

TXP1000

High Density Video Transcoding Cards



The **TXP1000 family** of PCIe plug-in cards are designed to provide direct offload of host CPUs for high channel density video and voice transcoding applications. The TXP1000 cards use Octasic's Vocallo MGW (DSPs) Digital Signal Processors and media processing software stack to provide an easy to use and very low power accelerator card in a PCI Express form factor. Well within the 25Watt power budget of a PCIe x1 link, the TXP1000 cards provide the highest density H.264, MPEG4, H.263 video codec, and G711, G729, AMR voice codec transcoding density per watt in the industry.

Furthermore, the standard functionality is also extended to provide video and voice quality processing features such as video packet loss concealment, scaling, mixing & keying, as well as voice echo cancellation and adaptive noise reduction.

TXP1000 cards can be used for any scalable media transcoding, web to mobile, IVVR (Interactive Voice & Video Response) and IP based voice and video telephony gateway systems. The use of an industry recognized form factor and an IP based host API and communications stack, means that TXP1000 cards can be easily added to existing systems to drastically increase channel density and efficiency.

FEATURES

- Channel density scalability:
 - 67 – 335 video channels
 - 484 – 2420 voice channels
- Octasic's low power Vocallo MGW processors
- Wide range of media processing functionality: all common video & voice codecs are provided and are supported by a library of signal quality enhancement algorithms
- IP based host API for real time data and control plane processing

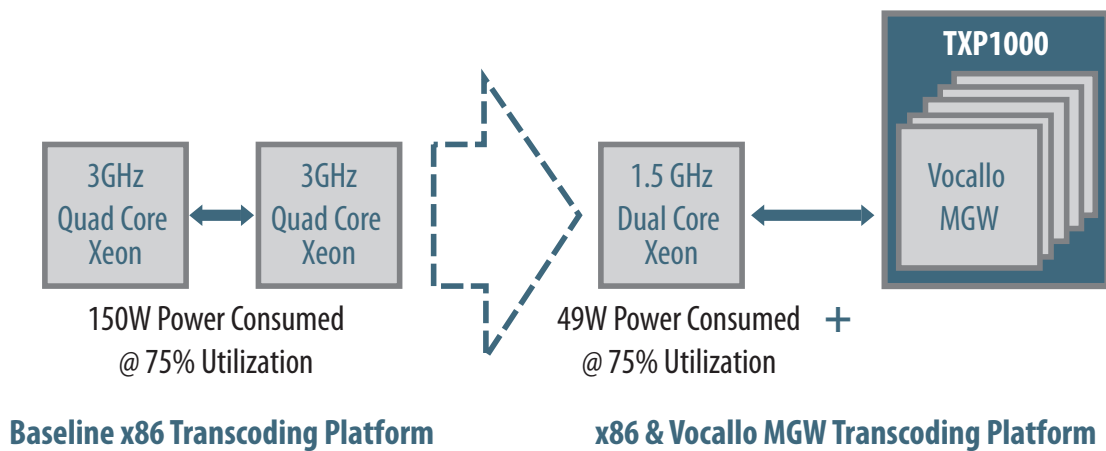
BENEFITS

- Allows TXP1000 customers to easily scale solutions within a given system footprint and achieve very high channel densities
- Enables systems to scale without being restricted by difficult to manage increases in power consumption and heat dissipation
- Ensures that systems using TXP1000 cards deliver the all common video & voice formats whilst maintaining the highest levels of signal quality
- Simplifies new system development and upgrades to existing systems using either direct offload or bump-in-the wire topologies



Technology Overview

TXP1000 cards are built using Octasic's award winning Vocallo MGW multi-core DSP. Vocallo MGW is based on an array of Octasic's Opus DSP cores; a unique asynchronous architecture that provides the highest levels of performance per watt in the industry. For high channel density transcoding applications that are based on standard x86 architectures, power and efficiency soon become the primary issue when trying to scale systems. TXP1000 cards can yield a real 10x channel density gain when deployed as an x86 offload solution. Or, if simple power reduction is the goal, just using a single TXP1000 card can save 90+ watts when compared to a standard x86 based implementation.



TXP1000 Family Performance

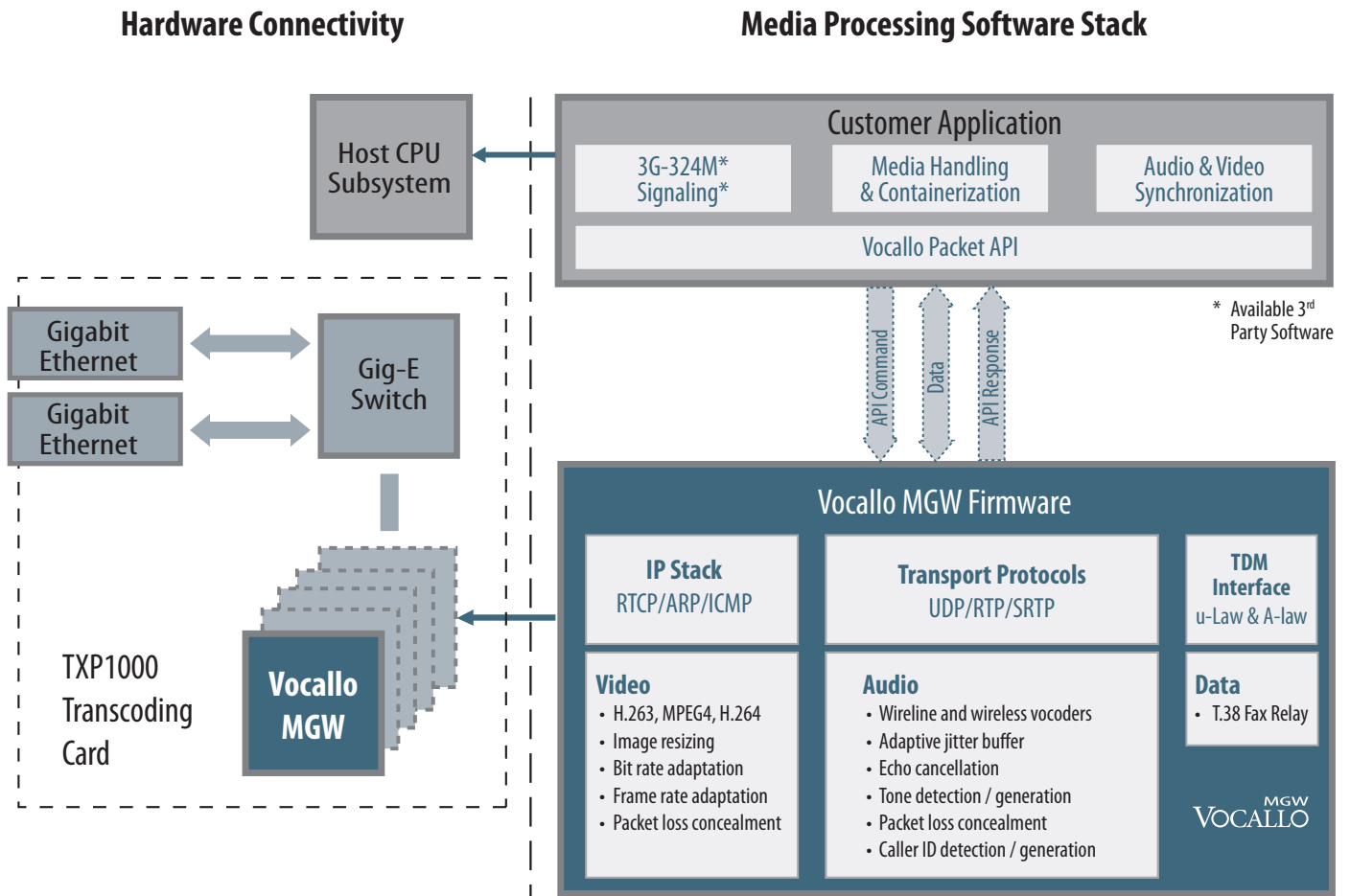
Video and voice transcoding resources and signal quality enhancement functions can easily be mixed and combined to create many different media processing configurations. The following table lists common modes of operation to provide a reference for the level of performance that can be achieved by an individual TXP1000 card.

TXP1000 Channel Density*	TXP1050	TXP1100	TXP1150	TXP1200	TXP1250
H.263 → MPEG4 QCIF/15FPS	67	134	201	268	335
MPEG4 → H.264 CIF → QCIF/15FPS	21	42	63	84	105
H.264 → H.263 CIF/15FPS	14	28	42	56	70
G.711(20ms) → G.729AB(20ms)	484	968	1452	1936	2420
G.711(20ms) → AMR WB (20ms)	69	138	207	276	345
G.723(30ms) — G.711(10ms)	185	370	555	740	925

* Actual channel density may vary slightly based on specific system level use conditions and the specific of the software release being used.

System Overview

To get started with simple system design planning, the following diagram shows the basic system processing topology when using a TXP1000 card. Control and data is sent to and from a TXP1000 card via a non-blocking packet API. The API provides system level access to all the media processing functions that come as standard with the Vocallo MGW firmware load.



About Octasic

Octasic Inc. is a global provider of media and wireless modem processing silicon and software solutions for the converged carrier, enterprise and end-point communication equipment markets. The company's leading quality VoIP, video and multi-standard wireless basestation DSP solutions are based on Opus, a unique asynchronous DSP architecture. Octasic allows next-generation equipment manufacturers to significantly reduce system costs by offering unmatched performance in terms of density and power consumption.

Founded in 1998, Octasic is a privately-held company headquartered in Montreal, Canada.

TECHNICAL SPECIFICATIONS

Form Factor	PCI Express x1
Power Supplies	Power over PCIe
Power Consumption	1.6A @ 12v, 1.5A @ 3.3v (max consumption for a TXP1250)
Physical Connections	2x Ethernet (via rear I/O); PCI Express x1
Network Interface	2x 1000/100Base T
Host Interface	PCI Express x1 v1.1 (via IP based API)
Chipset Details	Vocallo MGW: OCT1010; Broadcom BCM5723
Video Resources	>400 uni-directional transcoding instances
Voice Resources	>2400 uni-directional transcoding instances
Operating System Support	Windows XP; WinServer 2003; Linux (contact Octasic for distribution details)
Physical Dimensions	Standard single width PCI Express with the following dimensions:

