



SmartLink600

DMR Portable Ad-Hoc Repeater

SmartLink600 Ad-Hoc repeater can provide long-distance wireless service in harsh environments without relying on external network and other communication equipment.

Highlights

Light and Portable

The compact backpack design and lightweight 3.7kg (including antenna and battery) body make SmartLink600 be easily carried on the back and rapidly deployed to the front line.

Optimized RF Design

Well optimized RF circuit design renders the ad-hoc network a good wireless performance and achieves a long distance of network coverage.

High Spectrum Efficiency

The whole ad-hoc network only needs two 12.5KHz frequency points (no need to be adjacent or symmetric) to provide one channel, saving spectrum resources for customers. And radios don't need to switch channels across sites.

Flexible and Dynamic Networking

Support flexible and dynamic networking modes including: chain, star, tree and hybrid, which can be flexibly changed without modifying parameters or adjusting the layout.

Large Capacity and Replaceable Battery

Equipped with a built-in battery of 236W capacity, which can support long-term working duration. Meanwhile, SmartLink600 also has a power interface, which can be connected to an external power adapter or battery for power supply.

Mobile Ad-Hoc DMR Coverage

SmartLink600 is typically used to create a wireless mobile ad-hoc network with a maximum of 32 nodes, where there is lack of wired backhaul connection.

Standard Compliant

Comply with DMR standards, and is compatible with radios of mainstream DMR manufacturers.

Easy Configuration

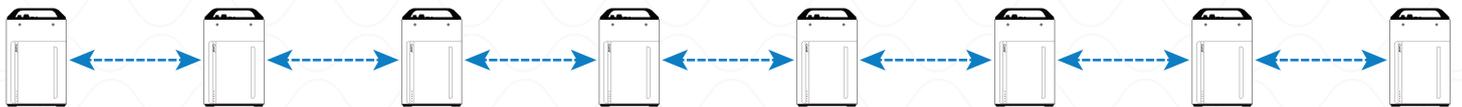
Built-in LCD and keypad make configuration and startup easy and efficient, you can quickly set the parameters of SmartLink600.

Carrier Network as Backup

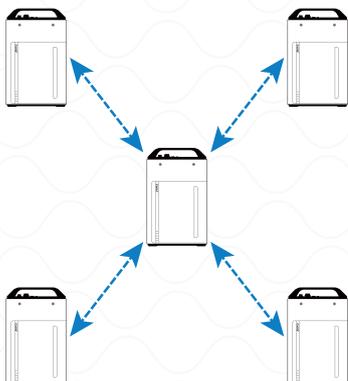
Support external accessory connection, to ensure communication be completed through 4G carrier networks in case of disconnection with other ad-hoc nodes.

Ruggedized Design and Reliable Quality

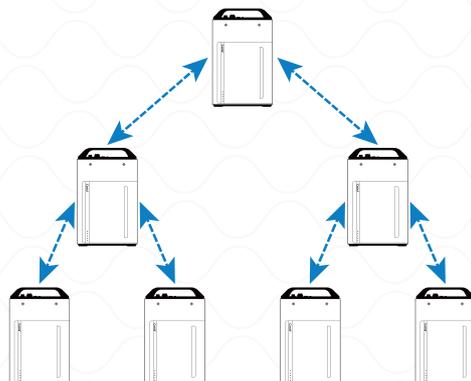
IP68 and MIL-STD-810G compliant, working temperature ranges from -40°C ~ $+60^{\circ}\text{C}$ (with chill-proof battery), meeting the requirements of all-weather complex scenarios.



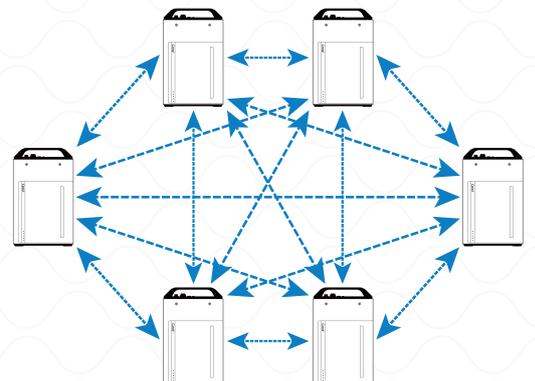
Chain Networking



Star Networking



Tree Networking



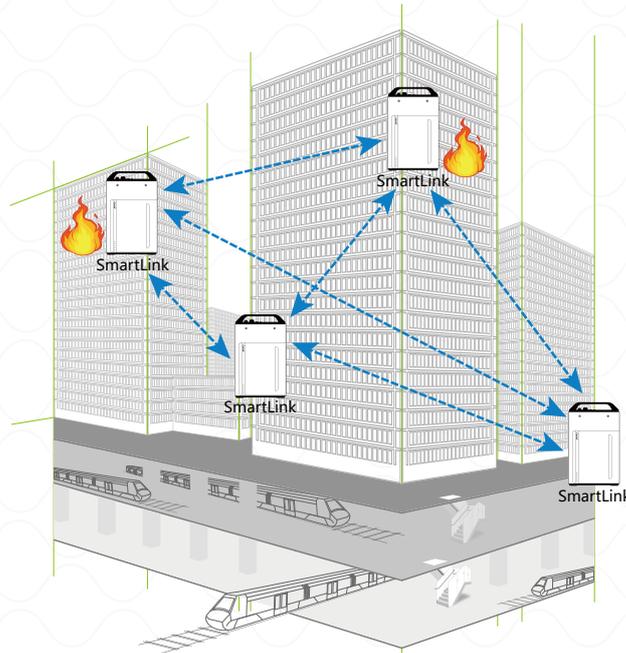
Hybrid Networking

Which Industries Need to Use SmartLink600, in What Scenarios?

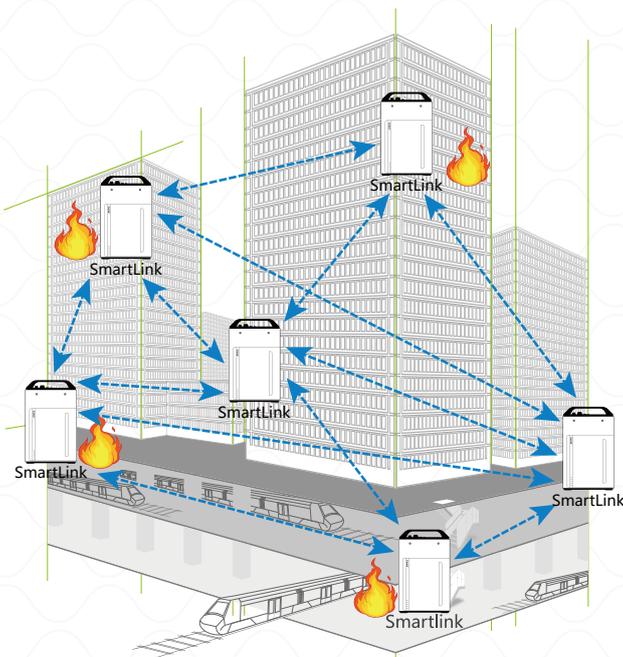
Traditional narrowband trunking or conventional networks cannot meet the needs of industries such as emergency response, forest firefighting and forestry, mainly involving the following typical scenarios:

- The network coverage area is not fixed, and usually there is an urgent need for network deployment in the target area;
- There are blind areas left by the general network, and the blind areas need to be filled by providing temporary base stations or repeaters;
- It is impossible or difficult to build a wired backhaul network to connect various sites;
- When disaster or emergency happen, the existed network is unavailable due to breakdown, congestion, etc.

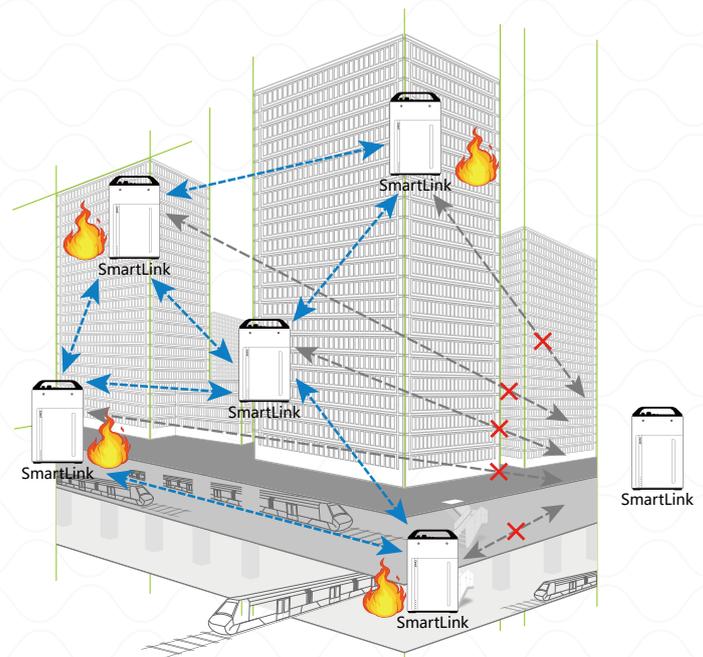
A Typical Application for Disaster Relief



In the event of a fire caused by an accident, the existed network is out of function, SmartLink600 can be quickly deployed to ensure frontline smooth communication during emergency rescue.



When the fire spreads, new SmartLink600 devices can be added to the ad-hoc network at any time. The network can be dynamically adjusted according to the location and number of SmartLink600 devices.



When some SmartLink600 devices are unavailable due to weak signal or exhausted batteries, other devices can still work normally to ensure the robustness and availability of the ad-hoc network.

Specifications

General	
Protocol	ETSI TS 102 361-1,-2,-3
Frequency	UHF3: 350-400MHz, UHF1: 400-470MHz VHF:136-174MHz
Channel Spacing	12.5kHz
Ad-Hoc Network Maximum Nodes	Up to 32 Nodes in chain mode
Size (HxWxD)	320x190x70mm
Weight	3.7Kg
Power Supply	Internal Replaceable Battery External Power Adaptor External Backup Battery
Charging	Charging with Repeater Standalone Charging
Internal Battery Capacity	236Wh @ 14.8V
Standby Current	< 0.55A
Transmission Current	10W Transmission Power < 4A 25W Transmission Power < 5A
Location	GPS
Display	2.0 inch 240x320 Color LCD 10 LED Indicator
Keypad	Functional Keypad
Audio Accessory	External Remote Speaker Microphone, Earpiece
Vocoder	AMBE++

Transmitter	
Frequency Stability	±0.5ppm
Output Power	1W - 25W
4FSK Digital Modulation	12.5kHz Data: 7K60FXD 12.5kHz Voice and Data: 7K60FXE
Conducted/Radiated Emission	-36dBm ≤1GHz, -30dBm >1GHz
Modulation Limiting	±2.5kHz @12.5kHz
Adjacent Channel Power	-60dB@12.5kHz
FM Hum and Noise	-40dB@12.5kHz
Audio Response	+1 j -3dB
Audio Distortion	≤3% (Typical)

Receiver	
Frequency Stability	±0.5ppm
Sensitivity (Digital)	0.14uV 5% BER
Intermodulation	75dB (TIA603D) 70dB (ETSI)
Adjacent Channel Selectivity	65dB@12.5 kHz TIA603D 65dB@12.5 kHz ETSI
Spurious Rejection	80dB (TIA603D) 80dB (ETSI)
Blocking or Desensitization	98dB (TIA603D) 95dB (ETSI)
Hum and Noise	-40 dB@12.5kHz
Conducted Spurious Emission	-57 dBm
Audio Response	+1 j -3dB
Audio Distortion	≤3% (Typical)

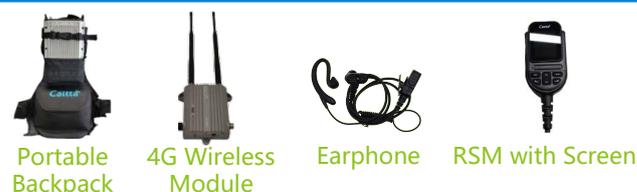
Environmental	
Operating Temperature	-30 ℃ ~ +60 ℃ (Standard Battery) -40 ℃ ~ +60 ℃ (Chill-proof battery)
Storage Temperature	-50 ℃ ~ +85 ℃
Dust and Water Resistance	IP67
Reliability	MIL-STD-810G

GPS Location	
Accuracy specs are for long-term tracking (95th percentile values>5 satellites visible at nominal -130 dBm signal strength)	
TTFF (Time To First Fix) Cold Start	<60s
TTFF (Time To First Fix) Hot Start	<10s
Horizontal Accuracy	<10m

Standard Accessories



Optional Accessories



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General Disclaimer:

The specifications in this document are in accordance with the applicable standard test. Due to the continuous technology development, Caltta may change the specifications without notice.