

## Alcatel-Lucent 5073 SG

### SIGNALING GATEWAY

The Alcatel-Lucent Signaling Gateway (SG) provides IP interconnectivity, circuit concentration and local routing. With its SIGTRAN-compliant M2UA, M2PA, M3UA and SUA protocols, the 5073 SG provides a full-fledged solution for signaling gateway requirements, connecting SS7 networks to next-generation networks (NGNs). The 5073 SG provides signaling gateway functions for mobile and fixed network operators migrating to 3G or NGN technology. It bridges connections between Signaling Transfer Points (STPs), switches, softswitches, databases and other next-generation signaling applications, and legacy circuit switched signaling architectures. By providing a compact, cost-effective solution for concentrating SS7 traffic for backhaul over an IP network, the 5073 SG reduces the recurring expense of leased T1 or E1 lines.



#### Features

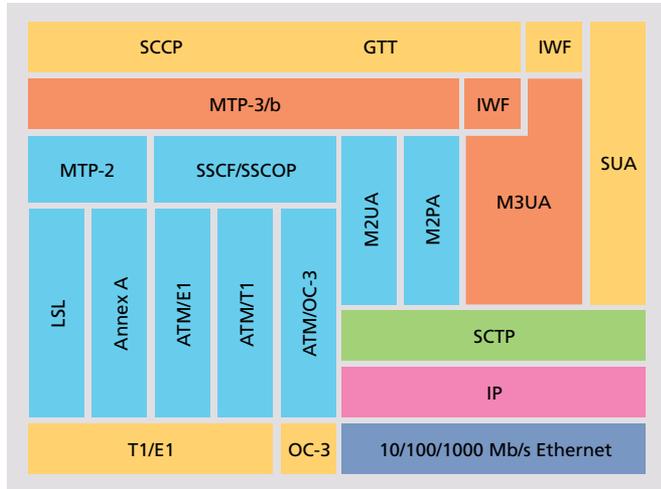
- SS7-to-SIGTRAN interworking
- SIGTRAN-to-SIGTRAN interworking (M2UA-to-M2PA, M3UA-to-M2PA, SUA-to-M2PA) for backhauling over IP networks
- Support for:
  - ATM over T1
  - ATM over E1
  - ATM over OC-3
  - T1 (DS-1)
  - E1
  - 10/100/1000 Mb/s Ethernet
- A scalable architecture supporting dozens of links in 1 to 8 rack units (RUs)
- Fault tolerance through software redundancy and active/standby management and switchover



#### Benefits

- Offers a compact, cost-effective signaling gateway
- Provides a cost-effective interface to IP networks
- Allows carriers to consolidate their SS7 network
- Provides a full suite of protocol conversion options, allowing legacy equipment to use SS7-over-IP transport
- Enables concentration of circuits, allowing carriers to gain efficiencies by loading the IP network with SS7 links
- Can be used by service providers for local routing, allowing carriers to load circuits while completing local routing at the distant end
- Allows operators to offer IP Multimedia Subsystem (IMS) network services to legacy network customers
- Provides interfaces for interworking with IP and IMS architectures

Figure 1. 5073 SG Architecture



## Technical Specifications

### Interfaces

- Low-speed SS7 links
  - 4 T1s/E1s per card
- High-speed SS7 links
  - Unchannelized E1 links (4 E1s per card)
  - ATM/T1 (4 T1s per card)
  - ATM/E1 (4 E1s per card)
  - ATM/OC-3 (2 OC-3s per card)
- SS7 over IP (SIGTRAN)
  - 10/100/1000 Mb/s Ethernet
  - M2UA RFC 3331
  - M2PA RFC 4165
  - M3UA RFC 4666
  - SUA RFC 3868
  - Stream Control Transport Protocol (SCTP) RFC 2960, 3309

### SS7 Capacity

- 256 low-speed links
- 48 high-speed links: ATM or unchannelized
- 48 T1/E1 spans
- 253 SCTP associations with up to 25 secondary IP addresses per association
- 128 SIGTRAN end points (M2UA, M2PA, M3UA or SUA peer)
- Up to 128 SS7-over-IP connections across 12 10/100/100 Mb/s Ethernet connections
- 128 link sets and 4096 route sets

- 4,096 destination point codes
- 50,000 global titles
- Up to 15,000 message signal units (MSUs)/second for each 5073 SG (bi-directional)

### Signaling Gateway

- SS7 signaling per ANSI, ITU, SIGTRAN and Telcordia standards
- Global Title Translation (GTT)
- SIGTRAN M2UA adaptation layer
- SIGTRAN M2PA adaptation layer
- SIGTRAN M3UA adaptation layer
- SCTP multihoming
- SIGTRAN SUA adaptation layer

### Signaling Applications

- TDM to M2UA
- TDM to M2PA
- TDM to M3UA
- TDM to SUA
- ATM to TDM
- ATM to M2UA
- ATM to M2PA
- ATM to M3UA
- ATM to SUA
- M2PA to M2UA
- M2PA to M3UA
- M2PA to SUA
- SCCP with GTT/TDM to SUA
- SCCP with GTT/ATM to SUA
- SCCP with GTT/M2UA to SUA
- SCCP with GTT/M2PA to SUA

### Operations Support System

- Alcatel-Lucent 1300 Convergent Network Management Center (CMC)

### Operations

- JAVA WEB client GUI interface browser with password security
- Command line interface using RS-232 local or remote workstations
- Online software upgrades through Trivial File Transfer Protocol (TFTP) with no downtime for distributed systems
- SSH or TELNET access
- Alarms, events and measurement data (statistics) through Simple Network Management Protocol (SNMP)
- Alarms are reported by autonomous traps
- Troubleshooting and debugging commands
  - ping
  - route
  - traceroute
  - ARP
  - log files for troubleshooting alarm severities

### Physical Specifications

#### Height

- 1 RU: 1.75 in. (4.4 cm)
- 2 RU: 3.46 in. (8.8 cm)
- 4 RU: 7.0 in. (17.8 cm)

#### Width

- 1 RU: 17.0 in. (43.2 cm)
- 2 RU: 17.5 in. (44.4 cm)
- 4 RU: 17.2 in. (43.7 cm)

#### Depth

- 1 RU: 13.0 in. (33.0 cm)
- 2 RU: 12.5 in. (31.7 cm)
- 4 RU: 12.5 in. (31.7 cm)
- Optional rack mounting: 19 in. (48.3 cm) or 23 in. (58.4 cm)

#### Power

- Power: -48 V DC nominal
- Typical power consumption
  - 1 RU (fully loaded High Availability [HA]): 400 W
  - 2 RU (fully loaded HA): 400 W
  - 4 RU (fully loaded HA): 500 W

#### Operating Environment

- Operating temperature: 23 F to 131 F (-5 C to +55 C)
- Relative humidity: 5% to 90%
- Storage temperature: -40 F to +158 F (-40 C to +70 C)

#### Regulatory Compliance

- NEBS 3 certified
- CE compliant
- EMC: FCC Class A
- Safety: UL 60950