



GTReS-32

(**G**SM **T**raffic **R**ecording **S**ystem)

Product Description

GTReS

(GSM Traffic Recording System)

1. Introduction

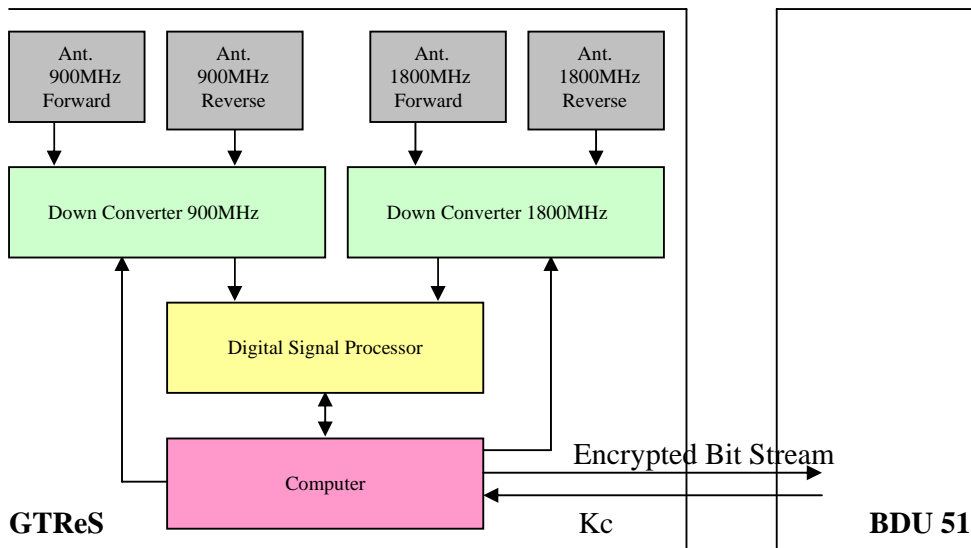
This document provides product description and technical characteristics of GTReS. It generally explains its features, capabilities, operational modes and applications.

2. System overview

GTReS consists of following parts:

1. Down Converter 900MHz 1 unit
2. Down Converter 1800 MHz 2 units
3. Digital Signal Processor 2 units
4. Computer 1 unit
5. Antennas 4 units

Functional diagram of GTReS is represented bellow:



All the components can be mounted in either industrial case 19” or in industrial lunchbox PC.

3. Operational overview

GTReS is intended to record entire traffic transmitted by BTS and GSM mobile phones located within operational range of the system. GTReS is designed to work with A5/1 deciphering machine BDU 51. GTReS sends small portion of A5/1 encrypted communication to A5/1 deciphering machine BDU 51. BDU 51 decrypts communication, finds ciphering key Kc and sends it back to GTReS. Upon receipt Kc GTReS decipheres and reconstructs previously recorded conversation. Once deciphered and reconstructed, it can be listened and recorded in the archive.

GTReS can be connected to BDU 51 either directly via USB cable or wirelessly by using any available communication means.

Operation usually begins from scanning GSM environment. GTReS detects all BTS and their characteristics in its operational range. GTReS operator then decides traffic of which BTS' and mobile phones have to be recorded. There are two operational modes of the system: Target List Mode and Random Mode. In the Target List Mode GTReS records only traffic related to the targets activities. In the random mode GTReS records entire traffic of predefined BTS'.

4. System features, Technical and Operational Characteristics

System Features:

Number receiver channels	32
Decoding voice calls	Yes
Decoding SMS messages	Yes
Decoding DTMF tones	Yes
Decoding CRI	Yes
Recording on hard disk all of bit stream and deciphered and decoded information	Yes

Technical Characteristics

Working frequency bands	900/1800 MHz
Frequency stability of each receiver	±0.03 ppm
Sensitivity of Receiver Unit	not worse than -105 dBm (signal/noise =20dB)
AGC – dynamic range	25 dB
Measurement of signal level – dynamic range	75 dB
Synchronization	Adaptive

Demodulator	GMSK
Error correction	Viterbi decoder

Operational characteristics

Total Weight	16 kg
Operating temperature range	+5° C to +45° C
Rated temperature range	+5° C to +40° C
Storage temperature range	-20° C to +60° C
Humidity	+40° C at 95% humidity
Shock	40 g shock spectrum
Vibration, sinusoidal	5 Hz to 50 Hz, 0.15 mm amplitude
Vibration, random	10 Hz to 300 Hz, 1.2 g (rms)

Power supply: 115/230V AC \pm 15%, 47 Hz to 63 Hz or 12V DC