URTC-1000 USB/Serial Controller Specifications

Specifications for the URTC-1000 controller include:

Electrical

Supply Voltage and Current

- +5 Vdc, nominal (+4.75 to +5.25 Vdc)
- 40 mA, typical at +5 Vdc. Average power dissipation is 0.2 W, typical.
- Supply must be capable of sourcing 100 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 RS-232/USB jumper selectable host communication interface.
- RS-232
    - EIA 232E (Serial RS-232), DCE configuration. 8 Data Bits, 1 Stop Bit, No Parity, Full Duplex.
    - Baud rate: 9600
    - Hardware handshaking: None.
- 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 RS-232 & USB, Ref. to UTCP reference manual for detail
- MT™ : MT410™/510™ protocol, Ref. to MT410™ reference manual for detail (RS-232 Mode only)
- Elo™ : SmartSet™ protocol, Ref. to SmartSet™ reference manual for detail (RS-232 Mode only)

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.

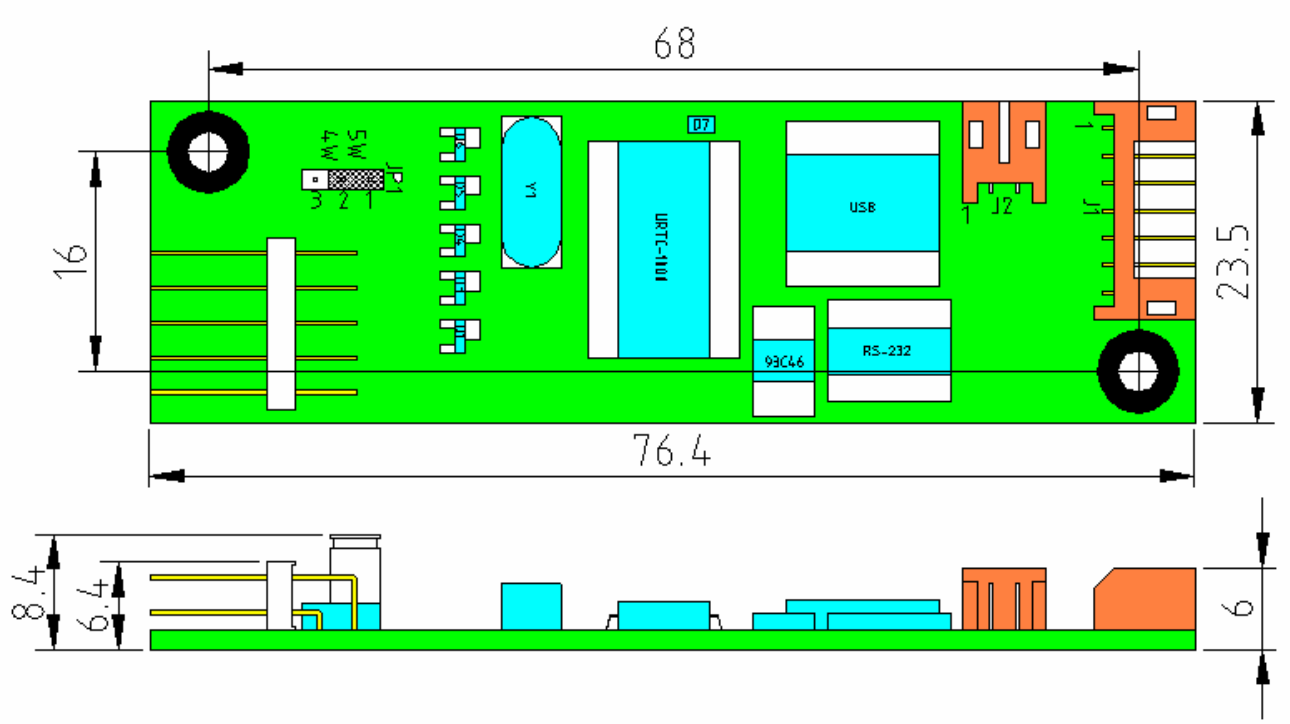
Flammability

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

Physical Characteristics

Construction (For Ver. UTR-0429-01, Rev3.1)

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



Dimension

- Total Width: 23.5 mm
- Total Length: 76.4 mm(including connectors)
- Total height: 8.4mm(include jumper)
- All mounting holes are plated through for chassis ground connection. Refer to the drawings at the end of this document.

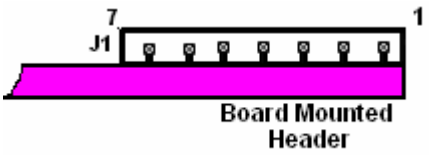
Connectors and Pin Definitions

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

  Serial connector, J1, and signal descriptions

  The serial I/O connector, J1, is a single row by seven-position header with pins spaced on 2mm centers. Refer to the following figure for pin number locations.

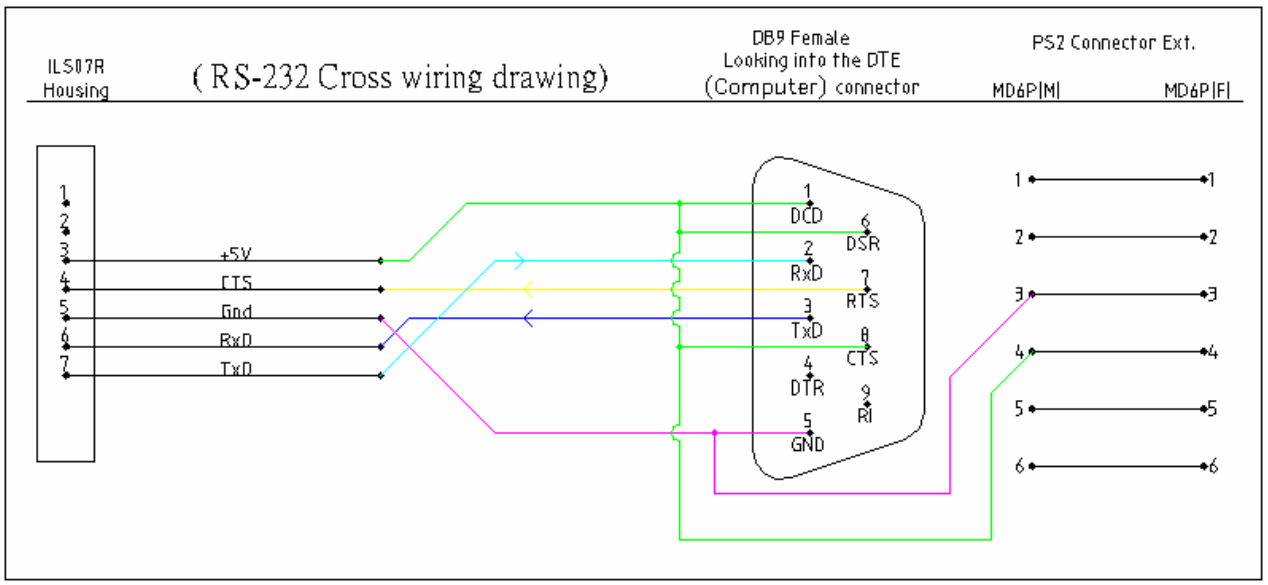
Figure 1. Pin diagram for serial connector, J1, as viewed from connector mating surfaces



Signal definition for RS-232 interface		
Signal Name	**J1 pin**	**Signal Function**
RxD	6	serial data from host to controller
TxD	7	serial data from controller to host
Power	3	+5V power drain from host side.
CTS	4	Use to disable report touch from controller, signal Lo=Disable.
SG	5	signal ground
Signal definition for USB interface		
D-	1	USB bus signal
D+	2	USB bus signal
Power	3	+5V power drain from host USB port
CTS	4	Use to disable report touch from controller, signal Lo=Disable.
SG	5	signal ground

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

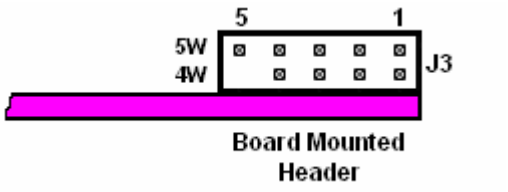
※ Recommended RS-232 Cable connection:



Touch screen connector, J3(90° dual row) and signal descriptions

The touch screen connector, J3, is a dual row by five-position header with 0.025-inch square pins spaced on 0.100 centers. 5W sensor must be connected to the upper row of the connector. 4W sensor must be connected to the low row of the connector. The pins are numbered as shown in the figure.

Figure 2. Pin diagram for touch screen connector, J3, as viewed from connector mating surfaces



The 5 Wire Touch screen connector, J3 upper row, and signal descriptions
*Note: Pin 5,4,2,1 can be redefinition using ***LiyiTouch*** utility software.

Signal name	J3 pin	Signal function
UL(Y+)	5	Connect to touch screen Upper Left Conner of glass layer
UR(X-)	4	Connect to touch screen Upper Right Conner of glass layer
WIPPER	3	Connect to touch screen film layer
LR(Y-)	2	Connect to touch screen Lower Right Conner of glass layer
LL(X+)	1	Connect to touch screen Lower Left Conner of glass layer

Table 2. Touch screen connector, J3 upper row, pins and signal names.

The 4 Wire Touch screen connector, J3 lower row, and signal descriptions

*Note : Pin 4,3,2,1 can be redefinition using ***LiyiTouch*** utility software.

Signal name	J4 pin	Signal function
None	5	Leave this pin not connect.
Y+	4	Connect to 4 Wire touch screen Y+
X-	3	Connect to 4 Wire touch screen X-
Y-	2	Connect to 4 Wire touch screen Y-
X+	1	Connect to 4 Wire touch screen X+

Table 3. Touch screen connector, J3 lower row, pins and signal names

Jumper, JP1 (180° Single row locate on left side of sensor connector) and signal descriptions

The jumper connector, JP1, is a single row by three-position header with 0.025 inch square pins spaced on 2mm centers. The pins are numbered as shown in the figure.

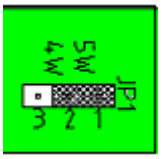


Figure 3. Pin diagram for jumper connector, JP1, as viewed from connector mating surfaces.

The jumper connector, JP1, and signal descriptions

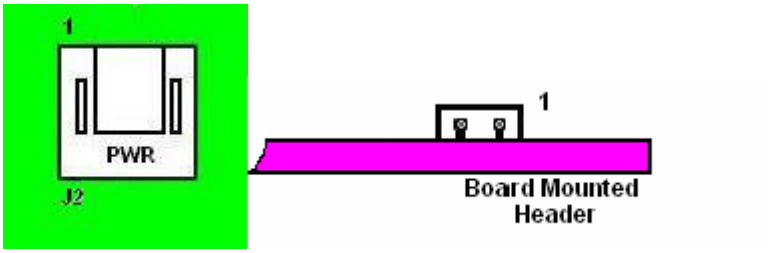
Jumper name	Pos	Jumper function
5W	1-2	Short these 2 pins to enable 5W measurement mode.
4W	2-3	Short these 2 pins to enable 4W measurement mode.

Table 3. Touch screen connector, JP1 pins and signal names

Power connector, J2 (90° single row) and signal descriptions

The PWR connector, J2, is a single row by two-position header with pins spaced on 2mm centers. The pins are numbered as shown in the figure.

Figure 4. Pin diagram for jumper connector, J2, as viewed from connector mating surfaces



The PWR connector, J2, and signal descriptions
※Note: Don't connect PWR from touch monitor if you are going to use power from Host (computer).

Signal name	Pos	Signal function
GND	1	DC GND from touch monitor if exist.
+5V	2	+5V DC supply from touch monitor if exist.

Table 4. PWR connector, J2, pins and signal names

Figure 5. Sensor header, J3, Reference drawing.

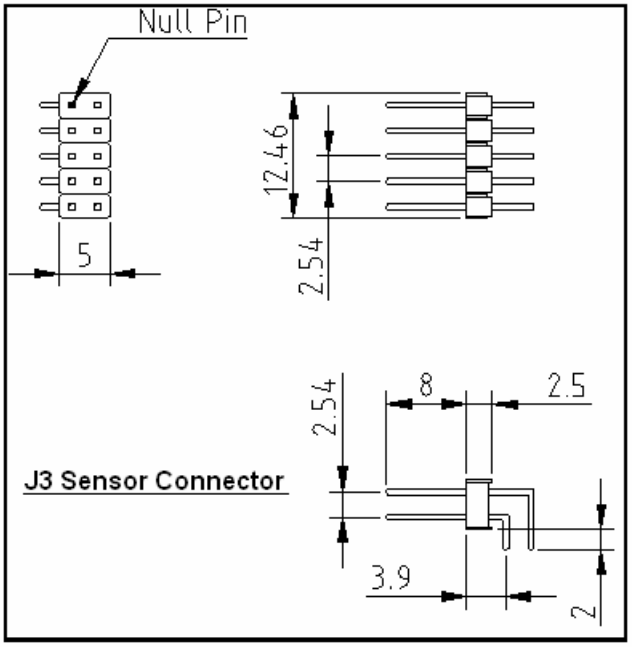


Figure 6. Host (J1) and PWR (J2) connector reference drawing.