

Ritron Model(s):	RQA and RQT Series
Current Firmware Revision:	9s1N3214.s19, 9s1N3254.s19
Revision Update:	December 29, 2022

Firmware revision 9S1N3214 fixes a problem where RQT Input 1 OPEN message was missing the first 125mS of the recorded message. The full recorded message was heard on PC Programmer playback, only in normal operation was the first part of the message missing. With firmware revision 9S1N3214 Input 1 OPEN message starts at the normal operation point when recording or on PC Programmer playback. Firmware revision 9S1N3214 will have no effect on existing radios until Input 1 OPEN message is re-recorded.

Firmware revision 9S1N3254 addresses RQA field programming problem when On Semi memory is installed.

RQT and Legacy RQA firmware revision history:

1. 9S103202 released: 04/07/2011

Firmware revision 32.02 was installed on the initial product release of the RQA / RQT-151 / 151M / 451.

2. 9S103203 released: 07/14/2011

- a. Fixes a problem in the Press-and-Hold Reset operation where radio was reset on power up and did not send switch closed message on RQA.
 - b. Fixes a problem where the radio was not consistently enumerating. This was caused by the Resume Interrupt Enable flag not being set.
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3. 9S103204 released: 08/17/2011

All RQA / RQT-151 / 151M / 451 models should be updated to firmware revision 9s103204 or greater

- a. Makes Canadian table frequencies wideband
 - b. Fixes a problem where alert tone always played on battery fail message.
 - c. Battery Fail message can be programmed for “never”, even if battery message is enabled. This allows a battery message on append only. Previously it would send on event if battery message flag was enabled.
 - d. Fixes RQT lockup problem due to non-compliant MC9S08JM32CLDE microprocessors. In normal operation the RQT wakes up from a low power STOP3 mode every 250ms to see if there is a change on any of the four RQT inputs. A certain percentage of RQT radios would not reliably wake up, putting them into a locked condition that required a power-on reset. This was a problem with starting the 12MHz crystal oscillator. Firmware revision 9s103204 no longer starts the 12MHz oscillator during STOP3 scan mode, but instead uses an internal 31.25 kHz oscillator. This also results in lower OFF time current consumption for extended battery life.
 - e. Fixes problem where radio did not go into STOP3 scan mode if input was set for latching unless the “Press and Hold Reset” was set.
 - f. Fixes problem where if an input was set for latching and was still in latched condition after a schedule was completed the radio did not enter STOP3 scan mode.
 - g. Fixes problem where messages were played any time the USB was plugged in if “Play messages at Startup” was enabled. However, RQA models still play the Assist message any time USB is plugged in.
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4. 9S103205 released: 11/21/2011

- a. Increases the recorded voice audio output from -8dB to -4dB volume setting when operating in normal (non-companded) mode. Companded voice audio remains at the -8dB volume setting.
 - b. Generated tones (Alert Tones, DTMF, Selcall) remain at -8dB volume, but are never companded.
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5. 9S103206 released: 01/27/2012

Requires PC programmer RQT-PCPS 1.1.0 or greater to program RQT models for keyfob operation

- a. Allows operation with the RQX-433-RCVR keyfob receiver. Input type KEYFOB is added, which will allow the RQT model radios to activate an input with the RQT-433-RCVR keyfob receiver.
 - b. Activates the RQA_ON output whenever the RQT is transmitting. RQT models have a problem with battery powered operation when the voltage approaches the dead battery level. The +VBATT voltage drops in transmit due to the higher current drain, which could cause the RQT to go into dead battery turn-off mode prematurely.
 - c. Increases TX modulation density when operating in a non-companded mode. The recorded voice audio output is increased from -4dB to 0dB volume setting when operating in normal (non-companded) mode. Companded voice audio remains at the -8dB volume setting.
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6. 9S103207 released: 02/21/2012

Provides a 3-point slope alignment for TX Power. The RQA / RQT-152 products are the only items utilizing the 3-point slope TX power alignment.

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- 7. 9S1N3208 released: 10/04/2012**
Update to accommodate the RQT-KEYFOB-B5, RQT-KEYFOB-B2, and RQT-KEYFOB-B8 (future consideration). This update is only required for RQT products with the RQT-433-RCVR keyfob receiver installed.
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- 8. 9S1N3209 beta release: 11/27/2012**
With Press-and-Hold Reset enabled, the Reset Message is only sent on press-and-hold reset event. When Press-and-Hold Reset is not enabled, the Reset Message is sent after the completion of the associated Assist Message schedule. On RQT, Assist Message is defined as the switch condition on which latching is set and the Reset Message the switch condition that is not latched.
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- 9. 9S1N3210 released: 01/28/2013**
- a. With Press-and-Hold Reset enabled, the Reset Message is only sent on press-and-hold reset event. When Press-and-Hold Reset is not enabled, the Reset Message is sent after the completion of the associated Assist Message schedule. On RQT, Assist Message is defined as the switch condition on which latching is set and the Reset Message the switch condition that is not latched. (Introduced with beta revision 9S1N3209)
 - b. Optimize USB programming for consistent and reliable enumeration.
 - c. Improved EE programming verification during the manufacturing process by programming location 0000 last. Firmware uses location 0000 to verify EE programming, if FF the firmware loads default values for RQA-451 into EE.
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- 10. 9S1N3211 released: 01/30/2014**
- a. Add Press-and-Hold Reset capability to KEYFOB mode of operation to support the RQA-1B and RQA-4B Call Button. This update only affects RQT products with the RQT-433-RCVR keyfob receiver installed.

On any RQT input operating in KEYFOB mode, if Press-and-Hold Reset option is set the 2nd KEYFOB message is used as a reset and clears the 1st KEYFOB message schedule. If a 1st KEYFOB message schedule is not currently running the 2nd KEYFOB reset message is not played. Ritron Programmer RQT-PCPS 1.2.0 is required to program the RQT for Press-and-Hold Reset operation in KEYFOB mode.
 - b. Fix problem with USB connection if USB cable is already plugged in when radio is powered on.
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- 11. 9S1N3212 released: 06/04/2014**
Update operation when a low battery condition is detected the radio waits 300mS and takes a second reading to confirm. This fixes a problem on RQT models where External power is lost and the backup battery voltage has not fully ramped up, triggering a false low battery message.
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- 12. 9S1N3213 released: 04/27/2016**
- a. Add 150mS QC (CTCSS) 180° phase reversal for squelch tail elimination. 32.12 and earlier used 150mS tone removal.
 - b. Add High/Low TX Alert Tone capability where, on a per input basis, it can be set low for 1/2 deviation.
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- 13. 9S1N3214 released: 2/08/2017**
Fixes a problem where RQT Input 1 OPEN message was missing the first 125mS of the recorded message. The full recorded message was heard on PC Programmer playback, only in normal operation was the first part of the message missing.

With firmware revision 9S1N3214, Input 1 OPEN message starts at the normal operation point when recording or on PC Programmer playback, and will have no effect on existing radios until Input 1 OPEN message is re-recorded.
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Firmware revisions 9S1N3250 and higher apply to GEN 2 RQA models only

1. 9S1N3250 released: 06/25/2018

Release 9S1N3250, RQA only firmware for new generation radio with field programming capability.

2. 9S1N3251 released: 09/17/2018

Firmware revision 9S1N3251 adds UHF model RQA-451-CANADA-GMRS and has no effect on VHF models.

3. 9S1N3252 released: 11/25/2019

- a. Fixes Program button operation when the RQA is on.
 - b. Adds 2nd Escalate Channel (with field programming capability)
 - c. Adds Escalate Time between transmissions (with field programming capability)
 - d. Adds a short TX Alert Tone option ((with field programming capability)
 - e. Update LED operation to flash every 1 second when RQA is active and between scheduled transmissions.
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4. 9S1N3253 released: 10/22/2021

Firmware revision 9S1N3253 prevents field programming of table frequencies when the radio is configured as an RQA-451-ETSI. This firmware update has no effect on any other RQA model.

5. 9S1N3254 released: 12/29/2022

EE memory U501 was changed from ATMEL #AT25080B-SSHL-T to On Semiconductor CAT25080VI-GT3 in April 2022 due to availability of the Atmel part. With this change a problem was introduced on certain field program codes as follows:

A51xxx – escalate channel frequency	bxx – QC
A52xx – escalate channel QC	bxxx – DQC
A52xxx – escalate channel DQC	d0 – clear ANI
A53xxxxxxxx – escalate channel DTMF ANI	d1xxxxxxxx – DTMF ANI
A54xxxxxxxx – escalate channel Selcall ANI	d2xxxxxxxx – Selcall ANI
A21 – reset to factory defaults	
