

CGA2121

Wireless .11ac
Gigabit-Class Cable Gateway with Voice



24 x 8

CABLE

DATA

VOICE

VIDEO

■ Latest Gigabit-Class Bandwidth Technology

The CGA2121 is a EuroDOCSIS/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 CGA2121 into powerful and reliable platform in the home, ready for demanding services and applications.

The CGA2121 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 wireless 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 CGA2121 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

- 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
- 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™/EuroPacketCable™ 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
- 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 CGA2121 exceeds SCTE-40+ performance and eliminates all frequency limitations of traditional wideband tuners. The CGA2121 enables use of the full Radio Frequency (RF) spectrum without the need for grouped channels. This helps the operator migrate his entire (Euro)DOCSIS 3.0 installed base from one to all (Euro)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 CGA2121 is EuroPacketCable 1.5 compliant and, after a software upgrade, it can operate in PacketCable 2.0 or SIP mode. The CGA2121 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.

■ Video Streaming

The CGA2121 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 CGA2121 and is a first step for cable operator towards distributing IPTV without any change to their existing QAM (digital video) broadcast infrastructure.

■ 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 CGA2121 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.

■ Easy to Use

Like all Technicolor modems and gateways, the CGA2121 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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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 IEEE 802.11ac 5 GHz 2 FXS POTS ports 1 USB 2.0 master port 6 status LEDs
■ Buttons & indicators	Wi-Fi on/off button (with backlit LED) WPS button (with backlit LED) Reset button (recessed) Power button
■ Power input	DC jack
■ Power supply	12 VDC external PSU
■ AC voltage	100 - 240 VAC (switched mode power supply)
■ Operating temperature	0° - 40° C (32° - 104° F)
■ Operating humidity	20 % - 90 % non-condensing
■ Storage temperature	-20° - 70° C (-4° - 158° F)

Certifications

■ Data	EuroDOCSIS® 3.0 compliant
■ Voice	EuroPacketCable™ 1.5 & 2.0 compliant
■ CMTS interoperability	Any qualified EuroDOCSIS® / DOCSIS® CMTS

RF downstream

■ Downstream modulation	64, 256 QAM
■ Downstream frequency range	108 - 1002 MHz
■ Number of downstream channels	Up to 24 bonded
■ Maximum downstream rates	1335 Mbps (theoretical, 24 x 55.62 Mbps)
■ Capture windows	1.2 GHz full band capture
■ Channel bandwidth	8 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 - 85 MHz
■ Number of upstream channels	Up to 8 bonded
■ Maximum upstream rates	245 Mbps (theoretical, 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 Protected Setup (WPS™)	
■ Wi-Fi security levels	WPA2™-Enterprise / WPA™-Enterprise WPA2™-Personal / WPA™-Personal IEEE 802.1x port-based authentication with RADIUS client
■ 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	SGi STBC 20/40 MHz coexistence
■ 3x3 MIMO 5 GHz Wi-Fi features	SGi STBC 20/40/80 MHz mode
■ Dynamic rate switching for optimal wireless performance	
■ Manual/auto radio channel selection	

Voice and telephony

■ Voice technologies	Voice over IP (VoIP)
■ Voice signalling	EuroPacketCable™ 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 µ-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
■ 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 Up to V.90 (38.5 kbps)
■ Modems	
■ RFC 2833 DTMF tone relay	Enabled / disabled via SNMP
■ REN	5 REN per device
■ Pulse dialing	DTMF/pulse tones Pulse/DTMF tones conversion
■ RTP layer	RFC 1889 RFC 1890
■ RTCP statistics collection	

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Management

- 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 Y1731
- 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
 - 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

ECO design

- WMM-Power Save

Package contents

- CGA2121
- Power supply unit
- Ethernet cable
- Quick Setup leaflet(s) (optional)
- Safety Instructions & Regulatory Information booklet



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