

## Intelligent Home Automation

### Introduction

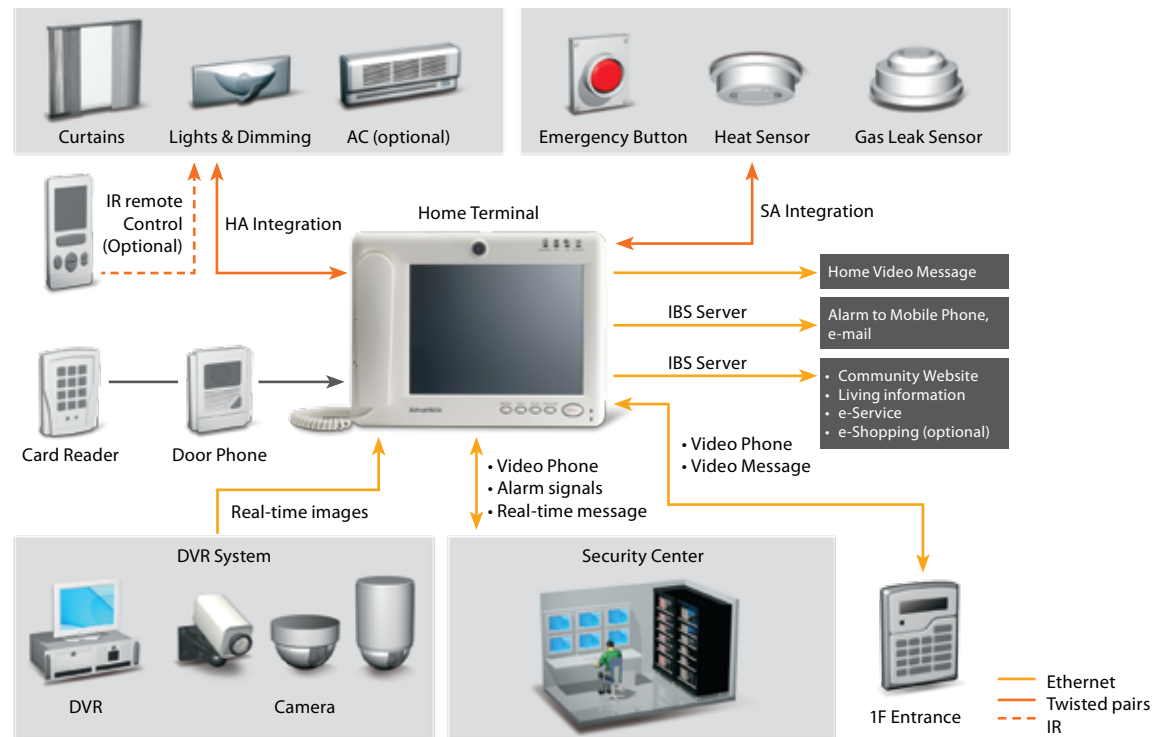
In recent years, the application of digital technology has advanced to include links between various home appliances. The case presented here is a comprehensive solution designed for a luxury apartment located in Taipei's upscale Xinyi District. Equipment such as lighting, electronics, electric curtains, multimedia devices and so forth were all connected and integrated according to users' needs to create the desired atmosphere and environment.

Bao Lai Garden Square is situated amid the cluster of luxury housing in Xinyi District. While the architecture boasts ample elegance typical of luxury apartments through its spatial design, the builder expressed his desire to provide futuristic lifestyle conveniences that rival those of Tokyo's Ronppongi Hills for the building's residents. In order to achieve this vision, Advantech combined the concepts of "Intelligent House", "Intelligent Building", and "Intelligent Community" and came up with the three-in-one "Intelligent Building System".

### Solutions

- Community video phone functionality:**  
 Integrated intercom system functions including video intercom set installed at the front door of every apartment, and sub unit in master bedrooms.
- "One-Touch" home scenario control:**  
 Residents can control home lighting circuits and related devices through the 10.4" touchscreen terminal. Residents are able to control their lighting, electric appliance circuits, and home scenario modes via PC, PDA, or laptop over the network.
- Integrated home security functions:**  
 Every household's security and detection devices, such as hidden reed switches at main entrances, gas detectors, emergency help buttons, and so forth, have been integrated. In the event of an emergency, the touchscreen terminal generates alert messages to the building management center. Moreover, real time video imagery captured by all surveillance cameras positioned in the community's public areas can be accessed from anywhere within the community via the integrated digital surveillance system.

### System



### Benefits

The trend today is to blend digital technology into people's everyday lives, combining user-friendly, touch-control interfaces with customizable scenario selections that integrate the operation of household equipment with electronic devices to simplify and improve the quality of life.

## Intelligent Office Automation

### Introduction

The ABC Company is a large international company with over 1000 employees. It has over 25 meeting rooms of varying sizes. Even so, meeting space requirements were not well met, and caused constant problems. Inefficient use of existing meeting space created pressure for the ABC Company to purchase additional conference facilities. In order to raise the efficiency of meeting room usage and save facility and energy cost, ABC Company decided to integrate common facilities in their conference rooms.

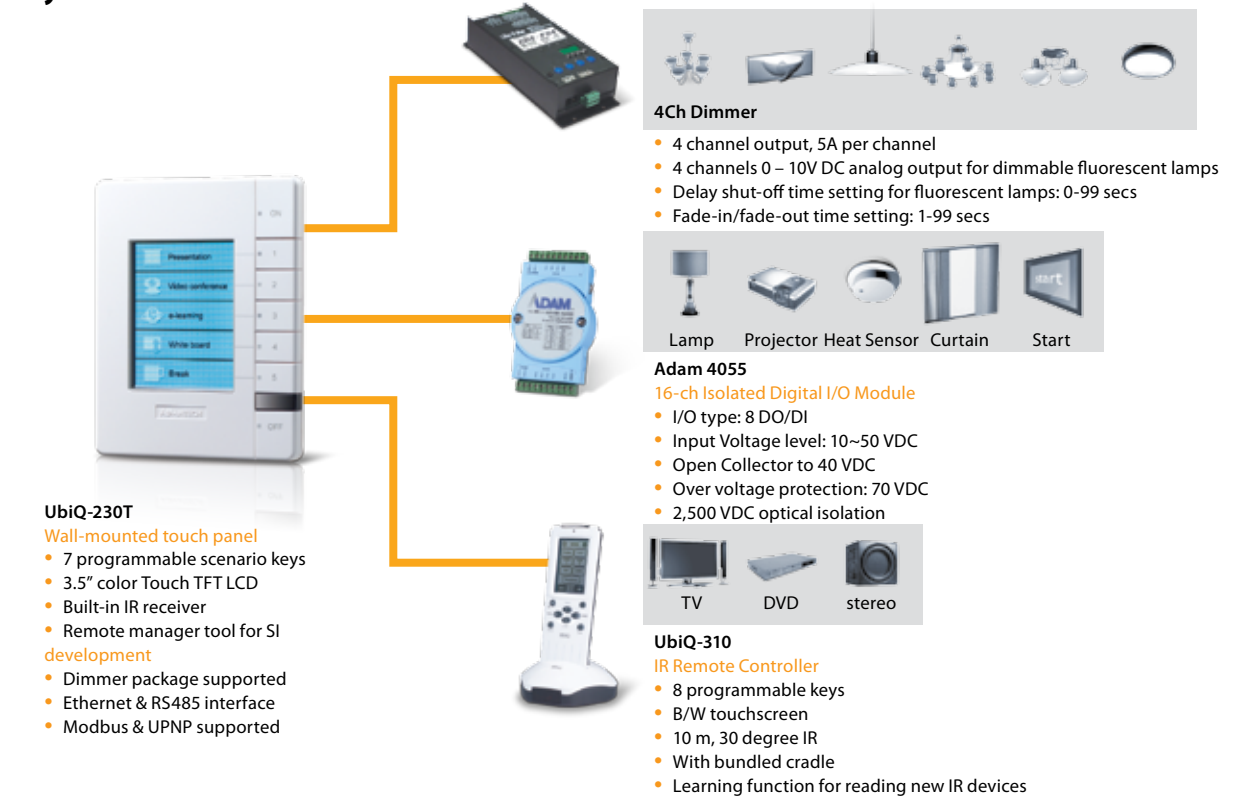
After reviewing users' needs and conference room facilities, there were five systems which needed to be integrated:

- Video conferencing
- Audio conferencing
- Lighting systems
- Presentation systems
- Distant training systems

### Solutions

After reviewing the ABC company's requirements, Advantech provided a scenario solution, multi-function conference room. This solution adapts four main devices to integrate with the existing systems: UbiQ-230, dimmer, Adam 4050 and an IR remote controller. Dimmer-controlled lighting creates a variety of lighting effects using adjustments in overall lighting intensity, plus fading, and delay. Adam 4050 controls the switching of electronic devices such as the projection screen, projector, camera, and video- and audio- conferencing facilities. The UbiQ-230T, a 3.5" scenario-control touch panel, features seven programmable keys for five scenarios: presentation, break, theater, e-learning, and video conference. Users can set scenarios with the UbiQ-230T, controlling lighting effects and switching electronic devices. When they are in a meeting, ABC company users can also use the IR remote controller, which has the same interface as the UbiQ-230T, to control all related devices as well, without touching the UbiQ-230T.

### System



### Benefits

At the conclusion of this construction project, the versatile conference room demonstrated highly integrated functions. UbiQ-230T replaced many remote controls with different interfaces. Integrated facilities, and the unified, user-friendly interface, have reduced the previously steep learning curve. Now with improved integration, this conference room plays different roles for different users, and the room now enjoys a much increased usage rate. With this solution the company has also realized huge maintenance and energy savings.

# Panel PCs



Model Name		Multi-functional Panel Computer			
		PPC-175T	PPC-174T	PPC-155T	PPC-S155T
CPU Board		PCM-9687	PCM-9680	PCM-9687	PCM-9691
Processor		Socket 478 Pentium M/ Celeron M CPU up to 1.8 GHz/1.5 GHz	Socket 478 Intel Pentium 4 CPU up to 3.06 GHz	Socket 478 Pentium M/ Celeron M CPU up to 1.8 GHz/1.5 GHz	Socket 478 support Celeron M/Pentium M up to 2.0 GHz
Memory	Size	128 MB ~ 1 GB DDR DRAM	128 MB ~ 2 GB DDR SDRAM	128 MB ~ 1 GB DDR DRAM	128 MB ~ 2 GB DDR SDRAM (Standard is built-in 256 MB)
	Module Type	184-pin DIMM x 2	184-pin DIMM x 2	184-pin DIMM x 2	200-pin SODIMM x 2
2nd Cache Memory		On-die 512 KB	On-die 512 KB	On-die 512 KB	On-die 1-2 MB
SSD/Type		-	Optional 6-in-1 Card Reader (MS, SD, SM, MC, and CF Type I/II sockets)	-	Supports 1 x internal CompactFlash Type II socket
Display	Size/Type	17" TFT LCD	17" TFT LCD	15" TFT LCD	15" TFT-LCD
	Max. Resolution	1280 x 1024	1280 x 1024	1024 x 768	1024 x 768
	Max. Colors	16.7 M	16.7 M	262 K	262 K
	Pixel Pitch (mm)	0.297 x 0.297	0.264 x 0.264	0.297 x 0.297	0.297 x 0.297
	Brightness (cd/m <sup>2</sup> )	300	300	350	350
	Viewing Angle	140°	140°	120°	120°
	Brightness Control	Yes	Yes	Yes	Yes
	Simultaneous Mode	Yes	Yes	Yes	Yes
VGA	Chipset	855GM	Intel 845GV	855GM	Intel 915GM
VRAM		32 MB	32 ~ 64 MB (DVMT)	32 MB	up to 128 MB (DVMT)
HDD/Type		1 x 2.5" drive	1 x 3.5" drive	1 x 2.5" drive	1 x 2.5" drive
FDD/Type		Optional	1 x built-in 3.5" drive	Optional	1 x built-in 3.5" drive
PCMCIA Slot		Supports Type II x 1	Supports Type II x 2 or Type III x 1	Supports Type II x 1	-
CD-ROM/Combo Drive		Optional 24X or above	1 x built-in drive, 24X or above for CD-ROM; 8D/24W/24E/24R or above for Combo	Optional 24X or above	Optional 24X or above for CD-ROM; 8D/24W/24E/24R or above for Combo
DVD-ROM, DVD+/- RW Drive Option		Yes	Yes	Yes	Yes
I/O Port		3 x COM ports, 4 x USB ports (V2.0), PS/2 mouse & KB, Mic-in/Line-in/Line-out, VGA port, 2 IEEE 1394 ports	3 x COM ports, 1 x Parallel port, 4 x USB ports (V2.0), PS/2 mouse & K/B, Mic-in/Line-in/Line-out, VGA port, S-Video port	3 x COM ports, 4 x USB ports (V2.0), PS/2 mouse & KB, Mic-in/Line-in/Line-out, VGA port, 2 IEEE 1394 ports	2 x COM ports (Optional 1 x Parallel port for OEM), 4 x USB ports (V2.0), PS/2 mouse & K/B, Mic-in/Line-in/Line-out, VGA port, S-Video port for option
Bus Expansion		1 x PCI Slot	2 x PCI slots	1 x PCI Slot	1 x MINI PCI Socket
Network (LAN)		2 Ports 10/100Base-T Ethernet interface	10/100Base-T Ethernet (Gigabit Optional)	2 Ports 10/100Base-T Ethernet interface	Gigabit LAN
IrDA Transmission		-	-	-	Yes
Power	Output Rating	100 W	180 W	100 W	72 W
	Input Voltage	100 ~ 250 VAC @ 50 ~ 60 Hz	100 ~ 240 VAC @ 50 ~ 60 Hz	100 ~ 250 VAC @ 50 ~ 60 Hz	19 Vdc
Touch screen	Technology	Resistive/Capacitive/SAW/Infrared/Projected capacitive	Resistive/Capacitive/SAW/IR	Resistive/Capacitive/SAW	Resistive/Capacitive
	Control Port	RS-232	RS-232 (COM 4)	RS-232	RS-232 (COM 4)
	Light Transmission	80% (Resistive)/ 91% (Capacitive)/ 91% (SAW)/Infrared (91%)/ Projected Capacitive(91%)	75% (Resistive)/ 91% (Capacitive)/ 91% (SAW)/ 91% (IR)	80% (Resistive)/ 91% (Capacitive)/ 91% (SAW)	80% (Resistive)/ 91% (Capacitive)
	OS Support	Windows 95/98/ME/2000/XP/ DOS/XPE	Windows ME/2000/XP, DOS/ XPE	Windows 95/98/ME/2000/XP/ DOS/XPE	Windows 95/98/ME/2000/XP/ DOS/XPE
	Durability (Touches)	35 million (Resistive)/ 225 million (Capacitive)/ 50 million (SAW)/100,000 hrs (Infrared)/unlimited (Projected Capacitive)	10 million (Resistive)/ 225 million (Capacitive)/ 50 million (SAW)/ 100,000 hrs (Infrared)	35 million (Resistive)/ 225 million (Capacitive)/ 50 million (SAW)	35 million (Resistive)/ 225 million (Capacitive)
Watchdog Timer		255 Level	62 level, 1 ~ 62 seconds	255 Level	62 level, 1 ~ 62 seconds
Working Temperature		0 ~ 45° C (32 ~ 113° F)	0 ~ 45° C (32 ~ 113° F)	0 ~ 45° C (32 ~ 113° F)	0 ~ 45° C (32 ~ 113° F)
Front Panel Protection		NEMA 4 / IP65 compliant	NEMA 4/IP65 compliant (systems with SAW T/S excluded)	NEMA 4 / IP65 compliant	NEMA4/IP 65 compliant
Certificate		BSMI, VCCI, UL, CE, FCC Class B, CCC	BSMI, VCCI, UL, CE, FCC Class B, CCC	BSMI, VCCI, UL, CE, FCC Class B, CCC	UL, CE, FCC Class B, CB, BSMI, VCCI, CCC
Dimensions (W x H x D)		442 x 362 x 111.5 mm (17.40" x 14.25" x 4.39")	446 x 382 x 127 mm (17.56" x 15.04" x 5")	420 x 223.3 x 130.5 mm (16.54" x 12.72" x 5.12")	375 x 299 x 49 mm (14.76" x 11.77" x 1.93")
Weight		7.6 kg (16.74 lb)	10.5 kg (23 lb)	6 kg (13.22 lb)	4.9 kg (10.78 lb)



Model Name		Multi-functional Panel Computer			
		PPC-154T	PPC-S154T	PPC-S123T	PPC-103T
CPU Board		PCM-9683	PCM-9681	PCM-9573	PCM-9573
Processor		Socket 478 Intel Pentium 4 CPU up to 3.06 GHz	Socket 478 Mobile Intel Pentium 4 Processor-M CPU up to 2.2 GHz (built-in 1.7 GHz)	Socket 370 Pentium III & Celeron CPU to 850 MHz	Socket 370 Pentium III & Celeron CPU to 850 MHz
Memory	Size	128 MB ~ 2 GB DDR SDRAM	64 MB ~ 1 GB DDR SDRAM (standard is built-in 256 MB)	32 ~ 512 MB SDRAM	32 ~ 512 MB SDRAM
	Module Type	184-pin DIMM x 2	200-pin SODIMM x 2	144-pin SODIMM x 2	144-pin SODIMM x 2
2nd Cache Memory		On-die 512 KB	On-die 512 KB	On-die 256 KB	On-die 256 KB
SSD/Type		Optional 6-in-1 Card reader (MS, SD, SM, MC, ad CF Type I/II sockets)	Supports 1 internal CompactFlash Type II socket	Supports 1 x Internal CompactFlash Type I socket	Supports 1 x Internal CompactFlash Type I socket
Display	Size/Type	15" TFT LCD	15" TFT LCD	12.1" TFT LCD	10.4" TFT LCD
	Max. Resolution	1024 x 768	1024 x 768	800 x 600	800 x 600
	Max. Colors	262 K	262 K	262 K	262 K
	Pixel Pitch (mm)	0.297 x 0.297	0.297 x 0.297	0.3075 x 0.3075	0.264 x 0.264
	Brightness (cd/m <sup>2</sup> )	350	350	400	230
	Viewing Angle	120°	120°	140°	100°
	Brightness Control	Yes	Yes	Yes	Yes
	Simultaneous Mode	Yes	Yes	Yes	Yes
VGA	Chipset	Intel 845GV	Intel 845GV	SMI721	SMI721
VRAM		32 ~ 64 MB (DVMT)	32 ~ 64 MB (DVMT)	8 MB	4 MB
HDD/Type		1 x 2.5" drive	1 x 2.5" drive	1 x 2.5" drive	1 x 2.5" drive
FDD/Type		1 x built-in 3.5" drive	1 x built-in 3.5" drive	1 x external FDD connector	Supports 1 x external FDD connector
PCMCIA Slot		Supports Type II x 2 or Type III x 1	-	-	-
CD-ROM/Combo Drive		1 x built-in drive, 24X or above for CD-ROM; 8D/24W/24E/24R or above for Combo	1 x built-in drive, 24X or above for CD-ROM; 8D/24W/24E/24R or above for Combo	1 x external IDE connector	1 x external IDE connector
DVD-ROM, DVD+/- RW Drive Option		Yes	Yes	1 x external IDE connector	1 x external IDE connector
I/O Port		2 x COM ports, 1 x Parallel port, 4 x USB ports (V2.0), PS/2 mouse & K/B, Mic-in/Line-in/Line-out, VGA port, S-Video port, 2 x IEEE 1394 ports	2 x COM ports, 4 x USB V2.0 ports, PS/2 mouse & K/B, Mic-in/Line-in/Line-out, VGA port, S-Video port (optional)	4 x COM ports, 1 x parallel port, 2 x USB, PS/2 mouse & K/B, Line-in/Line-out	4 x COM ports, 1 x parallel port, 2 x USB, PS/2 mouse & K/B, VGA port, Mic-in/Line-out
Bus Expansion		1 x PCI Slot	1 x MINI PCI Socket	1 x PCI/ISA slot	1 x PCI/ISA slot
Network (LAN)		10/100Base-T Ethernet (Gigabit Optional)	10/100Base-T Ethernet (Gigabit Optional)	10/100Base-T Ethernet	10/100Base-T Ethernet
IrDA Transmission		-	Yes	-	-
Power	Output Rating	180 W	70 W	60 W	65 W/75 W; 60 W
	Input Voltage	100 ~ 240 VAC @ 50 ~ 60 Hz	24 Vdc	24 Vdc	(100 ~ 250 VAC @ 50 ~ 60 Hz); 12/24 Vdc
Touch screen	Technology	Resistive/Capacitive/SAW/IR	Resistive	Resistive	Resistive/IR
	Control Port	RS-232 (COM 4)	RS-232 (COM 4)	RS-232 (COM 4)	RS-232 (COM 4)
	Light Transmission	80% (Resistive)/ 91% (Capacitive)/ 91% (SAW)/ 91% (IR)	80%	75%	75% (Resistive)/91% (IR)
	OS Support	Windows 95/98/ME/2000/XP/ DOS/XPE	Windows 95/98/ME/2000/XP/DOS/XPE	Windows 95/98/ME/NT/2000/DOS/XP/XPE	Windows 95/98/ME/NT/2000/XP, DOS/ XPE
	Durability (Touches)	35 million (Resistive)/ 225 million (Capacitive)/ 50 million (SAW)/ 100,000 hrs (IR)	35 million	10 million	10 million (Resistive)/ 100,000 hrs (IR)
Watchdog Timer		62 level, 1 ~ 62 seconds	62 level, 1 ~ 62 seconds	62 level, 1 ~ 62 seconds	62 level, 1 ~ 62 seconds
Working Temperature		0 ~ 45° C (32 ~ 113° F)	0 ~ 45° C (32 ~ 113° F)	0 ~ 45° C (32 ~ 113° F)	0 ~ 45° C (32 ~ 113° F)
Front Panel Protection		NEMA 4/IP65 compliant (systems with SAW T/S excluded)	NEMA4/IP 65 compliant	NEMA 4/IP65 compliant	NEMA 4/IP65 compliant
Certificate		BSMI, VCCI, UL, CE, FCC Class B, CCC	UL, CE, FCC Class B, CB, BSMI, VCCI, CCC	UL, CE, FCC Class B	VCCI, UL, CE, FCC Class B
Dimensions (W x H x D)		420 x 223.3 x 130.5 mm (16.54" x 12.72" x 5.12")	375 x 299 x 49 mm (14.76" x 11.77" x 1.93")	311 x 237 x 54.5 mm (12.24" x 9.33" x 2.15")	342 x 265 x 92.4 mm (13.5" x 10.4" x 3.64")
Weight		7 kg (15.4 lb)	4.9 kg (10.78 lb)	2.6 kg (5.8 lb)	3.5 kg (7.7 lb)

# Panel PCs



Model Name	Fanless Panel Computer				
	PPC-L156T	PPC-L127T	PPC-L106T	PPC-L61T	
CPU Board	PCM-9685	PCM-9693	PCM-9679	PCM-9697	
Processor	Intel Celeron M 1.0 GHz Intel Pentium M 1.1 GHz	Intel Celeron M 1.0 GHz	AMD Geode LX 800 (500 MHz)	AMD Geode LX 800 (500MHz)	
Memory	Size	128 MB ~ 1 GB DDR (Standard: 256 MB built-in)	128 MB ~ 1GB DDR DRAM	128 MB ~ 1 GB DDR SDRAM (Standard: 256 MB built-in)	
	Module Type	200-pin SODIMM x 2	184-pin DIMM x 1	200-pin SODIMM x 1	
2nd Cache Memory	NA / 1 G	NA	128 KB	128 KB	
SSD/Type	Supports 1 internal Compact Flash Type I/II socket				
Display	Size/Type	15" TFT LCD	12.1" TFT LCD	10.4" TFT LCD	6.5" TFT LCD
	Max. Resolution	1024 X 768	800 x 600	800 x 600	640 X 480
	Max. Colors	262 K	262 K	262 K	262 K
	Pixel Pitch (mm)	0.297 x 0.297	0.3075 x 0.3075	0.264 x 0.264	0.207 x 0.207
	Brightness (cd/m2)	350	400	230	400
	Viewing Angle	130°/120° C	140°/110° C	120°/100° C	140°/120° C
	Brightness Control	Yes	Yes	Yes	Yes
	Simultaneous Mode	-	Yes	Yes	Yes
VGA	Chipset	Intel 852GM/Intel 855GME	Intel 852GM	AMD CS 5536	AMD CS5536
	VRAM	64 MB (DVMT)	64 MB (DVMT)	32 MB	32 MB
HDD/Type	1 x 2.5" drive	1 x 2.5" drive	1 x 2.5" drive	1 x 2.5" drive Optional	
FDD/Type	-	-	-	-	
PCMCIA Slot	Supports Type II x 2 or Type III x1	-	-	-	
CD-ROM/Combo Drive	Optional	Optional	-	-	
DVD-ROM, DVD+/- RW Drive Option	Optional	Optional	-	-	
I/O Port	3 x COM ports, 1 x Parallel port, 2 x USB ports, 1 x VGA port, 1 x PS/2 mouse and keyboard port	4 x COM ports, 1 x Parallel port, 6 x USB (4x external, 2 x internal) K/B, VGA port, Mic-in/ Line-in/Line-out	4 x COM ports, 1 x Parallel port, 4 x USB (2 x external, 2 internal), Mic-in/ Line-out, PS/2 mouse & K/B, VGA port	2 x Com ports , VGA port, 2 x USB	
Bus Expansion	1 x PCI slot, 1 x MINI PCI	1 x PCI/ISA slot, 1 x MINI PCI	1 x PCI/ISA slot, 1 x MINI PCI	1 X MINI PCI	
Network (LAN)	10/100Base-T Ethernet (Gigabit Optional)	10/100Base-T Ethernet	10/100Base-T Ethernet (Dual LAN Optional)	10/100 Base-T Ethernet	
IrDA Transmission	-	-	-	-	
Power	Output Rating	60 W	60 W	65 W	60 W
	Input Voltage	18 ~ 25 VDC	18 ~ 25 VDC	100 ~ 250 VAC/50 ~ 60 Hz	12~30 VDC
Touch screen	Technology	Resistive/Capacitive/IR	Resistive	Resistive	Resistive
	Control Port	RS-232	USB	RS-232 (COM 4)	RS-232
	Light Transmission	80% (Resistive) 91% (Capacitive) 91% (Infrared)	80%	80%	80%
	OS Support	Windows CE, XPE, 2000, XP	Windows CE, XPE, XP, 2000	Windows CE, XPE, XP	Windows CE, XPE, XP
	Durability (Touches)	35 million (Resistive) 225 million (Capacitive) 100,000 hrs (IR)	35 million	35 million	10 million
Watchdog Timer	255 Level	255 Level	255 Level	255 Level	
Working Temperature	0 ~ 45° C (32 ~ 113° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 45° C (32 ~ 113° F)	0 ~ 50° C (32 ~ 122° F)	
Front Panel Protection	NEMA/IP65 compliant	NEMA 4/IP65 compliant	NEMA 4/IP65 compliant	NEMA 4/IP65 compliant	
Certificate	CE, FCC Class B, UL, BSMI, CCC				
Dimensions (W x H x D)	415 x 333 x 76.5 mm (16.3" x 13.1" x 3")	340.5 x 269.3 x 70.5 mm (13.41" x 10.6" x 2.78")	342 x 265 x 92.4 mm (13.5" x 10.4" x 3.64")	202 x 148 x 49 mm (7.9" x 5.82" x 1.92")	
Weight	6 kg (13.2 lb)	3.25 kg (7.15 lb)	3.2 kg (7.1 lb)	1.2 kg (2.66 lb)	

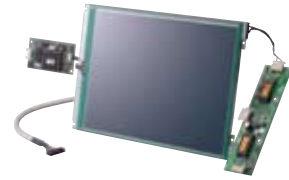
# RISC-based Panel PCs



Model Name	RISC-based Panel PC			
	SPC-58A/ SPC-58C	SPC-65A/ SPC-65C	SPC-101A/ SP-101C	
CPU Board	-	-	-	
Processor	Marvell PXA-270 312 MHz (520 MHz as option)	Marvell PXA-270 312 MHz (520 MHz as option)	Marvell PXA-270 312 MHz (520MHz as option)	
Memory	Size	128 MB/ 256 MB	128 MB/ 256 MB	
	Module Type	On-board Flash	On-board Flash	
2nd Cache Memory	-	-	-	
SSD/Type	Supports 1 x Compact Flash Type I/II slot, 1 x SD/MMC slot	Supports 1 x Compact Flash Type I/II slot, 1 x SD/MMC slot	1 x SD/MMC slot	
Display	Size/Type	5.6" 18-bits TFT LCD	6.4"	10.4"
	Max. Resolution	320 x 234	640 x 480	800 x 600
	Max. Colors	18 bits	18 bits	18 bits
	Pixel Pitch (mm)	0.118 (W) x 0.362 (H)	0.0675 x 0.203	0.264 x 0.264
	Brightness (cd/m2)	500 (typ)	150 (typ)	230 (typ)
	Viewing Angle	20°/40°/50°/50°	15°/35°/45°/45°	70°/70°/55°/65°
	Brightness Control	-	-	-
	Simultaneous Mode	-	-	-
VGA	Chipset	-	-	-
	VRAM	-	-	-
HDD/Type	-	-	-	
FDD/Type	-	-	-	
PCMCIA Slot	-	-	-	
CD-ROM/Combo Drive	-	-	-	
DVD-ROM, DVD+/- RW Drive Option	-	-	-	
I/O Port	1 x RS-232/1 x Selected RS-485/422/232/1 x USB 1.1 host	1 x RS-232/1 x Selected RS-485/422/232/1 x USB 1.1 host/ 1x CF type II slot/1x SD/MMC slot	1 x RS-232/1 x Selected RS-485/422/232/2 x USB 1.1 host/ 1x Line-out	
Bus Expansion	50-pin box header with: SM bus, Mic-in, Line-in, Line-out, 2-wire RS-232, 1 x USB 1.1 Host, 4 x TTL-Level DI, 4 x TTL-Level DO	50-pin box header with: SM bus, Mic-in, Line-in, Line-out, 2-wire RS-232, 1 x USB 1.1 Host, 4 x TTL-Level DI, 4 x TTL-Level DO	50-pin box header with: SM bus, Mic-in, Line-in, Line-out, 2-wire RS-232, 1 x USB 1.1 Host, 4 x TTL-Level DI, 4 x TTL-Level DO	
Network (LAN)	10/100Base-T Ethernet	10/100Base-T Ethernet	10/100Base-T Ethernet	
IrDA Transmission	-	-	-	
Power	Output Rating	-	-	-
	Input Voltage	10 ~ 28 VDC	10 ~ 28 VDC	10 ~ 28 VDC
Touch screen	Technology	Resistive	Resistive	Resistive
	Control Port	-	-	-
	Light Transmission	80%	80%	80%
	OS Support	Windows CE 5.0	Windows CE 5.0	Windows CE 5.0
Durability (Touches)	10 million	10 million	10 million	
Watchdog Timer	-	-	-	
Working Temperature	0~50° C (32~ 122° F)	0~50° C (32~ 122° F)	0~50° C (32~ 122° F)	
Front Panel Protection	IP65 compliant	IP65 compliant	IP65 compliant	
Certificate	UL, FCC, CE	UL, FCC, CE	UL, FCC, CE	
Dimensions (W x H x D)	165 x 218 x 46.6 mm (6.5" x 8.6" x 1.8")	165 x 218 x 46.6 mm (6.5" x 8.6" x 1.8")	220 x 286 x 40 mm (8.66" x 11.26" x 1.57")	
Weight	1.4 kg/ 1.5 kg (3.08 lb/ 3.3 lb)	1.4 kg/ 1.5 kg (3.08 lb/ 3.3 lb)	1.7/1.9 kg (3.74 lb/ 4.18 lb)	

# LCD Kits

LCD kits (ES-1000 series) provide the most cost effective and proven display solutions that are seamlessly compatible with all Advantech SBC/AIMB boards. They also come with inverter, cables and the assurance of long-term industrial component support.



ES-1000 Series

LVDS Interface Series (Wide Temperature Range)									
Model Name	ES-1106N-LVAE	ES-1108N-LSAE	ES-1110N-LSAWE	ES-1112N-LXCWE	ES-1112N-LSME	ES-1112N-LSAE	ES-1115N-LXAE	ES-1117N-LEAE	ES-1119N-LEAE
Description	6.5" VGA TFT-LCD kit	8.4" SVGA TFT-LCD kit	10.4" SVGA TFT-LCD kit	12.1" XGA TFT-LCD kit	12.1" SVGA TFT-LCD kit	12.1" SVGA TFT-LCD kit	15" XGA TFT-LCD kit	17" SXGA TFT-LCD kit	19" SXGA TFT-LCD kit
Display Size	6.5"	8.4"	10.4"	12.1"	12.1"	12.1"	15"	17"	19"
Resolution (pixels)	640 x 480, 16.2M	800 x 600, 262K	800 x 600, 262K	1024 x 768, 262K	800 x 600, 262K	800 x 600, 262K/16.2 (FRC)	1024 x 768, 262K / 16.2M	1280 x 1024, 16.2K	1280 x 1024, 16.7M
View Angle (L/R/U/D)	70°/70°/60°/60°	60°/60°/60°/40°; 65°/65°/65°/45°	60°/60°/35°/65°	80°/80°/80°/80°	65°/65°/75°/45°	70°/70°/50°/60°	60°/60°/40°/60°; 0°/70°/70°/50°	70°/70°/70°/60°	89°/89°/89°/89°
Brightness (cd/m2)	400	450 (Standard)/220 (OEM)	230 (Standard)/400 (OEM)	450	350	400	350 (Standard)/550 (OEM)	300	300
Contrast Ratio	600:1	500:1	500:1	700:1	500:1	500:1	500:1	500:1	1300:1
Signal Interface	18-bit LVDS	18-bit LVDS	18-bit LVDS	18-bit LVDS	18-bit LVDS	18-bit LVDS	18-bit LVDS	24-bit LVDS	24-bit LVDS
Supply Voltage (V)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	5	5
Backlight (hrs.)	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 20,000 hrs/50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs/4-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 4-tubes, 50,000 hrs
Operating Temperature	-20 ~ 70° C	0 ~ 50° C (-20 ~ 70° C)	0 ~ 50° C (-20 ~ 70° C)	-30 ~ 70° C	-20 ~ 70° C	-10 ~ 65° C (-20 ~ 70° C)	0 ~ 50° C	0 ~ 50° C	0 ~ 50° C
Power Consumption (W)	4.26	5.8	3.3 / 8.3	4	6	7.3	11.5 / 21	25.8	28
Response Time (ms) (at 25° C)	25	35	35	6	10	35	12	8	8
Standard LCD Cable Length (mm)	500	500	500	500	500	500	500	500	500
Weight (g)	200	260 / 215	280/485	720	720	640	1100 / 1350	1900	2500
Outline Dimensions (W x H x D)	153 x 118 x 10.7	203 x 142.5 x 8/203 x 142.5 x 5.7	236 x 174.3 x 5.6 / 243 x 184 x 10.6	260.5 x 204 x 12.2	280 x 210 x 12	279 x 209 x 11	326.5 x 253.5 x 12	358.5 x 296.5 x 17	396 x 324 x 17.5
4 Wire Res. Touch	OEM	ES-1108R-LSAWE	ES-1110R-LSAWE	OEM	OEM	ES-1112R-LSAE	ES-1115R-LXAAE	OEM	OEM
5 Wire Res. Touch	OEM	OEM	OEM	OEM	OEM	OEM	OEM	OEM	OEM
Advantech Touch Control Board (Combo)	OEM	OEM	OEM	OEM	OEM	OEM	OEM	OEM	OEM

## Ordering Information

### LVDS Cable Category vs. CPU Board

LCD Series	LVDS Cable	Advantech CPU Card To match
ES-1106N-LVA ES-1108R-LSA ES-1108N-LS ES-1110R-LSA ES-1110N-LSA ES-1112N-LXM ES-1112N-LSA ES-1112N-LSM ES-1115N-LXA ES-1117N-LEA ES-1119N-LEA	- 01E or -W1E	PCI-6872/6871, PCA-6774/6773, PCM-9371/9372/9373/9375E/9377, PCM-9579/9577/9575, PCM-3370E/3353/4153
	- 03E or -W3E	PCM-9388/9387/9386/9381/9380, PCM-4390/4386/4381/4381/4373/4372, PCM-3372/3386/3380, PCM-9590/9587/9586/9584/9582/9581/9580, AIMB-641/640/350/330V/330G/340/750/554/240/556, PCI-6886/6882/6881/6880/6872/6870/6780
	- 06E or -W6E	AIMB-250/251

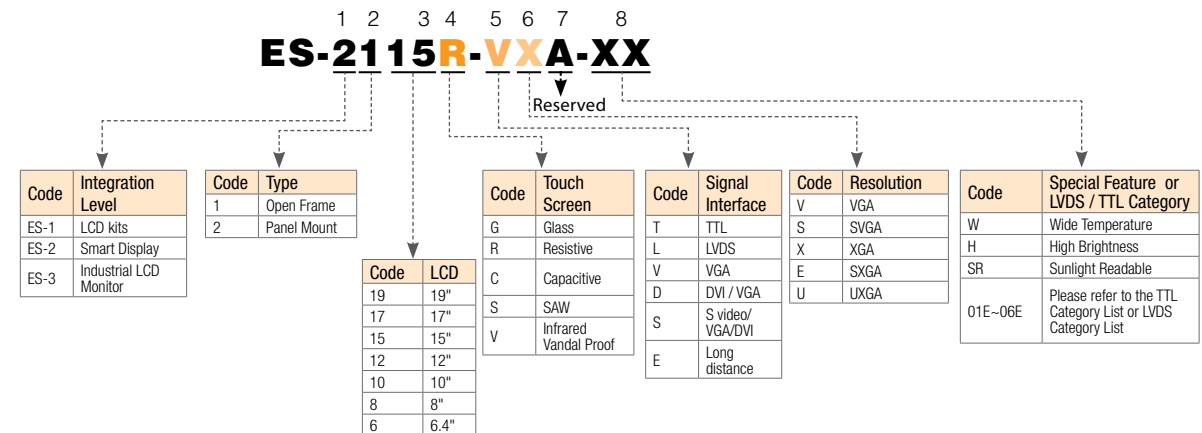
Model Name	TTL Interface Series				Outdoor Application				
	ES-1106N-TVPE	ES-1108N-TVME	ES-1110N-TVME	ES-1112N-TSME	ES-1108N-TVM-SRE	ES-1110N-TVM-HE	ES-1112N-LSM-HE	ES-1112N-LXM-HE	ES-1115N-LXM-HE
Description	6.4" VGA TFT LCD	8.4" VGA TFT LCD kit	10.4" VGA TFT LCD kit	12.1" SVGA TFT-LCD kit	8.4" SVGA TFT-LCD kit	10.4" SVGA TFT-LCD kit	12.1" XGA TFT-LCD kit	12.1" SVGA TFT-LCD kit	15" XGA TFT LCD kit
Display Size	6.4"	8.4"	10.4"	12.1"	8.4"	10.4"	12.1"	12.1"	15"
Display Size Resolution (pixels)	VGA, 262K	VGA, 262K	800 x 600, 260K	800 x 600, 260K	640 x 480, 262K	640 x 480, 262K	800 x 600, 262K	1024 x 768, 262K	1024 x 768, 262K
View Angle (L/R/U/D)	60°/60°/40°/35°	65°/65°/50°/60°	65°/65°/65°/45°	65°/65°/75°/45°	65°/65°/60°/50°	70°/70°/60°/60°	65°/65°/75°/45°	60°/60°/75°/45°	75°/75°/60°/50°
Brightness (cd/m2)	400	480	430	400	480	1000	1000	1000	1500
Contrast Ratio	400:1	450:1	500:1	500:1	500:1	700:1	500:1	700:1	650:1
Signal Interface	18-bit TTL	18-bit TTL	18-bit TTL	18-bit TTL	18-bit TTL	18-bit TTL	18-bit LVDS	18-bit LVDS	18-bit LVDS
Supply Voltage (V)	5	3.3	3.3/5.0	3.3/5.0	3.3	3.3	3.3	3.3	5
Backlight (hrs.)	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 4-tubes, 50,000 hrs	CCFL, 4-tubes, 50,000 hrs	CCFL, 4-tubes, 50,000 hrs	CCFL, 6-tubes, 50,000 hrs
Operating Temperature	-20 ~ 70° C	-20 ~ 70° C	-20 ~ 70° C	-20 ~ 70° C	-20 ~ 70° C	-20 ~ 70° C	-20 ~ 70° C	-20 ~ 70° C	-20 ~ 70° C
Power Consumption (W)	4.32	4	6.5	6	7	26.2	27	29.2	25.6
Response time (ms)(at 25° C)	15	6	10	10	6	4	10	6	6
Standard LCD Cable Length (mm)	500	500	500	500	500	500	500	500	500
Weight (g)	340	360	540	720	360	650	990	990	TBD
Outline Dimensions (W x H x D)	175 x 126 x 12 mm (6.89" x 4.96" x 0.47")	199.5 x 149 x 11.5 mm (7.85" x 5.87" x 0.45")	243 x 181.6 x 12.2 mm (9.57" x 7.15" x 0.48")	280 x 210 x 12 mm (11.02" x 8.27" x 0.47")	199.5 x 149 x 11.5 mm (7.85" x 5.87" x 0.45")	241 x 181.6 x 16 mm (9.45" x 7.15" x 0.63")	280 x 219 x 17.8 mm (11.02" x 8.62" x 0.70")	280 x 219 x 17.8 mm (11.02" x 8.62" x 0.70")	326 x 267 x 20.5 mm (12.83" x 10.51" x 0.81")

## Ordering Information

### TTL Cable Category vs. CPU Board

LCD Kits	TTL Category	Advantech CPU Card To match
ES-1106N-TVP	- 01E	PCA-6740, PCI-6872, PCA-6775/6774/6773
ES-1108N-TVM	- 02E	
ES-1110N-TVM	- 03E	PCM-9375F, PCI-6871, PCM-3341/3353/3370F/3375/4141/4153, SOM-2353 w/SOM-DB2300
ES-1112N-TSM	- 04E	PCM-9576/9572

## Display Product Naming Rule



# Open Frame Monitor

ES-2000 series is a new type of display designed to meet the needs of customers who want to quickly and easily integrate their solutions with Advantech Embedded Box Computers such as ARK, EPBC, DVS and DSA.



ES-2100 Series

Model Name	ES-2106 series	ES-2108 series	ES-2110 series	ES-2112 series	ES-2115 series	ES-2117 series	ES-2119 series	
<b>Description</b>	6.5" Open Frame Monitor	8.4" Open Frame Monitor	10.4" Open Frame Monitor	12.1" Open Frame Monitor	15" Open Frame Monitor	17" Open Frame Monitor	19" Open Frame Monitor	
<b>Interface</b>	VGA/LVDS	VGA/LVDS	VGA/LVDS	VGA	VGA/LVDS	VGA/LVDS	VGA/LVDS	
<b>Display (Standard)</b>	Display Size (")	6.5	8.4	10.4	12.1	15	17	
	Panel Type	TFT LCD	TFT LCD	TFT LCD	TFT LCD	TFT LCD	TFT LCD	
	Resolution	640 x 480 VGA	800 x 600 SVGA	800 x 600 SVGA	800 x 600 SVGA/1024x768 XGA	800 x 600 SVGA	1280 x 1024 SVGA	1280 x 1024 SVGA
	Number of Colors	16.2 M	262 K	262 K	262 K/ 260K	262 K	16.2 M	16.2 M
	Contrast Ratio	600:1	350:1	350:1	500:1 / 550:1	400:1	500:1	500:1
	Brightness	400	350	230	400 / 320	350	300	300
	Response Time	25	35	35	35 / 6	16	8	8
	Backlight MTBF	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs
Viewing Angle L/R/U/D	70°/70°/60°/60°	60°/60°/60°/40°	60°/60°/40°/60°	65°/65°/75°/45° 65°/65°/75°/45°	65°/65°/75°/45°	60°/60°/70°/70°	89°/89°/89°/89°	
<b>OSD Key Function</b>	Brightness							
	Contrast							
	Clock							
	Phase	Yes	Yes	Yes	Yes	-	Yes	
	Horizontal							
	Vertical							
Sharpness								
<b>Power Input</b>	AC 100 ~ 240 V/ 12V DC in	AC 100 ~ 240 V/ 12V DC in	AC 100 ~ 240 V/ 12V DC in	AC 100 ~ 240 V/ 12V DC in	AC 100 ~ 240 V/ 12V DC in	AC 100 ~ 240 V/ 12V DC in	AC 100 ~ 240 V/ 12V DC in	
<b>Operating Temperature (Standard)</b>	-20 ~ 70° C	0 ~ 50° C (-20 ~ 70° C optional)	0 ~ 50° C (-20 ~ 70° C optional)	-10 ~ 50° C (-20 ~ 70° C optional)	0 ~ 50° C	0 ~ 50° C	0 ~ 50° C	
<b>Dimensions (W x H x D)</b>	190 x 142 x 40 mm (7.48" x 5.59" x 1.57")	256 x 193 x 47.3 mm (10.08" x 7.60" x 1.86")	203 x 184 x 45 mm (7.99" x 7.24" x 1.77")	352 x 251 x 49 mm (13.86" x 9.88" x 1.93")	326.5 x 253.3 x 50 mm (12.85" x 9.97" x 1.97")	402.1 x 320.4 x 56.24 mm (15.83" x 12.61" x 2.21")	446 x 364 x 56.58 mm (17.56" x 14.33" x 2.23")	
	Weight	1.3 kg (2.86 lb)	2.2 kg (4.84 lb)	2.5 kg (5.50 lb)	3 kg (6.60 lb)	3.4 kg (7.48 lb)	TBD	TBD
<b>Touchscreen</b>	Tempered Glass	Yes	Yes	Yes	Yes	Yes	Yes	
	5-Wire Resistive	Yes	Yes	Yes	Yes	Yes	Yes	
	Capacitive	Yes	Yes	Yes	Yes	Yes	Yes	
	SAW	-	Yes	Yes	Yes	Yes	Yes	
	Infrared (Vandal Proof)	-	-	Yes	Yes	Yes	Yes	Yes
<b>Interface for Touch Screen</b>	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	

## Ordering Information

### LVDS Series

Open Frame (LVDS) Series	LVDS Cable	Advantech CPU Card To Match
ES-2106R-LVA ES-2108R-LSA ES-2110R-LSA ES-2112R-LSA ES-2115R-LXA ES-2117R-LEA ES-2119R-LEA	- 01	PCA-6774, PCM-6773, PCI-6886, PCI-6881, PCI-6880, PCI-6872, PCM-9371, PCM-9373, PCM-9375, PCM-9575, PCM-9577, PCM-9579, PCM-3370E
	- 02	POS-761F, SOM-4450, SOM-4451, SOM-4475, SOM-4481, SOM-4486 w/SOM-DB4400, SOM-5780 w/SOM-DB5700
	- 03	PCM-9387, PCM-9386, PCM-9381, PCM-9380, PCM-3386, PCM-3380, PCM-9586, PCM-9582, PCM-9580, PCM-9581, AIMB-641, AIMB-640, AIMB-350, AIMB-340, AIMB-330G/V, POS-760, POS-7680
	- 05	ARK-1000 & ARK-3000 series

# Rugged Panel Mount Monitor



ES-2200 Series

Model Name	ES-2206 Series	ES-2208 Series	ES-2210 Series	ES-2212 Series	ES-2215 Series	ES-2217 Series	ES-2219 Series	
<b>Description</b>	6.5" panel mount monitor	8.4" panel mount monitor	10.4" panel mount monitor	12.1" panel mount monitor	15" panel mount monitor	17" panel mount monitor	19" panel mount monitor	
<b>Interface</b>	VGA	VGA	VGA	VGA	VGA	VGA	VGA	
<b>Display (Standard)</b>	Display Size (")	6.5	8.4	10.4	12.1	15	17	
	Panel Type	TFT LCD	TFT LCD	TFT LCD	TFT LCD	TFT LCD	TFT LCD	
	Resolution	640 x 480 VGA	800 x 600 SVGA	800 x 600 SVGA	800 x 600 SVGA/1024 x 768 XGA	800 x 600 SVGA	1280 x 1024 SVGA	1280 x 1024 SVGA
	Number of Colors	16.2 M	262 K	262 K	262 K / 260 K	262 K	16.2 M	16.2 M
	Contrast Ratio	600:1	350:1	350:1	500:1 / 550:1	400:1	500:1	500:1
	Brightness	400	350	230	400 / 320	350	300	300
	Response Time	25	35	35	35 / 6	16	8	8
	Backlight MTBF	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs
Viewing Angle L/R/U/D	70°/70°/60°/60°	60°/60°/60°/40°	60°/60°/40°/60°	65°/65°/75°/45° 65°/65°/75°/45°	65°/65°/75°/45°	60°/60°/70°/70°	89°/89°/89°/89°	
<b>OSD Key Function</b>	Brightness							
	Contrast							
	Clock							
	Phase	Yes	Yes	Yes	Yes	N/A	Yes	
	Horizontal							
	Vertical							
Sharpness								
<b>Power Input</b>	AC 100 ~ 240 V/ 12V DC in	AC 100 ~ 240 V/ 12V DC in	AC 100 ~ 240 V/ 12V DC in	AC 100 ~ 240 V/ 12V DC in	AC 100 ~ 240 V/ 12V DC in	AC 100 ~ 240 V/ 12V DC in	AC 100 ~ 240 V/ 12V DC in	
<b>Operating Temperature (Standard)</b>	-20 ~ 70° C	0 ~ 50° C (-20 ~ 70° C optional)	0 ~ 50° C (-20 ~ 70° C optional)	-10 ~ 50° C (-20 ~ 70° C optional)	0 ~ 50° C	0 ~ 50° C	0 ~ 50° C	
<b>Dimensions (W x H x D)</b>	190 x 142 x 40 mm (7.48" x 5.59" x 1.57")	256 x 193 x 47.3 mm (10.08" x 7.60" x 1.86")	203 x 184 x 45 mm (7.99" x 7.24" x 1.77")	352 x 251 x 49 mm (13.86" x 9.88" x 1.93")	326.5 x 253.3 x 50 mm (12.85" x 9.97" x 1.97")	402.1 x 320.4 x 56.24 mm (15.83" x 12.61" x 2.21")	446 x 364 x 56.58 mm (17.56" x 14.33" x 2.23")	
	Weight	1.3 kg (2.86 lb)	2.2 kg (4.84 lb)	2.5 kg (5.50 lb)	3 kg (6.60 lb)	3.4 kg (7.48 lb)	TBD	TBD
<b>Touch Screen</b>	Tempered Glass	Yes	Yes	Yes	Yes	Yes	Yes	
	5-Wire Resistive	Yes	Yes	Yes	Yes	Yes	Yes	
	Capacitive	Yes	Yes	Yes	Yes	Yes	Yes	
	SAW	-	Yes	Yes	Yes	Yes	Yes	
	Infrared (Vandal Proof)	-	-	Yes	Yes	Yes	Yes	Yes
<b>Interface for Touch Screen</b>	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	

## Power Code Options

1702002600	Power Cable UL/CSA (USA) 180 cm
1702031801	Power Cable (UK) 5A-Fuse 180 cm
1702002605	Power Cable 220 V EUROPEAN 250 V/6 A (FRANCE) 180 cm

# Outdoor Open Frame/Panel Mount Monitor



Model Name	ES-2106/2206 Series	ES-2108/2208 Series	ES-2110/2210 Series	ES-2112/2212 Series	ES-2115/2215 Series	ES-2117/2217 Series	ES-2119/2219 Series	
<b>Description</b>	6.5" Open Frame Monitor	8.4" Open Frame Monitor	10.4" Open Frame Monitor	12.1" Open Frame Monitor	15" Open Frame Monitor	17" Open Frame Monitor	19" Open Frame Monitor	
<b>Interface</b>	VGA/LVDS	VGA/LVDS	VGA/LVDS	VGA	VGA/LVDS	VGA/LVDS	VGA/LVDS	
<b>Display (Standard)</b>	<b>Display Size (")</b>	6.5	8.4	10.4	12.1	15	19	
	<b>Panel Type</b>	TFT LCD	TFT LCD	TFT LCD	TFT LCD	TFT LCD	TFT LCD	
	<b>Resolution</b>	640 x 480 VGA	800 x 600 SVGA	640 x 480 VGA	800 x 600 SVGA/1024x768 XGA	1024 x 768 XGA	1280 x 1024 SXGA	1280 x 1024 SXGA
	<b>Number of Colors</b>	16.2M	262 K	262 K	262 K/260 K	262 K	16.2 M	16.2 M
	<b>Contrast Ratio</b>	600:1	350:1	700:1	500:1/700:1	400:1	500:1	500:1
	<b>Response Time</b>	25	35	4	10/6	6	8	8
	<b>Backlight MTBF</b>	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 4-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs	CCFL, 2-tubes, 50,000 hrs
	<b>Viewing Angle L/R/U/D</b>	70°/70°/60°/60°	60°/60°/60°/40°	70°/70°/60°/60°	65°/65°/75°/45°	75°/75°/60°/50°	60°/60°/70°/70°	89°/89°/89°/89°
	<b>Display (Ultra High Brightness)</b>	<b>Brightness</b>	-	-	1000	1000	1500	ODM
<b>Anti-Reflection</b>		-	-	Yes	Yes	Yes	ODM	
<b>Display (Sunlight Readable + AR)</b>	<b>Brightness</b>	600	450	500	450	550	450*	
	<b>Anti-Reflection</b>	Yes	Yes	Yes	Yes	Yes	Yes	
<b>OSD Key Function</b>	<b>Brightness</b>	Yes	Yes	Yes	Yes	-	Yes	
	<b>Contrast</b>							
	<b>Clock</b>							
	<b>Phase</b>							
	<b>Horizontal</b>							
	<b>Vertical</b>							
<b>Power Input</b>	<b>AC</b>	AC 100 ~ 240 V / 12V DC in	AC 100 ~ 240 V / 12V DC in	AC 100 ~ 240 V / 12V DC in	AC 100 ~ 240 V / 12V DC in	AC 100 ~ 240 V / 12V DC in	AC 100 ~ 240 V / 12V DC in	
	<b>Operating Temperature (Standard)</b>	-20 ~ 70° C (-4 ~ 158° F)	-20 ~ 70° C (-4 ~ 158° F)	-20 ~ 70° C (-4 ~ 158° F)	-20 ~ 70° C (-4 ~ 158° F)	-20 ~ 70° C (-4 ~ 158° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)
<b>Dimensions (W x H x D)</b>	190 x 142 x 40 mm (7.48" x 5.59" x 1.57")	256 x 193 x 47.3 mm (10.08" x 7.60" x 1.86")	203 x 184 x 45 mm (7.99" x 7.24" x 1.77")	352 x 251 x 49 mm (13.86" x 9.88" x 1.93")	326.5 x 253.3 x 50 mm (12.85" x 9.97" x 1.97")	402.1 x 320.4 x 56.24 mm (15.83" x 12.61" x 2.21")	446 x 364 x 56.58 mm (17.56" x 14.33" x 2.23")	
<b>Weight</b>	1.3 kg (2.86 lb)	2.2 kg (4.84 lb)	2.5 kg (5.50 lb)	3 kg (6.60 lb)	3.4 kg (7.48 lb)	TBD	TBD	
<b>Touch Screen</b>	<b>Tempered Glass</b>	V	V	V	V	V	V	
	<b>5 wire Resistive</b>	V	V	V	V	V	V	
	<b>Capacitive</b>	V	V	V	V	V	V	
	<b>Infrared (Vandal Proof)</b>	-	-	V	V	V	V	
<b>Interface for Touchscreen</b>	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	
<b>Sunlight Readable (Semi-Outdoor)</b>	ES-2106C-VVA-SRE	ES-2108C-VSA-SRE	ES-2110C-VSA-SRE	ES-2112C-VSA-SRE	ES-2115C-VXA-SRE	ES-2117C-VEA-SRE	ES-2119C-VEA-SRE	
<b>Sunlight Readable (Pure-Outdoor)</b>	-	ES-2108C-VSM-SRE	ES-2110C-VVM-HE	ES-2112C-VSM-HE	ES-2115C-VXM-HE	ODM	ODM	

# Industrial LCD Monitors



This industrial LCD monitor (ES-3000 series) has a highly integrated embedded LCD touchscreen with EMI safety certification. The front bezel is designed to protect against water and dust penetration. It has a steel enclosure designed to integrate easily with embedded industrial display applications.

Model Name	ES-3112R-VSAE	ES-3112C-VSS-SRE	ES-3115R-VXAE	ES-3115C-VXA-SRE	ES-3117R-VEAE	ES-3117C-VEA-SRE	
<b>Description</b>	12.1" industrial LCD monitor with resistive touch screen	12.1" industrial Sunlight readable LCD monitor w/ vandal proof infrared touch screen	15" industrial LCD monitor with resistive touch screen	15" industrial Sunlight readable LCD monitor w/ vandal proof infrared touch screen	17" industrial LCD monitor with resistive touch screen	17" industrial Sunlight readable LCD monitor w/ vandal proof infrared touch screen	
<b>Display</b>	<b>Display Size</b>	12"	12"	15"	15"	17"	
	<b>Panel Type</b>	TFT LCD	TFT LCD	TFT LCD	TFT LCD	TFT LCD	
	<b>Resolutions</b>	SVGA 800 x 600	SVGA 800 x 600	XGA 1024 x 768	XGA 1024 x 768	SXGA 1280 x 1024	SXGA 1280 x 1024
	<b>Number of Colors</b>	262 K	262 K	262 K	262 K	16.2 M	16.2 M
	<b>Contrast Ratio</b>	500:1	400:1	400:1	400:1	500:1	500:1
	<b>Brightness</b>	400 cd/m2	200 cd/m2	350 cd/m2	350 cd/m2	300 cd/m2	300 cd/m2
	<b>Response Time</b>	35 ms	35 ms	12 ms	12 ms	8 ms	8 ms
	<b>Backlight MTBF</b>	50,000 hrs.	50,000 hrs.	50,000 hrs.	50,000 hrs.	50,000 hrs.	50,000 hrs.
<b>I/O Port</b>	<b>Viewing Angle L/R/U/D</b>	70°/70°/50°/60°	40°/40°/35°/35°	60°/60°/40°/60°	60°/60°/40°/60°	70°/70°/70°/60°	70°/70°/70°/60°
	<b>VGA Port</b>	Yes	Yes	Yes	Yes	Yes	Yes
	<b>S-Video</b>	Optional	Optional	Optional	Optional	Optional	Optional
	<b>Audio Port</b>	Optional	Optional	Optional	Optional	Optional	Optional
<b>OSD Key Function</b>	<b>OSD Key Function</b>	Brightness/Contrast/Clock/Phase/Horizontal/Vertical/Sharpness	Brightness/Contrast/Clock/Phase/Horizontal/Vertical/Sharpness	Brightness/Contrast/Clock/Phase/Horizontal/Vertical/Sharpness	Brightness/Contrast/Clock/Phase/Horizontal/Vertical/Sharpness	Brightness/Contrast/Clock/Phase/Horizontal/Vertical/Sharpness	Brightness/Contrast/Clock/Phase/Horizontal/Vertical/Sharpness
	<b>Power Input</b>	AC 100 ~ 240 V / 12V DC in	AC 100 ~ 240 V / 12V DC in	AC 100 ~ 240 V / 12V DC in	AC 100 ~ 240 V / 12V DC in	AC 100 ~ 240 V / 12V DC in	AC 100 ~ 240 V / 12V DC in
	<b>Operating Temperature</b>	0 ~ 60° C (32 ~ 140° F)	-30 ~ 80° C (-22 ~ 176° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)
<b>Storage Temperature</b>	-20 ~ 70° C (-4 ~ 158° F)	-30 ~ 80° C (-22 ~ 176° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	
<b>Dimensions (W x H x D)</b>	390 x 297 x 49 mm (15.35" x 11.69" x 1.93")		414 x 232 x 50 mm (16.30" x 12.68" x 1.97")		448 x 358 x 51.8 mm (17.64" x 14.09" x 2.03")		
<b>Weight</b>	3.4 kg (7.48 lb)	3.4 kg (7.48 lb)	4.1 kg (9.02 lb)	4.1 kg (9.02 lb)	4.5 kg (9.90 lb)	4.5 kg (9.90 lb)	
<b>Certifications</b>	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	
<b>Touchscreen</b>	<b>Tempered Glass</b>	Yes	Yes	Yes	Yes	Yes	
	<b>5-Wire Resistive</b>	Yes	Yes	Yes	Yes	Yes	
	<b>Capacitive</b>	Yes	Yes	Yes	Yes	Yes	
	<b>Infrared (Vandal Proof)</b>	Yes	Yes	Yes	Yes	Yes	
<b>Interface for Touchscreen</b>	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	

Note: The model numbers shown above are only applicable to resistive and Capacitive touchscreen options. Please refer to the selection wizard website for other options and detailed specifications.

## Ordering Information

ES-3112R-VSAE	12" Embedded resistive touch monitor, 800 x 600 resolution
ES-3112R-VXME	12" Embedded resistive touch monitor, 1024 x 768 resolution
ES-3112C-VSS-SRE	12" Embedded sunlight readable capacitive touch monitor, 800 x 600 resolution
ES-3115R-VXAE	15" Embedded resistive touch monitor, 1024 x 768 resolution
ES-3115C-VXA-SRE	15" Embedded sunlight readable capacitive touch monitor, 1024 x 768 resolution
ES-3117R-VEAE	17" Embedded resistive touch monitor, 1280 x 1024 resolution
ES-3117C-VEA-SRE	17" Embedded sunlight readable capacitive touch monitor, 1280 x 1024 resolution

Note: ultra high brightness touch monitor is available by OEM/ODM.

## Power Code Options

1702002600	Power Cable UL/CSA (USA) 180 cm
1702031801	Power Cable (UK) 5A-Fuse 180 cm
1702002605	Power Cable 220 V EUROPEAN 250 V/6 A (FRANCE) 180 cm

# Medical Computing Platforms



Model Name		POC-195	POC-175	POC-174	POC-155
<b>CPU</b>		Socket 479 Intel Pentium M processor up to 2.0 Ghz	Socket 479 Intel Pentium M processor up to 2.0 Ghz	Socket 478 Intel Pentium 4 Mobile processor up to 2.2 GHz	Socket 479 Intel Pentium M processor up to 2.0 Ghz
<b>System Chipset</b>		915GM GMCH/ICH6-M Chipset 533 MHz FSB	915GM GMCH/ICH6-M Chipset 533 MHz FSB	845GV GMCH/ICH4 Chipset 400 MHz FSB	915GM GMCH/ICH6-M Chipset 533 MHz FSB
<b>Display</b>	<b>Size/Display Type</b>	19" TFT color LCD	17" TFT color LCD	17" TFT color LCD	15" TFT color LCD
	<b>Max. Resolution</b>	1280 x 1024	1280 x 1024	1280 x 1024	1024 x 768
	<b>Max. Colors</b>	16.7M	16.7M	16.7M	262 K
	<b>Pixel Pitch (mm)</b>	0.294 x 0.294	0.264 x 0.264	0.264 x 0.264	0.297 x 0.297
	<b>Viewing Angle</b>	178°	160°	160°	120°
	<b>Luminance</b>	300 cd/m2	300 cd/m2	300 cd/m2	350 cd/m2
	<b>Backlight Lifetime</b>	50,000 hours	50,000 hours	50,000 hours	50,000 hours
<b>Memory</b>		Supports up to 2GB DDR2 533 DRAM	Supports up to 2GB DDR2 533 DRAM	Supports up to 2GB DDR 333 DRAM	Supports up to 2GB DDR2 533 DRAM
<b>HDD/Type</b>		One 2.5" IDE HDD/One SATA 2.5" HDD	One 2.5" IDE HDD/One SATA 2.5" HDD	One 2.5" IDE HDD	One 2.5" IDE HDD/One SATA 2.5" HDD
<b>FDD/Type</b>		-	-	1.44 MB	-
<b>Optical Device</b>		Slim type	Slim type	Slim type	Slim type
<b>PCMCIA Slot</b>		-	-	2 x Type II	-
<b>CF</b>		-	-	-	-
<b>I/O Port &amp;Speakers</b>	<b>Serial</b>	3: RS-232 x 2, RS-232/422/485 x 1	3: RS-232 x 2, RS-232/422/485 x 1	4: RS-232 x 3, RS-232/422/485 x 1	3: RS-232 x 2, RS-232/422/485 x 1
	<b>USB port</b>	6	6	2	6
	<b>IEEE1394a Port</b>	3	3	-	3
	<b>PS/2 mouse and keyboard interface</b>	1	1	1	1
	<b>D-sub VGA port</b>	1	1	1	1
	<b>Parallel port</b>	1	1	1	1
	<b>Mic-in/Line-in/Line-out</b>	Yes	Yes	Yes	Yes
	<b>Speakers (1W)</b>	2	2	2	2
<b>Network (LAN)</b>		Gigabit LAN x 2	Gigabit LAN x 2	10/ 100 Base-T Ethernet x 2	Gigabit LAN x 2
<b>Bus Expansion</b>		PCI 2.2 expansion slot x 1, mini-PCI slot x 1	PCI 2.2 expansion slot x 1, mini-PCI slot x 1	PCI 2.2 expansion slot x 1	PCI 2.2 expansion slot x 1, mini-PCI slot x 1
<b>Optional</b>	<b>WLAN</b>	802.11b/g	802.11b/g	802.11 b	802.11b/g
	<b>Touchscreen: Analog resistive</b>	Yes	Yes	Yes	Yes
	<b>Li-ion battery pack</b>	-	-	-	-
<b>Power Supply</b>		AC model: 180 Watts Input voltage: 100~250 VAC,4/2A max. @ 50~60 Hz	AC model: 180 Watts Input voltage: 100~250 VAC,4/2A max. @ 50~60 Hz	AC model: 180 Watts Input voltage: 100~240 VAC,4/2A max. @ 50~60 Hz	AC model: 180 Watts Input voltage: 100~240 VAC,4/2A max. @ 50~60 Hz
<b>Cooling</b>		Yes	Yes	Yes	Yes
<b>Front Panel</b>		IP65/NEMA 4 compliant	IP65/NEMA 4 compliant	IP65/NEMA 4 compliant	IP65/NEMA 4 compliant
<b>Whole System</b>		IPX1 compliant	IPX1 compliant	IPX1 compliant	IPX1 compliant
<b>Mounting</b>		VESA 75 x 75 mm, 100 x 100 mm	VESA 75 x 75 mm, 100 x 100 mm	VESA 75 x 75 mm, 100 x 100 mm	VESA 75 x 75 mm, 100 x 100 mm
<b>Certification</b>		CE, FCC, CCC approved;EN60601-1, UL60601-1 approved	CE, FCC, CCC approved;EN60601-1, UL60601-1 approved	CE, FCC, VCCI, BSMI approved;UL60950, UL60601-1, EN60950,EN60601-1 approved	CE, FCC, CCC approved;EN60601-1, UL60601-1 approved
<b>Dimensions (W x H x D)</b>		472 x 416 x 124 mm	437 x 377 x 131 mm	437 x 377 x 131 mm	418 x 342 x 115 mm
<b>Weight</b>		10.5 Kg (23.15 lb)	10.5 Kg (23.15 lb)	10 Kg (22.05 lb)	6.5Kg (14.33 lb)

Model Name		POC-154	POC-125
<b>CPU</b>		Socket 478 Intel Pentium 4 Mobile processor up to 2.2 GHz	Soldered type Celeron Mprocessor 600 MHz
<b>System Chipset</b>		845GV GMCH/ICH4 Chipset400 MHz FSB	855GME GMCH/ICH4 Chipset400 MHz FSB
<b>Display</b>	<b>Size/Display Type</b>	15" TFT color LCD	12.1" TFT color LCD
	<b>Max. Resolution</b>	1024 x 768	800 x 600
	<b>Max. Colors</b>	262 K	262 K
	<b>Pixel Pitch (mm)</b>	0.297 x 0.297	0.307 x 0.307
	<b>Viewing Angle</b>	120°	140°
	<b>Luminance</b>	350 cd/m2	400 cd/m2
	<b>Backlight Lifetime</b>	50,000 hours	50,000 hours
<b>Memory</b>		Supports up to 2GB DDR2 333 DRAM	Supports up to 2GB DDR2 333 DRAM
<b>HDD/Type</b>		One 2.5" IDE HDD	One 2.5" IDE HDD
<b>FDD/Type</b>		1.44 MB	-
<b>Optical Device</b>		-	-
<b>PCMCIA Slot</b>		2 x Type II	-
<b>CF</b>		-	1 x Type I/II
<b>I/O Port &amp;Speakers</b>	<b>Serial</b>	4: RS-232 x 3, RS-232/422/485 x 1	2: RS-232 x 1, RS-232/422/485 x 1
	<b>USB port</b>	2	4
	<b>IEEE1394a Port</b>	-	1
	<b>PS/2 mouse and keyboard interface</b>	1	1
	<b>D-sub VGA port</b>	1	-
	<b>Parallel port</b>	1	-
	<b>Mic-in/Line-in/Line-out</b>	Yes	Yes
	<b>Speakers (1W)</b>	2	2
<b>Network (LAN)</b>		10/100Base-T Ethernet x 2	10/100Base-T Ethernet x 2
<b>Bus Expansion</b>		PCI 2.2 expansion slot x 1	PCI 2.2 expansion slot x 1, mini-PCI slot x 1
<b>Optional</b>		802.11 b	802.11b/g
<b>Power Supply</b>		AC model: 180 Watts Input voltage: 100~240 VAC,4/2A max. @ 50~60 Hz	DC model: 50 Watts Input voltage: +24 VDC, 2A max
<b>Cooling</b>		Yes	Fanless
<b>Front Panel</b>		IP65/NEMA 4 compliant	IP65/NEMA 4 compliant
<b>Whole System</b>		IPX1 compliant	IPX1 compliant
<b>Mounting</b>		VESA 75 x 75 mm, 100 x 100 mm	VESA 75 x 75 mm, 100 x 100 mm
<b>Certification</b>		CE, FCC, VCCI, BSMI approved;UL60950, UL60601-1, EN60950,EN60601-1 approved	CE, FCC, CCC approved;EN60601-1, UL60601-1 approved
<b>Dimensions (W x H x D)</b>		418 x 342 x 115 mm	348 x 287 x 92 mm
<b>Weight</b>		6.5Kg (14.33 lb)	4.5Kg (9.92 lb)

Model Name		MT-100-TE	MT-100-AE
<b>CPU</b>		AMD Geode LX 800@0.9W 1Ch., UDMA-66	AMD Geode LX 800@0.9W 1Ch., UDMA-66
<b>Front Side Bus</b>		500 MHz	500 MHz
<b>System Chipset</b>		AMD Geode LX 800 & CS5536	AMD Geode LX 800 & CS5536
<b>Memory</b>		1GB DDR400 DRAM	512 MB DDR400 DRAM
<b>Storage</b>	<b>HDD</b>	One 1.8" IDE HDD	One 1.8" IDE HDD
	<b>CF</b>	Option, Type I/II x 1 (Trade-o, HDD)	Option, Type I/II x 1 (Trade-o, HDD)
<b>Display</b>	<b>Size/Display Type</b>	10.4" TFT color LCD	10.4" TFT color LCD
	<b>Max. Resolution</b>	1024 x 768	800 x 600
	<b>Viewing Angle</b>	90/90/50/50 (L/R/U/D)	60/60/35/65 (L/R/U/D)
	<b>Luminance</b>	170 cd/m2	230 cd/m2
	<b>Contrast Ratio</b>	250:1	500:1
<b>TouchScreen</b>	<b>Type</b>	Analog Resistive	Analog Resistive
	<b>Light transmission</b>	75%	75%
	<b>Controller</b>	USB interface	USB interface
<b>I/O Port</b>	<b>Durability</b>	30 million touches	30 million touches
	<b>USB port</b>	2	2
<b>Network</b>	<b>Speaker (1W)</b>	1	1
	<b>WLAN</b>	802.11 b/g wireless LAN	802.11 b/g wireless LAN
<b>Bus Expansion</b>		mini-PCI slot x 1, accept the type IIIB (for LWAN)	mini-PCI slot x 1, accept the type IIIB (for LWAN)
<b>Li-ion battery pack</b>		4800 mAh	4800 mAh
<b>Power Supply</b>		AC/DC Adapter: 100 Watts, Input voltage: 100~240 VAC,1.25~0.5A @ 47~63 Hz, Output voltage: +15 VDC,6.6A max	AC/DC Adapter: 100 Watts, Input voltage: 100~240 VAC,1.25~0.5A @ 47~63 Hz, Output voltage: +15 VDC,6.6A max
<b>Optional</b>	<b>Li-ion battery pack</b>	4800 mAh	4800 mAh
	<b>Blue Tooth</b>	Blue Tooth module	Blue Tooth module
	<b>Trim Knob</b>	USB interface	USB interface
<b>Cradle</b>		USB x 4, VGA x 1, Gigabit LAN x 1, RS-232 x 2, DC in x 1, Docking connector x 1, Smart Card Reader x 1	USB x 4, VGA x 1, Gigabit LAN x 1, RS-232 x 2, DC in x 1, Docking connector x 1, Smart Card Reader x 1
<b>Cooling</b>		Fanless	Fanless
<b>Mounting</b>		VESA 75 x 75 mm	VESA 75 x 75 mm
<b>Certification</b>		CE, FCC approved;UL60601-1, EN60601-1 approved	CE, FCC approved;UL60601-1, EN60601-1 approved
<b>Dimensions (W x H x D)</b>		261 x 211 x 36 mm (10.27" x 8.3" x 1.42")	261 x 211 x 36 mm (10.27" x 8.3" x 1.42")
<b>Weight</b>		2 Kg (4.41 lb)	2 Kg (4.41 lb)

# Medical Computing Platforms



Model Name		POC-S196	POC-S195	POC-S175	POC-S155
<b>CPU</b>		Soldered type Intel Core Duo processor 1.66 GHz	Soldered type Intel Pentium M Processor 1.4 GHz/Celeron M Processor 1.0 GHz	Soldered type Intel Pentium M Processor 1.4 GHz/Celeron M Processor 1.0 GHz	Soldered type Intel Pentium M Processor 1.4 GHz/Celeron M Processor 1.0 GHz
<b>System Chipset</b>		945GME GMCH/ICH7M Chipset667 MHz FSB	855GME GMCH/ICH4 Chipset400 MHz FSB	855GME GMCH/ICH4 Chipset400 MHz FSB	855GME GMCH/ICH4 Chipset400 MHz FSB
<b>Display</b>	<b>Size/Display Type</b>	19" TFT color LCD	19" TFT color LCD	17" TFT color LCD	15" TFT color LCD
	<b>Max. Resolution</b>	1280 x 1024	1280 x 1024	1280 x 1024	1024 x 768
	<b>Max. Colors</b>	16.7M	16.7M	16.7M	262 K
	<b>Pixel Pitch (mm)</b>	0.294 x 0.294	0.294 x 0.294	0.264 x 0.264	0.297 x 0.297
	<b>Viewing Angle</b>	178°	178°	160°	120°
	<b>Luminance</b>	300 cd/m2	300 cd/m2	300 cd/m2	350 cd/m2
	<b>Backlight Lifetime</b>	50,000 hours	50,000 hours	50,000 hours	50,000 hours
<b>Memory</b>		Supports up to 4GBDDR2 533/667 DRAM	Supports up to 2GB DDR 333 DRAM	Supports up to 2GB DDR 333 DRAM	Supports up to 2GB DDR 333 DRAM
<b>HDD/Type</b>		One 2.5" SATA HDD	One 2.5" IDE HDD	One 2.5" IDE HDD	One 2.5" IDE HDD
<b>FDD/Type</b>		-	-	-	-
<b>Optical Device</b>		-	-	-	-
<b>PCMCIA Slot</b>		-	-	-	-
<b>CF</b>		-	1 x Type I/II	1 x Type I/II	1 x Type I/II
<b>I/O Port &amp; Speakers</b>	<b>Serial</b>	RS-232/422/485 x 1	2: RS232 x 1, RS232/ 422/ 485 x 1	2: RS232 x 1, RS232/ 422/ 485 x 1	2: RS232 x 1, RS232/ 422/ 485 x 1
	<b>USB port</b>	4	2	2	2
	<b>IEEE1394a Port</b>	-	-	-	-
	<b>PS/2 mouse and keyboard interface</b>	-	1	1	1
	<b>D-sub VGA port</b>	1 (DVI-I)	1	1	1
	<b>Parallel port</b>	-	-	-	-
	<b>Mic-in/Line-in/Line-out</b>	Mic-in/Line-out	Mic-in/ Speaker-out	Mic-in/ Speaker-out	Mic-in/ Speaker-out
	<b>Speakers (1W)</b>	2	2	2	2
<b>Network (LAN)</b>		Gigabit LAN x 2	10/100Base-T Ethernet x 2	10/100Base-T Ethernet x 2	10/100Base-T Ethernet x 2
<b>Bus Expansion</b>		mini PCI-e slot, mini-PCI slot x 1	mini-PCI slot x 1	mini-PCI slot x 1	mini-PCI slot x 1
<b>Optional</b>	<b>WLAN</b>	802.11b/g	802.11b/g	802.11b/g	802.11b/g
	<b>Touchscreen: Analog resistive</b>	Yes	Yes	Yes	Yes
	<b>Li-ion battery pack</b>	-	-	4400 mAh	4400 mAh
<b>Power Supply</b>		DC model: 100 Watts, Input: +18 VDC, 5.55A max	DC model:100 Watts, Input:+24 VDC, 4.16 A max	DC model:80 Watts, Input: +24 VDC, 3.33 A max	DC model:50 Watts, Input: +24 VDC, 3.08 A max
<b>Cooling</b>		Fanless	Fanless	Fanless	Fanless
<b>Front Panel</b>		IP65/NEMA 4 compliant	IP65/NEMA 4 compliant	IP65/NEMA 4 compliant	IP65/NEMA 4 compliant
<b>Whole System</b>		IPX1 compliant	IP54 compliant	IPX1 compliant	IPX1 compliant
<b>Mounting</b>		75 x 75 mm; 100 x 100 mm	75 x 75 mm; 100 x 100 mm	75 x 75 mm; 100 x 100 mm	75 x 75 mm; 100 x 100 mm
<b>Certification</b>		CE, FCC approved; UL60601-1,EN60601-1 approved	CE, FCC approved; UL60601-1,EN60601-1 approved	CE, FCC approved; UL60601-1,EN60601-1 approved	CE, FCC approved; UL60601-1,EN60601-1 approved
<b>Dimensions (W x H x D)</b>		472 x 416 x 111 mm	472 x 416 x 111 mm	437 x 377 x 84 mm	418 x 342 x 115 mm
<b>Weight</b>		10kg (22.05 lb)	10kg (22.05 lb)	7.2kg (15.87 lb)	6.5Kg (14.33 lb)



Model Name		PIN - M106
<b>CPU</b>		Soldered type Intel Celeron M processor 1.06 GHz
<b>System Chipset</b>		945 GME GMCH/ICH7 Chipset 533 MHz FSB
<b>Graphic Chipset</b>		Intel 945GME with Intel Graphics Media Accelerator 950 engine
<b>Max. Resolution (per display)</b>		1600 x 1200 at 60Hz
<b>Memory</b>		Supports up to 4GB DDR2 533 DRAM
<b>HDD/Type</b>		One 2.5" SATA HDD
<b>I/O Port &amp; Speakers</b>	<b>Serial port</b>	RS-232 x2
	<b>USB port</b>	4
	<b>DVI port</b>	DVI-I port x 1, DVI-D port x 1
	<b>Mic-in/Line-in/Line-out</b>	Mic-in/Line-out
<b>Network (LAN)</b>		Gigabit LAN x 3
<b>Bus Expansion</b>		mini-PCI slot x 1, mini PCI-e slot x 1
<b>Whole System</b>		IPX1 compliant
<b>VESA Mount</b>		100 x 100 mm
<b>Certification</b>		CE, FCC approved;UL60601-1, EN60601-1 approved
<b>Power Supply</b>		DC model: 80 Watts, Input: +18 VDC, 4.44A maxDC model: 100 Watts, Input: +18 VDC, 5.55A max
<b>Cooling</b>		Fanless
<b>Dimensions (W x H x D)</b>		261 x 185 x 67 mm (10.27" x 7.26" x 2.63")
<b>Weight</b>		4.0kg (8.82 lb)



Model Name		PDC-190	PDC-170
<b>Panel Size/Type</b>		19" TFT Color LCD	17" TFT Color LCD
<b>Display Size (mm)</b>		376.32 (H) x 301.056 (V)	337.92 (H) x 270.336 (V)
<b>Pixel Pitch Size (mm)</b>		0.294 x 0.294	0.264 x 0.264
<b>Max. Resolution</b>		1280 x 1024 (SXGA)	1280 x 1024 (SXGA)
<b>Contrast Ratio</b>		1000:1	800:1
<b>Brightness (cd/m2)</b>		600 cd/m2 (DICOM preset at 400 cd/m2)	300 cd/m2
<b>Colors</b>		16.7M (8-bit data per R, G, B each)	16.2M Colors (RGB 6-bit + FRC data)
<b>View Angle (H/V)</b>		170°	160°
<b>I/O Port &amp; Speakers</b>	<b>RS-232 port</b>	-	1 (Touchscreen model only)
	<b>USB port</b>	Type A x2, Type B x 1	Type A x2, Type B x 1
	<b>VGA port</b>	1	1
	<b>DVI port</b>	DVI-D x 1	DVI-D x 1
	<b>Audio Line in</b>	Yes	Yes
	<b>Speaker (1 W)</b>	2	2
<b>VESA Mount</b>		75 x 75 mm, 100 x 100 mm	75 x 75 mm
<b>Optional</b>		Touchscreen panel Trim knob via USB	
<b>Power Supply</b>		DC Adapter: 100 Watts, Input: 100~240 VAC, 47~63 Hz, Output: +12 VDC, 8.33A max	DC Adapter: 45 Watts, Input: 100~240 VAC, 47~63 Hz, Output: +12 VDC, 3.75A max
<b>Certification</b>		CE, FCC approved;UL60601-1, EN60601-1 approved	CE, FCC approved;UL60601-1, EN60601-1 approved
<b>Dimensions (W x H x D)</b>		472 x 416 x 104 mm (18.56" x 16.38" x 4.13")	437 x 377 x 84 mm (17.18" x 14.82" x 3.29")
<b>Weight</b>		6.5 Kg (14.32 lb)	6.4 Kg (14.11 lb)

# Portable Computing Platforms



Model Name	MARS-1030 Numeric Keypad Version	MARS-1030 Full Keypad Version	MARS-1031 Numeric Keypad Version	MARS-1031 Full Keypad Version	
Processor	Intel Xscale PXA255 400 MHz		Intel Xscale PXA270 520 MHz		
OS	Supports Windows CE .NET 5.0 Professional				
Memory	128 MB SDRAM				
Storage	64 MB NAND flash		128 MB NAND flash		
Graphics	Size/Type: 3.5" transfective TFT LCD				
	Max. Resolution: 240 x 320				
	Max. Colors: 256 K				
	Viewing Angle (degree): 50/50				
	Touchscreen: 4-wire resistive				
VGA	Chipset: nVidia 2D graphic accelerator				
	RAM: Internal 256 KB SRAM				
Brightness Control	Software control or hotkey control				
I/O Port	DC-in jack LIF connector (supports RS-232, USB v1.1 host/client)				
Keypad & Button	Keypad	16 Alphanumeric keys	44 Alphanumeric keys	16 Alphanumeric keys	44 Alphanumeric keys
	Button	Power button Three barcode scanner buttons Four application buttons Application hotkey (programmable) Four buttons for navigation (left, right, up, down)			
Expansion	1 x CF type II slot or PCMCIA slot 1 x SD/MMC slot				
Audio	Speaker	mono speaker			
	Microphone	-			
	Earphone	2.5 mm stereo earphone jack with microphone			
LED Indicator	1 x triple-color LED for charger indicator and alarm notification 1 x bi-color LED for scanner indicator				
Wireless Module	WLAN	802.11b (Optional)		802.11b/g (Optional)	
	Bluetooth	Bluetooth v1.2 (Optional)			
	WAN	Tri-band GSM/GPRS (Optional)			
Add-on Module	1D Barcode scanner (Optional) 2D Barcode scanner (Optional)				
Power	Battery	Li-ion battery pack 3.7 V, 3000 mA/H			
	Battery Life	8 hours			
	Charging Time	4 hours			
	Adapter	Auto-switching 100 ~ 240 V AC, 50/60 Hz input; 5 V DC 2.6 A output			
Operating Temperature	-10 ~ 50° C				
Storage Temperature	-20 ~ 70° C				
IP Rating	IP54		IP65		
Drop Rating	5 ft free drop to concrete				
Certification	UL/cUL, CE, FCC Class B				
Dimensions (L x W x D)	192.5 x 91.3/78 x 42.2/60.6 mm (7.58" x 3.6"/3.7" x 1.66"/2.39")	220 x 91.3/78 x 42.2/60.6 mm (8.66" x 3.6"/3.7" x 1.66"/2.39")	192.5 x 91.3/78 x 42.2/60.6 mm (7.58" x 3.6"/3.7" x 1.66"/2.39")	220 x 91.3/78 x 42.2/60.6 mm (8.66" x 3.6"/3.7" x 1.66"/2.39")	
Weight	560 g with standard battery	660 g with standard battery	560 g with standard battery	660 g with standard battery	



Model Name	MARS-3100R	MARS-3100R with Sunlight Readable Solution	MARS-3100S
Processor	Intel Core Duo Ultra Low Voltage U2500 @ 1.2 GHz		AMD LX800 500 MHz
OS	Supports Windows XP compatible		Supports Windows XP Embedded
Memory	1 GB DDR2 533, 200-pin SODIMM		512 MB DDR 400, 200-pin SODIMM
Storage	Default 2.5" 40 GB shock mounted HDD		Default 4 GB CF for storage
	Size/Type: 10.4" TFT LCD		10.4" TFT LCD
	Max. Resolution: XGA, 1024 x 768		SVGA, 800 x 600
	Max. Colors: 256 K		256 K
	Viewing Angle (Degree): 50/90		120/100
VGA	Chipset	Intel 945GME chipset	AMD CS5536 chipset
	RAM	64~224 MB shared memory	8~254 MB shared memory
Brightness Control	8-level brightness by software control		-
I/O Port	RS-232 Two USB v2.0 15-pin D-Sub for VGA out RJ-45 jack for 10/100 Ethernet DC in jack		RS-232 USB v2.0 15-pin D-Sub for VGA out RJ-45 jack for 10/100 Ethernet DC in jack
	Keypad & Button	Power button Logon button Rotation key (for display) WLAN ON/OFF button Three application hotkeys (programmable) 5-way navigation buttons (left, right, up, down, enter)	
Expansion	1 x internal MiniPCI for WLAN		
Audio	Speaker	Mono speaker	
	Microphone	3.5 mm microphone jack	
	Earphone	3.5 mm headset jack	
LED Indicator	1 x Power LED 1 x Charging LED 1 x HDD status LED 1 x WLAN ON/OFF LED		
	WLAN	802.11a/b/g	802.11a/b/g
	Bluetooth	Bluetooth V2.0/EDR module	Bluetooth V2.0/EDR module (Optional)
	WAN	GSM/GPRS (Optional) EDGE (Optional) CDMA (Optional) EVDO (Optional) UMTS (Optional)	
Add-on Module (Optional)	SiRFIII GPS module Smart card reader 1.3 Megapixel Autofocus CMOS camera Fingerprint scanner		
Power	Battery	Warm-swappable 11.1 V @ 3600 mAh Li-ion battery pack	
	Battery Life	2.5 ~ 3.5 hours	
	Charging Time	2.5 hours to 90%	
	Adapter	Auto-switching 100 ~ 240 V AC, 50/60 Hz input 19 V DC 3.16 A output	
Operating Temperature	-10 ~ 55° C		0 ~ 50° C
Storage Temperature	-40 ~ 60° C		-40 ~ 60° C
IP Rating	IP54		
Drop Rating	3 ft free drop to steel during operation		
Certification	UL/cUL, CE, FCC Class B, CB		
Dimensions (L x W x H)	299 x 224 x 37 mm (11.77" x 8.82" x 1.46")		
Weight	2.1 kg (4.63 lb) with standard battery		

# Vehicle Mounted Computers



Model Name	TREK-775	TREK-775 Anti freeze model	TREK-776	TREK-776 Anti freeze model	TREK-743
Processor	Onboard Intel ULV Celeron M 600 MHz / LV Pentium M 1.1 GHz				Onboard AMD LX800 500 MHz
2nd Cache Memory (L2 cache)	Celeron M 512k cache / Pentium M 1 MB cache				128 KB
OS	Supports Windows 2000/XP; Windows CE.NET; Windows XP Embedded and Linux compliant				WinCE 5.0; Windows XP Embedded
Memory	Size	Up to 2 GB DDR SDRAM			Up to 1 GB DDR SDRAM
	Module Type	184 pin DIMM x 2			200 pin SODIMM x 1
Storage	One internal CompactFlash type I/II socket for CF card or one IDE interface for HDD				One internal CompactFlash type I/II socket for CF card
Graphics	Size/Type	10.4" TFT LCD		12.1" TFT LCD	
	Max. Resolution	800 x 600		1024 x 768	
	Max. Colors	256 K or above			
	Brightness (cd/m²)	400		450	
	Viewing Angle (degrees)	140/110		160/160	
	Backlight MTBF	50,000 hrs.		50,000 hrs.	
VGA	Chipset	Intel 855GME			AMD LX800
	VRAM	64 MB (SMA)			32 MB
Touchscreen	Technology	Analog Resistive			Analog Resistive
	Control Port	USB			RS-232 (COM3)
Brightness Control	Brightness control buttons				
I/O Port	2 x RS-232 (COM3, COM4) 2 x RS-232/422/485 (COM3, COM4) 2 x USB v2.0, 1 x PS/2 KB, 1 x PS/2 Mouse				3 x USB v2.0, 2 x RS-232/422/485, 1 x CAN, 4 x DI/DO
Expansion	One Mini PCI Type III A/B slot				
	PCMCIA Type II x 2 / III x 1				N/A
Network (LAN)	10/100 Base-T Ethernet				
GPS	Option (COM3)				Option
Power	9 ~ 58 VDC				9 ~ 36 VDC
	AC-to-DC adapter (optional)				N/A
Operating Temperature	0 ~ 40° C (32 ~ 104° F)	-20 ~ 60° C (-4 ~ 140° F)	0 ~ 40° C (32 ~ 104° F)	-30 ~ 60° C (-22 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)
Certification	UL, CE, FCC Class B, CSA				UL, CE, FCC Class B, CCC, CSA
Dimensions (W x H x D)	310 x 255 x 80 mm (12.20" x 10.04" x 3.15")		310 x 255 x 90 mm (12.20" x 10.04" x 3.54")		255 x 160 x 50 mm (10.04" x 6.30" x 1.97")
Weight	3.8 kg (8.38 lb)		4.8 kg (10.58 lb)		1.7 kg (3.7 lb)

# UbiQ Scenario Control



Model Name	Scenario Control	In-Wall Touch Panel	Residential Terminal	Mobile A/V Control Panel
	UbiQ-230T	UbiQ-470	EH-7106	UbiQ-350
CPU	ARM9 32-bit, 200 MHz	Intel Xscale PXA270 312 MHz (520 MHz as option)	Intel Celeron M 800 MHz	Intel Xscale PXA270 312 MHz (520 MHz as option)
LCD	3.5" QVGA	7.0" 16:9, 800 x 480	10.4" TFT, SVGA	7.0" 16:9 800 x 480
Touchscreen	-	Resistive	Resistive	Resistive
Memory (SDRAM/Flash)	64/128 MB	64/128 MB	256 MB/2 GB (Optional)	64/128 MB
VGA Accelerator	-	Intel 2700G	-	Intel 2700G
Power Management	-	-	-	On/ Idle/ Suspend/ Off
Hard Disk	-	-	20 GB (Optional)	-
Expansion	-	1 x SD/MMC	1 x MiniPCI	1 x SD (Memory & SDIO)
Hot Keys	7 x Scenario	-	4 x programmable/ 1 x emergency	5 x volume/ channel/ start/ mute
Status LED	7 x	4 x	4 x	3 x (batt./ docking/ wireless)
I/O Ports	1 x RS-232 console, 1 x RS-485, 1 x expansion (RS-232, SPI)	1 x RS-485, 1 x RS-232, 1 x power switch, 2 x USB host 1.1	2 x USB2.0, 1 x RS-485, 1 x RS-232, 4 x DI/DO, 1 x DC-in jack, 1 x Video-in, 1 x Audio port	1 x USB1.1
Audio	1 x 1W SPK	Mic. 1.5W SPK, Line-out	1 x 1W, SPK, Mic.	1 x Mic; 1x SPK (HiFi)
Expansion I/O	-	50-pin box header 1 x RS-232, 1 x USB host 1.1, Line-in, Mic-in, 4 x DI, 4 x DO, I2C & power (3.3V & 5V)	-	1 x USB host 1.1 (on cradle)
Network (LAN)	10/100Base-Tx	10/100Base-Tx	10/100Base-Tx	Wi-Fi thru SD
IR	Device #	IR Receiver	IR Receiver	--
Power DC-in	10 ~ 28 V	10 ~ 28 V	19 V	12V DV-in (on cradle)
Front Bezel	Plastic	Plastic	Plastic	Plastic
Water/Dust Resistance	-	-	-	--
Battery	-	-	-	3S1P-3.7 V, 2100 mAh rechargeable (6 ~ 12 hr. operating)
Cradle	-	-	-	Table top (included), Wall-mount (optional)
OS	Windows CE 5.0 core ver.	Windows CE 5.0 core ver.	Windows XP Embedded	Windows CE 5.0 Professional
Dimension (W x H x D)	105 x 135 x 26.5 mm (4.13" x 5.31" x 1.04")	188 x 152 x 43.6 mm (7.40" x 5.98" x 1.72")	315 x 240 x 60 mm (12.40" x 9.45" x 2.36")	230 x 149 x 30 mm (9.06" x 5.87" x 1.18")
Weight	260 g (0.57 lb)	0.8 kg (1.76 lb)	2.5 kg (5.50 lb)	0.8 kg (1.76 lb)
Certification	UL/FCC/CE/CCC	UL/FCC/CE	UL/FCC/CE/CCC	UL/FCC/CE

# RISC-based Digital Signage Platforms



Model Name		DSA-2102V	DSA-2102	DSA-2101	DSA-5110D
Media Formats	Video	MPEG-1, MPEG-2 MP @ ML up to 14 Mbps, MPEG-4 ASP			MPEG-1, MPEG-2 MP @ ML up to 14 Mbps, MPEG-4 ASP
	Audio	2 channels, MPEG-1 and MPEG-2 Layers I, II and III (MP3), 16-bit PCM, bit rate up to 384 kbps, sample rate up to 48 kHz			2 channels, MPEG-1 and MPEG-2 Layers I, II and III (MP3), 16-bit PCM, bit rate up to 384 kbps, sample rate up to 48 kHz
	Graphics	32-bit color with transparency BMP, JPEG			32-bit color with transparency BMP, JPEG
	Text	Variable scrolling speed and position			Variable scrolling speed and position
	Playlist	Scheduling playback, endless loop playback, auto play after power on			Scheduling playback, endless loop playback, auto play after power on
Video-Out	Digital and Analog	VESA DVI-I connector x 1, up to 720p, 1280 x 720 @ 60 Hz			Built-in LCD display, 10.2", 800 x 480 pixels (wide VGA)
	Composite	RCA jack x 1			-
	S-Video	Mini-DIN 4-pin connector x 1			-
Audio-Out	R / L Channel Analog	Unbalanced stereo RCA jack x 2			3.5 Ø Stereo phone jack x 1 Embedded 3 watt stereo speakers
	S/PDIF	Coaxial digital audio output	-	-	-
Video-In	Composite	RCA jack x 1	-	-	-
Audio-In	R / L Channel Analog	Unbalanced stereo RCA jack x 2	-	-	-
Network	10/100 Mbps	RJ-45 x 1			RJ-45 x 1
Serial	RS-232	D-Sub 9-pin (male) x 1			-
USB	USB 2.0 Host	USB Type A connector x 2			USB Type A connector x 2
Network Protocol		HTTP, DHCP			HTTP, DHCP
IDE		40 GB HDD	40 GB HDD	512 MB Flash Memory	1 GB Flash Memory
Power Consumption		Approx. 15 W	Approx. 15 W	Approx. 7 W	Approx. 15 W
Power Supply		DC 12 V input			DC 12 V input
Operating Temperature		0 to 40° C (32 to 140° F)			0 to 40° C (32 to 140° F)
Relative Humidity		5-85% @ 40° C			5-85% @ 40° C
Dimensions		211 x 153 x 43 mm (8.31" x 6.02" x 1.69")			256 x 195 x 52 mm (10.08" x 7.68" x 2.05")
Weight		Approx. 1.7 kg (3.75 lb) (for DSA-2102); Approx. 1.1 kg (2.42 lb) (for DSA-2101)			Approx. 2.9 kg (6.39 lb)

# x86-based Digital Signage Platforms

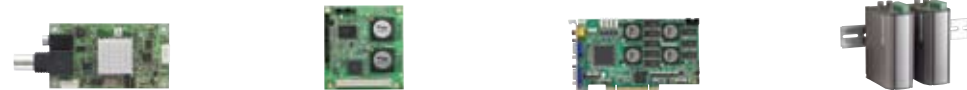


Model Name		DSA-3300	DSA-3400	DSA-3610	DSA-3710
Processor & System	CPU	Intel Pentium M/ Celeron M processor	Intel Core 2 Duo Mobile Processor	Intel Core 2 Duo Mobile Processor	Intel Core 2 Duo Desktop Processor
	Chipset	Intel 852GME/ICH4	Intel 945GM / ICH7M	Intel GME965 / ICH8M	Intel Q965 / ICH8M
	L2 Cache	Depends on CPU type	2 MB	4 MB	4 MB
	BIOS	AWARD 4-Mbit BIOS	AWARD 4-Mbit BIOS	AMI 16MB SPI BIOS	AWARD 16MB bit BIOS
	Front Side Bus Technology	533/400 MHz	400/533/667 MHz	533/800 MHz	533/800/1066 MHz
Memory	Max. Capacity	1 GB	2 GB	4 GB	4 GB
	Socket	200-pin SODIMM x 1	200-pin SODIMM x 2	200-pin SODIMM x 2	240-pin DIMM x 2
	Chipset	Chipset integrated VGA controller	Intel Graphics Media Accelerator 950	Intel Graphics Media Accelerator X3100	Intel Graphics Media Accelerator 3000
Graphics	Memory Size	Shared system memory up to 64 MB	Shared system memory up to 224 MB	Shared system memory up to 384 MB	Shared system memory up to 256 MB
	Resolution	up to 1600 x 1200 @ 85 Hz and 2048 x 1536 @ 75 Hz	Up to 2048 x 1536 @ 75 Hz	Up to 2048 x 1536 @ 75 Hz	Up to 2048 x 1536 @ 75 Hz
	DVI	DVI-D x1			-
I/O Ports	VGA	D-Sub 15-pin x 1			-
	Audio	AC97 - LINE-OUT, MIC-IN			
	Network	RJ-45 x 1, 10/100 Base-T	RJ-45 x 1, 1 Gbit Lan x 1	RJ-45 x 2, 1 Gbit LAN x 2	RJ-45 x 2, 1 Gbit Lan x 1
	Mini-PCI	Mini-PCI x1 (for optional WLAN module or TV tuner module)			-
	USB 2.0	USB connector x 4 (480 Mbps)			
	Serial	COM1 - RS-232 COM2 - RS-232	COM1 - RS-232 COM 2 - RS-232/485	RS-232	RS-232
	PSW	External power switch connector			
	CardBus	-	PCMCIA slot x1	-	-
	TV Out	-	S-Video and Composite video	-	-
	Storage	IDE-0	2.5" HDD (40 GB default)		
IDE-1		-	CompactFlash socket for type I/II		-
SATA		-	-	3.5" HDD (80 GB default)	3.5" HDD (80 GB default)
Power	Power Consumption	Average 29 W, Maximum 45 W	Average 33 W, Maximum 49 W	Power Output Wattage AC 120 W	Power Output Wattage AC 180 W
	Power Supply	12V DC ~ 24V DC, 12V DC@4.14 A, 24V DC@2.07 A			Type AC 100 ~ 240 V
	System Alarm	Schedule boot up function			
Environment	Temperature	-10 ~ 45° C (14 ~ 113° F), Operating			
	Relative Humidity	95% @ 40° C (non-condensing), Operating			
	Vibration Resistance	1 Grms, IEC 60068-2-64, Random, 5-500 Hz, 1hr/axis			
Physical	Dimensions	222 x 135 x 43 mm (8.7" x 5.3" x 1.7")	222 x 135 x 47 mm (8.7" x 5.3" x 1.85")	272 x 232 x 78 mm (9.1" x 7.7" x 2.6")	250 x 253 x 156 (9.84" x 9.96" x 6.14")
	Weight	1.25 kg (0.57 lb)	1.47 kg (0.67 lb)	4 kg (8.8lb)	6.2 kg (13.64lb)
Watchdog Timer	Output	Interrupt, system reset			
	Interval	Programmable 1-255 sec.			
Certification	Electromagnetic	CE, FCC			
	Safety	UL, CB, CCC			
	Environmental Protection	RoHS, WEEE			

# Motherboards/ Capture Cards



Model Name	DVMB-764-16D1E	DVMB-764-16CFE	DVMB-554E
Form Factor	ATX		Mini-ITX
Processor	Intel Quad / C2D / Pentium 4 / Celeron D LGA 775		Intel Core 2 Duo / Core Duo Socket 479
Chipset	Intel Q965 + ICH8DO		Intel 945GM + ICH7
Memory(Max Capacity)	Dual channel DDR2 533/667/800 MHz (Max 8G)		Dual Channel DDR2 533/667 (Max 4G)
Graphics	Intel GMA 3000		Intel GMA 950
Ethernet	Dual Gigabit LAN	Single Gigabit LAN	Dual G-LAN: Intel 82566DM and Marvell 88E8053
Expansion Slot	PCIe x 16, PCIe x 4, PCI		PCIe x 4
SATA	6 channels 300 MB/s with Matrix RAID & Hot plug		2 channels 300 MB/s
EIDE	2 ATA 100/66/33		1 ATA 100/66/33
IO Interface	2 x RS-232, 10 x USB (4 on back IO), Parallel port, VGA, PS2, Audio		1 x VGA, 2 x COM, 1 x PS/2 Keyboard, 1 x PS/2 Mouse, 1 x Audio I/O, 2 x RJ45, 4 x USB 2.0/1.1, 1 x DVI, 1 x Composite
WDT & CPLD	WDT & Software protection key		WDT
Video Standard	Composite NTSC/PAL		Composite NTSC/PAL
Video Input	16 Channel @ 480/400 FPS		4 Channel @ 120/100 FPS
Live Preview	16 Channel @ 480 FPS (up to D1)		4 Channel @ 120 FPS (up to D1)
Video Codec	ISO/IEC 1496-2 MPEG4 Advanced Simple Profile		MPFG4 SW
Video Encoder Performance	480/400 fps @ D1	480/400 fps @ CIF	120/100 fps @ D1
Video output	1 Smart Quad TV output	N/A	Composite TV-out
Audio Input /Encoder	16 Channel/ADPCM		No
Digital Input/Output	12 Isolate Input/8 Relay output		20-pin GPIO (SDK supports 7 input and 8 output)
Dual Video Stream	MPEG4, MJPEG		MPEG4
OSD	Yes, with encoding video		-
Motion Detection	Motion detection & motion trace		-
Software Development Kits	Supports Windows XP DVP Suite SDK with Sample program and C++ Source code		



Model Name	DVP-1412E	DVP-2420E	DVP-7421BE	DVG-1100
Host Interface	USB 2.0	PCI-104	PCI bus	Network (LAN)
Video Standard	Composite NTSC/PAL	Composite NTSC/PAL	Composite NTSC/PAL	Composite NTSC/PAL
Video Input	1	2	4 (with 4 video loop through)	1 (with 1 video loop through)
Capture Resolution	Up to D1	Up to D1	Up to D1	Up to D1
Total Frame Rate	30/25 fps	60/50 fps	120/100 fps	30/25 fps
Video Encoding	MPEG-4 HW encoding	MPEG-4 HW codec	MPEG-4 HW codec	MPEG-4 HW encoding
Video Output	-	2	1 smart quad Composite output	1 loop through
Audio Input/Output	1 mono input	2 stereo inputs/outputs	4 stereo/mono inputs/outputs	1 mono
Audio Encoding	ADPCM	MPEG-1 Layer II	MPEG-1 Layer II	ADPCM G.726
Software Development Kits	Complete demo program with VC++ sample code for reference	Complete demo program with VC++ sample code for reference	Complete demo program with VC++ sample code for reference	Supports Windows XP DVP Suite SDK with Sample program, source code and OCX component
Environment	0 ~ 60° C (32 ~ 140° F), -20 ~ 80° C (-4 ~ 176° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	-20 ~ 70 °C (-4 ~ 158° F)

# Digital Video Systems/ Full DVR Systems



Model Name	DVS-350	DVS-355	DVS-510	DVS-500	DVS-5120	DVS-640
Form Factor	Rugged Mobile Platform	Rugged Mobile Platform	Compact 1 U	Desktop	Wallmount	4U Rack mount
Process System	Intel Penium M	Intel Core Duo Mobile	Intel Core Duo Mobile	Intel Core 2 Duo/ Pentium 4	Intel Core 2 Duo/ Pentium 4	Intel Core 2 Duo/ Pentium 4
Video Input	4 - 16 Channel	6 Channel	4 Channel	4 - 16 Channel	4 - 16 Channel	4 - 32 Channel
Video Encoding	MPEG 4 SW Compression	MPEG 4 SW Compression	MPEG 4 SW Compression	MPEG-4 SW/HW or H.264 HW	MPEG-4 SW/HW or H.264 HW	MPEG-4 SW/HW or H.264 HW
Video Performance	120/100 fps	60/50 fps	120/100 fps	Up to 480 fps	Up to 480 fps	Up to 960 fps
I/O Interface	USB, Card bus, DIO, COM, WLAN, VGA, TV-OUT	USB, Card bus, COM, WLAN, DVI, VGA	USB, COM, VGA, DVI, PS2	1 x VGA, 1x RJ45, 1 x COM (RS-232), 4 x USB2.0, 1 x Parallel , 2 x PS/2 , 1 x MIC-In, 1 x Line-In, 1 x Line-Out		
Storage	1 x 2.5" HD	1 x 2.5" HD	1 x 3.5" HD	2 x 3.5" HD	3 x 3.5" HD	4 x 3.5" HD
Dimensions	232 x 138.4 x 65 mm (9.13" x 5.43" x 2.56")	232 x 138.4 x 65 mm (9.13" x 5.43" x 2.56")	410 x 44 x 252 mm (16.14" x 1.73" x 9.92")	370 X 88 x 370 mm (14.57" x 3.46" x 14.57")	320 x 164 x 307 mm (12.60" x 6.46" x 12.09")	482 x 177 x 480 mm (18.98" x 6.97" x 18.90")
Software Development Kits	Support Windows XP DVP Suite SDK with Sample program and C++ Source code			Follow capture card SDK		
Temperature	0 ~ 60° C (32 ~ 140° F)	-15 ~ 60° C (5 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 40° C (32 ~ 104° F)	0 ~ 40° C (32 ~ 104° F)	0 ~ 50° C (32 ~ 122° F)



Model Name	PVS-500	PVS-5120	PVS-640
Form Factor	Desktop	Wallmount	4U Rack mount
Process System	Core 2 Duo / Pentium 4	Core 2 Duo / Pentium 4	Core 2 Duo / Pentium 4
Video Input	8 - 16 channel	8 - 16 channel	8 - 32 channel
Video Encoding	H.264 HW	H.264 HW	MPEG-4 SW / H.264 HW
Video Performance	up to 480 fps	up to 480 fps	up to 960 fps
General Function for PowerView Surveillance Solutions	Real Time Display and Playback		
	Quick Search by Calendar and Time Segment		
	Intelligent e-Map Function		
	Comprehensive Log View in Function		
	Powerful Remote Control Functions via IE Browser		
Language	E / TC / SC / SP		
Temperature	0 ~ 40° C (32 ~ 104° F)	0 ~ 40° C (32 ~ 104° F)	0 ~ 50° C (32 ~ 122° F)

# Embedded Motherboards



Model Name		AIMB-542	AIMB-251	i865G2-IGM
Processor System	Processor (90nm)	Intel Pentium 4/Intel Celeron D	Onboard Intel ULV Celeron 600 MHz	Intel Core 2 Duo/Core Duo/Pentium 4/ Celeron Processor
	Max. Speed	3.8 GHz (800FSB)/3.06 GHz	600 MHz	
	Chipset	Intel 865G + ICH5	Intel 82852GM + ICH4	Intel 82865G GMC/ICH5
	BIOS	AMI 4 Mbit FWH	Award 4 Mbit FWH	AMI 4 Mbit FWH
	Front Side Bus	533/800 MHz	400 MHz	533/800 MHz
Expansion Slot	AGP	AGP 8X	-	AGP 8X
	PCI	32-bit/33 MHz, 3 slots	32-bit/33 MHz, 1 slot	32-bit/33 MHz, 3 slots
	ISA	-	32-bit/33 MHz, 1 slot	-
Memory	Technology	Dual channel DDR 333/400 SDRAM	DDR 200/266 SDRAM	DDR 400/333/266 SDRAM
	Max. Capacity	4 GB	1 GB	2 GB
	Socket	184-pin DIMM x 4	184-pin DIMM socket x 1	184-pin DIMM x 2
Graphics	Controller	Chipset integrated VGA controller	Chipset integrated VGA controller	Intel 82865G GMCH integrated Extreme Graphics 2
	VRAM	Dynamically shared system memory up to 64 MB	Shared system memory up to 64 MB video memory	Dynamically shared system memory up to 64 MB
	LVDS	-	Single Channel 18-bit/ Dual-channel 36-bit LVDS	Through LVDS Card
	TV-Out	-	Supports both S-video and composite video Chrontel CH7009A TV encoder supports both NTSC/PAL	Through TV-Out Card
	DVI	-	Chrontel CH7009A DVI transmitter up to 135M pixels/second	Through DVI Card
	Dual Display	-	CRT + LVDS, or DVI/TV-out + LVDS, or CRT + DVI	-
	Ethernet	Interface	10/100Base-T	10/100/1000Base-T
SATA	Controller	Realtek RTL 8100C	LAN 1 Realtek RTL 8100S Gigabit LAN (PCI)	Marvell 88E8001 PCIe Gigabit LAN
	Connector	1 (RJ45)	1 (RJ45)	1 (RJ45)
EIDE	Max. Data Transfer Rate	150 MB/s	-	150 MB/s
	Channel	2	-	2
I/O Interface	Mode	ATA 100/66/33	2 x EIDE (Ultra DMA 100)	Ultra DMA 100/66
	Channel	2 (Max. 4 devices)	2	2
	VGA	1	1	1
	USB	8 (USB 2.0, 480Mbps; 4 external ports and 4 onboard pin headers)	2 (USB 2.0 ports)	4 (USB 2.0/1.1 ports)
	Audio	3 (Mic-In, Line-In, Line-Out)	Mic-In, Line-In, Line-Out (VIA VT1616 supports 5.1 CH AC97 Audio)	Mic in, line in, CD Audio in, Line out, S/PDIF
	Serial	1	1 (RS-232/422/485), supply 5 V or 12 via jumper	1
	Parallel	1 (SPP/EPP/ECP)	1	1
	FDD	1	1	1
	PS/2	2 (keyboard and mouse)	2 (keyboard and mouse)	2 (keyboard and mouse)
	Internal Connector	LVDS	-	1
TV-Out		-	1	-
DVI		-	1	-
USB		2 x USB 2.0 connector supports additional 4 USB 2.0 ports	2 x USB 2.0 connector supports additional 4 USB 2.0 ports	2 x USB 2.0 connector supports additional 4 USB 2.0 ports
Serial		1 (RS-232)	3 (RS-232)	-
IDE		2 connector supports 4 devices	1 connector supports 2 devices	2 connectors supports 4 devices
CompactFlash		-	1	-
IrDA		-	115k bps, IrDA 1.0 compliant	-
FDD		1	1	1
DIO		-	16-bit General Purpose I/O for DI and DO	-
Watchdog Timer	Output	-	System reset	System reset
	Interval	-	Reset: 1 sec. ~ 255 min. and 1 sec. or 1 min./step	1 sec. ~ 255 sec. and 1 sec. or 1 min./step
Physical Characteristics	Form Factor	Micro ATX	Mini ITX	Micro ATX
	Dimensions	244 mm x 244 mm (9.6" x 9.6")	170 mm x 170 mm (6.69" x 6.69")	244 mm x 244 mm (9.6" x 9.6")

# Embedded Box Computer/ Thermal Printer



Model Name		ARK-3381	ARK-3383
Features		7 x COM, 2 x printer ports	7 x USB 2.0, 4 x COM, 2 x LAN, Audio
Processor System	Processor	Intel ULV Celeron M 1.0 GHz, Intel LV Pentium M 1.4 GHz	Intel ULV Celeron M 1.0 GHz, Intel LV Pentium M 1.4 GHz
	System Memory	Up to 1 GB DDR SDRAM SODIMM	Up to 1 GB DDR SDRAM SODIMM
Display Interface	CRT	Yes	Yes
	LVDS	36-bit LVDS	36-bit LVDS
	DVI	-	-
I/O Interface	TV Out	-	-
	Audio	-	AC97 Audio, Line-In, Spk-out, Mic-in
	Ethernet	1 x 10/100Base-T (Supports WOL)	2 x 10/100Base-T (Supports WOL)
	Keyboard/Mouse	1 x PS/2	1 x PS/2
	USB	1 x USB 2.0	7 x USB 2.0
Storage System	Serial Port	2 x RS-232, 5 x RS-232/422/485	1 x RS-232, 3 x RS-232/422/485
	Expansion	-	-
	Solid State Disk	One socket supports Type I/II CompactFlash Card	One socket supports Type I/II CompactFlash Card
Power	HDD	1 x 2.5" HDD bay	1 x 2.5" HDD bay
	Input Voltage	DC 12 V ~ 24 V, ATX	DC 12 V ~ 24 V, ATX
Certifications	EMC	CE, FCC	CE, FCC
	Safety	UL, CCC	UL, CCC
Dimensions		264.5 x 69.2 x 137.26 mm (10.41" x 2.72" x 5.40")	264.5 x 69.2 x 137.28 mm (10.41" x 2.72" x 5.40")
Ordering Information		ARK-3381-2S0A2E ARK-3381-2S4A2E	ARK-3383-2S0A2E ARK-3383-2S4A2E



Model Name	FTP-637	WP-K833
Printing Method	Thermal-line dot method	Thermal-line dot method
Dot Structure	576 dots/line	12 x 24, 9 x 17 dots
Dot Pitch (Horizontal)	0.125 mm (8 dots/mm)-Dot density	1/203 Inch (0.125 mm)
Dot Pitch (Vertical)	0.125 mm (8 dots/mm)-Line feed pitch	1/203 Inch (0.125 mm)
Effective Printing Area	72 mm	80 mm
Number Of Columns	ANK 48 columns/line (maximum 12 x 24 dot font)	40 columns
Paper Width	80 mm	82 ± 0.5 mm
Paper Thickness	60 ~ 100 gsm (some paper in this range may not be used because of paper characteristics)	0.05 ~ 0.15 mm
Printing Speed Maximum	100 mm/sec. (800 dot line/sec.)	120 ~ 220 mm/sec.
Interface	Conforms to RS-232C/Centronics	RS-232C, USB with option
Head Life	Pulse resistance: 500 million pulses/dot (under standard conditions); abrasion resistance: paper traveling distance 50 km (print ratio: 12.5% or less)	100 km
Cutter Life	500,000 cuts	1,000,000 Time
Operating Temperature	0~50° C (32 ~ 122° F)	0~40° C (32 ~ 104° F)
Operating Humidity	20 ~ 85% Relative Humidity (no condensation)	10~90 RH
Storage Temperature	-20 ~ 60° C (-4 ~ 140° F) (paper not included)	-20 ~ 60° C (-4 ~ 140° F)
Storage Humidity	5 ~ 95%	10 ~ 90 RH
Head Temperature Detection	Detected by thermistor	80° C
Paper Out/Mark Detection	Detected by photo-interrupter	Paper out detector (No Paper Out mark detector).



## About Industrial Automation Group

### Open eAutomation, Boundless Integration

Founded in 1983, the Industrial Automation Group has grown into a global business organization with more than 30 branch offices in 17 countries and a worldwide partner network comprised of leading Automation corporations. As a pioneer in Open Automation technology, we are proud of our efforts as global stewards; providing vertical-focused products, solutions and value-added services.

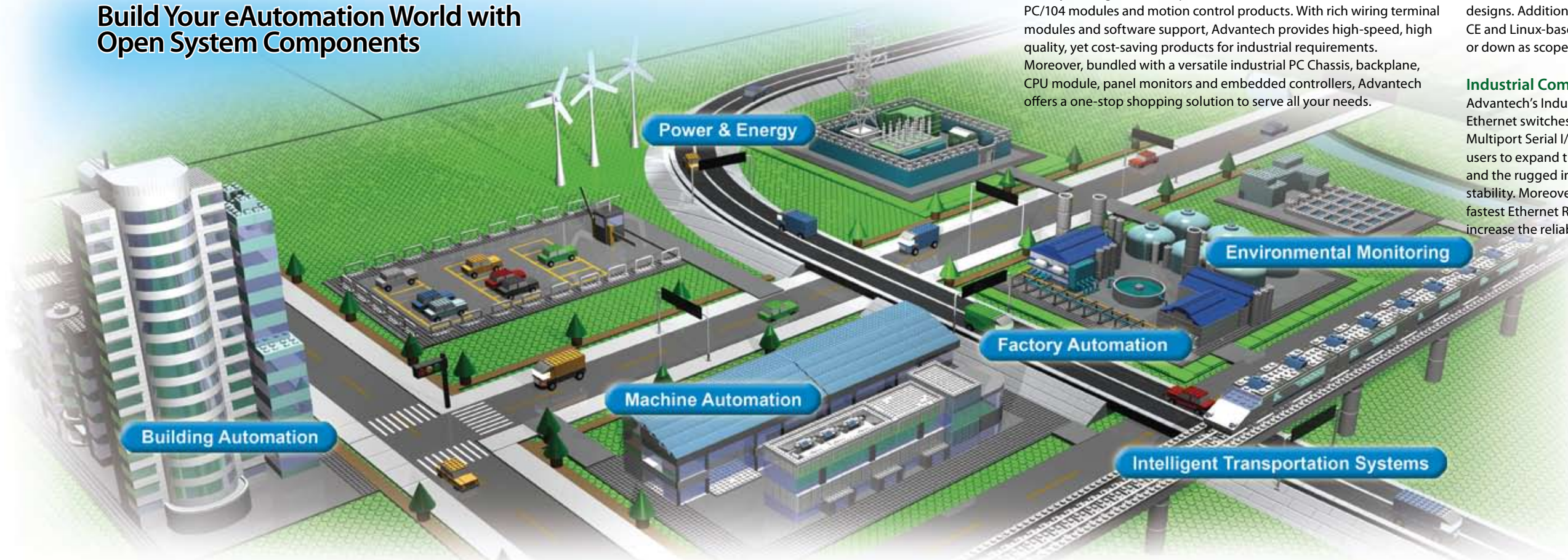
As a leading Industrial Automation provider, IAG combines connectivity, flexibility and ruggedness with today's most reliable PC-based automation technologies. Aligned with the Open architecture movement, we empower our customers with fully integrated platforms, Open system Components and solution competence. In this way, we help our customers realize streamlined and customized solutions that improve efficiency & productivity. Our high quality services are proven through Focused Sales Units, Channel Partners, Global Direct & Unified Marketing and Certified Technical Support, all of which help grow our partners business.

Through systematic training and workshops our partners are certified annually, guaranteeing a high standard of quality in the Automation industry. These dedicated and well-trained sales and technical support teams provide outstanding quality services to all of our industrial automation customers everyday.

With more than 20 years experience in providing a full range of products to various vertical markets, we are now fully dedicated to our slogan of "Open eAutomation, Boundless Integration", and are committed to this direction by stretching the boundaries of technology and service with cutting-edge Open Automation products and solutions.

As Advantech shifts into becoming a Globally Integrated Enterprise (GIE), we can operate seamlessly on a global scale as a single entity, by integrating internal operations and collaborating with external partners to maximize value from a worldwide point of view which transcends national boundaries.

## Build Your eAutomation World with Open System Components



### Product Offerings

#### Broad Product Range to Fulfill eAutomation Market Needs

#### Programmable Automation Controllers & Software

Advantech's Programmable Automation Controllers (PAC) feature the PC's openness, high performance CPU, rich memory and powerful software functionality as well as the PLC's reliability and robustness to satisfy the market demand for the integration of HMI, control logic, motion and enterprise networking in a single platform. Advantech's PAC series offers one control engine and one development environment on multiple hardware platforms such as ADAM-5550, UNO, AMAX and TPC to meet the requirements of multiple application domains.

#### Remote I/O Modules

With field-proven industrial-grade noise immunity features, the rugged ADAM-4000/4100 and ADAM-6000 Remote I/O Modules are designed specially for reliable operation in harsh environments. The built-in microprocessors, encased with industrial-grade plastic, independently provide intelligent signal conditioning, Analog I/O, data display and Serial/Ethernet/Wireless communications. Additionally, the ADAM-5000 Distributed DA&C system allows remote control via Ethernet or RS-485 for efficient management.

#### Data Acquisition & Control

With over 22 years of Plug-in I/O card design and manufacturing experience, Advantech has become a global leader, providing a full range of industrial data acquisition and control products. There are six major categories - CompactPCI, PCI-bus, ISA-bus, USB-bus, PC/104 modules and motion control products. With rich wiring terminal modules and software support, Advantech provides high-speed, high quality, yet cost-saving products for industrial requirements. Moreover, bundled with a versatile industrial PC Chassis, backplane, CPU module, panel monitors and embedded controllers, Advantech offers a one-stop shopping solution to serve all your needs.

#### Building Automation

Advantech offers complete Web-enabled BAS systems ranging from Web-enabled BA SCADA software and Direct Digital Controllers to Video Surveillance Systems. Adopting Open building networking standards - Modbus, BACNet, LonWorks and up-to-date information technology, such as Open database management and IE browser interfaces, Advantech's BAS solutions allow many building facilities to be integrated into one complete BA system. Moreover, Advantech's WebAccess SCADA also offers energy management functions and detailed analysis to save utility rate charges.

#### Embedded Automation Computers

Advantech's Embedded Automation Computers (UNO) are designed to fulfill the needs of mission-critical automation applications. Their embedded design, rugged features and powerful computing technology deliver reliability and flexibility. These computers are targeted to satisfy customers looking for a robust and compact computing platform with an industrial design and built-in I/O to handle diverse automation applications.

#### Human Machine Interface

Advantech's Open HMI platforms are scalable, open, and rugged platforms that offer advanced functionality over traditional HMI. They provide not only high performance computing, standard I/O interfaces and advanced communications, but also fanless, diskless designs. Additionally, Advantech also offers powerful Windows XP/CE and Linux-based HMI solutions to easily migrate applications up or down as scope changes.

#### Industrial Communication

Advantech's Industrial Communication series includes Industrial Ethernet switches, Serial Device Servers, Media Converters, and Multiport Serial I/O Cards. Advantech's Ethernet technology allows users to expand their industrial network fast and cost-effectively, and the rugged industrial-grade design assures reliability and stability. Moreover, Advantech's X-Ring technology offers the fastest Ethernet Ring Redundancy (recovery time < 10 ms) to increase the reliability and speed of network infrastructures.

## Building Automation

### Empower BA Systems with Open & Web-enabled Technologies

Advantech offers complete Web-enabled BAS systems ranging from Web-enabled BA SCADA software and Direct Digital Controllers to Video Surveillance Systems.

Adopting Open building networking standards - Modbus, BACNet, LonWorks and up-to-date information technology, such as Open database management and IE browser interfaces, Advantech's BAS solutions allow many building facilities to be integrated into one complete BA system. Moreover, Advantech's WebAccess SCADA also offers energy management functions and detailed analysis to save utility rate charges.

#### Product Solutions



Facility Management



Energy Management



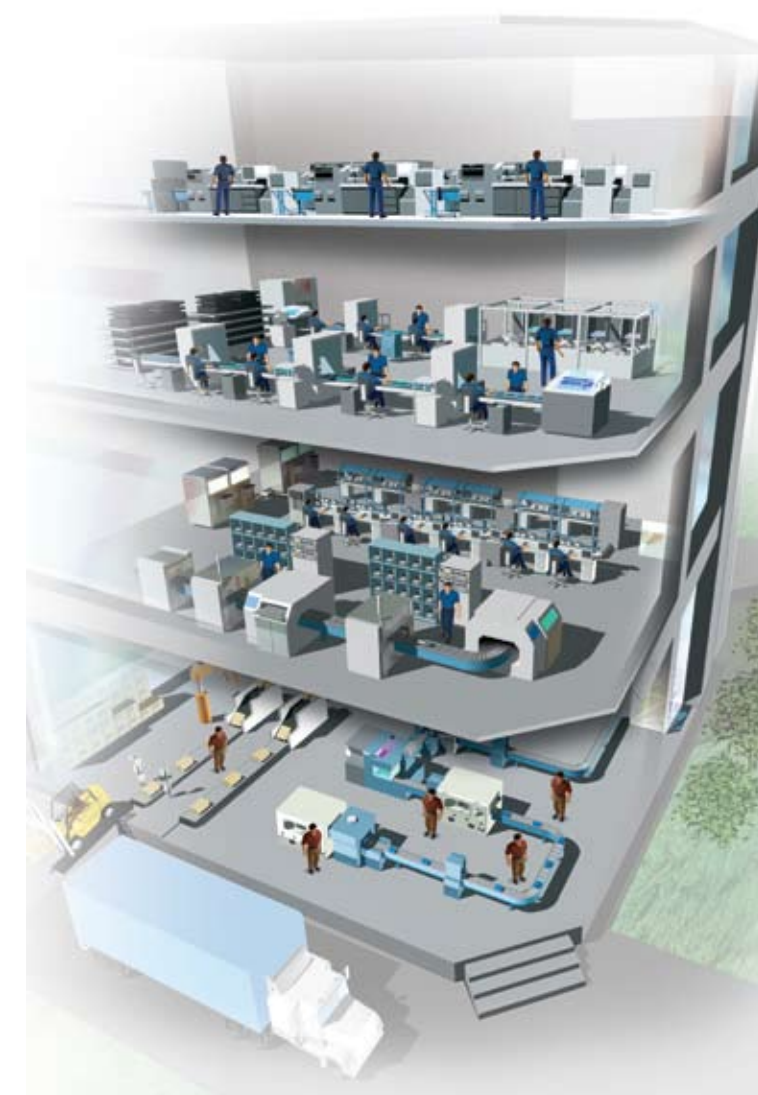
Video Surveillance

## Machine Automation

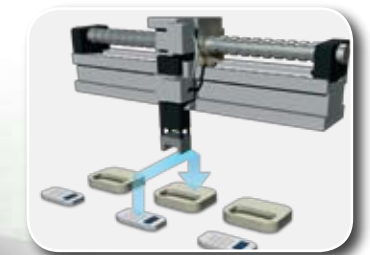
### Advance Automatic Machinery into the Next Generation with Open PACs

Advantech offers the open system components which based on PAC, IEC 61131-3 SoftLogic, PLCopen motion control function block and remote diagnostic utility, providing the solution in both centralized and decentralized motion control architectures to fits the demand for both electronics manufacturing and packaging applications. With the new PAC-based automation solution from Advantech, all the operation, runtime and downtime information can be well integrated into MES/ CIM system to improve the production yield rate and optimized usage of all the facilities

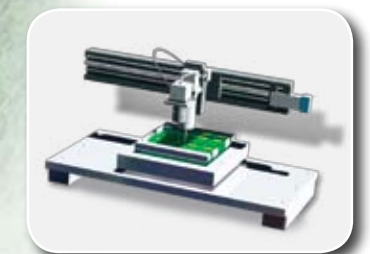
#### Product Solutions



Loader/Unloader



Packaging Machine



PCB Separator

## Intelligent Transportation Systems

### Construct ITS Infrastructures with Open eAutomation Components

Intelligent Transportation Systems provide the components and communications required for safe, convenient, comfortable, efficient, and environmentally protected highway travel. These systems have already become an integral part of the traffic policies for many countries worldwide.

Advantech offers a full-range of open system components in the transportation market (especially in traffic control & management). Products such as Touch Panel Computers (TPC series), Industrial Controllers (UNO & ADAM), Device I/O (USB), and Industrial Managed Switches (EKI) are all highly customized for the transportation market, and provide total solutions with easy integration.

#### Product Solutions

HMI		Controller		Communication		I/O
						
TPC-660E Touch Panel PC	TPC-1070H Touch Panel PC	UNO-2172 Embedded Automation Computer	ADAM-5510 KW SoftLogic Controller	EKI-7659C Ethernet Switch	EKI-2526M Ethernet Switch	ADAM-5017P AI Module



Traffic Management



Auto-Parking System



Carrier Management

## Power & Energy

### Build Reliable Power Automation Solutions with Trusted System Components

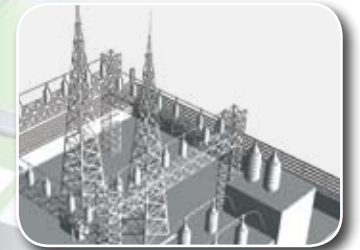
Energy supply and demand is getting more critical. Renewable power generation equipment, IEC-61850-based power substations, energy management systems and maintenance-free power backup systems are rapidly growing and becoming more mainstream. This trend helps make energy usage much more efficient while also protecting our environment and natural resources. Advantech is proud to develop reliable Embedded Automation Computers (UNO series), Industrial Managed Switches (EKI series) and Programmable Automation Controllers (ADAM series) to serve the market.

#### Product Solutions

HMI	Controller	Communication			I/O
					
TPC-1070H Touch Panel PC	ADAM-5510 KW SoftLogic Controller	UNO-4678 Communication Gateway	EKI-4654R Ethernet Switch	EDG-4516+ Device Server	ADAM-5017P AI Module



Renewable Energy



Power Substation



Energy Management

# Touch Panel Computers



Model Name	TPC-1570H	TPC-1270H	TPC-1261H	TPC-1070H	TPC-870H	
<b>CPU</b>	Intel Pentium M 1.4 GHz Intel Celeron M 1 GHz Intel Celeron M 600 MHz	Intel Pentium M 1.4 GHz Intel Celeron M 1 GHz	AMD Geode LX800 500 MHz	Intel Pentium M 1.4 GHz Intel Celeron M 1 GHz	Intel Celeron M 1 GHz	
<b>Memory</b>	512 MB DDR SDRAM (up to 1 GB DDR SDRAM)	512 MB DDR2 SDRAM (up to 1 GB DDR2 SDRAM)	256 MB DDR SDRAM (up to 1 GB DDR SDRAM)	512 MB DDR SDRAM	512 MB DDR SDRAM	
<b>Display</b>	Type	XGA TFT LCD	SVGA TFT LCD	SVGA TFT LCD	VGA TFT LCD	
	Size	15"	12.1"	12.1"	10.4"	8"
	Max. Resolution	1024 x 768	800 x 600	800 x 600	800 x 600	640 x 480
	Max. Colors	262 K	262 K	262 K	260 K	64 K
	Luminance (cd/m <sup>2</sup> )	350	350	340	400	350
	Viewing Angle (H/V°)	120/100	140/120	100/60	140/100	130/120
Backlight Life (hrs)	50,000	50,000	50,000	50,000	50,000	
<b>Touchscreen</b>	Resistive	Resistive	Resistive	Resistive	Resistive	
<b>Flash Memory</b>	N/A	N/A	N/A	N/A	N/A	
<b>HDD</b>	1 x Internal 2.5" PATA (optional)	1 x Internal 2.5" SATA (optional)	1 x Internal 2.5" PATA (optional)	1 x Internal 2.5" PATA (optional)	1 x Internal 2.5" PATA (optional)	
<b>Network (LAN)</b>	TPC-1570H-P1E/C1E,A1E 10/100Base-T x 1 10/100/1000Base-T x 1 TPC-1570H-B1E 10/100Base-T x 2	TPC-1270H-P1E/P2E 10/100Base-T x 1 10/100/1000Base-T x 1 TPC-1270H-C1E 10/100Base-T x 2	1 x 10/100Base-T	TPC-1070H-P1E 10/100Base-T 10/100/1000Base-T x 2 TPC-1070H-C1E 10/100Base-T x 2	10/100Base-T x 2	
<b>I/O Ports</b>	Serial Port x 3 (RS-232 x 2 and RS-232/485/422 x 1) Parallel Port x 1 VGA x 1 USB x 2 Audio x 3 (MIC-in x 1, Line-in x 1, Line-out x 1) PS/2 x 1	Serial Port x 4 (RS-232 x 3 and RS-232/485/422 x 1) VGA x 1 USB x 4 Audio x 2 (MIC-in x 1, Line-out x 1)	Serial Port x 4 (RS-232 x 3 and RS-232/485/422 x 1) Parallel Port x 1 USB x 2 PS/2 x 1	Serial Port x 3 (RS-232 x 2 and RS-232/485/422 x 1) USB x 2 PS/2 x 1	Serial Port x 3 (RS-232 x 2 and RS-232/485/422 x 1) USB x 2 PS/2 x 1	
<b>CompactFlash Slots</b>	Type II x 1	Type II x 1	Type II x 1	Type II x 1	Type II x 1	
<b>PCMCIA Slots</b>	Type II x 1	N/A	N/A	N/A	N/A	
<b>Expansion Slots</b>	N/A	PCI-104 x 1	PCI-104 x 1	PCI-104 x 1	PCI-104 x 1	
<b>Power Input Voltage</b>	18 ~ 32 Vdc	18 ~ 32 Vdc	18 ~ 32 Vdc	18 ~ 32 Vdc	18 ~ 32 Vdc	
<b>Dimensions (W x D x H)</b>	383 x 307 x 64.5 mm (15.08" x 12.09" x 2.54")	311 x 237 x 52.3 mm (12.24" x 9.33" x 2.06")	311 x 237 x 56 mm (12.24" x 9.33" x 2.2")	286 x 226 x 58 mm (11.26" x 8.9" x 2.28")	286 x 226 x 58 mm (11.26" x 8.9" x 2.28")	
<b>Weight (Net)</b>	5 kg (11.02 lbs)	3.3 kg (7.28 lbs)	2.2 kg (4.85 lbs)	3.5 kg (7.72 lbs)	3.5 kg (7.72 lbs)	
<b>Front Cover</b>	Al-Mg	Al-Mg	Al-Mg	Die-Cast Aluminum Alloy	Die-Cast Aluminum Alloy	
<b>Operating Temperature</b>	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	
<b>Ingress Protection (Front Panel)</b>	NEMA4/IP65	NEMA4/IP65	NEMA4/IP65	NEMA4/IP65	NEMA4/IP65	
<b>Certifications</b>	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	
<b>Operating System</b>	Windows XP Windows XP Embedded Windows CE 5.0	Windows XP Windows XP Embedded Windows CE 5.0	Windows XP Windows XP Embedded Windows CE 5.0	Windows XP Windows XP Embedded Windows CE 5.0	Windows XP Windows XP Embedded Windows CE 5.0	



TPC-660E	TPC-662G	TPC-120H	TPC-66SN	TPC-66T/TPC-68T	TPC-30T/32T
AMD Geode LX800 500 MHz		Intel PXA270 520 MHz	Intel PXA270 416 MHz		Intel PXA270 312 MHz
256 MB DDR SDRAM (up to 1 GB DDR SDRAM)		64 MB SDRAM on board	64 MB SDRAM on board		64 MB SDRAM on board
VGA TFT LCD		SVGA TFT LCD	QVGA CSTN LCD	QVGA TFT LCD	QVGA TFT LCD
5.7"	6.4"	12.1"	5.7"	5.6"	3.5"
640 x 480	640 x 480	800 x 600	320 x 240	320 x 234	320 x 240
262 K	262 K	262 K	64 K	64 K	64 K
220	150	340	400	500	200
140/100	90/50	100/60	100/55	100/60	120/110
50,000	20,000	50,000	60,000	30,000	30,000
Resistive		Resistive	Resistive		Resistive
N/A		64 MB on board	64 MB on board		32 MB on board
1 x Internal 2.5" PATA (optional)		N/A	N/A		N/A
10/100Base-T x 1		10/100Base-T x 2	10/100Base-T x 1		10/100Base-T x 1
Serial Port x 2 (RS-232 x 1 and RS-232/485/422 x 1) USB x 2		Serial Ports x 3 (Full RS-232 x 2 and 4-pin RS-232/485 x 1) VGA x 1 USB x 2 CAN Bus x 1 (optional)	Serial Port x 3 (Full RS-232 x 2 and 4-pin RS-232/485 x 1) USB x 2 (Host x 1, Client x 1)	TPC-66T Serial Port x 3 (Full RS-232 x 2 and 4-pin RS-232/485 x 1) USB x 2 (Host x 1, Client x 1) TPC-68T Serial Port x 2 (Full RS-232 x 2) CAN-Bus/RS-485 x 1 USB x 2 (Host x 1, Client x 1)	USB x 1 (Host) TPC-30T: RS-232/485 x 1 TPC-32T: CAN-Bus/RS-232 x 1
Type II x 1		Type II x 1	Type II x 1		N/A
N/A		N/A	N/A		N/A
PC-104 x 1		N/A	N/A		N/A
18 ~ 32 Vdc		18 ~ 32 Vdc	18 ~ 32 Vdc		8 ~ 28 Vdc
195 x 148 x 44.4 mm (7.68" x 5.83" x 1.75")		311 x 237 x 52 mm (12.24" x 9.33" x 2")	195 x 148 x 44.4 mm (7.68" x 5.83" x 1.75")		120.8 x 85.5 x 26.5 mm (4.76" x 3.37" x 1.04")
1 kg (2.2 lbs)		2.2 kg (4.85 lbs)	0.8 kg (1.76 lbs)		0.25 kg (0.55 lbs)
ABS		Al-Mg	ABS		ABS
0 ~ 50° C (32 ~ 122° F)		0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)		0 ~ 50° C (32 ~ 122° F)
NEMA4/IP65		NEMA4/IP65	NEMA4/IP65		NEMA4/IP65
BSMI, CCC, CE, FCC, UL		BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL		BSMI, CCC, CE, FCC, UL
Windows XP Windows XP Embedded Windows CE 5.0		Windows CE 5.0	Windows CE 5.0/4.2		Windows CE 5.0

# Industrial Panel PC



Model Name	IPPC-6172A	IPPC-6152A	IPPC-9171G	IPPC-9151G/F	IPPC-7157A
<b>Type</b>	SXGA TFT LCD	XGA TFT LCD	SXGA TFT LCD	XGA TFT LCD	XGA TFT LCD
<b>Size</b>	17"	15"	17"	15"	15"
<b>Max. Resolution</b>	1280 x 1024	1024 x 768	1280 x 1024	1024 x 768	1024 x 768
<b>Max. Colors</b>	16.2 M (RGB 6-bit + FRC data)	16.2 M (RGB 6-bit + FRC data)	16.2 M (RGB 6-bit + FRC data)	262 K, 144 K	16.2 M (RGB 6-bit + FRC data)
<b>Viewing Angle (H, V°)</b>	160, 160	140, 120	160, 160	120, 100	140, 120
<b>Luminance (cd/m²)</b>	300	250	300	350	250
<b>Backlight Life (hrs)</b>	50,000	50,000	50,000	50,000	50,000
<b>Contrast Ratio</b>	800 : 1	500 : 1	800 : 1	400 : 1	500 : 1
<b>CPU</b>	Socket 478 Pentium M (up to 2 GHz)/ Celeron M 1.6 GHz	Socket 478 Pentium M (up to 2 GHz)/ Celeron M 1.6 GHz	Socket 478 Pentium 4 (up to 2.8 GHz)/ Celeron 2.4 GHz	Socket 478 Pentium 4 (up to 2.8 GHz)/ Celeron 2.4 GHz	Socket 775 PentiumR D (up to 3.2 GHz) Socket 775 PentiumR 4 (up to 3.8 GHz) Socket 775 CeleronR D (up to 3.06 GHz)
<b>Memory</b>	Up to 2 GB DDR2 SDRAM 400/533 MHz	Up to 2 GB DDR2 SDRAM 400/533 MHz	Up to 2 GB DDR SDRAM (DDR-DIMM 184 pin)	Up to 2 GB DDR SDRAM (DDR-DIMM 184 pin)	Up to 4 GB DDR2 SDRAM (Dual Channel DDR2 DIMM 240 pin)
<b>IEEE 1394 (Firewire) Ports</b>	-	-	Two	Two	N/A
<b>Serial Ports</b>	1 x RS-232	1 x RS-232	1 x RS-232, 1 x RS-232/422/485	1 x RS-232, 1 x RS-232/422/485	1 x RS-232, 1 x RS-232/422/485
<b>Parallel Ports</b>	One	One	One	One	One
<b>Video Ports</b>	VGA	VGA	VGA/S-Video	VGA/S-Video	VGA
<b>USB Ports</b>	5 x USB 2.0 (one at front)	5 x USB 2.0 (one at front)	5 x USB 2.0 (one at front)	5 x USB 2.0 (one at front)	1 x USB2.0 on front panel 4 x USB2.0 on rear I/O
<b>Network (LAN)</b>	10/100Base-T x1 10/100/1000Base-T x 1	10/100Base-T x1 10/100/1000Base-T x 1	10/100Base-T	10/100Base-T	Dual 10/100/1000Base-T
<b>Floppy Disk Drive (Optional)</b>	-	-	One	One	3.5"
<b>CD-ROM Drive (Optional)</b>	Slim Type x 1	Slim Type x 1	Slim Type x 1	Slim Type x 1	5.25" half length
<b>Hard Disk Drive (Optional)</b>	1 x 2.5" SATA	1 x 2.5" SATA	1 x 3.5"	1 x 3.5"	2 x 3.5" SATA
<b>PCMCIA Slot</b>	-	-	Type II x 2	Type II x 2	N/A
<b>Expansion Slots</b>	2 x PCI	2 x PCI	2 x PCI	2 x PCI	5 x PCI 2 x PCIe
<b>Touchscreen Type (Optional)</b>	Resistive	Resistive	Resistive	Resistive	Resistive
<b>Power Supply (AC)</b>	180 W	180 W	180 W	180 W	300 W
<b>Operating Temperature</b>	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)
<b>Storage Temperature</b>	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)
<b>Certifications</b>	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC
<b>Dimensions (W x H x D)</b>	481.92 x 355.87 x 146 mm (18.97" x 14.01" x 5.75")	449.92 x 315.63 x 141.7 mm (17.73" x 12.44" x 5.58")	482 x 354.8 x 162 mm (18.97" x 13.96" x 6.37")	428 x 310 x 162 mm (16.85" x 12.2" x 6.37")	482 x 354.8 x 162 mm (18.97" x 13.96" x 6.37")

# Industrial Workstation



Model Name	IPPC-7158B	AWS-8259	AWS-8248V	AWS-8129H	Model Name	IACP-4000D
<b>Model Type</b>	15" Industrial Panel PC	Modular Workstation	Modular Workstation	Workstation with 9 expansion slots	<b>Diagonal</b>	5.7"
<b>LCD Display</b>	<b>Diagonal</b>	15"	15"	15"	<b>Type</b>	QVGA TFT LCD
	<b>Type</b>	XGA TFT LCD	XGA TFT LCD	XGA TFT LCD	<b>Max. Resolution</b>	640 x 480
	<b>Resolution</b>	1024 x 768	1024 x 768	1024 x 768	<b>Max. Colors</b>	262 K (RGB 6-bit)
	<b>Colors</b>	16.2 M (RGB 6-bit + FRC data)	262 K	262 K	<b>Viewing Angle (H,V°)</b>	140, 100
	<b>Viewing Angle (H, V°)</b>	140, 120	120, 100	120, 100	<b>Luminance (cd/m²)</b>	220
	<b>Luminance (cd/m²)</b>	250	350	350	<b>Backlight Life (hrs)</b>	50,000
	<b>Backlight Lifetime (hrs)</b>	50,000	50,000	50,000	<b>Contrast Ratio</b>	300:1
	<b>Interface</b>	VGA	VGA	VGA	<b>CPU</b>	Intel® µFC-LGA 775 socket Supports Pentium® 4/Celeron® D with 65nm process technology
	<b>Other</b>	Detachable display module	Detachable display module	-	<b>Memory</b>	Up to 4 GB DDR2 SDRAM (Dual Channel DDR2 DIMM 240 pin)
	<b>OSD (Optional Display)</b>	Yes	Yes	Yes	<b>IEEE 1394 (Firewire) Ports</b>	N/A
<b>Backplane</b>	<b>Slot Number</b>	14	9	14	<b>Serial Ports</b>	1
	<b>CPU, PCI, ISA, PCI/ISA</b>	0, 10, 2, 2 (PICMG)	1, 0, 8, 0 (AWS-8259T) 1, 4, 4, 0 (AWS-8259TP)	0, 0, 14, 0 (AWS-8248VT) 1, 4, 9, 0 (AWS-8248VTP)	<b>Parallel Ports</b>	1
<b>Storage Device</b>	<b>FDD (Standard)</b>	1	1	1	<b>Video Ports</b>	VGA
	<b>HDD Housing</b>	3.5" x 1	3.5" x 1	3.5" x 2	<b>USB Ports</b>	6 (2 at front)
	<b>CD-ROM (Optional)</b>	5.25" x 1/ 3.5" HDD x 1	Slim Type x 1	5.25" x 1	<b>Network (LAN)</b>	Dual 10/100/1000Base-T
<b>Key Pad</b>	<b>Data Entry Keys</b>	31	39	39	<b>Drive Bay</b>	3.5" : 1 5.25" : 3
	<b>Function Keys</b>	12	10	10	<b>PCMCIA Slot</b>	N/A
	<b>Macro Function Keys</b>	10	10	10	<b>Expansion Slots</b>	1 PCI Express x 16, 5 PCI slots (PCI Rev. 2.2 compliant), 2 ISA slots
<b>Touchscreen (Optional)</b>	USB Resistive	Analog Resistive	Analog Resistive	<b>Touchscreen Type (Optional)</b>	N/A	
<b>Power Supply (AC)</b>	300 W	300 W	250 W	<b>Power Supply (AC)</b>	300 W	
<b>Front Panel Compliance</b>	NEMA 4/IP65	NEMA 4/IP65	NEMA 4/IP65	<b>Operating Temperature</b>	0 ~ 50° C (32 ~ 122° F)	
<b>Operating Temperature</b>	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	<b>Storage Temperature</b>	-20 ~ 60° C (-4 ~ 140° F)	
<b>Storage Temperature</b>	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	<b>Certifications</b>	BSMI, CCC, CE, FCC	
<b>Certifications</b>	CE, FCC, BSMI, CCC	CE, FCC, BSMI, CCC	CE, FCC, BSMI, CCC	<b>Dimensions (W x H x D)</b>	482 x 177 x 480 mm (19" x 7" x 18.9")	
<b>Dimensions (W x H x D)</b>	482 x 354.8 x 162 mm (18.97" x 13.96" x 6.37")	482 x 356 x 229 mm (18.98" x 14" x 9")	482 x 356 x 465 mm (18.98" x 14" x 18.32")	<b>Weight</b>	18 kg (39.7 lb)	
<b>Weight</b>	18 kg	22 kg	25.5 kg	<b>CPU Card Suggestion</b>	PCA-6186VE PCA-6186LV PCA-6003VE	
<b>CPU Card Suggestion</b>	PCA-6186VE PCA-6186LV PCA-6003VE	PCA-6186VE PCA-6186LV PCA-6003VE	PCA-6186VE PCA-6186LV PCA-6003H		PCA-6186 PCA-6187	

# Industrial Monitor



Model Name	FPM-5171G	FPM-5151G	FPM-3190G/3191G	FPM-3170G/3171G	
LCD Display	Size (diagonal)	17"	15"	19"	17"
	Resolution	1280 x 1024	1024 x 768	1280 x 1024	1280 x 1024
	Colors	16.7 M	16.2 M	16.2M	16.2 M
	Viewing Angle (H,V)	160, 160	140, 120	178, 178	140, 130
	Luminance (cd/m <sup>2</sup> )	300	250	300	300
	Backlight Life (hrs)	50,000	50,000	50,000	40,000
	Contrast Ratio	800 : 1	500 : 1	1000 : 1	700 : 1
Direct VGA Input	Yes	Yes	Yes	Yes	
DVI Input	Yes	Yes	FPM-3190G	FPM-3170G	
S-Video	-	-	FPM-3190G	FPM-3170G	
Video Input	-	-	FPM-3190G	FPM-3170G	
Touchscreen (optional)	Resistive	Resistive	Resistive	Resistive	
OSD (onscreen display)	Yes	Yes	Yes	Yes	
Touchscreen Sensor	AMT	AMT	ELO	ELO	
Inverter	TDK	TDK	TDK	TDK	
Power Adapter (voltage, AC)	100-240 V	100-240 V	100-240 V	100-240 V	
DC Power Input (voltage)	10-30 V	10-30 V	N/A	N/A	
Front Panel Ingress Protection	NEMA4/IP65	NEMA4/IP65	NEMA4/IP65	NEMA4/IP65	
Operating Temperature	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	
Storage Temperature	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	
Certifications	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC	BSMI, CCC, CE, FCC	
Dimensions (W x H x D)	481.9 x 355.9 x 58.5 mm (18.9" x 14" x 2.3")	449.92 x 315.63 x 52.5mm (17.7" x 12.4" x 2")	482 x 399 x 66 mm (18.9" x 15.7" x 2.6")	482 x 354 x 68 mm (18.9" x 13.9" x 2.7")	



FPM-3150G	FPM-2150G	FPM-3120G	FPM-3060G
15"	15"	12.1"	6.5"
1024 x 768	1024 x 768	800 x 600	640 x 480
16.2 M	16.2 M	262 k	262 k
140, 120	140, 125	140, 120	140, 120
550	250	350	300
50,000	50,000	50,000	50,000
500 : 1	500 : 1	200 : 1	500 : 1
Yes	Yes	Yes	Yes
Yes	-	-	-
-	-	-	-
-	-	-	-
Resistive	Resistive	Resistive	Resistive
Yes	Yes	Yes	Yes
AMT	AMT	AMT	AMT
TDK	TDK	TDK	TDK
100-240 V	100-240 V	100-240 V	100-240 V
N/A	N/A	N/A	N/A
NEMA4/IP65	NEMA4/IP65	NEMA4/IP65	NEMA4/IP65
0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° C (32 ~ 122° F)
-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)
BSMI, CCC, CE, FCC	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC	BSMI, CCC, CE, FCC
422 x 310 x 86 mm (16.6" x 12.2" x 3.4")	383 x 307 x 48 mm (15" x 12" x 1.89")	312 x 244 x 44.6 mm (12.28" x 9.61" x 1.76")	220 x 150 x 46 mm (8.7" x 5.9" x 1.8")

# UNO Series



Model Name	UNO-1019	UNO-1150	UNO-1170	UNO-1170E	UNO-2050E	UNO-2052E	UNO-2053E	UNO-2059E	UNO-2170
CPU	XScale PXA 255 200 MHz	GX2-400 MHz	Celeron M 1.0 GHz, Pentium M 1.4	Celeron M 1.0 GHz, Pentium M 1.4	GX2-400 MHz				Celeron M 600 MHz, Celeron M 1.0 GHz
Onboard RAM	64 MB SDRAM	256 MB DDR SDRAM	512 MB/1 GB DDR SDRAM	512 MB/1 GB DDR SDRAM	256 MB DDR SDRAM				256 MB/512 MB DDR SDRAM
Battery-Backup SRAM	-	-	512 KB	512 KB	-				512 KB
Display/Mouse/Keyboard	VGA								
Audio	-	Yes	Yes	Yes	-	-	Yes	-	-
Serial Ports	2 x RS-232 2 x RS-232/422/485	1 x RS-232, 2 x RS-232/422/485 with DB9 connectors	2 x RS-232, 1 x RS-232/422/485 with DB9 connectors	2 x RS-232, 1 x RS-232/422/485 with DB9 connectors	2 x RS-232 2 x Isolated RS-232/422/485	2 x CAN 1 x RS-232	2 x RS-232	2 x RS-232/485 2 x RS-232/422/485	2 x RS-232 2 x RS-232/422/485
Ethernet Ports	2 x 10/100Base-T	2 x 10/ 100 Base-T	2 x 10/ 100 Base-T	2 x 10/ 100 Base-T	2 x 10/100Base-T	1 x 10/100Base-T	2 x 10/100Base-T	1 x 10/100Base-T	2 x 10/100Base-T
USB Ports	-	Two	Four	Four	-	One	Two	Two	Two
PC Card Slots	-	-	-	-	-	-	One	One	One
Printer Ports	-	-	-	-	-	-	-	-	One
PC/104 Expansion	-	-	-	PC/104+	-	-	-	-	PC/104
PCI Expansion	-	-	-	-	-	-	-	-	-
Onboard I/O	2-ch DI 2-ch DO	-	-	-	8-ch isolated DI 8-ch isolated DO	-	-	-	-
Watchdog Timer	Yes								
CompactFlash Slots	One External	One internal	One external	One external	One internal				
2.5" HDD Expansion	-	No	No	Yes	Option				Yes
Operating Systems	Windows CE 4.2 & 5.0	Windows XP Embedded, Windows CE 6.0, Windows 2000/XP, Linux	Windows XP Embedded, Windows CE 6.0, Windows 2000/XP, Linux	Windows XP Embedded, Windows CE 6.0, Windows 2000/XP, Linux	Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux				
Programming Runtime Library	Yes								
Software Development Kit	Yes								
Activesync	Yes								
Web server/Email service	Yes								
Modem Dial-in (RAS)/Dial-up Function	Yes								
Mounting	DIN-rail/Wall								Wall
Anti-Vibration	-	2G w/CF @ IEC 68 section 2-64, sine, 5-500 Hz, 1 Oct./min, 1hr/axis.	2G w/CF @ IEC 68 section 2-64, sine, 5-500 Hz, 1 Oct./min, 1hr/axis.	2G w/CF, 0.5G w/ HDD @ IEC 68 section 2-64, sine, 5-500 Hz, 1 Oct./min, 1hr/axis.	2 G w/CF, 1 G w/HDD @ IEC 68 section 2-6, sine, 12 - 300 Hz, 1 Oct./min, 1hr/axis.				2 G w/CF, 0.5 G w/HDD @ IEC 68 section 2-64, sine, 5 - 500 Hz, 1 Oct./min, 1hr/axis.
Anti-Shock	-	50 G w/CF @ IEC 68 section 2-27, half sine, 11 ms	50 G w/CF @ IEC 68 section 2-27, half sine, 11 ms	50G w/CF, 20G w/ HDD @ IEC 68 section 2-27, half sine, 11 ms	20 G w/CF @ DIN IEC 68 section 2-27, half sine, 11ms 50 G w/CF @ Wall/Panel 68 section 2-27, half sine, 11 ms				20 G w/HDD @ IEC 68 section 2-27, half sine, 11 ms 50 G w/CF @ IEC 68 section 2-27, half sine, 11 ms
Power Input Range	10 - 30 VDC	9 - 36 VDC						10 - 48 VDC	9 - 36 VDC
Operating Temperature	0 - 70° C @ 5 - 85% RH	-10 - 55° C	-10 - 60° C	-10 - 60° C	-10 - 55° C @ 5 - 85% RH				-20 - 50° C @ 5 - 85% RH
Relative Humidity	95% @ 40° C (non-condensing)								
Power Consumption Typical	8.5 W	15 W (typical)	24 W (typical)	24 W (typical)	15 W				24 W
Power Requirement	Min. 13 W	Min. 24 W +24 V @ 1 A power input	Min. 48 W +24 V @ 2 A power input	Min. 48 W +24 V @ 2 A power input	Min. 24 W, +24 V @ 1 A power input				Min. 48 W, +24 V @ 2 A power input
Dimensions (W x D x H)	46 x 162 x 126 mm (1.8" x 6.4" x 5")	85 x 155 x 140 mm (3.4" x 6.1" x 5.6")	85 x 155 x 140 mm (3.4" x 6.1" x 5.6")	110 x 155 x 140 mm (4.4" x 6.1" x 5.6")	188.8 x 106.5 x 35.5 mm (7.5" x 4.2" x 1.4")				255 x 152 x 50 mm (10" x 6.0" x 2.0")
Weight	0.4 kg	1.6 KG	1.6 KG	2.0 KG	0.8 kg				1.6 kg



Model Name	UNO-2171	UNO-2172	UNO-2176	UNO-2182	UNO-3072L	UNO-3072	UNO-3074	UNO-3282	UNO-4678	
CPU	Celeron M 1.0 GHz, Pentium M 1.4	Celeron M 1.0 GHz, Celeron M 1.5 GHz, Pentium M 1.6 GHz	Celeron M 1.0 GHz, Pentium M 1.4 GHz	Core 2 Duo 1.5 GHz	Celeron M 1.0 GHz, Celeron M 1.5 GHz	Pentium M 1.4 GHz	Pentium M 1.4 GHz, Pentium M 1.8 GHz	Core 2 Duo 1.5 GHz	Celeron M 1 GHz	
Onboard RAM	512 MB/1 GB DDR SDRAM	512 MB/1 GB DDR2 SDRAM	512 MB DDR SDRAM	1 GB DDR2 SDRAM	512 MB/1 GB DDR SDRAM	512 MB DDR SDRAM	512 MB/1 GB DDR SDRAM	1 GB DDR2 SDRAM	512 MB DDR SDRAM	
Battery-Backup RAM	512 KB	512 KB	512 KB	512 KB	-				512 KB	
Display/Mouse/Keyboard	VGA	DVI-I	VGA	DVI-I	VGA			VGA+ DVI-D	VGA	
Audio	Yes	Yes	-	Yes	-	-	-	Yes	-	
Serial Ports	2 x RS-232, 2 x RS-232/422/485 with DB9 connectors	2 x RS-232, 2 x RS-232/422/485 with DB9 connectors	2 x RS-232, 2 x Isolated RS-232/422/485 with DB9 connectors, 2 x Isolated RS-232/422/485 with 5-pin screw terminal	2 x RS-232, 2 x RS-232/422/485 with DB9 connectors	2 x RS-232, 2 x RS-232/422/485				2 x isolated RS-232, 6 x isolated RS-232/422/485 with screw terminal	
Ethernet Ports	2 x 10/100Base-T	2 x 10/100/1000Base-T	2 x 10/100Base-T	2 x 10/100/1000Base-T	2 x 10/100Base-T			2 x 10/100/1000Base-T	3 x 10/100 Base-T	
USB Ports	Two	Two	Two	Two	Four				Two	
PC Card Slots	One	One	-	One	-	One		-	-	
Printer Ports	-									
PC/104 Expansion	PC/104+	PCI-104	PC/104	PCI-104	-				PC/104	
PCI Expansion	-									
Onboard I/O	-	-	8-ch Isolated DI 8-ch Isolated DO	-	4-ch isolated DI, 4-ch isolated DO				-	
Watchdog Timer	Yes									
CompactFlash Slots	Two internal	One internal	One internal	One internal	One internal	One internal, One external		One internal, One external	One internal	
2.5" HDD Expansion	Yes									
Operating Systems	Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux	Windows XP Embedded, Windows 2000/XP	Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux	Windows XP Embedded, Windows 2000/XP	Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux			Windows XP Embedded, Windows 2000/XP/ Vista, Linux	Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux	
Programming Runtime Library	Yes									
Software Development Kit	Yes									
Activesync	Yes									
Web server/Email service	Yes									
Modem Dial-in (RAS)/Dial-up Function	Yes									
Mounting	Wall			Wall	Wall/Panel/Stand				Wall/Stand	Rack Mount
Anti-Vibration	2 G w/CF, 1 G w/HDD (for X and Y Axis), 1 G w/HDD @ IEC 68 section 2-64, sine, 5 - 500 Hz, 1 Oct./min, 1hr/axis	2 G w/CF, 1 G w/HDD @ IEC 68 section 2-64, sine, 5 - 500 Hz, 1 Oct./min, 1hr/axis.								
Anti-Shock	20 G w/HDD @ IEC 68 section 2-27, half sine, 11 ms				20 G w/HDD @ IEC 68 section 2-27, half sine, 11 ms, 50 G w/CF @ IEC 68 section 2-27, half sine, 11 ms				20 G w/HDD @ IEC 68 section 2-27, half sine, 11 ms, 50 G w/CF @ IEC 68 section 2-27, half sine, 11 ms	
Power Input Range	10 - 53 VDC	9 - 36 VDC			16 - 36 VDC		20 - 36 VDC	9 - 36 VDC	9 - 36 VDC	
Operating Temperature	-20 - 65° C @ 5 - 85% RH	-20 - 50° C @ 5 - 85% RH	-20 - 65° C @ 5 - 85% RH	-20 - 60° C @ 5 - 85% RH	-20 - 60° C @ 5 - 85% RH	-20 - 55° C @ 5 - 85% RH		-20 - 60° C	-10 - 55° C	
Relative Humidity	95% @ 40° C (non-condensing)				95% @ 40° C		95% @ 40° C (non-condensing)			
Power Consumption Typical	24 W	45 W	24 W	35 W	24 W			100 W	24 W (typical)	
Power Requirement	Min. 48 W, +24 V @ 2 A power input						Min. 96 W, +24 V @ 4 A power input	Min. 120 W +24 V @ 5 A power input	Min. 48 W +24 V @ 2 A power input	
Dimensions (W x D x H)	265 x 152 x 59 (10" x 6" x 2.3")	255 x 152 x 69 mm (10" x 6.0" x 2.7")	255 x 152 x 59 mm (10" x 6.0" x 2.3")	255 x 152 x 69 mm (10" x 6.0" x 2.7")	140 x 237 x 179 mm/153 x 237 x 179 mm (5.5" x 9.3" x 7.0"/6" x 9.3" x 7.0")	140 x 237 x 179 (5.5" x 9.3" x 7")	180 x 237 x 177 mm/193 x 237 x 177 mm (7.1" x 9.3" x 7.0"/7.6" x 9.3" x 7.0")	200 x 240 x 130 (7.9" x 9.4" x 5")	440 x 220 x 44 mm (17.3" x 8.6" x 1.7")	
Weight	2.4 kg	3 kg	2.4 kg	3 kg	4.2 kg/6 kg		4.4 kg	5.0 kg/6.0 kg	5.5 Kg	3.6 kg

# Industrial Ethernet Solutions

## Managed Ethernet Switches

Model Name	EKI-4654R	EKI-7758F	EKI-7656C	EKI-7659C/EKI-7659CI	EKI-7654C	
<b>Description</b>	24+2 SFP Port Managed Redundant Industrial Ethernet Switch	8-port Gigabit Managed Redundant Industrial Ethernet Switch	16+2G Combo Port Gigabit Managed Redundant Industrial Ethernet Switch	8+2G Combo Port Gigabit Managed Redundant Industrial Ethernet Switch	4+2G Combo Port Gigabit Managed Redundant Industrial Ethernet Switch	
<b>Communications</b>	<b>Standard</b>	IEEE 802.3, 802.3u, 802.3x, 802.3z, 802.1D, 802.1w, 802.1p, 802.1Q, 802.1X, 802.3ad, 802.3ab				
	<b>LAN</b>	10/100/1000Base-TX, Optional 100Base-FX, 1000Base-SX/LX/LHX/XD/ZX/EZX				
	<b>Transmission Distance</b>	Ethernet: Up to 100m (4-wire Cat.5e, Cat.6 RJ-45 cable suggested for Gigabit port) Gigabit Fiber: Up to 110 km (depends on SFP)				
<b>Transmission Speed</b>	Ethernet: 10/100Mbps Auto-Negotiation Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation Gigabit Fiber: Up to 1000 Mbps					
<b>Interface</b>	<b>Ethernet Connectors</b>	24 x RJ-45 + 2 x SFP ports or 12 x SC type fiber optic connector + 8 x RJ-45 + 2 x SFP ports	4 x RJ-45 + 4 x SFP (mini-GBIC) ports	16 x RJ-45 + 2 x RJ-45/SFP (mini-GBIC) combo ports	8 x RJ-45 + 2 x RJ-45/SFP (mini-GBIC) combo ports	4 x RJ-45 + 2 RJ-45/SFP (mini-GBIC) combo ports
	<b>Power Connector</b>	10-pin screw terminal				
	<b>LED Indicators</b>	System: PWR, PWR1, PWR2, PWR3, R.M., P-Fail 10/100 TX: Link/Activity, Duplex/ Collision Gigabit Copper: Link/Activity, Speed (1000 Mbps) SFP: Link/Activity	System: PWR, R.M., PWR1, PWR2, P-Fail Gigabit Copper: Link/Activity, SpeedSFP: Link/Activity	System: PWR, PWR1, PWR2, R.M., P-Fail10/100TX: Link/Activity, Duplex/Collision Gigabit Copper: Link/Activity, Speed (1000 Mbps) SFP: Link/Activity		
	<b>Console</b>	RS-232 (RJ-45)				
<b>Network Management</b>	<b>Redundancy</b>	ADVANTECH X-Ring (Recovery time< 10 ms at 50 pcs full loading ring structure), Dual Homing, Couple Ring, 802.1w/D RSTP/STP				
	<b>Diagnostics</b>	Port Mirroring, Real-time traffic statistic, MAC Address Table, SNMP, Syslog, E-Mail Alert, SNMP Trap, RMON				
	<b>VLAN</b>	IEEE 802.1Q, GVRP, Port-based VLAN				
	<b>Configuration</b>	Web browser, Telnet, Serial console, Windows Utility, TFTP, SNMP v1/v2c/v3, Port Speed/Duplex Configuration				
	<b>SNMP</b>	SNMPv1, V2c, V3 and X-Ring Utility				
	<b>Security</b>	IP Access security, port security, DHCP Server, Port and IP Binding, 802.1X Port Access Control				
<b>Traffic Control</b>	IGMP Snooping/Query for multicast group management Port Trunking, Static/802.3ad LACP Rate limit and storm control IEEE 802.1p QoS CoS/TOS/DSCP priority queuing IEEE 802.3x flow control					
<b>Power</b>	<b>Power Consumption</b>	Max. 36 W	Max. 17 W	Max. 10.7 W	Max. 10.7 W	Max. 10.7 W
	<b>Power Input</b>	2 x 100 ~ 240 VAC/ 100 ~ 240 Vdc (Redundancy)	2 x Unregulated 12~ 48 Vdc	2 x Unregulated 12~ 48 Vdc	2 x Unregulated 12~ 48 Vdc	2 x Unregulated 12~ 48 Vdc
	<b>Power Fault Output</b>	1 Relay Output				
<b>Mechanism</b>	<b>Dimensions (W x H x D)</b>	440 x 44 x 280 mm	79 x 152 x 105 mm	79 x 152 x 105 mm	79 x 152 x 105 mm	79 x 152 x 105 mm
	<b>Enclosure</b>	IP30, metal shell with solid mounting kits				
	<b>Mounting</b>	1U 19" Rack mount	DIN-rail, wall			
<b>Protection</b>	<b>ESD (Ethernet)</b>	4,000 Vdc				
	<b>Surge (EFT for power)</b>	3,000 Vdc				
	<b>Power Reverse</b>	Yes				
	<b>Overload</b>	3.15 A @ 110 V (Fuse)	3.5 A @ 12 Vdc (Fuse)		1.6 A @ 12 Vdc (Re-settable Fuse)	
<b>Environment</b>	<b>Operating Temperature</b>	-40 ~ 85° C (-40 ~ 185° F)	-10 ~ 60° C (14 ~ 140° F), Wide temp. model -40 ~ 75° C (-40 ~ 167° F)			
	<b>Storage Temperature</b>	-40 ~ 85° C (-40 ~ 185° F)				
	<b>Operating Humidity</b>	5 ~ 95% (non-condensing)				
	<b>Storage Humidity</b>	0 ~ 95% (non-condensing)				
	<b>MTBF</b>	284,409 hours	289,777 hours	295,000 hours	284,409 hours	284,409 hours
<b>Certifications</b>	<b>Safety</b>	UL 60950-1, CAN/CSA-C22.2 No.60950	UL 60950-1, CAN/CSA-C22.2 No.60950	UL 60950-1, CAN/CSA-C22.2 No.60950	UL 60950-1, CAN/CSA-C22.2 No.60950	UL 60950-1, CAN/CSA-C22.2 No.60950
	<b>EMC</b>	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011, EN61000-6-4 EN55022 Class A, EN61000-3-2/3 EN55024 IEC61000-4-2/3/4/5/6/8 EN61000-6-2/4 IEC-61850-3, IEEE1613	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011, EN61000-6-4, EN55022 Class A, EN61000-3-2/3, EN55024, IEC61000-4-2/3/4/5/6/8 EN61000-6-2	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011, EN61000-6-4, EN55022 Class A, EN61000-3-2/3, EN55024, IEC61000-4-2/3/4/5/6/8 EN61000-6-2	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011, EN61000-6-4, EN55022 Class A, EN61000-3-2/3, EN55024, IEC61000-4-2/3/4/5/6/8 EN61000-6-2	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011, EN61000-6-4 EN55022 Class A, EN61000-3-2/3 EN55024 IEC61000-4-2/3/4/5/6/8 EN61000-6-2/4

## Unmanaged Ethernet Switches

Model Name	EKI-7626C	EKI-7629C	EKI-2725/2728	EKI-2525/2528	
<b>Description</b>	16+2G Combo Port Gigabit Unmanaged Industrial Ethernet Switch	8+2G Combo Port Gigabit Unmanaged Industrial Ethernet Switch	5/8-port Gigabit Unmanaged Industrial Ethernet Switches	5/8-port Unmanaged Industrial Ethernet Switch	
<b>Communications</b>	<b>Standard</b>	IEEE 802.3, 802.3ab, 802.3u, 802.3x, 802.3z		IEEE 802.3, 802.3u, 802.3x	
	<b>LAN</b>	10/100/1000Base-TX, Optional 100Base-FX, 1000Base-SX/LX/LHX/XD/ZX/EZX		10/100Base-TX	
	<b>Transmission Distance</b>	Ethernet: Up to 100 m (4- wire Cat.5e, Cat.6 RJ-45 cable suggested for Gigabit port) Gigabit Fiber: Up to 110 km (depending on SFP)	Ethernet: Up to 100 m (4- wire Cat.5e, Cat.6 RJ-45 cable suggested for Gigabit port) Gigabit Fiber: Up to 110 km (depending on SFP)	Up to 100 m (4- wire Cat.5e, Cat.6 RJ-45 cable)	Up to 100 m
	<b>Transmission Speed</b>	Ethernet: 10/100Mbps Auto-Negotiation Gigabit Copper: 10/100/1000 Mbps, Auto-Negotiation Gigabit Fiber: Up to 1000 Mbps	Ethernet: 10/100Mbps Auto-Negotiation Gigabit Copper:10/100/1000 Mbps, Auto-Negotiation Gigabit Fiber: Up to 1000 Mbps	Up to 1000 Mbps	Up to 100 Mbps
<b>Interface</b>	<b>Ethernet Connectors</b>	16 x RJ-45+ 2 x RJ-45/SFP (mini-GBIC) combo ports	8xRJ-45 + 2xRJ-45/SFP (mini-GBIC) combo ports 6-pin removable screw terminal (Power & Relay)	5 x RJ-45 (EKI-2725) or 8 x RJ-45 (EKI-2728)	5 x RJ-45 (EKI-2525) or 8 x RJ-45 (EKI-2528)
	<b>Power Connector</b>	6-pin removable screw terminal			
	<b>LED Indicators</b>	System: PWR1, PWR2, P-Fail Gigabit Copper: Link/Activity, Speed (1000 Mbps) Gigabit SFP: Link/Activity	System: PWR1, PWR2, P-Fail Gigabit Copper: Link/Activity, Speed (1000 Mbps) Gigabit SFP: Link/Activity	P1, P2, P-Fail10/100/1000 TX: Link/Activity, Duplex/Collision	P1, P2, P-Fail 10/100 TX: Link/Activity, Duplex/Collision
<b>Power</b>	<b>Console</b>	N/A			
	<b>Power Consumption</b>	Max. 6.5 W	Max. 6.5 W	EKI-2728: W EKI-2725: W	EKI-2528: Max. 5 W EKI-2525: Max. 3 W
	<b>Power Input</b>	2 x Unregulated 12 ~ 48 Vdc			
<b>Mechanism</b>	<b>Power Fault Output</b>	1 Relay Output			
	<b>Dimensions (W x H x D)</b>	79 x 152 x 105 mm	79 x 152 x 105 mm	37 x 140 x 95 mm	37 x 140 x 95 mm
	<b>Enclosure</b>	IP30, metal shell with solid mounting kits			
	<b>Mounting</b>	DIN-rail, Wall			
<b>Protection</b>	<b>ESD (Ethernet)</b>	4,000 Vdc			
	<b>Surge (EFT for power)</b>	3,000 Vdc			
	<b>Power Reverse</b>	Yes			
<b>Environment</b>	<b>Overload</b>	3.5 A @ 12 Vdc (Fuse)	1.6 A @ 12 Vdc (Re-settable Fuse)	EKI-2725: 0.9 A @ 12 Vdc (Re-settable Fuse) EKI-2728: 1.6 A @ 12 Vdc (Re-settable Fuse)	0.9 A @ 12 Vdc (Re-settable Fuse)
	<b>Operating Temperature</b>	-10 ~ 60° C (14 ~ 140° F) Wide temp. model -40 ~ 75° C (-40 ~ 167° F)			
	<b>Storage Temperature</b>	-40 ~ 85° C (-40 ~ 185° F)			
	<b>Operating Humidity</b>	5 ~ 95% (non-condensing)			
	<b>Storage Humidity</b>	0 ~ 95% (non-condensing)			
<b>MTBF</b>	295,000 hrs	295,000 hrs	627,958 hrs	689,000 hrs (EKI-2528) 1,260,000 hrs (EKI-2525)	
<b>Certifications</b>	<b>Safety</b>	UL 60950-1, CAN/CSA-C22.2 No.60950	UL 60950-1, CAN/CSA-C22.2 No.60950	UL 60950-1, CAN/CSA-C22.2 No.60950	UL 60950-1, CAN/CSA-C22.2 No.60950
	<b>EMC</b>	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011, EN61000-6-4, EN55022 Class A, EN61000-3-2/3, EN55024, IEC61000-4-2/3/4/5/6/8 EN61000-6-2	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011, EN61000-6-4, EN55022 Class A, EN61000-3-2/3, EN55024, IEC61000-4-2/3/4/5/6/8 EN61000-6-2	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011, EN61000-6-4 EN55022 Class A, EN61000-3-2/3 EN55024 IEC61000-4-2/3/4/5/6/8 EN61000-6-2	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011, EN61000-6-4 EN55022 Class A, EN61000-3-2/3 EN55024 IEC61000-4-2/3/4/5/6/8 EN61000-6-2

# Industrial Ethernet Solutions

## Unmanaged Ethernet Switches

Model Name	EKI-2525M	EKI-2526M/S	ADAM-6520 Series	ADAM-6521 Series	
<b>Description</b>	4+1 100FX Port Multi-mode Unmanaged Industrial Ethernet Switch	4+2 100FX Port Unmanaged Industrial Ethernet Switch	5-port Unmanaged Industrial Ethernet Switches	4 x 10/100TX Ports and 1 x 100FX Fiber Optic Port Industrial Ethernet Switches	
<b>Communications</b>	<b>Standard</b>	IEEE 802.3, 802.3u, 802.3x	IEEE 802.3, 802.3u, 802.3x	IEEE 802.3, 802.3u, 802.3x	
	<b>LAN</b>	10/100Base-TX, 100Base-FX	10/100Base-TX, 100Base-FX	10/100Base-TX	
	<b>Transmission Distance</b>	Ethernet: Up to 100 m Multi-mode Fiber: Up to 2 km	Ethernet: Up to 100 m Multi-mode Fiber: Up to 2 km (EKI-2526M) Single-mode Fiber: Up to 30 km (EKI-2526S)	Up to 100 m	Ethernet: Up to 100 m Multi-mode Fiber: Up to 2 km (ADAM-6521, ADAM-6521/ST) Single-mode Fiber: Up to 15 km (ADAM-6521S)
	<b>Transmission Speed</b>	Up to 100 Mbps	Up to 100 Mbps	Up to 100Mbps	Up to 100 Mbps
<b>Interface</b>	<b>Ethernet Connectors</b>	4 x RJ-45 ports + 1 x SC type fiber connector	4 x RJ-45 ports 2 x SC type fiber connector	5 x RJ-45	
	<b>Power Connector</b>	6-pin removable screw terminal		2-pin removable screw terminal	
	<b>LED Indicators</b>	P1, P2, P-Fail/10/100 TX: Link/Activity, Duplex/Collision	P1, P2, P-Fail/10/100 TX: Link/Activity, Duplex/Collision	Power, Link/Speed	Power, Link (100Base-FX), 100/10M (Ethernet)
	<b>Console</b>	N/A			
<b>Power</b>	<b>Power Consumption</b>	Max. 5 W	EKI-2526M: Max. 6.41 W EKI-2526S: Max. 6.45 W	ADAM-6520L: Max. 3 W ADAM-6520/6520L: Max. 2.4 W	
	<b>Power Input</b>	2 x Unregulated 12 ~ 48 VDC	2 x Unregulated 12 ~ 48 VDC	1 x Unregulated 10 ~ 30 VDC	
	<b>Power Fault Output</b>	1 Relay Output	1 Relay Output	N/A	
<b>Mechanism</b>	<b>Dimensions (W x H x D)</b>	37 x 140 x 95 mm	37 x 140 x 95 mm	70 x 102 x 27 mm	
	<b>Enclosure</b>	IP30, metal shell with solid mounting kits	IP30, metal shell with solid mounting kits	IP30, ABS+PC with solid mounting kits	
	<b>Mounting</b>	DIN-rail, Wall	DIN-rail, Wall	DIN 35 rail, Wall, Stack	
<b>Protection</b>	<b>ESD (Ethernet)</b>	4,000 VDC	4,000 VDC	4,000 VDC (ADAM-6520L not equipped)	
	<b>Surge (EFT for power)</b>	3,000 VDC	3,000 VDC	3,000 VDC (ADAM-6520L not equipped)	
	<b>Power Reverse</b>	Present	Present	N/A	
<b>Environment</b>	<b>Operating Temperature</b>	-10 ~ 60° C (14 ~ 140° F) Wide temp. model -40 ~ 75° C (-40 ~ 167° F)	-10 ~ 60° C (14 ~ 140° F) Wide temp. model -40 ~ 75° C (-40 ~ 167° F)	ADAM-6520: -10 ~ 70° C (14 ~ 158° F), Stack: -10 ~ 60° C (14 ~ 140° F) ADAM-6520L: 0 ~ 60° C (32 ~ 140° F), Stack: 0 ~ 50° C (32 ~ 122° F) ADAM-6520L: -40 ~ 85° C (-40 ~ 185° F), Stack: -40 ~ 75° C (-40 ~ 167° F)	
	<b>Storage Temperature</b>	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	ADAM-6520: -20 ~ 80° C (-4 ~ 176° F) ADAM-6520L: -10 ~ 70° C (14 ~ 158° F) ADAM-6520L: -50 ~ 95° C (-58 ~ 203° F)	
	<b>Operating Humidity</b>	5 ~ 95% (non-condensing)	5 ~ 95% (non-condensing)	20 ~ 95 % (non-condensing)	
	<b>Storage Humidity</b>	0 ~ 95% (non-condensing)	0 ~ 95% (non-condensing)	0 ~ 95 % (non-condensing)	
	<b>MTBF</b>	610,453 hrs	610,453 hrs	1,580,000 hrs	
<b>Certifications</b>	<b>Safety</b>	UL 60950-1, CAN/CSA-C22.2 No.60950	UL 60950-1, CAN/CSA-C22.2 No.60950	UL 60950-1, CAN/CSA-C22.2 No.60950	
	<b>EMC</b>	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011, EN61000-6-4 EN55022 Class A, EN61000-3-2/3 EN55024 IEC61000-4-2/3/4/5/6/8 EN61000-6-2/4	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011, EN61000-6-4 EN55022 Class A, EN61000-3-2/3 EN55024 IEC61000-4-2/3/4/5/6/8 EN61000-6-2/4	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011, EN61000-6-4 EN55022 Class A, EN61000-3-2/3 EN55024, IEC61000-4-2/3/4/5/6/8 EN61000-6-2	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011, EN61000-6-4 EN55022 Class A, EN61000-3-2/3, EN55024, IEC61000-4-2/3/4/5/6/8 EN61000-6-2

## Ethernet Media Converters

Model Name	EKI-2741F/SX/LX	EKI-2541M/S	ADAM-6541 Series	
<b>Description</b>	10/100/1000TX to Fiber Optic Gigabit Industrial Media Converters	10/100TX to Multi-mode/Single-mode Fiber Optic Industrial Media Converters	Ethernet to Fiber Optic Converters	
<b>Communications</b>	<b>Standard</b>	IEEE802.3, 802.3u, 802.3ab, 802.3x, IEEE 802.3z	IEEE 802.3, 802.3u, 802.3x	
	<b>LAN</b>	10/100/1000Base-TX, 1000Base-SX or 1000Base-LX	10/100Base-TX, 100Base-FX	
	<b>Transmission Distance</b>	Ethernet: Up to 100 m Fiber: Multi-mode: Up to 550 m (EKI-2741SX) Single-mode: Up to 10 km (EKI-2741LX) SFP: Up to 110 km (2741F)	Ethernet: Up to 100m Fiber: Multi-mode: up to 2 km Fiber: Single-mode: up to 30 km	Ethernet: Up to 100 m Fiber: Multi-mode: Up to 2 km Single-mode: Up to 20 km
	<b>Transmission Speed</b>	Up to 1000 Mbps	Up to 100 Mbps	Up to 100 Mbps
<b>Interface</b>	<b>Ethernet Connectors</b>	1 x RJ-45 + 1 x SC type fiber connector (EKI-2741SX/LX) or 1 x SFP type fiber connector (EKI-2741F)	1 x RJ-45 1 x SC type fiber connector	1 x RJ-45 1 x SC type fiber connector (ADAM-6541) or 1 x ST type fiber connector (ADAM-6541/ST) 2-pin removable screw terminal (power)
	<b>Power Connector</b>	6-pin removable screw terminal		
	<b>LED Indicators</b>	P1, P2, P-Fail Fiber: LNK/ACT Ethernet: 1000M, LNK/ACT	P1, P2, P-Fail Ethernet: 10/100M, LNK/ACT Fiber: HDX/FDX, LNK/ACT	ADAM-6541, ADAM-6541/ST: Power, Full/Link (100BASE-FX), 100/10M (Ethernet)
	<b>DIP Switch</b>	Port Alarm, LFP	Port/Power Alarm, LFP Fiber: HDX/FDX, Converter/Switch	N/A
<b>Power</b>	<b>Power Consumption</b>	5.28 W (EKI-2741F) 5.18 W (EKI-2741SX) 5.30 W (EKI-2741LX)	Max. 5 W	ADAM-6541, ADAM-6541/ST: Max. 3 W
	<b>Power Input</b>	2 x Unregulated 12 ~ 48 VDC	2 x Unregulated 12 ~ 48 VDC	1 x Unregulated 10 ~ 30 VDC
	<b>Power Fault Output</b>	1 Relay Output	1 Relay Output	N/A
<b>Mechanism</b>	<b>Dimensions (W x H x D)</b>	37 x 140 x 95 mm	37 x 140 x 95 mm	70 x 112 x 27 mm
	<b>Enclosure</b>	IP30, metal shell with solid mounting kits	IP30, metal shell with solid mounting kits	IP30, ABS+PC with solid mounting kits
	<b>Mounting</b>	DIN-rail, Wall	DIN-rail, Wall	DIN 35 rail, Wall, Stack
<b>Protection</b>	<b>ESD (Ethernet)</b>	4,000 VDC	4,000 VDC	4,000 VDC
	<b>Surge (EFT for Power)</b>	3,000 VDC	3,000 VDC	3,000 VDC
	<b>Power Reverse</b>	Present	Present	N/A
	<b>Overload</b>	0.9 A @ 12 VDC (Re-settable Fuse)	0.9 A @ 12 VDC (Re-settable Fuse)	N/A
<b>Environment</b>	<b>Operating Temperature</b>	-10 ~ 60° C (14 ~ 140° F) Wide temp. model -40 ~ 75° C (-40 ~ 167° F)	-10 ~ 60° C (14 ~ 140° F) Wide temp. model -40 ~ 75° C (-40 ~ 167° F)	0 ~ 60° C (32 ~ 140° F) Stack: 0 ~ 55° C (32 ~ 131° F)
	<b>Storage Temperature</b>	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-10 ~ 70° C (-14 ~ 158° F)
	<b>Operating Humidity</b>	5 ~ 95% (non-condensing)	5 ~ 95% (non-condensing)	20 ~ 95 % (non-condensing)
	<b>Storage Humidity</b>	0 ~ 95% (non-condensing)	0 ~ 95% (non-condensing)	0 ~ 95 % (non-condensing)
	<b>MTBF</b>	515,600 hrs (EKI-2741F) 525,300 hrs (EKI-2741SX/LX)	577,175 hrs	550,000 hrs
<b>Certifications</b>	<b>Safety</b>	UL 60950-1, CAN/CSA-C22.2 No.60950	UL 60950-1, CAN/CSA-C22.2 No.60950	UL 60950-1, CAN/CSA-C22.2 No.60950
	<b>EMC</b>	U.S.A.: FCC Part 15 CISPR 22 EU:EN55011, EN61000-6-4, EN55022 Class A, EN61000-3-2/3, EN55024, IEC61000-4-2/3/4/5/6/8 EN61000-6-2	U.S.A.: FCC Part 15 CISPR 22 EU:EN55011, EN61000-6-4, EN55022 Class A, EN61000-3-2/3, EN55024, IEC61000-4-2/3/4/5/6/8 EN61000-6-2	U.S.A.: FCC Part 15 CISPR 22 EU:EN55011, EN61000-6-4 EN55022 Class A, EN61000-3-2/3 EN55024, IEC61000-4-2/3/4/5/6/8 EN61000-6-2

# Serial Device Server

## Serial Device Servers

Model Name	Interface	Serial Port	Serial Type	Baud Rate	Connector		Operation Mode	Driver
					Network	Serial		
EKI-1521	10/100 Mbps	1	RS-232/422/485	50 ~ 921K bps	RJ45 x 2	DB9	Virtual COM, Data Mode, Control Mode	Window 2000/XP Socket or WinSocket
EKI-1522	10/100 Mbps	2	RS-232/422/485	50 ~ 921k bps	RJ45 x 2	DB9	Virtual COM, Data Mode, Control Mode	Window 2000/XP Socket or WinSocket
EKI-1524	10/100 Mbps	4	RS-232/422/485	50 ~ 921k bps	RJ45 x 2	DB9	Virtual COM, Data Mode, Control Mode	Window 2000/XP Socket or WinSocket
ADAM-4571	10/100 Mbps	1	RS-232/422/485	50 ~ 230k bps	RJ45	RJ48	Virtual COM	Window 2000/XP
ADAM-4571L	10/100 Mbps	1	RS-232	50 ~ 230k bps	RJ45	RJ48	Virtual COM	Window 2000/XP
ADAM-4570	10/100 Mbps	2	RS-232/422/485	50 ~ 230k bps	RJ45	RJ48	Virtual COM	Window 2000/XP
ADAM-4570L	10/100 Mbps	2	RS-232	50 ~ 230k bps	RJ45	RJ48	Virtual COM	Window 2000/XP
EDG-4504	10/100 Mbps	4	RS-232/422/485	50 ~ 230k bps	RJ45	DB9	Virtual COM	Window 2000/XP
EDG-4508(R)+	10/100 Mbps	8	RS-232/422/485	50 ~ 230k bps	RJ45	RJ48	Virtual COM, Data Mode, Control Mode	Window 2000/XP Socket or WinSocket
EDG-4516(R)+	10/100 Mbps	16	RS-232/422/485	50 ~ 230k bps	RJ45	RJ48	Virtual COM, Data Mode, Control Mode	Window2000/XP Socket or WinSocket
ADAM-4572	10/100 Mbps	1	RS-232/422/485	50 ~ 115.2k bps	RJ45	Screw terminal	Modbus/TCP	Socket or WinSocket
ADAM-4579	10/100 Mbps	2	RS-232/422/485	50 ~ 230k bps	RJ45	RJ48	Data Mode, Control Mode	Socket or WinSocket

## Wireless Serial Device Servers

Model Name	Interface	Serial Port	Serial Type	Baud Rate	Connector	Operation Mode	Driver
EK-1351	802.11b/g	1	RS-232/422/485	50 ~ 921k bps	DB9	Virtual COM, Data Mode, Control Mode	Window2000/XP Socket or WinSocket
EKI-1352	802.11b/g	2	RS-232/422/485	50 ~ 921k bps	DB9	Virtual COM, Data Mode, Control Mode	Window2000/XP Socket or WinSocket
ADAM-4571W	802.11b	1	RS-232/422/485	50 ~ 230k bps	RJ48	Virtual COM,	Window 2000/XP
ADAM-4570W	802.11b	2	RS-232/422/485	50 ~ 230k bps	RJ48	Virtual COM,	Window 2000/XP

## USB to Serial Data Converters

Model Name	Interface	Serial Port	Serial Type	Baud Rate	Connector		Protection		Driver
					USB	Serial	Isolation	Surge	
ADAM-4561	USB 1.1	1	RS-232/422/485	50 ~ 115.2k bps	Type B	Screw terminal	3000 V <sub>DC</sub> (RS-232/422/485)	3000 V <sub>DC</sub> (RS-485)	Windows 2000/XP
ADAM-4562	USB 1.1	1	RS-232	75 ~ 115.2k bps	Type B	DB9	2500 V <sub>DC</sub>	-	Windows 2000/XP
USB-4602B	USB2.0	2	RS-232	50 ~ 921k bps	Type B	DB9	-	2500 V <sub>DC</sub>	Windows 2000/XP/2003, CE5.0
USB-4602BM	USB2.0	2	RS-232/422/485	50 ~ 921k bps	Type B	DB9	-	2500 V <sub>DC</sub>	Windows 2000/XP/2003, CE5.0
USB-4604B	USB2.0	4	RS-232	50 ~ 921k bps	Type B	DB9	-	2500 V <sub>DC</sub>	Windows 2000/XP/2003, CE5.0
USB-4604BM	USB2.0	4	RS-232/422/485	50 ~ 921k bps	Type B	DB9	-	2500 V <sub>DC</sub>	Windows 2000/XP/2003, CE5.0

# Serial Communication Card

Bus	Model Name	Ports	Communication Interfaces					Protection		Cable Connector Type
			Current Loop	RS-232	RS-422	RS-485	CAN	Surge	Isolation	
Universal Low Profile PCI	PCI-1602UP	2			V	V		2500 V <sub>DC</sub>	2500 V <sub>DC</sub>	DB9 Male
	PCI-1604UP	2		V			2500 V <sub>DC</sub>		DB9 Male	
	PCI-1610UP	4		V			2500 V <sub>DC</sub>		DB9 Male	
	PCI-1610AUP	4		V					DB9 Male	
PCI & Universal PCI	PCI-1601A	2			V	V			-	
	PCI-1601B	2			V	V	2500 V <sub>DC</sub>		-	
	PCI-1602A	2			V	V		3000 V <sub>DC</sub>	-	
	PCI-1602B	2			V	V	2500 V <sub>DC</sub>	3000 V <sub>DC</sub>	-	
	PCI-1603	2	V	V				3000 V <sub>DC</sub>	-	
	PCI-1610A	4		V					DB25 Male	
	PCI-1610A/9	4		V					DB9 Male	
	PCI-1610B	4		V			3000 V <sub>DC</sub>		DB25 Male	
	PCI-1610B/9	4		V			3000 V <sub>DC</sub>		DB9 Male	
	PCI-1610CU	4		V			2500 V <sub>DC</sub>	2500 V <sub>DC</sub>	DB25 Male	
	PCI-1610CU/9	4		V			2500 V <sub>DC</sub>	2500 V <sub>DC</sub>	DB9 Male	
	PCI-1611U	4			V	V	2500 V <sub>DC</sub>	2000 V <sub>DC</sub>	DB25 Male	
	PCI-1611U/9	4			V	V	2500 V <sub>DC</sub>	2000 V <sub>DC</sub>	DB9 Male	
	PCI-1612A	4		V	V	V			DB25 Male	
	PCI-1612A/9	4		V	V	V			DB9 Male	
	PCI-1612B	4		V	V	V	2500 V <sub>DC</sub>		DB25 Male	
	PCI-1612B/9	4		V	V	V	2500 V <sub>DC</sub>		DB9 Male	
	PCI-1612AU	4		V	V	V			DB25 Male	
	PCI-1612AU/9	4		V	V	V			DB9 Male	
	PCI-1612BU	4		V	V	V	2500 V <sub>DC</sub>		DB25 Male	
	PCI-1612BU/9	4		V	V	V	2500 V <sub>DC</sub>		DB9 Male	
	PCI-1612CU	4		V	V	V	2500 V <sub>DC</sub>	2500 V <sub>DC</sub>	DB25 Male	
	PCI-1612CU/9	4		V	V	V	2500 V <sub>DC</sub>	2500 V <sub>DC</sub>	DB9 Male	
	PCI-1620A	8		V					Optional	
	PCI-1620B	8		V			3000 V <sub>DC</sub>		Optional	
	PCI-1620AU	8		V					Optional	
	PCI-1620BU	8		V			2500 V <sub>DC</sub>		Optional	
	PCI-1622CU	8			V	V	2500 V <sub>DC</sub>	2500 V <sub>DC</sub>	Optional	
	PCI-1625U *	8		V	V**				Optional	
	PCI-1680U	2					V	2500 V <sub>DC</sub>	-	
	ISA	PCL-740	1	V	V	V	V			-
		PCL-741	2	V	V				2500 V <sub>DC</sub>	-
PCL-743B		2			V	V			-	
PCL-743S		2			V	V	2500 V <sub>DC</sub>		-	
PCL-745B		2			V	V		3000 V <sub>DC</sub>	-	
PCL-745S		2			V	V	2500 V <sub>DC</sub>	3000 V <sub>DC</sub>	-	
PCL-841		2					V	1000 V <sub>DC</sub>	-	
PCL-746+		4		V	V	V			DB25 Male	
PCL-746+/9		4		V	V	V			DB9 Male	
PCL-846A		4			V	V		1000 V <sub>DC</sub>	DB9 Male	
PCL-846B		4			V	V	2000 V <sub>DC</sub>	1000 V <sub>DC</sub>	DB9 Male	
PCL-849A		4		V					DB25 Male	
PCL-849A/9		4		V					DB9 Male	
PCL-849B		4		V			3000 V <sub>DC</sub>		DB25 Male	
PCL-849B/9		4		V			3000 V <sub>DC</sub>		DB9 Male	
PCL-849+		4		V			3000 V <sub>DC</sub>		DB25 Male	
PCL-849+/9		4		V			3000 V <sub>DC</sub>		DB9 Male	
PCL-849L		4		V					DB25 Male	
PCL-849L/9		4		V					DB9 Male	
PCL-844+*		8		V	V**				Optional	
PCL-858A		8		V					Optional	
PCL-858B		8		V			3000 V <sub>DC</sub>		Optional	
PC/104		PCM-3610	2		V	V	V		1000 V <sub>DC</sub>	-
		PCM-3612	2			V	V			-
	PCM-3680	2					V	1000 V <sub>DC</sub>	-	
	PCM-3614	4			V	V		1000 V <sub>DC</sub>	-	
	PCM-3640/3641	4		V					-	
PCI-104	PCM-3618	8		V	V	V		1000 V <sub>DC</sub>	-	
	PCM-3614I	4		V	V	V			-	
	PCM-3641I	4		V					-	
	PCM-3642I	8		V					-	

## Accessories

Model Name	Connectors Side 1	Connectors Side 2	Length	Type	Use With
OPT8AP	1 x DB62 Male	8 x DB25 Female	1.5 m	Connection Box	PCI-1620A/B/AU/BU PCI-1625U PCL-844+ PCL-858A/B
OPT8BP	1 x DB62 Male	8 x DB25 Male	1.5 m	Connection Box	
OPT8C	1 x DB62 Male	8 x DB25 Male	1 m	Cable	
OPT8H	1 x DB62 Male	8 x DB9 Male	1 m	Cable	
OPT8I	1 x DB78 Male	8 x DB25 Male	1 m	Cable	PCI-1622CU
OPT8J	1 x DB78 Male	8 x DB9 Male	1 m	Cable	

\* Intelligent Communication Card, \*\* Link with OPT8FP can support RS-422

# Analog I/O & Multifunction Cards

Category		Multifunction							
Bus		PCI							
Model Name		PCI-1710/1710L	PCI-1710HG/1710HGL	PCI-1711/1711L	PCI-1712/1712L	PCI-1716/1716L	PCI-1718HDU/HGU	PCI-1741U	
Analog Input	General Spec.	Resolution	12 bits	12 bits	12 bits	12 bits	16 bits	12 bits	16 bits
		Channels	16 SE/8 Diff.	16 SE/8 Diff.	16 SE	16 SE/8 Diff.	16 SE/8 Diff.	16 SE/8 Diff.	16 SE/8 Diff.
		Onboard FIFO	4096 samples	4096 samples	1024 samples	1024 samples	1024 samples	1024 samples	1024 samples
		Smampling Rate	100 kS/s	100 kS/s	100 kS/s	1 MS/s	250 kS/s	100 kS/s	200 kS/s
		Auto Channel Scanning	✓	✓	✓	✓	✓	✓	✓
	Input Ranges	Unipolar Inputs (V)	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 1, 0 ~ 0.1, 0 ~ 0.01	-	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 (PCI-1718HGU)	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25**
		Bipolar Inputs (V)	±10, 5, 2.5, 1.25, 0.625	±10, 5, 1, 0.5, 0.1, 0.05, 0.01, 0.005	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625 (PCI-1718HGU)	±10, 5, 2.5, 1.25, 0.625**
		Configurable Per-Channel	✓	✓	✓	✓	✓	✓	-
	Trigger Mode	Pacer/Software/External Pulse	✓	✓	✓	✓	✓	✓	✓
		Analog Slope	-	-	-	✓	-	-	-
		Pre-trigger	-	-	-	✓	-	-	-
		Post-trigger	-	-	-	✓	-	-	-
	Data Transfer Mode	Software	✓	✓	✓	✓	✓	✓	✓
		DMA	-	-	-	Bus-mastering	Bus-mastering	-	-
	Analog Output	Resolution	12 bits	12 bits	12 bits	12 bits	16 bits	12 bits	16 bits
Number of Channels		2 (PCI-1710 only)	2 (PCI-1710HG only)	2 (PCI-1711 only)	2 (PCI-1712 only)	2 (PCI-1716 only)	1	1	
Onboard FIFO		-	-	-	32 K samples	-	-	-	
Output Range (V)		0 ~ 5, 0 ~ 10	0 ~ 5, 0 ~ 10	0 ~ 5, 0 ~ 10	0 ~ 5, 0 ~ 10, ±5, ±10	0 ~ 5, 0 ~ 10, ±5, ±10	0 ~ 5, 0 ~ 10	±5, ±10	
Throughput		Static update	Static update	Static update	1 MS/s	Static update	Static update	Static update	
DMA transfer		-	-	-	✓	-	-	-	
Digital I/O	Input Channels	16	16	16	16 (mixed)	16	16	16	
	Output Channels	16	16	16		16	16	16	
Timer/Counter	Channels	1	1	1	3	1	1	1	
	Resolution	16-bit	16-bit	16-bit	16-bit	16-bit	16-bit	16-bit	
Isolation Voltage	Time Base	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	
	Auto Calibration	-	-	-	✓	✓	-	✓	
	BoardID Switch	✓	✓	-	-	✓	✓	✓	
	Dimensions (mm)	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	
	Connector	68-pin SCSI-II	68-pin SCSI-II	68-pin SCSI-II	68-pin SCSI-II	68-pin SCSI-II	DB-37	68-pin SCSI-II	
	Windows 98/2000/XP DLL Driver	✓	✓	✓	✓	✓	✓	✓	
	Windows 98/2000/XP Test Utility	✓	✓	✓	✓	✓	✓	✓	
	VC++, VB & delphi Examples	✓	✓	✓	✓	✓	✓	✓	
	Advantech ActiveDAQ/ActiveDAQ Pro	✓	✓	✓	✓	✓	✓	✓	
	Labview I/O Drivers (Ver. 6i and 7.0)	✓	✓	✓	✓	✓	✓	✓	
	Mathworks MATLAB Data Acquisiton Tool Box 2.5.1	✓	✓	✓	✓	-	-	-	
	KW Win33 Driver	✓	✓	-	-	✓	-	-	

\* Note: SS = Single DMA channel, Single A/D channel scan SM = Single DMA channel, Multiple A/D channel scan  
 \*\* Note: All channels should be set to the same range.

Category		Multifunction							AI						
Bus		PCI							PCI						
Model Name		PCI-1742U	PCL-711B	PCL-812PG	PCL-818L	PCL-818HD	PCL-818HG	PCM-3718H	PCM-3718HG	PCM-3718HO	PCI-1713	PCI-1714U	PCI-1714UL		
Analog Input	General Spec.	Resolution	16 bits	12 bits	12 bits	12 bits	12 bits	12 bits	12 bits	12 bits	12 bits	12 bits	12 bits		
		Channels	16 SE/8 Diff.	8 SE	16 SE	16 SE/8 Diff	16 SE/8 Diff	16 SE/8 Diff	16 SE/8 Diff.	16 SE/8 Diff.	16 SE/8 Diff.	32 SE/16 Diff. (Isolation)	4 SE	4 SE	
		Onboard FIFO	1024 samples	-	-	-	1024 samples	1024 samples	-	-	1024 samples	4096 samples	32,768 samples	8,192 samples	
		Smampling Rate	1 MS/s	40 kS/s	30 kS/s	40 kS/s	100 kS/s	100 kS/s	100 kS/s	100 kS/s	100 kS/s*	100 kS/s	30 MS/s	10 MS/s	
		Auto Channel Scanning	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Input Ranges	Unipolar Inputs (V)	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	-	-	-	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 1, 0 ~ 0.1, 0 ~ 0.01 (PCI-1718HGU)	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 1, 0 ~ 0.1, 0 ~ 0.01	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 1, 0 ~ 0.1, 0 ~ 0.01	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	-	-
		Bipolar Inputs (V)	±10, 5, 2.5, 1.25, 0.625	±5, 2.5, 1.25, 0.625, 0.3125	±10, 5, 2.5, 1.25, 0.625, 0.3125	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625	±10, 5, 1, 0.5, 0.1, 0.05, 0.01, 0.005	±10, 5, 2.5, 1.25, 0.625	±10, 5, 1, 0.5, 0.1, 0.05, 0.01, 0.005	±10, 5, 1, 0.5, 0.1, 0.05, 0.01, 0.005	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625	±5, 2.5, 1, 0.5	±5, 2.5, 1, 0.5
		Configurable Per-Channel	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Trigger Mode	Pacer/Software/External Pulse	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		Analog Slope	-	-	-	-	-	-	-	-	-	-	✓	✓	
		Pre-trigger	-	-	-	-	-	-	-	-	-	-	✓	✓	
		Post-trigger	-	-	-	-	-	-	-	-	-	-	✓	✓	
	Data Transfer Mode	Software	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		DMA	-	-	SS*	SM*	SM*	SM*	SS*	SS*	SS*	-	Bus-mastering	Bus-mastering	
	Analog Output	Resolution	16 bits	12 bits	12 bits	12 bits	12 bits	12 bits	-	-	12 bits	-	-	-	
Number of Channels		2	1	2	1	1	1	-	-	1	-	-	-		
Onboard FIFO		-	-	-	-	-	-	-	-	-	-	-	-		
Output Range (V)		0 ~ 5, 0 ~ 10, ±5, ±10	0 ~ 5, 0 ~ 10	0 ~ 5, 0 ~ 10	0 ~ 5, 0 ~ 10	0 ~ 5, 0 ~ 10, ±10	0 ~ 5, 0 ~ 10, ±10	-	-	0 ~ 5, 0 ~ 10	-	-	-		
Throughput		Static Update	Static update	Static update	Static update	Static update	Static update	-	-	Static update	-	-	-		
DMA transfer		-	-	-	-	-	-	-	-	-	-	-	-		
Digital I/O	Input Channels	16	16	16	16	16	16	16	16	16	-	-	-		
	Output Channels	16	16	16	16	16	16	16	16	16	-	-	-		
Timer/Counter	Channels	1	1	1	3	1	1	1	1	1	-	-	-		
	Resolution	16 bits	16-bit	16-bit	16-bit	16-bit	16-bit	16 bits	16 bits	16 bits	-	-	-		
Isolation Voltage	Time Base	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	-	-	-		
	Auto Calibration	-	-	-	✓	✓	-	-	-	-	-	✓	✓		
	BoardID Switch	✓	✓	-	-	✓	✓	-	-	-	-	✓	✓		
	Dimensions (mm)	175 x 100	175 x 100	185 x 100	155 x 100	185 x 100	185 x 100	96 x 90	96 x 90	96 x 90	175 x 100	175 x 100	175 x 100		
	Connector	68-pin SCSI-II	3 x 20-pin	5 x 20-pin	DB-37	DB-37	DB-37	2 x 20-pin	2 x 20-pin	2 x 20-pin	DB-37	4 BNC	4 BNC		
	Windows 98/2000/XP DLL Driver	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Windows 98/2000/XP Test Utility	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	VC++, VB & delphi Examples	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Advantech ActiveDAQ/ActiveDAQ Pro	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Labview I/O Drivers (Ver. 6i and 7.0)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Mathworks MATLAB Data Acquisiton Tool Box 2.5.1	✓	✓	✓	✓	✓	✓	-	-	-	✓	-	-		
	KW Win33 Driver	✓	✓	-	-	✓	-	-	-	-	-	-	-		

\* 80kHz on P4-based (or upper) system  
 \*\* Note: System-dependent

# Analog I/O & Multifunction Cards

Category		AI			AO									
Bus		PCI		ISA	PCI			ISA			PC./104			
Model Name		PCI-1715U	PCI-1747U	PCL-813B	PCI-1720U	PCI-1721	PCI-1723	PCI-1724	PCI-1727U	PCL-726	PCL-727	PCL-728	PCM-3712	
Analog Input	General Spec.	Resolution	12bits	16 bits	12 bits	-	-	-	-	-	-	-	-	
		Channels	32 SE/16 Diff.	64 SE/32 Diff.	32 SE	-	-	-	-	-	-	-	-	-
		Onboard FIFO	1024 samples	1024 samples	-	-	-	-	-	-	-	-	-	-
		Smapping Rate	500 kS/s	250 kS/s	25 kS/s	-	-	-	-	-	-	-	-	-
		Auto Channel Scanning	✓	✓	-	-	-	-	-	-	-	-	-	-
	Input Ranges	Unipolar Inputs (V)	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 0.125	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	-	-	-	-	-	-	-	-	-
		Bipolar Inputs (V)	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625	-	-	-	-	-	-	-	-	-
		Configurable Per-Channel	✓	✓	✓	-	-	-	-	-	-	-	-	-
	Trigger Mode	Pacer/Software/External Pulse	✓	Pacer/Software	Software only	-	-	-	-	-	-	-	-	-
		Analog Slope	-	-	-	-	-	-	-	-	-	-	-	-
		Pre-trigger	-	-	-	-	-	-	-	-	-	-	-	-
	Data Transfer Mode	Software	✓	✓	Software only	-	-	-	-	-	-	-	-	-
		DMA	Bus-mastering	Bus-mastering	-	-	-	-	-	-	-	-	-	-
	Analog Output	Resolution	-	-	-	12 bits	12 bits	16 bits	14 bits	14 bits	12 bits	12 bits	12 bits	12 bits
		Number of Channels	-	-	-	4 (Isolation)	4 (Waveform Output)	8	32	12	6	12	2 (Isolation)	2
Onboard FIFO		-	-	-	-	1K samples	-	-	-	-	-	-	-	
Output Range (V)		-	-	-	0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20 mA, 4 ~ 20 mA	0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20 mA, 4 ~ 20 mA	-10 ~ 10, 0 ~ 20 mA, 4 ~ 20 mA	±10, 0 ~ 20 mA	0 ~ 5, 0 ~ 10, ±5, 4 ~ 20 mA	0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20 mA, 4 ~ 20 mA	-0 ~ 5, 0 ~ 10, ±5, 4 ~ 20 mA	0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20 mA, 4 ~ 20 mA	0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20 mA, 4 ~ 20 mA	
Throughput		-	-	-	Static update	10M	Static update	Static update	Static update	Static update	Static update	Static update	Static update	
DMA Transfer	-	-	-	-	Bus-mastering	-	-	-	-	-	-	-		
Digital I/O	Input Channels	-	-	-	-	16	16	-	16	16	16	-	-	
	Output Channels	-	-	-	-	-	-	-	16	16	16	-	-	
Timer/Counter	Channels	-	-	-	-	1	-	-	-	-	-	-	-	
	Resolution	-	-	-	-	16-bit	-	-	-	-	-	-	-	
	Time Base	-	-	-	-	10 MHz	-	-	-	-	-	-	-	
Isolation Voltage	2,500 V <sub>oc</sub>	-	500 V <sub>oc</sub>	2,500 V <sub>oc</sub>	-	-	-	-	-	-	500 V <sub>oc</sub>	-		
Auto Calibration	-	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓		
BoardID Switch	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Dimensions (mm)	175 x 100	175 x 100	219 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	337 x 112	337 x 112	185 x 120	96 x 90		
Connector	DB-37	68-pin SCSI-II	DB-37	DB-37	68-pin SCSI-II	68-pin SCSI-II	DB-62	2 x 20-pin, DB-37	4 x 20-pin	2 x 20-pin, DB-37	2 x DB-9	1 x 10-pin box header		
Windows 98/2000/XP DLL Driver	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Windows 98/2000/XP Test Utility	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
VC++, VB & delphi Examples	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Advantech ActiveDAQ/ActiveDAQ Pro	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Labview I/O Drivers (Ver. 6i and 7.1)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Mathworks MATLAB Data Acquisition Tool Box 2.5.1	-	-	✓	✓	-	-	-	-	✓	✓	✓	-		
KW Win33 Driver	-	-	-	-	-	-	-	-	-	-	-	-		

\*Note: SS=Single DMA channel, Single A/D channel scan  
SM=Single DMA channel, Multiple A/D channel scan

# Digital I/O & Counter Cards

Category		Non-Isolated DI/O									
Bus		PCI						ISA			
Model Name		PCI-1735U	PCI-1737U	PCI-1739U	PCI-1751	PCI-1753/1753E	PCI-1755	PCI-1757UP	PCL-720+	PCL-722	
TTL DI/O	Input Channels	32	-	-	-	-	-	-	32	-	
	Output Channels	32	24	48	48	96	32	24	32	144	
	Output Channel	Sink Current	0.5 V @ 24 mA	0.5 V @ 24 mA	0.5V @ 24 mA	24 mA @ 0.4 V	24 mA @ 0.44 V	48 mA @ 0.5 V	0.5 V @ 24 mA	24 mA @ 0.5 V	24 mA @ 0.5 V
		Source Current	2.0 V @ 15 mA	2.0 V @ 15mA	2.0 V @ 15 mA	15 mA @ 2.4 V	24 mA @ 3.76 V	15 mA @ 2.4 V	2.0 V @ 15 mA	3 mA @ 2.4 V	15 mA @ 2.4 V
Isolated DI/O	Input	Channels	-	-	-	-	-	-	-	-	
		Isolation Voltage	-	-	-	-	-	-	-	-	
		Input Range	-	-	-	-	-	-	-	-	
	Output	Channels	-	-	-	-	-	-	-	-	
		Isolation Voltage	-	-	-	-	-	-	-	-	
		Output Range	-	-	-	-	-	-	-	-	
Timer/Counter	Channels	3	-	-	3	-	3	-	3	-	
	Resolution	16 bits	-	-	16-bit	-	16-bit	-	16-bit	-	
	Time Base	10 MHz	-	-	10 MHz	-	10 MHz	-	1 MHz	-	
Advanced Function	Pattern Match	-	-	-	-	✓	✓	-	-	-	
	Change of State	-	-	-	-	✓	✓	-	-	-	
	BoardID Switch	✓	✓	✓	✓	✓	✓	✓	-	-	
	Channel-Freeze Function	-	-	-	-	-	✓	-	-	-	
	Output Status Read Back	✓	✓	✓	✓	✓	-	✓	-	-	
Dry/Wet Contact	-	-	-	✓	✓	-	✓	-	-		
Dimensions (mm)	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	120 x 65	185 x 100	334 x 100		
Connectors	5 x 20-pin	1 x 50-pin	2 x 50-pin	68-pin SCSI-II	100-pin SCSI-II	100-pin SCSI-II	1 x DB-25	5 X 20-pin	6 x 50-pin		
Windows 98/2000/XP DLL Driver	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Windows 98/2000/XP Test Utility	✓	✓	✓	✓	✓	✓	✓	✓	✓		
VC++, VB & delphi Examples	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Advantech ActiveDAQ/ActiveDAQ Pro	✓	✓	✓	✓	✓	-	✓	✓	✓		
Labview I/O Drivers (Ver. 6i and 7.0)	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Mathworks MATLAB & Simulink Data Acquisition Tool Box 2.5.1	-	-	-	✓	✓	-	-	✓	✓		
KW Win33 Driver	-	-	-	-	-	-	-	-	-		

\* Dry/wet contact can be mixed at the same time within one group.

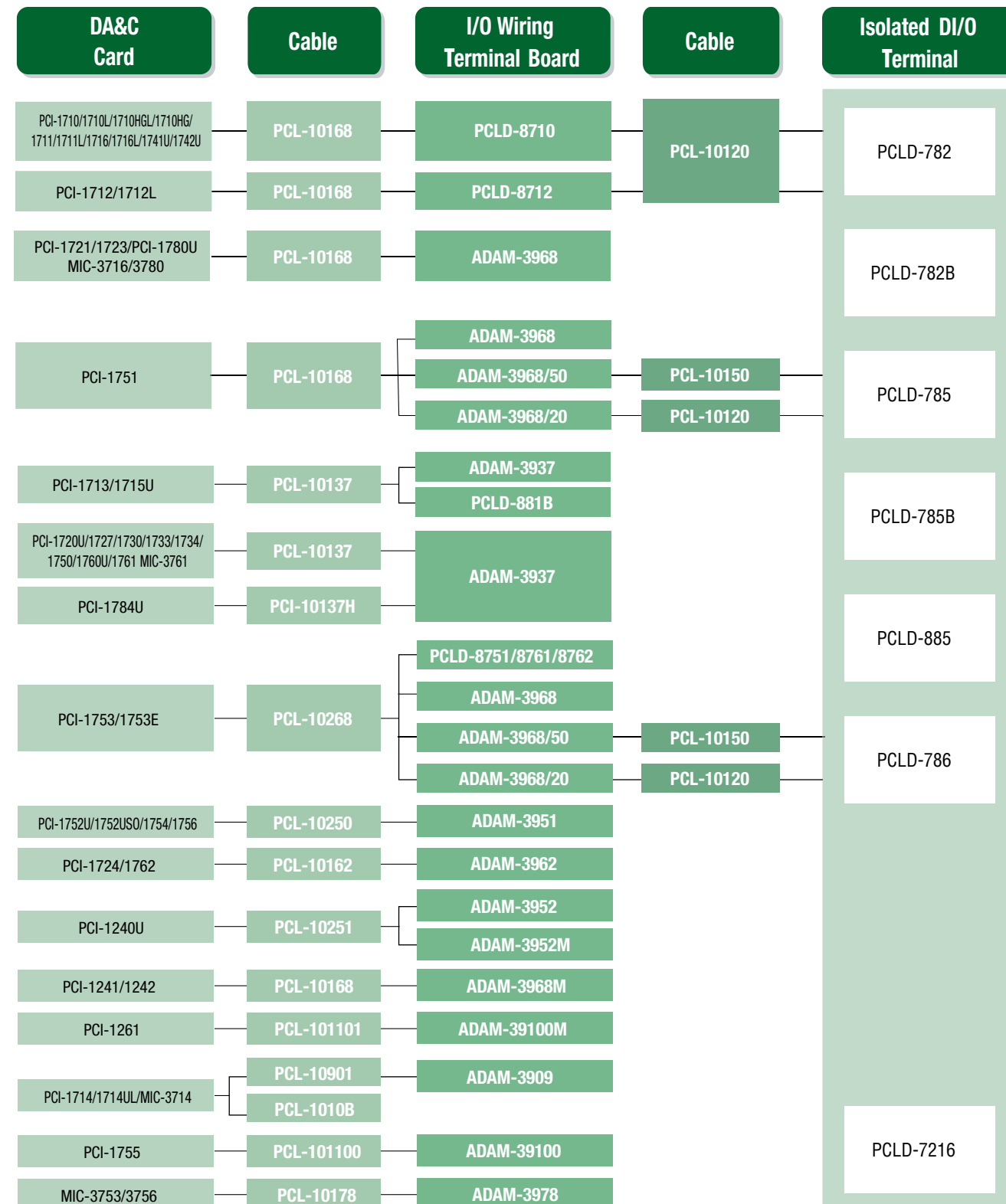
# Digital I/O & Counter Cards

Category		Non-Isolated DI/O			Isolated DI/O									
Bus		ISA		PC/104	PCI									
Model Name		PCL-724	PCL-731	PCM-3724	PCI-1730	PCI-1733	PCI-1734	PCI-1750	PCI-1752U	PCI-1754	PCI-1756	PCI-1758UDI	PCI-1758UDO	
TTL DI/O	Input Channels				16	-	-	-	-	-	-	-	-	
	Output Channels	24	48	48	16	-	-	-	-	-	-	-	-	
	Output Channel	Sink Current	24 mA @ 0.4 V	24 mA @ 0.4 V	0.5 V @ 24 mA	8 mA @ 0.5 V	-	-	-	-	-	-	-	
		Source Current	15 mA @ 2.4 V	15 mA @ 2.4 V	2.0 V @ 15 mA	0.4 mA @ 2.4 V	-	-	-	-	-	-	-	
Isolated DI/O	Input	Channels	-	-	-	16 (Sink)	32 (Sink)	-	16 (Sink)	-	64 (Sink)	32 (Sink)	128	-
		Isolation Voltage	-	-	-	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	-	2,500 V <sub>DC</sub>	-	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2500 VRMS	-
		Input Range	-	-	-	5 ~ 30 V <sub>DC</sub>	5 ~ 30 V <sub>DC</sub>	-	5 ~ 50 V <sub>DC</sub>	-	10 ~ 50 V <sub>DC</sub>	10 ~ 50 V <sub>DC</sub>	5 ~ 25 V <sub>DC</sub>	-
	Output	Channels	-	-	-	16 (Sink)	-	32 (Sink)	16 (Sink)	64 (Sink)	-	32 (Sink)	-	128
		Isolation Voltage	-	-	-	2,500 V <sub>DC</sub>	-	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	-	2,500 V <sub>DC</sub>	-	2500 VRMS
		Output Range	-	-	-	5 ~ 40 V <sub>DC</sub>	-	5 ~ 40 V <sub>DC</sub>	5 ~ 40 V <sub>DC</sub>	5 ~ 40 V <sub>DC</sub>	-	5 ~ 40 V <sub>DC</sub>	-	5 ~ 40 V <sub>DC</sub>
		Max. Sink Current	-	-	-	200 mA	-	200 mA	200 mA	200 mA	-	200 mA	-	90 mA
	Timer/Counter	Channels	-	-	-	-	-	-	1	-	-	-	-	-
		Resolution	-	-	-	-	-	-	16-bit	-	-	-	-	-
		Time Base	-	-	-	-	-	-	1 MHz	-	-	-	-	-
Advanced Function	Pattern Match	-	-	-	-	-	-	-	-	-	-	-	-	
	Change of State	-	-	-	-	-	-	-	-	-	-	-	-	
	BoardID Switch	-	-	-	✓	✓	✓	-	✓	✓	✓	✓	✓	
	Channel-Freeze Function	-	-	-	✓	-	-	-	✓	-	✓	-	-	
	Output Status Read Back	-	-	-	✓	-	✓	-	✓	-	✓	-	✓	
	Dry/Wet Contact	-	-	-	✓	✓	-	✓	-	-	-	-	-	
Dimensions (mm)	125 x 100	185 x 100	96 x 90	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	
Connectors	1 x 50-pin	2 x 50-pin	2 x 50-pin	1 x DB-37 4 x 20-pin	1 x DB-37	1 x DB-37	1 x DB-37	100-pin SCSI-II	100-pin SCSI-II	100-pin SCSI-II	dual 100-pin mini-SCSI	dual 100-pin mini-SCSI		
Windows 98/2000/XP DLL Driver	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Windows 98/2000/XP Test Utility	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
VC++, VB & delphi Examples	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Advantech ActiveDAQ/ActiveDAQ Pro	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Labview I/O Drivers (Ver. 6i and 7.0)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Mathworks MATLAB & Simulink Data Acquisition Tool Box 2.5.1	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	-	✓		
KW Win32 Driver	-	-	-	✓	✓	✓	-	✓	✓	✓	✓	✓		

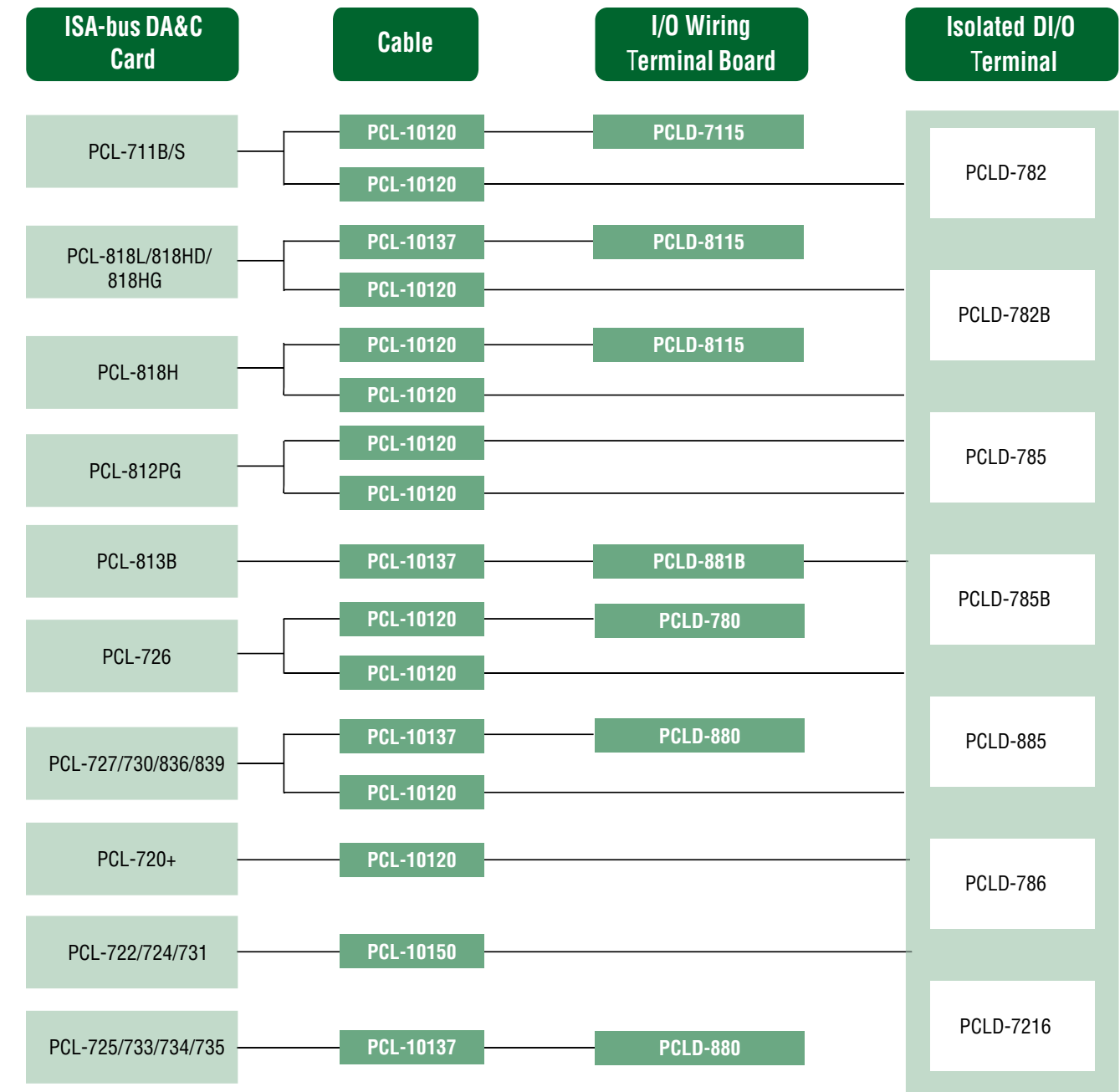
Isolated DI/O													Counter		
PCI				ISA					PC/104		PCI	ISA	PC/104		
PCI-1758UDIO	PCI-1760U	PCI-1761	PCI-1762	PCL-725	PCL-730	PCL-733	PCL-734	PCL-735	PCM-3725	PCM-3730	PCI-1780U	PCL-836	PCM-3780		
-	-	-	-	-	16	-	-	-	8	16	8	16	24		
-	-	-	-	-	16	-	-	-	8	16	8	16	-		
-	-	-	-	-	8 mA @ 0.5 V	-	-	-	-	0.5 V @ 8 mA	24 mA @ 0.5 V	8 mA @ 0.5 V	24 mA @ 0.5 V		
-	-	-	-	-	0.4 mA @ 2.4 V	-	-	-	-	-0.4 mA @ 2.4 V	15 mA @ 2.4 V	0.4 mA @ 2.4 V	15 mA @ 2.0 V		
64	8 (Sink)	8 (Sink)	8 (Sink)	8 (Sink)	16 (Sink)	32 (Sink)	-	-	8	8	-	-	-		
2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	1,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	-	-	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	-	-	-		
5 ~ 25 V <sub>DC</sub>	5 ~ 12 V <sub>DC</sub>	10 ~ 50 V <sub>DC</sub>	10 ~ 50 V <sub>DC</sub>	5 ~ 24 V <sub>DC</sub>	5 ~ 24 V <sub>DC</sub>	5 ~ 24 V <sub>DC</sub>	-	-	10 ~ 50 V <sub>DC</sub>	5 ~ 24 V <sub>DC</sub>	-	-	-		
64	8 x Form C	4 x Form A 4 x Form C	16 x Form C	4 x Form A 4 x Form C	16 (Sink)	-	32 (Sink)	12 x Form C	8 x Form C	8	-	-	-		
2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	1,000 V <sub>DC</sub>	1,000 V <sub>DC</sub>	-	1,000 V <sub>DC</sub>	1,000 V <sub>DC</sub>	2,000 V <sub>DC</sub>	2,500 V <sub>DC</sub>	-	-	-		
5 ~ 40 V <sub>DC</sub>	120 V <sub>AC</sub> @ 0.5 A 30 V <sub>DC</sub> @ 1 A	250 V <sub>AC</sub> @ 3 A 24 V <sub>DC</sub> @ 3 A	120 V <sub>AC</sub> @ 0.5 A 30 V <sub>DC</sub> @ 1 A	120 V <sub>AC</sub> @ 0.5 A 30 V <sub>DC</sub> @ 1 A	5 ~ 40 V <sub>DC</sub>	-	5 ~ 40 V <sub>DC</sub>	0.6 A @ 100 V <sub>DC</sub> 0.6 A @ 125 V <sub>DC</sub>	240 V <sub>AC</sub> @ 0.25 A 30 V <sub>DC</sub> @ 1 A	5 ~ 40 V <sub>DC</sub>	-	-	-		
90 mA	Up CTR for DI 2 X PWM	-	-	-	-	-	-	-	-	-	8 x CTR	6 x CTR 3 x PWM	2		
-	16-bit (2,500 Isolation)	-	-	-	-	-	-	-	-	-	16-bit	16-bit	16 bits		
-	500 Hz for Up CTR	-	-	-	-	-	-	-	-	-	20 MHz	10 MHz	20 MHz		
-	✓	-	-	-	-	-	-	-	-	-	-	-	-		
-	✓	-	-	-	-	-	-	-	-	-	-	-	-		
✓	✓	✓	✓	-	-	-	-	-	-	-	✓	-	-		
-	-	-	✓	-	-	-	-	-	-	-	-	-	-		
✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
175 x 100	175 x 100	175 x 100	175 x 100	147 x 95	185 x 100	185 x 100	185 x 100	155 x 100	96 x 90	96 x 90	175 x 100	185 x 100	96 x 90		
dual 100-pin mini-SCSI	1 X DB-37	1 X DB-37	1 x DB-62	1 x DB-37	1 x DB-37 4 x 20-pin	1 x DB-37	1 x DB-37	1 x DB-37	1 x 20-pin 1 x 50-pin	3 x 20-pin	68-pin SCSI-II	1 x DB-37 2 x 20-pin	1 x 50-pin 1 x 20-pin		
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-		
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
-	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	✓	-		
✓	-	✓	✓	-	-	-	-	-	-	-	-	-	-		

# Terminal Board

Recommended Cables, I/O Wiring Terminal Boards and Isolated DI/O Terminals for Connecting to PCI-bus/CompactPCI DA&C Cards



Recommended Cables, I/O Wiring Terminal Boards and Isolated DI/O Terminals for Connecting to ISA-bus DA&C Cards



# Industrial USB I/O Modules

Category		Multifunction		Analog Input	
Bus		USB	USB	USB	
Model Name		USB-4711A	USB-4716	USB-4718	
Analog Input	General Spec.	Resolution	12 bits	16 bits	16 bits
		Channels	16 S.E./8 Diff.	16 S.E./8 Diff.	8 Diff.
		Onboard FIFO	1024 samples	1024 samples	-
		Sampling Rate	150 kS/s	200 kS/s	10 S/s
		Auto Channel Scanning	v	v	-
	Input Ranges	Unipolar Inputs (V)	-	-	J,K,T,E,R,S,B types
		Bipolar Inputs (V)	±10, 5, 2.5, 1.25, 0.625 V	±10, 5, 2.5, 1.25, 0.625 V 0 ~ 10 V, 0 ~ 5 V, 0 ~ 2.5 V, 0 ~ 1.25 V	-
		Configurable Per-Channel	v	v	v
	Trigger Mode	Pacer/Software/External Pulse	v	v	Software
	Data Transfer Mode	Software	v	v	v
	DMA	-	-	-	
Analog Output	Resolution	12 bits	16 bits	-	
	Channels	2	2	-	
	Output Range (V)	0 ~ 5, 0 ~ 10, ±5, ±10	0 ~ 5, 0 ~ 10, ±5, ±10	-	
	Throughput	Static update	Static update	-	
Digital I/O	Input Channels	8	8	8 (Isolated)	
	Output Channels	8	8	8 (Isolated)	
Timer/Counter	Channels	1	1	-	
	Resolution	32 bits	32 bits	-	
	Time Base	1 kHz	1 kHz	-	
Isolation Voltage		-	-	2,500 V <sub>DC</sub>	
Auto Calibration		v	v	v	
BoardID Switch		Software	Software	Software	
Dimensions (mm)		132 x 80 x 32	132 x 80 x 32	132 x 80 x 32	
Connector		Onboard screw terminal	Onboard screw terminal	Onboard screw terminal	
Windows 2000/XP DLL Driver & Windows CE 5.0 Driver		v	v	v	
Windows 2000/XP Test Utility		v	v	v	
VC++, VB & Delphi Examples		v	v	v	
Advantech ActiveDAQ/ActiveDAQ Pro		v	v	v	
Labview I/O Drivers (Ver. 6i and 7.0)		v	v	v	
Mathworks Matlab & Simulink Data Acquisition Tool Box x 2.5.1		-	-	-	
KW Win32 Driver		v	v	v	

Category		Non-Isolated DI/O		Isolated DI/O		
Bus		USB	USB	USB	USB	
Model Name		USB-4751	USB-4751L	USB-4750	USB-4761	
TTL DI/O	Input Channels	48	24	-	-	
	Output Channels			-	-	
	Output Channel	Sink Current	0.4 V @ 8 mA	0.4 V @ 8 mA	-	-
		Source Current	2.4 V @ 4 mA	2.4 V @ 4 mA	-	-
Isolated DI/O	Input	Channels	-	-	16	8
		Isolation Voltage	-	-	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>
		Input Range	-	-	5 ~ 50 V <sub>DC</sub>	5 ~ 30 V <sub>DC</sub>
	Output	Channels	-	-	16	8 x Form C
		Isolation Voltage	-	-	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>
		Output Range	-	-	5 ~ 40 V <sub>DC</sub>	-
Timer/Counter	Output Status Read Back	Max. Sink Current	-	-	100 mA max. per channel	30 VDC @ 1A, 240 VAX @ 0.25 A
		Channels	2	2	2	-
		Resolution	32 bits	32 bits	32 bits	-
		Time Base	10 MHz	10 MHz	1 MHz	-
Advanced Function	Output Status Read Back	v	v	v	v	
Dimensions		132 x 80 x 32	132 x 80 x 32	132 x 80 x 32	132 x 80 x 32	
Connectors		2 x opto-22 compatible box header	1 x opto-22 compatible box header	Onboard screw terminal	Onboard screw terminal	
Windows 2000/XP DLL Driver & WinCE 5.0 Driver		v	v	v	v	
Windows 2000/XP Test Utility		v	v	v	v	
VC++, VB & Delphi Examples		v	v	v	v	
Advantech ActiveDAQ/ActiveDAQ Pro		v	v	v	v	
Labview I/O Drivers (Ver. 6 AND 7.0)		v	v	v	v	
Mathworks Matlab & Simulink Data Acquisition Tool Box x 2.5.1		-	-	-	-	
KW Win32 Driver		-	-	-	-	

# ADAM-5500 Series Controller

System	ADAM-5510M ADAM-5510E	ADAM-5510/TCP ADAM-5510E/TCP	ADAM-5510KW ADAM-5510EKW	ADAM-5510KW/TCP ADAM-5510EKW/TP	ADAM-5550KW ADAM-5550CE
CPU	80188				AMD Geode GX533 (GX2)
RAM	640 KB			768KB	128 MB DDR SDRAM
Flash ROM	256 KB				-
Flash Memory	256 KB	256 KB	768 KB	768 KB	-
Flash Disk	1 MB	1 MB	512 KB	512 KB	-
OS	ROM-DOS				WinCE 5.0
Real-time Clock	Yes				
Watchdog Timer	Yes				
COM1	RS-232 (ADAM-5510M) RS-232/485 (ADAM-5510E)	RS-232 (ADAM-5510/TCP) RS-232/RS-485 (ADAM-5510E/TCP)	RS-232 (ADAM-5550KW) RS-232/485 (ADAM-5510EKW)	RS-232/485	RS-232/485
COM2	RS-485				
COM3 (Programming)	RS-232 (TX, RX, GND)	RS-232 (TX, RX, GND)	RS-232 (TX, RX, GND)	RS-232 (TX, RX, GND)	RS-232
COM4	RS-232/485				
I/O Slots	4/8				8
Power Consumption	4 W				12 W
Isolation					
Communication	2500V <sub>DC</sub> (COM2 RS-485)				2500V <sub>DC</sub> (COM2 RS-485) 1000V <sub>DC</sub> (COM4 RS-485)
Communication Power	3000 V <sub>DC</sub>				
I/O Module	3000 V <sub>DC</sub>				
Diagnosis					
Status Display	Power, CPU, Communication, Battery				Power, User define
Self Test	Yes, while ON				
Software Diagnosis	Yes				
Communication					
Network	RS-232/485	Ethernet (RJ-45)	RS-232/485	Ethernet (RJ-45)	Ethernet (2 x RJ-45)
Speeds	1200 bps ~ 115.2 kbps	10/100 Mbps	9600, 38400, 57600 bps and 115.2 kbps	10/100 Mbps	10/100 Mbps
Max. Distance	4000 feet (1.2 km)	150 m	4000 feet (1.2 km)	150 m	150 m
Data Format	N, 8, 1, 1	-	N, 8, 1, 1	-	-
Max. Nodes	32	256 for Ethernet, 32 for RS-485	32	32	-
Protocol	User Defined Modbus/RTU	User Defined Modbus/RTU Modbus/TCP	Modbus/RTU	Modbus/RTU, Modbus/TCP	Modbus/RTU, Modbus/TCP
Remote I/O	Modbus Device				
Power Requirements	+10 ~ +30 V <sub>DC</sub>				
Environment					
Operating Temperature	-10 ~ 70° C (14 ~ 158° F)				0 ~ 55° C (32 ~ 131° F)
Storage Temperature	-25 ~ 85° C (-13 ~ 185° F)				
Humidity	5 ~ 95%				

System	ADAM-5000/485	ADAM-5000E	ADAM-5000L/TCP	ADAM-5000/TCP
CPU	80188	80188	RISC CPU	
RAM	-	-	4 MB	
Flash ROM (User AP)	-	-	512 KB	
Flash Memory (Data Storage)	-	-	-	
Flash Disk	-	-	-	
OS	-	-	real-time OS	
Timer BIOS	-	-	-	
Real-time Clock	-	-	-	
Watchdog Timer	Yes			
COM1/COM2	RS-485	RS-485	RS-485 (Modbus)	
COM3 (Programming)	TX, RX, GND			
I/O Slots	4	8	4	8
Power Consumption	3 W		4.0 W	5.0 W
Isolation				
Communication	2500 V <sub>DC</sub>	3000 V <sub>DC</sub>	RS-485: 1500 V <sub>DC</sub> Ethernet: 3000 V <sub>DC</sub>	
Communication Power	3000 V <sub>DC</sub>			
I/O Module	3000 V <sub>DC</sub>			
Diagnosis				
Status Display	Power, CPU, Communication		Power, CPU, Error Diagnostic, Communication	
Self Test	Yes, while ON			
Software Diagnosis	Yes			
Communication				
Interface	RS-232/485 (2-wire)	RS-232/485 (2-wire)	Ethernet	
Speeds (bps)	1200, 2400, 4800, 9600, 192 K, 38.4 K, 57.6 K, 115.2 K	1200, 2400, 4800, 9600, 19.2 K, 38.4 K, 57.6 K, 115.2 K	10 M, 100 M	
Max. Distance	4000 feet (1.2 km)	4000 feet (1.2 km)	100 m without repeater	
Data Format	Advantech protocol: N,8,1 Modbus protocol: N,8,1 N,8,2 E,8,1 O,8,1	Advantech protocol: N,8,1 Modbus protocol: N,8,1 N,8,2 E,8,1	TCP/IP	
Max. Nodes	128	128	Depend on IP address	
Protocols	ADAM ASCII/Modbus Protocol	ADAM ASCII/Modbus Protocol	Modbus/TCP	
Remote I/O	-	-	20 nodes Modbus devices	
Power Requirements	+10 ~ +30 V <sub>DC</sub>			
Environment				
Operating Temperature	-10 ~ 70° C (14 ~ 158° F)			
Storage Temperature	-25 ~ 85° C (-13 ~ 185° F)			
Humidity	5 ~ 95%			

# ADAM-5000 I/O Module

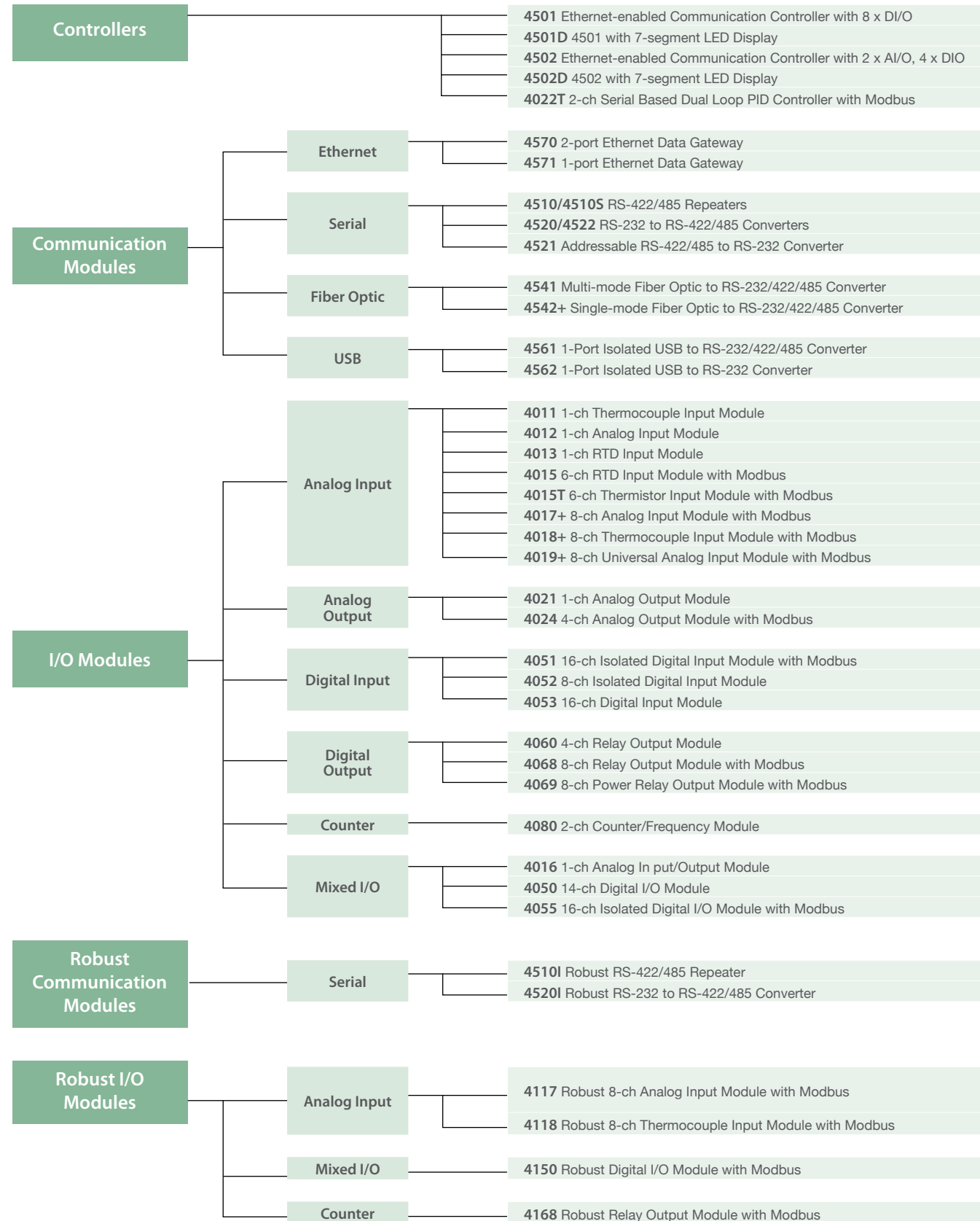
Module		ADAM-5013	ADAM-5017	ADAM-5017P	ADAM-5017UH	ADAM-5018	ADAM-5018P	ADAM-5024	ADAM-5050	ADAM-5051/ ADAM-5051D/ ADAM-5051S	ADAM-5052	ADAM-5053S	
Analog Input	Resolution	16 bit	16 bit	16 bit	12 bit	16 bit	16 bit	-	-	-	-	-	
	Input Channel	3	8	8	8	7	7	-	-	-	-	-	
	Sampling Rate	10	10	10	200K	10	10	-	-	-	-	-	
	Voltage Input	-	±150 mV ±500 mV ±1 V ±5 V ±10 V	±150 mV ±500 mV ±1 V ±5 V ±10 V 0 ~ 150mV 0 ~ 1V 0 ~ 5V 0 ~ 10V 0 ~ 15V	±150 mV ±500 mV ±1 V ±5 V ±10 V 0 ~ 10 V	±15 mV ±50 mV ±100 mV ±500 mV ±1 V ±2.5 V	±15 mV ±50 mV ±100 mV ±500 mV ±1 V ±2.5 V	-	-	-	-	-	-
	Current Input	-	±20 mA	±20 mA, 4 ~ 20mA	0 ~ 20 mA 4 ~ 20 mA	±20 mA	4 ~ 20 mA	-	-	-	-	-	-
	Direct Sensor Input	Pt or Ni RTD	-	-	-	J, K, T, E, R, S, B	J, K, T, E, R, S, B	-	-	-	-	-	-
	Isolation	3000 Vdc	3000 Vdc	3000 Vdc	3000 Vdc	3000 Vdc	3000 Vdc	3000 Vdc	-	2500 Vdc (5051S)	5000 VRMS	2500 Vdc	
Analog Output	Resolution	-	-	-	-	-	-	12 bit	-	-	-	-	
	Voltage Output	-	-	-	-	-	-	0~10 V	-	-	-	-	
	Current Output	-	-	-	-	-	-	0~20 mA 4~20 mA	-	-	-	-	
Digital Input and Digital Output	Digital Input Channels	-	-	-	-	-	-	-	16 DIO (bit-wise selectable)	16 16w/LED (5051D/5051S)	-	32	
	Digital Output Channels	-	-	-	-	-	-	-	-	-	8	-	
Counter (32-bit)	Channels	-	-	-	-	-	-	-	-	-	-	-	
	Input Frequency	-	-	-	-	-	-	-	-	-	-	-	
	Mode	-	-	-	-	-	-	-	-	-	-	-	
COMM	Channels	-	-	-	-	-	-	-	-	-	-	-	
	Type	-	-	-	-	-	-	-	-	-	-	-	

Module		ADAM-5055S	ADAM-5056/ ADAM-5056D	ADAM-5056S/ ADAM-5056SO	ADAM-5057S	ADAM-5060	ADAM-5068	ADAM-5069	ADAM-5080	ADAM-5081	ADAM-5090/ ADAM-5091
Digital Input and Digital Output	Digital Input Channels	8 w/LED	-	-	-	-	-	-	-	-	-
	Digital Output Channels	8 w/LED	16 16 w/LED (5056D)	16 w/LED	32	6 relay (2 form A/ 4 form C)	8 relay (8 form A)	8 power relay (form A)	-	-	-
Counter (32-bit)	Channels	-	-	-	-	-	-	-	4	8	-
	Input Frequency	-	-	-	-	-	-	-	5000 Hz (max)	5 Hz ~ 1 MHz max. (frequency mode) 1 MHz max. (counter mode)	-
	Mode	-	-	-	-	-	-	-	Frequency, Up/Down Counter, Bi-direction Counter	Frequency, up/down, Bi- direction, up, A/B Phase, Counter	-
COMM	Channels	-	-	-	-	-	-	-	-	-	4
	Type	-	-	-	-	-	-	-	-	-	RS-232
Isolation	2500 Vdc	-	2500 Vdc	2500 Vdc	-	-	4000 VRMS	1000 VRMS	2500Vdc	-	-

Model		ADAM-5202	ADAM-5240	ADAM-5030
Axes	Number of Axes	-	4	-
	Linear Interpolation	-	v	-
	2-Axis Circle Interpolation	-	v	-
Advanced Functions	Encoder Channels	-	4	-
	Limit switch Input Channel	-	8	-
	Home Input Channel	-	4	-
	Emergency stop Input Channel	-	1	-
	Slow Down Limit Switch	-	8	-
	General Purpose DI Channel	-	-	-
	Servo On Output Channel	-	4	-
	General Purpose DO Channel	-	4	-
	Position Compare Event	-	V	-
	Remote Motion	V	-	-
Remote I/O	V	-	-	
Board ID	-	-	-	
Connectors	2 x RJ-45,	100-PinSCSI-II	-	
Wiring Board	AMAX-3752F, AMAX-3754F, AMAX-3756F,	ADAM-3952, ADAM-3952J2S	-	
Remote Motion Wiring Board	AMAX-3210, AMAX-3211/PMA, AMAX-3212/J2S, AMAX-3213/YS2	-	-	
Storage	Type	-	-	SD (Secure Digital Card)
	Channel	-	-	2
	Size	-	-	2 GB (Max)
USB	Type	-	-	V2.0 (compliant)
	Channel	-	-	2
Supported Controller	ADAM-5550KW			

# RS-485 I/O Modules: ADAM - 4000

## Module Selection Chart



# Communication and Controller Module

Module	Controllers			Repeaters	Converters & Data Gateways				
	ADAM-4501 ADAM-4501D	ADAM-4502 ADAM-4502D	ADAM-4022T	ADAM-4510 ADAM-4510S	ADAM-4520 ADAM-4522	ADAM-4521	ADAM-4541 ADAM-4542+	ADAM-4561 ADAM-4562	ADAM-4570 ADAM-4571
<b>Network</b>	Ethernet, RS-232, RS-485		RS-485	RS-422 RS-485	RS-232 to RS-422/485		Fiber Optic to RS-232/422/485	USB to RS-232/485/422	Ethernet to RS-232/422/485
<b>Comm. Protocol</b>	Modbus/RTU, Modbus/TCP TCP/IP, UDP, ICMP, ARP, DHCP			ASCII Command/ Modbus	-				
<b>Comm. Speed (bps)</b>	Ethernet: 10/100M Serial: From 1200 to 115.2 kbps		Serial: From 1200 to 115.2 k						Ethernet: 10/100 M Serial: up to 230.4 k
<b>Comm. Distance</b>	Ethernet: 100 m Serial: 1.2 Km		Serial: 1.2 km	Serial: 1.2 km	Serial: 1.2 km	Serial: 1.2 km	ADAM-4541: 2.5 km ADAM-4542: 15 km	Serial: 1.2 km	LAN: 100 m Serial: 1.2 km
<b>Interface Connectors</b>	Ethernet: RJ-45 RS-485: plug-in screw terminal RS-232: RJ-48		RS-485: plug-in screw terminal	RS-422/485: plug-in screw terminal	RS-232: female DB9 RS-422/485: plug-in screw terminal	RS-232: female DB9 RS-422/485: plug-in screw terminal	RS-232/422/485: plug-in screw terminal Fiber: ADAM-4541: ST connector ADAM-4542: SC connector	USB: type A client connector Serial: ADAM-4561: plug-in screw terminal (RS-232/422/485) ADAM-4562: DB9 (RS-232)	Ethernet: RJ-45 RS-232/422/485: RJ-48
<b>LED Indicators</b>	Communication & Power		Power	Communication & Power					Network: Tx/ Rx Link, Speed, Power
<b>Data Flow Control</b>	Yes		Yes	-	-	Yes	-	Yes	Yes
<b>Watchdog Timer</b>	Yes		Yes	-	-	Yes	-	Yes	Yes
<b>Isolation Voltage</b>	-	1000 V <sub>DC</sub>	3000 V <sub>DC</sub>	3000 V <sub>DC</sub> (ADAM-4510S)	3000 V <sub>DC</sub> (ADAM-4520)	1000 V <sub>DC</sub>	-	ADAM-4561: 3000 V <sub>DC</sub> ADAM-4562: 2500 V <sub>DC</sub>	-
<b>Special Features</b>	Email function Built-in HTTP and FTP Server		PID Control	-	-	-	-	-	-
<b>Built-in I/O</b>	4DI/4DO	1AI/1AO/2DI/2DO	-	-	-	-	-	-	-
<b>Power Requirement</b>	+10 ~ +30 V <sub>DC</sub>								
<b>Operating Temperature</b>	-10 ~ 70° C		-10 ~ 50° C	-10 ~ 70° C					0 ~ 60° C
<b>Humidity</b>	5 ~ 95% RH								20 ~ 95% RH
<b>Power Consumption</b>	4 W @ 24 V <sub>DC</sub>			1.4 W @ 24 V <sub>DC</sub>	1.2 W @ 24 V <sub>DC</sub>	1 W @ 24 V <sub>DC</sub>	1.5 W @ 24 V <sub>DC</sub>	ADAM-4561: 1.5 W @ 5 V <sub>DC</sub> ADAM-4562: 1.1 W @ 5 V <sub>DC</sub>	4 W @ 24 V <sub>DC</sub>

# I/O Module

Module	Analog Input								
	ADAM-4011	ADAM-4012	ADAM-4013	ADAM-4015 ADAM-4015T	ADAM-4016	ADAM-4017+	ADAM-4018+	ADAM-4019+	
Resolution	16 bit								
Analog Input	Input Channels	1 differential		6 differential	1 differential	8 differential	8 differential	8 differential	
	Sampling Rate	10 Hz							
	Voltage Input	±15 mV ±50 mV ±100 mV ±500 mV ±1 V ±5 V ±2.5 V	±150 mV ±500 mV ±1 V ±5 V ±10 V	-	-	±15 mV ±50 mV ±100 mV ±5 V ±500 mV	±150 mV ±500 mV ±1 V ±5 V ±10 V	-	± 100 mV ± 500 mV ± 1 V ± 2.5 V ± 5 V ± 10 V
	Current Input	±20 mA	±20 mA	-	-	±20 mA	4 ~ 20 mA ±20 mA	4 ~ 20 mA ±20 mA	4 ~ 20 mA ± 20 mA
	Direct Sensor Input	J, K, T, E, R, S, B Thermocouple	-	RTD	ADAM-4015: RTD ADAM-4015T: Thermistor	-	-	J, K, T, E, R, S, B Thermocouple	J, K, T, E, R, S, B Thermocouple
	Burn-out Detection	Yes	-	-	Yes	-	-	Yes	Yes (4~20 mA & All T/C)
	Channel Independent Configuration	-	-	-	Yes	-	Yes	Yes	Yes
Analog Output	Output Channels	-	-	-	-	1	-	-	
	Voltage Output	-	-	-	-	0 - 10 V	-	-	
	Current Output	-	-	-	-	30 mA	-	-	
Digital Input and Output	Digital Input Channels	1	1	-	-	-	-	-	
	Digital Output Channels	2	2	-	-	4	-	-	
	Alarm Settings	Yes	Yes	-	-	-	-	-	
Counter (32-bit)	Channels	-	-	-	-	-	-	-	
	Input Frequency	-	-	-	-	-	-	-	
Isolation	3000 Vdc								
Digital LED Indicator	-								
Watchdog Timer	Yes (System)	Yes (System)	Yes (System)	Yes (System & Comm.)	Yes (System)	Yes (System & Comm.)	Yes (System & Comm.)	Yes (System & Comm.)	
Safety Setting	-								
Modbus Support *	-	-	-	Yes	-	Yes	Yes	Yes	

\*: All ADAM-4000 I/O Modules support ASCII Commands

Analog Output		Digital Input/Output					Relay Output			Counter
ADAM-4021	ADAM-4024	ADAM-4050	ADAM-4051	ADAM-4052	ADAM-4053	ADAM-4055	ADAM-4060	ADAM-4068	ADAM-4069	ADAM-4080
12 bit	12 bit	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1	4	-	-	-	-	-	-	-	-	-
0 ~ 10 V	±10 V	-	-	-	-	-	-	-	-	-
0 ~ 20 mA 4 ~ 20 mA	0 ~ 20 mA 4 ~ 20 mA	-	-	-	-	-	-	-	-	-
-	4	7	16	8	16	8	-	-	-	-
-	-	8	-	-	-	8	4-ch relay	8-ch relay	8-ch power relay	2
-	Yes	-	-	-	-	-	-	-	-	Yes
-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	50 kHz
3,000 Vdc	3,000 Vdc	-	2,500 Vdc	5,000 VRMS	-	2,500 Vdc	-	-	-	2,500 VRMS
-	-	-	Yes	-	-	Yes	-	-	-	-
Yes (System)	Yes (System & Comm.)	Yes (System)	Yes (System & Comm.)	Yes (System)	Yes (System)	Yes (System & Comm.)	Yes (System)	Yes (System & Comm.)	Yes (System & Comm.)	Yes (System)
-	Yes	-	-	-	-	Yes	Yes	Yes	Yes	-
-	Yes	-	Yes	-	-	Yes	-	Yes	Yes	-

# Robust RS-485 I/O Module

Module	ADAM-4117	ADAM-4118	ADAM-4150	ADAM-4168	
Resolution	16 bit		-	-	
Analog Input	Input Channels	8 differential		-	
	Sampling Rate	10/100 Hz (total)		-	
	Voltage Input	0 ~ 150 mV, 0 ~ 500 mV, 0 ~ 1 V, 0 ~ 5 V, 0 ~ 10 V, 0 ~ 15 V, ±150 mV, ±500 mV, ±1 V, ±5 V, ±10 V, ±15V	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5V	-	-
	Current Input	0 ~ 20 mA, ±20 mA, 4 ~ 20 mA	±20 mA, 4 ~ 20 mA	-	-
	Direct Sensor Input	-	J, K, T, E, R, S, B Thermocouple	-	-
	Burn-out Detection	Yes (mA)	Yes (mA and All T/C)	-	-
Digital Input and Output	Channel Independent Configuration	Yes		-	
	Digital Input Channels	-	-	7	
Counter	Digital Output Channels	-	-	8	
	Channels	-	-	7	
Counter	Input Frequency	-	-	3 kHz	
	Input Frequency	-	-	-	
Isolation Voltage	3000 Vdc				
Digital LED Indicator	Communication and Power				
Watchdog Timer	Yes (System & Communication)				
Safety Setting	-	-	-	Yes	
Communication Protocol	ASCII Command/Modbus				
Power Requirement	10 ~ 48 Vdc				
Operating Temperature	-40 ~ 85° C				
Storage Temperature	-40 ~ 85° C				
Humidity	5 ~ 95% RH				
Power Consumption	1.2 W @ 24 Vdc	0.5 W @ 24 Vdc	0.7 W @ 24 Vdc	1.8 W @ 24 Vdc	

Module	ADAM-4510I	ADAM-4520I
Network	RS-422/485	RS-232 to RS-422/485
Communication Speed (bps)	From 1200 to 115.2k	
Communication Distance	Serial: 1.2 km	
Interface Connectors	RS-422/485: plug-in screw terminal	RS-232: female DB9 RS-422/485: plug-in screw terminal
Digital LED Indicators	Communication and Power	
Auto Data Flow Control	Yes	
Isolation Voltage	3000 Vdc	
Power Requirement	10 ~ 48 Vdc	
Operating Temperature	-40 ~ 85° C	
Storage Temperature	-40 ~ 85° C	
Humidity	5 ~ 95%	
Power Consumption	1.4 W @ 24 Vdc	1.2 W @ 24 Vdc

# Ethernet I/O Modules: ADAM-6000

Module Spec.	ADAM-6015	ADAM-6017	ADAM-6018	ADAM-6022	ADAM-6024	ADAM-6050	ADAM-6051	ADAM-6052	ADAM-6060	ADAM-6066	ADAM-6050W	ADAM-6051W	ADAM-6060W	
Interface	10/100 Mbps Ethernet										802.11b wireless LAN			
Peer-to-Peer*	Yes		No		Receiver Only**		Yes							
GCL*	Yes		No		Receiver Only**		Yes				No			
Resolution	16 bit			16 bit for AI 12 bit for AO		-	-	-	-	-	-	-	-	
Analog Input	Channels	7	8	8	6	6	-	-	-	-	-	-	-	
	Sampling Rate	10 sample/second										-	-	-
	Voltage Input	-	±150 mV ±500 mV ±1 V ±5 V ±10 V	-	±10 V	±10 V	-	-	-	-	-	-	-	-
	Current Input	-	0 ~ 20 mA 4 ~ 20 mA	-	0 ~ 20 mA 4 ~ 20 mA	0 ~ 20 mA 4 ~ 20 mA	-	-	-	-	-	-	-	-
	Direct Sensor Input	Pt, Balco and Ni RTD	-	J.K.T.E.R.S.B. Thermocouple	-	-	-	-	-	-	-	-	-	-
	Burn-out Detection	Yes	-	Yes	-	-	-	-	-	-	-	-	-	-
Math. Functions	Max. Min. Avg.	Max. Min. Avg.	Max. Min. Avg.	-	-	-	-	-	-	-	-	-	-	
Analog Output	Channels	-	-	-	2	2	-	-	-	-	-	-	-	
	Current Output	-	-	-	0 ~ 20 mA, 4 ~ 20 mA with 15 Vdc	0 ~ 20 mA, 4 ~ 20 mA with 15 Vdc	-	-	-	-	-	-	-	
	Voltage Output	-	-	-	0 ~ 10 Vdc with 30 mA	0 ~ 10 Vdc with 30 mA	-	-	-	-	-	-	-	
Digital Input and Output	DI Channels	-	-	-	2	2	12	12	8	6	6	12	12	6
	DO Channels	-	2 (Sink)	8 (Sink)	2 (Sink)	2 (Sink)	6 (Sink)	2 (Sink)	8 (Source)	6-channel relay	6-channel power relay	6 (Sink)	2 (Sink)	6-channel relay
	Extra Counter Channels	-	-	-	-	-	-	2	-	-	-	-	2	-
	Counter Input	-	-	-	-	-	3 kHz	4.5 kHz	3 kHz			4.5 kHz	3 kHz	
	Frequency Input	-	-	-	-	-	3 kHz	4.5 kHz	3 kHz			4.5 kHz	3 kHz	
	Pulse Output	-	-	-	-	-	Yes							
High/Low Alarm Settings	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-	-	
Isolation Protection	2000 Vdc			2000 VDC***		2000 Vdc								
Remark	-	-	-	Built-in Dual Loop PID Control Algorithm	-	-	-	-	-	-	-	-	-	

\* : Peer-to-Peer and GCL cannot run at the same time, only one feature is enabled at one time.

\*\* : ADAD-6024 can only play the receiver and generate analog output when using Peer-to-Peer or GCL.

\*\*\* : Only for analog input and analog output channels.

# Motion Control I/O Modules

## Centralized Motion Control Cards

Bus Category		PCI			ISA		
		Pulse Type		Encoder Card	Pulse Type		Encoder Card
Model		PCI-1240U	PCI-1243U	PCI-1784U	PCL-839+	PCM-3240	PCL-833
Axes	Number of Axes	4	4	-	3	4	-
	Linear Interpolation	✓	-	-	-	✓	-
	2-axis Circle Interpolation	✓	-	-	-	✓	-
	Helical Interpolation	-	-	-	-	-	-
Advanced Functions	Encoder Channels	4	-	4	-	4	3
	Limit Switch Input Channels	8	8	-	6	8	-
	Home Input Channels	4	4	-	3	4	-
	Emergency Stop Input Channels	1	1	-	-	1	-
	Slow Down Limit Switches	8	8	-	6	8	-
	General Purpose DI Channels	-	8	4	16	-	2
	Servo On Output Channels	4	-	-	-	4	-
	General Purpose DO Channels	4	8	4	16	4	-
	BoardID Switch	✓	✓	✓	-	✓	-
	Position Compare Event	✓	-	-	-	-	-
Dimensions (mm)		175 x 100	175 x 100	175 x 100	185 x 100	96 x 90	185 x 100
Connectors		100-pin SCSI-II	DB-62	DB-37	1 x DB-37 2 x 20-pin	2 x 50-pin IDC	1 x DB-25
Wiring Boards		ADAM-3952 ADAM-3952/J2S ADAM-3952/PMA	ADAM-3962 ADAM-3943	ADAM-3937	ADAM-3937 ADAM-3920	ADAM-3950 ADAM-3952 ADAM-3952/PMA ADAM-3952/J2S	ADAM-3925

## AMONet Distributed Motion Control Cards

Bus Category		PCI	PC/104+
		Remote Card	Remote Card
Model		PCI-1202U	PCM-3202P
Advanced Functions	General Purpose DI Channels	8	-
	General Purpose DO Channels	4	-
	Remote Motion	✓	✓
	Remote I/O	✓	✓
Dimensions (mm)		175 x 100	96 x 90
Connectors		2 x RJ45	4 x RJ45
Digital I/O Slave Modules		AMAX-2730 AMAX-2752 AMAX-2754 AMAX-2756	AMAX-2730 AMAX-2752 AMAX-2754 AMAX-2756
Motion Slave Modules		AMAX-2210 AMAX-2211/PMA AMAX-2212/J2S AMAX-2213/YS2 AMAX-2241/PMA AMAX-2242/J2S AMAX-2243/YS2	AMAX-2210 AMAX-2211/PMA AMAX-2212/J2S AMAX-2213/YS2 AMAX-2241/PMA AMAX-2242/J2S AMAX-2243/YS2

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