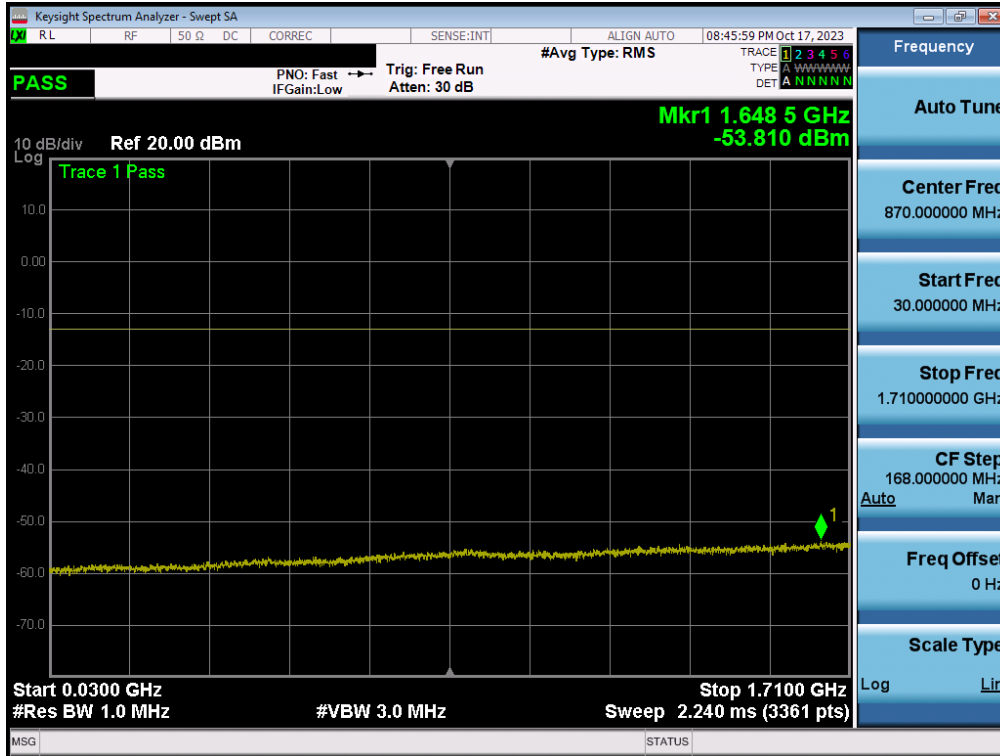
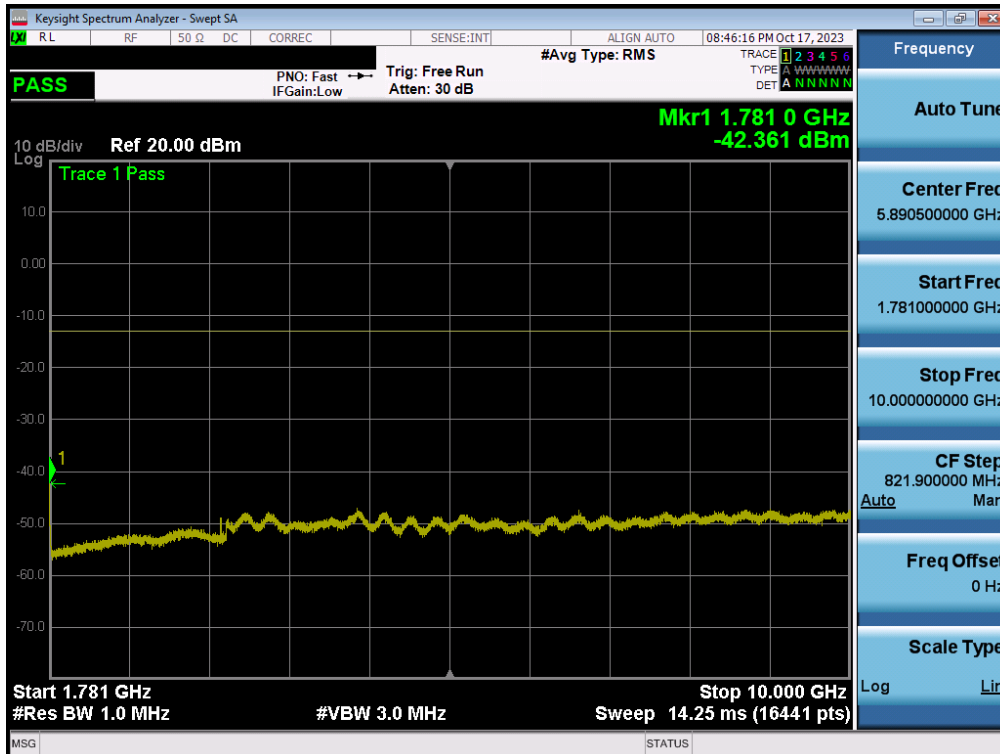


# LTE Band 66/4 – Ant1

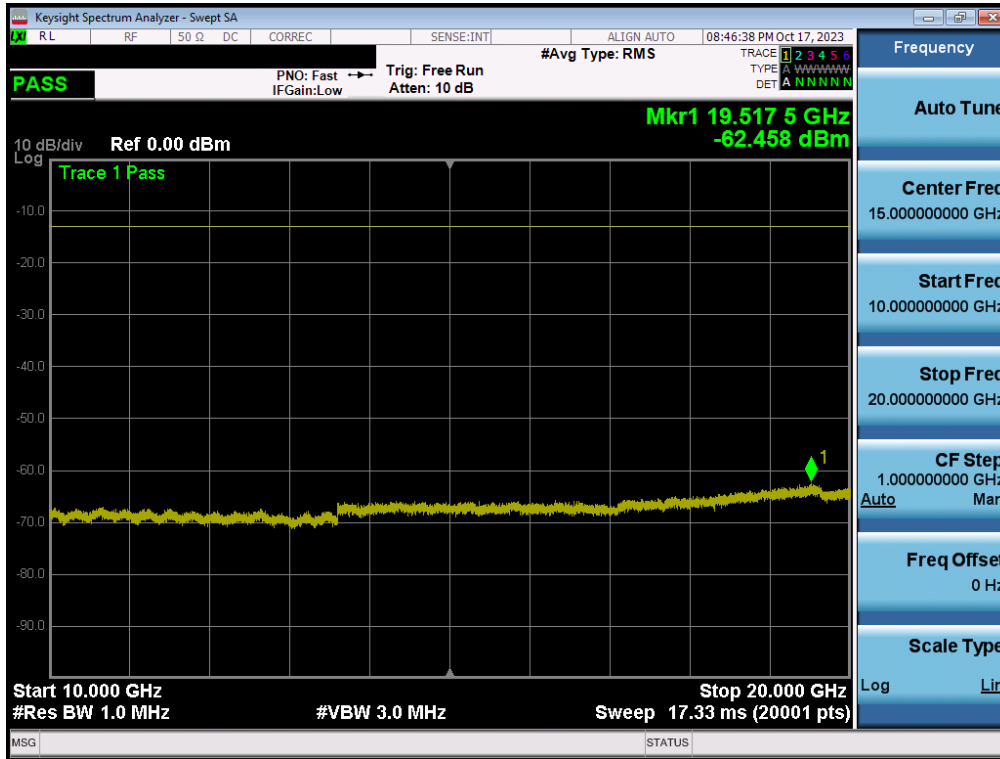


Plot 7-83. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - High Channel – Ant1)



Plot 7-84. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - High Channel – Ant1)

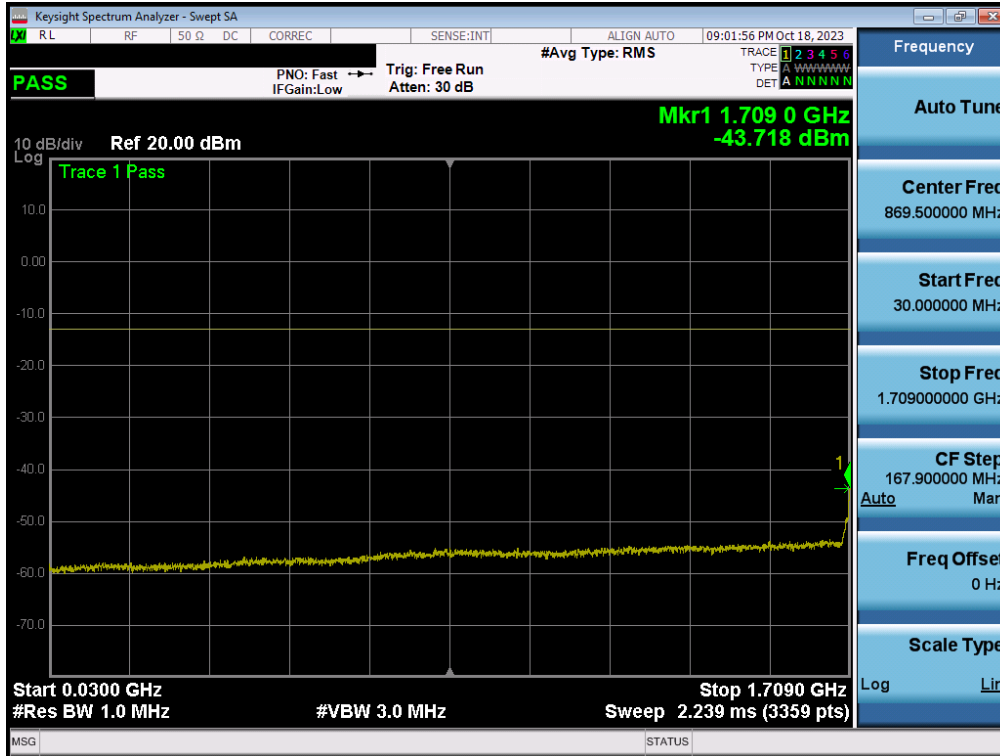
FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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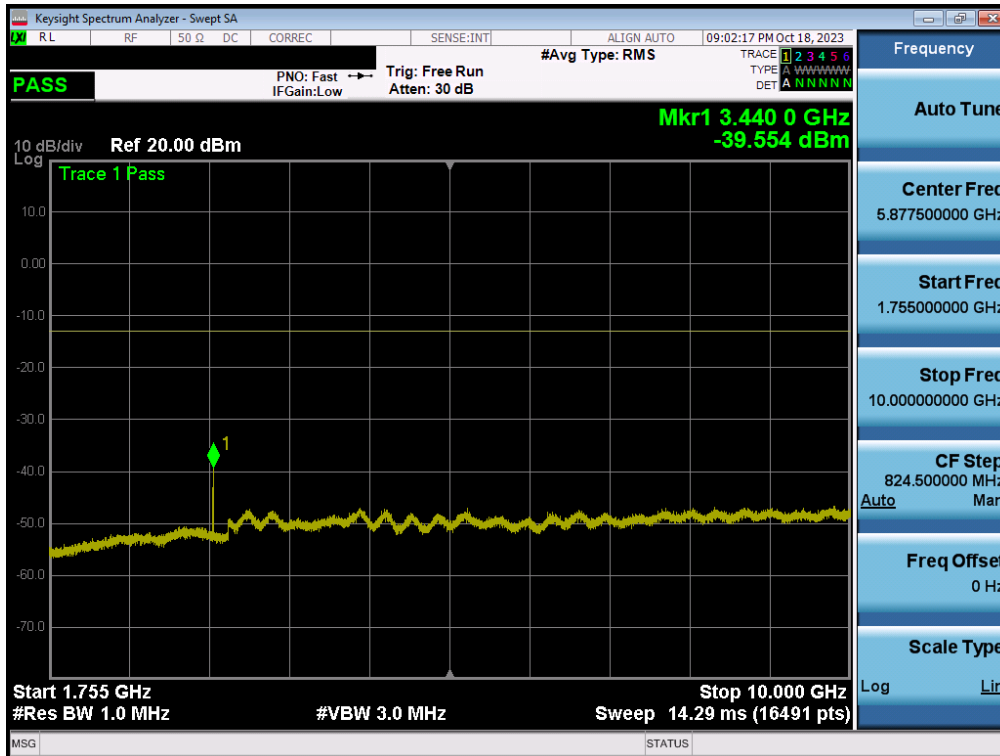
Plot 7-85. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - High Channel – Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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## LTE Band 4 – Ant2

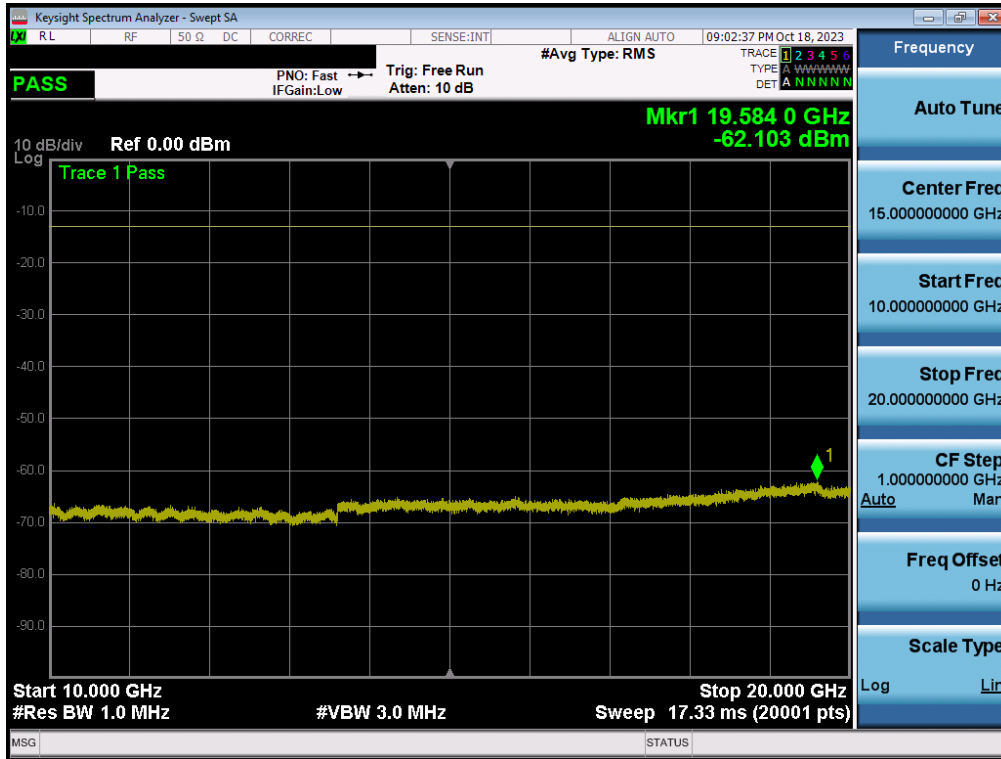


Plot 7-86. Conducted Spurious Plot (LTE Band 4 - 20MHz QPSK - 1 RB - Low Channel – Ant2)



Plot 7-87. Conducted Spurious Plot (LTE Band 4 - 20MHz QPSK - 1 RB - Low Channel – Ant2)

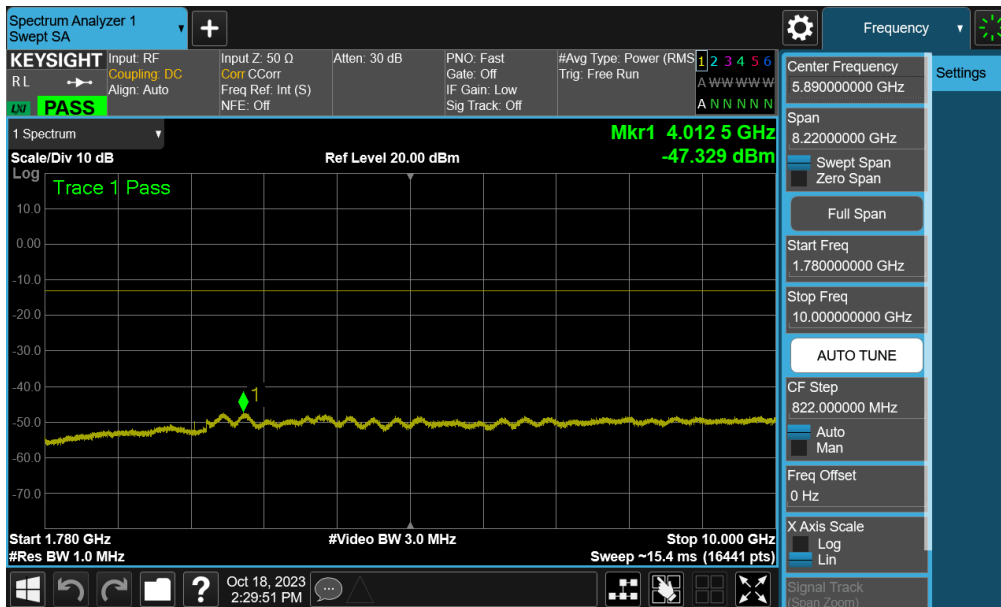
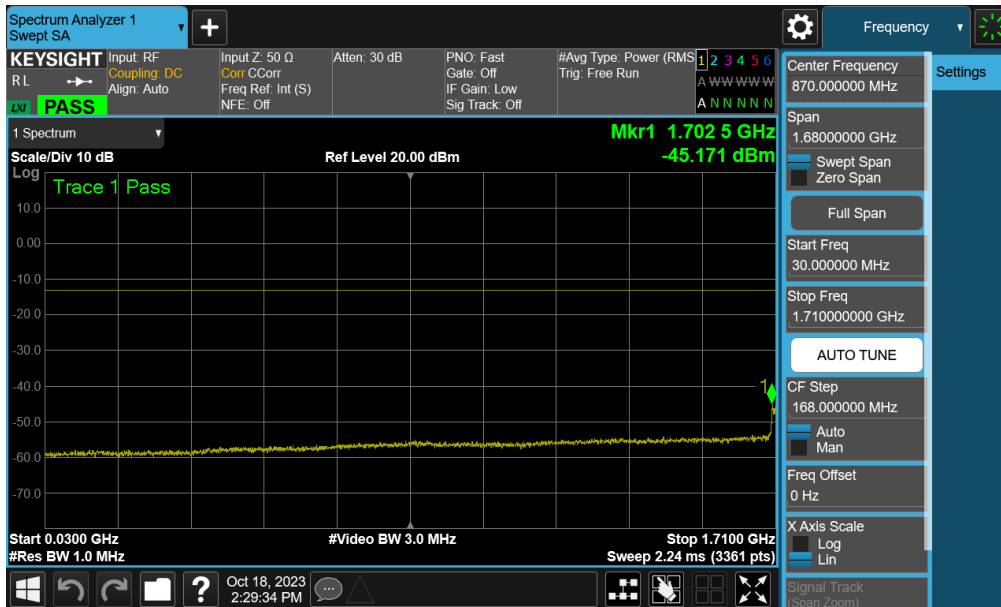
FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 63 of 126



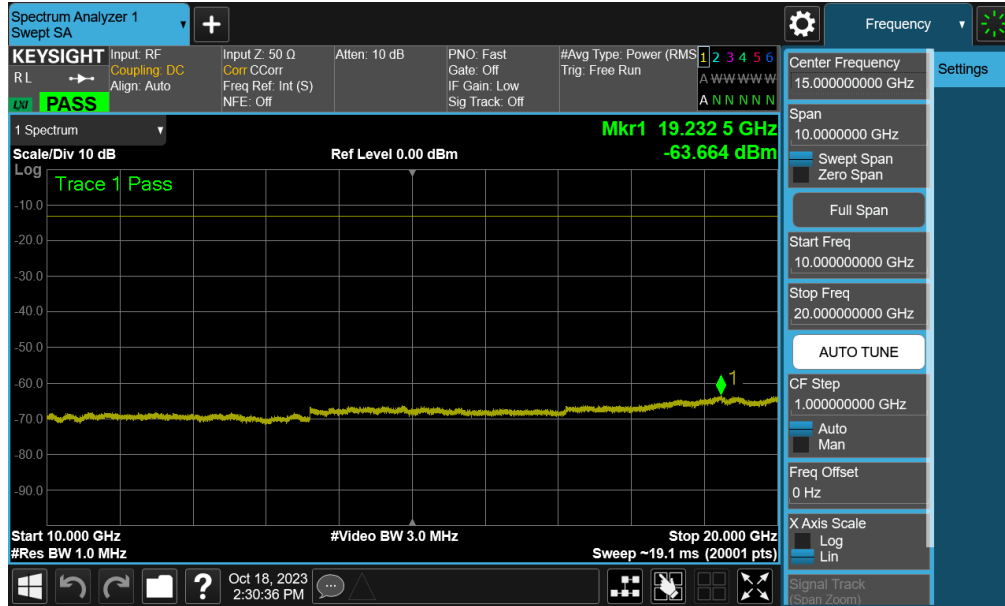
Plot 7-88. Conducted Spurious Plot (LTE Band 4 - 20MHz QPSK - 1 RB - Low Channel – Ant2)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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# NR Band n66 – Ant1



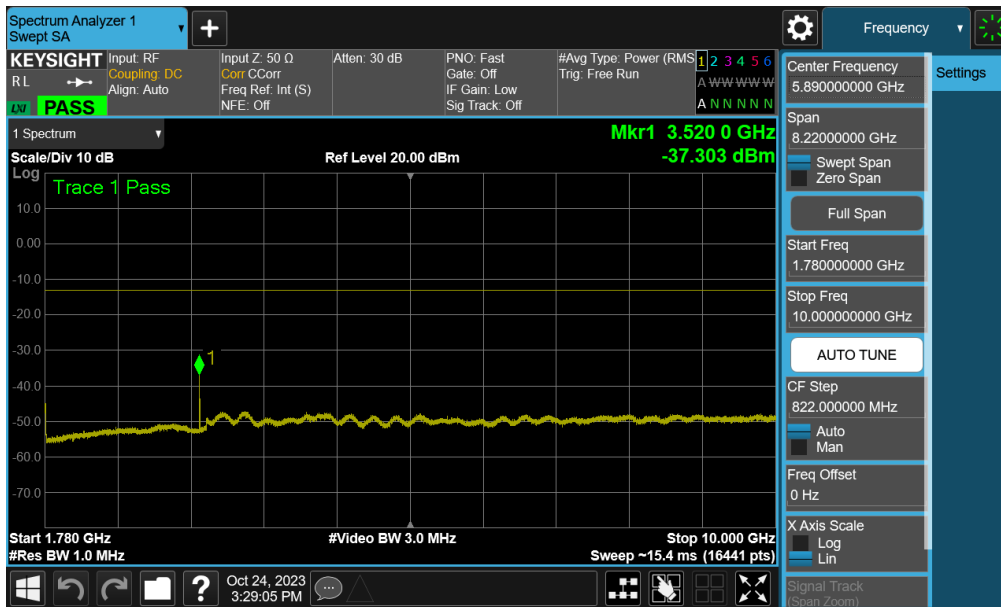
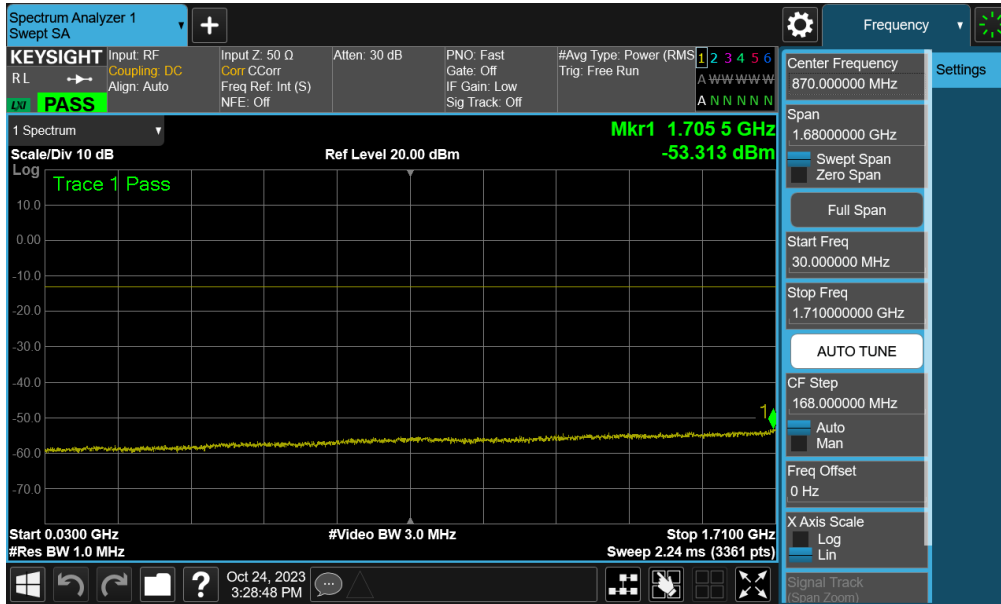
FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 65 of 126



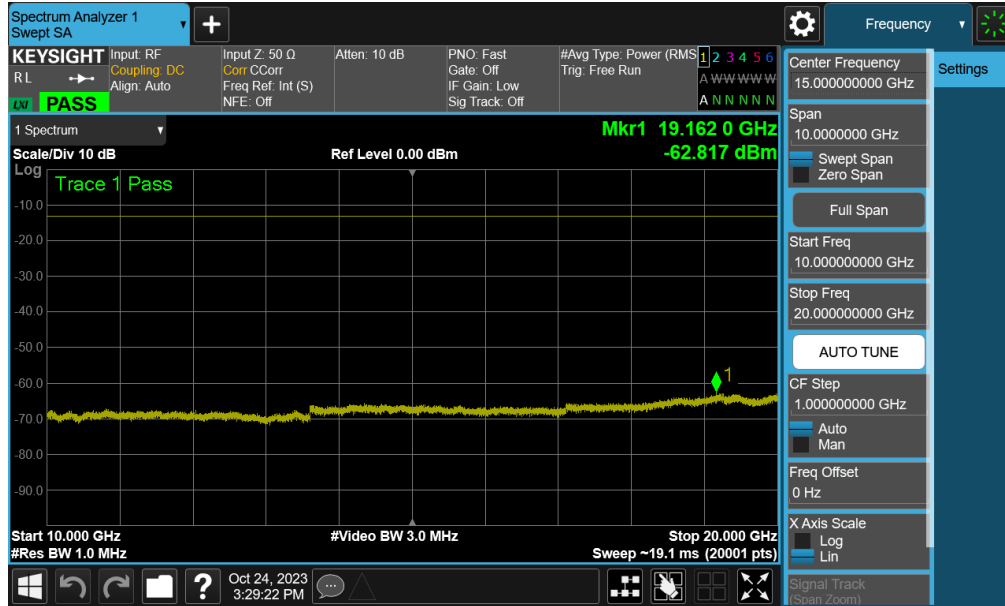
Plot 7-91. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Low Channel - Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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## NR Band n66 – Ant2



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Plot 7-94. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - High Channel - Ant2)

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## 7.4 Band Edge Emissions at Antenna Terminal

### 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 its maximum duty cycle, 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.

***The minimum permissible attenuation level of any spurious emission is  $43 + 10 \log_{10}(P_{[Watts]})$ , where  $P$  is the transmitter power in Watts.***

### Test Procedure Used

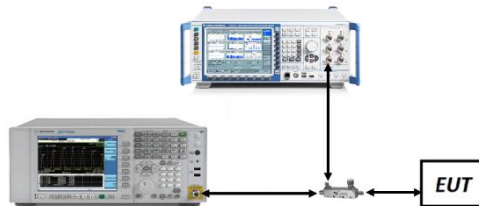
ANSI C63.26-2015 – Section 5.7.3

### Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW  $\geq$  1% of the emission bandwidth
4. VBW  $\geq$  3 x RBW
5. Detector = RMS
6. Number of sweep points  $\geq$  2 x Span/RBW
7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize

### Test Setup

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



**Figure 7-3. Test Instrument & Measurement Setup**

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**Test Notes**

1. Per 27.53(h) for AWS band operation, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter 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 frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.
2. Per 27.53(g) for operations in the 698 – 746MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.
3. Per 27.53(c)(5) for operations in the 776-788 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.
4. For all plots showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit per 27.53(c)(4) is  $65 + 10 \log_{10}(P) = -35\text{dBm}$  in a 6.25kHz bandwidth.

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Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]	
WCDMA-AWS	5 MHz	Low	Band Edge	-23.51	-13.00	-10.51	
			Extended	-14.95	-13.00	-1.95	
		High	Band Edge	-27.51	-13.00	-14.51	
			Extended	-19.47	-13.00	-6.47	
LTE-B12/17	10 MHz	Low	Band Edge B12	-30.57	-13.00	-17.57	
			Band Edge B17	-30.74	-13.00	-17.74	
		High	Band Edge	-30.45	-13.00	-17.45	
	5 MHz	Low	Band Edge B12	-25.97	-13.00	-12.97	
			Band Edge B17	-24.30	-13.00	-11.30	
	3 MHz	High	Band Edge	-25.50	-13.00	-12.50	
			Band Edge	-22.31	-13.00	-9.31	
	1.4 MHz	Low	Band Edge	-16.55	-13.00	-3.55	
			High	Band Edge	-17.37	-13.00	-4.37
	LTE-B13	10 MHz	Low	Band Edge	-33.57	-13.00	-20.57
				Lower Emission Mask	-51.14	-35.00	-16.14
			High	Band Edge	-34.13	-13.00	-21.13
Lower Emission Mask				-55.39	-35.00	-20.39	
5 MHz		Low	Band Edge	-26.61	-13.00	-13.61	
			Lower Emission Mask	-48.57	-35.00	-13.57	
High		Band Edge	-27.03	-13.00	-14.03		
		Lower Emission Mask	-60.78	-35.00	-25.78		
LTE-B66/4		20MHz	Low	Band Edge	-30.36	-13.00	-17.36
				Extended	-27.73	-13.00	-14.73
	Band Edge B4			-31.96	-13.00	-18.96	
	High		Extended B4	-29.88	-13.00	-16.88	
			Band Edge B66	-29.61	-13.00	-16.61	
			Extended B66	-27.27	-13.00	-14.27	
	15MHz	Low	Band Edge	-29.36	-13.00	-16.36	
			Extended	-25.75	-13.00	-12.75	
			Band Edge B4	-31.22	-13.00	-18.22	
		High	Extended B4	-27.94	-13.00	-14.94	
			Band Edge B66	-27.74	-13.00	-14.74	
			Extended B66	-25.66	-13.00	-12.66	
	10MHz	Low	Band Edge	-28.45	-13.00	-15.45	
			Extended	-22.39	-13.00	-9.39	
			Band Edge B4	-29.88	-13.00	-16.88	
		High	Extended B4	-24.33	-13.00	-11.33	
			Band Edge B66	-27.94	-13.00	-14.94	
			Extended B66	-22.97	-13.00	-9.97	
	5MHz	Low	Band Edge	-23.20	-13.00	-10.20	
			Extended	-22.24	-13.00	-9.24	
			Band Edge B4	-28.09	-13.00	-15.09	
		High	Extended B4	-24.31	-13.00	-11.31	
			Band Edge B66	-27.58	-13.00	-14.58	
			Extended B66	-23.78	-13.00	-10.78	
	3MHz	Low	Band Edge	-26.00	-13.00	-13.00	
			Extended	-21.16	-13.00	-8.16	
			Band Edge B4	-25.99	-13.00	-12.99	
		High	Extended B4	-23.11	-13.00	-10.11	
			Band Edge B66	-26.16	-13.00	-13.16	
			Extended B66	-22.82	-13.00	-9.82	
	1.4MHz	Low	Band Edge	-24.10	-13.00	-11.10	
			Extended	-25.27	-13.00	-12.27	
			Band Edge B4	-26.59	-13.00	-13.59	
		High	Extended B4	-27.71	-13.00	-14.71	
			Band Edge B66	-27.28	-13.00	-14.28	
			Extended B66	-26.66	-13.00	-13.66	
	NR-n66	40MHz	Low	Band Edge	-29.45	-13.00	-16.45
				Extended	-32.03	-13.00	-19.03
			High	Band Edge	-23.37	-13.00	-10.37
				Extended	-26.82	-13.00	-13.82
		30MHz	Low	Band Edge	-28.64	-13.00	-15.64
				Extended	-26.52	-13.00	-13.52
			High	Band Edge	-25.86	-13.00	-12.86
				Extended	-25.75	-13.00	-12.75
		25MHz	Low	Band Edge	-30.20	-13.00	-17.20
				Extended	-24.94	-13.00	-11.94
			High	Band Edge	-30.04	-13.00	-17.04
				Extended	-25.19	-13.00	-12.19
20MHz		Low	Band Edge	-29.16	-13.00	-16.16	
			Extended	-23.19	-13.00	-10.19	
		High	Band Edge	-29.77	-13.00	-16.77	
			Extended	-23.46	-13.00	-10.46	
15MHz		Low	Band Edge	-31.83	-13.00	-18.83	
			Extended	-21.14	-13.00	-8.14	
		High	Band Edge	-30.07	-13.00	-17.07	
			Extended	-22.03	-13.00	-9.03	
10MHz		Low	Band Edge	-28.86	-13.00	-15.86	
			Extended	-16.86	-13.00	-3.86	
		High	Band Edge	-30.87	-13.00	-17.87	
			Extended	-19.28	-13.00	-6.28	
5MHz	Low	Band Edge	-27.15	-13.00	-14.15		
		Extended	-19.97	-13.00	-6.97		
	High	Band Edge	-28.99	-13.00	-15.99		
		Extended	-21.39	-13.00	-8.39		

Table 7-6. Summary of Conducted Band Edge Test Results – Ant1

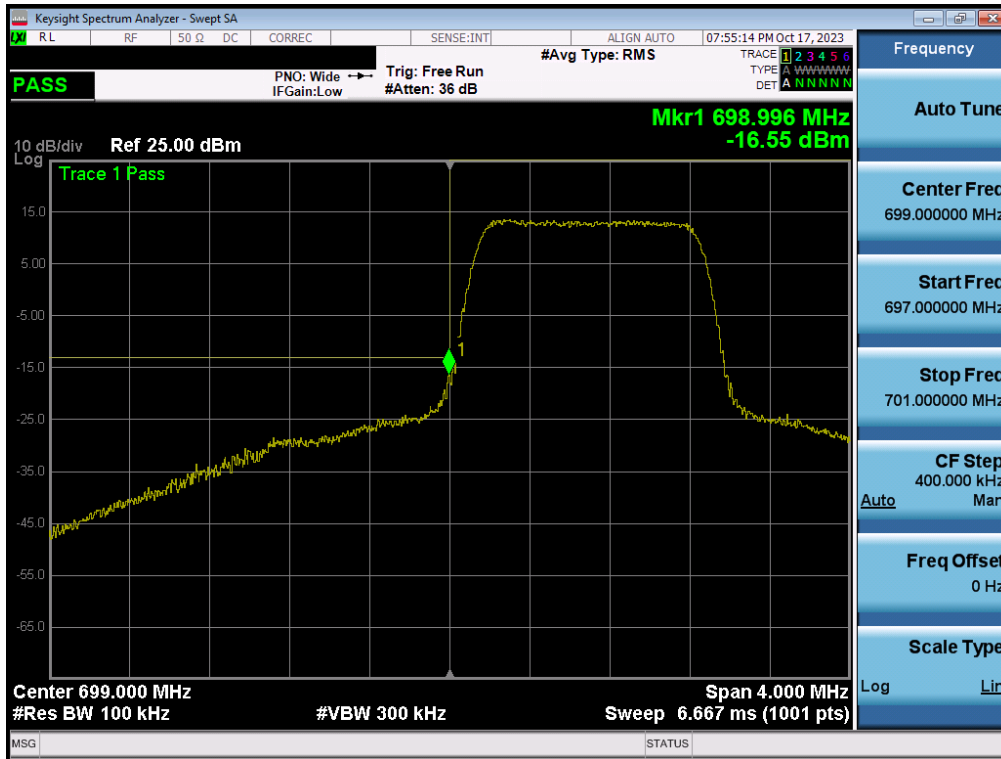
FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
LTE-B4	20MHz	Low	Band Edge	-30.51	-13.00	-17.51
			Extended	-28.22	-13.00	-15.22
		High	Band Edge	-30.00	-13.00	-17.00
			Extended	-26.74	-13.00	-13.74
	15MHz	Low	Band Edge	-29.62	-13.00	-16.62
			Extended	-27.03	-13.00	-14.03
		High	Band Edge	-29.28	-13.00	-16.28
			Extended	-26.31	-13.00	-13.31
	10MHz	Low	Band Edge	-30.55	-13.00	-17.55
			Extended	-23.63	-13.00	-10.63
		High	Band Edge	-29.12	-13.00	-16.12
			Extended	-22.78	-13.00	-9.78
	5MHz	Low	Band Edge	-26.26	-13.00	-13.26
			Extended	-24.94	-13.00	-11.94
		High	Band Edge	-24.60	-13.00	-11.60
			Extended	-23.36	-13.00	-10.36
	3MHz	Low	Band Edge	-27.10	-13.00	-14.10
			Extended	-23.40	-13.00	-10.40
		High	Band Edge	-26.11	-13.00	-13.11
			Extended	-22.08	-13.00	-9.08
	1.4MHz	Low	Band Edge	-26.34	-13.00	-13.34
			Extended	-25.35	-13.00	-12.35
		High	Band Edge	-25.89	-13.00	-12.89
			Extended	-26.67	-13.00	-13.67
NR-n66	40MHz	Low	Band Edge	-26.77	-13.00	-13.77
			Extended	-27.47	-13.00	-14.47
		High	Band Edge	-22.56	-13.00	-9.56
			Extended	-25.31	-13.00	-12.31
	30MHz	Low	Band Edge	-27.19	-13.00	-14.19
			Extended	-26.06	-13.00	-13.06
		High	Band Edge	-26.05	-13.00	-13.05
			Extended	-24.00	-13.00	-11.00
	25MHz	Low	Band Edge	-29.47	-13.00	-16.47
			Extended	-25.29	-13.00	-12.29
		High	Band Edge	-28.78	-13.00	-15.78
			Extended	-23.65	-13.00	-10.65
	20MHz	Low	Band Edge	-30.17	-13.00	-17.17
			Extended	-23.31	-13.00	-10.31
		High	Band Edge	-28.04	-13.00	-15.04
			Extended	-22.00	-13.00	-9.00
	15MHz	Low	Band Edge	-29.96	-13.00	-16.96
			Extended	-21.33	-13.00	-8.33
		High	Band Edge	-27.97	-13.00	-14.97
			Extended	-20.60	-13.00	-7.60
	10MHz	Low	Band Edge	-29.50	-13.00	-16.50
			Extended	-16.63	-13.00	-3.63
		High	Band Edge	-28.03	-13.00	-15.03
			Extended	-17.90	-13.00	-4.90
5MHz	Low	Band Edge	-26.78	-13.00	-13.78	
		Extended	-20.41	-13.00	-7.41	
	High	Band Edge	-27.67	-13.00	-14.67	
		Extended	-19.35	-13.00	-6.35	

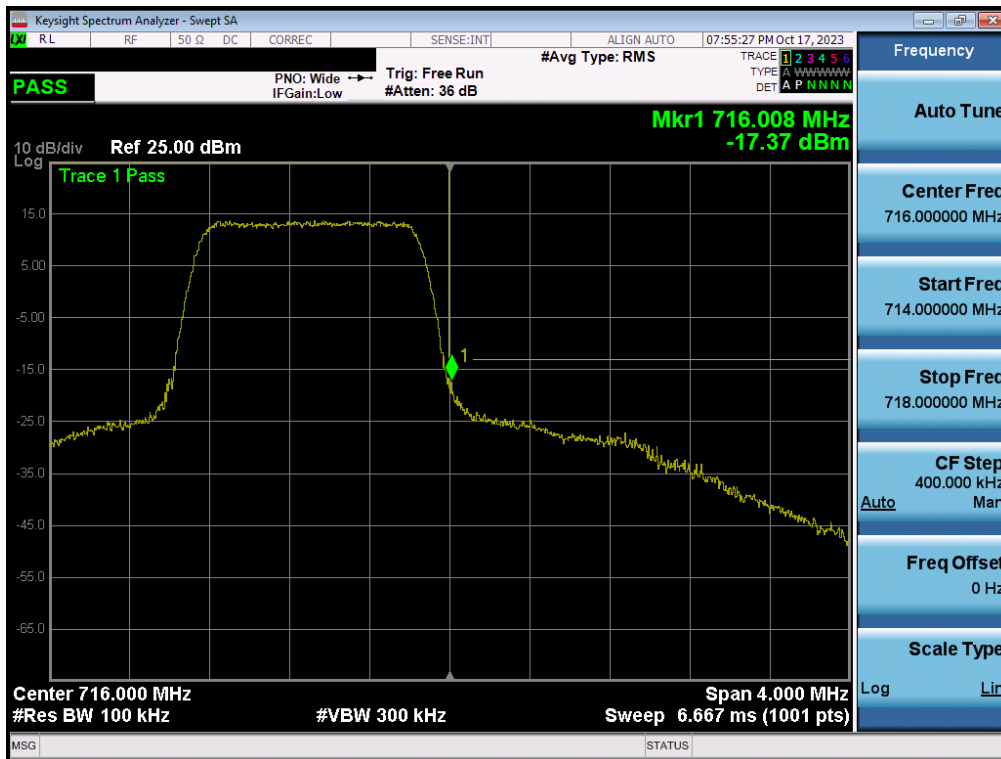
**Table 7-7. Summary of Conducted Band Edge Test Results – Ant2**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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# LTE Band 12/17 – Ant1



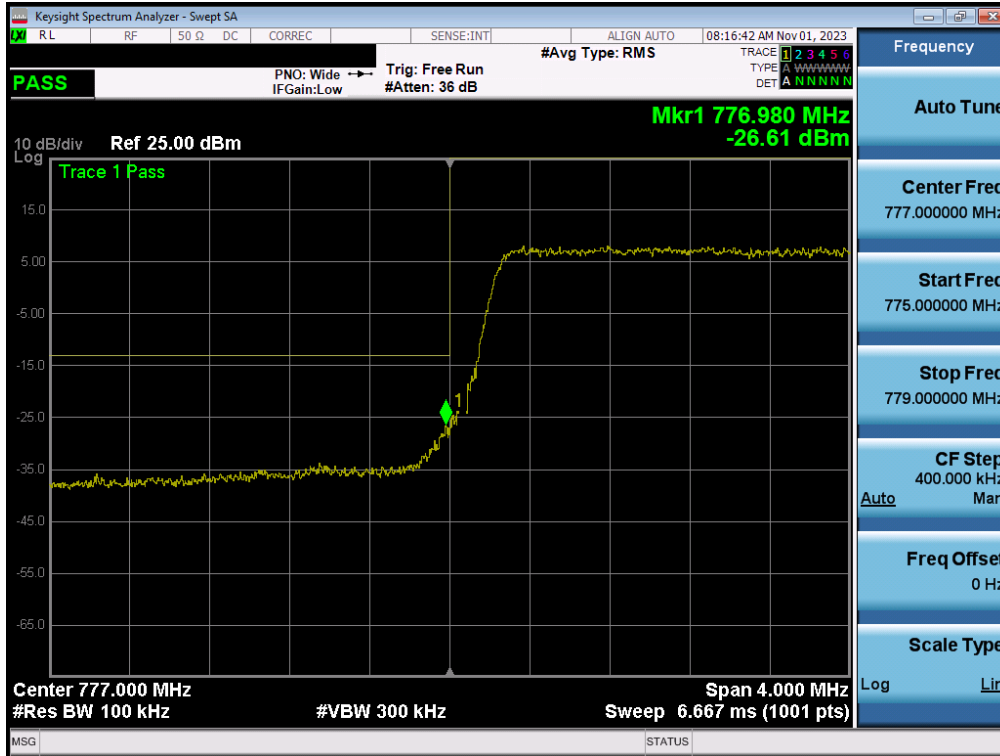
Plot 7-95. Lower Band Edge Plot (LTE Band 12 – 1.4MHz QPSK – Full RB - Ant1)



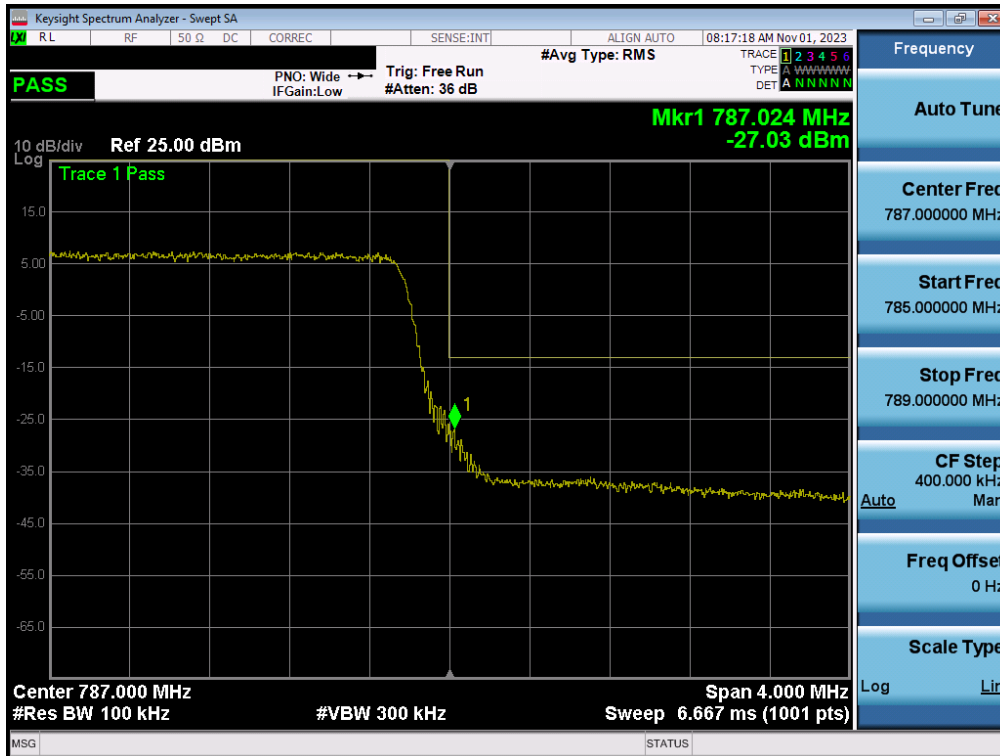
Plot 7-96. Upper Band Edge Plot (LTE Band 12 – 1.4MHz QPSK – Full RB - Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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# LTE Band 13 – Ant1



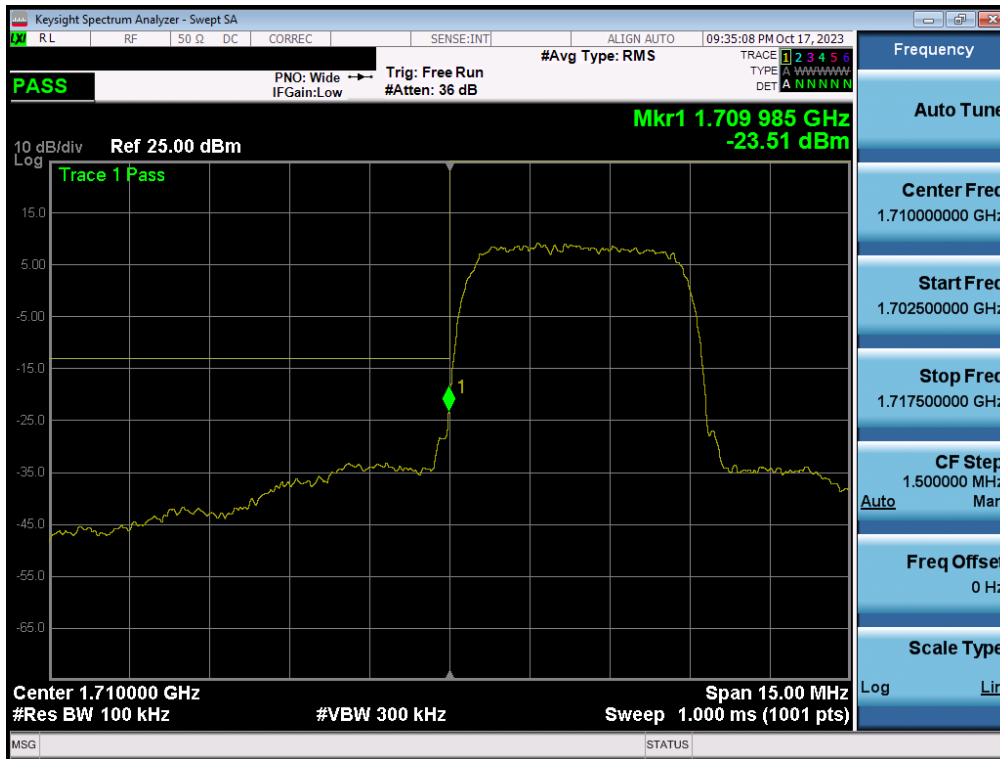
Plot 7-97. Lower Band Edge Plot (LTE Band 13 - 5MHz QPSK – Full RB - Ant1)



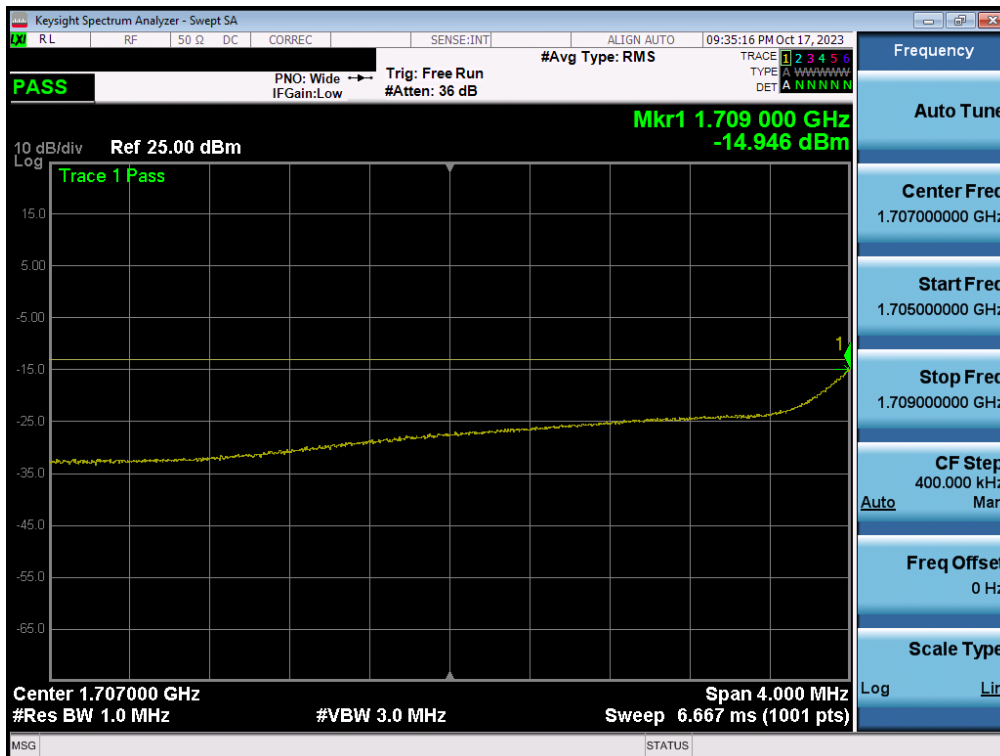
Plot 7-98. Upper Band Edge Plot (LTE Band 13 - 5MHz QPSK – Full RB - Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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# WCDMA AWS – Ant1



Plot 7-99. Lower Band Edge Plot (WCDMA AWS – Ch. 1312 – Ant1)



Plot 7-100. Lower Extended Band Edge Plot (WCDMA AWS – Ch. 1312 – Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-101. Upper Band Edge Plot (WCDMA AWS – Ch. 1513 – Ant1)



Plot 7-102. Upper Extended Band Edge Plot (WCDMA AWS – Ch. 1513– Ant1)

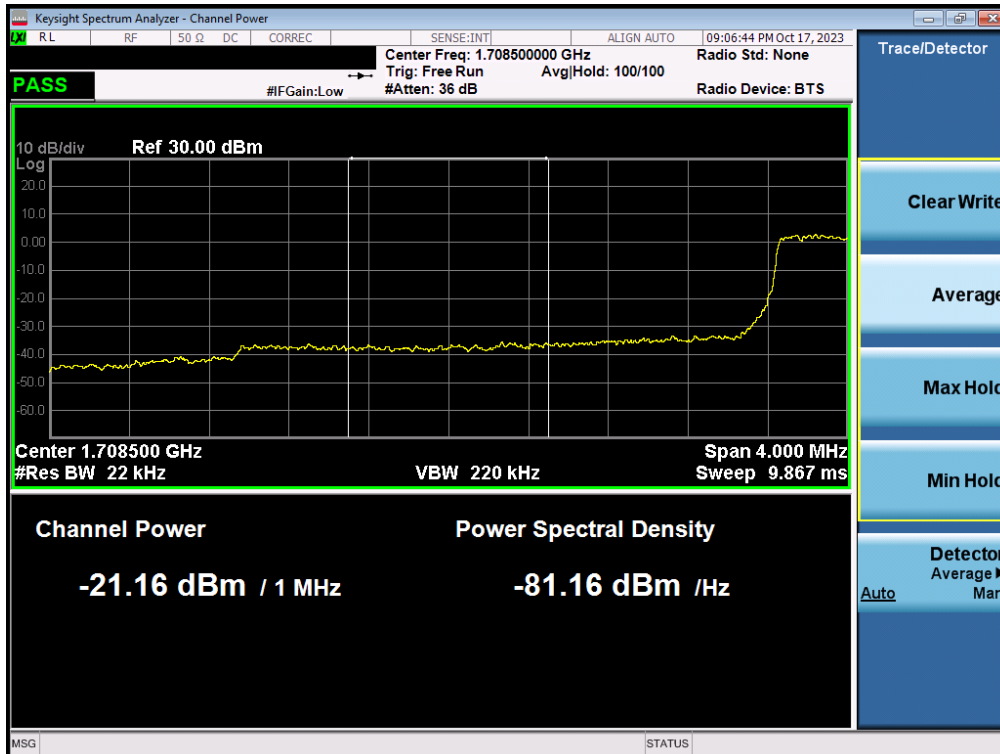
FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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# LTE Band 66/4 – Ant1



Plot 7-103. Lower Band Edge Plot (LTE Band 66/4 - 3MHz QPSK – Full RB - Ant1)

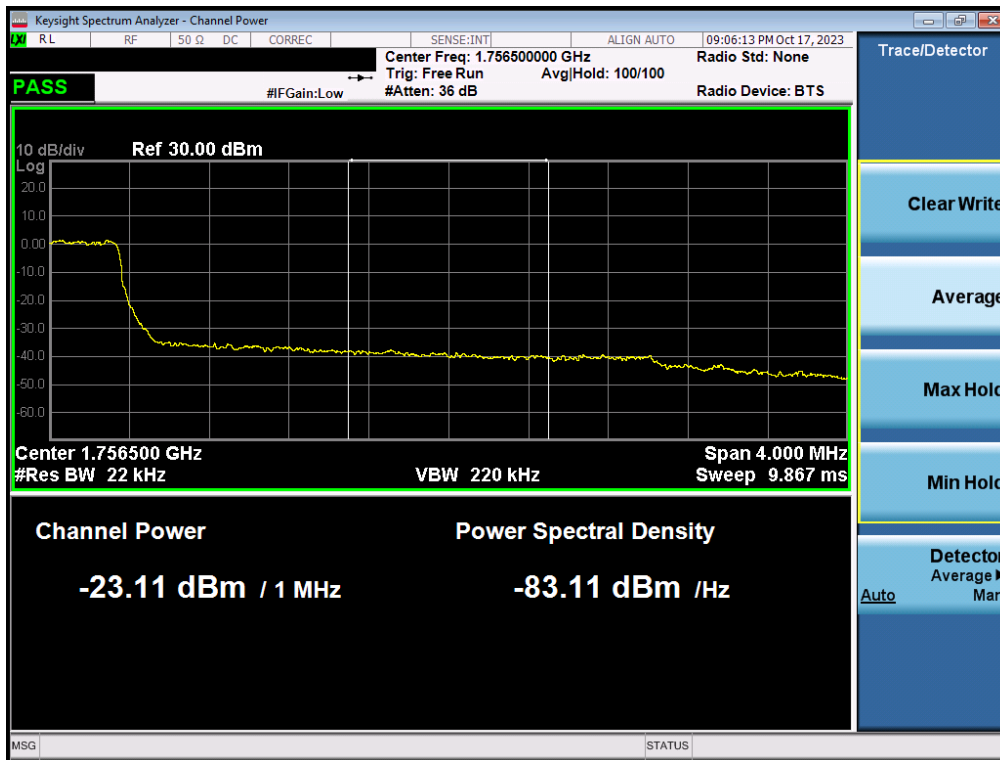


Plot 7-104. Lower Extended Band Edge Plot (LTE Band 66/4 - 3MHz QPSK – Full RB - Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-105. Upper Band Edge Plot (LTE Band 4 - 3MHz QPSK – Full RB - Ant1)

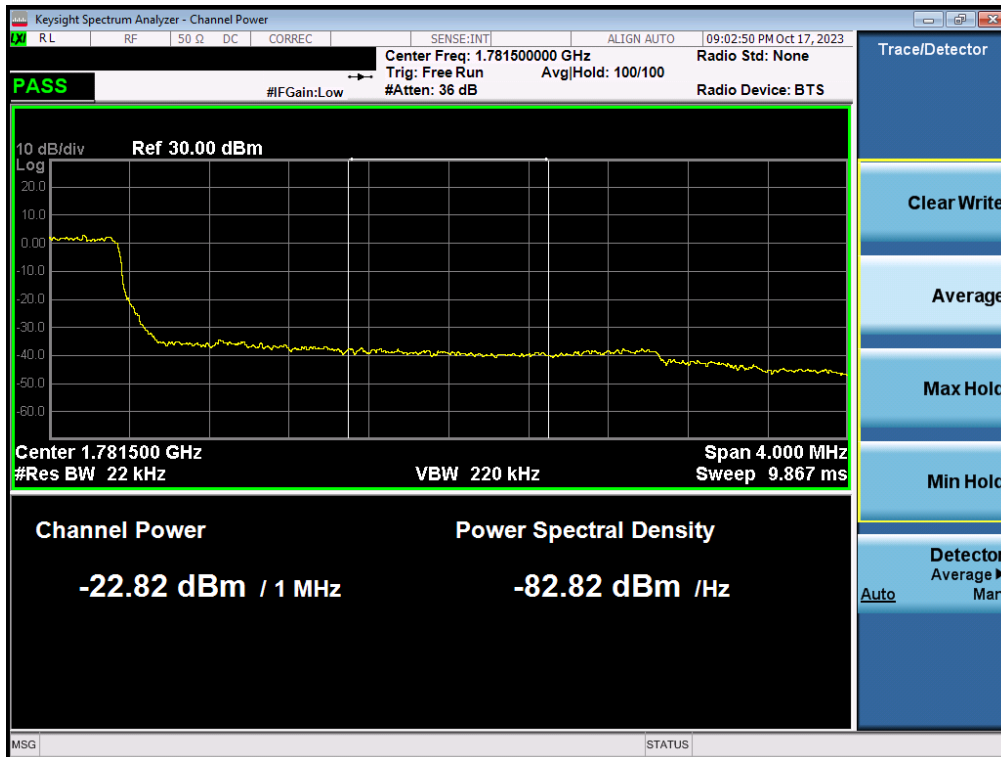


Plot 7-106. Upper Extended Band Edge Plot (LTE Band 4 - 3MHz QPSK – Full RB - Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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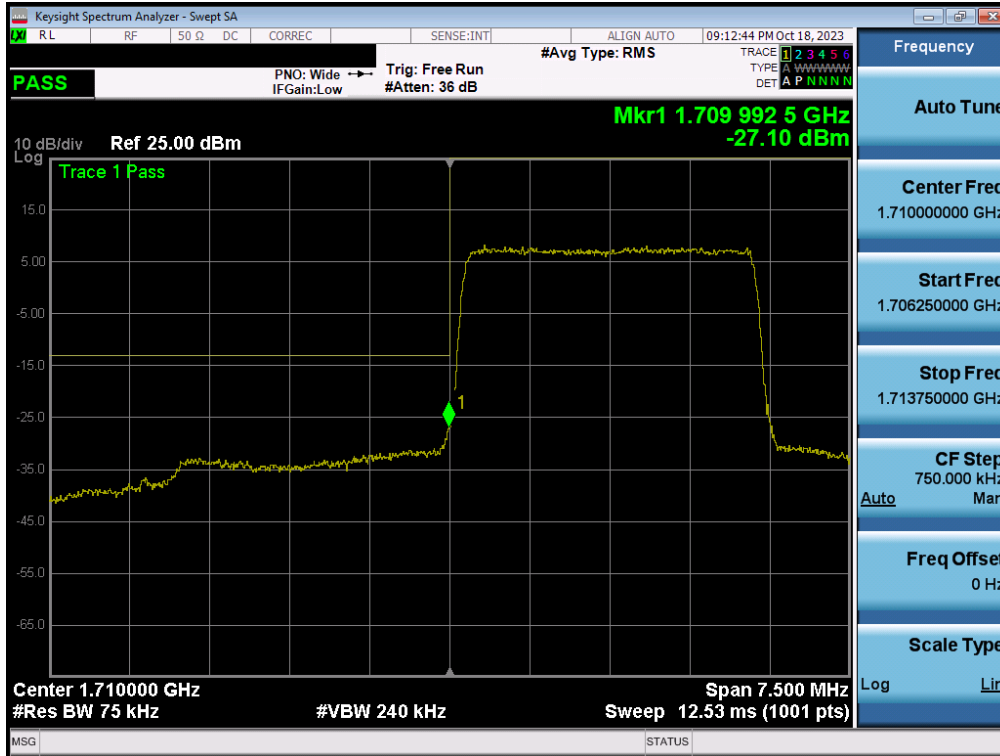
Plot 7-107. Upper Band Edge Plot (LTE Band 66 - 3MHz QPSK – Full RB - Ant1)



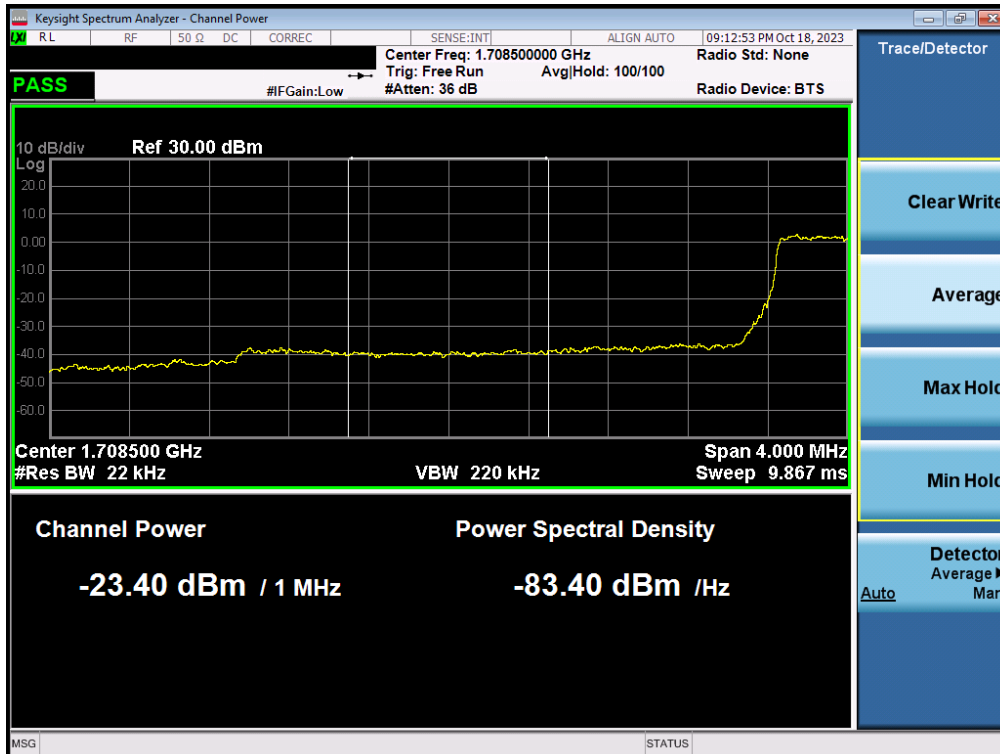
Plot 7-108. Upper Extended Band Edge Plot (LTE Band 66 - 3MHz QPSK – Full RB - Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 79 of 126

# LTE Band 4 – Ant2



Plot 7-109. Lower Band Edge Plot (LTE Band 4 - 3MHz QPSK – Full RB - Ant2)

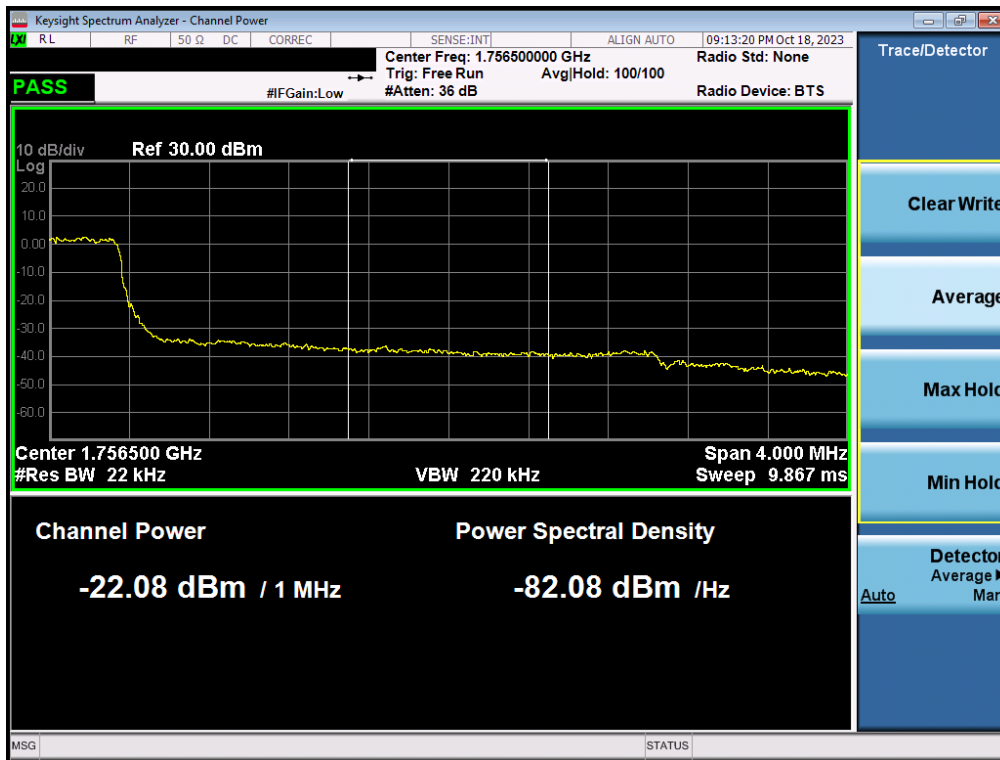


Plot 7-110. Lower Extended Band Edge Plot (LTE Band 4 - 3MHz QPSK – Full RB - Ant2)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 80 of 126



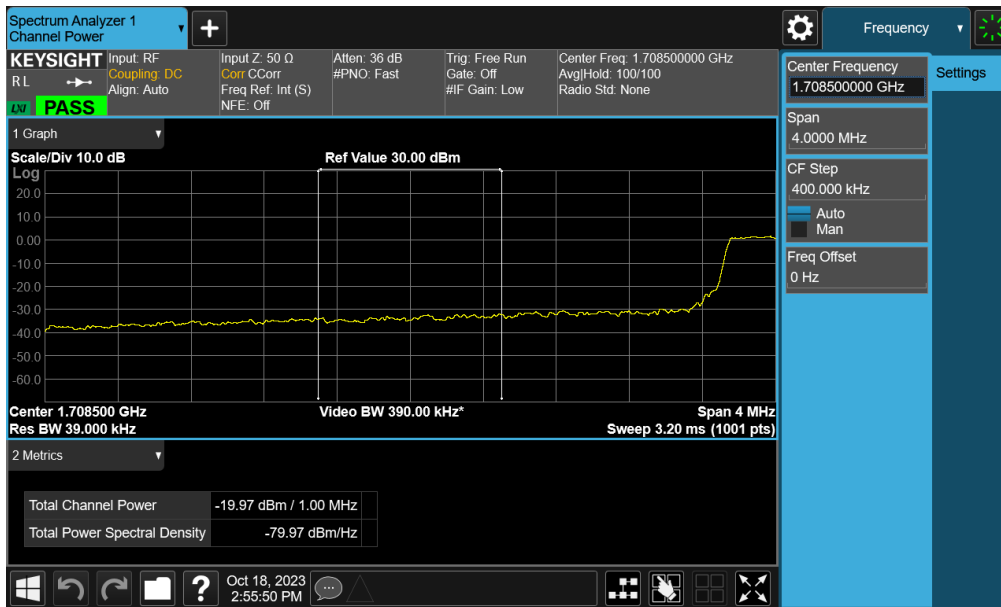
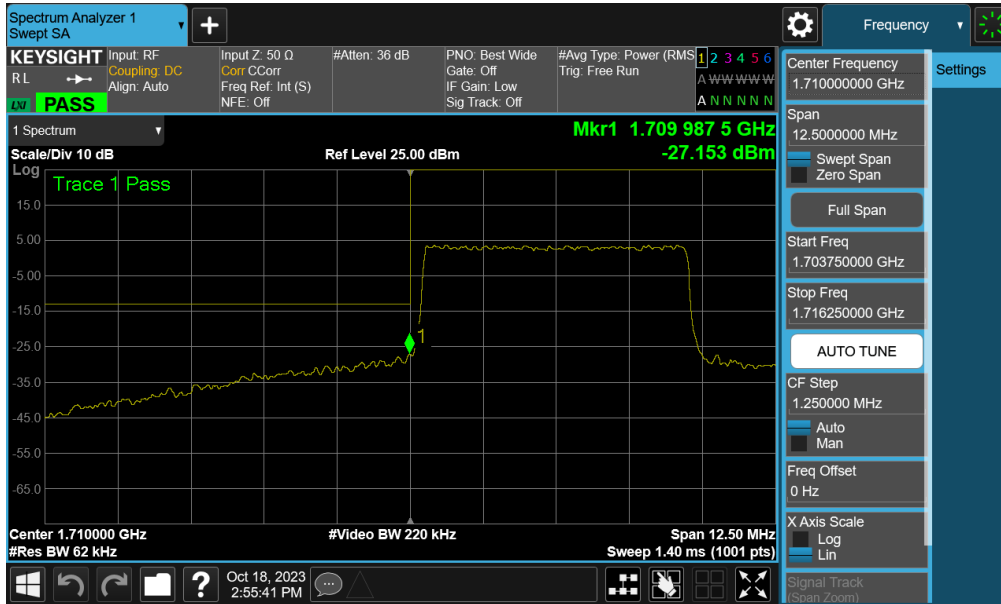
Plot 7-111. Upper Band Edge Plot (LTE Band 4 - 3MHz QPSK – Full RB - Ant2)



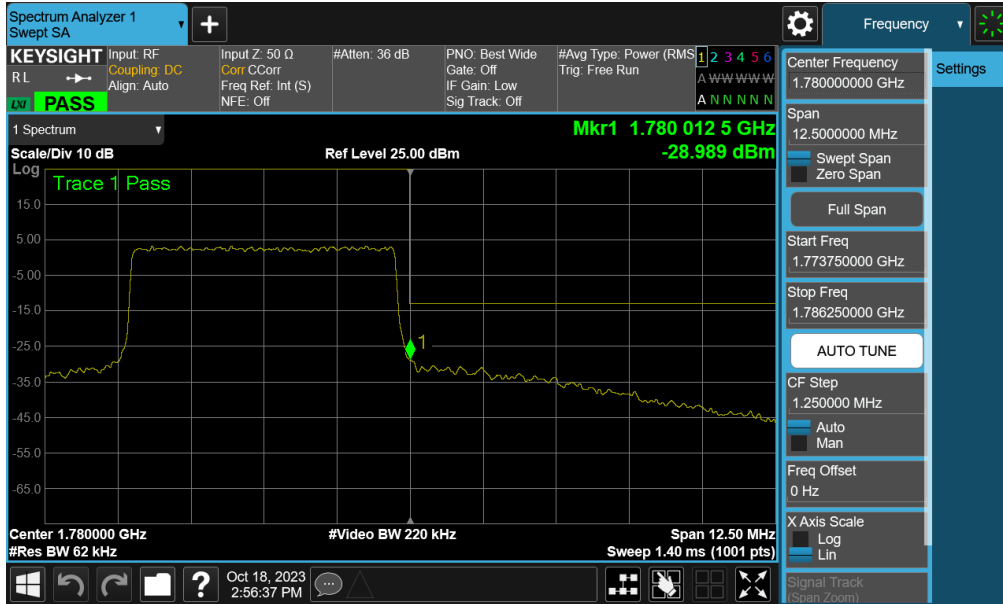
Plot 7-112. Upper Extended Band Edge Plot (LTE Band 4 - 3MHz QPSK – Full RB - Ant2)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 81 of 126

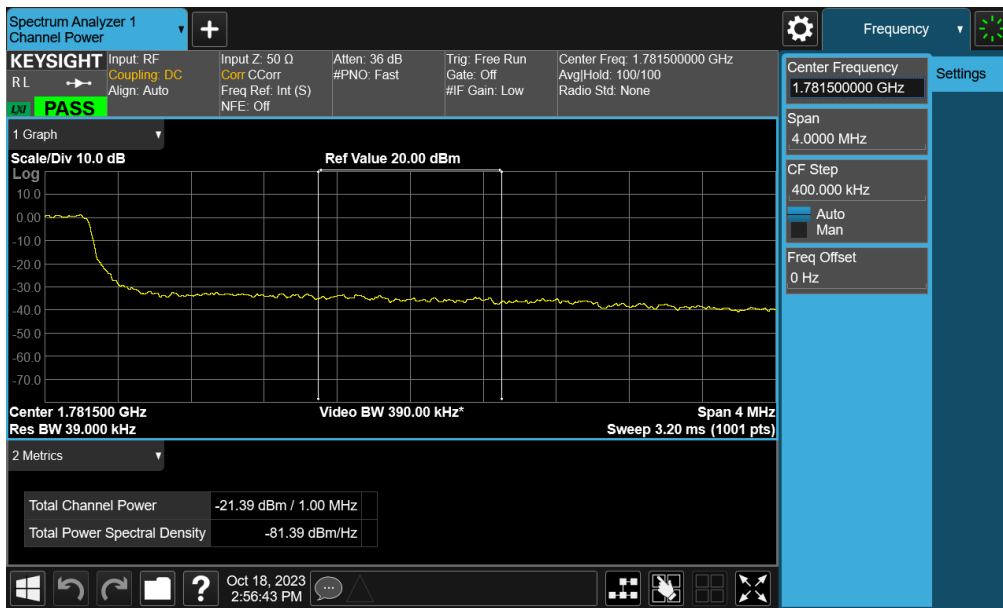
# NR Band n66 – Ant1



FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 82 of 126



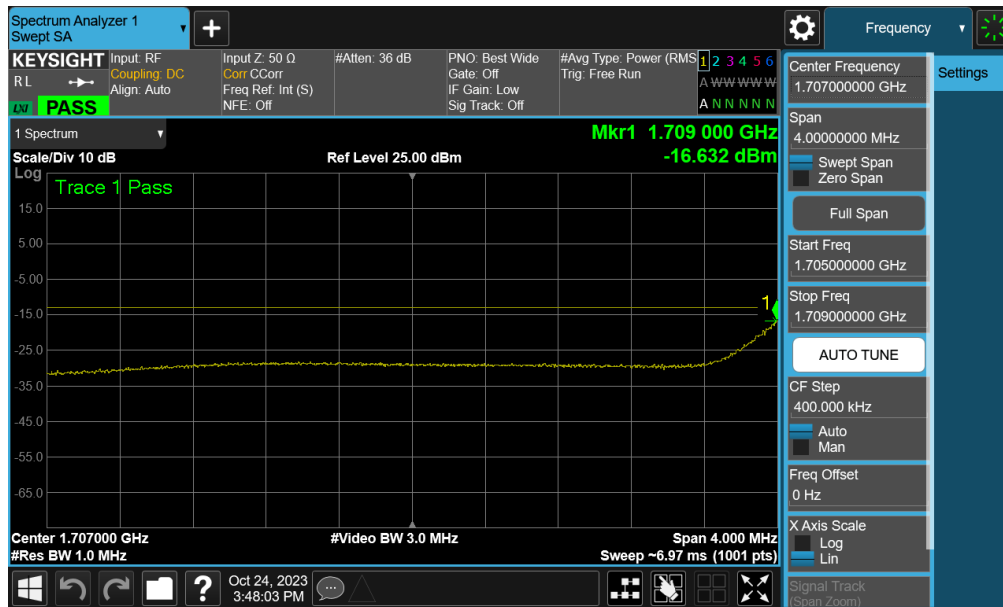
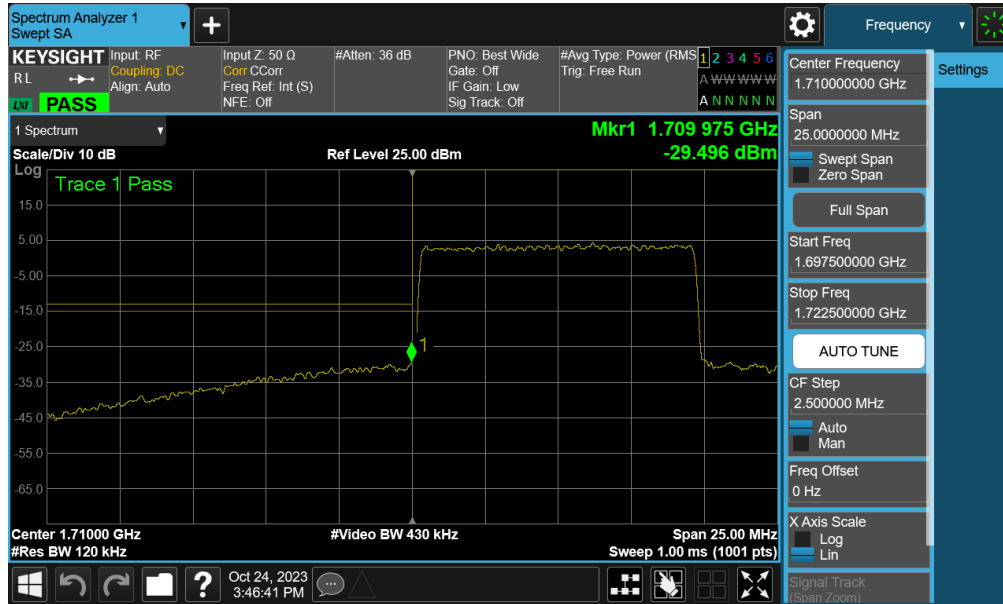
Plot 7-115. Upper Band Edge Plot (NR Band n66 – 5.0MHz - Full RB - Ant1)



Plot 7-116. Upper Extended Band Edge Plot (NR Band n66 – 5.0MHz - Full RB - Ant1)

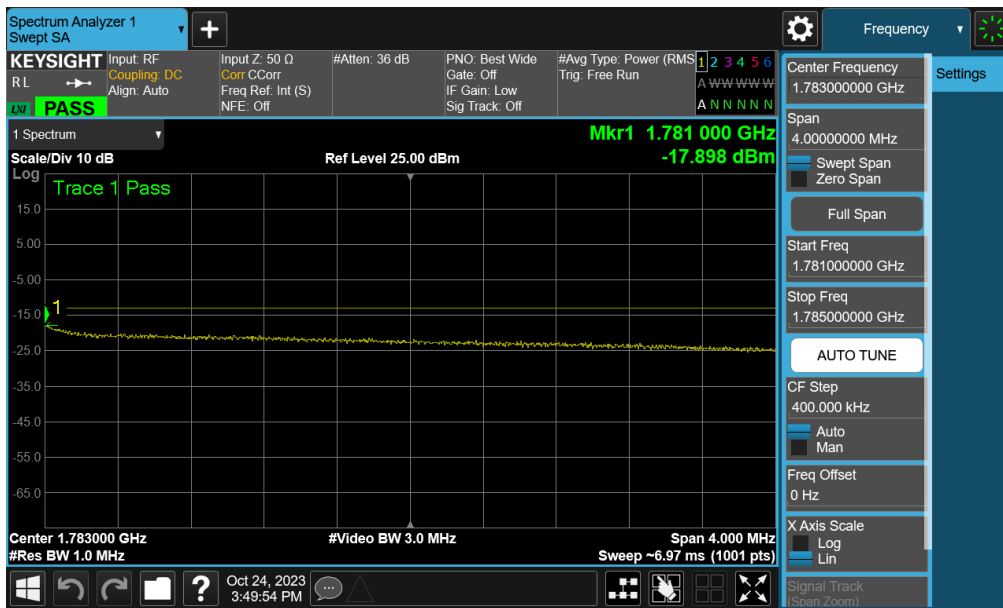
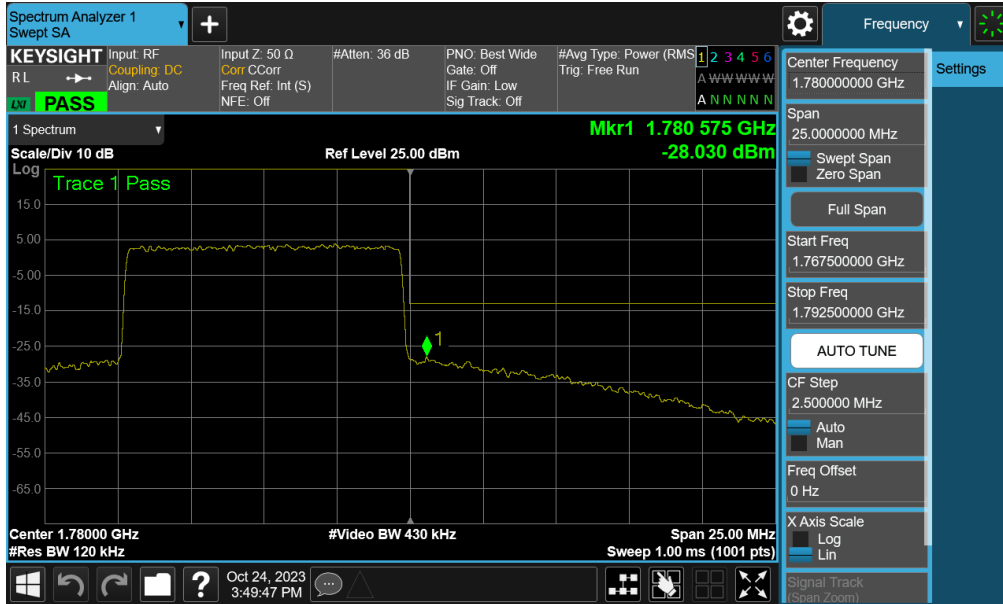
FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 83 of 126

## NR Band n66 – Ant2



FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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## 7.5 Peak-Average Ratio

### Test Overview

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

### Test Procedure Used

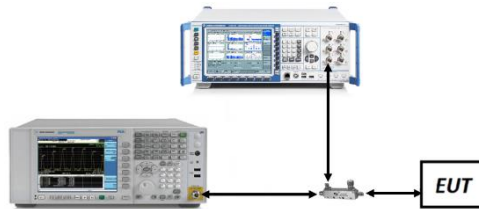
ANSI C63.26-2015 – Section 5.2.3.4

### Test Settings

1. The signal analyzer’s CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW  $\geq$  OBW or specified reference bandwidth
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal “RF Burst” trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the “on time” of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

### Test Setup

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



**Figure 7-4. Test Instrument & Measurement Setup**

### Test Notes

For the QAM modulations, 256QAM was found to have the worst-case peak-to-average ratio so it is the only QAM measurement included in this section.

FCC ID: A3LSMA156M	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 86 of 126

Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dBm]	Margin [dB]	
WCDMA-AWS	5 MHz	Spread Spectrum	23.52	3.12	13.00	-9.88	
LTE-B66/4	20 MHz	QPSK	22.50	5.27	13.00	-7.73	
		256QAM	19.13	6.84	13.00	-6.16	
	15 MHz	QPSK	22.48	5.31	13.00	-7.69	
		256QAM	19.11	6.79	13.00	-6.21	
	10 MHz	QPSK	22.48	5.35	13.00	-7.65	
		256QAM	19.10	6.77	13.00	-6.23	
	5 MHz	QPSK	22.50	5.35	13.00	-7.65	
		256QAM	19.13	6.76	13.00	-6.24	
	3 MHz	QPSK	22.42	5.35	13.00	-7.65	
		256QAM	19.10	6.77	13.00	-6.23	
	1.4 MHz	QPSK	22.40	5.30	13.00	-7.70	
		256QAM	19.10	6.87	13.00	-6.13	
	NR-n66	40MHz	BPSK	23.61	4.64	13.00	-8.36
			QPSK	21.16	7.83	13.00	-5.17
256QAM			17.73	8.76	13.00	-4.24	
30MHz		BPSK	23.69	4.25	13.00	-8.75	
		QPSK	21.20	7.61	13.00	-5.39	
		256QAM	17.85	8.67	13.00	-4.33	
25MHz		BPSK	23.69	4.53	13.00	-8.47	
		QPSK	21.21	7.67	13.00	-5.33	
20MHz		256QAM	17.83	8.85	13.00	-4.15	
		BPSK	23.72	4.18	13.00	-8.82	
15MHz		QPSK	21.23	7.66	13.00	-5.34	
		256QAM	17.85	8.81	13.00	-4.19	
		BPSK	23.75	4.36	13.00	-8.64	
10MHz		QPSK	21.22	7.66	13.00	-5.34	
		256QAM	17.84	8.88	13.00	-4.12	
		BPSK	23.72	4.29	13.00	-8.71	
5MHz		QPSK	21.21	7.70	13.00	-5.30	
		256QAM	17.86	8.77	13.00	-4.23	
	BPSK	23.75	4.25	13.00	-8.75		
	5MHz	QPSK	21.24	7.68	13.00	-5.32	
		256QAM	17.91	8.69	13.00	-4.31	

Table 7-8. Summary of Peak-Average Ratio Test Results – Ant1

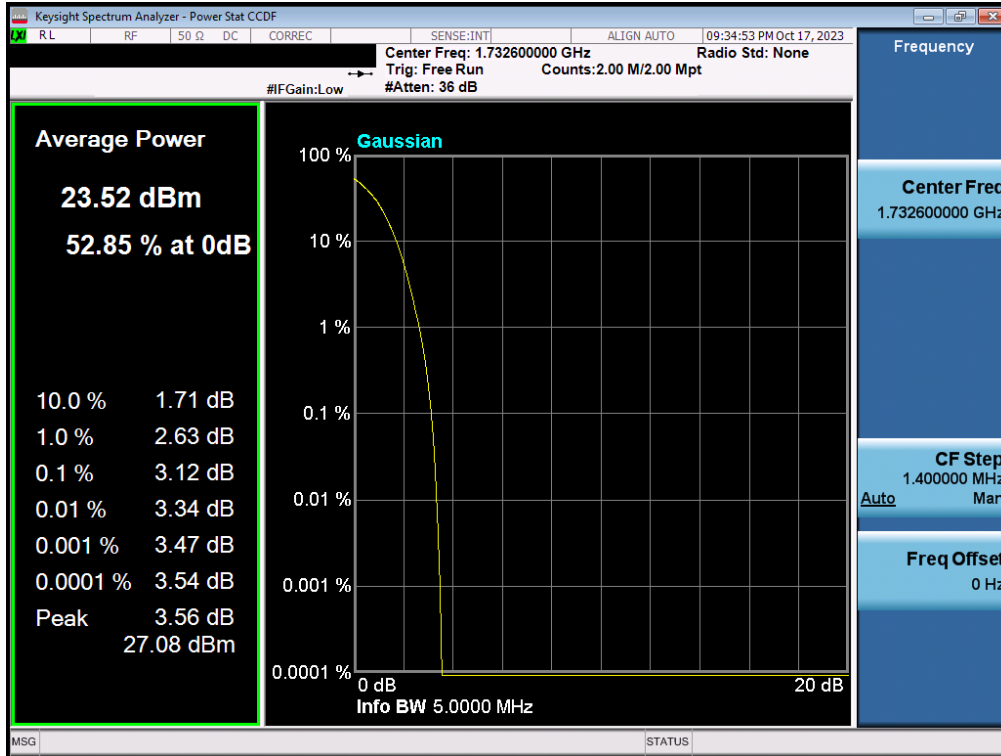
FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 87 of 126

Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dBm]	Margin [dB]	
LTE-B4	20 MHz	QPSK	22.46	5.60	13.00	-7.40	
		256QAM	19.12	7.00	13.00	-6.00	
	15 MHz	QPSK	22.39	5.68	13.00	-7.32	
		256QAM	19.06	6.99	13.00	-6.01	
	10 MHz	QPSK	22.41	5.79	13.00	-7.21	
		256QAM	19.04	6.93	13.00	-6.07	
	5 MHz	QPSK	22.42	5.78	13.00	-7.22	
		256QAM	19.02	6.97	13.00	-6.03	
	3 MHz	QPSK	22.30	5.80	13.00	-7.20	
		256QAM	18.98	6.97	13.00	-6.03	
	1.4 MHz	QPSK	22.30	5.81	13.00	-7.19	
		256QAM	18.98	7.12	13.00	-5.88	
	NR-n66	40MHz	BPSK	24.21	4.72	13.00	-8.28
			QPSK	21.70	7.84	13.00	-5.16
256QAM			18.31	8.86	13.00	-4.14	
30MHz		BPSK	24.30	4.22	13.00	-8.78	
		QPSK	21.77	7.67	13.00	-5.33	
		256QAM	18.36	8.80	13.00	-4.21	
25MHz		BPSK	24.22	4.54	13.00	-8.46	
		QPSK	21.70	7.85	13.00	-5.15	
		256QAM	18.32	8.88	13.00	-4.12	
20MHz		BPSK	24.27	4.22	13.00	-8.78	
		QPSK	21.73	7.73	13.00	-5.27	
		256QAM	18.39	8.80	13.00	-4.20	
15MHz		BPSK	24.30	4.29	13.00	-8.71	
		QPSK	21.80	7.72	13.00	-5.28	
		256QAM	18.43	8.79	13.00	-4.21	
10MHz		BPSK	24.28	4.23	13.00	-8.77	
		QPSK	21.73	7.72	13.00	-5.28	
		256QAM	18.40	8.83	13.00	-4.17	
5MHz		BPSK	24.33	4.23	13.00	-8.77	
		QPSK	21.78	7.67	13.00	-5.33	
		256QAM	18.43	8.85	13.00	-4.15	

**Table 7-9. Summary of Peak-Average Ratio Test Results – Ant2**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 88 of 126

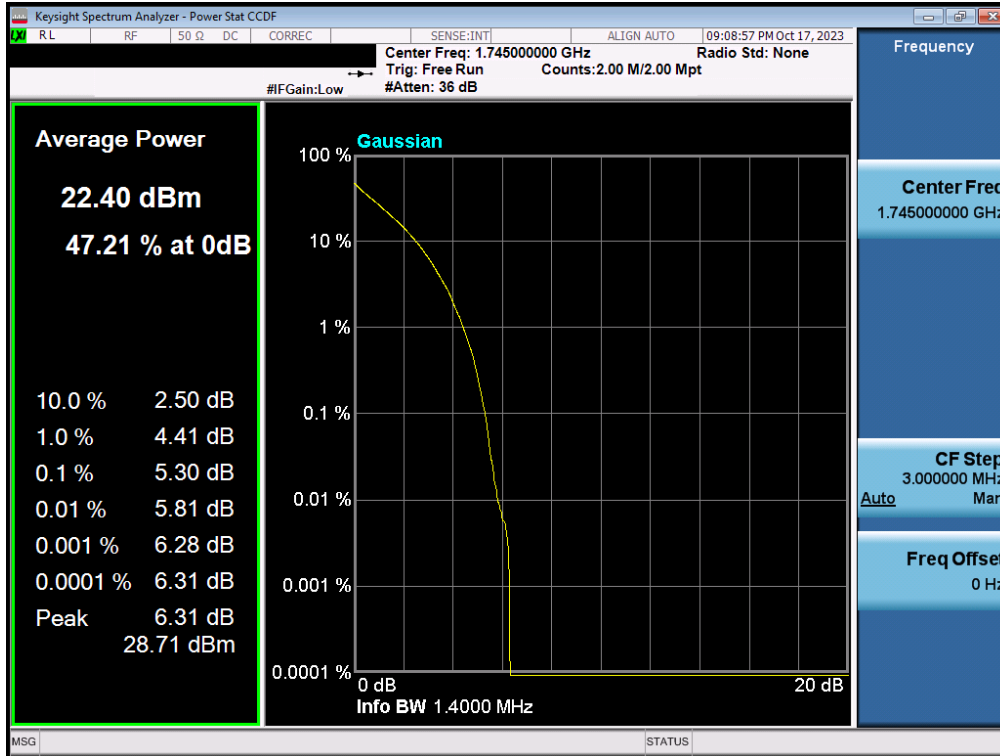
# WCDMA AWS – Ant1



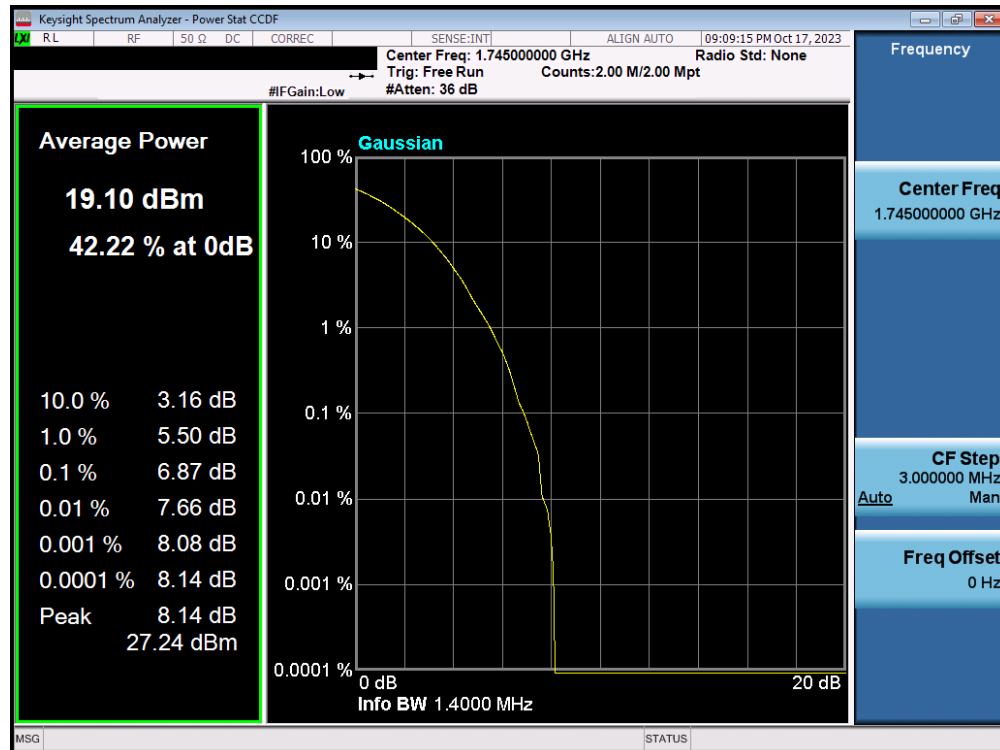
Plot 7-121. PAR Plot (WCDMA, Ch. 1413 – Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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### LTE Band 66/4 – Ant1



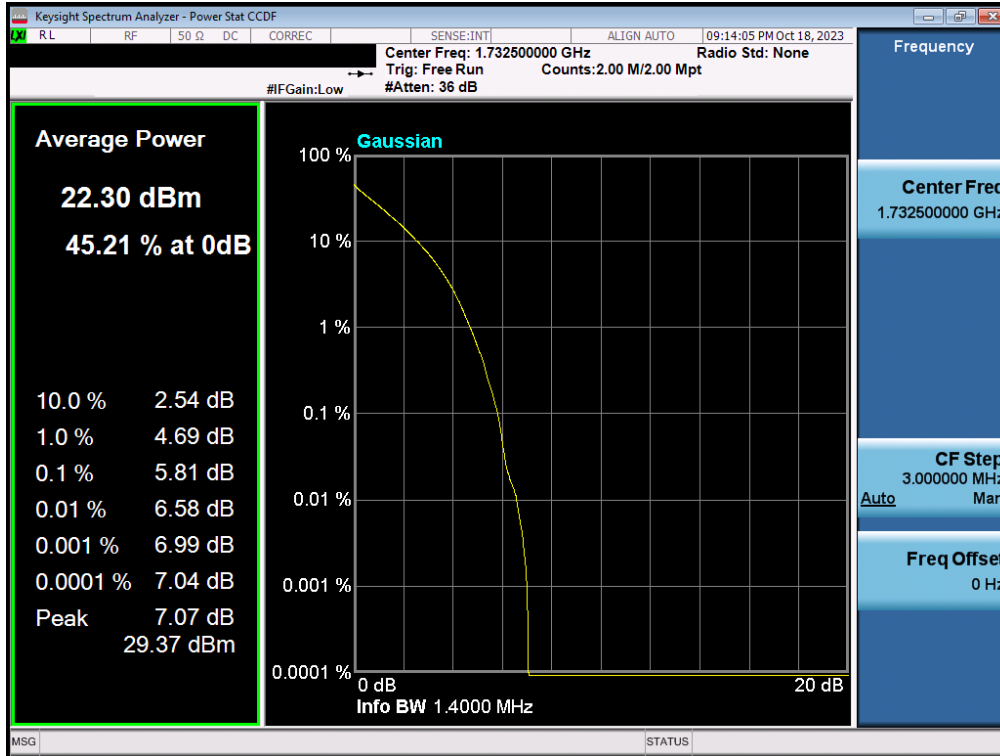
Plot 7-122. PAR Plot (LTE Band 66/4 - 1.4MHz QPSK - Full RB - Ant1)



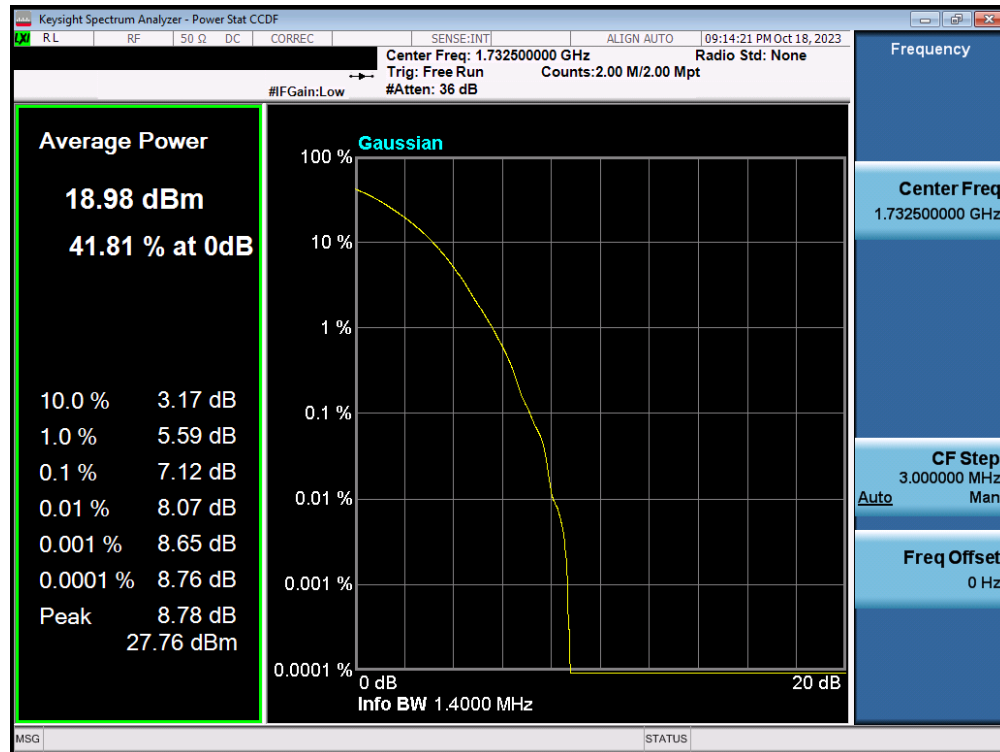
Plot 7-123. PAR Plot (LTE Band 66/4 - 1.4MHz 256-QAM - Full RB - Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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## LTE Band 4 – Ant2



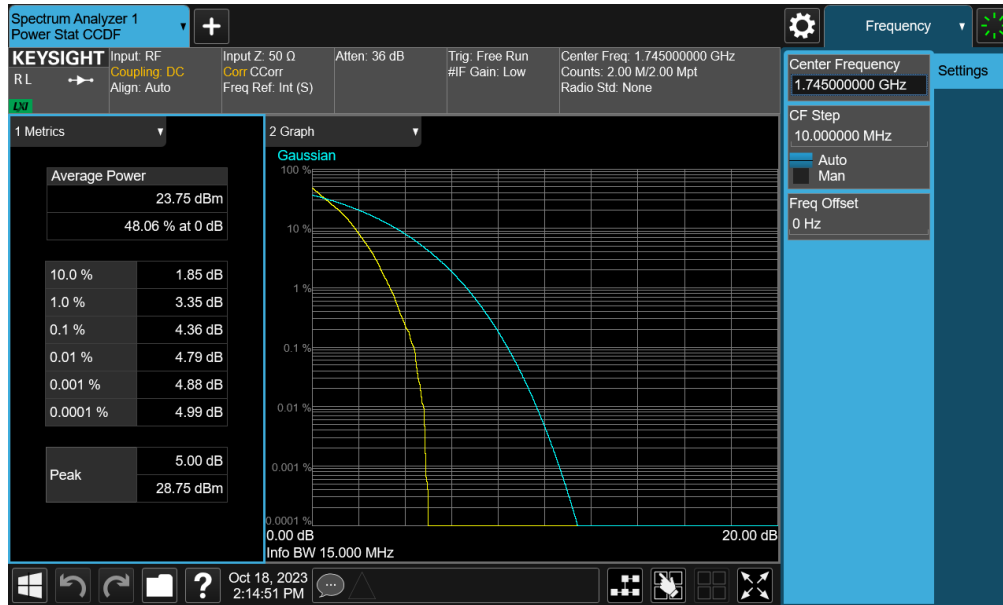
Plot 7-124. PAR Plot (LTE Band 4 - 1.4MHz QPSK - Full RB - Ant2)



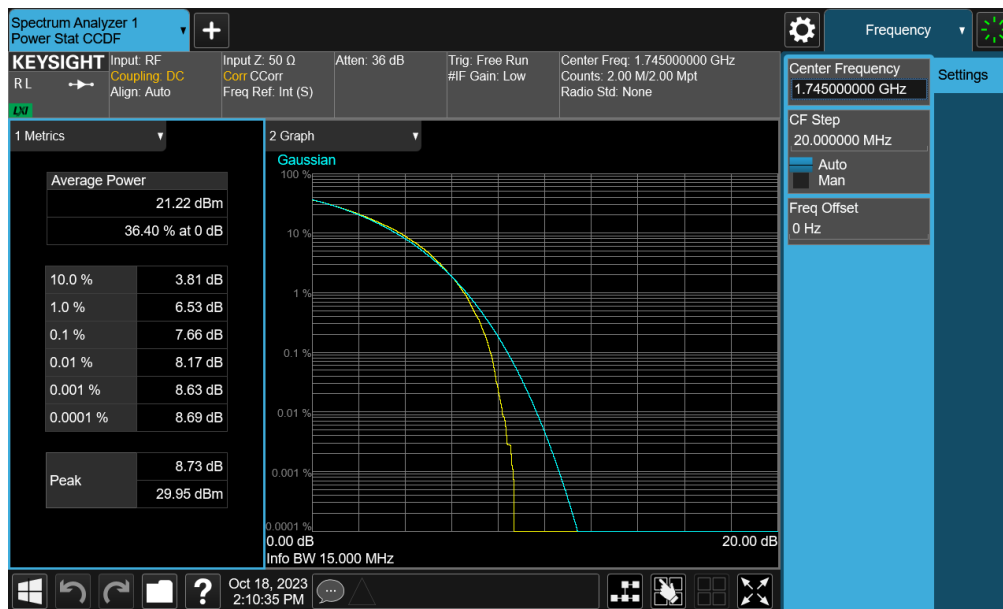
Plot 7-125. PAR Plot (LTE Band 4 - 1.4MHz 256-QAM - Full RB - Ant2)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 91 of 126

## NR Band n66 – Ant1



Plot 7-126. PAR Plot (NR Band n66 - 15.0MHz DFT-s-OFDM BPSK - Full RB - Ant1)



Plot 7-127. PAR Plot (NR Band n66 - 15.0MHz CP-OFDM QPSK - Full RB - Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 92 of 126

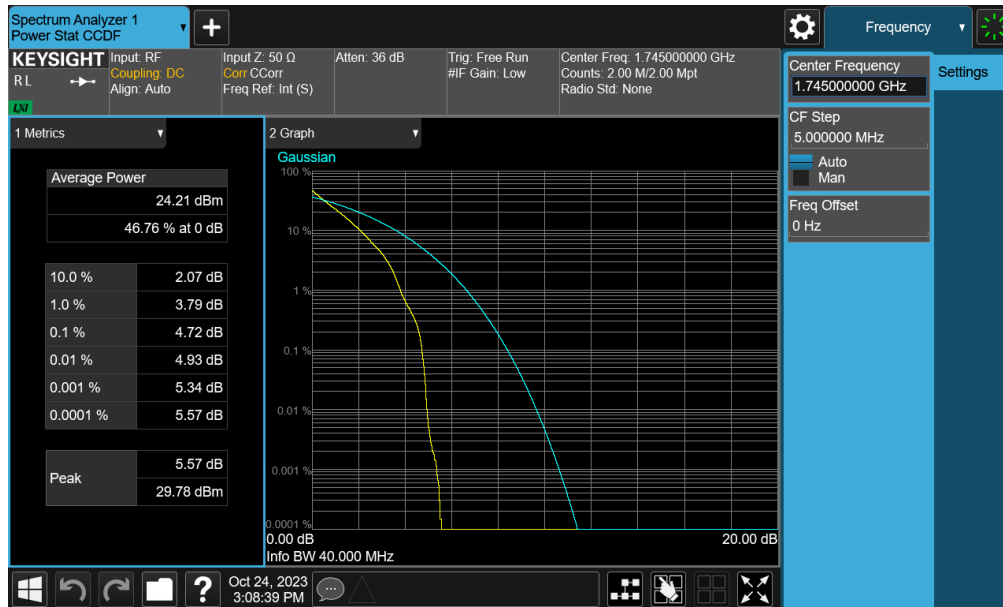




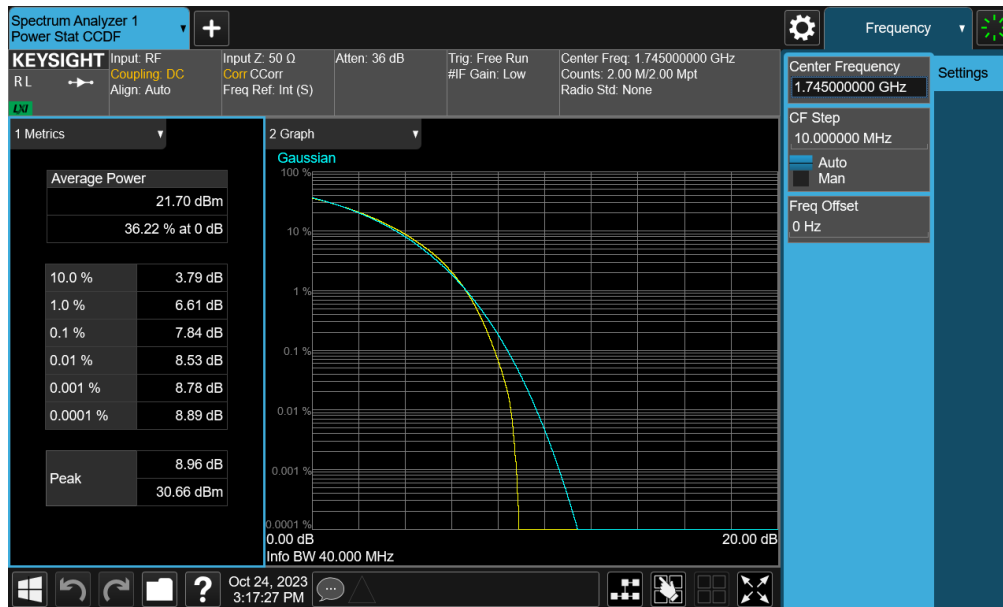
Plot 7-128. PAR Plot (NR Band n66 - 15.0MHz CP-OFDM 256-QAM - Full RB - Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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## NR Band n66 – Ant2

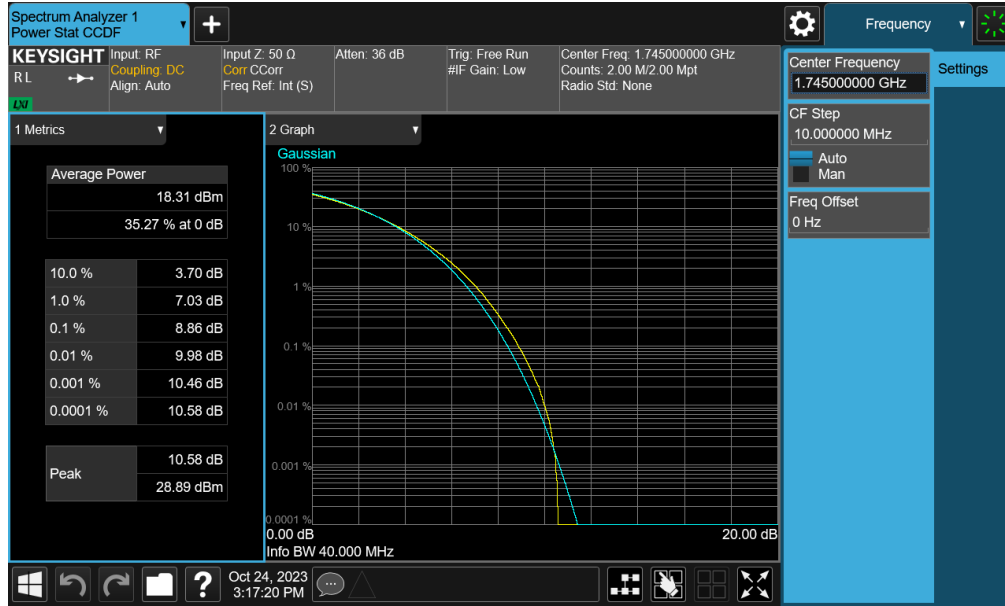


Plot 7-129. PAR Plot (NR Band n66 - 40.0MHz DFT-s-OFDM BPSK - Full RB - Ant2)



Plot 7-130. PAR Plot (NR Band n66 - 40.0MHz CP-OFDM QPSK - Full RB - Ant2)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-131. PAR Plot (NR Band n66 - 40.0MHz CP-OFDM 256-QAM - Full RB - Ant2)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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## 7.6 Radiated Power (ERP/EIRP)

### Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

### Test Procedures Used

ANSI C63.26-2015 – Section 5.2.4.4

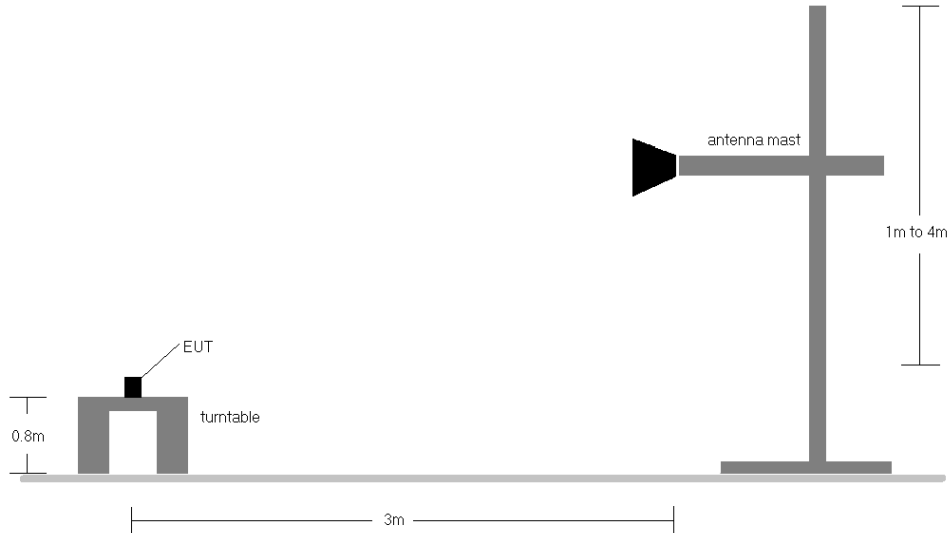
### Test Settings

1. Radiated power measurements are performed using the signal analyzer’s “channel power” measurement capability for signals with continuous operation.
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW  $\geq$  3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points  $\geq$  2 x span / RBW
6. Detector = RMS
7. Trigger is set to “free run” for signals with continuous operation with the sweep times set to “auto”.
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

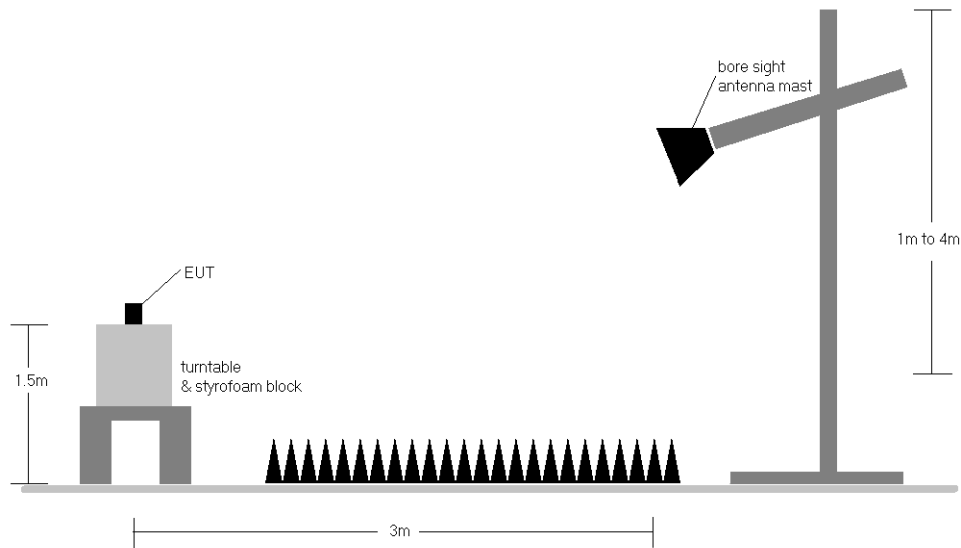
FCC ID: A3LSMA156M	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 96 of 126

**Test Setup**

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



**Figure 7-5. Radiated Test Setup <1GHz**



**Figure 7-6. Radiated Test Setup >1GHz**

**Test Notes**

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 97 of 126

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
10 MHz	QPSK	704.00	H	127	304	1.14	1 / 49	19.03	20.17	0.104	36.99	-16.82	18.02	0.063	34.77	-16.75
	QPSK	707.50	H	125	294	1.16	1 / 49	18.93	20.09	0.102	36.99	-16.90	17.94	0.062	34.77	-16.83
	QPSK	711.00	H	127	306	1.17	1 / 49	19.20	<b>20.37</b>	0.109	36.99	-16.62	<b>18.22</b>	0.066	34.77	-16.55
	16-QAM	704.00	H	127	304	1.14	1 / 49	18.05	19.19	0.083	36.99	-17.80	17.04	0.051	34.77	-17.73
	16-QAM	707.50	H	125	294	1.16	1 / 49	17.95	19.11	0.081	36.99	-17.88	16.96	0.050	34.77	-17.81
	16-QAM	711.00	H	127	306	1.17	1 / 49	18.21	19.38	0.087	36.99	-17.61	17.23	0.053	34.77	-17.54
5 MHz	QPSK	701.50	H	127	304	1.13	1 / 24	18.84	19.97	0.099	36.99	-17.02	17.82	0.061	34.77	-16.95
	QPSK	707.50	H	125	294	1.16	1 / 24	19.19	20.34	0.108	36.99	-16.65	18.19	0.066	34.77	-16.58
	QPSK	713.50	H	127	306	1.19	1 / 24	19.21	<b>20.40</b>	0.110	36.99	-16.59	<b>18.25</b>	0.067	34.77	-16.52
	16-QAM	701.50	H	127	304	1.13	1 / 0	17.90	19.03	0.080	36.99	-17.96	16.88	0.049	34.77	-17.89
	16-QAM	707.50	H	125	294	1.16	1 / 24	18.10	19.26	0.084	36.99	-17.73	17.11	0.051	34.77	-17.67
	16-QAM	713.50	H	127	306	1.19	1 / 12	18.19	19.38	0.087	36.99	-17.61	17.23	0.053	34.77	-17.54
3 MHz	QPSK	700.50	H	127	304	1.12	1 / 14	19.02	20.15	0.103	36.99	-16.84	18.00	0.063	34.77	-16.78
	QPSK	707.50	H	125	294	1.16	1 / 7	18.94	20.10	0.102	36.99	-16.89	17.95	0.062	34.77	-16.82
	QPSK	714.50	H	127	306	1.19	1 / 14	19.26	<b>20.45</b>	0.111	36.99	-16.54	<b>18.30</b>	0.068	34.77	-16.47
	16-QAM	700.50	H	127	304	1.12	1 / 0	17.91	19.03	0.080	36.99	-17.96	16.88	0.049	34.77	-17.89
	16-QAM	707.50	H	125	294	1.16	1 / 7	17.78	18.94	0.078	36.99	-18.05	16.79	0.048	34.77	-17.99
	16-QAM	714.50	H	127	306	1.19	1 / 0	18.28	19.47	0.088	36.99	-17.52	17.32	0.054	34.77	-17.45
1.4 MHz	QPSK	699.70	H	127	304	1.12	1 / 3	18.84	19.96	0.099	36.99	-17.03	17.81	0.060	34.77	-16.96
	QPSK	707.50	H	125	294	1.16	1 / 5	18.93	20.09	0.102	36.99	-16.90	17.94	0.062	34.77	-16.84
	QPSK	715.30	H	127	306	1.20	1 / 3	19.21	<b>20.41</b>	0.110	36.99	-16.58	<b>18.26</b>	0.067	34.77	-16.51
	16-QAM	699.70	H	127	304	1.12	1 / 0	17.87	18.98	0.079	36.99	-18.01	16.83	0.048	34.77	-17.94
	16-QAM	707.50	H	125	294	1.16	1 / 5	17.72	18.87	0.077	36.99	-18.11	16.72	0.047	34.77	-18.05
	16-QAM	715.30	H	127	306	1.20	1 / 5	18.21	19.41	0.087	36.99	-17.58	17.26	0.053	34.77	-17.51

Table 7-10. ERP Data (LTE Band 12/17 – Ant1)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
10 MHz	QPSK	782.00	H	105	292	1.09	1 / 0	19.12	<b>20.21</b>	0.105	36.99	-16.78	<b>18.06</b>	0.064	34.77	-16.72
	16-QAM	782.00	H	105	292	1.09	1 / 0	18.10	19.19	0.083	36.99	-17.80	17.04	0.051	34.77	-17.74
5 MHz	QPSK	779.50	H	105	292	1.11	1 / 0	19.14	20.25	0.106	36.99	-16.74	18.10	0.065	34.77	-16.67
	QPSK	782.00	H	105	292	1.09	1 / 24	19.16	20.24	0.106	36.99	-16.75	18.09	0.064	34.77	-16.68
	QPSK	784.50	H	105	292	1.06	1 / 24	19.36	<b>20.43</b>	0.110	36.99	-16.56	<b>18.28</b>	0.067	34.77	-16.50
	16-QAM	779.50	H	105	292	1.11	1 / 0	18.22	19.33	0.086	36.99	-17.66	17.18	0.052	34.77	-17.59
	16-QAM	782.00	H	105	292	1.09	1 / 24	18.18	19.27	0.084	36.99	-17.72	17.12	0.051	34.77	-17.65
	16-QAM	784.50	H	105	292	1.06	1 / 24	18.39	19.45	0.088	36.99	-17.54	17.30	0.054	34.77	-17.47

Table 7-11. ERP Data (LTE Band 12/17 – Ant1)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1712.40	WCDMA1700	H	139	12	18.13	2.89	21.02	0.126	30.00	-8.98
1732.60	WCDMA1700	H	192	6	18.46	2.86	21.32	0.136	30.00	-8.68
1752.60	WCDMA1700	H	233	6	18.67	2.83	<b>21.50</b>	<b>0.141</b>	30.00	-8.50

Table 7-12. EIRP Data (WCDMA AWS – Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 98 of 126



Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	QPSK	1720.00	H	237	12	2.93	1 / 50	21.17	24.10	0.257	30.00	-5.90
	QPSK	1745.00	H	225	9	2.93	1 / 50	22.16	<b>25.09</b>	0.323	30.00	-4.91
	QPSK	1770.00	H	176	12	2.93	1 / 99	21.18	24.11	0.258	30.00	-5.89
	16-QAM	1720.00	H	237	12	2.93	1 / 50	19.70	22.63	0.183	30.00	-7.37
	16-QAM	1745.00	H	225	9	2.93	1 / 50	21.08	24.01	0.252	30.00	-5.99
16-QAM	1770.00	H	176	12	2.93	1 / 99	20.25	23.18	0.208	30.00	-6.82	
15 MHz	QPSK	1717.50	H	237	12	2.93	1 / 74	21.12	24.05	0.254	30.00	-5.95
	QPSK	1745.00	H	225	9	2.93	1 / 37	22.15	<b>25.08</b>	0.322	30.00	-4.92
	QPSK	1772.50	H	176	12	2.93	1 / 37	21.25	24.18	0.262	30.00	-5.82
	16-QAM	1717.50	H	237	12	2.93	1 / 74	19.54	22.47	0.177	30.00	-7.53
	16-QAM	1745.00	H	225	9	2.93	1 / 74	20.89	23.82	0.241	30.00	-6.18
16-QAM	1772.50	H	176	12	2.93	1 / 0	20.00	22.93	0.196	30.00	-7.07	
10 MHz	QPSK	1715.00	H	237	12	2.93	1 / 0	20.99	23.92	0.247	30.00	-6.08
	QPSK	1745.00	H	225	9	2.93	1 / 25	22.18	<b>25.11</b>	0.324	30.00	-4.89
	QPSK	1775.00	H	176	12	2.93	1 / 0	20.96	23.89	0.245	30.00	-6.11
	16-QAM	1715.00	H	237	12	2.93	1 / 0	19.72	22.65	0.184	30.00	-7.35
	16-QAM	1745.00	H	225	9	2.93	1 / 0	20.95	23.88	0.244	30.00	-6.12
16-QAM	1775.00	H	176	12	2.93	1 / 49	20.27	23.20	0.209	30.00	-6.80	
5 MHz	QPSK	1712.50	H	237	12	2.93	1 / 12	21.20	24.13	0.259	30.00	-5.87
	QPSK	1745.00	H	225	9	2.93	1 / 0	22.11	<b>25.04</b>	0.319	30.00	-4.96
	QPSK	1777.50	H	176	12	2.93	1 / 24	21.08	24.01	0.251	30.00	-5.99
	16-QAM	1712.50	H	237	12	2.93	1 / 12	19.67	22.60	0.182	30.00	-7.40
	16-QAM	1745.00	H	225	9	2.93	1 / 12	20.78	23.71	0.235	30.00	-6.29
16-QAM	1777.50	H	176	12	2.93	1 / 12	20.23	23.16	0.207	30.00	-6.84	
3 MHz	QPSK	1711.50	H	237	12	2.93	1 / 14	21.01	23.94	0.248	30.00	-6.06
	QPSK	1745.00	H	225	9	2.93	1 / 0	22.32	<b>25.25</b>	0.335	30.00	-4.75
	QPSK	1778.50	H	176	12	2.93	1 / 7	21.23	24.16	0.261	30.00	-5.84
	16-QAM	1711.50	H	237	12	2.93	1 / 14	19.66	22.59	0.182	30.00	-7.41
	16-QAM	1745.00	H	225	9	2.93	1 / 7	20.88	23.81	0.240	30.00	-6.19
16-QAM	1778.50	H	176	12	2.93	1 / 7	20.23	23.16	0.207	30.00	-6.84	
1.4 MHz	QPSK	1710.70	H	237	12	2.93	1 / 5	21.06	23.99	0.251	30.00	-6.01
	QPSK	1745.00	H	225	9	2.93	1 / 3	21.98	<b>24.91</b>	0.310	30.00	-5.09
	QPSK	1779.30	H	176	12	2.93	1 / 5	20.98	23.91	0.246	30.00	-6.09
	16-QAM	1710.70	H	237	12	2.93	1 / 0	19.62	22.55	0.180	30.00	-7.45
	16-QAM	1745.00	H	225	9	2.93	1 / 3	20.72	23.65	0.232	30.00	-6.35
16-QAM	1779.30	H	176	12	2.93	1 / 0	19.99	22.92	0.196	30.00	-7.08	

Table 7-13. EIRP Data (LTE Band 66/4 – Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 99 of 126



Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	QPSK	1720.00	V	Y	114	251	2.90	1 / 99	17.19	20.09	0.102	30.00	-9.91
	QPSK	1732.50	V	Y	119	266	2.92	1 / 50	17.19	20.11	0.103	30.00	-9.89
	QPSK	1745.00	V	Y	111	273	2.94	1 / 99	17.97	20.91	0.123	30.00	-9.09
	16-QAM	1720.00	V	Y	114	251	2.90	1 / 99	16.15	19.05	0.080	30.00	-10.95
	16-QAM	1732.50	V	Y	119	266	2.92	1 / 50	16.16	19.08	0.081	30.00	-10.92
15 MHz	16-QAM	1745.00	V	Y	111	273	2.94	1 / 99	16.94	19.88	0.097	30.00	-10.12
	QPSK	1717.50	V	Y	114	251	2.89	1 / 74	17.29	20.18	0.104	30.00	-9.82
	QPSK	1732.50	V	Y	119	266	2.92	1 / 0	17.15	20.07	0.102	30.00	-9.93
	QPSK	1747.50	V	Y	111	273	2.95	1 / 37	17.99	20.94	0.124	30.00	-9.06
	16-QAM	1717.50	V	Y	114	251	2.89	1 / 0	16.17	19.07	0.081	30.00	-10.93
10 MHz	16-QAM	1732.50	V	Y	119	266	2.92	1 / 37	16.32	19.24	0.084	30.00	-10.76
	16-QAM	1747.50	V	Y	111	273	2.95	1 / 37	17.15	20.10	0.102	30.00	-9.90
	QPSK	1715.00	V	Y	114	251	2.89	1 / 49	17.38	20.27	0.106	30.00	-9.73
	QPSK	1732.50	V	Y	119	266	2.92	1 / 0	17.15	20.07	0.102	30.00	-9.93
	QPSK	1750.00	V	Y	111	273	2.95	1 / 0	18.03	20.98	0.125	30.00	-9.02
5 MHz	16-QAM	1715.00	V	Y	114	251	2.89	1 / 49	16.26	19.15	0.082	30.00	-10.85
	16-QAM	1732.50	V	Y	119	266	2.92	1 / 49	16.25	19.17	0.083	30.00	-10.83
	16-QAM	1750.00	V	Y	111	273	2.95	1 / 25	17.05	20.00	0.100	30.00	-10.00
	QPSK	1712.50	V	Y	114	251	2.88	1 / 12	17.29	20.18	0.104	30.00	-9.82
	QPSK	1732.50	V	Y	119	266	2.92	1 / 12	17.17	20.09	0.102	30.00	-9.91
3 MHz	QPSK	1752.50	V	Y	111	273	2.96	1 / 0	17.90	20.86	0.122	30.00	-9.14
	16-QAM	1712.50	V	Y	114	251	2.88	1 / 0	16.13	19.01	0.080	30.00	-10.99
	16-QAM	1732.50	V	Y	119	266	2.92	1 / 12	16.23	19.15	0.082	30.00	-10.85
	16-QAM	1752.50	V	Y	111	273	2.96	1 / 0	16.82	19.78	0.095	30.00	-10.22
	QPSK	1711.50	V	Y	114	251	2.88	1 / 14	17.29	20.18	0.104	30.00	-9.82
1.4 MHz	QPSK	1732.50	V	Y	119	266	2.92	1 / 0	17.06	19.98	0.100	30.00	-10.02
	QPSK	1753.50	V	Y	111	273	2.96	1 / 0	17.78	20.75	0.119	30.00	-9.25
	16-QAM	1711.50	V	Y	114	251	2.88	1 / 14	15.96	18.84	0.077	30.00	-11.16
	16-QAM	1732.50	V	Y	119	266	2.92	1 / 0	16.26	19.18	0.083	30.00	-10.82
	16-QAM	1753.50	V	Y	111	273	2.96	1 / 0	16.81	19.77	0.095	30.00	-10.23
1.4 MHz	QPSK	1710.70	V	Y	114	251	2.88	1 / 0	17.20	20.08	0.102	30.00	-9.92
	QPSK	1732.50	V	Y	119	266	2.92	1 / 0	17.12	20.04	0.101	30.00	-9.96
	QPSK	1754.30	V	Y	111	273	2.97	1 / 3	17.67	20.64	0.116	30.00	-9.36
	16-QAM	1710.70	V	Y	114	251	2.88	1 / 5	15.96	18.85	0.077	30.00	-11.15
	16-QAM	1732.50	V	Y	119	266	2.92	1 / 3	16.14	19.06	0.080	30.00	-10.94
16-QAM	1754.30	V	Y	111	273	2.97	1 / 0	16.62	19.59	0.091	30.00	-10.41	

Table 7-14. EIRP Data (LTE Band 4 – Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 100 of 126





Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
40 MHz	$\pi/2$ BPSK	1730.00	H	181	20	2.86	1 / 214	19.01	21.87	0.154	30.00	-8.13
	$\pi/2$ BPSK	1745.00	H	184	22	2.84	1 / 1	19.18	<b>22.02</b>	0.159	30.00	-7.98
	$\pi/2$ BPSK	1760.00	H	176	20	2.81	1 / 1	19.02	21.83	0.153	30.00	-8.17
	QPSK	1730.00	H	181	20	2.86	1 / 214	18.80	21.66	0.147	30.00	-8.34
	QPSK	1745.00	H	184	22	2.84	1 / 1	19.10	21.94	0.156	30.00	-8.06
	QPSK	1760.00	H	176	20	2.81	1 / 1	18.91	21.72	0.149	30.00	-8.28
	16-QAM	1730.00	H	181	20	2.86	1 / 214	18.06	20.92	0.124	30.00	-9.08
	16-QAM	1745.00	H	184	22	2.84	1 / 1	18.26	21.10	0.129	30.00	-8.90
16-QAM	1760.00	H	176	20	2.81	1 / 1	18.12	20.93	0.124	30.00	-9.07	
30 MHz	$\pi/2$ BPSK	1725.00	H	181	20	2.87	1 / 80	19.15	22.02	0.159	30.00	-7.98
	$\pi/2$ BPSK	1745.00	H	184	22	2.84	1 / 80	19.24	<b>22.08</b>	0.162	30.00	-7.92
	$\pi/2$ BPSK	1765.00	H	176	20	2.80	1 / 80	19.12	21.92	0.156	30.00	-8.08
	QPSK	1725.00	H	181	20	2.87	1 / 80	18.86	21.73	0.149	30.00	-8.27
	QPSK	1745.00	H	184	22	2.84	1 / 80	19.08	21.92	0.156	30.00	-8.08
	QPSK	1765.00	H	176	20	2.80	1 / 80	18.46	21.26	0.134	30.00	-8.74
	16-QAM	1725.00	H	181	20	2.87	1 / 80	17.79	20.66	0.116	30.00	-9.34
	16-QAM	1745.00	H	184	22	2.84	1 / 80	18.05	20.89	0.123	30.00	-9.11
16-QAM	1765.00	H	176	20	2.80	1 / 80	18.06	20.87	0.122	30.00	-9.13	
25 MHz	$\pi/2$ BPSK	1722.50	H	181	20	2.87	1 / 66	18.79	21.66	0.147	30.00	-8.34
	$\pi/2$ BPSK	1745.00	H	184	22	2.84	1 / 1	18.97	<b>21.82</b>	0.152	30.00	-8.18
	$\pi/2$ BPSK	1767.50	H	176	20	2.80	1 / 66	18.83	21.63	0.145	30.00	-8.37
	QPSK	1722.50	H	181	20	2.87	1 / 131	18.69	21.57	0.143	30.00	-8.43
	QPSK	1745.00	H	184	22	2.84	1 / 66	18.91	21.75	0.150	30.00	-8.25
	QPSK	1767.50	H	176	20	2.80	1 / 66	18.59	21.39	0.138	30.00	-8.61
	16-QAM	1722.50	H	181	20	2.87	1 / 1	17.80	20.67	0.117	30.00	-9.33
	16-QAM	1745.00	H	184	22	2.84	1 / 66	18.20	21.04	0.127	30.00	-8.96
16-QAM	1767.50	H	176	20	2.80	1 / 1	18.44	21.24	0.133	30.00	-8.76	
20 MHz	$\pi/2$ BPSK	1720.00	H	181	20	2.88	1 / 53	18.79	21.66	0.147	30.00	-8.34
	$\pi/2$ BPSK	1745.00	H	184	22	2.84	1 / 53	19.16	<b>22.00</b>	0.158	30.00	-8.00
	$\pi/2$ BPSK	1770.00	H	176	20	2.79	1 / 104	18.88	21.67	0.147	30.00	-8.33
	QPSK	1720.00	H	181	20	2.88	1 / 1	18.73	21.60	0.145	30.00	-8.40
	QPSK	1745.00	H	184	22	2.84	1 / 53	18.81	21.65	0.146	30.00	-8.35
	QPSK	1770.00	H	176	20	2.79	1 / 1	18.64	21.43	0.139	30.00	-8.57
	16-QAM	1720.00	H	181	20	2.88	1 / 1	17.79	20.67	0.117	30.00	-9.33
	16-QAM	1745.00	H	184	22	2.84	1 / 1	17.80	20.64	0.116	30.00	-9.36
16-QAM	1770.00	H	176	20	2.79	1 / 1	18.26	21.05	0.127	30.00	-8.95	
15 MHz	$\pi/2$ BPSK	1717.50	H	181	20	2.88	1 / 77	18.80	21.68	0.147	30.00	-8.32
	$\pi/2$ BPSK	1745.00	H	184	22	2.84	1 / 39	18.85	21.70	0.148	30.00	-8.30
	$\pi/2$ BPSK	1772.50	H	176	20	2.78	1 / 77	18.82	21.61	0.145	30.00	-8.39
	QPSK	1717.50	H	181	20	2.88	1 / 39	18.75	21.63	0.145	30.00	-8.37
	QPSK	1745.00	H	184	22	2.84	1 / 39	19.00	<b>21.85</b>	0.153	30.00	-8.15
	QPSK	1772.50	H	176	20	2.78	1 / 1	18.67	21.46	0.140	30.00	-8.54
	16-QAM	1717.50	H	181	20	2.88	1 / 1	17.60	20.48	0.112	30.00	-9.52
	16-QAM	1745.00	H	184	22	2.84	1 / 1	17.84	20.68	0.117	30.00	-9.32
16-QAM	1772.50	H	176	20	2.78	1 / 1	18.01	20.79	0.120	30.00	-9.21	
10 MHz	$\pi/2$ BPSK	1715.00	H	181	20	2.88	1 / 50	18.78	21.66	0.147	30.00	-8.34
	$\pi/2$ BPSK	1745.00	H	184	22	2.84	1 / 1	18.98	21.83	0.152	30.00	-8.17
	$\pi/2$ BPSK	1775.00	H	176	20	2.78	1 / 1	18.84	21.61	0.145	30.00	-8.39
	QPSK	1715.00	H	181	20	2.88	1 / 26	18.65	21.54	0.142	30.00	-8.46
	QPSK	1745.00	H	184	22	2.84	1 / 1	19.02	<b>21.86</b>	0.153	30.00	-8.14
	QPSK	1775.00	H	176	20	2.78	1 / 26	18.66	21.43	0.139	30.00	-8.57
	16-QAM	1715.00	H	181	20	2.88	1 / 26	17.58	20.46	0.111	30.00	-9.54
	16-QAM	1745.00	H	184	22	2.84	1 / 26	17.86	20.70	0.118	30.00	-9.30
16-QAM	1775.00	H	176	20	2.78	1 / 1	17.88	20.66	0.116	30.00	-9.34	
5 MHz	$\pi/2$ BPSK	1712.50	H	181	20	2.89	25 / 0	18.73	21.62	0.145	30.00	-8.38
	$\pi/2$ BPSK	1745.00	H	184	22	2.84	1 / 12	19.46	<b>22.30</b>	0.170	30.00	-7.70
	$\pi/2$ BPSK	1777.50	H	176	20	2.77	1 / 12	18.80	21.57	0.144	30.00	-8.43
	QPSK	1712.50	H	181	20	2.89	1 / 1	18.55	21.43	0.139	30.00	-8.57
	QPSK	1745.00	H	184	22	2.84	1 / 12	19.27	22.12	0.163	30.00	-7.88
	QPSK	1777.50	H	176	20	2.77	1 / 12	18.48	21.25	0.133	30.00	-8.75
	16-QAM	1712.50	H	181	20	2.89	1 / 1	17.67	20.56	0.114	30.00	-9.44
	16-QAM	1745.00	H	184	22	2.84	1 / 12	18.49	21.33	0.136	30.00	-8.67
16-QAM	1777.50	H	176	20	2.77	1 / 23	18.09	20.86	0.122	30.00	-9.14	

Table 7-15. EIRP Data (NR Band n66 – Ant1)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 101 of 126



Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
40 MHz	π/2 BPSK	1730.00	V	Y	112	242	2.92	1 / 214	16.96	19.88	0.097	30.00	-10.12
	π/2 BPSK	1745.00	V	Y	105	242	2.94	1 / 214	17.15	20.09	0.102	30.00	-9.91
	π/2 BPSK	1760.00	V	Y	103	242	2.99	1 / 108	17.32	<b>20.31</b>	0.107	30.00	-9.69
	QPSK	1730.00	V	Y	112	242	2.92	1 / 214	16.90	19.82	0.096	30.00	-10.18
	QPSK	1745.00	V	Y	105	242	2.94	1 / 214	17.09	20.03	0.101	30.00	-9.97
	QPSK	1760.00	V	Y	103	242	2.99	1 / 108	17.23	20.22	0.105	30.00	-9.78
	16-QAM	1730.00	V	Y	112	242	2.92	1 / 214	16.01	18.93	0.078	30.00	-11.07
	16-QAM	1745.00	V	Y	105	242	2.94	1 / 214	16.18	19.12	0.082	30.00	-10.88
16-QAM	1760.00	V	Y	103	242	2.99	1 / 108	16.37	19.36	0.086	30.00	-10.64	
30 MHz	π/2 BPSK	1725.00	V	Y	112	242	2.91	1 / 158	16.90	19.81	0.096	30.00	-10.19
	π/2 BPSK	1745.00	V	Y	105	242	2.94	1 / 80	17.10	20.04	0.101	30.00	-9.96
	π/2 BPSK	1765.00	V	Y	103	242	3.00	1 / 1	17.22	<b>20.23</b>	0.105	30.00	-9.77
	QPSK	1725.00	V	Y	112	242	2.91	1 / 158	16.57	19.47	0.089	30.00	-10.53
	QPSK	1745.00	V	Y	105	242	2.94	1 / 80	17.17	20.12	0.103	30.00	-9.88
	QPSK	1765.00	V	Y	103	242	3.00	1 / 1	17.10	20.10	0.102	30.00	-9.90
	16-QAM	1725.00	V	Y	112	242	2.91	1 / 158	16.03	18.94	0.078	30.00	-11.06
	16-QAM	1745.00	V	Y	105	242	2.94	1 / 80	16.36	19.30	0.085	30.00	-10.70
16-QAM	1765.00	V	Y	103	242	3.00	1 / 1	16.73	19.73	0.094	30.00	-10.27	
25 MHz	π/2 BPSK	1722.50	V	Y	112	242	2.90	1 / 131	16.77	<b>19.66</b>	0.093	30.00	-10.34
	π/2 BPSK	1745.00	V	Y	105	242	2.94	1 / 66	17.21	<b>20.15</b>	0.104	30.00	-9.85
	π/2 BPSK	1767.50	V	Y	103	242	3.02	1 / 66	16.70	19.72	0.094	30.00	-10.28
	QPSK	1722.50	V	Y	112	242	2.90	1 / 131	16.82	19.72	0.094	30.00	-10.28
	QPSK	1745.00	V	Y	105	242	2.94	1 / 1	17.00	19.95	0.099	30.00	-10.05
	QPSK	1767.50	V	Y	103	242	3.02	1 / 66	17.06	20.08	0.102	30.00	-9.92
	16-QAM	1722.50	V	Y	112	242	2.90	1 / 131	15.96	18.86	0.077	30.00	-11.14
	16-QAM	1745.00	V	Y	105	242	2.94	1 / 66	16.49	19.44	0.088	30.00	-10.56
16-QAM	1767.50	V	Y	103	242	3.02	1 / 1	15.94	18.96	0.079	30.00	-11.04	
20 MHz	π/2 BPSK	1720.00	V	Y	112	242	2.90	1 / 53	16.55	19.45	0.088	30.00	-10.55
	π/2 BPSK	1745.00	V	Y	105	242	2.94	1 / 53	16.97	19.91	0.098	30.00	-10.09
	π/2 BPSK	1770.00	V	Y	103	242	3.02	1 / 53	16.71	19.73	0.094	30.00	-10.27
	QPSK	1720.00	V	Y	112	242	2.90	1 / 53	16.74	19.64	0.092	30.00	-10.36
	QPSK	1745.00	V	Y	105	242	2.94	1 / 1	17.20	20.14	0.103	30.00	-9.86
	QPSK	1770.00	V	Y	103	242	3.02	1 / 104	17.05	20.07	0.102	30.00	-9.93
	16-QAM	1720.00	V	Y	112	242	2.90	1 / 53	15.48	18.38	0.069	30.00	-11.62
	16-QAM	1745.00	V	Y	105	242	2.94	1 / 53	16.31	19.25	0.084	30.00	-10.75
16-QAM	1770.00	V	Y	103	242	3.02	1 / 53	16.20	19.22	0.084	30.00	-10.78	
15 MHz	π/2 BPSK	1717.50	V	Y	112	242	2.89	1 / 77	16.65	19.54	0.090	30.00	-10.46
	π/2 BPSK	1745.00	V	Y	105	242	2.94	1 / 39	17.22	20.17	0.104	30.00	-9.83
	π/2 BPSK	1772.50	V	Y	103	242	3.03	1 / 1	16.76	19.79	0.095	30.00	-10.21
	QPSK	1717.50	V	Y	112	242	2.89	1 / 77	16.60	19.49	0.089	30.00	-10.51
	QPSK	1745.00	V	Y	105	242	2.94	1 / 1	17.26	<b>20.21</b>	0.105	30.00	-9.79
	QPSK	1772.50	V	Y	103	242	3.03	1 / 39	17.02	20.05	0.101	30.00	-9.95
	16-QAM	1717.50	V	Y	112	242	2.89	1 / 39	15.51	18.41	0.069	30.00	-11.59
	16-QAM	1745.00	V	Y	105	242	2.94	1 / 77	16.51	19.45	0.088	30.00	-10.55
16-QAM	1772.50	V	Y	103	242	3.03	1 / 77	16.22	19.24	0.084	30.00	-10.76	
10 MHz	π/2 BPSK	1715.00	V	Y	112	242	2.89	1 / 26	16.59	19.47	0.089	30.00	-10.53
	π/2 BPSK	1745.00	V	Y	105	242	2.94	1 / 26	17.16	20.10	0.102	30.00	-9.90
	π/2 BPSK	1775.00	V	Y	103	242	3.04	1 / 26	16.95	19.98	0.100	30.00	-10.02
	QPSK	1715.00	V	Y	112	242	2.89	1 / 26	16.49	19.38	0.087	30.00	-10.62
	QPSK	1745.00	V	Y	105	242	2.94	1 / 26	17.19	20.14	0.103	30.00	-9.86
	QPSK	1775.00	V	Y	103	242	3.04	1 / 26	17.38	<b>20.42</b>	0.110	30.00	-9.58
	16-QAM	1715.00	V	Y	112	242	2.89	1 / 1	15.74	18.63	0.073	30.00	-11.37
	16-QAM	1745.00	V	Y	105	242	2.94	1 / 26	16.37	19.32	0.085	30.00	-10.68
16-QAM	1775.00	V	Y	103	242	3.04	1 / 50	16.41	19.44	0.088	30.00	-10.56	
5 MHz	π/2 BPSK	1712.50	V	Y	112	242	2.88	1 / 1	16.60	19.48	0.089	30.00	-10.52
	π/2 BPSK	1745.00	V	Y	105	242	2.94	1 / 1	17.13	20.07	0.102	30.00	-9.93
	π/2 BPSK	1777.50	V	Y	103	242	3.05	1 / 12	17.06	20.11	0.102	30.00	-9.89
	QPSK	1712.50	V	Y	112	242	2.88	1 / 1	16.56	19.44	0.088	30.00	-10.56
	QPSK	1745.00	V	Y	105	242	2.94	1 / 23	17.12	20.07	0.102	30.00	-9.93
	QPSK	1777.50	V	Y	103	242	3.05	1 / 12	17.24	<b>20.28</b>	0.107	30.00	-9.72
	16-QAM	1712.50	V	Y	112	242	2.88	1 / 12	15.85	18.74	0.075	30.00	-11.26
	16-QAM	1745.00	V	Y	105	242	2.94	1 / 12	16.27	19.21	0.083	30.00	-10.79
16-QAM	1777.50	V	Y	103	242	3.05	1 / 12	16.60	19.65	0.092	30.00	-10.35	

Table 7-16. EIRP Data (NR Band n66 – Ant2)

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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## 7.7 Radiated Spurious Emissions Measurements

### Test Overview

Radiated spurious emissions measurements are performed using the field strength conversion method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using hybrid (biconical/log) antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

### Test Procedures Used

ANSI C63.26-2015 – Section 5.5.4

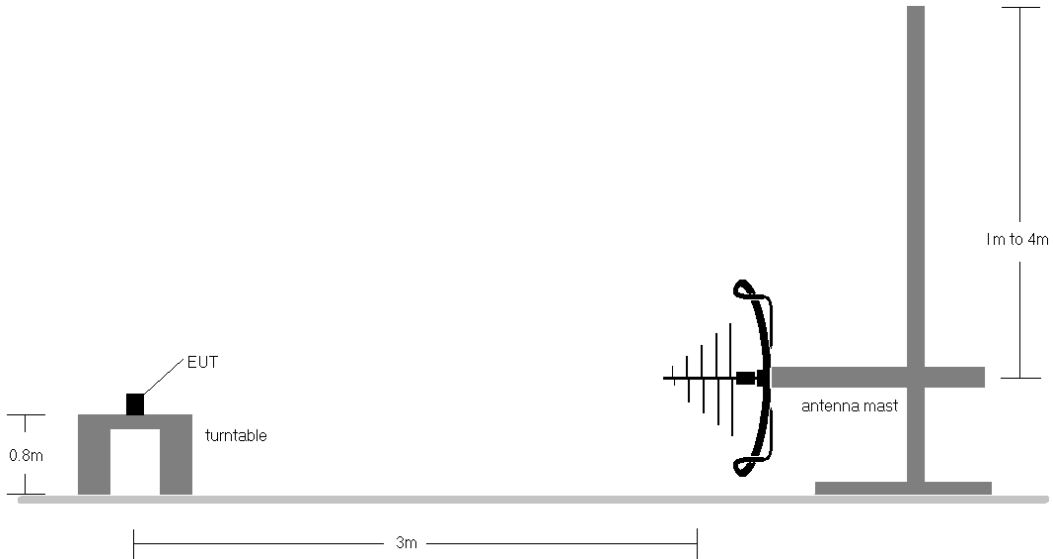
### Test Settings

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

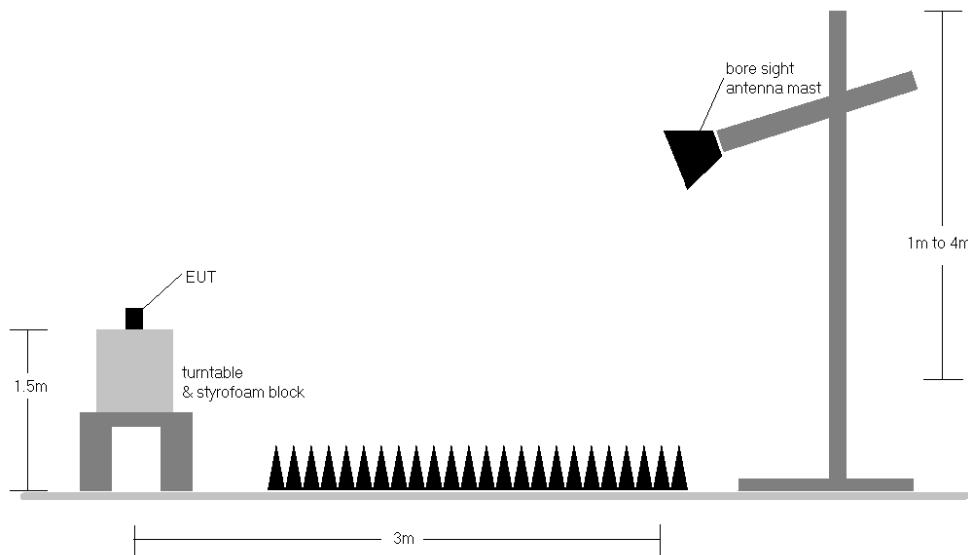
FCC ID: A3LSMA156M	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 103 of 126

**Test Setup**

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



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



**Figure 7-8. Test Instrument & Measurement Setup > 1GHz**

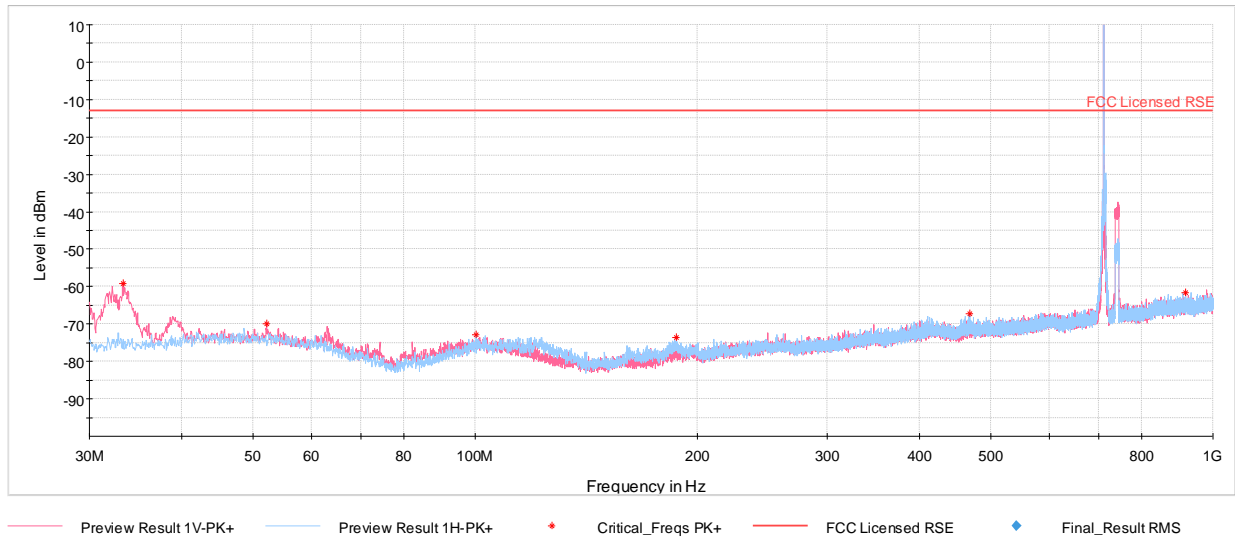
<b>FCC ID:</b> A3LSMA156M	<b>PART 27 MEASUREMENT REPORT</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2309070101-03.A3L	<b>Test Dates:</b> 09/08/2023 - 11/2/2023	<b>EUT Type:</b> Portable Handset	Page 104 of 126

**Test Notes**

- 1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
  - a)  $E(\text{dB}\mu\text{V}/\text{m}) = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
  - b)  $\text{EIRP (dBm)} = E(\text{dB}\mu\text{V}/\text{m}) + 20\log D - 104.8$ ; where D is the measurement distance in meters.
- 2) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 3) This unit was tested with its standard battery.
- 4) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 5) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 6) The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 7) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.
- 8) Spurious emission in EN-DC Operating mode with Sub 6GHz NR carrier as well as an LTE carrier (anchor) has been checked and was found to not to be the worst case. Spurious emissions from the NR carrier device, is subject to the rules under which the NR carrier operates. Spurious emissions caused by the LTE carrier must meet the requirements of the rules under which the LTE carrier operates.

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### LTE Band 12/17 – Ant1

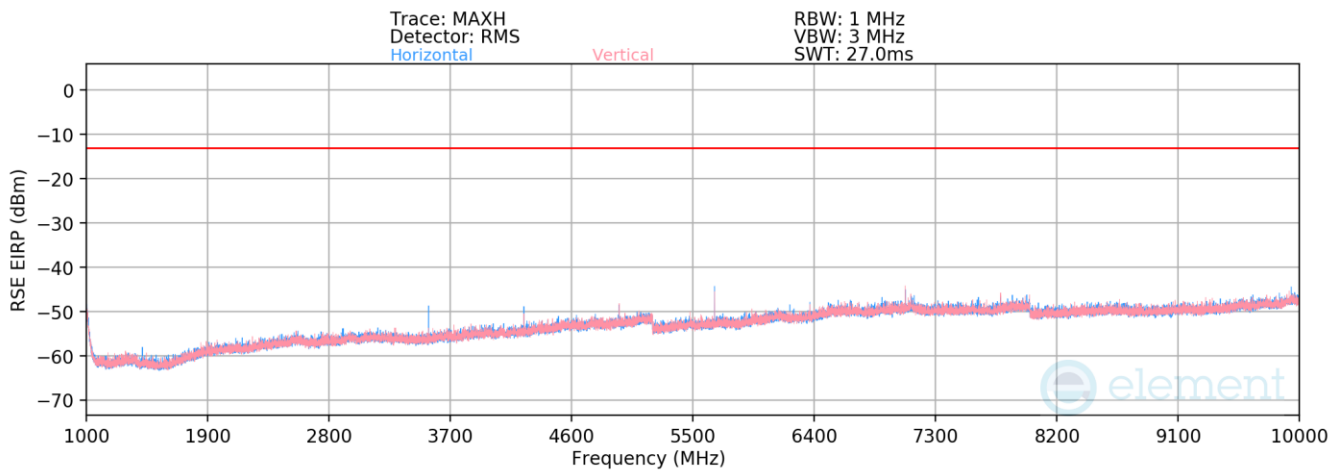


**Plot 7-132. Radiated Spurious Plot Below 1GHz (LTE Band 12/17 – Ant1)**

Bandwidth (MHz):	10
Frequency (MHz):	707.5
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]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
33.30	V	100	75	32.52	-101.26	38.26	-59.15	-13.00	-46.15
52.16	V	300	6	18.99	-98.55	27.44	-69.97	-13.00	-56.97
100.23	H	300	139	19.22	-101.79	24.43	-72.98	-13.00	-59.98
187.14	H	200	149	19.98	-103.21	23.77	-73.64	-13.00	-60.64
467.91	H	300	114	18.99	-95.86	30.13	-67.28	-13.00	-54.28
916.77	V	200	325	16.55	-87.75	35.80	-61.61	-13.00	-48.61

**Table 7-17. Radiated Spurious Data Below 1GHz (LTE Band 12/17 – Ant1)**



**Plot 7-133. Radiated Spurious Plot Above 1GHz (LTE Band 12/17 – Ant1)**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth (MHz):	10
Frequency (MHz):	704
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]
1408.00	H	-	-	-76.98	-3.40	26.62	-68.64	-13.00	-55.64
2112.00	H	-	-	-77.96	1.38	30.42	-64.84	-13.00	-51.84
2816.00	H	-	-	-78.97	3.62	31.65	-63.60	-13.00	-50.60

**Table 7-18. Radiated Spurious Data Above 1GHz (LTE Band 12/17 – Low Channel – Ant1)**

Bandwidth (MHz):	10
Frequency (MHz):	707.5
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]
1415.00	H	123	14	-75.38	-3.37	28.25	-67.00	-13.00	-54.00
2122.50	H	105	177	-76.54	1.36	31.82	-63.44	-13.00	-50.44
2830.00	H	-	-	-79.07	3.70	31.63	-63.63	-13.00	-50.63
3537.50	H	-	-	-79.86	5.06	32.20	-63.06	-13.00	-50.06
4245.00	H	-	-	-80.67	6.76	33.09	-62.16	-13.00	-49.16

**Table 7-19. Radiated Spurious Data Above 1GHz (LTE Band 12/17 – Mid Channel – Ant1)**

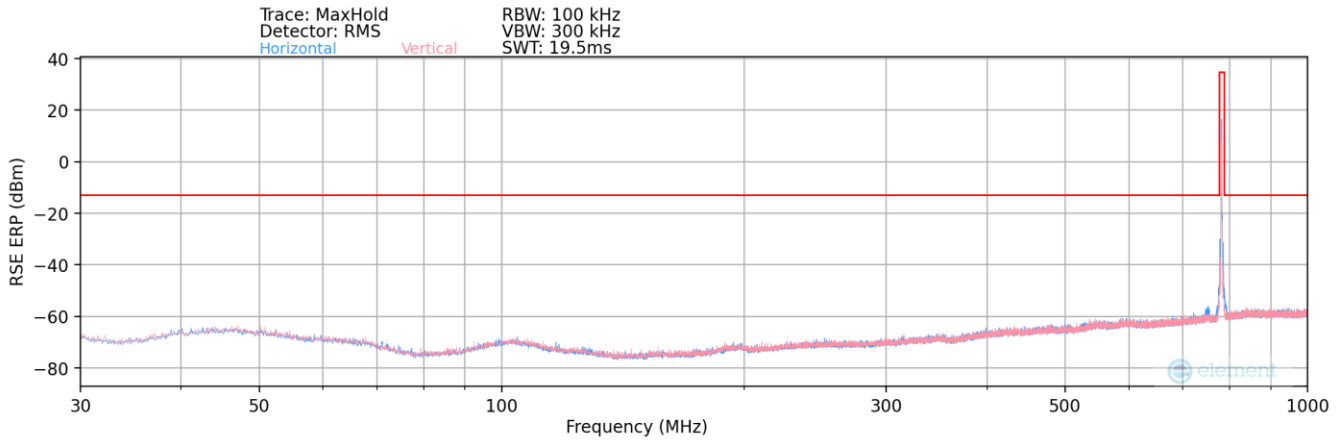
Bandwidth (MHz):	10
Frequency (MHz):	711
RB / Offset:	1 / 25

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]
1422.00	H	113	22	-74.49	-3.34	29.17	-66.09	-13.00	-53.09
2133.00	H	111	183	-76.14	1.35	32.21	-63.05	-13.00	-50.05
2844.00	H	101	35	-75.55	3.61	35.06	-60.20	-13.00	-47.20
3555.00	H	-	-	-80.12	5.11	31.99	-63.27	-13.00	-50.27
4266.00	H	-	-	-80.64	6.99	33.35	-61.91	-13.00	-48.91
4977.00	H	-	-	-81.84	9.14	34.30	-60.96	-13.00	-47.96

**Table 7-20. Radiated Spurious Data Above 1GHz (LTE Band 12/17 – High Channel – Ant1)**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 107 of 126

### LTE Band 13 – Ant1

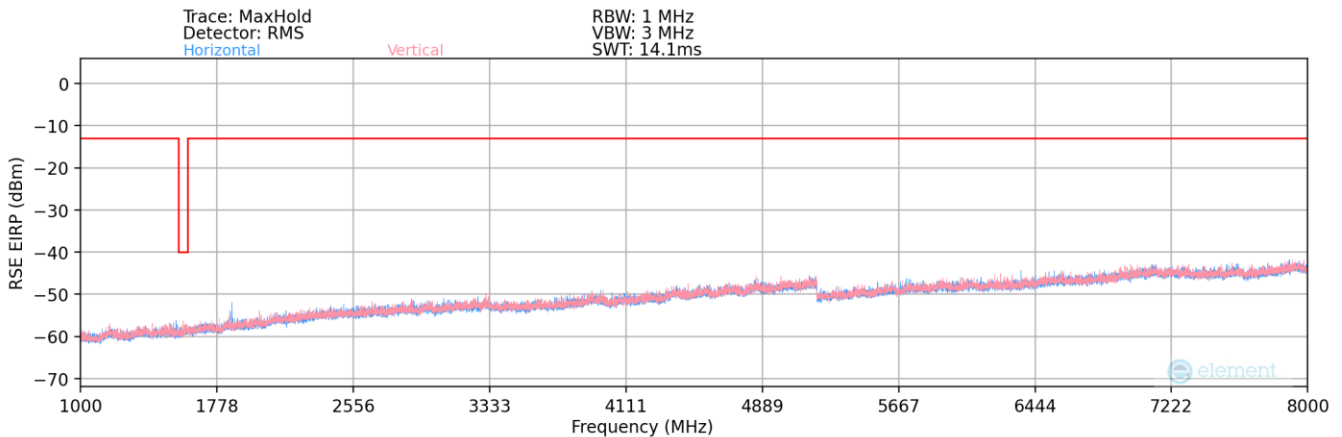


**Plot 7-134. Radiated Spurious Plot Below 1GHz (LTE Band 13 – Ant1)**

Bandwidth (MHz):	10
Frequency (MHz):	782
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBuV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
720.00	H	-	-	-70.20	-0.70	36.10	-61.30	-13.00	-48.30

**Table 7-21. Radiated Spurious Data Below 1GHz (LTE Band 13 – Ant1)**



**Plot 7-135. Radiated Spurious Plot Above 1GHz (LTE Band 13 – Ant1)**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 108 of 126





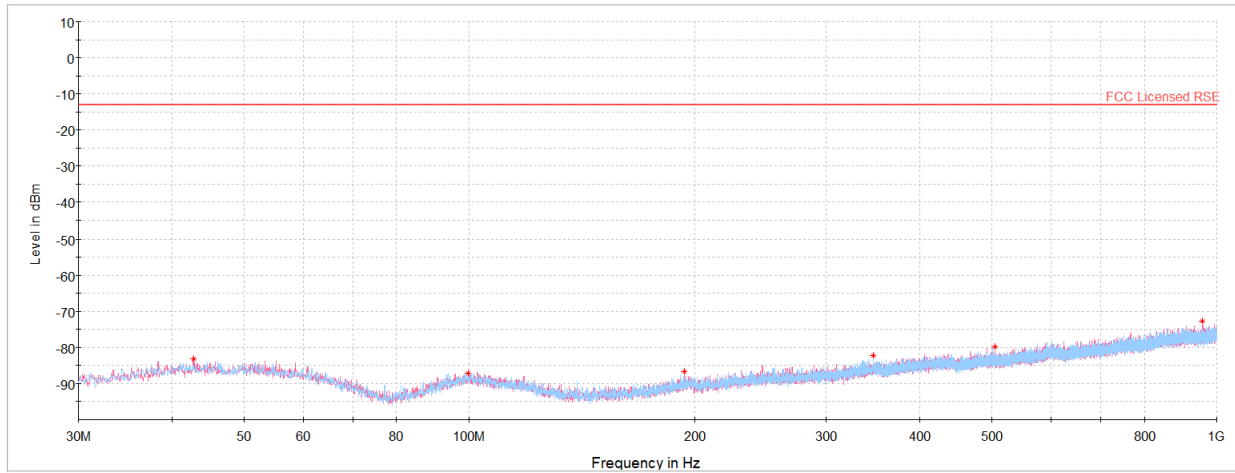
Bandwidth (MHz):	10
Frequency (MHz):	782
RB / Offset:	1 / 25

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]
1564.00	H	127	24	-75.29	-1.02	30.69	-64.56	-40.00	-24.56
2346.00	H	105	190	-76.67	3.49	33.82	-61.44	-13.00	-48.44
3128.00	H	107	41	-78.08	5.84	34.76	-60.50	-13.00	-47.50
3910.00	H	-	-	-80.32	8.32	35.00	-60.26	-13.00	-47.26
4692.00	H	-	-	-80.89	9.80	35.91	-59.35	-13.00	-46.35
5474.00	H	-	-	-81.55	11.31	36.76	-58.50	-13.00	-45.50

**Table 7-22. Radiated Spurious Data Above 1GHz (LTE Band 13 – Mid Channel – Ant1)**

<b>FCC ID:</b> A3LSMA156M	<b>PART 27 MEASUREMENT REPORT</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2309070101-03.A3L	<b>Test Dates:</b> 09/08/2023 - 11/2/2023	<b>EUT Type:</b> Portable Handset	Page 109 of 126

# WCDMA AWS – Ant1

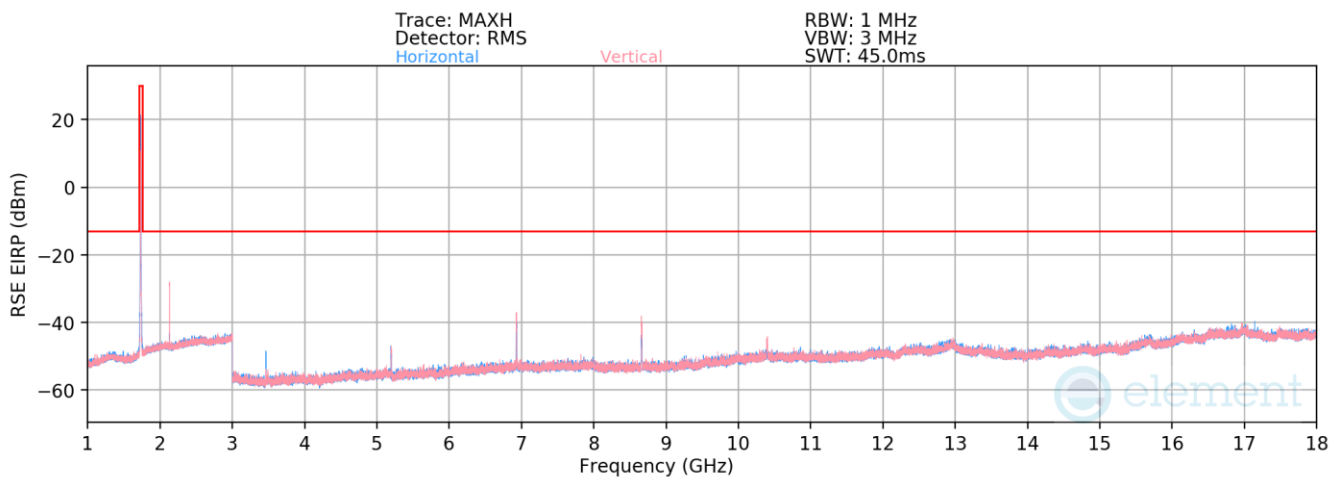


**Plot 7-136. Radiated Spurious Plot Below 1GHz (WCDMA AWS – Ant1)**

Mode:	WCDMA RMC
Channel:	1413
Frequency (MHz):	1732.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
33.93	V	100	261	32.95	-113.14	26.81	-70.60	-13.00	-57.60
66.47	V	100	64	28.69	-114.98	20.71	-76.70	-13.00	-63.70
99.74	H	300	159	28.94	-113.83	22.11	-75.30	-13.00	-62.30
154.60	H	200	125	37.88	-117.35	27.53	-69.88	-13.00	-56.88
269.98	H	100	352	33.69	-112.71	27.98	-69.43	-13.00	-56.43
877.63	V	100	289	17.20	-100.32	23.88	-73.53	-13.00	-60.53

**7-23. Radiated Spurious Data Below 1GHz (WCDMA AWS – Ant1)**



**Plot 7-137. Radiated Spurious Plot Above 1GHz (WCDMA AWS – Ant1)**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 110 of 126



Mode:	WCDMA RMC
Channel:	1312
Frequency (MHz):	1712.4

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]
3424.80	H	105	170	-67.64	3.43	42.79	-52.47	-13.00	-39.47
5137.20	H	101	170	-68.53	7.62	46.09	-49.17	-13.00	-36.17
6849.60	H	101	165	-64.34	10.36	53.02	-42.23	-13.00	-29.23
8562.00	H	116	175	-65.25	10.84	52.59	-42.67	-13.00	-29.67
10274.40	H	270	47	-71.07	13.62	49.55	-45.71	-13.00	-32.71
11986.80	H	-	-	-84.06	16.43	39.37	-55.89	-13.00	-42.89
13699.20	H	-	-	-85.15	18.35	40.20	-55.06	-13.00	-42.06
15411.60	H	-	-	-85.45	20.27	41.82	-53.44	-13.00	-40.44

**7-24. Radiated Spurious Data Above 1GHz (WCDMA AWS – Low Channel – Ant1)**

Mode:	WCDMA RMC
Channel:	1413
Frequency (MHz):	1732.6

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]
3465.20	H	115	173	-67.98	3.45	42.47	-52.79	-13.00	-39.79
5197.80	H	105	145	-71.15	7.73	43.58	-51.68	-13.00	-38.68
6930.40	H	101	20	-65.64	10.65	52.01	-43.25	-13.00	-30.25
8663.00	H	119	172	-72.25	10.55	45.30	-49.96	-13.00	-36.96
10395.60	H	262	44	-76.54	14.01	44.47	-50.78	-13.00	-37.78
12128.20	H	-	-	-84.52	16.72	39.20	-56.05	-13.00	-43.05
13860.80	H	-	-	-85.24	18.72	40.48	-54.77	-13.00	-41.77
15593.40	H	-	-	-85.38	21.11	42.73	-52.52	-13.00	-39.52

**Table 7-25. Radiated Spurious Data Above 1GHz (WCDMA AWS – Mid Channel – Ant1)**

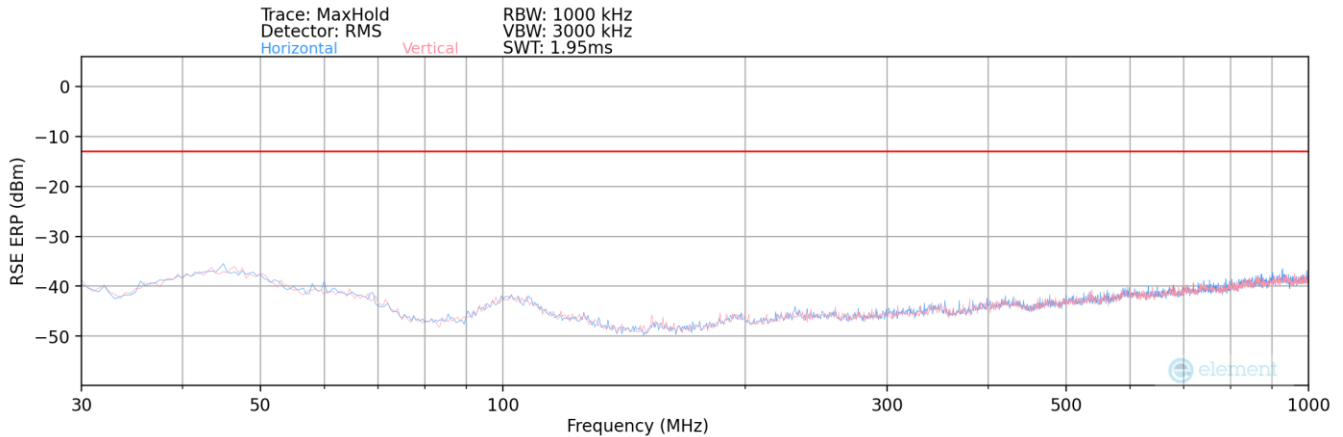
Mode:	WCDMA RMC
Channel:	1513
Frequency (MHz):	1752.6

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]
3505.20	H	119	178	-66.84	3.89	44.05	-51.20	-13.00	-38.20
5257.80	H	109	170	-69.07	8.01	45.94	-49.32	-13.00	-36.32
7010.40	H	105	162	-65.31	10.80	52.49	-42.77	-13.00	-29.77
8763.00	H	115	172	-67.37	10.75	50.38	-44.88	-13.00	-31.88
10515.60	H	266	46	-74.37	13.98	46.61	-48.64	-13.00	-35.64
12268.20	H	-	-	-84.43	17.50	40.07	-55.19	-13.00	-42.19
14020.80	H	-	-	-85.46	18.23	39.77	-55.49	-13.00	-42.49
15773.40	H	-	-	-85.68	21.57	42.89	-52.37	-13.00	-39.37

**Table 7-26. Radiated Spurious Data Above 1GHz (WCDMA AWS – High Channel – Ant1)**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 111 of 126

### LTE Band 66/4 – Ant1

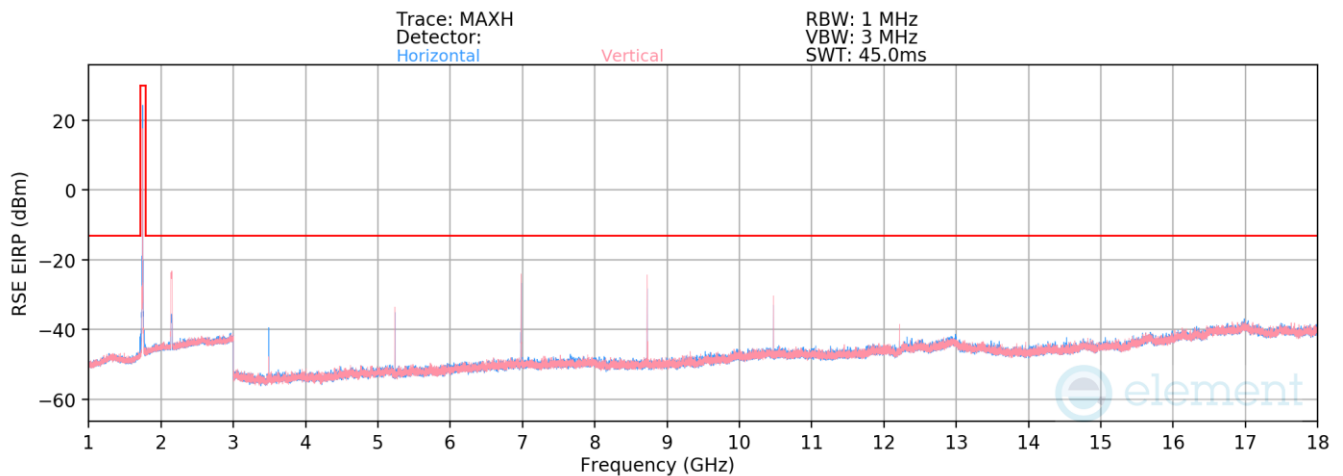


**Plot 7-138. Radiated Spurious Plot Below 1GHz (LTE Band 66/4 – Ant1)**

Bandwidth (MHz):	20
Frequency (MHz):	1745
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
44.74	H	-	-	-36.98	-8.91	61.11	-36.30	-13.00	-23.30

**Table 7-27. Radiated Spurious Data Below 1GHz (LTE Band 66/4 – Ant1)**



**Plot 7-139. Radiated Spurious Plot Above 1GHz (LTE Band 66/4 – Ant1)**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 112 of 126



Bandwidth (MHz):	20
Frequency (MHz):	1720
RB / Offset:	1 / 50

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]
3440.00	H	105	221	-61.58	5.95	51.37	-43.88	-13.00	-30.88
5160.00	H	109	176	-61.24	9.69	55.45	-39.81	-13.00	-26.81
6880.00	V	262	108	-52.99	12.07	66.08	-29.18	-13.00	-16.18
8600.00	V	101	267	-54.32	12.52	65.20	-30.06	-13.00	-17.06
10320.00	H	101	44	-66.05	15.26	56.21	-39.05	-13.00	-26.05
12040.00	V	105	267	-74.35	18.71	51.36	-43.89	-13.00	-30.89
13760.00	V	101	90	-77.51	18.76	48.25	-47.00	-13.00	-34.00
15480.00	V	-	-	-85.39	23.32	44.93	-50.33	-13.00	-37.33

**Table 7-28. Radiated Spurious Data Above 1GHz (LTE Band 66/4 – Low Channel – Ant1)**

Bandwidth (MHz):	20
Frequency (MHz):	1745
RB / Offset:	1 / 50

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]
3490.00	H	113	223	-61.88	6.18	51.30	-43.96	-13.00	-30.96
5235.00	V	348	190	-63.78	9.69	52.91	-42.35	-13.00	-29.35
6980.00	V	250	114	-53.25	13.01	66.76	-28.50	-13.00	-15.50
8725.00	V	105	270	-52.81	13.00	67.19	-28.07	-13.00	-15.07
10470.00	H	262	114	-64.40	15.87	58.47	-36.79	-13.00	-23.79
12215.00	V	101	303	-74.49	18.70	51.21	-44.05	-13.00	-31.05
13960.00	V	101	84	-76.43	19.49	50.06	-45.20	-13.00	-32.20
15705.00	V	-	-	-85.28	23.70	45.42	-49.84	-13.00	-36.84

**Table 7-29. Radiated Spurious Data Above 1GHz (LTE Band 66/4 – Mid Channel – Ant1)**

Bandwidth (MHz):	20
Frequency (MHz):	1770
RB / Offset:	1 / 50

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]
3540.00	H	105	227	-62.66	6.49	50.83	-44.42	-13.00	-31.42
5310.00	H	105	84	-58.53	9.72	58.19	-37.06	-13.00	-24.06
7080.00	V	238	111	-57.07	12.39	62.32	-32.94	-13.00	-19.94
8850.00	V	105	105	-57.44	12.78	62.34	-32.91	-13.00	-19.91
10620.00	H	246	114	-70.03	16.61	53.58	-41.68	-13.00	-28.68
12390.00	V	380	327	-80.83	18.51	44.68	-50.58	-13.00	-37.58
14160.00	V	105	84	-82.61	19.88	44.27	-50.98	-13.00	-37.98
15930.00	V	-	-	-85.41	24.42	46.01	-49.25	-13.00	-36.25

**Table 7-30. Radiated Spurious Data Above 1GHz (LTE Band 66/4 – High Channel – Ant1)**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 113 of 126

### LTE Band 4 – Ant2

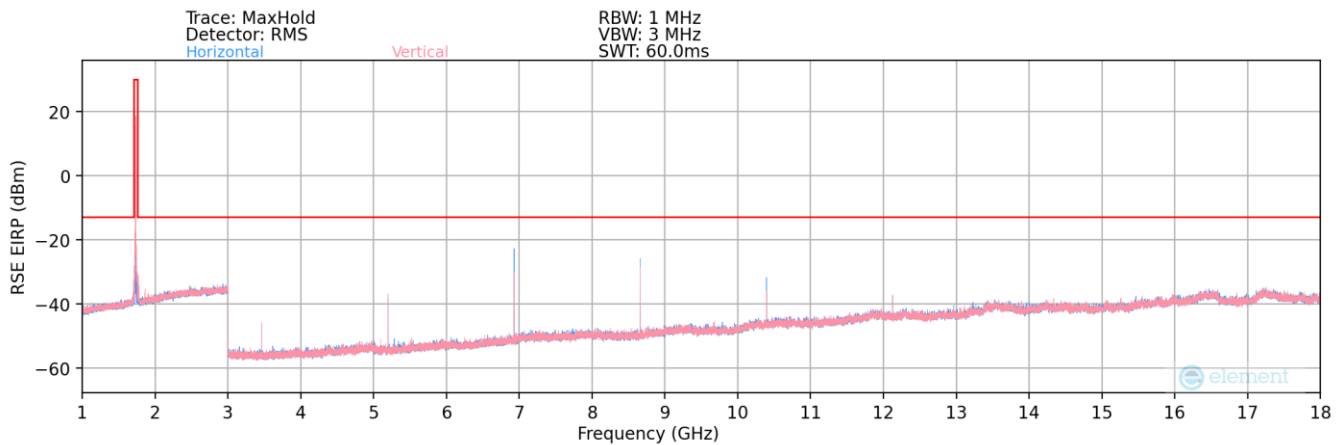


**Plot 7-140. Radiated Spurious Plot Below 1GHz (LTE Band 4 – Ant2)**

Bandwidth (MHz):	20
Frequency (MHz):	1732.5
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
40.74	H	-	-	-34.74	-10.10	62.16	-35.25	-13.00	-22.25

**Table 7-31. Radiated Spurious Data Below 1GHz (LTE Band 4 – Ant2)**



**Plot 7-141. Radiated Spurious Plot Above 1GHz (LTE Band 4 – Ant2)**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 114 of 126



Bandwidth (MHz):	20
Frequency (MHz):	1720
RB / Offset:	1 / 50

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]
3440.00	H	229	52	-70.22	7.00	43.78	-51.48	-13.00	-38.48
5160.00	H	168	354	-63.99	10.43	53.44	-41.81	-13.00	-28.81
6880.00	H	188	40	-54.83	13.68	65.85	-29.41	-13.00	-16.41
8600.00	H	155	21	-62.32	16.47	61.15	-34.11	-13.00	-21.11
10320.00	H	152	52	-73.82	19.21	52.39	-42.86	-13.00	-29.86
12040.00	H	157	51	-82.62	22.07	46.45	-48.80	-13.00	-35.80
13760.00	H	-	-	-83.77	25.44	48.67	-46.59	-13.00	-33.59
15480.00	H	-	-	-85.01	27.12	49.11	-46.15	-13.00	-33.15

**Table 7-32. Radiated Spurious Data Above 1GHz (LTE Band 4 – Low Channel – Ant2)**

Bandwidth (MHz):	20
Frequency (MHz):	1732.5
RB / Offset:	1 / 50

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]
3465.00	H	242	48	-68.89	6.81	44.92	-50.34	-13.00	-37.34
5197.50	H	184	317	-60.98	10.18	56.20	-39.06	-13.00	-26.06
6930.00	H	196	35	-51.16	13.64	69.48	-25.78	-13.00	-12.78
8662.50	H	149	21	-57.19	17.05	66.86	-28.40	-13.00	-15.40
10395.00	H	138	50	-67.66	19.87	59.21	-36.05	-13.00	-23.05
12127.50	H	143	50	-77.63	22.41	51.78	-43.47	-13.00	-30.47
13860.00	H	226	11	-79.86	25.08	52.22	-43.04	-13.00	-30.04
15592.50	H	-	-	-84.96	27.67	49.71	-45.55	-13.00	-32.55

**Table 7-33. Radiated Spurious Data Above 1GHz (LTE Band 4 – Mid Channel – Ant2)**

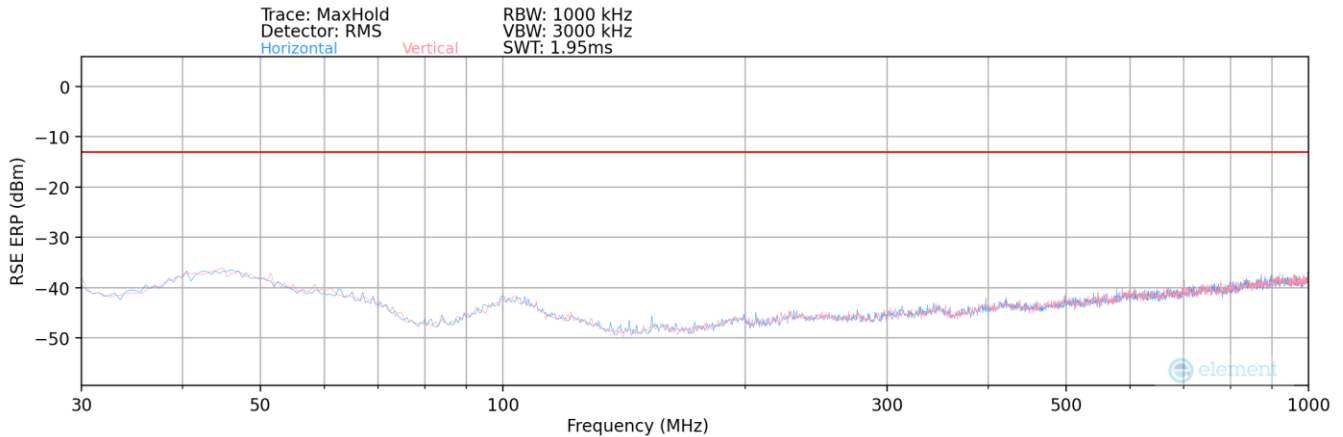
Bandwidth (MHz):	20
Frequency (MHz):	1745
RB / Offset:	1 / 50

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]
3490.00	H	258	42	-66.39	6.95	47.56	-47.70	-13.00	-34.70
5235.00	H	176	323	-62.31	10.00	54.69	-40.57	-13.00	-27.57
6980.00	H	103	42	-52.57	13.74	68.17	-27.09	-13.00	-14.09
8725.00	H	137	17	-59.41	16.16	63.75	-31.51	-13.00	-18.51
10470.00	H	139	48	-67.90	19.35	58.45	-36.81	-13.00	-23.81
12215.00	H	148	47	-79.59	22.20	49.61	-45.65	-13.00	-32.65
13960.00	H	231	8	-79.57	25.37	52.80	-42.46	-13.00	-29.46
15705.00	H	-	-	-84.48	27.71	50.23	-45.03	-13.00	-32.03

**Table 7-34. Radiated Spurious Data Above 1GHz (LTE Band 4 – High Channel – Ant2)**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 115 of 126

### NR Band n66 – Ant1

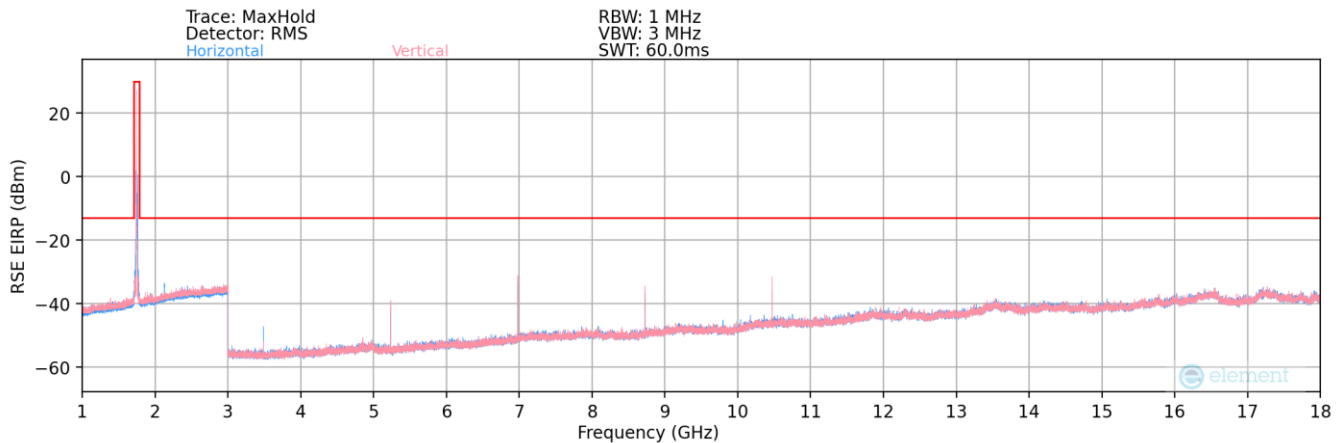


**Plot 7-142. Radiated Spurious Plot Below 1GHz (NR Band n66 – Ant1)**

Bandwidth (MHz):	40
Frequency (MHz):	1745
RB / Offset:	1 / 108

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
920.00	H	-	-	-70.02	1.85	38.83	-58.58	-13.00	-45.58

**Table 7-35. Radiated Spurious Data Below 1GHz (NR Band n66 – Ant1)**



**Plot 7-143. Radiated Spurious Plot Above 1GHz (NR Band n66 – Ant1)**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 116 of 126





Bandwidth (MHz):	40
Frequency (MHz):	1730
RB / Offset:	1 / 108

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3460.00	H	104	179	-68.06	6.82	45.76	-49.50	-13.00	-36.50
5190.00	H	114	176	-64.25	10.27	53.02	-42.24	-13.00	-29.24
6920.00	H	102	25	-61.11	13.50	59.39	-35.87	-13.00	-22.87
8650.00	H	105	21	-68.38	16.96	55.58	-39.68	-13.00	-26.68
10380.00	H	112	130	-76.30	19.83	50.53	-44.73	-13.00	-31.73
12110.00	H	-	-	-83.34	22.24	45.90	-49.36	-13.00	-36.36
13840.00	H	-	-	-84.41	24.87	47.46	-47.80	-13.00	-34.80

**Table 7-36. Radiated Spurious Data Above 1GHz (NR Band n66 – Low Channel – Ant1)**

Bandwidth (MHz):	40
Frequency (MHz):	1745
RB / Offset:	1 / 108

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3490.00	H	104	184	-69.86	6.95	44.09	-51.17	-13.00	-38.17
5235.00	H	117	173	-67.59	10.00	49.41	-45.85	-13.00	-32.85
6980.00	H	103	29	-63.35	13.74	57.39	-37.87	-13.00	-24.87
8725.00	H	104	26	-70.41	16.16	52.75	-42.51	-13.00	-29.51
10470.00	H	112	140	-75.78	19.35	50.57	-44.69	-13.00	-31.69
12215.00	H	-	-	-83.80	22.20	45.40	-49.86	-13.00	-36.86
13960.00	H	-	-	-84.13	25.37	48.24	-47.02	-13.00	-34.02

**Table 7-37. Radiated Spurious Data Above 1GHz (NR Band n66 – Mid Channel – Ant1)**

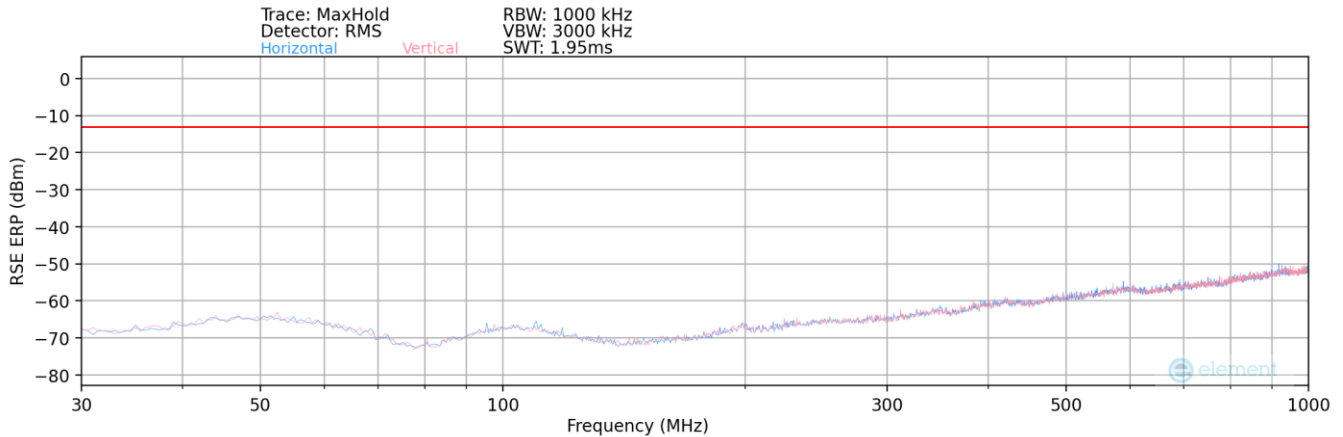
Bandwidth (MHz):	40
Frequency (MHz):	1760
RB / Offset:	1 / 108

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3520.00	H	103	182	-65.52	6.93	48.41	-46.85	-13.00	-33.85
5280.00	H	114	169	-64.14	10.15	53.01	-42.25	-13.00	-29.25
7040.00	H	107	28	-60.42	14.78	61.36	-33.89	-13.00	-20.89
8800.00	H	102	28	-67.27	16.70	56.43	-38.83	-13.00	-25.83
10560.00	H	102	136	-72.94	19.87	53.93	-41.33	-13.00	-28.33
12320.00	H	-	-	-84.57	22.54	44.97	-50.29	-13.00	-37.29
14080.00	H	-	-	-84.10	25.11	48.01	-47.25	-13.00	-34.25

**Table 7-38. Radiated Spurious Data Above 1GHz (NR Band n66 – High Channel – Ant1)**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070101-03.A3L	Test Dates: 09/08/2023 - 11/2/2023	EUT Type: Portable Handset	Page 117 of 126

### NR Band n66 – Ant2

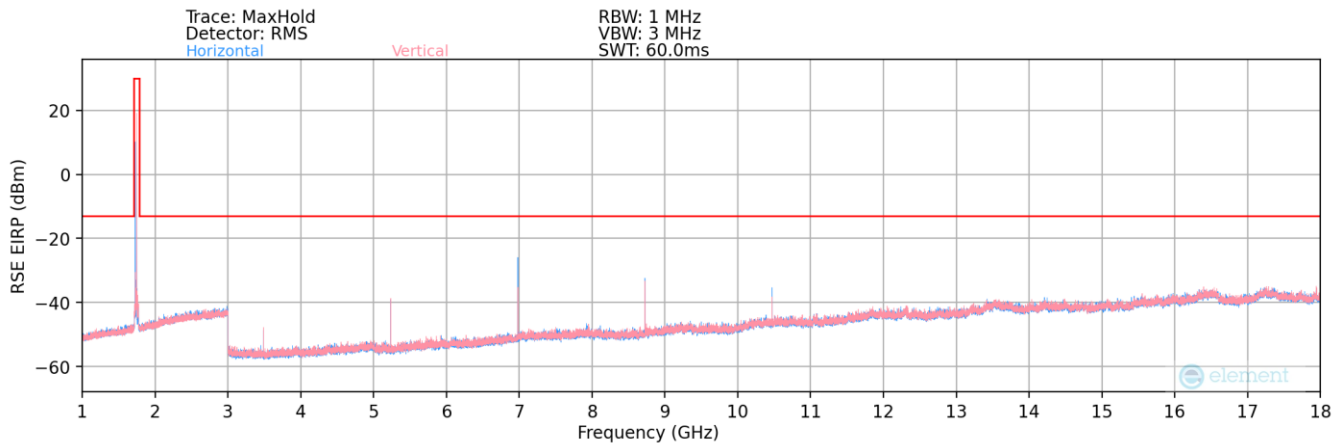


**Plot 7-144. Radiated Spurious Plot Below 1GHz (NR Band n66 – Ant2)**

Bandwidth (MHz):	40
Frequency (MHz):	1745
RB / Offset:	1 / 108

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
917.80	H	-	-	-61.73	2.27	47.54	-49.87	-13.00	-36.87

**Table 7-39. Radiated Spurious Data Below 1GHz (NR Band n66 – Ant2)**



**Plot 7-145. Radiated Spurious Plot Above 1GHz (NR Band n66 – Ant2)**

FCC ID: A3LSMA156M	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth (MHz):	40
Frequency (MHz):	1730
RB / Offset:	1 / 108

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3460.00	H	130	190	-72.83	6.82	40.99	-54.27	-13.00	-41.27
5190.00	H	174	350	-65.51	10.27	51.76	-43.50	-13.00	-30.50
6920.00	H	142	45	-56.51	13.50	63.99	-31.27	-13.00	-18.27
8650.00	H	211	19	-65.07	16.96	58.89	-36.37	-13.00	-23.37
10380.00	H	180	53	-74.73	19.83	52.10	-43.16	-13.00	-30.16
12110.00	H	-	-	-83.54	22.24	45.70	-49.56	-13.00	-36.56
13840.00	H	-	-	-84.09	24.87	47.78	-47.48	-13.00	-34.48

**Table 7-40. Radiated Spurious Data Above 1GHz (NR Band n66 – Low Channel – Ant2)**

Bandwidth (MHz):	40
Frequency (MHz):	1745
RB / Offset:	1 / 108

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3490.00	H	126	196	-72.20	6.95	41.75	-53.51	-13.00	-40.51
5235.00	H	164	329	-65.54	10.00	51.46	-43.80	-13.00	-30.80
6980.00	H	185	55	-56.79	13.74	63.95	-31.31	-13.00	-18.31
8725.00	H	162	18	-65.13	16.16	58.03	-37.23	-13.00	-24.23
10470.00	H	150	42	-74.04	19.35	52.31	-42.95	-13.00	-29.95
12215.00	H	-	-	-83.07	22.20	46.13	-49.13	-13.00	-36.13
13960.00	H	-	-	-84.28	25.37	48.09	-47.17	-13.00	-34.17

**Table 7-41. Radiated Spurious Data Above 1GHz (NR Band n66 – Mid Channel – Ant2)**

Bandwidth (MHz):	40
Frequency (MHz):	1760
RB / Offset:	1 / 108

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3520.00	H	120	201	-71.90	6.93	42.03	-53.23	-13.00	-40.23
5280.00	H	162	320	-64.19	10.15	52.96	-42.30	-13.00	-29.30
7040.00	H	197	58	-57.32	14.78	64.46	-30.79	-13.00	-17.79
8800.00	H	155	24	-65.02	16.70	58.68	-36.58	-13.00	-23.58
10560.00	H	218	38	-71.70	19.87	55.17	-40.09	-13.00	-27.09
12320.00	H	-	-	-83.41	22.54	46.13	-49.13	-13.00	-36.13
14080.00	H	-	-	-83.81	25.11	48.30	-46.96	-13.00	-33.96

**Table 7-42. Radiated Spurious Data Above 1GHz (NR Band n66 – High Channel – Ant2)**

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## 7.8 Frequency Stability / Temperature Variation

### 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 Part 27, 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 – Section 5.6

### 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

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

### Test Notes

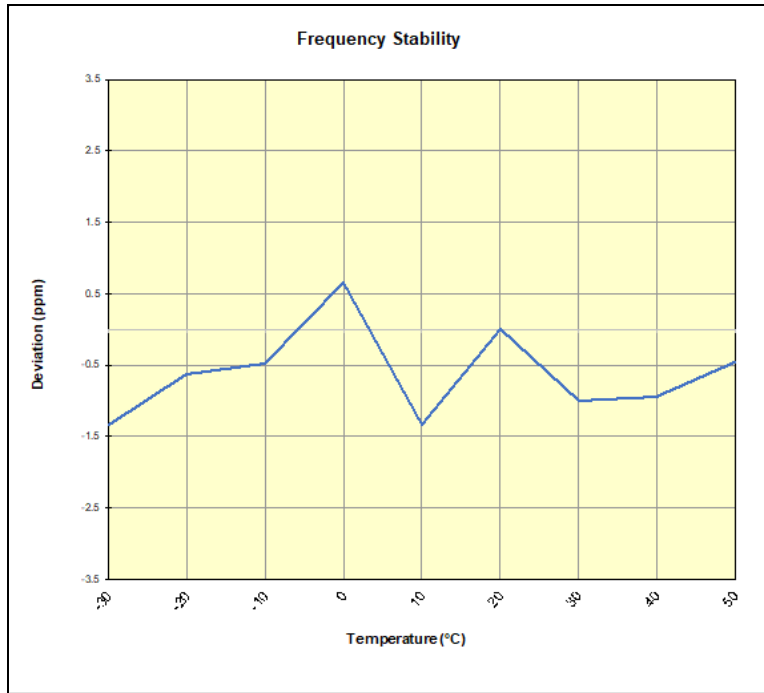
None.

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## Frequency Stability / Temperature Variation

LTE Band 12/17					
Operating Frequency (Hz):		707,500,000			
Ref. Voltage (VDC):		4.331			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.331	- 30	707,499,934	-939	-0.0001328
		- 20	707,500,430	-444	-0.0000627
		- 10	707,500,535	-338	-0.0000478
		0	707,501,333	459	0.0000649
		+ 10	707,499,922	-951	-0.0001344
		+ 20 (Ref)	707,500,873	0	0.0000000
		+ 30	707,500,172	-702	-0.0000992
		+ 40	707,500,202	-672	-0.0000950
Battery Endpoint	3.355	+ 20	707,499,937	-936	-0.0001324

Table 7-43. LTE Band 12/17 Frequency Stability Data



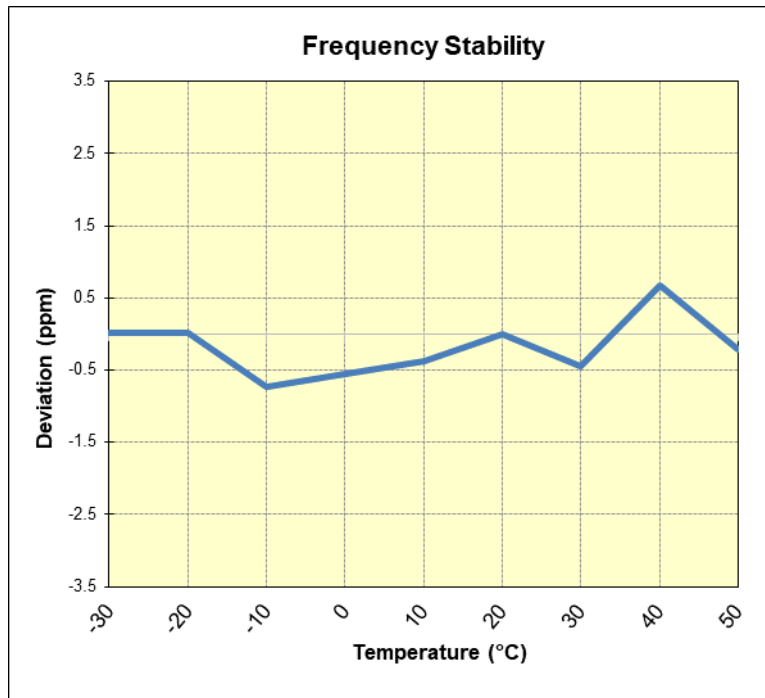
Plot 7-146. LTE Band 12/17 Frequency Stability Chart

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## Frequency Stability / Temperature Variation

LTE Band 13					
Operating Frequency (Hz):		782,000,000			
Ref. Voltage (VDC):		4.331			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.331	- 30	781,999,466	17	0.0000021
		- 20	781,999,463	13	0.0000017
		- 10	781,998,874	-576	-0.0000736
		0	781,999,011	-439	-0.0000562
		+ 10	781,999,155	-295	-0.0000377
		+ 20 (Ref)	781,999,450	0	0.0000000
		+ 30	781,999,102	-348	-0.0000445
		+ 40	781,999,970	520	0.0000665
		+ 50	781,999,284	-166	-0.0000212
Battery Endpoint	3.355	+ 20	782,000,801	1,351	0.0001728

Table 7-44. LTE Band 13 Frequency Stability Data



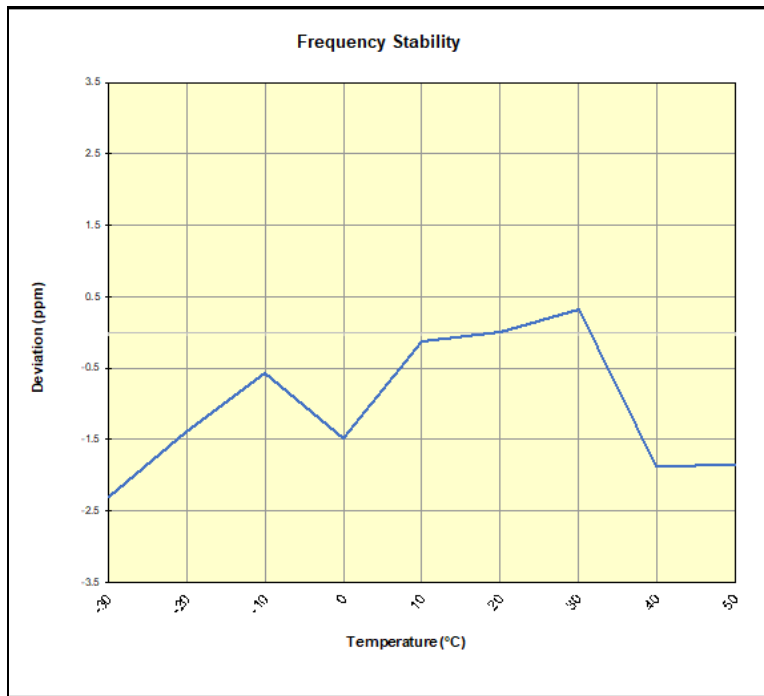
Plot 7-147. LTE Band 13 Frequency Stability Chart

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## Frequency Stability / Temperature Variation

WCDMA AWS					
Operating Frequency (Hz):		1,732,600,000			
Ref. Voltage (VDC):		4.331			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.331	- 30	1,732,575,227	-3,978	-0.0002296
		- 20	1,732,576,804	-2,401	-0.0001386
		- 10	1,732,578,204	-1,000	-0.0000577
		0	1,732,576,619	-2,585	-0.0001492
		+ 10	1,732,578,996	-208	-0.0000120
		+ 20 (Ref)	1,732,579,204	0	0.0000000
		+ 30	1,732,579,756	552	0.0000318
		+ 40	1,732,575,962	-3,242	-0.0001871
		+ 50	1,732,575,977	-3,227	-0.0001863
Battery Endpoint	3.355	+ 20	1,732,577,802	-1,402	-0.0000809

**Table 7-45. WCDMA AWS Frequency Stability Data**



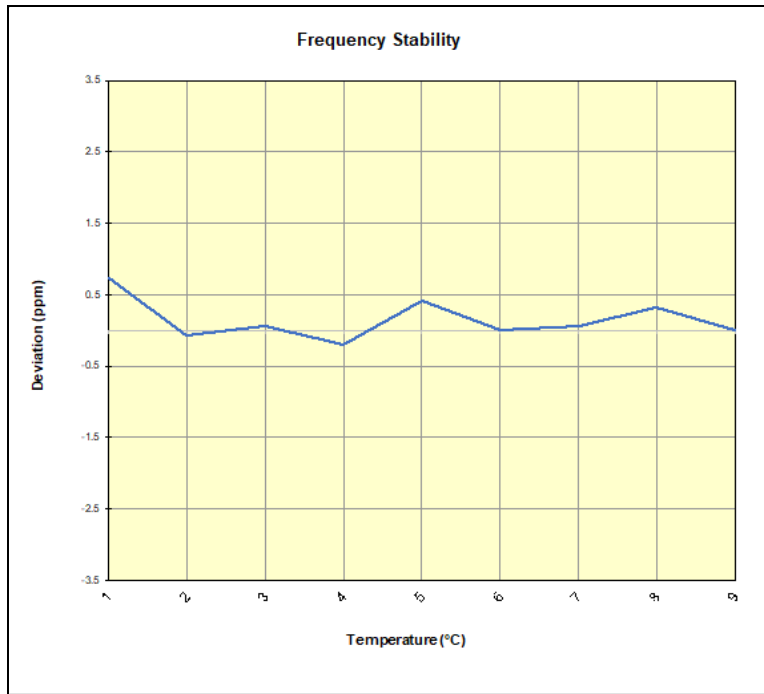
**Plot 7-148. WCDMA AWS Frequency Stability Chart**

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## Frequency Stability / Temperature Variation

LTE Band 66/4					
Operating Frequency (Hz):		1,745,000,000			
Ref. Voltage (VDC):		4.331			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.331	- 30	1,745,000,917	1,286	0.0000737
		- 20	1,744,999,523	-108	-0.0000062
		- 10	1,744,999,743	112	0.0000064
		0	1,744,999,284	-347	-0.0000199
		+ 10	1,745,000,350	719	0.0000412
		+ 20 (Ref)	1,744,999,631	0	0.0000000
		+ 30	1,744,999,723	92	0.0000053
		+ 40	1,745,000,176	545	0.0000312
		+ 50	1,744,999,637	6	0.0000003
Battery Endpoint	3.355	+ 20	1,744,998,673	-958	-0.0000549

**Table 7-46. LTE Band 66/4 Frequency Stability Data**



**Plot 7-149. LTE Band 66/4 Frequency Stability Chart**

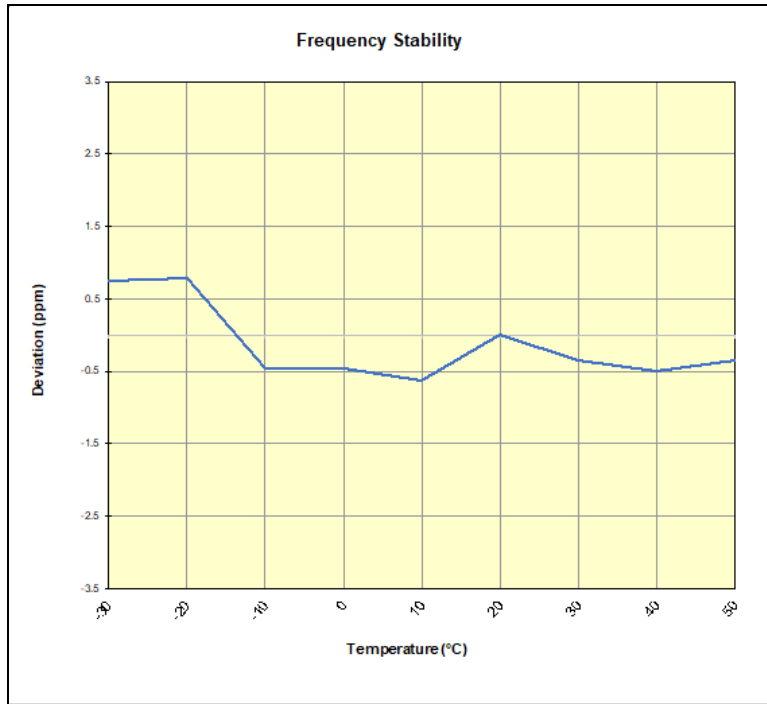
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## Frequency Stability / Temperature Variation

NR Band n66					
Operating Frequency (Hz):		1,745,000,000			
Ref. Voltage (VDC):		4.331			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.331	- 30	1,744,992,108	1,296	0.0000742
		- 20	1,744,992,185	1,373	0.0000787
		- 10	1,744,990,014	-799	-0.0000458
		0	1,744,990,005	-808	-0.0000463
		+ 10	1,744,989,709	-1,104	-0.0000633
		+ 20 (Ref)	1,744,990,813	0	0.0000000
		+ 30	1,744,990,217	-595	-0.0000341
		+ 40	1,744,989,947	-865	-0.0000496
Battery Endpoint	3.355	+ 20	1,744,992,968	2,155	0.0001235

**Table 7-47. NR Band n66 Frequency Stability Data**



**Plot 7-150. NR Band n66 Frequency Stability Chart**

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## 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMA156M** complies with all the requirements of Part 27 of the FCC rules.

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