

PERSONAL SOLDIER RADIO

R35010

The R35010 radio is dedicated for two way communication between members of squad or combat team in small area radio networks. The radio operates within the 2405 ÷ 2480 MHz frequency band and users may communicate on 16 working frequencies. The radio enables a communication at a distance of up to several hundred meters in an open terrain.

The R35010 radio is small and very light equipment intended for immediate transmission of tactical and operational data as well as information about threats and current situation in fighting area. Simple operation and high reliability allow to maintain communication between all group members during combat missions. Therefore the radio users can be rapidly organized into a radio network with no need to use base stations. Up to 4 soldiers can arrange simultaneous conference communication. The radio networks are formed by assignment of the same ID to all radios belonging to the same network. Up to 64 radio networks can be formed for every working frequency.

Types of radio communication:

- simplex digital voice with wireless PTT switch or VOX
- full duplex digital voice – conference with max 4 speaking users with VOX – optional simultaneous voice and 19,2 kbps data transmission
- data transmission with max 57,6 kb/s rate

The radio R35010 operates in DSSS mode (Direct Sequence Spread Spectrum) with burst transmission of audio or data signal packets which can also be enciphered.

The transceiver unit co-operates also with the wireless PTT switch using the Frequency Hoping Spread Spectrum (FHSS) system. Each radio operating in the network has its own unique digital address used in the FHSS communication between the transceiver unit and the wireless PTT switch.

To reduce probability of detection and interception of the radio operation, to save the energy and to eliminate mutual interference between individual units the transmitters are being switched on periodically for short time (burst operation) in the way excluding simultaneous transmission of the radio and the transmitters of accessories.

The R35010 radio enables:

- co-operation of the transceiver unit with the headset and wireless PTT switch
- handheld operation (without the headset and wireless PTT switch)
- full duplex operation with max four users speaking simultaneously; number of listening users is unlimited
- mobile system operation with use of vehicular adapter
- connection to mobile object intercom network as an access point
- static and dynamic retransmission



PERSONAL SOLDIER RADIO R35010



For various services

The R35010 radio is particularly dedicated for use in military services, though it can be efficiently used by other users who require radio communication for various tasks and operations. The radio is produced in versions for border guards, police or fire brigades. It can also be a personal radio equipment for anti-terrorist groups and other special units.

Ease-of-Use

The R35010 radio is small and very light. Its single integrated switch is used to switch on power supply, control volume and select a number of a previously programmed radio network. The radio includes a wireless PTT switch that allows the user to wear the radio at any place of the soldier uniform. The wireless PTT switch can be fixed in any convenient place e.g. on a rifle's butt or precisely under a finger what enables to get communication without removing hands from the weapon. The VOX feature also simplifies radio operation by starting transmission with voice. The communication can be kept by connecting a lightweight headset which can be easily placed under the helmet. The R35010 is supplied with two Ni-MH batteries, though two standard batteries R6 can be used. They enable the radio to operate up to 24 hours (in the cycle Tx/Rx/Standby=1/7/16).

Voice messages

It can be troublesome to the user to observe the radio's network selector if the radio is placed on one's arm or at the belt. In such cases it is very comfortable and usable to get the information about the network number by voice. These voice messages are sent from the radio to the user via headset loudspeaker - if connected to the radio - or via the internal loudspeaker during handheld operation. If needed this feature can be turned off - then these manipulations are not acoustically signaled.

Rapid configuration

For fast entering of individual network parameters into the radio the user may use the programmer - „fill gun“. The radio is then programmed with a configuration file and encryption keys which both are previously saved into the programmer using a computer or other radio. The wireless PTT switch enables to start transmitting only via the radio that has the same identification code as the PTT switch. In case of loss or damage of the wireless PTT switch, the radio can be remotely matched over „air“ to the new PTT switch with no need to use any additional equipment.

Vehicular system

The vehicular adapter enables mounting the radio onboard of a vehicle. The user can get better audio quality by connecting the external handset to this adapter. The mobile antenna connected to the vehicular system increases the communication range. After system installation in the vehicle the radio is supplied from on-board power supply. It is also possible to connect the radio system to the intercom (on-board internal communication network).



Vehicular adapter

Retransmission

The retransmission of radio signals is a unique and highly useful feature in personal radios. It increases communication range and provides better area coverage by allowing to bypass mixed terrain obstacles. The retransmission excellently improves communication quality within the soldiers' troop inside buildings and in urban terrain. It successfully works in the hard terrain conditions, if the terrain is strongly craggy and other obstacles worsening the communication appear.

In the R35010 radio two retransmission modes are available: "static" – via additional radio, located in a vehicle, working as the retransmission point or "ad hoc" dynamic retransmission where this feature is dynamically taken over by any radio.

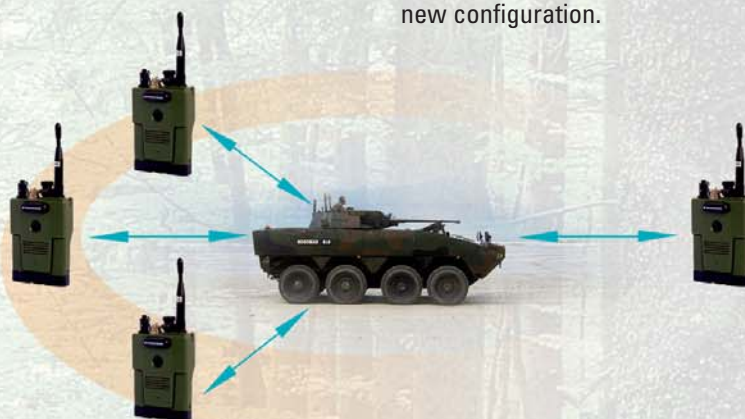
In case of "static" retransmission the communication between the radios is possible only via the retransmission station. The number of radios working in such organized network is unlimited.

In case of dynamic "ad hoc" retransmission each radio in the group of radios can take part in retransmission. The selection of communication way, direct or through retransmission point, is done automatically depending on which mode provides better communication quality.

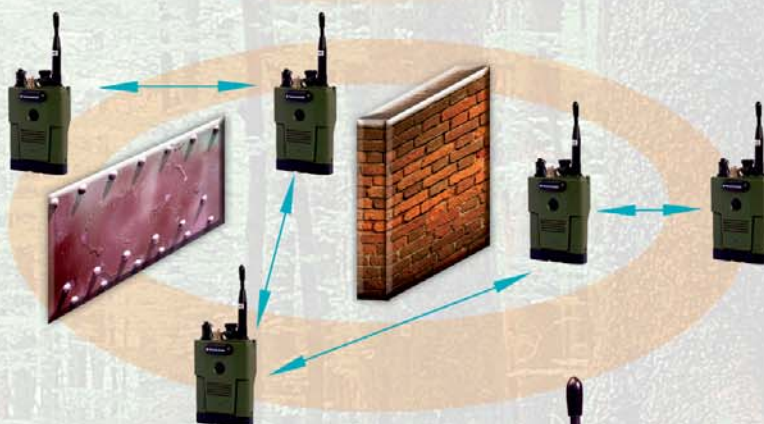
Radio "stunning"

Each R35010 radio can be easily deprogrammed ("stunned") by the user. Then the radio is not able to operate normally but other radios in the same network may listen the stunned radio's environment. The return to the radio's normal operation is possible only by its new configuration.

Static retransmission



Dynamic retransmission



Wide spectrum of accessories

In order to take advantage of all radio features the R35010 radio can be equipped with the following accessories:

- different sorts of carrying bags – for fixing the radio on soldier's arm, shoulder board or on MOLLE system vest
- clips for fixing the radio on belt
- headset
- wireless PTT switch
- battery charger: one-, five- and ten-positioned
- vehicular adapter
- vehicular headset for cooperation with vehicular set
- mobile antennas
- programmer („fill gun“)



PERSONAL SOLDIER RADIO R35010

TECHNICAL SPECIFICATION

Frequency band	2405 ÷ 2480 MHz (unlicensed ISM band)
Number of operation frequencies	16
Number of radio networks	16 x 64
Operation mode	DSSS
Type of voice encoding	CVSD
Max data transmission rate	19,2 kb/s; 57,6 kb/s
Encryption algorithm	AES
Transmitter RF power	10 mW; 100 mW; 400 mW
Receiver L.F. power	250 mW
Power supply voltage	2 ÷ 3,6 V / 5 V
Access type at full duplex	TDMA
Number of users at full duplex (conference)	≤ 4
MTBF	≥ 5 000 h

EXPLOITATION PARAMETERS

Range in open terrain	800 m
Range of wireless PTT switch	2 m
Operation time (Tx/Rx/S'By = 1/7/16) (depending on operation mode)	up to 24 h
Power supply	2 x alkaline battery R6 or 2 x AA Ni-MH battery
Dimensions (without antenna)	115 x 69 x 25/34 mm
Weight (without battery)	270 g
Power supply of wireless PTT switch	lithium battery CR2450
Dimensions of wireless PTT switch	50 x 38 x 17 mm
Weight of wireless PTT switch	40 g
Dimensions of headset	114 x 87 x 17 mm
Weight of headset	130 g

The radio meets the environmental requirements according to the MIL-STD 810F standard.



RADMOR S.A.
Hutnicza 3, 81-212 Gdynia, Poland
Export Department: tel. (+48 58) 69 96 621,
fax (+48 58) 69 96 622
e-mail: export@radmor.com.pl
www.radmor.com



Note: The mentioned parameters are not the binding specification. Technical parameters of the product are subject to change without notice.