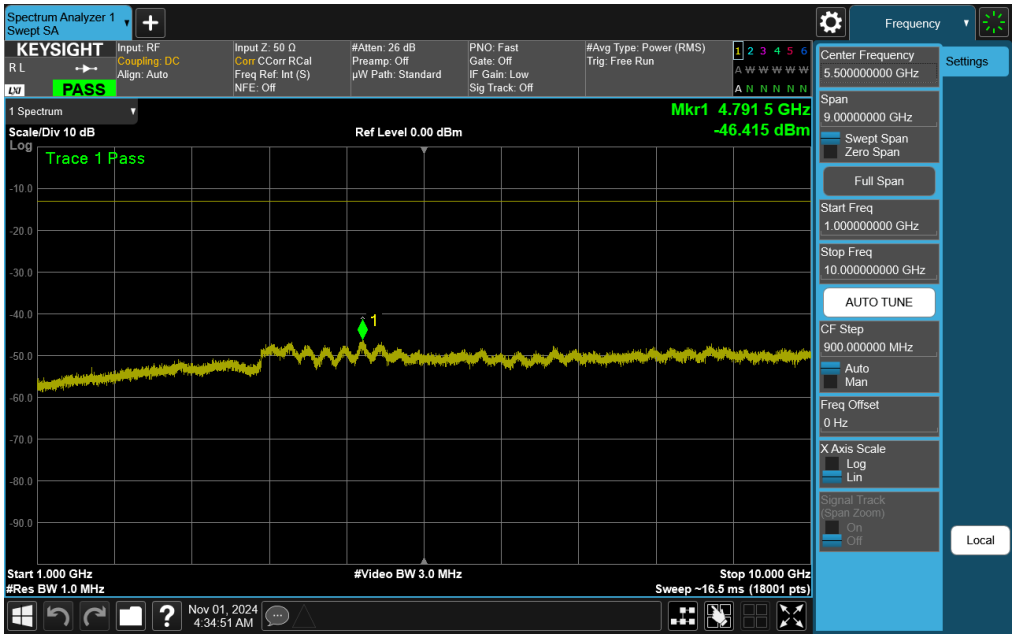
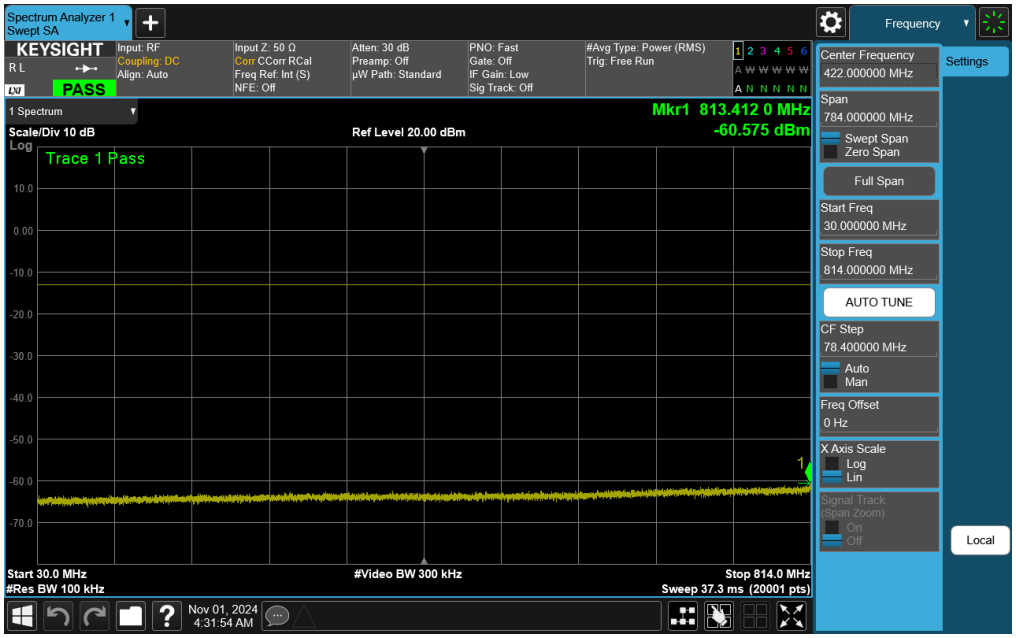
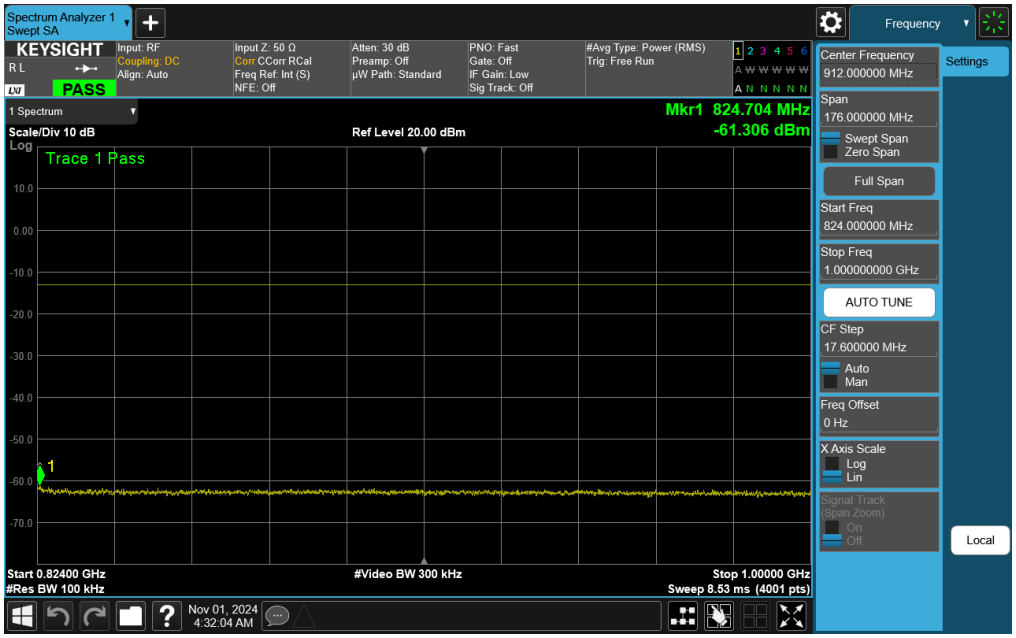


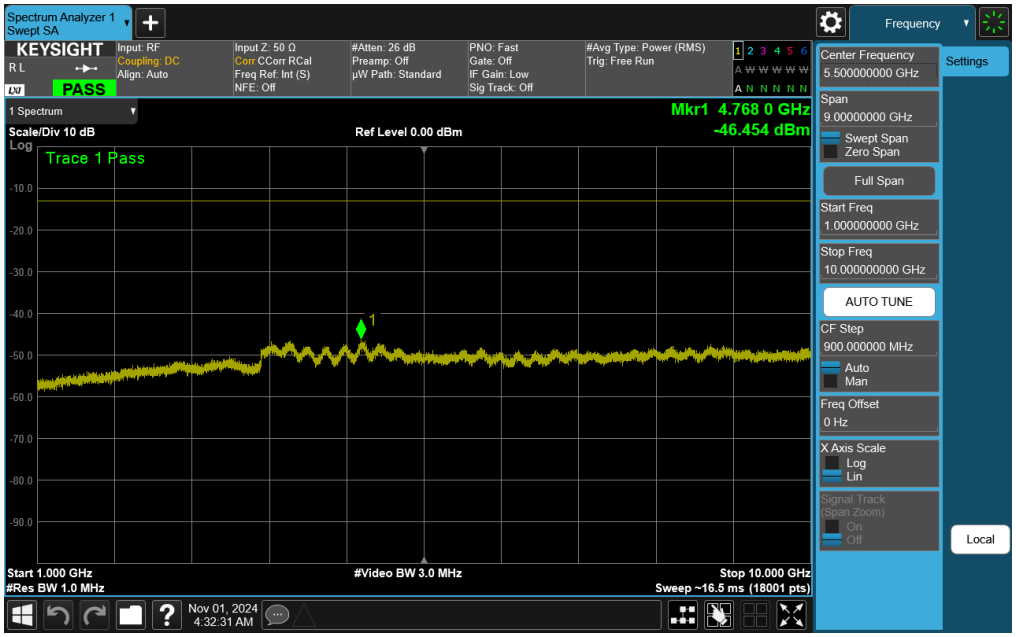
Plot 7-74. Conducted Spurious Plot (NR Band 26 - 5MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



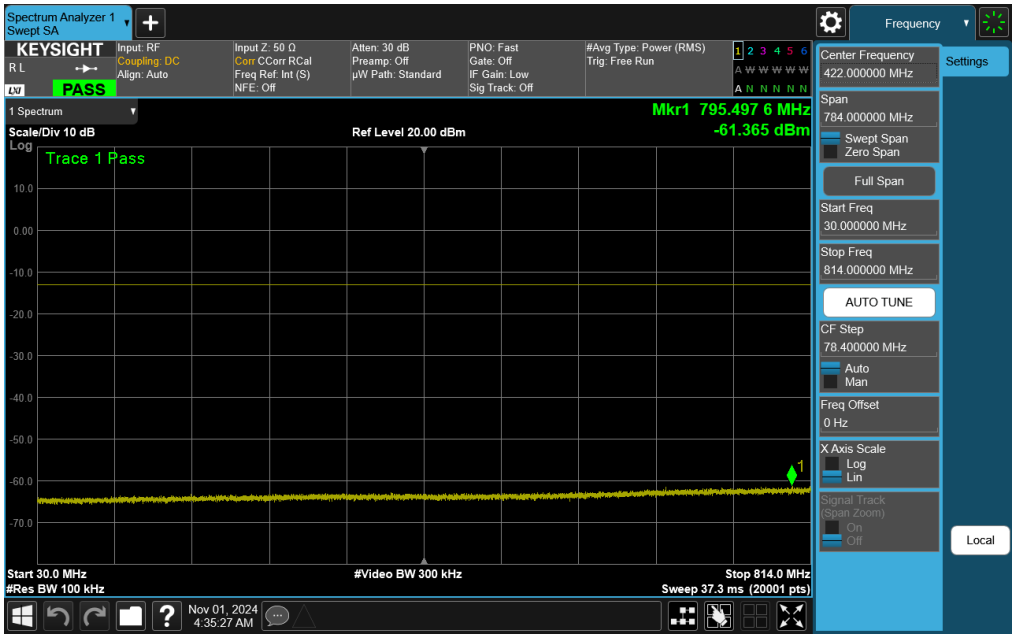
Plot 7-75. Conducted Spurious Plot (NR Band 26 - 10MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



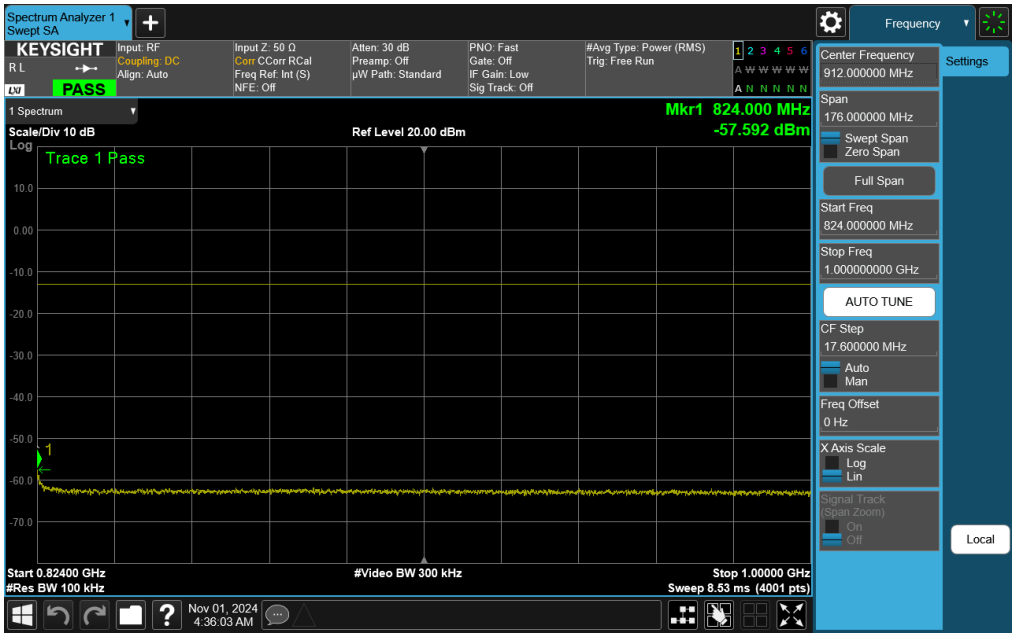
Plot 7-76. Conducted Spurious Plot (NR Band 26 - 10MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



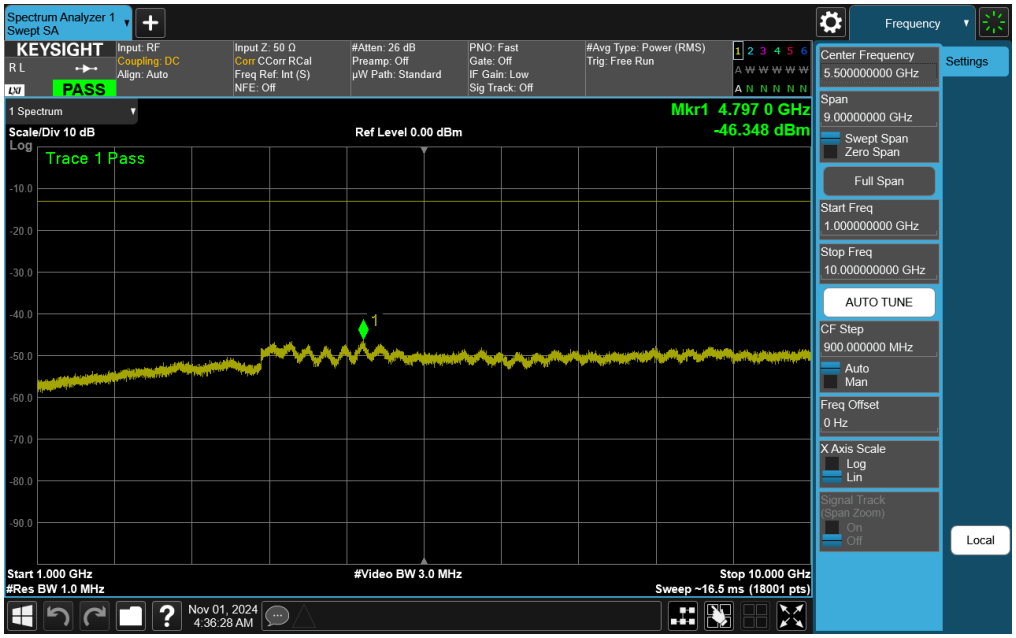
Plot 7-77. Conducted Spurious Plot (NR Band 26 - 10MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Plot 7-78. Conducted Spurious Plot (NR Band 26 - 5MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

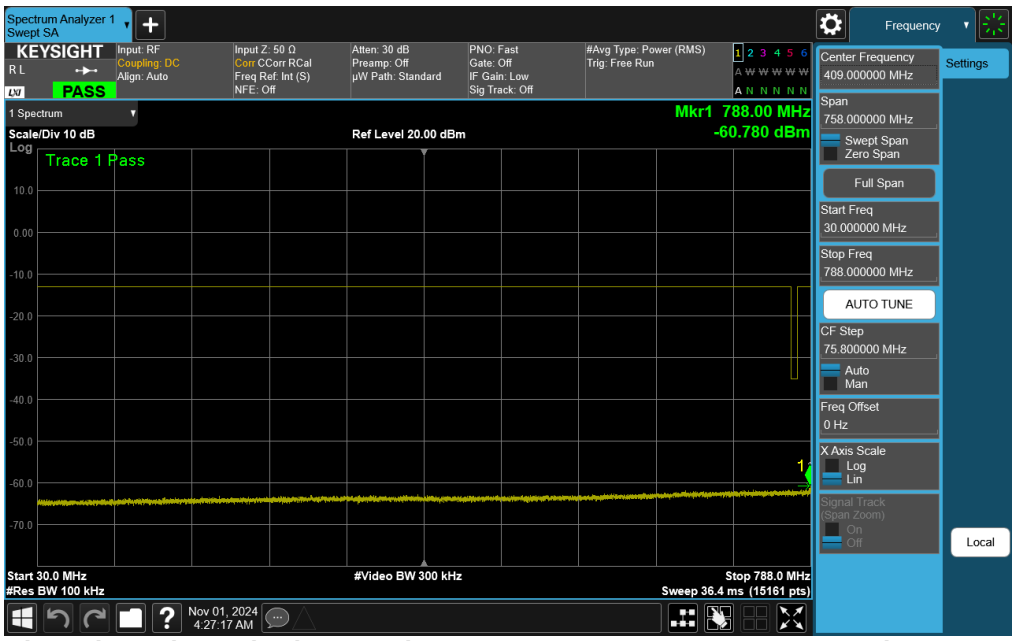


Plot 7-79. Conducted Spurious Plot (NR Band 26 - 5MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

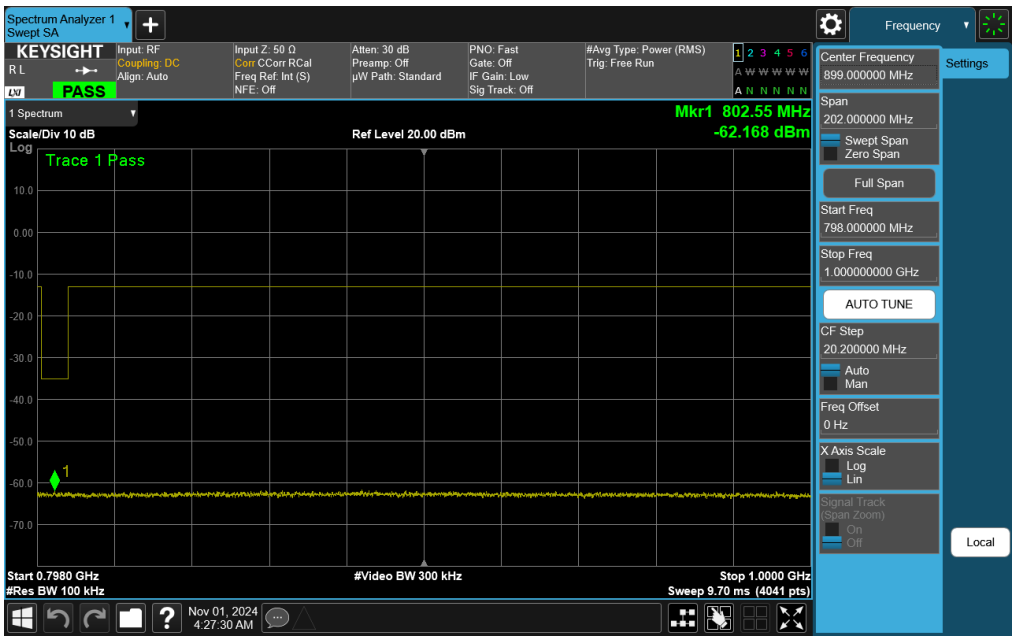


Plot 7-80. Conducted Spurious Plot (NR Band 26 - 5MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

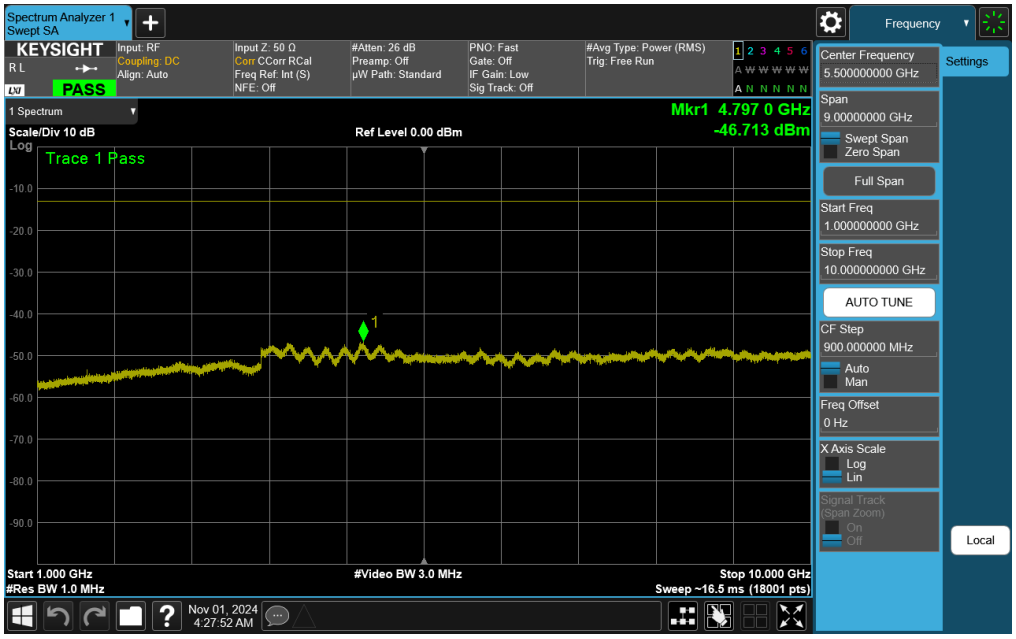
NR Band 14



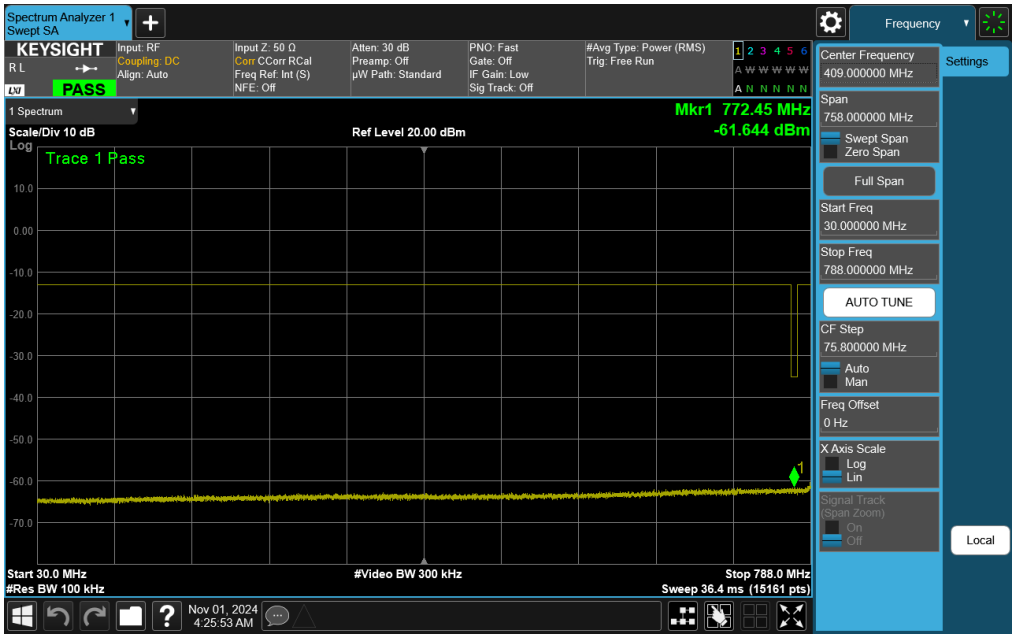
Plot 7-81. Conducted Spurious Plot (NR Band 14 - 5MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



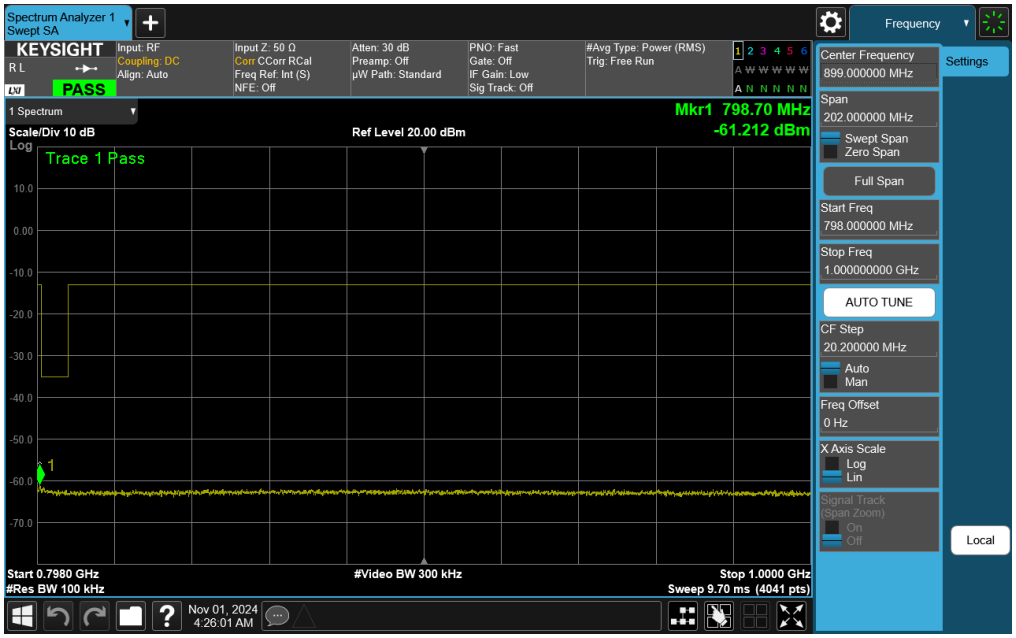
Plot 7-82. Conducted Spurious Plot (NR Band 14 - 5MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



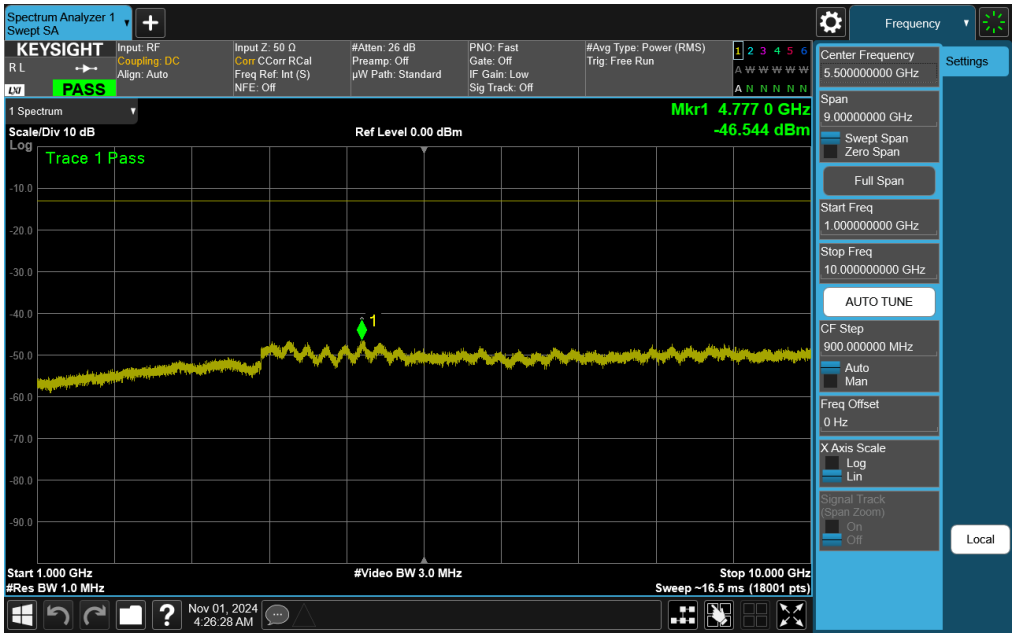
Plot 7-83. Conducted Spurious Plot (NR Band 14 - 5MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



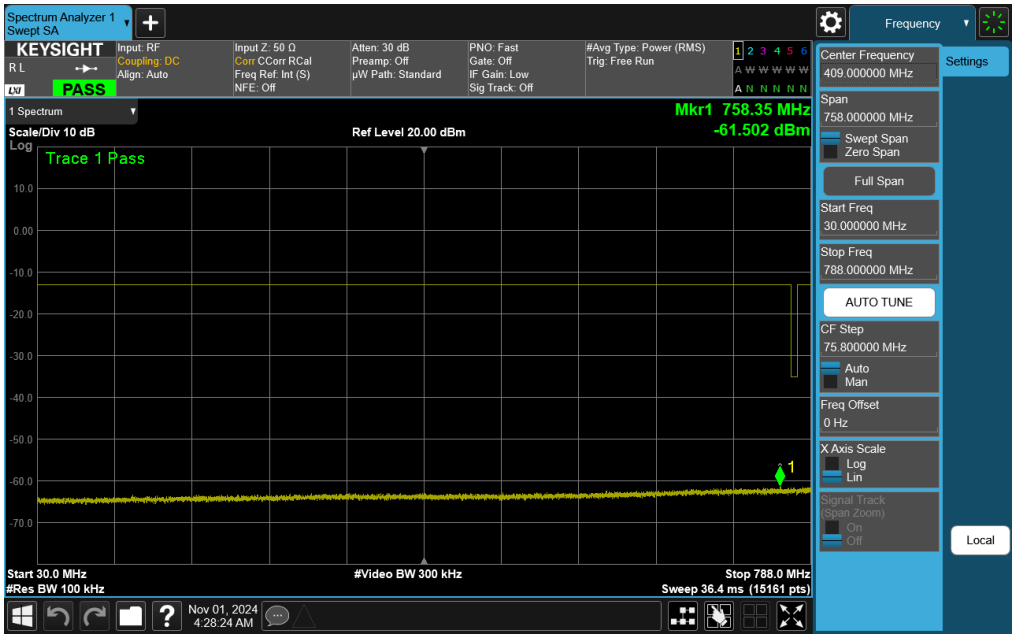
Plot 7-84. Conducted Spurious Plot (NR Band 14 - 10MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



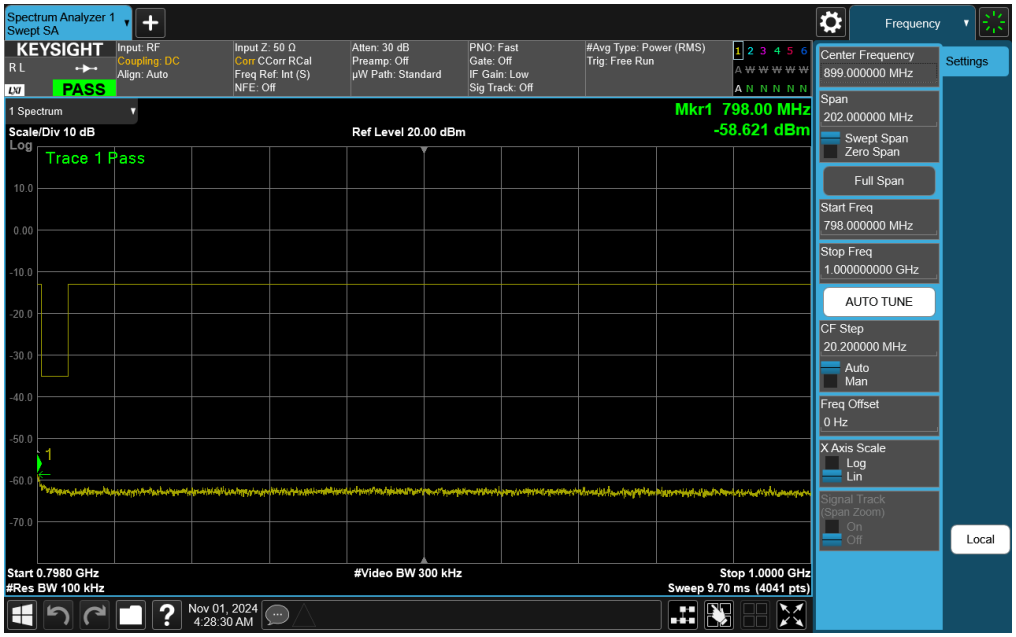
Plot 7-85. Conducted Spurious Plot (NR Band 14 - 10MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



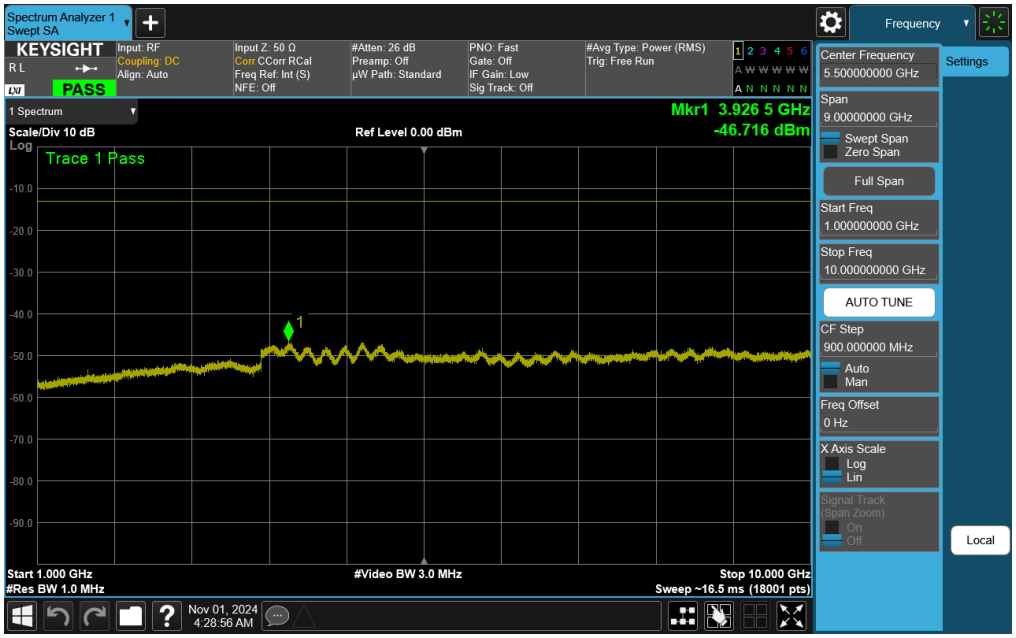
Plot 7-86. Conducted Spurious Plot (NR Band 14 - 10MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Plot 7-87. Conducted Spurious Plot (NR Band 14 - 5MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-88. Conducted Spurious Plot (NR Band 14 - 5MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-89. Conducted Spurious Plot (NR Band 14 - 5MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

7.4 Band Edge Emissions at Antenna Terminal

§2.1051 §90.691(a) §90.543(e) §90.543(f)

Test Overview

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section. All ports were tested and only the worst case data were reported.

For LTE B26 operation under Part 90.691, the minimum permissible attenuation level of any spurious emission removed from the EA licensee's frequency block by greater than 37.5 kHz is 43 + 10log$_{10}$(P$_{[Watts]}$), where P is the transmitter power in Watts. The minimum permissible attenuation level of any spurious emission removed from the EA licensee's frequency block by up to and including 37.5 kHz is 50 + 10log$_{10}$(P$_{[Watts]}$), where P is the transmitter power in Watts.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 6.0

Test Settings

1. Span was set large enough so as to capture all out of band emissions near the band edge
2. RBW = 100 kHz
3. VBW = 300 kHz
4. Detector = RMS
5. Trace mode = trace average
6. Sweep time = auto couple
7. The trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

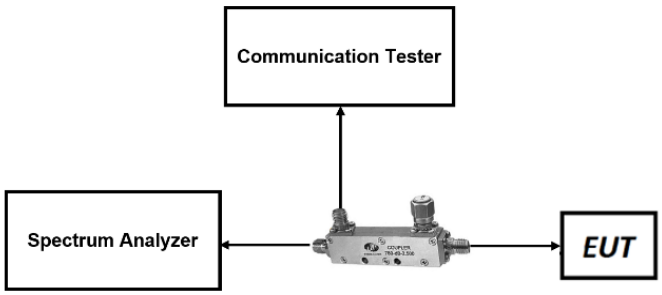


Figure 7-5. LTE Instrument & Measurement Setup

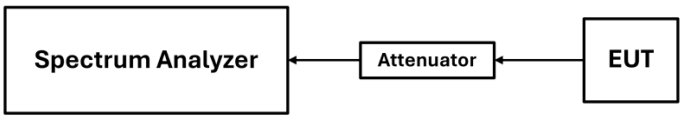


Figure 7-6. FR1 Instrument & Measurement Setup

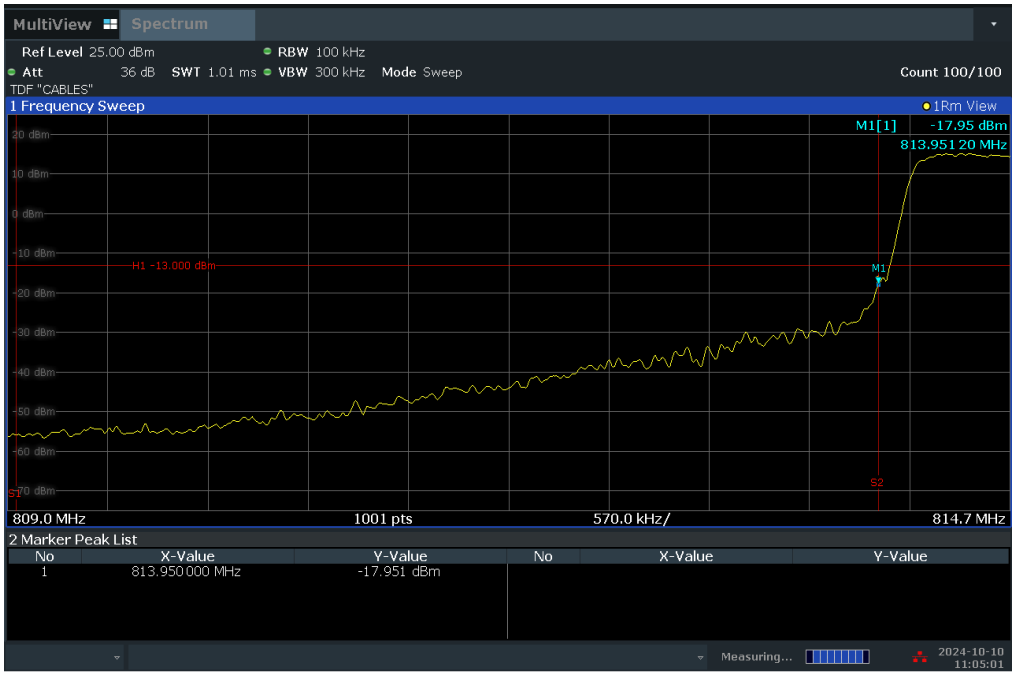
Test Notes

1. Per Part 90, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center.

2. For LTE Band 14 and NR Band n14 operation under Part 90.543, the power of any emission must be reduced below the mean output power (P) by at least 43 + 10log (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.

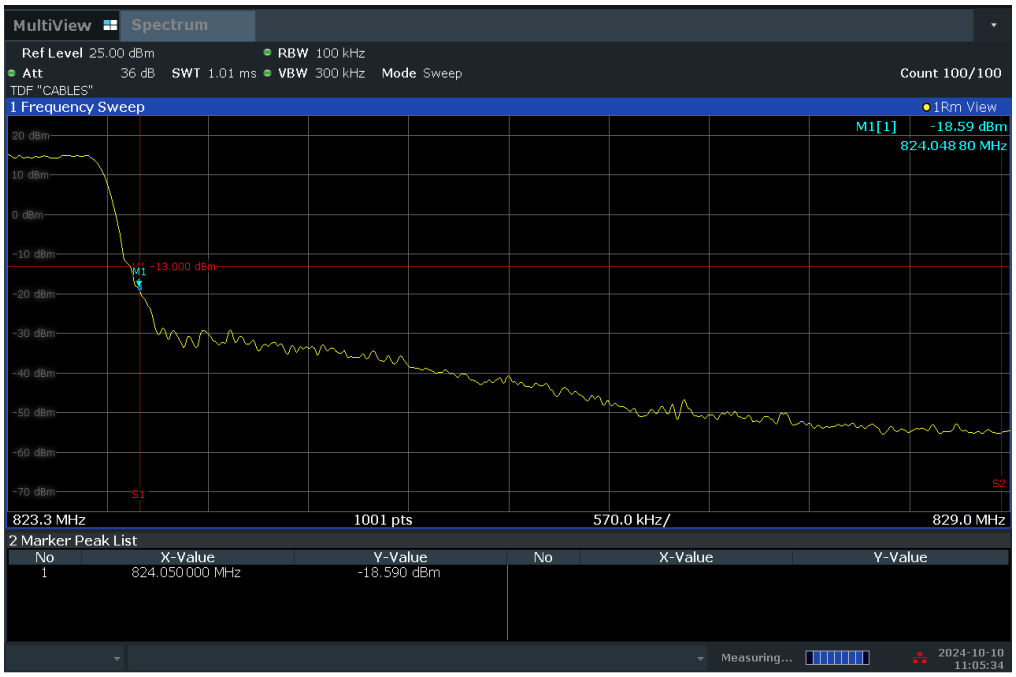
3. Additionally, for LTE Band 14 and NR Band n14 operation, on all frequencies between 769-775 MHz and 799-805 MHz, the power of any emission shall be attenuated by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

LTE Band 26



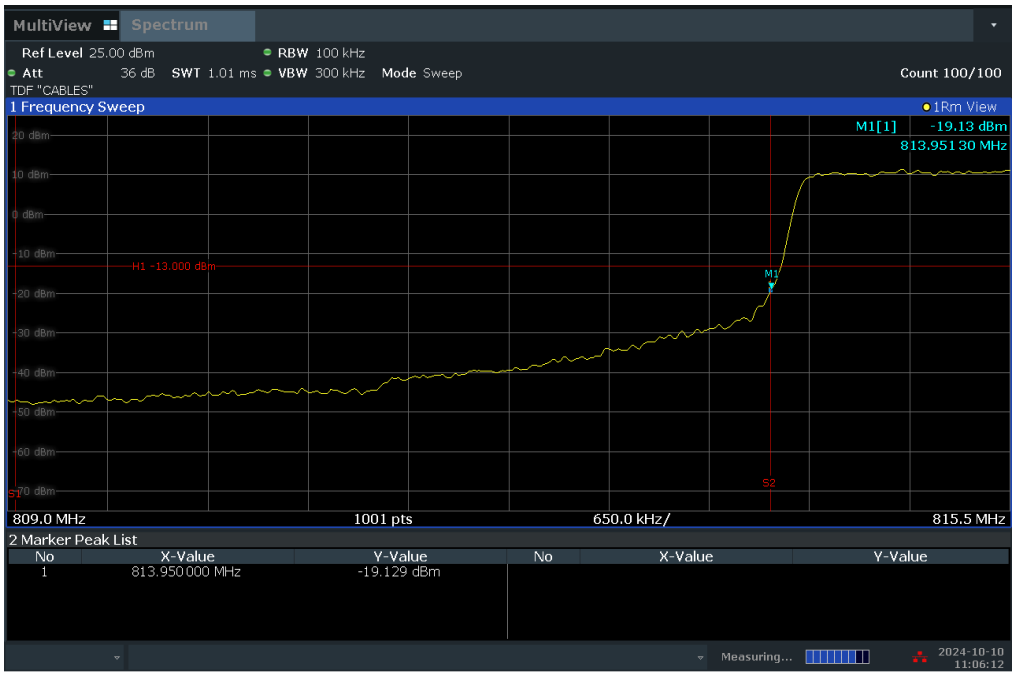
11:05:01 AM 10/10/2024

Plot 7-90. Channel Edge Plot (LTE Band 26 – 1.4MHz QPSK – Low Channel)



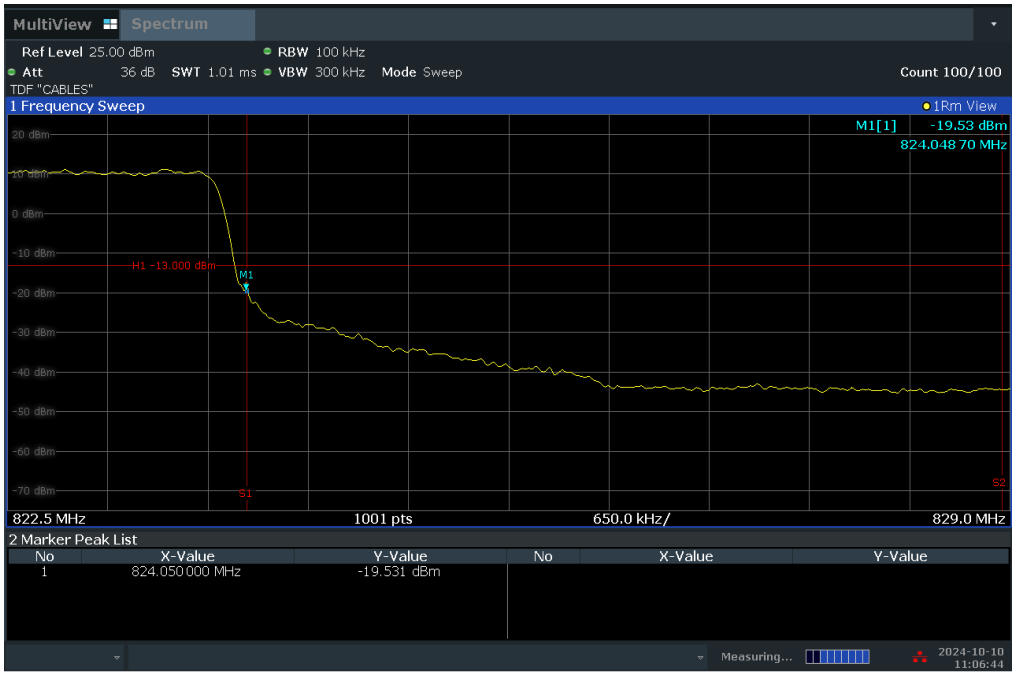
11:05:34 AM 10/10/2024

Plot 7-91. Channel Edge Plot (LTE Band 26 – 1.4MHz QPSK – High Channel)



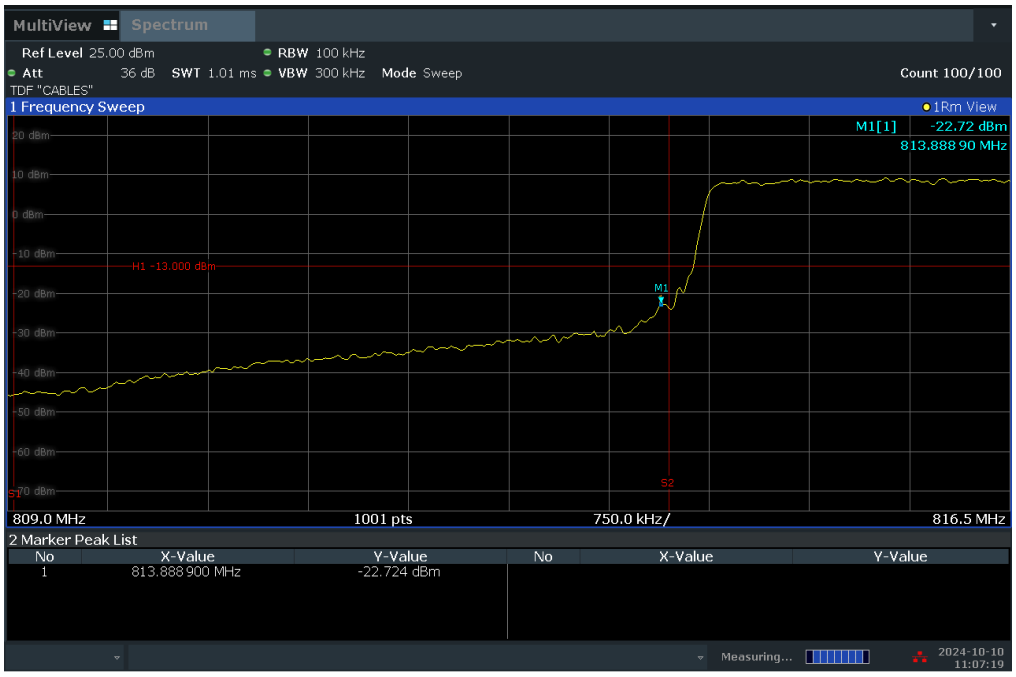
11:06:12 AM 10/10/2024

Plot 7-92. Channel Edge Plot (LTE Band 26 - 3MHz QPSK – Low Channel)



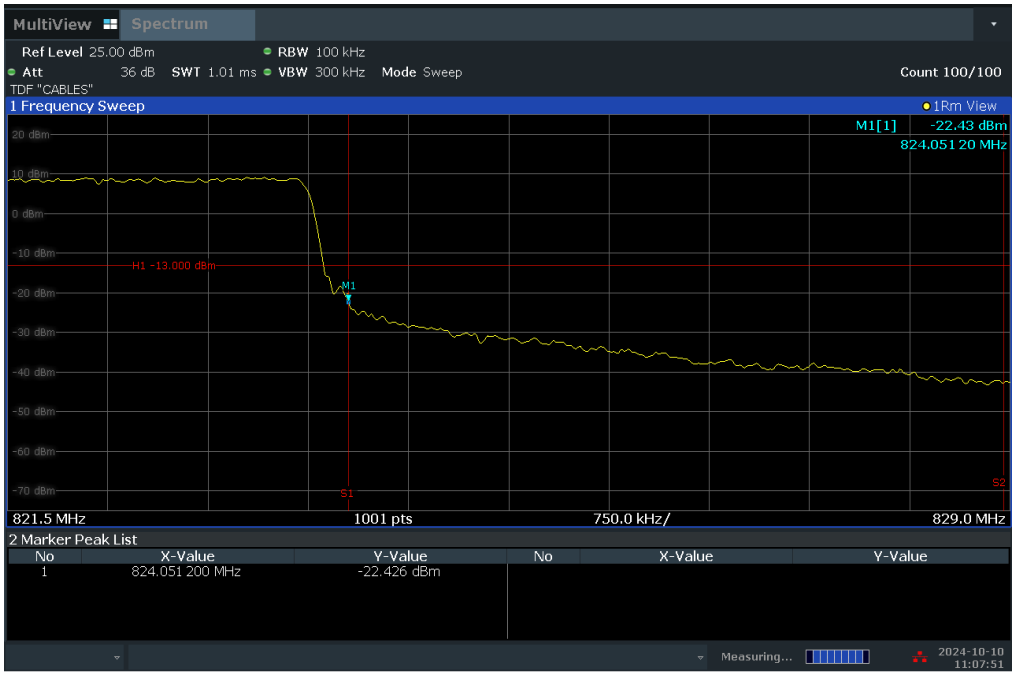
11:06:44 AM 10/10/2024

Plot 7-93. Channel Edge Plot (LTE Band 26 - 3MHz QPSK – High Channel)



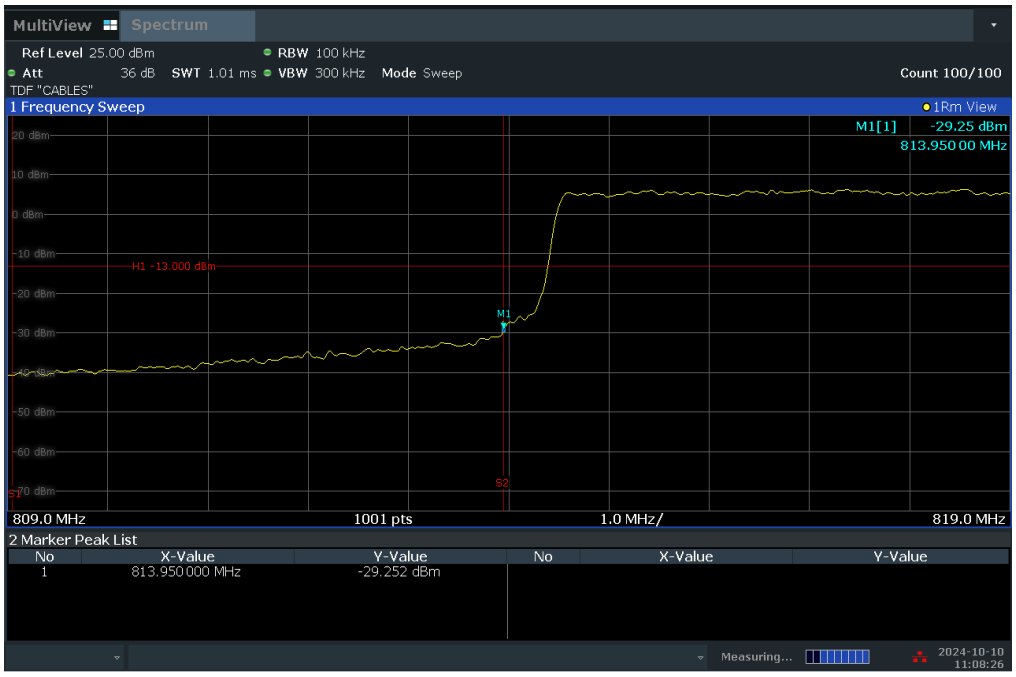
11:07:19 AM 10/10/2024

Plot 7-94. Channel Edge Plot (LTE Band 26 - 5MHz QPSK – Low Channel)



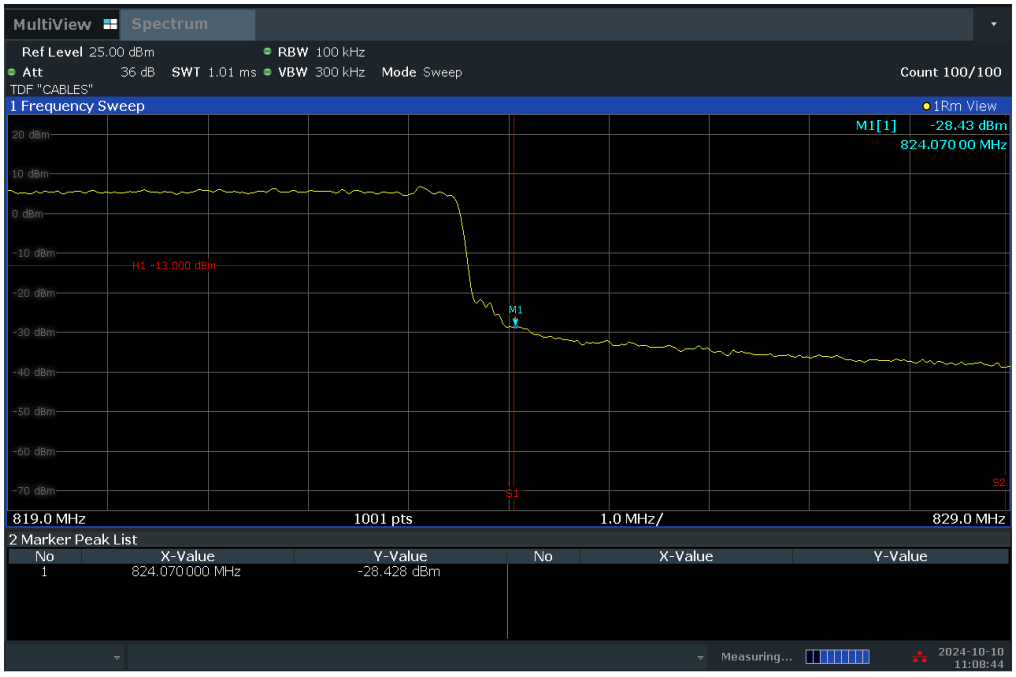
11:07:51 AM 10/10/2024

Plot 7-95. Channel Edge Plot (LTE Band 26 - 5MHz QPSK – High Channel)



11:08:26 AM 10/10/2024

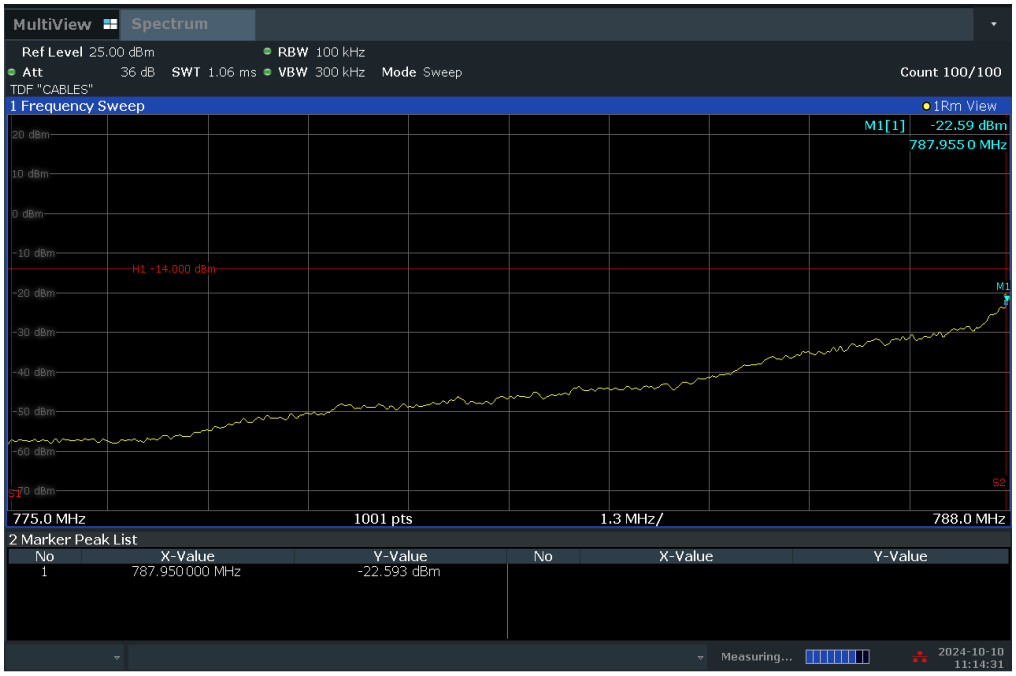
Plot 7-96. Channel Edge Plot (LTE Band 26 - 10MHz QPSK – Low Channel)



11:08:44 AM 10/10/2024

Plot 7-97. Channel Edge Plot (LTE Band 26 - 10MHz QPSK – High Channel)

LTE Band 14

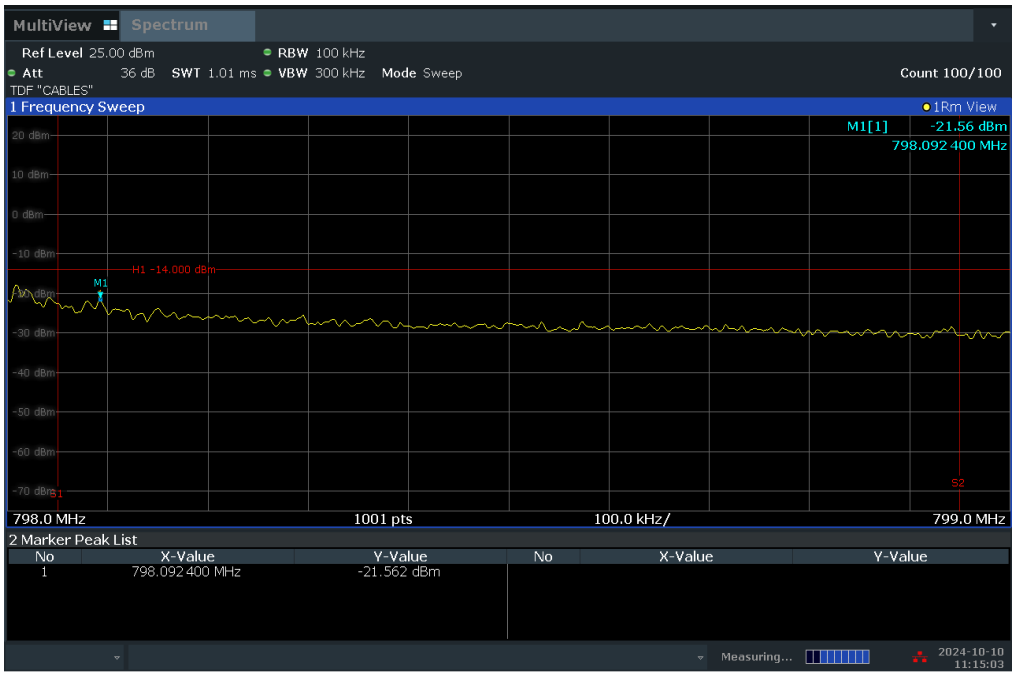


11:14:31 AM 10/10/2024

Plot 7-98. Lower Band Edge Plot (LTE Band 14 - 5MHz QPSK – RB Size 25)

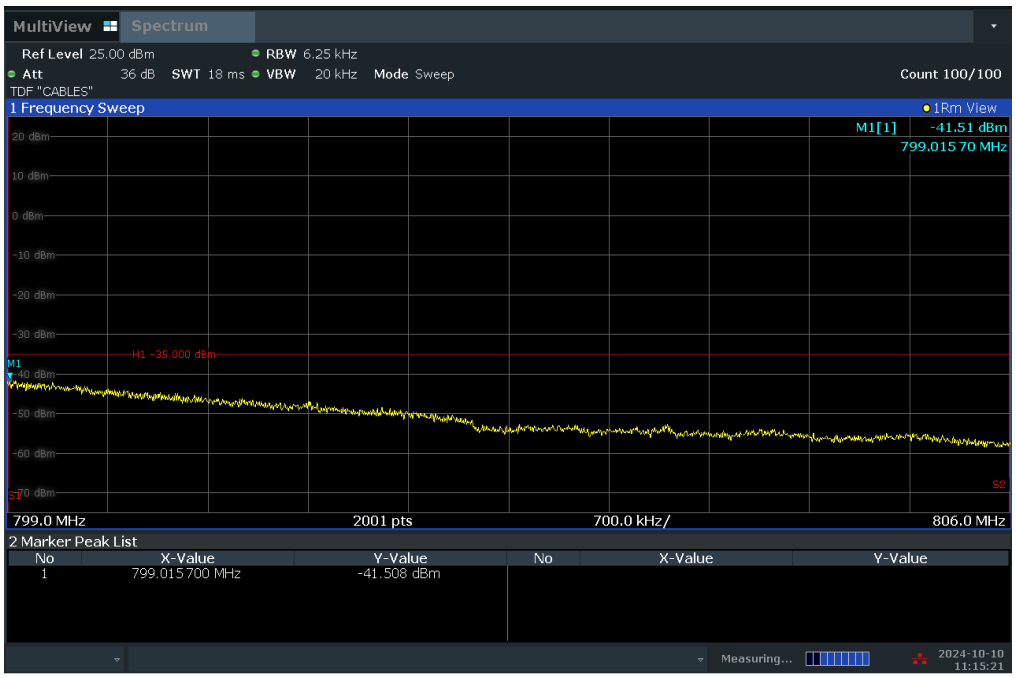
11:14:14 AM 10/10/2024

Plot 7-99. Lower Emission Mask Plot (LTE Band 14 - 5MHz QPSK – RB Size 25)



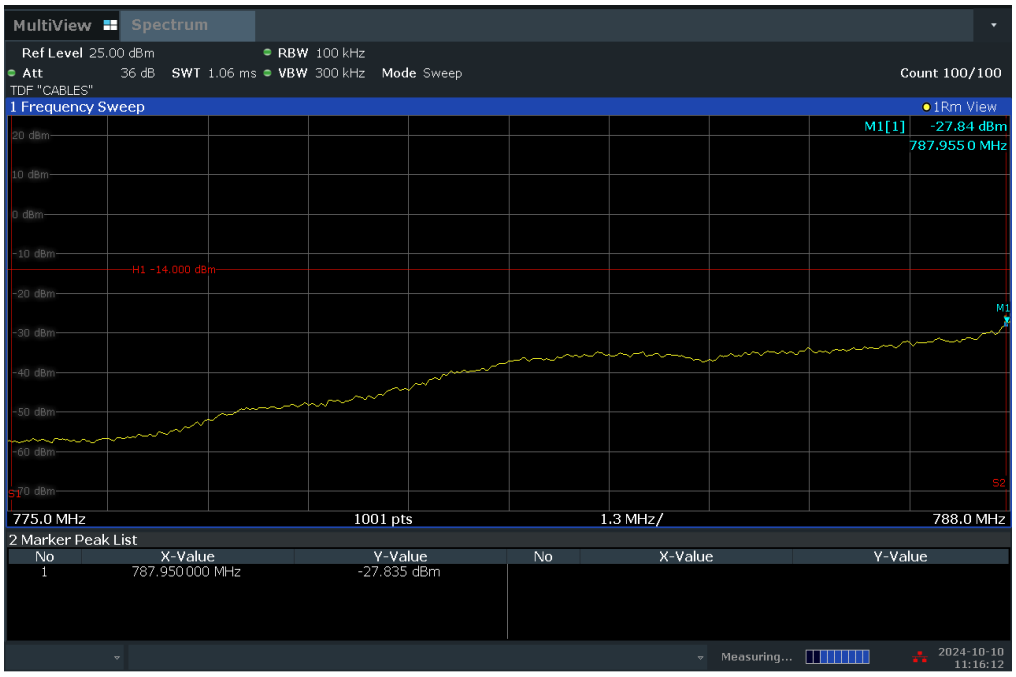
11:15:04 AM 10/10/2024

Plot 7-100. Upper Band Edge Plot (LTE Band 14 - 5MHz QPSK – RB Size 25)



11:15:21 AM 10/10/2024

Plot 7-101. Upper Emission Mask Plot (LTE Band 14 - 5MHz QPSK – RB Size 25)

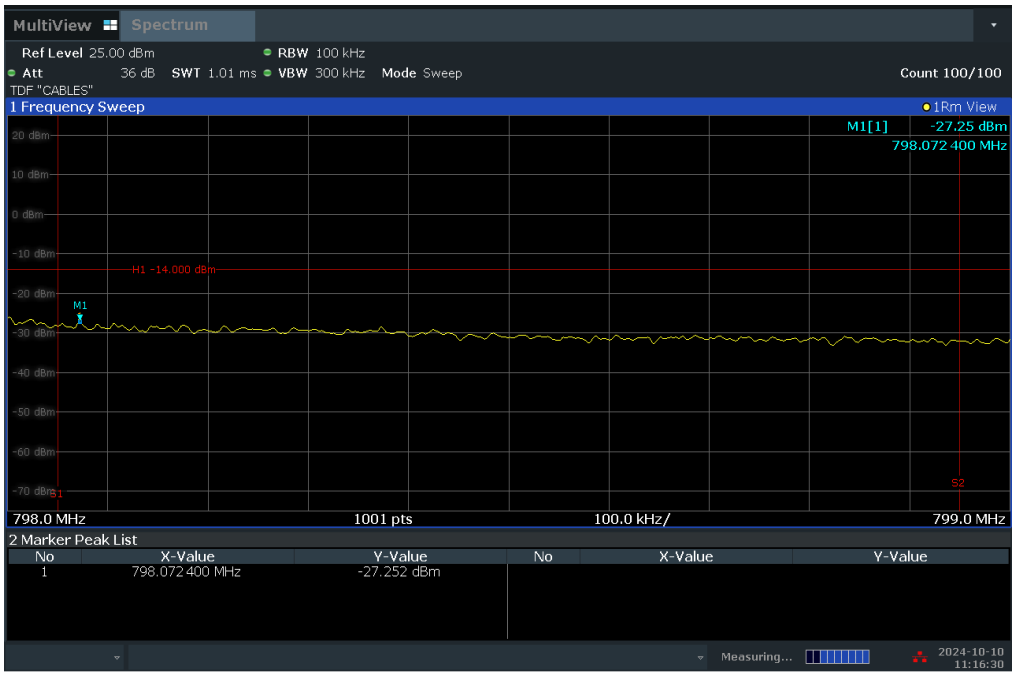


11:16:13 AM 10/10/2024

Plot 7-102. Lower Band Edge Plot (LTE Band 14 - 10MHz QPSK – RB Size 50)

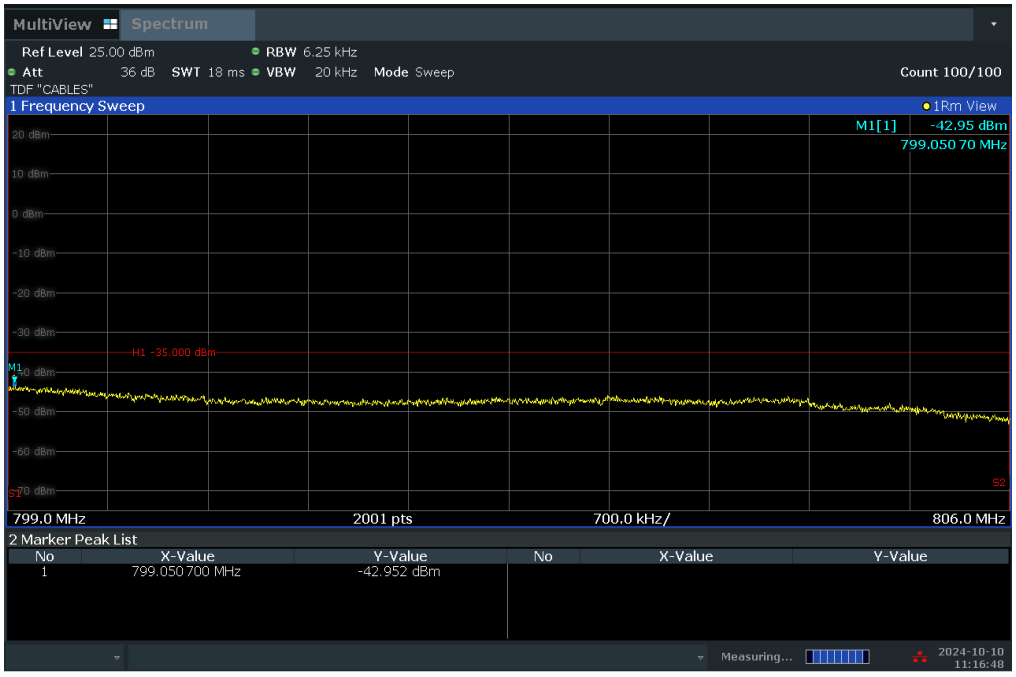
11:15:55 AM 10/10/2024

Plot 7-103. Lower Emission Mask Plot (LTE Band 14 - 10MHz QPSK – RB Size 50)



11:16:30 AM 10/10/2024

Plot 7-104. Upper Band Edge Plot (LTE Band 14 - 10MHz QPSK – RB Size 50)



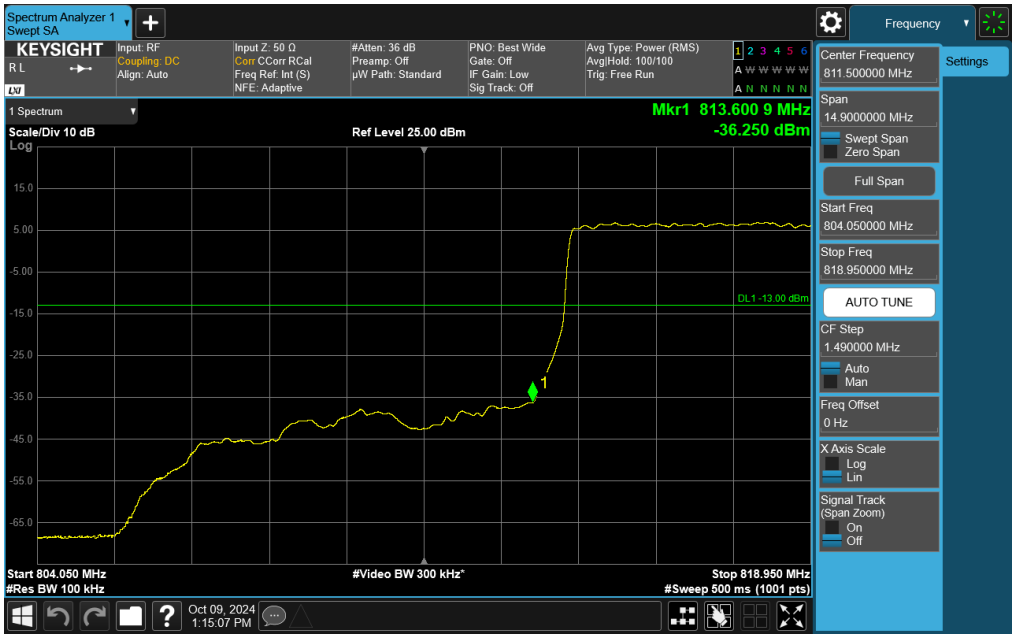
11:16:48 AM 10/10/2024

Plot 7-105. Upper Emission Mask Plot (LTE Band 14 - 10MHz QPSK – RB Size 50)

NR Band n26

Plot 7-106. Lower Band Edge Plot (NR Band n26 - 5MHz DFT-s-OFDM π/2 BPSK – Low Channel)

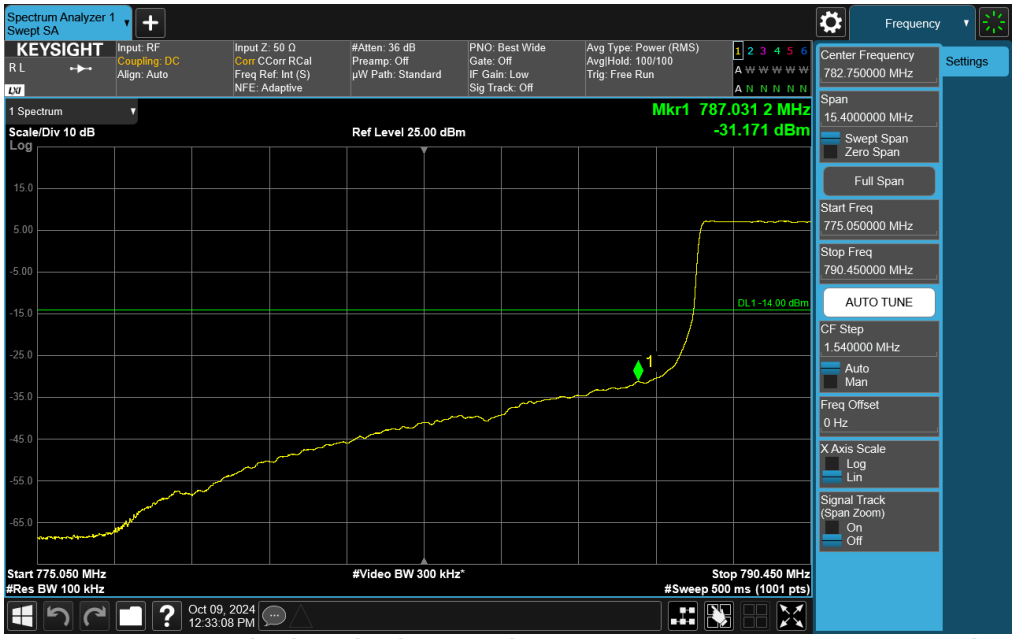
Plot 7-107. Upper Band Edge Plot (NR Band n26 - 5MHz DFT-s-OFDM π/2 BPSK – High Channel)



Plot 7-108. Lower Band Edge Plot (NR Band n26 - 10MHz DFT-s-OFDM π/2 BPSK – Mid Channel)

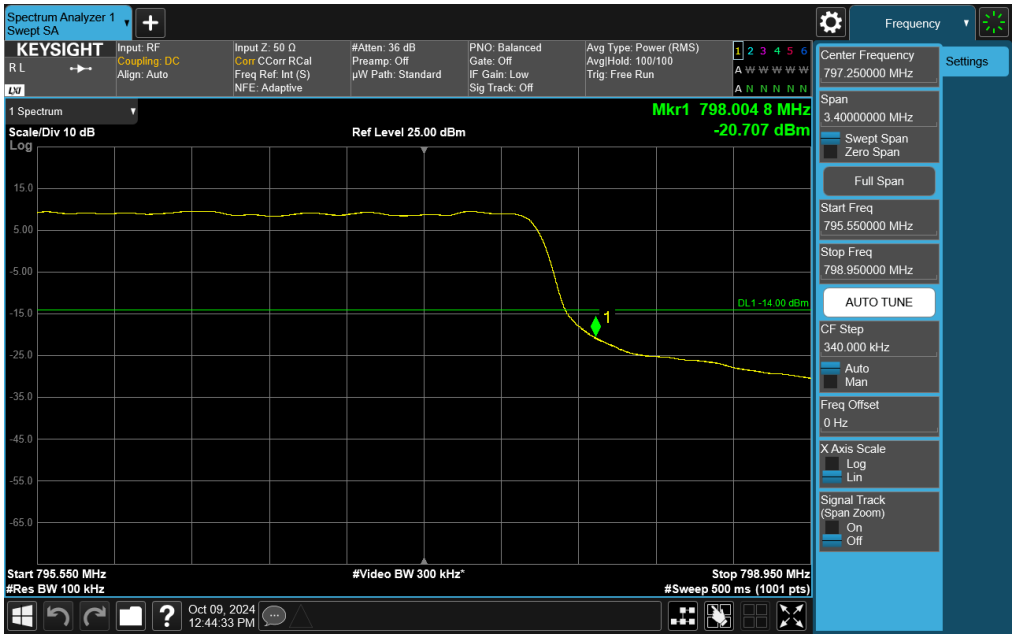
Plot 7-109. Upper Band Edge Plot (NR Band n26 - 10MHz DFT-s-OFDM π/2 BPSK – High Channel)

NR Band n14

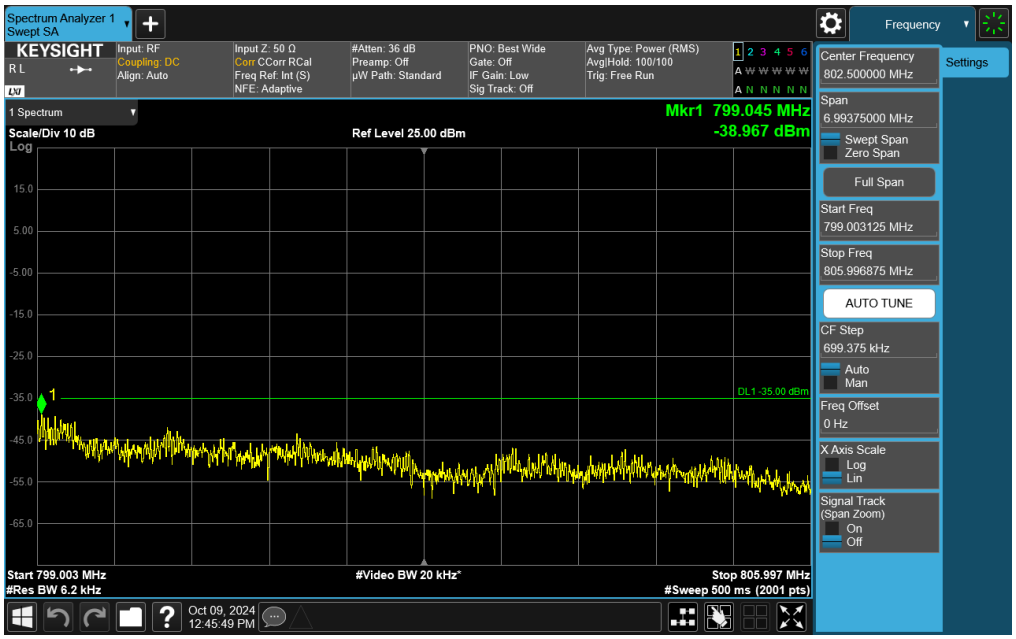


Plot 7-110. Lower Band Edge Plot (NR Band n14 - 5MHz CP-OFDM QPSK – RB Size 25)

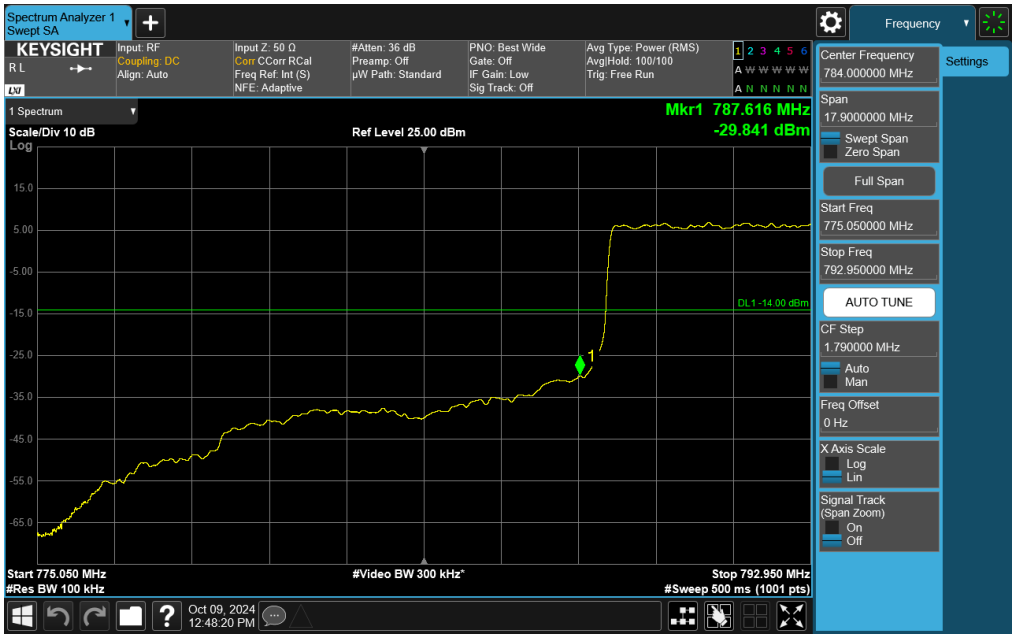
Plot 7-111. Lower Emission Mask Plot (NR Band n14 - 5MHz CP-OFDM QPSK – RB Size 25)



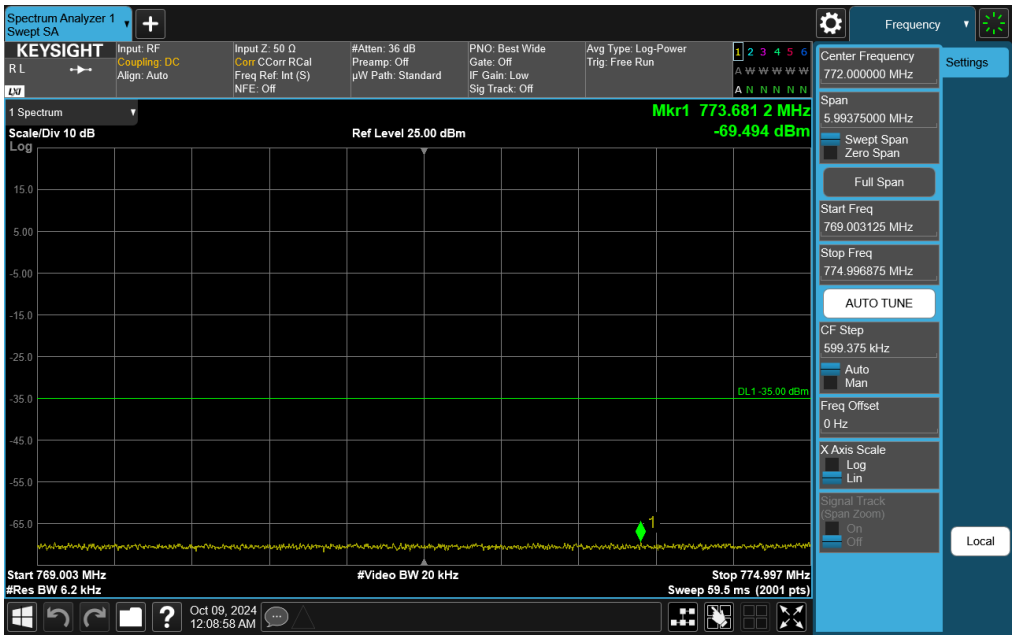
Plot 7-112. Upper Band Edge Plot (NR Band n14 - 5MHz DFT-s-OFDM QPSK – RB Size 25)



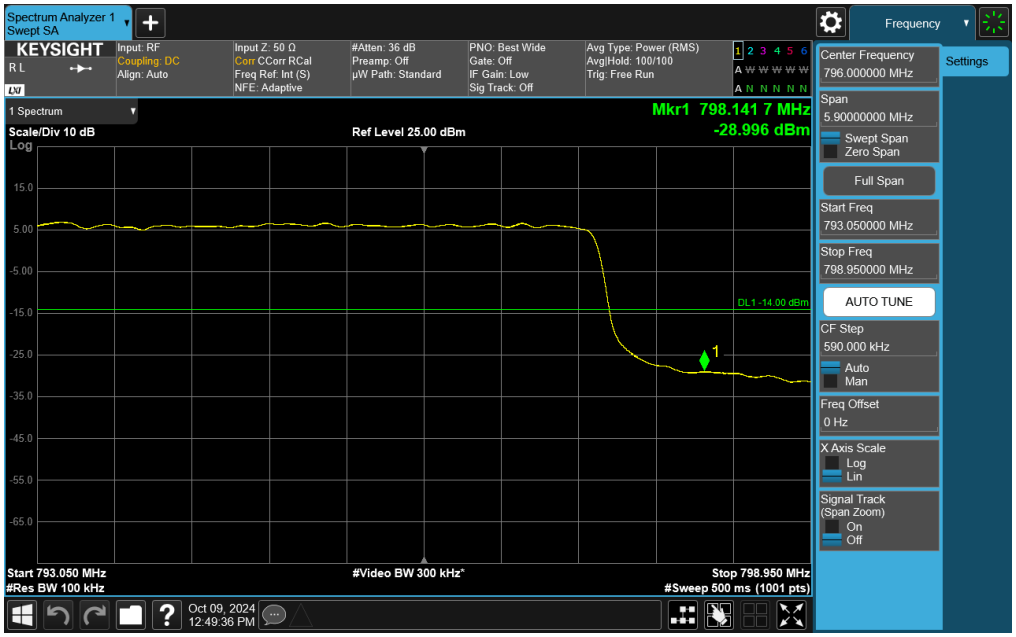
Plot 7-113. Upper Emission Mask Plot (NR Band n14 - 5MHz DFT-s-OFDM QPSK – RB Size 25)



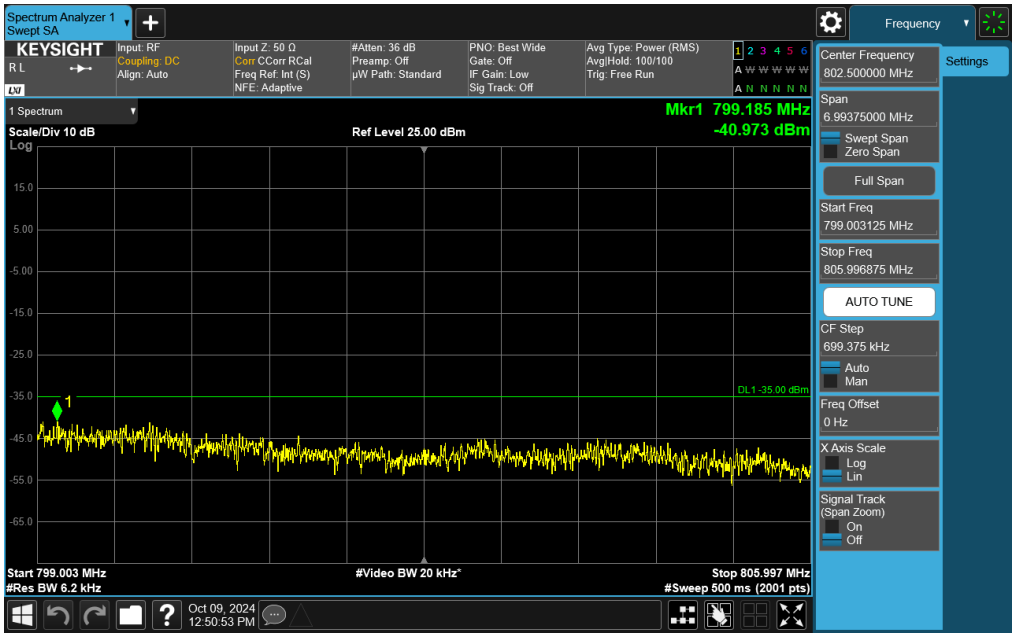
Plot 7-114. Lower Band Edge Plot (NR Band n14 - 10MHz QPSK – RB Size 50)



Plot 7-115. Lower Emission Mask Plot (NR Band n14 - 10MHz DFT-s-OFDM QPSK – RB Size 50)



Plot 7-116. Upper Band Edge Plot (NR Band n14 - 10MHz DFT-s-OFDM QPSK – RB Size 50)



Plot 7-117. Upper Emission Mask Plot (NR Band n14 - 10MHz DFT-s-OFDM QPSK – RB Size 50)

7.5 Conducted Power Output Data

§2.1046 §90.635

Test Overview

Conducted power measurements are performed to measure the average output power of the EUT. The averaging is to be performed only over duration of active transmissions at maximum output power level. The average measurements do not include averaging over periods when the transmitter is quiescent or when operating at reduced power level.

Test Procedures Used

KDB 971168 D01 v03r01

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

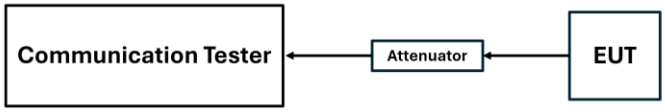


Figure 7-7. LTE Conducted Power Measurement Setup

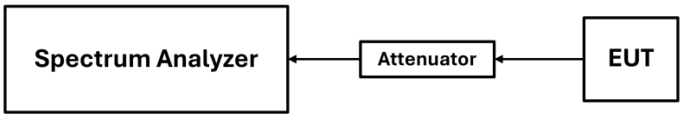


Figure 7-8. FR1 Test Instrument & Measurement Setup

Test Notes

1. The EUT was tested in all possible test configurations. The worst case emissions are reported with the EUT modulations and channel bandwidth configurations shown in the tables below.

7.5.1 Antenna 4 – Conducted Power

Bandwidth	Modulation	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Conducted Power [Watts]	Conducted Power Limit [dBm]	Margin [dB]
1.4 MHz	QPSK	814.7	1 / 5	25.67	0.369	50.00	-24.33
		823.3	1 / 3	25.50	0.355	50.00	-24.50
	16-QAM	814.7	1 / 0	24.55	0.285	50.00	-25.45
	64-QAM	814.7	1 / 5	23.70	0.234	50.00	-26.30
	256-QAM	814.7	1 / 0	20.61	0.115	50.00	-29.39
3 MHz	QPSK	815.5	1 / 14	25.56	0.360	50.00	-24.44
		822.5	1 / 7	25.70	0.372	50.00	-24.30
	16-QAM	815.5	1 / 14	24.71	0.296	50.00	-25.29
	64-QAM	822.5	1 / 14	23.45	0.221	50.00	-26.55
	256-QAM	822.5	1 / 14	20.80	0.120	50.00	-29.20
5 MHz	QPSK	816.5	1 / 24	25.61	0.364	50.00	-24.39
		821.5	1 / 24	25.70	0.372	50.00	-24.30
	16-QAM	816.5	1 / 24	24.71	0.296	50.00	-25.29
	64-QAM	821.5	1 / 24	23.75	0.237	50.00	-26.25
	256-QAM	816.5	1 / 0	20.75	0.119	50.00	-29.25
10 MHz	QPSK	819.0	1 / 49	25.52	0.356	50.00	-24.48
	16-QAM	819.0	1 / 25	24.46	0.279	50.00	-25.54
	64-QAM	819.0	1 / 25	23.69	0.234	50.00	-26.31
	256-QAM	819.0	1 / 0	20.67	0.117	50.00	-29.33

Table 7-2. Conducted Output Data (LTE Band 26)

Bandwidth	Modulation	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Conducted Power [Watts]	Conducted Power Limit [dBm]	Margin [dB]
5 MHz	π/2 BPSK	816.5	1 / 1	25.32	0.340	50.00	-24.68
		819.0	1 / 1	25.66	0.368	50.00	-24.34
		821.5	1 / 12	25.64	0.366	50.00	-24.36
	QPSK	816.5	1 / 12	25.63	0.366	50.00	-24.37
		819.0	1 / 23	25.70	0.372	50.00	-24.30
		821.5	1 / 1	25.51	0.356	50.00	-24.49
	16-QAM	816.5	1 / 1	24.69	0.294	50.00	-25.31
	64-QAM	819.0	1 / 1	23.71	0.235	50.00	-26.29
	256-QAM	819.0	1 / 23	20.73	0.118	50.00	-29.27
	π/2 BPSK	819.0	1 / 25	25.70	0.372	50.00	-24.30
10 MHz	QPSK	819.0	1 / 25	25.56	0.360	50.00	-24.44
	16-QAM	819.0	1 / 1	24.54	0.284	50.00	-25.46
	64-QAM	819.0	1 / 1	23.70	0.234	50.00	-26.30
	256-QAM	819.0	1 / 1	20.69	0.117	50.00	-29.31

Table 7-3. Conducted Output Data (NR Band n26)

7.5.2 Antenna 3b – Conducted Power

Bandwidth	Modulation	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Conducted Power [Watts]	Conducted Power Limit [dBm]	Margin [dB]
1.4 MHz	QPSK	814.7	1 / 0	25.18	0.330	50.00	-24.82
		823.3	1 / 3	25.04	0.319	50.00	-24.96
	16-QAM	814.7	1 / 0	24.16	0.261	50.00	-25.84
	64-QAM	823.3	1 / 5	22.97	0.198	50.00	-27.03
	256-QAM	823.3	1 / 3	20.28	0.107	50.00	-29.72
3 MHz	QPSK	815.5	1 / 0	25.12	0.325	50.00	-24.88
		822.5	1 / 7	25.20	0.331	50.00	-24.80
	16-QAM	815.5	1 / 7	24.23	0.265	50.00	-25.77
	64-QAM	815.5	1 / 14	23.14	0.206	50.00	-26.86
	256-QAM	822.5	1 / 0	20.20	0.105	50.00	-29.80
5 MHz	QPSK	816.5	1 / 24	25.20	0.331	50.00	-24.80
		821.5	1 / 0	25.18	0.330	50.00	-24.82
	16-QAM	821.5	1 / 0	24.18	0.262	50.00	-25.82
	64-QAM	816.5	1 / 0	23.09	0.204	50.00	-26.91
	256-QAM	821.5	1 / 24	20.11	0.103	50.00	-29.89
10 MHz	QPSK	819.0	1 / 25	25.01	0.317	50.00	-24.99
	16-QAM	819.0	1 / 49	24.17	0.261	50.00	-25.83
	64-QAM	819.0	1 / 49	22.96	0.198	50.00	-27.04
	256-QAM	819.0	1 / 0	20.25	0.106	50.00	-29.75

Table 7-4. Conducted Output Data (LTE Band 26)

Bandwidth	Modulation	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Conducted Power [Watts]	Conducted Power Limit [dBm]	Margin [dB]
5 MHz	π/2 BPSK	816.5	1 / 12	25.08	0.322	50.00	-24.92
		819.0	1 / 1	25.20	0.331	50.00	-24.80
		821.5	1 / 12	25.07	0.321	50.00	-24.93
	QPSK	816.5	1 / 12	25.03	0.318	50.00	-24.97
		819.0	1 / 12	25.09	0.323	50.00	-24.91
		821.5	1 / 1	25.15	0.327	50.00	-24.85
	16-QAM	816.5	1 / 1	24.22	0.264	50.00	-25.78
	64-QAM	821.5	1 / 23	23.21	0.209	50.00	-26.79
	256-QAM	816.5	1 / 23	20.30	0.107	50.00	-29.70
10 MHz	π/2 BPSK	819.0	1 / 1	25.09	0.323	50.00	-24.91
	QPSK	819.0	1 / 1	25.07	0.321	50.00	-24.93
	16-QAM	819.0	1 / 1	24.12	0.258	50.00	-25.88
	64-QAM	819.0	1 / 1	22.92	0.196	50.00	-27.08
	256-QAM	819.0	1 / 1	20.12	0.103	50.00	-29.88

Table 7-5. Conducted Output Data (NR Band n26)

7.6 Radiated Power (ERP)

§90.542(a)(7)

Test Overview

Effective Radiated Power (ERP) measurements are calculated by adding highest antenna gain to maximum measured conducted output power. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.2.1
ANSI C63.26-2015

Test Settings

The relevant equation for determining the ERP from the conducted RF output power measured is:

ERP = PMeas – LC + GT

Where:

ERP = Effective Radiated Power (expressed in the same units as PMeas, typically dBW or dBm)

PMeas = measured transmitter output power or PSD, in dBW or dBm

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

GT = gain of the transmitting antenna, in dBd (ERP)

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

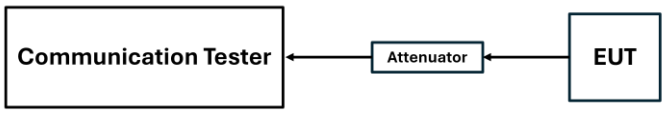


Figure 7-9. LTE ERP Measurement Setup

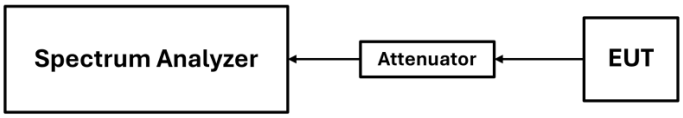


Figure 7-10. FR1 ERP Measurement Setup

Test Notes

1) The worst case emissions are reported with the modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.

2) This unit was tested with its standard battery.

3) The Level (dBm) readings in the table were taken with a correction table loaded into the base station simulator. The correction table was used to account for the signal attenuation in the connecting cable between the transmitter and antenna.

4) The Ant. Gains (GT) are listed in dBi.

7.6.1 Antenna 4 - ERP

Bandwidth	Mod.	Frequency [MHz]	Ant. Gain [dBi]	RB Size/Offset	Conducted Power [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
5 MHz	QPSK	790.5	-0.30	1 / 0	25.63	23.18	0.208	34.77	-11.59
		793.0	-0.30	1 / 12	25.63	23.18	0.208	34.77	-11.59
		795.5	-0.30	1 / 24	25.70	**23.25**	0.211	34.77	-11.52
	16-QAM	790.5	-0.30	1 / 24	24.66	22.21	0.166	34.77	-12.56
	64-QAM	793.0	-0.30	1 / 12	23.66	21.21	0.132	34.77	-13.56
	256-QAM	795.5	-0.30	1 / 24	20.80	18.35	0.068	34.77	-16.42
10 MHz	QPSK	793.0	-0.30	1 / 49	25.65	**23.20**	0.209	34.77	-11.57
	16-QAM	793.0	-0.30	1 / 25	24.54	22.09	0.162	34.77	-12.68
	64-QAM	793.0	-0.30	1 / 0	23.56	21.11	0.129	34.77	-13.66
	256-QAM	793.0	-0.30	1 / 25	20.78	18.33	0.068	34.77	-16.44

Table 7-6. Antenna 4 ERP Data (LTE Band 14)

Bandwidth	Mod.	Frequency [MHz]	Ant. Gain [dBi]	RB Size/Offset	Conducted Power [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
5 MHz	π/2 BPSK	790.5	-0.30	1 / 23	25.41	22.96	0.198	34.77	-11.81
		793.0	-0.30	1 / 12	25.67	23.22	0.210	34.77	-11.55
		795.5	-0.30	1 / 23	25.70	**23.25**	0.211	34.77	-11.52
	QPSK	790.5	-0.30	1 / 1	25.70	**23.25**	0.211	34.77	-11.52
		793.0	-0.30	1 / 12	25.61	23.16	0.207	34.77	-11.61
		795.5	-0.30	1 / 1	25.66	23.21	0.209	34.77	-11.56
	16-QAM	790.5	-0.30	1 / 1	24.63	22.18	0.165	34.77	-12.59
	64-QAM	793.0	-0.30	1 / 1	23.66	21.21	0.132	34.77	-13.56
	256-QAM	790.5	-0.30	1 / 12	20.73	18.28	0.067	34.77	-16.49
10 MHz	π/2 BPSK	793.0	-0.30	1 / 25	25.70	**23.25**	0.211	34.77	-11.52
	QPSK	793.0	-0.30	1 / 1	25.65	**23.20**	0.209	34.77	-11.57
	16-QAM	793.0	-0.30	1 / 25	24.65	22.20	0.166	34.77	-12.57
	64-QAM	793.0	-0.30	1 / 1	23.53	21.08	0.128	34.77	-13.69
	256-QAM	793.0	-0.30	1 / 25	20.57	18.12	0.065	34.77	-16.65

Table 7-7. Antenna 4 ERP Data (NR Band n14)

7.6.2 Antenna 3b - ERP

Bandwidth	Mod.	Frequency [MHz]	Ant. Gain [dBi]	RB Size/Offset	Conducted Power [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
5 MHz	QPSK	790.5	-2.70	1 / 24	25.18	**20.33**	0.108	34.77	-14.44
		793.0	-2.70	1 / 0	25.14	20.29	0.107	34.77	-14.48
		795.5	-2.70	1 / 0	24.94	20.09	0.102	34.77	-14.68
	16-QAM	795.5	-2.70	1 / 0	24.15	19.30	0.085	34.77	-15.47
	64-QAM	790.5	-2.70	1 / 0	23.17	18.32	0.068	34.77	-16.45
	256-QAM	793.0	-2.70	1 / 0	20.37	15.52	0.036	34.77	-19.25
10 MHz	QPSK	793.0	-2.70	1 / 0	25.05	**20.20**	0.105	34.77	-14.57
	16-QAM	793.0	-2.70	1 / 0	23.72	18.87	0.077	34.77	-15.90
	64-QAM	793.0	-2.70	1 / 49	23.11	18.26	0.067	34.77	-16.51
	256-QAM	793.0	-2.70	1 / 25	20.25	15.40	0.035	34.77	-19.37

Table 7-8. Antenna 3b ERP Data (LTE Band 14)

Bandwidth	Mod.	Frequency [MHz]	Ant. Gain [dBi]	RB Size/Offset	Conducted Power [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
5 MHz	π/2 BPSK	790.5	-2.70	1 / 23	24.82	19.97	0.099	34.77	-14.80
		793.0	-2.70	1 / 12	25.20	**20.35**	0.108	34.77	-14.42
		795.5	-2.70	1 / 23	24.97	20.12	0.103	34.77	-14.65
	QPSK	790.5	-2.70	1 / 12	25.06	20.21	0.105	34.77	-14.56
		793.0	-2.70	1 / 23	25.12	20.27	0.106	34.77	-14.50
		795.5	-2.70	1 / 12	25.15	**20.30**	0.107	34.77	-14.47
	16-QAM	795.5	-2.70	1 / 1	24.20	19.35	0.086	34.77	-15.42
	64-QAM	795.5	-2.70	1 / 23	23.13	18.28	0.067	34.77	-16.49
	256-QAM	790.5	-2.70	1 / 12	20.21	15.36	0.034	34.77	-19.41
10 MHz	π/2 BPSK	793.0	-2.70	1 / 1	25.11	**20.26**	0.106	34.77	-14.51
	QPSK	793.0	-2.70	1 / 25	25.11	**20.26**	0.106	34.77	-14.51
	16-QAM	793.0	-2.70	1 / 1	24.21	19.36	0.086	34.77	-15.41
	64-QAM	793.0	-2.70	1 / 1	23.22	18.37	0.069	34.77	-16.40
	256-QAM	793.0	-2.70	1 / 25	20.19	15.34	0.034	34.77	-19.43

Table 7-9. Antenna 3b ERP Data (NR Band n14)

7.7 Radiated Spurious Emissions

§2.1053 §90.691(a) §90.543(e) §90.543(f)

Test Overview

Radiated spurious emissions measurements are performed using the field strength conversion method described in KDB 971168 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using horizontally and vertically polarized broadband hybrid antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed while the EUT is operating at maximum power and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

ANSI C63.26-2015

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points ≥ 2 x span / RBW
5. Detector = RMS
6. Trace mode = Average (Max Hold for pulsed emissions)
7. The trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

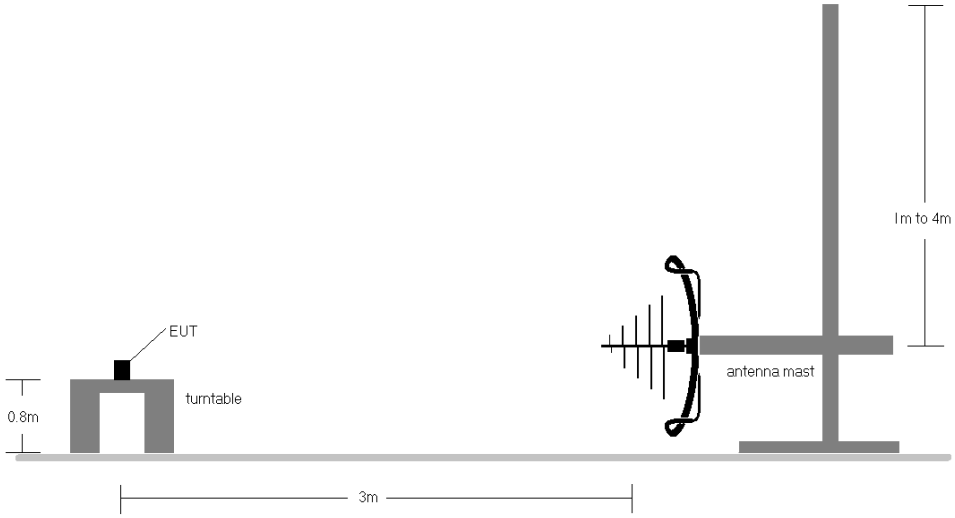


Figure 7-11. Test Instrument & Measurement Setup < 1GHz

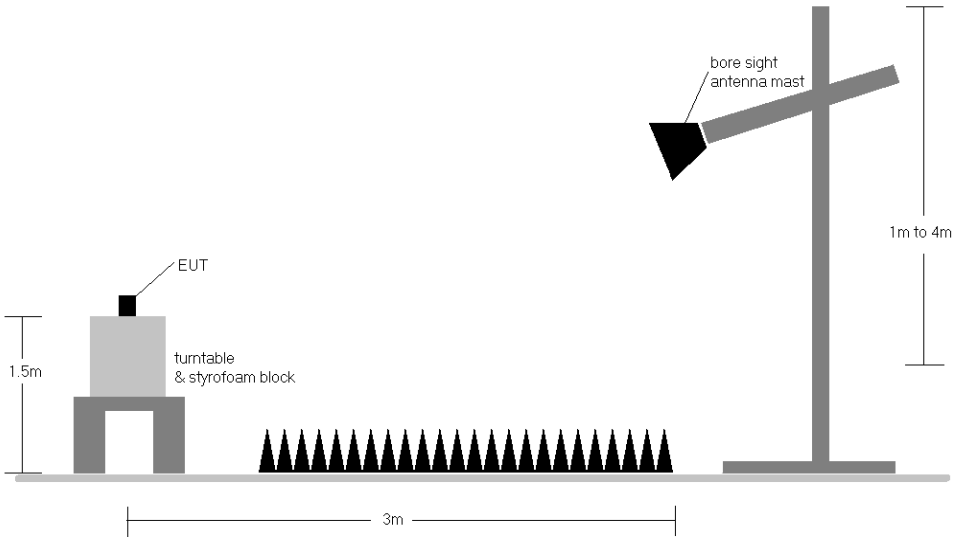


Figure 7-12. Test Instrument & Measurement Setup >1 GHz

Test Notes

1. Field strengths are calculated using the Measurement quantity conversions in KDB 971168 D01 v03r01 Section 5.8.4.
    a. E(dBµV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m)
    b. EIRP (dBm) = E(dBµV/m) + 20logD – 104.8; where D is the measurement distance in meters.

2. The device was tested under all modulations, RB sizes and offsets, and channel bandwidth configurations and the worst case emissions are reported with 1 RB.

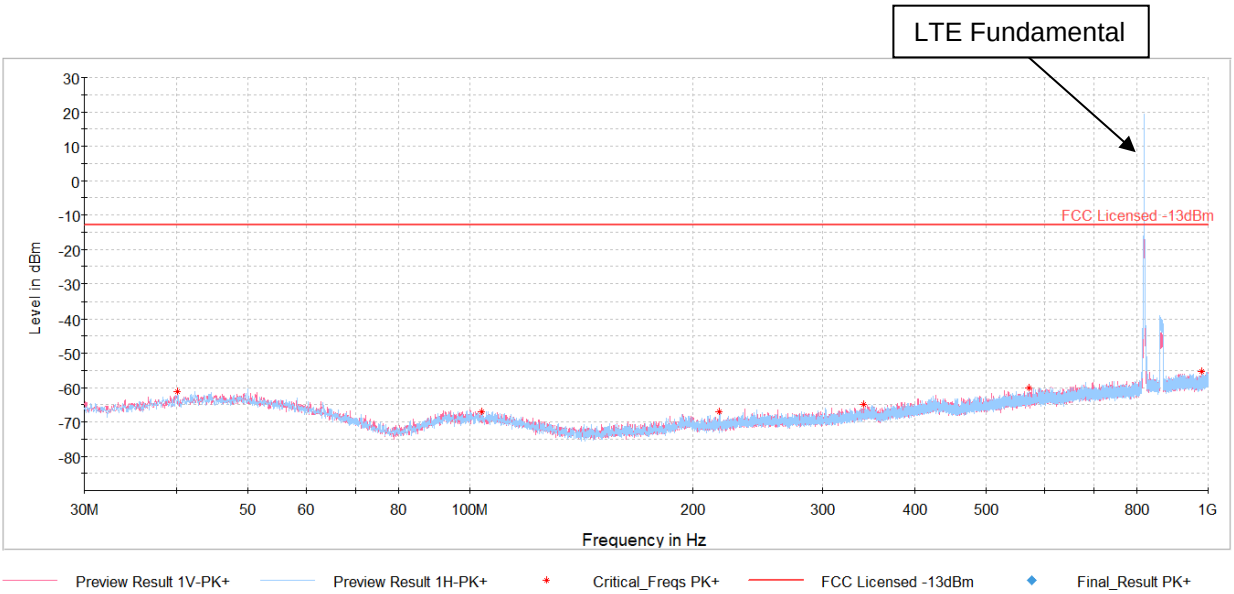
3. This unit was tested with its standard battery.

4. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.

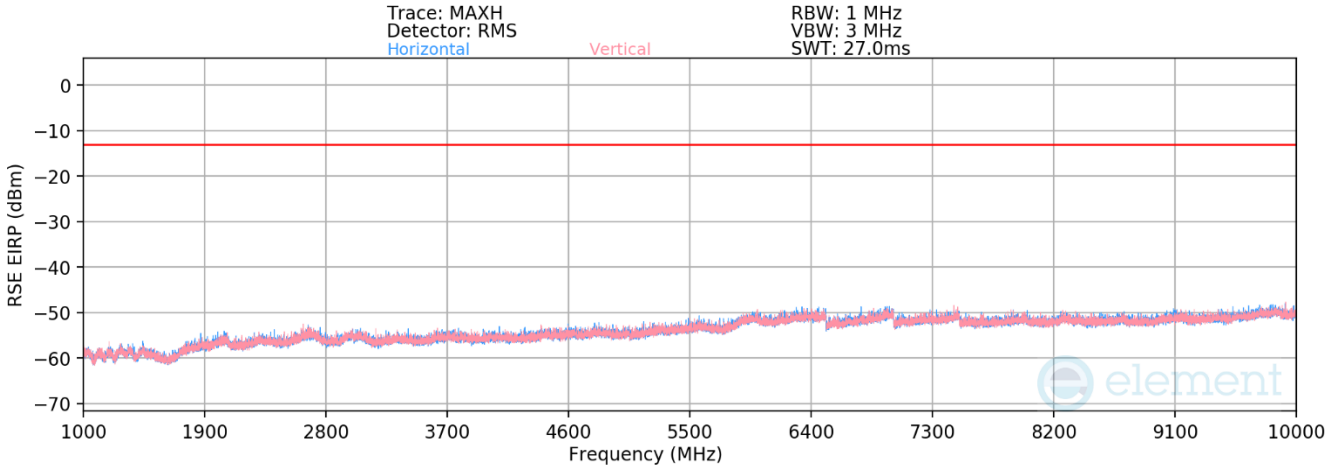
5. The "-" shown in the following RSE tables are used to denote a noise floor measurement.

7.7.1 Antenna 4 – Radiated Spurious Emission Measurements

LTE Band 26



Plot 7-118. Antenna 4 Radiated Spurious Plot Below 1GHz (LTE Band 26)



Plot 7-119. Antenna 4 Radiated Spurious Plot Above 1GHz (LTE Band 26)

Bandwidth (MHz):	5
Frequency (MHz):	816.5
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 12

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1633.0	H	-	-	-72.10	-5.91	28.99	-66.27	-13.00	-53.27
2449.5	H	-	-	-74.36	-0.38	32.26	-62.99	-13.00	-49.99
3266.0	V	-	-	-75.72	1.75	33.03	-62.22	-13.00	-49.22

Table 7-10. Antenna 4 Radiated Spurious Data (LTE Band 26 – Low Channel)

Bandwidth (MHz):	10
Frequency (MHz):	819.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1638.0	H	-	-	-72.78	-5.37	28.85	-66.41	-13.00	-53.41
2457.0	V	-	-	-74.33	-0.46	32.21	-63.05	-13.00	-50.05
3276.0	H	-	-	-75.83	2.00	33.17	-62.09	-13.00	-49.09

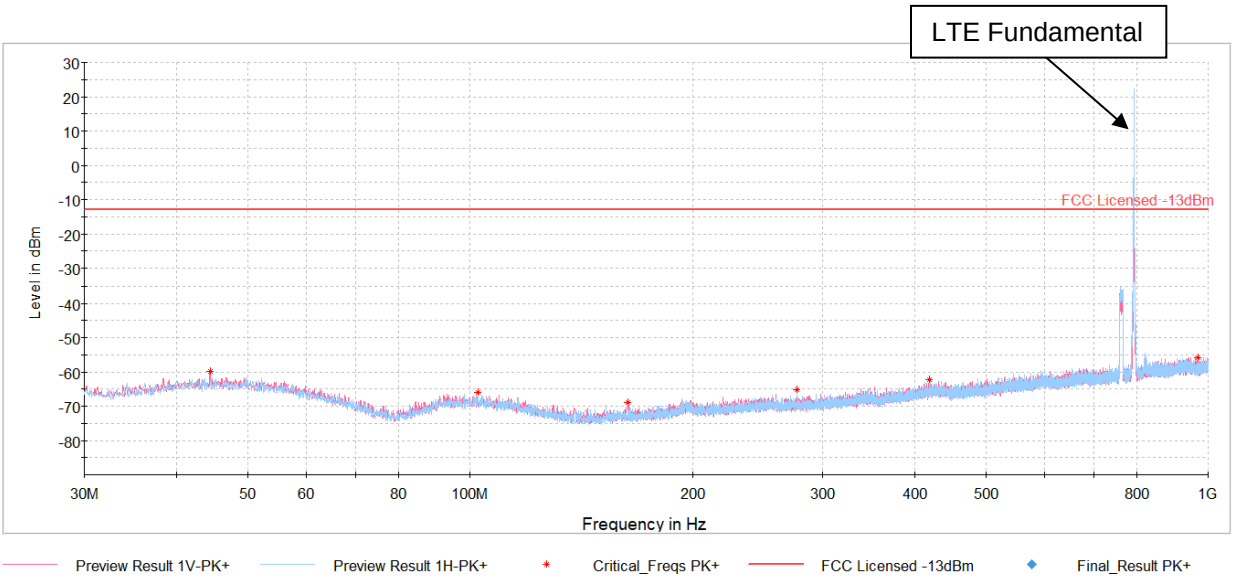
Table 7-11. Antenna 4 Radiated Spurious Data (LTE Band 26 – Mid Channel)

Bandwidth (MHz):	5
Frequency (MHz):	821.5
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 12

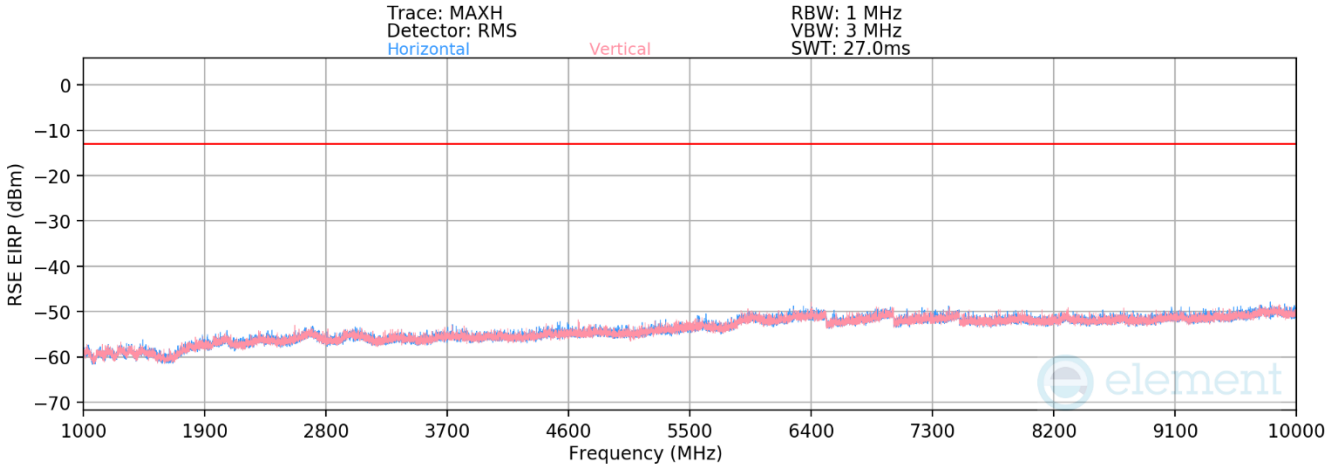
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1643.0	H	-	-	-72.25	-5.85	28.89	-66.36	-13.00	-53.36
2464.5	H	-	-	-74.38	-0.38	32.24	-63.02	-13.00	-50.02
3286.0	V	-	-	-75.75	2.05	33.30	-61.96	-13.00	-48.96

Table 7-12. Antenna 4 Radiated Spurious Data (LTE Band 26 – High Channel)

LTE Band 14



Plot 7-120. Antenna 4 Radiated Spurious Plot Below 1GHz (LTE Band 14)



Plot 7-121. Antenna 4 Radiated Spurious Plot Above 1GHz (LTE Band 14)

Bandwidth (MHz):	5
Frequency (MHz):	790.5
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 12

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1581.0	V	-	-	-72.53	-5.31	29.16	-66.10	-40.00	-26.10
2371.5	H	-	-	-74.34	-0.24	32.42	-62.84	-13.00	-49.84
3162.0	H	-	-	-76.21	1.67	32.46	-62.79	-13.00	-49.79

Table 7-13. Antenna 4 Radiated Spurious Data (LTE Band 14 – Low Channel)

Bandwidth (MHz):	10
Frequency (MHz):	793.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1586.0	H	-	-	-72.89	-5.29	28.82	-66.44	-40.00	-26.44
2379.0	H	-	-	-74.24	-0.29	32.48	-62.78	-13.00	-49.78
3172.0	H	-	-	-75.91	1.41	32.50	-62.76	-13.00	-49.76

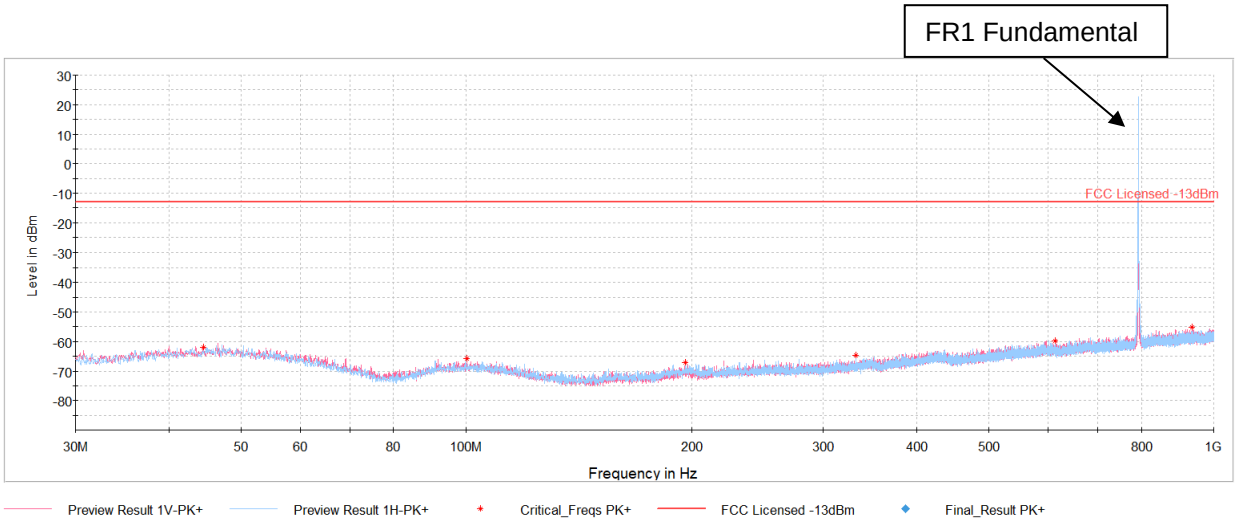
Table 7-14. Antenna 4 Radiated Spurious Data (LTE Band 14 – Mid Channel)

Bandwidth (MHz):	5
Frequency (MHz):	795.5
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 12

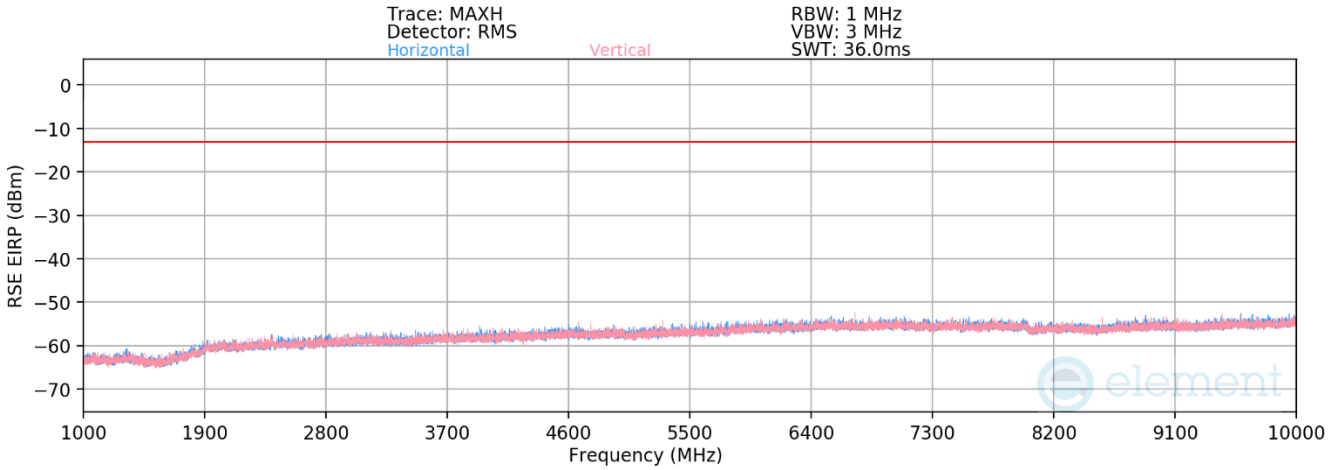
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1591.0	H	-	-	-73.02	-5.29	28.69	-66.57	-40.00	-26.57
2386.5	H	-	-	-73.98	-0.24	32.78	-62.47	-13.00	-49.47
3182.0	H	-	-	-75.80	1.41	32.61	-62.65	-13.00	-49.65

Table 7-15. Antenna 4 Radiated Spurious Data (LTE Band 14 – High Channel)

NR Band n14



Plot 7-122. Antenna 4 Radiated Spurious Plot Below 1GHz (NR Band n14)



Plot 7-123. Antenna 4 Radiated Spurious Plot Above 1GHz (NR Band n14)

Bandwidth (MHz):	5
Frequency (MHz):	790.5
Modulation Signal:	QPSK
RB / Offset:	1 / 12

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1581.0	H	-	-	-74.59	-6.41	26.00	-69.26	-40.00	-29.26
2371.5	H	-	-	-74.92	-2.18	29.91	-65.35	-13.00	-52.35
3162.0	H	-	-	-75.63	-0.39	30.97	-64.28	-13.00	-51.28

Table 7-16. Antenna 4 Radiated Spurious Data (NR Band n14 – Low Channel)

Bandwidth (MHz):	10
Frequency (MHz):	793.0
Modulation Signal:	QPSK
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1586.0	H	-	-	-74.49	-6.36	26.15	-69.11	-40.00	-29.11
2379.0	H	-	-	-74.79	-2.18	30.04	-65.22	-13.00	-52.22
3172.0	H	-	-	-75.45	-0.44	31.11	-64.15	-13.00	-51.15

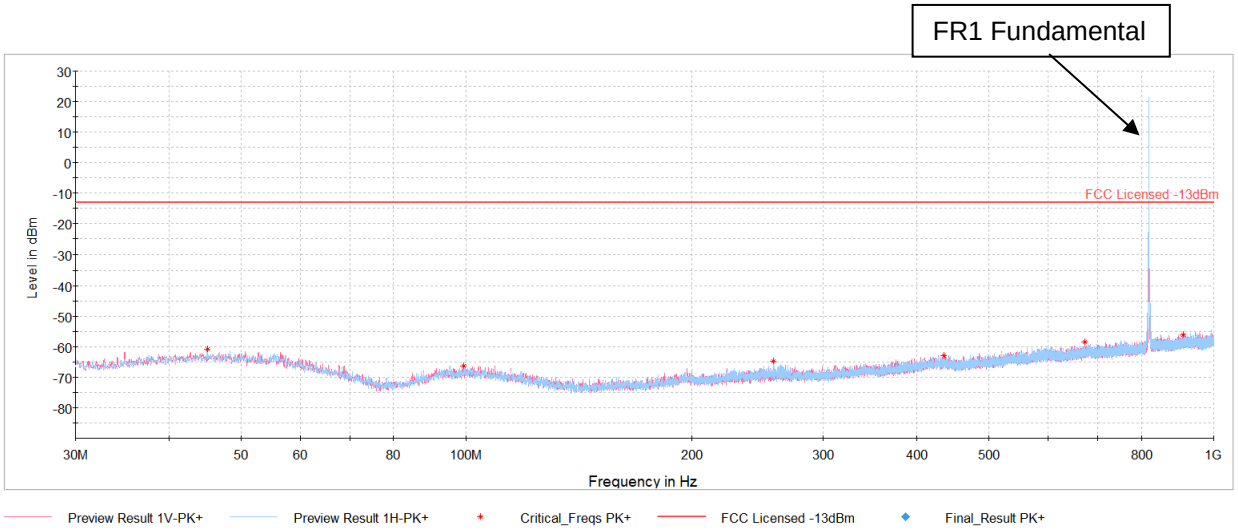
Table 7-17. Antenna 4 Radiated Spurious Data (NR Band n14 – Mid Channel)

Bandwidth (MHz):	5
Frequency (MHz):	795.5
Modulation Signal:	QPSK
RB / Offset:	1 / 12

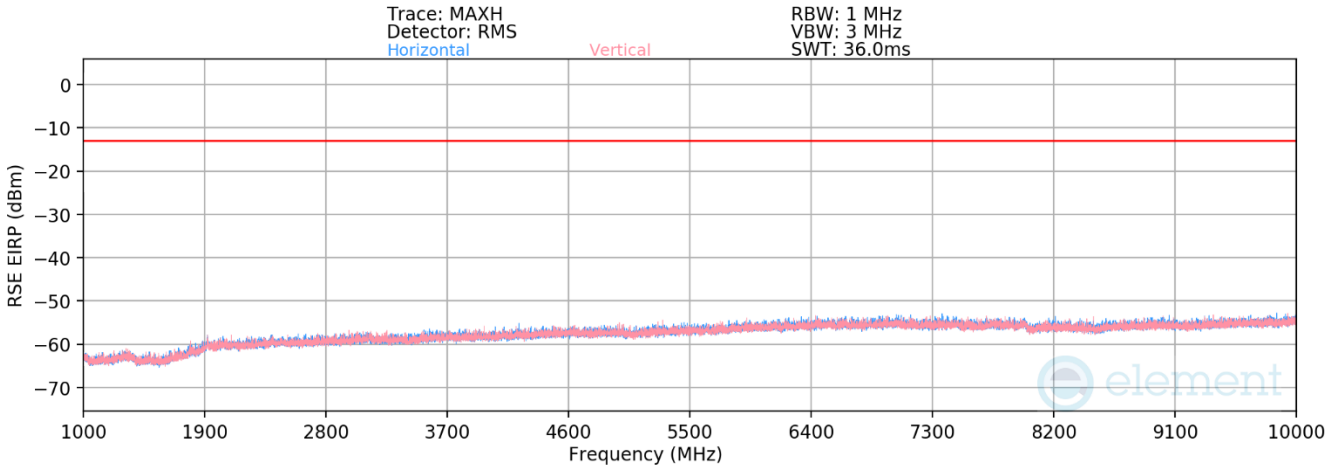
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1591.0	V	-	-	-74.89	-6.22	25.89	-69.37	-40.00	-29.37
2386.5	H	-	-	-74.81	-1.99	30.19	-65.06	-13.00	-52.06
3182.0	H	-	-	-75.85	-0.28	30.87	-64.38	-13.00	-51.38

Table 7-18. Antenna 4 Radiated Spurious Data (NR Band n14 – High Channel)

NR Band n26



Plot 7-124. Antenna 4 Radiated Spurious Plot Below 1GHz (NR Band n26)



Plot 7-125. Antenna 4 Radiated Spurious Plot Above 1GHz (NR Band n26)

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
33.0	H	-	-	-73.66	-6.36	26.98	-68.28	-13.00	-55.28
49.5	V	-	-	-75.18	-1.51	30.31	-64.95	-13.00	-51.95
66.0	V	-	-	-75.81	-0.25	30.95	-64.31	-13.00	-51.31

Table 7-19. Antenna 4 Radiated Spurious Data (NR Band n26 – Low Channel)

Bandwidth (MHz):	10
Frequency (MHz):	819.0
Modulation Signal:	QPSK
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
38.0	H	-	-	-74.46	-5.85	26.69	-68.57	-13.00	-55.57
57.0	V	-	-	-75.09	-1.51	30.39	-64.86	-13.00	-51.86
76.0	H	-	-	-75.76	-0.25	30.99	-64.27	-13.00	-51.27

Table 7-20. Antenna 4 Radiated Spurious Data (NR Band n26 – Mid Channel)

Bandwidth (MHz):	5
Frequency (MHz):	821.5
Modulation Signal:	QPSK
RB / Offset:	1 / 12

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
43.0	H	-	-	-74.58	-5.85	26.56	-68.69	-13.00	-55.69
64.5	V	-	-	-75.13	-1.51	30.36	-64.90	-13.00	-51.90
86.0	V	-	-	-75.68	-0.23	31.08	-64.17	-13.00	-51.17

Table 7-21. Antenna 4 Radiated Spurious Data (NR Band n26 – High Channel)

7.7.2 Antenna 3b – Radiated Spurious Emission Measurements

LTE Band 26

Bandwidth (MHz):	5
Frequency (MHz):	816.5
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 12

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1633.0	H	-	-	-74.73	-5.85	26.42	-68.84	-13.00	-55.84
2449.5	H	-	-	-75.31	-1.51	30.17	-65.08	-13.00	-52.08
3266.0	V	-	-	-75.77	-0.23	31.00	-64.26	-13.00	-51.26

Table 7-22. Antenna 3b Radiated Spurious Data (LTE Band 26 – Low Channel)

Bandwidth (MHz):	10
Frequency (MHz):	819.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1638.0	V	-	-	-74.40	-5.19	27.41	-67.85	-13.00	-54.85
2457.0	H	-	-	-75.24	-1.48	30.28	-64.98	-13.00	-51.98
3276.0	H	-	-	-75.84	-0.33	30.83	-64.43	-13.00	-51.43

Table 7-23. Antenna 3b Radiated Spurious Data (LTE Band 26 – Mid Channel)

Bandwidth (MHz):	5
Frequency (MHz):	821.5
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 12

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1643.0	V	-	-	-74.11	-6.35	26.54	-68.72	-13.00	-55.72
2464.5	V	-	-	-75.13	-1.63	30.24	-65.02	-13.00	-52.02
3286.0	V	-	-	-75.96	-0.23	30.81	-64.45	-13.00	-51.45

Table 7-24. Antenna 3b Radiated Spurious Data (LTE Band 26 – High Channel)

LTE Band 14

Bandwidth (MHz):	5
Frequency (MHz):	790.5
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 12

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1581.0	V	-	-	-72.92	-6.54	27.54	-67.72	-40.00	-27.72
2371.5	H	-	-	-74.90	-2.13	29.97	-65.29	-13.00	-52.29
3162.0	V	-	-	-75.43	-0.38	31.19	-64.07	-13.00	-51.07

Table 7-25. Antenna 3b Radiated Spurious Data (LTE Band 14 – Low Channel)

Bandwidth (MHz):	10
Frequency (MHz):	793.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1586.0	V	-	-	-74.50	-6.41	26.09	-69.17	-40.00	-29.17
2379.0	H	-	-	-74.06	-2.18	30.76	-64.49	-13.00	-51.49
3172.0	V	-	-	-75.52	-0.39	31.08	-64.18	-13.00	-51.18

Table 7-26. Antenna 3b Radiated Spurious Data (LTE Band 14 – Mid Channel)

Bandwidth (MHz):	5
Frequency (MHz):	795.5
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 12

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1591.0	H	-	-	-74.49	-6.33	26.18	-69.08	-40.00	-29.08
2386.5	H	-	-	-74.06	-1.99	30.94	-64.31	-13.00	-51.31
3182.0	V	-	-	-75.78	-0.38	30.84	-64.41	-13.00	-51.41

Table 7-27. Antenna 3b Radiated Spurious Data (LTE Band 14 – High Channel)

NR Band n14

Bandwidth (MHz):	5
Frequency (MHz):	790.5
Modulation Signal:	QPSK
RB / Offset:	1 / 12

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1581.0	H	-	-	-74.68	-6.22	26.10	-69.16	-40.00	-29.16
2371.5	V	-	-	-74.03	-2.18	30.79	-64.46	-13.00	-51.46
3162.0	V	-	-	-75.82	-0.39	30.79	-64.47	-13.00	-51.47

Table 7-28. Antenna 3b Radiated Spurious Data (NR Band n14 – Low Channel)

Bandwidth (MHz):	10
Frequency (MHz):	793.0
Modulation Signal:	QPSK
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1586.0	V	-	-	-74.63	-6.22	26.14	-69.11	-40.00	-29.11
2379.0	V	-	-	-74.51	-2.18	30.31	-64.94	-13.00	-51.94
3172.0	V	-	-	-75.86	-0.24	30.90	-64.35	-13.00	-51.35

Table 7-29. Antenna 3b Radiated Spurious Data (NR Band n14 – Mid Channel)

Bandwidth (MHz):	5
Frequency (MHz):	795.5
Modulation Signal:	QPSK
RB / Offset:	1 / 12

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1591.0	V	-	-	-74.68	-6.22	26.10	-69.16	-40.00	-29.16
2386.5	H	-	-	-74.86	-1.99	30.14	-65.12	-13.00	-52.12
3182.0	V	-	-	-75.78	-0.38	30.84	-64.41	-13.00	-51.41

Table 7-30. Antenna 3b Radiated Spurious Data (NR Band n14 – High Channel)

NR Band n26

Bandwidth (MHz):	5
Frequency (MHz):	816.5
Modulation Signal:	QPSK
RB / Offset:	1 / 12

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
33.0	V	-	-	-74.16	-6.35	26.49	-68.77	-13.00	-55.77
49.5	H	-	-	-75.14	-1.51	30.35	-64.91	-13.00	-51.91
66.0	V	-	-	-75.63	-0.42	30.95	-64.31	-13.00	-51.31

Table 7-31. Antenna 3b Radiated Spurious Data (NR Band n26 – Low Channel)

Bandwidth (MHz):	10
Frequency (MHz):	819.0
Modulation Signal:	QPSK
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
38.0	H	-	-	-74.69	-5.85	26.46	-68.79	-13.00	-55.79
57.0	V	-	-	-74.94	-1.51	30.55	-64.71	-13.00	-51.71
76.0	V	-	-	-75.67	-0.25	31.09	-64.17	-13.00	-51.17

Table 7-32. Antenna 3b Radiated Spurious Data (NR Band n26 – Mid Channel)

Bandwidth (MHz):	5
Frequency (MHz):	821.5
Modulation Signal:	QPSK
RB / Offset:	1 / 12

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
43.0	H	-	-	-74.68	-5.85	26.47	-68.79	-13.00	-55.79
64.5	V	-	-	-75.24	-1.51	30.25	-65.01	-13.00	-52.01
86.0	H	-	-	-75.74	-0.18	31.08	-64.18	-13.00	-51.18

Table 7-33. Antenna 3b Radiated Spurious Data (NR Band n26 – High Channel)

7.8 Frequency Stability / Temperature Variation

§2.1055 §90.213

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015. The frequency stability of the transmitter is measured by:

a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Band 26, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Band 14 the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Procedure Used

ANSI C63.26-2015

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

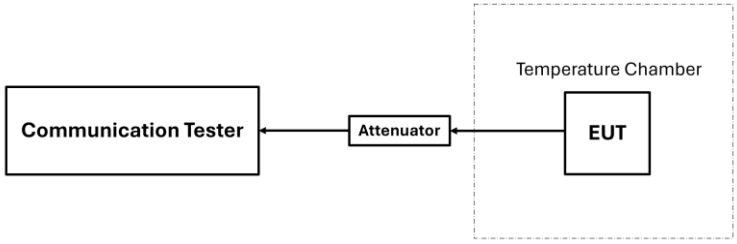


Figure 7-13. LTE Test Instrument & Measurement Setup

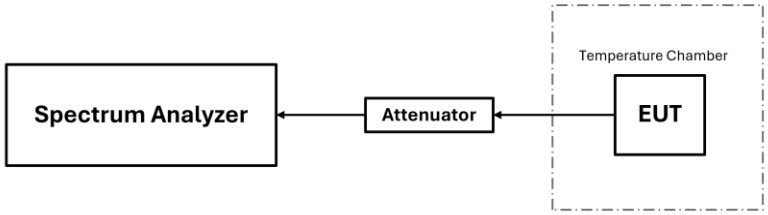


Figure 7-14. FR1 Test Instrument & Measurement Setup

Test Notes

All ports were tested and only the worst case data were reported.

Frequency Stability / Temperature Variation

LTE Band 26

Operating Frequency (GHz):	0.819
Ref. Voltage (VDC):	3.80
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (GHz)	Freq. Dev. (GHz)	Deviation (%)
100 %	3.80	- 30	0.818999967	-0.000000045	-0.000005495
		- 20	0.818999945	-0.000000067	-0.000008181
		- 10	0.819000127	0.000000115	0.000014042
		0	0.819000119	0.000000107	0.000013065
		+ 10	0.819000015	0.000000003	0.000000366
		+ 20 (Ref)	0.819000012	0.000000000	0.000000000
		+ 30	0.819000023	0.000000011	0.000001343
		+ 40	0.819000061	0.000000049	0.000005983
		+ 50	0.819000069	0.000000057	0.000006960
Battery Endpoint	3.40	+ 20	0.818999992	-0.000000020	-0.000002442

Table 7-34. LTE Band 26 Frequency Stability Data

Frequency Stability / Temperature Variation

LTE Band 14	
Operating Band Lower Boundary (GHz)	0.788
Ref. Voltage (VDC):	3.80

Voltage (%)	Power (VDC)	Temp (°C)	Measured Freq. (GHz)	Freq. Delta from Operating Range (GHz)
100 %	3.80	- 30	0.788083159	-0.000083159
		- 20	0.788972442	-0.000972442
		- 10	0.788287242	-0.000287242
		0	0.788710042	-0.000710042
		+ 10	0.788120586	-0.000120586
		+ 20 (Ref)	0.788842195	-0.000842195
		+ 30	0.788386101	-0.000386101
		+ 40	0.788166272	-0.000166272
		+ 50	0.788169439	-0.000169439
Battery Endpoint	3.40	+ 20	0.788020848	-0.000020848

Table 7-35. LTE Band 14 Lower Boundary Frequency Stability Data

LTE Band 14	
Operating Band Upper Boundary (GHz)	0.798
Ref. Voltage (VDC):	3.80

Voltage (%)	Power (VDC)	Temp (°C)	Measured Freq. (GHz)	Freq. Delta from Operating Range (GHz)
100 %	3.80	- 30	0.797672633	-0.000327367
		- 20	0.797796386	-0.000203614
		- 10	0.797219736	-0.000780264
		0	0.797818229	-0.000181771
		+ 10	0.797833180	-0.000166820
		+ 20 (Ref)	0.797424447	-0.000575553
		+ 30	0.797869065	-0.000130935
		+ 40	0.797038975	-0.000961025
		+ 50	0.797495954	-0.000504046
Battery Endpoint	3.40	+ 20	0.797806408	-0.000193592

Table 7-36. LTE Band 14 Upper Boundary Frequency Stability Data

Frequency Stability / Temperature Variation

NR Band n26

Operating Frequency (GHz):	0.819
Ref. Voltage (VDC):	3.80
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (GHz)	Freq. Dev. (GHz)	Deviation (%)
100 %	3.80	- 30	0.819000151	0.000000109	0.000013309
		- 20	0.819000124	0.000000082	0.000010012
		- 10	0.819000103	0.000000061	0.000007448
		0	0.819000024	-0.000000018	-0.000002198
		+ 10	0.819000023	-0.000000019	-0.000002320
		+ 20 (Ref)	0.819000042	0.000000000	0.000000000
		+ 30	0.818999982	-0.000000060	-0.000007326
		+ 40	0.818999906	-0.000000136	-0.000016606
		+ 50	0.819000007	-0.000000035	-0.000004274
Battery Endpoint	3.40	+ 20	0.819000001	-0.000000041	-0.000005006

Table 7-37. NR Band n26 Frequency Stability Data

Frequency Stability / Temperature Variation

NR Band n14	
Operating Band Lower Boundary (GHz)	0.788
Ref. Voltage (VDC):	3.80

Voltage (%)	Power (VDC)	Temp (°C)	Measured Freq. (GHz)	Freq. Delta from Operating Range (GHz)
100 %	3.80	- 30	0.788461458	-0.000461458
		- 20	0.788573972	-0.000573972
		- 10	0.788469106	-0.000469106
		0	0.788103711	-0.000103711
		+ 10	0.788317224	-0.000317224
		+ 20 (Ref)	0.788529470	-0.000529470
		+ 30	0.788259106	-0.000259106
		+ 40	0.788960193	-0.000960193
		+ 50	0.788519743	-0.000519743
Battery Endpoint	3.40	+ 20	0.788281887	-0.000281887

Table 7-38. NR Band n14 Lower Boundary Frequency Stability Data

NR Band n14	
Operating Band Upper Boundary (GHz)	0.798
Ref. Voltage (VDC):	3.80

Voltage (%)	Power (VDC)	Temp (°C)	Measured Freq. (GHz)	Freq. Delta from Operating Range (GHz)
100 %	3.80	- 30	0.797521204	-0.000478796
		- 20	0.797991263	-0.000008737
		- 10	0.797369437	-0.000630563
		0	0.797488160	-0.000511840
		+ 10	0.797825276	-0.000174724
		+ 20 (Ref)	0.797672090	-0.000327910
		+ 30	0.797347148	-0.000652852
		+ 40	0.797818818	-0.000181182
		+ 50	0.797200414	-0.000799586
Battery Endpoint	3.40	+ 20	0.797298779	-0.000701221

Table 7-39. NR Band n14 Upper Boundary Frequency Stability Data

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Apple Tablet Device FCC ID: BCGA3355** complies with all the requirements of Part 90 of the FCC rules.