FX-TK04U-V1.22 USB Controller

Specifications for the TK04U-V1.22 controller include:

Electrical

Supply Voltage and Current

- +5 Vdc, nominal (+4.75 to +5.25 Vdc)
- 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.

Interface

- Support USB jumper selectable host communication interface.
    - USB
        - Compliant USB 1.1 low speed device spec.
        - Support suspend and remote wakeup capability

Operating Modes

- Desktop
- Drawing
- Button

Touch Resolution

- 4096x4096, size independent

Conversion Time

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

Serial Communication Protocol

- UTCP : Default for USB, Ref. to UTCP reference manual for detail
- MT™ : MT410™/510™ protocol,
- Elo™ : SmartSet™ protocol,

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

Environmental

Temperature

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

Humidity

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

Shock and Vibration

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

ESD

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

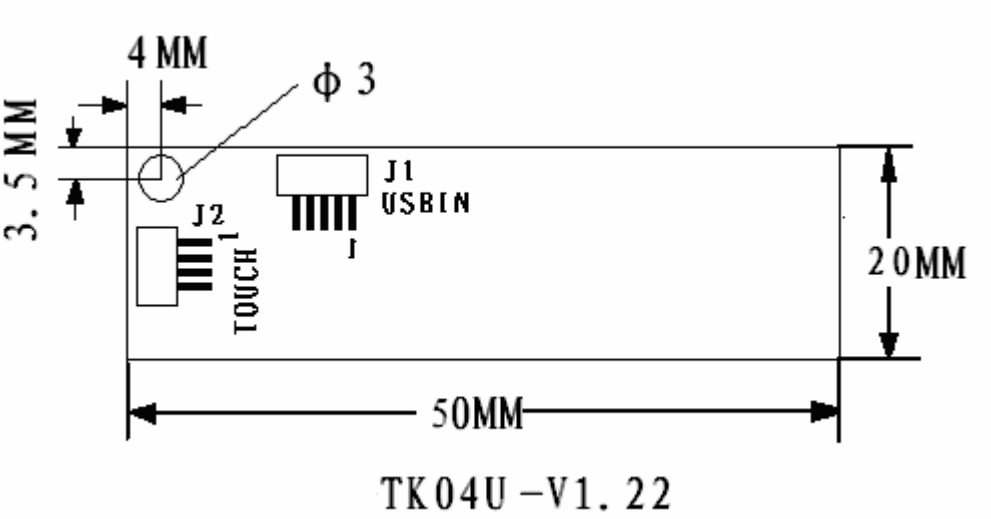
Flammability

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

Physical Characteristics

Construction()

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



Dimension

- Total Width: 20 mm
- Total Length:50 mm(including connectors)
- Total height:4.0mm
- All mounting holes are plated through for chassis ground connection. Refer to the drawings at the end of this document.

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

The USB connector, J1, is a single row by seven-position header with pins spaced on 1mm centers. Refer to the following figure for pin number locations.

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

Signal definition for USB interface		
Signal Name	**J1 pin**	**Signal Function**
Power (V5IN)	1	+5V power drain from host USB port
D-	2	USB bus signal
D+	3	USB bus signal
GND	4	signal ground
GND	5	signal ground

Table 1. Host Connector, J1, signal names and functions

Touch screen connector*, J2 signal descriptions*

The touch screen connector, J2, is a dual row by five-position header with 0.025-inch square pins spaced on 0.100 centers. 4W sensor must be connected to the low row of the connector.

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

Signal name	**J2 pin**	**Signal function**
X+	4	Connect to 4 Wire touchscreen X+
Y+	3	Connect to 4 Wire touchscreen Y+
X-	2	Connect to 4 Wire touchscreen X-
Y-	1	Connect to 4 Wire touchscreen Y-

Table 2. Touchscreen connector, J2 lower row, pins and signal names