

(analogue & digital)

and private use

 Private call O 51 CTCSS for professional applications

○ 214 DCS

the transceiver when using other accessories and/ or attachment not sold by us. ▲ Refer service to qualified technicians only.

operation of any transceiver.

NOTICES TO THE USER

WARNING: Ban to use transceiver in the explosive surroundings. (such as gas, dust, and fumes etc.) ▲ Please turn off your transceiver while enter into

Government law prohibits the operation of unlicensed

radio transmitters within the territories under

Illegal operation is punished by fine or imprisonment

It's important that the operation is aware of and

We don't guarantee the safety and operation for

understands the common hazards caused by the

personal inquiry and transceiver damage. Do not modify or attempt to adjust this transceiver for any reason by non-technicians.

Observe the following precautions to prevent fire,

PRECAUTIONS

 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

company software) Individual Call ▲ Individual Call is to call an individual user

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

▲ The squelch technique is to filter background noise

ADVANCED AUXILIARY FUNCTION

2. Medium Battery strength----light green and blue

▲ Dealer or authorized users could program

transceivers definable sidekey by our company special

software. (Subject to the preset functions of our

Definable sidekey (FP1 FP2)

Gerneral Call

SQUELCH

the current channel

and improve communication quality.

Battery strength inspection

3. Low battery --light blue

★ Transmit interval time

programmed by software only)

Auto contact

1. Full battery strength---light green

The CE certificate is downloadable from http://www.maas-elektronik.com or can be requested Group Call by email. ▲ Group Call is a single user to call all members in

UNPACKING AND CHECKING EQUIPMENT.... FP2 definable sidekey... GETTING ACQUAINTED Channel Knob..... TRANSMITTING OPEARATION.. Part description. **ACQUAINTING THE CALL...** Definable sidekey. ADVANCED AUXILIARY FUNCTION... Selective call. Calling Type... Battery strength inspection Making calls... Auto contact... Receiving call...... Work alone.... Channel mode switchable AUXILIARY FUNCTION. Emergency Alarm .. Reverse frequency... Narm Type (To set via software)... **BATTERY SAFETY INFORMATION** CHARGING OPERATION... Priority scan Charging battery Scan indication Charging operation.

Exiting Scan..... Falkaround.... Remote Kill/Stun function... Revive function... DTMF (Valid for analogue mode).. Programming ID code... Programming Digital ID. CTCSS/DCS (Be effective for Analogue mode only).....

UNPACKING AND CHECKING EQUIPMENT

Charger

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

Supplied accessories

Li-ion battery

with the carrier immediately.

Transceiver

Transceiver with antenna Li-ion battery pack Charger Belt Clip Adaptor Hand strap User manual Hand strap User manual

Supplied accessories

Quantity

1

1

1

1

1

GETTING ACQUAINTED

Part d	escription				
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			

GETTING ACQUAINTED Definable sidekey

or park on gas station.

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:

To secure the private communication by voice encryption or SMS encryption

Quick to exchange the transmitting and receiving frequency of the current channel

Quick to switch the current channel mode (digital/ analogue/digital and analogue

NO. Function name Monitor (should be long press) To turn the speaker ON whatever the carrier signal exists or not. To receive other channels communication To check the priority channel during scanning Priority scan To remove the uninterested channel out of scan list temporarily. Temporary channel lockout Hands free for transmitting Quick to adjust power output (High or low power) Prompt the battery surplus Battery strength inspection Asking for help in emergency Emergency alarn

To call other users on the current channel

To communicate with other user directly without repeater

Once the work alone is activated, if there is no manual

alarm will be activated. (To be activated after programmed by software only) Channel mode switchable

operation in the preset time, an normal emergency

▲ Transceiver ID. The transceiver with display or

transceiver from receiving PTT ID.

CE CERTIFICATE

the calling control center could identify the working

1) To work under analogue mode, LED lights green single prompt tone: Low. Analogue channel: To receive and transmit under The interval time for each auto contact transmission analogue mode. Receive or transmit analogue signal. between transceivers (To be activated after ② To work under digital mode, LED lights blue, single prompt tone: Medium

★ Checking interval time (Within communication Digital channel: To receive and transmit under digital mode. Receive or transmit digital signal only. If transceiver can t receive auto contact code within ③ Mixed digital and analogue mode the preset time, a beep warning sound will be ★ A short blue LED indicator lights up firstly, then transmitted automatically out of communication range green light on, single prompt tone: High. (To be activated after programmed by software only)

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

ADVANCED AUXILIARY FUNCTION

Installing the antenna / Uninstalling the antenna

nstalling battery pack / Uninstalling battery pack8

Plugging in/out the audio accessory/programming cable...9

Turning the Power ON/OFF and adjusting the Volume......10

★ 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

CONTENTS

Charger LED indicator.

Installing/ Uninstalling belt clip.....

BASIC OPERATION.....

FPI definable sidekey

INSTALLATION...

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. 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 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

★ In the preset time, if the current channel does not

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.

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.

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 5) After full and correct charge, the battery still fail to work well or decrease operation time, thus the battery

3) Always switch OFF the transceiver equipped with

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

(1). When the radio on the idle state, press 【PTT】 to

(2), Press 【PTT】 on the current channel, it will call

(3). When a call received on the current channel, to

press [PTT] will reply the current calling contact.

call the defaulted Contact of the channel.

TRANSMITTING OPEARATION

1. Digital/Analogue transmission

the current selected contact.

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 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. ② If the battery pack is damaged. 5. If the charger LED lights green (Li-ion battery), ③ The surrounding temperature is too high or low.

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

ED indicator Current state Description ash red and then OFF Electrify but on standby No-load Charging completed 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

Note: Please read the 《battery safety information》

The specification under digital mode (DPMR) should

allow the general call, so that the function can be

It can preset 16 messages; every message can contain

a maximum of 128k. (This feature should be based

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)

for current battery.

before charging.

General call

carried out.

Making calls

Digital mode

3. Analogue Mode

on the radio's allocation).

4. SMS

wait until LED light green which indicate full charged 3. The charger LED flash red during charging ① Please check the battery pack is well contact with **INSTALLATION** Installing the antenna

General ca

Private call

Talkaround

Reverse frequency

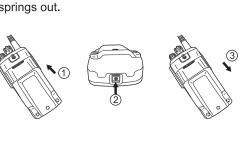
Channel mode switchable

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

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



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;

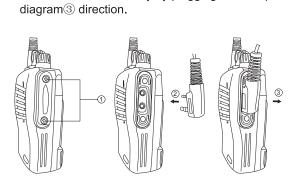
INSTALLATION

3. To remove the accessory by plugging it out as per 2. Put the belt clip to the according holes for screwing diagram[®] direction. 3. To uninstall belt clip by unscrewing all the screws on it.



Plugging in/out the audio accessory/programming 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



Reminder: If the installation can't be use, please check if the accessory is appropriate or installed incorrect.

BASIC OPERATION

receive/ transmit digital signal only.

Turning the Power ON/OFF and adjusting the To release the sidekey, the squelch will be ON and 1. To turn the power ON by rotating the knob (as per diagram(1) 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 diagram(1) 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.

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

1. You could program a critical focus channel as

2. The priority scan is a cyclical working state. It will

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



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.

ACQUAINTING THE CALL

which means full charged. And then, you could pick

out the battery or the transceiver with a battery.

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. 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

ACQUAINTING THE CALL

① If to preset the contact on the Call 1 and Call 2 press or release the 【PTT】key, it will transmit a via software, then press the sidekey will call the preset group of preset PTT encode ID. 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). 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

via software, then press the sidekey will call the preset

①. If to preset the contact on the Call 1 and Call 2

If to preset the PTT ID via software, whatever you

the speaker, and then a calling heard.

AUXILIARY FUNCTION

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

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 The transceiver can NOT send alarm, but

could receive alarm from other transceivers. Once alarm activated, the radio will sound a sharp alarm sound.

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

Operation method: 1. Press the definable sidekey as Scan or Priority

Alarm alarm ID, only the receiver could hear the Once alarm activated, the radio could receive voice reply automatically from other companion

446,190625

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

Once alarm activated, the radio will sound a

sharp alarm sound. And then it will transmit

and receive automatically for some time in a

When the alarm is activated, the radio itself

or control center. But the radio itself does NOT

cycle. (To program via software).

Secret | will not sound any audibly alarm, but send an

scan the priority channel before scan every regular 3. Cyclical scan pattern: Please refer to the diagram: scan to activate scan function. Press it again to exit

AUXILIARY FUNCTION

2. Temporary Channel Lockout

channel will resume to the scan list.

channel prior in every channel scan.

CH2 is programmed as priority channel.

Priority scan

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 priority channel via software, and then it will scan the 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

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

AUXILIARY FUNCTION 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.)

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

Talkaround

Repeater Mode.

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with each other directly. Operation method: Press [Talkaround] shortcut key to switch the Direct Communication mode and

mode, so that the two transceiver could communicate

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

Remote Kill/Stun function

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

AUXILIARY FUNCTION

beep sound.

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

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,

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

and ringing or reminding beep sound, then get into

ID as 6789*, 678**, *7890, 6*890 are all regards as 3. When a receiving matched ID contains group ID ③ Reply: Once a matched ID received, the radio will word, it will be regarded as group ID, or it will be

AUXILIARY FUNCTION

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. on initiating. the main transceiver ON, the transceiver will be on

press 【PTT】 of main transceiver to restart the wired 6. Press sidekey 【FP1】 or 【FP2】, it will stop cloning

automatically.

2. Turning the cloned transceiver ON, then it will be 3. Rotate the channel knob of the main transceiver to Channel No. 13, and pressing 【FP1】 while to turn

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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,

or exit the cloning mode temporarily. If there is no

operation for 20s, it will exit the wired clone

AUXILIARY FUNCTION

446.05625

446,08125

Default Analog Frequency with CTCSS / DCS: Default Digital Frequency with CTCSS / DCS:

the scan mode.

el-Nr.	Frequenz (MHz)	CTCSS/CDCSS	Kanal-Nr.	Frequenz (MHz)	Common-ID
	446,00625	94,8	1	446,103125	1
<u> </u>	446,09375	88,5	2	446,109375	1
3	446,03125	103,5	3	446,115625	1
ļ	446,06875	79,7	4	446,121875	1
5	446,04375	118,8	5	446,128125	1
6	446,01875	123,0	6	446,134375	1
7	446,08125	127,3	7	446,140625	1
3	446,05625	85,4	8	446,146875	1
)	446,00625	107,2	9	446,153125	1
0	446,09375	110,9	10	446,159375	1
1	446,03125	114,8	11	446,165625	1
2	446,06875	82,5	12	446,171875	1
3	446,04375	D132N	13	446,178125	1
4	446,01875	D155N	14	446,184375	1

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