ROVING networks

MICROCHIP

RN52 Bluetooth Audio Module

Fully Certified Bluetooth® Version 3.0 Module

PRODUCT BRIEF



RN52-I/RM

Roving Networks' RN52-I/RM Bluetooth audio module provides an integrated solution for delivering high-quality stereo audio in a small form factor. It combines a Class 2 Bluetooth radio with an embedded DSP processor, controlled and configured by simple ASCII commands and GPIO.

It integrates RF, a baseband controller, and DSP, making it a complete Bluetooth audio wireless link. The RN52 supports HSP/HFP, A2DP, AVRCP, SPP, and iAP profiles and includes support for codecs such as SBC, aptX®, and AAC. It provides a UART interface, GPIO, stereo speaker outputs, stereo microphone inputs, and a USB port (see block diagram).

FEATURES

- Fully certified Bluetooth® version 3.0 audio module, fully compatible with Bluetooth version 2.1+EDR, 1.2, and 1.1
- Software configurable through commands over UART console interface
- Embedded Bluetooth stack profiles: SPP, A2DP, HFP/HSP, and AVRCP
- Supports iAP profile discovery for iPhone® and iPod® Bluetooth accessories
- Available as an A2DP audio source or sink
- Postage-stamp-sized form factor, 13.5 x 26 x 2.7mm
- Dual-channel, differential audio input and output for highest quality audio
- External audio codecs supported via I^2S and S/PDIF interface
- Castellated SMT pads for easy and reliable PCB mounting
- Additional support for codecs such as aptX®, AAC, MP3, and others
- Environmentally friendly, RoHS compliant
- Certifications: FCC, IC, CE
- Bluetooth SIG certified

APPLICATIONS

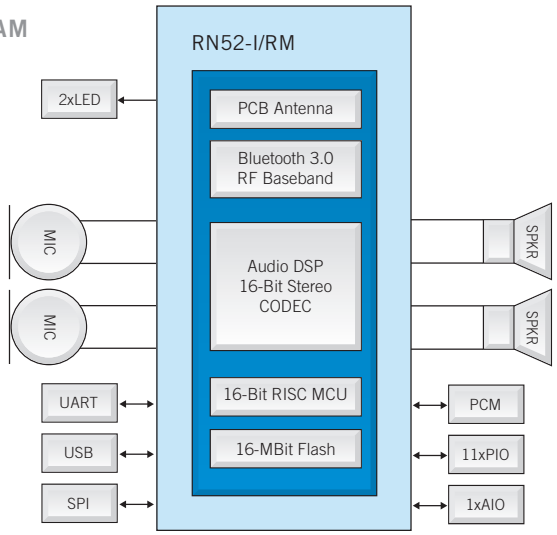
- Wireless stereo speakers and headsets
- Wireless audio docking station for smartphones
- High-quality, 2-channel audio streaming
- Smartphone app streaming
- Automotive hands free audio
- Remote control for media player
- Intercom push-to-talk audio connection



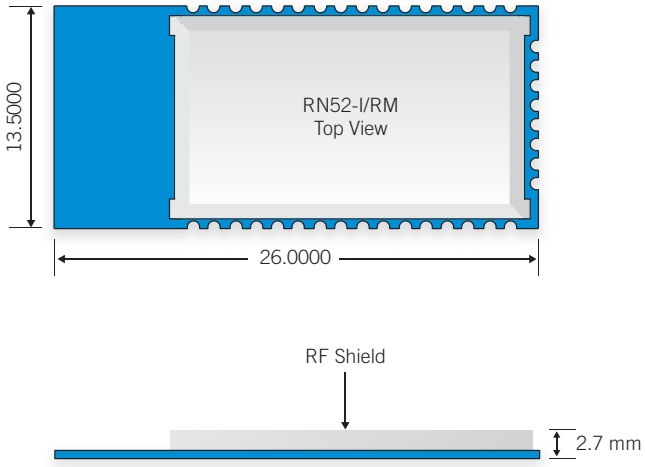
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BLOCK DIAGRAM



PHYSICAL DIMENSIONS



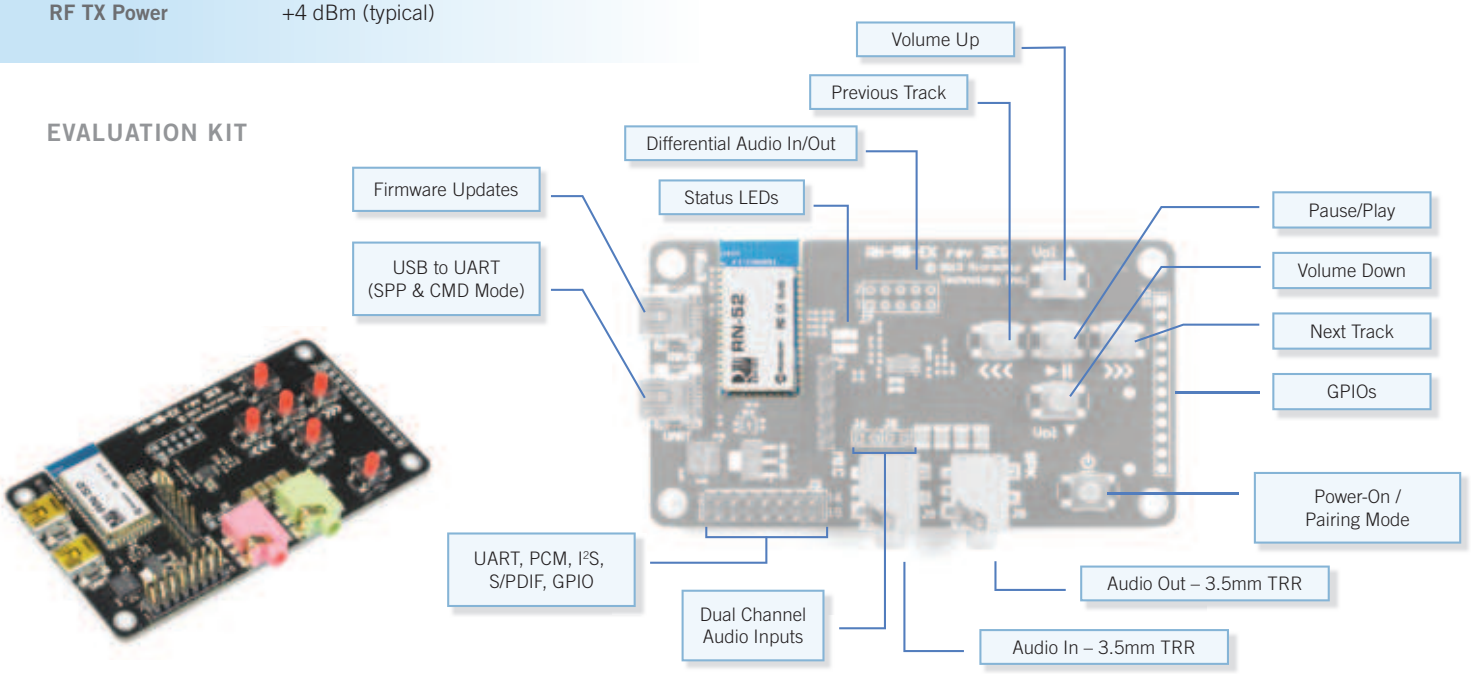
SPECIFICATIONS

Standard	Bluetooth 3.0
Standard Profiles	A2DP, AVRCP, SPP, HFP/HSP, iAP
Frequency	2.4 ~ 2.48 GHz
Modulation Method	GFSK, PI/4-DQPSK, 8 DPSK
Maximum Data Rate	3 Mbps burst mode, 1.5 Mbps sustained
RF Input Impedance	50 ohms
Interface	UART, USB, Bluetooth, GPIO
Operation Range	Class 2: 10 meters (33 feet)
Sensitivity	-85 dBm at 0.1 % BER
RF TX Power	+4 dBm (typical)

ORDERING INFORMATION

Part Number	Description
RN52-I/RM	Bluetooth 3.0 Class 2 surface mount audio module with PCB trace antenna
RN52APL-I/RM	Bluetooth 3.0 Class 2 surface mount audio module with PCB trace antenna, supports A2DP, SPP profiles with additional support for iAP data communication
RN52APT-I/RM	Bluetooth 3.0 Class 2 surface mount audio module with aptX™ codec (decode), PCB trace antenna
RN-52-EK	Evaluation kit for the RN52 audio Bluetooth module - includes evaluation board, USB cable, and 2 USB mini-speakers

EVALUATION KIT



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