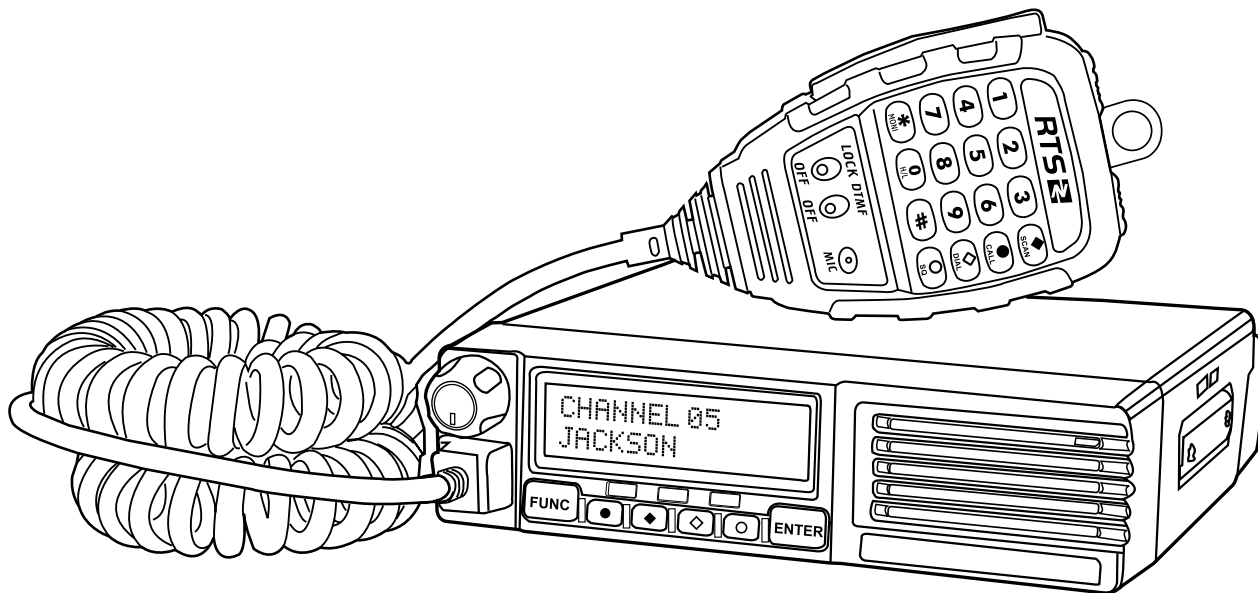


# DV 2055/2066/2135/2400

Series Mobile Radio



FC CE0678 ①  RoHS

# USER'S MANUAL



Thank you for choosing this **RTS** vehicle transceiver, **RTS** always provides high quality products, And this transceiver is no exception. As you learn how to use this transceiver, you will find that **RTS** is pursuing “user friendliness”. For example, each time you change the Menu No. in Menu mode, you will see a text message on the display that lets you know what you are configuring.

Though user friendly, this transceiver is technically sophisticated and some features may be new to you. Consider this manual to be a personal tutorial from the designers. Allow the manual to guide you through the learning process now, then act as a reference in the coming years.

**Models Apply To This Manual: DV2055/2066/2135/2400**

**Mobile radio**

**DV2055/2066/2135/2400 Mobile Radio Applicable**

**Software: DV2055/2066/2135/2400**

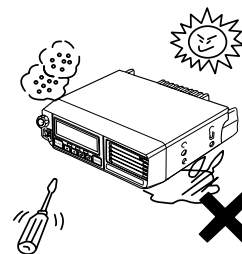
**ATTENTION:**

**When programming the transceiver, read the factory initial data firstly, then rewrite the frequency and signaling etc., otherwise errors may occur because of different frequency band etc..**

## ■ Precautions

Please observe the following precautions to prevent fire, personal injury, and/or transceiver damage:

- ⚠ Do not attempt to configure your transceiver while driving; it is simply too dangerous.
- ⚠ This transceiver is designed for a 13.8V power source. Never use a 24V battery to power the transceiver.
- ⚠ Do not place the transceiver in excessively dusty, humid or wet areas, nor on unstable surfaces.
- ⚠ Please keep it away from interferential devices (such as TV, generator etc.) when interfered by external
- ⚠ Do not expose the transceiver to long periods of direct sunlight nor place it close to heating appliances.
- ⚠ If an abnormal odor or smoke is detected coming from the transceiver, turn OFF the power immediately. Contact a **RTS** service station or your dealer.
- ⚠ Do not transmit with high output power for extended periods; the transceiver may overheat.



# **CONTENTS**

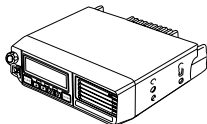
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# SUPPLIED ACCESSORIES/OPTIONAL ACCESSORIES

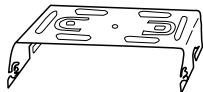
## Supplied Accessories

After carefully unpacking the transceiver, identify the items listed in the table below. We recommend you keep the box and packaging for shipping.

- Vehicle transceiver



- Mounting bracket (QMB-02)



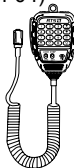
- Hardware kit for bracket  
Hexagon SEMS screws  
(M4x8mm) 4pcs (QSS-02A)



Flat washers / Spring washers (QSS-02D)



- DTMF Microphone  
(QHM-04)



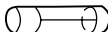
- DC power cable with  
fuse holder (QPL-02)



Self -Tapping screws  
(M5x20mm) 4pcs (QSS-02B)



- Spare fuses  
2pcs(QF-02)



- Instruction manual



## Optional Accessories

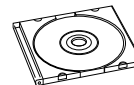
- Programming  
cable (PC51)



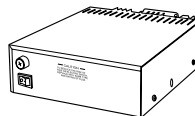
- Cloning cable  
(CP51)



- Programming  
software



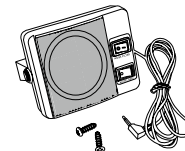
- Regulated power  
supply (QRP-01)



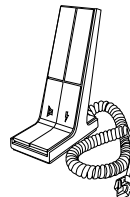
- Car antenna  
(QCA-01)



- External Speaker  
(SP-01)



- Desktop Microphone  
(QDM-01)

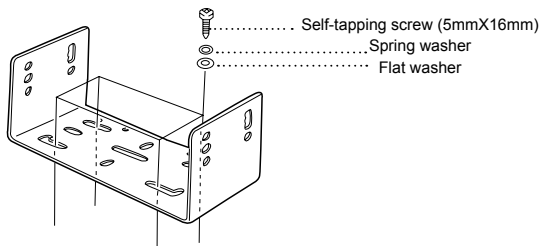


# PREPARATION

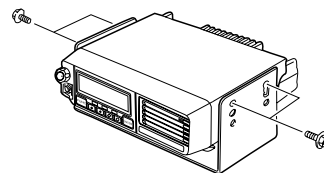
## Mobile installation

To install the transceiver, select a safe, convenient location inside your vehicle that minimizes danger to your passengers and yourself while the vehicle is in motion. Consider installing the unit at an appropriate position so that knees or legs will not strike it during sudden braking of your vehicle. Try to pick a well ventilated location that is shielded from direct sunlight.

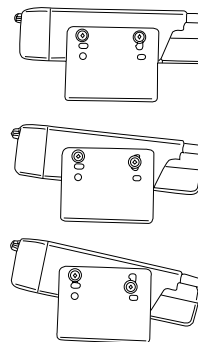
1. Install the mounting bracket in the vehicle using the supplied self-tapping screws (4pcs), flat washers (4pcs), and spring washers (4pcs).
  - The bracket must be installed so that the 3 screw hole positions on the side of the mounting bracket are towards the rear of the bracket.



2. Position the transceiver, then insert and tighten the supplied hexagon SEMS screws and flat washers.
  - Double check that all hardware is tightened to prevent vehicle vibration from loosening the bracket or transceiver.



- Determine the appropriate angle of the transceiver, using the 3 screw hole positions on the side of the mounting bracket.



## DC Power Cable Connection

### Note:

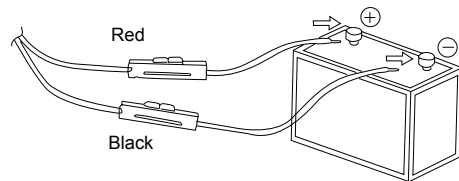
Locate the power input connector as close to the transceiver as possible.

### ◆ Mobile Operation

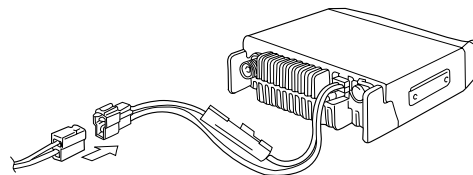
The vehicle battery must have a nominal rating of 12V. Never connect the transceiver to a 24V battery. Be sure to use a 12V vehicle battery that has sufficient current capacity. If the current to the transceiver is insufficient, the display may darken during transmission, or transmit output power may drop excessively.

1. Route the DC power cable supplied with the transceiver directly to the vehicle's battery terminals using the shortest path from the transceiver.
  - If using a noise filter, it should be installed with an insulator to prevent it from touching metal on the vehicle.
  - We recommend you do not use the cigarette lighter socket as some cigarette lighter sockets introduce an unacceptable voltage drop.
  - The entire length of the cable must be dressed so it is isolated from heat, moisture, and the engine secondary (high voltage) ignition system/cables.
2. After the cable is in place, wrap heat-resistant tape around the fuse holder to protect it from moisture and tie down the full run of cable.
3. To prevent the risk of short circuits, disconnect other wiring from the negative (-) battery terminal before connecting the transceiver.

4. Confirm the correct polarity of the connections, then attach the power cable to the battery terminals; red connects to the positive (+) terminal and black connects to the negative (-) terminal.
  - Use the full length of the cable without cutting off excess even if the cable is longer than required. In particular, never remove the fuse holders from the cable.



5. Reconnect any wiring removed from the negative terminal.
6. Connect the DC power cable to the transceiver's power supply connector.
  - Press the connectors firmly together until the locking tab clicks.



### ◆ Fixed Station Operation

In order to use this transceiver for fixed station 1 operation, you will need a separate 13.8 V DC power supply (not included).

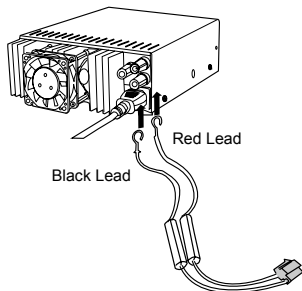
The recommended current capacity of your power supply is 12 A.

1. Connect the DC power cable to the regulated DC power supply and ensure that the polarities are correct (Red: positive, Black: negative).

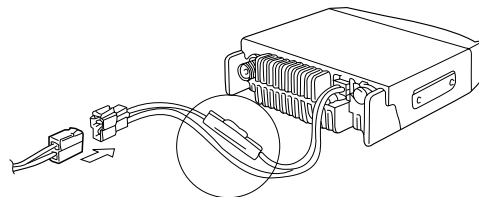
- Do not directly connect the transceiver to an AC outlet.
- Use the supplied DC power cable to connect the transceiver to a regulated power supply.
- Do not substitute a cable with smaller gauge wires.



Regulat Power supply [QRP-01]



2. Connect the transceiver's DC power connector to the connector on the DC power cable. Press the connectors firmly together until the locking tab clicks.

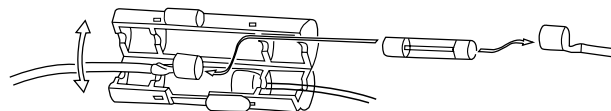


#### Note:

- Before connecting the DC power to the transceiver, be sure to switch the transceiver and the DC power supply OFF.
- Do not plug the DC power supply into an AC outlet until you make all connections.

### ◆ Replacing Fuses

If the fuse blows, determine the cause, then correct the problem. After the problem is resolved, replace the fuse. If newly installed fuses continue to blow, disconnect the power cable and contact your authorized **RTS** dealer or an authorized **RTS** service center for assistance.





Fuse Location	Fuse Current Rating
Transceiver	15A
Supplied Accessory DC power cable	20A

**Caution:**

Only use fuses of the specified type and rating; otherwise the transceiver could be damaged.

**Note:**

If you use the transceiver for a long period when the vehicle battery is not fully charged, or when the engine is OFF, the battery may become discharged, and will not have sufficient reserves to start the vehicle.

Avoid using the transceiver in these conditions.

**Antenna Connection**

Before operating, install an efficient, well-tuned antenna. The success of your installation will depend largely on the type of antenna and its correct installation. The transceiver can give excellent results if the antenna system and its installation are given careful attention.

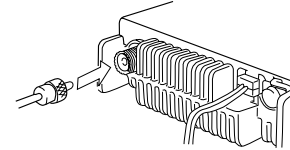
Use a 50Ω impedance antenna and low-loss coaxial feed line that has a characteristic impedance of 50Ω, to match the transceiver input impedance. Coupling the antenna to the transceiver via feed lines having an impedance other than 50Ω reduces the efficiency of the antenna system and can cause interference to nearby broadcast television receivers, radio receivers, and other electronic equipment.

**Note:**

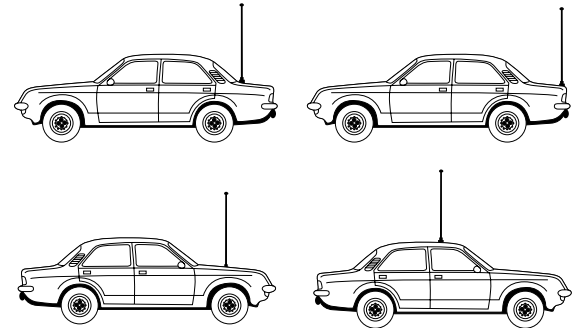
- Transmitting without first connecting an antenna or other matched load may damage the transceiver. Always connect the

antenna to the transceiver before transmitting.

- All fixed stations should be equipped with a lightning arrester to reduce the risk of fire, electric shock, and transceiver damage.



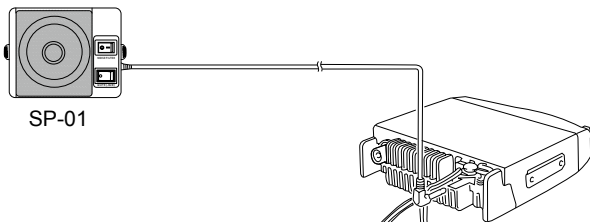
The possible locations of antenna on a car are shown as following.



## Accessories Connections

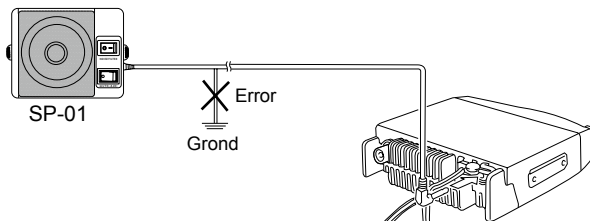
### ◆ External Speaker

If you plan to use an external speaker, choose a speaker with an impedance of  $8\Omega$ . The external speaker jack accepts a 3.5 mm (1/8") mono (2-conductor) plug.



#### Note:

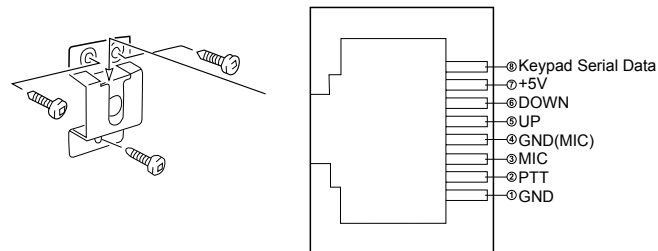
External speaker adopt double port BTL, please care about the connecting way. The speaker can not connect with the ground, otherwise the speaker will be fault. The wrong connecting way as the following picture.



### ◆ Microphone

For voice communications, connect a microphone equipped with an 8-pin modular plug into the modular socket on the front of the main unit. Press firmly on the plug until the locking tab clicks.

Attach the supplied microphone hanger in an appropriate location using the screws included in the screw set.



### ◆ PC Connecting

To utilize the optional DV2066\_2135 software, you must first connect the transceiver to your PC using an optional programming Cable PC51 (via the microphone jack).

Please use DV2066\_2135 software for programming.

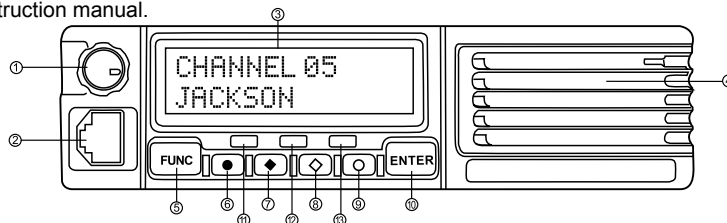
#### Note:

Ask your dealer about purchasing a Programming Cable PC51.

# GETTING ACQUAINTED

## Front Panel

Note: This section describes only the main functions of the front panel controls. Explanations for functions not described here are provided in the appropriate sections of this instruction manual.



### 1 Power switch /Volume control/Selector knob

- Turn to adjust the frequency/channel while standby.
- Press once while standby and then turn to adjust the volume level.
- Press and hold for 3 seconds while standby to switch off transceiver.
- Press once to switch on the transceiver while switch off.

### 2 PC/Microphone connection

- Standard 8 pins interface for PC programming.
- Connect to microphone for voice communication.

### 3 Display LCD

- 16X2 two rows of dot matrix displaying diversified menus and user's information.

### 4 Speaker

- For operating prompting and communication.

### 5 FUNC Key

- Press it then press relevant key, or press and hold it then within 2 seconds press relevant key to achieve multiple shortcut operations.
- Press and hold more than 2 seconds to enter background operations.

### 6 Key

- Press to transmit pre-stored and selected DTMF/2-Tone/5-Tone signaling

### 7 Key

- Press to scan the channels.

### 8 Key

- Press to add/del the current channel into/out of the scan list.

### 9 Key

- Press and hold to disable squelch while standby, background noise hearable, Release to resume squelch.
- Press while in setup mode, transceiver returns to standby and store current setups.

### 10 ENTER key

- Press and hold to start up the emergency function.

### 11 Busy lamp (Green)

- Lights while current channel receives a matching carrier but un-matching signaling.
- Flashes while a matching carrier and signaling received.

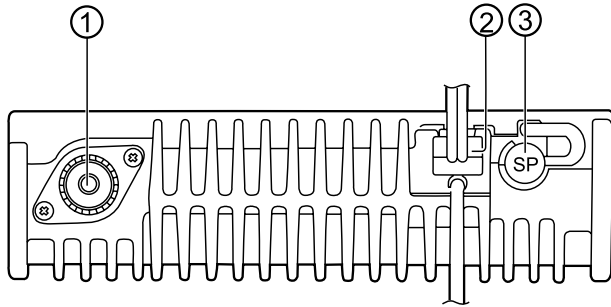
### 12 Transmitting lamp (Red)

- Lights while transmitting.

### 13 Power lamp (Yellow)

- Lights while power on

## Rear Panel



### 1 Antenna Connector

- Connect an external antenna [page 5] here. When transmitting, the antenna system or load should have an impedance of 50Ω.

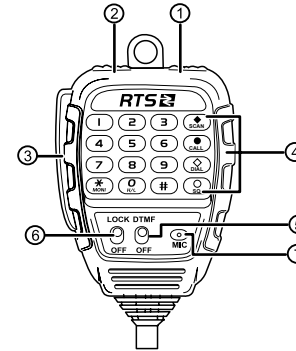
### 2 13.8V DC Cable

- Connect a 13.8V DC power source here. Use the supplied DC power cable QPL-02 [page 1].

### 3 SP (Speaker) Jack

- If desired, Connect an optional external speaker (SP-01) for clearer audio. This jack accepts a 3.5mm(1/8") mono (2-conductor) plug [page 6]

## Microphone



NO.	KEY	FUNCTION
1	UP	Increase channel number or setting value.
2	DOWN	Decrease channel number or setting value.
3	PTT	Press the PTT (Push-TO-Talk) key to transmit.
4	Number Key	Input channel number or DTMF dial out etc..
5	DTMF ON/OFF	Switches between DTMF dialing or function operating.
6	LOCK Switch	Locks out the UP、Down、Numerical keys and Function keys.
7	MIC	Speak here during transmission.

## WORKING MODE

### ■ Channel number mode:

All setup in this mode should be operated in PC software.



CHANNEL 05

## OPERATING BASICS

### ■ Switching The Power On/Off

Press the selector knob once to switch on the transceiver while switch off, Press and hold it for 3 seconds to switch off while standby.

### ■ Adjusting The Volume

After switch on the transceiver, turn the channel selector knob, When LCD displays "SET VOLUME XX" (XX shows for current volume level), turn the channel selector knob to adjust volume, Clockwise-up, anticlockwise-down.



SET VOLUME  
12

### ■ Selector Knob Adjusting Channel

Under channel mode, press the selector knob shortly, when the screen show "DIAL", Turn selector knob clockwise to forward channel, counterclockwise to backward channel.

In relevant modes, the Microphone [UP/DWON] key have the same function of adjusting edited channel.(this transceiver shows only edited channels).

### ■ Squelch Off / Squelch Off Momentary

key can be set as "Squelch Off / Squelch Off Momentary" function. This function enable you to monitor weak signal.

1. Squelch off: Press  key once to disable squelch, background noise appears. Press  key again to resume squelch.
2. Squelch Off Momentary: Press and hold  key to disable squelch, background noise appears. Release  key to resume squelch.

#### **Note:**

The above functions should be set in software,  key become a return key while in function setups.

## Receiving



The green LED lamp flashes when the channel being called. then you can hear the calling from the transmitting party.

### Note:

If the transceiver has set with higher squelch level, it may fail to hear the calling.

If the green lamp keep lighting, it means the transceiver is receiving a matching carrier and un-matching signaling. The calling is not audible. ( Please refer to signaling combination setup).

## Transmitting

According to different setup of  key, press and hold  key to monitor for a while to confirm the channel desired is not busy. Then, press and hold **[PTT]** key to speak into microphone.

Please hold the microphone approximately 2.5-5.0cm from your lips, and then speak into the microphone in your normal speaking voice to get best timbre.


### Note:

Press and hold **[PTT]** key, LED lights RED indicating it is transmitting, Release to receive.

## Transmitting Optional Signaling

Press and hold **[PTT]**, then press Microphone **[UP]** key to transmit pre-stored and selected DTMF, 2Tone, 5Tone signaling.

## Emergency Function

Press and hold  key 2 seconds to start up the emergency function. Once start the emergency function, the radio will sound alarm and start up transmitting, the alarm process according to its pre-programmed setting.

### Note:

Please refer to the Emergency Function information in software DV2055/2066/2135/2400.

## Lock the keyboard

Press **[FUNC]** key then press and hold **[ENTER]** key for 2 seconds to lock the keyboard. Repeat this operation to unlock the keyboard.

# BACKGROUND OPERATIONS

Background operations can be changed in any modes, and can be stored as the latest value for a long time, the operations as following:

1. Press and hold **[FUNC]** key for over 2 seconds to enter background operations menu.
2. Repeatedly press **[◊]** key or Microphone **[UP/DOWN]** key to select desired function option.
3. Turn selector knob to select desired setup.
4. Press **[○]** key to confirm selection and to exit.

## Squelch Setup

The purpose of Squelch is to mute the speaker when no signals are present.

1. Press and hold **[FUNC]** key for over 2 seconds to enter function menu.
1. Repeatedly press **[◊]** key or Microphone **[UP/DOWN]** key until LCD displays **"SQUELCH LEVEL"**.
2. Turn selector knob to select the desired level.  
00-20: Total 21 levels available; 00: Minimum ~ 20:Maximum
3. Default: 04



SQUELCH LEVEL  
04

Remind: Press and hold **[○]** key, then turn selector knob also can adjust the squelch level.

### Note:

If the squelch level is too high, the transceiver will fail to get weak signal; if the squelch level is too low, the transceiver will be easily disturbed.

## LCD Backlight

1. Press and hold **[FUNC]** key for over 2 seconds to enter function menu. Repeatedly press **[◊]** key or Microphone **[UP/DOWN]** key until LCD displays **"LCD BACKLIGHT"**.
2. Turn selector knob to select desired setup.  
**LOW:** Low brightness



LCD BACKLIGHT  
LOW

**HIGH:** High brightness



LCD BACKLIGHT  
HIGH

4. Default: HIGH

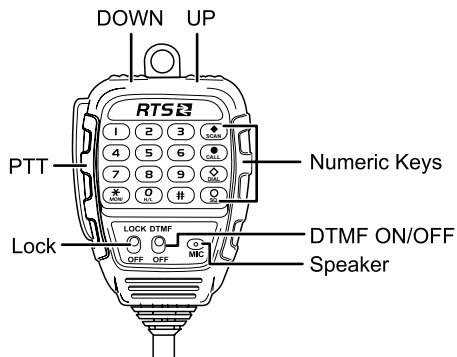
## Current Voltage Display

1. Press and hold **[FUNC]** key for over 2 seconds to enter function menu. Repeatedly press **[◊]** key or Microphone **[UP/DOWN]** key until LCD displays **"VOLTAGE"**.
2. The LCD will show current voltage.



VOLTAGE  
13.7V

# MICROPHONE OPERATIONS



You can operate the transceiver by keyboard or input desired frequency/channel through the QHM-04 Microphone keyboard.

12

## Key Lockout

To avoid misplay, switch it to LOCK position, the microphone lamp off and all keys invalid except [PTT].

## Transmitting DTMF Tone By Microphon

Slide DTMF key to DTMF position, press and hold the [PTT] key, transmitting the desired DTMF signaling by the numeric key directly. (Note: Slide DTMF key to DTMF position, the keyboard is invalid in standby).

## Function Setup by Microphone Keyboard

### ◆ Squelch off

Press **[5]** key while standby, the squelch is disabled when the green LCD flashes, press **[5]** key again to enable squelch.

### ◆ Scan Channel Add/Del

Press **[2]** to add/del the channel into/out of the scan list.

### ◆ Scan channel

While standby, press **[SCAN]** key to stat the channel scan frequency mode.

### ◆ Short call

While standby, press **[CALL]** key to transmit selected signaling (DTMF, 2-Tone, 5-Tone)

### ◆ Input channel via Microphone keyboard

While standby, input three numbers (001 -250) to switch to

a desired channel. If an unedited channel being selected, the transceiver will emit a beep sound for error, the transceiver will resume to current channel. e.g, input **[0]** **[0]** **[5]** is for channel number 5, **[0]** **[5]** **[5]** for channel number 55, **[2]** **[2]** **[5]** for channel number 225.



# AUXILIARY FUNCTIONS

## Cable Cloning

With this function, you can copy the programming data of the transceiver to another one; it can copy parameters and memory programming data to another transceiver.

1. Synchronously press and hold the **FUNC** key and **◊** key to power on main unit and enter clone mode. the LCD displays **"CLONE"**.
2. Use CP51 wire cloning cable (optional accessory) to connect main transceiver with sub-transceiver through PC or MIC interface.
3. Press main unit **ENTER** key to begin clone, both units will display **"CLONE XX"**. XX stands for the size of current cloned data.
4. When the clone finish, the sub-transceiver will restart automatically and the main unit display **"CLONE"**, replace the sub-unit with another unit, and repeat step 2 and step3 to start new clone. (Note: While main unit in clone mode, repeat step 2 to step 4 to apply cloning for more units)
5. Restart the main unit power to exit the clone mode.

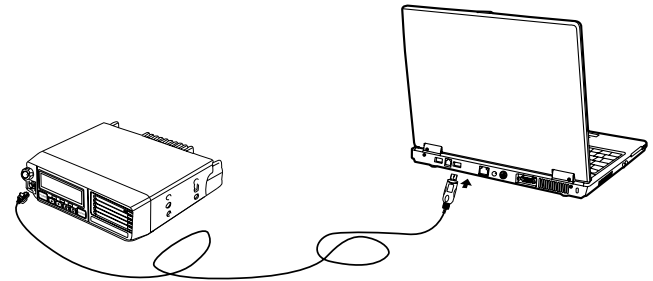
## Programming Software Installing and Starting (in windows XP system)

1. Double click DV2055/2066/2135/2400 setup.exe, then follow the installing instruction.
2. Click start menu in computer, under **"ALL PROGRAMS"** menu, choose and click **"USB To Com port"** in DV2055/2066/2135/2400 program, install **"USB To Com port"** drives by indication.
3. Connect the optional PC51 USB Programming cable to USB port in PC with transceiver.

4. Double click DV2055/2066/2135/2400 shortcut or click DV2055/2066/2135/2400 in procedure index of. Start menu, choose serial com port as indicated then click OK to start programming software.(You shall install software before connecting the USB cable line.)

### Note:

This software has product identify system. So when firstly installing the software, you have to connect the products, otherwise, you can not start the software.



# MAINTENANCE

## General information

This product has been factory aligned and tested to specification before shipment. In normal circumstances, the transceiver will operate in accordance with these instructions. All adjustable trimmers, coils, and resistors in the transceiver were preset at the factory. They should only be readjusted by a qualified technician who is familiar with this transceiver and has the necessary test equipment. Attempting service or alignment without factory authorization can void the transceiver warranty.

When operated properly, the transceiver will provide years of service and enjoyment without requiring further realignment. The information in this section gives some general service procedures requiring little or no test equipment.

## Service

If it is ever necessary to return this equipment to your dealer or service center for repair, pack it in its original box and packing material. Include a full description of the problems experienced.

Include your telephone number, fax number, and e-mail address (if available) along with your name and address in case the service technician needs to call you for further information. While investigating your problem. Do not return accessory items unless you feel they are directly related to the service problem.

You may return this product for service to the authorized **RTS** dealer from whom you purchased it, or any authorized **RTS** service center. A copy of the service report will be returned with the transceiver. Please do not send subassemblies or printed circuit boards; send the complete transceiver. Tag all returned items with your name and call sign for identification.

Please mention the model and serial number of the transceiver in any communication regarding the problem.

## Service note

If you desire to correspond on a technical or operational problem, please make your note short, complete, and to the point. Help us help you by providing the following:

- Model and serial number of equipment.
- Question or problem you are having.
- Other equipment in your station pertaining to the problem.
- Meter readings.
- Other related information (menu setup, mode, frequency, key sequence to induce malfunction, etc.)

### **Warning:**

Do not pack the equipment in crushed newspapers for shipment. Extensive damage may result during rough handling or shipping.

## Cleaning

The keys, controls, and case of the transceiver are likely to become soiled after extended use. Remove the controls from the transceiver and clean them with a neutral detergent and warm water. Use a neutral detergent (no strong chemicals) and a damp cloth to clean the case.

## **TROUBLE SHOOTING**

The problems described in the following tables are commonly encountered operational malfunctions. These types of difficulties are usually caused by improper hook-up, accidental incorrect control setup, or operator error due to incomplete programming. These problems are usually not caused by circuit failure. Please review these tables and the appropriate section(s) of this instruction manual before assuming your transceiver is defective.

<b>Problem</b>	<b>Probable Cause</b>	<b>Corrective Action</b>
The transceiver will not power up after connecting a 13.8 V DC power supply and pressing the power switch. Nothing appears on the display.	<ol style="list-style-type: none"> <li>1.The power cable was connected backwards.</li> <li>2.One or more of the power cable fuses are open.</li> </ol>	<ol style="list-style-type: none"> <li>1.Connect the supplied DC power cable correctly: Red ( + ); Black ( - ).</li> <li>2.Look for the cause of the blown fuse(s). After inspecting and correcting any problems, install a new fuse(s) with the same ratings.</li> </ol>
The display is too dim, even though you selected a high brightness level.	The supply voltage is too low.	The supply voltage requirement is 13.8V DC 15% (11.7 V to 15.8 V DC). If the input voltage is outside this range, adjust your regulated power supply and/or check all power cable connections.
You cannot transmit even though you press Microhpone [PTT].	The microphone plug was not inserted completely into the front panel connector.	Switch OFF the power, then insert themicrophone plug until the locking tab clicks in place.
Scan not available	Channel not included in scan when PC programming	
Communicational range drop down	<ol style="list-style-type: none"> <li>1. Antenna connection problem</li> <li>2.The transceiver may work in low power mode</li> </ol>	<ol style="list-style-type: none"> <li>1.Check antenna connector</li> <li>2.Change output power to a high level.</li> </ol>

# SPECIFICATIONS

## Specifications

General	
Frequency Range	HF: 33-49MHz 54-60MHz 66-88MHz VHF: 136-174MHz 245-246MHz UHF: 400~490MHz
Number of Channels	250 channels
Channel Spacing	25KHz (Wide Band) 20KHz (Middle Band) 12.5K (Narrow band)
Phase-locked Step	5KHz, 6.25KHz
Operating Voltage	13.8V DC $\pm 15\%$
Squelch	Carrier/CTCSS/DCS/5Tone/2Tone/DTMF
Frequency Stability	$\pm 2.5$ ppm
Operating Temperature	-20~+60°C (-4 F~+140 F)
Dimensions(WxHxD)	160x155x40mm
Weight	1KG

Specifications are subject to change without notice due to advancements in technology.

Receiver (ETSI EN 300 086 standard testing)		
	Wide band	Narrow band
Sensitivity (12dB Sinad)	$\leq 0.2\mu V$	$\leq 0.25\mu V$
Adjacent Channel Selectivity	$\geq 70$ dB	$\geq 60$ dB
Intermodulation	$\geq 65$ dB	$\geq 60$ dB
Spurious Rejection	$\geq 70$ dB	$\geq 70$ dB
Audio Response	+1~-3dB(0.3~3KHz)	+1~-3dB(0.3~2.55KHz)
Hum & Noise	$\geq 45$ dB	$\geq 40$ dB
Audio distortion	$\leq 5\%$	
Audio power output	$> 2W@10\%$	

Transmitter (ETSI EN 300 086 standard testing)		
	Wide band	Narrow band
Power Output	54-60MHz: 50W/10W/5W 66-88MHz: 50W/10W/5W 136-174MHz: 60W/25W/10W 400-490MHz: 45W/25W/10W	
Modulation	16K $\Phi$ F3E	11K $\Phi$ F3E
Adjacent Channel Power	$\geq 70$ dB	$\geq 60$ dB
Hum & Noise	$\geq 40$ dB	$\geq 36$ dB
Spurious Emission	$\geq 60$ dB	$\geq 60$ dB
Audio Response	+1~-3dB(0.3~3KHz)	+1~-3dB(0.3~2.55KHz)
Audio Distortion	$\leq 5\%$	





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