



# DOCSIS 3.1 Cable Modem with Voice

EN2251-HSP



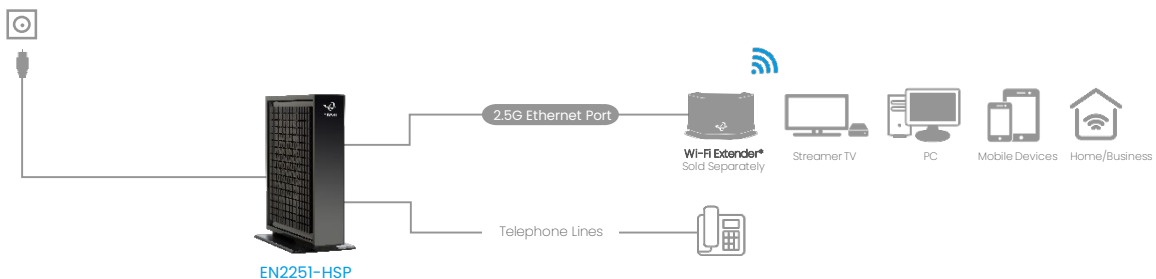
With support for DOCSIS 3.1, residential and business customers will enjoy the ultimate digital experience, today and tomorrow, with richer ultra-HD video streaming, faster online gaming, virtual reality applications, more reliable video conferencing and more. And one 2.5GigE port provides the fastest wired speeds to connect a Wi-Fi router, computer or other wired device.

<p><b>DOCSIS 3.1</b></p> <p>DOCSIS 3.1 speeds up to 10 Gbps* downstream</p>	<p><b>2.5GigE</b></p> <p>Ultra-fast 2.5GigE wired ports</p>	<p><b>Two HD Voice Ports</b></p>
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## Key Features

- DOCSIS 3.1 2x2 OFDM/OFDMA
- DOCSIS/EuroDOCSIS 3.0 32x8 Channel Bonding
- Switchable Upstream 5-85MHz/5-204MHz
- One 2.5GigE Port
- Supports Business Services over DOCSIS
- Two HD Voice Ports, SIP and MGCP Support

## Application



# Specifications

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## Reception-Demodulation

- DOCSIS 3.1/3.0/2.0 with EuroDOCSIS compliant
- DOCSIS 3.1 Demodulation: Multi-carrier OFDM 16 to 4096QAM
- DOCSIS 3.1 Data Rate: Up to 10Gbps\*
- DOCSIS/EuroDOCSIS 3.0 Demodulation: 64QAM, 256QAM
- DOCSIS/EuroDOCSIS 3.0 Data Rate: Up to 1.3/1.7 Gbps with 32 Bonded Downstream Channels
- Frequency (edge-to-edge): 258 -1218MHz
- Channel Bandwidth: 6MHz/8MHz (DOCSIS/EuroDOCSIS)
- Signal Level: -15dBmV to 15dBmV

## Transmitter-Modulation

- DOCSIS 3.1/3.0/2.0 with EuroDOCSIS compliant
- DOCSIS 3.1 Modulation: Multi-carrier OFDMA BPSK to 4096QAM
- DOCSIS 3.1 Data Rate: Up to 1 Gbps with OFDMA 96MHz Upstream Channels
- DOCSIS/EuroDOCSIS 3.0 Modulation: QPSK, 8QAM, 16QAM, 32QAM, 64QAM, and 128QAM (SCDMA only)
- DOCSIS/EuroDOCSIS 3.0 Data Rate: Up to 320Mbps with 8 bonded Upstream Channels
- Frequency: Switchable 5-85/5-204 MHz Upstream Transmit Signal Level: +11 to 65dBmV

## Voice

### General Voice Features

- SIP v2 Call, SIP v2 Call Control
- MGCP
- DNS SRV
- Hook Flash Event Signaling
- RTP Audio Transport
- RFC2833 RTP Payload
- SIP INFO
- InBand DTMF Mode
- HD Voice Ports with 16kHz sampling rates

### Voice Audio Codecs

- G.711 (a-law and mu-law)
- G.722 (HD codec)
- G.723.1
- G.726
- G.728
- G.729
- AMR (narrowband)
- Adaptive Jitter Buffer
- G.167 Acoustic Echo Cancellation

### FAX/Relay Protocols Compliance

- T.38 Pass-through and over IP Fax/Modem Detection Control
- T.28 (IP) Compliant Group 3 and SG3 fallback to Transport T.30
- V.34 Fax and Modem Bypass
- Automatic fallback to G.711 support

### CLASS Calling Features

- Call Waiting
- Call Hold
- Call Resume
- Call Forward Unconditional, Call Forward on Busy
- Caller ID
- 3-Way Conference
- Call Consultant
- Call Transfer and Network-initiated Class Services – MWI messaging, VMWI via FAX

### Management

- Protocol Support: TR-069, TFTP, SSHv2, SNMP v2, v3
- Web-based GUI Control, Configuration and Management
- Power-on Self-Diagnostic
- Hitron-proprietary MIBs for Extended Support on DOCSIS, Router Management, Wi-Fi Management
- HitronCloud cloud-based platform backend support

## Interfaces

- 1x RF F-Type 75Ω Female Connector
- 1x RJ-45 1/2.5GBASE-T Ethernet Port

## Mechanical

- LEDs: 5 (Power, DS, US, Status, LAN)
- Factory Default Reset Button
- Dimensions: 204mm (H) x 177mm (W) x 45mm (D)
- Net Weight: 650 +/- 10g

## Environmental

- Operating Temperature: 0°C (32°F) - 40°C (104°F)
- Operating Humidity: 10% - 90% (Non-condensing)
- Storage Temperature: -40°C (-40°F) - 60°C (140°F)

## Electrical

- Input Power: 12VDC, 2A
- Power Adaptor: 100-240VAC, 50/60Hz
- Power Consumption: 8.23W (power saving), 9.68W (link), 16.93W (Max)
- Surge Protection
  - RF Input sustains at least 4KV
  - Ethernet RJ-45 sustains at least 4KV

## Regulatory Compliance

- RoHS
- CableLabs
- FCC Part 15 Class B Subpart B, Part 15.247, Part 15.407, Part 2.1091
- ICES-003 Issue 6, Class B
- RSS-102 Issue 5
- IC RSS-247 Issue 2, 2017-02 and RSS-Gen Issue 5, 2018-4 Canada RSS-Gen Issue 5, Amendment 1, Mar 2019
- UL 62368-1
- cUL 62368-1-14
- CE



I.T.V F219020



Specifications subject to change without further notice. Product photo may differ.

DOCSIS 3.1 is a CableLabs standard for high speed Internet access that defines support for up to 10 Gbps downstream and 1 Gbps upstream. Actual cable operator network speeds will vary and will be less than the calculated maximum possible speeds. Actual upload and download speeds are affected by several factors including but not limited to: the capacity of your cable operator's network, the services offered by your cable operator, cable and internet network traffic, your computer equipment etc. Final speeds will also be limited by each device and the quality of its connection to the modem or router.

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