As a voice and data service provider, chances are you find yourself in a continuous race with the competition to provide customers with new services—and new opportunities.

Today’s customers expect you to deliver a rich portfolio of data and voice services, and the necessary bandwidth to meet unpredictable surges in demand. You must meet stringent QoS (quality of service) commitments for mission-critical applications by providing premium levels of availability, reliability, and responsiveness.

Market conditions require a comprehensive strategy that can meet these challenges while positioning your network for the data-centric future.

As an integral part of that strategy, Nortel Networks offers the Passport 15000 Multiservice Switch—a versatile, reliable, and scalable platform for multiservice access and transport.
What makes the Passport 15000 exceptional?

Versatility, reliability, and scalability are integral to the Nortel Networks Passport 15000 design—making it ideal for the challenges of today’s service provider networking environment.

**Versatility**
Think of the possibilities... One platform to deploy ATM, frame relay, IP, MPLS, circuit emulation, and voice. One platform to serve as a multiservice edge switch or core backbone. One platform under the control of a powerful, integrated network management system.

Passport’s versatile design also allows you to mix and match function processors to support all interface speeds from DS-0 to high-speed OC-48c/STM-16 with future evolution to OC-192/STM-64 Packet over SONET/SDH (POS). The Passport 15000 also provides the industry’s most diverse array of both physical and logical interface connectivity to address numerous networking configurations.

Passport 15000 supports intelligent standards-based ATM networking including IISP, PNNI (private network-to-network interface), and Multi-Hierarchy PNNI. These networking capabilities offer interoperability and scalability, with proven quality of service (QoS), in a dynamic networking environment. Passport 15000 protects service revenue and provides peace of mind through equipment protection, quick and accurate fault detection, robust networking features, and in-service software upgrades.

Passport 15000 offers high node availability through “hot-swappable” common equipment protection. In addition, a wide array of optional line and equipment protection redundancy schemes are available such as 1:1 (inter-card and intra-card) SONET APS/SDH M SP and 1:1 or 1:N redundancy for all electrical ATM, frame relay, and voice function processors.

Passport networking ensures cost-effective operations through intelligent features such as PNNI Edge-based Rerouting, and MPLS Hot Standby LSPs (label switched paths), which provide effective fault recovery and route optimization at all times. Passport also protects service revenue by eliminating one of the largest contributors to network and node downtime through support of hitless software migration. This support enables connections to be maintained during software upgrades.

**Scalability**
Passport 15000 lets you scale your network to support extreme growth—providing insurance against the uncertainties of the future while extending the value of today’s systems.

A single Passport 15000 multiservice shelf supports up to 40 Gbps of user capacity. Scalability can be increased through higher speed interfaces and interworking with Nortel Networks innovative OPTera Packet Core up to 19.2 terabits and beyond.
Comprehensive network management
Nortel Networks industry-leading
Preside network management and
operational efficiency tools give service
providers the power to create, imple-
ment, and manage high-value, in-
demand, and revenue-generating
applications.

With Preside Multiservice Data
Manager, service providers can take
advantage of comprehensive fault
management, simplified end-to-end
provisioning, and detailed configura-
tion management for high-quality
customer care.

Together with Management Data
Provider, Preside Multiservice Data
Manager delivers an extensive set of
data for usage billing—enabling rigor-
ous SLA reporting that enhances cus-
tomer trust.

Passport 15000 is the industry's
most versatile, reliable, and scalable
multiservice switching platform—
meeting the challenges of even the
most volatile marketplace. Its pow-
erful networking features and capa-
ibilities not only make it the ideal
choice for today, but for tomorrow,
too. It positions your business for
data-centric, next-generation
networks, simplifies your network,
reduces operational costs, and
unleashes new revenue opportunities.

Key technical specifications—services
ATM services
- SVCs, SPVPs, SPVCs, PVPs, and PVCs
- UNI 3.0, 3.1, 4.0 with interworking
  ILMI 4.0, AINI
- Point-to-multipoint (logical and spatial)
- Inverse multiplexing over ATM (IMA)
  n x DS-1/E1
- VPT (Virtual Path Termination)

ATM traffic management services
ATMF service categories (TM4.1)
- CBR, VBR (rt/nrt), UBR, ABR,
  GFR, UBR+

Shaping and UPC enhancements
- Dual leaky bucket traffic shaping
  (inverse UPC) and policing
- DGCRA, separate stats for GCRA1
  and GCRA2 UPC violations

Congestion management
- EDP/PPD/LPD, W-RED (per connect-
  ion, virtual circuits in virtual path)
- AAL5 auto detection

Advanced queuing and scheduling
- Eight quality-of-service classes per
  link/channel
- Per connection WFQ (weighted fair
  queuing) for each class

Circuit emulation services
- ATM CES 2.0 (AAL1), structured
  and unstructured
- DS-3 structured, channelized to
  the D-S-0
- DS-1, structured and unstructured
- PVCs, SVCs, and SPVCs

IP services
- IP-VPN’s for intranet service, VPN access
- IP class of service
- Routing protocols: OSPF, RIP v.1, 2,
  BGP-4
- IP-VPN over ATM or MPLS with
  CR-LDP and RSVP-TE
- IP accounting

Frame relay services
- FR UNI and NNI (FRF.1, FRF. 2)
- (ITU-T, ANSI, Frame Relay and
  Vendor Forum)
- Frame relay usage-based accounting
  and detailed statistics
- X.121 and E.164 addressing schemes
- PVC’s and SVCs
- Closed user groups (CUGs), signaled
  per DLCI and per port
- SVC call redirection and huntgroups
  (FRF.4)
- FR-ATM service and network inter-
  working (FRF.8 and FRF.5)
- Multilink Frame Relay (MLFR)
  (FRF.16)
Voice transport services
- Toll-quality, ITU-T G.711 PCM, G.726 ADPCM or G.729 A/B CS-ACELP
- Silence suppression, comfort noise generation, and dynamic downsampling
- Congestion management
- 56/64-kbps clear-channel fax and modem support
- PRI signaling support (ANSI/ETSI), CAS signaling support

Networking services
ATM networking
- IISP, PNNI, AINI
- SPVCs and SPVPs across UNI, IISP, and PNNI interfaces
- PNNI-IMA interworking

Key technical specifications—physical

Interfaces
ATM UNI/NNI interfaces
- unchannelized—IMA (nxDS-1/nxE1), DS-3/E3, OC-3c/STM-1, OC-12c/STM-4, OC-48c/STM-16
- channelized—DS-3, OC-12c/STM-4, OC-48c/STM-16

Frame relay interfaces
- DS-3, DS-3ch, STM-1ch

IP interfaces
- DS-3, DS-3ch, STM-1ch
- IP over frame relay, IP over PPP, IP over ATM

Circuit emulation and voice interfaces
- DS-3, DS-3ch, DS-3ch TDM, OC-3c/STM-1
- Structured and unstructured

Multiservice access interfaces
- Any service, any channel

Packaging
Standards compliance
- Telcordia GR-1089-CORE, GR63-CORE
- Safety: CSA C22.2 no. 950, EN 60950, UL 1950
- EMC: EN 55022/FCC Part 15B Class A
- Seismic: up to Zone 4

Dimensions
- 2125 mm x 600 mm x 600 mm (h x w x d) (83.66" x 23.62" x 23.62")
- ETI/NEBS compliant

Smart cable management—Cable management guides and trays; rear cabling for power and alarms

Power—48 V dc/-60 V dc nominal voltage

Alarm Systems—Frame- and shelf-level Major, Minor, Power, and Fan alarms

Nortel Networks supplied cabinet or standard 23" ETA rack

http://www.nortelnetworks.com

For more information, contact your Nortel Networks representative, or call 1-800-4 NORTEL or 1-800-466-7835 from anywhere in North America.

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