

# TC400 Series - Voice Processing



The TCE400B is a bundle of the half-length, low-profile PCI-Express x1 TCE400P base card and the TC400M voice processing module. The TC400B is a bundle of the half-length, low-profile PCI 3.3/5.0V TC400P base card and the TC400M voice processing module. The TCE400B and TC400B are designed to handle, in dedicated DSP resources, the complex codec translations for highly compressed audio as would otherwise be processed by Asterisk in software.

Asterisk, in software and with Digium G.729a licensing, is capable of transforming the G.729a codec into other codecs for the purposes of call origination or termination, bridging disparate calls, or VoIP to TDM connectivity. These transformations in software are very expensive, in terms of MIPS, and require a substantial amount of CPU time to accomplish. The TCE400B and TC400B not only relieve the CPU of this duty, freeing it up to handle other tasks or complete additional call processing, but also provide Asterisk with the capability of bridging G.723.1 compressed audio into other formats, a capability not otherwise possible.

The TCE400B and TC400B decompress G.729a (8.0kbit) or G.723.1 (5.3kbit/6.0kbit) into G.711 u-law or a-law and compress G.711 u-law or a-law into G.729a (8.0kbit) or G.723.1 (5.3kbit). The TCE400B and TC400B are rated to handle up to 120 bi-directional G.729a-only transformations or 92 bi-directional mixed-mode G.729a/G.723.1 transformations. The TCE400B and TC400B do not require additional licensing fees for the use of these codecs nor does it require the registration process association with Digium's software-based G.729a codec licensing.

## Features

TC400M Voice Processing Module  
TC400P - Half-Length Low-Profile PCI 2.2+ 3.3/5.0V Card  
TCE400P - Half-Length Low-Profile PCI-Express x1 Card  
Includes Codec Licensing and Indemnification  
120 G.729a Transformations  
92 G.723.1 Transformations

## Requirements

DAHDI 2.2.0 or greater **and**  
Asterisk 1.6.0.10 or greater  
Linux Kernel 2.6  
Available PCI-Express or PCI Slot

## Target Applications

Media Gateway  
Conferencing Server  
IVR Server  
Distributed Office PBX  
Call Centers

## Codec Support

G.729a - 8.0kbit/s  
G.723.1 - 6.3kbit/s (decode-only)  
5.3kbit/s (decode/encode)  
G.711  $\mu$ -law  
G.711 a-law

HAMMER™ by Em | I



TC400B



TCE400B

# Digium, The Asterisk Company



Corporate Office  
445 Jan Davis Drive NW  
Huntsville, AL 35806 - USA  
[www.digium.com](http://www.digium.com)

Phone: +1 256-428-6000  
Toll Free: +1 877-DIGIUM1  
Sales: +1 256-428-6262  
Fax: +1 256-864-0464

Copyright © 2009 Digium, Inc. All rights reserved. Digium, Asterisk, and Switchvox are trademarks of Digium, Inc. All other trademarks are property of their respective owners.

Digium reserves the right to change, without notice, product offerings and/or specifications.

Under the Risk-Free Guarantee, Digium® will refund the purchase price of any qualifying Digium product(s) for any customer that is not 100% satisfied with the performance of the Digium product(s) they purchased. For more detailed information about Digium's ESP Program, please visit [www.digium.com/esp](http://www.digium.com/esp).

Version 1.2 / 2 July 2009



Digium® is the creator, sponsor, and innovative force behind Asterisk®, the industry's first and world's most popular open source telephony software. Additionally, Digium provides a variety of VoIP communication solutions that fit the needs of small, medium, and large businesses. Digium's product lines include commercial business phone systems, as well as software, hardware, and other components needed to create powerful custom telephony solutions.

## BUSINESS PHONE SYSTEMS

---

Digium's line of award winning Switchvox IP PBX phone systems are built on a strong foundation of our open source Asterisk software. Switchvox solutions are designed to be extraordinarily easy to use and provide features that most small and medium businesses had previously considered out of their reach.

Switchvox's web-aware unified communications capabilities are unique in an industry cluttered with old technology. Integration with web and back office applications turns your phone system into a powerful platform for employees' productivity and efficiency. Its web-based Switchboard provides an intuitive control panel to assist with call management in real time while unifying phone calls, faxes, e-mails, instant messaging, Google Maps, CRM systems and other web tools from an easy-to-use, centralized control panel.

We're able to offer these PBX systems with superior capabilities for a fraction of the cost of traditional vendors' products because the shift to an open source software foundation represents a dramatic leap forward in telephony technology.

## CUSTOM TELEPHONY SOLUTIONS

---

Digium empowers users, developers and integrators to build custom telephony solutions by offering a variety of software, hardware, and third-party components. From a simple phone system, to a sophisticated telephony application, Digium makes it possible for the world to communicate in an infinite number of ways at a fraction of the cost of proprietary solutions.

At the heart of these offerings is Asterisk, the powerful open source telephony development toolkit. Asterisk is free software that turns an ordinary computer into a feature-rich voice communications platform. Its flexible architecture lets you configure it as an IP PBX, a voicemail server, IVR server, VoIP gateway, call recorder, automatic call distributor and virtually any other voice-enabled application you can imagine.

To support Asterisk-based solutions, Digium offers a full line of high quality analog and digital interface cards to connect your solution to the public telephone network. In addition, Digium offers add-on software components like Skype® For Asterisk, Fax For Asterisk, G.729 codec, and high performance echo cancellation (HPEC) to enhance your solution.