

# PANASONIC Bluetooth Modules and Mesh Networks



Panasonic Wireless Solutions

## Make Your Product Powered by Panasonic

Modules That Exceed Expectations! Panasonic Electronic Components provides powerful, highly flexible, cost effective RF Modules for a wide variety of wireless Personal Area Network (PAN) applications. New extended range products and small footprints combined with network firmware flexibility make Panasonic an industry leader in the development of cutting edge RF Module technology.

### BLUETOOTH RF MODULES

Panasonic's unique Easy-To-Use (ETU) series of modules, plug directly into evaluation kits with the added benefit of header connectors that simplify prototype wiring and field trials. Based on IEEE 802.15.1, Bluetooth was developed for the purpose of sending larger amounts of data quickly from computers to PDAs to cell phones or other portable handheld devices. Key features include high data rate, frequency hopping, very small form factor and modest power consumption.



RoHS Compliant

| Series     | Receiver Sensitivity (BER=10 <sup>-3</sup> ) | Output Power | Power Supply | Ultra Low Power Mode | eSCO Link 2-EV3 | EDR 3-DH1/3-DH5 | ACL (connected DH5) | ACL (connected DH1) | Operating Temperature Range |
|------------|--|--------------|--------------|----------------------|-----------------|-----------------|---------------------|---------------------|-----------------------------|
| PAN1323ETU | -93dBm                                       | 10dBm        | 1.7-4.8V     | 135uA                | -               | 33mA            | -                   | -                   | -20°C to +70°C              |
| PAN1326    | -93dBm                                       | 10.5dBm typ. | 1.7-4.8V     | 135uA                | 8.3mA           | 39.2mA          | -                   | -                   | -20°C to +70°C              |
| PAN1720    | -94dBm                                       | +3dBm typ.   | 2.0-3.6V     | 0.5uA                | -               | -               | -                   | -                   | -40°C to +85°C              |
| PAN1325A   | -93dBm                                       | 10dBm        | 1.7-4.8V     | 135uA                | -               | -               | -                   | -                   | -20°C to +70°C              |
| PAN1315A   | -93dBm                                       | 10.5dBm typ. | 1.7-4.8V     | 135uA                | 8.3mA           | 39.2mA          | -                   | -                   | -20°C to +70°C              |
| PAN1555    | -86dBm                                       | +4dBm typ.   | 2.7-3.6V     | <100uA               | -               | -               | 50.5mA to 49.5mA    | 48.0mA to 46.0mA    | -40°C to +85°C              |
| PAN1455    | -86dBm                                       | +4dBm typ.   | 2.7-3.6V     | <100 uA              | -               | -               | 50.5mA to 49.5mA    | 48.0mA to 46.0mA    | -40°C to +85°C              |

### PAN1323ETU

Panasonics new development tool for entire PAN13xx product line. A single development module for three standards: Bluetooth Classic, Bluetooth Low Energy and ANT.

For quantities greater than listed, call for quote.

| MOUSER STOCK NO.  | Panasonic Part No. | Fig. | Description  | Price Each |        |
|-------------------|--------------------|------|--|------------|--------|
|                   |                    |      |  | 1          | 250    |
| 667-ENW89825A2JF  | ENW89825A2JF       | A    | PAN1323ETU Triple Mode Development Module                                | 47.90      | 36.30  |
| 667-ENW-89842A2JF | ENW-89842A2JF      | B    | PAN1323 Triple Mode RF module with Antenna                               | 18.42      | 14.04  |
| 667-EVAL-PAN1323  | EVAL_PAN1323       | A    | Development Kit for PAN1315, PAN1316, PAN1317, PAN1325, PAN1326, PAN1327 | 499.95     | 416.61 |

### PAN1326

For quantities greater than listed, call for quote.

| MOUSER STOCK NO. | Panasonic Part No. | Fig. | Description                        | Price Each |       |
|------------------|--------------------|------|------------------------------------|------------|-------|
|                  |                    |      |                                    | 1          | 250   |
| 667-ENW89823A2JF | ENW89823A2JF       | C    | PAN1326 CC2564 BT+ BLE, HCI Module | 20.72      | 14.06 |

### PAN1327/1317

Dual-Mode ANT™ and Wireless Bluetooth® Connectivity

For quantities greater than listed, call for quote.

| MOUSER STOCK NO.  | Panasonic Part No. | Fig. | Description  | Price Each |       |
|-------------------|--------------------|------|--|------------|-------|
|                   |                    |      |  | 1          | 250   |
| 667-ENW-89827A2JF | ENW-89827A2JF      | B    | PAN1327, CC2567, Bluetooth and ANT, HCI module, antenna    | 23.16      | 23.16 |
| 667-ENW-89827C2JF | ENW-89827C2JF      | D    | PAN1317, CC2567, Bluetooth and ANT, HCI module, no antenna | 22.18      | 22.18 |

### PAN1720

For quantities greater than listed, call for quote.

| MOUSER STOCK NO.    | Panasonic Part No. | Fig. | Description  | Price Each |        |
|---------------------|--------------------|------|--|------------|--------|
|                     |                    |      |  | 1          | 250    |
| 667-EVAL-PAN1720    | EVAL_PAN1720       | E    | Evaluation Kit w/ 2 PAN1720 USB Development Modules                  | 199.95     | 157.90 |
| 667-EVAL-PAN1720-BR | EVAL_PAN1720-BR    | F    | Evaluation Kit, w/ 2 PAN1720 USB Development Modules, BlueRaidos™ FW | 199.95     | 158.90 |
| 667-ENW89820A1KF    | ENW89820A1KF       | G    | PAN1720 CC2540 2.4GH HCI Mod Antenna                                 | 22.18      | 16.08  |
| 667-ENW-89820A3KF   | ENW-89820A3KF      | G    | PAN1720 CC2540 BLE 8051 Ctrlr BlueRaidos™ FW                         | 39.74      | 25.26  |

### PAN1311/PAN1321i

For quantities greater than listed, call for quote.

| MOUSER STOCK NO.  | Panasonic Part No. | Fig. | Description  | Price Each |        |
|-------------------|--------------------|------|--|------------|--------|
|                   |                    |      |  | 1          | 250    |
| 667-ENW-89811K4CF | ENW-89811K4CF      | H    | Module contains integrated controller, antenna and Bluetooth transceiver | 20.52      | 14.71  |
| 667-ENW-89811A6KF | ENW-89811A6KF      | -    | PAN1321i Bluetooth Module v2.0 EDR, SPP, w/ antenna                      | 21.56      | 17.36  |
| 667-EVAL-PAN1321i | EVAL_PAN1321i      | -    | PAN1321i Eval Kit  | 152.29     | 147.99 |

### PAN1325A/PAN1315A

Panasonic's new PAN1315 Host Controlled Interface (HCI) Bluetooth RF module brings Texas Instrument's seventh generation Bluetooth core integrated circuit, the CC2560, to an easy to use module format. This module has been designed to be 100% pin compatible with the next generation of Bluetooth Low Energy devices. This unique design feature enables designers to seamlessly transition between Bluetooth Classic and Low Energy modules.

For quantities greater than listed, call for quote.

|                   |               |   |  |       |       |
|-------------------|---------------|---|--|-------|-------|
| 667-ENW-89829A2JF | ENW-89829A2JF | I | PAN1325A, CC2560A Controller, HCI Module, Antenna    | 26.14 | 16.62 |
| 667-ENW-89829C2JF | ENW-89829C2JF | I | PAN1315A, CC2560A Controller, HCI Module, no Antenna | 24.60 | 15.64 |

### PAN1455

The new PAN1455 Bluetooth module series is also based on Cambridge Silicon Radio's BlueCore6-ROM (BC06). The PAN1455 is excellent for projects requiring an external antenna. The new PAN1455 Bluetooth module series include on-board microcontrollers that optionally include multiple BT profiles, including SPP, HSP, HFP and HDP.

For quantities greater than listed, call for quote.

|                  |              |   |                                 |       |       |
|------------------|--------------|---|---------------------------------|-------|-------|
| 667-ENW89815C3KF | ENW89815C3KF | J | PAN1455, CSR, BC06, SPP Profile | 35.52 | 27.50 |
|------------------|--------------|---|---------------------------------|-------|-------|

### PAN1555

The new PAN1555 Bluetooth module series is based upon Cambridge Silicon Radio's BlueCore6-ROM (BC06). The PAN1555 includes an integrated ceramic antenna. The product delivers greater simplicity of use, lower power consumption and enhanced security along with an on-board microcontrollers that optionally include multiple BT profiles, including SPP, HSP, HFP and HDP.

For quantities greater than listed, call for quote.

|                  |              |   |   |        |       |
|------------------|--------------|---|---|--------|-------|
| 667-EVAL-PAN1555 | EVAL-PAN1555 | J | EVAL-PAN1555, Evaluation Kit - Stollmann            | 485.19 | -     |
| 667-ENW89815A3KF | ENW89815A3KF | J | PAN1555, CSR, BC06, SPP Profile, Integrated Antenna | 36.90  | 28.59 |

**A** NEW!  
TECHNOLOGY

**B** NEW!  
TECHNOLOGY

**C** NEW!  
TECHNOLOGY

**D** NEW!  
TECHNOLOGY

**E** PRODUCT NEW

**F** PRODUCT NEW

**G** NEW!  
TECHNOLOGY

**H** NEW!  
TECHNOLOGY

**I** NEW!  
TECHNOLOGY

**J**

### 802.15.4 MESH NETWORKS

A wireless mesh network based on the SNAP® (Synapse Network Application Protocol) software stack is instant-on, self-forming, and self-healing. Creating applications to run on the nodes forming the network is fast, efficient, updated over-the-air, and does not require embedded programming skills. In fact, users can administer and manage a SNAP based network without actually having to know anything about the details of wireless networks. This approach makes wireless technology accessible to a much broader range of users, including monitoring and control in consumer, commercial, industrial, and government markets. Uses range from building automation (lighting, security, HVAC) to industrial control and machine communication, medical monitoring, security applications and home automation.



RoHS Compliant

The PAN4561 is a brand new extended range 2.4GHz, ISM, SNAP® software enabled RF module with an industry-leading small footprint size of 35mm x 15mm x 3.5mm!

### PAN4555 802.15.4 Short Range Low Power 2.4GHz ISM Band Transceiver

For quantities greater than listed, call for quote.

| MOUSER STOCK NO.    | Panasonic Part No. | Description  | Price Each |       |
|---------------------|--------------------|--|------------|-------|
|                     |                    |  | 1          | 250   |
| 667-EVAL-PAN4555    | EVAL-PAN4555       | 802.15.4, EVAL-PAN4555, Evaluation Kit PAN4555 (Synapse) | 390.30     | -     |
| 667-EVAL-PAN4555ETU | EVAL-PAN4555ETU    | 802.15.4, EVAL-PAN4555ETU, PAN4555 Evaluation Module     | 47.01      | -     |
| 667-ENWC9A08A4EF    | ENWC9A08A4EF       | 802.15.4, 8 bit Ceramic Antenna, SNAP FW                 | 26.04      | 20.18 |