### Bluetooth Selector Guide

#### Bluetooth Low Energy Modules

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Supplier</th>
<th>Footprint (mm)</th>
<th>Bluetooth Standard</th>
<th>Transmit Power</th>
<th>Receive Sensitivity</th>
<th>Range (m)</th>
<th>Antenna</th>
<th>Current Consumption</th>
<th>MCU</th>
<th>Advantage/Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BGM113</td>
<td>Silicon Labs</td>
<td>9.2 x 15.8 x 1.83</td>
<td>Bluetooth 4.2</td>
<td>Configurable up to +3 dBm</td>
<td>-92 dBm</td>
<td>50</td>
<td>High performance chip antenna</td>
<td>8.8 mA TX current @ 0 dBm output power</td>
<td>ARM Cortex M4 with 32 kB RAM &amp; 256 kB Flash</td>
<td>Fully integrated module with MCU, Bluetooth stack &amp; radio</td>
</tr>
<tr>
<td>BGM111</td>
<td>Silicon Labs</td>
<td>13 x 15 x 2.2</td>
<td>Bluetooth 4.2</td>
<td>Configurable up to +8 dBm</td>
<td>-92 dBm</td>
<td>200</td>
<td>High performance chip antenna</td>
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<td>ARM Cortex M4 with 32 kB RAM &amp; 256 kB Flash</td>
<td>Fully integrated module with MCU, Bluetooth stack &amp; radio</td>
</tr>
<tr>
<td>BGM121</td>
<td>Silicon Labs</td>
<td>6.5 x 6.5 x 1.4</td>
<td>Bluetooth 4.2</td>
<td>Configurable up to +8 dBm</td>
<td>-90 dBm</td>
<td>200</td>
<td>Ceramic chip antenna or 50 ohm RF pin</td>
<td>8.2 mA TX current @ 0 dBm output power</td>
<td>ARM Cortex M4 with 32 kB RAM &amp; 256 kB Flash</td>
<td>Long range with SiP Packaging</td>
</tr>
<tr>
<td>BGM123</td>
<td>Silicon Labs</td>
<td>6.5 x 6.5 x 1.4</td>
<td>Bluetooth 4.2</td>
<td>Configurable up to +3 dBm</td>
<td>-90 dBm</td>
<td>50</td>
<td>Ceramic chip antenna or 50 ohm RF pin</td>
<td>8.2 mA TX current @ 0 dBm output power</td>
<td>ARM Cortex M4 with 32 kB RAM &amp; 256 kB Flash</td>
<td>Low power with SiP Packaging</td>
</tr>
<tr>
<td>BlueMod+S</td>
<td>Telit</td>
<td>17x10x2.6</td>
<td>Bluetooth 4.1</td>
<td>Configurable up to -30 dBm to +5 dBm</td>
<td>-88.5 dBm sensitivity</td>
<td>50</td>
<td>Ceramic Antenna</td>
<td>12 mA TX current @ 0 dBm output power</td>
<td>ARM Cortex M0 (Nordic nRF51822 inside)</td>
<td>Custom firmware from production</td>
</tr>
<tr>
<td>BlueMod+S42</td>
<td>Telit</td>
<td>17x10x2.6</td>
<td>Bluetooth 4.2</td>
<td>Configurable up to -20 dBm to +4 dBm</td>
<td>-96 dBm sensitivity</td>
<td>300</td>
<td>Ceramic Antenna</td>
<td>Max Power consumption 7.5 mA</td>
<td>Arm® Cortex M4F (Nordic nRF52832 inside)</td>
<td>Low Power</td>
</tr>
<tr>
<td>EYSHCNZXZ</td>
<td>TAIYO YUDEN</td>
<td>9.6 x 12.9 x 2.0</td>
<td>Bluetooth 4.2</td>
<td>Configurable up to +4 dBm</td>
<td>-96 dBm sensitivity</td>
<td>200</td>
<td>High performance ceramic chip antenna</td>
<td>5.3 mA TX current @ 0 dBm output power</td>
<td>ARM Cortex M4F (Nordic nRF52832 inside)</td>
<td>Integrated module with Sleep Clock and LC for DC/DC</td>
</tr>
<tr>
<td>EYSHSNZWZ</td>
<td>TAIYO YUDEN</td>
<td>3.25 x 8.55 x 0.9</td>
<td>Bluetooth 5.0</td>
<td>Configurable up to +4 dBm</td>
<td>-93 dBm sensitivity</td>
<td>200</td>
<td>high performance PCB antenna</td>
<td>5.3 mA TX current @ 0 dBm output power</td>
<td>ARM Cortex M4F (Nordic nRF52832 inside)</td>
<td>Ultra compact Bluetooth module</td>
</tr>
</tbody>
</table>
## Bluetooth Selector Guide

### Bluetooth Classic Modules

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Supplier</th>
<th>Footprint (mmxmmxmm)</th>
<th>Bluetooth Standard</th>
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<th>Advantage/Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT41u</td>
<td>Silicon Labs</td>
<td>35.55 x 14.50 x 5.65</td>
<td>Bluetooth v2.1 + EDR</td>
<td>Transmit power: +20 dBm</td>
<td>Receiver sensitivity: -90 dBm</td>
<td>500+</td>
<td>Chip antenna or U.FL connector or PIN</td>
<td>85 mA for TX 2-DH5 mode</td>
<td>NA</td>
<td>Very Long Range</td>
</tr>
<tr>
<td>WT11u</td>
<td>Silicon Labs</td>
<td>35.75 x 14.50 x 2.6</td>
<td>Bluetooth v2.1 + EDR</td>
<td>Transmit power: +17 dBm</td>
<td>Receiver sensitivity: -86 dBm</td>
<td>350 m line of sight</td>
<td>chip antenna or U.FL connector</td>
<td>88 mA for TX 2-DH5 mode</td>
<td>NA</td>
<td>Long Range</td>
</tr>
<tr>
<td>WT32i</td>
<td>Silicon Labs</td>
<td>35.75 x 14.50 x 2.6</td>
<td>Bluetooth v3.0</td>
<td>Transmit power: +6.5 dBm</td>
<td>Receiver sensitivity: -90 dBm</td>
<td>50</td>
<td>chip antenna or U.FL connector</td>
<td>75 mA for A2DP audio streaming</td>
<td>NA</td>
<td>Audio Module</td>
</tr>
</tbody>
</table>

### Bluetooth Smart Ready Modules (BT Classic +BLE)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Supplier</th>
<th>Footprint (mmxmmxmm)</th>
<th>Bluetooth Standard</th>
<th>Transmit Power</th>
<th>Receive Sensitivity</th>
<th>Range (m)</th>
<th>Antenna</th>
<th>Current Consumption</th>
<th>MCU</th>
<th>Advantage/Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT121</td>
<td>Silicon Labs</td>
<td>11.0 x 13.9 x 2.2</td>
<td>Bluetooth 4.2 Smart Ready compliant</td>
<td>+12 dBm : BT BR/EDR +8 dBm : BLE</td>
<td>RX Sensitivity: -96 dBm</td>
<td>200-400 meter LoS range</td>
<td>Intergated Antenna</td>
<td>15.8 mA @ 115kbps continuous transmission</td>
<td>ARM Cortex M0 with 16kB RAM &amp; 128kB Flash</td>
<td>Small Size</td>
</tr>
<tr>
<td>BlueMod+SR</td>
<td>Telit</td>
<td>17 x 10 x 2.6</td>
<td>Bluetooth 4.0 compliant</td>
<td>-23 to +8 dBm (software adjustable)</td>
<td>-91 dBm sensitivity</td>
<td>100</td>
<td>Ceramic antenna OR pin</td>
<td>15-27 mA</td>
<td>Cortex-M3 STM32F103 (CSR8811 BlueCore08)</td>
<td>cost-effective &amp; easy integration</td>
</tr>
<tr>
<td>EYSGCCAXX/ EYSGCCSXX</td>
<td>TAIYO YUDEN</td>
<td>15.4 x 10.0 x 2.0</td>
<td>Bluetooth v4.1 Certified</td>
<td>+12dBm Typical Output Power @Class1 Operation</td>
<td>spec available soon</td>
<td>spec available soon</td>
<td>High Performance On-board Antenna</td>
<td>5.6mA Typ. at 0dBm TX Power</td>
<td>Qualcomm/CSR CSR85348 HCI Ready</td>
<td>Small Size, Low Power</td>
</tr>
</tbody>
</table>
## Bluetooth SoC

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Supplier</th>
<th>Footprint (mm x mm)</th>
<th>Bluetooth Standard</th>
<th>Transmit Power</th>
<th>Receive Sensitivity</th>
<th>Current Consumption</th>
<th>MCU</th>
<th>Peripherals</th>
<th>Advantage/Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFR32BG</td>
<td>Silicon Labs</td>
<td>QFN48 (7 x 7) BGA125 (7 x 7) QFN32 (5 x 5) WLCSP43 (3.3 x 3.14)</td>
<td>Bluetooth 4.2/5.0 Ready + 2.4 GHz &amp; sub Ghz option</td>
<td>Programmable up to +19.5 dBm</td>
<td>- 94 dBm</td>
<td>8.2 mA at Tx 0dBm</td>
<td>ARM Cortex® -M4 with 256 kB Flash &amp; 32kB SRAM</td>
<td>UART, I2C, Timers &amp; 31 GPIO</td>
<td>Multi-radio, User-friendly development tools</td>
</tr>
<tr>
<td>nRFS2840</td>
<td>Nordic Semiconductor</td>
<td>AQFN73 (7 x 7)</td>
<td>Bluetooth 5.0 ANT, 802.15.4 2.4 GHz proprietary</td>
<td>Programmable -20 dBm to +8 dBm</td>
<td>- 96 dBm</td>
<td>5.3mA at TX 0dBm</td>
<td>ARM® Cortex® -M4F with 1MB Flash &amp; 256 kB RAM</td>
<td>SPI/UART/PWM &amp; 48 GPIO</td>
<td>Multiprotocol, Low Power, Large Memory</td>
</tr>
<tr>
<td>nRFS2832</td>
<td>Nordic Semiconductor</td>
<td>QFN48 (6 x 6) WLCSP (3.0 x 3.2)</td>
<td>Bluetooth 4.2/5.0 Ready</td>
<td>Programmable -20 dBm to +4 dBm in 4 dB steps</td>
<td>- 96 dBm</td>
<td>5.3mA at TX 0dBm</td>
<td>ARM® Cortex® -M4 with 512 kB flash &amp; 64 kB RAM</td>
<td>SPI,I2C,I2S UART &amp; 48 GPIO</td>
<td>Low Power</td>
</tr>
<tr>
<td>RTL8762A</td>
<td>Realtek</td>
<td>QFN32 (5 x 5) QFN40 (5 x 5) QFN56 (7 x 7)</td>
<td>Bluetooth 4.2</td>
<td>0 dBm</td>
<td>-94.5 dBm</td>
<td>5.2mA at Tx 0dBm</td>
<td>ARM® Cortex™ -M0, 256KB eFlash, 80KB RAM</td>
<td>SPI, I2C, UART, PWM, Timers, RTC, IR Transceiver, 15 to 37 GPIOs</td>
<td>Low Power</td>
</tr>
<tr>
<td>RTL8761</td>
<td>Realtek</td>
<td>QFN32 (4 x 4)</td>
<td>Bluetooth 2.1/3.0/4.0</td>
<td>+8 dBm</td>
<td>-89 dBm</td>
<td>15mA @ ACL no traffic</td>
<td>HCI, No app MCU</td>
<td>UART/USB, PCM</td>
<td>Bluetooth Smart Ready (Dual mode)</td>
</tr>
<tr>
<td>RTL8763</td>
<td>Realtek</td>
<td>QFN40 (5 x 5) BGA81 (4.5 x 4.5)</td>
<td>Bluetooth 4.2/5.0 Ready</td>
<td>+8 dBm</td>
<td>-95 dBm</td>
<td>5.4 mA at Tx 0dBm</td>
<td>ARM® Cortex® -M4</td>
<td>Audio with I2S, ADC/DAC</td>
<td>Audio</td>
</tr>
<tr>
<td>MT2523D</td>
<td>Mediatek</td>
<td>TFBGA165 (6.2 x 5.8)</td>
<td>Bluetooth 2.1 + EDR, 4.0</td>
<td>+7.5 dBm (BT 2.1) +5 dBm (EDR) 0 dBm (BT 4.0)</td>
<td>-93 dBm (BT 2.1 + EDR) -96.5 dBm (BT 4.0)</td>
<td>16 mA at Tx 0dBm</td>
<td>ARM Cortex-M4 with FPU, 4MB flash, 4MB PSRAM</td>
<td>UART, I2C, SPI, I2S, PWM, SDIO, MSDC, USB, PCMIF, ADC and dual digital mic, up to 38 GPIOs</td>
<td>Bluetooth Smart Ready (Dual mode)</td>
</tr>
<tr>
<td>MT2523G</td>
<td>Mediatek</td>
<td>TFBGA246 (9.2 x 6)</td>
<td>Bluetooth 2.1 + EDR, 4.0 + GNSS</td>
<td>+7.5 dBm (BT 2.1) +5 dBm (EDR) 0 dBm (BT 4.0)</td>
<td>-93 dBm (BT 2.1 + EDR) -96.5 dBm (BT 4.0)</td>
<td>16 mA at Tx 0dBm</td>
<td>ARM Cortex-M4 with FPU, 4MB flash, 4MB PSRAM</td>
<td>UART, I2C, SPI, I2S, PWM, SDIO, MSDC, USB, PCMIF, ADC and dual digital mic, GPS+GLONASS, Galileo, Beidou, up to 38 GPIOs</td>
<td>Bluetooth Smart Ready (Dual mode) with GNSS</td>
</tr>
</tbody>
</table>
Recommended Development Kits

**Silicon Labs Blue Gecko Wireless Starter Kit**

- **Kit Features**
  - Sensors: temperature, humidity, accelerometer
  - UI: Display, buttons, LEDs, joystick
  - PC connectivity: USB
  - Battery or USB powered

- **Bluetooth Smart Ready Software**
  - BGScript™ development tools and example code
  - BGLIB™ source code and example applications
  - Profile Toolkit™ for building profiles
  - iOS and Android applications

- **Compatible radio boards** (sold separately)
  - EFR32BG Blue Gecko Bluetooth Smart SoC radio board (SLWRB4100A)
  - BGM113 Blue Gecko Bluetooth Smart module radio board (SLWRB4301A)

- **Kit Contents (Part # SLWSTK6101C)**
  - BGM111 Blue Gecko Bluetooth Smart Module Radio Board (SLWRB4300A)
  - BGM121 Blue Gecko Bluetooth Smart SiP Radio Board (SLWRB4302A)
  - Wireless Starter Kit main board
  - Blue Gecko Module Kit Add-on Board
  - CR2032 Lithium battery
  - USB Type A to USB Mini-B cable

**Nordic nRF52840 Dev Kit**

- **Kit Contents (Part # NRF52840-PDK)**
  - nRF52840 dev board
  - 2032 battery
  - NFC antenna

- **Kit Features**
  - Supports Bluetooth 5 development on nRF52840 SoC
  - Arduino Uno shield compatible
  - RF SMA connector for direct RF measurements
  - NFC tag-A interface and antenna

- **Part # nRF6936**
  The Nordic Thingy:52™ is a compact, power-optimized, multi-sensor development kit. It is an easy-to-use development platform, designed to help you build IoT prototypes and demos, without the need to build hardware or write firmware. The Nordic Thingy:52 is built around the nRF52832 Bluetooth * 5 SoC. It sends data to/from its sensors and actuators to an app and to the cloud.

**Telit BlueEva+S42/BlueDev+S42 Kit**

- **Kit Contents - BlueEva+S42**
  - BlueEva+S42 board
  - NFC Antenna Class6/V1.0
  - Mini USB cable
  - Battery CR2032
  - Printed card with download instructions

- **Kit Contents - BlueDev+S42**
  - Telit demo source code (requires nRF51 SDK v7v11.20.0, not included)
  - BlueDev+S42 board
  - NFC Antenna Class6/V1.0
  - Mini USB cable
  - Battery CR2032
  - 10-pin debugger cable
  - Printed card with download instructions

- **Software Features**
  - Terminal connection to PC
  - NFC Handover Example for Android (BlueEva+S42)
  - Terminal IO Utility App for iPhone

**Nordic Thingy:52**

- **Software Features**
  - Can be used with Nordic-DK and Use Cases
  - Software tools support: Keil uVersion 5, nRFGo Studio
  - SoftDevice FW S132 can be written

**TAIYO YUDEN EYSNSN Eval Kit**

- **Kit Contents (Part # EKSHSNZWZ)**
  - EBSHSN2WZ Evaluation Board
  - CD-ROM (DataReport, EVBManual)
  - J-Link Lite (EKSNSN2WZ Only)

- **Kit Features**
  - Easy connectivity to PC through USB
  - Power supply with 3.3V from 3V3OUT of FT232RQ
  - Serial Wire Debug included

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