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

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<tr>
<th>Module</th>
<th>Technology</th>
<th>Antenna</th>
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<tr>
<td>RN171XVW-IRM*</td>
<td>Wi-Fi</td>
<td>Wire</td>
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<tr>
<td>RN171XS-IRM</td>
<td>Wi-Fi</td>
<td>SMA connector</td>
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<tr>
<td>RN171XU-IRM</td>
<td>Wi-Fi</td>
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<tr>
<td>RN41XVC-IRM</td>
<td>Bluetooth</td>
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<tr>
<td>RN41XU-IRM*</td>
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<td>RN42XVP-IRM*</td>
<td>Bluetooth</td>
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</tr>
<tr>
<td>RN42XU-IRM</td>
<td>Bluetooth</td>
<td>U.FL connector</td>
</tr>
</tbody>
</table>

* 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: -40°C to +85°C
- Interface: UART, USB, Bluetooth
- Antenna Options: RN41: Chip antenna, U.FL connector
  - RN42: PCB trace, U.FL connector
- Certifications: FCC, IC, CE, Bluetooth SIG

### 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