



Quick Assist[®] with Field Programming

RQA-451-ETSI

WIRELESS CALLBOX TRANSMITTER USER MANUAL

General Information	Page	Programmable Features	Page
WHAT THIS MANUAL COVERS	1	TX Alert Tone	16
GENERAL INFORMATION	1	Short Alert Tone.....	16
QUICK ASSIST [®] FEATURES	1	Low Battery Message	16
IMPORTANT SAFETY INFORMATION.....	1	Press and Hold Reset.....	16
QUICK ASSIST [®] MODELS AND FREQUENCIES	1	Field Programming Enable.....	17
PLEASE NOTE THE FOLLOWING WITH REGARD TO RF EXPOSURE FOR THIS PRODUCT	2	Message Delay on TX.....	17
CARE AND MAINTENANCE	2	2 nd Escalate Channel	17
FREQUENTLY ASKED QUESTIONS ABOUT QUICK ASSIST [®] PROGRAMMING	3	2 nd Escalate Channel Frequency Table	17
INSTALLING THE QUICK ASSIST [®]	4	2 nd Escalate Channel Transmit Frequency	17
INSTALLATION / REPLACEMENT OF BATTERIES	4	2 nd Escalate Channel QC or DQC Code.....	17
AUTOMATIC LOW BATTERY ALERT MESSAGE.....	4	2 nd Escalate Channel DQC Invert.....	17
IDENTIFICATION OF QUICK ASSIST [®] CONTROLS AND CONNECTORS	5	Number of Message Transmissions	17
FIG-1: Controls & Connectors.....	5	Time Between Transmissions	17
Field Programming	Page	Play Message on each Transmissions	17
QUICK ASSIST [®] FIELD PROGRAMMING OVERVIEW	6	ANI	17
HOW TO FIELD PROGRAM TONE CODES.....	7	Escalate Message	17
TABLE 2: PROGRAMMABLE QC TONE CODES	8	Time Between Escalate Transmissions.....	17
TABLE 3: PROGRAMMABLE DIGITAL DQC TONE CODES.....	8	Voice Messages	17
HOW TO FIELD PROGRAM DTMF OR SELCALL ENCODE ANI (TRANSMIT) CODES	9	RECORDING YOUR QUICK ASSIST [®] VOICE MESSAGES.....	18
HOW TO FIELD PROGRAM FEATURE CODES	10	Assist Message.....	18
TABLE 4: FEATURES CODES.....	11	Reset Message.....	18
HOW TO RECORD VOICE MESSAGES.....	14	Low Battery Message	18
TEST YOUR QUICK ASSIST [®] PROGRAMMING	15	Escalate Message	18
QUICK ASSIST [®] DEFAULT PROGRAMMING	15	Recording Custom Voice Messages	18
Programmable Features	Page	To Record Your Quick Assist [®] Voice Messages using the on-board microphone:.....	18
PC PROGRAMMING.....	16	To Record Your Quick Assist [®] Voice Messages using a pre-recorded .wav file:	18
PROGRAMMER SCREEN	16	Warranty	Page
Description	16	RITRON, INC. LIMITED WARRANTY.....	20
Frequency Table.....	16	Quick Programming Guide	Page
Transmit Frequency.....	16	TONE PROGRAMMING CODES.....	21
QC or DQC Code	16	DTMF OR SELCALL ENCODE ANI (TRANSMIT) CODES.....	21
DQC Invert	16	MESSAGE CODES	22
Wideband	16	FEATURE CODES.....	23
		2ND ESCALATE CHANNEL CODES	23

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.

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® FEATURES

- Radio transmitter (UHF).
- User-recorded voice messages; total recording time of 24 seconds.
- Typical range of 1/4 mile.
- Internal battery holder for six (6) AA Alkaline cells.
- Typical operating battery life of 1 year.
- Automatic low battery message.
- PC or Field Programmable Features:
 - Tone Coded Squelch Encoder (Quiet Call®)
 - Digital Coded Squelch Encoder (Digital Quiet Call™)
 - DTMF and Selcall ANI
 - Message transmission schedule and limits
- Limited One-year Factory Warranty.

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® MODELS AND FREQUENCIES

MODEL	BAND	FREQUENCY RANGE
RQA-451-ETSI	UHF-FM	446 to 470 MHz

See the programming sections of this manual 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-451-ETSI**

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.

For the standard internal antenna, 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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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.

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 can be accomplished with the RITRON RQA/RQT PC Programmer software available at www.ritron.com, or by field programming as described in this manual.

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 (800-872-1872); 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. 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?

To identify your assigned frequency, 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® was previously programmed with a Quiet Call® 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®?

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

Do I need to program my Quick Assist® with a Digital Quiet Call code?

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

What is the purpose of testing the Quick Assist® radio transmitter?

After programming your radio, your Quick Assist® 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® Transmitter?

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

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.

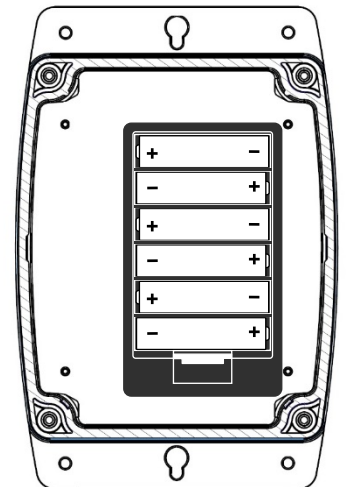
1. **Install 6 new AA Alkaline batteries into the internal battery holder** and screw the case halves together. Be sure the case halves are pulled tightly together for a good weather seal.
2. **Select a location that provides the best possible radio coverage.**
 - Avoid mounting to metal structures
 - 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 slot.**
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.



INSTALLATION / REPLACEMENT OF BATTERIES

1. Remove the Quick Assist® from the wall or mounting surface.
2. Remove the four corner screws holding the case halves together, located on the back side of the enclosure.
3. Separate the case halves and disconnect the battery holder from the radio printed circuit board by separating the in-line connectors.
4. Remove the lid on the battery holder by pressing the tab at the bottom, and then remove the old batteries.
5. Install the new batteries. Be sure to observe the correct polarity of the batteries, shown in the bottom of the battery holder.
6. Install the battery holder lid and connect the two polarized, in-line battery connectors.
7. Press the front panel push button and test the Quick Assist® by listening on a receiving radio.
8. 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®.



AUTOMATIC LOW BATTERY ALERT MESSAGE

By factory default, if the battery voltage drops below approximately 6 Volts, the Quick Assist® transmits a factory prerecorded message, "Quick Assist Battery", at the conclusion of each transmission. When this occurs, replace the batteries promptly — within a day or so.

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® will transmit the factory- programmed message:

"Quick Assist 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.

Do I need to program this feature?

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.

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 Battery Connector

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

3 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.

4 Antenna Jumper

This jumper allows connection to the internal antenna (jumper up) or to the SMB RF Test Connector (jumper down).

5 SMB RF Test Connector

This SMB connector is used for radio testing when the Antenna Jumper is in the SMB position.

6 Internal Antenna

The internal antenna radiates radio signals when the Antenna Jumper is in the Antenna position.

7 Microphone

Microphone for recording voice messages.

8 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.

9 Program Button

Press this button to field program the Quick Assist® and to initiate voice recording.

10 Program Display

7-segment LED display used to field program the Quick Assist®.

11 Front Panel LED

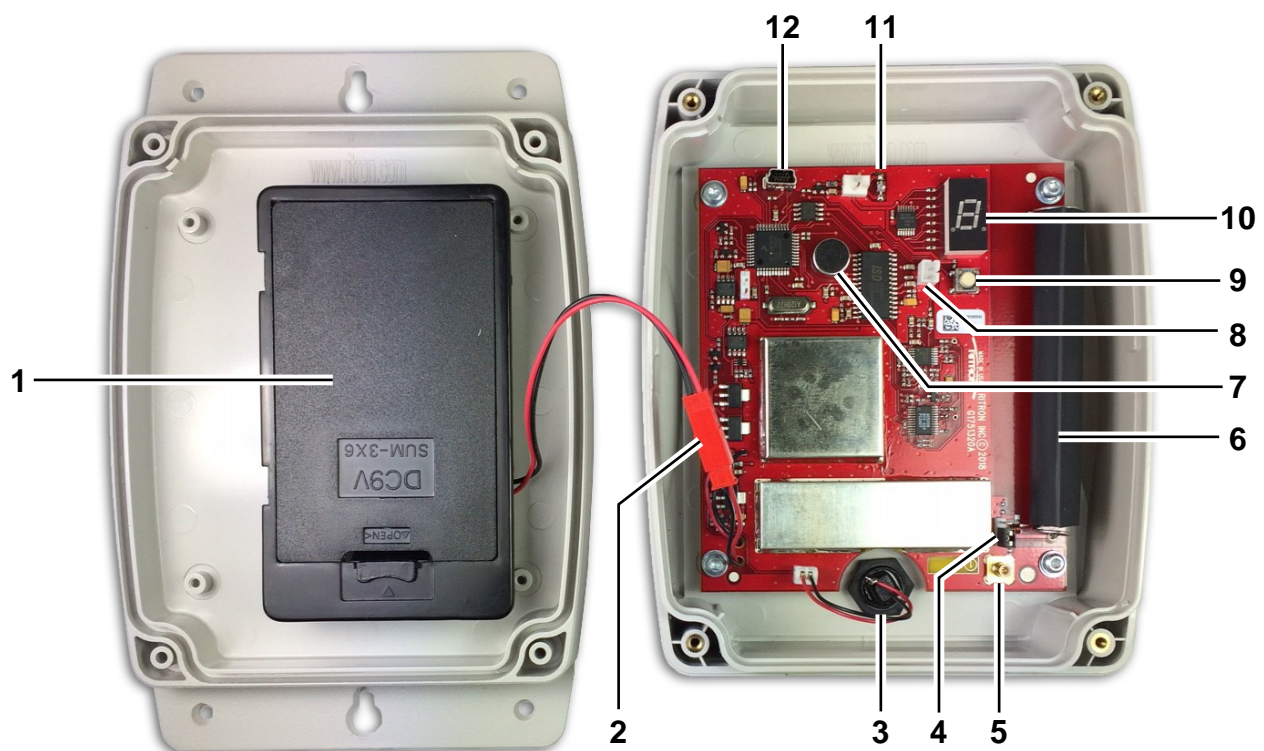
The red front panel LED is lit whenever the Quick Assist® is transmitting a message.

12 USB Programming Connector

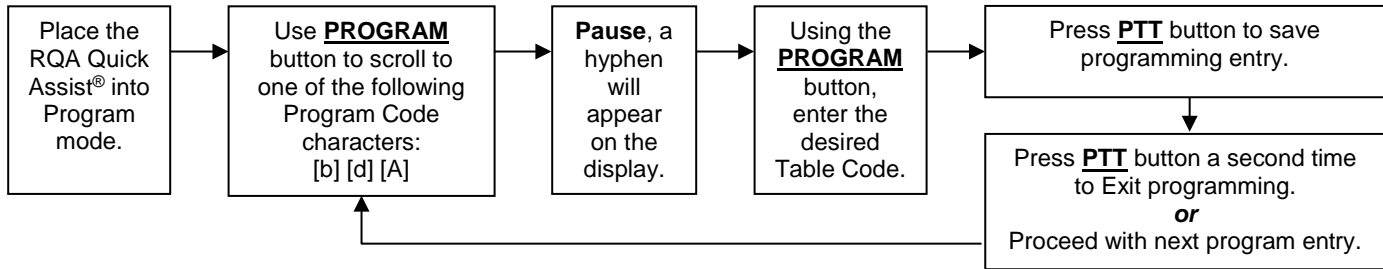
Connects the Quick Assist® to the USB port on your computer for programming.

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® FIELD PROGRAMMING OVERVIEW

**Program Codes****Table Codes**

Enter a 2-digit Quiet Call code from Table 2 or a 3-digit Digital Quiet Call code from Table 3.

**For Encode ANI:**

Enter a **1** plus any 3–9 digit DTMF ANI Code **or**

Enter a **2** plus any 3–7 digit Selcall ANI Code



Enter any RQA Feature code from Table 4 to:

- Enable or disable the TX Alert Tone.
- Enable or disable Low Battery Alert message.
- Enable or disable Press and Hold Reset function.
- Record and Playback Assist, Reset, Battery and Escalate messages.
- Program how many times the Assist message will be transmitted.
- Program the time between Assist message transmissions.
- Program how many times the Assist message is repeated on each transmission.
- Program the RQA to append the Assist message with an Escalate message after a number of transmissions.
- Program the time between Escalate message transmissions.
- Program a 2nd Escalate channel to transmit Escalate message transmissions to alternate radio users.
- Program how many times the Reset message is repeated on each transmission.
- Reset RQA Quick Assist® to Factory default programming.
- Readout codes currently programmed into the RQA.

HOW TO FIELD PROGRAM TONE CODES

To match other radios, the owner can select Tone and DQC Codes from [Table 2](#) and [Table 3](#). In our example, we will program an RQA-451-ETSI to operate with 100.0 Hz tone.




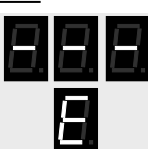
- | | |
|---|--|
| 12 | 1. Refer to Table 2 to determine the two-digit tone code for 100.0 Hz and write it down. |
| | 2. Loosen the (4) screws in the rear corners of the case. |
| | 3. Separate the case front from the case back, leaving the batteries connected to the radio. Make sure the unit has batteries installed. |
| | NOTE: The voltage of the batteries must be greater than 6 VDC to program properly. |
| | 4. Press and HOLD the Program button located next to the program display. |
|  | 5. Press and RELEASE the ON/PTT button on the front of the unit while continuing to hold the Program button. A "P" will appear on the program display. |
|  | 6. Release the Program button after a hyphen appears on the program display. The radio is now in program mode. |
|  | 7. Click the Program button until the program display shows the Program Code "b". Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the 2-digit Quiet-Call code or 3-digit Digital Quiet-Call code from Table 2 or Table 3. |
| TONE CODE | 8. Enter the 1 st digit of the tone code (or 1 st digit of the DQC code) by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit. |
| | 9. Enter the 2 nd digit of the tone code (or 2 nd digit of the DQC code) by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit. |
| | 10. FOR DQC CODES ONLY – Enter the 3 rd digit of the DQC code by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit. |
|  | 11. Press and release the ON/PTT button to save your programming. A hyphen will flash 3 times on the program display. The radio is now ready for another program entry. |
| | NOTE: If you attempt to save an incorrect code an "E" will appear on the display. Check the digits you are attempting to enter, then re-enter. |
| | 12. Once you have made your final program entry, press the ON/PTT button a final time to turn the radio off. Turn the radio back on for normal operation. |

TABLE 2: PROGRAMMABLE QC 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	00	No Tone

TABLE 3: PROGRAMMABLE DIGITAL DQC TONE CODES

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

HOW TO FIELD PROGRAM DTMF OR SELCALL ENCODE ANI (TRANSMIT) CODES

Each RQA Quick Assist® can be uniquely identified by programming for DTMF or Selcall encode ANI (transmit) operation. The user is able to field program the radio for any 3-9 digit DTMF or 3-7 digit Selcall sequence. The radio will transmit the ANI code at the beginning of each transmission. In our example we will program an RQA-451-ETSI to operate with a DTMF ANI Code of "547".

- | | |
|--|--|
| 547 | <ol style="list-style-type: none"> 1. Write down the desired DTMF or Selcall ANI code. 2. Loosen the (4) screws in the rear corners of the case. 3. Separate the case front from the case back, leaving the batteries connected to the radio. Make sure the unit has batteries installed. |
| | <p>NOTE: The voltage of the batteries must be greater than 6 VDC to program properly.</p> |
|  | <ol style="list-style-type: none"> 4. Press and HOLD the Program button located next to the program display. 5. Press and RELEASE the ON/PTT button on the front of the unit while continuing to hold the Program button. A "P" will appear on the program display. |
|  | <ol style="list-style-type: none"> 6. Release the Program button after a hyphen appears on the program display. The radio is now in program mode. |
|  | <ol style="list-style-type: none"> 7. Click the Program button until the program display shows the Program Code "d". Pause—the radio show a hyphen across the center of the display to indicate that it is ready to accept a 3- 9 digit DTMF or 3-7 digit Selcall encode ANI sequence. |
|  or
 or
 | <ol style="list-style-type: none"> 8. FOR DTMF ANI CODES TO BE TRANSMITTED WITH ALL MESSAGES – Enter a "1" FOR SELCALL ANI CODES TO BE TRANSMITTED WITH THE ALL MESSAGES – Enter a "2" TO REMOVE ALL DTMF AND SELCALL ANI CODES– Enter a "0" |
|  | <ol style="list-style-type: none"> 9. Enter the 1st digit of the DTMF or Selcall code by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit. |
|  | <ol style="list-style-type: none"> 10. Enter the 2nd digit of the DTMF or Selcall code by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit. |
|  | <ol style="list-style-type: none"> 11. Enter the 3rd digit of the DTMF or Selcall code by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit. Continue entering up to nine DTMF digits or seven Selcall digits. |
|  | <ol style="list-style-type: none"> 12. Press and release the ON/PTT button to save your programming. A hyphen will flash 3 times on the program display. The radio is now ready for another program entry. |
|  | <p>NOTE: If you attempt to save an incorrect code an "E" will appear on the display. Check the digits you are attempting to enter, then re-enter.</p> |
| | <ol style="list-style-type: none"> 13. Once you have made your final program entry, press the ON/PTT button a final time to turn the radio off. Turn the radio back on for normal operation. |

HOW TO FIELD PROGRAM FEATURE CODES

The RQA Quick Assist® can be field programmed for a number of advanced features. Refer to **Table 4** for the two or three digit codes available for field programming. In our example we will program an RQA-451-ETSI to transmit the Assist message 3 times with 30 seconds between each transmission.
















613 623	1. Refer to Table 4 to determine the two or three-digit feature codes and write them down.
	2. Loosen the (4) screws in the rear corners of the case.
	3. Separate the case front from the case back, leaving the batteries connected to the radio. Make sure the unit has batteries installed.
	NOTE: The voltage of the batteries must be greater than 6 VDC to program properly.
	4. Press and HOLD the Program button located next to the program display.
	5. Press and RELEASE the ON/PTT button on the front of the unit while continuing to hold the Program button. A "P" will appear on the program display.
	6. Release the Program button after a hyphen appears on the program display. The radio is now in program mode.
	7. Click the Program button until the program display shows the Program Code "A". Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept a 2-digit or a 3-digit Feature code.
FEATURE CODE  	8. Enter the 1 st digit of the feature code by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit.
	9. Enter the 2 nd digit of the feature code (if necessary) by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit.
	10. Enter the 3 rd digit of the feature code (if necessary) by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit.
  	11. Press and release the ON/PTT button to save your programming. A hyphen will flash 3 times on the program display. The radio is now ready for another program entry.
	NOTE: If you attempt to save an incorrect code an "E" will appear on the display. Check the digits you are attempting to enter, then re-enter.
FEATURE CODE  	12. Enter the 1 st digit of the feature code by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit.
	13. Enter the 2 nd digit of the feature code (if necessary) by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit.
	14. Enter the 3 rd digit of the feature code (if necessary) by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit.
  	15. Press and release the ON/PTT button to save your programming. A hyphen will flash 3 times on the program display. The radio is now ready for another program entry.
	NOTE: If you attempt to save an incorrect code an "E" will appear on the display. Check the digits you are attempting to enter, then re-enter.
	16. Once you have made your final program entry, press the ON/PTT button a final time to turn the radio off. Turn the radio back on for normal operation.

TABLE 4: FEATURE CODES

Code	Feature	Key	Description
Special Features			
21	Reset to Factory Defaults		Resets all Quick Assist® features that can be field programmed to Factory default programming.
22	Display Radio Revision		Quick Assist will display a sequence of 6 digits to identify model and operating code revision. This is helpful when troubleshooting the radio.
23	Disable TX Alert Tone		Disables the TX Alert Tone.
231	Enable Short Alert Tone		Enables a shorter TX Alert Tone that is sent at the start of each transmitted message. (5)
24	Enable TX Alert Tone Low	√	Enables a low TX Alert Tone that is sent at the start of each transmitted message.
25	Enable TX Alert Tone High		Enables a high TX Alert Tone that is sent at the start of each transmitted message.
26	Disable Low Battery Alert		Disables Low Battery Alert.
27	Enable Low Battery Alert	√	Enables the Low Battery Alert message that is sent at the end of each transmitted message whenever the batteries are in need of replacement.
28	Disable Press and Hold Reset		Disables Press and Hold Reset.
29	Enable Press and Hold Reset	√	Enables Press and Hold Reset. Holding down the Call Button for 5 seconds will cause the Quick Assist to transmit the Reset message, then turn-off.
20x	Message delay	√	Delay between time TX turns on and a Message is sent. 200 = no delay 201 = ½ second 202 = 1 second 203 = 1½ second 204 = 2 second 205 = 2½ second 206 = 3 second 207 = 3½ second 208 = 4 second 209 = 4½ second

Record Voice Messages

31	Reset Message (12 sec. max)	Once recorded, the message is transmitted when the Quick Assist is turned-off using the Press and Hold Reset feature.
32	Assist Message (12 sec. max)	Once recorded, the message is transmitted when the Call Button is pressed, and then re-transmitted per the programmed schedule.
33	Low Battery Message (2 sec. max)	Once recorded, the message is sent at the end of each transmitted message if low battery voltage is detected.
34	Escalate Message (4 sec. max)	Once recorded, the message is appended to the Assist message starting at a programmed number in the schedule.

Play Voice Messages

41	Reset Message	Transmits the recorded message for review.
42	Assist Message	
43	Low Battery Message	
44	Escalate Message	

2nd Escalate Channel

51xxx	2 nd Escalate Table Frequency	When the radio transmit schedule has reached the point of escalation, the Escalate message will be sent on both the normal radio frequency and on a 2 nd Escalate frequency. Refer to Table 1 for the 2 or 3-digit Table Frequency to be entered. Enter a table code "0" to delete all 2 nd Escalate Channel programming. (5)
52xxx	2 nd Escalate QC or DQC Code	Enter a 2-digit QC or 3-digit DQC code to be used with the 2 nd Escalate frequency. Refer to Table 2 for QC Tone Codes or Table 3 for digital DQC Tone Codes. (5)
53xxxxxxxx	2 nd Escalate DTMF ANI (9-digits max)	Enter a DTMF ANI string of 3-9 digits to be sent at the start of each transmission on the 2 nd Escalate frequency. (5)
54xxxxxxx	2 nd Escalate Selcall ANI (7-digits max)	Enter a Selcall ANI string of 3-7 digits to be sent at the start of each transmission on the 2 nd Escalate frequency. (5)

Code	Feature	Key	Description
Assist Message Operation			
61x	Number of Message Transmissions		Sets the number of times the Assist Message will be transmitted on a scheduled basis before the Quick Assist turns off.
		√	611 = 1 time 612 = 2 times 613 = 3 times 614 = 4 times 615 = 5 times 616 = 6 times 617 = 7 times 618 = 8 times 619 = repeat forever
62x	Time between transmissions		Sets the length of time between Assist message transmissions.
		√	621 = on changes only 622 = 15 sec 623 = 30 sec 624 = 1 min 625 = 1 ½ min 626 = 2 min 627 = 3 min 628 = 4 min 629 = 5 min 620 = 10 min
63x	Repeat Message		Sets the number of times the Assist Message is played on each transmission.
		√	631 = 1 time 632 = 2 times 633 = 3 times 634 = 4 times 635 = 5 times 636 = 6 times 637 = 7 times 638 = 8 times 639 = 9 times
64x	Append Escalation Message		Sets the Assist Message transmission on which the Escalation Message is appended
		√	641 = Always append 642 = Append on 2 nd transmission 643 = Append on 3 rd transmission 644 = Append on 4 th transmission 645 = Append on 5 th transmission 646 = Append on 6 th transmission 647 = Append on 7 th transmission 648 = Append on 8 th transmission 649 = Append on 9 th transmission 640 = Never append
65x	Time between Escalate transmissions		Sets the length of time between Escalated Assist message transmissions. (5)
		√	651 = Same as normal Assist message time. 652 = 15 sec 653 = 30 sec 654 = 1 min 655 = 1 ½ min 656 = 2 min 657 = 3 min 658 = 4 min 659 = 5 min 650 = 10 min
Reset Message Operation			
73x	Repeat Message		Sets the number of times the Reset Message is played on each transmission.
		√	731 = 1 time 732 = 2 times 733 = 3 times 734 = 4 times 735 = 5 times 736 = 6 times 737 = 7 times 738 = 8 times 739 = 9 times













Code	Feature	Key	Description
Programming Readout Codes			
81	Frequency Code		Display will sequentially show the programmed 2 or 3-digit Frequency Code. (1)
82	QC or DQC Tone Code		Display will sequentially show the programmed 2-digit QC Tone Code or 3-digit DQC Tone Code. (2)
83	DTMF or Selcall ANI		Display will sequentially show the programmed 3-9 digit DTMF or 3-7 digit Selcall Code. (3)
851	2 nd Escalate Frequency		Display will sequentially show the programmed 2 or 3-digit Frequency Code. (1)(5)
852	2 nd Escalate QC or DQC Tone Code		Display will sequentially show the programmed 2-digit QC Tone Code or 3-digit DQC Tone Code. (2)(5)
853	2 nd Escalate DTMF ANI		Display will sequentially show the programmed 3-9 digit DTMF Code. (3)(5)
854	2 nd Escalate Selcall ANI		Display will sequentially show the programmed 3-7 digit Selcall Code. (3)(5)
861	Number of Assist Messages		Readout Assist Message Number of message transmissions
862	Assist Message Repeat Time		Readout Assist Message Time between transmissions
863	Assist played each transmission		Readout Assist Message Number of times message is played on each transmission
865	Escalate Message Repeat Time		Readout Escalate Message Time between transmissions (5)
873	Reset played each transmission		Readout Reset Message Number of times message is played on each transmission

KEY: ✓ The Quick Assist® is set from the factory with these options **enabled**.

- NOTES:**
- (1) 999 indicates a non-table frequency.
 - (2) If DCS is inverted you will get an ERROR indication
 - (3) If "0" is displayed the radio has not been programmed for DTMF or Selcall ANI.
 - (4) ERROR indication will be displayed if not a Field Programming value (has been PC programmed)
 - (5) Feature available on radio revision 32.52 or higher. Enter "Display Radio Revision" code A22, the last 4 digits displayed indicate radio revision.

HOW TO RECORD VOICE MESSAGES

Recite your voice message a number of times before recording to be sure it can be completed in the time allowed. For best results speak directly into the microphone in a slow, clear voice. In our example we will program an RQA-451-ETSI Assist message.

- | | |
|---|---|
| 32 | <ol style="list-style-type: none"> 1. Refer to Table 4 to determine the two-digit Record Voice Message Code and write it down. 2. Loosen the (4) screws in the rear corners of the case. 3. Separate the case front from the case back, leaving the batteries connected to the radio. Make sure the unit has batteries installed.
NOTE: The voltage of the batteries must be greater than 6 VDC to program properly. 4. Press and HOLD the Program button located next to the program display. |
|  | <ol style="list-style-type: none"> 5. Press and RELEASE the ON/PTT button on the front of the unit while continuing to hold the Program button. A "P" will appear on the program display. |
|  | <ol style="list-style-type: none"> 6. Release the Program button after a hyphen appears on the program display. The radio is now in program mode. |
|  | <ol style="list-style-type: none"> 7. Click the Program button until the program display shows the Program Code "A". Pause—the radio show a hyphen across the center of the display to indicate that it is ready to accept a 2-digit Record Voice Message Code. |
| <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; margin-right: 5px;">VOICE MESSAGE CODE</div> <div style="display: flex; flex-direction: column; gap: 5px;">   </div> </div> | <ol style="list-style-type: none"> 8. Enter the 1st digit of the Record Voice Message Code by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit. |
| <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; margin-right: 5px;">VOICE MESSAGE CODE</div> <div style="display: flex; flex-direction: column; gap: 5px;">   </div> </div> | <ol style="list-style-type: none"> 9. Enter the 2nd digit of the Record Voice Message Code by clicking the Program button until the program display shows the desired number. Pause—the radio will show a hyphen across the center of the display to indicate that it is ready to accept the next digit. |
|  | <ol style="list-style-type: none"> 10. Press and release the ON/PTT button to save the 2-digit Record Voice Message Code and initiate the voice record process. A hyphen will appear on the Program display. |
|  | <p>NOTE: If you attempt to enter an incorrect code an "E" will appear on the display. Check the digits you are attempting to enter, then re-enter.</p> |
| | <ol style="list-style-type: none"> 11. Press and Hold the Program Button and wait for the red LED to light. Speak directly into the Quick Assist® microphone in a slow, clear voice. |
|    | <ol style="list-style-type: none"> 12. Release the Program button when you have finished recording the message. A hyphen will flash 3 times on the program display and the red LED will go off. The radio is now ready to record another message, or for another program entry. |
| | <ol style="list-style-type: none"> 13. Once you have recorded your final message, press the ON/PTT button a final time to turn the radio off. Turn the radio back on for normal operation. |

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 “Quick Assist call cleared” 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.

NOTE: The Reset message will not be heard if the radio is not programmed for Press-and-Hold Reset.

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 recorded Assist Message.
5. The Assist Message will be repeated for the number of times programmed for Repeat Message on each Transmission.
6. The RQA transmitter will turn OFF and the RQA will wait for the period of time programmed for Wait Time between Transmissions.
7. If Repeat Message Transmissions has been programmed for more than one transmission, the RQA transmitter will again be activated and Steps 1 – 7 will be repeated for the programmed number of transmissions.
8. If an Escalation Message has been programmed the Assist Message will be appended with the Escalation Message on the programmed transmission. If a 2nd

Escalation Channel has been programmed the Assist Message appended with the Escalation Message will also be transmitted on the 2nd Escalation Channel frequency.

9. If at any time during this sequence the front panel button is held down until the LED goes from solid red and begins flashing rapidly, the RQA will transmit the Reset Message and the sequence will be terminated.

QUICK ASSIST® DEFAULT PROGRAMMING

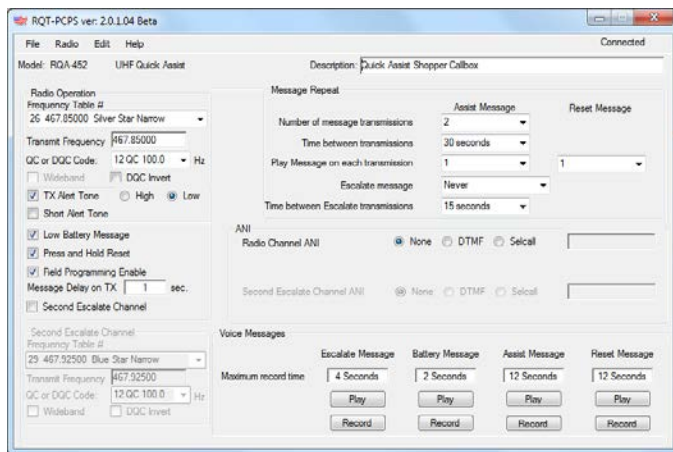
QC/DQC Code	b44	No Tone
DTMF/Selcall on Assist	d10	None
DQC Invert		No
Assist Transmissions	A612	2 transmissions
Time between Transmissions	A623	30 seconds
Assist Message played per transmission	A631	1 time
Escalate Message	A643	Escalate message on 3 rd transmission
Press and Hold Reset	A29	Enabled
Reset Button Hold Time		5 sec.
Reset Message played per transmission	A731	1 time
Low Battery Message	A27	Enabled
TX Alert Tone	A24	Enabled Low
Message Delay on TX	A202	1 sec.
Recorded Messages		
RQA Message		“Assistance needed”
Reset Message		“Quick Assist call cleared”
Low Battery		“Quick Assist battery”
Escalate		“Immediate attention required”

PC PROGRAMMING

The Quick Assist® can be programmed with unique voice messages and attributes. Programming can be accomplished with the RITRON RQA/RQT PC Programmer software available at www.ritron.com.

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

PROGRAMMER SCREEN



Description

Enter a brief description (35 characters or less) of the Quick Assist® use, location, customer, etc. 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

The Frequency Table is not applicable to RQA-451-ETSI.

Transmit Frequency

Once you have selected a code from the Frequency Table the actual transmit frequency will appear here. If your operating frequency does not appear on the Frequency Table 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 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 MHz.
- Your assigned frequency is shown on your FCC 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 shipping box.

QC or DQC Code

Refer to Table 2 of this manual and 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 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).

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 require inversion.

Wideband

The Quick Assist® can be set for wideband operation where allowed, otherwise this attribute dimmed and unavailable for programming.

TX Alert Tone

By default, the Quick Assist® will transmit an alert tone before each voice message transmission. This feature can be disabled via the PC programmer or Field Programming, and can be set for High or Low level.

Short Alert Tone

With TX Alert Tone enabled, the RQA can be set for a short, single Alert Tone.

Low Battery Message

If selected, a Low Battery message is transmitted when the internal batteries are in need of replacement. The Low Battery message will play at the conclusion of any "Assistance needed" or "Quick Assist call cleared" message.

Press and Hold Reset

Often it is desirable to repeat the "Assistance message" without limitation until the call has been answered. With Press and Hold Reset enabled the front panel push button can be held down for 5 seconds to reset the Quick Assist® to the standby condition. If Press and Hold Reset is not enabled the programmed Assist Message schedule will continue to completion before the radio returns to standby condition.

Example: To use a Quick Assist® 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 Assist® set for Press and Hold Reset an employee can terminate the message transmissions, and in the process send a “Quick Assist call cleared” message.

Field Programming Enable

With this feature disabled the Quick Assist® cannot be field programmed.

Message Delay on TX

This sets a time delay between turning on the Quick Assist® transmitter and playing any messages or ANI strings.

2nd Escalate Channel

If the RQA has been programmed for Escalate operation, enable this feature to transmit the escalated message on a 2nd Escalate Channel frequency. Radio will transmit the escalated message on both the normal radio frequency and on the 2nd Escalate Channel frequency.

2nd Escalate Channel Frequency Table

Select from a table of transmit frequencies.

2nd Escalate Channel Transmit Frequency

Displays the table of transmit frequency, or enter another frequency within the radio's operating band.

2nd Escalate Channel QC or DQC Code

Select from a table of QC or DQC codes.

2nd Escalate Channel DQC Invert

Invert the DQC Digital Quiet Call™ code.

2nd Escalate Channel Wideband

Set for wideband operation where allowed, otherwise this attribute dimmed and unavailable for programming.

Number of Message Transmissions

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

Time Between Transmissions

This sets the amount of time the Quick Assist® will wait between repeated transmissions. This applies to the Assist message only.

Example: When the “Press for Help” push-button is pressed in the paint department, an “Assistance needed in paint” message is to be transmitted every 30 seconds for 5 minutes. To accomplish this the Quick Assist® is programmed for 10 message transmissions with a time between transmissions setting of 30 seconds.

The Quick Assist® will transmit the “Quick Assist call cleared” message only once.

Play Message on Each Transmission

Your recorded voice message can be programmed to play from one time to nine times on each Quick Assist® radio transmission. Urgent messages may require more phrase repeats. This can be applied to the Assist message and the Reset message.

Example: The Quick Assist® is to be used as an emergency call button in a parking garage. If “Repeat on each Transmission” is set to 3, the Quick Assist® would transmit “Emergency in garage level 2, Emergency in garage level 2, Emergency in garage level 2” when the front-panel pushbutton is pressed.

ANI

The Quick Assist® can be programmed with a 3-9 digit DTMF or 3-7 digit Selcall ANI string. The ANI will be transmitted immediately prior to the Alert Tone and message. To program an ANI string, select Selcall or DTMF and enter the string in the value field.

Escalate Message

Program the scheduled transmission at which the Assist Message will be appended with the Escalate Message. The setting must be less than or equal to the Number of Message Transmissions for escalation to occur.

Time Between Escalate Transmissions

This sets the amount of time the Quick Assist® will wait between repeated transmissions once escalation has been achieved.

Example: When the “Press for Help” push-button is pressed in the paint department, an “Assistance needed in paint” Assist Message is to be transmitted 5 times. The Assist Message is to be sent 2 times every 30 seconds, and on the 3rd transmission the Assist Message is appended with an “Assistance Critical” Escalate Message and sent every 15 seconds an additional 3 times. To accomplish this the Quick Assist® is programmed for 5 message transmissions, a time between transmissions setting of 30 seconds, Escalation Message on 3rd transmission, and a time between Escalate transmissions of 15 seconds.

Voice Messages

The Assist, Reset, Battery, and Escalate messages can be recorded via the Programmer Screen. Refer to the [Recording Your Quick Talk™ Messages](#) section of this manual for instructions on recording voice messages using the PC Programmer. The Maximum Record Time for each message is also indicated.

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 "Quick Assist call cleared" 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.

Assist Message

The Assist message is limited to 12 seconds

When the Quick Assist® front panel push button is pressed, the factory-programmed message "Assistance needed" will be transmitted, and will be repeated per the programmed schedule. By default, the message is sent out twice with a 30 second wait time between transmissions.

Reset Message

The Reset message is limited to 12 seconds

If the Quick Assist® has been programmed for Press and Hold Reset, the user can press and hold the front panel push button for 5 seconds to reset the radio to the standby condition, at which time the factory-programmed message "Quick Assist call cleared" will be transmitted.

Low Battery Message

The Low Battery message is limited to 2 seconds

When it senses the installed batteries are nearly run down, Quick Assist® will play the factory-programmed message "Quick Assist battery" at the conclusion of any transmitted message. 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.

Escalate Message

The Escalate message is limited to 4 seconds

When re-transmitting the Assist message, the Quick Assist® can append the Assist Message with an Escalate message after a programmed number of re-transmissions to alert radio equipped personnel that the call has not been answered in a timely manner.

Recording Custom Voice Messages

What is the purpose of Recording Custom Voice Messages?

Recording customized Quick Assist® voice messages gives them unmistakable meaning and significance. The standard factory prerecorded messages of "Assistance needed" and "Quick Assist call cleared" require the listener to know exactly where the Quick Assist® is located. However, when a user hears a custom message such as "Assistance needed in the paint department", the meaning is clear.

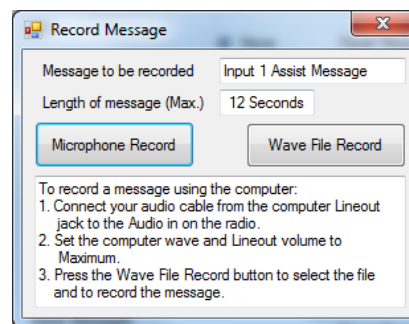
Do I need to record Custom Voice Messages?

If the factory-recorded messages "Assistance needed" and "Quick Assist call cleared" suit your application, recording custom messages is not necessary.

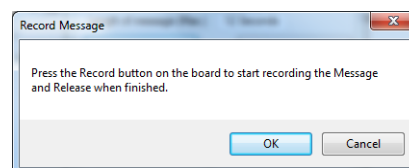
To record a custom message using the PC Programmer, refer to the following instructions. To record a custom message via Field Programming, refer to "HOW TO RECORD VOICE MESSAGES" in the Field Programming section of this manual. Once recorded, playback the message to be sure you are satisfied with the quality and content of the message.

To record your Quick Assist® Voice Messages using the on-board microphone:

1. Read the existing radio programming.
2. Press the RECORD button for the message to be recorded. The Record Message dialog box will appear.



3. Select Microphone Record.
4. The following dialog box will appear. Record the message per the instructions, then press OK to exit record mode. Message recording will automatically terminate after the allotted Length of Message time if the record button has not been released.



5. The RECORDED checkbox will now indicate that the message is recorded.
6. After you have recorded a message you can review it by pressing the associated PLAY button. The Quick Assist® will transmit the message on the programmed transmit frequency.

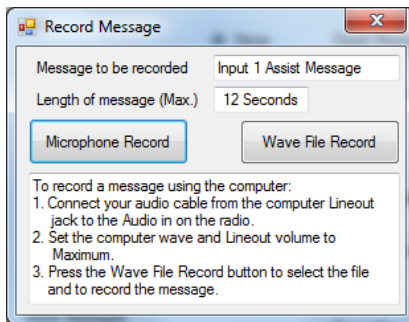
To record your Quick Assist® Voice Messages using a pre-recorded .wav file:

1. Connect the computer audio output to the RQA Series Quick Assist® using the 3.5mm to 2-pin audio cable (60201123) available from Ritron.

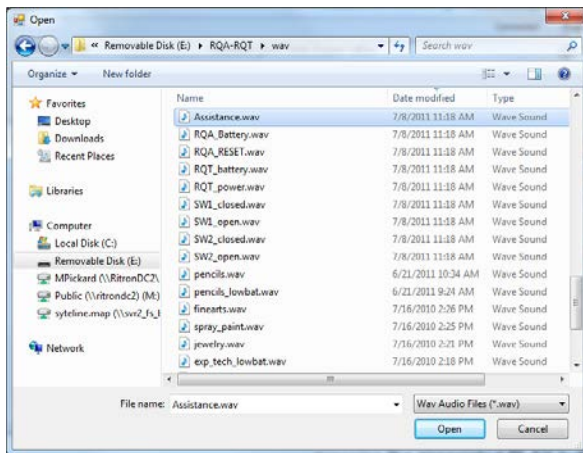
The computer connection will be a 3.5mm stereo jack on the back or side of your computer marked as AUDIO OUT. This output is where you might connect desktop speakers or headset.

The connection to your Quick Assist® will be via the 2-pin header located beside the Program button and display.

2. Read the existing radio programming.
3. Press the RECORD button for the message to be recorded. The Record Message dialog box will appear.



4. Select Wave File Record.
5. A Windows navigation dialog box will appear. Find and select the .wav file you would like to record to your Quick Assist®.



6. The following dialog box will appear as the message is being recorded.



7. The RECORDED checkbox will now indicate that the message is recorded.
6. After you have recorded a message you can review it by pressing the associated PLAY button. The Quick Assist® will transmit the message on the programmed transmit frequency.

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

TONE PROGRAMMING CODES

Code	QC Tone	Code	QC Tone	Code	DQC	Code	DQC	Code	DQC
b-0-1	67.0	b-2-7	167.9	b-0-2-3	023	b-2-2-3	223	b-4-4-5	445
b-0-2	71.9	b-2-8	173.8	b-0-2-5	025	b-2-2-5	225	b-4-4-6	446
b-0-3	74.4	b-2-9	179.9	b-0-2-6	026	b-2-2-6	226	b-4-5-2	452
b-0-4	77.0	b-3-0	186.2	b-0-3-1	031	b-2-4-3	243	b-4-5-4	454
b-0-5	79.7	b-3-1	192.8	b-0-3-2	032	b-2-4-4	244	b-4-5-5	455
b-0-6	82.5	b-3-2	203.5	b-0-3-6	036	b-2-4-5	245	b-4-6-2	462
b-0-7	85.4	b-3-3	210.7	b-0-4-3	043	b-2-4-6	246	b-4-6-4	464
b-0-8	88.5	b-3-4	218.1	b-0-4-7	047	b-2-5-1	251	b-4-6-5	465
b-0-9	91.5	b-3-5	225.7	b-0-5-1	051	b-2-5-2	252	b-4-6-6	466
b-1-0	94.8	b-3-6	233.6	b-0-5-3	053	b-2-5-5	255	b-5-0-3	503
b-1-1	97.4	b-3-7	241.8	b-0-5-4	054	b-2-6-1	261	b-5-0-6	506
b-1-2	100.0	b-3-8	250.3	b-0-6-5	065	b-2-6-3	263	b-5-1-6	516
b-1-3	103.5	b-3-9	69.4	b-0-7-1	071	b-2-6-5	265	b-5-2-3	523
b-1-4	107.2	b-4-0	159.8	b-0-7-2	072	b-2-6-6	266	b-5-3-2	532
b-1-5	110.9	b-4-1	165.5	b-0-7-3	073	b-2-7-1	271	b-5-4-6	546
b-1-6	114.8	b-4-2	171.3	b-0-7-4	074	b-2-7-4	274	b-5-6-5	565
b-1-7	118.8	b-4-3	177.3	b-1-1-4	114	b-3-0-6	306	b-6-0-6	606
b-1-8	123.0	b-4-4	No Tone	b-1-1-5	115	b-3-1-1	311	b-6-6-2	662
b-1-9	127.3	b-4-5	183.5	b-1-1-6	116	b-3-1-5	315	b-6-1-2	612
b-2-0	131.8	b-4-6	189.9	b-1-2-2	122	b-3-2-5	325	b-6-2-4	624
b-2-1	136.5	b-4-7	196.6	b-1-2-5	125	b-3-3-1	331	b-6-2-7	627
b-2-2	141.3	b-4-8	199.5	b-1-3-1	131	b-3-3-2	332	b-6-3-1	631
b-2-3	146.2	b-4-9	206.5	b-1-3-2	132	b-3-4-3	343	b-6-3-2	632
b-2-4	151.4	b-5-0	229.1	b-1-3-4	134	b-3-4-6	346	b-6-4-5	645
b-2-5	156.7	b-5-1	254.1	b-1-4-3	143	b-3-5-1	351	b-6-5-4	654
b-2-6	162.2	b-0-0	No Tone	b-1-4-5	145	b-3-5-6	356	b-6-6-4	664
				b-1-5-2	152	b-3-6-4	364	b-7-0-3	703
				b-1-5-5	155	b-3-6-5	365	b-7-1-2	712
				b-1-5-6	156	b-3-7-1	371	b-7-2-3	723
				b-1-6-2	162	b-4-1-1	411	b-7-3-1	731
				b-1-6-5	165	b-4-1-2	412	b-7-3-2	732
				b-1-7-2	172	b-4-1-3	413	b-7-3-4	734
				b-1-7-4	174	b-4-2-3	423	b-7-4-3	743
				b-2-0-5	205	b-4-3-1	431	b-7-5-4	75
				b-2-1-2	212	b-4-3-2	432		

DTMF OR SELCALL ENCODE ANI (TRANSMIT) CODES

Code	Description
d-1-xxxxxxxx	For DTMF ANI codes to be transmitted with all messages – Enter “d” and “1”, then a 3-9 digit ANI code.
d-2-xxxxxxx	For SELCALL ANI codes to be transmitted with all messages – Enter “d” and “2” then a 3-7 digit ANI code.
d-0	To remove all DTMF and SELCALL ANI codes – Enter “d” and “0”

MESSAGE CODES

Code	Description
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Record Voice Messages

A-3-1	Reset Message (12 sec. max) Once recorded, the message is transmitted when the Quick Assist is turned-off using the Press and Hold Reset feature.
A-3-2	Assist Message (12 sec. max) Once recorded, the message is transmitted when the Call Button is pressed, and then re-transmitted per the programmed schedule.
A-3-3	Low Battery Message (2 sec. max) Once recorded, the message is sent at the end of each transmitted message if low battery voltage is detected.
A-3-4	Escalate Message (4 sec. max) Once recorded, the message is appended to the Assist message starting at a programmed number in the schedule.

Transmit a recorded message for review

A-4-1	Reset Message
A-4-2	Assist Message
A-4-3	Low Battery Message
A-4-4	Escalate Message

Delay between the time TX turns on and a message is sent

A-2-0-0	no delay
A-2-0-1	½ second
A-2-0-2	1 second (Factory default)
A-2-0-3	1½ seconds
A-2-0-4	2 seconds
A-2-0-5	2½ seconds
A-2-0-6	3 seconds
A-2-0-7	3½ seconds
A-2-0-8	4 seconds
A-2-0-9	4½ seconds

Code	Description
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Number of times the Assist Message will be transmitted on a scheduled basis before the Quick Assist turns off

A-6-1-1	1 time
A-6-1-2	2 times (Factory default)
A-6-1-3	3 times
A-6-1-4	4 times
A-6-1-5	5 times
A-6-1-6	6 times
A-6-1-7	7 times
A-6-1-8	8 times
A-6-1-9	repeat forever

Time between scheduled Assist message transmissions

A-6-2-1	on changes only
A-6-2-2	15 sec
A-6-2-3	30 sec (Factory default)
A-6-2-4	1 min
A-6-2-5	1 ½ min
A-6-2-6	2 min
A-6-2-7	3 min
A-6-2-8	4 min
A-6-2-9	5 min
A-6-2-0	10 min

Number of times the Assist Message is played on each transmission

A-6-3-1	1 time (Factory default)
A-6-3-2	2 times
A-6-3-3	3 times
A-6-3-4	4 times
A-6-3-5	5 times
A-6-3-6	6 times
A-6-3-7	7 times
A-6-3-8	8 times
A-6-3-9	9 times

Code	Description
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Append Escalation Message - The scheduled Assist Message transmission on which the Escalation Message is appended

A-6-4-1	Always append
A-6-4-2	Append on 2 nd transmission
A-6-4-3	Append on 3 rd transmission (Factory default)
A-6-4-4	Append on 4 th transmission
A-6-4-5	Append on 5 th transmission
A-6-4-6	Append on 6 th transmission
A-6-4-7	Append on 7 th transmission
A-6-4-8	Append on 8 th transmission
A-6-4-9	Append on 9 th transmission
A-6-4-0	Never append

Time between Escalate transmissions - Sets the length of time between Escalated Assist message transmissions. (5)

A-6-5-1	Same as Assist message time
A-6-5-2	15 sec
A-6-5-3	30 sec
A-6-5-4	1 min
A-6-5-5	1 ½ min
A-6-5-6	2 min
A-6-5-7	3 min
A-6-5-8	4 min
A-6-5-9	5 min
A-6-5-0	10 min

Number of times the Reset Message is played on each transmission

A-7-3-1	1 time (Factory default)
A-7-3-2	2 times
A-7-3-3	3 times
A-7-3-4	4 times
A-7-3-5	5 times
A-7-3-6	6 times
A-7-3-7	7 times
A-7-3-8	8 times
A-7-3-9	9 times

FEATURE CODES

Code	Description
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Special Features

A-2-1	Resets all Quick Assist® features that can be field programmed to Factory default programming.
A-2-2	Display 6-digit Radio Revision
A-2-3	Disable TX Alert Tone
A-2-3-1	Enable Short Alert Tone (5)
A-2-4	Enable TX Alert Tone Low (<i>Factory default</i>)
A-2-5	Enable TX Alert Tone High
A-2-6	Disable Low Battery Alert
A-2-7	Enable Low Battery Alert (<i>Factory default</i>)
A-2-8	Disable Press and Hold Reset
A-2-9	Enable Press and Hold Reset (<i>Factory default</i>)

Code	Description
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Programming Readout Codes

A-8-1	Display will sequentially show the 2 or 3-digit Frequency Code. (1)
A-8-2	Display will sequentially show the 2-digit QC Tone Code or 3-digit DQC Tone Code. (2)
A-8-3	Display will sequentially show the 1-9 digit DTMF or 3-7 digit Selcall Code. (3)
A-8-6-1	Number of Assist Messages transmissions
A-8-6-2	Assist Message Time between transmissions
A-8-6-3	Assist Message Number of times message is played on each transmission
A-8-6-5	Escalate Message Time between transmissions
A-8-7-3	Reset Message Number of times message is played on each transmission.

2ND ESCALATE CHANNEL CODES

Code	Description
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A-5-1-xxx	To transmit Escalate Messages on a 2 nd Escalate frequency - Refer to Table 1 for the 2 or 3-digit Table Frequency. Enter "A", "5", "1", then enter the Table Frequency Code. (5)
A-5-1-0	Delete all 2 nd Escalate Channel programming. (5)
A-5-2-xxx	To set a 2 nd Escalate QC or DQC Code - Refer to Table 2 for the QC Tone Code or Table 3 for digital DQC Tone Code. Enter "A", "5", "2", then enter the 2-digit QC or 3-digit DQC code. (5)
A-5-3-xxxxxxx	To set a 2 nd Escalate DTMF ANI (9-digits max) that is sent at the start of each transmission on the 2 nd Escalate frequency. Enter "A", "5", "3", then a 3-9 digit DTMF ANI code. (5)
A-5-4-xxxxxxx	To set a 2 nd Escalate Selcall ANI (7-digits max) that is sent at the start of each transmission on the 2 nd Escalate frequency. Enter "A", "5", "4", then a 3-7 digit Selcall ANI code. (5)
A-8-5-1	Readout 2 nd Escalate Frequency, Display will sequentially show the programmed 2 or 3-digit Frequency Code. (1) (5)
A-8-5-2	Readout 2 nd Escalate QC or DQC Tone Code. Display will sequentially show the programmed 2-digit QC Tone Code or 3-digit DQC Tone Code. (2) (5)
A-8-5-3	Readout 2 nd Escalate DTMF ANI. Display will sequentially show the programmed 3-9 digit DTMF Code. (3) (5)
A-8-5-4	Readout 2 nd Escalate Selcall ANI. Display will sequentially show the programmed 3-7 digit Selcall Code. (3) (5)

- NOTES:**
- (1) 999 indicates a non-table frequency.
 - (2) If DCS is inverted you will get an ERROR indication
 - (3) If "0" is displayed the radio has not been programmed for DTMF or Selcall ANI.
 - (4) ERROR indication will be displayed if not a Field Programming value (has been PC programmed)
 - (5) Feature available on radio revision 32.52 or higher. Enter "Display Radio Revision" code A22, the last 4 digits displayed indicate radio revision.