



**Industrial Port-Powered RS-232 ⇔ TTL 3.3V Converter**  
**(Part Number: TTL33-232-1)**

CE



***<http://www.CommFront.com>***

**Part Number: TTL33-232-1****■ INTRODUCTION**

The TTL33-232-1 is a compact, rugged, industrial grade, port-powered RS-232 to 3.3VDC TTL converter, which can be used to convert RS-232 to 3.3VDC TTL compatible levels and vice versa. This industrial grade RS232 to TTL converter operates within a temperature range of -40°F to 185°F (-40°C to 85°C), and features 600W surge protection and 15kV static protection. The unit is efficiently powered from the RS-232 data line, and therefore, it requires no external power or software drivers, making the unit a rugged, highly reliable, and truly plug-and-play device.

**■ FEATURES**

- Industrial grade enclosed in a rugged, rustless ABS housing.
- Port-powered, no external power is required.
- Operates reliably from 300 to 115,200 baud.
- Plug and play (hot-pluggable, data format auto-sensing and self-adjusting).
- Operating temperature: -40°F to 185°F (-40°C to 85°C).
- Built-in 600W surge protection, 15kV static protection and circuit protection.
- Surface Mount Technology manufactured to RoHS and ISO-9001 standards.
- Safety: Strictly certified by TUV (Cert No. SG-CE-090012).
- 5-year manufacturer's warranty.

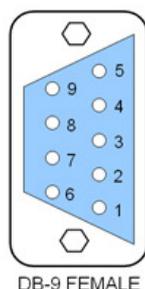
**■ SPECIFICATIONS**

Compatibility:	EIA/TIA RS-232C standard and TTL 3.3VDC level
Power Source:	Port power from RS-232 data line
Current Consumption:	Less than 10mA
Baud Rates:	300 to 115,200bps (auto-sensing and self-adjusting)
Distance:	RS-232 side: 16ft (5m); TTL side: 10ft (3m)
Connectors:	RS-232 side: DB-9 Female; TTL side: DB-9 Male; Termination Board: DB-9 Female and a 3-Way Terminal Block
Surge Protection:	600W
Static Protection (ESD):	Up to 15KV
Dimensions (H x W x D):	0.63 x 1.3 x 3.5 in (16 x 32 x 88 mm) (with termination board)
Weight:	1.27 oz (36 g) (with termination board)
Operating Temperature:	-40°F to 185°F (-40°C to 85°C)
Operating Humidity:	Up to 90% RH (no condensation)

**■ PIN ASSIGNMENT**

RS-232 Side (DB-9 Female Connector):

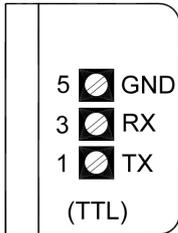
Pin:	1	4	6	7	8	2	3	5
Signal:	DCD	DSR	DTR	CTS	RTS	TX	RX	GND
Function:	tied together			tied together		TX	RX	GND



Note: Some software requires handshake line acknowledgements. To satisfy the requirements, the TTL33-232-1's handshake lines (RS232 side) are tied together (DCD, DSR, and DTR tied together, CTS and RTS tied together). Therefore, you don't have to modify your existing software.

TTL Side (DB-9 Male Connector / Terminal Block):

DB-9 Pin:	1	3	5
Terminal Block:	TX	RX	GND
Function:	TTL OUT	TTL IN	GND



- The numbers on the left indicate the pin assignment of DB-9 male connector (TTL side).
- TX is the TTL Output, RX is the TTL Input.

## ■ CONNECTIONS

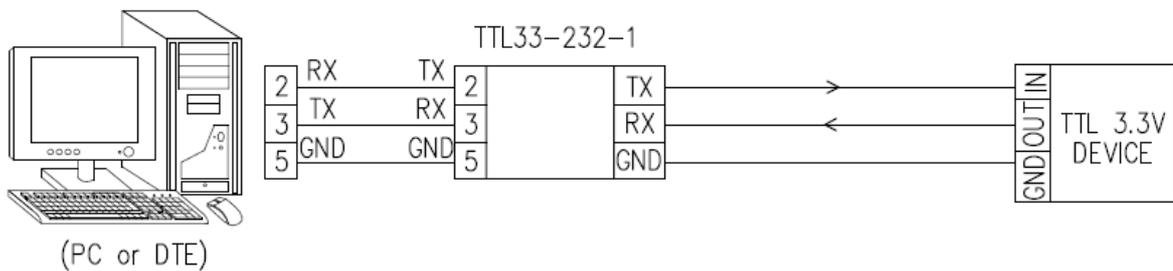


FIGURE 1: TTL33-232-1 CONNECTION DIAGRAM

## ■ TTL SIGNAL LEVELS

TTL Input	TTL Output
High (>2.0V)	High (3.3V)
Low (<0.8V)	Low (0.0V)

## ■ TROUBLESHOOTING

Perform a loopback test by using CommFront's 232Analyzer software: Connect TX (TTL Out) to RX (TTL In), and then send commands from the 232Analyzer software. You should receive an echo of the commands sent. By performing a simple loopback test like this, you can test both the transmitter and receiver of the RS-232/TTL converter. This is very helpful when you are in doubt about the performance of your converter.

