

LC-TK04U-V2.2

USB Touch controller

1. Electrical

- Supply voltage +5 Vdc, nominal (+4.75 to +5.25 Vdc)
- Supply current 100 mA, typical at +5 Vdc. Average power dissipation is 0.2 W, typical.
- Supply must be capable of sourcing 300 mA, minimum.
- Total noise and ripple requirement must be less than 100 mV (p-p) for frequencies below 1 MHz, and less than 50 mV (p-p) for frequencies above 1 MHz.

2. Interface

- USB
Compliant USB 1.1 low speed device specification
Support suspend and remote wakeup capability

3. Operating Modes

- Desktop
- Drawing
- Button

4. Conversion Time

- Max. 200 Points/Sec (pps), typical 160pps

5. Serial Communication Protocol

- UTCP : Default for USB, Ref. to UTCP reference manual for detail
- MTTM : MT410TM/510TM protocol,
- EloTM : SmartSetTM protocol,

6. Reliability

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

7. Environmental

7.1 Temperature

- Operating: 0°C to 65°C
- Storage: -25°C to 85°C

7.2 Humidity

- Operating: 10% to 90% RH, non-condensing
- Storage: 10% to 90% RH, non-condensing

7.3 Shock and Vibration

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

8. ESD

- Per EN 6100-4-2 1995: Level 4. Contact discharge 8kV, air discharge 15kV.

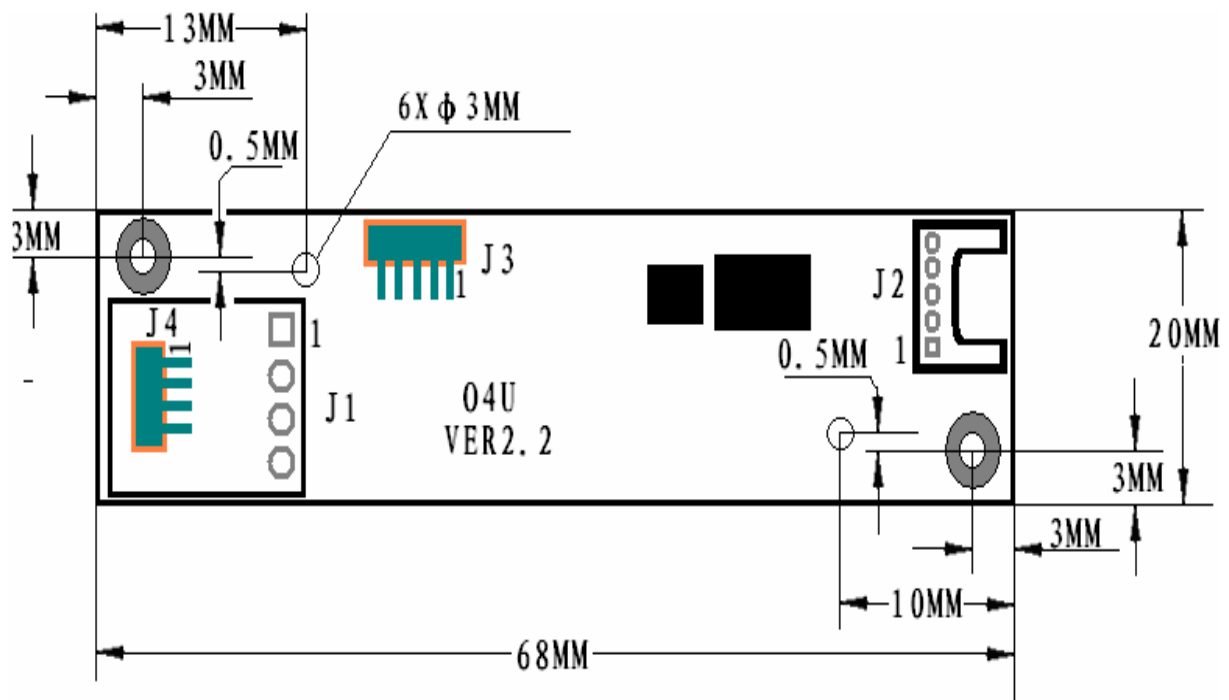
9. Flammability

- The printed circuit board substrate is rated 94V0. All plastic components, such as headers and connectors, are also rated 94V0.

10. Physical Characteristics

10.1 Construction

- Four-layer surface-mount design with internal ground plane for EMI suppression.
- different layouts with different connectors and positions, drawing shows all options combined



10.2 Dimension

- Total Width: 20 mm
- Total Length: 68 mm (including connectors)
- Total height: 8.3mm
- All mounting holes are plated through for chassis ground connection

11.Connectors and Pin Definitions

The connector configuration permits the controller to be placed in-line between the touchscreen and serial I/O attachments.

The USB connector, J2(J3), is a single row by seven-position header with pins spaced on 1mm centers. Refer to the following figure for pin number locations.

Signal definition for USB

Signal Name	J3 pin	J2 pin	Signal Function
Power (V5IN)	1	2	+5V power drain from host USB port
D-	2	5	USB bus signal
D+	3	4	USB bus signal
GND	4	1	signal ground
GND	5	3	signal ground

Figure 1. Pin diagram for serial connector, J1, as viewed from connector mating surfaces

Touch screen connector, J1(J4) signal descriptions

The touch screen connector, J1, is either a single row or a dual row by four-position header with 0.025-inch square pins spaced on 0.100 centers (2,54mm pitch). 4-Wire sensors must be connected to the low row of the connector in case of a dual row one.

The 4 Wire Touchscreen connector, J2 lower row, and signal descriptions

Signal name	J1 (J4) pin	Signal function
Y+	1	Connect to 4 Wire touchscreen Y+
X+	2	Connect to 4 Wire touchscreen X+
Y-	3	Connect to 4 Wire touchscreen Y-
X-	4	Connect to 4 Wire touchscreen X-

12.Scope of delivery

The touch controller board is always delivered with a cable set:

- USB interface cable, about 1,80 m long,with USB-A connector
- Interface cable for touch panel, 20 cm to 40 cm long, depending on the panel



13.Touchsreen driver software

Touchscreen driver software for different operating systems is available

- LinuxMCE
- Windows 7
- Windows2000/XP/Vista
- DOS
- WindowsNT

Drivers for other OS on request

14. Revision: V2.2 10/06/2012 revised