



**PROJECT
TELECOM**

UNIFYING COMMUNICATIONS



Robust Long Range Two Way Radio Digital and Analogue



The Robust Radio from Project Telecom offers a sleek, innovative handset for professional radio users. With a lightweight, crafted metal design, supporting both digital and analogue technology, the Robust radio is a popular feature rich device.



www.projecttelecom.co.uk

Robust Long Range Two-Way Radio



Highlights

Robust and lightweight

The Robust series from Project Telecom is only 27mm deep, making it particularly slim. The chassis is encased in a high-quality aluminum metal frame and with a weight of only 310g, this handset is easy to carry for long operations

Longer battery life

With the 1500 mAh standard lithium-ion battery, the Robust handset can achieve an operating time in digital mode of at least 16 hours. With the optionally available 2000-mAh battery, this could be up to 20 hours.

The Robust radio can be operated in Pseudo-Trunk mode. This assignment of the available bandwidth with double the number of channels leads to a significant easing of the increasing shortage of frequencies in the operation of DMR mobile radio systems compared to analogue mobile radio systems.

Expanded frequency range

The frequency range in UHF is covered from 400 MHz to 527 MHz.

Support of analogue and digital mobile radio

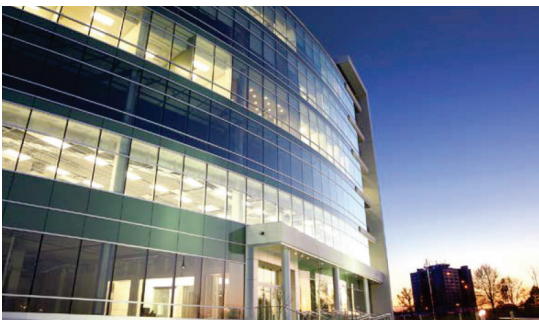
The Robust series was developed in compliance with the ETSI DMR standard. Digital Mobile Radio (DMR). The handheld radios support the conventional DMR operation and can also be used in analogue mode. This makes the terminals of the Robust series the ideal companion for the migration to digital mobile radio.

System solution for larger networks

In addition to conventional DMR (DMR Tier II) and analogue modes, all Robust radios support operation in DMR trunked (Tier III), XPT digital trunking and MPT 1327.

Additional Functions

- The Robust radio is also available with GPS
- GPS supports GIS applications such as AVL, telemetry and also include a Man Down function
- Encryption with the encryption algorithm ARC4 (40 bit) in accordance with DMRA or with optional algorithms AES128 and AES256 (128 and 256 bit)
- Expansion interface for applications
- Priority interrupt
- Leasing function
- Versatile voice calls: Individual call, group call, broadcast call, emergency call
- Bluetooth accessories available with optional adapter
- Roaming



Small and lightweight, robust chassis with metal frame

Multifaceted accessories available for every operation

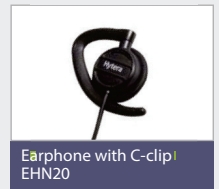
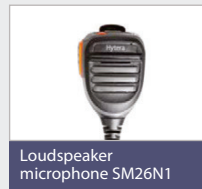
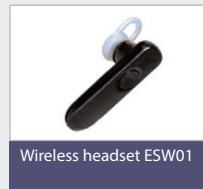
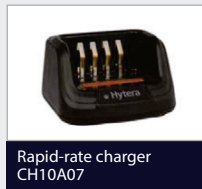


Dust and water-proof radios in accordance with IP67

Correspond to US Military Standard MIL-STD-810 C / D / E / F / G

In the box

Optional accessories



Technical Data

General data	
Frequency range	VHF: 136 - 174 MHz UHF: 400 - 470 MHz UHF3: 350 - 400 MHz UHF2: 450 - 520 MHz (PD415 only)
Supported operating modes	<ul style="list-style-type: none"> DMR Tier II in acc. with ETSI TS 102 361-1/2/3 Analogue DMR Trunking (chargeable licence) MPT Trunking (via licence upgrade)
Channel capacity	256 (128 analogue + 128 digital)
Number of zones	Robust 64 (with max. 256 channels each)
Channel spacing	12.5 / 25 kHz
Operating voltage	7.4 V (nominal)
Standard battery	1500 mAh (lithium-ion battery)
Battery life (5-5-90 duty cycle)	analogue / digital: approx. 12 / 16 hours (with 1500 mAh) approx. 16 / 22 hours (with 2000 mAh)
Frequency stability	± 0.5 ppm
Antenna impedance	50 Ω
Dimensions (H x W x D) (without antenna)	112 x 54 x 28 mm (PD405) 112 x 54 x 31 mm (PD415)
Weight (with antenna and standard battery)	approx. 270 g
Programmable keys	3 (Robust) + number keys
Range of the RFID reader	up to 4 cm

Environmental conditions	
Operating temperature range	- 30°C to + 60°C
Storage temperature range	- 40°C to + 85°C
ESD	IEC 61000-4-2 (level 4), ± 8 kV (contact, ± 15kV (air)
Protection against dust and moisture	IP67
Shock and vibration resistance	MIL-STD-810 C/D/E/F/G
Relative humidity	MIL-STD-810 C/D/E/F/G



Transmitter	
Transmitting power	VHF: 1 / 5 W UHF: 1 / 4 W
Modulation	11 K0F3E at 12.5 kHz 16 K0F3E at 25 kHz
4FSK digital modulation	12.5 kHz (data only): 7K60FXD 12.5 kHz (data and voice): 7K60FXW
Interfering signals and harmonics	-36 dBm (< 1GHz) -30 dBm (> 1GHz)
Modulation limiting	± 2.5 kHz at 12.5 kHz ± 5.0 kHz at 25 kHz
Hum and noise	40 dB at 12.5 kHz 45 dB at 25 kHz
Adjacent channel selectivity	60 dB at 12.5 kHz 70 dB at 25 kHz
Audio sensitivity	+ 1dB at - 3dB
Nominal audio distortion	≤ 3 %
Digital vocoder type	AMBE+2™

Receiver	
Sensitivity (analogue)	0.22 µV (12 dB SINAD) 0.22 µV (typical) (12 dB SINAD) 0.4 µV (12 dB SINAD)
Sensitivity (digital)	0.22 µV / BER 5 %
Adjacent channel selectivity TIA-603 ETSI	60 dB at 12.5 kHz / 70 dB at 25 kHz 60 dB at 12.5 kHz / 70 dB at 25 kHz
Intermodulation TIA-603 ETSI	70 dB at 12.5 / 25 kHz 65 dB at 12.5 / 25 kHz
Spurious response rejection TIA-603 ETSI	70 dB at 12.5 / 25 kHz 70 dB at 12.5 / 25 kHz
Signal-to-noise ratio (S/N)	40 dB at 12.5 kHz 45 dB at 25 kHz
Audio power output	0.5 W
Nominal audio distortion	≤ 3%
Audio sensitivity	+ 1 dB at - 3dB
Conducted spurious emission	< -57dBm

All technical information was determined at the factory and in accordance with the corresponding standards. Subject to change on the basis of continuous development.

