Thanks for buying the **maas** *transceiver.*

This transceiver offers latest design, multi-functionality, stable performance and easy operation. We believe you will be pleased with the high quality and dependable features for all your communication needs.

READ THIS IMPORTANT INFORMATION ON SAFE AND EFFICIENT OPERATION BEFORE USING YOUR **maas** PORTABLE TWO-WAY RADIO. This manual is suitable ONLY: PT-819.

ATTENTIONS

maas Two-way Radio is well-designed and researched by advanced technology. The following standards and guidelines can help you performance the responsibilities in the warranty, understand the user safety.

1. Please put the radio and all the other accessories far away from the kids.
2. Don't try to open the radios, if you are not a qualified technician as it may cause harmful interference to the radio communications.
3. maas or approved replacement batteries and chargers.
4. Please use only maas approved, supplied antenna or approved maas replacement antenna.
5. Do not expose the radio to direct sunlight over a long time, nor place it close to heating source.
6. Do not place the radio in excessively dusty, humid areas, nor on unstable surfaces.
7. Do not wash the radios using the harsh chemicals or cleaning solvents.
8. Do not transmit without installing the antenna.
9. If you find the transceiver odor or smoke, immediately power off the transceiver and remove the battery pack from the transceiver, and please contact the maas dealer.

NOTE ⚠

- All advice mentioned above are the same for all maas transceiver. If the transceiver does not work, please contact your nearest maas dealer.
- maas does not guarantee the safety and operation of any maas transceiver when using accessories which are not supplied by maas .

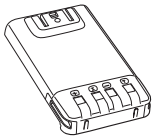
Contents

Unpacking and checking of your equipment

Carefully unpack the transceiver. We suggest that you identify the items on the following table before discarding the packing material. If any items are missing or have been damaged during shipment, please notify your **maas** dealer.

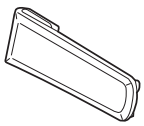
Supplied accessories

Transceiver



Lithium batterypack

Intelligent charger



Beltclip

Handstrap

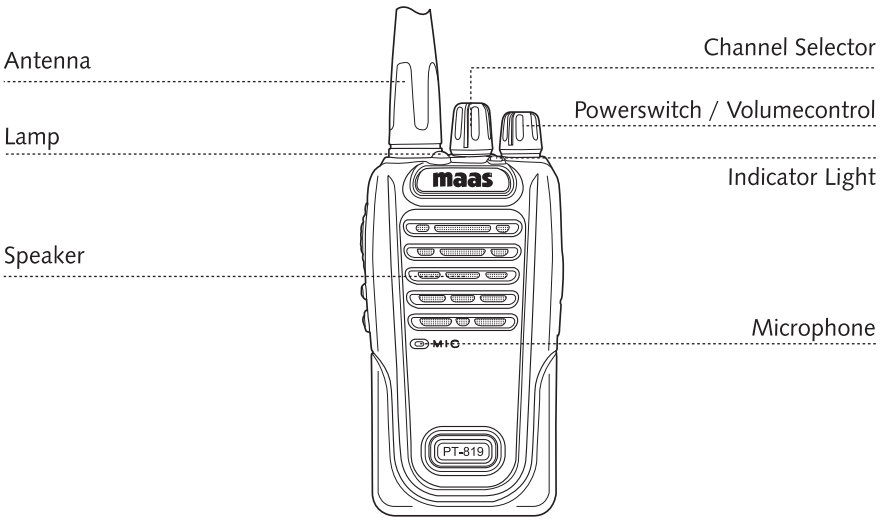
User's manual

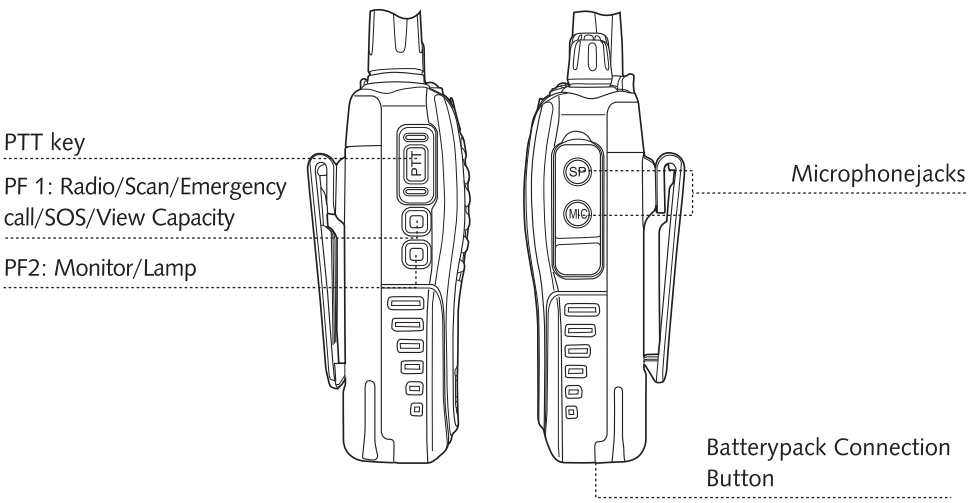
Description of functions

1. PMR446
2. Output power: 0.5W
3. DTMF encoding and decoding
4. 1750Hz burst tone
5. VOX
6. Inspection, stun, kill and monitor function
7. Distant urgency alarm, SOS function
8. Digital FM radio
9. Calling ring function
10. 105 groups DCS/50 groups CTCSS
11. Voiceguide (English/Chinese)
12. Wide/narrow bandwidth selection (25KHz/12.5KHz)
13. Multi scan function
14. Priority scan function
15. High capacity Lithium batterypack
15. Intelligent charger
16. Busy channel lockout
17. Low voltage voice prompt
18. Transmit overtime prompt
19. Adding channelscan function
20. Programmable by computer
21. Wireclone function

Getting started

Description of transceiver





Low-voltage alarm	Sound "Toot" twise. Each "Toot" is on every 5seconds.
Transmitting	Red light flashes

Getting started

Receiving	Green light flash
Scan	Green light flashes every second

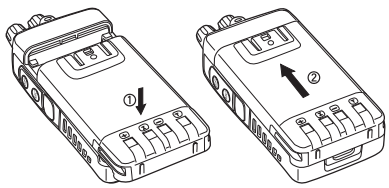
■ ***Install/remove batterypack***

The batterypack is not fully charged before leaving factory. Please charge it before use.

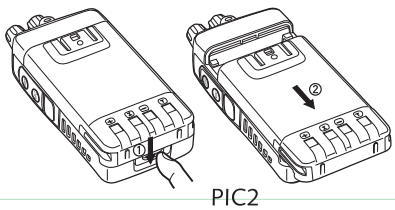
NOTE ⚠

» Don't shortcircuit of the terminals or put the batterypack into fire.
» Don't try to remove the case from the battery pack.

1. Please aim the batterypack at the back of the transceiver, and then push up the batterypack and the transceiver till the connection button is locked. (PIC1)
2. If you want to remove the batterypack, push down the connection button, and the batterypack will be released from the tranaceiver. (PIC2)



PIC1



PIC2

Programming assistance function

maas
Professional PMR Transceiver

User can, as required, set the following assistance functions for PF1 via PT-819 programming software:

- No definition
- Scan
- Emergency call
- Radio
- View capacity
- SOS alarm

The steps as following

1. Rotate the power switch / volume control knob clockwise to conduct the power supply. Then adjust the volume byrotating the knob. Rotating the knob counter-clockwise to power off.
2. Rotate the encoder knob to select the desired channel. Clockwise rotation can raise the channel number while counter-clockwise rotation lowers the number. The encoder also can hear the annoucement of the current channel number.

Function operation and specification

NOTE ⚠

» All the function operations are programmable via PT-819 programming software.

CTCSS & D.C.S

This transceiver is equipped with CTCSS (Continuous Tone Controlled Squelch System) and D.C.S (Digital Controlled Squelch) functions. You can ignore the unwanted calling from the frequency via this function. Only when receiving the same CTCSS tone or D.C.S code, the transceiver will release mute.

NOTE ⚠

» CTCSS or D.C.S cannot make the dialogue concealed or encrypted, but only can prevent you from the unwanted dialogue.

Transmit overtime timer

Transmit overtime timer is to prevent the transceiver from continuous transmitting for a long time. The transmitting will be interrupted compulsorily when the continuous transmitting time is over than the preset value. This function is to protect the transceiver overheat and damaged.

Function operation and specification

Transmit overtime alarm

This function is to alarm the users that the transmitting time will reach the preset value very soon.
There are 10 levels for alarm, and 1 second per level.
The alarm prompt is that red light flashing.

Battery save mode

This function is to turn off the receiver circuit for a certain time, and then turn on detect signals.
Without receiving or operating, the function can help the batterypack reduce comsumption.

Batterypack capacity prompt

1. If you want to know the batterypack capacity, please power on the transceiver again. When green light:
   Flashes 4 times-----means the capacity is full;
   Flashes 3 times-----means the capacity is less than full;
   Flashes 2 times-----means the capacity is not full;
   Flashes 1 time------means the capacity is a little low.
   When the red light flashes 4 times----means the capacity is very low, you'd better to change the battery or recharge the transceiver.
2. When pressPF1 that is programmed as "View Capacity", it shows the current capacity.

VOX

When detecting voice, the transceiver will switch to transmitting mode automatically.
As VOX should detect voice, transmitting will be a little delayed, and the beginning of the voice may not be transmitted.
The VOX of this transceiver has 10 levels. Higher level, less sensitive.

Begin/end transmitting voice prompt

This function means to select transmitting voice prompt way.
OFF: turn off this function, without any voice prompt.
BOT: press PTT, voice prompt when begin transmitting
EOT: release PTT, voice prompt when end transmitting.
BOTH: press and release PTT, voice prompt.

FM radio function

Turn on the Radio: Press PF1 key that is programmed to FM radio function to turn on. And green light flashes. It stands for that FM radio is automatically searching for radio stations. Search will automatically stop when receiving signals from the radio station. FM radio will be on the searched radio station to receive.

Function operation and specification

Tune the radio stations: In radio mode, press squelch key, the radio will tune the stations automatically and green light flashes at the same time. It will stop tuning until finishing search.

Turn off the radio: Press PF1.

NOTE

» When FM radio is working, the current channel is still in standby. While receiving signals, it automatically be back. After the signal disappears for 5 seconds, then it will be back to transceiver mode automatically. After pressing PTT key to transmit for 5 seconds, it will be back to FM radio mode automatically.

Alarm

1. When pressing PF1 that is programmed as "emergency alarm", speaker sounds alarm and then transmits alarm code.
   Press PF1 again to exit.
2. When pressing PF1 that is programmed as "SOS alarm", speaker sounds alarm and transmits alarm tone.

   NOTE

   » It will transmit signals every 5 minutes, lasting for 10 seconds each time.

   Press PF1 again to exit.

Scan

This function is a receiving way for monitoring the wanted channel communication.

Press PPF1 that is programmed as "Scan". the transceiver will scan one by one according to the channel numbers on the scan list. When scanning, green light flashes. Indicator LED lights green when a certain channel receives signals and the signaling types are matched.

While the scan function is activated, the transceiver will check the calling being available in the scan channel.

If there are activities, it will switch to the channel for receiving calling.

Report channel number when scanning signals

When starting scan and receiving signals, the transceiver will report the channel number.

Scan add

This function is to confirm whether the memory channels are added to the scan list.

Scan mode

TO: After searching signals, the transceiver will continue scanning if without any operation within 5 seconds. Press PTT key, the transceiver transmits the appointed channel by encoder. Scan will stop after transmitting.

CO: The transceiver will stop scanning when searching a signal. It will resume after the signal disappears for 3 seconds. Press PTT key, the transceiver will transmit the appointed channel by encoder. It will stop scanning after transmitting.

SE: Scan will stop when receiving a signal. Press PTT key, the transceiver will transmit the searched channel.

It will be back to the appointed channel by encoder after transmitting if there is no operation in 10 seconds.

Turn on/off the scan function

The way to enter the scan mode: Press PF1 that is programmed as "scan function".

The way to exit the scan mode: (1) Press PF1

(2) Press PTT key

(3) Switch to the other channel

Priority scan

Sometimes you maybe want to monitor the other channels and detect the activities from some certain prioriy channel at the same time.

In this stuation, priority scan function is useful.

E.g.: Scan six channels: CH1, CH2, CH3, CH4 and CH5 as the common scanned channel, and CH6 set as the priority scanned channel.

Scanned sequence as following chart:

CH1 – CH6 – CH2 – CH6 – CH3 – CH6 – CH4 – CH6 – CH5 – CH6

If the transceiver detects a signal on priority channel, it will call out its frequency.

DTMF function

PTT-ID

This feature means the delay time before transmitting ID. If the repeater can not respond, you should adjust this parameter.

1-30: allowed delay time for transmitting ID, unit: 100ms

OFF: not allowed to transmit ID

1750Hz burst tone

Press PTT to transmit, and press PF1 key at the same time. The transceiver will transmit 1750Hz burst tone.

ANI ID code

ANI ID code is made up of 3-6 bits, which can be edited at random.

DTMF sidetone

DTMF sidetone means if the transceiver turns the speaker on when transmitting ANI ID code and hear the relative DTMF tone from the speaker.

Inspection, stun, kill and monitor function

Inspection: Manager can use this function when he/she wants to know whether his/her staff are on duty. Manager will transmit inspection signals, and the transcivers in the group will reply to the manager automatically(what they reply is their ANI ID CODE).

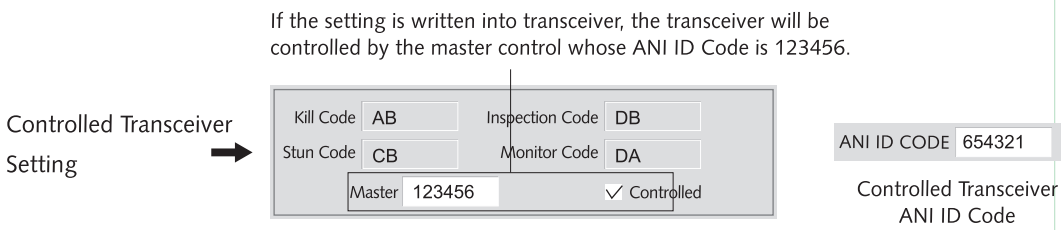
Stun: Manager can use this function when he/she only want to let his/her members just receive but can't transmit. Manager only needs to transmit signaling to stun the memebers' transceiver. So that the stunned transceivers only can receive but can't tranmit.

Kill: When the transceiver is lost or some accidents happen, in order not to make the transceiver receive

or transmit, manager can use this function to kill the transceiver.

Monitor: Manager can use this function when he/she wants to know what his/her group members are doing at the moment. When manager transmits the monitor signaling, the members' transceiver in the group will transmit automatically, then manager can hear the members' voice.

Eg.



The way to control the controlled transceiver as followings:

When you press PTT key, meanwhile input the master controller ID(123456) from the keypad, then press the master control numbers (i. e, the kill code is AB). At last, press the controlled transceiver ANI ID code (654321) of the transceiver you want to control.

NOTE ⚠

» When writing the above parameters into the transceiver, it will be controlled by the other transceiver with the same frequency. Since this transceiver is without keypad, it can't transmit DTMF code. So this transceiver can only be controlled but not control the other transceivers.

» When the master control codes are 3-5 digits and transmitting them all manually, you need to input an extra "#" after completing master control codes transmission. And then transmit control and controlled ANI ID Code.

» You only need to transmit stun code again to revive the stunned transceiver.

» You only need to transmit kill code again to revive the killed transceiver.

Squelch level

Short press the squelch key: just press the squelch key once to turn on illumination function. Press again to exit the function.

Hold on the squelch key: Hold on the squelch key to disable squelch function continuously.

Voice prompt

This transceiver has 2 voice prompt selectable: Chinese and English.

Busy channel lockout

This function is to prevent the interference of other communicating channels. If the selected channel is occupied, press PTT, the transceiver can not transmit.

Low-voltage voice prompt

When the voltage is low, the transceiver will sound two "Toot", and the light will flash every 5 seconds and a "Toot" sounds.

Function operation and specification

Wireclone cable

Using wire clone	a. Installing batterypacks on source transceiver and target transceiver and connect them via wireclone cable. b. And then power target transceiver on. c. Power on the source transceiver and hold on the MONI key at the same time. d. Red light on the source transceiver flashes, while the green light on the target transceiver flashes, it shows the wire cloning is completely starts up.	Transmitting red light flashing means transmitting data when wire cloning. Transmitting red light distinguishes after completing wireclone, and the transceiver returns to standby. Transmitting red light lasting flashing means the wireclone is failed and the transceiver returns to standby mode.
	Target transceiver	Receiving green light flashing means receiving data when wire cloning. Receiving green light extinguishes after completing wireclone, and the transceiver returns to standby.

How to use the intelligent charger

1. Insert the AC plug into the outlet (AC: 90-240V), the charger indicator flashes one, that means the charging is in standby.
2. Insert the battery into the charger, the RED indicator continuously flashes, that means the charging is on the progress.
   While the GREEN indicator continuously flashes, that means the charging is complete.

NOTE ⚠

» When inserting the exhausted batterypack, the intelligent charger will precharge the batterypack in trickle from The RED indicator will be flashing at the mement. This process is lasting for 10-20 minutes. And then the charging is normal. Red indicator continuously flashes. And then the GREEN indicator flashes when the charging completes.

» Trickling charging the exhausted batterypack is in order to protect lithium batterypack better.

Trouble shooting

Please check carefully if your transceiver is faulty by following this chart.
If you maintain to have trouble you can reset your transceiver and very often this will eliminate your problem.

Problem	Possible Cause	Possible Solution
Transceiver will not switch on.	**1.** The batterypack is not installed properly. **2.** The batterpack maybe exhausted. **3.** The batterypack is getting too old	**1.** Re-install the batterypack. **2.** Charge the batterypack. **3.** Change the batterypack.
The receiver light is on and there is no sound from the speaker.	**1.** The powerswitch is not adjusted well. **2.** Confirm if you use the right mutemode.	**1.** Turn the volume control again. **2.** Reset the mutermode.
There is no reception	**1.** Check if you have installed your antenna right. **2.** The signal you are receiving is very weak.	**1.** Install the supplied antenna. **2.** Move the radio around till you receive the desired signal.

Problem	Possible Cause	Possible Solution
The transmitting light is on, but can't transmit.	**1.** Check whether you set the busy channel lockout function.	**1.** Turn off the busy channel lockout function.
Transmit automatically when it is in standby.	**1.** Check whether the VOX level is too low.	**1.** Turn off the VOX function, or set the VOX to high level.

Appendix 1

Channel NO.	Frequency (MHz)	CTCSS Code (Hz)	Channel NO.	Frequency (MHz)	CTCSS Code(Hz)
1	446.00625	94.8	9	446.00625	107.2
2	446.09375	88.5	10	446.09375	110.9
3	446.03125	103.5	11	446.3125	114.8
4	446.06875	79.7	12	446.06875	82.5
5	446.04375	118.8	13	446.04375	D132N (DCS)
6	446.01875	123.05	14	446.01875	D155N (DCS)
7	446.08125	127.3	15	446.05625	D134N (DCS)
8	446.05625	85.4	16	446.08125	D243N (DCS)

NOTE ⚠

» The above data is programmed fixed from factory.

Appendix 2

CTCSS

1	67.0	11	94.8	21	131.8	31	171.3	41	203.5
2	69.3	12	97.4	22	136.5	32	173.8	42	206.5
3	71.9	13	100.0	23	141.3	33	177.3	43	210.7
4	74.4	14	103.5	24	146.2	34	179.9	44	218.1
5	77.0	15	107.2	25	151.4	35	183.5	45	225.7
6	79.7	16	110.9	26	156.7	36	186.2	46	229.1
7	82.5	17	114.8	27	159.8	37	189.9	47	233.6
8	85.4	18	118.8	28	162.2	38	192.8	48	241.8
9	88.5	19	123.0	29	165.5	39	196.6	49	250.3
10	91.5	20	127.3	30	167.9	40	199.5	50	254.1

Technology parameter

Appendix 3

DCS

1	D023N	16	D074N	31	D165N	46	D261N	61	D356N	76	D462N	91	D627N
2	D025N	17	D114N	32	D172N	47	D263N	62	D364N	77	D464N	92	D631N
3	D026N	18	D115N	33	D174N	48	D265N	63	D365N	78	D465N	93	D632N
4	D031N	19	D116N	34	D205N	49	D266N	64	D371N	79	D466N	94	D645N
5	D032N	20	D122N	35	D212N	50	D271N	65	D411N	80	D503N	95	D654N
6	D036N	21	D125N	36	D223N	51	D274N	66	D412N	81	D506N	96	D662N
7	D043N	22	D131N	37	D225N	52	D306N	67	D413N	82	D516N	97	D664N
8	D047N	23	D132N	38	D226N	53	D311N	68	D423N	83	D523N	98	D703N
9	D051N	24	D134N	39	D243N	54	D315N	69	D431N	84	D526N	99	D712N
10	D053N	25	D143N	40	D244N	55	D325N	70	D432N	85	D532N	100	D723N
11	D054N	26	D145N	41	D245N	56	D331N	71	D445N	86	D546N	101	D731N
12	D065N	27	D152N	42	D246N	57	D332N	72	D446N	87	D565N	102	D732N
13	D071N	28	D155N	43	D251N	58	D343N	73	D452N	88	D606N	103	D734N
14	D072N	29	D156N	44	D252N	59	D346N	74	D454N	89	D612N	104	D743N
15	D073N	30	D162N	45	D255N	60	D351N	75	D455N	90	D624N	105	D754N

Technology specification

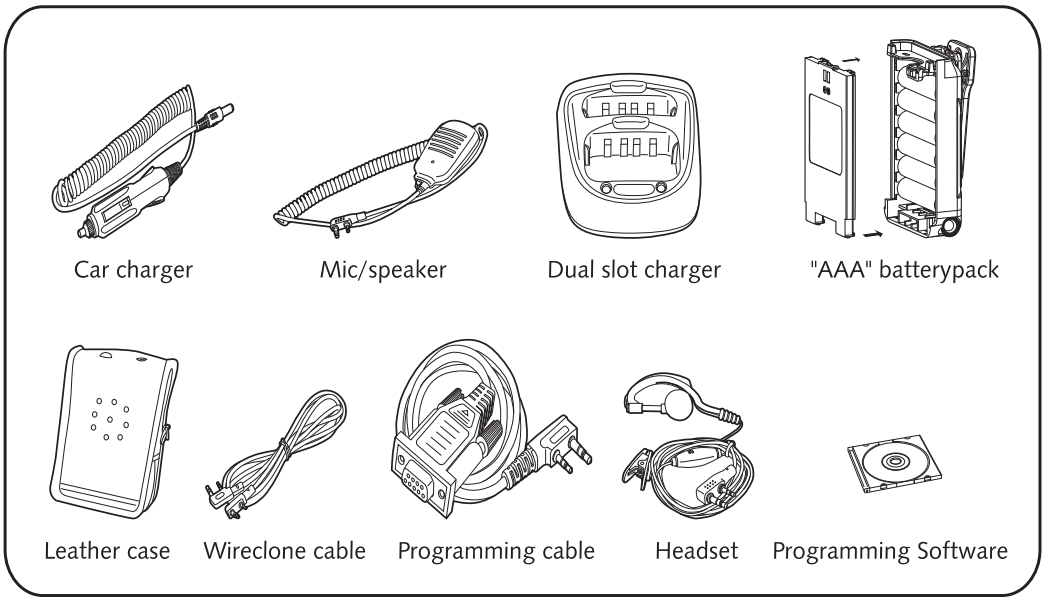
maas
Professional PMR Transceiver

Frequency range	PMR446
Channel numbers	16 channels
Operating voltage	7.4V
Operating temperature	-30℃ to 60℃
Operating mode	Co-channel or Dis-channel simplex
Output power	0.5W
Modulation	FM (F3E)
Maximum Deviation	⩽ ± 5KHz
Spurious Radiation	< -60dB
Frequency stability	± 5ppm
Receiving stability	< 0.2μV
Audio output power	⩾ 500mW
Weight	206g
Size	100.6 x 56.5 x 32.7 (mm)

NOTE ⚠

» Specifications are subject to change without notice.

Optional accessories



Announce

maas endeavors to achieve the accuracy and completeness of this manual, but is not liable for any possible omission and printing errors. All the above specifications are subject to change by **maas** without prior notice.

English Version: PT-819-1007-V1