

BTLE Single Mode Module with USB

Description

VDBTLE24, Bluetooth low energy single mode module is a single mode Bluetooth 4.0 device targeted for low power sensors and accessories.

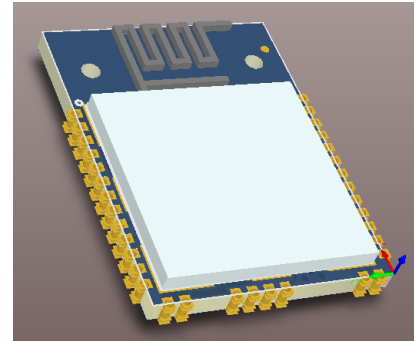
VDBTLE24 offers all Bluetooth low energy features: radio, stack, with custom profile support.

The module also provides USB 2.0 support in either Device or Host mode.

The module provides flexible hardware interfaces to connect sensors or external devices.

VDBTLE24 can be powered directly with a standard 3.3V supply or from a coin-cell battery.

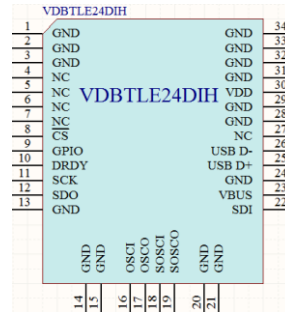
FCC Certified.



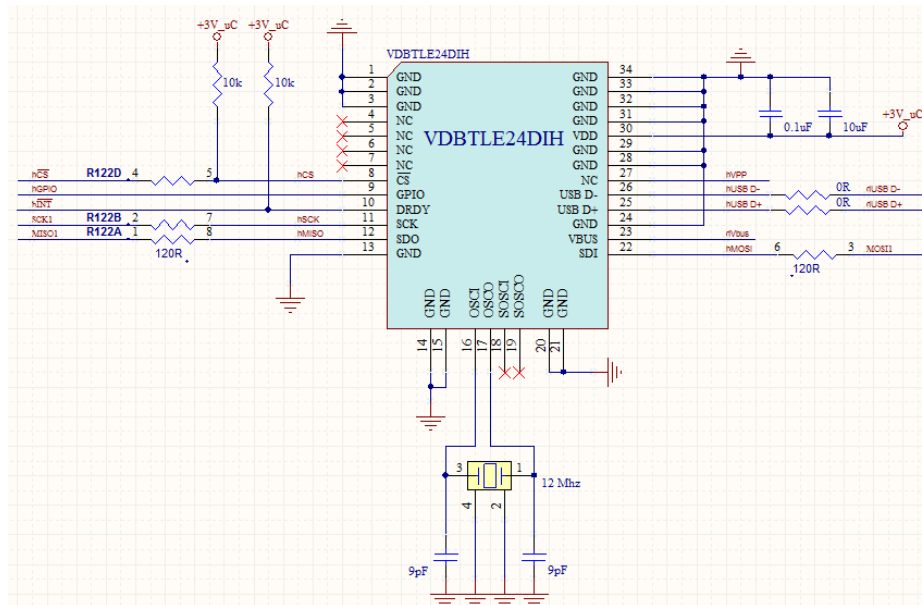
Applications

- Health/Medical Devices
 - Glucose Meters
 - Heart rate
 - Scale
 - Sensor Driver/Reader
 - Remote Data Monitor
- Sports Activity & Fitness
 - Pedometer
 - Cycling computer
 - Heart rate

Pin Diagram

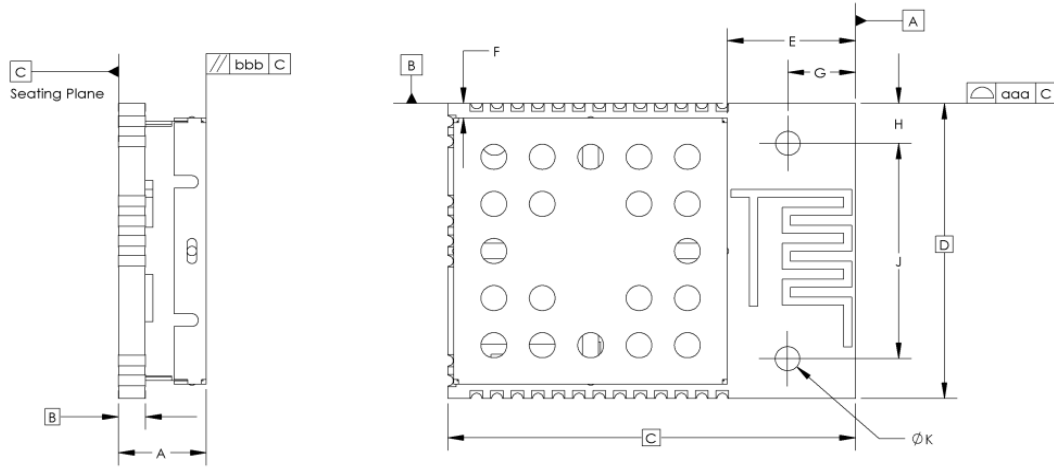


Example Application

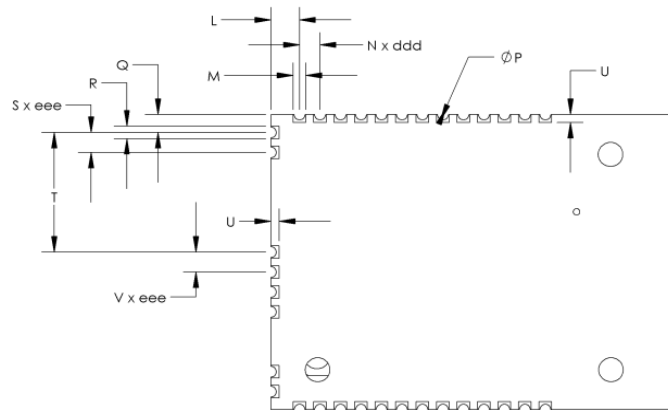


Example application includes USB and SPI connections to the VDBTLE24DIH module.

Mechanical Outline



Top View



Bottom View

Figure 1 - BTLE Package Dimensions

Dimensions

DESCRIPTION		DIMENSION	MILLIMETERS		
			MIN	NOM	MAX
Total Thickness		A	5.17	5.43	5.68
Board Thickness		B	1.40	1.63	1.75
Board Size	X	C	25.14	25.27	25.40
	Y	D	18.67	18.80	18.93
Shield Location	X	E	7.69	7.94	8.19
	Y	F	0.67	0.92	1.17
Hole Locations	X	G	4.11	4.19	4.27
	Y	H	2.46	2.54	2.62
Hole Spacing		J	13.59	13.72	13.85
Hole Dia.		K	1.39	1.52	1.65
Pad Location	X	L	1.65	1.78	1.91
	Y	Q	1.01	1.14	1.27
Pad Pitch	X	N	1.19	1.27	1.35
	Y	S	1.19	1.27	1.35
Pad Width	X	M	0.71	0.79	0.87
	Y	R	0.71	0.79	0.87
Pad Pitch	Y	S	1.19	1.27	1.35
Pad Location	Y	T	6.14	6.22	6.30
Pad Depth		U	0.38	0.51	0.64
Package Edge Tol.		aaa			
Coplanarity		ccc			
No. of Pads		ddd			

Recommended Layout

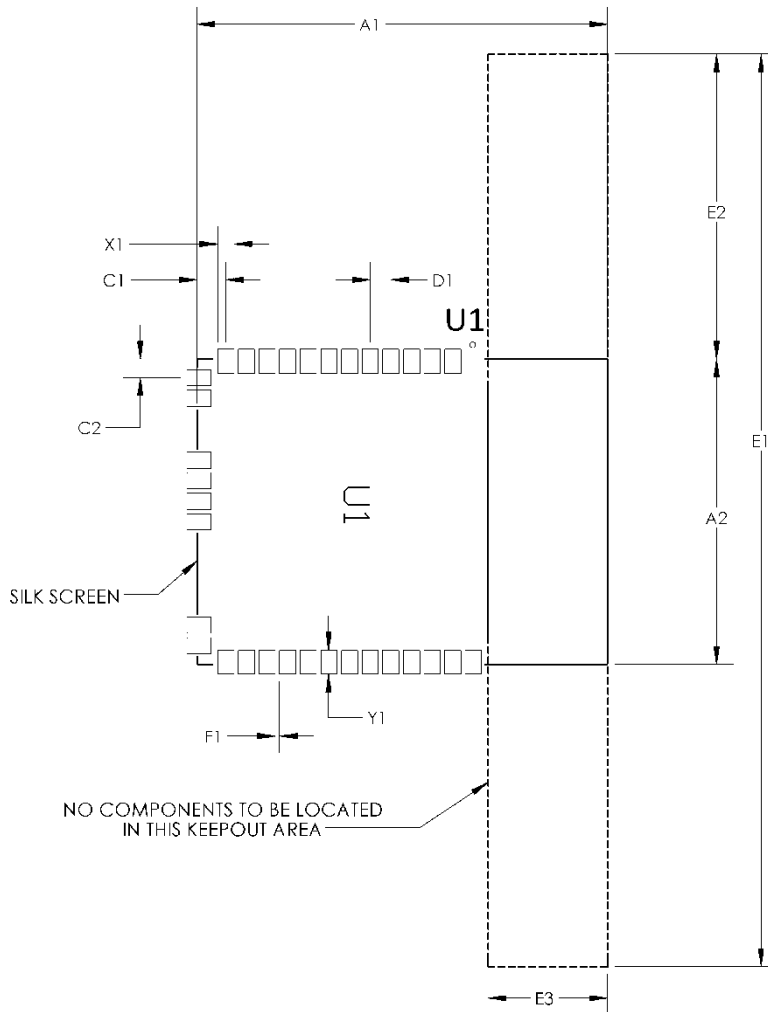


Figure 2 - BTLE Recommended Land Pattern

	DIMENSION	MILLIMETERS		
		MIN	NOM	MAX
Contact Pitch	D1		1.27	
Contact Pad Position	C1		1.78	
Contact Pad Position	C2		1.14	
Contact Pad Spacing	A1		25.27	
Contact Pad Spacing	A2		18.80	
Contact Pad Width	X1		1.00	
Contact Pad Length	Y1		1.47	
Distance Between Pads	F1		0.27	
Keepout Area Length	E1		56.24	
Keepout Area Width	E3		7.37	
Keepout Area Position	E2		18.80	

FCC Information

FCC ID: 2AB7YVDBTLE24

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS.

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Your device is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government. The FCC has established criteria for the amount of radio frequency energy various products may produce depending on their intended usage. This product has been evaluated and found to comply with the FCC's exposure criteria. For body worn operation, the FCC RF exposure guidelines were also met when used with the accessories supplied or designed for this product. Use of other accessories may not ensure compliance with FCC RF exposure guidelines and should be avoided.

Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device. This device must not be co-located with other transmitters.

Regulatory Approval

The VDBTLE24 module has received regulatory approvals for modular devices in the United States. Modular approval allows the end user to place the module inside a finished product and not require regulatory testing for an intentional radiator (RF transmitter), provided no changes or modifications are made to the module circuitry. Changes or modifications could void the user's authority to operate the equipment. The end user must comply with all of the instructions provided by the Grantee, which indicate installation and/or operating conditions necessary for compliance. The integrator may still be responsible for testing the end product for any additional compliance requirements required with this module.

The VDBTLE24 module has been labeled with its own FCC ID number, and if the FCC ID is not visible when the module is installed inside another device, then the outside of the finished product into which the module is installed must also display a label referring to the enclosed module. An example of the label is as follows:

Contains Transmitter Module FCC ID: 2AB7YVDBTLE24

-or-

Contains FCC ID: 2AB7YVDBTLE24
This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) this device may not cause harmful interference,
and (2) this device must accept any interference
received, including interference that may cause
undesired operation.

Revision History

Version	Action
0.1	First draft; Initial Release
0.2	Preproduction information
0.3	Reference schematic added; Recommended land pattern updated
0.4	Design guide, I/O descriptions updated;
0.5	Soldering recommendations added
1.0	Released Version
1.11	Pinout Updated
1.12	Electrical Characteristics Updated
1.13	BKB, added FCC information.
1.14	BKB, updated FCC information per TCB review.