

Data Products



MegaPort Series

Remote Power Reset

Cable Modem Termination System

Cable Modems

Data

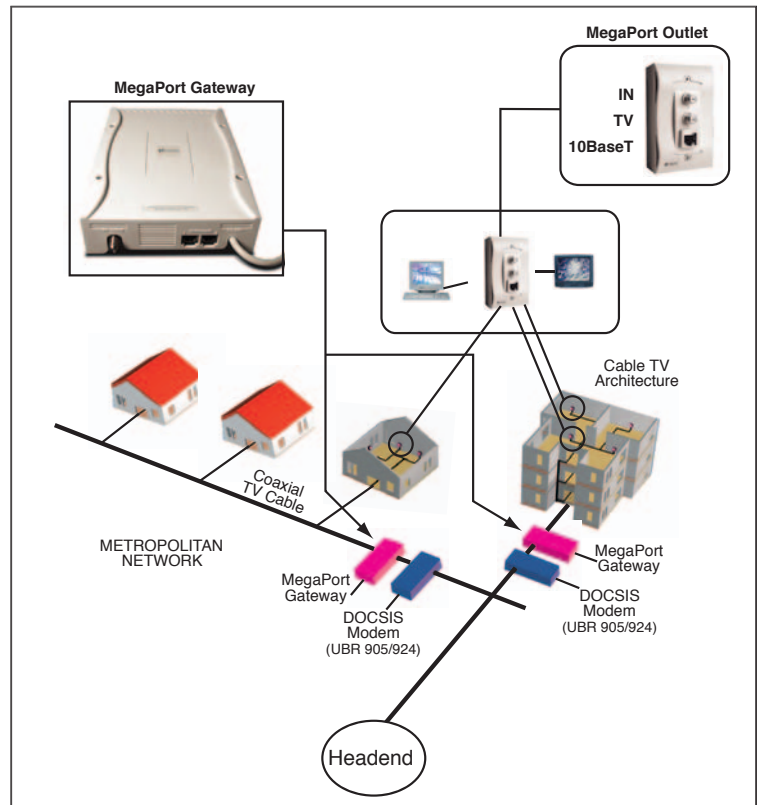
MegaPort Products Overview

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.

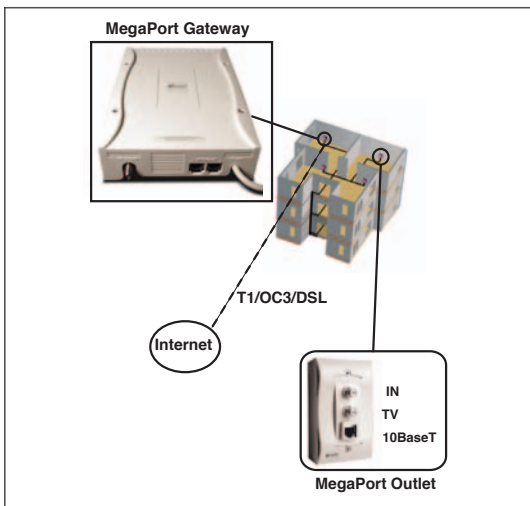
Overview

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.

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 (MAX)

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

Physical Interfaces

Coax Female F-connector

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:
5,000m (16,405 Feet)

Attenuation Between Gateway and MPO:

Minimum: 10 dB

Optimum: 30 dB

Electrical Specifications

Power Dissipation: 20 Watts (Typical)

MAX Power Consumption: 30 Watts

Input voltage: 100-250 VAC

Input Frequency: 50-60 Hz

Power Supply Options:

UPS, Warm Standby SBC

AC Input Voltage:

40-60 VAC Via Coax
(Factory Preset)

Dimensions

Height: 22.6 cm (8 3/4")

Width: 15.1 cm (6 1/4")

Depth: 5.7 cm (2 1/4")

Weight: 1.94 Kg (4.3 lb)

Packing Size: 35-x 21.5 x 8 cm

Environmental Specifications

Operating Temperature:

32° to 104° F (0° to 40° C)

Storage Temperature:

-40° to 158° F (-40° to 70° C)

Humidity: 5% to 95% Non-condensing

Altitude: 0 -10,000 ft

Certification

UL, CE, FCC, ICES

○ 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



Data

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 OHM

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-Connector, Female

10BaseT: RJ-45 Receptacle

Electrical Specifications

Power Consumption:

10BaseT: External Power Adapter
110/220 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

Length: 11.4 cm (4 15/32")

Width: 7 cm (2 3/4")

Height: 4.2 cm (1 3/4") Surface Mount

Weight: 200 gr.

Packing Size: 16 x 17.5 x 5.5 cm

Environmental Specifications

Operating Temperature:

32° to 104° F (0° to 40° C)

Non-Operating Temperature:

-13° to 158° F (-25° to 70° C)

Relative Humidity:

5 to 95% non-condensing

Altitude: 0 -10,000 feet

Certification

UL, LE, FCC, ICES

○ Ordering Information

Model	Stock No.	Description
MPO-ESM-52	2673	MegaPort Outlet Ethernet Surface Mount 48-56 MHz
MPO-ESM-AG	2679	MegaPort Outlet Ethernet Surface Mount 54-860 MHz Agile, Not Stocked
MPO-ESM-44	2678	MegaPort Outlet Ethernet Surface Mount 40-48 MHz, Not Stocked
MPO-ESM-70	2677	MegaPort Outlet Ethernet Surface Mount 64-76 MHz

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.

Symbol Rate (KS/s)	Down-Stream (Gateway to MPO)					Up-Stream (MPO to Gateway)		
	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				

MegaPort Manager

Exert Total 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

Remote Power Reset

RPR Series



Data

Blonder Tongue's Remote Power Reset (RPR) Series gives the cable operator the means to remotely power-up or shutdown equipment in the event of malfunction that may require a "cold boot."

Equipment locks up. It's not as much of an issue if you're sitting at your desk and it's your computer, but what if it's a satellite receiver in a headend miles away and now hundreds, if not thousands, of customers are affected? That's where the Remote Power Reset becomes critical. Without a service call, truck roll or any significant time lost, the power may be cycled at the remote location via an Ethernet connection.

The RPR requires no software installation and uses a standard internal Explorer web browser interface to access the unit. The unit is UL Listed and comes with a three year warranty.

○ Features & Benefits

- Turn On/Off or Reset Power to Any AC Powered Device
- 8 Individually Controlled AC Outlets
- 117 VAC, 15 Amp Capable
- Web Browser with Graphical Interface Loaded in the Unit
- Remotely Accessible via the Internet Using a RJ45 Ethernet
- LCD Based Front Panel for Easy Set-up
- DHDP or Static Support
- Two Levels of Security

○ Specifications

Input

Nominal Voltage: 117 VAC
Input Frequency: 50/60 Hz
Maximum Input Current: 15 A

Output

Nominal Voltage: 117 VAC
Total Current: 15 A
Number of AC Outlets: 8

Physical

Dimensions (L X W X H): 9.56 x 17.38 x 1.63 in
Material: 16 GA Aluminum
Weight: 8 lbs.
Operating Temperature: 0 to 50° C
Storage: -25 to 70° C
Relative Humidity: 0 to 95%
LED Indicators: 3 Transmit, Link, Receive
Liquid Crystal Display LED
5 Push Button Navigation Controls
RJ-45 Port for Network Connection
RS-232, RJ-11 Port for Future Modem Support

○ Ordering Information

Model	Stock No.	Description
RPR-8	3921	Remote Power Reset, 120 VAC, 15A

Cable Modem Termination System

Communication Station - CMTS



The Communication Station CMTS unit from Blonder Tongue is a high performance cable modem termination system designed to accommodate practically any application but is perfectly suited for small system type deployments.

The CS-CMTS starts out like your usual DOCSIS/Euro-DOCSIS “pizza box” like unit but that is where the comparison ends. The unit features a scalable design architecture that minimizes capital investment by providing the ability to add support for additional subscribers as the base grows. This is accomplished by supporting 1 to 8 upstream modules that are field installable. An advanced command line interface (CLI) software with context sensitive help and variable prompts make set-up easy. The CLI can be accessed locally via the serial interface or remotely through the built-in network secure Telnet server as well as provide remote download capability for software updates with the use of TFTP and FTP servers.

Security is vital to any data application today and the CS-CMTS provides advanced tools such as DOCSIS BPI and BPI+ packet filtering, and DHCP and ARP monitoring to prevent unauthorized system access. Traffic forwarding is handled as a layer-2 transparent bridge with support for Syslog, Radius, PPPoE and network protocol services. Plus, subscriber satisfaction during peak usage is maintained with a unique dynamic load balancing approach of upstream traffic management with the use of load balancing algorithms and support for upstream frequency reuse. An optional NMS (Network Monitoring Software) is also available to provide a single source for configuration, service provisioning, performance analysis, QoS accounting and subscriber access authentication. This all adds up to the most complete, easy to use and affordable DOCSIS based CMTS solution available.

○ Features & Benefits

- DOCSIS & Euro DOCSIS CMTS in 1 Rack High Chassis Unit
- Scalable Design supports Up to 8 Upstream Channels
- Traffic Forwarding Performed via Layer-2 Transparent Bridge
- Integrated Advanced Command Line Interface Permits Easy Programming
- Remotely Manageable & Upgradeable with SNMP & Telnet Access Capabilities

○ Specifications

	DOCSIS	Euro-DOCSIS
Downstream		
Downstreams:	44 MHz	36.125 MHz
IF Output:	6 MHz	8 MHz
RF Channel Spacing:	1	1
Number of Channels:	QAM 64 & QAM 256	QAM 64 & QAM 256
Modulation Type:	5.056 Msyms/s (QAM 64)	6.952 Msyms/s (QAM 64)
Symbol Rate:	5.360 Msyms/s (QAM 256)	6.952 Msyms/s (QAM 256)
Bandwidth	6 MHz	8 MHz
Output Impedance:	75 Ohms	75 Ohms
Output Return Loss:	> 14 dB	> 14 dB
Output Level:	+ 40 dBmV	+ 40 dBmV
Upstream		
Frequency Range:	5 — 42 MHz	5 — 65 MHz
Number of Channels:	1 to 8	1 to 8
CNR (In Channel):	> 22 dB	> 22 dB
Level Range:	-4 to + 26 dBmV	-4 to + 26 dBmV
Modulation Type:	QPSK & QAM 16	QPSK & QAM 16
Symbol Rate:	160, 320, 640, 1280 & 2560 ksym/s	160, 320, 640, 1280 & 2560 ksym/s
Bandwidth:	200, 400, 800, 1600, 3200 6 kHz	200, 400, 800, 1600, 3200 kHz
Controls & Interfaces	System Standards	General
LAN Interface: 10BaseT/100BaseT Fast Ethernet	Specification: DOCSIS/EuroDOCSIS 1.0	Power Consumption: 34 Watt
Serial Port: EIA-232 9 Pin D	Communication: SNMP, Radius, PPPoE, Telnet	Voltage: 100—240 V, 47—63 Hz, Auto
IF Out Port: F Connector, Rear	Mechanical	Safety Compliance: UL, CE
US Port: F Connector, Rear	Dimensions: 21 x 1.75 x 19 Inches	EMC/EMI: FCC Part 15, CE Class B
-20 dB IF Test Port: BNC Connector, Front	Weight: 515 x 44 x 483 mm 19.8 lbs. 9 kg	Warranty: 1 Year
LEDs: AC Power, Link, WAN, Data Downstream, Data Upstream		Operating Temperature: 0° to 40° C
		Storage Temperature: -10° to 60° C
		Humidity: 10% to 90%, non- condensing

○ Ordering Information

Model	Stock No.	Description
CS-BT-CMTS-1x1	2643	Blonder Tongue 1 x 1 DOCSIS CMTS, 1 Downstream 1 Upstream Channel
CS-BT CMTS U/S Mod	2644	BT CMTS Upstream Module
CS-BT-CMTS-NMS	2645	Blonder Tongue DOCSIS CMTS Network Monitoring Software Package for CMTS

Accessory

DQX-1	2632-1	Digital QAM Upconverter - Single Channel Unit
DHDP-UH	6262	Digital and HD Upconverter, 54-860 Output, Horizontal Mounting
DHDP-UV	6265	Digital and HD Upconverter, 54-860 Output, Vertical Mounting
MIRC-4C	7710	HE-4 Series Rack Chassis for Horizontal Upconverter

Cable Modems

DataXpress™



Data

The DataXpress is a DOCSIS (Data Over Cable Service Interface Specification) 1.0 compliant Cable Modem. It is interoperable with commercially available CMTS units. The modem features an Ethernet port easy hassle free connections to any PC. It features a sleek housing that allows for vertical or horizontal use. Get the DataXpress for your demanding cable modem applications.

○ Features & Benefits

- DataXpress Cable Modem
- 10BaseT Interface
- DOCSIS 1.0 Compliant
- Sleek Vertical or Horizontal Flexible Design

○ Specifications

Up-Stream

Modulation Type: QPSK and 16 QAM
Frequency Range: 5 — 42 MHz
Channel Bandwidth:
200, 400, 800, 1600, 3200 kHz
Symbol Rate (Nominal):
160, 320, 640, 1280, 2560 Ksym/sec
FEC: Reed Solomon
Impedance (Nominal): 75 ohm
Return Loss: > 6 dB

Down-Stream

Modulation Type: 64 QAM and 256 QAM
Frequency Range: 91 — 857 MHz
Channel Bandwidth: 6 MHz
Symbol Rate (Nominal):
5.056941 Msym/sec @ 64 QAM
5.360537 Msym/sec @ 256 QAM
FEC: ITU J.83-B as per DOCSIS
Impedance (Nominal): 75 ohm
Return Loss: > 6 dB

Interfaces

CATV Connection: F-Type Female, 75 ohm Connector
CPE Connection: 10BaseT Ethernet, RJ-45

General

Standards Compliance: DOCSIS 1.0
Protocol: IP, UDP, ARP, ICMP, DHCP, TFTP
Bridging: IEEE 802.1 d-compliant
Transparent Bridging

Management:

SNMPv2 with MIB II, Cable MIB and Bridge MIB

Encryption:

DOCSIS Baseline Privacy with RSA Public-key and 56-bits DES

Front Panel LED:

PWR – Power, ETH – Ethernet Connection, RDY – CMTS Connection

Electrical

Voltage:

External AC/DC Universal Power Adapter, Input 100-250Vac, 47-63 Hz

Power Consumption:

< 10W in Operational Mode

Mechanical

Dimensions: 1.4 x 9.8 x 4.7 in
35 x 250 x 120 mm

Weight: 315 ounces (900 g)

Temperature

Operating: 0 to 40 °C

Storage: -25 to 85 °C

Approvals

Safety:

UL 1950; CSA C22.2 No. 950; IEC 950; EN 60950 EN 60065

Emission:

FCC Part 15, Class B; CISPR 22, Class B; EN 55022, Class B

Immunity: EN 50083-2

○ Ordering Information

Model	Stock No.	Description:
CS-DX-ETH	2610	DataXpress Cable Modem, 10BaseT Ethernet port DOCSIS 1.0 Compliant