

RX2050 - EPM receiver

PN (RN): 2310.100.81



RX2050 receiver is a device intended for installation in mobile devices. It ensures reception of RF signals from transceivers operating in 25 MHz to 146 MHz fixed frequency band. Transceiver modulation in 30 MHz to 108 MHz band meets the requirements of STANAG 4204 standard. In other bands, the receiver is capable of receiving signals from [RF2050](#) or other transceivers that are compatible with the [RF2050](#) in terms of modulation at these frequencies. The RX2050 receiver also receives signals in frequency hopping mode and it is fully compatible with the [RF2050](#) and [RF20](#) transceiver modes. The receiver includes an effective co-site filter that allows simultaneous operation of the RX2050 receiver with [RF2050](#) transceivers in a single vehicle in 30 MHz to 90 MHz operating band. The condition of compatible operation is the distance between recommended vehicle antenna types of at least 1.5 m and receiving and transmitting frequencies differing by at least 10 %. The RX2050 receiver is not designed for data transmission.

Operation features

a) in all operation modes

- built-in test equipment (BITE) with error indication on the transceiver display;
- operating data programming from external equipment;
- emergency erasure of operating data on fixed frequency channels including encryption unit codes and information for FH networks, including TRANSEC and COMSEC;
- switching on/off of acoustic signaling by transceiver operators;
- backlit display and keypad;
- adjustable display contrast;
- operating channel signal reception signaling by a LED on the transceiver panel;
- whisper mode with reduced audio frequency output power;
- received signal loud monitoring with volume regulation and LED monitor signaling;
- service information display - firmware;
- remote receiver control via REMOTE connector and RS232 or RS485 communication link and PRC20 protocol;
- simple control.□

b) in fixed frequency operation

- up to 10 channel presents from the entire 25 MHz to 145.9875 MHz frequency range, number of preset channels is reduced when occupied by FH networks;
- simplex reception;
- 150 Hz sub-tone squelch or signal squelch (only signal in VHF II);
- reception via built-in encryption unit compatible with RF13, RF20, RF2050;
- reception of short coded messages - FLASH with opposite transceiver identification;
- keypad channel programming;
- fixed frequency channel preset scanning;
- operating frequency setting in 6.25 kHz, 8.33 kHz, 25 kHz or 1 MHz steps.□

c) in FH operation

- up to 6 network presets;
- operation in 30.000 MHz to 87.975 MHz frequency range;
- secured TRANSEC operation and encrypted COMSEC operation;

- compatible with RF20, RF2050 transceivers;
- HLC, HLG and 121.500 MHz (HLA) frequency monitoring;
- optional frequency hopping operating modes – FH, DFF, FCS and MIX with quick transition to HLC, HLG or HLA reception;
- reception of alert message to all network users;
- reception of selective communication from MASTER transceiver;
- reception of short text messages (maximum 156 characters);
- INTERLEAVING switching off for close-to-the-limits communication.

Technical parameters

BASIC SPECIFICATION

Operating frequency	25 MHz to 145.9875 MHz
Nominal input impedance	50 Ω
Frequency sub-bands	
HF	25 MHz to 29.975 MHz
VHF I	30 MHz to 108 MHz
VHF II	117.975 to 140 MHz
VHF III	140.025 to 145.9875 MHz
Type of received modulation	
HF	F3E (FM)
VHF I	F3E (FM)
VHF II	A3E (AM)
VHF III	F3E (FM)
Channel spacing	
HF	25 kHz
VHF I	25 kHz; 12.5 kHz; 6.25 kHz
VHF II	25 kHz; 8.33 kHz
VHF III	25 kHz; 12.5 kHz
Number of operating channels for 25 kHz channel spacing	
HF	200
VHF I	3121
VHF II	882
VHF III	239
Number of preset channels	up to 10
Number of frequency-hopping channels	up to 6
RECEIVER SPECIFICATIONS	
Receiver sensitivity	
25 MHz to 29,975 MHz	0.6 μV
30 MHz to 90 MHz	0.7 μV
90.00625 MHz to 108 MHz	0.5 μV
117.975 MHz to 140 MHz	0.5 μV
140.025 MHz to 145.9875 MHz	0.5 μV
Dynamic two-signal selectivity for adjacent channel	min. 57 dB
Suppression of intermediate frequencies	min. 80 dB
Suppression of image-channel frequencies	min. 60 dB
Suppression of spurious receptions at > 10 % detuning from operating frequency	min. 70 dB
AUDIO FREQUENCY OUTPUT SPECIFICATIONS	
Range of effectively transmitted frequencies	
narrow band audio	300 Hz to 3000 Hz
wide band audio	10 Hz to 11000 Hz
Audio frequency levels on AF connector	
narrow band audio	min. 200 mW, adjustable level up to 8 Ω

narrow band audio	min. 775 mV, constant level up to 600 Ω
wide band audio	1000 mV, constant level up to 600 Ω
Acoustic pressure of the built-in speaker	min. 85 dB at maximum volume
Non-linear distortion factor	up to 10 %
POWER SUPPLY SPECIFICATIONS	
Nominal supply voltage	12 V or 24 V
Limit supply voltage range	10 V to 33 V
Maximum consumption	0.625 A at 24 V 1.25 A at 12 V
Consumption during synchronization hold	up to 0.015 A from 24 V backup supply
SPECIAL OPERATION MODES SPECIFICATIONS	
Range of operating frequencies in FH modes	30 MHz to 87.975 MHz
Number of monitored frequencies in FH modes	3 (two programmable, third 121.5 MHz)
Frequency hopping modes	
FH	secure frequency hopping
DFF	secure digital fixed frequency
FCS	secure free channel search
MIX	mix mode FH + FCS
Time to initial synchronization	up to 5 s
Synchronization hold	48 hours
Synchronization hold with disconnected power supply	50 s
Minimum number of operation frequencies in FH mode	1
Hopping rate	100 hops/s
MECHANICAL SPECIFICATIONS	
Maximum dimensions	184 mm x 196 mm x 175 mm [w x h x d]
Maximum weight	up to 6.5 kg
Resistances	
Operating temperature	-40° C to +70 °C
Mechanical and climatic resistance	according to MIL-STD-810E
EMC immunity	according to MIL-STD-461E
Mains power immunity	according to MIL-STD-1275B

Set

EPM receiver set RX2050 - (2310.000.81)

Documentation

RX2050 operating instructions 2310.010.81
RF2050 short operating instructions 2310.011.12

Accessories

Mobile set frame (7007.100.14)
Handset RF13.3 - (2022.100.52)
Handset holder (2026.700.01)
Power supply cable 3 m (1050.126.02)
Grounding (1050.993.01)

2.6 m VHF vehicle antenna	(2036.100.23, 2036.100.24)
Vehicle antenna VHF/UHF 1.3 m	(2036.100.84)
Vehicle antenna VHF 1.6 m	(2036.100.85)
Vehicle antenna VHF/UHF 2.7 m	(2036.100.86)
1.88 m VHF vehicle antenna	(2036.100.40)
Discon antenna	(2036.100.68)
Groundplane antenna	(2036.100.38)
Long-wire antenna	PD13 - (2036.100.10)
Hang-up antenna	RF13.8 - (2036.100.11)
Telescopic winch driven mast 10 m	(2036.100.70)
Antenna mast	(2036.100.39)
Fill gun set	PK20 - (2320.000.02)
Remote control unit set	RC20 - (2312.000.01)
Antenna cable (10 m)	(2011.904.02)
Antenna cable (3 m)	(2011.904.01)
RF headsets	