

FREQUENCY

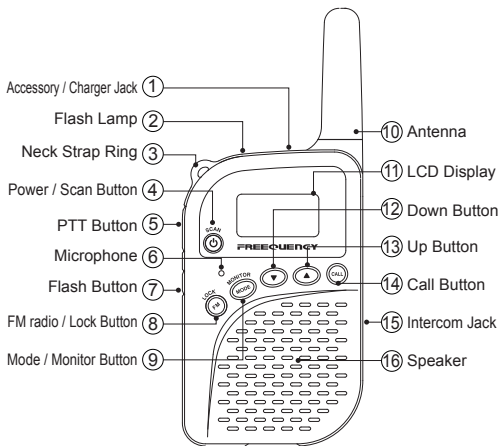
PMR-500TX



PMR 446 TRANSCEIVER
INSTRUCTION MANUAL



www.ttikorea.co.kr



Thank you for purchasing this Freequency radio.

All our products are built to offer excellent value for money by combining advanced features, great design and manufacturing quality.

To ensure you are familiar with the operation and features of your radio and in order to obtain the best performance, please read this manual carefully before operation.

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2. CAUTION

IMPORTANT - READ ALL INSTRUCTIONS carefully and completely before operating your radio and retain this manual for future reference.

NEVER connect the radio to a power source other than the supplied battery. This may damage your product.

NEVER operate your radio with the antenna less than 5cm from exposed parts of the body.

NEVER use the radio in or near a mining facility or other area which uses remotely triggered explosives or an area labelled "Blasting Area".

NEVER use or charge your radio in a potentially explosive atmosphere.

DO NOT place your radio in front of a vehicle airbag.

DO NOT operate your radio onboard an aircraft.

DO NOT use your radio with a damaged antenna.

DO NOT attempt to modify your radio in any way.

ALWAYS charge your radio at normal room temperature.

ALWAYS keep you radios at least 1.5m apart when in use.

ALWAYS switch off your radio where notices restrict the use of two-way radio or mobile telephones.

ALWAYS replace the accessory jack cover (if applicable) when the jack is not in use.

ONLY use TTI approved rechargeable batteries with the supplied charger.

AVOID exposing your radio to water. It is not waterproof.

AVOID storing or charging your radio in direct sunlight.

AVOID storing or using your radio where temperatures are below -20°C or above +60°C.

3. Supplied Accessories

Your radio is supplied with a full range of accessories to help you get started and benefit from virtually all the features straight away.

PMR-500TX radio (with internal battery)	1 unit
Owner's manual	1 unit
Wall charger unit	1 unit
Earbud microphone with remote PTT button	1 unit
Carrying case	1 unit
Lanyard/neck strap	1 unit

4. Fitting the Batteries

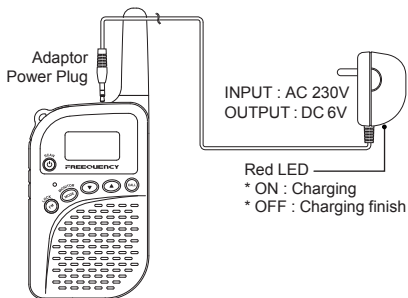
The PMR-500TX uses an internal Lithium Ion battery which has been pre-installed.

For removal or replacement please contact your local dealer. Unauthorised attempts to remove or replace the battery will void your warranty and may damage your product.

5. Battery Charging

To charge your radio, carefully follow these instructions.

1. Remove all audio accessories (including intercom connections) and insert the charge plug into the top accessory jack of your radio (see diagram).
2. Connect the charger unit to the mains power supply.
3. The red LED on the charger will glow and the charge indicator will appear in the radio display.
The battery charging time is typically 12 to 15 hours. When the battery is fully charged the charger LED will stop glowing and radio charge indicator will disappear.
Remove the charge plug from the radio when charging is complete.



6. The Radio Controls

(1) Power/Scan button



Press and hold the POWER button for at least 2 seconds. You will hear a confirmation tone to indicate the radio is on. To turn the radio off, press and hold the POWER button for at least 2 seconds. Press this button briefly to activate or deactivate scanning where appropriate.

(2) Push-To-Talk (PTT)



Press and hold this button to speak (transmit). Release the button to listen (receive) messages. You can only communicate with other PMR446 radios when the channel and privacy code settings are the same as yours.

(3) Up button



Pressing this button will increase the volume. In some modes this button is used to adjust the function setting.

(4) Down button



Pressing this button will decrease the volume. In some modes this button is used to adjust the function setting.

(5) Mode/Monitor button



Press this button briefly to enter the function mode. Press again (repeatedly) to step through the function menu.

Press and hold this button for 2 seconds to activate or deactivate the monitor function.

(6) Key light button



Press and hold this button to activate the key light (mounted in the top of the radio). Releasing the button will deactivate the key light.

(7) Call button



Press this button to transmit a call melody and alert other parties to your call.

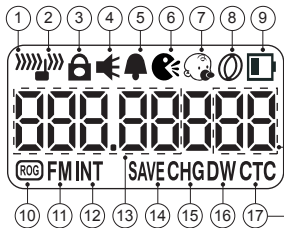
(8) FM Radio/Lock button



Press this button briefly to activate or deactivate the FM Radio mode.

Press and hold this button for 2 seconds to activate or deactivate the keypad lock.

7. The Radio Display



1. Receiving/Busy Icon
2. Transmit Icon
3. Lock Icon
4. Monitor Icon
5. Keytone Icon
6. VOX Icon
7. Baby Monitor Icon
8. Scan Icon
9. Battery Warning Icon
10. Roger Beep Icon
11. FM Radio Icon
12. Intercom Icon
13. Channel Display
14. Power Save Mode Icon
15. Charge Icon
16. Dual Watch Icon
17. Privacy Code Display

8. Basic Radio Operation

The PMR446 service which this radio uses shares channels on a 'take turns' basis. This means that other users and groups may be using any channel and privacy code combination. To communicate with other PMR446 radios, all units must be switched to the same channel (8 choices) and privacy code (38 choices).

If the combination you have selected is already in use please make an alternative selection.

1. Switch on your radio by pressing the Power button for 2 seconds.
2. Check and if necessary change the channel and privacy code settings (see Function Mode and Radio Features Explained).
3. To speak, hold the radio upright, about 10cm from your mouth and press the PTT. Speak slowly and clearly towards the radio. Release the PTT when you have finished speaking.

You will hear messages from other radios within range, with the same channel and privacy code setting. The appropriate icon will appear in the radio display when you receive or transmit a message.

9. The Function Mode

The Function Mode allows you to program user preferences, activate features and use advanced functions (see Radio Features Explained).

To access the Function Mode press the MODE button briefly. Each press of the MODE button steps the radio sequentially through the different functions.

The radio display indicates the current function. The present setting and associated icon flash. Use the up or down button to change the setting.

Display	Function	Settings
CH shows	change Channel	1 to 8
Privacy code flashing	change Privacy Code	1 to 38, Off
dCH shows	select Dual Watch mode	1 to 8, Off
Uo shows	select Hands Free (VOX) mode	1 to 3, Off
rb shows	activate the Roger Beep	On/Off
bEP shows	activate Key Beep	On/Off
bby shows	activate the Room Monitor	On/Off
SqL shows	adjust Squelch Level	1 to 8
CAL shows	change Call Tone	1 to 3

Press the PTT or FUNCTION button or wait for 5 seconds to store your choice.

If you do not press any key for 5 seconds your radio will return to standby automatically.

10. Radio Features Explained

(1) Volume Level

There are 7 volume levels to suit your personal preference.

To adjust the volume level, press the Up or Down button.

VoL and the current volume level are shown in the radio display.

(2) Channels

This radio operates on any one of the 8 PMR446 licence free channels. To communicate with other PMR446 radios, all units must be switched to the same channel and privacy code.

To change the radio channel, press the FUNCTION button until the channel number flashes. Use the up or down button to select the desired channel. Press the PTT or FUNCTION button or wait for 5 seconds to store your choice.

(3) Privacy Codes (CTCSS)

This radio is fitted with 38 different privacy codes (also known as CTCSS, sub-codes or sub-channels). You can select or change the current privacy code via the Function Menu.

If the other units do not have privacy codes set your units privacy code to Off.

Privacy codes do not prevent other radio users from hearing

your conversation. They allow you to ignore messages that are using a different privacy code. There are 304 channel/privacy code combinations to help avoid interference from other users. To change the privacy code, press the FUNCTION button until the privacy code number flashes. Use the up or down button to select the desired code. Press the PTT or FUNCTION button or wait for 5 seconds to store your choice. The privacy code icon will appear when a privacy code is selected.

(4) Dual Watch

Dual Watch mode allows you to monitor two channels, a primary and dual watch channel. When a signal is received on either channel the unit will pause for 5 seconds before resuming the dual watch.

To activate the dual watch mode, first select a radio channel (see Channels) as the primary channel. To select the dual watch channel press the FUNCTION button until dCH appears. Use the up or down button to select the desired dual watch channel. Press the PTT or FUNCTION button or wait for 5 seconds to store your choice and activate the dual watch.

The radio display will alternate between the primary and dual watch channels and the dual watch icon will appear.

To deactivate the dual watch press the scan button.

If you press the PTT button whilst receiving a signal in dual watch mode the radio will transmit on the currently displayed channel. If you press the PTT button when no signal is present the radio will transmit on the primary channel.

(5) Hands Free (VOX) mode

When Hands Free (VOX) mode is selected the radio will automatically transmit when the microphone detects your voice (or other noise). It can be used with the internal microphone or an appropriate audio accessory (available separately).

To avoid accidental operation and reduce the effect of background noise there are 3 microphone sensitivity settings.

To activate the Hands Free (VOX) mode, press the FUNCTION button until Uo appears. Use the up or down button to change the sensitivity level. Press the PTT or FUNCTION button or wait for 5 seconds to store your choice and activate the VOX mode. The VOX icon will appear when VOX mode is active.

Repeat this process and change the sensitivity setting to Of to deactivate the Hands Free (VOX) mode.

(6) Roger Beep

The Roger Beep is a short tone that is automatically added to the end of your transmissions to tell other users that you have finished speaking. You can activate or deactivate the Roger Beep as required.

To change the Roger Beep setting, press the FUNCTION button until rb appears. Use the up or down button to change the setting. Press the PTT or FUNCTION button or wait for 5 seconds to store your choice. The Roger Beep icon will appear when Roger Beep is active.

(7) Key Beep

If the Key Beep is activated, your radio will emit a confirmation tone whenever you use the keypad. You can activate or deactivate the Key Beep as required.

To change the Key Beep setting, press the FUNCTION button until bEP appears. Use the up or down button to change the setting. Press the PTT or FUNCTION button or wait for 5 seconds to store your choice. The Key Beep icon will appear when Key Beep is active.

(8) Room Monitor

The Room Monitor is similar to Hands Free (VOX) mode, but it ignores short, brief noises and uses only the highest microphone sensitivity level. When Room Monitor mode is activated, the radio will transmit for 15 seconds when it detects a continuous noise for 5 seconds or more. If the noise persists the radio will transmit for another 15 seconds.

To activate the Room Monitor mode, press the FUNCTION button until bby appears. Use the up or down button to change the setting. Press the PTT or FUNCTION button or wait for 5 seconds to store your choice and activate the Room Monitor. The Room Monitor icon will appear when the Room Monitor is active.

NB The Room Monitor function is not a replacement for regularly checking the safety and security of children. If you move out of communication range you will not hear transmissions.

(9) Squelch Level

The adjustable Squelch allows you to optimise the radios sensitivity. It also allows you to increase the sensitivity and receive weaker signals.

There are 8 decreasing levels of sensitivity. 1 is the most sensitive, for detecting the weakest signals. 8 is the least sensitive, for hearing only stronger signals and cutting out interference from weak signals.

At higher sensitivity settings it is normal to hear continual background static noise. Generally you should set the squelch level to the first setting which removes background static noise. To change the Squelch level setting, press the FUNCTION button until SqL appears. Use the up or down button to change the setting. Press the PTT or FUNCTION button or wait for 5 seconds to store your choice.

(10) Call Alert

To alert other users to your message and gain their attention you can send a Call Alert melody by pressing the CALL button. There are three different call alert tones.

To change the Call Alert melody, press the FUNCTION button until CAL appears. Use the up or down button to change the setting. Press the PTT or FUNCTION button or wait for 5 seconds to store your choice.

(11) Monitor

The Monitor function is used to check for activity on the current channel regardless of privacy code settings. It also sets the squelch to minimum and will detect weaker signals.

To activate or deactivate the Monitor press the Mode/Monitor button for at least 2 seconds. The Monitor icon will appear when the Monitor is active. When activated it is normal to hear background static noise.

(12) Key Lock

To avoid changing the channel or function settings accidentally this radio has a lock function.

To activate or deactivate the lock press and hold the FM/Lock button for at least 2 seconds. The Key Lock icon will appear when the Key Lock is active. The Power, PTT, Flash, Call and Volume adjustment are unaffected by the Lock.

(13) Channel Scan

The Channel Scan can be used to find or detect users on other radio channels.

To activate/deactivate the channel scan, press the Power/Scan button briefly. The Scan icon will appear when the channel scan is active. Scanning will only stop when you deactivate the scan function.

The radio will scan through the 8 channels. If your radio detects a valid signal the scan will pause for 5 seconds.

If you press the PTT or CALL button when your radio detects a signal, the radio will transmit on the same channel. Scanning will resume after approximately 15 seconds. Press the UP or DOWN button to resume scanning immediately.

If you press the PTT or CALL button during scanning, the radio will return to your original channel. Scanning will resume after approximately 15 seconds.

The Function Menu and FM radio are disabled whilst scanning. To increase battery life, use the scan mode sparingly.

(14) Privacy Code Scan/Decode

This radio has Privacy code scan to determine which Privacy Code (CTCSS) is in use on the current channel.

To activate the privacy code scan press the FUNCTION button until the privacy code number flashes, then press the SCAN button briefly. The Scan icon will appear when the privacy code scan is active.

The radio will scan through the 38 privacy codes (CTCSS). If your radio detects a valid signal the scan will pause for 5 seconds.

If you press the PTT or CALL button when your radio detects a signal, the radio will transmit on the same privacy code.

Scanning will resume after approximately 15 seconds. Press the UP or DOWN button to resume scanning immediately.

If you press the PTT or CALL button during scanning, the radio will return to your original privacy code. Scanning will resume after approximately 15 seconds.

The Function Menu and FM radio are disabled whilst scanning. To increase battery life, use the scan mode sparingly.

(15) Battery Warning

The Battery Warning icon indicates when the battery level is low and the battery needs recharging. If necessary, refer to the instructions to recharge the battery. Operating the radio with a low battery will reduce performance.

(16) Flash Light

To activate the key light, press and hold the Flash button. Release the Flash button to deactivate the key light.

To avoid draining the battery accidentally the key light will only operate when the radio is switched on.

(17) Power Save

To conserve battery power the radio will automatically enter Power Save mode after a short period of inactivity. The Save icon will appear to indicate that Power Save is active. There is no user setting for Power Save.

(18) Intercom

The Intercom function allows two users to share the use of one radio and communicate with each other simultaneously. Each user must have an appropriate audio accessory. User 1 is connected to the accessory jack and user 2 to the intercom jack (additional accessory required). When an audio accessory is connected to the Intercom jack the intercom mode is automatically selected and the intercom icon is shown in the display.

Both users can now communicate with each other hands free (e.g. without using the PTT). For reassurance, when talking each user can also hear their own voice in the earpiece (known as talkback).

To transmit, either user can press the PTT button on their audio accessory or on the radio. However, the sound from both users microphones will be broadcast. If the Hands Free (VOX) mode is activated, the radio will transmit whenever either microphone detects a voice signal.

(19) Display Backlight

The display backlight will illuminate for approximately 5 seconds whenever a key is pressed.

11. FM Radio

This two-way radio is also equipped with an FM radio to receive local broadcast stations.

To activate/deactivate the FM radio, press the FM button briefly. The FM icon will appear when the FM radio is active.

You will hear the current FM station (if tuned) and the radio display will show the current FM frequency.

Whilst the FM radio is active you will also hear radio communications on the channel and privacy code you have selected. To allow clear reception, when present these signals will mute the FM radio.

The main two-way radio controls (PTT and CALL) and the volume controls continue to function. Other controls have different functions when the FM radio is active.

To switch off your radio you must return to the two way radio mode. You must deactivate Dual Watch or Channel Scan to use the FM radio. VOX and Room Monitor are automatically deactivated when you select the FM radio.

(1) Locating Radio Stations

To find a radio station automatically, press the scan button briefly. The radio will scan the FM frequencies incrementally to locate the next station.

When your radio detects a radio station the scan will pause and the radio frequency will flash. If no action is taken within 5 seconds, or if you press the MODE button, the radio will store this station and the scan will stop. Press the SCAN button briefly to ignore this station and resume scanning.

(2) Frequency Adjustment

If reception is poor you may wish to manually tune the FM radio to the desired station.

Press the MODE button to start manual tuning. Whilst the FM frequency is flashing press the up or down button to adjust the frequency. When you locate the desired station press the MODE button again to store the frequency.

(3) FM Radio Lock

The FM Radio Lock avoids interrupting the FM radio when a two

way radio signal is received and disables the two way radio controls.

To activate or deactivate the FM Radio Lock function press and hold the FM/Lock button for at least 2 seconds.

12. Troubleshooting

If you experience problems with your PMR-500TX first check the battery power level as low batteries can cause problems such as no transmission, weak reception and poor sound quality. Check the manual and radio display to ensure that a function (such as VOX) has not been activated by accident.

If this does not solve the problem reset your unit as follows:

1. Switch off the radio.
2. Press and hold the Mode button and PTT button together
3. Switch on the radio.

This will reset the radio to the factory settings and should fix most problems.

In case of further difficulty please consult your dealer or visit our website at www.tti.uk.com.

13. CE Declaration

CE versions of the PMR-500TX which display the CE symbol on the product label, comply with the essential requirements of the European Radio and Telecommunication Terminal Directive 1999/5/CE.

This warning symbol indicates that this equipment operates in non-harmonised frequency bands and/or may be subject to licensing conditions in the country of use.

Be sure to check that you have the correct version of this radio or the correct programming of this radio, to comply with your national licensing requirements.

This unit can be used without license and charges in; Austria, Belgium, Denmark, Finland, France, Germany, Great Britain, Greece, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, Switzerland

14. Safety Requirements

For charging the rechargeable batteries, only a CE approved AC adaptor complying with the following specifications must be used:

* INPUT: AC 230V/50Hz

* OUTPUT: DC 9V, 100mA

15. Technical Specifications

1. Operating Frequencies:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	446.00625	5	446.05625
2	446.01875	6	446.06875
3	446.03125	7	446.08125
4	446.04375	8	446.09375

2. Channel Spacing: 12.5kHz

3. Power Source: 1 x Li-ion battery

4. Privacy Code/Tone Table (CTCSS frequency shown in Hz):

No.	Freq.	No.	Freq.	No.	Freq.	No.	Freq.
1	67.0	11	97.4	21	136.5	31	192.8
2	71.9	12	100.0	22	141.3	32	203.5
3	74.4	13	103.5	23	146.2	33	210.7
4	77.0	14	107.2	24	151.4	34	218.1
5	79.7	15	110.9	25	156.7	35	225.7
6	82.5	16	114.8	26	162.2	36	233.6
7	85.4	17	118.8	27	167.9	37	241.8
8	88.5	18	123.0	28	173.8	38	250.3
9	91.5	19	127.3	29	179.9	OF	0
10	94.8	20	131.8	30	186.2		

Freequency products are manufactured by TTI Tech. Co. Ltd, Korea.

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