



BR688 NEW GENERATION

Portable Digital Repeater

BR688 is the latest portable digital Repeater. The compact and exquisite design can flexibly adapt to various environments by backpack, wall-mounting, and pole mounting, etc. It has made further breakthroughs in performance, appearance and functionality, effectively guaranteeing stable and reliable communication and enhancing users cope with challenges in actual work.

-  SFR
-  AI Noise Reduction
-  IP68 Protection
-  Backup Battery
-  Super Long Battery Life
-  Advanced Encryptions*
-  Management Visualization*
-  IP Interconnection Networking*



PDT/DMR Protocol Support

BR688 is fully compatible with PDT and DMR digital handheld terminals, and supports analog, digital, and analog/digital auto-mixed operation modes, thereby providing users with greater flexibility in the selection of communication terminals.

Single-Frequency Repeater

BR688 with its single frequency repeater functions to expand communication coverage while effectively saving frequency resources, so that users can establish a same-frequency network rapidly. It not only saves frequency points but also saves terminal programming time, improving dispatching efficiency.

IP68 Protection

BR688 portable digital Repeater is made of aluminum alloy and complies with IP68 protection. Its excellent rugged design guarantees stable and outstanding performance even when exposed to harsh environments.



AI Noise Reduction

BR688 portable digital Repeater is equipped with the most advanced AI noise reduction algorithm, which can filter the background noise and upgrade the signal-to-noise ratio of audio communication. In addition, it can suppress the echo of the short-range communication, effectively reduce the howling, and minimize the interference caused by short-range communication.



IP Interconnection Networking

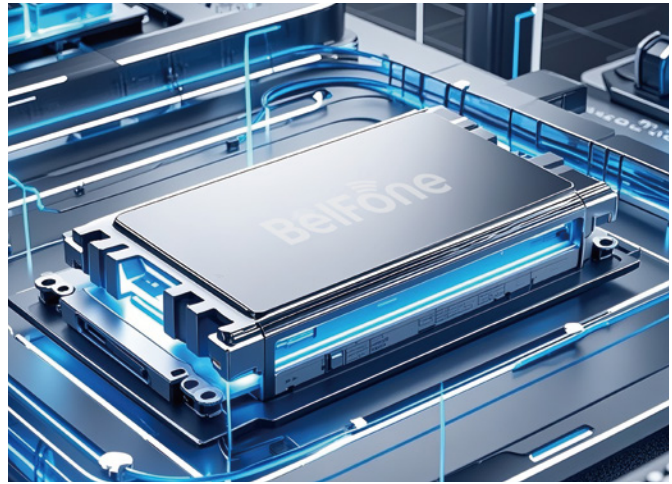
BR688's flexible IP Interconnection Networking Solution helps you easily build a powerful and cost-effective communication network. It not only supports interconnection among up to four devices for rapid and elastic expansion, but also enables hybrid networking with the full range of BelFone repeaters, achieving seamless integration of new and legacy equipment.

Simulcast

BR688 enables a leap from "single-point coverage" to "a unified area-wide network," overcoming co-channel interference in overlapping coverage zones. This effectively addresses the core pain points of traditional multi-station systems—such as spectrum scarcity, dropped calls during roaming handovers, and coverage blind spots or weak areas—delivering users consistently uniform, stable, and reliable signal quality across the entire network.

Floating Charging Mode

BR688 supports battery charging and external DC charging mode. The external DC power supply will provide the floating charging for the battery, ensuring the lithium is fully charged. If the external DC power supply is accidentally interrupted, the battery will automatically take over and provide power for the Repeater to ensure the normal operation of the equipment. This backup solution reduces the capital investment and maintenance manpower required for UPS power equipment, ensuring long-term communication reliability.



Advanced Digital Encryptions

BR688 supports XOR encryption and can optionally AES256 and ARC4 advanced encryption. Turning on the encryption function encrypts the voice and data sent on the current channel to ensure voice and data security. This improves communication security and provides privacy and information security protection.

Management and Dispatching Visualization

BR688 supports access to the Belfone Smart Digital IP Connect System (SDC). This intelligent platform integrates core functions such as voice dispatch, GIS dispatch, patrol management, data management, and personnel management, providing users with smarter communication assurance and operational applications for visual command and dispatch. (Note: SDC System needs additional deployment)

Super Long Battery Life

BR688 offers an optional 5000mAh high-capacity battery for outdoor users, delivering up to 8 hours of continuous operation even at a 10W transmit power, ensuring persistent, uninterrupted, and reliable communication.

MAIN FUNCTIONS

- BT5.0
- 5000mAh Battery Capacity
- Beidou/GPS Dual Mode Positioning
- 4G Networking
- Public Network Telephone
- 2.0-Inch Color Screen
- License Authorization
- Digital/Analog Compatible
- Common-Frequency Broadcasting

SPECIFICATION

General	
Frequency Range	VHF: 136-174MHz UHF: 350-400MHz UHF: 400-480MHz
Channel Capacity	1024
Channel Spacing	12.5KHz/25KHz
Antenna Impedance	50 Ω
Working Voltage	Mobile: DC13.8V (\pm 15%) Negative Grounding Backpack: 10.8-12.6V
Current Consumption	< 4A
Weight	Host+ Battery \leq 2.5Kg
Transmission	
Output Power	External Power Supply: 5-15W (Transmitting Continuous) Battery Power Supply: 3-10W (Transmitting Continuous)
Frequency Stability	\leq 0.5ppm
4FSK Modulation	12.5KHz(data only): 7K60FXD ; 12.5KHz(data and voice): 7K60FXW
Adjacent Channel Power	\leq -60dB
Conducted Emission	-36dBm<1GHz ; -30dBm>1GHz
Digital Voice Decoder	AMBE or NVOC (PDT only)
Receiver	
Sensitivity	3%BER \leq 0.35 μ V
Frequency Stability	\leq 0.5ppm
Adjacent Channel Selectivity	\geq 60dB
Intermodulation Immunity	\geq 65dB
Spurious Response	\geq 70dB
Blocking	\geq 90dB
Rated Audio Output Power	This device has no speaker, but can be connected to microphone
Environmental	
Operation Temperature	-30 $^{\circ}$ C~+70 $^{\circ}$ C
Storage Temperature	-40 $^{\circ}$ C~+85 $^{\circ}$ C
Waterproof& Dustproof	IP68

Note: The above specification is tested by the trial standard. Due to the continuous development of technology, the data provided are for reference only.

STANDARD ACCESSORIES



OPTIONAL ACCESSORIES



Fujian Belfone Communications Technology Co., Ltd

Add:A-15 Huaqiao Economic Development Zone, Luojiang, Quanzhou, Fujian, China

Email: overseas@belfone.com

Phone: +86 595 28396717

Fax: +86 595 22771635

Dedicated to increasing the efficiency and reliability of missioncritical communications, Belfone is always on the way to offer responsive, flexible and reliable products. For more information about our products and solutions, contact us or visit us at www.belfone.com.

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