

High Performance VEmesh

VEmesh™ are high performance mesh wireless networks for distributed control, monitoring and data collection of lighting, metering and sensor systems, with high robustness and cost effective bi-directional communication.

One Gateway with several VEmod Nodes form a VEmesh network, for high performance wireless mesh connectivity. All network units act as relays, in addition to their own activity, by retransmitting other unit's data in order to create a modular solution with a practical unlimited number of nodes and unlimited coverage area. The result is highly reliable bi-directional communication with extended range and coverage.

A large number of such VEmesh networks can be deployed together with the same high performance, for building large scale network systems.

VEmesh is optimized for wireless mesh topology and for the operation in the ISM/SRD unlicensed frequency bands, by using the innovative *synchronized-flooding* technology for space, time and frequency diversity. After an initiating node transmitting its message, all nodes within range simultaneously retransmit the received message, repeating the process until all the nodes have received the message.

This brief data sheet is about VEmesh Gateways. In standard Gateways the user can choose between UART, USB or TCP/IP interface and availability for operation in the US, Europe and Israel.

Gateways Main Features

- Full ownership - operates in ISM/SRD unlicensed frequency bands
- Forms fully transparent, bi-directional extended range wireless mesh networks
- Space diversity robust propagation - no single point of failure
- Unlimited number of nodes per network
- Instant addition, removal and location change of nodes and gateway - no network downtime
- No software stack required
- Customer's programmable using a standard based environment
- Eliminates network management - no management software required
- External Antenna for further range extension



Figure 1 - VEmesh TCP/IP Gateway

- Frequency Hopping - according to the relevant regulations
- LBT and ATA for utmost range and coverage.

Main Specifications

- RF Data
 - Frequency Bands: 902-928 MHz in US, 863-870 MHz with AFA and LBT in Europe, 916 MHz in Israel
 - RF Channel spacing: 250/100 KHz
 - Modulation: Synchronous FSK
- Interface and protocols
 - UART, USB, TCP/IP in standard models; additional is special models
- RF Output Power: +15 dBm typical
- RF Reception sensitivity: -103 dBm typical
- Max. number of Nodes: unlimited
- Max. number of Hops: 63
- Regulatory standards' compliance
 - FCC: Parts 15.247 & 15.249
 - ETSI: EN 300-220 V2.1.1
 - Israel: MOC ISM 0.9 GHz
- Power supply: 5 ±0.25V/1A/micro USB-B

Ordering information

Model number	Interface	Freq. Band
VEsmgt-s31-us	TCP/IP	US
VEsmgu-s31-us	USB	US
VEsmgr-s31-us	UART	US
VEsmgt-s31-eu	TCP/IP	Europe
VEsmgu-s31-eu	USB	Europe
VEsmgr-s31-eu	UART	Europe
VEsmgt-s31-il	TCP/IP	Israel
VEsmgu-s31-il	USB	Israel
VEsmgr-s31-il	UART	Israel

For additional models, please contact Virtual Extension sales.

July 3, 2015

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