

# ShoreGear IP Voice Switches



Enabling business-critical  
Unified Communications  
with high performance  
and high reliability



## BENEFITS

- *Highly scalable switch solutions to meet the needs of enterprises, and small and medium businesses*
- *99.999% system availability exceeds stringent enterprise standards*
- *Ability to span multiple locations with one enterprise IP telephony system*
- *Delivers Pure IP voice communications of exceptional quality*
- *Dramatically lower installation and ownership costs*

ShoreTel® ShoreGear® IP Voice Switches deliver Unified Communications to organizations of every size – from large enterprises to small and medium businesses. Highly reliable and intelligent, these ShoreGear devices unify communications across multiple enterprise locations, supporting both IP phones and analog devices.

### *Eliminate communication boundaries*

ShoreTel delivers breakthrough Unified Communications solutions with a single system spanning multiple locations, which dramatically simplifies employee communication and boosts customer satisfaction. Significant productivity gains can be realized, as employees spend less time interacting with the voice system and more time communicating with each other. ShoreTel's *Pure IP* telephony solutions enable effortless communication with four-digit dialing across the enterprise, and seamless transfer, conference, pick up, park and intercom between sites. Designed for growing businesses, ShoreGear allows employee extensions to be easily moved, added or changed.

ShoreTel *Pure IP* communications also reduce productivity-draining "phone tag" with the Office Anywhere feature that lets users assign their extensions to any internal or external telephone. Productivity rises and customer satisfaction increases as calling parties connect with the right people, faster.

### *Business-critical reliability*

Voice communications are the foundation of any business, demanding the utmost in system availability. ShoreGear IP voice switches exceed today's most stringent enterprise IT requirements, delivering 99.999% reliability. For maximum availability, the processors that power ShoreGear IP voice switches do not require or use mechanical disk drives, eliminating the single most common point of system failure.

ShoreGear IP voice switches use an embedded, real-time operating system and unique call control architecture, enabling them to communicate with

each other and distribute call processing in the network. Unlike other providers' solutions, servers can be disconnected from the ShoreTel IP telephony system and the switches will continue to place and receive calls.

If a ShoreGear IP voice switch supporting IP phones fails or is isolated by a network fault, the phones will automatically failover to another voice switch at the site providing complete redundancy. Second-, third- and fourth- level redundancy can be configured by simply adding additional voice switches. This "N + 1" form of redundancy is simple, cost effective and incredibly reliable.

### *Smooth migration and seamless scalability*

With eleven stackable, space-efficient designs, ShoreTel offers a wide range of solutions for organizations of any size. Growing companies simply need to add ShoreGear IP voice switches; the system scales geometrically and seamlessly. Enterprises can also migrate to IP telephony over time using the ShoreGear T1 and ShoreGear E1 options to provide tandem trunking and coordinated dialing with existing PBXs.

### *Lower total cost of ownership*

ShoreTel's exceptional ease of installation, ease of use and centralized management significantly lower ongoing maintenance and operating expenditures. New ports and users can be added by simply connecting switches to the network. ShoreWare® Director management software automatically discovers new switches and adds them to the ShoreTel IP telephony system.

### *Exceptional voice quality*

In independent rankings\*, ShoreTel consistently earns top marks for superior IP telephony call quality. ShoreTel's technology leadership in dynamic echo cancellation, jitter buffering and lost packet handling result in low latency and toll-quality voice communications.

\*"Building the Successful Virtual Workplace: VoIP Review: Products, Services, Architecture" Nemertes Research, March 2007.





## ShoreGear Voice Switches Features:

ShoreGear T1	ShoreGear 220T1	ShoreGear 220T1A	ShoreGear E1	ShoreGear 220E1
	220	220		220
		4		
-	-	-	-	-
-	-	2	-	-
-	-	4	-	-
24/23B+D	24/23B+D	24/23B+D	30B+D+F	30B+D+F
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
10,000 ports	10,000 ports	10,000 ports	10,000 ports	10,000 ports
500 switches	500 switches	500 switches	500 switches	500 switches
2	2	2	2	2
		RJ-21X		
	•	•		•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
17.16 x 1.72 x 14.28 in. 43.6 x 4.4 x 36.3 cm	8.39 x 1.69 x 14.88 in. 21.3 x 4.3 x 37.8 cm	8.39 x 1.69 x 14.88 in. 21.3 x 4.3 x 37.8 cm	17.16 x 1.72 x 14.28 in. 43.6 x 4.4 x 36.3 cm	8.39 x 1.69 x 14.88 in. 21.3 x 4.3 x 37.8 cm
8 lb / 3.6 kg	5.3 lb / 2.4 kg	5.3 lb / 2.4 kg	8 lb / 3.6 kg	5.3 lb / 2.4 kg
100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz
1A max.	1A max.	1A max.	1A max.	1A max.
18 W max.	17 W max.	17 W max.	19 W max.	17 W max.
18 W max.	17 W max.	17 W max.	19 W max.	17 W max.
0° to 50° C	0° to 50° C	0° to 50° C	0° to 50° C	0° to 50° C
0-90% non-condensing	0-90% non-condensing	0-90% non-condensing	0-90% non-condensing	0-90% non-condensing
-30° to 70° C	-30° to 70° C	-30° to 70° C	-30° to 70° C	-30° to 70° C

### Telephone Features

Call barge in  
 Call conference (6-party)  
 Call forward, busy  
 Call forward, external  
 Call forward, no answer  
 Call hold  
 Call join  
 Call park/unpark  
 Call pickup  
 Call recording  
 Call stack (1-16 calls)  
 Call redirect  
 Call transfer, blind  
 Call transfer, consultative  
 Call transfer, intercom  
 Call transfer, mailbox  
 Call waiting  
 Caller ID name  
 Caller ID number  
 Caller ID blocking  
 Directory dialing  
 Distinctive dial tone  
 E911  
 Group paging  
 Handsfree  
 Hot key pad  
 InstaDial  
 Intercom  
 Night bell  
 Message waiting  
 Missed call  
 Multiple line appearance  
 Music-on-hold  
 Operator ("0")  
 On hold reminder ring  
 Office Anywhere  
 Outbound caller ID  
 Paging  
 Redial  
 Ring tone selection  
 Speed dial  
 Silent monitoring  
 Voicemail ("##")  
 Whisper page

### Trunk types

Analog loop start  
 Analog wink start  
 T1 loop start  
 T1 wink start  
 T1 PRI  
 • NI2  
 • 4ESS  
 • 5ESS  
 • DMS 100  
 • Hong Kong Variant  
 • QSIG Basic Call  
 E1 PRI  
 • EURO-ISDN  
 • New Zealand Telecom  
 • QSIG Basic Call  
 SIP  
 • RFC 3261 - SIP  
 • RFC 2976 - SIP INFO  
 • RFC 3891 - SIP Replace  
 • RFC 3515 - SIP Refer  
 • RFC 2396 - URI  
 • RFC 2388 - DTMF

### Trunk Features

ANI  
 Automatic trunk maintenance  
 Caller ID name  
 Caller ID number  
 Centrex flash  
 Dial-in prefix  
 Dial-out prefix  
 DID  
 Digit translation  
 DNIS  
 Network call routing  
 Network/User side PRI  
 Off-system extensions  
 Tandem trunking  
 Trunk groups

### IP phone support

MGCP  
 VLAN (DHCP)  
 ToS/Diff Derv  
 UDP 5004  
 (patent pending)

### DSP features

Dynamic echo cancellation  
 Dynamic jitter buffer  
 Lost packet handling  
 Voice compression  
 • Linear  
 • G.711  
 • ADPCM  
 • G.729a

### System features

Account codes  
 Admission control  
 Backup auto-attendant  
 Bridge call appearance  
 Call permissions  
 Extension length (3-5 digits)  
 Fax redirection  
 Feature permissions  
 IP phone failover  
 Media encryption  
 Office Anywhere  
 On-net dialing (1-7 digits)  
 Power fail transfer  
 PSTN failover  
 SMDI  
 SNMP

### Hunt groups

Simultaneous hunt  
 Top down hunt  
 Single or multiple calls per extension  
 Busy out group  
 Busy out extension  
 16 extensions max. per switch  
 8 groups max. per switch  
 Call forward busy  
 Call forward no answer  
 Scheduled modes

**Note:** Caller ID and Message Waiting on analog ports use FSK signalling.

### Choices to meet every need

Providing a full range of solutions that are ideal for headquarters, regional and branch offices and small and medium businesses, ShoreTel offers:

- ShoreGear 120
- ShoreGear 90 & 90BRI
- ShoreGear 60
- ShoreGear 50
- ShoreGear 40

These switches support up to 120, 90, 60, 50 and 40 IP telephones or combinations of analog devices, respectively. A power-fail transfer port on all switches ensures dial tone during power outages.

### Digital trunk options

The ShoreGear 220T1, ShoreGear 220T1A and ShoreGear 220E1 support digital trunks combined with up to 220 IP telephones, within a 1U half-width chassis. All the switches provide an audio input port for music-on-hold, plus an audio output port for overhead paging and night bell services.

ShoreGear T1, ShoreGear 220T1 and ShoreGear 220T1A provide a T1 interface for high-density trunking to a Central Office (CO). ShoreGear T1 options support loop start, wink start or Primary Rate Interface (PRI) signaling.

ShoreGear T1 options can also function as a Voice over IP (VoIP) gateway to PBX installations – bridging the ShoreTel IP telephony system to pre-existing legacy systems and easing migration to IP telephony.

ShoreGear E1 and ShoreGear 220E1 provide an E1 interface using Euro-ISDN PRI signaling for international applications. All the ShoreGear IP voice switches include two LAN ports for redundant network connections.

### Key features and capabilities

#### Embedded call control

ShoreGear IP voice switches use VxWorks, the leading embedded, real-time operating system from Wind River® Systems, making it immune from the attacks and viruses associated with other solutions. Embedded call control gives you the assurance that your organization's communications are being delivered by the most reliable, robust platform on the market.

#### Distributed call control

Call control on the ShoreTel IP telephony system eliminates any single point of failure. In the unlikely event a ShoreGear IP voice switch fails or becomes isolated by a network fault, the other switches on the network continue to operate without being affected.

#### IP telephone failover

Site reliability can be increased by adding a single additional ShoreGear IP voice switch. If a ShoreGear IP voice switch supporting IP phones fails or is isolated by a network fault, the phones will automatically failover to the additional voice switch at the site. This "N + 1" form of redundancy is simple, cost effective and incredibly reliable.

#### Gateway failover

If a ShoreGear IP voice switch connected to the Public Switched Telephone Network (PSTN) fails or is isolated by a network fault, the system will automatically route calls through an alternative switch.

#### PSTN failover

If the Wide Area Network (WAN) is down, or if admission control for voice traffic on WAN is reached, extension-to-extension calls between sites can automatically route over the PSTN, ensuring seamless communication.

#### Ethernet port failover

ShoreGear IP voice switches feature redundant network uplinks. If the upstream network device fails, ShoreGear IP voice switches will automatically failover to the redundant link, providing continuous operation.

#### Power failover

The ShoreGear-220T1A, 120, 90, 60, 50 and 40 all feature power fail transfer. If a complete power outage exceeds the duration of the reserve power, one analog trunk on the ShoreGear IP voice switch will automatically connect to one analog telephone, providing emergency dial tone.

### About ShoreTel

ShoreTel is a leading provider of enterprise *Pure IP* telephony solutions. ShoreTel voice systems provide customers with a number of key benefits, including ease of use, manageability and lower total cost of ownership than alternative solutions. ShoreTel's distributed software architecture and switched-based hardware platform extend enterprise-class voice services to every office and outpost, keeping employees fully connected wherever they go. Founded in 1996, ShoreTel has achieved broad industry recognition for its technology and high customer satisfaction. For more information, visit [www.shoretel.com](http://www.shoretel.com) or call 1-800-425-9385.



**World Headquarters:**  
960 Stewart Drive  
Sunnyvale, CA  
94085 USA

+1 (800) 425-9385 Toll Free  
+1 (408) 331-3300 Tel  
+1 (408) 331-3333 Fax

info@shoretel.com

www.shoretel.com

**EMEA:**  
+44 800 652 8645 Tel

**Asia Pacific:**  
+61 (0)2 9959 8000 Tel