FEATURES

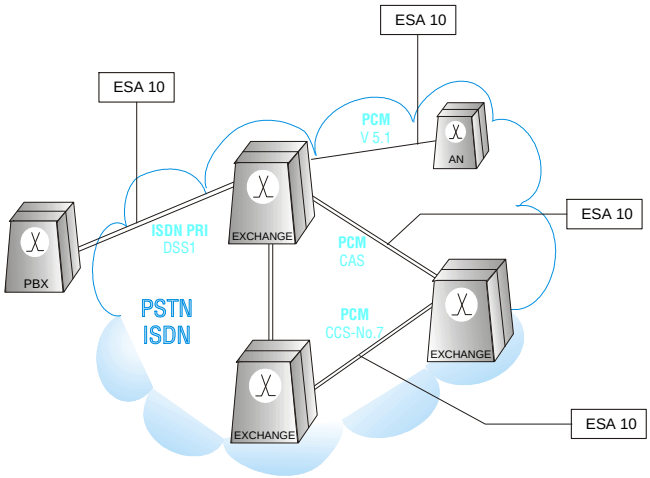
- Dual 2048 kbit/s receiver with high impedance
- Interface meets to ITU-T Rec.G.703 / G.704 / G.706 / I.431 / and ETSI ETS 300 011
- **Monitoring and analysis**
  CAS systems
  R1.5 and R2
  CCS systems
  Nº7 (SS7) ITU-T Q.7xx
  MTP (L2 L3) decoding
  ISUP, SCCP
  ISDN DSS1
  QSIG
  V.5.1 / V.5.2
- Call trace and statistics
- PC software for analysis of signalling data and control
- Voice channels monitoring through built in speaker
- External clock input
- 320 x 240 dot LCD display
- LED indicators showing settings and status of line signal
- Selectable English or Russian languages
- Internal rechargeable battery-pack
- USB interface to connect to PC

APPLICATIONS

The users of a telecommunication network expect high **quality** and reliable services. The users qualify the services with the timeframe of the services, the billing errors, failed calls, random errors, response time, and with the quality of the transmission.

The subjective parameters measured by the users can be brought into connection with the objective technical parameters (**traffic, number of successful calls, bit-error ratio** etc.), that must be checked on the elements and among the elements of the telecommunication networks during the installation and operation to ensure the high quality.

The main fields of the application:



- signalling and quality testing of PCM telephone exchanges and networks during the installation and maintenance,
- installation and maintenance testing of primary PCM interconnections (channels)
- **Interoperability analysis** of the interconnection of different type exchanges and networks
- Other digital signal processing tests.

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MEASURING MODES

Monitoring of the CAS signalling
This test is a classical signalling analysis test. The test-set is connected with a PCM trunk line which has separated signalling channel(s) of the circuit switched network at the beginning of the test. During the test the test-set analyses the electrical signals crossing the line, and records their changes (signal level, frequency, logical level etc.), and decodes and displays them in variable forms for the user.

Monitoring of the SS5 signalling
The test-set is connected with a PCM trunk line which has no separated signalling channel of the circuit switched network at the beginning of the test. During the test the test-set analyses the electrical signals crossing the trunk line, and records its changes (signal level, frequency), and decodes and displays them in the consume form for the user.

Monitoring of the CCS SS7 signalling
This test-item provides the classical CCS signalling analysis functions. The test-set is connected to a PCM trunk of the circuit switched network at the beginning of the test. During the test the test-set records the messages in the signalling channel(s) of the trunk in both directions and decodes and displays them in variable forms for the user.

Monitoring of the CCS EDSS1 signalling
This test-item provides the classical CCS signalling analysis functions. The test-set is connected to a primary ISDN interface between an exchange and a subscriber of the circuit switched network at the beginning of the test. During the test the test-set records the messages in the signalling channel of the interface in both directions and decodes and displays them in variable forms for the user.

EDSS1 emulation
The test-set substitutes an element (exchange, terminal) of the signalling network in this test-item. The receiver part of the test-set operates according to the EDSS1 MONITORING test-item, and it records and displays the received signalling messages. The test-set also answers the received signals automatically.

PROTOCOLS
CAS (R1.5, R2)
SS7
EDSS1, QSIG
V5.1/V5.2

SPECIFICATIONS

E1 interface
Electrical characteristics .....ITU-T Rec. I.431/G.703, ETS 300 011
Input
- Unbalanced ..... 75 Ω or >2 kΩ
- Connector .....BNC
- Balanced..... 120 Ω or >2 kΩ
- Connector .....RJ 45

Mode..... 75 Ω, 120 Ω, high impedance
Receiver sensitivity.....>30 dB

CLK interface
Input.....ITU-T Rec. G.703
Connector .....RJ 9

Coding law
Selection by software..... A law, µ law

General specification
Power supply
- Internal rechargeable battery pack
  - Operation time..... approx. 8 hours
  - External charger..... mains adapter
  - Charging time (fast charging mode) .....less than 3 hours

Display..... 320 x 240 dot graphic LCD with backlight
Serial interface.....USB 1.1
Ambient temperature range
- Operating ..... 0 to +50℃
- Storage and transport.....-20 to +70℃

Dimensions..... 224 x 160 x 44 mm
Weight (including battery pack) ..... approx. 1.5 kg

Ordering information
SIGNALLING ANALYSER ESA 10.....392-000-000

Including:
- Operating manual
- Mains adapter
- 2 balanced measuring cables (RJ 45 / bananas)
- 2 coaxial measuring cables
- Carrying case
- Demo program

Options:
- –SS7 protocol .....SW 392-510-000
- –EDSS1, QSIG protocols .....SW 392-520-000
- –V5.1/V5.2 protocols .....SW 392-530-000
- –PC software for analysis of signalling data and control .....SW 392-540-000
- –Analysis of CAS .....SW 392-550-000
- –Calibration Report..... CR 392-000-000E

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The Research and Development of Signalling Analyser ESA 10 have realized in Europe Plan, co-financed by European Union.

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