

450 MHz Antennas for RFID Readers

Antenna P/N		MT-182018/NLH	MT-182016/NLH	MT-181033/N	MT-182011/NV
Frequency Band	MHz	430-440	430-437	430-440	405-450
Gain	dBi (Min.)	3.5dBic	9 dBic	3dBi±0.5	8 dBi
Polarization		Circular LHCP	Circular LHCP	Linear V/H	Linear V/H
AZ/EL BW	Degree	88° / 88°	68° / 70°	86° / 90°	68° / 70°
Sidelobe Level (AZ/EL)	dB (Max.)		-10.5	-14	-20@± 120° / -20
Cross Polarization	dB (Max.)	TBD	N/A	-14	-18
Axial ratio Level	dB (Max.)	2-6	4 (2 @ 432-434)	N/A	N/A
Front to Back Ratio	dB (Max.)	15	10.5	14	18
VSWR 50 Ohm	(typ)	1.5:1	1.2:1	1.7:1	1.5:1 (@415-440)
Max. Input Power	Watt	6	6	6	6
Additional Features			Available for IAE		Available for IAE
Size	mm	305x305x25	370x370x30	305x305x25	370x370x40
Weight	Kg	2.3	2	2.3	2
Connector other connectors available		N-Type Female	N-Type Female	N-Type Female	N-Type Female
Mounting Kit		MT-120018	MT-120018	MT-120018	MT-120018

Last Update: February 1, 2007

Environmental

Temperature Range	-55 to +71 degree per IEC 68
Temperature Shock	-40°C to +71°C, 3 cycles 30°C/min
Vibration	1g rms, 10-500 Hz (2 hrs per axis)
Mechanical Shock	10 g, 11 msec half sine pluse
Transit Drop	MIL-STD-810E 26 drops from height of 122 cm
Humidity	95% per ETSI EN300
Water Tightness	IP67
Salt Spray	500 hours per IEC 68
Solar Radiation	1000 hours per ASTM G53
Flammability	Class HB per UL-94

Notes

All specifications are subject to change without notice
Preliminary specs are for antennas under development
Upon request MTI may provide the complete spec controlled document for specific antenna

Key Features

- High-Quality Low-Cost
- High Robustness and Endurance
- Lightweight antenna with low profile
- Very aesthetic look and Environmental friendly
- Various polarities
- Various configurations such as standalone, integrated or internal component
- Meets RFID electrical and environmental requirements
- Asymmetrical beam antenna can be tilted 90° for different beam width ratio

Benefits

- Provides High performance Low Cost reader antenna solution
- Low installation and maintenance cost
- Maintains real estate aesthetic look and value

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Mounting Kits

Mounting Kit P/N		MT-120018/A	MT-120018	MT-120019	MT-120021
Mechanical					
Pole Mount	Yes/No	Yes	Yes	Yes	Yes
Wall Mount	Yes/No	Yes	Yes	No	Yes
Pole Size	Intch	1-3	1-3	2.75-3.5	2.5-4.5
Azimuth Control	Degree	0-360	0-360	0-360	0-360 (on pole)
Elevation Control	Degree	See Spec	See Spec	0 to -10	0 to -10
Weight	Kg (max)	0.9	0.9	2.2	2.5
Front Thrust	Kg (max)	56	15	104	138
Side Thrust	Kg (max)	6	6	9	27

Last Update: February 1, 2007

Environmental for Mounting Kit

Temperature Range	-45 to +70 degree per IEC 68
Vibration	Random 4M3 per IEC 60721
Mechanical Shock	4M3 per IEC 60721
Humidity	95% per ETSI EN300
Salt Spray	500 hours per IEC 68
Solar Radiation	1000 hours per ASTM G53
Wind Speed	160 Kmph Operation/220 Kmph Survival
Flammability	UL-94HB

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Integrated Antenna Enclosure (IAE)

Integrated Antenna Enclosure (IAE)		MT-900007	MT-900007
Mechanical			
External dimens	mm (max)	305x305x70	190x190x50
Internal space	mm (max)	250x250x39.5	150x150x38
Antenna size	mm	305x305 - 450x450	190x190 - 450x450
Power Dissipation	W (max)	20	15
Weight (w/o ante)	kg	2.5kg	0.55kg
Connectors		CAT 5 and N-Type	
Mounting		MT-120018/A	
AZ/EL control		Both	
Pole Size		Ø 0.5"-3"	

Last Update: February 1, 2007

Environmental for IAE

Temperature	-55°C to 71°C
Vibration	IEC60721-3-4 4M5 Random
Mechanical Shock	IEC61721-3-4 4M5
Humidity	100%
Water tightness	IEC 529 / IP67
Solar Radiation	ASTM G53 1000h
Ice load	25m radial
Salt fog	IEC 8-2-11 Ka 500 hours

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865-870 MHz Circular Polarization Single Polarized Antennas for RFID Readers

Antenna P/N		MT-242033/NRH	MT-242034/NLH Preliminary	MT-242032/NRH Ultra Low Ax. Ratio	MT-242040/NLH Preliminary	MT-242027/NRH	MT-242014/NRH	MT-242017/NRH	MT-243017/NRH
Frequency Band	MHz	865-870	865-870	865-870	865-870	865-870	865-870	865-870	865-870
Gain	dBic (Min)	8	8.5	7	7	8.5	8.5	10	11
Polarization		RHCP or LHCP	RHCP or LHCP	RHCP or LHCP	RHCP or LHCP	RHCP or LHCP	RHCP or LHCP	RHCP or LHCP	RHCP or LHCP
AZ/EL BW	Degree	50±5°/135±8°	33±5°/120±6°	72±1°/73±2°	72°	65° / 65°	65° / 65°	60° / 48°	30° / 62°
Sidelobe Level	dB (Max)					-12	-16	-12	-12
Axial ratio Level	dB (Max)	4	4	1.3 (0.7 typ)	3.5	2	2	2 (1dB Typ.)	3
Front to Back Ratio	dB (Max)	20	20	17	18	18	18	20	20
VSWR 50 Ohm	(Max)	1.5:1	1.5:1	1.3:1	1.5:1	1.3:1	1.3:1	1.3:1	1.5:1
Max. Input Power	Watt	6	6	6	6	6	6	6	6
Size: • T1	mm	540x470x220	685x626x220	190x190x30	190x190x30	260x260x30	305x305x25	371x371x40	650x320x40
• T2	mm	N/A	N/A	N/A	N/A	N/A	220X220X21	TBD	N/A
• T3	mm	N/A	N/A	N/A	N/A	N/A	240X220X32	442X292X32	N/A
Weight T1/T2/T3	Kg (Max)	4.2	7.6	0.8	0.8	1	1.2/0.6/0.9	1.5/N/A/1.5	2.8
Connector other connectors available		N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female
Mounting Kit (T1 & T2)		MT-120019	MT-120019	MT-120018/A	MT-120018/A	MT-120018	MT-120018(A)	MT-120018	MT-120019

The antennas are available in three different configurations:

T1 - Tooled radome with connector at the back • T2 - Very low-profile with connector at the back • T3 - Very low-profile with connector on the bottom side.

Last Update: April 1, 2007

Environmental

Temperature Range -55 to +71 degree per IEC 68
 Temperature Shock -40°C to +71°C, 3 cycles 30°C/min
 Vibration 1g rms, 10-500 Hz (2 hrs per axis)
 Mechanical Shock 10 g, 11 msec half sine pulse
 Transit Drop MIL-STD-810E 26 drop from height of 122 cm
 Humidity 95% per ETSI EN300
 Water Tightness IP54 (IP67 optional)
 Salt Spray 500 hours per IEC 68
 Solar Radiation 1000 hours per ASTM G53
 Flammability Class HB per UL-94

Notes

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Key Features

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- Lightweight antenna with low profile
- Very aesthetic look and Environmental friendly
- Various polarities
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Benefits

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865-870 MHz Circular Polarization Dual Polarized Antennas for RFID Readers

Antenna P/N		MT-242038/NRLH Preliminary	MT-242026/NRLH	MT-242039/NRH Preliminary	MT-243008/NRH	MT-243010/NRH	MT-243018 Preliminary
Frequency Band	MHz	865-870	865-870	865-870	865-870	865-870	865-870
Gain	dBic (Min)	6	7.5	7.5	8.5	10	11
Polarization		2xRH / 2xLH / R+L	RHCP + LHCP	2xRH / 2xLH / R+L	2xRH or RH+LH	2xRH or RH+LH	RHCP + LHCP
AZ/EL BW	Degree	72° / 72°	72° / 60°	72° / 60°	60° / 65°	64° / 45°	65° / 30°
Sidelobe Level	dB (Max)		-10	-10	-12	-14	-12
axial ratio Level	dB (Max)	1.5	4	4 (@±40°)	2.5	2	3
Front to Back Ratio	dB (Max)	18	18	18	20	25	20
Port to Port Isolation	dB (Max)	40	-35	-40	-40	-40	-30
VSWR 50 Ohm	(Max)	1.35:1	1.5:1	1.4:1	1.4:1	1.5:1 (typ)	1.5:1
Max. Input Power	Watt	6	6	6	6	6	6
Size: • T1	mm	200x500x30	200x500x26	200x500x26	536x360x26	920x325x34	1245x320x40
• T2	mm	N/A	N/A	N/A	550x251x21	TBD	N/A
• T3	mm	N/A	N/A	N/A	550x251x34	TBD	N/A
Weight T1/T2/T3	Kg (Max)	1.8	1.5	1.5	2.1/1.5/1.7	4	5.5
Connector other connectors available		2xN-Type Female	2x N-Type Female	2x N-Type Female	2xN-Type Female	2xN-Type Female	2xN-Type Female
Mounting Kit (T1 & T2)		MT-120018	MT-120018	MT-120018	MT-120018	MT-120021	MT-120021

The antennas are available in three different configurations:

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Environmental

Temperature Range	-55 to +71 degree per IEC 68
Temperature Shock	-40°C to +71°C, 3 cycles 30°C/mim
Vibration	1g rms, 10-500 Hz (2 hrs per axis)
Mechanical Shock	10 g, 11 msec half sine pluse
Transit Drop	MIL-STD-810E 26 drop from height of 122 cm
Humidity	95% per ETSI EN300
Water Tightness	IP54 (IP67 optional)
Salt Spray	500 hours per IEC 68
Solar Radiation	1000 hours per ASTM G53
Flammability	Class HB per UL-94

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902-928 MHz Circular Polarization Single Polarized Antennas for RFID Readers

Antenna P/N		MT-262014/NRH	MT-262024/TLH/A Preliminary	MT-262013/NRH Ultra Low Ax. Ratio	MT-262026/TLH/A Preliminary	MT-262011/TRH/A	MT-262006/TRH/A	MT-263007/TRH/A	MT-263020/TRH/A
Frequency Band	MHz	902-928	902-928	902-928	902-928	902-928	902-928	902-928	902-928
Gain	dBic (Min)	7	7	7.5	8	8.5	9	10	11
Polarization		RHCP or LHCP	LHCP	RHCP or LHCP	RHCP or LHCP	RHCP or LHCP	RHCP or LHCP	RHCP or LHCP	RHCP or LHCP
AZ/EL BW	Degree	50°/140°	72°/72°	70°(±3)/71°(±1)	33°± 5/120°± 6	68° / 63°	63° / 63°	63° / 45°	30° / 63°
Sidelobe Level	dB (Max)			-19		-14	-16	-12	-12
Axial Ratio Level	dB (Max)	4	3.5	1.3	4	4	4	2.5	3
Front to Back Ratio	dB (Max)	18	18	17	20	18	18	20	20
VSWR 50 Ohm	(Max)	1.5:1	1.7:1	1.3:1	1.5:1	1.5:1	1.3:1	1.3:1	1.5:1
Max. Input Power	Watt	6	6	6	6	6	6	6	6
Size: • T1	mm	540x470x220	190x190x30	190x190x30	685x626x220	260x260x25	305x305x25	371x371x40	630x320x40
• T2	mm	N/A	0.8	TBD	N/A	TBD	220X220X21	413X293X21	N/A
• T3	mm	N/A	TBD	TBD	N/A	TBD	240X220X32	411X292X33	N/A
Weight T1/T2/T3	Kg (Max)	4.2	1	0.8	7.6	1.2	1.2/0.6/0.9	2/1.2/1.5	2.8
Connector other connectors available		N-Type	TNC RP	N-Type	TNC RP	TNC RP	RP TNC or N-Type	TNC or N-Type	TNC RP
Mounting Kit (T1 & T2)		MT-120019	MT-120018/A	MT-120018/A	MT-120019	MT-120018	MT-120018(A)	MT-120018	MT-120019

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Environmental

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Vibration 1g rms, 10-500 Hz (2 hrs per axis)
Mechanical Shock 10 g, 11 msec half sine pulse
Transit Drop MIL-STD-810E 26 drop from height of 122 cm
Humidity 95% per ETSI EN300
Water Tightness IP54 (IP67 optional)
Salt Spray 500 hours per IEC 68
Solar Radiation 1000 hours per ASTM G53
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902-928 MHz Circular Polarization Dual Polarized Antennas for RFID Readers

Antenna P/N		MT-263025/TRLH/A Preliminary	MT-262010/TRLH/A	MT-262008/TRLH/A	MT-263009/NRH MT-263018/TRLH/A	MT-263021/TRLH/A
Frequency Band	MHz	902-928	902-928	902-928	902-928	902-928
Gain	dBic (Min)	6	8	9	10 (10.5 for 2xRH)	11
Polarization		2xRH / 2xLH / R+L	2xRH / 2xLH / R+L	2xRH / 2xLH / R+L	2xRH / 2xLH / R+L	RHCP + LHCP
AZ/EL BW	Degree	72° / 72°	70° / 60°	58° / 70°	65° / 40°	63° / 30°
Sidelobe Level	dB (Max)	-10	-10	-12	-14	-12
Axial Ratio Level	dB (Max)	1.5	4	3 (typ.)	2	3
Front to Back Ratio	dB (Max)	18	18	20	25	20
Port to Port Isolation	dB (Max)	45	35	40 (typ)	35 (40 for 2xRH)	30
VSWR 50 Ohm	(Max)	1.35:1	1.5:1	1.5:1	1.5:1	1.5:1
Max. Input Power	Watt	6	6	6	6	6
			Available with 10kΩ Resistor	Available with 10kΩ Resistor (263011)		
Size: • T1	mm	500x200x30	500x200x30	536x360x26	920x325x34	1220x320x35
• T2	mm	N/A	TBD	550x251x21	TBD	N/A
• T3	mm	N/A	TBD	580x250x32	TBD	N/A
Weight T1/T2/T3	Kg (Max)	1.8	1.5	2/1.5/1.5	4	5.4
Connector other connectors available		2xRP TNC/N-Type	2xRP TNC/N-Type	2xRP TNC/N-Type	2xRP TNC/N-Type	2xTNC RP
Mounting Kit (T1 & T2)		MT-120018	MT-120018	MT-120018	MT-120021	MT-120019

Last Update: April 1, 2007

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 Mechanical Shock 10 g, 11 msec half sine pluse
 Transit Drop MIL-STD-810E 26 drop from height of 122 cm
 Humidity 95% per ETSI EN300
 Water Tightness IP54 (IP67 optional)
 Salt Spray 500 hours per IEC 68
 Solar Radiation 1000 hours per ASTM G53
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865-870 MHz Linear Polarization Antennas for RFID Readers

Antenna P/N		MT-242028/NV	MT- 242021/NV	MT- 242020/NV	MT- 243012/NV	MT- 243009/N
Frequency Band	MHz	865-870	865-870	865-870	865-870	865-870
Gain	dBi (Min)	7.5	8	9.5	10.5	13
Polarization		2x Linear Vertical	Linear Vertical	Linear Vertical	Linear Vertical	Linear V/H
Port-to-Port Isolation		-8	N/A	N/A	N/A	N/A
AZ/EL BW	Degree	68±2°/50°	80° /71°	62° /58°	43° /76°	37° /37°
Sidelobe Level (AZ/EL)	dB (Max)	EL Tilt: ±20°	-20/-16	-23/-22	-18	-15
Cross Polarization Level (AZ/EL)	dB (Max)		-20	-17/-25	-15/-26	-20
Front to Back Ratio	dB (Max)	15	20	21	22	15
VSWR 50 Ohm	(Max)	1.7:1 (typ.)	1.3:1	1.3:1	1.3:1	1.7:1
Max. Input Power	Watt	6	6	6	6	6
Size:	mm	320x260x30	190x190x30	305x305x25	370x370x40	450x450x35
Weight	Kg (Max)	1.6	0.7	1.2	2	2
Connector other connectors available		2xN-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female
Mounting Kit		N/A	MT-120018/A	MT-120018	MT-120018	MT-120018

Last Update: April 1, 2007

Environmental

Temperature Range	-55 to +71 degree per IEC 68
Temperature Shock	-40°C to +71°C, 3 cycles 30°C/min
Vibration	1g rms, 10-500 Hz (2 hrs per axis)
Mechanical Shock	10 g, 11 msec half sine pluse
Transit Drop	MIL-STD-810E 26 drop from height of 122 cm
Humidity	95% per ETSI EN300
Water Tightness	IP54 (IP67 optional)
Salt Spray	500 hours per IEC 68
Solar Radiation	1000 hours per ASTM G53
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902-928 MHz Linear Polarization Antennas for RFID Readers

Antenna P/N		MT-262002/N/A	MT-262001/N/A	MT-263003/N	MT-263006/N	MT-264003/NV	MT-264003/NH	MT-243004/NVH	MT-263004/NV	MT-263004/NH	MT-243005/NVH	MT-243015/NH	MT-262012/NH	MT-262003/NV	MT-243003/NV	MT-243003/NH
Frequency Band	MHz	902-928	902-928	902-928	902-928	902-928	902-928	902-928	902-928	902-928	902-928	902-928	902-928	902-928	902-928	902-928
Gain	dBi (Min)	8	9	10	12.5	13.5	13.5	13(V)/12.5(H)	12	12.5 - / + 0.5	12	10	10.5	8 -/+ 1.25	11 -/+ 0.5	11.5
Polarization		Linear V/H	Linear V/H	Linear V/H	Linear V/H	Vertical	Horizontal	Dual V+H	Vertical	Horizontal	Dual V+H	Horizontal	Horizontal	Vertical	Vertical	Horizontal
Port to Port Isol.	dB (Min)	-	-	-	-	-	-	35	-	-	35	-	-	-	-	-
AZ/EL BW	Degree	70° /70°	65° /55°	50° /50°	42° /42°	90° /14°	90° /14.5°	90° /16.5°	120° /14°	120° /14.5°	120(V)/110(H)/16	180/10	360/11	360° /12°	360° /6°	360°/9.5°
Sidelobe Level	dB (Max)	-	-18 @ ± 90°	-20	-19	1 st Null >-20dB	1 st Null >-22dB	N/A	1 st Null >-20dB	1 st Null >-20dB	N/A	N/A	-	-11	1 st Null >-16dB	1 st Null >-20dB
Cross Polarization Level	dB (Max)	-14	-13	-25	-20	-20	-16	-23(AZ)/-18(EL)	-20	-20	-25	-20	-	-20	-20	-20
Front to Back Ratio	dB (Max)	-11	-18	-27	-24	-23	-23	-24(V)/-15(H)	-21	-16	-24(V)/-16(H)	-5	N/A	N/A	N/A	2:1
VSWR 50 Ohm		1.7:1	1.5:1	1.5:1	1.7:1	1.7:1	1.7:1	1.5:1	1.7:1	1.7:1	1.5:1	1.7:1	1.7:1	1.7:1	1.7:1	50
Max. Input Power	Watt	6	6	6	6	20	20	20	20	20	20	20	50	20	50	
Additional Features		Available w/o DC ground	Available w/o DC ground	High Grade	High Grade	Null Field 1.5° Down Tilt	Null Field 1.25° Down Tilt		Null Field 1.5° Down Tilt	Null Field 1.25° Down Tilt			Compact Size	0-3° Down Tilt	Null Field 0-3° Down Tilt	
Size	mm	190X190X30	305X305X25	305X305X25	450X450X36	1260X400X115	1252X298X55	1220X450X145	1260X400X115	1320X375X55	1220X500X145	1339x435x78.5	1541x280x56	1318 X Ø44	3700 X Ø90	1940X280X55
Weight	Kg (Max)	0.7	1.5	1.5	3	7	7	6	7	7	6	9.5	8.5	5	16	20
Connector		N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female	2XN-Type Fem.	N-Type Female	N-Type Female	2X N-Type Fem.	N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female
Mounting Kit		MT-120018/A	MT-120018	MT-120018	MT-120018	MT-120021	MT-120021	MT-120021	MT-120021	MT-120021	MT-120021	MT-120021	Included	Included	Included	Included

Last Update: June 1, 2007

Environmental

Temperature Range -45 to +70 degree per IEC 68
Vibration Random 4M3 per IEC 60721
Mechanical Shock 4M3 per IEC 60721
Humidity 95% per ETSI EN300
Water Tightness Per IEC 529 IP67 (IP52 for some sector antennas)
 Subject to change upon request
Salt Spray 500 hours per IEC 68
Solar Radiation 1000 hours per ASTM G53
Ice and Snow 25mm Radial
Wind Speed 160 Kmph Operation/220 Kmph Survival
Flammability UL-94HB

Notes

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Key Features

- High-Quality Low-Cost
- High Robustness and Endurance
- Lightweight antenna with low profile
- Very aesthetic look and Environmental friendly
- Various polarities
- Various configurations such as standalone, integrated or internal component
- Meets RFID electrical and environmental requirements
- Asymmetrical beam antenna can be tilted 90° for different beam width ratio

Benefits

- Provides High performance Low Cost reader antenna solution
- Low installation and maintenance cost
- Maintains real estate aesthetic look and value

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950-956 MHz Circular and Linear Polarization Antennas for RFID Readers

Antenna P/N		MT-262017/NRH Ultra Low Ax. Ratio	MT-262009/NRH	MT-263008/NRH	MT-263025/NLH Preliminary	MT-262018/NRH	MT-262007/NRH Preliminary	MT-263010/NRH Preliminary	MT-263024/N	MT-263023/N	MT-263022/N
Frequency Band	MHz	950-956	950-956	950-956	950-956	950-956	950-956	950-956	950-956	950-956	950-956
Gain	dBi (Min.)	6 dBi	8.5 dBi	10 dBi	10.5 dBi	8 dBi	8 dBi	10 dBi	10 dBi	12 dBi	13 dBi
Polarization		RHCP or LHCP	RHCP or LHCP	RHCP or LHCP	LHCP or RHCP	2xRH/2xLH/R+L	2 x RHCP	2 x RHCP	Linear V/H	Linear V/H	Linear V/H
AZ/EL BW	Degree	71° / 70°	63° / 63°	50° / 60°	30° / 70°	70° / 60°	65° / 65°	60° / 45°	N/A	N/A	N/A
Sidelobe Level	dB (Max.)	TBD	-12	-10	-12	-10	-12	-12	50±1°/61±1.5°	37° / 42°	36° / 37°
axial ratio Level	dB (Max.)	1	3	3	3	4 (3 typ.)	3	3	N/A	N/A	N/A
Cross Polarization Level	dB (Max)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-17 / -18 (AZ/EL)	-17 / -25 (AZ/EL)	-17 / -25 (AZ/EL)
Front to Back Ratio	dB (Max.)	-17	-18	-18	20	-18	-40	-40	-20 / -30 (AZ/EL)	-17	-23
Port-to-Port Isolation	dB (Min.)	N/A	N/A	N/A	N/A	-40	40	40	-25	-17	-23
VSWR 50 Ohm		1.3:1	1.5:1	1.3:1	1.5:1	1.2:1(typ)	1.5:1	1.5:1	1.4:1	1.3:1	1.3:1
Max. Input Power	Watt	6	6	6	6	6	6	6	6	6	6
Size:	mm	190x190x30	305x305x25	371x371x40	200x500x30	200x500x30	536x360x26	920x325x34	305x305x25	370x370x40	450x450x38
Weight	Kg	0.8	1.2	1.2	1.5	1.5	2	2	1.2	1.5	2
Connector	other connectors available	N-Type Female	N-Type Female	N-Type Female	N-Type Female	2xN-Type Female	2xN-Type Female	2xN-Type Female	N-Type Female	N-Type Female	N-Type Female
Mounting Kit (T1 & T2)		MT-120018/A	MT-120018	MT-120018	MT-120018	MT-120018	MT-120018	MT-120021	MT-120018	MT-120018	MT-120018

Last Update: April 1, 2007

Environmental

Temperature Range -55 to +71 degree per IEC 68
Temperature Shock -40°C to +71°C, 3 cycles 30°C/min
Vibration 1g rms, 10-500 Hz (2 hrs per axis)
Mechanical Shock 10 g, 11 msec half sine pulse
Transit Drop MIL-STD-810E 26 drop from height of 122 cm
Humidity 95% per ETSI EN300
Water Tightness IP54 (IP67 optional)
Salt Spray 500 hours per IEC 68
Solar Radiation 1000 hours per ASTM G53
Flammability Class HB per UL-94

Notes

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Key Features

- High-Quality Low-Cost
- High Robustness and Endurance
- Lightweight antenna with low profile
- Very aesthetic look and Environmental friendly
- Various polarities
- Various configurations such as standalone, integrated or internal component
- Meets RFID electrical and environmental requirements
- Asymmetrical beam antenna can be tilted 90° for different beam width ratio

Benefits

- Provides High performance Low Cost reader antenna solution
- Low installation and maintenance cost
- Maintains real estate aesthetic look and value

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865-956 MHz Linear or Circular Polarization Antennas for RFID Readers

Antenna P/N		MT-242036/N Preliminary	MT- 242022/NV	MT- 243013/NV	MT-242025	MT-243011/NRH/B	MT-242038/NRLH
Frequency Band	MHz	Tri-Band: 865-956	Tri Band: 865–956	Tri- Band: 865–956	Tri- Band: 865–956	Tri- Band: 865–956	Dual Band: 865-928
Gain	(Min)	8dBi (6.5@950-956)	8dBi ±0.5	10.5dBi ±0.5	7dBic ±0.5	8 dBic	6dBic
Polarization		Linear Vertical	Linear Vertical	Linear Vertical	RHCP or LHCP	RHCP	RH+LH or 2xRH or 2xLH
AZ/EL BW	Degree	75° /72°	71° /67°	43°/50°	74°/72°	60°/85°	72°/72°
Sidelobe Level (AZ/EL)	dB (Max)		-20@±120° /-20			TBD	
Cross Polarization Level	dB (Max)	865-870:-15/-24(AZ/EL) 902-928:-13/-18 (AZ/EL) 950-956:-18/-20(AZ/EL)	-17 to -22	-22 / -26	N/A	N/A	
Axial Ratio Level		N/A	N/A	N/A	1.3 (@ 902-928)	3	1.5
Front to Back Ratio	dB (Max)	20	20	24	18	20	18
VSWR 50 Ohm	(Max)	1.7:1	2.5:1	1.7:1 to 2.3:1	1.35:1	1.5:1	1.35:1
Max. Input Power	Watt	6	6	6	6	6	6
Size	mm	190x190x30	190x190x30	370x370x40	190x190x30	306 x 158 x 34	200x500x30
Weight	Kg (Max)	0.7	0.7	2	1	1	1.8
Connector		N-Type Female	N-Type Female	N-Type Female	TNC or N-Type	N-Type Female	N-Type Female
Mounting Kit		MT-120018/A	MT-120018/A	MT-120018	MT-120018/A	MT-120018/A	MT-120018

Last Update: June 1, 2007

Environmental

Temperature Range	-55 to +71 degree per IEC 68
Temperature Shock	-40°C to +71°C, 3 cycles 30°C/mim
Vibration	1g rms, 10-500 Hz (2 hrs per axis)
Mechanical Shock	10 g, 11 msec half sine pluse
Transit Drop	MIL-STD-810E 26 drop from height of 122 cm
Humidity	95% per ETSI EN300
Water Tightness	IP54 (IP67 optional in some antennas)
Salt Spray	500 hours per IEC 68
Solar Radiation	1000 hours per ASTM G53
Flammability	Class HB per UL-94

Notes

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Key Features

- High-Quality Low-Cost
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- Lightweight antenna with low profile
- Very aesthetic look and Environmental friendly
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- Meets RFID electrical and environmental requirements
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2.4 GHz Circular Polarization Antennas for RFID Readers

Antenna P/N		MT-343025/NRH	MT-344034/NRH	MT-345014/NRH
Frequency Band	GHz	2.4-2.5	2.4-2.5	2.4-2.5
Gain	(Min.)	13 dBic	15.5 dBic	19 dBic
Polarization		RHCP or LHCP	RHCP or LHCP	RHCP or LHCP
AZ/EL BW	Degree	32°/32°	22°/22°	17°/17°
ETSI		N/A	N/A	N/A
Sidelobe Level	dB (Max.)	-10	-9	-12
Axial Ratio Level	dB (Max.)	3 (1.5 typ)	3 (1.5 typ)	2
Cross Pol. Level	dB (Max.)	N/A	N/A	N/A
Front to Back Ratio	dB (Max.)	27	30	30
VSWR 50 Ohm	(Max)	1.4:1	1.5:1	1.5:1
Max. Input Power	Watt	10	6	6
Size	mm	190x190x30	305x305x15	371x371x40
Weight	Kg	1	1	2
Connector other connectors available		N-Type Female	N-Type Female	N-Type Female
Mounting Kit		MT-120018/A	MT-120018	MT-120018

Last Update: February 1, 2007

Environmental

Temperature Range	-55 to +71 degree per IEC 68
Temperature Shock	-40°C to + 71°C, 3 cycles 30°C/min
Vibration	1 g rms, 10-500 Hz (2hrs per axis)
Mechanical Shock	10 g, 11 msec half sine pulse
Transmit Drop	MIL-STD-810E 26 drops from height of 122 cm
Humidity	95% per ETSI EN300
Water Tightness	IP54 (IP67 Optional)
Salt Spray	500 hours per IEC 68
Solar Radiation	1000 hours per ASTM G53
Flammability	Class HB per UL-94

Notes

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2.4 GHz Linear Polarization Antennas for RFID Readers

Antenna P/N		MT-10004/N	MT-30081/A	MT-344041/N	MT-345013/N	MT-344030/NV	MT-344029/NV	MT-343018/NV	MT-343018/NH	MT-344027/NV	MT-344031/NV	MT-342015/NV/B	MT-342007/N	MT-343013/N
Frequency Band	GHz	2.4-2.5	2.4-2.5	2.2-2.7	2.4-2.5	2.4-2.5	2.4-2.5	2.4-2.5	2.4-2.5	2.4-2.5	2.4-2.5	2.4-2.5	2.4-2.5	2.4-2.5
Gain	dBi (Min)	13.5 dBi	15.5 dBi	17.5(@2.5-2.6GHz)	19 dBi	14	17.5	13	13 +/- 1	17	13	7.5	9	12 +/- 1
Polarization		Linear V/N	Linear V/N	Linear V/H	Linear V/N	Vertical	Vertical	Vertical	Horizontal	Vertical	Vertical	Vertical	Vertical	Vertical
AZ/EL BW	Degree	33° /33°	20° /20°	20/20	17° /17°	60° /19°	60° /6°	90° /20°	13° / 90°	90	120° /12°	360/14	360° /10°	360° /5.1°
Sidelobe Level	dB (Max)	-12/-9	TS2	TS2	TS3	-21 @ ± 90°	-19 @ ± 90°	-25 @ ± 135°	-27 @ ± 135°	-32 @ ± 135°	-	-10 EL Plane	-10 EL Plane	-10 EL Plane
Cross Polarization Level	dB (Max)	-18	TS2	TS2	TS3	-18	-20	-20	-20	-20	-	-	-	-
Front to Back Ratio	dB (Max)	-26	-26	TS2	TS3	-30	-30	-30	-30	-32	-	N/A	N/A	N/A
VSWR 50 Ohm		1.5:1	1.5:1	1.7:1	1.7:1	1.7:1	1.7:1	1.7:1	1.5:1	1.7:1	1.7:1	1.5:1	1.5:1	1.5:1
Max. Input Power	Watt	6	6	6	6	6	6	6	6	6	10	6	6	6
Size	mm	190X190X30.5	305X305X25	305x305x25	371X371X40	350X150X30	1050X128X28	500X200X30	500X200X30	1232X330X28	500X200X30	462x28	730X30	1400X30
Weight	Kg (Max)	0.7	1.5	1.2	2	1.2	2.5	1.5	1.5	5.5	1.5	0.15	0.7	1
Connector		N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female	N-Type Female
Mounting Kit		MT-120018/A	MT-120018	MT-120018	MT-120018	MT-120019	MT-120021/A	MT-120019	MT-120019	MT-120021	MT-120019	Included	Included	Included

Last Update: February 1, 2007

Environmental

Temperature Range	-45 to +70 degree per IEC 68
Vibration	Random 4M3 per IEC 60721
Mechanical Shock	4M3 per IEC 60721
Humidity	95% per ETSI EN300
Water Tightness	Per IEC 529 IP67 (IP52 for some sector antennas) Subject to change upon request
Salt Spray	500 hours per IEC 68
Solar Radiation	1000 hours per ASTM G53
Ice and Snow	25mm Radial
Wind Speed	160 Kmph Operation/220 Kmph Survival
Flammability	UL-94HB

Notes

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Key Features

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UHF Near Field Antenna for RFID readers

Antenna P/N		MT-269502/NRH	MT-269503/NRH
Frequency Band	MHz	902-928	902-928
Reader Type	(Min.)	Impinj Speedway Reader	Impinj Speedway Reader
Tested with		New Satellite	New Satellite
Tag Orientation	Degree	Any	Any
Number of Tags		Designed to detect unambiguously closely spaced tags 1cm apart up to 15 tags.	Designed to detect unambiguously closely spaced tags 1cm apart up to 15 tags.
VSWR	dB (Max.)	1.5 :1 (typ), 2:1 (max)	1.5 :1 (typ), 2:1 (max)
Range	dB (Max.)	0 to 50 cm from antenna	0 to 50 cm from antenna
Area Coverage of each Ant.	dB (Max.)	Circle 37 cms diameter	Circle 37 cms diameter
Read Area Outside **	dB (Max.)	10 cms (max)	40 cms (max)
Designated Area			
Polarization	(Max)	RHCP	RHCP
Input Impedance	Ω	50	50
Test Power	Watt	1	1
Max. Input Power	Watt	2	2
Size	mm	Ø370x120	Ø370x120
Weight	Kg	1	1
Connector other connectors available		N-Type Female	N-Type Female
Temperature	C	-25°C to +71°C	-25°C to +71°C

**The extra radius beyond the edge of the antenna where tags can still be read.

Last Update: April 1, 2007

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