











AMT Standard PCI Touch Panel Information

Part No.	Touch Panel	T/P Size	Outside Dimension (mm)	Active Area (mm)	PenMount Control Board	Board Size (L x W x H, mm)	Connectors
P3002		3.5"	84.42 x 65.63	72.60 x 53.16	PM1100	30 x 45 x 6.65	Tail : one Interface : RS-232
P3003		4.3"	105.30 x 67.60	96.10 x 54.90			
P3004		5.7"	130.80 x 130.00	116.76 x 87.72	PM1200	40 x 60 x 6.65	Tail : one Interface : USB and RS-232
P3005		6.4"	146.80 x 115.40	133.08 x 99.96			
P3006		7"	166.40 x 108.40	152.40 x 91.44			
P3012		7"	172.60 x 113.44	159.60 x 97.44	PM1201	30 x 80 x 4.10	Tail : two Interface : USB, RS-232 and I ² C / SPI
P3007		8.4"	192.90 x 153.30	172.40 x 129.80	PM1300	40 x 70 x 6.65	Tail : two Interface : USB
P3008		10.4"	228.20 x 180.10	211.03 x 158.42			
P3009		12.1"	268.50 x 210.50	252.00 x 190.50	PM1400	30 x 125 x 4.15	Tail : three Interface : USB, RS-232 and I ² C / SPI
P3013		15"	327.60 x 255.60	310.10 x 234.10			

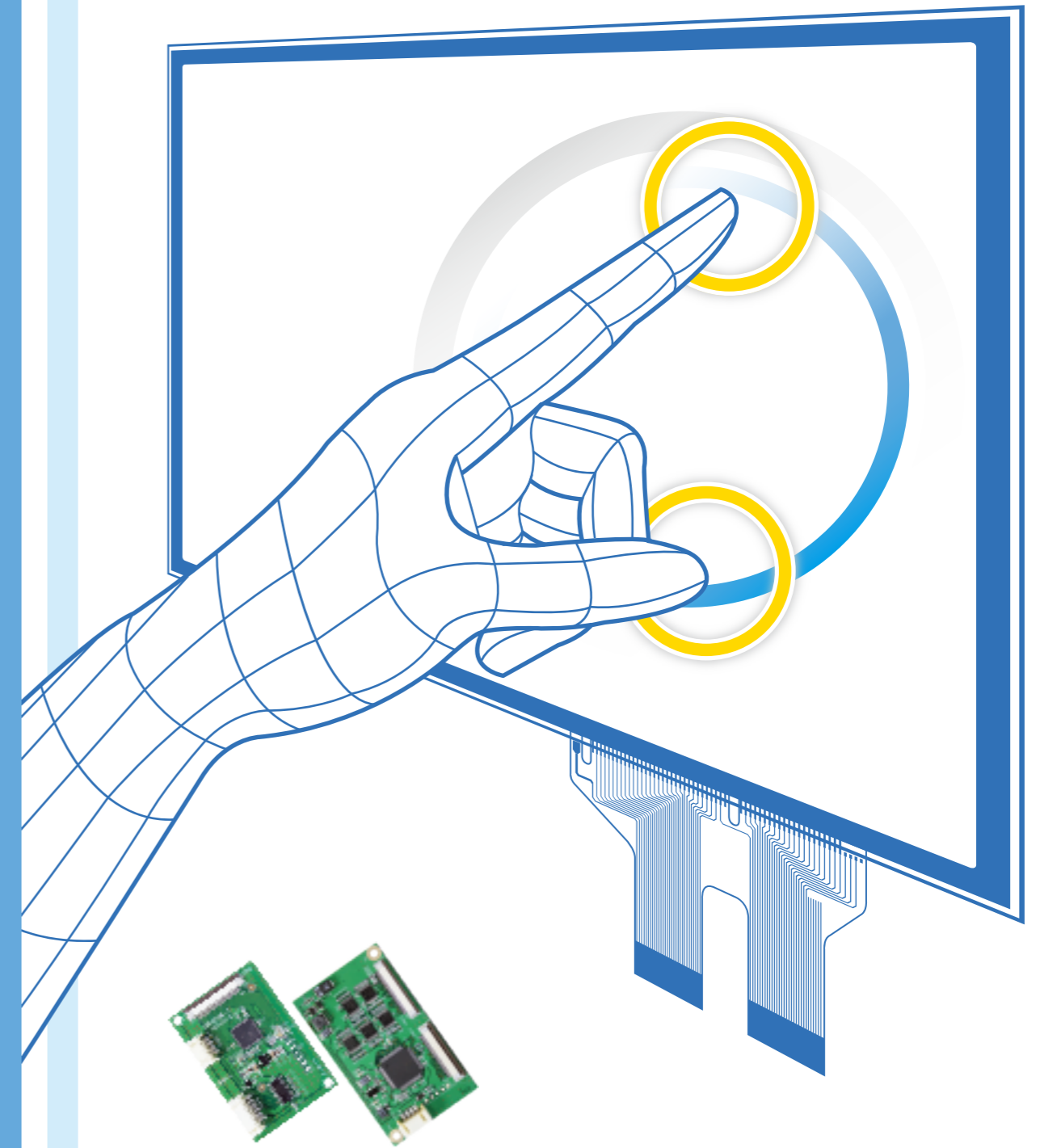
AMT PCI Series Specification

- Sensor Size : 3.5"~15"
- Surface Hardness : > Mohs 5 for clear surface glass
- Cover Lens : Glass, PC or PMMA
- Cover Lens Thickness : 1.1, 1.8, or 2.8 mm (check AMT for details)
- Light Transmission : 87 ± 3%
- Haze : <3%, based on clear surface
- Tail Design : FPC
- Input Media : Finger, and gloved hand
- Measurement Resolution : 1024, based on PenMount P2 controller series
- Response Time : <20ms
- Activation Force : Forceless

Surface Chemical Resistance : for cover glass

- Industrial Chemicals : Acetone, Alcohol, 5% Ammonia, Antifreeze, Coal Oil, Diesel Fuel, Hexane, 6% Hydrochloric Acid, 3% Hydrogen Peroxide, Isopropanol, Methylene Chloride, Methyl Ethyl Ketone (MEK), Mineral Spirit, Motor Oil, 70% Nitric Acid, 10% Sodium Hydroxide, 40% Sulfuric Acid, Toluene, Transmission Fluid, Turpentine, Unleaded Gasoline.
- Household Products : Ammonia-based Glass Cleaner, Black Tea, Cleaner, Coffee, Cola, Cooking Oil, Grease, Laundry Detergents, Salt, Vinegar.

* Above features subject to change without prior notice.



Projected Capacitive Touch Solutions
Touch Panel, Control Board and Drivers

AMT PCI Touch Sensor & PenMount Control Board

Versatile PCI for professional systems

AMT, focusing on its "Total Touch Solution" concept has launched its Projected Capacitive Input (PCI) product line, which features a range of standard touch panels, from 3.5" to 15", to fit many popular LCD sizes. AMT PCI touch panels are designed to mate with a series of PenMount control boards developed to optimize performance and minimize EMI susceptibility. While Projected Capacitive technology has been prevalent in consumer product applications, it is not seen in many Industrial, Medical or other commercial applications. There are many good reasons for not seeing Projected Capacitive technology used in these fields to the extent it is seen in consumer applications such as cell phones. In many cases, the technology that has been available has not been stable enough or in available in the larger sizes required by this market; in other cases, the quantities required are too small to get the support required to solve the integration issues. AMT has changed this with the introduction of the PCI family touch system with its Total Touch Solution approach. AMT is unique in the industry by offering ALL components required for the touch system to properly function. AMT designs and develops the sensor, writes the System level drivers and developed and maintains the PCI controller. AMT's PCI line of touch products offer full support all common gestures in a wide range of operating systems and communication interfaces and provides accurate input for bare fingers and thin gloves and is easily configured with a wide range of passive glass or plastic front lens designs.

There are five series offered at this time and highlighted below.

- S Series** : for screen size from 3" to 4.9", coupled with PenMount PM1100 control board ;
- MS-1 Series** : for screen size from 5" to 7.9", coupled with PenMount PM1200 control board ;
- MS-2 Series** : for screen size from 5" to 7.9", coupled with PM1201 control board ;
- ML Series** : for screen size from 8" to 10.9", coupled with PenMount PM1300 control board ;
- L Series** : for screen size from 11" to 15.9" touch panels, coupled with PM1400 control board.

Because AMT is continually improving and expanding the functionality of its PCI product line, all PenMount PCI controllers are field upgradable via USB or RS232 to allow your product to take advantage of future enhancements.

S Series (3" ~ 4.9")

AMT PCI S Series is for small size PCI touch panels; touch panel sizes from 3" to 4.9" are supported. The PenMount PM1100 control board uses the P2-02 series controller with RS232/I²C interface supported. PenMount PM1100 control boards support single/ dual touch and have a user programmable filter and gain amplifier supported by PenMount API utilities.

S Series (3" ~ 4.9") :

Touch Panel part no : P3002 (3.5") / P3003 (4.3")

PenMount 1100 Control Board :

- For PCI touch panel sizes from 3.0" to 4.9"
- Interface : RS232 and I²C
- Touch Controller : PenMount P2-02
- Power Consumption : Typical 20mA
- Max. touch lines : 13 sensing lines and 16 driving lines
- Sample rate : ≥ 100 per second
- Board size : 30mm (L) X 45mm (W) X 6.65mm (H)
- Tail Connector : one, 30-pins
- Interface Connector : RS-232
- Drivers :
 - Windows 7, Windows Vista, XP, CE
 - Linux : Android, others by request



MS-1 Series (5" ~ 7.9")

MS-1 Series is for the medium small sizes of PCI touch panels, from 5" to 7.9", it is supported by PenMount PM1200 control board which uses P2-03 series controller with USB/RS232 interface.

MS-1 Series (5" ~ 7.9") :

Touch Panel part no : P3004 (5.7"), P3005 (6.5") and P3006 (7")

PenMount 1200 Control Board :

- For PCI touch panel sizes from 5.0" to 7.9"
- Communication Interfaces supported : USB, RS232 and I²C
- Touch Controller : PenMount P2-03
- Power Consumption : Typical 25mA
- Maximum touch line : 15 sensing lines and 24 driving lines
- Sample rate : ≥ 125 per second
- Board size : 40mm (L) X 60mm (W) X 6.65mm (H)
- Tail Connector : one, 40-pins
- Interface Connectors : USB and RS-232
- Drivers :
 - Windows 7, Windows Vista, XP, CE
 - Linux : Android, others by request



MS-2 Series (5" ~ 7.9")

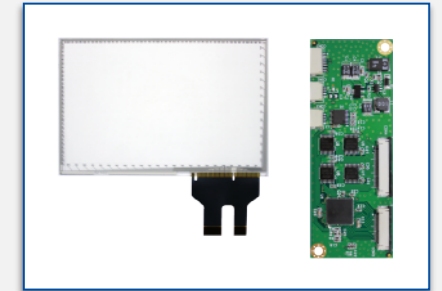
MS-2 Series is also for the medium and small sizes of PCI touch panels. The main difference between the MS-2 and MS-1 series controllers is that MS-2 series has added a voltage charge pump in the control board circuit. The PCI sensor design is also modified, with the tail moved toward the corner. These changes allow for a thicker top cover glass to be used. The MS-2 series features the PenMount 1201 control board, which uses the P2-03 series controller and supports USB, RS232, I²C and SPI communication interfaces, supporting 5" to 7.9" touch panels.

MS-2 Series (5" ~ 7.9") :

Touch Panel part no : P3012 (7")

PenMount 1201 Control Board :

- For PCI touch panel sizes from 5" to 7.9"
- Communication Interfaces supported : USB, RS232, I²C and SPI
- Touch Controller : PenMount P2-03
- Power Consumption : Typical 25mA
- Maximum touch lines : 15 sensing lines, 24 driving lines
- Sample rate : ≥ 125 per second
- Board size : 30mm (L) X 80mm (W) X 4.10mm (H)
- Tail Connectors : two, 20-pins+30-pins
- Interface Connectors : USB, RS-232 and I²C/ SPI
- Drivers :
 - Windows 7, Windows Vista, XP, CE
 - Linux : Android, others by request



ML Series (8" ~ 10.4")

AMT PCI ML Series supports 8.0" to 10.4" touch panels with the PenMount 1300 control board and P2-04 series controller chips, which offers USB and I²C Interface support. PenMount 1300 control board support single and/or dual touch and have a user programmable filter and gain amplifier supported by PenMount API utilities.

ML Series (8" ~ 10.4") :

Touch Panel part no : P3007 (8.4") / P3008 (10.4")

PenMount 1300 Control Board :

- For PCI touch panel sizes from 8" to 10.4"
- Host interface : USB and I²C
- Touch Controller : PenMount P2-04
- Power Consumption : Typical 25mA
- Maximum touch lines : 23 sensing lines and 30 driving lines
- Sample rate : ≥ 125 per second
- Board size : 40mm (L) X 70mm (W) X 6.65mm (H)
- Tail Connectors : two, 40-pins+40-pins
- Interface Connector : USB



- Drivers :
 - Windows 7, Windows Vista, XP, CE
 - Linux : Android, others by request

L Series (10.5" ~ 15")

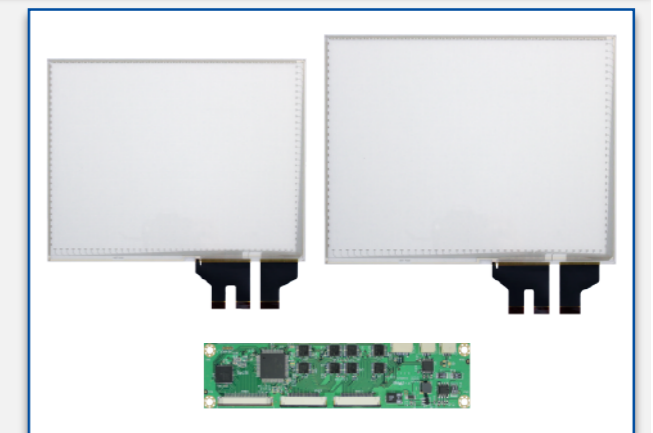
This L series is for the large size touch panels, supported by PenMount PM1400 control board which uses the P2-02 and P2-04 controller. Communications interfaces supported are USB, RS232, SPI and I²C. Touch panel sizes from 10.5" to 15" are supported.

L Series (10.5" ~ 15") :

Touch Panel part no : P3009 (12.1") / P3013 (14.97")

PenMount 1400 Control Board :

- For PCI touch panel sizes from 10.5" ~ 15"
- Communication interfaces supported: USB, RS232, SPI, I²C
- Touch Controller : PenMount P2-02 & P2-04
- Power Consumption : Typical 40mA
- Maximum touch lines : 35 sensing lines and 46 driving lines
- Sample rate : ≥ 100 per second
- Board size : 30mm (L) X 125mm (W) X 4.15mm (H)
- Tail Connectors : three, 30-pins+30-pins+40-pins
- Interface Connectors : USB, RS-232 and I²C/ SPI



- Drivers :
 - Windows 7, Windows Vista, XP, CE
 - Linux : Android, others by request

Environmental specification for PenMount control board :

- Storage Temperature : -40°C ~ +85°C
- Operating Temperature : -20°C ~ +70°C