TEST REPORT

CTK Co., Ltd.	**CTK Co., Ltd.** **(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea** **Tel: +82-31-339-9970** **Fax: +82-31-624-9501**	Report No.: CTK-2020-01893-1 Page (1) / (1101) Pages	

1. Client

◦ Name : Samsung Electronics Co Ltd

◦ Address : 19 Chapin Rd, Building D. Pine Brook, New Jersey, United States

◦ Date of Receipt : 2020-04-13

2. Manufacturer

◦ Name : Samsung Electronics Co., Ltd.

◦ Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Republic of Korea

3. Use of Report : For FCC Certification

4. Test Sample / Model: RF4421d-D1A

5. Date of Test : 2020-06-18 to 2020-07-13

6. Test Standard(method) used : FCC 47 CFR Part 2, 27

7. Testing Environment: Temp.: (23 ± 1) ℃, Humidity: (42 ± 1) % R.H.

8. Test Results : Compliance

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full.

Affirmation	Tested by Bong-jun Jang: (Signature)	Technical Manager Young-taek Lee: (Signature)

2020-07-14

Republic of KOREA **CTK Co., Ltd.**

REPORT REVISION HISTORY

Date	Revision	Page No
2020-05-20	Issued (CTK-2020-01893)	All
2020-07-14	Issued (CTK-2020-01893-1) Addition of bandwidth(Band 66 Multi Carrier)	All

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1. General Information

1.1 Client Information

Company	Samsung Electronics Co., Ltd.
Contact Point	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Republic of Korea
Contact Person	Name : Kim, Jong-in E-mail : jered.kim@samsung.com Tel : +82-31-279-3096

1.2 Product Information

FCC ID	A3LRF4421D-D1A
Product Description	RRU(RF4421d)
Model name	RF4421d-D1A
Power Supply	-48 Vdc
Operating Frequency	- Band 25 DL : 1930 MHz - 1995 MHz, UL : 1850 MHz - 1915 MHz - Band 66 DL : 2110 MHz - 2180 MHz, UL : 1710 MHz - 1760 MHz
RF Output Power	- Band 25 [Multi 2 Carrier] BW 5 MHz+5 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz+10 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz+15 MHz : 40 W / path(Total 4 path =160 W) BW 10 MHz+10 MHz : 40 W / path(Total 4 path =160 W) BW 10 MHz+15 MHz : 40 W / path(Total 4 path =160 W) BW 10 MHz+20 MHz : 40 W / path(Total 4 path =160 W) [Multi 3 Carrier] BW 5 MHz+5 MHz+5 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz+5 MHz+15 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz+5 MHz+20 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz+10 MHz+10 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz+10 MHz+15 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz+10 MHz+20 MHz : 40 W / path(Total 4 path =160 W) BW 10 MHz+10 MHz+10 MHz : 40 W / path(Total 4 path =160 W) BW 10 MHz+10 MHz+15 MHz : 40 W / path(Total 4 path =160 W) BW 10 MHz+10 MHz+20 MHz : 40 W / path(Total 4 path =160 W) - Band 66 [Multi 2 Carrier] BW 5 MHz + 5 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz + 10 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz + 15 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz + 20 MHz : 40 W / path(Total 4 path =160 W) BW 10 MHz + 15 MHz : 40 W / path(Total 4 path =160 W) BW 10 MHz + 20 MHz : 40 W / path(Total 4 path =160 W) [Multi 3 Carrier] BW 5 MHz+5 MHz+5 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz+5 MHz+10 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz+5 MHz+15 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz+5 MHz+20 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz+10 MHz+15 MHz : 40 W / path(Total 4 path =160 W) BW 5 MHz+10 MHz+20 MHz : 40 W / path(Total 4 path =160 W)

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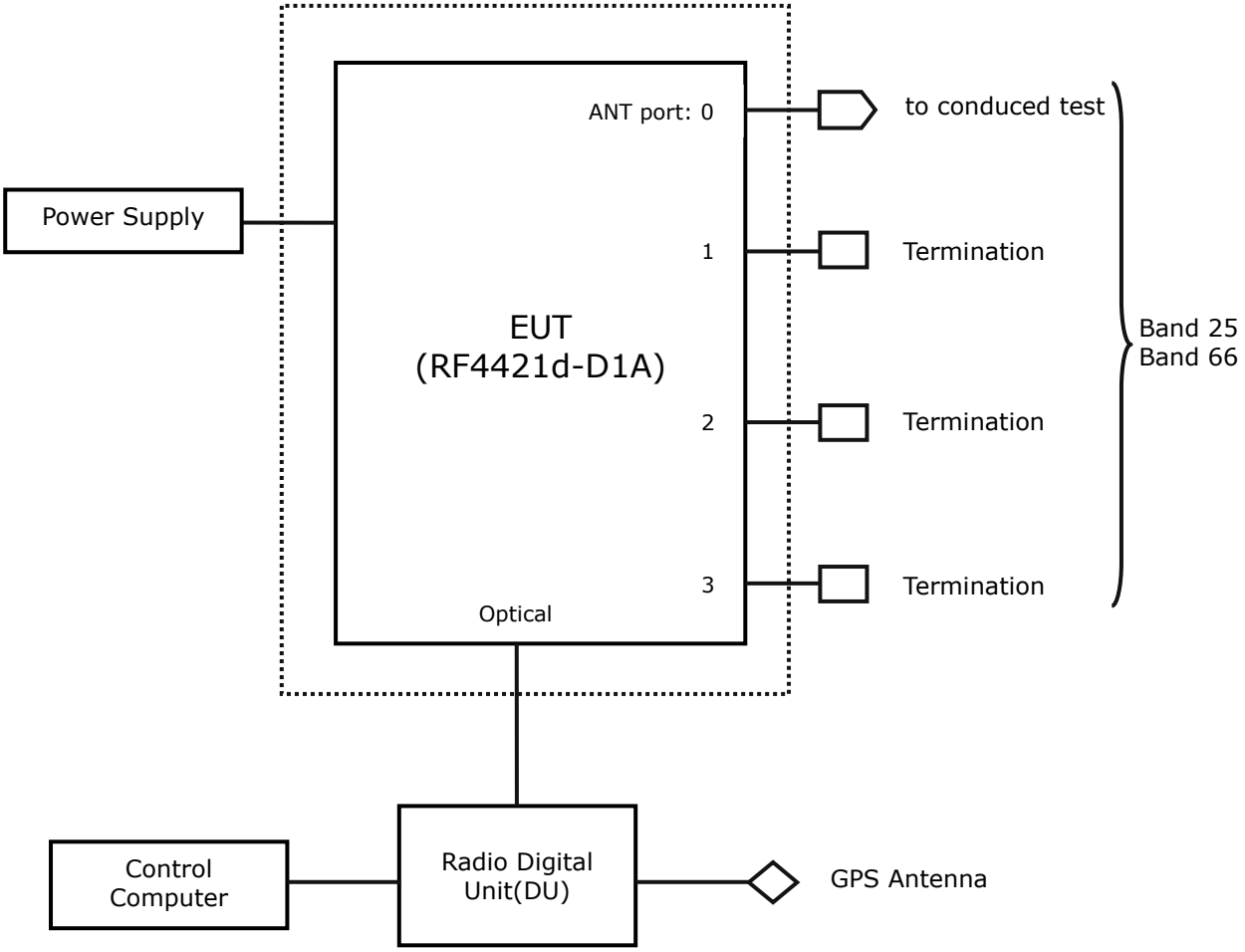
	BW 10 MHz+10 MHz+10 MHz : 40 W / path(Total 4 path =160 W) BW 10 MHz+10 MHz+15 MHz : 40 W / path(Total 4 path =160 W)
Channel Bandwidth	5 MHz, 10 MHz, 15 MHz, 20 MHz
Modulation Type	QPSK, 16QAM, 64QAM, 256QAM
FCC Rule	Part 2 : FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS Part 24 : PERSONAL COMMUNICATIONS SERVICES Part 27 : MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES KDB Publication 662911 D01 Multiple Transmitter Output v02r01

1.3 Configurations



2. Facility and Accreditations

2.1 Test Facility

The measurement facility is located at (Ho-dong), 113, Yejik-ro, Cheoin-gu, Yong-in-si, Gyeonggi-do, Korea.

2.2 Laboratory Accreditations and Listings

Country	Agency	Registration Number
USA	FCC	805871
CANADA	ISED	8737A-2
KOREA	NRRA	KR0025

2.3 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

3. Test Specifications

3.1 Standards

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 2, Part 27.

Section	Test Items	Results
§2.1046, §27.50(d)(2)	RF output power	Compliant
§2.1049	Occupied bandwidth	Compliant
§2.1051, §27.53(h)	Spurious Emissions at Antenna Terminals	Compliant
§2.1051, §27.53(h)	Band edge	Compliant
§2.1053, §27.53(h)	Spurious Radiated Emissions	Compliant
§2.1055(a)(1), §27.54	Frequency Stability over Temperature variation	Compliant
§2.1055(d), §27.54	Frequency Stability over Voltage variation	Compliant

3.2 Mode of operation during the test

The EUT is operated in a manner representative of the typical of the equipments.
During at testing, system components were manipulated within the confines of typical usage to maximize each emission. All modulation(QPSK, 16QAM, 64QAM, 256QAM) modes were tests.
The results are only attached worst cases.

Operating band and Frequency range		
Band 66	Transmit	2 110 MHz to 2 180 MHz
	Receive	1 710 MHz to 1 760 MHz

Operating Configurations	
Supported configurations	Multi carrier
Spectrum Operation	Contiguous

Multi 2 carrier rated total output power as a sum of all carriers

Band type	Bandwidth Configuration [MHz]	Bandwidth positions		1st FA	2nd FA	Output port	Total Power(sum)[W]
Band 66	5+5	Bottom	Frequency	2 112.5 MHz	2 117.5 MHz	4 TX	160 W
			Output Power	40 W			
		Middle	Frequency	2 142.5 MHz	2 147.5 MHz		
			Output Power	40 W			
		Top	Frequency	2 172.5 MHz	2 177.5 MHz		
			Output Power	40 W			
	5+10	Bottom	Frequency	2 112.5 MHz	2 120 MHz	4 TX	160 W
			Output Power	40 W			
		Middle	Frequency	2 140 MHz	2 147.5 MHz		
			Output Power	40 W			
		Top	Frequency	2 167.5 MHz	2 175 MHz		
			Output Power	40 W			
	5+15	Bottom	Frequency	2 112.5 MHz	2 122.5 MHz	4 TX	160 W
			Output Power	40 W			
		Middle	Frequency	2 137.5 MHz	2 147.5 MHz		
			Output Power	40 W			
		Top	Frequency	2 162.5 MHz	2 172.5 MHz		
			Output Power	40 W			
	5+20	Bottom	Frequency	2 112.5 MHz	2 125 MHz	4 TX	160 W
			Output Power	40 W			
		Middle	Frequency	2 135 MHz	2 147.5 MHz		
			Output Power	40 W			
		Top	Frequency	2 157.5 MHz	2 170 MHz		
			Output Power	40 W			
	10+15	Bottom	Frequency	2 115 MHz	2 127.5 MHz	4 TX	160 W
			Output Power	40 W			
		Middle	Frequency	2 137.5 MHz	2 150 MHz		
			Output Power	40 W			
		Top	Frequency	2 160 MHz	2 172.5 MHz		
			Output Power	40 W			
	10+20	Bottom	Frequency	2 115 MHz	2 130 MHz	4 TX	160 W
			Output Power	40 W			
		Middle	Frequency	2 135 MHz	2 150 MHz		
			Output Power	40 W			
		Top	Frequency	2 155 MHz	2 170 MHz		
			Output Power	40 W			

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Multi 3 carrier rated total output power as a sum of all carriers

Band type	Bandwidth Configuration [MHz]	Bandwidth positions		1st FA	2nd FA	3nd FA	Output port	Total Power (sum)[W]
Band 66	5+5+5	Bottom	Frequency	2 112.5 MHz	2 117.5 MHz	2 122.5 MHz	4 TX	160 W
			Output Power	40 W				
		Middle	Frequency	2 140 MHz	2 145 MHz	2 150 MHz		
			Output Power	40 W				
		Top	Frequency	2 167.5 MHz	2 172.5 MHz	2 177.5 MHz		
			Output Power	40 W				
	5+5+10	Bottom	Frequency	2 112.5 MHz	2 117.5 MHz	2 125 MHz	4 TX	160 W
			Output Power	40 W				
		Middle	Frequency	2 137.5 MHz	2 142.5 MHz	2 150 MHz		
			Output Power	40 W				
		Top	Frequency	2 162.5 MHz	2 167.5 MHz	2 175 MHz		
			Output Power	40 W				
	5+5+15	Bottom	Frequency	2 112.5 MHz	2 117.5 MHz	2 127.5 MHz	4 TX	160 W
			Output Power	40 W				
		Middle	Frequency	2 135 MHz	2 140 MHz	2 150 MHz		
			Output Power	40 W				
		Top	Frequency	2 157.5 MHz	2 162.5 MHz	2 172.5 MHz		
			Output Power	40 W				
	5+5+20	Bottom	Frequency	2 112.5 MHz	2 117.5 MHz	2 130 MHz	4 TX	160 W
			Output Power	40 W				
		Middle	Frequency	2 132.5 MHz	2 137.5 MHz	2 150 MHz		
			Output Power	40 W				
		Top	Frequency	2 152.5 MHz	2 157.5 MHz	2 170 MHz		
			Output Power	40 W				
	5+10+15	Bottom	Frequency	2 112.5 MHz	2 120 MHz	2 132.5 MHz	4 TX	160 W
			Output Power	40 W				
		Middle	Frequency	2 132.5 MHz	2 140 MHz	2 152.5 MHz		
			Output Power	40 W				
		Top	Frequency	2 152.5 MHz	2 160 MHz	2 172.5 MHz		
			Output Power	40 W				
	5+10+20	Bottom	Frequency	2 112.5 MHz	2 120 MHz	2 135 MHz	4 TX	160 W
			Output Power	40 W				
		Middle	Frequency	2 130 MHz	2 137.5 MHz	2 152.5 MHz		
			Output Power	40 W				
		Top	Frequency	2 147.5 MHz	2 155 MHz	2 170 MHz		
			Output Power	40 W				
	10+10+10	Bottom	Frequency	2 115 MHz	2 125 MHz	2 135 MHz	4 TX	160 W
			Output Power	40 W				
		Middle	Frequency	2 135 MHz	2 145 MHz	2 155 MHz		
			Output Power	40 W				
		Top	Frequency	2 155 MHz	2 165 MHz	2 175 MHz		
			Output Power	40 W				
	10+10+15	Bottom	Frequency	2 115 MHz	2 125 MHz	2 137.5 MHz	4 TX	160 W
			Output Power	40 W				
		Middle	Frequency	2 132.5 MHz	2 142.5 MHz	2 155 MHz		
			Output Power	40 W				
		Top	Frequency	2 150 MHz	2 160 MHz	2 172.5 MHz		
			Output Power	40 W				

3.3 Maximum Measurement Uncertainty

The value of the measurement uncertainty for the measurement of each parameter.
Coverage factor k = 2, Confidence levels of 95 %

Description	Uncertainty
Conducted RF output power	1.5 dB
Occupied bandwidth	0.1 MHz
Spurious emission at antenna terminals	3.0 dB
Radiated spurious emissions (f ≤ 1 GHz)	4.0 dB
Radiated spurious emissions (f > 1 GHz)	5.0 dB
Frequency stability	0.1 kHz

3.4 Standards Environmental Test conditions

Temperature	+ 15 ℃ to + 35 ℃
Relative humidity	30 % to 60 %
Air pressure	860 mbar to 1 060 mbar

4. RF output power

Test Requirements :

§ 2.1046 Measurements required : RF power output :

(a) For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in §2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.
(b) For single sideband, independent sideband, and single channel, controlled carrier radiotelephone transmitters the procedure specified in paragraph (a) of this section shall be employed and, in addition, the transmitter shall be modulated during the test as follows. In all tests, the input level of the modulating signal shall be such as to develop rated peak envelope power or carrier power, as appropriate, for the transmitter.
(c) For measurements conducted pursuant to paragraphs (a) and (b) of this section, all calculations and methods used by the applicant for determining carrier power or peak envelope power, as appropriate, on the basis of measured power in the radio frequency load attached to the transmitter output terminals shall be shown. Under the test conditions specified, no components of the emission spectrum shall exceed the limits specified in the applicable rule parts as necessary for meeting occupied bandwidth or emission limitations.

§ 27.50 Power limits and duty cycle.

(d) (1) The power of each fixed or base station transmitting in the 1995-2000 MHz, 2110-2155 MHz, 2155-2180 MHz or 2180-2200 MHz band and located in any county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, is limited to:
(ii) An EIRP of 3280 watts/MHz when transmitting with an emission bandwidth greater than 1 MHz.

(2) The power of each fixed or base station transmitting in the 1995-2000 MHz, the 2110-2155 MHz 2155-2180 MHz band, or 2180-2200 MHz band and situated in any geographic location other than that described in paragraph (d)(1) of this section is limited to:
(ii) An EIRP of 1640 watts/MHz when transmitting with an emission bandwidth greater than 1 MHz.

(5) Equipment employed must be authorized in accordance with the provisions of §24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Test Procedures :

According to FCC §2.1046 (a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in §2.1033(c). The electrical characteristics of the radio frequency load attached to the output terminals when this is made shall be stated.

1) The radio frequency load attached to the EUT antenna terminal was 50 Ohm. The lost of the cables the test system is calibrated to correct the reading.
2) The spectrum analyzer was set to RMS Detector function and Average mode.
3) The resolution bandwidth of the spectrum analyzer was comparable to the emission bandwidth.
4) The conducted emission level is measured at each antenna port and then summed mathmatically to determine the total emission level from the device.

Note 1 : The conducted emission level is measured at each antenna port and then summed mathematically to determine the total emission level from the device.

Note 2: Maximun ERP is sufficient level to pass the limit.

Note 3 : Sum data is in a tolerance of specification provided from manufacturer.

Maximum output power for one port :
Multi 2 Carrier, 3 Carrier : **46.02 dBm (40 W)**

Maximum output sum power :
Multi 2 Carrier, 3 Carrier : 40 W *Antenna port (4) = **52.04 dBm (160 W)**

Measured sum maximum power : **51.60 dBm (144.54 W)**

.

Test Results :

Test Data : Band 66, BW 5+5MHz, Multi 2carrier

Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 5+5MHz	Bottom	QPSK	45.23	45.73	45.10	45.79	51.49	140.93
		16QAM	45.20	45.70	44.94	45.66	51.41	138.36
		64QAM	45.27	45.67	45.07	45.66	51.45	139.64
		256QAM	45.20	45.59	44.91	45.61	51.36	136.77
	Middle	QPSK	45.27	45.64	45.06	45.77	51.46	139.96
		16QAM	45.20	45.57	45.00	45.73	51.41	138.36
		64QAM	45.24	45.60	45.02	45.75	51.43	139.00
		256QAM	45.18	45.56	44.97	45.69	51.38	137.40
	Top	QPSK	45.19	45.64	44.81	45.65	51.36	136.77
		16QAM	45.23	45.56	44.75	45.60	51.32	135.52
		64QAM	45.25	45.56	44.76	45.61	51.33	135.83
		256QAM	45.20	45.51	44.74	45.63	51.30	134.90

Test Data : Band 66, BW 5+10MHz, Multi 2carrier

Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 5+10MHz	Bottom	QPSK	45.24	45.70	45.13	45.24	51.35	136.46
		16QAM	45.34	45.64	45.04	45.18	51.33	135.83
		64QAM	45.29	45.66	45.03	45.18	51.32	135.52
		256QAM	45.30	45.61	44.99	45.17	51.29	134.59
	Middle	QPSK	45.29	45.65	45.07	45.35	51.37	137.09
		16QAM	45.26	45.54	45.03	45.26	51.30	134.90
		64QAM	45.22	45.42	44.87	45.14	51.19	131.52
		256QAM	45.26	45.63	45.02	45.31	51.33	135.83
	Top	QPSK	45.28	45.67	45.02	45.53	51.40	138.04
		16QAM	45.24	45.58	44.90	45.40	51.31	135.21
		64QAM	45.30	45.60	44.91	45.47	51.35	136.46
		256QAM	45.18	45.54	44.84	45.39	51.27	133.97

Test Data : Band 66, BW 5+15MHz, Multi 2carrier

Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 5+15MHz	Bottom	QPSK	45.34	45.73	45.11	45.29	51.39	137.72
		16QAM	45.30	45.62	45.06	45.19	51.32	135.52
		64QAM	45.36	45.64	44.92	45.08	51.28	134.28
		256QAM	45.35	45.72	45.08	45.24	51.37	137.09
	Middle	QPSK	45.17	45.61	45.10	45.42	51.35	136.46
		16QAM	45.29	45.66	45.06	45.40	51.38	137.40
		64QAM	45.30	45.67	45.12	45.44	51.41	138.36
		256QAM	45.31	45.59	45.09	45.38	51.37	137.09
	Top	QPSK	44.87	45.44	44.79	45.44	51.17	130.92
		16QAM	45.21	45.63	44.95	45.56	51.37	137.09
		64QAM	45.18	45.59	44.88	45.51	51.32	135.52
		256QAM	45.13	45.64	44.95	45.60	51.36	136.77

Test Data : Band 66, BW 5+20MHz, Multi 2carrier

Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 5+20MHz	Bottom	QPSK	45.23	45.63	44.91	45.24	51.28	134.28
		16QAM	45.19	45.63	44.87	45.23	51.26	133.66
		64QAM	45.18	45.58	44.87	45.20	51.24	133.05
		256QAM	45.13	45.66	44.91	45.23	51.26	133.66
	Middle	QPSK	45.04	45.54	45.07	45.29	51.26	133.66
		16QAM	45.12	45.58	44.94	45.40	51.29	134.59
		64QAM	45.15	45.52	44.91	45.36	51.26	133.66
		256QAM	45.15	45.57	44.95	45.38	51.29	134.59
	Top	QPSK	44.46	44.83	45.34	45.19	50.99	125.60
		16QAM	45.21	45.74	45.02	45.62	51.43	139.00
		64QAM	45.21	45.72	44.99	45.61	51.41	138.36
		256QAM	45.22	45.72	45.00	45.61	51.42	138.68

Test Data : Band 66, BW 10+15MHz, Multi 2carrier

Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 10+15MHz	Bottom	QPSK	44.85	45.62	45.06	45.32	51.24	133.05
		16QAM	45.23	45.65	45.06	45.36	51.35	136.46
		64QAM	45.23	45.69	45.08	45.36	51.37	137.09
		256QAM	45.22	45.60	45.01	45.29	51.31	135.21
	Middle	QPSK	44.89	45.48	44.97	45.37	51.21	132.13
		16QAM	45.14	45.59	44.98	45.39	51.30	134.90
		64QAM	45.17	45.60	45.01	45.44	51.33	135.83
		256QAM	45.10	45.55	44.97	45.40	51.28	134.28
	Top	QPSK	45.01	45.54	44.92	45.53	51.28	134.28
		16QAM	45.02	45.46	44.79	45.42	51.20	131.83
		64QAM	45.10	45.57	44.87	45.40	51.26	133.66
		256QAM	45.07	45.50	44.89	45.49	51.27	133.97

Test Data : Band 66, BW 10+20MHz, Multi 2carrier

Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 10+20MHz	Bottom	QPSK	45.05	45.47	44.94	45.22	51.20	131.83
		16QAM	45.08	45.48	44.91	45.15	51.18	131.22
		64QAM	45.08	45.47	44.91	45.18	51.19	131.52
		256QAM	45.08	45.41	44.87	45.16	51.15	130.32
	Middle	QPSK	44.91	45.49	44.94	45.36	51.20	131.83
		16QAM	45.07	45.43	44.93	45.31	51.21	132.13
		64QAM	45.08	45.50	44.99	45.37	51.26	133.66
		256QAM	45.08	45.47	44.97	45.36	51.25	133.35
	Top	QPSK	44.92	45.43	44.89	45.45	51.20	131.83
		16QAM	45.11	45.51	44.87	45.51	51.28	134.28
		64QAM	45.11	45.53	44.93	45.48	51.29	134.59
		256QAM	45.12	45.55	44.93	45.52	51.31	135.21

Test Data : Band 66, BW 5+5+5MHz, Multi 3carrier

Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 5+5+5MHz	Bottom	QPSK	44.51	45.45	45.78	45.73	51.42	138.68
		16QAM	44.58	45.49	45.83	45.78	51.47	140.28
		64QAM	44.48	45.44	45.78	45.76	51.42	138.68
		256QAM	44.53	45.48	45.80	45.76	51.44	139.32
	Middle	QPSK	44.14	45.43	45.80	45.71	51.34	136.14
		16QAM	44.48	45.44	45.78	45.69	51.40	138.04
		64QAM	44.23	45.45	45.83	45.72	51.37	137.09
		256QAM	44.54	45.48	45.86	45.74	51.46	139.96
	Top	QPSK	44.57	45.39	45.84	45.70	51.42	138.68
		16QAM	44.73	45.45	45.84	45.65	51.46	139.96
		64QAM	44.69	45.41	45.82	45.66	51.44	139.32
		256QAM	44.73	45.48	45.85	45.69	51.48	140.60

Test Data : Band 66, BW 5+5+10MHz, Multi 3carrier

Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 5+5+10MHz	Bottom	QPSK	44.41	45.39	45.71	45.68	51.35	136.46
		16QAM	44.44	45.42	45.79	45.73	51.40	138.04
		64QAM	44.60	45.50	45.79	45.76	51.46	139.96
		256QAM	44.52	45.50	45.77	45.72	51.43	139.00
	Middle	QPSK	45.01	45.54	45.90	45.80	51.60	144.54
		16QAM	44.69	45.50	45.85	45.72	51.48	140.60
		64QAM	45.02	45.55	45.90	45.74	51.59	144.21
		256QAM	44.63	45.50	45.82	45.71	51.46	139.96
	Top	QPSK	44.53	45.40	45.85	45.72	51.43	139.00
		16QAM	44.59	45.38	45.85	45.71	51.43	139.00
		64QAM	44.64	45.47	45.89	45.76	51.49	140.93
		256QAM	44.59	45.45	45.86	45.72	51.45	139.64

Test Data : Band 66, BW 5+5+15MHz, Multi 3carrier

Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 5+5+15MHz	Bottom	QPSK	43.99	45.45	45.74	45.72	51.30	134.90
		16QAM	44.34	45.49	45.86	45.84	51.45	139.64
		64QAM	44.41	45.43	45.76	45.72	51.38	137.40
		256QAM	44.42	45.42	45.76	45.72	51.38	137.40
	Middle	QPSK	43.73	45.38	45.69	45.61	51.19	131.52
		16QAM	44.22	45.46	45.89	45.69	51.38	137.40
		64QAM	44.00	45.45	45.82	45.71	51.32	135.52
		256QAM	44.37	45.46	45.88	45.71	51.41	138.36
	Top	QPSK	44.38	45.45	45.90	45.72	51.42	138.68
		16QAM	44.55	45.50	45.96	45.76	51.50	141.25
		64QAM	44.59	45.54	45.95	45.76	51.51	141.58
		256QAM	44.61	45.46	45.91	45.75	51.48	140.60

Test Data : Band 66, BW 5+5+20MHz, Multi 3carrier

Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 5+5+20MHz	Bottom	QPSK	44.64	45.41	45.71	45.65	51.39	137.72
		16QAM	44.34	45.38	45.70	45.67	51.33	135.83
		64QAM	44.65	45.41	45.73	45.66	51.40	138.04
		256QAM	44.79	45.39	45.73	45.67	51.43	139.00
	Middle	QPSK	44.96	45.59	45.94	45.78	51.60	144.54
		16QAM	44.69	45.50	45.85	45.67	51.47	140.28
		64QAM	44.68	45.55	45.93	45.74	51.52	141.91
		256QAM	44.53	45.45	45.81	45.64	51.41	138.36
	Top	QPSK	44.96	45.42	45.90	45.70	51.53	142.23
		16QAM	44.79	45.39	45.88	45.73	51.49	140.93
		64QAM	44.81	45.47	45.91	45.69	51.51	141.58
		256QAM	44.67	45.34	45.83	45.61	51.40	138.04

Test Data : Band 66, BW 5+10+15MHz, Multi 3carrier

Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 5+10+15MHz	Bottom	QPSK	44.53	45.29	45.65	45.83	51.37	137.09
		16QAM	44.68	45.32	45.65	45.63	51.36	136.77
		64QAM	44.68	45.37	45.66	45.63	51.37	137.09
		256QAM	44.57	45.29	45.65	45.63	51.33	135.83
	Middle	QPSK	44.79	45.36	45.74	45.62	51.41	138.36
		16QAM	44.74	45.43	45.71	45.63	51.41	138.36
		64QAM	44.84	45.42	45.76	45.62	51.44	139.32
		256QAM	44.69	45.32	45.69	45.57	51.35	136.46
	Top	QPSK	44.61	45.21	45.78	45.63	51.35	136.46
		16QAM	44.59	45.32	45.83	45.67	51.40	138.04
		64QAM	44.54	45.33	45.84	45.64	51.39	137.72
		256QAM	44.60	45.30	45.82	45.65	51.39	137.72

Test Data : Band 66, BW 5+10+20MHz, Multi 3carrier

Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 5+10+20MHz	Bottom	QPSK	44.50	45.29	45.69	45.64	51.33	135.83
		16QAM	44.54	45.30	45.68	45.61	51.33	135.83
		64QAM	44.52	45.27	45.64	45.59	51.30	134.90
		256QAM	44.53	45.29	45.63	45.56	51.29	134.59
	Middle	QPSK	44.40	45.44	45.85	45.68	51.40	138.04
		16QAM	44.42	45.36	45.78	45.63	51.35	136.46
		64QAM	44.43	45.39	45.85	45.70	51.40	138.04
		256QAM	44.53	45.31	45.76	45.59	51.34	136.14
	Top	QPSK	44.51	45.35	45.78	45.64	51.37	137.09
		16QAM	44.61	45.32	45.79	45.65	51.39	137.72
		64QAM	44.64	45.38	45.79	45.66	51.41	138.36
		256QAM	44.54	45.28	45.78	45.65	51.36	136.77

Test Data : Band 66, BW 10+10+10MHz, Multi 3carrier

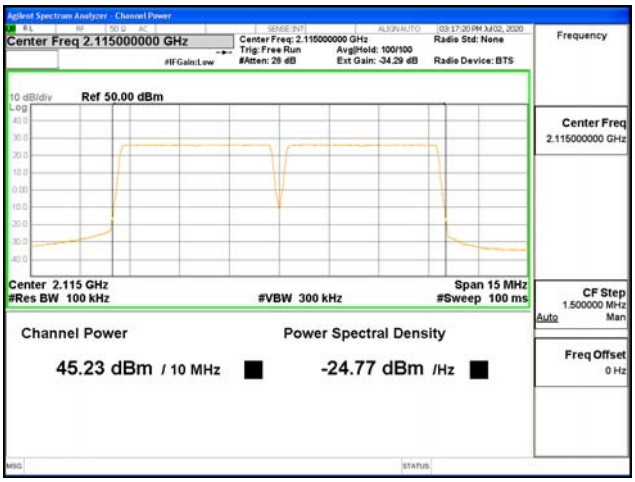
Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 10+10+10 MHz	Bottom	QPSK	44.32	45.26	45.61	45.56	51.24	133.05
		16QAM	44.37	45.32	45.64	45.61	51.28	134.28
		64QAM	44.49	45.33	45.66	45.61	51.32	135.52
		256QAM	44.36	45.29	45.62	45.56	51.26	133.66
	Middle	QPSK	44.26	45.13	45.72	45.65	51.25	133.35
		16QAM	44.70	45.40	45.73	45.63	51.40	138.04
		64QAM	44.68	45.35	45.72	45.63	51.38	137.40
		256QAM	44.42	45.32	45.61	45.52	51.26	133.66
	Top	QPSK	44.47	45.19	45.69	45.56	51.27	133.97
		16QAM	44.53	45.26	45.72	45.60	51.32	135.52
		64QAM	44.55	45.26	45.72	45.56	51.32	135.52
		256QAM	44.54	45.28	45.74	45.59	51.33	135.83

Test Data : Band 66, BW 10+10+15MHz, Multi 3carrier

Type	Channel	Modulation	Output Power [dBm]				Total Power	
			Test antenna port				[dBm]	[W]
			0	1	2	3		
Band 66 BW 10+10+15 MHz	Bottom	QPSK	44.54	45.30	45.69	45.62	51.33	135.83
		16QAM	44.72	45.45	45.75	45.68	51.44	139.32
		64QAM	44.76	45.36	45.67	45.60	51.38	137.40
		256QAM	44.74	45.43	45.74	45.69	51.44	139.32
	Middle	QPSK	44.80	45.35	45.78	45.66	51.43	139.00
		16QAM	44.81	45.44	45.78	45.68	51.46	139.96
		64QAM	44.82	45.39	45.77	45.65	51.44	139.32
		256QAM	44.65	45.42	45.77	45.67	51.42	138.68
	Top	QPSK	44.81	45.40	45.81	45.66	51.46	139.96
		16QAM	44.85	45.42	45.80	45.66	51.47	140.28
		64QAM	44.92	45.44	45.80	45.64	51.48	140.60
		256QAM	44.86	45.45	45.83	45.68	51.49	140.93

Test Plot at Output Power

Band 66, BW 5MHz+5MHz, Multi 2 carrier, Bottom
ANT 0

QPSK	16QAM
	
64QAM	256QAM

ANT 1

QPSK	16QAM
64QAM	256QAM

ANT 2

QPSK	16QAM
64QAM	256QAM

ANT 3

QPSK	16QAM
64QAM	256QAM

Band 66, BW 5MHz+5MHz, Multi 2 carrier, Middle
ANT 0

QPSK	16QAM
64QAM	**256QAM**

ANT 1

QPSK	16QAM
64QAM	256QAM

ANT 2

QPSK	16QAM
64QAM	256QAM

ANT 3

QPSK	16QAM
64QAM	**256QAM**

Band 66, BW 5MHz+5MHz, Multi 2 carrier, Top
ANT 0

QPSK	16QAM
64QAM	256QAM

ANT 1

QPSK	16QAM
64QAM	256QAM

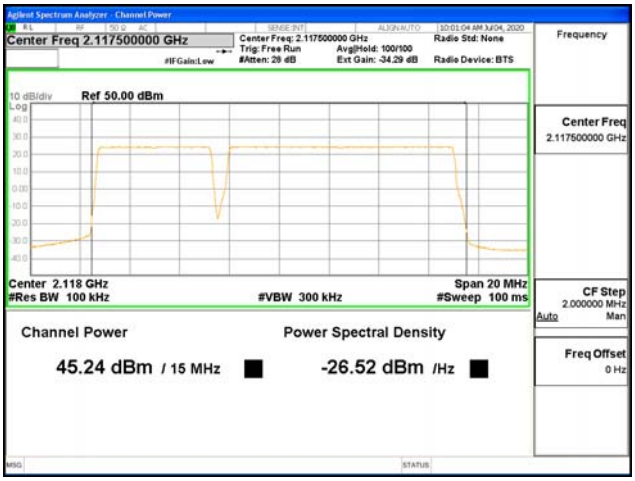
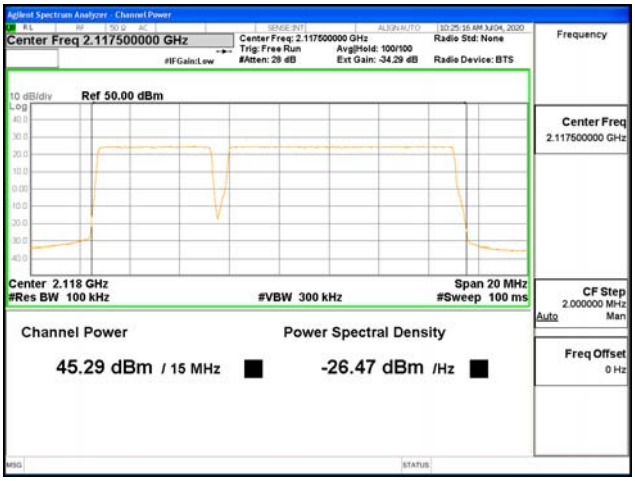
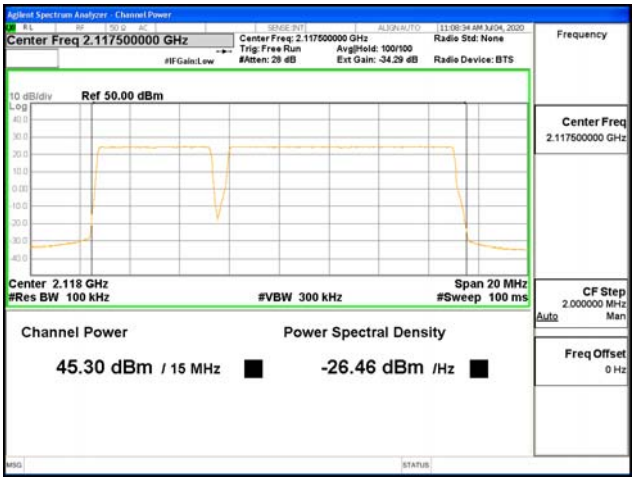
ANT 2

QPSK	16QAM
64QAM	256QAM

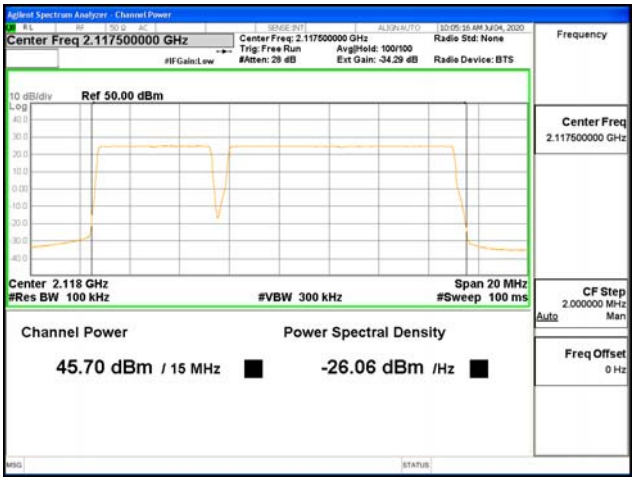
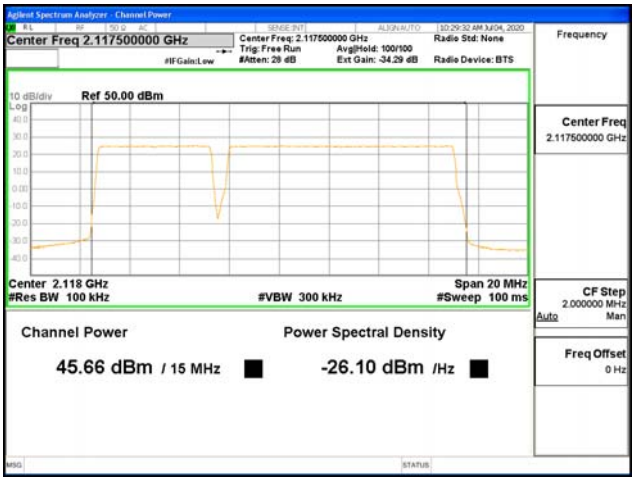
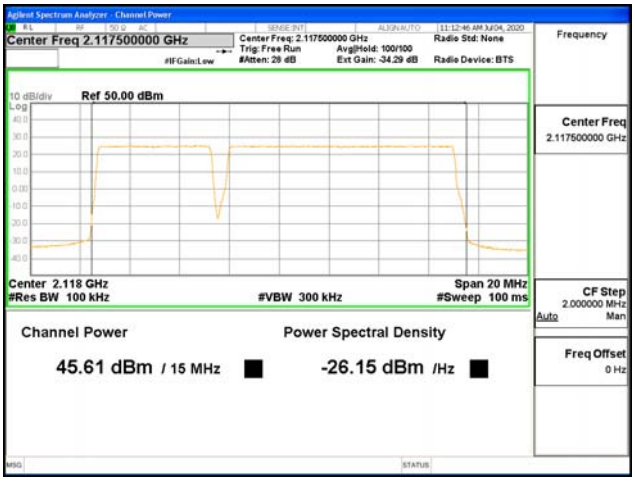
ANT 3

QPSK	16QAM
64QAM	**256QAM**

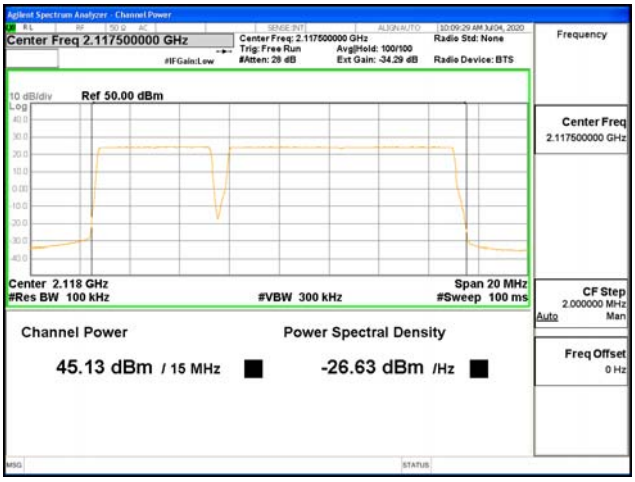
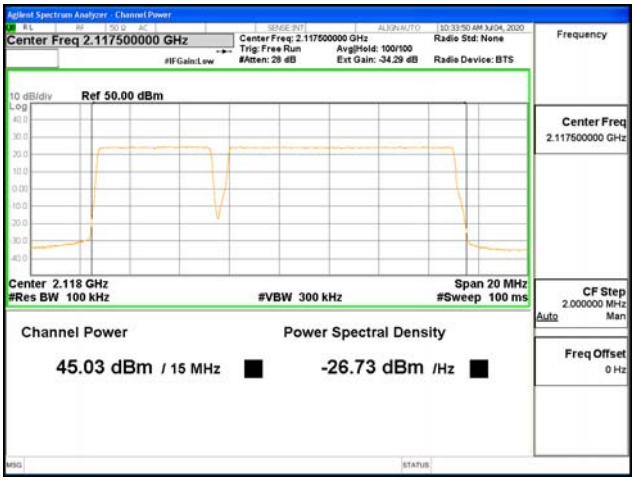
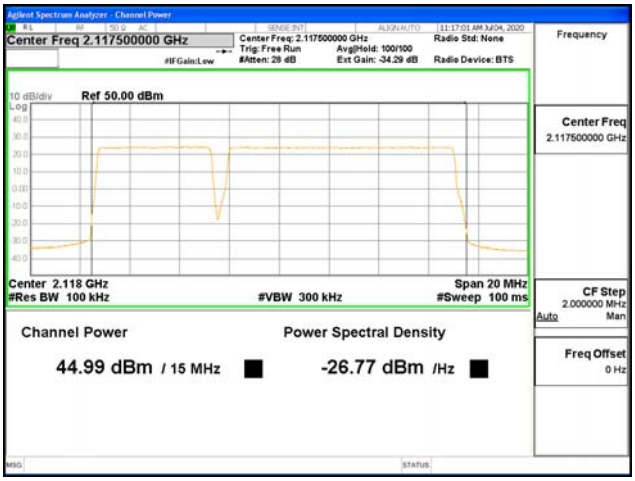
Band 66, BW 5MHz+10MHz, Multi 2 carrier, Bottom
ANT 0

QPSK	16QAM
	
64QAM	256QAM
	

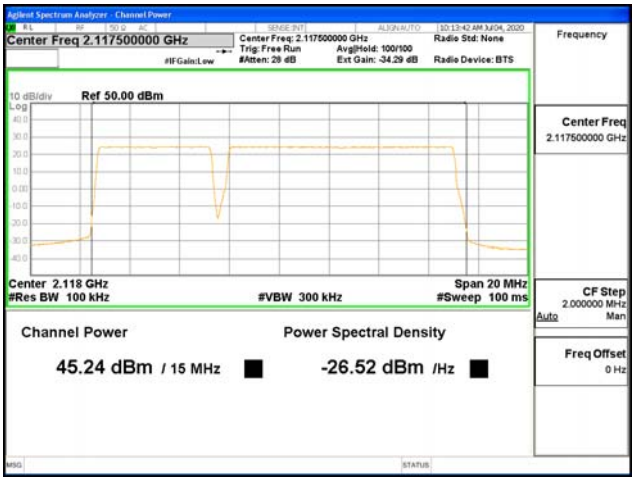
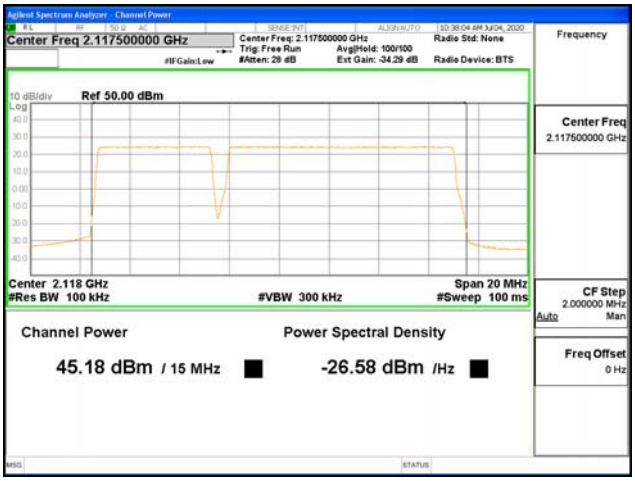
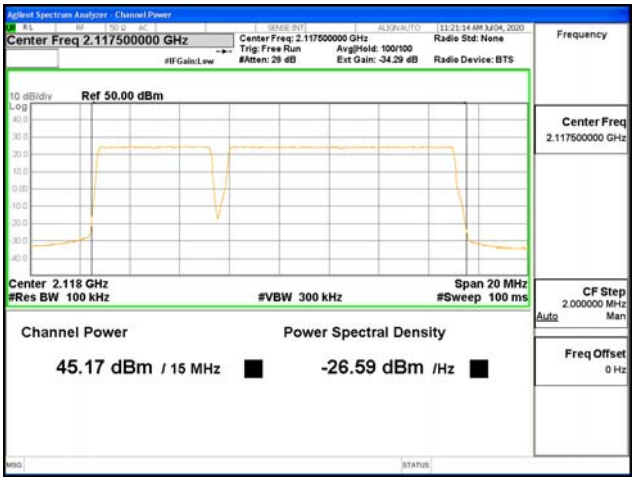
ANT 1

QPSK	16QAM
	
64QAM	256QAM
	

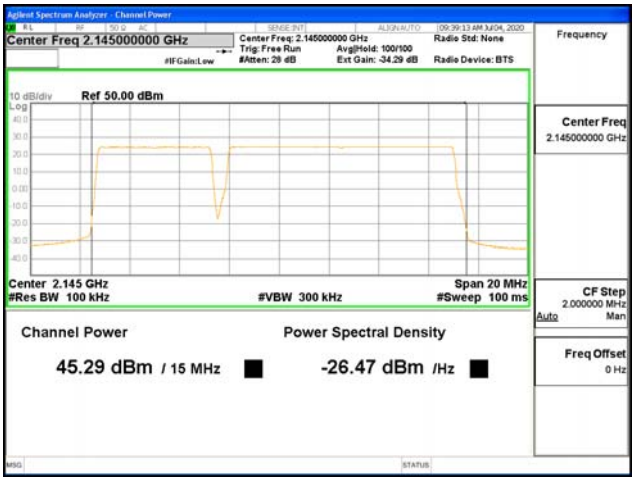
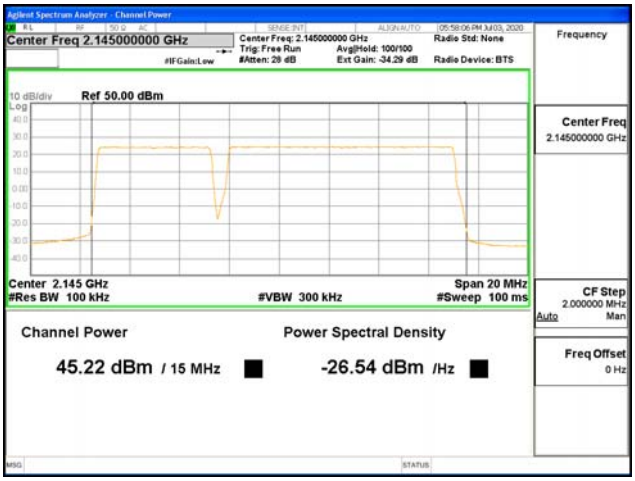
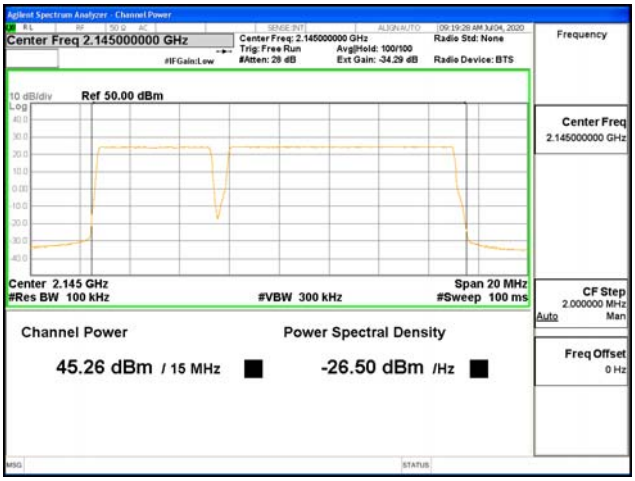
ANT 2

QPSK	16QAM
	
64QAM	256QAM
	

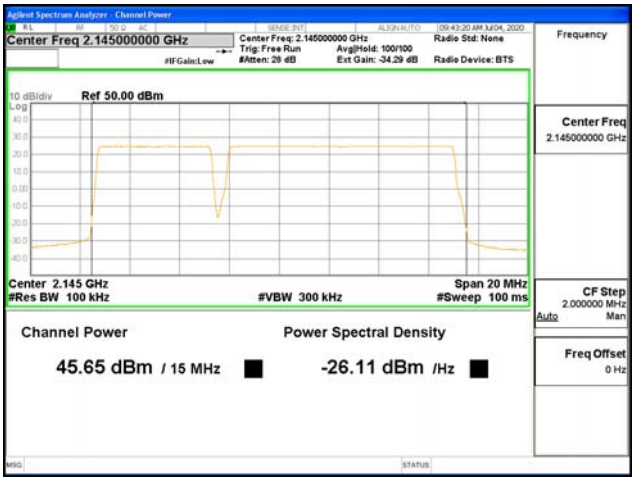
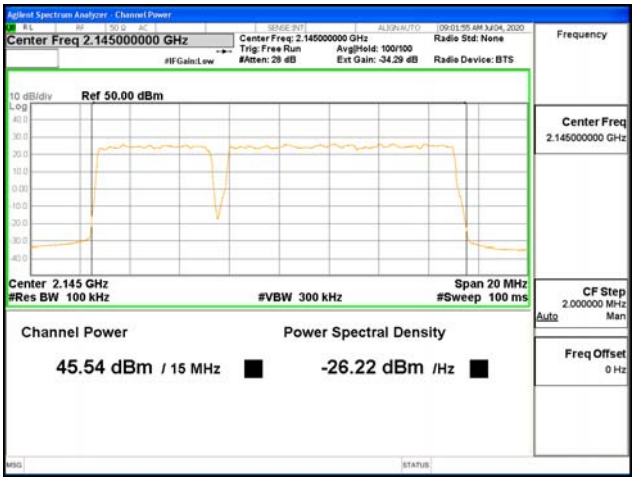
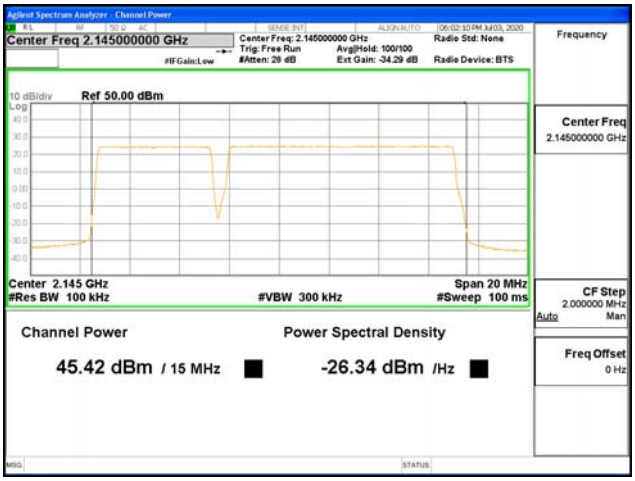
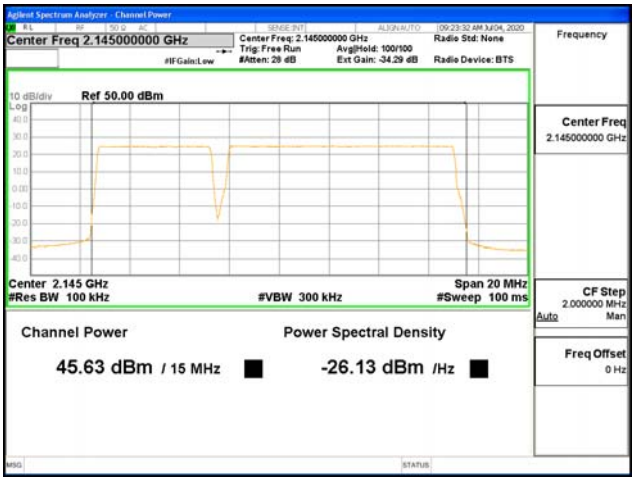
ANT 3

QPSK	16QAM
	
64QAM	256QAM
	

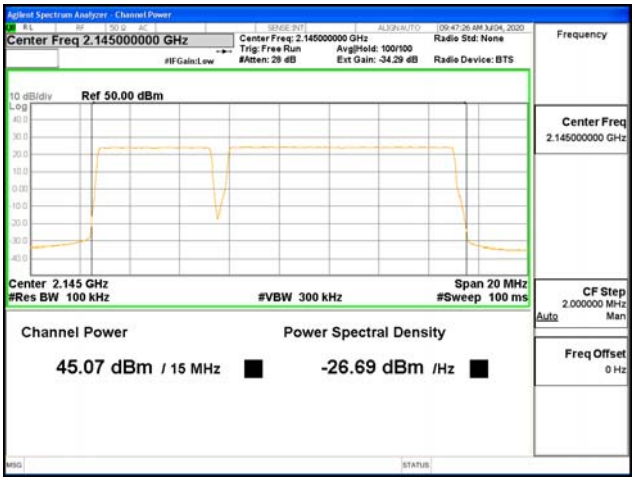
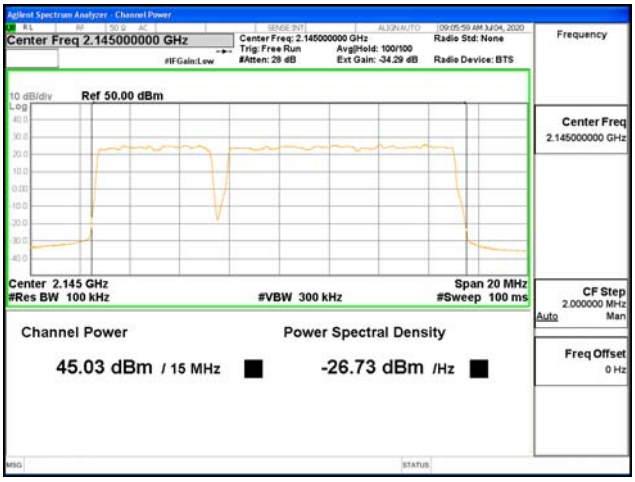
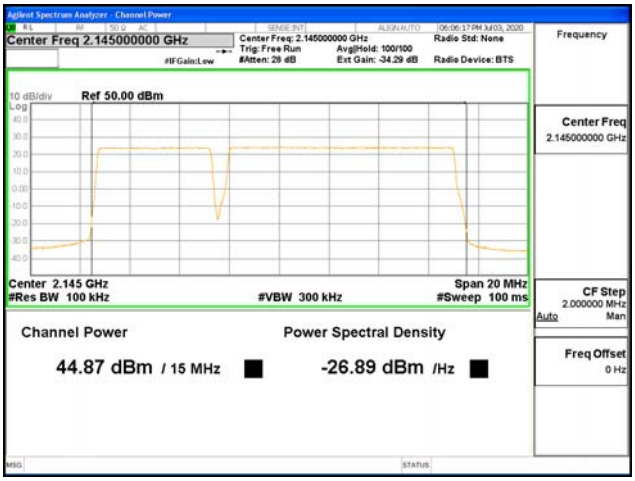
Band 66, BW 5MHz+10MHz, Multi 2 carrier, Middle
ANT 0

QPSK	16QAM
	
64QAM	256QAM
	

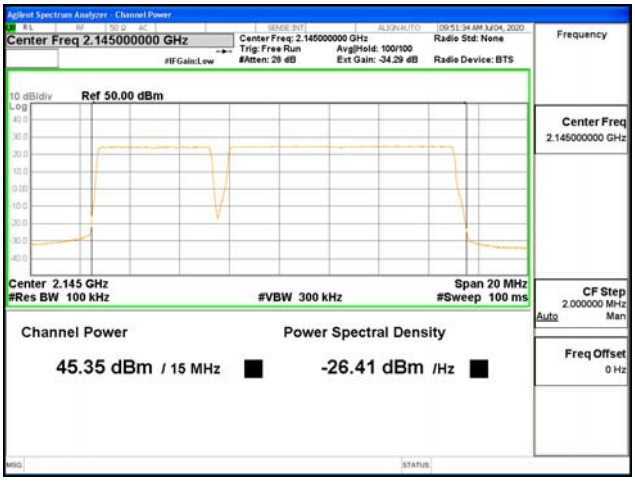
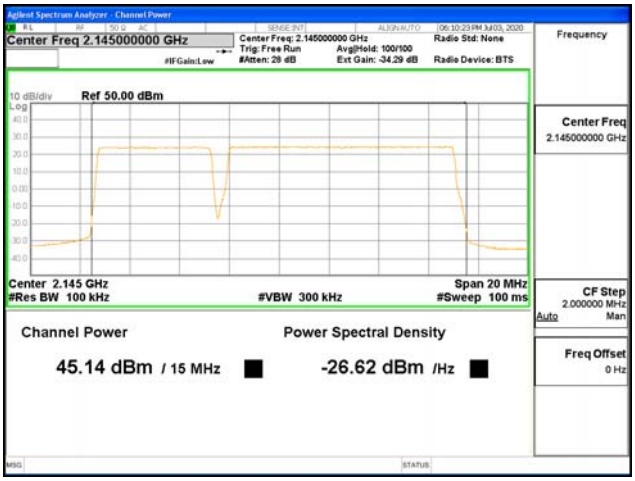
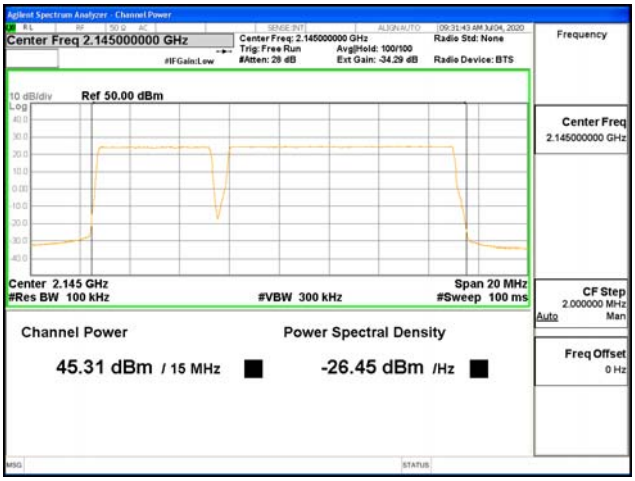
ANT 1

QPSK	16QAM
	
64QAM	256QAM
	

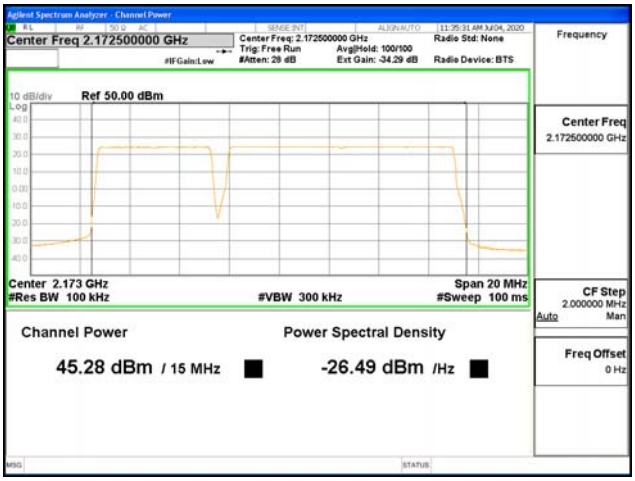
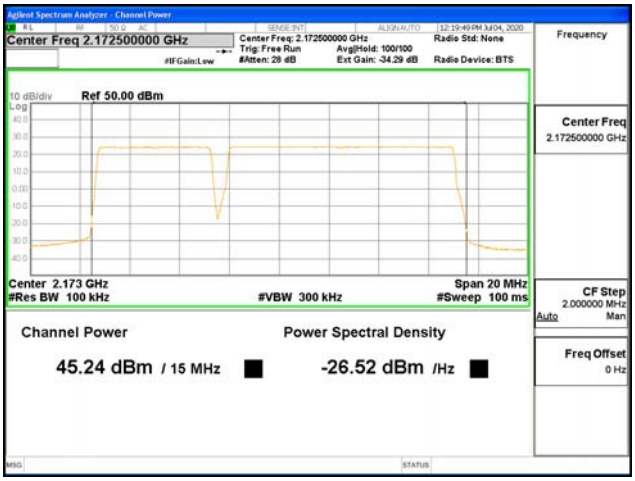
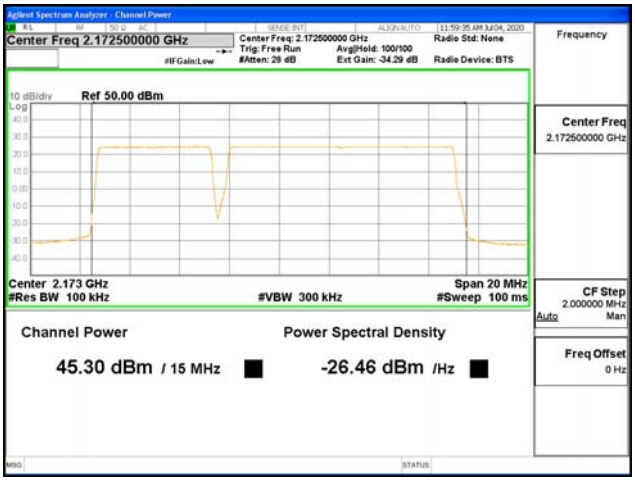
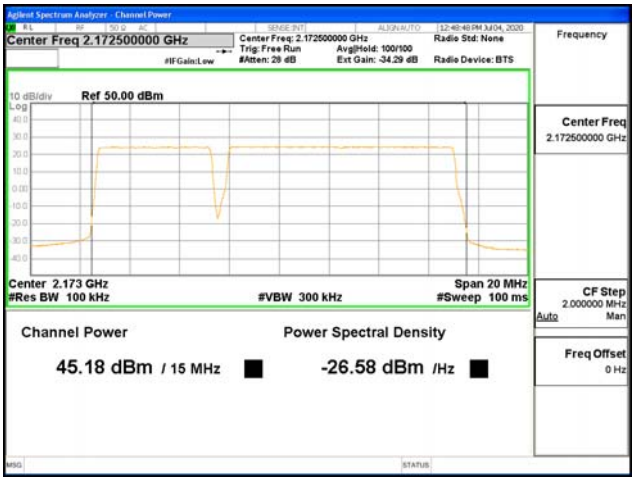
ANT 2

QPSK	16QAM
	
64QAM	**256QAM**
	

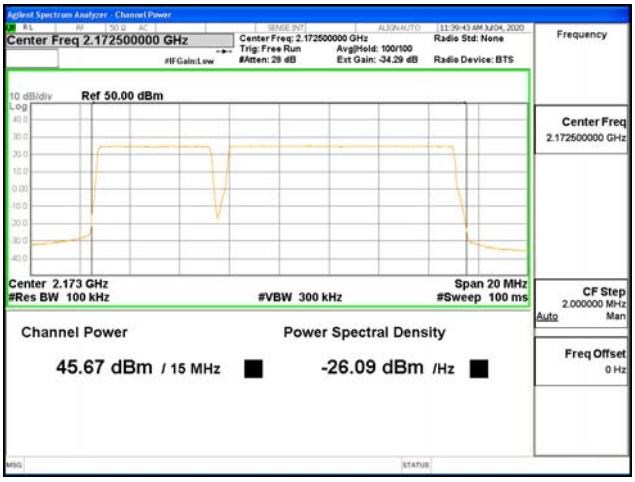
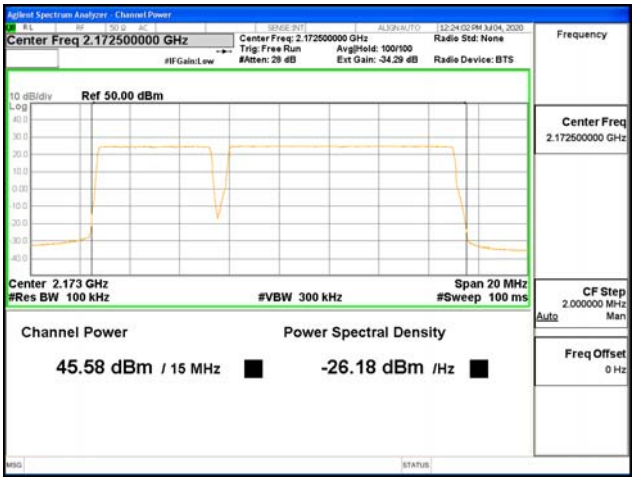
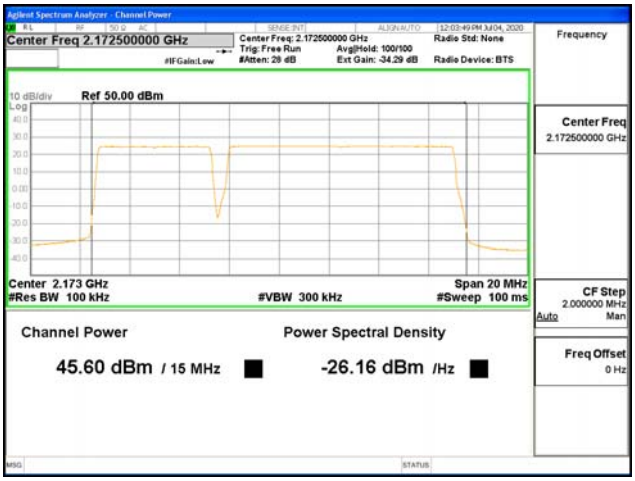
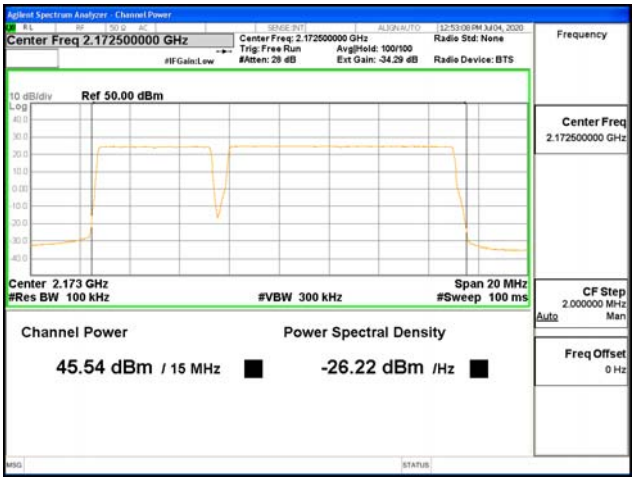
ANT 3

QPSK	16QAM
	
64QAM	256QAM
	

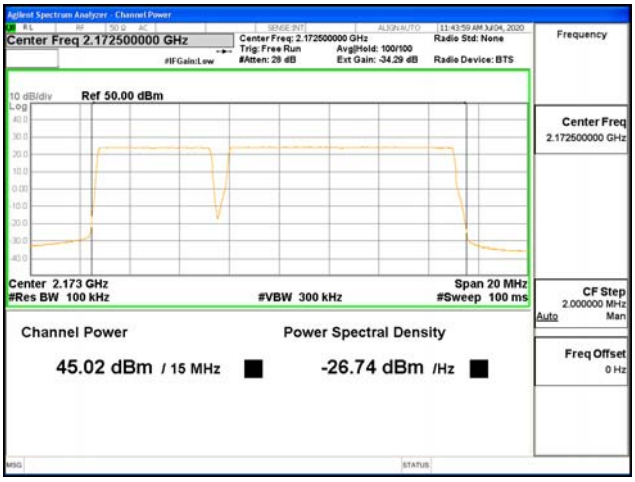
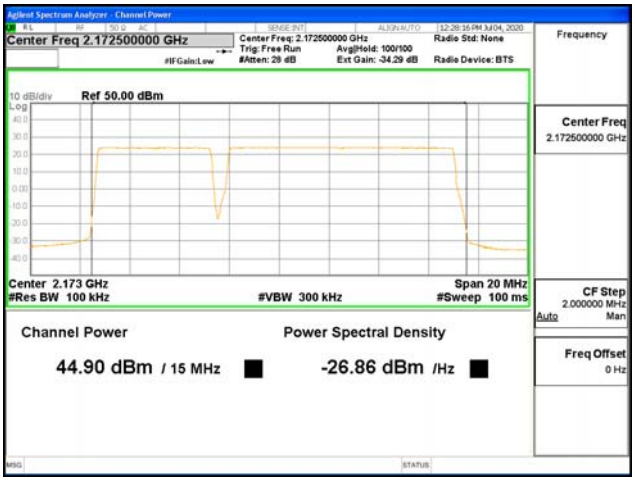
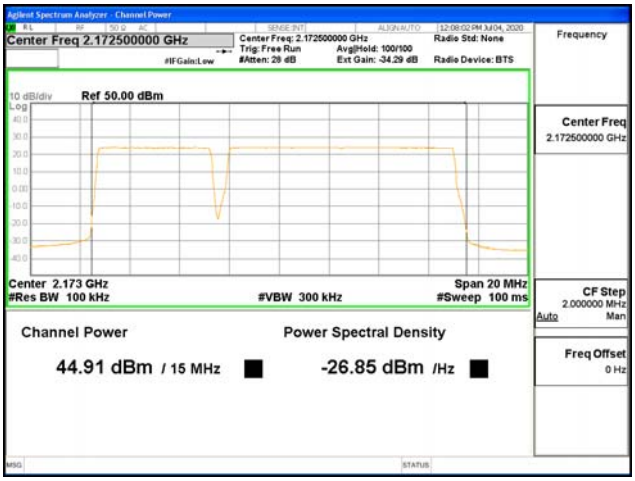
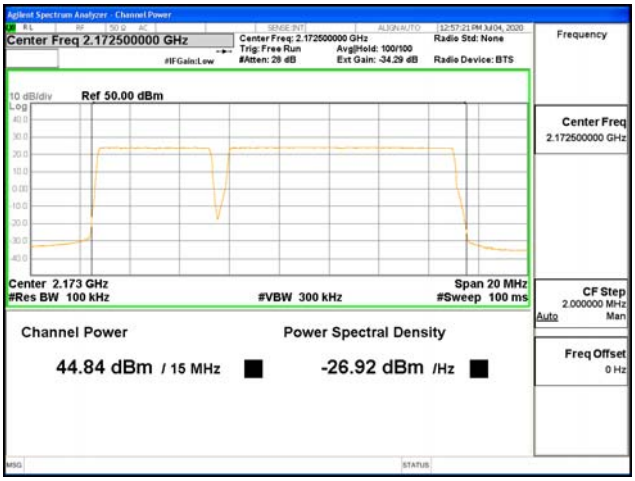
Band 66, BW 5MHz+10MHz, Multi 2 carrier, Top
ANT 0

QPSK	16QAM
	
64QAM	256QAM
	

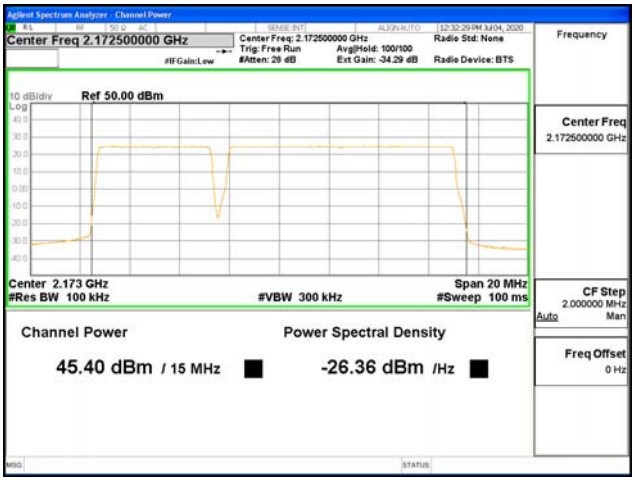
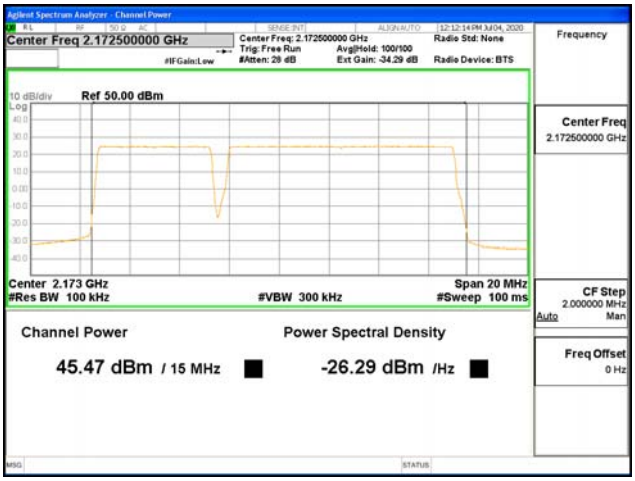
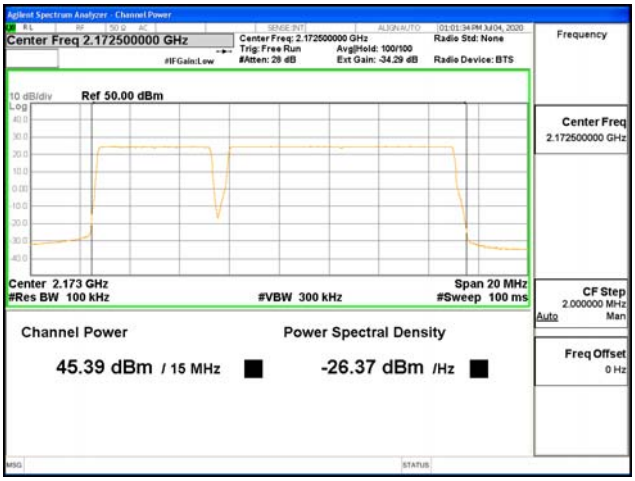
ANT 1

QPSK	16QAM
	
64QAM	**256QAM**
	

ANT 2

QPSK	16QAM
	
64QAM	**256QAM**
	

ANT 3

QPSK	16QAM
	
64QAM	256QAM
	

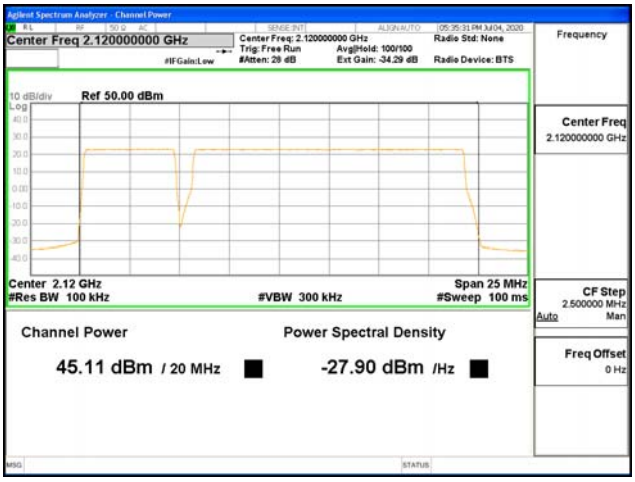
Band 66, BW 5MHz+15MHz, Multi 2 carrier, Bottom
ANT 0

QPSK	16QAM
64QAM	256QAM

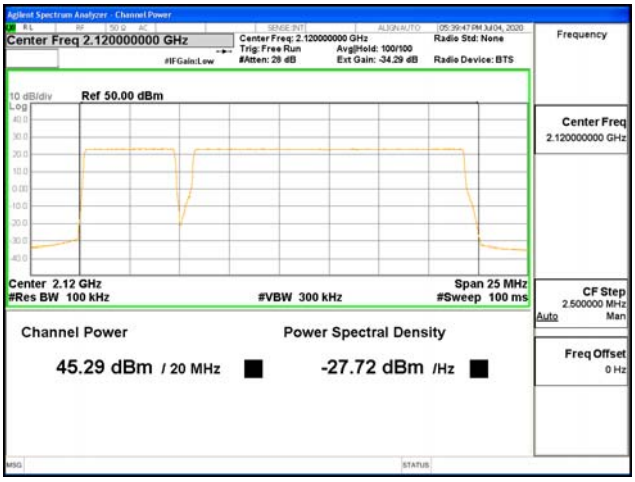
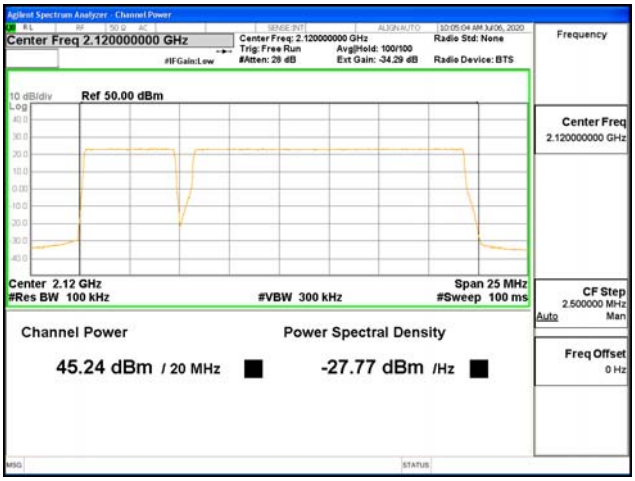
ANT 1

QPSK	16QAM
64QAM	256QAM

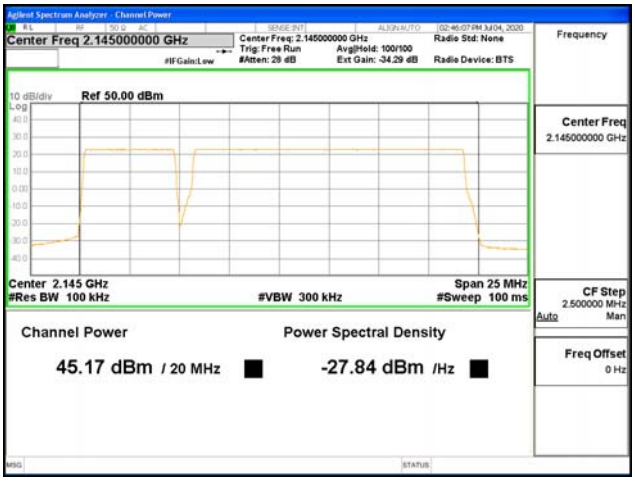
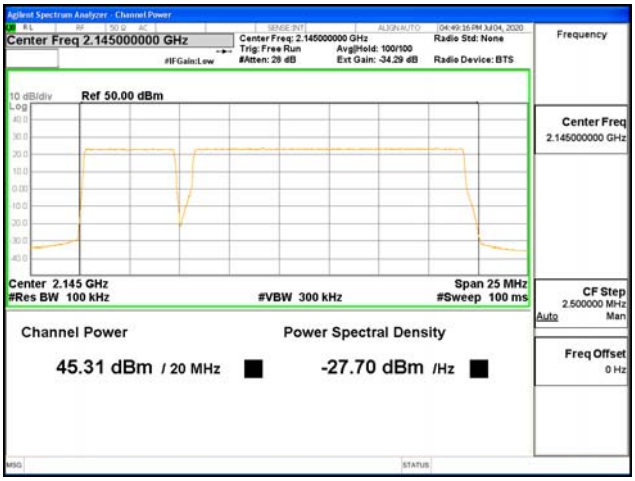
ANT 2

QPSK	16QAM
	
64QAM	256QAM

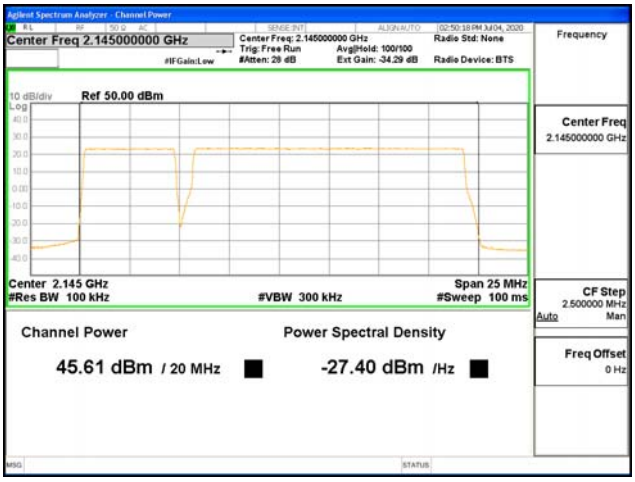
ANT 3

QPSK	16QAM
	
64QAM	**256QAM**
	

Band 66, BW 5MHz+15MHz, Multi 2 carrier, Middle
ANT 0

QPSK	16QAM
	
64QAM	256QAM
	

ANT 1

QPSK	16QAM
	
64QAM	256QAM

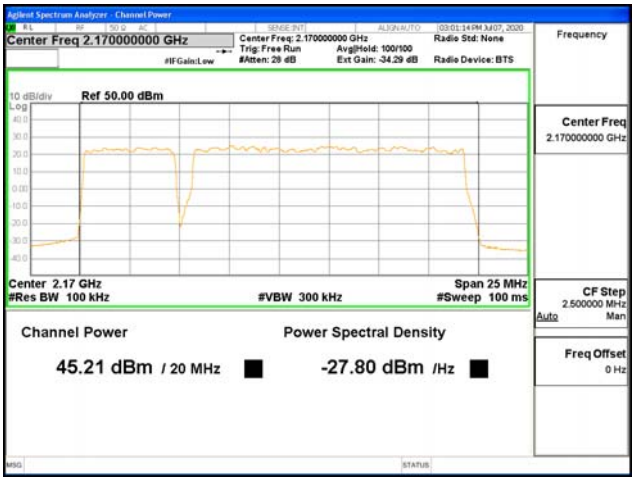
ANT 2

QPSK	16QAM
64QAM	**256QAM**

ANT 3

QPSK	16QAM
64QAM	256QAM

Band 66, BW 5MHz+15MHz, Multi 2 carrier, Top
ANT 0

QPSK	16QAM
	
64QAM	256QAM

ANT 1

QPSK	16QAM
64QAM	256QAM

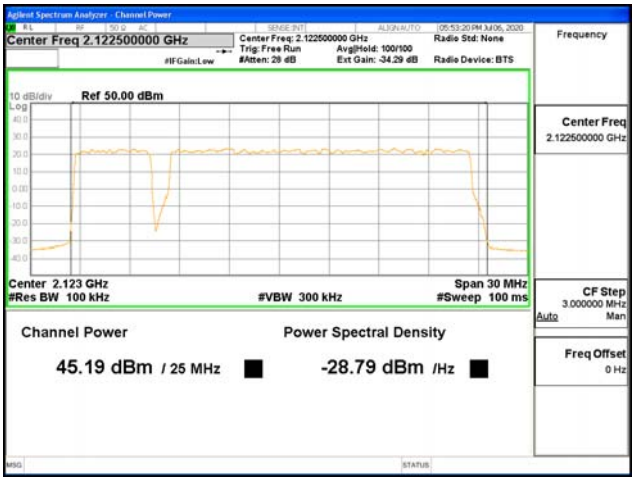
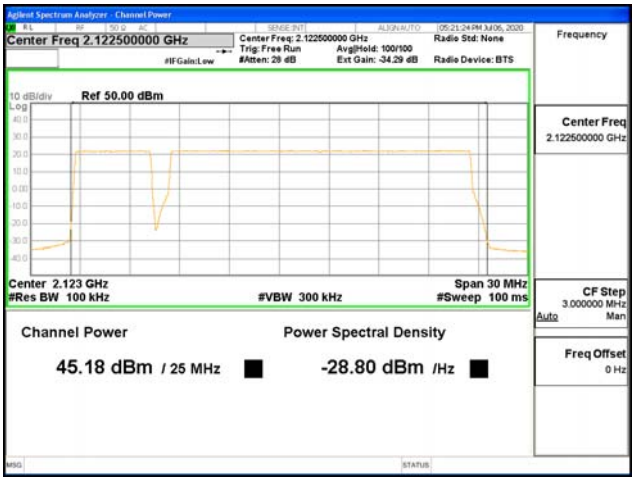
ANT 2

QPSK	16QAM
64QAM	**256QAM**

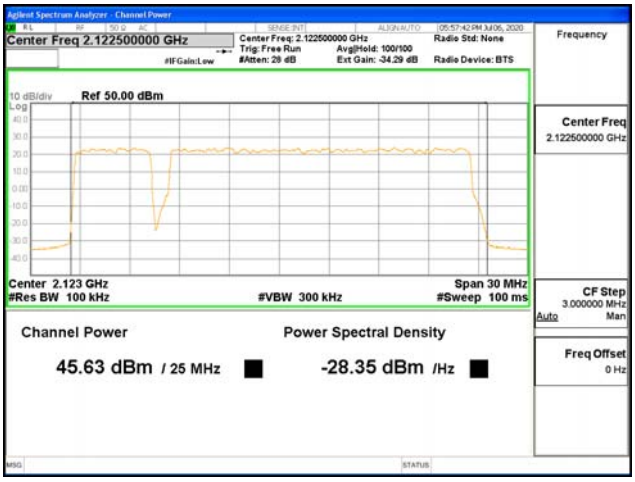
ANT 3

QPSK	16QAM
64QAM	**256QAM**

Band 66, BW 5MHz+20MHz, Multi 2 carrier, Bottom
ANT 0

QPSK	16QAM
	
64QAM	**256QAM**
	

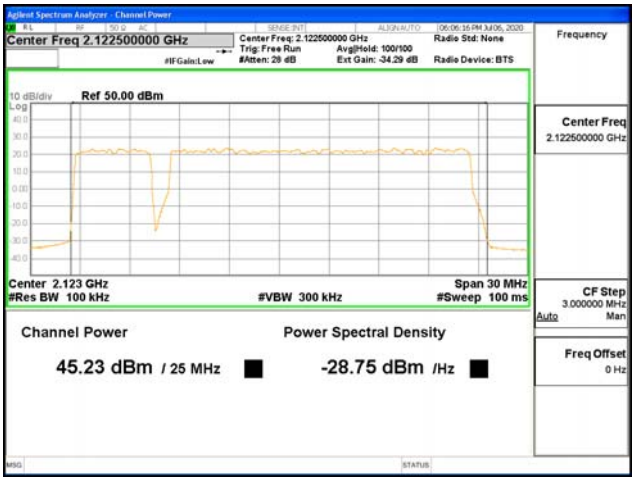
ANT 1

QPSK	16QAM
	
64QAM	256QAM

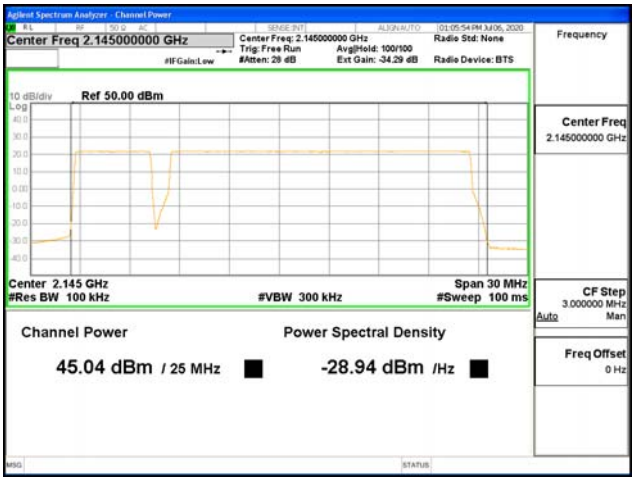
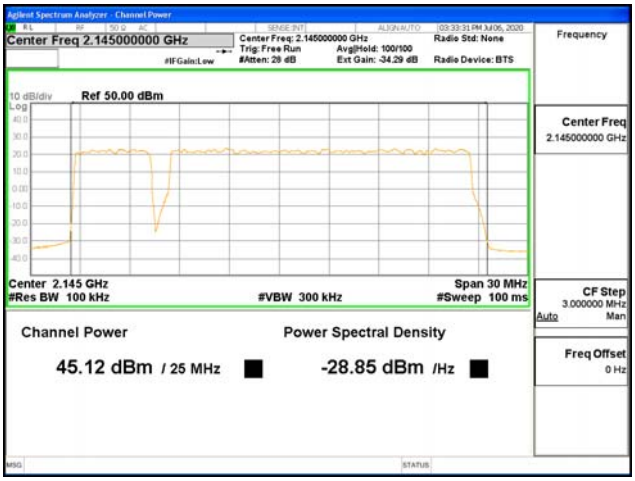
ANT 2

QPSK	16QAM
64QAM	**256QAM**

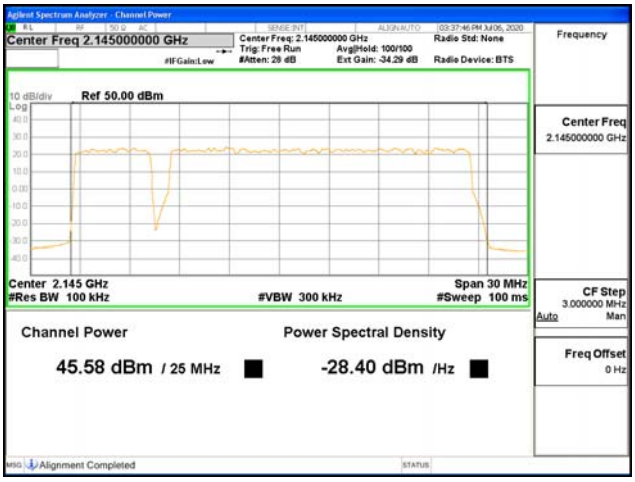
ANT 3

QPSK	16QAM
	
64QAM	256QAM

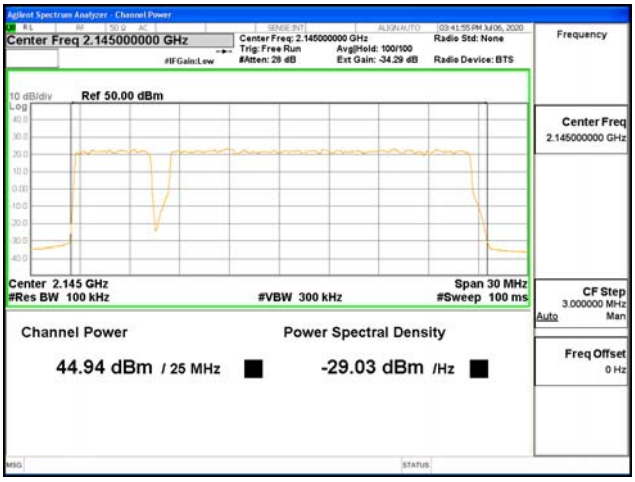
Band 66, BW 5MHz+20MHz, Multi 2 carrier, Middle
ANT 0

QPSK	16QAM
	
64QAM	256QAM

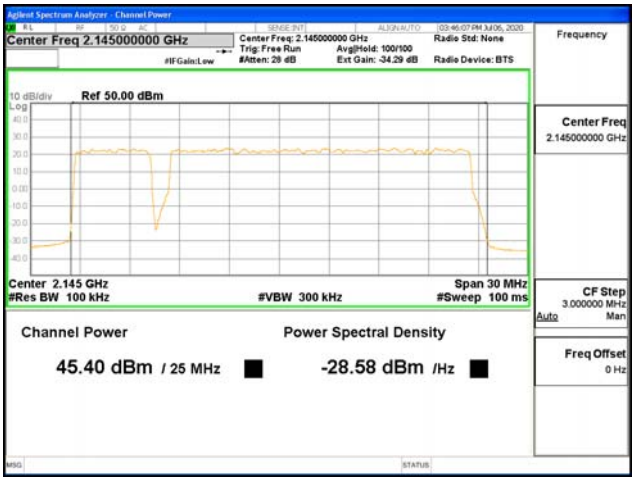
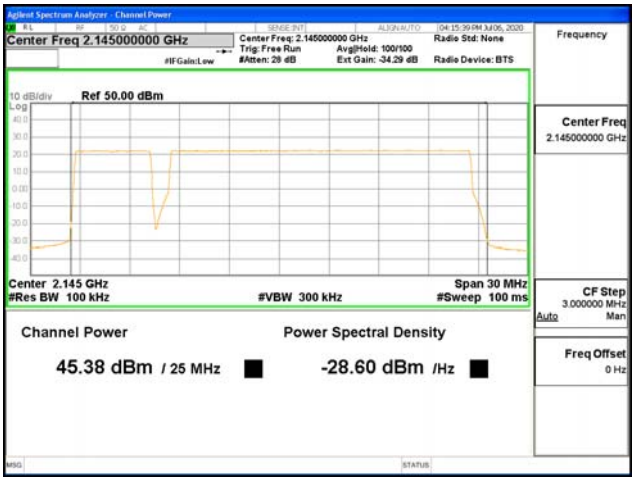
ANT 1

QPSK	16QAM
	
64QAM	**256QAM**

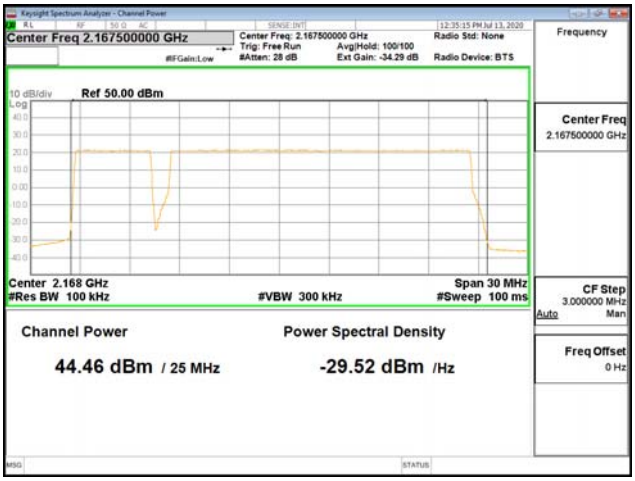
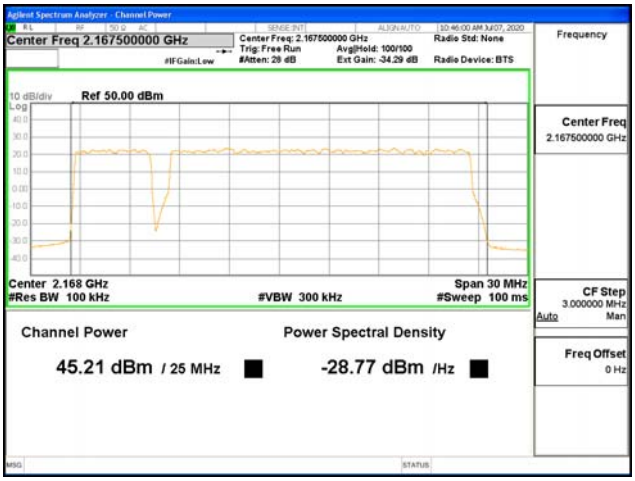
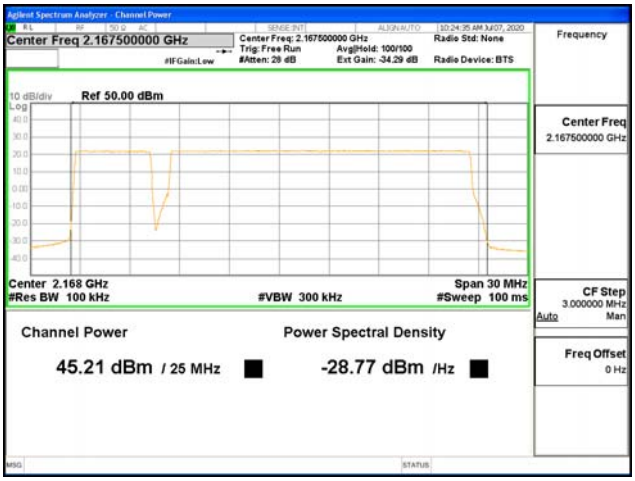
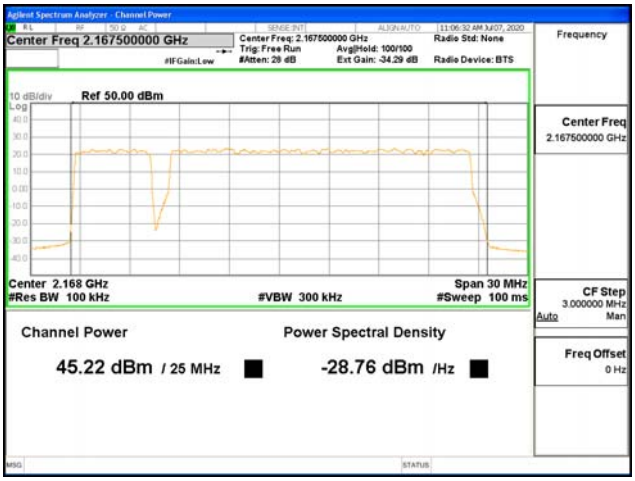
ANT 2

QPSK	16QAM
	
64QAM	256QAM

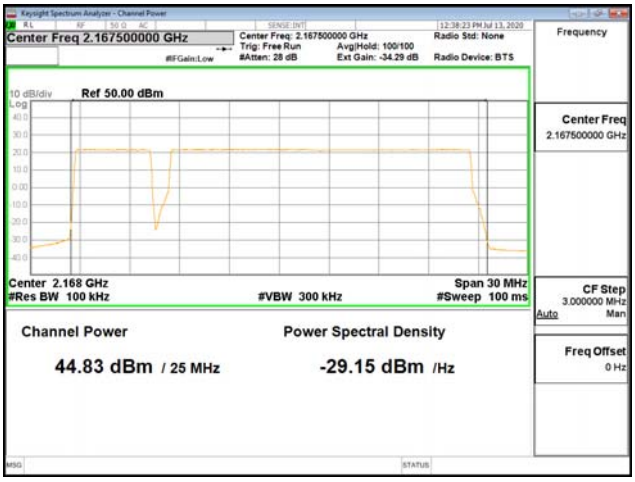
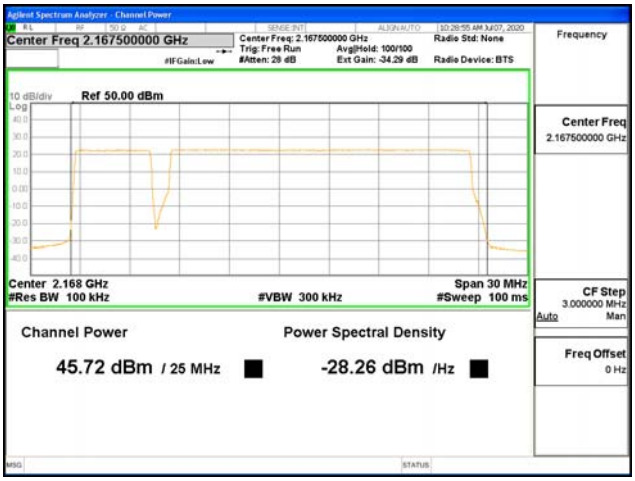
ANT 3

QPSK	16QAM
	
64QAM	256QAM
	

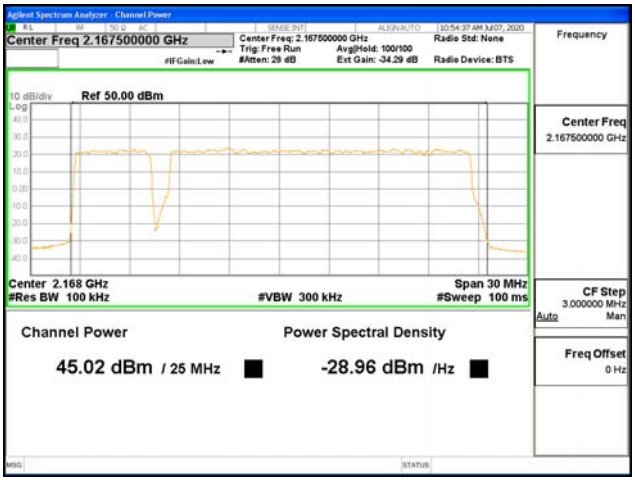
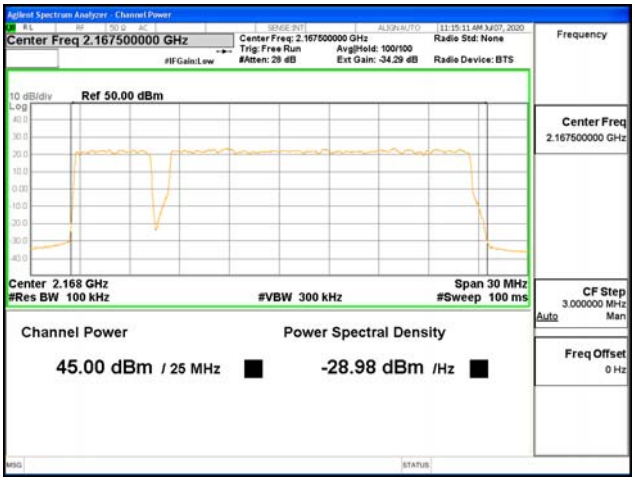
Band 66, BW 5MHz+20MHz, Multi 2 carrier, Top
ANT 0

QPSK	16QAM
	
64QAM	256QAM
	

ANT 1

QPSK	16QAM
	
64QAM	**256QAM**
	

ANT 2

QPSK	16QAM
	
64QAM	256QAM