

BMD-330 module



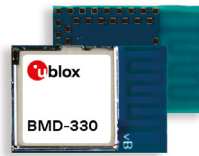
Stand-alone Bluetooth 5 low energy module

Cost efficient Bluetooth 5 module

- Supports the key Bluetooth 5 features of high throughput and increased broadcast capacity
- Powerful and ultra-efficient 64 MHz 32-bit Arm® Cortex®-M4 CPU with 192 kB Flash and 24 kB RAM
- Built-in DC-DC converter for low power operation
- Footprint compatible with BMD-300/301 and BMD-360 modules



9.8 × 14.0 × 1.9 mm



BMD-330

	BMD-330
Grade	
Automotive	
Professional	
Standard	•
Radio	
Chip inside	nRF52810
Bluetooth qualification	v5.0
Bluetooth low energy	•
Thread / Zigbee	
Bluetooth output power EIRP [dBm]	3
Max range [meters]	200
NFC	
Antenna type (see footnotes)	pcb
Application software	
Open CPU for embedded applications	•
Interfaces	
UART	◆
SPI	◆
I2C	◆
I2S	
USB	
PDM and PWM	◆
GPIO pins	32
AD converters [number of bits]	12
Features	
MCU (see footnotes)	M4
RAM [kB]	24
Flash [kB]	192
Simultaneous GATT server and client	◆
Throughput [Mbit/s]	1.4
Maximum Bluetooth connections	4
Secure boot	
Bluetooth mesh	
FOTA	◆

pcb = Internal PCB antenna ◆ = Feature enabled by HW. The actual support depends on the open CPU application SW.
M4 = 64 MHz Arm® Cortex-M4

Product description

The BMD-330 module is a powerful, highly flexible, ultra-low power Bluetooth 5 module based on the Nordic nRF52810 SoC. Featuring a common footprint, the BMD-330 complements the BMD-3xx series lineup with an optimized peripheral set that is attractive for a wide range of cost-sensitive applications.

The BMD-330 provides a complete RF solution allowing faster time-to-market with reduced development cost and provides full use of the nRF52810's capabilities and peripherals. With an internal DC-DC converter and intelligent power control the BMD-330 provides class-leading power efficiency, enabling ultra-low power sensitive applications. Carrying FCC, IC and CE certifications and Bluetooth qualification, the BMD-330 is ready to implement right away.

BMD-330 module



Features

Bluetooth	v5.0 (Bluetooth low energy)
Range	200 m
Max. radiated output power (EIRP)	3 dBm
Conducted sensitivity	-96 dBm (1 Mbit/s, Bluetooth mode)
Bluetooth address	Unique public Bluetooth address provided (in flash, on label)
Bluetooth operating modes	Simultaneous central and peripheral roles LE 2M PHY (2 Mbps) LE 1M PHY (1 Mbps) LE Data Length Extension Channel Selection Algorithm #2
Antenna	Integrated PCB antenna
Development environment	Nordic SDK Customers develop and embed their own application on top of the Bluetooth stack in the BMD-330 modules (open CPU concept)
Security	Secure Simple Pairing 128-bit AES encryption Bluetooth low energy secure connections

Interfaces and peripherals*

UART	1 block. 1200 baud to 1 M baud, parity, CTS and RTS support
SPI master	1 block. 125 kHz to 8 Mhz clock rates
SPI Slave	1 block. 125 kHz to 8 Mhz clock rates
TWI (I2C) master/slave	1 block. 100 kHz to 400 kHz clock rates
PDM	1 block. 2 microphones (left/right) 16 kHz sample rate, 16-bit
ADC	8-ch, 12-bit @ 200 ksps
PWM	1 block, 4 channels
GP Comparator	8-ch, VCC and internal ref, 64 levels
Temp. Sensor	Internal, -40 °C to 85 °C, +/- 4 °C, 0.25 °C resolution
GPIO	32 - Input High: 0.7 x VCC; Input Low: 0.3 x VCC; 13 kΩ pull-up/pull-down
Timers	3 x 32-bit and 2 x 24-bit RTC with 12-bit prescaler, watchdog

* Not all simultaneously

Package

Dimensions	9.8 x 14.0 x 1.9 mm
Weight	< 1.0 g
Mounting	Machine mountable Solder pins

Environmental data, quality & reliability

Operating temperature	-40 °C to +85 °C
Storage temperature	-40 °C to +85 °C
Humidity	RH 5 – 90% non-condensing
RoHS	RoHS 3 compliant

Electrical data

Power supply	1.7 VDC to 3.6 VDC
Power consumption in Bluetooth low energy mode	Active TX @ 0 dBm: 4.6 mA Full RAM retention, wake on RTC: 1.5 µA No RAM retention, wake on RTC: 1.4 µA Sleep, full RAM retention: 500 nA Sleep, no RAM retention: 300 nA

Certifications and approvals

Type approvals	Europe (ETSI RED); US (FCC/CFR 47 part 15 unlicensed modular transmitter approval); Canada (ISED RSS); Australia and New Zealand (RCM)
Health and safety	EN 62479, EN 60950-1, IEC 60950-1
Bluetooth qualification	v5.0 (Bluetooth low energy), Bluetooth RF PHY

Support products

BMD-330-Eval	Evaluation kit for BMD-330 with open CPU and internal PCB antenna
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Product variants

BMD-330	With internal PCB antenna, open CPU
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Further information

For contact information, see www.u-blox.com/contact-us.

For more product details and ordering information, see the [product data sheet](#).

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