

A Touch Technologies Co., Ltd.



Specification of Surface Acoustic Wave USB Control Board

Model : SAW-USB



A. Application

This specification applies to the following USB Control Board for Surface Acoustic Wave Touch Panel.

B. Environmental Conditions

1. Operating Temperature Range

0°C ~ 65°C

2. Operating Humidity Range

10%~90% RH (no dew falls)

3. Storage Temperature Range

-25°C ~ 85°C

4. Storage Humidity Range

10%~90% RH (no dew falls)

5. Operating Altitude

10,000 feet (3048m)

6. Shock and Vibration

Three axis sine wave, 50 Hz to 2kHz, 1G, 2 minutes / Octave with dwell on resonances.

7. Flammability

The PCB substrate and all plastic components, such as headers and connectors are rated UL 94 V0.

C. Electrical Characteristics

1. Supply Voltage

+5VDC (+4.75V to +5.25V)

2. Supply Current

85 mA, typical at +5V DC

Max. current : 150 mA



SURFACE ACOUSTIC WAVE USB CONTROL BOARD

3. Electrostatic Protection

Per EN 61000-4-2, 1995 : Meets Level 4
(15 kV air / 8 kV contact discharges).

4. Interface

USB 1.1
Plug and play compatible

5. Touch Resolution

4096x4096, size independent

6. Conversion Time

Approximately 15 ms per coordinate set

7. Reliability

MTBF greater than 300,000 hours
per MIL-HDBK-217-F2 using the part stress calculation method for
ground benign environment with an ambient temperature of 25°C

D. Mechanical Characteristics

1. Construction

Four-layer surface-mount design with internal ground plane for EMI
suppression.

2. Dimensions

PCB 87 x 56 x 12mm
Refer to Appendix C

3. Standard Cables, Connectors and Pin Definitions

Standard external USB cable connecting the SAW USB controller with
the computer USB port : Refer to Appendix A

USB Output Connector : JUSB

Mini USB 4 Pin Female SMD A Type connector on board for
connection with USB port.

Refer to Appendix A

Touchscreen Connector : J1

A dual row by six position header with 0.635 mm square pins
spaced on 2.54 centers for connection with touch panel.

Refer to Appendix B



E. LED Diagnostic Characteristics

A red LED indicates controller status as follows:

Action & Condition	LED status	Function
The control board is connected with host, not touch panel yet.	Light continuously	The control board is normal condition.
No touch	Snuff out	Untouched state
Touch	Light	Touched state

F. Software Driver

Under Windows : Mouse emulation

Support Operating System

- Microsoft Windows NT4.0/XP/2000/ME/98/95
- Linux : Red Hat 9.0 , Mandrake 9.1



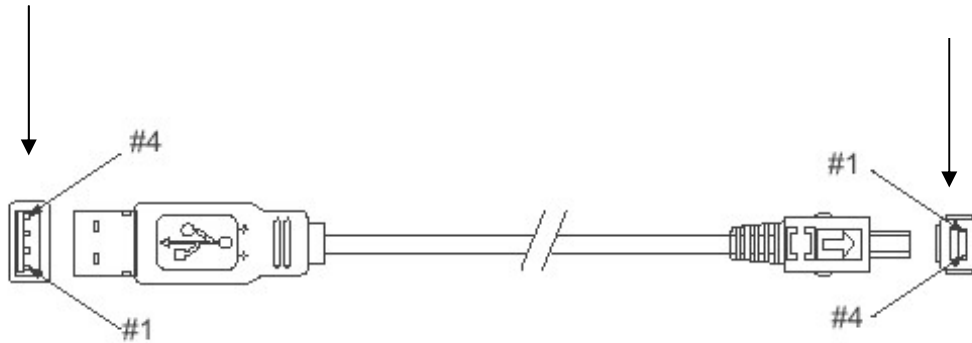
Appendix A : Standard External USB Cable

USB Output Connector : JUSB

P2 PC USB port

P1 Mini USB 4 Pin Female SMD

A Type connector on board : JUSB



Mini USB cable with 4 position male

Contact Position

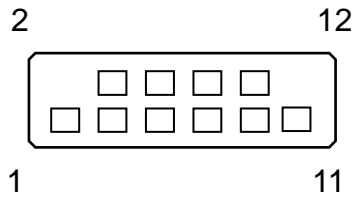
P2		P1
4	-----	1
3	-----	2
2	-----	3
1	-----	4

JUSB, pins and signal names

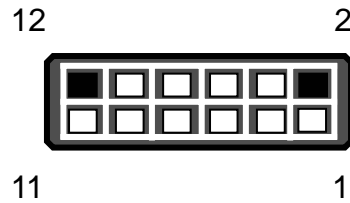
Pin	Signal Name
1	GND
2	D+
3	D-
4	Vcc



Appendix B : Touchscreen Connector : J1



Board mounted header : J1



Cable applied plug

J1, pins and signal names

Pin	Signal Name
1	Chassis
2	Key
3	Y rcv +
4	Y xmt +
5	Y rcv -
6	Y xmt -
7	Analog Ground
8	X xmt -
9	X rcv-
10	X xmt +
11	X rcv +
12	Key



Appendix C Dimension Drawing

