Integrated Wireless LAN Modules with Integrated TCP/IP Stack
BP3580 / BP3591

Integrated TCP/IP stack eliminates the need for device driver development

ROHM’s BP3580 and BP3591 IEEE802.11b/g/n wireless LAN modules perform all LAN protocol processing, including WPS/WPA-PSK, and WPA2-PSK, significantly lightening host load. In addition, the units integrate a TCP/IP protocol stack that eliminates the need for device driver development and enables wireless LAN functionality simply by adding application software.

*Modules with and without a TCP/IP stack feature the same firmware, resulting in common hardware specifications. Access Point (AP) functionality planned.

**All-in-one wireless LAN modules**

ROHM wireless LAN modules integrate all required protocols, including WPA-PSK, WPA2-PSK, and WPS. In addition, the built-in TCP/IP stack eliminates the need for a device driver, contributing to greater miniaturization.

**Terminal/Communication modes**

Connect the BP3580/BP3591 between terminals via RS232C to enable simple wireless communication in ‘terminal mode’ or opt for more advanced operation in ‘communication mode’.

**Software Stack Comparison**

- **Competitor Wireless LAN Module**
  - Host Side Software
  - User Applications
  - RTOS
  - TCP/IP Protocol Stack
  - WPS
  - WPA-PSK
  - WPA2-PSK
  - Wireless LAN Device Driver

- **ROHM Module with Built-in TCP/IP**
  - Host Side Software
  - User Applications
  - Wireless LAN Module Firmware
  - TCP/IP Protocol Stack
  - HOST Interface Driver
  - WPS
  - WPA-PSK, WPA2-PSK
  - MAC Controller

Network functions handled by module

**Compatibility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARP</td>
<td>Supported</td>
</tr>
<tr>
<td>ICMP</td>
<td>Supported</td>
</tr>
<tr>
<td>DHCP Client</td>
<td>Supported</td>
</tr>
<tr>
<td>DNS Client</td>
<td>Supported</td>
</tr>
<tr>
<td>TCP</td>
<td>Max. No. of Sessions: 4</td>
</tr>
<tr>
<td></td>
<td>Server: Supported</td>
</tr>
<tr>
<td></td>
<td>Ephem: Supported</td>
</tr>
<tr>
<td></td>
<td>Connect/Disconnect Notification: Supported</td>
</tr>
<tr>
<td></td>
<td>Receive Timeout Notification: Supported</td>
</tr>
<tr>
<td>UDP</td>
<td>Max. No. of Ports</td>
</tr>
<tr>
<td></td>
<td>Transfer: Unicast/broadcast: supported</td>
</tr>
<tr>
<td></td>
<td>Receive Timeout Notification: Supported</td>
</tr>
<tr>
<td></td>
<td>Other: Data source/destination designation possible</td>
</tr>
<tr>
<td>HTTP</td>
<td>Settings Screen: Supported</td>
</tr>
</tbody>
</table>

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**Applications**

- AV equipment, industrial devices, sensor networks
- Wireless LAN devices connected to routers, including smartphones
- Devices that previously could not integrate wireless LAN due to insufficient microcontroller capability or prohibitive development costs

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