GSM Interceptor (WideBand)

PASSIVE MONITORING SYSTEM FOR ENCRYPTED GSM NETWORKS

GSM Interceptor (WideBand)

MULTICHANNEL SYSTEM FOR RADIOMONITORING OF SIGNALS IN GSM CELLULAR COMMUNICATION NETWORKS

THE SYSTEM CONSISTS OF:

1. Signal reception and processing unit
2. A5/1 and A5/2 deciphering unit / encryption algorithms
3. Operator's workstation based on a laptop
4. Specialized Software (SSW)
5. Omnidirectional magnet mount antenna 7dB, for GSM signal power reception (GSM 850, R-GSM 900, DCS 1800, PCS 1900)
6. Omnidirectional magnet mount antenna 3dB, for embedded GSM modem systems
7. GPS magnet mount antenna, for determining the system location
8. Antenna amplifier for directional antenna
9. Directional antenna 12 dB with bracket for mounting on a mast, for improving the quality of Low-Power Uplink signals reception
10. Power inverter 12 V / 220 V (DC/AC)
11. GSM mobile terminal with NetMonitor feature

The **GSM interceptor WB** system is intended for passive radio interception of GSM cellular communication sessions that support A5/1, A5/2 encryption algorithms.

KEY AND DISTINGUISHING FEATURES:

- Fully passive GSM interception
- Wideband multiband receiver
- Possibility of several SRPUs to operate with one A5/1 deciphering unit
- Support of diversity reception
- Possibility to record all GSM sessions coming from controlled GSM base stations
- Possibility of quick search and listening to the sessions of nearby located subscribers
- Possibility of deceleration/acceleration of playback of voice data without modifying the voice tone
- Possibility of operating in a distributed configuration that makes it possible to build branched radio monitoring networks covering large territory
- Possibility to work in continuous automatic mode without operator's intervention.

ENGINEERING CHARACTERISTICS OF THE SUBSYSTEMS:

Radio receiver:

- Supported bands: GSM 850, R-GSM 900, DCS 1800, PCS 1900;
- Quantity of duplex channels in real-time mode: 64, 128, 256, 576 channels;
- 576 channel system capable of receiving ALL duplex calls within a given LAC
- Quantity of duplex channels in delayed-time mode: 256,512,1028,2304 channels: (All time slots in each ARFCN)
- Receiving path sensitivity: -105 dBm;
- External interface: Ethernet;
- Power supply: 220V ± 10%, 50 Hz.
- SRPU Configurations Dimensions Net weight, kg
- Radius-WB-64 324x268x147 mm 8
- Radius-WB-128 with reception diversity 361x330x147 mm 9,3
- Radius-WB-256 with reception diversity 361x330x147 mm 9,6
- Radius-WB-576 3U 19'' Rack 15

A5/1 deciphering unit:

- Average performance for key calculation: from 5 to 160 keys/sec;
- External Interface: Ethernet.

Operator workstation (OWS):

- Processor: Intel Core i7 (quad-core);
- RAM: 8 Gb;
- SSD: 750 Gb.

FUNCTIONAL CAPABILITIES:

- Search and identification of Base Transceiver Station (BTS) control channel numbers of communication networks in full working frequency range;
- Collection and displaying of technical and statistical information about communication networks with detailed indication of parameters for each BTS;

- Displaying of radio frequency environment in the point of current location;
- Operational evaluation of received signal strength and quality at all receiving channels;
- Displaying of messages passing through control channels of BTSs and mobile stations;
- Selection of controlled targets with use of both constant (IMSI, IMEI, IMEISV) and temporary (TMSI) identifiers;
- Selection of targets by Classmark;
- Selection of targets by the specified range of distances from BTS;
- Support of a signaling protocol for SDCCH/8 and SDCCH/4 channel formats;
- Capability of operating both in the Realtime mode and in the Delayed mode with recording all the data received onto a disc and next session reconstructing;
- Playback of speech in real time with possibility of automatic switching to any of the assigned traffic channel;
- Viewing of text messages (SMS) and USSD;
- Decryption of A5/1 and A5/2 algorithms in real-time;
- Storing of all records in the database with possibility of multi-user remote access;
- Intercepting of direct and reverse (under sufficient signal strength) traffic channels;
- Support of HR, FR, EFR, AMR-FR, AMR-HR, AMR-WB speech codecs;
- Support of Hopping mode;
- Processing of handover of traffic channels between BTSs;
- Maintenance of data bases for all the information accumulated during system operation (voice messages, SMS, number information and service messages);
- Displaying of DTMF symbols being dialed during the call;
- Match making between a subscriber number MSISDN and a system identifier IMSI/ TMSI used by a network by active search of targets;
- Access to system functional capabilities is possible only after user authorization;
- System's software includes a separate shell that is intended for working with databases and that is capable to function independently of the hardware;
- System's software can be interfaced with Navitron geoinformation system for storing GPS information and displaying the particular objects on vector maps;
- System's software runs in Windows XP / Windows Server 2003 / Windows 7 / Windows 8 / Windows 10 environments.