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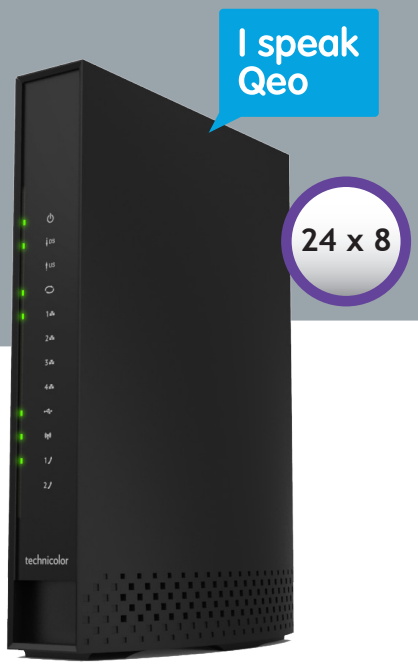
MediaAccess TC7230

Gigabit-Class Wireless .11ac Voice Cable Gateway



CABLE

- DATA
- VOICE
- VIDEO

Next-Gen Wireless Technology for Next-Gen Speeds

Featuring next-generation IEEE 802.11ac Wi-Fi, this enhanced wireless solution with beamforming technology enables even higher throughput and better coverage over the much less crowded 5GHz radio, for real-time content delivery.

As a dual band concurrent wireless gateway, the TC7230 also guarantees uninterrupted transmission of data services over IEEE 802.11n using the 2.4 GHz band.

Latest Gigabit-Class Bandwidth Technology

The TC7230 is a (Euro)DOCSIS 3.0 wireless Embedded Multimedia Terminal Adapter (EMTA) gateway introducing the next generation in ultrahigh-speed data services. This new cable solution offers next to 8 bonded upstream channels, 24 bonded downstream channels for wired gigabit download speeds (up to 1.2 Gbps). Operators can now offer their customers even faster broadband access as well as demanding IPTV services.

Other value-added applications such as a DLNA media server and hard disk sharing are also at your fingertips thanks to the TC7230's dedicated application processor.

Features at a Glance

- EuroDOCSIS® 3.0 compliant
- Dual mode DOCSIS®/EuroDOCSIS®
- Backward compatible with (Euro)DOCSIS® 2.0 (and older)
- 24 bonded downstream and 8 bonded upstream channels
- Full band capture tuner
- Voice EuroPacketCable™ 1.5 compliant
- 4 GE LAN ports
- Wireless networking on-board:
  - IEEE 802.11n 2.4 GHz (2x2)
  - IEEE 802.11ac 5.0 GHz (3x3)
- 2 FXS ports for phone or fax
- 1 USB 2.0 master port
- MPEG2 over IP encapsulation solution
- Future-proof full service platform supporting:
  - Qeo communication framework and apps
- Advanced security features
- IPv4 and IPv6 DS-Lite support
- Designed to meet the latest ECO standards

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Full Band Capture Solution

Thanks to its fully integrated 1 GHz wideband tuner, the TC7230 exceeds SCTE-40+ performance and eliminates all frequency limitations of traditional wideband tuners. The TC7230 enables use of the full Radio Frequency (RF) spectrum without the need for grouped channels. This helps the operator migrate his entire EuroDOCSIS 3.0 installed base from one to 24 EuroDOCSIS downstream channels without having to re-align all broadband channels to accommodate this new service.

"I speak Qeo"

The TC7230 has been developed to run Qeo, Technicolor's open, agile and distributed communication framework that addresses the issue of disparate ecosystems used for device interaction. With Qeo, you can seamlessly bridge all your connected devices, applications and over-the-top cloud solutions, regardless of brand or ecosystem. As a universal software language, it lets you create totally new use cases for the connected life and the "Internet of Things" (IoT).

Qeo also includes tools to monitor and manage all Qeo enabled devices, helping you keep operational costs under control.

To learn more about Qeo, visit: **www.i-speak-qeo.com**

Voice Performance

The TC7230 is EuroPacketCable 1.5 compliant and, after a software upgrade, it can operate in PacketCable 2.0 or SIP mode. The TC7230 supports all standard codecs including iLBC and BV16 and is equipped with basic and extended CLASS features such as caller ID and call waiting. Gateway and voice operations support data throughput and complex voice calls simultaneously.

Advanced Security

The integrated firewall provides Stateful Packet Inspection (SPI), and an integrated Intrusion Detection and Prevention System (IDS) engine which monitors a wide range of attack patterns, and logs potential security breaches to a local cache or remote server.

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

The TC7230 also supports powerful wireless security mechanisms, such as Wi-Fi Protected Access (WPA, WPA2). together with a secure and user friendly connection and configuration mechanism for connecting wireless clients (WPS).

The TC7230 supports up to eight wireless networks (mSSID), enabling to set up independent virtual wireless access points. These additional wireless networks allow other wireless users to enjoy high-performance access without compromise on the integrity of the basic network, thus keeping the original network access limited and secure.

Video Streaming

The TC7230 contains an MPEG2 to IP encapsulation solution allowing the capture of the DVB-C free-to-air video signal on the RF network and the distribution of this video signal over IP on the local network of the customer.

This feature is available upon software upgrade of the TC7230 and is a first step for cable operator towards distributing IPTV without any change to their existing QAM (digital video) broadcast infrastructure.

Media Sharing

The TC7230 acts as a fully compliant DLNA 1.5 Digital Media Server (DMS) and enables distribution of all content from any device to any device in the home. You can stream music, data, pictures and video from your gateway to devices connected to your wired or wireless home network.

In addition, the TC7230 supports hot plugging of USB hard disk drives, allowing you to simply plug and play devices without the need to switch the gateway off first.

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 TC7230 benefits from a unique combination of hardware and software features that reduce power consumption substantially.

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
- Seamless system integration
- Warranty on all our products
- Qualified technical support and maintenance
- Efficient repair, refurbishment and recycling

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Technical Specifications

Hardware Specifications

- Interfaces WAN: 1 RF connector F-Type
- Interfaces LAN: 4-port auto-MDI/MDI-X 10/100/1000 Base-T Ethernet LAN switch (RJ-45)
  Wi-Fi IEEE 802.11n 2.4 GHz on-board
  Wi-Fi IEEE 802.11ac 5.0 GHz on-board
  2 FXS POTS ports (RJ-11)
  1 USB 2.0 master port
- Interfaces other: Power button
  WPS button
  Reset button
- Dimensions: 218 x 63 x 160 mm (8.6 x 2.5 x 6.3 in)
- Power supply: 120-240 VAC, 50-60 Hz
- Operating temperature: 0° to 40° C (32° - 104° F)
- Operating humidity: 20 % to 90 % non-condensing
- Storage temperature: -20° to 70° C (-4° - 158° F)

Cable Certifications

- Data: EuroDOCSIS® 3.0 compliant
- Voice: EuroPacketCable™ 1.5 compliant
- CMTS interoperability: Any qualified EuroDOCSIS® / DOCSIS® CMTS

Receiver Specifications

- Downstream modulation: QAM 64/256
- Downstream frequency range: 108 - 1002 MHz
- Maximum downstream data range: 1.2 Gbps (theoretical)
  (55.61 Mbps x 24 channels)
- Capture windows: Full Band Capture: possibility to have any of the 16 downstream channels over the full EuroDOCSIS® spectrum
- Number of downstream channels: Up to 24
- Input signal level range: -15 dBmV / + 15 dBmV
- Input impedance: 75 Ohm

Transmitter Specifications

- Upstream modulation: QPSK
  8, 16, 32, 64 and 128 QAM
- Upstream frequency range: 5 - 85 MHz
- Maximum upstream data range: 240 Mbps (theoretical)
  (32.78 Mbps x 8 channels)
- Number of upstream channels: 8
- Channel bandwidth: 200, 400 and 800 kHz, 1.6, 3.2 and 6.4 MHz
- Output impedance: 75 Ohm

Wireless Specifications*

- Full dual band concurrent Wi-Fi access points, Wi-Fi certified®
  2.4 GHz (2x2) IEEE 802.11n AP
  5.0 GHz (3x3) IEEE 802.11ac AP with IEEE 802.11ac compliant transmit beamforming
- Wi-Fi Protected Setup (WPS™)
- Wi-Fi security levels: IEEE802.1x port-based authentication with RADIUS client
  WPA2™-Personal / WPA™-Personal
  WEP™
- Up to 8 BSSIDs (virtual AP) support
- Wi-Fi Hotspot functionality with SoftGRE standard
- 2x2 MIMO 2.4 GHz Wi-Fi features
  SGi
  STBC
  20/40 MHz coexistence
- 3x3 MIMO 5 GHz Wi-Fi features
  SGi
  STBC
  20/40/80 MHz mode
- Dynamic rates switching for optimal wireless rates

*Wireless configuration can be tailored to customer requirements

Management

- User-friendly GUI via HTTP
- Web-based user interface management and administration
- Logging and alert

Services

- Support of Qeo communication framework and apps, including access to real time diagnostics
- Parental control: URL- and content-based website filtering
- Content sharing: file server
  DLNA® DMS

Security

- Stateful Packet Inspection Firewall (SPIF)
- Customizable firewall security levels
- Intrusion detection and prevention (DoS, SYN Flood, Ping of Death)
- Security and service segregation per SSID

Networking

- Network protocol: IP, TCP, UDP, ARP, ICMP, DHCP, TFTP, SNMP, HTTP
- Protocol filtering: Ethernet and IP
- SNMP management: SNMP v2, SNMP v3

Software

- Downloadable software
- Multiple client support: 254
- Class of Services: 32 DSIDs and 32 Service Flows
- Security: BPI+
- HTTP server

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Technical Specifications

Telephony

- Audio codecs — PCM A-law, PCM μ-law, G.729, G.729a, G.729e, G.728, iLBC and BV16
- Multi-line phone support — 2 phone lines; 3-party conference calls; Supports two complex voice codecs simultaneously
- Fax relay — T.38
- DTMF tone relay — RFC 2833
- Caller ID — Type I and Type II
- CLASS features — Basic and extended CLASS features
- Voice Activity Detection (VAD)
- Comfort Noise Generation (CNG)
- Echo cancellation — G.165; G.168 up to 16 ms
- Packet tone — DTMF generation; Call progress generation; Custom tone generation
- Call discrimination — Fax and modem detection
- Telephony interface capabilities — Loopback and on-demand diagnostics
- Modems — Up to V.90 (38.5 kbps)
- RFC 2833 DMTF tone relay — Enabled / disabled via SNMP
- REN — 5 REN
- Pulse dialing — DTMF/pulse tones; Pulse/DTMF tones conversion
- RTP layer — RFC 1889; RFC 1890
- RTCP statistics collection
- PacketCable protocols — PacketCable™ NCS; Network-based call signalling protocol (PKT-SP-EC-MGCP); SIP protocol by software upgrade
- SIP based protocols

Environmental features

- Power control features — Ability to turn off any or all modules; Slow down or turn off processors; Turn on or turn off external interfaces; Dynamic power consumption reduction

Content of the Box

- EMTA Gigabit-Class Wireless .11ac Voice Cable Gateway
- Power supply unit
- Ethernet cable (RJ-45)
- CD-ROM
- Quick Installation Guide

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