RADIO TEST REPORT

Test Report No. 14131466H-A-R1

Customer	**Panasonic Corporation of North America**
Description of EUT	**Personal Computer**
Model Number of EUT	**FZ-40**
FCC ID	**ACJ9TGFZ40**
Test Regulation	**FCC Part 30**
Test Result	**Complied (Refer to SECTION 3)**
Issue Date	**June 16, 2022**
Remarks	**-**

Representative Test Engineer	Approved By
Yuichiro Yamazaki Engineer	Takayuki Shimada Leader

CERTIFICATE 5107.02

☐ The testing in which "Non-accreditation" is displayed is outside the accreditation scopes in UL Japan, Inc.

☒ There is no testing item of "Non-accreditation".

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REVISION HISTORY

Original Test Report No.: 14131466H-A

This report is a revised version of 14131466H-A. 14131466H-A is replaced with this report.

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	14131466H-A	May 31, 2022	-
1	14131466H-A-R1	June 16, 2022	P136 and 137 Relocated the title “Band n261, Antenna #2, H+V” from page 136 to 137.

Reference: Abbreviations (Including words undescribed in this report)

A2LA	The American Association for Laboratory Accreditation	ICES	Interference-Causing Equipment Standard
AC	Alternating Current	IEC	International Electrotechnical Commission
AFH	Adaptive Frequency Hopping	IEEE	Institute of Electrical and Electronics Engineers
AM	Amplitude Modulation	IF	Intermediate Frequency
Amp, AMP	Amplifier	ILAC	International Laboratory Accreditation Conference
ANSI	American National Standards Institute	ISED	Innovation, Science and Economic Development Canada
Ant, ANT	Antenna	ISO	International Organization for Standardization
AP	Access Point	JAB	Japan Accreditation Board
ASK	Amplitude Shift Keying	LAN	Local Area Network
Atten., ATT	Attenuator	LIMS	Laboratory Information Management System
AV	Average	MCS	Modulation and Coding Scheme
BPSK	Binary Phase-Shift Keying	MRA	Mutual Recognition Arrangement
BR	Bluetooth Basic Rate	N/A	Not Applicable
BT	Bluetooth	NIST	National Institute of Standards and Technology
BT LE	Bluetooth Low Energy	NS	No signal detect.
BW	BandWidth	NSA	Normalized Site Attenuation
Cal Int	Calibration Interval	NVLAP	National Voluntary Laboratory Accreditation Program
CCK	Complementary Code Keying	OBW	Occupied Band Width
Ch., CH	Channel	OFDM	Orthogonal Frequency Division Multiplexing
CISPR	Comite International Special des Perturbations Radioelectriques	P/M	Power meter
CW	Continuous Wave	PCB	Printed Circuit Board
DBPSK	Differential BPSK	PER	Packet Error Rate
DC	Direct Current	PHY	Physical Layer
D-factor	Distance factor	PK	Peak
DFS	Dynamic Frequency Selection	PN	Pseudo random Noise
DQPSK	Differential QPSK	PRBS	Pseudo-Random Bit Sequence
DSSS	Direct Sequence Spread Spectrum	PSD	Power Spectral Density
EDR	Enhanced Data Rate	QAM	Quadrature Amplitude Modulation
EIRP, e.i.r.p.	Equivalent Isotropically Radiated Power	QP	Quasi-Peak
EMC	ElectroMagnetic Compatibility	QPSK	Quadri-Phase Shift Keying
EMI	ElectroMagnetic Interference	RBW	Resolution Band Width
EN	European Norm	RDS	Radio Data System
ERP, e.r.p.	Effective Radiated Power	RE	Radio Equipment
EU	European Union	RF	Radio Frequency
EUT	Equipment Under Test	RMS	Root Mean Square
Fac.	Factor	RSS	Radio Standards Specifications
FCC	Federal Communications Commission	Rx	Receiving
FHSS	Frequency Hopping Spread Spectrum	SA, S/A	Spectrum Analyzer
FM	Frequency Modulation	SG	Signal Generator
Freq.	Frequency	SVSWR	Site-Voltage Standing Wave Ratio
FSK	Frequency Shift Keying	TR	Test Receiver
GFSK	Gaussian Frequency-Shift Keying	Tx	Transmitting
GNSS	Global Navigation Satellite System	VBW	Video BandWidth
GPS	Global Positioning System	Vert.	Vertical
Hori.	Horizontal	WLAN	Wireless LAN

Contents

1 Customer information

Company Name	Panasonic Corporation of North America
Address	Two Riverfront Plaza, 9th Floor Newark, NEW JERSEY, 07102-5940, USA
Telephone Number	+1-201-348-7760
Contact Person	Ben Botros

*Remarks:
Panasonic Connect Co., Ltd. is on behalf of the applicant: Panasonic Corporation of North America (Company incorporated abroad).

The information provided from the customer is as follows;
- Customer, Description of EUT, Model Number of EUT, FCC ID on the cover and other relevant pages
- Operating/Test Mode(s) (Mode(s)) on all the relevant pages
- SECTION 1: Customer Information
- SECTION 2: Equipment Under Test (EUT) other than the Receipt Date and Test Date
- SECTION 4: Operation of EUT during testing

* The laboratory is exempted from liability of any test results affected from the above information in SECTION 2 and 4.

2 Equipment under test (EUT)

2.1 Identification of EUT

Description	Personal Computer
Model Number	FZ-40
Serial Number	Refer to SECTION 4.2
Condition	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification	No Modification by the test lab
Receipt Date	February 4, 2022
Test Date	February 21 to April 18, 2022

2.2 Product description

General Specification

Rating	AC 100 V to 240 V, 50 / 60 Hz

Radio Specification

5G NR (FR2)	TDD	120 kHz	n258	Pi/2 BPSK (DFT-s-OFDM), QPSK (CP-OFDM/DFT-s-OFDM)
	TDD	120 kHz	n260	16QAM (CP-OFDM/DFT-s-OFDM),
	TDD	120 kHz	n261	64QAM (CP-OFDM/DFT-s-OFDM)
	-	-	-	
	-	-	-	MIMO Support: No
EN-DC(LTE-FR2 mmW) (NSA mode only)	Supported combination			*B48: not used in Canada(ISED)
	LTE Anchor Bands for NR band n258			LTE Band 2/5/7/12/66
	LTE Anchor Bands for NR band n260			LTE Band 2/5/12/13/14/48*/66
	LTE Anchor Bands for NR band n261			LTE Band 2/5/13/48*/66

Antenna type	Patch Antenna (Cross-polarized array of 1 by 4 elements)
Antenna gain	See the table below

Band n258a						
Antenna	Beam Pol.	Channel	Beam ID	Paired With	Feed No.	Antenna Gain [dBi]
#0	H	Low	151		4	12.51
		High	151		4	12.53
	V	Low	23		4	11.98
		High	22		4	12.05
	H+V	Low	24	152	4	11.6
		High	24	152	4	11.7
#1	H	Low	168		4	11.24
		High	168		4	11.13
	V	Low	28		4	10.93
		High	28		4	10.82
	H+V	Low	25	153	4	11.11
		High	25	153	4	11.11
#2	H	Low	172		4	11.83
		High	172		4	11.78
	V	Low	44		4	12.39
		High	44		4	12.47
	H+V	Low	44	172	4	11.38
		High	44	172	4	11.36

Band n258b						
Antenna	Beam Pol.	Channel	Beam ID	Paired With	Feed No.	Antenna Gain [dBi]
#0	H	Low	151		4	12.18
		High	163		4	12
	V	Low	36		4	12.02
		High	36		4	12.15
	H+V	Low	24	152	4	11.34
		High	36	164	4	11.28
#1	H	Low	156		4	11.27
		High	156		4	11.36
	V	Low	28		4	10.7
		High	40		4	11.04
	H+V	Low	25	153	4	10.92
		High	40	168	4	10.94
#2	H	Low	159		4	11.66
		High	159		4	11.49
	V	Low	44		4	12.19
		High	31		4	11.87
	H+V	Low	43	171	4	10.52
		High	32	160	4	10.14

Band n260						
Antenna	Beam Pol.	Channel	Beam ID	Paired With	Feed No.	Antenna Gain [dBi]
#0	H	Low	166		4	11.42
		Mid	166		4	11.6
		High	166		4	11.92
	V	Low	39		4	9.659
		Mid	39		4	10.66
		High	39		4	10.69
	H+V	Low	38	166	4	11.05
		Mid	38	166	4	11.18
		High	38	166	4	11.55
#1	H	Low	171		4	11.38
		Mid	171		4	10.39
		High	171		4	11.06
	V	Low	28		4	11.52
		Mid	28		4	10.93
		High	41		4	11.46
	H+V	Low	29	157	4	11.8
		Mid	29	157	4	11.09
		High	29	157	4	11.02
#2	H	Low	161		4	12.54
		Mid	161		4	12.94
		High	161		4	11.7
	V	Low	46		4	13.55
		Mid	46		4	12.51
		High	46		4	12.17
	H+V	Low	33	161	4	13.52
		Mid	33	161	4	12.82
		High	33	161	4	11.54

Band n261						
Antenna	Beam Pol.	Channel	Beam ID	Paired With	Feed No.	Antenna Gain [dBi]
#0	H	Low	151		4	12.54
		Mid	150		4	12.25
		High	152		4	12.72
	V	Low	23		4	12.91
		Mid	38		4	12.67
		High	22		4	12.28
	H+V	Low	23	151	4	12.33
		Mid	23	151	4	11.67
		High	37	165	4	12.02
#1	H	Low	156		4	11.23
		Mid	169		4	11.39
		High	169		4	11.76
	V	Low	28		4	11.8
		Mid	28		4	11.71
		High	28		4	11.44
	H+V	Low	28	156	4	11.22
		Mid	41	169	4	11.45
		High	41	169	4	11.22
#2	H	Low	161		4	12.7
		Mid	161		4	12.93
		High	174		4	12.7
	V	Low	46		4	12.8
		Mid	46		4	12.84
		High	45		4	11.63
	H+V	Low	33	161	4	12.99
		Mid	33	161	4	13.05
		High	46	174	4	12.41

Radio Module (Tested inside of Panasonic Personal Computer FZ-40)
Model : WW21A (FCC ID ACJ9TGWW21A / ISED certification number 216H-CFWW21A)

Wireless technologies	Dup.	Band	Mode
WCDMA	FDD	2	UMTS Rel. 99 (Data) HSDPA (Rel. 5)
	FDD	4	HSUPA (Rel. 6), HSPA+ (Rel. 7), DC-HSDPA (Rel. 8)
	FDD	5	
LTE	FDD	2	QPSK, 16QAM, 64AQM, 256QAM
	FDD	4	
	FDD	5	Downlink MIMO Support: Yes(2x2, 4x4)
*B42: not used in US (FCC)	FDD	7	Supported band : B2, B4, B7, B25, B38, B41, B42, B48, B66
	FDD	12	
*B48: not used in	FDD	13	Uplink MIMO Support: No
Canada(ISED)	FDD	14	Uplink transmission is limited to a single output stream.
	FDD	17	
	FDD	25	
	FDD	26	
	FDD(Rx only)	29	
	TDD	38	
	TDD	41	
	TDD	42	
	TDD(Rx only)	46	
	TDD	48	
	FDD	66	
	FDD	71	

LTE CA	Downlink	Uplink *B42: not used in US (FCC) / B48: not used in Canada(ISED)
	Maximum 7 carriers	Maximum 2 carriers Supported combination: <Inrta-band contiguous> 7C, 41C, 42C, 48C <Inter-band>2A-5A, 2A-12A, 2A-13A, 4A-5A, 4A-12A, 4A-13A, 5A-7A,5A-66A, 12A-66A, 13A-66A

5G NR (FR1)	FDD	15 kHz	n2	Pi/2 BPSK (DFT-s-OFDM),
	FDD	15 kHz	n5	QPSK (CP-OFDM/DFT-s-OFDM),
*n77, n78: not used in US	TDD	15 kHz	n41	16QAM (CP-OFDM/DFT-s-OFDM),
(FCC)	FDD	15 kHz	n66	64QAM (CP-OFDM/DFT-s-OFDM),
	FDD	15 kHz	n71	256QAM (CP-OFDM/DFT-s-OFDM)
	TDD	30 kHz	n77	Downlink MIMO Support: Yes(2x2, 4x4)
	TDD	30 kHz	n78	Supported band : n2, n41, n66, n77, n78
	-	-	-	Uplink MIMO Support: No
	-	-	-	Uplink transmission is limited to a single output stream.

EN-DC(LTE-FR1 Sub6)	Supported combination	*n77, n78: not used in US (FCC)
(NSA mode only)	LTE Anchor Bands for NR band n2	LTE Band 5/12/13
	LTE Anchor Bands for NR band n5	LTE Band 2/7/66
	LTE Anchor Bands for NR band n41	LTE Band 2/25/26/66
	LTE Anchor Bands for NR band n66	LTE Band 5/12/13/14/71
	LTE Anchor Bands for NR band n71	LTE Band 2/7/66
	LTE Anchor Bands for NR band n77*	LTE Band 41
	LTE Anchor Bands for NR band n78*	LTE Band 2/5/7/12/38/66

Wireless module (Tested inside of Panasonic Personal Computer FZ-40)
Model : WL20B (FCC ID ACJ9TGWL20B / ISED certification number 216H-CFWL20B)

Wireless technologies	Dup.	Band		Mode
WLAN	TDD	2.4GHz	2412-2472	802.11b
			for US	802.11g
			2412-2462	802.11n(20,40)
			for Canada	802.11ax(20,40)
	TDD	5GHz	5180-5240	802.11a
			5260-5320	802.11n(20,40)
			5500-5720	802.11ac(20,40.80.160)
			5745-5825	802.11ax(20,40.80.160)
Bluetooth	TDD	2.4GHz	2402-2480	BR/EDR/LE

*This report is for mmW range

3 Test standard information

3.1 Test Specification

	Part	Title
☒	47 CFR Part 2	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS
☒	47 CFR Part 30	UPPER MICROWAVE FLEXIBLE USE SERVICE

Procedures and KDB

	Name of documents	Title
☒	ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
☒	KDB 842590 D01 v01r02	Upper Microwave Flexible Use Service
☒	KDB 971168 D01 v03r01	Power Meas License Digital Systems

UL Japan, Inc. ’s Work Procedures Procedure

	Name of documents	Title
☒	Work Instructions-ULID-003591	UL Japan, Inc.’s EMI work procedures

3.2 Summary of results

FCC Part Section	Test Description	Test Limit	Test condition	Test result [1]
2.1049	Occupied Bandwidth (OBW)	N/A	Radiated	Reference a)
2.1046 30.202	Equivalent Isotropic Radiated Power (EIRP)	+43 dBm	Radiated	Complied b)
2.1051 30.203	Out Of Band Emissions at Band Edge (OOB)	-13 dBm/MHz for All out-of-band emissions. -5 dBm/MHz from the band edge up to 10% of the channel BW	Radiated	Complied# c)
2.1051 30.203	Spurious Emissions	- 13 dBm / MHz for all out-of-band emissions	Radiated	Complied# d)
2.1055	Frequency Stability	N/A	Radiated	Reference e)

a) Refer to APPENDIX 1 (data of OBW)
b) Refer to APPENDIX 1 (data of EIRP)
c) Refer to APPENDIX 1 (data of OOB)
d) Refer to APPENDIX 1 (data of Spurious Emissions)
e) Refer to APPENDIX 1 (data of Frequency Stability)

[1] Complied: The data of this test item has enough margin, more than the measurement uncertainty.
Complied# The data of this test item meets the limits unless the measurement uncertainty is taken into consideration.

3.3 Additions or deviations to standard

Other than above, no addition, exclusion nor deviation has been made from the standard.

3.4 Uncertainty

There is no applicable rule of uncertainty in this applied standard. Therefore, the results are derived depending on whether or not laboratory uncertainty is applied.

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor k=2.

Radiated emission		Uncertainty (+/-)	Measurement distance
9 kHz to 30 MHz		3.3 dB	3 m
		3.2 dB	10 m
30 MHz to 200 MHz	(Horizontal)	4.8 dB	3 m
	(Vertical)	5.0 dB	
200 MHz to 1000 MHz	(Horizontal)	5.2 dB	
	(Vertical)	6.3 dB	
30 MHz to 200 MHz	(Horizontal)	4.8 dB	10 m
	(Vertical)	4.8 dB	
200 MHz to 1000 MHz	(Horizontal)	5.0 dB	
	(Vertical)	5.0 dB	
1 GHz to 6 GHz		4.9 dB	3 m
6 GHz to 18 GHz		5.2 dB	
10 GHz to 26.5 GHz		5.5 dB	1 m
26.5 GHz to 40 GHz		5.5 dB	
1 GHz to 18 GHz		5.2 dB	10 m
40 GHz - 50 GHz		4.1 dB	>= 0.5 m
50 GHz - 75 GHz		5.1 dB	>= 0.5 m
75 GHz - 110 GHz		5.4 dB	>= 0.5 m
110 GHz - 170 GHz (Extension Module)		4.8 dB	>= 3.8 cm
170 GHz - 260 GHz (Extension Module)		7.8 dB	>= 2.5 cm

Frequecy stability	Uncertainty (+/-)
Frequecy stability	2.08.E-07

3.5 Test Location

UL Japan, Inc. Ise EMC Lab.
*A2LA Certificate Number: 5107.02 / FCC Test Firm Registration Number: 884919
ISED Lab Company Number: 2973C / CAB identifier: JP0002
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone: +81 596 24 8999, Facsimile: +81 596 24 8124

Test site	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms	Maximum measurement distance
No.1 semi-anechoic chamber	19.2 x 11.2 x 7.7	7.0 x 6.0	No.1 Power source room	10 m
No.2 semi-anechoic chamber	7.5 x 5.8 x 5.2	4.0 x 4.0	-	3 m
No.3 semi-anechoic chamber	12.0 x 8.5 x 5.9	6.8 x 5.75	No.3 Preparation room	3 m
No.3 shielded room	4.0 x 6.0 x 2.7	N/A	-	-
No.4 semi-anechoic chamber	12.0 x 8.5 x 5.9	6.8 x 5.75	No.4 Preparation room	3 m
No.4 shielded room	4.0 x 6.0 x 2.7	N/A	-	-
No.5 semi-anechoic chamber	6.0 x 6.0 x 3.9	6.0 x 6.0	-	-
No.5 measurement room	6.4 x 6.4 x 3.0	6.4 x 6.4	-	-
No.6 shielded room	4.0 x 4.5 x 2.7	4.0 x 4.5	-	-
No.6 measurement room	4.75 x 5.4 x 3.0	4.75 x 4.15	-	-
No.7 shielded room	4.7 x 7.5 x 2.7	4.7 x 7.5	-	-
No.8 measurement room	3.1 x 5.0 x 2.7	3.1 x 5.0	-	-
No.9 measurement room	8.8 x 4.6 x 2.8	2.4 x 2.4	-	-
No.10 shielded room	3.8 x 2.8 x 2.8	3.8 x 2.8	-	-
No.11 measurement room	4.0 x 3.4 x 2.5	N/A	-	-
No.12 measurement room	2.6 x 3.4 x 2.5	N/A	-	-

* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0 m for No.1, No.2, No.3, and No.4 semi-anechoic chambers and No.3 and No.4 shielded rooms.

3.6 Test data, Test instruments, and Test set up

Refer to APPENDIX.

4 Operation of EUT during testing

4.1 Mode and channel plan

All testing was performed using FTM (Factory Test Mode) software at continuous Tx operation. When implemented out in the field, the EUT will operate with a maximum uplink configuration (i.e., a maximum uplink duty cycle of 100%).

The beam IDs were selected based on EIRP simulation resulting the highest value provided from customer. (Refer Table 4-2 to 4-5)

All modulations, RB size, Cyclic Prefix OFDM (CP-OFDM), Discrete Fourier Transform Spread OFDM (DFT-s-OFDM) and Subcarrier Spacing (SCS) were investigated and the worst-case configuration result are reported.

The EUT cannot activate with the some 5G module antennas, while the test only one antenna was active.

Table 4-1 channel plan

Band	CC	SCK [kHz]	CBW [MHz]	Channel	Ch No.	Frequency [MHz]
n258a	1	120	50	Low	2017083	24275.04
				High	2019582	24424.98
			100	Low	2017499	24300.00
				High	2019165	24399.96
n258b	1	120	50	Low	2025417	24775.08
				High	2032915	25224.96
			100	Low	2025833	24800.04
				High	2032499	25200.00
n260	1	120	50	Low	2229583	37025.04
				Mid	2254165	38499.96
				High	2278749	39975.00
			100	Low	2229999	37050.00
				Mid	2254165	38499.96
				High	2278331	39949.92
n261	1	120	50	Low	2071249	27525.00
				Mid	2077915	27924.96
				High	2084581	28324.92
			100	Low	2071667	27550.08
				Mid	2077915	27924.96
				High	2084165	28299.96

“CC” refers to “Component Carriers”.

Table 4-2 worst beam ID (band n258a)

Antenna	Beam Pol.	Channel	Beam ID	Paired with
#0	H	Low	151	-
		High	151	-
	V	Low	23	-
		High	22	-
	H+V	Low	24	152
		High	24	152
#1	H	Low	168	-
		High	168	-
	V	Low	28	-
		High	28	-
	H+V	Low	25	153
		High	25	153
#2	H	Low	172	-
		High	172	-
	V	Low	44	-
		High	44	-
	H+V	Low	44	172
		High	44	172

Table 4-3 worst beam ID (band n258b)

Antenna	Beam Pol.	Channel	Beam ID	Paired with
#0	H	Low	151	-
		High	163	-
	V	Low	36	-
		High	36	-
	H+V	Low	24	152
		High	36	164
#1	H	Low	156	-
		High	156	-
	V	Low	28	-
		High	40	-
	H+V	Low	25	153
		High	40	168
#2	H	Low	159	-
		High	159	-
	V	Low	44	-
		High	31	-
	H+V	Low	43	171
		High	32	160

Table 4-4 worst beam ID (band n260)

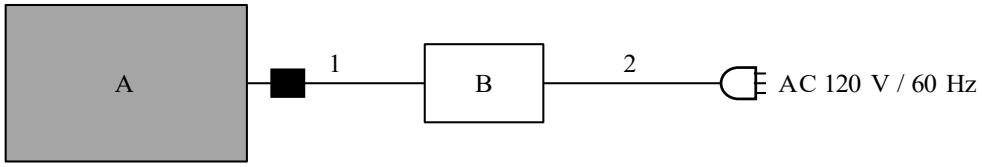
Antenna	Beam Pol.	Channel	Beam ID	Paired with
#0	H	Low	151	-
		Mid	150	-
		High	152	-
	V	Low	23	-
		Mid	38	-
		High	22	-
	H+V	Low	23	151
		Mid	23	151
		High	37	165
#1	H	Low	156	-
		Mid	169	-
		High	169	-
	V	Low	28	-
		Mid	28	-
		High	28	-
	H+V	Low	28	156
		Mid	41	169
		High	41	169
#2	H	Low	161	-
		Mid	161	-
		High	174	-
	V	Low	46	-
		Mid	46	-
		High	45	-
	H+V	Low	33	161
		Mid	33	161
		High	46	174

Table 4-5 worst beam ID (band n261)

Antenna	Beam Pol.	Channel	Beam ID	Paired with
#0	H	Low	166	-
		Mid	166	-
		High	166	-
	V	Low	39	-
		Mid	39	-
		High	39	-
	H+V	Low	38	166
		Mid	38	166
		High	38	166
#1	H	Low	171	-
		Mid	171	-
		High	171	-
	V	Low	28	-
		Mid	28	-
		High	41	-
	H+V	Low	29	157
		Mid	29	157
		High	29	157
#2	H	Low	161	-
		Mid	161	-
		High	161	-
	V	Low	46	-
		Mid	46	-
		High	46	-
	H+V	Low	33	161
		Mid	33	161
		High	33	161

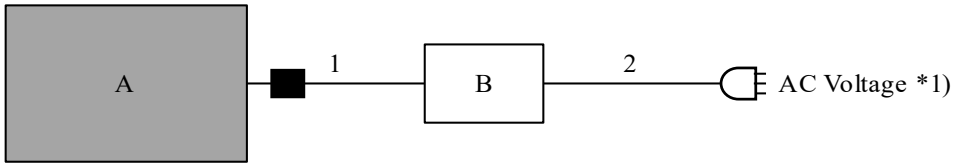
4.2 Configuration and peripherals

Other than Frequency stability test

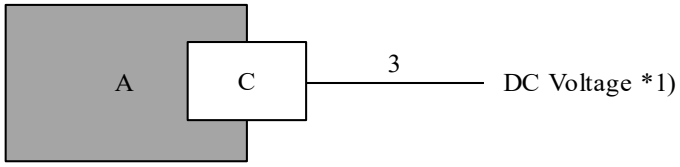


Frequency stability test

AC



DC



*1) Refer to Section 6 for tested voltage
■ : Standard Ferrite Core

* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Personal Computer	FZ-40	1LTSA00071 *2) 1LTSA00158 *3)	Panasonic Connect Co., Ltd.	EUT
B	AC Adapter	CF-AA5713A M7	5713AM7219029666WB	Panasonic Connect Co., Ltd.	EUT
C	Battery Jig	FZ-VZSU1XU	M9PZ-20256	Panasonic Connect Co., Ltd.	-

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	DC Cable	1.4	Unshielded	Unshielded	-
2	AC Cable	1.9	Unshielded	Unshielded	-
3	DC Cable	1.6	Unshielded	Unshielded	-

*2) Used for Radiated spurious emission (RSE) tests for Antenna #2, Band edge emission (OOB) test n261 for Antenna #2
*3) Used for tests other than *2)

Software and version information

Power of the EUT was set by the software as follows;
Power settings: 120 (When this value was set, the transmitting power was controlled to the same value as production maximum power setting values)
Software: Qualcomm Radio Control Toolkit
Version: 4.0.00197.0

This setting of software is the worst case.
Any conditions under the normal use do not exceed the condition of setting.
In addition, end users cannot change the settings of the output power of the product.

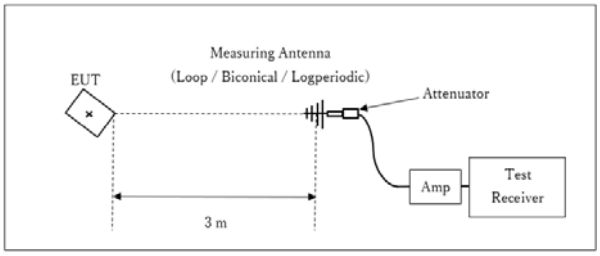
5 Radiated emission

5.1 Far-field distance and measurement distance

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntable. The measurement distance is in the far field per formula $2D^2 / \lambda$ where D is the larger dimension of the Rx antenna. For fundamental or band edge emissions, the largest far-field distance of either the EUT antenna or measurement antenna shall be used. For above 18 GHz spurious emissions, the far-field distance will be based on the measured antenna. In this case, the measurement antenna has the largest far-field distance. The EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest EIRP reading on the receive spectrum analyzer.

Figure 5-1 General test set up

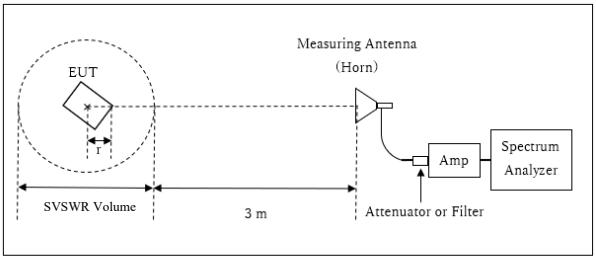
Below 1 GHz



× : Center of turn table

Test Distance: 3 m

1 GHz - 18 GHz



r : Radius of an outer periphery of EUT
× : Center of turn table

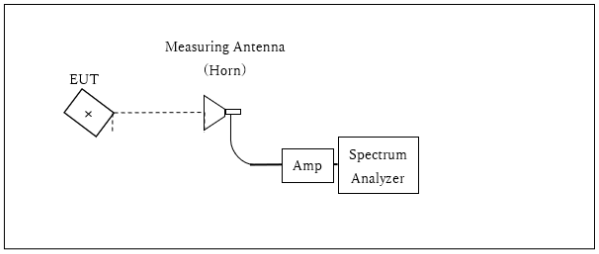
Test Distance: (3 + SVSWR Volume /2) - r = 4.0 m

SVSWR Volume : 2.0 m
r = 0m

(SVSWR Volume has been calibrated based on CISPR 16-1-4.)

* The test was performed with r = 0.0 m since EUT is small and it was the rather conservative condition.

18 GHz - 200 GHz



× : Center of turn table

Test Distance:
OBW and EIRP: Refer Table 5-1
OOB: Refer Table 5-2
RSE: Refer Table 5-3

For each axis X, Y, and Z (see Appendix C.3) of the EUT preliminary measurements to determine the worst-case polarization/positioning of the emissions were made by manually moving the measuring antenna 360 degrees around its axis, and the height of the measuring antenna varied between 1 m and 4 m. This method follows the ANSI C63.26 section 5.5.2.3 and is consistent with procedures in KDB 842590. For final measurements the EUT was then located on the turntable positioned at an angle consistent with the worst case positioning from the preliminary measurements in each axis for each measurement antenna polarization.

Table 5-1 Measurement Distance (OBW and EIRP)

Test Range		Upper	Rx Antenna	Larger dimention	Far Field	Measurement
Lower	Upper	Wavelength	(Local ID)	of the	Distance	Distance
		λ		Rx Antenna	r	D
[GHz]	[GHz]	[m]		[m]	[m]	[m]
18	26.5	0.0113	MHA-02	0.048	0.415	1.0
26.5	33	0.0091	MHA-03	0.035	0.270	1.0
33	50	0.0060	MHA-07	0.069	1.603	1.7

Table 5-2 Measurement Distance (OOB)

Test Range		Upper	Rx Antenna	Larger dimention	Far Field	Measurement
Lower	Upper	Wavelength	(Local ID)	of the	Distance	Distance
		λ		Rx Antenna	r	D
[GHz]	[GHz]	[m]		[m]	[m]	[m]
18	26.5	0.0113	MHA-02	0.048	0.415	1.0
26.5	40	0.0075	MHA-03	0.035	0.327	1.0
40	50	0.0060	MHA-31	0.042	0.602	3.0

Table 5-3 Measurement Distance (RSE)

Test Range		Upper	Rx Antenna	Larger dimention	Far Field	Measurement
Lower	Upper	Wavelength	(Local ID)	of the	Distance	Distance
		λ		Rx Antenna	r	D
[GHz]	[GHz]	[m]		[m]	[m]	[m]
18	26.5	0.0113	MHA-02	0.048	0.415	1.0
26.5	40	0.0075	MHA-03	0.035	0.327	0.5
40	50	0.0060	MHA-07	0.042	0.602	3.0
50	75	0.0040	MHA-33	0.047	1.126	2.0
75	100	0.0030	MHA-35	0.033	0.711	2.0
100	110	0.0027	MHA-35	0.033	0.782	1.0
110	170	0.0018	MHA-24	0.020	0.460	1.0
170	200	0.0015	MHA-27	0.013	0.237	1.0

5.2 Occupied Bandwidth (OBW)

Limit:
For reporting purposes only

Test procedure:
KDB 842590 D01 Upper Microwave Flexible Use Service v01 Section 4.3
ANSI C63.26-2015 Clause 5.4.3.

99% bandwidth measurement function of the signal analyzer was used to measure 99% occupied.

- RBW = 1 - 5 % of OBW
- VBW ≥ 3 x RBW
- Detector = Peak
- Trace mode = max hold
- Sweep = auto couple
- The trace was allowed to stabilize

All modulations were investigated in single beam/single beam-dual/paired beam to determine worst case configuration.
All modes of operations were investigated and the results were reported in this section.

Test engineer and Test condition: Refer Appendix A.6

5.3 Equivalent Isotropic Radiated Power (EIRP)

Limit:
30.202 (b) - For mobile stations, the average power of the sum of all antenna elements is limited to a maximum EIRP of +43 dBm.

Test procedure:
KDB 842590 D01 Upper Microwave Flexible Use Service v01 Section 4.2
ANSI C63.26-2015 Clause 5.2, Clause 5.5, Clause 6.4, and Annex C.5.2

Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.

- RBW = 1 - 5% of the OBW, not to exceed 1 MHz
- VBW ≥ 3 x RBW
- Span = 2x to 3x the OBW
- Number of measurement points in sweep > 2 x span / RBW
- Sweep time = auto-couple
- Detector = RMS
- Trace mode = Average over 100 sweeps

EIRP was calculated using the equations on section 5.2.7 of ANSI C63.26-2015.
Sample calculation of EIRP:
EIRP [dBm] = *E* [dBuV/m] + 20log(*D*) -104.8; where *D* is measurement distance (in the far field region) in m.

Sample calculation of The field strength *E*:
E [dBuV/m] = S/A Channel Power Level [dBm] + Rx Antenna Factor [dB/m] + Cable Loss [dB] +107.

That is, set the spectrum offset including sum of the following correction factor (*CF*).

Sample calculation of *CF*:
CF [dB] = Antenna Factor [dB/m] + Cable Loss [dB] +107 + 20log(D) – 104.8

Example:
CF [dB] = Antenna Factor [dB/m] + Cable Loss [dB] +107 + 20log(D) – 104.8
= 40.31 + 9.19 + 107 + 20log(1) - 104.8
= 51.70 [dB]

The appropriate far field test distance, listed on Section 5, was used at test.

Radiated power levels are investigated while the receive antenna was rotated through all angles to determine the worst-case polarization/positioning. EUT was set for each mode X axis. (See Appendix C.3)

For antenna every antenna, π/2-BPSK, QPSK, 16QAM and 64QAM modulations were all investigated in H beam, V beam, H+V beam configurations.

For H+V beam configuration, EIRP of H polarization and V polarization were measured respectively, and EIRP of H+V beam configuration was calculated by totaling the EIRP of H polarization and V polarization.

Single RB (1RB) and Full RB Inner allocations were measured.

Test engineer and Test condition: Refer Appendix A.6

Result: Pass

5.4 Band edge emission (OOB)

Limit:
30.203 (a) - The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be −13 dBm/MHz or lower. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be −5 dBm/MHz or lower.

Test procedure:
KDB 842590 D01 Upper Microwave Flexible Use Service v01 Section 4.2
ANSI C63.26-2015 Clause 5.2, Clause 5.5, Clause 6.4, and Annex C.5.2

The band edge emissions are conducted below settings.

- RBW = 1 MHz
- VBW ≥ 3 x RBW
- Number of measurement points in sweep > 2 x span / RBW
- Sweep time = auto-couple
- Detector = RMS
- Trace mode = Average

Band Edge measurements were measured as EIRP for direct comparison to the 30.203 TRP limit to demonstrate compliance.

The appropriate far field test distance, listed on Section 5, was used at test.

EIRP was calculated using the equations on section 5.2.7 of ANSI C63.26-2015.
Sample calculation of EIRP:
EIRP [dBm] = *E* [dBuV/m] + 20log(*D*) -104.8; where *D* is measurement distance (in the far field region) in m.

Sample calculation of The field strength *E*:
E [dBuV/m] = S/A Reading Level [dBm] + Rx Antenna Factor [dB/m] – Rx Amp. Gain [dB] + Cable Loss [dB] +107.

That is, set the spectrum offset including sum of the following correction factor (*CF*).

Sample calculation of *CF*:
CF [dB] = Rx Antenna Factor [dB/m] -Rx Amp. Gain [dB] + Cable Loss [dB] +107 + 20log(*D*) – 104.8 + 3

Example:
CF [dB] = Antenna Factor [dB/m] -Rx Amp. Gain [dB] + Cable Loss [dB] +107 + 20log(D) – 104.8 + 3
= 41.41 -35.17 + 7.68 + 107 + 20log(3) - 104.8
= 25.77 [dB]

BPSK, QPSK, 16QAM and 64QAM modulations at DFT-s-OFDM were all investigated in H+V beam configurations.

The highest band edge emissions were for H+V beam configuration consistent with this also being the configuration with the highest EIRP.

Single RB (1RB) and Full RB Outer allocations were measured.

The test results and limit are rounded off to two decimals place, so some differences might be observed.

Test engineer and Test condition: Refer Appendix A.6

Result: Pass

5.5 Radiated spurious emission (RSE)

Limit:
30.203 - (a) The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be -13 dBm/MHz or lower.

Test procedure:
KDB 842590 D01 Upper Microwave Flexible Use Service v01 Section 4.4.2 and Section 4.4.3
ANSI C63.26-2015 Clause 5.5 and Annex C.5.2

All radiated spurious emissions were measured as EIRP to compare with the §30.203 TRP limits to demonstrate compliance.

RSE was investigated from 9 kHz - 200 GHz on n260, 9 kHz - 100 GHz on n258a, n258b and n261.

EIRP was calculated using the equations on section 5.2.7 of ANSI C63.26-2015.
Sample calculation of EIRP:
EIRP [dBm] = *E* [dBuV/m] + 20log(*D*) -104.8; where *D* is measurement distance (in the far field region) in m.

Sample calculation of The field strength *E*:
Below 1 GHz
E [dBuV/m] = S/A Reading Level [dBuV] + Rx Antenna Factor [dB/m] + Loss(Cable + ATT) [dB] - Rx Amp. Gain [dB]

Above 1 GHz
E [dBuV/m] = S/A Reading Level [dBm] + Rx Antenna Factor [dB/m] – Rx Amp. Gain [dB] + Loss(Cable + External harmonic Mixer(Only used above 50 GHz)) [dB] +107.

That is, correct the S / A Reading Level with the sum of the following correction factor (*CF*).

Sample calculation of *CF*:
CF [dB] = Rx Antenna Factor [dB/m] -Rx Amp. Gain [dB] + Loss +107 + 20log(D) – 104.8

Example:
CF [dB] = Tx Antenna Factor [dB/m] -Rx Amp. Gain [dB] + Loss +107 + 20log(D) – 104.8
= 40.35 – 32.05 + 8.53 + 107 + 20log(1) - 104.8
= 19.03 [dB]

The chart in the data were not corrected by *CF*.
The corrected EIRP at the frequency at which the emissions were detected were listed in the table.

RSEs from 18 - 50 GHz were measured using a spectrum analyzer with an internal preamplifier when applicable. Emissions above 50 GHz were measured using an external harmonic mixer with spectrum analyzer, while an external Low noise amplifier (LNA) was used when applicable. RSEs from 1 - 200 GHz were measured at 1.5 meters height.

All RSEs were measured for the configuration with the highest EIRP (H +V configuration with a single RB) as representing the worst case.
Preliminary radiated emissions tests on the low, mid and high channels indicated that the worst case radiated spurious emissions were on the channel with the highest power and so only the test data for that channel is included in this report. (Refer Table 5-4)

Table 5-4 RSEs test mode (Worst case)

Band	Antenna	Beam Pol.	Bandwidth [MHz]	Transmission scheme	Modulation	Channel	RB (Size/Offset)
n258a	#0	H+V	50	DFT-s -OFDM	QPSK	Low	1/11
	#1	H+V	50	DFT-s -OFDM	QPSK	Low	1/11
	#2	H+V	50	DFT-s -OFDM	QPSK	Low	1/11
n258b	#0	H+V	50	DFT-s -OFDM	QPSK	High	1/21
	#1	H+V	50	DFT-s -OFDM	QPSK	High	1/21
	#2	H+V	50	DFT-s -OFDM	QPSK	Low	1/11
n260	#0	H+V	50	DFT-s -OFDM	QPSK	Low	1/11
	#1	H+V	50	DFT-s -OFDM	QPSK	Low	1/11
	#2	H+V	50	DFT-s -OFDM	QPSK	Low	1/11
n261	#0	H+V	50	DFT-s -OFDM	QPSK	Low	1/11
	#1	H+V	50	DFT-s -OFDM	QPSK	Low	1/11
	#2	H+V	50	DFT-s -OFDM	QPSK	Low	1/11

As the single RB with 1CC mode has the highest power and is the same for all channel bandwidths, therefore the single RB with 1CC for the narrowest channel bandwidth was used as the worst case for purposes of RSE measurements.

The emissions in the table show the maximum values tested for the axes at X, Y and Z.

Where the measured EIRP value is within 2 dB of the limit, a TRP measurement is made, otherwise the EIRP value is compared with the §30.203 TRP limits to demonstrate compliance.

The test results and limit are rounded off to two decimals place, so some differences might be observed.

Test engineer and Test condition: Refer Appendix A.6

Result: Pass

6 Frequency stability

Limit:
For reporting purposes only

Test procedure:
KDB 842590 D01 Upper Microwave Flexible Use Service v01 Section 4.5
ANSI C63.26-2015 Clause 5.6

Test procedures for temperature variation:

1. Position the EUT in temperature/humidity chamber with power off.
2. Set chamber temperature to -30 °C and stabilize the EUT for at least 30 minutes.
3. Record maximum change in frequency within one minute after powering the EUT.
4. Increase chamber temperature at 10 °C intervals from -30 °C to 50 °C. Record maximum change in frequency at each temperature.
5. A period of at least 30 minutes is provided to allow stabilization of the equipment at each temperature level.

Tested temp. = -30 °C to +50 °C

Test procedures for voltage variation:

1. Position the EUT in temperature/humidity chamber with power off.
2. Set chamber temperature to 20 °C.
3. Record maximum frequency change within one minute after powering the EUT.
4. The test voltage is changed from 85 % to 115 % of the nominal value of AC and DC as follows. For DC, test with endpoint voltage.

Tested voltage range = (85 % to 115 %)
AC

100 %:	120 V / 60 Hz
85 %:	138 V / 60 Hz
115 %:	102 V / 60 Hz

DC

100 %:	10.80 V
85 %:	9.18 V
115 %:	12.42 V
End point:	6.95 V

Since the difference in output frequency of each antenna was confirmed at pre-check and there was no difference, the measurements were performed with the CW signal on antenna #0 as a representative.

Test engineer and Test condition: Refer Appendix A.6

Appendix A Test data

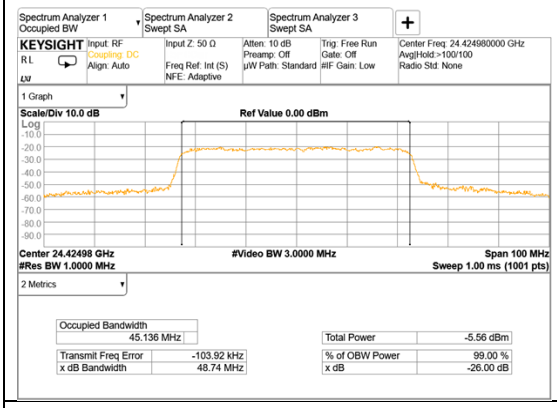
A.1 OBW

Band n258a

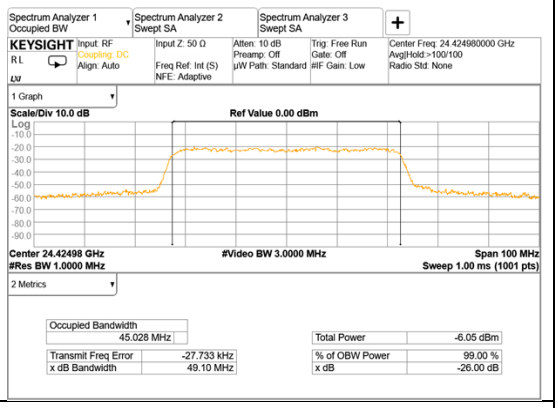
Antenna	Bandwidth [MHz]	Transmission scheme	Modulation	OBW [MHz]
#0	50	CP-OFDM	QPSK	45.136
#0	50	CP-OFDM	16QAM	45.028
#0	50	CP-OFDM	64QAM	45.028
#0	50	DFT-s-OFDM	π/2-BPSK	45.193
#0	50	DFT-s-OFDM	QPSK	45.015
#0	50	DFT-s-OFDM	16QAM	45.432
#0	50	DFT-s-OFDM	64QAM	45.143
#0	100	CP-OFDM	QPSK	92.787
#0	100	CP-OFDM	16QAM	92.882
#0	100	CP-OFDM	64QAM	92.621
#0	100	DFT-s-OFDM	π/2-BPSK	90.306
#0	100	DFT-s-OFDM	QPSK	90.495
#0	100	DFT-s-OFDM	16QAM	90.395
#0	100	DFT-s-OFDM	64QAM	90.261
#1	50	CP-OFDM	QPSK	45.303
#1	50	CP-OFDM	16QAM	45.185
#1	50	CP-OFDM	64QAM	45.112
#1	50	DFT-s-OFDM	π/2-BPSK	44.968
#1	50	DFT-s-OFDM	QPSK	45.193
#1	50	DFT-s-OFDM	16QAM	45.269
#1	50	DFT-s-OFDM	64QAM	45.074
#1	100	CP-OFDM	QPSK	92.574
#1	100	CP-OFDM	16QAM	92.607
#1	100	CP-OFDM	64QAM	92.408
#1	100	DFT-s-OFDM	π/2-BPSK	90.584
#1	100	DFT-s-OFDM	QPSK	90.536
#1	100	DFT-s-OFDM	16QAM	90.659
#1	100	DFT-s-OFDM	64QAM	90.603
#2	50	CP-OFDM	QPSK	45.249
#2	50	CP-OFDM	16QAM	45.187
#2	50	CP-OFDM	64QAM	45.064
#2	50	DFT-s-OFDM	π/2-BPSK	45.046
#2	50	DFT-s-OFDM	QPSK	45.199
#2	50	DFT-s-OFDM	16QAM	45.294
#2	50	DFT-s-OFDM	64QAM	45.086
#2	100	CP-OFDM	QPSK	92.535
#2	100	CP-OFDM	16QAM	92.620
#2	100	CP-OFDM	64QAM	92.207
#2	100	DFT-s-OFDM	π/2-BPSK	90.416
#2	100	DFT-s-OFDM	QPSK	90.504
#2	100	DFT-s-OFDM	16QAM	90.560
#2	100	DFT-s-OFDM	64QAM	90.443

Band n258a, Antenna #0, 50 MHz

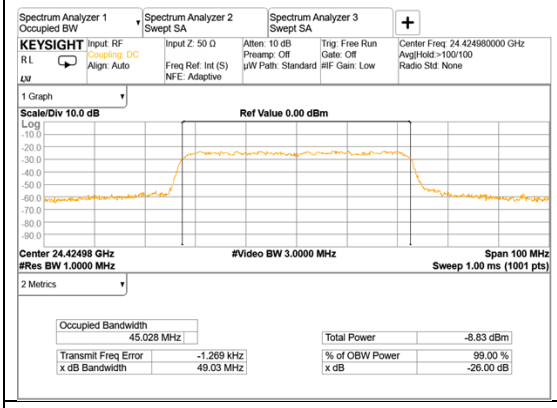
CP-OFDM, QPSK



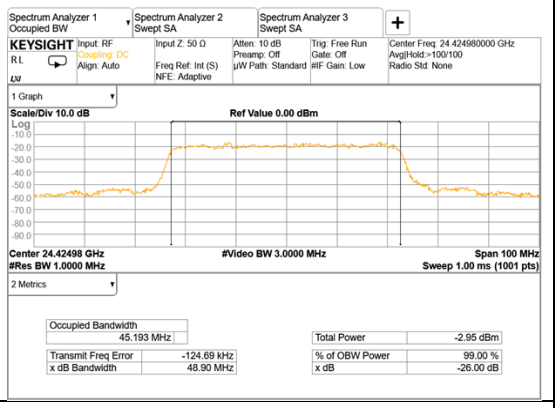
CP-OFDM, 16QAM



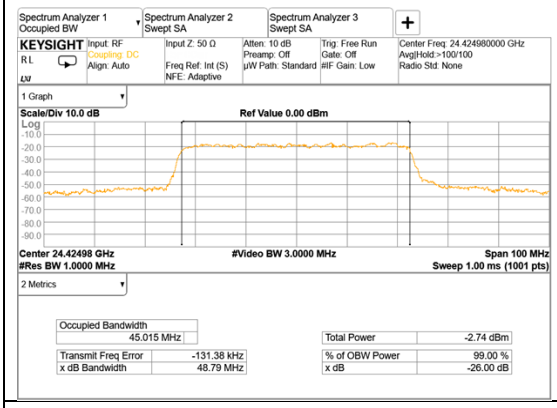
CP-OFDM, 64QAM



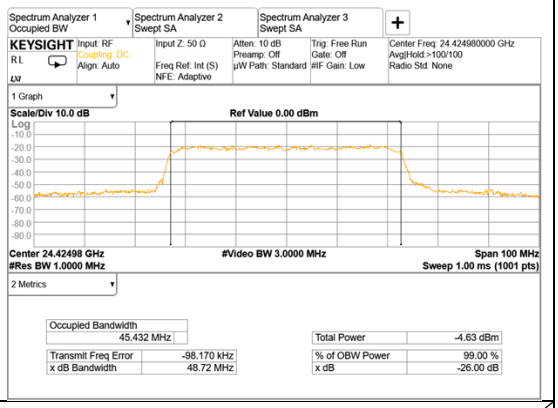
DFT-s-OFDM, π/2-BPSK



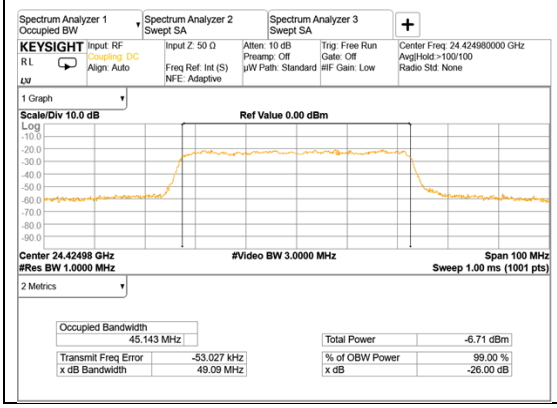
DFT-s-OFDM, QPSK



DFT-s-OFDM, 16QAM

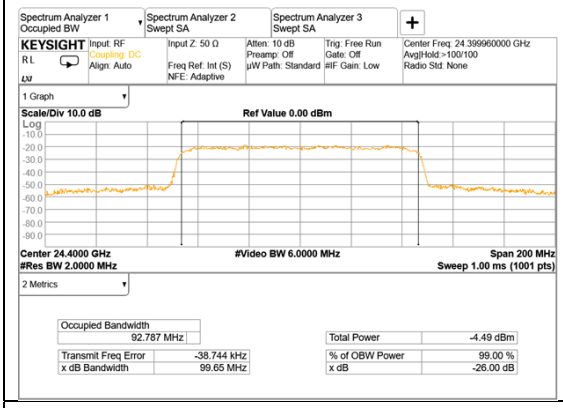


DFT-s-OFDM, 64QAM

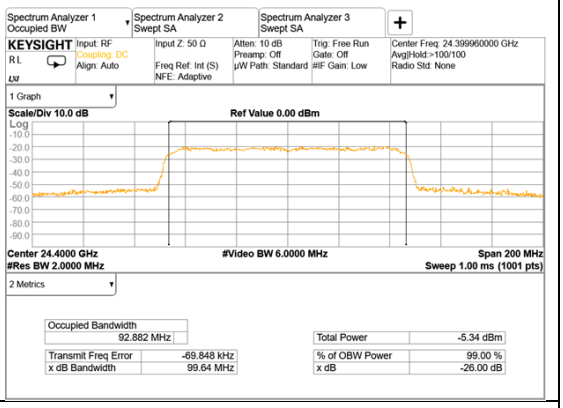


Band n258a, Antenna #0, 100 MHz

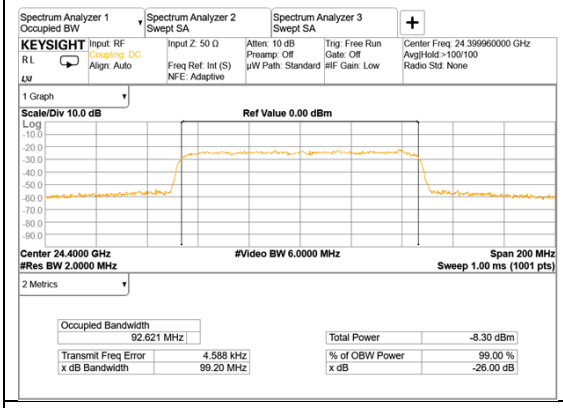
CP-OFDM, QPSK



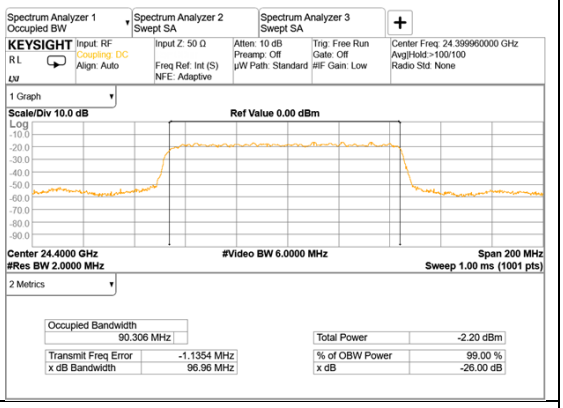
CP-OFDM, 16QAM



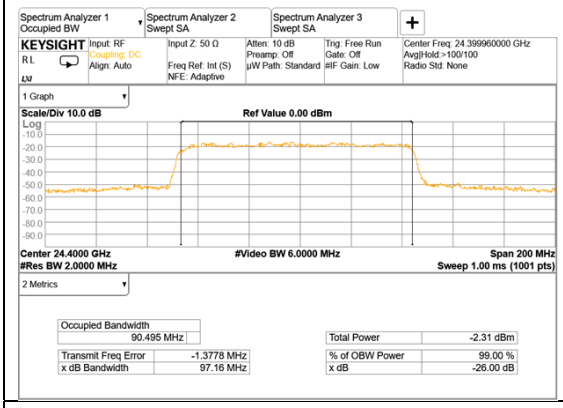
CP-OFDM, 64QAM



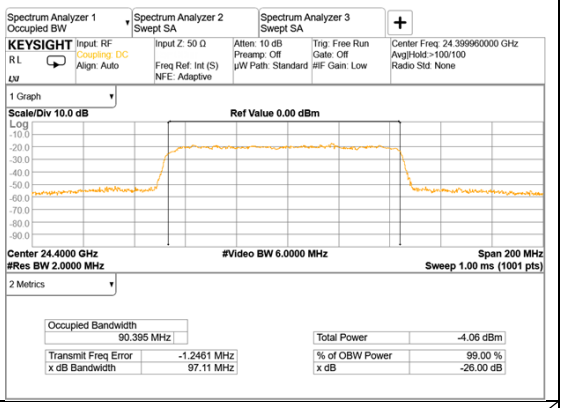
DFT-s-OFDM, $\pi/2$-BPSK



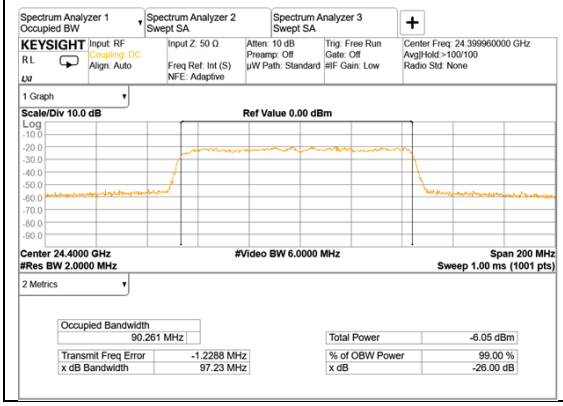
DFT-s-OFDM, QPSK



DFT-s-OFDM, 16QAM

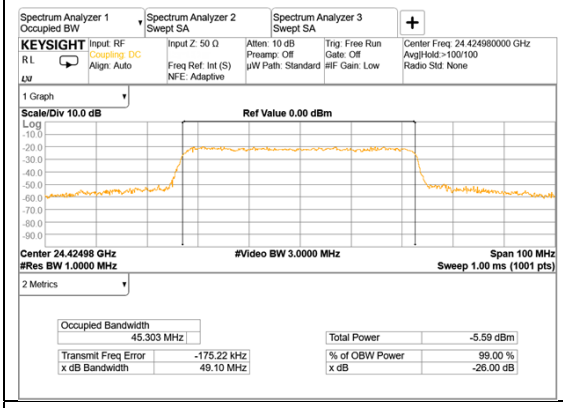


DFT-s-OFDM, 64QAM

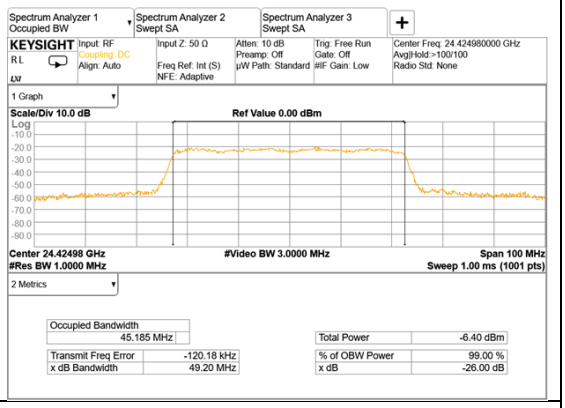


Band n258a, Antenna #1, 50 MHz

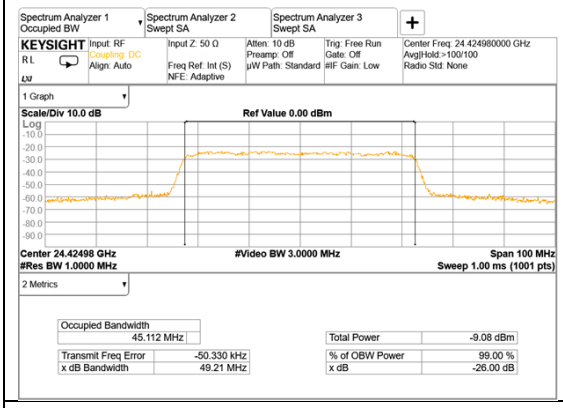
CP-OFDM, QPSK



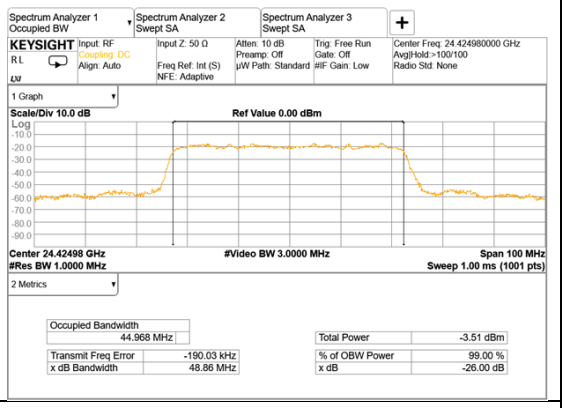
CP-OFDM, 16QAM



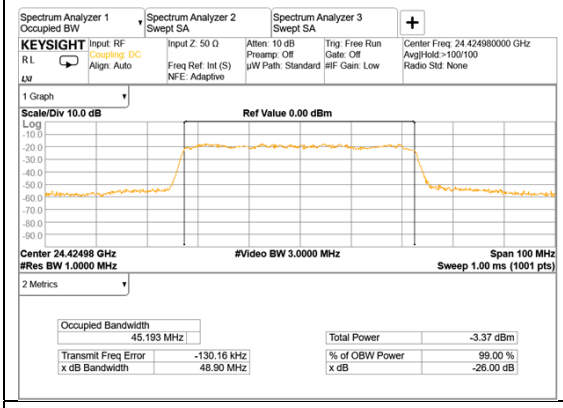
CP-OFDM, 64QAM



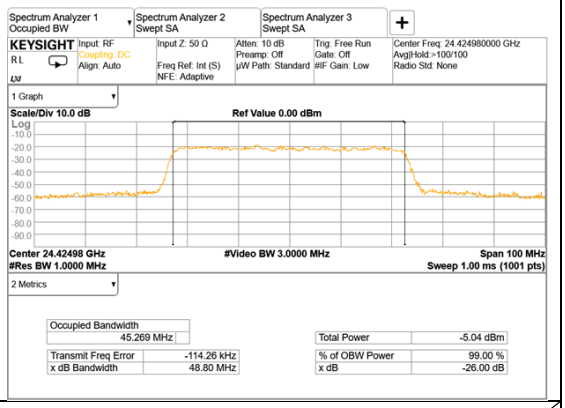
DFT-s-OFDM, π/2-BPSK



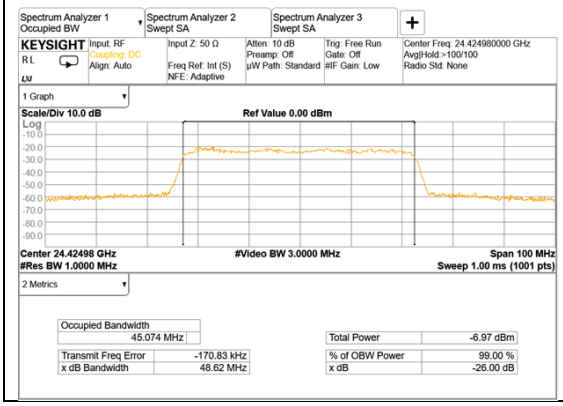
DFT-s-OFDM, QPSK



DFT-s-OFDM, 16QAM

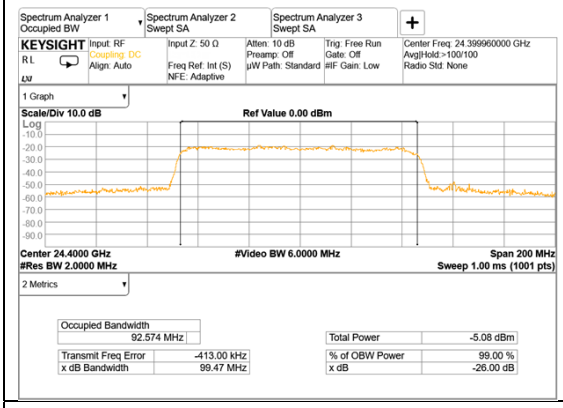


DFT-s-OFDM, 64QAM

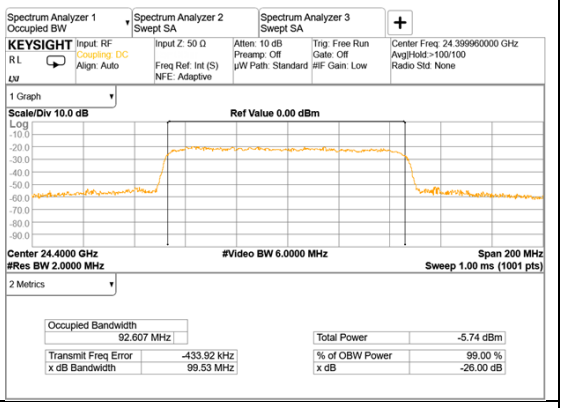


Band n258a, Antenna #1, 100 MHz

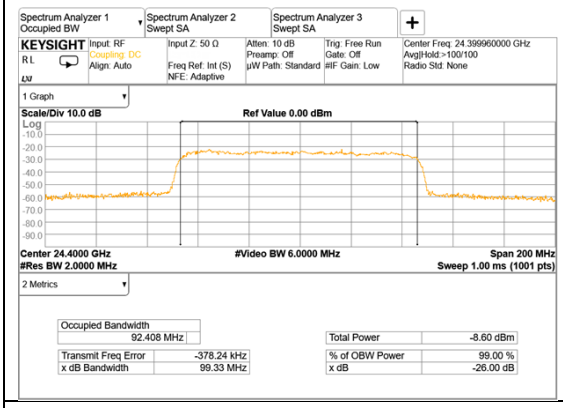
CP-OFDM, QPSK



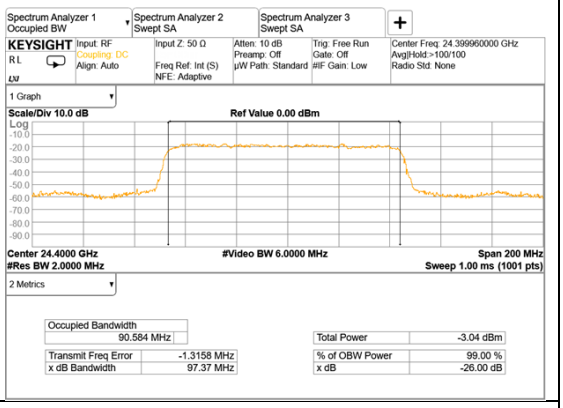
CP-OFDM, 16QAM



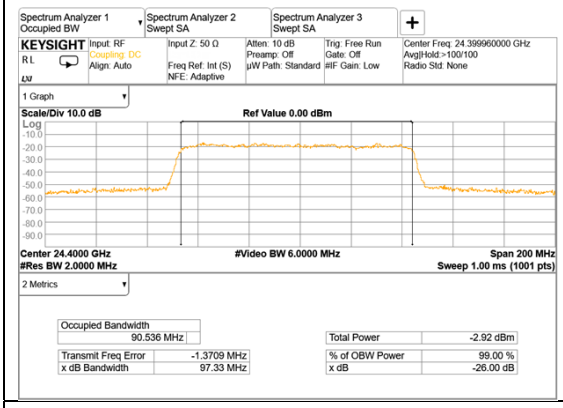
CP-OFDM, 64QAM



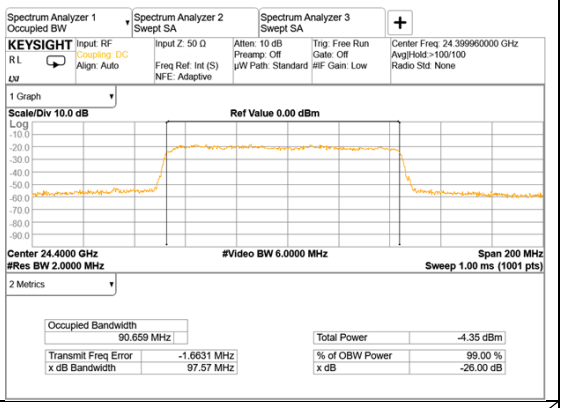
DFT-s-OFDM, π/2-BPSK



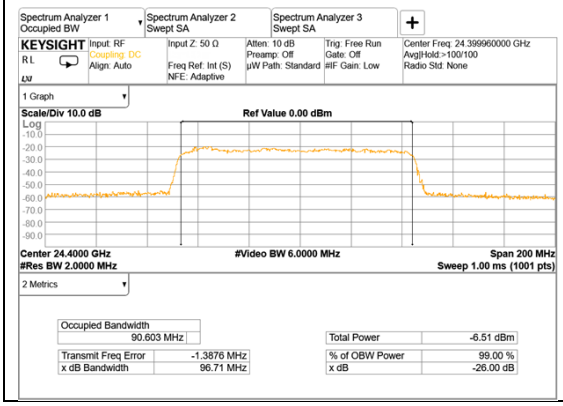
DFT-s-OFDM, QPSK



DFT-s-OFDM, 16QAM

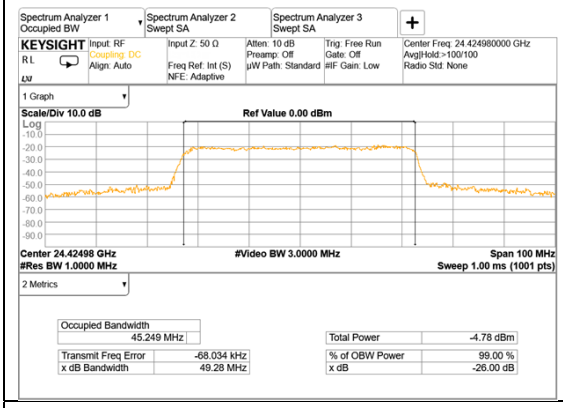


DFT-s-OFDM, 64QAM

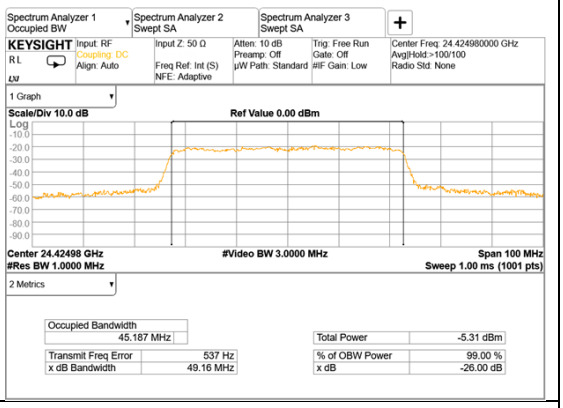


Band n258a, Antenna #2, 50 MHz

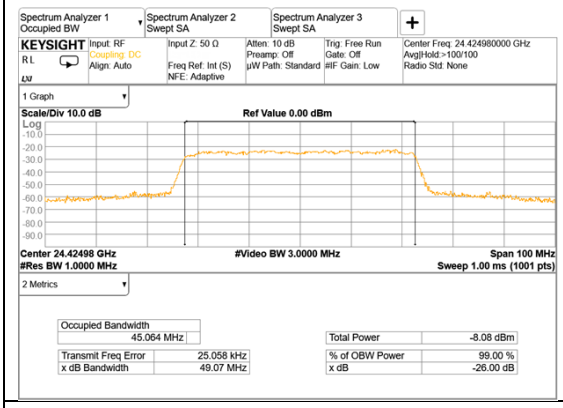
CP-OFDM, QPSK



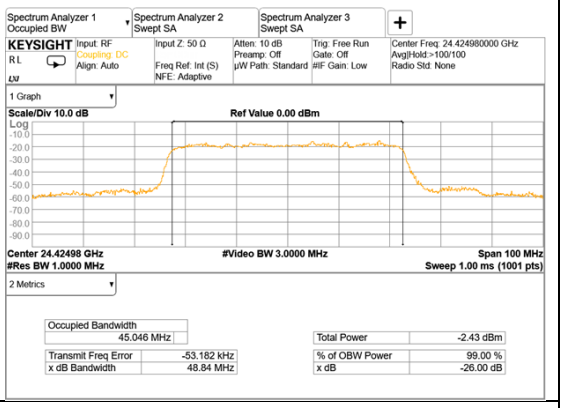
CP-OFDM, 16QAM



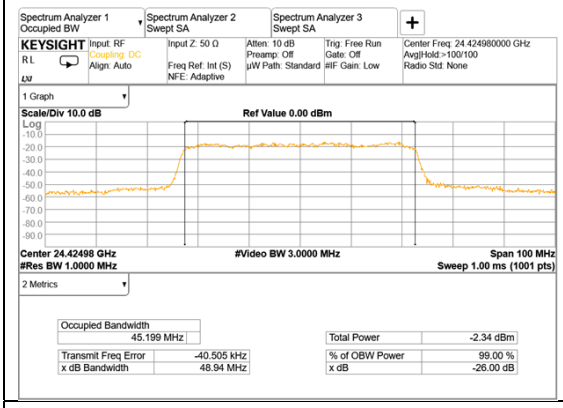
CP-OFDM, 64QAM



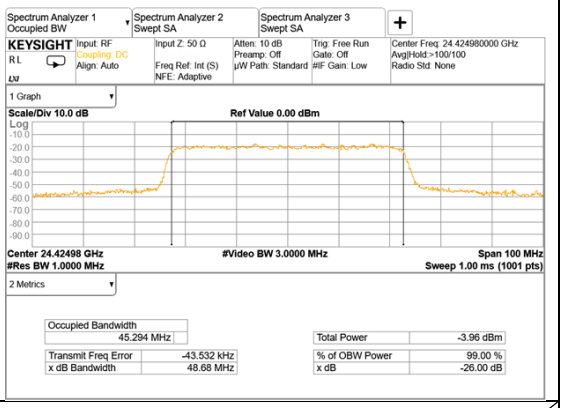
DFT-s-OFDM, $\pi/2$-BPSK



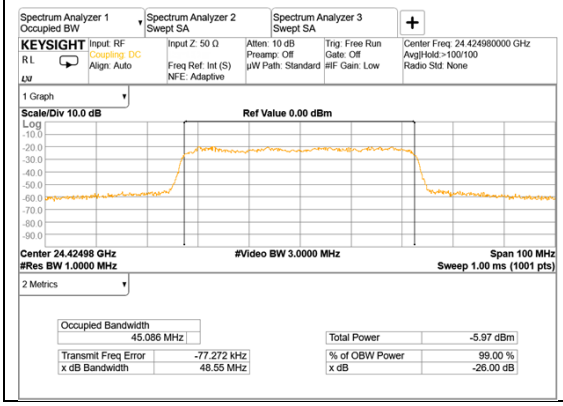
DFT-s-OFDM, QPSK



DFT-s-OFDM, 16QAM

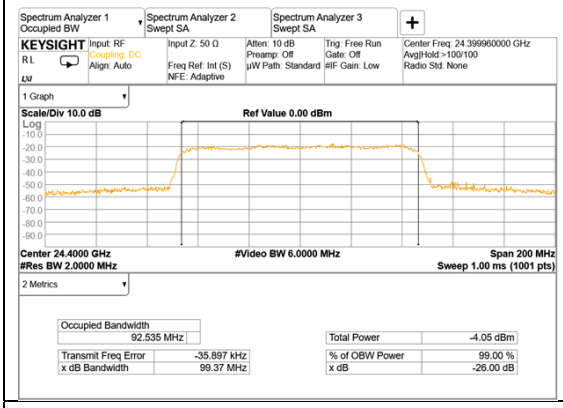


DFT-s-OFDM, 64QAM

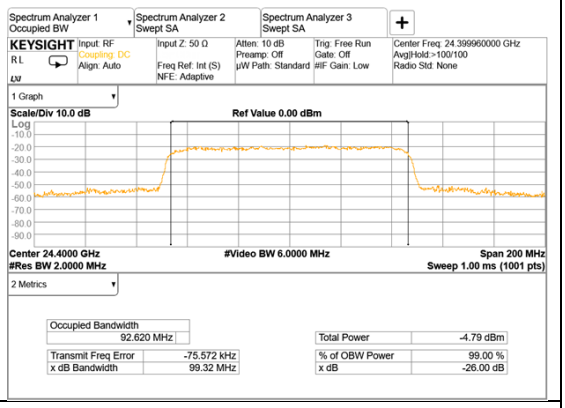


Band n258a, Antenna #2, 100 MHz

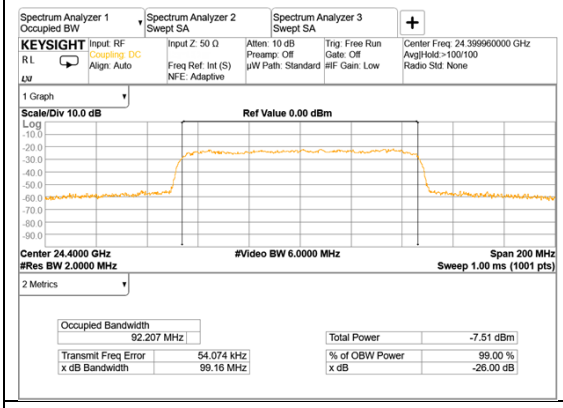
CP-OFDM, QPSK



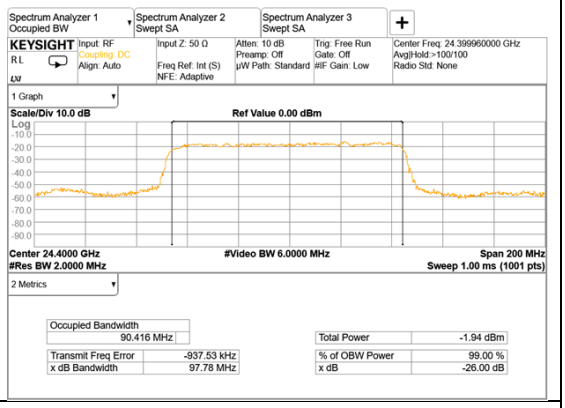
CP-OFDM, 16QAM



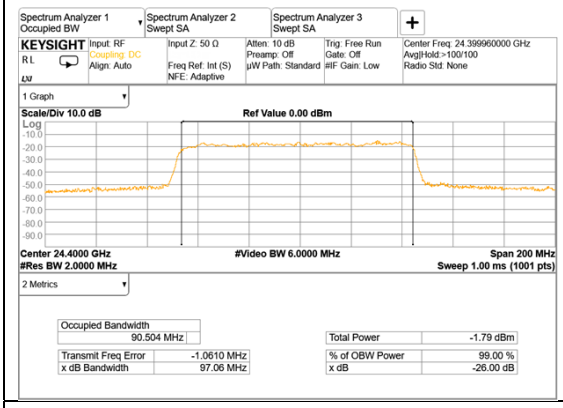
CP-OFDM, 64QAM



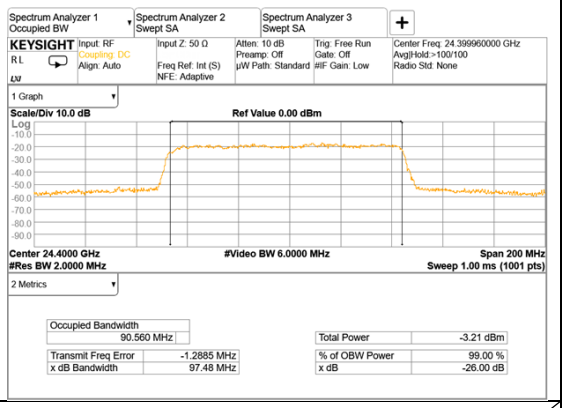
DFT-s-OFDM, π/2-BPSK



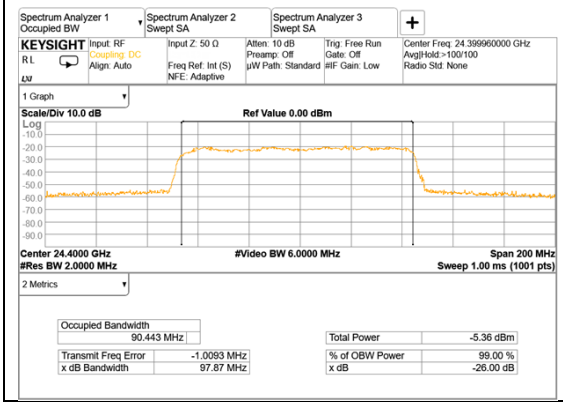
DFT-s-OFDM, QPSK



DFT-s-OFDM, 16QAM



DFT-s-OFDM, 64QAM

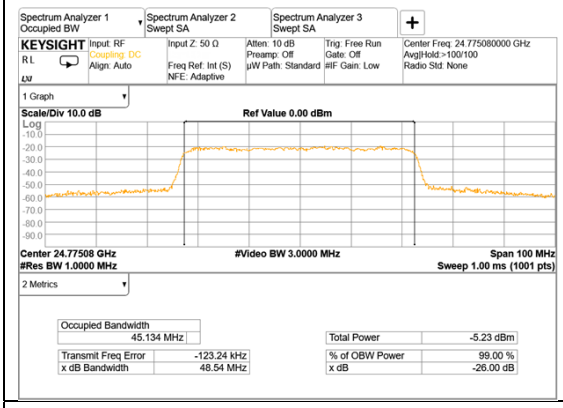


Band n258b

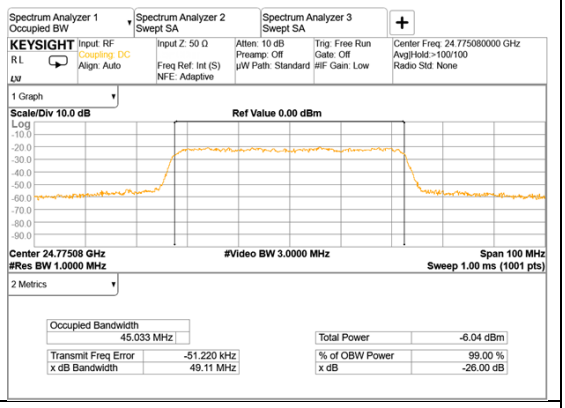
Antenna	Bandwidth [MHz]	Transmission scheme	Modulation	OBW [MHz]
#0	50	CP-OFDM	QPSK	45.134
#0	50	CP-OFDM	16QAM	45.033
#0	50	CP-OFDM	64QAM	45.031
#0	50	DFT-s-OFDM	π/2-BPSK	45.216
#0	50	DFT-s-OFDM	QPSK	45.041
#0	50	DFT-s-OFDM	16QAM	45.440
#0	50	DFT-s-OFDM	64QAM	45.257
#0	100	CP-OFDM	QPSK	92.539
#0	100	CP-OFDM	16QAM	92.795
#0	100	CP-OFDM	64QAM	92.578
#0	100	DFT-s-OFDM	π/2-BPSK	90.324
#0	100	DFT-s-OFDM	QPSK	90.456
#0	100	DFT-s-OFDM	16QAM	90.385
#0	100	DFT-s-OFDM	64QAM	90.262
#1	50	CP-OFDM	QPSK	45.286
#1	50	CP-OFDM	16QAM	45.217
#1	50	CP-OFDM	64QAM	44.996
#1	50	DFT-s-OFDM	π/2-BPSK	45.047
#1	50	DFT-s-OFDM	QPSK	45.231
#1	50	DFT-s-OFDM	16QAM	45.261
#1	50	DFT-s-OFDM	64QAM	45.026
#1	100	CP-OFDM	QPSK	92.430
#1	100	CP-OFDM	16QAM	92.684
#1	100	CP-OFDM	64QAM	92.427
#1	100	DFT-s-OFDM	π/2-BPSK	90.201
#1	100	DFT-s-OFDM	QPSK	90.266
#1	100	DFT-s-OFDM	16QAM	90.554
#1	100	DFT-s-OFDM	64QAM	90.159
#2	50	CP-OFDM	QPSK	45.253
#2	50	CP-OFDM	16QAM	45.185
#2	50	CP-OFDM	64QAM	45.119
#2	50	DFT-s-OFDM	π/2-BPSK	45.031
#2	50	DFT-s-OFDM	QPSK	45.240
#2	50	DFT-s-OFDM	16QAM	45.260
#2	50	DFT-s-OFDM	64QAM	45.126
#2	100	CP-OFDM	QPSK	92.491
#2	100	CP-OFDM	16QAM	92.605
#2	100	CP-OFDM	64QAM	92.389
#2	100	DFT-s-OFDM	π/2-BPSK	90.471
#2	100	DFT-s-OFDM	QPSK	90.587
#2	100	DFT-s-OFDM	16QAM	90.655
#2	100	DFT-s-OFDM	64QAM	90.473

Band n258b, Antenna #0, 50 MHz

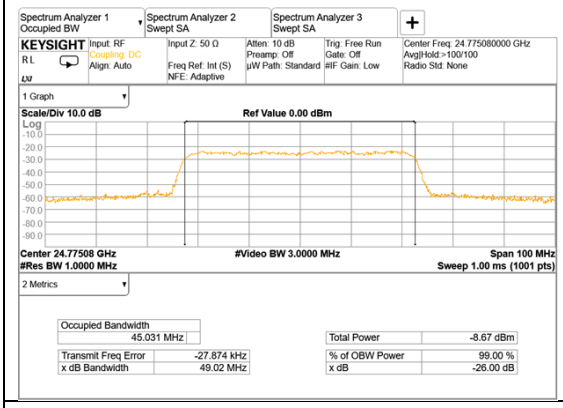
CP-OFDM, QPSK



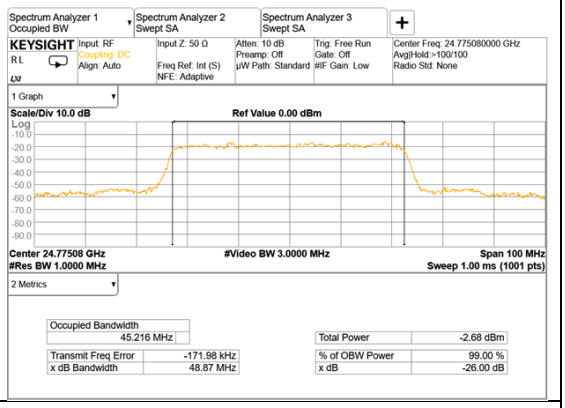
CP-OFDM, 16QAM



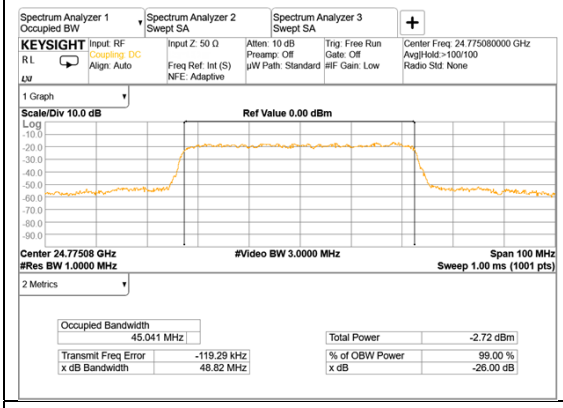
CP-OFDM, 64QAM



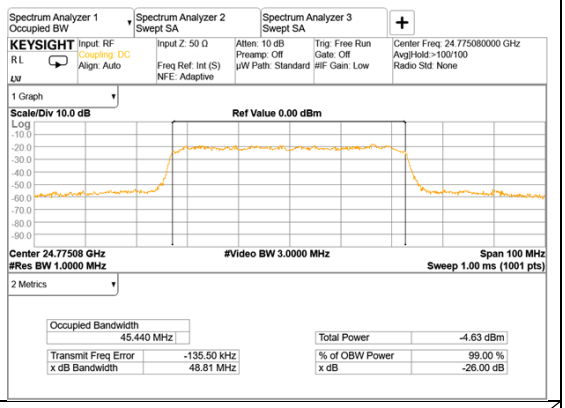
DFT-s-OFDM, π/2-BPSK



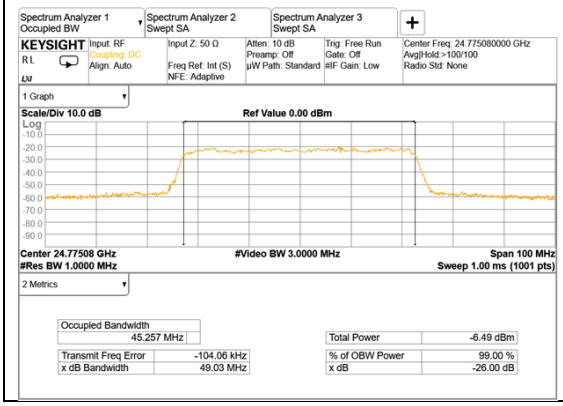
DFT-s-OFDM, QPSK



DFT-s-OFDM, 16QAM

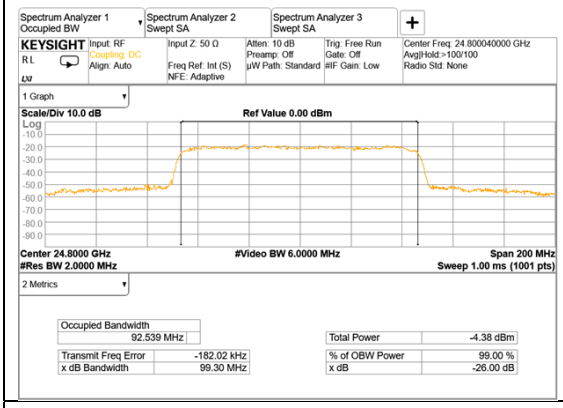


DFT-s-OFDM, 64QAM

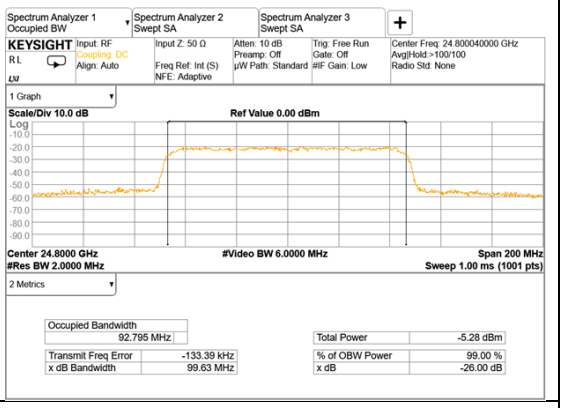


Band n258b, Antenna #0, 100 MHz

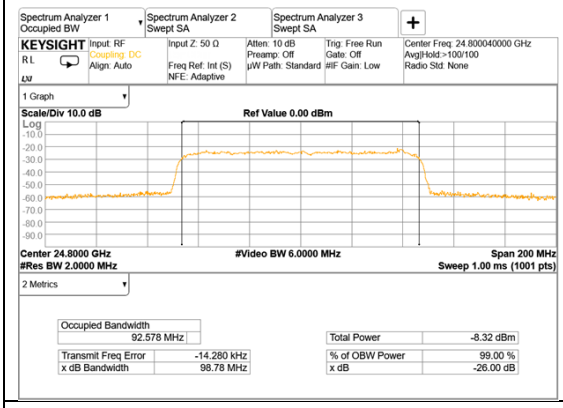
CP-OFDM, QPSK



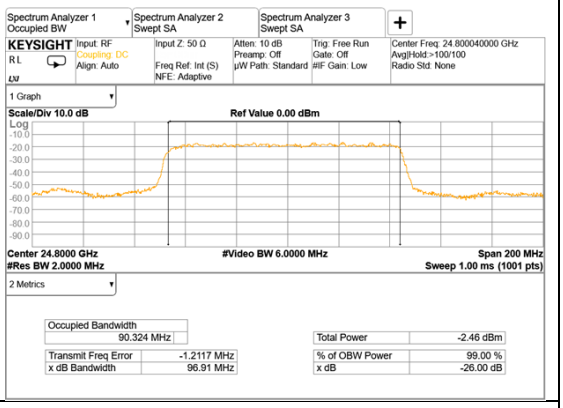
CP-OFDM, 16QAM



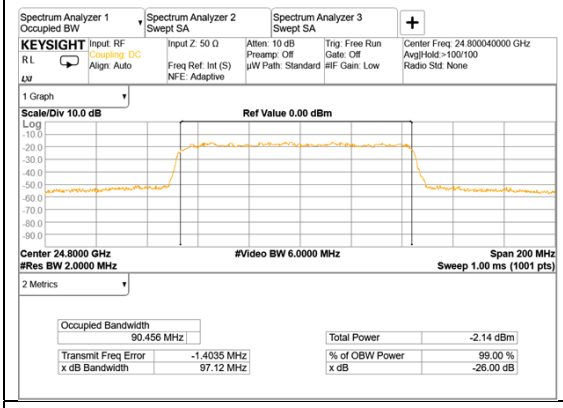
CP-OFDM, 64QAM



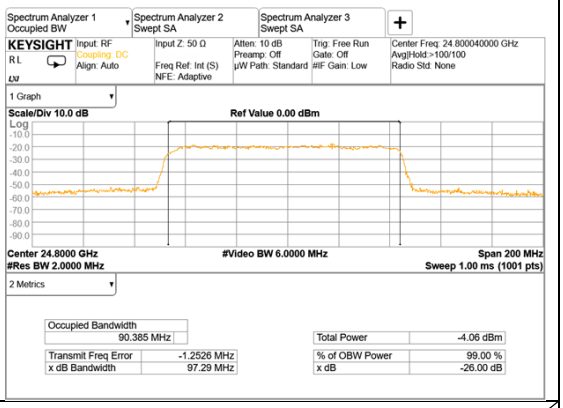
DFT-s-OFDM, π/2-BPSK



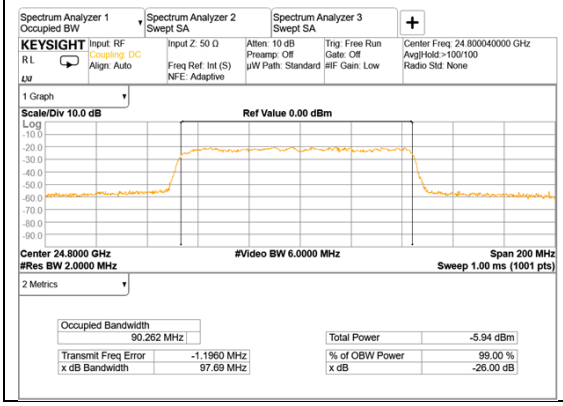
DFT-s-OFDM, QPSK



DFT-s-OFDM, 16QAM

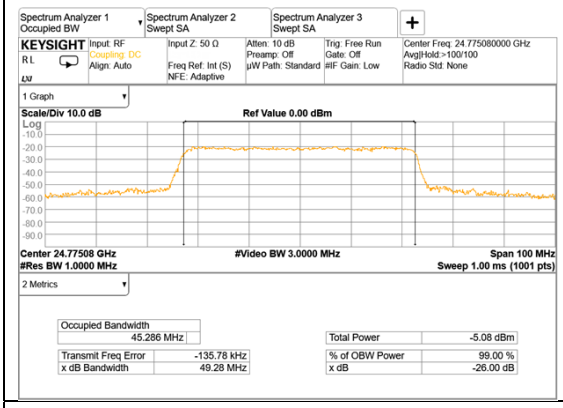


DFT-s-OFDM, 64QAM

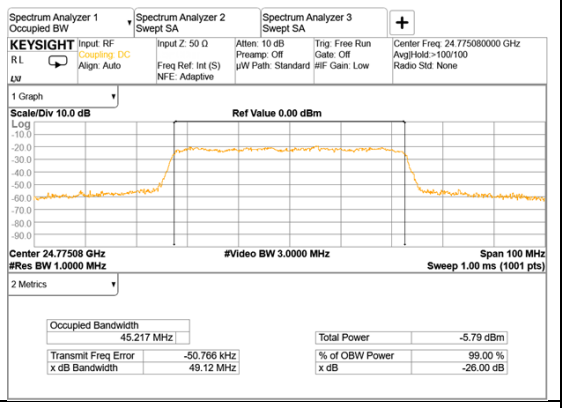


Band n258b, Antenna #1, 50 MHz

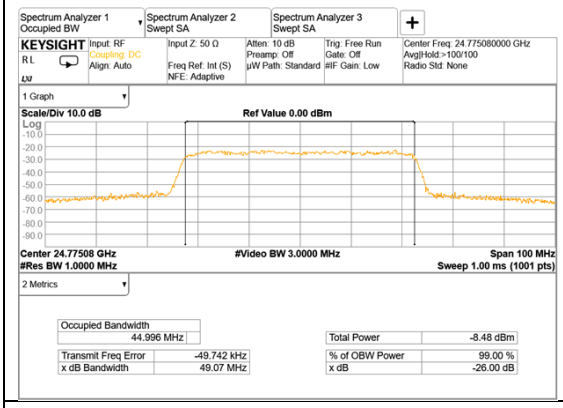
CP-OFDM, QPSK



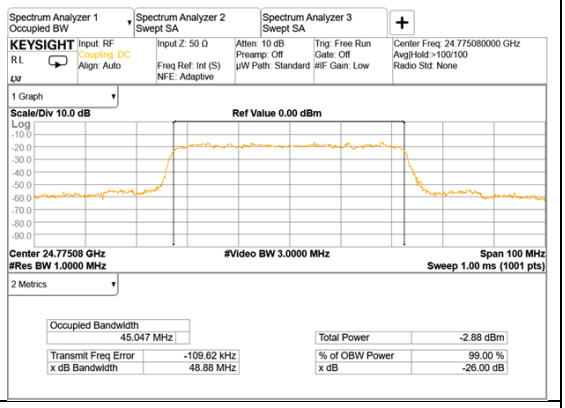
CP-OFDM, 16QAM



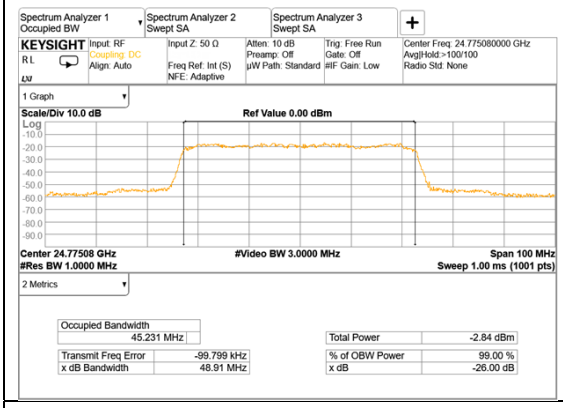
CP-OFDM, 64QAM



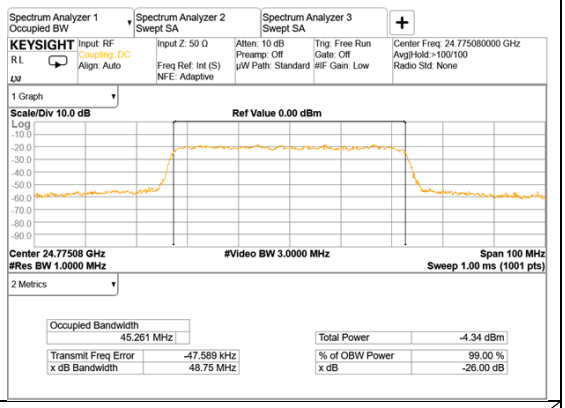
DFT-s-OFDM, π/2-BPSK



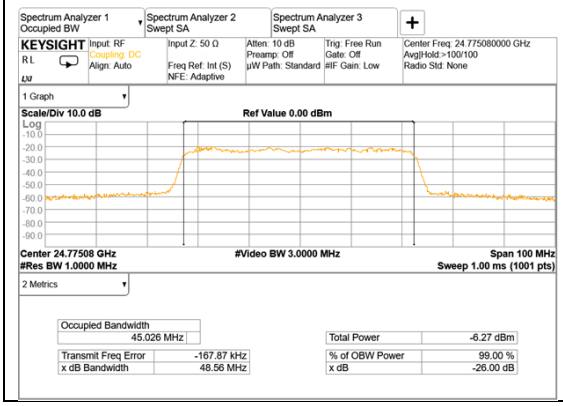
DFT-s-OFDM, QPSK



DFT-s-OFDM, 16QAM

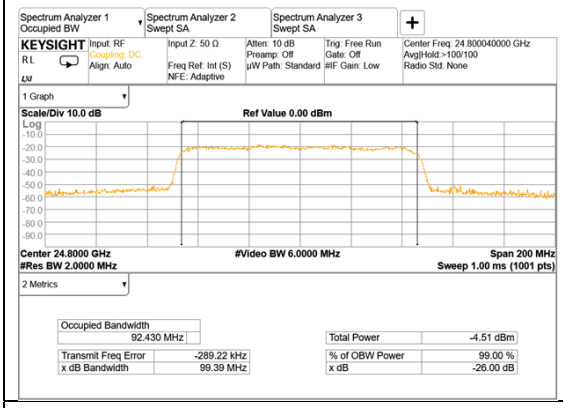


DFT-s-OFDM, 64QAM

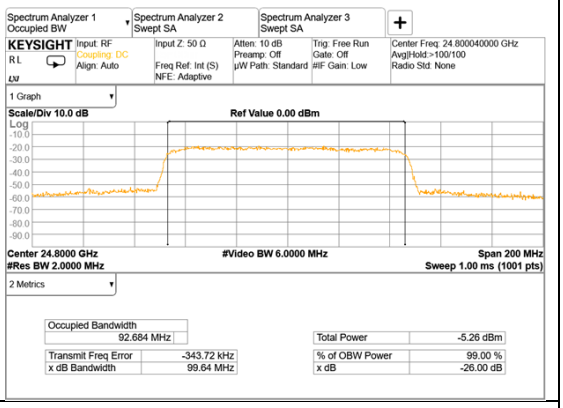


Band n258b, Antenna #1, 100 MHz

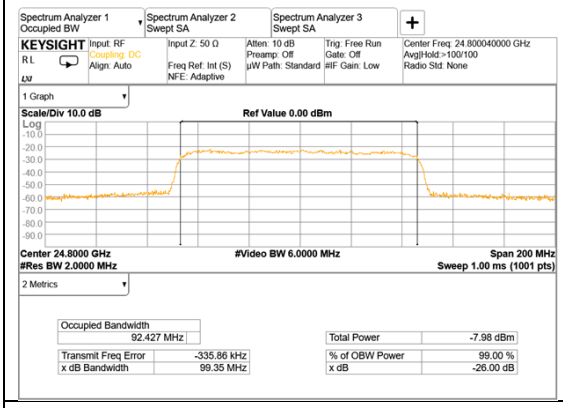
CP-OFDM, QPSK



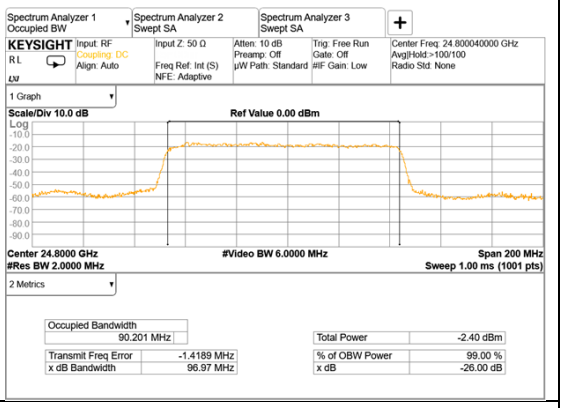
CP-OFDM, 16QAM



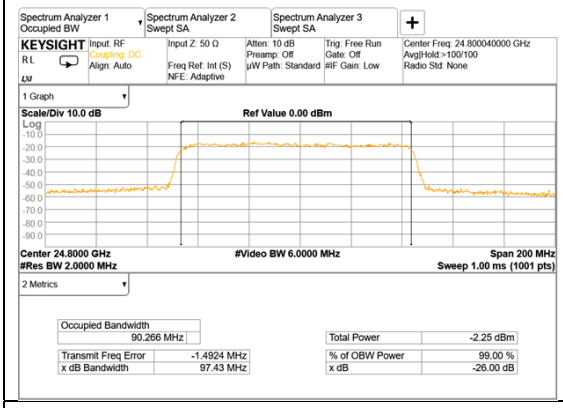
CP-OFDM, 64QAM



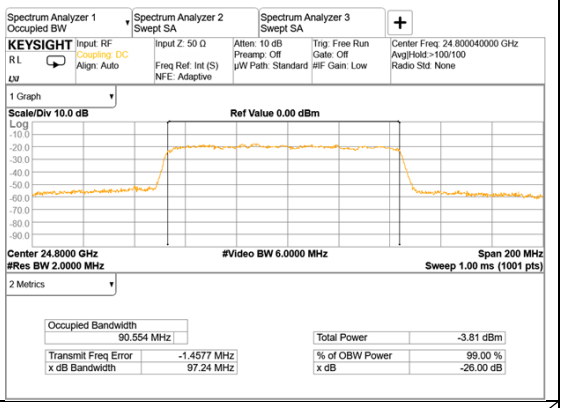
DFT-s-OFDM, $\pi/2$-BPSK



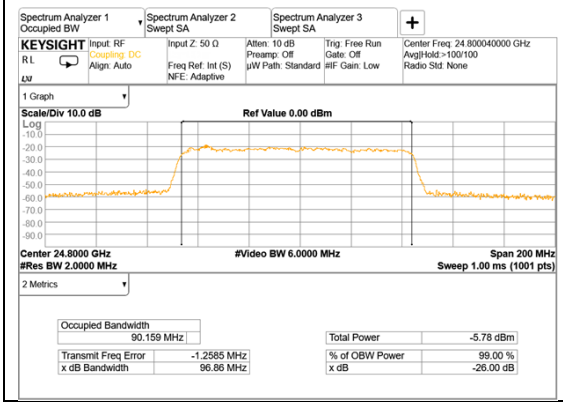
DFT-s-OFDM, QPSK



DFT-s-OFDM, 16QAM

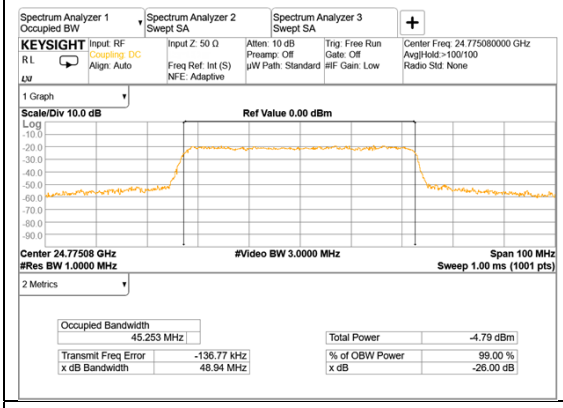


DFT-s-OFDM, 64QAM

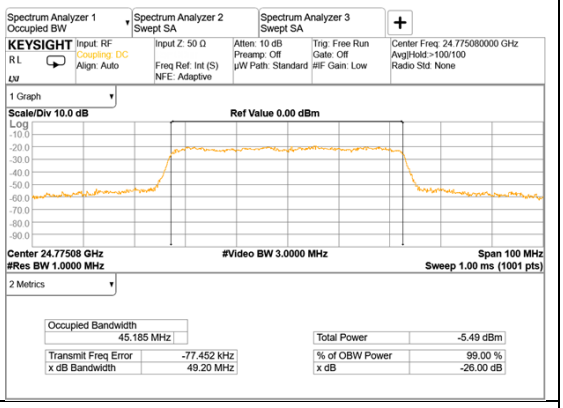


Band n258b, Antenna #2, 50 MHz

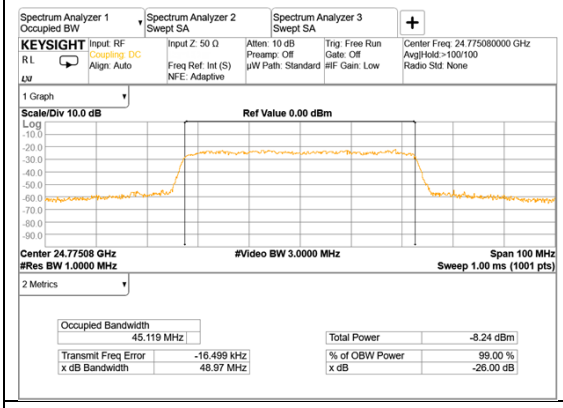
CP-OFDM, QPSK



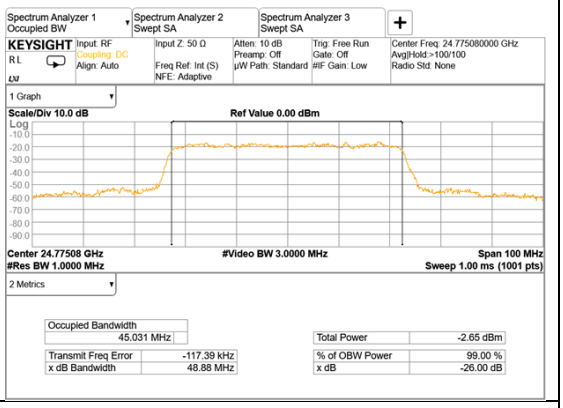
CP-OFDM, 16QAM



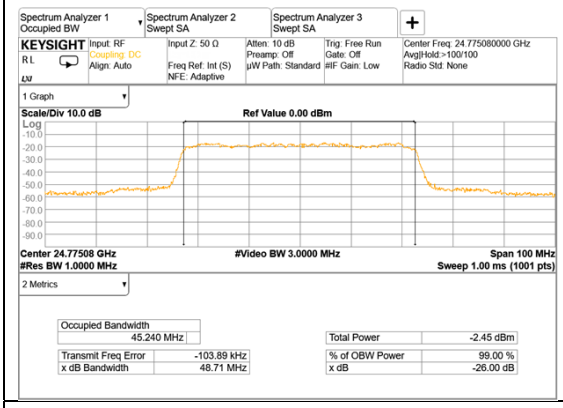
CP-OFDM, 64QAM



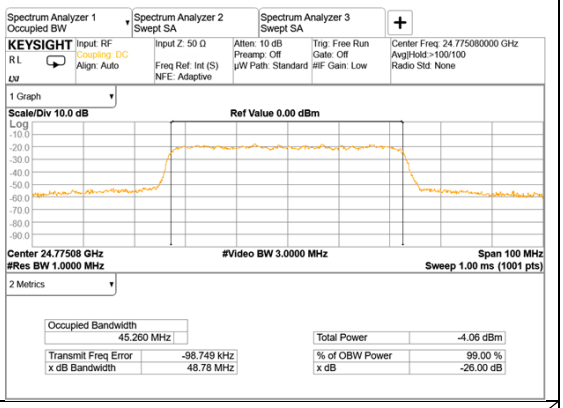
DFT-s-OFDM, π/2-BPSK



DFT-s-OFDM, QPSK



DFT-s-OFDM, 16QAM



DFT-s-OFDM, 64QAM