

## DIGITAL ACCESS PLATFORM



# LABYRINTH

## ALMAZ series

**The ALMAZ Switching and access platform** is a digital telecommunication platform for construction of exchange systems of various types. Thanks to flexible modular structure of hard-ware and soft-ware, wide range of subscriber and network interfaces and high adaptability the system can be combined with existing telecommunication networks, can develop them and still stay open to further new technologies introductions.

**The ALMAZ Switch can be utilized** in public, rural, private and dedicated networks in a variety of applications:

- private exchange with ISDN services
- local sub-exchange, supporting exchange, transit exchange
- rural exchange
- signal converter
- multiplexor
- channel generating and compression equipment
- IP-network access equipment
- Switching system with functions of call-centre and notification system.



The main elements of system architecture are switching and access modules which include in different functional blocks and units. Scalable configuration permits step-by-step system capacity extension, flexibly defines the required configuration thus creating the base for introduction of next generation telecommunication services and use of up-to-date technologies of subscriber's access. Modular platform structure and centralized systems of operation and configuration control allow for the introduction of geographically distributed networks.

High platform reliability is ensured by distributed control and switching units and redundancy of the main functional components (processing unit, power supply, bus and etc).

Connection to digital networks is effected via PRI, E1 and E2 interfaces. PCM interfaces support common channel signaling protocols (SS7, E-DSS1, QSIG) and associated channel protocols (1 ACS, 2 ACS), packet signaling protocols, decade code, R2, R1.5, caller ID.

Connection to analog networks is organized via 2- and 3-wire physical lines, 4-wire connective lines from transmitting systems without ACS signaling, 4/6/8-wire connective lines with 1 ACS, 2 ACS and E&M signaling.

Supervisor and monitor services, automatic diagnostics systems for operative search measures and packet switching of speech traffic can be introduced and performed on ALMAZ equipment. The standard system configuration can be complemented by means of radio access via DECT protocol.

**EXCLUSIVE EXPORTER:**

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**TECHNICAL CHARACTERISTICS****General characteristics**

Capacity	up to 30,000 subscribers' lines and 5,500 connective line
Performance at busy hour	1,5 million calls
Transmission characteristics	according to ITU Q.551
Unit telephone traffic at busy hour	on subscriber line 0.2 Erl on connective line 0.8 Erl
Voltage	DC 60 V, 48 V, 24 V (+/-20%), AC 220 V (+10/-15%)
Power consumption per subscriber line	0.4-0.6 Wt
Switching matrix	360/1680/6720 channels (64 Kb/s) expandable, fully accessible, without internal blocking

**Peripheral boards**

Amount of boards	peripheral 20, system 22
Amount of subscriber lines per board	analog/ISDN/system phones 15/8/30
Amount of connective lines per board	15 2-wire 6 3-wire 8 4/6/8-wire
E1 channel increment	1E1/4E1

**Analog subscriber line**

Characteristics	60 V/1,800 Ohm, overvoltage protection
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**Digital subscriber line**

ISDN BRI - 2B+D, Uko  
 system phones - 2B+D, Up

**Digital network interfaces**

transmission speed 2,048 Kb/s according to ITU G.703/704  
 interface S2M with protocols SS7, E-DSS1  
 interface E1 with protocols 1ACS, 2ACS, R2, E&M  
 transmission speed 1024 Kb/s with protocols 1ACS (PCM15)

**Analog network interfaces**

2-wire on subscriber line of automatic exchange  
 3-wire with battery signaling and caller-ID  
 4-wire from transmitting systems without ACS  
 2,600Hz, 2,100Hz  
 1,200/1,600Hz, 600/700Hz  
 4/6/8-wire E&M type

**Data transmission digital interfaces**

V.24/V.28, V.35  
 G.703/1 codirectional/contradirectional  
 Ethernet 10/100 Base-T

**IP-telephony**

Interface	Ethernet 10/100 Base-T; V.35; E1
Protocols	H.323v2; H.323v3; SIP
Compression algorithms	G.711, 723.1, 726, 729; GSM 0610, GSM MS

**Chassis**

Basic module	19", 16 or 13-slot backplane
Desk/wall mounted case	19", 6U, 500/300/300 mm
Telecommunication cabinet	19", 10U-47U, up to 2,200/800/600 mm
Cable hooking	frontal

**Environment conditions**

+5 - +40 °C, RH 20-80%