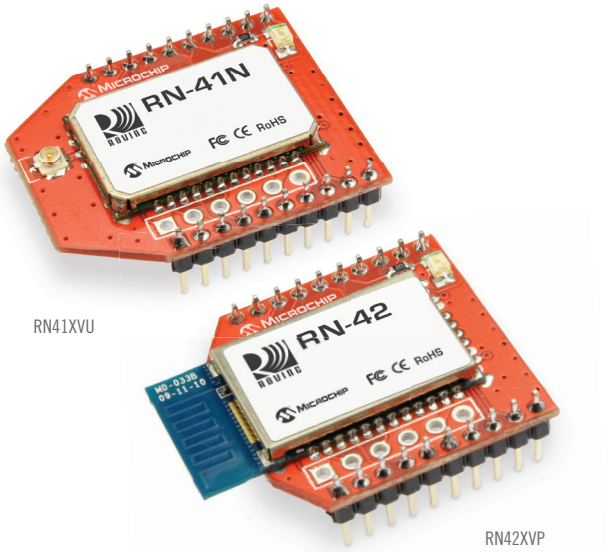
RNXV Bluetooth / Wi-Fi Module

Provides drop in, certified Bluetooth or Wi-Fi connectivity for existing systems currently using 802.15.4 modules

PRODUCT BRIEF

RN171XVW



RN41XVU

RN42XVP

The RNXV module by Roving Networks provides drop-in, certified Bluetooth or Wi-Fi™ connectivity for existing systems using 802.15.4 modules. Based on the popular 2 x 10 (2mm) socket footprint often found in embedded applications, the RNXV offers a complete wireless solution for customers looking to migrate to a standard protocol without modifying existing hardware.

The RN171XV Wi-Fi module is built upon Roving's RN171 ultra-low power 802.11 b/g technology which boasts a complete onboard TCP/IP stack with a simple UART interface. The onboard stack offers network services including full WEP/WPA/WPA2 security, FTP/HTTP client, UDP, TCP, HTTP, Telnet, DNS, and DHCP and Wi-Fi protected setup (WPS) amongst others. It supports infrastructure networking, AdHoc connectivity, and SoftAP.

The RN41XV and RN42XV modules are built upon Roving's RN41 and RN42 low power Bluetooth modules. The modules have an embedded Bluetooth stack and support multiple interface protocols and profiles including the commonly used SPP and HID profiles. The RN42 and RN41 are functionally compatible with high-performance, onboard antennas and support for Bluetooth EDR.

ORDERING INFORMATION

Module	Technology	Antenna
RN171XVW-I/RM*	Wi-Fi	Wire
RN171XVS-I/RM	Wi-Fi	SMA connector
RN171XVU-I/RM	Wi-Fi	U.FL connector
RN41XVC-I/RM	Bluetooth	Chip
RN41XVU-I/RM*	Bluetooth	U.FL connector
RN42XVP-I/RM*	Bluetooth	PCB trace
RN42XVU-I/RM	Bluetooth	U.FL connector

* Note: modules shown left

RN171XV (Wi-Fi)

- Direct internet connectivity
- Full 802.11 b/g data rate support
- Onboard TCP/IP stack
- Infrastructure, AdHoc, and AP modes
- Low power operation
- Industrial temperature range
- Multiple antenna options: wire, U.FL, SMA connector
- FCC, CE, IC, and Wi-Fi certifications
- Firmware over-air upgradeable
- Webserver configurator

SPECIFICATIONS

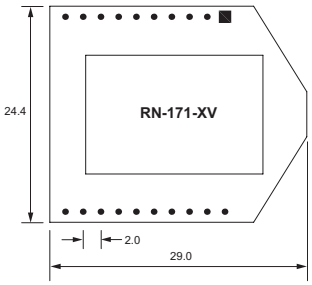
RF Data Rates	Up to 54Mbps
Range (LoS)	~200m
Transmit Power (Tx)	-2 to +12dBm (programmable)
Sensitivity (Rx)	-83dBm
Serial Data Interface	UART (up to 464Kbps)
Configuration	API, local or remote (over air)
Frequency	2.4GHz
ADC	(8) 14-bit inputs
Digital I/O	3
Antenna options	Wire, SMA, UFL, chip

RN41XV / RN42XV (Bluetooth)

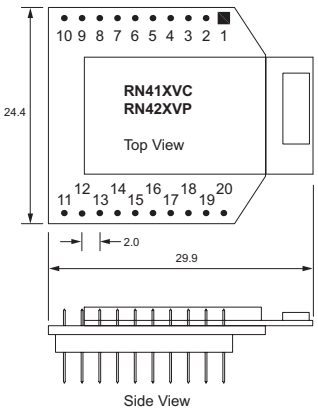
- Fully certified Bluetooth® module, supports version 2.1 + Enhanced Data Rate (EDR)
- Backwards-compatible with Bluetooth version 2.0, 1.2, and 1.1
- Low power:
  - **RN41XV:** 30 mA connected, < 10 mA sniff mode
  - **RN42XV:** 26 µA sleep, 3 mA connected, 30 mA transmit
- UART (SPP) data connection interface
- Certifications: FCC, IC, CE, Bluetooth SIG

Bluetooth Versions	2.1 + EDR, 2.0, 1.2, 1.1
Data Rate	With onboard stack: 300Kbps
Frequency Band	2.412 - 2.484 GHz
Modulation Techniques	FHSS/GFSK modulation, 79 channels at 1MHz intervals
Profiles	SPP, DUN, HID, iAP, HCI, RFCOM, L2CAP, SDP
Supply Voltage	3.3V ± 10%
Output Power	RN41: +15dBm; RN42: +4dBm
Power Consumption	Standby/Idle 25 mA : Connected (normal mode) 30 mA Connected (low power Sniff) 8 mA Standby/Idle (Deep sleep enabled) 26 µA (250µA for RN41)
Operating Temperature Range	-40ºC to +85ºC
Interface	UART, USB, Bluetooth
Antenna Options	RN41: Chip antenna, U.FL connector RN42: PCB trace, U.FL connector
Certifications	FCC, IC, CE, Bluetooth SIG

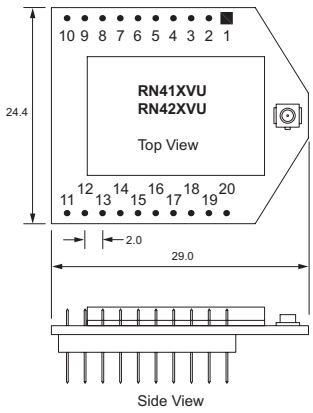
PIN DIAGRAM



Dimensions in mm



Side View



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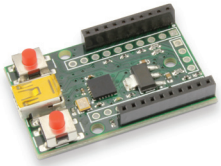

DEVELOPMENT TOOLS

Roving offers several development tools for both Bluetooth and Wi-Fi RNXV modules such as the RN-XV-EK1, an evaluation kit that connects to a PC via a standard USB cable. It has 2 pushbutton switches and connectors for the RNXV.

Part Number	Descriptions
RN-XV-EK1	RNXV Evaluation kit with UART to USB connector and 802.15.4 socket

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