

MP10 Working principle

The Mine Site Technologies MinePhone MP10 is a Voice over Wireless LAN (VoWLAN) phone designed for use in hazardous environments. It is an integral component in the MST ImPact Coal product suite, allowing for two way voice and text communication over underground wireless networks.

WiFi mobile phone uses the digital transmission mode and the full-duplex communication, it has character of good anti-jamming, high security, and can connect with the WiFi nets seamlessly, it can realize voice communication, short messages' sending and receiving, radio, talkback, a key alarm functions, and so on.

VoIP(Voice over IP) is just an IP telephone , it is a transmission technology that based on the IP network. It uses the packetized and digitized transmission technology of the computer communication. First , it compresses and codes the voice data, then, it packs the data according to relevant protocol, and after the packet has been send to the destination, the receiver reconstitutes the data, at last , the data is recovered to the primary voice signals after decoded and decompressed. Thus, it completes the conversation of the two ends. SIP(Session Initiation Protocol)is an application layer protocol for multimedia communication in the IP network, it is used to create、 modify and end a conversation which one or more talker attends. SIP protocol can be used to initiate a conversation, and can also be used to invite members to join in a conversation that has been built by other ways.

Wifi mobile phone RF system is made up with two parts : the RF receiver and the RF launcher , the RF receive circuit includes the received signals' filter、signal amplification 、demodulation and so on; the RF launch circuit mainly includes the speech baseband signals' modulation、 frequency conversion、 power amplifier , etc .

The launch end of the WiFi phone: it receives the mechanical signals from the microphone and converses them into analog audio signals, after de-noising and echo suppression processing, they are sent to the speech signal processing module for further processing, then, we can get the audio PCM data stream. After the sample data is processed and packed by the SIP protocol, it drives the wireless WiFi module to send the radio-frequency signal to the wireless network by electromagnetic wave.

The receive end of the WiFi phone : first, it converses the radio-frequency signal to the digital signal, after it has received the data from the wireless network, it analyses the data by SIP protocol, extracts the audio data, processes by the Audio Signal processing(D/A conversion), then it converses the digital output pulse that gotten into analog audio signal, amplifese by the audio power amplifier, and transmits the signal to the speaker of the cell phones,thus, it can be sounded by human.