

INNOMEDIA

EMTA 6528-2

CABLE MODEM INTEGRATED VOIP TERMINAL ADAPTER

NEXT GENERATION INTEGRATED IP TELEPHONY ENABLED CABLE MODEM FOR CABLE OPERATORS

InnoMedia's EMTA 6528-2 offers the industry's most interoperable, feature-rich, and cost-effective DOCSIS™ 2.0 ready cable modem designed to provide consumers with reliable telephony services over a broadband IP network.

Key Benefits

Ideal All-in-one Solution For Cable Operators To Deliver Telephony And Broadband Internet Services To New Users

Highly Flexible Design Provides Comprehensive Interoperability And Support For A Variety Of Platforms

Easy To Install

Supports Auto-Provisioning

QoS Features Ensure PSTN Voice Quality Service

CLASS Feature Support With Call Agents Or Softswitches



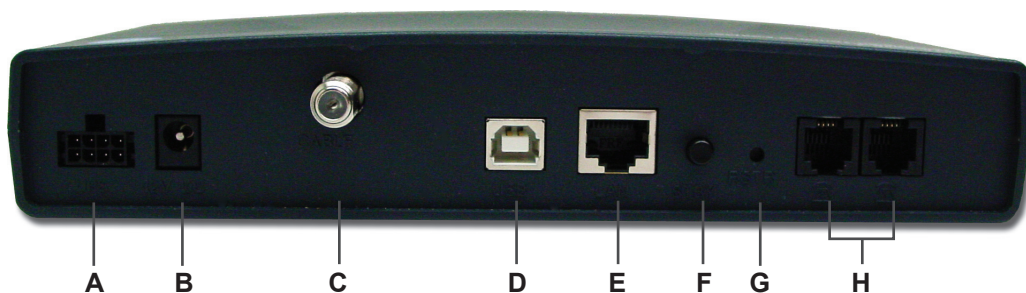
Designed for DOCSIS 2.0 cable networks, InnoMedia's EMTA 6528-2 is an embedded 4 voice port MTA device. Designed with the cable operator in mind, InnoMedia's EMTA 6528-2 is an all-in-one standalone CPE device that offers MSO's an excellent opportunity to deliver new revenue generating telephony services to their customers. It is interoperable with multi-vendor VoIP infrastructure elements and can be deployed with GR303/V5.2 gateways, PacketCable™-based Call Agents/Softswitches, or SIP-based Softswitches. The EMTA 6528-2 is compatible with any standard analog telephone set and can provide 1 or 2 telephone lines each with their own, unique telephone number. The EMTA 6528-

2 is simple to install and configure thanks to auto-provisioning server support. It delivers superior voice service by utilizing D-QoS, advanced compression, echo cancellation, packet recovery algorithms, and voice packet prioritization. EMTA 6528-2 supports HTTP, SNMP, TFTP, FTP, and Telnet for remote provisioning, monitoring and testing. It also offers innovative features like three-way calling and fax support, as well as CLASS feature support with Call Agents, Softswitches or GR303/V5.2 gateways.



EMTA INTERFACE

- A. UPS port
- B. Power
- C. Cable interface
- D. USB port
- E. LAN port
- F. Standby button
- G. Restore button
- H. RJ-11 ports



SPECIFICATIONS

Product Interfaces

Category	Specification
Service Provider Interface	DOCSIS Standard CATV coaxial cable, 75 Ohms "F" type connector
Telephone Interface	1 or 2 FXS Voice Ports
User Data Interface	10/100 BaseT Ethernet (RJ-45); 9-pin serial diagnostic interface

Telephony Specifications

Category	Specification												
Protocols	PacketCable NCS 1.0; RFC 2833; MGCP 1.0; SIP 2.0; P-QoS, D-QoS (MGCP only)												
Security	Media, provisioning and signaling												
Speech Codec Capabilities	G.711, G.726 (No compression & simple compression) G.728, G.729E (High quality high complexity codecs) G.723.1, G.729A (Low bit rate codecs)												
Signal Processing	Echo cancellation: G.168 G.728 (highest MIPS) based three-way calling Fax (fall-back to G.711) and caller ID FSK signal regeneration Line reversal												
Approval	FCC Part15B												
Tones	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Ring back tone</td> <td>Busy tone</td> </tr> <tr> <td>Recorder tone</td> <td>5 distinct rings</td> </tr> <tr> <td>Dial tone</td> <td>Confirmation tone</td> </tr> <tr> <td>Ring splash</td> <td>Stutter tone</td> </tr> <tr> <td>Off hook warning tone</td> <td>Message waiting indicator (MWI)</td> </tr> <tr> <td>Caller ID generation & call waiting tone</td> <td></td> </tr> </table>	Ring back tone	Busy tone	Recorder tone	5 distinct rings	Dial tone	Confirmation tone	Ring splash	Stutter tone	Off hook warning tone	Message waiting indicator (MWI)	Caller ID generation & call waiting tone	
Ring back tone	Busy tone												
Recorder tone	5 distinct rings												
Dial tone	Confirmation tone												
Ring splash	Stutter tone												
Off hook warning tone	Message waiting indicator (MWI)												
Caller ID generation & call waiting tone													
DTMF Tone	DTMF tone detection and generation												
Announcements	Play out any voice stream sent by Call Agent controlled announcement server												
OAM&P	Access components implemented: TFTP, FTP, HTTP 1.0, SNMP, Telnet, DHCP & DNS Works with any SNMP (v.1-3) -based EMS Offers web-based access as well as TFTP-based remote software downloads or upgrades												

SPECIFICATIONS

Cable Modem Technical Specifications

- DOCSIS 1.1 and 2.0 compliant.
- Integrated A-TDMA and S-CDMA technology - Capable of providing 30 Mbps upstream data rate
- 8/16/32/64/128/256 QAM auto detection

Cable Transmit/Receive Specifications

Item	Downstream	Upstream
Frequency Range	DOCSIS: 88~860MHz Euro-DOCSIS*: 112~858 Mhz	DOCSIS: 5~65Mhz Euro-DOCSIS*: 5~42Mhz
Modulation	QPSK, 16/ 32/ 64/ 128/ 256QAM	QPSK, 8/16/32/64/128 QAM
Data Rate	DOCSIS: 64 QAM: 30 Mbps 256 QAM: 42.8 Mbps Euro-DOCSIS*: 64 QAM: 41 Mbps 256 QAM: 55 Mbps	QPSK 0.32 ~ 10.24 Mbps 8 QAM 0.48 ~ 15.36 Mbps 16 QAM 0.64 ~ 20.48 Mbps 32 QAM 0.80 ~ 25.60 Mbps 64 QAM 0.96 ~ 30.72 Mbps 128 QAM/TCM 30.72 Mbps
Bandwidth	Euro-DOCSIS*: 8 MHz; DOCSIS: 6 MHz	TDMA: 200, 400, 800, 1600, 3200 and 6400 kHz S-CDMA: 1600, 3200 and 6400 kHz
FEC	RS (128,122) GF128 with Trellis coding	Reed Solomon
Signal Level	Receive Power Level: DOCSIS: -15 ~ +15 dBmV Euro-DOCSIS*: 64 QAM: -17 dBmV ~ +13 dBmV 256 QAM: -13dBmV ~ +17 dBmV	Transmit Power Level : TDMA: +8 ~ +54 dBmV (32QAM, 64QAM) +8 ~ +55 dBmV (8QAM, 16QAM) +8 ~ +58 dBmV (QPSK) S-CDMA: +8 ~ +53 dBmV (all modulation)

Cable Modem Other Specifications

Signal-to-NoiseRatio (SNR)	BER < 10 ⁻⁸ DOCSIS: 64 QAM: >23.5 dB 256 QAM: >30 dB	Euro-DOCSIS*: 64QAM: >= 25.5dB 256QM: -13 dBmV ~ -6 dBmV >= 34.5 dB -6 dBmV~ +17 dBmV >= 31.5 dB
Security	DOCSIS Baseline Privacy Plus: 1024-bit RSA and 128-bit Triple-DES for BPKM protocol 56 -bit DES for data encryption X.509 v3 certificates	
DOCSIS	Compliant to DOCSIS 2.0 and Euro-DOCSIS 2.0*	
Protocol	TCP/IP, UDP, ARP, ICMP, DHCP, SNMP, TFTP, TOD, BOOTP, SYSLOG	
Configuration	Ease of configuration and privacy control provided by resident or downloaded code from a Cable Modem Termination System (CMTS)	
Bridging	Support for unicast, broadcast, and multicast IP packets Variable-length packet cable Media Access Control (MAC) transport layer Mix of contention and reservation-based upstream transmission	
Quality of Service	Quality of service of MAC layer	
SIDs	16	
Management Operations (SNMPv1/v2c/v3)	RFC1157, RFC1901, RFC3416, RFC3417, RFC2578, RFC2570, RFC3411, RFC3412, RFC3413, RFC3414, RFC3415, RFC2576	
MIBs support	RFC1493, RFC3418, RFC2011, RFC2013, RFC2233, RFC3411, RFC3412, RFC3413, SNMP-NOTIFICATION-MIB, RFC3414, RFC3415, RFC2576, RFC2665, RFC2669, RFC2786, RFC2851, RFC2933, RFC3083, DRAFT: DOCS-IF-MIB, DRAFT: USB-MIB, DRAFT: DOCS-BPI2-MIB, DRAFT: DOCS-QOS-MIB, Append L/Annex H: DOCS-IF-EXT-MIB, Append L/Annex H: DOCS-CABLE-DEVICE-TRAP-MIB	

* Check for availability



SPECIFICATIONS cont.

Physical Specifications

Category	Specification	
Power Consumption	Talk	DC 12V @ 1.45 Amps (17.4W), loop current ≤ 32 mA
	Idle	DC 12V @ 0.7 Amps (8.4W)
Loop Current	For load of 520Ω, SNMP-settable to 23 mA (default) or 32 mA (max.)	
Ring Voltage	> 40 VRms @ 2000 ft. 5 REN max. per port 24 AWG loop	
On Battery	8 hrs Talk Time / 12 hrs Idle Time using 12V 8 Amp-Hr. Battery	
Power Supply	Output: DC 12V 1.45 Amps; Input: AC 100~240V, 50~60Hz, 400 mA	
Dimensions	8.3 in (H) x 1.5 in (W) x 5.4 in (D) / 211 mm (H) x 39 mm (W) x 136 mm (D)	
Operating Temperature	32°F to 104°F (0°C to 40°C)	
Storage Temperature	-4°F to 158°F (-20°C to 70°C)	
Operating Humidity	Up to 95% RH	
Storage Humidity	5 to 95% RH	

www.innomedia.com

InnoMedia Pte Ltd.

10 Science Park Road #03-04
The Alpha, Singapore Science Park II, SINGAPORE 117684
Ph: (65) 6872 0828; Fax: (65) 6872 0900

InnoMedia Technology Inc.

3F, No. 3, Industrial East Road IX
Hsinchu Science-Based Industrial Park, Hsinchu TAIWAN 300
Ph: (886) 3 564 1299; Fax: (886) 3 564 1589

InnoMedia, Inc.

128 Baytech Drive
San Jose, CA 95134
Ph: (408) 432-5400; Fax: (408) 432-5404

InnoMedia, Inc.

Room 1405, Prime Tower, #22 Chaowai Street
Chaoyang District, Beijing 100020 CHINA
Ph: (86) 10 6588 5141; Fax: (86) 10 6588 5140

