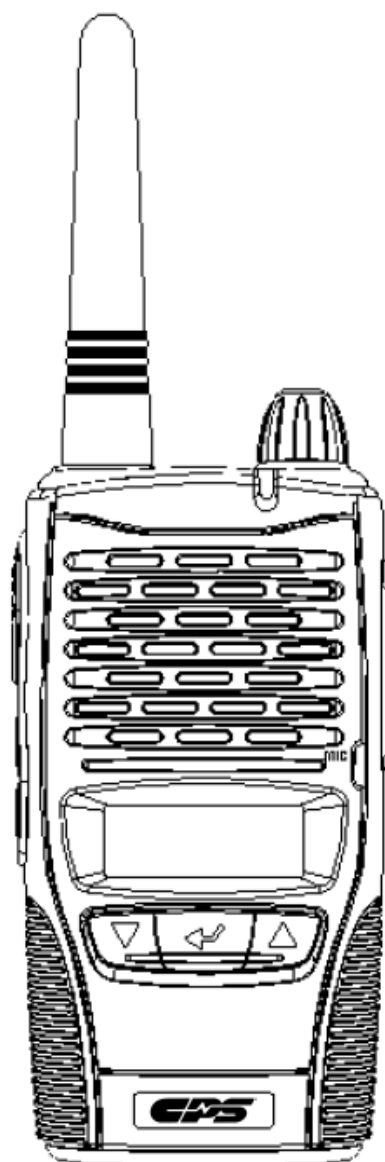
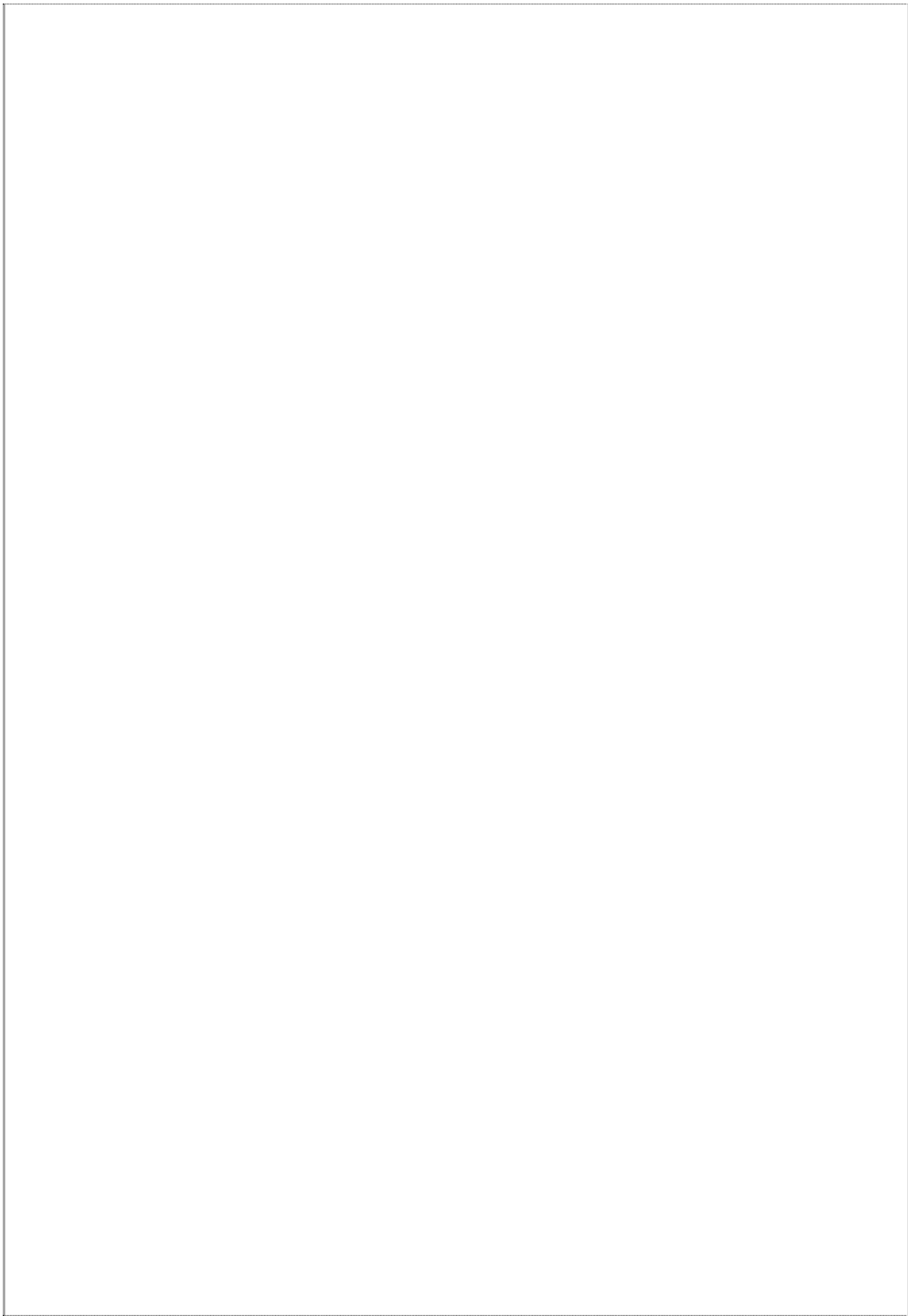


CL230

手持式对讲机 使用说明书



中国无线电管理局型号核准证 CMIIT ID:2010FJ6779



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1.概述

1.1 概述

CL230系列专业手持对讲机，设计优良，线条美观时尚，铝合金机架，坚固耐用，性能良好，配合大容量锂离子电池，提供长时间通话功能。

1.2 功能

- 频率范围 (CL230U/400-470MHz)
- 128个工作频道
- 内置53单音CTCSS及208个DCS数字私线组合
- 双音多频功能(可发射DTMF身份编码)
- 高和低发射输出功率可设置
- 7.4V 2000mAh 锂离子电池，环保锂离子电池可提供长时间通话电量
- VOX声控发射功能，可无需按动PTT而以讲话声音进行声控发射
- 12.5KHz/25KHz 可编程频道间隔
- 扫描及优先扫描，多种扫描功能包括优先扫描功能
- 监听功能，能在微弱的接收讯号或带有防干扰静音码的场合中进行监听功能
- 繁忙频道锁定，每收到信号时，禁止发射
- TOT 发射时限，限制连续发射时间，可设置发射定时
- 个人计算机编程及设定，“克隆”复制功能，个人计算机进行编程及可经由外接编程线或复制线 (CLONING) 随时作现场编码、复制
- 紧急呼叫按键，当持续按下紧急呼叫按键，该机将发射DTMF身份编码和警报声但本机并无声响和发射指示，可隐蔽求援
- 0.5W音频功率输出

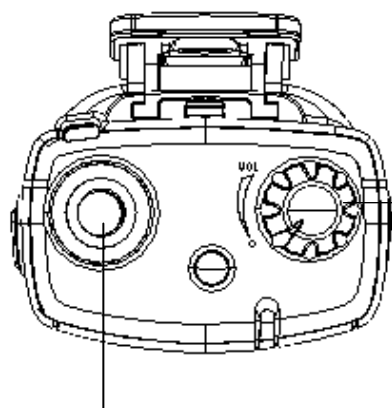
1.3 配件

- 2000mAh 锂离子电池组
- 电源适配器及充电器
- 天线
- 皮带夹
- 使用说明书
- 保修卡

1.4 另购配件

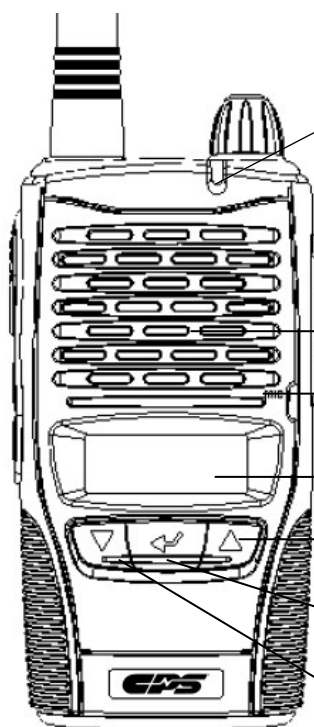
- 耳管麦克风
- 计算机编程线
- 复制连线
- PC230 编程软件

2. 控制键及显示说明



· 天线接口

· 电源/音量按钮



· LED指示灯

- 红灯 - 发射
- 绿灯 - 接收
- 闪动伴随“哔”声 - 低电量

· 扬声器

· 麦克风

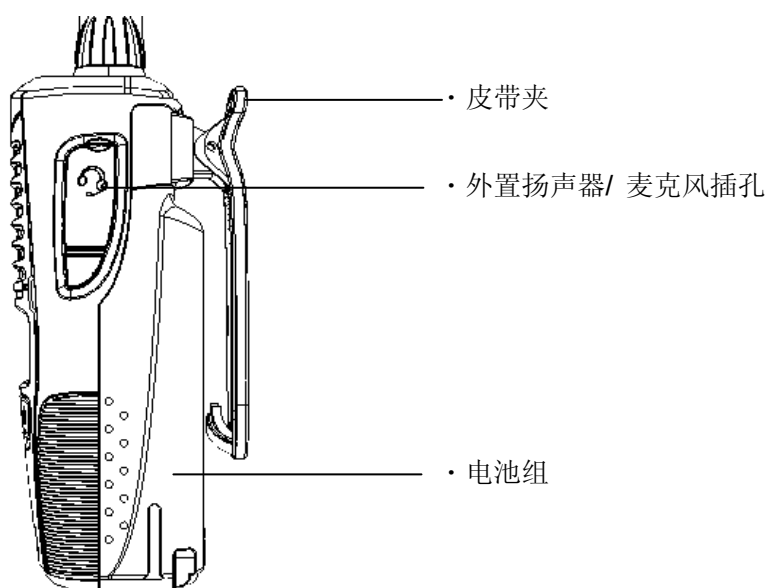
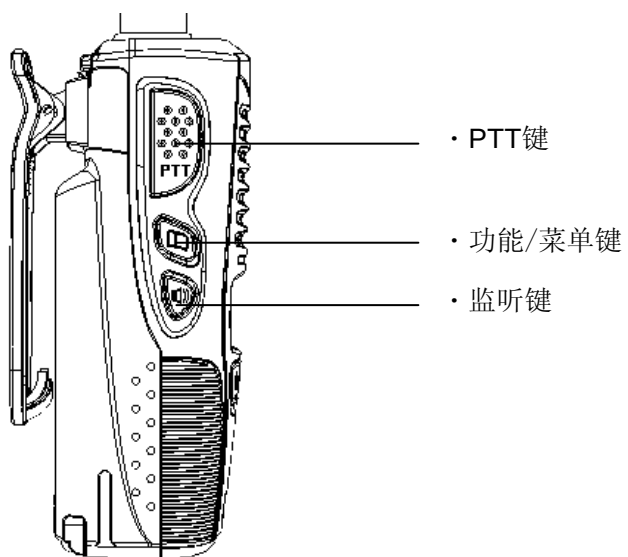
· 液晶显示器屏幕显示

· ▲ 上键

· ◀ 确认键

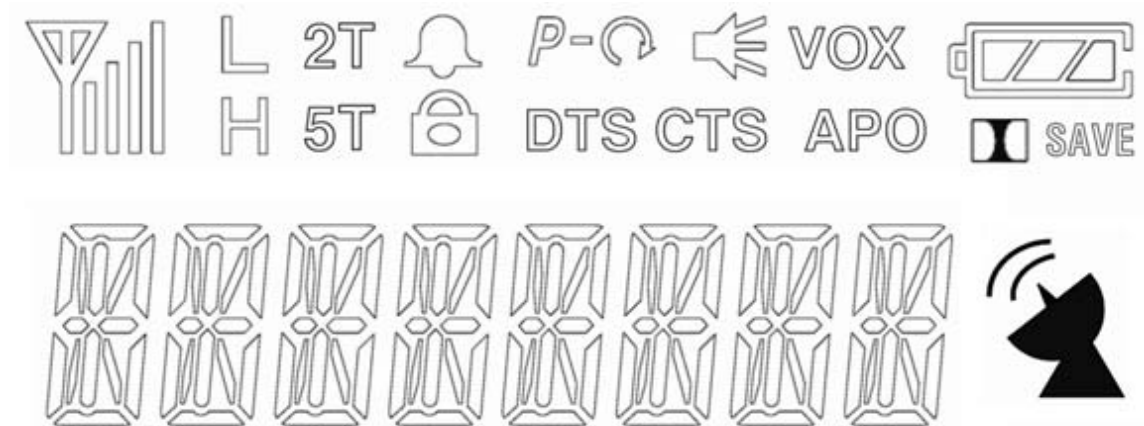
· ▼ 下键

2. 控制键及显示说明



2. 控制键及显示说明

显示屏



接收信号强度指示



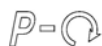
“L” “H”：发射功率高低指示



提示音指示



键盘锁指示



扫描指示，“P-” 优先信道扫描指示



静噪指示



电池电量指示

VOX VOX指示声控发射功能开启

DCS 指示DTCSS数字亚音功能开启

CTS 指示CTCSS模拟亚音功能开启

SAVE 省电指示



中转功能指示

3. 一般操作

3.1 开机/关机

顺时针方向开机，显示屏将显示该机状态，如DTMF开启，开机将显示本机的DTMF身份编号（DTMF身份编号可由PC编程）。

3.2 发射

持续按下PTT键并距离麦克风约5cm讲话，红色指示灯将亮起，表示在进行发射，放开PTT键恢复接收模式。

3.3 接收

接收信息时，绿色指示灯将亮起，表示正在接收信息。

3.4 频道选择

按下▲或▼键选择频道，同时将会有一声响提示。如果只编有一个频道，频道号码将不会改变。持续按下▲或▼将加速频道跳动。

3.5 发射功率选择

用户可通过PC编程选择各信道的发射功率为高或低。选择低功率时可延长电池供电时间；用户也可通过按键调节各信道的发射功率为高功率或低功率，方法是持续按下PTT键并按下▲为高功率或▼键为低功率。

3.6 扫描

在一般模式，在2秒内先按住  再按下“←”可选择扫描功能，该机将自动寻找正在通话之频道。当扫描并停留到通话频道时，按下▲或▼可暂时取消聆听该频道而转入下一个频道。按一下  退出扫描功能。扫描模式可由PC编程。

3.7 优先频道扫描

如有编选优先频道P-CH（由计算机编程），显示屏将显示“P”及“SCAN”。扫描次序将为



当收到通话频道时，按一下▲或▼键可暂时取消聆听该频道而转入下一个频道，按一下  退出扫描功能。

3.8 监听功能

按下  可取消静噪以便监听微弱讯号，该键的工作模式可由PC编程。

3.9 紧急呼叫功能

持续按下紧急呼叫键约3秒，开启紧急呼叫功能，紧急呼叫向其它对讲机发出身份编号 (DTMF) 和警报声但本机并无声响和发射指示，仅LCD显示“EMERGEN”而LCD背光灯不亮。此时的发射信道为当前信道或在SCAN状态时由软件设定的回复信道。

3.10 LCD 背光灯持续打开或关闭

短按  可选择LCD背光灯打开或关闭。

3. 一般操作

3.11 键盘锁

按住  后再按下▲键，LCD显示“KEYLOCK”，除PTT及监听键与紧急呼叫键外，所有键盘不能操作；按住  同时再按下▼键则解除键盘锁，LCD显示“LOCKOFF”。

3.12 计算机编程

接入编程线于麦克风接口并连接计算机，按住  再打开对讲机电源开关(或关闭再打开)直至显示“PROGRAM”再松开按键，点击开启编程软件，按下读取数据读出原始编程资料，完成编程后按写入数据写入编程资料于机器内，完成后关机，除下编程线后可正常操作。本机处于编程状态时显示屏的“APO”符号会闪烁，表示可以进行编程，编程过程LCD背光灯会闪亮代表编程资料正在读写。

3.13 本机手动编程

持续按下  约3秒进入功能选项，其次序如下：

SQUELCH(静噪灵敏度) --> SOUND(按键音) --> VOX_TH(声控发射灵敏度) --> VOX_EN(声控发射(开/关)) --> SAVE(省电功能(开/关)) --> SCAN(扫描功能(开/关)) --> DTMF(DTMF(开/关))

按▲或▼键选择所需功能，按动“”确认，然后按动▲或▼选择开启或关闭，然后再按“”确认，再按“”退出编程。(如10秒内未有任何选择，该机将自行退出编程功能。)

SQUELCH(静噪灵敏度)： 可选 LEVEL 0-9，(出厂值：2)
SOUND(按键)： 可选 SOUND_ON(出厂值) 或 SOUNDOFF
VOX_TH(声控发射灵敏度)： 可选 1-9，(出厂值：4)
VOX_EN(声控发射(开/关))： 可选 VOX_ON 或 VOX_OFF(出厂值)
SAVE(省电功能(开/关))： 可选 SAVE_ON(出厂值) 或 SAVEOFF
SCAN(扫描功能(开/关))： 可选 SCAN_ON 或 SCANOFF(出厂值)
DTMF(DTMF(开/关))： 可选 DTMF_ON 或 DTMFOFF(出厂值)

3.14 克隆功能

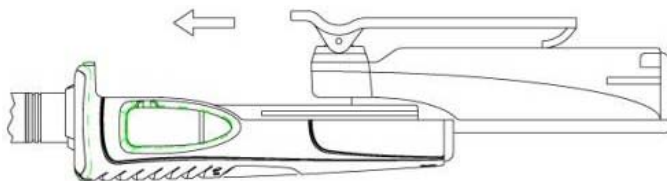
目的为将一部机(主机)之频率等内容复制到另一部机里(子机)。

- 1) 主机与子机以复制线连接
- 2) 主机按住PTT并开机直至LCD显示“CLONE”
- 3) 子机按住  后开机直至LCD显示“PROGRAM”
- 4) 主机按下“”确认进行主动复制，完成后，主机显示CLON OK
- 5) 除下子机复制连线，复制另一部子机或完成复制

4. 电池组安装及拆除

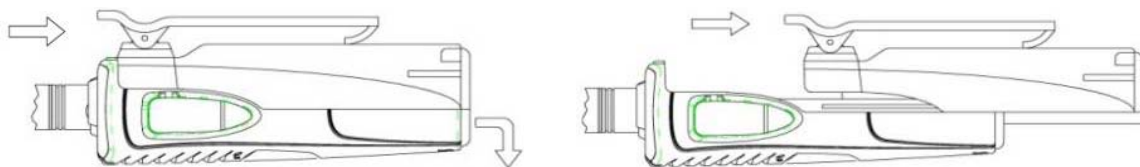
4.1 安装电池组

- 1) 把电池组下边缘对齐到对讲机铝壳卡位。
- 2) 向上推电池至发出咔哒声。



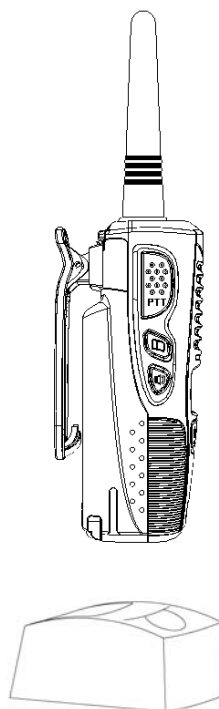
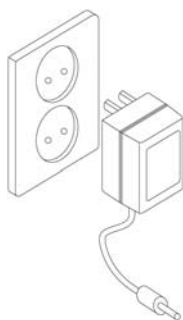
4.2 拆除电池组

关机，按下电池锁按钮，退下电池组。
注意：卡扣紧为正常现象。



4.3 电池组充电

- 将DC插头插入充电座
- 将电源适配器接入110/220V AC电源
- 关上对讲机
- 将对讲机放入充电座进行充电
- 充电完成后提取对讲机



4.4 充电器灯号指示

红灯	正在充电中
绿灯	充电完成
红灯闪动	充电短路/电池有问题/过时
绿灯闪动	高温
红灯及绿灯闪动	接触不良

5.CTCSS/DCS

CTCSS表

No	Frequency	No	Frequency	No	Frequency	No	Frequency
1	67.0	14	107.2	27	167.9	40	159.8
2	71.9	15	110.9	28	173.8	41	183.5
3	74.4	16	114.8	29	179.9	42	189.9
4	77.0	17	118.8	30	186.2	43	196.6
5	79.7	18	123.0	31	192.8	44	199.5
6	82.5	19	127.3	32	203.5	45	206.5
7	85.4	20	131.8	33	210.7	46	229.1
8	88.5	21	136.5	34	218.1	47	254.1
9	91.5	22	141.3	35	225.7	48	165.5
10	94.8	23	146.2	36	233.6	49	171.3
11	97.4	24	151.4	37	241.8	50	177.3
12	100.0	25	156.7	38	250.3	51	60.7
13	103.5	26	162.2	39	69.3	52	62.5
						53	64.7

DCS表

N0	DCS Code	N0	DCS Code	No	DCS Code	No	DCS Code
1	023	28	172	55	431	82	743
2	025	29	174	56	432	83	754
3	026	30	205	57	445	84	036
4	031	31	223	58	464	85	053
5	032	32	226	59	465	86	122
6	043	33	243	60	466	87	145
7	047	34	244	61	503	88	212
8	051	35	245	62	506	89	225
9	054	36	251	63	516	90	246
10	065	37	261	64	532	91	252
11	071	38	263	65	546	92	255
12	072	39	265	66	565	93	266
13	073	40	271	67	606	94	274
14	074	41	306	68	612	95	325
15	114	42	311	69	624	96	332
16	115	43	315	70	627	97	356
17	116	44	331	71	631	98	446
18	125	45	343	72	632	99	452
19	131	46	346	73	654	100	454
20	132	47	351	74	662	101	455
21	134	48	364	75	664	102	462
22	143	49	365	76	703	103	523
23	152	50	371	77	712	104	526
24	155	51	411	78	723		
25	156	52	412	79	731		
26	162	53	413	80	732		
27	165	54	423	81	734		

6.技术参数

型号	CL230U
频率范围	400-470 MHz
频道数目	128个
频道间隔	12.5 KHz/25 KHz可编程
工作电压范围	7.4VDC
调制型式	FM
体积(高×阔×深)	103×56×40mm
重量(连电池)	250g
发射	
射频输出功率	High 4W/Low 1W
频率稳定	$\pm 2.5\text{ppm}(-30^{\circ}\text{C} \sim +60^{\circ}\text{C})$
杂波辐射	62dB
调频杂噪声	38dB
音频失真	3%
音频响应	+3, -3dB from 6 dB per Octave de-emphasis characteristic from 300-3000Hz
接收	
灵敏度(12dB SINAD)	0.2uV(-120dBm)
门限静噪灵敏度	0.158uV(-123dBm)
选择性	62dB
互调抗拒	62dB
音频输出功率	0.5W, 8 Ω 阻抗

注：以上数据如有变化，恕不另行通知。以实物为准。

7.用户安全须知

1. 未经允许请勿拆开对讲机，非专业人员对本机的处理可能会造成对讲机故障。
2. 为避免电磁干扰或电磁兼容引起的问题，请在禁止使用对讲机的场合关闭对讲机。例如医院和其他保健场所。
3. 汽车加油或停车于加油站期间，请关闭对讲机。
4. 在带有安全气囊的汽车内，请勿将对讲机放在气囊展开可能覆盖的区域范围内。
5. 在进入易燃、易爆的环境前请关闭对讲机。
6. 在易燃、易爆的环境中请勿更换对讲机电池或进行电池充电。
7. 在靠近爆破区域和雷管所在区域前，请关闭对讲机。
8. 请勿把对讲机长时间暴露在直射日光下，勿将对讲机放在加热器附近。
9. 请勿把对讲机放在多尘、潮湿、水溅或者表面不平稳的地方。
10. 请勿使用天线已损坏的对讲机，损坏的天线如果接触皮肤可能导致皮肤轻微灼伤。
11. 对讲机发射时，请保持对讲机机身处于垂直状态，话筒距离嘴部约5厘米，发射时对讲机天线至少距离头部或身体2.5厘米，
12. 如未安装天线请勿发射。

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1. GENERAL INFORMATION

1.1 Introduction

The CL230 Business combines quality and versatility into a compact, light and portable professional two-way radio with state-of-the-art design and easy-to-use features.

1.2 Key Features

- Frequency Range (400 - 470MHz)
- 128 Channels
- Built-in 53 CTCSS Tones / 208 DCS Codes
- Dual Tone Modulation Frequency (DTMF) Signaling
- Adjustable Transmission Power – Helps conserve battery life using low- power output under favorable communications condition
- 7.4V 2000mAh Li-ion High Capacity Battery – Lightweight lithium-ion battery with extended battery life.
- Voice Activated Transmission (VOX) – Allows for hands-free transmission of message without pressing the PTT button.
- 12.5kHz / 25kHz Selective Channel Spacing
- Channel Scan/Priority Channel Scan – Scans for activity across different communications channels or pre-defined priority channels.
- Monitor function – Enables monitoring of weak radio signals.
- Busy Channel Lockout – Prevents the radio from listening to or transmitting over its group.
- Time-Out Timer – Alerts you if the PTT button is keyed for a prolonged period.
- Software Programming / Cloning – Enable to program or copy the contents from one radio to another.
- Emergency button- Send out emergency signals with user ID when pressed.
- 0.5 Watt High Power Speaker.

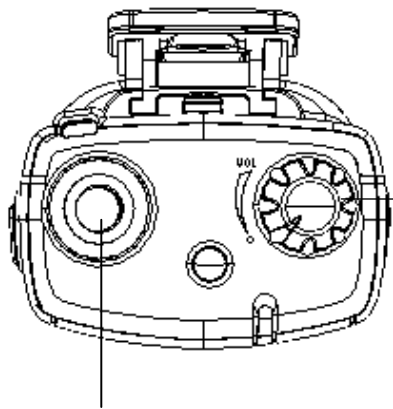
1.3 Accessories

- 2000 mAh Li-ion high capacity battery pack
- Rapid charger with stand and charging adaptor
- Antenna
- Belt clip
- Owner's manual
- Warranty card

1.4 Optional Accessories

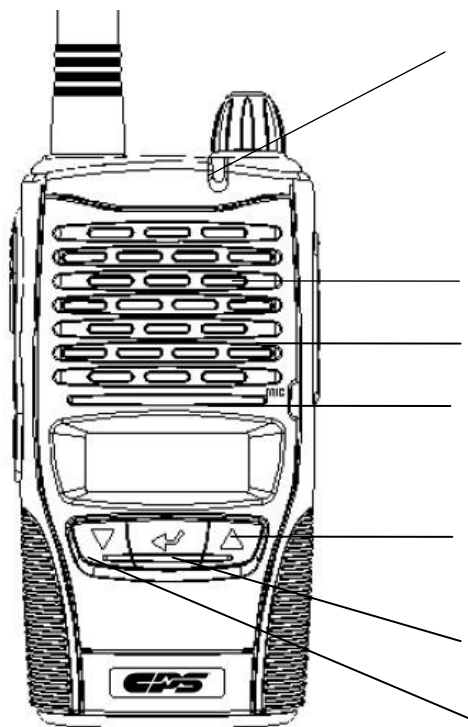
- Ear tube microphone
- PC programming cable
- Cloning cable
- PC230 programming software

2. CONTROLS AND INDICATORS



• Antenna

• Power / Volume Control Knob



• LED Indicator

- Red - Transmitting

- Green - Receiving

- Blinks – Together with beep sound and background light blinking indicates battery level low

• Speaker

• Microphone

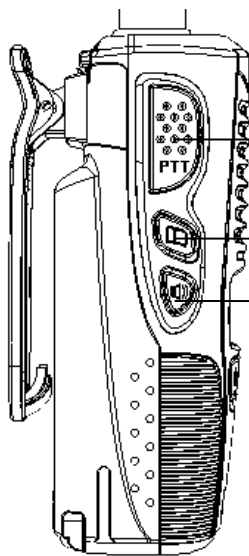
• LCD Display

• ▲ Up Button

• ← Confirm Button

• ▼ Down Button

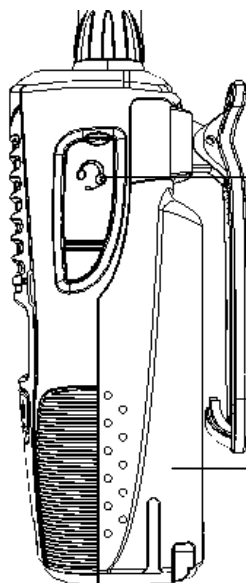
2. CONTROLS AND INDICATORS



• Push-To-Talk (PTT) Button

• Menu / Function Key

• Monitor Key



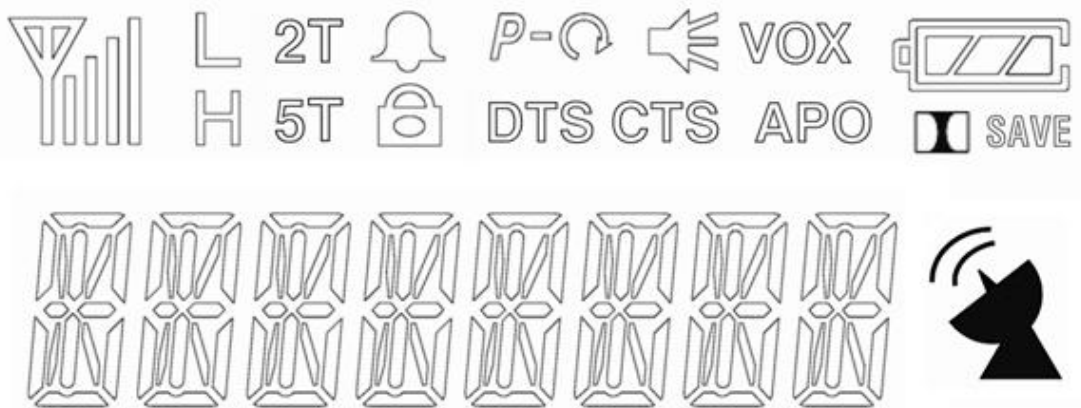
• Belt Clip

• External PTT / Ear Microphone Jack

• Battery

2. CONTROLS AND INDICATORS

LCD Display



Transmission / Reception Indicators



“L” Low Power; “H” High Power Indicator



Alert



Key Lock



Priority SCAN & Normal SCAN



Scramble



Battery Level Indicator



VOX (Voice Activated Transmission) Function ON



DTCSS Function ON



CTCSS Function ON



Battery Save Indicator



Repeater

3. OPERATION

3.1 Power On/Off

Switch on the radio by turning the power knob clockwise until the speaker is at a desired volume level. As soon as the power is on, the LCD display becomes lit and shows the user ID if applicable (DTMF is programmable by computer).

3.2 Transmission

Press and hold the PTT button while speaking at about 5cm from the microphone for transmission (indicated by the red LED). Release the PTT button to return to the Standby mode.

3.3 Reception

The green LED will be on during reception of signals.

3.4 Channel

Press ▲ or ▼ to select channel and a “beep” sound will be heard when a new channel is selected. If only one channel is preset, the channel number will not be changed. To select channels quickly, press and hold ▲ and ▼ until the desired channel.

3.5 Transmission Power Adjustment

High power output “H” or Low power output “L” can be selected by programming. Low power output may prolong the battery life. User may select “H” by pressing the PTT and ▲ or “L” by pressing the PTT and ▼.

3.6 Scan

While in General mode, press and hold  and  for scanning function. The radio will automatically scan for activity until an active channel is detected. Press ▲ or ▼ to skip the detected channel and continue the scan. Press  once to abort the channel scan function.

3.7 Priority Channel Scan

Priority channels can be pre-defined through programming. Press and hold  and  to initiate priority channel scan as indicated by “P” and “SCAN” on the LCD. The scanning sequence is



Only pre-defined channels will be scanned for activity. When an active channel is detected, you may press ▲ or ▼ to skip the detected channel and move on to the next priority channel. Press  once to abort the function.

3.8 Monitor Function

Press  to monitor weak radio signals. This mode can be programmable by computer

3.9 Emergency Call

Press and hold the Emergency button for about 3 seconds to activate or deactivate the Emergency mode. During which a distress signals with user ID will be transmitted to other users of the same frequency channel. The subject radio will display “EMERGEN” with no siren or LED light.

3. OPERATION

3.10 LCD Back Light

Press  to select LCD back light

3.11 Keypad Lock

Press  followed by ▲ to activate keypad lock, The LCD will display “KEYLOCK” and all keys are disabled except PTT, Monitor and Emergency button. Press  followed by ▼ to deactivate keypad lock.

3.12 Software Programming

Connect the radio to the computer through the programming cable (via microphone port), press and hold  while turning on the radio until “PROGRAM” is displayed and start to program. Upon completion, turn off the radio, disconnect the programming cable and turn on the radio again to return to normal operation. “APO” icon will blink indicates programming is ready to begin, LCD back light will be on during the programming.

3.13 Programming at Menu Mode

Press and hold  for about 3 seconds to enter the Menu mode, which has the following selection sequence:

SQUELCH (Squelch) SOUND (Key sound) VOX_TH (VOX Sensitivity)

VOX_EN (VOX ON / OFF) → SAVE (Battery save ON / OFF) →

SCAN (Scan function ON / OFF) → DTMF (DTMF ON / OFF)

Press ▲ or ▼ to select and  to confirm selection(if no selection is confirmed after 10 seconds, the radio will automatically exit the Menu mode with saving.)

SQUELCH (Squelch):

Select level between 0 – 9 (default: 2)

Sound (Key sound):

Select SOUND_ON (default) or SOUNDOFF

VOX_TH (VOX Sensitivity):

Select level between 1 – 9 (default: 3)

VOX_EN (VOX ON / OFF):

Select VOX_ON or VOX_OFF (default)

SAVE (Battery save ON / OFF):

Select SAVE_ON (default) or SAVEOFF

SCAN (Scan function ON / OFF):

Select SCAN_ON or SCANOFF (default)

DTMF (DTMF ON / OFF):

Select DTMF_ON or DTMFOFF (default)

3.14 Cloning

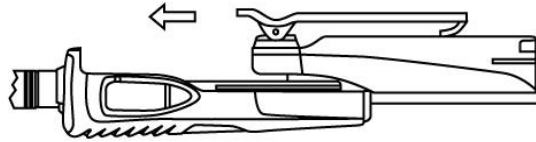
To copy the contents from one radio to another radio.

1. Connect the Source Radio and Receiving Radio by Cloning Cable.
2. Press and hold PTT while turning on the Source Radio until the LCD displays “CLONE”
3. Press and hold  while turning on the Receiving Radio until the LCD displays “PROGRAM”
4. Press  of the Source Radio for cloning, The Source Radio will display “CLON OK” upon completion.
5. Disconnect the Cloning Cable

4. BATTERY

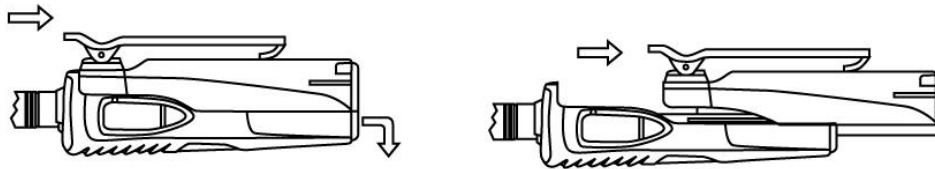
4.1 To install the battery

1. Align the top of the battery (belt-clip end) with the radio's battery compartment and guide rails.
2. Slide the battery towards the top of the radio until the battery is fully engaged by the latch with a "click" sound.



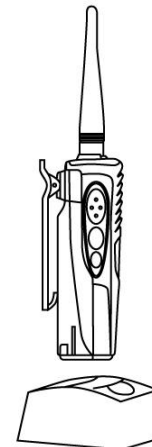
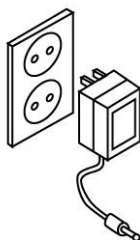
4.2 To remove the battery

1. After the radio has been switched off, disengage the battery latch by pushing and holding it towards the front of the radio.
2. With the latch disengaged, slide the battery down until it can be entirely removed from the radio.



4.3 To charge the battery

1. Plug the charger into the appropriate AC power outlet.
2. Turn off the radio.
3. Insert the radio (with battery) into the charging tray (! Make sure the radio is off).
4. When the radio with battery is fully inserted, a glowing red light indicates that the battery is charging.



4.4 Charging Status Indicators

Red	Charging
Green	Charging completed
Red blinking	Short circuit / Battery problem / Over charged
Green blinking	Over heating
Red & Green blinking	Loose contact

5. CTCSS / DCS TABLE

CTCSS Table

No	Frequency	No	Frequency	No	Frequency	No	Frequency
1	67	14	107.2	27	167.9	40	159.8
2	71.9	15	110.9	28	173.8	41	183.5
3	74.4	16	114.8	29	179.9	42	189.9
4	77	17	118.8	30	186.2	43	196.6
5	79.7	18	123	31	192.8	44	199.5
6	82.5	19	127.3	32	203.5	45	206.5
7	85.4	20	131.8	33	210.7	46	229.1
8	88.5	21	136.5	34	218.1	47	254.1
9	91.5	22	141.3	35	225.7	48	165.5
10	94.8	23	146.2	36	233.6	49	171.3
11	97.4	24	151.4	37	241.8	50	177.3
12	100	25	156.7	38	250.3	51	60.7
13	103.5	26	162.2	39	69.3	52	62.5
						53	64.7

DCS Table

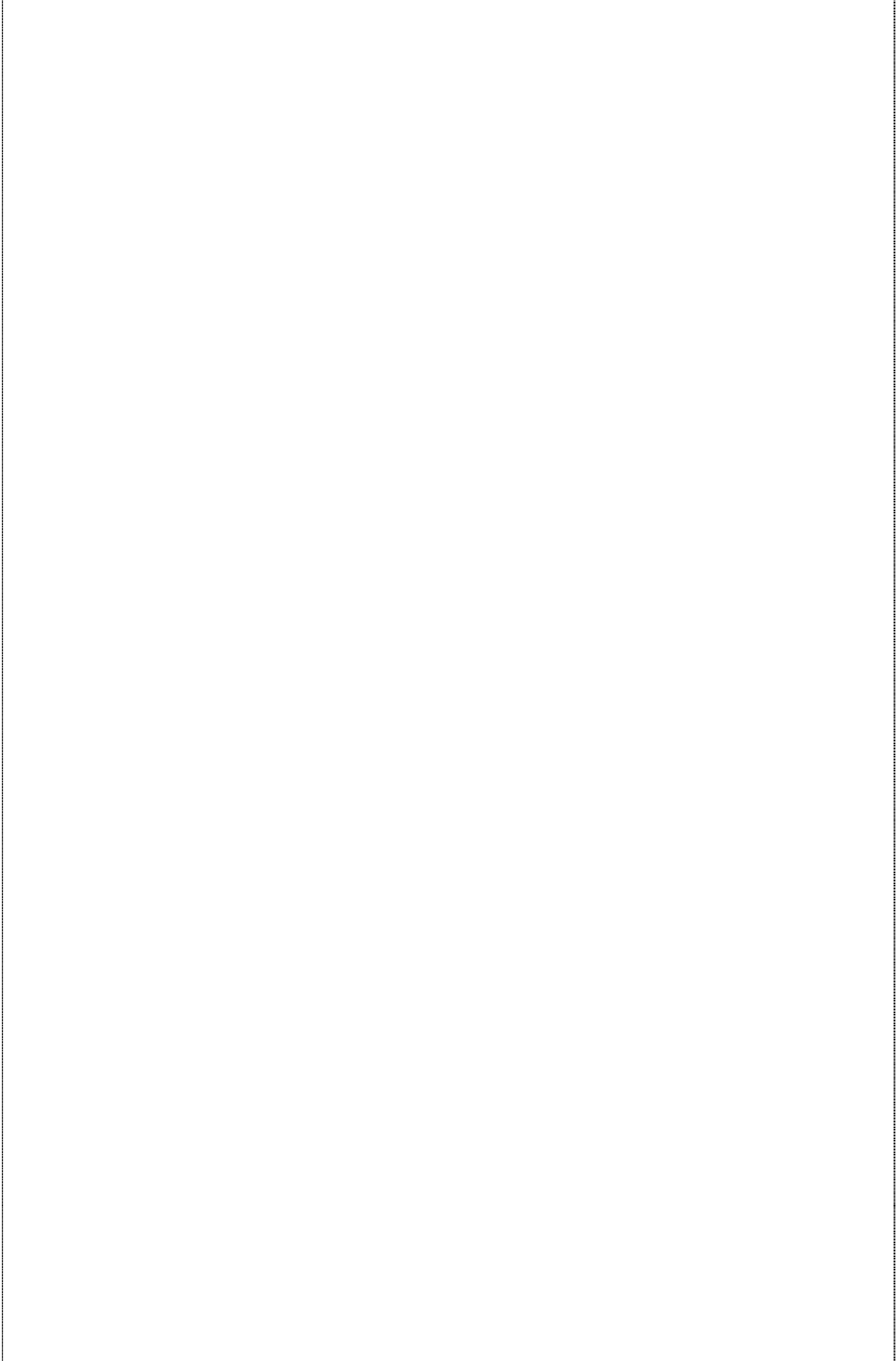
No	DCS Code	No	DCS Code	No	DCS Code	No	DCS Code
1	23	28	172	55	431	82	743
2	25	29	174	56	432	83	754
3	26	30	205	57	445	84	36
4	31	31	223	58	464	85	53
5	32	32	226	59	465	86	122
6	43	33	243	60	466	87	145
7	47	34	244	61	503	88	212
8	51	35	245	62	506	89	225
9	54	36	251	63	516	90	246
10	65	37	261	64	532	91	252
11	71	38	263	65	546	92	255
12	72	39	265	66	565	93	266
13	73	40	271	67	606	94	274
14	74	41	306	68	612	95	325
15	114	42	311	69	624	96	332
16	115	43	315	70	627	97	356
17	116	44	331	71	631	98	446
18	125	45	343	72	632	99	452
19	131	46	346	73	654	100	454
20	132	47	351	74	662	101	455
21	134	48	364	75	664	102	462
22	143	49	365	76	703	103	523
23	152	50	371	77	712	104	526
24	155	51	411	78	723		
25	156	52	412	79	731		
26	162	53	413	80	732		
27	165	54	423	81	734		

6. SPECIFICATION

Model	CL230U
Frequency Range	400-470MHz
Channel	128
Channel Spacing	12.5KHz /25KHz Selectable
Operating Voltage	7.4 VDC
Modulation	FM
Dimension	103 X 56 X 40 mm
Weight (including battery)	250g
TRANSMITTER	
Output Power	4W -1W
Frequency Stability	±2.5ppm (-30°C ~ + 60°C)
Spurious and Harmonics	62 dB
Hum and Noise	38 dB
Audio Distortion	3%
Audio Frequency Response	+3, -3 dB from 6 dB Octave de-emphasis characteristic from 300-3000Hz
RECEIVER	
Sensitivity (12 dB SINAD)	0.2uV (-120 dBm)
Squelch Sensitivity (Threshold)	0.158uV (-123 dBm)
Selectivity	62 dB
Intermodulation Rejection	62 dB
Audio Output Power	0.5W, 8Ω

7. USER SAFETY PRECAUTIONS

1. Do not Disassemble your radio without permission, allowing unqualified personnel to service your radio may result in damage to your radio and will void your manufacturer's warranty.
2. To avoid electromagnetic interference or electromagnetic compatibility problems caused, turn off your radio when you are restrict the use of a radio device in a particular area e.g. Hospital or Near Medical equipment.
3. Do not use your radio at refueling points (service stations), near fuels or chemicals, and at blasting areas.
4. Avoid placing your radio near or in an airbag deployment area. can cause serious injury when air bags inflate rapidly.
5. Turn off your radio in potentially flammable / explosive environments.
6. Do not install or remove the battery when you are in potentially flammable / explosive environments.
7. When you near the blasting and detonators area, turn off your radio.
8. Do not expose your radio to direct sunlight for extended periods of time; Do not store your device near or in heaters, microwaves, hot cooking equipment, or high pressure containers.
9. Keep your radio dry, do not use or store your radio in wet, dusty, dirty or on slopes areas
10. Do not use your radio when the antenna had been damaged, if the damaged antenna contacts skin it may cause minor skin burns.
11. When transmitting, hold the radio upright, speaking at about 5cm from the microphone and keep about at least 2.5cm from the head or body.
12. Do not use the radio without antenna.





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