

VEBLE103

General Features

- On-board proprietary protocol stack
- Bluetooth Smart
- Bluetooth v4.1 specification compliant
- RSSI monitoring for proximity applications
- UART communication
- 128KB memory; 64KB RAM and 64KB ROM
- Compact form factor: 20 x 14.5 mm
- Castellated SMT pads for easy and reliable PCB mounting
- Environmentally friendly, RoHS compliant
- FCC Certified
- Programmable GPIO
- SPI Debug
- On-board 3-axis accelerometer
- Device Firmware Upgrade (DFU) over UART, Contact Viaan Electronics for reference manual

Operational

- Single operating voltage: 2.1V to 3.6V (3.3V typical)
- Temperature range: -40°C to +85°C
- Low-power consumption
- Programmable RF Communication Bit Rate up to 250 bps
- Integrated MCU, Crystal, Programmed 64 bit unique address, Radio Transceiver with Analog Front End, Matching Circuitry, and onboard ceramic antenna
- GPIOs for control and status

RF/Analog Features

- BLE Transceiver operating in the 2.4 GHz frequency band
- High Receiver Sensitivity: down to -94 dBm
- TX Power: adjustable up to +9 dBm high efficiency PA
- GFSK Modulation
- 100 meter coverage at suburban and 30 meter coverage at urban area

Description

VEBLE103 is a Viaan Electronics IoT BLE Module. VEBLE103 is a single-mode Bluetooth low energy product for the Bluetooth Smart market. VEBLE103 can be used where space is limited. VEBLE103 enables ultra low-power connectivity and basic data transfer for applications previously limited by the power consumption, size constraints and complexity of other wireless standards. VEBLE103 provides everything required to create a Bluetooth low energy product

with RF, baseband, MCU, qualified Bluetooth v4.1 specification stack, 3-axis accelerometer, and customer application running on a single compact board.

Applications

- HID: keyboards, mice, touchpads, remote controls
- Sports and fitness sensors: heart rate, runner speed and cadence, cycle speed and cadence
- Health sensors: blood pressure, thermometer and glucose meters
- Mobile accessories: watches, proximity tags, alert tags and camera controls
- Smart home: heating control and lighting control

Federal Communication Commission Statement (FCC, U.S.)

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 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.

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.

FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTES

Co-location warning:

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

OEM integration instructions:

This device is intended only for OEM integrators under the following conditions:

The transmitter module may not be co-located with any other transmitter or antenna. The module shall be only used with the external antenna(s) that has been originally tested and certified with this module.

As long as the conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

Validity of using the module certification:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End product labeling:

The final end product must be labeled in a visible area with the following: "Contains Transmitter Module FCC ID: 2ALON-VEBLE103"