

PTP 820C Licensed Microwave Radio

QUICK LOOK:

PTP 820C, an all Outdoor dual-core radio capable of 1024 QAM with ACM

- Support 6-38 GHz
- Support 1+0 to 4+0, 1+1/2+2, 2 x 1+0 East-West configuration
- Support Multi Band(With PTP 850E or PTP 820E)



Radio

6-38 GHz

1+0 to 4+0, 1+1/2+2, 2 x 1+0 East-West

Multi Band(With PTP 850E or PTP 820E)

Radio Features

Multi-Carrier Adaptive Bandwidth Control (up to 2+0)

Protection: 1+1/2+2 HSB, 1+1 HSB-SD

QPSK to 2048 QAM w/ACM

XPIC

2x2 / 4x4 MIMO

Advanced Space Diversity (ASD)

Advanced Frequency Reuse (AFR)

Ethernet

Ethernet Interfaces

Traffic Interfaces – 1 x 10/100/1000Base-T (RJ-45) and 1x1000base-X (SFP) or 10/100/1000 Base-T (electrical SFP)

Management Interface - 1 x 10/100 Base-T (RJ-45)

Optical SFP Types - Optical 1000Base-LX (1310 nm) or SX (850nm)

Note: SFP devices must be of industrial grade (-40°C to +85°C)

Ethernet Features

MTU – 9600 Bytes

Quality of Service

Multiple Classification criteria (VLAN ID, p-bits, IPv4, DSCP, IPv6 TC, MPLS EXP)

8 priority queues

Deep buffering (configurable up to 64 Mbit per queue)

WRED

P-bit marking/remarking

4K VLANs

VLAN add/remove/translate

Frame Cut Through – controlled latency and PDV for delay sensitive applications

Header De-Duplication – Capacity boosting by eliminating inefficiency in all layers (L2, MPLS, L3, L4, Tunneling – GTP for LTE, GRE)

Y.1731 Ethernet OAM:Y.1731 Ethernet Bandwidth Notification (ETH-BN)

Adaptive Bandwidth Notification (ABN)

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Management Protocols

SNMP

REST

SDN Support: NETCONF/YANG

Synchronization

Synchronization Distribution

Sync Distribution over any traffic interface (GE/FE)

Sync-E (ITU-T G.8261, G.8262)

SSM/ESMC Support for ring/mesh applications (ITU-T G.8264)

Sync-E Regenerator mode, providing PRC grade (ITU-T G.811) performance for smart pipe applications.

IEEE-1588

Optimized Transport for reduced PDV

IEEE-1588 TC

Security

AES 256-bit Encryption

Secured protocols (HTTPS, SNMPV3, SSH, SFTP)

Radius authentication and authorization

TACACS+ authentication and authorization (session-based)

Standard

MEF

Carrier Ethernet 2.0 (CE 2.0)

Supported Ethernet Standards

10/100/1000base-T/X (IEEE 802.3)

Ethernet VLANs (IEEE 802.3ac)

Virtual LAN (VLAN, IEEE 802.1Q)

Class of service (IEEE 802.1p)

Provider bridges (Q-in-Q – IEEE 802.1ad)

Link aggregation (IEEE 802.3ad)

Auto MDI/MDIX for 1000baseT

RFC 1349: IPv4 TOS

RFC 2474: IPv4 DSCP

RFC 2460: IPv6 Traffic Classes

Standards Compliance

EMC: EN 301 489-1, EN 301 489-4, Class B (Europe), FCC 47 CFR, part 15, class B (US), ICES-003, Class B (Canada), TEC/EMI/TEL-001/01, Class B (India)

Surge: EN61000-4-5, Class 4 (for PWR and ETH1/PoE ports)

Safety: EN 60950-1, IEC 60950-1, UL 60950-1, CSA-C22.2 No.60950-1, EN 60950-22, UL 60950-22, CSAC22.2.60950-22

Ingress Protection: IP66-compliant

Storage: ETSI EN 300 019-1-1 Class 1.2

Transportation: ETSI EN 300 019-1-2 Class 2.3

Technical

Mechanical Specifications

Dimensions: 230mm(H), 233mm(W), 98mm(D), 6kg;

9.05”(H), 9.07”(W), 3.86”(D), 12lbs.

Pole Diameter Range (for Remote Mount Installation):

8.89 cm – 11.43 cm; 3.5” – 4.5”

Environmental Specifications

-33°C to +55°C (-45°C to +60°C extended); -27°F to +131°F (-49°F to +140°F extended)

Power Input Specifications

Standard Input: -48 VDC

IDU DC Input range: -40 to -60 VDC

Power Consumption Specifications

Maximum Power Consumption (2+0 Operation) 6 GHz: 65W; 7/8 GHz: 75W; 11 GHz: 65W; 13-15 GHz: 55W; 18-24 GHz: 48W; 26-38 GHz: 55W

Maximum Power Consumption (1+0 Operation) –5.7-6 GHz: 40W; 7-8 GHz: 50W; 11 GHz: 53W; 13-15 GHz: 41W; 18-24 GHz: 39W; 26-38 GHz: 41W

PoE Injector Mechanical Specifications

Dimensions – 134mm(H), 190mm(W), 62mm(D), 1 kg; 5.28”(H), 7.48”(W), 2.44”(D), 2.2 lbs.

PoE Injector Environmental Specifications

33°C to +55°C (-45°C to +60°C extended); -27°F to +131°F (-49°F to +140°F extended)

PoE Injector Power Input Specifications

Standard Input: -48 or +24 VDC (Optional)

DC Input range: ±(18/40.5 to 60) VDC (+18VDC extended range is supported as part of the nominal +24VDC support)

PoE Injector Interfaces

GbE Data Port supporting 10/100/1000Base-T

Power-Over-Ethernet (PoE) Port

DC Power Port –40V to -60V (a PoE supporting two redundant DC feeds each supporting ±(18-60)V is available)

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| Transmit Power (dBm) | | | | | | | | | | |
|----------------------|-------|-------|-------|-----------|-----------|--------|--------|--------------|--------|-----------|
| Transmit Power | 6 GHz | 7 GHz | 8 GHz | 10-11 GHz | 13-15 GHz | 18 GHz | 23 GHz | 24 GHz UL HP | 26 GHz | 28-38 GHz |
| QPSK | 28 | 28 | 28 | 26 | 24 | 22 | 20 | -17 | 21 | 18 |
| 8 PSK | 28 | 28 | 28 | 26 | 24 | 22 | 20 | -17 | 21 | 18 |
| 16 QAM | 28 | 27 | 27 | 26 | 23 | 21 | 20 | -17 | 20 | 17 |
| 32 QAM | 27 | 26 | 26 | 25 | 22 | 20 | 20 | -17 | 19 | 16 |
| 64 QAM | 27 | 26 | 26 | 25 | 22 | 20 | 20 | -17 | 19 | 16 |
| 128 QAM | 27 | 26 | 26 | 25 | 22 | 20 | 20 | -17 | 19 | 16 |
| 256 QAM | 27 | 26 | 24 | 25 | 20 | 20 | 18 | -17 | 17 | 14 |
| 512 QAM | 25 | 24 | 24 | 24 | 20 | 18 | 18 | -17 | 17 | 14 |
| 1024 QAM | 25 | 24 | 24 | 23 | 20 | 18 | 17 | -17 | 16 | 13 |
| 2048 QAM | 23 | 22 | 22 | 21 | 18 | 16 | 16 | -17 | 15 | 12 |

| Receive Sensitivity (dBm @BER=10 ⁻⁶) | | | | | | | | | | | | | | | |
|--|-------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|--------|--------|
| | 3.5 & 5 MHz | 6 GHz | 7 GHz | 8 GHz | 10 GHz | 11 GHz | 13 GHz | 15 GHz | 18 GHz | 23 GHz | 24 GHz | 26 GHz | 28-31 GHz | 32 GHz | 38 GHz |
| QPSK | -96.5 | -96.0 | -96.0 | -96.0 | -95.5 | -96.5 | -95.5 | -94.5 | -96.0 | -95.0 | -94.5 | -94.5 | -94.5 | -94.0 | -94.0 |
| 16 QAM | -90.0 | -89.0 | -89.0 | -89.0 | -89.0 | -89.5 | -88.5 | -88.0 | -89.0 | -88.0 | -87.5 | -88.0 | -87.5 | -87.5 | -87.0 |
| 32 QAM | -86.5 | -85.5 | -85.5 | -85.5 | -85.5 | -86.0 | -85.0 | -84.5 | -85.5 | -84.5 | -84.0 | -84.5 | -84.0 | -84.0 | -83.5 |
| 64 QAM | -83.0 | -82.5 | -82.5 | -82.0 | -83.0 | -82.0 | -81.0 | -82.5 | -81.5 | -81.0 | -81.0 | -81.0 | -81.0 | -80.5 | -80.5 |
| 128 QAM | -79.5 | -79.0 | -79.0 | -78.5 | -79.5 | -78.5 | -77.5 | -79.0 | -78.0 | -77.5 | -77.5 | -77.5 | -77.5 | -77.0 | -77.0 |
| 256 QAM | -76.5 | -75.5 | -75.5 | -75.5 | -76.5 | -75.0 | -74.5 | -75.5 | -75.0 | -74.5 | -74.5 | -74.5 | -74.0 | -74.0 | -73.5 |
| | 7 MHz | 6 GHz | 7 GHz | 8 GHz | 10 GHz | 11 GHz | 13 GHz | 15 GHz | 18 GHz | 23 GHz | 24 GHz | 26 GHz | 28-31 GHz | 32 GHz | 38 GHz |
| QPSK | -93.5 | -93.0 | -93.0 | -93.0 | -92.5 | -93.5 | -92.5 | -91.5 | -93.0 | -92.0 | -91.5 | -91.5 | -91.5 | -91.0 | -91.0 |
| 8 PSK | -87.5 | -87.0 | -87.0 | -87.0 | -86.5 | -87.5 | -86.5 | -85.5 | -87.0 | -86.0 | -85.5 | -85.5 | -85.5 | -85.0 | -85.0 |
| 16 QAM | -87.0 | -86.5 | -86.5 | -86.5 | -86.0 | -87.0 | -86.0 | -85.0 | -86.5 | -85.5 | -85.0 | -85.0 | -85.0 | -84.5 | -84.5 |
| 32 QAM | -83.5 | -83.0 | -83.0 | -83.0 | -82.5 | -83.5 | -82.5 | -81.5 | -83.0 | -82.0 | -81.5 | -81.5 | -81.5 | -81.0 | -81.0 |
| 64 QAM | -80.5 | -80.0 | -80.0 | -80.0 | -79.5 | -80.5 | -79.5 | -78.5 | -80.0 | -79.0 | -78.5 | -78.5 | -78.5 | -78.0 | -78.0 |
| 128 QAM | -77.5 | -76.5 | -76.5 | -76.5 | -76.5 | -77.5 | -76.0 | -75.5 | -76.5 | -76.0 | -75.5 | -75.5 | -75.0 | -75.0 | -74.5 |
| 256 QAM | -74.0 | -73.5 | -73.5 | -73.0 | -73.0 | -74.0 | -73.0 | -72.0 | -73.5 | -72.5 | -72.0 | -72.0 | -72.0 | -71.5 | -71.5 |
| 512 QAM | -72.0 | -71.5 | -71.5 | -71.0 | -72.0 | -71.0 | -70.0 | -70.0 | -71.5 | -70.5 | -70.0 | -70.0 | -70.0 | -69.5 | -69.5 |
| 1024 QAM (strong FEC) | -68.5 | -68.0 | -68.0 | -67.5 | -68.5 | -67.5 | -66.5 | -66.5 | -68.0 | -67.0 | -66.5 | -66.5 | -66.5 | -66.0 | -66.0 |
| 1024 QAM (light FEC) | -68.0 | -67.0 | -67.0 | -67.0 | -67.5 | -66.5 | -66.0 | -66.0 | -67.0 | -66.0 | -65.5 | -66.0 | -65.5 | -65.5 | -65.0 |

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Receive Sensitivity (dBm @BER=10-6) - continued

| | 10 MHz | 6 GHz | 7 GHz | 8 GHz | 10 GHz | 11 GHz | 13 GHz | 15 GHz | 18 GHz | 23 GHz | 24 GHz | 26 GHz | 28-31 GHz | 32 GHz | 38 GHz |
|------------------------------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|--------|--------|
| QPSK | -92.0 | -91.5 | -91.5 | -91.5 | -91.0 | -92.0 | -91.0 | -90.0 | -91.5 | -90.5 | -87.0 | -90.0 | -90.0 | -89.5 | -89.0 |
| 8 PSK | -87.0 | -86.0 | -86.0 | -86.0 | -86.0 | -87.0 | -85.5 | -85.0 | -86.0 | -85.5 | -81.5 | -85.0 | -84.5 | -84.5 | -84.0 |
| 16 QAM | -85.5 | -85.0 | -85.0 | -85.0 | -84.5 | -85.5 | -84.5 | -83.5 | -85.0 | -84.0 | -80.5 | -83.5 | -83.5 | -83.0 | -82.5 |
| 32 QAM | -82.0 | -81.5 | -81.5 | -81.0 | -82.0 | -81.0 | -80.0 | -80.0 | -81.5 | -80.5 | -77.0 | -80.0 | -80.0 | -79.5 | -79.0 |
| 64 QAM | -79.0 | -78.5 | -78.5 | -78.0 | -79.0 | -77.5 | -77.0 | -77.0 | -78.5 | -77.5 | -74.0 | -77.0 | -77.0 | -76.5 | -76.0 |
| 128 QAM | -75.5 | -75.0 | -75.0 | -74.5 | -75.5 | -74.5 | -73.5 | -73.5 | -75.0 | -74.0 | -70.5 | -73.5 | -73.5 | -73.0 | -72.5 |
| 256 QAM | -72.5 | -72.0 | -72.0 | -71.5 | -72.5 | -71.5 | -70.5 | -70.5 | -72.0 | -71.0 | -67.5 | -70.5 | -70.5 | -70.0 | -69.5 |
| 512 QAM | -70.0 | -69.5 | -69.5 | -69.0 | -70.0 | -68.5 | -68.0 | -68.0 | -69.5 | -68.5 | -65.0 | -68.0 | -68.0 | -67.5 | -67.0 |
| 1024 QAM (strong FEC) | -67.0 | -66.5 | -66.5 | -66.0 | -67.0 | -66.0 | -65.0 | -65.0 | -66.5 | -65.5 | -62.0 | -65.0 | -65.0 | -64.5 | -64.0 |
| 1024 QAM (light FEC) | -66.5 | -65.5 | -65.5 | -65.5 | -66.5 | -65.0 | -64.5 | -64.5 | -65.5 | -65.0 | -61.0 | -64.5 | -64.0 | -64.0 | -63.5 |
| | 14 MHz | 6 GHz | 7 GHz | 8 GHz | 10 GHz | 11 GHz | 13 GHz | 15 GHz | 18 GHz | 23 GHz | 24 GHz | 26 GHz | 28-31 GHz | 32 GHz | 38 GHz |
| QPSK | -90.5 | -90.0 | -90.0 | -90.0 | -89.5 | -90.5 | -89.5 | -88.5 | -90.0 | -89.0 | -88.5 | -88.5 | -88.5 | -88.0 | -88.0 |
| 8 PSK | -84.5 | -84.0 | -84.0 | -84.0 | -83.5 | -85.5 | -83.5 | -82.5 | -84.0 | -83.0 | -82.5 | -82.5 | -82.5 | -82.0 | -82.0 |
| 16 QAM | -83.5 | -83.0 | -83.0 | -83.0 | -82.5 | -83.5 | -82.5 | -81.5 | -83.0 | -82.0 | -81.5 | -81.5 | -81.5 | -81.0 | -81.0 |
| 32 QAM | -80.5 | -79.5 | -79.5 | -79.5 | -79.5 | -80.5 | -79.0 | -78.5 | -79.5 | -79.0 | -78.5 | -78.5 | -78.0 | -78.0 | -77.5 |
| 64 QAM | -77.5 | -76.5 | -76.5 | -76.5 | -76.5 | -77.0 | -76.0 | -75.5 | -76.5 | -76.0 | -75.5 | -75.5 | -75.0 | -75.0 | -74.5 |
| 128 QAM | -74.0 | -73.5 | -73.5 | -73.0 | -74.0 | -73.0 | -72.0 | -73.5 | -72.5 | -72.0 | -72.0 | -72.0 | -72.0 | -71.5 | -71.5 |
| 256 QAM | -71.5 | -70.5 | -70.5 | -70.5 | -70.5 | -71.0 | -70.0 | -69.5 | -70.5 | -69.5 | -69.0 | -69.5 | -69.0 | -69.0 | -68.5 |
| 512 QAM | -68.5 | -68.0 | -68.0 | -67.5 | -68.5 | -67.5 | -66.5 | -66.5 | -68.0 | -67.0 | -66.5 | -66.5 | -66.5 | -66.0 | -66.0 |
| 1024 QAM (strong FEC) | -65.5 | -65.0 | -65.0 | -64.5 | -65.5 | -64.5 | -63.5 | -63.5 | -65.0 | -64.0 | -63.5 | -63.5 | -63.5 | -63.0 | -63.0 |
| 1024 QAM (light FEC) | -65.0 | -64.0 | -64.0 | -64.0 | -64.0 | -64.5 | -63.5 | -63.0 | -64.0 | -63.5 | -63.0 | -63.0 | -62.5 | -62.5 | -62.0 |
| | 20 MHz | 6 GHz | 7 GHz | 8 GHz | 10 GHz | 11 GHz | 13 GHz | 15 GHz | 18 GHz | 23 GHz | 24 GHz | 26 GHz | 28-31 GHz | 32 GHz | 38 GHz |
| QPSK | -89.0 | -88.5 | -88.5 | -88.5 | -88.0 | -89.0 | -88.0 | -87.0 | -88.5 | -87.5 | -84.0 | -87.0 | -87.0 | -86.5 | -86.0 |
| 8 PSK | -84.0 | -83.5 | -83.5 | -83.5 | -83.0 | -84.0 | -83.0 | -82.0 | -83.5 | -82.5 | -79.0 | -82.0 | -82.0 | -81.5 | -81.0 |
| 16 QAM | -82.5 | -82.0 | -82.0 | -82.0 | -81.5 | -82.5 | -81.0 | -80.5 | -82.0 | -81.0 | -77.5 | -80.5 | -80.5 | -80.0 | -79.5 |
| 32 QAM | -79.0 | -78.5 | -78.5 | -78.0 | -79.0 | -77.5 | -77.0 | -77.0 | -78.5 | -77.5 | -74.0 | -77.0 | -77.0 | -76.5 | -76.0 |
| 64 QAM | -76.0 | -75.0 | -75.0 | -75.0 | -76.0 | -74.5 | -74.0 | -74.0 | -75.0 | -74.5 | -70.5 | -74.0 | -73.5 | -73.5 | -73.0 |
| 128 QAM | -73.0 | -72.0 | -72.0 | -72.0 | -73.0 | -71.5 | -71.0 | -71.0 | -72.0 | -71.5 | -67.5 | -71.0 | -70.5 | -70.5 | -70.0 |
| 256 QAM | -70.0 | -69.5 | -69.5 | -69.0 | -70.0 | -68.5 | -68.0 | -68.0 | -69.5 | -68.5 | -65.0 | -68.0 | -68.0 | -67.5 | -67.0 |
| 512 QAM | -67.5 | -66.5 | -66.5 | -66.5 | -67.5 | -66.0 | -65.5 | -65.5 | -66.5 | -66.0 | -62.0 | -65.5 | -65.0 | -65.0 | -64.5 |
| 1024 QAM (strong FEC) | -64.5 | -63.5 | -63.5 | -63.5 | -64.5 | -63.0 | -62.5 | -62.5 | -63.5 | -63.0 | -59.0 | -62.5 | -62.0 | -62.0 | -61.5 |
| 1024 QAM (light FEC) | -63.5 | -63.0 | -63.0 | -62.5 | -63.5 | -62.5 | -61.5 | -61.5 | -63.0 | -62.0 | -58.5 | -61.5 | -61.5 | -61.0 | -60.5 |
| 2048 QAM | -60.0 | -59.5 | -59.5 | -59.0 | -60.0 | -59.0 | -58.0 | -58.0 | -59.5 | -58.5 | -55.0 | -58.0 | -58.0 | -57.5 | -57.0 |

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| Receive Sensitivity (dBm @BER=10-6) - continued | | | | | | | | | | | | | | | |
|---|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|--------|--------|
| | 25 MHz | 6 GHz | 7 GHz | 8 GHz | 10 GHz | 11 GHz | 13 GHz | 15 GHz | 18 GHz | 23 GHz | 24 GHz | 26 GHz | 28-31 GHz | 32 GHz | 38 GHz |
| QPSK | -87.5 | -86.5 | -86.5 | -86.5 | -86.5 | -87.0 | -86.0 | -85.5 | -86.5 | -85.5 | -82.0 | -85.5 | -85.0 | -85.0 | -84.0 |
| 8 PSK | -82.5 | -82.0 | -82.0 | -82.0 | -81.5 | -82.5 | -81.5 | -80.5 | -82.0 | -81.0 | -77.5 | -80.5 | -80.5 | -80.0 | -79.5 |
| 16 QAM | -80.5 | -80.0 | -80.0 | -80.0 | -79.5 | -80.5 | -79.5 | -78.5 | -80.0 | -79.0 | -75.5 | -78.5 | -78.5 | -78.0 | -77.5 |
| 32 QAM | -77.5 | -77.0 | -77.0 | -77.0 | -76.5 | -77.5 | -76.0 | -75.5 | -77.0 | -76.0 | -72.5 | -75.5 | -75.5 | -75.0 | -74.5 |
| 64 QAM | -74.5 | -74.0 | -74.0 | -74.0 | -73.5 | -74.5 | -73.5 | -72.5 | -74.0 | -73.0 | -69.5 | -72.5 | -72.5 | -72.0 | -71.5 |
| 128 QAM | -71.5 | -71.0 | -71.0 | -71.0 | -70.5 | -71.5 | -70.5 | -69.5 | -71.0 | -70.0 | -66.5 | -69.5 | -69.5 | -69.0 | -68.5 |
| 256 QAM | -68.5 | -67.5 | -67.5 | -67.5 | -67.5 | -68.5 | -67.0 | -66.5 | -67.5 | -67.0 | -63.0 | -66.5 | -66.0 | -66.0 | -65.5 |
| 512 QAM | -66.0 | -65.0 | -65.0 | -65.0 | -65.0 | -66.0 | -64.5 | -64.0 | -65.0 | -64.5 | -60.5 | -64.0 | -63.5 | -63.5 | -63.0 |
| 1024 QAM (strong FEC) | -63.0 | -62.5 | -62.5 | -62.5 | -62.0 | -63.0 | -61.5 | -61.0 | -62.5 | -61.5 | -58.0 | -61.0 | -61.0 | -60.5 | -60.0 |
| 1024 QAM (light FEC) | -62.5 | -61.5 | -61.5 | -61.5 | -61.5 | -62.5 | -61.0 | -60.5 | -61.5 | -61.0 | -57.0 | -60.5 | -60.0 | -60.0 | -59.5 |
| 2048 QAM | -58.5 | -58.0 | -58.0 | -57.5 | -58.5 | -57.0 | -56.5 | -56.5 | -58.0 | -57.0 | -53.5 | -56.5 | -56.5 | -56.0 | -55.5 |
| | 28 MHz | 6 GHz | 7 GHz | 8 GHz | 10 GHz | 11 GHz | 13 GHz | 15 GHz | 18 GHz | 23 GHz | 24 GHz | 26 GHz | 28-31 GHz | 32 GHz | 38 GHz |
| QPSK | -87.5 | -87.0 | -87.0 | -87.0 | -86.5 | -87.5 | -86.5 | -85.5 | -87.0 | -86.0 | -85.5 | -85.5 | -85.5 | -85.0 | -85.0 |
| 8 PSK | -83.0 | -82.5 | -82.5 | -82.5 | -82.0 | -83.0 | -82.0 | -81.0 | -82.5 | -81.5 | -81.0 | -81.0 | -81.0 | -80.5 | -80.5 |
| 16 QAM | -81.0 | -80.5 | -80.5 | -80.5 | -80.0 | -81.0 | -79.5 | -79.0 | -80.5 | -79.5 | -79.0 | -79.0 | -79.0 | -78.5 | -78.0 |
| 32 QAM | -77.5 | -77.0 | -77.0 | -77.0 | -76.5 | -77.5 | -76.0 | -75.5 | -77.0 | -76.0 | -75.5 | -75.5 | -75.5 | -75.0 | -74.5 |
| 64 QAM | -74.5 | -74.0 | -74.0 | -74.0 | -73.5 | -74.5 | -73.0 | -72.5 | -74.0 | -73.0 | -72.5 | -72.5 | -72.5 | -72.0 | -71.5 |
| 128 QAM | -71.5 | -70.5 | -70.5 | -70.5 | -70.5 | -71.0 | -70.0 | -69.5 | -70.5 | -69.5 | -69.0 | -69.5 | -69.0 | -69.0 | -68.5 |
| 256 QAM | -68.5 | -67.5 | -67.5 | -67.5 | -67.5 | -68.0 | -67.0 | -66.5 | -67.5 | -66.5 | -66.0 | -66.5 | -66.0 | -66.0 | -65.5 |
| 512 QAM | -66.0 | -65.0 | -65.0 | -65.0 | -65.0 | -66.0 | -64.5 | -64.0 | -65.0 | -64.5 | -64.0 | -64.0 | -63.5 | -63.5 | -63.0 |
| 1024 QAM (strong FEC) | -63.0 | -62.5 | -62.5 | -62.5 | -62.0 | -63.0 | -61.5 | -61.0 | -62.5 | -61.5 | -61.0 | -61.0 | -61.0 | -60.5 | -60.0 |
| 1024 QAM (light FEC) | -62.0 | -61.5 | -61.5 | -61.5 | -61.0 | -62.0 | -60.5 | -60.0 | -61.5 | -60.5 | -60.0 | -60.0 | -60.0 | -59.5 | -59.0 |
| 2048 QAM | -58.5 | -58.0 | -58.0 | -57.5 | -58.5 | -57.0 | -56.5 | -56.5 | -58.0 | -57.0 | -56.5 | -56.5 | -56.5 | -56.0 | -55.5 |
| | 30 MHz | 6 GHz | 7 GHz | 8 GHz | 10 GHz | 11 GHz | 13 GHz | 15 GHz | 18 GHz | 23 GHz | 24 GHz | 26 GHz | 28-31 GHz | 32 GHz | 38 GHz |
| QPSK | -87.5 | -87.0 | -87.0 | -87.0 | -86.5 | -87.5 | -86.0 | -85.5 | -87.0 | -86.0 | -85.5 | -85.5 | -85.5 | -85.0 | -84.5 |
| 8 PSK | -82.5 | -81.5 | -81.5 | -81.5 | -81.5 | -82.5 | -81.0 | -80.5 | -81.5 | -81.0 | -80.5 | -80.5 | -80.0 | -80.0 | -79.0 |
| 16 QAM | -81.0 | -80.0 | -80.0 | -80.0 | -80.0 | -80.5 | -79.5 | -79.0 | -80.0 | -79.0 | -78.5 | -79.0 | -78.5 | -78.5 | -77.5 |
| 32 QAM | -77.0 | -76.5 | -76.5 | -76.5 | -76.0 | -77.0 | -76.0 | -75.0 | -76.5 | -75.5 | -75.0 | -75.0 | -75.0 | -74.5 | -74.0 |
| 64 QAM | -74.5 | -73.5 | -73.5 | -73.5 | -73.5 | -74.0 | -73.0 | -72.5 | -73.5 | -72.5 | -72.0 | -72.5 | -72.0 | -72.0 | -71.0 |
| 128 QAM | -71.0 | -70.5 | -70.5 | -70.5 | -70.0 | -71.0 | -70.0 | -69.0 | -70.5 | -69.5 | -69.0 | -69.0 | -69.0 | -68.5 | -68.0 |
| 256 QAM | -68.0 | -67.5 | -67.5 | -67.5 | -67.0 | -68.0 | -67.0 | -66.0 | -67.5 | -66.5 | -66.0 | -66.0 | -66.0 | -65.5 | -65.0 |
| 512 QAM | -66.0 | -65.5 | -65.5 | -65.5 | -65.0 | -66.0 | -64.5 | -64.0 | -65.5 | -64.5 | -64.0 | -64.0 | -64.0 | -63.5 | -63.0 |
| 1024 QAM (strong FEC) | -63.0 | -62.0 | -62.0 | -62.0 | -62.0 | -62.5 | -61.5 | -61.0 | -62.0 | -61.0 | -60.5 | -61.0 | -60.5 | -60.5 | -59.5 |
| 1024 QAM (light FEC) | -62.0 | -61.0 | -61.0 | -61.0 | -61.0 | -62.0 | -60.5 | -60.0 | -61.0 | -60.5 | -60.0 | -60.0 | -59.5 | -59.5 | -58.5 |
| 2048 QAM | -58.0 | -57.5 | -57.5 | -57.5 | -57.0 | -58.0 | -56.5 | -56.0 | -57.5 | -56.5 | -56.0 | -56.0 | -56.0 | -55.5 | -55.0 |

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| Receive Sensitivity (dBm @BER=10-6) - continued | | | | | | | | | | | | | | | |
|---|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|--------|--------|
| | 40 MHz | 6 GHz | 7 GHz | 8 GHz | 10 GHz | 11 GHz | 13 GHz | 15 GHz | 18 GHz | 23 GHz | 24 GHz | 26 GHz | 28-31 GHz | 32 GHz | 38 GHz |
| QPSK | -86.0 | -85.5 | -85.5 | -85.5 | -85.0 | -86.0 | -85.0 | -84.0 | -85.5 | -84.5 | -84.0 | -84.0 | -84.0 | -83.5 | -83.5 |
| 8 PSK | -81.0 | -80.5 | -80.5 | -80.5 | -80.0 | -81.0 | -79.5 | -79.0 | -80.5 | -79.5 | -79.0 | -79.0 | -79.0 | -78.5 | -78.0 |
| 16 QAM | -79.5 | -79.0 | -79.0 | -79.0 | -78.5 | -79.5 | -78.0 | -77.5 | -79.0 | -78.0 | -77.5 | -77.5 | -77.5 | -77.0 | -76.5 |
| 32 QAM | -76.0 | -75.0 | -75.0 | -75.0 | -75.5 | -74.5 | -74.0 | -74.0 | -75.0 | -74.0 | -73.5 | -74.0 | -73.5 | -73.5 | -73.0 |
| 64 QAM | -73.0 | -72.0 | -72.0 | -72.0 | -73.0 | -71.5 | -71.0 | -72.0 | -71.5 | -71.0 | -71.0 | -71.0 | -70.5 | -70.5 | -70.0 |
| 128 QAM | -70.0 | -69.0 | -69.0 | -69.0 | -70.0 | -68.5 | -68.0 | -69.0 | -68.5 | -68.0 | -68.0 | -68.0 | -67.5 | -67.5 | -67.0 |
| 256 QAM | -67.0 | -66.0 | -66.0 | -66.0 | -66.5 | -65.5 | -65.0 | -66.0 | -65.0 | -65.0 | -64.5 | -65.0 | -64.5 | -64.5 | -64.0 |
| 512 QAM | -64.0 | -63.5 | -63.5 | -63.0 | -64.0 | -62.5 | -62.0 | -63.5 | -62.5 | -62.0 | -62.0 | -62.0 | -62.0 | -61.5 | -61.0 |
| 1024 QAM (strong FEC) | -61.5 | -61.0 | -61.0 | -60.5 | -61.5 | -60.0 | -59.5 | -61.0 | -60.0 | -59.5 | -59.5 | -59.5 | -59.5 | -59.0 | -58.5 |
| 1024 QAM (light FEC) | -60.5 | -60.0 | -60.0 | -59.5 | -60.5 | -59.5 | -58.5 | -60.0 | -59.0 | -58.5 | -58.5 | -58.5 | -58.5 | -58.0 | -58.0 |
| 2048 QAM -58.0 | -57.0 | -57.0 | -57.0 | -58.0 | -56.5 | -56.0 | -57.0 | -56.5 | -56.0 | -56.0 | -56.0 | -55.5 | -55.5 | -55.0 | -55.5 |
| | 50 MHz | 6 GHz | 7 GHz | 8 GHz | 10 GHz | 11 GHz | 13 GHz | 15 GHz | 18 GHz | 23 GHz | 24 GHz | 26 GHz | 28-31 GHz | 32 GHz | 38 GHz |
| QPSK | -85.5 | -84.5 | -84.5 | -84.5 | -84.5 | -85.0 | -84.0 | -83.5 | -84.5 | -83.5 | -80.0 | -83.5 | -83.0 | -83.0 | -82.5 |
| 8 PSK | -80.0 | -79.5 | -79.5 | -79.5 | -79.0 | -80.0 | -79.0 | -78.0 | -79.5 | -78.5 | -75.0 | -78.0 | -78.0 | -78.0 | -77.5 |
| 16 QAM | -78.5 | -77.5 | -77.5 | -77.5 | -78.0 | -77.0 | -76.5 | -77.5 | -76.5 | -76.5 | -73.0 | -76.5 | -76.0 | -76.0 | -75.5 |
| 32 QAM | -74.5 | -74.0 | -74.0 | -74.0 | -73.5 | -74.5 | -73.5 | -72.5 | -74.0 | -73.0 | -69.5 | -72.5 | -72.5 | -72.5 | -72.0 |
| 64 QAM | -71.5 | -70.5 | -70.5 | -70.5 | -71.5 | -70.0 | -69.5 | -70.5 | -70.5 | -70.0 | -66.0 | -69.5 | -69.0 | -69.0 | -68.5 |
| 128 QAM | -68.5 | -68.0 | -68.0 | -67.5 | -68.5 | -67.5 | -66.5 | -68.0 | -67.0 | -63.5 | -66.5 | -66.5 | -66.5 | -66.5 | -66.0 |
| 256 QAM | -66.0 | -65.0 | -65.0 | -65.0 | -66.0 | -64.5 | -64.0 | -65.0 | -64.5 | -60.5 | -64.0 | -63.5 | -63.5 | -63.5 | -63.0 |
| 512 QAM | -63.5 | -63.0 | -63.0 | -62.5 | -63.5 | -62.0 | -61.5 | -63.0 | -62.0 | -58.5 | -61.5 | -61.5 | -61.5 | -61.5 | -61.0 |
| 1024 QAM (strong FEC) | -60.0 | -59.5 | -59.5 | -59.0 | -60.0 | -58.5 | -58.0 | -59.5 | -58.5 | -55.0 | -58.0 | -58.0 | -58.0 | -58.0 | -57.5 |
| 1024 QAM (light FEC) | -59.0 | -58.0 | -58.0 | -58.0 | -59.0 | -57.5 | -57.0 | -58.0 | -57.5 | -53.5 | -57.0 | -56.5 | -56.5 | -56.5 | -56.0 |
| 2048 QAM | -57.0 | -56.0 | -56.0 | -56.0 | -56.5 | -55.5 | -55.0 | -56.0 | -55.0 | -51.5 | -55.0 | -54.5 | -54.5 | -54.5 | -54.0 |
| | 56 MHz | 6 GHz | 7 GHz | 8 GHz | 10 GHz | 11 GHz | 13 GHz | 15 GHz | 18 GHz | 23 GHz | 24 GHz | 26 GHz | 28-31 GHz | 32 GHz | 38 GHz |
| QPSK | -84.0 | -83.5 | -83.5 | -83.5 | -83.0 | -84.0 | -83.0 | -82.0 | -83.5 | -82.5 | -82.0 | -82.0 | -82.0 | -81.5 | -81.5 |
| 8 PSK | -80.0 | -79.5 | -79.5 | -79.5 | -79.0 | -80.0 | -79.0 | -78.0 | -79.5 | -78.5 | -78.0 | -78.0 | -78.0 | -77.5 | -77.5 |
| 16 QAM | -77.5 | -77.0 | -77.0 | -77.0 | -76.5 | -77.5 | -76.5 | -75.5 | -77.0 | -76.0 | -75.5 | -75.5 | -75.5 | -75.0 | -75.0 |
| 32 QAM | -74.5 | -73.5 | -73.5 | -73.5 | -74.0 | -73.0 | -72.5 | -73.5 | -73.5 | -72.5 | -72.0 | -72.5 | -72.0 | -72.0 | -71.5 |
| 64 QAM | -71.0 | -70.5 | -70.5 | -70.5 | -70.0 | -71.0 | -70.0 | -69.0 | -70.5 | -69.5 | -69.0 | -69.0 | -69.0 | -68.5 | -68.5 |
| 128 QAM | -68.5 | -67.5 | -67.5 | -67.5 | -68.0 | -67.0 | -66.5 | -67.5 | -66.5 | -66.5 | -66.0 | -66.5 | -66.0 | -66.0 | -65.5 |
| 256 QAM | -65.0 | -64.5 | -64.5 | -64.5 | -64.0 | -65.0 | -64.0 | -63.0 | -64.5 | -63.5 | -63.0 | -63.0 | -63.0 | -62.5 | -62.5 |
| 512 QAM | -63.0 | -62.5 | -62.5 | -62.5 | -62.0 | -63.0 | -61.5 | -61.0 | -62.5 | -61.5 | -61.0 | -61.0 | -61.0 | -60.5 | -60.0 |
| 1024 QAM (strong FEC) | -59.5 | -59.0 | -59.0 | -58.5 | -59.5 | -58.5 | -57.5 | -59.0 | -58.0 | -57.5 | -57.5 | -57.5 | -57.5 | -57.0 | -57.0 |
| 1024 QAM (light FEC) | -58.5 | -58.0 | -58.0 | -57.5 | -58.5 | -57.5 | -56.5 | -58.0 | -57.0 | -56.5 | -56.5 | -56.5 | -56.5 | -56.0 | -56.0 |
| 2048 QAM | -54.0 | -53.5 | -53.5 | -53.0 | -54.0 | -53.0 | -52.0 | -53.5 | -52.5 | -52.0 | -52.0 | -52.0 | -52.0 | -51.5 | -51.5 |

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| Receive Sensitivity (dBm @BER=10-6) - continued | | | | | | | | | | | | | | | |
|---|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|--------|--------|
| | 60 MHz | 6 GHz | 7 GHz | 8 GHz | 10 GHz | 11 GHz | 13 GHz | 15 GHz | 18 GHz | 23 GHz | 24 GHz | 26 GHz | 28-31 GHz | 32 GHz | 38 GHz |
| QPSK | -84.5 | -84.0 | -84.0 | -84.0 | -83.5 | -84.5 | -83.0 | -82.5 | -84.0 | -83.0 | -82.5 | -82.5 | -82.5 | -82.0 | -81.5 |
| 8 PSK | -80.0 | -79.0 | -79.0 | -79.0 | -79.0 | -79.5 | -78.5 | -78.0 | -79.0 | -78.0 | -77.5 | -78.0 | -77.5 | -77.5 | -77.0 |
| 16 QAM | -77.5 | -77.0 | -77.0 | -77.0 | -76.5 | -77.5 | -76.0 | -75.5 | -77.0 | -76.0 | -75.5 | -75.5 | -75.5 | -75.0 | -74.5 |
| 32 QAM | -74.0 | -73.0 | -73.0 | -73.0 | -73.0 | -73.5 | -72.5 | -72.0 | -73.0 | -72.0 | -71.5 | -72.0 | -71.5 | -71.5 | -71.0 |
| 64 QAM | -70.5 | -70.0 | -70.0 | -70.0 | -69.5 | -70.5 | -69.5 | -68.5 | -70.0 | -69.0 | -68.5 | -68.5 | -68.5 | -68.0 | -68.0 |
| 128 QAM | -68.0 | -67.0 | -67.0 | -67.0 | -67.0 | -67.5 | -66.5 | -66.0 | -67.0 | -66.0 | -65.5 | -66.0 | -65.5 | -65.5 | -65.0 |
| 256 QAM | -64.5 | -64.0 | -64.0 | -64.0 | -63.5 | -64.5 | -63.5 | -62.5 | -64.0 | -63.0 | -62.5 | -62.5 | -62.5 | -62.0 | -62.0 |
| 512 QAM | -62.5 | -62.0 | -62.0 | -62.0 | -61.5 | -62.5 | -61.5 | -60.5 | -62.0 | -61.0 | -60.5 | -60.5 | -60.5 | -60.0 | -60.0 |
| 1024 QAM (strong FEC) | -59.0 | -58.5 | -58.5 | -58.5 | -58.0 | -59.0 | -58.0 | -57.0 | -58.5 | -57.5 | -57.0 | -57.0 | -57.0 | -56.5 | -56.5 |
| 1024 QAM (light FEC) | -58.0 | -57.5 | -57.5 | -57.5 | -57.0 | -58.0 | -57.0 | -56.0 | -57.5 | -56.5 | -56.0 | -56.0 | -56.0 | -55.5 | -55.5 |
| 2048 QAM | -55.5 | -54.5 | -54.5 | -54.5 | -54.5 | -55.0 | -54.0 | -53.5 | -54.5 | -53.5 | -53.0 | -53.5 | -53.0 | -53.0 | -52.5 |
| | 80 MHz | 6 GHz | 7 GHz | 8 GHz | 10 GHz | 11 GHz | 13 GHz | 15 GHz | 18 GHz | 23 GHz | 24 GHz | 26 GHz | 28-31 GHz | 32 GHz | 38 GHz |
| QPSK | -82.5 | -82.0 | -82.0 | -82.0 | -81.5 | -82.5 | -81.5 | -80.5 | -82.0 | -81.0 | -80.5 | -80.5 | -80.5 | -80.0 | -80.0 |
| 8 PSK | -78.5 | -78.0 | -78.0 | -78.0 | -77.5 | -78.5 | -77.5 | -76.5 | -78.0 | -77.0 | -76.5 | -76.5 | -76.5 | -76.0 | -76.0 |
| 16 QAM | -76.0 | -75.5 | -75.5 | -75.5 | -75.0 | -76.0 | -75.0 | -74.0 | -75.5 | -74.5 | -74.0 | -74.0 | -74.0 | -73.5 | -73.5 |
| 32 QAM | -73.0 | -72.0 | -72.0 | -72.0 | -72.0 | -72.5 | -71.5 | -71.0 | -72.0 | -71.0 | -70.5 | -71.0 | -70.5 | -70.5 | -70.0 |
| 64 QAM | -69.5 | -69.0 | -69.0 | -69.0 | -68.5 | -69.5 | -68.5 | -67.5 | -69.0 | -68.0 | -67.5 | -67.5 | -67.5 | -67.0 | -67.0 |
| 128 QAM | -67.0 | -66.0 | -66.0 | -66.0 | -66.0 | -66.5 | -65.5 | -65.0 | -66.0 | -65.0 | -64.5 | -65.0 | -64.5 | -64.5 | -64.0 |
| 256 QAM | -63.5 | -63.0 | -63.0 | -63.0 | -62.5 | -63.5 | -62.5 | -61.5 | -63.0 | -62.0 | -61.5 | -61.5 | -61.5 | -61.0 | -61.0 |
| 512 QAM | -61.5 | -61.0 | -61.0 | -61.0 | -60.5 | -61.5 | -60.0 | -59.5 | -61.0 | -60.0 | -59.5 | -59.5 | -59.5 | -59.0 | -58.5 |
| 1024 QAM Strong | -58.0 | -57.5 | -57.5 | -57.5 | -57.0 | -58.0 | -57.0 | -56.0 | -57.5 | -56.5 | -56.0 | -56.0 | -56.0 | -55.5 | -55.5 |
| 1024 QAM Light | -57.0 | -56.5 | -56.5 | -56.5 | -56.0 | -57.0 | -56.0 | -55.0 | -56.5 | -55.5 | -55.0 | -55.0 | -55.0 | -54.5 | -54.5 |
| 2048 QAM | -54.0 | -53.5 | -53.5 | -53.5 | -53.0 | -54.0 | -53.0 | -52.0 | -53.5 | -52.5 | -52.0 | -52.0 | -52.0 | -51.5 | -51.5 |

| Ethernet Throughput (Mbps) | | | | | | |
|----------------------------|--------------|----------------|-------|----------------|-------|--------|
| Modulation | Channel Size | No Compression | | L2 Compression | | |
| | | | | | | |
| QPSK | 5 MHz | 3-4 | 4-13 | 10 MHz | 13-15 | 13-48 |
| 8 PSK | | - | - | | 19-23 | 20-73 |
| 16 QAM | | 8-10 | 9-32 | | 26-32 | 28-100 |
| 32 QAM | | 11-14 | 12-43 | | 35-43 | 37-133 |
| 64 QAM | | 14-17 | 15-54 | | 43-53 | 45-164 |
| 128 QAM | | 17-21 | 18-65 | | 52-63 | 54-196 |
| 256 QAM | | 19-24 | 20-74 | | 59-72 | 62-225 |
| 512 QAM | | - | - | | 65-79 | 68-247 |
| 1024 QAM Strong | | - | - | | 68-83 | 72-260 |
| 1024 QAM Light | | - | - | | 73-89 | 76-276 |

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| Ethernet Throughput (Mbps) - continued | | | | | | |
|--|--------------|----------------|----------------|--------------|----------------|----------------|
| Modulation | Channel Size | No Compression | L2 Compression | Channel Size | No Compression | L2 Compression |
| QPSK | 14 MHz | 19-24 | 20-74 | 20 MHz | 28-34 | 29-105 |
| 8 PSK | | 29-36 | 31-112 | | 42-51 | 44-158 |
| 16 QAM | | 40-49 | 42-153 | | 57-70 | 60-217 |
| 32 QAM | | 53-65 | 56-203 | | 75-92 | 79-286 |
| 64 QAM | | 66-80 | 69-249 | | 92-113 | 97-352 |
| 128 QAM | | 79-97 | 83-301 | | 112-136 | 117-424 |
| 256 QAM | | 90-110 | 95-344 | | 126-155 | 133-481 |
| 512 QAM | | 100-122 | 105-380 | | 138-169 | 145-526 |
| 1024 QAM Strong | | 106-129 | 111-402 | | 147-180 | 154-559 |
| 1024 QAM Light | | 112-137 | 118-426 | | 156-191 | 164-593 |
| 2048 QAM | | - | - | | 166-203 | 175-633 |
| QPSK | 25 MHz | 35-43 | 37-135 | 28 MHz | 43-52 | 45-162 |
| 8 PSK | | 53-65 | 56-202 | | 62-76 | 65-236 |
| 16 QAM | | 72-88 | 76-275 | | 87-107 | 92-332 |
| 32 QAM | | 95-117 | 100-363 | | 115-140 | 121-437 |
| 64 QAM | | 117-143 | 123-446 | | 141-173 | 149-538 |
| 128 QAM | | 141-173 | 148-538 | | 170-208 | 179-648 |
| 256 QAM | | 161-197 | 169-613 | | 196-239 | 206-745 |
| 512 QAM | | 178-217 | 187-677 | | 209-255 | 219-794 |
| 1024 QAM Strong | | 189-231 | 198-719 | | 228-278 | 239-866 |
| 1024 QAM Light | | 201-245 | 211-763 | | 241-295 | 253-917 |
| 2048 QAM | | 215-263 | 226-819 | | 263-321 | 276-1000 |
| QPSK | 30 MHz | 43-52 | 45-162 | 40 MHz | 58-71 | 61-220 |
| 8 PSK | | 62-76 | 65-236 | | 86-105 | 90-328 |
| 16 QAM | | 87-107 | 92-332 | | 117-143 | 123-446 |
| 32 QAM | | 115-140 | 121-437 | | 154-189 | 162-588 |
| 64 QAM | | 141-173 | 149-538 | | 190-232 | 199-722 |
| 128 QAM | | 170-208 | 179-648 | | 229-280 | 241-873 |
| 256 QAM | | 196-239 | 206-745 | | 247-302 | 259-939 |
| 512 QAM | | 209-255 | 219-794 | | 270-330 | 284-1000 |
| 1024 QAM Strong | | 228-278 | 239-866 | | 306-375 | 322-1000 |
| 1024 QAM Light | | 241-295 | 253-917 | | 325-398 | 342-1000 |
| 2048 QAM | | 263-321 | 276-1000 | | 352-430 | 370-1000 |

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| Ethernet Throughput (Mbps) - continued | | | | | | | |
|--|--------------|----------------|----------------|--------------|----------------|----------------|--|
| Modulation | Channel Size | No Compression | L2 Compression | Channel Size | No Compression | L2 Compression | |
| QPSK | 50 MHz | 70-86 | 74-267 | 56 MHz | 87-106 | 91-331 | |
| 8 PSK | | 109-133 | 114-415 | | 127-155 | 133-482 | |
| 16 QAM | | 148-181 | 155-563 | | 176-215 | 185-670 | |
| 32 QAM | | 186-227 | 195-707 | | 232-283 | 243-881 | |
| 64 QAM | | 240-293 | 252-913 | | 284-348 | 299-1000 | |
| 128 QAM | | 280-342 | 294-1000 | | 344-420 | 361-1000 | |
| 256 QAM | | 332-406 | 348-1000 | | 397-485 | 416-1000 | |
| 512 QAM | | 360-440 | 378-1000 | | 426-521 | 448-1000 | |
| 1024 QAM Strong | | 392-479 | 411-1000 | | 464-567 | 487-1000 | |
| 1024 QAM Light | | 416-509 | 437-1000 | | 493-602 | 517-1000 | |
| 2048 QAM | | 449-548 | 471-1000 | | 534-653 | 561-1000 | |
| QPSK | 60 MHz | 87-106 | 91-331 | 80 MHz | 114-140 | 120-435 | |
| 8 PSK | | 127-155 | 133-482 | | 162-198 | 170-618 | |
| 16 QAM | | 176-215 | 185-670 | | 231-283 | 243-880 | |
| 32 QAM | | 232-283 | 243-881 | | 304-371 | 319-1000 | |
| 64 QAM | | 284-348 | 299-1000 | | 371-454 | 390-1000 | |
| 128 QAM | | 344-420 | 361-1000 | | 439-536 | 461-1000 | |
| 256 QAM | | 397-485 | 416-1000 | | 505-618 | 531-1000 | |
| 512 QAM | | 427-521 | 448-1000 | | 555-679 | 583-1000 | |
| 1024 QAM Strong | | 464-567 | 487-1000 | | 604-738 | 634-1000 | |
| 1024 QAM Light | | 493-602 | 517-1000 | | 641-784 | 673-1000 | |
| 2048 QAM | | 534-653 | 561-1000 | | 679-829 | 713-1000 | |

ABOUT CAMBIUM NETWORKS

Cambium Networks empowers millions of people with wireless connectivity worldwide. Its wireless portfolio is used by commercial and government network operators as well as broadband service providers to connect people, places and things. With a single network architecture spanning fixed wireless and Wi-Fi, Cambium Networks enables operators to achieve maximum performance with minimal spectrum. End-to-end cloud management transforms networks into dynamic environments that evolve to meet changing needs with minimal physical human intervention. Cambium Networks empowers a growing ecosystem of partners who design and deliver gigabit wireless solutions that just work.