

VELORA102

General Features

- On-board proprietary protocol stack
- command interface over UART
- Compact form factor: 32.5 mm diameter
- Castellated SMT pads for easy and reliable PCB mounting
- Environmentally friendly, RoHS compliant
- FCC Certified
- 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 5468 bps with LoRa™ Technology modulation
- Integrated MCU, Crystal, Programmed 64 bit unique address, Radio Transceiver with Analog Front End, Matching Circuitry
- GPIOs for control and status

RF/Analog Features

- Low-Power Long Range Transceiver operating in the 915 MHz frequency band
- High Receiver Sensitivity: down to -148 dBm
- TX Power: adjustable up to +20 dBm high efficiency PA
- LoRa Technology modulation
- IIP3 = -11 dBm
- >1 mile coverage at suburban and >0.5 mile coverage at urban area

Description

Viaan Electronics' Low-Power Long Range LoRa Technology Transceiver module provides an easy to use, low-power solution for long range wireless data transmission. The advanced command interface offers rapid time to market. The VELORA102 module has proprietary software to allow for secure messaging between devices. The module is also prepared for LORAWAN Type A data transfer.

It integrates RF, a baseband controller, command Application Programming Interface (API) processor, battery or external power making it a complete long range Solution. The VELORA102 module is suitable for simple long range sensor applications with external host MCU or standalone.

Applications

- Automated Meter Reading
- Home and Building Automation
- Wireless Alarm and Security Systems
- Industrial Monitoring and Control
- Machine to Machine
- Internet of Things (IoT)

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-VELORA102

This device must be kept away from all persons by 20cm or more and installations using less distance, or installations using antennas with gain greater than that with which this was Certified will require additional approvals.

Antenna Specification:

Type: Ceramic Antenna

Model: VELORA102

Brand: Wireless

Gain: 2dBi