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DATE: 23 July 2020

I.T.L. (PRODUCT TESTING) LTD.

FCC Radio Test Report

For

Corning Optical Communication Wireless

Equipment under test:

Building Wireless Systems (BWS) v1.0

Low Power Radio (LPR)

(PCS Section)

Tested by: _____
A. Shelly

Approved by: _____
D. Shidlowsky

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Measurement/Technical Report for
Corning Optical Communication Wireless
Building Wireless Systems (BWS) v1.0

FCC ID: OJF1LPR

This report concerns:	Original Grant: Class II change: X Class I change:
Equipment type:	B21 - Part 20 Industrial Booster (CMRS)
Limits used:	47CFR Parts 2; 24

Measurement procedure used is KDB 935210 D05 v01r03 April 2019 and ANSI IEEE C63.26-2015

Substitution Method used as in ANSI TIA-603-E-2016

Application for Certification prepared by:

D. Shidlowsky
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Applicant for this device: (different from "prepared by")

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1 General Information

1.1 Administrative Information

Manufacturer:	Corning Optical Communication Wireless
Manufacturer's Address:	8253 1st Street Vienna, VA 22812 U.S.A. Tel: +1-703 855-1773
Manufacturer's Representative:	Isaac Nissan
Equipment Under Test (E.U.T):	Building Wireless Systems (BWS) v1.0
Equipment Model No.:	Low Power Radio (LPR)
Equipment Serial No.:	Not Designated
Date of Receipt of E.U.T:	01.06.2020
Start of Test:	01.06.2020
End of Test:	21.07.2020
Test Laboratory Location:	I.T.L (Product Testing) Ltd. 1 Batsheva St, Lod, Israel 7116002
Test Specifications:	FCC Parts 2; 24

1.2 List of Accreditations

The EMC laboratory of I.T.L. is accredited by/registered with the following bodies:

1. The American Association for Laboratory Accreditation (A2LA) (U.S.A.), Certificate No. 1152.01.
2. The Federal Communications Commission (FCC) (U.S.A.), FCC Designation Number is IL1005.
3. The Israel Ministry of the Environment (Israel), Registration No. 1104/01.
4. The Voluntary Control Council for Interference by Information Technology Equipment (VCCI) (Japan), Registration Numbers: C-20025, R-2729, T-20028, G-20068.
5. Department of Innovation, Science and Economic Development (ISED) Canada, CAB identifier: IL1002.

I.T.L. Product Testing Ltd. is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this test report have been determined in accordance with I.T.L.'s terms of accreditation unless stated otherwise in the report.

1.3 Product Description

Corning's BWS™ platform 1.0 is the first fully-digital, end-to-end in-building cellular solution, for medium size venues.

Corning's Low Power Radio (LPR) units are the end-point antennas connected by optical cable to the BWS system Digital Router Unit (DRU) (distribution/routing of RF samples via CPRI stream), and to the system Power Supply Unit (PSU) for power.

LPR is the first release of Corning's fully-digital radio remote unit, providing plug-and-play, cost-effective processing, minimizing power loss and noise.

1.4 Test Methodology

Both conducted and radiated testing were performed according to the procedures in KDB 935210 D05 v01r03 April 2019 and ANSI/TIA-603-E-2016. Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.5 Test Facility

Both conducted and radiated emissions tests were performed at I.T.L.'s testing facility in Lod, Israel. I.T.L.'s EMC Laboratory is accredited by A2LA, certificate No. 1152.01 and its FCC Designation Number is IL1005.

1.6 Measurement Uncertainty

Conducted Emission (CISPR 11, EN 55011, CISPR 32, EN 55032, ANSI C63.4)
0.15 – 30 MHz:
Expanded Uncertainty (95% Confidence, K=2):
± 3.44 dB

Radiated Emission (CISPR 11, EN 55011, CISPR 32, EN 55032, ANSI C63.4) for open site 30-1000MHz:

Expanded Uncertainty (95% Confidence, K=2):

± 4.98 dB

2 System Test Configuration

2.1 Justification

The E.U.T. was previously tested for FCC certification as follows:
The EUT consists of the LPR (Low-Power Remote Module) which is connected with the head-end ICRAN equipment (BBU and DRU) using fiber optic cable.
The RF source signals are represented in the setup by BBU unit.
An "Exercise" SW on the computer was used to enable/disable transmission of the EUT, while the EUT output was connected to the spectrum analyzer.
The system was tested under maximum gain conditions.
Only peak power testing was done on the both ports, all other testing was performed 1 port (see customer declaration on following page regarding the identical ports).
Presently the following tests were performed in order to allow the use of 5G:
RF output power, occupied bandwidth, and spurious emissions.
Testing was performed on the following configuration:

Frequency Range (MHz)		
Service/Band	**Downlink (DL)**	**Technology**
PCS	1930-1995	LTE

2.2 EUT Exercise Software

vHCM SW ver. 1.0 used for commands delivery. These commands are used to enable/disable the EUT transmission.
EUT Embedded SW versions are:
DRU ver dru_d719_10_25
LPR ver LPR_D803_01.63

2.3 Special Accessories

No special accessories were needed in order to achieve compliance.

2.4 Equipment Modifications

No modifications were necessary in order to achieve compliance.

CORNING

Declaration

Date: December 25, 2019

RE: Corning Optical Communication Wireless
P/N: LPR-3C-2A2P2W-10
FCC ID: OJF1LPR

I hereby declare that the MIMO stream 1 and MIMO stream 2 of the LPR-3C-2A2P2W-10 have the identical RF chain including antenna gain of 2dBi.

Authorized Signature:

Printed Name: Isaac Nissan

2.5 Configuration of Tested System

Product Name	Building Wireless Systems (BWS) v1.0
Model Name	Low Power Radio (LPR)
Working voltage	100-240VAC/ 48VDC
Mode of operation	Industrial Booster for AWS-3 band
Modulations	16QAM, 64QAM, 256QAM, QPSK
Operating Frequency Range	1930 – 1995 MHz
Transmit power	~15.0 dBm
Antenna Gain	2dBi
DATA rate	N/A
Modulation BW	5MHz, 10MHz, 15 MHz, 20MHz
DC Voltage and DC current applied to the final amplifying device	36-60VDC, (nominal voltage 48V)/ 2A

3 Test Set-Up Photos

Figure 1. Conducted Emission From Antenna Port Tests

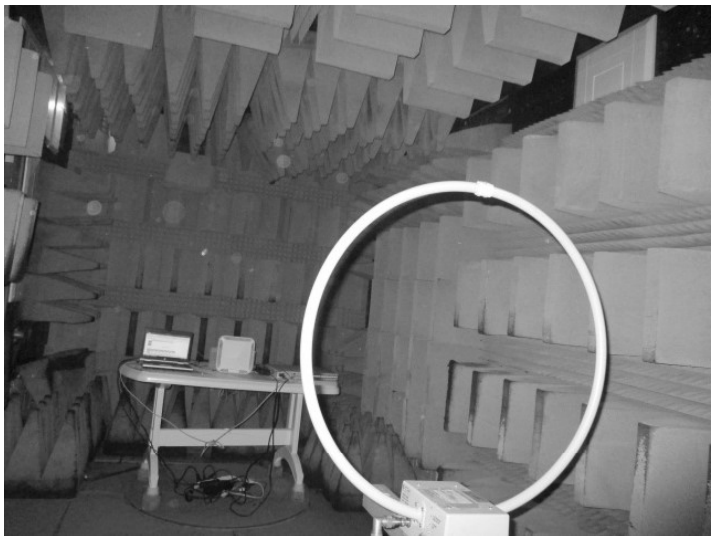

Figure 2. Radiated Emission Test 9kHz - 30MHz

Figure 3. Radiated Emission Test 30 - 200 MHz

Figure 4. Radiated Emission Test 200 - 1000MHz

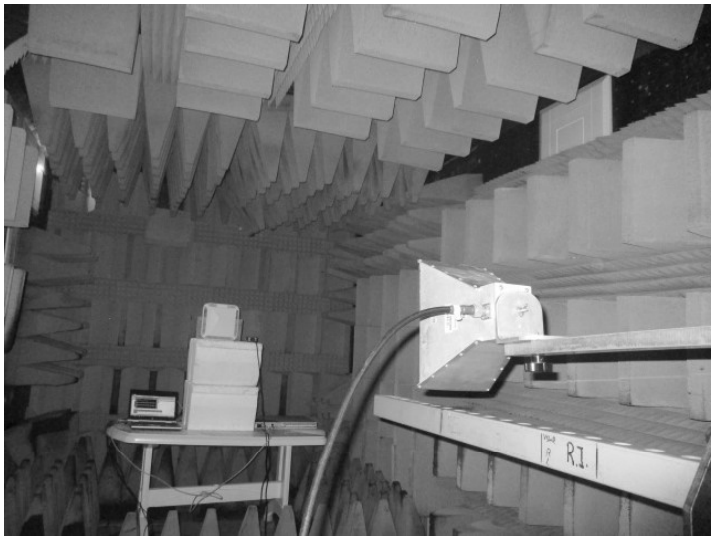

Figure 5. Radiated Emission Test 1-18GHz

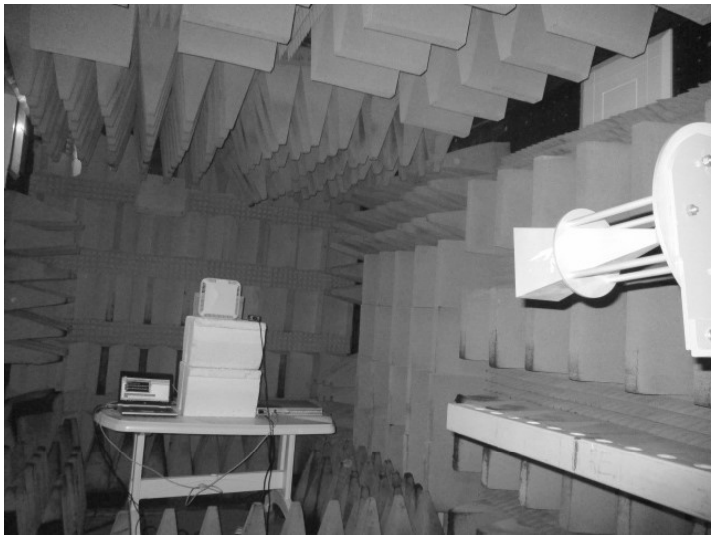

Figure 6. Radiated Emission Test 18-20GHz

4 RF Power Output

4.1 Test Specification

FCC Part 24, Subpart E

4.2 Test Procedure

(Temperature (23°C)/ Humidity (29%RH))

The E.U.T. antenna terminal was connected to the Spectrum Analyzer through an external attenuator and an appropriate coaxial cable. Special attention was taken to prevent Spectrum Analyzer RF input overload.

4.3 Test Limit

An EIRP of 1640 watts/MHz when transmitting with an emission bandwidth greater than 1 MHz (62.1 dBm/MHz)

4.4 Test Results

JUDGEMENT: Passed

See additional information in Table 1 to Table 3 and Figure 7 to Figure 108 for Antenna Port 1 SISO.
See additional information in Table 1 to Table 6 and Figure 109 to Figure 204 for Antenna Port 2 MIMO.

Modulation	Bandwidth	Sub Carrier	Operation Frequency	Reading	Antenna Gain	EIRP	Limit	Margin
	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)
16QAM	5	15	1932.5	20.28	2.0	22.28	62.1	-39.8
		30	1932.5	20.37	2.0	22.37	62.1	-39.7
		15	1962.5	20.31	2.0	22.31	62.1	-39.8
		30	1962.5	20.07	2.0	22.07	62.1	-40.0
		15	1992.5	20.22	2.0	22.22	62.1	-39.9
		30	1992.5	19.93	2.0	21.93	62.1	-40.2
	10	15	1935.0	19.86	2.0	21.86	62.1	-40.2
		30	1935.0	20.19	2.0	22.19	62.1	-39.9
		60	1935.0	19.68	2.0	21.68	62.1	-40.4
		15	1962.5	20.34	2.0	22.34	62.1	-39.8
		30	1962.5	20.49	2.0	22.49	62.1	-39.6
		60	1962.5	20.24	2.0	22.24	62.1	-39.9
		15	1990.0	20.35	2.0	22.35	62.1	-39.8
		30	1990.0	20.50	2.0	22.50	62.1	-39.6
		60	1990.0	20.15	2.0	22.15	62.1	-40.0
	15	15	1937.5	19.92	2.0	21.92	62.1	-40.2
		30	1937.5	20.33	2.0	22.33	62.1	-39.8
		60	1937.5	20.28	2.0	22.28	62.1	-39.8
		15	1962.5	20.35	2.0	22.35	62.1	-39.8
		30	1962.5	20.20	2.0	22.20	62.1	-39.9
		60	1962.5	19.92	2.0	21.92	62.1	-40.2
		15	1987.5	20.15	2.0	22.15	62.1	-40.0
		30	1987.5	20.14	2.0	22.14	62.1	-40.0
		60	1987.5	20.24	2.0	22.24	62.1	-39.9
	20	15	1940.0	20.03	2.0	22.03	62.1	-40.1
		30	1940.0	19.86	2.0	21.86	62.1	-40.2
		60	1940.0	20.04	2.0	22.04	62.1	-40.1
		15	1962.5	20.19	2.0	22.19	62.1	-39.9
		30	1962.5	20.06	2.0	22.06	62.1	-40.0
		60	1962.5	20.24	2.0	22.24	62.1	-39.9
		15	1985.0	20.06	2.0	22.06	62.1	-40.0
		30	1985.0	20.14	2.0	22.14	62.1	-40.0
		60	1985.0	20.19	2.0	22.19	62.1	-39.9

Table 1 RF Power Output 16QAM, Antenna Port 1 SISO

Modulation	Bandwidth	Sub Carrier	Operation Frequency	Reading	Antenna Gain	EIRP	Limit	Margin
	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)
64QAM	5	15	1932.5	20.04	2.0	22.04	62.1	-40.1
		30	1932.5	19.90	2.0	21.90	62.1	-40.2
		15	1962.5	20.21	2.0	22.21	62.1	-39.9
		30	1962.5	20.28	2.0	22.28	62.1	-39.8
		15	1992.5	20.12	2.0	22.12	62.1	-40.0
		30	1992.5	20.08	2.0	22.08	62.1	-40.0
	10	15	1935.0	20.11	2.0	22.11	62.1	-40.0
		30	1935.0	20.22	2.0	22.22	62.1	-39.9
		60	1935.0	20.18	2.0	22.18	62.1	-39.9
		15	1962.5	20.23	2.0	22.23	62.1	-39.9
		30	1962.5	20.30	2.0	22.30	62.1	-39.8
		60	1962.5	20.27	2.0	22.27	62.1	-39.8
		15	1990.0	20.23	2.0	22.23	62.1	-39.9
		30	1990.0	20.18	2.0	22.18	62.1	-39.9
		60	1990.0	20.21	2.0	22.21	62.1	-39.9
	15	15	1937.5	19.92	2.0	21.92	62.1	-40.2
		30	1937.5	20.05	2.0	22.05	62.1	-40.1
		60	1937.5	20.02	2.0	22.02	62.1	-40.1
		15	1962.5	20.27	2.0	22.27	62.1	-39.8
		30	1962.5	20.18	2.0	22.18	62.1	-39.9
		60	1962.5	20.28	2.0	22.28	62.1	-39.8
		15	1987.5	20.16	2.0	22.16	62.1	-39.9
		30	1987.5	20.14	2.0	22.14	62.1	-40.0
		60	1987.5	20.09	2.0	22.09	62.1	-40.0
	20	15	1940.0	20.35	2.0	22.35	62.1	-39.8
		30	1940.0	20.13	2.0	22.13	62.1	-40.0
		60	1940.0	19.94	2.0	21.94	62.1	-40.2
		15	1962.5	20.21	2.0	22.21	62.1	-39.9
		30	1962.5	20.35	2.0	22.35	62.1	-39.8
		60	1962.5	20.44	2.0	22.44	62.1	-39.7
		15	1985.0	19.96	2.0	21.96	62.1	-40.1
		30	1985.0	20.19	2.0	22.19	62.1	-39.9
		60	1985.0	20.23	2.0	22.23	62.1	-39.9

Table 2 RF Power Output 64QAM, Antenna Port 1 SISO

Modulation	Bandwidth	Sub Carrier	Operation Frequency	Reading	Antenna Gain	EIRP	Limit	Margin
	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)
256QAM	5	15	1932.5	20.18	2.0	22.18	62.1	-39.9
		30	1932.5	19.91	2.0	21.91	62.1	-40.2
		15	1962.5	20.30	2.0	22.30	62.1	-39.8
		30	1962.5	20.24	2.0	22.24	62.1	-39.9
		15	1992.5	20.26	2.0	22.26	62.1	-39.8
		30	1992.5	20.25	2.0	22.25	62.1	-39.9
	10	15	1935.0	20.09	2.0	22.09	62.1	-40.0
		30	1935.0	20.14	2.0	22.14	62.1	-40.0
		60	1935.0	19.88	2.0	21.88	62.1	-40.2
		15	1962.5	20.28	2.0	22.28	62.1	-39.8
		30	1962.5	19.95	2.0	21.95	62.1	-40.2
		60	1962.5	20.27	2.0	22.27	62.1	-39.8
		15	1990.0	20.22	2.0	22.22	62.1	-39.9
		30	1990.0	19.98	2.0	21.98	62.1	-40.1
		60	1990.0	20.25	2.0	22.25	62.1	-39.9
	15	15	1937.5	20.38	2.0	22.38	62.1	-39.7
		30	1937.5	20.38	2.0	22.38	62.1	-39.7
		60	1937.5	20.13	2.0	22.13	62.1	-40.0
		15	1962.5	20.26	2.0	22.26	62.1	-39.8
		30	1962.5	20.18	2.0	22.18	62.1	-39.9
		60	1962.5	20.14	2.0	22.14	62.1	-40.0
		15	1987.5	20.23	2.0	22.23	62.1	-39.9
		30	1987.5	20.12	2.0	22.12	62.1	-40.0
		60	1987.5	20.00	2.0	22.00	62.1	-40.1
	20	15	1940.0	19.97	2.0	21.97	62.1	-40.1
		30	1940.0	19.96	2.0	21.96	62.1	-40.1
		60	1940.0	20.00	2.0	22.00	62.1	-40.1
		15	1962.0	20.38	2.0	22.38	62.1	-39.7
		30	1962.0	20.05	2.0	22.05	62.1	-40.1
		60	1962.0	20.27	2.0	22.27	62.1	-39.8
		15	1985.0	20.35	2.0	22.35	62.1	-39.8
		30	1985.0	20.23	2.0	22.23	62.1	-39.9
		60	1985.0	20.29	2.0	22.29	62.1	-39.8

Table 3 RF Power Output 256QAM, Antenna Port 1 SISO

Modulation	Bandwidth	Sub Carrier	Operation Frequency	Reading	Antenna Gain	EIRP	Limit	Margin
	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)
16QAM	5	15	1932.5	19.97	2.0	21.97	62.1	-40.1
		30	1932.5	20.06	2.0	22.06	62.1	-40.0
		15	1962.5	20.32	2.0	22.32	62.1	-39.8
		30	1962.5	20.31	2.0	22.31	62.1	-39.8
		15	1992.5	20.09	2.0	22.09	62.1	-40.0
		30	1992.5	20.09	2.0	22.09	62.1	-40.0
	10	15	1935.0	19.86	2.0	21.86	62.1	-40.2
		30	1935.0	20.19	2.0	22.19	62.1	-39.9
		60	1935.0	20.22	2.0	22.22	62.1	-39.9
		15	1962.5	20.33	2.0	22.33	62.1	-39.8
		30	1962.5	20.08	2.0	22.08	62.1	-40.0
		60	1962.5	20.38	2.0	22.38	62.1	-39.7
		15	1990.0	20.19	2.0	22.19	62.1	-39.9
		30	1990.0	20.02	2.0	22.02	62.1	-40.1
		60	1990.0	20.24	2.0	22.24	62.1	-39.9
	15	15	1937.5	19.96	2.0	21.96	62.1	-40.1
		30	1937.5	19.96	2.0	21.96	62.1	-40.1
		60	1937.5	19.94	2.0	21.94	62.1	-40.2
		15	1962.5	20.08	2.0	22.08	62.1	-40.0
		30	1962.5	20.03	2.0	22.03	62.1	-40.1
		60	1962.5	20.28	2.0	22.28	62.1	-39.8
		15	1987.5	19.92	2.0	21.92	62.1	-40.2
		30	1987.5	19.86	2.0	21.86	62.1	-40.2
		60	1987.5	20.24	2.0	22.24	62.1	-39.9
	20	15	1940.0	19.91	2.0	21.91	62.1	-40.2
		30	1940.0	20.06	2.0	22.06	62.1	-40.0
		60	1940.0	20.04	2.0	22.04	62.1	-40.1
		15	1962.5	20.18	2.0	22.18	62.1	-39.9
		30	1962.5	20.24	2.0	22.24	62.1	-39.9
		60	1962.5	20.24	2.0	22.24	62.1	-39.9
		15	1985.0	20.13	2.0	22.13	62.1	-40.0
		30	1985.0	20.09	2.0	22.09	62.1	-40.0
		60	1985.0	20.16	2.0	22.16	62.1	-39.9

Table 4 RF Power Output 16QAM, Antenna Port 2 MIMO

Modulation	Bandwidth	Sub Carrier	Operation Frequency	Reading	Antenna Gain	EIRP	Limit	Margin
	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)
64QAM	5	15	1932.5	20.13	2.0	22.13	62.1	-40.0
		30	1932.5	20.15	2.0	22.15	62.1	-40.0
		15	1962.5	20.31	2.0	22.31	62.1	-39.8
		30	1962.5	20.38	2.0	22.38	62.1	-39.7
		15	1992.5	20.18	2.0	22.18	62.1	-39.9
		30	1992.5	20.08	2.0	22.08	62.1	-40.0
	10	15	1935.0	19.99	2.0	21.99	62.1	-40.1
		30	1935.0	20.03	2.0	22.03	62.1	-40.1
		60	1935.0	20.11	2.0	22.11	62.1	-40.0
		15	1962.5	20.35	2.0	22.35	62.1	-39.8
		30	1962.5	20.33	2.0	22.33	62.1	-39.8
		60	1962.5	20.28	2.0	22.28	62.1	-39.8
		15	1990.0	20.13	2.0	22.13	62.1	-40.0
		30	1990.0	20.16	2.0	22.16	62.1	-39.9
		60	1990.0	20.12	2.0	22.12	62.1	-40.0
	15	15	1937.5	20.30	2.0	22.30	62.1	-39.8
		30	1937.5	20.22	2.0	22.22	62.1	-39.9
		60	1937.5	20.25	2.0	22.25	62.1	-39.9
		15	1962.5	20.31	2.0	22.31	62.1	-39.8
		30	1962.5	20.31	2.0	22.31	62.1	-39.8
		60	1962.5	20.29	2.0	22.29	62.1	-39.8
		15	1987.5	20.15	2.0	22.15	62.1	-40.0
		30	1987.5	20.12	2.0	22.12	62.1	-40.0
		60	1987.5	20.15	2.0	22.15	62.1	-40.0
	20	15	1940.0	20.08	2.0	22.08	62.1	-40.0
		30	1940.0	20.04	2.0	22.04	62.1	-40.1
		60	1940.0	20.08	2.0	22.08	62.1	-40.0
		15	1962.5	20.29	2.0	22.29	62.1	-39.8
		30	1962.5	20.24	2.0	22.24	62.1	-39.9
		60	1962.5	20.28	2.0	22.28	62.1	-39.8
		15	1985.0	20.17	2.0	22.17	62.1	-39.9
		30	1985.0	20.12	2.0	22.12	62.1	-40.0
		60	1985.0	20.15	2.0	22.15	62.1	-40.0

Table 5 RF Power Output 64QAM, Antenna Port 2 MIMO

Modulation	Bandwidth	Sub Carrier	Operation Frequency	Reading	Antenna Gain	EIRP	Limit	Margin
	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)
256QAM	5	15	1932.5	20.10	2.0	22.10	62.1	-40.0
		30	1932.5	20.14	2.0	22.14	62.1	-40.0
		15	1962.5	20.11	2.0	22.11	62.1	-40.0
		30	1962.5	20.27	2.0	22.27	62.1	-39.8
		15	1992.5	19.87	2.0	21.87	62.1	-40.2
		30	1992.5	20.05	2.0	22.05	62.1	-40.1
	10	15	1935.0	20.33	2.0	22.33	62.1	-39.8
		30	1935.0	20.33	2.0	22.33	62.1	-39.8
		60	1935.0	20.40	2.0	22.40	62.1	-39.7
		15	1962.5	20.10	2.0	22.10	62.1	-40.0
		30	1962.5	20.05	2.0	22.05	62.1	-40.1
		60	1962.5	20.11	2.0	22.11	62.1	-40.0
		15	1990.0	20.01	2.0	22.01	62.1	-40.1
		30	1990.0	19.93	2.0	21.93	62.1	-40.2
		60	1990.0	20.14	2.0	22.14	62.1	-40.0
	15	15	1937.5	20.40	2.0	22.40	62.1	-39.7
		30	1937.5	19.98	2.0	21.98	62.1	-40.1
		60	1937.5	20.30	2.0	22.30	62.1	-39.8
		15	1962.5	20.10	2.0	22.10	62.1	-40.0
		30	1962.5	20.05	2.0	22.05	62.1	-40.1
		60	1962.5	20.24	2.0	22.24	62.1	-39.9
		15	1987.5	19.94	2.0	21.94	62.1	-40.2
		30	1987.5	20.01	2.0	22.01	62.1	-40.1
		60	1987.5	20.17	2.0	22.17	62.1	-39.9
	20	15	1940.0	20.35	2.0	22.35	62.1	-39.8
		30	1940.0	20.21	2.0	22.21	62.1	-39.9
		60	1940.0	20.18	2.0	22.18	62.1	-39.9
		15	1962.5	20.00	2.0	22.00	62.1	-40.1
		30	1962.5	20.08	2.0	22.08	62.1	-40.0
		60	1962.5	20.13	2.0	22.13	62.1	-40.0
		15	1985.0	19.83	2.0	21.83	62.1	-40.3
		30	1985.0	20.35	2.0	22.35	62.1	-39.8
		60	1985.0	19.95	2.0	21.95	62.1	-40.2

Table 6 RF Power Output 256QAM, Antenna Port 2 MIMO

Figure 7: 16QAM 5MHz B.W.; 1932.5MHz, 15kHz

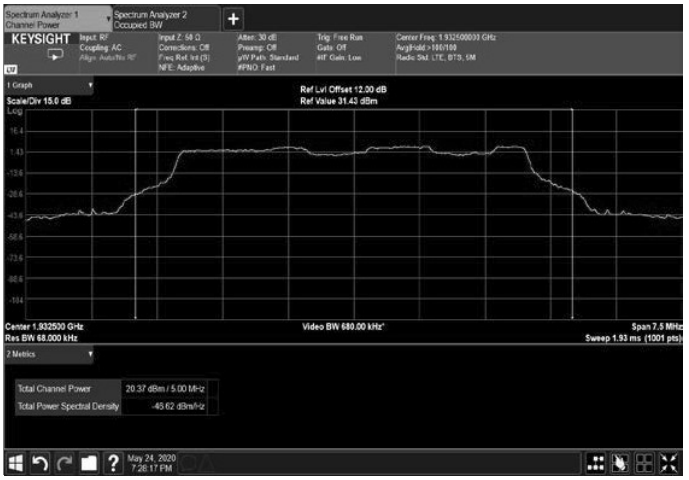

Figure 8: 16QAM 5MHz B.W.; 1932.5MHz, 30kHz

Figure 9: 16QAM 5MHz B.W.; 1962.5MHz, 15kHz

Figure 10: 16QAM 5MHz B.W.; 1962.5MHz, 30kHz

Figure 11: 16QAM 5MHz B.W.; 1992.5MHz, 15kHz

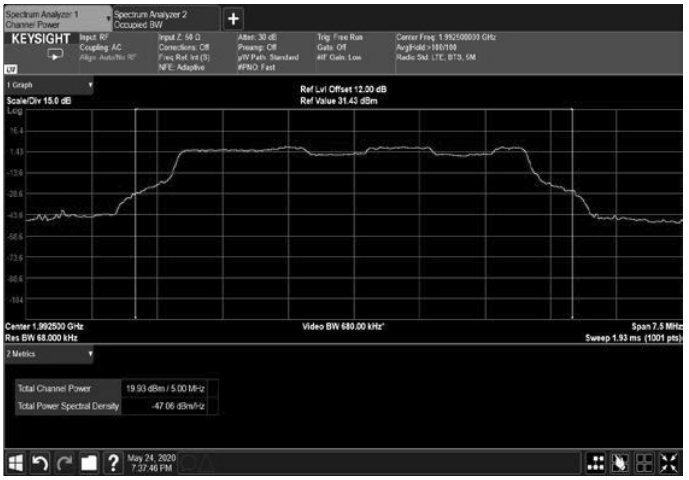

Figure 12: 16QAM 5MHz B.W.; 1992.5MHz, 30kHz

Figure 13: 16QAM 10MHz B.W.; 1935.0MHz, 15kHz

Figure 14: 16QAM 10MHz B.W.; 1935.0MHz, 30kHz

Figure 15: 16QAM 10MHz B.W.; 1935.0MHz, 60kHz

Figure 16: 16QAM 10MHz B.W.; 1962.5MHz, 15kHz

Figure 17: 16QAM 10MHz B.W.; 1962.5MHz, 30kHz

Figure 18: 16QAM 10MHz B.W.; 1962.5MHz, 60kHz

Figure 19: 16QAM 10MHz B.W.; 1990.0MHz, 15kHz

Figure 20: 16QAM 10MHz B.W.; 1990.0MHz, 30kHz

Figure 21: 16QAM 10MHz B.W.; 1990.0MHz, 60kHz

Figure 22: 16QAM 15MHz B.W.; 1937.5MHz, 15kHz

Figure 23: 16QAM 15MHz B.W.; 1937.5MHz, 30kHz

Figure 24: 16QAM 15MHz B.W.; 1937.5MHz, 60kHz

Figure 25: 16QAM 15MHz B.W.; 1962.5MHz, 15kHz

Figure 26: 16QAM 15MHz B.W.; 1962.5MHz, 30kHz

Figure 27: 16QAM 15MHz B.W.; 1962.5MHz, 60kHz

Figure 28: 16QAM 15MHz B.W.; 1987.5MHz, 15kHz

Figure 29: 16QAM 15MHz B.W.; 1987.5MHz, 30kHz

Figure 30: 16QAM 15MHz B.W.; 1987.5MHz, 60kHz

Figure 31: 16QAM 20MHz B.W.; 1940.0MHz, 15kHz

Figure 32: 16QAM 20MHz B.W.; 1940.0MHz, 30kHz

Figure 33: 16QAM 20MHz B.W.; 1940.0MHz, 60kHz

Figure 34: 16QAM 20MHz B.W.; 1962.5MHz, 15kHz

Figure 35: 16QAM 20MHz B.W.; 1962.5MHz, 30kHz

Figure 36: 16QAM 20MHz B.W.; 1962.5MHz, 60kHz

Figure 37: 16QAM 20MHz B.W.; 1985.0MHz, 15kHz

Figure 38: 16QAM 20MHz B.W.; 1985.0MHz, 30kHz

Figure 39: 16QAM 20MHz B.W.; 1985.0MHz, 60kHz

Figure 40: 64QAM 5MHz B.W.; 1932.5MHz, 15kHz

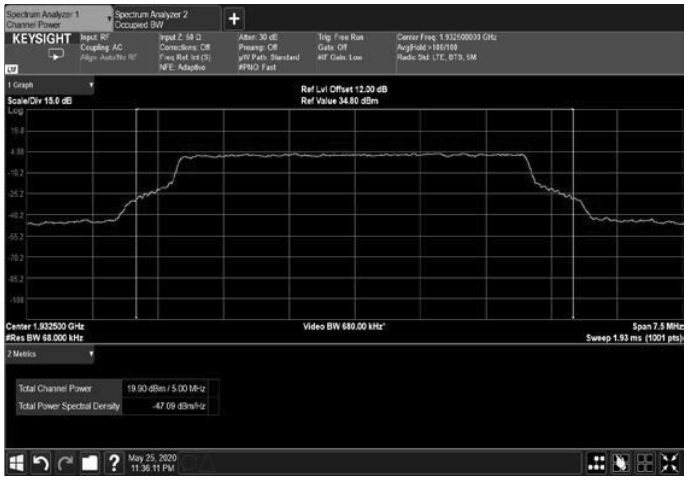

Figure 41: 64QAM 5MHz B.W.; 1932.5MHz, 30kHz

Figure 42: 64QAM 5MHz B.W.; 1962.5MHz, 15kHz

Figure 43: 64QAM 5MHz B.W.; 1962.5MHz, 30kHz

Figure 44: 64QAM 5MHz B.W.; 1992.5MHz, 15kHz

Figure 45: 64QAM 5MHz B.W.; 1992.5MHz, 30kHz

Figure 46: 64QAM 10MHz B.W.; 1935.0MHz, 15kHz

Figure 47: 64QAM 10MHz B.W.; 1935.0MHz, 30kHz

Figure 48: 16QAM 10MHz B.W.; 1935.0MHz, 60kHz

Figure 49: 64QAM 10MHz B.W.; 1962.5MHz, 15kHz

Figure 50: 64QAM 10MHz B.W.; 1962.5MHz, 30kHz

Figure 51: 64QAM 10MHz B.W.; 1962.5MHz, 60kHz

Figure 52: 64QAM 10MHz B.W.; 1990.0MHz, 15kHz

Figure 53: 64QAM 10MHz B.W.; 1990.0MHz, 30kHz

Figure 54: 64QAM 10MHz B.W.; 1990.0MHz, 60kHz

Figure 55: 64QAM 15MHz B.W.; 1937.5MHz, 15kHz

Figure 56: 64QAM 15MHz B.W.; 1937.5MHz, 30Hz

Figure 57: 64QAM 15MHz B.W.; 1937.5MHz, 60kHz

Figure 58: 64QAM 15MHz B.W.; 1962.5MHz, 15Hz

Figure 59: 64QAM 15MHz B.W.; 1962.5MHz, 30kHz

Figure 60: 64QAM 15MHz B.W.; 1962.5MHz, 60Hz

Figure 61: 64QAM 15MHz B.W.; 1987.5MHz, 15kHz

Figure 62: 64QAM 15MHz B.W.; 1987.5MHz, 30kHz

Figure 63: 64QAM 15MHz B.W.; 1987.5MHz, 60kHz

Figure 64: 64QAM 20MHz B.W.; 1940.0MHz, 15kHz

Figure 65: 64QAM 20MHz B.W.; 1940.0MHz, 30kHz

Figure 66: 64QAM 20MHz B.W.; 1940.0MHz, 60Hz

Figure 67: 64QAM 20MHz B.W.; 1962.5MHz, 15kHz

Figure 68: 64QAM 20MHz B.W.; 1962.5MHz, 30kHz

Figure 69: 64QAM 20MHz B.W.; 1962.5MHz, 60kHz

Figure 70: 64QAM 20MHz B.W.; 1985.0MHz, 15kHz

Figure 71: 64QAM 20MHz B.W.; 1985.0MHz, 30kHz

Figure 72: 64QAM 20MHz B.W.; 1985.0MHz, 60Hz

Figure 73: 256QAM 5MHz B.W.; 1932.5MHz, 15kHz

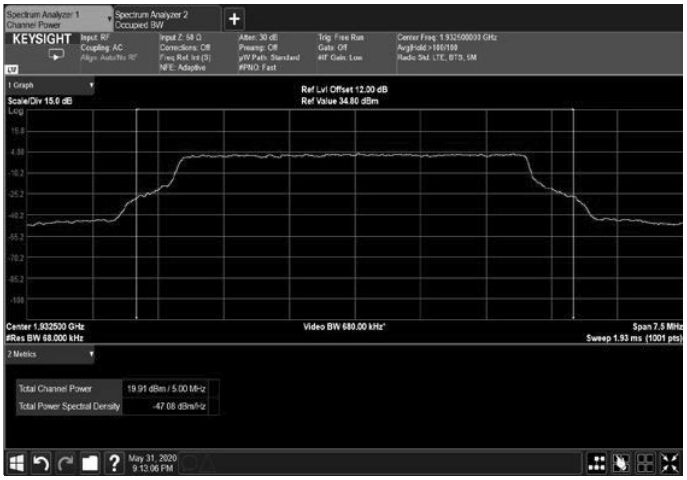

Figure 74: 256QAM 5MHz B.W.; 1932.5MHz, 30kHz

Figure 75: 256QAM 5MHz B.W.; 1982.5MHz, 15kHz

Figure 76: 256QAM 5MHz B.W.; 1982.5MHz, 30kHz

Figure 77: 256QAM 5MHz B.W.; 1992.5MHz, 15kHz

Figure 78: 256QAM 5MHz B.W.; 1992.5MHz, 30kHz

Figure 79: 256QAM 10MHz B.W.; 1935.0MHz, 15kHz

Figure 80: 256QAM 10MHz B.W.; 1935.0MHz, 30kHz

Figure 81: 256QAM 10MHz B.W.; 1935.0MHz, 60kHz

Figure 82: 256QAM 10MHz B.W.; 1962.5MHz, 15kHz

Figure 83: 256QAM 10MHz B.W.; 1962.5MHz, 30kHz

Figure 84: 256QAM 10MHz B.W.; 1962.5MHz, 60Hz

Figure 85: 256QAM 10MHz B.W.; 1990.0MHz, 15kHz

Figure 86: 256QAM 10MHz B.W.; 1990.0MHz, 30kHz

Figure 87: 256QAM 10MHz B.W.; 1990.0MHz, 60kHz

Figure 88: 256QAM 15MHz B.W.; 1937.5MHz, 15kHz

Figure 89: 256QAM 15MHz B.W.; 1937.5MHz, 30kHz

Figure 90: 256QAM 15MHz B.W.; 1937.5MHz, 60Hz

Figure 91: 256QAM 15MHz B.W.; 1962.5MHz, 15kHz

Figure 92: 256QAM 15MHz B.W.; 1962.5MHz, 30kHz

Figure 93: 256QAM 15MHz B.W.; 1962.5MHz, 60kHz

Figure 94: 256QAM 15MHz B.W.; 1987.5MHz, 15kHz

Figure 95: 256QAM 15MHz B.W.; 1987.5MHz, 30kHz

Figure 96: 256QAM 15MHz B.W.; 1987.5MHz, 60Hz

Figure 97: 256QAM 20MHz B.W.; 1940.0MHz, 15kHz

Figure 98: 256QAM 20MHz B.W.; 1940.0MHz, 30kHz

Figure 99: 256QAM 20MHz B.W.; 1940.0MHz, 60kHz

Figure 100: 256QAM 20MHz B.W.; 1962.5MHz, 15kHz

Figure 101: 256QAM 20MHz B.W.; 1962.5MHz, 30kHz

Figure 102: 256QAM 20MHz B.W.; 1962.5MHz, 60Hz