

Cable Modems

TCM 290

Digital Cable Modem



With the TCM 290, Thomson multimedia provides to Cable Operators a real break through product. Not only does this product offer additional added value services such as NAT/PAT, basic router and firewall, but the TCM 290 is a versatile product which can cope with both DOCSIS and Euro-DOCSIS standards. The Dual mode feature is ideal for operators intending to move eventually at a later stage to Euro-DOCSIS at no cost on the CPE side: No software download is even required and the inventory management problem for operators dealing with both standards is solved. Basic Firewall functionalities combined with NAT/PAT will help the operators to generate additional revenue flow with 'easy to manage' embedded functions. This new set of features confirms again Thomson multimedia as one the leading suppliers of Euro-DOCSIS cable modems and shows its commitment to participate to the growth of high speed Internet over cable.

- Certified by Euro-DOCSIS certification board (for a previous software revision)
- Dual-Mode cable modem (DOCSIS and Euro-DOCSIS)
- NAT/PAT (controlled by the operator)
- Router functionality with just an additional external hub
- Embedded Firewall (controlled by the operator)
- Bridging between the USB and Ethernet port
- Easy Access to Advanced Diagnostics Web Pages
- USB port for easy installation
- Reliable high-performance platform
- Surf the Internet Up to 50 Times Faster than a 56k analog Modem
- Always On, No waiting for a connection, No phone line

Other Broadband Cable Products:

- DGW 504 : 4 port router
- DCW 615 : DOCSIS wireless cable modem
- TCM 305 : DOCSIS Cable Modem
- THG 450 / THG 455 : 2 lines PacketCable VoIP E-MTA (Euro-DOCSIS/DOCSIS)
- THOMSON WATCH : SNMP based diagnostic tool

TCM 290 Digital Cable Modem

Specifications

- Euro-DOCSIS Based Design** - The cable modem is certified to work on any Euro-DOSIS or DOCSIS (if using the Euro-DOCSIS bandwidth) based HFC cable system. Resident BPI+ certificates enable future upgrades to advanced Euro-DOCSIS 1.1 features.
- Bridging** - Allows to connect two PC's at the same time and even to route between the Ethernet and USB port.
- NAT / PAT** - Controlled by the operator, this feature, combined with a DHCP server, allows the user to connect up to 32 IP devices using a single IP address.
- Router** - Combined with an external hub and NAT/PAT turned on, the cable modem features a basic router function.
- Firewall** - The combination NAT/PAT and additional packet filtering capabilities provides the cable modem with a basic firewall feature controlled by the operator.
- Easy Installation** - Upgraded to the latest technology 100Base-T Ethernet standard. The TCM 290 also supports the older standard, 10Base-T Ethernet by auto-sensing.
- E-Z Start-Up Indicators** - Easy-to-use LED lights on the front of the unit show the modem status. This provides the user the ability to verify modem operation and connectivity.
- Simple-to-Use Illustrated Setup Guide** - The guide steps users through the connections of the broadband cable, electrical power, and Ethernet or USB cables.
- Security** - Supports BPI+ communications privacy to support secure data exchange between modems and cable operators' servers.
- LED Administrative Disable Indicator** - Helps prevent unnecessary truck rolls.
- Internal Web Pages** - TCM 290 web pages allow direct access to information about the status of the modem and other important information.
- Advanced Upstream Rate Limiting** - This provides an advanced algorithm to minimize network retransmissions of filtered packets, preserving the available upstream bandwidth. Cable companies may limit upstream rates of subscribers, to prevent single users from running server applications in their homes. Less sophisticated rate-limiting algorithms lead to high packet loss, resulting in many retransmissions, further straining the upstream bandwidth.
- On/Off Security Button** - Turning the modem off puts the modem into "standby" mode. The modem is still on, and remains locked to the CMTS, responding to SNMP, enabling subscribers fast and easy use when required. The button also serves as a security feature, assuring the customer that the network will not be accessible if the button is off, alleviating security concerns of an "always on" connection.
- Network Shutdown Recovery** - In the case of a cable area electrical signal outage, in order to avoid all the modems rebooting at the same time, and flooding the networks with collisioned requests, Thomson has implemented a feature allowing the modems to reboot at different times thus facilitating a smooth reactivation of the network.

Product Specifications

► Standards

Euro-DOCSIS certification board	Certified
1.1 upgradeability	DOCSIS and Euro-DOCSIS
CMTS Interoperability	Any qualified Euro-DOCSIS and DOCSIS* (* using the Euro-DOCSIS frequency band width with a DOCSIS CMTS)
Operating Systems supported (USB)	Windows 98SE, Windows 2000, Windows Me, Windows XP

► Receiver

Downstream Modulation	64/256 QAM
Downstream Frequency Range	108-862 MHz
Maximum Downstream Data Rate	41.71/55.61 Mbps (64 QAM/256 QAM)
RF Input Sensitivity	+43 to +73 dBμV (64 QAM), +47 to +77 dBμV (256 QAM)
BER <10⁻⁸	64 QAM: C/N >25.5 dB, 256 QAM: C/N >34.5 dB, if DS <54 dBμV else C/N >31.5 dB
Input Impedance	75 Ohms

► Transmitter

Upstream Modulator	QPSK/16 QAM
Frequency Range	5-65 MHz
Channel Bandwidth	200 KHz, 400 KHz, 800 KHz, 1.6 MHz, 3.2 MHz
Maximum Upstream Data Rate	Max 5.12/10.24 Mbps (QPSK/16 QAM)
RF Output Level	QPSK: +68 to +118 dBμV, 16 QAM: +68 to +115 dBμV
Automatic Level Adjust	Yes
Gain Control Range	50 dB
Frequency Stability	± 5 kHz
Output Impedance	75 Ohms

► Software Features

Software Downloadable	Yes
NAT/PAT	Switchable by the operator
Firewall	Switchable by the operator
Bridging	Between USB and Ethernet
Multiple client support	32
Upstream Rate limiting	Sophisticated algorithm to limit upstream rate and minimize retransmissions of loss packets
Safety On/Off button	When turned Off, the modem can be accessed by the head-end but the connection to the PC is Off, so that nobody can access it

Class-of-Service (COS)	Yes
Protocol Filtering	Ethernet & IP
SNMP Management	V2, V3
Security	BPI+
IP Security	Hardware support
LED Diagnostics	5-step LED
HTTP Server (CM status)	Yes

► Packaging & Content

Cabinet Dimensions (cm)	14,7 H x 15,2 D x 5,8 W
Shipping Weight appr.	1,35 kg
Packaging dimensions (cm)	24,5 H x 16,5 D x 9,8 W
Overpack Quantity	12
Operating Temp.	0°C to +40°C
Cables	USB & Ethernet
CD-ROM	Yes

► I/O Interfaces

Ethernet 10Base-T or 100Base-T	RJ45 – auto-detect
RF Connector	F-Type
Number of PCs supp.	32
Power (Wall Pack)	220 Vac 50 Hz
USB Port	Yes
User Switches	On/Off & Reset

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