PENMOUNT PM2357
CONTROL BOARD DATASHEET

Version 1.0
5/Aug/'19

PenMount®
TOUCH SCREEN SOLUTIONS

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Revision history

Rev.	Date	By	Summary	Remark
1.0	2019/8/5	Kenhsu	New Release	

1.0 Introduction

The PenMount PM2357 control board is a high specification (Projected Capacitive Input, PCI) touch panel controller product introduced by PenMount. The PenMount PM2357 can be applied in the consumer, commercial and the industrial fields.

The PenMount PM2357 provides USB types of interfaces, supports PCI touch panels sized from 8”~12.1”. PenMount PM2351 also supports a wide range of operating systems such as Windows and Linux.

The PenMount PM2357 is 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.

2.0 Specifications

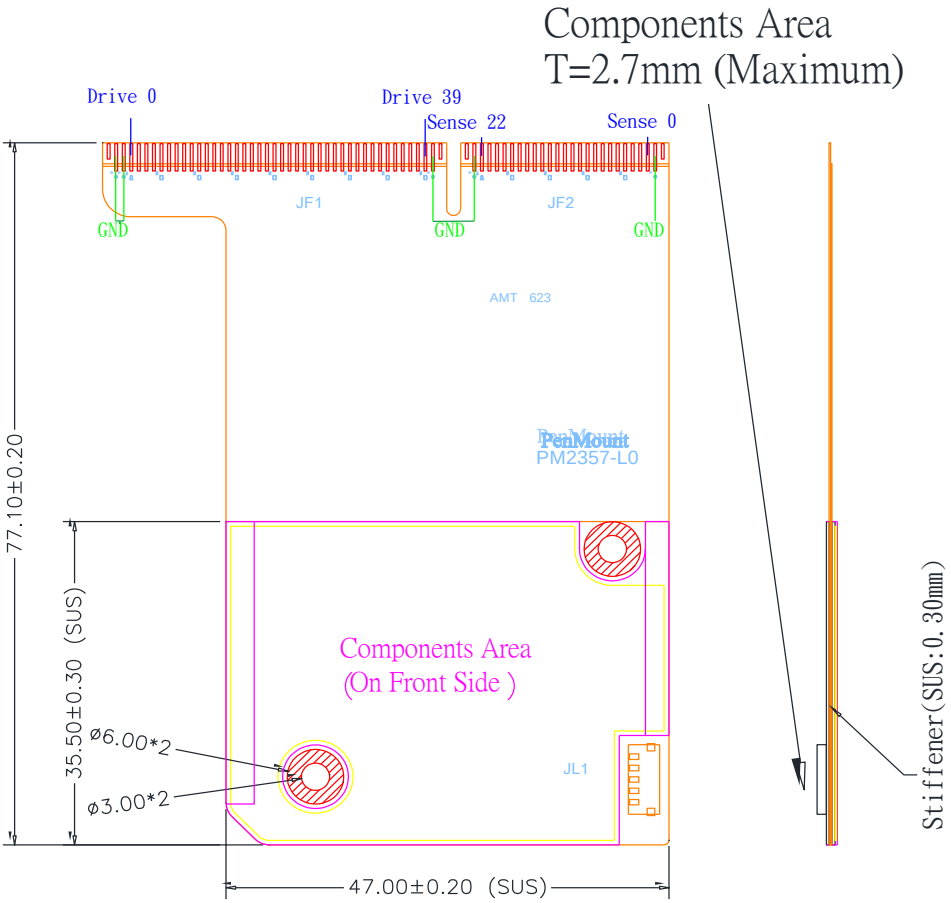
Parameter		feature
Controller part number		PenMount P2-08
Number of sensing line		23
Number of driving line		40
Supporting projected capacitive touch panel size		Projected capacitive type, from 8" to 12.1"
Interface	USB	Full-speed, 12Mbps
ADC resolution		10bits (Typical)
Firmware resolution		2048 x 2048 (Typical)
Response time		Average < 40ms
Sampling rate	One point	150 Hz(Typical)
	Five points	100 Hz(Typical)
Operating voltage		+5Vdc ±5 %
Power consumption	Working mode	45mA @ 5Vdc (Typical)
	Idle mode	30mA @ 5Vdc (Typical)
	Sleep mode	2mA @ 5Vdc (Typical)
Operating temperature		-40°C ~ +85°C
Storage temperature		-40°C ~ +85°C
Relative humidity range		95% RH at 60°C. RH Non-condensing
EMS specification	RS	IEC61000-4-3 Level 3 , Criteria A
	CS	IEC61000-4-6 Level 3 , Criteria A
Watchdog Timer		Support WDT function through firmware programming

Note :

CS and RS performance, 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

JF2							
PIN	Description	PIN	Description	PIN	Description	PIN	Description
1	GND	8	Cap Sense 16	15	Cap Sense 9	22	Cap Sense 2
2	Cap Sense 22	9	Cap Sense 15	16	Cap Sense 8	23	Cap Sense 1
3	Cap Sense 21	10	Cap Sense 14	17	Cap Sense 7	24	Cap Sense 0
4	Cap Sense 20	11	Cap Sense 13	18	Cap Sense 6	25	GND
5	Cap Sense 19	12	Cap Sense 12	19	Cap Sense 5		
6	Cap Sense 18	13	Cap Sense 11	20	Cap Sense 4		
7	Cap Sense 17	14	Cap Sense 10	21	Cap Sense 3		

JF1							
PIN	Description	PIN	Description	PIN	Description	PIN	Description
1	GND	12	Cap Drive 9	23	Cap Drive 20	34	Cap Drive 31
2	GND	13	Cap Drive 10	24	Cap Drive 21	35	Cap Drive 32
3	Cap Drive 0	14	Cap Drive 11	25	Cap Drive 22	36	Cap Drive 33
4	Cap Drive 1	15	Cap Drive 12	26	Cap Drive 23	37	Cap Drive 34
5	Cap Drive 2	16	Cap Drive 13	27	Cap Drive 24	38	Cap Drive 35
6	Cap Drive 3	17	Cap Drive 14	28	Cap Drive 25	39	Cap Drive 36
7	Cap Drive 4	18	Cap Drive 15	29	Cap Drive 26	40	Cap Drive 37
8	Cap Drive 5	19	Cap Drive 16	30	Cap Drive 27	41	Cap Drive 38
9	Cap Drive 6	20	Cap Drive 17	31	Cap Drive 28	42	Cap Drive 39
10	Cap Drive 7	21	Cap Drive 18	32	Cap Drive 29	43	GND
11	Cap Drive 8	22	Cap Drive 19	33	Cap Drive 30		

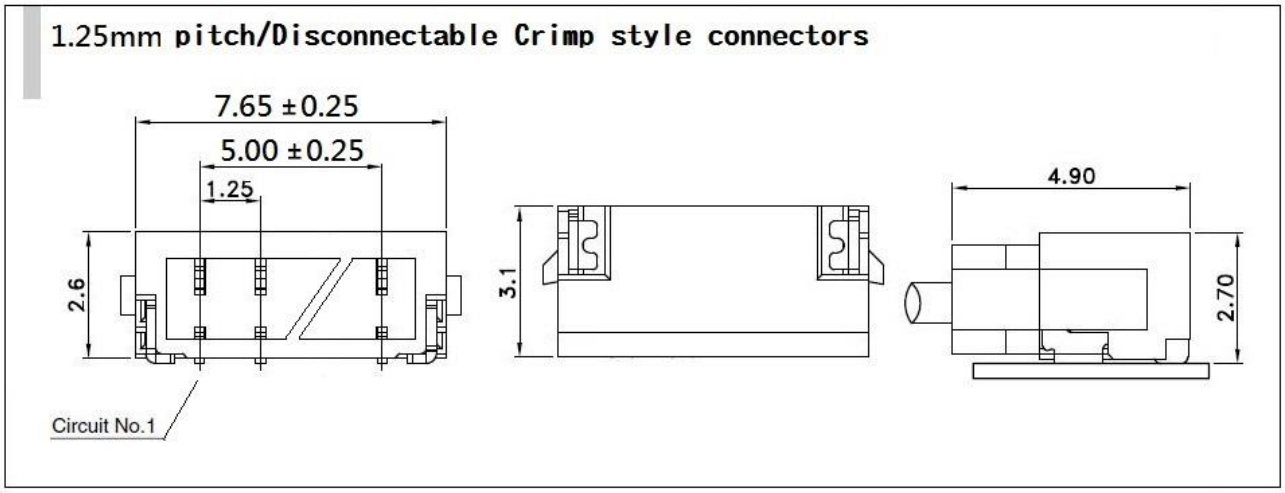
3.3 Interface pin definition

PM2357 includes USB communication interfaces, intends to maximize application flexibility and reliability, and minimizes cost through elimination of external components.

JL1 / 5PIN / UYT 1W1258WOR0-05K						
PIN NO.	USB	Description	Min	Typ	Max	Unit
1	VCC	Positive power supply		5		V
2	D-	D- pin of internal USB transceiver		3.3		V
3	D+	D+ pin of internal USB transceiver		3.3		V
4	GND	Ground		0		V
5	SW	Pull low for disable touch function, release this pin will back to enable touch function, Leave the pin unconnected if not used.				V

Figure1 USB interface

3.1 Connector specifications



4.0 Drivers and Utilities

4.1 Drivers

For USB

- Windows 2000, XP, 2003: single touch, mouse driver.
- Windows Vista: single touch, inbox driver.
- Windows 7,8,10: multi touch, Inbox driver.
- Linux: Ubuntu, Android, other Linux distributions under development.

(Provide source code for integration if any)

4.2 Utilities

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

Note:

All drivers and utilities are available on PenMount websites. Please contact us for further information.

5.0 Others

5.1 ROHS compliance

This control board is ROHS compliant

5.2 EMC protection recommendations

Please refer to PCI touch screen integration guides.

5.3 Noise Protection

To achieve good noise interference protection capabilities, PenMount requires paired interface cables possess comprehensive EMI shielding.

The cable should have a woven or spirally copper shield with 360 ° shield coverage
The shield must be terminated to the receptacle and be connected to ground plane carefully.

Below is an example for 4-pin USB cable diagram. For other implementation, please follow the same design rules.