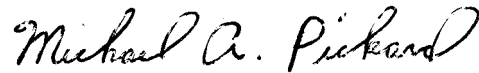


**TYPE OF EXHIBIT:** INSTALLATION AND OPERATING INSTRUCTION MANUAL  
**FCC PART:** 2.1033 (c)(3)  
**MANUFACTURER:** RITRON, INC.  
505 West Carmel Drive  
Carmel, IN 46032  
**MODELS:** RQA-451, RQT-451  
**TYPE OF UNIT:** UHF-FM Voice Message Transmitter  
**FCC ID:** AIERIT32-451  
**DATE:** January 14, 2011

Included in this exhibit are draft copies of the User Manual for RITRON Models RQT-451 and RQA-451 UHF-FM Voice Message Transmitters.

These manuals provide the end user with installation and operating instructions.

Signed:



Michael A. Pickard - Project Engineer



# **Quick Talk™**

## **Wireless Voice Monitor & Alarm Owner's Manual**

# PRELIMINARY



- **CONSTRUCTION**
- **FACTORIES**
- **WAREHOUSES**
- **FARMS**
- **UTILITIES**
- **AIRPORTS**
- **RETAIL STORES**
- **SECURITY**
- **LAW ENFORCEMENT**
- **SHIPPING**
- **APARTMENTS**
- **SPORTS**
- **HOTELS**
- **RESTAURANTS**
- **SCHOOLS**
- **TRANSPORTATION**

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[www.ritron.com](http://www.ritron.com)

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## ACCESSORIES FOR QUICK TALK™ .....

These replacement and optional items are available from Ritron and its authorized dealers.

<u>Item</u>	<u>Description</u>
AFB-1545	Standard 16 in. Flexible Whip Antenna
RAM-1545	Magnetic-Mount Antenna w/ 20 ft. of Cable and a BNC Connector

## WHAT THIS MANUAL COVERS .....

This manual covers basic operation of the Quick Talk™ Wireless Voice Monitor and Alarm. For most applications, this is all the information you will need. More complex features of Quick Talk™ are explained in the Advanced Features Section of this manual.

## IMPORTANT SAFETY INFORMATION .....

**NOTICE:** The Quick Talk™ should not be used to report conditions relating to safety of life or property.

To reduce the risk of fire, electric shock or personal injury, follow these basic safety instructions when using this unit.

1. Read and follow all instructions.
2. Remove power from the unit before cleaning. Do not use liquid or aerosol cleaners.
3. Use only Ritron approved power sources for the unit.
4. During thunderstorms, avoid contact with this unit and any external antenna system or wiring.
5. The Quick Talk™ switch and external power terminals are connected internally to the antenna connector. If the Quick Talk™ switch or power supply terminals contact high voltage, a hazardous condition may exist in that contacting the antenna could prove injurious or even fatal.
6. In general, the switches you connect to the Quick Talk™ are to be independent dry contact switches, and not part of any other "live" electrical circuit
7. If you are unsure whether your installation will be safe, contact an experienced electrician or electronics technician.

## ABOUT THE QUICK TALK™ WIRELESS VOICE MONITOR & ALARM.....

### General Information

The Quick Talk™ is a wireless radio transmitter that reports changes in the status of switches by transmitting user-recorded voice messages to two-way mobile, portable or base station radios. Quick Talk™ transmits your voice message when the switch change occurs, and at intervals you select.

Because you provide and connect the switches, your Quick Talk™ units can report on the status of intrusion, tampering, equipment malfunction, liquid levels, machinery, pressure, temperature, power, smoke or leakage.

The Quick Talk™ is easily programmed to transmit on either an existing or a new radio frequency, with the most popular sub-audible coded squelch formats, such as Quiet Call® or Digital Quiet Call™. This enables all your personnel with JOBCOM®, PATRIOT®, or equivalent two-way radios to hear the voice messages instantly, and to be advised of the current condition of each monitored location or device.

Quick Talk™ is housed in a weather-resistant enclosure, so it can be installed in a wide variety of indoor and outdoor locations. Because six internal AA Alkaline batteries will power the unit for about a year, Quick Talk™ does not require AC line power.

### Quick Talk™ Models and Frequencies

There are three Quick Talk™ models, one for each of the most popular professional radio communications bands. The model number appears on a label on the front of the case, and on a second label inside the case.

MODEL	BAND	FREQUENCY RANGE
RQT-151	VHF-FM	150 to 165 MHz
RQT-151M	VHF-FM	151.820, 151.880, 151.940, 154.570, 154.600 MHz
RQT-451	UHF-FM	450 to 470 MHz

Ritron manufactures mobile, portable and base station two-way radios and repeaters for use with Quick Talk™. Ritron pioneered the use of Color Dots on radios to identify frequencies.

Factory-programmed, default Quick Talk™ frequencies are:

Red Dot = 151.625 MHz for RQT-151

Green Dot = 154.600 MHz for RQT-151M

Blue Star = 467.925 MHz for RQT-451

See page 4 for instructions on changing the Quick Talk™ transmit frequency to match an existing radio system.

## PLEASE NOTE THE FOLLOWING WITH REGARD TO RF EXPOSURE FOR THIS PRODUCT .....

### EXPOSURE TO RADIO FREQUENCY ENERGY:

**RQA-151, RQA-151M, RQA-451:** This product generates radio frequency (RF) energy when the button on the front of the unit is depressed. This product has been evaluated for compliance with the maximum permissible exposure limits for RF energy at the maximum power rating of the unit when using antennas available from RITRON.

**RQT-151, RQT-151M, RQT-451:** This product generates radio frequency (RF) energy when the state of any of the four inputs has been changed. This product has been evaluated for compliance with the maximum permissible exposure limits for RF energy at the maximum power rating of the unit when using antennas available from RITRON.

For both the AFB-1545 and the standard internal antennas, at the 20 cm (7.9 inches) minimum expected separation distance and greater, the maximum RF exposure is well below the General Population / Uncontrolled limits. Antennas other than those available from RITRON have not been tested for compliance and may or may not meet the exposure limits at the distances given. Higher gain antennas are capable of generating higher fields in the strongest part of their field and would, therefore, require a greater separation from the antenna. This product is not to be used by the general public in an uncontrolled environment unless compliance with the Uncontrolled / General Population limits for RF exposure can be assured.

To limit exposure to RF energy to levels below the limit, please observe the following:

- Use only the antenna(s) available from RITRON for these models. **DO NOT** operate the radio without an antenna.
- **DO NOT** activate the transmitter when not actually wishing to transmit. These radios transmit recorded messages of a pre-determined length to prevent continuous transmit times.
- When transmitting, make certain that the distance limits for the particular model in use are observed.
- **DO NOT** allow children to operate the radio.

When used as directed, this series of radios is designed to comply with the FCC's RF exposure limits for "Uncontrolled/General Population". In addition, they are designed to comply with the following Standards and Guidelines:

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR §§ 2 sub-part J.
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1992.
- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition.

Copyright Telecommunications Industry Association

## QUICK TALK™ WIRELESS VOICE ALARM REPORTER FEATURES .....

### Basic Features:

- Internal radio transmitter (separate VHF and UHF models).
- User-recorded voice messages; total recording time of 30 seconds.
- Connection to user-supplied switches.
- Included external antenna.
- Typical range of 1/2 mile. Longer range is possible using an optional antenna.
- Weather-resistant (not waterproof nor immersible) enclosure.
- Internal battery holder for six (6) AA Alkaline cells.
- Companded Audio – Selectable.
- Optional External 12 VDC power supply with battery back-up.
- Connection and use of an external 12 Volt DC power supply.
- Typical operating battery life of 1 year.
- Automatic low battery message.
- Limited One-year Factory Warranty.

- The following are programmable features:
  - Transmit Frequency;
  - Tone Coded Squelch Encoder (Quiet Call® Interference Eliminator);
  - Digital Coded Squelch Encoder (Digital Quiet Call™ Interference Eliminator);
  - Message transmission schedules and limits.

### Advanced Features:

- Use of multiple (4) switch inputs for messages
- Analog voltage (or 4-20 mA loop) inputs
- Multiple location identification messages
- Terminated alarm loop inputs
- Use of solar power panels to operate and charge internal NiCad batteries
- Enabling and disabling the low battery or external power failure messages
- Battery saver options

## FREQUENTLY ASKED QUESTIONS ABOUT QUICK TALK™ PROGRAMMING.....

### Do I have to program my Quick Talk™?

You may not need to program your Quick Talk™ at all. If you purchased a Quick Talk™ that is factory-programmed to your radio system frequency (check the Color Dots on your radios and the Quick Talk™), and you do not use a form of Quiet Call coded squelch, you can connect your switch to the color-coded "Switch #1" wires on the hook-up cable, install the batteries, and start using Quick Talk™. The factory default voice messages are "Switch Open" and "Switch Closed". Otherwise, read this manual, and then program your Quick Talk™.

### Do I need to program every feature?

In many cases, no. The factory pre-programmed settings, explained in the instructions, may meet many of your needs.

### How do I program my Quick Talk™?

Quick Talk™ is programmed using RITRON programming software and a PC computer.

### What if I don't find what I need in this manual?

Call Ritron; we will be glad to help you. For most applications, this manual should cover everything you will need to know. However, the Quick Talk™ has more capabilities and features than described here. Contact us at Ritron; we can make Quick Talk™ do just about anything.

### Will it harm the Quick Talk™ if I program it improperly?

No; however, you may need to erase all programming and start over; see page 10 to do this. Feel free to experiment with the various features and possible configurations.

### Can my settings or messages get lost or erased if the battery runs down, or if my Quick Talk™ is disconnected?

No. The settings and voice messages you enter are stored in special electronic memory devices in the Quick Talk™ that do not require power to hold the information. This means that if the batteries run down or if you remove them, you will not need to reprogram the unit. All your settings and messages will be there for you when you install fresh batteries.

### What if I need more range?

To increase the range of your Quick Talk™ transmissions, we suggest you first relocate the unit. Depending on the type of switch and wiring, you may use several hundred feet of wiring to connect the switch — this allows installation of the Quick Talk™ and it's attached antenna for the best range, at an unobstructed and elevated position.

Also, Ritron offers several optional "high gain" antennas. And, Ritron can provide a radio repeater to increase the range not only for your Quick Talk™, but also for your entire radio system.

## IDENTIFICATION OF QUICK TALK™ CONTROLS AND CONNECTIONS .....

### 1 Battery Holder

The battery holder accommodates the six (6) standard "AA" alkaline cells required to power the Quick Talk™.

**NOTE:** Always install a fresh set of alkaline batteries before programming the unit.

### 2 BNC Antenna Connector

The antenna radiates radio signals. Before using Quick Talk™, make sure the antenna is fastened securely to this connector on the front of the radio.

### 3 SMB Antenna Connector

This connects the front-panel, BNC antenna connector to the radio printed circuit board.

### 4 External Audio Input

Allows input to the Quick Talk™ voice recorder from an external audio source, such as the Line Out audio from your computer.

### 5 Microphone

Microphone for recording voice messages.

### 6 USB Programming Connector

Connects the Quick Talk™ to the USB port on your computer for programming.

### 7 Record Button

Press this button to initiate voice recording.

### 8 External Hook-up Cable

A 10-conductor cable for connection of external power supply and up to four (4) switch inputs.

### 9 Watertight Strain Relief Cable Fitting

The cable to your external switches passes through this fitting. When the strain relief fitting is used with recommended cable sizes, it provides a water-resistant enclosure. Do not overtighten this fitting.

**NOTES:** Use Radio Shack Telephone Station Wire, 6-conductor, solid 24-AWG In-wall Type CM, Cat. No. 278-874, or equivalent size round cable (0.114 — 0.250" diameter).

If you cannot find suitable wire, call Ritron at 800-872-1872.

### 10 External Hook-up Connector

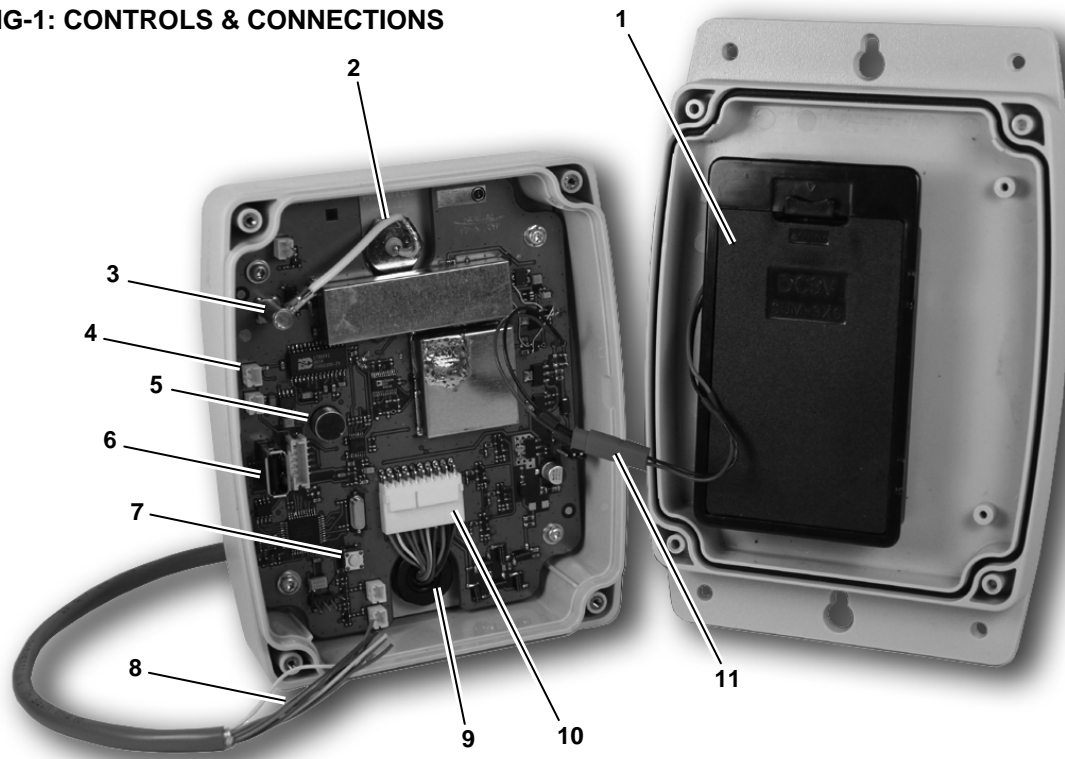
A 10-position connector for the external hookup cable.

### 11 Battery Connector

In-line connector between the printed circuit board and the battery holder.

**IMPORTANT:** Do not remove any other fasteners or further disassemble the Quick Talk™ unit; doing so risks damage to the unit and could void the manufacturer's warranty.

FIG-1: CONTROLS & CONNECTIONS





## QUICK TALK™ PROGRAMMABLE FEATURES .....

The Quick Talk™ features four (4) separate inputs that can each be programmed with unique voice messages and attributes. All programming is accomplished with the RITRON RQA/RQT PC Programmer software available at [www.ritron.com](http://www.ritron.com).

The programmer software requires Window® XP or greater, and a PC computer with a USB port.

### Description

Enter a brief description (35 characters or less) of the Input function or the recorded message. This can be useful when reading out the Quick Talk™ programming at a later date, or when saving a programming profile for use with other radios.

### Frequency Table #

To match other RITRON radios, the owner can select from a table of transmit frequencies. Simply “read-out” the Frequency Code of your RITRON portable, mobile or base radio and enter the same code when programming the Quick Talk™.

### Transmit Frequency

Once you have selected a Frequency Code the actual transmit frequency will appear here. If your operating frequency does not appear on the Frequency Code list, a licensed radio service technician will be able to enter other frequencies within the radio's operating band.

To identify your assigned frequency:

- Read-out the Frequency Code of the RITRON radio you intend to use with the Quick Talk™.
- Check for a corresponding color dot on the radio you intend to use with the Quick Talk™.
- Locate a label identifying the receiver frequency in megahertz (MHz).
- Your assigned frequency is shown on your FCC Station License.
- Call your radio dealer or Ritron for help if you cannot determine your radio's receiver frequency.

The original factory-programmed transmitter frequency of your Quick Talk™ is marked on the outside of the shipping box.

### QC or DQC Code

Select from a list of QC and DQC Codes to transmit subaudible squelch tones for interference elimination.

The Quick Talk™ radio transmitter is compatible with two standard communications industry sub-audible signaling formats: QC (Quiet Call® Interference Eliminator), and DQC (Digital Quiet Call™ Interference Eliminator). Both Quiet Call formats unlock receivers programmed to require these codes -- they screen out interference from other radio systems operating on your same transmit frequency.

QC Quiet Call® is Ritron's trade name for what the communications industry calls sub-audible (below the range of human hearing) tone squelch, or CTCSS (Continuous Tone Coded Subaudible Squelch). Other radio manufacturers use different trade-names for essentially the same system. You may program a specific QC code into your Quick Talk™ to transmit with the voice messages, which will “unlock” the receivers in your radio system.

DQC Digital Quiet Call™ is Ritron's digital coded squelch, and works the same as QC, except it is a digital code that is transmitted with the voice messages.

To identify your QC or DQC tone:

- Read-out the Tone Code of the RITRON radio you intend to use with the Quick Talk™.
- Refer to your radio manual.
- Contact your radio dealer or Ritron if you are unsure about this issue.

### DQC Invert

The DQC Digital Quiet Call™ code can be inverted for systems that require inversion.

### TX Alert Tone

The RQT can transmit an alert tone before and after each voice message transmission.

## Comband

Some two-way radios have a feature referred to as “companding”. It is a way of eliminating background hiss or noise, making the radio sound clearer. “Companding” is a combination of audio “compression” in the transmitter and audio “expanding” in the receiver. The Quick Talk™ can be programmed for audio compression. To determine if your existing 2-way radios are using the Companding feature, you can check the radio’s User Manual, contact your radio dealer, or call Ritron for help.

If you are unable to determine if your portable radio uses the companding feature, we suggest the following:

1. Leave the radio in the factory default setting with no companding.
2. Activate the transmitter of the Quick Talk™ and listen to the message from your portable radio. If the received audio is acceptable, you should not need to set the Quick Talk™ for companding.

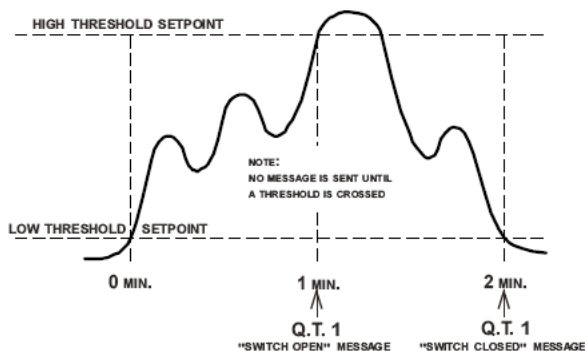
## Input Type

Each input can be programmed for one of the three (3) basic types of Input operation.

**Contact Closure** – Is used when a switch closure is connected to the input.

**Analog Input** – Voltages above the High Threshold Setpoint cause the Input OPEN message to transmit. Voltages below the Low Threshold Setpoint cause the Input CLOSED message to transmit. The dead zone—an area of hysteresis provided by the difference between High and Low Threshold Setpoints—prevents unwanted messages caused by noise or minor signal changes. See Fig—9.

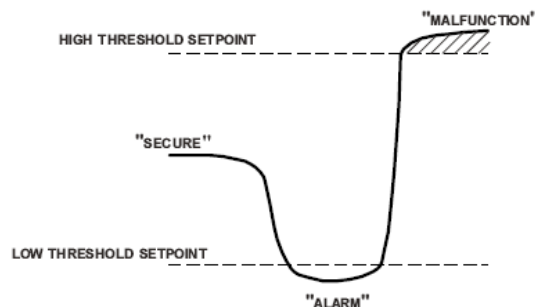
When the input is in CLOSED condition, a change to OPEN condition occurs only when the signal exceeds the High Threshold Setpoint. Similarly, when the input is in OPEN condition, the change to CLOSED condition occurs only when the signal is less than the Low Threshold Setpoint.



FIG—9. ANALOG INPUT MODE (EXAMPLE)

**Terminated Alarm Input** - This mode is useful in security alarm applications, where the “Secure” (Good) condition is a range of voltages. Any voltage above or below this range represents an “Alarm” (Bad) condition. See Fig—10.

The “Secure” condition is the range of voltage between the High and Low Threshold Setpoints. The input OPEN message is activated in this range. Voltage above High Threshold Setpoint, or below Low Threshold Setpoint activates the input CLOSED message.



FIG—10. TERMINATED ALARM INPUT MODE (EXAMPLE)

**Analog Setpoints** - The HIGH and LOW Threshold Setpoints used when the Input is set to Analog Input mode or Terminated Alarm Input mode can be programmed to any DC voltage between 0-5 VDC. The Analog Setpoints have no effect when the Input is set to Contact Closure mode.

## Input Operation

**Normal** – operation transmits a message each time a changed condition is detected.

**Debounce Mode** - is an option specifying that the switch must remain in it’s changed condition for the programmed debounce time before generating a message for the changed condition.

**Example:** A sensor is used to detect a car in a “No Parking” zone. Since it is undesirable for a message to be generated by normal traffic through the “No Parking” zone, a five-minute Debounce is used. Only if the sensor is activated for a full five minutes will the “car illegally parked” message be transmitted.

**Holdoff Mode** - option transmits messages immediately upon a change of switch condition, and will hold off a message indicating further change for the programmed holdoff time.

**Example:** A Quick Talk™ is used as a gate doorbell. It is practical for the message to be transmitted immediately, and also desirable to have a one-minute holdoff before the same message is re-sent, even if the button is pushed repeatedly.

**Debounce / Holdoff Time** – specifies the debounce time or holdoff time described above. This time is programmed independently for the OPEN and CLOSED conditions.



**Latching Input Mode** - Use the Quick Talk™ Latching Input mode if repeated transmissions are desired with a momentary switch (i.e. a push-button). The latching effect maintains message repeats after the momentary switch change has ended.

Example: To use a Quick Talk™ in a paint department, you want it to re-transmit a message several times after a "Press for Help" push-button is pressed. With the Quick Talk™ set to Latching Input mode, release of the push-button is ignored and the message is re-transmitted as scheduled.

## Message Repeat

### Repeat Message on each transmission

Your recorded voice message can be programmed to repeat from one time to nine times on each Quick Talk™ radio transmission, depending on how you program this feature. More urgent messages may have more phrase repeats.

Example: You recorded the message "Pump Motor Hot", then programmed Quick Talk™ to repeat the phrase two (2) times in each transmission. In this case, activating the switch results in the Quick Talk™ transmitting:  
"...beep. Pump motor hot. Pump motor hot. beep..." The beginning and ending beeps are added automatically to attract attention to Quick Talk™ transmissions.

### Repeat Message with multiple transmissions

You can set a limit to the number of times the message will be transmitted at the scheduled intervals.

Example: Suppose you have a vehicle detector switch that closes when it detects a vehicle at the delivery door of your building. Your recorded message might then be "Vehicle at Delivery Door". You may want this message

to be transmitted every two minutes for approximately a quarter hour after a vehicle is detected, then to stop transmitting until the vehicle is moved. In this case, you would program the message Wait Time for every two minutes, and set the Message Limit to "8", as described here.

When a vehicle arrives, the switch closes and the message is transmitted every 2 minutes until it has been sent 8 times over a span of 16 minutes, unless the vehicle leaves before 16 minutes has lapsed. In this case, the switch opens and the message ceases when the vehicle is moved.

When another vehicle arrives, the Quick Talk™ again transmits the message every two minutes for about a quarter of an hour, or until the vehicle leaves.

The Quick Talk™ is set at the factory to transmit switch status messages without limit. For example, if you programmed the Quick Talk™ to transmit a status message every hour, it would continue to do so until the battery runs down.

### Wait time between repeated transmissions

This sets the amount of time the Quick Talk™ will wait between repeated transmissions. You can program a different Wait Time for the open condition, and for the closed condition of your switch.

Example: The switch status message for switch open is "Pump motor temperature OK". You may schedule the Quick Talk™ to transmit this message once every two hours; this way, you know the Quick Talk™ is operating properly.

If the corresponding switch status message for switch closed is "Pump Motor Over Temperature", you may schedule the Quick Talk™ to broadcast this message every two minutes, so the situation would receive prompt attention.

## QUICK TALK™ DEFAULT PROGRAMMING .....

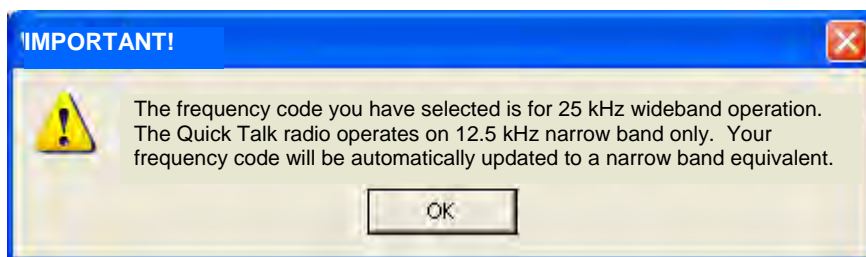
<b>TX Frequency</b> (all inputs)	24	151.625 MHz (RQT-151)
	22	154.600 MHz (RQT-151M)
	26	467.850 MHz (RQT-451)
<b>QC/DQC Code</b> (all inputs)	44	No Tone
<b>DQC Invert</b>	No	
<b>Compand</b>	No	
<b>Input Type</b>	Contact Closure	
<b>Analog Setpoints</b>	High	3.5 VDC
	Low	1.7 VDC
<b>Input Operation</b>	Normal	
<b>Latching Input Mode</b>	No	
<b>Debounce/Holdoff Time</b>	Open/High	10 sec.
	Closed/Low	10 sec.
<b>Number of Inputs</b>	Inputs 1-2	
<b>TX Alert Tone</b>	Yes	
<b>Battery Saver</b>	Yes	
<b>Low Battery Message</b>	Yes	
<b>Power Fail Message</b>	No	

<b>Message Delay on TX</b>	1 sec.	
<b>Recorded Messages</b>		
Input 1 Open/High	"Switch 1 open"	
Input 1 Closed/Low	"Switch 1 closed"	
Input 2 Open/High	"Switch 2 open"	
Input 2 Closed/Low	"Switch 2 closed"	
Power Fail	"Power fail"	
Low Battery	"Low battery"	
<b>Number of Times Recorded Message is repeated on each Transmission</b>		
Inputs 1-4 Open/High	One time	
Inputs 1-4 Closed/Low	One time	
<b>Number of Times the Transmission is sent</b>		
Inputs 1-4 Open/High	Repeat forever	
Inputs 1-4 Closed/Low	Repeat forever	
<b>Wait Time between Transmissions</b>		
Inputs 1-4 Open/High	On change only	
Inputs 1-4 Closed/Low	On change only	

## PROGRAMMING YOUR QUICK TALK™ TRANSMITTER FREQUENCY AND TONE.....

The Quick Talk™ transmitter operates exclusively on a 12.5 kHz narrow band channel bandwidth. Many of the Frequency Table Codes programmed in your compatible Ritron radios are for 25 kHz wide band channels. If these codes are selected when programming your Quick Talk™ radio, the programmer will automatically update to the equivalent 12.5 kHz code. This allows you to use your Quick Talk™ with all of your existing radios. The following dialog box will appear any time you attempt to program a wideband code into a Quick Talk™.

The RQT-151M MURS model radio can only be programmed to the codes listed on Table 1 below. VHF Business band models can be programmed to the codes listed on Table 2 below, or can be programmed to any valid licensed frequency between 150-165 MHz EXCEPT the frequencies listed on MURS Table 1 below.



**TABLE 1: MURS model radios only**

Code	Frequency (MHz)	Color Dot	Narrow Band Equivalent Code
01	154.600	Green Dot	22
02	154.570	Blue Dot	23
19	151.820	MURS	
20	151.880	MURS	
21	151.940	MURS	
22	154.600	MURS	
23	154.570	MURS	

**TABLE 2: VHF Business band models**

Code	Frequency (MHz)	Color Dot	Narrow Band Equivalent Code
03	151.625	Red Dot	03N *
04	151.955	Purple Dot	04N *
05	151.925		05N *
06	154.540		06N *
07	154.515		07N *
08	154.655		08N *
09	151.685		09N *
10	151.715		10N *
11	151.775		11N *
12	151.805		12N *
13	151.835		13N *
14	151.895		14N *
15	154.490		15N *
16	151.655		16N *
17	151.745		17N *
18	151.865		18N *
24	154.700		
25	151.760		
26	152.700		

\* New Narrow Band Table Frequency

**TABLE 3: UHF Business band models**

Code	Frequency (MHz)	Color Dot	Narrow Band Equivalent Code
01	467.7625	J	24
02	467.8125	K	25
03	464.5500	Yellow Dot	23
04	464.5000	Brown Dot	22
05	467.8500	Silver Star	26
06	467.8750	Gold Star	27
07	467.9000	Red Star	28
08	467.9250	Blue Star	29
09	469.2625		09N *
10	462.5750	White Dot	10N *
11	462.6250	Black Dot	11N *
12	462.6750	Orange Dot	12N *
13	464.3250		13N *
14	464.8250		14N *
15	469.5000		15N *
16	469.5500		16N *
17	463.2625		17N *
18	464.9125		18N *
19	464.6000		19N *
20	464.7000		20N *
21	462.7250		21N *
22	464.5000		
23	464.5500		
24	467.7625		
25	467.8125		
26	467.8500		
27	467.8750		
28	467.9000		
29	467.9250		
30	461.0375		
31	461.0625		
32	461.0875		
33	461.1125		
34	461.1375		
35	461.1625		

**TABLE 3: UHF Business band models (cont.)**

Code	Frequency (MHz)	Color Dot	Narrow Band Equivalent Code	Code	Frequency (MHz)	Color Dot	Narrow Band Equivalent Code
36	461.1875			57	466.0875		
37	461.2125			58	466.1125		
38	461.2375			59	466.1375		
39	461.2625			60	466.1625		
40	461.2875			61	466.1875		
41	461.3125			62	466.2125		
42	461.3375			63	466.2375		
43	461.3625			64	466.2625		
44	462.7625			65	466.2875		
45	462.7875			66	466.3125		
46	462.8125			67	466.3375		
47	462.8375			68	466.3625		
48	462.8625			69	467.7875		
49	462.8875			70	467.8375		
50	462.9125			71	467.8625		
51	464.4875			72	467.8875		
52	464.5125			73	467.9125		
53	464.5375			74	469.4875		
54	464.5625			75	469.5125		
55	466.0375			76	469.5375		
56	466.0625			77	469.5625		

**TABLE 4: Quiet Call Tone Codes**

Code	Frequency	Code	Frequency	Code	Frequency	Code	Frequency
01	67.0	14	107.2	27	167.9	40	159.8
02	71.9	15	110.9	28	173.8	41	165.5
03	74.4	16	114.8	29	179.9	42	171.3
04	77.0	17	118.8	30	186.2	43	177.3
05	79.7	18	123.0	31	192.8	44	No Tone
06	82.5	19	127.3	32	203.5	45	183.5
07	85.4	20	131.8	33	210.7	46	189.9
08	88.5	21	136.5	34	218.1	47	196.6
09	91.5	22	141.3	35	225.7	48	199.5
10	94.8	23	146.2	36	233.6	49	206.5
11	97.4	24	151.4	37	241.8	50	229.1
12	100.0	25	156.7	38	250.3	51	254.1
13	103.5	26	162.2	39	69.4		

Use Code "44" to program No Tone for systems without a Coded Squelch Interference Eliminator feature.

**TABLE 5: Digital Quiet Call Codes**

Code	Code	Code	Code	Code	Code	Code	Code	Code
023	071	143	225	266	356	452	546	703
025	072	145	226	271	364	454	565	712
026	073	152	243	274	365	455	606	723
031	074	155	244	306	371	462	662	731
032	114	156	245	311	411	464	612	732
036	115	162	246	315	412	465	624	734
043	116	165	251	325	413	466	627	743
047	122	172	252	331	423	503	631	754
051	125	174	255	332	431	506	632	
053	131	205	261	343	432	516	645	
054	132	212	263	346	445	523	654	
065	134	223	265	351	446	532	664	

## RECORDING YOUR QUICK TALK™ VOICE MESSAGES .....

Each of the four Quick Talk™ inputs can be programmed to play two unique voice messages, a “Switch Open” message that plays when the input changes to an OPEN or HIGH condition, and a “Switch Closed” message that plays when the input changes to a CLOSED or LOW condition.

Voice messages can be recorded into the Quick Talk™ using the RQA/RQT PC Programmer and the electret condenser microphone built onto the radio PCB assembly. Voice messages can also be recorded with an incoming audio signal from your computer. This allows you to record and store a message onto your computer and use it for multiple Quick Talk™ transmitters.

	RECORD	PLAY	RECORDED	TIME (MAX)
<input checked="" type="checkbox"/> Input 1 OPEN Message	[RECORD]	[PLAY]	<input checked="" type="checkbox"/>	6 Sec.
<input checked="" type="checkbox"/> Input 1 CLOSED Message	[RECORD]	[PLAY]	<input checked="" type="checkbox"/>	6 Sec.
<input checked="" type="checkbox"/> Input 2 OPEN Message	[RECORD]	[PLAY]	<input checked="" type="checkbox"/>	6 Sec.
<input checked="" type="checkbox"/> Input 2 CLOSED Message	[RECORD]	[PLAY]	<input checked="" type="checkbox"/>	6 Sec.
<input type="checkbox"/> Input 3 OPEN Message	[RECORD]	[PLAY]	<input type="checkbox"/>	Sec.
<input type="checkbox"/> Input 3 CLOSED Message	[RECORD]	[PLAY]	<input type="checkbox"/>	Sec.
<input type="checkbox"/> Input 4 OPEN Message	[RECORD]	[PLAY]	<input type="checkbox"/>	Sec.
<input type="checkbox"/> Input 4 CLOSED Message	[RECORD]	[PLAY]	<input type="checkbox"/>	Sec.
Low Battery	[RECORD]	[PLAY]	<input checked="" type="checkbox"/>	2 Sec.
Power Fail	[RECORD]	[PLAY]	<input checked="" type="checkbox"/>	2 Sec.
Location	[RECORD]	[PLAY]	<input checked="" type="checkbox"/>	2 Sec.

### Number of Inputs

Set the number of RQT inputs that will be used.

### Message Delay on TX

Whenever the RQT transmitter is activated it will wait this length of time before the alert tones and recorded voice message are sent.

### Input Messages

The length of each message is determined by two factors:

1. The number of inputs to be used.
2. If you will play both an OPEN and CLOSED message, or just one or the other.

A total of 24 seconds is allocated for all voice messages related to the four inputs. The 24 seconds is first divided equally by the number of inputs you have programmed into your Quick Talk™. Each input is then divided by the number of messages it will play, either two messages for both the OPEN and CLOSED condition or one message if only one condition is required.

**EXAMPLE:** If you have programmed your Quick Talk™ for two inputs, 12 seconds will be allocated to each input. If Input 1 transmits both the “Switch Open” and “Switch Closed” messages they will each be limited to 6 seconds. If Input 2 requires only the “Switch Closed” message it can be up to 12 seconds.

Carefully consider your requirements before recording the Quick Talk™ voice messages. If you decide later to use additional inputs, all messages will have to be re-recorded.

### Low Battery Message

When it senses the installed batteries are nearly run down, the Quick Talk™ will transmit one time each hour the factory-programmed message: “Low Battery”. If you maintain several Quick Talk™ transmitters within radio range of each other, you may customize this feature to easily determine which unit needs new batteries.

If you use only one Quick Talk™ in any area, or if you regularly change Quick Talk™ batteries, the factory-programmed message may be sufficient for your application.

### Power Fail Message

When the Quick Talk™ is powered with an external +12VDC supply and batteries are installed as a back-up, the RQT will transmit the Power Fail Message on a scheduled basis as long as the +12VDC external supply is not detected.

### Location Message

When installing more than one Quick Talk™ on a single frequency it may be desirable to record a unique Location Message to identify each individual Quick Talk™. The Location Message will be played after the TX Alert Tone and before the Input Message.

### To record your Quick Talk™ Voice Messages:

1. Read existing radio programming.
2. Enter the Number of Inputs you will be using.
3. Select the messages you will be recording.
4. Enter Message Delay on TX time.

5. If there were any changes made during steps 2 through 4, press the COMMIT button. This will erase all input messages, which will have to be re-recorded and the RECORDED boxes will no longer be checked.

**NOTE:** Pressing the COMMIT button will not erase the Low Battery, Power Fail, or Location messages.

6. To record a new message, press the associated RECORD button and follow the instructions on the Record Message dialog box.
7. The RECORDED checkbox will now indicate that the message is recorded.

After you have recorded a message you can review it by pressing the associated PLAY button. The Quick Talk™ will transmit the message on the transmit frequency associated with the input selected.

Record Message
✖

Message to be recorded: INPUT 1 OPEN

Length of Message (Max): 6 sec.

Audio Input:

☒ Microphone
 ☐ Computer .wav file
 

SELECT FILE

To record the message using the Microphone:

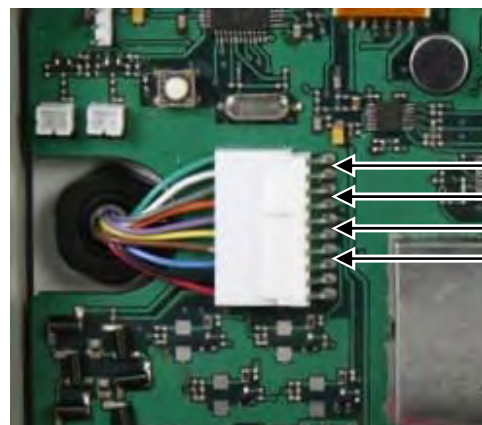
1. Press and hold the RECORD button on the radio printed circuit board.
2. Speak into the radio microphone.
3. Release the RECORD button.

## TEST YOUR QUICK TALK™ PROGRAMMING.....

Once your Quick Talk™ has been programmed, it will transmit on the same frequency as your radio receivers, and will transmit any coded squelch signals required for your radio system. Before installing the Quick Talk™ you should test for communication with your radio receivers.

To test the Quick Talk™ radio transmitter:

1. Attach the Quick Talk™ flexible antenna.
2. Turn on your radio receiver.
3. Place a screwdriver, paper clip or other electrically conductive item across the Input #1 pins.
4. Quick Talk™ will transmit the Input 1 CLOSED message, which you should be able to hear on your radio receiver.
5. Remove the short across the Input #1 pins.
6. Quick Talk™ will transmit the Input 1 OPEN message, which you should be able to hear on your radio receiver.
7. Repeat Steps 3 through 6 for Inputs 2, 3 and 4 if they have been programmed to be used.
8. If you do not hear the messages, you have probably not properly programmed the Quick Talk™ transmitter frequency or the Quiet Call® Coded Squelch. In this case, repeat the programming and perform this test again.



Depending upon your programming, the following sequence describes what you should hear with your radio receiver:

1. The Quick Talk™ transmitter will broadcast on the Transmit Frequency and QC or DQC Code programmed for the input that has been activated.
2. The Quick Talk™ will broadcast silence during the programmed Message Delay on TX Time
3. The Quick Talk™ will broadcast the TX Alert Tone if one has been programmed.
4. The Quick Talk™ will broadcast the Location Message if one has been recorded.
5. The Quick Talk™ will broadcast the recorded Input OPEN Message if the input has gone high or the Input CLOSED Message if the input has gone low.
6. The Input Message will be repeated for the number of times programmed for Repeat Message on each Transmission.
7. The Quick Talk™ will broadcast the TX Alert Tone again to signal the end of message, if one has been programmed.
8. The Quick Talk™ transmitter will turn OFF and the RQT will wait for the period of time programmed for Wait Time between Transmissions.
9. If Repeat Message Transmissions has been programmed for more than one transmission, the Quick Talk™ transmitter will again be activated and Steps 1 – 8 will be repeated for the programmed number of transmissions.



## INSTALLING THE QUICK TALK™

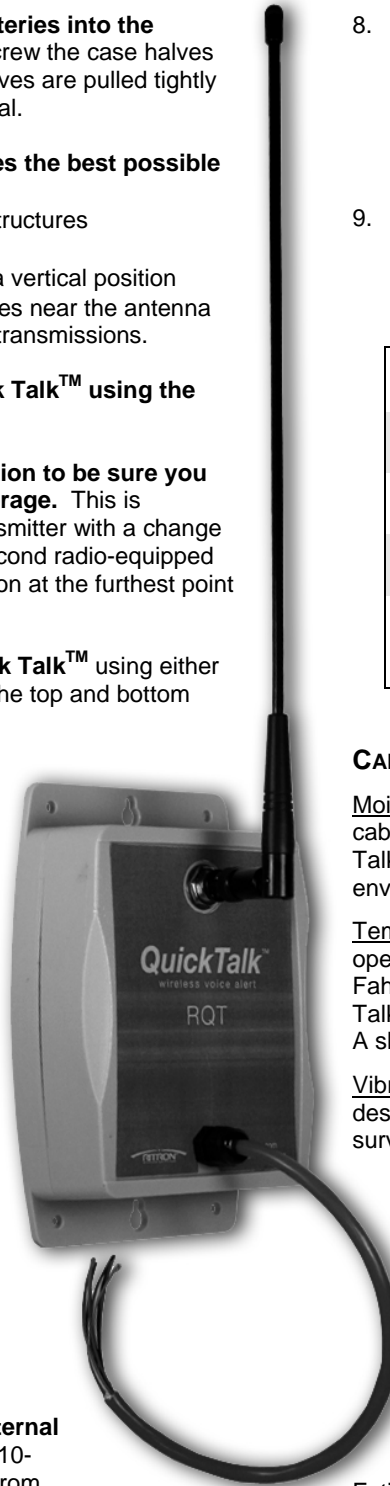
Prior to installing the Quick Talk™ transmitter, it is important to verify all radio programming to be certain that you have achieved the operation you desire. Re-programming requires the removal of the Quick Talk™ from its installed location, which can be time consuming and frustrating.

1. **Install 6 new AA Alkaline batteries into the internal battery holder** and screw the case halves together. Be sure the case halves are pulled tightly together for a good weather seal.
2. **Select a location that provides the best possible radio coverage.**
  - Avoid mounting to metal structures
  - Install as high as possible
  - Be sure the antenna is in a vertical position
  - Be aware that metal or wires near the antenna can block or absorb radio transmissions.
3. **Temporarily mount the Quick Talk™ using the top keyhole slots.**
4. **Test the radio from this location to be sure you get the necessary radio coverage.** This is achieved by activating the transmitter with a change on one of the inputs while a second radio-equipped person receives the transmission at the furthest point you will need to cover.
5. **Permanently mount the Quick Talk™** using either the four (4) corner mounts, or the top and bottom keyhole slots.

6. **Connect the antenna to the front panel BNC connector.**

If the Quick Talk™ is installed in an outdoor location, the antenna connection must be sealed with weather-proof tape to prevent corrosion and leakage. Seal the antenna connection to hold the antenna in a vertical position, to protect antenna fittings, and to maintain water-resistance of the Quick Talk™ in wet or outdoor environments. Use Archer Connector Sealant, Radio Shack Catalog Number 278-1645 or an equivalent. Wrap the connection with the sealant tape and press it securely in place. See sealant instructions for the specific details.

7. **Connect the 4 Inputs and External +12VDC power** provided by a 10-conductor, color-coded cable from the front of the Quick Talk™. This cable has been pre-installed with a sealed strain relief to provide weather resistance.



8. **Connect your switches or sensors to the desired Quick Talk™ input using wire nuts** to the color-coded cable described in Table 6. Be sure to use an appropriate sized, sealing wire nut. The color-coded wires are 24 AWG stranded.
9. **Test each one of the input switches or sensors** for the desired operation.

**Table 6: Color-Coded Inputs**

Input 1	+	GREEN
	-	WHITE (Ground)
Input 2	+	GRAY
	-	ORANGE (Ground)
Input 3	+	PURPLE
	-	YELLOW (Ground)
Input 4	+	BROWN
	-	BLUE (Ground)
External +12 VDC	+	RED
	-	BLACK

### CARE AND MAINTENANCE.....

**Moisture:** When the antenna sealant and power cable recommendations are followed, the Quick Talk™ is highly weather-resistant in outdoor environments. Do not immerse the unit in water.

**Temperature:** The Quick Talk™ is designed to operate between -22 and +140 degrees Fahrenheit. Like all electronic equipment, Quick Talk™ should not be subjected to extreme heat. A shaded area is an ideal outdoor location.

**Vibrations/Shocks:** Though the Quick Talk™ is designed to be rugged, it cannot be expected to survive extreme abuse.

**Chemicals:** Do not use harsh, corrosive or abrasive chemicals to clean the Quick Talk™ case; use only a cloth moistened with water. Do not attempt to clean the printed circuit board inside the housing.

**Batteries:** Use only fresh, new alkaline batteries when programming Quick Talk™. Acceptable brands and types are: Duracell MX1500B, Eveready E91, Rayovac 815 or equivalent.

**Estimated Battery Life:** Starting with a fresh set of AA alkaline batteries, Quick Talk™ can transmit about 7,000 voice messages over a period of one year before the batteries will need to be replaced.



## TEST YOUR SWITCH'S OPEN AND CLOSED CONDITIONS.....

In the Quick Talk™ basic operating mode, you will record two (2) voice messages for the Quick Talk™ to transmit. One message is transmitted when the switch is OPEN and the other is transmitted when the switch is CLOSED. Before you record these switch condition messages, determine how your switch works by using the factory pre-recorded messages in the Quick Talk™. After you have programmed the Quick Talk™ with your radio system frequency and with any required sub-audible squelch codes, use the following procedure.

### ***Do I need to test my switch?***

If you are certain of the conditions which cause your switch to open and close, you do not need to perform this test. However, we recommend you do test your switch, because doing so will confirm you have properly programmed the Quick Talk™ transmitter frequency — and, if required for your radio system, the Quiet Call Interference Eliminator squelch code.

### To Test Your Switch and Verify Reception of Messages by Your Radios:

1. Remove the batteries from the holder.
2. Review the safety precautions on Page ii of this manual before connecting your switches. When you are sure your connections will be safe, connect your switch to the wires on the Quick Talk™ color-coded cable described in Table 6.
3. Reinstall fresh AA Alkaline batteries in the Quick Talk™ according to the polarity marks.
4. Activate your switch; listen to your two-way radio as the factory default messages are transmitted. (The message will be either "Switch One Open" or "Switch One Closed".) Write down a description of how the condition of your switch corresponds to the transmitted message. Then de-activate the switch and listen to the other transmitted message; again, write down the results.
5. By performing Step 4, you should understand how your switch works, and the meaning of it's open and closed states — essential knowledge to program a descriptive voice message for each switch condition. For example, if your switch is a magnetic reed switch on a door, and the switch closes when the door is opened, you can record the phrase "Door three open" for the switch closed condition, and then "Door three closed" for the switch open condition. Note that magnetic reed switches are available which work in the opposite way.

**NOTE:** We suggest that you do not record over the factory prerecorded messages until you are sure how your switch works. If the factory programmed messages have been erased, you will have to use an electrician's continuity tester or similar instrument to determine how your switch works.

## RECORDING CUSTOM VOICE MESSAGES FOR YOUR SWITCH CONDITIONS .....

### ***What is the purpose of Recording Custom Voice Messages?***

Recording customized Quick Talk™ voice messages gives them unmistakable meaning and significance. The standard factory prerecorded messages of "Switch Open" and "Switch Closed" require the listener to know how the switch works and what it does. However, when a user hears a custom message such as "Water pump three running hot", the meaning is clear.

### ***Do I need to record Custom Voice Messages?***

If the factory recorded messages "Switch Open" and "Switch Closed" suit your application, recording custom messages is not necessary.

To record a custom message, follow the instructions in the Recording Your Quick Talk™ Voice Messages section of this manual. Once recorded, play back the message to be sure you are satisfied with the quality and content of the message.

## Setting Battery Saver Options .....

The Battery Saver factory default is "Battery Saver enabled." With this setting the Quick Talk™ only checks the inputs 4 times per second to extend battery life. To detect very fast changes on the inputs, disable the Battery Saver option.

When the Battery Saver Option is disabled, it is recommended that Quick Talk™ is powered with an external power supply. This is because it draws approximately 7 mA continuously with this setting and will rapidly drain the batteries.

**NOTE:** DO NOT disable the Battery Saver unless you need to detect very fast changes on the inputs.

## **AUTOMATIC LOW BATTERY ALERT MESSAGE.....**

If the battery voltage drops below approximately 6 Volts, the Quick Talk™ transmits a factory prerecorded message, "Low Battery", every 60 minutes. When this occurs, replace the batteries promptly — within a day or so.

## **CONNECTING AN EXTERNAL +12 VDC POWER SUPPLY .....**

The Quick Talk™ may be used with an external +12 VDC power supply. With an external supply connected the internal batteries are automatically configured as a back-up power source. With the Quick Talk™ programmed for External Power and batteries installed as a back-up, it will broadcast the Power Fail message any time the external supply is removed and will repeat the Power Fail message once every hour until external power is restored.

To use the Quick Talk™ with an external +12 VDC power supply:

1. Use the PC Programmer to set the Quick Talk™ for External Power.
2. If the factory recorded "Power Fail" message is not adequate, record a new Power Fail message.
3. Use Ritron #RPS-203 Power Supply (11-15 VDC, 200 mA), or equivalent, to power the Quick Talk™. The Quick Talk™ requires 11-15 VDC, 200 mA minimum.
4. Connect the positive (+) terminal of the power supply cable to the RED wire on the Quick Talk™ color-coded cable.
5. Connect the negative (-) terminal of the power supply cable to the BLACK wire on the Quick Talk™ color-coded cable.
6. Be sure to use an appropriate sized, sealing wire nut to connect the wires. The color-coded wires are 24 AWG stranded.

## **SOLAR PANELS FOR OPERATING & CHARGING RECHARGEABLE BATTERIES .....**

Quick Talk™ uses little power when it is not transmitting. The estimated time the unit transmits can help determine the solar panel size required to charge rechargeable batteries. The following formula can be used to determine the size the solar panel:

The formula to calculate the solar panel's required mAH:

(TX time per hour) x (TX current in mA) x (Number of hours per day) = Req'd. mAH per day

EXAMPLE: Assume the Quick Talk™ transmits for one minute of every hour, on average (1/60 hour). Further assume the Quick Talk™ draws 150 mA of current while transmitting (150 mA).

NOTE: 150 mA is a bit higher than real consumption; the panel will be slightly oversized.

Plug the Example into the Formula:

(1/60 hour) x (150mA) x (24 hours/day) = 60 mAH per day

RESULTS: In this Example, the Quick Talk™ solar panel requires 60 mAH in a 24-hour period.

NOTE: Study solar panel manufacturers' information. Quick Talk™ input voltage cannot exceed 15 VDC.

## **ADDING A SECOND SWITCH TO DISABLE THE QUICK TALK™ TRANSMITTER.....**

### ***What is the purpose of adding a second switch to disable the Quick Talk™?***

There may be times when you want to disable the Quick Talk™ to prevent it from transmitting messages. For example, if Quick Talk™ reports the status of an entry door for the night shift, you may wish to disable status messages all day. Use a second switch to enable the Quick Talk™ at night, and disable it during the day.

To add a second switch to disable Quick Talk™ Messaging:

1. Use the PC Programmer to set the Quick Talk™ for Input 2 On/Off Switch.
2. Connect an external switch to the GRAY and ORANGE wires on the Quick Talk™ color-coded cable for connection to Input 2.

NOTE: With Input #2 in On/OFF mode, Quick Talk™ functions normally with the external switch closed. When the switch is open, Quick Talk™ is disabled and will not transmit messages. When the On/Off switch has been open (Quick Talk™ disabled), and it is then closed, Quick Talk™ transmits the prerecorded message describing the current condition of Input #1.

#### **MONITOR 4-20 MA SENSOR CURRENT LOOP WITH QUICK TALK™ ANALOG INPUT .....**

Quick Talk™ can act as a current sink when a resistor is connected between an Input's positive and negative connection. The resistance value is selected to scale the current to the permitted 0 - 5 Volt range for the Input to Quick Talk™. The following formula is used to calculate the Analog Threshold Setpoints necessary for your application.

**Analog Threshold Setpoint = 4-20 ma current (Amps) times the resistor value (Ohms)**

NOTE: A resistor value of 250Ω provides the maximum resolution, and is the recommended value. Using a lower resistance value with the 4-20 mA current loop produces less than 5 V at the Input and the measurement resolution is reduced. Using a higher resistance value at 20 mA can produce a voltage greater than 5V at the Input, which will not be recognized.

To configure an Input for 4-20 mA current loop:

1. Connect a resistor between the two wires on the Quick Talk™ color-coded cable that are associated with the desired Input (see Table 6)
2. Connect the output of the 4-20 mA current loop device to the positive (+) wire of the Input connection.
3. Program the desired Input for Analog Input operation and for the calculated Analog Setpoints.
4. Record an Input OPEN and Input CLOSED message for the associated Input.

## RITRON, INC. LIMITED WARRANTY .....

### WHAT THIS WARRANTY COVERS:

RITRON, INC. ("RITRON") provides the following warranty against defects in materials and/or workmanship in **RITRON Radios and Accessories** under normal use and service during the applicable warranty period (as stated below). "Accessories" means antennas, holsters, chargers, earphones, speaker/microphones and items contained in the programming and programming/service kits.

<u>WHAT IS COVERED</u>	<u>FOR HOW LONG</u>	<u>WHAT RITRON WILL DO</u>
Ritron RQT Quick Talk™	1 year*	During the first year after date of purchase, RITRON will repair or replace the defective product, at RITRON's option, parts and labor included at no charge.
Accessories	90 days*	<i>*After date of purchase</i>

### WHAT THIS WARRANTY DOES NOT COVER:

- Any technical information provided with the covered product or any other RITRON products;
- Installation, maintenance or service of the product, unless this is covered by a separate written agreement with RITRON;
- Any products not furnished by RITRON which are attached or used with the covered product, or defects or damage from the use of the covered product with equipment that is not covered (such as defects or damage from the charging or use of batteries other than with covered product);
- Defects or damage, including broken antennas, resulting from:
  - misuse, abuse, improper maintenance, alteration, modification, neglect, accident or act of God,
  - the use of covered products other than in normal and customary manner or,
  - improper testing or installation;
- Defects or damages from unauthorized disassembly, repair or modification, or where unauthorized disassembly, repair or modification prevents inspection and testing necessary to validate warranty claims;
- Defects or damages in which the serial number has been removed, altered or defaced.
- Batteries if any of the seals are not intact.

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**HOW TO GET WARRANTY SERVICE:** To receive warranty service, you must deliver or send the defective product, delivery costs and insurance prepaid, within the applicable warranty period, to **RITRON, INC., 505 West Carmel Drive, Carmel, Indiana 46032, Attention: Warranty Department**. Please point out the nature of the defect in as much detail as you can. You must retain your sales or lease receipt (or other written evidence of the date of purchase) and deliver it along with the product. If RITRON chooses to repair or replace a defective product, RITRON may replace the product or any part or component with reconditioned product, parts or components. Replacements are covered for the balance of the original applicable warranty period. All replaced covered products, parts or components become RITRON's property.

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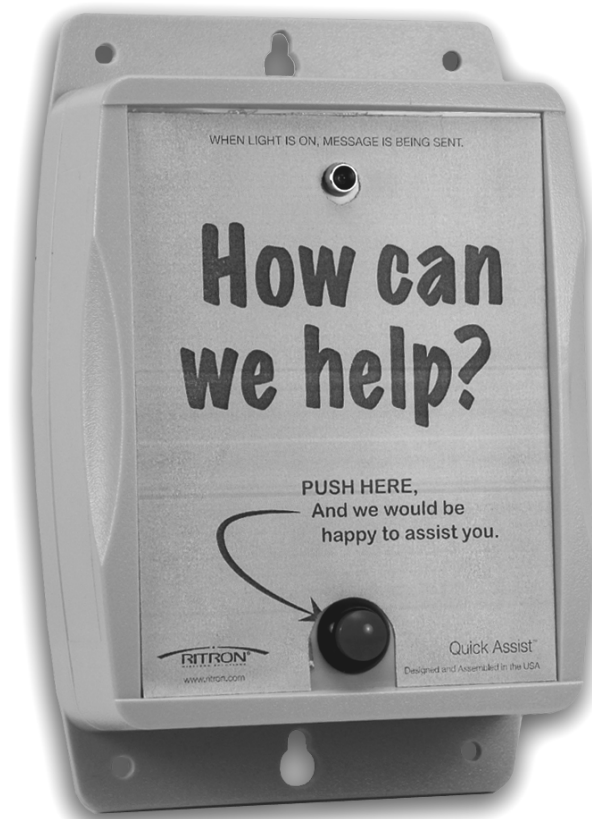
**WHERE THIS WARRANTY IS VALID:** THIS WARRANTY IS VALID ONLY WITHIN THE UNITED STATES, THE DISTRICT OF COLUMBIA AND PUERTO RICO.



# ***Quick Assist***<sup>®</sup>

## **Wireless Callbox Transmitter Owner's Manual**

PRELIMINARY



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**Ritron Publication 14500079      Rev. A   01-11**

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## WHAT THIS MANUAL COVERS .....

This manual covers basic operation of the Quick Assist® Wireless Callbox Transmitter. For most applications, this is all the information you will need.

## IMPORTANT SAFETY INFORMATION .....

**NOTICE:** The Quick Assist® unit should not be used to report conditions relating to safety of life or property.

To reduce the risk of fire, electric shock or personal injury, follow these basic safety instructions when using this unit.

1. Read and follow all instructions.
2. Disconnect the unit before cleaning. Do not use liquid or aerosol cleaners.
3. Use only approved power sources for the unit.
4. During thunderstorms, avoid contact with this unit and any external antenna system or wiring.
5. If you are unsure whether your installation will be safe, contact an experienced electrician or electronics technician.

## QUICK ASSIST® FEATURES DESCRIBED IN THIS MANUAL .....

- Internal radio transmitter (separate VHF and UHF models).
- User-recorded voice messages; total recording time of 24 seconds.
- Typical range of 1/2 mile. Longer range is possible using an optional antenna.
- Internal battery holder for six (6) AA Alkaline cells.
- Typical operating battery life of 1 year.
- Automatic low battery message.
- Programmable Features:
  - Transmit Frequency;
  - Tone Coded Squelch Encoder (Quiet Call® Interference Eliminator);
  - Digital Coded Squelch Encoder (Digital Quiet Call® Interference Eliminator);
  - Message transmission schedules and limits.
- Connection and use of an external 12 Volt DC power supply.
- Limited One-year Factory Warranty.



## ABOUT THE QUICK ASSIST® WIRELESS CALLBOX TRANSMITTER.....

### General Information

The Quick Assist® is a RITRON Wireless Callbox Transmitter, specialized for indoor retail or commercial use, and pre programmed to transmit a custom recorded "assistance needed" message when the Message push-button is pressed for customer assistance. Personnel know from these message transmissions in which specific areas a customer needs assistance.

The Quick Assist® is easily programmed to transmit on either an existing or a new radio frequency, with the most popular sub-audible coded squelch formats, such as Quiet Call® or Digital Quiet Call®. This enables all your personnel with JOBCOM®, PATRIOT™ or equivalent two-way radios to hear the voice messages instantly.

The Quick Assist® can be installed in a wide variety of indoor locations. Because it's six internal AA Alkaline batteries will power the unit for about a year, the Quick Assist® does not require AC line power.

### Quick Assist® Models and Frequencies

There are three Quick Assist® models, one for each of the most popular professional radio communications bands. The model number appears on a label on the bottom of the case, and on a second label inside the case.

MODEL	BAND	FREQUENCY RANGE
RQA-151	VHF-FM	150 to 165 MHz
RQA-151M	VHF-FM	151.820, 151.880, 151.940, 154.570, 154.600 MHz
RQA-451	UHF-FM	450 to 470 MHz

Ritron manufactures mobile, portable and base station two-way radios and repeaters for use with Quick Assist®. Ritron pioneered the use of Color Dots on radios to identify frequencies.

Factory-programmed, default Quick Assist® frequencies are:

Red Dot = 151.625 MHz for RQA-151

Green Dot = 154.600 MHz for RQA-151M

Blue Star = 467.925 MHz for RQA-451

See page 5 for instructions on changing the Quick Assist® transmit frequency to match an existing radio system.

## PLEASE NOTE THE FOLLOWING WITH REGARD TO RF EXPOSURE FOR THIS PRODUCT .....

### EXPOSURE TO RADIO FREQUENCY ENERGY:

**RQA-151, RQA-151M, RQA-451:** This product generates radio frequency (RF) energy when the button on the front of the unit is depressed. This product has been evaluated for compliance with the maximum permissible exposure limits for RF energy at the maximum power rating of the unit when using antennas available from RITRON.

**RQT-151, RQT-151M, RTA-451:** This product generates radio frequency (RF) energy when the state of any of the four inputs has been changed. This product has been evaluated for compliance with the maximum permissible exposure limits for RF energy at the maximum power rating of the unit when using antennas available from RITRON.

For both the AFB-1545 and the standard internal antennas, at the 20 cm (7.9 inches) minimum expected separation distance and greater, the maximum RF exposure is well below the General Population/Uncontrolled limits. Antennas other than those available from RITRON have not been tested for compliance and may or may not meet the exposure limits at the distances given. Higher gain antennas are capable of generating higher fields in the strongest part of their field and would, therefore, require a greater separation from the antenna. This product is not to be used by the general public in an uncontrolled environment unless compliance with the Uncontrolled/General Population limits for RF exposure can be assured.

To limit exposure to RF energy to levels below the limit, please observe the following:

- Use only the antenna(s) available from RITRON for these models. **DO NOT** operate the radio without an antenna.
- **DO NOT** activate the transmitter when not actually wishing to transmit. These radios transmit recorded messages of a pre-determined length to prevent continuous transmit times.
- When transmitting, make certain that the distance limits for the particular model in use are observed.
- **DO NOT** allow children to operate the radio.

When used as directed, this series of radios is designed to comply with the FCC's RF exposure limits for "Uncontrolled/General Population". In addition, they are designed to comply with the following Standards and Guidelines:

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR §§ 2 sub-part J.
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1992.
- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition.

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## FREQUENTLY ASKED QUESTIONS ABOUT QUICK ASSIST® PROGRAMMING.....

### ***Do I have to program my Quick Assist®?***

You may not need to program your Quick Assist® at all. If you purchased a Quick Assist® unit that is factory programmed to your radio system frequency (check the frequency on your radios and the Quick Assist®), and you do not use a form of Quiet Call coded squelch, you can install the batteries and start using Quick Assist®. The factory default voice message is "Assistance Needed". Otherwise, read this manual before programming your Quick Assist®.

### ***Do I need to program every feature?***

In many cases, no. The factory pre-programmed settings, explained in the instructions, may meet many of your needs.

### ***How do I program my Quick Assist®?***

All programming is accomplished with the RITRON RQA/RQT PC Programmer software available at [www.ritron.com](http://www.ritron.com).

The programmer software requires Window® XP or greater, and a PC computer with a USB port.

### ***What if I don't find what I need in this manual?***

Call Ritron (317-846-1201): we will be glad to help you. For most applications, this manual should cover everything you will need to know. However, the Quick Assist® has more capabilities and features than described here.

### ***Will it harm the Quick Assist® if I program it improperly?***

No; however, you may need to erase all programming and start over, see page 5 to do this. Feel free to experiment with the various features and possible configurations.

### ***Can my settings or messages get lost or erased if the battery runs down, or if my Quick Assist® is disconnected?***

No. The settings and voice messages you enter are stored in special electronic memory devices in the Quick Assist® that do not require power to hold the information. This means that if the batteries run down or if you remove them, you will not need to reprogram the Quick Assist®. All your settings and messages will be there for you when you install fresh batteries.

### ***What if I need more range?***

To increase the range of your Quick Assist® transmissions, we suggest you first relocate the unit. Ritron also manufactures radio repeaters to increase the range not only for your Quick Assist®, but also for your entire radio system.

### ***What is my Radio System Frequency?***

Ritron pioneered the Color Dot system to simplify the identification of radio system frequencies for Ritron Jobcom® radios. Color Dots are placed on the bottoms of and inside the enclosures of all Jobcom® radios. Other manufacturers have also adopted this idea.

To identify your assigned frequency if your radios do not have a color dot, locate a label identifying the receiver frequency in megahertz (MHz). Your assigned frequency is also shown on your F.C.C. Station License. Consult your radio user manual, your dealer, or call Ritron for help if you cannot determine your radio's receiver frequency.

### ***Do I need to program my Quick Assist® transmitter frequency?***

The original factory-programmed transmitter frequency of your Quick Assist® is marked on the outside of the shipping box. If the Quick Assist® frequency matches your radio system frequency, and if the Quick Assist® has not been reprogrammed since it left the factory, you will not have to program the transmitter frequency.

### ***What is Quiet Call® Sub Audible Coded Squelch?***

The Quick Assist® radio transmitter is compatible with two standard communications industry sub audible signaling formats: QC (Quiet Call® Interference Eliminator), and DQC (Digital Quiet Call® Interference Eliminator). Both Quiet Call® formats unlock receivers programmed to require these codes, they screen out interference from other radio systems operating on your same frequency.

QC Quiet Call® is Ritron's trade name for what the communications industry calls sub-audible (below the range of human hearing) tone squelch, or CTCSS (Continuous Tone Coded Subaudible Squelch) or Interference Eliminator. Other radio manufacturers use different trade-names for essentially the same system. You may program a specific QC code into your Quick Assist® to transmit with the voice messages, which will "unlock" the receivers in your radio system.

DQC Digital Quiet Call® is Ritron's digital coded squelch, and works the same as QC, except it is a digital code that is transmitted with the voice messages.

### ***Do I need to program my Quick Assist® with a Quiet Call Code?***

Your radio system may or may not use coded squelch signaling. If you have programmed the Quick Assist® to match your radio frequency, and your radios are not receiving Quick Assist® transmissions unless the "monitor" or "test" button is pressed on your radio, your system is probably using Coded Squelch. Refer to your radio manual, or contact your radio dealer or Ritron if you are unsure about this issue.

If your Quick Assist<sup>®</sup> was previously programmed with a Quiet Call<sup>®</sup> code and you need to remove it, follow the programming instructions, using No Tone code, "44", as shown in the table.

### ***What is Digital Quiet Call<sup>®</sup>?***

Digital Quiet Call<sup>®</sup> (DQC) is a digital sub-audible coded squelch system.

### ***Do I need to program my Quick Assist<sup>®</sup> with a Digital Quiet Call code?***

If your radio system does not use Digital Quiet Call<sup>®</sup>, or any other trade name equivalent, you will not need to program a Digital Quiet Call<sup>®</sup> code.

### ***What is the purpose of testing the Quick Assist<sup>®</sup> radio transmitter?***

After programming your radio, your Quick Assist<sup>®</sup> will transmit on the same frequency as your radio receivers, using any coded squelch signals required for your radio system.

### ***Do I need to test my Quick Assist<sup>®</sup> Transmitter?***

Yes; performing this test now will save you time and confusion later.

### **TO TEST THE QUICK ASSIST<sup>®</sup> RADIO TRANSMITTER:**

- Turn on your radio receiver.
- Press the red button on front of the Quick Assist<sup>®</sup>.
- Quick Assist<sup>®</sup> transmits the "Assistance needed" message, which you should be able to hear on your radio receiver.

If you do not hear the messages, you have probably not properly programmed the Quick Assist<sup>®</sup> transmitter frequency or the Quiet Call<sup>®</sup> Coded Squelch. In this case, repeat the programming, then perform this test again.

### ***What is the purpose of recording a unique Voice Phrase for the Low Battery Message?***

When it senses the installed batteries are nearly run down, Quick Assist<sup>®</sup> will transmit one time each hour the factory- programmed message: "Low Battery". If you maintain several Quick Assist<sup>®</sup> transmitters within radio range of each other, you may customize this feature to easily determine which unit needs new batteries.

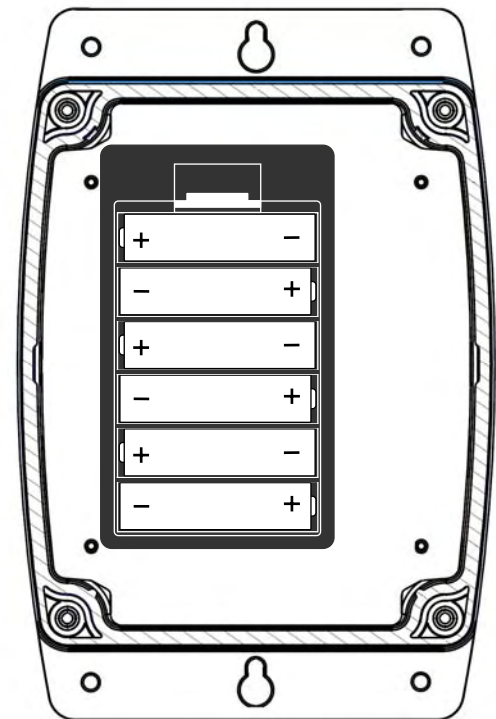
### ***Do I need to program this feature?***

If you use only one Quick Assist<sup>®</sup> in any area, or if you regularly change Quick Assist<sup>®</sup> batteries, the factory programmed message may be sufficient for your application.

## **INSTALLATION / REPLACEMENT OF BATTERIES .....**

- Remove the Quick Assist<sup>®</sup> from the wall or mounting surface.
- Remove the four corner screws holding the case halves together, located on the back side of the enclosure.
- Separate the case halves and disconnect the battery holder from the radio printed circuit board by separating the in-line connectors.
- Remove the lid on the battery holder by pressing the tab at the top, and then remove the old batteries.
- Install the new batteries. Be sure to observe the correct polarity of the batteries, shown in the bottom of the battery holder.
- Install the battery holder lid and connect the two polarized, in-line battery connectors.
- Press the front panel push button and test the Quick Assist<sup>®</sup> by listening on a receiving radio.
- Secure the case halves with the four corner screws and re-install on the wall or mounting surface.

NOTE: Be sure to properly dispose of the used batteries removed from the Quick Assist<sup>®</sup>.



## IDENTIFICATION OF QUICK ASSIST® CONTROLS AND CONNECTIONS .....

### 1 Battery Holder

The battery holder accommodates the six (6) standard "AA" alkaline cells required to power the Quick Assist®.

**NOTE:** Always install a fresh set of alkaline batteries before programming the unit.

### 2 Front Panel LED

The red front panel LED is lit whenever the Quick Assist® is transmitting a message.

### 3 SMB Antenna Connector

This connects the internal antenna to the radio printed circuit board.

### 4 External Audio Input

Allows input to the Quick Assist® voice recorder from an external audio source, such as the Line Out audio from your computer.

### 5 Microphone

Microphone for recording voice messages.

### 6 USB Programming Connector

Connects the Quick Assist® to the USB port on your computer for programming.

### 7 Record Button

Press this button to initiate voice recording.

### 8 Internal Antenna

The internal antenna radiates radio signals.

### 9 Front Panel Push Button

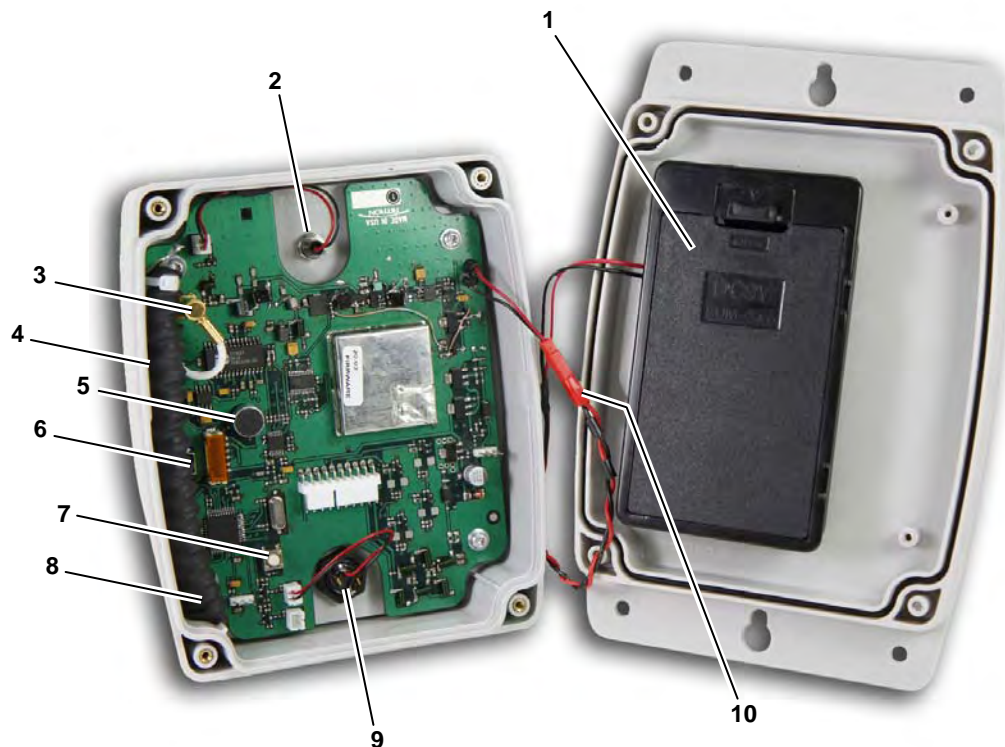
When the front panel push button is pressed the Quick Assist® transmits your pre-recorded voice message. This sealed push button provides a water-resistant enclosure.

### 10 Battery Connector

In-line connector between the printed circuit board and the battery holder.

**IMPORTANT:** Do not remove any other fasteners or further disassemble the Quick Assist® unit; doing so risks damage to the unit and voiding the manufacturer's warranty.

FIG-1: CONTROLS & CONNECTIONS





## QUICK ASSIST® PROGRAMMABLE FEATURES .....

The Quick Assist® features four (4) separate inputs that can each be programmed with unique voice messages and attributes. All programming is accomplished with the RITRON RQA/RQT PC Programmer software available at [www.ritron.com](http://www.ritron.com).

The programmer software requires Window® XP or greater, and a PC computer with a USB port.

### Description

Enter a brief description (35 characters or less) of the programming profile, or of the recorded message. This can be useful when reading out the Quick Assist® programming at a later date, or when saving a programming profile for use with other radios.

### Frequency Table #

To match other RITRON radios, the owner can select from a table of transmit frequencies. Simply “read-out” the Frequency Code of your RITRON portable, mobile or base radio and enter the same code when programming the Quick Assist®.

### Transmit Frequency

Once you have selected a Frequency Code the actually transmit frequency will appear here. If your operating frequency does not appear on the Frequency Code list, a licensed radio service technician will be able enter other frequencies within the radio’s operating band.

#### To identify your assigned frequency:

- Read-out the Frequency Code of the RITRON radio you intend to use with the Quick Assist®.
- Check for a corresponding color dot on the radio you intend to use with the Quick Assist®.
- Locate a label identifying the receiver frequency in megahertz (MHz).
- Your assigned frequency is shown on your F.C.C. Station License.
- Call your radio dealer or Ritron for help if you cannot determine your radio’s receiver frequency.

The original factory-programmed transmitter frequency of your Quick Assist® is marked on the outside of the shipping box.

### QC or DQC Code

Select from a list of QC and DQC Codes to transmit subaudible squelch tones for interference elimination.

The Quick Assist® radio transmitter is compatible with two standard communications industry sub-audible signaling formats: QC (Quiet Call® Interference Eliminator), and DQC (Digital Quiet Call® Interference Eliminator). Both Quiet Call formats unlock receivers programmed to require these codes -- they screen out interference from other radio systems operating on your same transmit frequency.

QC Quiet Call® is Ritron’s trade name for what the communications industry calls sub-audible (below the range of human hearing) tone squelch, or CTCSS (Continuous Tone Coded Subaudible Squelch). Other radio manufacturers use different trade-names for essentially the same system. You may program a specific QC code into your Quick Assist® to transmit with the voice messages, which will “unlock” the receivers in your radio system.

DQC Digital Quiet Call® is Ritron’s digital coded squelch, and works the same as QC, except it is a digital code that is transmitted with the voice messages.

#### To identify your QC or DQC tone:

- Read-out the Tone Code of the RITRON radio you intend to use with the Quick Assist®.
- Refer to your radio manual.
- Contact your radio dealer or Ritron if you are unsure about this issue.

### DQC Invert

The DQC Digital Quiet Call® code can be inverted for systems that required inversion.

### TX Alert Tone

The Quick Assist® can transmit an alert tone before and after each voice message transmission.

## Compand

Some two-way radios have a feature referred to as “companding”. It is a way of eliminating background hiss or noise, making the radio sound clearer. “Companding” is a combination of audio “compression” in the transmitter and audio “expanding” in the receiver. The Quick Assist® can be programmed for audio compression. To determine if your existing 2-way radios are using the Companding feature, you can check the radio’s User Manual, contact your radio dealer, or call Ritron for help.

If you are unable to determine if your portable radio uses the companding feature, we suggest the following:

1. Leave the radio in the factory default setting with no companding.
2. Activate the transmitter of the Quick Assist® and listen to the message from your portable radio. If the received audio is acceptable, you should not need to set the Quick Assist® for companding.

## Input Operation

**Normal** – operation transmits a message each time the front panel push button is pressed.

**Debounce Mode** - is an option specifying that the front panel button must remain pressed for the programmed debounce time before generating a message for the changed condition.

Example: A Quick Assist® is used to alert store personnel that assistance is need. If someone were to repeatedly press and release the button, it would be considered a single button press.

**Holdoff Mode** - option transmits a message immediately after the front panel push button has been pressed, but will hold off sending additional messages for the programmed holdoff time.

Example: A Quick Assist® is used to alert store personnel that assistance is need. It is practical for the message to be transmitted immediately, and also desirable to have a one-minute holdoff before the same message is re-sent, even if the button is pushed again by an impatient customer.

**Debounce / Holdoff Time** – specifies the debounce time or holdoff time described above.

**Latching Input Mode** -The Quick Assist® is set for Latching Input mode. The latching effect maintains message repeats after a momentary switch change has ended. This is necessary for momentary push button operation.

## Reset Operation

**No Reset** – operation means that the Quick Assist® will continue with scheduled transmissions with no ability to stop them.

Example: You recorded the message “Assistance needed in the paint department”, and then programmed Quick Assist® to transmit the message 8 times with 2 minutes between each transmission. With No Reset programmed the messages will be sent as scheduled for the full 16 minutes whenever the push button is pressed.

**Reset from Front Panel Button** – allows store personnel to press and hold the front panel button for a period of time greater than the programmed Reset Button Hold Time to terminate scheduled transmissions.

Example: A Quick Assist® is used to alert store personnel that assistance is need in the paint department. It is practical for an “Assistance needed in the paint department” message to be transmitted immediately, and also to be repeated every 30 seconds until an attendant has responded. The attendant will then hold down the front panel button until the LED flashes rapidly to signal that the Quick Assist® has been reset. A “Paint department has been serviced” message is then sent to notify other store personnel that the call has been answered.

**2<sup>nd</sup> Reset Button Installed** – operates the same as Reset from Front Panel Button except a separate, momentary button is used for reset.

**Reset Button Hold Time** – specifies the length of time the reset button must be held down before reset operation to occur.

## Message Repeat

### Repeat Message on each transmission

Your recorded voice message can be programmed to repeat from one time to nine times on each Quick Assist® radio transmission, depending on how you program this feature. More urgent messages may have more phrase repeats.

Example: You recorded the message “Assistance needed in the paint department”, and then programmed Quick Assist® to repeat the phrase two (2) times in each transmission. In this case, activating the switch results in the Quick Assist® transmitting:

“...beep. Assistance needed in the paint department. Assistance needed in the paint department. beep...”

The beginning and ending beeps are added automatically to attract attention to Quick Assist® transmissions if the TX Alert Tone feature has been set.



### **Repeat Message with multiple transmissions**

You can set a limit to the number of times the message will be transmitted at the scheduled intervals.

Example: Suppose you have placed a Quick Assist® at the delivery door of your building. Your recorded message might then be "Visitor at Delivery Door". You may want this message to be transmitted every two minutes for approximately a quarter hour after the push button has been pressed, and then to stop transmitting until the button is pressed again. In this case, you would program the message Wait Time for every two minutes, and set the Message Limit to "8", as described here.

When the push button is pressed the message is transmitted every 2 minutes until it has been sent 8 times over a span of 16 minutes.

The Quick Assist® is set at the factory to transmit the recorded message twice with a 30 second Wait Time in between transmissions.

### **Wait time between repeated transmissions**

This sets the amount of time the Quick Assist® will wait between repeated transmissions.

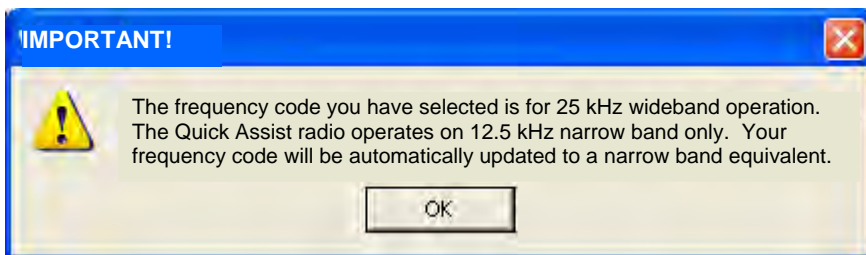
## **QUICK ASSIST® DEFAULT PROGRAMMING .....**

<b>TX Frequency</b>	RQA-151	24	151.625 MHz
	RQA-151M	22	154.600 MHz
	RQA-451	26	467.850 MHz
<b>QC/DQC Code</b>		44	No Tone
<b>DQC Invert</b>			No
<b>Compend</b>			No
<b>Reset Operation</b>			Reset from Front Panel Button
<b>Reset Button Hold Time</b>			5 sec.
<b>Input Operation</b>			Normal
<b>Latching Input Mode</b>			Yes
<b>Debounce/Holdoff Time</b>			10 sec.
<b>Number of Inputs</b>			1
<b>TX Alert Tone</b>			Yes
<b>Battery Saver</b>			Yes
<b>Low Battery Message</b>			Yes
<b>Power Fail Message</b>			No
<b>Message Delay on TX</b>			1 sec.
<b>Recorded Messages</b>	RQA Message		"Assistance needed"
	Reset Message		"Call answered"
	Power Fail		"Power fail"
	Low Battery		"Low battery"
<b>Number of Times Recorded Message is repeated on each Transmission</b>			1 time
<b>Number of Times the Transmission is sent</b>			2 times
<b>Wait Time between Transmissions</b>			30 seconds

## PROGRAMMING YOUR QUICK ASSIST® TRANSMITTER FREQUENCY AND TONE .....

The Quick Assist® transmitter operates exclusively on a 12.5 kHz narrow band channel bandwidth. Many of the Frequency Table Codes programmed in your compatible Ritron radios are for 25 kHz wide band channels. If these codes are selected when programming your Quick Assist® radio, the programmer will automatically update to the equivalent 12.5 kHz code. This allows you to use your Quick Assist® with all of your existing radios. The following dialog box will appear any time you attempt to program a wideband code into a Quick Assist®.

The RQA-151M MURS model radio can only be programmed to the codes listed on Table 1 below. VHF Business band models can be programmed to the codes listed on Table 2 below, or can be programmed to any valid licensed frequency between 150-165 MHz **EXCEPT** the frequencies listed on MURS Table 1 below.



**TABLE 1: MURS model radios only**

Code	Frequency (MHz)	Color Dot	Narrow Band Equivalent Code
01	154.600	Green Dot	22
02	154.570	Blue Dot	23
19	151.820	MURS	
20	151.880	MURS	
21	151.940	MURS	
22	154.600	MURS	
23	154.570	MURS	

**TABLE 2: VHF Business band models**

Code	Frequency (MHz)	Color Dot	Narrow Band Equivalent Code
03	151.625	Red Dot	03N *
04	151.955	Purple Dot	04N *
05	151.925		05N *
06	154.540		06N *
07	154.515		07N *
08	154.655		08N *
09	151.685		09N *
10	151.715		10N *
11	151.775		11N *
12	151.805		12N *
13	151.835		13N *
14	151.895		14N *
15	154.490		15N *
16	151.655		16N *
17	151.745		17N *
18	151.865		18N *
24	154.700		
25	151.760		
26	152.700		

\* New Narrow Band Table Frequency

**TABLE 3: UHF Business band models**

Code	Frequency (MHz)	Color Dot	Narrow Band Equivalent Code
01	467.7625	J	24
02	467.8125	K	25
03	464.5500	Yellow Dot	23
04	464.5000	Brown Dot	22
05	467.8500	Silver Star	26
06	467.8750	Gold Star	27
07	467.9000	Red Star	28
08	467.9250	Blue Star	29
09	469.2625		09N *
10	462.5750	White Dot	10N *
11	462.6250	Black Dot	11N *
12	462.6750	Orange Dot	12N *
13	464.3250		13N *
14	464.8250		14N *
15	469.5000		15N *
16	469.5500		16N *
17	463.2625		17N *
18	464.9125		18N *
19	464.6000		19N *
20	464.7000		20N *
21	462.7250		21N *
22	464.5000		
23	464.5500		
24	467.7625		
25	467.8125		
26	467.8500		
27	467.8750		
28	467.9000		
29	467.9250		
30	461.0375		
31	461.0625		
32	461.0875		
33	461.1125		
34	461.1375		
35	461.1625		

**TABLE 3: UHF Business band models (cont.)**

Code	Frequency (MHz)	Color Dot	Narrow Band Equivalent Code	Code	Frequency (MHz)	Color Dot	Narrow Band Equivalent Code
36	461.1875			57	466.0875		
37	461.2125			58	466.1125		
38	461.2375			59	466.1375		
39	461.2625			60	466.1625		
40	461.2875			61	466.1875		
41	461.3125			62	466.2125		
42	461.3375			63	466.2375		
43	461.3625			64	466.2625		
44	462.7625			65	466.2875		
45	462.7875			66	466.3125		
46	462.8125			67	466.3375		
47	462.8375			68	466.3625		
48	462.8625			69	467.7875		
49	462.8875			70	467.8375		
50	462.9125			71	467.8625		
51	464.4875			72	467.8875		
52	464.5125			73	467.9125		
53	464.5375			74	469.4875		
54	464.5625			75	469.5125		
55	466.0375			76	469.5375		
56	466.0625			77	469.5625		

**TABLE 4: Quiet Call Tone Codes**

Code	Frequency	Code	Frequency	Code	Frequency	Code	Frequency
01	67.0	14	107.2	27	167.9	40	159.8
02	71.9	15	110.9	28	173.8	41	165.5
03	74.4	16	114.8	29	179.9	42	171.3
04	77.0	17	118.8	30	186.2	43	177.3
05	79.7	18	123.0	31	192.8	44	No Tone
06	82.5	19	127.3	32	203.5	45	183.5
07	85.4	20	131.8	33	210.7	46	189.9
08	88.5	21	136.5	34	218.1	47	196.6
09	91.5	22	141.3	35	225.7	48	199.5
10	94.8	23	146.2	36	233.6	49	206.5
11	97.4	24	151.4	37	241.8	50	229.1
12	100.0	25	156.7	38	250.3	51	254.1
13	103.5	26	162.2	39	69.4		

Use Code "44" to program No Tone for systems without a Coded Squelch Interference Eliminator feature.

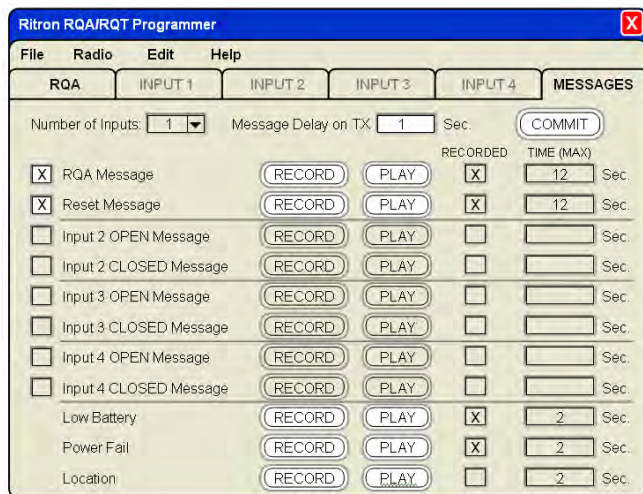
**TABLE 5: Digital Quiet Call Codes**

Code	Code	Code	Code	Code	Code	Code	Code	Code
023	071	143	225	266	356	452	546	703
025	072	145	226	271	364	454	565	712
026	073	152	243	274	365	455	606	723
031	074	155	244	306	371	462	662	731
032	114	156	245	311	411	464	612	732
036	115	162	246	315	412	465	624	734
043	116	165	251	325	413	466	627	743
047	122	172	252	331	423	503	631	754
051	125	174	255	332	431	506	632	
053	131	205	261	343	432	516	645	
054	132	212	263	346	445	523	654	
065	134	223	265	351	446	532	664	

## RECORDING YOUR QUICK ASSIST® VOICE MESSAGES .....

The Quick Assist® can be programmed to play two unique voice messages, an "Assistance needed" message that is transmitted when the front panel push button is pressed, and a "Call answered" message that is transmitted if the Quick Assist® has been reset.

Voice messages can be recorded into the Quick Assist® using the RQA/RQT PC Programmer and the electret condenser microphone built onto the radio PCB assembly. Voice messages can also be recorded with an incoming audio signal from your computer. This allows you to record and store a message onto your computer and use it for multiple Quick Assist® transmitters.



### Number of Inputs

The number of inputs is fixed at 1 for Quick Assist®.

### Message Delay on TX

Whenever the Quick Assist® transmitter is activated it will wait this length of time before the alert tones and recorded voice message are sent.

### Quick Assist® Messages

A total of 24 seconds is allocated for Quick Assist® voice messages, 12 seconds for the RQA Message and 12 seconds for the Reset Message.

### Low Battery Message

When it senses the installed batteries are nearly run down, Quick Assist® will transmit one time each hour the factory-programmed message: "Low Battery". If you maintain several Quick Assist® transmitters within radio range of each other, you may customize this feature to easily determine which unit needs new batteries.

If you use only one Quick Assist® in any area, or if you regularly change Quick Assist® batteries, the factory-programmed message may be sufficient for your application.

### Power Fail Message

When the Quick Assist® is powered with an external +12VDC supply and batteries are installed as a back-up, the RQA will transmit the Power Fail Message on a scheduled basis as long as the +12VDC external supply is not detected.

### Location Message

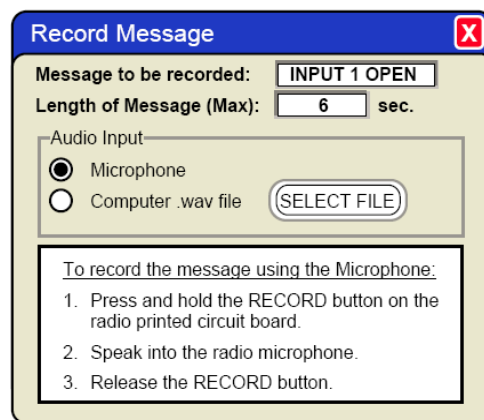
When installing more than one Quick Assist® on a single frequency it may be desirable to record a unique Location Message to identify each individual Quick Assist®. The Location Message will be played after the TX Alert Tone and before the RQA Message.

### To record your Quick Assist® Voice Messages:

1. Read existing radio programming.
2. Enter the Number of Inputs you will be using.
3. Select the messages you will be recording.
4. Enter Message Delay on TX time.
5. If there were any changes made during steps 2 through 4, press the COMMIT button. This will erase all input messages, they will have to be re-recorded and the RECORDED boxes will no longer be checked.

**NOTE:** Pressing COMMIT button will not erase the Low Battery, Power Fail, or Location messages.

6. To record a new message, press the desired RECORD button and follow the instructions on the Record Message dialog box.
7. The RECORDED checkbox will now indicate that the message is recorded.



After you have recorded the message you can review by pressing the associated PLAY button. The Quick Assist® will transmit the message on the transmit frequency associated with the input selected.

## TEST YOUR QUICK ASSIST® PROGRAMMING.....

Once your Quick Assist® has been programmed it will transmit on the same frequency as your radio receivers, and will transmit any coded squelch signals required for your radio system. Before installing the Quick Assist® you should test for communication with your radio receivers.

### To test the Quick Assist® radio transmitter:

1. Turn on your radio receiver.
2. Press the front panel push button switch.
3. Quick Assist® will transmit the RQA "Assistance needed" message, which you should be able to hear on your radio receiver.
4. Press and hold the front panel push button switch until the front panel LED blinks rapidly.
5. Quick Assist® will transmit the Reset "Call answered" message, which you should be able to hear on your radio receiver.
6. If you do not hear the messages, you have probably not properly programmed the Quick Assist® transmitter frequency or the Quiet Call® Coded Squelch. In this case, repeat the programming and perform this test again.

### Depending upon your programming, the following sequence describes what you should hear with your radio receiver:

1. The RQA transmitter is activated on the Transmit Frequency and QC or DQC Code programmed when the front panel push button is pressed and released.
2. The RQA will broadcast silence for the programmed Message Delay on TX Time
3. The RQA will broadcast the TX Alert Tone if it has been programmed.
4. The RQA will broadcast the Location Message if it has been recorded.
5. The RQA will broadcast the recorded RQA Message.
6. The RQA Message will be repeated for the number of times programmed for Repeat Message on each Transmission.
7. The RQA will broadcast the TX Alert Tone again to signal the end of message, if it has been programmed.
8. The RQA transmitter will turn OFF and the RQA will wait for the period of time programmed for Wait Time between Transmissions.
9. If Repeat Message Transmissions has been programmed for more than one transmission, the RQA transmitter will again be activated and Steps 1 – 8 will be repeated for the programmed number of transmissions.
10. If at any time during this sequence the front panel button is held down until the LED begins flashing rapidly, the RQA will transmit the Reset Message and the sequence will be terminated.

## INSTALLING THE QUICK ASSIST® .....

Prior to installing the Quick Assist® transmitter, it is important to verify all radio programming to be certain that you have achieved the operation you desire. Re-programming requires the removal of the Quick Assist® from its installed location, which can be time consuming and frustrating.

1. **Install 6 new AA Alkaline batteries into the internal battery holder** and screw the case halves together. Be sure the case halves are pulled tightly together for a good weather seal.
2. **Select a location that provides the best possible radio coverage.**
  - Avoid mounting to metal structures
  - Install as high as possible
  - Be sure the Quick Assist® is in a vertical position
  - Be aware that metal or wires near the Quick Assist® can block or absorb radio transmissions.
3. **Temporarily mount the Quick Assist® using the top keyhole slots.**
4. **Test the radio from this location to be sure you get the necessary radio coverage.** This is achieved by pressing the front panel push button on the Quick Assist® while a second radio-equipped person receives the transmission at the furthest point you will need to cover.
5. **Permanently mount the Quick Assist®** using either the four (4) corner mounts, or the top and bottom keyhole slots.



## CARE AND MAINTENANCE.....

**Moisture:** The Quick Assist® is highly weather-resistant in outdoor environments. Do not immerse the unit in water.

**Temperature:** The Quick Assist® is designed to operate between -22 and +140 degrees Fahrenheit. Like all electronic equipment, Quick Assist® should not be subjected to extreme heat. A shaded area is an ideal outdoor location.

**Vibrations/Shocks:** Though the Quick Assist® is designed to be rugged, it cannot be expected to survive extreme abuse.

**Chemicals:** Do not use harsh, corrosive or abrasive chemicals to clean the Quick Assist® case; use only a cloth moistened with water. Do not attempt to clean the printed circuit board inside the housing.

**Batteries:** Use only fresh, new alkaline batteries when programming Quick Assist®. Acceptable brands and types are: Duracell MX1500B, Eveready E91, Rayovac 815 or equivalent.

**Estimated Battery Life:** Starting with a fresh set of AA alkaline batteries, Quick Assist® can transmit about 7,000 voice messages over a period of one year before the batteries will need to be replaced.



## RECORDING CUSTOM VOICE MESSAGES .....

### ***What is the purpose of Recording Custom Voice Messages?***

Recording customized Quick Assist<sup>®</sup> voice messages gives them unmistakable meaning and significance. The standard factory prerecorded messages of “Assistance needed” and “Call answered” require the listener to know exactly where the Quick Assist<sup>®</sup> is located. However, when a user hears a custom message such as ‘Assistance needed in the paint department’, the meaning is clear.

### ***Do I need to record Custom Voice Messages?***

If the factory-recorded messages “Assistance needed” and “Call answered” suit your application, recording custom messages is not necessary.

To record a custom message, follow the instructions in the Recording Your Quick Assist<sup>®</sup> Voice Messages section of this manual. Once recorded, playback the message to be sure you are satisfied with the quality and content of the message.

## Setting Battery Saver Options .....

The Battery Saver factory default is “Battery Saver enabled.” With this setting the Quick Assist<sup>®</sup> only checks the push button switch 4 times a second to extend battery life. To detect very fast changes, disable the Battery Saver option.

When the Battery Saver Option is disabled, it is recommended that Quick Assist<sup>®</sup> is powered with an external power supply. This is because it draws approximately 7 mA continuously with this setting and will rapidly drain the batteries.

NOTE: DO NOT disable the Battery Saver unless you need to detect very fast changes on the inputs.

## AUTOMATIC LOW BATTERY ALERT MESSAGE.....

If the battery voltage drops below approximately 6 Volts, the Quick Assist<sup>®</sup> transmits a factory prerecorded message, “Low Battery”, every 60 minutes. When this occurs, replace the batteries promptly — within a day or so.

## CONNECTING AN EXTERNAL +12 VDC POWER SUPPLY .....

The Quick Assist<sup>®</sup> may be used with an external +12 VDC power supply. With an external supply connected the internal batteries are automatically configured as a back-up power source. With the Quick Assist<sup>®</sup> programmed for External Power and batteries installed as a back-up, it will broadcast the Power Fail message any time the external supply is removed and will repeat the Power Fail message once every hour until external power is restored.

To use the Quick Assist<sup>®</sup> with an external +12 VDC power supply:

1. Use the PC Programmer to set the Quick Assist<sup>®</sup> for External Power.
2. If the factory recorded “Power Fail” message is not adequate, record a new Power Fail message.
3. Use Ritron #RPS-203 Power Supply (11-15 VDC, 200 mA), or equivalent, to power the Quick Assist<sup>®</sup>. The Quick Assist<sup>®</sup> requires 11-15 VDC, 200 mA minimum.
4. Connect the positive (+) terminal of the power supply cable to the RED wire on the Quick Assist<sup>®</sup> color-coded cable.
5. Connect the negative (-) terminal of the power supply cable to the BLACK wire on the Quick Assist<sup>®</sup> color-coded cable.
6. Be sure to use an appropriate sized, sealing wire nut to connect the wires. The color-coded wires are 24 AWG stranded.

## RITRON, INC. LIMITED WARRANTY .....

### WHAT THIS WARRANTY COVERS:

RITRON, INC. ("RITRON") provides the following warranty against defects in materials and/or workmanship in **RITRON Radios and Accessories** under normal use and service during the applicable warranty period (as stated below). "Accessories" means antennas, holsters, chargers, earphones, speaker/microphones and items contained in the programming and programming/service kits.

<u>WHAT IS COVERED</u>	<u>FOR HOW LONG</u>	<u>WHAT RITRON WILL DO</u>
Ritron RQA Quick Assist	1 year*	During the first year after date of purchase, RITRON will repair or replace the defective product, at RITRON's option, parts and labor included at no charge.
Accessories	90 days*	<i>*After date of purchase</i>

### WHAT THIS WARRANTY DOES NOT COVER:

- Any technical information provided with the covered product or any other RITRON products;
- Installation, maintenance or service of the product, unless this is covered by a separate written agreement with RITRON;
- Any products not furnished by RITRON which are attached or used with the covered product, or defects or damage from the use of the covered product with equipment that is not covered (such as defects or damage from the charging or use of batteries other than with covered product);
- Defects or damage, including broken antennas, resulting from:
  - misuse, abuse, improper maintenance, alteration, modification, neglect, accident or act of God,
  - the use of covered products other than in normal and customary manner or,
  - improper testing or installation;
- Defects or damages from unauthorized disassembly, repair or modification, or where unauthorized disassembly, repair or modification prevents inspection and testing necessary to validate warranty claims;
- Defects or damages in which the serial number has been removed, altered or defaced.
- Batteries if any of the seals are not intact.

**IMPORTANT:** This warranty sets forth the full extent of RITRON's express responsibilities regarding the covered products, and is given in lieu of all other express warranties. What RITRON has agreed to do above is your sole and exclusive remedy. No person is authorized to make any other warranty to you on behalf of RITRON. Warranties implied by state law, such as implied warranties of merchantability and fitness for a particular purpose, are limited to the duration of this limited warranty as it applies to the covered product. Incidental and consequential damages are not recoverable under this warranty (this includes loss of use or time, inconvenience, business interruption, commercial loss, lost profits or savings). Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitation on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. Because each covered product system is unique, RITRON disclaims liability for range, coverage, or operation of the system as a whole under this warranty.

**WHO IS COVERED BY THIS WARRANTY:** This warranty is given only to the purchaser or lessee of covered products when acquired for use, not resale. This warranty is not assignable or transferable.

**HOW TO GET WARRANTY SERVICE:** To receive warranty service, you must deliver or send the defective product, delivery costs and insurance prepaid, within the applicable warranty period, to **RITRON, INC., 505 West Carmel Drive, Carmel, Indiana 46032, Attention: Warranty Department**. Please point out the nature of the defect in as much detail as you can. You must retain your sales or lease receipt (or other written evidence of the date of purchase) and deliver it along with the product. If RITRON chooses to repair or replace a defective product, RITRON may replace the product or any part or component with reconditioned product, parts or components. Replacements are covered for the balance of the original applicable warranty period. All replaced covered products, parts or components become RITRON's property.

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**YOUR RIGHTS UNDER STATE LAW:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**WHERE THIS WARRANTY IS VALID:** THIS WARRANTY IS VALID ONLY WITHIN THE UNITED STATES, THE DISTRICT OF COLUMBIA AND PUERTO RICO.