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**CIGNUS V-85 pro**

NTC Type Acceptance Certificate No.

VHF: ESD - 1307729C

UHF: ESD - 1307730C

136 - 174MHz & 400 - 470MHz



# V85 pro

## USER'S MANUAL



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## User's Instruction

Please read this manual carefully before use.

- Do not operate or charge the transceiver in an inflammable, explosive and banned area (gas station, hospital, airport, etc.).
- Do not transmit the transceiver in the government administrated area without permission.
- Do not expose it in the direct radiate sun for a long time, or put it nearby the heater
- Do not put it in the extreme dusty, wet or splashed places, or on the unsteady surface.
- If find the peculiar smell or mist giving off from the transceiver, cut off the power supply at once and remove the battery, then contact our company or local distributor.
- Maintenance can only be undertook by professional technicians

## Content

<b>Unpacking and Checking Equipments</b> .....	01
Supplied Accessories .....	01
<b>Preparation</b> .....	02
Charging the Transceiver .....	02
Installing the Battery Pack .....	03
Installing the Antenna .....	04
Installing the Belt Clip .....	04
Install the External Speaker/Microphone .....	04
<b>Getting Acquainted</b> .....	05
Sketch Map .....	05
<b>Basic Operation</b> .....	06
<b>Auxiliary Functions</b> .....	07
<b>Technical Specification</b> .....	14

## Unpacking and Checking Equipments

Carefully unpack the transceiver. We recommend that you identify the items listed in the following before discarding the packing material. If any items are missing or have been damaged during shipment, please contact the deliveryman or your dealers immediately.

Item	Antenna	Hand Strap	Battery Charger	Battery Pack	Belt Clip	User's Manual
Qty	1	1	1	1	1	1



Antenna



Hand Strap



Battery Charger



Battery Pack



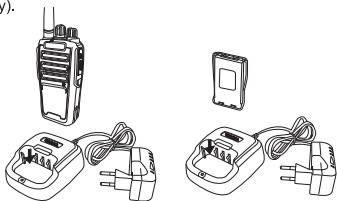
Belt Clip

## Preparation

### Charging the Transceiver

Please follow these steps:

1. Take out special interphone charger, plug the AC connector of the adapter into the AC outlet socket, then the green light is on, red light twinkles.
2. Slide the battery pack or transceiver with battery pack into the charger. Make sure the battery pack contacts are in good contact with the charging terminals. Now, green light goes out, while red light is on, charging begins.
3. After finish charging, green light is on, red light goes out. (Charging time depends on the battery capability).

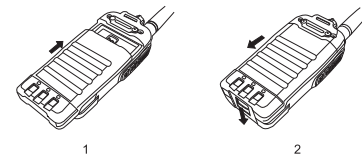


#### Note:

- Do not recharge if the battery pack has been fully charged, otherwise it may shorten the battery service life and reduce the performance of the battery.
- Initially charging the battery pack can not reach its normal capacity after purchasing or extended storing (for more than 2 months), Charging & discharging the battery pack twice or three times is needed, then it can reach the normal capacity.

### Installing the Battery Pack

1. Make the battery aim at the slide way of transceiver back, then push forward the battery till the release latch is on the base of transceiver lock. (Picture 1)
2. To remove the battery pack, press the release latch and slide the battery away from the transceiver. (Picture 2)

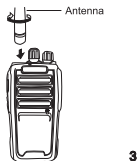


#### Note:

- Do not short circuit the battery terminals or dispose of the battery in fire.
- Never attempt to remove the case from the battery pack.

## Installing the Antenna

Hold the base of the antenna, then screw the antenna into the connector at the top of transceiver clockwise, until it is firmly engaged. On the contrary, screw out the antenna. (Picture 3)



## Installing the Belt Clip

If necessary, fix the belt clip at the tapped hole of the battery back for convenient carrying. To remove the belt clip, just screw out 2 screws (Picture 4).

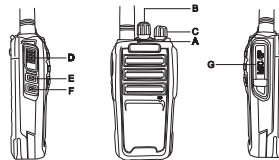


## Install the External Speaker/Microphone

Plug the external speaker /Microphone into the jack of 'SP.&MIC' of the transceiver.



## Getting Acquainted



- A. **State Indicator:** the green light keeps lighting while receiving a selected signal. The red light twinkles while receiving designated signal. Red light twinkles while the transmitting is to be time out , green light twinkles while scanning.
- B. **Channel selector:** Rotate to select channels. In the different positions, press PF1 to switch on or off a variety of functions, and channel group code selection.
- C. **PWR/VOL Switch:** Turn clockwise to switch on the transceiver. Turn counterclockwise to switch off the transceiver. Rotate to adjust the volume level.
- D. **PTT (Push-To-Talk) Switch:** Press and hold PTT button to call a station, then talk to the microphone in your normal voice. Release it to receive a call.
- E. **Function Button (PF1):** According to different switch positions of channel number, press this button to switch on the transceiver to turn on or off a variety of functions, and channel group code selection.  
During the state of dual watch, it is PTT button of designated channel (Written by PC programming software)
- F. **MONI Button (MONI):** Press and hold this button to monitor circularly the signal from the selected channel and designated channel,
- G. **Speaker /Microphone rubber plug:** Cover the jack while SP & MIC is free.

## Basic Operation

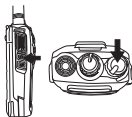
### Power On:

Rotate PWR/VOL Switch clockwise, you will hear a sound "Beep", report the present channel, the transceiver is ready for working.



### Adjusting Volume:

Press and hold MONI button, meanwhile rotate PWR/VOL Switch to adjust the volume.



### Channel Selection:

Rotate Channel Selector to select your channel or select a new channel, (Press PF1 to power on) to turn on or off other functions.



### PTT Button:

Press and hold PTT button to call a station, then talk to the microphone in your normal voice.



**Note:** Keep the Microphone approximately 1.5 inches (3-5cm) from your lips

## Auxiliary Functions

### Working Channel Number 128

128 channels into eight groups and 16 channels for each group.

Channels 1-16	1st group	Channel 65-80	5th group
Channels 17-32	2nd group	Channels 81-96	6th group
Channels 33-48	3rd group	Channels 97-112	7th group
Channels 49-64	4th group	Channels 113-128	8th group

Channel selector can only select the channel in the current group. In different selector positions, press and hold [PF1] to power on and begin the group settings.

Selector position	Group	Channel Range
1	1	1-16
2	2	17-32
3	3	33-48
4	4	49-64
5	5	65-80
6	6	81-96
7	7	97-112
8	8	113-128

### For example:

The 1st first group (channel 1-16). First turn off the transceiver, rotate the channel selector at "No.1", then press and hold [PF1] button to power on. Set the group channel like this.

While Channel switch in the "No.9", " No.10", " No.11", " No.1", " No.15" position, press and hold [PF1] button to switch on or off the following functions.

Channel Switch Position	Function
9	VOX ON/OFF
10	TDR(Dual watch/dual reception) ON/OFF
11	Confirmed Tone via Repeater ON/OFF
12	Ending Tone of Transmitting ON/OFF
15	Chinese /English Switch

### Working Frequency

VHF/UHF dual band frequency can be set via PC programming software in any VHF/UHF designated range within 128 channels. Different frequencies can also be set up in the same channel, and eventually cross band transmitting and receiving

### Dual Channel Standby

- This transceiver can achieve dual channel standby in the selected channel (selected by selector position) and designated channel (another channel designated by PC programming software). When dual standby is switched on, both selected channel and designated channel stay in the transceiver and dual watch).
- Rotate the selector at "No.10", press and hold [PF1] button to switch ON/OFF dual channel standby function. If the designated channel by PC programming software has no parameters, dual channel standby can't be switched on.
- While dual channel standby is switched on, FM radio has to be closed.

- [PF1] becomes **【PTT】** button of designated channel. While dual channel standby is switched on, green LED keeps lighting while selected channel receive a signal, press and hold **【PTT】** to reply; red LED twinkles while designated channel receive a signal, press and hold **【PF1】** to reply.

### Channel Copy (Cable Copy)

Press and hold **【MONI】** button to copy the channel parameters into another transceiver.

Before copying, connect the two transceivers by a copy cable. During the copy, red light of the copying part continuously twinkles; green light of copied part continuously twinkles. Copying completed, indicator lights go out. When copying is in progress, please release **【MONI】** button.

### Aging Test Program

Press **【PTT】** and **【MONI】** button simultaneously to switch on the transceiver, aging test program begins

### VOX Transmitting

Rotate channel selector at "No.9", press and hold **【PF1】** button to switch ON/OFF VOX transmitting. VOX transmitting channel is for the entire channel (128 channels) opening or closing. (Note: PC software VOX transmitting level must be set among Level 1-10, VOX transmitting can be only valid. Factory setting is Level 5.)

### Roger (Ending Tone of Transmission)

Rotate channel selector at "No.12", press and hold **【PF1】** button to switch ON/OFF ending tone of transmission.

### Relayed Forwarding Confirmation

Rotate channel selector at "No.11", press and hold **【PF1】** button to switch ON/OFF confirmed tone via Repeater.

**Note:** The details of PC programming software setting in communication via repeater as follow:

	OFF	CTCSS	DCS
STE(Tail Tone Elimination)	ON	ON	ON
RP_STE (Tail tone elimination via repeater) ms	OFF	OFF	OFF
Tail Tone Detection via repeater ms	400	400	600
Confirmation Switch via repeater	ON	ON	ON

Confirmation Switch via repeater can operate manually, 【PF1】 + Channel 11 to switch ON/OFF.

### Frequency Channel Report

To know the transmitting and receiving frequency of selected channel, and CTCSS of transmitting and receiving, press and hold 【MONI】 to squelch, then press 【PF1】.

Report order:

"Transmitting Storage", Transmitting Frequency, Transmitting CTCSS. "Receiving Storage", receiving frequency, receiving CTCSS.

After reporting the frequency, if DCS or CTCSS is not reported, it means no CTCSS is set in this channel. Otherwise, continue to report DCS or CTCSS. While reporting frequency and CTCSS, a sound "Beep" comes out, it indicates a "frequency point". After reporting DCS, a sound "Beep" indicates positive DCS, while a sound "Beep, Beep" indicates reverse DCS.

### High/ Low Power Switchover

With the state of FM radio unactivated, press 【MONI】 to make noise, then press 【PTT】 can temporarily switch High/Low power of selected channel(selected by selector). Meanwhile report the state of Dual Band Dual Watch Mode (TDR mode). If it is on, report "TDR ON", it is off, report "TDR OFF". Voice prompt "Transmitting Power 1" is low power transmitting, "Transmitting Power 5" is high power transmitting.

### MONI channel

With the dual standby state, keep holding 【MONI】 button to take turns to monitor the signal of designated channel and selected channel. If the green LED keeps lighting, the signal is from designated channel, if the green LED twinkles, the signal is from selected channel.

### Scanning

The transceiver can scan group channel or full channels. The green LED twinkles rapidly while scanning.

Press and hold 【MONI】 , 【PF1】 button simultaneously to start scanning group channel or full channels

Rotate the channel selector at "No.1", after scanning; scanning channel No. is 1-16.

Rotate the channel selector at "No.2", after scanning; scanning channel No. is 17-32.

The rest can be done in the same manner.

If rotate the channel selector at "No.16", after scanning; scanning channels are 128 channels.

- Press transmitting key of selected channel( 【PTT】 button). Under the time and carrier scanning mode, it turns back to the current channel (selected by selector) and transmit, meanwhile stop scanning. Under the search scanning mode, if a signal is scanned, also in the suspended scanning state(green LED twinkles slowly), then transmit in the current channel, otherwise it will turn back to the current channel (selected by selector ) to transmit.
- Press transmitting key of designated channel [Middle key], In the dual standby state, scanning stops and go back to designated channel to transmit. Without dual standby state, transmitting is invalid
- Pressing 【MONI】 is invalid.



**Scanning modes** (scanning modes must be selected via PC programming software):

- 1.Under the time scanning mode, it would be paused for 5 seconds, then continue to scan after scanning a signal.
- 2.Under the carrier scanning mode, scanning stops after a signal is scanned. And then continue to scan after carrier signal lost for 3 seconds.
- 3.Under the search scanning mode, after scanning a signal, scanning pauses, the green LED twinkles slowly, at this time press [PTT ] button, transmit only in the current scanned channel. In the suspended scanning state, press [MONI] button to continue scanning (green LED twinkles rapidly) until scan your desired channel. After scanning a signal, voice prompt the scanned channel number.

### **FM Radio Function**

In the single reception state, press [PF1] switch on FM radio. After FM Radio starts, press [PF1] to search FM radio. Press [MONI] for FM band switch. If press [MONI], a sound "Beep" is heard, then FM works in 65-75.9 FM band range, at this time press [PF1] radio frequency search in the range of 65-75.9MHz. If press [MONI] ,a sound "Beep, Beep" is heard, FM works in 76-108 FM band range, at this time press [PF1] radio frequency search in the range of 76-108 MHz. Shutdown and restart or rotate the selector can permanently turn off the radio.

### **Emergency Alarm**

Press [MONI] twice rapidly and continuously, emergency alarm function starts. Alarm modes include scene alarm, warning tone, warning codes (Must be selected by PC programming software). Alarm channels are only selected channel.

### **Relay Forwarding Signal 1750 HZ**

In the transmitting state, press [MONI] to send out 1750 HZ relay forwarding signal.

### **Chinese /English Switchover**

Rotate the channel selector at "No.15" press [PF1] to switch on the transceiver, then enter language selection function, namely: Chinese /English Switchover

### **PTT ID Transmitting Way** (must be set by PC programming software)

- 1.OFF
- 2.Press [PTT ] button to transmit BOT.
- 3.Release [PTT ] button to transmit EOT.
- 4.Press and release [PTT ] button to transmit BOTH.

### **DTMF ST**(must be set by PC programming software)

- 1.OFF
- 2.DT-ST
- 3.ANI-ST
- 4.DT+ANI

**Unity Section:**

Frequency Range	136.00-174.00 MHz 400.00- 480.00MHz
Storage Channel	128
Step Frequency	2.5/5/6.25/10/12.5/20/25KHz
Rated voltage	DC 7.4V (Chargeable Li-ion Battery)
Battery Capacity	H-1800 m Ah (Li-ion Battery)
Frequency Stability	±2.5ppm
Work Temperature	-20 °C to +60 °C
Antenna Impedance	50 Ω
Work Mode	Same Frequency simplex Operation or Different Frequency simplex Operation

**Transmitter:**

Output Power	5W/1W
Modulation Mode(W/N Band)	FM (F3E)
Maximum Frequency Deviation (W/N Band)	<5KHz(W), <2.5KHz(N)
Spurious Radiation	≅ 7.5 μW
Adjacent channel power	≅ -65dB (W) / ≅ -60dB (N)
Radiation	<-60 dB
Audio Distortion	<5 %
SNR	45dB(W), 42dB(N)
CTSCC/DCS Frequency Deviation(W/N Band)	0.7±0.1KHz (W), 0.4±0.1KHz (N)
Modulation Sensitivity	8-12mV
Transmitting Current	≅ 1500mA

**Receiver:**

Sensitivity	<0.20 μV (12dB SINAD)
Audio Power	1 W
Audio Distortion	5 %
Inter modulation Interference Resistance	≅ 65dB (W), ≅ 55dB (N)
Adjacent channel Sensitivity (W/N Band)	≅ 65dB (W), ≅ 55dB (N)
Spurious Response	≅ 60dB
Receiving Current	≅ 380mA

**Note:**

- Specifications are subject to change for technology improvement without notice

### Busy Channel Lockout

Switch on or off each effective channel busy lockout function via PC programming software. When the setting is ON, signal from the current channel is banned to transmit.

### Battery Voltage Detection

- a. Voltage too high: when high voltage transmission is banned. If the voltage is too high, it is ineffective to press [PTT] key, transmit VOX or send Emergency Alarm, meanwhile the prompt sound "Beep" won't stop until you release [PTT] key, stop VOX transmission or emergency alarm.
- b. Low Battery Alarm: when the voltage goes below a certain voltage value, voice prompt low battery, transmission is still effective.
- c. Voltage too low: when the voltage goes below a certain value, voice prompt low battery, transmission is ineffective, and the prompt sound "Beep" would be heard.

If low voltage transmission is banned, it is ineffective to press [PTT] button, transmit VOX or send out Emergency Alarm.

### Battery Saving Function (Set by PC Programming Software)

ON: without any operation for 5 seconds, enter into the battery saving state automatically

OFF: Battery saving is off.

### QT/DQT

QT/DQT signal can be pre-programmed by programming software in the transceiver's channels. If a channel is set up with QT/DQT signal, squelch can only be opened when receiving the same QT or DQT signals from the other transceiver. If you make a call with different QT/DQT signals in the same channel, the squelch is bare, the light is green.

### QT/DQT lists as followed:

#### A.QT(50 groups)

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

#### B.DQT (210)

D023N, D025N, D026N, D031N, D032N, D036N, D043N, D047N, D051N, D053N, D054N, D065N, D071N, D072N, D073N, D074N, D114N, D115N, D116N, D122N, D125N, D131N, D132N, D134N, D143N, D145N, D152N, D155N, D156N, D162N, D165N, D172N, D174N, D205N, D212N, D223N, D225N, D226N, D243N, D244N, D245N, D246N, D251N, D252N, D255N, D261N, D263N, D265N, D266N, D271N, D274N, D306N, D311N, D315N, D325N, D331N, D322N, D343N, D346N, D351N, D356N, D364N, D365N, D371N, D411N, D412N, D413N, D423N, D431N, D432N, D445N, D446N, D452N, D454N, D455N, D462N, D464N, D465N, D466N, D503N, D506N, D516N, D523N, D526N, D532N, D546N, D565N, D606N, D612N, D624N, D627N, D631N, D632N, D645N, D654N, D662N, D664N, D703N, D712N, D723N, D731N, D732N, D734N, D743N, D754N  
D023I, D025I, D026I, D031I, D032I, D036I, D043I, D047I, D051I, D053I, D054I, D065I, D071I, D072I, D073I, D074I, D114I, D115I, D116I, D122I, D125I, D131I, D132I, D134I, D143I, D145I, D152I, D155I, D156I, D162I, D165I, D172I, D174I, D205I, D212I, D223I, D225I, D226I, D243I, D244I, D245I, D246I, D251I, D252I, D255I, D261I, D263I, D265I, D266I, D271I, D274I, D306I, D311I, D315I, D325I, D331I, D322I, D343I, D346I, D351I, D356I, D364I, D365I, D371I, D411I, D412I, D413I, D423I, D431I, D432I, D445I, D446I, D452I, D454I, D455I, D462I, D464I, D465I, D466I, D503I, D506I, D516I, D523I, D526I, D532I, D546I, D565I, D606I, D612I, D624I, D627I, D631I, D632I, D645I, D654I, D662I, D664I, D703I, D712I, D723I, D731I, D732I, D734I, D743I, D754I

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