SAMCOM
MADE IN FAITH

CP-400HP

Professional Portable Radio

User Guide

INTRODUCTION

Thank you for purchasing our products. Combined the latest technology along with a sturdy mechanical frame, our radios provide cost-effective communications for the people who need to stay in touch with the working team such as retail stores, restaurants, campuses and schools, construction sites, manufacturing, shows and trade fairs, property and hotel management and more, they are the perfect communication solutions for all of today's fast-paced industries.

We sincerely appreciate your interest on our products, and strongly suggest you to read the instruction carefully. Your comment will be highly valued. Please read through the manual in order to get familiar with the device and learn the features of this model.

Main Features

- 10 Watts power output
- IP54 rating dust and splash protection
- Rugged, heavy-duty design
- Crisp, clear sound
- 7.4V, 3500mAh Li-ion battery
- 2 Programmable side buttons
- Wide frequency range
  UHF: 400-480MHz or VHF: 136-174MHz
- 16 programmable channels
- CTCSS tone & DCS code on each channel
- Voice annunciator
- Time-out Timer (TOT)
- Squelch levels setting
- Battery saver
- Built-in VOX
- Emergency alarm
- High/low power selection
- PC programmable
- Password protection
- Busy channel lockout (BCLO)

CONTENTS

SAFETY INFORMATION

Please read this information before using your radio. Failure to do so could result in personal injury, death, and/or damage to your radio, accessories and/or other property.

Radio Care
Advice
● Do not use options or accessories not specified.
● Ensure that the radio is used within the parameters for which it was designed.
● Turn the radio OFF before connecting optional accessories.

Warning
Turn the radio OFF in the following locations:
● In explosive atmospheres (flammable gas, dust including metallic & grain powders etc).
● Whilst taking on fuel or while parked near a fuel station.
● Near explosives or blasting sites.
● In aircraft, medical institutions or near persons known to be wearing a pacemaker.

Caution
● Do not disassemble or modify the radio for any reason.
● Do not transmit while touching the antenna terminal or any exposed metallic parts of the aerial as this my result in burn.
● Please check and observe regulation in your country with regards to use whilst driving.

End of Life Disposal
● When your radio reaches the end of its useful life, please ensure that the unit is disposed of in an environmentally friendly way.

Battery Care
Precautions
● Turn the radio OFF before charging.
● Charge the battery pack before use.
● Do not recharge the battery pack if it is already fully charged as this will use one its charge cycles and may shorten its life.
● Charge the battery in accordance with the instructions enclosed with your charger.
● Do not charge the radio and/or battery pack if they are wet.

The battery pack includes potentially hazardous components. Please:
● Do not disassemble or reconstruct battery.
● Do not short-circuit the battery.
● Do not incinerate or apply heat to the battery.
● Do not immerse the battery in water or get it wet by other means.
● Do not charge the battery near fires or under direct sunlight.
● Use only the specified charger and observe charging requirements.
● Do not pierce the battery with any object or strike it with an instrument.
● Do not use the battery pack if it is damaged in any way.
● Do not reverse-charge or reverse-connect the battery.
● Do not touch a ruptured or leaking battery.

If liquids from the battery get on your skin or into your eyes, immediately:
● Wash your eyes out with fresh water avoiding rubbing them.
● Seek medical treatment.

Notes:
● If a battery is not to be used for an extended period of time (several months) remove the battery pack from the equipment and store in a cool and dry location part charged. Do not fully discharge the battery before storage.

● Each charge cycle reduces the battery's life. Minimize the number of times you charge your battery especially in hotter environments which further shorten a battery's life.

RADIO OVERVIEW

Package Includes
1pcs radio unit
1pcs rubber antenna
1pcs rechargeable Lithium-ion battery pack
1pcs AC adapter & rapid desktop charger kit
1pcs belt clip & hand strap
1pcs user's manual

At a Glance
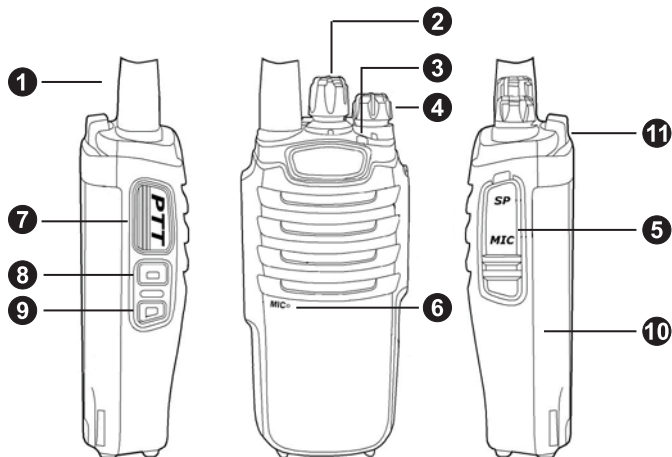
1 – Antenna
Provide attached SMA rubber flexible antenna or anther 50Ω impedance antenna.
Note: It may cause the damage to your radio if the antenna is connected inappropriately.

2 – Channel Selector Knob
Select the radio's different channels.

3 – LED Indicator
Give battery status, radio TX & RX, scan information.

4 – On/Off/Volume Knob
Turn the radio ON or OFF, and to adjust the radio's volume.

5 – Audio Accessory Jack (Kenwood 2 Pin Connector)
Connect compatible audio accessories.

6 – Microphone
Speak clearly into the microphone when transmitting.

7 – PTT (Push-To-Talk) Button
Press and hold down this button to transmit and talk, release it to receive and listen.

8 – Side Button PF1
The side button is a general button that can be configured by the programming software. The default setting of press this button is 'Monitor' feature.

9 – Side Button PF2
The side button is a general button that can be configured by the programming software. The default setting of press this button is 'Scan' feature.

10 – Lithium-Ion Battery Pack
Radio comes equipped with a rechargeable Lithium-ion battery pack. This battery should be fully charged before initial use to ensure optimum capacity and performance. Batteries are designed specifically to be used with a supplied charger and vice versa.

11 – Battery Latch
Push down battery latch to release battery pack.

GETTING STARTED

Install and Remove Battery Pack

Installing Battery
1. Turn the radio OFF.
2. Insert the battery pack at the rear side into the radio set until a click is heard.
3. Make sure the battery is locked completely.

Removing Battery
1. Turn the radio OFF.
2. Release the battery latch and remove the battery.
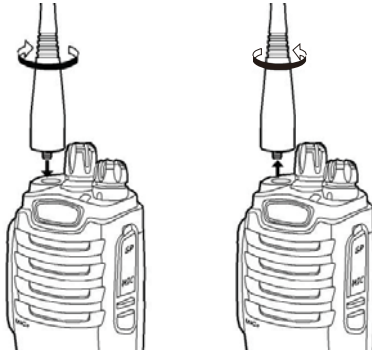3. Pull the battery away from the radio.
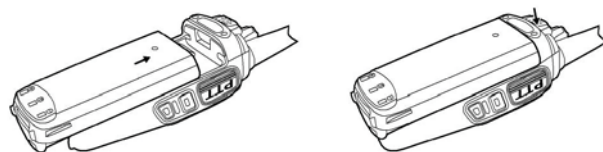
Install and Remove Antenna

Installing Antenna
Screw the antenna into the connector at the top of the radio by holding the bottom of the antenna, and turning it clockwise until secure.

Removing Antenna
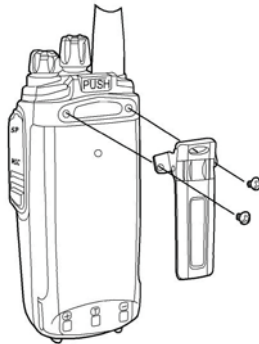Rotate the antenna counter clockwise by holding the bottom of antenna.

Install and Remove Belt Clip

Installing Belt Clip
Align the screw eyelets of the belt clip with those on rear of radio and fasten the belt clip with enclosed screws.

Removing Belt Clip
Loosen the screws to remove the belt clip.

AC Adapter and Desktop Charger
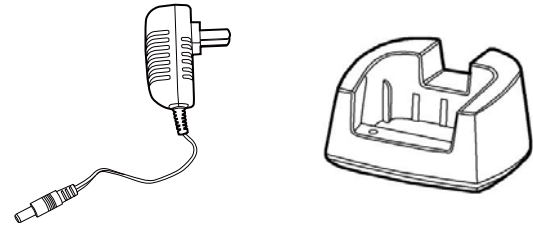
The radio is equipped with 1pcs AC adapter and 1pcs desktop charger.

Charging the Battery Pack
To charge the battery pack, place it in the supplied desktop charger.
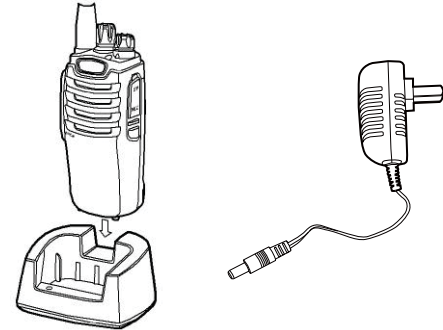
1. Place the desktop charger on a flat surface.
2. Insert the connector of the AC adapter into the charger port on the back of the desktop charger.
3. Plug the AC adaptor into a power outlet.
4. The charger is ready for charging if the indicator LED lights red for one second and turns off. If the indicator LED is flashing, the charger is not ready.

5. Place the battery into the charger aligning the battery slots with the charger guide rails.
6. The indicator LED lights red when charging. If the battery capacity is too low, the indicator LED flashes red. The battery first trickle charges and turns to normal charging automatically.
7. The battery is fully charged when the battery LED light is green. The charger stops charging automatically.

Notes:
● When you charge a battery attached to the radio, turn the radio OFF to ensure a full charge.
● The estimated charging time of the battery with charger is about 5 hours.

BASIC OPERATION

Turn the Radio ON/OFF
To turn on the radio, rotate on the On/Off/Volume Knob clockwise. The radio plays power up audio and channel number.
To turn off the radio, rotate the On/Off/Volume Knob counterclockwise until you hear a 'Click' sound.

Adjusting Volume
Turn the On/Off/Volume knob clockwise to increase the volume, or counterclockwise to decrease the volume.
Note: Do not hold the radio too close to the ear when the volume is high or when adjusting the volume.

Selecting a Channel
To select a channel, turn the channel selector knob until you reach the desired channel. An audible voice indicates the selected channel if the channel annunciation is enable. Each channel has its own frequency, privacy code…etc. settings.

Receiving a Call and Talking
1. Select a channel by rotating the channel selector knob until you reach the desired channel. An audible voice indicates the selected channel.
2. Make sure the **PTT** button is released and listen for voice activity.
3. The LED indicator stays solid green when the radio is receiving a call. And the screen will show busy and signal strength.
4. To respond, hold the radio vertically 1 to 2 inches (2.5 to 5 cm) from mouth. Press the **PTT** button to talk; release it to listen.
5. When transmitting, the LED indicator stays solid red.

LED Indicators
Radio Working Status and LED Indicators

Radio Status	LED Indicator
Low Battery	Red Heartbeat
Transmit (TX) in High Power	Solid Red
Receive (RX)	Solid Green
Scanning	Green Slow Heartbeat
PC Programming/Reading Data	Red Fast Heartbeat
PC Programming/Writing Data	Green Fast Heartbeat

ADVANCED OPERATON

Monitor
This feature enables you to set squelch off and hear the calls with weak signal. Press the side button to activate when it is assigned via programming software.

Scan
Scan allows you to hear conversations on all channels. When the radio detects a transmission, it stops scanning and goes to the active channel. This allows you to listen and talk to people in that channel without having to channel manually. If there are transmissions on another channel, you will not hear that activity once the radio has stopped scanning. Press the side button to activate when it is assigned.

Voice Annunciator
This feature allows the user to choose the language the radio plays.

Transmit Time-out Timer (TOT)
The Time-out Timer prevents callers from using a channel for an extended duration. If you continuously transmit for the duration programmed (default is 120s), transmission will automatically stop and an alert tone will sound. To stop the tone, release the **PTT** button.

Squelch Level
A squelch eliminates background noise. Higher level settings will keep the squelch 'closed' more tightly for quieter monitoring, but weak signals will not be heard. Lower settings allow weaker signals to 'open' the squelch but noise may also cause it to open. The radio has 10 (0~9) squelch levels:
0 – Squelch turns off (monitor on condition)

1 – Maximum sensitivity (minimum squelch)
9 – Minimum sensitivity (maximum/tight squelch)

Battery Saver
When it is activated, the radio decreases the amount of power used after no signal is present and no operations are being performed for 5 seconds. When a signal is received or an operation is performed, this feature turns off temporarily.

CTCSS Tone & DCS Code
CTCSS and DCS are functions that reject undesired signals on your channel. You will hear a call only when you receive a signal that contains a matching CTCSS tone or DCS code. If a call containing a different tone or code is received, squelch will not open and you will not hear the call. Likewise, when transmitting using CTCSS or DCS, the receiving station must have a matching tone or code to hear your call. Be aware that other parties can still hear your calls if they set up their radio with the same tone or code.

TX Power Level
This feature allows you to select between high and low transmit power in each channel.

Busy Channel Lock-out (BCLO)
It prevents the radio's transmitter from being activated if a signal strong enough to break through the 'noise' squelch is present. It prevents users from disrupting others' communications who are transmitting on the same channel frequency.

Bandwidth
Select the transmitter deviation while operating on the current channel.
Wide: Max. Deviation = ± 5 KHz

Narrow: Max. Deviation = ± 2.5 KHz

Emergency Alarm

This feature allows you to send an emergency alert to other users on the same channel. Other radios on the same channel will sound an emergency alert after received emergency signal.

Programming Software

The easiest way to program or change features in your radio is via its programming software and programming cable. The programming software is available for free as downloadable software at our website.

To program, connect the radio with your PC via the programming cable, as shown picture as below.
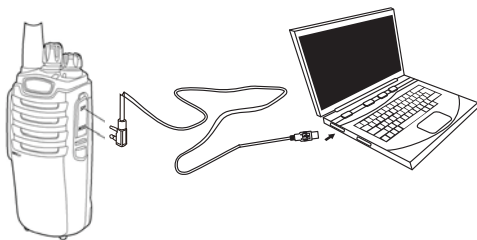
The programming software allows you to program the frequencies, CTCSS/DCS privacy codes as well as other features such as: TX power, bandwidth, battery save, TOT, voice annunciator, busy channel lock-out…etc.

TROUBLESHOOTING

Problem	Possible Reasons and Potential Solutions
No Power	Recharge or replace the battery pack; Extreme operating temperatures may affect battery life.
Hearing other noises or conversation on a channel	Confirm CTCSS/DCS is set; Frequency or CTCSS/DCS may be in use; Change settings: either change frequencies or CTCSS/DCS on all radios; Make sure the radio is at the right frequency and privacy code when transmitting.
Audio quality not good enough	Radio settings might not be matching up correctly. Double check frequencies, CTCSS/DCS and bandwidths to make sure they are identical in all radios.
Limited talk range	Steel and/or concrete structures, heavy foliage, buildings or vehicles decrease range. Check for clear line of sight to improve transmission; Wearing radio close to body such as in a pocket or on a belt decreases range; Change location of radio. UHF radios provide great coverage in industrial and commercial buildings. Increasing power provides greater signal range and increases penetration through obstructions.
Can not transmitted or received	Make sure the **PTT** button is completely pressed when transmitting; Confirm that the radios have the same Channel, Frequency, Interference Eliminator Code and bandwidth settings; Recharge, replace and/or reposition batteries; Obstructions and operating indoors, or in vehicles, may interfere, change location; Verify that the radio is not in Scan.
Heavy static or interference	Radios are too close, they must be at least seven feet apart; Radios are too far apart or obstacles are interfering with transmission.
Low battery	Recharge or replace the battery pack; Extreme operating temperatures affect battery life.
Desktop Charger LED light does not blink	Check that the radio/battery is properly inserted and check the battery/charger contacts to ensure that they are clean and charging pin is inserted correctly.
Battery does not charge	Check desktop charger is properly connected and correspond to a compatible AC adapter; Check the charger's LED indicators to see if the battery has a problem.

Note: Whenever a feature in the radio seems to not correspond to the default or preprogrammed values, check to see if the radio has been programmed using the user program software with a customized profile.

SPECIFICATIONS

General

Frequency Range	136-174 / 350-390MHz 400-480 / 465-520MHz
Channel Capacity	16 Channels
Channel Bandwidth	12.5 / 25KHz
Antenna Impedance	50 Ohms
Battery Type	7.4V 3500mAh Li-ion
Operating Voltage	7.4V DC ± 20%
Dimensions	5.24 x 2.28 x 1.50in
Weight with battery	0.59 lb

Transmitter

RF Power	≤10W (High) / 5W (Low)
Frequency Stability	<1.5ppm
Spurious & Harmonics	-36dBm<1GHz, -30dBm>1GHz
FM Hum & Noise	65dB(W) / 55dB(N)
Modulation Deviation	≤5kHz(W) / ≤2.5kHz(N)
Adjacent Channel Power	70dBC(W) / 60dBC(N)
Audio Frequency Response	+1 ~ -3dB
Audio Distortion	<3%

Receiver

Sensitivity (12 dB SINAD)	0.25µV(Wide) / 0.35µV(Narrow)
Adjacent Channel Selectivity	70dBC(Wide) / 60dBC(Narrow)
Audio Distortion	< 5%
Radiated Spurious Emissions	< -54dBm
Intermodulation Rejection	60dB
Audio Output	750mW @ 8 ohms