

# CG624

## DOCSIS 3.1 Cable Modem with 4 GbE and Wifi 6E AX6000

**DOCSIS/EuroDOCSIS 3.1**  
**Compatible DOCSIS 3.0**  
**32×8 channel bonding**  
**OFDM 2×2**



DOCSIS system include CMTS (Headend cable network ) and CM (user end). The main function of DOCSIS Cable Modem system is transparently transmitting IP packets between the front end and the user end.

The model CG624 product is designed with state-of-the-art DOCSIS/EuroDOCSIS 3.1, as well as backward compatible to all existing DOCSIS 3.0/2.0/1.1/1.0 head-end equipment under Multiple Service Operator networks.

In OFDM mode, it support 2\*2 channel bonding technology, and in SC-QAM mode, it support 32\*8 channel bonding technology. This cable modem with Wi-Fi 6E AX6000 function provides a cost-effective solution which delivers high-speed and bi-directional data services.

### Features

- DOCSIS 3.1 Compliant; Backward compatible with DOCSIS/EuroDOCSIS 3.0
- Intel's Puma7 SoC
- 2x 192 MHz OFDM Downstream reception capability
- 32x SC-QAM (Single-Carriers QAM) Channel Downstream reception capability
- 2x 96 MHz OFDMA Upstream transmission capability
- 8x SC-QAM Channel upstream transmission capability
- FBC (Full-Band Capture) Front End
- 4x Gigabit Ethernet Ports
- Wi-Fi 6E AX6000 4x4 MIMO

## TECHNICAL SPECIFICATIONS

### Connectivity Interface

RF Interface	F type female 75ohm connector port
RJ45	4x RJ45 Ethernet port 10/100/1000 Mbps

### RF Downstream

Frequency (edge-to-edge)	108-1218 MHz (Default) 258-1218 MHz (Optional)
Input Impedance	75 OHM
Total Input Power	<40 dBmV
Input Return Loss	> 6 dB

### SC-QAM Channels

No. of Channels	32 Max.
Level Range (one channel)	North Am (64 QAM, 256 QAM): -15 to + 15 dBmV Euro (64 QAM): -17 to + 13 dBmV Euro (256 QAM): -13 to + 17dBmV 64 QAM, 256 QAM
Modulation Type	North Am (64 QAM): 5.056941 Msym/s North Am (256 QAM): 5.360537 Msym/s Euro (64 QAM, 256 QAM): 6.952 Msym/s
Symbol Rate (nominal)	64 QAM, 256 QAM
Bandwidth	North Am (64 QAM/256QAM with $\alpha=0.18/0.12$ ): 6 MHz EURO (64 QAM/256QAM with $\alpha=0.15$ ): 8 MHz
Data Rate	Up to 1.2 Gbps with 32 bonded downstream channels @ DOCSIS Up to 1.6 Gbps with 32 bonded downstream channels @ EuroDOCSIS

### OFDM Channels

Signal Type	OFDM
Max OFDM Channel Bandwidth	192 MHz
Mini Contiguous-Modulated OFDM Bandwidth	24 MHz
No. of OFDM Channels	2
IDFT size	4K Mode: 4096 8K Mode: 8192
Subcarrier spacing	4K Mode: 50 KHz 8K Mode: 25 KHz
FFT Duration (Useful symbol duration)	4K Mode: 20 us 8K Mode: 40 us
Maximum number of active subcarriers in signal (192 MHz channel) values refer to 190 MHz used Subcarriers	4K Mode: 3800 8K Mode: 7600
Maximum spacing between first and last active subcarrier	190 MHz
Modulation Type	64-QAM, 128-QAM, 256-QAM, 512-QAM, 1024-QAM, 2048-QAM, 4096-QAM

### Upstream

Frequency Range (edge to edge)	5-85 MHz (Default), 5-204 MHz (Optional)
Output Impedance	75 OHM
Maximum Transmit Level	(Total average power) +65 dBmV
Output Return Loss	>6 dB

### SC-QAM Channels

Signal Type	TDMA, S-CDMA
No. of Channels	8 MAX.
Modulation Type	QPSK, 8 QAM, 16 QAM, 32 QAM, 64 QAM, and 128 QAM
Modulation Rate (nominal)	TDMA: 1280, 2560, and 5120 KHz S-CDMA: 1280, 2560, and 5120 KHz

### Bandwidth

### Level range per channel

Pre-DOCSIS3 operation: TDMA:	160, 320, and 640 KHz
TDMA:	1600, 3200, and 6400 KHz
S-CDMA:	1600, 3200, and 6400 KHz
Pre-DOCSIS3 operation:	
TDMA:	200, 400, and 800 KHz
TDMA:	
Pmin to +57 dBmV (32-QAM, 64-QAM)	
Pmin to +58 dBmV (8-QAM, 16-QAM)	
Pmin to +61 dBmV (QPSK)	
S-CDMA:	
Pmin to +56 dBmV (all modulations)	
Where	
Pmin = +17 dBmV, 1280 kHz modulation rate	
Pmin = +20 dBmV, 2560 kHz modulation rate	
Pmin = +23 dBmV, 5120 kHz modulation rate	

### OFDMA Channels

Signal Type	OFDMA
Max OFDMA Channel Bandwidth	96 MHz
Mini OFDMA Occupied Bandwidth	6.4 MHz (for 25 KHz subcarrier spacing) 10 MHz (for 50 KHz subcarriers spacing)
No. of Independently Configurable OFDMA Channels	2
Subcarrier Channel Spacing	25, 50 KHz
FFT Size	50 KHz: 2048 (2K FFT); 1900 Max. active subcarriers 25 KHz: 4096 (4K FFT); 3800 Max. active subcarriers
Sampling Rate	102.4 (96 MHz Block Size)
FFT Time Duration	40 us (25 KHz subcarriers) 20 us (50 KHz subcarriers)
Modulation Type	BPSK, QPSK, 8-QAM, 16-QAM, 32-QAM, 64-QAM, 128-QAM, 256-QAM, 512-QAM, 1024-QAM, 2048-QAM, 4096-QAM

### Wireless

Standard	802.11a/b/g/n/ac/ax
Data Rate	2.4G 4x4 MIMO 1.14Gbps 5G 4x4 MIMO 4.8Gbps
Output Power	2.4 GHz (20 dBm) and 5 GHz (18 dBm)
Security	WEP, TKIP, AES, WPA, WPA2, WPA3
Antenna	x4 Internal Antennas

### Mechanical

LED	PWR/DS/US/ONLINE/Ethernet/WIFI
Factory Reset Button	1
WPS Button	1
Dimensions	230mm (W) x 200mm (H) x 45mm (D)
Weight	630g

### Environment

Operation temperature	0 to 40°C
Storage temperature	-40~80°C
Operating Humidity	10~90% non - condensing
Power Consumption	<30W (Max.)
Power input	12V/2.5A
Surge Protection	RF input sustains at least 6KV Ethernet RJ-45 sustains at least 1KV

### Accessories

1x User Guide	
1x 1.5M Ethernet Cable	
4x Label (SN, MAC Address)	
1x Power Adapter	
Input: 100-240VAC, 50/60Hz; Output: 12VDC/2.5A	