Wireless Technologies

DATASHEET

Telemetry & messaging **radio** solutions

MReX-460

MReX
TELEMETRY AND MESSAGING TRANSCEIVER MODULE

The MReX is a low cost, very high sensitivity transceiver module for mobile paging and general telemetry use.

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

Single modular type approval means that the module can be incorporated into other products, in some cases with no required testing for FCC and CE compliance. This can result in a very short time to market for products.

APPLICATIONS:

- Transmit DMR Messages to a variety of standard DMR radios.
- Transmit and receive POCSAG paging messages for use with legacy belt pager type systems.
- Transmit and receive serial and telemetry data at high data rates (optional).
- Repeat and forwarding telemetry and paging messages in poor coverage areas (optional).
- Remotely control outputs or monitor inputs

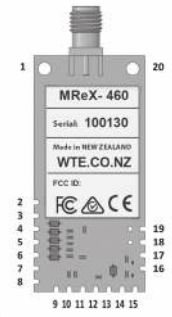
FEATURES:

- Sends and receives 512, 1200 and 2400 baud POCSAG paging messages.
- Transmits DMR Tier 1 text messages (optional).
- Sends telemetry data from 512 baud to 9600 baud
- Paging store and forward repeater operation with configurable duplicate reject (optional).
- Data transmit rates from 512 baud to 9.6K baud.
- Supported channel spacing of 25kHz, 12.5kHz and 6.25kHz.
- Optionally can be used as a point to point wireless serial link operating at speeds up to 9600 baud. In this manner a wireless transparent serial link can be achieved.
- 5 inputs. One Input may be reconfigured to be an open collector output.
- Periodic message support to ensure link integrity.
- High stability 0.5PPM oscillator ensuring minimal drift over the entire specified temperature range.
- High sensitivity receiver (-127dBm at 512 baud).
- Operation through external power supply (5-9Vdc) or 3V battery pack.
- Configured inputs can be programmed to send POCSAG and DMR messages simultaneously when triggered.
- Configured outputs can be controlled via received messages.
- Autonomous operation without the need for any host processor.
- Compliant as mobile and base station transceiver meaning that the user can select a suitable antenna for best performance.

DMR MESSAGING SUPPORT

The MReX supports the transmission of short Digital Mobile Radio text messages, allowing direct messaging to a variety of DMR radios.

MReX PINOUT



Pin Number	Description
1 & 2	GND
3	Input/Output – Digital 5
4	Input/Output – Digital 4
5	Input/Output – Digital 3
6	Input/Output – Digital 2
7	Input/Output – Digital 1
8	Output – Digital 1 (open drain)
9	TX Serial TTL (out 3.3V)
10	RX Serial TTL (in 3.3V)
11	GND
12	Power IN + (5-9Vdc, 150mA)
13 & 14	GND
15	LED 2. (open drain). Red Transmit.
16	LED 1. (open drain). Green Status.
17	GND
18	Power IN + Battery (3V)
19 & 20	GND

CUSTOMISATION

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

MReX-460

Specifications:

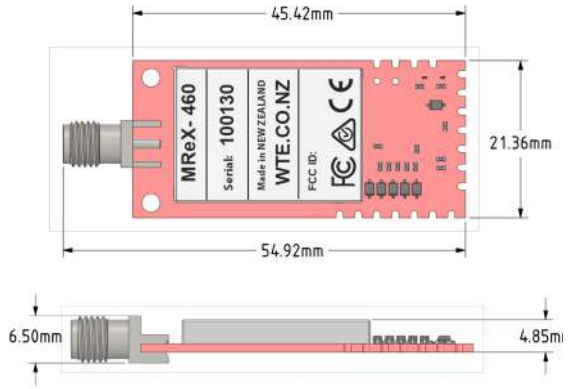
Frequency Range ..... .MReX-460: 421MHZ to 480MHZ
Tx Power ..... Up to 100mW (+20dBm)
Receiver Sensitivity ..... **450MHZ** (512 BAUD) -126 dBm
450MHZ (1200 BAUD) -124 dBm
Maximum RX Input Power ..... .13 dBm
Tx/Rx Frequency Accuracy 0.5ppm

External supply voltage ..... Nominal 5V. Min 4. Max 9V.
OR Battery ..... .3V.
Operating Current:
Receiving: 21mA
Transmitting: 95mA
Standby: ..... .<300nA in transmit only standby

Digital Inputs 5
Analog Inputs (optional) ..... .5(0-3V)
Digital Outputs ..... 5 (1 Open Drain)
Indicator Outputs ..... 2 Open Drain; TX and status
Interfaces ..... .Serial TTL (3V) 9600:8-N-1 baud
Antenna Connector ..... SMA female

Mechanical:

Weight: ..... 10 Grams
Mounting: ..... .SMD or Through-hole



Environmental

Operating Temperature ..... -10 to +55 ºC
Humidity ..... Maximum 95% non-condensing

DMR Support:

Encode ..... Partial ETSI TS 102 361-1 (Tier 1 direct mode).
Short Message Type, unconfirmed.
Max Message Length 50 characters.
Decode ..... N/A.

POCSAG Support:

Encode and Decode BAUD RATES ..... .512, 1200, 2400, 4800, 9600
Supported modes ..... .Alphanumeric and numeric, singular or batched
for 25KHz, 12.5KHz and 6.25KHz channel spacing
Adjustable preamble from 64 to 5000 bit

Modulations Support:

25KHZ CHANNEL WIDTH ..... 512 BAUD (FSK), 1200 (FSK)
12.5KHZ CHANNEL WIDTH ..... .512 BAUD (FSK), 1200 (FSK), 1800(GFSK),
2400 (GFSK), 4800 (GFSK), 9600 (GFSK), 9600 (4GFSK)
6.25KHZ CHANNEL WIDTH ..... .512 BAUD (FSK), 4800 (4GFSK)

Regulatory Compliance

FCC ..... .FCC Part 90.217
EN ..... .EN 300 224 (base station and mobile transceiver compliant).
EN ..... EN 50385
AS/NZ ..... AS/NZ 4769.1:2000
EMC ..... EN 301 489
SAFETY ..... EN 62368
RoHS (Restriction of Hazardous Substances) ..... Compliant
WEEE (Waste Electrical and Electronic Equipment) ..... Compliant[1]
FCC ID 2ASGC-MREX460

Notes: [1] Please contact your WTE dealer or WTE directly for further information regarding safely disposing of electronic equipment

For latest information and specifications please visit wte.co.nz

Contact your local WTE authorized distribution partner for more information

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