

## WIRELESS DOCSIS 3.1 METER

DOCSIS 3.1 meter using Intel® Puma™ 7 OFDM 2x2 with 2x2 5GHz and 2x2 2.4GHz dual band Wi-Fi, LTE, GigE and USB ports

### KEY FEATURES

- DOCSIS 3.1/3.0/2.0/1.1 compliant
- Wi-Fi 2x2 5GHz 802.11ac and 2x2 2.4GHz 802.11n dual band internal antennas
- Wireless connection with smartphone to initiate tests and display results
  - Smartphone App support (IOS / Android)
- 1 x RJ-45 Ethernet port 10/100/1000Mbps
- Two USB 2.0 ports (5V/1A)
- LTE detection
- Battery 9000mAh
- 2 RF connectors (outside & home)
- FAN cooling
- AC detection
- Full frequency spectrum support
- IQ constellation
- Pre-equalizer analysis
- Switchable Upstream 5-85/5-42
- QAM measurements
- Channel plan scan
- Ping and trace route
- Channel plan
- System information
- DOCSIS WAN
- DOCSIS logger
- DOCSIS provisioning status
- MoCA power spectrum display
- Downstream OFDM/OFDMA Metrics
- Fast reposting available QAM channel
- Wi-Fi scan capability including channel utilization statistics to replace Raspberry Pi
- Speed test (iperf 3, ariac2)
- Buffers for persistence mode analysis
- Firmware & APK Upgrade



### Empower technicians to troubleshoot the whole home

XM2 is a powerful troubleshooting tool offering the major tests required to measure both DOCSIS and DVB-C networking environments. Through MSO partnerships, this wireless DOCSIS 3.1 meter was specially tailored to the requirements faced by installers and service technicians in the field.

The XM2 is a cable/DVB-C probe with 1 Gigabit Ethernet port and 802.11b/g/n/ac wireless LAN Access Point combined into one device to simplify cable connectivity testing and troubleshooting. The unit contains a DOCSIS 3.1/3.0/2.0/1.1 compliant cable modem to insure interoperability with existing cable systems. Through the use of technicians' smartphones and our specifically-designed app (iOS & Android), Hitron aims to offer the most cost-efficient testing solution containing the major features MSOs require.

The XM2 also features a speed test function for proofing the customer's premise as well as the outside network. It enables customizable DOCSIS logging functions that allow increased visibility and details.

## SPECIFICATIONS

### Connectivity

- 2 x RF F-type male 75Ω connector
- LTE antenna 700 MHz ~ 1.8GHz
- 1 x RJ-45 Ethernet port 10/100/1000 Mbps (Auto-MDI/MDIX)
- 2 x USB2.0 (5V, 1A)



### Management

- App-based GUI for configuration and management
- Protocol support: SNMP v1, v2C, v3
- Power on self diagnostic
- MIB II/MCNS MIB
- Hitron proprietary MIBs for extended support

### Reception-Demodulation

- DOCSIS 3.1/3.0/2.0 /1.1
- DOCSIS 3.1 demodulation: Multi-carrier OFDM 16 to 4096QAM
- DOCSIS 3.1 data rate: Up to 5Gps with 2 OFDM 192MHz downstream channels +32 QAM
- DOCSIS 3.0 demodulation: 64QAM, 256QAM
- DOCSIS 3.0 data rate: Up to 1.2Gbps with 32 bonded downstream channels
- Frequency (edge-to-edge): 108~1218MHZ/54~1218MHZ (EuroDOCSIS/DOCSIS) 1350~1675MHZ(MoCA2.0)
- Channel bandwidth: 6/8 MHz (DOCSIS 3.0) 100Mhz (MoCA2.0)
- Signal level: -15dBmV to 15dBmV
- Input return loss: >6dB

### Transmitter-Modulation

- DOCSIS 3.1/3.0/2.0 /1.1
- DPCSOS 3.1 modulation: Multi-carrier OFDMA 96MHz US channels
- DOCSIS 3.0 modulation: QPSK, 8QAM, 16QAM, 32QAM, 64QAM, and 128QAM (SCDMA only)
- DOCSIS 3.0 data rate: Up to 320Mbps with 8 bonded upstream channels
- Frequency: switchable 5-85/5-42MHz 1350~1675Mhz(MoCA2.0)
- Upstream transmit signal level: +11 to 65dBmV
- Output return loss: >6dB

### Wireless

- Dual band Wi-Fi
- 802.11a/b/g/n/ac
- 2T2R 5GHz (5180MHz-5240MHz band 1, 5748-5825MHz band 4) 802.11ac with 400Mbps PHY data rate
- 2T2R 2.4GHz (2412MHz-2462MHz) 802.11n with 150Mbps PHY data rate
- 20/40MHz channel bandwidth
- Up to 4 SSIDs for each frequency
- Security: WPS, WPA, WPA2, WPA-PSK and 64/128-bit WEP encryption
- Wi-Fi output power Range :

### Mechanical

- 7 status LEDs (Power, Wi-Fi, DS, US, Status, Charge, Bat)
- Factory reset button
- Power restart button
- Dimensions: 165mm (W) x 210mm (H) x 79mm (D)
- Weight: 1100g ± 10g

### Electrical

- Power adaptor: 100-240VAC to 12VDC, 50/60Hz, 5A
- Power input: 12VDC
- Power consumption: 32W (typical), 48W (max)
- Battery: lithium battery cells 9000mAh (8h of typical operation, 4.5h full load, 4h to charge)
- Surge protection: RF input sustains at least 4KV, Ethernet RJ-45 sustains at least 4KV

### Environmental

- Operating temperature: 0°C (32°F) - 40°C (104°F)
- Operating humidity: 10% - 90% (non-condensing)
- Storage temperature: -40°C (-40°F) - 80°C (176°F)

### Compliance Certificates

- FCC, IC, UL
- RoHS compliant
- IP20

### Federal Communication Commission Interference Statement

- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:
  - - Reorient or relocate the receiving antenna.
  - - Increase the separation between the equipment and receiver.
  - - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - - Consult the dealer or an experienced radio/TV technician for help.
- FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- Operations in the 5.15-5.25GHz band are restricted to indoor usage only.
- **Radiation Exposure Statement:**
  - This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 25 cm between the radiator & your body.

### Industry Canada statement:

- This device complies with ISED's licence-exempt RSSs. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.
- **Caution :**
  - (i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
  - (iii) where applicable, antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in section 6.2.2.3 shall be clearly indicated.
- **Avertissement:**
  - (i) les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;
  - (iii) lorsqu'il y a lieu, les types d'antennes (s'il y en a plusieurs), les numéros de modèle de l'antenne et les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de la p.i.r.e. applicable au masque d'élévation, énoncée à la section 6.2.2.3, doivent être clairement indiqués.

### Radiation Exposure Statement:

- This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 30 cm between the radiator & your body.
- **Déclaration d'exposition aux radiations:**

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à plus de 30 cm entre le radiateur et votre corps.