RNXV Bluetooth®/Wi-Fi® Modules

Provides Drop-In, Certified Bluetooth or Wi-Fi Connectivity for Existing Systems Currently Designed for 802.15.4 Modules

Summary

The RNXV modules by Microchip provide drop-in, certified Bluetooth or Wi-Fi connectivity for existing systems using 802.15.4 modules. Based on the popular 2 × 10 (2 mm) 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 Microchip'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, DHCP, and Wi-Fi protected setup (WPS) amongst others. It supports infrastructure networking, Ad hoc connectivity, and SoftAP.
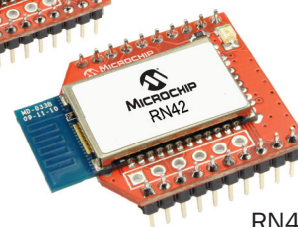
The RN41XV and RN42XV modules are built upon Microchip's RN41 and RN42 low power Bluetooth modules. The modules have an embedded Bluetooth stack and support multiple profiles including the commonly used SPP and HID profiles. The RN42 and RN41 are functionally compatible with high-performance, onboard antennas and support for Bluetooth EDR.
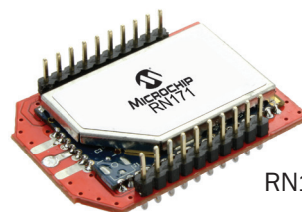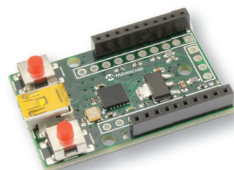
RN171XVW
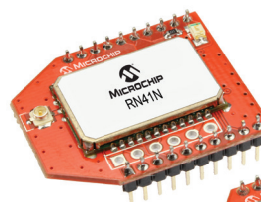
RN41XVU

RN42XVP

Development Tools

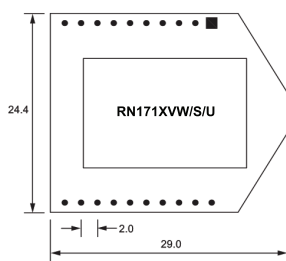### RNXV Evaluation Kit with UART to USB Connector and Module Socket (RN-XV-EK1)

Microchip 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.
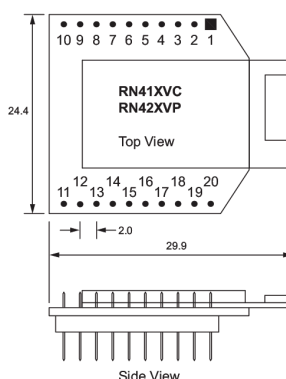
Ordering Information

Module	Protocol	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

Pin Diagram

RN171XVW/S/U

24.4

2.0

29.0

Dimensions in mm

RN41XVC
RN42XVP

Top View

10 9 8 7 6 5 4 3 2 1

11 12 13 14 15 16 17 18 19 20

24.4

2.0

29.9

Side View

RN41XVU
RN42XVU

Top View

10 9 8 7 6 5 4 3 2 1

11 12 13 14 15 16 17 18 19 20

24.4

2.0

29.0
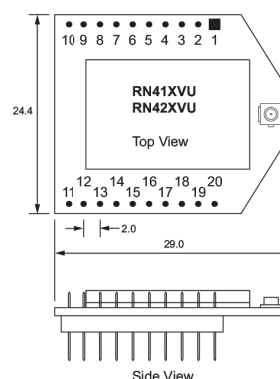
Side View

MICROCHIP

RN171XV (Wi-Fi)

- Direct internet connectivity
- Full 802.11 b/g data rate support
- Onboard TCP/IP stack
- Infrastructure, Ad hoc, and AP modes
- Low power operation:
  - 4 µA sleep, 40 mA active Rx, 180 mA Tx (at +12 dBm)
- Certifications: FCC, IC, CE, Wi-Fi
- Firmware over-air upgradeable
- Webserver configurator

Specifications	
Wi-Fi® Data Rates	Up to 54 Mbps
Frequency Band	2.412–2.484 GHz
Modulation	802.11b: DSSS (CCK-11, CCK-5.5, DQPSK-2, DBPSK-1) 802.11g: OFDM
Wi-Fi Security	WEP, WPA, WPA2
Protocols	DHCP, DNS, ARP, ICMP, FTP Client, HTTP Client, TCP, UDP
Supply Voltage	3.3V ± 10%
Output Power	0 dBm to +12 dBm
Power Consumption	4 µA sleep, 40 mA active Tx, 180 mA Tx (at +12 dBm)
Operating Temperature Range	−40ºC to +85ºC
Range	Up to 200m
Interface	UART, Wi-Fi
Antenna Options	Wire antenna, SMA connector, U.Fl connector
Certifications	FCC, IC, CE, Wi-Fi Alliance

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

Specifications	
Bluetooth® Versions	2.1 + EDR, 2.0, 1.2, 1.1
Data Rate	With onboard stack: 300 Kbps
Frequency Band	2.412–2.484 GHz
Modulation	FHSS/GFSK modulation, 79 channels at 1 MHz intervals
Profiles	SPP, DUN, HID, iAP, HCI, RFCOM, L2CAP, SDP
Supply Voltage	3.3V ± 10%
Ouput Power	RN41: +15 dBm; RN42: +4 dBm
Power Consumption	Standby/Idle 25 mA : Connected (normal mode) 30 mA Connected (low power Sniff) 8 mA Standby/Idle (Deep sleep enabled) 26 µA (250 µA 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

www.microchip.com/wireless

Visit our web site for additional product information and to locate your local sales office.

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