Wireless Connectivity Solutions

Panasonic Wireless Connectivity Solutions include a wide range of technologies and provide the flexibility to easily choose and implement a wireless protocol that is best suited to an application from a single, world class supplier. Manufactured with design simplicity in mind, Panasonic’s RF Modules provide quick implementation of wireless communication without the need to invest in complex wireless hardware and software design. Panasonic Wireless Connectivity products combine the latest communication protocols with place-and-play modules for Bluetooth® Low Energy, Bluetooth Dual Mode, Wi-Fi, Wi-Fi Combo and more.
### Panasonic Bluetooth Modules

Panasonic’s Bluetooth Modules are designed for operation in harsh RF environments and can be designed into all types of electronic devices. Key features include:

- **High Data Rates**
- **Long Range**
- **Reduced Power Consumption** (under 4mA)
- **Common Hardware and Software Interfaces for Interchangeability**

#### PAN1720/1721 Series
- **Part Number**: ENW-89820xxKF
- **RF Category**: Bluetooth® Low Energy v4.0
- **Supported Profile**: SPP
- **Controller**: CC2560B
- **Size [mm]**: 15.6 x 8.7 x 1.8
- **Rx Sensitivity [dBm]**: -94 dBm
- **Tx Power (max.) [dBm]**: +4 / 0
- **Power Supply [V]**: 2.0 to 3.6
- **Current Consumption**: Tx: 23mA @ -6dBm, Rx: 18mA
- **Footprint-compatible with**: PAN172x Series
- **Operating Temp. [°C]**: -40 to +85
- **Evaluation Kit**: Available

#### PAN1740 Series
- **Part Number**: ENW-89846A1KF
- **RF Category**: Bluetooth® Low Energy v4.1
- **Supported Profile**: SPP
- **Controller**: DA14580
- **Size [mm]**: 9.0 x 9.5 x 1.8
- **Rx Sensitivity [dBm]**: -93 dBm
- **Tx Power (max.) [dBm]**: 0
- **Power Supply [V]**: 2.35 to 3.3
- **Current Consumption**: Rx: 4.7mA
- **Footprint-compatible with**: PAN172x Series
- **Operating Temp. [°C]**: -40 to +85

#### PAN1760A Series
- **Part Number**: ENW-89847A3KF
- **RF Category**: Bluetooth® Low Energy v4.2
- **Supported Profile**: SPP
- **Controller**: TC35678
- **Size [mm]**: 15.6 x 8.7 x 1.9
- **Rx Sensitivity [dBm]**: -93 dBm
- **Tx Power (max.) [dBm]**: +0
- **Power Supply [V]**: 1.8 to 3.6
- **Current Consumption**: Rx: 18mA
- **Footprint-compatible with**: PAN172x Series
- **Operating Temp. [°C]**: -40 to +85

#### PAN1761 Series
- **Part Number**: ENW-89848A1KF
- **RF Category**: Bluetooth® Low Energy v4.1 + NFC Tag Type 3
- **Supported Profile**: SPP
- **Controller**: TC35670
- **Size [mm]**: 15.6 x 8.7 x 1.8
- **Rx Sensitivity [dBm]**: -91 dBm
- **Tx Power (max.) [dBm]**: +0
- **Power Supply [V]**: 1.8 to 3.6
- **Current Consumption**: Rx: 18mA
- **Footprint-compatible with**: PAN172x Series
- **Operating Temp. [°C]**: -40 to +85

#### PAN1762 Series
- **Part Number**: ENW-89853A1KF
- **RF Category**: Bluetooth® Low Energy v5.0
- **Supported Profile**: SPP
- **Controller**: TC35680
- **Size [mm]**: 15.6 x 8.7 x 1.9
- **Rx Sensitivity [dBm]**: -105 @ 125 kb/s
- **Tx Power (max.) [dBm]**: +8
- **Power Supply [V]**: 1.9 to 3.6
- **Current Consumption**: Rx: 4.9mA
- **Footprint-compatible with**: PAN172x Series
- **Operating Temp. [°C]**: -30 to +85

#### PAN1026A
- **Part Number**: ENW-89837A5KF
- **RF Category**: Bluetooth® v4.2
- **Supported Profile**: SPP and GATT
- **Controller**: TC35661-551
- **Size [mm]**: 15.6 x 8.7 x 1.8
- **Rx Sensitivity [dBm]**: -89 dBm
- **Tx Power (max.) [dBm]**: +0
- **Power Supply [V]**: 2.8 to 3.6
- **Current Consumption**: Rx: 4.9mA
- **Footprint-compatible with**: PAN1760A, PAN1762, PAN1026A, PAN1761
- **Operating Temp. [°C]**: -40 to +85

#### PAN1326B/C
- **Part Number**: ENW-89823x4KF*
- **RF Category**: Bluetooth® v4.1/v4.2 Dual Mode (BR, EDR, LE)
- **Supported Profile**: All
- **Controller**: CC2564C
- **Size [mm]**: 9.0 x 9.5 x 1.8
- **Rx Sensitivity [dBm]**: -93 dBm
- **Tx Power (max.) [dBm]**: +4
- **Power Supply [V]**: 1.8 to 4.8
- **Current Consumption**: Rx: 4.9mA
- **Footprint-compatible with**: PAN1760A, PAN1762, PAN1026A, PAN1761
- **Operating Temp. [°C]**: -40 to +85

#### Notes:
1. All Bluetooth Special Interest Group LE profiles
2. Place and Play – Integrated microcontroller, API and Bluetooth controller
3. Host Controlled Interface – Microcontroller and Bluetooth stack are required
4. Autonomous – Stand Alone Operation
5. BRSP- Blue Radios Serial Port

---

**Ready-To-Use Modules with Built-In, Bluetooth Technology**

Panasonic’s Bluetooth Modules are designed for operation in harsh RF environments. Features include high data rates, long range, reduced power consumption (under 4mA), common hardware and software interfaces for interchangeability.
Long Range, High Data Rates, Secure Connections with Panasonic Wi-Fi

Adding Wi-Fi connectivity to a design has never been easier. Panasonic Wi-Fi Modules provide fast implementation of 802.11 bgn and combo Wi-Fi plus Bluetooth Dual Mode in your designs. Panasonic Wi-Fi Modules are cost effective and flexible system-on-chip (SoC) designs, with an optional integrated webserver, certificate based security and simultaneous access point and infrastructure modes. Panasonic Wi-Fi Modules offer the perfect blend of long life, reliability and performance.

<table>
<thead>
<tr>
<th>Non-Embedded Wi-Fi + BLE 5.0:</th>
<th>Non-Embedded Wi-Fi</th>
<th>Embedded Wi-Fi</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part Number</strong></td>
<td>PAN9026 Series</td>
<td>PAN9010/PAN9020</td>
</tr>
<tr>
<td><strong>RF Category</strong></td>
<td>Wi-Fi® Radio 2.4 GHz &amp; 5 GHz 802.11 a/b/g/n + Bluetooth® v5.0 (BR, EDR, LE)</td>
<td>Wi-Fi® Radio 802.11 b/g/n</td>
</tr>
<tr>
<td><strong>Software/ Profile</strong></td>
<td>Linux</td>
<td>Linux / Android Driver</td>
</tr>
<tr>
<td><strong>Used ICs</strong></td>
<td>88W8977</td>
<td>88W8782</td>
</tr>
<tr>
<td><strong>Size [mm]</strong></td>
<td>17.5 x 10.0 x 2.6</td>
<td>22.75 x 13.5 x 2.42</td>
</tr>
<tr>
<td><strong>Antenna Options</strong></td>
<td>w/ antenna / w / 50 Ohm bottom pad</td>
<td>w/ antenna / w / 50 Ohm bottom pad</td>
</tr>
<tr>
<td><strong>Rx Sensitivity [dBm]</strong></td>
<td>-98 @ 1M-DSSS</td>
<td>-98 @ 1M-DSSS</td>
</tr>
<tr>
<td><strong>Tx Power (max.) [dBm]</strong></td>
<td>+17 @ 11b</td>
<td>+18 @ 11b</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>1.8 to 3.3</td>
<td>3.0 to 3.6</td>
</tr>
<tr>
<td><strong>Current Consumption</strong></td>
<td>Tx: 400mA @ 11Mbps Rx: 70mA @ 11Mbps Power Down Mode: 150μA</td>
<td>Tx: 105mA @ 11Mbps Rx: 75mA @ 11Mbps Power Down Mode: 200μA</td>
</tr>
<tr>
<td><strong>Centre Frequency [MHz]</strong></td>
<td>2,400 and 5,000</td>
<td>2,400</td>
</tr>
<tr>
<td><strong>Interfaces</strong></td>
<td>SDIO 3.0, HS UART</td>
<td>USB 2.0</td>
</tr>
<tr>
<td><strong>Speciality</strong></td>
<td>Coexistence interface for external co-located 2.4GHz radios</td>
<td></td>
</tr>
<tr>
<td><strong>Operating Temp. [°C]</strong></td>
<td>-30 to +85</td>
<td>0 to +70</td>
</tr>
<tr>
<td><strong>Evaluation Kit</strong></td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>
Accelerate Prototyping and Testing by Utilizing Panasonic’s Evaluation Kits

Whether integrating Bluetooth Dual-Mode, ultra-low power Bluetooth Low Energy, WiFi or Wi-Fi Combo Modules into an application, Panasonic provides easy to use development boards, complete with software and documentation to get up and running FAST. Discover today why Panasonic Modules are the premier choice for reducing design cycles and lowering cost of development.

na.industrial.panasonic.com/products/wireless-connectivity/evaluation-kits