



SMCD3GNV

Value-Added Multimedia Voice Gateway
Enables Cable Operators to Deliver New Revenue Services

The Opportunity: Offer New Services

Cable Operators are looking for new applications to differentiate their services and build new revenue streams. Residential customers are demanding value-added services like Voice, Home Security, and whole home distribution of digital content. Deployment of DOCSIS 3.0 Multimedia Gateways provide Cable Operators with the higher bandwidth required to offer these new services to their current and prospective residential customers.

Most cable operators have established a profitable position in the segment by offering residential consumers ISP services over DOCSIS. Value-added services offered over DOCSIS 3.0 Multimedia Gateways provides a unique opportunity for operators to expand their service offerings to include Voice, Home Security, and whole home distribution of digital content and address this growing and highly profitable market segment.



The Solution: SMCD3GNV

The **SMCD3GNV** is a highly advanced DOCSIS 3.0 Multimedia Voice gateway. The SMCD3GNV is a Multimedia gateway that delivers Voice and Data and enables new revenue applications such as Home Security and Automation and Voice.

SMC is a specialist in high-quality, reliable CPE products to MSOs. The SMCD3GNV is designed to provide:

- Central Hub for IP Based Services
- Future-proofed CPE that can deliver many New Services and Revenue Streams

We have over 3 Million SMC CPE gateways, routers, and modems currently in service in North America. The launch of the SMCD3GNV continues our nearly 40 year history of delivering excellence for our customers.



SMCD3GNV Specification Overview

The SMCD3GNV is a Multimedia Voice gateway based upon 4x4 DOCSIS 3.0 technology delivering Voice and Data, and enabling new Home Security and Automation and Voice services.

Some key features of the SMCD3GNV include a Packet Cable 1.5 eMTA and a 802.11n interface that allows for VoIP phone service, whole home distribution of digital content, easy networking of computers, external hard drives, and gaming consoles. The SMCD3GNV also features sophisticated Quality of Service (QoS) software that eliminates network congestion that is common from bandwidth-intensive applications like VOIP.

This versatile and robust platform provides the ideal solution for Cable Operators to grow and differentiate their service offering, reduce churn, and build new revenue streams.



SMCD3GNV Key Features:

DOCSIS 3.0 Cable Modem

- The SMCD3GNV includes a 4x4 DOCSIS 3.0 Cable Modem capable of speeds up to 300Mbps downstream and 120Mbps upstream.

Packet Cable 1.5 eMTA

- Includes a Packet Cable 1.5 eMTA and two voice ports, and software is upgradeable to Packet Cable 2.0

Router/SPI Firewall

- Includes a four port 10/100/1000 router including SPI firewall and provides for Port Triggering, Port Forwarding, parental controls, and other features.

2 FXS Ports

- Includes 2 FXS voice ports which can be used for Voice or Home Security and Automation services

USB Port

- Support for 1 USB 2.0 host port is provided. Internal server support for Print Server and File Server allows for connecting to USB hard drives and peripherals.

UPnP

- Whole home distribution of digital content and networking of digital devices made easy with UPnP certification.

Application Overview



Gaming Console

External Hard Drive

.11n Wireless

10/100/1000 Ethernet

Coax

Cable Network

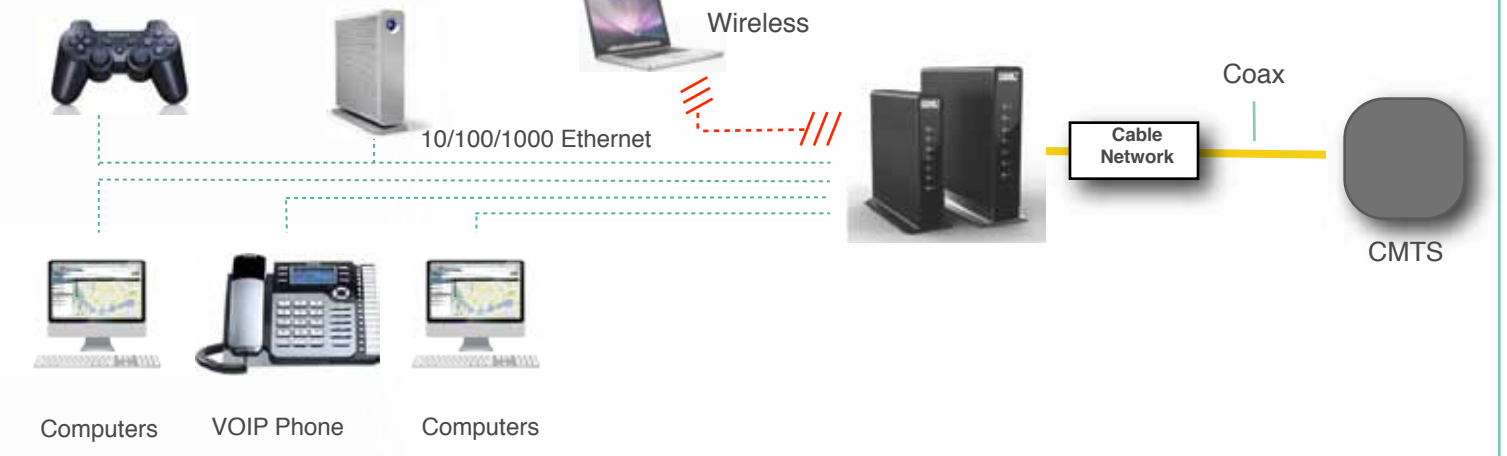
CMTS



Computers

VOIP Phone

Computers



Tech Specs:



HARDWARE FEATURES

- ☛ Platform independent – works with PC, OS X, Linux, MAC, UNIX
- ☛ DOCSIS 1.0/1.1/2.0/3.0 compliant
- ☛ F type RF connector for cable network interface
- ☛ Four RJ-45, 10/100/1000 Ethernet connector for LAN
- ☛ Two RJ-11 connector for voice
- ☛ USB 2.0 Host Port
- ☛ One AC 110V power input

SOFTWARE FEATURES

- ☛ Compliant to MCNS DOCSIS 1.1/2.0/3.0 specifications
- ☛ Supports UDP, IP, ARP, ICMP, DHCP, TFTP, SNMP, HTTP
- ☛ Support G.711(A-Law, Mu-Law), G.723.1, G.729A, G.729E voice compression
- ☛ Voice Activity Detection(VAD) with Comfort Noise Generation to save bandwidth consumption
- ☛ Support Auto-Jitter buffer adjustment to adapt with the jitter of Internet traffic
- ☛ Keep alive intervals and backup support to reconnect to redundant server
- ☛ DHCP, TFTP and ToD clients, provide device auto configuration
- ☛ Support G.168 Echo Cancellation up to 16ms
- ☛ Support caller ID generation for USA, Japan and China
- ☛ No need to have fixed IP
- ☛ Provide regional profile to accommodate the regulation for different country
- ☛ Support standard SNMP, MIB-II, Ethernet-like MIB, Bridge MIB, RF Interface MIB, Cable Device MIB, Baseline privacy Interface MIB
- ☛ Supports TFTP software download
- ☛ Power on self-diagnostic
- ☛ Browser-based configuration and management
- ☛ Easy to install and friendly to user, just plug and play

COMPLIANT STANDARD

- ☛ DOCSIS 1.0 1.1, 2.0, 3.0
- ☛ PACKET CABLE 1.5
- ☛ WiFi Alliance
- ☛ UPnP
- ☛ UL 60950
- ☛ FCC Part 15 Class B

DIMENSIONS (W X L X H)

- ☛ 218 x 212 x 75 mm
- ☛ 8.58.1 x 8.33 x 2.95 in

MAX. NUMBER OF CPES

- ☛ 64 (64 MAC addresses)

FILTERING

- ☛ LLC: 16, IP: 64

RECEIVER

- ☛ Demodulation: 64/256QAM
- ☛ Max Speed: 38Mbps (64QAM)/43Mbps (256QAM) per channel
- ☛ Input Frequency Range: 88MHz to 1002 MHz
- ☛ DOCSIS 5120 Kbps/10Mbps (QPSK/16QAM)
- ☛ DOCSIS 41.4Mbps (64QAM)/55.2Mbps (256QAM) bonding (DOCSIS) per channel
- ☛ Signal Level
 - ☛ -15dBmV to +15dBmV (Automatically Gain Controlled by CM)
 - ☛ 17dBmV

WIRELESS:

- ☛ 16 MB DRAM
- ☛ 2T3R 2.4GHz with 300/450 Mbps PHY data rate
- ☛ TX power: 18dBm
- ☛ RX Sensitivity: -76dBm@54Mbps
- ☛ 20MHz/40MHz channel bandwidth
- ☛ Hardware NAT, QoS, TCP/UDP/IP checksum overloading. QoS: WMM/WMM-PS
- ☛ Supports L-SIG TXOP
- ☛ Embedded MIPS 74KC 500MHz with 64KB I cache/32 KB D cache
- ☛ Legacy and high throughput modes
- ☛ Reverse Data Grant (RDG) support
- ☛ Dynamic Frequency Selection (DFS/DFS2)
- ☛ 16 Multiple BSSID
- ☛ Security: WEP-64/WEP-128/TKIP/AES/WPA/WPA2/HWAPI
- ☛ WPS (WiFi protected setup) PBC, PIN

TRANSMITTER

- ☛ Modulation
 - ☛ 64/256QAM
 - ☛ TDMA: QPSK, 8QAM, 16QAM, 32QAM, 64QAM
 - ☛ S-CDMA: QPSK, 8QAM, 16QAM, 32QAM, 64QAM, 128QAM

Max Speed

- ☛ Over 120Mbps with 4 bonding upstream channels

Frequency Range

- ☛ 5 to 42MHz (edge to edge) DOCSIS

Bandwidth

- ☛ 0.2, 0.4, 0.8, 1.6, 3.2MHz
- ☛ TDMA: 200, 400, 800, 1600, 3200, 6400 kHz
- ☛ S-CDMA: 1600, 3200 and 6400 kHz

Signal Level

- ☛ +8dBmV to +58dBmV (QPSK)
- ☛ +8dBmV to +55dBmV (16QAM)
- ☛ TDMA:
 - ☛ +8 to +54 dBmV (32QAM, 64QAM)
 - ☛ +8 to +55 dBmV (8QAM, 16QAM)
 - ☛ +8 to +58 dBmV (QPSK)

S-CDMA:

- ☛ +8 to +53 dBmV (all modulations)
- ☛ (Output level of CM can automatically controlled by CMTS through power ranging function), Step: 1dB
- ☛ Output Return Loss

- ☛ > 6 dB (5-42 MHz) and (91~857 MHz)

TELEPHONY

- ☛ Supervisory Voltage: 48V dc nominal
- ☛ Maximum Loop Length: 1500 ft (457M) of 26 AWG (0.4 mm) wire
- ☛ Ringing Load Capacity: 5 REN per line
- ☛ Programmable Interface for Worldwide: Select by country code and modem config file
- ☛ Protocol
 - ☛ NCS/MGCP 1.0 for PC 1.5
 - ☛ SIP RFC3261 for PC 2.0 (in later software release)
- ☛ CODEC
 - ☛ G.711A, G.726, G.728, G.729E, T.38, G.722
- ☛ Fax Support & Fax Relay over IP: T.38

LED

- ☛ Front Panel: Power, US/DS, Online, WiFi, Tel 1, Tel 2, Battery
- ☛ Connector Side: Active Ethernet LAN for 4 port OSS
- ☛ Protocol: ICMP/SNMP V1, V2c, V3
- ☛ MIB: MIB II / MCNS MIB/Hitron Proprietary MIB, PKT-SP-MIB-EXSIG1.5-I01-050128

BATTERY BACKUP WITH LITHIUM BATTERY CELLS

- ☛ 2600mAh - 5hrs operation and 8 hrs standby
- POWER**
- Input DC: AC 110V
 - Consumption: TBD

ENVIRONMENT

- Operating temperature
 - ☛ Regular Model 32 F (0 C) to 104 F (40 C)
- Operating humidity
 - ☛ 10% to 90% (Non condensing)
- Storage temperature
 - ☛ -4 F (-40 C) to 140 F (80 C)
- Surge Protection
 - ☛ On RF Input shall sustain at least 4.5 kV
 - ☛ On Ethernet RJ-45 shall sustain at least 3KV.

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