

WCG200 Cable Gateway Product Specification

Product Overview

WCG200 is a DOCSIS 1.1 compliant wireless cable residential gateway that provide high-speed connectivity to residential, commercial, and education subscribers on public and private networks via an existing cable infrastructure. WCG200 is equipped with 4-port Ethernet switch, USB, and IEEE802.11g Wireless interfaces. WCG200 can inter-operate with any DOCSIS compliant headend equipment. It provides high-speed access to local area networks and high-speed Internet access. The data security secures upstream and downstream communications.

Features

General

- F-Connector for the cable interface
- Four ports 10/100BaseT Ethernet switch with auto-negotiation function and auto-media dependent interface crossover (MDIX)
- USB Connector for USB interface
- IEEE802.11g Wireless Access Point
- Clear LED Display
- Plug and Play
- UPnP support

CableLabs DOCSIS 1.0/1.1 Standard Compliant

- Up to 42.88 Mbps downstream and up to 10.24 Mbps upstream
- Frequency agility
- Bridging wired & wireless segments of network
- Security with X.509 Authentication / RSA protected Key Exchange / 56 bits DES Data Encryption
- Interoperable with any DOCSIS compatible headend equipment

Two-Way Cable Residential Gateway

- NAT (Network Address Translation) to support multiple users with one IP account for routing mode
 - One to Many
 - Many to Many
 - Reverse NAT
 - PPTP, L2TP & IPSec Pass-Through

	– Advanced Application Level Gateways (ALG) Support
Wireless	• Transparent bridging for IP traffic for bridge mode • DHCP Client/Server • DNS Proxy • DNS Server • Dynamic DNS • Firewall Function • Virtual Servers for Web, FTP, and Mail • Fully 802.11g (Draft) Compatible • Fully 802.11b Compatible • Up to 54 Mbps Data Rate • Auto Channel Selection • Seamless Link Quality Around Home & Business Office • Support Efficient Power Management • 64/128 bit WEP Encryption for Wireless Security • Support Wi-Fi Protected Access (WPA) • Support Temporal Key Integrity Protocol (TKIP) • IEEE 802.1x Port-Based Authentication with RADIUS Client, support MD5, TLS, TTLS • Support Authentication: Open System, Shared Key • Wireless LAN MAC Filtering • Association Control List (ACL) for Wireless Clients Management
Firewall	• IP Filtering • Stateful Packet Inspection (SPI) • Intrusion Detection System (IDS) • Application Content Filtering • Configurable Access Policy • Web-Based User Interface Management and Administration • Remote User Access • Logging & Alert • DMZ Hosting
Management & Maintenance	• Support Web pages and private DHCP server for status monitoring

monitoring

- SNMP v1/v2c/v3 Management
- Remote secured operating firmware downloading
- Reset To Default Settings by RESET Push Button
- Syslog (Remote)
- Event Log (Local)

Specifications

Cable RF :

	<u>Downstream</u>	<u>Upstream</u>
Operating Frequency Range	88-860MHz	5-42MHz
Frequency Channel	HRC, IRC, STD	
Frequency Selection	Auto Scanning	Controlled by Headend
Bandwidth	6MHz	Programmable (200*N KHz) N=1, 2, 4, 8, 16
Characteristic Impedance	75Ω Nominal	75Ω Nominal
Signal Level Range	-15 to +15dBmV/64QAM -15 to +15dBmV/256QAM	+8 to +58dBmV/QPSK +8 to +55dBmV/16QAM
Modulation	64QAM/256QAM	QPSK/16QAM
Modulation Rate	5.056941/5.360537 Msym/sec	160/320/640/1280/2560 Ksym/sec
Maximum Bit Rate	42.88Mbps/256QAM 30.34Mbps/64QAM	10.24Mbps/16QAM 5.12Mbps/QPSK
Forward Error Correction (FEC)	RS(128,122)/Trellis	Reed Solomon
Signal to Noise Ratio (SNR)		>30
Bit Error Rate (BER)	1×10^{-8} @ C/N=23.5dB, 64QAM with FEC 1×10^{-8} @ C/N=30dB, 256QAM with FEC, received power = -6dBmV to +15dBmV 1×10^{-8} @ C/N=33dB, 256QAM with FEC, received power = -15dBmV to -6dBmV	

Physical & Hardware:

Dimensions	• L = 186 mm • W = 154.5 mm • H = 63 mm
Weight	• TBD
Ports	• 4 * 10/100 Ethernet Port (RJ-45) • USB port (Type B)
Antenna	• Dual External Antenna
Case	• Lay down
Reset Button	• Restore Factory Default Settings
Power	• 12VDC, 1.0 A

LED Status:

Power	Green ON	Power On / Device Ready
	Orange ON	Error
Cable Activity	OFF Blinking	Scanning D/S channels
	OFF ON	D/S channel acquired, Start ranging process
	Blinking OFF	Ranging complete, start DHCP / TFTP / ToD / Registration
	ON OFF	Registered
	ON Blinking	Traffic (Send / Receive)
Ethernet	OFF	No Ethernet Link
	Green ON	Ethernet Link
	Green Blinking	Traffic
	Orange Blinking	Collision
USB	OFF	No USB Link or PC Off

Wireless	Orange Blinking	USB cable attached / but drivers not loaded
	Green ON	USB Link / drivers loaded and port functional
	Green Blinking	Traffic
	Green OFF	No 802.11g module installed or wireless is disabled from WEB
	Green ON	802.11g module is functional
	Green Blinking	Traffic
	Orange Blinking	802.11g module is installed but in Error condition

Wireless:

Media Access Control	• CSMA/CA with ACK for unicast data frames • CSMA/CA with ACK for broadcast data frames and management frames
Data Rate	• 802.11g ➤ 54, 48, 36, 24, 18, 12, 9, 6 Mbps • 802.11b ➤ 11, 5.5, 2, 1 Mbps
Frequency Range	• 2.4 GHz ~ 2.4835 GHz ISM Band • N.America/FCC: 2.412~2.462GHz (1 - 11Channels)
Modulation	• 802.11g ➤ OFDM • 802.11b ➤ Barker (1Mbps, 2Mbps) ➤ CCK (5.5Mbps, 11Mbps)
Receiver Sensitivity	• -80 dbm @ 11Mbps
Output Power	• 11b: 14 dBm • 11g: 14 dBm
Operating Range	• Indoors: 20m @ 54Mb 30m @ 18Mb

35m @ 11Mb

40m @ 5.5Mb

45m @ 2Mb

50m @ 1Mb

- Outdoors:

50m @ 54Mb

70m @ 18Mb

100m @ 11Mb

150m @ 5.5Mb

250m @ 2Mb

300m @ 1Mb

Standards & Protocols:

Standards

- DOCSIS 1.0/1.1 Compliant
- IEEE 802.11g
- IEEE 802.11b
- IEEE 802.3
- IEEE 802.3u
- IEEE 802.1x
- USB v1.1

Protocols

- TCP/IP
- DHCP
- NAT
- RIP
- DNS
- ICMP
- ARP
- SNMP v1/v2c/v3
- Syslog
- HTTP
- TFTP
- UPnP
- Kerberos
- WPA / TKIP

MIB Support:

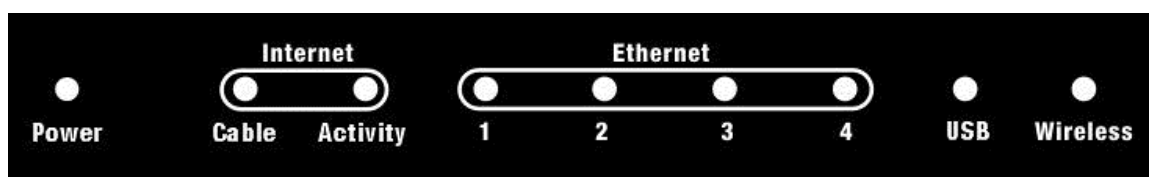
- MIB 2
- RFC2786
- RFC2669
- CableLabs Private MIBs

Environment:

- | | |
|-----------------------|--------------------------------|
| Operating Temperature | • 32°F ~ 104°F (0°C to 40°C) |
| Storage Temperature | • -4°F ~ 158°F (-20°C to 70°C) |
| Humidity | • 20% ~ 90% Non-condensing |

Certification:

- | | |
|-----------|-----------------------|
| Standards | • DOCSIS / WHQL |
| Safety | • UL |
| EMC | • FCC Part 15
• CE |
| Wireless | • Wi-Fi Compliant |
| UPnP | • UIC |

FrontView:

POWER CABLE ACT

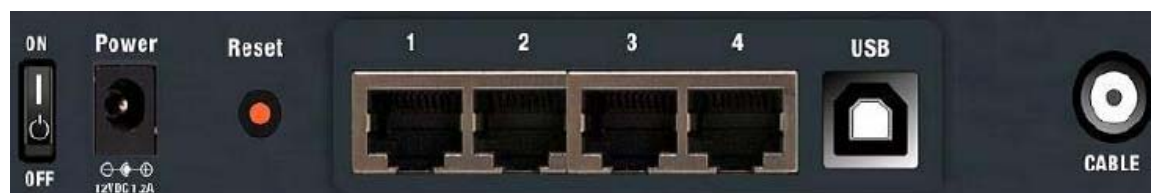


ETHERNET



USB WLAN



Rear View:

- CABLE: F-Connector
- USB: USB Connector
- ETHERNET: Four ports RJ-45 10/100BaseT Ethernet switch
- RST: Reset-to-Default push button
- 12VDC: Power connector



