



TG789vac Xstream

Wireless .11ac
Smart Ultra-Broadband Gateway
with Integrated Video Bridge

TELECOM

DATA

VOICE

VIDEO

Technicolor's TG789vac Xstream is a unique future-proof triple-play service gateway allowing VDSL2 connectivity while providing VoIP functions for residential and business users. Thanks to its integrated wireless video bridge featuring a robust chipset and 4x4 antennas, the TG789vac Xstream can support seamless real-time HD video streaming over next generation 802.11ac Wi-Fi without any interruption of your data traffic.

Seamless Video over Next-Gen Wi-Fi

With its support of dual band concurrent Wi-Fi (IEEE 802.11n 2.4 GHz and the next-generation IEEE 802.11ac wireless standard for the 5 GHz band), the TG789vac Xstream is a powerful and future-proof smart gateway enabling high-speed wireless HD video streaming inside the home. Thanks to its integrated wireless video bridge featuring a robust chipset and 4x4 antennas, it can support multiple HD TV channels over the clean 5 GHz radio. Furthermore, its advanced architecture guarantees a very low packet error rate on the wireless link, resulting in a 100% smooth and flicker-free wire-quality viewing experience.

Simultaneously, it guarantees uninterrupted transmission of data services over IEEE 802.11n using the 2.4 GHz band.

Superspeed USB

The TG789vac Xstream comes with superspeed USB 3.0 master ports to support mass storage devices, LTE and 4G USB adapters, enabling transfer speeds multiple times higher than the conventional USB 2.0.

Flexible & Future-Proof Software Stack

The TG789vac Xstream is enriched with Technicolor Homeware, a reliable and managed middleware that offers an open architecture with multiple application environments fit to open up the connected home and deliver an unlimited spectrum of value-added services and applications.

Featuring a platform agnostic architecture, Technicolor Homeware is a fully portable solution that ensures the fastest time to market. Moreover, its modularity and enhanced life cycle management make it easy to add or remove components to or from a software release, while enabling second & third party development.

Leveraging open source, Technicolor Homeware embraces different execution environments and supports current and emerging trends, transforming the gateway into a full-blown app platform.

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 (4x4)
- 1 FXO analog port (optional)
- 2 FXS ports for phone or fax
- 2 superspeed USB 3.0 master ports
- Seamless media sharing (UPnP A/V™ and DLNA®)
- Future-proof full service platform
- Enabled to support Wi-Fi Doctor® (sold separately) and Wi-Fi Controller (sold separately)
- Extensive remote management
- Non-service-affecting platform software upgrades (dual bank memory)
- IPv4 & IPv6 enabled
- Designed according to the latest ECO standards



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■ 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 Xstream 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 Xstream 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 Xstream is completely interoperable with the main IMS cores in the market.

■ Media Sharing

The TG789vac Xstream 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 Xstream 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.

■ Easy to Use

Like all Technicolor modems and gateways, the TG789vac Xstream 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.

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■ Highest Security

The TG789vac Xstream Stateful Packet Inspection (SPI) firewall guarantees users the ultimate network security level. Through integration with Network Address & Port Translation (NAPT), the firewall leverages all the Application Level Gateways (ALGs) provided in the NAT context to minimize undesired service impacts.

Advanced smart parental controls, security audit services, access logging and monitoring are optionally available for home, hotspot and mobile data network users to create a fully personalized and time-based access control environment, based on individual user profiles and web usage behaviour.

The TG789vac Xstream also supports powerful wireless security mechanisms, such as Wi-Fi Protected Access (WPA, WPA2) together with the secure and user friendly Wi-Fi Protected Setup (WPS) connection and configuration mechanism for connecting wireless clients.

In addition, the TG789vac Xstream supports multiple wireless networks (mSSID) enabling to set up independent virtual wireless access points, including controlled wireless hotspots. These additional wireless networks allow other wireless users to enjoy high-performance access without any compromise on the integrity of the basic network, thus keeping the original network access limited and secure.

■ Easy to Manage

The TG789vac Xstream is completely designed according to the TR-069's TR-098 IGD data model through which the device can be configured remotely by the operator without interrupting the end user's experience.

In addition, the TR-181i2 Device:2 data model is made available to further increase the remote management capabilities towards life cycle management, diagnostics and application management.

■ 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 Xstream 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.

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

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Technical Specifications

Hardware

■ Interfaces WAN	1 RJ-11 DSL line port 1 autosensing 10/100/1000 Base-T Ethernet WAN port 1 FXO port (optional)
■ Interfaces LAN	4-port autosensing 10/100/1000 Base-T Ethernet LAN switch 2 FXS POTS ports 2 USB 3.0 master ports IEEE 802.11n 2.4 GHz on-board IEEE 802.11ac 5 GHz on-board
■ Interfaces other	Info/ECO button Wi-Fi on/off button WPS button Reset button Power button
■ Power input	DC jack
■ Power supply	12 VDC external PSU
■ AC Voltage	100 - 240 VAC, 50 - 60 Hz (switched mode power supply)
■ Dimensions	241 x 37 x 192 mm (9.49 x 1.46 x 7.56 in.)
■ Operating temperature	0° - 40° C (32° - 104° F)
■ Operating humidity	20% - 80%

xDSL modem

■ Supports multi mode standards	
■ ADSL compliancy	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) Rates up to 8 Mbps downstream and 1 Mbps upstream
■ ADSL2 compliancy	ITU-T G.992.3 Annex A, B, L (G.dmt.bis) ITU-T G.992.4 Annex A, B, L (G.lite.bis) ITU-T G.998.4 (G.inp) Rates up to 12 Mbps downstream and 1 Mbps upstream
■ ADSL2+ compliancy	ITU-T G.992.5 Annex A, B, M ITU-T G.998.4 (G.inp) Rates up to 24 Mbps downstream and 3 Mbps upstream
■ VDSL2 compliancy	ITU G.993.2 SOS SRA INM Up to VDSL2 profile 17a (VDSL2 profile 35b optional) ITU-T G.993.5 (G.vector) ITU-T G.998.4 (G.inp)
■ Supports Dying Gasp	

Wireless

■ Full dual band concurrent Wi-Fi access points, Wi-Fi certified®	2.4 GHz (2x2) IEEE 802.11n AP 5 GHz (4x4) IEEE 802.11ac AP with IEEE 802.11ac compliant transmit beamforming
■ Wi-Fi Protected Setup (WPS™)	
■ Wi-Fi security levels	WPA2™-Enterprise / WPA™-Enterprise WPA2™-Personal / WPA™-Personal
■ Wi-Fi Multimedia (WMM®) and WMM-Power Save	
■ Up to 4 BSSIDs (virtual AP) support per radio interface	
■ Wireless hotspot capabilities	
■ 2x2 MIMO 2.4 GHz Wi-Fi features	SGi STBC 20/40 MHz coexistence
■ 4x4 MIMO 5 GHz Wi-Fi features	SGi STBC LDPC (FEC) 20/40/80 MHz mode
■ RX/TX switched diversity	
■ Dynamic rate switching for optimal wireless performance	
■ Manual/auto radio channel selection	

Voice and telephony

■ Voice technologies	Voice over IP (VoIP)
■ Voice signalling	SIP
■ Voice codecs	G.711, G.726, G.729 Wideband T.38 G.722.2 (optional)
■ Echo cancellation	G.168 compliant
■ Comfort Noise Generator (CNG)	
■ Voice Activity Detection (VAD)	
■ Flexible telephone number per FXS handsets, including common numbers	
■ FXO (optional)	Outgoing PSTN calls in case of power failure Lifeline backup: manual and automatic PSTN/VoIP (optional) Fully flexible dial plan for PSTN/VoIP outgoing calls (optional) Prefix for PSTN/VoIP switch (optional) Incoming call detection on PSTN (optional)
■ 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) Call completion to busy subscriber Forced FXO (optional) Abbreviated number Anonymous Call Rejection (ACR) Distinctive ringing DNS SRV
■ Interoperable with main market softswitches	

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Management

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

Services

- Life Cycle Management (LCM) for developing advanced services support
- Open architecture for 3rd party application and UI development
- 3G/LTE/4G mobile fall-back WAN connection (through USB adapter)
- Wireless hotspot (optional, on request)
 - Passpoint
 - GRE tunneling
 - EAP
 - Fon
- Parental control
 - URL- and (optional) content-based website filtering
 - Time-based access control
- Printer sharing
 - IPP
 - LPD
- Content sharing
 - Server Message Block (SMB) Samba file server
 - UPnP A/V™ media server and control point
 - DLNA® DMS
 - Metadata support
- HDD file systems
 - FAT32, NTFS, ExFAT
 - EXT2, EXT3, EXT4
 - HFS+

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
- 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
 - DS-Lite
- Stateful connection tracking / stateful inspection firewall
- DHCPv6
 - Stateful/stateless DHCPv6 client
 - Stateless DHCPv6 server
 - Relay
 - Prefix Delegation
- ICMPv6

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
 - Dynamic link fragmentation
- Ethernet QoS
 - Priority or C-VLAN/S-VLAN tagging
 - Ethernet switch port queuing and scheduling
- Wireless QoS
 - WMM (BE, BK, VI, VO access categories) queuing and scheduling

Security

- Stateful Packet Inspection Firewall (SPIF)
- Customizable firewall security levels
- Intrusion detection and prevention
- DeMilitarized Zone (DMZ)
- Multilevel access policy
- Security and service segregation per SSID

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Technical Specifications

ECO design

- ECO mode for more intelligent power saving
- Wi-Fi on/off button
- WMM-Power Save

Package contents

- TG789vac Xstream
- DSL cable (RJ-11)
- Ethernet cable (RJ-45)
- Power supply unit
- Quick Setup leaflet(s) (optional)
- Safety Instructions & Regulatory Information booklet
- Filter(s) or splitter(s) (optional)



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

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