TRIMTALK 450S

Multi-channel, UHF radio modem

Key features and benefits

- **Compatible with any GPS Total Station® system**
- **Type approved in many European countries**
- **Easy to use**
- **Choice of up to 20 channels**
- **Seamless coverage with multi-repeater networking**
- **Rugged and weatherproof**

The TRIMTALK™ 450S radio modem provides a convenient, versatile means of establishing a robust wireless data broadcast network for real-time, high-precision GPS applications. A TRIMTALK 450S broadcasts, repeats, or receives data used by Trimble Series 4000 as well as by other Trimble GPS receivers. The TRIMTALK 450S can be ordered in four different 10MHz-wide frequency bands covering 430 MHz to 470 MHz.*

The TRIMTALK 450S radio modem is designed to meet the licensing requirements of many countries around the world and is license-free in some countries.**

Each TRIMTALK 450S-based broadcast network can be configured by the user to operate on one of twenty factory-preset channels. This ability to select from multiple channels provides the flexibility needed to ensure successful transmission in today's RF-hostile environments.

For robust broadcast and reception of real-time GPS surveying data, with multi-repeater networking capability.

Convenient, easy to use

Built for convenience, the TRIMTALK 450S radio modem plugs directly into Trimble's Series 4000 and other Trimble GPS receivers. Upon starting a real-time survey, the TRIMTALK 450S radio modem automatically activates, while an indicator light lets you know that the unit is either transmitting or receiving data. A single cable delivers both power and data between the GPS receiver and radio modem. Serial port communications settings are easily set to match the default settings on the GPS receiver.

Broad coverage

Designed for harsh environments, the TRIMTALK 450S is both rugged and weatherproof. This small, lightweight unit can be used in a variety of configurations: as a base transmitter, a repeater, or a rover unit. As a repeater, the TRIMTALK 450S enables you to reach locations that otherwise may be difficult to reach with an individual radio modem.

The TRIMTALK 450S radio modem can be mounted on a tripod, on a mast, or in a GPS receiver backpack. In addition, the TRIMTALK 450S works with many antennas, including omnidirectional antennas for base/repeater/rover use, as well as high-gain directional antennas for longer range base/repeater use.

A single TRIMTALK 450S radio modem broadcasts data up to 10 km line-of-sight, under optimal conditions, without using a repeater. Path obstructions and terrain can reduce the effective range to 3–5 km, typically. Up to two additional units can be networked as repeater stations to extend range and provide seamless coverage around local obstacles such as large buildings or hills. This can be a major logistical advantage for many survey projects, resulting in saved time and money.

* Prior to operating this radio modem, users are legally required to obtain frequency licenses, as required by the country-of-use.

** Contact your Trimble representative to determine the TRIMTALK 450S radio modem's Type Approval status and licensing requirements for specific countries.

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STANDARD FEATURES

- Selectable, twenty channel capability*
- Up to 10km line-of-sight range under optimal conditions
- Selectable wireless data rates of 1200, 2400, 4800 and 9600 bps
- Interfaces with Series 4000 and other Trimble GPS receivers
- Compatible with TRIMTALK 450 at 4800 bps and below
- Repeater mode selectable via a Windows® utility
- Capable of supporting up to two repeaters in a single network
- Rugged, weatherproof construction
- Low power consumption
- Power & data provided via a single cable
- LED status indicators
- Standard antenna supplied with 2 tips (0 dB and 5 dB)*
- Trimble CMR2 and RTCM SC-104 Version 2.1 compatible

OPTIONS AND ACCESSORIES

Antennas:	5 dB Omnidirectional Antenna*
	9 dB Directional Antenna*
	12 dB Directional Antenna*
Cables:	PC to OSMII Cable (DB9–DB9)
	50′ Power & I/O Extension Cable
	Camcorder Battery Cable (single head)
Power/Batteries:	2.3 Ah Camcorder Battery
	Camcorder Pack
	6 Ah & 10 Ah battery/case/cable
	Office Support Module II (OSMII)
Support:	Extended hardware warranty

ORDERING INFORMATION

TRIMTALK 450S Base Equipment Set **Part Number 28876-81***

Includes TRIMTALK 450S radio modem, standard antenna with 0 dB & 5 dB tips, 50′ Port 2 Power & I/O cable and Tripod Mount with cable.

TRIMTALK 450S Repeater Equipment Set **Part Number 28876-83***

Includes TRIMTALK 450S radio modem, standard antenna with 0 dB & 5 dB tips, Tripod Mount with cable, 6 Ah battery with battery cable.

TRIMTALK 450S Rover Equipment Set **Part Number 28876-85***

Includes TRIMTALK 450S radio modem, standard antenna with 0 dB & 5 dB tips, 3′ Port 2 Power & I/O cable and Backpack Mount with cable.

TRIMTALK 450S radio modem **Part Number 28876-00***

* Broadcast frequency, transmit power, channel spacing, and antenna gain are regulated by countries-of-use. These are unique on a per country basis. The broadcast frequencies, channel spacing and country-of-use for the radio modem must be specified at time of order. Contact your local Trimble representative for further information.

** Power consumption, as well as the permissible number of repeaters in a network, depends on the selected wireless data rate and the broadcast information content and rate (i.e., CMR2 vs. RTCM SC-104 Ver. 2.1 RTK packets at 1 Hz vs. 2 Hz RTK epoch rates). The 9600 bps wireless data rate is not available for units with 12.5 kHz channel spacing.

Specifications and descriptions are subject to change without notice.

TECHNICAL SPECIFICATIONS

Physical

Radio modem size:	14.3 cm W x 19 cm D x 6.7 cm H
Radio modem weight:	0.95 kg

Antenna Type	Length	Weight
0 dB Base/Repeater/Rover	47 cm, typical	0.5 kg
5 dB Base/Repeater/Rover	99 cm, typical	0.5 kg
5 dB Base/Repeater	127 cm, typical	1.1 kg
9 dB Base/Repeater	84 cm	0.9 kg
12 dB Base/Repeater	183 cm	2.3 kg

Electrical

Power:	Input: 10VDC to 35VDC, nominal
Base/Rep:	3W power consumption, typical**
Rover:	1W power consumption, typical**
Battery:	
Transmitting:	12 hours operation on one external 6 Ah battery at 20°C**
Receiving:	12 hours operation on one external 2.3 Ah battery at 20°C**
Indicators:	Power LED
	Data LED
Connectors:	
Power & I/O:	5-pin female Lemo (RXD, TXD & SGND)
Aux. I/O:	7-pin male Conxall RS-232C (RXD, TXD, SGND, CTS, DTR, DSR and DCD)
Antenna:	female TNC

Environmental

Operating temp:	–20°C to +55°C
Storage temp:	–30°C to +70°C
Humidity:	100%, fully sealed, weatherproof

Radio Modem Performance

Modes:	Base/Rover
	Repeater
Range:	
Optimal:	10 km, line-of-sight
Typical:	3–5 km
	Varies with terrain & operating conditions.
	Up to 2 repeaters may be used to extend range.**
Radio Link:	
Frequency Range:	Single 10 MHz band per unit: 430–440 MHz, 440–450 MHz, 450–460 MHz or 460–470 MHz
Channels:	Up to twenty (factory pre-set)
Transmit Power:	0.5W
Channel Spacing:	12.5 kHz or 25 kHz
Wireless Data Rates:	1200, 2400, 4800 and 9600 bps**
Modulation:	MSK, GMSK

Emission Designator:	**Wireless Data Rate**		
Channel Spacing	**1200/2400 bps**	**4800 bps**	**9600 bps**
12.5 kHz	11K0F2D	11K0F1D	N/A
25 kHz	16K0F2D	16K0F1D	16K0F1D

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