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Introduction

PRORADIO keeps the advantages of an rough capsuled headset, to ensure the safety of hearing in noisy working environments, combined with the functions of an modern PMR-transceiver, that can be used without licence in quiet all european countries.

Coverage:

The operating band (446 MHz) allows clear communication, virtually free from atmospheric interferences and – despite the low power – will allow you to communicate up to a distance of 2 km. The maximum range is obtained operating in a open space.

If you find communication is not possible, many times this can be solved by moving a few meters to a new location. Range is also reduces while operating in a vehicle or metal building.

Safetyprecautions:

- Never expose the unit to extreme temperatures or dust.
- Avoid contact with water.
- Use the supplied original charger only. The charger is adjusted specially to the batteries of the unit. Different charger may destroy the batteries irreversible.
- To prolong the life of your battery, avoid charging it longer than necessary. Subsequently 12 hours will provide a full charge. An overload effectively reduces their capacity.

Cleaning:



Hanger, headset and microphone may be cleaned several times with a damp cloth only.

Do not use alcohol or harsh chemicals!

Controls and Indicators



1. ON/OFF/VOLUME Control

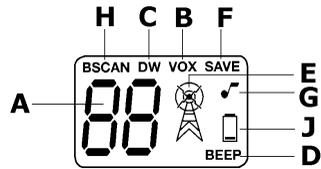
With this control you can switch on or switch off PRORADIO and adjust the volume to a comfortable level. Turn the knob clockwise to switch on the unit, counterclockwise to turn it off.

2. and 3. Channel (selection) keys up/down

With these keys you can select one of the 8 following channels.

Channels	Frequencies (MHz)
1	446,00625
2	446,01875
3	446,03125
4	446,04375
5	446,05625
6	446,06875
7	446,08125
8	446,09375

4. Display



The display shows following functions:

- A Channel indicator
- B VOX activated
- C Dual Watch activated
- D Key Pad beep activated
- E Transmitter  -/Receiver icon 
- F Power Save on
- G Roger Beep
- H Mode of channel monitoring
- J Batterie level icon

5. Call Button [call]

By pressing the CALL-button your PRORADIO is sending an audio signal to others using the same frequency.

If you keep pressed this button while switching on the unit, you are able to set VOX sensivity and RX return time too.

6. Charger control LED

Indicates when the batteries are fully charged.

7. Function button [menu]

By pressing this button you can activate the additional functions DW, SCAN, BSCAN, Roger Beep and Keypad tone.

If you want to cancel all the settings, you can make a reset by pressing this button while switching on the PRORADIO.

8. PTT Button (PTT)

By pressing the PTT-Button, PRORADIO switches from receive mode into transmit mode. By releasing PTT it returns into receive mode. The display shows the icon  for transmit mode and the icon  for receive mode.

9. Charger jack and external PTT (optional)

You can connect this jack to the charger for charging the batteries in the device. You can connect the jack to an external PTT (optional), too.

10. Adjustable hanger microphone

PRORADIO is equipped with an noise cancelling electret microphone, that reduces irritating background noise for clear audibility. For optimal noise cancelling the microphone must be adjusted exactly. During

transmission keep your mouth approx. 1,5 cm distance to the microphone at the end of the hanger.

Power Save:

PRORADIO is supplied with an automatic current economy circuit. If the transceiver receives no signals for longer than 5 seconds the "Power Save Function" automatically will be activated.

Power save is reducing at minimum the consumption extending the Standby-Time. The Display shows "SAVE". When PRORADIO is reduced to a minimum consumption nevertheless you can receive signals without restriction.

Battery level indicator:

The battery icon  will flash on the LCD when the batteries are in need of charging. In that case it's necessary to recharge the NiMH-batteries.

To go into operation

Turn on the unit:

To turn on PRORADIO, slightly rotate the ON/OFF/Volume control clockwise until you hear a „clic“. Four successive tones are signalling that the transceiver is turned on. The display starts an autotest for approximately 1 sec.; then it returns to channel 1.

To adjust volume

To adjust the volume, select with the buttons <up> and <down> a channel with carrier and low background noise. Rotate the volume dial clockwise until you reach a comfortable listening level.

To Transmit and Receive:

Select with the buttons <up> and <down> the desired channel. Please recommend that communication with other stations is possible only when the units are operating on the same frequency. To confirm the receiving mode, the display shows the RX icon .

Manual transmit mode (PTT):

To transmit, press the PTT-button (8) on PRORADIO or external PTT-button (optional) connected to the

charger/PTT-socket (9). PRORADIO is now ready to transmit. The display shows the transmit icon . At the same time you hear your voice at the loudspeaker. PRORADIO will be on transmission until you release the PTT-button again. After releasing the PTT-button the unit will turn back to RX mode.

Voice controlled transmit mode (VOX):

The VOX-function permits the hands-free use of PRORADIO. The transmission can start as soon as you speak close to the microphone. For control the display shows the transmit icon . PRORADIO will be on transmission until you speak to the microphone. When you finish speaking, the unit turns back to RX mode. The voice controlled transmit mode works only until a special background noise level. In sites with extreme loud background noise, it's better to use the manual transmit mode, because over a special intense noise level the unit activates the TX mode.

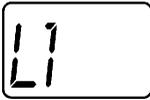
VOX activation:

Keep pressed again the <menu> button for more than 2 seconds. The display shows "VOX" to confirm that voice controlled transmit mode has been activated.

To deactivate voice controlled transmit mode, keep pressed the button <menu> for more than 2 seconds again.

VOX-sensitivity setting:

1. Turn off the unit.
2. Keep the button <call> pressed and restart the unit. The display shows:



3. Press the buttons <up> or <down>, to select the desired sensitivity level. L3 (lower sensitivity) is recommended in very noisy sites, L1 (higher sensitivity) is recommended in quiet sites. To confirm the operation, turn the unit off.

Delay adjustment:

There will be a brief delay between finish talking and transmit mode. The automatical delay time will be activated after setting the desired return time from transmit mode into receive mode. This delay is adjustable in 3 level and allows you to speak in your own inflexion without the reception mode starts.

1. To set the RX return time, turn the unit off.
2. Keep pressed the <call> button and restart the unit. The Display shows:



3. Press one time the <menu> button.
4. The display shows now:



5. With <up> or <down> you are able to select the desired delay level. "d1" signs for the shortest return time and „d3“ for the longest return time.
6. To confirm the operation turn off the unit.

Additional functions:

Roger Beep (end transmission tone):

When you finish transmission, a beep signalling the end transmission is heard by the other partner station. The tones will be sent automatically at the end of transmission.

To activate this function, follow these instructions:

1. Press the <menu> button until the display shows "oF"



and the icon  blinks.

2. If you desire end transmission tone select with the <up> button "oN" .
3. To confirm the operation press once again the button <menu>. Now the icon  remains in the display without flashing.

Key pad tone:

By turning on PRORADIO and pressing any key, the unit sends out a beep.

1. To deactivate the beeps, press <menu> until the display shows "oN" and "BEEP" blinks.
2. If you desire no tone select with the <up> button "oF" .
3. To confirm the operation press once again the button <menu>.
4. "BEEP" is not any more shown in the display.

Reset:

PRORADIO can be set easily to conditions of delivery. This is recommended in case of malfunctionings or if you want to cancel all settings. To make a reset keep pressed the button <menu> by turning on the unit. After that all settings are cancelled.

SCAN and BSCAN:

SCAN monitors continuous busy channels with carriers. When the unit notifies a carrier, it stops scanning about 5 seconds, than it restart monitoring.

To activate **SCAN** follow the instructions:

1. Press the **<menu>** button until in the display "**SCAN**" blinks.
2. Press **<up>** or **<down>** to start the SCAN function.
3. To interrupt the SCAN press **<call>** or the PTT-button.

BSCAN monitors the first free channel (without carrier) for 5 seconds amongst the 8 available channels. BSCAN always skips channels with carrier.

To activate **BSCAN** follow the instructions:

1. Press the **<menu>** button until in the display "**BSCAN**" blinks.
2. Press **<up>** or **<down>** to start the BSCAN function.
3. To interrupt the BSCAN press **<call>** or the PTT-button.

DUAL WATCH:

This function allows to monitor 2 channels at your choice. To activate DUAL WATCH follow the instructions:

1. Turn on PRORADIO.
2. Select with the **<up>** or **<down>** buttons the first channel you want to monitor.
3. Press repeatedly the **<menu>** button until the display shows "DW".
4. Select the second channel you want to monitor by means of **<up>** or **<down>** buttons.

After approximately 1 sec. the second channel is fixed and the DUAL WATCH function will start.

Now the dual watch between the two prefixed channels starts and stops when a carrier is heard on one of the two channels. Dual watch restarts when the carrier disappears.

To stop dual watch function, press the **<call>** button for a short time or press the PTT-button.

Technical Specifications:

General:

N° of channels:	8
Channel spacing:	12,5 kHz
Channel 1:	446,00625 MHz
Channel 2:	446,01875 MHz
Channel 3:	446,03125 MHz
Channel 4:	446,04375 MHz
Channel 5:	446,05625 MHz
Channel 6:	446,06875 MHz
Channel 7:	446,08125 MHz
Channel 8:	446,09375 MHz
Battery:	3 x NiMH-battery, 1,2V Mignon
Consumption:	RX: 33 mA Save: 21 mA (intermedia) TX: 270 mA
Operating time:	more than 15 hours (20% TX-mode)
Charging time:	10-12 hours
Operating temperature:	-40 °C to +55 °C
Frequency control:	PLL synthesiser
Weight:	485 g

Receiver:

Sensitivity:	better than 0,35 μ V for 12dB SINAD
Squelch:	automatic
Audio output:	0,3 W (max)
Intermediate frequency:	1. IF: 21,7 MHz 2. IF: 0,450 MHz
Spurious rejection:	within the european terms
Image rejection:	within the european terms
Intermodulation:	within the european terms

Transmitter:

Output Power:	500 mW ERP
Type of modulation:	FM
Modulation capability:	2,5 kHz (max.)
Frequency tolerance:	\pm 2,5 ppm

Restriction to the use:

Chart derived from ERC/DEC (98) 25-26-27

Country	PMR446 introduced	Deviations to ERC directive and comments
Austria	YES	Licence free
Belgium	YES	For inhabitants of Belgium licence required, free for travellers up to 3 months
Denmark	YES	Licence free
Finland	YES	Licence free
France	YES	Ch 1 and Ch 2 not allowed to be used
Germany	YES	Licence free
Greece	YES	Licence free
Hungary	YES	Licence free
Iceland	YES	Licence free
Ireland	YES	Licence free
Italy	NO	Not established
Luxemburg	YES	Licence free
Netherlands	YES	Licence free
Norway	NO	Not established
Portugal	YES	Licence free
Spain	YES	Licence free
Sweden	YES	Licence free
Switzerland	YES	Licence free

If something doesn't work...



It's impossible to connect the partner station.

Did you turn on the unit?

Did you adjust the right volume level?

Did you select the same channel like your partner station?

It's impossible to turn off the unit.

Connect the PRORADIO to the charger. If now PRORADIO can be turned on, the batteries are discharged. Turn off PRORADIO again and wait, until the batteries are fully charged.

If it is impossible to turn on the unit, control if protection fuse lost connection. You'll find the fuse on the top of board inside of the left earphone. For substitution use only fuses of same type and capacity (1 Ampère).