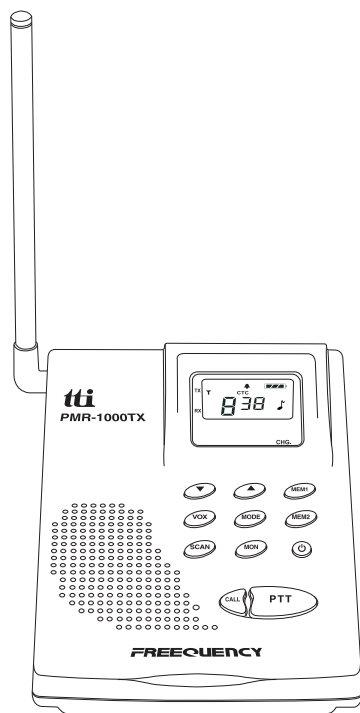# Instruction Manual

tti Tech

Private Mobile Radio (PMR)446MHz
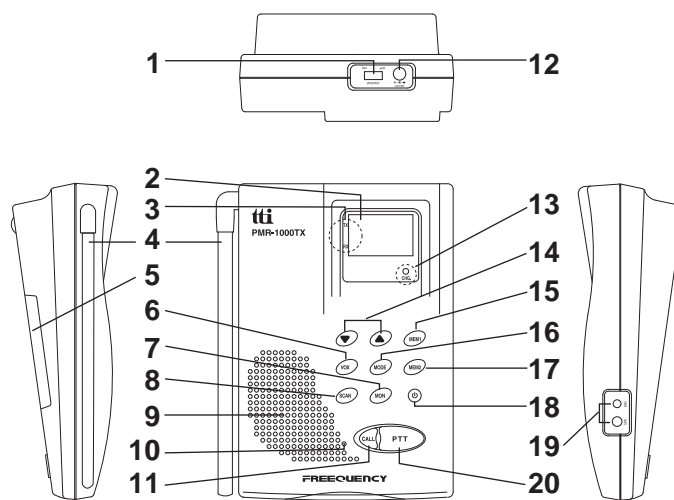
Model:PMR-1000TX

⚠️ CAUTION

NEVER ATTEMPT TO CHARGE ALKALINE OR DRY CELL BATTERIES. WHEN RECHARGING, USE ONLY THE RE-CHARGEABLE BATTERIES SUPPLIED WITH YOUR TRANS-CEIVER (OPTIONAL IN SOME CASES). USE OF OTHER BATTERIES WILL CAUSE DAMAGE TO YOUR PMR-1000TX TRANSCEIVER. OTHER TYPES OF BATTERIES MAY BURST CAUSING PERSONAL INJURY.

AVOID INSTALLING THE PMR-1000TX TRANSCEIVER IN AN AREA WHERE IT MAY BE SUBJECTED FOR PROLONGED PERIODS OF TIME TO DIRECT SUNLIGHT OR TEMPERA-TURES BELOW -4°F (-20°C) OR ABOVE 140°F (60°C).
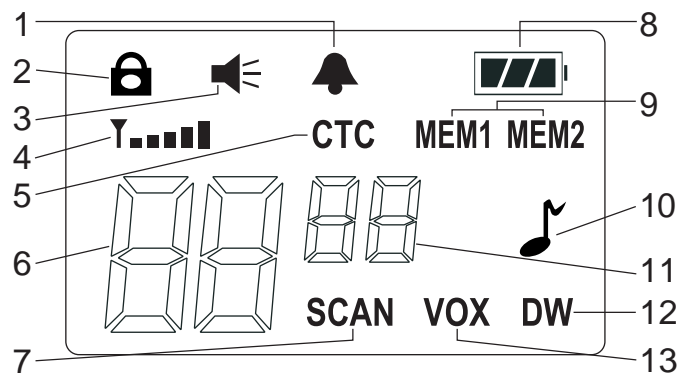
KEEP THE ANTENNA AT LEAST 1 INCH (2.5 cm) AWAY FROM YOUR HEAD AND BODY. DO NOT USE YOUR PMR-1000TX RADIO TRANSCEIVER WITH A DAMAGED ANTENNA.

Model PMR-1000TX

1. Battery CHARGE On/Off Switch
2. Liquid Crystal Display (LCD)
3. TX/RX LED
4. Antenna
5. Battery Door
6. Voice-Operated Transmission (VOX) Button
7. Monitor Button
8. SCAN/Lock Button
9. Built-in Speaker
10. Built-in Microphone
11. CALL Button
12. DC12V Power Jack
13. Charging (CHG.) LED (Red)
14. Up/Down Channel/ Volume Buttons
15. Memory 1 Button
16. MODE Button
17. Memory 2 Button
18. Power On/Off Button
19. External Speaker(SPK)/ Microphone (MIC) Jacks
20. Push-To-Talk (PTT) Button

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Model PMR-1000TX DISPLAY

1. **Beep On/Off Indicator:** This icon appears when the beep key tone is on, and disappears when tone is not in use.
2. **Key Lock Indicator:** Icon appears when keypad is locked. This function disables keys such as MODE, Memory, SCAN and VOX.
3. **Monitor Indicator:** Icon appears when the Monitor (MON) button is pressed and the channel monitor function is activated.
4. **Signal Strength Indicator:** Icon appears when a signal is being received. The icon consists of five bars to indicate the received signal level.
5. **Continuous Tone Coded Squelch System (CTCSS) Indicator:** Icon appears when the CTCSS tone function is active.
6. **Large Segment Display:** Indicates the PMR-446 Radio channel number in use.
7. **Scan Indicator:** This function allows the user to scan a channel to search for a valid signal.
8. **Battery Level Indicator:** Icon indicates the battery charge level.
9. **MEM1 / MEM2 Indicators:** Appropriate icon appears when the required memorized channel is selected.

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10. **Roger Beep Tone Indicator:** Icon appears when the roger beep tone is enabled, signifying transmission has been terminated. Icon disappears when tone is disabled.

11. **Small Segment Display:** Displays the CTCSS tone option for a given channel from (01-38).

12. **Dual Watch Mode Indicator:** Icon appears when dual watch mode is active.

13. **Voice Activated Transmission (VOX) Indicator:** This function allows hands-free conversation. The icon appears when the VOX mode is activated.
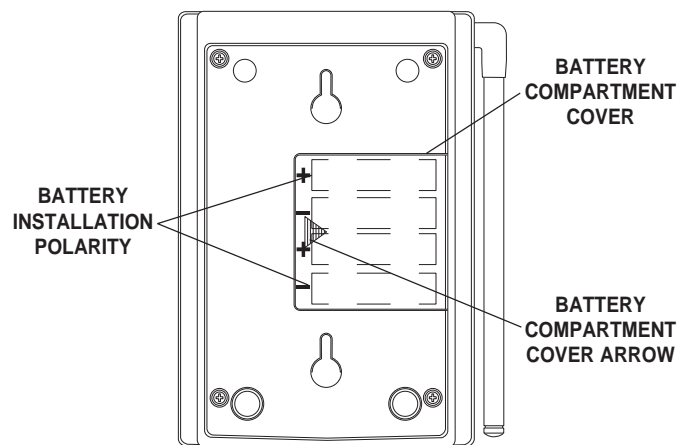
Powering the transceiver:

The primary power source for Your PMR-1000TX base station is the AC wall adaptor. The PMR-1000TX is also supplied with a battery back-up, should you experience loss of household current.

The PMR-1000TX will automatically switch to battery back-up when AC power is interrupted.

The rechargeable batteries are charged in the radio transceiver using the AC power adaptor, which is also supplied with the unit.

Installing the Back-Up Batteries
(For some customers, batteries are optional.) :

The four AA batteries are installed in the compartment at the right rear of the transceiver; the compartment is fitted with a removable cover. Install the batteries as follows:

1. Press down with the thumb at the arrow, and slide the battery cover off the side of the unit.

2. Insert the four AA rechargeable batteries provided. (Alternate positive ends (+) as shown in battery compartment layout.) Replace the cover.

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BATTERY
COMPARTMENT
COVER

BATTERY
INSTALLATION
POLARITY

BATTERY
COMPARTMENT
COVER ARROW

The following guidelines will improve performance and provide longer operating times for the **PMR-1000TX**:

1. Do not mix old and new batteries.
2. Do not mix alkaline, or rechargeable (Ni-MH) batteries.
3. If the unit is not to be used for an extended period of time, remove the batteries. Old or leaking batteries can cause damage to the unit and will void the warranty.

Charging The Rechargeable Batteries:
The rechargeable batteries, supplied with the unit, are charged by connecting the AC Adaptor plug to the **DC12V** jack on the top of the unit, and setting the **CHARGE** switch to the **ON** position. Use only the AC Wall Adaptor that is supplied with the base unit. The **CHG**. LED indicator below the LCD display lights **red** during battery charge operation.

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The battery charge indicator icon displays the battery charge level when the AC adaptor is unplugged. When the AC adaptor is connected and in use, the indicator icon will indicate a full charge as shown below.
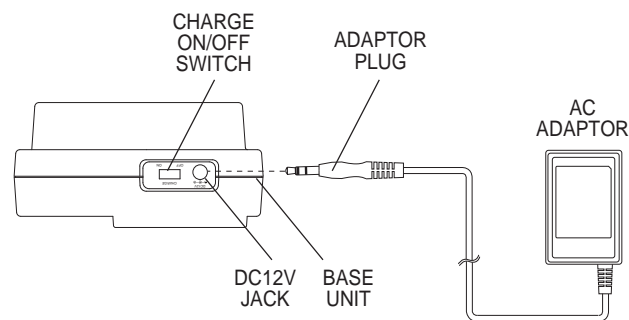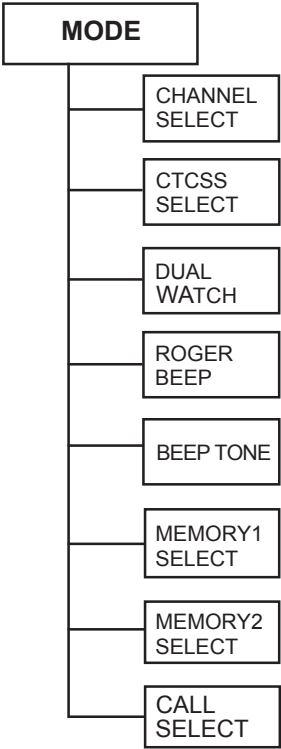
Full Battery - three segments are illuminated.
Low Battery - one segment is illuminated.

Approximately 20–24 hours are required to fully charge the batteries. The red LED charging indicator (12) will light whenever the batteries are charging. A flashing red LED-charging indicator denotes batteries are not installed. You must set the CHARGE switch to the OFF position, when using any batteries other than the ones provided. Failure to do this may cause damage to batteries resulting in personal injury and/or damage to the unit.

Caution: The charging adaptor is intended for use with the supplied rechargeable Ni-MH batteries. Do not attempt to recharge any other type batteries.

CHARGE
ON/OFF
SWITCH

ADAPTOR
PLUG

AC
ADAPTOR

DC12V
JACK

BASE
UNIT

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PMR-1000TX OPERATIONAL MODES

```
┌──────────────────┐
│      MODE        │
└──────┬───────────┘
       │   ┌──────────────┐
       ├───│ CHANNEL      │
       │   │ SELECT       │
       │   └──────────────┘
       │   ┌──────────────┐
       ├───│ CTCSS        │
       │   │ SELECT       │
       │   └──────────────┘
       │   ┌──────────────┐
       ├───│ DUAL         │
       │   │ WATCH        │
       │   └──────────────┘
       │   ┌──────────────┐
       ├───│ ROGER        │
       │   │ BEEP         │
       │   └──────────────┘
       │   ┌──────────────┐
       ├───│ BEEP TONE    │
       │   └──────────────┘
       │   ┌──────────────┐
       ├───│ MEMORY1      │
       │   │ SELECT       │
       │   └──────────────┘
       │   ┌──────────────┐
       ├───│ MEMORY2      │
       │   │ SELECT       │
       │   └──────────────┘
       │   ┌──────────────┐
       └───│ CALL         │
           │ SELECT       │
           └──────────────┘
```

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Controls:

Power On/Off (18) Button
Press and hold the power on/off button (⏻) for at least 2 seconds. You will hear a confirming melody to indicate the unit is on. To turn the unit off, press and hold the button for at least 2 seconds.

Adjusting the Volume
With the unit powered on, press the Up Channel/Volume button (▲) to increase volume and the Down Channel/Volume button (▼) to decrease volume. The display will indicate the current volume level by the small number adjacent to the icon (⊔⌐)

Monitor/(MON) Button (6)
This button is used to check activity on the current frequency before transmitting. Check activity by pressing the Monitor (MON) button longer than 2 seconds; the ◀⋶ icon will appear on the display and you will hear static if frequency is clear.
Do not transmit if you hear conversation. Hold down the MON button again longer than 2 seconds and the ◀⋶ icon will disappear from the display. The monitor function will temporarily bypass the squelch setting and play all signals on a given channel. This feature is useful when communicating with other parties at extreme range. By pressing the monitor button momentarily, the LCD backlight is turned on; the LCD backlight will turn off automatically in about 5 seconds, or when the MON button is pressed momentarily once again.

Push To Talk (PTT) Button (20)
Pressing and holding this button will allow you to speak to any transceiver that is set to the same channel and privacy code setting as yours.
After you have finished speaking, release the PTT button to allow reception of incoming signals. It is not possible to transmit and receive at the same time. The Transmit (TX) LED at the upper left side of the LCD panel will light **red** while the PTT button is pressed. Releasing the button allows the unit to revert to standby mode. When receiving an incoming signal, the received signal strength indicator (▼▪▪■■) will display the relative strength of the signal, and the receive (RX) LED at the lower left side of the LCD will light green.

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CALL Button (11)

Pressing the button will call another party on the same channel. The Transmit LED will light **red** for approximately 3 seconds and then go out.

Up Channel/Volume Button (14)

In the standby mode, pressing this button (▲) will increment the listening volume. When in function edit mode, this button will be used to adjust the unit's settings.

Down Channel/Volume Button (14)

In the standby mode, pressing this button (▼) will decrement the listening volume. When in function edit mode, this button will be used to adjust the unit's settings.

Mode Button (16)

In the standby mode, pressing this button momentarily will enter the function edit mode. Subsequent presses will cycle to each mode. The MODE button is used to select various features for adjustment.

External Speaker (SPK)/Microphone (MIC) Jacks (19)

This set of jacks accepts an external headset/microphone connector. Refer to the Operational Modes.

Scan/Lock Mode Button (8)

Press this button momentarily to enable or disable the scan mode. Press and hold button for more than 1 second to lock or unlock keypad functions, except PTT, Call, Monitor (MON), Power on/off and Volume up/down. When the keypad is locked, the (🔒) icon will appear in the upper left corner of the display.

Operational modes

Channel Selection

In order to communicate with other PMR-446 units, both transmitting and receiving party must be on the same frequency. The PMR-1000TX has 8 channels (frequencies 01-08) indicated by the large digits on the LCD display panel. Communication with any compatible units is possible on these 8 channels. Before transmitting on the selected

channel, press the Monitor (MON) button (7) to check the activity on that channel. If there is activity on the selected channel, change to another channel that is clear.

To change the PMR-1000TX channel,

- From the standby mode, press the MODE button (16) until the channel number flashes.

- Press the Up button (▲) briefly to move to the next higher main channel number.

- Press the Down button (▼) briefly to move to the next lower main channel number.

Continuous Tone Coded Squelch System (CTCSS) Mode (Sub-channel)Selection

The Coded Tone Controlled Squelch System (CTCSS) consists of 38 Sub-Frequencies. This feature allows you to utilize the coded squelch tones (01-38) within each main channel (01-08). This enables you to communicate with another party on the same main channel using the same sub-code. The CTCSS filters out unwanted transmissions without the same coded squelch tone.

To change the CTCSS Sub-channel,

- From the standby mode, press the MODE button twice; the sub-channel number will flash as it is displayed. If **oF** is displayed, press the Up or Down button to enable the CTCSS mode; the flashing **CTC** icon will appear on the display with the flashing sub-channel number.

- Then press the Up or Down button to select the desired sub-channel for use.

- Press the PTT button momentarily to confirm selection. The CTCSS mode can be turned off by selecting the **oF** icon with the Up or Down button.

NOTE: To communicate with other PMR-446 units, they must be switched to the same channel and CTCSS sub-code. To communicate with other PMR-446 units that do not have sub-codes, switch your unit to the same channel with the

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sub-code set to **oF**. The CTCSS sub-codes do not prevent others from hearing your transmission. This will only allow you to ignore all traffic on a given channel not using the same sub-code.

Dual Watch Mode

This feature allows you to monitor two channels. While in dual watch mode, the unit will continuously monitor both the primary and dual watch channel. Received signals will be played for 5 seconds then the other channel will be scanned. Pressing the PTT button during a received transmission will set the unit to transmit on the same channel. Pressing the PTT button when no signal is received will set the unit to transmit on the primary channel.

To set the Dual Watch Mode:

- From the standby mode, press the MODE button 3 times; the **DW** icon flashes on the display. If the dual watch mode is off, the **oF** icon will also appear flashing.
- To enable the dual watch mode, press the Up or Down button; the dual watch channel number will flash and start to increment up or down as the Up or Down button is pressed.
- Press the PTT button to confirm selection of the dual watch channel. The display will now alternate between the primary channel and the dual watch channel just selected.

When enabled, the **DW** icon appears steady on the display. To exit the dual watch mode, enter the dual watch mode again and set the mode off (**oF**).

Roger Beep Tone

The Roger Beep is a tone, which is automatically transmitted whenever the PTT button is released. This tone alerts the receiving party that the transmission has been terminated intentionally.

To enable and disable the Roger Beep tone:

- From the standby mode, press the Mode button 4 times until **rb** appears on the display with the flashing Roger Beep icon (♪) and **On** or **oF**.
- Press the Up or Down button to select the tone on or off as desired.
- Momentarily press the PTT button to confirm selection.

When enabled, the tone icon (♪) appears steady on the display.

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Beep Tone

This feature allows the transceiver to sound a tone whenever the following keys are pressed: Up/Down buttons, VOX button, MODE button, SCAN button, Monitor (MON) button, Memory (MEM1/MEM2) button, or Power button.

To turn the beep tones on or off:
- From the standby mode, press the MODE button 5 times until **bp**, the Bell (🔔) icon, and **On** or **oF** flash on the LCD display.
- Press the Up or Down button to toggle the key tone feature On or Off.
- Momentarily press the PTT button to confirm your selection.

When enabled, the bell icon appears steady on the display.

Memory Selection

The Memory function allows you to store a channel so that you can use the stored channel when needed by pressing the **MEM1** or **MEM2** button.

- From the standby mode, press the MODE button 6 times until **MEM1** icon appears on the display with the flashing MEM1 icon.
- Press the Up or Down button to select a channel.
- Momentarily press the PTT button to confirm selection.

NOTE: To use the stored channel, press the "**MEM1**" button, then you will be able to see the stored channel and **MEM1** icon on the display.
    * While the memorized channel is working, the SCAN and MODE buttons are locked. To unlock the buttons, press the **MEM1** button one more time. The radio goes to the home channel and the buttons are unlocked.

To select or exit **MEM2**, press the Mode button 7 times until **MEM2** icon appears on the display, and repeat the same process as done in **MEM1.**

Call Ringer Selection Mode

The transceiver provides 5 user-selectable call ringer melodies to alert you to an incoming call.

To select your favorite call ringer melody:
- From the standby mode, press the MODE button 8 times; **C** will appear on the display, together with a flashing number between

01 and 05, and an appropriate call ring.
- Press the Up or Down button to preview and hear the 5 available call melodies.
- Call ring can be turned off buy selecting **oF** as the setting.
- Momentarily press the PTT button to confirm your selection.

VOX Selection Mode

This option enables you to have hands-free conversation. Your voice or other relatively loud noises are detected and the radio transmits without the need to press the PTT button.
To set radio for VOX operation,

- From standby mode, press the VOX button; **Vo** appears steady and **VOX** icon and sensitivity level (if VOX is enabled) flashes on the display.
- Press the Up or Down button to select the desired VOX sensitivity level (05 is the most sensitive, 01 is the least sensitive, **oF** represents off).
- Momentarily press the PTT button to confirm the VOX selection.
- The **VOX** icon will appear steady on the display whenever the VOX feature is in use.
  VOX can be turned off by selecting **oF** as the setting.

Scan Operation

This feature allows you to monitor all channels automatically for valid signals. While scanning, you can transmit and receive. During reception, the scan function is interrupted and will return to the scan mode after 10 seconds. To enable the channel scan mode,
- Momentarily press the SCAN button; **SCAN** will appear on the display.
- The radio will display each channel (01-08) in order as the scan mode operates to find an active main channel.
- When unit doesn't find any signals and you want to transmit, press the PTT switch to return to home channel operation. The transceiver will automatically resume scanning approximately 15 seconds after the transmission is completed.
- If there is no activity and you want to leave the scan mode, press the SCAN button momentarily and the unit will return to normal operation; **SCAN** icon will disappear from the display.

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Auto Key Lock Selection Mode
This feature prevents accidental channel change. The Auto Key Lock function temporarily disables the VOX, SCAN MODE, MEM1 and MEM2 buttons.
To access the Auto Key Lock selection menu:
- From the standby mode, press and hold the SCAN button for over 2 seconds to Lock the Auto Key function; the (🔒) icon appears on the display.
- To unlock the Auto Key function, press and hold the SCAN button for at least 2 seconds; the (🔒) icon disappears from the display.

Additional Functions
When one or more segments of the battery (🔋) icon appear(s) flashing on the LCD panel, recharge unit or install new approved rechargeable batteries. If this icon continues to flash on the LCD, please contact your authorized service center. Prior to contacting your authorized service center, please check the following:
1. Check the operating procedures.
2. Verify correct battery installation.
3. Install new, charged Alkaline batteries and check functions.
4. Check that AC adaptor is plugged into a working AC power outlet.

NOTES FOR GOOD COMMUNICATION
1. The PMR-1000TX channels are shared on a 'take turns' basis. This means other groups may be talking on any of the channels. A common code of courtesy is to switch to another vacant channel and not to attempt to talk over someone who is already using the channel you first selected.
2. The PMR-1000TX has been designed to maximize performance and improve transmission range in the field.To avoid interference, it is recommended that you do not use the units closer than 5 feet apart.
3. To increase battery life, use the SCAN feature sparingly. This feature will reduce operating time considerably.

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Warning

· Remove the batteries from the transceiver if it is not expected to be used for long periods.This will eliminate the possibility of chemicals leaking from the batteries and corroding the transceiver.

· Avoid exposing the transceiver to water or extremes of temperature.

· Do not use this device in or near a mining facility, which uses remotely triggered explosives or in areas labeled "Blasting Area".

· Do not attempt to modify or in any way increase the output of this transceiver. Its output is designed to meet the legal limits.

· Do not use this device or charge its batteries in potentially explosive atmospheres. Turn your transceiver off wherever posted notices restrict the use of radios or cellular telephones.

· Facilities such as hospitals may use equipment that is sensitive to RF energy.

· Turn your transceiver off on board aircraft when requested to do so.

· Do not place your radio in front of a vehicle's air-bag. if the air-bag deploys, it could propel the transceiver like a projectile causing bodily injury.

TROUBLESHOOTING

If you have problems with your PMR-1000TX, reset your unit by turning it off and removing the batteries. And re-insert the batteries and turn the unit on again. Check the battery power level since in many cases low batteries cause problems such as no transmission, weak receiving signal and low sound.

TECHNICAL SPECIFICATIONS

Operating frequency	446.00625 to 446.09375 MHz
Channel capacity	8 channels
Channel spacing	12.5KHz
Power source	4 X 1.5 V 'AA' battery
	12V 500mA AC adaptor

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Main Channel Frequency Table

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

CTCSS Tone Sub-code Table

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

CE DECLARATION

C€ 0682 CE version of the PMR-1000TX that displays the "CE" symbol on the product label, complies 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-harmonized 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 national licensing requirement.

Safety Requirement

For charging the rechargeable batteries, only CE-approved AC adaptor must be used in compliance with the following specifications:

    * INPUT : AC 230V 50Hz
    * OUTPUT:DC 12V 500mA

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