

Ritron Model(s):	RBS-477DMR Analog/DMR Base Radio
Current Firmware Revisions:	9S1N5006_update.srec, 9S110505.update.hex
Revision Update:	March 3, 2026

IMPORTANT! All RBS-477DMR base radios must be updated to 9s1N5005 and 9s110505, or higher, to scan DMR channels.

RBS-477DMR Analog/DMR Base Radio firmware revision history:

1. 9s1N5003 (main) released: 03/20/2024

- a. Initial release with current hardware configuration.
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2. 9s110503 (DMR) released: 03/20/2024

- a. Initial release with current hardware configuration.
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3. 931N5004 (main) released: 11/18/2024

- a. Make P2 transmission always send selected contact (no callback).
 - b. Fix other conditions for transmitted contact depending upon when P1 pressed, when call received, P1 timer, and callback timer.
 - c. Reload callback timer at beginning of each callback transmission and do not decrement while transmitting.
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4. 9s110504 (DMR) released: 11/18/2024

- a. Prevents DMR board lockup when a DMR channel is configured and actively communicating with a repeater.
- b. While transmitting, occasionally the transmitted audio sounds "choppy" or garbled on the receiving radio.
 - Transmission of garbled audio occurs when there's less than 3 packets in the vocoder tx packet buffer.
 - In previous versions of firmware, "silence" was inserted into the vocoder tx packet buffer to prevent the transmission of garbled audio. Inserting "silence" exacerbated the transmitted garbled audio issue by making it sound choppy/broken up.
 - Resolved the transmitted garbled and/or choppy audio by removing the insertion of "silence" and, instead, initializing the vocoder tx packet buffer when there's less than 3 packets.

NOTE: Firmware changes 931N5004 and 9s110504 do not address the problem where incoming DMR transmissions are not received when channel scanning. This will be corrected with a future firmware update.

5. 9s1N5005 (main) released: 12/03/2025

- a. Corrects problem with scanning DMR channels. Channel scanning is in analog mode until a carrier is detected, at which time it checks the channel for a valid DMR or Analog signal.
 - b. Corrects problem with Scan Resume Delay Time after TX.
 - c. Corrects problem with Priority Channel being set incorrectly.
 - d. Memory locations 07F0-07F3 are used to define scan timing. If programmed with FFFFFFFF, these memory locations are populated with default values the first time scan is initiated, allowing for field update.
 - 07F0 0B Analog mode carrier detect time (10.4ms)
 - 07F1 14 DMR mode carrier detect time (10.4ms)
 - 07F2 28 DMR decode time after carrier detect (32.25ms)
 - 07F3 00 Debug operation set to 00 (for development use only)
 - e. Corrects problem with repeater operation when assigned slot is busy.
 - f. Allows a Priority channel assignment to a channel that is not in the scan list.
 - g. Removed checking for mixed mode channel.
 - h. When scan mode is stopped, go to last active channel (if not null, otherwise the previous channel before starting scan)
 - i. When P2 button selects Last Called channel, ignore if last active channel is null.
 - j. Allow scan block a channel during scan resume delay time.
 - k. For analog channel, check for carrier detect continuously during scan look time.
 - l. Fix DMR priority channel.
 - m. TX in scan mode:
 - IF Priority scan enabled and go to priority on PTT enabled, go to priority channel.
 - ELSE If last active channel is not null, go to last active channel.
 - ELSE Go to channel prior to starting scan.
 - IF Priority channel is invalid or deleted, clear go to priority on PTT setting.
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6. 9s110505 (DMR) released: 12/03/2025

- a. Allows the DMR board to be put into an idle state when scanning on an analog channel.
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7. 9s1N5006 (main) released: 03/03/2026

Scan mode enhancements as follows:

- a. When scanning, if an incoming call is missed "Call" will appear on the 2nd line of the radio display.
 - b. When scanning, if a DMR channel is received a transmitted response will be to the received channel and contact.
 - c. "Last Channel" option is only available in Scan mode. When selected with the P2 button radio exits Scan mode and goes to the last channel received, with the received contact if a DMR channel.
 - d. Scan dwell time for a DMR channel is reduced from 1.38 sec to 0.375 sec by going to the next channel as soon as it decodes an invalid address.
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