USB-TTL-5 PRODUCT
IS A COMBINATION
OF PRODUCTS USB-232-2
AND TTL-232-5P
BOTH DATASHEETS
ARE INCLUDED
IN THIS PDF FILE

USB-232-2

USB To RS-232 Converter – 9 Pin

SERIALCOMM.COM

Datasheet Revision 2.7

GENERAL FEATURES:

- Plug-and-Play (hot-pluggable)
- USB 1.1 and 2.0 compatible
- Port powered - no external power needed
- Supports 300 baud to 460,800 baud rates
- Supports all RS-232 signals: TX, RX, RTS, CTS, DTR, DSR, RI and GND
- 3 feet (1m) cable for convenience
- Transmit/Receive LED indicators
- Data direction auto-turnaround - no flow control necessary
- Internal 128/385 byte TX / RX buffers
- No IRQs, IO, DMA required. No IRQ conflicts
- Supports remote wakeup and power management
- Easy to install included drivers
- Built-in surge and static protection
- 5 Year manufacturer's warranty
- CE, FCC, RoHS and REACH certified

DESCRIPTION:

The SerialComm USB-232-2 is a bi-directional USB-powered USB to RS-232 converter which makes a full-duplex RS-232 port available to a PC via the USB port. The USB-232-2 has a DB9 male connector on the RS-232 serial port, and a USB type A female on the USB port. The adapter is powered from the USB port; no external power is required.

The USB-232-2 uses the latest FTDI chipset and is fully compatible with Windows 10 32/64, Windows 8 32/64, Windows 7 32/64, Vista 32/64, Server 2003, Server 2008, Server 2008 R2, XP 32/64, 2000 98Se, CE, Mac 8/9/x, Linux.

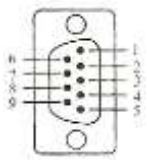
CERTIFICATIONS:

PINOUT CONFIGURATION:

RS-232 SIDE – DB9 MALE

SIGNAL	DCD	DTR	DSR	RTS	CTS	TX	RX	GND
PIN #	1	4	6	7	8	2	3	5

MALE DB9



SPECIFICATIONS:

COMMUNICATION	
STANDARDS:	USB 2.0 and 1.1 Standards - EIA/TIA RS-232C Standard
OPERATING SYSTEM:	Windows 10 (32/64), Windows 8.1 (32/64), Windows 8 (32/64), Windows 7 (32/64), Vista (32/64), Server 2012, Server 2008 R2, Server 2008, Server 2003, XP (32/64), 2000, 98Se, CE, Mac 8/9/X, Linux and Android
BAUD RATES:	From 300 bps to 460,800 bps
CONNECTOR TYPES:	USB Side: Type A Female and RS-232 Side: DB9 Male
DISTANCE:	USB Side: 10ft (3m) and RS-232 Side: 16 ft (5m)
LED INDICATIONS:	RS-232 TX (Red) and RX (Green)
DRIVERS:	FTDI drivers are included in package
ELECTRICAL	
POWER SOURCE:	Port Powered From USB Port
CURRENT CONSUMPTION:	Less Than 100 mA
STATIC PROTECTION:	15KV Electric Static Discharge (ESD) Protection
SURGE PROTECTION:	600W Surge Protection
CONVERSION IC:	FTDI FT232RL
MECHANICAL	
WEIGHT:	2.0oz (58 grams)
DIMENSIONS:	**RS-232 Housing:** 2.33" X 1.42" X 0.58" (59.3 mm X 36.1 mm X 14.7 mm) **Cable Length**: 3 ft (1m)
ENVIRONMENTAL	
OPERATING TEMP.:	14° F to 140° F (-10°C to 60° C)
STORAGE TEM P:	-40° F to 185° F (-40°C to 85° C)
OPERATING HUMIDITY:	5% To 95% - No Condensation
QUALITY	
PRODUCT SAFETY:	CE, FCC, RoHS and REACH Third-part Certified
QUALITY MANAGEMENT:	Manufactured and Distributed to ISO 9001:2015 QMS
MEAN TIME BEFORE FAILURE:	427,056 Hours
RELIABILITY:	Low Failure Rate – 99+% Reliability Since Inception
WARRANTY:	5 Year Replacement Warranty

TROUBLESHOOTING INSTRUCTIONS:

Using one USB-232-2 unit:

1. Perform a loop back test on one unit:
    a) Connect the TX to RX on the RS232 port.
    b) Connect the USB connector on the cable to the USB port of the computer.
    c) Install the USB / RS232 FTDI driver on the computer per instructions provided.
    d) Running a hyper terminal program on the PC, send ASCII characters to the USB-232-2 converter from one PC port, and check that the characters are received at the same PC port. This tests that the transmit and receive functions of the USB-232-2 unit is working properly.
    e) When there is constant RX data you should see the GREEN light blink. When there is constant TX data you should see the RED light blink.

Using two USB-232-2 units:

1. Perform a loop back test on two units:
    a) Connect the two TX to RX and RX to TX on two USB-232-2 RS-232 ports. Or connect TX to TX and RX to RX with a null modem.
    b) Connect the USB connectors on the cables to two USB ports on the computer.
    c) Install the USB / RS232 FTDI driver on the computer per instructions provided.
    d) Running hyper terminal programs on both PCs, send ASCII characters to the USB-232-2 converter from one PC port, and check that the characters are received at the 2nd PC port. Repeat the test in the opposite direction. This tests that the transmit and receive functions of both USB-232-2 units are working properly.
    e) The GREEN light should flash when there is RX data and RED when there is TX data.

TTL-232-5P

RS-232 To 5V TTL Converter - DB9

SERIALCOMM.COM

Datasheet Revision 2.6

GENERAL FEATURES:

- Plug-and-Play (hot-pluggable)
- Port powered - no external power needed
- Data direction auto-turnaround - no flow control necessary
- Built-in surge and static protection
- 5-year replacement manufacturer's warranty
- CE, FCC, RoHS and REACH certified

DESCRIPTION:

The SerialComm TTL-232-5P is a bi-directional port powered RS-232 to 5V TTL converter which converts a full-duplex RS-232C port to a 5V TTL signal. A built-in data direction auto-turnaround feature automatically enables the TTL driver when data is present from the RS-232 port, eliminating the need for software drivers, and making the device fully plug-and-play. The TTL-232-5P has a DB9 female connector on the RS-232 serial port, and DB9 male connector on the TTL port. A separate terminal block is included with the product. The terminal block plugs into the TTL port, providing screw-lug wire terminations for the port. The unit is enclosed in a rugged ABS housing and is powered from the RS-232 data lines; no external power is required.

CERTIFICATIONS:

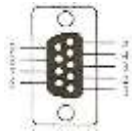
TTL VOLTAGE LEVELS:

TTL INPUT	TTL OUTPUT
HIGH (> 2.0V)	HIGH (5.0V)
LOW (< 0.8V)	LOW (0.0V)

PINOUT CONFIGURATION:

RS-232 SIDE – DB9 FEMALE

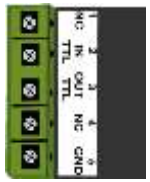
FEM. DB9

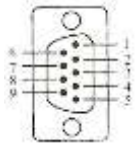


SIGNAL	DCD	DTR	DSR	RTS	CTS	TX	RX	GND
PIN #	1	4	6	7	8	2	3	5
FUNCT.	TIED			TIED		TX	RX	GND

TTL SIDE – DB9 MALE OR TERMINAL BLOCK

MALE DB9





SIGNAL	NC	TTLIN	TTL OUT	NC	GND
PIN #	1	2	3	4	5
FUNCTION	NC	TTL IN	TTL OUT	NC	GND

SPECIFICATIONS:

COMMUNICATION	
STANDARDS:	EIA/TIA RS-232C Standard
BAUD RATES:	From 300 bps to 115,200 bps
CONNECTOR TYPES:	RS-232 Side: DB9 Female and TTL Side: either DB9 Male or 5 Way Terminal Block
DISTANCE:	RS-232 Side: 16 ft (5m) and TTL Side: up to 10 ft (3m)
ELECTRICAL	
POWER SOURCE:	Port Powered From RS-232 Data Lines
CURRENT CONSUMPTION:	Less Than 10 mA
STATIC PROTECTION:	15KV Electric Static Discharge (ESD) Protection
SURGE PROTECTION:	600W Surge Protection
MECHANICAL	
HOUSING:	Rugged ABS
WEIGHT:	**With Terminal Block**: 1.2oz (36 grams) **Without Terminal Block**: 0.8oz (24 grams)
DIMENSIONS:	**With Terminal Block:** 3.16" X 1.32" X 0.73" (80.3 mm X 33.4 mm X 18.6 mm) **Without Terminal Block**: 2.47" X 1.33" X 0.70" (62.8 mm X 33.8 mm X 17.8 mm)
ENVIRONMENTAL	
OPERATING TEMP:	-4° F to 140° F (-20°C to 60° C)
STORAGE TEMP:	-40° F to 185° F (-40°C to 85° C)
OPERATING HUMIDITY:	5% To 95% - No Condensation
QUALITY	
PRODUCT SAFETY:	CE, FCC, RoHS and Third-party Third-party Certified
QUALITY MANAGEMENT:	Manufactured and Distributed to ISO 9001:2015 QMS
MEAN TIME BEFORE FAILURE:	249,914 Hours
RELIABILITY:	Low Failure Rate – 99+% Reliability Since Inception
WARRANTY:	5 Year Replacement Warranty

TROUBLESHOOTING INSTRUCTIONS:

Using one TTL-232-5P unit:

1. Check that all connections comply with the connection diagrams.
2. Perform a loop back test on one unit:
    a) Connect the TTL IN to TTL OUT on the TTL port.
    b) Connect the RS-232C port to the PC RS-232 port.
    c) Running a hyper terminal program on the PC, send ASCII characters to the TTL-232-5P converter from one PC port, and check that the characters are received at the same PC port. This tests that the transmit and receive functions of the TTL-232-5P unit is working properly.

Using two TTL-232-5P units:

1. Check that all connections comply with the connection diagrams.
2. Perform a loop back test on two units:
    a) Connect the two TTL ports. Connect TTL IN to TTL OUT and TTL OUT to TTL IN.
    b) Connect the two RS-232 ports to two PC RS-232 ports.
    c) Running hyper terminal programs on both PCs, send ASCII characters to the TTL-232-5P converter from one PC port, and check that the characters are received at the 2nd PC port. Repeat the test in the opposite direction. This tests that the transmit and receive functions of both TTL-232-5P units are working properly.

APPLICATIONS:

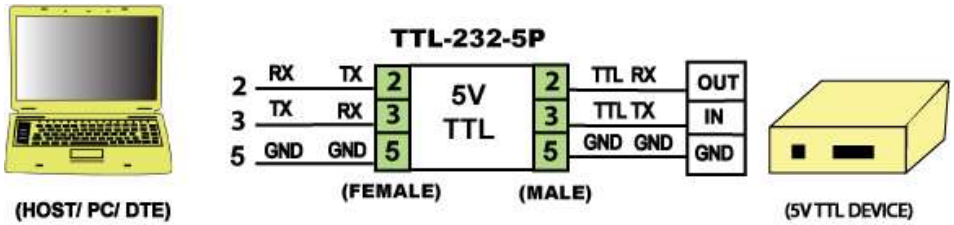


FIGURE 1: CONNECTING THE RS-232 PORT TO A 5V TTL DEVICE