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TDi2

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Wireless RS232 Interface Board

TDi2 interface board enables a cable free transparent data link between RS232 ports without any additional interface circuitry.

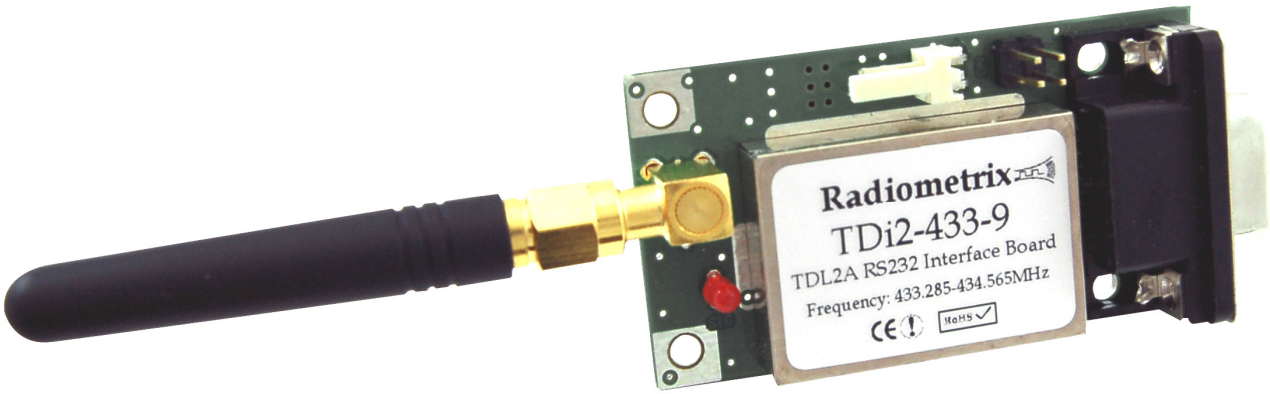


Figure 1: TDi2-433-9

The interface board feature an on board TDL2A-433-9 OEM serial modem, MAX232 RS232 driver, 9 way D connector, 5V voltage regulator and SMA RF connector, hence requires just a Voltage supply to power up and operate without any additional interface circuitry. The TDL2A modules would be soldered directly on to the interface board for better grounding and to improve RF performance. The helical antenna and the SMA connector shown are optional. User could also use a two pin terminal block instead to mount a 1/4 whip antenna made of piece of wire or metal rod.

Features

- RS232 driver and DB9F connector for direct interface to PC serial port
- Serial modem baud rate at 9600bps (half-duplex)
- Addressable point-to-point
- 5 serial select wideband channels
- Carries ASCII and RTU MODBUS messages
- Access to internal diagnostic/Test modes using HyperTerminal
- On board SMA antenna connector
- Signal LED for visual indication of valid code received
- Supply range: 5 - 15V @ 28mA (transmit), 22mA (receive)
- Setup is simple as Plug-and-Play
- Set-up and configuration using HyperTerminal
- Conforms to EN 300 220-3 and EN 301 489-3
- Size: 61mm x 33mm (excluding helical antenna length of 55mm)

Applications

- Handheld / portable terminals
- PDAs, organisers & laptops
- Industrial telemetry and telecommand
- In-building environmental monitoring and control
- Remote data acquisition system, data logging
- Fleet management, vehicle data acquisition

Configuring the TDi2

In order to use all the functions embedded in the on board TDL2A modem, the user must be aware of the setup /programming facility, which allow different addresses and frequency channels to be set up, and if necessary accesses diagnostic test modes.

The TDi2 is programmed through the same RS232 port that is used for sending/receiving data. An RS232 terminal emulator (such as Aterm or HyperTerminal) is an ideal tool.

Connect the TDi2 directly (or via serial straight through cable) to the PC serial port.

To enter program mode, insert the PGM jumper (to pull the SETUP pin of TDL2A low) and run the PC HyperTerminal program. In this mode the radio link is disabled, but characters sent (at 9600 baud, as normal) to the unit are echoed back on the RXD pin.

The HyperTerminal should be set with the following settings.
9600 baud RS232, 8 bit data, no parity, 1 start bit, 1 or 2 stop bits. No flow control.

The unit will only respond to certain command strings:

ADDR0 to **ADDR7** <CR><LF> These commands set up one of 8 unique addresses. A TDi2 will only communicate with a unit set to the same address.

CHAN0 to **CHAN4** <CR><LF> These commands select one of 5 preset channels

A TDi2 will only communicate with a unit set to the same address and the same channel.

Address and channel numbers are stored in volatile memory. On power-up the TDi2 reverts to the default in EEPROM (as supplied this is always address 0 and Channel 0)

SETPROGRAM <CR> Writes the current set address into EEPROM as the new default.
A tilda character (~, ascii 126dec) sent by the unit indicates end of EEPROM write sequence

(these commands are normally only used for factory diagnostics)
NOTONE <CR>Transmit unmodulated carrier
LFTONE <CR> Transmit carrier modulated with 8KHz squarewave
HFTONE <CR> Transmit carrier modulated with 16KHz squarewave
<CR> Transmitter off

A Carriage Return '<CR>' (00Dhex) should be entered after each command sequence to execute it.
Releasing the SETUP (by removing the PGM jumper) to high state returns the TDi2 to normal operation

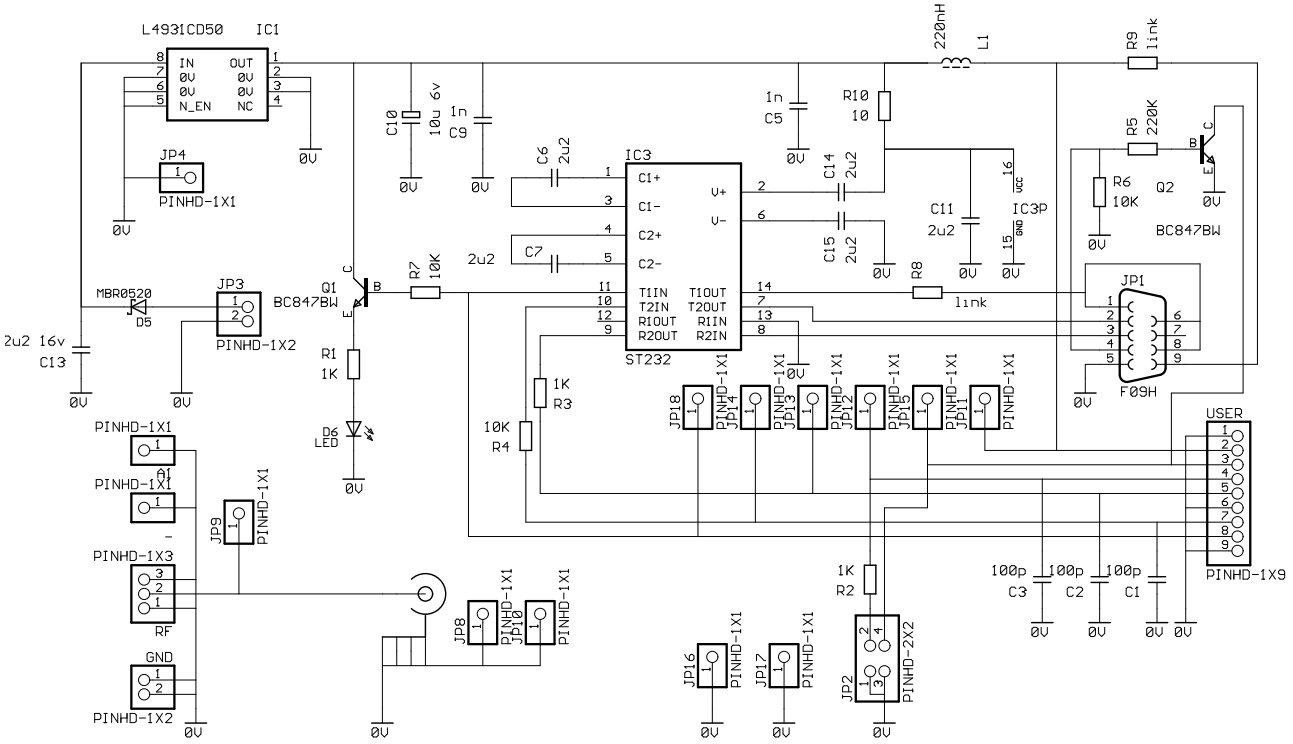


Figure 2: Schematic diagram of TDi2

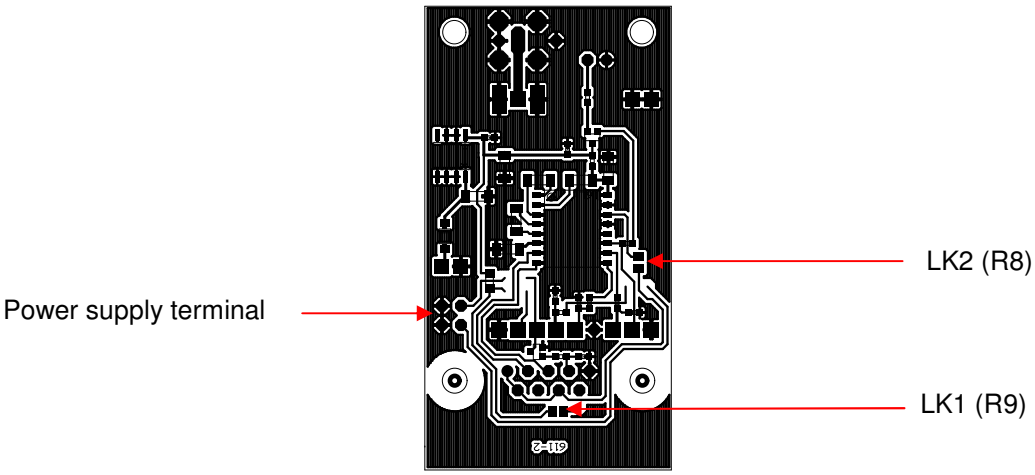


Figure 3: PCB layout of TDi2 (bottom view)

On-board regulator (L4931) can supply up to 250mA current at 5V.

R9 (LK1) connects pin 9 (Ring Indicator) on the D type to the 5V, which enables any external host to be powered from pin 9 (+5V DC) and pin 5 (GND). Certain CCD barcode scanner can make use of this feature, eliminating the need for additional external power adaptor.

R8 connects STATUS (data ready, via an RS232 buffer) to DCD, DSR and CTS. Not linking this jumper (LK2 at the back of the board) saves power.

The SIG LED is provided for visual indication of STATUS data ready. This LED would lit when a valid data is present in the receive buffer.

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The Intrastat commodity code for all our modules is: 8542 6000

R&TTE Directive

After 7 April 2001 the manufacturer can only place finished product on the market under the provisions of the R&TTE Directive. Equipment within the scope of the R&TTE Directive may demonstrate compliance to the essential requirements specified in Article 3 of the Directive, as appropriate to the particular equipment.

Further details are available on The Office of Communications (Ofcom) web site:

http://www.ofcom.org.uk/

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