



**ANTENNAS & RF SYSTEMS LTD.**



**Ver 14.01**

# MARS Antennas & RF Systems Product Catalogue

January 2014

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## About MARS

MARS Antennas & RF Systems Ltd., established in 1994, is a world class leading manufacturer of antennas, RF solutions, and Research & Development based in Israel.

Mars has demonstrated capability to design and provide products with exceptional performance characteristics.

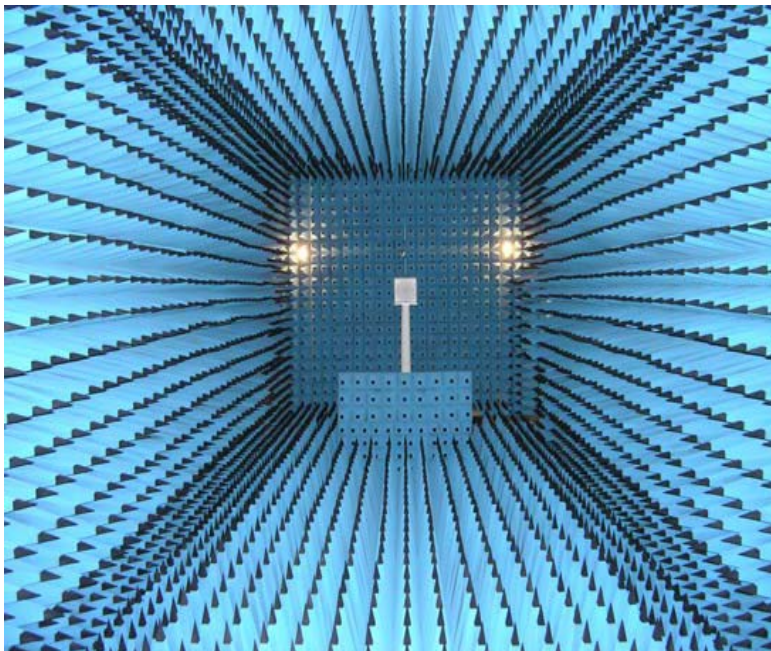
The Company has unsurpassed expertise in developing and manufacturing standard, as well as customized wide band high performance antennas.



**MARS premises**

MARS's expertise in developing and manufacturing of antennas based on printed circuit antennas called flat or Flat Panel Arrays allows them to meet the following certifications: ISO 9001, ISO 14001 and RoHS.

MARS owns an in-house internal anechoic chamber, which allows high quality product development and quality control.



**MARS In-House Antenna Range 13.5x5 m**

MARS offers its customers customized Antennas & RF Systems Solutions which is an integral part of customer's application development process. Some of MARS outstanding designs were the first in the market and are still uncontested.

MARS Key Customers: Proxim, Cisco, Airspan, Infinet Wireles, Ruckus, Aruba, Alcatel Lucent, Cambium, Juniper, Exalt, etc.

MARS is approved supplier to OEMs: Alvarion, Motorola, Motorola-Canopy, Ericsson, Proxim, Airaya, Mobile Access, Alcatel Lucent etc.

MARS Antennas installations provide reliable coverage in major airports, government facilities, and the hospital industry, etc.

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## Client Commitment

MARS Antennas & RF Systems is fully committed to addressing the needs of our diverse international client base. To meet this objective, we employ a methodology that integrates each client throughout the development lifecycle.

By encouraging client interaction and feedback at all stages of the development process, MARS Antennas & RF Systems ensures that each product is equipped with the most advanced technology, while meeting specific end-user requirements.

Our client commitment and proven track record have helped MARS Antennas & RF Systems earn a reputation for transforming unique, complex requirements into fully operational products – on time, on budget and on spec.

## Quality Assurance at MARS

MARS is ISO9001 and ISO14001 certified.

QA department monitors the development and manufacturing processes.

During the development process the QA audits the process, documentation and milestones. QA is expressed primarily in the prototype production authentication, testing, planning surveys and documentation control with specific attention to the documents production portfolio.

QA department production process supervision includes:

- Raw material and purchased accessories acceptance testing
- Testing process
- Final testing

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## Latest and New Designs

### Indoor/Outdoor LTE Multi Band Tri-Ports Omni Antenna



**MA-WOLTE-3M1**  
Tri-Ports Multi Band  
Omni Antenna

Covering  
698-6500 MHz

#### Gain

##### Port 1 & 2

2	dBi	@ 698-960 MHz
3-4	dBi	@ 1710-2170 MHz
5	dBi	@ 2.3-2.7 GHz
4	dBi	@ 3.3-3.8 GHz
6	dBi	@ 4.9- 6.5 GHz

##### Port 3

3	dBi	@ 1710-2170 MHz
3	dBi	@ 2.3-2.7 GHz
4	dBi	@ 3.3-3.8 GHz
6	dBi	@ 4.9-6.5 GHz

#### Polarization

Linear, Vertical

### Multi-Band Dual Polarized Indoor/Outdoor Omni Antenna



**MA-WOLTE-DP1**

Multi-Band  
Dual Polarized  
Indoor/Outdoor  
Omni Antenna

covering  
698MHz-6.5GHz

#### Polarization - Horizontal

2.3-2.7 GHz

5 dBi

4.9-5.875 GHz

5 dBi

#### Polarization - Vertical

698-960 MHz	1.71-2.17 GHz	2.3-2.7 GHz	3.3-3.8 GHz	4.9-6.5 GHz
4 dBi	5 dBi	5.5 dBi	7 dBi	7.5 dBi

### Multi-Band Indoor/Outdoor Omni Antenna



**MA-CQ29-1X**

Multi-Band  
Indoor/Outdoor  
Omni Antenna

covering  
380MHz-6GHz

#### Gain

380-806 MHz	806-960 MHz	1.7-2.5 GHz	2.5-2.7 GHz	3.3-3.7 GHz	4.9-6 GHz
1 (2*) dBi	4 dBi	5 dBi	5 dBi	6 dBi	6 dBi

(\*) Specifications for Ground Plate of 40 cm and up, or above a metal surface, with a spacing of 35-45 mm.

#### Polarization

Linear, Vertical


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## High Gain/Size Ratio Dual Pole/Slant 2.5 GHz Subscriber Antenna

	<b>MA-WA25-DP9</b>	
	High Gain/Size Ratio Dual Polarization/Slant Subscriber Antenna (112mm X 112mm)	
	covering 2.3-2.7 GHz	
	<b>Gain</b>	
	8 ± 1 dBi	
	<b>Polarization</b>	
	<b><u>Dual Pole</u></b> Linear Vertical & Horizontal	<b><u>Dual Slant (opt.)</u></b> ± 45° (diamond shape)

## High Gain/Size Ratio Dual Pole/Slant 3.6 GHz Subscriber Antenna

	<b>MA-WA36-DP9</b>	
	High Gain/Size Ratio Dual Polarization/Slant Subscriber Antenna (112mm X 112mm)	
	covering 3.3-4.01 GHz	
	<b>Gain</b>	
	8 ± 1 dBi	
	<b>Polarization</b>	
	<b><u>Dual Pole</u></b> Linear Vertical & Horizontal	<b><u>Dual Slant (opt.)</u></b> ± 45° (diamond shape)

## High Gain/Size Ratio Dual Pole/Slant 5 GHz Subscriber Antenna

	<b>MA-WA56-DP13</b>	
	High Gain/Size Ratio Dual Polarization/Slant Subscriber Antenna (112mm X 112mm)	
	covering 4.9-6.1 GHz	
	<b>Gain</b>	
	H-pol 14.5 dBi	V-pol 13.5 dBi
<b>Polarization</b>		
<b><u>Dual Pole</u></b> Linear Vertical & Horizontal	<b><u>Dual Slant (opt.)</u></b> ± 45° (diamond shape)	

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## High Gain Vertical or Horizontal Polarized Antenna



### MA-WA48-23

High Gain (23 dBi)  
Vertical or Horizontal  
Polarized Antenna

covering  
4.4-5.1 GHz

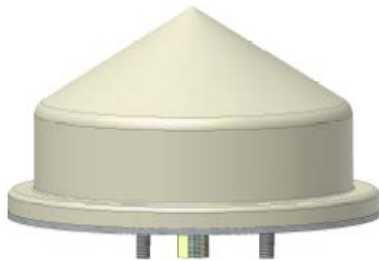
#### Gain

23 dBi

#### Polarization

Linear, Vertical & Horizontal

## Active GPS Antenna



### MA-AGP15-5

Active GPS Antenna  
features stable and  
efficient performance

covering  
1575.42±2 MHz

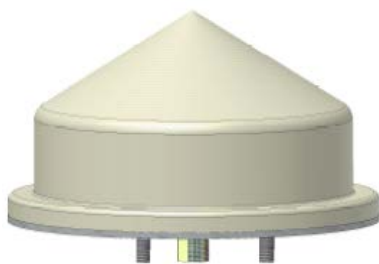
#### LNA Gain, typ.

25 dB

#### Gain Characteristics of Antenna Element

+5.0 dBic minimum at zenith  
-10 dBic minimum at 0° elevation

## Passive GPS Antenna



### MA-PGP15-5

Passive GPS  
Antenna features  
stable and efficient  
performance

covering  
1575.42±2 MHz

#### Gain, min.

5 dBic

#### Gain Characteristics of Antenna Element

-10 dBic minimum at 0° elevation

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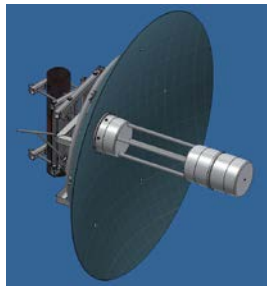
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## Parabolic Antennas

### Dual Band Dual Polarization Parabolic Reflector Antenna, 1.2m



#### MA-WP2556-DP12

Dual Band  
Dual Polarization  
Parabolic Reflector  
Antenna, 1.2m

Covering  
2.4-2.7 GHz &  
4.9-6.0 GHz

#### Gain

**2.4-2.7 GHz**  
25 ± 1 dBi

**5-6 GHz**  
32.5 ± 1 dBi

#### Polarization

Dual, Vertical & Horizontal

### Dual Polarization Parabolic Dish Antenna, 1.2m



#### MA-WP56-DP34

High Gain, Dual  
Polarization, Parabolic  
Dish antenna, 1.2m

Covering  
4.9-6.1 GHz

#### Gain

**5.15-6.10 GHz**  
34 dBi

**4.90-5.15 GHz**  
32 dBi

#### Polarization

Dual polarized

### Dual Polarization Parabolic Dish Antenna, 0.9m



#### MA-WP56-DP34

High Gain, Dual  
Polarization, Parabolic  
Dish antenna, 0.9m

Covering  
4.9-6.1 GHz

#### Gain

**5.15-6.10 GHz**  
32 dBi

**4.90-5.15 GHz**  
30 dBi

#### Polarization

Dual polarized



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## Wide Band Blade Antenna for Mobile Applications

<b>MA-VM1765-5</b> (Bottom Mount)    Ruggedized and Aerodynamic Wide Band Blade antenna covering 1.7-6.5GHz	<b>MA-VM1765-5S</b> (Magnetic Mount)  	<b>Polarization</b>			
		Linear, Vertical			
		<b>Polarization</b>			
		1.7-2.3 GHz	2.3-3.0 GHz	3.0-4.0 GHz	4.0-6.5 GHz
		3 dBi	4 dBi	5 dBi	6 dBi

## High Gain Dual Pole/Slant 4.9-6.1 GHz Subscriber Antenna

  <b>MA-WA56-DP23</b> Dual Polarization/Slant Subscriber Antenna (305mm X 305mm X 15mm) covering 4.9-6.1 GHz	<b>Gain</b>	
	23 ± 1 dBi	
	<b>Polarization</b>	
	<b>Dual Pole</b> Linear Vertical & Horizontal	<b>Dual Slant (opt.)</b> ± 45° (diamond shape)

## Mid / High Gain 120° Dual Polarization Base Station Antenna

  <b>MA-WE56-DP15</b> 120° Dual Polarization Base Station Antenna (370mm X 370mm X 40mm) covering 5.15-5.875 GHz	<b>Gain</b>	
	14.5 dBi	
	<b>Polarization</b>	
	Dual, Vertical & Horizontal	

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## 600 X 600 mm (23.5" x 23.5") Antennas


### High Gain Dual Pole/Slant Subscriber for 2.3-2.7 GHz

	<b>MA-WA25-DP23</b> <b>22-24 dBi gain</b> Dual Polarization/Slant Subscriber Antenna  covering 2.3-2.7 GHz	<b>Gain</b>	
		23 ± 1 dBi	
		<b>Polarization</b>	
		Linear, Vertical & Horizontal	

### High Gain Dual Pole/Slant Subscriber for 3.5GHz

	<b>MA-WA36-DP25</b> <b>High Gain (24-26 dBi)</b> Dual Pole/Slant Antenna  covering 3.3-3.8 GHz	<b>Gain</b>	
		25 ± 1 dBi	
		<b>Polarization</b>	
		Linear, Vertical & Horizontal	

### High Gain Dual Pole/Slant Full 5GHz spectrum

	<b>MA-WA56-DP28N</b>					
	High Gain ( <b>26-29.5 dBi</b> )					
	Wideband Dual Pole/Slant Antenna					
	Covering					
	<b>Full 5GHz spectrum</b>					
	4.7-6.425 GHz					
<b>Gain (dBi)</b>						
<b>GHz</b>	4.7-4.9	4.9-5.15	5.15-5.875	5.875-6.1	6.1-6.425	
<b>V-Pol</b>	28±1	28.5±0.5	29±0.5	28.5±0.5	27.5±1	
<b>H-Pol</b>	27±1	28±0.5	28.5±0.5	28±1	27±1	
<b>Polarization</b>						
<b>Dual Pole</b>				<b>Dual Slant (opt.)</b>		
Vertical & Horizontal				± 45°		


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## High Gain Dual Pole/Slant Subscriber for 6GHz

 <p><b>MA-WA62-DP30</b> High Gain (<b>28-30 dBi</b>) Dual Pole/Slant Antenna covering 5.3-6.5 GHz</p>	<b>Gain</b>	
	29 ± 1 dBi	
	<b>Polarization</b>	
	Dual polarization Vertical & Horizontal	

## High Gain Subscriber Full 5 & 6 GHz spectrum

 <p><b>MA-WA62-30</b> High Gain (<b>30 dBi</b>) Dual Pole/Slant Antenna covering <b>Full 5 &amp; 6 GHz spectrum</b> 4.9-6.5 GHz</p>	<b>Gain</b>		
	4.9-5.15 GHz 28.5 dBi	5.15-5.875 GHz 29 dBi	5.875-6.5GHz 30 dBi
	<b>Polarization</b>		
	Linear, Vertical		

## Multi Band Omni Directional Base Station Antenna 740MHz - 2700MHz

 <p><b>MA- WO7402700-5</b> Multi Band Omni Directional Base Station Antenna featuring stable and efficient performance of 4 or 6dBi of gain. (470mm X Dia.66mm)  Covering 740-2700 MHz</p>	<b>Gain</b>	
	<u><b>740-960 MHz</b></u> 4 dBi	<u><b>1710-2700 MHz</b></u> 6 dBi
	<b>Polarization</b>	
	Linear, Vertical	

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## 2 X 2 Dual Polarization MIMO CPE Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<b>MA-WA18-DP12</b>	Dual Polarized / Dual Slant Subscriber Ant.	1.75-1.85 GHz	14 dBi (typ.)	Dual Pole V & H Dual Slant $\pm 45^\circ$	305 x 305 x 15 mm	<b>27</b>
<b>MA-WA18-DP18</b>	Dual Polarized / Dual Slant Subscriber Ant.	1.75-1.85 GHz	17 dBi (typ.)	Dual Pole V & H Dual Slant $\pm 45^\circ$	370 x 370 x 40 mm	<b>28</b>
<b>MA-WA25-DP9</b>	Dual Polarized / Dual Slant Subscriber Ant.	2.3-2.7 GHz	8 $\pm 1$ dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	112 x 112 x 33.5 mm	<b>29</b>
<b>MA-WA25-DP14</b>	Dual Polarized / Dual Slant Subscriber Ant.	2.3-2.7 GHz	14 dBi (typ.)	Dual Pole V & H Dual Slant $\pm 45^\circ$	200 x 200 x 33 mm	<b>30</b>
<b>MA-WA25-DP17</b>	Dual Polarized / Dual Slant Subscriber Ant.	2.3-2.7 GHz	17.5 dBi (typ.)	Dual Pole V & H Dual Slant $\pm 45^\circ$	305 x 305 x 40 mm	<b>31</b>
<b>MA-WA25-DP19</b>	Dual Polarized / Dual Slant Subscriber Ant.	2.3-2.7 GHz	19 $\pm 1$ dBi (typ.)	Dual Pole V & H Dual Slant $\pm 45^\circ$	370 x 370 x 40 mm	<b>32</b>
<b>MA-WA25-DP23</b>	Dual Polarized / Dual Slant Subscriber Ant.	2.3-2.7 GHz	23 $\pm 1$ dBi (typ.)	Dual Pole V & H Dual Slant $\pm 45^\circ$	600 x 600 x 30 mm	<b>33</b>
<b>MA-WA36-DP9</b>	Dual Polarized / Dual Slant Subscriber Ant.	3.3-4.01 GHz	8 $\pm 1$ dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	112 x 112 x 33.5 mm	<b>34</b>
<b>MA-WA36-DP14</b>	Dual Polarized / Dual Slant Subscriber Ant.	3.3-3.8 GHz	14 dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	200 x 200 x 33 mm	<b>35</b>
<b>MA-WA36-DP19</b>	Dual Polarized / Dual Slant Subscriber Ant.	3.3-4.1 GHz	19.5 dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	305 x 305 x 25 mm	<b>36</b>
<b>MA-WA36-DP21</b>	Dual Polarized / Dual Slant Subscriber Ant.	3.3-3.8 GHz	22 dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	370 x 370 x 40 mm	<b>37</b>
<b>MA-WA36-DP25</b>	Dual Polarized / Dual Slant Subscriber Ant.	3.3-3.8 GHz	25 dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	600 x 600 x 22 mm	<b>38</b>
<b>MA-WA48-DP23</b>	Dual Polarized / Dual Slant Subscriber Ant.	4.4-5.1 GHz	23 dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	370 x 370 x 40 mm	<b>39</b>
<b>MA-WA56-DP13</b>	Dual Polarized / Dual Slant Subscriber Ant.	4.9-6.1 GHz	V-Pol: 13.5 dBi H-Pol: 14.5 dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	112 x 112 x 33.5 mm	<b>40</b>
<b>MA-WA56-DP19</b>	Dual Polarized / Dual Slant Subscriber Ant.	4.9-6.1 GHz	19 $\pm 1$ dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	200 x 200 x 33 mm	<b>41</b>
<b>MA-WA56-DP20</b>	Dual Polarized / Dual Slant Subscriber Ant.	4.9-5.875 GHz	21 $\pm 1$ dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	305 x 305 x 15 mm	<b>42</b>
<b>MA-WA56-DP23</b>	Dual Polarized / Dual Slant Subscriber Ant.	4.9-6.1 GHz	23 $\pm 1$ dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	305 x 305 x 15 mm	<b>43</b>
<b>MA-WA56-DP25N</b>	Dual Polarized / Dual Slant Subscriber Ant.	4.9-5.875 GHz	V-Pol: 24.5 $\pm 1$ H-Pol: 23.5 $\pm 1$	Dual Pole V & H Dual Slant $\pm 45^\circ$	370x 370 x 40 mm	<b>44</b>
<b>MA-WA56-DP28N</b>	High Gain, Dual Polarized / Dual Slant Subscriber Antenna	4.9-6.425 GHz	V-Pol: 29 $\pm 0.5$ H-Pol: 28.5 $\pm 0.5$	Dual Pole V & H Dual Slant $\pm 45^\circ$	600 x 600 x 22 mm	<b>45</b>
<b>MA-WA62-DP30</b>	High Gain, Dual Polarized/Dual Slant Antenna	5.3-6.5 GHz	29 $\pm 1$ dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	600 x 600 x 30 mm	<b>46</b>
<b>MA-WA62-DP24</b>	Dual Polarized / Dual Slant Subscriber Ant.	5.4-6.42 GHz	24 dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	305 x 305 x 15 mm	<b>47</b>
<b>MA-WA62-DP19</b>	Dual Polarized / Dual Slant Subscriber Ant.	5.7-6.425 GHz	19 $\pm 1$ dBi	Dual Pole V & H Dual Slant $\pm 45^\circ$	202 x 202 x 33 mm	<b>48</b>

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## 2 X 2 Dual Polarization Base Station Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<b>MA-WE91-2D</b>	Dual Polarized Base Station Antenna, 120°	902-928 MHz	11.5 dBi (min.), Both Polarizations	Dual, Vertical & Horizontal	1207 x 327 x 217 mm	<b>49</b>
<b>MA-WC25-DP14</b>	Dual Polarized Base Station Antenna 60°	2.3-2.7 GHz	14 dBi	Dual, Vertical & Horizontal	370 x 370 x 40 mm	<b>50</b>
<b>MA-WD25-DP13</b>	Dual Polarized Base Station Antenna 60°	2.3-2.7 GHz	12.5 dBi	Dual Slant ±45°	370 x 370 x 40 mm	<b>51</b>
<b>MA-WC25-DS18</b>	Dual Slant Base Station Antenna 60°	2.3-2.7 GHz	17 dBi	Dual Slant ±45°	1200 x 200 x 70 mm	<b>52</b>
<b>MA-WC2458-2H</b>	Dual Band , Dual Slant Small Sector Antenna, 60°	2.4-2.5 & 5.15-5.875 GHz	2 X 7.5 dBi	Dual Slant ±45°	200 x 200 x 33 mm	<b>53</b>
<b>MA-WE2458-2H</b>	Dual Slant Base Station Antenna 120°	2.4-2.5 & 4.9-5.875 GHz	5 dBi	Dual Slant ±45°	200 x 200 x 33 mm	<b>54</b>
<b>MA-WD36-DP14</b>	Dual Polarization Base Station Antenna, 90°	3.3-4.01 GHz	14 dBi (typ.)	Dual, Vertical & Horizontal	370 x 370 x 40 mm	<b>55</b>
<b>MA-WC35-DS17</b>	Dual Slant WiMAX Base Station Antenna, 65°	3.3-3.8 GHz	16.5 dBi (typ.)	Dual Slant ±45°	600 x 225 x 40 mm	<b>56</b>
<b>MA-WD35-DS15</b>	Dual Slant WiMAX Base Station Antenna, 90°	3.3-3.8 GHz	15 dBi (typ.)	Dual Slant ±45°	600 x 225 x 40 mm	<b>57</b>
<b>MA-WC55-DS17</b>	Dual Slant Base Station Antenna, 60°	4.9-6.1 GHz	17 dBi (typ.)	Dual Slant ±45°	370 x 370 x 40 mm	<b>58</b>
<b>MA-WD55-DS16</b>	Dual Slant Base Station Antenna, 90°	4.9-6.1 GHz	16 dBi (typ.)	Dual Slant ±45°	370 x 370 x 40 mm	<b>59</b>
<b>MA-WC56-DP17</b>	Dual Polarized Base Station Antenna, 60°	4.9-6.1 GHz	H Pol. 17dBi V Pol. 18dBi	Dual, Vertical & Horizontal	370 x 370 x 40 mm	<b>60</b>
<b>MA-WD56-DP16</b>	Dual Polarized Base Station Antenna, 90°	4.9-6.1 GHz	16 dBi	Dual, Vertical & Horizontal	370 x 370 x 40 mm	<b>61</b>
<b>MA-WD56-DP13</b>	Dual Polarized Base Station Antenna, 90°	5.15-5.875 GHz	13 dBi	Dual, Vertical & Horizontal	200 x 200 x 33 mm	<b>62</b>
<b>MA-WE56-DP12</b>	Dual Polarized Base Station Antenna, 120°	5.15-5.875 GHz	12 dBi	Dual, Vertical & Horizontal	200 x 200 x 33 mm	<b>63</b>
<b>MA-WE56-DP15</b>	Dual Polarized Base Station Antenna, 120°	5.15-5.875 GHz	14.5 dBi	Dual, Vertical & Horizontal	370 x 370 x 40 mm	<b>64</b>
<b>MA-WC62-DP17</b>	Dual Polarized Base Station Antenna, 60°	5.7-6.425 GHz	17 dBi	Linear, Vertical	370 x 370 x 40 mm	<b>65</b>
<b>MA-WD62-DP16</b>	Dual Polarized Base Station Antenna, 90°	5.7-6.425 GHz	16 dBi	Dual, Vertical & Horizontal	370 x 370 x 40 mm	<b>66</b>
<b>MA-WD62-DS16</b>	Dual Slant Base Station Antenna, 90°	5.7-6.425 GHz	15.5 dBi	Dual Slant ±45°	370 x 370 x 40 mm	<b>67</b>

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### 3 X 3 Triple Polarization MIMO Subscriber Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<b>MA-WA24-TPMIMO</b>	<b>Triple Polarization MIMO</b> Subscriber Antenna	2.3-2.7 GHz	<u>Ver. Pol</u> 15±1 dBi <u>Dual Slant pol.</u> 12±1 dBi	Dual Slant ± 45° & Vertical	305 x 305 x 15 mm	<b>68</b>
<b>MA-WA55-TPMIMO</b>	<b>Triple Polarization MIMO</b> Subscriber Antenna	5.125-6.1 GHz	<u>Ver. Pol</u> 19 dBi <u>Dual Slant pol.</u> 17.5 dBi	Dual Slant ± 45° & Vertical	305 x 305 x 15 mm	<b>69</b>

### 3 X 3 Triple Polarization MIMO Base Station Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<b>MA-WC2458-3H</b>	Triple Polarization MIMO <b>Dual Band</b> Sector Antenna 60°	2.4-2.5 & 5.15-5.875 GHz	3 X 7.5 dBi	Dual Slant ± 45° & Vertical	200 x 200 x 33 mm	<b>70</b>
<b>MA-WE2458-3H</b>	Triple Polarization MIMO <b>Dual Band</b> Sector Antenna 120°	2.3-2.7 & 4.9-6.1 GHz	3 X 5 dBi	Dual Slant ± 45° & Vertical	200 x 200 x 33 mm	<b>71</b>
<b>MA-WD56-DSV16</b>	Triple Polarization MIMO Sector Antenna, 90°	4.9-6.1 GHz	3 X 16 dBi	Dual Slant ± 45° & Vertical	370 x 370 x 40 mm	<b>72</b>

### 2 X 2 Dual Polarization MIMO Base Station Array Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<b>MA-WD25-MIMO3</b>	Dual Polarization <b>Array</b> Antenna 90°	2.3-2.7 GHz	6 X 14 dBi	Dual Slant ± 45°	800 x 600 x 40 mm	<b>73</b>
<b>MA-WD36-MIMO3</b>	Dual Polarization <b>Array</b> Antenna 90°	3.3-3.8 GHz	6 x 15 dBi	Dual Slant ± 45°	800 x 600 x 40 mm	<b>74</b>

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## 3 X 3 and up Single Polarization MIMO Base Station Array Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<b>MA-WO24-MIMONH8</b>	<b>MIMO Omni</b> Base Station Antenna	2.3-2.7 GHz	3 x 8 dBi	Linear, Vertical	640 x 330 x 120 mm	<b>75</b>
<b>MA-WD24-13MIMO</b>	MIMO Base Station Antenna, 90°	2.3-2.7 GHz	3 x 13 dBi	Linear, Vertical	400 x 308 x 80 mm	<b>76</b>
<b>MA-WD24-15MIMO6</b>	MIMO Base Station Antenna, 90°	2.3-2.7 GHz	6 x 15.5 dBi	Linear, Vertical	812 x 705 x 70 mm	<b>77</b>
<b>MA-WE24-14MIMO</b>	MIMO Base Station Antenna, 120°	2.3-2.7 GHz	4 X 14 dBi	Linear, Vertical	812 x 470 x 70 mm	<b>78</b>
<b>MA-DBO-3H</b>	<b>Dual Band</b> MIMO Omni Antenna	2.3-2.7 & 4.9-6.1 GHz	3 X 2.5 dBi 3 X 3.5 dBi	Linear, Vertical	200 x 200 x 33 mm	<b>79</b>
<b>MA-DBO-3MIMO</b>	<b>Dual Band</b> MIMO Omni Antenna	2.3-2.7 & 4.9-6 GHz	3 X 4 dBi 3 X 7 dBi	Linear, Vertical	205 x 330 mm	<b>80</b>
<b>MA-WD36-16MIMO4</b>	Sector Antenna WiMAX MIMO 90°	3.3-3.8 GHz	4 x 15.5 dBi	Linear, Vertical	573 x 390 x 53 mm	<b>81</b>
<b>MA-WE36-15MIMO4</b>	Sector Antenna WiMAX MIMO 120°	3.3-3.8 GHz	4 x 14.5 dBi	Linear, Vertical	573 x 390 x 53 mm	<b>82</b>
<b>MA-WD55-16MIMO</b>	MIMO Base Station Antenna, 90°	4.9-6.1 GHz	3 x 16 dBi	Linear, Vertical	400 x 300 x 50 mm	<b>83</b>
<b>MA-WE55-15MIMO</b>	MIMO Base Station Antenna, 120°	4.9-6.1 GHz	3 x 15 dBi	Linear, Vertical	400 x 300 x 50 mm	<b>84</b>
<b>MA-WO55-MIMO9NH3</b>	<b>MIMO Omni</b> –Base Station Antenna	4.9-5.875 GHz	3 x 9 dBi	Linear, Vertical	330 x 120 mm	<b>85</b>

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## 1 X 1 Single Polarization CPE Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<a href="#">MA-WA74-LX</a>	700 MHz Lower Band Subscriber Antenna	698-746 MHz	8.5 dBi (min.)	Linear, Vertical or Horizontal	305 x 305 x 25 mm	<a href="#">86</a>
<a href="#">MA-WA79-UX</a>	700 MHz Upper Band Subscriber Antenna	746-806 MHz	8.5 dBi (min.)	Linear, Vertical or Horizontal	305 x 305 x 25 mm	<a href="#">87</a>
<a href="#">MA-IS91-12</a>	915 MHz Subscriber Antenna	902-928 MHz	12 dBi (min.)	Linear, Vertical or Horizontal	370 x 370 x 40 mm	<a href="#">88</a>
<a href="#">MA-IS91-T2</a>	915 MHz Subscriber Antenna	902-928 MHz	10.5 dBi (min.)	Linear Vertical or Horizontal	305 x 305 x 25 mm	<a href="#">89</a>
<a href="#">MA-IS91-T3</a>	915 MHz Small Size Subscriber Antenna	902-928 MHz	8 dBi (min.)	Linear, Vertical or Horizontal	230 x 214 x 31 mm	<a href="#">90</a>
<a href="#">MA-IS91-R1</a>	915 MHz Subscriber Antenna	902-928 MHz	10 dBi (typ.)	RHCP	305 x 305 x 25 mm	<a href="#">91</a>
<a href="#">MA-WA14-1X</a>	1425-1525 MHz Directional Antenna	1425-1525 MHz	13.5 dBi (min.)	Linear, Vertical	305 x 305 x 25 mm	<a href="#">92</a>
<a href="#">MA-WA18-1X</a>	1.8 GHz Directional Antenna	1.71-1.88 GHz	14 dBi (min.)	Linear, Vertical	305 x 305 x 27 mm	<a href="#">93</a>
<a href="#">MA-WA19-4X</a>	1.9 GHz Directional Antenna	1.85-1.99 GHz	15 dBi (min.)	Linear, Vertical	305 x 305 x 25 mm	<a href="#">94</a>
<a href="#">MA-WA20-1X</a>	UMTS Subscriber Antenna	1.9-2.17 GHz	14 dBi (min.)	Linear, Vertical or Horizontal	305 x 305 x 15 mm	<a href="#">95</a>
<a href="#">MA-WA25-9</a>	Small Size Subscriber Antenna	2.3-2.7 GHz	9 dBi (min.)	Linear Vertical	100 x 100 x 30 mm	<a href="#">96</a>
<a href="#">MA-WA24-12</a>	Small Size Subscriber Antenna	2.4-2.7 GHz	12 dBi (min.)	Linear, Vertical	155 x 155 x 28 mm	<a href="#">97</a>
<a href="#">MA-WA24-2X</a>	Subscriber Antenna, High Gain	2.3-2.7 GHz	18 dBi (typ.)	Linear, Vertical or Horizontal	305 x 305 x 15 mm	<a href="#">98</a>
<a href="#">MA-WS2455-1X</a>	Dual Band Subscriber Antenna, High Gain	2.4-2.5 & 4.9-5.875 GHz	18 dBi 12 dBi (typ.)	Linear, Vertical or Horizontal	305 x 305 x 25 mm	<a href="#">99</a>
<a href="#">MA-WA25-20</a>	Subscriber Antenna, High Gain	2.3-2.7 GHz	20 dBi (typ.)	Linear, Vertical or Horizontal	370 x 370 x 40 mm	<a href="#">100</a>
<a href="#">MA-WA35-12</a>	3.5GHz Small Size Subscriber Antenna	3.3-3.8 GHz	12 dBi	Linear, Vertical or Horizontal	155 x 155 x 28 mm	<a href="#">101</a>
<a href="#">MA-WA36-15</a>	3.5 GHz Subscriber Antenna	3.3-3.8 GHz	15 dBi	Linear, Vertical	230 x 215 x 30 mm	<a href="#">102</a>
<a href="#">MA-WA35-2X-D</a>	Subscriber Antenna for WiMAX Applications	3.3-3.8 GHz	18 dBi (min.)	Linear, Vertical	305 x 305 x 15 mm (Diamond shape)	<a href="#">103</a>
<a href="#">MA-WA35-2X</a>	Subscriber Antenna	3.4-3.7 GHz	18 dBi (min.)	Linear, Vertical	305 x 305 x 15 mm	<a href="#">104</a>
<a href="#">MA-WA36-19</a>	3.5 GHz Subscriber Antenna	3.3-3.8 GHz	19 dBi	Linear, Vertical	305 x 305 x 15 mm	<a href="#">105</a>
<a href="#">MA-WA36-22</a>	3.5 GHz Subscriber Antenna	3.3-3.8 GHz	22 dBi	Linear, Vertical	370 x 370 x 40 mm	<a href="#">106</a>

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Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<b>MA-WA36-26</b>	3.5 GHz Subscriber Antenna	3.3-3.8 GHz	26 dBi	Linear, Vertical	600 x 600 x 30 mm	<b>107</b>
<b>MA-WA48-23</b>	High Gain, 4.8 GHz Subscriber Antenna	4.4-5.1 GHz	23 dBi	Linear, Vertical	370 x 370 x 40 mm	<b>108</b>
<b>MA-WA57-3HG1</b>	Small Size Subscriber Antenna, High Gain	4.9-6.5 GHz	19 dBi (min.)	Linear, Vertical	155 x 155 x 28 mm	<b>109</b>
<b>MA-WA47-20</b>	4.5 GHz Subscriber Antenna	4.4-5.1 GHz	20 dBi	Linear, Vertical	305 x 305 x 15 mm	<b>110</b>
<b>MA-WA49-1X</b>	4.9 GHz Subscriber Antenna	4.9-5.4 GHz	21 dBi (min.)	Linear, Vertical	305 x 305 x 15 mm (Diamond Shape)	<b>111</b>
<b>MA-WA58-1X</b>	Broadband Subscriber Antenna	4.9-5.875 GHz	23 dBi (typ.)	Linear, Vertical	305 x 305 x 15 mm (Diamond Shape)	<b>112</b>
<b>MA-WA58-1XMMES</b>	Integrated Antenna & Enclosure Solution	4.9-5.875 GHz	23 dBi (typ.)	Linear, Vertical	305 x 305 x 15 mm (Diamond Shape)	<b>113</b>
<b>MA-WA55-27</b>	5 GHz Broadband Subscriber Antenna	4.9-6.1 GHz	26 dBi (typ.)	Linear, Vertical or Horizontal	370 x 370 x 40 mm	<b>114</b>
<b>MA-WA55-30</b>	High Gain Subscriber Antenna	4.9-6.1 GHz	30 dBi (typ.)	Linear, Vertical	600 x 600 x 30 mm	<b>115</b>
<b>MA-WA62-30</b>	4.9-6.5 GHz High Gain Subscriber Antenna	4.9-6.5 GHz	30 dBi (Typ.)	Linear, Vertical	600 x 600 x 30 mm	<b>116</b>
<b>MA-WA62-22</b>	6 GHz Broadband Subscriber Antenna	5.7-6.425 GHz	22.5 dBi	Linear, Vertical	305 x 305 x 15 mm	<b>117</b>
<b>MA-WA61-25</b>	6 GHz Broadband Subscriber Antenna	5.4-6.5 GHz	25 dBi	Linear, Vertical	305 x 305 x 15 mm	<b>118</b>

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## 1 X 1 Single Polarization Base Station & Omni Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<b>MA-WO7402700-5</b>	Multi Band Omni Directional Base Station Antenna	740-960 1710-2700 MHz	4 dBi 6 dBi	Linear, Vertical	470 x 66 Dia mm	<b>119</b>
<b>MA-WC90-5X</b>	Base Station Antenna, 60°	902-928 MHz	14.5 dBi (min.)	Linear, Vertical	1200 x 330 x 105 mm	<b>120</b>
<b>MA-WD90-6X</b>	Base Station Antenna, 90°	902-928 MHz	13 dBi (min.)	Linear, Vertical	1200 x 330 x 105 mm	<b>121</b>
<b>MA-WE90-7X</b>	Base Station Antenna, 120°	902-928 MHz	11.5 dBi (min.)	Linear, Vertical	1200 x 330 x 105 mm	<b>122</b>
<b>MA-WC91-5H</b>	Horizontally Polarized Sector Antenna, 60°	902-928 MHz	14 dBi (min.)	Linear, Horizontal	1200 x 330 x 105 mm	<b>123</b>
<b>MA-WD91-6H</b>	Horizontally Polarized Sector Antenna, 90°	902-928 MHz	12 dBi (min.)	Linear, Horizontal	1200 x 330 x 105 mm	<b>124</b>
<b>MA-WE91-7H</b>	Horizontally Polarized Sector Antenna, 120°	902-928 MHz	11 dBi (min.)	Linear, Horizontal	1200 x 330 x 105 mm	<b>125</b>
<b>MA-WO91-8X</b>	Omni-Directional Antenna	902-928 MHz	8 dBi	Linear, Vertical I	1350 x 64 (Dia.) mm	<b>126</b>
<b>MA-WC19-5X</b>	Base Station Antenna, 60°	1.85-2.05 GHz	15 dBi (min.)	Linear, Vertical	812 x 122 x 58 mm	<b>127</b>
<b>MA-WC24-14</b>	Base Station Antenna, 60°	2.3-2.7 GHz	14 dBi	Linear, Vertical	380 x 150 x 80 mm	<b>128</b>
<b>MA-WD24-13</b>	Base Station Antenna, 90°	2.3-2.7 GHz	13 dBi	Linear, Vertical	380 x 75 x 80 mm	<b>129</b>
<b>MA-WE24-11</b>	Base Station Antenna, 120°	2.3-2.7 GHz	11.5 dBi	Linear, Vertical	380 x 75 x 80 mm	<b>130</b>
<b>MA-WC24-17</b>	Base Station Antenna, 60°	2.3-2.7 GHz	17 dBi	Linear, Vertical	800 x 120 x 65 mm	<b>131</b>
<b>MA-WD24-15</b>	Base Station Antenna, 90°	2.3-2.7 GHz	15.5 dBi	Linear, Vertical	800 x 120 x 65 mm	<b>132</b>
<b>MA-WE24-14</b>	Base Station Antenna, 120°	2.3-2.7 GHz	14 dBi	Linear, Vertical	800 x 120 x 65 mm	<b>133</b>
<b>MA-WC24-6H</b>	Horizontally Polarized Sector Antenna, 60°	2.4-2.5 GHz	17 dBi (min.)	Linear, Horizontal	810 x 120 x 60 mm	<b>134</b>
<b>MA-WD24-6H</b>	Horizontally Polarized Sector Antenna, 90°	2.4-2.5 GHz	15 dBi (min.)	Linear, Horizontal	810 x 120 x 60 mm	<b>135</b>
<b>MA-DBO2458-6</b>	Dual Band Omni Antenna	2.3-2.7 & 4.9-6 GHz	4-5 dBi / 7 dBi	Linear, Vertical	210 x 28.5 Dia. mm	<b>136</b>
<b>MA-WO25-9</b>	Omni-Directional Antenna	2.3-2.7 GHz	9 dBi	Linear, Vertical	640 x 76 Dia mm	<b>137</b>
<b>MA-WC36-17</b>	Base Station Antenna, 70°	3.3-3.8 GHz	16.5 dBi	Linear, Vertical	573 x 95 x 53 mm	<b>138</b>
<b>MA-WD36-16</b>	Base Station Antenna, 90°	3.3-3.8 GHz	15.5 dBi	Linear, Vertical	573 x 95 x 53 mm	<b>139</b>
<b>MA-WE36-15</b>	Base Station Antenna, 120°	3.3-3.8 GHz	14.5 dBi	Linear, Vertical	573 x 95 x 53 mm	<b>140</b>

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<b>MA-WD35-14H</b>	Horizontally Polarized Sector Antenna, 90°	3.4-3.6 GHz	14 dBi	Linear, Horizontal	554 x 76 x 55 mm	<b>141</b>
<b>MA-WO36-10N</b>	3.5 GHz Omni-Directional Base Station Antenna	3.3-3.8 GHz	9.5 dBi (typ.)	Linear, Vertical	470 x 66 mm	<b>142</b>
<b>MA-WC55-17</b>	Base Station Antenna, 60°	4.9-6.1 GHz	17 dBi (typ.)	Linear, Vertical	573 x 95 x 53 mm	<b>143</b>
<b>MA-WD55-16</b>	Base Station Antenna, 90°	4.9-6.1 GHz	16 dBi (typ.)	Linear, Vertical	573 x 95 x 53 mm	<b>144</b>
<b>MA-WE55-15</b>	Base Station Antenna, 120°	4.9-6.1 GHz	15 dBi (typ.)	Linear, Vertical	573 x 95 x 53 mm	<b>145</b>
<b>MA-WB55-20</b>	Base Station Antenna 30°	4.9-6.1 GHz	20 dBi (typ.)	Linear, Vertical	573 x 120 x 115 mm	<b>146</b>
<b>MA-WC55-18H</b>	Base Station Antenna, 65°	4.9-6.1 GHz	18 dBi (typ.)	Linear, Horizontal	573 x 95 x 53 mm	<b>147</b>
<b>MA-WD55-17H</b>	Base Station Antenna, 90°	4.9-6.1 GHz	17 dBi (typ.)	Linear, Horizontal	573 x 95 x 53 mm	<b>148</b>
<b>MA-WO55-10NH</b>	Omni-Directional Antenna	4.9-5.875 GHz	10 dBi	Linear, Vertical	315 x 40 Dia. mm	<b>149</b>
<b>MA-WC58-5EL</b>	Base Station Antenna, 60°	5.725-5.875 GHz	16 dBi	Linear, Vertical	554 x 76 x 53 mm	<b>150</b>
<b>MA-WE58-7EL</b>	Base Station Antenna, 120°	5.725-5.875 GHz	14 dBi (min.)	Linear, Vertical	554 x 76 x 53 mm	<b>151</b>
<b>MA-WC62-17</b>	Base Station Antenna, 60°	5.7-6.5 GHz	17 dBi	Linear, Vertical	573 x 95 x 53 mm	<b>152</b>
<b>MA-WD62-16</b>	Base Station Antenna, 90°	5.7-6.5 GHz	16 dBi	Linear, Vertical	573 x 95 x 53 mm	<b>153</b>
<b>MA-WE62-15</b>	Base Station Antenna, 120°	5.7-6.5 GHz	15 dBi	Linear, Vertical	573 x 95 x 53 mm	<b>154</b>
<b>MA-WG10-6H</b>	10.5GHz Sector Antenna	10.15-10.65 GHz	15 dBi	Linear, Horizontal	339 x 195 x 40 mm	<b>155</b>

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## Multi Band In-Building/Outdoor Antennas

### TETRA, CDMA, GSM, UMTS, WLAN, WLL, Wi-Fi & WiMax

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<b>MA-CQ26-1X</b>	380 MHz -6 GHz Multi Band Omni	380-806 806-960 1395-1432 1710-2170 2300-2500 3300-3700 4900-6000 MHz	1 (2*) dBi 4 dBi 5 dBi 5 dBi 5 dBi 5 dBi 6 dBi	Linear, Vertical	Base Dia. - 275 Height - 187 mm	<b>156</b>
<b>MA-CQ27-1X</b>	380 MHz -6 GHz Multi Band Omni	380-806 806-960 1395-1432 1710-2170 2300-2700 3300-3700 4900-6000 MHz	1 (2*) dBi 4 dBi 5 dBi 5 dBi 6 dBi 6 dBi 6 dBi	Linear, Vertical	Base Dia. - 275 Height - 187 mm	<b>157</b>
<b>MA-CQ29-1X</b>	380 MHz -6 GHz Multi Band Omni	380-806 806-960 1700-2500 2500-2700 3300-3700 4900-6000 MHz	1 (2*) dBi 4 dBi 5 dBi 5 dBi 6 dBi 6 dBi	Linear, Vertical	Base Dia. - 275 Height - 187 mm	<b>158</b>
<b>MA-CM36-15</b>	Multi Band Omni Antenna	806-960 1710-2170 2300-2700 MHz	2 dBi 3-4 dBi 5 dBi	Linear, Vertical	Base Dia. - 205 Height - 89 mm	<b>159</b>
<b>MA-CR26-2X</b>	Multi Band Omni Antenna	806-960 1710-2170 2300-2700 3400-3700 4900-6000 MHz	2 dBi 3-4 dBi 5 dBi 5 dBi 5-6 dBi	Linear, Vertical	Base Dia. - 205 Height - 89 mm	<b>160</b>
<b>MA-WOLTE-3X</b>	<b>LTE, GSM, UMTS, WLAN, Wi-Fi</b> Multi Band Omni	698-806 806-960 1710-2170 2300-2700 3300-3800 4900-6500 MHz	2 dBi 2 dBi 3-4 dBi 5 dBi 4 dBi 6 dBi	Linear, Vertical	Base Dia. - 205 Height - 89 mm	<b>161</b>
<b>MA-WOLTE-3M1</b>	<b>698-6500 MHz Multi Band Tri-Ports Omni Antenna</b>	<b>Port 1 &amp; 2</b> 698-960 MHz 1710-2170 MHz 2.3-2.7 GHz. 3.3-3.8 GHz 4.9- 6.5 GHz <b>Port 3</b> 1710-2170 MHz 2.3-2.7 GHz 3.3-3.8 GHz 4.9- 6.5 GHz	2 dBi 3-4 dBi 5 dBi 4 dBi 6 dBi  3 dBi 3 dBi 4 dBi 6 dBi	Linear, Vertical	Antenna dimension (D,H): 220 x 95 mm  Base dimension (L,W,H): 369 x 270 x 30 mm	<b>162</b>

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Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<b>MA-WOLTE-DP1</b>	<b>698-6500 MHz Multi Band Dual Polarized Omni Antenna</b>	<u>Vertical</u> 698-960 MHz 1710-2170 MHz 2.3-2.7 GHz. 3.3-3.8 GHz 4.9- 6.5 GHz	4 dBi 5 dBi 5.5 dBi 7 dBi 7.5 dBi	Linear, Vertical	Base Diameter 275 mm  Height 190 mm	<b>163</b>
		<u>Horizontal</u> 2.3-2.7 GHz. 4.9- 5.875 GHz	5 dBi 5 dBi			
<b>MA-WA43-1X</b>	In-Building Panel Antenna	425-445 MHz	4 dBi	Linear, Vertical	225 x 215 x 29 mm	<b>164</b>
<b>MA-WA46-1X</b>	In-Building Panel Antenna	450-470 MHz	4 dBi	Linear, Vertical	225 x 215 x 29 mm	<b>165</b>
<b>MA-WA48-1X</b>	In-Building Panel Antenna	480±10 MHz	4 dBi	Linear, Vertical	225 x 215 x 29 mm	<b>166</b>
<b>MA-CLTE-14</b>	<b>LTE, GSM, UMTS, WLAN, Wi-Fi</b> Multi Band Panel Antenna	698-806 806-960 1710-2170 2200-2700 MHz	5 dBi 6 dBi 6.5 dBi 5 dBi	Mixed, Vertical and Horizontal	231 x 215 x 37.5 mm	<b>167</b>
<b>MA-CL67-15</b>	<b>GSM, UMTS, WLAN</b> Multi Band Panel Antenna	806-960 1710-2170 2200-2700 MHz	8.5 dBi 7.5-10 dBi 5-6.5 dBi	Linear, Vertical	231 x 215 x 37.5 mm	<b>168</b>
<b>MA-CN14-11</b>	Multi Band 140°	806-960 1710-2170 MHz	5 dBi	Linear, Vertical	175 x 35 x 125 mm	<b>169</b>
<b>MA-CH11-16</b>	GSM/AMPS/IDEN In-Building Antenna	810-960 MHz	3 dBi	Linear, Vertical	180 x 180 x 25 mm	<b>170</b>
<b>MA-CB22-13</b> <b>MA-CB22-23</b> <b>MA-CB22-33</b>	Squint Band Extra Thin Antenna	824-894 MHz	15 dBi 14.5 dBi 13 dBi	Linear, Vertical	808 x 708 x 30 mm	<b>171</b>
<b>MA-CB50-20</b>	Dual Beam CDMA/TDMA/AMPS Antenna	824-894 MHz	5 dBi	Linear, Vertical	400 x 185 x 55 Mm	<b>172</b>
<b>MA-CC60-20</b>	Dual Beam GSM Antenna	870-960 MHz	5 dBi	Linear, Vertical	400 x 185 x 55 mm	<b>173</b>
<b>MA-CC60-60</b>	Dual Beam GSM Antenna	870-960 MHz 2.4-2.5 GHz	3.5 dBi 4.5 dBi	Linear, Vertical	184 x 100 x 125 mm	<b>174</b>
<b>MA-CD09-2X</b>	Cellular Yagi Antenna	1.71-1.88 GHz	9 dBi	Linear, Vertical	500 x 85 mm	<b>175</b>

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## Mobile Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<a href="#">MA-IS43-C1</a>	Car Mounted Antenna	433.92±2 MHz	~5 dBi (min.)	Linear, Vertical	78.6 x 39 x 4.2 mm	<a href="#">176</a>
<a href="#">MA-IS72-AS</a>	Car Mounted Antenna	710-746 MHz	0 dBi (min.)	Linear, Vertical	78.6 x 39 x 4.2 mm	<a href="#">177</a>
<a href="#">MA-CH11-W1</a>	Broadband Cellular Window Mounted ant.	824-960 MHz	0 dBi (min.)	Linear, Vertical	78.6 x 39 x 4.2 mm	<a href="#">178</a>
<a href="#">MA-CB11-C3</a>	CDPD Car Mounted Antenna	824-849 MHz 869-894 MHz	0 dBi (min.)	Linear, Vertical	145 x 16 x 4.5 mm	<a href="#">179</a>
<a href="#">MA-IS91-C1</a>	915 MHz Car Mounted Antenna	902-928 MHz	0 dBi	Linear, Vertical	78 x 39 x 4 mm	<a href="#">180</a>
<a href="#">MA-VM1765-5</a>	Wide Band Blade Antenna for Mobile Applications	1.7-6.5 GHz	6 dBi (typ.)	Linear, Vertical	132 x 79 x 76 mm	<a href="#">181</a>
<a href="#">MA-VM1765-5S</a>	Wide Band Blade Antenna for Mobile Applications	1.7-6.5 GHz	6 dBi (typ.)	Linear, Vertical	132 x 79 x 76 mm.	<a href="#">182</a>
<a href="#">MA-VM23-3X</a>	Car Mounted Antenna	2.3-2.39 GHz	3 dBi	Linear	40 x 45 x 15 mm	<a href="#">183</a>
<a href="#">MA-CH25-W1</a>	Cellular Car Window Mounted Antenna	2.3-2.69 GHz	0 dBi	Linear Vertical	78.6 x 39 x 4.2 mm	<a href="#">184</a>
<a href="#">MA-DBO2455-3</a>	<b>Dual Band Omni</b> WiMAX Antenna	2.3-2.6 & 4.9-6.4 GHz	2 dBi 4 dBi	Linear Vertical	50 (D) x 34 (H) mm	<a href="#">185</a>
<a href="#">MA-VM24-3X</a>	Car Mounted Antenna	2.4-2.5 GHz	3-5 dBi	Linear	40 x 45 x 15 mm	<a href="#">186</a>
<a href="#">MA-WO25-CT</a>	WiMAX Car Mounted Antenna	2.4-2.6 GHz	4 dBi	Linear	100 x 50 x 80 mm	<a href="#">187</a>
<a href="#">MA-VM26-3X</a>	WiMAX Car Mounted Antenna	2.5-2.7 GHz	3 dBi	Linear	40 x 45 x 15 mm	<a href="#">188</a>
<a href="#">MA-VM35-4X</a>	WiMAX Car Mounted Antenna	3.4-3.8 GHz	4 dBi	Linear	40 x 45 x 15 mm	<a href="#">189</a>
<a href="#">MA-WO36-CT</a>	WiMAX Car Mounted Antenna	3.4-3.8 GHz	4 dBi	Linear	100 x 50 x 80 mm	<a href="#">190</a>
<a href="#">MA-CH36-W1</a>	Glass Car Antenna	3.4-3.8 GHz	0 dBi	Linear, Vertical	78.6 x 39 x 4.2 mm	<a href="#">191</a>
<a href="#">MA-WO35-B-X</a>	Blade Antenna for Mobile Applications	3.4-3.6 GHz	2 dBi	Linear, Vertical	115 x 220 x 100 mm	<a href="#">192</a>
<a href="#">MA-WO55-CT</a>	WiMAX Car Mounted Antenna	4.9-5.875 GHz	4 dBi	Linear	100 x 50 x 80 mm	<a href="#">193</a>
<a href="#">MA-WO45-B-X</a>	Blade Antenna for Mobile Applications	4.4-4.6 GHz	2 dBi	Linear, Vertical	115 x 220 x 100 mm	<a href="#">194</a>
<a href="#">MA-WO49-B-X</a>	Blade Antenna for Mobile Applications	4.94-4.99 GHz	2 dBi	Linear, Vertical	115 x 220 x 100 mm	<a href="#">195</a>

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## ISM & Special Applications Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<a href="#">MA-IS43-B1</a>	433 MHz Base Station Antenna	433.92±2 MHz	4.5 (min.)	Linear, Vertical	400 x 176 x 195 mm	<a href="#">196</a>
<a href="#">MA-IS43-B2</a>	433 MHz Panel Antenna	433±2 MHz	4 dBi (min.)	Linear, Vertical	225 x 215 x 29 mm	<a href="#">197</a>

## GPS Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<a href="#">MA-EG15-XX</a>	GPS AVL Active Antenna	1575±1.24 MHz	27 dBi	Circular, RHCP	40 x 45 x 15 mm	<a href="#">198</a>
<a href="#">MA-GP15-2M</a>	Active GPS Antenna	1575.42±2 MHz	2 dBic zenith	Right Hand Circular	94 x 110 mm	<a href="#">199</a>
<a href="#">MA-AGP15-5</a>	Active GPS Antenna	1575.42±2 MHz	+5 dBic zenith	Right Hand Circular	170 x 100 mm	<a href="#">200</a>
<a href="#">MA-PGP15-5</a>	Passive GPS Antenna	1575.42±2 MHz	5 dBic	Right Hand Circular	170 x 100 mm	<a href="#">201</a>

## Embedded Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<a href="#">MA-IS91-BR</a>	915MHz Embedded Antenna	902-928 MHz	1 dBi	Linear, Vertical	130 x 16 x 4.5 mm	<a href="#">202</a>
<a href="#">Embedded Antennas</a>	Specifications Vary (In accordance with customer requirements)					<a href="#">203</a>

## Parabolic Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (Ø)	Page
<a href="#">MA-WP2556-DP12</a>	2.4-2.7 GHz & 4.9-6.0 GHz Dual Band Dual Polarization Parabolic Reflector Antenna, 1.2m	2.4-2.7 GHz 4.9-6.0 GHz	26 ± 1 dBi 32.5 ± 1 dBi	Dual Polarized	1200 mm. (4 ft.)	<a href="#">204</a>
<a href="#">MA-WP56-DP32</a>	4.9-6.1 GHz Dual Polarization Parabolic Dish Antenna, 0.9m	4.9-6.1 GHz	32dBi@5.15-6.10 GHz 30dBi@4.90-5.15 GHz	Dual Polarized	900 mm. (4 ft.)	<a href="#">205</a>
<a href="#">MA-WP56-DP34</a>	4.9-6.1 GHz Dual Polarization Parabolic Dish Antenna, 0.9m	4.9-6.1 GHz	34dBi@5.15-6.10 GHz 32dBi@4.90-5.15 GHz	Dual Polarized	1200 mm. (4 ft.)	<a href="#">206</a>

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## Bi-Directional Amplifiers

Part Number	Description	Up Link/ Down Link	Frequency Band	Gain	Dimensions (LxWxD)	Page
<b>MR-PBSMR55-X</b>	SMR/IDEN Personal Bi-Directional Amplifier	Down Link (base to mobile)	851-866 MHz	55 dB (min.)	120 x 70 x 35 mm	<b>207</b>
		Up Link (mobile to base)	806-821 MHz	55 dB (min.)		
<b>MR-BIDEN60-X1W</b>	SMR/IDEN Bi-Directional Amplifier	Down Link (base to mobile)	851-866 MHz	60 dB (min.)	243 x 160 x 57 mm	<b>208</b>
		Up Link (mobile to base)	806-821 MHz	60 dB (min.)		
<b>MR-BSMR60-A1W</b>	SMR/IDEN Automatic Control Repeater	Down Link (base to mobile)	851-866 MHz	60 dB (min.)	243 x 163 x 57 mm	<b>209</b>
		Up Link (mobile to base)	806-821 MHz	60 dB (min.)		
<b>MR-BSMR80-XA</b>	SMR/IDEN High Gain Automatic Control Repeater	Down Link (base to mobile)	851-866 MHz	80 dB (min.)	280 x 250 x 65 mm	<b>210</b>
		Up Link (mobile to base)	806-821 MHz	80 dB (min.)		
<b>MR-HSBDA60-X</b>	CDMA High Selective Repeater	Down Link (base to mobile)	864-894 MHz	63 dB (min.)	280 x 250 x 65 mm	<b>211</b>
		Up Link (mobile to base)	824-849 MHz	60 dB (min.)		
<b>MR-PBCT55-X</b>	CMDA/TDMA Personal BDA	Down Link (base to mobile)	869-894 MHz	55 dB (min.)	120 x 70 x 35 mm	<b>212</b>
		Up Link (mobile to base)	824-849 MHz			
<b>MR-PBCT55-A</b>	CMDA/TDMA Personal BDA Automatic Gain Control	Down Link (base to mobile)	869-894 MHz	55 dB (min.)	120 x 70 x 35 mm	<b>213</b>
		Up Link (mobile to base)	824-849 MHz			
<b>MR-BDA60-X1W</b>	CDMA Bi-Directional Amplifier	Down Link (base to mobile)	869-879 MHz	60 dB (min.)	243 x 160 x 57 mm	<b>214</b>
		Up Link (mobile to base)	824-834 MHz			
<b>MR-BGSM60-X1W</b>	GSM Bi-Directional Amplifier	Down Link (base to mobile)	947-960 MHz	60 dB (min.)	243 x 160 x 57 mm	<b>215</b>
		Up Link (mobile to base)	902-915 MHz			
<b>MR-PBGS55-FA</b>	Full Band GSM Automatic Gain Control Repeater	Down Link (base to mobile)	935-960 MHz	55 dB (min.)	120 x 70 x 35 mm	<b>216</b>
		Up Link (mobile to base)	890-915 MHz			

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Part Number	Description	Up Link/ Down Link	Frequency Band	Gain	Dimensions (LxWxD)	Page
<b>MR-PBGS55-X</b>	GSM Personal Bi-Directional Amplifier	Down Link (base to mobile)	947-960 MHz	55 dB (min.)	120 x 70 x 35 mm	<b>217</b>
		Up Link (mobile to base)	902-915 MHz			
<b>MR-HGSM50-X</b>	GSM1800 Bi-Directional Amplifier	Down Link (base to mobile)	1805-1880 MHz	45 dB (min.)	310 x 150 x 63 mm	<b>218</b>
		Up Link (mobile to base)	1710-1785 MHz			
<b>MR-HSBGSM60</b>	GSM High Selective Repeater	Down Link (base to mobile)	935-960 MHz	63 dB (min.)	280 x 250 x 65 mm	<b>219</b>
		Up Link (mobile to base)	890-915 MHz	60 dB (min.)		
<b>MR-BGSM80-XA</b>	GSM High Gain Automatic Control Repeater	Down Link (base to mobile)	935-960 MHz	80 dB (min.)	260 x 250 x 65 mm	<b>220</b>
		Up Link (mobile to base)	890-915 MHz	70 dB (min.)		
<b>MR-DBHSDG-70YY</b>	<b>Dual Band GSM</b> 900 & 1800 MHz Repeater	Down Link (base to mobile)	935-960 MHz	70 dB (min.)	310 x 200 x 60 mm	<b>221</b>
		Up Link (mobile to base)	890-915 MHz			
		Up Link (mobile to base)	1805-1880 MHz			
		Down Link (base to mobile)	1710-1785 MHz			
<b>MR-HSUMTS70-X</b>	UMTS High Selective Bi – Directional Amplifier <b>1Watt</b>	Down Link (base to mobile)	2110-2170 MHz	75 dB (min)	440 x 325 x 180 mm	<b>222</b>
		Up Link (mobile to base)	1920-1980 MHz	72 dB (min)		
<b>MR-UMTS70-20F</b>	UMTS Bi – Directional Amplifier (WCDMA)	Down Link (base to mobile)	2110-2170 MHz	70 dB (min)	280 x 250 x 65 mm	<b>223</b>
		Up Link (mobile to base)	1920-1980 MHz			
<b>MR-HSUMTS70-20</b>	UMTS HS Bi – Directional Amplifier	Down Link (base to mobile)	2110-2170 MHz	73 dB (min)	280 x 250 x 65 mm	<b>224</b>
		Up Link (mobile to base)	1920-1980 MHz			
<b>MR-HSUMTS70-18</b>	UMTS HS Bi – Directional Amp. (WCDMA)	Down Link (base to mobile)	2110-2170 MHz	73 dB (min)	420 x 250 x 65 mm	<b>225</b>
		Up Link (mobile to base)	1920-1980 MHz	70 dB (min)		
<b>MR-PUMTS50-FA</b>	Full Band UMTS (2GHz) Automatic Gain Control Repeater	Down Link (base to mobile)	2110-2170 MHz	50 dB (min)	120 x 70 x 35 mm	<b>226</b>
		Up Link (mobile to base)	1920-1980 MHz			

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Part Number	Description	Up Link/ Down Link	Frequency Band	Gain	Dimensions (LxWxD)	Page
<b>MR-DBHSUC-80</b>	<b>CDMA/UMTS 1Watt Dual Band</b> 850MHz & 2000MHz Repeater	Down Link (base to mobile)	869-879 MHz	75 dB (min.)	350 x 270 x 100 mm	<b>227</b>
		Up Link (mobile to base)	824-834 MHz	72 dB (min.)		
		Up Link (mobile to base)	2140-2150 MHz	80 dB (min.)		
		Down Link (base to mobile)	1950-1690 MHz	77 dB (min.)		
<b>MR-DBHSUC-70YY</b>	<b>Dual Band CDMA/UMTS</b> 850 & 2000 MHz Repeater	Down Link (base to mobile)	869-879 MHz	68 dB (min.)	260 x 200 x 60 mm	<b>228</b>
		Up Link (mobile to base)	824-834 MHz	65 dB (min.)		
		Up Link (mobile to base)	2140-2150 MHz	75 dB (min.)		
		Down Link (base to mobile)	1950-1690 MHz	72 dB (min.)		
<b>MR-AM800-X</b>	Power Amplifier Cellular Bands	----	800-960 MHz	30±1 dB	60 x 50 x 20 mm W/O Heat Sink	<b>229</b>
<b>MR-AM1800-X</b>	Power Amplifiers – Cellular Bands	----	PCS1800 GSM1800 1800-1900 MHz	30±1 dB	60 x 50 x 20 mm W/O Heat Sink	<b>230</b>
<b>MR-AM1900-X</b>			PCS1900 GSM1900 1900-2000 MHz			
<b>MR-AM2100-X</b>	Power Amplifiers – Cellular Bands	----	2110-2170 MHz IMT2000 UMTS	11 dB	260 x 250 x 65 mm	<b>231</b>
<b>MR-AM1200-2100</b>	Power Amplifiers RF	----	1200-2100 MHz	20-28 dB	44 x 9 x 25 mm	<b>232</b>

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## GPS Systems

Part Number	Description	Frequency Band	Gain	Dimensions (LxWxD)	Page
<a href="#">MR-RA30-1</a>	GPS Re-Radiating System	1575.42±2.0 MHz	35 dB		<a href="#">233</a>
<a href="#">MR-RA30-2</a>	GPS Re-Radiating System	1575.42±2.0 MHz	35 dB		<a href="#">234</a>

## RF Products

Part Number	Description	Frequency Band	Gain	Dimensions (LxWxD)	Page
<a href="#">MR-DARF-XX</a>	Dual Active Reject Filter	825-835 MHz	3 dB (min) to 7 dB (max)	19" Box	<a href="#">235</a>
<a href="#">MR-PD02-X</a>	2 Way Splitter	800-2500 MHz	0.7dB/1.5 dB typ. / max.	120 x 95 x 30 mm	<a href="#">236</a>
<a href="#">MR-PD03-X</a>	3 Way Splitter	800-2000 MHz	1.3 dB	140 x 95 x 30 mm	<a href="#">237</a>
<a href="#">MR-PD04-X</a>	4 Way Splitter	800-2200 MHz	1.5 dB	120 x 110 x 30 mm	<a href="#">238</a>
<a href="#">MR-PD04-X1</a>	4 Way Splitter	2.3-2.6 GHz	1.5 dB	197 x 136 x 82 mm	<a href="#">239</a>

## Antenna mounts & Enclosure Kit

Part Number	Description	Page
<a href="#">MNT-22</a>	Heavy Duty, Az/EI Adjustable Mount for CPE / Subscriber and Small Base Station Antennas	<a href="#">240</a>
<a href="#">MNT-23</a>	Az/EI Adjustable Mount for CPE / Subscriber Antennas	<a href="#">241</a>
<a href="#">MNT-1A</a>	Mount for CPE / Subscriber and Small Base Station Antennas	<a href="#">242</a>
<a href="#">MNT-5A</a>	Mount for CPE / Subscriber and Small Base Station Antennas	<a href="#">243</a>
<a href="#">MNT-25</a>	Mount for CPE / Subscriber and Small Base Station Antennas	<a href="#">244</a>
<a href="#">MNT-4X</a>	Az/EI Adjustable Mount for Small Size Antennas	<a href="#">245</a>
<a href="#">MNT-60A</a>	Mount for CPE / Subscriber Large Size Antennas	<a href="#">246</a>
<a href="#">MK-ES20</a>	Small Enclosure kit	<a href="#">247</a>
<a href="#">MK-EL30</a>	Large Enclosure kit	<a href="#">248</a>

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## MA-WA18-DP12

### 1750-1850 MHz Dual Polarization/ Dual Slant Subscriber Antenna

#### Additional Features:

- Dual slant if mounted diagonally.
- Efficient and stable performance.
- High gain/size ratio.
- Light weight and durable construction.
- UV protected radome made of polycarbonate suitable for harsh weather installations.
- Easy mounting allowing Az/EI adjustment and 45deg. turn installation.



## Specifications

### Electrical

Frequency range	1.75-1.85 GHz
GAIN, typ.	14 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Pole Dual Slant (opt.)
	Linear, Vertical & Horizontal $\pm 45^\circ$
3 dB Beam-Width, H-Plane, typ.	30°
3 dB Beam-Width, E-Plane, typ.	30°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-15 dB
Port to Port Isolation, typ.	-25 dB
Front to Back Ratio, min.	-20 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Connector	2 x N-Type Female
Weight	1.3 kg.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mounting	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA18-DP12	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA18-DP12B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA18-DP18

### 1750-1850 MHz Dual Polarization/ Dual Slant Subscriber Antenna

#### Additional Features:

- Dual slant if mounted diagonally.
- Efficient and stable performance.
- High gain/size ratio.
- Light weight and durable construction.
- UV protected radome made of polycarbonate suitable for harsh weather installations.
- Easy mounting allowing Az/EI adjustment and 45deg. turn installation.



### Specifications

#### Electrical

Frequency range	1.75-1.85 GHz
GAIN, typ.	17 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Pole, Vertical & Horizontal
3 dB Beam-Width, H-Plane, typ.	23°
3 dB Beam-Width, E-Plane, typ.	23°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-15 dB
Port to Port Isolation, typ.	-25 dB
Front to Back Ratio, min.	-20 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.6" x 14.6" x 1.5")
Connector	2 x N-Type Female
Weight	2.1 kg.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mounting	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

### Ordering Options

MA-WA18-DP18	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA18-DP18B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA25-DP9

### 2.3-2.7 GHz Dual Polarization Antenna

MARS 2.5 GHz Dual Polarized Antenna is a wide band antenna designed for LTE, Wi-Fi, LAN, MMDS, WLL and WiMAX applications.

Additional Features:

- Exceptionally efficient performance.
- High gain/size ratio.
- Aesthetic design.
- Weatherized and durable.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz
GAIN	8±1 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Pole Dual Slant (opt.)
	Linear, Vertical & Horizontal ±45° (diamond shape)
3dB Beam-Width, H-Plane, typ.	60°
3dB Beam-Width, E-Plane, typ.	60°
Side Lobes, min.	-15dB
Front to Back Ratio, min.	-15dB
Input power, max.	50 Watt
Input Impedance	50 Ohm

### Mechanical

Dimensions (HxWxD)	112 x 112 x 33.5 mm (4.41" x 4.41" x 1.32")
Connector	2 x Right Angle SMA ,Female
Weight	147 gr.
Mounting	MNT-4UL
Radome	UV Protected Polycarbonate
Back Plane	Aluminum protected through chemical passivation.

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

Patterns are available on our website

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## MA-WA25-DP14

### 2.3-2.7 GHz Dual Polarization/ Dual Slant Subscriber Antenna

MARS 2.3-2.7 GHz Dual Polarized Antenna designed to provide full coverage for the 2.5 GHz frequency band.

Additional Features:

- Dual slant if mounted diagonally.
- Efficient and stable performance.
- High gain/size ratio.
- Light weight and durable construction.
- UV protected radome made of polycarbonate suitable for harsh weather installations.
- Easy mounting allowing Az/EI adjustment and 45deg. turn installation.



### Specifications

#### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	14 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Pole
	Dual Slant (opt.)
	Linear, Vertical & Horizontal
	$\pm 45^\circ$ (diamond shape)
3 dB Beam-Width, H-Plane, typ.	$33^\circ$
3 dB Beam-Width, E-Plane, typ.	$33^\circ$
Side Lobes	ETSI DN4
Cross Polarization	ETSI DN4
Port to Port Isolation, typ.	-25 dB
Front to Back Ratio	ETSI DN4
Input power, max.	10 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	200 x 200 x 33 mm (7.9" x 7.9" x 1.25")
Connector	See ordering options
Weight	400 gr.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mounting	See ordering options

#### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

### Ordering Options

MA-WA25-DP14	Antenna 2 x N-Type Female connectors Suited for MNT-23 mount
MA-WA25-DP14B	Antenna 2 x N-Type Female connectors with MNT-23 mount
MA-WA25-DP14SMES	Antenna 2 x SMA RA Female connectors, enclosure with MNT-22 mount

Patterns are available on our website

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## MA-WA25-DP17

### 2.3-2.7 GHz Dual Polarization/Dual Slant Subscriber Antenna

MARS 2.5 GHz Dual Polarized Antenna is a wide band antenna designed for LTE, Wi-Fi, LAN, MMDS, WLL and WiMAX applications.

Additional Features:

- Exceptionally efficient performance.
- High gain/size ratio.
- Aesthetic design.
- Weatherized and durable.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	17.5 ± 1 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Pole Dual Slant (opt.)
	Linear, Vertical & Horizontal ±45° (diamond shape)
3dB Beam-Width, H-Plane, typ.	21°
3dB Beam-Width, E-Plane, typ.	21°
Side Lobes, typ.	-12 dB
Cross Polarization, typ.	-20 dB
Front to Back Ratio, min.	-35 dB
Port to Port Isolation, min.	-23 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	305 x 305 x 25 mm (12" x 12" x 1.2")
Connector (without enclosure)	2 x N-Type, Female
Connector (with enclosure)	2 x SMA
Weight	1300 gr.
Mounting	See ordering options
Radome	UV Protected Polycarbonate
Enclosure - Small	171 x 167 x 68 mm. (External dimension)
Back Plane	Aluminum protected through chemical passivation.

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA25-DP17	Antenna 2 x N-Type Female connectors Suited for MNT-22 mount
MA-WA25-DP17B	Antenna 2 x N-Type Female connectors with MNT-22 mount
MA-WA25-DP17SMES	Antenna 2 x SMA Female connectors, enclosure small with MNT-22 mount

Patterns are available on our website

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## MA-WA25-DP19

### 2.3-2.7 GHz Dual Polarized/ Dual Slant Antenna

MARS 2.5 GHz Dual Polarized Antenna is a wide band antenna designed for LTE, Wi-Fi, LAN, MMDS, WLL and WiMAX applications.

Additional Features:

- Dual slant if mounted diagonally.
- Exceptionally efficient performance.
- High gain/size ratio.
- Aesthetic design.
- Weatherized and durable.
- Mount allows 45deg. turn installation.



### Specifications

#### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	19 ± 1 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical & Horizontal
Dual Pole Dual Slant (opt.)	±45°
3 dB Beam-Width, H-Plane, typ.	17°
3 dB Beam-Width, E-Plane, typ.	17°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-19 dB
Port to Port Isolation, typ.	-25 dB
Front to Back Ratio, min.	-30 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	2 kg.
Connector	2 x N-Type Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected, Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

### Ordering Options

MA-WA25-DP19	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA25-DP19B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA25-DP23

### 2.3-2.7 GHz Dual Polarization/Dual Slant Subscriber Antenna

MARS 2.5 GHz Dual Polarized Antenna is a wide band antenna designed for LTE, Wi-Fi, LAN, MMDS, WLL and WiMAX applications.

Additional Features:

- Exceptionally efficient performance.
- High gain/size ratio.
- Aesthetic design.
- Weatherized and durable.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	23 ± 1 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Pole Dual Slant (opt.)
	Linear, Vertical & Horizontal ±45° (diamond shape)
3dB Beam-Width, H-Plane, typ.	10°
3dB Beam-Width, E-Plane, typ.	10°
Side Lobes, min.	-12dB
Cross Polarization, min.	-25dB
Front to Back Ratio, min.	-35dB
Port to Port Isolation, min.	-30dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	600 x 600 x 30 mm (23.5" x 23.5" x 1.2")
Connector	2 x N-Type ,Female
Weight	4.7kg.
Mounting	See ordering options
Radome	UV Protected Polycarbonate
Back Plane	Aluminum protected through chemical passivation.

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA25-DP23	Antenna 2 x N-Type Female connectors Suited for MNT-60A mount
MA-WA25-DP23B	Antenna 2 x N-Type Female connectors with MNT-60A mount

Patterns are available on our website

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## MA-WA36-DP9

### 3.3-4.01 GHz Dual Polarization Antenna

MARS 3.6 GHz Dual Polarized Antenna is a wide band antenna designed for LTE, Wi-Fi, LAN, MMDS, WLL and WiMAX applications.

Additional Features:

- Exceptionally efficient performance.
- High gain/size ratio.
- Aesthetic design.
- Weatherized and durable.



## Specifications

### Electrical

Frequency range	3.3-4.01 GHz
GAIN	8±1 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Pole Dual Slant (opt.)
3dB Beam-Width, H-Plane, typ.	Linear, Vertical & Horizontal ±45° (diamond shape)
3dB Beam-Width, E-Plane, typ.	60°
Side Lobes, min.	60°
Front to Back Ratio, min.	-15dB
Input power, max.	-15dB
Input Impedance	50 Watt
	50 Ohm

### Mechanical

Dimensions (HxWxD)	112 x 112 x 33.5 mm (4.41" x 4.41" x 1.32")
Connector	2 x Right Angle SMA ,Female
Weight	147 gr.
Mounting	MNT-4UL
Radome	UV Protected Polycarbonate
Back Plane	Aluminum protected through chemical passivation.

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

Patterns are available on our website

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## MA-WA36-DP14

### 3.3-4.01 GHz Dual Polarization/ Dual Slant Subscriber Antenna

MARS Broadband Dual Polarized Subscriber Antenna provides a cost effective solution for LTE & WiMAX applications.

Additional Features:

- Dual slant if mounted diagonally.
- Stable performance with 14 dBi of gain.
- Compact size allowing easy blending with any environment.
- Mount allowing quick and easy 45deg. turn installation.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	3.3-4.01 GHz
GAIN, typ.	14 ± 0.5 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Pole Dual Slant (opt.)
	Linear, Vertical & Horizontal ±45° (Diamond Shape)
3 dB Beam-Width, H-Plane, typ.	32°
3 dB Beam-Width, E-Plane, typ.	28°
Side Lobes.	-10 dB
Cross Polarization, min.	-16 dB
Port to Port Isolation, min.	-30 dB
Front to Back Ratio.	-25 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm

### Mechanical

Dimensions (W x L x H)	200 x 200 x 33 mm (7.9" x 7.9" x 1.25")
Connector	See ordering options
Weight	400 gr.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mounting	See ordering options

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA36-DP14	Antenna 2 x N-Type Female connectors Suited for MNT-23 mount
MA-WA36-DP14B	Antenna 2 x N-Type Female connectors with MNT-23 mount
MA-WA36-DP14SMES	Antenna 2 x SMA RA Female connectors, enclosure with MNT-22 mount

Patterns are available on our website

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## MA-WA36-DP19

### 3.3-4.01 GHz Dual Polarization/ Dual Slant Subscriber Antenna

MARS Broadband Dual Polarized Subscriber Antenna provides a cost effective solution for LTE & WiMAX applications.

Additional Features:

- Dual slant if mounted diagonally.
- Stable performance with 19.5 dBi of gain.
- Compact size allowing easy blending with any environment.
- Mount suitable for quick and easy 45deg. turn installation.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	3.3-4.01 GHz
GAIN, typ.	19.5 ± 0.5 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Pole Dual Slant (opt.)
	Linear, Vertical & Horizontal ±45°
3 dB Beam-Width, H-Plane, typ.	17°
3 dB Beam-Width, E-Plane, typ.	17°
Cross Polarization, min.	-23 dB
Front to Back Ratio, min.	-35 dB
Side Lobes, min.	-12 dB @ 3.3-3.8 GHz -11 dB @ 3.8-4.01 GHz
Port to Port Isolation, min.	-30 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	305 x 305 x 25 mm (12" x 12" x 1")
Weight	1.3 kg.
Connector	2 x N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ESTI TS3

## Ordering Options

MA-WA36-DP19	Antenna with 2xN-Type, Female Connector Suited for MNT-22
MA-WA36-DP19B	Antenna with 2xN-Type, Female Connector and MNT-22 mount

Patterns are available on our website

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## MA-WA36-DP21

### 3.3-3.8 GHz Dual Polarization/ Dual Slant Subscriber Antenna

MARS Broadband Dual Polarized Subscriber Antenna provides a cost effective solution for LTE & WiMAX applications.

Additional Features:

- Dual slant if mounted diagonally.
- Stable performance with 22 dBi of gain.
- Compact size allowing easy blending with any environment.
- Mount allowing quick and easy 45deg. turn installation.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	3.3-3.8 GHz
GAIN: H-Port & V-Port	22 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Pole
	Dual Slant (opt.)
	Linear, Vertical & Horizontal
	±45°
3 dB Beam-Width, H-Plane, typ.	12°
3 dB Beam-Width, E-Plane, typ.	12°
Cross Polarization, max	ETSI TS3
Front to Back Ratio, max.	ETSI TS3
Side Lobes, min.	ETSI TS3
Port to Port Isolation, typ.	-35 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	2.1 kg.
Connector	See ordering options
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA36-DP21	Antenna with 2xSMA, Female Connector Suited for MNT-22
MA-WA36-DP21B	Antenna with 2xSMA, Female Connector and MNT-22 mount
MA-WA36-DP21N	Antenna with 2xN-Type, Female Connector suited for MNT-22
MA-WA36-DP21NB	Antenna with 2xN-Type, Female Connector and MNT-22 mount

Patterns are available on our website

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## MA-WA36-DP25

### 3.3-3.8 GHz High Gain Dual Polarized/ Dual Slant Antenna

MARS 3.5GHz High Gain Antenna is designed to provide full coverage for the 3.5 GHz frequency band.

Additional Features:

- Efficient and stable performance
- High gain/size ratio
- Durable construction
- UV protected radome made of polycarbonate allowing harsh weather installations



## Specifications

### Electrical

Frequency range	3.3-3.8 GHz
GAIN, typ.	25 ± 1 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical & Horizontal
Dual Pole	±45°
Dual Slant (opt.)	8°
3 dB Beam-Width, H-Plane, typ.	8°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI TS3
Cross Polarization, min.	ETSI TS3
Front to Back Ratio, min.	ETSI TS3
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	600 x 600 x 22 mm (23.5" x 23.5" x 0.86")
Weight	4.7 kg.
Connector	2 x N-Type Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected, Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA36-DP25	Antenna Suited for MNT-60A (optional wall/pole adjustable mount)
MA-WA36-DP25B	Antenna with MNT-60A mount

Patterns are available on our website

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## MA-WA48-DP23

### 4.4-5.1 GHz Dual Polarization/Dual Slant Subscriber Antenna

#### Antenna Features:

- Dual slant if mounted diagonally.
- Efficient and stable performance.
- High gain/size ratio.
- Light weight and durable construction.
- UV protected radome made of polycarbonate suitable for harsh weather installations.
- Easy mounting allowing Az/EI adjustment and 45deg. turn installation.



### Specifications

#### Electrical

Frequency range	4.4-5.1 GHz
GAIN	23 ± 1 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical & Horizontal
3 dB Beam-Width, H-Plane, typ.	9°
3 dB Beam-Width, E-Plane, typ.	9°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-20 dB
Port to Port Isolation, typ.	-35 dB
Front to Back Ratio, min.	-35 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	2.1 kg.
Connector	2 x N-Type Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11

### Ordering Options

MA-WA48-DP23	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA48-DP23B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA56-DP13

### 4.9-6.1 GHz Dual Polarization/Dual Slant Subscriber Antenna

MARS 5 GHz Dual Polarized Antenna designed to provide full coverage for the 5 GHz frequency band.

Additional Features:

- Dual slant if mounted diagonally.
- Efficient and stable performance.
- High gain/size ratio.
- Light weight and durable construction.
- UV protected radome made of polycarbonate suitable for harsh weather installations.
- Easy mounting allowing Az/EI adjustment and 45deg. turn installation.



## Specifications

### Electrical

Frequency range		4.9-6.1 GHz
GAIN, typ.	H-pol	14.5 dBi
	V-pol	13.5 dBi
VSWR, max.		1.7 : 1
Polarization	Dual Pole Dual Slant (opt.)	Linear, Vertical & Horizontal ±45° (diamond shape)
3dB Beam-Width, H-Plane, typ.		35°
3dB Beam-Width, E-Plane, typ.		35°
Side Lobes, min.		-10 dB
Cross Polarization, typ.		-15 dB
Front to Back Ratio, min.		-20 dB
Port to Port Isolation, min.		-24 dB
Input power, max.		50 Watt
Input Impedance		50 Ohm
Lightning Protection		DC Grounded

### Mechanical

Dimensions (HxWxD)	112 x 112 x 33.5 mm (4.41" x 4.41" x 1.32")
Connector	2 x Right Angle SMA ,Female
Weight	147 gr.
Mounting	MNT-4UL
Radome	UV Protected Polycarbonate
Back Plane	Aluminum protected through chemical passivation.

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

Patterns are available on our website

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## MA-WA56-DP19

### 4.9-6.1 GHz Dual Polarization/Dual Slant Subscriber Antenna

MARS 5 GHz Dual Polarized Antenna designed to provide full coverage for the 5 GHz frequency band.

Additional Features:

- Dual slant if mounted diagonally.
- Efficient and stable performance.
- High gain/size ratio.
- Light weight and durable construction.
- UV protected radome made of polycarbonate allowing for harsh weather installations.
- Easy mounting allowing for Az/EI adjustment and 45deg. turn installation.



### Specifications

#### Electrical

Frequency range	4.9-5.875 GHz	5.875-6.1 GHz
GAIN	19 ± 1 dBi	19 ± 1 dBi
VSWR, max.	1.7 : 1	2 : 1
Polarization	Linear, Vertical & Horizontal	
Dual Pole	±45°	
Dual Slant (opt.)		
3 dB Beam-Width, H-Plane, typ.	16°	
3 dB Beam-Width, E-Plane, typ.	16°	
Side Lobes, min.	ETSI TS2	
Cross Polarization	-20 dB	
Port to Port Isolation	-30 dB	
Front to Back Ratio, min.	ETSI TS2	
Input power, max.	10 Watt	
Input Impedance	50 Ohm	
Lightning Protection	DC Grounded	

#### Mechanical

Dimensions (HxWxD)	200 x 200 x 33 mm (7.9" x 7.9" x 1.25")
Connector	See ordering options
Weight	400 gr.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Enclosure - Small	171 x 167 x 68 mm. (External dimension)
Mounting	See ordering options

#### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

### Ordering Options

MA-WA56-DP19	Antenna 2 x N-Type Female connectors Suited for MNT-23 mount
MA-WA56-DP19B	Antenna 2 x N-Type Female connectors with MNT-23 mount
MA-WA56-DP19SMES	Antenna 2 x SMA RA Female connectors, enclosure with MNT-22 mount
MA-WA56-DP19SMESZ	Antenna 2 x SMA RA Female connectors, enclosure with PEMs and MNT-22 mount

Patterns are available on our website

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## MA-WA56-DP20

### 4.9-5.875 GHz Dual Polarization/Dual Slant Subscriber Antenna

MARS 5 GHz Dual Polarized Antenna designed to provide full coverage for the 5 GHz frequency band.

Additional Features:

- Dual slant if mounted diagonally.
- Efficient and stable performance.
- High gain/size ratio.
- Light weight and durable construction.
- UV protected radome made of polycarbonate suitable for harsh weather installations.
- Easy mounting allowing Az/EI adjustment and 45deg. turn installation.



## Specifications

### Electrical

Frequency range	4.9-5.875 GHz
GAIN	21 ± 1 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Pole Dual Slant (opt.)
	Linear, Vertical & Horizontal ±45°
3 dB Beam-Width, H-Plane, typ.	12°
3 dB Beam-Width, E-Plane, typ.	12°
Side Lobes, min.	ETSI TS3
Cross Polarization, min.	-18 dB
Port to Port Isolation, typ.	-30 dB
Front to Back Ratio, min.	ETSI TS3
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Connector (without enclosure)	2 x N-Type Female
Connector (with enclosure)	2 x SMA Female
Weight	900 gr.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Enclosure - Large	287 x 287 x 68 mm. (External dimension)
Mounting	See ordering options

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA56-DP20	Antenna with 2xN-Type Female suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA56-DP20B	Antenna with 2xN-Type Female with MNT-22 mount
MA-WA56-DP20SMELZ	Antenna with large enclosure, 2 x SMA Female Connector and MNT-22

Patterns are available on our website

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## MA-WA56-DP23

### 4.9-6.1 GHz Dual Polarization/Dual Slant Subscriber Antenna

MARS 5 GHz Dual Polarized Antenna designed to provide full coverage for the 5 GHz frequency band.

Additional Features:

- Dual slant if mounted diagonally.
- Efficient and stable performance.
- High gain/size ratio.
- Light weight and durable construction.
- UV protected radome made of polycarbonate suitable for harsh weather installations.
- Easy mounting allowing Az/EI adjustment and 45deg. turn installation.



## Specifications

### Electrical

Frequency range	4.9-6.1 GHz
GAIN	23 ± 1 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical & Horizontal
Dual Pole Dual Slant (opt.)	±45° (diamond shape)
3dB Beam-Width, H-Plane, typ.	10°
3dB Beam-Width, E-Plane, typ.	10°
Side Lobes, min.	ETSI TS3
Cross Polarization, typ.	-20 dB
Front to Back Ratio, min.	ETSI TS3
Port to Port Isolation, typ.	-30 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 1.6")
Connector (without enclosure)	2 x N-Type, Female
Connector (with enclosure)	2 x SMA RA Female
Weight	900 gr.
Mounting	See ordering options
Radome	UV Protected Polycarbonate
Enclosure - Large	287 x 287 x 68 mm. (External dimension)
Back Plane	Aluminum protected through chemical passivation

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA56-DP23	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA56-DP23B	Antenna with MNT-22 mount
MA-WA56-DP23SMELZ	Antenna with large enclosure, 2 X SMA Connectors with PEMs and MNT-22

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## MA-WA56-DP25N

### 4.9-5.875 GHz Dual Polarized/ Dual Slant Antenna

MARS 5 GHz Dual Polarized Antenna designed to provide full coverage for the 5 GHz frequency band.

Additional Features:

- Dual slant if mounted diagonally.
- Efficient and stable performance.
- High gain/size ratio.
- Light weight and durable construction.
- UV protected radome made of polycarbonate suitable for harsh weather installations.

MARS 5 GHz Dual Polarized Antenna & Enclosure Solution comprises of waterproof 5 GHz Dual Polarized Antenna and weatherproof enclosure with provisions for Az/EI Mounting device. This solution enables WISP/Integrator to design his own low cost, weatherized subscriber unit, saving high costs of special antenna-radio integration.



### Specifications

#### Electrical

Frequency range		4.9-5.875 GHz
GAIN	V-Pol	23.5 ± 1 dBi
	H-Pol	24.5 ± 1dBi
VSWR, max.		1.7 : 1
Polarization	Dual Pole	Linear, Vertical & Horizontal
	Dual Slant (opt.)	±45°
3 dB Beam-Width, H-Plane, typ.		7°-9°
3 dB Beam-Width, E-Plane, typ.		7°-9°
Side Lobes, min.		ETSI TS3, TS4, TS5
Cross Polarization, typ.		-25 dB
Port to Port Isolation,typ.		-30 dB
Front to Back Ratio, min.		ETSI TS3, TS4, TS5
Input power, max.		5 Watt
Input Impedance		50 Ohm
Lightning Protection		DC Grounded

#### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Connector (without enclosure)	2 x N-Type, Female
Connector (with enclosure)	2 x SMA Female
Weight	1.8 kg.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Enclosure dimensions (external)	287 x 287 x 68 mm.
Enclosure dimensions (internal)	260 x 260 x 45 mm (10.2" x 10.2" x 1.8")
Enclosure internal plate dimensions	245 x 245 mm, height of PCB (from Base for RF to backplane) - 55 mm
Mounting	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

### Ordering Options

MA-WA56-DP25N	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA56-DP25NB	Antenna with MNT-22 mount
MA-WA56-DP25SMELY	Antenna with large enclosure, 2 x SMA Female Connector and MNT-22
MA-WA56-DP25SMELZ	Antenna with large enclosure, 2 x SMA Female Connector with PEMs and MNT-22

Patterns are available on our website

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## MA-WA56-DP28N

### 4.7-6.425 GHz High Gain, Wideband, Dual Polarized/Dual Slant Antenna

MARS 5 GHz Dual Polarized Antenna designed to provide full coverage for the 5 GHz frequency band.

Additional Features:

- Efficient and stable performance.
- High gain/size ratio.
- Durable construction.
- UV protected radome made of polycarbonate allowing harsh weather installations.



## Specifications

### Electrical

Frequency range		4.7-4.9 GHz	4.9-5.15 GHz	5.15-5.875 GHz	5.875-6.1GHz	6.1-6.425 GHz
GAIN	V-Pol:	28 ± 1dBi	28.5 ± 0.5 dBi	29 ± 0.5 dBi	28.5 ± 0.5 dBi	27.5 ± 1 dBi
	H-Pol:	27 ± 1 dBi	28 ± 0.5 dBi	28.5±0.5 dBi	28 ± 1 dBi	27 ± 1 dBi
VSWR, max.		2.3 : 1	2 : 1	1.7 : 1	2 : 1	2.3:1
Polarization	Dual Pole Dual Slant (opt.)	Dual Polarization V&H ±45°				
3dB Beam-Width, H-Plane, typ.		5.5°	5.2°	4.7°	4.4°	5°
3dB Beam-Width, E-Plane, typ.		5.5°	5.2°	4.7°	4.4°	5°
Side Lobes, min.		ETSI TS3				ETSI TS 2
Cross Polarization, min.	V-Pol:	-26 dB	-26 dB	-23 dB	-23 dB	-23 dB
	H-Pol:	-23 dB	-25 dB	-23 dB	-20 dB	-15 dB
Front to Back Ratio, min.		ETSI TS3				
Port to Port Isolation, typ.		-30 dB				
Input power, max.		10 Watt				
Input Impedance		50 Ohm				
Lightning Protection		DC Grounded				

### Mechanical

Dimensions (HxWxD)	600 x 600 x 22 mm (23.5" x 23.5" x 0.86")
Weight	4.7 kg.
Connector (without enclosure)	2 x N-Type Female
Connector (with enclosure)	2 x SMA
Back Plane	Aluminum; Protected through chemical passivation
Radome	UV Protected, Polycarbonate
Enclosure - Small	171 x 167 x 68 mm. (External dimension)
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA56-DP28N	Antenna Suited for MNT-60A (optional wall/pole adjustable mount)
MA-WA56-DP28NB	Antenna with MNT-60A mount
MA-WA56-DP28NSMESY	Antenna Suited for MNT-60A (2 x SMA with Small Enclosure)

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## MA-WA62-DP30

### 5.4-6.5 GHz High Gain, Dual Polarized/Dual Slant Antenna

MARS 6 GHz High Gain Broadband Antenna is designed to provide full coverage for the 6GHz frequency band.

Antenna Features:

- Dual slant if mounted diagonally.
- Efficient and stable performance.
- High gain.
- Durable construction.
- UV protected radome made of polycarbonate.
- Easy mounting allowing Az/EI adjustment and 45deg. turn installation.



## Specifications

### Electrical

Frequency range	5.4-6.5 GHz
GAIN	5.4-6.5 GHz @ 29 ± 1 dBi
VSWR, max.	1.7 : 1 @ 5.4-6.5 GHz
Polarization	Dual Pole
	Dual Slant (opt.)
3 dB Beam-Width, H-Plane, typ.	4.5°
3 dB Beam-Width, E-Plane, typ.	4.5°
Side Lobes, typ.	-12 dB
Cross Polarization, typ.	-25dB
Front to Back Ratio, min.	-40 dB
Port to Port Isolation, min.	-25 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	600 x 600 x 30 mm (23.5" x 23.5" x 1.2")
Weight	4.7kg
Connector	2 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA62-DP30	Antenna Suited for MNT-60A (optional wall/pole adjustable mount)
MA-WA62-DP30B	Antenna with MNT-60A mount

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## MA-WA62-DP24

### 5.7-6.425 GHz Dual Polarized Subscriber Antenna

#### Antenna Features:

- Dual slant if mounted diagonally.
- Efficient and stable performance.
- High gain/size ratio.
- Light weight and durable construction.
- UV protected radome made of polycarbonate suitable for harsh weather installations.
- Easy mounting allowing Az/EI adjustment and 45deg. turn installation.



### Specifications

#### Electrical

Frequency range	5.7-6.425GHz
Gain ,typ.	24 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical & Horizontal
Dual Pole Dual Slant (opt.)	$\pm 45^\circ$
3 dB Beam-Width, H-Plane, typ.	8.5°
3 dB Beam-Width, E-Plane, typ.	8.5°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-16 dB
Port to Port Isolation, typ.	-32 dB
Front to Back Ratio, min.	-35 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Connector	2 x N-Type Female Right Angle
Weight	950 gr.
Back Plane	Aluminum ; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mounting	See ordering options

#### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

### Ordering Options

MA-WA62-DP24	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA62-DP24B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA62-DP19

### 5.7-6.425 GHz Dual Polarization Subscriber Antenna

MARS 6 GHz Broadband Medium Gain Antenna covers newly approved 5.7-6.425 GHz band.

Additional Features:

- Exceptionally high gain.
- Light weight and durable construction.
- DC grounded for lightning protection.
- Easy mounting allowing Az/EI adjustment.
- UV protected radome suitable for harsh environment installations



## Specifications

### Electrical

Frequency range	5.7-6.425 GHz
GAIN (without cable)	19 ± 1 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Pole Dual Slant (opt.)
3 dB Beam-Width, Az-Plane, typ.	Linear, Vertical & Horizontal ±45° (diamond shape)
3 dB Beam-Width, EI-Plane, typ.	16°
Side Lobes, min.	16°
Cross Polarization, min.	-12 dB
Port to Port Isolation, min.	-16 dB (-20 dB typ.)
Front to Back Ratio, min.	-25 dB (-30 dB typ.)
Input power, max.	-30 dB
Input Impedance	10 Watt
Lightning Protection	50 Ohm
	DC Grounded

### Mechanical

Dimensions (HxWxD)	200 x 200 x 33 mm (7.9" x 7.9" x 1.25")
Connector	2 x N-Type Female
Weight	400 gr.
Radome	UV Protected Polycarbonate
Water Proofing	IP-67
Mounting	See ordering options

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA62-DP19	Antenna Suited for MNT-23
MA-WA62-DP19B	Antenna with MNT-23 mount

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## MA-WE91-2D

### 915 MHz Base Station Antenna, Dual Polarized, 120°

MARS 915 MHz Base Station Antenna features:

- High gain sectorial antenna with 120° coverage.
- Dual polarized (V & H).
- Allowing polarization selection at the time of installation.
- UV protected radome and corrosion-resistant mount suitable for outdoor installations in harsh weather conditions.



## Specifications

### Electrical

Frequency range	902-928 MHz
GAIN, min.	11.5 dBi, Both Polarizations
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical and Horizontal (Simultaneous)
3 dB Beam-Width, Horizontal, typ.	120°
3 dB Beam-Width, Elevation, typ.	11°
Side Lobes, typ.	-12 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-15 dB
Input power, max.	100 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	1207 x 327 x 217 mm (47.5" x 12.9" x 8.5")
Weight	17 kg.
Connector	2 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	10mm radial (survival)

## Ordering Options

MA-WE91-2D	Antenna Suited for MNT-25 (optional tilt mount)
MA-WE91-2DB	Antenna with MNT-25 mount

Patterns are available on our website

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## MA-WC25-DP14

### 2.3-2.7 GHz Dual Polarized Base Station Antenna, 60°

MARS 60° Base Station Antenna with 14 dBi of gain is light-weight yet has a robust and durable construction.

Antenna Features:

- Quick and easy installation.
- Small, aesthetic and unobtrusive radome.
- Easily adapted to any RF connector.
- Easy mounting allows obtaining required down tilt degree.

Applications:

- Point-to-Multi-Point Systems.
- WLL applications.
- MMDS.
- ISM applications.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	14 dBi
VSWR, max.	1.7 : 1
Polarization, Dual Pole	Linear, Vertical & Horizontal
3 dB Beam-Width, Az-Plane, typ.	60°
3 dB Beam-Width, El-Plane, typ.	16°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-15 dB
Port to Port Isolation, min.	-35 dB
Front to Back Ratio, min.	-25 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Connector	2 x N-Type, Female
Weight	1.8 Kg.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mounting	See ordering options

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WC25-DP14	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WC25-DP14B	Antenna with MNT-22 mount

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## MA-WD25-DP13

### 2.3-2.7 GHz Dual Polarized Base Station Antenna, 90°

MARS 90° Base Station Antenna with 12.5 dBi of gain is light-weight yet has a robust and durable construction.

Antenna Features:

- Quick and easy installation.
- Small, aesthetic and unobtrusive radome.
- Easily adapted to any RF connector.
- Easy mounting allows obtaining required down tilt degree.

Applications:

- Point-to-Multi-Point Systems.
- WLL applications.
- MMDS.
- ISM applications.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	12.5 dBi
VSWR, max.	1.7 : 1
Polarization, Dual Pole	Linear, Vertical & Horizontal
3 dB Beam-Width, Az-Plane, typ.	90°
3 dB Beam-Width, El-Plane, typ.	17°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-15 dB
Port to Port Isolation, min.	-35 dB
Front to Back Ratio, min.	-20 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Connector	2 x N-Type, Female
Weight	2 Kg.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mounting	See ordering options

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WD25-DP13	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD25-DP13B	Antenna with MNT-22 mount

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## MA-WC25-DS18

### 2.3-2.7 GHz Dual Slant Base Station Antenna, 60°

MARS Dual Slant  $\pm 45$  degrees 60° sector antenna features:

- Efficient and stable performance with 17.5 dBi of gain.
- Full 2.3-2.7 GHz band coverage.
- High Isolation ratio.
- Compact size.
- Optional Azimuth & Elevation Adjustable mount.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	17.5 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Slant $\pm 45^\circ$
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	6°
Side Lobes, min.	-18 dB
Port to Port Isolation	-25 dB (min.), -30 dB (typ.)
Front to Back Ratio, min.	-30 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	1200 x 200 x 70 mm (47.2" x 7.9" x 2.8")
Weight	5 kg.
Connector	2 x N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WC25-DS18	Antenna Suited for MNT-25 (optional tilt mount)
MA-WC25-DS18B	Antenna with MNT-25 mount

Patterns are available on our website

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## MA-WC2458-2H

### 2.4-2.5 GHz & 5.15-5.875 GHz Dual Band Small Sector Antenna, 60°

MARS Dual Band Sector antenna provides coverage of 2.4 to 2.5 GHz & 5.15 to 5.875 GHz in a single antenna radome.

Additional Features:

- Wide coverage.
- Light weight and durable construction.
- UV protected radome made of polycarbonate.



## Specifications

### Electrical

Frequency range	2.4-2.5 GHz & 5.15-5.875 GHz
GAIN, typ.	2 x 7.5 dBi
VSWR, max.	1.8 : 1
Polarization	Dual Slant $\pm 45^\circ$
3 dB Beam-Width, H-Plane, typ.	70° @ 2.4-2.5 GHz; 65° @ 5.15-5.875 GHz
3 dB Beam-Width, E-Plane, typ.	65° @ 2.4-2.5 GHz; 60° @ 5.15-5.875 GHz
Input power, max.	20 Watt
Input Impedance	50 Ohm

### Mechanical

Dimensions (W x L x H)	200 x 200 x 33 mm (7.9" x 7.9" x 1.25")
Connector	See ordering options
Weight	400 gr.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Water Proofing	IP-67
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +70°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

## Ordering Options

MA-WC2458-2H	Antenna 2 x Coaxial Cable RG 316 with RPSMA Male, wall mountable
MA-WC2458-2H2	Antenna 2 x Coaxial Cable RG 316 with N-Type Male with provision for Az/EI adjustable for MNT-22 mount
MA-WC2458-2H2B	Antenna 2 x Coaxial Cable RG 316 with N-Type Male with MNT-22 mount

Patterns are available on our website

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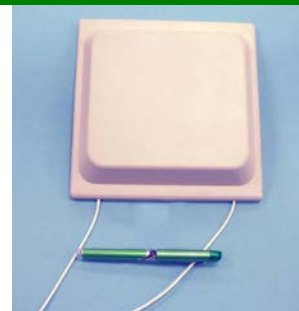
## MA-WE2458-2H

### 2.3-2.7 GHz & 4.9-6.1 GHz Dual Band MIMO Applications Sector Antenna, 120°

MARS Dual Band Sector antenna provides coverage of 2.3 to 2.7 GHz & 4.9 to 6.1 GHz in a single antenna radome.

Additional Features:

- Simultaneous coverage of LTE, 802.11 a, b, g, e, n, WiMAX & 4.9 GHz Public Safety Bands.
- Light weight and durable construction.
- UV protected radome made of plastic.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz & 4.9-6.1 GHz
GAIN, typ.	2 x 5 dBi
VSWR, max.	2 : 1 (typ. 1.5 : 1)
Polarization	Dual Slant $\pm 45^\circ$
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	70°
Input power, max.	20 Watt
Input Impedance	50 Ohm

### Mechanical

Dimensions (W x L x H)	200 x 200 x 33 mm (7.9" x 7.9" x 1.25")
Connector	See ordering options
Weight	400 gr.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Water Proofing	IP-67
Mount	See Ordering Options

### Environmental

Operating Temperature Range	-40°C to +70°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

## Ordering Options

MA-WE2458-2H	Antenna 2 x Coaxial Cable RG 316 with RPSMA, wall mountable
MA-WE2458-2H2	Antenna 2 x Coaxial Cable RG 316 with N-Type male with provision for Az/EI adjustable for MNT-22 mount
MA-WE2458-2H2B	Antenna 2 x Coaxial Cable RG 316 with N-Type male with MNT-22 mount

Patterns are available on our website

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## MA-WD36-DP14

### 3.3-4.01 GHz Dual Polarized Base Station Antenna, 90°

MARS 90° Broadband Dual Polarized Sector Antenna provides a cost effective solution for LTE & WiMAX applications.

Additional Features:

- Stable performance with 14 dBi of gain.
- Compact size allowing for easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	3.3-4.01 GHz
GAIN, typ.	14 dBi
VSWR, max.	1.7 : 1
Polarization	Dual, Vertical & Horizontal
3 dB Beam-Width, Azimuth, typ.	90°
3 dB Beam-Width, Elevation, typ.	12°
Side Lobes, min.	-12 dB
Front to Back Ratio, min.	-30 dB
Cross Polarization, min.	-15 dB
Port to Port Isolation, typ.	-30 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	2 Kg.
Connector	2 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WD36-DP14	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD36-DP14B	Antenna with MNT-22 mount

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## MA-WC35-DS17

### 3.3-3.8 GHz Dual Slant LTE & WiMAX Base Station Antenna, 65°

MARS Dual Slant Base Station Antenna is light-weight yet has a robust and durable construction.

Additional Features:

- Specially designed for LTE & WiMAX applications.
- Quick and easy installation.
- Easy mounting allowing obtaining required down tilt.
- Suitable for harsh environment installations.
- DC grounded.

Applications:

- Licensed band applications.
- Point-to-Multi Point Applications.
- WLL applications.



## Specifications

### Electrical

Frequency range	3.3-3.8 GHz
GAIN, typ.	16.5 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Polarized $\pm 45^\circ$
3 dB Beam-Width, H-Plane, typ.	65°
3 dB Beam-Width, E-Plane, typ.	8°
Down tilt, E-Plane	2°
Front to Back Ratio.	-25 dB
Port to Port Isolation	-30 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	600 x 225 x 40 mm (23.6" x 8.9" x 1.6")
Weight	1.8 kg.
Connector	2 x N-Type, Female (bottom)
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

## Ordering Options

MA-WC35-DS17	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WC35-DS17B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WD35-DS15

### 3.3-3.8 GHz Dual Slant WiMAX Base Station Antenna, 90°

MARS Dual Slant Base Station Antenna is light-weight yet has a robust and durable construction.

Additional Features:

- Specially designed for WiMAX applications.
- Quick and easy installation.
- Easy mounting allowing obtaining required down tilt.
- Suitable for harsh environment installations.
- DC grounded.

Applications:

- WiMAX – licensed band applications.
- Point-to-Multi Point Applications.
- WLL applications.



## Specifications

### Electrical

Frequency range	3.3-3.8 GHz
GAIN, typ.	15 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Polarized $\pm 45^\circ$
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	8°
Down tilt, E-Plane	2°
Front to Back Ratio.	-20 dB
Port to Port Isolation	-30 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	600 x 225 x 40 mm (23.6" x 8.9" x 1.6")
Weight	1.8 kg.
Connector	2 x N-Type, Female (bottom)
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

## Ordering Options

MA-WD35-DS15	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD35-DS15B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WC55-DS17

### 4.9-6.1 GHz Dual Slant Base Station Antenna, 60°

MARS Dual Slant  $\pm 45$  degrees 60° sector antenna features:

- Efficient and stable performance with 17 dBi of gain.
- Full 4.9-6.1 GHz band coverage.
- High Isolation ratio.
- Compact size.
- Optional Azimuth & Elevation Adjustable mount.
- UV protected radome suitable for harsh environment installations.
- Square shape.



## Specifications

### Electrical

Frequency range	4.9-6.1 GHz
GAIN, typ.	17 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Slant $\pm 45^\circ$
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	8°
Port to Port Isolation	-30 dB
Front to Back Ratio, min.	-35 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	2 kg.
Connector	2x N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WC55-DS17	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WC55-DS17B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WD55-DS16

### 4.9-6.1 GHz Dual Slant Base Station Antenna, 90°

MARS Dual Slant  $\pm 45$  degrees 90° sector antenna features:

- Efficient and stable performance with 16 dBi of gain.
- Full 4.9-6.1 GHz band coverage.
- High Isolation ratio.
- Compact size.
- Optional Azimuth & Elevation Adjustable mount.
- UV protected radome suitable for harsh environment installations.
- Square shape.



## Specifications

### Electrical

Frequency range	4.9-6.1 GHz
GAIN, typ.	16 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Slant $\pm 45^\circ$
3 dB Beam-Width, Azimuth, typ.	90°
3 dB Beam-Width, Elevation, typ.	8°
Front to Back Ratio.	-30 dB
Port to Port Isolation	-30 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	1.8 kg.
Connector	2 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WD55-DS16	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD55-DS16B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WC56-DP17

### 4.9-6.1 GHz Dual Polarized Base Station Antenna, 60°

MARS 60° Broadband Dual Polarized Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to-Multi-Point applications.

Additional Features:

- Stable performance with 17/18 dBi of gain.
- Compact size allowing easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



### Specifications

#### Electrical

Frequency range		4.9-6.1 GHz
GAIN, typ.	H-pol:	18 dBi
	V-pol:	17 dBi
VSWR, max.		1.7 : 1
Polarization		Dual, Vertical & Horizontal
3 dB Beam-Width, H-Plane, typ.		60°
3 dB Beam-Width, E-Plane, typ.		8°
Side Lobes, min.	H-pol:	ETSI EN 302 085 V1.2.3 – CS2
	V-pol:	ETSI EN 302 085 V1.2.3 – CS3
Cross Polarization, min.		-16 dB
Front to Back Ratio, min.		-30 dB
Port to Port Isolation, typ.		-40 dB
Input power, max.		10 Watt
Input Impedance		50 Ohm
Lightning Protection		DC Grounded

#### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	1.8 kg.
Connector (without enclosure)	2 x N-Type, Female
Connector (with enclosure)	2 x SMA
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Enclosure - Large	287 x 287 x 68 mm. (External dimension)
Mount	See ordering options

#### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WC56-DP17	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WC56-DP17B	Antenna with MNT-22 mount
MA-WC56-DP17SMEL	Antenna with large enclosure, 2 x SMA Connectors and MNT-22
MA-WC56-DP17SMELZ	Antenna with large enclosure, 2 x SMA Connectors with PEMs and MNT-22

Patterns are available on our website

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## MA-WD56-DP16

### 4.9-6.1 GHz Dual Polarized Base Station Antenna, 90°

MARS 90° Broadband Dual Polarized Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to-Multi-Point applications.

Additional Features:

- Stable performance with 16 dBi of gain.
- Compact size allowing easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



### Specifications

#### Electrical

Frequency range	4.9-6.1 GHz
GAIN, typ.	16 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Vertical & Horizontal
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	V-Pol. ETSI EN 302 085 V1.2.3 – CS2 H-Pol. ETSI EN 302 085 V1.2.3 – CS3
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-30 dB
Port to Port Isolation, typ.	-30 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	2 kg.
Connector (without enclosure)	2 x N-Type, Female
Connector (with enclosure)	2 x SMA
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Enclosure - Large	287 x 287 x 68 mm. (External dimension)
Mount	See ordering options

#### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WD56-DP16	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD56-DP16B	Antenna with MNT-22 mount
MA-WD56-DP16SMEL	Antenna with large enclosure, 2xSMA Connectors and MNT-22
MA-WD56-DP16SMELZ	Antenna with large enclosure, 2xSMA Connectors with PEMs and MNT-22

Patterns are available on our website

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## MA-WD56-DP13

### 5.15-5.875 GHz Dual Polarized Base Station Antenna, 90°

MARS 90° Broadband Dual Polarized Sector Antenna.

Additional Features:

- Stable performance with 13 dBi of gain.
- Compact size allowing easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	5.15-5.875 GHz
GAIN, typ.	13 dBi
VSWR, max.	1.7 : 1
Polarization	Dual, Vertical & Horizontal
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	15°
Cross Polarization, typ.	-15 dB
Front to Back Ratio, min.	-30 dB
Port to Port Isolation, typ.	-20 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	200 x 200 x 33 mm (7.9" x 7.9" x 1.25")
Weight	400 gr.
Connector	2 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering options

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WD56-DP13	Antenna Suited for MNT-23 (optional wall/pole adjustable mount)
MA-WD56-DP13B	Antenna with MNT-23 mount

Patterns are available on our website

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## MA-WE56-DP12

### 5.15-5.875 GHz Dual Polarized Base Station Antenna, 120°

MARS 120° Broadband Dual Polarized Sector Antenna.

Additional Features:

- Stable performance with 12 dBi of gain.
- Compact size allowing easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	5.15-5.875 GHz
GAIN, typ.	12 dBi
VSWR, max.	1.7 : 1
Polarization	Dual, Vertical & Horizontal
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	15°
Cross Polarization, typ.	-15 dB
Front to Back Ratio, min.	-30 dB
Port to Port Isolation, typ.	-20 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	200 x 200 x 33 mm (7.9" x 7.9" x 1.25")
Weight	400 gr.
Connector	2 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WE56-DP12	Antenna Suited for MNT-23 (optional wall/pole adjustable mount)
MA-WE56-DP12B	Antenna with MNT-23 mount

Patterns are available on our website

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## MA-WE56-DP15

### 5.15-5.875 GHz Dual Polarized Base Station Antenna, 120°

MARS **120° Broadband Dual Polarized Base station** Antenna.

Additional Features:

- Stable performance with 15 dBi of gain.
  - Compact size allowing easy blending with any environment.
  - Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	5.15-5.875 GHz
GAIN, typ.	14.5 dBi
VSWR, max.	1.7 : 1
Polarization	Dual, Vertical & Horizontal
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	8°
Cross Polarization, typ.	-15 dB
Front to Back Ratio, min.	-30 dB
Port to Port Isolation, typ.	-25 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	2 kg.
Connector (without enclosure)	2 x N-Type, Female
Connector (with enclosure)	2 x SMA
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Enclosure - Large	287 x 287 x 68 mm. (External dimension)
Mount	See ordering options

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WE56-DP15	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WE56-DP15B	Antenna with MNT-22 mount
MA-WE56-DP15SMELZ	Antenna with large enclosure, 2 x SMA Connectors with PEMs and MNT-22

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## MA-WC62-DP17

### 5.7-6.425 GHz Dual Polarized Base Station Antenna, 60°

MARS 60° Broadband Dual Polarized Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to-Multi-Point applications.

Additional Features:

- Stable performance with 17 dBi of gain.
- Compact size allowing easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	5.7-6.425 GHz
GAIN, typ.	17 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Vertical & Horizontal
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	8.5°
Side Lobes, min. (azimuth)	-25 dB
Cross Polarization, min.	-18 dB
Front to Back Ratio, min.	-40 dB
Port to Port Isolation, typ.	-45 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	2 kg.
Connector	2 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering information

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WC62-DP17	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WC62-DP17B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WD62-DP16

### 5.7-6.425 GHz Dual Polarized Base Station Antenna, 90°

MARS 90° Broadband Dual Polarized Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to-Multi-Point applications.

Additional Features:

- Stable performance with 16 dBi of gain.
- Compact size allowing easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	5.7-6.425 GHz
GAIN, typ.	16 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Vertical & Horizontal
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	8.5°
Side Lobes, min. (azimuth)	-25 dB
Cross Polarization, min.	-18 dB
Front to Back Ratio, min.	-40 dB
Port to Port Isolation, typ.	-45 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	2 kg.
Connector	2 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WD62-DP16	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD62-DP16B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WD62-DS16

### 5.7-6.425 GHz Dual Slant Base Station Antenna, 90°

MARS Dual Slant  $\pm 45$  degrees 90° sector antenna features:

- Efficient and stable performance with 15.5 dBi of gain.
- Full 5.7-6.425 GHz band coverage.
- High Isolation ratio.
- Compact size.
- Optional Azimuth & Elevation Adjustable mount.
- UV protected radome suitable for harsh environment installations.
- Square shape.



## Specifications

### Electrical

Frequency range	5.7-6.425 GHz
GAIN, typ.	15.5 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Slant $\pm 45^\circ$
3 dB Beam-Width, Azimuth, typ.	90°
3 dB Beam-Width, Elevation, typ.	8.5°
Side Lobe level ( Elevation),min.	-12 dB
Front to Back Ratio.	-35 dB
Cross Polarization, min.	-15 dB
Port to Port Isolation	-40 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	1.8 kg.
Connector	2 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WD62-DS16	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD62-DS16B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA24-TPMIMO

### 2.3-2.7 GHz Triple Polarization MIMO Subscriber Antenna

MARS Triple Polarization antenna provides coverage of 2.3-2.7 GHz frequency band in a single antenna radome.

Additional Features:

- Specially designed for MIMO applications.
- Light weight and durable construction.
- UV protected radome made of polycarbonate.
- Can be customized with customer defined back plane and different connector configurations.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz
GAIN	Vertical Pol. 15 ± 1 dBi
	Dual Slant Pol. 12 ± 1 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Slant ±45° and Vertical
3 dB Beam-Width-Azimuth, typ.	Dual Slant: 38°; V- Pol 37°
3 dB Beam-Width-Elevation, typ.	Dual Slant: 38°; V- Pol 21°
Side Lobes, min.	-12 dB
Front to Back Ratio, min.	-30 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Connector	3 x N-Type Female
Weight	1.5 Kg.
Mounting	See ordering options
Radome	UV Protected Polycarbonate
Back Plane	Aluminum protected through chemical passivation

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA24-TPMIMO	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA24-TPMIMOB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA55-TPMIMO

### 5.125-6.1 GHz Triple Polarization MIMO Subscriber Antenna

MARS Triple Polarization antenna provides coverage of 5.125-6.1 GHz frequency band in a single antenna radome.

Additional Features:

- 3 Ports: Dual Slant ( $\pm 45^\circ$ ) and Vertical Polarization.
- Specially designed for MIMO applications for optimal decorrelation.
- Light weight and durable construction.
- UV protected radome made of polycarbonate.
- Can be customized with customer defined back plane and different connector configurations.



### Specifications

#### Electrical

Frequency range	5.125-6.1 GHz
GAIN	Vertical Pol. 19 dBi
	Dual Slant Pol. 17.5 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Slant $\pm 45^\circ$ and Vertical
3 dB Beam-Width-Azimuth, typ.	Dual Slant: $20^\circ$ ; V- Pol $22^\circ$
3 dB Beam-Width-Elevation, typ.	Dual Slant: $19^\circ$ ; V- Pol $14^\circ$
Side Lobes, min.	-12 dB
Front to Back Ratio, min.	-35 dB
Port to Port Isolation	-40 dB (Vertical to $\pm 45^\circ$ Dual Slant)
Port to Port Isolation	-30 dB ( $+45^\circ$ Dual Slant to $-45^\circ$ Dual Slant)
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Connector	3 x N-Type Female
Weight	1.5 kg.
Mounting	See ordering options
Radome	UV Protected Polycarbonate
Back Plane	Aluminum protected through chemical passivation

#### Environmental

Operating Temperature Range	-55°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

### Ordering Options

MA-WA55-TPMIMO	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA55-TPMIMOB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WC2458-3H

### 2.4-2.5 GHz & 5.15-5.875 GHz Dual Band Small Sector Antenna, 60°

MARS Dual Band Sector antenna provides coverage of 2.4 to 2.5 GHz & 5.15 to 5.875 GHz in a single antenna radome.

Additional Features:

- Wide coverage.
- Light weight and durable construction.
- UV protected radome made of polycarbonate.



## Specifications

### Electrical

Frequency range	2.4-2.5 GHz & 5.15-5.875 GHz
GAIN, typ.	3 x 7.5 dBi
VSWR, max.	1.8 : 1
Polarization	Linear Vertical & Dual Slant $\pm 45^\circ$
3 dB Beam-Width, H-Plane, typ.	70° @ 2.4-2.5 GHz; 65° @ 5.15-5.875 GHz
3 dB Beam-Width, E-Plane, typ.	65° @ 2.4-2.5 GHz; 60° @ 5.15-5.875 GHz
Input power, max.	20 Watt
Input Impedance	50 Ohm

### Mechanical

Dimensions (W x L x H)	200 x 200 x 33 mm (7.9" x 7.9" x 1.25")
Connector	See ordering options
Weight	400 gr.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +70°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

## Ordering Options

MA-WC2458-3H	Antenna 3 x Coaxial Cable RG 316 with RPSMA Male, wall mountable
MA-WC2458-3H2	Antenna 3 x Coaxial Cable RG 316 with N-Type Male with provision for Az/EI adjustable for MNT-22 mount
MA-WC2458-3H2B	Antenna 3 x Coaxial Cable RG 316 with N-Type Male with MNT-22 mount

Patterns are available on our website

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## MA-WE2458-3H

### 2.3-2.7 GHz & 4.9-6.1 GHz Dual Band MIMO Applications Sector Antenna, 120°

MARS Dual Band Sector antenna provides coverage of 2.3 to 2.7 GHz & 4.9 to 6.1 GHz in a single antenna radome.

Additional Features:

- Simultaneous coverage of LTE, 802.11 a, b, g, e, n, WiMAX & 4.9 GHz Public Safety Bands.
- Light weight and durable construction.
- UV protected radome made of polycarbonate.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz & 4.9-6.1 GHz
GAIN, typ.	3 x 5 dBi
VSWR, max.	2 : 1 (typ. 1.5 : 1)
Polarization	Vertical & 2 Dual Slant $\pm 45^\circ$
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	70°
Input power, max.	20 Watt
Input Impedance	50 Ohm

### Mechanical

Dimensions (W x L x H)	200 x 200 x 33 mm (7.9" x 7.9" x 1.25")
Connector	See ordering options
Weight	400 gr.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

### Environmental

Operating Temperature Range	-40°C to +70°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

## Ordering Options

MA-WE2458-3H	Antenna 3 x Coaxial Cable RG 316 with RPSMA, wall mountable
MA-WE2458-3H2	Antenna 3 x Coaxial Cable RG 316 with N-Type male with provision for Az/EI adjustable for MNT-22 mount
MA-WE2458-3H2B	Antenna 3 x Coaxial Cable RG 316 with N-Type male with MNT-22 mount

Patterns are available on our website

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## MA-WD56-DSV16

### 4.9-6.1 GHz Triple Polarizations MIMO Base Station Antenna, 90°

MARS Triple Polarization Sector antenna provides coverage of 4.9-6.1 GHz frequency band in a single antenna radome.

Additional Features:

- 3 Ports: Dual Slant ( $\pm 45^\circ$ ) and Vertical Polarization.
- Specially designed for MIMO applications for optimal decorrelation.
- Light weight and durable construction.
- UV protected radome made of polycarbonate.
- Can be customized with customer defined back plane and different connector configurations.



## Specifications

### Electrical

Frequency range	4.9-6.1 GHz
GAIN:	Vertical Pol. 16 dBi
	Dual Slant Pol. 16 dBi
VSWR, max.	1.7 : 1
Polarization	Dual Slant: $\pm 45^\circ$ and Vertical
3 dB Beam-Width-Azimuth, typ.	Dual Slant: $90^\circ$ ; V- Pol $90^\circ$
3 dB Beam-Width-Elevation, typ.	Dual Slant: $8^\circ$ ; V- Pol $8^\circ$
Front to Back Ratio, min.	-30 dB
Port to Port Isolation, min.	-30 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Connector	3 x N-Type Female
Weight	2.1 Kg.
Mounting	See ordering options
Radome	UV Protected Polycarbonate
Back Plane	Aluminum protected through chemical passivation

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WD56-DSV16	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD56-DSV16B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WD25-MIMO3

### 2.3-2.7 GHz, 14dBi Dual Polarized Antenna Array, 90°

#### Antenna Features:

- 3 columns dual slant antenna arrays.
- Total 6 outputs.
- Quick and easy installation.
- Aesthetic and unobtrusive radome.
- Easy mounting allows obtain required down tilt degree.

#### Applicable Applications:

- Point-to-Multi-Point Systems.
- WLL applications.
- MMDS.
- ISM applications.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz
GAIN, min.	6 x 14 dBi
VSWR, max.	1.8 : 1
Polarization	Dual Slant $\pm 45^\circ$
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	9°
Side Lobes, min.	Elevation Plane Azimuth Plane
	-12 dB -20 dB
Cross Polarization Discrimination, typ.	-20 dB
Port to Port Isolation, min.	20 dB
Front to Back Ratio, min.	30 dB
Array Element Spacing	196 mm (1.5 $\lambda$ on 2.3 GHz)
Input power, max.	5 Watts average, 50 Watts peak
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	800 x 600 x 40 mm (31.5" x 23.6" x 1.6")
Weight	6.5 kg.
Connector	6 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WD25-MIMO3	Antenna Suited for MNT-25 (optional tilt mount)
MA-WD25-MIMO3B	Antenna with MNT-25 mount

Patterns are available on our website

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## MA-WD36-MIMO3

### 3.3-3.8 GHz, 15dBi Dual Polarized Antenna Array, 90°

#### Antenna Features:

- 3 columns dual slant antenna arrays.
- Total 6 outputs.
- Quick and easy installation.
- Easy mounting allows obtain required down tilt.
- Suitable for harsh environment installations.
- DC grounded.

#### Applications:

- Licensed band applications.
- Point-to-Multi Point Applications.
- WLL applications.



## Specifications

### Electrical

Frequency range	3.3-3.8 GHz
GAIN, min.	6 x 15 dBi
VSWR, max.	1.8 : 1
Polarization	Dual Slant $\pm 45^\circ$
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	Elevation Plane Azimuth Plane
	-12 dB -20 dB
Cross Polarization Discrimination, typ.	-20 dB
Port to Port Isolation, min.	20 dB
Front to Back Ratio, min.	30 dB
Array Element Spacing	136 mm (1.5 $\lambda$ on 3.3 GHz)
Input power, max.	5 Watts average, 50 Watts peak
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	800 x 600 x 40 mm (31.5" x 23.6" x 1.6")
Weight	6.5 kg.
Connector	6 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WD36-MIMO3	Antenna Suited for MNT-25 (optional tilt mount)
MA-WD36-MIMO3B	Antenna with MNT-25 mount

Patterns are available on our website

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## MA-WO24-MIMONH8

### 2.3-2.7 GHz MIMO Omni – Directional Base Station Antenna

MARS MIMO Omni antenna provides coverage of 2.3-2.7 GHz in a single antenna radome.

Additional Features:

- High gain.
- Light weight and durable construction.
- UV protected radome made of plastic.



### Specifications

#### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	3 x 8 dBi
VSWR, max.	2 : 1
Polarization	Linear Vertical
3 dB Beam-Width, H-Plane, typ.	Omni - Directional
3 dB Beam-Width, E-Plane, typ.	10°
Input power, max.	50 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (WxLxH)	120 x 330 x 640 mm (4.7" x 13" x 25")
Connector	3 x N-Type, Female
Weight	1.5 kg.
Radome	UV Protected Plastic
Mount	Pole Mount with Brackets

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

Patterns are available on our website

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## MA-WD24-13MIMO

### 2.3-2.7 GHz MIMO Base Station Antenna, 90°

#### Antenna Features:

- Quick and easy installation.
- Aesthetic and unobtrusive radome.
- Easy mounting allows obtaining required down tilt degree.

#### Applicable Applications:

- Point-to-Multi-Point Systems.
- WLL applications.
- MMDS.
- ISM applications.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	3 x 13 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	15°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-24 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	400 x 308 x 80 mm (15" x 8.9" x 3.1")
Weight	2 kg.
Connector	3 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WD24-13MIMO	Antenna Suited for MNT-22 (optional tilt mount)
MA-WD24-13MIMOB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WD24-15MIMO6

### 2.3-2.7 GHz Base Station Antenna, 90°

MARS 90° Base Station Antenna consists of 6 Sector Antennas.

Antenna Features:

- Quick and easy installation.
- Aesthetic and unobtrusive radome.
- Easy mounting allowing obtaining required down tilt degree.

Applicable Applications:

- Point-to-Multi-Point Systems.
- WLL applications.
- MMDS.
- ISM applications.



### Specifications

#### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	6 x 15.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-24 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	812 x 705 x 70 mm (32" x 27.8" x 2.8")
Weight	8 kg.
Connector	6 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	MNT-25

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 301 525 v1.1.1

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## MA-WE24-14MIMO

### 2.3-2.7 GHz MIMO Base Station Antenna, 120°

#### Antenna Features:

- Quick and easy installation.
- Aesthetic and unobtrusive radome.
- Easy mounting allowing obtaining required down tilt degree.

#### Applicable Applications:

- Point-to-Multi-Point Systems.
- WLL applications.
- MMDS.
- ISM applications.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	4 x 14 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-24 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	812 x 470 x 70 mm (32" x 18.5" x 2.8")
Weight	5 kg.
Connector	4 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WE24-14MIMO	Antenna Suited for MNT-25 (optional mount)
MA-WE24-14MIMOB	Antenna with MNT-25 mount

Patterns are available on our website

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## MA-DBO-3H

### 2.3-2.7 GHz & 4.9-6.1 GHz Dual Band 3X3 MIMO Omni Antenna

MARS Dual Band Omni antenna provides coverage of 2.3 to 2.7 GHz & 4.9 to 6.1 GHz in a single antenna radome.

Additional Features:

- Simultaneous coverage of LTE, 802.11 a, b, e, g, n, WiMAX & 4.9 GHz Public Safety Bands.
- Light weight and durable construction.
- UV protected radome made of polycarbonate.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz & 4.9-6.1 GHz
GAIN, typ.	2.3-2.7 GHz @ 3 x 2.5 dBi (without cable) 4.9-6.1 @ 3 x 3.5 dBi (without cable)
VSWR, max.	2 : 1 (typ. 1.5:1)
Polarization	Linear Vertical
Input power, max.	20 Watt
Input Impedance	50 Ohm

### Mechanical

Dimensions (W x L x H)	200 x 200 x 33 mm (7.9" x 7.9" x 1.25")
Connector	3 x Coaxial Cable RG 316 with RPSMA Male Right Angle
Weight	400 gr.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +70°C
Vibration	According to IEC 60721-3-4
Water Proofing	IP-67
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

## Ordering Options

MA-DBO-3H	Antenna 3 x Coaxial Cable RG 316 with RPSMA Male Right Angle suited for optional ceiling mount MNT-4CL
MA-DBO-3HB	Antenna 3 x Coaxial Cable RG 316 with RPSMA Male Right Angle with MNT-4CL mount
MA-DBO-3H2	Antenna 3x Coaxial Cable RG 316 with N-Type male suited for optional ceiling mount MNT-4CL
MA-DBO-3H2B	Antenna 3x Coaxial Cable RG 316 with N-Type male with MNT-4CL mount

Patterns are available on our website

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## MA-DBO-3MIMO

### 2.3-2.7 GHz & 4.9-6 GHz Omni Dual Band MIMO Applications Antenna

MARS Dual Band MIMO Omni antenna provides coverage of 2.3 to 2.7 GHz & 4.9 to 6 GHz in a single antenna radome.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz & 4.9-6GHz
GAIN, typ.	2.3-2.7 GHz @ 3 x 4 dBi 4.9-6 GHz @ 3 x 7 dBi
VSWR, max.	2 : 1
Patterns.	Omni Directional
Port to Port Isolation.typ	-20 dB
Input power, max.	20 Watt
Input Impedance	50 Ohm

### Mechanical

Dimensions (DxH)	205 x 330 mm
Connector	3 x N-Type Female
Weight	1.5 Kg.
Back Plane	Aluminium; protected through chemical passivation
Radome	UV Protected Plastic
Mount	Pole Mount

### Environmental

Operating Temperature Range	-40°C to +70°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

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## MA-WD36-16MIMO4

### 3.3-3.8 GHz Sector Antenna for LTE & WiMAX MIMO Applications, 90°

MARS 90° Base Station Antenna consists of 4 Sector Antennas.

Antenna Features:

- Specially designed for LTE & WiMAX MIMO applications.
- Quick and easy installation.
- Easy mounting allowing obtaining required down tilt.
- Suitable for harsh environment installations.
- DC grounded.

Applications:

- Licensed band applications.
- Point-to-Multi Point Applications.
- WLL applications.



## Specifications

### Electrical

Frequency range	3.3-3.8 GHz
GAIN, typ.	4 x 15.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	9°
Side Lobes, min.	ETSI EN 302 085 V1.2.3-CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3-CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3-CS1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	573 x 390 x 53 mm (22.6" x 15.4" x 2.1")
Weight	4 kg.
Connector	4 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

## Ordering Options

MA-WD36-16MIMO4	Antenna Suited for MNT-25 (optional mount)
MA-WD36-16MIMO4B	Antenna with MNT-25 mount

Patterns are available on our website

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## MA-WE36-15MIMO4

### 3.3-3.8 GHz Sector Antenna for LTE & WiMAX MIMO Applications, 120°

MARS 120° Base Station Antenna consists of 4 Sector Antennas.

Antenna Features:

- Specially designed for LTE & WiMAX MIMO applications.
- Quick and easy installation.
- Easy mounting allowing obtaining required down tilt.
- Suitable for harsh environment installations.
- DC grounded.

Applications:

- Licensed band applications.
- Point-to-Multi Point Applications.
- WLL applications.



## Specifications

### Electrical

Frequency range	3.3-3.8 GHz
GAIN, typ.	4 x 14.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	9°
Side Lobes, min.	ETSI EN 302 085 V1.2.3-CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3-CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3-CS1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	573 x 390 x 53 mm (22.6" x 15.4" x 2.1")
Weight	4 kg.
Connector	4 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

## Ordering Options

MA-WE36-15MIMO4	Antenna Suited for MNT-25 (optional mount)
MA-WE36-15MIMO4B	Antenna with MNT-25 mount

Patterns are available on our website

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## MA-WD55-16MIMO

### 4.9-6.1 GHz MIMO Base Station Antenna, 90°

#### Antenna Features:

- Specially designed for MIMO applications.
- Quick and easy installation.
- Easy mounting allowing obtaining required down tilt.
- Suitable for harsh environment installations.
- DC grounded.



## Specifications

### Electrical

Frequency range	4.9-6.1 GHz
GAIN, typ.	3 x 16 dBi
VSWR, max.	1.8 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3-CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3-CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3-CS1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	400 x 300 x 50 mm (15.7" x 11.8" x 2")
Weight	2.5 kg.
Connector	3 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3-CS1

## Ordering Options

MA-WD55-16MIMO	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD55-16MIMOB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WE55-15MIMO

### 4.9-6.1 GHz MIMO Base Station Antenna, 120°

#### Antenna Features:

- Specially designed for MIMO applications.
- Quick and easy installation.
- Easy mounting allowing obtains required down tilt.
- Suitable for harsh environment installations.
- DC grounded.



## Specifications

### Electrical

Frequency range	4.9-6.1 GHz
GAIN, typ.	3 x 15 dBi
VSWR, max.	1.8 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3-CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3-CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3-CS1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	400 x 300 x 50 mm (15.7" x 11.8" x 2")
Weight	2.5 kg.
Connector	3 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

## Ordering Options

MA-WE55-15MIMO	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WE55-15MIMOB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WO55-MIMO9NH3

### 4.9-5.875 GHz MIMO Omni - Directional Base Station Antenna

MARS MIMO Omni antenna provides coverage of 4.9-5.875 GHz in a single antenna radome.

Additional Features:

- High gain.
- Light weight and durable construction.
- UV protected radome made of plastic.



## Specifications

### Electrical

Frequency range	4.9-5.875 GHz
GAIN, typ.	3 x 9 dBi
VSWR, max.	2 : 1
Polarization	Linear Vertical
3 dB Beam-Width, H-Plane, typ.	Omni - Directional
3 dB Beam-Width, E-Plane, typ.	10°
Input power, max.	50 Watt
Input Impedance	50 Ohm

### Mechanical

Dimensions (HxD)	330 x 120 mm (13" x 4.7")
Connector	3 x N-Type, Female
Weight	600 gr.
Radome	UV Protected Plastic
Mount	Pole Mount

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

Patterns are available on our website

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## MA-WA74-LX

### 700 MHz Lower Band Subscriber Antenna

MARS 700 MHz - Lower Band Antenna provides solutions for new services such as LTE, mobile broadband, mobile video and WiMAX applications.

Additional Features:

- Excellent performance.
- Aesthetic and unobtrusive.
- Thin radome and easy mounting.



### Specifications

#### Electrical

Frequency range	698-746 MHz
GAIN, min.	8.5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Horizontal or Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	60°
Side Lobes, min.	-30 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-20 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 25 mm (12" x 12" x 1")
Weight	1.3 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WA74-LX PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA74-LX MNT	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA74-LX MNTB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA79-UX

### 700 MHz Upper Band Subscriber Antenna

MARS 700 MHz - Upper Band Antenna provides solutions for new services such as LTE, mobile broadband, mobile video and WiMAX, as well as Public Safety applications.

Additional Features:

- Excellent performance.
- Aesthetic and unobtrusive.
- Thin radome and easy mounting.



### Specifications

#### Electrical

Frequency range	746-806 MHz
GAIN, min.	8.5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Horizontal or Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	60°
Side Lobes, min.	-30 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-20 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 25 mm (12" x 12" x 1")
Weight	1.3 kg.
Connector	N-Type
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WA79-UX PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA79-UX MNT	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA79-UX MNTB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-IS91-12

### 902-928 MHz High Gain Subscriber Antenna

MARS 915 MHz Antenna is designed for Point-to-Multipoint systems using the ISM 915 MHz band.

Additional features:

- High efficiency.
- Superb co-siting performance due to high crosspol rejection.
- Unobtrusive, blends easily with the environment.
- Optionally available with Pole Mount or MNT-22 (pole/wall, azimuth and elevation adjustable mount).



### Specifications

#### Electrical

Frequency range	902-928 MHz
GAIN, min.	12 dBi
VSWR, max.	1.5 : 1
Polarization	Linear Vertical or Horizontal
3 dB Beam-Width, H-Plane, typ.	43°
3 dB Beam-Width, E-Plane, typ.	42°
Side Lobes, min.	-16 dB
Cross Polarization, min.	-16 dB
Front to Back Ratio, min.	-16 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	2 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-IS91-12	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-IS91-12B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-IS91-T2

### 915 MHz Subscriber Antenna

MARS 915 MHz Antenna is designed for Point-to-Multipoint systems using the ISM 915 MHz band.

Additional features:

- High efficiency.
- Superb co-sitting performance due to high crosspol rejection.
- Unobtrusive, blends easily with the environment.
- Optionally available with Pole Mount or MNT-22 (pole/wall, azimuth and elevation adjustable mount).



### Specifications

#### Electrical

Frequency range	902-928 MHz
GAIN, min.	10.5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical (Horizontal with MNT-22 Option)
3 dB Beam-Width, H-Plane, typ.	55°
3 dB Beam-Width, E-Plane, typ.	60°
Side Lobes, min.	-20 dB
Cross Polarization, min.	-17 dB
Front to Back Ratio, min.	-27 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 25 mm (12" x 12" x 1")
Weight	1.3 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-IS91-T2 PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-IS91-T2 MNT	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-IS91-T2 MNTB	Antenna with MNT-22 mount
MA-IS91-T2C (*)	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-IS91-T2CB (*)	Antenna with MNT-22 mount

(\*) Approved by MOTOROLA for CANOPY 915 MHz System

Patterns are available on our website

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## MA-IS91-T3

### 915 MHz Subscriber Antenna

MARS 915 MHz small size panel antenna provides for coverage of the ISM 915 band under FCC part 15.

Additional Features:

- High gain/size ratio.
- Small and unobtrusive.
- New aesthetic and durable radome.
- Suitable for indoor and outdoor applications.



### Specifications

#### Electrical

Frequency range	902-928 MHz
GAIN, min.	8 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical (Horizontal with MNT-22 Option)
3 dB Beam-Width, H-Plane, typ.	70°
3 dB Beam-Width, E-Plane, typ.	65°
Cross Polarization, min.	-17 dB
Front to Back Ratio, min.	-16 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	230 x 214 x 31 mm ( 9.1" x 8.4" x 1.2")
Weight	520 gr.
Connector	N-Type, Female ( at the back plane)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-IS91-T3 PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-IS91-T3 MNT	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-IS91-T3 MNTB	Antenna with MNT-22 mount

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## MA-IS91-R1

### 915 MHz RFID Reader Antenna

MARS 915 MHz Antenna is designed for Point-to-Multipoint systems using the ISM 915 MHz band.

Additional features:

- High efficiency.
- Superb co-siting performance due to low SSL and high F/B rejection.
- Unobtrusive, blends easily with the environment.
- Optionally available with Pole Mount or MNT-22 (pole/wall, azimuth and elevation adjustable mount).



### Specifications

#### Electrical

Frequency range	902-928 MHz
GAIN, typ.	10 dBi
VSWR, max.	1.5 : 1
Polarization	RHCP
3 dB Beam-Width, Horizontal, typ.	75°
3 dB Beam-Width, Vertical, typ.	55°
Front to Back Ratio, typ.	-20 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 25 mm (12" x 12" x 1")
Weight	1.2 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-IS91-R1 PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-IS91-R1 MNT	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-IS91-R1 MNTB	Antenna with MNT-22 mount

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## MA-WA14-1X

### 1425-1525 MHz Broadband Directional Antenna

MARS 1425-1525 MHz Antenna provides a cost effective and reliable solution for Fixed Wireless Data & Telephony Services and any other application in this band.

This panel antenna replaces Yagis previously used for the same purpose.

Additional Features:

- Durable construction and light weight.
- Optionally available with Pole Mount or MNT-22 (pole/wall, azimuth and elevation adjustable mount).
- DC Grounded.



### Specifications

#### Electrical

Frequency range	1425-1525 MHz
GAIN, min.	13.5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	31°
3 dB Beam-Width, E-Plane, typ.	31°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-20 dB
Input power, max.	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 25 mm (12" x 12" x 1")
Weight	1.2 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial

### Ordering Options

MA-WA14-1X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA14-1X MNT	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA14-1X MNTB	Antenna with MNT-22 mount

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## MA-WA18-1X

### 1.8 GHz Directional Antenna

MARS 1.8 GHz Antenna is a flat panel that provides directional coverage of the GSM 1800 band. This panel antenna replaces Yagis previously used for same purpose.

Additional Features:

- Effective co-siting performance.
- Excellent size/gain ratio.
- Weatherized and robust.
- Suitable for heavy duty outdoor applications.



### Specifications

#### Electrical

Frequency range	1.71-1.88GHz
GAIN, min.	14 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	30°
3 dB Beam-Width, E-Plane, typ.	30°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-20 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 25 mm (12" x 12" x 1")
Weight	1.2 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-34
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WA18-1XPM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA18-1XMNT	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA18-1XMNTB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA19-4X

### 1.9 GHz Subscriber Antenna

MARS 1.9 GHz Antenna is designed for coverage of the 1.9 PCS band.

Additional Features:

- Effective co-siting performance.
- Excellent size/gain ratio.
- Weatherized and robust.
- Suitable for heavy duty outdoor applications.
- Optionally available with Pole Mount or MNT-2 (pole/wall, azimuth and elevation adjustable mount)



### Specifications

#### Electrical

Frequency range	1.85-1.99 GHz
GAIN, min.	15 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	24°
3 dB Beam-Width, E-Plane, typ.	24°
Side Lobes, min.	-9 dB
Cross Polarization, min.	-18 dB
Front to Back Ratio, min.	-18 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 25 mm (12" x 12" x 1")
Weight	1.3 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WA19-4X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA19-4X MNT	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA19-4X MNTB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA20-1X

### UMTS Subscriber Antenna

MARS UMTS Antenna is a wide band antenna that provides an effective solution for Yagi replacements or repeaters.

Additional Features:

- Aesthetic, small and unobtrusive profile blends easily with any environment.
- DC grounded for lightning protection to meet local electrical building codes.
- Optionally available with Pole Mount or MNT-22 (pole/wall, azimuth and elevation adjustable mount).



### Specifications

#### Electrical

Frequency range	1.90-2.17 GHz
GAIN, min.	14 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Horizontal or Vertical
3 dB Beam-Width, H-Plane, typ.	24°
3 dB Beam-Width, E-Plane, typ.	24°
Side Lobes, min.	-9 dB
Cross Polarization, min.	-18 dB
Front to Back Ratio, min.	-18 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Weight	1.3 Kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WA20-1X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA20-1X MNT	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA20-1X MNTB	Antenna with MNT-22 mount

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## MA-WA25-9

### 2.3-2.7 GHz Small Size Subscriber Antenna

MARS 2.3-2.7 GHz Antenna is a wide band antenna designed for LTE, Wi-Fi, LAN, MMDS, WLL and WiMAX applications.

Additional Features:

- Exceptionally efficient performance.
- High gain/size ratio.
- Aesthetic design.
- Weatherized and durable.
- Compact size.



### Specifications

#### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	9 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	55°
3 dB Beam-Width, E-Plane, typ.	50°
Side Lobes, min.	-15 dB
Cross Polarization, min.	-12 dB
Front to Back Ratio, min.	-15 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	100 x 100 x 30 mm (3.9" x 3.9" x 1.2")
Weight	110 gr.
Connector	SMA Right Angle, Female/ N-Type Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WA25-9	Antenna with SMA Right Angle Female Connector suited for MNT-4L or MNT-4U
MA-WA25-9BL	Antenna with SMA Right Angle Female Connector and MNT-4L mount
MA-WA25-9BU	Antenna with SMA Right Angle Female Connector and MNT-4U mount
MA-WA25-9N	Antenna with N-Type, Female Connector Suited for MNT-4L or MNT-4U
MA-WA25-9NBL	Antenna with N-Type, Female Connector and MNT-4L mount
MA-WA25-9NBU	Antenna with N-Type, Female Connector and MNT-4U mount

Patterns are available on our website

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## MA-WA24-12

### 2.4-2.7 GHz Small Size Subscriber Antenna

MARS 2.4 GHz Antenna is a wide band antenna designed for LTE, Wi-Fi, LAN, MMDS, WLL and WiMAX applications.

Additional Features:

- Exceptionally efficient performance.
- High gain/size ratio.
- Aesthetic design.
- Weatherized and durable.



### Specifications

#### Electrical

Frequency range	2.4-2.7 GHz
GAIN, typ.	12 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical or Horizontal (See Ordering Options)
3 dB Beam-Width, H-Plane, typ.	40°
3 dB Beam-Width, E-Plane, typ.	40°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-16 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	155 x 155 x 28 mm (6.1" x 6.1" x 1.1")
Weight	250 gr.
Connector	See Ordering Options
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

### Ordering Options

MA-WA24-12	Antenna with SMA Female Connector suited for MNT-4L or MNT-4U
MA-WA24-12BL	Antenna with SMA Female Connector and MNT-4L mount
MA-WA24-12BU	Antenna with SMA Female Connector and MNT-4U mount
MA-WA24-12NTF	Antenna with N-Type, Female Connector Suited for MNT-23 (optional wall/pole adjustable mount)
MA-WA24-12NTFB	Antenna with N-Type, Female Connector and MNT-23 mount
MA-WA24-12NTF & MNT-23H	Antenna with N-Type, Female Connector and MNT-23H for horizontal polarization

Patterns are available on our website

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## MA-WA24-2X

### 2.3-2.7 GHz Subscriber Antenna

MARS 2.4 GHz Antenna is a wide band antenna designed for LTE, Wi-Fi, LAN, MMDS, WLL and WiMAX applications.

Additional Features:

- Exceptionally efficient performance.
- High gain/size ratio.
- Aesthetic design.
- Weatherized and durable.

The antenna with the enclosure (small or large) solution is Waterproof and Weatherproof with provisions for Azimuth/Elevation Adjustable mount.

This solution enables WISP/Integrator to design his own low cost, weatherized subscriber unit, saving high costs of special antenna-radio integration.



### Specifications

#### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	2.3-2.4 @ 17 dBi    2.4-2.7 @ 18 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical (Horizontal with MNT-22 Option)
3 dB Beam-Width, H-Plane, typ.	21°
3 dB Beam-Width, E-Plane, typ.	20°
Side Lobes, min.	-16 dB
Cross Polarization, min.	-26 dB
Front to Back Ratio, min.	-26 dB
Input power, max.	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Weight	1 kg (without Enclosure)
Connector (without enclosure)	N-Type, Female
Connector (with enclosure)	SMA Female / Pig Tail with MCX, Female (*)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Enclosure - Small	171 x 167 x 68 mm. (External dimension)
Enclosure - Large	287 x 287 x 68 mm. (External dimension)
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm Radial

#### Standard Compliance

ETSI EN 302 085 V1.2.3 – TS1, TS2, TS3

### Ordering Options

MA-WA24-2X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA24-2X MNT	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA24-2X MNTB	Antenna with MNT-22 mount
MA-WA24-2XSMESY / MA-WA24-2XMCESY	Antenna with small enclosure, SMA/pig tail Connector and MNT-22
MA-WA24-2XSMESZ / MA-WA24-2XMCESZ	Antenna with small enclosure, SMA/pig tail Connector with PEMs and MNT-22
MA-WA24-2XSMELY / MA-WA24-2XMCELY	Antenna with large enclosure, SMA/pig tail Connector and MNT-22
MA-WA24-2XSMELZ / MA-WA24-2XMCELZ	Antenna with large enclosure, SMA/pig tail Connector with PEMs and MNT-22

(\*) Can be customized with different connector configuration

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## MA-WS2455-1X

### 2.4-2.5 GHz & 4.9-5.875 GHz Dual Band Antenna

MARS Dual Band antenna provides coverage of 2.4 to 2.5. GHz & 4.9 to 5.875 GHz in a single antenna radome.

Additional Features:

- Simultaneous coverage of LTE, 802.11 a,b,g, WiMAX & 4.9 GHz Public Safety Bands.
- High gain/size ratio.
- Light weight and durable construction.
- UV protected radome made of polycarbonate suitable for harsh weather installations.
- Easy mounting allowing Az/EI adjustment.



## Specifications

### Electrical

Frequency range	2.4-2.5 GHz & 4.9-5.875 GHz
GAIN,typ.	2.4-2.5 GHz @ 12 dBi 4.9-5.875 GHz @ 18 dBi
VSWR, max.	1.7 : 1
Polarization	Linear Vertical
3 dB Beam-Width, H-Plane, typ.	2.4-2.5 GHz @ 30° 4.9-5.875 GHz @ 12°
3 dB Beam-Width, E-Plane, typ.	2.4-2.5 GHz @ 60° 4.9-5.875 GHz @ 18°
Side Lobes, max.	-10 dB
Cross Polarization, max.	-12 dB
Front to Back Ratio, min.	ETSI TS3, TS4, TS5
Input power, max.	50 Watt
Input Impedance	50 Ohm

### Mechanical

Dimensions (HxWxD)	305 x 305 x 25 mm (12" x 12" x 1")
Connector	2 x N-Type, Female
Weight	1.5 kg.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mounting	See ordering options

### Environmental

Operating Temperature Range	-40°C to +70°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68 -2-11
Ice and Snow	25 mm radial (survival)

## Ordering Options

MA-WS2455-1X	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WS2455-1XB	Antenna with MNT-22 mount

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## MA-WA25-20

### 2.3-2.7 GHz High Gain Subscriber Antenna

MARS 2.4 GHz Antenna is a wide band antenna designed for LTE, Wi-Fi, LAN, MMDS, WLL and WiMAX applications.

Additional Features:

- Exceptionally efficient performance.
- High gain/size ratio.
- Aesthetic design.
- Weatherized and durable.



### Specifications

#### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	2.3-2.5 @ 19 dBi 2.5-2.7 @ 20 dBi
VSWR, max.	1.8 : 1
Polarization	Linear, Vertical or Horizontal
3 dB Beam-Width, H-Plane, typ.	17°
3 dB Beam-Width, E-Plane, typ.	17°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-35 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	2 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WA25-20	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA- WA25-20B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA35-12

### 3.5 GHz Subscriber Antenna

MARS Small Size Antenna covering the licensed band of 3.5 GHz is designed for LTE, WiFi, WLL and WiMAX applications.

Additional Features:

- High gain/size ratio.
- Small and unobtrusive profile.
- Suitable for both indoor and outdoor applications.



### Specifications

#### Electrical

Frequency range	3.3-3.8 GHz
GAIN, typ.	12 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical or Horizontal (See Ordering Options)
3 dB Beam-Width, H-Plane, typ.	35°
3 dB Beam-Width, E-Plane, typ.	30°
Side Lobes, min.	-11 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-20 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	155 x 155 x 28 mm (6.1" x 6.1" x 1.1")
Weight	250 gr.
Connector	SMA, Female (At the Bottom of the Antenna)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

#### Standard Compliance

ETSI EN 302 085 V1.2.3 – TS1

### Ordering Options

MA-WA35-12	Antenna with SMA Female Connector suited for MNT-4L, MNT-4U or MNT-4G
MA-WA35-12B	Antenna with SMA Female Connector and mount
MA-WA35-12N	Antenna with SMA, Female Connector Suited for MNT-23 (optional wall/pole adjustable mount)
MA-WA35-12NB	Antenna with SMA, Female Connector and mount MNT-23
MA-WA35-12N & MNT-23H	Antenna with SMA Female Connector and MNT-23H for horizontal polarization

Patterns are available on our website

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## MA-WA36-15

### 3.3-3.8 GHz Subscriber Antenna

MARS 3.5 GHz Antenna suited for the licensed 3.5GHz band is specially designed for LTE & WiMAX applications.

Additional Features:

- Aesthetic and unobtrusive profile.
- Suitable for both indoor and outdoor applications.
- Can be customized with customer defined back plane and different connector configurations.



## Specifications

### Electrical

Frequency range	3.3-3.8 GHz
GAIN, min.	15 dBi
VSWR, max.	1.5 : 1
Polarization	Linear
3 dB Beam-Width, H-Plane, typ.	30°
3 dB Beam-Width, E-Plane, typ.	24°
Cross Polarization, max	ETSI EN 302 085 v1.2.3 TS2 Range 1
Front to Back Ratio, max.	ETSI EN 302 085 v1.2.3 TS2 Range 1
Side Lobes, min.	ETSI EN 302 085 v1.2.3 TS2 Range 1
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	231 x 215 x 31 mm (9.1" x 8.4" x 1.2")
Weight	0.5 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 v1.2.3 TS2 Range

## Ordering Options

MA-WA36-15	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA36-15B	Antenna with MNT-22 mount

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## MA-WA35-2X-D

### 3.3-3.8 GHz Subscriber Antenna for LTE & WiMAX Applications

MARS High Gain Diamond shaped Antenna, covering from 3.3 GHz to 3.8 GHz, is specially designed for LTE & WiMAX applications.

Additional Features:

- Diamond shape for very low side lobes level.
- Meets and exceeds ETSI TS2 standards.
- Ruggedized for harsh outdoor condition.
- Customized back plane and different connector configurations.
- Aesthetic and unobtrusive profile.



### Specifications

#### Electrical

Frequency range	3.3-3.8 GHz
GAIN, min.	18 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical (Horizontal with MNT-2 Option)
3 dB Beam-Width, H-Plane, typ.	18°
3 dB Beam-Width, E-Plane, typ.	14°
Side Lobes, min.	-17 dB
Cross Polarization, min.	-17 dB
Front to Back Ratio, min.	-30 dB
Input power, max.	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Weight	840 gr.
Connector	N-Type, Female / Coaxial Cable RD 316 with MCX Connector
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 302 085 V1.2.3 – TS1, TS2

### Ordering Options

MA-WA35-2XD PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA35-2XD MNT	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA35-2XD MNTB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA35-2X

### 3.5 GHz Subscriber Antenna

MARS 3.5 GHz Antenna suited for the licensed 3.5GHz band is specially designed for LTE & WiMAX applications.

Additional Features:

- Aesthetic and unobtrusive profile.
- Suitable for both indoor and outdoor applications.
- Can be customized with customer defined back plane and different connector configurations.



### Specifications

#### Electrical

Frequency range	3.4-3.7 GHz
GAIN, min.	18 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	20°
3 dB Beam-Width, E-Plane, typ.	20.5°
Side Lobes, min.	-18 dB
Cross Polarization, min.	-18 dB
Front to Back Ratio, min.	-40 dB
Input power, max.	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Weight	840 gr.
Connector	N-Type, Female/ SMA/MCX (Other Connector types available on request)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 302 085 V1.2.3 – TS1, TS2

### Ordering Options

MA-WA35-2X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA35-2X MNT	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA35-2X MNTB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA36-19

### 3.3-3.8 GHz Subscriber Antenna

MARS 3.5 GHz Antenna suited for the licensed 3.5GHz band is specially designed for LTE & WiMAX applications.

Additional Features:

- Aesthetic and unobtrusive profile.
- Suitable for both indoor and outdoor applications.
- Can be customized with customer defined back plane and different connector configurations.



### Specifications

#### Electrical

Frequency range	3.3-3.8 GHz
GAIN, min.	3.3-3.7 @ 19 dBi 3.7-3.8 @ 18 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	16°
3 dB Beam-Width, E-Plane, typ.	16°
Cross Polarization, max	ETSI EN 302 085 v1.2.3 TS2 Range 1
Front to Back Ratio, max.	ETSI EN 302 085 v1.2.3 TS2 Range 1
Side Lobes, min.	ETSI EN 302 085 v1.2.3 TS2 Range 1
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Weight	840 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 302 085 v1.2.3 TS2 Range 1

### Ordering Options

MA-WA36-19	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA36-19B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA36-22

### 3.3-3.8 GHz Subscriber Antenna

MARS 3.5 GHz Antenna suited for the licensed 3.5 GHz band is specially designed for LTE & WiMAX applications.

Additional Features:

- Aesthetic and unobtrusive profile.
- Suitable for both indoor and outdoor applications.
- Can be customized with customer defined back plane and different connector configurations.



### Specifications

#### Electrical

Frequency range	3.3-3.8 GHz
GAIN, typ.	22 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	11.5°
3 dB Beam-Width, E-Plane, typ.	11.5°
Cross Polarization, max	ETSI EN 302 085 v1.2.3 TS3 Range 1
Front to Back Ratio, max.	ETSI EN 302 085 v1.2.3 TS3 Range 1
Side Lobes, min.	ETSI EN 302 085 v1.2.3 TS3 Range 1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.6" x 14.6" x 1.5")
Weight	2 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 302 085 v1.2.3 TS3 Range 1

### Ordering Options

MA-WA36-22	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA36-22B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA36-26

### 3.3-3.8 GHz High Gain Subscriber Antenna

MARS Broadband 3.5 GHz High Gain Antenna is designed to provide full coverage for the 3.5 GHz frequency band.

Additional Features:

- Efficient and stable performance.
- Exceptionally high gain/size ratio.
- Durable construction.
- UV protected radome made of polycarbonate suitable for harsh weather installations.



## Specifications

### Electrical

Frequency range	3.3-3.8 GHz
GAIN	26 dBi
VSWR, max.	1.7 : 1
Polarization	Linear Vertical
3 dB Beam-Width, H-Plane, typ.	7.5°
3 dB Beam-Width, E-Plane, typ.	7.5°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-25 dB
Front to Back Ratio, min.	-40 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	600 x 600 x 30 mm (23.5" x 23.5" x 1.2")
Weight	4.5 kg.
Connector	N-Type Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected, Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA36-26	Antenna Suited for MNT-60A (optional wall/pole adjustable mount)
MA-WA36-26B	Antenna with MNT-60A mount

Patterns are available on our website

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## MA-WA48-23

### 4.4-5.1 GHz High Gain Vertical or Horizontal Polarized Antenna

#### Antenna Features:

- Efficient and stable performance.
- High gain/size ratio.
- Light weight and durable construction.
- UV protected radome made of polycarbonate suitable for harsh weather installations.



## Specifications

### Electrical

Frequency range	4.4-5.1 GHz
Gain	23 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical or Horizontal
3 dB Beam-Width, H-Plane, typ.	10°
3 dB Beam-Width, E-Plane, typ.	10°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-35 dB
Port to Port Isolation, typ	-35 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm
Connector	N-Type Female
Weight	1.8 Kg
Mounting	See ordering options
Radome	UV Protected, Polycarbonate
Back Plane	Aluminum protected through chemical passivation

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

### Standard Compliance

ETSI EN 302085 V1.2.3-TS3

## Ordering Options

MA-WA48-23	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA48-23B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA57-3HG1

### 4.9-6.5 GHz Small Size Subscriber Antenna, High Gain

MARS Small Size High Gain Antenna covers the full 5 GHz spectrum band including its unlicensed part.

Additional Features:

- Exceptionally high gain/size ratio.
- Small and unobtrusive profile.
- Suitable for both indoor and outdoor applications.



## Specifications

### Electrical

Frequency range	4.9-6.5 GHz
GAIN, typ.	4.9-5.15 @ 18 dBi 5.15-6.5 @ 19 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical or Horizontal (See Ordering Options)
3 dB Beam-Width, H-Plane, typ.	19.5°
3 dB Beam-Width, E-Plane, typ.	19.5°
Cross Polarization, max	ETSI EN 302 085 v1.2.3 TS2 Range 1
Front to Back Ratio, max.	ETSI EN 302 085 v1.2.3 TS2 Range 1
Side Lobes, min.	ETSI EN 302 085 v1.2.3 TS2 Range 1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	155 x 155 x 28 mm (6.1" x 6.1" x 1.1")
Weight	250 gr.
Connector	See Ordering Options
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WA57-3HG1	Antenna with N-Type, Female Connector Suited for MNT-23 (optional wall/pole adjustable mount)
MA-WA57-3HG1B	Antenna with N-Type, Female Connector and MNT-23 mount
MA-WA57-3HG1 & MNT-23H	Antenna with N-Type, Female Connector and MNT-23H for horizontal polarization
MA-WA57-3HGS1	Antenna with SMA Female Connector suited for MNT-22
MA-WA57-3HGS1B	Antenna with SMA Female Connector and MNT-22 mount

Patterns are available on our website

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## MA-WA47-20

### 4.5-4.9 GHz Broadband Subscriber Antenna

MARS 4.5 GHz Broadband High Gain Antenna covers 4.5-4.9GHz spectrum

Additional Features:

- Exceptionally high gain of 20 dBi over the entire frequency band.
- Light weight and durable construction.
- DC grounded for lightning protection to meet local electrical building codes.
- Antenna has a customized version with an optional enclosure for the customer's OEM radio/CPE.



### Specifications

#### Electrical

Frequency range	4.5-4.9 GHz
GAIN	20 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	11°
3 dB Beam-Width, E-Plane, typ.	14°
Side Lobes, min.	-12 dB
Front to Back Ratio, min.	-35 dB
Cross Polarization, min.	-18 dB
Input power, max	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Weight	840 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WA47-20	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA47-20B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA49-1X

### 4.9-5.4 GHz Subscriber Antenna

MARS 4.9-5.4 GHz Antenna provides a cost effective solution for large scale WLL, UNII and Public Safety applications.

Additional Features:

- Minimum gain of 21 dBi over the entire frequency range.
- Light weight and durable construction.
- UV protected radome suitable for harsh weather installations.
- DC grounded for lightning protection to meet local electrical building codes.



### Specifications

#### Electrical

Frequency range	4.9-5.4 GHz
GAIN, min.	21 dBi
VSWR, max.	1.9 : 1
Polarization	Linear, Horizontal or Vertical
3 dB Beam-Width, H-Plane, typ.	10.5°
3 dB Beam-Width, E-Plane, typ.	10.5°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-24 dB
Front to Back Ratio, min.	-30 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Weight	840 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WA49-1X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA49-1X MNT	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA49-1X MNTB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA58-1X

### 5 GHz Broadband Subscriber Antenna

MARS 5 GHz Broadband High Gain Antenna covers the full 5 GHz spectrum, from lower to higher UNII band, including its unlicensed part.

Additional Features:

- Exceptionally high gain of 23 dBi over the entire frequency band.
- Diamond shape provides the highest range of ETSI standards, up to TS5.
- Light weight and durable construction.
- DC grounded for lightning protection to meet local electrical building codes.

The MARS 5GHz Antenna & Enclosure Solution comprises of Waterproof 5 GHz Broadband Antenna and Weatherproof Enclosure with provisions for Az/EI Mounting device. This solution enables WISP/Integrator to design his own low cost, weatherized subscriber unit, saving high costs of special antenna-radio integration.



### Specifications

#### Electrical

Frequency range	4.9-5.875 GHz	
GAIN, typ.	23 dBi @ 5.15-5.875	21 dBi @ 4.9-5.15
VSWR, max.	1.5 : 1 @ 5.15-5.875	1.9 : 1 @ 4.9-5.15
Polarization	Linear, Vertical	
3 dB Beam-Width, H-Plane, typ.	10.5°	
3 dB Beam-Width, E-Plane, typ.	10.5°	
Side Lobes, min.	-23 dB	
Cross Polarization, min.	-24 dB	
Front to Back Ratio, min.	-30 dB	
Input power, max.	30 Watt	
Input Impedance	50 Ohm	
Lightning Protection	DC Grounded	

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Weight	840 gr.
Connector (without enclosure)	N-Type, Female
Connector (with enclosure)	SMA Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Enclosure - Small	171 x 167 x 68 mm. (External dimension)
Enclosure - Large	287 x 287 x 68 mm. (External dimension)
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

4.9-5.15 GHz ETSI EN 302 085 V1.2.3 - TS1, TS2, TS3
5.15-5.875 GHz ETSI EN 302 085 V1.2.3 - TS1, TS2, TS3, TS4, TS5

### Ordering Options

MA-WA58-1X PM	Antenna with N-Type Female connector with integral Pole Mount includes stainless steel brackets
MA-WA58-1X MNT	Antenna with N-Type Female connector Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA58-1XMNTB	Antenna with N-Type Female connector with MNT-22 mount
MA-WA58-1XSMEZY	Antenna with small enclosure, SMA Connector and MNT-22
MA-WA58-1XSMEZS	Antenna with small enclosure, SMA Connector with PEMs and MNT-22
MA-WA58-1XSMEZY	Antenna with large enclosure, SMA Connector and MNT-22
MA-WA58-1XSMEZL	Antenna with large enclosure, SMA Connector with PEMs and MNT-22

Patterns are available on our website

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## MA-WA58-1XMMES

### 5 GHz Broadband Antenna & Enclosure

MARS 5GHz Antenna & Enclosure Solution comprises of:

- Waterproof 5 GHz Broadband Antenna.
- Weatherproof Enclosure with provisions for Az/EI Mounting device.
- Azimuth/Elevation Adjustable Mount MNT-22.

This solution enables WISP/Integrator to design his own low cost, weatherized subscriber unit, saving high costs of special antenna-radio integration.



### Specifications

#### Electrical

Frequency range	4.9-5.875 GHz
GAIN, typ.	23 dBi @ 5.15-5.875 21 dBi @ 4.9-5.15
VSWR, max.	1.5 : 1 @ 5.15-5.875 1.9 : 1 @ 4.9-5.15
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	10.5°
3 dB Beam-Width, E-Plane, typ.	10.5°
Side Lobes, min.	-23 dB
Cross Polarization, min.	-24 dB
Front to Back Ratio, min.	-30 dB
Input power, max.	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (Diamond Shape, 12" x 12" x 0.6")
Weight	840 gr. (1.5 kg with Enclosure)
Connector	MMCX with RD316 Coaxial Cable/UFL (Other connector types available on request)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Enclosure	171 x 167 x 68 mm. (External dimension)
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25 mm radial (survival)

#### Standard Compliance

4.9-5.15 GHz ETSI EN 302 085 V1.2.3 – TS1, TS2, TS3
5.15-5.875 GHz ETSI EN 302 085 V1.2.3 – TS1, TS2, TS3, TS4, TS5

### Ordering Options

MA-WA58-1XMMES	Antenna Suited for MNT-22
MA-WA58-1XMMESB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA55-27

### 4.9-6.1 GHz Subscriber Antenna

MARS Broadband Antenna designed to provide high gain coverage of the UNII frequency band.

Additional Features:

- Efficient and stable performance.
- Aesthetic and unobtrusive.
- Thin UV protected radome suitable for harsh weather installations.
- Easy mounting allowing Az/EI adjustment.



## Specifications

### Electrical

Frequency range	4.9-6.1 GHz
GAIN. typ	26 dBi
VSWR, max.	4.9-5.875 @ 1.7 : 1 5.875-6.1 @ 2 : 1
Polarization	Linear, Vertical or Horizontal
3 dB Beam-Width, H-Plane, typ.	7.5°
3 dB Beam-Width, E-Plane, typ.	7.5°
Side Lobes, min.	ETSI TS3, TS4, TS5
Cross Polarization, min.	ETSI TS3, TS4, TS5
Front to Back Ratio, min.	ETSI TS3, TS4, TS5
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x 14.5" x 1.6")
Weight	1.6 kg.
Connector	N-Type Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA55-27	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA55-27B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA55-30

### 4.9-6.1 GHz High Gain Subscriber Antenna

MARS Broadband High Gain Antenna covers the full 5GHz spectrum, from lower to higher UNII band, including its unlicensed part.

Additional Features:

- Exceptionally high gain over the entire frequency band.
- UV protected radome suitable for harsh weather installations.
- Highest range of ETSI standards - TS3, TS4, TS5.
- Easy mounting allowing Az/EI adjustment.



## Specifications

### Electrical

Frequency range	4.9-6.1 GHz	
GAIN, typ.	4.9-5.15 & 5.875-6.1 @ 29 dBi	5.15-5.875 @ 30 dBi
VSWR, max.	1.7 : 1 @ 4.9-5.875	1.9 : 1 @ 5.875-6.1
Polarization	Linear, Vertical or Horizontal	
3 dB Beam-Width, H-Plane, typ.	5°	
3 dB Beam-Width, E-Plane, typ.	5°	
Side Lobes, min.	ETSI TS3, TS4, TS5	
Cross Polarization, min.	ETSI TS3, TS4, TS5	
Front to Back Ratio, min.	ETSI TS3, TS4, TS5	
Input power, max.	50 Watt	
Input Impedance	50 Ohm	
Lightning Protection	DC Grounded	

### Mechanical

Dimensions (HxWxD)	600 x 600 x 30 mm (23.5" x 23.5" x 1.2")
Weight	4.5 kg.
Connector	N-Type Female
Back Plane	Aluminum ; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA55-30	Antenna Suited for MNT-60A (optional wall/pole adjustable mount)
MA-WA55-30B	Antenna with MNT-60A mount

Patterns are available on our website

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## MA-WA62-30

### 4.9-6.5 GHz High Gain Subscriber Antenna

MARS High Gain Broadband Antenna covers the **full** 5GHz and 6GHz spectrum.

#### Antenna Features:

- Exceptionally high gain over the entire frequency band.
- Efficient and stable performance.
- High gain.
- Durable construction.
- UV protected radome made of polycarbonate.



## Specifications

### Electrical

Frequency range	4.9-6.5 GHz		
GAIN, typ.	4.9-5.15 GHz 28.5 dBi	5.15-5.875 GHz 29 dBi	5.875-6.5 GHz 30 dBi
VSWR, max.	1.8 : 1 @ 4.9-5.3 GHz 1.7 : 1 @ 5.3-6.5 GHz		
Polarization	Linear ,Vertical		
3 dB Beam-Width, H-Plane, typ.	4.5°		
3 dB Beam-Width, E-Plane, typ.	4.5°		
Side Lobes, min.	-12 dB		
Cross Polarization, typ.	-29 dB		
Front to Back Ratio, min.	-40 dB		
Input power, max.	10 Watt		
Input Impedance	50 Ohm		
Lightning Protection	DC Grounded		

### Mechanical

Dimensions (HxWxD)	600 x 600 x 30 mm (23.5" x 23.5" x 1.2")
Weight	4.5 kg
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11

## Ordering Options

MA-WA62-30	Antenna Suited for MNT-60A (optional wall/pole adjustable mount)
MA-WA62-30B	Antenna with MNT-60A mount

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## MA-WA62-22

### 6 GHz Broadband Subscriber Antenna

MARS 6 GHz Broadband High Gain Antenna covers newly approved 5.7-6.425 GHz band.

Additional Features:

- Exceptionally high gain.
- Light weight and durable construction.
- DC grounded for lightning protection.
- Easy mounting allowing Az/EI adjustment.
- UV protected radome suitable for harsh environment installations.



### Specifications

#### Electrical

Frequency range	5.7-6.425 GHz
GAIN, min.	22 dBi @ 6-6.425 GHz 20 dBi @ 5.7-6 GHz
VSWR, max.	1.5 : 1 @ 6-6.425 GHz 1.8 : 1 @ 5.7-6 GHz
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	9.5°
3 dB Beam-Width, E-Plane, typ.	11°
Side Lobes, min.	-13 dB
Front to Back Ratio, min.	-30 dB
Cross Polarization, min.	-17 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Weight	840 gr.
Connector	N-Type, Female (SMA Female Right Angle optional)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WA62-22	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA62-22B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WA61-25

### 6 GHz Broadband Subscriber Antenna

MARS 6 GHz Broadband High Gain Antenna covers newly approved 5.4-6.5 GHz band.

Additional Features:

- Exceptionally high gain.
- Light weight and durable construction.
- DC grounded for lightning protection.
- Easy mounting allowing Az/EI adjustment.
- UV protected radome suitable for harsh environment installations.



### Specifications

#### Electrical

Frequency range	5.4-6.5 GHz
GAIN, typ.	25 dBi
VSWR, max.	2 : 1 @ 5.4-5.7 GHz 1.7 : 1 @ 5.7-6.5 GHz
Polarization	Linear, Vertical or Horizontal
3 dB Beam-Width, H-Plane, typ.	9°
3 dB Beam-Width, E-Plane, typ.	9°
Side Lobes, min.	-12 dB
Front to Back Ratio, min.	-30 dB
Cross Polarization, min.	-20 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Weight	840 gr.
Connector (without enclosure)	N-Type, Female
Connector (with enclosure)	SMA Female Right Angle
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Enclosure - Small	171 x 167 x 68 mm. (External dimension)
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 302 085 V1.2.3 – TS1

### Ordering Options

MA-WA61-25	Antenna with N-Type connector suited for MNT-22 (optional wall/pole adjustable mount)
MA-WA61-25B	Antenna with N-Type connector with MNT-22 mount
MA-WA61-25SMES	Antenna with small enclosure, SMA RA Connector and MNT-22

Patterns are available on our website

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## MA-WO7402700-5

### 740MHz - 2700MHz Multi Band Omni Directional Base Station Antenna

MARS Dual Band Base Station Antenna provides a cost effective solution for GSM 900/1800, LTE, WLL, WLAN, ISM, WiMAX, Point-to-Point and Point-to-Multi Point applications as well as MESH networks.  
UV protected radome suitable for harsh environment installations.  
Antenna features stable and efficient performance with up to 6 dBi of gain.



### Specifications

#### Electrical

Frequency range	740-960 MHz	1710-2700 MHz
GAIN, typ.	4 dBi	6 dBi
VSWR,	1.5 : 1 (typ) 2 : 1 (max)	
Polarization	Linear, Vertical	
3 dB Beam-Width, H-Plane, typ.	Omni Directional	
3 dB Beam-Width, E-Plane, typ.	35°	
Input power, max	50 Watt	
Lightning Protection	DC Grounded	
Input Impedance	50 Ohm	

#### Mechanical

Dimensions (HxDia.)	470 x 66 mm (18.5" x 2.5")
Weight	350 gr.
Connector	N-Type, Female
Radome	UV Protected Plastic
Mount	2.5" PM (End) Attachment

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

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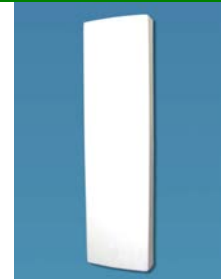
## MA-WC90-5X

### 915 MHz Base Station Antenna, 60°

MARS 915 MHz Base Station Antenna provides a robust and efficient solution for the Point-to-Multipoint systems based on the ISM 915 MHz band.

Additional Features:

- 60° azimuthally coverage.
- Suitable for harsh environment installations.
- DC grounded.
- Easy mounting allowing obtaining required down tilt degree with the optional MNT-25 mount.



### Specifications

#### Electrical

Frequency range	902-928 MHz
GAIN, min.	14.5 dBi
VSWR, max.	1.7 : 1
Polarization	Vertical
3 dB Beam-Width, Horizontal Plane, typ.	60°
3 dB Beam-Width, Elevation Plane, typ.	15°
Side Lobes, min.	-14 dB
Cross Polarization, min.	-23 dB
Front to Back Ratio, min.	-23 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	1200 x 330 x 105 mm (47.2" x 13" x 4.1")
Weight	4.5 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WC90-5X	Antenna Suited for MNT-25 (optional tilt mount)
MA-WC90-5XB	Antenna with MNT-25 mount

Patterns are available on our website

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## MA-WD90-6X

### 915 MHz Base Station Antenna, 90°

MARS 915 MHz Base Station Antenna provides a robust and efficient solution for the Point-to-Multi-point systems based on the ISM 915 MHz band.

Additional Features:

- 90° azimuthal coverage.
- Suitable for harsh environment installations.
- DC grounded.
- Easy mounting allowing obtaining required down tilt degree with the optional MNT-25 mount.



## Specifications

### Electrical

Frequency range	902-928 MHz
GAIN, min.	13 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, Horizontal Plane, typ.	90°
3 dB Beam-Width, Elevation Plane, typ.	15°
Side Lobes, min.	-11 dB
Cross Polarization, min.	-13 dB
Front to Back Ratio, min.	-23 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	1200 x 330 x 105 mm (47.2" x 13" x 4.1")
Weight	4.5 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WD90-6X	Antenna Suited for MNT-25 (optional tilt mount)
MA-WD90-6XB	Antenna with MNT-25 mount

Patterns are available on our website

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## MA-WE90-7X

### 915 MHz Base Station Antenna, 120°

MARS 915 MHz Base Station Antenna provides a robust and efficient solution for the Point-to-Multipoint systems based on the ISM 915 MHz band.

Additional Features:

- 120° azimuthal coverage.
- Suitable for harsh environment installations.
- DC grounded.
- Easy mounting allows to obtain required down tilt degree with the optional MNT-25 mount.



## Specifications

### Electrical

Frequency range	902-928 MHz
GAIN, min.	11.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, Horizontal Plane, typ.	120°
3 dB Beam-Width, Elevation Plane, typ.	15°
Side Lobes, min.	-11 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-18 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	1200 x 330 x 105 mm (47.2" x 13" x 4.1")
Weight	4.5 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WE90-7X	Antenna Suited for MNT-25 (optional tilt mount)
MA-WE90-7XB	Antenna with MNT-25 mount

Patterns are available on our website

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## MA-WC91-5H

### 915 MHz Horizontally Polarized Sector Antenna, 60°

MARS 60°Horizontally Polarized Sector Antenna provides a robust and efficient solution for Point-to-Multi-Point applications using 915 MHz band, in spectrally crowded areas in this band.

Antenna Features:

- Stable and reliable performance for high interference environments.
- Features horizontal polarization with 14 dBi of gain.
- Light-weight and durable construction.
- Suitable for harsh environment installations.
- DC grounded.
- Easy mounting allowing obtaining required down tilt degree with the optional MNT-25 mount.



### Specifications

<i>Electrical</i>	
Frequency range	902-928 MHz
GAIN, min.	14 dBi
VSWR, max.	1.7 : 1
Polarization	Horizontal
3 dB Beam-Width, Horizontal Plane, typ.	60°
3 dB Beam-Width, Elevation Plane, typ.	15°
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	1200 x 330 x 105 mm (47.2" x 13" x 4.1")
Weight	4 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-25
<i>Environmental</i>	
Operating Temperature Range	-40°C to +70°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WC91-5H	Antenna Suited for MNT-25 (optional tilt mount)
MA-WC91-5HB	Antenna with MNT-25 mount

Patterns are available on our website

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## MA-WD91-6H

### 915 MHz Horizontally Polarized Sector Antenna, 90°

MARS 90° Horizontally Polarized Sector Antenna provides a robust and efficient solution for Point-to-Multi-Point applications using 915 MHz band, in spectrally crowded areas in this band.

Antenna Features:

- Stable and reliable performance for high interference environments.
- Features horizontal polarization with 12 dBi of gain.
- Light-weight and durable construction.
- Suitable for harsh environment installations.
- DC grounded.
- Easy mounting allowing obtaining required down tilt degree with the optional MNT-25 mount.



## Specifications

### Electrical

Frequency range	902-928 MHz
GAIN, min.	12 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Horizontal
3 dB Beam-Width, Horizontal Plane, typ.	90°
3 dB Beam-Width, Elevation Plane, typ.	15°
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	1200 x 330 x 105 mm (47.2" x 13" x 4.1")
Weight	4 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +70°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WD91-6H	Antenna Suited for MNT-25 (optional tilt mount)
MA-WD91-6HB	Antenna with MNT-25 mount

Patterns are available on our website

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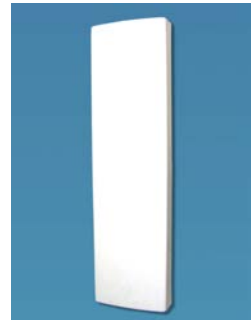
## MA-WE91-7H

### 915 MHz Horizontally Polarized Sector Antenna, 120°

MARS 120° Horizontally Polarized Sector Antenna provides a robust and efficient solution for Point-to-Multi-Point applications using 915 MHz band, in spectrally crowded areas in this band.

Antenna Features:

- Stable and reliable performance for high interference environments.
- Features horizontal polarization with 11 dBi of gain.
- Light-weight and durable construction.
- Suitable for harsh environment installations.
- DC grounded.
- Easy mounting allowing obtain required down tilt degree with the optional MNT-25 mount.



### Specifications

#### Electrical

Frequency range	902-928 MHz
GAIN, min.	11 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Horizontal
3 dB Beam-Width, Horizontal Plane, typ.	120°
3 dB Beam-Width, Elevation Plane, typ.	15°
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	1200 x 330 x 105 mm (47.2" x 13" x 4.1")
Weight	4.5 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +70°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WE91-7H	Antenna Suited for MNT-25 (optional tilt mount)
MA-WE91-7HB	Antenna with MNT-25 mount

Patterns are available on our website

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## MA-WO91-8X

### 902-928 MHz Omni-Directional Antenna

MARS ISM Omni - Directional Antenna is a ruggedized model suitable for outdoor installations on end of tower / spike poles.

UV protected radome allowing harsh environment installations.

Antenna features stable and efficient performance with 8 dBi of gain.



### Specifications:

#### Electrical

Frequency range	902-928 MHz
GAIN, min.	8 dBi
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni directional
3 dB Beam-Width, E-Plane, typ.	14°
Input power, max.	10 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxDiameter)	1350 x 64 mm (53" x 2.5")
Weight	900 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	2.5" Pole Mount Attachment

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

Patterns are available on our website

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## MA-WC19-5X

### 1.85–2.05 GHz Sector Antenna, 60°

MARS 60° Sector Antenna is light-weight yet has a robust and durable construction. UV protected radome makes the antenna suitable for harsh environment installations.

Typical Applications:

- Point-to-Multi-Point Systems.
- WLL applications.
- MMDS.
- ISM applications.



## Specifications

### Electrical

Frequency range	1.85-2.05 GHz
GAIN, min.	15 dBi
VSWR, max.	1.7 : 1
Polarization	Vertical
3 dB Beam-Width, Horizontal Plane, typ.	60°
3 dB Beam-Width, Elevation Plane, typ.	10°
Side Lobes, min.	-11 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-20 dB
Input power, max.	5 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	812 x 122 x 58 mm (32" x 4.8" x 2.3")
Weight	1.2 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WC19-5X	Antenna Suited for MNT-5A
MA-WC19-5XB	Antenna with MNT-5A mount

Patterns are available on our website

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## MA-WC24-14

### 2.3-2.7 GHz Base Station Antenna, 60°

MARS 60° Base Station Antenna with 14 dBi of gain is light-weight yet has a robust and durable construction.

Antenna Features:

- Quick and easy installation.
- Small, aesthetic and unobtrusive radome.
- Easily adapted to any RF connector
- Easy mounting allows obtaining required down tilt degree.

Applications:

- Point-to-Multi-Point Systems.
- WLL applications.
- MMDS.
- ISM applications.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz
GAIN, min.	14 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	14°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-22 dB
Front to Back Ratio, min.	-22 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	380 x 150 x 80 mm (15" x 5.9" x 3.1" - including side wings)
Weight	0.5 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WC24-14	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WC24-14B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WD24-13

### 2.3-2.7 GHz Base Station Antenna, 90°

MARS 90° Base Station Antenna has a lightweight and durable construction.

Additional Features:

- Compact Size.
- Quick and easy installation.
- Adjustable Tilt (with optional mount MNT-22).

Applications:

- Point-to-Multi-Point Applications.
- WLL Applications.
- MMDS.
- ISM Applications.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz
GAIN, min.	13 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	15°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-22 dB
Front to Back Ratio, min.	-20 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	380 x 75 x 80 mm (15" x 3" x 3.1")
Weight	0.5 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WD24-13	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD24-13B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WE24-11

### 2.3-2.7 GHz Base Station Antenna, 120°

MARS 120° Base Station Antenna has a lightweight and durable construction.

Additional Features:

- Compact Size.
- Quick and easy installation.
- Adjustable Tilt (with optional mount MNT-22).

Applications:

- Point-to-Multi-Point Applications.
- WLL Applications.
- MMDS.
- ISM Applications.



## Specifications

### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	11.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	15°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-22 dB
Front to Back Ratio, min.	-17 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	380 x 75 x 80 mm (15" x 3" x 3.1")
Weight	0.5 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WE24-11	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WE24-11B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WC24-17

### 2.3-2.7 GHz Base Station Antenna, 60°

MARS 60° Base Station Antenna with 17 dBi of gain is light-weight yet has a robust and durable construction.

Antenna Features:

- Quick and easy installation.
- Small, aesthetic and unobtrusive radome.
- Easily adapted to any RF connector.
- Easy mounting allowing obtaining required down tilt degree.

Applicable Applications:

- Point-to-Multi-Point Systems.
- WLL applications.
- MMDS.
- ISM applications.



### Specifications

#### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	17 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-24 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	800 x 120 x 65 mm (31.5" x 4.7" x 2.6")
Weight	1.2 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 301 525 v1.1.1

### Ordering Options

MA-WC24-17	Antenna Suited for MNT-5A (optional wall/pole adjustable mount)
MA-WC24-17B	Antenna with MNT-5A mount

Patterns are available on our website

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## MA-WD24-15

### 2.3-2.7 GHz Base Station Antenna, 90°

MARS 90° Base Station Antenna with 15.5 dBi of gain is light-weight yet has a robust and durable construction.

Antenna Features:

- Quick and easy installation.
- Small, aesthetic and unobtrusive radome.
- Easily adapted to any RF connector.
- Easy mounting allowing obtaining required down tilt degree.

Applicable Applications:

- Point-to-Multi-Point Systems.
- WLL applications.
- MMDS.
- ISM applications.



### Specifications

#### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	15.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-24 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	800 x 120 x 65 mm (31.5" x 4.7" x 2.6")
Weight	1.2 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	MNT-5

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 301 525 v1.1.1

### Ordering Options

MA-WD24-15	Antenna Suited for MNT-5A (optional wall/pole adjustable mount)
MA-WD24-15B	Antenna with MNT-5A mount

Patterns are available on our website

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## MA-WE24-14

### 2.3-2.7 GHz Base Station Antenna, 120°

MARS 120° Base Station Antenna with 14.5 dBi of gain is light-weight yet has a robust and durable construction. Available also for heavy duty.

Antenna Features:

- Quick and easy installation.
- Small, aesthetic and unobtrusive radome.
- Easily adapted to any RF connector.
- Easy mounting allowing obtaining required down tilt degree.

Applicable Applications:

- Point-to-Multi-Point Systems
- For WLL applications
- MMDS
- ISM applications



### Specifications

#### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	14.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-24 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	800 x 120 x 65 mm (31.5" x 4.7" x 2.6")
Weight	1.2 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 301 525 v1.1.1

### Ordering Options

MA-WE24-14	Antenna suited for MNT-5A (optional mount)
MA-WE24-14B	Antenna with MNT-5A mount
MA-WE24-14SB	Antenna heavy duty with MNT-5A mount

Patterns are available on our website

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## MA-WC24-6H

### 2.4-2.5 GHz Horizontally Polarized Sector Antenna, 60°

MARS 60°Horizontally Polarized Sector Antenna provides a cost effective solution for WLL, MMDS and Point-to-Multi-Point applications, in spectrally crowded areas.

#### Antenna Features:

- High discrimination of V-pol signals.
- It features horizontal polarization with 17 dBi of gain.
- Antenna is light-weight and has durable construction.
- UV protected radome suitable for harsh environment installations.
- DC grounded.
- Easy mounting allowing obtaining required down tilt degree.



### Specifications

#### Electrical

Frequency range	2.4-2.5 GHz
GAIN, min.	17 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Horizontal
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	-17 dB
Cross Polarization, min.	-24 dB
Front to Back Ratio, min.	-27 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	810 x 120 x 60 mm (32" x 4.7" x 2.3")
Weight	1.1 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 301 525 V1.1.1 – CS

### Ordering Options

MA-WC24-6H	Antenna Suited for MNT-5A
MA-WC24-6HB	Antenna with MNT-5A mount

Patterns are available on our website

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## MA-WD24-6H

### 2.4-2.5 GHz Horizontally Polarized Sector Antenna, 90°

MARS 90°Horizontally Polarized Sector Antenna provides a cost effective solution for WLL, MMDS and Point-to-Multi-Point applications, in spectrally crowded areas in this band.

Antenna Features:

- High discrimination of V-pol signals.
- It features horizontal polarization with min. 15 dBi of gain.
- Antenna is light-weight and has durable construction.
- UV protected radome suitable for harsh environment installations.
- DC grounded.
- Easy mounting allowing obtaining required down tilt degree.



### Specifications

#### Electrical

Frequency range	2.4-2.5 GHz
GAIN, min.	15 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Horizontal
3 dB Beam-Width, Horizontal Plane, typ.	90°
3 dB Beam-Width, Elevation Plane, typ.	8°
Side Lobes, min.	-17 dB
Cross Polarization, min.	-22 dB
Front to Back Ratio, min.	-22 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	810 x 120 x 60 mm (32" x 4.7" x 2.3")
Weight	1.1 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WD24-6H	Antenna Suited for MNT-5A (optional mount)
MA-WD24-6HB	Antenna with MNT-5A mount

Patterns are available on our website

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## MA-DBO2458-6

### 2.3-2.7 GHz & 4.9-6.0 GHz Dual Band Omni Antenna

MARS Dual Band Omni antenna provides coverage of 2.3 to 2.7 GHz & 4.9 to 6.0 GHz in a single antenna radome.

Additional Features:

- Simultaneous coverage of LTE & 802.11 a, b, e, g, n, WiMAX & 4.9 GHz Public Safety Bands.
- Light weight and durable construction.
- UV protected radome.



### Specifications

#### Electrical

Frequency range	2.3-2.7 GHz & 4.9-6.0 GHz
GAIN, typ.	4 dBi @ 2.3-2.7 GHz 5 dBi @ 2.4-2.5 GHz 7 dBi @ 4.9-6.0 GHz
VSWR, max.	2 : 1
Polarization	Linear Vertical
Input power, max.	10 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxDia.)	210 x 28.5 mm (8.3" x 1.1")
Connector	See Ordering Options
Weight	90 gr.
Radom	UV Protected Plastic
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +70°C
Vibration	According to IEC 60721-3-4
Water Proofing	IP-67
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

### Ordering Options

MA-DBO2458-6	Antenna with RP N-Type Plug connector
MA-DBO2458-6NF	Antenna with N-Type Female connector
MA-DBO2458-6NM	Antenna with N-Type Male connector
MA-DBO2458-6NF1	Antenna with N-Type Female connector with mount

Patterns are available on our website

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## MA-WO25-9

### 2.3-2.7 GHz Omni – Directional Base Station Antenna

MARS 2.4 GHz Base Station Antenna provides a cost effective solution for large scale WLL, WLAN, ISM and Point-to-Multi Point applications. UV protected radome suitable for harsh environment installations. Antenna features stable and efficient performance with 9 dBi of gain.



### Specifications

#### Electrical

Frequency range	2.3-2.7 GHz
GAIN, typ.	9 dBi
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni - Directional
3 dB Beam-Width, E-Plane, typ.	10°
Input power, max.	50 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxDia.)	640 x 76mm (25" x 3")
Weight	660 gr.
Connector	N-Type, Female
Radome	UV Protected Plastic
Mount	Pole Mount

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WO25-9	Antenna suited for pole mount
MA-WO25-9S	Antenna heavy duty suited for pole mount

Patterns are available on our website

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## MA-WC36-17

### 3.3-3.8 GHz Sector Antenna for LTE & WiMAX Applications, 70°

MARS 70° Base Station Antenna is light-weight yet has a robust and durable construction.

Additional Features:

- Specially designed for LTE & WiMAX applications.
- Quick and easy installation.
- Easy mounting allowing obtaining required down tilt.
- Suitable for harsh environment installations.
- DC grounded.

Applications:

- Licensed band applications.
- Point-to-Multi Point Applications.
- WLL applications.



## Specifications

### Electrical

Frequency range	3.3-3.8 GHz
GAIN, typ.	16.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	70°
3 dB Beam-Width, E-Plane, typ.	9°
Side Lobes, min.	ETSI EN 302 085 V1.2.3-CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3-CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3-CS1
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	573 x 95 x 53 mm (22.6" x 3.7" x 2.1")
Weight	700 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

## Ordering Options

MA-WC36-17	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WC36-17B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WD36-16

### 3.3-3.8 GHz Sector Antenna for WiMAX Applications, 90°

MARS 90° Base Station Antenna is light-weight with a robust and durable construction.

Additional Features:

- Specially designed for WiMAX applications.
- Quick and easy installation.
- Easy mounting allowing obtaining required down tilt.
- Suitable for harsh environment installations.
- DC grounded.

Applications:

- WiMAX – licensed band applications.
- Point-to-Multi Point Applications.
- WLL applications.



## Specifications

### Electrical

Frequency range	3.3-3.8 GHz
GAIN, typ.	15.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	9°
Side Lobes, min.	ETSI EN 302 085 V1.2.3-CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3-CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3-CS1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	573 x 95 x 53 mm (22.6" x 3.7" x 2.1")
Weight	700 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

## Ordering Options

MA-WD36-16	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD36-16B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WE36-15

### 3.3-3.8 GHz Sector Antenna for LTE & WiMAX Applications, 120°

MARS 120° Base Station Antenna is light-weight yet has a robust and durable construction.

Additional Features:

- Specially designed for LTE & WiMAX applications.
- Quick and easy installation.
- Easy mounting allowing obtaining required down tilt.
- Suitable for harsh environment installations.
- DC grounded.

Applications:

- Licensed band applications.
- Point-to-Multi Point Applications.
- WLL applications.



## Specifications

### Electrical

Frequency range	3.3-3.8 GHz
GAIN, typ.	14.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	9°
Side Lobes, min.	ETSI EN 302 085 V1.2.3-CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3-CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3-CS1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	573 x 95 x 53 mm (22.6" x 3.7" x 2.1")
Weight	700 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

## Ordering Options

MA-WE36-15	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WE36-15B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WD35-14H

### 3.4-3.6 GHz Horizontally Polarized Sector Antenna, 90°

MARS Horizontally Polarized Sector Antenna provides a cost effective solution for WLL, WiMAX and Point-to-Multi-Point applications, in spectrally crowded areas in this band.

Antenna Features:

- Efficient and reliable performance.
- It features horizontal polarization with 14 dBi of gain.
- Antenna is light-weight and has durable construction.
- UV protected radome suitable for harsh environment installations.
- DC grounded.
- Easy mounting allowing obtaining required down tilt degree.



## Specifications

### Electrical

Frequency range	3.4-3.6 GHz
GAIN, min.	14 dBi
VSWR, max.	1.5 : 1
Polarization	Horizontal
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	9°
Side Lobes, min.	-14 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-18 dB
Input power, max.	5 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	554 x 76 x 55 mm (21.8" x 3" x 2.2")
Weight	620 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

## Ordering Options

MA-WD35-14H	Antenna Suited for MNT-1A (optional mount)
MA-WD35-14HB	Antenna with MNT-1A mount

Patterns are available on our website

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## MA-WO36-10N

### 3.3-3.8 GHz Omni Directional Base Station Antenna

MARS 3.5 GHz Base Station Antenna provides a cost effective solution for large scale LTE, WLL, WLAN, ISM, WiMAX, Point-to-Multi Point Systems and MESH Networks licensed applications.  
 UV protected radome suitable for harsh environment installations.  
 Antenna features stable performance with up to 9.5 dBi of gain.



### Specifications

#### Electrical

Frequency range	3.3-3.8 GHz
GAIN, typ.	9.5 dBi @ 3.4-3.8 GHz 9 dBi @ 3.3-3.4 GHz
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	10°
Input power, max	50 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxDia.)	470 x 66 mm (18.5" x 2.5")
Weight	350 gr.
Connector	N-Type, Female
Radome	UV Protected Polycarbonate
Mount	2.5" PM (End) Attachment

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

Patterns are available on our website

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## MA-WC55-17

### 5 GHz Base Station Antenna, 60°

MARS 60° Broadband Sector Antenna provides a cost effective solution for large scale of WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to- Multi-Point applications.

Additional Features:

- Efficient and stable performance with 17 dBi of gain.
- Small size allowing easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



### Specifications

#### Electrical

Frequency range	4.9-6.1 GHz
GAIN, typ.	17 dBi
VSWR, max.	1.8 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3 – CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3 – CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3 – CS1
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	573 x 95 x 53 mm (22.6" x 3.7" x 2.1")
Weight	700 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

### Ordering Options

MA-WC55-17	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WC55-17B	Antenna with MNT-22 mount

Patterns are available on our website

Mars Antennas & RF Systems proprietary information

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## MA-WD55-16

### 5 GHz Base Station Antenna, 90°

MARS 90° Broadband Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to-Multi-Point applications.

Additional Features:

- Stable performance with 16 dBi of gain.
- Small size allowing easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



### Specifications

#### Electrical

Frequency range	4.9-6.1 GHz
GAIN, typ.	16 dBi
VSWR, max.	1.8 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3 – CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3 – CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3 – CS1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	573 x 95 x 53 mm (22.6" x 3.7" x 2.1")
Weight	700 gr.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

### Ordering Options

MA-WD55-16	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD55-16B	Antenna with MNT-22 mount

Patterns are available on our website

Mars Antennas & RF Systems proprietary information

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## MA-WE55-15

### 4.9-6.1 GHz Base Station Antenna, 120°

MARS 120° Broadband Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, and Point-to-Multi-Point applications.

Additional Features:

- Stable performance with 15 dBi of gain.
- Small size allowing easy blending with any environment.
- Pole mount allowing quick and easy installation and tilting adjustment.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	4.9-6.1 GHz
GAIN, typ.	15 dBi
VSWR, max.	1.8 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3 – CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3 – CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3 – CS1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	573 x 95 x 53 mm (22.6" x 3.7" x 2.1")
Weight	700 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

## Ordering Options

MA-WE55-15	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WE55-15B	Antenna with MNT-22 mount

Patterns are available on our website

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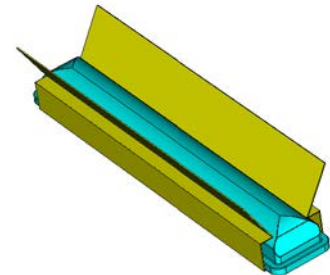
## MA-WB55-20

### 5 GHz Base Station Antenna, 30°

MARS 30° Broadband Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to-Multi-Point applications.

Additional Features:

- Stable performance with 20 dBi of gain.
- Small size allowing easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



### Specifications

#### Electrical

Frequency range	4.9-6.1 GHz
GAIN, typ.	20 dBi
VSWR, max.	1.8 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	30°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3 – CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3 – CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3 – CS1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxL)	573 x 120 x 115 mm (22.6" x 4.7" x 4.5")
Weight	1 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

### Ordering Options

MA-WB55-20	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WB55-20B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WC55-18H

### 5.5 GHz Horizontal Polarization Base Station Antenna, 65°

MARS 65° Broadband Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to-Multi-Point applications.

Additional Features:

- Stable performance with 18 dBi of gain.
- Small size allowing easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	4.9-6.1 GHz
GAIN, typ.	18 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Horizontal
3 dB Beam-Width, H-Plane, typ.	65°
3 dB Beam-Width, E-Plane, typ.	5°
Side Lobes, min.	ETSI EN 302 085 V1.2.3 – CS2
Cross Polarization, min.	ETSI EN 302 085 V1.2.3 – CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3 – CS2
Input power, max.	20 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	573 x 95 x 53 mm (22.6" x 3.7" x 2.1")
Weight	600 gr.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1 / CS2

## Ordering Options

MA-WC55-18H	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WC55-18HB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WD55-17H

### 5.5 GHz Horizontal Polarization Base Station Antenna, 90°

MARS 90° Broadband Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to-Multi-Point applications.

Additional Features:

- Stable performance with 17 dBi of gain.
- Small size allowing for easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	4.9-6.1 GHz
GAIN, typ.	17 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Horizontal
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	5°
Side Lobes, min.	ETSI EN 302 085 V1.2.3 – CS2
Cross Polarization, min.	ETSI EN 302 085 V1.2.3 – CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3 – CS2
Input power, max.	20 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	573 x 95 x 53 mm (22.6" x 3.7" x 2.1")
Weight	600 gr.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1 / CS2

## Ordering Options

MA-WD55-17H	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD55-17HB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WO55-10NH

### 4.9-5.875 GHz Omni – Directional Base Station Antenna

MARS 5.8 GHz Base Station Antenna provides a cost effective solution for large scale WLL, WLAN, ISM and Point-to-Multi Point applications.

UV protected radome suitable for harsh environment installations.

Antenna features stable performance with exceptional 10 dBi of gain.

Applications:

- MESH Networks.
- Point-to-Point Applications.



### Specifications

#### Electrical

Frequency range	4.9-5.875 GHz
GAIN, typ.	10 dBi
VSWR, max.	4.9-5.15 GHz @ 2 : 1 5.15-5.875 GHz @ 1.8 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni - Directional
3 dB Beam-Width, E-Plane, typ.	10°
Input power, max.	10 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxDia.)	315 x 40 mm (12.4" x 1.6")
Weight	210 gr.
Connector	N-Type, Female / N-Type, Male (optional)
Radome	UV Protected Polycarbonate
Mount	2" PM (End) Attachment

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WO55-10NH	Antenna with N-Type, Female Connector
MA-WO55-10NHM	Antenna with N-Type, Male Connector

Patterns are available on our website

Mars Antennas & RF Systems proprietary information

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## MA-WC58-5EL

### 5.8 GHz Sector Antenna, 60° (meets UK Interference Requirements (IR) 2007)

MARS 60° Sector Antenna provides a cost effective solution for WLL, ISM and Point-to-Multi-Point applications.

Additional Features:

- Efficient and stable performance with 16 dBi of gain.
- Small size allowing easy blending with any environment.
- Pole mount allowing quick and easy installation and tilting adjustment.
- UV protected radome suitable for harsh environment installations

**\*UK Product Only**



## Specifications

### Electrical

Frequency range	5.725-5.875 GHz		
GAIN, min.	16 dBi		
VSWR, max.	1.7 : 1		
Polarization	Linear, Vertical		
3 dB Beam-Width, H-Plane, typ.	60°		
3 dB Beam-Width, E-Plane, typ.	7.5°; Elevation Mask at Horizon per "UK Interference Requirements 2007", as Follows:		
	<u>Co-Polar</u>	<u>Angle</u>	<u>Relative Gain</u>
	P0	0°	0 dB
	P1	4°	0 dB
	P2	28°	-28.8 dB
	P3	180°	-28.8 dB
Cross Polarization, min.	-14 dB		
Front to Back Ratio, min.	-28.8 dB		
Input power, max.	5 Watt		
Input Impedance	50 Ohm		
Lightning Protection	DC Grounded		

### Mechanical

Dimensions (HxWxD)	554 x 76 x 53 mm (21.8" x 3" x 2.1")
Weight	740 gr.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	MNT-1

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1
UK Radio Interface Requirement 2007 (Ver. 1.00)

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## MA-WE58-7EL

### 5.8 GHz Sector Antenna, 120° (meets UK Interference Requirements (IR) 2007)

MARS 120° Sector Antenna provides a cost effective solution for WLL, ISM and Point to Multi Point applications.

Additional Features:

- Stable performance with 16 dBi of gain.
- Small size allowing easy blending with any environment.
- Pole mount allowing quick and easy installation and tilting adjustment.
- UV protected radome suitable for harsh environment installations.

**\*UK Product Only**



## Specifications

### Electrical

Frequency range	5.725-5.875 GHz		
GAIN, min.	14 dBi		
VSWR, max.	1.7 : 1		
Polarization	Linear, Vertical		
3 dB Beam-Width, H-Plane, typ.	120°		
3 dB Beam-Width, E-Plane, typ.	7.5°; Elevation Mask at Horizon per “UK Interference Requirements 2007”, as Follows:		
	<u>Co-Polar</u>	<u>Angle</u>	<u>Relative Gain</u>
	P0	0°	0 dB
	P1	4°	0 dB
	P2	28°	-28.8 dB
	P3	180°	-28.8 dB
Cross Polarization, min.	-16 dB		
Front to Back Ratio, min.	-28.8 dB		
Input power, max.	5 Watt		
Input Impedance	50 Ohm		
Lightning Protection	DC Grounded		

### Mechanical

Dimensions (HxWxD)	554 x 76 x 53 mm (21.8" x 3" x 2.1")
Weight	740 gr.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	MNT-1

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1
UK Radio Interface Requirement 2007 (Ver. 1.00)

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## MA-WC62-17

### 6 GHz Base Station Antenna, 60°

MARS 60° Broadband Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to-Multi-Point applications.

Additional Features:

- Stable performance with 17 dBi of gain.
- Small size allowing easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



### Specifications

#### Electrical

Frequency range	5.7-6.5 GHz
GAIN, typ.	17 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3 – CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3 – CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3 – CS1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	573 x 95 x 53 mm (22.6" x 3.7" x 2.1")
Weight	700 gr.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

### Ordering Options

MA-WC62-17	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WC62-17B	Antenna with MNT-22 mount

Patterns are available on our website

Mars Antennas & RF Systems proprietary information

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## MA-WD62-16

### 5.7-6.5 GHz Base Station Antenna, 90°

MARS 90° Broadband Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to-Multi-Point applications.

Additional Features:

- Stable performance with 16 dBi of gain.
- Small size allowing easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



### Specifications

#### Electrical

Frequency range	5.7-6.5 GHz
GAIN, typ.	16 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3 – CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3 – CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3 – CS1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	573 x 95 x 53 mm (22.6" x 3.7" x 2.1")
Weight	700 gr.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Polycarbonate
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

### Ordering Options

MA-WD62-16	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WD62-16B	Antenna with MNT-22 mount

Patterns are available on our website

Mars Antennas & RF Systems proprietary information

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## MA-WE62-15

### 5.7-6.5 GHz Base Station Antenna, 120°

MARS 120° Broadband Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to-Multi-Point applications.

Additional Features:

- Stable performance with 15 dBi of gain.
- Small size allowing easy blending with any environment.
- Tilt mount allowing quick and easy installation.
- UV protected radome suitable for harsh environment installations.



## Specifications

### Electrical

Frequency range	5.7-6.5 GHz
GAIN, typ.	15 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3 – CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3 – CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3 – CS1
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

### Mechanical

Dimensions (HxWxD)	573 x 95 x 53 mm (22.6" x 3.7" x 2.1")
Weight	700 gr.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Polycarbonate
Mount	See ordering options

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Standard Compliance

ETSI EN 302 085 V1.2.3 – CS1

## Ordering Options

MA-WE62-15	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WE62-15B	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-WG10-6H

### 10.5 GHz Sector Antenna

MARS 10.5 GHz Sector Antenna provides a cost effective solution for large scale WLL / BWA, Point-to-Point applications.

Antenna Features:

- Stable and reliable performance.
- Features horizontal polarization with 15 dBi of gain.
- Antenna is light-weight and yet has a durable construction.
- Suitable for harsh environment installations.
- Easy and quick installation with corrosion-resistant az/el adjustable mount.



### Specifications

#### Electrical

Frequency range	10.15-10.65 GHz
GAIN, min.	15 dBi
Gain Variation Across Main Beam (Ripple), max.	3 dB
VSWR, max.	1.7 : 1
Polarization	Horizontal
3 dB Beam-Width, H-Plane, typ.	84°
3 dB Beam-Width, E-Plane, typ.	5°
Side Lobe Level	ETSI EN 302 085 V1.2.3-CS2
Cross Polarization,min.	ETSI EN 302 085 V1.2.3-CS2
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3-CS2
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	339 x 195 x 40 mm (13.3" x 7.7" x 1.6")
Weight	900 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	See ordering options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

#### Standard Compliance

ETSI EN 302 085 V1.2.3 - CS2

### Ordering Options

MA-WG10-6H	Antenna Suited for MNT-22 (optional wall/pole adjustable mount)
MA-WG10-6HB	Antenna with MNT-22 mount

Patterns are available on our website

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## MA-CQ26-1X

### 380 MHz-6 GHz Multi Band Omni Antenna

MARS Multi Band Omni Antenna covers all the bands for 2G, 2.5G and 3G cellular, as well as ISM, WLAN, UNII, Bluetooth, Wi-Fi, WMTS and IMT-MC450.

The antenna is aesthetic and has unobtrusive profile that blends easily with any environment.

The antenna is easy-installed and is highly recommended as an outstanding logistic solution for In-Building Installations.



### Specifications

#### Electrical

Standard	TETRA, IMT-MC450, WMTS, DVB-T LTE	SMR, AMPS, CDMA, TDMA, GSM 900	WMTS, PCS, DECT, GSM 1900, UMTS	Bluetooth, ISM, WLAN	WLL, Broad- band access Licensed Band	Homeland Security, UNII, WLL, H-LAN, Wi-Fi
Frequency range	380-806 MHz	806-960 MHz	1.395-1.432 1.71-2.17 GHz	2.3-2.5 GHz	3.3-3.7 GHz	4.9-6 GHz
GAIN, typ.	1 (2*)	4	5	5	5	6
VSWR, max.	3 : 1 (2.5 : 1*)	2 : 1	2 : 1	2 : 1	1.9 : 1	1.9 : 1
Polarization	Linear, Vertical					
Input power, max.	50 Watt					
Input Impedance	50 Ohm					
Lightning Protection	DC Grounded					

#### Mechanical

Dimensions (HxWxD)	Base Diameter - 275 mm, Height - 187 mm
Weight	550 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Water Proofing	IP-67 (for outdoor use only)
Mount	Ceiling Mounting

#### Environmental

Operating Temp. Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

### Ordering Options

MA-CQ26-1X	Antenna Indoor
MA-CQ26-1XT	Antenna Indoor with DC Return Option
MA-CQ26-1XR	Antenna Outdoor

(\*) Specifications for Ground Plate of 40 cm and up, or above a metal surface, with a spacing of 35-45 mm.

### Patent Pending

Patterns are available on our website.

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## MA-CQ27-1X

### 380 MHz-6 GHz Multi Band Omni Antenna

MARS Multi Band Omni Antenna covers continuously all the bands from 380 to 960 MHz and for 2G, 2.5G and 3G cellular, as well as ISM, WLAN, UNII, Bluetooth, Wi-Fi, WMTS IMT-MC450 and LTE.

The antenna is aesthetic and has unobtrusive profile that blends easily with any environment.

The antenna is easy-installed and is highly recommended as an outstanding logistic solution for fast deployments and "In-Building" installations. The antenna is available also for outdoor applications.



### Specifications

#### Electrical

Standard	TETRA, IMT-MC450, WMTS, DVB-T LTE	SMR, AMPS, CDMA, TDMA, GSM 900	WMTS, PCS, DECT, GSM 1900, UMTS	Bluetooth, ISM, WLAN	WLL, Broad-band access Licensed Band	Homeland Security, UNII, WLL, H-LAN, Wi- Fi
Frequency range	380-806 MHz	806-960 MHz	1.395-1.432 1.71-2.17 GHz	2.3-2.7 GHz	3.3-3.7 GHz	4.9-6 GHz
GAIN, typ.	1 (2*)	4	5	6	6	6
VSWR, max.	3 : 1 (2.5 : 1*)	2 : 1	1.9 : 1	1.9 : 1	1.9 : 1	1.9 : 1
Polarization	Linear, Vertical					
Input power, max	50 Watt					
Input Impedance	50 Ohm					
Lightning Protection	DC Grounded					

#### Mechanical

Dimensions(HxWxD)	Base Diameter - 275 mm, Height - 187 mm
Weight	550 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Water Proofing	IP-67 (for outdoor use only)
Mount	Ceiling Mounting

#### Environmental

Operating Temp. Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

### Ordering Options

MA-CQ27-1X	Antenna Indoor
MA-CQ27-1XT	Antenna Indoor with DC Return Option
MA-CQ27-1XR	Antenna Outdoor

(\*) Specifications for Ground Plate of 40 cm and up, or above a metal surface, with a spacing of 35-45 mm.

**Patent Pending**

Patterns are available on our website.

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## MA-CQ29-1X

### 380 MHz-6 GHz Multi Band Omni Antenna

MARS Multi Band Omni Antenna covers continuously all the bands from 380 to 960 MHz and for 2G, 2.5G and 3G cellular, as well as ISM, WLAN, UNII, Bluetooth, Wi-Fi, WMTS IMT-MC450.

The antenna is aesthetic and has unobtrusive profile that blends easily with any environment.

The antenna is easy-installed and is highly recommended as an outstanding logistic solution for fast deployments and "In-Building" installations.



### Specifications

#### Electrical

Standard	TETRA, IMT-MC450, WMTS, DVB-T	SMR, AMPS, CDMA, TDMA, GSM 900	WMTS, PCS, DECT, GSM 1900, UMTS	Bluetooth, ISM, WLAN	WLL, Broad- band access Licensed Band	Homeland Security, UNII, WLL, H-LAN, Wi-Fi
Frequency range	380-806 MHz	806-960 MHz	1.7-2.5 GHz	2.5-2.7 GHz	3.3-3.7 GHz	4.9-6 GHz
GAIN, typ.	1 (2*)	4	5	5	6	6
VSWR, max.	3 : 1 (2.5 : 1*)	2 : 1	2 : 1	2.5 : 1	1.6 : 1	1.6 : 1
Polarization	Linear, Vertical					
Input power, max.	50 Watt					
Input Impedance	50 Ohm					
Lightning Protection	DC Grounded					

#### Mechanical

Dimensions (HxWxD)	Base Diameter - 275 mm, Height - 187 mm
Weight	550 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	Ceiling Mounting

#### Environmental

Operating Temp. Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Water Proofing	IP-67 (for outdoor use only)
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

### Ordering Options

MA-CQ29-1X	Antenna Indoor
MA-CQ29-1XT	Antenna Indoor with DC Return Option
MA-CQ29-1XR	Antenna Outdoor

(\*) Specifications for Ground Plate of 40 cm and up, or above a metal surface, with a spacing of 35-45 mm.

### Patent Pending

Patterns are available on our website.

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## MA-CM36-15

### Multi Band Omni Antenna

MARS Multi Band Omni Antenna covers all the bands for 2G, 2.5G and 3G cellular, as well as ISM, WLAN and Bluetooth.

The antenna is aesthetic, small and has unobtrusive profile that blends easily with any environment.

The antenna is easy-installed and is highly recommended as an outstanding logistic solution for In-Building Installations.



### Specifications

#### Electrical

Standard	SMR, AMPS, CDMA, TDMA, GSM 900	PCS, DECT, GSM 1900, UMTS	Bluetooth, ISM, WLAN
Frequency range	806-960 MHz	1.71-2.17 GHz	2.3-2.7 GHz
GAIN, typ.	2 dBi	3-4 dBi	5 dBi
VSWR, max.	2 : 1	1.5 : 1	1.6 : 1
Polarization	Linear, Vertical		
Input power, max.	50 Watt		
Input Impedance	50 Ohm		
Lightning Protection	DC Grounded		

#### Mechanical

Dimensions (HxWxD)	Base Diameter - 205 mm, Height - 89 mm
Weight	220 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	Ceiling Mounting

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

### Ordering Options

MA-CM36-15	Antenna Indoor
MA-CM36-15R	Antenna Outdoor
MA-CM36-15T	Antenna Indoor with DC Return Option

Patterns are available on our website

**Patent Pending**

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## MA-CR26-2X

### Multi Band Omni Antenna

MARS Multi Band Omni Antenna covers all the bands for 2G, 2.5G and 3G cellular, as well as ISM, WLAN, UNII, Bluetooth and Wi-Fi.

The antenna is aesthetic, small and has unobtrusive profile that blends easily with any environment.

The antenna is easy-installed and is highly recommended as an outstanding logistic solution for In-Building Installations.



### Specifications

#### Electrical

Standard	SMR, AMPS, CDMA, TDMA, GSM 900	PCS, DECT, GSM 1900, UMTS	Bluetooth, ISM, WLAN	WLL	UNII, WLL, H-LAN, Wi-Fi
Frequency range	806-960 MHz	1.71-2.17 GHz	2.3-2.7 GHz	3.4-3.7 GHz	4.9-6 GHz
GAIN, typ.	2	3-4	5	5	5-6
VSWR, max.	2 : 1	1.6 : 1	1.6 : 1	2 : 1	1.8 : 1
Polarization	Linear, Vertical				
Input power, max	50 Watt				
Input Impedance	50 Ohm				

#### Mechanical

Dimensions (HxWxD)	Base Diameter - 205 mm, Height - 89 mm
Weight	220 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	Ceiling Mounting

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

### Ordering Options

MA-CR26-2X	Antenna Indoor
MA-CR26-2XR	Antenna Outdoor
MA-CR26-2XT	Antenna Indoor with DC Return Option

Patterns are available on our website

**Patent Pending**

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## MA-WOLTE-3X

### 698 MHz-6.5 GHz Multi Band Omni Antenna

MARS Multi Band Omni Antenna covers all the bands for 2G, 2.5G and 3G cellular, as well as UHF (760-960 MHz), LTE (698-806 MHz), ISM, WLAN, UNII, Bluetooth and Wi-Fi bands.

The antenna is aesthetic, small and has unobtrusive profile that blends easily with any environment.

The antenna is easy-installed and is highly recommended as an outstanding logistic solution for In-Building Installations.



### Specifications

#### Electrical

Standard	LTE	SMR, AMPS, CDMA, TDMA, GSM 900	PCS, DECT, GSM 1900, UMTS	Bluetooth, ISM, WLAN	WLL	UNII, WLL, H-LAN, Wi-Fi
Frequency range	698-806 MHz	806-960 MHz	1.71-2.17 GHz	2.3-2.7 GHz	3.3-3.8 GHz	4.9-6.5 GHz
GAIN, typ.	2	2	3-4	5	4	6
VSWR, max.	2:1	2.2 : 1	1.9 : 1	2.1 : 1	2 : 1	2: 1
Polarization	Linear, Vertical					
Input power, max.	50 Watt					
Input Impedance	50 Ohm					

#### Mechanical

Dimensions (HxWxD)	Base Diameter - 205 mm, Height - 89 mm
Weight	220 gr.
Connector	N-Type, Female (See Ordering Options)
Back Plane	Glass epoxy
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

### Ordering Options

MA-WOLTE-3X	Ceiling Mountable
MA-WOLTE-3X1	Ceiling option with central connector mounting (Long N-type 45 cm)
MA-WOLTE-3XA	Ceiling Mountable with 38 cm pigtail
MA-WOLTE-3XB	Ceiling/Wall Adjustable with MNT-22 mount
MA-WOLTE-3XT	Ceiling/Wall Provision for Adjustable with MNT-22 mount with DC Return

Patterns are available on our website

**Patent Pending**

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## MA-WOLTE-3M1

### 698-6500 MHz Multi Band Tri-Ports Omni Antenna

MARS Multi Band Tri-Ports Omni Antenna provides coverage of 698-6500 MHz in a single antenna radome.

The Multi Band Tri-Ports Omni Antenna is easy-installed on ceiling and is highly recommended as an outstanding logistic solution for In-Building and outdoor installations and applications.

Additional Features:

- Low/mid gain.
- UV protected radome made of polycarbonate.



## Specifications

### Electrical

Frequency Range	698-6500 MHz	
GAIN, typ	Port 1 & 2	Port 3
	2 dBi @ 698-960 MHz	3 dBi @ 1710-2170 MHz
	3-4 dBi @ 1710-2170 MHz	3 dBi @ 2.3-2.7 GHz
	5 dBi @ 2.3-2.7 GHz	4 dBi @ 3.3-3.8 GHz
	4 dBi @ 3.3-3.8 GHz	6 dBi @ 4.9-6.5 GHz
VSWR, max.	< 2 : 1	
Polarization	Linear, Vertical	
Input power, max	5 Watt	
3 dB Beam Width-Plane	Omni directional	
Port to Port Isolation	698-960 MHz > -14dB & 1710-2170 MHz > -20dB & 2.3-2.7 GHz @ 3.3-3.8 GHz > -25dB & 4.9-6.5 GHz > -30dB	
Input Impedance	50 Ohm	

### Mechanical

Dimension of Antenna(DxH)	220 x 95 mm
Dimension of Base(LxW xH)	369 x 270 x 30 mm
Weight	1.36 Kg.
Connector	See ordering information
Back Plane	UV Protected Polycarbonate
Radome	UV Protected Polycarbonate
Mounting	Ceiling

### Environmental

Operating Temperature Range	-40°C to +65°C
Wind Load	200 Km/h (Survival)
Vibration	According to IEC 60721-3-4
Water Proofing	IP-67
Flammability	UL94
Salt Fog	According to IEC 68-2-11
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)

## Ordering Options

MA-WOLTE-3M1	3x Pigtail 6 feet LMR-195 with N-Type Male (Plenum Rated Cable)
MA-WOLTE-3M1N	Antenna 3 x N-Type Female

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## MA-WOLTE-DP1

### 698 MHz – 6.5 GHz Multi Band Dual Polarized Omni Antenna

MARS Multi Band Omni Antenna covers continuously all the bands from 698 to 6500 MHz in Vertical Polarization and 2.3-2.7 GHz & 4.9-5.875 GHz Band in Horizontal Polarization in a single antenna radome.

The antenna is aesthetic and has unobtrusive profile that blends easily with any environment.

The antenna is easy-installed and is highly recommended as an outstanding logistic solution for fast deployments and "In-Building" installations. The antenna is available also for outdoor applications.



## Specifications

### Electrical

Polarization	Horizontal		Vertical				
Frequency range	2.3-2.7 GHz	4.9-5.875 GHz	698-960 MHz	1.71-2.17 GHz	2.3-2.7 GHz	3.3-3.8 GHz	4.9-6.5 GHz
GAIN, typ.	5 dBi	5 dBi	4 dBi	5 dBi	5.5 dBi	7 dBi	7.5 dBi
VSWR, max.	2 : 1						
Input power, max.	10 Watt						
Input Impedance	50 Ohm						
Port to Port Isolation, typ.	-40 dB						

### Mechanical

Dimensions (HxWxD)	Base Diameter – 275 mm, Height – 190 mm
Weight	400 gr.
Connector	2 x N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
PIM, 3 <sup>rd</sup> Order, 220W, dBc	-150 dBc typ.
Radome	UV Protected Plastic
Mount	Ceiling Mounting

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Water Proofing	Ordering Option
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

Patterns are available on our website

**Patent Pending**

## Ordering Options

MA-WOLTE-DP1	Antenna Indoor
MA-WOLTE-DP1R	Antenna Outdoor (IP67)

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## MA-WA43-1X

### 425-445 MHz In Building Panel Antenna

MARS 425-445 MHz Panel Antenna provides a cost effective solution for In Building PMR applications.

Additional Features:

- Excellent and stable performance
- Small and aesthetic profile
- UV protected antenna radome
- Suitable for both indoor and outdoor installations
- DC grounded
- Wall mount



### Specifications

#### Electrical

Frequency range	425-445 MHz
GAIN, typ.	4 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	100°
3 dB Beam-Width, E-Plane, typ.	110°
Input power, max	20 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	231 x 215 x 31 mm (8.9" x 8.5" x 1.1")
Weight	840 gr.
Connector	N-Type, (F)/ Pigtail ending in N-Type (F)
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	Wall-Indoor Usage (Outdoor Version Available on Request)

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	N/A
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WA43-1X	N-Type Connector Version
MA-WA43-1XC	N-Type + Cable RG58, ~25cm

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## MA-WA46-1X

### 450-470 MHz In Building Panel Antenna

MARS 450 - 470 MHz Panel Antenna provides a cost effective solution for In Building PMR applications.

Additional Features:

- Excellent and stable performance
- Small and aesthetic profile
- UV protected antenna radome
- Suitable for both indoor and outdoor installations
- DC grounded
- Wall mount



### Specifications

#### Electrical

Frequency range	450-470 MHz
GAIN, typ.	4 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	100°
3 dB Beam-Width, E-Plane, typ.	110°
Input power, max	20 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	231 x 215 x 31 mm (8.9" x 8.5" x 1.1")
Weight	840 gr.
Connector	N-Type, (F)/ Pigtail ending in N-Type (F)
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	Wall-Indoor Usage (Outdoor Version Available on Request)

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	N/A
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WA46-1X	N-Type Connector Version
MA-WA46-1XC	N-Type + Cable RG58, ~25cm

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## MA-WA48-1X

### 480 MHz Indoor-Outdoor Panel Antenna

MARS 480 MHz Panel Antenna provides a cost effective solution for In Building PMR applications.

Additional Features:

- Excellent and stable performance.
- Small and aesthetic profile.
- UV protected antenna radome.
- Suitable for both indoor and outdoor installations.
- DC grounded.
- Wall mount.



### Specifications

#### Electrical

Frequency range	480±10 MHz
GAIN, min.	4 dBi
VSWR, max.	1.7 : 1
3 dB Beam-Width, H-Plane, typ.	100°
3 dB Beam-Width, E-Plane, typ.	110°
Polarization	Linear, Vertical
Input power, max.	20 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	231 x 215 x 31 mm (8.9" x 8.5" x 1.1")
Weight	840 gr.
Connector	N-Type, Female / Pigtail ending with N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	Wall-mountable, indoor usage (outdoor version av. on request)

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-WA48-1XC	N-Type Connector Version
MA-WA48-1XP	N-Type + Cable RG58, ~25cm

Patterns are available on our website

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## MA-CLTE-14

### Multi Band Panel Antenna

Up-To-Date Multi Band Panel Antenna covers all the bands for LTE 700 MHz, cellular bands, as well as ISM, WLAN, GSM1800, UMTS and Bluetooth.

The antenna is aesthetic, small and has unobtrusive profile that blends easily with any environment.

The antenna can be easily used either for Indoor or Outdoor Applications and features different mounting options.



### Specifications

#### Electrical

Standard	LTE 700	SMR,AMPC, CDMA,TDMA GSM 900	GSM 1800, UMTS	Bluetooth, ISM, WLAN
Frequency range	698-806 MHz	806-960 MHz	1710-2170 MHz	2.2-2.7 GHz
GAIN, typ.	5 ± 1dBi	6 ± 1dBi	6.5 ± 1dBi	5 ± 1 dBi
VSWR, max.	2 : 1	2 : 1	1.7 : 1	1.7 : 1
3 dB Beam-Width, H-Plane, typ.	130°	140°	80°	55°
3 dB Beam-Width, E-Plane, typ.	70°	60°	45°	30°
Polarization	Linear, Vertical			
Input power, max.	10 Watt			
Input Impedance	50 Ohm			

#### Mechanical

Dimensions (HxWxD)	231 x 215 x 37.5 mm (9.1" x 8.5" x 1.5")
Weight	500 gr.
Connector	N-Type, Female at bottom (can be installed also upside down)
Back Plane	UV Protected Plastic (metal reinforced from the inside)
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

Application	Wall Mountable	Az/EI Adjustable MNT-22 Mount
Indoor / Outdoor	MA-CLTE-14	MA-CLTE-14B
Indoor / Outdoor + DC Return	MA-CLTE-14T	MA-CLTE-14TB

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## MA-CL67-15

### Multi Band Panel Antenna

Up-To-Date Multi Band Panel Antenna covers all the bands for 2G, 2.5G and 3G cellular, as well as ISM, WLAN and Bluetooth.

The antenna is aesthetic, small and has unobtrusive profile that blends easily with any environment.

The antenna can be easily used either for Indoor or Outdoor Applications and features different mounting options.

Antenna is designed to include DC Return Option which is available on request.



### Specifications

#### Electrical

Standard	SMR, AMPS, CDMA, TDMA, GSM 900	PCS, DECT, GSM 1900, UMTS	Bluetooth, ISM, WLAN
Frequency range	806-960 MHz	1.71-2.17 GHz	2.2-2.7 GHz
GAIN, typ.	8.5 dBi	7.5-10 dBi	5-6.5 dBi
VSWR, max.	2 : 1	1.7 : 1	1.9 : 1 @ 2.2-2.5 GHz 2.1 : 1 @ 2.5-2.7 GHz
3 dB Beam-Width, H-Plane, typ.	75°	60°	50°
3 dB Beam-Width, E-Plane, typ.	65°	45°	25°
Polarization	Linear, Vertical		
Input power, max.	50 Watt		
Input Impedance	50 Ohm		

#### Mechanical

Dimensions (HxWxD)	231 x 215 x 37.5 mm (9.1" x 8.5" x 1.5")
Weight	500 gr.
Connector	N-Type, Female at bottom (can be installed also upside down)
Back Plane	UV Protected Plastic (metal reinforced from the inside)
Radome	UV Protected Polycarbonate
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25 mm radial (survival)

### Ordering Options

Application	Wall Mountable	Az/El Adjustable MNT-22 Mount
Without DC Return	MA-CL67-15	MA-CL67-15B
With DC Return	MA-CL67-15T	MA-CL67-15TB

Patterns are available on our website

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## MA-CN14-11

### Multi Band 140° Antenna

MARS Multi Band 140° Antenna covers all the bands for 2G, 2.5G and 3G cellular.

The antenna is aesthetic, small and has unobtrusive profile.



### Specifications

#### Electrical

Standard	SMR, AMPS, CDMA, TDMA, GSM 900	PCS, DECT, GSM 1900, UMTS
Frequency range	806-960 MHz	1.71-2.17 GHz
GAIN, typ.	5 dBi	
VSWR, max.	2 : 1	
3 dB Beam-Width, H-Plane, typ.	130°	140-150°
3 dB Beam-Width, E-Plane, typ.	70°	85°
Polarization	Linear, Vertical	
Input power, max.	50 Watt	
Input Impedance	50 Ohm	

#### Mechanical

Dimensions - Base Plate (HxW)	185 x 105 mm (7.3" x 4.1")
Dimensions - Radome (HxWxD)	175 x 35 x 125 mm (6.9" x 1.4" x 4.9")
Weight	260 gr.
Connector	Pig Tail with N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

### Ordering Options

MA-CN14-11T	Antenna Indoor with DC Return Option
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Patterns are available on our website

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## MA-CH11-16

### 3 dBi GSM / AMPS / IDEN In-Building Antenna

MARS 3dBi GSM/AMPS/IDEN In-Building Antenna is small and unobtrusive and blends easily with any environment. Provides a cost-effective solution for high volume and multiple in-building deployments.

Additional Features:

- Integrated Wall Mount (picture hanger).
- DC grounded for lightning protection to meet local electrical building codes

Applications:

- In-Building coverage.
- Indoor cell extender.



### Specifications

#### Electrical

Frequency range	810-960 MHz
GAIN, min.	3 dBi
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	80°
3 dB Beam-Width, E-Plane, typ.	110°
Cross Polarization, min.	-24 dB
Front to Back Ratio, min.	-35 dB
Input power, max.	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	181 x 180 x 25 mm (7.1" x 7.1" x 1")
Weight	400 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Finish	White Epoxy Paint

#### Environmental

Operating Temperature Range	-40°C to +65°C
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Patterns are available on our website

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## MA-CB22-13, MA-CB22-23, MA-CB22-33

### Squint Band Extra Thin Antenna

MARS Squint Beam Extra Thin Antennas are High Gain Planar Arrays with various horizontal Beam squints.

The Antenna is flat and thin, thus featuring a very low profile.

Mounted on building walls, the antenna virtually merges with the wall, yet allowing beam pointing to cover any required direction ( $\pm 45^\circ$ ).

UV protected radome allows harsh environment installations.

Applications:

- Unobtrusive Long Yagi Replacement
- BDA outdoor (BS) Antenna
- Sector Extension
- Narrow-High Gain sectorial coverage ( $22^\circ$ )



### Specifications

#### Electrical

Model	MA-CB22-13	MA-CB22-23	MA-CB22-33
Beam Squint in H-Plane	0°	22°	45°
Frequency range	824-894 MHz		
GAIN, min.	15 dBi	14.5 dBi	13 dBi
3 dB Beam-Width, E-Plane, typ.	22°	22°	22°
3 dB Beam-Width, H-Plane, typ.	27°	27°	31°
VSWR, max.	1.8 : 1		
Polarization	Linear, Vertical		
Input power, max.	50 Watt		
Input Impedance	50 Ohm		
Lightning Protection	DC Grounded		

#### Mechanical

Dimensions (HxWxD)	808 x 708 x 31 mm (31.8" x 27.9" x 1.2")
Weight	6.7 kg.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	Wall Mount / Connector Up or Down for Opposite Squint

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

Patterns are available on our website

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## MA-CB50-20

### Dual Beam CDMA/TDMA/AMPS Antenna

MARS Dual Beam CDMA/TDMA/AMPS Antenna is ideal for deployment in tunnels or long building corridors.

Its small and unobtrusive profile blends easily with any environment.

Additional Features:

- Wall/Ceiling mount.
- DC grounded for lightning protection to meet local electrical building codes.

Applicable Applications:

- Tunnel coverage.
- Indoor cell extender.



### Specifications

#### Electrical

Frequency range	824-894 MHz
GAIN, min.	5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Two Beams, Each 60°
3 dB Beam-Width, E-Plane, typ.	60°
Front to Back Ratio, min.	-12 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	400 x 185 x 55 mm (15.7" x 7.3" x 2.2")
Weight	400 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	Wall/ Ceiling Mounting

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

Patterns are available on our website

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## MA-CC60-20

### Dual Beam GSM Antenna

MARS Dual Beam GSM Antenna is ideal for deployment in tunnels or long building corridors. It features small and unobtrusive profile that blends easily with any environment.

Additional Features:

- Wall/Ceiling mount
- DC grounded for lightning protection to meet local electrical building codes.

Applicable Applications:

- Tunnel coverage.
- Indoor cell extender.



### Specifications

#### Electrical

Frequency range	870-960 MHz
GAIN, min.	5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Two Beams, Each 60°
3 dB Beam-Width, E-Plane, typ.	60°
Front to Back Ratio, min.	-12 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	400 x 185 x 55 mm (15.7" x 7.3" x 2.2")
Weight	400 gr.
Connector	N-Type Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected, Plastic
Mount	Wall/ Ceiling Mounting

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

Patterns are available on our website

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## MA-CC60-60

### Dual Beam GSM Wi-Fi Antenna

MARS Dual Beam GSM Antenna is ideal for deployment in tunnels or long building corridors ceiling. It features small and unobtrusive profile that blends easily with any environment.

Applicable Applications:

- Tunnel coverage.
- Indoor cell extender.



### Specifications

#### Electrical

Frequency range	870-960 MHz	2.4-2.5 GHz
GAIN, min.	3.5 dBi	4.5 dBi
3 dB Beam-Width, H-Plane, typ.	2 x 90°	2 x 85°
3 dB Beam-Width, E-Plane, typ.	66°	60°
VSWR, max.	1.8 :1	
Polarization	Linear, Vertical	
Input power, max	50 Watt	
Input Impedance	50 Ohm	

#### Mechanical

Dimensions (HxWxD)	184 x 100 x 125 mm.
Weight	240 gr.
Connector	N-Type Female/Side Pigtail Optional
Back Plane	Aluminum, Conversion Coated
Radome	ABS, UV Protected
Mount	Ceiling Mountable

#### Environmental

Operating Temperature Range	-10°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	Survival: Indoor use.
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm Radial

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## MA-CD09-2X

### 9 dBi Cellular Yagi Antenna

MARS Cellular Yagi Antennas are ruggedly constructed to withstand severe environmental conditions.

The antenna is designed to provide excellent and stable performance and is ideal for Outdoor Applications. U-Bolt mounting allows for easy installation.



### Specifications

#### Electrical

Frequency range	1.71-1.88 GHz
GAIN, min.	9 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	40°
3 dB Beam-Width, E-Plane, typ.	40°
Side Lobes, min.	-15 dB
Front to Back Ratio, min.	-15 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (LxW)	500 x 85 mm (19.7" x 3.3")
Weight	280 gr.
Connector	TNC / N-Type, Female
Mount	PM, 1.5"

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11

Patterns are available on our website

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## MA-IS43-C1

### 433 MHz Car Mounted Antenna

MARS 433 MHz Antenna provides a cost effective solution for rear window car mounted antenna for ISM 433 MHz systems.

Additional Features:

- easy and fast installation
- consistent and steady performance
- small and unobtrusive profile
- available with any cable length and variety of connectors



### Specifications

#### Electrical

Frequency range	433.92±2 MHz
GAIN, min.	-5 dBi (With ~1.9 m Cable)
VSWR, max.	2.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	80°
Input power, max.	1 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	78.6 x 39 x 4.2 mm (3.1" x 1.5" x 0.2")
Weight	50 gr.
Connector	Pig Tail, RG 174/U Cable with SMA Straight Connector
Radome / Box	ABS, Dark Gray

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

Patterns are available on our website

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## MA-IS72-AS

### 710-746 MHz Car Mounted Antenna

MARS Cellular Window Mounted Antenna provides a cost effective and aesthetic solution for cellular phones communication in the car.

Additional Features:

- Replacement of external antenna on car window.
- Easy and fast installation.
- Consistent and steady performance.
- Small and unobtrusive profile.

Available with any cable length and variety of connectors.



### Specifications

#### Electrical

Frequency range	710-746 MHz
GAIN, min.	0 dBi (With ~2 m Cable)
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	100°
Input power, max.	1 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	78.6 x 39 x 4.2 mm (3.1" x 1.5" x 0.2")
Weight	50 gr.
Connector	Pig Tail, RG 174/U Cable with SMA Straight Connector
Radome / Box	ABS, Dark Gray

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

Patterns are available on our website

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## MA-CH11-W1

### Broadband Cellular Window Mounted Antenna

MARS Cellular Window Mounted Antenna provides a cost effective and aesthetic solution for cellular phones communication in the car.

Additional Features:

- Replacement of external antenna on car window.
- Easy and fast installation.
- Consistent and steady performance.
- Small and unobtrusive profile.

Available with any cable length and variety of connectors.



### Specifications

#### Electrical

Frequency range	824-960 MHz
GAIN, min.	0 dBi (With ~2 m Cable)
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	80°
Input power, max.	5 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	78.6 x 39 x 4.2 mm (3.1" x 1.5" x 0.2")
Weight	50 gr.
Connector	Pig Tail, RG 174/U Cable with SMA Straight Connector
Radome / Box	ABS, Dark Gray

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

Patterns are available on our website

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## MA-CB11-C3

### CDPD Car Mounted Antenna

MARS CDPD Car Mounted Antenna provides a cost effective solution for the mobile users.

Additional Features:

- Under Dashboard mounting.
- Consistent and steady performance.
- Small and unobtrusive profile.
- Available with variable cable lengths.



### Specifications

#### Electrical

Frequency range	824-849; 869-894 MHz
GAIN, min.	0 dBi (With 1 m Cable)
GAIN Ripple	±5 dB
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	75°
Input power, max.	1 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	145 x 16 x 4.5 mm (5.7" x 0.6" x 0.2")
Weight	30 gr.
Connector	MMCX, With RG 174/U Cable
Radome / Box	Heat Shrinkable Insulating Sleeve

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

Patterns are available on our website

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## MA-IS91-C1

### 915 MHz Car Mounted Antenna

MARS 915 MHz Antenna provides a cost effective solution for rear window car mounted antenna for ISM 915 MHz systems.

Additional Features:

- Easy and fast installation.
- Consistent and steady performance.
- Small and unobtrusive profile.
- Available with any cable length and variety of connectors.



### Specifications

#### Electrical

Frequency range	915±2 MHz
GAIN, min.	0 dBi (With ~2 m Cable)
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	80°
Input power, max.	1 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	78.6 x 39 x 4.2 mm (3.1" x 1.5" x 0.2")
Weight	50 gr.
Connector	Pig Tail, RG 174/U Cable with SMA Straight Connector
Radome / Box	ABS, Dark Gray

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

Patterns are available on our website

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## MA-VM1765-5

### 1.7-6.5 GHz Wide Band Blade Antenna for Mobile Applications

MARS Wide Band Blade Antenna is a ruggedized and aerodynamic antenna that provides an optimal solution for use in mobile applications such as trains, helicopters, buses or cars.

Additional Features:

- Bottom Mount, Fixed Mount (4 screws from bottom)
- Stable and reliable performance.



### Specifications

#### Electrical

Electrical				
Frequency range	1.7-2.3 GHz	2.3-3.0 GHz	3.0-4.0 GHz	4.0-6.5 GHz
GAIN, typ.	3 dBi	4 dBi	5 dBi	6 dBi
VSWR, max.	2 : 1 max.		1.5 :1 typ.	
Polarization	Linear, Vertical			
Pattern	Omni Directional			
Input power, max	5 Watt			
Input Impedance	50 Ohm			

#### Mechanical

Dimensions (LxWxH)	132 x 79 x 76 mm
Weight	150 gr.
Connector	N-Type Female Bottom
Back Plane	Aluminum, protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	Bottom Mount, Fixed Mount (4 screws from bottom)

#### Environmental

Operating Temp. Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Water Proofing	IP-67
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)

Patterns are available on our website.

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## MA-VM1765-5S

### 1.7-6.5 GHz Wide Band Blade Antenna for Mobile Applications

MARS Wide Band Blade Antenna is a ruggedized and aerodynamic antenna that provides an optimal solution for use in mobile applications such as trains, helicopters, buses or cars.

#### Additional Features:

- Magnetic Mount
- Fixed Mount (4 screws from bottom)
- Stable and reliable performance.



### Specifications

#### Electrical

Frequency range	1.7-2.3 GHz	2.3-3.0 GHz	3.0-4.0 GHz	4.0-6.5 GHz
GAIN, typ.	3 dBi	4 dBi	5 dBi	6 dBi
VSWR, max.	2 : 1 max.		1.5 :1 typ.	
Polarization	Linear, Vertical			
Pattern	Omni Directional			
Input power, max	5 Watt			
Input Impedance	50 Ohm			

#### Mechanical

Dimensions (LxWxH)	132 x 79 x 76 mm.
Weight	150 gr.
Connector	SMA Female side
Back Plane	Steel with galvanic protection
Radome	UV Protected Polycarbonate
Mount	Ordering Options

#### Environmental

Operating Temp. Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Water Proofing	IP-67
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)

### Ordering Options

Model No.	Application / Mount
MA-VM1765-5SM	Magnetic Mount
MA-VM1765-5SF	Fixed Mount (4 screws from bottom)

Patterns are available on our website.

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## MA-VM23-3X

### 2.3-2.4 GHz Car Mounted Antenna

MARS 2.3-2.4GHz Car Antenna provides an optimal solution for mobile WLL and Internet users in the car.

Additional Features:

- Cost effective.
- Can be mounted on or under the dashboard.
- Easy and fast installation (with or without magnet).
- Stable and reliable performance.



### Specifications

#### Electrical

Frequency range	2.3-2.4 GHz
GAIN, min.	3 dBi (With Ground 11x11 cm 5 dBi)
VSWR, max.	1.7 : 1
Polarization	Linear
3 dB Beam-Width, H-Plane, typ.	110°
3 dB Beam-Width, E-Plane, typ.	110°
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	40 x 45 x 15 mm (1.6" x 1.8" x 0.6")
Weight	60 gr.
Connector	SMA, Male on a 1m RG 316 Coaxial Cable
Radome	ABS

#### Environmental

Operating Temperature Range	-30°C to +60°C
Storage Temperature Range	-40°C to +70°C

### Ordering Options

Mount Type	Replace X with
Magnetic	M
Glue	G
Fixed Mount	F

Patterns are available on our website

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## MA-CH25-W1

### Broadband Cellular Window Mounted Antenna

MARS Cellular Window Mounted Antenna provides a cost effective and aesthetic solution for cellular phones communication in the car.

Additional Features:

- Replacement of external antenna on car window.
- Easy and fast installation.
- Consistent and steady performance.
- Small and unobtrusive profile.

Available with any cable length and variety of connectors.



### Specifications

#### Electrical

Frequency range	2.3-2.69 GHz
GAIN, min.	0 dBi (With ~1 m Cable)
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	80°
Input power, max	5 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	78.6 x 39 x 4.2 mm (3.1" x 1.5" x 0.2")
Weight	50 gr.
Connector	Pig Tail, RG 174/U Cable with SMA Straight Connector
Radome / Box	ABS, Dark Gray

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

Patterns are available on our website

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## MA-DBO2455-3

### 2.3-2.7 GHz & 4.9-6.4 GHz Dual Band Omni Antenna

MARS Dual Band Omni antenna provides coverage of 2.3 to 2.7 GHz & 4.9 to 6.4 GHz in a single antenna radome.

Additional Features:

- Simultaneous coverage of LTE, 802.11 a, b, g, WiMAX & 4.9 GHz Public Safety bands.
- Light weight and durable construction.
- UV protected radome made of polycarbonate.
- Suitable for either outdoor (car top) or indoor (ceiling) installations.\*



### Specifications

#### Electrical

Frequency range	2.3-2.7 GHz & 4.9-6.4 GHz
GAIN, typ.	2.3-2.7 GHz @ 2 dBi (on 20+ cm diameter ground plane) ** 4.9-6.4 GHz @ 4 dBi (on 20+ cm diameter ground plane) **
VSWR	2: 1 (max.); 1.5 : 1 (typ.)
Polarization	Linear Vertical
Input power, max.	20 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (D x H )	54 x 34 mm (2.1" x 1.3")
Connector	N-Type Female (Bottom)
Weight	60 gr.
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	Fixed Roof Top Mounting

#### Environmental

Operating Temperature Range	-40°C to +70°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

(\*) Supplied with 78 mm disc for ceiling installation.

(\*\*) Gain without ground plane is:

0 dBi @ 2.3-2.7 GHz

2 dBi @ 4.9-6.1 GHz

Patterns are available on our website

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## MA-VM24-3X

### 2.4-2.5 GHz Car Mounted Antenna

MARS 2.4-2.5 GHz Car Antenna provides an optimal solution for mobile WLL and Internet users in the car.

Additional Features:

- Cost effective.
- Can be mounted on or under the dashboard.
- Easy and fast installation (with or without magnet).
- Stable and reliable performance.



### Specifications

#### Electrical

Frequency range	2.4-2.5 GHz
GAIN, min.	3 dBi (With Ground 11x11 cm 5 dBi)
VSWR, max.	1.5 : 1
Polarization	Linear
3 dB Beam-Width, H-Plane, typ.	110°
3 dB Beam-Width, E-Plane, typ.	110°
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	40 x 45 x 15 mm (1.6" x 1.8" x 0.6")
Weight	60 gr.
Connector	SMA, Male on a 1m RG 316 Coaxial Cable
Radome	ABS

#### Environmental

Operating Temperature Range	-30°C to +60°C
Storage Temperature Range	-40°C to +70°C

### Ordering Options

Mount Type	Replace X with
Magnetic	M
Glue	G
Fixed Mount	F

Patterns are available on our website

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## MA-WO25-CT

### Blade Antenna for Mobile Applications

MARS WiMax 2.3-2.6 GHz Car Antenna provides a cost effective and aesthetic solution for LTE & WiMax applications.

Additional Features:

- External car antenna with magnetic or fixed mount.
- Easy and fast installation.
- Consistent and steady performance.
- Small and unobtrusive design.



### Specifications

#### Electrical

Frequency range	2.3-2.6 GHz
GAIN, min.	4 dBi
VSWR, max.	1.5 : 1
Polarization	Vertical
3 dB Beam-Width, H-Plane, typ.	Omni-Directional
3 dB Beam-Width, E-Plane, typ.	30°
Input Impedance	50 Ohm
Input Power	5 Watt

#### Mechanical

Dimensions	Height Base (LxW)	76 mm 131 x 78 mm
Weight		165 gr.
Connector		SMA Female
Radome		UV Protected Polycarbonate
Water Proofing		IP-67
Mount		See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +70°C
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### Ordering Options

Model No.	Application / Mount	Connector
MA-WO25-CT-B-M	Magnetic Mount	SMA, Female
MA-WO25-CT-B-F	Fixed Mount (Roof Top)	SMA, Female

Patterns are available on our website

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## MA-VM26-3X

### 2.495-2.69 GHz Car Mounted Antenna

MARS 2.495-2.69 GHz Car Antenna provides an optimal solution for mobile WLL and Internet users in the car.

Additional Features:

- Cost effective.
- Can be mounted on or under the dashboard.
- Easy and fast installation (with or without magnet).
- Stable and reliable performance.



### Specifications

#### Electrical

Frequency range	2.495-2.69 GHz
GAIN, min.	3 dBi (With Ground 11x11 cm 5 dBi)
VSWR, max.	2 : 1
Polarization	Linear
3 dB Beam-Width, H-Plane, typ.	110°
3 dB Beam-Width, E-Plane, typ.	110°
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	40 x 45 x 15 mm (1.6" x 1.8" x 0.6")
Weight	60 gr.
Connector	SMA, Male on a 1m RG 316 Coaxial Cable
Radome	ABS

#### Environmental

Operating Temperature Range	-30°C to +60°C
Storage Temperature Range	-40°C to +70°C

### Ordering Options

Mount Type	Replace X with
Magnetic	M
Glue	G
Fixed Mount	F

Patterns are available on our website

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## MA-VM35-4X

### 3.4-3.6 GHz Car Mounted Antenna

MARS 3.4-3.6GHz Car Antenna provides an optimal solution for mobile LTE, WiMAX, WLL and Internet users in the car.

Additional Features:

- Cost effective.
- Can be mounted on or under the dashboard.
- Easy and fast installation (with or without magnet).
- Stable and reliable performance.



## Specifications

### Electrical

Frequency range	3.4-3.6 GHz
GAIN, min.	4 dBi
VSWR, max.	1.5 : 1
Polarization	Linear
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	110°
Input Impedance	50 Ohm

### Mechanical

Dimensions (HxWxD)	40 x 45 x 15 mm (1.6" x 1.8" x 0.6")
Weight	60 gr.
Connector	SMA, Male on a 1m RG 316 Coaxial Cable
Radome	ABS

### Environmental

Operating Temperature Range	-30°C to +70°C
Storage Temperature Range	-40°C to +70°C

## Ordering Options

Mount Type	Replace X with
Magnetic	M
Glue	G
Fixed Mount	F

Patterns are available on our website

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## MA-WO36-CT

### Blade Antenna for Mobile Applications

MARS 3.4-3.8 GHz Car Antenna provides a cost effective and aesthetic solution for LTE & WiMax applications.

Additional Features:

- External car antenna with magnetic or fixed mount.
- Easy and fast installation.
- Consistent and steady performance.
- Small and unobtrusive design.



### Specifications

#### Electrical

Frequency range	3.4-3.8 GHz
GAIN, min.	4 dBi
VSWR, max.	1.5 : 1
Polarization	Vertical
3 dB Beam-Width, H-Plane, typ.	Omni-Directional
3 dB Beam-Width, E-Plane, typ.	30°
Input Impedance	50 Ohm
Input Power	5 Watt

#### Mechanical

Dimensions	Height	76 mm
	Base (LxW)	131 x 78 mm
Weight		165 gr.
Connector		SMA Female
Radome		UV Protected Polycarbonate
Water Proofing		IP-67
Mount		See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +70°C
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### Ordering Options

Model No.	Application / Mount	Connector
MA-WO36-CT-B-M	Magnetic Mount	SMA, Female
MA-WO36-CT-B-F	Fixed Mount (Roof Top)	SMA, Female

Patterns are available on our website

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## MA-CH36-W1

### Broadband LTE & WiMAX Window Mounted Antenna

MARS LTE & WiMAX Window Mounted Antenna provides a cost effective and aesthetic solution for cellular phones communication in the car.

Additional Features:

- Replacement of external antenna on car window.
- Easy and fast installation.
- Consistent and steady performance.
- Small and unobtrusive profile.

Available with any cable length and variety of connectors.



### Specifications

#### Electrical

Frequency range	3.4-3.8 GHz
GAIN, min.	0 dBi (With ~1 m Cable)
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	80°
Input power, max.	5 Watt
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	78.6 x 39 x 4.2 mm (3.1" x 1.5" x 0.2")
Weight	50 gr.
Connector	Pig Tail, RG 174/U Cable with SMA Straight Connector
Radome / Box	ABS, Dark Gray

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

Patterns are available on our website

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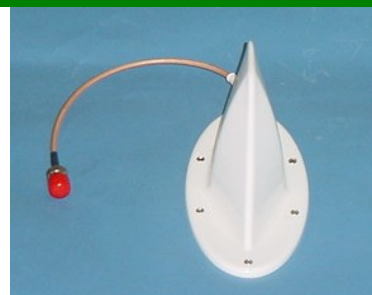
## MA-WO35-B-X

### Blade Antenna for Mobile Applications

MARS Blade Antenna is a ruggedized, aerodynamic antenna, for use in mobile applications such as trains, helicopters, buses or cars.

Antenna comes in two versions:

- Fixed Mount (Roof top).
- Magnetic Mount (Side Pigtail).



### Specifications

#### Electrical

Frequency range	3.4-3.6 GHz
GAIN, typ.	2 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	60°
Front to Back Ratio, min.	-20 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	115 x 220 x 100 mm (4.5" x 8.7" x 3.9")
Weight	420 gr.
Connector	See Ordering Information
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

Model No.	Application / Mount	Connector
MA-WO35-B-M	Magnetic Mount	N-Type, Female with ~25cm Coaxial Pigtail
MA-WO35-B-F	Fixed Mount (Roof Top)	N-Type, Female

Patterns are available on our website

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## MA-WO55-CT

### Blade Antenna for Mobile Applications

MARS WiMax 4.9-5.875 GHz Car Antenna provides a cost effective and aesthetic solution for WiMax communication.

Additional Features:

- External car antenna with magnetic or fixed mount.
- Easy and fast installation.
- Consistent and steady performance.
- Small and unobtrusive design.



### Specifications

#### Electrical

Frequency range	4.9-5.875 GHz
GAIN, min.	4 dBi
VSWR, max.	1.8 : 1
Polarization	Vertical
3 dB Beam-Width, H-Plane, typ.	Omni-Directional
3 dB Beam-Width, E-Plane, typ.	30°
Input Impedance	50 Ohm
Input Power	5 Watt

#### Mechanical

Dimensions	Height	76 mm
	Base (LxW)	131x78 mm
Weight		165 gr.
Connector		SMA Female
Radome		UV Protected Polycarbonate
Water Proofing		IP-67
Mount		See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +70°C
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### Ordering Options

Model No.	Application / Mount	Connector
MA-WO55-CT-B-M	Magnetic Mount	SMA, Female
MA-WO55-CT-B-F	Fixed Mount (Roof Top)	SMA, Female

Patterns are available on our website

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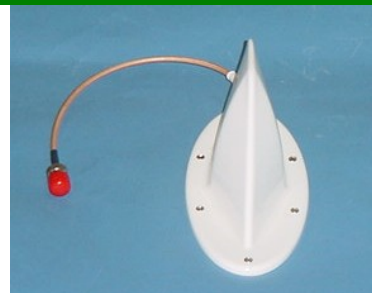
## MA-WO45-B-X

### Blade Antenna for Mobile Applications

MARS Blade Antenna is a ruggedized, aerodynamic antenna, for use in mobile applications such as trains, helicopters, buses or cars.

Antenna comes in two versions:

- Fixed Mount (Roof top).
- Magnetic Mount (Side Pigtail).



### Specifications

#### Electrical

Frequency range	4.4-4.6 GHz
GAIN, typ.	2 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	60°
Front to Back Ratio, min.	-20 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	115 x 220 x 100 mm (4.5" x 8.7" x 3.9")
Weight	420 gr.
Connector	See Ordering Information
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

Model No.	Application / Mount	Connector
MA-WO45-B-M	Magnetic Mount	N-Type, Female with ~25cm Coaxial Pigtail
MA-WO45-B-F	Fixed Mount (Roof Top)	N-Type, Female

Patterns are available on our website

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## MA-WO49-B-X

### Blade Antenna for Mobile Applications

MARS Blade Antenna is a ruggedized, aerodynamic antenna, for use in mobile applications such as trains, helicopters, buses or cars.

Antenna comes in two versions:

- Fixed Mount (Roof top).
- Magnetic Mount (Side Pigtail).



### Specifications

#### Electrical

Frequency range	4.94-4.99 GHz
GAIN, typ.	2 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	60°
Front to Back Ratio, min.	-25 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	115 x 220 x 100 mm (4.5" x 8.7" x 3.9")
Weight	420 gr.
Connector	See Ordering Information
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	See Ordering Options

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

Model No.	Application / Mount	Connector
MA-WO49-B-M	Magnetic Mount	N-Type, Female with ~25cm Coaxial Pigtail
MA-WO49-B-F	Fixed Mount (Roof Top)	N-Type, Female

Patterns are available on our website

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## MA-IS43-B1

### 433 MHz Base Station Antenna

MARS 433 MHz Antenna provides a cost effective solution for the Point-to-Multipoint Systems based on the ISM 433 MHz band.

Additional Features:

- Suited for new RFID technology applications.
- Wide coverage.
- Wall mount (optional Pole Mount available on request).
- Suitable for either indoor or outdoor installations.
- DC grounded.



### Specifications

#### Electrical

Frequency range	433.92±2 MHz
GAIN, min.	4.5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	180°
3 dB Beam-Width, E-Plane, typ.	75°
Side Lobes, min.	N/A
Cross Polarization, min.	-15 dB
Input power, max.	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	400 x 176 x 195 mm (15.7" x 6.9" x 7.7")
Weight	1.1 kg.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	Wall Mounting

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-63
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

Patterns are available on our website

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## MA-IS43-B2

### 433 MHz Base Station Panel Antenna

MARS 433 MHz Panel Antenna provides a cost effective solution for Point-to-Multipoint Systems based on the ISM 433 MHz.

Additional Features:

- Suited for new RFID technology applications.
- Excellent and stable performance.
- Small and aesthetic profile.
- UV protected antenna radome.
- Suitable for both indoor and outdoor installations.
- DC grounded.
- Wall mount.



### Specifications

#### Electrical

Frequency range	433±2 MHz
GAIN, min.	4 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	95°
3 dB Beam-Width, E-Plane, typ.	100°
Side Lobes, min.	No Side Lobes
Cross Polarization, min.	No Cross Polarization
Front to Back Ratio, min.	No Front to Back Ratio
Input power, max.	25 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

#### Mechanical

Dimensions (HxWxD)	231 x 215 x 31 mm (9.1" x 8.5" x 1.2")
Weight	840 gr.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	Indoor Usage (Outdoor Version Available on Request)

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

### Ordering Options

MA-IS43-B2	N-Type Connector Version
MA-IS43-B21	N-Type + Cable RG58, ~25cm

Patterns are available on our website

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## MA-EG15-XX

### GPS AVL Active Antenna

MARS GPS Active Antenna is exceptionally small sized and offers extremely wide coverage at low angles.

Additional Features:

- Reliable and stable performance.
- Dashboard or under dashboard mounting.
- Cable length with SMA connector option.
- Resists unfriendly environments.
- Built-in low noise amplifier.

Application:

- AVL, Automatic vehicular and asset location systems.
- GPS, time and location systems.

Cost effective solution for high volume deployment.



### Specifications

#### Electrical

Frequency range	1575±1.24 MHz
GAIN, min.	27 dBi
Axial Ratio	3 dB
VSWR, max.	2 : 1
Polarization	Circular, RHCP
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	150°
Noise Figure (Amp)	1.6 dB
Input power, max	30 mA / 3 V
Intercept Point	+10 dBm
Input Impedance	50 Ohm

#### Mechanical

Dimensions (HxWxD)	40 x 45 x 15 mm (1.6" x 1.8" x 0.6")
Weight	60 gr.
Connector	SMB, Female on a 1.8m RG 174 Cable / SMA, Female( optional)
Radome	ABS

#### Environmental

Operating Temperature Range	-30°C to +60°C
Storage Temperature Range	-40°C to +70°C

### Ordering Options

Mount Type	Replace X with
Magnetic	M
Glue	G
Fixed Mount	F
SMA, Female	A

Patterns are available on our website

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## MA-GP15-2M

### Active GPS Antenna

MARS Active GPS Antenna features stable and efficient performance with 5 dBi of gain. Antenna is small, light-weight and has an aesthetic design. Custom designs are available upon request.



### Specifications

#### Electrical

Frequency range	1575.42±2 MHz
1 dB points Bandwidth, typ.	15 MHz
GAIN, min.	2 dBic zenith
Gain Characteristics of Antenna Element	-10 dBic minimum at 0° elevation
VSWR, typ.	1.5 : 1 @ 1575.42
Polarization	Right Hand Circular
3 dB Beam-Width, H-Plane, typ.	360°
3 dB Beam-Width, E-Plane, typ.	0° to 90°
Filtering, typ.	40 dB @ ±50 MHz
LNA Gain, typ.	25 dB
Noise Figure, typ.	< 1.4 dB
Output Impedance	50 Ohm
Power Supply through RF Cable, typ.	5±0.25 VDC ; 21 mA @ 5 VDC

#### Mechanical

Dimensions (ØxH)	94 X 110 mm (3.7" x 4.3")
Weight	160 gr.
Connector	N-Type Female
Mount	Center Mount (M28 Nut)
Radome	UV Protected Polycarbonate

#### Environmental

Operating Temperature	-40°C to +85°C
Dynamics	Vibration: ETSI EN 300-19-2-4
Water Proofing	IP-67
Humidity	ETSI EN 300-19-2-4
Immersion Test	EN 60529-IP67
UV Radiation	ASTM G-154-4
Immunity to electrostatic discharge	ETSI IEC 61000-4-2
Conducted immunity to voltage surges	ETSI IEC 61000-4-5

Patterns are available on our website

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## MA-AGP15-5

### Active GPS Antenna

MARS Active GPS Antenna features stable and efficient performance. Antenna is small and has an aesthetic design. Custom designs are available upon request.



### Specifications

<b>Electrical</b>	
Frequency range	1575.42±2 MHz
1 dB points Bandwidth, typ.	15 MHz
Gain Characteristics of Antenna Element	+5.0 dBic minimum at zenith -10 dBic minimum at 0° elevation
VSWR, typ.	2 : 1 @ 1575.42
Polarization	Right Hand Circular
3 dB Beam-Width, H-Plane, typ.	360°
3 dB Beam-Width, E-Plane, typ.	±40°
Filtering, typ.	40 dB @ ± 50 MHz
LNA Gain, typ.	25 dB
Noise Figure, typ.	< 1.4 dB
Output Impedance	50 Ohm
Power Supply through RF Cable, typ.	5±0.25 VDC ; 21 mA @ 5 VDC
<b>Mechanical</b>	
Dimensions (ØxH)	170 X 100 mm
Weight	500 gr.
Connector	N-Type Female
Mount	MNT-22
Radome	UV Protected Polycarbonate
<b>Environmental</b>	
Operating Temperature	-40°C to +85°C
Dynamics	Vibration: ETSI EN 300-19-2-4
Humidity	ETSI EN 300-19-2-4
Water Proofing	IP-67
Immersion Test	EN 60529-IP67
UV Radiation	ASTM G-154-4
Immunity to electrostatic discharge	ETSI IEC 61000-4-2
Conducted immunity to voltage surges	ETSI IEC 61000-4-5

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## MA-PGP15-5

### Passive GPS Antenna

MARS passive GPS Antenna features stable and efficient performance with 5 dBic of gain. Antenna is small and has an aesthetic design. Custom designs are available upon request.



### Specifications

#### Electrical

Frequency range	1575.42±2 MHz
GAIN, min.	5 dBic
Gain Characteristics of Antenna Element	-10 dBic minimum at 0° elevation
Axial Ratio	4 dB
VSWR, typ.	1.5 : 1
Polarization	Right Hand Circular
3 dB Beam-Width, Azimuth, typ.	360°
3 dB Beam-Width, Elevation, typ.	±40°
Impedance	50 Ohm

#### Mechanical

Dimensions (ØxH)	170 x 100mm (6.7" x 3.9")
Weight	500 gr.
Connector	N-Type Female
Mount	MNT-22
Radome	UV Protected Polycarbonate

#### Environmental

Operating Temperature	-40°C to +85°C
Dynamics	Vibration: ETSI EN 300-19-2-4
Humidity	ETSI EN 300-19-2-4
Water Proofing	IP-67
Immersion Test	EN 60529-IP67
UV Radiation	ASTM G-154-4
Immunity to electrostatic discharge	ETSI IEC 61000-4-2
Conducted immunity to voltage surges	ETSI IEC 61000-4-5

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## MA-IS91-BR

### 915 MHz Embedded Antenna

MARS 915 MHz Antenna provides a cost effective solution for point-to-multipoint systems based on the ISM 915 MHz band.



### Specifications

#### *Electrical*

Frequency range	902-928 MHz
GAIN, typ.	1 dBi (With 12 cm Cable)
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	80°
Input power, max.	1 Watt
Input Impedance	50 Ohm

#### *Mechanical*

Dimensions (HxWxD)	130 x 16 x 4.5 mm (5.3" x 2.5")
Weight	30 gr.
Connector	SMA 90, Male, With RG 174/U Cable
Radome / Box	Heat Shrinkable Insulating Sleeve

Patterns are available on our website

Mars Antennas & RF Systems proprietary information

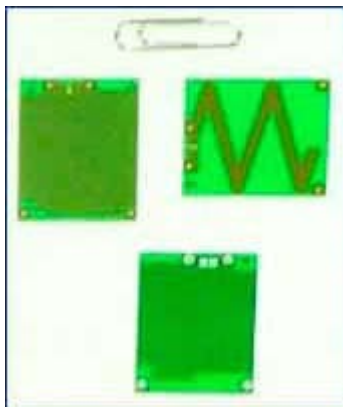
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## Embedded Antennas

Mars Internal / Embedded Antennas are custom made antennas, offered as OEM solutions to most products. The antennas are offered in frequency bands from 200MHz to 5.8 GHz as solutions to both products under development and to existing products. Mars Internal / Embedded Antennas are small, light weight and provide a creative, cost-effective and efficient solution.



Mars Internal / Embedded Antennas are tailored to customers' specification allowing for an electrically and physically precise solution to OEMs - a much better solution than off-the-shelf products that demand costly product restructuring.

Mars Internal / Embedded Antennas have a wide range of applications: Hand Held Devices, Point-of-Sale Devices, Cell-Phones, Wireless Modems (PCMCIA), W-LAN, Medical Devices, Blue-Tooth Applications, Security and Alarm Systems etc.

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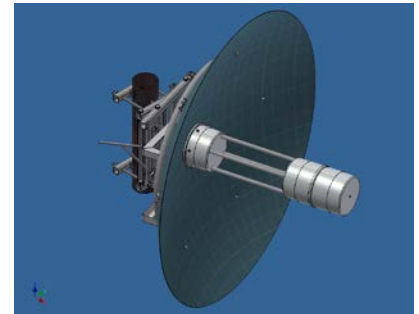
## MA-WP2556-DP12

### 2.4-2.7 GHz & 5-6 GHz Dual Band Dual Polarization Parabolic Reflector Antenna, 1.2m

MARS brand new Prime focus, Dual Band, Dual Polarization, Parabolic Reflector antenna provides coverage of 2.4-2.7 GHz & 5-6 GHz. The Parabolic Reflector antenna has a total of four connectors for vertical & horizontal polarization (2 V&H connectors for 2.4-2.7 GHz and 2 V&H connectors for 5-6 GHz).

Additional features:

- Efficient and stable performance.
- High gain stable performance.
- Suitable for harsh weather.



## Specifications

### Electrical

Frequency range	2.4-2.7 GHz	5-6 GHz
GAIN, typ.	25 ± 1 dBi	32.5 ± 1 dBi
VSWR, max.	1.7 : 1	2.0 : 1
Polarization	Dual Polarized	
Cross Polarization	10 dB	20 dB
3 dB Beam-Width, H-Plane, typ.	6°	3°
3 dB Beam-Width, E-Plane, typ.	6°	3°
Front to Back Ratio.	-30 dB	-40 dB
Port to Port Isolation	-15 dB	-20 dB
Interband isolation	-20 dB	-20 dB
Input power, max	20 Watt	
Input Impedance	50 Ohm	

### Mechanical

Dimensions (Ø)	1200 mm. (4 ft.)
Weight	18 kg.
Connector	4 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Mount	MNT-WP12

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

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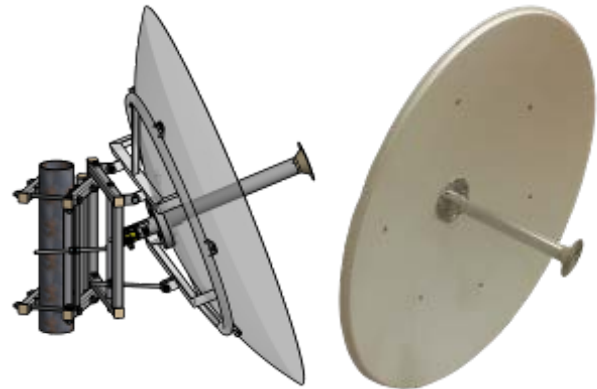
## MA-WP56-DP32

### 4.9-6.1 GHz Dual Polarization Parabolic Dish Antenna, 0.9m (3 ft.)

MARS brand new High Gain, Dual Polarization, Parabolic Dish antenna provides coverage of 4.9-6.1 GHz

Additional features:

- Efficient and stable performance.
- High gain stable performance.
- Suitable for harsh weather.



## Specifications

### Electrical

Frequency range	4.9 – 6.1 GHz
GAIN, typ.	32 dBi @ 5.15-6.10 GHz 30 dBi @ 4.90-5.15 GHz
VSWR, max.	1.7:1 @ 5.15-5.90 GHz 2.0:1 @ 4.90-5.15 GHz 2:0:1 @ 5.90-6.10 GHz
Polarization	Dual Polarized
Side Lobe Level, typ.	-15 dB
Cross Polarization, typ.	-20 dB
3 dB Beam-Width, H-Plane, typ.	4°
3 dB Beam-Width, E-Plane, typ.	4°
Front to Back Ratio	-40 dB
Port to Port Isolation, typ.	-36dB @ 4.9 – 5.6 GHz -20dB @ 5.6 – 6.1 GHz
Input power, max	100 Watt
Input Impedance	50 Ohm

### Mechanical

Dimensions (Ø)	900 mm. (3 ft.)
Weight	18 kg.
Connector	2 x N-Type, Female
Mount	MNT-WP12

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

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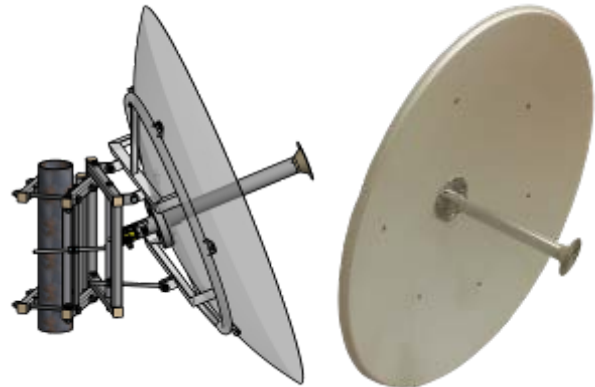
## MA-WP56-DP34

### 4.9-6.1 GHz Dual Polarization Parabolic Dish Antenna, 1.2m (4ft)

MARS brand new High Gain, Dual Polarization, Parabolic Dish antenna provides coverage of 4.9 – 6.1 GHz

Additional features:

- Efficient and stable performance.
- High gain stable performance.
- Suitable for harsh weather.



## Specifications

### Electrical

Frequency range	4.9-6.1 GHz
GAIN, typ.	34 dBi @ 5.15-6.10 GHz 32 dBi @ 4.90-5.15 GHz
VSWR, max.	2.0: 1 @ 4.90-5.15 GHz 1.7: 1 @ 5.15-5.90 GHz 2.0: 1 @ 5.90-6.10 GHz
Polarization	Dual Polarized
Side Lobe Level, typ.	-18 dB
Cross Polarization, typ.	-20 dB
3 dB Beam-Width, H-Plane, typ.	3°
3 dB Beam-Width, E-Plane, typ.	3°
Front to Back Ratio	-40 dB
Port to Port Isolation, typ.	-36dB @ 4.9-5.6 GHz -20dB @ 5.6-6.1 GHz
Input power, max	100 Watt
Input Impedance	50 Ohm

### Mechanical

Dimensions (Ø)	1200 mm. (4 ft.)
Weight	18 kg.
Connector	2 x N-Type, Female
Mount	MNT-WP12

### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)

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## MR-PBSMR55-X

### SMR / IDEN Bi - Directional Amplifier

MARS Personal BDA provides a cost effective solution for enhancing radio communication in offices and other small area spaces. Amplifier features small size and is easy to install.



### Specifications

#### Electrical

	Down Link	Up Link
Frequency range	851-866 MHz	806-821 MHz
Operational Frequency Band, (Other Available on Request)	851-866 MHz	806-821 MHz
Gain at, min. Attenuation	55 dB	
Pass Band Ripple	±2 dB	
Output Power @ 1 dB Compression	18 dBm	
Noise Figure max.	6.5 dB	
Step Attenuator (2 dB Step)	2 to 30 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	28 dBm	
Input Power, max.	-20 dBm	
Biassing (Through Separate DC Connector)	6V / 400mA (Adaptor MR-PS13 should be Ordered Separately)	

#### Mechanical

Dimensions	120 x 70 x 35 mm
Weight	200 gr.
Connectors	SMA, Female
Housing	Aluminum, Anodized, Black
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%

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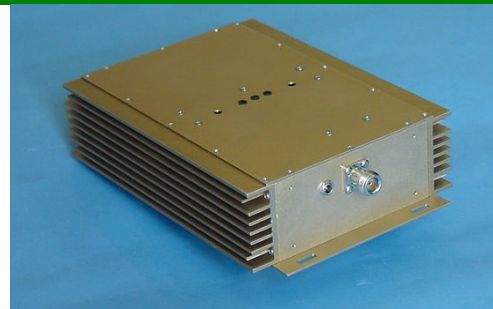
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## MR-BIDEN60-X1W

### SMR / IDEN Bi – Directional Amplifier

Mars BDA series of products provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments.

BDA products are designed to receive and amplify RF signals strength in both the "Down Link" and the "Up Link" communication paths.



### Specifications

#### Electrical

	Down Link	Up Link
Frequency range	851-866 MHz	806-821 MHz
Operational Frequency Band, (Other Available on Request)	851-866 MHz	806-821 MHz
Gain at, min. Attenuation	60 dB	
Pass Band Ripple	±1.5 dB	
Output Power @ 1 dB Compression	30 dBm	
Noise Figure max.	6 dB	
Gain Control Range, manual, 2 dB Step	30 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	40 dBm	
Biassing (Through Separate DC Connector)	6.7V / 3A (Adaptor MR-PS30 should be Ordered Separately)	

#### Mechanical

Dimensions	243 x 160 x 57 mm
Weight	2 kg.
Connectors	N-Type, Female

#### Environmental

Operating Temperature Range	-30°C to +70°C
Humidity, min.	95%
Splash, Dust	Protected

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## MR-BSMR60-A1W

### SMR / IDEN Automatic Control Repeater

Automatic Control Repeater is a high linear repeater at low power consumption. It provides a cost effective solution for enhancing in-building radio communication, basements, parking garages and other RF shielded environments.

Additional Features:

- Auto Setup
- Overload protection
- Oscillation protection



### Specifications

#### Electrical

	Down Link	Up Link
Frequency range	851-866 MHz	806-821 MHz
Operational Frequency Band, (Other available on request)	15 MHz	
Pass Band Ripple	±1.5 dB	
Gain at min. attenuation, min.	60 dB	
Output Power @ 1 dB Compression	30 dBm	
Maximum Output Power	21 dBm	
Output IP3, min.	40 dBm	
Noise Figure at min. attenuation, max.	6 dB	
Range of ALC output power setting points, (Other available by request)	7-21 dBm (up 8 set points)	
Range of AGC	45 dB	
Limited Output Power, (Other available by request)	28 dBm	
Protection from Oscillation and Overload	Automatic	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Input Power, No Damage, max.	10 dBm	
Biasing (Option - 220 VAC/ DC Adapter included)	6.7 VDC @ 3.5A max	

#### Mechanical

Dimensions	243 x 160 x 57 mm
Weight	2 kg.
Connectors	N-Type, Female
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%
Splash, Dust	Protected

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## MR-BSMR80-XA

### SMR / IDEN High Gain Automatic Control Repeater

High Gain Automatic Control Repeater is a high linear repeater at low power consumption. It provides a cost effective solution for enhancing in-building radio communication, basements, parking garages and other RF shielded environments.

Additional Features:

- Auto Setup
- Overload protection
- Oscillation protection



### Specifications

#### Electrical

	Down Link 851-866 MHz	Up Link 806-821 MHz
Frequency range	15 MHz	
Operational Frequency Band, (Other available on request)	80 dB	
Gain at min. attenuation, min.	30 dBm	
Output Power @ 1 dB Compression	25 dBm	
Maximum Output Power	41 dBm	
Output IP3, min.	1.5 dB	
Pass Band Ripple	6 dB	
Noise Figure at min. attenuation, max.	15-25 dBm (up 6 set points)	
Range of ALC output power setting points, (Other available by request)	45 dB	
Range of AGC (*)	28 dBm	
Limited Output Power, (Other available by request)	Automatic	
Protection from Oscillation and Overload	50 Ohm	
Impedance	2 : 1	
VSWR, max.	-15 dBm	
Input Power, No Damage, max.	6.7 VDC @ 3.5 A max	
Biassing (Option - 220 VAC/ DC Adapter included)		

#### Mechanical

Dimensions	280 x 250 x 65 mm
Weight	2.5 kg
Connectors	N-Type, Female
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%
Splash, Dust	Protected

(\*) Digital 30dB/1dB Step, Analog 15dB

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## MR-HSBDA60-X

### CDMA High Selective Repeater

MARS CDMA High Selective Repeater is a high linear repeater at low power consumption. It provides high frequency selectivity at low power consumption.

Additional Features:

- Auto Setup
- Overload protection
- Oscillation protection
- High spectral purity



### Specifications

#### Electrical

	Down Link	Up Link
Frequency range	869-894 MHz	824-849 MHz
Operational Frequency Band, (Other available on request)	10 MHz;	10 MHz;
Gain at min. attenuation, min.	63 dB	60 dB
Pass Band Ripple	3 dB	
Maximum Output Power	21 dBm	12 dBm
Selectivity: At 1 MHz offset from Pass Band edges, min.	50 dB	50 dB
Noise Figure at min. Attenuation	6.5 dB	
Range of AGC, step 1 dB (*)	30 dB	
Range of ALC Output Power Setting Points, (Other available by request)	8-21 dBm (up 8 set points)	-
Impedance In / Out	50 Ohm	
VSWR In / Out, max.	2 : 1	
Output IP3, min.	40 dBm	34 dBm
Propagation Delay, max.	5 usec	
Limited Output Power	28 dBm	19 dBm
Biasing (220 VAC/DC Adapter Included)	6.7 VDC @ 3.5A, max.	
Emission & Spurious	According to Standards	
Oscillation Protection	Yes	

#### Mechanical

Dimensions	280 x 250 x 65 mm
Weight	2.3 kg.
Connectors	N-Type, Female
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%

(\*) The Up Link Gain is Always 3 dB Lower than down Link Gain

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## MR-PBCT55-X

### CDMA / TDMA Bi - Directional Amplifier

MARS Personal BDA provides a cost effective solution for enhancing radio communication in offices and other small area spaces. Amplifier features small size and is easy to install.



### Specifications

#### Electrical

	Down Link	Up Link
Frequency range	869-894 MHz	824-849 MHz
Operational Frequency Band, (Other Available on Request)	869-879 MHz	824-834 MHz
Gain at, min. Attenuation	55 dB	
Pass Band Ripple	±2 dB	
Output Power @ 1 dB Compression	18 dBm	
Noise Figure max.	6.5 dB	
Step Attenuator (2 dB Step)	2 to 30 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	28 dBm	
Input Power, max.	-20 dBm	
Biassing (Through Separate DC Connector)	6V / 400 mA (Adaptor MR-PS13 should be Ordered Separately)	

#### Mechanical

Dimensions	120 x 70 x 35 mm
Weight	200 gr.
Connectors	SMA, Female
Housing	Aluminum, Anodized, Black
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%

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## MR-PBCT55-A

### CDMA Bi - Directional Amplifier /Repeater/

Gain Automatic Control Personal BDA provides a cost effective solution for enhancing radio communication in offices and other small area spaces. Amplifier features small size and is easy to install.



### Specifications

#### Electrical

	Down Link	Up Link
Frequency range	869-894 MHz	824-849 MHz
Operational Frequency Band, MHz (Other Available on Request)	869-879 MHz	824-834 MHz
Gain at, min. Attenuation	55 dB	
Pass Band Ripple	±2 dB	
Output Power @ 1 dB Compression	18 dBm	
Output IP3, min.	28 dBm	
Noise Figure max.	6.5 dB	
ALC	8 dBm	
RF Output Power Range	20 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Input Power, max.	-20 dBm	
Biassing (Through Separate DC Connector)	6V / 400mA (Adaptor MR-PS13 should be Ordered Separately)	

#### Mechanical

Dimensions	120 x 70 x 35 mm
Weight	200 gr.
Connectors	SMA, Female
Housing	Aluminum, Anodized, Black
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%

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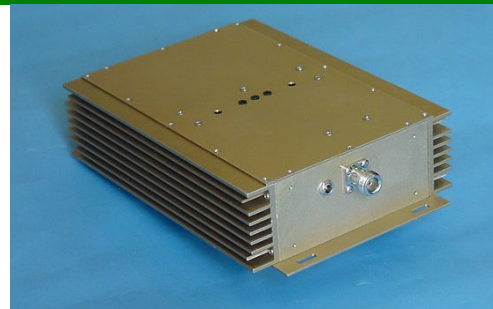
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## MR-BDA60-X1W

### Bi-Directional Amplifier

MARS BDA series of products provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments.

BDA products are designed to receive and amplify RF signals strength in both the "Down Link" and the "Up Link" communication paths.



### Specifications

#### Electrical

	Down Link	Up Link
Frequency range	869-894 MHz	824-849 MHz
Operational Frequency Band, MHz (Other Available on Request)	869-879 MHz	824-834 MHz
Gain at, min. Attenuation	60 dB	
Pass Band Ripple	±1.5 dB	
Output Power @ 1 dB Compression	30 dBm	
Noise Figure max.	6 dB	
Gain Control Range, manual, 2 dB Step	30 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	40 dBm	
Biassing (Through Separate DC Connector)	6.7VDC / 3A (Adaptor MR-PS30 should be Ordered Separately)	

#### Mechanical

Dimensions	243 x 160 x 57 mm
Weight	2 kg.
Connectors	N-Type, Female

#### Environmental

Operating Temperature Range	-30°C to +70°C
Humidity, min.	95%
Splash, Dust	Protected

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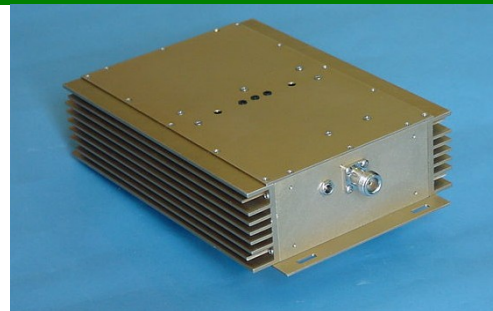
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## MR-BGSM60-X1W

### GSM Bi-Directional Amplifier

MARS BDA series of products provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments. BDA products designed to receive and amplify RF signals strength in both "Down Link" and "Up Link" communication paths.



### Specifications

#### Electrical

	Down Link	Up Link
Frequency range	935-960 MHz	890-915 MHz
Operational Frequency Band, MHz (Other Available on Request)	947-960 MHz	902-915 MHz
Gain at, min. Attenuation	60 dB	
Pass Band Ripple	±1.5 dB	
Output Power @ 1 dB Compression	30 dBm	
Noise Figure max.	6 dB	
Gain Control Range, manual, 2 dB Step	30 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	40 dBm	
Biassing (Through Separate DC Connector)	6.7V / 3A (Adaptor MR-PS30 should be Ordered Separately)	

#### Mechanical

Dimensions	243 x 160 x 57 mm
Weight	2 kg.
Connectors	N-Type, Female

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%
Splash, Dust	Protected

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## MR-PBGS55-FA

### Full Band GSM Automatic Gain Control Repeater

MARS Personal BDA provides a cost effective solution for enhancing radio communication in offices and other small area spaces. Amplifier features small size and is easy to install.



### Specifications

#### Electrical

	Down Link 935-960 MHz	Up Link 890-915 MHz
Operational Frequency Band, MHz		
Gain at min. Attenuation	55 dB	
Pass Band Ripple	$\pm 3$ dB	
Noise Figure max.	6 dB	
ALC	8 dBm	
RF Output Power Range	20 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	28 dBm	
Input Power, max.	-20 dBm	
Indications	Power ON & ALC Leds	
Power Supply	External PS 220V AC to 6VDC / 400 mA	

#### Mechanical

Dimensions	120 x 70 x 35 mm
Weight	200 gr.
Connectors	SMA, Female
Housing	Aluminum, Anodized, Black
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%

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## MR-PBGS55-X

### GSM Bi-Directional Amplifier

MARS Personal BDA provides a cost effective solution for enhancing radio communication in offices and other small area spaces. Amplifier features small size and is easy to install.



### Specifications

#### Electrical

	Down Link	Up Link
Frequency range	935-960 MHz	890-915 MHz
Operational Frequency Band, MHz (Other Available on Request)	947-960 MHz	902-915 MHz
Gain at, min. Attenuation	55 dB	
Pass Band Ripple	±2 dB	
Output Power @ 1 dB Compression	18 dBm	
Noise Figure max.	6.5 dB	
Step Attenuator (2 dB Step)	2 to 30 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	28 dBm	
Input Power, max.	-20 dBm	
Biassing (Through Separate DC Connector)	6V / 400mA (Adaptor MR-PS13 should be Ordered Separately)	

#### Mechanical

Dimensions	120 x 70 x 35 mm
Weight	200 gr.
Connectors	SMA, Female
Housing	Aluminum, Anodized, Black
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%

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## MR-HGSM50-X

### GSM1800 Bi-Directional Amplifier

MARS BDA series of products provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments.

BDA products are designed to receive and amplify RF signals strength in both the "Down Link" and the "Up Link" communication paths.



### Specifications

#### Electrical

	Down Link 1805-1880 MHz	Up Link 1710-1785 MHz
Frequency range		
Gain at, min. Attenuation		45 dB
Pass Band Ripple		±3 dB
Maximum Output Power		15 dBm
Output Power @ 1 dB Compression		25 dBm
Noise Figure max.		7 dB
Digital Automatic Level Control, 1 dB Step		30 dB
Impedance		50 Ohm
VSWR, max.		2 : 1
Output IP3, min.		38 dBm
Input Power, max.		-15 dBm
Biasing		6.5V / 1500mA

#### Mechanical

Dimensions	310 x 150 x 63 mm
Weight	Less than 2 kg.
Connectors	N-Type, Female
Mount	Panel

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%
Splash, Dust	Protected

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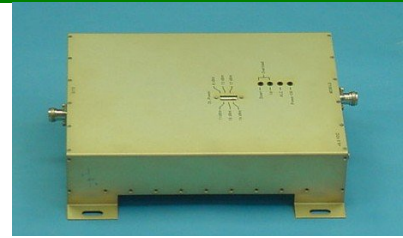
## MR-HSBGSM60

### GSM High Selective Repeater

GSM High Selective Repeater is a high linear repeater which provides high frequency selectivity at low power consumption.

Additional Features:

- Auto Setup
- Overload protection
- Oscillation protection
- High Spectral Purity



### Specifications

#### Electrical

	Down Link	Up Link
Frequency Range	935-960 MHz	890-915 MHz
Operational Frequency Band, (Other available on request)	11.4 MHz;	11.4 MHz;
Gain at min. attenuation, min.	63 dB	60 dB
Pass Band Ripple	$\pm 1.5$ dB	
Maximum Output Power	21 dBm	13 dBm
Output IP3, min.	40 dBm	33 dBm
Range of ALC Output Power Setting Points, (Other available by request)	8-21 dBm (up 8 set points)	-
Limited Output Power, (Other available by request)	28 dBm	19 dBm
Range of AGC, step 1 dB (*)	30 dB	
Noise Figure at min. attenuation, max.	6.5 dB	
Selectivity: At 1 MHz offset from Pass Band edges, min.	50 dB	50 dB
Protection from Oscillation and Overload	Automatic	
Impedance	50 Ohm	
Propagation Delay, max	5 usec.	
VSWR, max.	2 : 1	
Biasing (Option - 220 VAC/ DC Adapter included)	6.7 VDC @ 3.5A max	

#### Mechanical

Dimensions	280 x 250 x 65 mm
Weight	2.5 kg.
Connectors	N-Type, Female
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%
Splash, Dust	Protected

(\*) Note 1: the up link Gain is always 3 dB lower than the down link Gain

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## MR-BGSM80-XA

### GSM High Gain Automatic Control Repeater

MR-BGSM80-XA is a high linear repeater at low power consumption. It provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments.

#### Additional Features

- Auto Setup
- Overload protection
- Oscillation protection



### Specifications

#### Electrical

	Down Link 935-960 MHz	Up Link 890-915 MHz
Frequency range		
Pass Band, Nominal	25 MHz	
Gain at min. Attenuation, min.	80 dB	70 dB
Maximum Output Power	21 dBm	
Output Power @ 1 dB Compression	30 dBm	
Output IP3, min.	40 dBm	
Pass Band Ripple	±2 dB	
Noise Figure at min. attenuation, max.	5.5 dB	
Range of ALC output power setting points, dBm.	11-21 dBm (up 6 set points)	
Range of AGC, dB.	30 dB	
Limited Output Power, dBm.	28 dBm	
Protection from Oscillation and Overload	Automatic	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Input Power, No Damage, max.	-15 dBm	
Biasing (220 VAC/DC Adapter included)	6.7 VDC @ 3.5A max	

#### Mechanical

Dimensions	280 x 250 x 65 mm
Weight	2.5 kg.
Connectors	N-Type, Female
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%
Splash, Dust	Protected

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## MR-DBHSDG-70YY

### GSM Dual Band (900MHz & 1800MHz) Repeater

MR- DBHSDG-70YY is a high selective dual band medium RF power repeater with full band frequency range.

It provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments.

Additional Features

- Auto Setup
- Oscillation & Overload Protection
- AGC



### Specifications

#### Electrical

	GSM 900		DCS 1800	
	Down Link	Up Link	Down Link	Up Link
Frequency Band*	935-960 MHz	890-915 MHz	1805-1880 MHz	1710-1785 MHz
Gain at min. attenuation	70 dB		70 dB	
Pass Band Ripple	±2 dB		±4 dB	
Max Output Power	15 dBm	15 dBm	18 dBm	18 dBm
Output IP3, min.	36 dBm	36 dBm	40 dBm	40 dBm
Intermodulation products, not more	-45 dBc		-45 dBc	
Limited Output Power (Shut down level)	20 dBm		23 dBm	
Range of AGC	30 dB		30 dB	
Noise Figure at min. attenuation, max.	6 dB		6 dB	
Propagation delay, max.	5 usec		5 usec	
Protection from Oscillation and Overload	Automatic		Automatic	
Impedance	50 Ohm		50 Ohm	
VSWR In/Out, max.	2 : 1		2 : 1	
Indications -Leds	"Power ON", "850 Signal", "2000 Signal"			
Standard: 3GPP TS 25.106	Compliance			
Biasing ( 220 VAC/DC Adapter included)	12 VDC @ 2 A			

#### Mechanical

Dimensions	310 x 200 x 60 mm
Weight	3 kg.
Connectors	N-Type, Female
Mount	Wall/Ceiling Mount

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%
Splash, Dust	Protected

(\*) Other available on request

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## MR-HSUMTS70-X

### UMTS HS Bi-Directional Amplifier 1Watt

UMTS High Selective Repeater provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments. BDA products are designed to receive and amplify RF signals strength in both the "Down Link" and the "Up Link" communication paths.



### Specifications

#### Electrical

	Down Link	Up Link
Frequency Range	2110-2170 MHz	1920-1980 MHz
Pass Band (*)	2140-2150 MHz	1950-1960 MHz
Gain at min. Attenuation, min.	75 dB	72 dB
Pass Band Ripple	±1.5 dB	±1.5 dB
Rejection / 1 MHz from Pass Band, min.	45 dB	45 dB
Maximum Output Power	30 dBm	12 dBm
Range of ALC output power setting points (up 8)	30-16 dBm (*)	(*) & (**)
Range of ALC, min.	30 dB	
Output IP3, min.	48 dB	38 dB
Propagation delay, max.	5 usec	
Noise Figure, max.	6 dB	4.5 dB
Impedance	50 Ohm	
VSWR In/Out, max.	2 : 1	
Protection from Oscillation and Overload	Automatic	
Local control & monitoring / RS-232/	Yes	
Current & temperature protection	Yes	
Down RF Power indication	Yes	
Power Supply	220V AC	
Power consumption, max.	50 W	

#### Mechanical

Dimensions	440 x 325 x 180 mm
Weight	Less than 11 kg.
Connectors	N-Type, Female
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%
Splash, Dust	Protected

(\*) Other available on request

(\*\*) Up Link Gain is setting 3 dB less than Down Link Gain

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## MR-UMTS70-20F

### UMTS Bi-Directional Amplifier (WCDMA)

MR-UMTS70-20F is a full band UMTS linear repeater at low power consumption. It provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments.

#### Additional Features

- Auto Setup.
- Overload & Oscillation protection.
- "Down Link" RF Power indication.



### Specifications

#### Electrical

	Down Link	Up Link
Frequency Band	2110-2170 MHz	1920-1980 MHz
Pass Band - nominal	60 MHz	
Gain at min. attenuation, min.	70 dB	
Pass Band Ripple	± 3 dB	
Maximum Output Power	20 dBm	
Range of ALC output power setting points, dBm	20-6 dBm (up to 8 set points)	
Range of AGC, dB	30 dB	
Output IP3, min.	40 dBm	
Output Power @ 1 dB Compression	30 dBm	
Noise Figure at min. attenuation, max.	5 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Protection from Oscillation and Overload	Automatic	
Biasing (220 VAC/DC Adapter included)	6.7 VDC @ 2.5A max	

#### Mechanical

Dimensions	280 x 250 x 65 mm
Weight	2.5 kg.
Connectors	N-Type, Female
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%
Splash, Dust	Protected

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## MR-HSUMTS70-20

### UMTS HS Bi-Directional Amplifier

MR-HSUMTS70-20 is a high selective linear repeater at low power consumption. It provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments.

#### Additional Features

- Auto Setup.
- Overload & Oscillation protection.
- "Down Link" RF Power indication.



### Specifications

#### Electrical

	Down Link	Up Link
Frequency Band	2110-2170 MHz	1920-1980 MHz
Pass Band (*)	2140-2150 MHz	1950-1960 MHz
Gain at min. Attenuation, min.	73 dB	
Pass Band Ripple	±1.5 dB	
Rejection / 1 MHz from Pass Band, min.	45 dB	
Maximum Output Power	20dBm	
Range of ALC output power setting points, dBm	20-6 dBm (up to 8 set points)	
Range of AGC, dB	30 dB	
Output IP3, min.	40 dBm	
Output Power @ 1 dB Compression	30 dBm	
Propagation delay, max.	5 usec	
Noise Figure at min. attenuation, max.	6 dB	
Limited Output Power, dBm	28 dBm	
Impedance	50 Ohm	
VSWR, max.	2:1	
Protection from Oscillation and Overload	Automatic	
Biasing (220 VAC/DC Adapter included)	6.7 VDC @ 3.5 A max	

#### Mechanical

Dimensions	280 x 250 x 65 mm
Weight	2.5 kg.
Connectors	N-Type, Female
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%
Splash, Dust	Protected

(\*) Other available on request

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## MR-HSUMTS70-18

### UMTS HS Bi – Directional Amplifier (WCDMA)

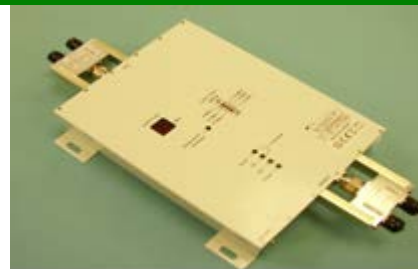
MR-HSUMTS70-18 is a high selective linear repeater at low power consumption. It provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments.

The features of this model are two built-in CDMA 800 / UMTS dual-band duplexers, which allows providing UMTS coverage in existing CDMA 800 area.

Different pass bands are available upon request

Additional Features

- Auto Setup.
- "Down Link" RF Power indication.



### Specifications

#### Electrical

	Down Link	Up Link
Frequency Band	2110-2170 MHz	1920-1980 MHz
Pass Band(*)	2140-2150 MHz	1950-1960 MHz
Gain at min. Attenuation, min.	73 dB	70 dB
Output Power @ 1 dB Compression		30 dBm
Pass Band Ripple		±1.5 dB
Rejection / 1 MHz from Pass Band, min.		45 dB
Maximum Output Power	20dBm	16dBm
Range of ALC output power setting points, dBm(*)	20-6 dBm (up 8 set points)	Gain is set 3 dB less than Down Link Gain
Range of AGC, dB		30 dB
Output IP3, min.		40 dBm
Propagation delay, max.		5 usec
Noise Figure at min. attenuation, max.		6 dB
Impedance		50 Ohm
VSWR, max.		2 : 1
Protection from Oscillation and Overload		Automatic
Limited Output Power		28 dBm
Isolation between RF ports: 800-2000 MHz (internal duplexer)		> 45 dB
Biasing ( 220 VAC/DC Adapter included)		6.7 VDC @ 3.5A max

#### Mechanical

Dimensions	420 x 250 x 65 mm
Weight	2.5 kg.
Connectors	N-Type, Female
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%
Splash, Dust	Protected

(\*) Other available on request

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## MR-PUMTS50-FA

### Full Band UMTS (2GHz) Automatic Gain Control Repeater

MARS Personal BDA provides a cost effective solution for enhancing radio communication in offices and other small area spaces. Amplifier features small size and is easy to install.



### Specifications

#### Electrical

	Down Link	Up Link
Operational Frequency Band, MHz	2110-2170 MHz	1920-1980 MHz
Gain at min. Attenuation	50 dB	
Pass Band Ripple	± 2.5 dB	
Output Power @ 1 dB Compression	17 dBm	
Noise Figure max.	6 dB	
ALC RF Output Power Range	8 dBm	
	20 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	27 dBm	
Input Power, max.	-20 dBm	
Indications	Power ON & ALC Leds	
Power Supply	External PS 220V AC to 6VDC / 400 mA	

#### Mechanical

Dimensions	120 x 70 x 35 mm
Weight	200 gr.
Connectors	SMA, Female
Housing	Aluminum, Anodized, Black
Mount	Wall / Ceiling Mounting

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%

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## MR-DBHSUC-80

### CDMA/UMTS 1Watt Dual Band (850MHz & 2000MHz) Repeater

MR-DBHSUC-80 is a high selective (45-50dB) dual band 1Watt RF liner power repeater at low power consumption. It provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments.

#### Additional Features

- Auto Setup
- Oscillation & Overload Protection
- AGC



### Specifications

Electrical				
	850MHz		2000MHz	
	Down Link	Up Link	Down Link	Up Link
Frequency Band *	869-879 MHz	824-834 MHz	2140-2150 MHz	1950-1960 MHz
Gain at min. attenuation	75 dB	72 dB	80 dB	77 dB
Gain Difference - DL/UL	3 dB		3 dB	
Pass Band Ripple	± 1.5dB		± 1.5dB	
Max (Linear) Output Power	30 dBm	15 dBm	30 dBm	15 dBm
Intermodulation products, not more	- 43 dBc		- 43 dBc	
Limited Output Power (Shut down level)	33 dBm	18 dBm	33 dBm	18 dBm
Range of AGC	30 dB		30 dB	
Noise Figure at min. attenuation, max.	6 dB		5 dB	
Propagation delay, max	5 usec		5 usec	
Protection from Oscillation and Overload	Automatic		Automatic	
Impedance	50 Ohm		50 Ohm	
VSWR In/Out, max.	2 : 1		2 : 1	
Indications -Leds	"Power ON", "850 Signal", "2000 Signal"			
Standard: 3GPP TS 25.106	Compliance			
Biasing (220 VAC/ DC Adapter included)	100-240VAC, 47-63Hz			
Mechanical				
Dimensions with connectors	350 x 270 x 100 mm			
Weight	< 5 Kg.			
Connectors	N-Type, Female			
Mount	Wall / Ceiling Mount			
Environmental				
Operating Temperature Range	-10°C to +50°C			
Humidity, min.	95%			
Splash, Dust	Protected			

(\*) Other available by request;

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## MR-DBHSUC-70YY

### CDMA/UMTS Dual Band (850MHz & 2000MHz) Repeater

MR- DBHSUC-70YY is a high selective (45-50dB) dual band medium RF power repeater at low power consumption.

It provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments.

Additional Features

- Auto Setup
- Oscillation & Overload Protection
- AGC



### Specifications

#### Electrical

	CDMA 850		UMTS 2100	
	Down Link	Up Link	Down Link	Up Link
Frequency Band*	869-879 MHz	824-834 MHz	2140-2150 MHz	1950-1960 MHz
Gain at min. attenuation	68 dB	65 dB	75 dB	72 dB
Gain Difference - DL/UL	3 dB		3 dB	
Pass Band Ripple	±1.5 dB		±1.5 dB	
Max Output Power	15 dBm	12 dBm	17 dBm	12 dBm
Intermodulation products, not more	-45 dBc		-45 dBc	
Limited Output Power (Shut down level)	20 dBm	16 dBm	20 dBm	16 dBm
Range of AGC	30 dB		30 dB	
Noise Figure at min. attenuation, max.	6 dB		5 dB	
Propagation delay, max.	5 usec		5 usec	
Protection from Oscillation and Overload	Automatic		Automatic	
Impedance	50 Ohm		50 Ohm	
VSWR In/Out, max.	2 : 1		2 : 1	
Indications - Leds	"Power ON", "850 Signal", "2000 Signal"			
Standard: 3GPP TS 25.106	Compliance			
Biasing ( 220 VAC/DC Adapter included)	12 VDC @ 2 A			

#### Mechanical

Dimensions	260 x 200 x 60 mm
Weight	< 3 kg.
Connectors	N-Type, Female
Mount	Wall/Ceiling Mount

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95%
Splash, Dust	Protected

(\*) Other available on request

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## MR-AM800-X

### Power Amplifier - Cellular Bands

MARS Power Amplifier features 30 dBi of gain and stable performance. Amplifiers features small size allowing for easy installation.

Can be customized to meet customer's requirements.



### Specifications

#### Electrical

Standard	AMPS, CDMA, TDMA
Frequency range, MHz	800-960 MHz
Gain	30 ± 1 dB
GAIN Flatness, max.	±0.2 dB
VSWR, max.	1.5 : 1
Output Power @1 dB Compression Point	+33 dBm
Noise Figure, max.	4 dB
Output IP3, min.	+46 dBm
Input Power, max.	+10 dBm
Operating Voltage	28 VDC / 600 mA

#### Mechanical

Dimensions	60 x 50 x 20 mm (Without Heat Sink)
RF Connectors	SMA, Female
DC Connector	Feed Through

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95% RH, IEC 60068-2-56
Splash, Dust	Protected

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## MR-AM1800-X, MR-AM1900-X

### Power Amplifier - Cellular Bands

MARS Power Amplifier features 30 dB of gain and stable performance. Amplifiers features small size allowing for easy installation.

Can be customized to meet customer's requirements.



### Specifications

#### Electrical

Model No.	MR-1800-X	MR-AM1900-X
Standard	PCS 1800 GSM 1800	PCS 1900 GSM 1900
Frequency range, MHz	1800-1900 MHz	1900-2000 MHz
Gain	30 ± 1 dB	
GAIN Flatness, max.	±0.2 dB	
VSWR, max.	1.5 : 1	
Output Power @ 1 dB Compression Point	+35 dBm	+35 dBm
Noise Figure, max.	5 dB	5 dB
Output IP3, min.	+45 dBm	+45 dBm
Operating Voltage	28 VDC / 500 mA	

#### Mechanical

Dimensions	60 x 50 x 20 mm (Without Heat Sink)
RF Connectors	SMA, Female
DC Connector	Feed Through

#### Environmental

Operating Temperature Range	-10°C to +50°C
Humidity, min.	95% RH, IEC 60068-2-56
Splash, Dust	Protected

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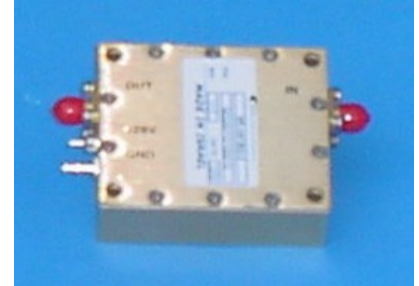
## MR-AM2100-X

### Power Amplifiers - Cellular Bands

MARS Power Amplifiers feature high efficiency, linearity and stable performance.

Amplifiers feature small size allowing for easy installation.

Can be customized to meet customer's requirements.



### Specifications

#### Electrical

Standard	IMT2000, UMTS
Frequency range, MHz	2110-2170 MHz
Gain	11 dB
GAIN Flatness, max.	±0.5 dB
VSWR, max.	2 : 1
Output Power @ 1 dB Compression Point	+38dBm
Noise Figure, max.	5 dB
Output IP3 @ 2 tone/27dBm	+50 dBm
Impedance	50 Ohm
Shut Down (ON/OFF)	+5V @ 25uA
Operating Voltage	9 VDC @ 1.2A (at 30 dBm RF Pout)

#### Mechanical

Dimensions	60 x 50 x 20 mm (Without Heat Sink)
RF Connectors	SMA, Female
DC Connector	Feed Through

#### Environmental

Operating Temperature Range	-20°C to +50°C
Humidity, min.	95% RH, IEC 60068-2-56
Splash, Dust	Protected

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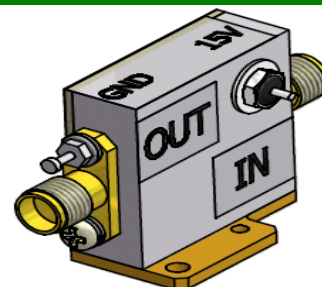
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## MR-AM1200-2100

### RF Amplifier

MARS Power Amplifiers feature 20-28 dBi of gain and stable performance.  
Amplifiers feature small size allowing for easy installation.  
Can be customized to meet customer's requirements.



### Specifications

#### *Electrical (temperature +23°C)*

RF Frequency range	1.2-2.1 GHz
Gain, min.	28 dB @ 1.2 GHz; 24 dB @ 1.5 GHz; 22 dB @ 1.8 GHz; 20 dB @ 2.1 GHz
VSWR, Input/Output	1.8 : 1
Impedance	50 Ohm
Noise Figure, max	2.5 dB
Output Power 1 dB Compression, min	17 dBm
Output IP3, min	30 dBm
Input RF Power (CW), max	15 dBm
DC Power: Voltage, Current, typ.	+(8-15) VDC; 100 mA

#### *Mechanical*

Dimensions (with RF connectors)	44 x 9 x 25 mm
Dimensions (without RF connectors)	25 x 9 x 25 mm
Solder Terminals for DC & GND	2 pcs.
RF Connectors (IN/OUT)	SMA Female
Mount (eye)	2 pcs.

#### *Environmental*

Operating Temperature	-30°C to +55°C
Non Operating Temperature	-30°C to +70°C

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## MR-RA30-1

### MARS GPS Re-Radiating System

MARS GPS Re-Radiating System is repeater kit to provide wireless indoor good GPS signal. This kit consists of three main components: outdoor active antenna, re-radiating amplifier (repeater) and indoor antenna.

MARS GPS System provides a cost effective solution for enhancing GPS communication in showrooms, car parks, trains, buses, GPS service centers etc. System components feature small size and are easy to install.

Additional features:

- High rejection
- DC feeder for outdoor GPS antenna
- Special Mount
- Cable lengths are available on request



### Specifications

#### Electrical

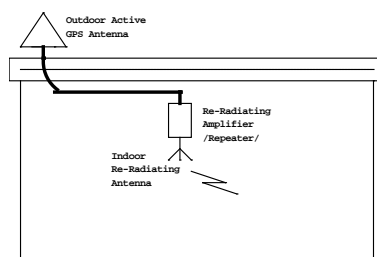
	Active GPS Antenna MA-GP15-3 (outdoor)	Re-Radiating Amplifier MR-RA30	GPS Antenna MA-EG15-2P (indoor)
Frequency range, MHz	1575.42 ± 2.0 MHz		
Impedance, Ohm	50	50	50
VSWR	2 : 1	2 : 1	2 : 1
Polarization	RHCP	---	RHCP
Gain of Antenna Element @ Zenith, dBic	2.0 min (-10 min at 0° elevation)	---	2.0 min
Gain, dB	25 (Ampl.)	35	---
Filtering, dB	---	40 @ ± 50MHz	---
Noise Figure, dB	1.6 (Ampl.)	1.0	---
Output Power @ 1dB compress., dBm	---	20	---
Output IP3, dBm	---	32	---
Adjustable Gain, dB	---	30	---
Power Supply, V/mA (220 VAC/ DC adapter included)	5 VDC @ 30 mA (thru RF cable)	(6-12) VDC @ 150 mA	---

#### Mechanical

Dimensions, mm	170 mm (diameter); 100 mm (height)	80 x 70 x 35 mm	40 x 45 x 15 mm
Weight, gr.	500 gr.	150 gr.	60 gr.
Connectors	N-type, Female	SMA, Female	SMA, Male

#### Environmental

Operating Temperature	-30°C to +50°C	-10°C to +50°C	-10°C to +50°C
Storage Temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C



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## MR-RA30-2

### MARS GPS Re-Radiating System

MARS GPS Re-Radiating System is repeater kit to provide wireless indoor good GPS signal. This kit consists of two main components: outdoor active antenna and indoor re-radiating amplifier with internal antenna.

MARS GPS System provides a cost effective solution for enhancing GPS communication in showrooms, car parks, trains, buses, GPS service centers etc.

System components feature small size and are easy to install.

Additional features:

- High rejection
- DC feeder for outdoor GPS antenna
- Special Mount
- Cable lengths are available on request



### Specifications

#### Electrical

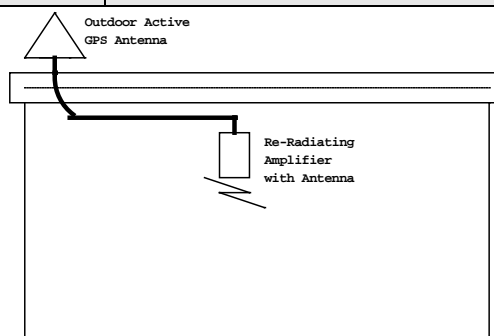
	Active GPS Antenna MA-GP15-3 (outdoor)	Re-Radiating Amplifier MR-RAWA35 (indoor)
Frequency range, MHz	1575.42 ± 2.0 MHz	
Impedance, Ohm	50	50
VSWR	2 : 1	2 : 1
Polarization	RHCP	RHCP
Gain of Antenna Element @ Zenith, dBic	2.0 min (-10 min at 0° elevation)	2.0 min
Gain, dB	25 (Ampl.)	35
Filtering, dB	---	40 @ ±50MHz
Noise Figure, dB	1.6 (Ampl.)	1.0
Output Power @ 1dB compress., dBm	---	20
Output IP3, dBm	---	32
Adjustable Gain, dB	---	30
Power Supply, V/mA (220 VAC/ DC adapter included)	5 VDC @ 30 mA (thru RF cable)	(6-12) VDC @ 150 mA

#### Mechanical

Dimensions, mm	170 mm (diameter); 100 mm (height)	155 x 155 x 25 mm
Weight, gr.	500 gr.	300 gr.
Connectors	N-type, Female	SMA, Female

#### Environmental

Operating Temperature	-30°C to +50°C	-10°C to +50°C
Storage Temperature	-40°C to +85°C	-40°C to +85°C



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## MR-DARF-XX

### Dual Active Reject Filter

MARS Dual Active Reject Filter (DARF) provides a cost effective solution for eliminating interfering signals within the cellular frequency band (over 30 dB rejection).

The full system consists of a 19" mountable rack unit that supports up to three dual reject filter modules (see picture), while each module handles one sector.

Additional Features:

- Frequency agile.
- Operates with RX and diversity antenna.



### Specifications

#### Electrical

Frequency range	825-835 MHz
IF Frequency	86 MHz
Band Reject (-3 dB)	≤ 150 KHz
Band Reject (-30 dB)	≥ 50 KHz (±5%) non Symmetrical
Null Depth, min.	40 dB
Gain	3 dB (min.) to 7 dB (max.)
Noise Figure, max.	6 dB
Input Intercept Points IP3	≥ -2 dBm
1 dB Compression Point	≥ -12 dBm
Overall Gain over Frequency Band	3 (+3 dB / -2 dB)
Gain Tracking over Frequency Band	≤ 3 +1 dB
Indicators (Led)	Lock Detection, DC
Tuning Step Conversion	25 KHz
DC Voltage	27 V
DC Current, max.	600 mA

#### Mechanical

Dimensions	19" Box
RF Connectors	N-Type, Female/Male
DC Connector	Terminal Block
Mount	Free Standing

#### Environmental

Operating Temperature Range	-10°C to +50°C
Storage Temperature Range	-10°C to +60°C
Humidity	90%

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## MR-PD02-X

### 2 Way Splitter

Can be used to split a signal from a source or combine signals from multiple sources.

Additional Features:

- Bi-directional splitter/combiner.
- Wide frequency range.
- Reliable and stable performance.
- Small size allowing for easy installation.



### Specifications

#### Electrical

Frequency range	800-2500 MHz
Insertion Loss, Over 3 dB, typ. / max.	0.7 dB / 1.5 dB
Output VSWR, max.	2 : 1
Amplitude Balance, max.	0.4 dB
Phase Balance, max.	4°
Isolation, typ.	20 dB
Impedance	50 Ohm
Operating Power	33 dBm

#### Mechanical

Dimensions (L x W x H)	120 x 95 x 30 mm (4.7" x 3.7" x 1.2")
Weight	Less than 200 gr.
Number of Outputs	2
Connectors	N-Type, Female
Mounting	Planar / Wall / Ceiling Mount

#### Environmental

Operating Temperature Range	-10°C to +55°C
Humidity, min.	95%
Splash, Dust	Protected

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## MR-PD03-X

### 3 Way Splitter

Can be used to split a signal from a source or combine signals from multiple sources.

Additional Features:

- Bi-directional splitter/combiner
- Wide frequency range
- Reliable and stable performance
- Small size allowing for easy installation



### Specifications

#### Electrical

Frequency range	800-2000 MHz
Insertion Loss, Over 4.8 dB	1.3 dB
Output VSWR, max.	1.8 : 1
Amplitude Balance, max.	0.8 dB
Phase Balance, max.	8°
Isolation, typ.	18 dB
Impedance	50 Ohm
Input Power (Load VSWR <1.2)	60 Watt

#### Mechanical

Dimensions (L x W x H)	140 x 95 x 30 (5.5" x 3.7" x 1.2")
Weight	Less than 200 gr.
Number of Outputs	3
Connectors	N-Type, Female
Mounting	Planar / Wall / Ceiling Mount

#### Environmental

Operating Temperature Range	-40°C to +70°C
Humidity, min.	95%
Splash, Dust	Protected

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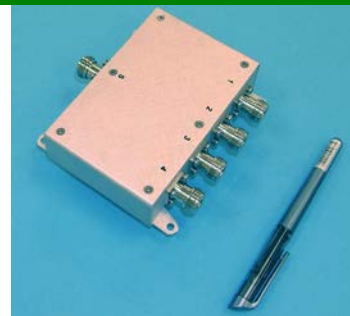
## MR-PD04-X

### 4 Way Splitter

Can be used to split a signal from a source or combine signals from multiple sources.

Additional Features:

- Bi-directional splitter/combiner.
- Wide frequency range.
- Reliable and stable performance.
- Easy installation.



### Specifications

#### Electrical

Frequency range	800-2200 MHz
Insertion Loss, max.	1.5 dB
Output VSWR, max.	2 : 1
Amplitude Balance, max.	0.7 dB
Phase Balance, max.	7°
Isolation, typ.	17 dB
Impedance	50 Ohm
Input Power (Load VSWR <2)	60 Watt

#### Mechanical

Dimensions (L x W x H)	120 x 110 x 30 mm (4.7" x 4.3" x 1.2")
Number of Outputs	4
Connectors	N-Type, Female
Mounting	Planar / Wall / Ceiling Mount

#### Environmental

Operating Temperature Range	-40°C to +70°C
Humidity, min.	95%
Splash, Dust	Protected

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## MR-PD04-X1

### 4 Way Splitter

Professional high performance 4 Way Splitter.

Additional Features:

- Bi-directional splitter.
- Reliable and stable performance.
- Easy installation.



### Specifications

#### Electrical

Operating Frequency range	2.3-2.6 GHz
Insertion Loss, max.	0.7 dB
Input/Output VSWR	1.5 Max
Amplitude Balance, max.	0.5 dB
Phase Unbalance, max.	7°
Isolation, min.	20 dB
Impedance	50 Ohm
Power rating, load VSWR better then 1.5:1	20 Watt

#### Mechanical

Dimensions (L x W x H)	197 x 136 x 82 [excluding mount]
Weight:	Less than 1.1 kg.
Number of Outputs	4
Connectors	N-Type, Female
Mounting	Mast

#### Environmental

Operating Temperature Range	-40°C to +70°C
Humidity, min.	95%
Splash, Dust	Protected

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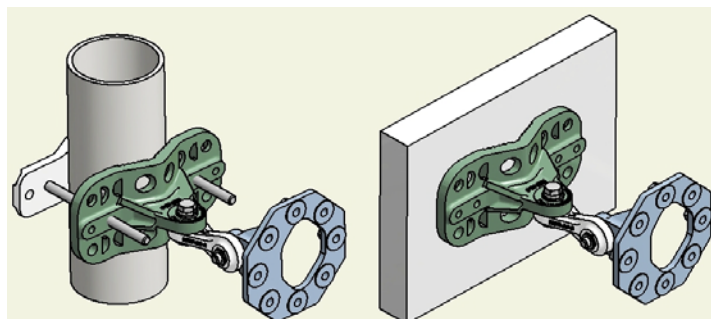
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## MNT-22

### Mount for CPE / Subscriber and Small Base Station Antennas

#### MNT-22 Features:

- Azimuth and Elevation Adjustable Mount for CPE, Subscriber and Small Base Station Antennas
- Suitable for pole or wall mounting.
- Allows positioning of antenna in 45° slant polarization.
- Made of Die Cast Aluminum.
- Comes with all required hardware in a kit form.
- Heavy duty.



### Specifications

#### Mechanical

Material	Aluminum
Kit Weight	0.820 kg.
Load	510 N
Suitable for pole diameter range	25-120 mm *Screws supplied are 80 mm. Longer screws are available on request.
Movement Possibility	Azimuth $\pm 45^\circ$ with antenna 300 x 300 mm mounted Elevation $\pm 45^\circ$ with antenna 300 x 300 mm mounted

#### Environmental

Operating Temperature Range	-40°C to +85°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Ice and Snow	25 mm radial (survival)
Wind Load	210 km/h
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

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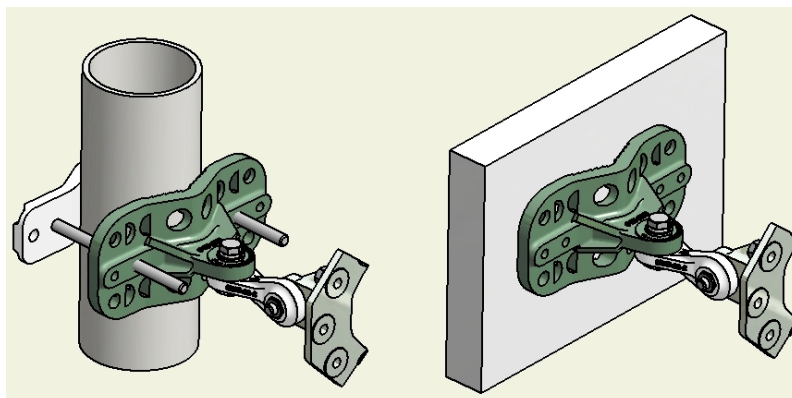
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## MNT-23

### Mount for Small Outdoor Antennas

#### MNT-23 Features:

- Azimuth and Elevation Adjustable Mount for Small Outdoor Antennas.
- Free access to cable connector.
- Suitable for pole or wall mounting.
- Made of Die Cast Aluminum.
- Comes with all required hardware in a kit form.
- Heavy duty.



### Specifications

#### Mechanical

Material	Aluminum
Kit Weight	0.760 kg.
Load	510 N
Suitable for pole diameter range	25-120 mm *Screws supplied are 80 mm. Longer screws are available on request.
Movement Possibility	Azimuth $\pm 45^\circ$ with antenna 300 x 300 mm mounted Elevation $\pm 45^\circ$ with antenna 300 x 300 mm mounted

#### Environmental

Operating Temperature Range	-40°C to +85°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Ice and Snow	25 mm radial (survival)
Wind Load	210 km/h
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

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## MNT-1A

### Mount for CPE / Subscriber and Small Base Station Antennas

#### MNT-1A Features:

- Azimuth and Elevation Adjustable Mount for CPE, Subscriber and Small Base Station Antennas.
- Suitable for pole mounting
- Allows positioning of antenna in 45° slant polarization
- Made of Aluminum 5052, Resist to Corrosion
- Comes with all required hardware in a kit form
- Heavy duty



### Specifications

#### Mechanical

Material	Aluminum
Kit Weight	0.6 kg.
Load	510 N
Suitable for pole diameter range	1-3" (inch)
Movement Possibility	Elevation $\pm 16^\circ$ with antenna 500 x 80 mm mounted

#### Environmental

Operating Temperature Range	-40°C to +85°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Ice and Snow	25 mm radial (survival)
Wind Load	210 km/h
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

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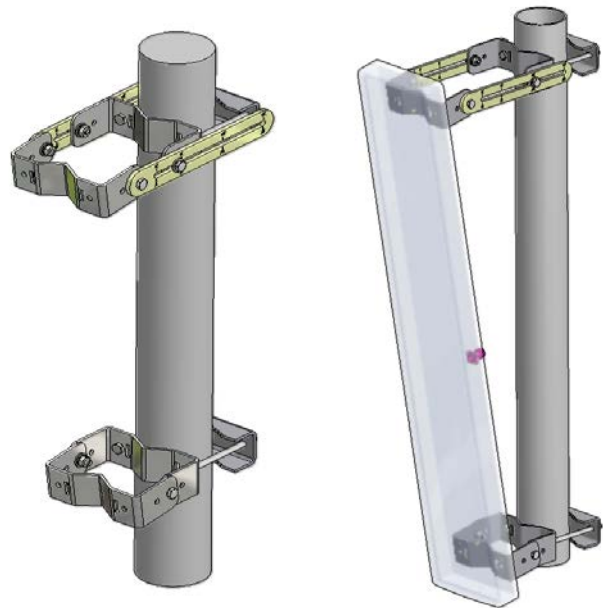
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## MNT-5A

### Mount for Base Station Antennas

#### MNT-5A Features:

- Elevation Tilt Adjustable Mount for large Base Station Antennas.
- Suitable for pole mounting.
- Made from steel
- Comes with all required hardware in a kit form.
- Heavy duty.



### Specifications

#### Mechanical

Material	STEEL
Kit Weight	1.6 kg.
Load	510 N
Suitable for pole diameter range	1-4" (inch)
Movement Possibility	Elevation Tilt $\pm 16^\circ$ with antenna 800x120 mm mounted

#### Environmental

Operating Temperature Range	-40°C to +85°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Ice and Snow	25 mm radial (survival)
Wind Load	210 km/h
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

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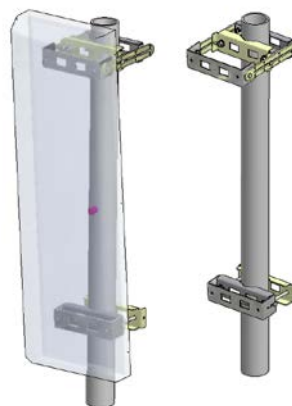
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## MNT-25

### Mount for Base Station Antennas

#### MNT-25 Features:

- Elevation Tilt Adjustable Mount for large Base Station Antennas.
- Suitable for pole mounting.
- Made from steel.
- Comes with all required hardware in a kit form.
- Heavy duty.



### Specifications

#### *Mechanical*

Material	STEEL
Kit Weight	2.4 kg.
Load	510 N
Suitable for pole diameter range	1-4" (inch)
Movement Possibility	Elevation Tilt $\pm 15^\circ$ with antenna 1200 x 330 mm mounted

#### *Environmental*

Operating Temperature Range	-40°C to +85°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Ice and Snow	25 mm radial (survival)
Wind Load	210 km/h
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

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## MNT-4 Series

### For Small Size Antennas

MNT-4G (Glass mount)



MNT-4U (Wall mount)



MNT-4L (Ceiling/Stand mount)



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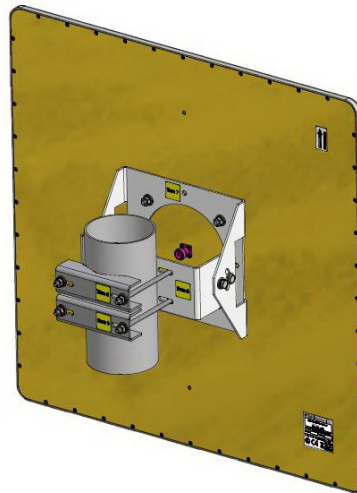
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## MNT-60A

### Mount for CPE / Subscriber Large Size Antennas

#### MNT-60A Features:

- Elevation Adjustable Mount for Subscriber Large Size Antennas.
- Suitable for pole or wall mounting.
- Allowing angle inclination of 16°.
- Made of Steel SAE1020, Resist to Corrosion.
- Comes with all required hardware in a kit form.
- Heavy duty.



### Specifications

#### *Mechanical*

Material	STEEL, GALVANIZED
Kit Weight	2 kg.
Load	700 N
Suitable for pole diameter range	1-4" (inch)
Movement Possibility	Elevation $\pm 16^\circ$ (with antenna 600 x 600 mm mounted)

#### *Environmental*

Operating Temperature Range	-40°C to +85°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Ice and Snow	25 mm radial (survival)
Wind Load	210 km/h
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

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## MK-ES20/MK-ES21

### Small Enclosure Kit

Mars enclosure kit designed for integration of RF PCB from different manufactures with Mars antennas.

Enclosure kit includes:

- Enclosure Die Cast Aluminum.
- Base for RF PCB (See ordering options).
- RJ45 Ethernet Waterproof Connector.
- Mount MNT-22 or MNT-60A\*.

Enclosure Kit Features:

- Suitable for integration with 200x200, 305x305, 370x370 and 600x600 mm Mars antennas\*.
- Suitable for pole or wall azimuth and elevation adjustable mounting.
- Heavy duty.

(\*) MNT-22 suitable for 200x200, 305x305, 370x370 mm Mars antennas.  
MNT-60A suitable for 600x600 mm Mars Antennas.



### Specifications

#### Mechanical

Enclosure Material	Aluminum A380
Enclosure dimensions (external)	180 x 167 (242 with RJ45) x 68 mm
Base for RF plate material	Aluminum
Base for RF dimensions	150 x 138 mm, height of PCB (max) - 55 mm
Enclosure Finish	White electrostatic powder coating
Connector	RJ45 Ethernet Waterproof Connector
Weight (without MNT)	0.7 kg.
Suitable for pole diameter range	25-120 mm (Screws supplied are 80 mm. Longer screws are available on request)

#### Environmental

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Ice and Snow	25 mm radial (survival)
Water proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

### Ordering Options

MK-ES20	Base for RF PCB
MK-ES21	Base for RF PCB with embedded PEMs suitable for RB-411/RB-711

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## MK-EL30/MK-EL31

### Large Enclosure Kit

Mars enclosure kit designed for integration of RF PCB from different manufactures with Mars antennas.

Enclosure kit includes:

- Enclosure Die Cast Aluminum.
- Base for RF PCB (See ordering options).
- RJ45 Ethernet Waterproof Connector.
- Mount MNT-22.

Enclosure Kit Features:

- Suitable for integration with 305x305, 370x370 mm Mars antennas.
- Suitable for pole or wall azimuth and elevation adjustable mounting.
- Heavy duty.



### Specifications

#### *Mechanical*

Enclosure Material	Aluminum A380
Enclosure dimensions (external)	287 x 287 (347 with RJ45) x 68 mm
Base for RF plate material	Aluminum
Base for RF dimensions	245 x 245 mm, height of PCB (from Base for RF to backplane) - 55 mm
Enclosure Finish	White electrostatic powder coating
Connector	RJ45 Ethernet Waterproof Connector
Weight (without MNT-22)	1.35 kg.
Suitable for pole diameter range	25-120 mm (Screws supplied are 80 mm. Longer screws are available on request)

#### *Environmental*

Operating Temperature Range	-40°C to +65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Ice and Snow	25 mm radial (survival)
Water proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

### Ordering Options

MK-EL30	Base for RF PCB
MK-EL31	Base for RF PCB with embedded PEMs suitable for RB-411/RB-711 and RB-433/RB-733

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