Preface

Welcome to the world of Hytera and thank you for purchasing this product. This manual includes a description of the functions and step-by-step procedures for use. To avoid bodily injury or property loss caused by incorrect operation, please carefully read the *Safety Information Booklet* before use.

This manual is applicable to the following product:

TF-512 Portable Radio

Copyright Information

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We do not guarantee, for any particular purpose, the accuracy, validity, timeliness, legitimacy or completeness of the third-party products and contents involved in this manual.

If you have any suggestions or would like to receive more information, please visit our website at: http://www.hytera.com.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. Verification of harmful interference by this equipment to radio or television reception can be determined by turning it off and then on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a different circuit to that of the receiver's outlet.
- Consult the dealer or an experienced radio/TV technician for help.

Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Note: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Compliance with RF Exposure Standards

Hytera's radio complies with the following RF energy exposure standards and guidelines:

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR § 1.1307, 1.1310 and 2.1093
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95. 1:2005; Canada RSS102 Issue 5 March 2015
- Institute of Electrical and Electronic Engineers (IEEE) C95.1:2005 Edition

RF Exposure Compliance and Control Guidelines and Operating Instructions

To control your exposure and ensure compliance with the environmental exposure limits, always adhere to the following procedures.

Guidelines:

- Do not remove the RF Exposure Label from the device.
- User awareness instructions should accompany device when transferred to other users.
- Do not use this device if the operational requirements described herein are not met.

Operating Instructions:

- Transmit no more than the rated duty factor of 50% of the time. To transmit (talk), push the **Push-To-Talk (PTT)** key. To receive calls, release the **PTT** key. Transmitting 50% of the time, or less, is important because the radio generates measurable RF energy only when transmitting (in terms of measuring for standards compliance).
- Keep the radio unit at least 2.5 cm away from the face. Keeping the radio at the proper distance is important as RF exposure decreases with distance from the antenna. The antenna should be kept away from the face and eyes.

- When worn on the body, always place the radio in a Hytera-approved holder, holster, case, or body harness or by use of the correct clip for this product. Use of non-approved accessories may result in exposure levels which exceed the FCC's RF exposure limits.
- Use of non-approved antennas, batteries, and accessories causes the radio to exceed the FCC RF exposure guidelines.
- Contact your local dealer for the optional accessories of the product.

FCC Licensing Information

This device operates on GMRS frequencies which require a license from the Federal Communications Commission (FCC) for business, personal, education and recreational use. To abtain forms, call the FCC forms hotline at:

1-800-418-3676 or go to http://www.fcc.gov.

For questions concerning GMRS licensing contact the FCC at 1-888-CALL-FCC (1-888-225-5322).

ISED Statement

The device has been tested and complies with SAR limits, users can obtain Canadian information on RF exposure and compliance.

Après examen de ce matériel aux conformité aux limites DAS et/ou aux limites d’intensité de champ RF, les utilisateurs peuvent sur l’exposition aux radiofréquences et la conformité and compliance d’acquérir les informations correspondantes

This device complies with Innovation, Science and Economic Development Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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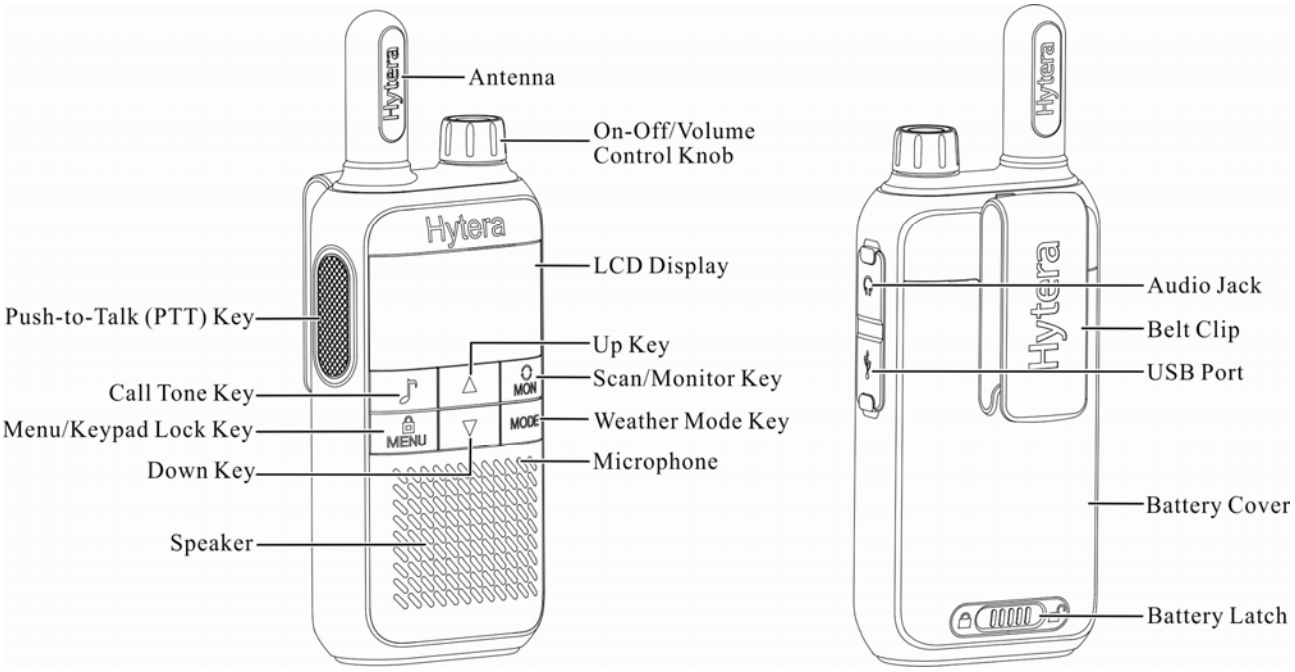
1. Packing List

Please unpack carefully and check if all items listed below are received. If any item is missing or damaged, please contact your local dealer.

Item	Quantity (PCS)	Item	Quantity (PCS)
Radio	2	Charger	1
Battery	2	Power Adapter	1
Belt Clip	2	Documentation Kit	1
Lanyard	2	/	/

2. Product Controls



3. Before Use

3.1 Attaching Batteries

You can attach the Ni-MH battery specified by the Company or three AA alkaline batteries to the radio.

To attach batteries, do as follows:

1. Slide the battery latch to the unlock position and then remove the battery cover.
2. Insert the Ni-MH battery or three AA alkaline batteries following the polarity indicated in the battery compartment and the instruction on the batteries.
3. Put the battery cover into space and then slide the battery latch to the lock position.

3.2 Charging the Ni-MH Battery

Caution

- Use the specified power adapter to charge the battery.
- Read the *Safety Information Booklet* before charging.

Before initial use, fully charge the battery.

To charge the battery, do as follows:

1. Insert the USB plug of the power adapter into the USB port of the radio.
2. Plug the power adapter to a power outlet.

3.3 Attaching the Belt Clip

To attach the belt clip, do as follows:

1. Align the rails on the belt clip with the groove on the battery.
2. Press the belt clip downwards into place.

4. Basic Operations

4.1 Turning the Radio On/Off

To turn the radio on or off, rotate the **On-Off** knob clockwise or counter-clockwise until you hear a click.

4.2 Adjusting the Volume

To increase or decrease the volume, rotate the **Volume Control** knob clockwise or counter-clockwise after turning on the radio.

4.3 Selecting a Channel

To communicate with other users through radios, you need to select the same channel as others.

To select a channel, do as follows:

1. Press the **Menu** key.

   The channel number flashes.

2. Press the **Up** key or **Down** key to select a channel.

3. Press the **PTT** key to confirm your selection.

4.4 Selecting a CTCSS/CDCSS Code

The Continuous Tone Coded Squelch System (CTCSS) or Continuous Digital Controlled Squelch System (CDCSS) code allows you to prevent unwanted calls on the same channel. If a CTCSS/CDCSS code is set on a channel, you receive calls from radios with matching CTCSS/CDCSS code only.

To set a CTCSS/CDCSS code for your selected channel, do as follows:

1. Press the **Menu** key for two consecutive times.

   The code number flashes.

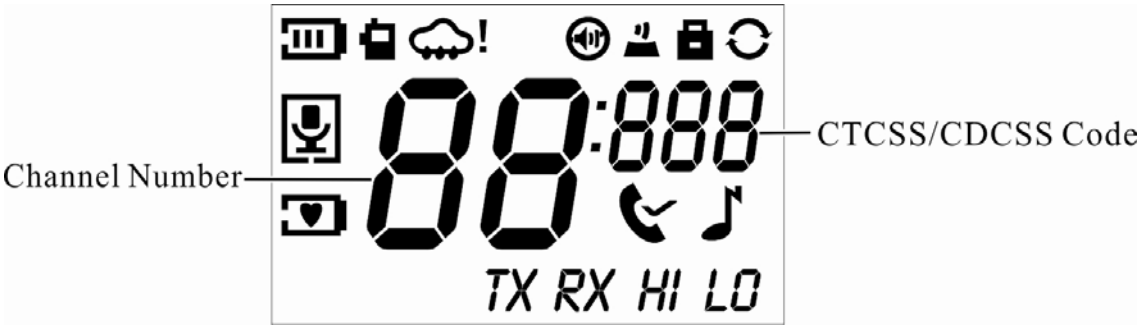
2. Press the **Up** key or **Down** key to select a code.

   Note

   Code 0 means no CTCSS/CDCSS code is selected. To communicate with radios which do not have CTCSS/CDCSS code, select code 0.

3. Press the **PTT** key to confirm your selection.

5. LCD Icons



Icon	Description	Icon	Description
	Battery		Room Monitor
	Radio Mode		Battery Save
	Weather Mode (TF-512 only)		Talk End Tone
	Weather Alert (TF-512 only)		Call Tone
	Silent Mode	TX	Transmit
	Keypad Tone	RX	Receive
	Keypad Lock	HI	High Power (TF-512 only)
	Scan	LO	Low Power (TF-512 only)
	VOX	/	/

6. Call Services

6.1 Initiating a Call

You can initiate calls to other radios on the same channel and CTCSS/CDCSS code as yours.

To initiate a call, do as follows:

1. Select a channel and a CTCSS/CDCSS code.
2. Hold the radio vertically 2.5 to 5 cm from your mouth.
3. Press and hold the **PTT** key, and then speak into the microphone.

   When transmitting, the radio displays TX.
4. When you finish your talk, release the **PTT** key.

6.2 Receiving a Call

When receiving a call, you can listen to the call without any operation. If you need to speak, wait till no one is speaking, and then press and hold the **PTT** key to speak into the microphone.

7. Supplementary Features

7.1 Keypad Lock

The Keypad Lock feature allows you to lock the keypad to avoid accidental operations when the radio is not in use. In the keypad lock mode, you can initiate calls and turn the radio on or off.

To lock or unlock the keypad, press and hold the **Keypad Lock** key until appears or disappears on the screen.

7.2 Scan

The Scan feature allows you to find someone in your team who has accidentally changed the channel, and can quickly find unused channels for your own use.

To turn on this feature, press the **Scan** key. The radio displays and begins to scan channels. When detecting activities on a channel, the radio stays on the channel to receive signals. Two seconds after the signal disappears, the radio continues to scan channels.

To turn off this feature, press the **Scan** key again.

7.3 Monitor

The Monitor feature allows the radio to receive weak signals on the current channel.

To turn on this feature, press and hold the **Monitor** key. The radio displays RX and begins to monitor the channel and receive signals.

To turn off this feature, release the **Monitor** key.

7.4 Power Level

The Power Level feature allows you to adjust the power level for the selected channel.

To adjust the power level, do as follows:

1. Press the **Menu** key for three consecutive times.

   The current setting flashes.

2. Press the **Up** or **Down** key to select one of the following:

   - **HI**: enables communication with distant radios but consumes more battery power.

- **LO**: enables communication with close radios and saves battery power.

Note

Channels 8 to 14 are low-power channels and their power levels cannot be changed.

3. Press the **PTT** key to confirm your selection.

7.5 Call Tone

The Call Tone feature allows you to transmit a tone to notify others that you want to talk.

To transmit a call tone, do as follows:

1. Select a call tone.
   a. Do the following until the radio displays :
      - For TF-512, press the **Menu** key for four consecutive times.
   b. Press the **Up** or **Down** key to select a call tone.

      Note

      Setting the call tone to **OFF** turns off the Call Tone feature.
   c. Press the **PTT** key to confirm your selection.
2. Press the **Call Tone** key to transmit the call tone.

7.6 Talk End Tone

The Talk End Tone feature allows you to send a tone when you release the **PTT** key. This tone notifies others that you finish your talk.

To turn on or off the feature, do as follows:

1. Do the following until the radio displays :
   - For TF-512, press the **Menu** key for six consecutive times.
2. Press the **Up** or **Down** key to select **ON** or **OFF**.
3. Press the **PTT** key to confirm your selection.

7.7 Voice Operated Transmit (VOX)

The VOX feature allows the radio to transmit voice automatically with or without an earpiece when the voice volume reaches the preset level.

To turn on or off this feature, do as follows:

1. Do the following until the radio displays :
   - For TF-512, press the **Menu** key for five consecutive times.
2. Press the **Up** or **Down** key to select **L1**, **L2**, or **L3** to turn on the feature, or select **OFF** to turn off the feature.

   L1, **L2**, and **L3** mean different sensitivity levels, as shown below:
   - **L1**: low sensitivity applicable to noisy environments
   - **L2**: medium sensitivity applicable to common environments
   - **L3**: high sensitivity applicable to quiet environments
3. Press the **PTT** key to confirm your selection.

Note

A short delay occurs from the time you start talking till the time the radio starts transmitting.

7.8 Silent Mode

The Silent Mode feature allows you to avoid disturbance by muting the speaker of the radio. In this mode, the backlight of the radio and on the screen flash when the radio receives signals. When the signal disappears, the backlight becomes off while the icon still flashes indicating missed calls.

To turn on or off this feature, do as follows:

1. Do the following until the radio displays :
   - For TF-512, press the **Menu** key for seven consecutive times.
2. Press the **Up** or **Down** key to select **ON** or **OFF**.
3. Press the **PTT** key to confirm your selection.

7.9 Keypad Tone

The Keypad Tone feature allows you to hear the key tone when you press a key.

To turn on or off the feature, do as follows:

1. Do the following until the radio displays :
   - For TF-512, press the **Menu** key for eight consecutive times.
2. Press the **Up** or **Down** key to select **ON** or **OFF**.
3. Press the **PTT** key to confirm your selection.

7.10 Room Monitor

The Room Monitor feature allows the radio to transmit voice automatically when the voice volume reaches the preset level. When you are out, you can use this feature to monitor your room.

Note

In the room monitor mode, the radio cannot receive signals.

To turn on or off this feature, do as follows:

1. Do the following until the radio displays :
   - For TF-512, press the **Menu** key for nine consecutive times.
2. Press the **Up** or **Down** key to select **L1**, **L2**, or **L3** to turn on the feature, or select **OFF** to turn off the feature.

   L1, **L2**, and **L3** mean different sensitivity levels, as shown below:
   - **L1**: low sensitivity applicable to noisy environments
   - **L2**: medium sensitivity applicable to common environments
   - **L3**: high sensitivity applicable to quiet environments
3. Press the **PTT** key to confirm your selection.

7.11 Sleep Level

The Sleep Level feature allows the radio to enter the sleep mode for a duration if no channel activity or operation is detected at the specified interval. It saves the battery power.

To turn on or off this feature, do as follows:

1. Do the following until the radio displays :
   - For TF-512, press the **Menu** key for ten consecutive times.
2. Press the **Up** or **Down** key to select **L1**, **L2**, or **L3** to turn on the feature, or select **OFF** to turn off the feature.

   L1, **L2**, and **L3** mean that the radio is in sleep mode for one second, two seconds, and three seconds, respectively.
3. Press the **PTT** key to confirm your selection.

Note

In the sleep mode, the radio does not receive or send any signal. Therefore, when you must respond to emergencies, do not enable the Sleep Level feature.

7.12 Stopwatch and Timer

The Stopwatch feature allows the radio to count upwards from zero for measuring elapsed time. The Timer feature allows the radio to counts down from the 59 minutes and 59 seconds.

To use the stopwatch or the timer, do as follows:

1. Do the following until the radio displays 00:00:
   - For TF-512, press the **Menu** key for eleven consecutive times.
2. To turn on the Stopwatch feature or the Timer feature, do the following:
   - For the Stopwatch feature, press the **Up** key.
   - For the Timer feature, press the **Down** key.

   The stopwatch or the timer begins to count.
3. To pause the stopwatch or the timer, press the **Call Tone** key.
4. Optional: To resume the stopwatch or timer, press the **Call Tone** key again.
5. To reset the stopwatch or the timer, press the **Scan/Monitor** key.
6. To turn off the feature, press the **PTT** key or the **Menu** key.

7.13 Weather Mode (TF-512 only)

The weather mode allows you to listen to weather conditions and set the radio to alert you to extreme weather broadcasted by the United States National Oceanic and Atmospheric Administration (NOAA) Weather Radio.

Note

In the weather mode, the radio exits the radio mode and cannot receive or send calls. Therefore, when you must respond to emergencies, do not enter the weather mode.

7.13.1 Entering/Exiting the Weather Mode

To enter the weather mode, press the **Weather Mode** key. The radio displays .

To exit the weather mode, press the **Weather Mode** key again.

7.13.2 Selecting a Weather Channel

To select a weather channel, do as follows:

1. In the weather mode, press the **Menu** key.

The current weather channel flashes.

2. Press the **Up** or **Down** key to select a weather channel with good reception in your area.

3. Press the **PTT** key to confirm your selection.

7.13.3 Turning the Weather Alert On/Off

With the Weather Alert feature on, when receiving NOAA Weather Radio emergency messages, the radio rings an alert tone and changes to the selected weather channel to inform you of weather alert information.

To turn the Weather Alert feature on or off, do as follows:

1. In the weather mode, press the **Menu** key twice.

   The radio displays and the current setting flashes.

2. Press the **Up** or **Down** key to select **ON** or **OFF**.

3. Press the **PTT** key to confirm your selection.

7.14 Battery Save

The Battery Save feature allows the radio to get maximum operational life on a single battery charge. When the radio does not detect any activity or operation for three seconds, it enters the battery save mode.

7.15 Low Battery Alert

When the radio is low on power, flashes on the screen and an alert tone rings when you press the **PTT** key, indicating that the radio enters the low battery alert mode. In this mode, you are not allowed to send a call tone or initiate a call.

To exit this mode, charge or replace the battery.

7.16 Time-out Timer (TOT)

The purpose of TOT is to prevent any user from occupying a channel for more than 60 seconds. After 60 seconds, the radio stops transmitting and keeps beeping. To stop beeping, release the **PTT** key.

7.17 Auto Squelch

The Auto Squelch feature allows the radio to improve voice clarity during the call by automatically removing background noise.

8. Troubleshooting

Phenomena	Analysis	Solution
The radio cannot be turned on.	The battery may be installed improperly.	Remove and reattach the battery.
	The battery power may run out.	Recharge or replace the battery.
	The battery may suffer from poor contact caused by dirtied or damaged battery contacts.	Clean the battery contacts or replace the battery.
During receiving, the voice is weak, discontinuous or totally inactive.	The battery voltage may be low.	Recharge or replace the battery.
	The volume level may be low.	Increase the volume.
	The speaker may be blocked.	Clean the surface of the speaker.
You cannot communicate with other members.	The channel or CTCSS/CDCSS code may be inconsistent with that of other members.	Set your channel and CTCSS/CDCSS code to the same as those of other members.
	You may be too far away from other members.	Move towards other members.
You hear unknown voices or noise.	You may be interrupted by radios using the same channel and/or CTCSS/CDCSS code.	Change the channel and/or the CTCSS/CDCSS code.
	The radio may be set with no CTCSS/CDCSS code.	Set a CTCSS/CDCSS code for all radios in your team to avoid interference.
You are unable to hear anyone because of too much noise and hiss.	You may be too far away from other members.	Move towards other members.
	You may locate in an unfavorable position. For example, your communication may be blocked by high buildings or frustrated in the	Move to an open and flat area, restart the radio, and try contacting again.

Phenomena	Analysis	Solution
	underground areas.	
	It could be the result of external disturbance (such as electromagnetic interference).	Stay away from equipment that may cause interference.
You cannot use the keys.	The keypad may fail to function temporarily.	Restart the radio.
The LCD does not display any information.	The LCD may fail to function temporarily.	Restart the radio.

If the above solutions cannot fix your problems, or you may have some other queries, please contact us or your local dealer for more technical support.

9. Optional Accessories

Contact your local dealer for the optional accessories used with the product.

Caution

Use the accessories specified by Hytera only; otherwise, the Company will not be liable for any loss or damage arising out of the use of any unauthorised accessories.

Channels and Frequencies

Channel	Frequency (MHz)	Description	Channel	Frequency (MHz)	Description
1	462.5625	GMRS/FRS	12	467.6625	FRS
2	462.5875	GMRS/FRS	13	467.6875	FRS
3	462.6125	GMRS/FRS	14	467.7125	FRS
4	462.6375	GMRS/FRS	15	462.5500	GMRS
5	462.6625	GMRS/FRS	16	462.5750	GMRS
6	462.6875	GMRS/FRS	17	462.6000	GMRS
7	462.7125	GMRS/FRS	18	462.6250	GMRS
8	467.5625	FRS	19	462.6500	GMRS
9	467.5875	FRS	20	462.6750	GMRS
10	467.6125	FRS	21	462.7000	GMRS
11	467.6375	FRS	22	462.7250	GMRS

Weather Channel Chart

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	162.550	6	162.500
2	162.400	7	162.525
3	162.475	8	161.650
4	162.425	9	161.775
5	162.450	10	163.275