

# Ultra Low Power Wi-Fi® + BLE Modules

For Battery Powered IoT Applications

## DA16600 Combo Wi-Fi + BLE Modules

### Full Offload Highly Integrated Ultra Low Power Modules

- The DA16600 is a module solution for IoT applications featuring lowest power Wi-Fi + BLE
- The fully integrated module consists of:
  - Wi-Fi SoC: DA16200
  - BLE SoC: DA14531
  - 4MB Flash memory
  - 40MHz Crystal for Wi-Fi
  - 32KHz RTC Crystal for Wi-Fi
  - 32MHz Crystal for BLE
  - Chip antenna or u.FL connector
  - SPDT Antenna Switch
- Single power supply voltage (3.3V)
- DA16600 module SKUs:
  - DA16600MOD-AAC4WA32 - chip antenna
  - DA16600MOD-AAE4WA32 - external antenna connector (u.FL)



### Module Types

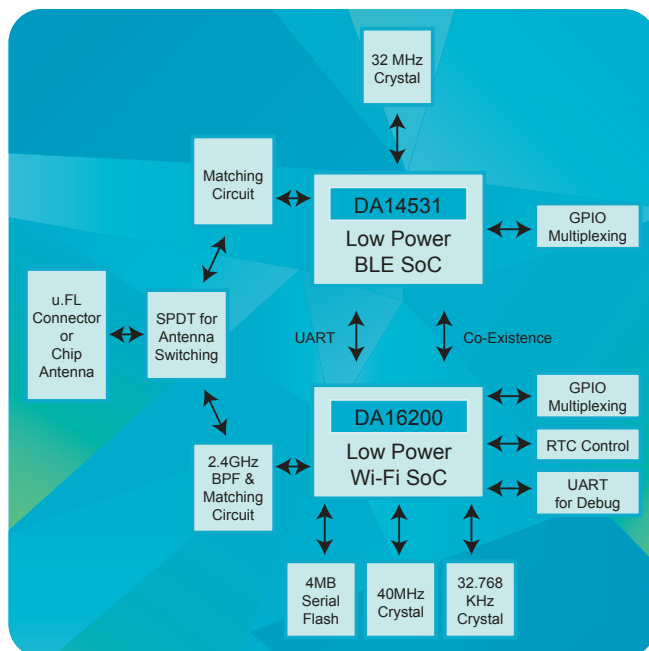
<b>On Board Chip Antenna</b>
14.2 mm x 24.6 mm x 3.0 mm
DA16600MOD-AAC



<b>External Antenna Connector (u.FL)</b>
14.2 mm x 24.6 mm x 3.0 mm
DA16600MOD-AAE



### System Block Diagram




Country	On Board Chip Antenna	External Antenna Connector (u.FL)
US FCC	TBD	TBD
Canada IC	TBD	TBD
EU CE	CE & RoHS Compliance	CE & RoHS Compliance
South Korea KC	TBD	TBD
Japan TELEC	TBD	TBD
China SRRC	TBD	TBD




# Low Power Wi-Fi + BLE Solution for Battery Powered IoT Applications


Features	Benefits
Low Power Wi-Fi	<ul style="list-style-type: none"> <li>VirtualZero™ DA16200 SoC</li> <li>802.11n 1x1 low power 2.4 GHz</li> <li>Up to 72 Mbps, MCS0-7</li> </ul>
Low Power BLE	<ul style="list-style-type: none"> <li>SmartBond TINY™ DA14531 SoC</li> <li>BT5.1 compliant BLE</li> </ul>
Ultra Low Power	<ul style="list-style-type: none"> <li>Enables year-plus battery life</li> <li>Breakthrough VirtualZero™ low power technology</li> <li>Virtually no power consumption in sleep state</li> <li>Ultra low power sensor wake-up</li> <li>Runs on small batteries and coin cells</li> </ul>
Wi-Fi/BLE Coexistence	<ul style="list-style-type: none"> <li>Built in, customizable, coexistence algorithms</li> </ul>
Superior Range	<ul style="list-style-type: none"> <li>Wi-Fi: Industry leading output power and Rx sensitivity for max range</li> <li>BLE: 4x range of BT 4.0</li> </ul>
Full Offload	<ul style="list-style-type: none"> <li>SoC runs full OS &amp; TCP/IP stack on module</li> </ul>
Simple Setup & Provisioning	<ul style="list-style-type: none"> <li>Provision Wi-Fi connection simply with BLE</li> <li>Automatically find &amp; configure new devices w/ smartphone app</li> </ul>
Complete Software Stack	<ul style="list-style-type: none"> <li>Comprehensive networking software stack</li> </ul>
Leading Security	<ul style="list-style-type: none"> <li>Secure boot • Secure debug • Secure asset storage</li> <li>Hardware accelerated • TLS • Digital certificates • Elliptic curve</li> </ul>
OTA Firmware Update	<ul style="list-style-type: none"> <li>Enables field deployed device firmware updates</li> </ul>
Multiple I/Os	<ul style="list-style-type: none"> <li>UART, SPI, ADC, I<sup>2</sup>C, PWM, I<sup>2</sup>S, GPIOs, JTAG and SWD</li> </ul>



## Leading Edge Low Power Technology




**> 1 Year  
Battery Life**



**Three Sleep Modes**

1. Unconnected (nanoamp)
2. Connected ultra low (microamp)
3. Connected ultra fast (microamp)



**Ultra Fast Wake-up  
Ultra Fast Return to Sleep**  
Extends battery life

## Additional Features



### Extended Range

- > +18.5 dBm output power
- > -98.5 dBm Rx sensitivity



### Highly Integrated SoC

- + No CPU or MCU required
- + Full offload
- + Runs network stack

Networking Capabilities	Protocols	Complete software stack including TCP/UDP/IP, HTTP, HTTPs, DHCP client/server, DNS client/server, mDNS, DNS-SD, MQTT, CoAP
	Provisioning	Set-up Wi-Fi via BLE; WPS 2.0
	Sensors	ADCs: (1 Wi-Fi, 3 BLE), I <sup>2</sup> C, SPI, PWM, and I <sup>2</sup> S



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