

Tanin

LPD-COMPACT TRANSCEIVER



GP-23

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

- IP55 rating dust and splash protection
- Compact, lightweight but rugged design
- Crisp, clear and high quality sound
- 3.7V, 1700mAh high quality Li-ion battery
- Shatterproof hidden LED lighting display
- 35 LPD 433MHz channels
- 50 CTCSS tone & 210 DCS codes
- Voice annunciator
- 10 levels digital volume adjustment
- TOT, squelch, battery save
- Built-in VOX, roger beep tone, BCLO
- Battery status indicator
- PC programmable

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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 may 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.

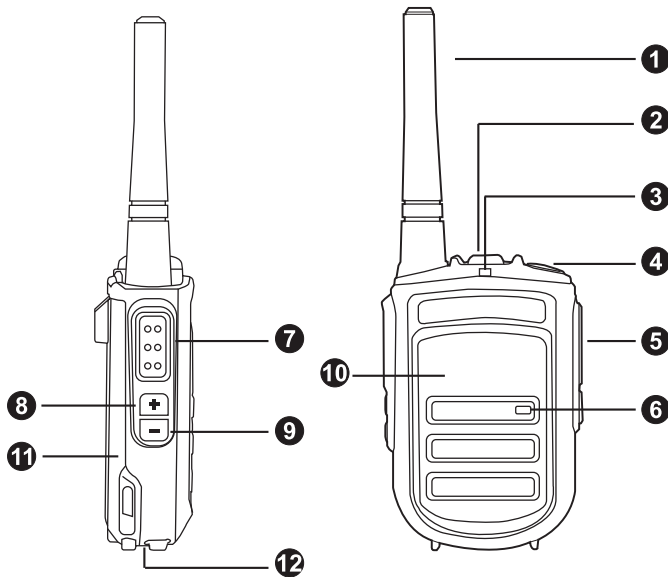
- Each charge cycle reduces the battery's life. Minimize the number of times you charge your battery especially in hotter environments which further shorten a battery's life.

RADIO OVERVIEW

Package Includes

- 1pcs radio unit
- 1pcs 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 rubber integrated antenna.

2 – Channel Rocker

Push the rocker to select the radio's different channels.

3 – LED Indicator

Give radio TX & RX status: **RED** means transmitting and **GREEN** means receiving.

4 – On/Off Button

Turn the radio ON or OFF, and check battery power.

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 P1

Short press the button **P1** is increasing the radio's volume. Long press the button **P1** is 'TX Power H/L' feature.

9 – Side Button P2

Short press the button **P2** is increasing the radio's volume. Long press the button **P2** is 'CTCSS/DCS Setting' feature.

10 – Hidden LED lighting display screen

Give radio setting and status, including CTCSS tone, DCS code, VOX, scan, channel number, volume, battery capacity, keypad lock, TX & RX signal strength.

11 – 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.

12 – Battery Latch

Push down battery latch to release battery pack.

GETTING STARTED

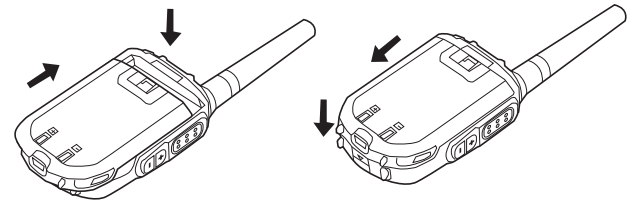
Install and Remove Battery Pack

Installing Battery (Figure 1)

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 (Figure 2)

1. Turn the radio OFF.
2. Release the battery latch and remove the battery.
3. Pull the battery away from the radio.



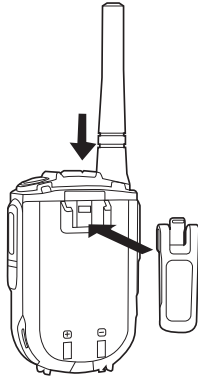
Install and Remove Belt Clip

Installing Belt Clip (Figure 3)

Push down the belt clip on the back of the battery to install the guide slot.

Removing Belt Clip (Figure 4)

Press the lock to remove the belt clip.



BASIC OPERATION

Turn the Radio ON/OFF

To turn on the radio, long press the On/Off button 3 seconds, the radio plays power up audio, displays current battery electric volume and channel number.

To turn off the radio, long press the On/Off button 3 seconds until 'Di Di' is heard.

Checking Battery Power

When the radio is on, double click On/Off button and the screen will display current battery power volume.

Adjusting Volume

Short press the side button **P1** to increase the volume, and the side button **P2** 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

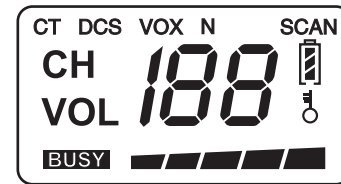
To select a channel, push the channel rocker until you reach the desired channel. An audible voice indicates the selected channel if the channel announcement is enable. Each channel has its own frequency, privacy code and other settings.




Receiving a Call and Talking

1. Select a channel by pushing the channel rocker 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.

Display Screen

On the display screen, you will see various icons which stand for the selected functions. Here you will find the icons indicator as below.



ICON	Description
CT	Means current channel sets CTCSS tone.
DCS	Means current channel sets DCS code.
VOX	Means the VOX is activated.
N	Means current channel sets narrowband mode.
SCAN	Means the scanning is activated.
CH	Means channel mode.
VOL	Means current voice volume.
188	Means channel number or volume index.
	Means battery power indicator.
	Means keypad lockout.
BUSY	Means busy channel.
	Means real time display receiving signal strength or power indicator.

ADVANCED OPERATON

TX Power Level

This feature allows you to select between high and low transmit power in each channel. Long press the side button **P1** to switch the TX power to be high and low.

CTCSS Tone & DCS Code Setting

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.

Long press the side button **P2** to enter CTCSS/DCS programming mode. You can select the desired CTCSS tone or DCS code by channel rocker. And you can short press the top On/Off button to confirm the choice, or short press **PTT** button to cancel the selection. Long press **P2** button again to exit the setting mode. Under standby mode, you can short press the top On/Off button once to check current CTCSS or DCS setting.

Monitor

This feature enables you to set squelch off and hear the calls with weak signal.

Channel Scanning

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.

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 60s), 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)

Battery Save

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.

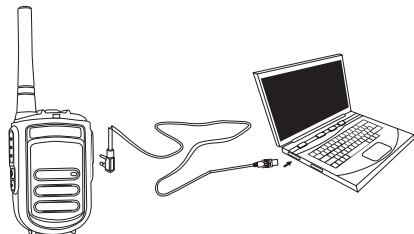
Busy Channel Lock-out (BCLO)

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.

Programming Software

The easiest way to program or change features in your radio is via its programming software and programming cable.

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, VOX, battery save, TOT, voice annunciator, roger beep, busy channel lock-out, keypad lock...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.
Cannot activate VOX	VOX feature might be set to OFF; Use the programming software to ensure that the VOX sensitivity level is not set to '0'; Accessory not working or not compatible.

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	433.0625 – 433.4875MHz
Channel Capacity	128 Channels
Channel Bandwidth	12.5 KHz
Operating Voltage	3.7V DC
Dimensions (H x W x D)	90 x 61 x 33mm
Weight with battery	133g

Transmitter

RF Power	< 0,5W
Frequency Stability	<1,5ppm
Spurious & Harmonics	-36dBm<1GHz, -30dBm>1GHz
FM Hum & Noise	55dB
Modulation Deviation	≤2,5kHz
Adjacent Channel Power	60dBC
Audio Frequency Response	+1 ~ -3dB
Audio Distortion	<3%

Receiver

Sensitivity (12 dB SINAD)	0,35μV
Adjacent Channel Selectivity	60dBC
Audio Distortion	< 5%
Radiated Spurious Emissions	< -54dBm
Intermodulation Rejection	60dB
Audio Output	750mW @ 8 ohms

Hereby, we declare that our radio is in compliance with the essential requirement and other relevant provisions of Directive.

TABLE LIST

50 CTCSS Tones

No	FREQ.(Hz)	No	FREQ.(Hz)	No	FREQ.(Hz)
01	67.0	18	118.8	35	183.5
02	69.3	19	123.0	36	186.2
03	71.9	20	127.3	37	189.9
04	74.4	21	131.8	38	192.8
05	77.0	22	136.5	39	196.6
06	79.7	23	141.3	40	199.5
07	82.5	24	146.2	41	203.5
08	85.4	25	151.4	42	206.5
09	88.5	26	156.7	43	210.7
10	91.5	27	159.8	44	218.1
11	94.8	28	162.2	45	225.7
12	97.4	29	165.5	46	229.1
13	100.0	30	167.9	47	233.6
14	103.5	31	171.3	48	241.8
15	107.2	32	173.8	49	250.3
16	110.9	33	177.3	50	254.1
17	114.8	34	179.9		

105 DCS Codes Normal & Inverted

No	Code	No	Code	No	Code	No	Code
01	023	28	155	55	325	82	516
02	025	29	156	56	331	83	523
03	026	30	162	57	332	84	526
04	031	31	165	58	343	85	532
05	032	32	172	59	346	86	546
06	036	33	174	60	351	87	565
07	043	34	205	61	356	88	606
08	047	35	212	62	364	89	612
09	051	36	223	63	365	90	624
10	053	37	225	64	371	91	627
11	054	38	226	65	411	92	631
12	065	39	243	66	412	93	632
13	071	40	244	67	413	94	645
14	072	41	245	68	423	95	654
15	073	42	246	69	431	96	662
16	074	43	251	70	432	97	664
17	114	44	252	71	445	98	703
18	115	45	255	72	446	99	712
19	116	46	261	73	452	100	723
20	122	47	263	74	454	101	731
21	125	48	265	75	455	102	732
22	131	49	266	76	462	103	734
23	132	50	271	77	464	104	743
24	134	51	274	78	465	105	754
25	143	52	306	79	466		
26	145	53	311	80	503		
27	152	54	315	81	506		