



LAWFUL INTERCEPTION SYSTEM

TNC

Lawful interception system or system for authorized electronic monitoring enables interception of communications in the network, leaving the interception subject and his correspondents, network operators, service providers and access providers unaware that the interception is taking place.

TNC enables handover, acquisition and recording of interception results, and also their presentation in the form suitable for the current phase of investigation or law enforcement procedure.



Features

- *Full monitoring* - call contents and interception related information IRI
- *Statistical monitoring* - interception related info only
- Complies to relevant international standards and recommendations *ITU-T, ETSI, ISO, IEC ...*
- Parallel operation upto 8 independent services or agencies authorized to perform lawful interception
- Standard, generally available input/output units and data formats
- Electrical characteristics per *ITU-T Q* and *G* series
- High reliability and immunity to external influences
- Built-in self-check and diagnostic functions
- Modular internal construction enables easy expansion or reconfiguring

Applications

- Lawful interception in fixed public switched telephone network
- Lawful interception in mobile telephone network
- Lawful interception in special / private / closed network
- Law Enforcement Monitoring Facility (LEMF) as defined in ETSI recommendations

Benefits

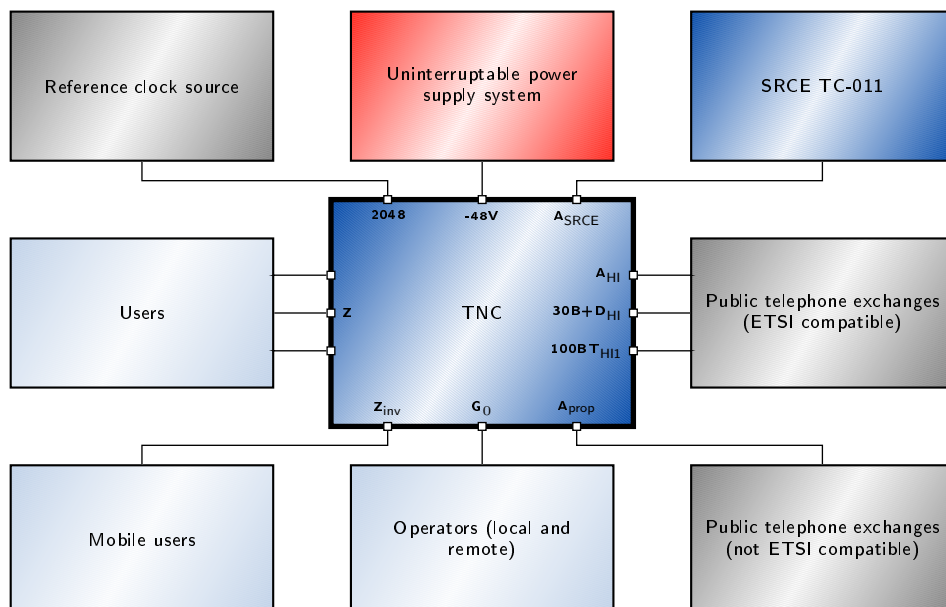
- Supports proprietary architectures and specifications not compatible with ETSI standards
- Technically unlimited number of targets
- High level of data protection, both collected and processed data, and high level of system protection
- Simultaneous independent interception of the same communication by several services or agencies
- Advanced processing of interception results through integration of third-party tools
- Fully software programmable interfaces
- Advanced and user-friendly Graphic User Interface simplifies operator work

Open *TNC* architecture is suitable for heterogeneous network that contains *ETSI* compatible exchanges, SRCE exchanges and *ETSI* incompatible exchanges. Integrated *TNC* architecture enables handover of call contents and interception related information over the same transmission media.

Lawful interception system *TNC* is a state-of-the-art, highly professional system, featuring exceptional electrical characteristics, user-friendly concept and high reliability. Thanks to many adjustable and programmable features, *TNC* easily copes with customer special requests.

System *TNC* is designed for international market and is available in english, russian and serbian language versions.

Along with other GVS products, like switching systems, uninterruptable power supply systems, test & measurement equipment and others, *TNC* offers a complete, well composed solution and forms a one-stop-shop for all telecom equipment for your telecom network node.



Technical data

Network interfaces

Compliance ITU-T G.703 E1
 Bitrate 2048 kbps \pm 50 ppm
 Line coding HDB3
 Impedance 120 Ω , twisted pair / 75 Ω , coax.
 Overvoltage protection ITU-T K.41
 SS7 level 2/3 MTP Q.701 - Q.709
 SS7 level 4 ISUP Q.761 - Q.764
 DSS1 signaling ITU-T Q.93x
 Data transmission 100BT, TCP/IP
 HI interface ETSI ES 201 671

User interfaces

Analog telephone Z, Q.55x, 64 kb/s
 Analog line Z_{inv} , Q.55x, 64 kb/s
 Overvoltage protection ITU-T K.20

System interfaces

Operation & maintenance LAN, 100BaseT
 System printer Laser A4
 Input/output units FDD, CD, DVD
 Alarm panel RS-232, RS-485
 Power supply 48 V, A - ETSI ETS 300 132-2
 Optional power supply 220/230 V_{ac}

Capacity

Analog ports 80 @ 1 E
 Acquisition channels 480 @ 1 E (16 x E1)
 Operator workplaces 100

Call contents

Interception with or without call release
 Handover HI3, ETSI ES 201 671
 Acquisition added/quasi stereo
 Monitoring real-time or VoIP
 Forwarding PCM 64 kbps or VoIP
 Audio delay < 250 μ sec
 Recording PCM16, PCM8, A/ μ , FLAC
 Playback integrated
 Basic processing integrated

Interception related information

Handover signaling channel
 Handover format HI2, ETSI ES 201 671
 Data acquisition correlating
 Monitoring real-time
 Forwarding e-mail, SMS, IM
 Recording ISO/IEC 26300, XML, ODBC
 Statistical processing integrated

Functions

Compliance ETSI TS 101 331
 Administration HI1, ETSI ES 201 671
 Intercept admin. single or group
 User administration operators, permissions
 Results presentation integrated
 Advanced processing external tools
 Results exporting generic/processed
 Export format ISO/IEC 26300, MP3, PDF

Synchronization

Functionality ITU-T G.823, Q.541
 Clock absolute accuracy 2×10^{-10}
 Temperature stability 10^{-10}

Electrical characteristics

Audio transmission G.712, G.507
 Attenuation 7 dB (-0,3 +0,7) @ 1020 Hz
 Non-linear distortion $\pm 0,5$ dB (-55 +3dB_{mo})
 Crossover attenuation >73dB @1020Hz
 Psophometric noise < -72 dB_m (400 pW)
 Non-psoph. noise < -40 dB_m (100 000 pW)
 Intermodulation <-41dB_{mo} @ 900/1020Hz
 Overload point 3,14 dB_{mo} @ 1000Hz
 EM compatibility ETSI EN 300 386

General data

Temperature range 0°C to 40°C
 Storage temperature -20°C to 60°C
 Relative humidity 0 to 90%
 Board dimensions PC AT
 Cabinet dimensions 23", 2,15 m
 Acoustic noise ETSI ETS 300 753
 Documentation CEPT T/CS 01-10E

Reliability & maintenance

Service life 40 years
 Spare parts & repair 10 years
 Fault detection automatic, 50-200 msec

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GVS ko - research, development,
 manufacturing & engineering
 company in electronics
 Product line
 High capacity digital switching systems
 Uninterruptable power supply systems
 Special purpose test & measurement equipment
 Special purpose communications equipment

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