

technicolor



FEEL THE WONDER

## ACCESS CABLE GATEWAY

CGA2121TCH2

Wireless .11ac Gigabit-Class Cable Gateway  
with Voice



### Latest Gigabit-Class Bandwidth Technology

The CGA2121TCH2 is a DOCSIS 3.0 cable 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 of up to 1.2 Gbps. Operators can now offer their customers even faster broadband access as well as demanding IPTV services.

The dedicated applications processor and software execution environment turns the CGA2121TCH2 into powerful and reliable platform in the home, ready for demanding services and applications.

The CGA2121TCH2 has an extended life cycle thanks to its extensive remote management capabilities, including the ability to smoothly upgrade itself.

### Next-Gen Wi-Fi Technology for Next-Gen Speeds

Featuring the next-generation IEEE 802.11ac Wi-Fi standard for the 5 GHz band, this dual band Wi-Fi solution makes optimal use of the radio spectrum. With its optimized antenna configuration, the CGA2121TCH2 enables even higher throughput and better coverage over the much less crowded 5 GHz radio.

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

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.

### Features at a Glance

- DOCSIS® 3.0 compliant
- Backward compatible with DOCSIS® 2.0 (and older)
- 24 bonded downstream and 8 bonded upstream channels
- Full band capture tuner
- Built-in RF spectrum analyzer
- 4 GE LAN ports
- Wi-Fi networking on-board
  - IEEE 802.11n 2.4 GHz (2x2)
  - IEEE 802.11ac 5 GHz (3x3)
- Wi-Fi hotspot functionality
- 2 FXS ports for phone or fax
- PacketCable™ 1.5 and 2.0 compliant
- 1 USB 2.0 master port
- Seamless media sharing (UPnP™ AV)
- MPEG2 over IP encapsulation solution
- Advanced security features
- TR-069 remote management
- IPv4 and IPv6 DS-Lite support



# ACCESS CABLE GATEWAY

## CGA2121TCH2

### Full Band Capture Solution

Thanks to its fully integrated 1 GHz wideband tuner, the CGA2121TCH2 exceeds SCTE-40+ performance and eliminates all frequency limitations of traditional wideband tuners. The CGA2121TCH2 enables use of the full Radio Frequency (RF) spectrum without the need for grouped channels. This helps the operator migrate his entire DOCSIS 3.0 installed base from one to all DOCSIS downstream channels without having to re-align broadband channels to accommodate this new service.

Remote diagnostics provides real time, unobtrusive diagnostic and spectrum analysis capabilities, without effecting user service on any of the downstream channels.

### Voice Performance

The CGA2121TCH2 is PacketCable 2.0 and PacketCable 1.5 compliant and can operate in MGCP as well as SIP mode.

The CGA2121TCH2 supports all standard codecs (optionally also 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.

### Video Streaming

The CGA2121TCH2 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 CGA2121TCH2 and is a first step for cable operator towards distributing IPTV without any change to their existing QAM (digital video) broadcast infrastructure.

### Easy to Use

Like all Technicolor modems and gateways, the CGA2121TCH2 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.

### Easy to Manage

Apart from being manageable via SNMP, the CGA2121TCH2 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.

### 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 CGA2121TCH2 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 CGA2121TCH2 supports up to eight wireless networks (mSSID) per Wi-Fi radio, 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.

# ACCESS CABLE GATEWAY

CGA2121TCH2

## Technical Specifications

### Hardware

■ Interfaces WAN	1 F-type connector, external threaded
■ Interfaces LAN	4-port autosensing 10/100/1000 Base-T Ethernet LAN switch
	IEEE 802.11n 2.4 GHz Wi-Fi
	IEEE 802.11ac 5 GHz Wi-Fi
	2 FXS POTS ports
	1 USB 2.0 master port
■ Buttons & indicators	6 status LEDs
	Wi-Fi on/off button (with backlit LED)
	WPS button (with backlit LED)
	Reset button (recessed)
■ Power input	DC jack
■ Power supply	12 VDC external PSU
■ AC voltage	100 - 240 VAC (switched mode power supply)
■ Dimensions	225 x 60 x 170 mm (8.86 x 2.36 x 6.69 in.)
■ Operating temperature	0° - 40° C (32° - 104° F)
■ Operating humidity	20 % - 90 % non-condensing
■ Storage temperature	-20° - 70° C (-4° - 158° F)

### Certifications

■ Data	DOCSIS® 3.0 compliant
■ Voice	PacketCable™ 1.5 & 2.0 compliant
■ CMTS interoperability	Any qualified DOCSIS® CMTS

### RF downstream

■ Downstream modulation	64, 256 QAM
■ Downstream frequency range	88 - 1002 MHz
	108 - 1002 MHz
■ Downstream channels	Up to 24 bonded
■ Downstream rates	Up to 1029 Mbps (24 x 42.88 Mbps)
■ Capture windows	1.2 GHz full band capture
■ Channel bandwidth	6 MHz
■ Input signal level range	-15 dBmV - +15 dBmV
■ Input impedance	75 Ohm

### RF upstream

■ Upstream modulation	QPSK
	8 - 128 QAM
■ Upstream frequency range	5 - 42 MHz
	5 - 85 MHz
■ Upstream channels	Up to 8 bonded
■ Upstream rates	Up to 245 Mbps (8 x 30.72 Mbps)
■ Channel bandwidth	200, 400, 800 kHz, 1.6, 3.2 and 6.4 MHz
■ Output signal level	Up to +61 dBmV
■ Output impedance	75 Ohm
■ Upstream Diagnostics Analyzer	

### Wi-Fi

■ Full dual band concurrent Wi-Fi access points, Wi-Fi certified®	2.4 GHz (2x2) IEEE 802.11n AP
	5 GHz (3x3) IEEE 802.11ac AP with IEEE 802.11ac compliant transmit beamforming
■ Wi-Fi security levels	WPA2™-Personal / WPA™-Personal/IEEE 802.1x port-based authentication with RADIUS client
■ Wi-Fi Protected Setup (WPS™)	
■ Wi-Fi Multimedia (WMM®) and WMM-Power Save	
■ Up to 8 BSSIDs (virtual AP) per radio interface	
■ Wi-Fi guest hotspots capabilities	
■ 2x2 MIMO 2.4 GHz Wi-Fi features	2.4 GHz frequency bands
	2400 - 2483.5 MHz
	SGi (Short Guard Interval)
	STBC (Space-Time Block Code)
	20, 40 MHz bandwidths
■ 3x3 MIMO 5 GHz Wi-Fi features	5 GHz frequency bands
	5150 - 5250 MHz
	5250 - 5350 MHz (Dynamic Frequency Control (DFC))
	SGi (Short Guard Interval)
	STBC (Space-Time Block Code)
	LDPC (FEC)
	20, 40, 80 MHz bandwidths
■ Dynamic rate switching for optimal wireless performance	
■ Manual/auto radio channel selection	

### Voice and telephony

■ Voice technologies	Voice over IP (VoIP)
■ Voice signalling	PacketCable™ NCS
	Network-based call signalling protocol (PKT-SP-EC-MGCP)
	RFC 3261 SIP
	RFC 2805 MGCP
■ Audio codecs	ITU-T G.711 PCM A-law, PCM $\mu$ -law,
	ITU-T G.728, G.729, G.729a, G.729e
	Wideband ITU-T G.722.1
	iLBC, BV16
■ Multi-line phone support	2 phone lines
	3-party conference calls
	Supports two complex voice codecs simultaneously
	T.38
■ Fax relay	RFC 2833
■ DTMF tone relay	Type I and Type II
■ Caller ID	Basic and extended CLASS features
■ 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
	Up to V.90 (38.5 kbps)
■ Modems	
■ RFC 2833 DMTF tone relay	Enabled / disabled via SNMP
■ REN	3 REN per device
■ Pulse dialing	DTMF/pulse tones
	Pulse/DTMF tones conversion
■ RTP layer	RFC 1889
	RFC 1890
■ RTCP statistics collection	

# ACCESS CABLE GATEWAY

CGA2121TCH2

## Technical Specifications

### Management

- Customizable user-friendly GUI via HTTP
- Web-based user interface management and administration
- Command Line Interface (CLI)
  - Telnet
  - SSH v2
- TR-069 CPE WAN Management Protocol (CWMP)
- SNMP
  - SNMP v1, SNMP v2, SNMP v3
- Operation, Administration & Maintenance (OAM) (optional)
  - ITU-T Y.1731
- Software upgrade
  - via WAN RF connection only
- Zero-touch autoprovisioning

### Services

- 3G/LTE/4G mobile fall-back WAN connection (through USB adapter)
- Wireless hotspot
  - SoftGRE
- Parental control
  - URL-based website filtering
  - Time-based access control
- Content sharing
  - Server Message Block (SMB) Samba file server
  - UPnP A/V™ media server and control point

### Networking

- Routing modes
  - Transparent bridging
  - Routed modes
- Multiple client support
  - 32 (bridged mode)
- Network protocols
  - Dual stack IP (IPv4, IPv6)
  - TCP, UDP
  - ARP, ICMP, DHCP
  - TFTP, SNMP, HTTP, Telnet
- Discovery protocols
  - UPnP
- Protocol filtering
  - Ethernet and IP

### IPv6 networking

- IPv4 / IPv6 dual IP stack
- Transitioning
  - DS-Lite

### Quality of Service

- Class of services
  - 32 downstream IDs
  - 32 upstream service flows
- Traffic prioritization
  - DOCSIS 1.0, 1.1 (management of service flows)
- Wireless QoS
  - WMM (BE, BK, VI, VO access categories) queuing and scheduling

### Security

- Baseline Privacy Interface Plus (BPI+)
- 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

### Package contents

- CGA2121TCH2
- Power supply unit
- Ethernet cable
- Quick Setup leaflet(s) (optional)
- Safety Instructions & Regulatory Information booklet



### TECHNICOLOR WORLDWIDE HEADQUARTERS

1-5, rue Jeanne d'Arc - 92130 Issy-les-Moulineaux, France  
Tel: +33 (0)1 41 86 50 00 - Fax: +33 (0)1 41 86 58 59

[www.technicolor.com](http://www.technicolor.com)

### SALES CONTACT

For more information please get in touch with your usual sales representative or use the following email:

[contactsales@technicolor.com](mailto:contactsales@technicolor.com)

**technicolor**  
  
FEEL THE WONDER