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DATE: 21 March 2021

**I.T.L. (PRODUCT TESTING) LTD.
FCC Radio Test Report**

For

Corning Optical Communication Wireless

Equipment under test:

**ONE - Optical Network Evolution Wireless
Platform**

RAU-5 Remote Antenna Unit

(CELL/ESMR Section)

Tested by:

M. Zohar

Approved by:

D. Shidlowky

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This report relates only to items tested.



**Measurement/Technical Report for
Corning Optical Communication Wireless
ONE - Optical Network Evolution Wireless
Platform
RAU-5 Remote Antenna Unit**

FCC ID: OJF1RAU5

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; 20; 22; 90

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. Shidlowky
ITL (Product Testing) Ltd.
1 Bat Sheva St.
Lod 7120101
Israel
e-mail davids@iltglobal.org

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

Isaac Nissan
Corning Optical Communication Wireless
8253 1st Street
Vienna, VA 22812
U.S.A.
Tel: +1-703 855-1773
e-mail: NissanI@corning.com



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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):	ONE - Optical Network Evolution Wireless Platform
Equipment Model No.:	RAU-5 Remote Antenna Unit
Equipment Serial No.:	Not Designated
Date of Receipt of E.U.T:	September 01, 2020
Start of Test:	September 01, 2020
End of Test:	December 30, 2020
Test Laboratory Location:	I.T.L (Product Testing) Ltd. 1 Batsheva St, Lod, Israel 7116002
Test Specifications:	FCC Parts 2, 20, 22, 90



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

Modular 7 band Enabled Mid Power Neutral Host Solution –

Supported modular frequency bands

700, ESMR+CELL, PCS, AWS, WCS

Integrated 2.5 GHz expansion ready

Composite Output Power

AWS: 34dBm

PCS, WCS: 33dBm

700, ESMR & CELL: 30dBm

Specifications

100% Modularity

NEBS Class 2 Compliant

Small Footprint – 6 Rack Units

Highlights:

Extended ONE platform design Diversity

100% modular component design

Composite output power: 2W

Small Compact Form Factor (6U)

Non-Service Impacting Upgrades

Lower initial deployment costs

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

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

Radiated Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4)

for open site:

30-1000MHz:

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

± 4.96 dB

1 GHz to 6 GHz

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

±5.19 dB

>6 GHz

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

±5.51 dB



2 System Test Configuration

2.1 *Justification*

1. The E.U.T was originally FCC certified on 12/26/2014 under FCC ID: OJF1RAU5. It originally supported cellular 3G & 4G technology.
2. A C2PC Grant was issued on 01/05/2017 allowing E.U.T. to operate as part of a booster system with the RXU2325 certified under FCC ID: OJF1RXUN.
3. Currently the manufacturer has made the following C2PC changes:
Enabling the use of 5G technology via software changes only with the same operation bands. No changes have been made to the hardware.
4. The following tests were performed: RF Output Power, Occupied Bandwidth and Spurious Emissions.
5. The EUT meets the requirements of a C2PC.

2.2 *EUT Exercise Software*

The Element Management System SW Version 3.7 build 50 used for commands delivery. These SW are used to enable/disable the EUT transmission.

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.

2.5 Configuration of Tested System

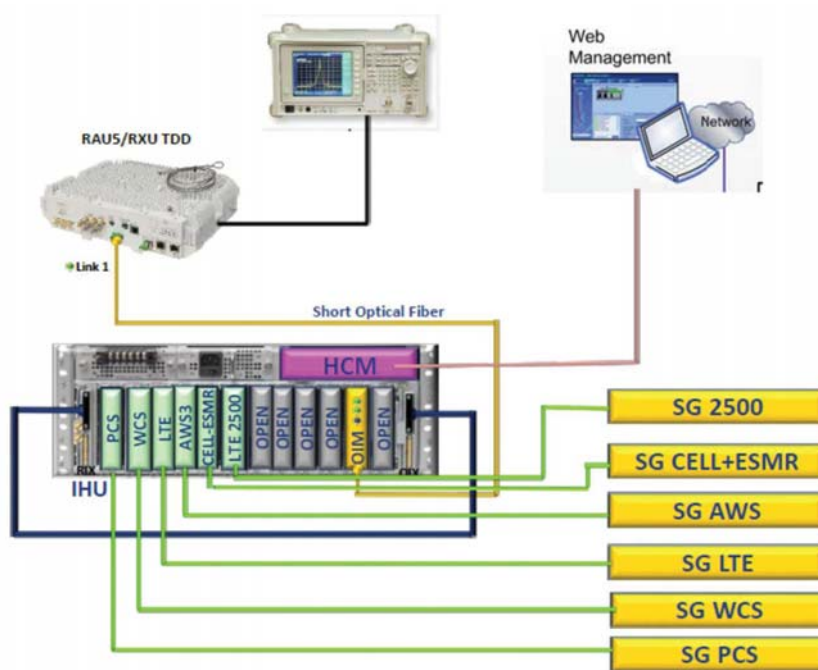


Figure 1. Conducted Test Set-Up

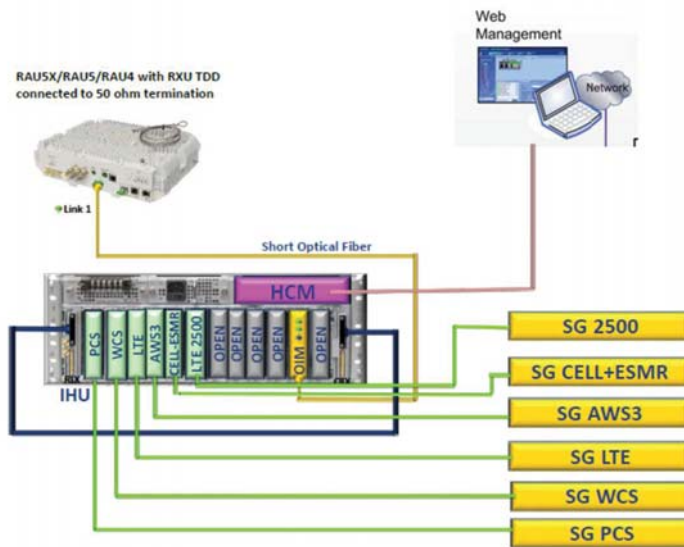


Figure 2. Radiated Test Set-Up



3 Test Set-Up Photos



Figure 3. Conducted Emission From Antenna Port Tests

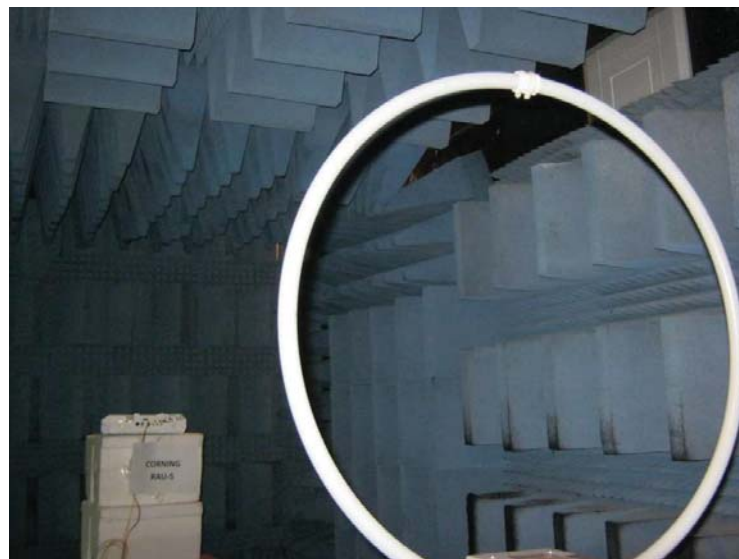


Figure 4. Radiated Emission Test 0.009MHz-30MHz



Figure 5. Radiated Emission Test 30 - 200 MHz



Figure 6. Radiated Emission Test 200 - 1000MHz



Figure 7. Radiated Emission Test 1-18GHz



4 RF Power Output

4.1 Test Specification

FCC Part 27, Subpart C (27.50)

4.2 Test Procedure

(Temperature (22°C)/ Humidity (50%RH))

The E.U.T. antenna terminal was connected to the Spectrum Analyzer through an external attenuator and an appropriate coaxial cable (41.0 dB). Special attention was taken to prevent Spectrum Analyzer RF input overload.

4.3 Test Limit

Peak Power Output must not exceed 1000W (60 dBm).

4.4 Test Results

JUDGEMENT: Passed

See additional information in *Table 1* to *Table 4* and *Figure 8* to *Figure 175*.



Modulation	Bandwidth (MHz)	Sub Carrier (kHz)	Operation Frequency (MHz)	Reading (dBm)	
16QAM	5	15	864.5	13.98	
		30	864.5	14.94	
		15	878.0	14.64	
		30	878.0	15.00	
		15	891.5	14.47	
		30	891.5	14.62	
	10	10	15	867.0	14.15
			30	867.0	14.86
			60	867.0	14.63
			15	878.0	15.03
			30	878.0	14.76
			60	878.0	14.48
			15	889.0	14.61
			30	889.0	14.77
			60	889.0	15.00
	15	15	15	869.0	14.24
			30	869.0	14.46
			60	869.0	14.82
			15	878.0	14.17
			30	878.0	14.55
			60	878.0	14.86
			15	886.5	14.76
			30	886.5	15.13
			60	886.5	15.16
	20	20	15	872.0	14.68
			30	872.0	14.91
			60	872.0	14.83
			15	878.0	14.95
			30	878.0	15.08
			60	878.0	15.06
			15	884.0	14.85
			30	884.0	14.86
			60	884.0	14.85
	25	25	15	874.5	15.02
			30	874.5	15.05
			60	874.5	14.89
15			878.0	14.92	
30			878.0	14.80	
60			878.0	14.76	
15			881.5	14.95	
30			881.5	14.86	
60			881.5	14.79	

Table 1 RF Power Output 16QAM



Modulation	Bandwidth (MHz)	Sub Carrier (kHz)	Operation Frequency (MHz)	Reading (dBm)	
64QAM	5	15	864.5	14.71	
		30	864.5	14.89	
		15	878.0	14.94	
		30	878.0	14.82	
		15	891.5	14.83	
		30	891.5	14.96	
	10	10	15	867.0	14.79
			30	867.0	14.79
			60	867.0	14.85
			15	878.0	14.67
			30	878.0	15.21
			60	878.0	14.79
			15	889.0	14.79
			30	889.0	14.75
	15	15	60	889.0	14.81
			15	869.5	14.81
			30	869.5	14.90
			60	869.5	14.87
			15	878.0	15.08
			30	878.0	15.14
			60	878.0	14.66
			15	886.5	14.83
			30	886.5	14.80
	20	20	60	886.5	14.79
			15	872.0	14.88
			30	872.0	14.76
			60	872.0	14.82
			15	878.0	14.66
			30	878.0	15.04
			60	878.0	14.98
			15	884.0	14.94
			30	884.0	15.00
			60	884.0	14.92
	25	25	15	874.5	15.00
			30	874.5	14.88
			60	874.5	14.93
			15	878.5	15.15
			30	878.5	15.04
			60	878.5	14.84
			15	881.5	15.00
			30	881.5	14.90
			60	881.5	14.82

Table 2 RF Power Output 64QAM



Modulation	Bandwidth (MHz)	Sub Carrier (kHz)	Operation Frequency (MHz)	Reading (dBm)	
256QAM	5	15	864.5	15.08	
		30	864.5	15.03	
		15	878.0	15.13	
		30	878.0	14.84	
		15	891.5	14.68	
		30	891.5	15.01	
	10	10	15	867.0	14.95
			30	867.0	14.90
			60	867.0	14.84
			15	878.0	14.86
			30	878.0	14.94
			60	878.0	14.84
			15	889.0	14.96
			30	889.0	14.98
	15	15	60	889.0	14.93
			15	869.5	14.85
			30	869.5	14.90
			60	869.5	14.99
			15	878.0	15.15
			30	878.0	14.62
			60	878.0	14.80
			15	886.0	15.00
			30	886.0	14.94
	20	20	60	886.0	14.94
			15	872.0	15.00
			30	872.0	15.00
			60	872.0	15.01
			15	878.0	14.70
			30	878.0	14.72
			60	878.0	14.75
			15	884.0	15.10
			30	884.0	15.08
			60	884.0	15.17
	25	25	15	874.5	14.85
			30	874.5	14.89
			60	874.5	14.81
15			878.0	14.73	
30			878.0	14.78	
60			878.0	14.71	
15			881.5	14.72	
30			881.5	14.70	
60			881.5	15.14	

Table 3 RF Power Output 256QAM



Modulation	Bandwidth (MHz)	Sub Carrier (kHz)	Operation Frequency (MHz)	Reading (dBm)	
QPSK	5	15	864.5	13.93	
		30	864.5	15.05	
		15	878.0	15.10	
		30	878.0	14.95	
		15	891.5	14.56	
		30	891.5	14.64	
	10	10	15	867.0	15.03
			30	867.0	15.01
			60	867.0	13.63
			15	878.0	13.83
			30	878.0	14.89
			60	878.0	14.48
			15	889.0	14.89
			30	889.0	14.97
	15	15	60	889.0	14.51
			15	869.5	15.04
			30	869.5	14.56
			60	869.5	14.55
			15	878.0	14.75
			30	878.0	14.76
			60	878.0	14.79
			15	886.5	14.47
			30	886.5	14.32
	20	20	60	886.5	14.41
			15	872.0	15.06
			30	872.0	15.08
			60	872.0	15.07
			15	878.0	14.78
			30	878.0	14.76
			60	878.0	14.78
			15	884.0	14.67
			30	884.0	14.68
			60	884.0	14.60
	25	25	15	874.5	14.79
			30	874.5	14.85
			60	874.5	14.85
15			878.0	14.70	
30			878.0	14.75	
60			878.0	14.65	
15			881.5	14.67	
30			881.5	14.66	
60			881.5	14.61	

Table 4 RF Power Output QPSK

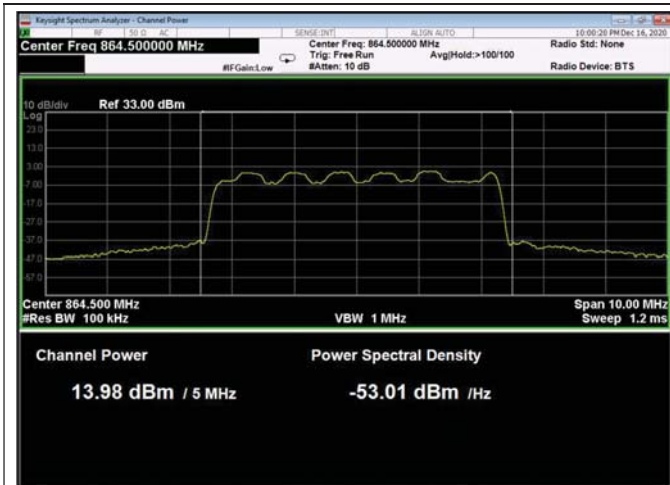


Figure 8: 16QAM 5MHz B.W.; 864.5MHz, 15kHz



Figure 9: 16QAM 5MHz B.W.; 864.5MHz, 30kHz



Figure 10: 16QAM 5MHz B.W.; 878.0MHz, 15kHz



Figure 11: 16QAM 5MHz B.W.; 878.0MHz, 30kHz



Figure 12: 16QAM 5MHz B.W.; 891.5MHz, 15kHz



Figure 13: 16QAM 5MHz C.S; 891.5MHz, 30kHz

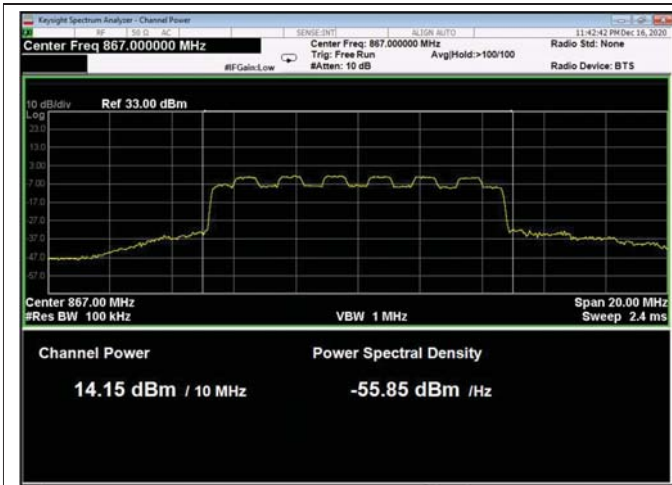


Figure 14: 16QAM 10MHz B.W.; 867.0MHz, 15kHz



Figure 15: 16QAM 10MHz B.W.; 867.0MHz, 30kHz



Figure 16: 16QAM 10MHz B.W.; 867.0MHz, 60kHz

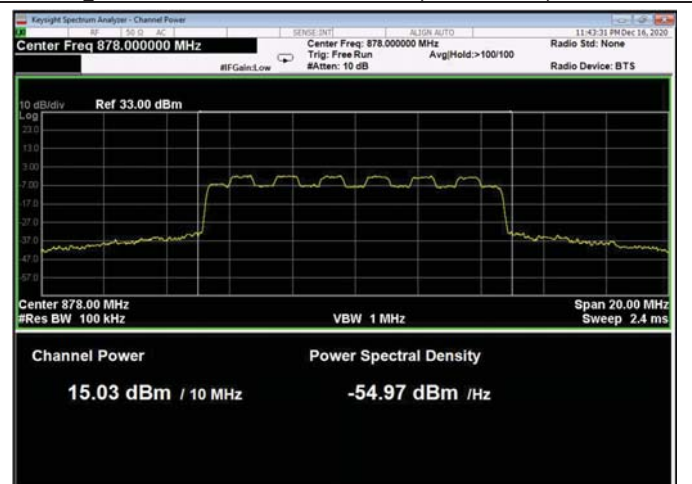


Figure 17: 16QAM 10MHz B.W.; 878.0MHz, 15kHz

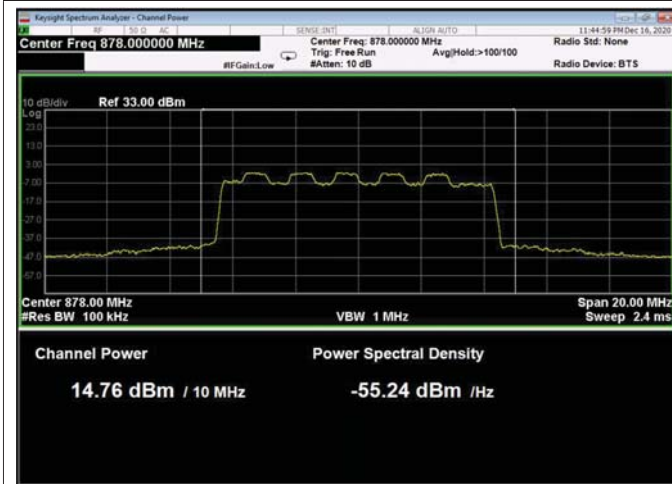


Figure 18: 16QAM 10MHz B.W.; 878.0MHz, 30kHz

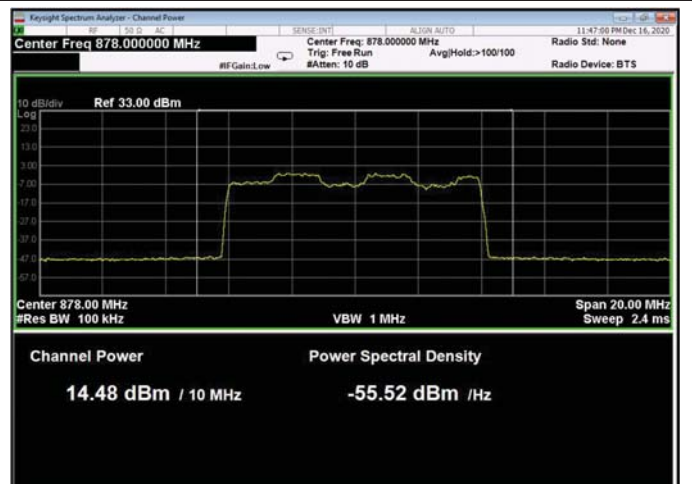


Figure 19: 16QAM 10MHz B.W.; 878.0MHz, 60kHz



Figure 20: 16QAM 10MHz B.W.; 889.0MHz, 15kHz



Figure 21: 16QAM 10MHz B.W.; 889.0MHz, 30kHz



Figure 22: 16QAM 10MHz B.W.; 889.0MHz, 60kHz

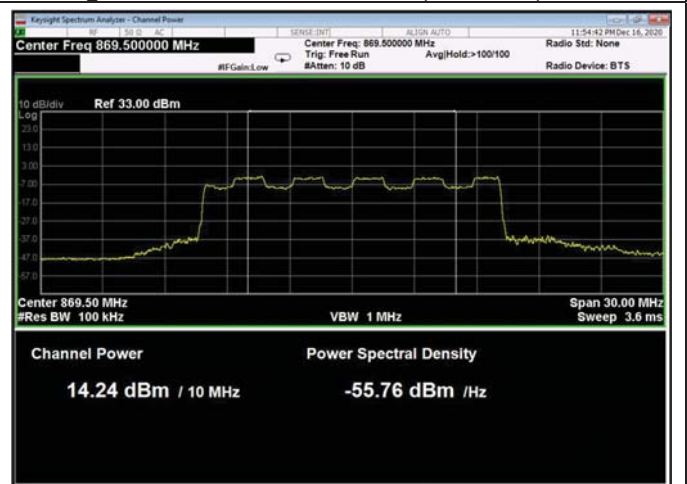


Figure 23: 16QAM 15MHz B.W.; 869.5MHz, 15kHz



Figure 24: 16QAM 15MHz B.W.; 869.5MHz, 30kHz

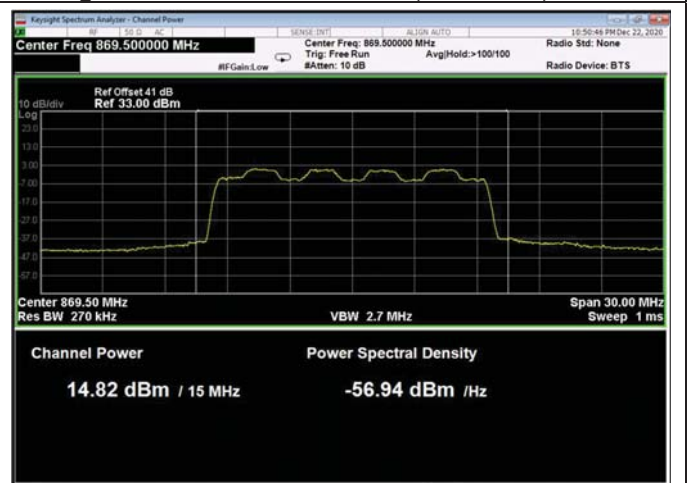


Figure 25: 16QAM 10MHz B.W.; 869.5MHz, 60kHz



Figure 26: 16QAM 15MHz B.W.; 878.0MHz, 15kHz



Figure 27: 16QAM 15MHz B.W.; 878.0MHz, 30kHz



Figure 28: 16QAM 15MHz B.W.; 878.0MHz, 60kHz

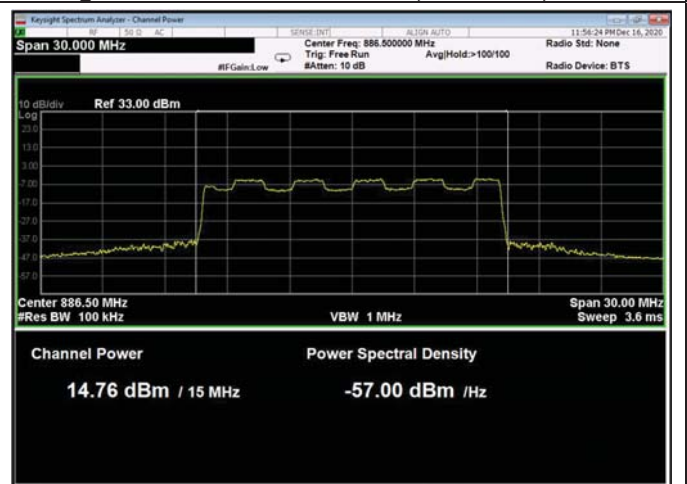


Figure 29: 16QAM 15MHz B.W.; 886.5MHz, 15kHz



Figure 30: 16QAM 15MHz B.W.; 886.5MHz, 30kHz



Figure 31: 16QAM 15MHz B.W.; 886.5MHz, 60kHz

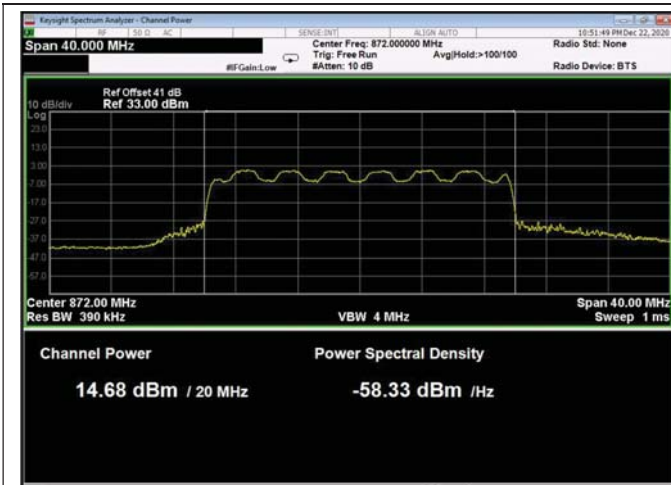


Figure 32: 16QAM 20MHz B.W.; 872.0MHz, 15kHz



Figure 33: 16QAM 20MHz B.W.; 872.0MHz, 30kHz

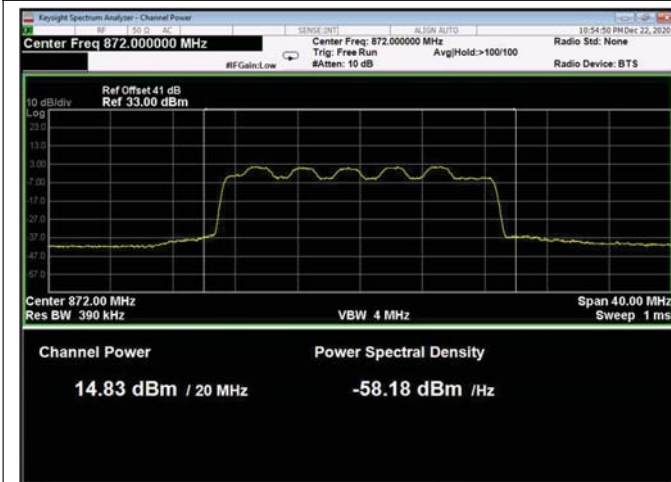


Figure 34: 16QAM 20MHz B.W.; 872.0MHz, 60kHz

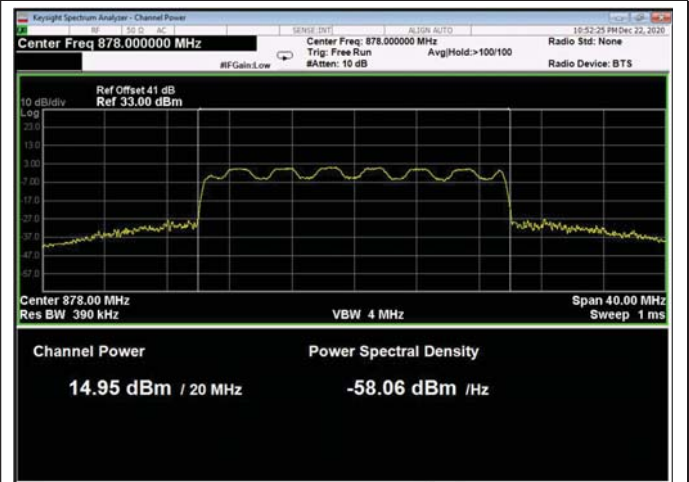


Figure 35: 16QAM 20MHz B.W.; 878.0MHz, 15kHz



Figure 36: 16QAM 20MHz B.W.; 878.0MHz, 30kHz



Figure 37: 16QAM 20MHz B.W.; 878.0MHz, 60kHz



Figure 38: 16QAM 20MHz B.W.; 884.0MHz, 15kHz

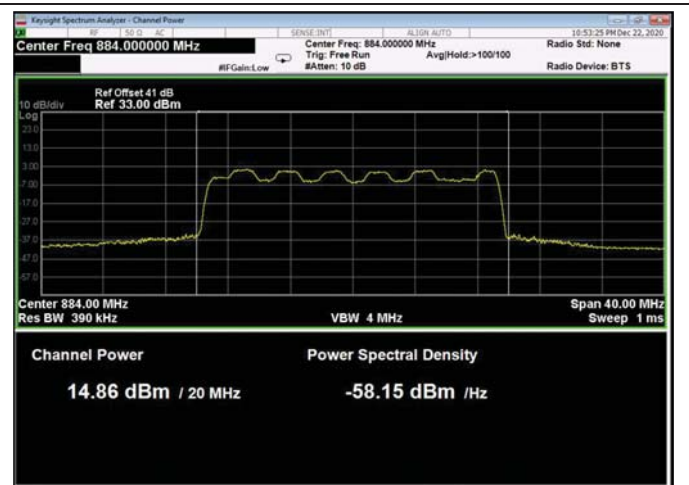


Figure 39: 16QAM 20MHz B.W.; 884.0MHz, 30kHz



Figure 40: 16QAM 20MHz B.W.; 884.0MHz, 60kHz

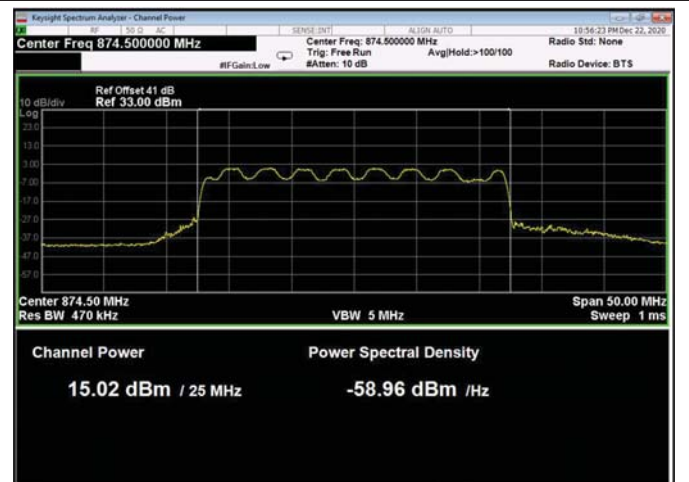


Figure 41: 16QAM 25MHz B.W.; 874.5MHz, 15kHz



Figure 42: 16QAM 25MHz B.W.; 874.5MHz, 30kHz



Figure 43: 16QAM 25MHz B.W.; 874.5MHz, 60kHz



Figure 44: 16QAM 25MHz B.W.; 878.0MHz, 15kHz

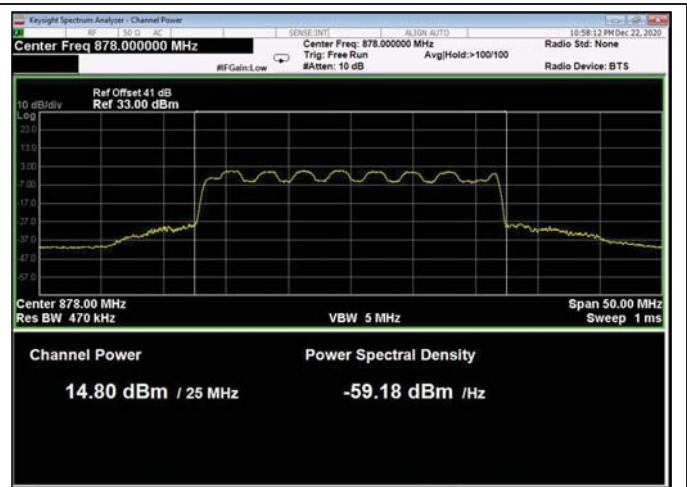


Figure 45: 16QAM 25MHz B.W.; 878.0MHz, 30kHz

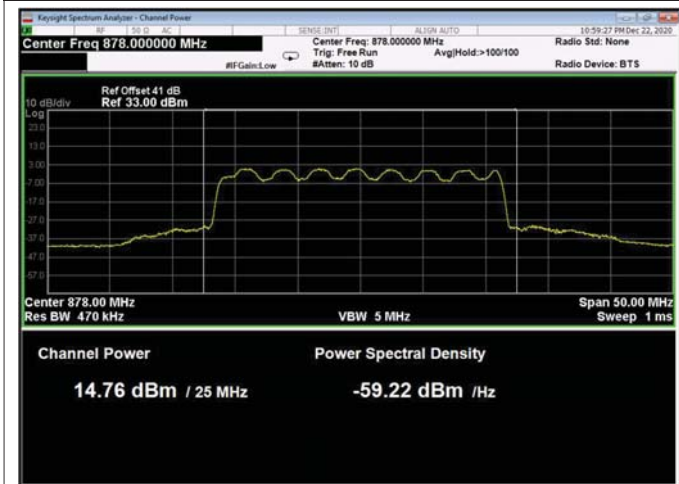


Figure 46: 16QAM 25MHz B.W.; 878.0MHz, 60kHz

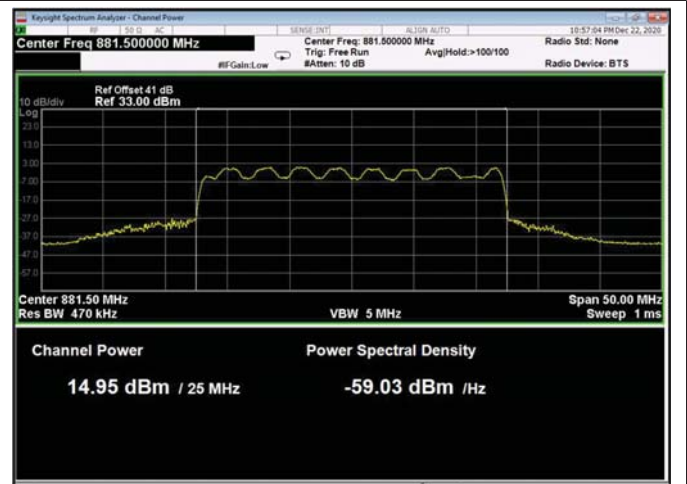


Figure 47: 16QAM 25MHz B.W.; 881.5MHz, 15kHz

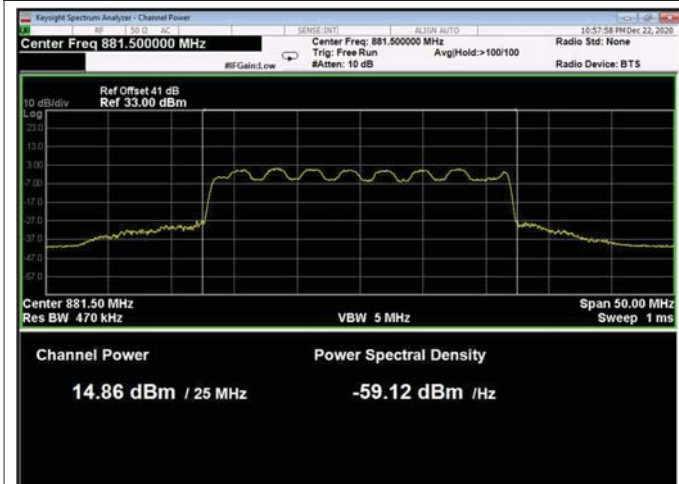


Figure 48: 16QAM 25MHz B.W.; 881.5MHz, 30kHz

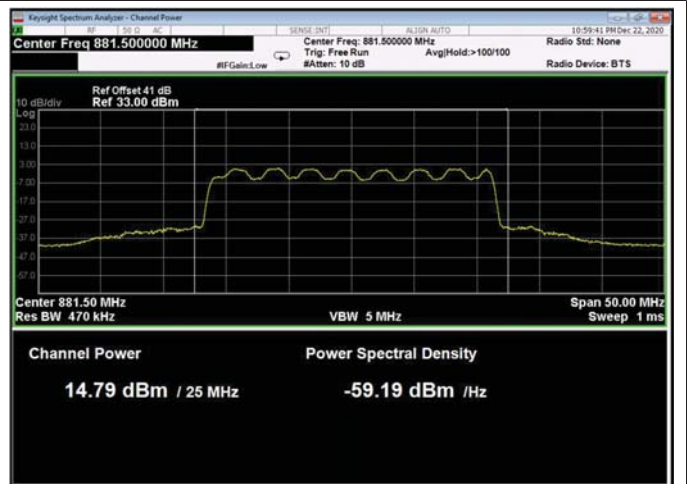


Figure 49: 16QAM 25MHz B.W.; 881.5MHz, 60kHz

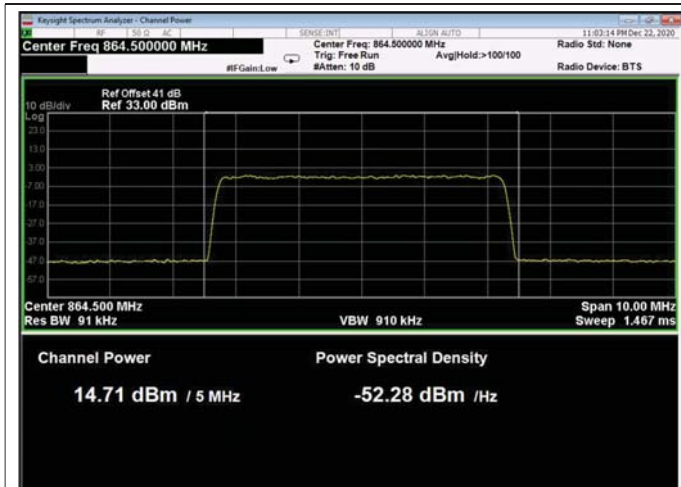


Figure 50: 64QAM 5MHz B.W.; 864.5MHz, 15kHz



Figure 51: 64QAM 5MHz B.W.; 864.5MHz, 30kHz

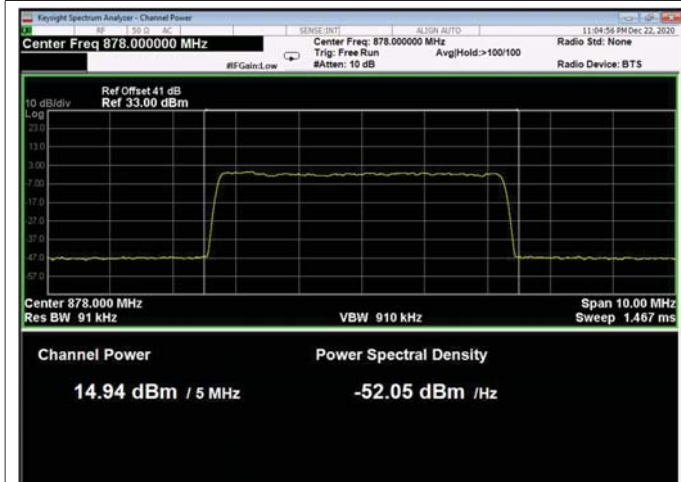


Figure 52: 64QAM 5MHz B.W.; 878.0MHz, 15kHz



Figure 53: 64QAM 5MHz B.W.; 878.0MHz, 30kHz

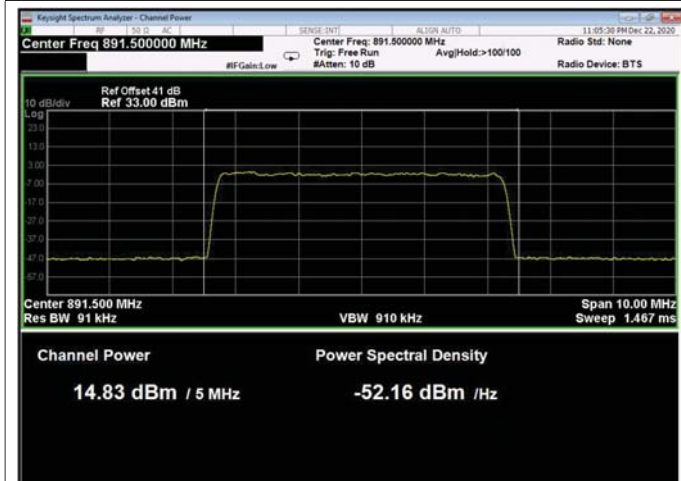


Figure 54: 64QAM 5MHz B.W.; 891.5MHz, 15kHz



Figure 55: 64QAM 5MHz B.W.; 891.5MHz, 30kHz



Figure 56: 64QAM 10MHz B.W.; 867.0MHz, 15kHz

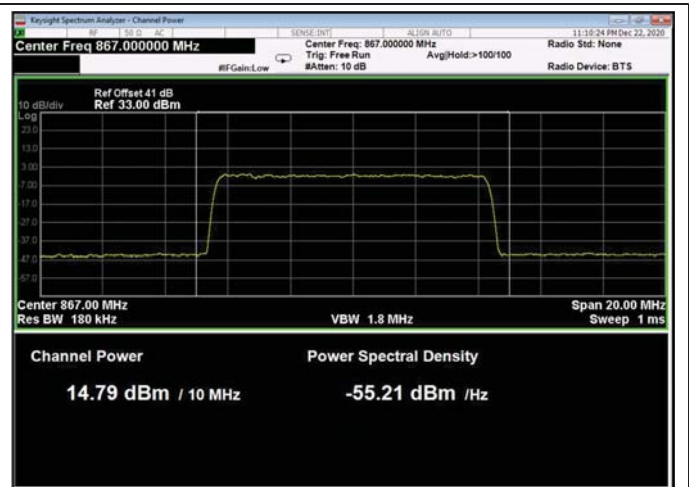


Figure 57: 64QAM 10MHz B.W.; 867.0MHz, 30kHz

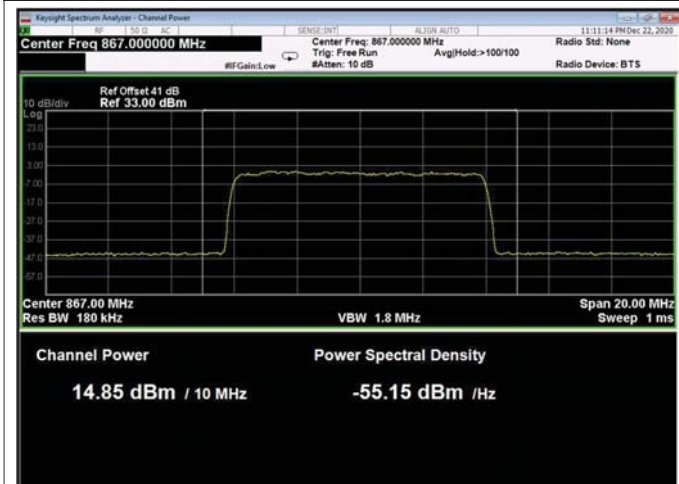


Figure 58: 64QAM 10MHz B.W.; 867.0MHz, 60kHz

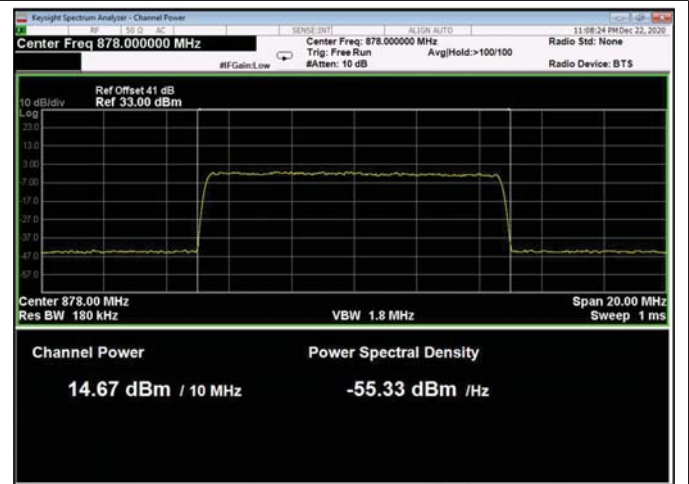


Figure 59: 64QAM 10MHz B.W.; 878.0MHz, 15kHz

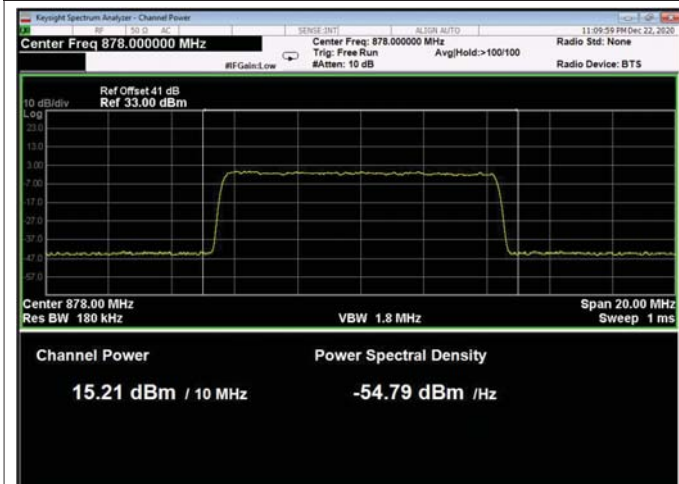


Figure 60: 64QAM 10MHz B.W.; 878.0MHz, 30kHz

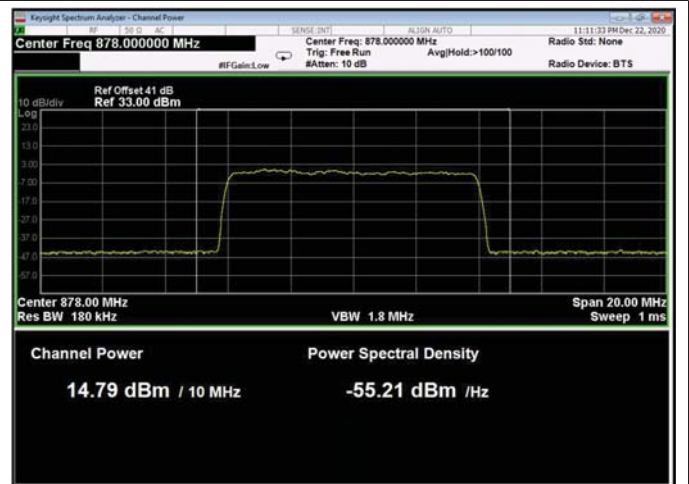


Figure 61: 64QAM 5MHz B.W.; 878.0MHz, 60kHz

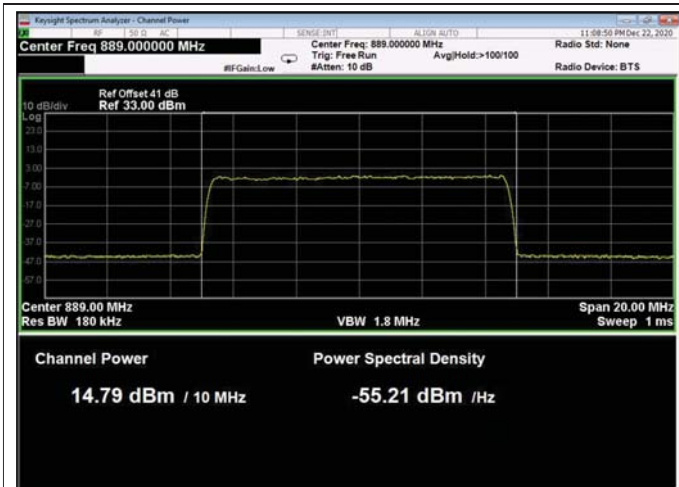


Figure 62: 64QAM 10MHz B.W.; 889.0MHz, 15kHz

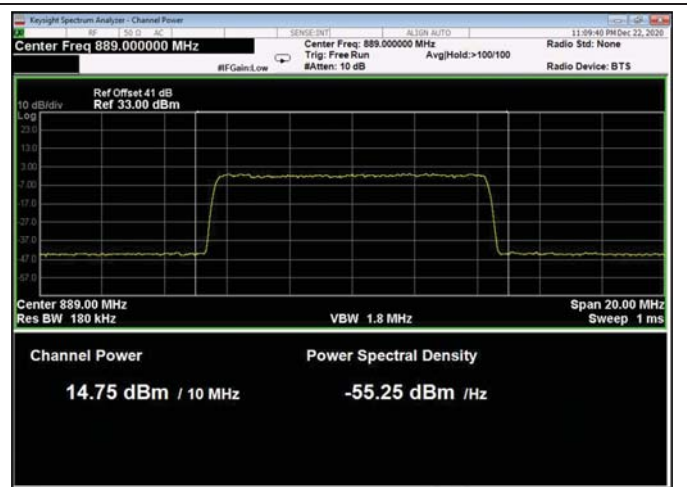


Figure 63: 64QAM 10MHz B.W.; 889.0MHz, 30kHz



Figure 64: 64QAM 10MHz B.W.; 889.0MHz, 60kHz

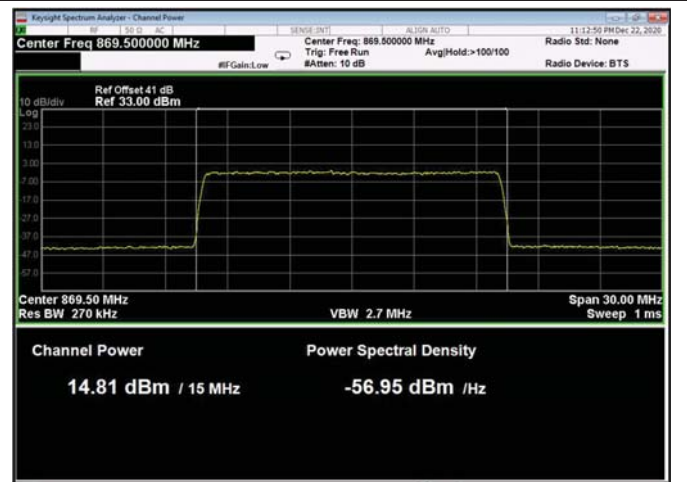


Figure 65: 64QAM 15MHz B.W.; 869.5MHz, 15kHz

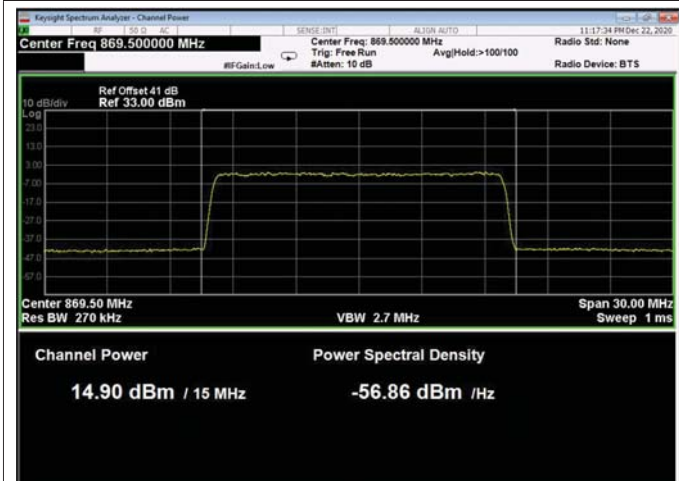


Figure 66: 64QAM 15MHz B.W.; 869.5MHz, 30kHz



Figure 67: 64QAM 15MHz B.W.; 869.5MHz, 60kHz



Figure 68: 64QAM 15MHz B.W.; 878.0MHz, 15kHz

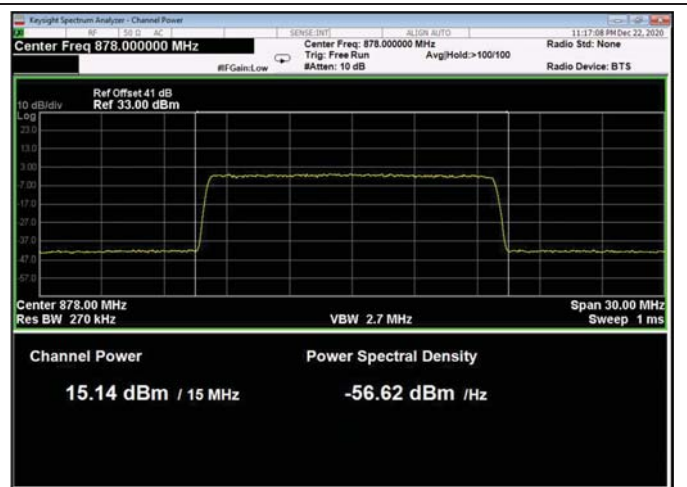


Figure 69: 64QAM 15MHz B.W.; 878.0MHz, 30kHz



Figure 70: 64QAM 15MHz B.W.; 878.0MHz, 60kHz



Figure 71: 64QAM 15MHz B.W.; 886.5MHz, 15kHz

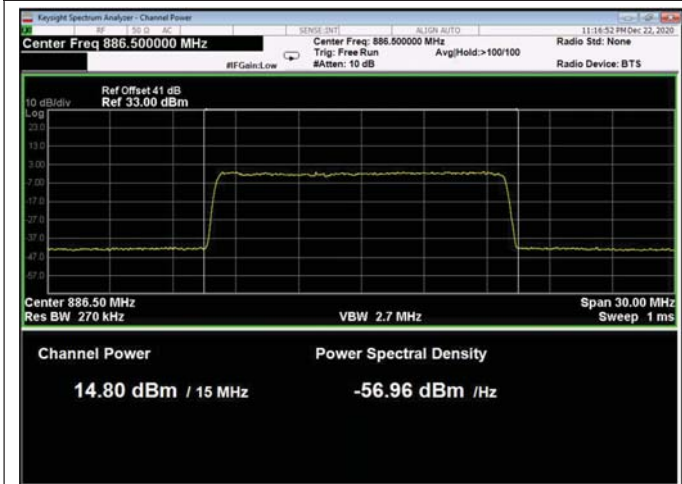


Figure 72: 64QAM 15MHz B.W.; 886.5MHz, 30kHz



Figure 73: 64QAM 15MHz B.W.; 886.5MHz, 60kHz

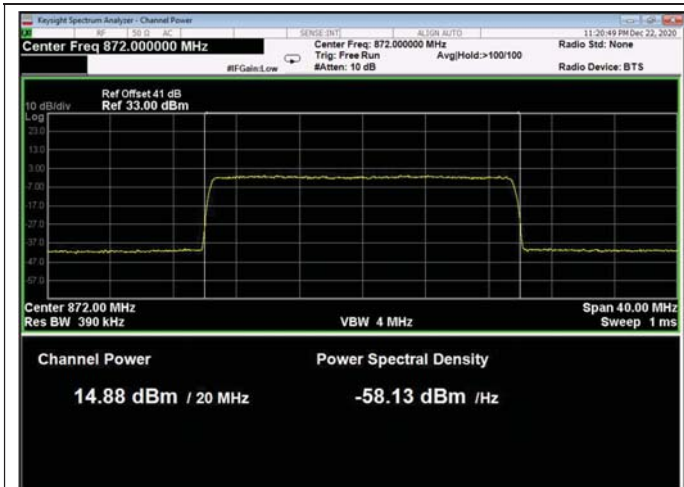


Figure 74: 64QAM 20MHz B.W.; 872.0MHz, 15kHz



Figure 75: 64QAM 20MHz B.W.; 872.0MHz, 30kHz



Figure 76: 64QAM 20MHz B.W.; 872.0MHz, 60kHz



Figure 77: 64QAM 20MHz B.W.; 878.0MHz, 15kHz

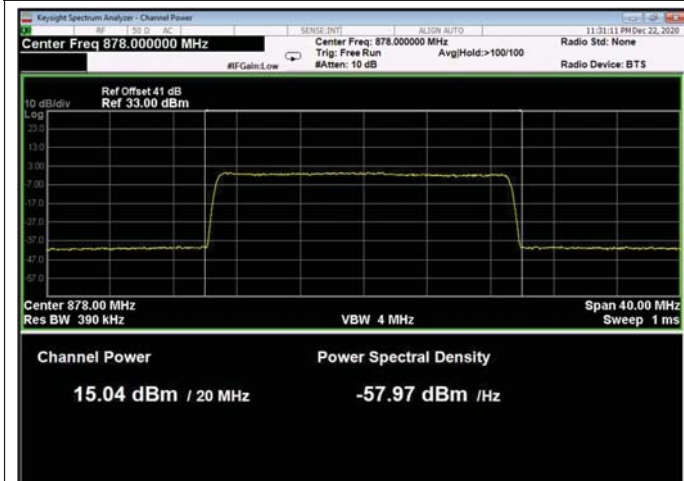


Figure 78: 64QAM 20MHz B.W.; 878.0MHz, 30kHz



Figure 79: 64QAM 20MHz B.W.; 878.0MHz, 60kHz



Figure 80: 64QAM 20MHz B.W.; 884.0MHz, 15kHz

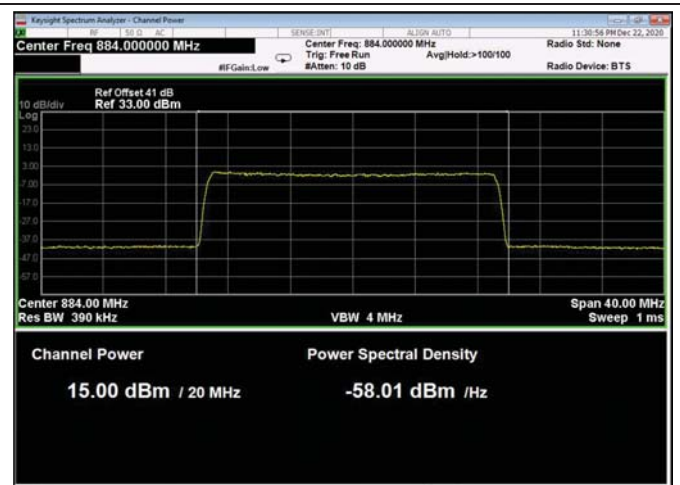


Figure 81: 64QAM 20MHz B.W.; 884.0MHz, 30kHz



Figure 82: 64QAM 20MHz B.W.; 884.0MHz, 60kHz

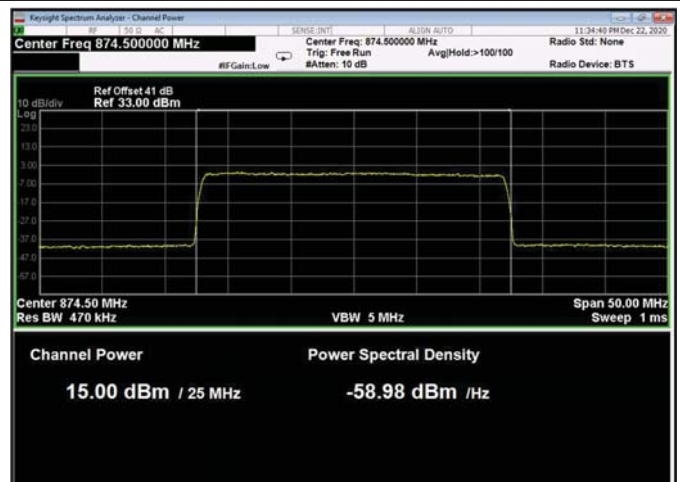


Figure 83: 64QAM 25MHz B.W.; 874.5 MHz, 15kHz

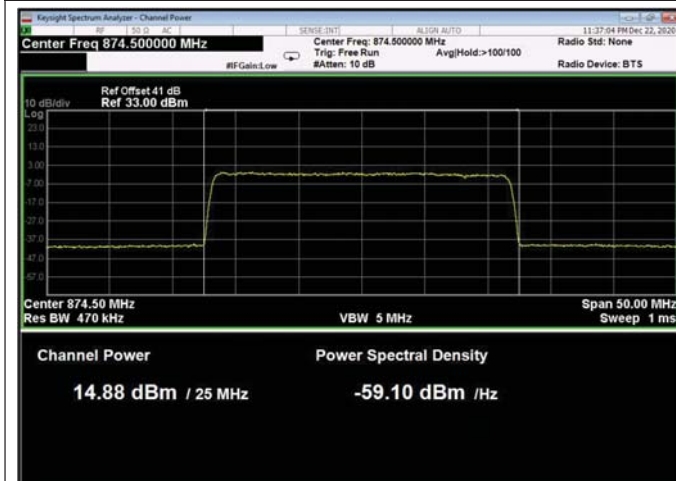


Figure 84: 64QAM 25MHz B.W.; 874.5MHz, 30kHz



Figure 85: 64QAM 25MHz B.W.; 874.5MHz, 60kHz



Figure 86: 64QAM 25MHz B.W.; 878.5MHz, 15kHz



Figure 87: 64QAM 25MHz B.W.; 878.5MHz, 30kHz

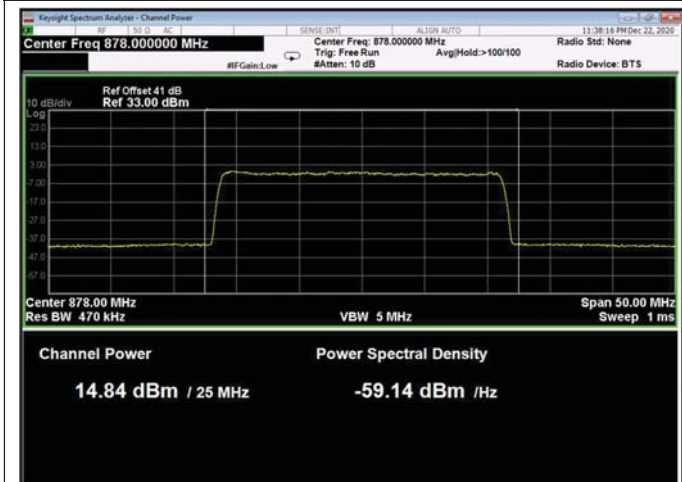


Figure 88: 64QAM 25MHz B.W.; 878.5MHz, 60kHz



Figure 89: 64QAM 25MHz B.W.; 881.5MHz, 15kHz

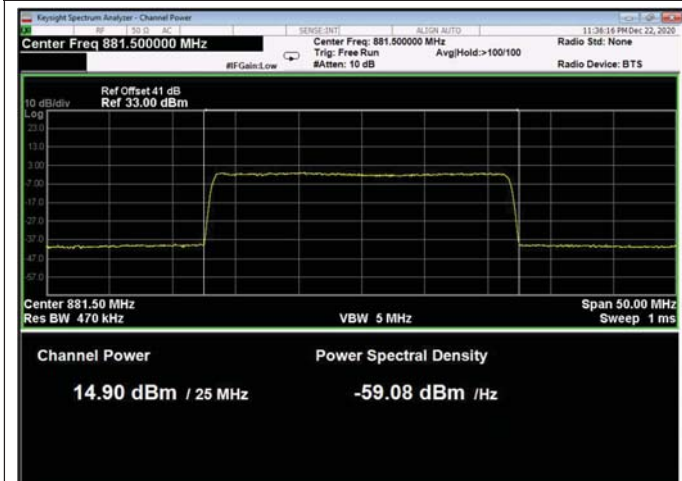


Figure 90: 64QAM 25MHz B.W.; 881.5MHz, 30kHz



Figure 91: 64QAM 25MHz B.W.; 881.5MHz, 60kHz



Figure 92: 256QAM 5MHz B.W.; 864.5MHz, 15kHz

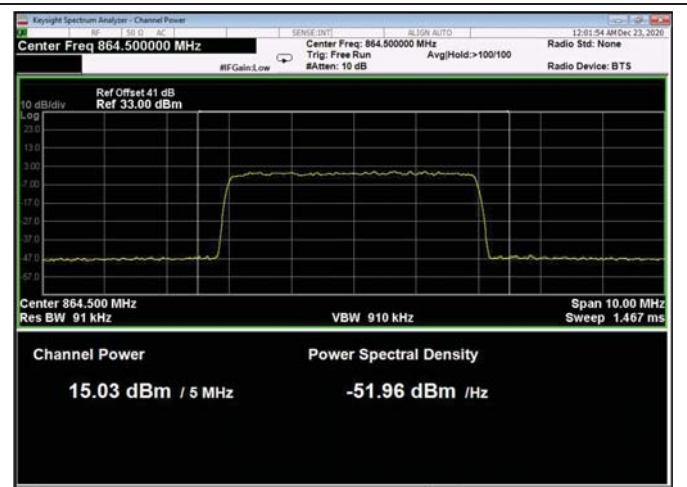


Figure 93: 256QAM 10MHz B.W.; 864.5MHz, 30kHz

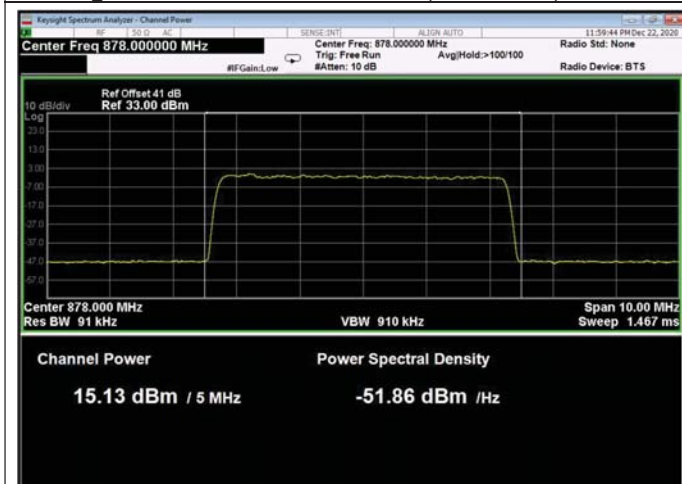


Figure 94: 256QAM 5MHz B.W.; 878.0MHz, 15kHz

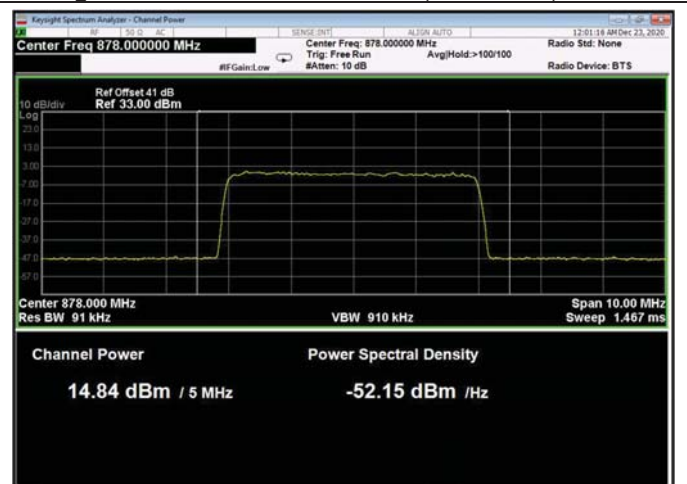


Figure 95: 256QAM 5MHz B.W.; 878.0MHz, 30kHz



Figure 96: 256QAM 5MHz B.W.; 891.5MHz, 15kHz



Figure 97: 256QAM 5MHz B.W.; 891.5MHz, 30kHz

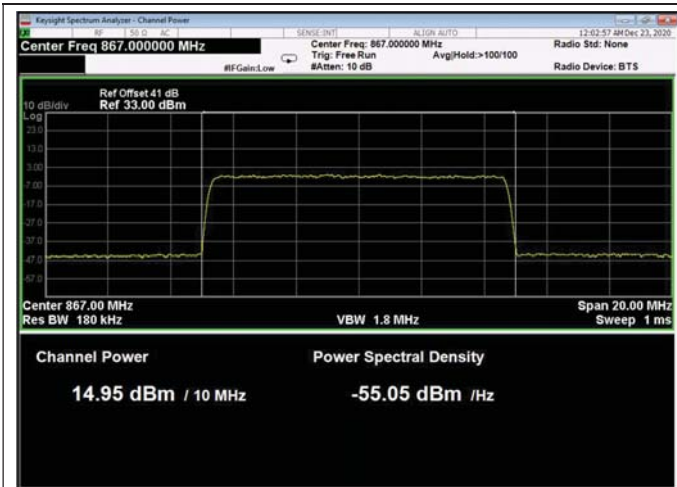


Figure 98: 256QAM 10MHz B.W.; 867.0MHz, 15kHz

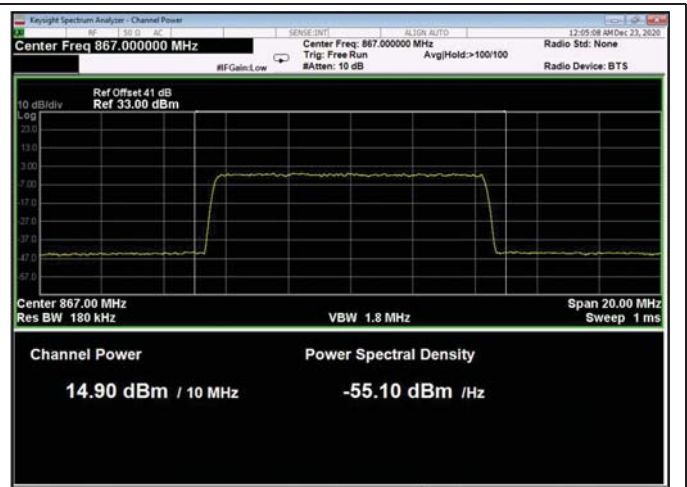


Figure 99: 256QAM 10MHz B.W.; 867.0MHz, 30kHz

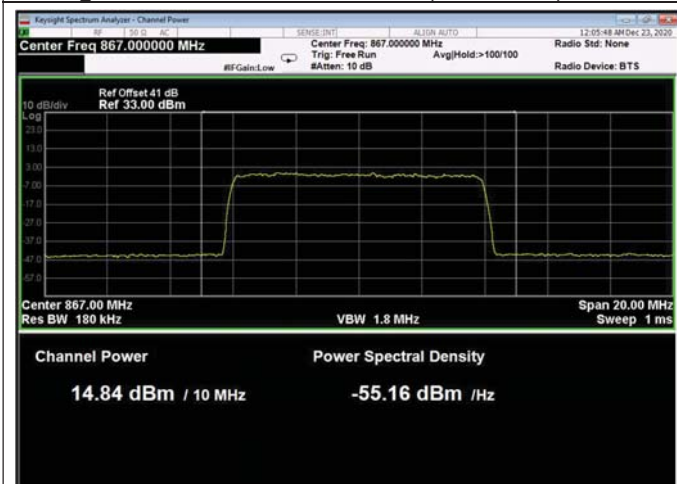


Figure 100: 256QAM 10MHz B.W.; 867.0MHz, 60kHz

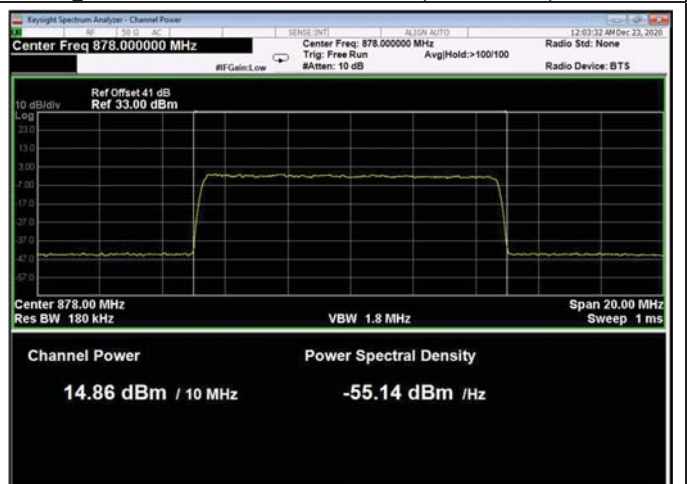


Figure 101: 256QAM 10MHz B.W.; 878.0MHz, 15kHz

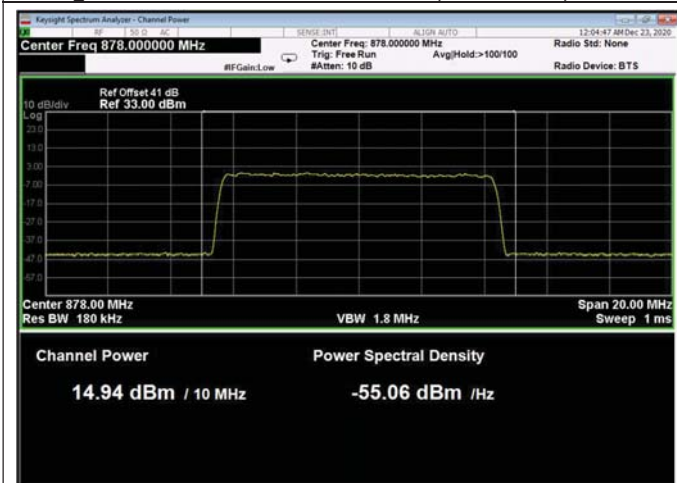


Figure 102: 256QAM 10MHz B.W.; 878.0MHz, 30kHz

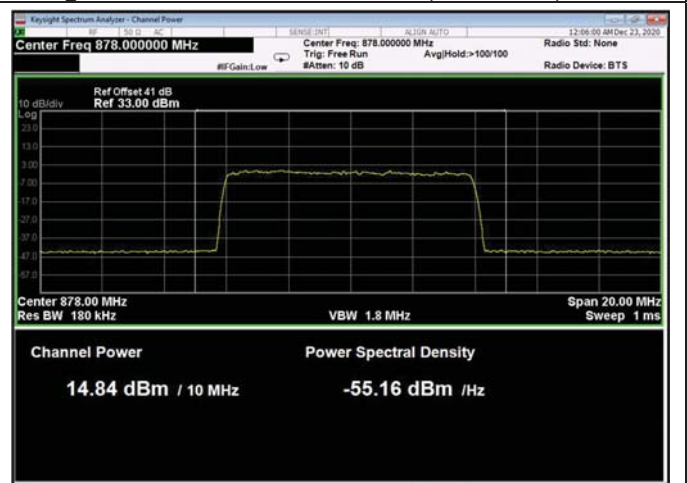


Figure 103: 256QAM 10MHz B.W.; 878.0MHz, 60kHz



Figure 104: 256QAM 10MHz B.W.; 889.0MHz, 15kHz



Figure 105: 256QAM 10MHz B.W.; 889.0MHz, 30kHz



Figure 106: 256QAM 10MHz B.W.; 889.0MHz, 60kHz

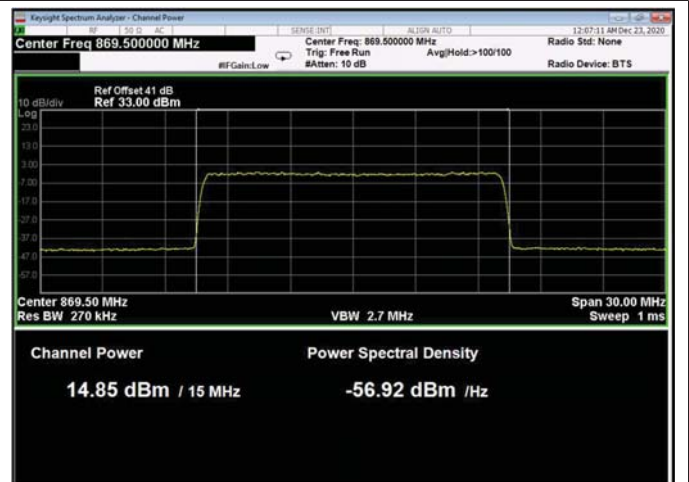


Figure 107: 256QAM 15MHz B.W.; 869.5MHz, 15kHz



Figure 108: 256QAM 15MHz B.W.; 869.5MHz, 30kHz

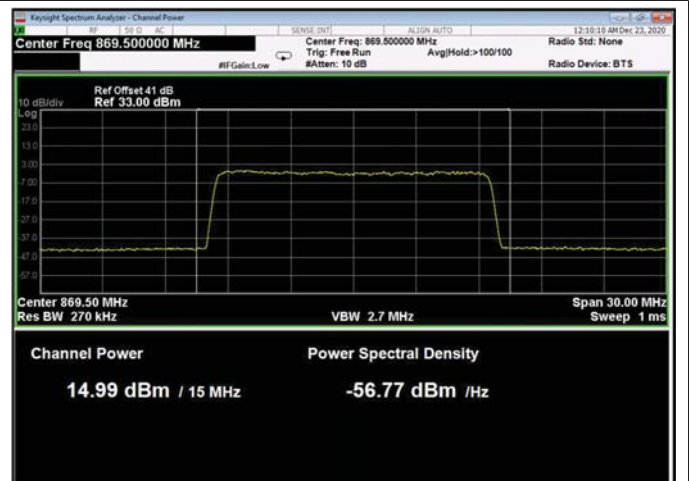


Figure 109: 256QAM 15MHz B.W.; 869.5MHz, 60kHz

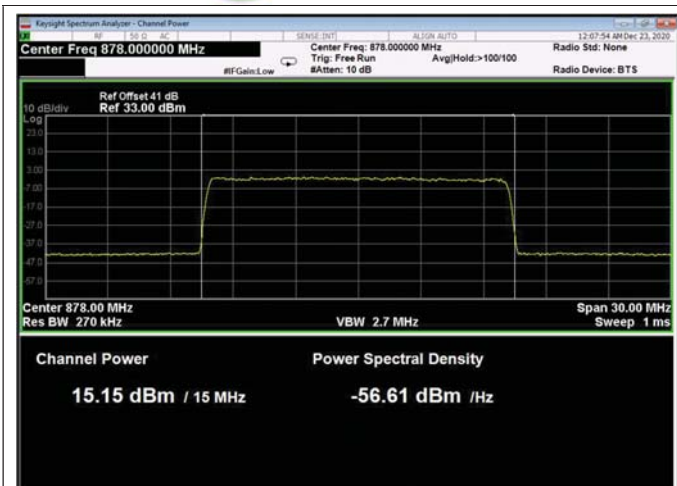


Figure 110: 256QAM 15MHz B.W.; 878.0MHz, 15kHz



Figure 111: 256QAM 15MHz B.W.; 878.0MHz, 30kHz



Figure 112: 256QAM 15MHz B.W.; 878.0MHz, 60kHz

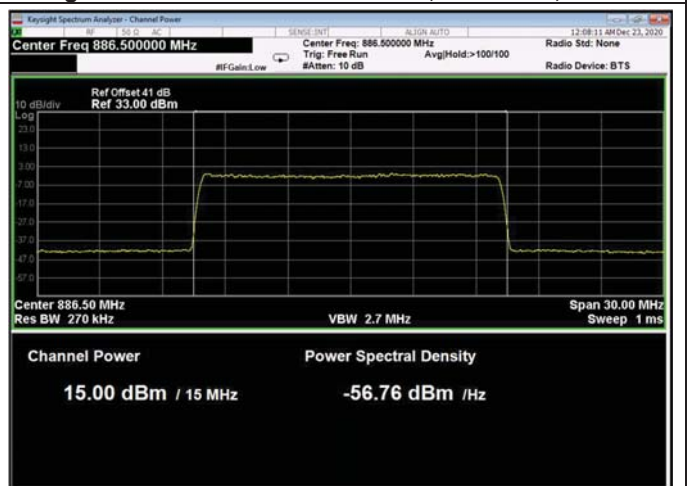


Figure 113: 256QAM 15MHz B.W.; 886.5MHz, 15kHz

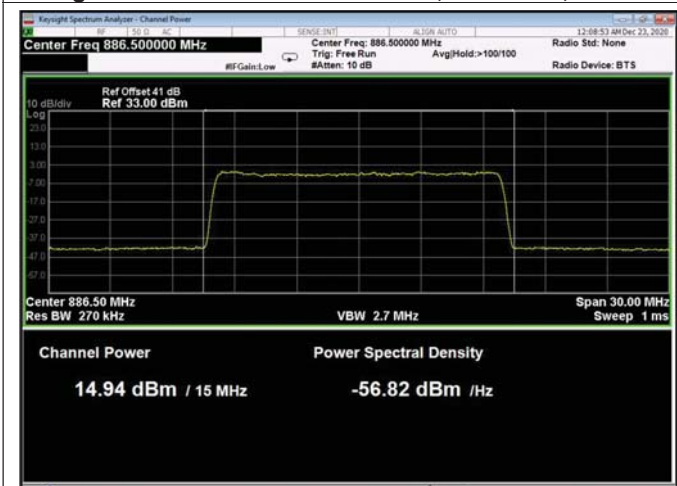


Figure 114: 256QAM 15MHz B.W.; 886.5MHz, 30kHz

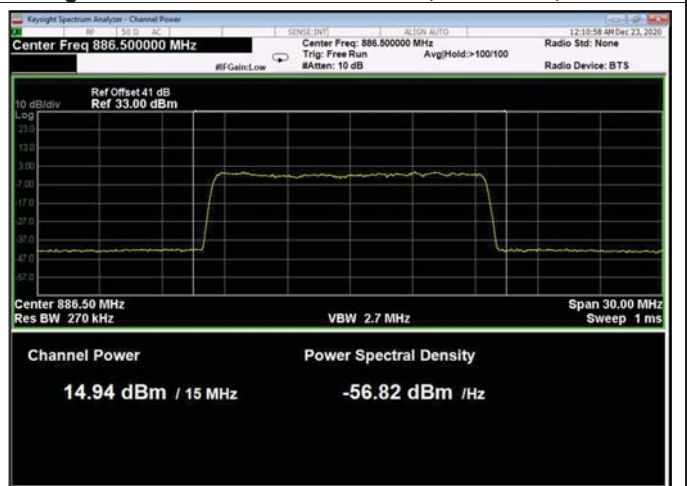


Figure 115: 256QAM 15MHz B.W.; 886.5MHz, 60kHz



Figure 116: 256QAM 20MHz B.W.; 872.0MHz, 15kHz

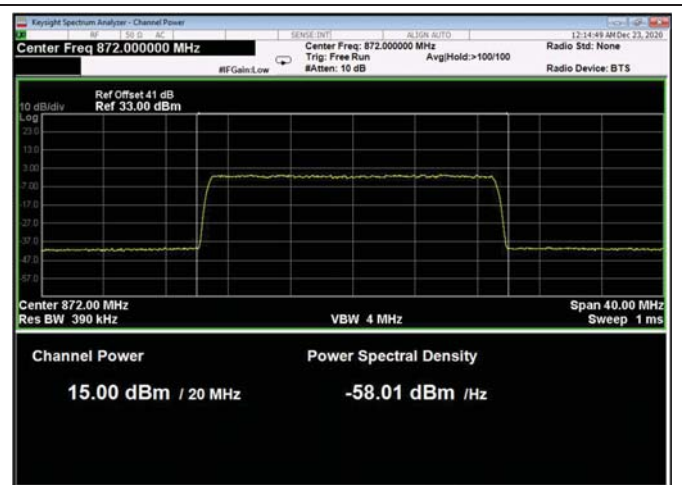


Figure 117: 256QAM 20MHz B.W.; 872.0MHz, 30kHz



Figure 118: 256QAM 20MHz B.W.; 872.0MHz, 60kHz



Figure 119: 256QAM 20MHz B.W.; 878.0MHz, 15kHz



Figure 120: 256QAM 20MHz B.W.; 878.0MHz, 30kHz



Figure 121: 256QAM 20MHz B.W.; 878.0MHz, 60kHz



Figure 122: 256QAM 20MHz B.W.; 884.0MHz, 15kHz



Figure 123: 256QAM 20MHz B.W.; 884.0MHz, 30kHz

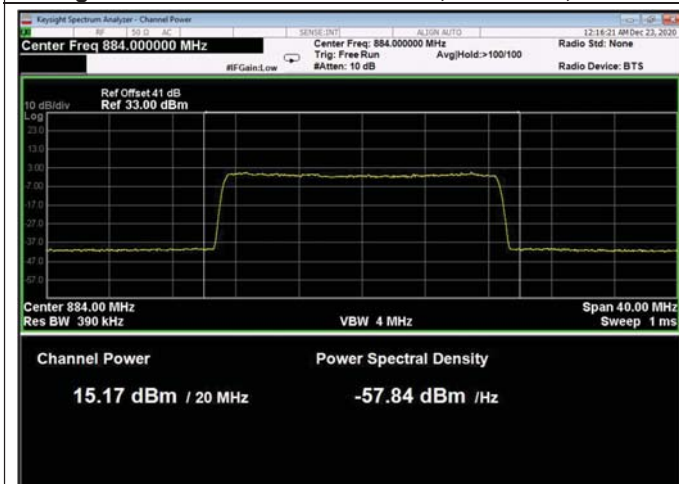


Figure 124: 256QAM 20MHz B.W.; 884.0MHz, 60kHz

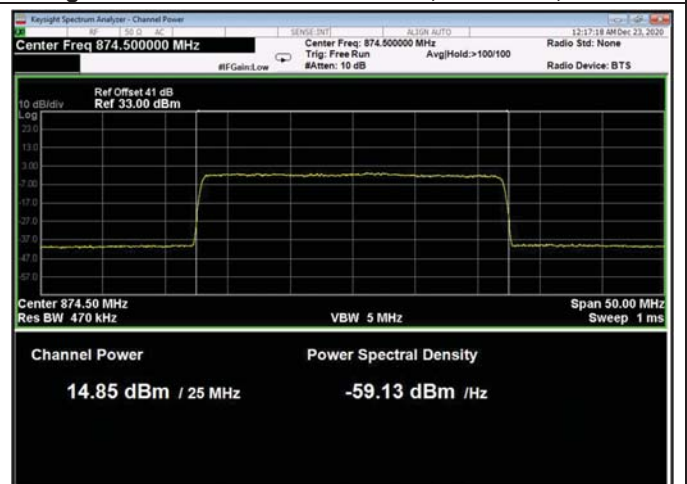


Figure 125: 256QAM 25MHz B.W.; 874.5MHz, 15kHz

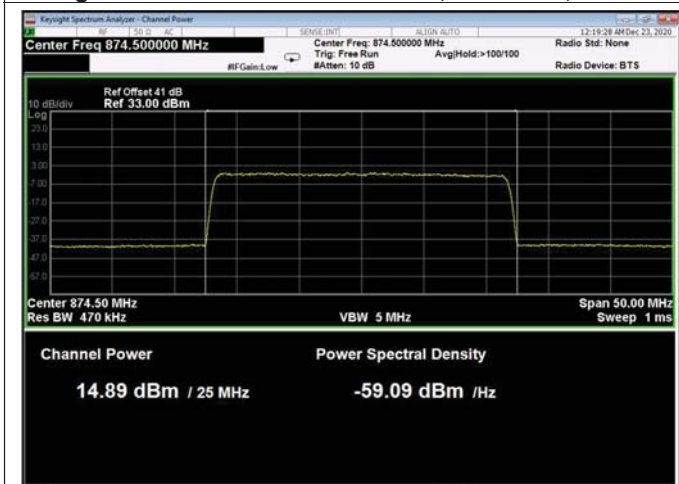


Figure 126: 256QAM 25MHz B.W.; 874.5MHz, 30kHz

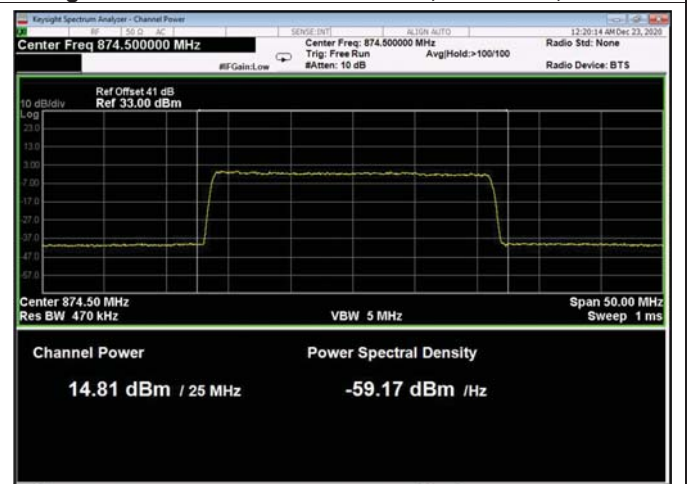


Figure 127: 256QAM 25MHz B.W.; 874.5MHz, 60kHz

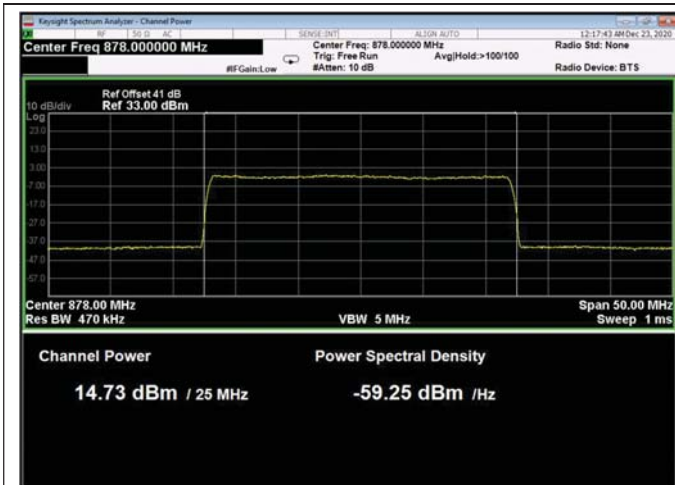


Figure 128: 256QAM 25MHz B.W.; 878.0MHz, 15kHz

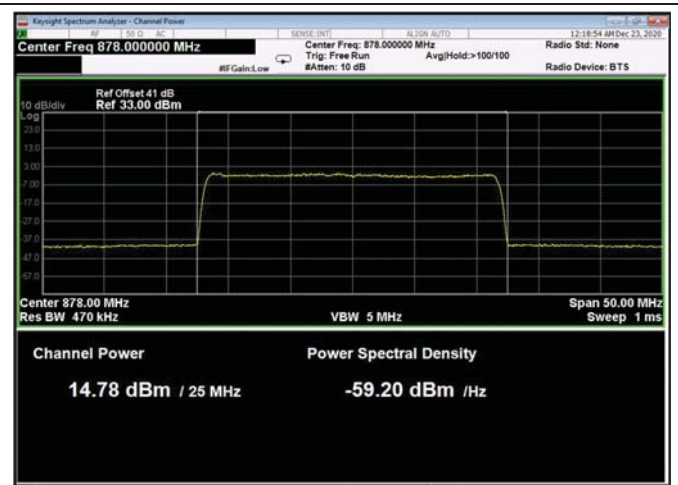


Figure 129: 256QAM 25MHz B.W.; 878.0MHz, 30kHz

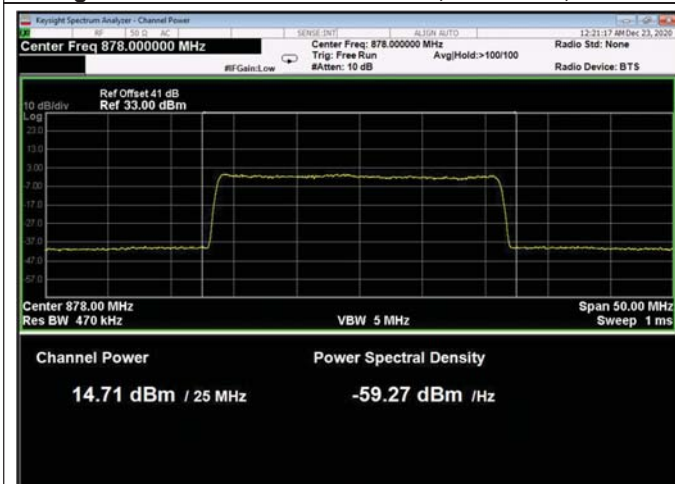


Figure 130: 256QAM 25MHz B.W.; 878.0MHz, 60kHz



Figure 131: 256QAM 25MHz B.W.; 881.5MHz, 15kHz



Figure 132: 256QAM 25MHz B.W.; 881.5MHz, 30kHz



Figure 133: 256QAM 25MHz B.W.; 881.5MHz, 60kHz

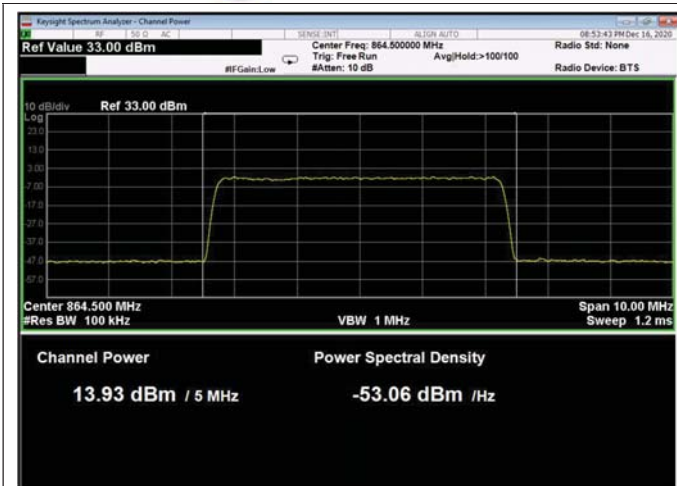


Figure 134: QPSK 5MHz B.W.; 864.5MHz, 15kHz



Figure 135: QPSK 5MHz B.W.; 864.5MHz, 30kHz

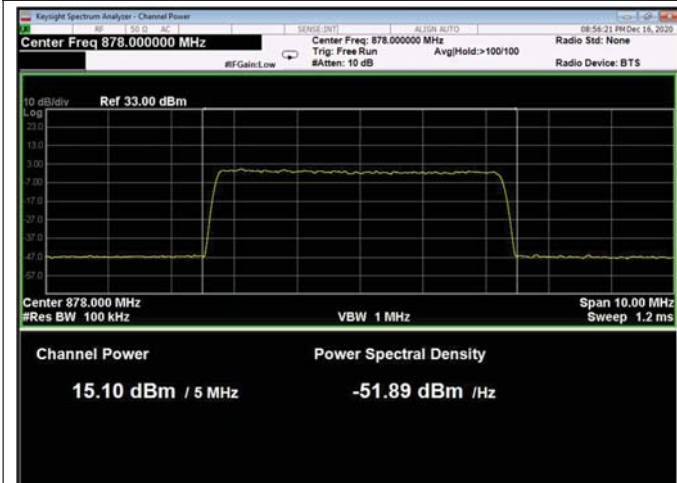


Figure 136: QPSK 5MHz B.W.; 878.0MHz, 15kHz

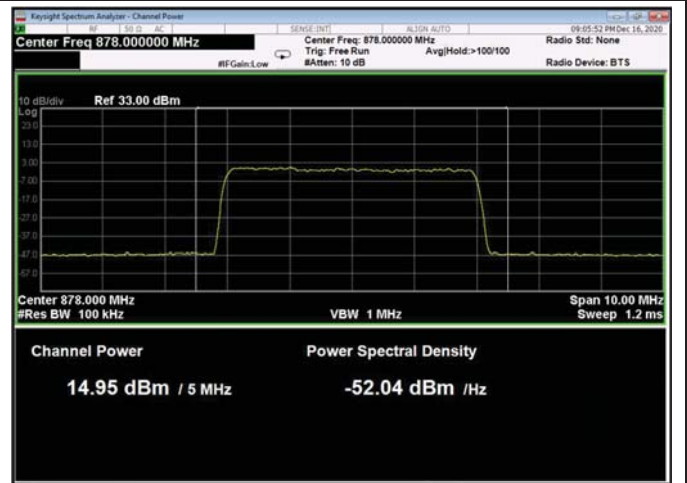


Figure 137: QPSK 5MHz B.W.; 878.0MHz, 30kHz

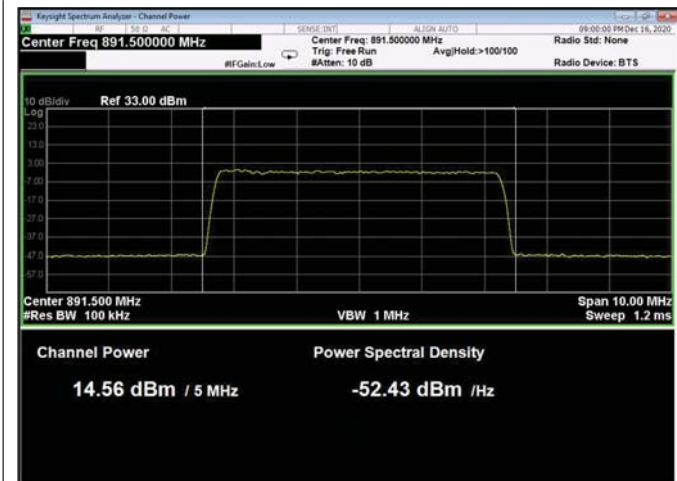


Figure 138: QPSK 5MHz B.W.; 891.50MHz, 15kHz



Figure 139: QPSK 5MHz B.W.; 891.5MHz, 30kHz



Figure 140: QPSK 10MHz B.W.; 867.0MHz, 15kHz



Figure 141: QPSK 10MHz B.W.; 867.0MHz, 30kHz

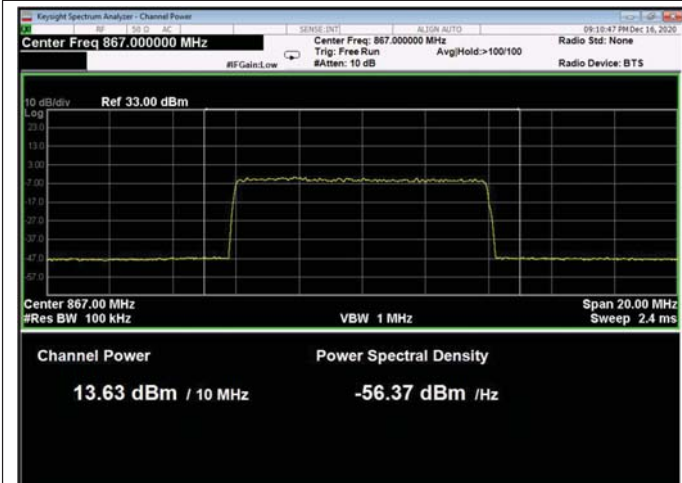


Figure 142: QPSK 10MHz B.W.; 867.0MHz, 60kHz



Figure 143: QPSK 10MHz B.W.; 878.0MHz, 15kHz

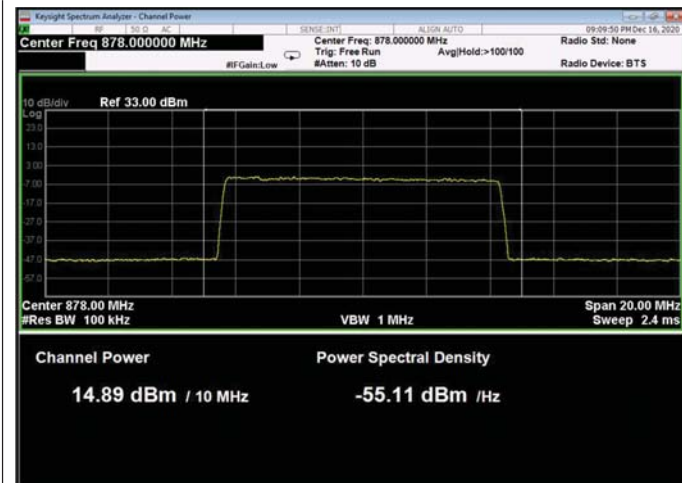


Figure 144: QPSK 10MHz B.W.; 878.0MHz, 30kHz

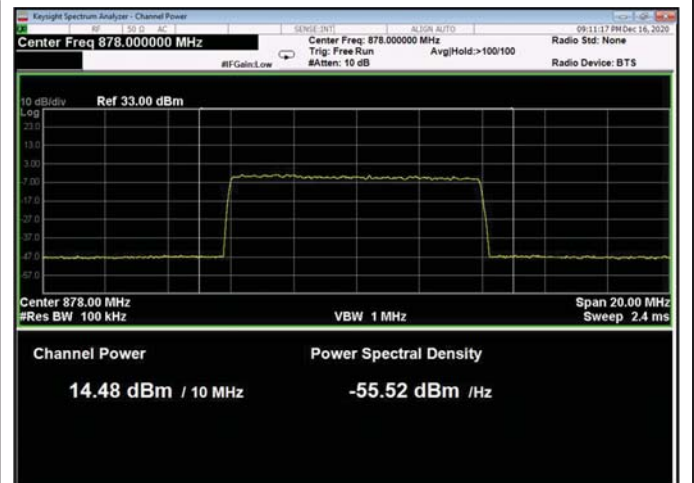


Figure 145: QPSK 10MHz B.W.; 878.0MHz, 60kHz



Figure 146: QPSK 10MHz B.W.; 889.0MHz, 15kHz



Figure 147: QPSK 10MHz B.W.; 889.0MHz, 30kHz



Figure 148: QPSK 10MHz B.W.; 889.0MHz, 60kHz

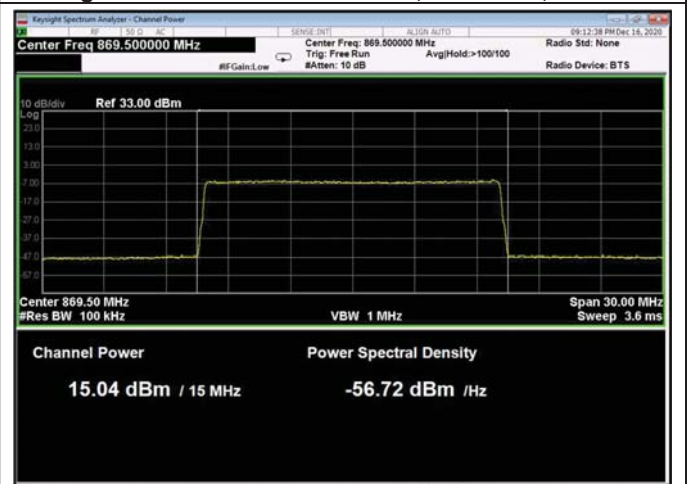


Figure 149: QPSK 15MHz B.W.; 869.5MHz, 15kHz



Figure 150: QPSK 15MHz B.W.; 869.5MHz, 30kHz



Figure 151: QPSK 15MHz B.W.; 869.5MHz, 60kHz



Figure 152: QPSK 15MHz B.W.; 878.0MHz, 15kHz



Figure 153: QPSK 15MHz B.W.; 878.0MHz, 30kHz



Figure 154: QPSK 15MHz B.W.; 878.0MHz, 60kHz



Figure 155: QPSK 15MHz B.W.; 886.5MHz, 15kHz



Figure 156: QPSK 15MHz B.W.; 886.5MHz, 30kHz



Figure 157: QPSK 15MHz B.W.; 886.5MHz, 60kHz

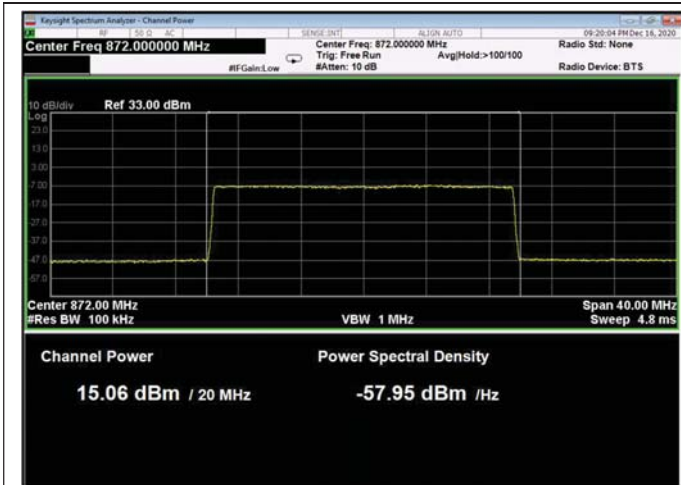


Figure 158: QPSK 20MHz B.W.; 872.0MHz, 15kHz

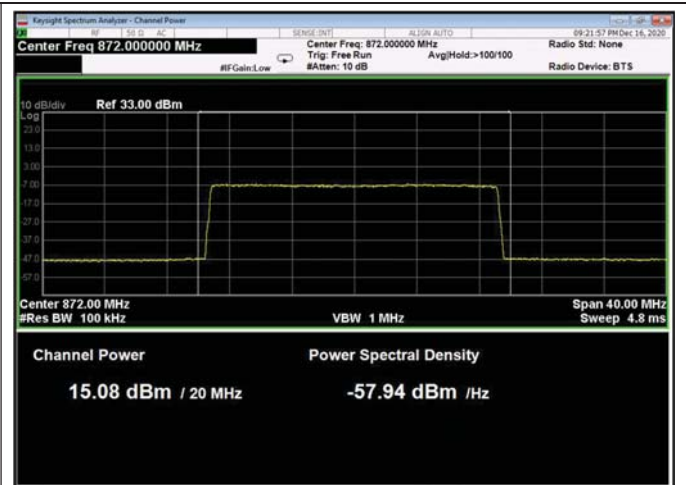


Figure 159: QPSK 20MHz B.W.; 872.05MHz, 30kHz

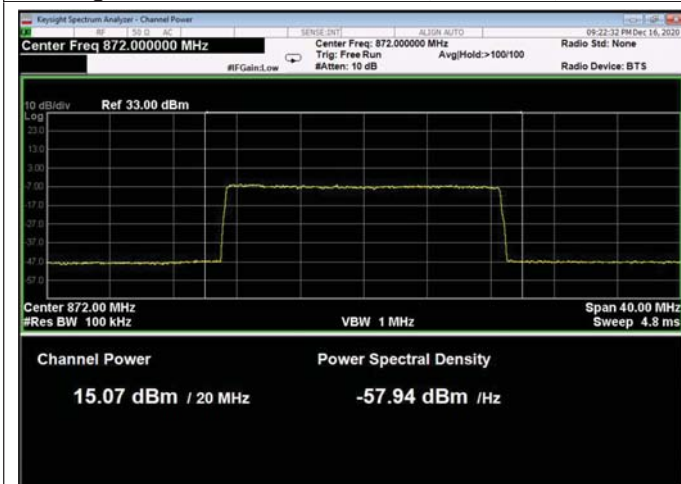


Figure 160: QPSK 20MHz B.W.; 872.0MHz, 60kHz

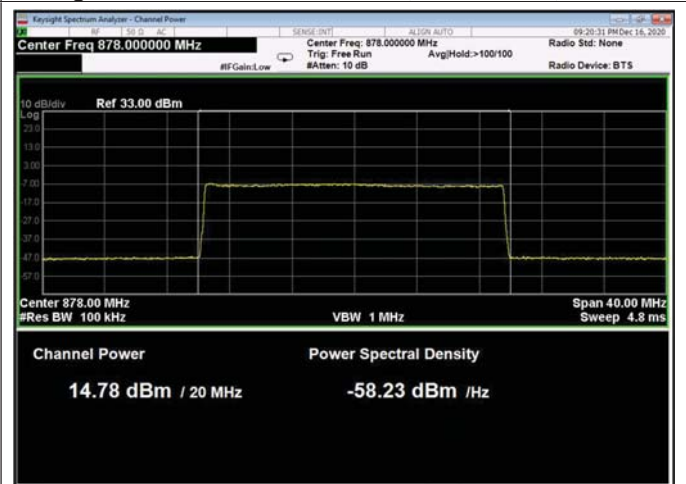


Figure 161: QPSK 20MHz B.W.; 878.0MHz, 15kHz



Figure 162: QPSK 20MHz B.W.; 878.0MHz, 30kHz

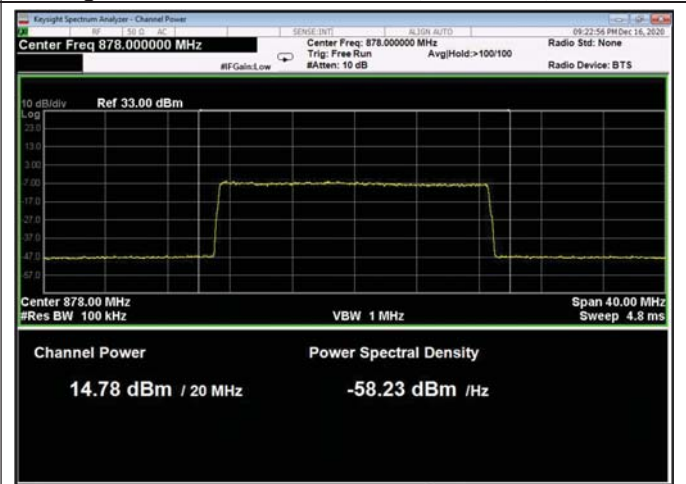


Figure 163: QPSK 20MHz B.W.; 878.0MHz, 60kHz



Figure 164: QPSK 20MHz B.W.; 884.0MHz, 15kHz



Figure 165: QPSK 20MHz B.W.; 884.0MHz, 30kHz

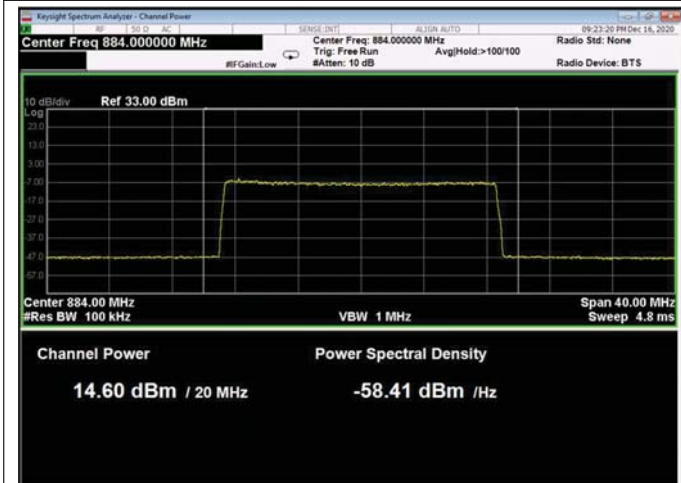


Figure 166: QPSK 20MHz B.W.; 884.0MHz, 60kHz

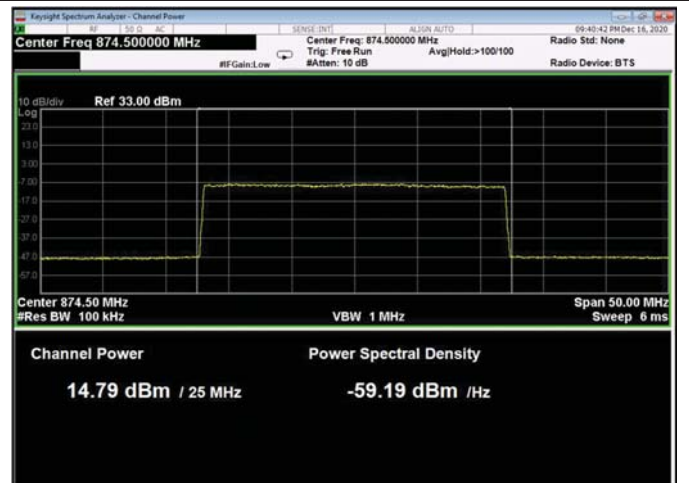


Figure 167: QPSK 25MHz B.W.; 874.5MHz, 15kHz

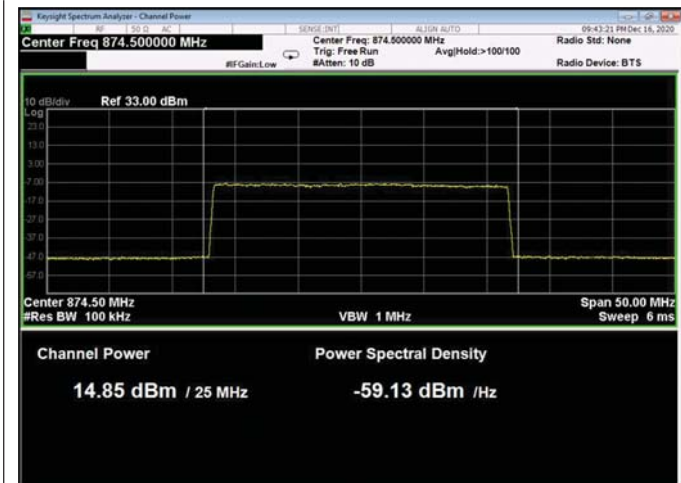


Figure 168: QPSK 25MHz B.W.; 874.5MHz, 30kHz

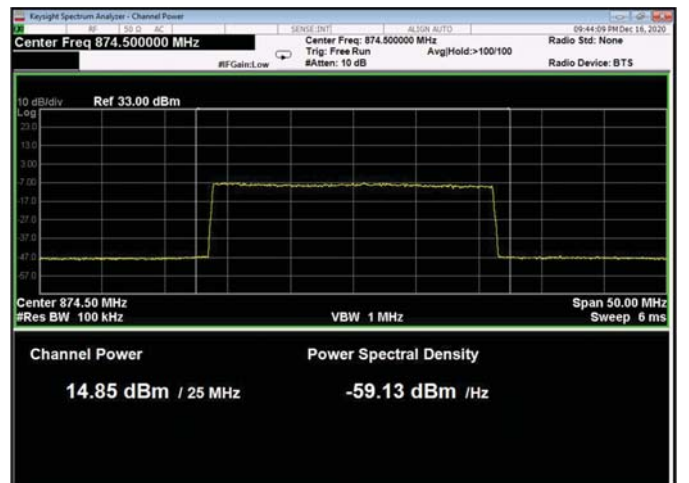


Figure 169: QPSK 25MHz B.W.; 874.5MHz, 60kHz

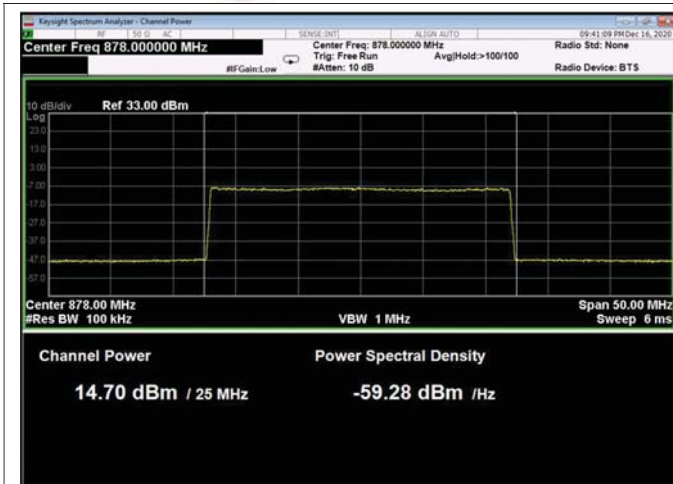


Figure 170: QPSK 25MHz B.W.; 878.0MHz, 15kHz



Figure 171: QPSK 25MHz B.W.; 878.0MHz, 30kHz

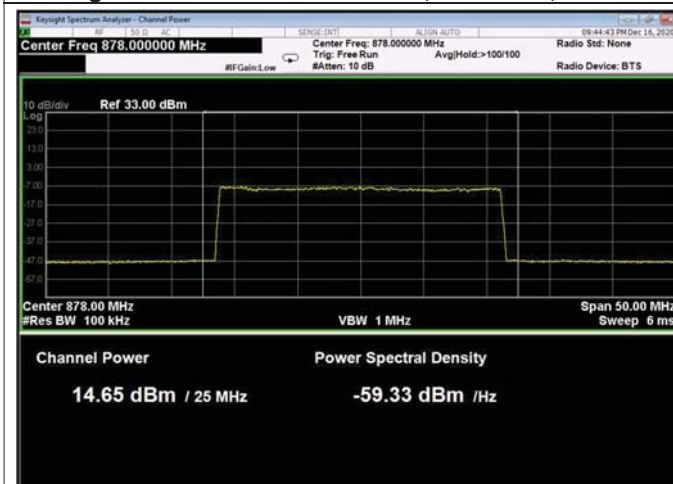


Figure 172: QPSK 25MHz B.W.; 878.0MHz, 60kHz



Figure 173: QPSK 25MHz B.W.; 881.5MHz, 15kHz



Figure 174: QPSK 25MHz B.W.; 881.5MHz, 30kHz



Figure 175: QPSK 25MHz B.W.; 881.5MHz, 60kHz



4.5 Test Equipment Used; RF Power Output

Instrument	Manufacturer	Model	Serial Number	Calibration	
				Last Calibration Date	Next Calibration Due
EXA signal Analyzer	Agilent Technologies	N9010A	MY52220686	November 28, 2018	May 30, 2021
Vector Signal Generator	R&S	SMBV100B	1423.1003K02-101470-XE	October 2, 2019	October 2, 2022
40 dB Attenuator	Weinschel	WA 39-40-33	A1323	July 7, 2020	July 31, 2021
RF Cable	Huber Suhner	Sucofelex	27504/4PEA	August 23, 2020	August 31, 2021

Table 5 Test Equipment Used