RWC2100F

Analog Radio Tester

3xFM-RDS/3xAM/Audio Analyzer



GENERAL DESCRIPTION

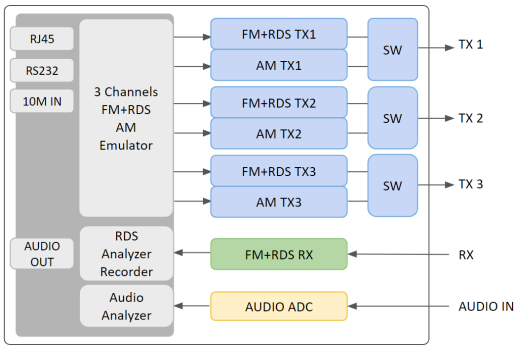
The RWC2100F multi-channel analog radio tester supports FM-RDS, AM, RDS analyzers, and audio analyzers. Three TX channels can be transmitted simultaneously and each TX channel can be set to FM-RDS or AM.

FM-RDS transmitter provides many editable protocol parameters such as PID, PS NAME, radio text, etc. It also provides many functional tests such as AF (Alternative Frequency), EON, TMC, TIME, etc.

The RDS analyzer receives signals over the air and displays RDS parameters. The received RDS signal can be recorded as a file, and the recorded file can be played back with the FM-RDS TX function.

The audio analyzer shows the audio spectrum and audio waveform as well as measures audio signal quality (SINAD, THDN and SNR) and frequency. It is very useful for automatic measurement of RX sensitivity by reducing the TX power of the 2100F TX signal and monitoring the radios (DUT) audio output with the Audio Analyzer.

The RWC2100F is a dongle-type transmitter that allows all functions to be controlled using the provided PC application.



System Block Diagram

KEY FEATURES

FM-RDS (TX)

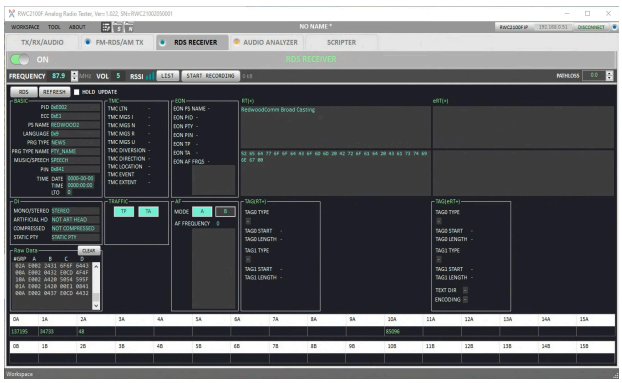
- Support 3 independent RF channels with fully configurable RDS parameters
- Support various Audio Modes, MONO / STEREO / WAV File/ SWEEP
- Real-time FM transmission of external audio signals via the 3.5pi auxiliary jack on the rear panel.
- Support the latest radio text functions (RT, RT+, eRT, eRT+) with RDS code, UTF-8 and UCS-2.
- Support transmission a recorded RDS file
- Automatic EON test function
- User-configurable TMC function
- Up to 10 AFs using method A/B

AM (TX)

- Support 3 independent RF channels
- Support various Audio Mode (MONO/WAVE Music/Sweep)
- Real-time AM transmission of external audio signals via the 3.5pi auxiliary jack on the rear panel



FM-RDS / AM Transmission



FM-RDS Analyzer

FM-RDS (RX)

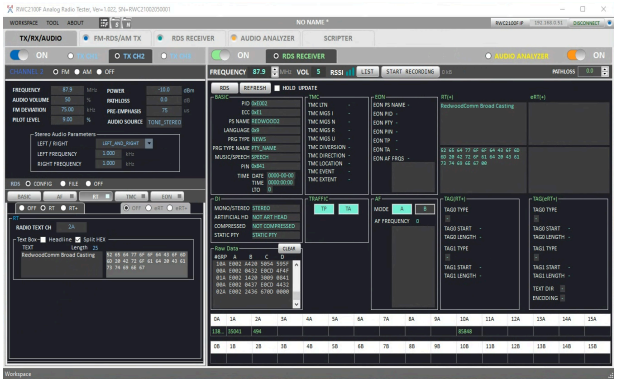
- Receive and analyze one FM-RDS radio signal
- Display all RDS information such as PS_NAME, TMC, EON, AF, Radio Text (RT, RT+, eRT, eRT+), AF list, etc.
- RDS recording feature that saves RDS data as files

Audio Analyzer

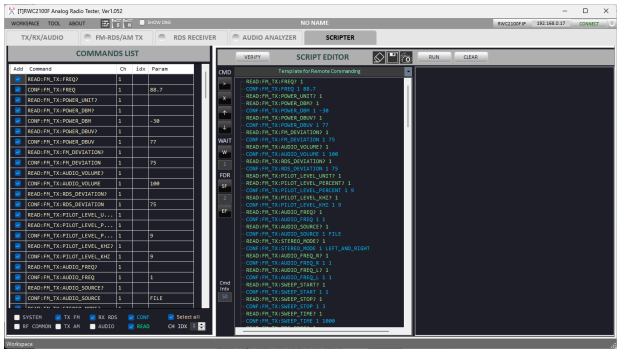
- SINAD, THDN, SNR and frequency measurement function
- Waveform and spectrum display of audio signal
- Audio weight filtering (A/ C/ CCIR)



Audio Analyzer



Combinational Display



Script function

Scripter Function

All functions can be controlled and data retrieved through command strings. Using the Scripter feature provided in the PC application, along with the included command templates, the functions of the RWC2100F can be verified.

SPECIFICATION

Transmitter Characteristics

- Frequency Range
  - 500 to 1,600 kHz (AM)
  - 76 to 108 MHz (FM)
- Frequency Accuracy: ±3.5 kHz
- Output Level
  - -10 to -90 dBm (AM)
  - 0 to -90 dBm (FM)
- Output Level Resolution: 0.25 dB
- Output Level Accuracy: ±1 dB
- VSWR: Better than 1.5

Receiver Characteristics

- Input Frequency: 76 to 108 MHz

Audio Analyzer Characteristics

- Input Frequency: 0.1 to 20 kHz
- Input Range: Single Ended 2.25 Vrms
- Bandwidth: 20 kHz
- Common-Mode Rejection Ratio(CMRR): 56 dB
- Connection Type: 3.5 pi Stereo

Miscellaneous

- Operating temperature: 5 to 40℃
- DC Power: 12V/3A VDC
- Dimension: 166(W) x 50(H) x 194(D) mm
- Weight: 950g

ORDERING INFORMATION

C2100F-00	Analog Radio Tester - Full Option AM/ FM/ RDS Receiver/ Audio Analyzer
C2100F-01	Analog Radio Tester - Transmitter only AM/ FM
02100F-01	RF Combiner Module Combining 3 TX ports and bypassing RX port

CONTACT

sales@redwoodcomm.com
https://www.redwoodcomm.com/

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