technicolor

FEEL THE WONDER

TC4400
Ultra-Broadband Cable Modem for above Gigabit speeds

32 x 8 D3.1

CABLE   DATA

The TC4400 is the first DOCSIS® 3.1 cable modem introduced by Technicolor offering data services beyond Gigabit speeds.

■ Highest Performance with DOCSIS 3.1

The TC4400 matches perfectly with the requirements of cable operators willing to propose ultimate Broadband access to their customers.

The TC4400 cable modem is fully compliant with the latest DOCSIS 3.1 specification as published by CableLabs® and is capable of delivering downstream cable speeds of up to 4 Gbps by using 2 Orthogonal Frequency-Division Multiplexing (OFDM) downstream channels and up to 1 Gbps upstream by using 2 Orthogonal Frequency-Division Multiple Access (OFDMA) upstream channels.

This enhanced and superior performance allows Cable Operators to propose multi-Gigabit data services to their customers through various applications, from IP connectivity to ultra-high speed internet access and gaming.

■ Future Proof High-Bandwidth Technology

The TC4400 can be deployed by cable operators on their current network, seamlessly integrating as a DOCSIS 3.0 cable modem offering 32 bonded downstream and 8 bonded upstream channels.

Once cable operators upgrade their network to the new DOCSIS 3.1 standard, the TC4400 supports this migration without any need of intervention at the customer premises due to some of its unique features such as:

- DOCSIS/EuroDOCSIS 3.0 backwards compatibility

- a fully integrated 1.2 GHz full band capture Wideband tuner

- a switchable diplexer that allows to support existing band split as well as future DOCSIS 3.1 band split on the same hardware.

■ Advanced Security

To secure data exchange between the cable modem and the cable operators' servers, BPI+ communications privacy is used.

■ Easy to Use

Like all Technicolor modems and gateways, the TC4400 is an easy to use, easy to install device.

For convenience of the end user, the easy-to-access LEDs provide a clear indication of start-up sequence, operational status, and connectivity status.

Multiple integrated web pages also allow direct access to the status and settings, including privacy and security information.

■ ECO

Technicolor is committed to offer its customers sustainable products and implements a set of ECO features to reach the best possible environmental performance. In addition to carefully selected plastics and packaging to minimize the ecological footprint, the TC4400 benefits from a unique combination of hardware and software features that reduce power consumption substantially.

Features at a Glance

- DOCSIS® 3.1 compliant
- Backward compatible with (Euro)DOCSIS® 3.0
- 2 x 2 OFDM(A) bonded channels in DOCSIS 3.1 mode
- 32 x 8 bonded channels in DOCSIS 3.0 mode
- Switchable diplexer for upstream and downstream frequency up to 204 MHz split
- 1.2 GHz full band capture tuner
- Built in RF spectrum analyzer
- 2 GE LAN ports
- IPv4, IPv6 DS-Lite
- Designed to meet the latest ECO standards

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Technical Specifications

Hardware

- Interfaces WAN — 1 RF connector F-Type
- Interfaces LAN — 2 10/100/1000 Base-T Ethernet ports
- Buttons — Reset button
- Power input — DC jack
- Power supply — 12 VDC external PSU
- AC Voltage — 120 - 240 VAC, 50 - 60 Hz (switched mode PSU)
- Dimensions — 163 x 53 x 145 mm (8.42 x 2.09 x 5.71 in.)
- Operating temperature — 0° - 40° C (32° - 104° F)
- Storage temperature — -20° - 70° C (-4° - 158° F)
- Operating humidity — 5 - 95 % non-condensing

Cable certifications

- Data — DOCSIS® 3.1 compliant
- CMTS interoperability — Any qualified DOCSIS 3.1 CMTS
  Any qualified (Euro)DOCSIS® 3.0 CMTS

Cable receiver

- Downstream modulation — 64, 256, 1024, 4096 QAM
- Downstream frequency range, software selectable

DOCSIS 3.0	54 - 1002 MHz
	108 - 1002 MHz
EuroDOCSIS 3.0	108 - 1218 MHz
	258 - 1218 MHz

- Number of downstream channels

DOCSIS 3.1	2 OFDM
(Euro)DOCSIS 3.0	Up to 32 bonded

- Maximum downstream data range

DOCSIS 3.1	Up to 4 Gbps
DOCSIS 3.0	1372 Mbps (theoretical 42.88 Mbps x 32)
EuroDOCSIS 3.0	1780 Mbps (theoretical 55.62 Mbps x32)

- Capture windows — 1.2 GHz full band capture
- Channel bandwidth

DOCSIS 3.1	max. 192 MHz bands
DOCSIS 3.0	6 MHz
EuroDOCSIS	8 MHz

- Input signal level range — -15 dBmV / + 15 dBmV
- Input impedance — 75 Ohm

Cable transmitter

- Upstream modulation — QPSK
  8, 16, 32, 64 and 128 QAM
- Upstream frequency range, software selectable

DOCSIS 3.0	5 - 42 MHz
	5 - 85 MHz
EuroDOCSIS 3.0	5 - 85 MHz
	5 - 204 MHz

- Number of upstream channels

DOCSIS 3.1	2 OFDMA
(Euro)DOCSIS 3.0	Up to 8 bonded

- Maximum upstream data range
  262 Mbps (theoretical 32.78 Mbps x 8)
- Channel bandwidth — 200, 400 and 800 kHz, 1.6, 3.2 and 6.4 MHz
- Output impedance — 75 Ohm
- Upstream spectral analyzer

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Technical Specifications

Management

- User-friendly GUI via HTTP
- Command Line Interface (CLI)
  - Telnet
  - SSH v2
- SNMP   SNMP v1, SNMP v2, SNMP v3
- Operation, Administration & Maintenance (OAM)
  - ITU-T Y.1731
- Software upgrade   via WAN RF connection only
- Logging and alert

Networking

- Routing modes   Transparent bridging
- Multiple client support   32
- Class of services   16 downstream IDs
  - 16 upstream service flows
- Network protocol   IP (IPv4, IPv6 DS-Lite)
  - TCP, UDP, ARP
  - ICMP, DHCP
  - TFTP, SNMP, HTTP, Telnet
- Protocol filtering   Ethernet and IP

Quality of Service

- Traffic type prioritization   DOCSIS 1.0, 1.1 compliant
- IEEE 802.1Q classification
- Queuing, policing, shaping

Security

- Baseline Privacy Interface Plus (BPI+)

ECO design

- Power control features   Power reduction schemes built-in

Package contents

- TC4400
- Ethernet cable (RJ-45)
- Power supply unit
- Quick Setup leaflet(s) (optional)
- Safety Instructions & Regulatory Information booklet

Professional Services

To reinforce our extensive portfolio of digital home solutions, Technicolor has a dedicated Professional Services team to make sure that every deployment is a success, from initial provisioning and integration to operations, upgrades, ongoing support and beyond. Our wide array of services spans the entire customer project lifecycle, encompassing:

- Expert consulting
- Software customizations and customer change orders
- Qualified technical support and maintenance
- Seamless system integration
- Efficient repair, refurbishment and recycling
- Warranty extensions on all our products

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