



**WB GROUP** 

VHF/FM Handheld Radio

***3501***



### Operation in extreme environment

The equipment can be used in very harsh environment in any region of the world. A robust die-cast aluminium housing is provide tightness and resistance to dust, sand, water and humidity. It withstands shocks and vibrations, immersion, heat, cold and thermal shocks. Radio 3501 has been designed and manufactured in accordance with NO-58-A210 for N14 devices.

### Easy to operate

There are two switches and two buttons for radio operation. You can program up to 10 channels. NiMH or Li-Ion rechargeable batteries provide long autonomous radio operation. Clear LCD display shows current settings and radio status. The radio has a built-in test program and the detected error message is shown on the LCD. The acoustic equipment, antennas and harnesses for carrying radios are designed not to constrain the movement of the soldier and to allow him moving freely on the battlefield.

### Features

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data transmission

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selective call

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GPS

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resistant to heat, cold, humidity

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long autonomy

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50 W amplifier

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vehicle set

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Some services are available only in selected radio versions – check table beside

## Radio versions

	3501/3	3501/5	3501/6	3501/7
Analogue scrambler	+	+	+	+
Digital scrambler	-	+	+	+
Encryption module AES 128	-	-	-	+
Data transmission	+	+	+	+
Rate of data transmission	16 kb/s	1,2 kb/s 2,4 kb/s 9,6 kb/s 12 kb/s 19,2 kb/s 24 kb/s	1,2 kb/s 2,4 kb/s 9,6 kb/s 12 kb/s 19,2 kb/s 24 kb/s	1,2 kb/s 2,4 kb/s 9,6 kb/s 19,2 kb/s
Error correction system of transmitted data	-	+	+	+
Built in GPS	-	-	+	+
Selective calling	-	+	+	+
SDS	-	+	+	+
Radio programming	manual fill gun PC	manual fill gun PC	manual fill gun PC	manual fill gun PC
Radio management software	-	+	+	+
Rechargeable Battery	NiMH 7,2 V / 1650 mAH Li-Ion 7,2 V / 4100 mAH Li-Ion 7,2 V / 6700 mAH	NiMH 7,2 V / 1650 mAH Li-Ion 7,2 V / 4100 mAH Li-Ion 7,2 V / 6700 mAH	NiMH 7,2 V / 1650 mAH Li-Ion 7,2 V / 4100 mAH Li-Ion 7,2 V / 6700 mAH	Li-Ion 7,2 V / 4100 mAH Li-Ion 7,2 V / 6700 mAH
Possibility of usage as part of vehicle set	+	+	+	+



### Data transmission

Depending on the radio version (table) the following internal modems can be built-in:

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FFSK/ 4LFSK modem (configurable)	<b>1,2 kb/s, 2,4 kb/s, 9,6 kb/s, 12 kb/s, 19,2 kb/s, 24 kb/s</b>
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GMSK modem	<b>16 kb/s</b>
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Radios in versions 5, 6 and 7 are equipped with an asynchronous modem, which enables the connection of virtually any external data source (terminals, drivers, computers, etc.). On an analog channel, switching to data transmission is automatic.



### Scramblers

Radio can be equipped with analogue or digital scrambler. Digital scrambler provides higher encryption level than analogue scrambler. Version 7 of the radio is additionally equipped with a digital AES encryption module. 10 encryption keys chosen by the user from radio's menu are available. It enables to create mutually separated users groups.

### **GPS receiver built-in**

Received geographical position can be displayed and send to supervisory radio automatically or on operator demand.

### **Selective call system**

Depending on the version (table) radio provides selective communication between single users or between groups of users. Individual or group calls are possible. There is possibility to choose up to 81 numbers of individual calls and to create up to 9 groups of 9 users each. Operation with selective call system can be switch on or off by the radio operator.

### **SDS**

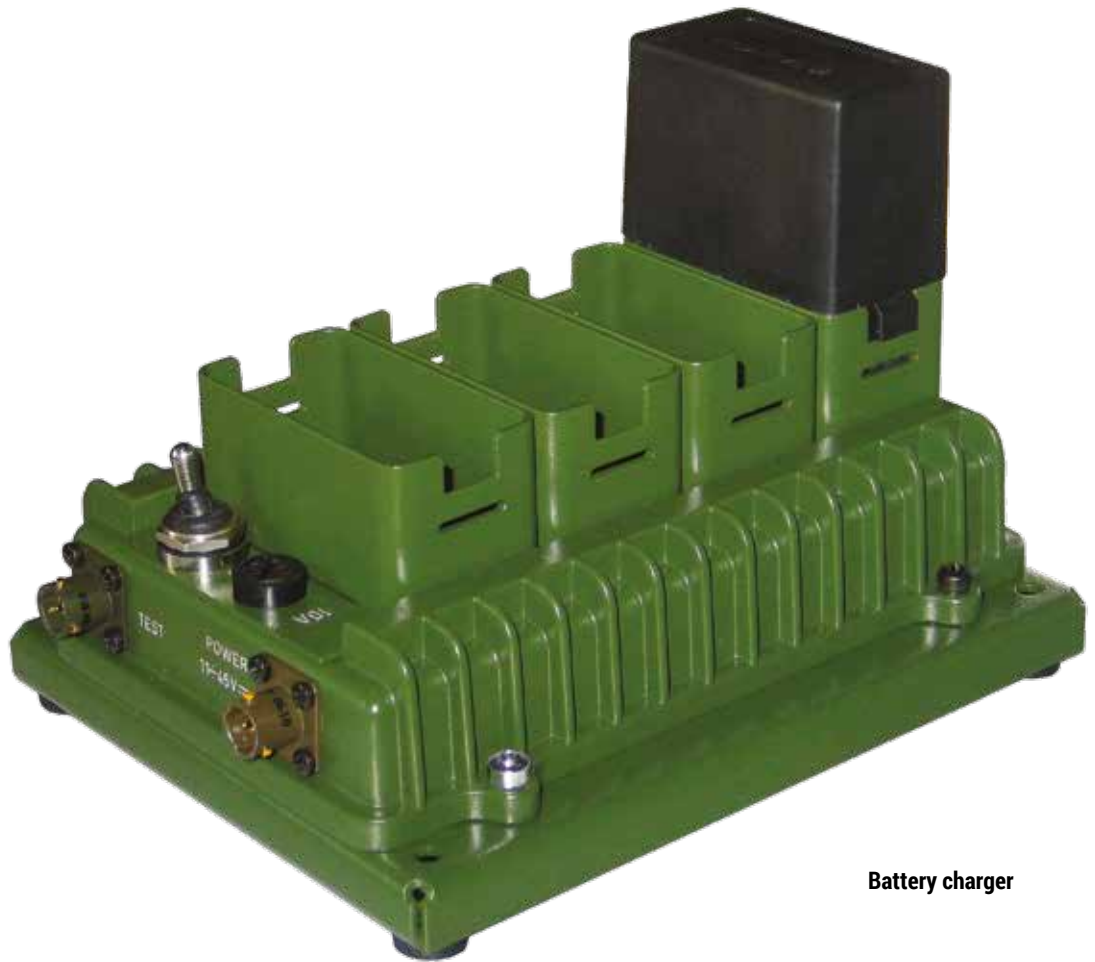
Short Data Service (SDS) transmission is implemented by sending three-digit number which have particular meaning in the system. Radio enables sending up to 256 short messages.

### **Radio programming and management**

Frequency, transmission type, channel number and output power level can be programmed for each of 10 channels. It can be done manually without any other external accessories using only switches, buttons and keyboard of the radio. For quick programming channels parameters a fill gun containing all needed data can be used. Cloning the radio, which means quick presetting channels configuration from one radio to another, is also possible. It can be done by connecting of two radios up using special cable.

Quick erasure of preset channels parameters is also possible (emergency erasure of settings). There is also a configuration software available, installed on PC computer, which enables easy radio parameters configuration. For the radios in versions 5, 6 and 7, a management software enables complete radio functional control including special functions management like "quiet inquiry", stun and radio revive. These functions are available by using radio selective call system.





**Battery charger**

**Batteries**

Two types of batteries are available for the radio:

NiMH battery      7,2 V / 1650 mAh

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Li-Ion battery      7,2 V / 4100 mAh  
                             7,2 V / 6700 mAh

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Li-Ion battery allows for much longer radio operation.

**Wide range of accessories**

headset without PTT button

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headset with PTT button

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headset with elbow and finger PTT buttons

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microphone with PTT button (sets with adapter only)

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battery chargers

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antennas: long, medium and short

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programmer (Fill Gun)

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car adapter

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cases



**Battery**

## Technical specification

General characteristics	Frequency band	30,000 to 87,975 MHz	
	No. of channels	2320	
	Channel spacing	25 kHz	
	Programmable channels	10	
	Modulations	F3E, F1D	
	Data transmission rates	1,2 / 2,4 / 9,6 / 12,0 / 16,0 / 19,2 / 24,0 kb/s	
	Operating modes	simpleks, two-frequency simplex	
	Supply voltage	7,2 V	
	Interoperability	according to STANAG 4204	
	Autonomy (1:1:8)	>12 hours for NiMH batteryH	
	>24 hours for Li-Ion battery		
Transmitter	Output power	3,0 / 1,0 / 0,1 W	
	Frequency stability	± 5 ppm	
	Nominal antenna impedance	50 Ω	
Receiver	Sensitivity	for F3E (SINAD 12 dB)	≤ 0,5 μV
		for F1D	≤ 0,7 μV (up to 9,6 kb/s)
			≤ 2,0 μV (over 9,6 kb/s)
	Audio output power	int. 400 mW / 16 Ω	
		ext. 200 mW / 8 Ω	
Audio bandwidth	400 to 2500 Hz		
Audio distortion	≤ 7%		
Mechanical characteristics	Height*	212 / 230 mm	
	Width*	91 / 76 mm	
	Depth*	43 mm	
	Weight (with battery)	940 g	
Environmental parameters	Operational temperature range	-32°C to +50°C	
	Extreme temperature range	-40°C to + 71°C	
	Immersion-proof	1 m / 2 hours	
	Military standards	NO-58-A213, MIL STD 810F	

\*Dimensions with battery but without antenna and case.



[www.wbgroup.pl](http://www.wbgroup.pl)

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Note: The given parameters are not binding specifications. The company reserves the right to change the technical parameters of the device.  
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