

# Sonus T7000® Intelligent Switching System

The T7000® Intelligent Switching System (T7000) is a wireline and wireless switching platform that provides economical access to an extensive array of IP and circuit-based, business and residential Class 5 features. Based on the patented blade-based switch design, each blade on the T7000 performs all of the functions required of a Class 5 end-office switch.

Dedicated resources for call processing, service logic, switch fabric, media processing and signaling are performed on each blade. By minimizing common equipment, the T7000 greatly improves service margins and gives carriers pinpoint control over network costs. The T7000 is the ideal switch for operators that want to start small, leverage new technology with both packet and TDM interfaces, and grow their lines and services as needed. A fully functional system can be deployed cost-effectively with a single blade. After deployment, operators can easily address market growth by adding expansion blades to any of the remaining revenue-generating slots.

## Sonus T7000 Features

- Broadband passive midplane architecture
- Scalable distributed processing model
- Expandable switching capacity
- Resource-efficient, high-density design
- Non-blocking switch fabric
- Any-to-any interface interworking flexibility
- Fault tolerance and high availability
- Compliance with industry standards and regulations
- RUS listed

### The T7000 can utilize five types of blades:

- Packet Interface Card (PIC)
- Broadband Interface Card (BIC)
- T1 Interface Card (TIC)
- E1 Interface Card (EIC)
- Mobile Interface Card (MIC)

### The T7000 supports a wide range of access and trunking protocols, including:

- MGCP
- NCS
- SIP
- SS7
- MF
- ISDN-PRI
- GR303
- H.248



## Packet Interface Card (PIC)



The Packet Interface Card provides all voice processing, signaling, switching, call control and management needed to provide VoIP service on a T7000. The T7000 PIC card shares the same high-density, single-card, non-blocking switch architecture used by

all other T7000 cards. A T7000 equipped with a PIC can support simultaneous IP and TDM operations while performing interworking between the two, allowing complete interoperability between POTS and VoIP users. The PIC enables an industry-unique ability to allow the T7000 to emulate an IAD when subtended to an IP applications server in order to deliver enhanced features to legacy TDM (GR-303) subscribers.

### Specifications:

- Protocols: SIP, MGCP, Packet Cable NCS, and H.248
- Card Types: PIC2-400 and PIC2-2000
- Network Interfaces: 1000 base-T Ethernet RJ-45, network RTP and control port
- Switch Fabric Interface: 16,384 port double speed mode, and 8,192 port
- Echo Cancellation: G.165/G.168 2000 complaint, 32/64/128ms echo tail per channel

### CODEC Support:

- G.711
- G.729
- ILBC
- G.723, G.726, G.728
- T.38

## Broadband Interface Card



The Broadband Interface Card is a cost-effective, high-density solution for local exchange carriers and competing service providers for access and trunking connectivity.

### Specifications:

- Capacity: 84 T1s-2,016 digital ports
- 16,384 TDM time slots, and 4 TDM busses
- Network Interfaces: DS3 44.736 Mbps, ANSI T1.404, and GR499-core compliant
- Framing: M13 and C-bit parity
- Signaling: SS7, ISDN-PRI, MFR1, and DTMF

### Compliance:

- GR-499
- GR-253
- T1.105
- T1.107
- G.703
- NEBS Level III: GR-63, GR-1089
- FCC Part 15 Class A, Part 68
- EN55022A, UL1950 3rd Ed., CSA 22.2

## T1 Interface Card (TIC)



The T1 Interface Card provides cost-effective, medium-density solutions. The TIC maximizes profitability by allowing operators to only pay for the capacity they need and easily grow into larger configurations.

### Specifications:

- Capacity: 20 T1's-480 DS-0's
- 16,384 TDM time slots and 4 TDM busses
- Network Interfaces: DSX-1 (ANSI T1.101/T1.102), and ANSI T1.403
- Signaling: SS7, ISDN-PRI, and DTMF
- Framing: DS-1, D4/SF, and DS1-ESF

### Compliance:

- T1.231
- T1.403
- NEBS Level 3, GR64, and GR-1089
- FCC Part 15 Class A Part 68

## E1 Interface Card (EIC)



The E1 Interface Card provides cost-effective medium-density solutions for international applications, such as Media Gateway in ETSI environments, on a field-proven hardware

platform. The EIC provides service providers the same capacity granularity of E1's that is available on the all switch Interface Cards, maximizing service provider profitability and scalability.

### Specifications:

- Capacity: 20 E1's-640 DS0's
- 16,384 TDM time slots, and 4 TDM busses
- Signaling: ITU-ISUP

### Compliance:

- G.826

### Framing:

- FF\_E1 (default) no CRC4, CCS, turn off E bits, Si bits on
  - FF\_E1\_CRC CRC4, CCS, turn on E bits, Si bits off
  - FF\_E1\_MF no CRC4, CAS mode, turn off E bits, Si bits on
  - FF\_E1\_CRC\_MF CRC4, CAS mode, turn on E bits, Si bits off
- The line coding is either LC\_HDB3 (default) or LC\_AMI*

## Mobile Interface Card



The Mobile Interface Card provides a converged fixed and mobile network solution that enables all carriers to cost-effectively and seamlessly deliver advanced applications across any wireline and wireless network

infrastructure including GSM/CDMA, 2G, 3G, and 4G.

### Specifications:

- Protocols: GSM, CDMA, SIP, MGCP, Packet Cable NCS, and H.248
- Network Interfaces: 1000 base-T Ethernet RJ-45, Network RTP and control port
- Switch Fabric Interface: 16,384 port double speed mode, and 8,192 port backward compatible mode
- Echo Cancellation: G.165/G.168 2000 complaint, and 32/64/128ms echo tail per channel

### Compliance:

- GSM FR/HR/EFR/AMR w/VAD on
- CDMA EVRC/EVRC-B/QCELP8/QCELP13
- G.711 20/10/5ms sample rates
- G.729 20/10ms sample rates
- ILBC
- G.723, G.726, G.728

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