TReX - IoT, telemetry, data and messaging I/O transceiver

What is the TReX?

The WTE TReX is a high power, IoT, telemetry, data, I/O control and messaging radio transceiver.

The TReX can be used for long range monitoring and control. Two-way messaging allows for confidence and certainty of critical messages being delivered and also provides periodic messaging of installation health status, giving customers critical insights without having to visit the site.

The TReX has a suite of in-built tools such as a spectrum analyser, antenna fault detector and message logging ability that can be set-up on site, with minimal downtime and is ready to be configured without external hardware support.

Suitable for a number of monitoring and control applications in sectors such as industry, agriculture, farming, retail, hospitality, security and emergency services.
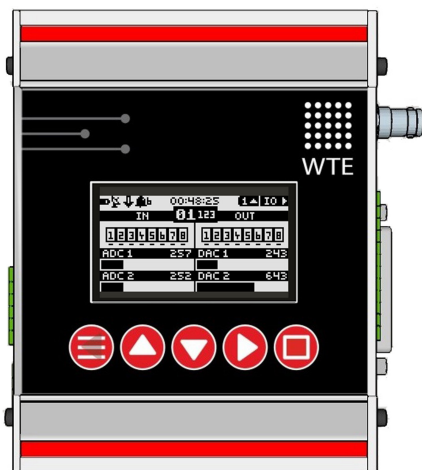
Control:

- Light systems, electric fences, pumps, irrigation, pipe pressure, flow, temperature, humidity, relays, gates, etc.

Monitor:

- Pumps, irrigation, center pivot irrigation, security systems, pressure, Flow, temperature, gates, water tank/trough levels, soil moisture, etc.

Notifications:

- System failure, antenna fault, input changes, battery states

Messaging:

- Upon a notification event a message can be sent directly to a belt pager, pass to a system which can generate an SMS message and/or timestamp log to internal memory.

Repeater:

- The TReX allows range extension by repeating of messages if required for extremely long range operation.

Typical applications:

- IoT control and monitoring.
- Electronic Work Site Safety Systems.
- Transmit and receive paging messages.
- Monitor and control installations using standard SCADA software.
- Autonomously mirror analog and digital I/O to a remote unit.
- Inspect potential site interference using the integrated spectrum analyzer.
- Monitor and control via TCP server or client.
- Emergency assembly point monitoring and reporting.

TReX

IoT and Scada Simplified

The TReX features reduce the components required in a SCADA system. Features includes: Digital and Analog I/O, Long Range Wireless I/O expansion and Modbus RTU/TCP protocol support.

Using the TReX makes SCADA system configuration easy, affordable and reliable.

Extra features:

• RF data transmit rates from 512 baud to 32K baud.
• Supported channel spacing of 25kHz, 12.5kHz and 6.25kHz.
• Two-way paging, with reporting on delivery and confirmation of message been read/accepted.
• Simple to configure back to back mirroring and monitoring of analog and digital IO.
• Graphics display shows all transmit and receive activity including I/O state.
• USB connection allows downloading of TX and RX logs or direct access to configuration files.
• Ethernet support allowing remote configuration and operation via TCP and web
• Configured inputs can be programmed to send messages when triggered
• Any output can be assigned to indicate:
    • Channel busy.
    • Alert on filtered match of message payload.
    • Comms link fail.
    • Antenna fault.
    • Low output power.
    • Low input voltage.
    • High temperature.
• Periodic message support to ensure radio link integrity.
• Firmware upgradeable.
• Antenna mismatch detection.
• High sensitivity receiver.
• Internal real time clock.
• Up to 4W power output.

Specifications:

Frequency Range	TReX-460: 421MHZ to 480MHZ
	TReX-160: 142MHZ to 175MHZ
Supply Voltage	Nominal 12V. Min 10.8. Max 15.6V.
Tx Power	250mW, 500mW, 1W, 2W and 4W
Digital Inputs	8
Analog Inputs	2 (0-16V)
Digital Outputs	8
Analog Outputs	2 (0-10V/4-20mA)
Antenna Connector	BNC
Interfaces	RS232, RS422,RS485 and Ethernet (Web/TCP)

Spectrum Analyzer (optional):

Resolution Bandwidth (RBW)	1KHZ OR 25KHZ
SPAN	up to 3MHz
Sweep mode	Continual or peak display.
Minimum signal	-120 dBm
Maximum signal	-10 dBm

Customisation

The TReX has been developed and is maintained "in-house". WTE can work with your team to customize the TReX to meet your system needs.