CERTIFICATION TEST REPORT

Report Number. : 4789867826-E9V2

Applicant	:	SAMSUNG ELECTRONICS CO., LTD. 129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI, GYEONGGI-DO, 16677, KOREA
Model	:	SM-T738U
FCC ID	:	A3LSMT738U
EUT Description	:	GSM/WCDMA/LTE/5G NR Tablet + BT/BLE, DTS/UNII a/b/g/n/ac
Test Standard	:	FCC CFR47 PART 30 Mobile Transmitter (5GM)

Date Of Issue:
2021-06-02

Prepared by:
UL Korea, Ltd.
26th floor, 152, Teheran-ro, Gangnam-gu Seoul, 06236, Korea

Suwon Test Site: UL Korea, Ltd. Suwon Laboratory
218 Maeyeong-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16675, Korea
TEL: (031) 337-9902
FAX: (031) 213-5433

IAS ACCREDITED
Testing Laboratory
TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2021-05-26	Initial issue	Seokhwan Hong
V2	2021-06-02	Updated to address TCB's question	Seokhwan Hong

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_30(04)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

TABLE OF CONTENTS

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_30(04)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

EUT DESCRIPTION: GSM/WCDMA/LTE/5G NR Tablet + BT/BLE, DTS/UNII a/b/g/n/ac

MODEL NUMBER: SM-T738U

SERIAL NUMBER: 513802b0251d7ece, 513802b1541d7ece;

DATE TESTED: 2021-04-19 – 2021-05-25;

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 30 Mobile Transmitter (5GM)	Pass

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Korea, Ltd. By:

Junwhan Lee
Suwon Lab Engineer
UL Korea, Ltd.

Tested By:

Seokhwan Hong
Suwon Lab Engineer
UL Korea, Ltd.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 30.
3. ANSI C63.26-2015
4. KDB 842590 D01 Upper Microwave Flexible Use Service v01r02
5. KDB 971168 D01 Power Meas License Digital Systems v03r01

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do,16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro
☐ Chamber 1
☒ Chamber 2
☐ Chamber 3
☒ mmWave Chamber 1
☒ mmWave Chamber 2

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength[dBuV/m] = PXA reading with EUT worst orientation (dBm) + Antenna Factor(dBuV/m) + cable loss(dB) + 107

EIRP[dBm] = PXA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna) + Substitution Antenna Factor (dBi)

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.01 dB
Radiated Disturbance, 30 MHz to 1 GHz	4.26 dB
Radiated Disturbance, 1 GHz to 18 GHz	5.90 dB
Radiated Disturbance, Above 18 GHz	5.49 dB

Uncertainty figures are valid to a confidence level of 95%.

4.4. DECISION RULE

Decision rule for statement(s) of conformity is based on Procedure 1, Clause 4.4.2 in IEC Guide 115:2007.

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_30(04)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE/5G NR Tablet + BT/BLE, DTS/UNII a/b/g/n/ac.
This test report addresses the 5G NR operational mode.

The EUT has an array antenna configuration. 2 patches, placed on the right side (denoted as K patch and L patch).
Each of the patch antennas is comprised of two separate antenna feeds - one for horizontal and one for vertical polarization. Only one array antenna can be active at a time.

Antenna	Name
Module 0	K Patch
Module 1	L Patch

The EUT supports up to 8CC for DL, and 2CC for UL. For each CC, the EUT supports both 50MHz bandwidth and 100MHz bandwidth.
For modulation, the EUT supports a subcarrier spacing (SCS) of 120kHz with two transmission schemes, CP-OFDM and DFT-s-OFDM, with QPSK, pi/2-BPSK, 16-QAM, and 64-QAM modulations.

Different Beam IDs are supported, each corresponding to a different position in space for each antenna. During testing, FTM (Factory Test Mode) was used to operate the transmitter.
MIMO operation was achieved by enabling two Beam IDs at the same time: one is from the list of H Beam IDs and other is from the list of V Beam IDs.

Manufacturer provided the Beam ID settings that yield the highest EIRP for each antenna by the EIRP Simulation tool. These Beam ID settings were used for all tests. All tests were performed in a non-signaling, stand-alone mode of operation.

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_30(04)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum average radiated EIRP output powers as follows:

Module 0 / Band n261

FCC Part 30								
Band	Frequency Range [MHz]	Antenna	BandWidth [MHz]	CCs Active	Mode	Modulation	Radiated	
							Avg [dBm]	Avg [mW]
n261	27500 - 28350	Module 0	50	1CC	SISO	pi/2-BPSK	26.38	434.51
					SISO-Dual	QPSK	**27.62**	**578.10**
					SISO-Dual	pi/2-BPSK	27.06	508.16
					SISO-Dual	16QAM	25.01	317.18
					SISO-Dual	64QAM	23.34	215.77
					MIMO	pi/2-BPSK	22.56	180.30
				2CC	SISO	QPSK	23.24	210.86
					SISO-Dual	QPSK	**24.34**	**271.64**
					SISO-Dual	pi/2-BPSK	24.28	267.92
					SISO-Dual	16QAM	22.83	191.87
					SISO-Dual	64QAM	20.50	112.20
					MIMO	pi/2-BPSK	21.19	131.52
			100	1CC	SISO	QPSK	26.25	421.70
					SISO-Dual	QPSK	28.90	776.25
					SISO-Dual	pi/2-BPSK	**28.99**	**792.50**
					SISO-Dual	16QAM	27.00	501.19
					SISO-Dual	64QAM	25.07	321.37
					MIMO	QPSK	22.92	195.88
				2CC	SISO	QPSK	17.37	54.58
					SISO-Dual	QPSK	**25.86**	**385.48**
					SISO-Dual	pi/2-BPSK	25.80	380.19
					SISO-Dual	16QAM	24.24	265.46
					SISO-Dual	64QAM	22.14	163.68
					MIMO	pi/2-BPSK	22.85	192.75

Module 0 / Band n260

FCC Part 30								
Band	Frequency Range [MHz]	Antenna	BandWidth [MHz]	CCs Active	Mode	Modulation	Radiated	
							Avg [dBm]	Avg [mW]
n260	37000 - 40000	Module 0	50	1CC	SISO	pi/2-BPSK	25.11	324.34
					SISO-Dual	QPSK	**27.06**	**508.16**
					SISO-Dual	pi/2-BPSK	26.74	472.06
					SISO-Dual	16QAM	24.82	303.39
					SISO-Dual	64QAM	23.27	212.32
					MIMO	pi/2-BPSK	23.66	232.27
				2CC	SISO	QPSK	20.90	123.03
					SISO-Dual	QPSK	22.17	164.82
					SISO-Dual	pi/2-BPSK	**22.23**	**167.11**
					SISO-Dual	16QAM	20.67	116.68
					SISO-Dual	64QAM	18.41	69.34
					MIMO	pi/2-BPSK	18.46	70.15
			100	1CC	SISO	pi/2-BPSK	24.72	296.48
					SISO-Dual	QPSK	**28.54**	**714.50**
					SISO-Dual	pi/2-BPSK	28.46	701.46
					SISO-Dual	16QAM	26.03	400.87
					SISO-Dual	64QAM	24.34	271.64
					MIMO	QPSK	24.08	255.86
				2CC	SISO	pi/2-BPSK	20.59	114.55
					SISO-Dual	QPSK	**24.02**	**252.35**
					SISO-Dual	pi/2-BPSK	23.95	248.31
					SISO-Dual	16QAM	22.62	182.81
					SISO-Dual	64QAM	19.68	92.90
					MIMO	pi/2-BPSK	21.20	131.83

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_30(04)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

Module 1 / Band n261

FCC Part 30								
Band	Frequency Range [MHz]	Antenna	BandWidth [MHz]	CCs Active	CCs Active	Modulation	Radiated	
							Avg [dBm]	Avg [mW]
n261	27500 - 28350	Module 1	50	1CC	SISO	pi/2-BPSK	23.96	248.89
					SISO-Dual	QPSK	**26.18**	**414.95**
					SISO-Dual	pi/2-BPSK	25.68	369.83
					SISO-Dual	16QAM	23.24	210.86
					SISO-Dual	64QAM	21.94	156.31
					MIMO	QPSK	21.90	154.88
				2CC	SISO	QPSK	20.67	116.68
					SISO-Dual	QPSK	**21.19**	**131.52**
					SISO-Dual	pi/2-BPSK	21.11	129.12
					SISO-Dual	16QAM	19.48	88.72
					SISO-Dual	64QAM	17.31	53.83
					MIMO	pi/2-BPSK	21.12	129.42
			100	1CC	SISO	QPSK	23.89	244.91
					SISO-Dual	QPSK	**27.22**	**527.23**
					SISO-Dual	pi/2-BPSK	27.17	521.19
					SISO-Dual	16QAM	24.43	277.33
					SISO-Dual	64QAM	23.25	211.35
					MIMO	QPSK	22.32	170.61
				2CC	SISO	pi/2-BPSK	20.49	111.94
					SISO-Dual	QPSK	23.60	229.09
					SISO-Dual	pi/2-BPSK	**23.62**	**230.14**
					SISO-Dual	16QAM	22.10	162.18
					SISO-Dual	64QAM	19.96	99.08
					MIMO	pi/2-BPSK	21.82	152.05

Module 1 / Band n260

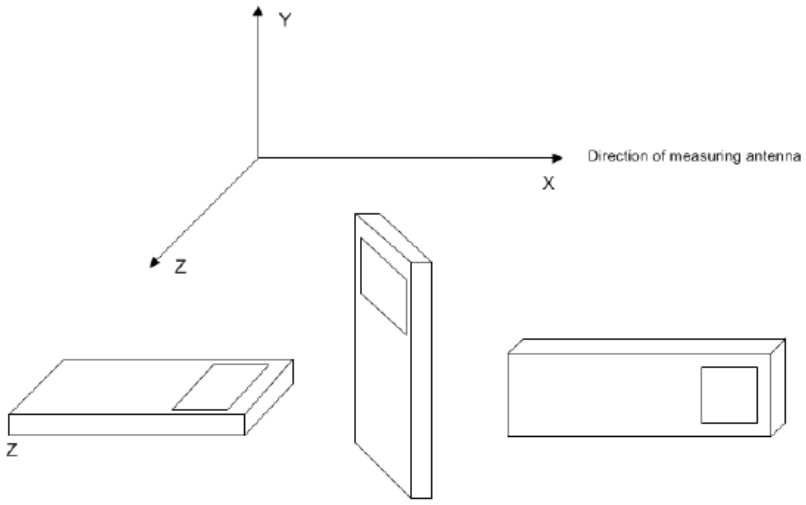
FCC Part 30								
Band	Frequency Range [MHz]	Antenna	BandWidth [MHz]	CCs Active	Mode	Modulation	Radiated	
							Avg [dBm]	Avg [mW]
n260	37000 - 40000	Module 1	50	1CC	SISO	QPSK	25.61	363.92
					SISO-Dual	QPSK	28.76	751.62
					SISO-Dual	pi/2-BPSK	**29.74**	**941.89**
					SISO-Dual	16QAM	27.48	559.76
					SISO-Dual	64QAM	25.96	394.46
					MIMO	QPSK	23.46	221.82
				2CC	SISO	pi/2-BPSK	15.30	33.88
					SISO-Dual	QPSK	26.29	425.60
					SISO-Dual	pi/2-BPSK	**26.41**	**437.52**
					SISO-Dual	16QAM	24.99	315.50
					SISO-Dual	64QAM	22.23	167.11
					MIMO	pi/2-BPSK	21.78	150.66
			100	1CC	SISO	pi/2-BPSK	25.73	374.11
					SISO-Dual	QPSK	29.26	843.33
					SISO-Dual	pi/2-BPSK	**29.64**	**920.45**
					SISO-Dual	16QAM	27.27	533.33
					SISO-Dual	64QAM	26.06	403.65
					MIMO	QPSK	23.55	226.46
				2CC	SISO	QPSK	21.64	145.88
					SISO-Dual	QPSK	**26.49**	**445.66**
					SISO-Dual	pi/2-BPSK	26.47	443.61
					SISO-Dual	16QAM	25.01	316.96
					SISO-Dual	64QAM	22.23	167.11
					MIMO	pi/2-BPSK	21.45	139.64

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_30(04)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

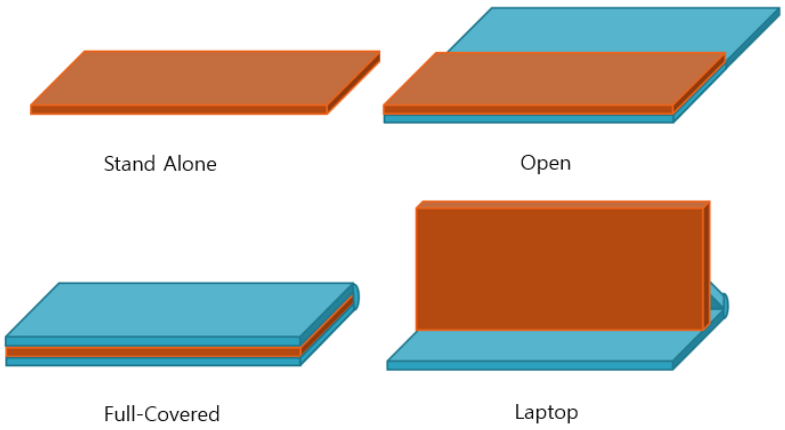
5.3. WORST-CASE ORIENTATION

For all 5G NR FR2 Bands, the worst-case scenario for all measurements is based on the EIRP measurement investigation results. EIRP were measured on QPSK, pi/2-BPSK, 16QAM and 64QAM modulations. It was found that QPSK results were worst case. 16QAM and 64QAM is EIRP testing was performed using based on QPSK worst channel modulations to represent the worst case. However, the out of band emissions and spurious radiation were only performed on bandwidth and RB offset(with RB size 1) with the highest EIRP in QPSK.

The fundamental and radiated spurious emission were investigated in three orthogonal orientations X, Y, Z and Roll, where is applicable. The final optimum position resulting in the highest EIRP for the frequency or band under investigation is placed on an open air fixture allowing no blockage of the signal as measured by the receiving antenna.



The Fundamental of the EUT was investigated four foldable conditions(Stand Alone, Open, Full-Covered, Laptop).



Note : EIRP Simulation data for all Beam IDs was used to determine the worst case Beam ID for SISO operation and Beam ID pair for MIMO operation. These Beam ID's were used for final measurements.

5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Charger	SAMSUNG	EP-TA200	R37N5GR6871SE3	N/A
Data Cable	SAMSUNG	EP-DT725BBE	N/A	N/A

I/O CABLE

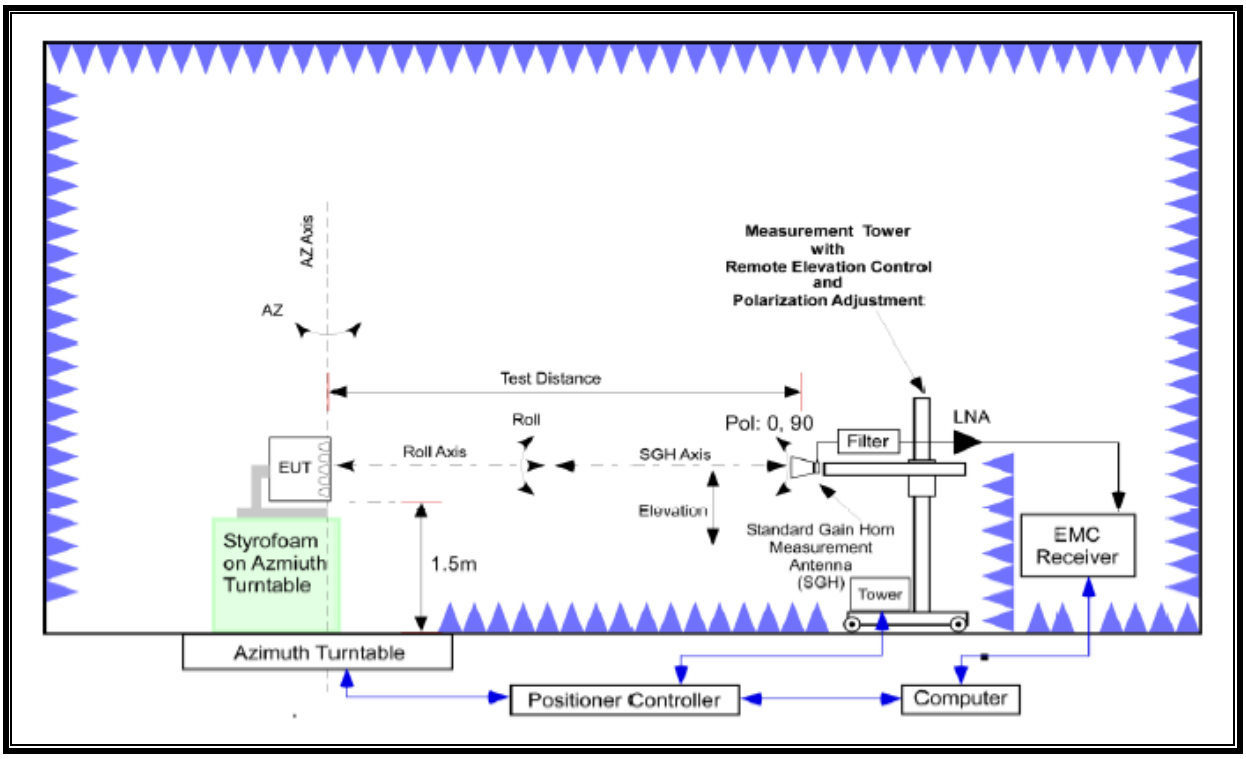
I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	DC Power	1	C Type	Shielded	1.0m	N/A

TEST SETUP

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 FTM software was also used for the EUT operation in the ENDC mode.

SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)

Radiated power (EIRP) measurements were performed in a full anechoic chamber (FAC) conforming to the site validation requirements of CISPR 16-1-4. Radiated spurious emission measurements from 30MHz - 18GHz were performed in a semi anechoic chamber (SAC) conforming to the site validation requirements of CISPR 16-1-4. A positioner was used to manipulate the EUT through several positions in space by rotating about the roll axis as shown in the figure below. The positioner was mounted on top of a turntable bringing the total EUT height to 1.5m.



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 antenna is in the far field of the EUT per formula $2D^2/\lambda$ where D is the larger between the dimension of the measurement antenna and the transmitting antenna of the EUT. In this case, "D" is the largest dimension of the measurement antenna. The EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer.

Frequency Range(GHz)	Wavelength(m)	Far Field Distance(m)	Measurement Distance(m)
18-40	0.008	0.54	1.00 (EIRP and Band Edge = 3.00)
40-50	0.006	1.05	1.50
50-75	0.004	0.69	1.00
75-110	0.003	0.46	1.00
110-175	0.002	0.34	1.00
175-200	0.002	0.16	1.00

Radiated power levels are investigated while the receive antenna was rotated through all angles to determine the worst case polarization/positioning. It was determined that H=0 degree and V=90 degree are the worst case positions when the EUT was transmitting horizontally and vertically polarized beams, respectively.

The maximized power level is recorded using the spectrum analyzer “Channel Power” function with the integration bandwidth set to the emissions’ occupied bandwidth. The EIRP is calculated from the raw power level measured with the spectrum analyzer using the formulas shown below.

6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	**Manufacturer**	**Model**	**S/N**	**Cal Due**
Spectrum Analyzer	KEYSIGHT	N9040B	US57212313	2022-01-13
Spectrum Analyzer	KEYSIGHT	N9040B	MY60080268	2022-01-13
Spectrum Analyzer	KEYSIGHT	N9030A	MY54490312	2021-08-05
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100418	2021-10-02
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	2022-08-13
Antenna, Horn, 18 GHz	ETS	3117	00168724	2022-07-27
DC Power Supply	Agilent / HP	E3640A	MY54226395	2021-08-05
Preamplifier, 1000 MHz	Sonoma	310N	351741	2021-08-03
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	2021-08-03
Temperature & Humidity Chamber	ESPEC	PL-1J	15004769	2021-08-04
Antenna, Horn, 40 GHz	ETS LINDGREN	3116C	00166155	2022-08-04
Antenna, Horn, 40 GHz	ETS LINDGREN	3116C	00168645	2021-10-02
Antenna, Horn, 33 to 50 GHz	CMI, Inc.	HO22R	UL22001	2023-02-24
Antenna, Horn, 33 to 50 GHz	CMI, Inc.	HO22R	UL22002	2023-02-24
Antenna, Horn, 50 to 75 GHz	CMI, Inc.	HO15R	UL15001	2023-02-24
Antenna, Horn, 50 to 75 GHz	CMI, Inc.	HO15R	UL15002	2023-02-24
Antenna, Horn, 75 to 110 GHz	CMI, Inc.	HO10R	UL10001	2023-02-24
Antenna, Horn, 75 to 110 GHz	CMI, Inc.	HO10R	UL10002	2023-02-24
Antenna, Horn, 110 to 170 GHz	CMI, Inc.	HO06R	UL06001	2023-02-24
Antenna, Horn, 110 to 170 GHz	CMI, Inc.	HO06R	UL06002	2023-02-24
Antenna, Horn, 170 to 260 GHz	CMI, Inc.	HO04R	UL04001	2023-02-24
Antenna, Horn, 170 to 260 GHz	CMI, Inc.	HO04R	UL04002	2023-02-24
EMI Test Receive, 40 GHz	Rohde & Schwarz	ESU40	100457	2021-08-03
SA Extension Module	Virginia Diodes Inc	N9029AV15	SAX486	2022-03-29
SA Extension Module	Virginia Diodes Inc	N9029AV10	SAX388	2022-01-19
SA Extension Module	Virginia Diodes Inc	N9029AV06	SAX483	2022-01-20
SA Extension Module	Virginia Diodes Inc	N9029AV04	SAX487	2022-01-20
Digital Multimeter	FLUKE	17B	27770596WS	2021-08-05
Temp and Humidity recorder	LUTRON	MHB-382SD	AH.91469	2021-08-07
Temp and Humidity recorder	LUTRON	MHB-382SD	AJ.72586	2022-01-16
Description	**Manufacturer**	**Model**	**Version**	
Radiated software	UL	UL EMC	Ver 9.5	

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_30(04)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

7. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result
2.1049	Occupied Bandwidth	N/A	Radiated	Pass
2.1046, 30.202	Equivalent Isotropic Radiated Power	43 dBm		Pass
2.1051, 30.203	Out-of-Band Emissions at the Band Edge	-13 dBm/MHz for all out-of-band emissions, -5 dBm/MHz from the band edge up to 10% of the channel BW		Pass
2.1051, 30.203	Spurious Emission	-13 dBm/MHz for all out-of-band emissions		Pass
2.1055	Frequency Stabillity	Fundamental emissions stay within authorized frequency block		Pass

8. LIMITS AND CONDUCTED RESULTS

8.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

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

a) RBW = 1 – 5% of OBW
b) VBW ≥ 3 x RBW
c) Detector = Peak
d) Trace mode = max hold
e) Sweep = auto couple
f) The trace was allowed to stabilize

(KDB 842590 D01 Upper Microwave Flexible Use Service v01r02 Section 4.3)
(ANSI C63.26-2015 Section 5.4.3)

Note

5G NR: All Waveforms (CP-OFDM vs DFT-s OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

RESULTS

See the following pages.

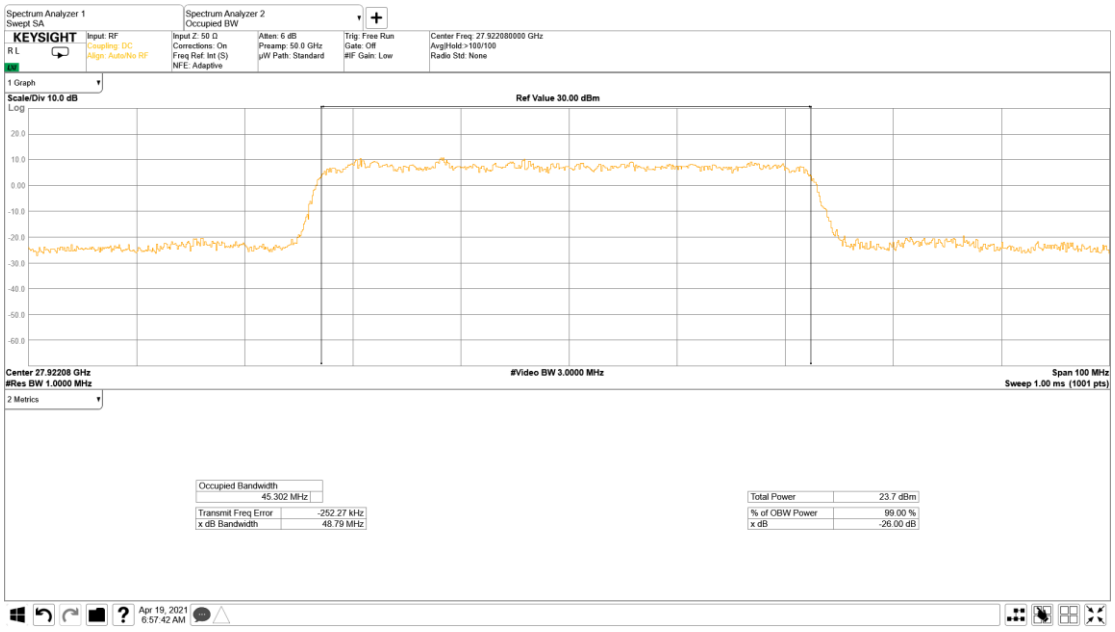
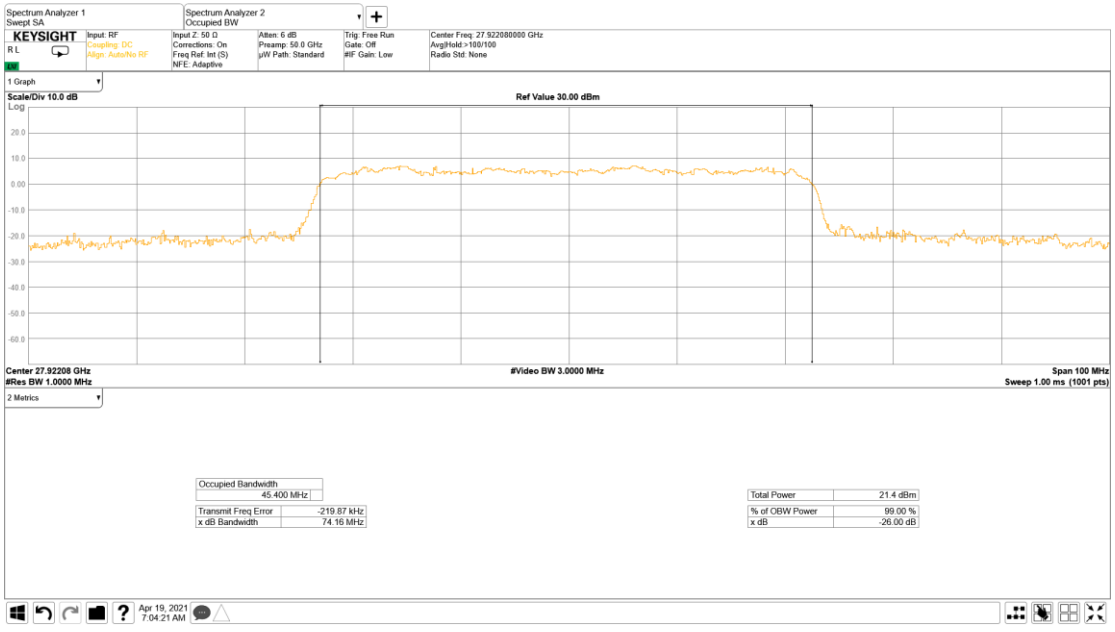
8.1.1. OCCUPIED BANDWIDTH RESULTS

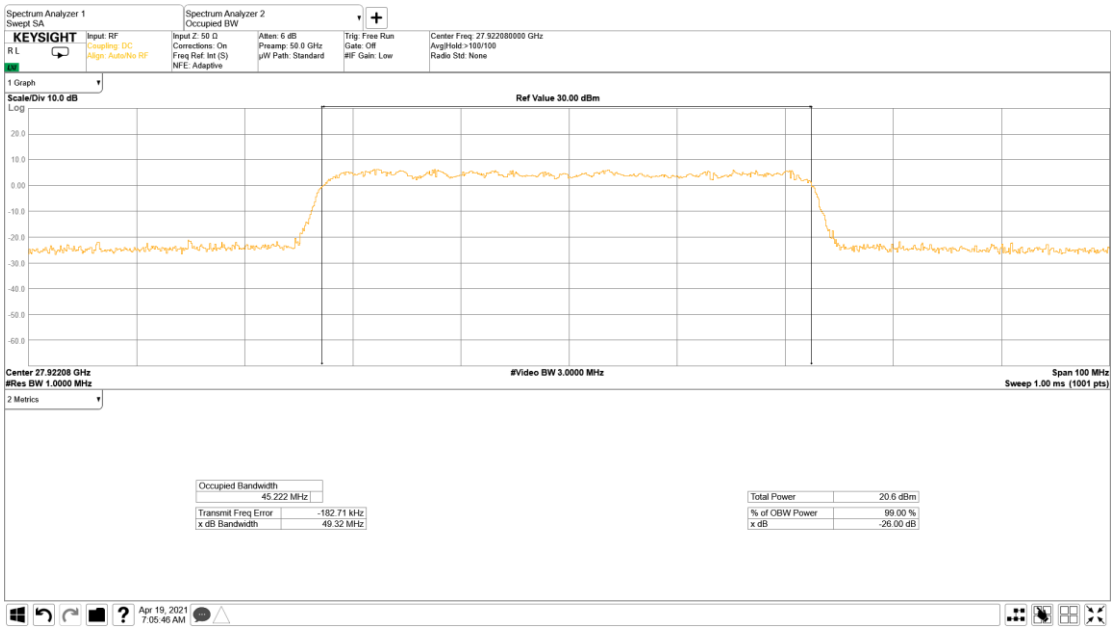
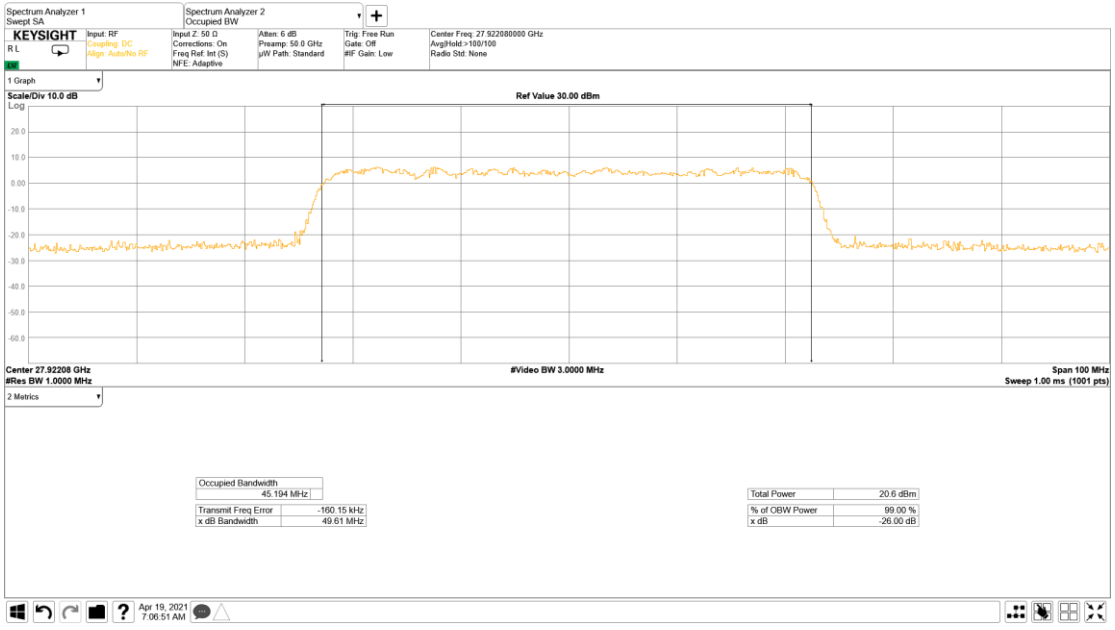
OBW Result - Module 0

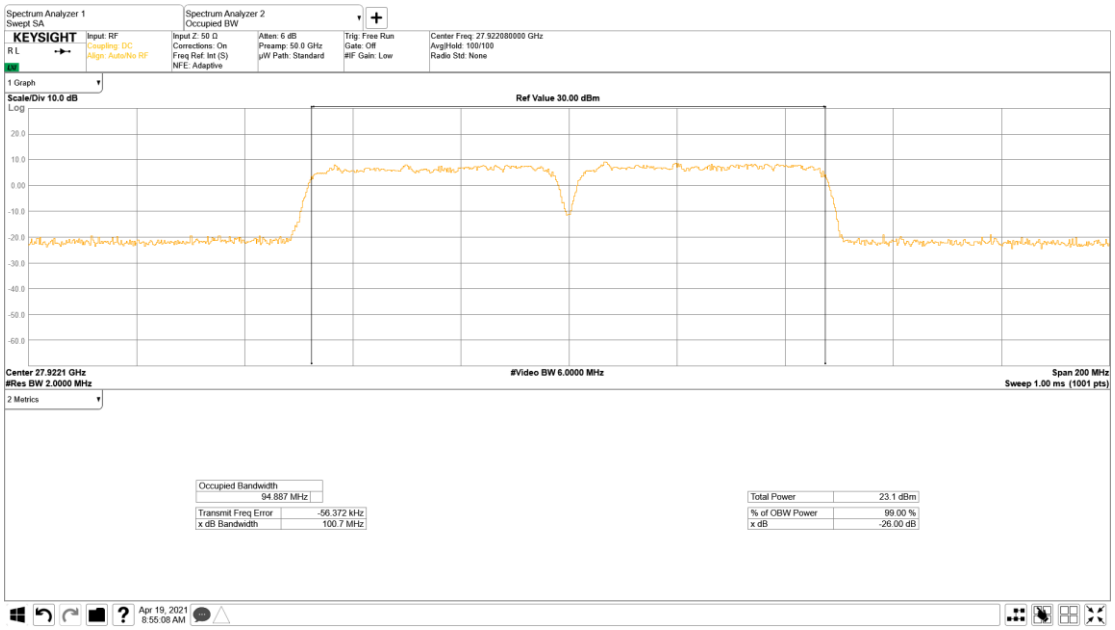
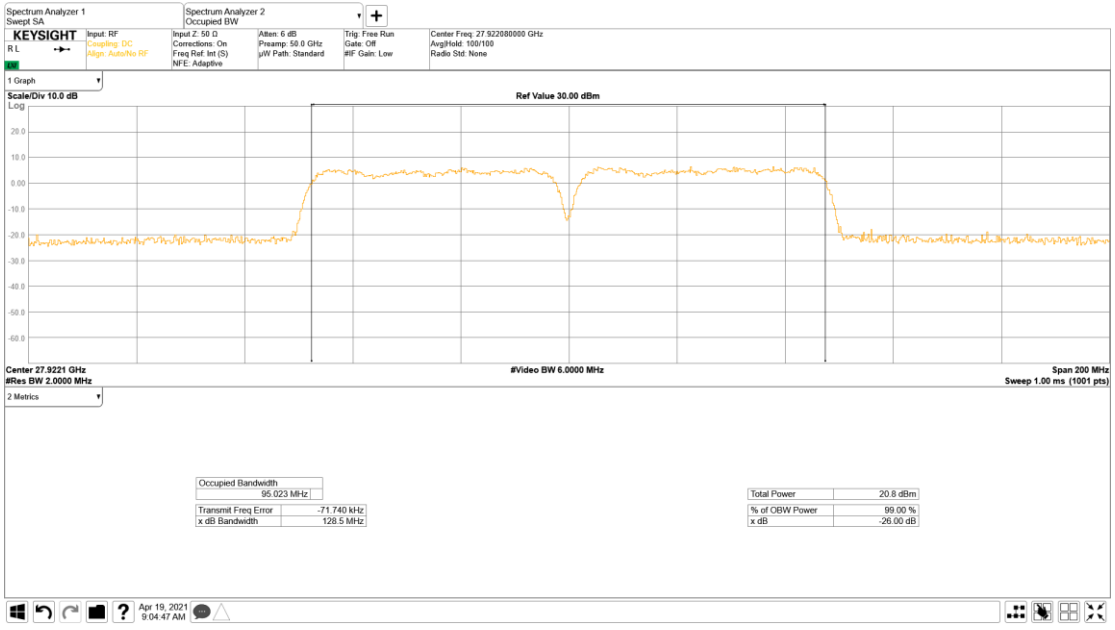
Antenna	Band	BandWidth [MHz]	CCs Active	Modulation	OBW [MHz]
Module 0	n261	50	1CC	pi/2-BPSK	45.30
				QPSK	**45.40**
				16QAM	45.22
				64QAM	45.19
			2CC	pi/2-BPSK	94.89
				QPSK	95.02
				16QAM	95.10
				64QAM	**95.68**
		100	1CC	pi/2-BPSK	90.81
				QPSK	93.48
				16QAM	93.70
				64QAM	**93.95**
			2CC	pi/2-BPSK	189.46
				QPSK	191.58
				16QAM	192.69
				64QAM	**194.87**
	n260	50	1CC	pi/2-BPSK	45.44
				QPSK	45.47
				16QAM	45.43
				64QAM	**46.27**
			2CC	pi/2-BPSK	95.63
				QPSK	95.73
				16QAM	**97.59**
				64QAM	96.07
		100	1CC	pi/2-BPSK	90.59
				QPSK	93.09
				16QAM	**93.57**
				64QAM	93.45
			2CC	pi/2-BPSK	190.98
				QPSK	192.66
				16QAM	193.54
				64QAM	**194.32**

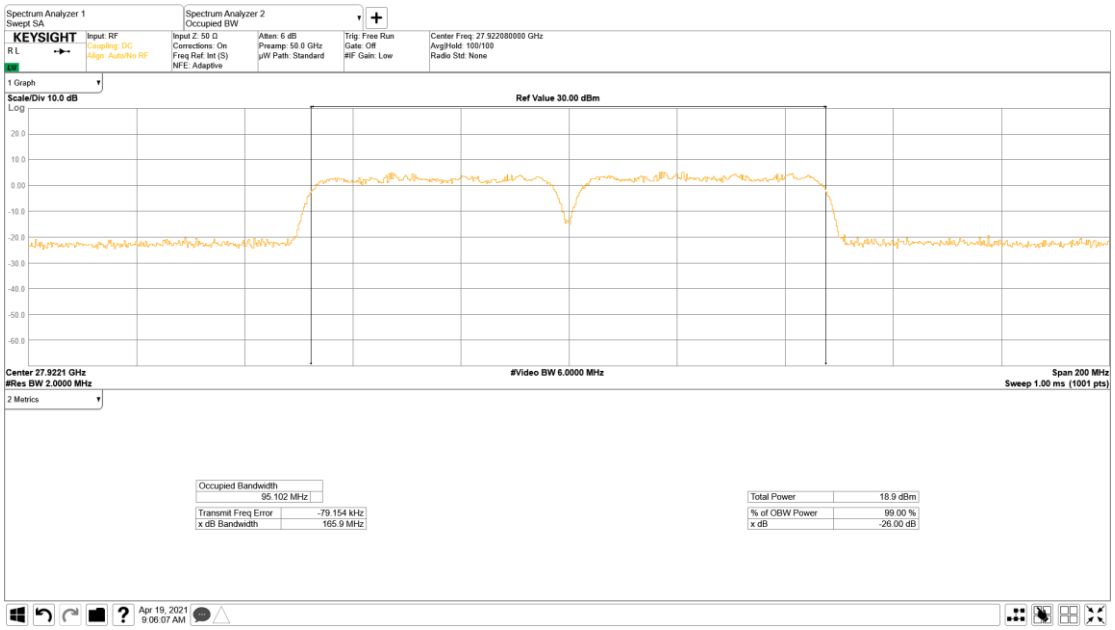
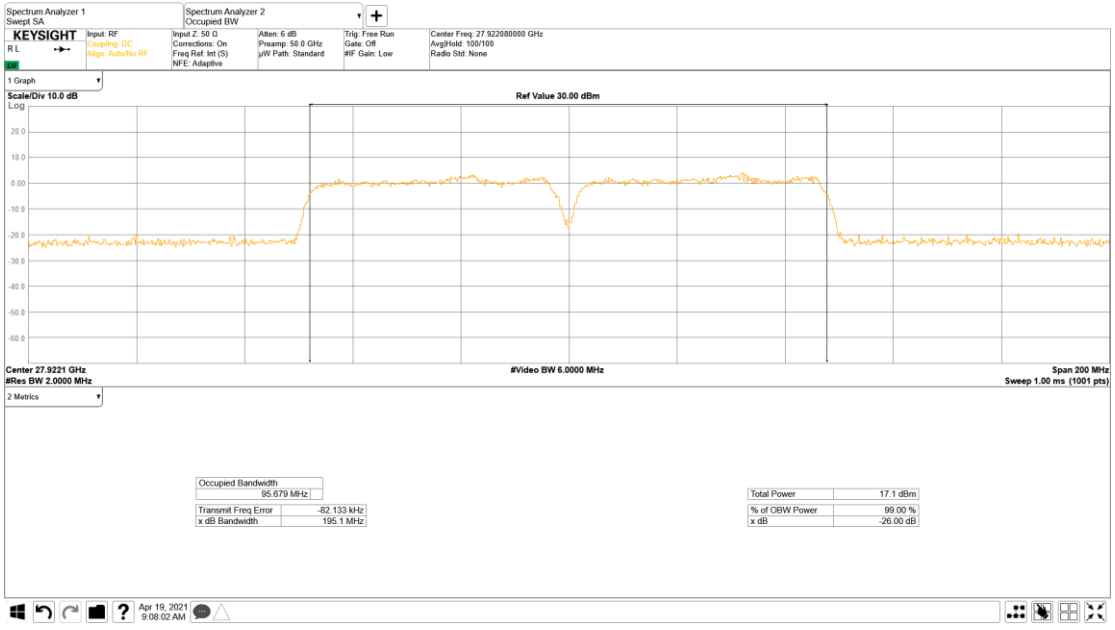
UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_30(04)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

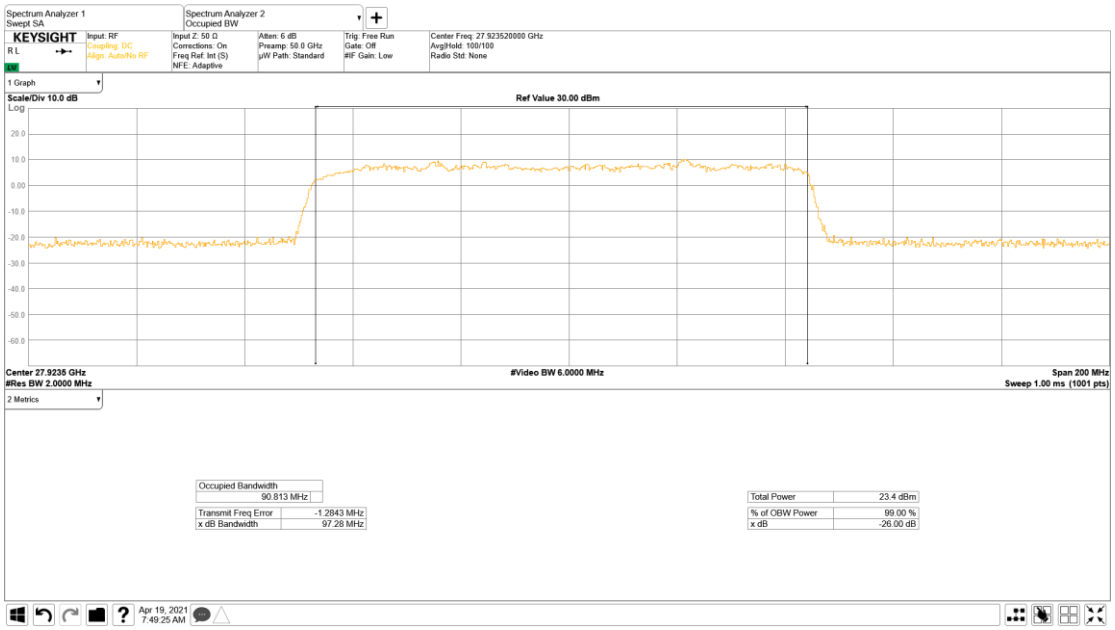
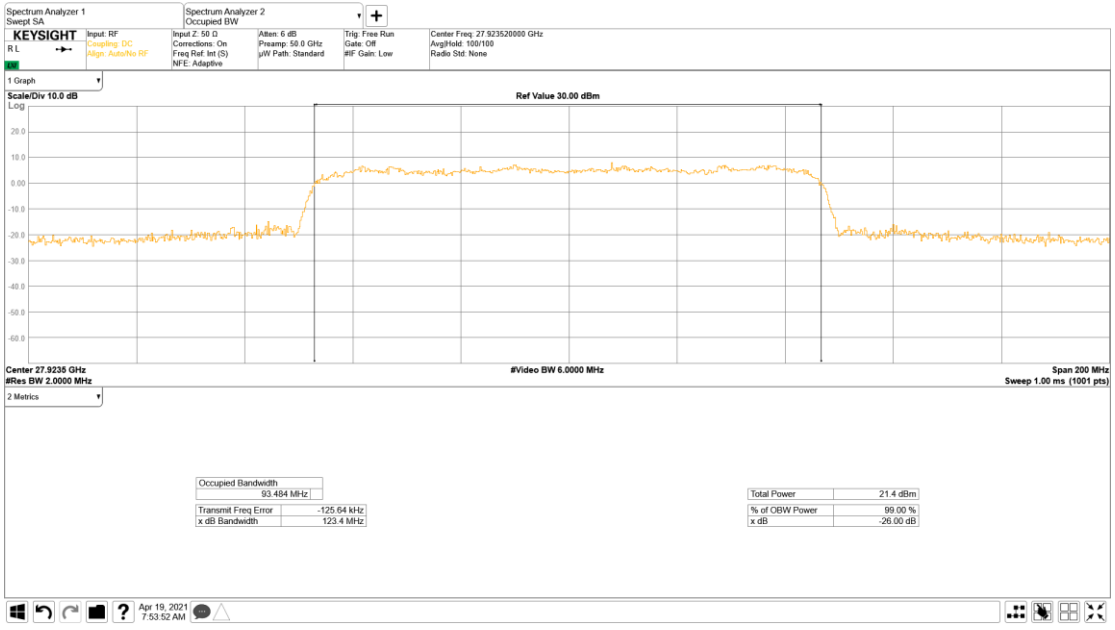
Module 0, Band n261

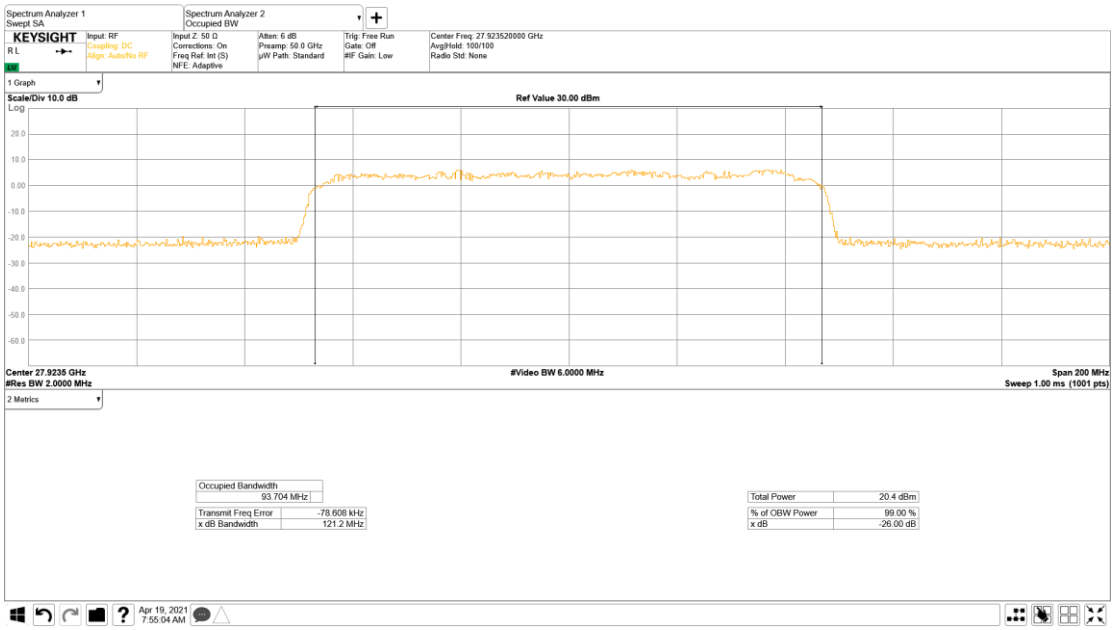
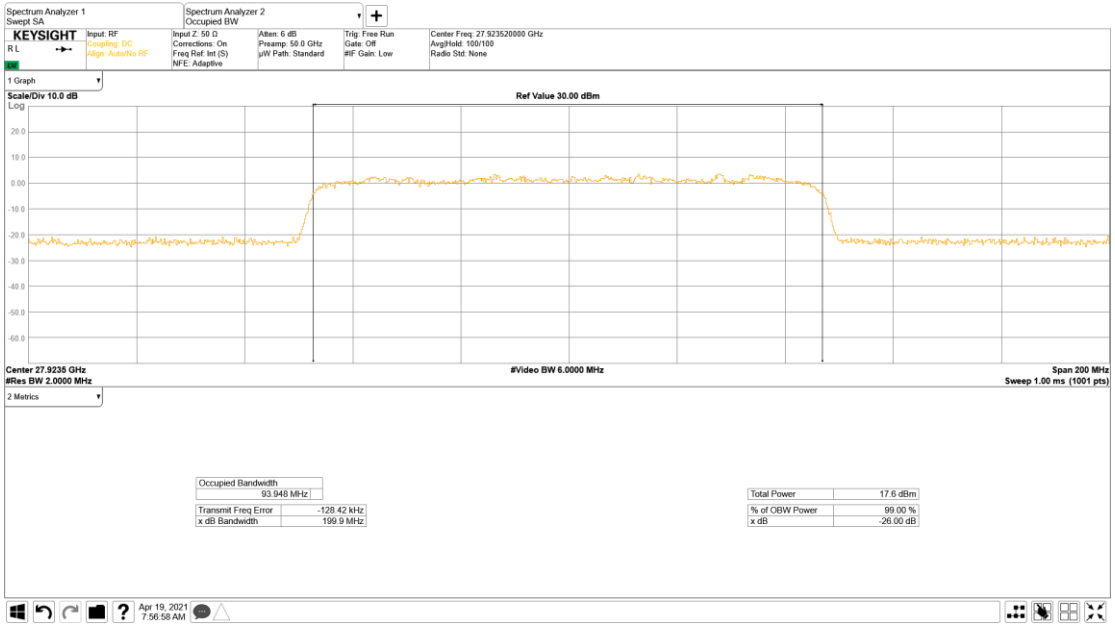
M 0 n261 BW 50MHz	 1CC / BPSK / Mid channel
M 0 n261 BW 50MHz	 1CC / QPSK / Mid channel

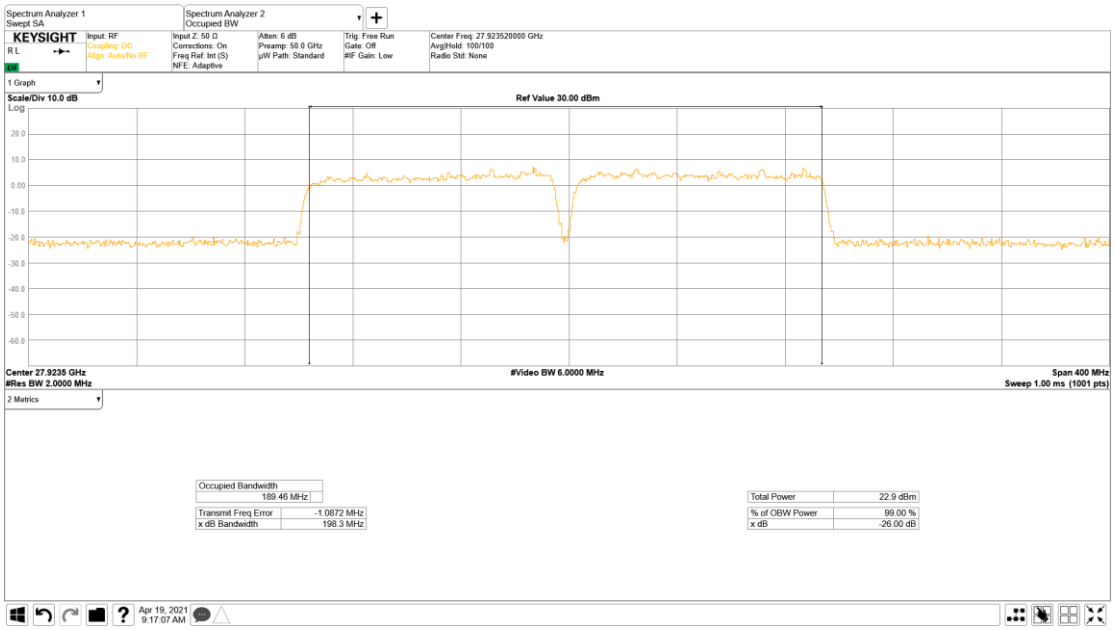
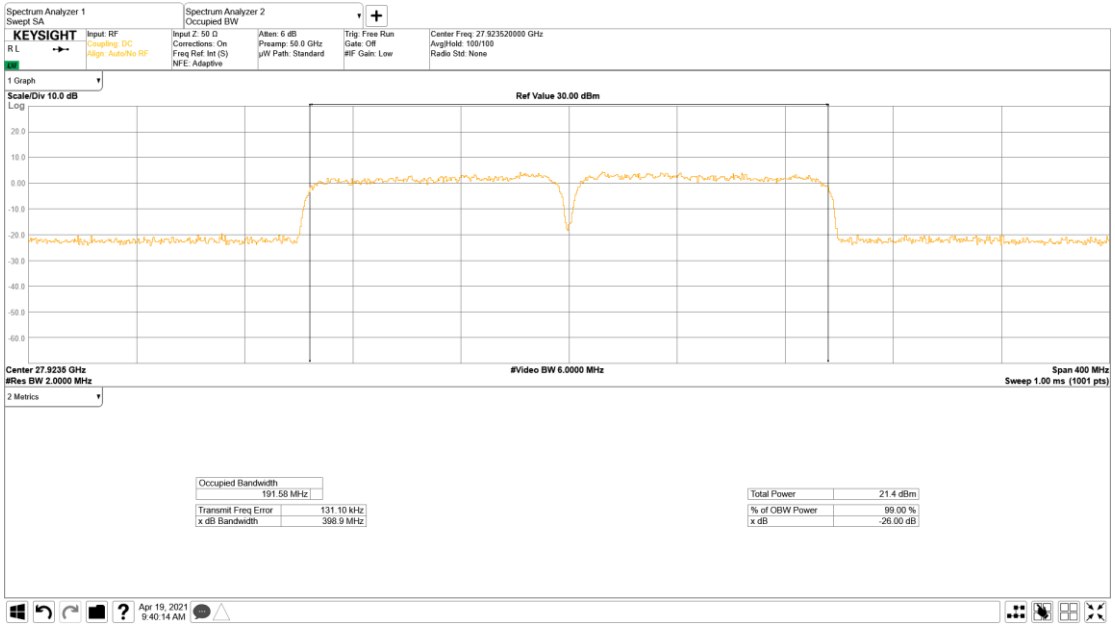
M 0 n261 BW 50MHz	 1CC / 16QAM / Mid channel
M 0 n261 BW 50MHz	 1CC / 64QAM / Mid channel

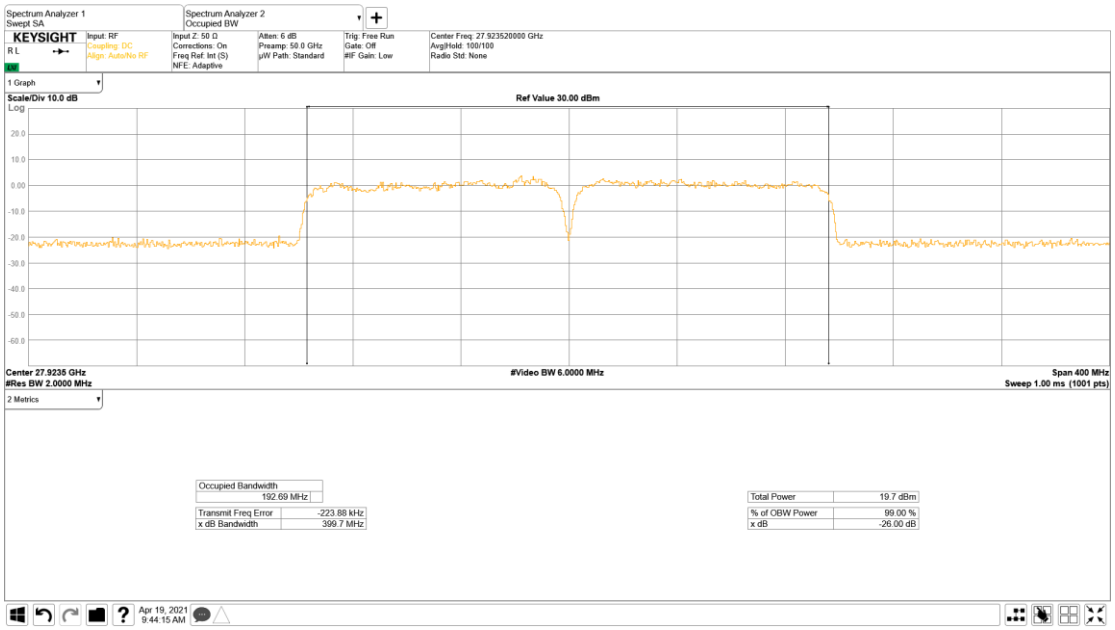
M 0 n261 BW 50MHz	 2CC / BPSK / Mid channel
M 0 n261 BW 50MHz	 2CC / QPSK / Mid channel

M 0 n261 BW 50MHz	 2CC / 16QAM / Mid channel
M 0 n261 BW 50MHz	 2CC / 64QAM / Mid channel

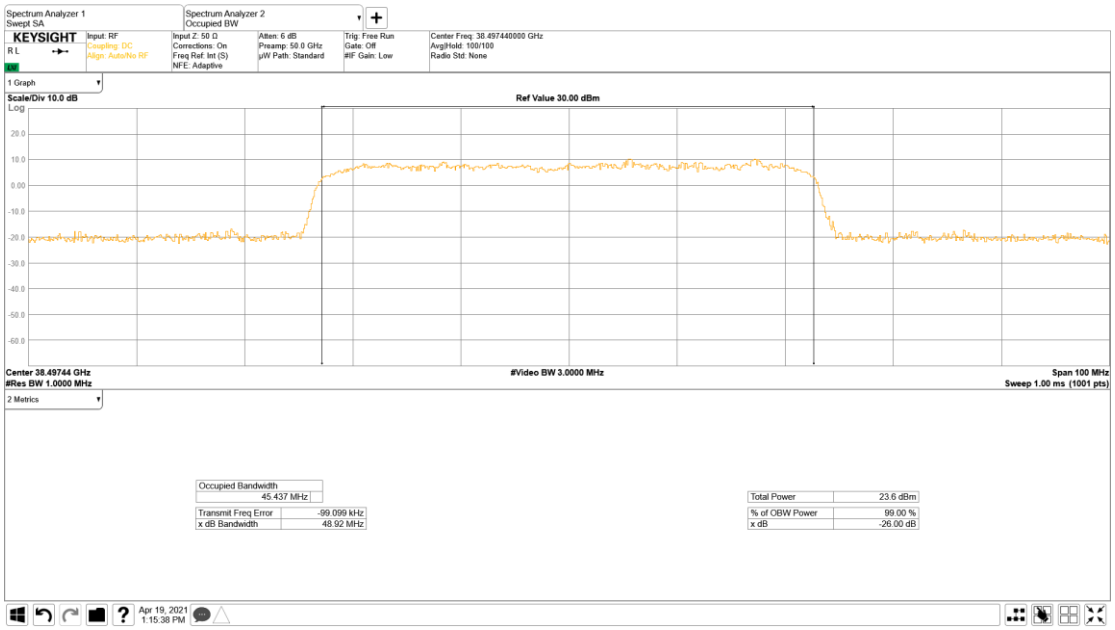
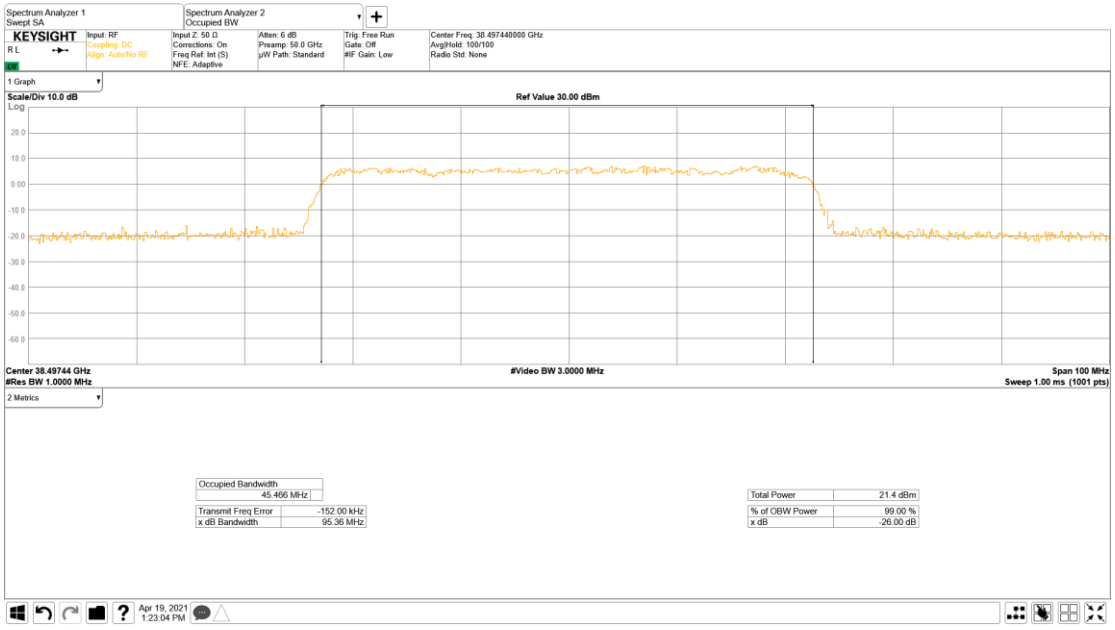
M 0 n261 BW 100MHz	 1CC / BPSK / Mid channel
M 0 n261 BW 100MHz	 1CC / QPSK / Mid channel

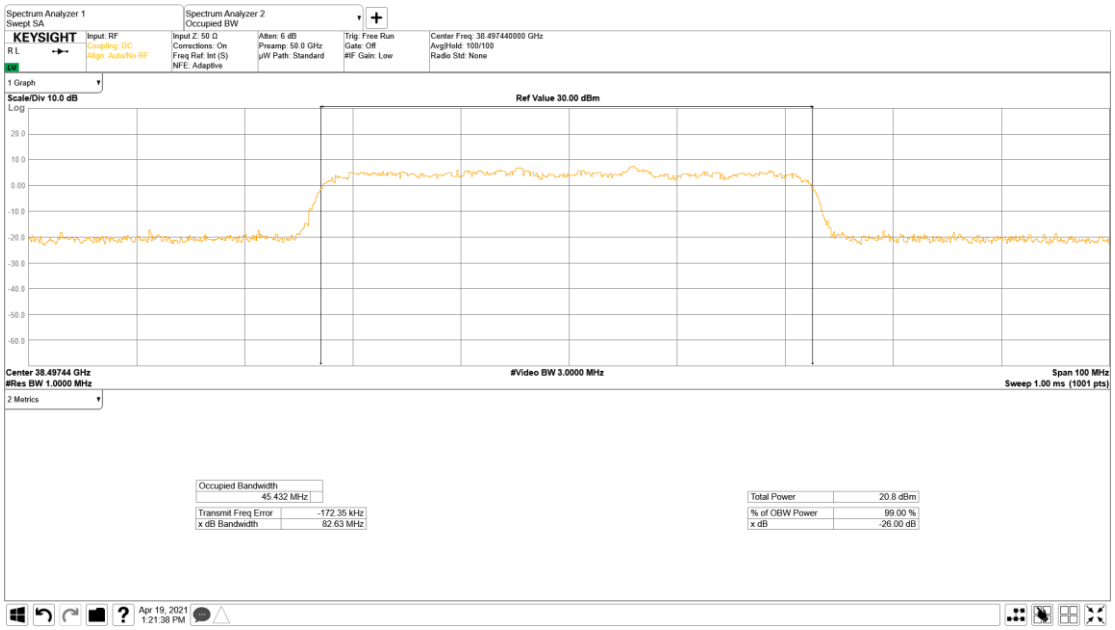
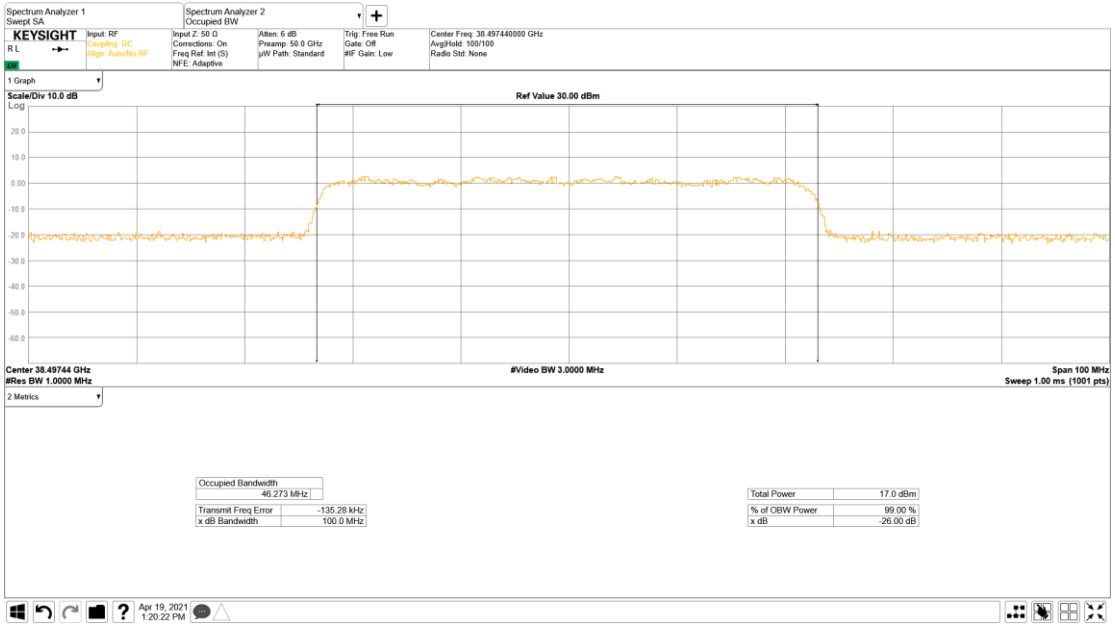
M 0 n261 BW 100MHz	 1CC / 16QAM / Mid channel
M 0 n261 BW 100MHz	 1CC / 64QAM / Mid channel

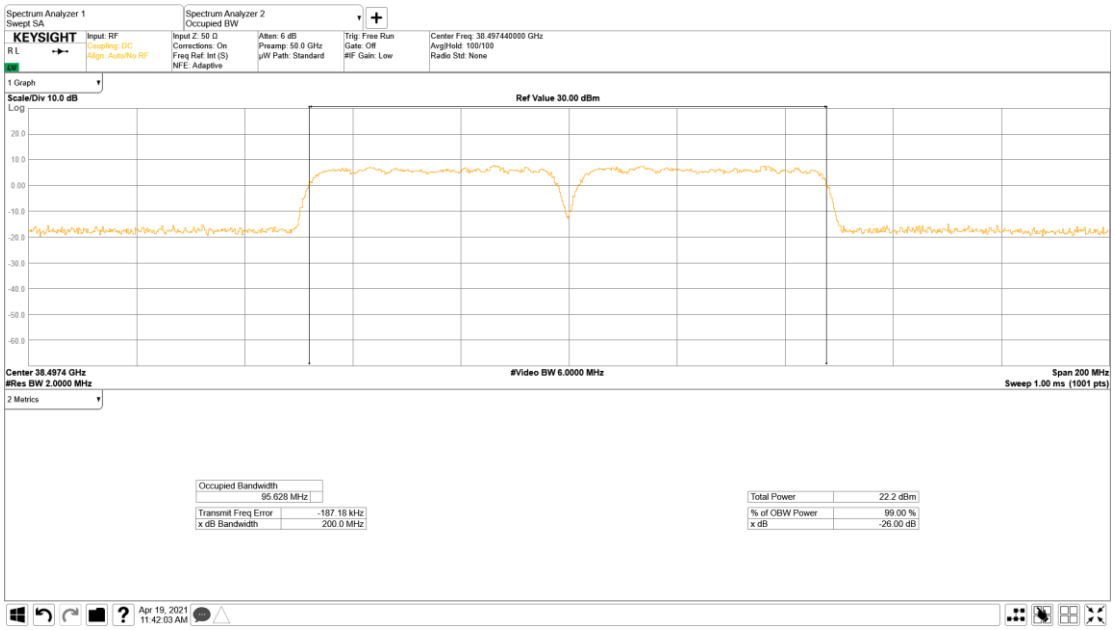
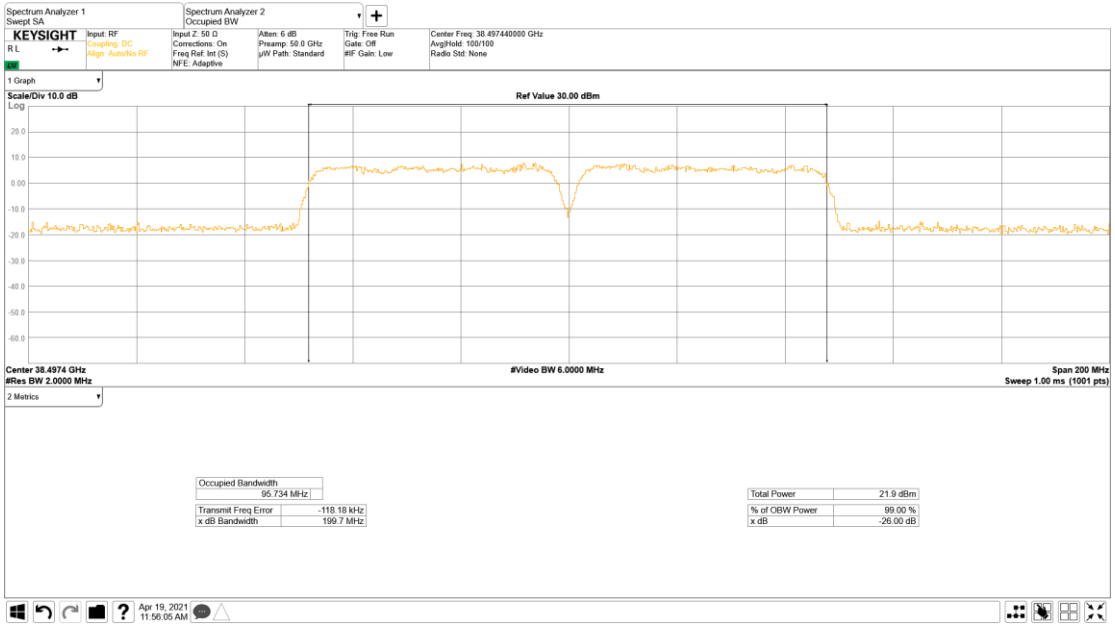
M 0 n261 BW 100MHz	 2CC / BPSK / Mid channel
M 0 n261 BW 100MHz	 2CC / QPSK / Mid channel

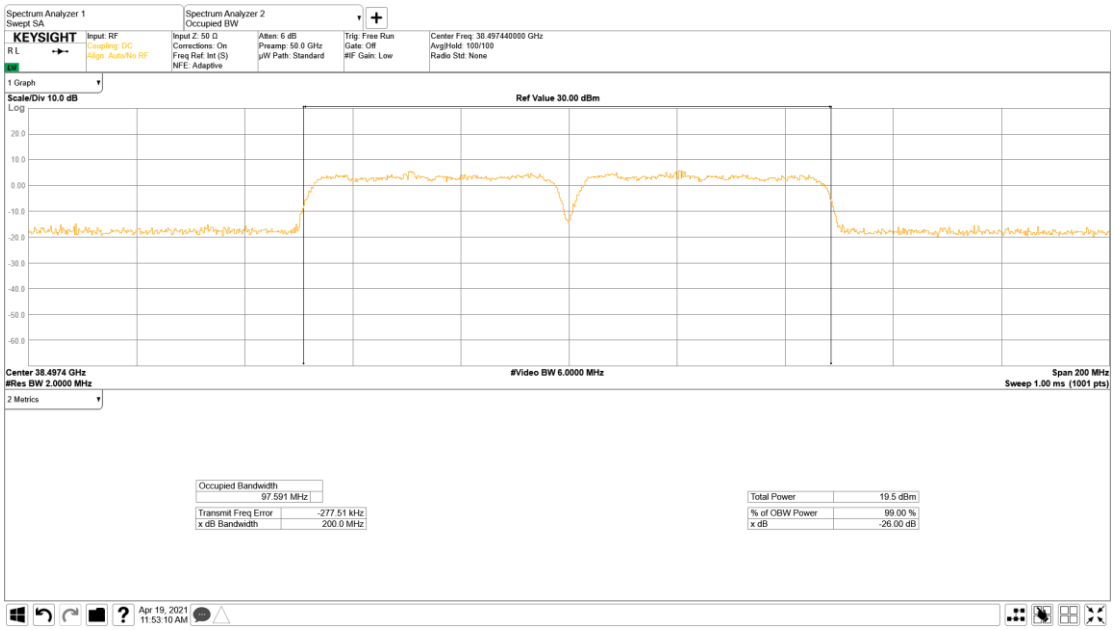
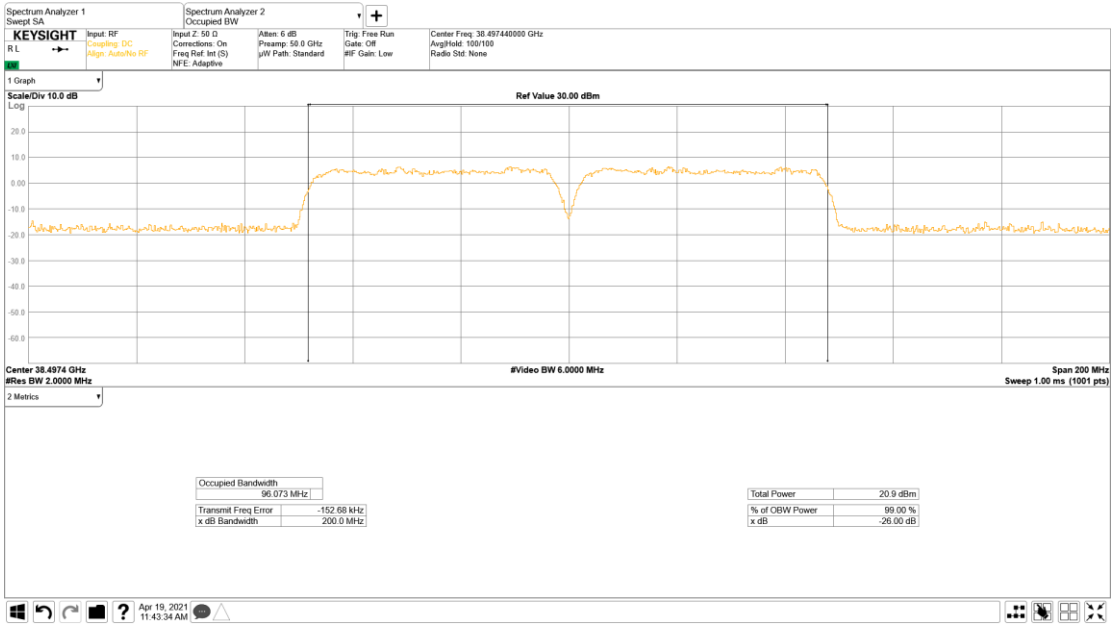
M 0 n261 BW 100MHz	 2CC / 16QAM / Mid channel
M 0 n261 BW 100MHz	 2CC / 64QAM / Mid channel

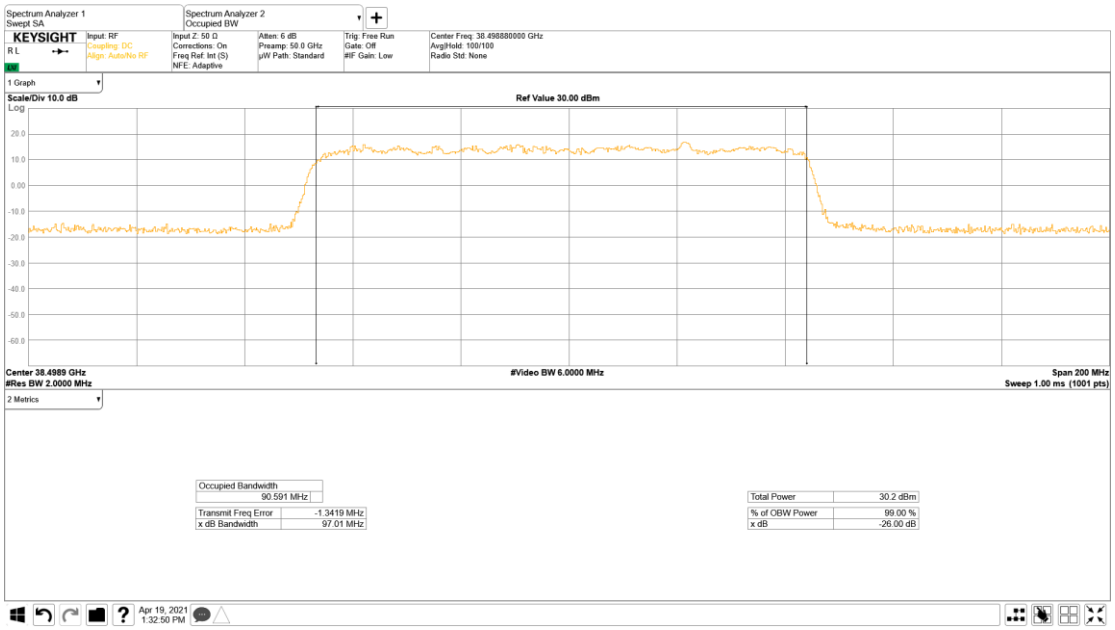
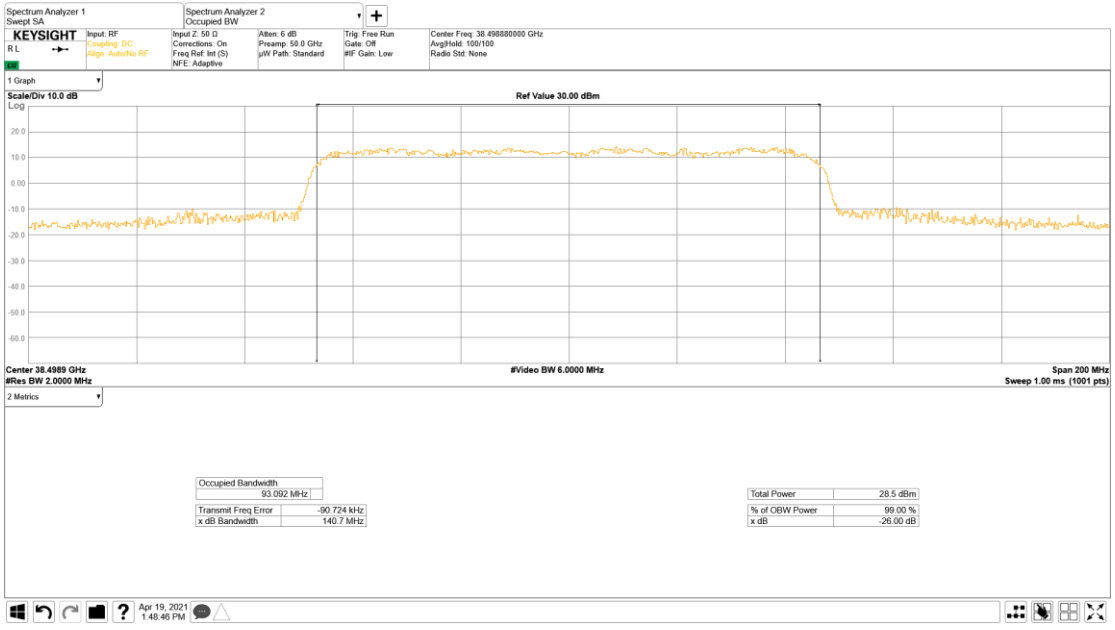
Module 0, Band n260

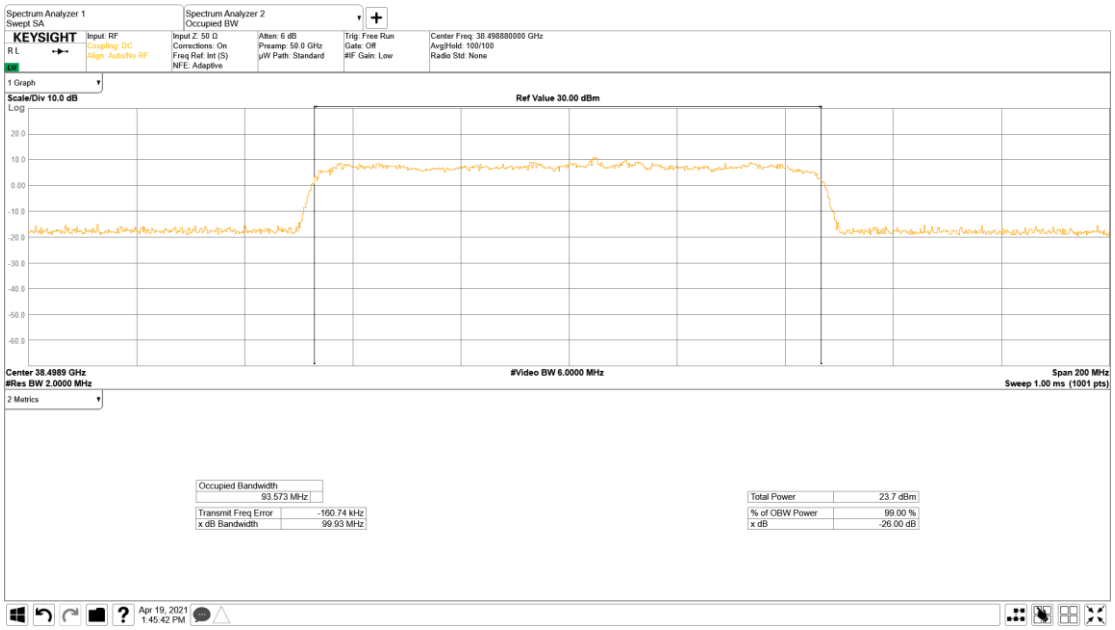
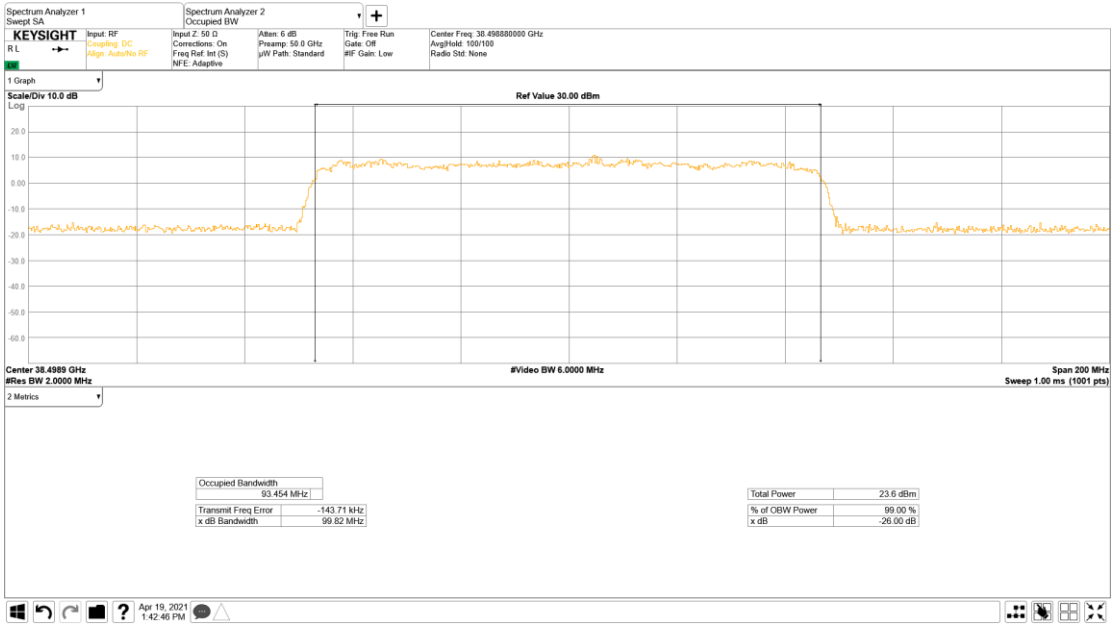
M 0 n260 BW 50MHz	 1CC / BPSK / Mid channel
M 0 n260 BW 50MHz	 1CC / QPSK / Mid channel

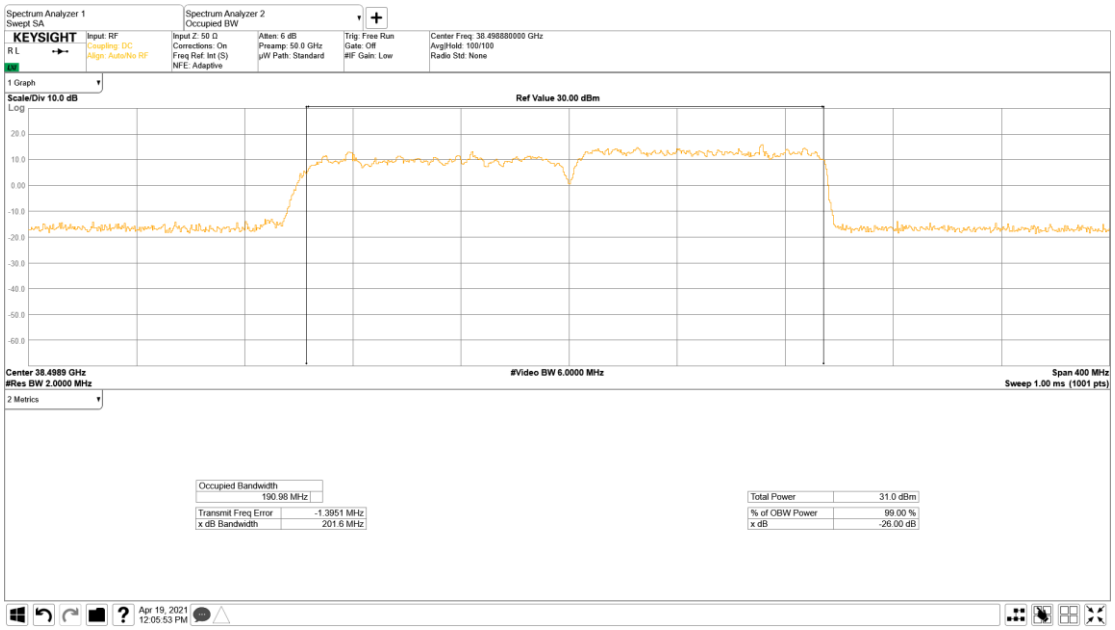
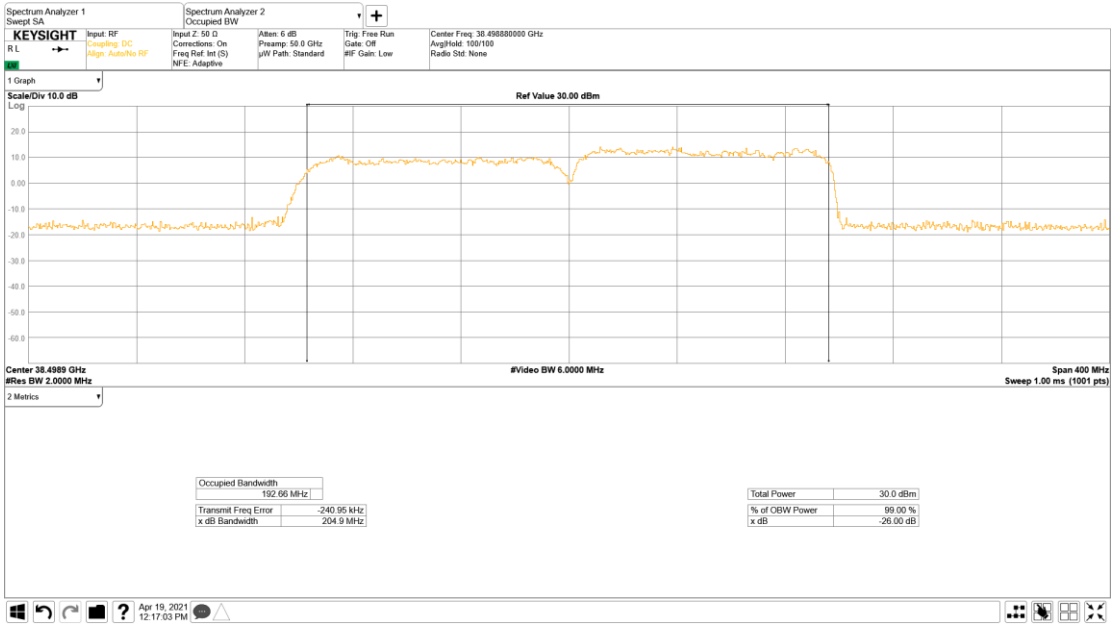
M 0 n260 BW 50MHz	 1CC / 16QAM / Mid channel
M 0 n260 BW 50MHz	 1CC / 64QAM / Mid channel

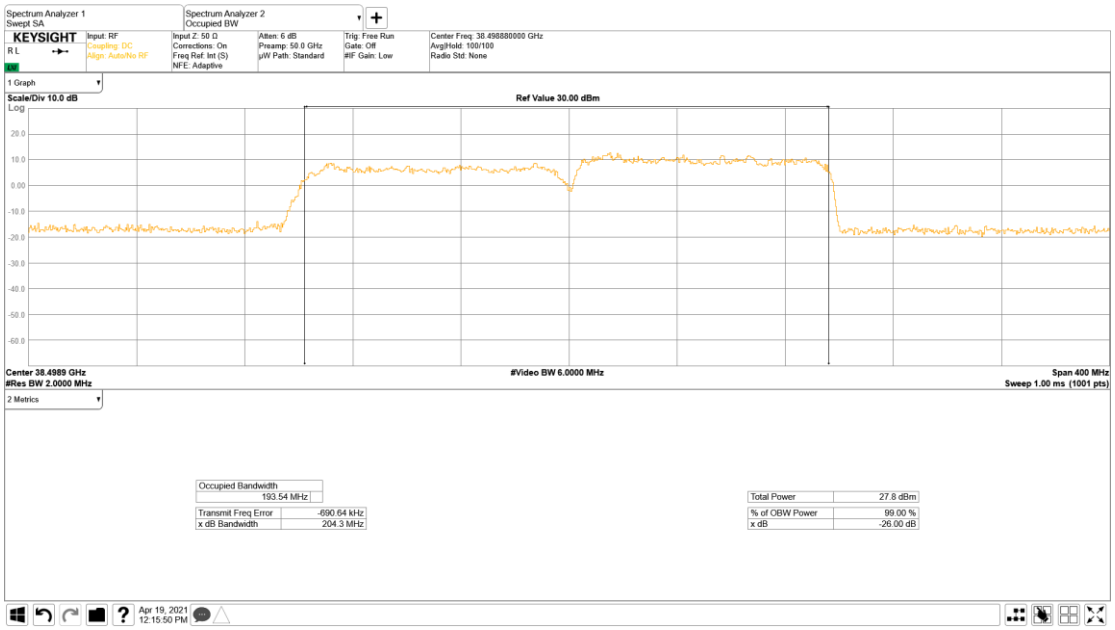
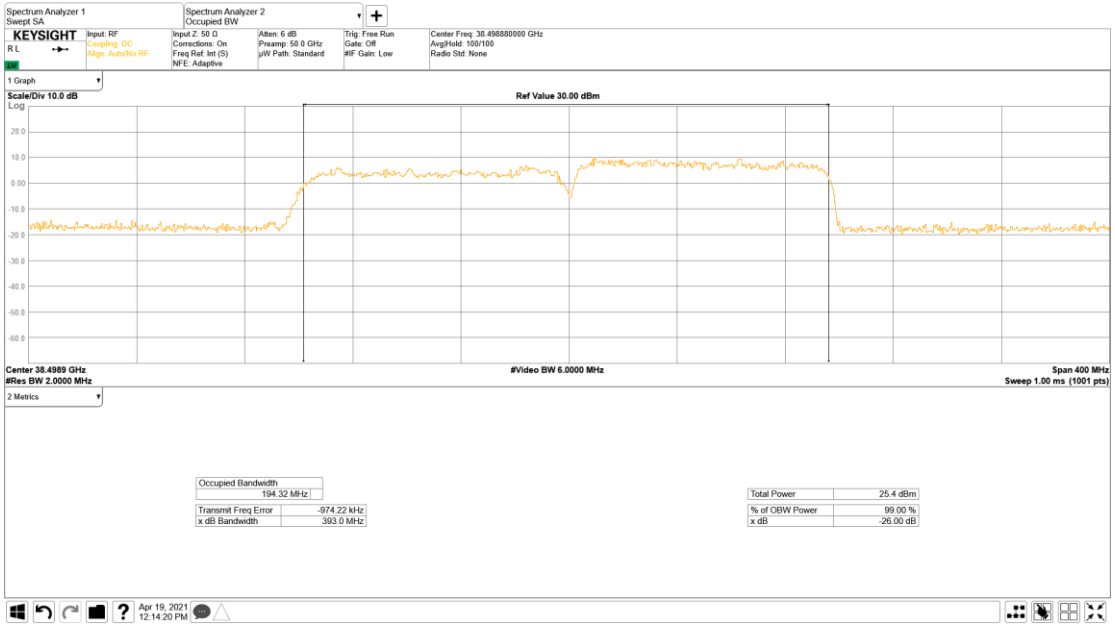
M 0 n260 BW 50MHz	 2CC / BPSK / Mid channel
M 0 n260 BW 50MHz	 2CC / QPSK / Mid channel

M 0 n260 BW 50MHz	 2CC / 16QAM / Mid channel
M 0 n260 BW 50MHz	 2CC / 64QAM / Mid channel

M 0 n260 BW 100MHz	 1CC / BPSK / Mid channel
M 0 n260 BW 100MHz	 1CC / QPSK / Mid channel

M 0 n260 BW 100MHz	 1CC / 16QAM / Mid channel
M 0 n260 BW 100MHz	 1CC / 64QAM / Mid channel

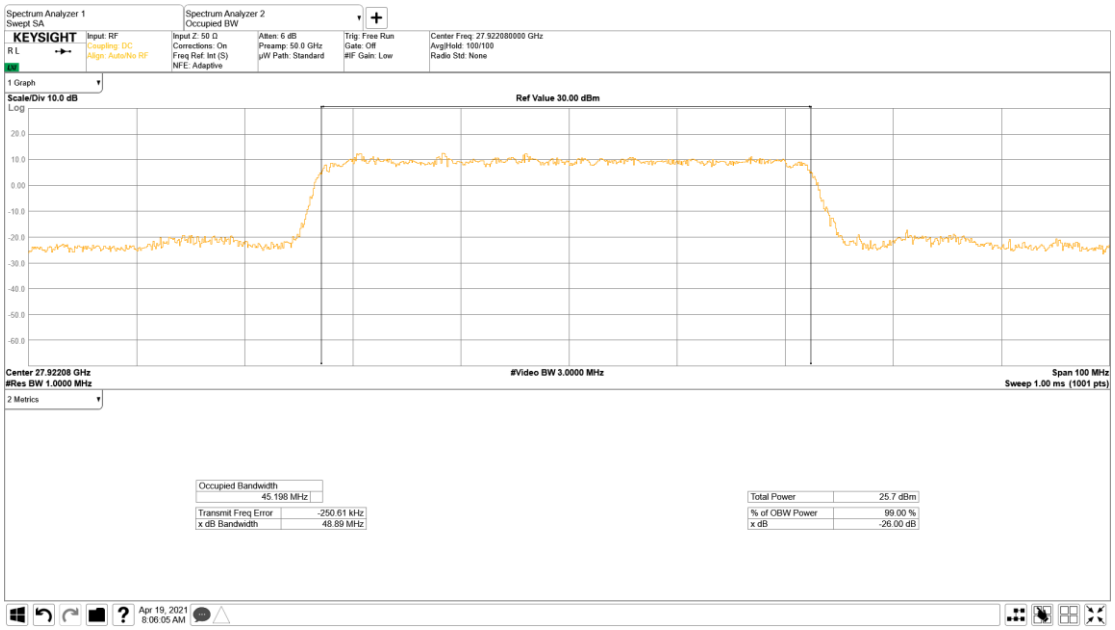
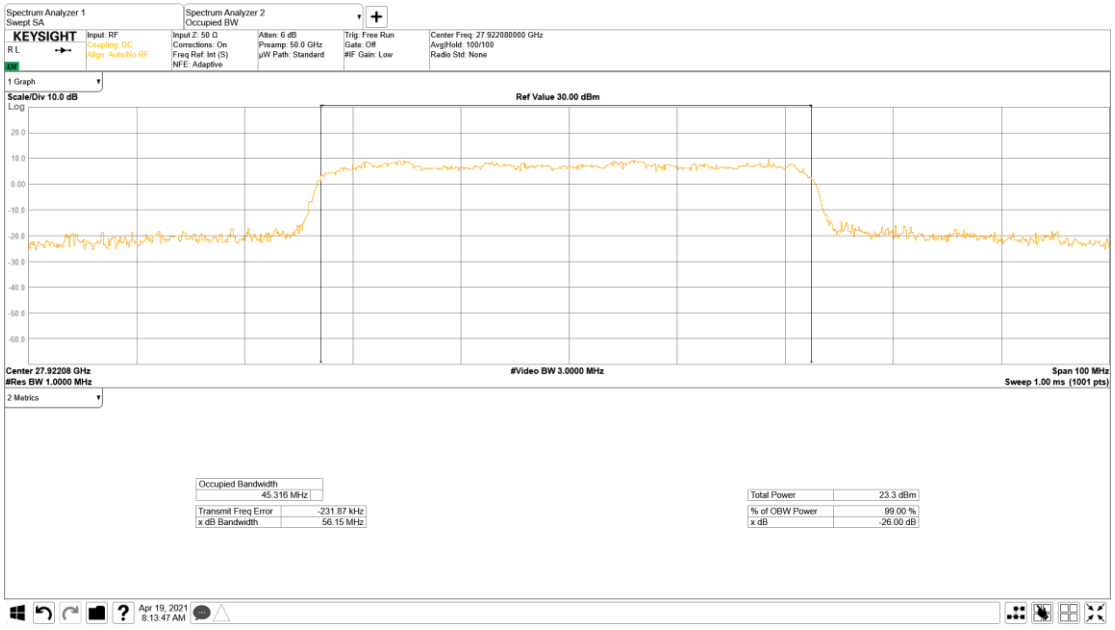
M 0 n260 BW 100MHz	 2CC / BPSK / Mid channel
M 0 n260 BW 100MHz	 2CC / QPSK / Mid channel

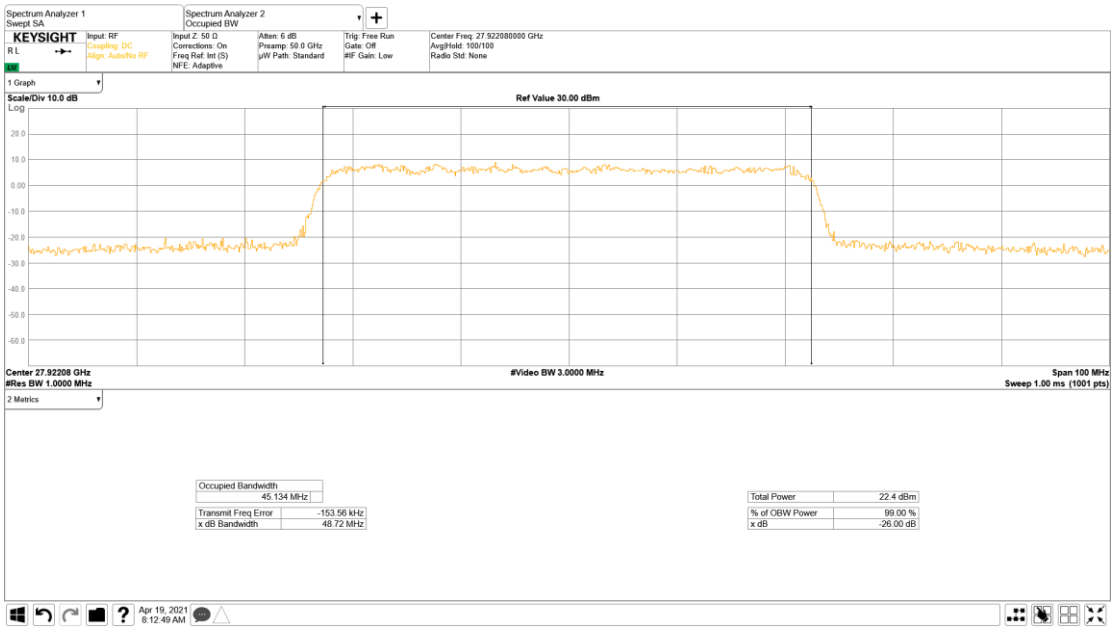
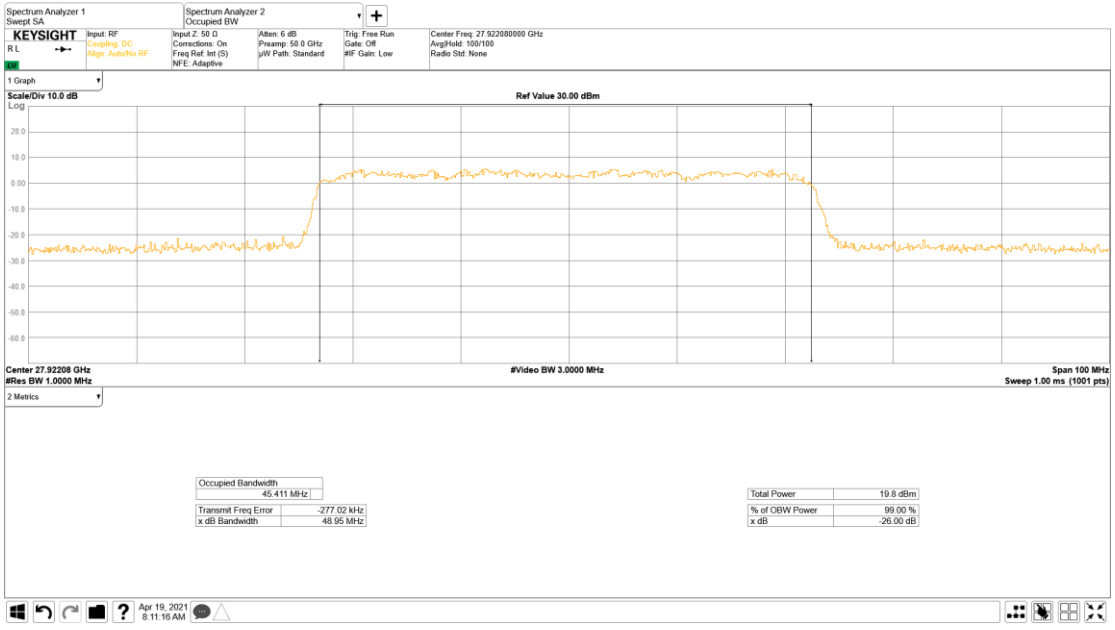
M 0 n260 BW 100MHz	 2CC / 16QAM / Mid channel
M 0 n260 BW 100MHz	 2CC / 64QAM / Mid channel

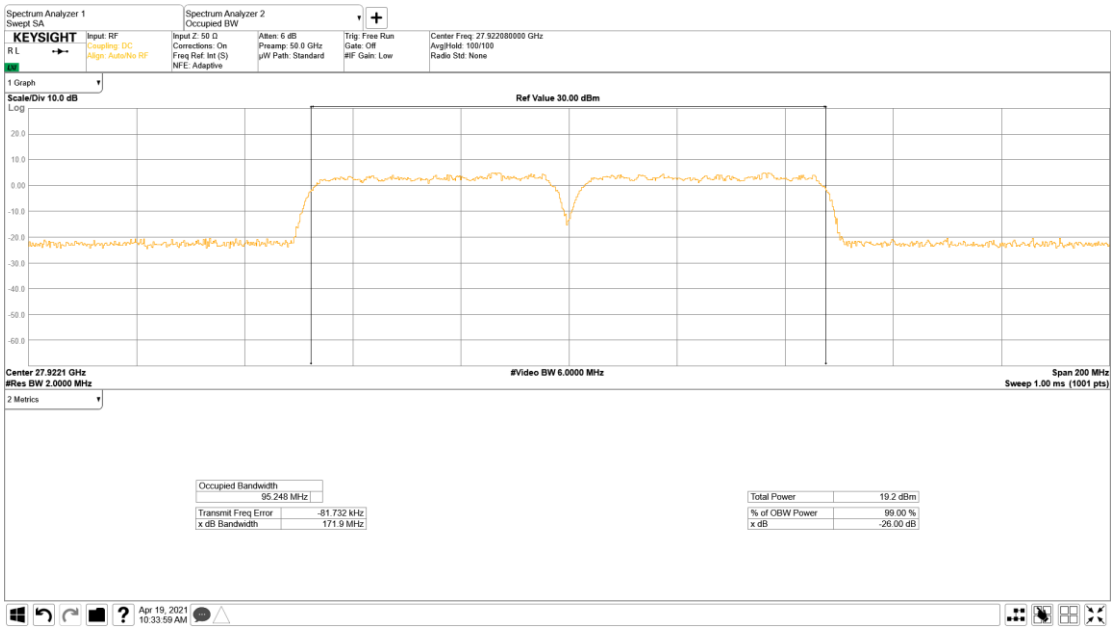
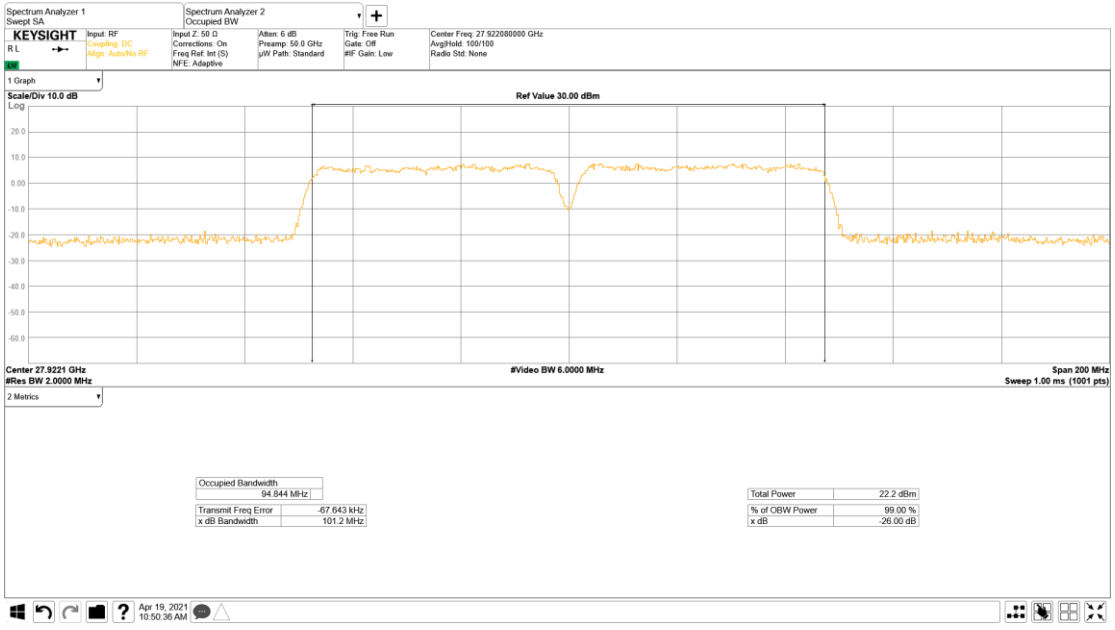
OBW Result - Module 1

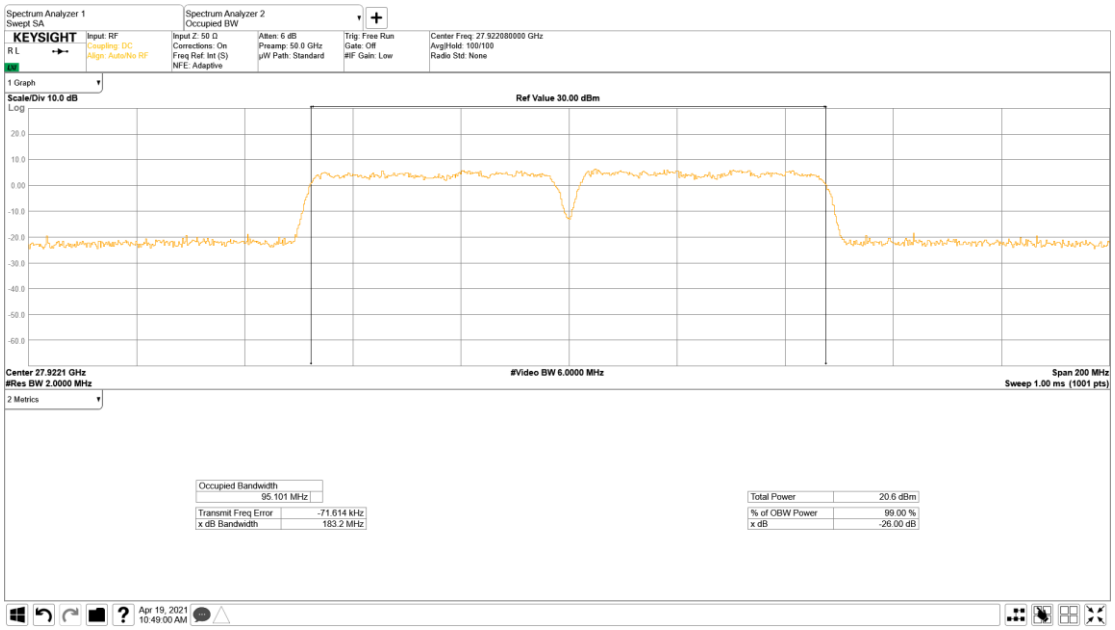
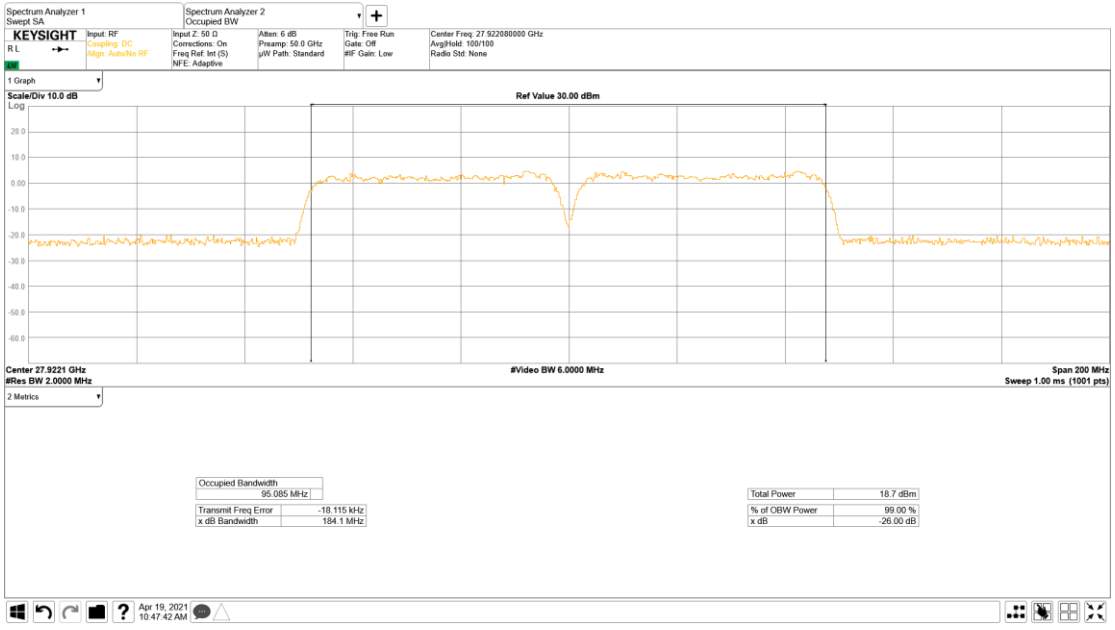
Antenna	Band	BandWidth [MHz]	CCs Active	Modulation	OBW [MHz]
Module 1	n261	50	1CC	pi/2-BPSK	45.20
				QPSK	45.32
				16QAM	45.13
				64QAM	**45.41**
			2CC	pi/2-BPSK	**95.25**
				QPSK	94.84
				16QAM	95.10
				64QAM	95.09
		100	1CC	pi/2-BPSK	91.46
				QPSK	**93.44**
				16QAM	93.33
				64QAM	93.28
			2CC	pi/2-BPSK	189.12
				QPSK	191.54
				16QAM	192.22
				64QAM	**192.83**
	n260	50	1CC	pi/2-BPSK	45.48
				QPSK	45.50
				16QAM	45.48
				64QAM	**46.09**
			2CC	pi/2-BPSK	95.57
				QPSK	95.09
				16QAM	95.39
				64QAM	**96.33**
		100	1CC	pi/2-BPSK	90.94
				QPSK	93.62
				16QAM	93.79
				64QAM	**97.14**
			2CC	pi/2-BPSK	192.83
				QPSK	193.80
				16QAM	**196.69**
				64QAM	193.12

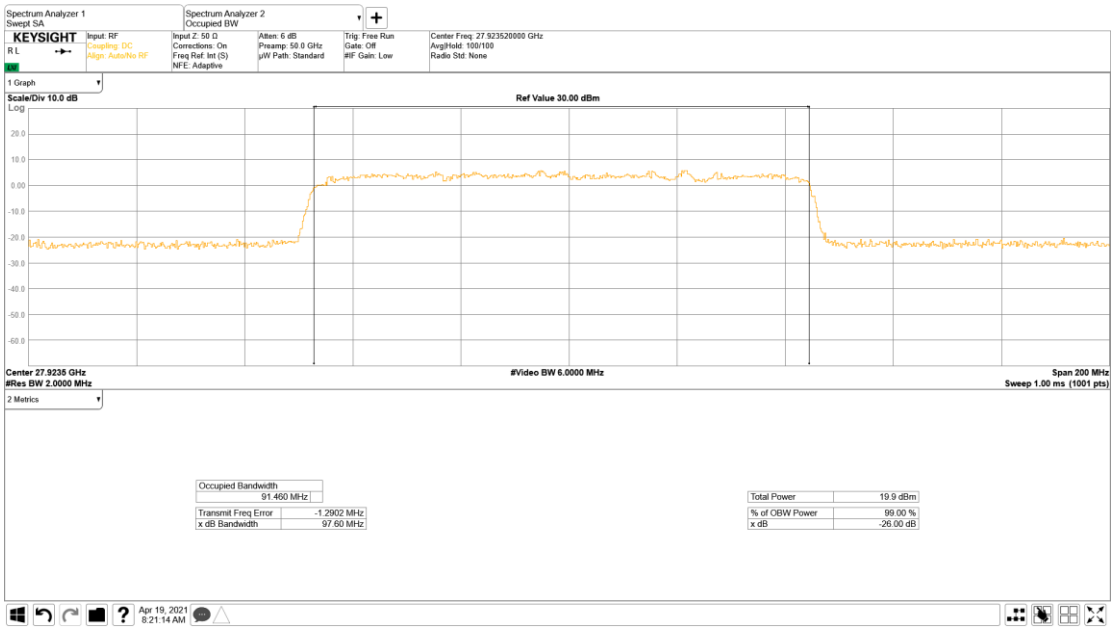
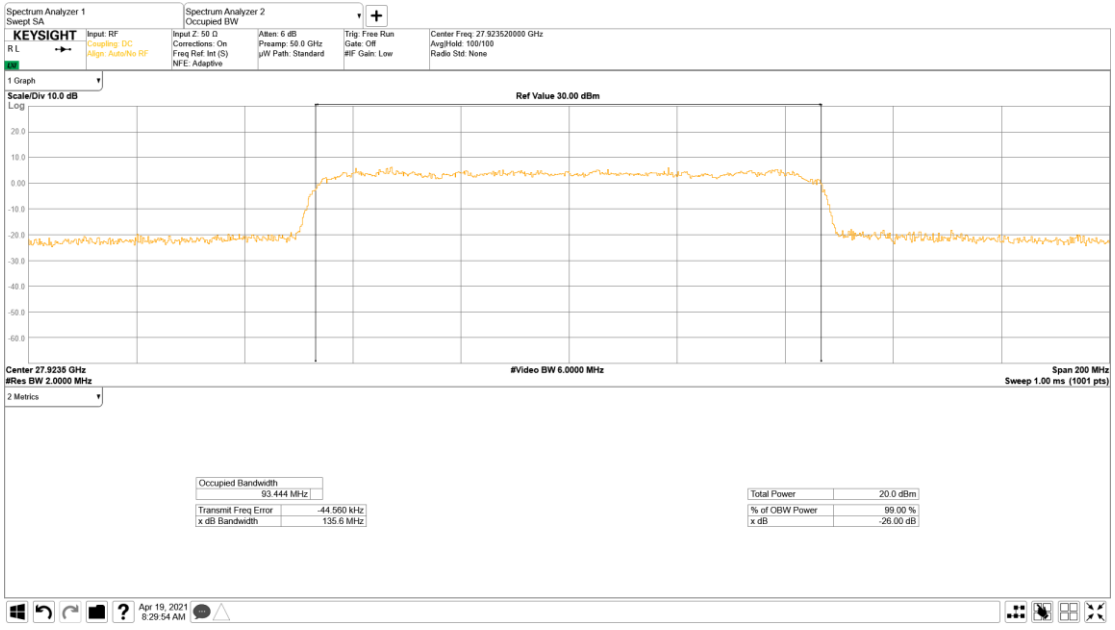
Module 1, Band n261

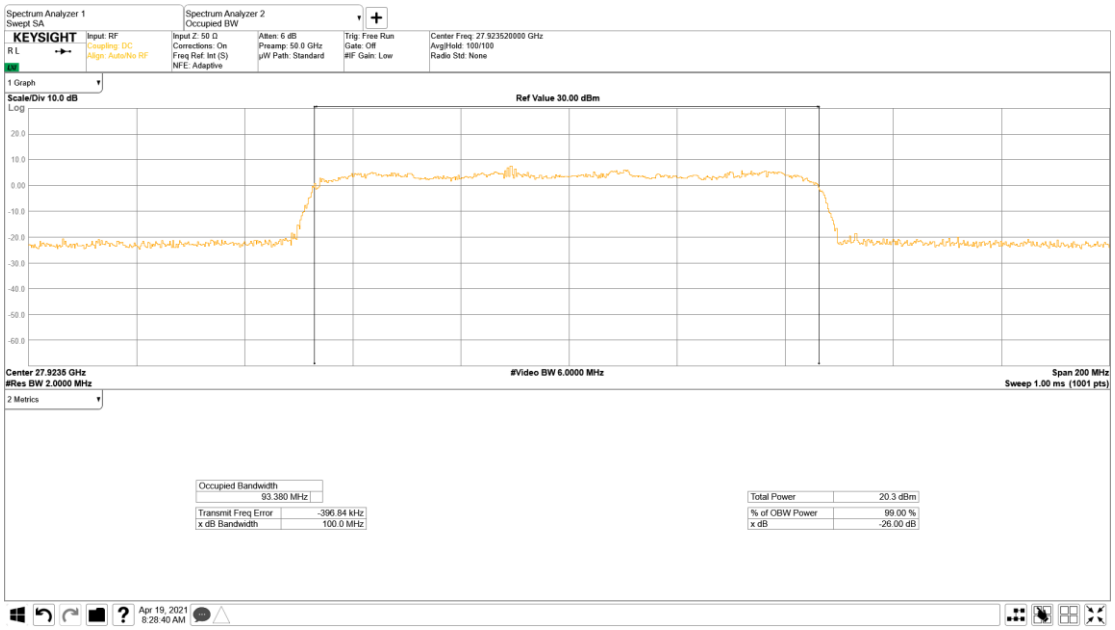
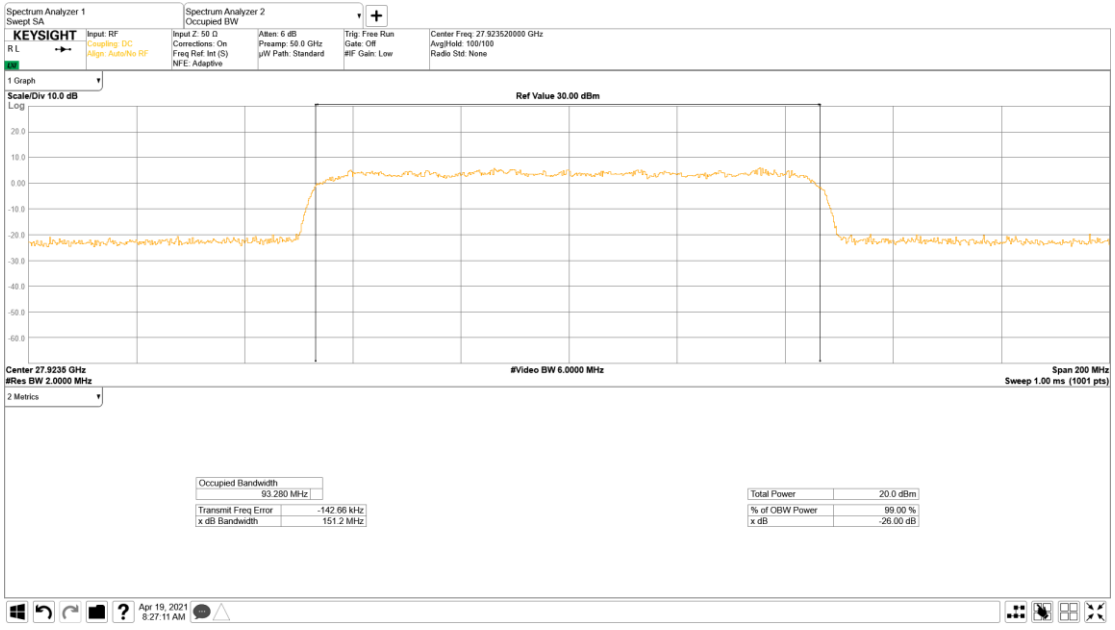
M 1 n261 BW 50MHz	 1CC / BPSK / Mid channel
M 1 n261 BW 50MHz	 1CC / QPSK / Mid channel

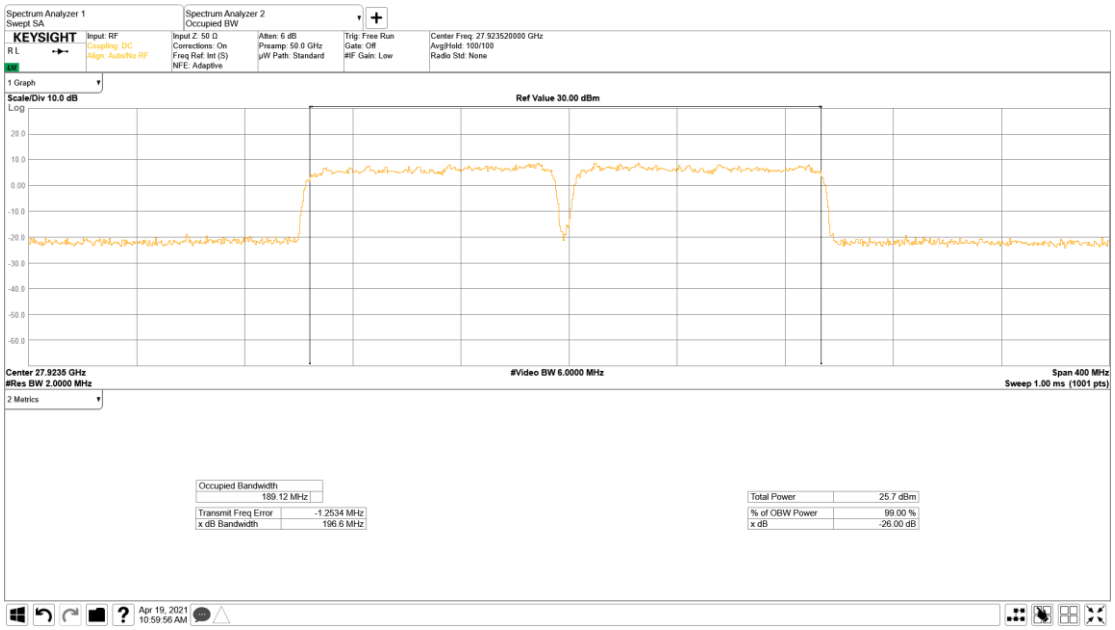
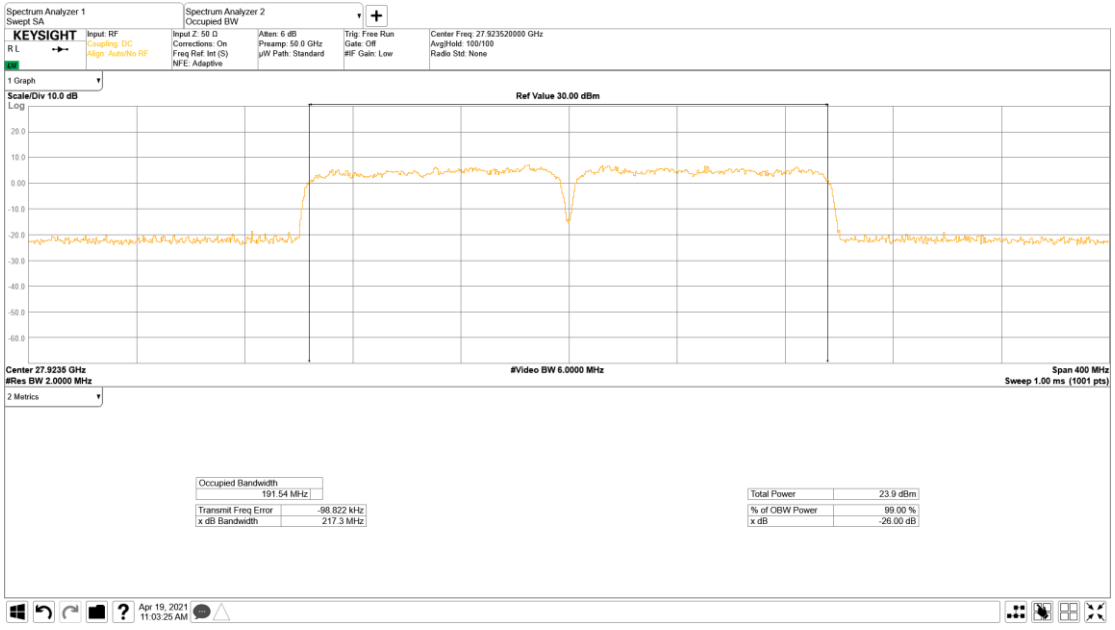
M 1 n261 BW 50MHz	 1CC / 16QAM / Mid channel
M 1 n261 BW 50MHz	 1CC / 64QAM / Mid channel

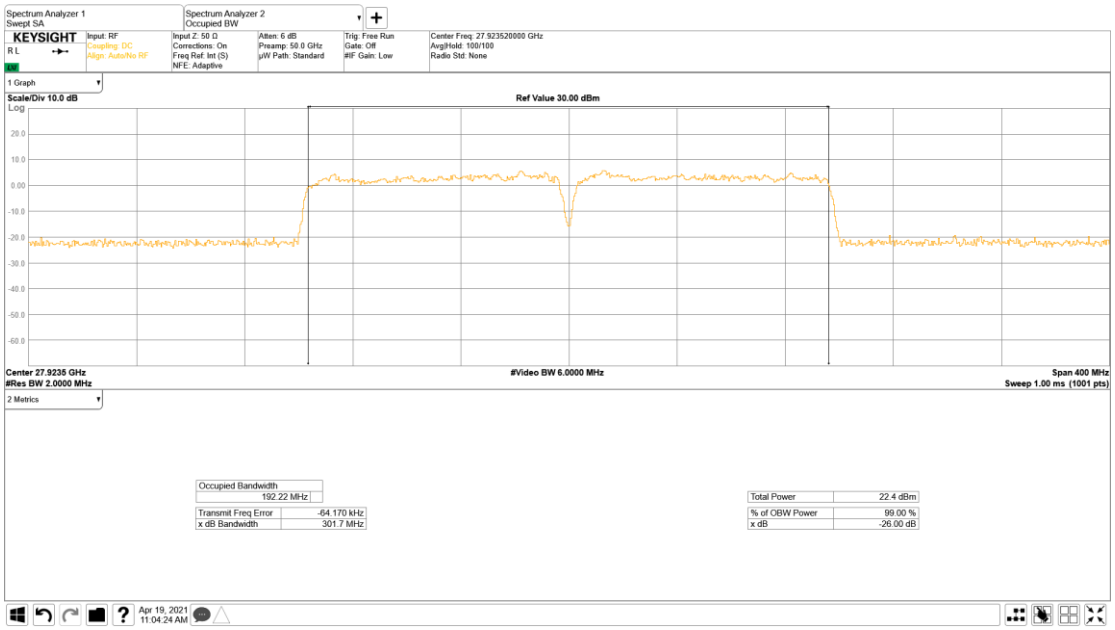
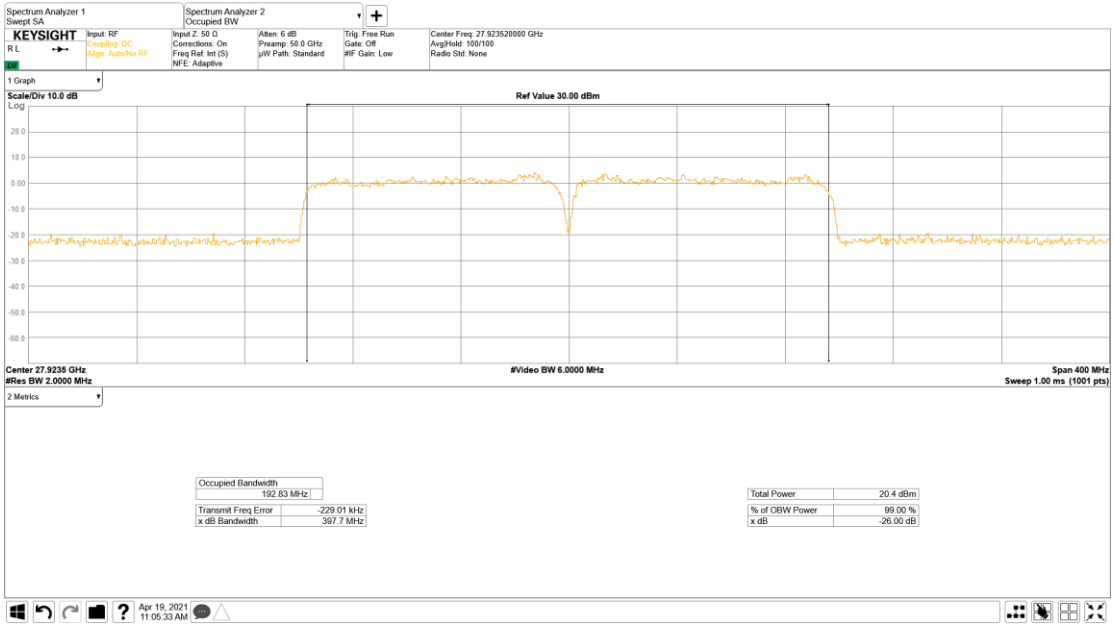
M 1 n261 BW 50MHz	 2CC / BPSK / Mid channel
M 1 n261 BW 50MHz	 2CC / QPSK / Mid channel

M 1 n261 BW 50MHz	 2CC / 16QAM / Mid channel
M 1 n261 BW 50MHz	 2CC / 64QAM / Mid channel

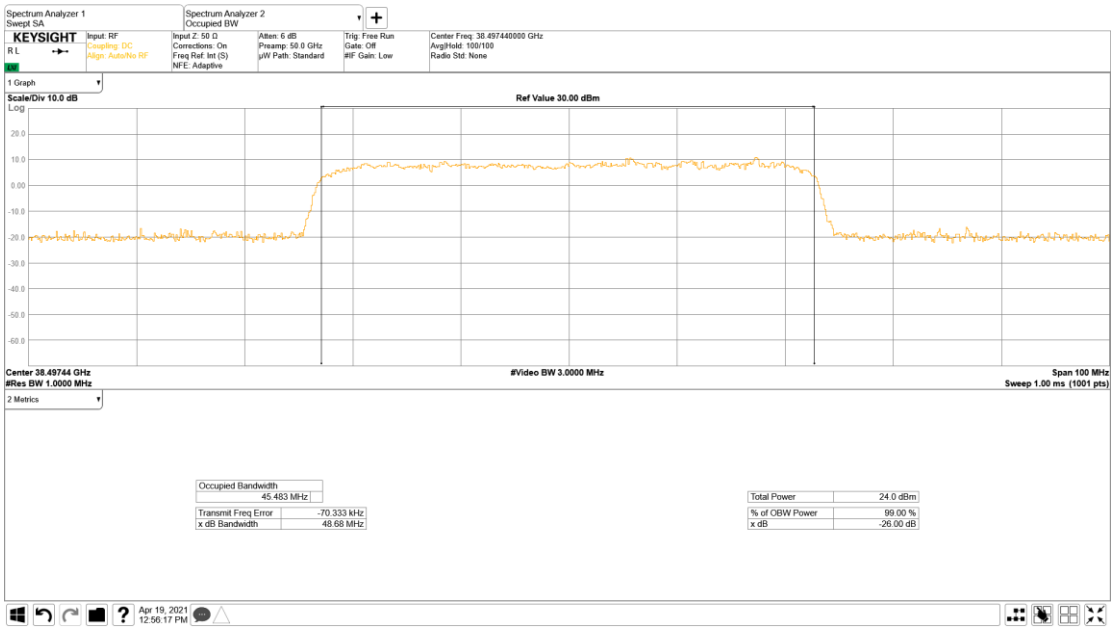
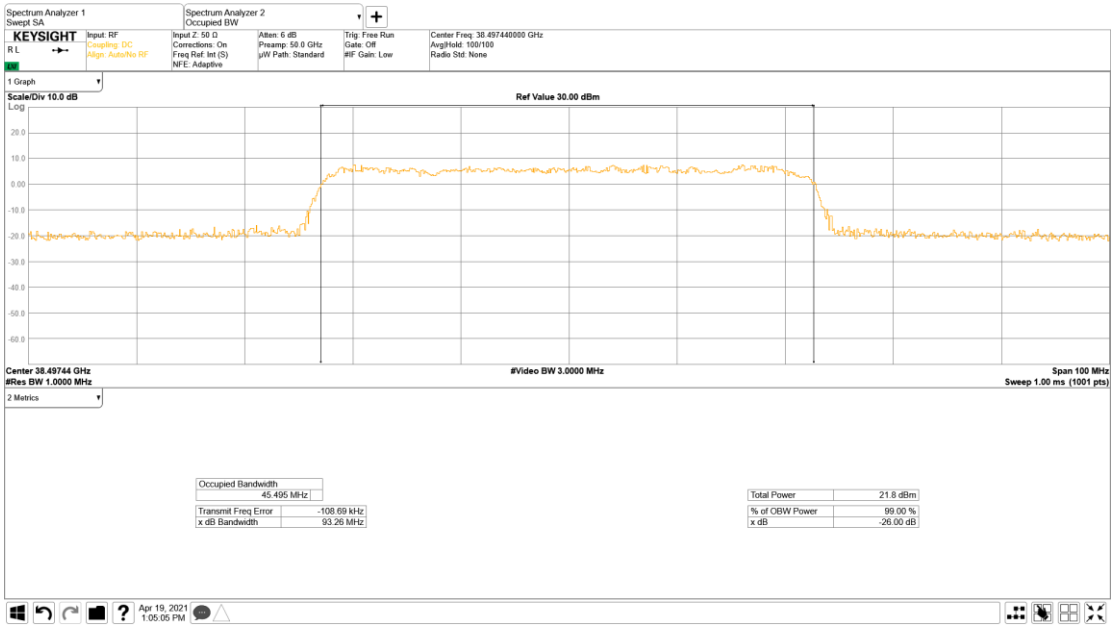
M 1 n261 BW 100MHz	 1CC / BPSK / Mid channel
M 1 n261 BW 100MHz	 1CC / QPSK / Mid channel

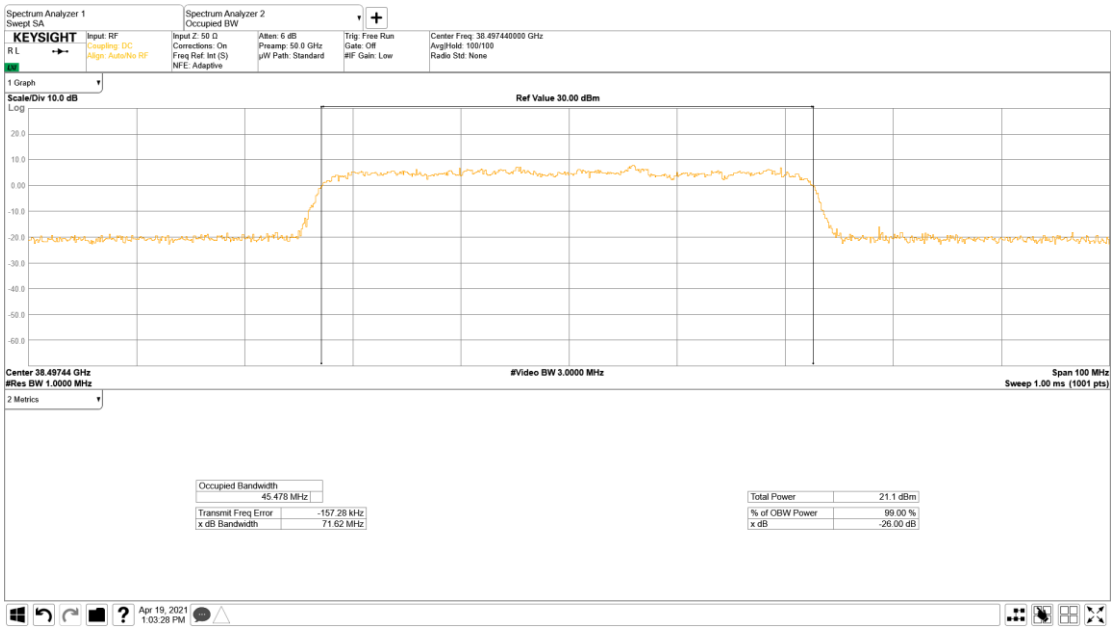
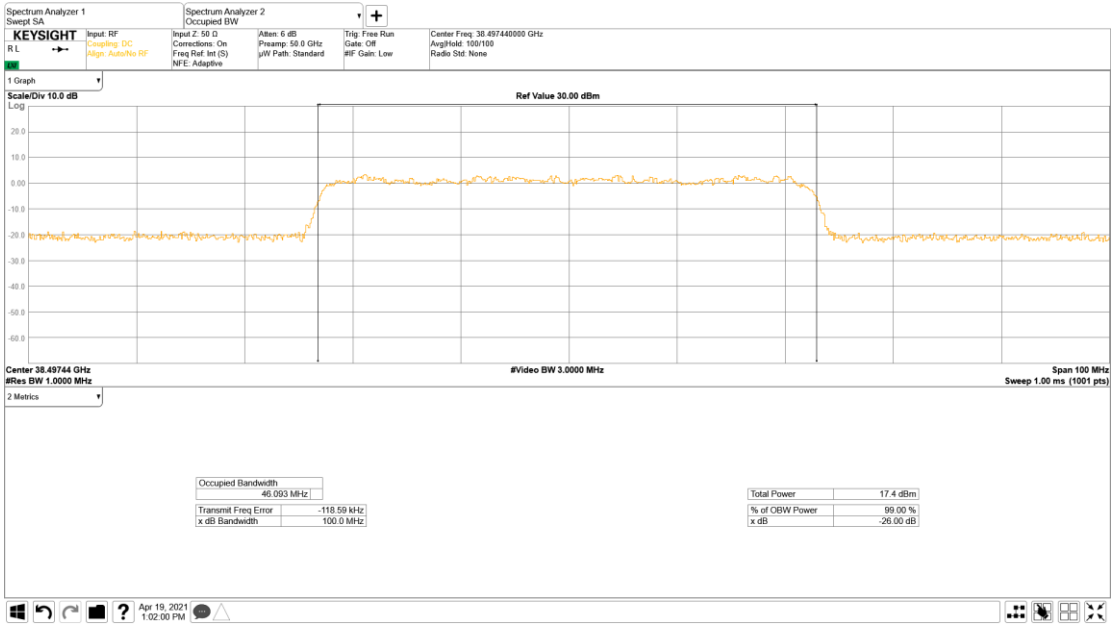
M 1 n261 BW 100MHz	 1CC / 16QAM / Mid channel
M 1 n261 BW 100MHz	 1CC / 64QAM / Mid channel

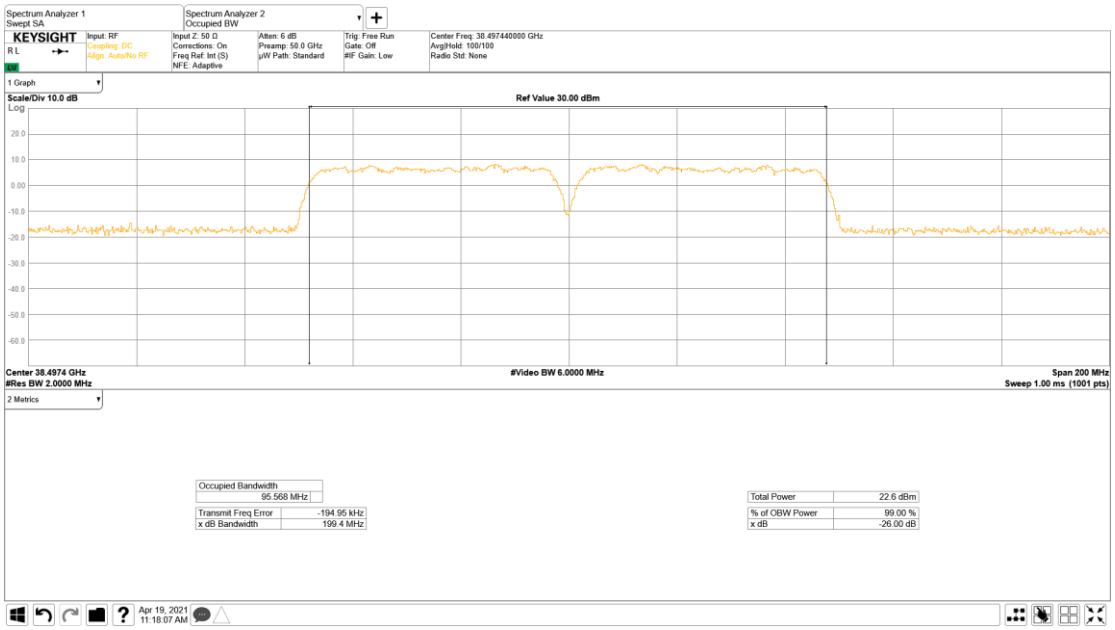
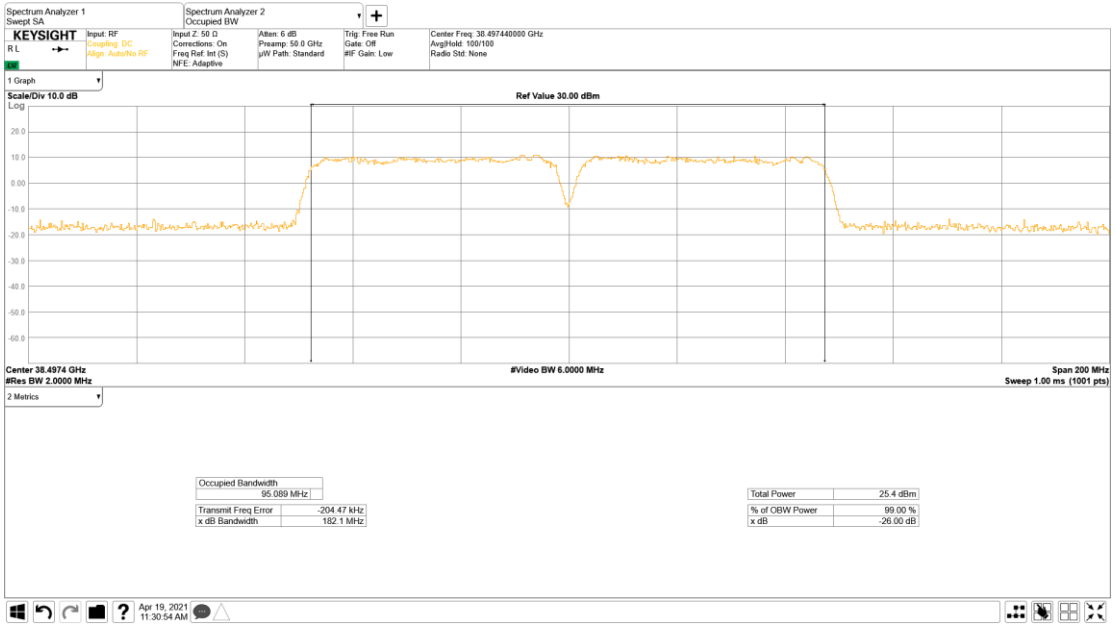
M 1 n261 BW 100MHz	 2CC / BPSK / Mid channel
M 1 n261 BW 100MHz	 2CC / QPSK / Mid channel

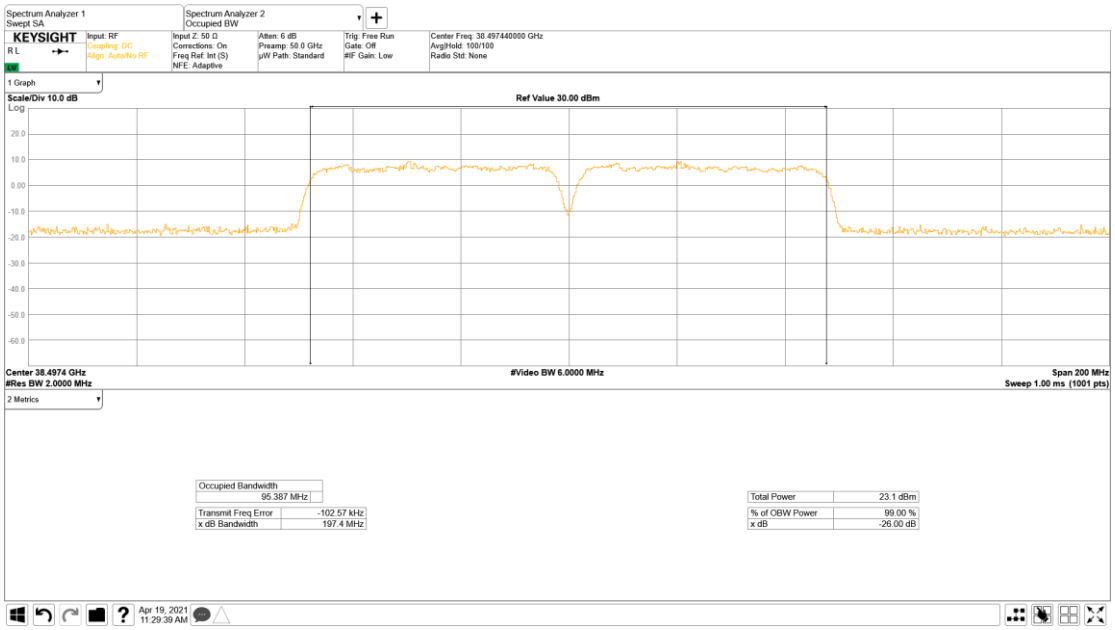
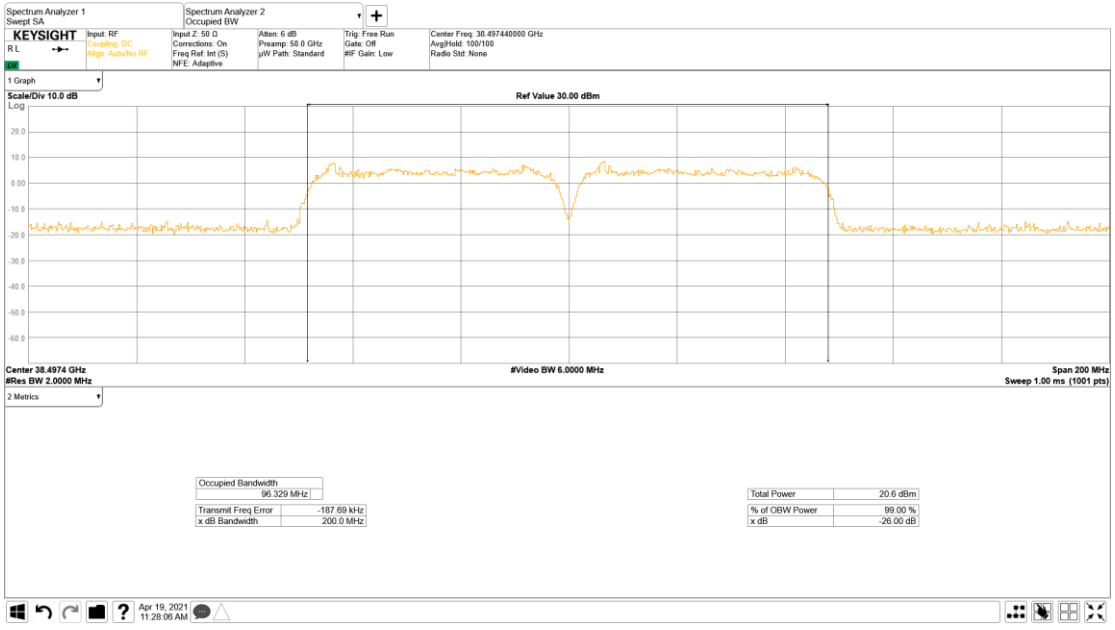
M 1 n261 BW 100MHz	 2CC / 16QAM / Mid channel
M 1 n261 BW 100MHz	 2CC / 64QAM / Mid channel

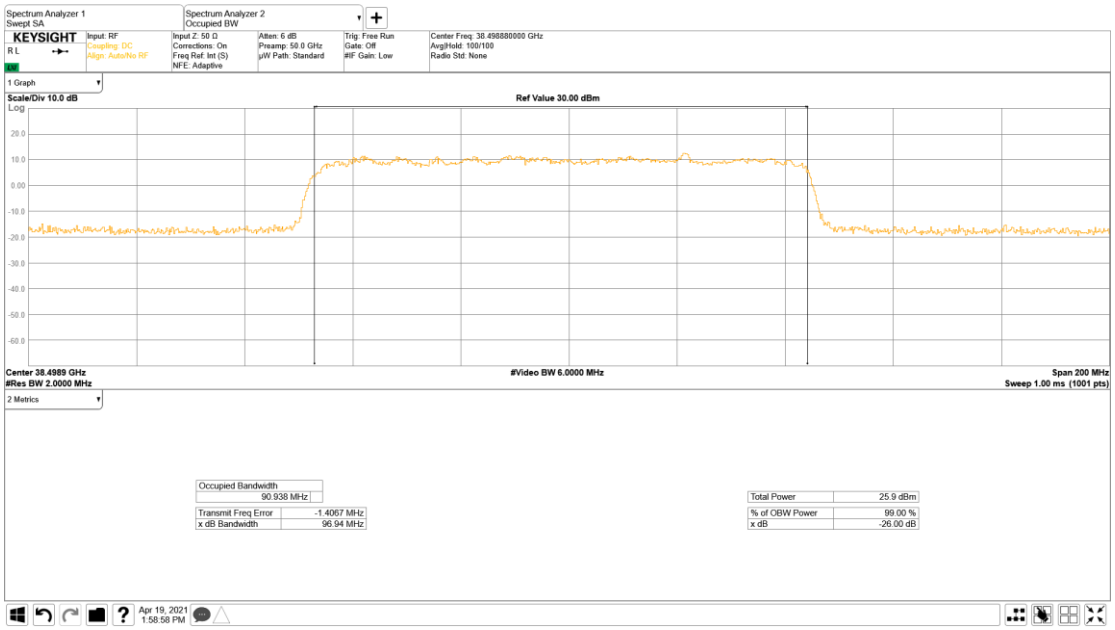
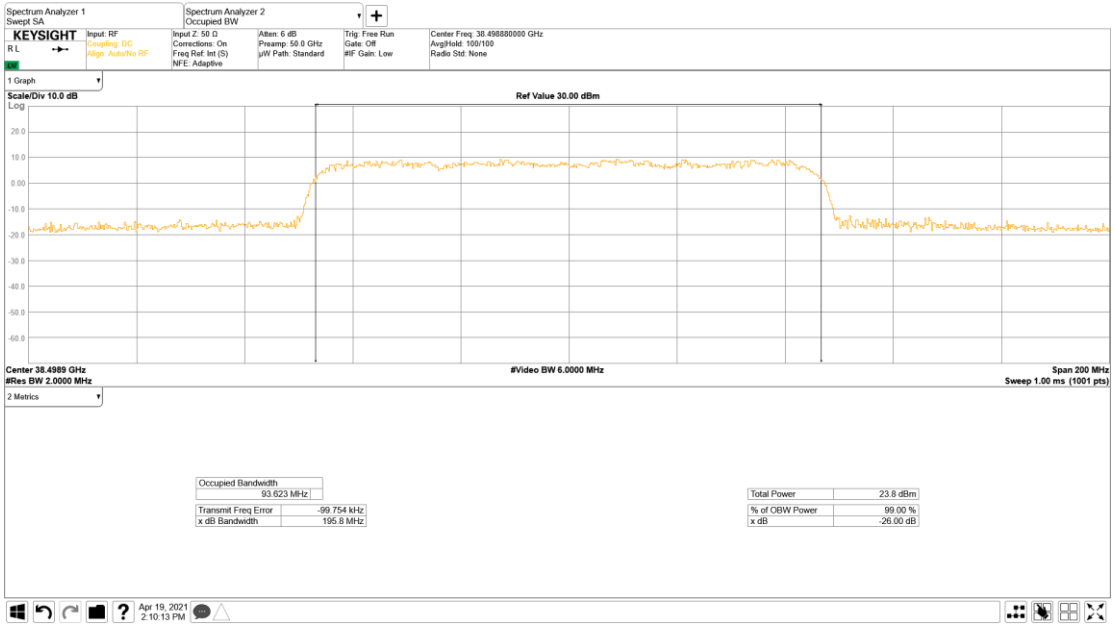
Module 1, Band n260

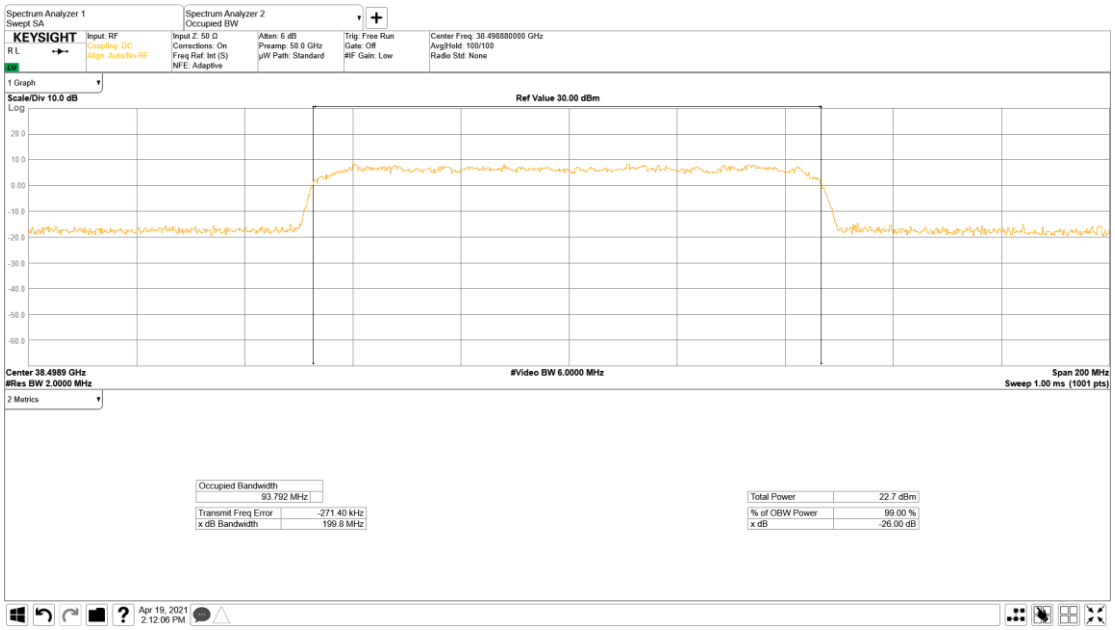
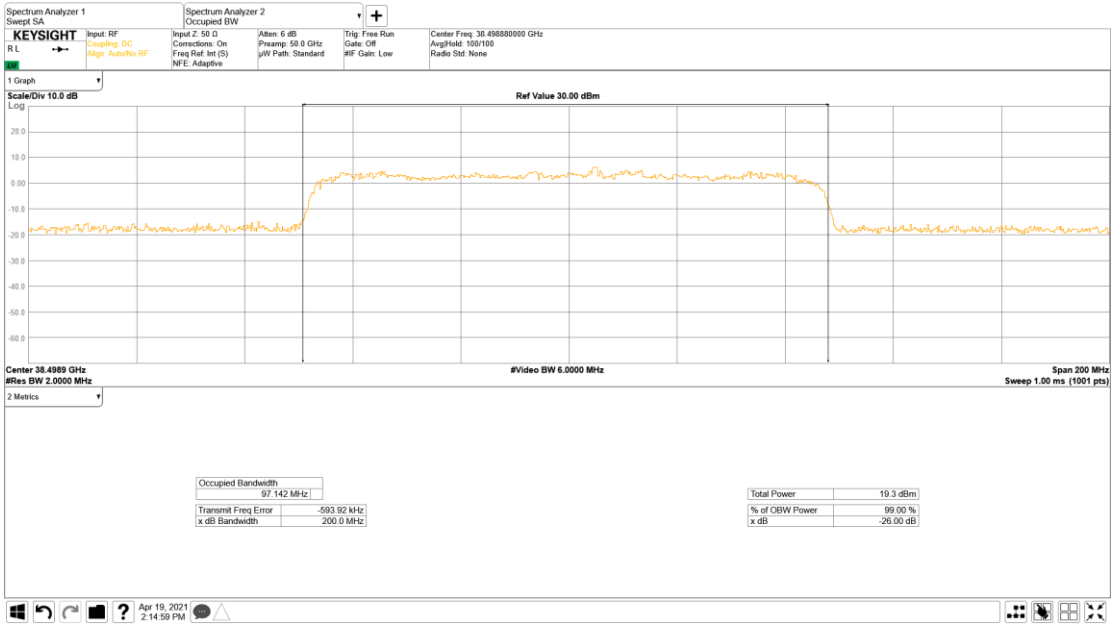
M 1 n260 BW 50MHz	 1CC / BPSK / Mid channel
M 1 n260 BW 50MHz	 1CC / QPSK / Mid channel

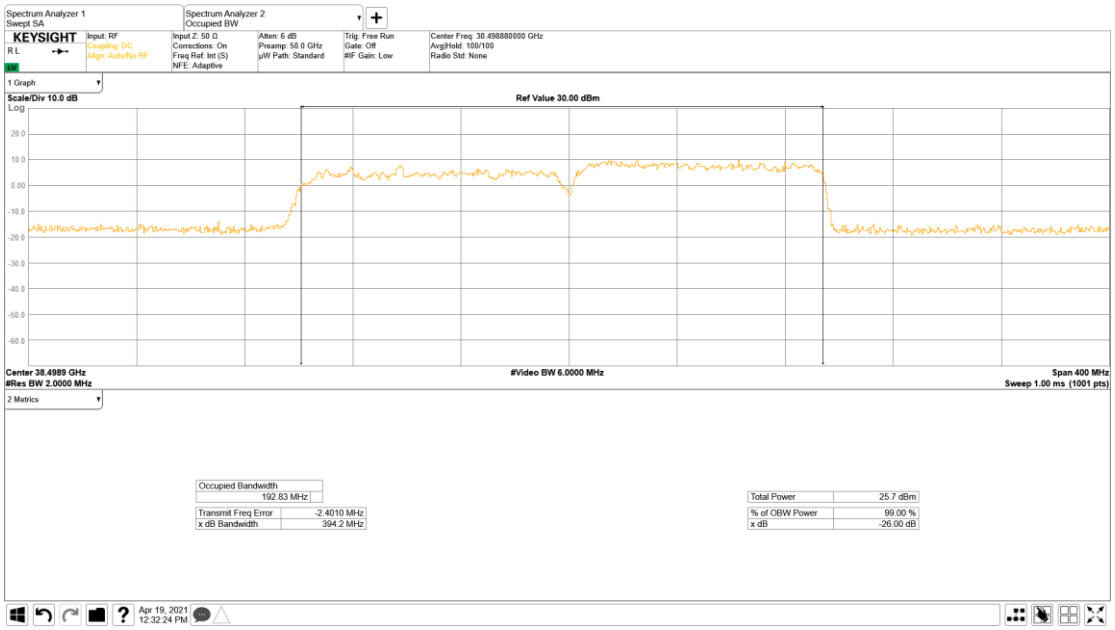
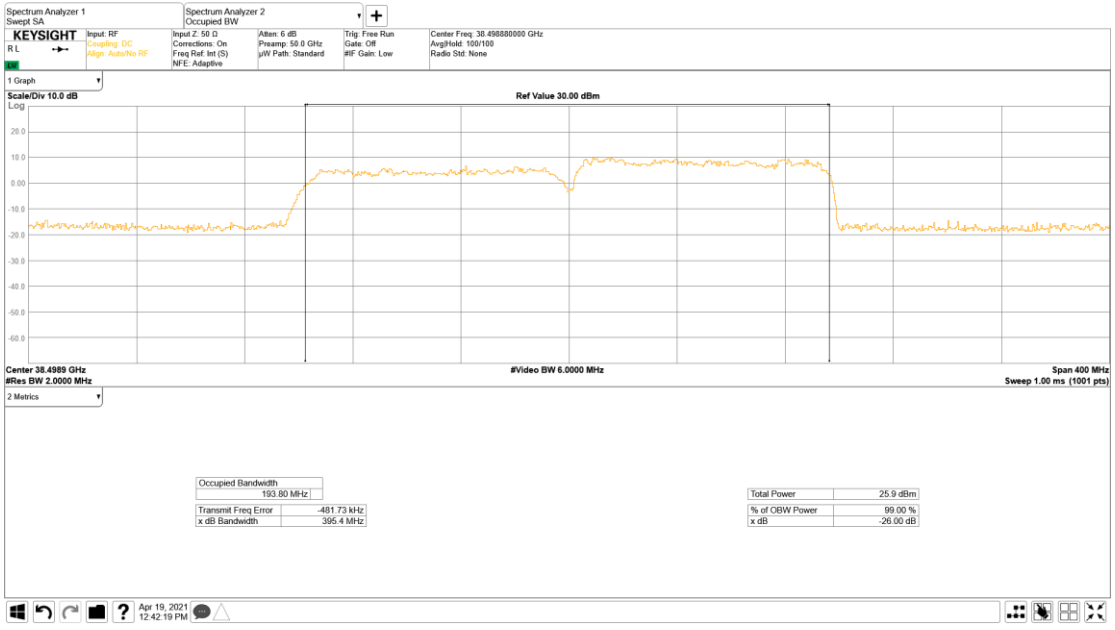
M 1 n260 BW 50MHz	 1CC / 16QAM / Mid channel
M 1 n260 BW 50MHz	 1CC / 64QAM / Mid channel

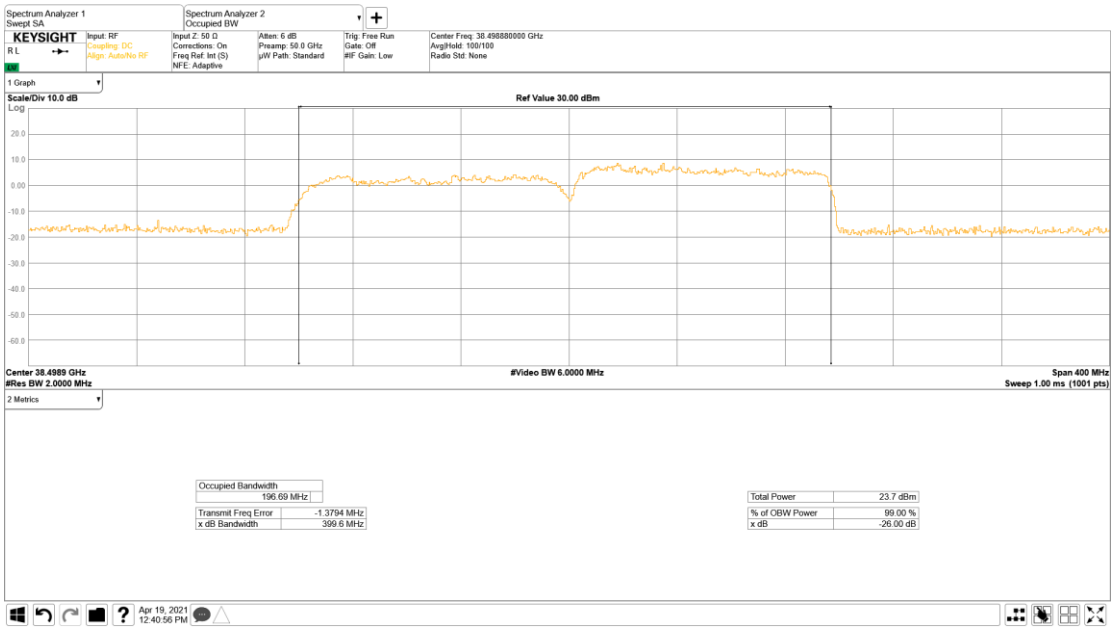
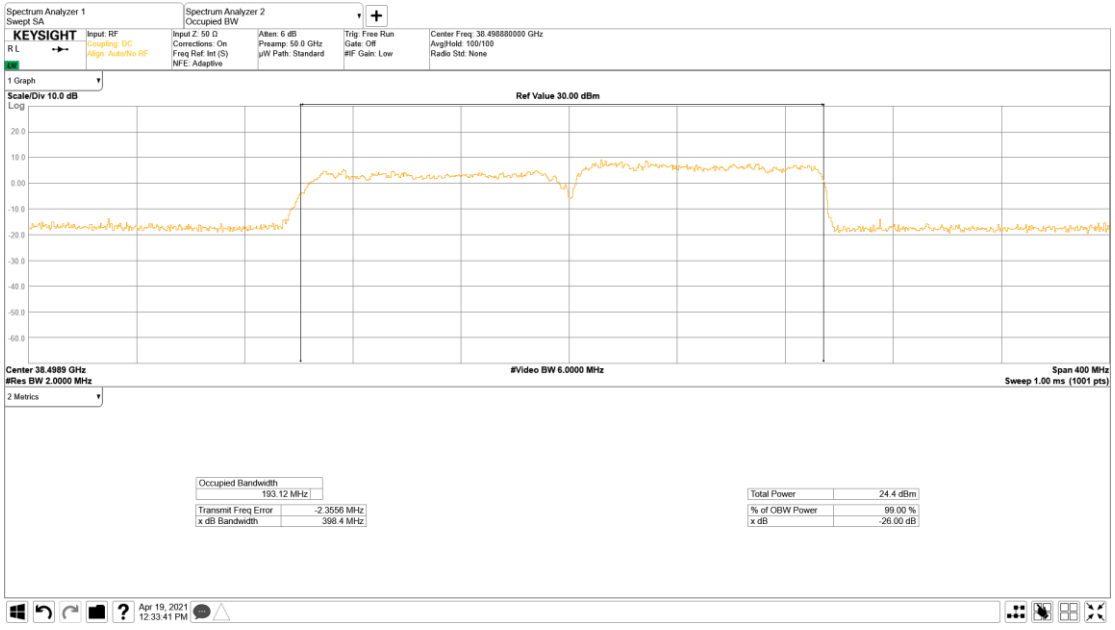
M 1 n260 BW 50MHz	 2CC / BPSK / Mid channel
M 1 n260 BW 50MHz	 2CC / QPSK / Mid channel

M 1 n260 BW 50MHz	 2CC / 16QAM / Mid channel
M 1 n260 BW 50MHz	 2CC / 64QAM / Mid channel

M 1 n260 BW 100MHz	 1CC / BPSK / Mid channel
M 1 n260 BW 100MHz	 1CC / QPSK / Mid channel

M 1 n260 BW 100MHz	 1CC / 16QAM / Mid channel
M 1 n260 BW 100MHz	 1CC / 64QAM / Mid channel

M 1 n260 BW 100MHz	 2CC / BPSK / Mid channel
M 1 n260 BW 100MHz	 2CC / QPSK / Mid channel

M 1 n260 BW 100MHz	 2CC / 16QAM / Mid channel
M 1 n260 BW 100MHz	 2CC / 64QAM / Mid channel

8.2. EQUIVALENT ISOTROPIC RADIATED POWER

RULE PART(S)

FCC: §2.1046, §30.202

LIMITS

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

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

a) RBW = 1 – 5% of the OBW, not to exceed 1MHz
b) VBW $\geq$ 3 x RBW
c) Span = 2x to 3x the OBW
d) number of measurement points in sweep > 2 x span / RBW
e) Sweep time = auto-couple
f) Detector = RMS
g) Trace mode = average over 100 sweeps

(KDB 842590 D01 Upper Microwave Flexible Use Service v01r02 Section 4.2)
(ANSI C63.26-2015 Section 5.2.4.4.1)

Note

EIRP measurements were taken at 3m test distance.

Elements within the same antenna array are correlated to produce beamforming array gain. Antenna arrays cannot be correlated with another antenna array. During testing, only one antenna array was active.

The average EIRP reported below is calculated per section 5.2.7 of ANSI C63.26-2015 which states: EIRP (dBm) = E (dBμV/m) + 20log(D) − 104.8; where D is the measurement distance (in the far field region) in meter.
The field strength E is calculated E (dBμV/m) = Spectrum Analyzer Channel Power Level (dBm) + Antenna Factor (dB/m) + Cable Loss (dB) + 107.

Radiated power levels are investigated while the receive antenna was rotated through all angles to determine the worst case polarization/positioning.

For antenna M0 and antenna M1, pi/2-BPSK, QPSK, 16QAM and 64QAM modulations were all investigated in SISO, SISO-Dual and MIMO configurations. The highest power mode is QPSK for the modulations and SISO-Dual antenna configuration. Full data is provided for those combinations. Single RB (highest power) and full RB allocations were measured.

The Fundamental of the EUT was investigated four foldable conditions(Stand Alone, Open, Full-Covered, Laptop).

5G NR: All Waveforms (CP-OFDM vs DFT-s OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

RESULTS

8.2.1. EIRP Results

Module 0, Band n261, 50M BW

Tx Type	Freq	Channel	CCs	Mod	Beam ID	Beam Pol	Ant Pol	RB_offset	X-axis	Y-axis	EIRP(dBm)	Foldable Condition
SISO	27534.84	Low	1CC	QPSK	145	H	H	1_16	197.1	252.2	20.63	Stand Alone
SISO	27534.84	Low	1CC	QPSK	145	H	V	1_16	357.7	78.3	25.41	Stand Alone
SISO	27922.08	Mid	1CC	QPSK	27	V	H	1_16	262.3	242.4	22.41	Stand Alone
SISO	27922.08	Mid	1CC	QPSK	27	V	V	1_16	11	89.6	25.29	Stand Alone
SISO	28319.52	High	1CC	QPSK	27	V	H	1_16	294.1	72.1	22.55	Stand Alone
SISO	28319.52	High	1CC	QPSK	27	V	V	1_16	2.4	82.9	26.23	Stand Alone
SISO	28319.52	High	1CC	BPSK	27	V	V	1_16	2.4	82.9	**26.38**	Stand Alone
SISO	28319.52	High	1CC	16QAM	27	V	V	1_16	2.4	82.9	24.58	Stand Alone
SISO	28319.52	High	1CC	64QAM	27	V	V	1_16	2.4	82.9	22.54	Stand Alone
SISO	28294.52	High	2CC	QPSK	27	V	V	32_0	9.5	84.2	23.24	Stand Alone
SISO	28294.52	High	2CC	BPSK	27	V	V	32_0	9.5	84.2	23.22	Stand Alone
SISO	28294.52	High	2CC	16QAM	27	V	V	32_0	9.5	84.2	21.85	Stand Alone
SISO	28294.52	High	2CC	64QAM	27	V	V	32_0	9.5	84.2	19.43	Stand Alone
SISO-Dual	27534.84	Low	1CC	QPSK	146/18	H+V	H	1_16	278.1	81.7	27.49	Stand Alone
SISO-Dual	27534.84	Low	1CC	QPSK	146/18	H+V	V	1_16	262.2	319.5	25.03	Stand Alone
SISO-Dual	27922.08	Mid	1CC	QPSK	146/18	H+V	H	1_16	248.2	277.8	27.60	Stand Alone
SISO-Dual	27922.08	Mid	1CC	QPSK	146/18	H+V	V	1_16	262.2	321	25.25	Stand Alone
SISO-Dual	28319.52	High	1CC	QPSK	155/27	H+V	H	1_16	324.8	86.6	**27.62**	Stand Alone
SISO-Dual	28319.52	High	1CC	QPSK	155/27	H+V	V	1_16	279	35.4	25.84	Stand Alone
SISO-Dual	28319.52	High	1CC	BPSK	155/27	H+V	H	1_16	324.8	86.6	27.06	Stand Alone
SISO-Dual	28319.52	High	1CC	16QAM	155/27	H+V	H	1_16	324.8	86.6	25.01	Stand Alone
SISO-Dual	28319.52	High	1CC	64QAM	155/27	H+V	H	1_16	324.8	86.6	23.34	Stand Alone
SISO-Dual	28294.52	High	2CC	QPSK	155/27	H+V	H	32_0	324.8	85	24.34	Stand Alone
SISO-Dual	28294.52	High	2CC	BPSK	155/27	H+V	H	32_0	324.8	85	24.28	Stand Alone
SISO-Dual	28294.52	High	2CC	16QAM	155/27	H+V	H	32_0	324.8	85	22.83	Stand Alone
SISO-Dual	28294.52	High	2CC	64QAM	155/27	H+V	H	32_0	324.8	85	20.50	Stand Alone
MIMO	28319.52	High	1CC	QPSK	155/27	H+V	H	1_16	324.8	86.6	**22.56**	Stand Alone
MIMO	28319.52	High	1CC	BPSK	155/27	H+V	H	1_16	324.8	86.6	19.45	Stand Alone
MIMO	28319.52	High	1CC	16QAM	155/27	H+V	H	1_16	324.8	86.6	22.15	Stand Alone
MIMO	28319.52	High	1CC	64QAM	155/27	H+V	H	1_16	324.8	86.6	18.76	Stand Alone
MIMO	28294.52	High	2CC	QPSK	155/27	H+V	H	32_0	324.8	85	20.17	Stand Alone
MIMO	28294.52	High	2CC	BPSK	155/27	H+V	H	32_0	324.8	85	21.19	Stand Alone
MIMO	28294.52	High	2CC	16QAM	155/27	H+V	H	32_0	324.8	85	18.49	Stand Alone
MIMO	28294.52	High	2CC	64QAM	155/27	H+V	H	32_0	324.8	85	16.35	Stand Alone

Module 0, Band n261, 100M BW

Tx Type	Freq	Channel	CCs	Mod	Beam ID	Beam Pol	Ant Pol	RB_offset	X-axis	Y-axis	EIRP(dBm)	Foldable Condition
SISO	27559.32	Low	1CC	QPSK	145	H	H	1_32	217	259	20.34	Stand Alone
SISO	27559.32	Low	1CC	QPSK	145	H	V	1_32	306.2	17.3	22.74	Stand Alone
SISO	27923.52	Mid	1CC	QPSK	27	V	H	1_32	277.1	65.3	23.23	Stand Alone
SISO	27923.52	Mid	1CC	QPSK	27	V	V	1_32	0.4	87.2	26.12	Stand Alone
SISO	28292.16	High	1CC	QPSK	27	V	H	1_32	279.1	99.8	22.09	Stand Alone
SISO	28292.16	High	1CC	QPSK	27	V	V	1_32	2.5	86.4	**26.25**	Stand Alone
SISO	28292.16	High	1CC	BPSK	27	V	V	1_32	2.5	86.4	26.09	Stand Alone
SISO	28292.16	High	1CC	16QAM	27	V	V	1_32	2.5	86.4	23.88	Stand Alone
SISO	28292.16	High	1CC	64QAM	27	V	V	1_32	2.5	86.4	22.36	Stand Alone
SISO	28242.16	High	2CC	QPSK	27	V	V	64_0	279	129	17.37	Stand Alone
SISO	28242.16	High	2CC	BPSK	27	V	V	64_0	279	129	17.36	Stand Alone
SISO	28242.16	High	2CC	16QAM	27	V	V	64_0	279	129	15.79	Stand Alone
SISO	28242.16	High	2CC	64QAM	27	V	V	64_0	279	129	13.53	Stand Alone
SISO-Dual	27559.32	Low	1CC	QPSK	146/18	H+V	H	1_32	277.6	90.8	28.90	Stand Alone
SISO-Dual	27559.32	Low	1CC	QPSK	146/18	H+V	V	1_32	277.9	32.3	23.50	Stand Alone
SISO-Dual	27923.52	Mid	1CC	QPSK	146/18	H+V	H	1_32	277.9	99.2	28.89	Stand Alone
SISO-Dual	27923.52	Mid	1CC	QPSK	146/18	H+V	V	1_32	261.3	324.5	26.49	Stand Alone
SISO-Dual	28292.16	High	1CC	QPSK	155/27	H+V	H	1_32	330.1	82.7	27.33	Stand Alone
SISO-Dual	28292.16	High	1CC	QPSK	155/27	H+V	V	1_32	280	35.1	26.07	Stand Alone
SISO-Dual	27559.32	Low	1CC	BPSK	146/18	H+V	H	1_32	277.6	90.8	**28.99**	Stand Alone
SISO-Dual	27559.32	Low	1CC	16QAM	146/18	H+V	H	1_32	277.6	90.8	27.00	Stand Alone
SISO-Dual	27559.32	Low	1CC	64QAM	146/18	H+V	H	1_32	277.6	90.8	25.07	Stand Alone
SISO-Dual	27609.32	Low	2CC	QPSK	146/18	H+V	H	64_0	278	87.4	25.86	Stand Alone
SISO-Dual	27609.32	Low	2CC	BPSK	146/18	H+V	H	64_0	278	87.4	25.80	Stand Alone
SISO-Dual	27609.32	Low	2CC	16QAM	146/18	H+V	H	64_0	278	87.4	24.24	Stand Alone
SISO-Dual	27609.32	Low	2CC	64QAM	146/18	H+V	H	64_0	278	87.4	22.14	Stand Alone
MIMO	27559.32	Low	1CC	QPSK	146/18	H+V	H	1_33	277.6	90.8	**22.92**	Stand Alone
MIMO	27559.32	Low	1CC	BPSK	146/18	H+V	H	1_33	277.6	90.8	20.89	Stand Alone
MIMO	27559.32	Low	1CC	16QAM	146/18	H+V	H	1_33	277.6	90.8	22.72	Stand Alone
MIMO	27559.32	Low	1CC	64QAM	146/18	H+V	H	1_33	277.6	90.8	19.99	Stand Alone
MIMO	27609.32	Low	2CC	QPSK	146/18	H+V	H	66_0	278	87.4	21.33	Stand Alone
MIMO	27609.32	Low	2CC	BPSK	146/18	H+V	H	66_0	278	87.4	22.85	Stand Alone
MIMO	27609.32	Low	2CC	16QAM	146/18	H+V	H	66_0	278	87.4	19.57	Stand Alone
MIMO	27609.32	Low	2CC	64QAM	146/18	H+V	H	66_0	278	87.4	17.57	Stand Alone

Module 0, Band n260, 50M BW

Tx Type	Freq	Channel	CCs	Mod	Beam ID	Beam Pol	Ant Pol	RB_offset	X-axis	Y-axis	EIRP(dBm)	Foldable Condition
SISO	37027.32	Low	1CC	QPSK	19	V	H	1_16	110	315.3	17.94	Stand Alone
SISO	37027.32	Low	1CC	QPSK	19	V	V	1_16	7	12.3	23.61	Stand Alone
SISO	38497.44	Mid	1CC	QPSK	147	H	H	1_16	75.1	106.9	20.13	Stand Alone
SISO	38497.44	Mid	1CC	QPSK	147	H	V	1_16	331.6	110	24.48	Stand Alone
SISO	39966.24	High	1CC	QPSK	17	V	H	1_16	312.6	47.1	18.97	Stand Alone
SISO	39966.24	High	1CC	QPSK	17	V	V	1_16	211.8	349.5	25.04	Stand Alone
SISO	39966.24	High	1CC	BPSK	17	V	V	1_16	211.8	349.5	**25.11**	Stand Alone
SISO	39966.24	High	1CC	16QAM	17	V	V	1_16	211.8	349.5	22.68	Stand Alone
SISO	39966.24	High	1CC	64QAM	17	V	V	1_16	211.8	349.5	20.97	Stand Alone
SISO	39941.24	High	2CC	QPSK	17	V	V	32_0	205.2	244.5	20.90	Stand Alone
SISO	39941.24	High	2CC	BPSK	17	V	V	32_0	205.2	244.5	20.84	Stand Alone
SISO	39941.24	High	2CC	16QAM	17	V	V	32_0	205.2	244.5	19.30	Stand Alone
SISO	39941.24	High	2CC	64QAM	17	V	V	32_0	205.2	244.5	17.20	Stand Alone
SISO-Dual	37027.32	Low	1CC	QPSK	147/19	H+V	H	1_16	49.5	123.3	19.62	Stand Alone
SISO-Dual	37027.32	Low	1CC	QPSK	147/19	H+V	V	1_16	4.6	14.4	23.73	Stand Alone
SISO-Dual	38497.44	Mid	1CC	QPSK	156/28	H+V	H	1_16	12.5	90.2	19.44	Stand Alone
SISO-Dual	38497.44	Mid	1CC	QPSK	156/28	H+V	V	1_16	205.3	267.1	25.59	Stand Alone
SISO-Dual	39966.24	High	1CC	QPSK	157/29	H+V	H	1_16	319.9	116.1	19.93	Stand Alone
SISO-Dual	39966.24	High	1CC	QPSK	157/29	H+V	V	1_16	244.3	350.2	**27.06**	Stand Alone
SISO-Dual	39966.24	High	1CC	BPSK	157/29	H+V	V	1_16	244.3	350.2	26.74	Stand Alone
SISO-Dual	39966.24	High	1CC	16QAM	157/29	H+V	V	1_16	244.3	350.2	24.82	Stand Alone
SISO-Dual	39966.24	High	1CC	64QAM	157/29	H+V	V	1_16	244.3	350.2	23.27	Stand Alone
SISO-Dual	39941.24	High	2CC	QPSK	157/29	H+V	V	32_0	2.5	12.5	22.17	Stand Alone
SISO-Dual	39941.24	High	2CC	BPSK	157/29	H+V	V	32_0	2.5	12.5	22.23	Stand Alone
SISO-Dual	39941.24	High	2CC	16QAM	157/29	H+V	V	32_0	2.5	12.5	20.67	Stand Alone
SISO-Dual	39941.24	High	2CC	64QAM	157/29	H+V	V	32_0	2.5	12.5	18.41	Stand Alone
MIMO	39966.24	High	1CC	QPSK	157/29	H+V	V	1_16	244.3	350.2	23.20	Stand Alone
MIMO	39966.24	High	1CC	BPSK	157/29	H+V	V	1_16	244.3	350.2	**23.66**	Stand Alone
MIMO	39966.24	High	1CC	16QAM	157/29	H+V	V	1_16	244.3	350.2	21.95	Stand Alone
MIMO	39966.24	High	1CC	64QAM	157/29	H+V	V	1_16	244.3	350.2	21.54	Stand Alone
MIMO	39941.24	High	2CC	QPSK	157/29	H+V	V	32_0	2.5	12.5	17.41	Stand Alone
MIMO	39941.24	High	2CC	BPSK	157/29	H+V	V	32_0	2.5	12.5	18.46	Stand Alone
MIMO	39941.24	High	2CC	16QAM	157/29	H+V	V	32_0	2.5	12.5	15.53	Stand Alone
MIMO	39941.24	High	2CC	64QAM	157/29	H+V	V	32_0	2.5	12.5	12.70	Stand Alone

Module 0, Band n260, 100M BW

Tx Type	Freq	Channel	CCs	Mod	Beam ID	Beam Pol	Ant Pol	RB_offset	X-axis	Y-axis	EIRP(dBm)	Foldable Condition
SISO	37051.80	Low	1CC	QPSK	19	V	H	1_32	50.3	124.2	20.17	Stand Alone
SISO	37051.80	Low	1CC	QPSK	19	V	V	1_32	4.3	11.7	23.33	Stand Alone
SISO	38498.88	Mid	1CC	QPSK	147	H	H	1_32	74.5	105.9	20.00	Stand Alone
SISO	38498.88	Mid	1CC	QPSK	147	H	V	1_32	331.8	109.9	24.45	Stand Alone
SISO	39949.92	High	1CC	QPSK	17	V	H	1_32	307.2	40.3	17.76	Stand Alone
SISO	39949.92	High	1CC	QPSK	17	V	V	1_32	214.3	348.9	24.59	Stand Alone
SISO	39949.92	High	1CC	BPSK	17	V	V	1_32	214.3	348.9	**24.72**	Stand Alone
SISO	39949.92	High	1CC	16QAM	17	V	V	1_32	214.3	348.9	22.65	Stand Alone
SISO	39949.92	High	1CC	64QAM	17	V	V	1_32	214.3	348.9	19.83	Stand Alone
SISO	39899.92	High	2CC	QPSK	17	V	V	64_0	197.5	246.4	20.53	Stand Alone
SISO	39899.92	High	2CC	BPSK	17	V	V	64_0	197.5	246.4	20.59	Stand Alone
SISO	39899.92	High	2CC	16QAM	17	V	V	64_0	197.5	246.4	19.07	Stand Alone
SISO	39899.92	High	2CC	64QAM	17	V	V	64_0	197.5	246.4	17.05	Stand Alone
SISO-Dual	37051.80	Low	1CC	QPSK	147/19	H+V	H	1_32	50.9	124.5	23.78	Stand Alone
SISO-Dual	37051.80	Low	1CC	QPSK	147/19	H+V	V	1_32	4.8	13.3	24.46	Stand Alone
SISO-Dual	38498.88	Mid	1CC	QPSK	156/28	H+V	H	1_32	104.5	298	24.35	Stand Alone
SISO-Dual	38498.88	Mid	1CC	QPSK	156/28	H+V	V	1_32	326.4	92.2	**28.54**	Stand Alone
SISO-Dual	39949.92	High	1CC	QPSK	157/29	H+V	H	1_32	242.8	312.1	21.43	Stand Alone
SISO-Dual	39949.92	High	1CC	QPSK	157/29	H+V	V	1_32	4.2	12.1	25.69	Stand Alone
SISO-Dual	38498.88	High	1CC	BPSK	156/28	H+V	V	1_32	326.4	92.2	28.46	Stand Alone
SISO-Dual	38498.88	High	1CC	16QAM	156/28	H+V	V	1_32	326.4	92.2	26.03	Stand Alone
SISO-Dual	38498.88	High	1CC	64QAM	156/28	H+V	V	1_32	326.4	92.2	24.34	Stand Alone
SISO-Dual	38498.88	High	2CC	QPSK	156/28	H+V	V	64_0	323.9	94.8	24.02	Stand Alone
SISO-Dual	38498.88	High	2CC	BPSK	156/28	H+V	V	64_0	323.9	94.8	23.95	Stand Alone
SISO-Dual	38498.88	High	2CC	16QAM	156/28	H+V	V	64_0	323.9	94.8	22.62	Stand Alone
SISO-Dual	38498.88	High	2CC	64QAM	156/28	H+V	V	64_0	323.9	94.8	19.68	Stand Alone
MIMO	38498.88	High	1CC	QPSK	156/28	H+V	V	1_33	326.4	92.2	**24.08**	Stand Alone
MIMO	38498.88	High	1CC	BPSK	156/28	H+V	V	1_33	326.4	92.2	22.13	Stand Alone
MIMO	38498.88	High	1CC	16QAM	156/28	H+V	V	1_33	326.4	92.2	22.80	Stand Alone
MIMO	38498.88	High	1CC	64QAM	156/28	H+V	V	1_33	326.4	92.2	19.79	Stand Alone
MIMO	38498.88	High	2CC	QPSK	156/28	H+V	V	66_0	323.9	94.8	20.51	Stand Alone
MIMO	38498.88	High	2CC	BPSK	156/28	H+V	V	66_0	323.9	94.8	21.20	Stand Alone
MIMO	38498.88	High	2CC	16QAM	156/28	H+V	V	66_0	323.9	94.8	18.16	Stand Alone
MIMO	38498.88	High	2CC	64QAM	156/28	H+V	V	66_0	323.9	94.8	15.62	Stand Alone

Module 1, Band n261, 50M BW

Tx Type	Freq	Channel	CCs	Mod	Beam ID	Beam Pol	Ant Pol	RB_offset	X-axis	Y-axis	EIRP(dBm)	Foldable Condition
SISO	27534.84	Low	1CC	QPSK	31	V	H	1_16	122	331.6	11.87	Stand Alone
SISO	27534.84	Low	1CC	QPSK	31	V	V	1_16	218.4	59.8	21.17	Stand Alone
SISO	27922.08	Mid	1CC	QPSK	23	V	H	1_16	198.6	87.3	14.69	Stand Alone
SISO	27922.08	Mid	1CC	QPSK	23	V	V	1_16	202	91.4	23.42	Stand Alone
SISO	28319.52	High	1CC	QPSK	160	H	H	1_16	336.4	293	18.06	Stand Alone
SISO	28319.52	High	1CC	QPSK	160	H	V	1_16	203.7	115.3	21.39	Stand Alone
SISO	27922.08	Mid	1CC	BPSK	23	V	V	1_16	202	91.4	**23.96**	Stand Alone
SISO	27922.08	Mid	1CC	16QAM	23	V	V	1_16	202	91.4	22.02	Stand Alone
SISO	27922.08	Mid	1CC	64QAM	23	V	V	1_16	202	91.4	20.03	Stand Alone
SISO	27922.08	Mid	2CC	QPSK	23	V	V	32_0	200	90.6	20.67	Stand Alone
SISO	27922.08	Mid	2CC	BPSK	23	V	V	32_0	200	90.6	20.60	Stand Alone
SISO	27922.08	Mid	2CC	16QAM	23	V	V	32_0	200	90.6	19.18	Stand Alone
SISO	27922.08	Mid	2CC	64QAM	23	V	V	32_0	200	90.6	16.81	Stand Alone
SISO-Dual	27534.84	Low	1CC	QPSK	152/24	H+V	H	1_16	345.3	305	21.07	Stand Alone
SISO-Dual	27534.84	Low	1CC	QPSK	152/24	H+V	V	1_16	326.4	296.5	**26.18**	Stand Alone
SISO-Dual	27922.08	Mid	1CC	QPSK	151/23	H+V	H	1_16	350.1	304.1	19.90	Stand Alone
SISO-Dual	27922.08	Mid	1CC	QPSK	151/23	H+V	V	1_16	352.8	300	25.36	Stand Alone
SISO-Dual	28319.52	High	1CC	QPSK	160/32	H+V	H	1_0	342.7	291.6	19.05	Stand Alone
SISO-Dual	28319.52	High	1CC	QPSK	160/32	H+V	V	1_16	336.7	293.5	25.82	Stand Alone
SISO-Dual	27534.84	Low	1CC	BPSK	152/24	H+V	V	1_16	326.4	296.5	25.68	Stand Alone
SISO-Dual	27534.84	Low	1CC	16QAM	152/24	H+V	V	1_16	326.4	296.5	23.24	Stand Alone
SISO-Dual	27534.84	Low	1CC	64QAM	152/24	H+V	V	1_16	326.4	296.5	21.94	Stand Alone
SISO-Dual	27559.84	Low	2CC	QPSK	152/24	H+V	V	32_0	344	296.8	21.19	Stand Alone
SISO-Dual	27559.84	Low	2CC	BPSK	152/24	H+V	V	32_0	344	296.8	21.11	Stand Alone
SISO-Dual	27559.84	Low	2CC	16QAM	152/24	H+V	V	32_0	344	296.8	19.48	Stand Alone
SISO-Dual	27559.84	Low	2CC	64QAM	152/24	H+V	V	32_0	344	296.8	17.31	Stand Alone
MIMO	27534.84	Low	1CC	QPSK	152/24	H+V	V	1_16	326.4	296.5	**21.90**	Stand Alone
MIMO	27534.84	Low	1CC	BPSK	152/24	H+V	V	1_16	326.4	296.5	20.42	Stand Alone
MIMO	27534.84	Low	1CC	16QAM	152/24	H+V	V	1_16	326.4	296.5	21.62	Stand Alone
MIMO	27534.84	Low	1CC	64QAM	152/24	H+V	V	1_16	326.4	296.5	19.55	Stand Alone
MIMO	27559.84	Low	2CC	QPSK	152/24	H+V	V	32_0	344	296.8	21.02	Stand Alone
MIMO	27559.84	Low	2CC	BPSK	152/24	H+V	V	32_0	344	296.8	21.12	Stand Alone
MIMO	27559.84	Low	2CC	16QAM	152/24	H+V	V	32_0	344	296.8	19.88	Stand Alone
MIMO	27559.84	Low	2CC	64QAM	152/24	H+V	V	32_0	344	296.8	17.94	Stand Alone

Module 1, Band n261, 100M BW

Tx Type	Freq	Channel	CCs	Mod	Beam ID	Beam Pol	Ant Pol	RB_offset	X-axis	Y-axis	EIRP(dBm)	Foldable Condition
SISO	27559.32	Low	1CC	QPSK	31	V	H	1_32	339	247	16.46	Stand Alone
SISO	27559.32	Low	1CC	QPSK	31	V	V	1_32	200.5	67.4	22.77	Stand Alone
SISO	27923.52	Mid	1CC	QPSK	23	V	H	1_32	264.8	176.4	13.60	Stand Alone
SISO	27923.52	Mid	1CC	QPSK	23	V	V	1_32	203.2	91.8	**23.89**	Stand Alone
SISO	28292.16	High	1CC	QPSK	160	H	H	1_32	206.7	116.4	19.05	Stand Alone
SISO	28292.16	High	1CC	QPSK	160	H	V	1_32	192.5	110.9	22.82	Stand Alone
SISO	27923.52	Mid	1CC	BPSK	23	V	V	1_32	203.2	91.8	23.57	Stand Alone
SISO	27923.52	Mid	1CC	16QAM	23	V	V	1_32	203.2	91.8	21.57	Stand Alone
SISO	27923.52	Mid	1CC	64QAM	23	V	V	1_32	203.2	91.8	20.15	Stand Alone
SISO	27923.52	Mid	2CC	QPSK	23	V	V	64_0	194.7	89.2	20.47	Stand Alone
SISO	27923.52	Mid	2CC	BPSK	23	V	V	64_0	194.7	89.2	20.49	Stand Alone
SISO	27923.52	Mid	2CC	16QAM	23	V	V	64_0	194.7	89.2	19.05	Stand Alone
SISO	27923.52	Mid	2CC	64QAM	23	V	V	64_0	194.7	89.2	16.74	Stand Alone
SISO-Dual	27559.32	Low	1CC	QPSK	152/24	H+V	H	1_32	329.6	305	18.77	Stand Alone
SISO-Dual	27559.32	Low	1CC	QPSK	152/24	H+V	V	1_32	344.3	295.7	26.43	Stand Alone
SISO-Dual	27923.52	Mid	1CC	QPSK	151/23	H+V	H	1_32	350.1	269.6	19.74	Stand Alone
SISO-Dual	27923.52	Mid	1CC	QPSK	151/23	H+V	V	1_32	344.7	269.1	26.17	Stand Alone
SISO-Dual	28292.16	High	1CC	QPSK	160/32	H+V	H	1_32	340.8	291.7	18.44	Stand Alone
SISO-Dual	28292.16	High	1CC	QPSK	160/32	H+V	V	1_32	202.3	105.1	**27.22**	Stand Alone
SISO-Dual	28292.16	High	1CC	BPSK	160/32	H+V	V	1_32	202.3	105.1	27.17	Stand Alone
SISO-Dual	28292.16	High	1CC	16QAM	160/32	H+V	V	1_32	202.3	105.1	24.43	Stand Alone
SISO-Dual	28292.16	High	1CC	64QAM	160/32	H+V	V	1_32	202.3	105.1	23.25	Stand Alone
SISO-Dual	28242.16	High	2CC	QPSK	160/32	H+V	V	64_0	207.6	108.4	23.60	Stand Alone
SISO-Dual	28242.16	High	2CC	BPSK	160/32	H+V	V	64_0	207.6	108.4	23.62	Stand Alone
SISO-Dual	28242.16	High	2CC	16QAM	160/32	H+V	V	64_0	207.6	108.4	22.10	Stand Alone
SISO-Dual	28242.16	High	2CC	64QAM	160/32	H+V	V	64_0	207.6	108.4	19.96	Stand Alone
MIMO	28292.16	High	1CC	QPSK	160/32	H+V	V	1_33	202.3	105.1	**22.32**	Stand Alone
MIMO	28292.16	High	1CC	BPSK	160/32	H+V	V	1_33	202.3	105.1	20.05	Stand Alone
MIMO	28292.16	High	1CC	16QAM	160/32	H+V	V	1_33	202.3	105.1	21.93	Stand Alone
MIMO	28292.16	High	1CC	64QAM	160/32	H+V	V	1_33	202.3	105.1	19.52	Stand Alone
MIMO	28242.16	High	2CC	QPSK	160/32	H+V	V	66_0	207.6	108.4	20.32	Stand Alone
MIMO	28242.16	High	2CC	BPSK	160/32	H+V	V	66_0	207.6	108.4	21.82	Stand Alone
MIMO	28242.16	High	2CC	16QAM	160/32	H+V	V	66_0	207.6	108.4	18.58	Stand Alone
MIMO	28242.16	High	2CC	64QAM	160/32	H+V	V	66_0	207.6	108.4	16.69	Stand Alone

Module 1, Band n260, 50M BW

Tx Type	Freq	Channel	CCs	Mod	Beam ID	Beam Pol	Ant Pol	RB_offset	X-axis	Y-axis	EIRP(dBm)	Foldable Condition
SISO	37027.32	Low	1CC	QPSK	160	H	H	1_16	4.4	251.2	20.76	Stand Alone
SISO	37027.32	Low	1CC	QPSK	160	H	V	1_16	352.5	249.4	21.46	Stand Alone
SISO	38497.44	Mid	1CC	QPSK	152	H	H	1_16	165.7	69.9	22.14	Stand Alone
SISO	38497.44	Mid	1CC	QPSK	152	H	V	1_16	345.7	244.2	24.38	Stand Alone
SISO	39966.24	High	1CC	QPSK	150	H	H	1_16	170.2	113.2	**25.61**	Stand Alone
SISO	39966.24	High	1CC	QPSK	150	H	V	1_16	65.8	331.3	19.83	Stand Alone
SISO	39966.24	High	1CC	BPSK	150	H	H	1_16	170.2	113.2	25.57	Stand Alone
SISO	39966.24	High	1CC	16QAM	150	H	H	1_16	170.2	113.2	23.36	Stand Alone
SISO	39966.24	High	1CC	64QAM	150	H	H	1_16	170.2	113.2	21.66	Stand Alone
SISO	39941.24	High	2CC	QPSK	150	H	H	32_0	68.7	49.8	15.28	Stand Alone
SISO	39941.24	High	2CC	BPSK	150	H	H	32_0	68.7	49.8	15.30	Stand Alone
SISO	39941.24	High	2CC	16QAM	150	H	H	32_0	68.7	49.8	13.80	Stand Alone
SISO	39941.24	High	2CC	64QAM	150	H	H	32_0	68.7	49.8	11.63	Stand Alone
SISO-Dual	37027.32	Low	1CC	QPSK	160/32	H+V	H	1_16	0.4	254	26.47	Full-Covered
SISO-Dual	37027.32	Low	1CC	QPSK	160/32	H+V	V	1_16	109.7	38.9	16.74	Full-Covered
SISO-Dual	38497.44	Mid	1CC	QPSK	160/32	H+V	H	1_16	3.5	253.4	28.76	Full-Covered
SISO-Dual	38497.44	Mid	1CC	QPSK	160/32	H+V	V	1_16	191.7	67.8	22.82	Full-Covered
SISO-Dual	39966.24	High	1CC	QPSK	152/24	H+V	H	1_16	20.1	245.6	26.95	Full-Covered
SISO-Dual	39966.24	High	1CC	QPSK	152/24	H+V	V	1_16	123	38	16.72	Full-Covered
SISO-Dual	38497.44	Mid	1CC	BPSK	160/32	H+V	H	1_16	3.5	253.4	**29.74**	Full-Covered
SISO-Dual	38497.44	Mid	1CC	16QAM	160/32	H+V	H	1_16	3.5	253.4	27.48	Full-Covered
SISO-Dual	38497.44	Mid	1CC	64QAM	160/32	H+V	H	1_16	3.5	253.4	25.96	Full-Covered
SISO-Dual	38497.44	Mid	2CC	QPSK	160/32	H+V	H	32_0	360	252.5	26.29	Full-Covered
SISO-Dual	38497.44	Mid	2CC	BPSK	160/32	H+V	H	32_0	360	252.5	26.41	Full-Covered
SISO-Dual	38497.44	Mid	2CC	16QAM	160/32	H+V	H	32_0	360	252.5	24.99	Full-Covered
SISO-Dual	38497.44	Mid	2CC	64QAM	160/32	H+V	H	32_0	360	252.5	22.23	Full-Covered
MIMO	38497.44	Mid	1CC	QPSK	160/32	H+V	H	1_16	3.5	253.4	**23.46**	Full-Covered
MIMO	38497.44	Mid	1CC	BPSK	160/32	H+V	H	1_16	3.5	253.4	21.14	Full-Covered
MIMO	38497.44	Mid	1CC	16QAM	160/32	H+V	H	1_16	3.5	253.4	22.58	Full-Covered
MIMO	38497.44	Mid	1CC	64QAM	160/32	H+V	H	1_16	3.5	253.4	19.74	Full-Covered
MIMO	38497.44	Mid	2CC	QPSK	160/32	H+V	H	32_0	360	252.5	21.36	Full-Covered
MIMO	38497.44	Mid	2CC	BPSK	160/32	H+V	H	32_0	360	252.5	21.78	Full-Covered
MIMO	38497.44	Mid	2CC	16QAM	160/32	H+V	H	32_0	360	252.5	19.11	Full-Covered
MIMO	38497.44	Mid	2CC	64QAM	160/32	H+V	H	32_0	360	252.5	16.28	Full-Covered

Module 1, Band n260, 100M BW

Tx Type	Freq	Channel	CCs	Mod	Beam ID	Beam Pol	Ant Pol	RB_offset	X-axis	Y-axis	EIRP(dBm)	Foldable Condition
SISO	37051.80	Low	1CC	QPSK	160	H	H	1_32	10.2	250	20.68	Stand Alone
SISO	37051.80	Low	1CC	QPSK	160	H	V	1_32	249.9	359.5	21.54	Stand Alone
SISO	38498.88	Mid	1CC	QPSK	152	H	H	1_32	249.1	18.2	21.06	Stand Alone
SISO	38498.88	Mid	1CC	QPSK	152	H	V	1_32	182.4	64.6	25.38	Stand Alone
SISO	39949.92	High	1CC	QPSK	150	H	H	1_32	7	291.5	24.23	Stand Alone
SISO	39949.92	High	1CC	QPSK	150	H	V	1_32	23.5	288.4	21.75	Stand Alone
SISO	38498.88	Mid	1CC	BPSK	152	H	V	1_32	182.4	64.6	**25.73**	Stand Alone
SISO	38498.88	Mid	1CC	16QAM	152	H	V	1_32	182.4	64.6	23.61	Stand Alone
SISO	38498.88	Mid	1CC	64QAM	152	H	V	1_32	182.4	64.6	21.25	Stand Alone
SISO	38498.88	Mid	2CC	QPSK	152	H	V	64_0	175.9	66.7	21.64	Stand Alone
SISO	38498.88	Mid	2CC	BPSK	152	H	V	64_0	175.9	66.7	21.63	Stand Alone
SISO	38498.88	Mid	2CC	16QAM	152	H	V	64_0	175.9	66.7	20.09	Stand Alone
SISO	38498.88	Mid	2CC	64QAM	152	H	V	64_0	175.9	66.7	17.50	Stand Alone
SISO-Dual	37051.80	Low	1CC	QPSK	160/32	H+V	H	1_32	2.8	253.5	26.38	Full-Covered
SISO-Dual	37051.80	Low	1CC	QPSK	160/32	H+V	V	1_32	110	36.6	16.89	Full-Covered
SISO-Dual	38498.88	Mid	1CC	QPSK	160/32	H+V	H	1_32	360	253.1	29.26	Full-Covered
SISO-Dual	38498.88	Mid	1CC	QPSK	160/32	H+V	V	1_32	191.4	67.8	22.87	Full-Covered
SISO-Dual	39949.92	High	1CC	QPSK	152/24	H+V	H	1_32	12.8	244.8	26.88	Full-Covered
SISO-Dual	39949.92	High	1CC	QPSK	152/24	H+V	V	1_32	123.8	29.8	19.98	Full-Covered
SISO-Dual	38498.88	Mid	1CC	BPSK	160/32	H+V	H	1_32	360	253.1	**29.64**	Full-Covered
SISO-Dual	38498.88	Mid	1CC	16QAM	160/32	H+V	H	1_32	360	253.1	27.27	Full-Covered
SISO-Dual	38498.88	Mid	1CC	64QAM	160/32	H+V	H	1_32	360	253.1	26.06	Full-Covered
SISO-Dual	38498.88	Mid	2CC	QPSK	160/32	H+V	H	64_0	360	252.6	26.49	Full-Covered
SISO-Dual	38498.88	Mid	2CC	BPSK	160/32	H+V	H	64_0	360	252.6	26.47	Full-Covered
SISO-Dual	38498.88	Mid	2CC	16QAM	160/32	H+V	H	64_0	360	252.6	25.01	Full-Covered
SISO-Dual	38498.88	Mid	2CC	64QAM	160/32	H+V	H	64_0	360	252.6	22.23	Full-Covered
MIMO	38498.88	Mid	1CC	QPSK	160/32	H+V	H	1_33	360	253.1	**23.55**	Full-Covered
MIMO	38498.88	Mid	1CC	BPSK	160/32	H+V	H	1_33	360	253.1	21.05	Full-Covered
MIMO	38498.88	Mid	1CC	16QAM	160/32	H+V	H	1_33	360	253.1	22.21	Full-Covered
MIMO	38498.88	Mid	1CC	64QAM	160/32	H+V	H	1_33	360	253.1	19.40	Full-Covered
MIMO	38498.88	Mid	2CC	QPSK	160/32	H+V	H	66_0	360	252.6	21.16	Full-Covered
MIMO	38498.88	Mid	2CC	BPSK	160/32	H+V	H	66_0	360	252.6	21.45	Full-Covered
MIMO	38498.88	Mid	2CC	16QAM	160/32	H+V	H	66_0	360	252.6	18.84	Full-Covered
MIMO	38498.88	Mid	2CC	64QAM	160/32	H+V	H	66_0	360	252.6	16.52	Full-Covered

8.3. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §2.1051, §30.203

LIMITS

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

a) RBW = 1MHz

b) VBW ≥ 3 x RBW

c) number of measurement points in sweep > 2 x span / RBW

d) Sweep time = auto-couple

e) Detector = RMS

f) Trace mode = average

(KDB 842590 D01 Upper Microwave Flexible Use Service v01r02 Section 4.4.2.5)
(ANSI C63.26-2015 Section 5 and 6.4)

NOTE

Band Edge emissions were measured at a 3 meter distance.

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

pi/2-BPSK, QPSK, 16QAM and 64QAM modulations were all investigated in SISO, SISO-Dual and MIMO configurations. The highest band edge emissions were for the SISO-Dual antenna configuration consistent with this also being the configuration with the highest EIRP. The SISO-Dual configuration was, therefore, use for the final band-edge measurements. Additional measurements were made on the MIMO configuration as it has a wider bandwidth than the SISO-DUAL configuration. The worst results were reported for each modulation.

5G NR: All Waveforms (CP-OFDM vs DFT-s OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The spectrum analyzer for each measurement shows an offset value that was determined using the measurement antenna factor, cable loss, far field measurement distance, and EUT antenna gain. A sample calculation is shown below.

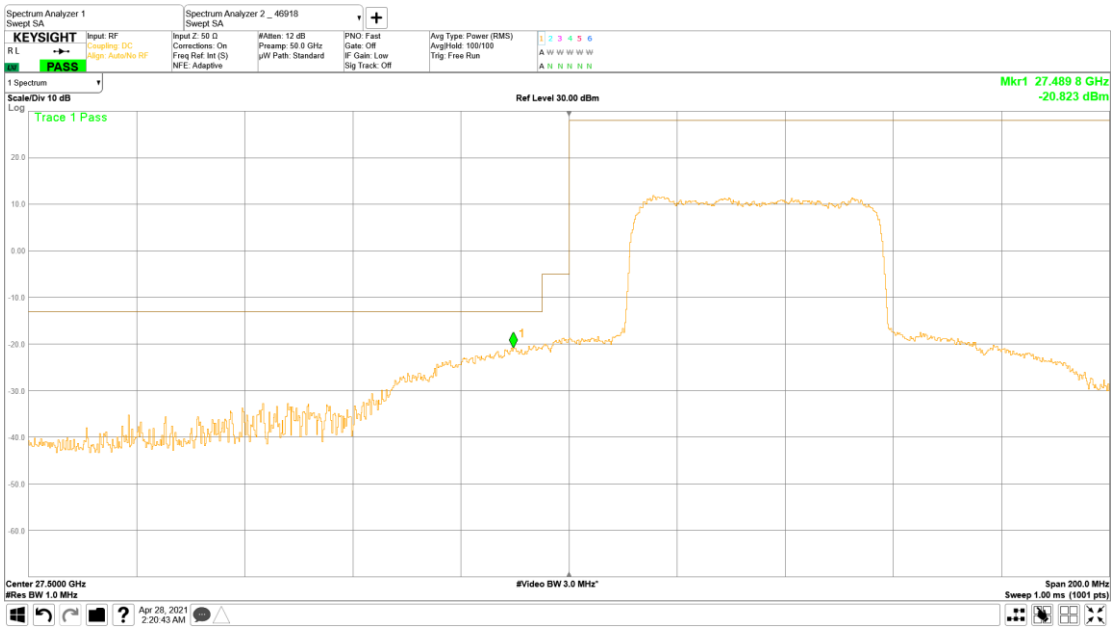
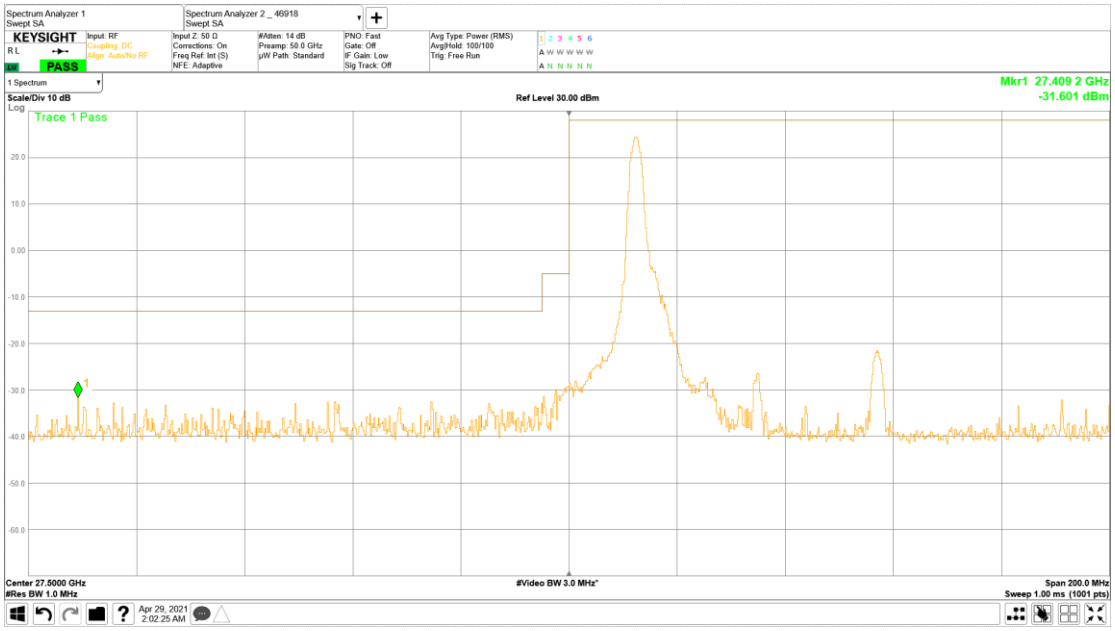
Sample Analyzer Offset Calculation (at 30GHz)
Measurement Antenna Factor = 46.90dB/m
Cable Loss = 2.53dB, EUT Antenna Gain = 8.22dBi
Analyzer Offset (dB) = AF (dB/m) + CL (dB) + 107 + 20log10(D) – 104.8dB – Gain (dBi), where D = 3m
= 46.90dB/m + 2.53dB + 107 + 20log10(3m) – 104.8dB – 8.22dBi = 52.95dB

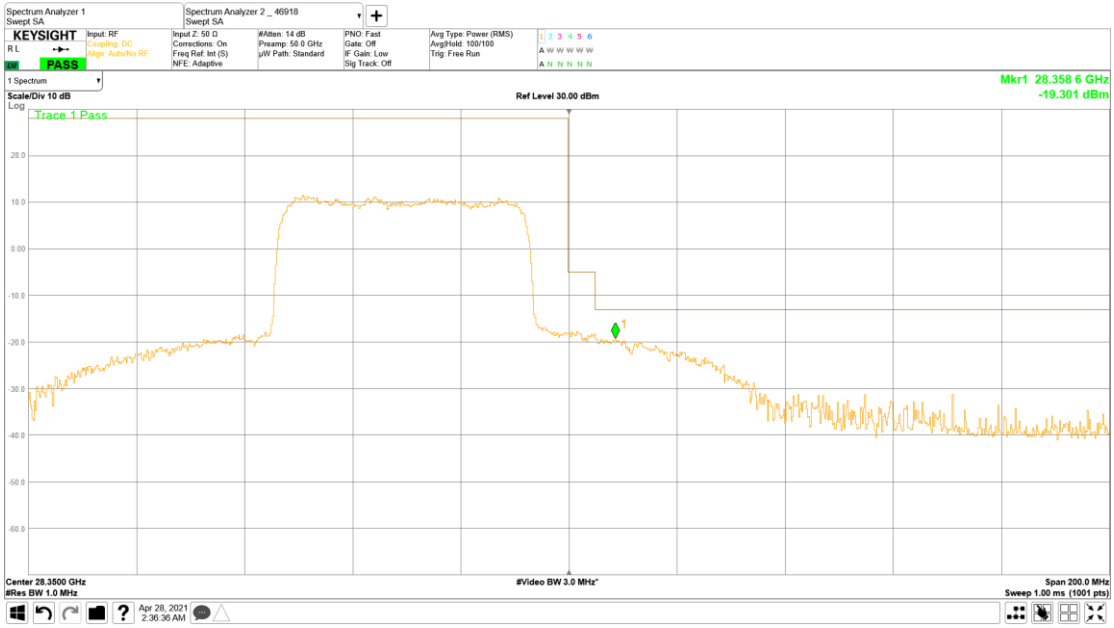
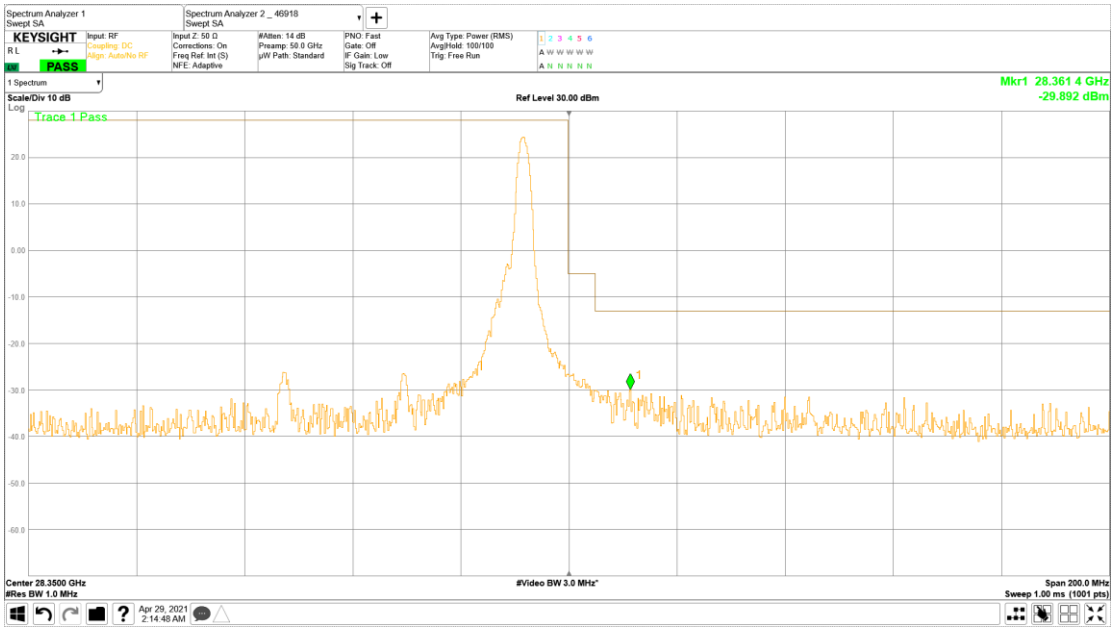
RESULTS

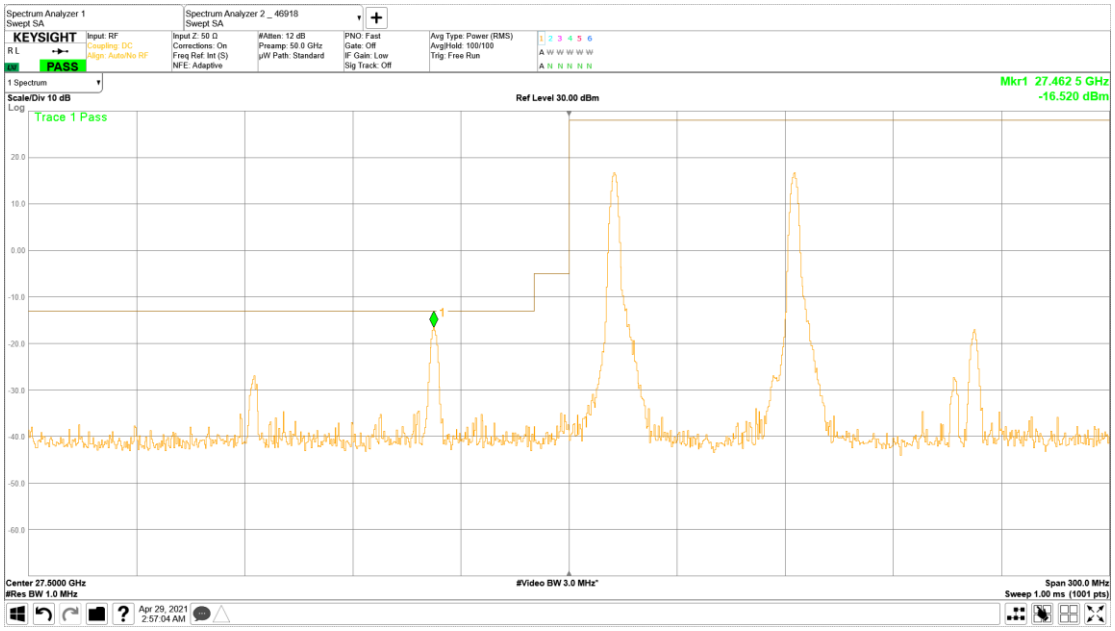
See the following pages.

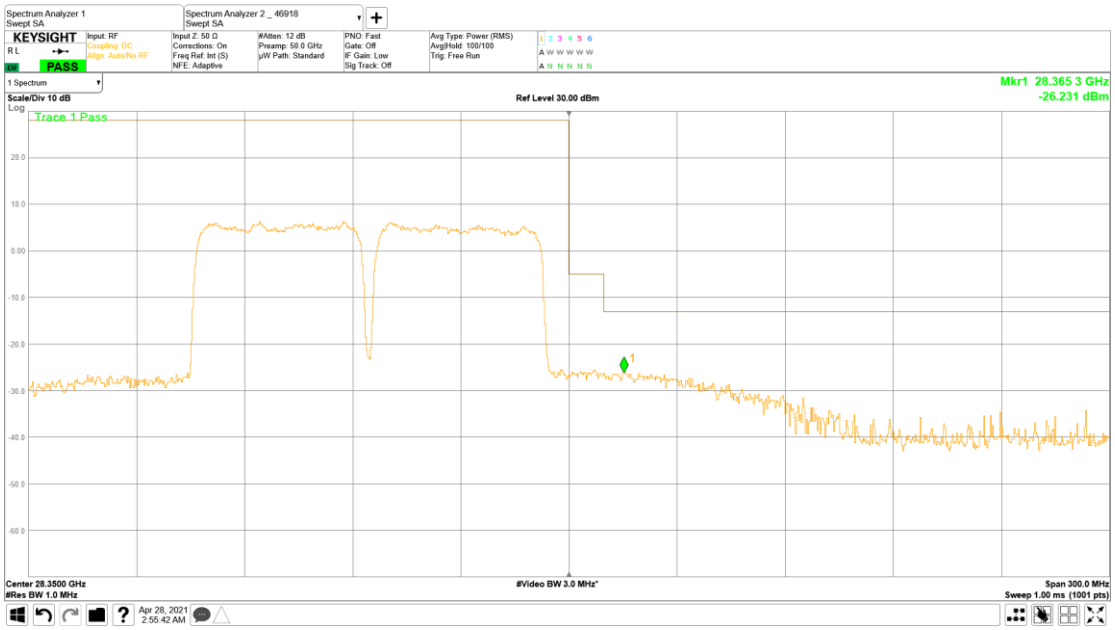
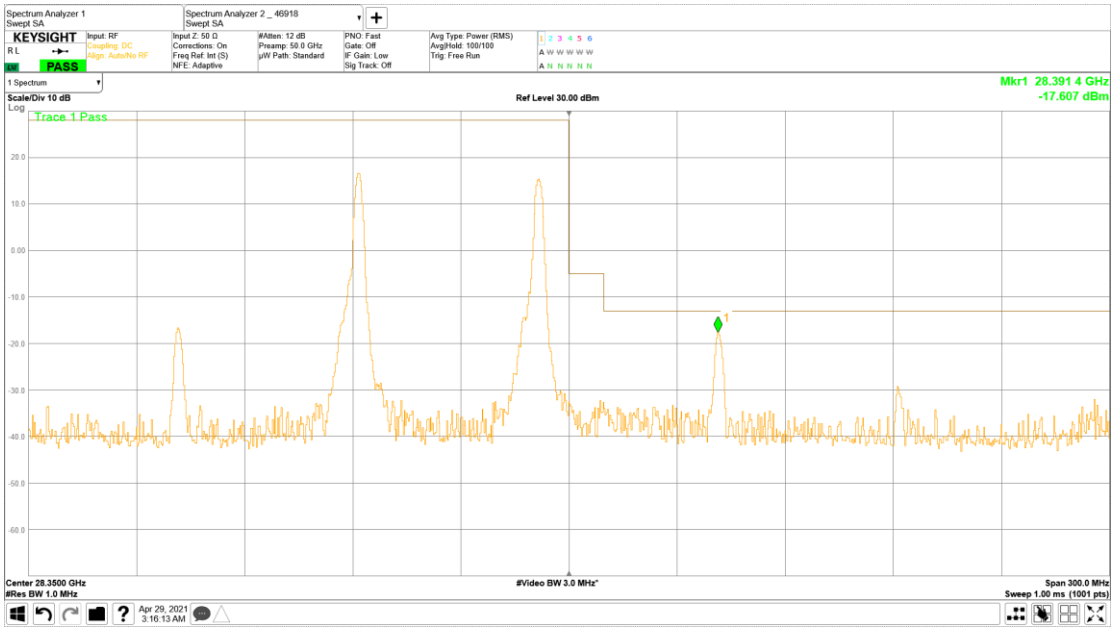
8.3.1. BAND EDGE RESULT

Module 0, Band n261, SISO-Dual

M 0 n261 SISO -Dual BW 50MHz	 1CC / QPSK / Low channel / Full RB
M 0 n261 SISO -Dual BW 50MHz	 1CC / BPSK / Low channel / 1 RB

M 0 n261 SISO -Dual BW 50MHz	 1CC / QPSK / High channel / Full RB
M 0 n261 SISO -Dual BW 50MHz	 1CC / BPSK / High channel / 1 RB

M 0 n261 SISO -Dual BW 50MHz	 2CC / QPSK / Low channel / Full RB
M 0 n261 SISO -Dual BW 50MHz	 2CC / 16QAM / Low channel / 1 RB

M 0 n261 SISO -Dual BW 50MHz	 2CC / QPSK / High channel / Full RB
M 0 n261 SISO -Dual BW 50MHz	 2CC / 16QAM / High channel / 1 RB