

AT RF20 MultiBand Handheld Transceiver

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AT RF20 ECCM handheld multiband transceiver with improved resistance to electronic warfare is designated for use at the lowest tactical command levels for all kinds of military units. Depending on the type of selected frequency band, the transceiver is able to communicate in HF band with frequency modulation, with VHF AT RF13 transceivers, AT RF2050 mobile transceivers and with airborne transceivers in Aircraft band I.

Operating features

a) in all operation modes

- automatic self-test after power-up, with failure indication on the transceiver display (BITE);
- operational data programming from external units;
- emergency erasure of operation data on fixed frequency channels, including encryption unit codes and information for FH networks including TRANSEC and COMSEC;
- transmission of tone calling (1000 ± 200) Hz, in VHF III band (1750 ± 25) Hz;
- acoustic signaling switching on/off by transceiver operator;
- display and keypad backlight activation;
- adjustable display contrast;
- battery pack voltage signaling;
- transmission power signaling on the display, transmission signaling by LED on the top panel;
- "reception only" mode, with transmission disabled;
- whisper mode with increased microphone sensitivity and decreased audio volume;
- displaying of servicing information - firmware;

- easy to control;
- displaying of the data from GPS with connected GPR30 receiver on the transceiver display.

b) in fixed frequency mode

- max. 10 presets from the entire frequency range 25 MHz to 145.9875 MHz, fewer preset channels if occupied by FH networks;
- simplex or semi-duplex operation;
- 150 Hz sub-tone squelch or signal squelch (only signal in VHF II);
- voice operation via internal encryption unit compatible with RF13, RF2050;
- transmission and reception of short encrypted messages - FLASH, with the opposite transceiver identification;
- channel parameter programming from keypad;
- preset channel scanning;
- direct dialing when calling from transceiver to a fixed telephone network;

[AT Communication](#) setting in 6.25 kHz, 8.33 kHz, 25 kHz or 1 MHz steps;

- transmission band for digital voice and data transmission 16 kbit/s according to STANAG 4204, edition 2.

c) in FH operation

- max. 6 network presets;
- operation frequency range from 30.000 MHz to 87.975 MHz;
- secure operation TRANSEC and secret operation COMSEC;
- compatibility with RF20, RF2050 transceiver;
- selectable frequency hopping operation mode - FH, DFF, FCS and MIX, or SFH, SDFF, SFCS and SMIX with quick transition to HLC, HLG or HLA;
- establishing of connection with fixed frequency transceivers through HLC and HLG monitoring;
- 121.500 MHz (HLA) frequency monitoring and transition to HLA with transmission disabled;
- late net entry with synchronization request;
- master transceiver switching depending on the network condition;
- transmission of warning message to all network participants;
- MASTER transceiver authentication request;
- MASTER transceiver selective communication with a selected slave transceiver;
- transmission and reception of short text message, maximum 156 characters;
- transmission over notification (BREAK IN) by MASTER transceiver;
- INTERLEAVING switching off for close-to-the-limits communication;
- data transmission at adjustable rates - 7100 bit/s, 4800 bit/s and 2400 bit/s.

Technical parameters

Frequency range	25.000 MHz to 145.9875 MHz
Nominal input/output impedance	50 Ω
Frequency ranges	
HF	FM

VHF I	30.000 MHz to 108.000 MHz
VHF II	117.975 MHz to 140.000 MHz
VHF III	140.025 MHz to 145.9875 MHz
Modulation type	
HF	FM
VHF I	FM
VHF II	AM
VHF III	FM
Channel spacing	
HF band	25 kHz
VHF I band	25 kHz; 12.5 kHz; 6.25 kHz
VHF II band	25 kHz; 8.33 kHz
VHF III band	25 kHz; 12.5 kHz
Number of operation channels at 25 kHz channel spacing	
HF	200
VHF I	3121
VHF II	882
VHF III	239
Preset channels	10
Number of channels monitored in all special operation modes	3 (two adjustable, third fixed at 121.500 MHz)
Max. number of programmable nets	6
Nominal supply voltage	7.2 V
Limit supply voltage	6.5 V to 9.5 V
Frequency band with special operation modes	30.000 MHz to 87.975 MHz
Voice operation F3E	according to STANAG 4204
Types of special operation modes	
FH	frequency hopping
DFF	digital fixed frequency
FCS	free channel search
MIX	mixed operation FH and FCS
SFH	secure frequency hopping
SDFP	secure digital fixed frequency
SFCS	secure free channel search
SMIX	mixed mode SFH and SFCS
Time to first synchronization	max. 7 s
Synchronization hold with transceiver off and battery pack connected	min. 48 hours
Transceiver synchronization hold with battery pack disconnected	min. 25 s
Transceiver current consumption	
- transmission (nominal power)	3.2 A
- transmission (lowered power)	0.7 A
- reception	0.18 A
- stand-by	0.16 A
Operation time	
transmission : reception : stand-by = 1 : 1 : 10 with LP1302 battery pack	min. 9 hours
TRANSMITTER PARAMETERS	

Transmitter nominal output for FM	5 W
Transmitter nominal output for AM	1 W
Transmitter decreased output for FM	0.2 W
Transmitter decreased output AM	0.1 W
Harmonics suppression	min. 40 dB
Spurious suppression at > 25 kHz mistuning	min. 60 dB
RECEIVER PARAMETERS	
Sensitivity	0,5 µV at 12 dB SINAD
Non-linear distortion factor	10 %
Loudspeaker output power	min. 200 mW/8 Ω
Audio bandwidth	
F3E operation	(300 to 3 000) Hz
DATA operation	(10 to 11 000) Hz
MECHANICAL PROPERTIES AND RESISTANCE	
Immersion	1 m depth
Operating temperature range	-30 °C to +70 °C
Dimensions - transceiver with battery pack	W 97 mm x H 217 mm x D 44 mm
Dimensions - battery pack	W 77 mm x H 63 mm x D 41 mm
Weight - transceiver	0.85 kg
Weight - battery pack	0.30 kg
Average ranges in a medium undulated and wooded terrain at nominal power	
• with short tape antenna AS1301	0.8 km
• with long tape antenna AL1301	5 km

Packages

- ECCM handheld transceiver package AT RF20
- Package t with modular carrying system elements AT RF20

Accessories

- Battery pack AT LP1302
- Short tape antenna 0.5 m AT AS1301
- Long tape antenna 1.1 m AL1301
- Transceiver bag
- Set bag
- Battery pack bag
- Set bag
- Carrying harness

- ✓ Transceiver sleeve
- ✓ Combination shoulder straps (left, right)
- ✓ Battery pack case (6000010103)
- ✓ Double charger set ND1301
- ✓ Universal charger set NU1302
- ✓ Mobile charger set NM1302
- ✓ Standard charger adapter set NS1301
- ✓ Standard battery charger set NS13
- ✓ Trickle charger adapter NK1301
- ✓ Hang-up antenna RF13.8
- ✓ Handheld microphone/speaker RM1301
- ✓ Fill gun set PK20
- ✓ Radio modem set (Net) MD13.2
- ✓ Radio modem set (P2P) MD13.2
- ✓ GPS receiver for transceiver GPR30
- ✓ Testing device set KZ13
- ✓ Data cable

Military VHF Multiband Handheld - Handheld Transceivers - Handheld Radio Transceiver