

FCC Test Report

(Part 22&24&27)

Product Name : WCDMA/LTE Mobile Phone

Model No : EA211101

FCC ID : RYQEA211101

Applicant : FIH CO., LTD.

Address : No.4, Minsheng St., Tu-Cheng Dist., New Taipei City 23679, Taiwan

Date of Receipt : 2021/04/23

Issued Date : 2021/06/25

Report No. : 2150946R-E3042110012

Report Version : V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

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Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test Report

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Product Name : WCDMA/LTE Mobile Phone
Applicant : FIH CO., LTD.
Address : No.4, Minsheng St., Tu-Cheng Dist., New Taipei City 23679, Taiwan
Manufacturer : FIH CO., LTD.
Trade Name : FIH
Model No. : EA211101
EUT Rated Voltage : DC 3.6V~4.2V
EUT Test Voltage : DC 3.8V
Measurement Standard : FCC CFR Title 47 Part 22 ; Part 24 ; Part 27
Measurement : FCC CFR Title 47 Part 2
Reference : TIA/EIA 603-E 2016
KDB 971168 D01V03R01
ANSI C63.26 2015
Test Result : Complied

Documented By : Genie Chang
(Senior Adm. Specialist / Genie Chang)

Tested By : Joe Wang
(Engineer / Joe Wang)

Approved By : wenLee
(Supervisor / Wen Lee)

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Revision History

Report No.	Version	Description	Issued Date
2150419R-E3042110012	V1.0	Initial issue of report.	2021-06-25

1. GENERAL INFORMATION

1.1 EUT Description

Product Name	WCDMA/LTE Mobile Phone
Model No.	EA211101
Trade Name	FIH
IMEI No.	353786870005698
FCC ID	RYQEA211101
TX Frequency	LTE Band 2: 1850MHz ~1910MHz
	LTE Band 4: 1710MHz~1755MHz
	LTE Band 5: 824MHz~849MHz
	LTE Band 12: 699MHz~716MHz
	LTE Band 30: 2305MHz~2315MHz
Rx Frequency	LTE Band 2: 1930MHz ~1990MHz
	LTE Band 4: 2110MHz ~2155MHz
	LTE Band 5: 869MHz ~894MHz
	LTE Band 12: 729MHz ~746MHz
	LTE Band 30: 2350MHz~2360MHz
Bandwidth	LTE Band 2: 1.4MHz/3MHz/5MHz/10MHz/15MHz/20MHz
	LTE Band 4: 1.4MHz/3MHz/5MHz/10MHz/15MHz/20MHz
	LTE Band 5: 1.4MHz/3MHz/5MHz/10MHz
	LTE Band 12: 1.4MHz/3MHz/5MHz/10MHz
	LTE Band 30: 5MHz/10MHz
Modulation	QPSK/16-QAM
HW Version	2.0
SW Version	ACD_0.2116.11.01_TA

1.2 Antenna List

Item	Manufacturer	Part No	Antenna Type	Peak Gain
Main (TX/RX)	Speed	S0AF2ACC0A4	PIFA	-3.45 dBi for B2 -2.73 dBi for B4 -4.12 dBi for B5 -5.02 dBi for B12 -3.97 dBi for B30
DIV (RX)		S0AF2ACC0A5	LOOP	-4.89 dBi for B2 -3.63 dBi for B4 -4.56 dBi for B5 -9.37 dBi for B12 -6.62 dBi for B30

1.3 Operational Description

The EUT provide all functions described as above. The EUT is tested with maximum rated TX power via the Base Station simulator.

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined

as:

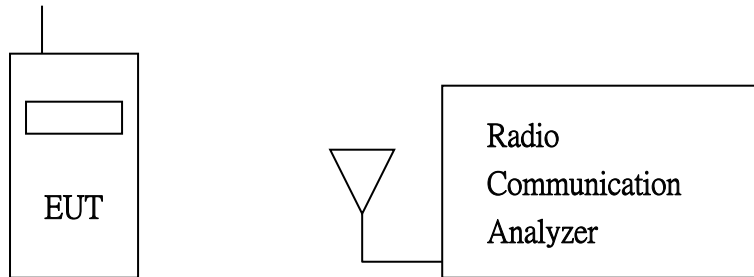
Test Mode:	LTE Band 2 QPSK/16-QAM
	LTE Band 4 QPSK/16-QAM
	LTE Band 5 QPSK/16-QAM
	LTE Band 12 QPSK/16-QAM
	LTE Band 30 QPSK/16-QAM

Note:

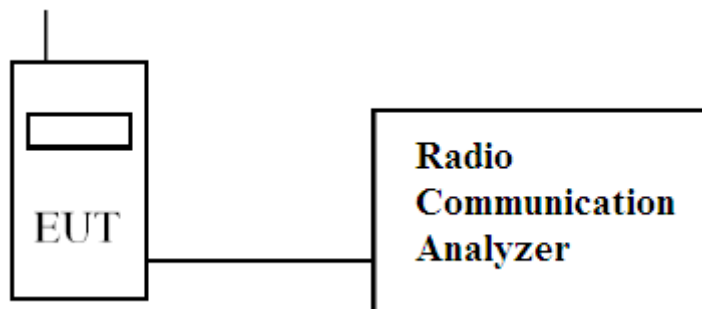
All operation modes has been verified and the report shows the worst case mode.

1.4 Configuration of tested System

(a) Configuration of Radiated measurement



(b) Configuration of Conducted measurement



1.5 EUT Setup Procedures

- (1) Setup the EUT and simulators as shown on 1.3
- (2) Turn on the power of all equipments.
- (3) The EUT link with base station and it will continue receive the signal.
- (4) Repeat the above procedure (3).

1.6 Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual	Laboratory
Temperature (°C)	15-35	20 ~ 26	Linkou (Valley)
Humidity (%RH)	25-75	43 ~ 59	Linkou (Valley)

USA : FCC Registration Number: TW3023

Canada : IC Registration Number: 4075A

Site Description: Accredited by TAF
Accredited Number: 3023

Test Laboratory: DEKRA Testing and Certification Co., Ltd
Address: No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451,
Taiwan, R.O.C.
Phone number: 886-2-8601-3788
Fax number: 886-2-8601-3789
Email address: info.tw@dekra.com
Website: <http://www.dekra.com.tw>

2. Technical Test

2.1. Summary of test result

Test Item	FCC Reference section	FCC Limit	Result
RF Output Power	§2.1046	<7 Watts for §22.913(a) <2 Watts for §24.232(c) <0.25 Watts for §27.50(a) <3 Watts for §27.50(c) <1 Watts for §27.50(d)	Pass
	§22.913(a)		
	§24.232(c)		
	§27.50(a, c, d)		
Occupied Bandwidth	§2.1049	Within the frequency range	Pass
	§22.863		
	§24.238(b)		
	§27.53(a, g, h)		
Spurious Emission at Antenna Terminals	§2.1051	<-13dBm <-13dBm / <-25dBm / <-31dBm / <-37dBm / <-40dBm for §27.53(a.4)	Pass
	§22.917(a)		
	§24.238(a)		
	§27.53(a, g, h)		
Conducted Emission	§2.1051	<-13dBm <-40dBm for §27.53(a.4)	Pass
	§22.917(a)		
	§24.238(a)		
	§27.53(a, g, h)		
Field Strength of Spurious Radiation	§2.1053	<-13dBm <-40dBm for §27.53(a.4)	Pass
	§22.917(a)		
	§24.238(a)		
	§27.53(a, g, h)		
Frequency Stability for Temperature & Voltage	§2.1055	<±2.5 ppm for §22.355 Within the frequency range for §24.235, §27.54	Pass
	§22.355		
	§24.235		
	§27.54		
Peak to Average Ratio	§22.913 (d)	<13dB	Pass
	§24.232 (d)		
	§27.50		

2.2. List of test Equipment

Conducted /CTR

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY54510357	2021/05/18
Directional coupler	Agilent	87300C	MY44300353	2020/12/03
Directional coupler	Agilent	778D-012	50550	2020/12/03
Standard Temperature & Humidity Chamber	WIT	TH-1S-B	EQ-201-00146	2021/05/18
DC power supply	Agilent	E3610A	MY40009845	2020/06/30
Communication Tester	R&S	CMW500	157304	2020/12/08

Radiated / Site3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2907	2021/02/26
Horn Antenna	R&S	9120D	556	2021/05/04
Pre-Amplifier	Agilent	87405C	MY55380068	2020/09/10
Spectrum Analyzer	Agilent	N9010A	MY54510357	2021/05/18
DC power supply	Agilent	E3610A	MY40009845	2020/06/30
Communication Tester	R&S	CMW500	157304	2020/12/08

2.3. Measurement Uncertainty

Conducted Emission

The measurement uncertainty of confidence of 95% is evaluated as ± 1.52 dB

Radiated Emission (Below 1GHz)

The measurement uncertainty of confidence of 95% is evaluated as ± 4.22 dB

Radiated Emission (Above 1GHz)

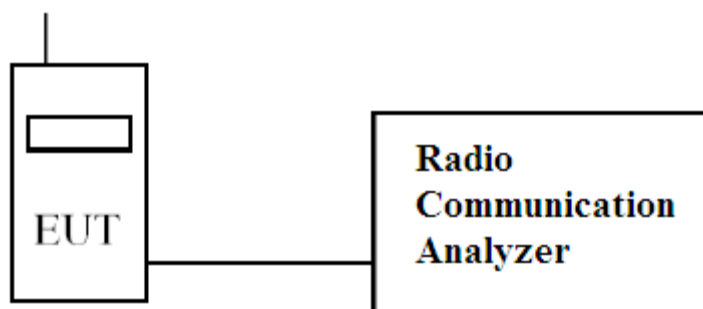
The measurement uncertainty of confidence of 95% is evaluated as ± 4.08 dB

3. Conducted Output Power Measurement

3.1. Test Specification

According to FCC Part 2.1046, 22.913, 24.232, 27.50

3.2. Test Setup



3.3. Limits

Band	Limit
LTE Band 2/1900	EIRP <2W
LTE Band 4/1700	EIRP <1W
LTE Band 5/850	ERP <7W
LTE Band 12/700	ERP <3W
LTE Band 30/2300	EIRP <0.25W

3.4. Test Procedure

The EUT is tested with maximum rated TX power via the Base Station simulator, and the output power was measured at the antenna terminals of the EUT.

3.5. Test Result of Maximum Power Output

Channel	Modulation	LTE Band 2 (1900MHz)							
		RB	RB	Maximum Conducted Output Power					
		No.	Offset	1.4M	3M	5M	10M	15M	20M
Low	QPSK	1	#0	23.01	23.16	23.31	22.54	22.38	22.82
		1	#Mid	23.07	23.25	23.57	24.09	23.96	24.07
		1	#Max	23.09	23.41	23.92	23.90	23.84	23.52
		50%	#0	23.01	23.20	23.21	22.94	22.74	22.70
		50%	#Mid	23.09	23.06	22.93	22.72	22.75	22.60
		50%	#Max	23.06	23.07	22.75	22.61	22.77	22.52
		100%	--	23.06	22.95	22.90	22.77	22.78	22.59
	16QAM	1	#0	22.15	22.26	22.09	21.66	21.66	21.82
		1	#Mid	22.27	22.52	22.46	22.48	22.37	23.05
		1	#Max	22.27	22.73	22.55	22.34	22.15	22.04
		50%	#0	21.98	22.17	22.04	22.05	21.80	21.87
		50%	#Mid	22.08	22.30	21.99	21.91	21.70	21.77
		50%	#Max	22.05	22.37	21.79	21.88	21.89	21.71
		100%	--	22.15	22.07	22.14	21.93	21.86	21.68
Mid	QPSK	1	#0	23.23	23.20	23.20	22.70	23.03	23.48
		1	#Mid	23.19	23.27	23.20	23.43	23.38	23.79
		1	#Max	23.13	23.30	23.37	23.08	23.35	23.57
		50%	#0	23.08	22.97	22.84	23.01	22.82	22.59
		50%	#Mid	23.14	22.72	22.73	22.70	22.71	22.62
		50%	#Max	23.09	22.73	22.73	22.69	22.70	22.56
		100%	--	22.94	22.67	22.70	22.71	22.70	22.58
	16QAM	1	#0	22.19	22.31	21.84	21.88	22.35	22.50
		1	#Mid	22.26	22.58	22.25	22.70	22.85	22.87
		1	#Max	22.10	22.58	22.01	22.36	22.82	22.73
		50%	#0	22.21	22.06	21.81	21.78	21.95	21.48
		50%	#Mid	22.28	21.85	21.72	21.74	21.68	21.59
		50%	#Max	22.25	21.86	21.81	21.63	21.79	21.62
		100%	--	21.91	21.80	21.83	21.61	21.77	21.62
High	QPSK	1	#0	23.51	23.41	23.23	22.76	23.59	23.40
		1	#Mid	23.50	23.50	23.39	23.31	23.40	23.80
		1	#Max	23.36	23.39	23.37	22.73	22.74	22.73
		50%	#0	23.40	22.80	22.61	22.99	22.81	22.67
		50%	#Mid	23.40	22.51	22.44	22.66	22.65	22.63
		50%	#Max	23.35	22.50	22.50	22.57	22.64	22.57
		100%	--	22.76	22.46	22.49	22.67	22.65	22.55
	16QAM	1	#0	22.09	22.26	22.15	22.12	22.39	22.01
		1	#Mid	22.29	22.45	22.21	22.76	22.91	22.32
		1	#Max	22.20	22.29	21.89	22.20	22.21	21.91
		50%	#0	22.20	21.56	21.37	22.08	21.80	21.52
		50%	#Mid	22.57	21.57	21.52	21.70	21.86	21.57
		50%	#Max	22.51	21.66	21.44	21.52	21.75	21.62
		100%	--	21.49	21.55	21.71	21.81	21.74	21.59

Channel	Modulation	LTE Band 4 (1900MHz)							
		RB	RB	Maximum Conducted Output Power					
		No.	Offset	1.4M	3M	5M	10M	15M	20M
Low	QPSK	1	#0	23.38	23.20	23.23	23.31	23.39	23.18
		1	#Mid	23.34	23.11	23.44	23.02	23.10	23.42
		1	#Max	23.22	23.12	22.95	23.14	22.85	23.07
		50%	#0	23.31	22.32	22.34	22.41	22.33	22.46
		50%	#Mid	23.27	22.21	22.33	22.28	22.30	22.31
		50%	#Max	23.36	22.29	22.28	22.30	22.23	22.41
		100%	--	22.24	22.35	22.28	22.27	22.22	22.41
	16QAM	1	#0	21.79	22.63	21.52	22.00	21.90	22.05
		1	#Mid	21.93	22.18	21.91	21.89	21.83	22.30
		1	#Max	21.77	21.90	21.65	21.80	21.80	21.84
		50%	#0	22.09	21.27	21.02	21.27	21.17	21.40
		50%	#Mid	22.03	21.23	20.95	21.24	21.25	21.35
		50%	#Max	22.04	21.19	20.88	21.36	21.22	21.47
		100%	--	21.20	21.36	21.14	21.32	21.26	21.29
Mid	QPSK	1	#0	23.17	23.30	23.38	23.12	23.07	22.80
		1	#Mid	23.23	23.17	23.25	23.24	23.22	23.58
		1	#Max	22.99	23.05	23.29	23.12	23.39	23.42
		50%	#0	23.32	22.33	22.31	22.25	22.32	22.37
		50%	#Mid	23.30	22.39	22.30	22.36	22.28	22.41
		50%	#Max	23.22	22.26	22.30	22.38	22.40	22.43
		100%	--	22.27	22.32	22.30	22.32	22.31	22.41
	16QAM	1	#0	22.62	21.71	21.71	21.99	21.96	22.11
		1	#Mid	22.74	22.38	21.91	22.43	21.86	22.66
		1	#Max	21.93	21.62	22.25	22.31	21.92	21.77
		50%	#0	21.91	21.32	21.18	21.24	21.43	21.27
		50%	#Mid	22.35	21.39	21.19	21.30	21.22	21.40
		50%	#Max	22.06	21.31	21.24	21.38	21.47	21.48
		100%	--	21.24	21.22	21.33	21.30	21.47	21.46
High	QPSK	1	#0	23.21	23.04	23.18	23.06	23.35	23.56
		1	#Mid	23.24	22.98	23.09	23.20	23.19	23.40
		1	#Max	22.91	22.93	22.96	23.15	23.30	23.09
		50%	#0	23.17	22.30	22.36	22.32	22.41	22.57
		50%	#Mid	23.22	22.26	22.33	22.40	22.35	22.39
		50%	#Max	23.17	22.22	22.33	22.34	22.33	22.29
		100%	--	22.23	22.29	22.41	22.36	22.31	22.40
	16QAM	1	#0	21.88	21.80	22.52	22.36	22.37	22.34
		1	#Mid	21.90	21.86	22.15	22.25	21.80	22.07
		1	#Max	21.80	21.81	21.83	21.89	21.93	21.75
		50%	#0	22.12	21.21	21.23	21.47	21.33	21.53
		50%	#Mid	22.13	21.27	21.32	21.54	21.26	21.32
		50%	#Max	22.12	21.32	21.34	21.39	21.32	21.38
		100%	--	21.22	21.41	21.41	21.27	21.22	21.44

Channel	Modulation	LTE Band 5 (850MHz)							
		RB	RB	Maximum Conducted Output Power					
		No.	Offset	1.4M	3M	5M	10M	15M	20M
Low	QPSK	1	#0	23.90	24.07	24.14	24.08	--	--
		1	#Mid	24.18	24.05	24.34	23.97	--	--
		1	#Max	23.89	24.05	24.18	24.10	--	--
		50%	#0	24.12	23.25	23.06	23.12	--	--
		50%	#Mid	24.13	23.24	23.11	23.17	--	--
		50%	#Max	24.22	23.20	23.08	23.13	--	--
		100%	--	23.12	23.20	23.14	23.16	--	--
	16QAM	1	#0	22.63	22.69	22.79	22.97	--	--
		1	#Mid	22.76	23.01	22.81	23.19	--	--
		1	#Max	22.48	23.42	22.37	23.41	--	--
		50%	#0	22.97	22.33	22.07	22.20	--	--
		50%	#Mid	23.13	22.33	22.34	22.32	--	--
		50%	#Max	23.07	22.38	22.17	22.08	--	--
		100%	--	21.99	22.25	22.17	22.10	--	--
Mid	QPSK	1	#0	23.91	24.21	23.86	24.06	--	--
		1	#Mid	24.04	24.03	23.97	23.99	--	--
		1	#Max	23.91	23.95	24.09	23.85	--	--
		50%	#0	24.12	23.06	22.98	23.11	--	--
		50%	#Mid	24.06	23.08	23.02	23.06	--	--
		50%	#Max	24.08	23.01	23.11	23.03	--	--
		100%	--	22.98	23.02	23.03	23.08	--	--
	16QAM	1	#0	22.38	22.72	22.27	22.67	--	--
		1	#Mid	22.53	22.95	22.51	22.95	--	--
		1	#Max	22.73	22.77	22.13	22.98	--	--
		50%	#0	22.88	22.14	21.96	22.11	--	--
		50%	#Mid	23.08	22.16	22.02	22.03	--	--
		50%	#Max	23.03	22.09	22.00	22.20	--	--
		100%	--	21.96	22.12	22.01	22.17	--	--
High	QPSK	1	#0	23.80	23.91	24.04	23.98	--	--
		1	#Mid	23.68	23.81	24.01	24.08	--	--
		1	#Max	23.49	23.41	23.37	22.90	--	--
		50%	#0	23.65	23.45	23.33	23.17	--	--
		50%	#Mid	23.57	23.19	23.15	23.08	--	--
		50%	#Max	23.50	23.19	23.09	23.14	--	--
		100%	--	23.38	23.15	23.16	23.09	--	--
	16QAM	1	#0	22.73	22.75	22.38	22.77	--	--
		1	#Mid	22.86	22.87	22.46	23.04	--	--
		1	#Max	22.76	22.77	22.26	22.15	--	--
		50%	#0	22.80	22.24	22.34	22.54	--	--
		50%	#Mid	22.72	22.15	22.25	22.20	--	--
		50%	#Max	22.61	22.03	22.13	22.26	--	--
		100%	--	22.16	22.13	22.18	22.19	--	--

Channel	Modulation	LTE Band 12 (700MHz)							
		RB	RB	Maximum Conducted Output Power					
		No.	Offset	1.4M	3M	5M	10M	15M	20M
Low	QPSK	1	#0	23.57	23.37	23.36	23.25	--	--
		1	#Mid	23.74	23.75	23.74	23.85	--	--
		1	#Max	23.68	23.78	23.69	23.96	--	--
		50%	#0	23.61	22.58	22.55	22.60	--	--
		50%	#Mid	23.66	22.58	22.62	22.64	--	--
		50%	#Max	23.59	22.59	22.38	22.78	--	--
		100%	--	22.53	22.58	22.66	22.64	--	--
	16QAM	1	#0	22.67	22.45	22.60	22.00	--	--
		1	#Mid	22.74	22.09	23.15	22.44	--	--
		1	#Max	22.70	21.91	22.95	22.61	--	--
		50%	#0	22.55	21.63	21.49	21.54	--	--
		50%	#Mid	22.36	21.71	21.49	21.66	--	--
		50%	#Max	22.47	22.02	21.30	21.79	--	--
		100%	--	21.41	21.74	21.68	21.67	--	--
Mid	QPSK	1	#0	23.62	23.75	23.67	23.37	--	--
		1	#Mid	23.79	23.52	23.71	23.66	--	--
		1	#Max	23.70	23.79	23.71	23.45	--	--
		50%	#0	23.74	22.73	22.65	22.59	--	--
		50%	#Mid	23.73	22.68	22.57	22.59	--	--
		50%	#Max	23.78	22.73	22.62	22.61	--	--
		100%	--	22.61	22.70	22.62	22.57	--	--
	16QAM	1	#0	22.42	22.81	22.82	22.50	--	--
		1	#Mid	22.68	22.84	22.41	22.86	--	--
		1	#Max	22.65	22.14	22.67	22.95	--	--
		50%	#0	22.55	21.68	21.55	21.67	--	--
		50%	#Mid	22.45	21.80	21.58	21.57	--	--
		50%	#Max	22.40	21.69	21.70	21.59	--	--
		100%	--	21.43	21.73	21.64	21.64	--	--
High	QPSK	1	#0	23.62	23.77	23.32	23.70	--	--
		1	#Mid	23.81	23.88	23.77	23.73	--	--
		1	#Max	23.72	23.68	23.55	23.37	--	--
		50%	#0	23.73	22.63	22.64	22.67	--	--
		50%	#Mid	23.82	22.70	22.56	22.64	--	--
		50%	#Max	23.86	22.63	22.66	22.72	--	--
		100%	--	22.59	22.68	22.72	22.70	--	--
	16QAM	1	#0	23.09	22.81	22.20	22.41	--	--
		1	#Mid	23.22	22.69	23.01	22.33	--	--
		1	#Max	23.15	22.91	22.70	22.14	--	--
		50%	#0	22.75	21.76	21.57	21.68	--	--
		50%	#Mid	22.84	21.73	21.53	21.67	--	--
		50%	#Max	22.82	21.76	21.79	21.86	--	--
		100%	--	21.64	21.56	21.86	21.73	--	--

Channel	Modulation	LTE Band 30 (2300MHz)							
		RB	RB	Maximum Conducted Output Power					
		No.	Offset	1.4M	3M	5M	10M	15M	20M
Low	QPSK	1	#0	--	--	22.57	--	--	--
		1	#Mid	--	--	22.70	--	--	--
		1	#Max	--	--	22.73	--	--	--
		50%	#0	--	--	21.85	--	--	--
		50%	#Mid	--	--	21.79	--	--	--
		50%	#Max	--	--	21.87	--	--	--
		100%	--	--	--	21.79	--	--	--
	16QAM	1	#0	--	--	21.97	--	--	--
		1	#Mid	--	--	21.49	--	--	--
		1	#Max	--	--	21.22	--	--	--
		50%	#0	--	--	20.55	--	--	--
		50%	#Mid	--	--	20.54	--	--	--
		50%	#Max	--	--	20.91	--	--	--
		100%	--	--	--	20.97	--	--	--
Mid	QPSK	1	#0	--	--	22.50	22.87	--	--
		1	#Mid	--	--	23.12	22.87	--	--
		1	#Max	--	--	22.90	22.33	--	--
		50%	#0	--	--	21.82	21.99	--	--
		50%	#Mid	--	--	21.85	21.96	--	--
		50%	#Max	--	--	21.91	21.97	--	--
		100%	--	--	--	21.82	21.90	--	--
	16QAM	1	#0	--	--	21.51	22.12	--	--
		1	#Mid	--	--	21.77	22.06	--	--
		1	#Max	--	--	21.70	21.91	--	--
		50%	#0	--	--	20.89	20.85	--	--
		50%	#Mid	--	--	20.70	20.93	--	--
		50%	#Max	--	--	21.01	20.87	--	--
		100%	--	--	--	20.84	20.85	--	--
High	QPSK	1	#0	--	--	22.75	--	--	--
		1	#Mid	--	--	22.96	--	--	--
		1	#Max	--	--	22.66	--	--	--
		50%	#0	--	--	21.95	--	--	--
		50%	#Mid	--	--	21.89	--	--	--
		50%	#Max	--	--	21.84	--	--	--
		100%	--	--	--	21.90	--	--	--
	16QAM	1	#0	--	--	22.13	--	--	--
		1	#Mid	--	--	22.20	--	--	--
		1	#Max	--	--	21.45	--	--	--
		50%	#0	--	--	20.72	--	--	--
		50%	#Mid	--	--	20.74	--	--	--
		50%	#Max	--	--	20.99	--	--	--
		100%	--	--	--	21.02	--	--	--

3.6. Maximum Conducted Power and ERP/EIRP Power

According to KDB 412172 D01 Section 1.2 Power Approach

$$\text{EIRP} = P_T + G_T - L_C = \text{ERP} + 2.15 \text{ dB}, \text{ERP} = \text{EIRP} - 2.15 \text{ dB}$$

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

LTE Band	BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Antenna Gain (dBi)	Maximum EIRP (W)	Maximum EIRP Limit (W)
2	1.4M	QPSK	23.51	0.224	-3.45	0.101	2
		16QAM	22.57	0.181	-3.45	0.082	2
	3M	QPSK	23.50	0.224	-3.45	0.101	2
		16QAM	22.73	0.187	-3.45	0.085	2
	5M	QPSK	23.92	0.247	-3.45	0.111	2
		16QAM	22.55	0.180	-3.45	0.081	2
	10M	QPSK	24.09	0.256	-3.45	0.116	2
		16QAM	22.76	0.189	-3.45	0.085	2
	15M	QPSK	23.96	0.249	-3.45	0.112	2
		16QAM	22.91	0.195	-3.45	0.088	2
	20M	QPSK	24.07	0.255	-3.45	0.115	2
		16QAM	23.05	0.202	-3.45	0.091	2

LTE Band	BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Antenna Gain (dBi)	Maximum EIRP (W)	Maximum EIRP Limit (W)
4	1.4M	QPSK	23.38	0.218	-2.73	0.116	1
		16QAM	22.74	0.188	-2.73	0.100	1
	3M	QPSK	23.30	0.214	-2.73	0.114	1
		16QAM	22.63	0.183	-2.73	0.098	1
	5M	QPSK	23.44	0.221	-2.73	0.118	1
		16QAM	22.52	0.179	-2.73	0.095	1
	10M	QPSK	23.31	0.214	-2.73	0.114	1
		16QAM	22.43	0.175	-2.73	0.093	1
	15M	QPSK	23.39	0.218	-2.73	0.116	1
		16QAM	22.37	0.173	-2.73	0.092	1
	20M	QPSK	23.58	0.228	-2.73	0.122	1
		16QAM	22.66	0.185	-2.73	0.098	1

LTE Band	BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Antenna Gain (dBi)	Maximum ERP (W)	Maximum ERP Limit (W)
5	1.4M	QPSK	24.22	0.264	-4.12	0.062	7
		16QAM	23.13	0.206	-4.12	0.049	7
	3M	QPSK	24.21	0.264	-4.12	0.062	7
		16QAM	23.42	0.220	-4.12	0.052	7
	5M	QPSK	24.34	0.272	-4.12	0.064	7
		16QAM	22.81	0.191	-4.12	0.045	7
	10M	QPSK	24.10	0.257	-4.12	0.061	7
		16QAM	23.41	0.219	-4.12	0.052	7

LTE Band	BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Antenna Gain (dBi)	Maximum ERP (W)	Maximum ERP Limit (W)
12	1.4M	QPSK	23.86	0.243	-5.02	0.047	7
		16QAM	23.22	0.210	-5.02	0.040	7
	3M	QPSK	23.88	0.244	-5.02	0.047	7
		16QAM	22.91	0.195	-5.02	0.037	7
	5M	QPSK	23.77	0.238	-5.02	0.046	7
		16QAM	23.15	0.207	-5.02	0.040	7
	10M	QPSK	23.96	0.249	-5.02	0.048	7
		16QAM	22.95	0.197	-5.02	0.038	7

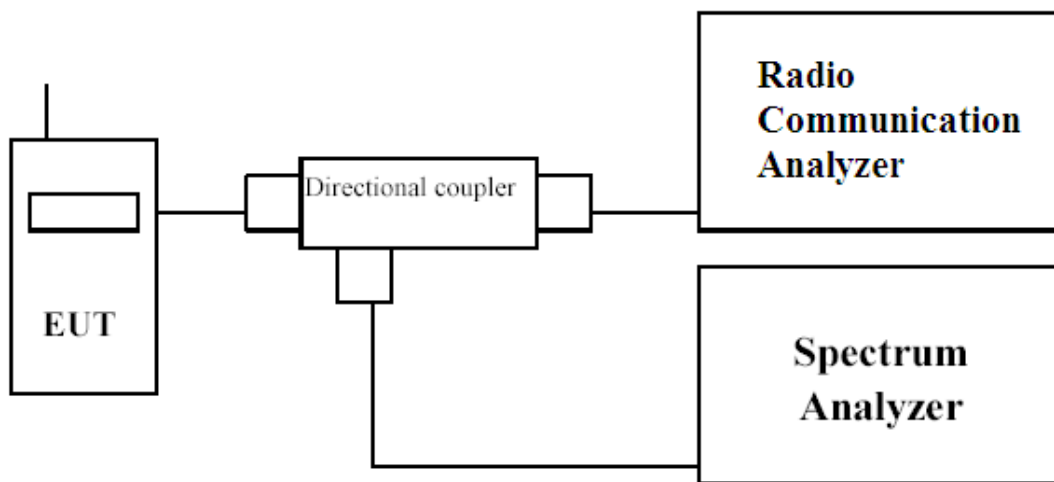
LTE Band	BW	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (W)	Antenna Gain (dBi)	Maximum EIRP (W)	Maximum EIRP Limit (W)
30	5M	QPSK	23.12	0.205	-3.97	0.082	0.25
		16QAM	22.20	0.166	-3.97	0.067	0.25
	10M	QPSK	22.87	0.194	-3.97	0.078	0.25
		16QAM	22.12	0.163	-3.97	0.065	0.25

4. Occupied Bandwidth

4.1. Test Secification

According to FCC Part 2.1049, 22.917, 24.238, 27.53

4.2. Test Setup



4.3. Test Procedure

The EUT is tested with maximum rated TX power via the Base Station simulator, and the occupied bandwidth was measured at the antenna terminals of the EUT. The Resolution BW of the analyzer is set to 1 %~5% of the emission bandwidth. The EUT's occupied bandwidth is measured as the width of the signal between two points, one below the carrier center frequency and one above the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

The plots below show the resultant display from the Spectrum Analyser.

4.4. Test Result of Occupied Bandwidth

Product	WCDMA/LTE Mobile Phone
Test Mode	Occupied Bandwidth
Test Site	CTR

LTE Band 2								
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26 dB bandwidth (MHz)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4M	18607	1850.7	1.0963	1.0952	--	1.304	1.309	--
1.4M	18900	1880	1.0980	1.0941	--	1.283	1.302	--
1.4M	19193	1909.3	1.0984	1.0946	--	1.303	1.303	--
3M	18615	1851.5	2.7337	2.7284	--	3.076	3.065	--
3M	18900	1880	2.7347	2.7196	--	3.078	3.043	--
3M	19185	1908.5	2.7343	2.7186	--	3.081	3.040	--
5M	18625	1852.5	4.5132	4.4881	--	5.009	4.974	--
5M	18900	1880	4.5051	4.4876	--	5.026	4.949	--
5M	19175	1907.5	4.5050	4.4850	--	5.024	4.951	--
10M	18650	1855	9.0290	8.9928	--	10.05	9.968	--
10M	18900	1880	9.0312	9.0285	--	10.05	9.999	--
10M	19150	1905	9.0449	9.0310	--	10.07	10.02	--
15M	18675	1857.5	13.471	13.400	--	14.71	14.62	--
15M	18900	1880	13.454	13.447	--	14.68	14.60	--
15M	19125	1902.5	13.465	13.451	--	14.81	14.71	--
20M	18700	1860	18.350	18.275	--	20.41	20.24	--
20M	18900	1880	18.573	18.495	--	20.69	20.33	--
20M	19100	1900	18.520	18.456	--	20.48	20.33	--

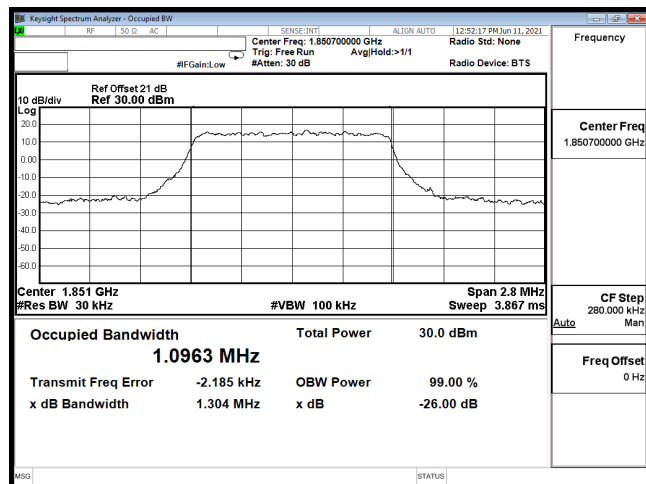
LTE Band 4								
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26 dB bandwidth (MHz)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4M	19957	1710.7	1.0986	1.0939	--	1.291	1.308	--
1.4M	20175	1732.5	1.0977	1.0937	--	1.293	1.315	--
1.4M	20393	1754.3	1.0985	1.0942	--	1.293	1.311	--
3M	19965	1711.5	2.7337	2.7283	--	3.077	3.063	--
3M	20175	1732.5	2.7355	2.7183	--	3.086	3.039	--
3M	20385	1753.5	2.7348	2.7196	--	3.080	3.036	--
5M	19975	1712.5	4.5132	4.4888	--	5.000	4.965	--
5M	20175	1732.5	4.5047	4.4864	--	5.038	4.948	--
5M	20375	1752.5	4.5054	4.4889	--	5.012	4.968	--
10M	20000	1715	9.0340	8.9998	--	10.06	10.02	--
10M	20175	1732.5	9.0263	9.0182	--	10.04	9.986	--
10M	20350	1750	9.0227	9.0102	--	10.07	10.01	--
15M	20025	1717.5	13.489	13.445	--	14.65	14.66	--
15M	20175	1732.5	13.443	13.423	--	14.63	14.64	--
15M	20325	1747.5	13.420	13.406	--	14.69	14.66	--
20M	20050	1720	18.567	18.464	--	20.63	20.43	--
20M	20175	1732.5	18.492	18.429	--	20.59	20.30	--
20M	20300	1745	18.453	18.382	--	20.54	20.27	--

LTE Band 5								
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26 dB bandwidth (MHz)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4M	20407	824.7	1.0994	1.0950	--	1.303	1.305	--
1.4M	20525	836.5	1.0981	1.0941	--	1.294	1.297	--
1.4M	20643	848.3	1.0984	1.0944	--	1.300	1.299	--
3M	20415	825.5	2.7344	2.7300	--	3.094	3.072	--
3M	20525	836.5	2.7348	2.7197	--	3.086	3.043	--
3M	20635	847.5	2.7329	2.7212	--	3.084	3.046	--
5M	20425	826.5	4.5127	4.4880	--	5.028	4.981	--
5M	20525	836.5	4.5015	4.4848	--	5.010	4.972	--
5M	20625	846.5	4.5026	4.4852	--	5.008	4.978	--
10M	20450	829	9.0302	9.0019	--	10.13	10.03	--
10M	20525	836.5	9.0247	9.0230	--	10.06	10.05	--
10M	20600	844	9.0241	9.0209	--	10.06	10.04	--

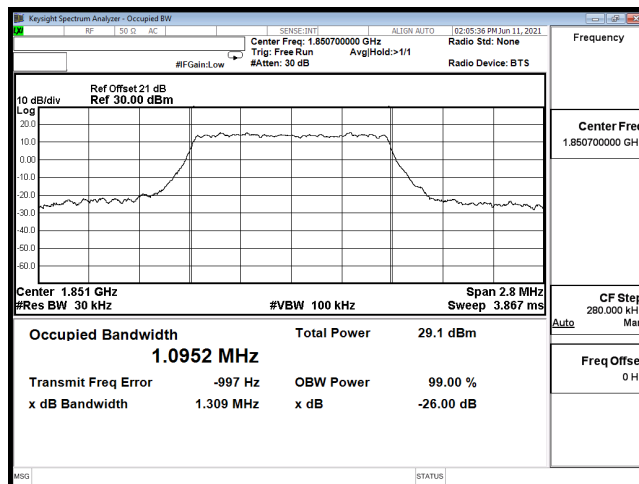
LTE Band 12								
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26 dB bandwidth (MHz)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4M	23017	699.7	1.0980	1.0948	--	1.292	1.300	--
1.4M	23095	707.5	1.0984	1.0943	--	1.296	1.302	--
1.4M	23173	715.3	1.0982	1.0939	--	1.294	1.302	--
3M	23025	700.5	2.7356	2.7281	--	3.082	3.065	--
3M	23095	707.5	2.7321	2.7183	--	3.073	3.041	--
3M	23165	714.5	2.7346	2.7203	--	3.081	3.040	--
5M	23035	701.5	4.5130	4.4889	--	5.019	4.969	--
5M	23095	707.5	4.5003	4.4831	--	5.005	4.952	--
5M	23155	713.5	4.5058	4.4878	--	5.014	4.976	--
10M	23060	704	9.0228	8.9887	--	10.05	9.994	--
10M	23095	707.5	9.0014	8.9959	--	10.03	10.02	--
10M	23130	711	9.0363	9.0358	--	10.07	9.994	--

LTE Band 30								
BW	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26 dB bandwidth (MHz)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5M	27685	2307.5	4.4871	4.4792	--	4.962	4.945	--
5M	27710	2310	4.5042	4.4832	--	5.002	4.960	--
5M	27735	2312.5	4.4984	4.4805	--	4.995	4.955	--
10M	--	--	--	--	--	--	--	--
10M	27710	2310	9.0096	8.9826	--	10.05	10.00	--
10M	--	--	--	--	--	--	--	--

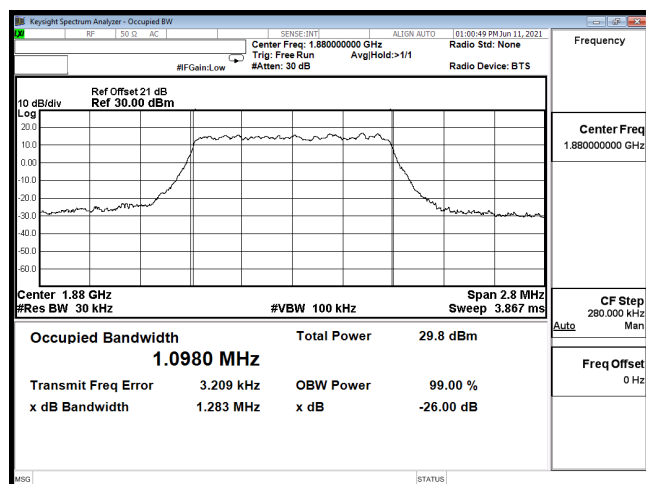
Product	WCDMA/LTE Mobile Phone		
Test Mode	Occupied Bandwidth		
Date of Test	2021/06/11	Test Site	CTR
Test Condition	Band 2 QPSK/16QAM		



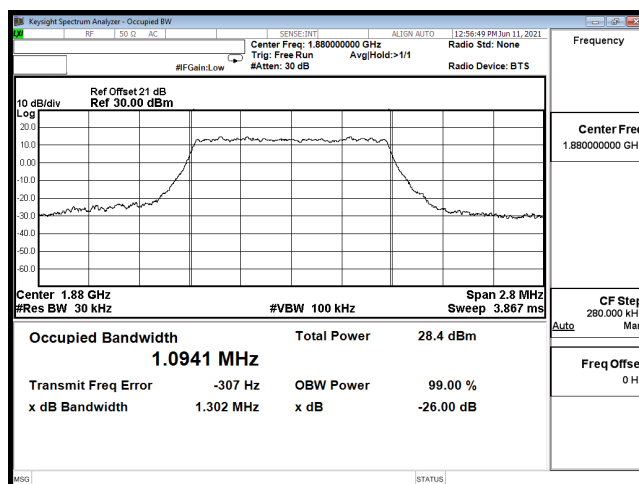
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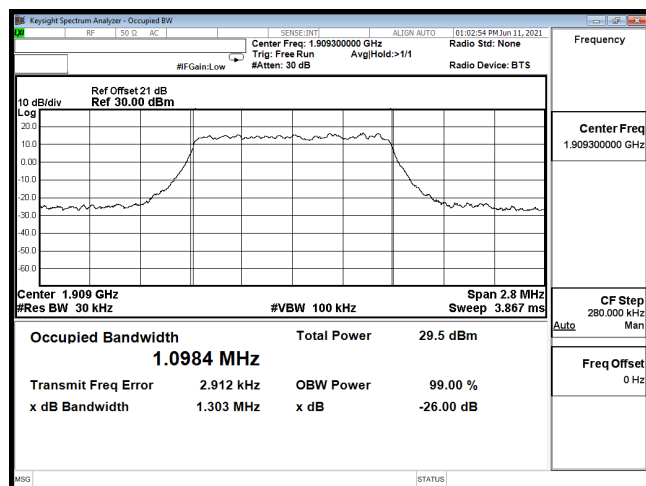
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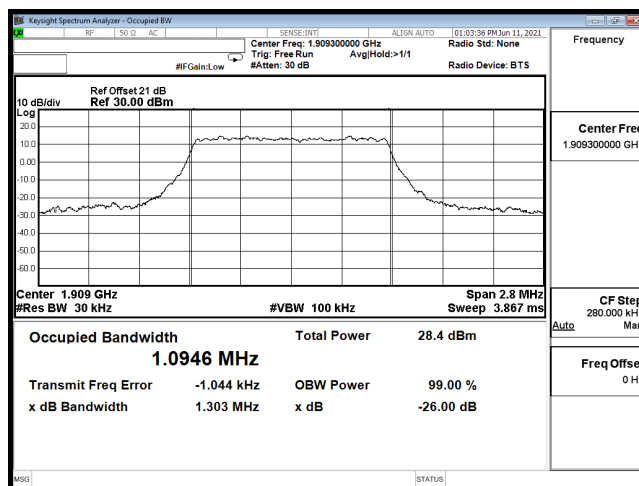
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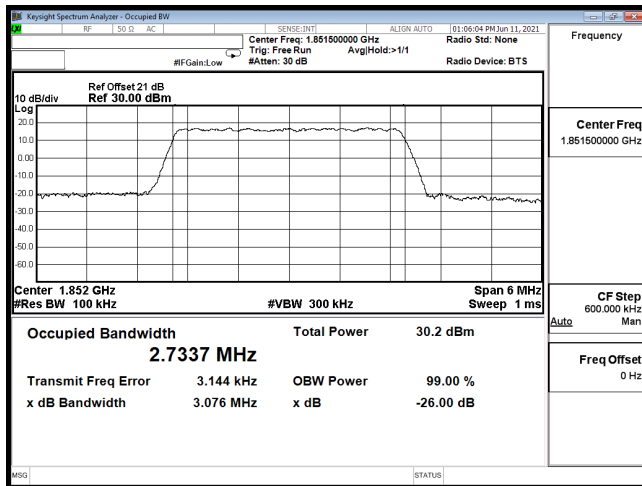
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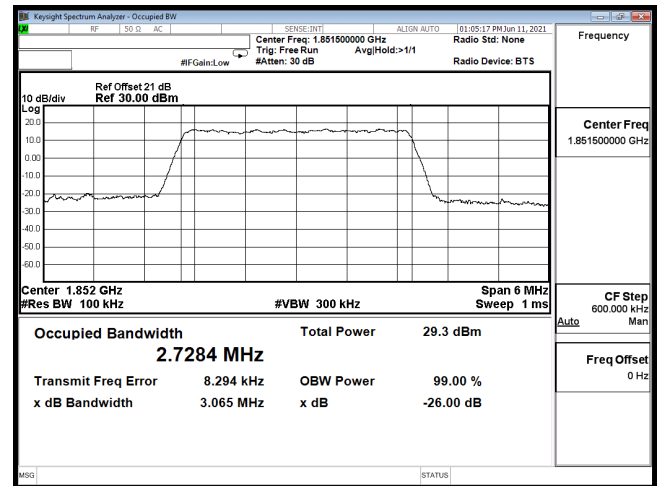
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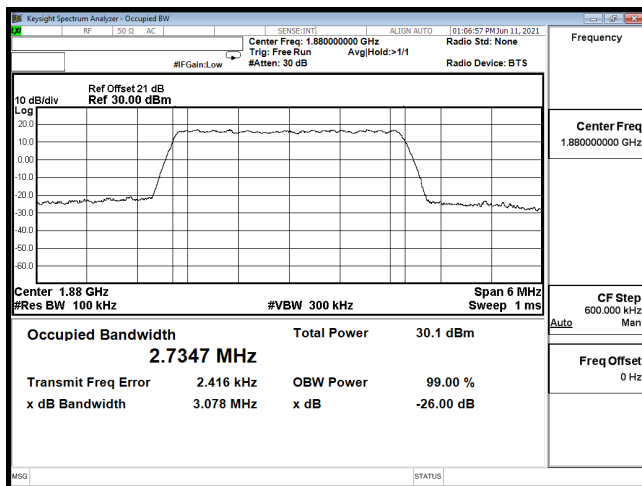
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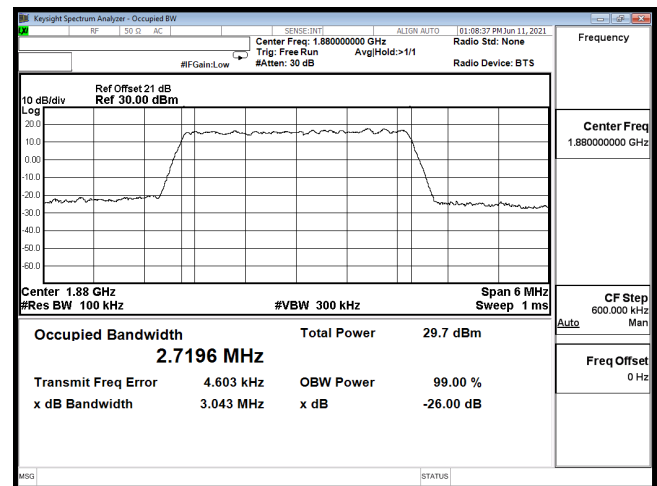
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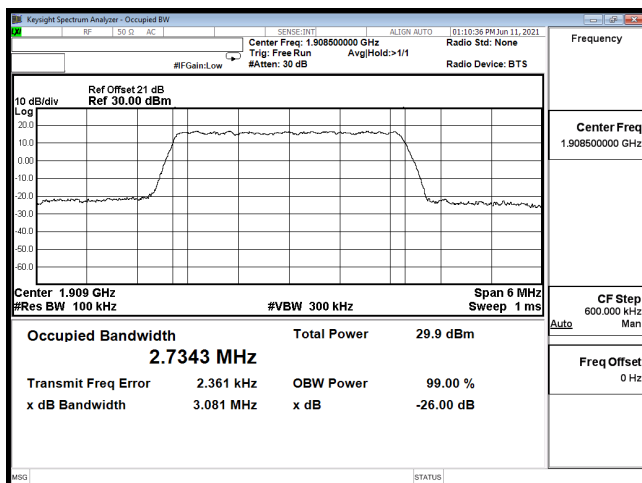
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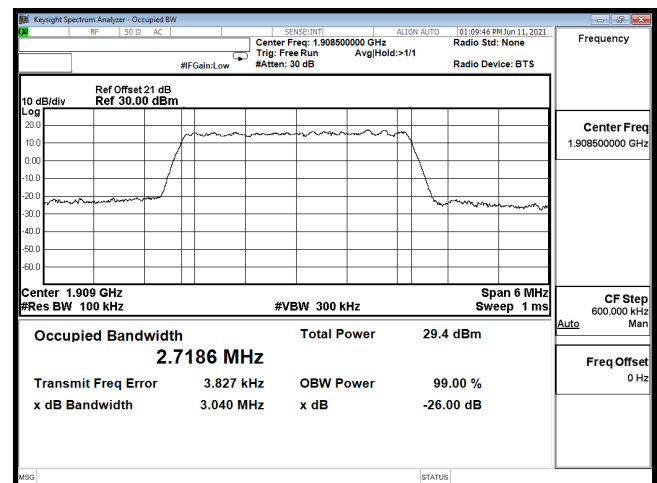
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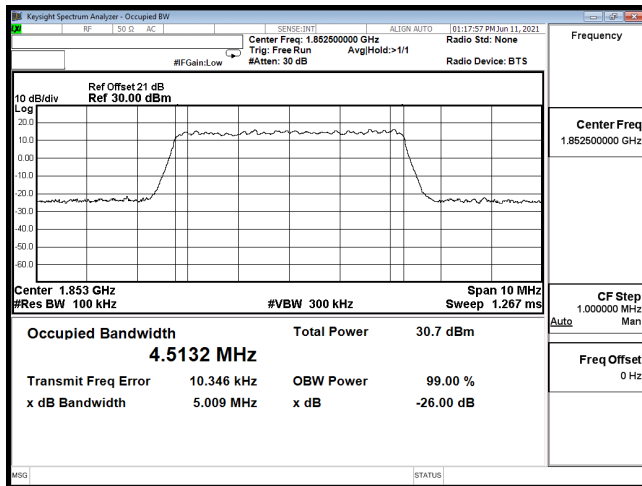
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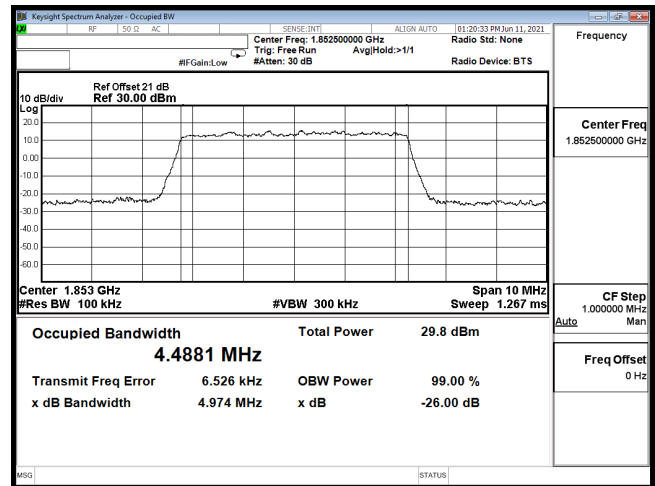
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OCC B2 3M CH19185 QPSK

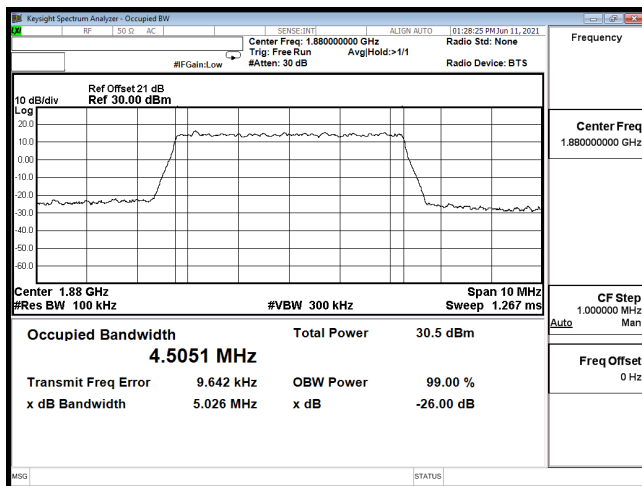
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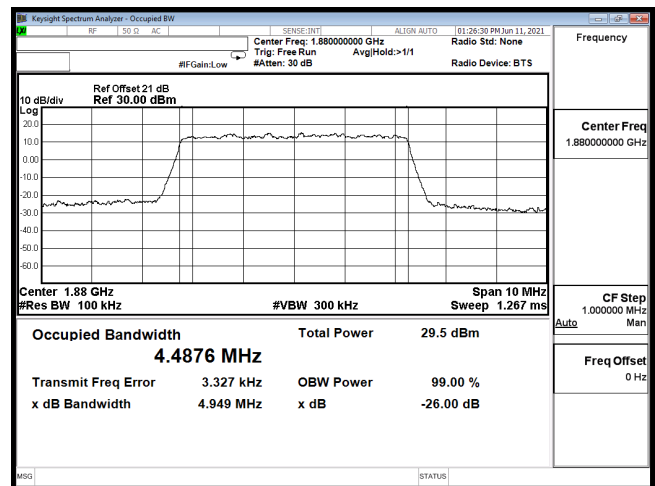
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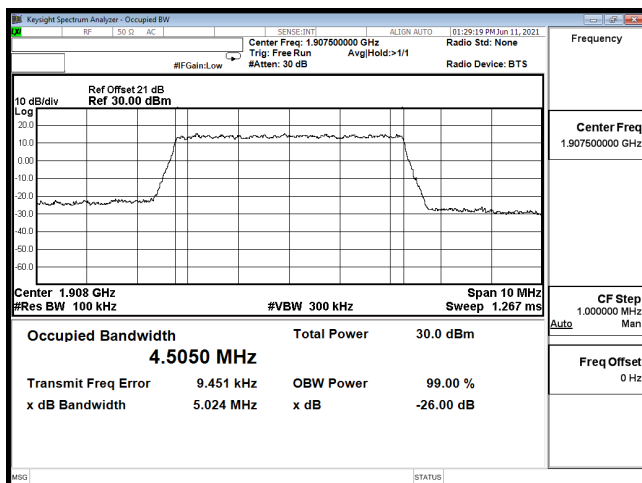
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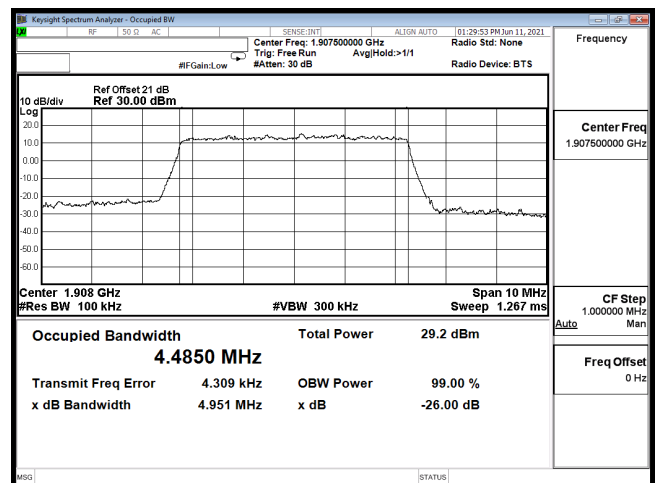
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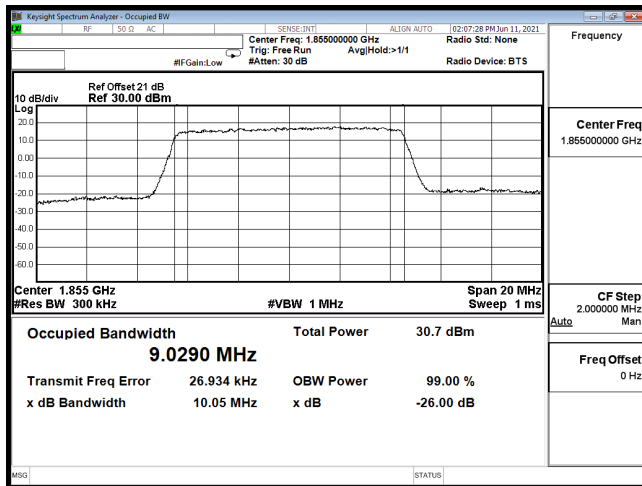
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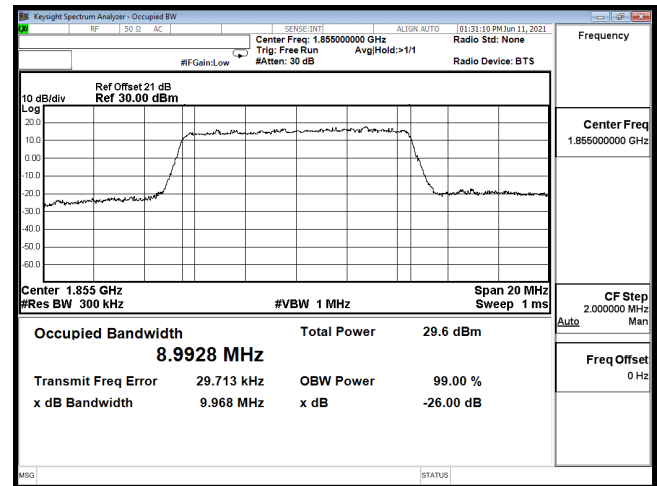
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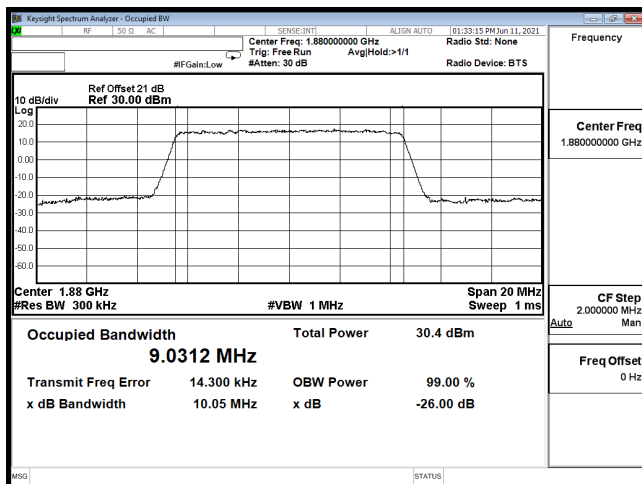
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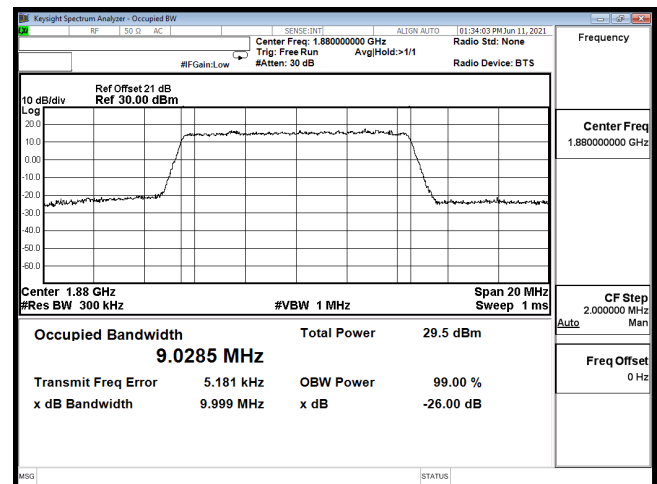
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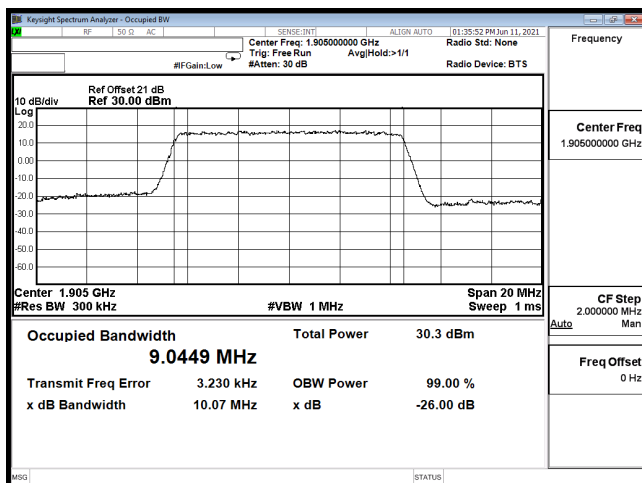
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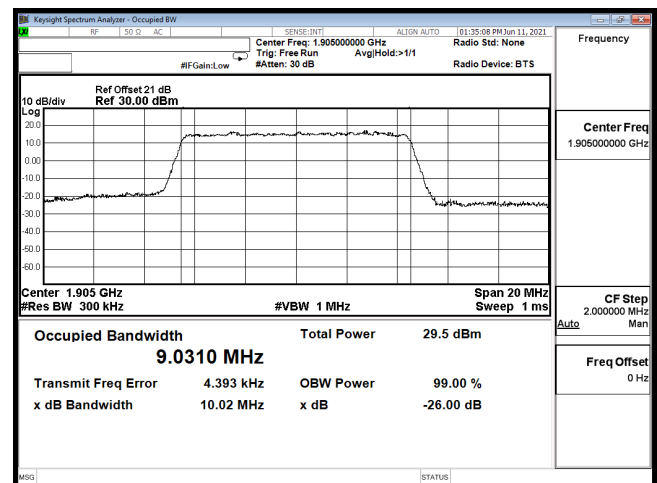
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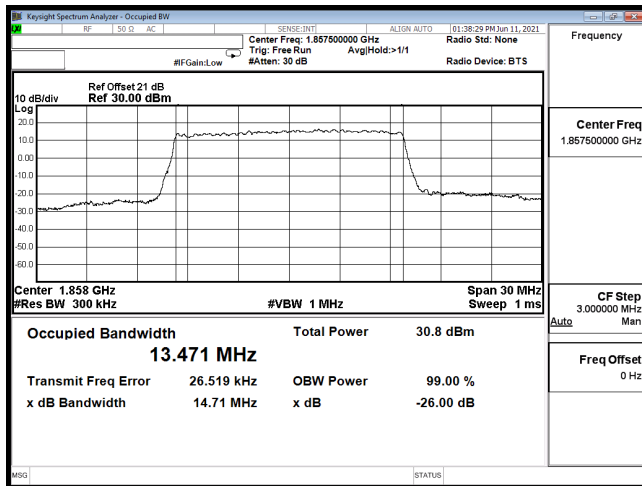
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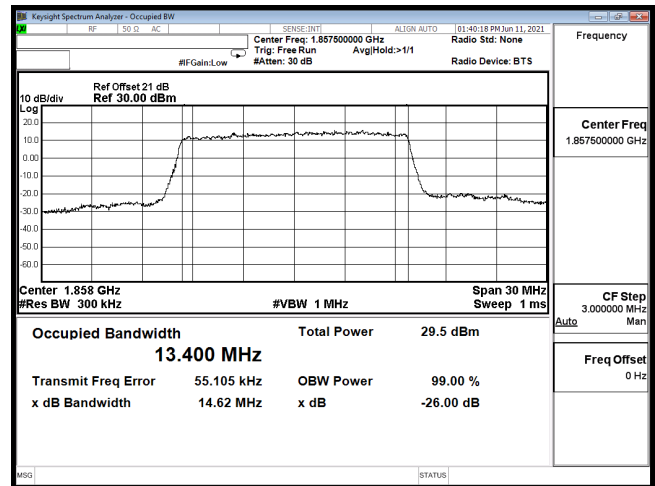
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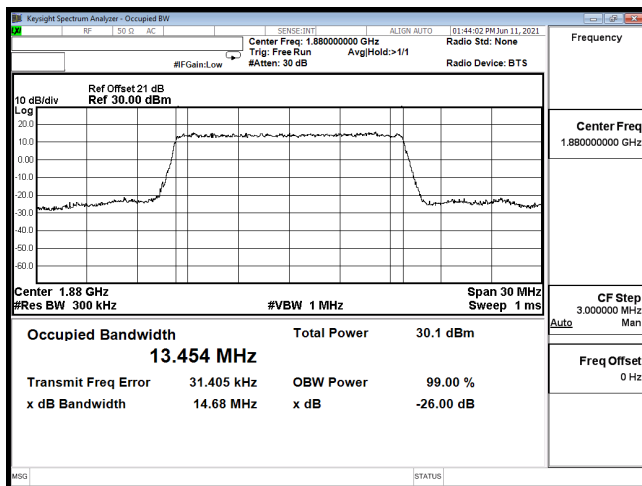
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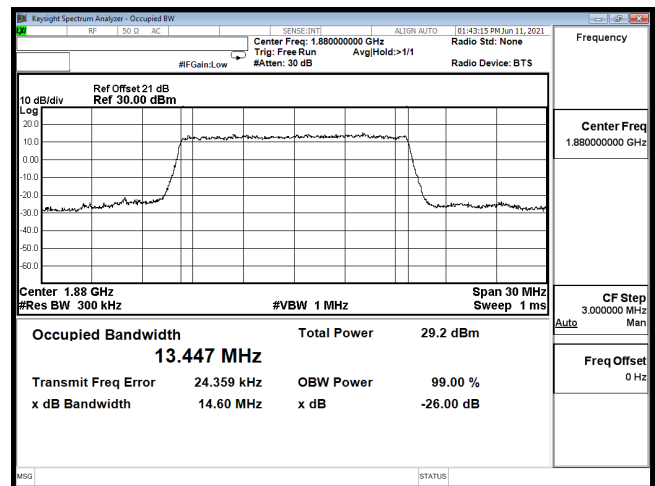
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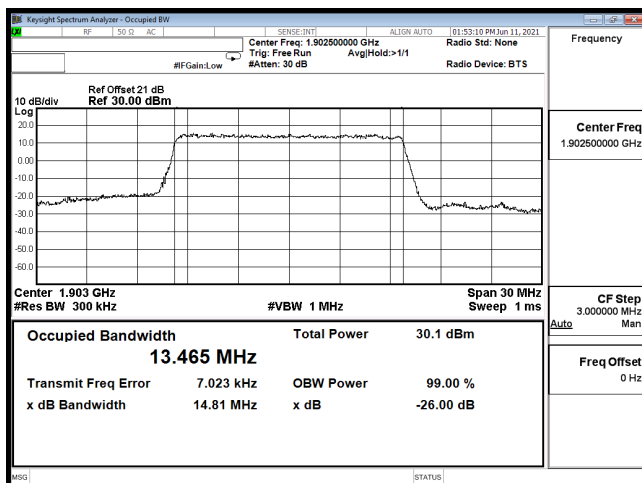
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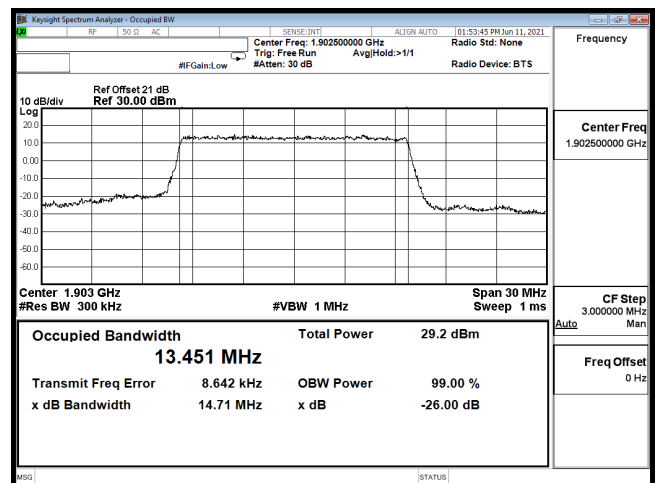
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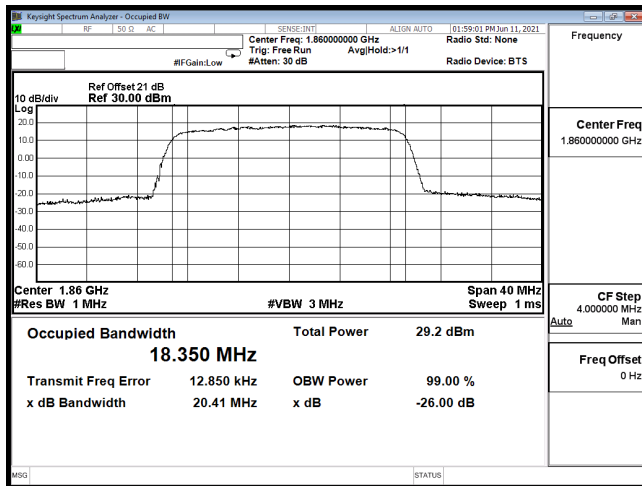
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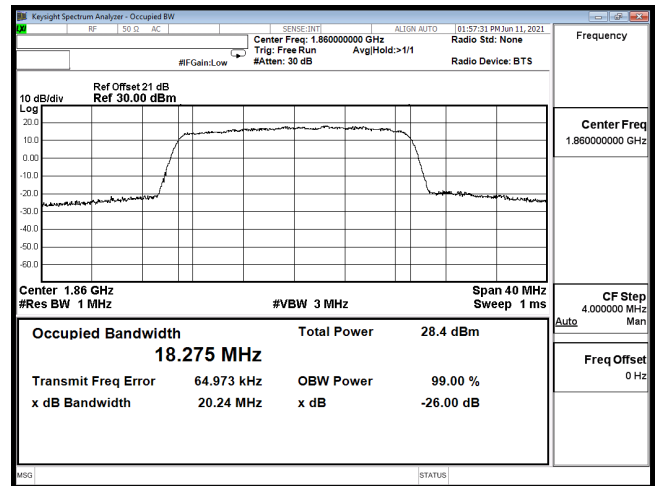
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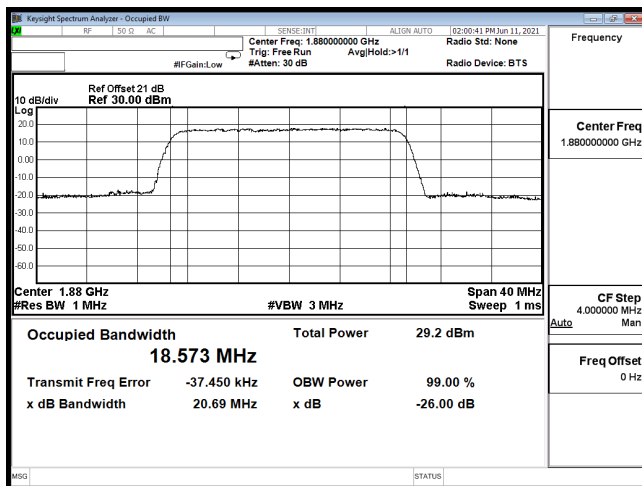
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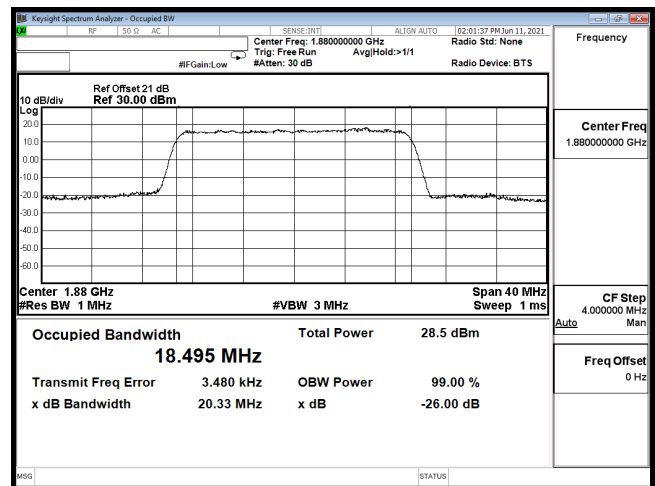
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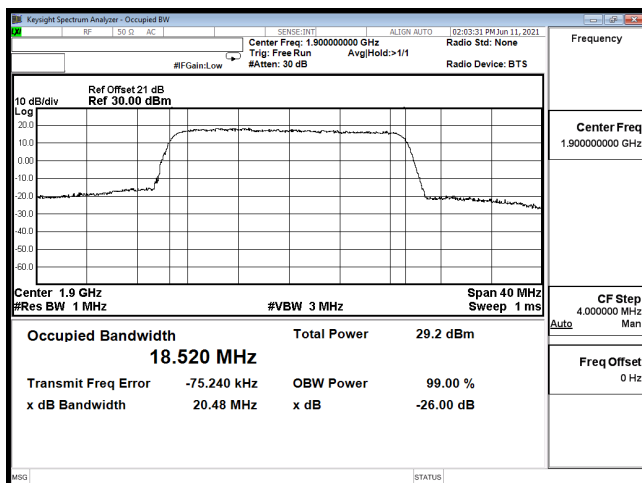
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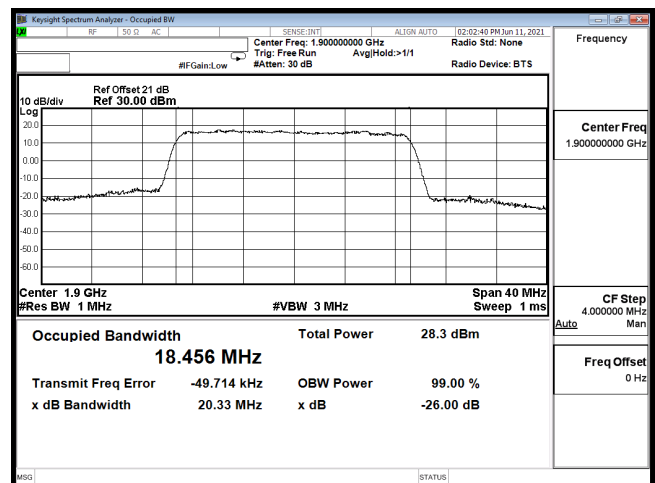
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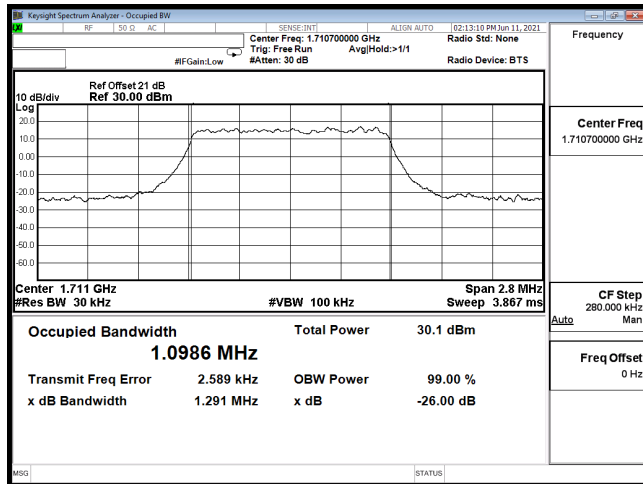


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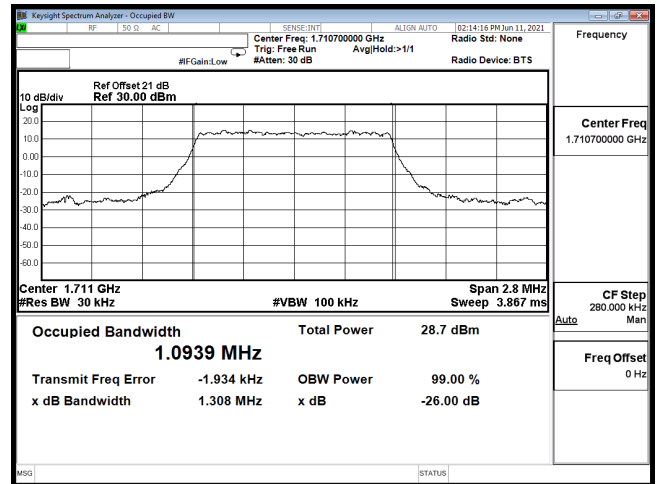


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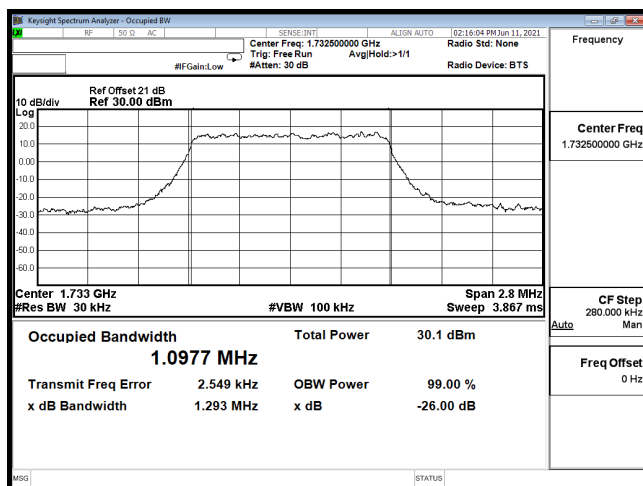
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Test Mode	Occupied Bandwidth		
Date of Test	2021/06/11	Test Site	CTR
Test Condition	Band 4 QPSK/16QAM		



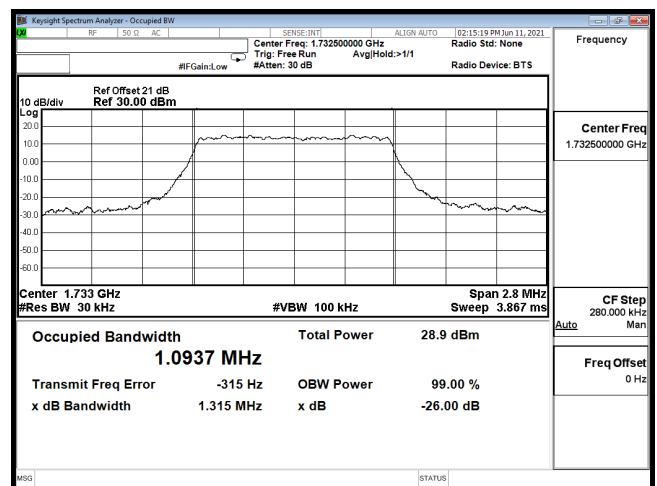
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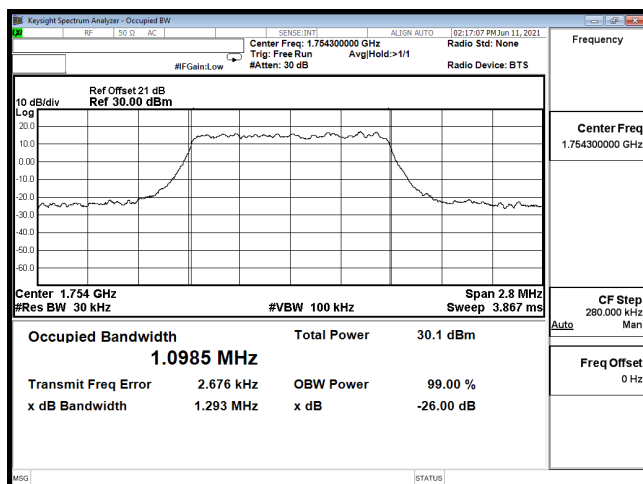
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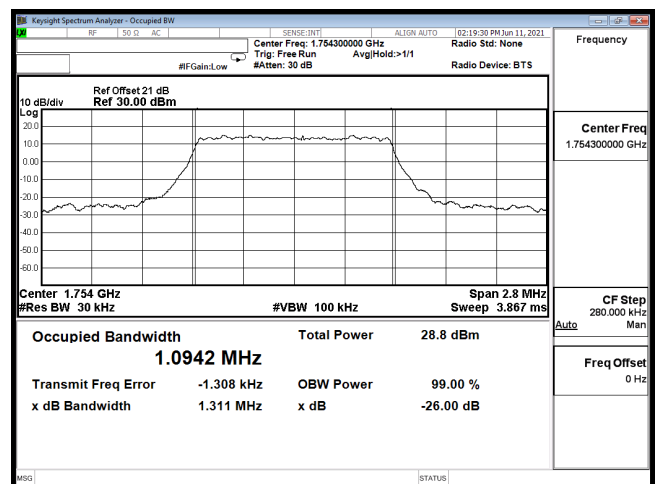
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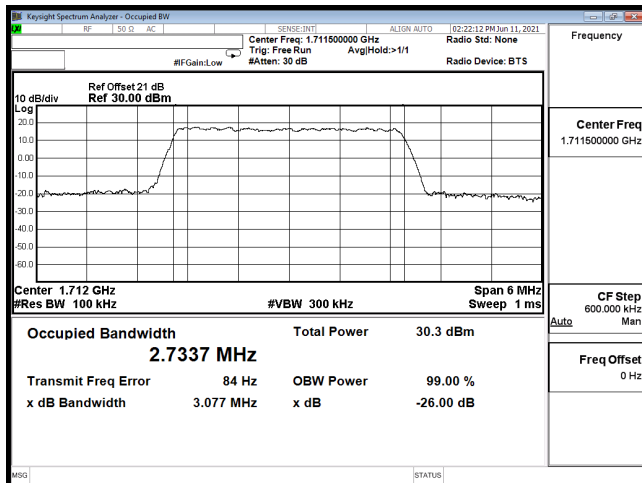
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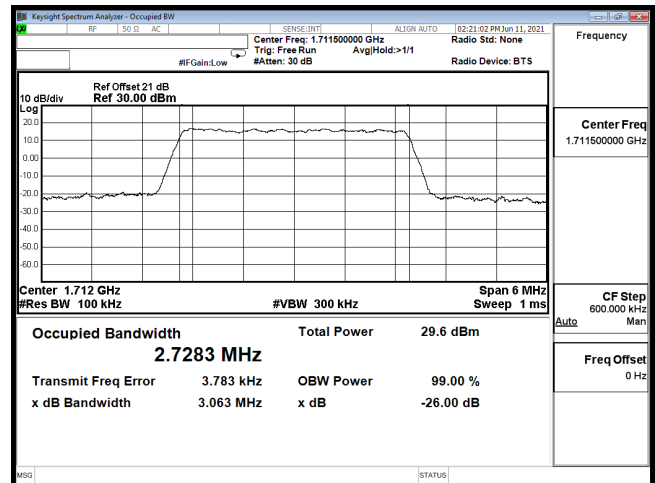
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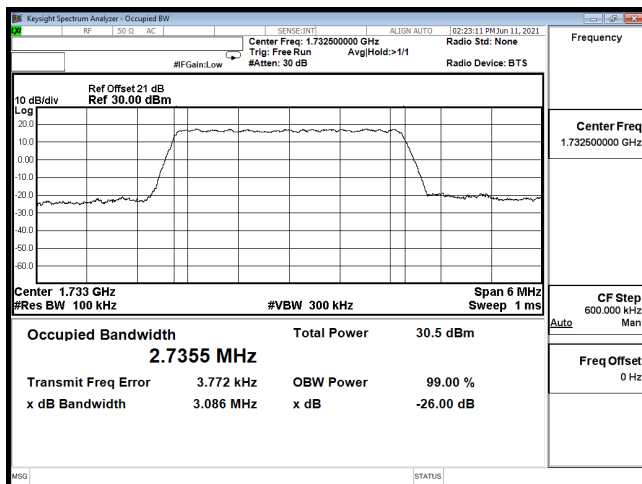
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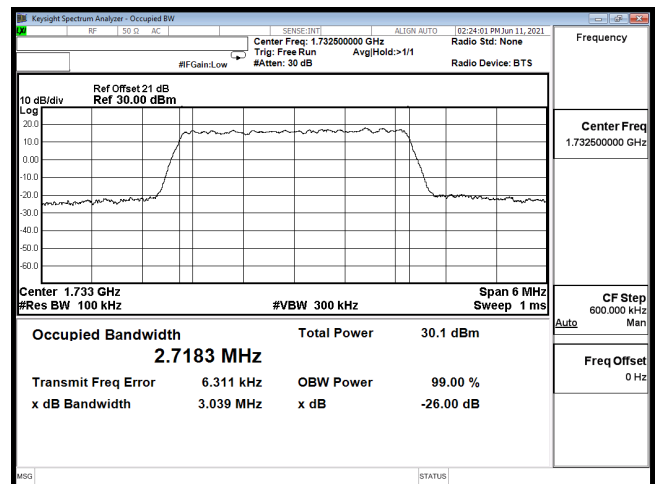
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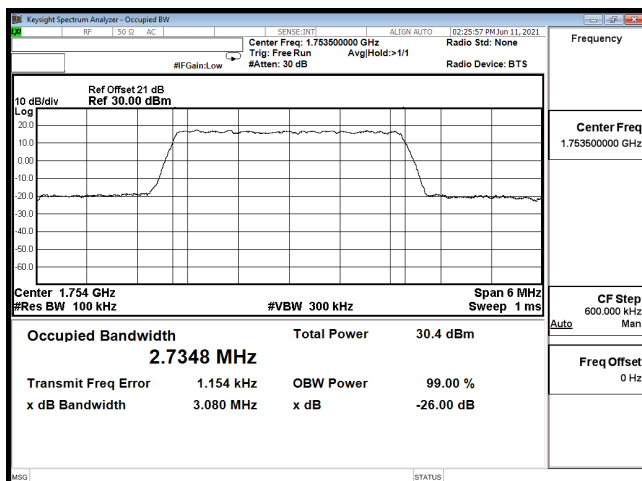
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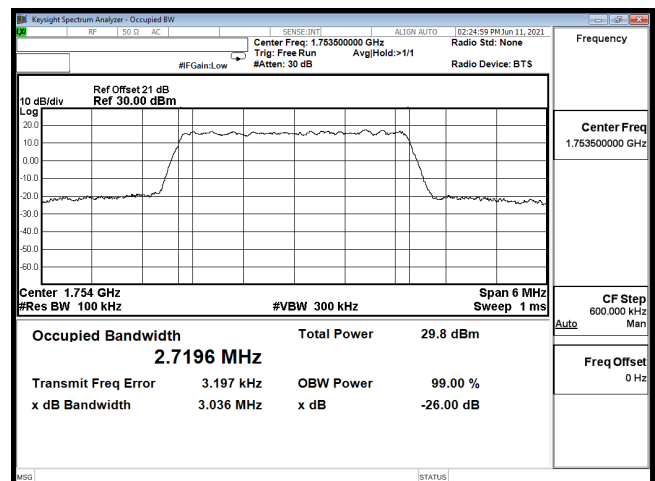
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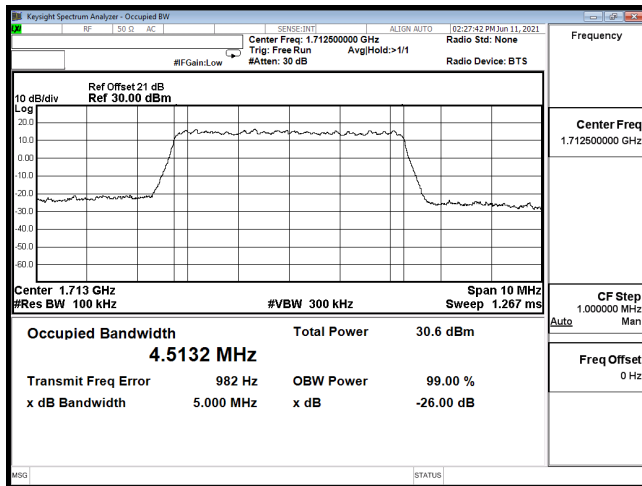
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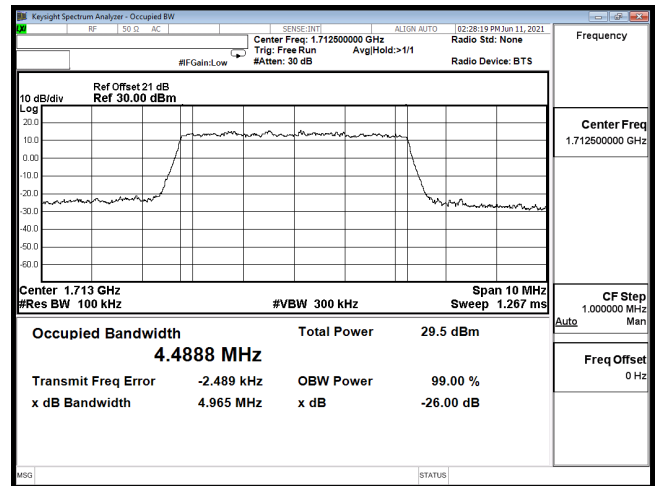
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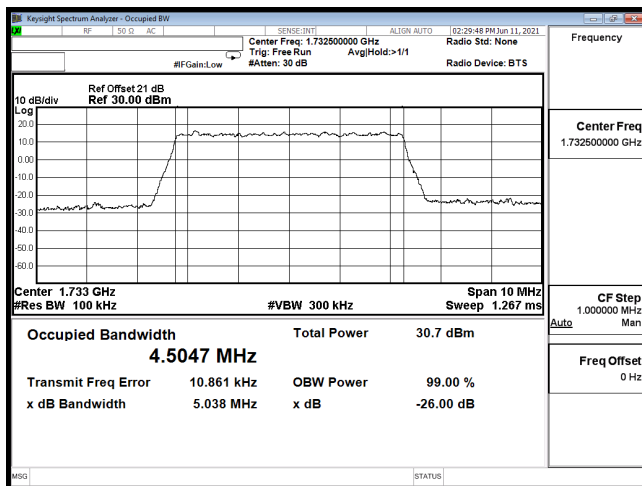
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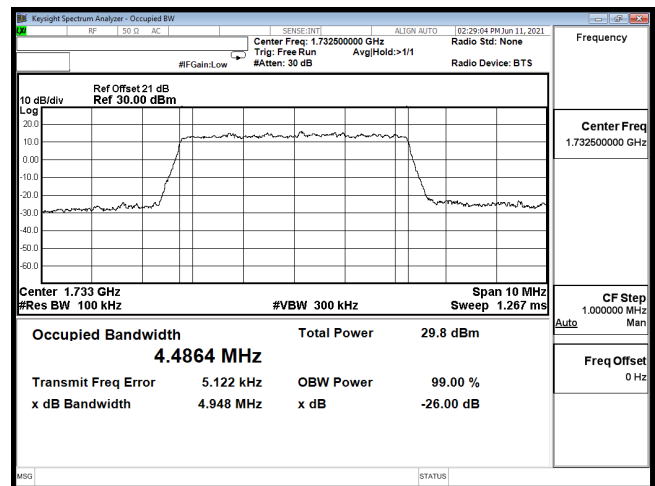
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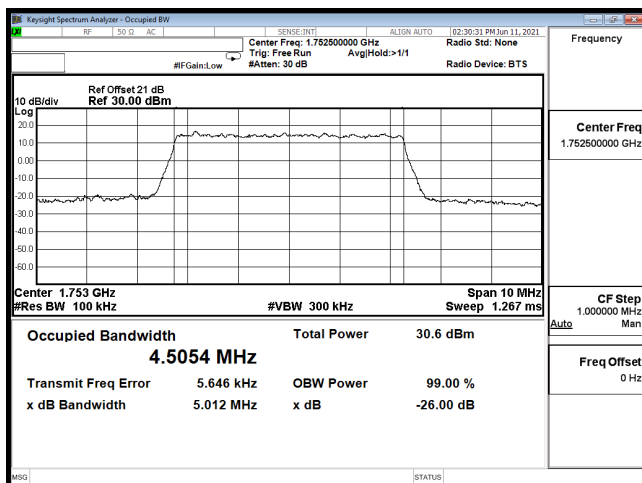
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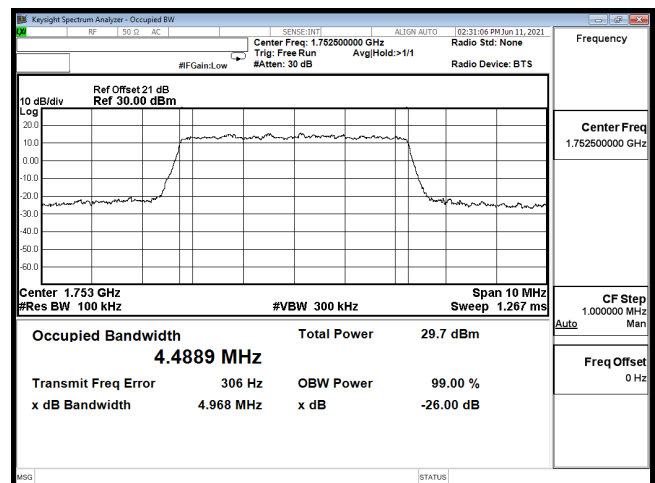
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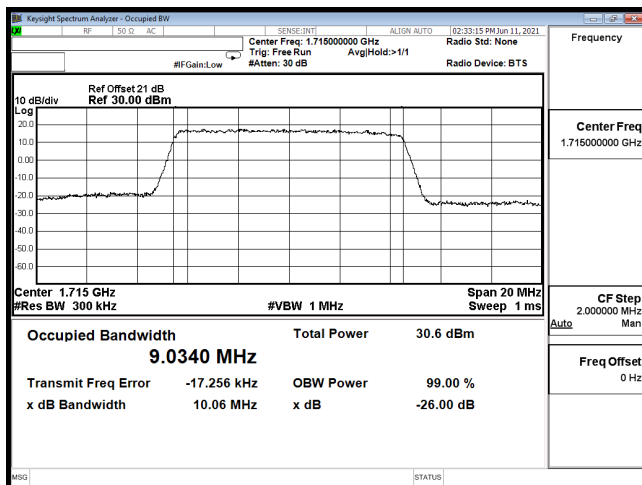
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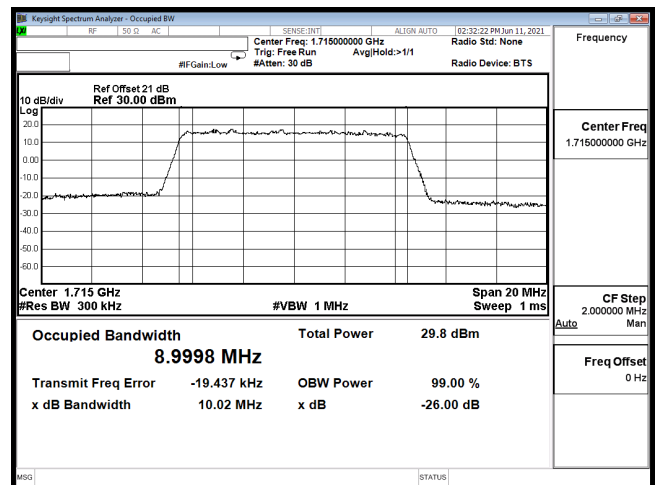
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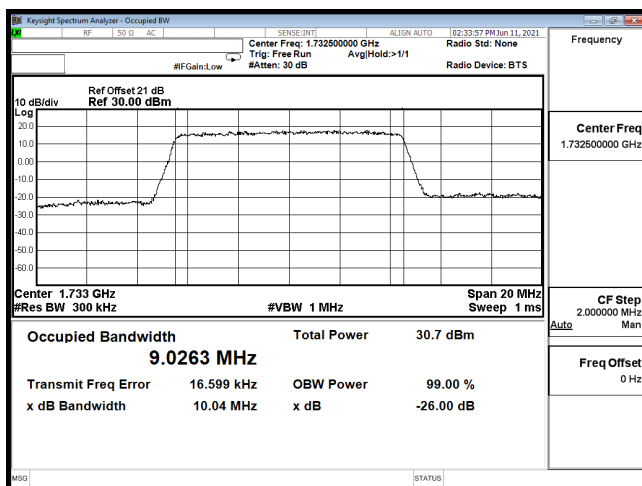
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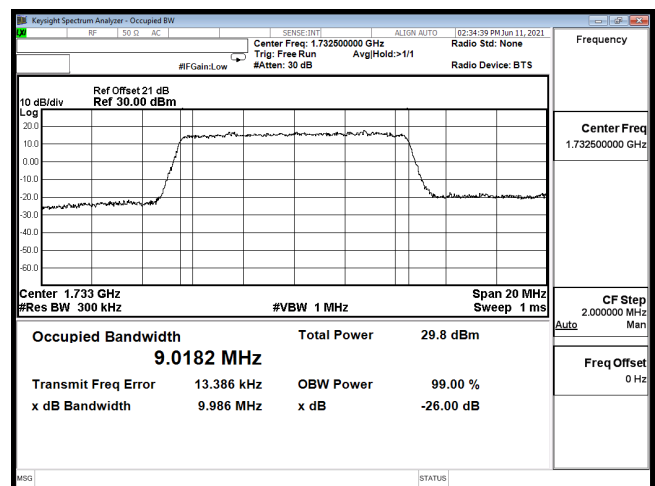
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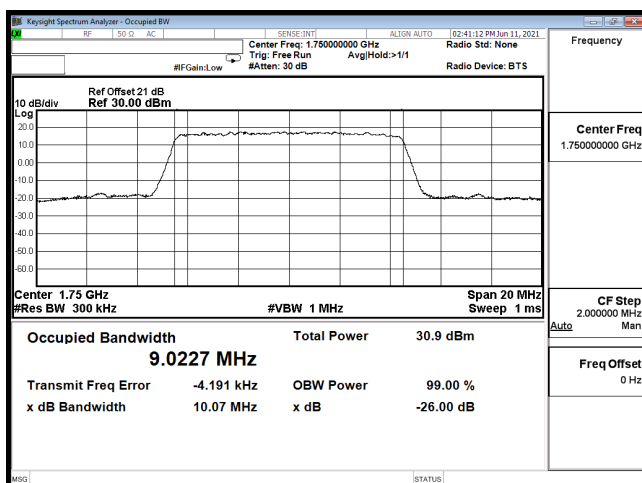
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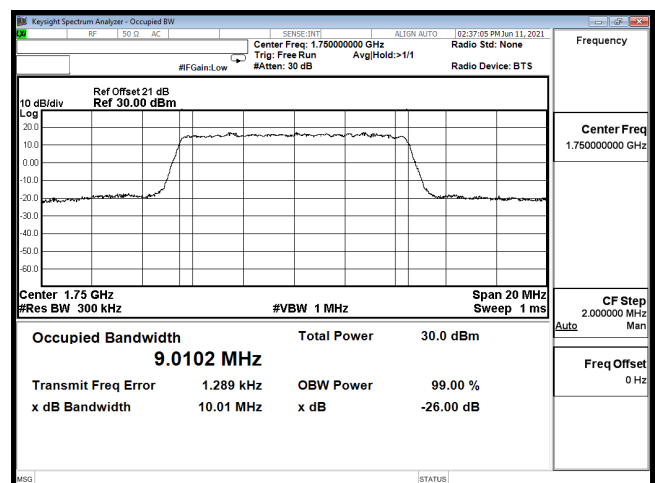
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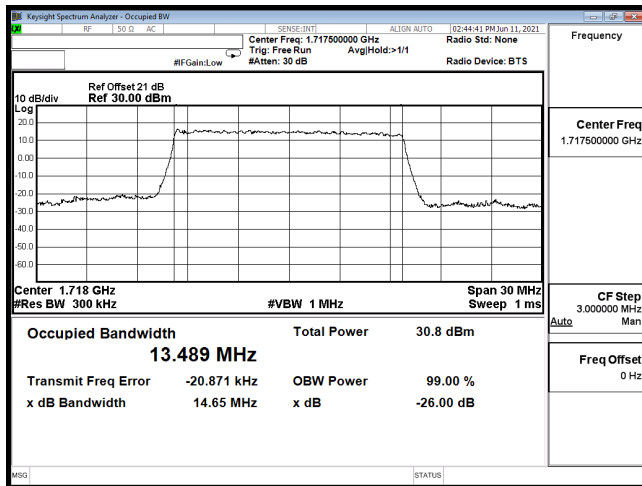
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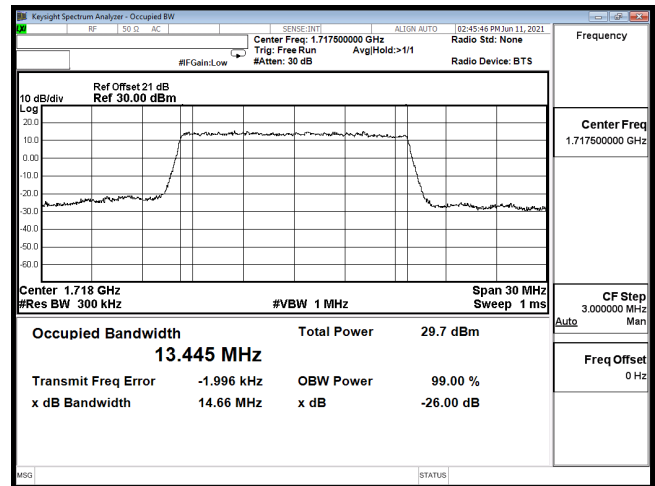
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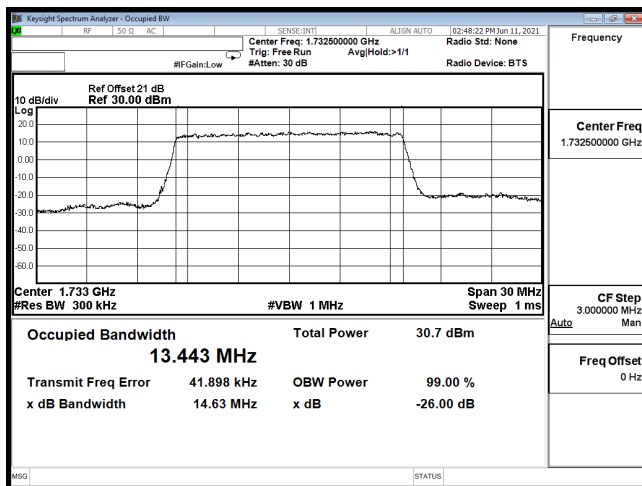
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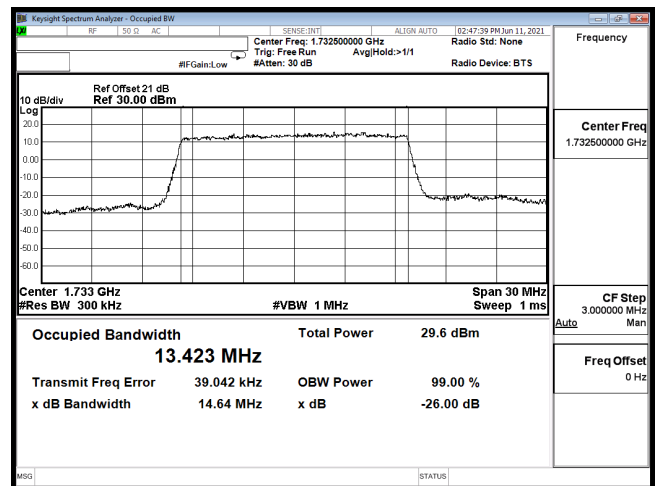
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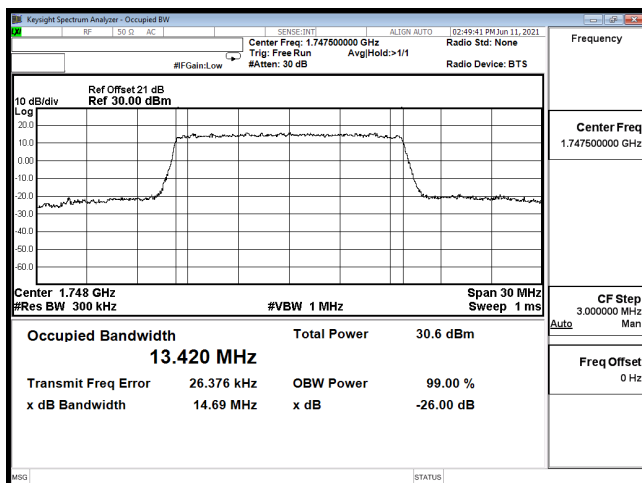
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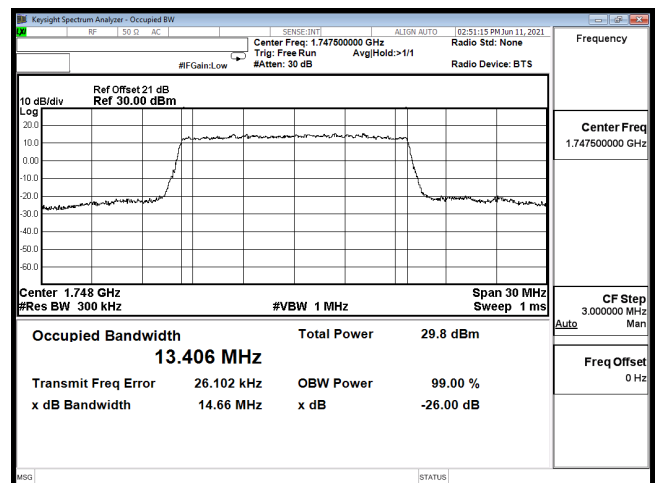
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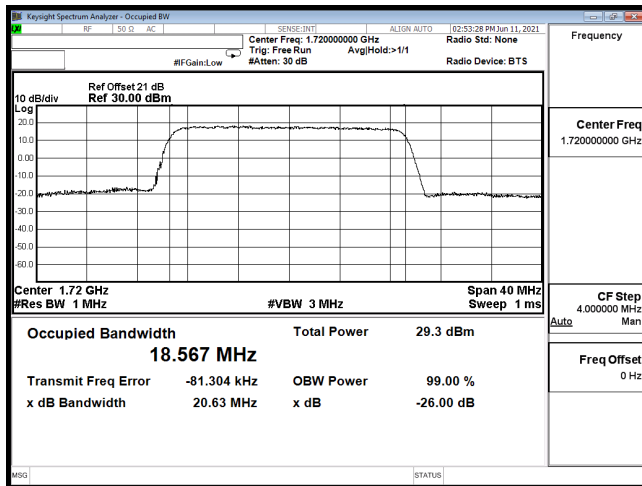
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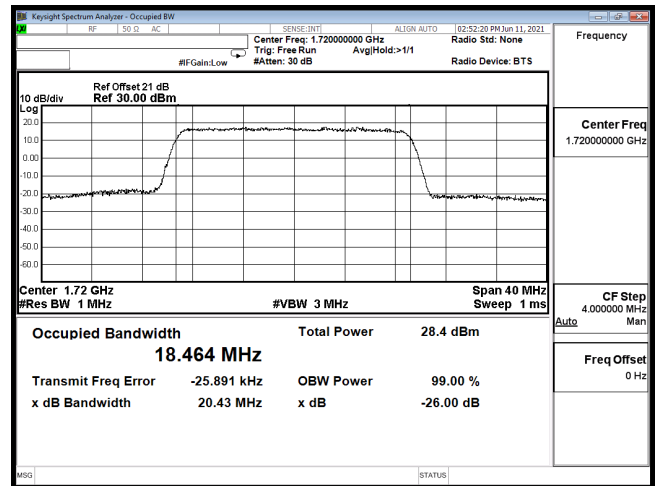
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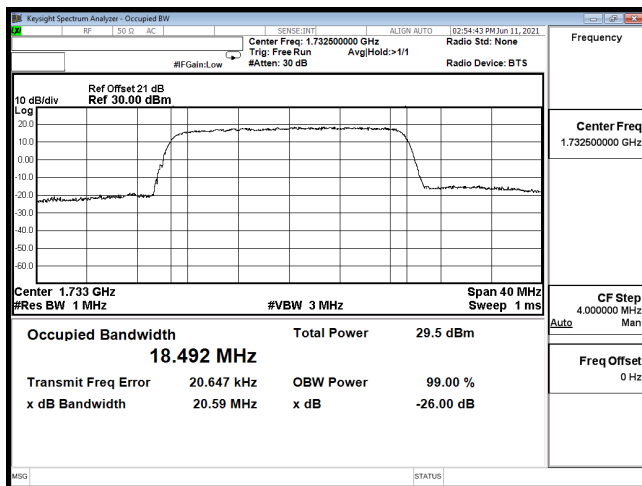
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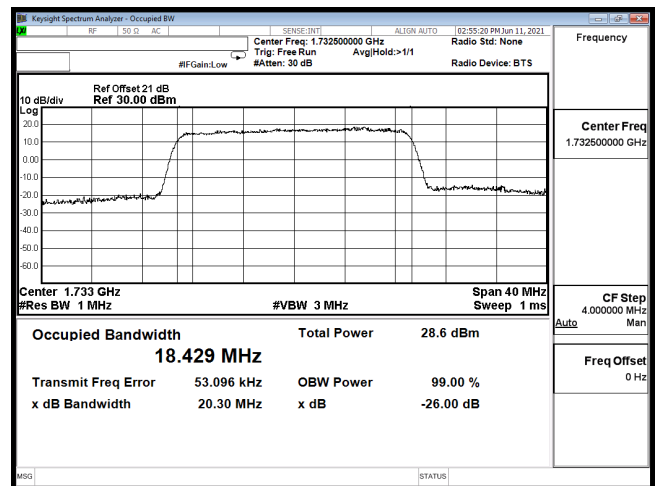
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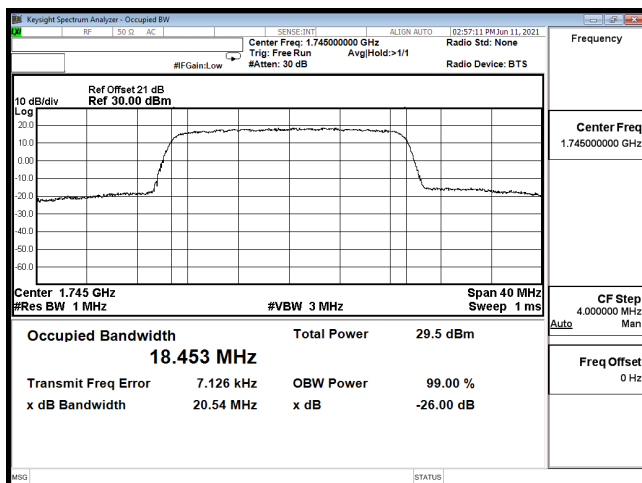
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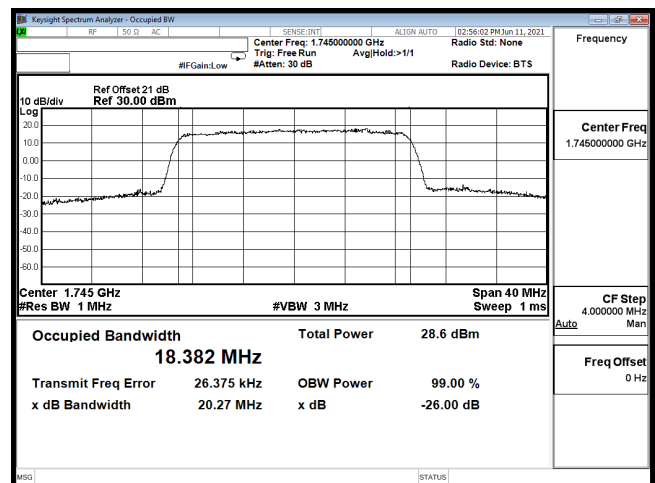
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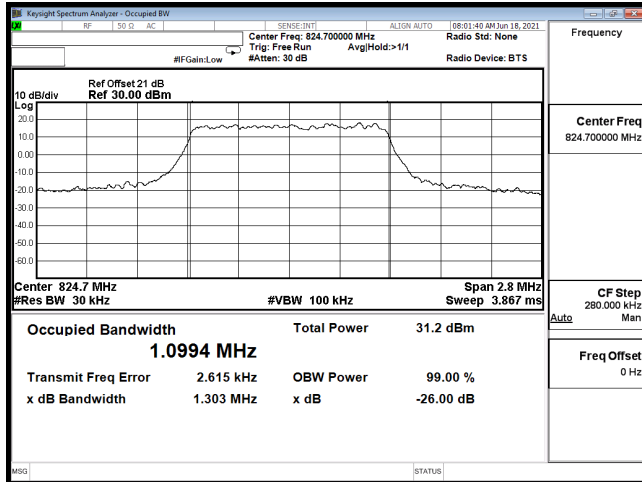


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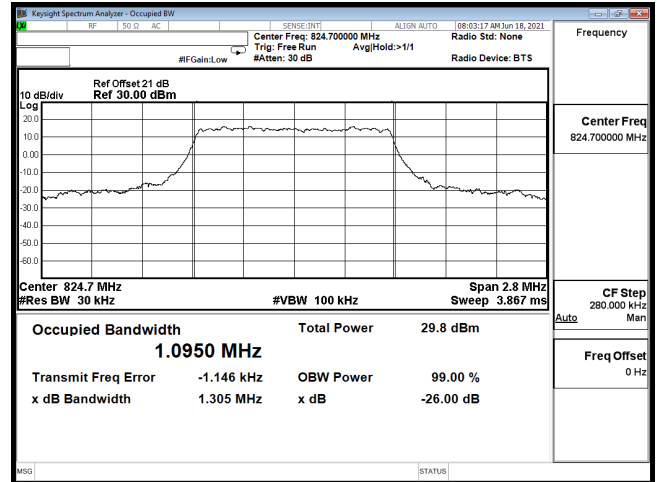
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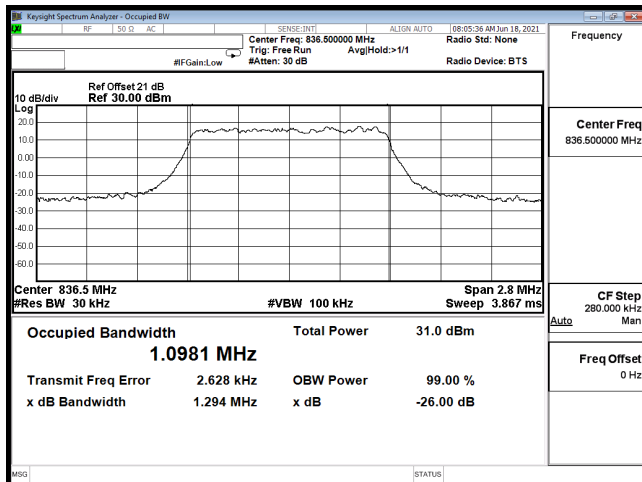
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Test Mode	Occupied Bandwidth		
Date of Test	2021/06/18	Test Site	CTR
Test Condition	Band 5 QPSK/16QAM		



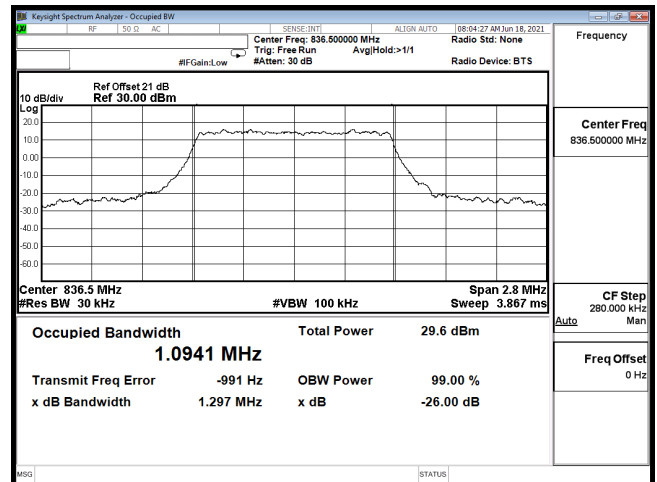
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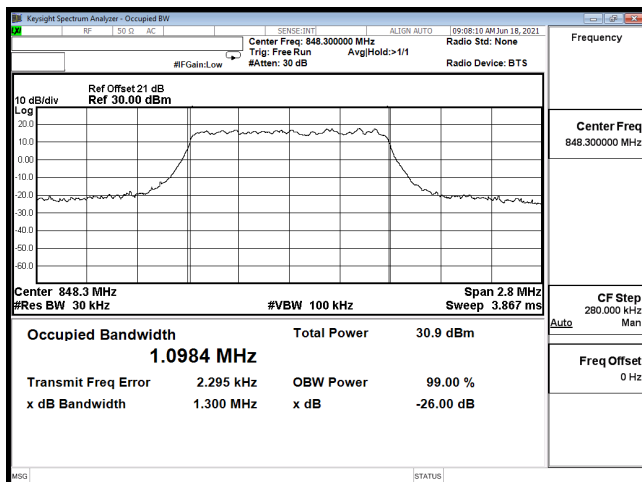
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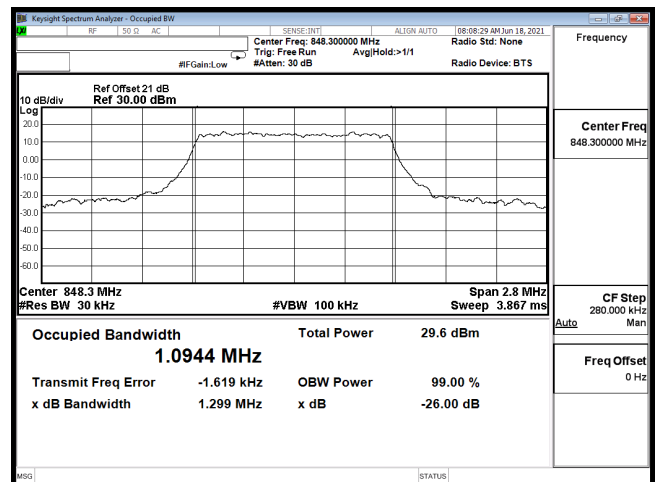
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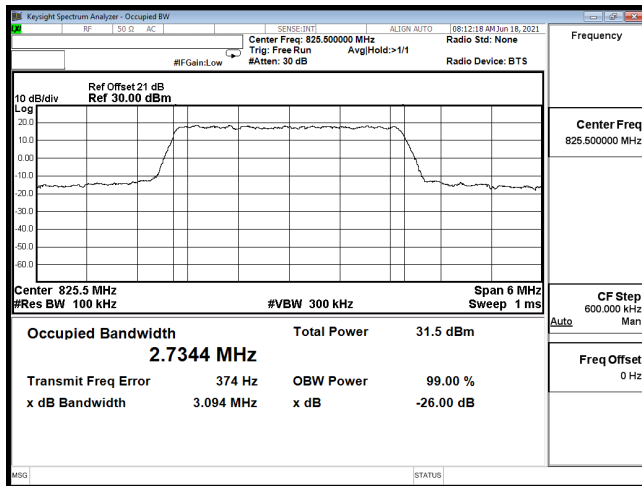
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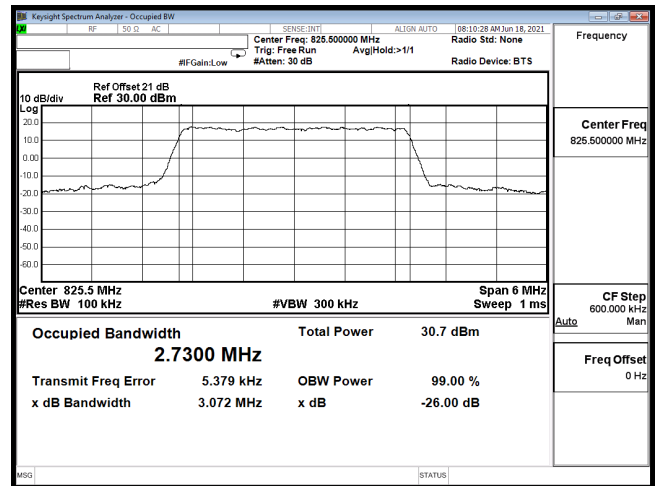
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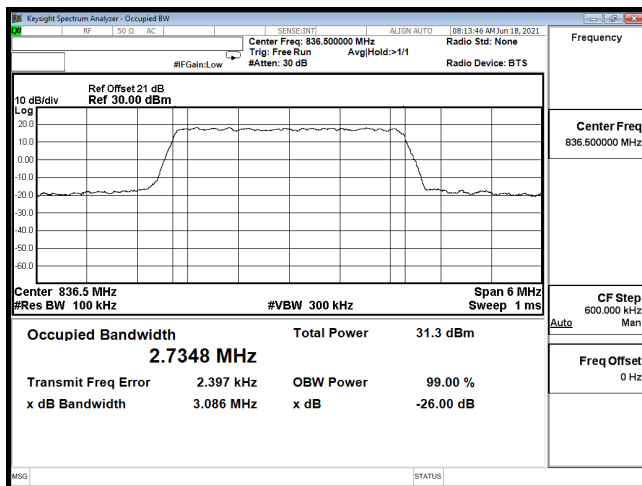
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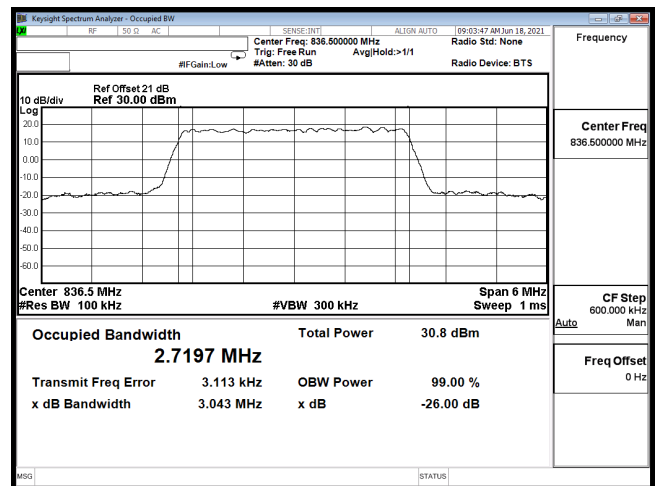
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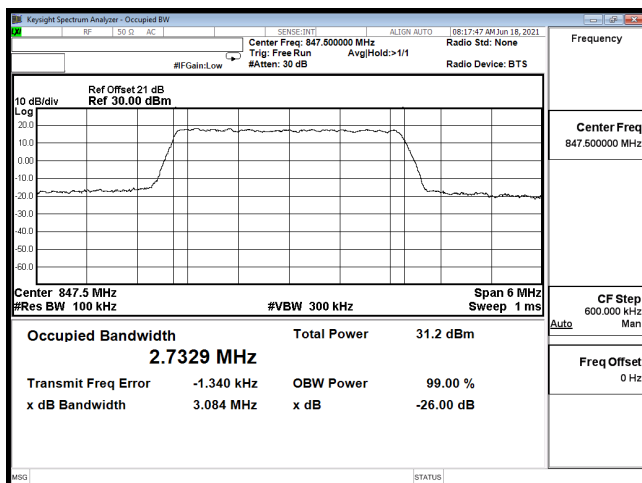
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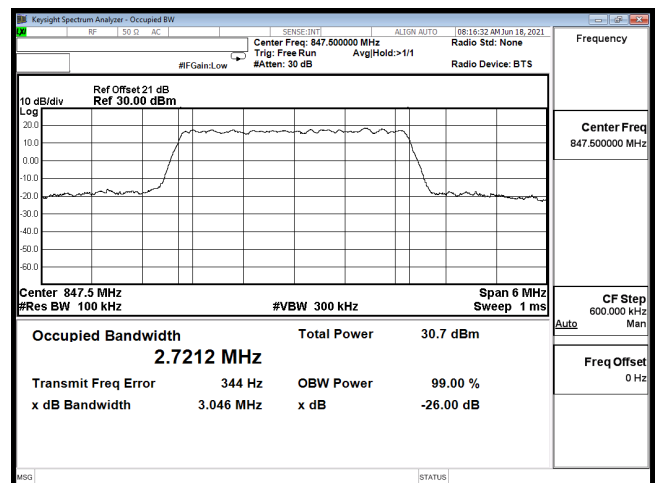
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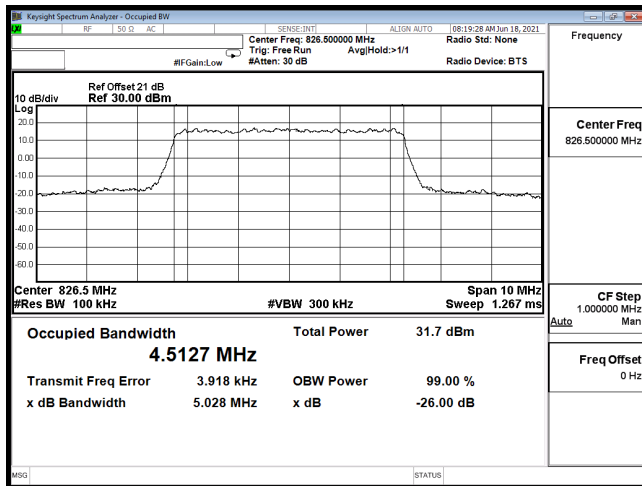
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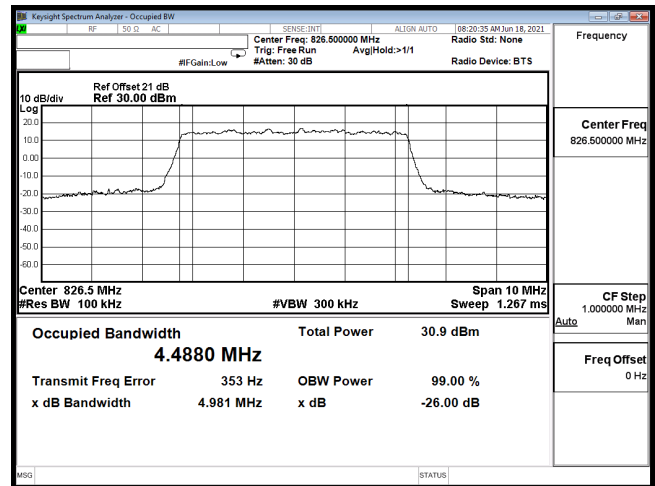
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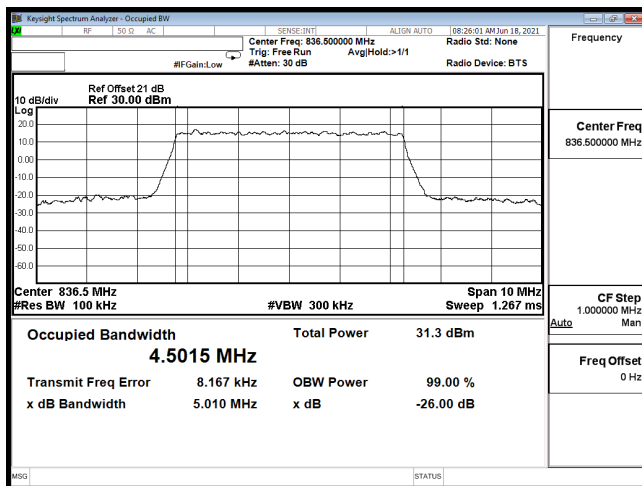
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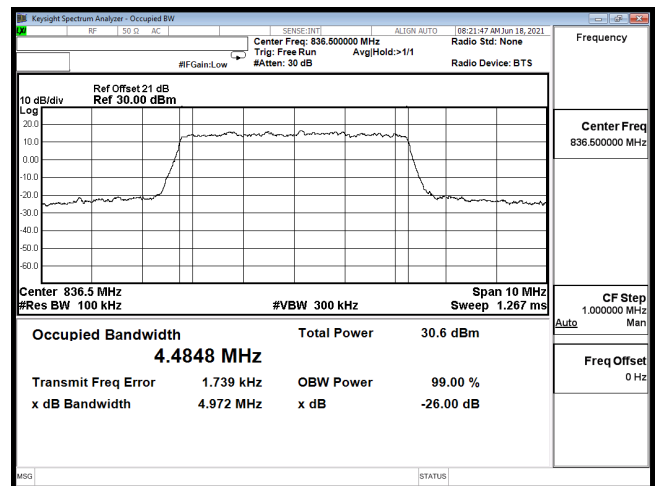
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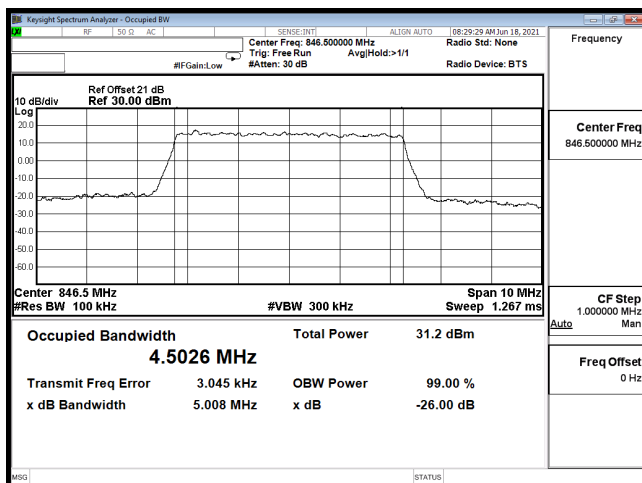
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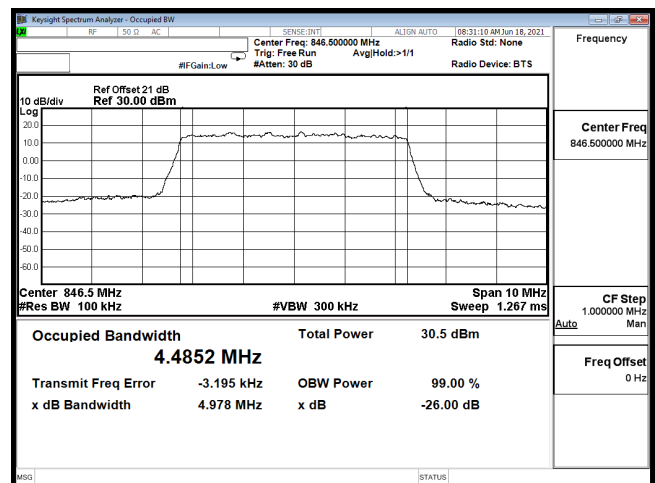
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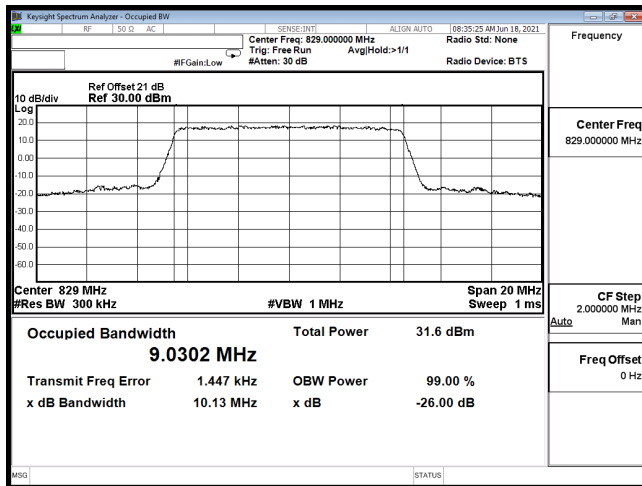
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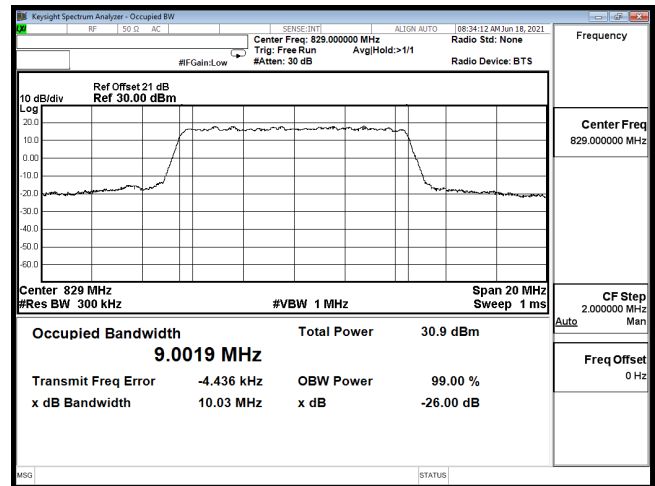
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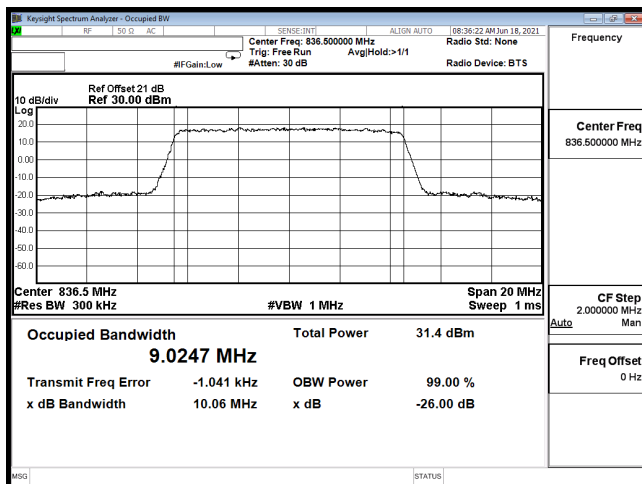
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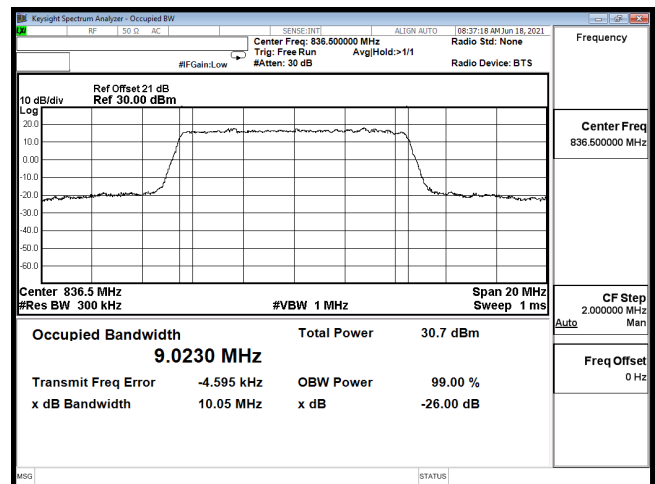
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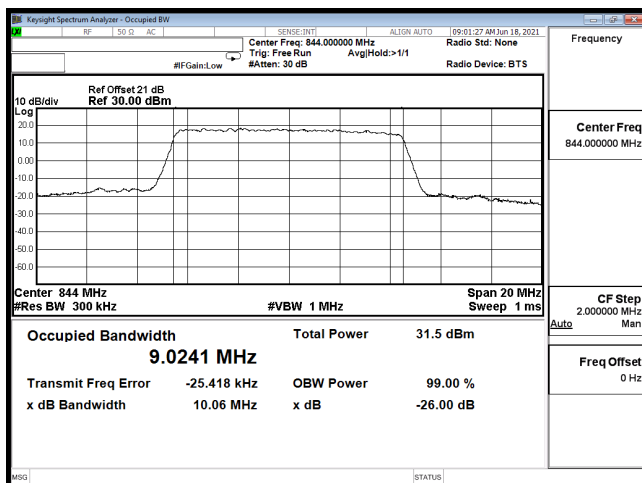
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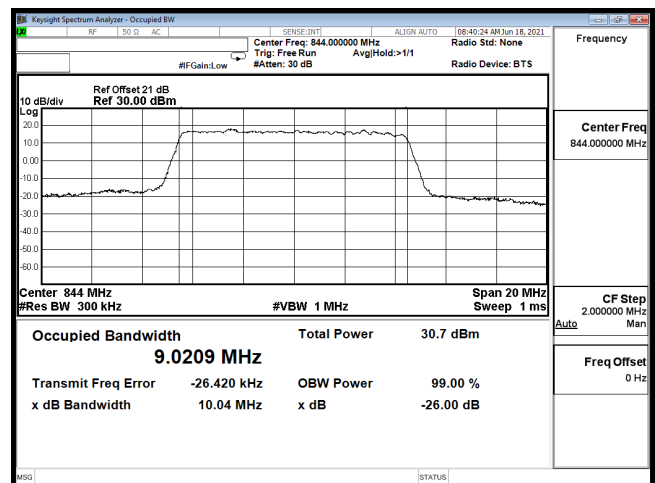
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OCC B5 10M CH20525 16QAM

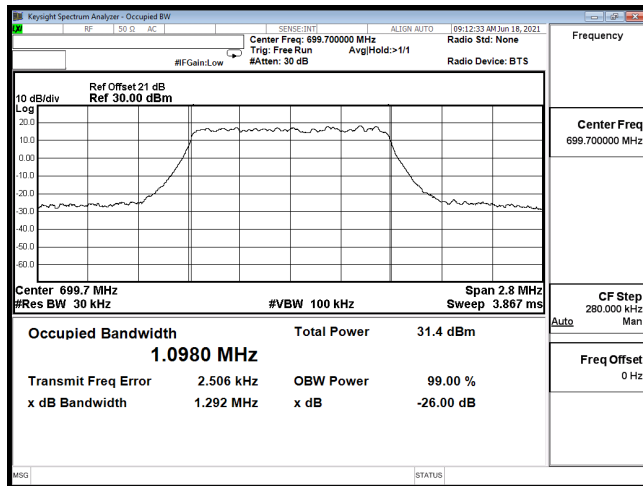


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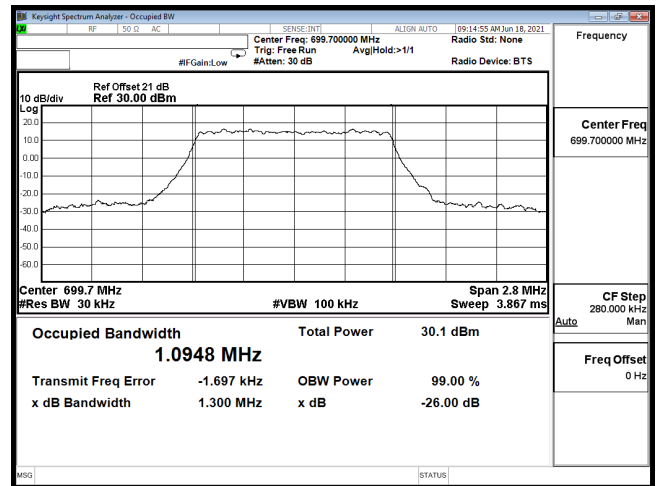


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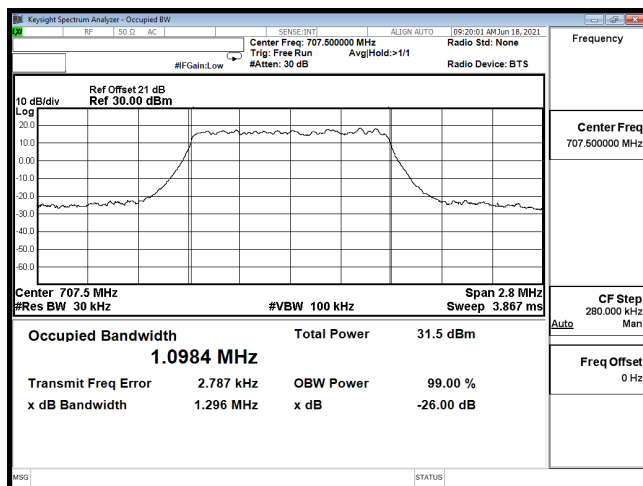
Product	WCDMA/LTE Mobile Phone		
Test Mode	Occupied Bandwidth		
Date of Test	2021/06/18	Test Site	CTR
Test Condition	Band 12 QPSK/16QAM		



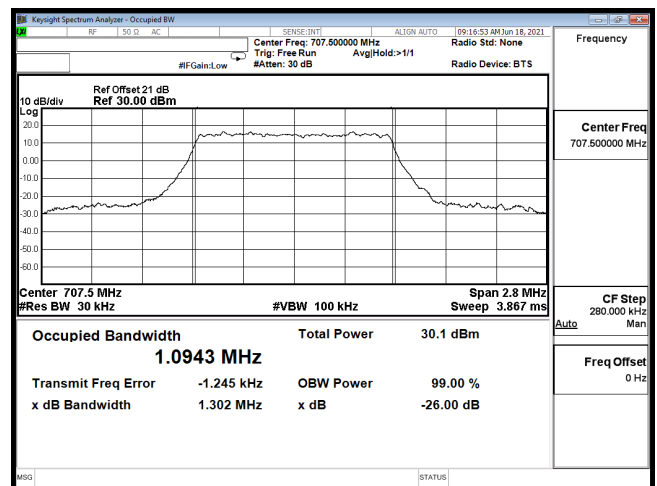
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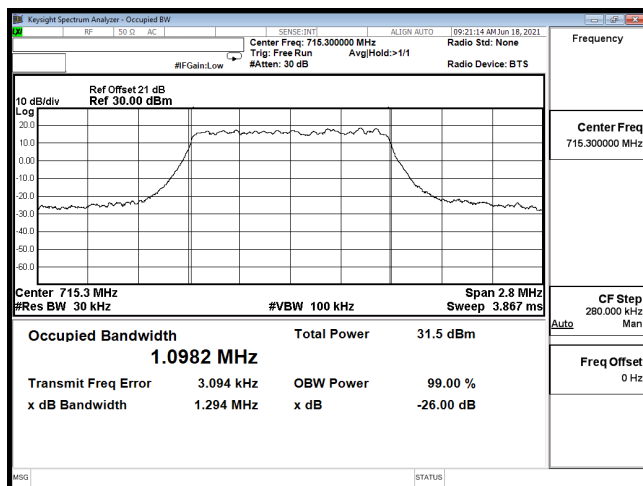
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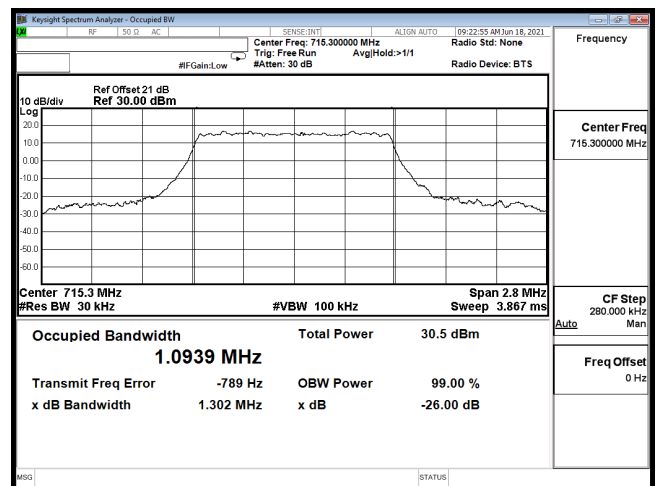
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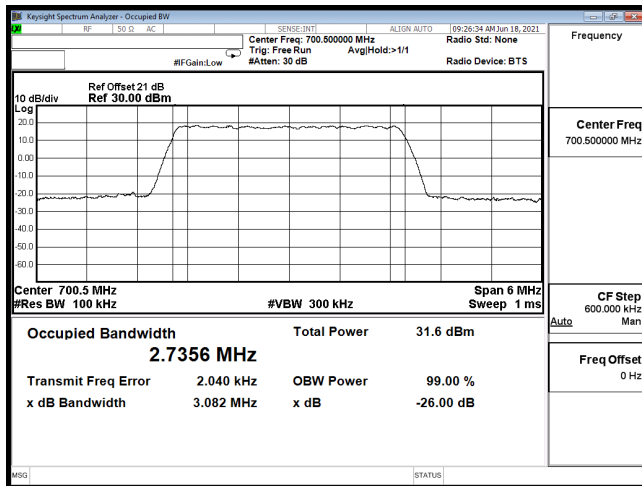
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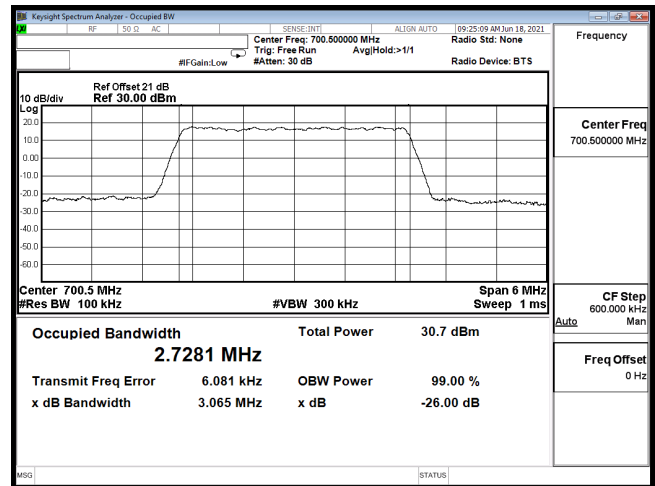
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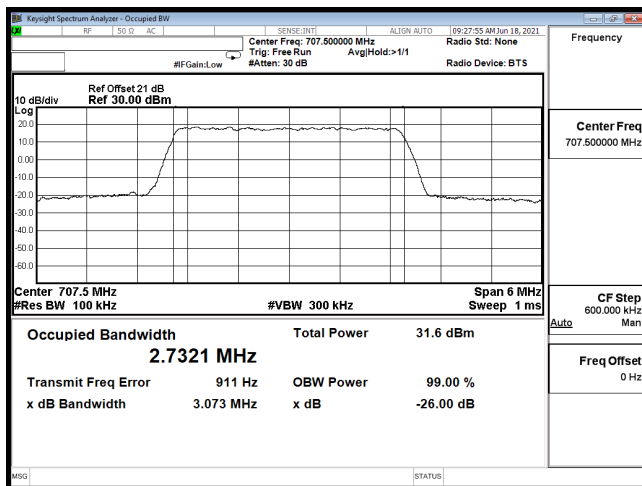
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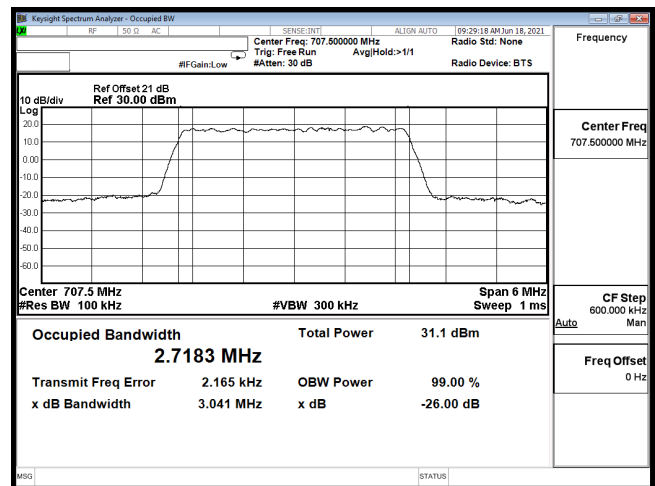
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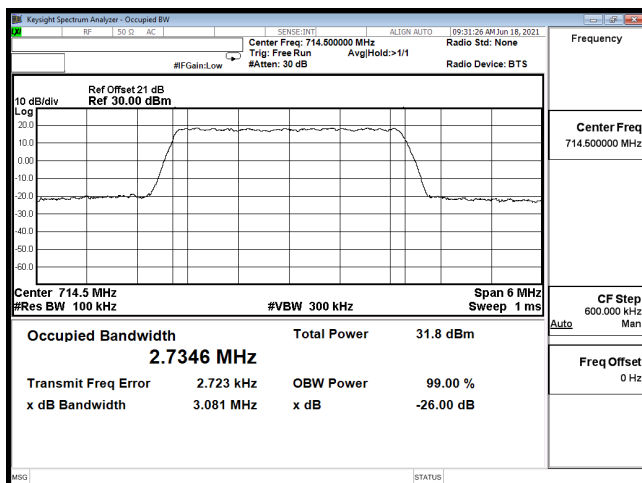
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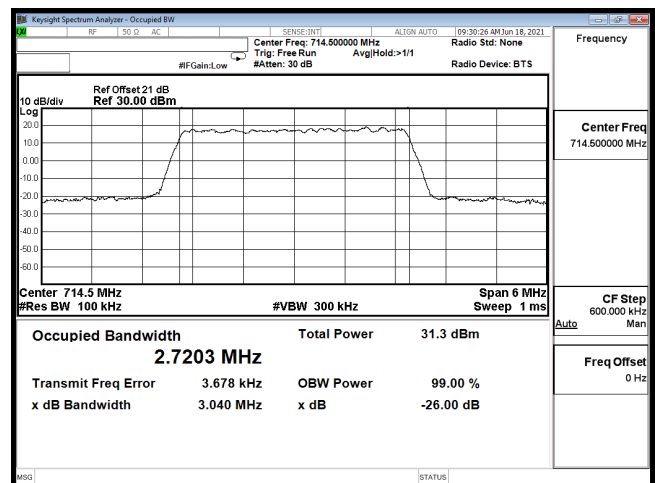
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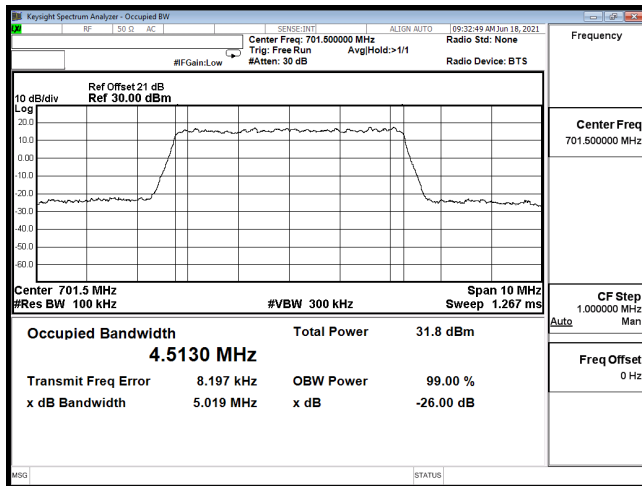
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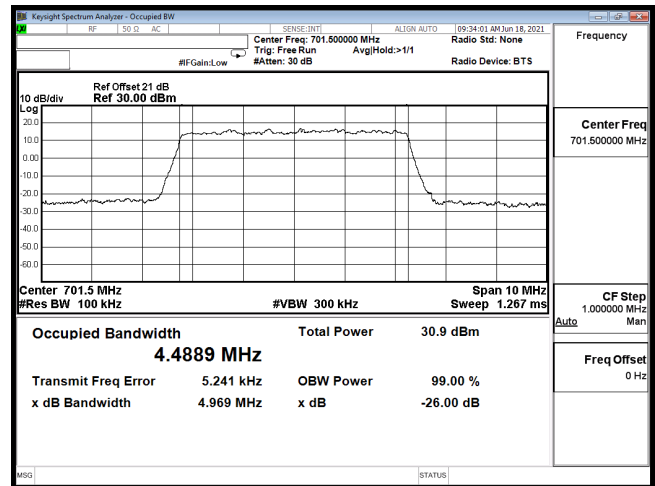
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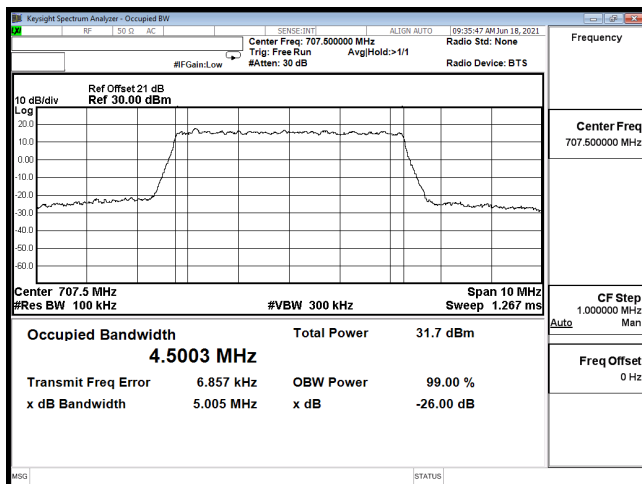
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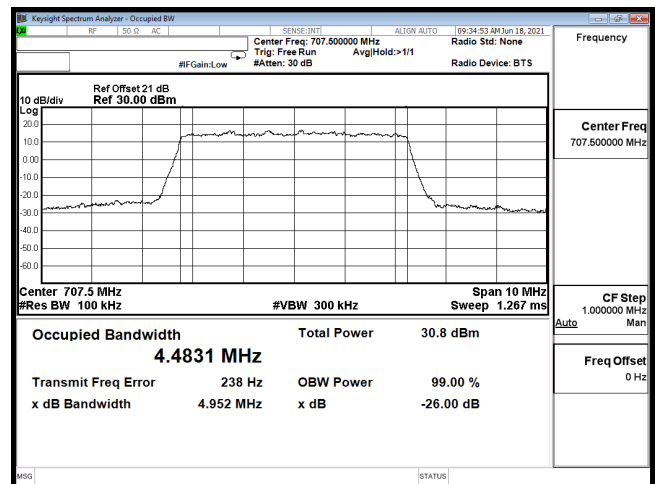
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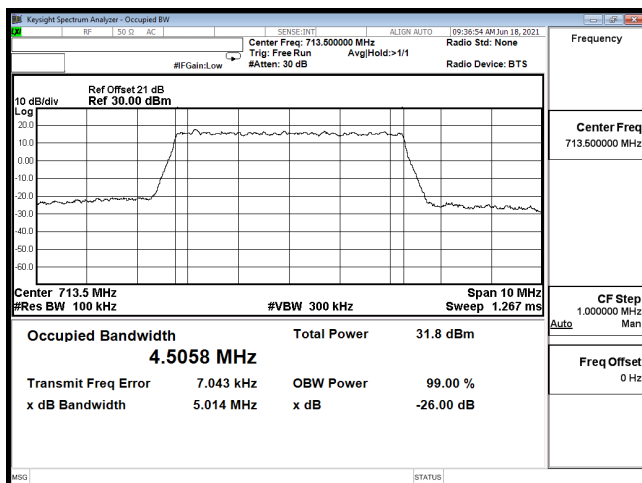
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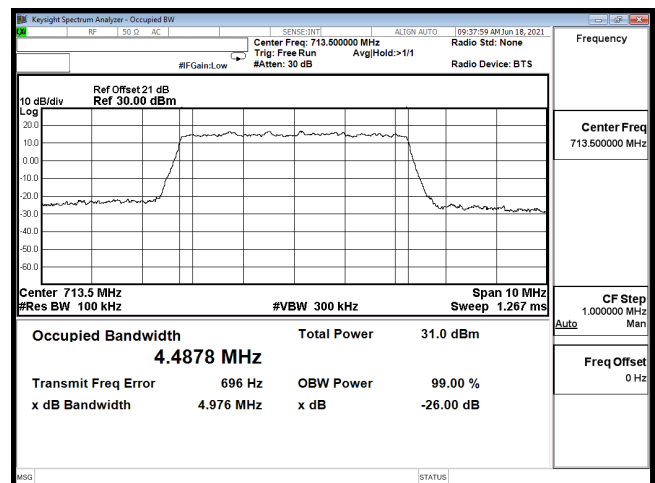
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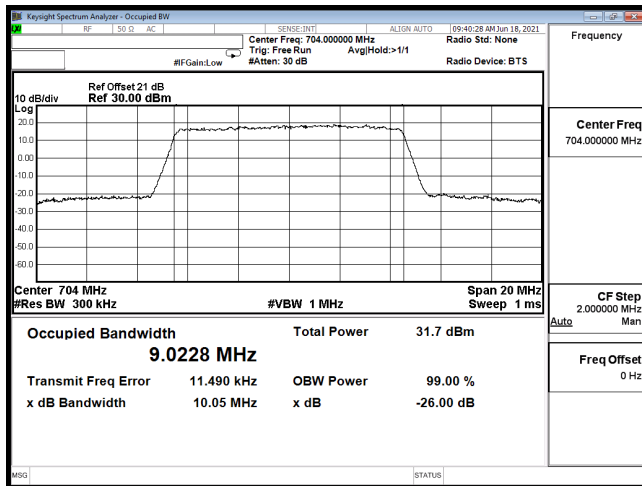
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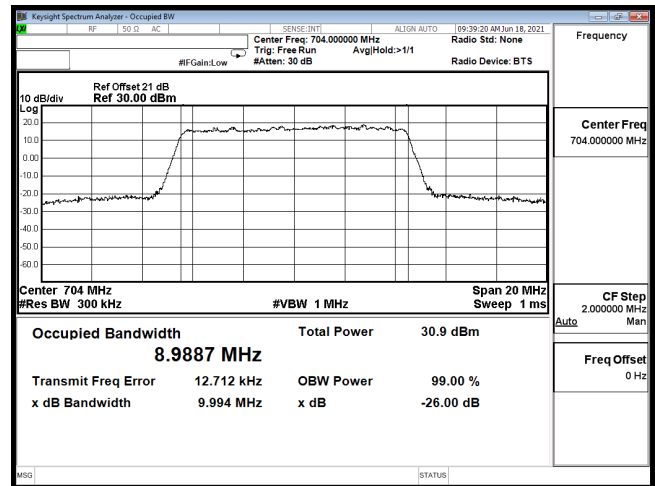
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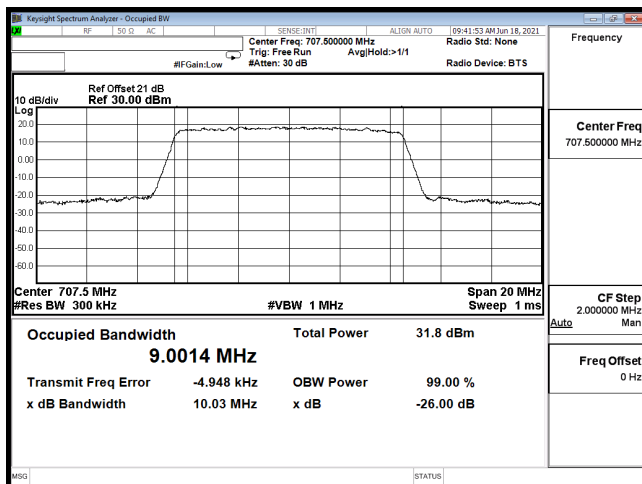
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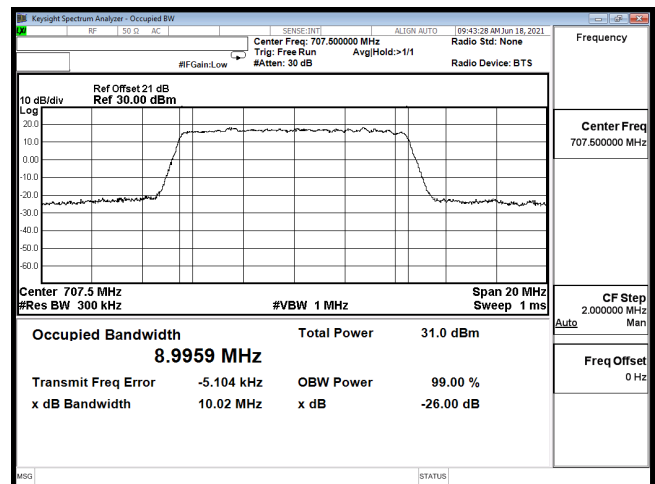
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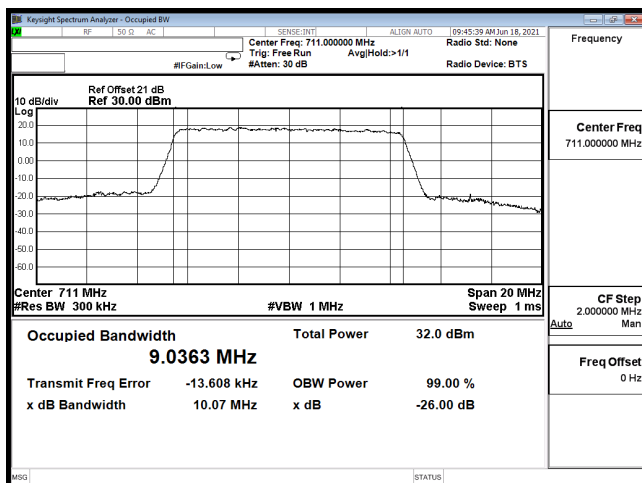
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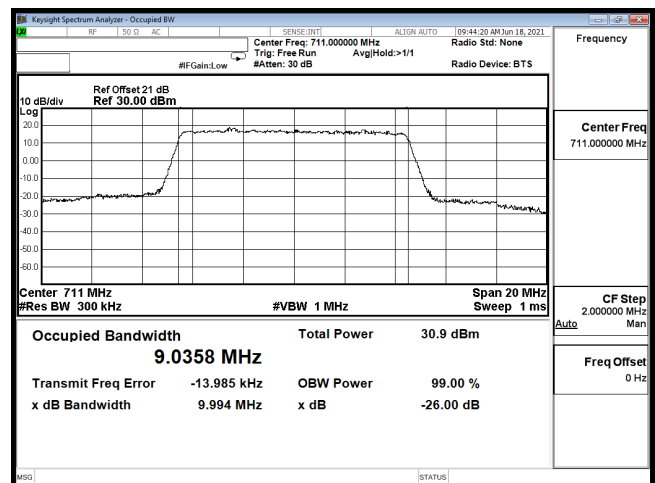
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OCC B12 10M CH23095 16QAM

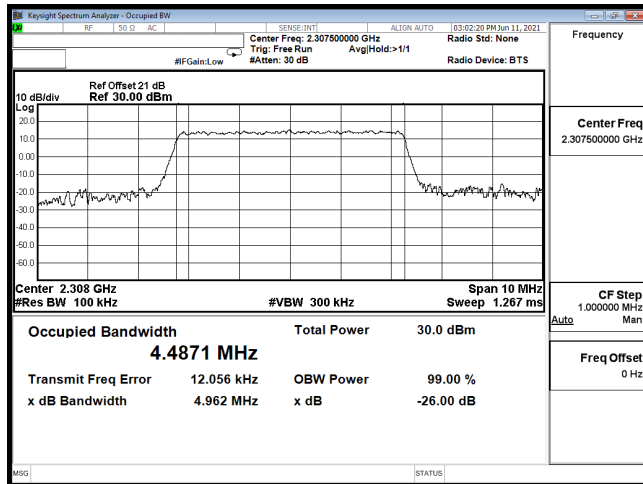


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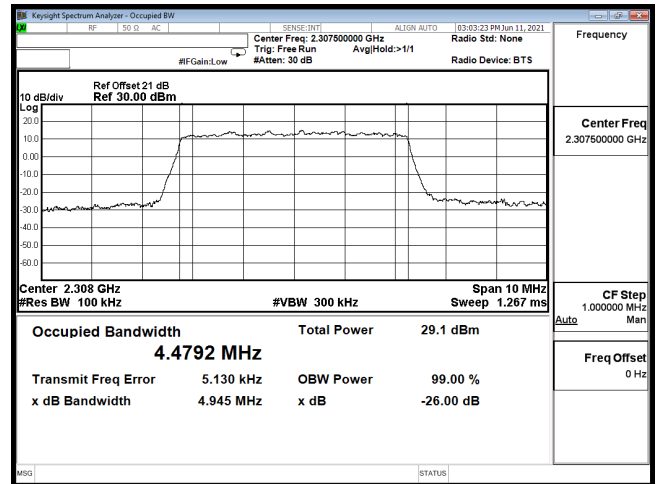


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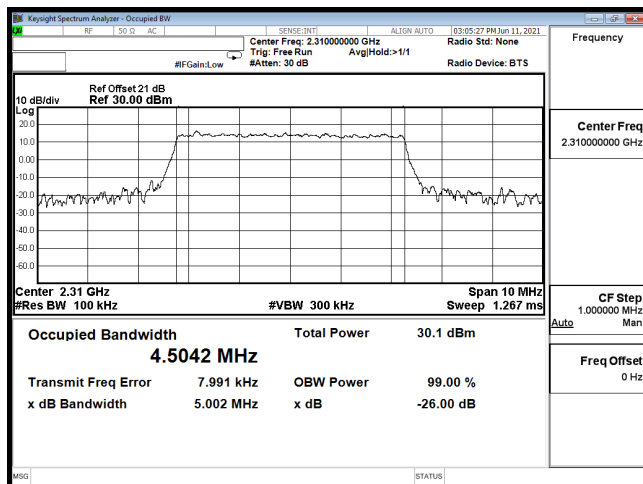
Product	WCDMA/LTE Mobile Phone		
Test Mode	Occupied Bandwidth		
Date of Test	2021/06/11	Test Site	CTR
Test Condition	Band 30 QPSK/16QAM		



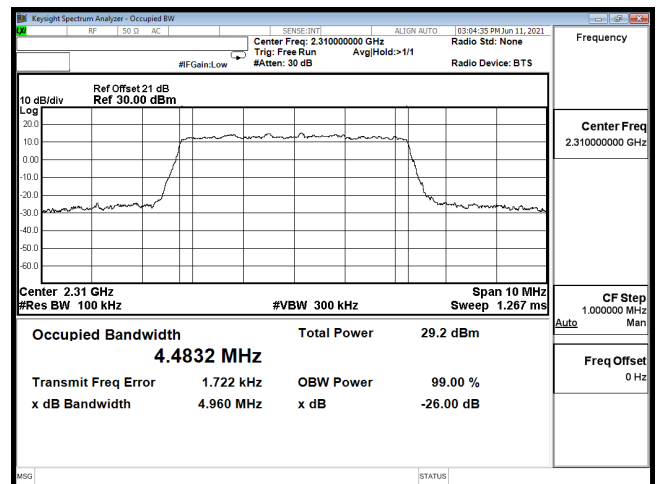
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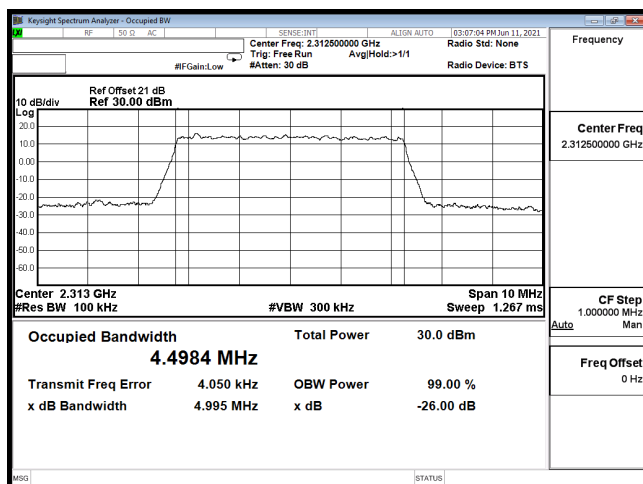
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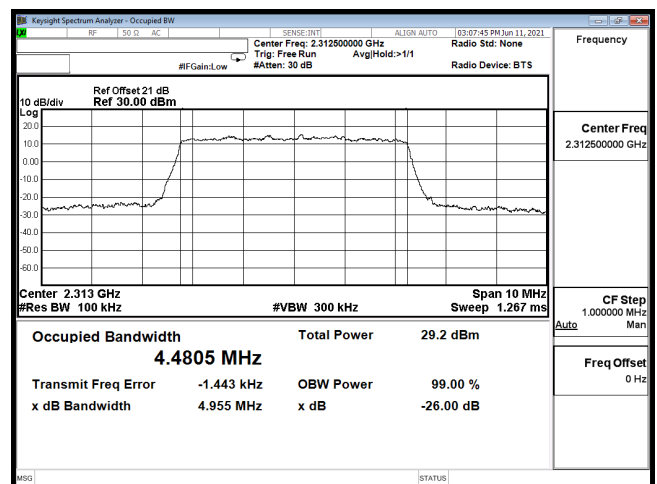
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OCC B30 5M CH27710 16QAM



OCC B30 5M CH27735 QPSK



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