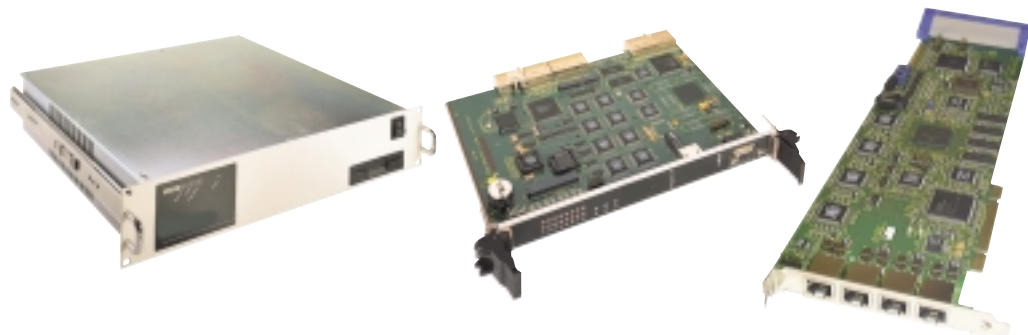




Intel® NetStructure™ Boards for SS7 Signaling



Signaling System 7 (SS7) is a packet-switched data network that forms the backbone of the international telecommunications network. Using Intel® NetStructure™ SS7 products and protocols from Intel, developers gain access to the full power and services of the core public network.

- Access an expanded customer base by network-enabling existing communications applications and making them available to network service providers
- Improve performance from a given application platform by utilizing SS7's fast call setup. This translates to less equipment required in the center office (CO), as well as lower trunking costs.
- Access premium services of the Intelligent Network (IN) by utilizing SS7's transaction capabilities
- Access premium services for mobile wireless telephony and data applications

SS7 plays an important role in both wireline and wireless networks. Intel has a complete family of SS7 products that scale from 64

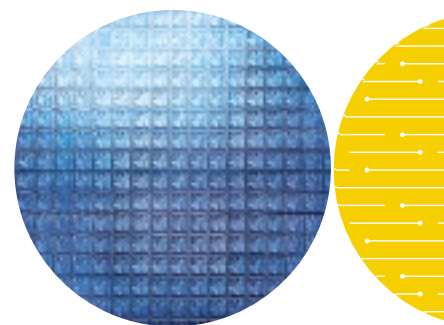
ports to over 16,000 ports. The Intel NetStructure SS7 product line consists of boards and server solutions that meet a wide variety of customer requirements. Intel offers a complete SS7 software stack that runs on these products. The following boards are part of the product line:

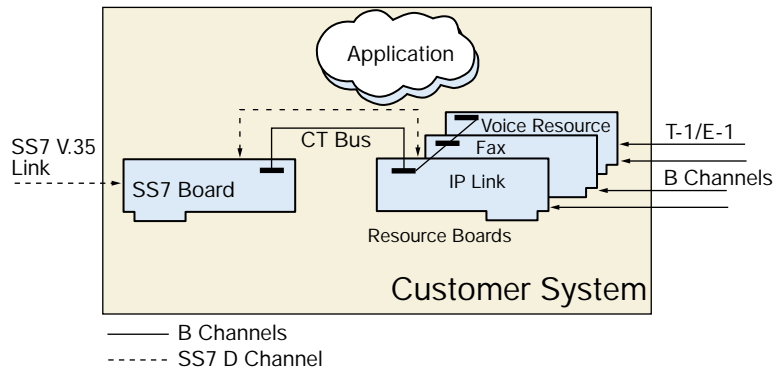
- Intel® NetStructure™ CPM8 (CompactPCI* form factor)
- Intel® NetStructure™ SPCI2S and Intel® NetStructure™ SPCI4 (PCI form factor)
- Intel® NetStructure™ PCCS6 (ISA form factor)

Applications

Up to 16 SS7 signaling boards can be installed in a single backplane. The CT Bus provides flexible routing of both bearer and signaling channels for connection to resource boards such as voice, fax, Voice over IP (VOIP), or speech boards. The flexible CT Bus routing lets SS7 channels be terminated on either the SS7 board or the resource boards.

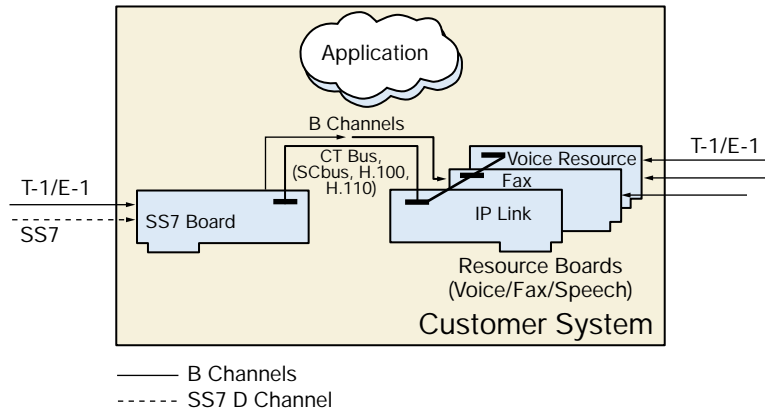
Intel in
Communications





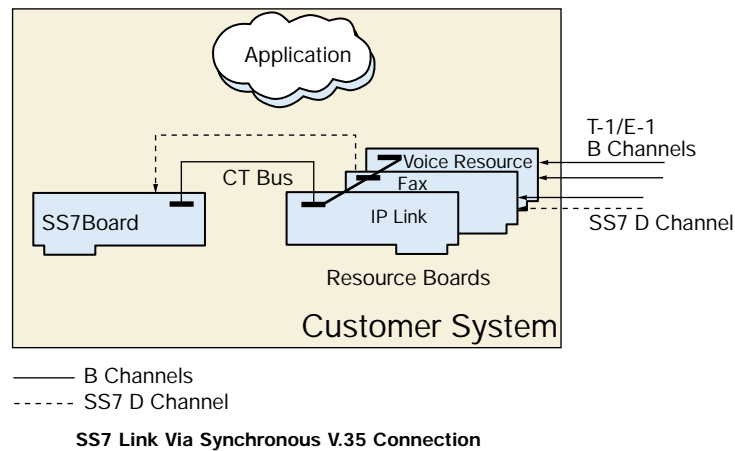
T-1/E-1 with SS7 D Channel Connected to Signaling Board

- B channels routed through SS7 signaling boards to voice resource boards via CT Bus
- SS7 T-1/E-1 managed by SS7 signaling boards
- Other T-1/E-1 channels are managed by voice boards routed to SS7 signaling board via CT Bus



SS7 Link and B Channels Enter Via Resource

- T-1/E-1 with SS7 D channel connects to voice board
- SS7 D channel routed to SS7 signaling board via CT Bus
- All T-1/E-1 channels are managed by voice boards
- All voice and data resources managed by Intel NetStructure boards



- All T-1/E-1 channels enter through and managed by Intel NetStructure boards
- SS7 link enters via V.35 port on SS7 signaling board

Functional Descriptions

Intel® NetStructure™ CPM8 (CompactPCI* Form Factor)

The Intel NetStructure CPM8 is an intelligent SS7 signaling board for use in CompactPCI systems. It combines onboard support for SS7 common channel signaling protocols and supports up to eight software programmable T-1/J-1 (1.544 Mb/s) or CEPT E-1 (2.048 Mb/s) digital line interfaces using an H.110 pulse code modulation (PCM) highway. The board also supports full hot-swap capability in compliance with PICMG standards.

A dedicated onboard processor makes performance independent of the processor load of the host CPU. Downloadable operating software enables upgrades to cope with protocol specification changes. Protocols can be selected at run time.

Since SS7 signaling is carried separately from the PCM stream in some situations, the CPM8 board also provides two V.35-compatible serial ports.

An H.110 PCM highway is provided for system integration with the complete set of Intel solutions. This local highway allows connection between CPM8 boards and a wide range of third-party voice, data, and fax boards.

A digital cross-connect switch lets voice and signaling channels be connected between the line interface, the PCM highway, and the protocol processor. Up to 240 voice channels can be dynamically routed to voice or fax boards as required.

Intel® NetStructure™ SPCI2S and SPCI4 (PCI Form Factor)

The Intel NetStructure SPCI2S and SPCI4 are PCI form factor SS7 signaling boards. They combine onboard support for SS7 common channel signaling protocols, with up to four digital line interfaces (T-1/E-1/J-1) and an H.100 PCM highway.

A dedicated onboard processor makes performance independent of the processor load of the host CPU. Downloadable operating software enables upgrades to cope with protocol specification changes. Since the protocol used is determined by the software downloaded from the host, the protocol in use can be configured at run time.

The board is available with four line interfaces, software configurable for 1.544 Mb/s (T-1/J-1) or 2.048 Mb/s CEPT (E-1) operation. The H.100 PCM highway allows connection between SPCI2S and SPCI4 boards and a wide range of third-party voice, data, and fax boards.

The SPCI2S also provides two V.35 compatible serial ports for use when SS7 signaling is carried separately from the PCM stream along with two T-1/E-1 line interfaces.

A digital cross-connect switch lets voice and signaling channels be connected between the line interface, the PCM highway, and the protocol processor. All the voice channels can be dynamically routed to voice or fax boards as required.

Intel® NetStructure™ PCCS6 (ISA Form Factor)

The Intel NetStructure PCCS6 is an intelligent SS7 signaling board for use in PC-compatible computers. It combines onboard support for SS7 common channel signaling protocols, dual digital line interfaces, and SCbus local PCM time slots, on a mezzanine bus. The board is an ISA form factor and can be purchased with options to support 64 circuits or 1024 circuits.

A dedicated onboard processor makes performance independent of the processor load of the host CPU. Downloadable operating software enables upgrades to cope with protocol specification changes. Protocols can be selected at run time.

The board is available with one- or two-line interfaces (T-1 or E-1). Since SS7 signaling is carried separately from the PCM stream in some situations, the PCCS6 board also provides an optional dual-V.35-compatible serial interface.

An SCbus PCM highway is provided for system integration with the complete set of Intel solutions. This local highway allows connection between PCCS6 boards and a wide range of third-party voice, data, and fax boards.

A digital cross-connect switch lets voice and signaling channels be connected between the line interface, the SCbus time slots, and the protocol processor.

Technical Specifications****Intel® NetStructure™ SS7 Boards**

Model Form Factor	CPM8 CompactPCI*	SPCI2S PCI	SPCI4 PCI	PCCS6 ISA
Capacity				
Physical links per unit				
T-1/E-1	8 (incl. J-1)	2 (incl. J-1)	4 (incl. J-1)	2
V.11 (V.35 compatible)	2	2	0	2 ¹ (optional)
SS7 links per board	4		4	3
Hardware				
Line interface:				
CEPT E1 (unbalanced)				
Connector				75 Ohm BNC
Bit rate				2.048 Mb/s
Line interface:				
CEPT E-1 (balanced)				
Connector	RJ-45	RJ-45	RJ-45	Rj-45
Bit rate	2.048 Mb/s	2.048 Mb/s	2.048 Mb/s	2.048 Mb/s
Line interface: T-1/J-1				
Connector	RJ-45	RJ-45	RJ-45	RJ-45
Bit rate	1.544 Mb/s	1.544 Mb/s	1.544 Mb/s	1.544 Mb/s
Line interface: Serial Electrical				
Connector	V.11 (V.35 compatible)	V.11 (V.35 compatible)		V.11 (V.35 compatible)
Bit rate	D-type (standard 15-way)	D-type (standard 15-way)		D-type (26-pin high density) ²
Bit rate	4.8 Kb/s to 64 Kb/s	4.8 Kb/s to 64 Kb/s	4.8 Kb/s to 64 Kb/s	
I/O connector accessibility	Provided through rear I/O transition module	Four RJ-45 connectors on rear bracket	Two RJ-45 and a 15-way D-type connectors on rear	
TDM bus	H.110	H.100	H.100	SCbus
Signaling interface bit rate	48 kb/s, 56 kb/s, 64 kb/s, programmable	48 kb/s, 56 kb/s, 64 kb/s, programmable	48 kb/s, 56 kb/s, 64 kb/s, programmable	48 kb/s, 56 kb/s, 64 kb/s, programmable
Time slots	Programmable	Programmable	Programmable	Programmable
Physical dimensions	6U Eurocard	PCI long card, single slot width	PCI long card, single slot width	Height: 338 mm (excluding connector edge) Length: 112 mm
Power Requirements				
+5 VDC	1 A, 1.5 A typical	2 A max.	2 A max.	1.5 A max.
+3.3 VDC	2.5 A			
Environmental				
Operating temperature	0°C to +55°C	0°C to +55°C	0°C to +55°C	+10°C to +55°C
Storage temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-20°C to +70°C
Humidity	95% noncondensing	95% noncondensing	95% noncondensing	20% to 80% noncondensing
Altitude (meters above sea level)	0 m to 3500 m	0 m to 3500 m	0 m to 3500 m	0 m to 3500 m

¹ V.35 option is a dual-port daughterboard that attaches to the PCCS6 board.² V.35 connector is a single, high-density connector. Customer-supplied cable breaks out individual ports. Alternatively, Intel can supply a break-out cable to convert from the high-density D to two 15-way D-types (DB-15).

Technical Specifications** (cont.)

Intel® NetStructure™ SS7 Boards

Model Form Factor	CPM8 CompactPCI*	SPCI2S PCI	SPCI4 PCI	PCCS6 ISAMTBF
Bellcore* Method @ 40°C	164,500 hours	203,000 hours	208,500 hours	

Safety and EMC Certifications

For specific country approval designation, see the Intel Communications Systems Products Global Product Approvals listing on the Intel Web site or contact your Intel technical sales representative.

Software

Host system requirements	Microsoft Windows* 2000, Microsoft Windows NT*, Linux*	Microsoft Windows 2000, Microsoft Windows NT, Linux*	Microsoft Windows 2000, Microsoft Windows NT, Linux*	Microsoft Windows 2000, Microsoft Windows NT, Linux*
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