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Statie radio UHF portabila

# PNI PMR R16

Manual de utilizare



Atentie: acest produs este supus licentierii inainte de a-l utiliza

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## **INTRODUCERE:**

Inainte de prima utilizare, va rugam cititi cu atentie acest manual.

PNI PMR R16 este o statie radio UHF compacta, portabila, usor de folosit si stabila. Poate fi folosita gratuit in majoritatea tarilor din Europa. Performantele statiei pot varia in functie de zona unde este folosita (zone de campie, de munte, pe malul marii sau in oras).

PNI PMR R16 este solutia ideală pentru profesionistii care vor sa fie in contact cu colegii (constructii, cladiri, hoteluri, show-uri televizate) sau cu cei apropiati (prietenii si familia) in timpul liber.

Datorita software-ului de programare special facut pentru PNI PMR R16, aveti posibilitatea modificarii setarilor predefinite. Puteti activa, dezactiva sau programa diferite functii precum VOX, Scan sau Squelch. Pentru informatii suplimentare, va rugam sa consultati manualul de programare.

## **ACCESORII INCLUSE:**

- Antena
- Suport centura
- Incarcator de birou
- Alimentator de perete
- Acumulator Li-Ion 2300 mAh 7.4V

## **CARACTERISTICI PRINCIPALE:**

- Gama frecvente 446.00625-446.09375 MHz (PMR446)
- Indicator vocal numar canal
- Putere de iesire: ≤500mW
- Coduri CTCSS 50/ DCS 83 pentru a evita interferente de la alte statii radio
- Functie VOX pentru comunicare fara maini

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- Functie TOT (Time out Timer ) pentru a evita defectiuni cauzate de emisie indelungata
  - Functie BCL (Busy Channel Lock-out) nu va permite sa emiteti pe un canal care este deja folosit
  - Functie Scan
  - Radio FM
  - Functie economie baterie

Toate functiile de mai sus pot fi programate prin software-ul pentru PC (poate fi achizitionat separat). De asemenea, statia mai are urmatoarele functii:

- Alarma
- Eliminare zgomot (elimina zgomotul de la sfarsitul emisiei)
- Blocare canal

## SPECIFICATII TEHNICE:

### Generale

Gama frecventa:

446.00625- 446.09375 MHz (PMR446)

Canale: 16

Modulatie frecventa: FM

Temperatura de functionare: -20°C ~ +55°C

Alimentare: 7.4V

Consum in standby: aproximativ 15mAh (modul Power Save activat)

Dimensiuni: 100 × 58 × 36mm

Greutate: 245g (acumulator si antena incluse)

### Emisie:

Distorsiune frecventa: ±3ppm

Putere de iesire: ≤500mW

Consum maxim: ≤1.5A

Deviatia maxima de frecventa: ±5kHz

Distorsiune frecventa audio: <10%

Frecventa adiacenta: <70dB

## Receptie:

Sensibilitate: <-122dBm(12dB SINAD)

Sensibilitate Squelch: <-126dBm

Putere audio nominala:  $\geq 500\text{mW}$

Consum in receptie:  $\leq 380\text{mA}$

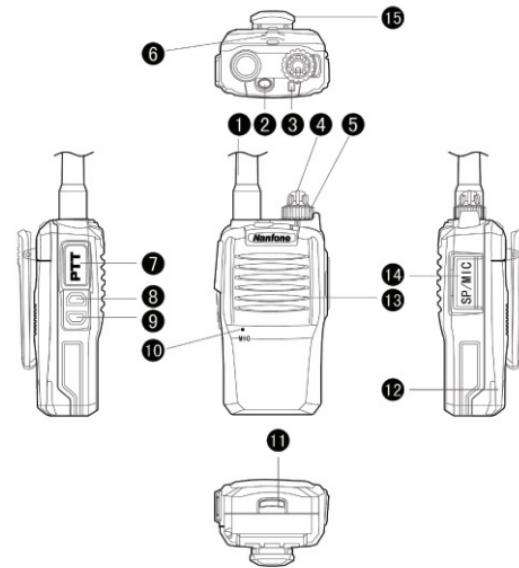
Distorsione frecventa audio: <10%

Selectivitate canal adjacente:  $\geq 60\text{dB}$

Respingere intermediere:  $\geq 60\text{dB}$

## DESCRIERE STATIE:

1. Antena
2. Alarma
3. Indicator LED
4. Volum / Vox / On-Off
5. Canal
6. Orificiu prindere snur
7. PTT
8. FM / Monitor / FM+
9. FM-
10. Microfon
11. Buton eliberare acumulator
12. Acumulator
13. Difuzor
14. Intrare casti
15. Clema prindere



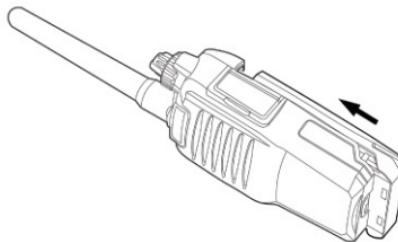
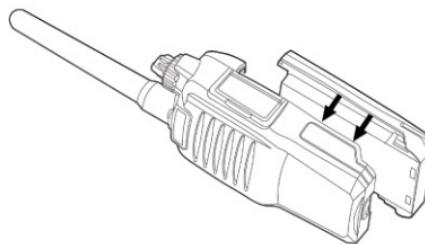
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## **INSTRUCTIUNI MONTAJ:**

Nota: Pentru a nu reduce performantele statiei, nu tineti statia de antena si nici nu atarnati de ea chei sau casti.

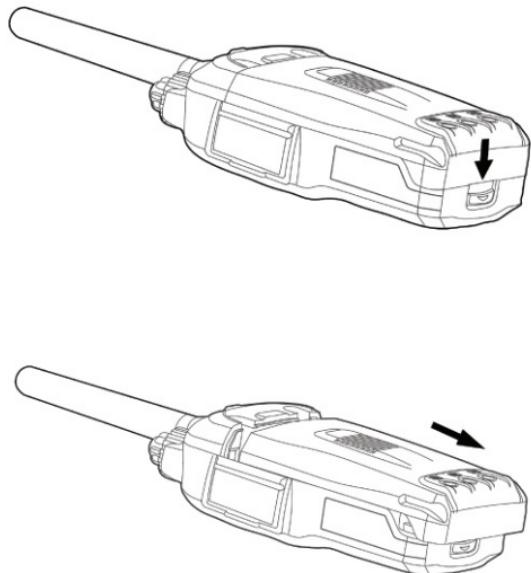
## **Instalare acumulator:**

Instalati acumulatorul ca in imaginea de mai jos.  
Folositi acumulatorul inclus in pachet.



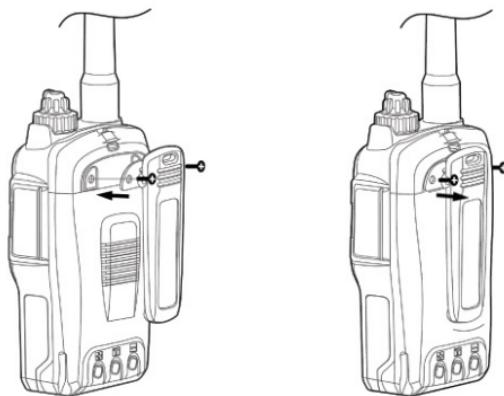
## **Dezinstalare acumulator:**

Pentru a scoate acumulatorul, apasati pe butonul din partea inferioara a statiei, ca in imaginea de mai jos:



## **Instalare suport centura:**

Folositi suruburile din pachet pentru fixarea suportului pentru centura.



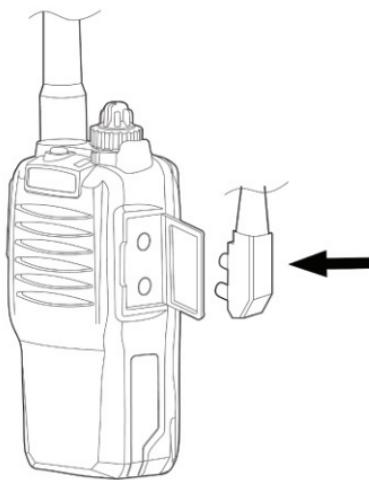
### **Note:**

1. Pentru a fixa suportul de centura, nu folositi niciun fel de lipici
2. Inainte de a scoate acumulatorul, indepartati mai intai suportul de centura.

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## **Instalare microfon extern:**

Instalati castile cu microfon ca in imaginea de mai jos:



## **Incarcarea acumulatorului:**

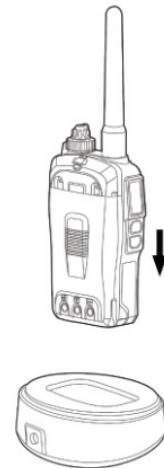
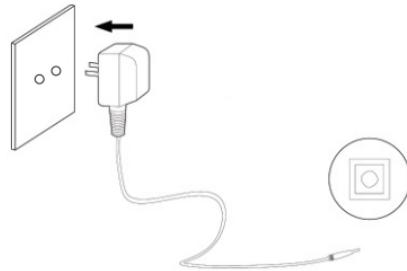
Incarcati acumulatorul inainte de prima folosire a statiei.

Daca statia nu este folosita mai mult de doua luni, capacitatea bateriei scade sub normal. Capacitatea bateriei revine la normal dupa 5 incarcari/descarcari consecutive.

In timpul incarcarii acumulatorului, LED-ul este rosu si se stinge cand acumulatorul este complet incarcat.

## Instructiuni instalare acumulator:

1. Introduceti adaptorul de perete in incarcatorul de birou
2. Introduceti adaptorul de perete in priza
3. Introduceti acumulatorul in incarcatorul de birou



### Note:

1. Asigurati-vă ca incarcatorul de birou functioneaza corect
2. Acumulatorul atinge capacitatea maxima după 5 încărcări/descărcări consecutive. În timpul încărcării acumulatorului, LED-ul este roșu și se stinge când acumulatorul este complet încărcat.
3. Nu aruncați acumulatorul în foc
4. Nu scurtcircuitați bateria
5. Nu desfaceți carcasa acumulatorului
6. Încărcarea completă a acumulatorului poate dura 5-6 ore

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## **DESCRIERE FUNCTII SI MOD DE OPERARE:**

### **Deschiderea statiei**

Pentru a deschide statia rotiti butonul [Volum / Vox / On-Off] in sensul acelor de ceasornic. Daca auziti un sunet "Di", inseamna ca statia este deschisa. Imediat veti auzi o voce care va indica canalul curent.

### **Schimbare canal**

Rotiti butonul [Canal] pana ajungeti la numarul canalului dorit. O voce va indica numarului fiecarui canal.

### **Reglare Vox**

Aceasta functie permite comunicarea fara a apasa tasta PTT.

Activati functia VOX din software-ul pentru PC. Nivelul VOX-ului poate fi setat intre 1 si 10. Cu cat este mai mare nivelul setat, cu atat sensibilitatea va fi mai mare. Conectati o perche de casti cu fir si incepeti sa emiteți.

### **Emisia**

Apasati tasta [PTT]. Indicatorul LED va deveni rosu. La terminarea emisiei, eliberati butonul PTT.

### **Monitor**

Functia Monitor permite dezactivarea temporara a squelch-ului pentru a receptiona eventuale semnale extrem de slabe. Apasati scurt tasta [FM / Monitor / FM+] pentru a dezactiva functia Squelch. Apasati din nou pentru a o activa.

### **Functia Squelch**

Poate elimina zgomotul de fundal pe canalul in uz si permite receptia semnalelor cu intensitate foarte scazuta. Nivelul Squelch-ul poate fi setat intre 1 si 9. Cu cat este mai mare nivelul squelch-ului, cu atat sunt mai mici sansele de interferente, dar poate influenta distanta de comunicare. Nivelul de Squelch poate fi modificat prin programare pe PC.

### **Functia apel**

Apasati tasta [PTT] si [FM / Monitor / FM+] in acelasi timp pentru a apela. Eliberati cele doua taste pentru a intrerupe apelul.

## **Activare FM**

Apasati lung tasta [FM / Monitor / FM+] pentru mai mult de 2 secunde pana auziti un sunet de confirmare. Functia FM este activata. Scanati canalele radio apasand scurt tasta [FM/Monitor/FM+] sau [FM/Monitor/FM-].

Pentru a dezactiva functia FM, apasati din nou timp de cel putin 2 secunde tasta [FM/Monitor/FM+] pana auziti sunetul de confirmare.

Functia FM poate fi activata sau dezactivata prin software-ul pentru PC.

## **Apel de urgență**

Pentru a activa apelul de urgență, apasati butonul rosu [Alarma] timp de 2 secunde. Statia va trece automat pe canalul 01 si va emite un semnal de alarmă pe acest canal. Apasati tasta [PTT] pentru a ieși din modul urgență. Dupa ieșirea din modul urgență, statia va ramane pe canalul 01. LED-ul va clipești verde. Rotiti butonul [Canal] pentru a schimba numarul canalului.

## **Functia Scan**

Daca functia Scanare a fost activata prin programare de pe PC si mergeti la canalul 16, atunci statia va intra in modul scanare. Indicatorul vocal va confirma activarea functiei Scan.

Daca porniti functia Scanare iar statia e in standby, atunci ea va scana unul cate unul canalele pe care a fost activata scanarea.

Cand gaseste semnal, LED-ul clipește verde iar statia incepe sa receptioneze. Succesiv, puteti emite apasand butonul PTT. Daca nu se inregistreaza activitate, statia reincepe scanarea.

De exemplu, daca a fost activata scanarea automata pentru canalele 3, 5, 7, cand rotiti selectorul de canale pana la canalul 16, statia va scana canalele 3, 5, 7, 16 cand va primi semnal pe unul dintre aceste canale, apoi va intrerupe scanarea si veti putea incepe comunicarea.

## **Blocare canal (Channel Lock Out)**

Aceasta functie permite blocarea canalului curent pentru a evita utilizarea accidentalala a statiei.

Apasati [FM/Monitor/FM +] si [FM-] in timp ce deschideti statia. Se va auzi un sunet de confirmare.

Dupa activarea acestei functii, un singur canal mai poate fi folosit si nu poate fi schimbat din selectorul de canale.

Pentru a dezactiva aceasta functie si pentru a va intoarce la canalul 16, repetati operatiunea de mai sus.

## **Alerta baterie descarcata**

1. Daca tensiunea este intre 6.5V - 6.3V, statia receptioneaza si emite, iar LED-ul clipeste rosu
2. Daca tensiunea este intre 6.3V - 6.1V (bateria este descarcata), statia receptioneaza si emite, se aude un sunet "Di Di" la fiecare 20 de secunde, iar LED-ul clipeste rosu.
3. Daca tensiunea este mai mica de 6.1V (bateria este descarcata), se aude un sunet "Di Di" la fiecare 20 de secunde, statia receptioneaza dar nu emite.

## **Functia TOT (Time out Timer)**

Rolul acestei functii este de a preveni folosirea indelungata a unui canal de catre o singura persoana.

Timpul maxim de utilizare a unui canal poate fi setat prin software-ul pentru PC si poate fi: 30, 60, 90, 120, 150,180 secunde sau OFF. In timpul emisiei, cand se atinge timpul de emisie continua setat prin software, statia va emite un sunet "Di". Pentru a intrerupe acest sunet, eliberati butonul PTT. Apasati din nou butonul PTT pentru a continua emisia.

## **Functia BCL (Busy Channel Lockout - Blocare canal ocupat)**

Aceasta functie poate fi setata prin software-ul de programare pe Off (dezactivata), Carrier wave busy lockout si CTCSS busy lockout.

## **DISTANTA DE LUCRU:**

Distanta maxima de acoperire este obtinuta atunci cand statia este folosita in camp deschis. Distanta maxima este limitata de factorii potentiali cum ar fi: copaci, cladiri, sau alte obstacole. In interiorul unei masini sau a unei constructii metalice, distanta este redusa semnificativ.

In mod normal distanta de acoperire in zone urbane este de 1 – 2 Km. In camp deschis dar cu obstacole cum ar fi copaci sau case, distanta maxima este de 4 – 6 Km. În camp deschis, dar fara obstacole si cu vizibilitate buna, cum ar fi la munte, distanta de acoperire poate fi pana la 15 Km.

## **MENTENANTA**

1. Nu incercati sa dezasamblati statia radio
2. Nu folositi statia radio daca va aflati intr-o benzinarie
3. Nu expuneti statia radio la surse de caldura excesiva, intrucat poate deteriora partile electronice si poate deforma carcasa de plastic.
4. Nu udati statia radio, intrucat umiditatea poate deteriora circuitele electronice.
5. Daca statia are un comportament ciudat, intrerupeti imediat alimentarea statiei.

## **PROBLEME SI SOLUTII**

### **1. Statia nu se aprinde**

Acumulatorul este descarcat. Incarcati sau inlocuiti acumulatorul.

Acumulatorul nu este instalat in mod corespunzator. Verificati instalarea acumulatorului.

### **2. Nu sunteți auzit sau ceilalți nu va aud în timp ce emiteți**

Asigurati-vă ca folositi aceeași frecvență și același ton CTCSS cu ceilalți membri ai grupului

Asigurati-vă că sunteți în raza celorlalți membri ai grupului.

### **3. Raza de acoperire este prea scurta**

Asigurati-vă că ati instalat corect antena. Asigurati-vă că folositi antena originală.

Reduceti nivelul Squelch-ului.

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**4. Pe canalul curent se aud vocile celorlalți utilizatori**

Schimbați frecvența

Schimbați tonul CTCSS/DCS

**5. Acumulatorul se descarcă în scurt timp după încărcare**

Acumulatorul este uzat și nu mai poate fi folosit. Înlocuiți acumulatorul.

Asigurați-vă că acumulatorul este încărcat complet.

**6. Vocea receptionată nu este clară și suficient de tare**

Verificați dacă microfonul stației nu este obțurat

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## CODURI CTCSS SI DCS DISPONIBILE PRIN PROGRAMARE PE PC

### 50 grupuri CTCSS

67.0	85.4	107.2	136.5	165.5	186.2	210.7	254.1
69.3	88.5	110.9	141.3	167.9	189.9	218.1	
71.9	91.5	114.8	146.2	171.3	192.8	225.7	
74.4	94.8	118.8	151.4	173.8	196.6	229.1	
77.0	97.4	123.0	156.7	177.3	199.5	233.6	
79.7	100.0	127.3	159.8	179.9	203.5	241.8	
82.5	103.5	131.8	162.2	183.5	206.5	250.3	

### 83 grupuri DCS

023	051	114	143	174	251	315	371	445	532	631	723
025	054	115	152	205	261	331	411	464	546	632	731
026	065	116	155	223	263	343	412	465	565	654	732
031	071	125	156	226	265	346	413	466	606	662	734
032	072	131	162	243	271	351	423	503	612	664	743
043	073	132	165	244	306	364	431	506	624	703	754
047	074	134	172	245	311	365	432	516	627	712	

## TABEL FRECVENTE INSTALATE:

CH	RX frequency	QT/DQT Dec	TX frequency	QT/DQT Enc	Power	Busy Lock	Band	Scan
1	446.00625	OFF	446.00625	OFF	Low	QT/DOT	Narrow	No
2	446.01875	OFF	446.01875	OFF	Low	QT/DOT	Narrow	No
3	446.03125	OFF	446.03125	OFF	Low	QT/DOT	Narrow	No
4	446.04375	OFF	446.04375	OFF	Low	QT/DOT	Narrow	No
5	446.05625	OFF	446.05625	OFF	Low	QT/DOT	Narrow	No
6	446.06875	OFF	446.06875	OFF	Low	QT/DOT	Narrow	No
7	446.08125	OFF	446.08125	OFF	Low	QT/DOT	Narrow	No
8	446.09375	OFF	446.09375	OFF	Low	QT/DOT	Narrow	No
9	446.00625	114.8	446.00625	114.8	Low	QT/DOT	Narrow	No
10	446.01875	114.8	446.01875	114.8	Low	QT/DOT	Narrow	No
11	446.03125	114.8	446.03125	114.8	Low	QT/DOT	Narrow	No
12	446.04375	114.8	446.04375	114.8	Low	QT/DOT	Narrow	No
13	446.05625	114.8	446.05625	114.8	Low	QT/DOT	Narrow	No
14	446.06875	114.8	446.06875	114.8	Low	QT/DOT	Narrow	No
15	446.08125	114.8	446.08125	114.8	Low	QT/DOT	Narrow	No
16	446.09375	114.8	446.09375	114.8	Low	QT/DOT	Narrow	No

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Portable UHF transceiver

# PNI PMR R16

User manual



**Warning: this product is subject to licensing before use**



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## **INTRODUCTION:**

Please read this manual carefully to learn its latest functions and operations before using.

PNI PMR R16 is a compact, portable, easy to use and stable UHF radio. It can be freely used in most of the European countries. The radio communication range and performances can vary depending on the area where it is used (heals or mountains, seaside or urban areas).

PNI PMR R16lt is ideal for professionals who want to be in contact with work colleagues (construction sites, hotels, TV sets) or with friends and family during spare time.

Thanks to the dedicated PC software, you can customize some features. You can enable or disable functions as: SCAN, VOX, Squelch etc. For further information, please read the software user manual.

## **ACCESORIES LIST:**

- Antenna
- Belt clip
- Charger
- Adaptor
- Lithium battery pack 2300 mAh 7.4V

## **MAIN FEATURES:**

- Frequency range 446.00625- 446.09375 MHz (PMR446)
- Voice indicator
- Power: ≤500mW
- 50 CTCSS codes/ 83 DCS codes to avoid interference from other radios
- VOX function for hands-free communication

- 
- TOT Function (Time out Timer). Avoid damage due to the long-term transmit
  - BCL (Busy Channel Lock-out) function you can't emit on a busy channel
  - Scan function
  - Radio FM
  - Battery Save and Long Standby

All the above function can be programmed by PC. The transceiver also has the below function:

- Emergency alert. Keep you safe and comfort
- Noises cancel function. Can clear up the noise after conversation ended
- Channel locked function

## TECHNICAL INFORMATION:

### General

Frequency range:

446.00625- 446.09375 MHz (PMR446)

Number of channel: 16

Modulation: FM

Operating temperature range: -20°C ~ +55°C

Voltage: 7.4V

Standby Current: about15mAh (Power Save enabled)

Dimensions: 100 × 58 × 36mm

Weight: 245g (battery and antenna included)

### Transmitter:

Frequency Distortion: ±3ppm

Output power: ≤500mW

Emission current: ≤1.5A

Maximum frequency deviation: ±5kHz

Audio frequency distortion: <10%

Adjacent frequency: <70dB

## **Receiver:**

Reference sensitivity: <-122dBm(12dB SINAD)

Squelch sensitivity: <-126dBm

Rated Audio Power: ≥500mW

Receiving current: ≤380mA

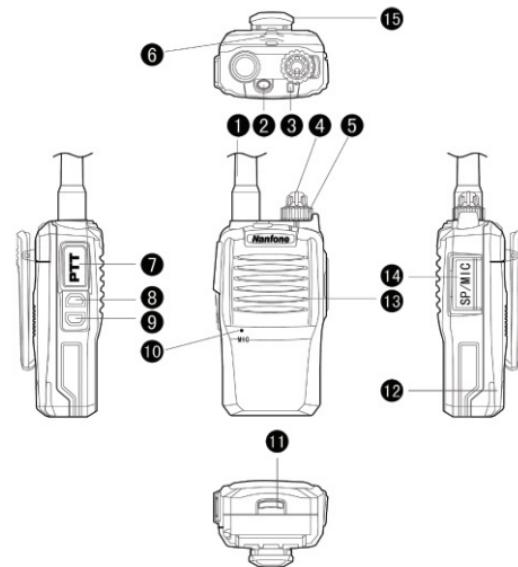
Audio frequency distortion: <10%

Adjacent- Channel Selectivity: ≥60dB

Intermediation Rejection: ≥60dB

## **PRODUCT DESCRIPTION:**

1. Antenna
2. Alarm
3. LED Indicator
4. Volume / Vox / On-Off
5. Channel
6. Ring Hole
7. PTT
8. FM / Monitor / FM+
9. FM-
10. Microphone
11. Battery snap
12. Battery
13. Speaker
14. MIC/Speaker input
15. Belt clip



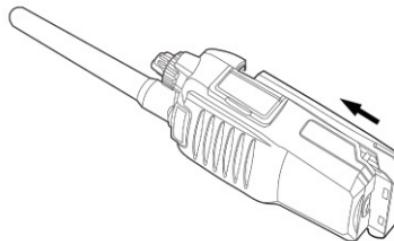
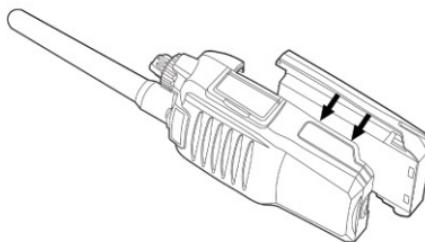
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## **PREPARATION FOR USE:**

Note: Don't hold the machine by antenna or hang the key chain and earphone on it, since they will spoil the antenna and reduce the performance of the machine.

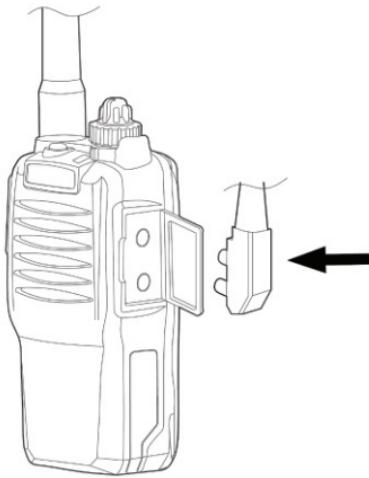
## **Install Lithium battery pack:**

Put the original Lithium battery pack into the transceiver correctly as following picture shows.



## **Install external microphone:**

Install the microphone as the picture shows:

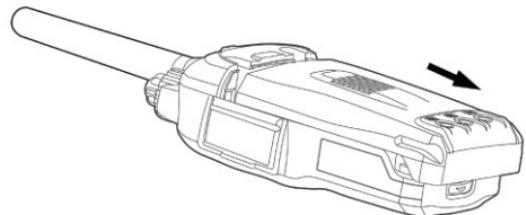
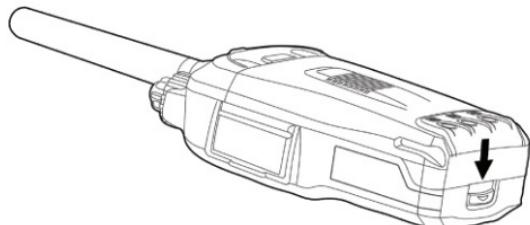


## **Charging the battery:**

When used for the first time after purchased or Stored over two months, the capacity of battery pack is less than normal. However, it will return normal after charged and discharged for five times. Charge in power-off mode, the indicate red light is on, and it is off when finish charging.

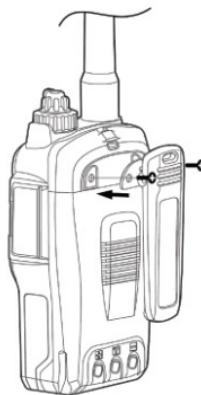
## **Remove the battery:**

Press the battery snap like picture shows and push up :



## **Install the belt clip:**

If necessary, install the belt clip with the 3\*6 screws included in the package.

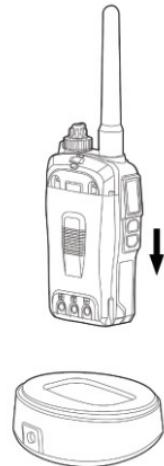
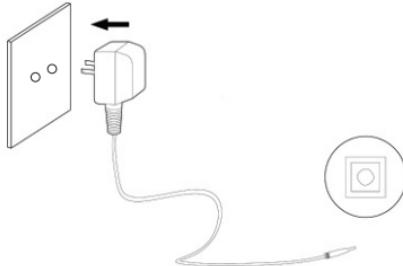


### **Note:**

1. When installing the belt clip , do not use any glue to fix crew or it will be bad for casing.
2. Take off the belt clip first, then the battery pack.

## **Charging steps:**

1. Insert the AC adaptor line to the charging hole of the charger
2. Connect the power with AC adaptor
3. Put the battery or radio with battery on the charger.



### **Note:**

1. Please make sure battery charging is working
2. It will return normal after charged and discharged for five times. Charge in power-off mode, the indicate red light is on, and it is off when finish charging.
3. Do not short-circuit the battery terminals or dispose of batteries in fire
4. Do not unload the battery rear case
5. It will cost 5.6 hours for complete charging

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## **FUNCTIONS AND OPERATIONS DESCRIPTION:**

### **Turn On**

Turn on the radio by rotating [Volume / Vox / On-Off] button clockwise. If you hear a “Di”, it means the radio is turned on. Immediately you will hear a voice indicating the channel number.

### **Channel switch**

Switch [Channel] button until you reach the desired channel. A voice will indicate you the channel number.

### **Vox function**

This functions allows you to communicate without pressing the PTT button.

Activate VOX function from the PC software. The VOX level can be set between 1 and 10. Higher the set level, higher will be the VOX sensitivity. Connect a wired earphone and start transmitting.

### **Transmitting**

Push [PTT] button. The LED will turn red. Release the PTT button when you have finished transmitting.

### **Monitor**

Monitor function allows the temporarily disabling the Squelch in order to receive extremely weak signals.

Short press the [FM / Monitor / FM+] key to disable Squelch function. Press again to enable this function.

### **Squelch function**

This function removes the background noise and allows receiving signal with low intensity. The squelch level can be set between 1 and 9. The squelch level can affect the communication range. The squelch level can be set through PC software..

### **Call function**

Press [PTT] and [FM / Monitor / FM+] in the same time. Release the two buttons to stop calling.

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## **FM Operation**

Long press [FM / Monitor / FM+] for more than 2 seconds until you hear a sound. Now the FM function is ON. Choose the FM channels by pressing [FM/Monitor/FM+] or [FM/Monitor/FM-].

Repeat the above operation to turn the FM radio function off.

FM function can be disabled from PC software.

## **Emergency Call**

Long press the red button for more than 2 seconds. The radio will transmit an emergency tone to all the radios in the same frequency (channel 1). Press [PTT] to exit emergency call mode. Rotate the channel selector button in order to change the channel.

## **Scan function**

When active the scan function by PC software and turn to channel 16, then the radio tips the sound of "scanning". If report "16", it means the scan function is turned off.

If the scan function is active, the radio will scan the signal one by one from the present channel.

When match with same signal, LED light would flash green and receive signals .Then you can transmit the information by pressing PTT. If there is no operation on the radio, it would return to scan .

Example: When scanning is active for channel 3,5,7, the radio would scan automatically when get to Channel 16 .Once receiving the signal from anyone of channel 3,5,7,16 , the scanning would stop and the radio will be ready for transmitting.

## **Channel Lock Out**

Radio with channel lock out function avoid transmitting by some improper operation on the radio at some specific occasions.

Press [FM/Monitor/FM +] and [FM-] while you turn the radio on. A “Di” sound will be heard.

It is only allowed to use one channel and can not be changed by channel selector when Channel lock out function is active.

Do again the above steps to turn to Channel 16.

## **Low Battery Alert**

1. If the voltage is between 6.5V - 6.3V, the radio transmit and receives, while the LED is red.
2. If the voltage is between 6.3V - 6.1V, the radio transmit and receives, the radio sounds a beep every 20 seconds, while the LED is red.
3. If the voltage is below 6.1V, the radio sounds a beep every 20 seconds, the radio transmit but not receives.

## **TOT (Time out Timer) function**

The purpose of the Time-out Timer is to prevent any single person from using a channel for an extended period of time. The overtime can be set by PC software programming (the time can set as 30, 60, 90, 120, 150, 180 seconds or OFF ). If the continuous launching time is over the preset timer, the launching will be stopped and a “Bi” tone sounds. To stop the “Bi” tone, please release the PTT button. You can press the PTT button again to resume launching.

## **BCL (Busy Channel Lockout) function**

This function can be set through PC software: Off, Carrier wave busy lockout or CTCSS busy lockout.

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## **COMMUNICATION RANGE:**

The maximum range depends on terrain condition and is obtained during use in an open space. The only limitation to maximum possible range are environmental factors such as blockage caused by trees, buildings or other obstructions. Inside a car or a metallic constructions, the range can be reduced. Normally the coverage in the city, with buildings or other obstructions is about 1 or 2 Km. In open space but with obstructions like trees, leaves or houses the maximum possible range is about 4-6 Km. In open space, without obstructions and in sight, like for example in mountain, the coverage can be more than 15 Km.

## **MAINTENANCE**

1. Please don't try to disassemble the transceiver
2. Please turn off the transceiver when you are in gas station
3. Please don't put the transceiver in sun or hot place for long time, because the high temperature will shorten use life of electronic parts and cause distortion to plastic parts.
4. Please keep the transceiver dry, because rain and moisture will erode the electronic circuits.
5. Please power off the transceiver and remove its battery pack immediately once it is peculiar.

## **TROUBLE SHOOTING**

### **1. No power**

The battery may have been exhausted. Please recharge or replace the battery pack.

The battery pack may not be installed correctly. Please check and install it again.

### **2. Unable to talk or hear members in your group**

Make sure you are using the same frequency and CTCSS tone as other members in your group  
make sure you are in the radio's operating range.

### **3. The communication distance is short**

Please confirm whether the antenna is well connected and tightened. Please confirm whether you use the original antenna. Please reduce the squelch level.

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**4. The other group members' voices are present on the channel**

Please change the frequency

Make sure to change CTCSS signal of all transceivers in your group

**5. Battery lasts a short time after charging**

The battery pack has been used out and cannot function any longer.

Please replace it with a new one.

Make sure the battery is fully charged

**6. The receiver voice is not clear and loud**

Check whether the MIC of transceiver blocked

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## AVAILABLE CTCSS AND DCS CODES

50 CTCSS groups

67.0	85.4	107.2	136.5	165.5	186.2	210.7	254.1	
69.3	88.5	110.9	141.3	167.9	189.9	218.1		
71.9	91.5	114.8	146.2	171.3	192.8	225.7		
74.4	94.8	118.8	151.4	173.8	196.6	229.1		
77.0	97.4	123.0	156.7	177.3	199.5	233.6		
79.7	100.0	127.3	159.8	179.9	203.5	241.8		
82.5	103.5	131.8	162.2	183.5	206.5	250.3		

83 DCS groups

023	051	114	143	174	251	315	371	445	532	631	723
025	054	115	152	205	261	331	411	464	546	632	731
026	065	116	155	223	263	343	412	465	565	654	732
031	071	125	156	226	265	346	413	466	606	662	734
032	072	131	162	243	271	351	423	503	612	664	743
043	073	132	165	244	306	364	431	506	624	703	754
047	074	134	172	245	311	365	432	516	627	712	

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## INSTALLED FREQUENCY CHART:

CH	RX frequency	QT/DQT Dec	TX frequency	QT/DQT Enc	Power	Busy Lock	Band	Scan
1	446.00625	OFF	446.00625	OFF	Low	QT/DOT	Narrow	No
2	446.01875	OFF	446.01875	OFF	Low	QT/DOT	Narrow	No
3	446.03125	OFF	446.03125	OFF	Low	QT/DOT	Narrow	No
4	446.04375	OFF	446.04375	OFF	Low	QT/DOT	Narrow	No
5	446.05625	OFF	446.05625	OFF	Low	QT/DOT	Narrow	No
6	446.06875	OFF	446.06875	OFF	Low	QT/DOT	Narrow	No
7	446.08125	OFF	446.08125	OFF	Low	QT/DOT	Narrow	No
8	446.09375	OFF	446.09375	OFF	Low	QT/DOT	Narrow	No
9	446.00625	114.8	446.00625	114.8	Low	QT/DOT	Narrow	No
10	446.01875	114.8	446.01875	114.8	Low	QT/DOT	Narrow	No
11	446.03125	114.8	446.03125	114.8	Low	QT/DOT	Narrow	No
12	446.04375	114.8	446.04375	114.8	Low	QT/DOT	Narrow	No
13	446.05625	114.8	446.05625	114.8	Low	QT/DOT	Narrow	No
14	446.06875	114.8	446.06875	114.8	Low	QT/DOT	Narrow	No
15	446.08125	114.8	446.08125	114.8	Low	QT/DOT	Narrow	No
16	446.09375	114.8	446.09375	114.8	Low	QT/DOT	Narrow	No



