COVERT WIRELESS COMMUNICATIONS

MULTI-CHANNEL DIGITAL COVERT/RELIABLE WIRELESS COMMUNICATION MODEM

Applications

- Covert encrypted wireless communication in conditions of electronic countermeasures
- Transmission and broadcasting of packet data (IPv4/v6), voice streams
- Remote reliable control of electronic devices / drones
- High speed simultaneous communication with multiple devices (MESH, Ad-Hoc)
- Providing of communication with network (LPWAN) of sensors, devices of “Internet of Things” (IoT)

Features

- Asynchronous receiving of spread spectrum signals, no need for external synchronization systems
- Transmission via parallel encrypted channels, radically complicates cryptanalysis
- Data rate 8…11 times faster than similar spread spectrum applications
- Transmission aligned with the speech codec CELP 2400/4800 (Speex)
- Simultaneous transmission and broadcast of 8x CELP4800 or 16x CELP2400 voice streams
- Simultaneous operation with 16x modems, connections schedules are not needed
- Advanced features of construction/deploying of MESH, Ad-Hoc networks
- Simultaneous operation up to 16x systems with different encryption keys in the same operational area
- Access methods: 1. Asynchronous CDMA with different access/encryption keys
  2. Synchronous CDMA, CSMA / CD-CDMA access with a single access/encryption key

Main parameters

Frequency range	110-600 MHz
Baseband	2 MHz
RF output power	-40…0 dBm
Maximum power of spectrum component	-56…-16 dBm
Spreading factor	2048/8192 (2x1024/4096)
Spread spectrum technique	Code Hopping - Direct Sequence Spread Spectrum (CH-DSSS)
Channel coding/modulation	Multichannel M-ary Biorthogonal Keying
Data rate in one channel	7680/1920 (9600/2400) bps
Multiple access	CDMA/FDMA
Quantity of CDMA channels	16
Tx/Rx division	Time Division Duplex (Half-Duplex)
Encryption technique	Polyalphabetic at the physical layer (1024 bit key defines the transmission symbols)
Consumption power	0,8 Watt

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