Specifications

General

Working Frequency	566–626 MHz, Tailor-made
Working Mode	TDD
Technical Standard	COFDM
Working bandwidth	Flexibly configured as 2.5 MHz, 5 MHz,10 MHz or 20 MHz
Transmit Power	2 × 2 W,dual transmitters and dual receivers
Sensitivity	≤-105dBm
Rate	Peak data rate 50 Mbps
Networking Mode	Centerless co-frequency Mesh
Networking Scale	32 nodes and more in co-frequency networking
Number of Hops Supported	Unlimited, recommend less than 8 hops
Encryption Mode	DES/AES128/AES256
Power Supply	Self-provided battery; External AC/DC
Duty Cycle	12 hours

Environment

Operating Temperature	-40℃ ~ +60℃
Storage Temperature	-50℃ ~ +70℃
Air Pressure Range	70 ~ 106 kPa
Dust and Water Resistance	IP66
Shock Resistance	Above class 7M2 in GBT 4798.7-2007 Environmental conditions existing in the application of electric and electronic products - Part 7: Portable and non-stationary use

Physical

Size(H × W × D)	270mm × 170mm × 65mm
Weight	4 kg (with battery)
External Port	Network Port: data transmission and network management Wi-Fi Port (SMA): Wi-Fi access Audio Port: connected to an external earphone RF Port (N): connected to an RF antenna GPS (SMA): location Power Port: connected to an external power supply

System management

Unified NMS	1 Unified NMS manages all on-net nodes and supports point-to-point, point-to-multipoint, chain,star network, and hybrid network topology. 2 NMS can check the communication quality between nodes in real time. 3 Spectrum frequency can be scanned, and interference to the used band can be checked in real time. 4 Locations of nodes can be positioned on GIP (geographical information) map in real time. 5 Multiple paths of voice and data services can be implemented.

Optional accessories

Optional accessories	Reinforced notebook, reinforced PAD, spare battery, portable mast, etc.

ZXIMCU sMesh100
Broadband Mesh Manpack System

The sMesh ("s" standing for smart) broadband Mesh Manpack system adopts center-less co-frequency Mesh network technology and distributed network architecture. The system supports any network topology and multi-hop relay, and provides users with reliable,fast-responsive,efficient,and secure multimedia integrated services, like All IP clear voice, broadband data under non-line-of-sight and fast-moving scenarios.

It is widely adopted in sectors such as public safety, fire brigade, electric power, petroleum, transportation,water conservancy,forestry,medical etc. to meet user demands for wireless broadband communication daily or in an emergency case to achieve "on-demand communication anytime and anywhere".

System Functions

- Center-less co-frequency mesh
- Various Network Topology
- Multi-node Flexible Networking
- High Speed,Broadband Data Support
- Interference Immunity
- Anti-interference multi-path capacity

- Disaster Recovery
- Highly secured
- ALL-IP Architecture
- VPN connection, Adapting to Various Networking
- Rich Services Support
- Rich interfaces, easy to operate and maintain

System Features

Quick Startup
The system does not require any configuration, starts up after pressing one button, accesses network and works in "seconds".

Frequency Scanning
The system can scan frequency in real-time to check environmental interference.

Easy to Manage
The system can display the working status of each node and wireless link quality, as well as GIS location information.

High Reliability
With IP67 waterproof and dust proof, high anti-vibration performance,and temperature range of −40°C to +60℃,the system is comprehensively applicable to harsh environment.

Disaster Recovery
When a node of the network fails or disconnects, the system calculates and switches the task of the above node to other node, selects an optimal path for transmission, and realizes network self-healing.

One system,Multi-purpose
The system can be flexibly deployed as required, such as man pack, onboard (vehicle or vessel) or fixed at one position. It can meet the requirements of communication support for users on land or on board, and can realize wireless networking coverage during parking or travel of vehicle or vessel.

Services Diversity
The system supports rich services such as voice video, and location, and support VPN connection and support to connect with satellite, public network, and LTE station systems.
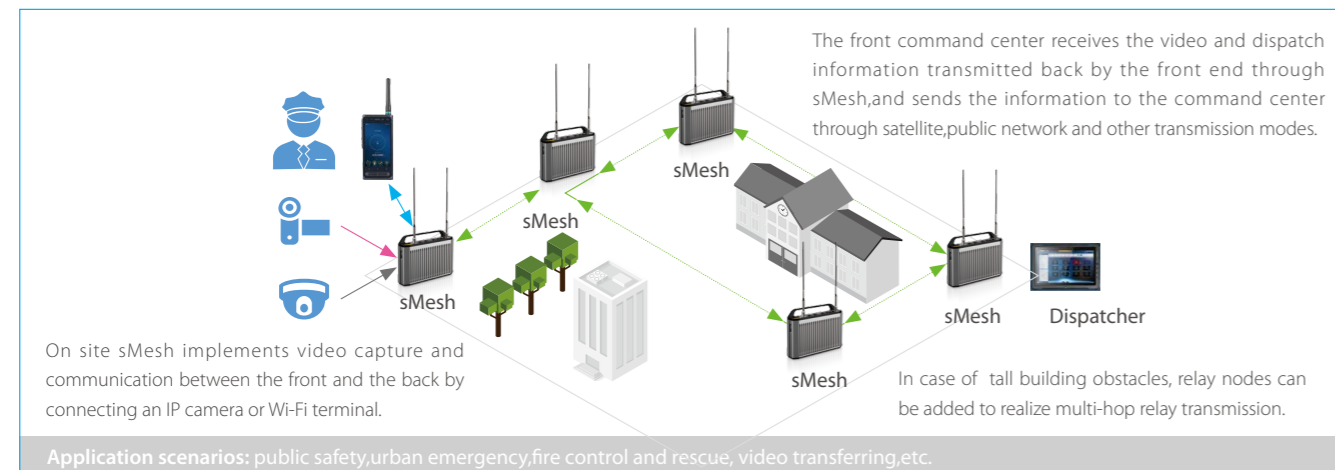
Flexible Networking
The system adopts centerless and co-frequency Mesh network and flexibly configured bandwidth of the carrier. It supports point-to-multipoint, chain relay,star network,and hybrid network,as well as multi-hop relay and relay forwarding.
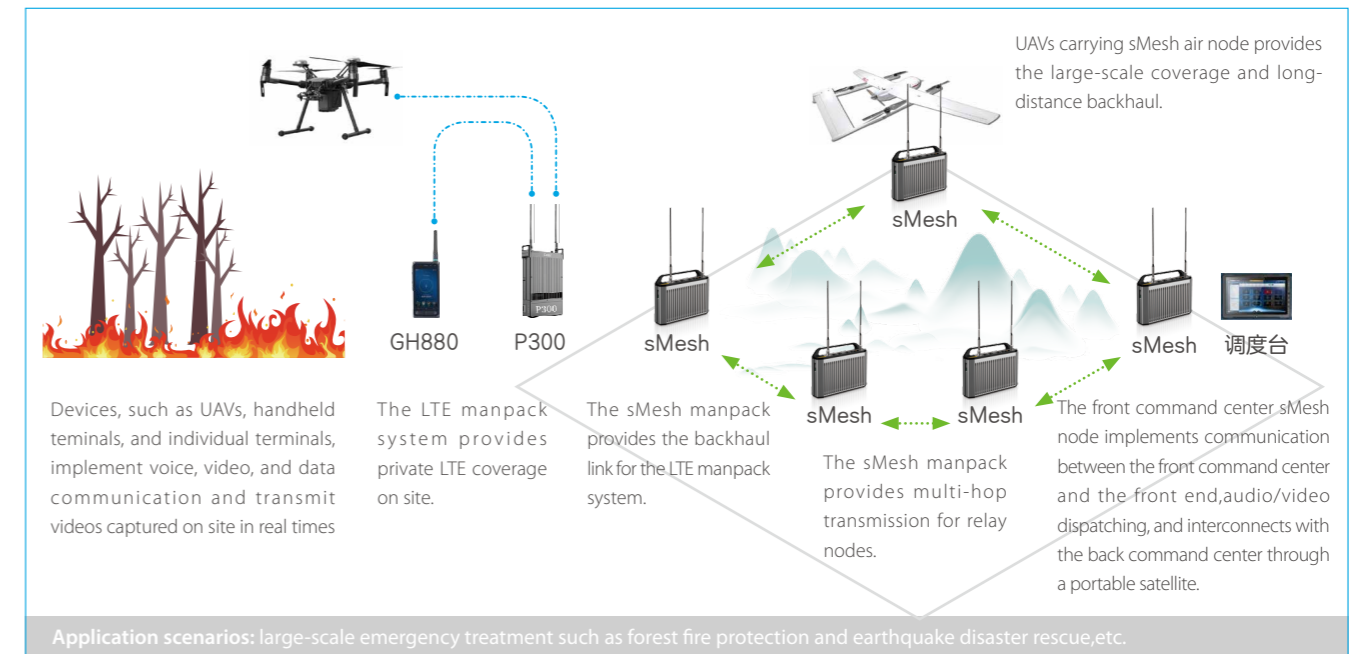
Application Scenarios

Independent Networking of sMesh

This scenario takes the features of the center-less and multi-hop Mesh feature given by the sMesh system to rapidly establish Multi-node IP interconnection and link backhaul.

The front command center receives the video and dispatch information transmitted back by the front end through sMesh,and sends the information to the command center through satellite,public network and other transmission modes.

sMesh
sMesh
sMesh
sMesh
sMesh
sMesh   Dispatcher

On site sMesh implements video capture and communication between the front and the back by connecting an IP camera or Wi-Fi terminal.

In case of tall building obstacles, relay nodes can be added to realize multi-hop relay transmission.

Application scenarios: public safety,urban emergency,fire control and rescue, video transferring,etc.

sMesh Backhaul

The sMesh system acts as the backhaul link between the spot and the command center.The portable LTE command system P300 is carried to the site to realize the network coverage and is interconnected with the command center through the sMesh system,achieving on-site video transferring and audio/video dispatching.

UAVs carrying sMesh air node provides the large-scale coverage and long-distance backhaul.

sMesh
GH880   P300   sMesh   sMesh   调度台
sMesh   sMesh

Devices, such as UAVs, handheld teminals, and individual terminals, implement voice, video, and data communication and transmit videos captured on site in real times

The LTE manpack system provides private LTE coverage on site.

The sMesh manpack provides the backhaul link for the LTE manpack system.

The sMesh manpack provides multi-hop transmission for relay nodes.

The front command center sMesh node implements communication between the front command center and the front end,audio/video dispatching, and interconnects with the back command center through a portable satellite.

Application scenarios: large-scale emergency treatment such as forest fire protection and earthquake disaster rescue,etc.

sMesh Extension

The portable LTE command system provides ground coverage.For LTE coverage blind spot such as underground parking lots and inside the tall building,the sMesh system acts as an extension to LTE network and realizes video backhaul, command and dispatching in complex scenarios.

When inside the building, sMesh nodes are adopted for multi-hop extension of signals.

The sMesh bridge connects the LTE network and the sMesh network to realize backhaul of audio and video in the building or underground parking lots.

sMesh
Building interior
sMesh
sMesh   sMesh bridge
GH880   GH880
sMesh bridge
sMesh bridge
GH880   P300
Dispatcher

The on-site staff uses handheld terminals to capture audio and video in the building for backhaul and communication.

Underground parking lot
GH880   sMesh   sMesh

The on-site staff uses handheld terminals to capture audio and video in the underground parking lots for backhaul and communication.

For complex scenarios like underground parking lots, sMesh nodes are used for multi-hop extension of signals.

The LET system implements ground and surrounding voice, and data communication, receives audios and videos covering dead space in a building or basement that are transmitted back via sMesh, and then transmits the audios and videos through satellite, public network and other transmission means.

Application scenarios: emergency response in complex urban scenario such as urban fire control and rescue and public safety enforcement,etc.