

# Ultra Low Power Wi-Fi® Modules

For Battery Powered IoT Applications

## DA16200 Modules

### Full Offload Highly Integrated Ultra Low Power Wi-Fi Modules

- The fully integrated module consists of the DA16200 SoC, 4MB flash memory, RF components including crystal oscillator, RF lumped filter, and either a chip antenna or a connector for an external antenna
- Single power supply voltage (3.3V)
- 37 pins including GPIOs, JTAG, RTC control, UART, power input, and 32.768kHz crystal
- DA16200 module SKUs:
  - DA16200MOD-AAC4WA32 with on board chip antenna
  - DA16200MOD-AAE4WA32 with external antenna connector (u.FL)
- Dimensions
  - Both modules have the same dimensions
  - 13.8 mm x 22.1 mm x 3.3 mm



### Module Types

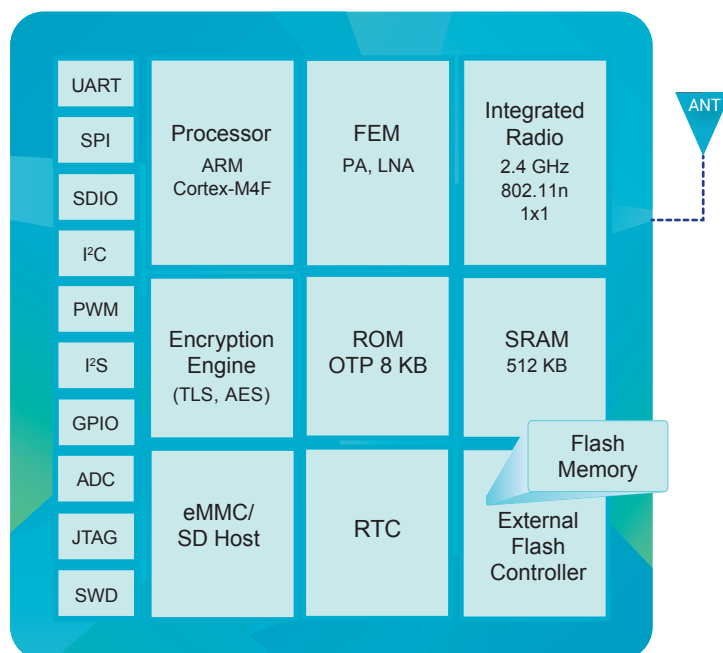
<b>On Board Chip Antenna</b>
13.8 mm x 22.1 mm x 3.3 mm
DA16200MOD-AAC4WA32



<b>External Antenna Connector (u.FL)</b>
13.8 mm x 22.1 mm x 3.3 mm
DA16200MOD-AAE4WA32



### Block Diagram (SoC)




Country	On Board Chip Antenna	External Antenna Connector (u.FL)
US FCC	2AU49-DA16200MC	2AU49-DA16200ME
Canada IC	25650-DA16200MC	25650-DA16200ME
EU CE	CE & RoHS Compliance	CE & RoHS Compliance
South Korea KC	R-C-fci-DA16200M-C4WA3	R-C-fci-DA16200M-E4WA3
Japan TELEC	201-190886	201-190892
China SRRC	2020DP0489	2020DJ0161(M)




# Low Power Wi-Fi Modules For Battery Powered IoT Applications

Features	Benefits
Ultra Low Power	<ul style="list-style-type: none"> <li>• Breakthrough VirtualZero™ technology</li> <li>• Virtually no power consumption in sleep state</li> <li>• Enables year-plus battery life</li> <li>• Ultra low power sensor wake-up</li> </ul>
Superior Range	<ul style="list-style-type: none"> <li>• Industry leading output power and Rx sensitivity for max range</li> </ul>
Highly Integrated SoC	<ul style="list-style-type: none"> <li>• 802.11b/g/n radio PHY, BB/MAC, PA, LNA w/on chip SRAM</li> <li>• Up to 72 Mbps, MCS0-7</li> </ul>
Full Offload	<ul style="list-style-type: none"> <li>• SoC runs full OS &amp; TCP/IP stack</li> </ul>
Simple Setup & Provisioning	<ul style="list-style-type: none"> <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, SDIO, ADC, I<sup>2</sup>C, PWM, I<sup>2</sup>S, GPIOs, JTAG and SWD</li> </ul>
eMMC/SD Expanded Memory	<ul style="list-style-type: none"> <li>• Data logging, memory intensive applications</li> </ul>

**VirtualZero™** 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

- > +20 dBm range booster mode
- > -100 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	Included smartphone app for iOS & Android; WPS 2.0
	Sensors	ADC: 4-channel SAR 12-bit, I <sup>2</sup> C, SPI, PWM, and I <sup>2</sup> S



## Dialog Semiconductor Worldwide Sales Offices

[www.dialog-semiconductor.com](http://www.dialog-semiconductor.com) email: [info@diasemi.com](mailto:info@diasemi.com)

**United Kingdom**  
Phone: +44 1793 757 700

**The Netherlands**  
Phone: +31 73 640 8822

**Japan**  
Phone: +81 3 5769 5100

**Hong Kong**  
Phone: +852 3769 5200

**China (Shenzhen)**  
Phone: +86 755 2981 3669

**Germany**  
Phone: +49 7021 8050

**North America**  
Phone: +1 408 845 8500

**Taiwan**  
Phone: +886 2 80718888

**Korea**  
Phone: +82 2 3469 8200

**China (Shanghai)**  
Phone: +86 21 5424 9058

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