

# Hytera Broadband Mesh Emergency Communication Solution

- Quick Mesh Network
- Highly Safe Network
- High Data Speed
- Integrated Command and Control
- Inter-communication; Unified Dispatching



## Network Topology

Hytera has developed an emergency communication solution which combines network transmission, dynamic broadband mesh and Hytera SmartOne (Professional Unified Communication) technologies together to: strengthen emergency communication capability; satisfy coverage requirement under emergency situations; effectively cope with voice communication and video transmission.

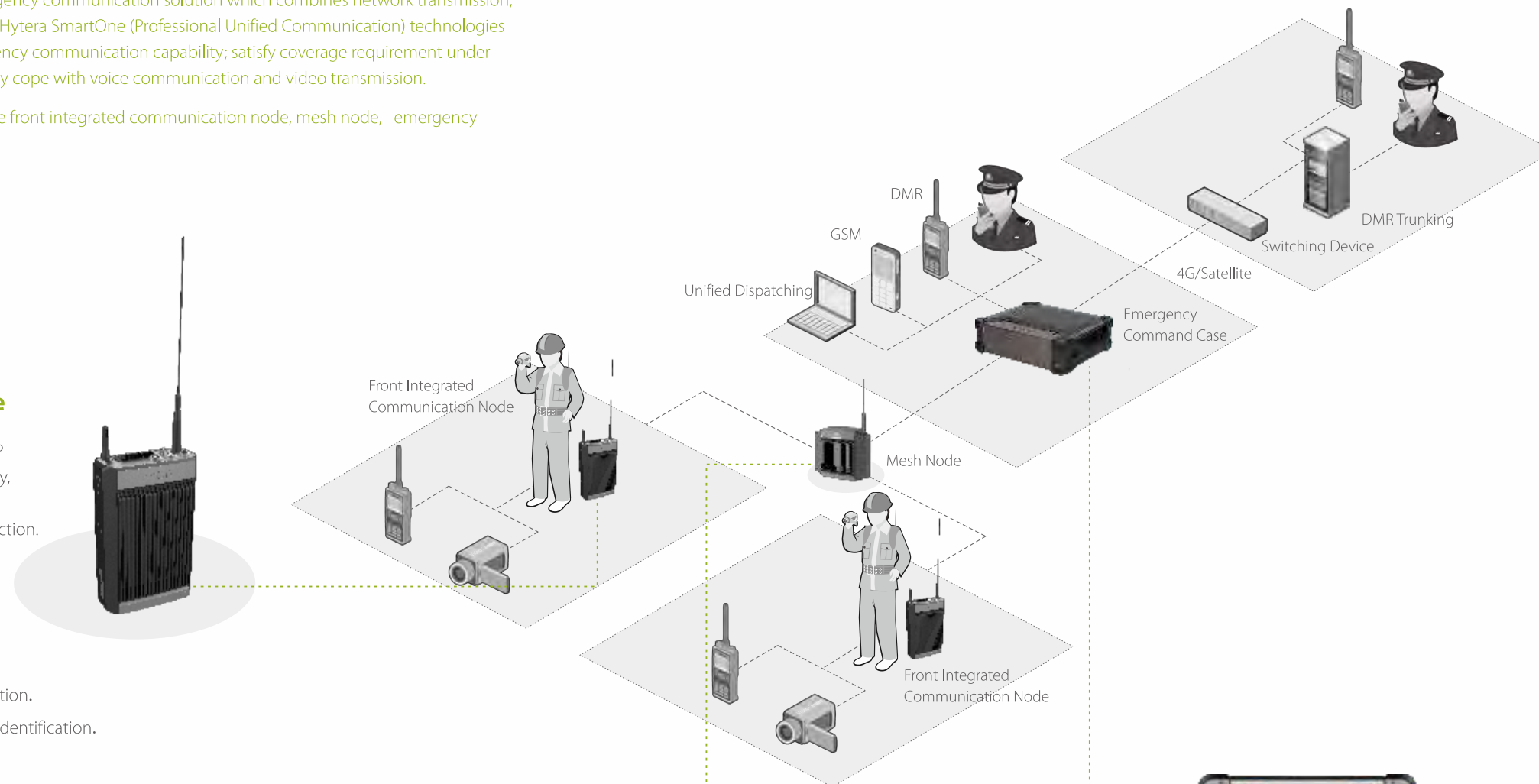
This solution is composed of the front integrated communication node, mesh node, emergency command case.

### Front Integrated Communication Node

It is comprised of a DMR Tier II IP Repeater, Mesh node and Battery, which achieves on-site voice communication and video collection.

#### Features

- Support camera connection.
- Small, light, easy to carry.
- Long life battery, easy installation.
- Analogue/Digital voice auto identification.



### Mesh Node

It is comprised of Mesh node and Battery, which provides wireless link for front integrated communication node and emergency command case.

#### Features

- Flexible deployment.
- Auto-switch to the best link.
- Maximum 20Mbps bandwidth.
- AES128 encryption.
- COFDM technology; strong resistance to multipath interference.
- 1km~20km coverage.

### Emergency Command Case

It is comprised of a DMR Tier II IP Repeater, Mesh node and Hytera SmartOne Platform, which achieves voice and video dispatching of the emergency network.

#### Features

- Robust, portable, quick deployment.
- Network control and management.
- Multi-network inter-communication.
- All network unified dispatching.
- Multi-level command and control.

### Robust, portable, quick deployment.

The emergency commanding case is robust for portability and mobility. It can be deployed quickly in emergency situations.

### Network control and management

The commanding case can configure, monitor and manage all of this emergency network's nodes. It can achieve voice communication, video surveillance and GPS positioning. It can automatically detect the network topology, dynamically update the number of current network devices, monitor network quality and equipment battery levels. The most powerful feature is that it can monitor interference signal strength and effective signal strength in the mesh network so that the working frequency or communication distance can be adjusted accordingly.

### Multi-network Inter-communication and Unified Dispatching

The commanding case can support MPT, DMR, Tetra, Conventional, satellite phones, GSM, PSTN access, and inter-communication of these different networks. The on-site commanding personnel can use a Pad or laptop to achieve unified dispatching of different networks through IP or wifi connection to the case.

### Multi-level command and control

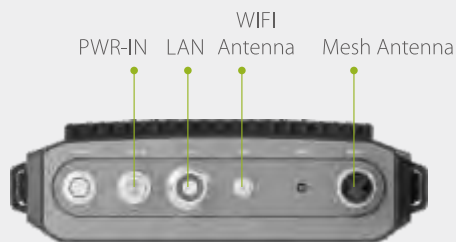
By using an LTE broadband link, the commanding case can also cooperate with a fixed command and control center to achieve unified communication for the front line terminals.

## Product Interface

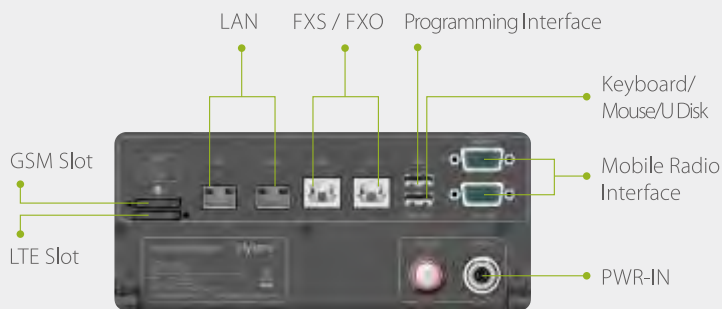
### Front Integrated Communication Node



### Mesh Node



### Emergency Command Case



## Highlights

### Quick Mesh Network

- The network is operational from Power-up with no need for configuration.
- Fast link establishment between different communication nodes.
- Supports multiple mesh nodes for voice, video and data communication.
- The connection and disconnection of each node does not affect other node communications.

### Highly Safe Network

If a node in the mesh is removed from the network for any reason, data will automatically route to another mesh node in order to guarantee link continuity.

### High Data Speed

Supports a maximum 20Mbps point to point data transmission speed, which can easily cater for Trunking voice, Conventional voice, Video, etc. simultaneously.

### Integrated Command and Control

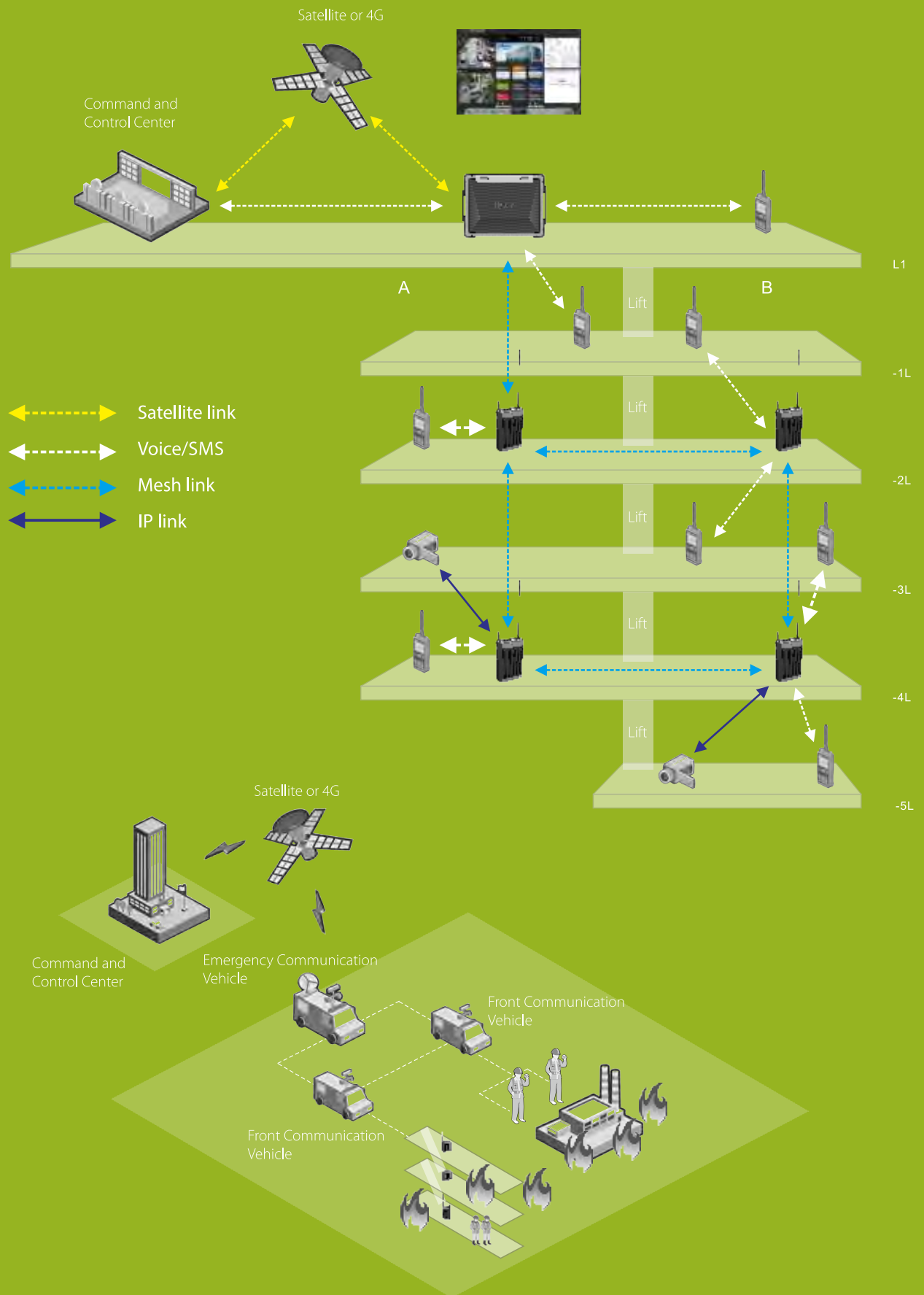
The commanding case can not only dispatch the emergency mesh network, including voice and video services, but also cooperate with the fixed command and control center through satellite or 4G.

### Inter-communication; Unified Dispatching

The commanding case integrates Hytera SmartOne platform which can realize multi-system inter-communication and unified dispatching.



# Typical Application Scenario



## Specification

Front integrated communication node	
Dimension(L * W * T)	281*206*87mm
Weight	<5kg
Link Frequency	100MHz~1.4GHz Customizable
Link Bandwidth	2MHz/5MHz/10MHz/20MHz
Tx Power	Link: 1~5W; Voice: 1~10W
Voltage	12V DC
Power Consumption	<40W
Operating Temperature	-20℃~+60℃
Storage Temperature	-40℃~+80℃
Vocoder Type	AMBE++/NVOC
Digital Protocol	ETSI DMR Tier II

Emergency Commanding Case	
Dimension(L * W * T)	426*342*115mm
Weight	<12kg
Link Frequency	100MHz~1.4GHz Customizable
Link Bandwidth	2MHz/5MHz/10MHz/20MHz
Tx Power	Link: 1~5W; Voice: 10~25W
Voltage	12V DC
Power Consumption	<140W
Operating Temperature	-20℃~+60℃
Storage Temperature	-40℃~+80℃
Vocoder Type	AMBE++/NVOC
Digital Protocol	ETSI DMR Tier II

Mesh Node	
Dimension(L*W*T)	244*206*66mm
Weight	<3kg
Frequency	100MHz~1.4GHz
Bandwidth	2MHz/5MHz/10MHz/20MHz
Tx Power	1W~5W
Modulation	COFDM
Digital Sensitivity	-93dBm@10MHz, 1.5Mbps
Transmission Distance	1km~20km
Networking Capacity	Max 16 nodes
Voltage	12V DC
Power Consumption	<20W
Operating Temperature	-20℃~+60℃
Storage Temperature	-40℃~+80℃



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