

1.0 Product

PenMount 1401 control board is one of the cutting-edge innovations from PenMount. A collectively integrated feature with USB / RS232 / UART interface supporting 11.0" to 15.0" projected capacitive touch screens; complemented by the superbly developed PenMount drivers which can be used directly in Windows 8.

PenMount 1401 Control Board uses Microcontroller, which is a capacitive sensing IC designed for AMT Projected Capacitive Input (PCI) touch panel and other projected capacitive touch panel. It is designed for PCI touch screen size up to 15.0". PenMount 1401 Control Board has the programmable filter, gain amplifier; with the functions of single, dual touch; and the gestures of one and two fingers. There are Six connectors on this board: 40Pin & two 30 Pins ZIF connectors for PCI touch screen FPC cable, one USB connector for 4-pin USB cable (optional) , and one RS232 connector for 5-pin RS232 cable (optional) , and one UART connector for 7-pin UART cable (optional).

2.0 Specifications

- 2.1 Controller part no : P2-04x1,P2-02x1
- 2.2 Supporting Projected Capacitive touch panel size:
Projected capacitive type, size is 11.0" to 15.0"
- 2.3 Interface: USB, UART, RS-232
USB: Full-speed, 12Mbps
UART,RS-232 : 38400 baud rate / 8bit data / non parity / one stop bit / non-PnP
- 2.4 ADC resolution: 10bits
- 2.5 Max Touch Line : 46 Driving lines, 35 Sensing line
- 2.6 Sampling rate:>100sps
- 2.7 Operating Voltage: +5V DC
- 2.8 Power Consumption : Typical -- Working Mode : 41.6mA
Idle Mode : 30.4mA
Sleep Mode : 5.3mA
- 2.9 RS specification: IEC61000-4-3 Level 3 , Criteria A (For 1.8mm Top glass)
- 2.10 CS specification: IEC61000-4-6 Level 3 , Criteria A (For 1.8mm Top glass)
- 2.11 Operating temperature: -20°C ~ +70°C
- 2.12 Storage temperature: -40°C ~ +85°C

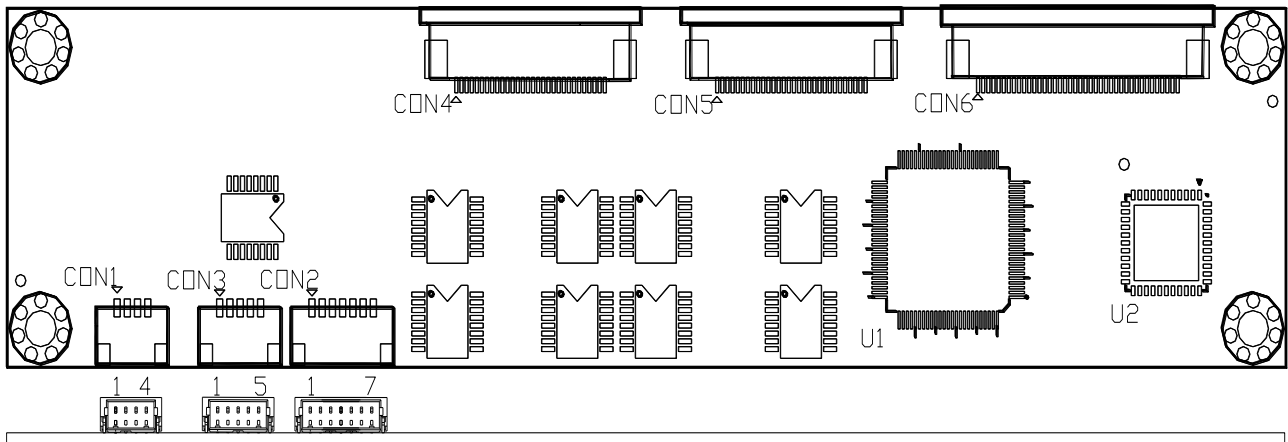
Note :

Power consumption and sample rate will vary according to different firmware versions.

3.2 Touch line pin definition

CON4 30Pin ZIF , PH 0.5mm ; ACES 88707-3001							
PIN	Description	PIN	Description	PIN	Description	PIN	Description
1	GND	9	Cap Drive X4	17	Cap Drive X12	25	Cap Drive X20
2	GND	10	Cap Drive X5	18	Cap Drive X13	26	Cap Drive X21
3	GND	11	Cap Drive X6	19	Cap Drive X14	27	Cap Drive X22
4	NC	12	Cap Drive X7	20	Cap Drive X15	28	Cap Drive X23
5	NC	13	Cap Drive X8	21	Cap Drive X16	29	NC
6	Cap Drive X1	14	Cap Drive X9	22	Cap Drive X17	30	GND
7	Cap Drive X2	15	Cap Drive X10	23	Cap Drive X18		
8	Cap Drive X3	16	Cap Drive X11	24	Cap Drive X19		
CON5 30Pin ZIF , PH 0.5mm ; ACES 88707-3001							
PIN	Description	PIN	Description	PIN	Description	PIN	Description
1	GND	9	Cap Drive X29	17	Cap Drive X37	25	Cap Drive X45
2	NC	10	Cap Drive X30	18	Cap Drive X38	26	Cap Drive X46
3	NC	11	Cap Drive X31	19	Cap Drive X39	27	NC
4	Cap Drive X24	12	Cap Drive X32	20	Cap Drive X40	28	NC
5	Cap Drive X25	13	Cap Drive X33	21	Cap Drive X41	29	GND
6	Cap Drive X26	14	Cap Drive X34	22	Cap Drive X42	30	GND
7	Cap Drive X27	15	Cap Drive X35	23	Cap Drive X43		
8	Cap Drive X28	16	Cap Drive X36	24	Cap Drive X44		
CON6 40Pin ZIF , PH 0.5mm ; ACES 88707-4001							
PIN	Description	PIN	Description	PIN	Description	PIN	Description
1	GND	11	Cap Sense Y27	21	Cap Sense Y17	31	Cap Sense Y7
2	NC	12	Cap Sense Y26	22	Cap Sense Y16	32	Cap Sense Y6
3	Cap Sense Y35	13	Cap Sense Y25	23	Cap Sense Y15	33	Cap Sense Y5
4	Cap Sense Y34	14	Cap Sense Y24	24	Cap Sense Y14	34	Cap Sense Y4
5	Cap Sense Y33	15	Cap Sense Y23	25	Cap Sense Y13	35	Cap Sense Y3
6	Cap Sense Y32	16	Cap Sense Y22	26	Cap Sense Y12	36	Cap Sense Y2
7	Cap Sense Y31	17	Cap Sense Y21	27	Cap Sense Y11	37	Cap Sense Y1
8	Cap Sense Y30	18	Cap Sense Y20	28	Cap Sense Y10	38	NC
9	Cap Sense Y29	19	Cap Sense Y19	29	Cap Sense Y9	39	GND
10	Cap Sense Y28	20	Cap Sense Y18	30	Cap Sense Y8	40	GND

3.3 Interface pin definition

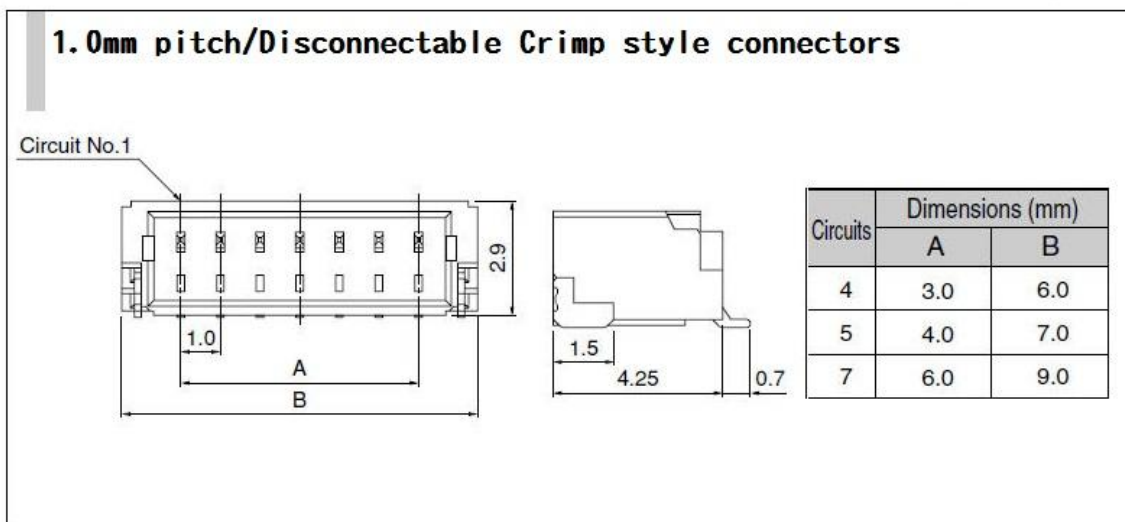


CON1 / 4PIN / USB	
PIN NO.	DESIGNATION
1	5VIN
2	D-
3	D+
4	Ground

CON3 / 5PIN / RS-232	
PIN NO.	DESIGNATION
1	5VIN
2	RXD
3	TXD
4	Ground
5	Ground

CON2 / 7PIN / UART	
PIN NO.	DESIGNATION
1	5VIN
2	Ground
3	RXD
4	TXD
5	NC
6	NC
7	Detection

3.4 Connector specification



3.5 Interface detection

PM1401 supports Interface detection. User can plug-in suitable cable to CON1 for USB interface, to CON2 for UART interface, and to CON3 for RS-232 interface. Firmware will use Detection to select UART. So user must setup Detection before PM1401 power-on. Please refer diagram below to select your desired interface for UART.

	Detection(CON2,Pin7)
UART	Low

4.0 Drivers, Utilities

4.1 Drivers:

For USB / RS-232 / UART

Windows 2000, XP, 2003: single touch, mouse driver.

Windows Vista: single touch, inbox driver.

Windows 7,8: dual touch, Inbox driver.

Linux: Ubuntu, Android, other Linux distributions under development.

4.2 Utility:

Firmware adjustment utility is ready for user to fine tune the touch panel sensitivity.

Note :

Drivers, Utilities : all the drivers are available in AMT and PenMount website. The PenMount utilities is also available, contact us

5.0 Others

5.1 ROHS compliance: This control board is met ROHS compliance

5.2 For EMC protection recommendations please refer to the AMT touch screen integration guides.

5.3 Warranty: one year