

PART 90 & 22 RF TEST REPORT

FCC ID:	A3LSMS741U
Model (s):	SM-S741U, SM-S741U1
Device Type:	Portable Handset
Report Issue Date:	July 24, 2026

Samsung Electronics Co., Ltd. 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Certification

The measurement evaluations presented in this report are based on the maximum performance of the tested device(s), which has been shown to be capable of compliance with the applicable technical requirements specified herein and has been tested in accordance with the measurement procedures outlined in 47CFR §2.947, ANSI C63.26 - 2015.

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This document has been revised and replaces all previously issued versions of this document with the same Test Report S/N.



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1. DUT Specifics

1.1. Device under Test

The manufacturer has confirmed that the device is within operational tolerances expected for production units and has the same physical, mechanical, and thermal characteristics expected for production units. The serial number of the device used for each test is indicated alongside the results.

1.2. Maximum Power per Mode

Table 1-1 Antenna A Summary

Band	Band Width [MHz]	Modulation	Frequency Range [MHz]	Max E.R.P		OBW [MHz]	Emission Designator
				[dBm]	[W]		
LTE Band 26	15	QPSK	821.5 - 821.5	20.92	0.124	13.56	13M6G7D
		16QAM	821.5 - 821.5	20.29	0.107	13.55	13M6W7D
	10	QPSK	819.0 - 819.0	20.99	0.126	9.09	9M09G7D
		16QAM	819.0 - 819.0	20.16	0.104	9.08	9M08W7D
	5	QPSK	816.5 - 821.5	21.06	0.128	4.59	4M59G7D
		16QAM	816.5 - 821.5	20.32	0.108	4.56	4M56W7D
	3	QPSK	815.5 - 822.5	21.07	0.128	2.76	2M76G7D
		16QAM	815.5 - 822.5	20.38	0.109	2.76	2M76W7D
	1.4	QPSK	814.7 - 823.3	21.11	0.129	1.11	1M11G7D
		16QAM	814.7 - 823.3	20.39	0.109	1.11	1M11W7D

Note - The 15 MHz channel bandwidth is supported only in LTE Band 26 (straddle)

Band	Band Width [MHz]	Modulation	Frequency Range [MHz]	Max Output Power		OBW [MHz]	Emission Designator
				[dBm]	[W]		
LTE Band 26	15	QPSK	821.5 - 821.5	24.49	0.281	13.56	13M6G7D
		16QAM	821.5 - 821.5	23.29	0.213	13.55	13M6W7D
	10	QPSK	819.0 - 819.0	24.54	0.284	9.09	9M09G7D
		16QAM	819.0 - 819.0	23.19	0.208	9.08	9M08W7D
	5	QPSK	816.5 - 821.5	24.64	0.291	4.59	4M59G7D
		16QAM	816.5 - 821.5	23.35	0.216	4.56	4M56W7D
	3	QPSK	815.5 - 822.5	24.62	0.290	2.76	2M76G7D
		16QAM	815.5 - 822.5	23.38	0.218	2.76	2M76W7D
	1.4	QPSK	814.7 - 823.3	24.66	0.292	1.11	1M11G7D
		16QAM	814.7 - 823.3	23.39	0.218	1.11	1M11W7D

Note - The 15 MHz channel bandwidth is supported only in LTE Band 26 (straddle)

Band	Band Width [MHz]	Modulation	Frequency Range [MHz]	Max E.R.P		OBW [MHz]	Emission Designator
				[dBm]	[W]		
LTE Band 14	10	QPSK	793.0 - 793.0	20.34	0.108	9.16	9M16G7D
		16QAM	793.0 - 793.0	19.45	0.088	9.16	9M16W7D
	5	QPSK	790.5 - 795.5	20.41	0.110	4.62	4M62G7D
		16QAM	790.5 - 795.5	19.66	0.092	4.56	4M56W7D

Table 1-2 Antenna E Summary

Band	Band Width [MHz]	Modulation	Frequency Range [MHz]	Max E.R.P		OBW [MHz]	Emission Designator
				[dBm]	[W]		
LTE Band 26	15	QPSK	821.5 - 821.5	20.89	0.123	13.56	13M6G7D
		16QAM	821.5 - 821.5	20.16	0.104	13.54	13M5W7D
	10	QPSK	819.0 - 819.0	20.97	0.125	9.09	9M09G7D
		16QAM	819.0 - 819.0	20.03	0.101	9.08	9M08W7D
	5	QPSK	816.5 - 821.5	20.96	0.125	4.60	4M60G7D
		16QAM	816.5 - 821.5	20.19	0.104	4.55	4M55W7D
	3	QPSK	815.5 - 822.5	21.03	0.127	2.76	2M76G7D
		16QAM	815.5 - 822.5	20.19	0.104	2.75	2M75W7D
	1.4	QPSK	814.7 - 823.3	20.97	0.125	1.10	1M10G7D
		16QAM	814.7 - 823.3	20.31	0.107	1.11	1M11W7D

Note - The 15 MHz channel bandwidth is supported only in LTE Band 26 (straddle)

Band	Band Width [MHz]	Modulation	Frequency Range [MHz]	Max Output Power		OBW [MHz]	Emission Designator
				[dBm]	[W]		
LTE Band 26	15	QPSK	821.5 - 821.5	23.55	0.226	13.56	13M6G7D
		16QAM	821.5 - 821.5	22.17	0.165	13.54	13M5W7D
	10	QPSK	819.0 - 819.0	23.49	0.223	9.09	9M09G7D
		16QAM	819.0 - 819.0	22.11	0.163	9.08	9M08W7D
	5	QPSK	816.5 - 821.5	23.48	0.223	4.60	4M60G7D
		16QAM	816.5 - 821.5	22.19	0.166	4.55	4M55W7D
	3	QPSK	815.5 - 822.5	23.51	0.224	2.76	2M76G7D
		16QAM	815.5 - 822.5	22.19	0.166	2.75	2M75W7D
	1.4	QPSK	814.7 - 823.3	23.49	0.223	1.10	1M10G7D
		16QAM	814.7 - 823.3	22.31	0.170	1.11	1M11W7D

Note - The 15 MHz channel bandwidth is supported only in LTE Band 26 (straddle)

Band	Band Width [MHz]	Modulation	Frequency Range [MHz]	Max E.R.P		OBW [MHz]	Emission Designator
				[dBm]	[W]		
LTE Band 14	10	QPSK	793.0 - 793.0	20.91	0.123	10.84	10M8G7D
		16QAM	793.0 - 793.0	20.12	0.103	10.76	10M8W7D
	5	QPSK	790.5 - 795.5	20.96	0.125	5.51	5M51G7D
		16QAM	790.5 - 795.5	20.90	0.123	5.48	5M48W7D

1.3. Antenna Configuration and Operating Band

The table below details the antennas supporting the licensed bands, with the specific bands evaluated in this report clearly checked.

Table 1-3 Supported Frequency Band per Antenna

Antenna	LTE Band 26	LTE Band 14
Ant A	✓	✓
Ant E	✓	✓
Ant F		
Ant B		
Ant D		
Ant C		
Ant I		

The antenna names utilized throughout this report are defined as follows:

Antenna	LTE Band 26	LTE Band 14
Ant A	Ant 1	Ant 1
Ant E	Ant 2	Ant 2

2. Executive Summary

2.1. Device Description

The DUT is a portable wireless handset designed to operate across multiple communication standards and frequency bands. This report covers the complete compliance testing of LTE Band 26, 14 in accordance with the applicable standards and regulatory requirements.

2.2. Summary of Test Results

The DUT has been tested according to the following specifications. The test period was from June 17, 2026 through July 06, 2026.

Test Condition	Test Item	FCC Requirement	Applied Band	Limit	Test Result	Reference
Conducted	The Maximum Output Power	§ 2.1046(a) § 90.635(b)	ALL Band	≤ 100 watts (20 dBw)	PASS	Section 4.4
	Occupied & Emission bandwidth	§ 2.1049(h)	ALL Band	Not Applicable	PASS	Section 4.5
	Conducted Band Edge	§ 90.543(c)(e) § 2.1051	LTE Band 14	Please refer to Section 4.7.1 of this report for the limits	PASS	Section 4.6
		§ 90.691(a) § 2.1051	LTE Band 26	> 43 + 10 log(P) dB. All out of band > 50 + 10 log(P) dB frequency block by up to 37.5 kHz	PASS	Section 4.6
	Conducted Spurious Emissions	§ 90.543(c)(e) § 2.1051	LTE Band 14	Please refer to Section 4.6 of this report for the limits	PASS	Section 4.7
		§ 90.691(a) § 2.1051	LTE Band 26	> 43 + 10 log(P) dB. All out of band > 50 + 10 log(P) dB frequency block by up to 37.5 kHz	PASS	Section 4.7
	Frequency Stability	§ 2.1055 § 90.213	ALL Band	≤ 2.5 PPM	PASS	Section 4.8
Radiated	Effective Radiated Power	§ 90.542(a)(7)	LTE Band 14	ERP ≤ 3 watts	PASS	Section 5.4
		§ 22.913(a)(5)	LTE Band 26	ERP ≤ 7 watts	PASS	Section 5.4
	Radiated Spurious Emissions	§ 90.543(c)(e)(f) § 2.1051	LTE Band 14	> 43 + 10 log(P) dB. All out of band < -70 dBW/MHz in the band 1559-1610 MHz(eirp)	PASS	Section 5.5
		§ 90.691(a) § 2.1053	LTE Band 26	> 43 + 10 log(P) dB. All out of band > 50 + 10 log(P) dB frequency block by up to 37.5 kHz	PASS	Section 5.5

2.3. Test Guidance Applied

Testing was performed in accordance with the following rules, standards, and guidance:

- ANSI C63.26 -2015
- ANSI C63.4 - 2014 + C63.4a - 2017
- FCC 47 CFR Part 2
- FCC 47 CFR Part 22 Subpart H
- FCC 47 CFR Part 90 Subpart S
- FCC 47 CFR Part 90 Subpart R
- KDB 648474 D03 v01r04
- KDB 971168 D01 v03r01
- KDB 971168 D02 v02r02
- KDB 412172 D01 v01r01

2.4. NGTL Test Site Location

All measurement operations were conducted at the NGTL testing facility.

- Location: 52-7, Choha-ro, Mohyeon-eup, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of Korea.
- Site Compliance: The measurement environments strictly adhere to the site validation requirements specified in ANSI C63.4-2014+C63.4a-2017 and FCC KDB 414788 D01.
- Accreditations: Fully accredited to ISO/IEC 17025 and designated by the National Radio Research Agency (RRA) as a Conformity Assessment Body (CAB) under the MRAs, maintaining official testing recognition from the FCC and ISED.

FCC Designation Number	FCC Test Firm Registration Number
KR0179	985720
ISED CAB identifier	ISED Company Number
KR0179	35746

3. Description of Tests

- The DUT is a handheld wireless device and was tested in accordance with ANSI C63.26-2015. For details regarding the test configuration, refer to the following sections.
- Antenna Port Conducted Test : Sections 4.1
- Radiated Emissions Test : Sections 5.1

- All tests were conducted under the environmental conditions specified below
- Ambient Temperature : 20 °C ~ 26 °C
- Relative Humidity : 40 % ~ 60 %

4. Conducted Test Results

4.1. Test Configuration

This section presents the results of the conducted tests performed at the antenna port in accordance with ANSI C63.26-2015. Conducted emissions were captured using automated test software 'NGTL ATE' Ver. 0.00.

4.2. Conducted Measurement Setup

Figure 4-1 Conducted Power Measurement Setup

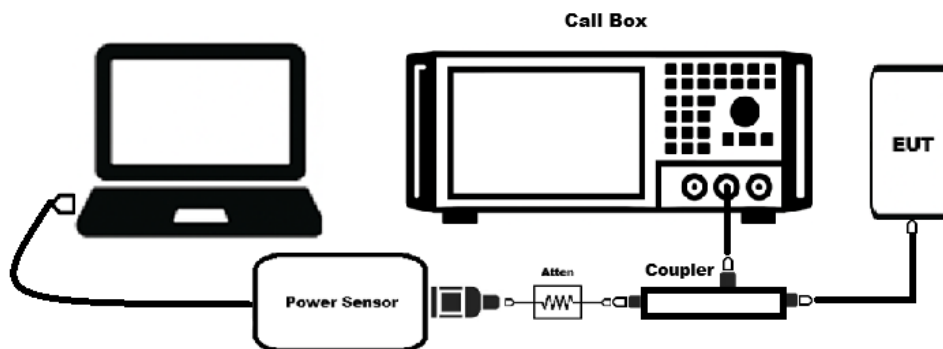
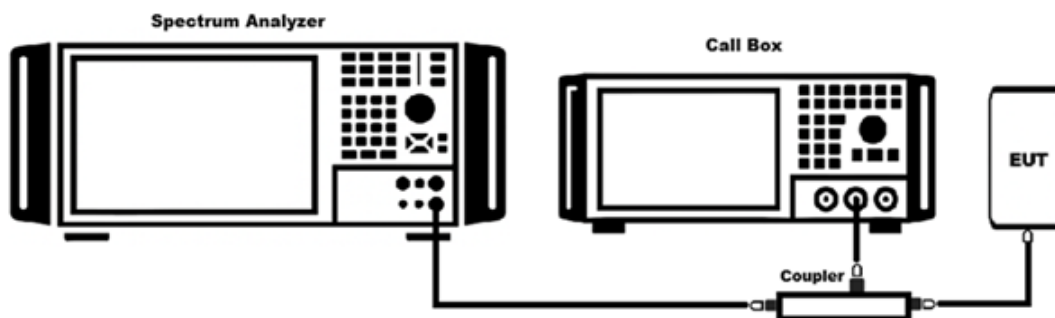


Figure 4-2 Conducted Measurement Setup



4.3. Conducted Measurement Sample

Serial Number(s) : ZDH0428M, ZEJ0893M, ZF50730M,

4.4. The Maximum Output Power

4.4.1. Regulatory Limit

§Part. 90.635(b)

(7) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

4.4.2. Test Method

ANSI C63.26-2015, clause 5.2.4.2

4.4.3. Test Procedure

The call simulator was used to control the EUT for RF power measurements.

The procedure for this method is follows:

- a) Connect the DUT to a wideband gated RF power meter.
- b) Apply an offset to the power meter to compensate for the insertion losses of the cables and attenuators connected between the DUT and the power sensor.
- c) Configure the DUT to transmit at its maximum power control level.
- d) Adjust the gate parameters on the power meter to ensure that the power is measured strictly during the active transmission of the DUT.

Test Note

- ✓ The output power was measured during the transmitter ON time at the maximum power control level using a gated RF power meter. No duty cycle correction factor was applied.
- ✓ The limit of 100 Watts (20 dBW) was converted to 50 dBm and applied to the measurement
- ✓ As a result of testing all modulation schemes, the output power decreased at higher modulations due to the implementation of MPR. Consequently, only 16QAM, which represents the worst-case higher-order modulation, is reported
- ✓ Although 1RB and Half RB allocations were evaluated along with the Full RB, only the worst-case results are reported herein.
- ✓ The Output Power unit is dBm.

4.4.4. Test Results

Table 4-1 Conducted Output Power Data LTE Band26 Ant1

BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit [dBm]	Margin at Max Power [dB]
				821.5				
				26765				
15	QPSK	1	0	24.48			50	-25.52
		1	36	24.47				-25.53
		1	74	24.49				-25.51
		75	0	23.04				-26.96
	16QAM	1	0	23.06				-26.94
		1	36	23.29				-26.71
		1	74	23.08				-26.92
		75	0	22.01				-27.99
BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit [dBm]	Margin at Max Power [dB]
				819				
				26740				
10	QPSK	1	0	24.52			50	-25.48
		1	25	24.54				-25.46
		1	49	24.53				-25.47
		50	0	23.02				-26.98
	16QAM	1	0	23.17				-26.83
		1	25	23.16				-26.84
		1	49	23.19				-26.81
		50	0	21.98				-28.02
BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit [dBm]	Margin at Max Power [dB]
				816.5	819	821.5		
				26715	26740	26765		
5	QPSK	1	0	24.51	24.57	24.56	50	-25.43
		1	12	24.36	24.56	24.61		-25.39
		1	24	24.63	24.56	24.64		-25.36
		25	0	23.04	23.02	23.05		-26.95
	16QAM	1	0	23.17	23.18	23.24		-26.76
		1	12	23.21	23.32	23.15		-26.68
		1	24	23.18	23.28	23.35		-26.65
		25	0	22.08	22.02	21.99		-27.92
BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit [dBm]	Margin at Max Power [dB]
				815.5	819	822.5		
				26705	26740	26775		
3	QPSK	1	0	24.59	24.54	24.49	50	-25.41
		1	7	24.42	24.62	24.53		-25.38
		1	14	24.49	24.61	24.58		-25.39
		15	0	23.07	23.12	23.05		-26.88
	16QAM	1	0	23.17	23.17	23.18		-26.82
		1	7	23.14	23.38	23.24		-26.62
		1	14	23.08	23.11	23.15		-26.85
		15	0	22.06	22.02	22.08		-27.92
BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit [dBm]	Margin at Max Power [dB]
				814.7	819	823.3		
				26697	26740	26783		
1.4	QPSK	1	0	24.45	24.63	24.62	50	-25.37
		1	3	24.46	24.59	24.66		-25.34
		1	5	24.50	24.54	24.59		-25.41
		6	0	22.99	23.09	23.07		-26.91
	16QAM	1	0	23.16	23.27	23.19		-26.73
		1	3	23.03	23.38	23.39		-26.61
		1	5	23.16	23.18	23.24		-26.76
		6	0	22.04	22.12	22.04		-27.88

Table 4-2 Conducted Output Power Data LTE Band26 Ant2

BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit [dBm/MHz]	Margin at Max Power [dB]
				821.5				
15	QPSK	1	0	23.55			50	-26.45
		1	36	23.37				-26.63
		1	74	23.39				-26.61
		75	0	22.03				-27.97
	16QAM	1	0	22.17				-27.83
		1	36	22.16				-27.84
		1	74	21.99				-28.01
		75	0	21.00				-29.00
BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit [dBm/MHz]	Margin at Max Power [dB]
				819				
10	QPSK	1	0	23.48			50	-26.52
		1	25	23.45				-26.55
		1	49	23.49				-26.51
		50	0	21.97				-28.03
	16QAM	1	0	22.11				-27.89
		1	25	22.03				-27.97
		1	49	22.05				-27.95
		50	0	20.96				-29.04
BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit [dBm/MHz]	Margin at Max Power [dB]
				816.5	819	821.5		
5	QPSK	1	0	26715	26740	26765	50	-26.52
		1	12	23.48	23.45	23.36		-26.56
		1	24	23.31	23.44	23.33		-26.54
		25	0	23.42	23.46	23.41		-28.05
	16QAM	1	0	21.95	21.93	21.91		-27.86
		1	12	22.12	22.13	22.14		-27.81
		1	24	22.17	22.19	21.96		-27.87
		25	0	22.11	22.10	22.13		-29.03
BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit [dBm/MHz]	Margin at Max Power [dB]
				815.5	819	822.5		
3	QPSK	1	0	26705	26740	26775	50	-26.52
		1	12	23.44	23.48	23.44		-26.49
		1	14	23.45	23.37	23.51		-26.53
		15	0	23.46	23.38	23.47		-28.01
	16QAM	1	0	21.99	21.94	21.92		-27.94
		1	7	22.02	22.04	22.06		-27.81
		1	14	22.19	22.10	22.12		-27.85
		15	0	22.01	22.03	22.15		-29.03
BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit [dBm/MHz]	Margin at Max Power [dB]
				814.7	819	823.3		
1.4	QPSK	1	0	26697	26740	26783	50	-26.59
		1	3	23.41	23.38	23.36		-26.55
		1	5	23.45	23.44	23.39		-26.51
		6	0	23.49	23.41	23.41		-27.98
	16QAM	1	0	22.02	21.91	21.93		-27.95
		1	3	22.05	21.97	22.04		-27.69
		1	5	22.06	22.31	22.19		-27.94
		6	0	22.04	22.01	22.06		-28.99

Table 4-3 Conducted Output Power Data LTE Band14 Ant1

BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit	Margin at Max Power
				793				
				23330			[dBm]	[dB]
10	QPSK	1	0	24.87			50	-25.13
		1	25	24.77				-25.23
		1	49	24.71				-25.29
		50	0	23.28				-26.72
	16QAM	1	0	23.45				-26.55
		1	25	23.38				-26.62
		1	49	23.28				-26.72
		50	0	22.25				-27.75
BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit	Margin at Max Power
				790.5	793	795.5		
				23305	23330	23355	[dBm]	[dB]
5	QPSK	1	0	24.80	24.83	24.81	50	-25.17
		1	12	24.72	24.82	24.74		-25.18
		1	24	24.78	24.77	24.68		-25.22
		25	0	23.31	23.26	23.20		-26.69
	16QAM	1	0	23.55	23.53	23.46		-26.45
		1	12	23.44	23.67	23.25		-26.33
		1	24	23.37	23.49	23.46		-26.51
		25	0	22.32	22.25	22.16		-27.68

Table 4-4 Conducted Output Power Data LTE Band14 Ant2

BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit [dBm]	Margin at Max Power [dB]
				793				
				23330				
10	QPSK	1	0	23.69			50	-26.31
		1	25	23.66				-26.34
		1	49	23.59				-26.41
		50	0	22.11				-27.89
	16QAM	1	0	22.28				-27.72
		1	25	22.39				-27.61
		1	49	22.17				-27.83
		50	0	21.11				-28.89
BW [MHz]	Modulation	RB Size	RB Offset	Frequency [MHz] / Earfcn			Limit [dBm]	Margin at Max Power [dB]
				790.5	793	795.5		
				23305	23330	23355		
5	QPSK	1	0	23.70	23.62	23.74	50	-26.26
		1	12	23.58	23.67	23.49		-26.33
		1	24	23.66	23.62	23.66		-26.34
		25	0	22.17	22.14	22.09		-27.83
	16QAM	1	0	22.34	22.35	22.34		-27.65
		1	12	22.36	22.46	22.13		-27.54
		1	24	23.32	22.37	22.35		-26.68
		25	0	21.22	21.13	21.08		-28.78

4.5. Occupied & Emission Bandwidth

4.5.1. Regulatory Limit

The following test is for reporting purposes only.

§Part. 2.1049(h)

4.5.2. Test Method

ANSI C63.26-2015, clause 5.4

4.5.3. Test Procedure

The automatic bandwidth measurement function of the spectrum analyzer was used.

The procedure for this method is follows:

- a) Set center frequency to the nominal EUT channel center frequency.
- b) Set SPAN ≥ 1.5 times the OBW.
- c) Set RBW = 1% to 5% of the OBW (RBW - IF 3 dB filter)
- d) Set VBW $\geq 3 \times$ RBW
- e) Detector = Peak
- f) Trace mode = max-hold
- g) Allow the trace to stabilize

Test Note

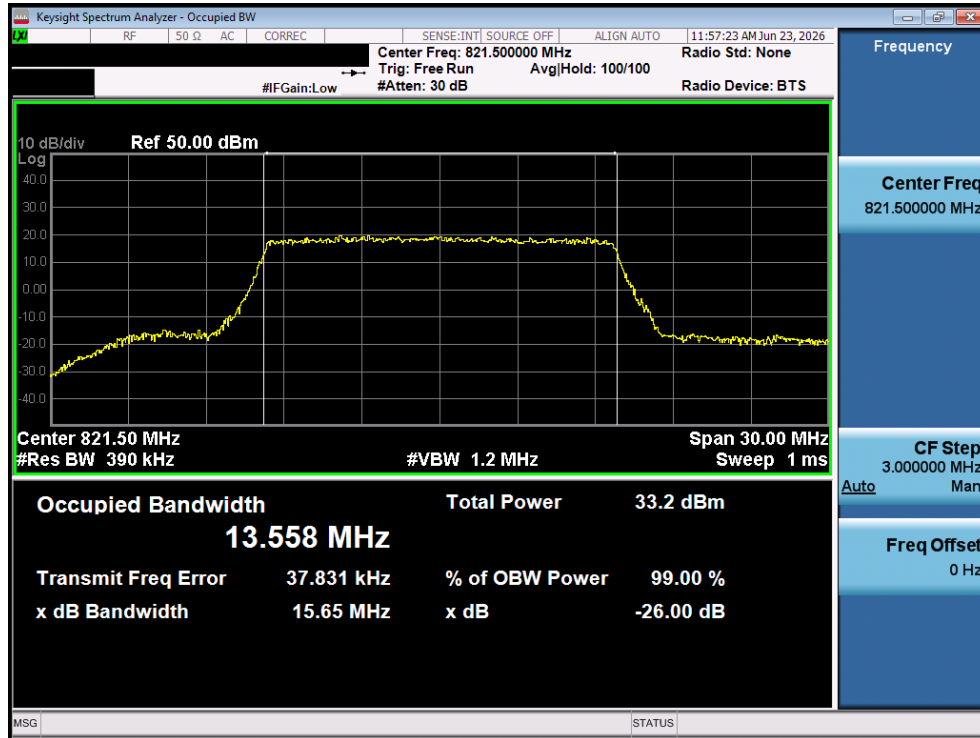
- ✓ All modulation were evaluated, and only the worst-case results are reported herein.
- ✓ The 26 dB Bandwidth data from this section were used to perform the Section 4.7 Conducted Band Edge testing.

4.5.4. Test Results

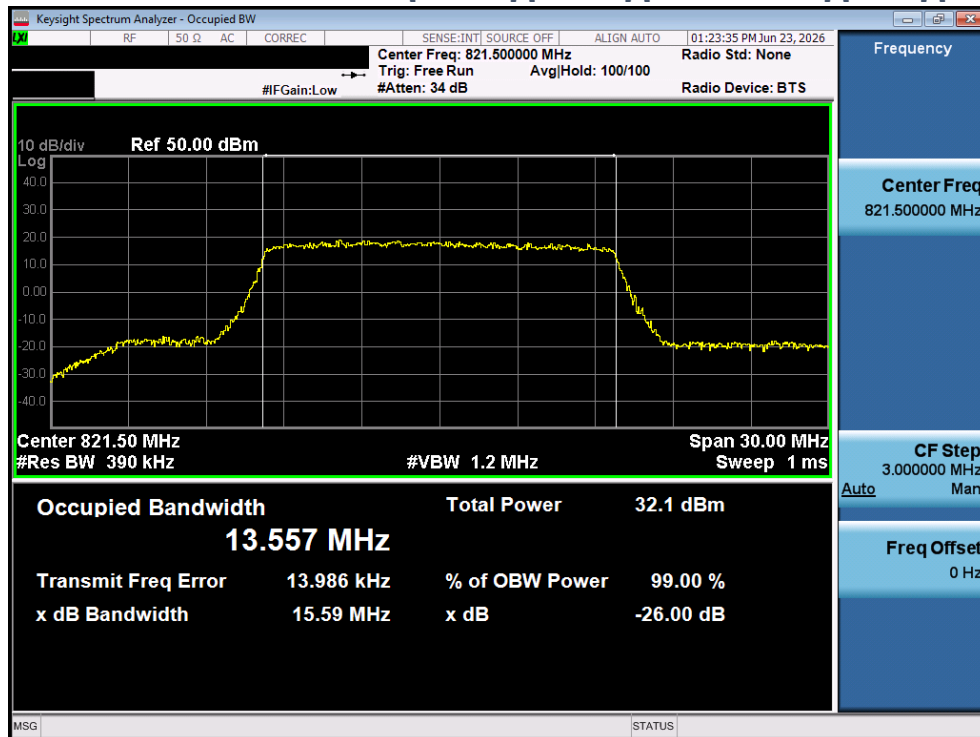
Table 4-5 OBW and 26dB Bandwidth Data LTE Band 26

Band	Band Width [MHz]	Frequency [MHz]	Earfcn UL	RB Size/Offset	Modulation	Occupied Bandwidth [MHz]		26 dB Bandwidth [MHz]	
						Ant1	Ant2	Ant1	Ant2
LTE Band 26	15	821.5	26765	75/0	QPSK	13.56	13.56	15.65	15.59
					16QAM	13.55	13.54	15.49	15.43
	10	819	26740	50/0	QPSK	9.09	9.09	10.67	10.62
					16QAM	9.08	9.08	10.68	10.68
	5	819	26740	25/0	QPSK	4.59	4.60	5.46	5.47
					16QAM	4.56	4.55	5.47	5.45
	3	819	26740	15/0	QPSK	2.76	2.76	3.20	3.21
					16QAM	2.76	2.75	3.18	3.21
	1.4	819	26740	6/0	QPSK	1.11	1.10	1.37	1.29
					16QAM	1.11	1.11	1.35	1.35

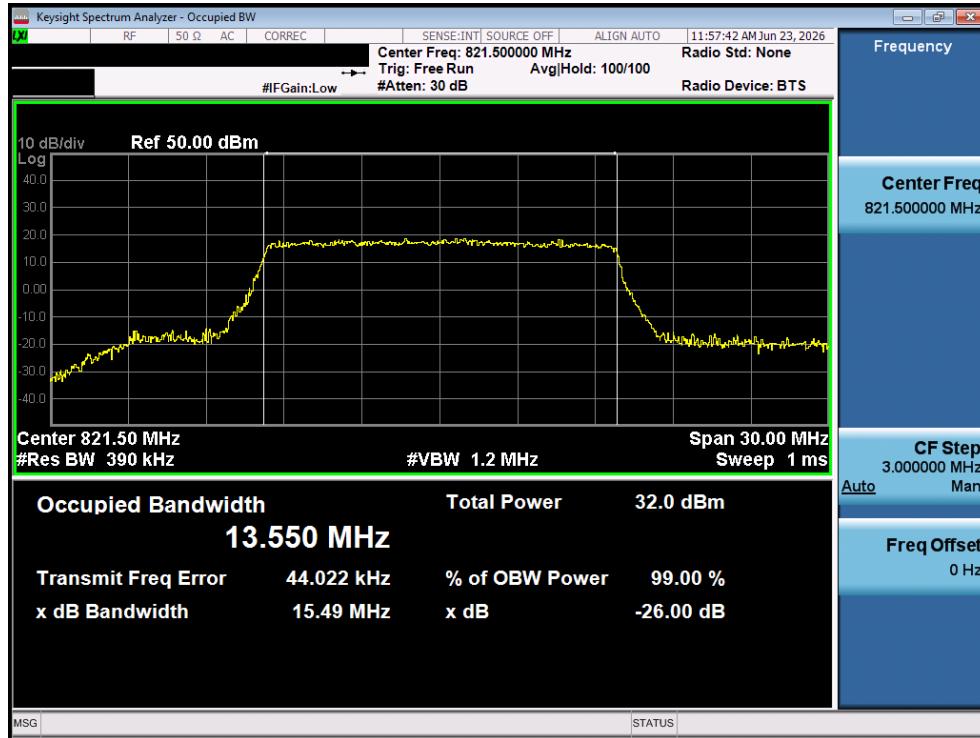
Plot 4-1 OBW Plot - LTE Band26 - [15MHz] [Full RB] [Mid Channel] [QPSK] [Ant 1]



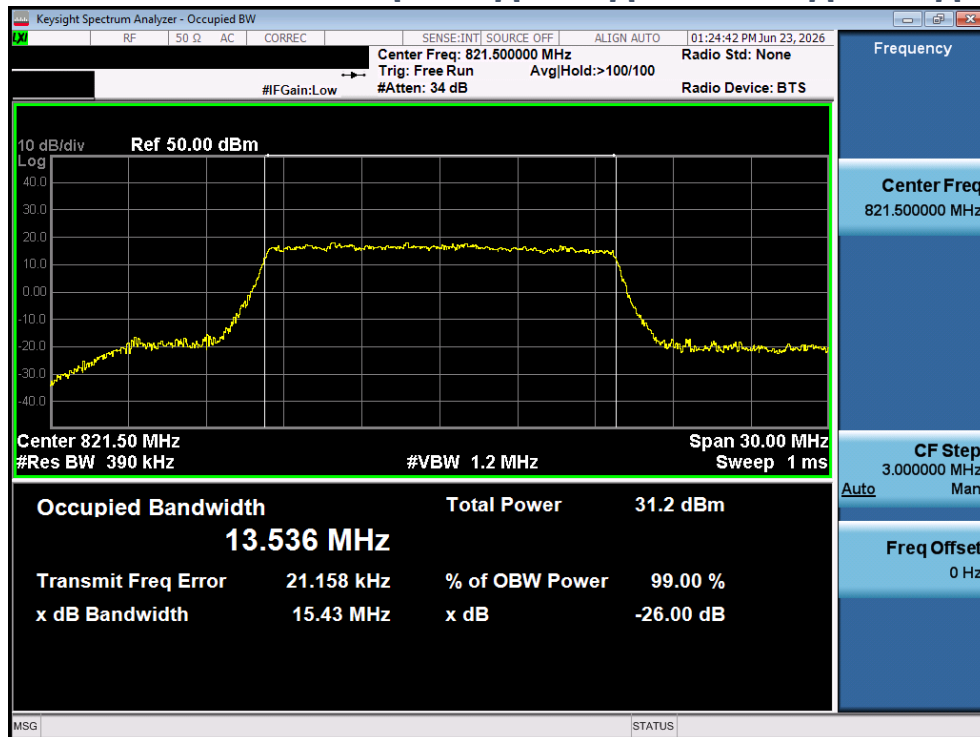
Plot 4-2 OBW Plot - LTE Band26 - [15MHz] [Full RB] [Mid Channel] [QPSK] [Ant 2]



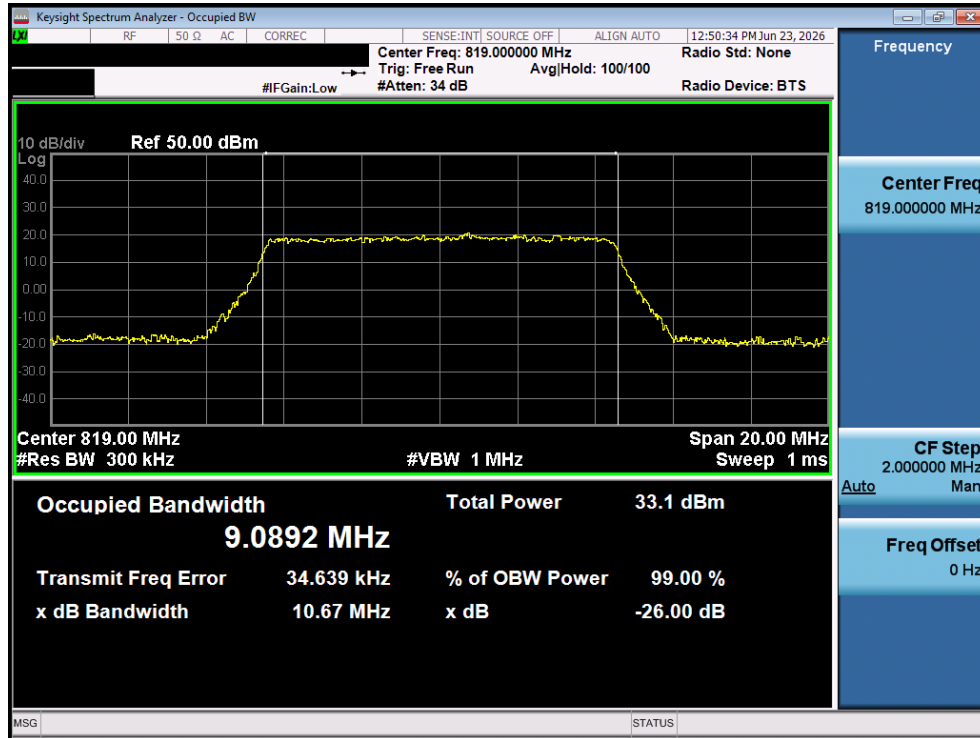
Plot 4-3 OBW Plot - LTE Band26 - [15MHz] [Full RB] [Mid Channel] [16QAM] [Ant 1]



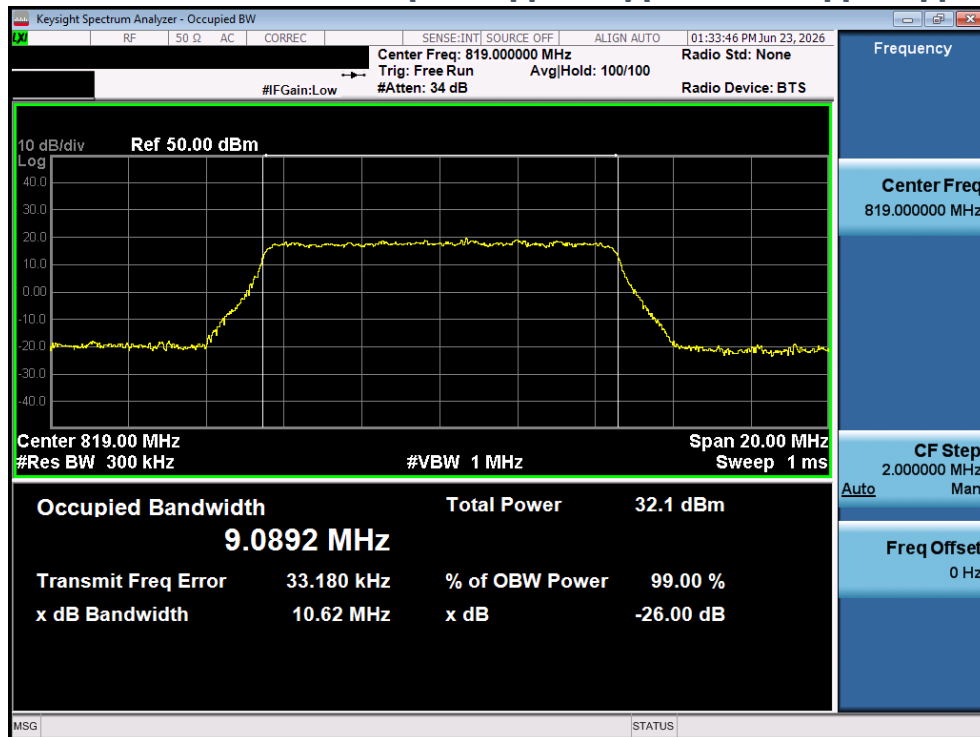
Plot 4-4 OBW Plot - LTE Band26 - [15MHz] [Full RB] [Mid Channel] [16QAM] [Ant 2]



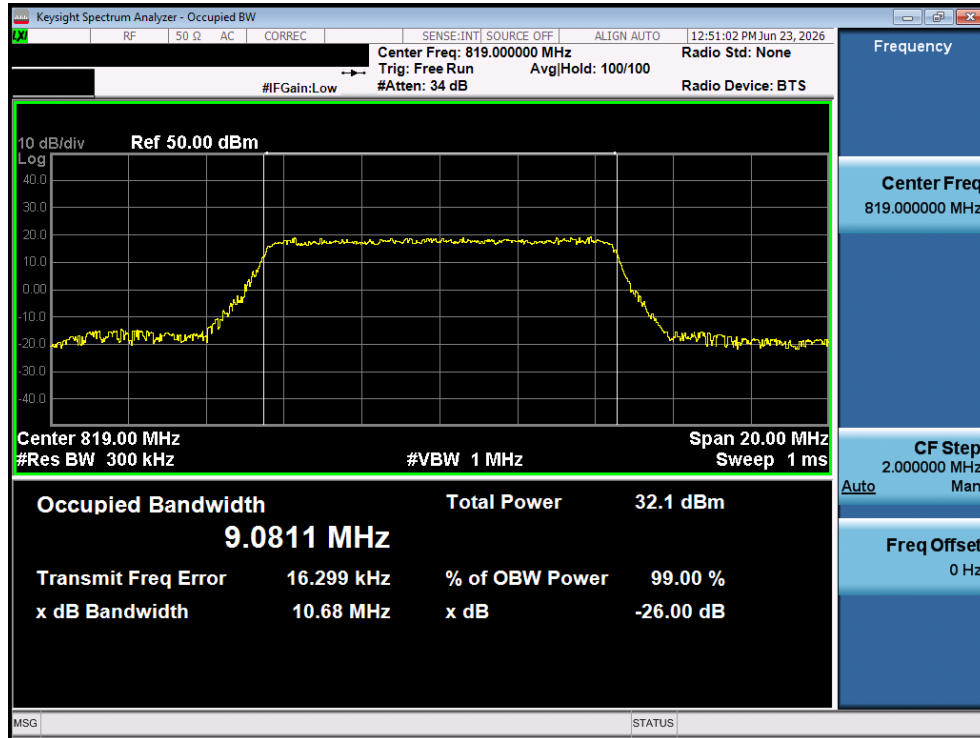
Plot 4-5 OBW Plot - LTE Band26 - [10MHz] [Full RB] [Mid Channel] [QPSK] [Ant 1]



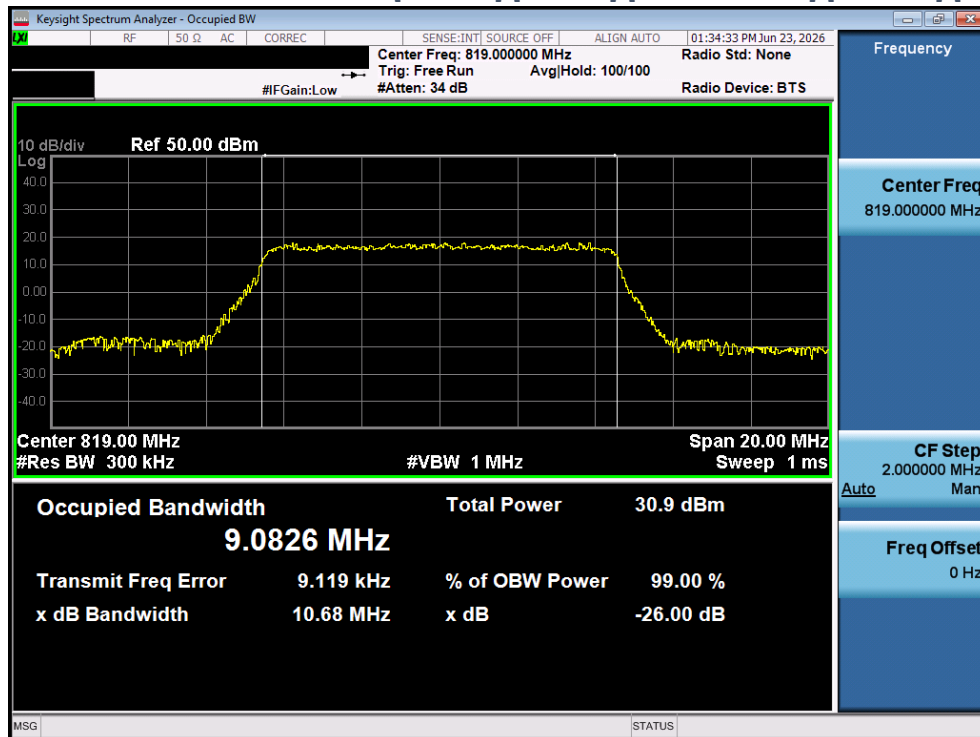
Plot 4-6 OBW Plot - LTE Band26 - [10MHz] [Full RB] [Mid Channel] [QPSK] [Ant 2]



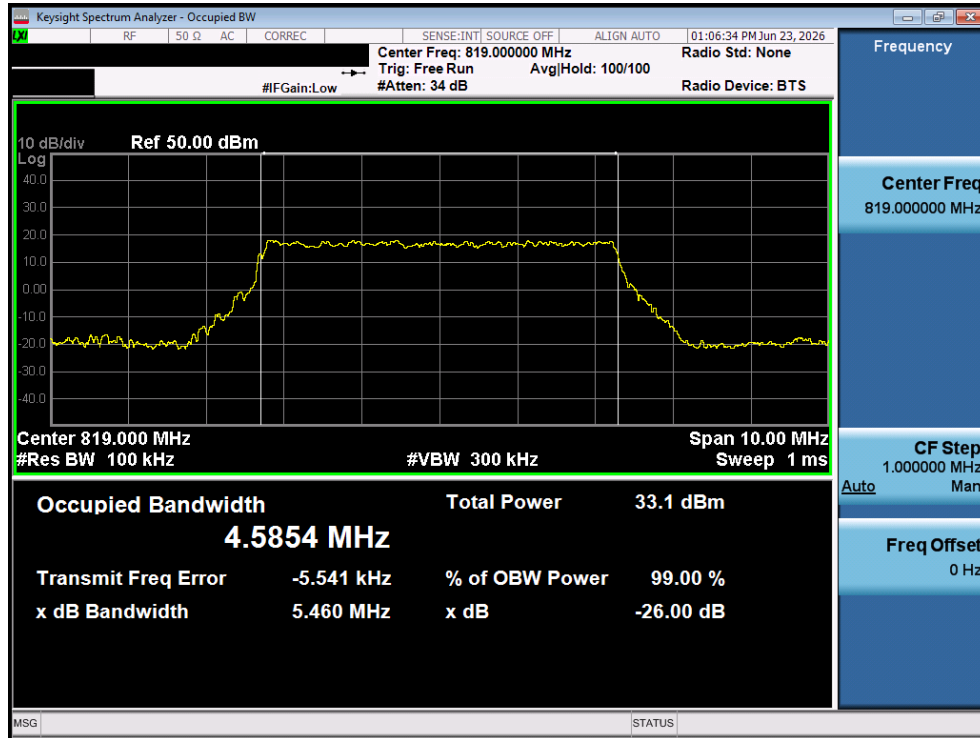
Plot 4-7 OBW Plot - LTE Band26 - [10MHz] [Full RB] [Mid Channel] [16QAM] [Ant 1]



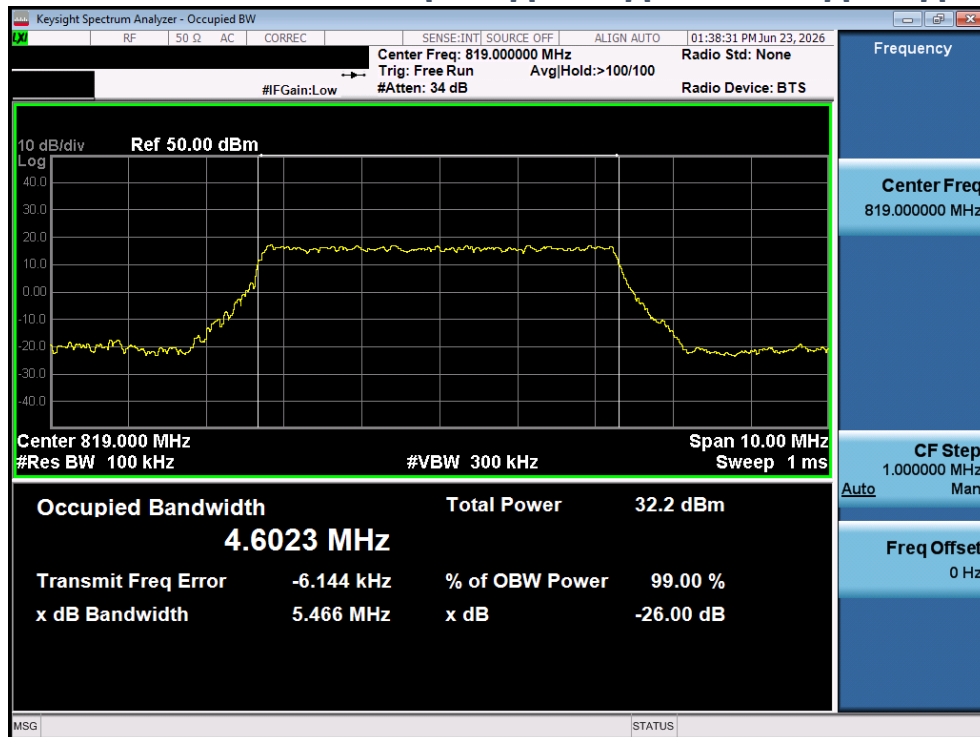
Plot 4-8 OBW Plot - LTE Band26 - [10MHz] [Full RB] [Mid Channel] [16QAM] [Ant 2]



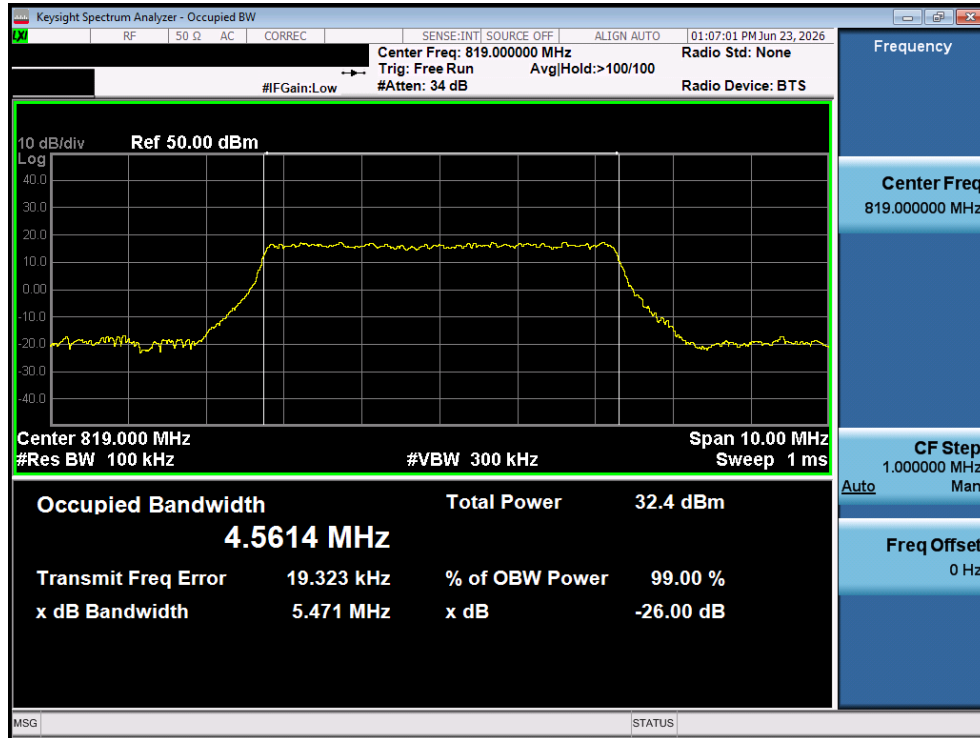
Plot 4-9 OBW Plot - LTE Band26 - [5MHz] [Full RB] [Mid Channel] [QPSK] [Ant 1]



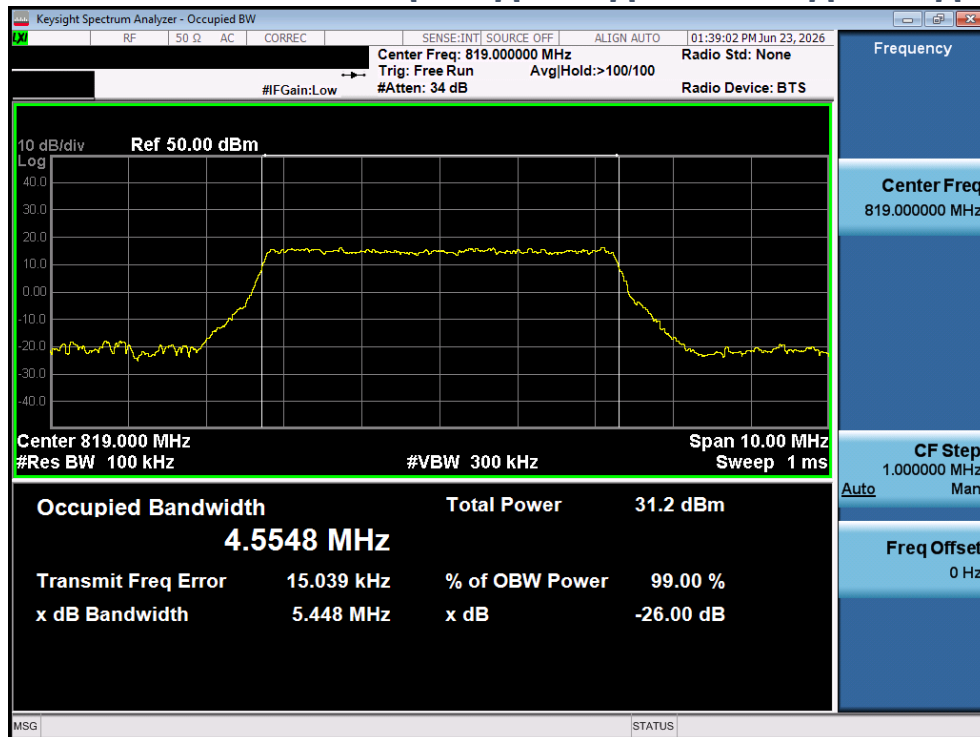
Plot 4-10 OBW Plot - LTE Band26 - [5MHz] [Full RB] [Mid Channel] [QPSK] [Ant 1]



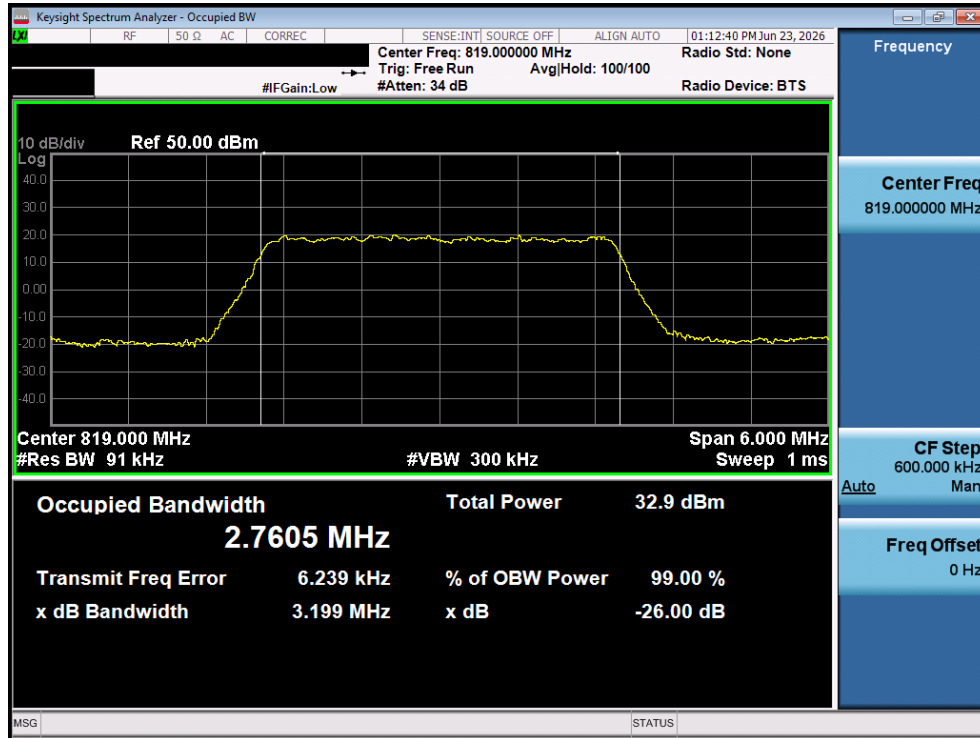
Plot 4-11 OBW Plot - LTE Band26 - [5MHz] [Full RB] [Mid Channel] [16QAM] [Ant 1]



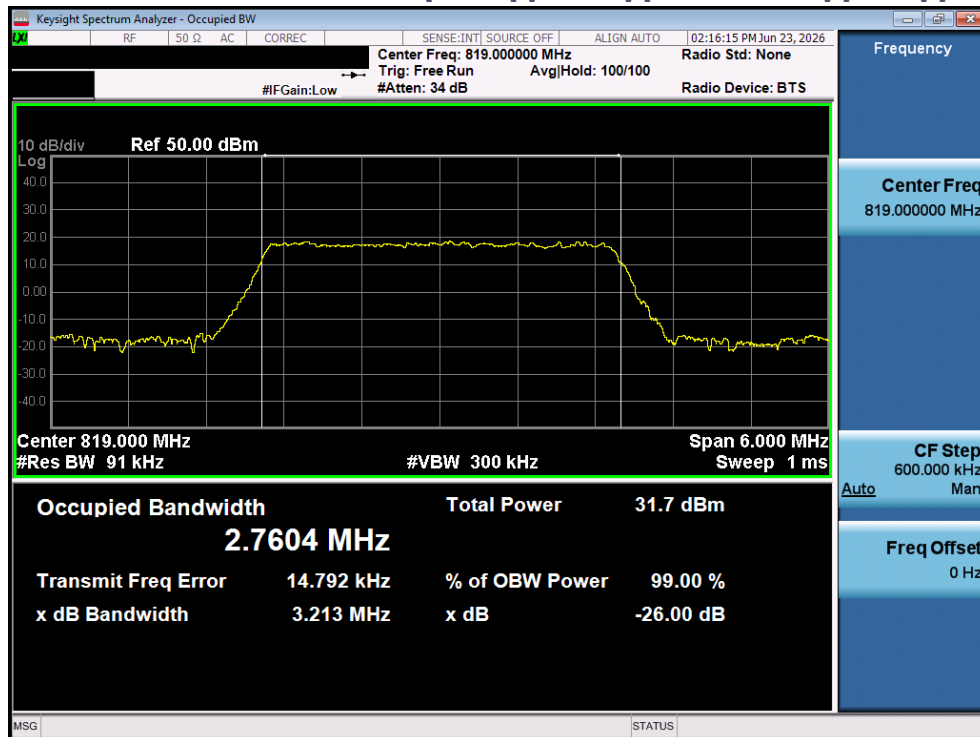
Plot 4-12 OBW Plot - LTE Band26 - [5MHz] [Full RB] [Mid Channel] [16QAM] [Ant 2]



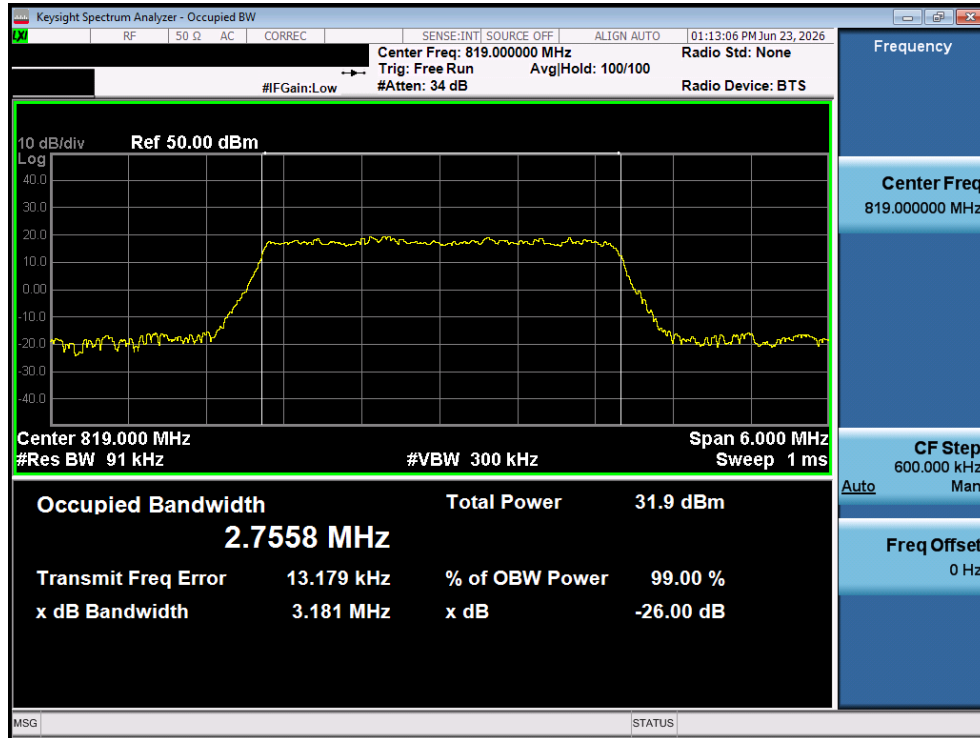
Plot 4-13 OBW Plot - LTE Band26 - [3MHz] [Full RB] [Mid Channel] [QPSK] [Ant 1]



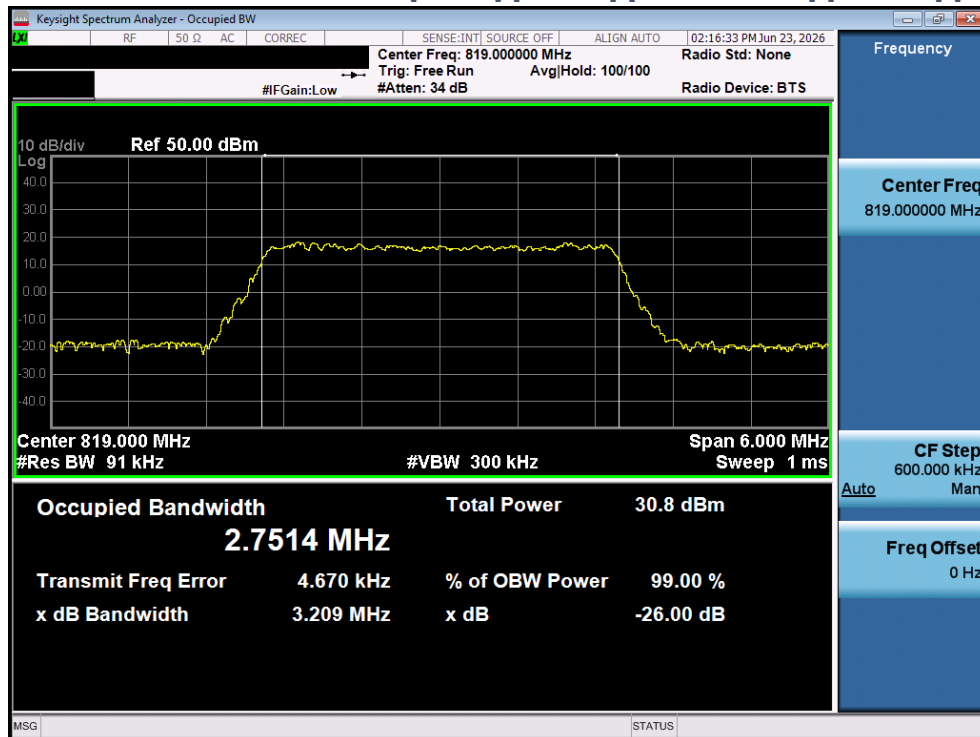
Plot 4-14 OBW Plot - LTE Band26 - [3MHz] [Full RB] [Mid Channel] [QPSK] [Ant 2]



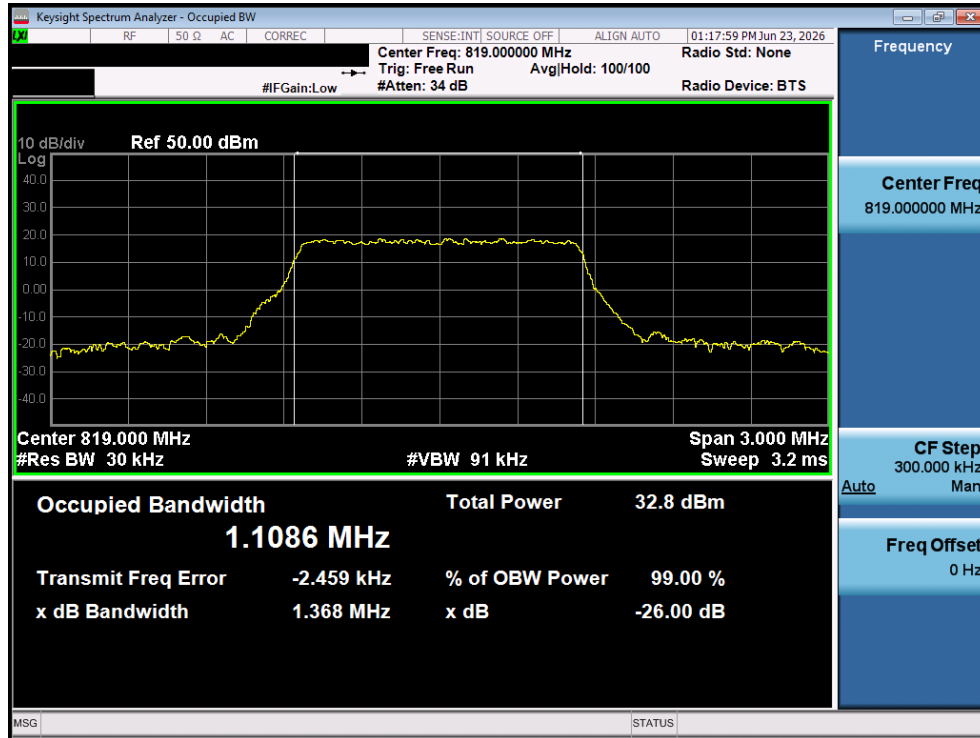
Plot 4-15 OBW Plot - LTE Band26 - [3MHz] [Full RB] [Mid Channel] [16QAM] [Ant 1]



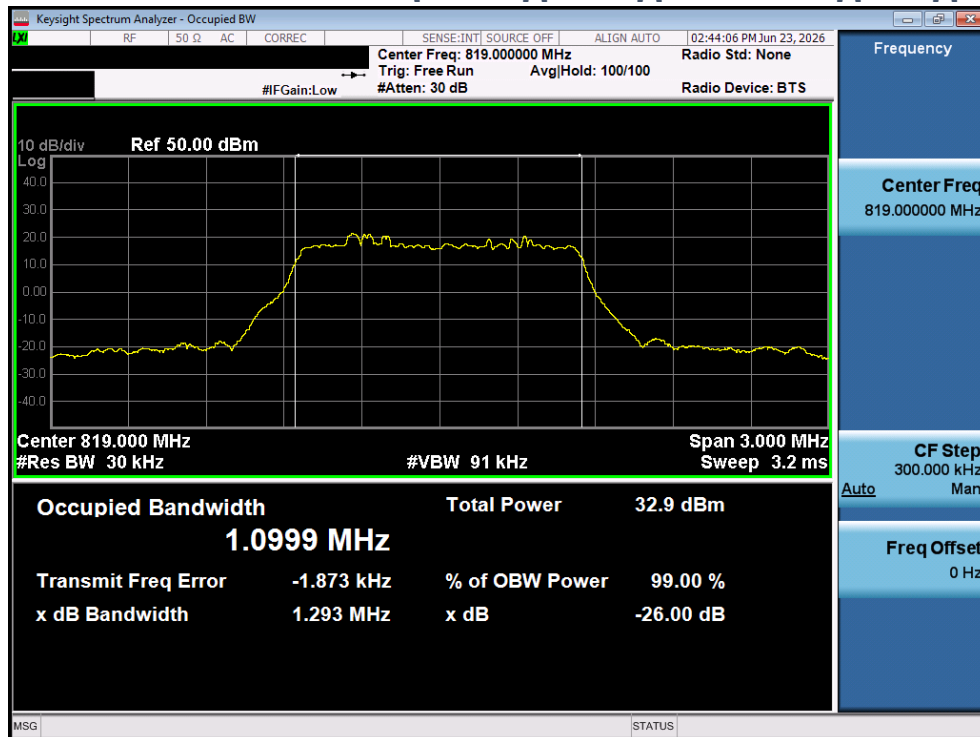
Plot 4-16 OBW Plot - LTE Band26 - [3MHz] [Full RB] [Mid Channel] [16QAM] [Ant 2]



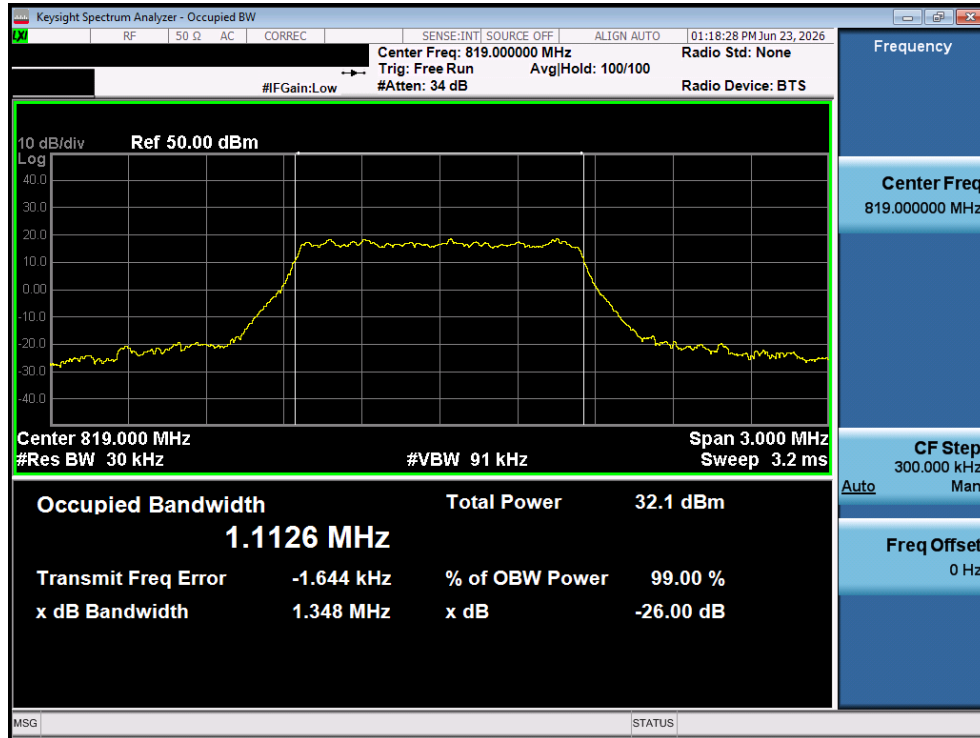
Plot 4-17 OBW Plot - LTE Band26 - [1.4MHz] [Full RB] [Mid Channel] [QPSK] [Ant 1]



Plot 4-18 OBW Plot - LTE Band26 - [1.4MHz] [Full RB] [Mid Channel] [QPSK] [Ant 2]



Plot 4-19 OBW Plot - LTE Band26 - [1.4MHz] [Full RB] [Mid Channel] [16QAM] [Ant 1]



Plot 4-20 OBW Plot - LTE Band26 - [1.4MHz] [Full RB] [Mid Channel] [16QAM] [Ant 2]

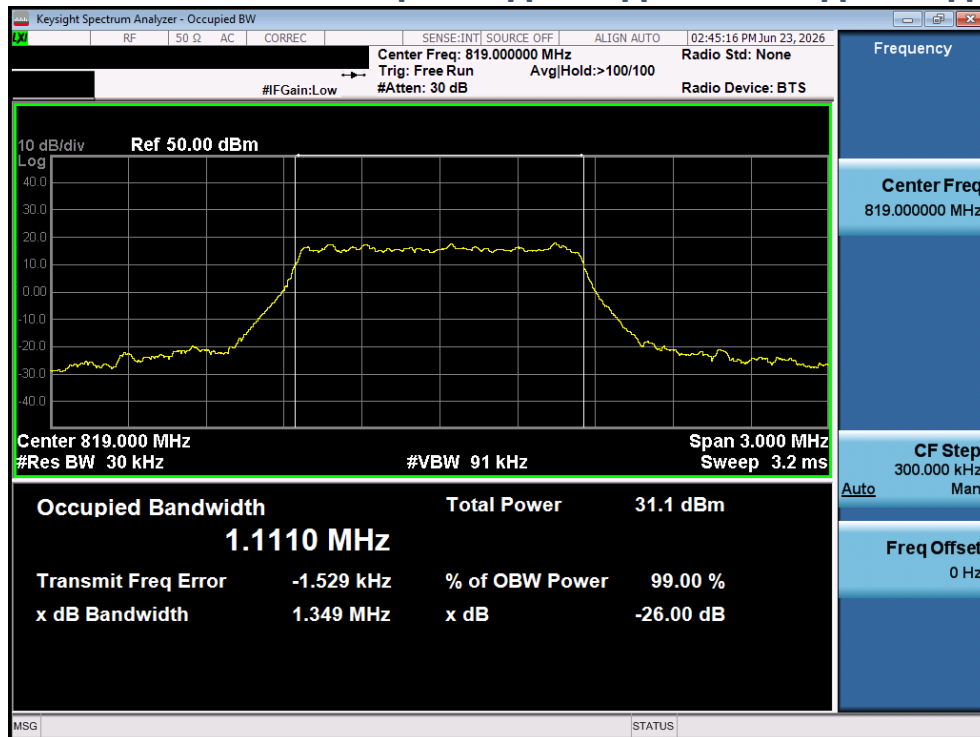
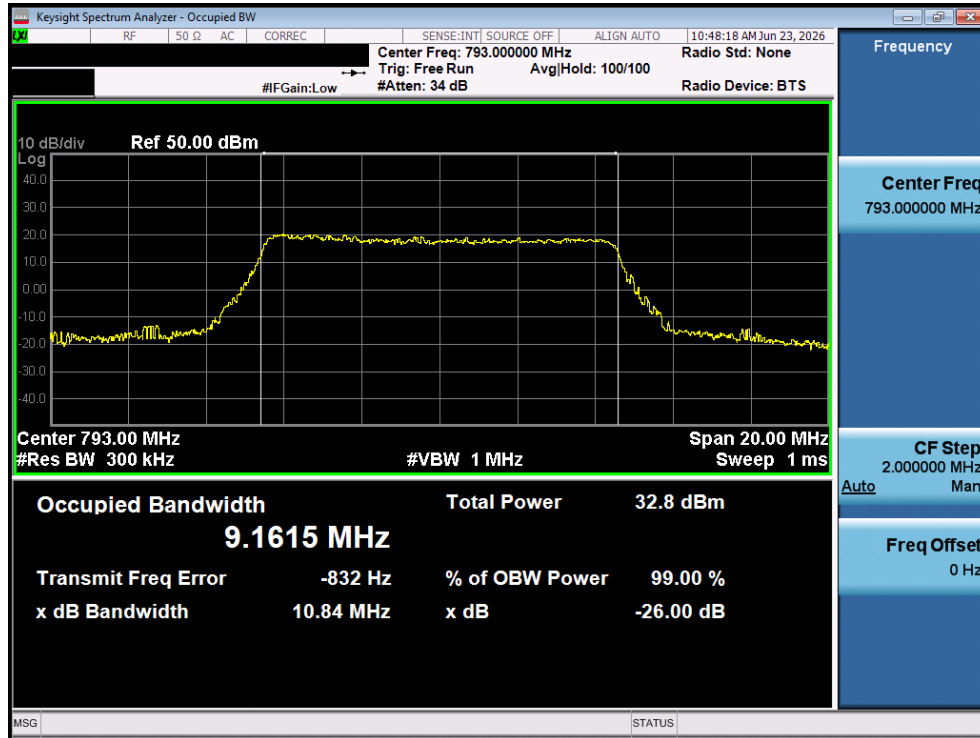


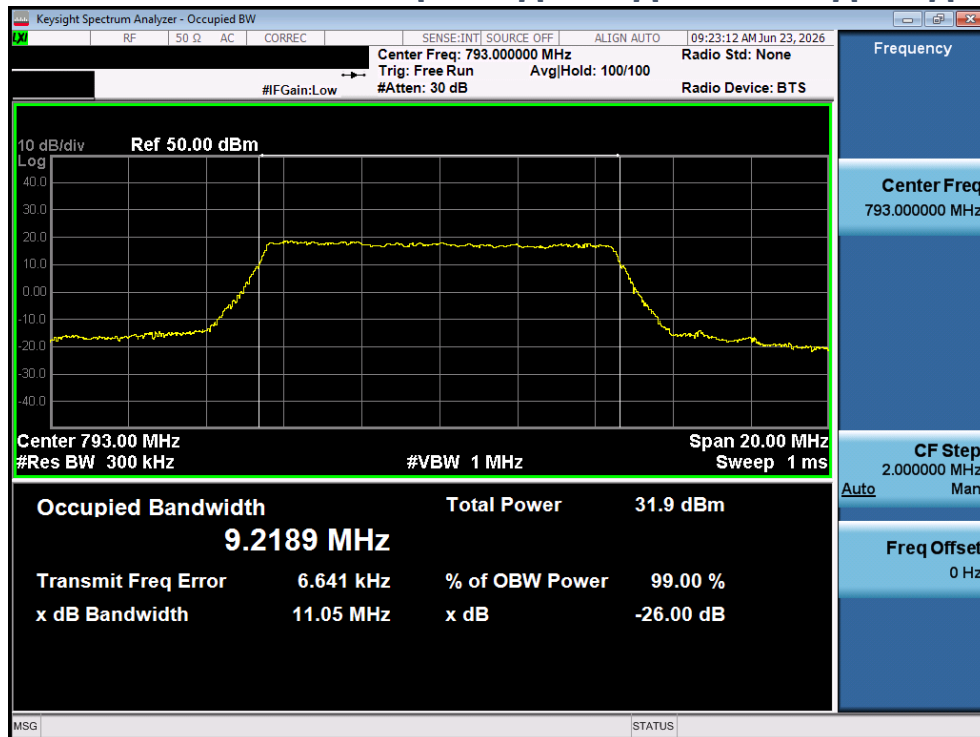
Table 4-6 OBW and 26dB Bandwidth Data LTE Band 14

Band	Band Width [MHz]	Frequency [MHz]	Earfcn UL	RB Size/Offset	Modulation	Occupied Bandwidth [MHz]		26 dB Bandwidth [MHz]	
						Ant1	Ant2	Ant1	Ant2
LTE Band 14	10	793	23330	50/0	QPSK	9.16	9.22	10.84	11.05
					16QAM	9.16	9.16	10.76	10.84
	5	793	23330	25/0	QPSK	4.62	4.59	5.51	5.63
					16QAM	4.56	4.57	5.48	5.48

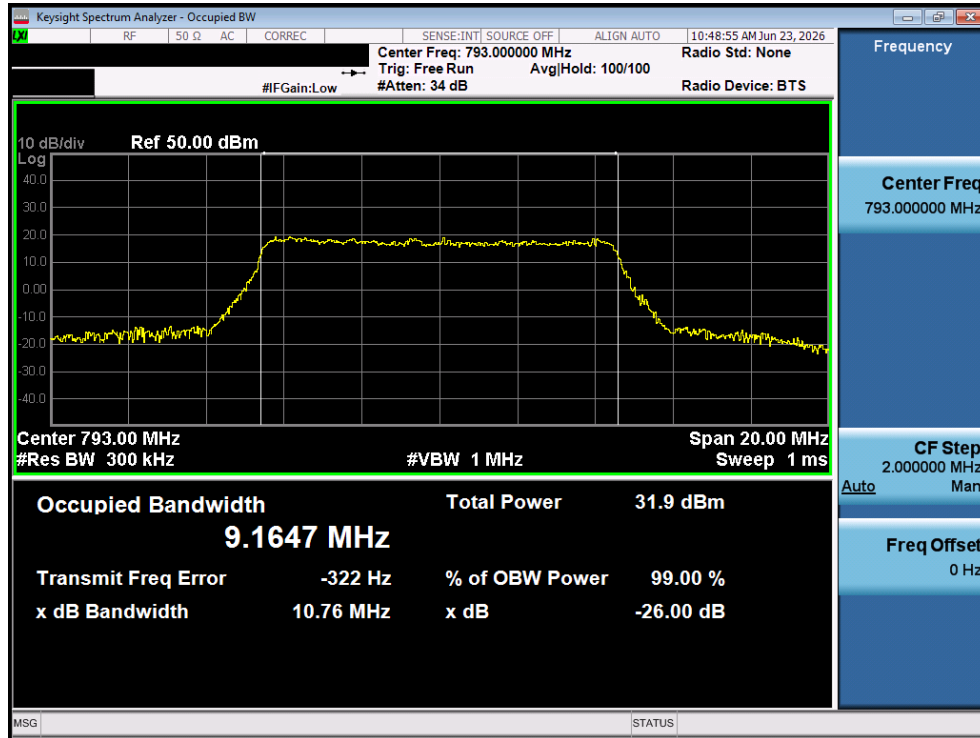
Plot 4-21 OBW Plot - LTE Band14 - [10MHz] [Full RB] [Mid Channel] [QPSK] [Ant 1]



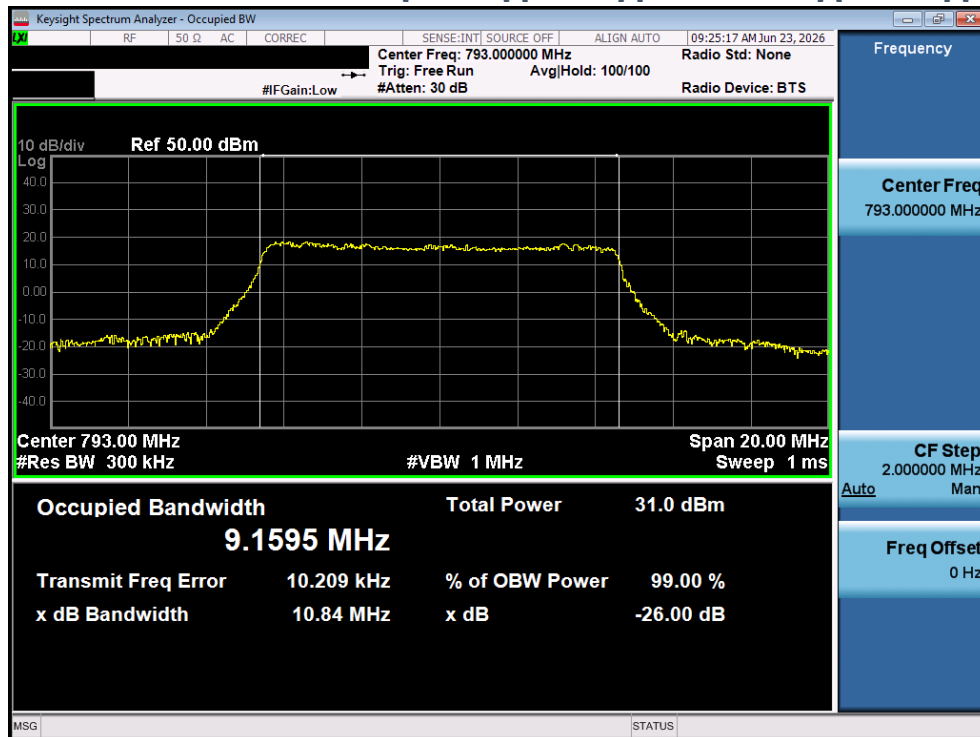
Plot 4-22 OBW Plot - LTE Band14 - [10MHz] [Full RB] [Mid Channel] [QPSK] [Ant 2]



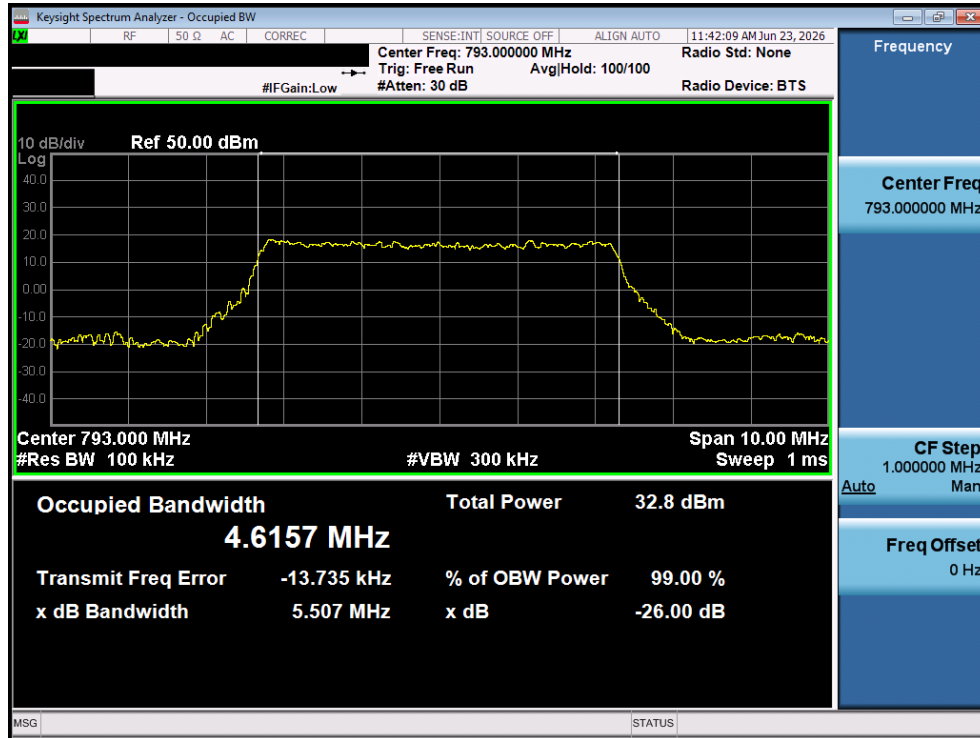
Plot 4-23 OBW Plot - LTE Band14 - [10MHz] [Full RB] [Mid Channel] [16QAM] [Ant 1]



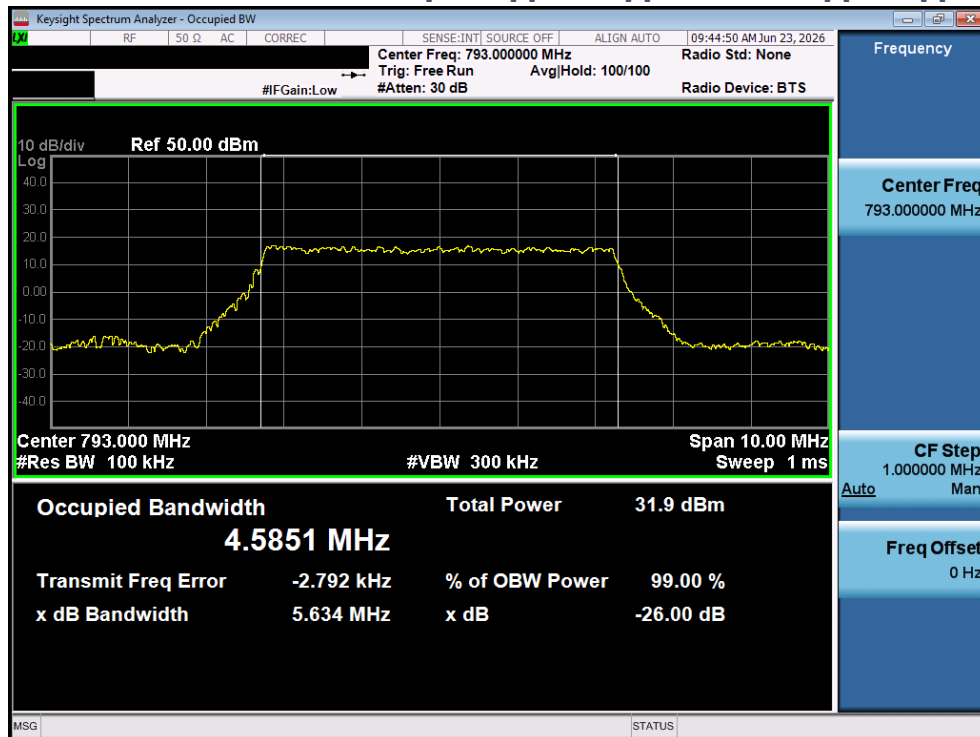
Plot 4-24 OBW Plot - LTE Band14 - [10MHz] [Full RB] [Mid Channel] [16QAM] [Ant 2]



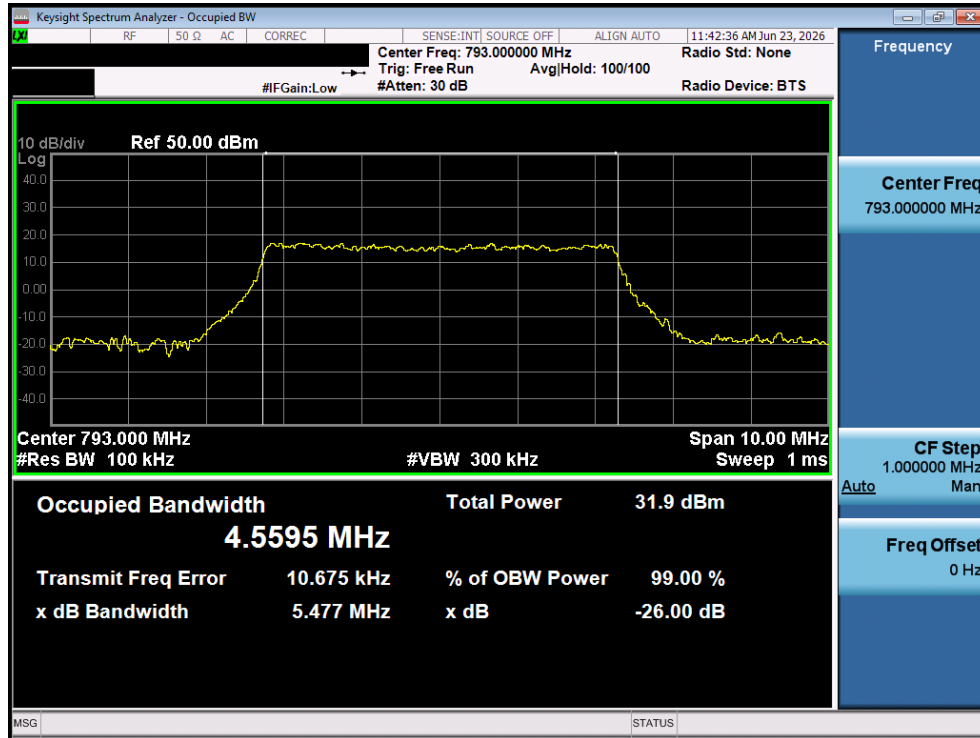
Plot 4-25 OBW Plot - LTE Band14 - [5MHz] [Full RB] [Mid Channel] [QPSK] [Ant 1]



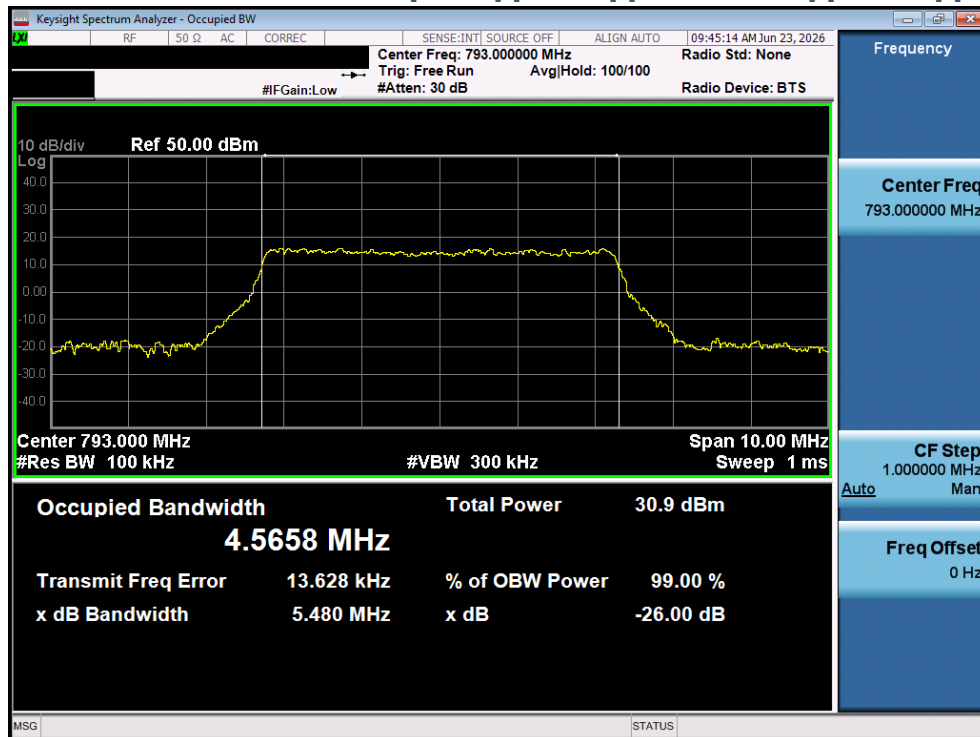
Plot 4-26 OBW Plot - LTE Band14 - [5MHz] [Full RB] [Mid Channel] [QPSK] [Ant 2]



Plot 4-27 OBW Plot - LTE Band14 - [5MHz] [Full RB] [Mid Channel] [16QAM] [Ant 1]



Plot 4-28 OBW Plot - LTE Band14 - [5MHz] [Full RB] [Mid Channel] [16QAM] [Ant 2]



4.6. Band Edge Emissions

4.6.1. Regulatory Limit

§Part. 90.543(c) for LTE Band 14

On any frequency outside of the frequency ranges covered by the ACP tables in this section, the power of any emission must be reduced below the mean output power (P) by at least $43 + 10\log(P)$ dB measured in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

§Part. 90.543(e) for LTE Band 14

The frequency band of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.
- (2) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log(P)$ dB

§Part. 90.691(a) for LTE Band 26

Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

- (1) The frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $50 + 10 \log_{10}(P)$
- (2) The frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10\log(P)$ dB

4.6.2. Test Method

ANSI C63.26-2015, clause 5.7.3

4.6.3. Test Procedure

The band edge emissions for LTE Band 26 were measured using the Adjacent Channel Power (ACP) function of the spectrum analyzer

The procedure for this method is follows:

- a) Set the spectrum analyzer center frequency to the block, band, or channel edge frequency.
- b) Set the span wide enough to capture the fundamental emission closest to the authorized block.
- c) Set RBW = 100 kHz
- d) Set the VBW $\geq 3 \times$ RBW.
- e) Set Number of points Sweep $\geq 2 \times$ span/RBW
- f) Detector = RMS
- g) Trace mode = Average
- h) Sweep time = auto

Test Note

- ✓ Per §Part. 90.543(e)(4), Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.
- ✓ Per §Part. 90.543(e)(5), Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.
- ✓ For §Part. 90.543(a), RBW=300Hz for offset less than 37.5kHz from channel edge and RBW=100kHz for offsets greater than 37.5kHz is allowed
- ✓ For cases where the duty cycle was less than 98%, measurements were performed using a gated trigger.
- ✓ All modulation were evaluated, and only the worst-case results are reported herein.
- ✓ Although 1RB and Half RB allocations were evaluated along with the Full RB, only the worst-case results are reported herein.

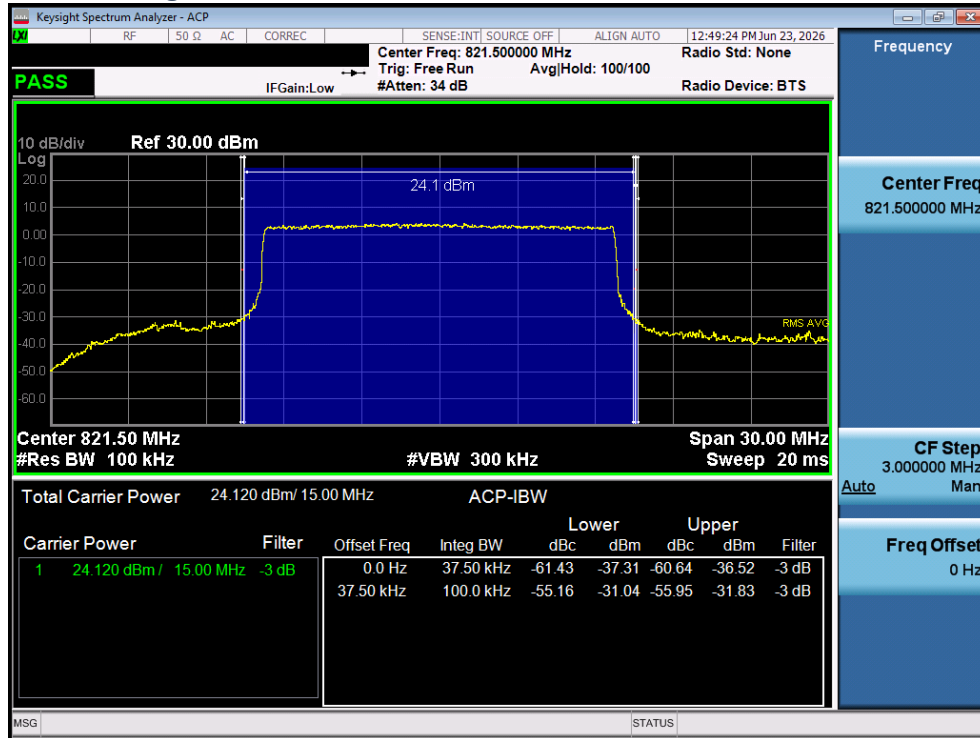
4.6.4. Test Results

Table 4-7 Band Edge Emissions Data LTE Band26 Ant 1

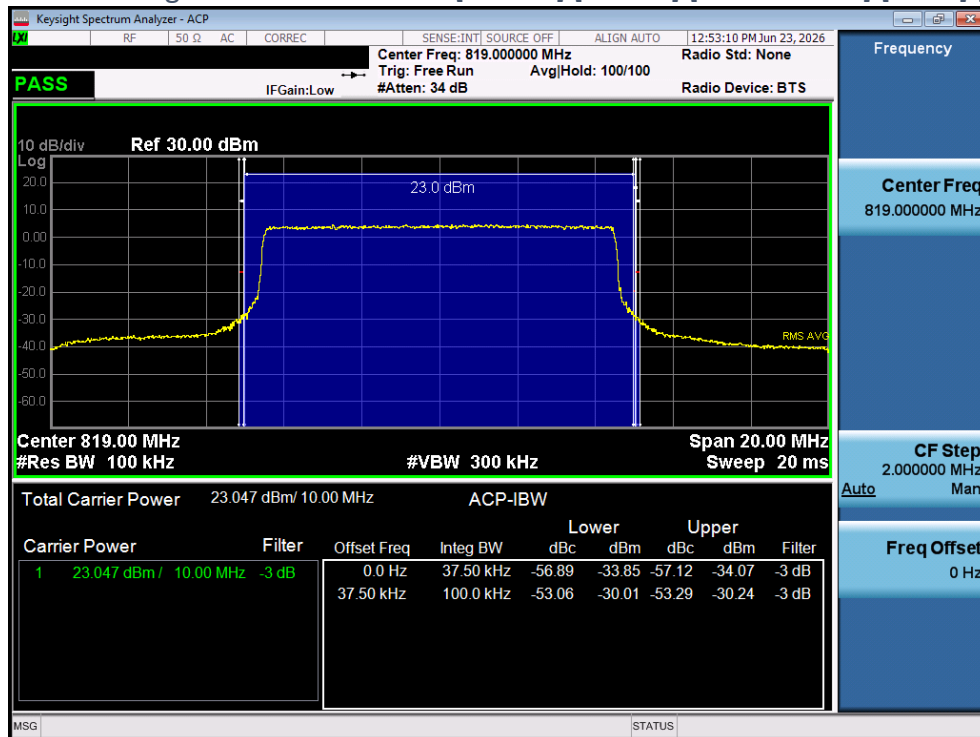
Band	Band Width [MHz]	Frequency [MHz]	RB Size/Offset	Modulation	Edge Side	Offset Freq [kHz]	Level [dBm]	Limit [dBm]	Margin [dB]
LTE Band 26 Ant 1	15	821.5	75/0	QPSK	Lower	37.50	-37.31	-20	-17.31
					Upper	37.50	-36.52	-20	-16.52
	10	819.0	50/0	QPSK	Lower	37.50	-33.85	-20	-13.85
					Upper	37.50	-34.07	-20	-14.07
	5	816.5	25/0	QPSK	Lower	37.50	-24.30	-20	-4.30
					Upper	37.50	-24.49	-20	-4.49
		819.0	25/0	QPSK	Lower	37.50	-25.86	-20	-5.86
					Upper	37.50	-22.20	-20	-2.20
		821.5	25/0	QPSK	Lower	37.50	-26.17	-20	-6.17
					Upper	37.50	-25.40	-20	-5.4
	3	815.5	15/0	QPSK	Lower	37.50	-23.71	-20	-3.71
					Upper	37.50	-23.80	-20	-3.80
		819.0	15/0	QPSK	Lower	37.50	-23.65	-20	-3.65
					Upper	37.50	-22.21	-20	-2.21
		822.5	15/0	QPSK	Lower	37.50	-25.59	-20	-5.59
					Upper	37.50	-22.47	-20	-2.47
	1.4	814.7	6/0	QPSK	Lower	37.50	-22.95	-20	-2.95
					Upper	37.50	-23.67	-20	-3.67
		819.0	6/0	QPSK	Lower	37.50	-23.51	-20	-3.51
					Upper	37.50	-22.62	-20	-2.62
		823.3	6/0	QPSK	Lower	37.50	-24.77	-20	-4.77
					Upper	37.50	-24.38	-20	-4.38

Note - The 15 MHz channel bandwidth is supported only in LTE Band 26 (straddle)

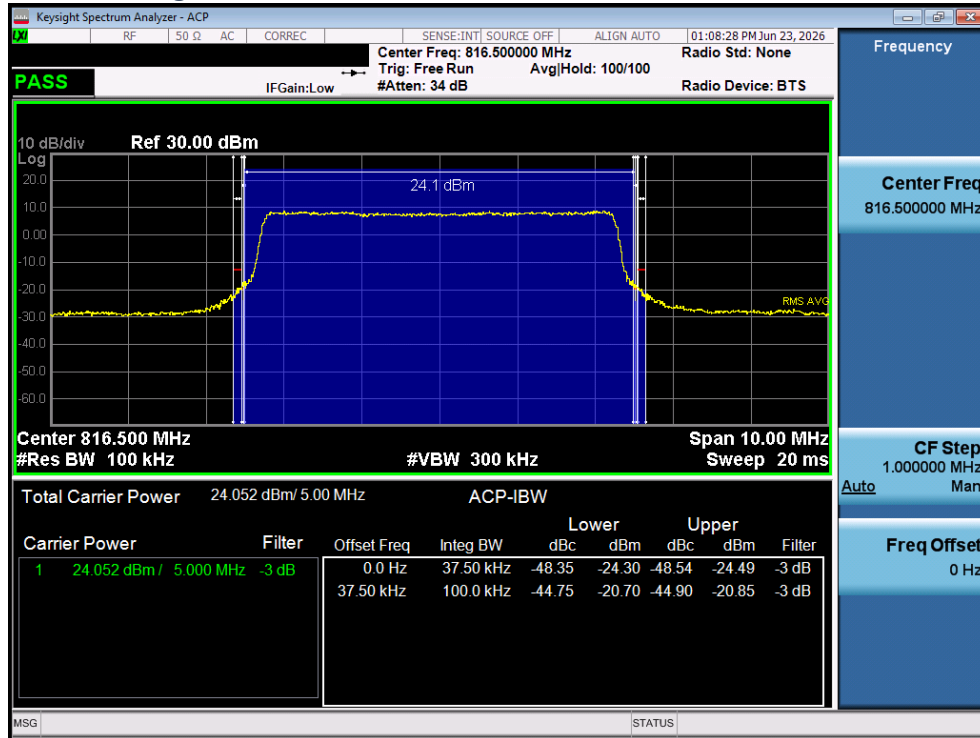
Plot 4-29 Band Edge Plot - LTE Band26 - [15MHz] [Full RB] [Mid Channel] [QPSK] [Ant 1]



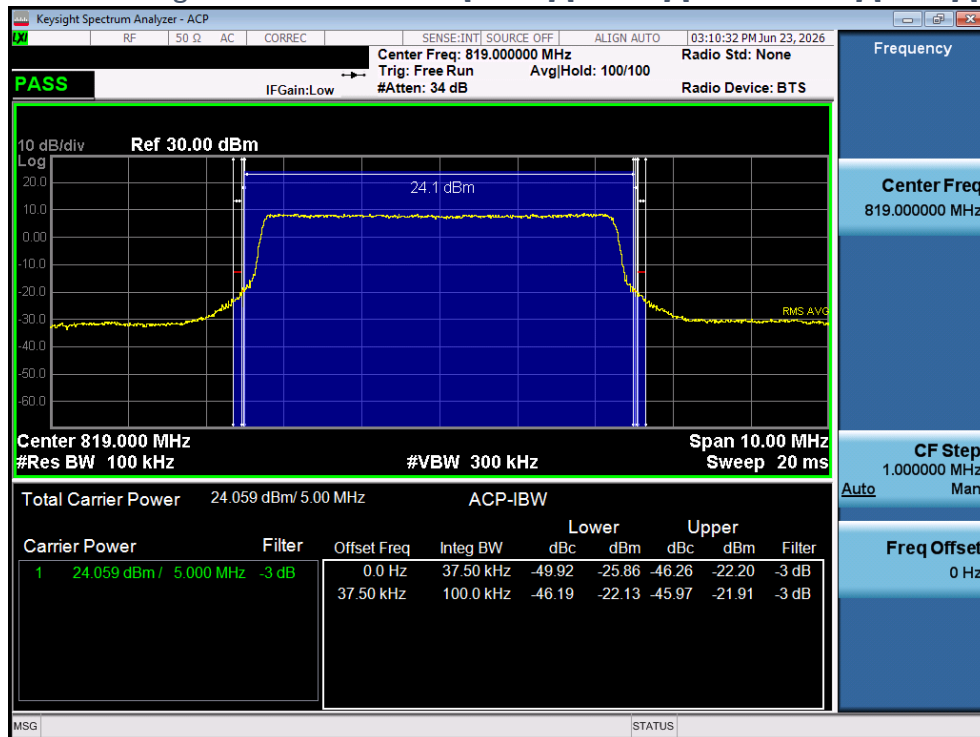
Plot 4-30 Band Edge Plot - LTE Band26 - [10MHz] [Full RB] [Mid Channel] [QPSK] [Ant 1]



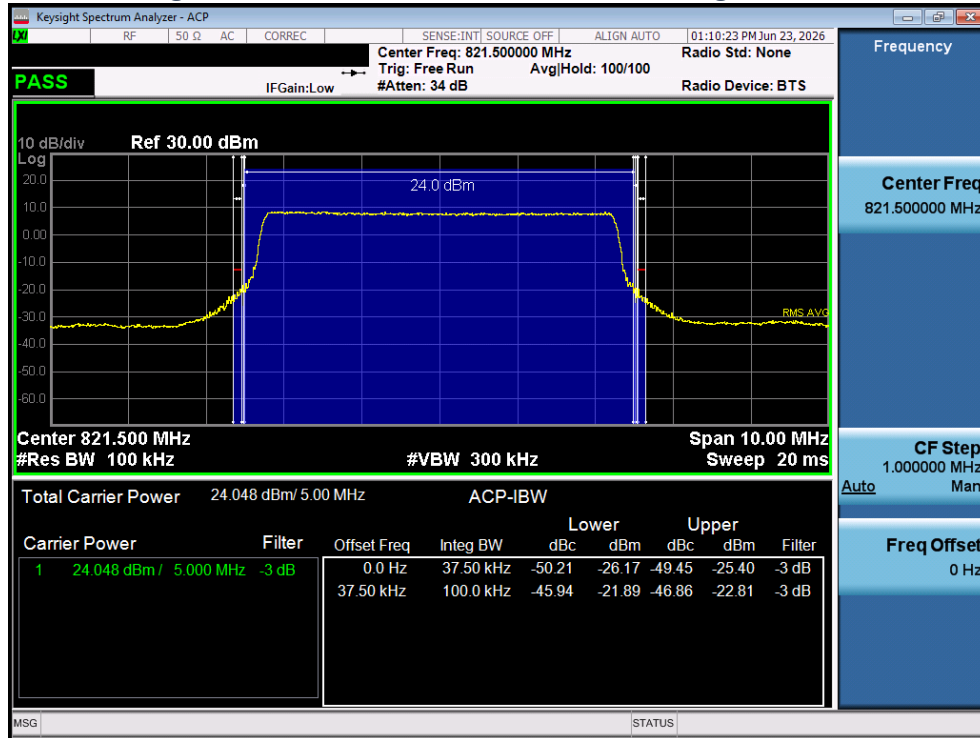
Plot 4-31 Band Edge Plot - LTE Band26 - [5MHz] [Full RB] [Low Channel] [QPSK] [Ant 1]



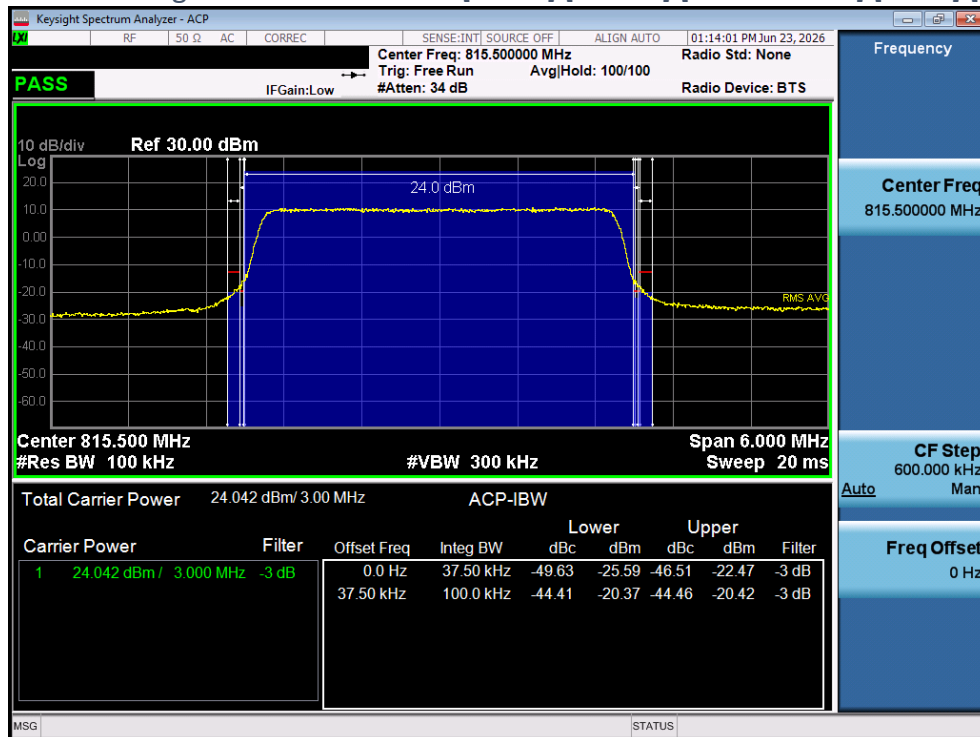
Plot 4-32 Band Edge Plot - LTE Band26 - [5MHz] [Full RB] [Mid Channel] [QPSK] [Ant 1]



Plot 4-33 Band Edge Plot - LTE Band26 - [5MHz] [Full RB] [High Channel] [QPSK] [Ant 1]

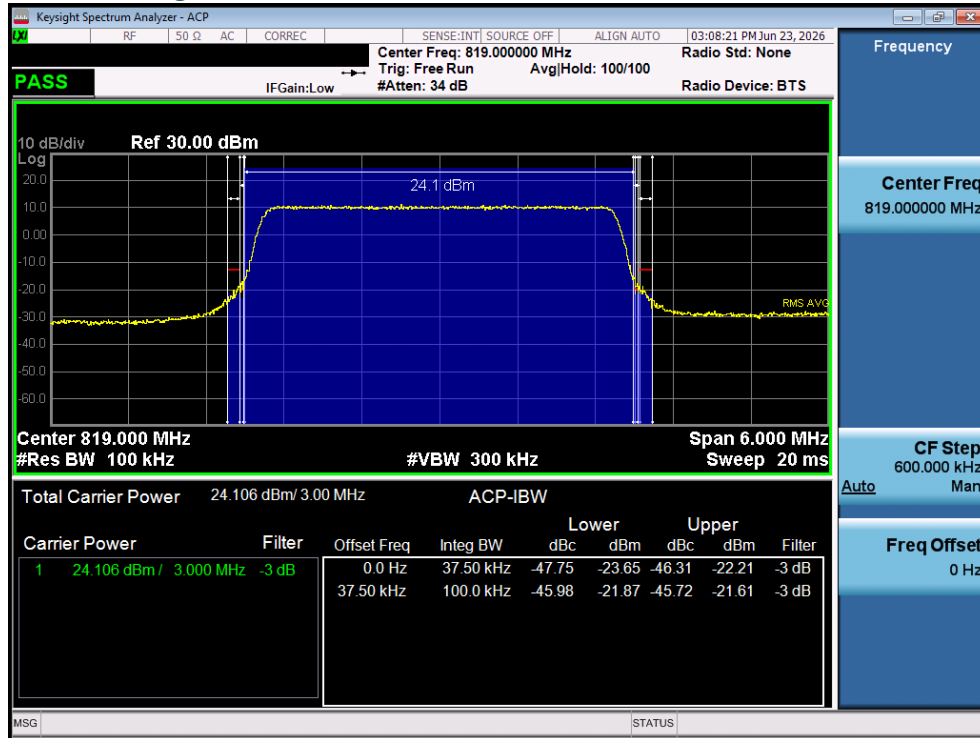


Plot 4-34 Band Edge Plot - LTE Band26 - [3MHz] [Full RB] [Low Channel] [QPSK] [Ant 1]

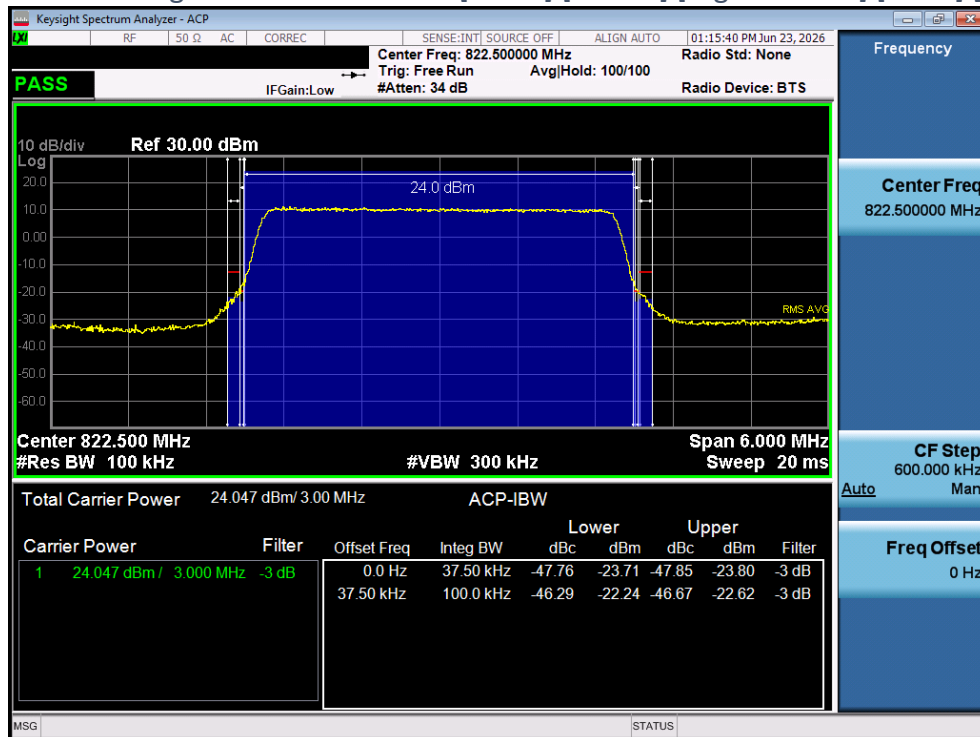




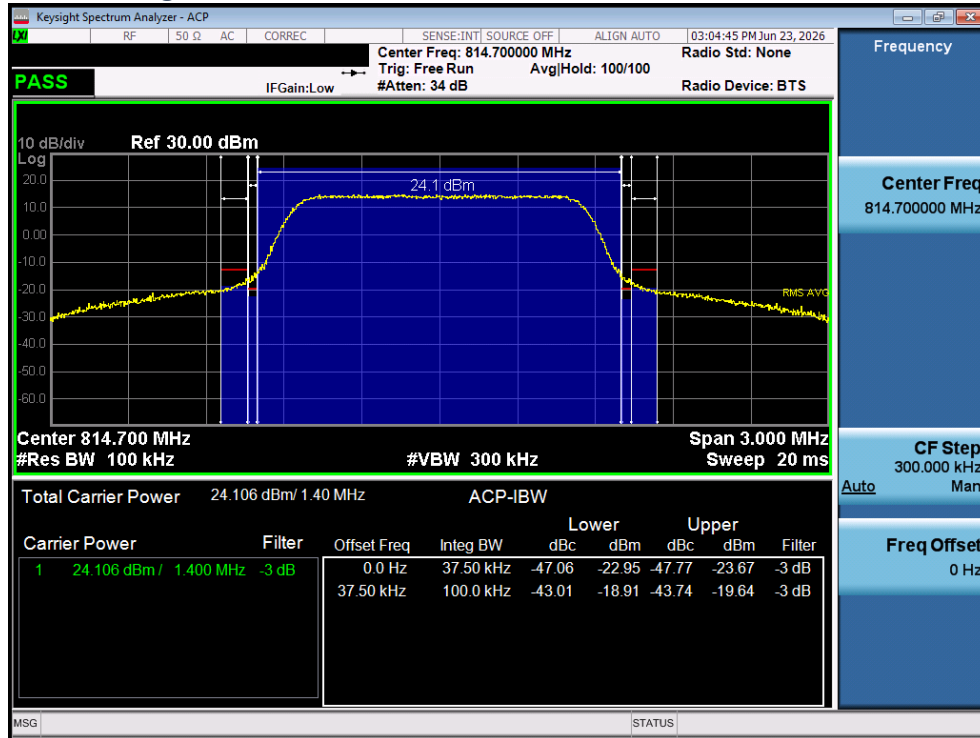
Plot 4-35 Band Edge Plot - LTE Band26 - [3MHz] [Full RB] [Mid Channel] [QPSK] [Ant 1]



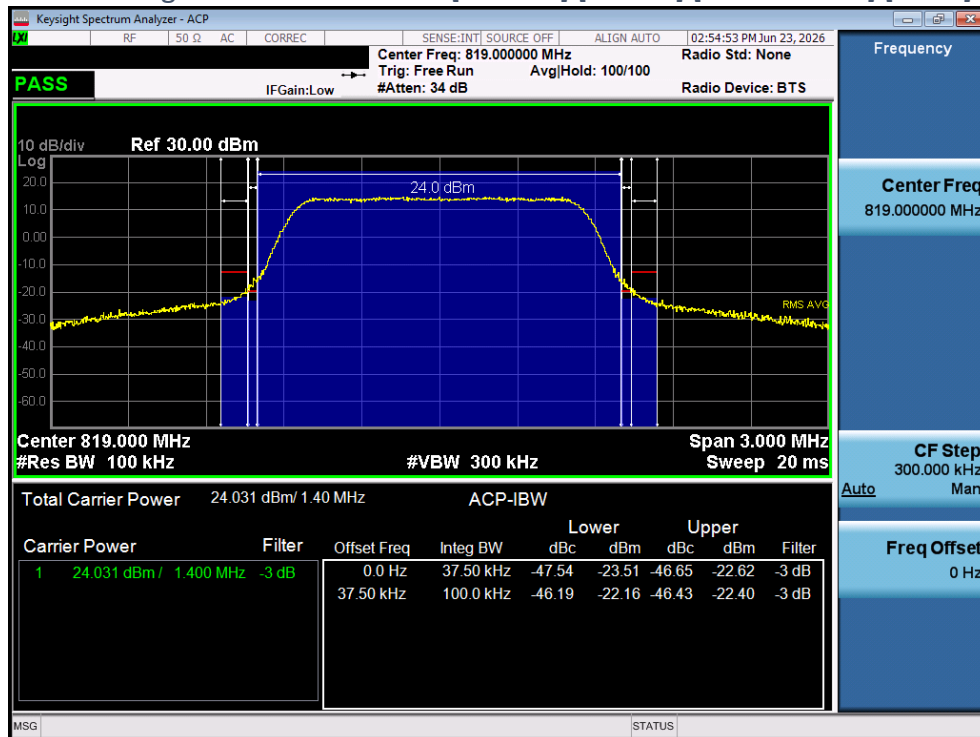
Plot 4-36 Band Edge Plot - LTE Band26 - [3MHz] [Full RB] [High Channel] [QPSK] [Ant 1]



Plot 4-37 Band Edge Plot - LTE Band26 - [1.4MHz] [Full RB] [Low Channel] [QPSK] [Ant 1]



Plot 4-38 Band Edge Plot - LTE Band26 - [1.4MHz] [Full RB] [Mid Channel] [QPSK] [Ant 1]



Plot 4-39 Band Edge Plot - LTE Band26 - [1.4MHz] [Full RB] [High Channel] [QPSK] [Ant 1]

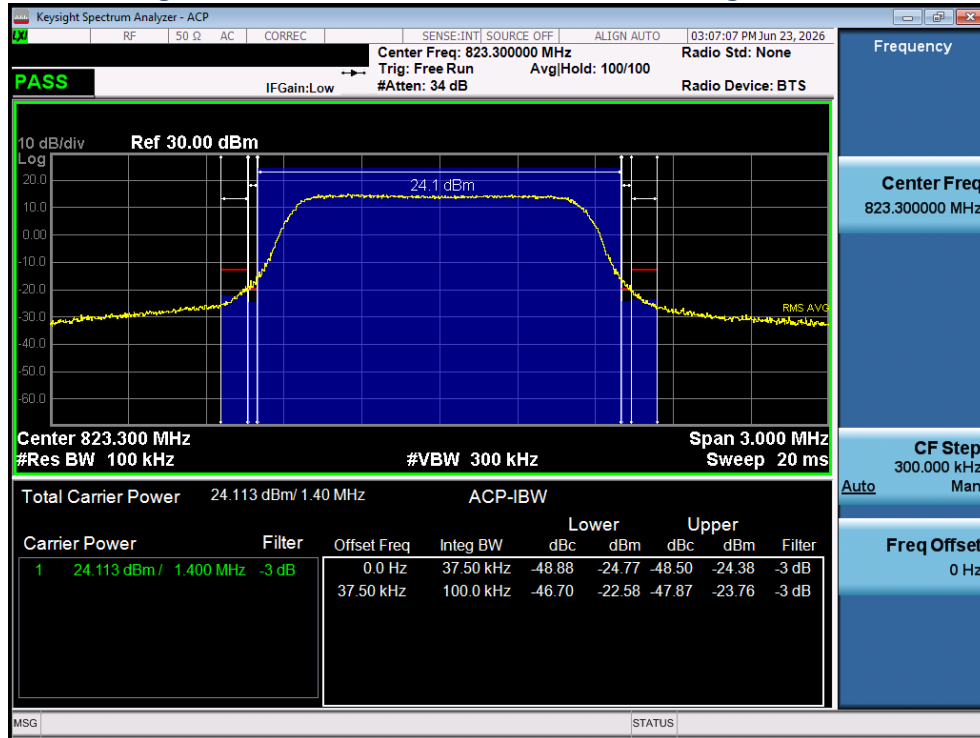
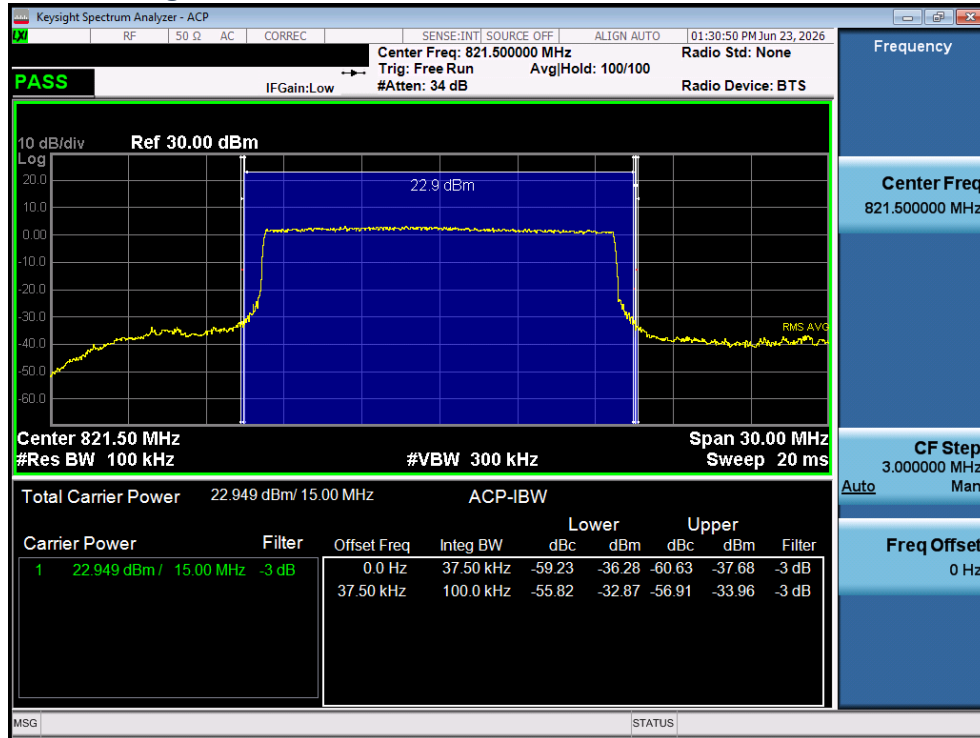


Table 4-8 Band Edge Emissions Data LTE Band 26 Ant 2

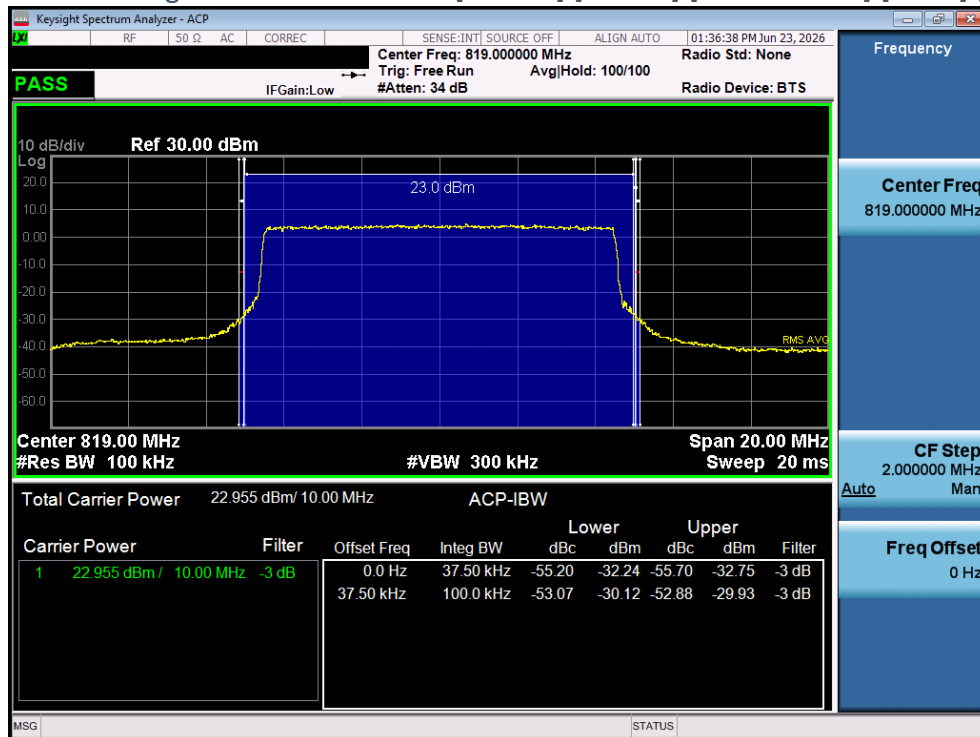
Band	Band Width [MHz]	Frequency [MHz]	RB Size/Offset	Modulation	Edge Side	Offset Freq [kHz]	Level [dBm]	Limit [dBm]	Margin [dB]
LTE Band 26 Ant 2	15	821.5	75/0	QPSK	Lower	37.50	-36.28	-20	-16.28
					Upper	37.50	-37.68	-20	-17.68
	10	819.0	50/0	QPSK	Lower	37.50	-32.24	-20	-12.24
					Upper	37.50	-32.75	-20	-12.75
	5	816.5	25/0	QPSK	Lower	37.50	-26.68	-20	-6.68
					Upper	37.50	-22.75	-20	-2.75
		819.0	25/0	QPSK	Lower	37.50	-28.09	-20	-8.09
					Upper	37.50	-26.45	-20	-6.45
		821.5	25/0	QPSK	Lower	37.50	-26.38	-20	-6.38
					Upper	37.50	-29.54	-20	-9.54
	3	815.5	15/0	QPSK	Lower	37.50	-25.38	-20	-5.38
					Upper	37.50	-22.07	-20	-2.07
		819.0	15/0	QPSK	Lower	37.50	-24.82	-20	-4.82
					Upper	37.50	-27.37	-20	-7.37
		822.5	15/0	QPSK	Lower	37.50	-23.12	-20	-3.12
					Upper	37.50	-28.04	-20	-8.04
	1.4	814.7	6/0	QPSK	Lower	37.50	-23.00	-20	-3.00
					Upper	37.50	-23.32	-20	-3.32
		819.0	6/0	QPSK	Lower	37.50	-25.28	-20	-5.28
					Upper	37.50	-24.18	-20	-4.18
		823.3	6/0	QPSK	Lower	37.50	-23.16	-20	-3.16
					Upper	37.50	-23.46	-20	-3.46

Note - The 15 MHz channel bandwidth is supported only in LTE Band 26 (straddle)

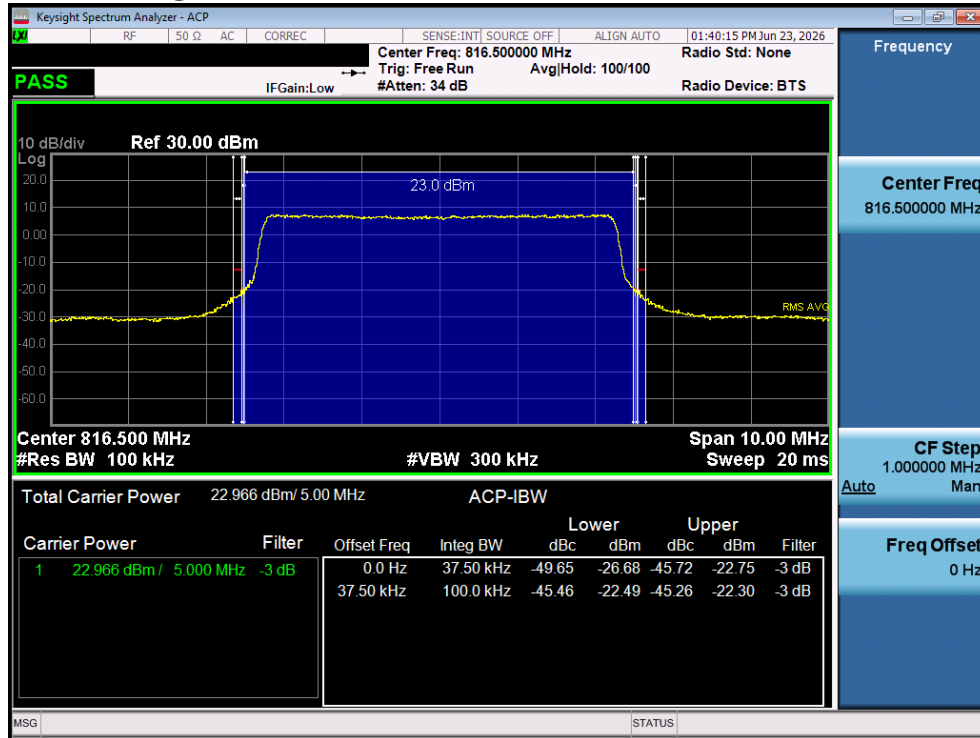
Plot 4-40 Band Edge Plot - LTE Band26 - [15MHz] [Full RB] [Mid Channel] [QPSK] [Ant 2]



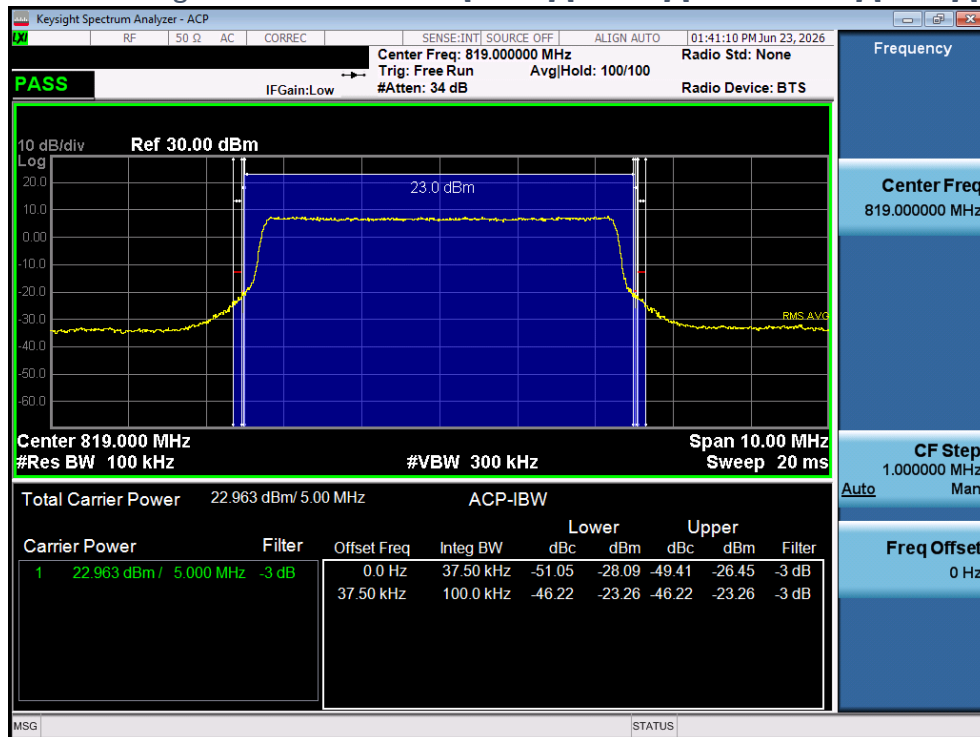
Plot 4-41 Band Edge Plot - LTE Band26 - [10MHz] [Full RB] [Mid Channel] [QPSK] [Ant 2]



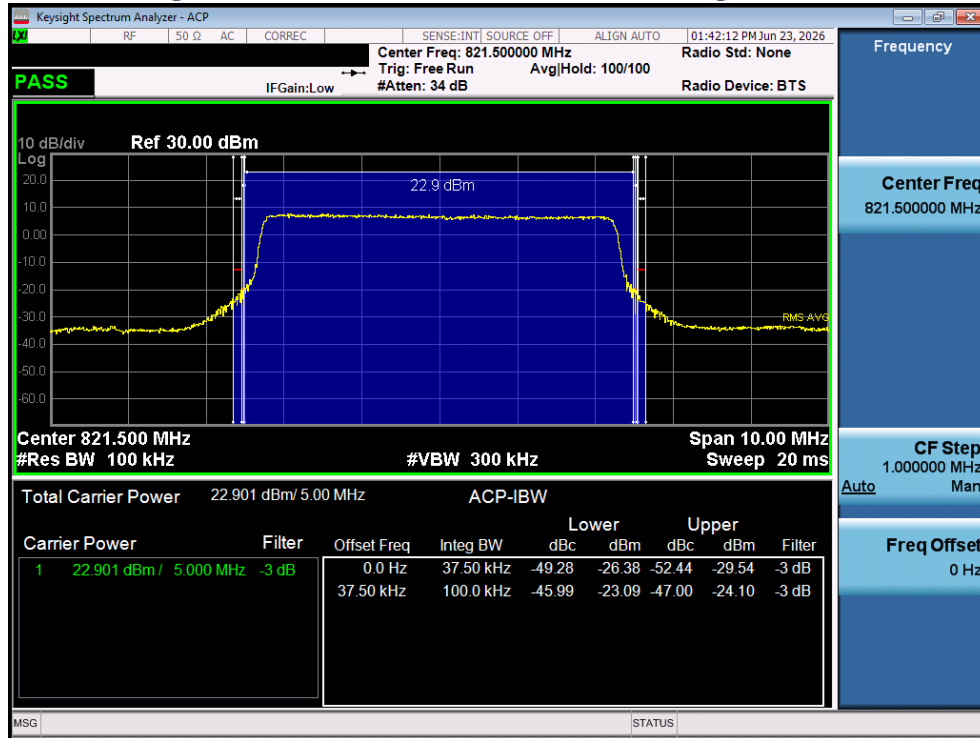
Plot 4-42 Band Edge Plot - LTE Band26 - [5MHz] [Full RB] [Low Channel] [QPSK] [Ant 2]



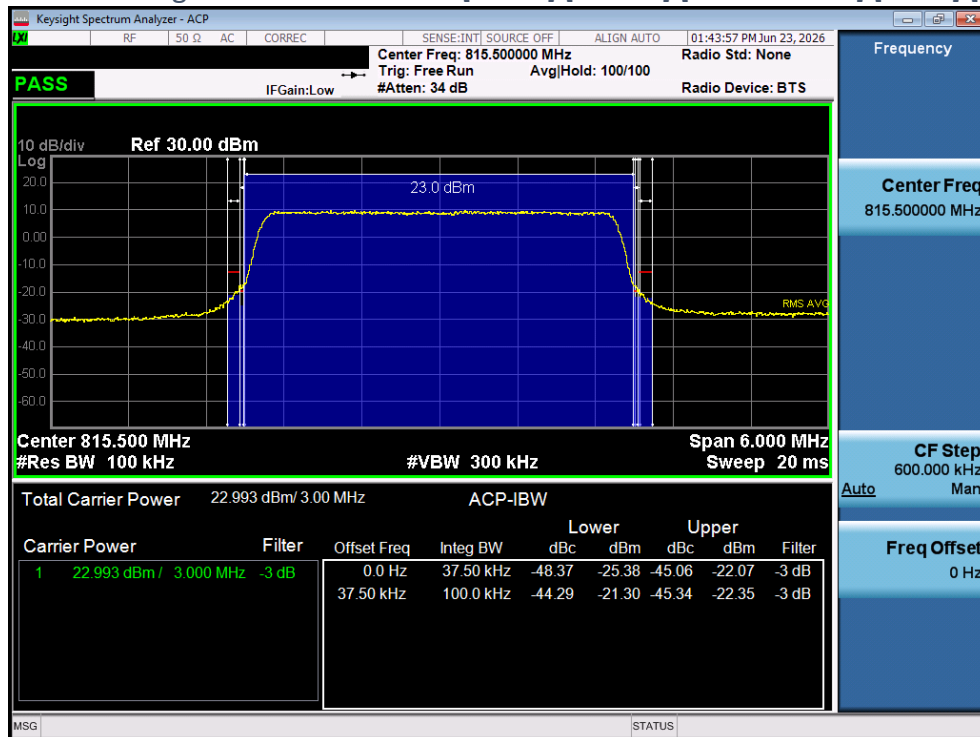
Plot 4-43 Band Edge Plot - LTE Band26 - [5MHz] [Full RB] [Mid Channel] [QPSK] [Ant 2]



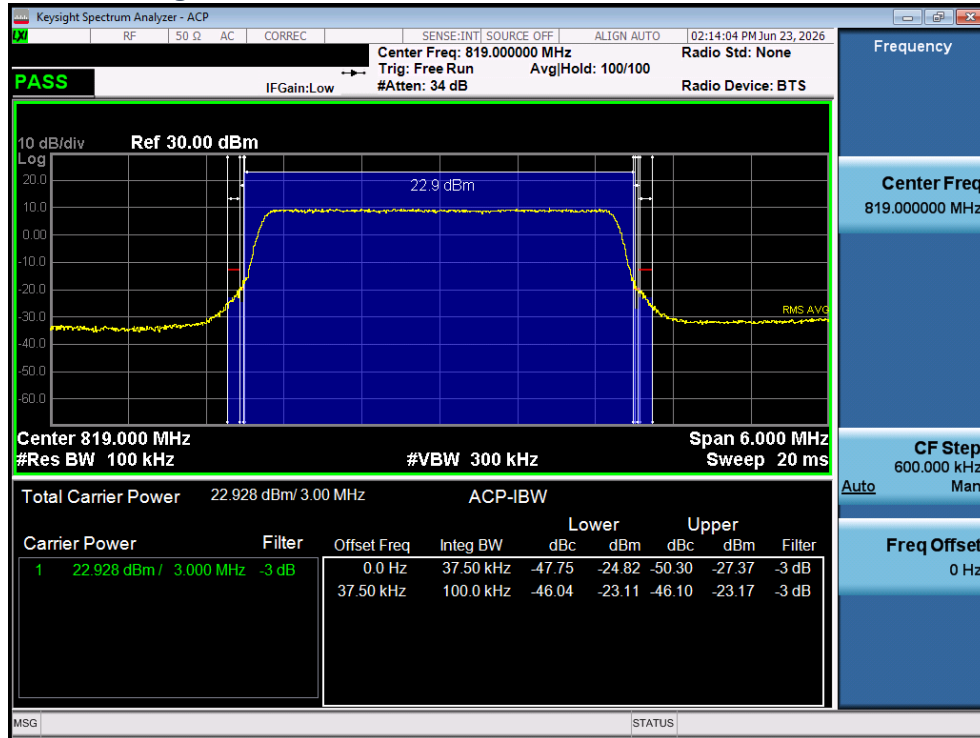
Plot 4-44 Band Edge Plot - LTE Band26 - [5MHz] [Full RB] [High Channel] [QPSK] [Ant 2]



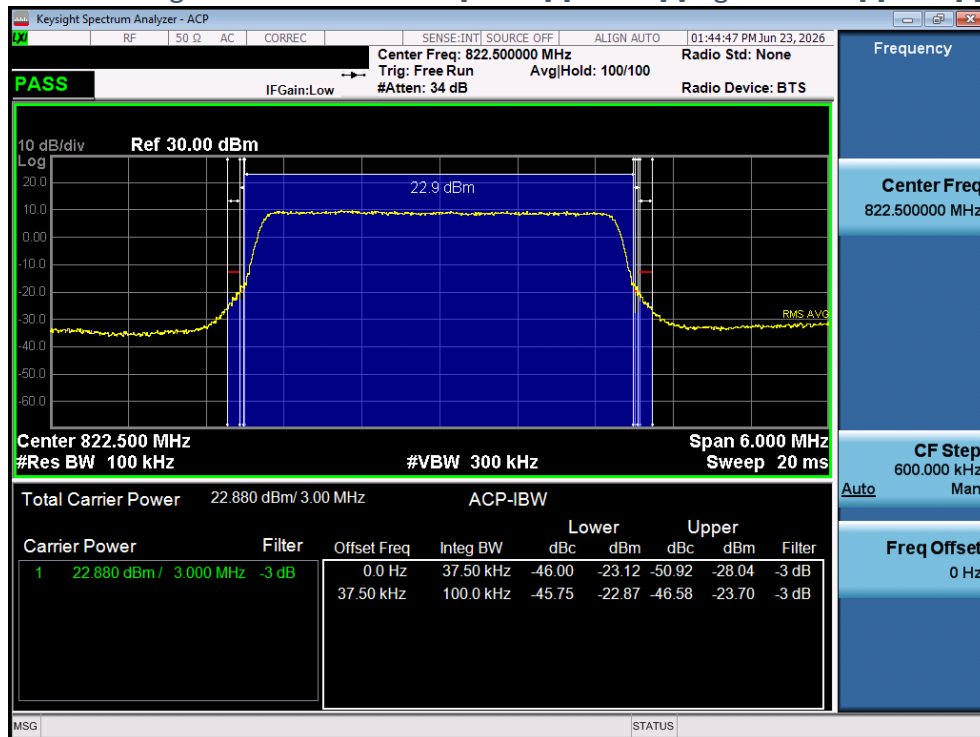
Plot 4-45 Band Edge Plot - LTE Band26 - [3MHz] [Full RB] [Low Channel] [QPSK] [Ant 2]



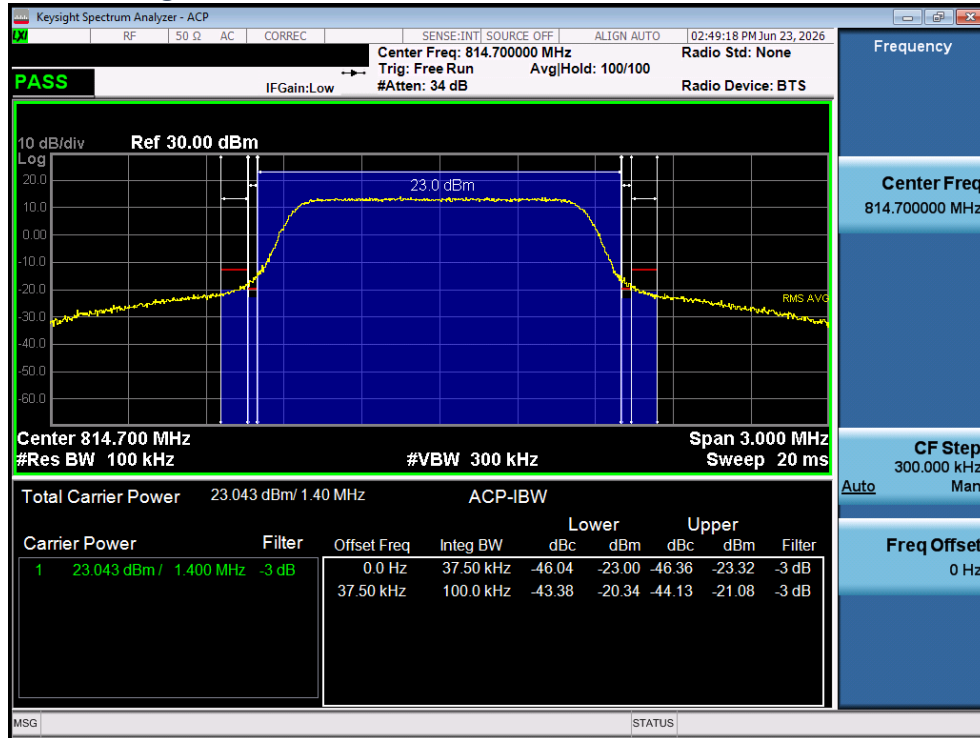
Plot 4-46 Band Edge Plot - LTE Band26 - [3MHz] [Full RB] [Mid Channel] [QPSK] [Ant 2]



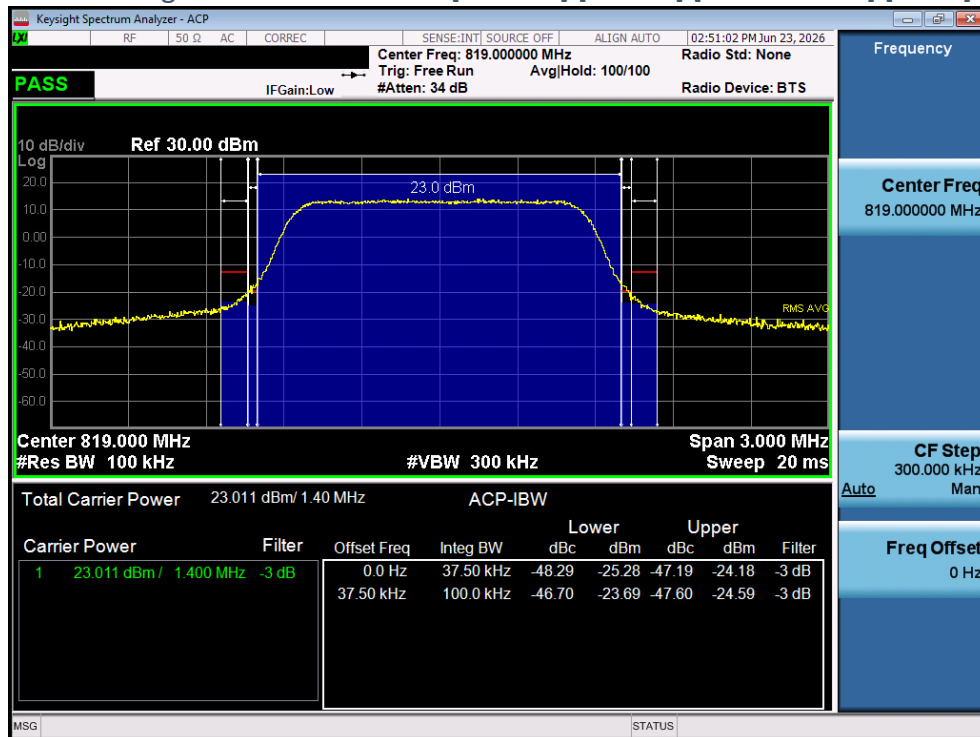
Plot 4-47 Band Edge Plot - LTE Band26 - [3MHz] [Full RB] [High Channel] [QPSK] [Ant 2]



Plot 4-48 Band Edge Plot - LTE Band26 - [1.4MHz] [Full RB] [Low Channel] [QPSK] [Ant 2]



Plot 4-49 Band Edge Plot - LTE Band26 - [1.4MHz] [Full RB] [Mid Channel] [QPSK] [Ant 2]



Plot 4-50 Band Edge Plot - LTE Band26 - [1.4MHz] [Full RB] [High Channel] [QPSK] [Ant 2]

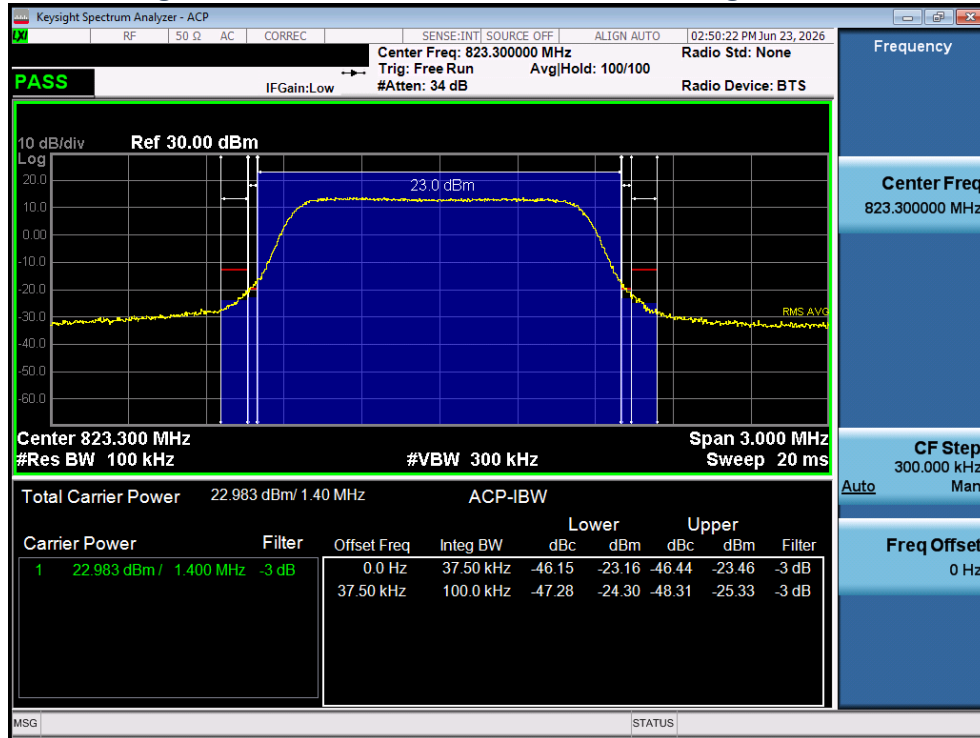


Table 4-9 Band Edge Emissions Data LTE Band 14 Ant 1

Band	Band Width [MHz]	Channel	Frequency [MHz]	Earfcn UL	RB Size/Offset	Modulation	Level [dBm]	Limit [dBm]	Margin [dB]
LTE Band 14	10	Low	793	23330	50/0	QPSK	-25.71	-13	-12.71
		High			50/0	QPSK	-25.48	-13	-12.48
	5	Low	790.5	23305	25/0	QPSK	-17.43	-13	-4.43
		High	795.5	23355	25/0	QPSK	-18.24	-13	-5.24

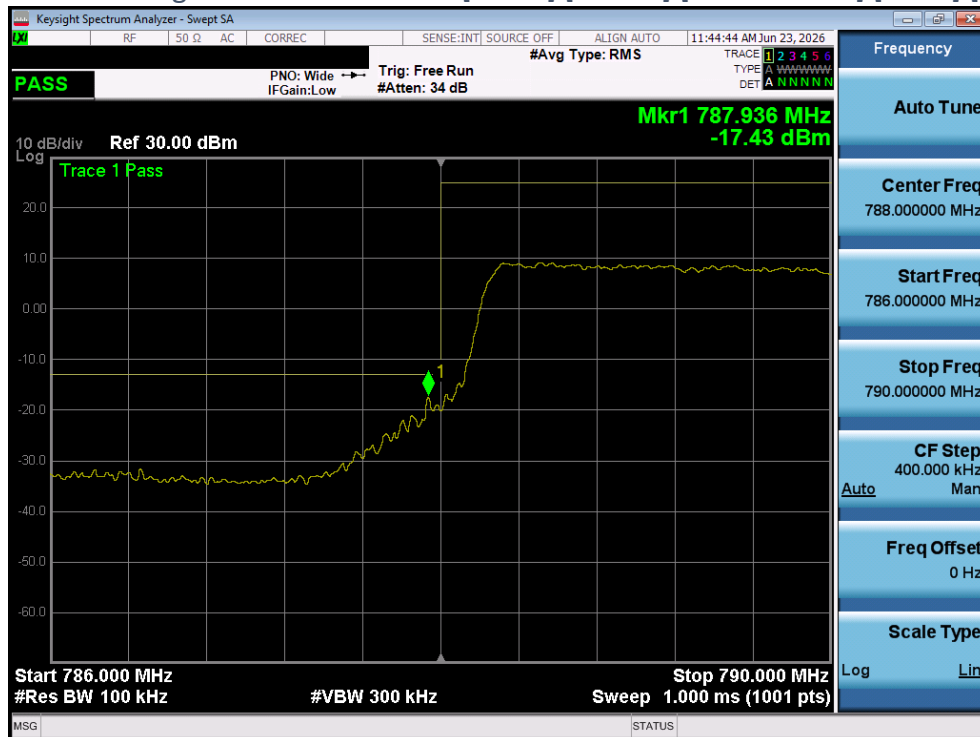
Plot 4-51 Band Edge Plot - LTE Band14 - [10MHz] [Full RB] [Low Channel] [QPSK] [Ant 1]



Plot 4-52 Band Edge Plot - LTE Band14 - [10MHz] [Full RB] [High Channel] [QPSK] [Ant 1]



Plot 4-53 Band Edge Plot - LTE Band14 - [5MHz] [Full RB] [Low Channel] [QPSK] [Ant 1]



Plot 4-54 Band Edge Plot - LTE Band14 - [5MHz] [Full RB] [High Channel] [QPSK] [Ant 1]



Table 4-10 Band Edge Emissions Data LTE Band 14 Ant 2

Band	Band Width [MHz]	Channel	Frequency [MHz]	Earfcn UL	RB Size/Offset	Modulation	Level [dBm]	Limit [dBm]	Margin [dB]
LTE Band 14	10	Low	793	23330	50/0	QPSK	-26.16	-13	-13.16
		High			50/0	QPSK	-27.66	-13	-14.66
	5	Low	790.5	23305	25/0	QPSK	-20.08	-13	-7.08
		High	795.5	23355	25/0	QPSK	-20.03	-13	-7.03

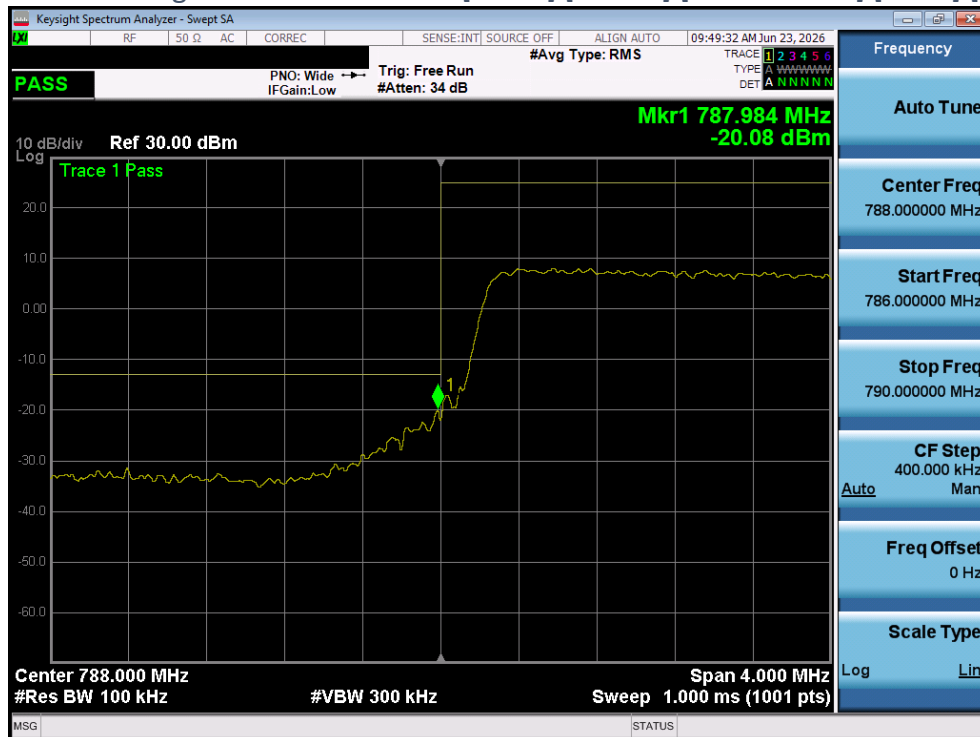
Plot 4-55 Band Edge Plot - LTE Band14 - [10MHz] [Full RB] [Low Channel] [QPSK] [Ant 2]



Plot 4-56 Band Edge Plot - LTE Band14 - [10MHz] [Full RB] [High Channel] [QPSK] [Ant 2]



Plot 4-57 Band Edge Plot - LTE Band14 - [5MHz] [Full RB] [Low Channel] [QPSK] [Ant 2]



Plot 4-58 Band Edge Plot - LTE Band14 - [5MHz] [Full RB] [High Channel] [QPSK] [Ant 2]



4.7. Conducted Spurious Emissions

4.7.1. Regulatory Limit

§Part. 90.543(c), Part 90.691(a)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB

4.7.2. Test Method

ANSI C63.26-2015, clause 5.7.4

4.7.3. Test Procedure

The measurement range defined by the start and stop frequencies was subdivided based on the frequency block requirements. The procedure for this method is follows:

- a) Set RBW = 1 MHz
- b) Set the VBW $\geq 3 \times$ RBW.
- c) Detector = RMS.
- d) Trace mode = Average.
- e) Set Number of points Sweep $\geq 2 \times$ (span / RBW)
- f) When unwanted noise or emissions are detected close to the limit, the sweep time is increased to perform a detailed measurement and capture the accurate signal level. (sweep time > number of points in sweep $\times$ symbol period)

Test Note

- ✓ All out of band spurious emissions were measured up to more than the 10th harmonic.
- ✓ Tests were conducted under QPSK modulation, which represents the worst-case scenario with the highest power level across all bandwidths.
- ✓ Although all transmission bandwidths and RB allocations including Full RB and 1 RB were evaluated, only the worst-case results are reported herein.
- ✓ Frequency Ranges A, B, and C represent separate out-of-band emission frequency ranges for each operating band.

4.7.4. Test Results

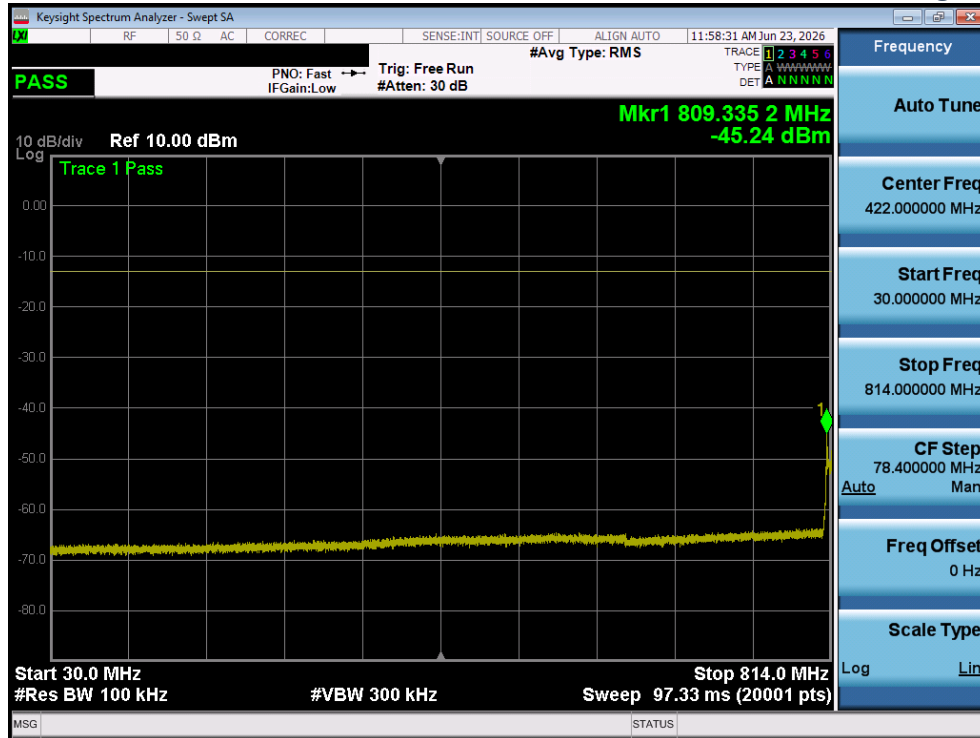
Table 4-11 Conducted Spurious Emissions Data LTE Band 26 Ant1

Band	Band Width [MHz]	Channel	Frequency [MHz]	RB Size/Offset	Modulation	Range	Level [dBm]	Limit [dBm]	Margin [dB]
LTE Band 26	15 (Straddle)	Mid	821.5	1/36	QPSK	A	-45.24	-13	-32.24
						B	-40.18	-13	-27.18
						C	-38.81	-13	-25.81

Table 4-12 Conducted Spurious Emissions Data LTE Band 26 Ant2

Band	Band Width [MHz]	Channel	Frequency [MHz]	RB Size/Offset	Modulation	Range	Level [dBm]	Limit [dBm]	Margin [dB]
LTE Band 26	15 (Straddle)	Mid	821.5	1/36	QPSK	A	-46.20	-13	-33.20
						B	-41.37	-13	-28.37
						C	-38.81	-13	-25.81

Plot 4-59 CSE Plot - LTE Band26 - [15MHz] [1/36 RB] [Mid Channel] [QPSK] [Range A] [Ant 1]



Plot 4-60 CSE Plot - LTE Band26 - [15MHz] [1/36 RB] [Mid Channel] [QPSK] [Range B] [Ant 1]

