Hytera

iMesh

Broadband Ad-hoc Network Solution

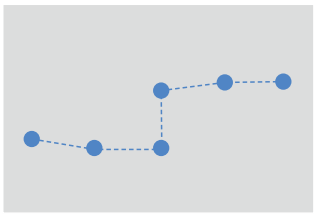
www.hytera.com

iMesh Series

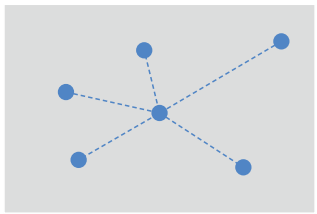
iMesh series include a range of products developed based on 4G and Pre-5G technologies. iMesh solution sets up a secure, non-of-sight wireless link-on-demand, providing high data throughput to enable front line responders to communicate with on-site command center in complicated environment. The network deployment is flexible. It is suitable for various application scenarios including public safety, VIP escort, emergency communications and etc.

iMesh Diversified Networking

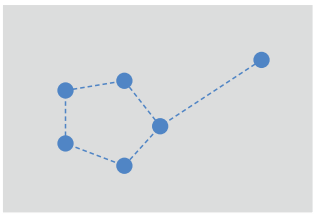
Several mesh nodes automatically form a wireless link in multiple networking shapes, such as chain, star, random, and hybrid. The mesh network is self-healing, allowing the system to automatically recover from the single-point failure by intelligently discovering and hopping to any other available node in the network.



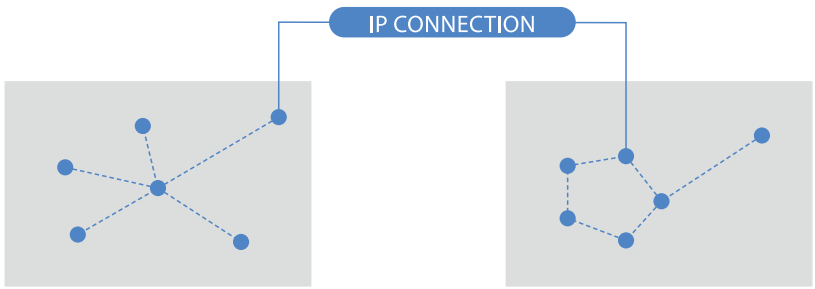
Chain Networking



Star Networking



Random Networking



Hybrid Networking

iMesh Vehicle Node

The node can be installed on a vehicle, at a fixed place, or carried by a UAV, applied to various mission critical scenarios.

Features

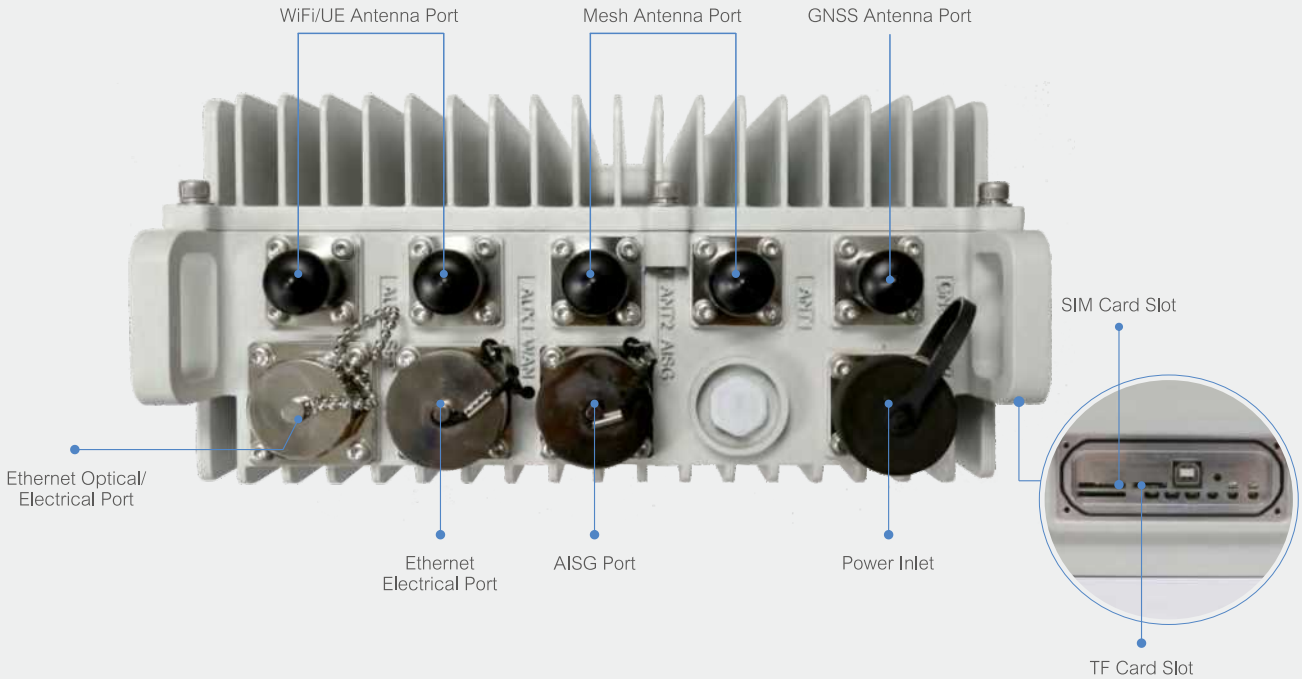
- High throughput
- Self-organizing
- Wide coverage
- E2E QoS and encryption
- Light in weight and compatible with external batteries
- MIL-STD-810G
- WiFi/4G, Ethernet Ports

Specifications

Operating Frequency	320–344 MHz, 542–582 MHZ, customizable
Antenna Configuration	2T2R
TX Power	2x5 W
Sensitivity	≤–105 dBm @ 10 MHZ
Operating Bandwidth	10 MHZ (Typ.), customizable
Single-hop Delay	5–10 ms
Max. Number of Nodes	32
Coverage Distance	40 km (LOS), 5 km (NLOS)
Spectral Efficiency/Throughput	6 bps/Hz, 60 Mbps (Max.)

Encryption	AES, Snow 3G, third-party algorithm
Dimensions	330mm×240mm×114mm
Weight	7kg
Power Supply	12–24 V DC
Power Consumption	50W(Typ.), 75W (Max.)
Operating Temperature	-40℃ to +55℃
Operating Humidity	5%RH to 100%RH
IP Rating	IP67

Connectors Diagram



iMesh Man-Pack Node

The node enables onsite video capture and transmission. It can be carried by individuals or a UAV for emergencies.

Features

- High throughput
- Self-organizing
- Wide coverage
- E2E QoS and encryption
- Light in weight: 5 kg including battery
- Golden Pin Design Award
- MIL-STD-810G
- WiFi, Ethernet, Bluetooth, HDMI Ports

Specifications

Operating Frequency	320–344 MHz, 542–582 MHZ, customizable
Antenna Configuration	2T2R
TX Power	2x2 W
Sensitivity	≤–105 dBm @ 10 MHZ
Operating Bandwidth	10 MHZ (Typ.), customizable
Single-hop Delay	5–10 ms
Max. Number of Nodes	24
Coverage Distance	10 km (LOS), 2km (NLOS)
Spectral Efficiency/Throughput	6 bps/Hz, 60 Mbps (Max.)

Encryption	AES, Snow 3G, third-party algorithm
Dimensions	266mm×206mm×87mm (battery included)
Weight	5kg (battery included)
Power Supply/Battery Capacity	12 V, 14800 mAh
Power Consumption	40W(Typ.), 50W (Max.)
Operating Temperature	-20℃ to +55℃
Operating Humidity	5%RH to 100%RH
IP Rating	IP67

iMesh Handheld Node (MiFi)

The node is small in size, low in power consumption, and easy to carry. It is suitable for firefighters, special agents, VIP escort operations.

Features

- Small in size
- Light in weight and low in power consumption
- High throughput
- IP67
- Large capacity battery

Specifications

Operating Frequency	320–344 MHz, 542–582 MHZ, customizable
Antenna Configuration	1T1R
TX Power	1x0.5 W
Sensitivity	≤–102 dBm (10 MHZ)
Operating Bandwidth	≤10 MHz
Single-hop Delay	5–10 ms
Max. Number of Nodes	16
Coverage Distance	2 km (LOS), 500 m (NLOS)
Throughput	6 Mbps (10MHz)

Encryption	AES, Snow 3G
Connectors	Wi-Fi, Micro USB, BT
Dimensions	170mm×85mm×30mm
Weight	0.6kg
Power Consumption	4W (Max.)
Operating Temperature	-40℃ to +55℃
Operating Humidity	5%RH to 100%RH
IP Rating	IP67

Solution Highlights

Flexibility

- Self-organizing and self-healing capability
- Supports multiple topologies: chain, star, random, and hybrid
- All-IP
- Multiple I/O Interfaces Supported: Optical/Ethernet/ Bluetooth/HDMI/LTE/WiFi

Security

- Encryption: Snow 3G, AES, IPSec, and more
- Mesh authentication: USIM AKA
- Wi-Fi authentication: EAP-SIM, EAP-Radius, and WPA/WPA2

Large Capacity

- Spectral Efficiency: 6 bps/Hz
- Throughput: 60 Mbps @ 10 MHz (Max.), supporting 15 channels 1080P videos

High Reliability

- MIL-STD-810G
- IP67

QoS

- 3GPP-based QoS and customized QoS
- Service Prioritization

Large Coverage

- LOS 40 km (Max.)
- NLOS 5 km (Max.)

Mobility

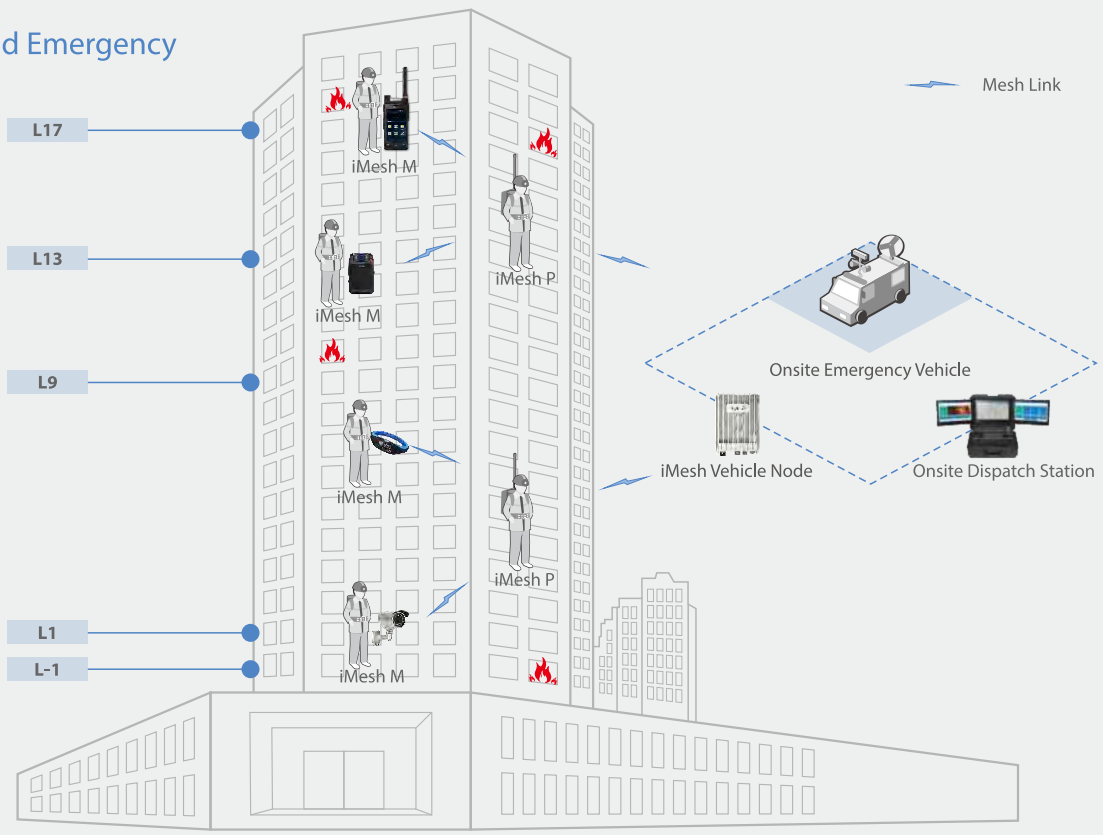
- Vehicle speed up to 120 Km/h

Synchronization

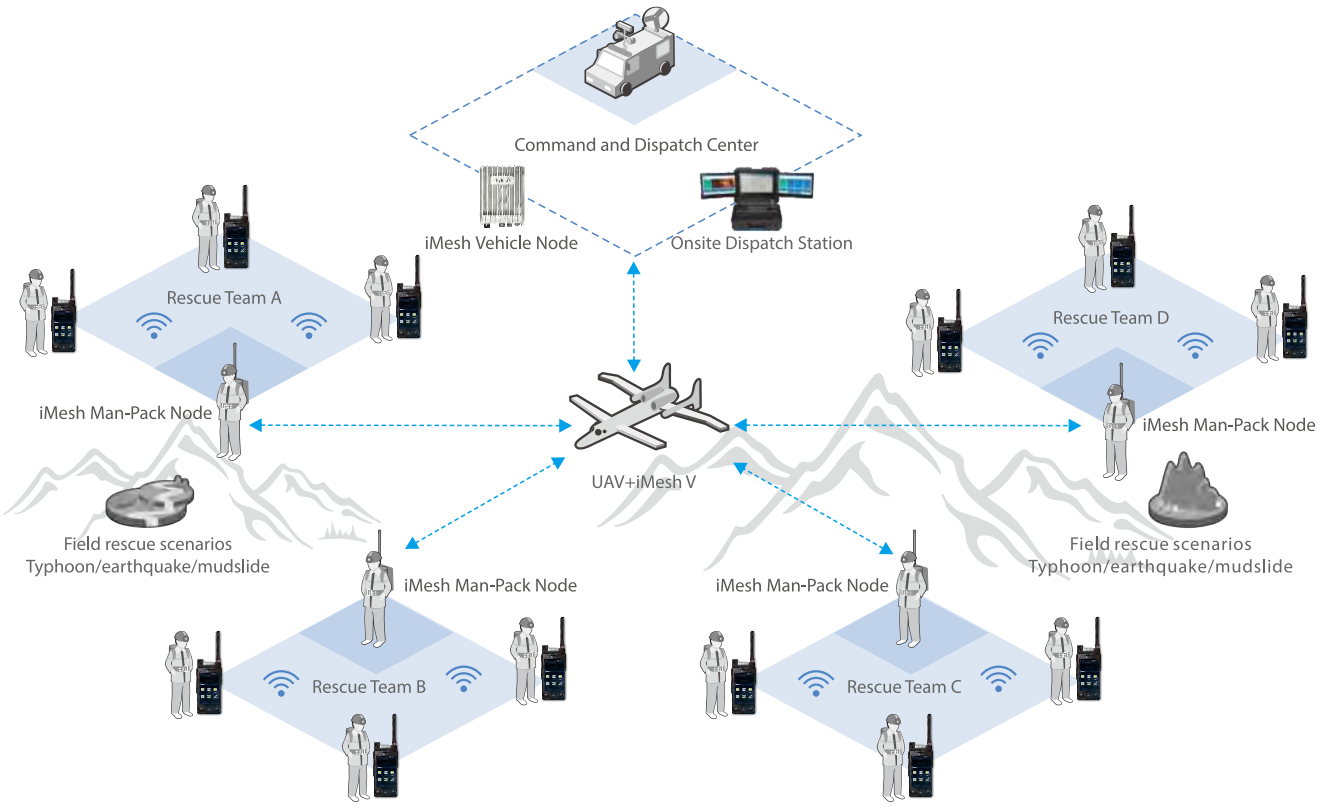
- GPS/Beidou/GLONASS/1588 V2

Application Scenarios

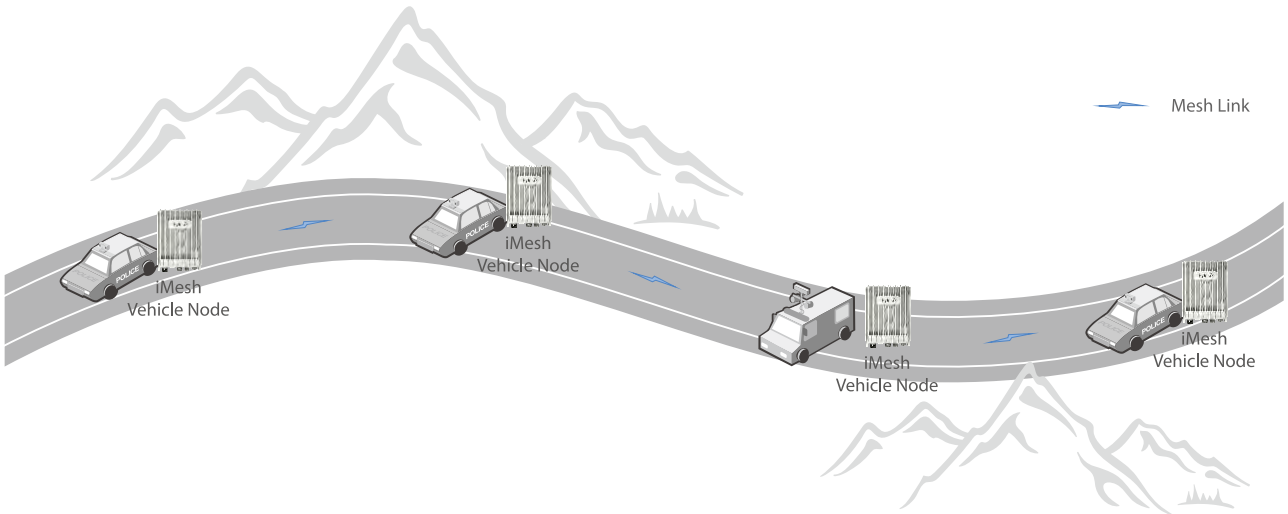
Fire and Emergency



Rescue and Relief



VIP Escort



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