PenMount PM1310 PCI Controller Board Data Sheet

1.0 Product

The PenMount PM1310 control board is a high specification (Projected Capacitive Input, PCI) touch panel controller product introduced by PenMount. The PenMount PM1310 can be applied in the consumer, commercial, and industrial fields.

The PenMount PM1310 provides three types of interfaces, USB, I²C and UART and supports PCI touch panels sized from 8.4” to 10.4”. The PenMount PM1310 also supports a wide range of operating systems such as Windows and Linux.

The PenMount PM1310 was developed based on Microchip microprocessors and is paired with PenMount’s in-house hardware design and firmware algorithmic mechanism. It provides high performance computing and possesses excellent anti-noise capabilities.

There are four connectors on this board: two 40 Pins ZIF connectors for PCI touch screen FPC cables, one USB connector for a 4-pin USB cable (optional) , and one I²C/UART connector for a 7-pin I²C cable (optional).

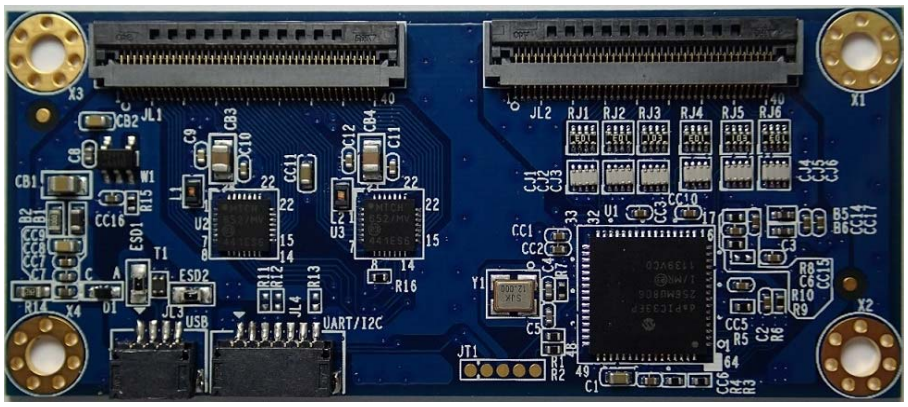
2.0 Specifications

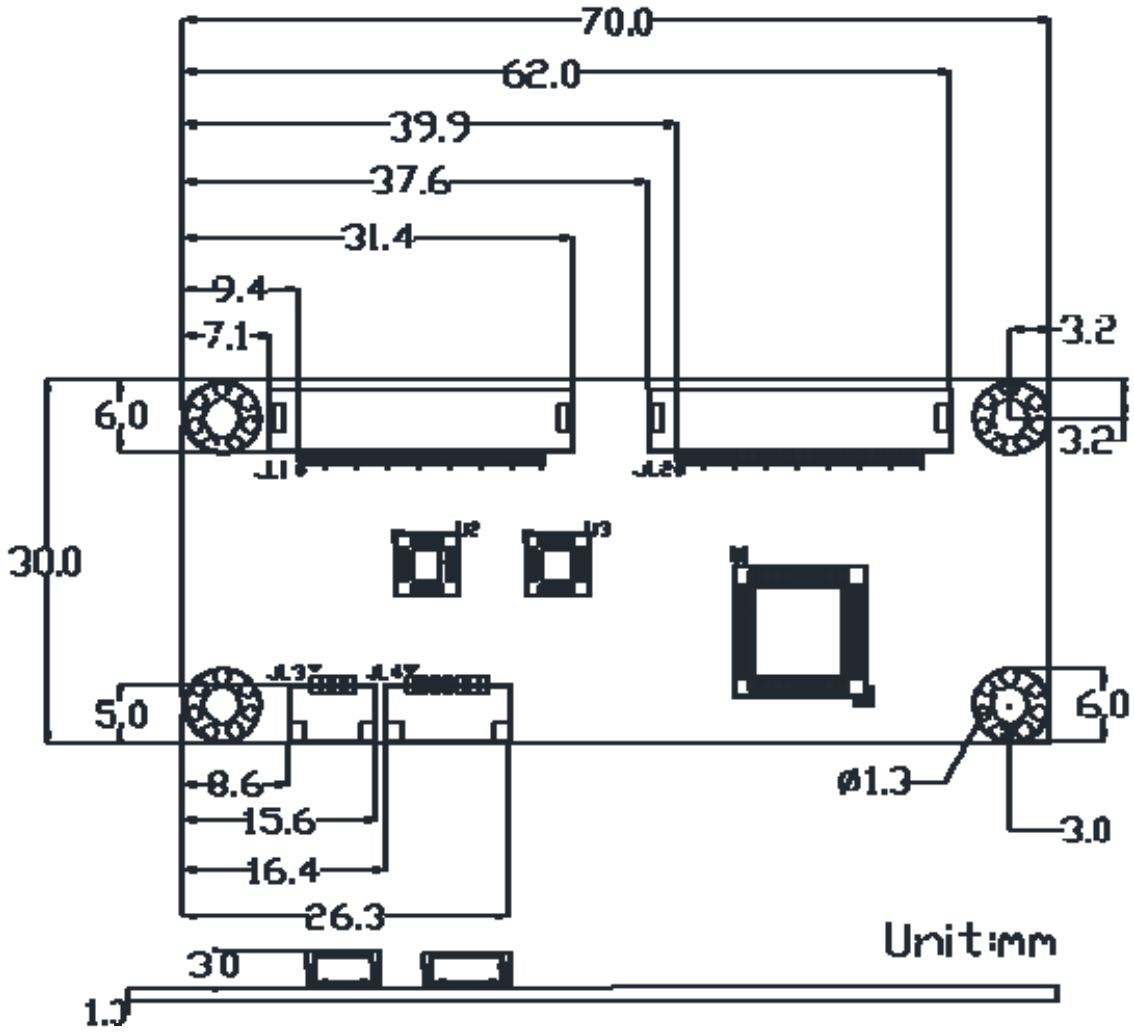
2.1 Controller part no: P2-08 x1
2.2 Supported Projected Capacitive touch panel size: 8.4” to 10.4"
2.3 Interface: USB, UART, I²C
USB: Full-speed, 12Mbps
UART Interface 38400 baud rate / 8bit data / non parity / one stop bit / non-PnP
I²C, Slave, supports 400 kHz specifications
2.4 ADC resolution: 10bits
2.5 Max Touch Line : 35 Driving lines, 23 Sensing line
2.6 Sampling rate: >160sps (Single)
2.7 Operation Voltage Vcc: +5V, ±5%
2.8 Power Consumption: Typical -- Working Mode: 33.2mA / 5V DC
Idle Mode: 23.2mA / 5V DC
Sleep Mode: 1.0mA / 5V DC
2.9 Operating temperature: -30°C ~ +85°C
2.10 Storage temperature: -40°C ~ +85°C
2.11 RS specification: IEC61000-4-3 Level 3 ,Criteria A (For 1.8mm Top Glass, Dual touch)
2.12 CS specification: IEC61000-4-6 Level 3 ,Criteria A (For 1.8mm Top Glass, Dual touch)

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

3.0 Mechanical Drawing

3.1 Mechanical size

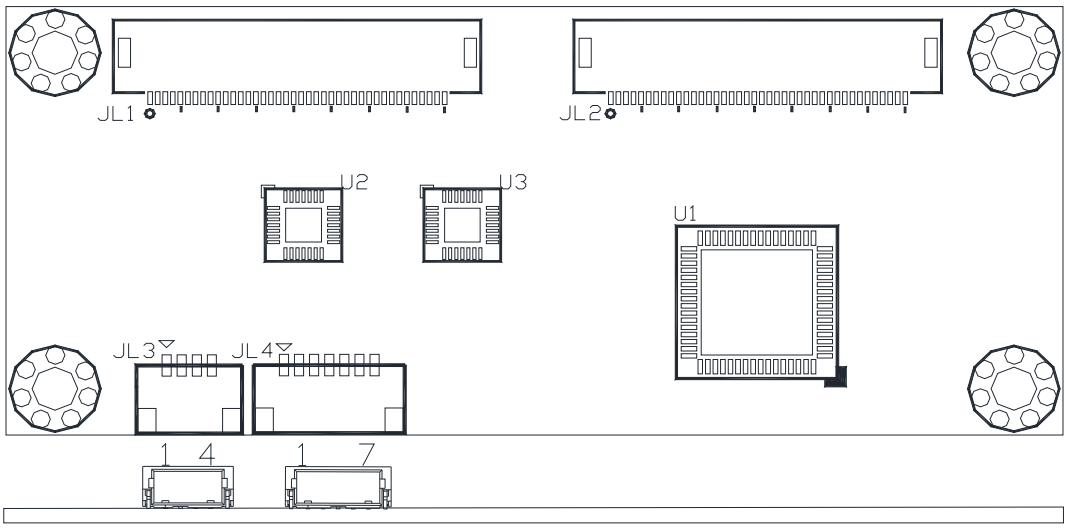




3.2 Touch line pin definition

JL1 40Pin ZIF , PH 0.5mm ; HRS FH52-40S-05SH							
PIN	Description	PIN	Description	PIN	Description	PIN	Description
1	Ground	11	Cap Drive X6	21	Cap Drive X16	31	Cap Drive X26
2	Ground	12	Cap Drive X7	22	Cap Drive X17	32	Cap Drive X27
3	NC	13	Cap Drive X8	23	Cap Drive X18	33	Cap Drive X28
4	Ground	14	Cap Drive X9	24	Cap Drive X19	34	Cap Drive X29
5	Cap Drive X0	15	Cap Drive X10	25	Cap Drive X20	35	Cap Drive X30
6	Cap Drive X1	16	Cap Drive X11	26	Cap Drive X21	36	Cap Drive X31
7	Cap Drive X2	17	Cap Drive X12	27	Cap Drive X22	37	Cap Drive X32
8	Cap Drive X3	18	Cap Drive X13	28	Cap Drive X23	38	Cap Drive X33
9	Cap Drive X4	19	Cap Drive X14	29	Cap Drive X24	39	Cap Drive X34
10	Cap Drive X5	20	Cap Drive X15	30	Cap Drive X25	40	Ground
JL2 40Pin ZIF , PH 0.5mm ; HRS FH52-40S-05SH							
PIN	Description	PIN	Description	PIN	Description	PIN	Description
1	NC	11	NC	21	Cap Sense Y15	31	Cap Sense Y5
2	NC	12	Ground	22	Cap Sense Y14	32	Cap Sense Y4
3	NC	13	NC	23	Cap Sense Y13	33	Cap Sense Y3
4	NC	14	Cap Sense Y22	24	Cap Sense Y12	34	Cap Sense Y2
5	NC	15	Cap Sense Y21	25	Cap Sense Y11	35	Cap Sense Y1
6	NC	16	Cap Sense Y20	26	Cap Sense Y10	36	Cap Sense Y0
7	NC	17	Cap Sense Y19	27	Cap Sense Y9	37	NC
8	NC	18	Cap Sense Y18	28	Cap Sense Y8	38	Ground
9	NC	19	Cap Sense Y17	29	Cap Sense Y7	39	NC
10	NC	20	Cap Sense Y16	30	Cap Sense Y6	40	Ground

3.3 Interface detection and pin definition



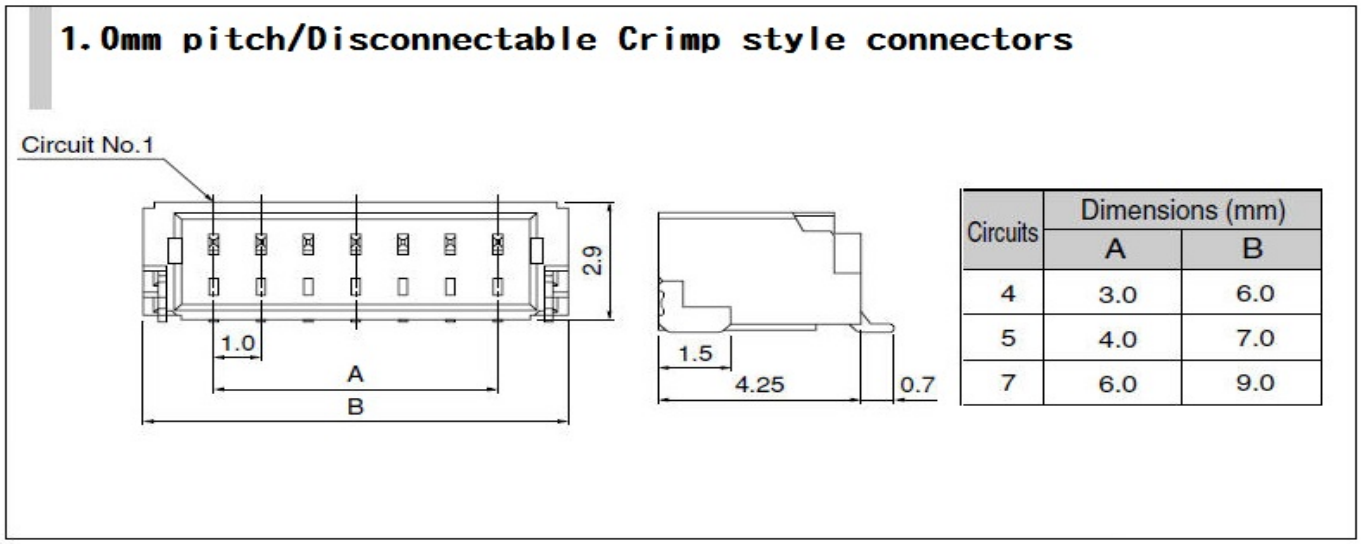
JL3 / 4PIN / USB ACES 50224-00401-001	
PIN NO.	DESIGNATION
1	V_{cc} (USB5V)
2	D-
3	D+
4	Ground

JL4 / 7PIN / I²C / UART ACES 50224-00701-001				
PIN NO.	DESIGNATION	I²C	UART	Remark
1	V_{cc} (5V)	v	v	
2	Ground	v	v	
3	SCL,RXD	v	v	Support voltage level of 3.3V
4	SDA,TXD	v	v	Support voltage level of 3.3V
5	Reset	Float	Float	Pull Low at least 2 μs to reset the P2-08 device
6	DETECT	N.C	Low	
7	INTHM	v	N.C	

Note. V: Connection / N.C: No Connection

PM1310 supports the single interface cable connection.
If you use I²C interface, please add pull-up resistor 2.2K at SCL / SDA / INTHM on Host side.

3.5 Connector specifications



Circuits	Dimensions (mm)	
	A	B
4	3.0	6.0
5	4.0	7.0
7	6.0	9.0

4.0 Drivers, Utilities

4.1 Drivers:

For I²C:

Windows CE : binary driver for freescale iMX platform provided. Other platform by request.

Linux / Android : source code for integration provided.

For USB / UART

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

Windows Vista: single touch, inbox driver.

Windows 7,8,10: 5 touch support, Inbox driver.

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

4.2 Utilities:

Firmware adjustment utility allows user to fine tune touch panel sensitivity.

Notes :

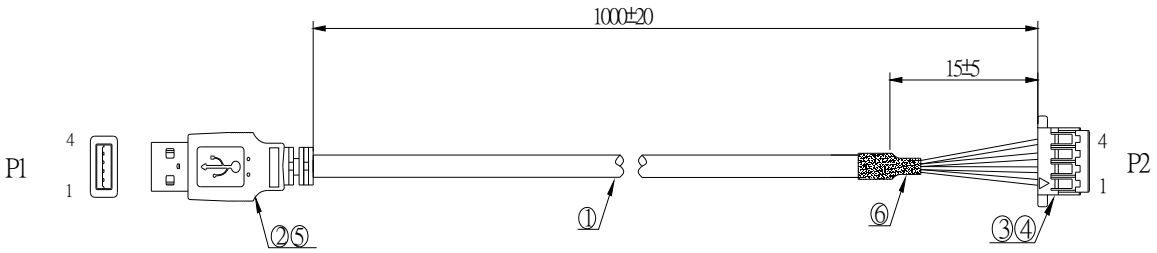
Drivers, Utilities : all drivers are available on AMT and PenMount websites. PenMount utilities are also available, please contact us

5.0 Others

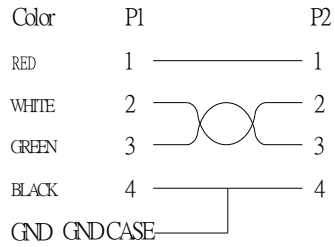
5.1 ROHS compliance: This control board is ROHS compliant

5.2 For EMC protection recommendations, please refer to PCI touch screen integration guides.

5.3 To achieve good noise interference protection capabilities, PenMount requires paired interface cables possess comprehensive EMI shielding. The following is an USB cable interface diagram as reference.



PIN ASSIGNMENT



Remark:

1.Test Conditions
a. Conductor Resistance:2Ω
b. Insulation Resistance:10MΩ
c. Insulation Testing:DC 300V

NO.	Description	Q'TY
⑥	HEAT SHRINK TUBE:?4.0mm L=10mm BLACK	1PC
⑤	OUTER MOLDED:PVC 45P COLOR:BLACK OR EQU	15g
④	HOUSING: KY-1001HS-04P OR EQU	15g
③	TERMINAL: KY-1001TPS-20 OR EQU	1PC
②	USB A(M):PIN G/F Plastic:Black Case Nickel-plated OD:4.5	1PC
①	CABLE:UL2725 #28*1P+#28*2C+ADB(80% Al-MgBraid) OD:3.5 Black L=1040MM	1PC

Remark: Specifications are subject to change without notice