

## TTM, Test Transmitter, TETRA 400MHz

### Technical Specification



Note! Changes to this specification as a result of ongoing developments may be made without notice.

## Contents

1. General Information
2. Physical data
3. Power Supply data
4. Transmitter data
5. Remote Control
6. Accessories

### 1. General Information

- 1.1 The test transmitter (hereafter called TTM) is intended for use during pathloss measurements together with the test measurement receiver (TMR) or other receivers for the low 400MHz band (380-400MHz) of the TETRA system.
- 1.2 The TTM transmits a CW signal for propagation measurements.
- 1.3 The TTM is designed for use under the environmental conditions that may be found during a field survey.
- 1.4 It may be used outdoors, but it should be protected against heavy rain and also direct sunlight if the temperature is expected to be above 35 degrees Celsius.
- 1.5 The output signal can be FM-modulated with different frequencies to allow a user to distinguish between different transmitters by listening to the demodulated audio tone.

### 2. Physical data

- 2.1 Weight: 7 kg  
Size: 330x190x280 mm (WxDxH)  
Temp range operating: 0 - +50 degrees Celsius  
Temp range storage: -30 - +70 degrees Celsius
- 2.2 The TTM is housed in a rugged aluminum housing with a carrying handle on the top and on one side.
- 2.3 All connectors are equipped with protective caps.
- 2.4 The handles on the right and left sides of the TTM may be used as a lift loops for a rope.
- 2.5 The TTM may be transported and used in any position. However the cooling air inlets and outlets have louvers that stop rain from above to enter the unit. If placed on side or upside down, some other protection is required. Also, under heavy rain conditions additional protection is required.
- 2.6 A storage box for protection during transportation is included .The box has room for the power cables. Weight approx. 4kg.

### 3. Power Supply data

- 3.1 External Power supply DC: 12V nominal (10.5-15V) max 120 Watt  
External Power supply AC: 85-265V AC 50-60Hz max. 100 Watt
- 3.2 Both inputs can be connected simultaneously.
- 3.3 The TTM has automatic circuit breakers on both power supply inputs.
- 3.4 Inputs are protected against overvoltage and reverse connections.
- 3.5 The TTM is well protected against EMI and conforms to the requirements of the European EMC directive.

**4. Transmitter data**

- 4.1 Transmitter frequencies: 380.0125-399.9875 MHz at 25kHz steps  
Transmitter channels: 1-799  
Frequency accuracy: <1 kHz (0-50 degrees Celsius)  
Frequency drift: <1 kHz / year  
Transmitter power: Settable in the range 1 to 15 Watts.  
Max reverse power: 5W  
Spurious and harmonics: < -50dBc  
Power level stability: ±0.5 dB  
Power meter accuracy: ±0.3 dB  
Output impedance: 50 ohm  
Output connector: type N  
Modulation: 0, 400, 1000 or 2500 Hz FM (typ 3kHz max 5kHz deviation)
- 4.3 The frequencies for all channel numbers of the system are listed on a chart supplied with the TTM.
- 4.2 The frequency is selected by setting the channel number on a thumbwheel switch. The channel numbers used are those specified for the system.
- 4.4 The forward or reflected power is displayed on a pointer instrument on the panel of the TTM.
- 4.5 The RF Power is turned on or off with a key switch and/or a 24-hour battery backed timer.

**5. Remote Control**

- 5.1 All settings and readings of the TTM (such as on/off, channel nr, power level, modulation etc.) may be controlled remotely via an RS232 connection. This connection may for example be taken to a modem for remote control of the TTM.
- 5.2 The remote connection is a 3-wire connection made via a 4-pole AMP CPC type connector. An adapter cable with a 9-pole D-Sub connector is included.

**6. Accessories**

Available accessories are as follows:

- 6.1 Standard accessories: Wooden storage box  
Mains cable  
12 V cable  
RS232 adapter cable  
Operator's manual  
Frequency chart
- 6.2 Optional accessories: Box with:  
4+8+16m antenna cables  
2 female to female type N joints  
25m mains cord on a bobin  
Tarpaulin 2x3 meters  
2 load strappers
- 6.3 Telescope mast adjustable 1.5 - 7 meters with:  
3 bracing wires  
3 pegs for the bracing wires  
Foot plate  
Hand sledge
- 6.4 Antennas may be available. Please contact us for details