



Projected Capacitive USB/RS232/I2C 1+2 Touch Sensor Controller Board



DawarTouch®

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Document Revision History

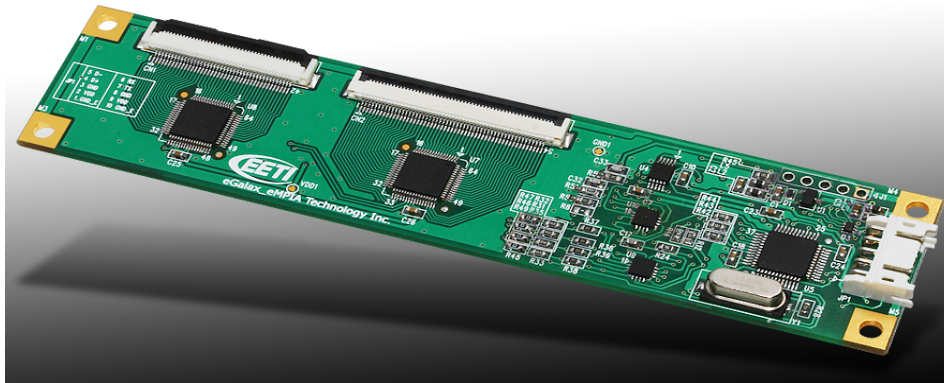
Revision	Date	Content	Author
A	04-02-12	Released Spec	Jason Liao and David Gess
B	02-15-13	Revised P/N for controller and accessories, revised labeling, updated 4-point to 5-point, revised Linux offering	David Gess

INTRODUCTION

USB/RS232/I2C Touch Panel Controller Board

- 96 channels of interface capability
- Supports USB/RS232/I2C Interface
- Meets the latest Restriction of Hazardous Substances (RoHS) directive
- Offers superior sensitivity, accuracy and overall excellent operation
- Provides 5 touch capability
- Gloved hand operation
- Supports through glass touch
- Excellent accuracy with no linearity calibration required
- Emulates mouse left and right button function and supports the following operating systems:

OS	Version	Interfaces
Windows	Windows 7	USB/RS232
	Windows Vista, XP/2000, 9x/ME	
	Windows CE 2.12/3.0/.net/5.0/6.0/7.0	
	Windows Embedded	
	Windows XP Tablet PC edition	
Linux	Drivers for Kernel 2.4.x and Kernel 2.6.x Multi-touch available for Kernel version 2.6.36 above. Single touch for Kernel version below 2.6.35.	USB/RS232/I2C
	Available for non-Xwindow system for Kernel version 2.6.24 upward. X-windows is required for Kernel version below 2.6.23	
Linux	Android 4.0 – Google	USB/RS232/I2C
	Moblin V2/Meego – Intel Nokia	
Mac	Mac OS9, Mac OS X (IBM, Intel CPU)	USB
QNX	QNX RTOS v6.5	USB/RS232

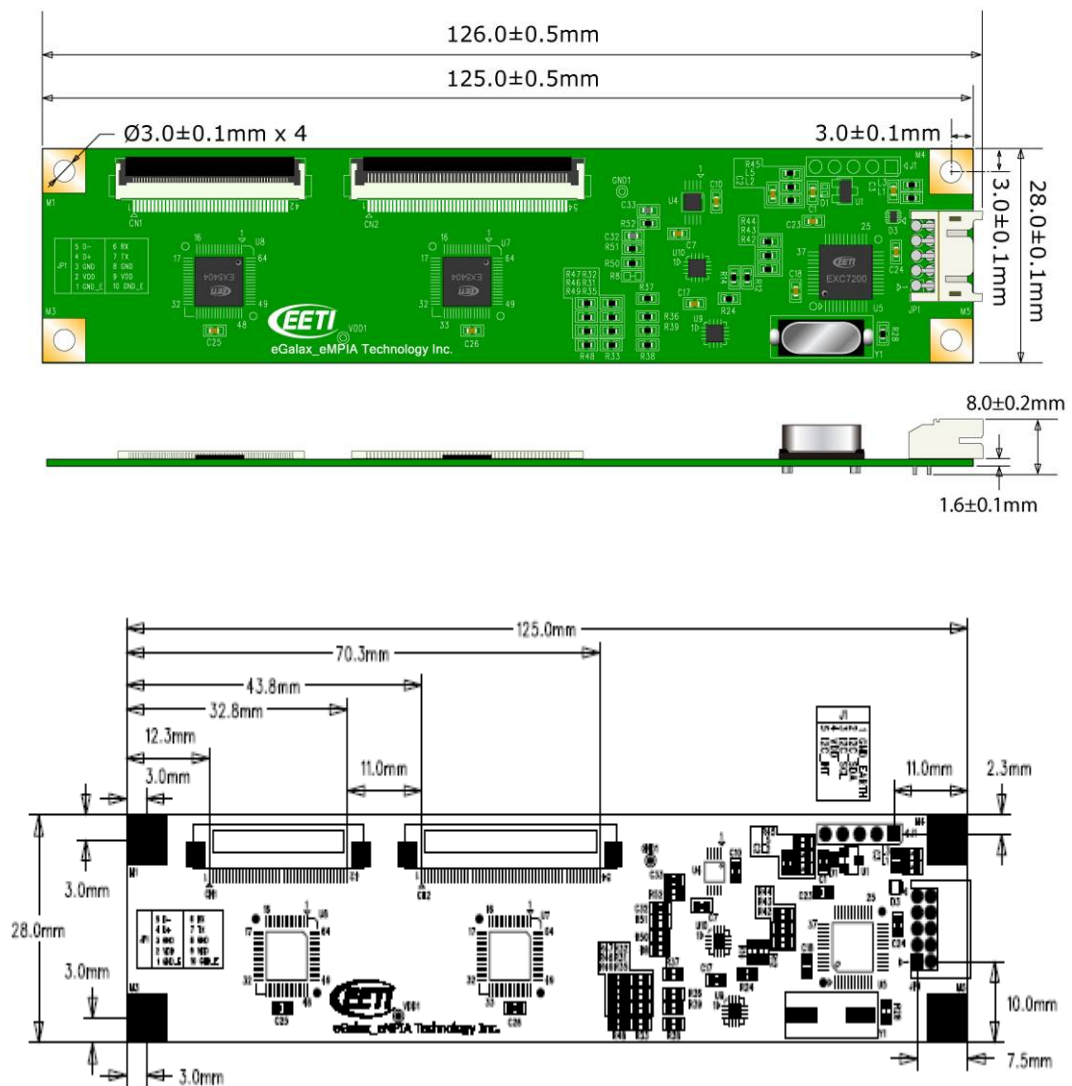


Specification

USB/RS232/I2C Type Controller	
Circuit Board Dimension	28mm x 126mm
Channels of Panel	Max. X: 52 Y:40 channels (2 shields used each X and Y circuits)
Input Voltage	3.5V~5.5V Typical 5V
Operating Temperature	-40 to 85°C
Storage Temperature	-40 to 90°C
Relative Humidity	95% at 60°C, RH Non-condensing
Interface	USB: 1.1 Full Speed RS232: No parity,8 data bits,1 stop bit Baud Rate: 57600bps
Resolution	2048 × 2048 resolution
Power consumption	Active Mode: Max 50 mA Idle Mode: 5mA
Report rate (points/sec) (See Note 1)	Single touch: Typ.200 Hz Dual touch: Typ.120 Hz 5 point touch: Typ.60 Hz
Response time	Max 20ms

Note 1: Report rate will vary by channel number, cover lens thickness and other parameters

Controller Board Dimensions



Thickness:

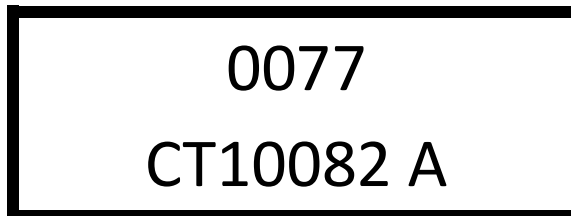
Total thickness: $8.0 \text{ mm} \pm 0.2 \text{ mm}$

(PCB: 1.6 mm . USB/RS232 connector: 5.1 mm . Soldering pin: 1.3 mm)

Label Format

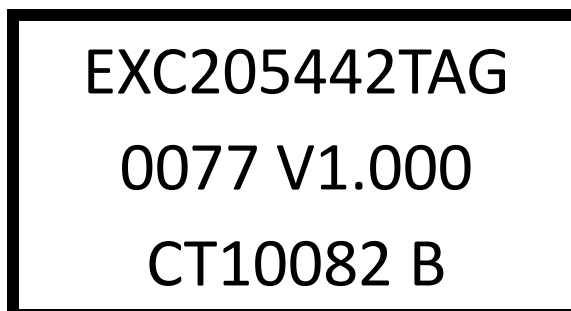
Label 1 – Prototype

Label 1 product labeling is provided with low volume orders less than 50 pieces. The first line is the firmware ID of the controller. The firmware ID is the controller tuning firmware. The second line is the Dawar item number and revision. Item numbers are assigned from Dawar by product and are customer specific in some cases.



Label 2 – Production - Part Number, FID, and Firmware Version

Label 2 product labeling is provided with production orders greater than 50 pieces. There are two labels on the back side of the controller. The first label shows the marketing part number, firmware ID, firmware version and Dawar item number. Example:



The first line EXC205442TAG is the marketing part number. The second line is firmware ID of the controller, i.e., 0077) and firmware version (V1.000). The firmware ID is a 4 digit/character identifying the tuning of the controller. In some cases the firmware ID will be standard. The firmware ID will be provided as standard until the customer's specific tuning requirements have been completed. Once the controller is tuned to the customer specific requirements, the firmware ID number will change to a discrete customer

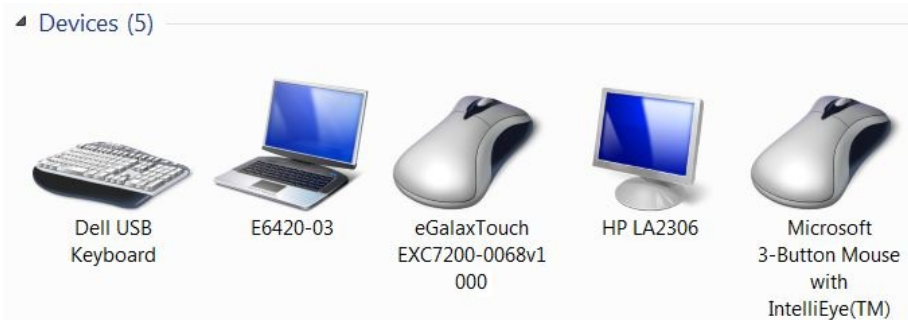
specific 4 digit/character. The firmware listed as V1.000 rarely changes unless there is a broad update. The third line is the Dawar item number and revision. This is the product number ordered by product and customer specific in some cases.

Label 3 10-digit Serial Number with Barcode



The serial number is a 10-digit number which allows Dawar to track the shipping record.

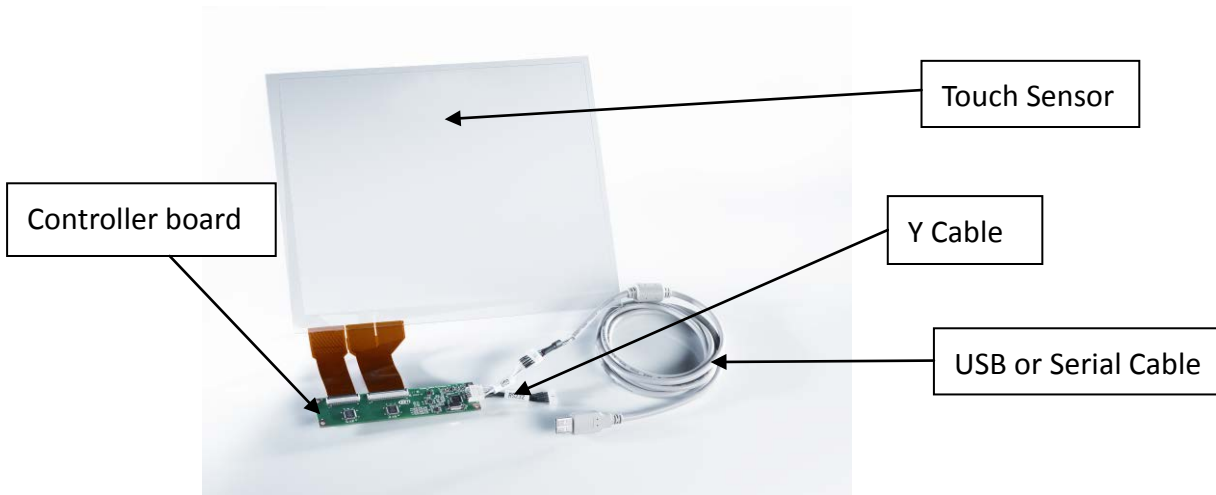
To check the version of FID and firmware version in windows, the following procedure is offered. Go to device manager, Hardware and Sound → View devices and printers.



Find device named started with eGalaxTouch EXC7200. For this example, the 0068 is the firmware ID and 1000 is the firmware version (1.000).



Complete Product Package



- (1) PCAP Touch Sensor
- (2) PCAP Controller Board
- (3) Y-Cable (CT10050)
- (4) USB cable (CT10051) or RS232 cable (CT10052)



CABLES

Optional USB and Serial (RS-232) interface cable

TYPE	Tail Length	Connector	P/N	Picture
USB	183cm	Pitch 2.0mm 5pin housing to USB A Male	CT10051	
Serial (RS-232)	183cm	Pitch 2.0mm housing to DB9 Female. PS/2 interface for 5V power input provided	CT10052	

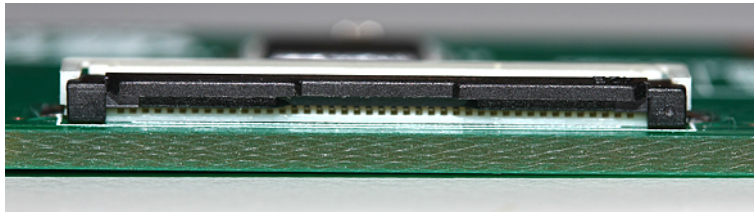
Serial (RS-232)	50cm	Pitch 2.0mm housing to DB9 Female. Black and red wire for 5V power input provided	CT10085	
Y Cable	6.5cm	Pitch 2.0mm 10pin housing to 2 individual 5 pin 2.0mm housing for USB and serial cable connection	CT10050	

Note: The external power from mainboard or PS/2 interface is necessary when using Serial interface only.

Touch Panel Connections

FPC Connector Pin Assignment:

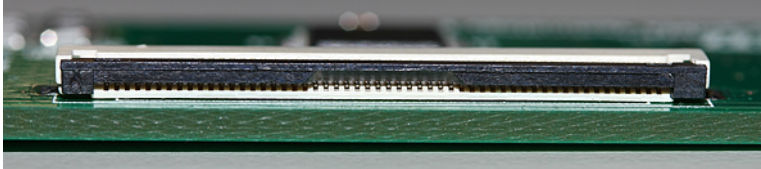
CN1 Connector Definition:



CN1																PIN					
20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	Shield_Y1	
Y18	Y17	Y16	Y15	Y14	Y13	Y12	Y11	Y10	Y9	Y8	Y7	Y6	Y5	Y4	Y3	Y2	Y11	Y0			
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	PIN	
Y38	Y37	Y36	Y35	Y34	Y33	Y32	Y31	Y30	Y29	Y28	Y27	Y26	Y25	Y24	Y23	Y22	Y21	Y20	Y19		
																		42	41	PIN	
																		Shield_Y2	Y39		



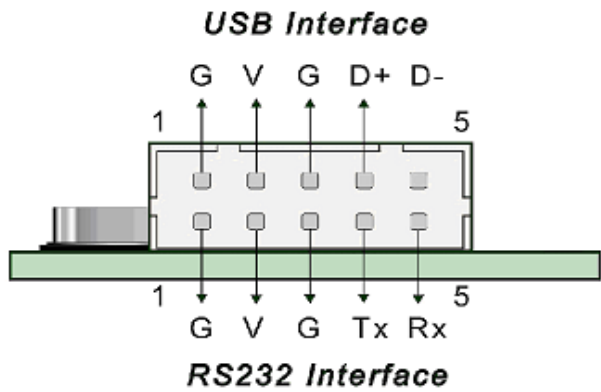
CN2 Connector



CN2

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	PIN
X18	X17	X16	X15	X14	X13	X12	X11	X10	X9	X8	X7	X6	X5	X4	X3	X2	X1	X0	Shield_X1	
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	PIN
X38	X37	X36	X35	X34	X33	X32	X31	X30	X29	X28	X27	X26	X25	X24	X23	X22	X21	X20	X19	
						54	53	52	51	50	49	48	47	46	45	44	43	42	41	PIN
						Shield_X2	X51	X50	X49	X48	X47	X46	X45	X44	X43	X42	X41	X40	X39	

USB/RS232 Combo Connector Pin Assignment:

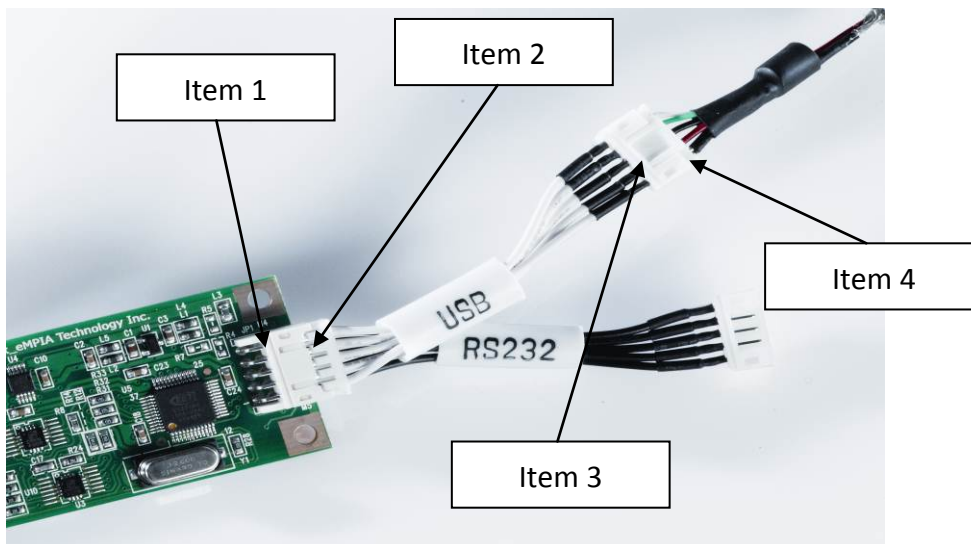


Y-Cable Pin Assignment:



This cable has a total of 3 connectors: one connection to the controller board and two connections to either USB or Serial cable.

CABLE CONNECTORS



Item	Description	Part Number	Manufacturer
1	Main Board, Male	CP-HD20R-2x5	Cherng Weei
2	YY Cable, Female	A2004H-2x5P (used for SXC00)	CJT or selected manufacture
2a Alternate	Y Cable, Female	JST-PHDR-10VS	JST
3	Y Cable, Male	A2001WV-XP-5P (used for SXC00)	CJT or selected manufacture
4	USB or Serial Cable, Female	A2001H-5P (used with SXU00 or SXR00)	CJT or selected manufacture
4a Alternate	USB or Serial Cable, Female	JST-PHR-5	JST

I2C interface:

The controller comes standard with I2C interface on the printed circuit board. For this controller, the end user can attach wires to this section of the board to achieve I2C interface.

1	GND_EARTH
2	I2C_SDA
3	I2C_SCL
4	VDD
5	I2C_INT

