Smart Computing Hub with Integrated Wireless Access, Server-Class Processing, and Mesh Scalability

Dual-band Wi-Fi 5 mesh / IoT / WAN / 4G LTE / LoRaWAN connectivity, Linux processor, and up to 2TB local storage
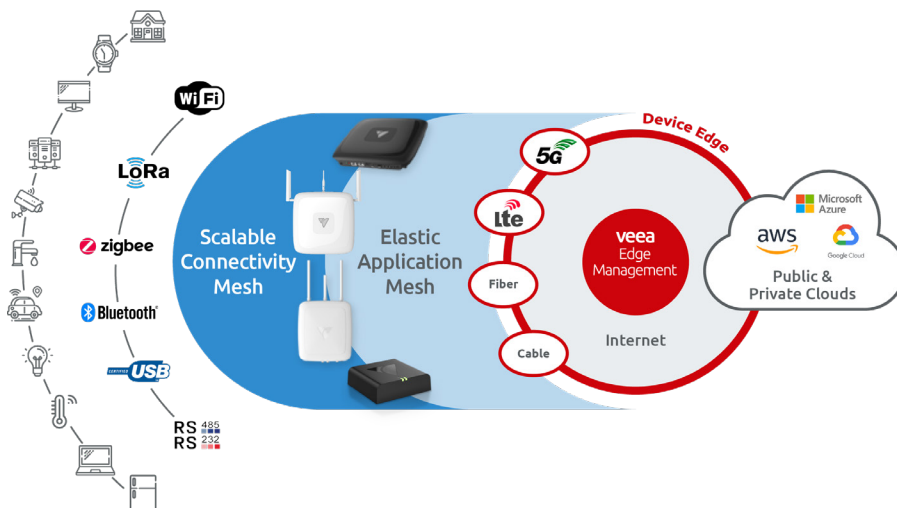
VeeaHub® Smart Computing Hubs

The VeeaHub VHE09 Smart Computing Hub offers enterprise-grade processing and a broad range of simultaneous connectivity options available in an integrated edge access/computation platform.

Designed to meet the needs of a broad array of smart applications in outdoor and industrial environments, the VHE09 integrates wired and wireless connectivity, quad core compute resources, and enough storage to support sensor and data-intensive AI applications—all secured by a chain of trust that starts with the hardware that will only run digitally signed software.

The VHE09 extends the capabilities of the Vee Edge Platform™ which is resetting the bar in edge computing simplicity.

VHE09 Highlights

- Simple plug-and-play setup for easy deployment

- Integrated wired and multiple wireless connectivity options
  - Wi-Fi 5
  - Zigbee
  - Thread / 6LoWPAN
  - Bluetooth
  - GNSS
  - LoRaWAN
  - 4G LTE

- 4G Fail-over protection (optional)

- Multi-node edge network scalability through Veea's vMesh™ technology

- Scalable storage to 2TB

- Linux Secure Container software architecture and hardware-based chain-of-trust for unmatched platform security

- Fan-less; No special cooling required

- IP65 enclosure rating

- Operating temperature -40°C to 65°C

Specifications

Compute

Quad Core Linux Server	
Processing/Compute	64-bit Armv8, Quad Core @1.5 GHz
Memory	2 GB PCDDR4 (4 GB optional)
Internal Storage	32 GB eMMC flash
External Storage	Up to 2TB storage w/ micro SDXC
Hardware Accelerated Operations	Cryptography Engine

Wi-Fi

Dual-band 802.11 a/b/n/ac	
2.4 GHz	2x2:2 / 300 Mbps
5.2 GHz	4x4:4 / 867 Mbps*
Frequency Bands (Country restrictions apply)	2.400-2.484 GHz 2.412-2.472 GHz 5.180-5.850 GHz (UNII-1_UNII3)
Bandwidth	20 / 40 / 80 MHz
Antennas Gains	2.4 GHz / 4.0 dBi 5.2 GHz / 3.5 dBi 5.7 GHz / 4.0 dBi
Security	WPA-PSK, WPA-TKIP, WPA2 AES, WPA3, 802.11i, Dynamic PSK

Low Power IOT

Independent IoT Radios w/ Hardware Co-existence	
Bluetooth Classic 4.2	
Bluetooth 5.x (BLE)	
GNSS	
Thread	
Zigbee 3.0	
Zigbee Pro	

Cellular / Mobile

4G LTE	Quectel EC25 modules (country dependent)

Wireless Long Range

LoRaWAN	900 MHz, 868 MHz, 470 MHz

Networking

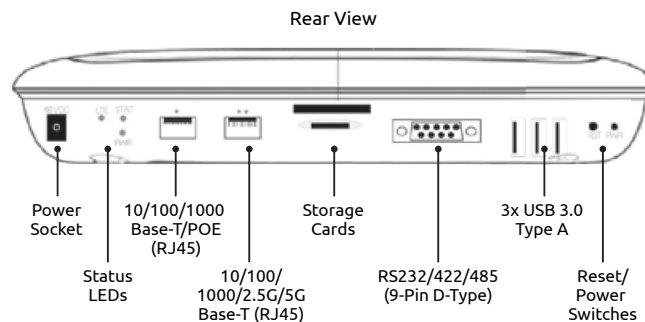| Meshing	Wired / Wireless
Management	Up to 4 SSIDs per radio
Quality of Service	Power Control 802.11h Channel Selection (DFS/ACS)
Security	Stateful Firewall 802.1Q VLAN SSID (AP Isolation) VxLAN WPA3 Personal WPA3 Enterprise w/ 802.1x

Interfaces

LED Status in Veea Logo	Color Coded
WAN / LAN Ports	1x 1000 BASE-T Ethernet, 1x 5000 BASE-T Ethernet
Expandable Storage	1x micro SDXC

Electrical

Power Supply	48V @ 1.5A
Power Consumption (Max / Typical)	60W
POE	802.3bt Compliant (Port 1)

Physical

Mounting	Desk / Ceiling / Wall
Dimensions (W x D x H)	280mm x 275mm x 61mm
Weight	2.5kg

Environmental

Indoor / Outdoor	Indoor
Operating Temperature	0°C to 50°C

Electrical

FCC / CE / KC / SRRC	

*Shared with vMesh at 5 GHz.

Rear View

Power Socket · Status LEDs · 10/100/1000 Base-T/POE (RJ45) · 10/100/1000/2.5G/5G Base-T (RJ45) · Storage Cards · RS232/422/485 (9-Pin D-Type) · 3x USB 3.0 Type A · Reset/Power Switches

Wi-Fi Transmit Power and Receive Sensitivity

Band	Mode		Coding Scheme	TX Power (dBm)	RX Sensitivity (dBm)
2.4 GHz	802.11n	HT20	MCS0	20.0	-91.0
			MCS7	18.0	-72.0
5 GHz	802.11n	HT20	MCS0	22.0	-91.0
			MCS7	19.0	-72.0
		HT40	MCS0	22.0	-88.0
			MCS7	19.0	-70.0
	802.11ac	VHT20	MCS0	22.0	-90.0
			MCS7	19.0	-71.0
			MCS8	17.0	-67.0
			MCS9	N/A	N/A
		VHT40	MCS0	22.0	-87.0
			MCS7	19.0	-68.0
			MCS8	17.0	-64.0
			MCS9	17.0	-62.0
		VHT80	MCS0	22.0	-84.0
			MCS7	19.0	-65.0
			MCS8	17.0	-61.0
			MCS9	17.0	-59.0

Radiation Patterns

A Top View   **B** Front View   **C** Side View

	Top Pattern	Front Pattern	Side Pattern
2.4 GHz			
5.2 GHz			
5.7 GHz			