Firmware Release Note

Equipment : RWC2010M, Digital Radio Tester

Revision History

Version	Date	Description
Version 1.100	04 Nov 2026	1. Added support for simultaneous 3-channel FM transmission, bringing the functionality in line with the RWC2010C. 2. Updated the IN Gain boundary value due to a change in the audio analyzer input impedance. 3. Added a feature that retrieves time information from an NTP server. An NTP_SERVER parameter was added to the SETUP screen to enable or disable this feature, and when NTP_SERVER is set to ON, the NTP_IP_ADDR and NTP_UTC parameters are displayed. 4. Fixed a bug where formatting the SD card or deleting all files caused invalid JSON to be sent to the PC, which froze the PC application. 5. The firmware upgrade address is now determined by the version of the Emergency Upgrade program. With the new method, the unit boots into the Emergency Upgrade program first, then — depending on the key input — either jumps to the normal program or continues booting the Emergency Upgrade program. **Please note that once you upgrade to this version, downgrading to an earlier version may not be possible.**
Version 1.064	25 June 2026	1. Previously, the RWC2010M booted into a mode with no protocol selected by default. This has been improved so that the RWC2010M now checks the equipment options during boot and starts in the appropriate mode — either ETI, MDI, or FM. 2. Changed the AA:ON status indicator on the screen to MOD to display the Modulation ON/OFF state.
Version 1.063	04 June 2026	1. Previously, Group 14B was transmitted only 3 times when EON_SWITCH was turned ON, and not transmitted at all when turned OFF. In this version, Group 14B is now transmitted continuously while EON_SWITCH is ON, and when EON_SWITCH is turned OFF, it sets EON_TA to OFF

		and EON_PTY to 0 (default), then transmits Group 14B 5 times before stopping. 2. When MDI files contained private-use tags, the MDI frame length could exceed the maximum frame length defined in the DRM Spec. This has been resolved by increasing the RWC2010X frame length limit to accommodate MDI files that include private-use data.
Version 1.062	29 May 2026	1. Added a DUT Impedance variable to the Audio Analyzer. When the DUT Impedance is set to High, the signal is amplified by 2x or more.
Version 1.061	15 May 2026	1. There was an issue with the flatness of the FM pre-emphasis filter that caused signal attenuation of more than 1 dB at high audio frequencies. The pre-emphasis filter flatness has been improved to 0.1 dB.
Version 1.060	16 April 2026	1. Fixed the bug where MDI files would not play correctly if the length of Part A of the content were not zero (UEP). 2. For models with RCA port audio analyzer input, added the ability to select between balanced and unbalanced input. The audio calibration method has also been improved to use a file-based format supporting both input types. 3. Previously, during FW upgrade, the system performed a CRC check after download, wrote to flash memory, and terminated. In this case, if the downloaded data became corrupted during the write process, the system could fail to boot properly. The process has been improved to perform an additional CRC check after writing to flash memory. If the written binary is corrupted, the system now automatically switches to Emergency upgrade mode.
Version 1.050	20 Nov.2025	1. Improved the firmware to allow the PC application program to manage and read the internal file list of the RWC2010M more efficiently.
Version 1.048	7 Nov.2025	1. Modified the Save/Recall memory structure because the increasing number of DAB variables was causing a memory overflow issue. **Please note that upgrading to this new version will reset all previously saved parameters**
Version 1.047	27 Oct.2025	1. Added a feature that allows the user to select System Reset during the boot process.

		2. Fixed an issue where, after memory initialization, the Tester Mode would default to SG Mode, causing the screen display to be abnormal.
Version 1.046	17 Oct.2025	1. Added the Low-Pass Filter (LPF) function to the Audio Analyzer. 2. Improved the resolution of the Audio Analyzer's audio level measurement from 1 mV to 0.01 mV. 3. Enhanced the system so that RDS now supports up to four simultaneous Tag information entries, an increase from the previous limit of two. 4. Added variables that allow the user to set the item toggle bit and item running bit when transmitting RDS Tag information.
Version 1.045	17 Sep.2025	1. Fixed an issue where the screen would fail to update when repeatedly changing between FM and AM modes for a long period using a remote command.
Version 1.044	02 Sep.2025	1. The audio analyzer has been enhanced to provide higher resolution for dBu measurements of audio input levels. This allows the users to measure a wider range of lower-level signals accurately.
Version 1.043	22 Aug.2025	1. Reference Clock (Ref Clock) Stability: We improved the RWC2010M so that when the Ref Clock is set to EXT, it will now switch to INT after a 3-second delay if there's no external input. Previously, it would switch back to INT too quickly. 2. External AMP Data Download: We fixed an issue where the content progress bar information was not being sent to the PC program after downloading external AMP data. 3. Stereo FM Phase Offset: We added the AUDIO_PH_OFFSET variable to Stereo FM. This allows users to adjust the phase difference between the Left and Right audio signals when their frequencies are identical. 4. We've fixed a screen display issue. When quickly switching Tester Modes, the screen update speed was slow, which made it appear that the screen had frozen even though the function was working correctly. We've now improved it so that the screen updates instantly whenever the Tester Mode is changed.

Version 1.042	10 July.2025	1. The UDP Event Port number has been changed to 52019.
Version 1.041	24 June.2025	1. Added dBu to the Audio Analyzer's measurement parameters.
Version 1.040	05 May.2025	1. In FM stereo mode, the FM deviation value of the CW tone was set to the value obtained by subtracting the pilot signal energy from the set value, but the FM deviation value of the CW tone has been improved to maintain the set value. 2. Changing the sampling frequency has improved the problem of sound quality deterioration due to a sampling frequency mismatch when transmitting Wave files in FM mode. 3. Added External Audio input function to FM/AM. This function modulates and transmits audio input through the audio input AUX port on the rear panel to FM or AM in real-time. 4. There was an issue where the remote control would occasionally stop working when using the UART port. It has been resolved. 5. There was a problem where the length information of the label variable was not saved when saving and recalling settings, so the label was not transmitted properly. 6. The AM band's lowest frequency was changed from 150 to 149 kHz. 7. Added encrypted ETI/MDI file transfer function. 8. Add a remote command to set SLS content on the DAB PAD channel. - CONF:DAB:COMPONENT:PAD_SLS_CONTENTS - READ:DAB:COMPONENT:PAD_SLS_CONTENTS? 9. Added function to select and execute the RECALL with the remote control box. 10. FM Filter performance has been improved to remove spurious noise. 11. Improved to allow multiple remote commands. Each command is separated by a semicolon. 12. They are improved to match the phase when the left and right audio signal frequencies of FM Stereo are the same. 13. Added parameter to determine whether to check AF CRC or not when transmitting the MDI file 14. Added remote command for MDI CRC Check - CONF:ETI:CONFIG:AF_CRC_CHECK

		- READ:ETI:CONFIG:AF_CRC_CHECK? 15. Added left/right audio separation measurement function to the audio analyzer. 16. Added a remote command to read the audio separation result. - READ:AUDIO:SEPARATE_L? - READ:AUDIO:SEPARATE_R?
Version 1.030	30 Jan.2024	1. When transmitting content, the method changed from infinitely repeated reading from EMMC memory to transmitting by reading it only once and copying it to DDR memory. 2. Fixed a content structure memory overflow bug that could cause unstable behaviour when transmitting RDS content. 3. The FPGA DLL Clock was improved because it was unlocked very occasionally.
Version 1.020	30 Dec.2023	1. The EON_PTY parameter is added to signal to the receiver the start of a programme item carrying a NEWS, WEATHER or ALARM announcement in FM RDS. 2. Add the remote commands to read audio analyzer waveform data. - READ:AUDIO:SCOPE_WAVE_L? - READ:AUDIO:SCOPE_WAVE_R? - READ:AUDIO:SPECTRUM_WAVE_L? - READ:AUDIO:SPECTRUM_WAVE_R? 3. In FM Wave mode, audio distortion occurred due to an audio buffer index error, so this was improved.
Version 1.010	10 Aug.2023	1. Fixed an issue where the signal was disconnected during DRM+ transmission. 2. Added quasi-peak detector function to Audio Analyzer. 3. Added Path_loss Parameter. 4. Added parameter for remote command delimiter option to select delimiter among LF, LR, LF+LR. 5. Fix the bug in "CONF:SETUP:TESTER_MODE" remote command. It couldn't change between AM and FM modes. 6. In DRM mode, the OFDM window function was incorrectly applied, creating a spurious signal in the spectrum. This bus is fixed.

		7. The EON_AF parameter is set to an incorrect value in FM RDS. It is fixed. 8. There was a problem that the magnitude of the OFDM symbol changes during DRM+ transmission, so it was corrected.