Datasheet

FibeAir IP-20C

REV. A.05 | June 2018
ANSI Version

Radio

Supported Frequency Range

6-38 GHz

Radio Configurations

1+0 to 4+0, 1+1/2+2, E/W

Multiband (with IP-20E)

Radio Features

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

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

High spectral utilization: QPSK to 2048 QAM w/ACM

XPIC

2x2/4x4 LoS MIMO

Advanced Frequency Reuse (AFR)

Ethernet

Ethernet Interfaces

Traffic Interfaces – 1 x 10/100/1000Base-T (RJ-45) and 2x1000Base-X (Optical SFP) or 10/100/1000Base-T (Electrical SFP)

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

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

Note: SFP devices must be of industrial grade (-40°F to +185°F)

Ethernet Features

MTU – 9600 Bytes

Quality of Service

- Multiple Classification criteria (VLAN ID, P-bits, IPv4 DSCP, IPv6 TC, MPLS EXP)
- 8 priority queues per port
- 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 DeDuplication – Capacity boosting by eliminating inefficiency in all layers (L2,MPLS, L3,L4, Tunneling – GTP for LTE, GRE)

Y.1731 Ethernet OAM

Adaptive Bandwidth Notification (ABN, also known as EOAM)

Synchronization

Synchronization Distribution

Sync Distribution over any traffic interface (GE/FE)

SyncE (ITU-T G.8261, G.8262)

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

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

IEEE-1588

Optimized Transport for reduced PDV

IEEE-1588 TC

Standards

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 (QinQ – 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

Security

Radio Encryption – AES 256

Secured protocols:

- HTTPS
- SNMPv3
- SSH
- SFTP

RADIUS authentication and authorization

Standards Compliance

Radio Spectral Efficiency: EN 302 217-2-2

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, CSA C22.2.60950-22

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

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

Technical Specifications

Mechanical Specifications

Dimensions – 9.05”(H), 9.07”(W), 3.86”(D), 14.33 lbs.

Pole Diameter Range (for Remote Mount Installation) – 3.5” – 4.5”

Environmental Specifications

-27°F to +131°F (-49°F to +140°F extended)

Power Input Specifications

Standard Input: -48 VDC

DC Input range: -40 to -60 VDC

Power Consumption Specifications

Maximum Power Consumption (Multi-Core 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) –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 – 5.28”(H), 7.48”(W), 2.44”(D), 2.2 lbs.

PoE Injector Environmental Specifications

-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)

Product Images

IP-20C

Radio Specifications

Capacity

Notes: For full specifications, please contact your Ceragon sales representative.

	Capacity (Mbps)	Capacity De-Dup	Capacity (Mbps)	Capacity De-Dup	Capacity (Mbps)	Capacity De-Dup
Modulation	5 MHz		10 MHz		20 MHz	
QPSK	3-4	4-13	13-15	13-48	28-34	29-105
8 PSK	–	–	19-23	20-73	42-51	44-158
16 QAM	8-10	9-32	26-32	28-100	57-70	60-217
32 QAM	11-14	12-43	35-43	37-133	75-92	79-286
64 QAM	14-17	15-54	43-53	45-164	92-113	97-352
128 QAM	17-21	18-65	52-63	54-196	112-136	117-424
256 QAM	19-24	20-74	59-72	62-225	126-155	133-481
512 QAM	–	–	65-79	68-247	138-169	145-526
1024 QAM Strong	–	–	68-83	72-260	147-180	154-559
1024 QAM Light	–	–	73-89	76-276	156-191	164-593
2048 QAM	–	–	–	–	166-203	175-633
Modulation	25 MHz		30 MHz		40 MHz	
QPSK	35-43	37-135	43-52	45-162	58-71	61-220
8 PSK	53-65	56-202	62-76	65-236	86-105	90-328
16 QAM	72-88	76-275	87-107	92-332	117-143	123-446
32 QAM	95-117	100-363	115-140	121-437	154-189	162-588
64 QAM	117-143	123-446	141-173	149-538	190-232	199-722
128 QAM	141-173	148-538	170-208	179-648	229-280	241-873
256 QAM	161-197	169-613	196-239	206-745	247-302	259-939
512 QAM	178-217	187-677	209-255	219-794	270-330	284-1000
1024 QAM Strong	189-231	198-719	228-278	239-866	306-375	322-1000
1024 QAM Light	201-245	211-763	241-295	253-917	325-398	342-1000
2048 QAM	215-263	226-819	263-321	276-1000	352-430	370-1000
	Capacity (Mbps)	Capacity De-Dup	Capacity (Mbps)	Capacity De-Dup	Capacity (Mbps)	Capacity De-Dup
Modulation	50 MHz		60 MHz		80 MHz	
QPSK	70-86	74-267	87-106	91-331	114-140	120-435
8 PSK	109-133	114-415	127-155	133-482	162-198	170-618
16 QAM	148-181	155-563	176-215	185-670	231-283	243-880
32 QAM	186-227	195-707	232-283	243-881	304-371	319-1000
64 QAM	240-293	252-913	284-348	299-1000	371-454	390-1000
128 QAM	280-342	294-1000	344-420	361-1000	439-536	461-1000
256 QAM	332-406	348-1000	397-485	416-1000	505-618	531-1000
512 QAM	360-440	378-1000	427-521	448-1000	555-679	583-1000
1024 QAM Strong	392-479	411-1000	464-567	487-1000	604-738	634-1000
1024 QAM Light	416-509	437-1000	493-602	517-1000	–	–
2048 QAM	449-548	471-1000	534-653	561-1000	–	–

Transmit Power

Transmit Power (dBm)	Freq. (GHz)	6	7	8	10-11	13-15	18	23	24 UL	26	28-38
QPSK – 8 QAM		28	28	28	26	24	22	20	0	21	18
16 QAM		28	27	27	26	23	21	20	0	20	17
32- 128 QAM		27	26	26	25	22	20	20	0	19	16
256 QAM		27	26	24	25	20	20	18	0	17	14
512 QAM		25	24	24	24	20	18	18	0	17	14
1024 QAM		25	24	24	23	20	18	17	0	16	13
2048 QAM		23	22	22	21	18	16	16	0	15	12

Receiver Threshold (RSL) (dBm @ BER = 10-6)

Frequency (GHz)	6	7	8	10	11	13	15	18	23	24UL	26	28-31	32	38
5 MHz														
QPSK	-96.5	-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	-89.5	-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	-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	-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	-77.0	-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	-74.0	-74.0	-73.5
10 MHz														
QPSK	-92.0	-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	-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	-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	-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	-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	-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	-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	-69.5	-68.5	-65.0	-68.0	-68.0	-67.5	-67.0
1024 QAM Strong	-67.0	-66.5	-66.5	-66.0	-67.0	-66.0	-65.0	-66.5	-65.5	-62.0	-65.0	-65.0	-64.5	-64.0
1024 QAM Light	-66.5	-65.5	-65.5	-65.5	-66.5	-65.0	-64.5	-65.5	-65.0	-61.0	-64.5	-64.0	-64.0	-63.5
20 MHz														
QPSK	-89.0	-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	-83.0	-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	-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	-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	-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	-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	-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	-66.5	-66.0	-62.0	-65.5	-65.0	-65.0	-64.5
1024 QAM Strong	-64.5	-63.5	-63.5	-63.5	-64.5	-63.0	-62.5	-63.5	-63.0	-59.0	-62.5	-62.0	-62.0	-61.5
1024 QAM Light	-63.5	-63.0	-63.0	-62.5	-63.5	-62.5	-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	-59.5	-58.5	-55.0	-58.0	-58.0	-57.5	-57.0

Frequency (GHz)	6	7	8	10	11	13	15	18	23	24UL	26	28-31	32	38
25 MHz														
QPSK	-87.5	-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	-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	-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	-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	-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	-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	-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	-66.0	-64.5	-64.0	-65.0	-64.5	-60.5	-64.0	-63.5	-63.5	-63.0
1024 QAM Strong	-63.0	-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	-62.5	-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	-58.0	-57.0	-53.5	-56.5	-56.5	-56.0	-55.5
30 MHz														
QPSK	-87.5	-87.0	-87.0	-86.5	-87.5	-86.0	-85.5	-87.0	-86.0	-82.5	-85.5	-85.5	-85.5	-85.0
8 PSK	-82.5	-81.5	-81.5	-81.5	-82.5	-81.0	-80.5	-81.5	-81.0	-77.0	-80.5	-80.0	-80.0	-79.5
16 QAM	-81.0	-80.0	-80.0	-80.0	-80.5	-79.5	-79.0	-80.0	-79.0	-75.5	-79.0	-78.5	-78.5	-78.0
32 QAM	-77.0	-76.5	-76.5	-76.0	-77.0	-76.0	-75.0	-76.5	-75.5	-72.0	-75.0	-75.0	-75.0	-74.5
64 QAM	-74.5	-73.5	-73.5	-73.5	-74.0	-73.0	-72.5	-73.5	-72.5	-69.0	-72.5	-72.0	-72.0	-71.5
128 QAM	-71.0	-70.5	-70.5	-70.0	-71.0	-70.0	-69.0	-70.5	-69.5	-66.0	-69.0	-69.0	-69.0	-68.5
256 QAM	-68.0	-67.5	-67.5	-67.0	-68.0	-67.0	-66.0	-67.5	-66.5	-63.0	-66.0	-66.0	-66.0	-65.5
512 QAM	-66.0	-65.5	-65.5	-65.0	-66.0	-64.5	-64.0	-65.5	-64.5	-61.0	-64.0	-64.0	-64.0	-63.5
1024 QAM Strong	-63.0	-62.0	-62.0	-62.0	-62.5	-61.5	-61.0	-62.0	-61.0	-57.5	-61.0	-60.5	-60.5	-60.0
1024 QAM Light	-62.0	-61.0	-61.0	-61.0	-62.0	-60.5	-60.0	-61.0	-60.5	-56.5	-60.0	-59.5	-59.5	-59.0
2048 QAM	-58.0	-57.5	-57.5	-57.0	-58.0	-56.5	-56.0	-57.5	-56.5	-53.0	-56.0	-56.0	-56.0	-55.5
40 MHz														
QPSK	-86.0	-85.5	-85.5	-85.0	-86.0	-85.0	-84.0	-85.5	-84.5	-81.0	-84.0	-84.0	-84.0	-83.5
8 PSK	-81.0	-80.5	-80.5	-80.0	-81.0	-79.5	-79.0	-80.5	-79.5	-76.0	-79.0	-79.0	-79.0	-78.5
16 QAM	-79.5	-79.0	-79.0	-78.5	-79.5	-78.0	-77.5	-79.0	-78.0	-74.5	-77.5	-77.5	-77.5	-77.0
32 QAM	-76.0	-75.0	-75.0	-75.0	-75.5	-74.5	-74.0	-75.0	-74.0	-70.5	-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	-67.5	-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	-64.5	-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	-61.5	-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	-59.0	-62.0	-62.0	-62.0	-61.5
1024 QAM Strong	-61.5	-61.0	-61.0	-60.5	-61.5	-60.0	-59.5	-61.0	-60.0	-56.5	-59.5	-59.5	-59.5	-59.0
1024 QAM Light	-60.5	-60.0	-60.0	-59.5	-60.5	-59.5	-58.5	-60.0	-59.0	-55.5	-58.5	-58.5	-58.5	-58.0
2048 QAM	-58.0	-57.0	-57.0	-57.0	-58.0	-56.5	-56.0	-57.0	-56.5	-52.5	-56.0	-55.5	-55.5	-55.0

Frequency (GHz)	6	7	8	10	11	13	15	18	23	24UL	26	28-31	32	38
50 MHz														
QPSK	-85.5	-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	-79.0	-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	-73.0	-76.5	-76.0	-76.0	-75.5
32 QAM	-74.5	-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	-70.0	-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	-66.0
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	-63.0
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	-61.0
1024 QAM Strong	-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	-57.5
1024 QAM Light	-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	-56.0
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	-54.0
60 MHz														
QPSK	-85.0	-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	-80.5	-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	-78.0	-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	-74.5	-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	-71.5	-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	-69.0	-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	-65.5	-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	-63.5	-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	-60.0	-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	-59.0	-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	-56.5	-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

Frequency (GHz)	11	18
80 MHz		
QPSK	-83.5	-82.5
8 PSK	-78.0	-77.5
16 QAM	-76.5	-76.0
32 QAM	-73.0	-72.5
64 QAM	-70.0	-69.5
128 QAM	-67.0	-66.5
256 QAM	-64.5	-64.0
512 QAM	-61.5	-61.0
1024 QAM Strong	-58.5	-58.0
1024 QAM Light	-58.0	-57.5