

# MegaPort Products Overview

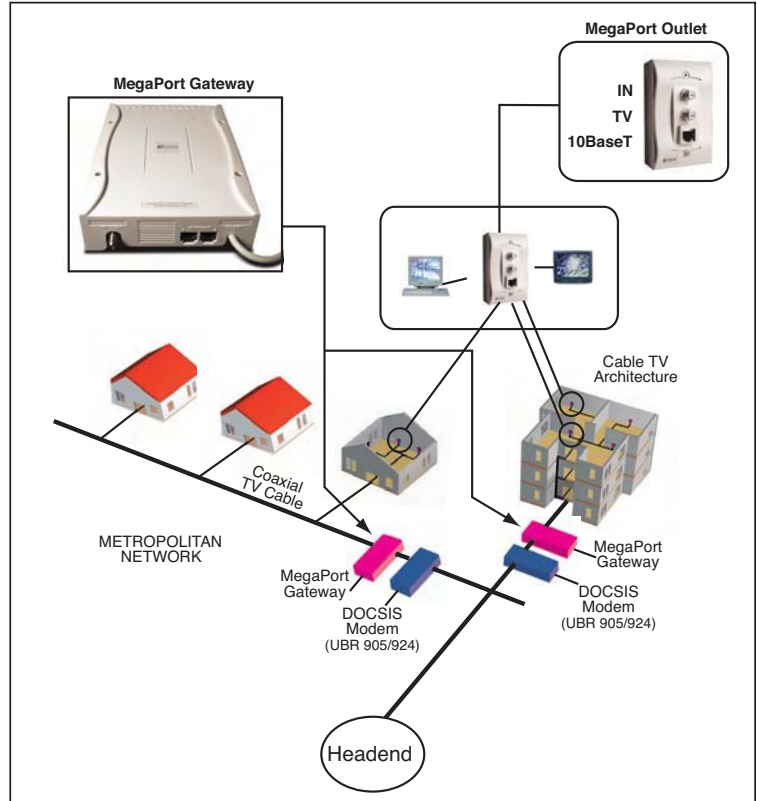
The MegaPort Series effectively allows CATV operators with or without existing DOCSIS data solutions to easily interface and effectively serve multi-dwelling communities, the hospitality industry, and standalone residential environments with high-speed Internet access.

## Overview

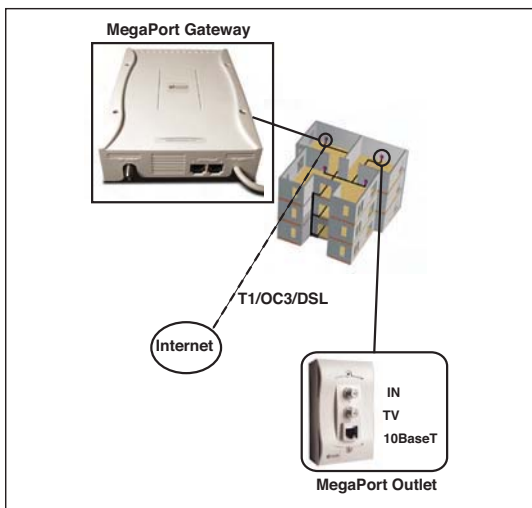
The MegaPort product line allows service providers to extend broadband internet access to any environment (64 provisioned users per Gateway). By adding additional Gateway units, the number of provisioned users served can be easily expanded. The MegaPort Gateway (MPG) is a broadband Ethernet Bridge/Router that establishes a network within a building or community. The MDU communities are easily accommodated by interfacing between trunk data networks and the existing coaxial infrastructure. This architecture allows an operator the option of configuring the MPG as either a Bridge or a Router. That allows the DOCSIS data provider the advantage of only using a single modem to serve an entire MDU property. This way the operator can isolate the property from the rest of the network.

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## Typical CATV HFC Backbone Solution



## Stand Alone Solution



## Ideal Hospitality Solution

## CATV Application System Elements

A business class DOCSIS modem is installed at the property HFC minimum point of entry (MPOE). At the HFC MPOE, an operator almost always chooses the option of blocking the upstream with the use of a high-pass filter so that no noise is added to the network except that which is generated by the single modem serving the site. This facilitates the ability to provide service to an MDU or hospitality environment without the need to split the fiber node. The MegaPort Gateway is connected to the DOCSIS Modem via an Ethernet connection. The MegaPort Gateway modulates data downstream and upstream over the existing property CATV distribution system to the MegaPort Outlet located in each room/residence. Each outlet has a unique MAC address allowing for remote activation, control, and management.

## In The Home

A 10BaseT port is provided to the user on the Outlet which permits connection to the computer to deliver the high-speed data traffic. Ethernet outlets are AC powered with an external adapter. When multiple Outlets are installed and activated in a single home they can be configured by the operator for Home Networking functionality as well.

# High Speed Internet

## MegaPort Series Gateway



The MegaPort Gateway is a broadband Ethernet Bridge/Router that establishes a network within a building or community. A single MPG allows service providers to easily offer broadband Internet access to up to 64 active MegaPort Outlets or users. By connecting several MPG units, the number of outlets can be increased easily. There is also an optional license upgrade to expand the users up to 250, great for hospitality environments where usage penetration is moderate. Plus, the entire system utilizes existing coaxial cable infrastructure, while interfacing and co-existing with CATV or DBS video and DOCSIS data services. This makes the MPG the only outside installation device required with a MegaPort deployment. Accompanying MegaPort Manager software, with built-in SNMP capability, allows remote management and control for system configuration and monitoring.

### ○ Features & Benefits

- Utilizes Existing Coaxial Infrastructure to Distribute Data Services
- Transparent to DOCSIS, CATV & DBS services
- Supports 64 Users per MegaPort Gateway, Expandable Via Optional License Upgrade
- Configurable for Bridge or Router Functions and Fully Remote Manageable
- Ideal Hospitality Solution

### ○ Specifications

#### Wan Interface

1 10/100BaseT Ethernet Port

#### LAN Interface

1 10/100BaseT Port for configuration

#### Down-Stream

One Downstream Modulation Type:

16/64/256 QAM

Symbol Rate: Up to 6 Msym/sec

Frequency Range:

40-80 MHz Software Adjustable

48-860 MHz with External Upconverter

Transmission Level: 50 dBmV

Bandwidth: 1.15 to 6.9 MHz

Spurious: -60 dBc

#### Up-Stream

One Upstream Modulation Type: QPSK

Symbol Rate: Up to 3 Msym/sec

Frequency Range:

5-32 MHz Software Adjustable

Receive Levels:

-10 dBmV to +15 dBmV Adjustable

Spurious: Meets DOCSIS 1.1

Bandwidth: 1 to 3.75 MHz

#### Connectors

"F" Female

10/100BaseT Ethernet -2 Ports

Power Cable

#### Software

Operating System: Linux

VLAN Capabilities:

Creation of Sub-Networks Between MPOs

Class of Service:

Supports 4 Operator Defined Levels

(64 MPO Units Only)

#### Distance

Between Gateway to Farthest MPO:  
5,000 m (16,405 Feet)

Attenuation Between Gateway and MPO:  
Minimum: 10 dB  
Optimum: 30 dB

#### Electrical

Power Dissipation: 20 W (Typical)

MAX Power Consumption: 30 W

Input voltage: 100 to 250 VAC

Input Frequency: 50 to 60 Hz

Power Supply Options:

UPS, Warm Standby SBC

AC Input Voltage:

40-60 VAC Via Coax  
(Factory Preset)

#### Dimensions

(H x W x D):

8.75 x 6.25 x 2.25 in.

22.6 x 15.1 x 5.7 cm

Weight: 4.3 lb., 1.94 kg

#### Environmental Specifications

Operating Temperature:  
0° to 40° C

Storage Temperature:  
-40° to 70° C

#### Certification

UL, CE, FCC, ICES

Refer to product instruction manual for additional specification measurements and notes.

### ○ Ordering Information

Model	Stock No.	Description
MPG-1100	2681	MegaPort Gateway 1100 Ethernet Bridge/Router for High Speed Internet Access

# High Speed Internet

## MegaPort Series Outlets



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The MegaPort Outlet (MPO) revolutionizes broadband Internet access by using a permanently installable infrastructure based solution. The MPO acts like a modem and is MAC addressed to allow for easy remote software activation and deactivation. The consumer simply plugs in and is instantly connected to an always on broadband connection through the MegaPort system. In addition, installing multiple MPOs allows the ability to offer Home Networking. All this is accomplished without interference to existing TV channels or other interactive services. By reducing the maintenance costs to virtually zero by eliminating the cost of the modem hardware and retrieval, there is no better broadband solution available for MDUs.

### ○ Features & Benefits

- 10BaseT RJ-45 Port for Easy Customer Interfacing
- Outlets Can Be Permanently Installed Eliminating the Need for CPE Retrieval
- MAC Addressed for Remote Activation & Deactivation
- Remote Software Upgrade Capable
- Ideal Hospitality Solution

### Specifications - MegaPort Outlets (MPO)

#### Identification

Unique MAC Address Per Outlet

#### RF Specifications

Coax Impedance: 75 Ω  
Inverse Modulation Support

#### Up-Stream (To Gateway)

Modulation Type: QPSK  
Symbol Rate: 3.0 Msym/sec  
Frequency Range:  
5-32 MHz Full Agility

Transmission Level: 48 dBmV  
Automatic and Widely Adjustable  
Upstream TX Level

#### Down-Stream (From Gateway)

Modulation Type: 16/64/256 QAM  
Symbol Rate: Up to 6 Msym/sec  
Frequency Range:  
48-56 MHz  
64-76 MHz  
48-860 MHz

Receive Range: -10 to +40 dBmV  
Automatic Frequency Scanning  
MPO: Every 250 KHz in Frequency Range  
Agile MPO: 48-860 MHz Every 250 KHz

#### Physical Interfaces

Coax (TV, IN): "F" Female  
10BaseT: RJ-45 Receptacle

#### Electrical Specifications

Power Consumption:  
10BaseT: External Power Adapter  
110 to 220 VAC Input, 5W Output

#### Distance

Between Gateway to Farthest MPO:  
5,000m (16,405 feet)

#### Standards

10BaseT:  
802.3 Full Duplex, Auto MDIX  
Supports Up to 16 Ethernet Devices

#### Dimensions

(H x W x D)  
1.75 x 2.75 x 4 15/32 in.  
4.2 x 7 x 11.4 cm  
Weight: 200 gr., .02 kg

#### Environmental Specifications

Operating Temperature:  
0° to 40° C  
Non-Operating Temperature:  
-25° to 70° C

#### Certification

UL, LE, FCC, ICES

Refer to product instruction manual for additional specification measurements and notes.

### ○ Ordering Information

Model	Stock No.	Description
MPO-ESM-52	2673	MegaPort Outlet Ethernet Surface Mount 48-56 MHz
MPO-ESM-70	2677	MegaPort Outlet Ethernet Surface Mount 64-76 MHz

# High Speed Internet

## MegaPort Series Outlets

### Modulation Schemes and Bandwidth

The MegaPort system can be set for different modulations from QPSK to QAM 256 at different symbol rates.

Setting these parameters determines the bandwidth used by the system as well as the raw data throughput.

The charts to the right displayed depict the typical system information.

\* Not supported with all hardware/software. Requires ASIC2 outlets.

Down-Stream (Gateway to MPO)					Up-Stream (MPO to Gateway)		
Symbol Rate (KS/s)	Channel Bandwidth (MHz)	QAM 16 Bit Rate (Mbps)	QAM 64 Bit Rate (Mbps)	QAM 256* Bit Rate (Mbps)	Symbol Rate (KS/s)	Channel Bandwidth (KHz)	QPSK Bit Rate (Mbps)
1000	1.2	4	6	8	1,500	1,875	3
1500	1.8	6	9	12	3,000	3,750	6
2000	2.4	8	12	16			
2400	2.88	9.6	14.4	19.2			
3000	3.6	12	18	24			
4000	4.8	16	24	32			
5000*	6.0	20	30	40			
6000*	7.2	24	36	48			

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## MegaPort Manager

### Computer Based Control

The MegaPort Series MegaPort Manager software, with built-in SNMP capability, allows remote management and control for system configuration and monitoring.

Remotely activate and deactivate Outlets with complete control. Easily configure independent sub-networks and provision Outlets for Home Networking capabilities. Remotely update software and firmware for Outlets and Gateways.

### Specifications - MegaPort Manager (MPM)

#### Network Management

- Network Management:
  - SNMP, Inbound/Outbound
  - Software Configurable as Bridge or Router Mode, DHCP Client and Server, NAT, Basic
  - Firewall, PPPOE, RIP
  - Service Control: Remote Add/Remove, Enable/Disable Outlets
  - Usage Recording: Automatic
  - Logs & Counters
  - Client Identification:
    - Auto Alarms, Diagnostics
  - Supports 4 CoS Predefined by Operator
  - Control of RF Parameters
  - Creation of VLANs Between MPOs
  - Define IP Parameters
  - Performance Monitoring

#### Standards Compliance

- DOCSIS and EURO DOCSIS Compatible WAN Connection
- CableHome 1.0 Compliance
- Universal Plug-n-Play (UPnP)
- Upstream Encoding Method
- Demodulation/Conversion to Ethernet Protocol and IP VLAN 802.1q Between Gateway and Outlets
- Downstream Physical Layer Enhanced ITU J.83, Annex A
- USB 1.1, 10BaseT, 100BaseT

#### Security and Encryption

- A). Physical Layer MAC
- B). Selective RF to IP Conversion Based on Destination Address
- C). VLAN
- D). Encryption