# Vantiva
## Pushing the edge

# ACCESS CABLE GATEWAY

CGA437A
Dual-Band Wi-Fi 6
Smart Ultra-Broadband Cable Gateway with Voice
for above Gigabit Speeds

The CGA437A is a DOCSIS® 3.1 capable cable gateway offering triple-play services beyond Gigabit speeds, while providing VoIP functions for residential and business users. The CGA437A is equipped with the latest Wi-Fi 6 technology, allowing for faster throughputs, better performance in dense multi-user environments and saving battery lifetime of the connected devices. The CGA437A has been designed to cover all regional requirements for Europe, Latin America and North America.

## Highest Performance with DOCSIS 3.1

The CGA437A matches perfectly with the requirements of cable operators willing to propose ultimate Broadband access to their customers.

The CGA437A cable gateway is fully compliant with the latest DOCSIS 3.1 specification as published by CableLabs® and is capable of delivering downstream cable speeds of up to 3.6 Gbps by using 2 Orthogonal Frequency-Division Multiplexing (OFDM) downstream channels (and up to 5 Gbps in case of 2 OFDM plus 32 Single Carrier QAM) and up to 1.5 Gbps upstream by using 2 Orthogonal Frequency-Division Multiple Access (OFDMA) upstream channels.

This enhanced and superior performance allows cable operators to propose multi-Gigabit data services to their customers through various applications, from IP connectivity to ultra-high speed internet access and gaming.

## Wi-Fi 6 Technology

Wi-Fi 6 – a stronger and more performing wireless connectivity – is a major evolution that improves gigabit-services delivery through providing reliable connections to a large number of devices in several ways. This evolution is intended for both 2.4 and 5 GHz, making Wi-Fi 6 the first major upgrade for Wi-Fi at 2.4 GHz since Wi-Fi 4 in 2009. While it keeps the data rate the same as Wi-Fi 5, Wi-Fi 6 increases signal robustness to accommodate more devices and allow better sharing of the wireless channel.

Wi-Fi 6 provides higher maximum data rate on the network by using higher orders of modulation for more data – up to 1024 QAM from Wi-Fi 5's 256 QAM. It lowers latency by dramatically reducing delay times as data is sent, improving load times and helping avoid disconnects and other issues. This is particularly helpful for online gaming for example. Additionally, Wi-Fi 6 provides a mechanism to reduce interference between neighboring routers through efficient spectrum use, improving service quality levels to customers that live in high Wi-Fi density areas. Finally, Wi-Fi 6 introduces a concept called Target Wake Time (TWT, allowing the access point to put clients' Wi-Fi radio in a sleep mode until it's needed, meaning power savings and longer battery life.

## Features at a Glance

- DOCSIS® 3.1 compliant
- Backward compatible with DOCSIS®/EuroDOCSIS® 3.0
- 2 x 2 OFDM(A) bonded channels in DOCSIS 3.1 mode
- 32 x 8 bonded channels in DOCSIS/EuroDOCSIS 3.0 mode
- Automatic switchable diplexer for up- and downstream
- Up to 1.2 GHz full band capture tuner
- Built in RF spectrum analyzer
- 4 GE LAN ports
  (1 2.5 Gigabit Ethernet and 3 GE LAN ports optional)
- Dual-band concurrent Wi-Fi (with high power optional)
    2.4 GHz (3x3) Wi-Fi 6 (IEEE 802.11ax)
    5 GHz (4x4) Wi-Fi 6 (IEEE 802.11ax)
- Enabled to support Wireless XL™ (sold separately)
- Hotspot GRE, Passpoint™
- 2 FXS ports for phone or fax
- Voice (Euro)PacketCable™ 2.0 & 1.5 and SIP compliant
- 1 superspeed USB 3.1 Gen 1 master port
- Future-proof Added Value Services platform supporting Vantiva RDK-B (Reference Design Kit - for Broadband)
- SNMP and TR-069 remote management
- Dual stack IPv4 and IPv6 DS-Lite enabled

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CGA437A

## Next-Gen Wi-Fi 6 and Vantiva Wi-Fi XL

Featuring the next-generation Wi-Fi 6 technology on both the 2.4 GHz and 5 GHz bands, the CGA437A makes optimal use of the radio spectrum allowing for faster throughputs, better performance in dense multi-user environments and saving battery lifetime of the connected devices. With its optimized antenna configuration, the CGA437A enables a best in class coverage.

The CGA437A supports Wi-Fi XL™, a differentiated Wi-Fi solution that delivers multi-user gigabit Wi-Fi services throughout the home.

## RDK-B Open Source Software

With the growth of consumer devices connected to internet, the rise of streaming video and the Internet of Things (IoT), Service Providers (SPs) need to quickly adapt to provide faster and more reliable home networks.

The Reference Design Kit for Broadband (RDK-B) is an open source initiative standardizing software functionalities in broadband devices for SPs to efficiently deploy services to a large customer base.

RDK-B provides all needed features to manage complex broadband functions such as Wide Area Networking (WAN), Local Area Networking (LAN), data reporting & management, and home-networking technologies, such as Wi-Fi and Multimedia over Coax Alliance (MoCA).

Based on Cisco's Common Component Software Platform now owned by **Vantiva**, RDK-B is a fully modular, portable and customizable software solution that is currently running on 5+ million broadband gateways.

## 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 CGA437A also supports powerful wireless security mechanisms, such as Wi-Fi Protected Access (WPA, WPA2 and WPA3) together with a secure and user friendly connection and configuration mechanism for connecting wireless clients (WPS).

In addition, the CGA437A supports multiple wireless networks (mSSID) per Wi-Fi radio 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.

## Voice Performance

The CGA437A is (Euro)PacketCable 2.0 and (Euro)PacketCable 1.5 compliant and can operate in MGCP as well as SIP mode.

The CGA437A 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.

## Superspeed USB

The CGA437A comes with superspeed USB 3.1 Gen 1 master ports to support devices such as mass storage devices, enabling transfer speeds multiple times higher than the conventional USB 2.0 and with more power output.

## Easy to Manage

The CGA437A 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, cable gateway products need to be ready for IPv6. **Vantiva** is a front runner in the support of IPv6 on its devices, with the CGA437A 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 to address security concerns that exist in an IPv4 environment.

# ACCESS CABLE GATEWAY

## CGA437A

## Technical Specifcations

### Hardware

| | |
|---|---|
| ■ CPU | Dual core ARMv7 and Viper CPUs (total 11700 DMIPs) |
| ■ Interfaces WAN | 1 F-Type RF connector, external threaded |
| ■ Interfaces LAN | 4-port autosensing Ethernet LAN switch, with: |
| | 4 x 10/100/1000 Base-T Ethernet |
| | 3 x 10/100/1000 Base-T and 1 x 10/100/1000/2500 Base-T (optional) |
| | 1 Wi-Fi 6 (IEEE 802.11ax) 2.4 GHz radio |
| | 1 Wi-Fi 6 (IEEE 802.11ax) 5 GHz radio |
| | MoCA 2.0 for LAN through WAN RF connector (optional) |
| ■ Interfaces other | 2 FXS POTS ports |
| | 1 USB 3.1 Gen 1 master port |
| | 1 external Battery Backup Unit telemetry port (optional) |
| ■ Power input | DC jack |
| ■ Power supply | 12 VDC external PSU |
| ■ AC Voltage | 100 - 240 VAC, 50 - 60 Hz (switched mode PSU) |
| ■ Operating temperature | 0 - 40 °C (32 - 104 °F) |
| ■ Operating humidity | 20 - 95 % RH non-condensing |
| ■ Storage temperature | -20 - 70 °C (-4 - 158 °F) |

### Cable certifications

| | |
|---|---|
| ■ Data | DOCSIS® 3.1 Certified |
| ■ Voice | (Euro)PacketCable™ 2.0 & 1.5 compliant |
| ■ CMTS interoperability | Any qualified DOCSIS 3.1 CMTS |
| | Any qualified DOCSIS®/EuroDOCSIS® 3.0 CMTS |

### RF downstream

| | | |
|---|---|---|
| ■ Downstream modulation | 64, 256, 1024, 2048 and 4096 QAM | |
| ■ Downstream frequency range , software selectable | | |
| | 108 - 1218 MHz or 258 - 1218 MHz | |
| ■ Number of downstream channels | | |
| | DOCSIS 3.1 | 2 OFDM |
| | (Euro)DOCSIS 3.0 | Up to 32 bonded |
| ■ Maximum downstream rates | DOCSIS 3.1 | Up to 3.6 Gbps |
| | | Up to 5 Gbps with 32 SC-QAM |
| | DOCSIS 3.0 | 1372 Mbps (theoretical, 32 x 42.88 Mbps) |
| | EuroDOCSIS 3.0 | 1780 Mbps (theoretical, 32 x 55.62 Mbps) |
| ■ Capture windows | 1.2 GHz full band capture | |
| ■ Channel bandwidth | DOCSIS 3.1 | 192 MHz |
| | DOCSIS 3.0 | 6 MHz |
| | EuroDOCSIS | 8 MHz |
| ■ Input signal level range | -15 dBmV / + 15 dBmV | |
| ■ Input impedance | 75 Ohm | |

### RF upstream

| | | |
|---|---|---|
| ■ Upstream modulation | QPSK | |
| | 8, 16, 32, 64 and 128 QAM | |
| | DOCSIS 3.1 | Up to 4096 QAM |
| ■ Upstream frequency range, software selectable | | |
| | 5 - 85 MHz or 5 - 204 MHz | |
| ■ Number of upstream channels | | |
| | DOCSIS 3.1 | 2 OFDMA |
| | (Euro)DOCSIS 3.0 | Up to 8 bonded |
| ■ Maximum upstream rates | DOCSIS 3.1 | Up to 1.5 Gbps |
| | (Euro)DOCSIS 3.0 | 262 Mbps (theoretical, 8 x 32.78 Mbps) |
| ■ Channel bandwidth | DOCSIS 3.1 | max. 96 MHz |
| | (Euro)DOCSIS 3.0 | 200, 400, 800 kHz |
| | | 1.6, 3.2 and 6.4 MHz |
| ■ Output impedance | 75 Ohm | |

### Wi-Fi

| | |
|---|---|
| ■ Full dual-band concurrent Wi-Fi radios, Wi-Fi certified® | |
| | 3x3 Wi-Fi 6 (IEEE 802.11ax) 2.4 GHz access point |
| | 4x4 Wi-Fi 6 (IEEE 802.11ax) 5 GHz access point |
| ■ Wi-Fi power levels adopted to meet requirements per regulatory region | |
| ■ Wi-Fi security levels | WPA3™-Enterprise / WPA2™-Enterprise / WPA™-Enterprise |
| | WPA3™-Personal / WPA2™-Personal / WPA™-Personal |
| | WPA3™ + WPA2™ + WPA™ mixed mode (SAE, AES and TKIP) |
| | IEEE802.1x 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) support per radio interface | |
| ■ Wi-Fi hotspot capabilities | Airtime Fairness |
| | Client Isolation |
| ■ Band Steering | |
| ■ Zero-Wait DFS | |
| ■ Explicit and Implicit Beamforming | |
| ■ Multi-User MIMO | |
| ■ Dynamic rates switching for optimal wireless rates | |
| ■ Manual/ auto radiochannel selection | |

### Voice and telephony

| | |
|---|---|
| ■ Voice technologies | Voice over IP (VoIP) |
| ■ Voice signalling | (Euro)PacketCable™ NCS |
| | Network-based call signalling protocol (PKT-SP-EC-MGCP) |
| | RFC 3261 SIP |
| | RFC 2805 MGCP |

### 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) | |
| | ITU-T Y.1731 |
| ■ Software upgrade | via WAN RF connection only |
| ■ Zero-touch autoprovisioning | |

### Package contents

- ■ CGA437A
- ■ Power supply unit
- ■ Ethernet cable
- ■ Quick Setup leaflet(s) (optional)
- ■ Safety Instructions & Regulatory Information

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