maas®

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User manual

PT-666-D

- ○ Remote kill
- ○ Private call
- ○ 51 CTCSS
- ○ 214 DCS

PROFESSIONAL DPMR TWO-WAY RADIO

MIC

NOTICES TO THE USER

● Government law prohibits the operation of unlicensed radio transmitters within the territories under government control.

● Illegal operation is punished by fine or imprisonment or both

SAFTY:

● It's important that the operation is aware of and understands the common hazards caused by the operation of any transceiver.

● We don't guarantee the safety and operation for the transceiver when using other accessories and/or attachment not sold by us.

▲ Refer service to qualified technicians only.

WARNING:

● Ban to use transceiver in the explosive surroundings. (such as gas, dust, and fumes etc.).

▲ Please turn off your transceiver while enter into or park on gas station.

PRECAUTIONS

Observe the following precautions to prevent fire, personal inquiry and transceiver damage.

● Do not modify or attempt to adjust this transceiver for any reason by non-technicians.

● Do not expose the transceiver to direct sunlight for long time, nor place it close to heating appliances.

● Do not place the transceiver in a dusty, humid, and/or wet area, nor on unstable surface.

● If an abnormal smell or smoke is detected coming from the transceiver, please switch OFF the power immediately and remove the battery pack from the transceiver. And contact your dealer in time.

TERMS EXPLANATION

▲ Short Press: Press and release button immediately

▲ Long Press: Press and hold for a programmed time. (Default set 2 seconds)

▲ Hold press: Keep pressing button without release

Definable sidekey (FP1 FP2)

▲ Dealer or authorized users could program transceivers definable sidekey by our company special software. (Subject to the preset functions of our company software)

Individual Call

▲ Individual Call is to call an individual user

Group Call

▲ Group Call is a single user to call all members in the group.

Gerneral Call

▲ Gerneral Call is a single user to call all users on the current channel

SQUELCH

▲ The squelch technique is to filter background noise and improve communication quality.

PTT ID

▲ Transceiver ID. The transceiver with display or the calling control center could identify the working transceiver from receiving PTT ID.

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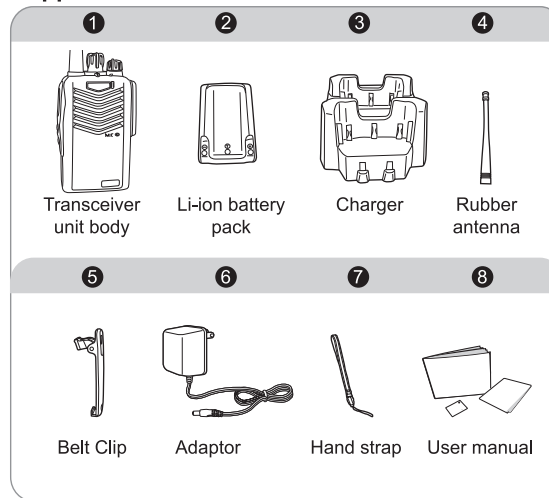
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UNPACKING AND CHECKING EQUIPMENT

Carefully unpack the transceiver package. We suggest you to check all items listed in the following table before discarding the packing material. If any items are missing or have been damaged during shipment, file a claim with the carrier immediately.

Supplied accessories

❶ Transceiver unit body
❷ Li-ion battery pack
❸ Charger
❹ Rubber antenna
❺ Belt Clip
❻ Adaptor
❼ Hand strap
❽ User manual

Supplied accessories

Item	Quantity
Transceiver unit body	1
Li-ion battery pack	1
Charger	1
Rubber antenna	1
Belt Clip	1
Adaptor	1
Hand strap	1
User manual	1
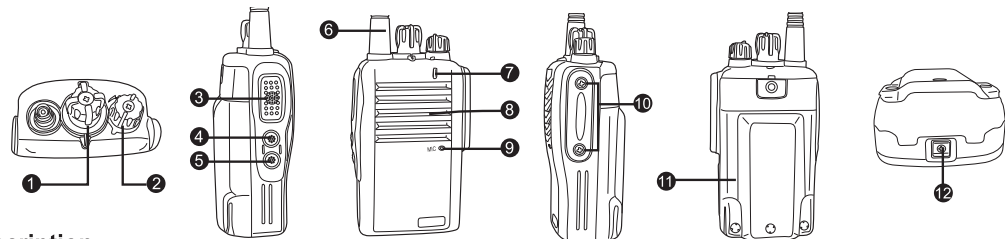
Part description

NO.	Part name	Function
1	Channel selector	To select desired working channel
2	Power Switch/Volume Control	To turn the transceiver ON/OFF; To adjust the volume level
3	PTT key	Press it for transmitting; Release to receive
4	Definable sidekey (FP1)	To program it as per user-friendly (For details in the definable sidekey functions description)
5	Definable sidekey (FP2)	To program it as per user-friendly (For details in the definable sidekey functions description)
6	Antenna	Receiving and transmitting carrier signal
7	LED Indicator/ Digital or Analogue	Flashing for receiving; light ON for transmitting; light Blue for digital mode; light green for analogue mode
8	Speaker	Built-in audio output
9	Microphone	Built-in microphone audio input
10	SP-MIC jack	Use for connecting external earphone, microphone, or programming cable
11	Battery pack	To supply transceiver power
12	Battery latch	To uninstall battery

Definable sidekey

To convenient users operation and communication, this transceiver is designed with two definable sidekeys 【FP1】 and 【FP2】 for users or dealers to define their desired function via our special software by themselves.

Please check the details of definable functions in the following sheet:

NO.	Function name	purpose
1	Monitor (should be long press)	To turn the speaker ON whatever the carrier signal exists or not.
2	Scan	To receive other channels communication
3	Priority scan	To check the priority channel during scanning.
4	Temporary channel lockout	To remove the uninterested channel out of scan list temporarily.
5	VOX	Hands free for transmitting
6	Power adjustment	Quick to adjust power output (High or low power)
7	Battery strength inspection	Prompt the battery surplus
8	Emergency alarm	Asking for help in emergency
9	Auto contact	
10	Work alone	
11	Call 1	
12	Call 2	
13	General call	To call other users on the current channel
14	Private call	To secure the private communication by voice encryption or SMS encryption
15	Talkaround	To communicate with other user directly without repeater
16	Reverse frequency	Quick to exchange the transmitting and receiving frequency of the current channel
17	Channel mode switchable	Quick to switch the current channel mode (digital/ analogue/digital and analogue mixed/analogue and digital mixed)

Battery strength inspection

1. Full battery strength---light green
2. Medium Battery strength----light green and blue
3. Low battery --light blue

Auto contact

★ Transmit interval time

The interval time for each auto contact transmission between transceivers (To be activated after programmed by software only)

★ Checking interval time (Within communication range)

If transceiver can t receive auto contact code within the preset time, a beep warning sound will be transmitted automatically out of communication range (To be activated after programmed by software only)

Work alone

Once the work alone is activated, if there is no manual operation in the preset time, an normal emergency alarm will be activated. (To be activated after programmed by software only)

Channel mode switchable

① To work under analogue mode, LED lights green, single prompt tone: Low.

Analogue channel: To receive and transmit under analogue mode. Receive or transmit analogue signal.

② To work under digital mode, LED lights blue, single prompt tone: Medium

Digital channel: To receive and transmit under digital mode. Receive or transmit digital signal only.

③ Mixed digital and analogue mode

★ A short blue LED indicator lights up firstly, then green light on, single prompt tone: High.

★ Under mixed digital and analogue mode, to press 【PTT】 actively, it will work under digital mode in this communication.

★ If an analogue signal received firstly, the channel will work under analogue mode in this communication, so receive /transmit analogue signal.

★ If a digital signal received firstly, the channel will work under digital mode in this communication, and receive/transmit digital signal only.

★ In the preset time, if the current channel does not receive current communication signal or press 【PTT】 to transmit, the transceiver will back to the standby mode for receiving digital or analogue signal automatically.

④ Mixed analogue and digital mode.

★ LED lights green shortly first, and then lights blue, single prompt tone: Double beep tones.

★ Under mixed analogue and digital mode, if to press 【PTT】 actively to transmit, transceiver will work under analogue mode in this communication.

★ If an analogue signal received firstly, the channel will work under analogue mode in this communication, and transmit/receive analogue mode.

★ If a digital signal received firstly, the channel will work under digital mode in this communication, and receive/ transmit digital signal only.

★ In the preset time, if the current channel does not receive current communication signal, or press 【PTT】 to transmit, the transceiver will back to the standby mode for receiving analogue or digital signal automatically.

LED indicator

① Analogue mode: To work under analogue mode, it lights green. When a signal received, it flashes green. If press 【PTT】 to transmit, it will light green.

② Digital mode: To work under digital mode, it lights blue. When a signal received, it flashes blue. If press 【PTT】 to transmit, it light blue.

Reverse frequency

This transceiver is equipped with reverse function which will facilitate your operation and communication. Reverse frequency refers to exchange the receiving and transmitting frequency of the current channel.

Note: If the current channel is programmed with same receiving and transmitting frequency, the function will not be in effect.

BATTERY SAFETY INFORMATION

Battery is not charged at the factory. Please initially charge the battery pack after purchase or long time storage (longer than 2months) which will not bring the battery pack to its normal operation. After repeating the charge and discharge in cycle two or three times, the battery capacity will reach its best. Please replace or charge the battery pack in time once low power inspected.

Available batteries

Please user our specified charger (including adapter, charger base) to charge batteries, if using other charge accessories, it may explode and damage nearby subjects or people.

Notes:

1) Do not short the battery terminals or discard the battery into fire. Never attempt to disassemble the battery housing case.

2) The ambient temperature should be between 5 and 40℃. To charge beyond this ambient temperature may cause the battery fail to be full charged.

3) Always switch OFF the transceiver equipped with a battery pack before charging. Using transceiver while charging will interfere its correct charging.

4) To avoid interfering charging procedure, please do not plug/unplug the AC adapter and battery during charging,

5) After full and correct charge, the battery still fail to work well or decrease operation time, thus the battery maybe damaged or beyond lifetime. Please replace it or send for maintenances.

6) If the purchased battery is full charged, please do not recharge it, or the battery lifetime will be shorten.

7) Please do not charge, if the battery or transceiver was wet, to avoid electronic shock or damaging battery or transceiver. Ought to dry it with cloth before charging.

Warning: All batteries can cause property damage and/or bodily injury, if a conductive material such as jewelry, keys, or decorative chains touches exposed contact terminals. The conductive material may lead to short circuit and heat. Please handle the battery carefully, especial for packing them in a pocket, wallet or metal container.

CHARGING OPERATION

Charging battery

Please use the pointed charger and adaptor by your dealer to charger battery. An appropriative charger will indicate the charging state.

Charging diagram:
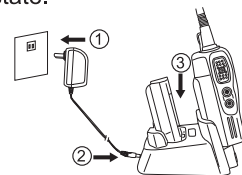
Charging operation:

1. Plug the AC adaptor into AC outlet, as per the diagram①;
2. Plug the other end of adaptor cable into the rear jack of charger, as per the diagram②.
3. Slide the battery pack or the transceiver with a battery into the charger, as per the diagram ③.
4. If the charger LED lights red, which indicates charging started.
5. If the charger LED lights green (Li-ion battery), which means full charged. And then, you could pick out the battery or the transceiver with a battery.

Note: To perfect the battery｀s performance, please full charge the battery for first charging.

Charger LED indicator

LED indicator	Current state	Description
Flash red and then OFF	Electrify but on standby	No-load
Light Red	Charging	Insert battery
Light Green	Full charged	Charging completed
Flash Red	Failure	For maintenances

Note:

1. The Charger LED will flash red for a short time when the adaptor is connected, it is normal.
2. When replace a battery pack to charger, please wait until LED light green which indicate full charged for current battery.
3. The charger LED flash red during charging
① Please check the battery pack is well contact with charger.
② If the battery pack is damaged.
③ The surrounding temperature is too high or low.

Note: Please read the 《battery safety information》 before charging.

INSTALLATION

Installing the antenna

Holding the base of antenna, and then screw it into the connector on the top of transceiver clockwise until secure.
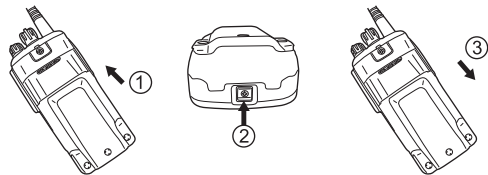
Uninstalling the antenna

Holding the base of antenna, and screw it anticlockwise.

Note: The antenna is an important accessory for securing communication quality. Please do not use it as a handle, or make the antenna close to metal or human body, they will reduce the transceiver* performance, impact communication.

Installing battery pack

1. Sliding the battery pack as per the diagram① direction;
2. Until a click sound or the latch button (diagram ②) springs out.

Uninstalling battery pack

1. Please turn the power OFF firstly.
2. Pressing the locking key (diagram ②), and then pull out the battery pack as per diagram③ direction.

Installing/ Uninstalling belt clip

1. Unscrewing the belt clip screw;

INSTALLATION

2. Put the belt clip to the according holes for screwing secured.
3. To uninstall belt clip by unscrewing all the screws on it.
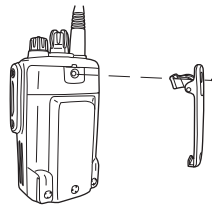
Plugging in/out the audio accessory/programming cable

1. Remove two screws (as per diagram 1), then open the jack stopper.
2. Plug the accessory into according jack of the radio as per diagram②, and then press it lightly for well contact.

3. To remove the accessory by plugging it out as per diagram③ direction.
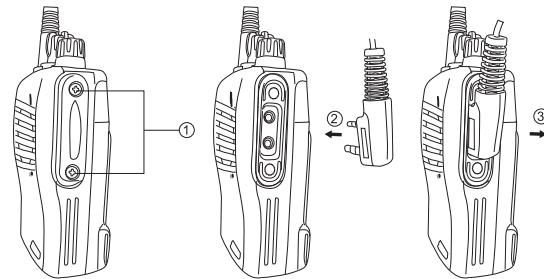
Reminder: If the installation can't be use, please check if the accessory is appropriate or installed incorrect.

BASIC OPERATION

Turning the Power ON/OFF and adjusting the Volume

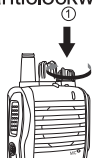1. To turn the power ON by rotating the knob (as per diagram① clockwise till a click sound.
2. To turn the power OFF by rotating the knob (as per diagram①) anticlockwise till a click sound.
3. When the power ON, please rotate the knob (as per diagram① clockwise to increase the volume, while rotate it anticlockwise to decrease the volume.

Note: If the radio is set with greeting message ON, when the radio is turned ON, it will sound a beep.

FPI definable sidekey

Pressing sidekey (as per diagram①), the squelch will be turned OFF and background noise will be heard.

To release the sidekey, the squelch will be ON and background noise will be turned OFF.
(Valid on Analogue mode ONLY)

FP2 definable sidekey

For user-friendly, please define the sidekey (as per diagram②) according to sidekey features list.

BASIC OPERATION

Channel selector

1. Rotating the knob (as per diagram①) to select your desired channel. If the Voice Annunciation is turned ON, the speaker will sound the current channel Number.

Note: To turn ON/OFF the voice annunciation by programming software.

2. Every channel of the radio can be assigned under the working mode for analogue, digital, mixed analogue and digital, or mixed digital and analogue.
Please refer to the description of Channel mode conversion.

TRANSMITTING OPEARATION

1. Digital/Analogue transmission
(1). When the radio on the idle state, press 【PTT】to call the defaulted Contact of the channel.
(2). Press 【PTT】 on the current channel, it will call the current selected contact.
(3). When a call received on the current channel, to press 【PTT】 will reply the current calling contact.

ACQUAINTING THE CALL

Selective call

To set call 1 or call 2 by definable sidekey, it will call the current defaulted contacts on digital channels.

1. Analogue selective call

To set the selective call via DTMF, it can store 16 calls at maximum.

2. Digital selective call

Selective call types: Voice communication and SMS transmitting.

Calling Type

1. Individual call

If the call type for contact is individual call, the individual call can be activated. The individual call can NOT with the mark of "*".

2. Group call

If the call type for contact is group call, the group call can be activated. The group call is with the mark of "*".

3. General call

The specification under digital mode (DPMR) should allow the general call, so that the function can be carried out.

4. SMS

It can preset 16 messages; every message can contain a maximum of 128k. (This feature should be based on the radio's allocation).

Making calls

Digital mode

1. If a contact is set default, the caller ID will be transmitted every time when pressing【PTT】.

2. Call 1/Call 2 (Preset contact via software)

①. If to preset the contact on the Call 1 and Call 2 via software, then press the sidekey will call the preset contact.

3. Analogue Mode

ACQUAINTING THE CALL

① If to preset the contact on the Call 1 and Call 2 via software, then press the sidekey will call the preset contact.

Receiving call

1. Analogue Mode

If a channel is set with code (such as CTCSS, DCS, DTMF code), only with same code or according decode, could receive the call and enter to the preset operation. (Such as calling, reply etc).

2. Digital mode

Only receive the right default contact call ID or same preset calling type (such as call ID, individual call, group call or general call), could transceiver activate the speaker, and then a calling heard.

PTT ID

If to preset the PTT ID via software, whatever you press or release the 【PTT】key, it will transmit a group of preset PTT encode ID.

AUXILIARY FUNCTION

Emergency Alarm

1. When you encounter emergency, please activate the function to ask help from your companion or control center.

2. Press the preset 【definable sidekey】 as 【Emergency alarm】to activate the emergency alarm function, to stop it by pressing 【PTT】. (To define it via software.)

Alarm Type (To set via software)

There are 5 types of alarm under every alarm mode. To select a type via your dealer's or special software.

Alarm type	description
OFF	The transceiver can NOT send alarm, but could receive alarm from other transceivers.
Whistle only	Once alarm activated, the radio will sound a sharp alarm sound.

Normal	Once alarm activated, the radio will sound a sharp alarm sound. And then it will transmit and receive automatically for some time in a cycle. (To program via software).
Secret Alarm	When the alarm is activated, the radio itself will not sound any audibly alarm, but send an alarm ID, only the receiver could hear the alarm sound.
Secret Voice	Once alarm activated, the radio could receive voice reply automatically from other companion or control center. But the radio itself does NOT sound any audibly alarm.

Scan

Scan could help you to receive the other channels' communication, and then to understand and grasp the relevant companions' current working state.

Operation method:

1. Press the definable sidekey as Scan or Priority scan to activate scan function. Press it again to exit the scan mode.

AUXILIARY FUNCTION

2. Temporary Channel Lockout

①When scan stops, if you refuse to receive the channel's communication, press the definable sidekey as 【Temporary channel lockout】, it will lockout the channel and will not scan it again. But when you exit the scan and then re-activate the scan, the locked channel will resume to the scan list.

Priority scan

1. You could program a critical focus channel as priority channel via software, and then it will scan the channel prior in every channel scan.

2. The priority scan is a cyclical working state. It will scan the priority channel before scan every regular channel.

3. Cyclical scan pattern: Please refer to the diagram: CH2 is programmed as priority channel.
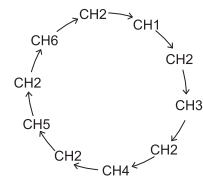
Scan indication

1. While the transceiver on scanning, the LED will flash (To activate the scan indicator via software). While scan a signal, LED will light ON.

Exiting Scan

1. Press 【PTT】to exit the scan mode, and it will stay on the current scanned channel.

2. Press other key or rotate the channel knob, it will exit the scan, and back to the pervious channel before scan.

VOX

1. Once the VOX function activated, it will no need

to press【PTT】for transmitting. When the Voice reaches the preset VOX level, the radio will transmit automatically, vice versa.
2. Before using VOX, the VOX sensitivity level should be preset firstly, and then activate VOX function. (To program via software.)

Talkaround
1. If to encounter repeater failure or beyond the covering range of repeater, but the two transceiver are still in the communication range of each other. Then you could press sidekey defined as 【Talkaround】 to transfer to direct communication mode, so that the two transceiver could communicate with each other directly.

Operation method: Press【Talkaround】shortcut key to switch the Direct Communication mode and Repeater Mode.

Remote Kill/Stun function
1. When a transceiver receives a remote kill/stun code, it will be prohibited transmitting and receiving automatically.
2. About programming the remote kill and stun code to prohibit the transmitting and receiving, please to do it via software.

Revive function
1. When a transceiver on the remote kill/stun mode, if it receives a reviving code, it will resume to normal transmitting and receiving automatically.
2. About programming the reviving code, please to do it via software.

DTMF (Valid for analogue mode)
1. Making call: To program DTMF encode and receiving decode via software, and then to define the code as the sidekey.

2. Selective call
(1). Calling party: The calling party could set the following mode via software.
①. Wait for reply
If to set as "ait for reply" the calling party could not enter to normal communication until a reply received from the called party.
② No wait for reply
If to set in this mode, when the calling party makes a call, it can enter to normal communication, whatever the called party replies or not.
(2). The called party: The called party could set the following response mode via software.
① NONE: Once a matched ID received, there is no need to do any response, but communicate directly.
② Reminder: Once a matched ID received, the transceiver will remind user by ringing or sending a beep sound.
③ Reply: Once a matched ID received, the radio will reply a message ID to the calling party, and then get into communication mode.
④ Reminder+Reply: Once a matched ID received, the radio will reply a message ID to the calling party, and ringing or reminding beep sound, then get into communication mode.

Programming ID code
1. Individual ID: it is combined with the number of 0~9, and supports maximum of 16 words.
2. Group ID: It should consist of a word of *, A~D, or #. The default one is *. The group ID can replace every word of the Individual ID.
Description: If to program the individual ID as 67890, and group ID word as ** then any one word or words of the receiving ID 67890 to be replaced as **are all regarded as matched ID. For example: If the receiving ID as 6789*, 678**, *7890, 6*890 are all regards as matched ID.
3. When a receiving matched ID contains group ID word, it will be regarded as group ID, or it will be individual ID.

Programming Digital ID

1. Digital individual ID: The ID code is combined with number of 0~9.
2. Digital group ID: It is combined with number of 0~9,and "*", "*"refers to the group ID.
Note: When a receiving matched ID contains"*" it will be regarded as group ID, or it will be individual ID.

CTCSS/DCS (Be effective for Analogue mode only) This transceiver is built-in 51 groups of CTCSS and 214 groups of DCS. (Please check the detail in the CTCSS and DCS table).

Wired Clone

As for user-friendly, this transceiver is equipped with wired clone function, so that the user can clone the data between two transceivers, and no need to use computer.
Operation approach:
1. To use the right cloning cable to connect to the SP-MIC jack of both main transceiver and cloned transceiver well.
2. Turning the cloned transceiver ON, then it will be on initiating.
3. Rotate the channel knob of the main transceiver to Channel No. 13, and pressing【FP1】while to turn the main transceiver ON, the transceiver will be on initiating. After initiating, the LED indicators of transceivers will light green and blue at the same time. That means main transceiver is on the cloning mode for transmitting data.
4. Press the【PTT】of main transceiver to start the clone, and the blue indicator of main transceiver will flash blue, while the cloned transceiver flashes green. When LED indicators of both transceivers stop flashing, then the wired clone completed.
5. If the data cloning failed, and the LED lights blue, press【PTT】of main transceiver to restart the wired clone.
6. Press sidekey 【FP1】or【FP2】, it will stop cloning or exit the cloning mode temporarily. If there is no operation for 20s, it will exit the wired clone automatically.

Default Analog Frequency with CTCSS / DCS:

Channel-Nr.	Frequenz (MHz)	CTCSS/CDCSS
1	446,00625	94,8
2	446,09375	88,5
3	446,03125	103,5
4	446,06875	79,7
5	446,04375	118,8
6	446,01875	123,0
7	446,08125	127,3
8	446,05625	85,4
9	446,00625	107,2
10	446,09375	110,9
11	446,03125	114,8
12	446,06875	82,5
13	446,04375	D132N
14	446,01875	D155N
15	446,05625	D134N
16	446,08125	D243N

Default Digital Frequency with CTCSS / DCS:

Kanal-Nr.	Frequenz (MHz)	Common-ID
1	446,103125	1
2	446,109375	1
3	446,115625	1
4	446,121875	1
5	446,128125	1
6	446,134375	1
7	446,140625	1
8	446,146875	1
9	446,153125	1
10	446,159375	1
11	446,165625	1
12	446,171875	1
13	446,178125	1
14	446,184375	1
15	446,190625	1
16	446,146875	1