ReliaSpeak

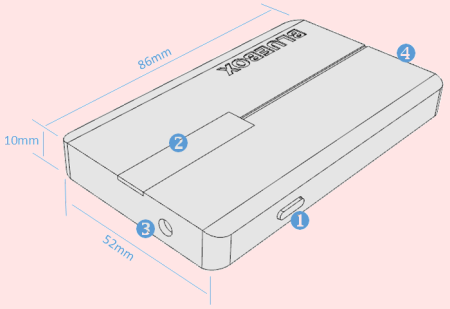
ReliaSpeak™ BLUEBOX20 Digital Encryption Headset

BLUEBOX20, based on the core technology of AMSI which is developed independently by ReliaSpeak, adopts 100% digital voice encryption technology to encrypt the voice of users, supporting GSM, UMTS and VoLTE cellular voice calls, and VoIP calls, such as WhatsApp, Skype, Facetime, Line, and etc. It can protect users' calls from being eavesdropped at any time and any place.

By connecting to the phone via Bluetooth, BLUEBOX20 can be widely used in mainstream commercial phone brands such as iPhone7/8/X, Huawei Mate20/P30 and Samsung S9/S10. It is easy to use and does not require any support from carriers or third-party service providers.

Product Features

- Adopting Bluetooth protocol version 5.0, supporting iPhone and Android smartphones.
- Supporting GSM, UMTS and VoLTE cellular encrypted calls.
- Supporting WhatsApp, Skype, Facetime, Line, and other VoIP encrypted calls.
- Supporting intercommunication with the encrypted phones and landline encryption devices of ReliaSpeak.
- End-to-end digital voice encryption, no restriction to carriers and regions.
- Simple operation, wire control, one button for call answering and encrypted/normal call switching.
- Small and lightweight design for easy carrying.



1 — power/pairing button
2 — indicator light
3 — 3.5mm headset jack
4 — Micro USB

answer: short press
hang up: long press
normal/encrypted calls : short press

Provide the Safest Privacy Protection

Currently, commercial encrypted headset products are generally applying scrambling technology. However, no matter how complicated the scrambling solution is, "the residue of speech intelligibility" will be existed. That is, there will be a speech characteristic vulnerability that can restore the scrambled voices to the original voices without cryptographic algorithm cracking. All this has been proved that commercial encrypted headset products using scrambling technology will not be secure enough for encrypted calls.

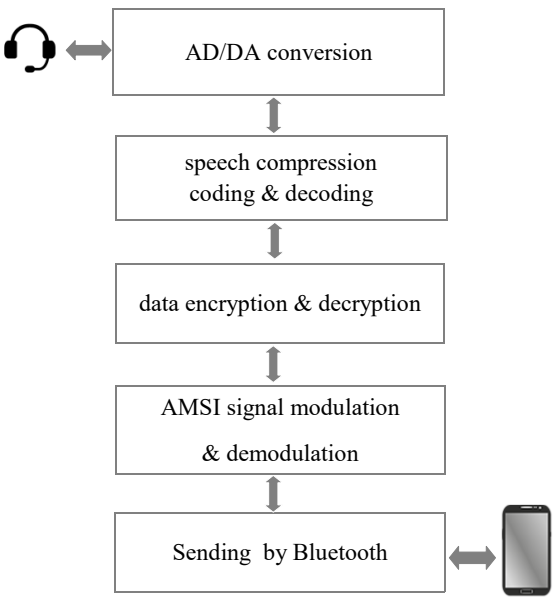
By adopting AMSI digital modulation technology, BLUEBOX20 can transmit high reliability data through voice compressed and coded channels (e.g. cellular calls, VoIP, etc.), and it's the first headset product in the world to realize end-to-end encrypted communication by using digital voice encryption technology.

The process of BLUEBOX20 is: compress and code the user's speech first, then encrypt the coded data with high-strength cryptographic algorithm, modulate the encrypted digital stream to audio signal that is similar to the sound of fax Modem and send to the phone. Therefore, there will be no any speech intelligibility residue in the voice channels during the transmission of audio signal. Eavesdroppers can only decrypt the encrypted voices by cryptographic algorithm cracking. The security level of BLUEBOX20 is totally determined by the adopted strength of cryptographic algorithm.

The cryptographic algorithm adopted by BLUEBOX20 is fully compliant with the highest commercial security standards：

- key agreement algorithm: ECDH, dynamic key negotiation
- speech cryptographic algorithm: AES256, CTR mode

BLUEBOX20 adopts voice source encryption solution. Users' voice has already been encrypted before sending to the phone devices, that can resist the risk of eavesdropping to the maximum extent, not only could prevent line eavesdropping from carriers, network, SS7, cellular interceptor, but also could prevent eavesdropping from mobile spywares, backdoors, etc.



Encrypted call process of BLUEBOX20

FAQ

Q: Which phone models are supported?

A: BLUEBOX20 supports iPhone7 or higher and most of the Android smartphone with Qualcomm 845, Kirin 970 or higher chipset.

Q: Whether BLUEBOX20 must be used in pairs?

A: Yes, both sides must use BLUEBOX20 for encrypted calls. Otherwise, one side encrypts the voice, another side can't decrypt it.

Q: Can the cellular voice encryption be used anywhere in the world?

A: Yes, but you need to select carriers who support GSM (using EFR or AMR speech coding), UMTS or VoLTE networks. BLUEBOX20 can not be used under CDMA or CDMA2000 network. In addition, for roaming and international long-distance calls, the effect of encrypted calls can not be guaranteed due to the different technical standards adopted by different carriers, as well as the possible problem caused by speech transcoding.

Q: Which VoIP applications are supported by BLUEBOX20?

A: Frankly speaking, there are too many VoIP applications to be tested one by one. Generally, VoIP applications with good voice quality can support encrypted calls. Several common VoIP applications that have been verified are listed in this document, as for other VoIP applications, need to be tested and found by yourself.

Q: Whether VoIP encrypted calls can be made anywhere in the world?

A: Yes, BLUEBOX20 could be used to make encrypted calls as long as your phone is connected to the internet and VoIP calls are in normal status. The effect of encrypted VoIP calls is related to network bandwidth, latency, and package loss rate. It is recommended to choose 4G network or 5G Wi-Fi as prior options.

Q: Why do we suggest users choose 4G network or 5G Wi-Fi for encrypted calls?

A: BLUEBOX20 connects to the mobile phone via Bluetooth. There will be signal interference if both Bluetooth and Wi-Fi use the same frequency band of 2.4GHz, resulting in loss or distortion of the modulated waveform of encrypted calls transmitted by Bluetooth, thus will cause worse sound quality. In addition, It is also found that different brands and models of mobile phones have different degrees of interference (mainly due to the differences in antenna design). In order to avoid signal interference completely, It is recommended to choose 4G network or 5G Wi-Fi as prior options.

Product Specifications

Applicable mobile phone models	iPhone7/8/X, Huawei Mate20/P30, Samsung S9/S10...
Connecting method	Bluetooth
Supported cellular network	GSM、UMTS、VoLTE
Supported speech code	GSM EFR, GSM AMR FR, AMR NB12.2, UMTS AMR WB, AMR WB24.4
Signal requirements	GSM: >-90dB; UMTS: > -90dB; LTE (VoLTE): > -100dB
VoIP applications	WhatsApp, Skype, Line, Facetime...
Speech coding rate of encrypted call	1.2kbps
Switching time from normal call to encrypted call	<10s
Music play	supported
Cryptographic algorithm	key agreement: ECDH; data cryptographic algorithm: AES256, CTR mode
Battery life	call duration: 2.5 hrs; standby time: 15 hrs
Indicator light	Power-on indication, Bluetooth connection indication, battery/charging indication, status indication of normal/encrypted call
Dimensions	86mm * 52mm * 10mm; weight: 38g
External interface	3.5mm headset jack; Micro USB interface
Charging	5V 1A DC power adapter
Package	BLUEBOX20 X 1; 3.5mm earphone X 1; USB cable X1; manual/warranty card X 1

⚠ Attention

- BLUEBOX20 is designed to protect the privacy of calls with the securest technology, so the voice quality of encrypted calls maybe not as good as normal calls.
- The voice quality of encrypted calls is mainly affected by phone speech enhancement function, signal strength of cellular network, signal purity, VoIP network bandwidth, latency, package loss rate and other factors. We couldn't guarantee a good voice quality under any condition.
- Under GSM network, BLUEBOX20 only supports EFR, AMR FR speech code. Some of carriers adopt FR or HR speech code to save line sources due to some condition limitations, which will cause poor encrypted voice quality. Therefore, it is recommended to select VoLTE or UMTS network for encrypted calls and VoIP Apps with better normal calls quality for long distance encrypted calls as prior options.

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ReliaSpeak

Reliaspeak™ Information Technology co., Ltd.
www.rlspeak.com
sales@rlspeak.com
Phone：+86 10 88334733
Fax：+86 10 62362502

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