technicolor

MediaAccess TG789vac

Wireless .11ac
Smart Ultra-Broadband Gateway
with Voice

TELECOM

- DATA
- VOICE
- VIDEO

Next-Gen Wireless Technology for Next-Gen Speeds

The TG789vac is one of the first dual band concurrent Wi-Fi ultra broadband gateways to feature the next-generation IEEE 802.11ac wireless standard for the 5 GHz band. With its optimized antenna configuration, this enhanced wireless solution enables even higher throughput and better coverage over the much less crowded 5 GHz radio, for real-time content delivery. Simultaneously, it guarantees uninterrupted transmission of data services over IEEE 802.11n using the 2.4 GHz band.

"I speak Qeo"

The TG789vac 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

Features at a Glance

- Integrated VDSL2 modem
- 1 GE WAN port
- AutoWAN sensing™
- 4 GE LAN ports
- Dual-band concurrent Wi-Fi interfaces:
  - IEEE 802.11n 2.4 GHz (2x2)
  - IEEE 802.11ac 5 GHz (3x3)
- 1 FXO analog port
- 2 FXS ports for phone or fax
- Wideband audio: G.722 and G.722.2
- 2 USB 2.0 masters for hard disk, printer, 3G adapter, ...
- Seamless media sharing (UPnP A/V™ and DLNA®)
- Extensive remote management
- Future-proof full service platform (powerful cache, execution environment, ...)
- Non-service-affecting platform software upgrades (dual bank memory)
- IPv6 enabled
- Designed according to the latest ECO standards

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Future-Proof Design

As a high-end service memory platform, the TG789vac is future-proof thanks to its scalable software architecture.

The most advanced features can be easily integrated, including demanding own and third-party applications such as home automation and home monitoring, or extended remote management and help desk functions.

Best-In-Class Ultra Broadband

The accelerating growth of WAN and LAN traffic is pushing operators to look to ultra-high-speed network technologies to solve the bandwidth crunch. VDSL2 combined with Gigabit Ethernet enables extremely high bandwidth and guarantees superior quality in voice, data and video.

A dedicated Gigabit Ethernet WAN port and AutoWAN sensing make the TG789vac the ideal service gateway for deployment in Fiber To The Home (FTTH) scenarios.

Some of the latest performance-enhancing technologies have been added on top, to get the utmost out of existing infrastructures:

- G.vector: effectively cancels the crosstalk noise inherently present in VDSL2 bands. With vectoring, every line in a binder can operate at peak performance, as if there were no other VDSL2 lines in that binder.
- G.inp ("Impulse Noise Protection"): makes sure that no errors occur on the DSL connection, even under extreme conditions, so that high-quality video transmission is guaranteed at all times. It is based on the principle of retransmission.

Furthermore, the latest wireless technologies ensure robust in-home wireless distribution which reduces wiring complexity and provides true mobility without sacrificing Quality of Service (QoS) and Quality of Experience (QoE) or transfer speeds.

Voice over IP

The TG789vac offers VoIP functions for residential and business users. POTS phone connectors are provided to accommodate regular phones and faxes. Once the gateway is registered with a VoIP service, regular phone calls can be conducted over the Internet with all the benefits of IP telephony.

On top of a wide range of advanced voice services like caller ID, CLIR, call waiting, call forwarding, three-way conference and message waiting notification, the TG789vac is completely interoperable with the main IMS cores in the market.

Media Sharing

The TG789vac 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 TG789vac 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.

Highest Security

The Technicolor firewall guarantees users the ultimate network security level. Through integration with NAT, the firewall leverages all the Application Level Gateways (ALGs) provided in the NAT context to minimize undesired service impacts. The firewall provides Stateful Packet Inspection (SPI), and an integrated Intrusion Detection and Prevention System (IDS) engine monitors a wide range of attack patterns, and logs potential security breaches to a local cache or remote server.

The TG789vac 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 wireless clients (WPS).

The support of multiple SSIDs in the gateway enables support for up to four independent wireless access networks. These additional wireless networks allow other wireless users to enjoy the high-performance access without compromising the integrity of the basic network, thus keeping the original network access limited and secure.

IPv6 Enabled

With the approaching IPv4 address pool depletion, our products need to be ready for IPv6. Technicolor is a frontrunner in the introduction of IPv6 on its devices, with the TG789vac being enabled for multiple IPv6 field scenarios. Internet Protocol version 6 is the next generation of Internet technologies aiming to effectively support the ever-expanding Internet usage and functionality, and also to address security concerns that exist in an IPv4 environment.

Technicolor aims to introduce IPv6 as smoothly as possible in customer networks. By providing in-depth knowledge of the networking stack, we guide our customers in their transition from IPv4 to IPv6.

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Easy to Use

The TG789vac is easy to use through simple 'plug and play' and easy to install with the Technicolor Gateway Setup wizard, making the setup of a wireless home network as effortless as clicking a button.

The Technicolor Gateway Setup wizard performs comprehensive system checks before and during the installation and setup process, and validates all user inputs to guarantee the end user a secured wireless connection to the Internet.

With Wi-Fi Protected Setup (WPS) users can easily connect with the TG789vac wireless network by simply pushing a button or entering a PIN code. It allows home users to easily connect to a secure network without any complex configuration and eliminates the need to remember or store their security information in an unsafe way.

For convenience of the end user, 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.

Easy to Manage

The TG789vac is completely designed according to the TR-069 data model through which the device can be configured remotely by the operator without interrupting the end user's experience.

In addition, the Device:2 data model is available to increase remote management capabilities such as life cycle management, diagnostics and applications.

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 TG789vac 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 RJ-11 DSL line port
  - 1 Ethernet WAN 10/100/1000 Base-T port
  - 1 FXO port
- Interfaces LAN
  - 4-port autosensing 10/100/1000 Base-T auto-MDI/MDI-X Ethernet LAN switch
  - 2 FXS POTS ports
  - 2 USB 2.0 master ports
  - IEEE 802.11n 2.4 GHz on-board
  - IEEE 802.11ac 5 GHz on-board
- Interfaces other
  - Power button
  - WPS button
  - ECO button
  - Reset button
- Dimensions: 221 x 171 x 39 mm (8.7 x 6.7 x 1.5 in.)
- AC Voltage: 100 - 240 VAC (switched mode power supply)
- Temperature: 0° - 40° C (32° - 104° F)
- Humidity: 20% to 80%

DSL Modem Specifications

- Supports multi mode standards
- ADSL compliance
  - ANSI T1.413 Issue 2
  - ITU-T G.992.1 Annex A, B (G.dmt)
  - ITU-T G.992.2 Annex A, B (G.lite)
  - ITU-T G.994.1 (G.hs)
  - Maximum rate: 8 Mbps for downstream and 1 Mbps for upstream
- ADSL2 compliance
  - ITU-T G.992.3 Annex A, B (G.dmt.bis)
  - ITU-T G.992.4 Annex A, B (G.lite.bis)
  - ITU-T G.998.4 (G.inp)
  - Maximum rate: 12 Mbps for downstream and 1 Mbps for upstream
- ADSL2+ compliance
  - ITU-T G.992.5 Annex A, B
  - ITU-T G.998.4 (G.inp)
  - Maximum rate: 24 Mbps for downstream and 1 Mbps for upstream
- VDSL2 compliance
  - ITU G.993.2
    - SOS
    - SRA
    - INM
  - Up to 17 MHz profiles (POTS/ISDN)
  - ITU-T G.993.5 (G.vector)
  - ITU-T G.998.4 (G.inp)

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 Beamforming technology
- Wi-Fi Protected Setup (WPS™)
- Wi-Fi security levels
  - WPA2™-Personal / WPA™-Personal
  - WEP™
- Wi-Fi Multimedia (WMM®)
- Up to 4 BSSIDs (virtual AP) support per radio interface
- Security and service segregation per SSID
- RX/TX switched diversity
- 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 MHz and 40 MHz mode
- Manual/auto radio channel selection

Management

- Customizable user-friendly GUI via HTTP and HTTPS
- Web services API for remote access (portal, management, diagnostics, applications, ...)
- GUI-embedded Easy Setup wizard
- Technicolor Setup wizard
- On-demand remote GUI assistance (helpdesk)
- Web-browsing intercept (install/diagnostics/captive portal)
- AutoWAN sensing™: automatic selection and configuration of WAN interfaces
- Unified management interface (MBus)
- TR-069 CPE WAN Management Protocol
  - TR-098 Internet Gateway Device Management
  - TR-143 network throughput performance tests and statistical monitoring
  - TR-181i2 Device:2 data model
  - TR-157a3 Life Cycle Management (LCM)
  - TR-104 voice service provisioning and configuration
  - TR-111 home network device management
  - TR-140 storage service provisioning
- TR-064 LAN side configuration
- Zero-touch autoprovisioning

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Technical Specifications

Services

- Printer sharing
- 3G mobile fall-back WAN connection (through 3G USB adapter)
- URL- and (optional) content-based website filtering
- Open architecture for 3rd party application and UI development
- HDD file systems: FAT32 (NTFS, EXT2, EXT3, HFS+ optional)
- Content sharing
  - Samba file server
  - UPnP A/V™ media server and control point
  - Certified DLNA® DMS
  - Metadata support
  - Remote HDD file access

Security

- Stateful Packet Inspection Firewall (SPIF)
- Customizable firewall security levels
- Intrusion detection and prevention (DoS, SYN Flood, Ping of Death, Fraggle, LAND, Teardrop, etc.)
- DeMilitarized Zone (DMZ)
- Multilevel access policy
- Security and service segregation per SSID

Networking

- Symmetrical NAT with application helpers (ALGs)
- Game and application sharing NAT port maps
- DHCP conditional serving & relay, DNS server & relay
- IGMPv3 proxy (Fastleave)
- IGMP snooping (full routed)
- DHCP spoofing
- Flexiport (automatic selection of Ethernet port bridged IPTV)
- IEEE 802.1q VLAN bridging, multiple bridge instances
- Multicast to unicast translation on Wi-Fi interfaces

IPv6 Networking

- IPv4 / IPv6 dual IP stack
- Supported models: PPP(oE)(oA) – IPoE(oA)
- Transitioning:
  - 6rd/6to4/6in4
  - DSLite
- Stateful connection tracking / stateful inspection firewall
- DHCPv6:
  - Stateful/stateless DHCPv6 client
  - Stateless DHCPV6 server
  - Relay
  - Prefix Delegation
- DNS v4/v6 Proxy
- ULA
- ICMPv6
- IPv6 Quality of Service
- MLDv1/v2

Quality of Service

- ATM QoS
  - UBR, VBR-nrt, VBR-rt, CBR shaping,
  - queuing and scheduling
  - CLP tagging
- IP QoS
  - Flexible classification (ALG aided)
  - IP rate limiting (two-rate remarking/dropping)
  - DSCP (re) marking
  - TCP ACK optimization
  - Dynamic link fragmentation
  - Per service class connection/resource reservation
- Ethernet QoS
  - Priority or C-VLAN/S-VLAN tagging
  - Switch port queuing and scheduling
- Wireless QoS
  - WMM (BE, BK, VI, VO access categories)
  - queuing and scheduling

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Technical Specifications

Voice over IP Specifications

- Voice signalling: SIP
- Voice codecs: G.711, G.726, G.729, wideband (G.722, G.722.2), T.38
- Echo cancellation: G.168 compliant
- Comfort Noise Generator (CNG)
- Flexible telephone number per FXS handset including common numbers
- Interoperable with main market softswitches
- FXO: Outgoing PSTN calls in case of power failure
- Supplementary and advanced services
  - Caller ID
  - Call waiting (on call basis)
  - Call forwarding (no answer/busy/unconditional)
  - Call transferring
  - Call hold, call return
  - Calling Line Identification Presentation (CLIP)
  - Calling Line Identification Restriction (CLIR)
  - Calling Name Identification Presentation (CNIP)
  - Calling Name Identification Restriction (CNIR)
  - Fax transparency / V.92 transparency
  - 3-way conference
  - Message Waiting Indicator (MWI)
  - Missed call email
  - Click to dial
  - Warm line
  - Call completion to busy subscriber
  - Abbreviated number
  - Common number in/outgoing call
  - Anonymous Call Rejection (ACR)
  - Distinctive ringing
  - Voice Mail on No Reply (VMNR)
  - Support for secondary outbound proxy
  - DNS NAPTR, DNS SRV

Environmental Features

- ECO mode for more intelligent power saving
- Wi-Fi on/off button
- ECO LED and button

Content of the Box

- Wireless .11ac Smart Ultra-Broadband Gateway with Voice
- DSL cable (RJ-11)
- Ethernet cable (RJ-45)
- Power supply unit
- Setup CD (optional)
- Quick Setup leaflet(s) (optional)
- Safety Instructions & Regulatory Information booklet (optional)
- Filter(s) or splitter(s) (optional)

TG789vac back panel

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