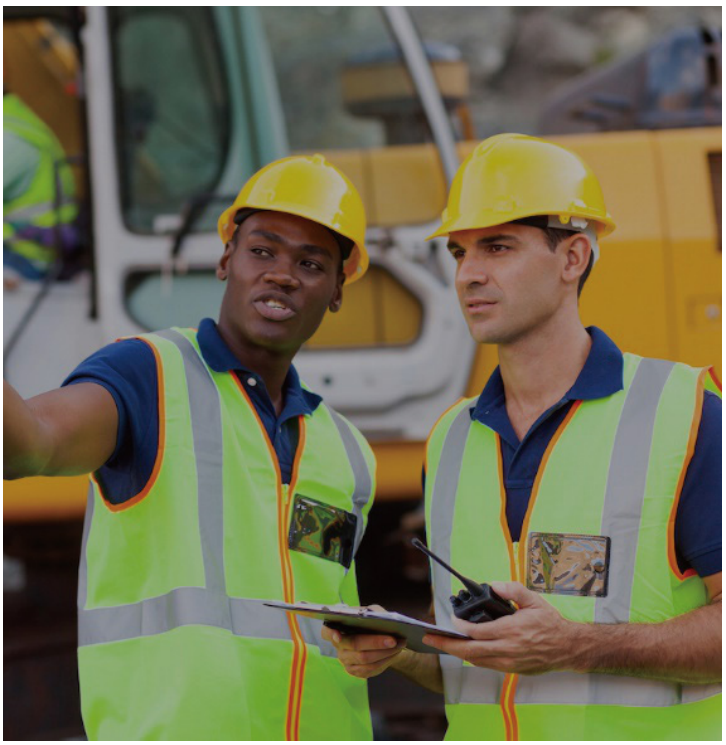
SDC (Smart Digital IP Connect) System

BelFone
Communications for Efficiency and Safety



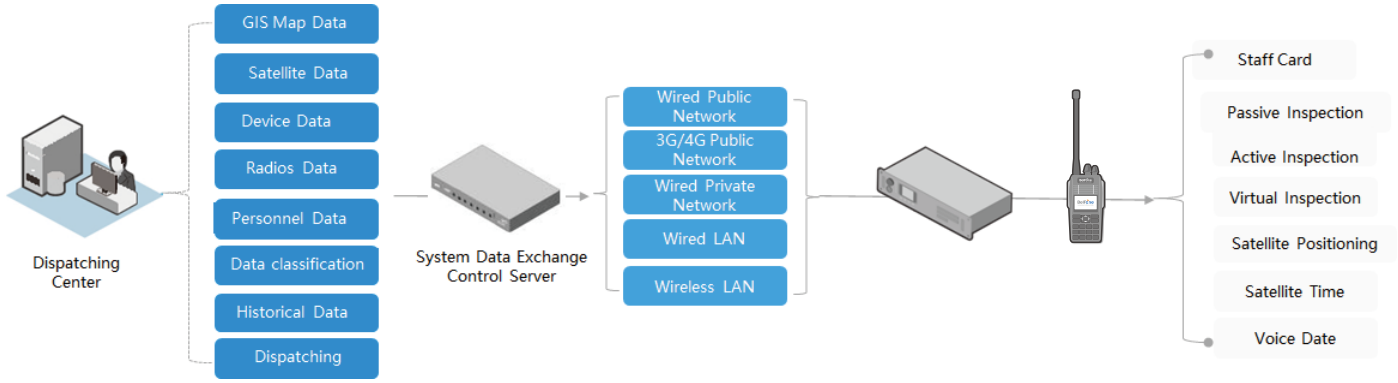
OVERVIEW

With data exchange server as the core, BF-8100 SDC intelligent IP connect system uses computer to realize integration of various data input, storage, collection, analysis and display; it meets the requirement of voice communication and intelligent management. It adopts large-area networking, supports VHF and UHF frequency bands, and meets large-scale networking requirements. What' s more, the system adopts all-IP architecture, which can be connected through wired public network, wired private network, 4G public network, wired LAN and wireless LAN to ensure cross-region wide area coverage.

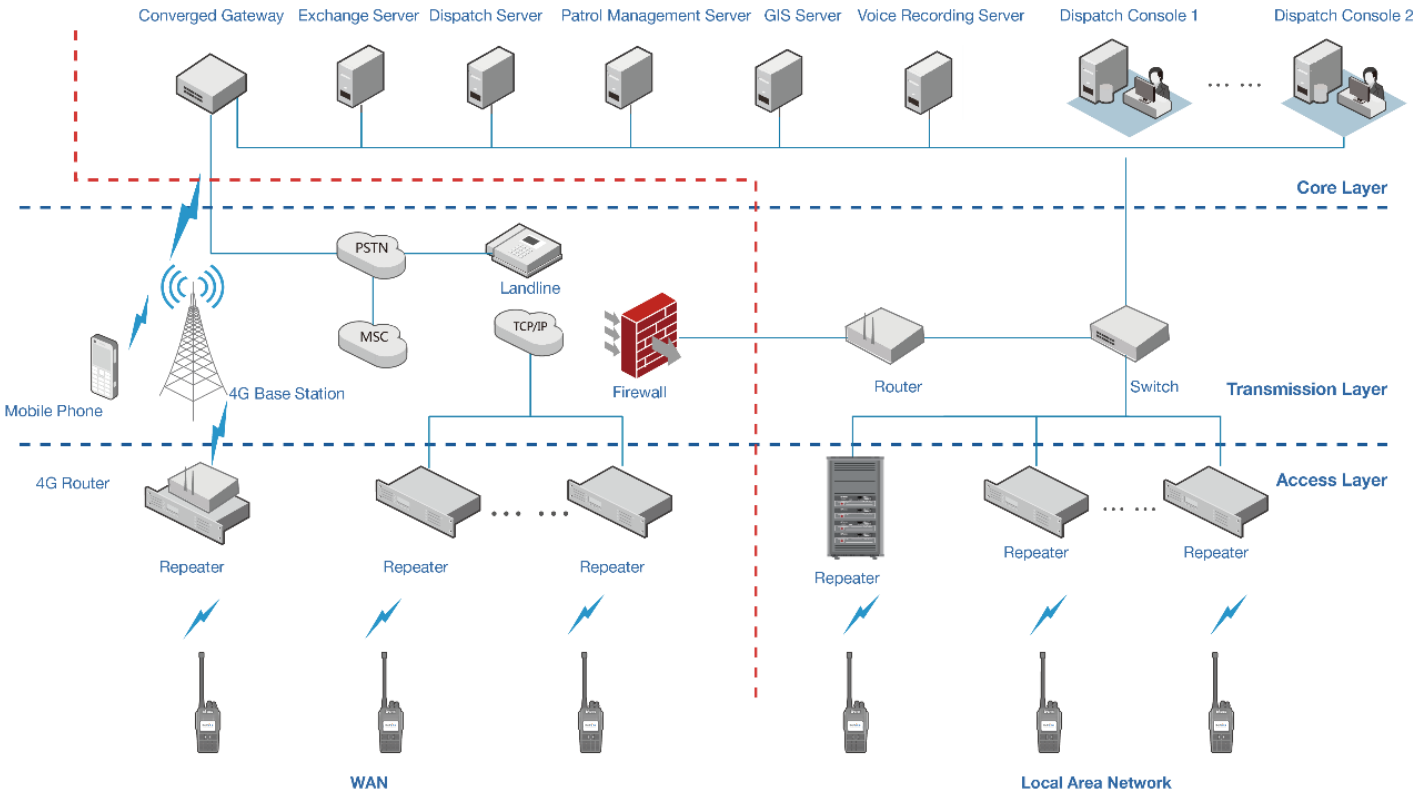
TOPOLOGY & NETWORKING

Architecture

Adopting IP architecture, the system is composed of the access layer, network layer and application layer with data exchange server, base station, data transmission network, terminal, dispatch client, etc. The system delivers abundant functions via command and dispatch software like patrol inspection, GIS, recording, personnel management, etc.



TOPOLOGY



FEATURES & BENEFITS

Large Coverage, Connect Wherever

Based on smart IP connect, SDC has coverage options without blind spots, and achieve long-distance, cross-regional communication and collaborative management to suit your needs.

Efficient Management Platform

This intelligent solution provides services with range from multiple voices, text message, centralized dispatch, GPS tracking to personnel monitoring, securi ty alarm, etc., make it easier to accomplish multiple tasks on a single purpose-built device.

- Intelligent design: Adopt B/S architecture and all-IP technology to realize intelligent IP connect.
- Cloud deployment: Deployable in the cloud, easier deployment and lower maintenance costs.
- Multi-mode positioning: High accuracy positioning; realize electronic fence, sentry fence,area of search, mobile monitoring, etc.
- Efficient interaction: Real-time, accurate and effective intelligent management; improve the management and personnel’ s work efficiency
- RFID technology: High recognition rate, fast data collection, strong reliability, accurate positioning.
- Traceability: Massive historical information, restore every monent of dispatch.

Abundant Command and Dispatch Functions

Security Service

- Online Patrol
- Lone worker
- low power alarm
- Alert message

Recording

- History Query

Data Service

- Predefined and offline message
- Data management
- Alert message

Voice Service

- Private call
- All call
- Emergency alarm call
- Whole network all call

Application

- Over-The-Air-Programming (OTAP)
- Remote control
- Remote programming
- Authentication
- Real-time monitoring: remotely control the terminal, such as monitor listening, stun & kill, switch channel, etc.

GPS Service

- GPS positioning
- Online patrol
- Electronic map
- Real-time/History Track
- Geofencing

ELEMENTS

Terminals	Repeater	Dispatcher	Server
BF-TD51X	BF-TM8250	BF-TR8500		

SDC REPEATER BF-TR8500

With sleek form factor, powerful digital feature, versatile and powerful communication experience and low power consumption, this DMR repeater is engineered for economic cost of ownership, shopping mall, logistics, airports, docks, etc. It also supports IP networking and simulcasting to delivers high reliability radio service with all the features required to connect a single site conventional system, or powerful capabilities as your needs evolve.

HIGHLIGHTS AND BENEFITS

Compact and Space-efficient Design

Standard 2U height rack mount, built-in power and duplexer(optional), it benefits for space-saving and fast deployment.

Round-the-clock Reliable Operation

Built-in features such as AC/DC power converter, battery charger which could keep working status once AC power is lost, error indication, etc.

Access to BelFone IP Connect System

It is compatible with some BelFone system architectures: BDC (conventional sites), BDS (simulcast), SDC (smart IP connect), which allows you to build applications based on actual requirements.

Rock-solid Performance

- Combined with the 50W transmit output power, this gives you clear voice quality, even in the most adverse conditions.
- Support GPS+BDS satellite positioning(optional).

SPECIFICATION

General	
Frequency Range	VHF: 136-174MHz UHF: 350-390/400-470/450-520MHz
Channel Capacity	99
Channel Spacing	12.5KHz
Antenna Impedance	50Ω
Operating Voltage	DC13.8V(±15%), negative ground AC110V/AC220V
Current	< 9A
Operating Temperature	-30℃ ~ +70℃
Storage Temperature	-40℃ ~ +85℃
Dimensions (W×H×D)	2U/19 inches
Weight	14kg
Transmitter	
RF Output Power	5-50W (continuous)
Frequency Stability	≤±0.5ppm (without GPS) ≤±0.02ppm (with GPS)
4FSK Modulation	12.5KHz (data only): 7K60FXD 12.5KHz (data and voice): 7K60FXW
Adjacent Channel Power	≤60dB
Spurious Radiation	-36dBm<1GHz -30dBm>1GHz
Vocoder	AMBE
Receiver	
Sensitivity	3%BER≤0.35μV
Frequency Stability	≤±0.5ppm (without GPS) ≤±0.2ppm (with GPS)
Adjacent Channel Selectivity	≥60dB
Intermodulation Immunity	≥70dB
Spurious Response	≥70dB
Blocking	≥95dB

BF-TD51X Enhanced Conventional Portable Radio

BelFone DMR IP67 portable radios BF-TD51X are a series of commercial radios especially designed for DMR conventional IP Connect systems, which enjoys the advantages of superior audio quality, outstanding coverage, a long-lasting battery life and-more. DMR virtual trunk and two times slots technologies greatly increase spectrum efficiency without any extra costs. Besides, TD51X strives to keep users safe by incorporating a delicate emergency alert button, and delivers revolutionary capabilities to keep the team safer and more efficient.

- DMO two-time slots to save frequency.
- DMR virtual trunking automatically choose the idle slot.
- Optional voice recording function.
- IP67 protection.
- Advanced RC4 encryption.
- Man down, lone worker, emergency alarm for personnel safety.

BF-TD510 BF-TD511 BF-TD512

BF-TD930 Enhanced Conventional Portable Radio

BF-TD930 brings versatile DMR Tier III trunking calls, advanced encryptions and other abundant features at a market price point of DMR conventional radios. This cost-effective trunking and feature-rich radio benefits users from public security to emergency response.

- Multiple working modes: DMR Tier III Trunking, DMR Conventional, Analog conventional.
- RFID reader for patrol.
- Built-in GPS to realize indoor & outdoor positioning.
- IP68 protection.
- Advanced RC4& AES256 encryption.
- Man down, lone worker, emergency alarm, covert for personnel safety.

BF-TM8250 Enhanced Conventional Mobile Radio

BF-TM8250 is compatible with the SDC and SVT system, which provides versatile voice & data services for critical communications. It comes with a large size color display, which delivers good visibility even under strong light. The five programmable buttons allow the user to access any features he needs and thus greatly facilitate ease of use. Besides a full set of digital features, the integrated remote kill/stun/revive features bring unprecedented efficiency to teamwork and radio management.

- Bright, Color LCD Display be readable in all kinds of lighting.
- DMO two-time slots and DMR virtual trunking features for better efficiency.
- SFR (Singe Frequency Repeater) feature.
- Built-in GPS for positioning(optional).
- Recording (optional).
- Automatic roaming (optional)
- Lone worker, emergency alarm, covert for personnel safety.

SPECIFICATION

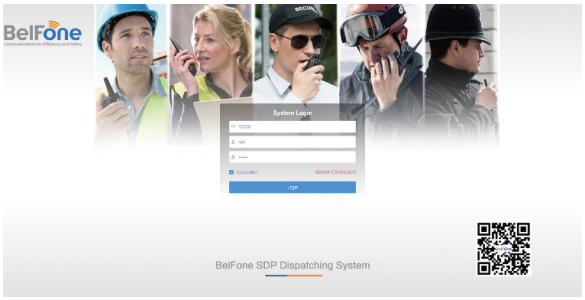
General					
Model	BF-TD510	BF-TD511	BF-TD512	BF-TD930	BF-TM8250
Frequency Range	VHF: 136-174MHZ UHF: 350-390MHz/ 400-480MHz/ 450-520MHz				
Channels	160	512	512	1024	512
Zones	32	32	32	128	32
Channel Spacing	12.5KHz/ 25KHz				
Working Voltage	DC7.4V (±20%)				DC 13.8V (±20%)
Frequency Stability	±1.5ppm			±0.5ppm	±1.5ppm
Antenna Impedance	50Ω				
Battery Capacity	2000mAh			2300mAh (3350 mAh optional)	/
Battery Average Working Time (5/5/90)	Digital 22 hours; Analog 16 hours				/
Recording	400 hours			/	/
Dimension(L*W*H mm)	60.8*35.7*118.5			56*33*129	175* 175* 63
Weigh	239g (including battery)	283g (including battery)	239g (including battery)	315g (including battery)	1448g
Transmitter					
Power Output	High power: 4.5W Low power: 1W			High power: 4W Low power: 1W	High power: 25W Low power: 10W
4FSK Modulation	12.5KHz data only: 7K60FXD 12.5KHz data and voice: 7K60FXE				
FM Modulation	12.5KHz: 8K50F3E 25KHz: 16KφF3E				
Modulation Limitation	+/- 2.5KHz @ 12.5KHz; +/- 5KHz @ 25KHz				
FM Noise	-40dB				
Spurious Emission	-36 dBm≤1GHz/-30 dBm≥1GHz				
Adjacent Channel Power	≤-60dB				
Frequency Response	+1/-3dB				
Vocoder	AMBE++				
Audio Distortion	≤3%			≤5%	≤3%
Receiver					
Digital Sensitivity	5% BER: 0.25 uV				
Analog Sensitivity	0.25 uV (12 dB SINAD)				
Intermodulation	60dB			65dB	65dB
Adjacent Channel Selectivity	60dB			60dB @ 12.5kHz 70dB @ 25kHz	60dB
Spurious Suppression	60dB			70dB	70dB
FM Noise	-40dB			40dB @ 12.5kHz 45dB @ 25kHz	-45 dB
Frequency Response	+1/-3 dB				
Audio Power	1.5W			0.5W(8Ω load)	3W
Audio Distortion	3% (typical)				
Conduction Radiation	-57dBm				
GPS Precision	Horizontal Accuracy ≤10m (with good signal)				
TTFF (first location) Cold Boot	< 1 minute(with good signal)				
TTFF (first location) Hot Boot	< 10 seconds (with good signal)				
Environmental Specifications					
Operating Temperature	-20℃~+60℃			-30℃—+70℃	-20℃—+60℃
Storage Temperature	-30℃~+85℃			-40℃—+85℃	-30℃—+70℃
Water & Dust Proof	IP67			IP68	IP54
Shock & Vibration	MIL-STD-810C/D/E/F				

SDC SERVER

As the switch and control center, SDC server not only manages the repeaters, but also provides the foundation for network management and radio terminal dispatching.

DISPATCH SYSTEM

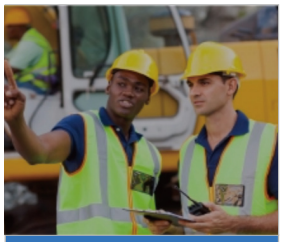
- Multi-level user dispatch management
- GIS information management
- Patrol management (optional)
- Personnel information management
- Integrated voice/SDS dispatching
- Voice recording
- Data query and statistics
- Equipment management



Load Interface

APPLICATION

Large-scale Manufacturing



Energy

Large-Scale Security

Municipal Services

Shopping Mall

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BelFone
Communications for Efficiency and Safety

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