TelcoBridges

BEST TECHNOLOGY > BRIGHT IDEAS > CLEAR FUTURE

TB640 *System-Blade*™

Enabling Cost-Effective Carrier-Class Systems

The TB640 *System-Blade*™ employs a unique architecture that is superior to common telecom blades on the market today.

Each blade is standalone and does not require a chassis CPU – this not only reduces cost but also increases system reliability.

TB640™ blades are controlled using an asynchronous message-based API over dual redundant GigE ports. The **TelcoB**ridges™ API is host agnostic and natively supports application server redundancy and automatically switches between redundant control paths, providing you with instantaneous system-level redundancy.

Models Available

- TB640-E1/T1/J1 (up to 64 ports)
- TB-8-E1/T1/J1 (up to 8 ports)
- TB-16-E1/T1/J1 (up to 16 ports)
- TB640-DS3 (up to 3 ports)
- TB640-OC3/STM-1 (1 port)

One Blade Multiple Applications

- Ringback Tones
- Media Gateway
- Signaling Gateway
- Transcoding Gateway
- Prepaid / Postpaid Switching
- SS7 Switching
- Least Cost Routing
- Media Server
- Conferencing
- Interactive Voice Response (IVR)
- Voicemail
- Background Music

The ability to build feature-rich carrier-class systems enables even the smallest system integrator to compete in markets that were previously out of their reach. The TB640 *System-Blade*™ is the ideal building block for developing a variety of telecom applications at a fraction of the cost. Reliability, density, scalability, flexibility and redundancy are fundamental attributes of the TB640 *System-Blade*™.

Our unique architecture allows system integrators to create highly-scalable and highly-available systems with no single point of failure.

Versatile, Flexible and Fully-Featured

TDM

- Up to 64 x E1/T1/J1
- Up to 3 x DS-3
- 1 x OC3/STM-1
- SS7 HA
  - MTP2 and MTP3
  - ISUP, SCCP, TCAP
- ISDN
- CAS

VoIP

- Up to 2,304 channels
- SIP
- Complete set of VoIP codecs
- T.38 fax
- DTMF relay
- G.168, 128 ms echo cancellation
- Gigabit Ethernet

Voice Processing

- Simultaneously on all channels:
  - Play & record
  - Conferencing (132 talkers per conference, unlimited listeners)
  - Tone detection & generation

Platform

- Interconnect up to 16 blades using the TB-Multi-Blade™ non-blocking switch
- Dynamic no-reboot configuration changes
- N+1 redundancy using TB-N+1 Shelf™
- Host agnostic API
- Hot-swap
- Hot-insertion

The TB640 *System-Blade*™ provides you with a powerful building block to develop larger and more powerful systems. It supports a wide range of signaling and media processing protocols which run on the blade, thereby offloading the application server to perform other functions.

The TB640 *System-Blade*™ incorporates all the features of a system on a single blade.

Network Interfaces

- Network interfaces are individually and dynamically configured
- A-law – mu-law conversion

E1

- 8 to 64 trunks (field upgradeable)
- Framing: Double frame, CRC multi-frame, automatic detection
- Line coding: HDB3, AMI
- Line termination: 120 Ohms

T1/J1

- 8 to 64 trunks (field upgradeable)
- Framing: SF, ESF, SLC96
- Line coding: B8ZS, AMI
- Line termination: 100 Ohms

DS3

- 1, 2, or 3 interfaces (field upgradeable)
- Channelized
- Framing: M23 with/without C-bit parity
- Line coding: B3ZS
- T1 multiplexing: Up to 28 T1s per DS3 (M13 multiplexed)
- E1 multiplexing: Up to 21 E1s per DS3 (M13 multiplexed)

OC3/STM-1

- Up to 2 interfaces (one active and one standby with APS)
- Framing: STS-1, VC3/AU3
- T1 multiplexing: Up to 84xT1 into VC11/TU11 or M13 into 3 DS3s
- E1 multiplexing: Up to 63xE1 into VC12/TU12 or M13 into 3 DS3s
- Line termination options:
  - Optical MMF or SMF (short/medium/long reach), LC connectors
  - Electrical 75 Ohms mini-coax

TDM Signaling

- Signaling stacks run on the blade
- Signaling type & variant are dynamically configured per trunk

SS7 HA (20+ variants, contact us for details)

- MTP2, MTP3, ISUP, SCCP, TCAP
- Over 1,000 ISUP calls per second (~3.6M BHCC)
- Up to 64 links
- Up to 30,000 CICs

ISDN (14+ variants, contact us for details)

- Q.921 LAPD
- Q.931 ISDN PRI

CAS (multiple variants)

- R1, MFC-R2, wink start, FXS loop/ground start, FXO, Taiwan R1
- Customizable parameters

VoIP

SIP

- RFC 3261
- Runs on the blade (API control provided)

TB-VoIP Mezzanine™

- 384, 768, 1152, 1536, 1920 or 2304 channel options (G.711/20 ms)
- Codec options
  - VoIP: G.711, G.723.1, G.726, G.728, G.729ab, G.729eg, iLBC
  - Wireless: AMR, EFR, FR, EVRC, QCELP, SMV
- T.38 fax relay, G.711 clear channel fax transport
- Tone detection, generation, and relay over IP
- AGC, VAD, CNG
- Adaptive and fixed jitter buffers
- G.168-128 ms tail echo cancellation on all chan. simultaneously
- GigE network interface

IVR

- All features are simultaneously available on all channels

TB-IVR Mezzanine™

- 496, 992, 1488 or 2048 channel options
- Voice processing
  - Play and record (TB-StreamServer™ application included)
  - Voice activity detection (VAD)
  - Automatic gain control (AGC) and adjustable fixed gain
- Tone processing
  - Programmable tone generation
  - Tone detection and suppression
- Conferencing
  - Up to 132 active participants per conference
  - Unlimited number of listeners per conference
- FSK modem support: ADSI, Caller ID, fixed-line SMS

Control and Management

Control

- Asynchronous message-based API
- Application server OS: Linux, Intel/SPARC Solaris™, Windows®
- Dual redundant GigE or dual fabric PICMG 2.16 control paths
- Does not require CompactPCI CPU server blade
- Sample source code provided for most functions

Management

- Field upgradeable software and firmware
- Ethernet and serial RS-232 management interfaces
- SNMP V2 read-only

Diagnostics

- Local and remote line loopback
- Extensive tracing, debug and diagnosis tools

Scalability and High Availability

- Interconnect up to 16 blades using the TB-Multi-Blade™ switch
  - Perfectly non-blocking up to 32,768 DSOs (1,024 E1/T1/J1)
  - Redundant dual star architecture
- Implement E1/T1/J1 facility protection and TB640 *System-Blade*™ redundancy using the TB-N+1 Shelf™
- Application server redundancy (active-active or active-standby)
- Hot swap/hot insertion (PICMG 2.1 R2.0 Hot Swap specifications)

Electrical

- Less than 60 Watts nominal
- Max. current: 13.5A@3.3 VDC, 3.3A@5 VDC, <0.1A@-12 VDC

Mechanical

- CompactPCI 6U single-slot blade (PICMG 2.0, rev. 3.0)
- Packet switching backplane (PICMG 2.16, rev. 1.0)
- ECTF H.110 (PICMG 2.15, rev. 2.0), 4096 switchable timeslots

Environmental

- Operating: 0 to +50 C, 0 to 95% non-condensing relative humidity
- Storage: -20 to +75 C, 0 to 95% non-condensing relative humidity

Compliance

- Designed to meet NEBS Level 3
- EMC: FCC Part 15 (2004), subpart b, EN55022 (1998), EN61000, ENV50204 (1995)
- Safety: CE, UL60950-1:2003, first edition, CSA C22.2 No.60950-1-03, first edition April 1, 2003

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ABOUT US

TelcoBridges is clearly defining the future of enabling communications technologies. By supplying the industry's best telecom platform, **TelcoB**ridges is helping system integrators worldwide realize their bright ideas. Since 2002, **TelcoB**ridges' customers create carrier-grade telecom solutions used by the world's largest operators in more than 30 countries.

Finalist "2006 Canada Innovation Award": Development of Export Sales