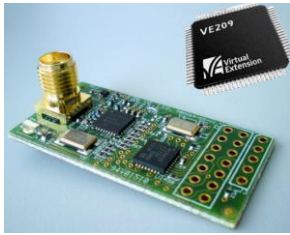


## VEmesh - a novel WSN Mesh solution



VEmesh™ is a mesh wireless network solution for distributed control, monitoring and data collection of lighting, metering and sensor systems, with a highly reliable and cost effective bi-directional communication.

With synchronized-flooding at its core, the network nodes act as relays in addition to their own activity, i.e. retransmitting other unit's data in order to create a modular solution with a practical unlimited number of nodes and practical unlimited coverage area. The network's design incorporates a built-in secured message delivery with space, time and frequency diversity, eliminating the need

for routing, configuration and self-healing.

VEmesh family includes two types of products: (1) modules - standard or customized for OEM, and (2) chipsets. In addition, VEmesh is the technology used in Wireless extension for DALI line of products.

### Features – standard and optional

- Mesh topology with any node to any node bi-directional communication
- Use of synchronized flooding in the unlicensed sub-Giga frequency bands
- Simultaneous use of all available propagation paths for communication between all nodes
- Single-hop range - 70 m ÷ 1.5 km
- Practically unlimited scalability and number of hops - from a few nodes to thousands of nodes
- Optimized for minimum number-of-hops
- Practically unlimited coverage extension - from a single hop to tens of hops
- Designed for simple deployment and maintenance
- Mobility of gateway and nodes
- Flexible device addressing - either by existing network management or by the gateway
- Direct interface to IP-based, DALI, RS232, RS485, USB, MODBUS, Dry-Contacts & current loop systems
- Frequency Hopping with at least 51 pseudo-random frequency hops
- TDMA access
- Data security using 128-bit AES encryption option
- Fragmentation option
- Housing, PCB and chipset versions
- Customization and optimization services available and included in solution.

### Proven applications

- Outdoor and Indoor Smart Lighting
- Emergency Lighting
- Utility Smart Metering
- Building Automation, HVAC
- Industrial sensors
- Wireless Credit Card terminals
- Geo-fencing, pipeline protection
- Security applications

### Benefits

- “Plug & Play” replacement of standard wire
- Setting up a new network, or adding and removing nodes is done in seconds
- Eliminates the need for network management software
- Network deployment and maintenance by untrained personnel
- Eliminates the need for routing and configuration - cost and specialization
- Achieves maximum mesh network range in class, both open space and densely built area
- Achieves minimum dead spots in class
- Highest known communication reliability in RF interferences and propagation change conditions
- Highest known reliability to single point (node) failure
- Lowest known power consumption in class
- Minimum overall latency
- Same equipment can be used in several physical configurations, such as fixed and drive-by
- Multi-layered security: FHSS and AES
- Covers a large variety of applications.

### Main Specifications

- RF Data
  - Frequency Band: 902-928 MHz (US), 863-870 MHz with AFA and LBT (Europe), 916 MHz (Israel) and other regions
  - Channel spacing: 256 KHz
  - RF hops: 51
  - Modulation: FHSS
- Interface and protocols
  - UART, DALI, RS232/485, USB, TCP/IP
    - MODBUS, M-Bus and others - optional
  - Serial Data Rate: Up to 300 kbps
- Output Power
  - Standard Power: +8 dBm nominal
  - High Power Unit: +30 dBm nominal

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