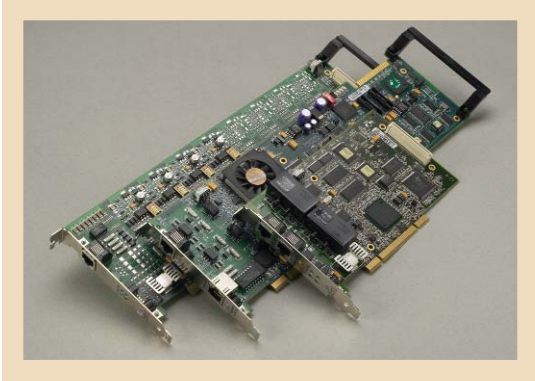


Scalable Voice Processing Platform



The Cantata Technology™ Brooktrout TR1000™ is a standards-based, board-level voice/fax processing platform specifically designed to support a broad array of speech, IVR, messaging, conferencing, and fax applications.

TR1000 models range from 2 to 120 channels per board, united under a single driver and API and featuring a comprehensive set of global signaling and protocol capabilities. With the single API design developers can run their applications across configurations without changing their software.

The TR1000 is specifically designed to address the performance, scale and robustness requirements of mission-critical systems. Optimized drivers and firmware minimize host CPU loading, freeing precious host resources for use by demanding applications. The TR1000 platform supports leading operating systems—Windows, Linux and Solaris—to address the unique requirements of specific applications and deployment environments.

The TR1000 includes quad density T1/E1 versions along with analog, ISDN basic rate interface (BRI) and single/dual T1/E1 versions allowing application vendors to streamline development, deploy broadly, and support their products cost-effectively. Analog configurations with PCI Express form factors are available now. Digital configurations will be available on a rolling schedule throughout 2007.

The TR1000 product is a full-featured TDM platform designed for performance and flexibility to offer services with an attractive growth path and return on investment for customers.

Features & Benefits

High Performance Speech Recognition Support

The TR1000 is an award-winning voice and speech processing board complete with “audio scrubbing” features that eliminate noise, silence, and echo to improve recognition accuracy and overall system performance of speech applications. The TR1000 features full-duplex play/record to allow users to “barge-in” on prompts and enhanced 32msec long-tail echo cancellation for improved recognition accuracy.

Integrates with ASR/TTS/VoiceXML and SALT Systems from Leading Vendors

The TR1000 is available as an integrated component within a growing list of third-party development tools and platforms. Applications based on third-party or standards-based APIs (such as VoiceXML and Microsoft Speech Server) can benefit from the TR1000 platform's best-of-breed media processing functionality.

Enhanced Call Control

An Enhanced Call Control interface reduces complex telephony programming to a small number of simple commands that are common to all network signaling types—analogue, ISDN and channel-associated signaling. For more complex or specialized applications, complementary low-level APIs provide comprehensive facilities for call control and signaling, performance statistics monitoring, and call management.

High and Low-level access with complete development environment

Cantata's Application Programming Interface (API) for the TR1000 provides high and low-level access to a comprehensive suite of functional components, including Media Processing, Call Control, Call Progress, Conferencing, and Operations, Administration and Maintenance (OA&M).

Robust Fax Support for Unified Voice/Fax Applications

The TR1000 is a fully functional fax platform with MMR compression and ECM to provide faster, more robust fax transmissions, EFF pass-through support for color fax and JBIG compression for advanced imaging applications.

Optimized for Streamlined Distribution and Support

The TR1000 platform integrates sophisticated DSPs, embedded microprocessors, analog, BRI or T1/E1 interfaces, and software within a common hardware and software architecture, and is specifically designed to support multiple, scalable services and a seamless migration path within the entire product family. The TR1000 is Microsoft Plug and Play compliant with a graphical installation wizard.

Specifications

HARDWARE

Analog Platform

- CPU: PowerPC 8241 @ 200MHz
- DSPs: 2 TI C5402 (123MIPS total)
- Media channels: Up to 8 voice, up to 2 V.17 fax
- Telephone interface and signaling: RJ11, Loop Start; RJ45-to-(4)RJ11 interface cable supplied.
- Physical: Full size 4.2"x12.283"
- Server Bus:
 - PCI 33 MHz PCI 2.2 (3.3/5V signaling)
 - PCIe x4 lane PCIe 1.1
- Power: 6W

BRI Platform

- CPU: PowerPC 8241 @ 200MHz
- DSP: TI C5402 (61 MIPS total)
- Media channels: Up to 4 voice, 1 V.17 fax
- Telephone interface: 1 or 2 BRI
- Signaling: ISDN BRI, Euro, Japan
- Physical: PCI 2.3 Full-size 33MHz uPCI, PCI 2.3 Fullsize 64-bit 64 MHz uPCI
- Power: 5W

T1/E1 Platform

- CPU
 - 1-2 span: PowerPC 8240 @ 200MHz
 - 3-4 span: PowerPC 8270 @ 450 MHz
- DSPs
 - 1-2 span: Up to 12 TI C549
 - 3-4 span: 3 C5541
- Network interface: Up to 4 T1/E1 interfaces (RJ48C), DSX-1 (requires CSU)
- Signaling:
 - ISDN PRI: N.A., Euro ISDN
 - T1 CAS: RBS E&M (wink and immediate)
 - E1 CAS: Configurable MFC R2 support
- Media channels: Up to 120 voice, 16 V.17 fax
- Telephony Bus: ECTF H.100
- Physical:
 - 1-2 span: PCI 2.2 Full-size 33MHz uPCI,
 - 3-4 span: PCI 2.3 Fullsize 64-bit 64MHz uPCI
- Power: 15W

VOICE PROCESSING

- 64Kbps PCM μ -law and A-law (G.711)
- 48Kbps PCM μ -law and A-law (6kHz sample rate)
- 8 Kbps PCM linear
- WAV 88Kbps PCM μ -law and A-law (11kHz sample rate)
- OKI ADPCM 24Kbps (6kHz sample rate) and 32Kbps
- 13 Kbps GSM
- G.726 compatible ADPCM 40, 32, 24 or 16Kbps
- DTMF/MF/Special Information Tone (SIT) detection
- 2 channel into 1 channel recording
- Playback volume control, pitch corrected speed control
- Silence compression
- Automatic gain control (AGC)

SPEECH RECOGNITION SUPPORT

- Full-duplex play and record supports barge-in
- Speech-aware Voice Activity Detector eliminates noise, silence and echo
- Vendor-independent Text-to-Speech support

CONFERENCING

- Up to 100 full-duplex or 4096 listen-only participants using multiple TR1000s
- DTMF detection and clamping; volume control, AGC, echo cancellation
- Coach/pupil ("whisper") conferencing

FAX

- ITU T.30; Group 3
- V.17, V.29, V.27ter, V.21 Modulation
- Up to 14.4Kbps with auto fallback
- Resolution: 100x200 through 1200x1200
- Onboard MH, MR, MMR compression
- A4, A3 and B4 Page Sizes with Scaling
- Onboard image and ASCII conversion (w/headers)
- EFF image pass-through w/T.30 holdup: Color fax T.42 (JPEG); JBIG T.85 (B/W), T.43 (color)
- Error Correction Mode (ECM)

CALL PROGRESS AND CALL CONTROL

- Q.SIG for PBX integration. Includes call diversion and call transfer support
- International call progress and tone detection
- Programmable tone and cadence detection/generation
- CED, CNG, v.21 modem detection
- ANI/DNIS DTMF and MF detection
- Same channel call transfer, Two B-channel call transfer, "hook flash" transfer, Tromboning; RLT, ECT
- Analog Caller ID

OPERATING SYSTEM SUPPORT

- Windows 2000 Server, 2003 Server and XP Professional (certified drivers for 2003 Server)
- Redhat Linux Advanced Server 3.0 & 4.0 and Enterprise Server 3.0 & 4.0
- Solaris SPARC 9 and 10 (32 and 64-bit for both versions)

DEVELOPMENT ENVIRONMENT

- Modular Brooktrout Bfv API: Media Processing; Call Control and Call Progress; Conferencing; OA&M (includes sample applications and utilities)
- Vendor-independent ASR/TTS/VoiceXML integration using Brooktrout APIs
- Proven integration with third-party development platforms from leading vendors such as Envoy, Intervoice, Nuance, Scansoft, and VoiceGenie

Needham, MA 02494
Phone: +1.781.449.4100
Fax: +1.781.449.9009
E-mail: info@cantata.com
www.cantata.com

Cantata Technology™, established in 2006 through the combination of Brooktrout Technology® and Excel Switching Corporation, provides enabling communications hardware and software that empowers the creation and delivery of anytime, anywhere IP-based communications applications. Leveraging more than 20 years of experience, Cantata offers the broadest range of products, along with a worldwide network of partners that allows service provider and enterprise customers to develop new products, introduce new services and cost-effectively transition networks to IP. Headquartered in Needham, Mass., Cantata maintains multiple locations worldwide in North America, Asia and Europe.

Cantata, Cantata Technology, Brooktrout Technology and the stylized logo with and without the term Cantata Technology are trademarks of EAS Group, Inc., the parent company of Cantata Technology, Inc., or its subsidiaries. All other trademarks mentioned in the above text are the property of their respective owners. Specifications are subject to change.

