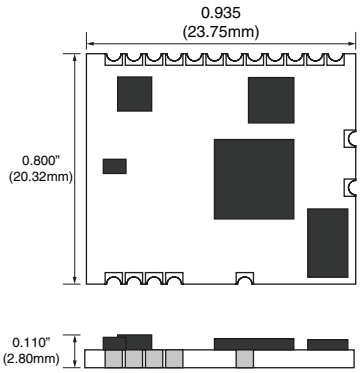
DTS Series and EUR Series RF Transceiver Module

The DTS Series and EUR Series RF transceiver modules combine a low power wireless transceiver with a powerful multipoint-to-multipoint protocol controller to form a transparent wireless communication solution capable of replacing wires in almost any RS-232/422/485 application. The module uses a Digital Transmission System type of spread spectrum. This type of system is allowed to have a higher output power, giving it a range of up to 1 mile (1.6km) without having to hop channels or the expense of a direct sequence (DSSS) system.

Interace: The transceiver has a UART serial interface and is designed to create a UART-to-antenna wireless solution.

Power: The transceiver is designed for low power applications. Low power modes as well as adjustable transmitter output power allow the designer to optimize the current consumption for the available power supply in the application.



Configuration: The transceiver contains several registers that control its configuration and operation. The registers are accessed through the UART and enable a great deal of optimization.

Protocol: The transceiver has a robust built-in protocol. A Carrier Sense Multiple Access (CSMA) algorithm makes sure the channel is clear before sending data. Group ID and addressing enable basic networking. A 16-bit CRC ensures correct data.

Variants: The North American module offers 32 DTS channels in the 902 to 928MHz band. The Brazilian module removes the channels in the 907 to 915MHz restricted band, leaving 19 DTS channels. The EUR Series offers 2 DTS channels in the 868 to 870MHz band.

Evaluation Module: An evaluation module is available that has the module on a board with an antenna connector and voltage regulator. The North American variant has received FCC certification. The Brazil variant has received Anatel certification. Specific antennas must be used to maintain the certification. This greatly reduces the expense and time to implement a wireless solution.

Specifications

Parameter	EUR	DTS
Operating Voltage	2.7–3.6V	2.7–3.6V
TX Supply Current		
@ 11dBm	50–58mA	63–72mA
@ 0dBm	26–35mA	28–36mA
RX Supply Current	16–24mA	16–24mA
Standby Current	0.85mA	0.85mA
Sleep Current	35µA	35µA
TX Output Power	–4 to 13dBm	–4 to 11dBm
Max. RX Sensitivity	–104dBm	–104dBm
Max. Data Rate	115.2kbps	115.2kbps
Operating Temperature Range	–40 to +85°C	–40 to +85°C

Applications

- Direct RS-232/422/485 Wire replacement
- Asset tracking
- Automated meter reading
- Industrial / home automation
- RFID
- Remote data logging
- Wireless sensors

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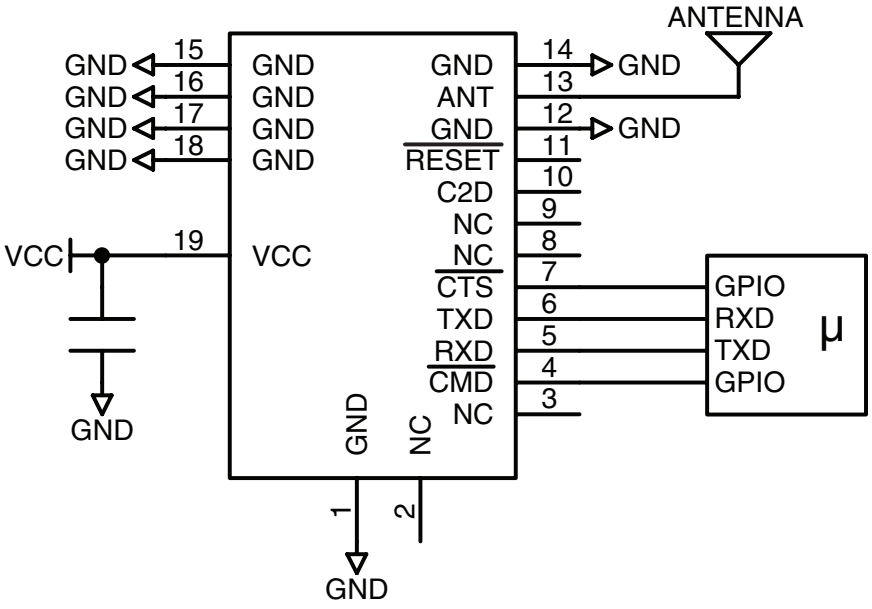
Typical Applications

The figure below shows the DTS Series transceiver connected to a microcontroller.



The DTS and EUR Series Transceivers are configured through a UART interface.

Configuration Options

- Set the transmit and receive channel
- Configure the transmitter output power level
- Configure the data rate
- Configure the module address and network mode
- Configure the power state
- Configure the packet size

Ordering Information

Part Number	Description	Radiotronix Part No.
TRM-915-DTS	900MHz DTS Series Transceiver	Wi.232DTS-R
TRM-915-DTS-BRZ	900MHz DTS Series Transceiver, Brazil	Wi.232DTSB-R
TRM-868-EUR	868MHz EUR Series Transceiver	WI.232EUR
EVM-915-DTS-FCS	900MHz DTS Series Transceiver Evaluation Module, Straight RP-SMA Connector, FCC Approved	Wi.232DTS-FCC-ST-R
EVM-915-DTS-FCR	900MHz DTS Series Transceiver Evaluation Module, Right Angle RP-SMA Connector, FCC Approved	Wi.232DTS-FCC-RA-R
EVM-915-DTS-BZR	900MHz DTS Series Transceiver Evaluation Module, Right Angle RP-SMA Connector, Brazil Anatel Approved	Wi.232DTSB-EVM-RA-R
EVM-915-DTS-BZS	900MHz DTS Series Transceiver Evaluation Module, Straight RP-SMA Connector, Brazil Anatel Approved	Wi.232DTSB-EVM-ST-R
EVM-868-EUR-RA	868MHz EUR Series Evaluation Module, 868MHz, Right Angle SMA Connector	
EVM-868-EUR-ST	868MHz EUR Series Evaluation Module, 868MHz, Straight SMA Connector	Wi.232EUR-EVM-R

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