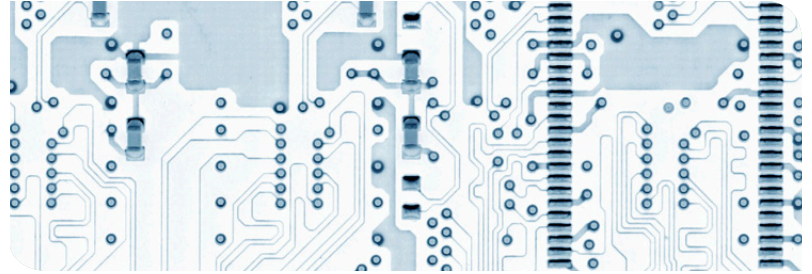


# Digium® Telephony Devices

When Every Call Counts



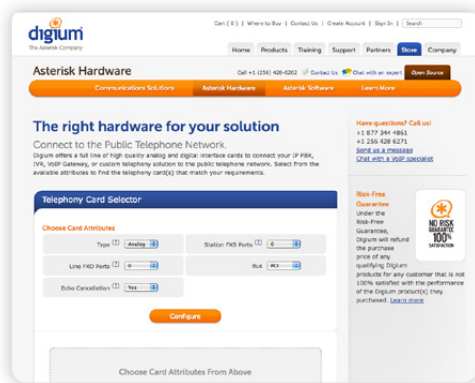
Digium's Asterisk® software has, since its first release in December of 1999, become the **global standard** for companies and individuals who need to decrease their cost of ownership of, and improve their control over, telecommunications. With Asterisk, users build anything from simple home-based business solutions to complex multi-location enterprise telephone systems. Since 2001, Digium® has designed, manufactured, and sold PC-based interface cards for extending the functionality of Asterisk to the Public Switched Telephone Network (PSTN).

## All Digium analog and digital interface cards:

- Are RoHS compliant
- Are manufactured in an ISO 9001:2001 certified facility in the United States
- Maintain an MTBF greater than one (1) million hours.
- Are backed by a five (5) year hardware warranty
- Are backed by Digium's Exceptional Satisfaction Program (ESP).

## Telephony Card Selector

Digium now offers a Telephony Card Selector to help you easily determine your hardware needs. Simply select from the available filters (Digital or Analog, # of FXS ports, # of FXO ports, echo cancellation requirements) to find the telephony card(s) that match your requirements.



## Exceptional Satisfaction Program

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. If Digium can not resolve the trouble to the customer's complete satisfaction, the customer may return the product(s) for a full refund of the purchase price up to MSRP. The refund will be paid in US Dollars only, to the same entity listed on the invoice. There is no predetermined end date for this offer, but Digium reserves the right to discontinue this offer at any time. Digium is committed to complete customer satisfaction.

Please visit [www.digium.com/ESP](http://www.digium.com/ESP) for more details on the Exceptional Satisfaction Program.

## Certifications



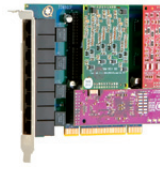

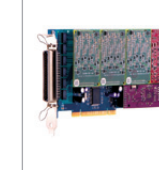
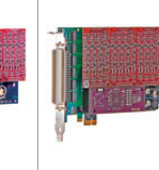
Digium, as a globally minded company, ensures that all Digium digital interface cards maintain telecom, safety and emissions certifications permitting their use in Australia, Canada, the European Union, and the United States.

Visit the online Telephony Card Selector: [store.digium.com/telephony\\_card\\_selector.php](http://store.digium.com/telephony_card_selector.php)

## Digium® Analog Boards

Digium's analog boards are created in three different port density capabilities. Our four (4) port interface cards, making use of our single-channel Loopstart modules, are perfect for smaller installations needing a small number of lines. Our eight (8) port interface cards, using either our single-channel or our quad-










channel Loopstart modules, are great for medium-sized installations. Our twenty-four (24) port interface cards, using our quad-channel Loopstart modules, are designed for larger installations or channel bank replacement.

						
	<b>TDM410</b>	<b>AEX410</b>	<b>TDM800</b>	<b>AEX800</b>	<b>TDM2400</b>	<b>AEX2400</b>
Ports	4	4	8	8	24	24
	RJ11	RJ11	RJ11	RJ11	50-pin RJ21	50-pin RJ21
Bus Type	PCI 2.2+	PCI-E 1.0+	PCI 2.2+	PCI-E 1.0+	PCI 2.2+	PCI-E 1.0+
Connector	3.3/5.0V	X1	3.3/5.0V	X1	3.3/5.0V	X1
Dimensions	6.46 x 10.67 x 1.72 cm	6.46 x 10.67 x 1.72 cm	6.46 x 10.67 x 1.72 cm	6.46 x 10.67 x 1.72 cm	31.19 x 10.67 x 1.72 cm	31.19 x 10.67 x 1.72 cm
Full-Height	Yes	Yes	Yes	Yes	Yes	Yes
Half-Length	Yes	Yes	Yes	Yes	No	No
FXO	Single Trunk Module	Single Trunk Module	Single and/or Quad Trunk Modules	Single and/or Quad Trunk Modules	Quad Trunk Modules	Quad Trunk Modules
FXS	Single Station Module	Single Station Module	Single and/or Quad Station Modules	Single and/or Quad Station Modules	Quad Station Modules	Quad Station Modules
Echo Cancellation	VPMOCT032	VPMOCT032	VPMOCT032	VPMOCT032	VPMOCT032	VPMOCT032

## Digium® Digital Boards

Digium's digital boards are provided in three different port density capabilities. Our one (1) port interface cards, the TE121 and TE122, are perfect for smaller installations. Our two (2) port interface cards,

the TE205 TE210 or TE220, are great for medium-sized installations. Our four (4) and eight (8) port interface cards, the TE405 TE410, TE420 or TE820, are designed for larger installations.

									
	<b>TE122</b>	<b>TE121</b>	<b>TE205</b>	<b>TE210</b>	<b>TE220</b>	<b>TE405</b>	<b>TE410</b>	<b>TE420</b>	<b>TE820</b>
	1 Port E1/T1/J1		2 Port E1/T1/J1			4 Port E1/T1/J1		8 Port E1/T1/J1	
Ports	1		2			4		8	
Bus Type	PCI 2.2+	PCI-E 1.0+	PCI 2.2+	PCI 2.2+	PCI-E 1.0+	PCI 2.2+	PCI 2.2+	PCI-E 1.0+	PCI-E 1.0+
Connector	3.3/5.0V	X1	5.0V	3.3V	X1	5.0V	3.3V	X1	X1
Dimensions (cm)	12.2 x 5.5 x 1.6		12.7 x 9.53 x 1.6			12.7 x 9.53 x 1.6		16.8 x 9.5 x 2.2	
Full-Height	No		Yes			Yes		Yes	
Full-Height	Yes		Yes			Yes		Yes	
Echo Cancellation	VPMOCT032		VPMOCT064			VPMOCT128		VPMOCT256	

## Supported features on analog boards:

### Analog PCI / PCI-Express

- 4-24 Modular Ports
- 32-bit 33MHz
- Analog Trunk or Station
- Loop Start or Kewl Start Signaling
- RoHS Compliant
- 5 Year Warranty
- Temperature: 0° to 50° C
- Optional DSP Echo Cancellation

### Minimum Hardware Requirement

- 800-Mhz Pentium III
- 64MB RAM
- Available PCI/PCI-e Slot

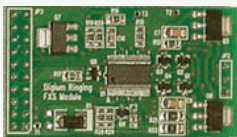
## Analog Modules

### Station-FXS (Foreign Exchange Station)

FXS is an interface that connects to a station, such as an analog telephone or the FXO interface of another PBX. It provides ringing voltage and battery to the FXO devices. FXS interfaces are used on the inside of your PBX, they do not connect directly to the PSTN. One FXS channel is required for each telephone that you wish to connect to your Asterisk system.

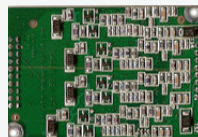
### Trunk-FXO (Foreign Exchange Office)

FXO is an interface that connects to a trunk line, like the one from your service provider. It receives ringing voltage and battery from FXS devices. FXO interfaces are used to connect your PBX to the PSTN. One FXO channel is required for each line you receive from your telco.



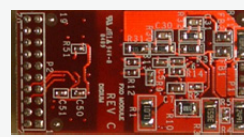
**S100M**

Single-Channel Analog  
Station Module



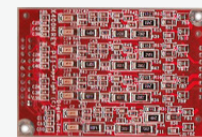
**S400M**

Quad-Channel Analog  
Station Module



**X100M**

Single-Channel Analog  
Trunk Module



**X400M**

Quad-Channel Analog  
Trunk Module

## Supported features on digital boards:

### Digium Digital PCI/PCI-Express

- 1-8 Ports E1/T1/PRI
- 32-bit 33MHz
- RJ48C Ports
- Built-in CSU/DSU
- RoHS Compliant
- 5 Year Warranty
- Temperature: 0 to 50° C
- Optional Octasic DSP Echo Cancellation

### Primary Rate Interface (PRI) Switch Types

- National ISDN 1 (NI1)
- National ISDN 2 (NI2)
- Nortel DMS100
- AT&T 4ESS
- Lucent 5ESS
- EuroISDN Q.931
- Q.SIG (Limited Support)
- \*Both PRI NET and PRI CPE are Supported*

### Minimum Hardware Requirement

- 800-Mhz Pentium III
- 64MB RAM
- Available PCI/PCI-e Slot

### Signaling Types

- E&M, E&M E1, E&M Wink
- Feature Group D (DTMF)
- Feature Group D (MF)
- Feature Group D (Tandem Access)
- Feature Group B
- Feature Group C-CAMA
- Feature Group C-CAMA (MF)
- Foreign Exchange Station (FXS) Loop Start, Ground Start, Kewl Start
- Foreign Exchange Office (FXO) Loop Start, Ground Start, Kewl Start
- PRI Network and CPE

### Framing Types

- Superframe (D4)
- Extended Superframe (ESF)
- Channel Associated Signaling (CAS)
- Common Channel Signaling (CCS)

### Coding Types

- Alternative Mark Inversion (AMI)
- Bipolar with Eight (8) Zeros Substitution (B8ZS)
- High Density Bipolar of Order Three (3) Code (HDB3)\*

*\*Optional Cyclic Redundancy Check 4 (CRC4)*

## Echo-Cancellation

Digium's telephony card offerings have the ability to use DSP-based echo cancellation modules. DSP-based echo cancellation can be more successful than software-based echo cancellation because it removes the burden of echo cancellation from the PC. Digium's echo cancellation modules are recommended when handling large call volumes or a high number of channels that would otherwise stress the CPU and result in the potential for poor audio quality. What makes the hardware echo cancellation so great?

- Octasic DSP-based (all modules)
- 128ms (1024 taps) of Echo Cancellation across all channels
- AT&T certified Toll-Quality G.168 compliant algorithm
- Dynamic Nonlinear Processor
- Comfort Noise Generator
- Automatic Tail Search
- Cancel Multiple Reflections
- Double-talk Detection



### VPMOCT256

- Up to 256 channels

#### Compatible with the following Digital card:

- TE820F (bundled as TE820BF)

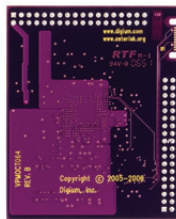


### VPMOCT128

- Up to 128 channels

#### Compatible with the following Digital cards:

- TE405PF (bundled as TE407PF)
- TE410PF (bundled as TE412PF)
- TE420F (bundled as TE420BF)



### VPMOCT064

- Up to 64 channels

#### Compatible with the following Digital cards:

- TE205PF (bundled as TE207PF)
- TE210PF (bundled as TE212PF)
- TE220F (bundled as TE220BF)



### VPMOCT032

- Up to 32 channels

#### Compatible with the following Analog cards:

- 4-port TDM410
- 4-port AEX410
- 8-port TDM800P
- 8-port AEX800
- 24-port TDM2400P
- 24-port AEX2400

#### Compatible with the following Digital cards:

- 1-port TE121
- 1-port TE122

## The company behind the next innovation in telecom.



Founded in 1999, Digium is the creator and primary developer of Asterisk, the world's most popular open source telephony platform. More than one million customers in 170 countries have deployed Asterisk-based systems. Digium is committed to ending the days of expensive, proprietary telecom with our award-winning line of Switchvox Unified Communication systems. Switchvox is much more than just an office phone system. It's a revolution in business communications, putting you in control of the most important asset in your business — your voice.