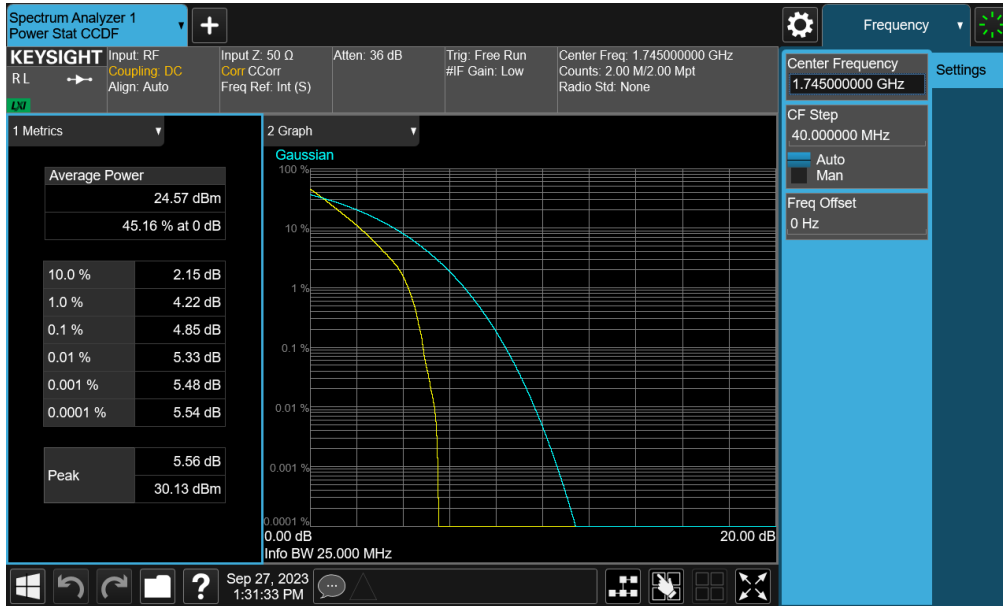
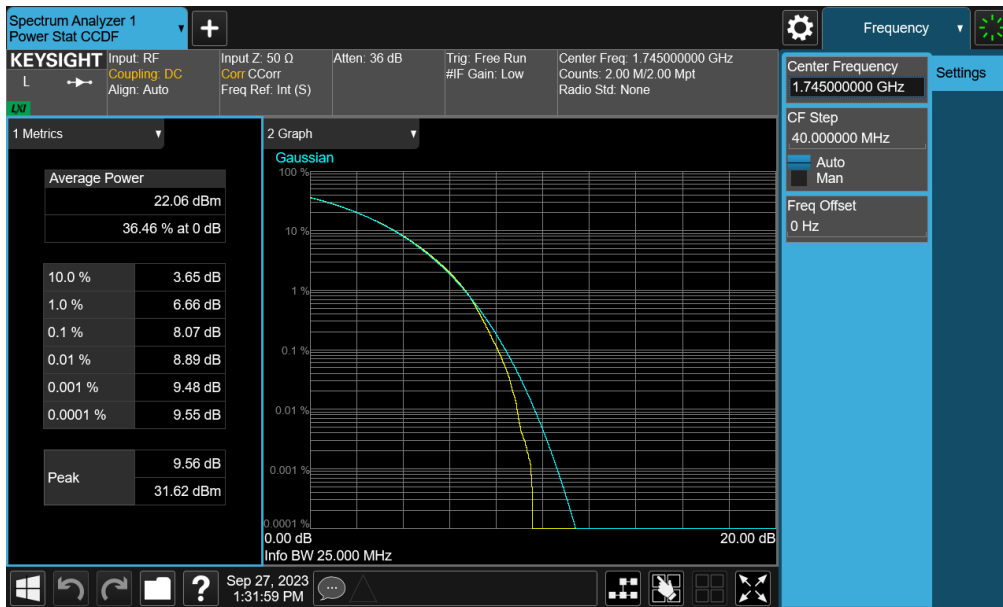


NR Band n66 – ANT1



Plot 7-183. PAR Plot (NR Band n66 - 25.0MHz DFT-s-OFDM $\pi/2$ BPSK- Full RB - ANT1)



Plot 7-184. PAR Plot (NR Band n66 - 25.0MHz CP-OFDM QPSK - Full RB - ANT1)

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Plot 7-185. PAR Plot (NR Band n66 - 25.0MHz CP-OFDM 256-QAM - Full RB - ANT1)

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Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dB]	Margin [dB]	
LTE-B66-4	20MHz	QPSK	23.57	5.57	13	-7.43	
		256QAM	19.68	6.55	13	-6.45	
	15MHz	QPSK	23.56	5.58	13	-7.42	
		256QAM	19.67	6.58	13	-6.42	
	10MHz	QPSK	23.51	5.66	13	-7.34	
		256QAM	19.58	6.58	13	-6.42	
	5MHz	QPSK	23.54	5.63	13	-7.37	
		256QAM	19.63	6.55	13	-6.45	
	3MHz	QPSK	23.48	5.69	13	-7.31	
		256QAM	19.62	6.57	13	-6.43	
	1.4MHz	QPSK	23.47	5.70	13	-7.30	
		256QAM	19.58	6.61	13	-6.39	
	NR-n66	40MHz	$\pi/2$ BPSK	23.47	5.04	13	-7.96
			QPSK	20.99	8.26	13	-4.74
256QAM			17.55	8.51	13	-4.49	
30MHz		$\pi/2$ BPSK	23.44	4.63	13	-8.38	
		QPSK	20.93	8.07	13	-4.93	
		256QAM	17.54	8.38	13	-4.62	
25MHz		$\pi/2$ BPSK	23.40	4.97	13	-8.03	
		QPSK	20.89	8.09	13	-4.91	
		256QAM	17.17	8.59	13	-4.41	
20MHz		$\pi/2$ BPSK	23.40	4.55	13	-8.45	
		QPSK	20.84	8.13	13	-4.87	
		256QAM	17.43	8.38	13	-4.62	
15MHz		$\pi/2$ BPSK	23.34	4.53	13	-8.47	
		QPSK	20.88	8.08	13	-4.92	
		256QAM	17.44	8.33	13	-4.67	
10MHz		$\pi/2$ BPSK	23.37	4.45	13	-8.55	
		QPSK	20.83	8.19	13	-4.81	
		256QAM	17.49	8.35	13	-4.65	
5MHz		$\pi/2$ BPSK	23.41	4.53	13	-8.47	
		QPSK	20.86	8.19	13	-4.81	
		256QAM	17.51	8.38	13	-4.62	

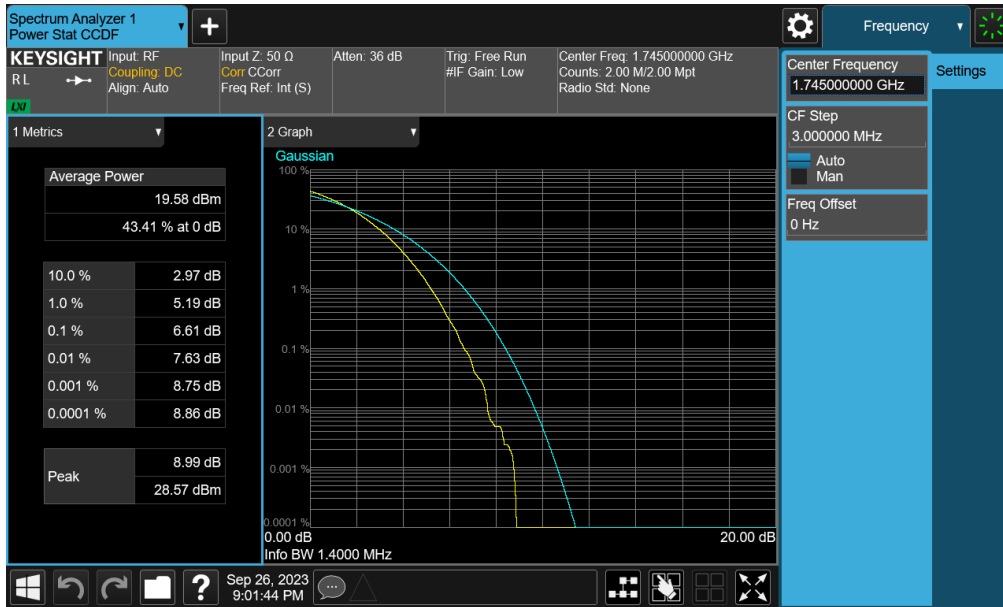
Table 7-17. Peak-Average Ratio Test Results – Ant2

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LTE Band 66/4 – ANT2



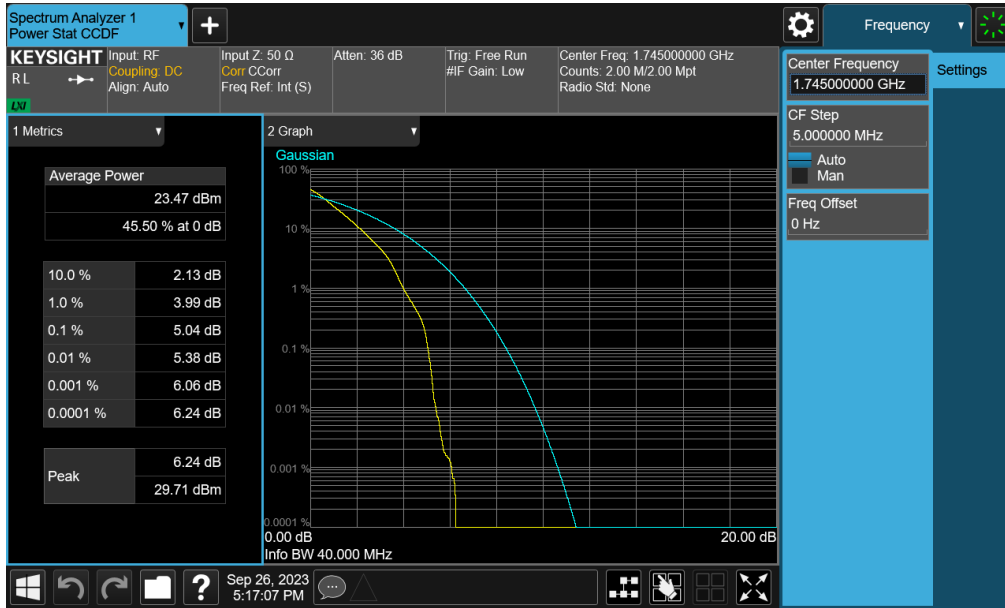
Plot 7-186. PAR Plot (LTE Band 66/4 – 1.4MHz QPSK - Full RB - ANT2)



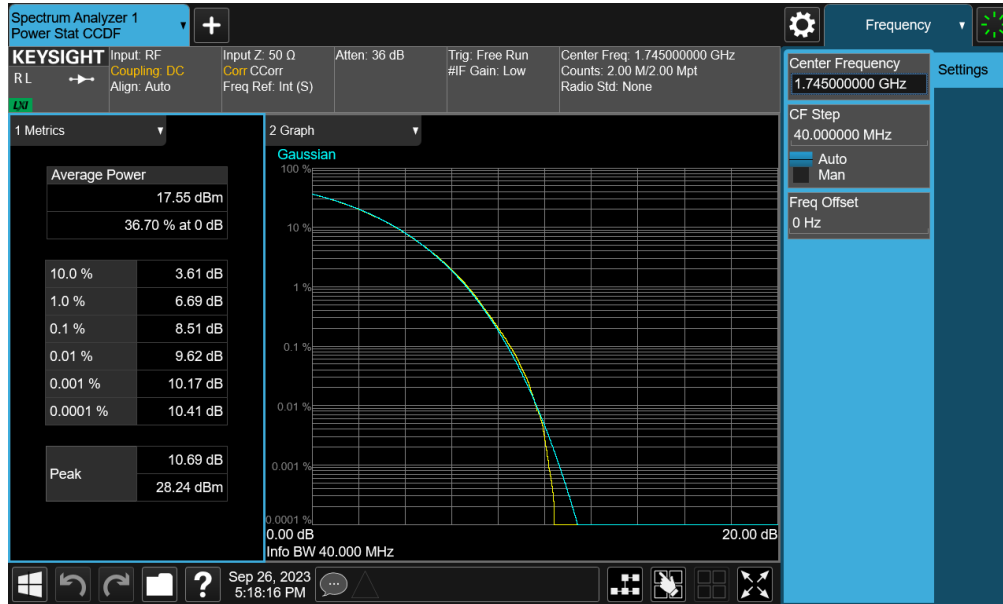
Plot 7-187. PAR Plot (LTE Band 66/4 – 1.4MHz 256-QAM - Full RB - ANT2)

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NR Band n66 – ANT2



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Plot 7-190. PAR Plot (NR Band n66 - 40.0MHz CP-OFDM 256-QAM - Full RB - ANT2)

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7.7 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

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Test Setup

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

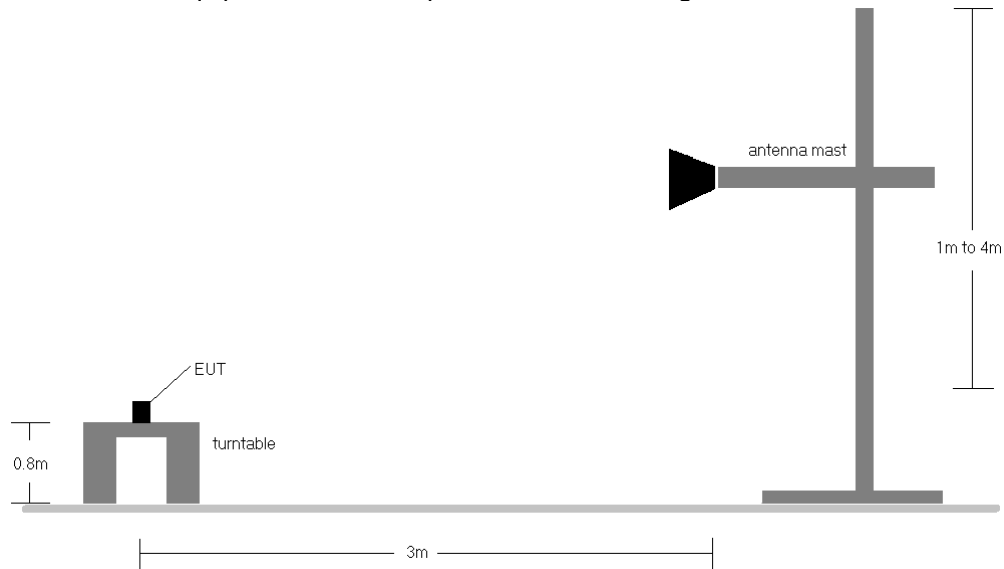


Figure 7-6. Radiated Test Setup <1GHz

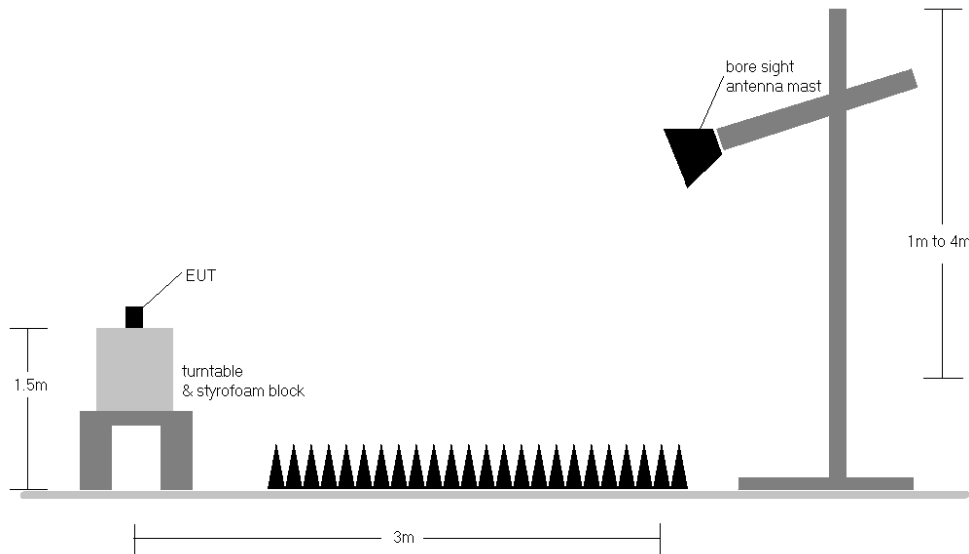


Figure 7-7. Radiated Test Setup >1GHz

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) 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.

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- 3) This unit was tested with its standard battery.
- 4) 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.

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Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
20 MHz	QPSK	673.00	H	165	344	0.69	1 / 99	18.81	17.35	0.054	34.77	-17.42
	QPSK	680.50	H	250	351	0.81	1 / 99	20.12	18.78	0.076	34.77	-15.99
	QPSK	688.00	H	251	347	0.93	1 / 99	20.59	19.37	0.087	34.77	-15.40
	16-QAM	688.00	H	251	347	0.93	1 / 99	19.90	18.68	0.074	34.77	-16.09
15 MHz	QPSK	670.50	H	165	344	0.65	1 / 37	18.87	17.37	0.055	34.77	-17.40
	QPSK	680.50	H	250	351	0.81	1 / 74	19.94	18.60	0.072	34.77	-16.17
	QPSK	690.50	H	251	347	0.97	1 / 37	20.87	19.69	0.093	34.77	-15.08
	16-QAM	690.50	H	251	347	0.97	1 / 74	20.15	18.97	0.079	34.77	-15.80
10 MHz	QPSK	668.00	H	165	344	0.61	1 / 25	18.77	17.22	0.053	34.77	-17.55
	QPSK	680.50	H	250	351	0.81	1 / 49	20.10	18.76	0.075	34.77	-16.01
	QPSK	693.00	H	251	347	1.01	1 / 49	20.76	19.62	0.092	34.77	-15.15
	16-QAM	693.00	H	251	347	1.01	1 / 49	20.00	18.86	0.077	34.77	-15.91
5 MHz	QPSK	665.50	H	165	344	0.57	1 / 0	18.93	17.34	0.054	34.77	-17.43
	QPSK	680.50	H	250	351	0.81	1 / 12	19.85	18.51	0.071	34.77	-16.26
	QPSK	695.50	H	251	347	1.05	1 / 24	20.75	19.65	0.092	34.77	-15.12
	16-QAM	695.50	H	251	347	1.05	1 / 12	20.10	19.00	0.079	34.77	-15.77

Table 7-191. ERP Data (LTE Band 71) – Ant1

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
10 MHz	QPSK	704.00	H	254	353	1.14	1 / 0	21.18	20.17	0.104	34.77	-14.60
	QPSK	707.50	H	244	343	1.16	1 / 0	21.17	20.18	0.104	34.77	-14.59
	QPSK	711.00	H	237	349	1.17	1 / 0	21.00	20.02	0.101	34.77	-14.75
	16-QAM	704.00	H	254	353	1.14	1 / 0	20.36	19.35	0.086	34.77	-15.42
5 MHz	QPSK	701.50	H	254	353	1.13	1 / 24	21.15	20.13	0.103	34.77	-14.64
	QPSK	707.50	H	244	343	1.16	1 / 24	21.01	20.02	0.100	34.77	-14.75
	QPSK	713.50	H	237	349	1.19	1 / 12	20.93	19.97	0.099	34.77	-14.80
	16-QAM	701.50	H	254	353	1.13	1 / 24	20.15	19.13	0.082	34.77	-15.64
3 MHz	QPSK	700.50	H	254	353	1.12	1 / 7	20.74	19.71	0.094	34.77	-15.06
	QPSK	707.50	H	244	343	1.16	1 / 7	21.04	20.05	0.101	34.77	-14.72
	QPSK	714.50	H	237	349	1.19	1 / 14	20.84	19.88	0.097	34.77	-14.89
	16-QAM	707.50	H	244	343	1.16	1 / 14	20.01	19.02	0.080	34.77	-15.75
1.4 MHz	QPSK	699.70	H	254	353	1.12	1 / 5	20.90	19.87	0.097	34.77	-14.90
	QPSK	707.50	H	244	343	1.16	1 / 0	21.00	20.00	0.100	34.77	-14.77
	QPSK	715.30	H	237	349	1.20	1 / 3	20.87	19.91	0.098	34.77	-14.86
	16-QAM	707.50	H	244	343	1.16	1 / 3	19.96	18.97	0.079	34.77	-15.80

Table 7-192. ERP Data (LTE Band 12) – Ant1

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
10 MHz	QPSK	782.00	H	146	340	1.09	1 / 25	19.08	18.02	0.063	34.77	-16.76
	16-QAM	782.00	H	146	340	1.09	1 / 25	18.29	17.23	0.053	34.77	-17.55
5 MHz	QPSK	779.50	H	146	340	1.11	1 / 24	18.92	17.88	0.061	34.77	-16.89
	QPSK	782.00	H	146	340	1.09	1 / 24	18.98	17.92	0.062	34.77	-16.85
	QPSK	784.50	H	146	340	1.06	1 / 12	19.30	18.21	0.066	34.77	-16.56
	16-QAM	784.50	H	146	340	1.06	1 / 12	18.47	17.39	0.055	34.77	-17.39

Table 7-193. ERP Data (LTE Band 13) – 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	V	109	69	19.30	2.88	22.18	0.165	30.00	-7.82
1732.60	WCDMA1700	V	120	69	19.43	2.92	22.35	0.172	30.00	-7.65
1752.60	WCDMA1700	V	118	56	19.19	2.96	22.15	0.164	30.00	-7.85

Table 7-194. EIRP Data (WCDMA) – Ant1

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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	V	124	60	2.90	1 / 50	21.68	24.58	0.287	30.00	-5.42
	QPSK	1745.00	V	116	60	2.94	1 / 50	21.84	24.78	0.301	30.00	-5.22
	QPSK	1770.00	V	133	91	3.02	1 / 50	21.64	24.66	0.292	30.00	-5.34
	16-QAM	1745.00	V	116	60	2.94	1 / 50	21.02	23.96	0.249	30.00	-6.04
15 MHz	QPSK	1717.50	V	124	60	2.89	1 / 0	21.71	24.60	0.288	30.00	-5.40
	QPSK	1745.00	V	116	60	2.94	1 / 74	21.73	24.68	0.294	30.00	-5.32
	QPSK	1772.50	V	133	91	3.03	1 / 0	21.61	24.64	0.291	30.00	-5.36
	16-QAM	1745.00	V	116	60	2.94	1 / 37	20.82	23.76	0.238	30.00	-6.24
10 MHz	QPSK	1715.00	V	124	60	2.89	1 / 25	21.69	24.58	0.287	30.00	-5.42
	QPSK	1745.00	V	116	60	2.94	1 / 25	21.84	24.79	0.301	30.00	-5.21
	QPSK	1775.00	V	133	91	3.04	1 / 25	21.50	24.54	0.284	30.00	-5.46
	16-QAM	1745.00	V	116	60	2.94	1 / 0	20.90	23.84	0.242	30.00	-6.16
5 MHz	QPSK	1712.50	V	124	60	2.88	1 / 0	21.71	24.60	0.288	30.00	-5.40
	QPSK	1745.00	V	116	60	2.94	1 / 12	21.78	24.73	0.297	30.00	-5.27
	QPSK	1777.50	V	133	91	3.05	1 / 24	21.60	24.65	0.292	30.00	-5.35
	16-QAM	1745.00	V	116	60	2.94	1 / 24	20.97	23.91	0.246	30.00	-6.09
3 MHz	QPSK	1711.50	V	124	60	2.88	1 / 7	21.71	24.59	0.288	30.00	-5.41
	QPSK	1745.00	V	116	60	2.94	1 / 0	21.68	24.62	0.290	30.00	-5.38
	QPSK	1778.50	V	133	91	3.05	1 / 0	21.52	24.57	0.286	30.00	-5.43
	16-QAM	1745.00	V	116	60	2.94	1 / 0	20.75	23.69	0.234	30.00	-6.31
1.4 MHz	QPSK	1710.70	V	124	60	2.88	1 / 3	21.72	24.60	0.288	30.00	-5.40
	QPSK	1745.00	V	116	60	2.94	1 / 5	21.64	24.59	0.287	30.00	-5.41
	QPSK	1779.30	V	133	91	3.05	1 / 3	21.47	24.52	0.283	30.00	-5.48
	16-QAM	1745.00	V	116	60	2.94	1 / 3	20.75	23.69	0.234	30.00	-6.31

Table 7-195. EIRP Data (LTE Band 66/4) – Ant1

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
20 MHz	$\pi/2$ BPSK	673.00	H	294	289	0.69	1 / 104	17.92	16.46	0.044	34.77	-18.31
	$\pi/2$ BPSK	680.50	H	8	268	0.81	1 / 104	18.07	16.73	0.047	34.77	-18.04
	$\pi/2$ BPSK	688.00	H	345	262	0.93	1 / 104	19.29	18.07	0.064	34.77	-16.70
	QPSK	673.00	H	294	289	0.69	1 / 104	17.96	16.50	0.045	34.77	-18.27
	QPSK	680.50	H	8	268	0.81	1 / 104	18.09	16.75	0.047	34.77	-18.02
	QPSK	688.00	H	345	262	0.93	1 / 104	19.31	18.09	0.064	34.77	-16.68
15 MHz	16-QAM	688.00	H	345	262	0.93	1 / 104	18.65	17.43	0.055	34.77	-17.34
	$\pi/2$ BPSK	670.50	H	294	289	0.65	1 / 39	18.05	16.55	0.045	34.77	-18.22
	$\pi/2$ BPSK	680.50	H	8	268	0.81	1 / 77	18.18	16.84	0.048	34.77	-17.93
	$\pi/2$ BPSK	690.50	H	345	262	0.97	1 / 77	19.42	18.24	0.067	34.77	-16.53
	QPSK	670.50	H	294	289	0.65	1 / 1	18.02	16.52	0.045	34.77	-18.26
	QPSK	680.50	H	8	268	0.81	1 / 77	18.06	16.72	0.047	34.77	-18.05
10 MHz	QPSK	690.50	H	345	262	0.97	1 / 77	19.19	18.01	0.063	34.77	-16.76
	16-QAM	690.50	H	345	262	0.97	1 / 77	18.66	17.48	0.056	34.77	-17.29
	$\pi/2$ BPSK	668.00	H	294	289	0.61	1 / 1	18.04	16.49	0.045	34.77	-18.28
	$\pi/2$ BPSK	680.50	H	8	268	0.81	1 / 50	18.10	16.76	0.047	34.77	-18.01
	$\pi/2$ BPSK	693.00	H	345	262	1.01	1 / 50	19.48	18.34	0.068	34.77	-16.43
	QPSK	668.00	H	294	289	0.61	1 / 1	18.01	16.46	0.044	34.77	-18.31
5 MHz	QPSK	680.50	H	8	268	0.81	1 / 50	18.08	16.74	0.047	34.77	-18.03
	QPSK	693.00	H	345	262	1.01	1 / 50	19.12	17.98	0.063	34.77	-16.79
	16-QAM	693.00	H	345	262	1.01	1 / 50	18.58	17.44	0.055	34.77	-17.34
	$\pi/2$ BPSK	665.50	H	294	289	0.57	1 / 12	18.14	16.55	0.045	34.77	-18.22
	$\pi/2$ BPSK	680.50	H	8	268	0.81	1 / 12	18.04	16.70	0.047	34.77	-18.07
	$\pi/2$ BPSK	695.50	H	345	262	1.05	1 / 12	19.37	18.27	0.067	34.77	-16.50
20 MHz	QPSK	665.50	H	294	289	0.57	1 / 12	18.06	16.47	0.044	34.77	-18.30
	QPSK	680.50	H	8	268	0.81	1 / 12	18.11	16.77	0.048	34.77	-18.00
	QPSK	695.50	H	345	262	1.05	1 / 12	19.23	18.13	0.065	34.77	-16.64
	16-QAM	695.50	H	345	262	1.05	1 / 12	18.25	17.15	0.052	34.77	-17.63
20 MHz	QPSK (CP-OFDM)	688.00	H	189	280	0.81	1/104	17.76	16.42	0.044	34.77	-18.35

Table 7-196. ERP Data (NR Band n71) – Ant1

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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]
15 MHz	$\pi/2$ BPSK	1702.50	V	136	302	2.84	1 / 77	20.09	22.93	0.197	30.00	-7.07
	QPSK	1702.50	V	136	302	2.84	1 / 77	20.02	22.86	0.193	30.00	-7.14
	16-QAM	1702.50	V	136	302	2.84	1 / 77	19.06	21.90	0.155	30.00	-8.10
10 MHz	$\pi/2$ BPSK	1700.00	V	136	302	2.84	1 / 26	20.14	22.98	0.199	30.00	-7.02
	$\pi/2$ BPSK	1702.50	V	136	302	2.84	1 / 26	20.08	22.92	0.196	30.00	-7.08
	$\pi/2$ BPSK	1705.00	V	136	302	2.84	1 / 1	20.27	23.11	0.205	30.00	-6.89
	QPSK	1700.00	V	136	302	2.84	1 / 26	20.10	22.94	0.197	30.00	-7.06
	QPSK	1702.50	V	136	302	2.84	1 / 26	20.03	22.87	0.194	30.00	-7.13
	QPSK	1705.00	V	136	302	2.84	1 / 1	20.15	22.99	0.199	30.00	-7.01
	16-QAM	1700.00	V	136	302	2.84	1 / 26	18.66	21.50	0.141	30.00	-8.50
5 MHz	$\pi/2$ BPSK	1697.50	V	136	302	2.84	1 / 1	20.40	23.24	0.211	30.00	-6.76
	$\pi/2$ BPSK	1702.50	V	136	302	2.84	1 / 23	20.20	23.04	0.202	30.00	-6.96
	$\pi/2$ BPSK	1707.50	V	136	302	2.84	1 / 12	20.06	22.90	0.195	30.00	-7.10
	QPSK	1697.50	V	136	302	2.84	1 / 1	20.33	23.17	0.208	30.00	-6.83
	QPSK	1702.50	V	136	302	2.84	1 / 12	20.10	22.94	0.197	30.00	-7.06
	QPSK	1707.50	V	136	302	2.84	1 / 12	20.10	22.94	0.197	30.00	-7.06
16-QAM	1702.50	V	136	302	2.84	1 / 12	18.46	21.30	0.135	30.00	-8.70	
15 MHz	QPSK (CP-OFDM)	1702.50	V	136	302	2.84	1 / 77	18.68	21.52	0.142	30.00	-8.48

Table 7-197. EIRP Data (NR Band n70) – Ant1

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070100-03.A3L	Test Dates: 9/8/2023 - 11/2/2023	EUT Type: Portable Handset	Page 144 of 179



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	V	108	55	2.92	1 / 214	18.89	21.81	0.152	30.00	-8.19
	$\pi/2$ BPSK	1745.00	V	112	42	2.94	1 / 108	19.50	22.44	0.176	30.00	-7.56
	$\pi/2$ BPSK	1760.00	V	115	52	2.99	216 / 0	18.73	21.72	0.148	30.00	-8.28
	QPSK	1730.00	V	108	55	2.92	1 / 214	18.86	21.78	0.151	30.00	-8.22
	QPSK	1745.00	V	112	42	2.94	1 / 108	19.49	22.43	0.175	30.00	-7.57
	QPSK	1760.00	V	115	52	2.99	1 / 1	18.65	21.64	0.146	30.00	-8.36
	16-QAM	1745.00	V	112	42	2.94	1 / 108	18.22	21.16	0.131	30.00	-8.84
30 MHz	$\pi/2$ BPSK	1725.00	V	108	55	2.91	1 / 1	19.07	21.97	0.157	30.00	-8.03
	$\pi/2$ BPSK	1745.00	V	112	42	2.94	1 / 80	19.06	22.00	0.159	30.00	-8.00
	$\pi/2$ BPSK	1765.00	V	115	52	3.00	1 / 1	18.84	21.84	0.153	30.00	-8.16
	QPSK	1725.00	V	108	55	2.91	1 / 1	18.84	21.74	0.149	30.00	-8.26
	QPSK	1745.00	V	112	42	2.94	1 / 80	19.31	22.25	0.168	30.00	-7.75
	QPSK	1765.00	V	115	52	3.00	1 / 1	18.88	21.88	0.154	30.00	-8.12
	16-QAM	1745.00	V	112	42	2.94	1 / 80	18.27	21.21	0.132	30.00	-8.79
25 MHz	$\pi/2$ BPSK	1722.50	V	108	55	2.90	1 / 66	18.95	21.85	0.153	30.00	-8.15
	$\pi/2$ BPSK	1745.00	V	112	42	2.94	1 / 66	19.31	22.25	0.168	30.00	-7.75
	$\pi/2$ BPSK	1767.50	V	115	52	3.01	1 / 131	18.88	21.89	0.155	30.00	-8.11
	QPSK	1722.50	V	108	55	2.90	1 / 1	18.89	21.79	0.151	30.00	-8.21
	QPSK	1745.00	V	112	42	2.94	1 / 66	19.50	22.44	0.176	30.00	-7.56
	QPSK	1767.50	V	115	52	3.01	1 / 131	18.85	21.86	0.153	30.00	-8.14
	16-QAM	1722.50	V	108	55	2.90	1 / 1	18.26	21.17	0.131	30.00	-8.83
20 MHz	$\pi/2$ BPSK	1720.00	V	108	55	2.90	1 / 53	18.96	21.86	0.153	30.00	-8.14
	$\pi/2$ BPSK	1745.00	V	112	42	2.94	1 / 53	19.08	22.02	0.159	30.00	-7.98
	$\pi/2$ BPSK	1770.00	V	115	52	3.02	1 / 53	18.64	21.67	0.147	30.00	-8.33
	QPSK	1720.00	V	108	55	2.90	1 / 53	18.99	21.88	0.154	30.00	-8.12
	QPSK	1745.00	V	112	42	2.94	1 / 53	19.49	22.44	0.175	30.00	-7.56
	QPSK	1770.00	V	115	52	3.02	1 / 53	18.72	21.74	0.149	30.00	-8.26
	16-QAM	1720.00	V	108	55	2.90	1 / 53	18.18	21.08	0.128	30.00	-8.92
15 MHz	$\pi/2$ BPSK	1717.5	V	108	55	2.89	1 / 26	18.80	21.69	0.148	30.00	-8.31
	$\pi/2$ BPSK	1745.0	V	112	42	2.94	1 / 26	19.22	22.16	0.164	30.00	-7.84
	$\pi/2$ BPSK	1772.5	V	115	52	3.04	1 / 26	18.75	21.79	0.151	30.00	-8.21
	QPSK	1717.5	V	108	55	2.89	1 / 26	19.03	21.92	0.155	30.00	-8.08
	QPSK	1745.0	V	112	42	2.94	1 / 26	19.37	22.31	0.170	30.00	-7.69
	QPSK	1772.5	V	115	52	3.04	1 / 26	18.95	21.98	0.158	30.00	-8.02
	16-QAM	1717.5	V	108	55	2.89	1 / 26	18.34	21.23	0.133	30.00	-8.77
10 MHz	$\pi/2$ BPSK	1715.00	V	108	55	2.89	1 / 50	19.14	22.03	0.159	30.00	-7.97
	$\pi/2$ BPSK	1745.00	V	112	42	2.94	1 / 26	19.29	22.23	0.167	30.00	-7.77
	$\pi/2$ BPSK	1775.00	V	115	52	3.04	1 / 26	18.68	21.71	0.148	30.00	-8.29
	QPSK	1715.00	V	108	55	2.89	1 / 50	18.73	21.61	0.145	30.00	-8.39
	QPSK	1745.00	V	112	42	2.94	1 / 26	19.31	22.25	0.168	30.00	-7.75
	QPSK	1775.00	V	115	52	3.04	1 / 26	18.83	21.87	0.154	30.00	-8.13
	16-QAM	1775.00	V	115	52	3.04	1 / 26	17.93	20.97	0.125	30.00	-9.03
5 MHz	$\pi/2$ BPSK	1712.50	V	108	55	2.88	1 / 12	18.56	21.45	0.140	30.00	-8.55
	$\pi/2$ BPSK	1745.00	V	112	42	2.94	1 / 12	19.03	21.97	0.157	30.00	-8.03
	$\pi/2$ BPSK	1777.50	V	115	52	3.05	1 / 1	18.55	21.60	0.145	30.00	-8.40
	QPSK	1712.50	V	108	55	2.88	1 / 12	18.55	21.43	0.139	30.00	-8.57
	QPSK	1745.00	V	112	42	2.94	1 / 12	19.22	22.16	0.165	30.00	-7.84
	QPSK	1777.50	V	115	52	3.05	1 / 1	18.56	21.60	0.145	30.00	-8.40
	16-QAM	1712.50	V	108	55	2.88	1 / 12	18.00	20.89	0.123	30.00	-9.11
40 MHz	QPSK (CP-OFDM)	1745.00	V	188	46	2.94	1/108	17.63	20.57	0.114	30.00	-9.43

Table 7-198. EIRP Data (NR Band n66) – Ant1

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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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	V	112	242	2.90	1 / 99	13.30	16.20	0.042	30.00	-13.80
	QPSK	1745.00	V	144	237	2.94	1 / 99	15.65	18.59	0.072	30.00	-11.41
	QPSK	1770.00	V	152	241	3.02	1 / 99	16.42	19.44	0.088	30.00	-10.56
	16-QAM	1770.00	V	152	241	3.02	1 / 99	15.50	18.52	0.071	30.00	-11.48
15 MHz	QPSK	1717.50	V	112	242	2.89	1 / 0	13.16	16.06	0.040	30.00	-13.94
	QPSK	1745.00	V	144	237	2.94	1 / 0	15.75	18.69	0.074	30.00	-11.31
	QPSK	1772.50	V	152	241	3.03	1 / 0	16.41	19.43	0.088	30.00	-10.57
	16-QAM	1772.50	V	152	241	3.03	1 / 0	15.53	18.56	0.072	30.00	-11.44
10 MHz	QPSK	1715.00	V	112	242	2.89	1 / 0	13.20	16.09	0.041	30.00	-13.91
	QPSK	1745.00	V	144	237	2.94	1 / 0	15.86	18.80	0.076	30.00	-11.20
	QPSK	1775.00	V	152	241	3.04	1 / 0	16.32	19.36	0.086	30.00	-10.64
	16-QAM	1775.00	V	152	241	3.04	1 / 0	15.22	18.26	0.067	30.00	-11.74
5 MHz	QPSK	1712.50	V	112	242	2.88	1 / 0	13.23	16.12	0.041	30.00	-13.88
	QPSK	1745.00	V	144	237	2.94	1 / 0	15.68	18.63	0.073	30.00	-11.37
	QPSK	1777.50	V	152	241	3.05	1 / 24	16.25	19.30	0.085	30.00	-10.70
	16-QAM	1777.50	V	152	241	3.05	1 / 24	15.22	18.27	0.067	30.00	-11.73
3 MHz	QPSK	1711.50	V	112	242	2.88	1 / 0	13.21	16.09	0.041	30.00	-13.91
	QPSK	1745.00	V	144	237	2.94	1 / 0	15.57	18.51	0.071	30.00	-11.49
	QPSK	1778.50	V	152	241	3.05	1 / 0	16.12	19.17	0.083	30.00	-10.83
	16-QAM	1778.50	V	152	241	3.05	1 / 0	15.08	18.13	0.065	30.00	-11.87
1.4 MHz	QPSK	1710.70	V	112	242	2.88	1 / 0	13.21	16.09	0.041	30.00	-13.91
	QPSK	1745.00	V	144	237	2.94	1 / 0	15.46	18.40	0.069	30.00	-11.60
	QPSK	1779.30	V	152	241	3.05	1 / 0	16.01	19.07	0.081	30.00	-10.93
	16-QAM	1779.30	V	152	241	3.05	1 / 0	15.25	18.30	0.068	30.00	-11.70

Table 7-199. EIRP Data (LTE Band 66/4) – Ant2

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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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	V	147	237	2.92	1 / 214	14.12	17.04	0.051	30.00	-12.96
	$\pi/2$ BPSK	1745.00	V	103	245	2.94	1 / 214	15.12	18.06	0.064	30.00	-11.94
	$\pi/2$ BPSK	1760.00	V	102	278	2.99	1 / 214	15.79	18.78	0.075	30.00	-11.22
	QPSK	1730.00	V	147	237	2.92	1 / 214	14.09	17.01	0.050	30.00	-12.99
	QPSK	1745.00	V	103	245	2.94	1 / 214	15.10	18.04	0.064	30.00	-11.96
	QPSK	1760.00	V	102	278	2.99	1 / 214	15.73	18.72	0.074	30.00	-11.28
30 MHz	16-QAM	1760.00	V	102	278	2.99	1 / 214	14.85	17.84	0.061	30.00	-12.16
	$\pi/2$ BPSK	1725.00	V	147	237	2.91	1 / 1	14.05	16.96	0.050	30.00	-13.04
	$\pi/2$ BPSK	1745.00	V	103	245	2.94	1 / 1	14.96	17.90	0.062	30.00	-12.10
	$\pi/2$ BPSK	1765.00	V	102	278	3.00	1 / 158	15.60	18.60	0.073	30.00	-11.40
	QPSK	1725.00	V	147	237	2.91	1 / 1	14.26	17.17	0.052	30.00	-12.83
	QPSK	1745.00	V	103	245	2.94	1 / 1	15.12	18.06	0.064	30.00	-11.94
25 MHz	QPSK	1765.00	V	102	278	3.00	1 / 158	15.75	18.75	0.075	30.00	-11.25
	16-QAM	1765.00	V	102	278	3.00	1 / 1	14.63	17.63	0.058	30.00	-12.37
	$\pi/2$ BPSK	1722.50	V	147	237	2.90	1 / 66	13.31	16.21	0.042	30.00	-13.79
	$\pi/2$ BPSK	1745.00	V	103	245	2.94	1 / 1	14.65	17.60	0.057	30.00	-12.40
	$\pi/2$ BPSK	1767.50	V	102	278	3.01	1 / 66	14.97	17.99	0.063	30.00	-12.01
	QPSK	1722.50	V	147	237	2.90	1 / 66	13.42	16.32	0.043	30.00	-13.68
20 MHz	QPSK	1745.00	V	103	245	2.94	1 / 1	14.65	17.59	0.057	30.00	-12.41
	QPSK	1767.50	V	102	278	3.01	1 / 66	14.90	17.91	0.062	30.00	-12.09
	16-QAM	1745.00	V	103	245	2.94	1 / 1	13.88	16.82	0.048	30.00	-13.18
	$\pi/2$ BPSK	1720.00	V	147	237	2.90	1 / 1	14.20	17.10	0.051	30.00	-12.90
	$\pi/2$ BPSK	1745.00	V	103	245	2.94	1 / 1	14.72	17.66	0.058	30.00	-12.34
	$\pi/2$ BPSK	1770.00	V	102	278	3.02	1 / 1	15.75	18.77	0.075	30.00	-11.23
15 MHz	QPSK	1720.00	V	147	237	2.90	1 / 53	14.35	17.25	0.053	30.00	-12.75
	QPSK	1745.00	V	103	245	2.94	1 / 1	14.72	17.66	0.058	30.00	-12.34
	QPSK	1770.00	V	102	278	3.02	1 / 53	15.60	18.62	0.073	30.00	-11.38
	16-QAM	1770.00	V	102	278	3.02	1 / 1	14.59	17.61	0.058	30.00	-12.39
	$\pi/2$ BPSK	1717.50	V	147	237	2.89	1 / 1	14.20	17.10	0.051	30.00	-12.90
	$\pi/2$ BPSK	1745.00	V	103	245	2.94	1 / 1	14.72	17.66	0.058	30.00	-12.34
10 MHz	$\pi/2$ BPSK	1772.50	V	102	278	3.03	1 / 1	15.74	18.77	0.075	30.00	-11.23
	QPSK	1717.50	V	147	237	2.89	1 / 39	14.35	17.25	0.053	30.00	-12.75
	QPSK	1745.00	V	103	245	2.94	1 / 1	14.72	17.66	0.058	30.00	-12.34
	QPSK	1772.50	V	102	278	3.03	1 / 39	15.59	18.62	0.073	30.00	-11.38
	16-QAM	1772.50	V	102	278	3.03	1 / 1	14.58	17.61	0.058	30.00	-12.39
	$\pi/2$ BPSK	1715.00	V	147	237	2.89	1 / 26	14.09	16.98	0.050	30.00	-13.02
5 MHz	$\pi/2$ BPSK	1745.00	V	103	245	2.94	1 / 1	14.89	17.83	0.061	30.00	-12.17
	$\pi/2$ BPSK	1775.00	V	102	278	3.04	1 / 1	15.73	18.77	0.075	30.00	-11.23
	QPSK	1715.00	V	147	237	2.89	1 / 26	14.61	17.50	0.056	30.00	-12.50
	QPSK	1745.00	V	103	245	2.94	1 / 1	14.81	17.75	0.060	30.00	-12.25
	QPSK	1775.00	V	102	278	3.04	1 / 50	15.71	18.74	0.075	30.00	-11.26
	16-QAM	1775.00	V	102	278	3.04	1 / 50	14.60	17.64	0.058	30.00	-12.36
5 MHz	$\pi/2$ BPSK	1712.50	V	147	237	2.88	1 / 23	14.12	17.00	0.050	30.00	-13.00
	$\pi/2$ BPSK	1745.00	V	103	245	2.94	1 / 12	14.65	17.59	0.057	30.00	-12.41
	$\pi/2$ BPSK	1777.50	V	102	278	3.05	1 / 12	15.56	18.61	0.073	30.00	-11.39
	QPSK	1712.50	V	147	237	2.88	1 / 23	14.59	17.47	0.056	30.00	-12.53
	QPSK	1745.00	V	103	245	2.94	1 / 12	14.76	17.71	0.059	30.00	-12.29
	QPSK	1777.50	V	102	278	3.05	1 / 12	15.72	18.77	0.075	30.00	-11.23
16-QAM	1777.50	V	102	278	3.05	1 / 12	14.55	17.59	0.057	30.00	-12.41	

Table 7-200. EIRP Data (NR Band n66) – Ant2

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7.8 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: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Test Setup

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

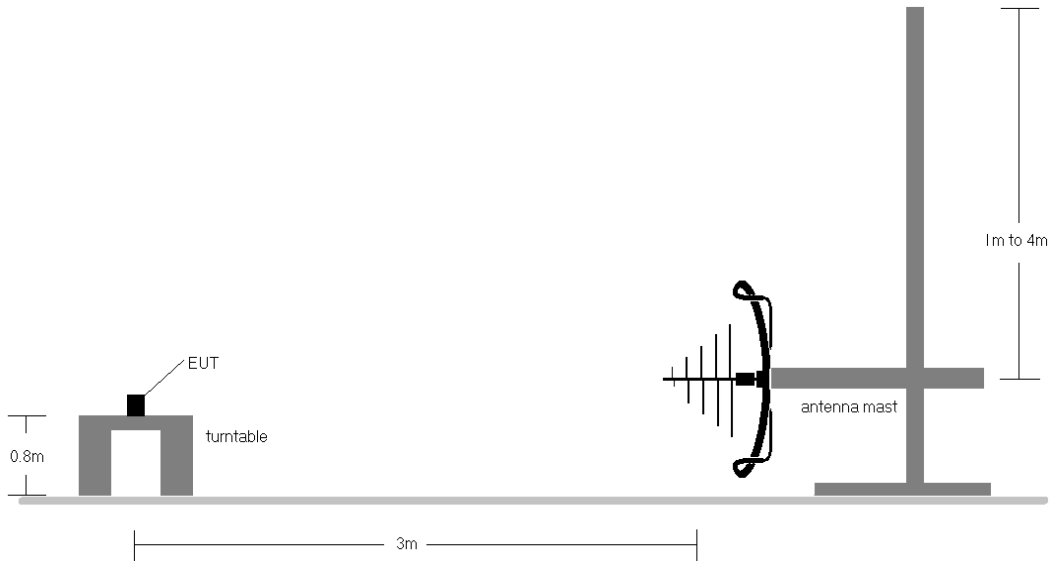


Figure 7-8. Test Instrument & Measurement Setup < 1GHz

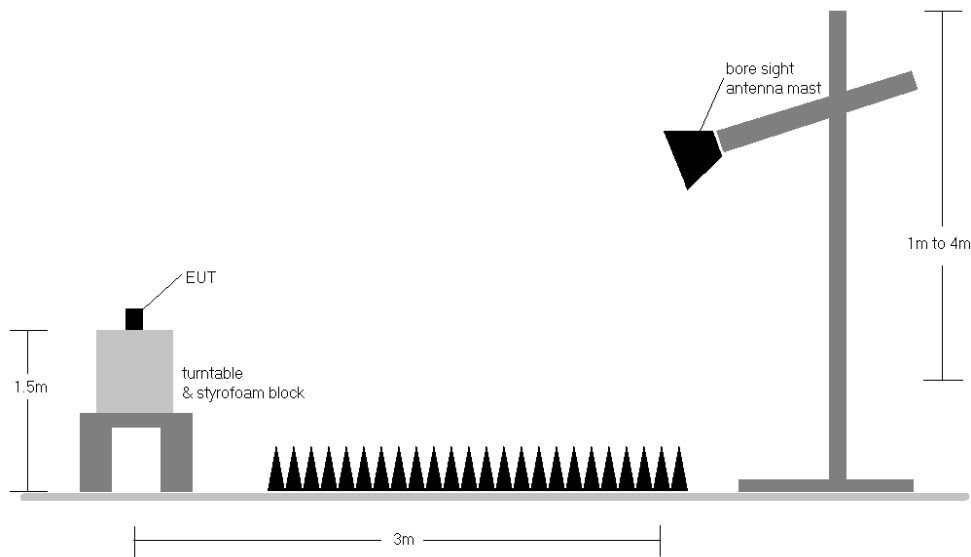


Figure 7-9. Test Instrument & Measurement Setup > 1GHz

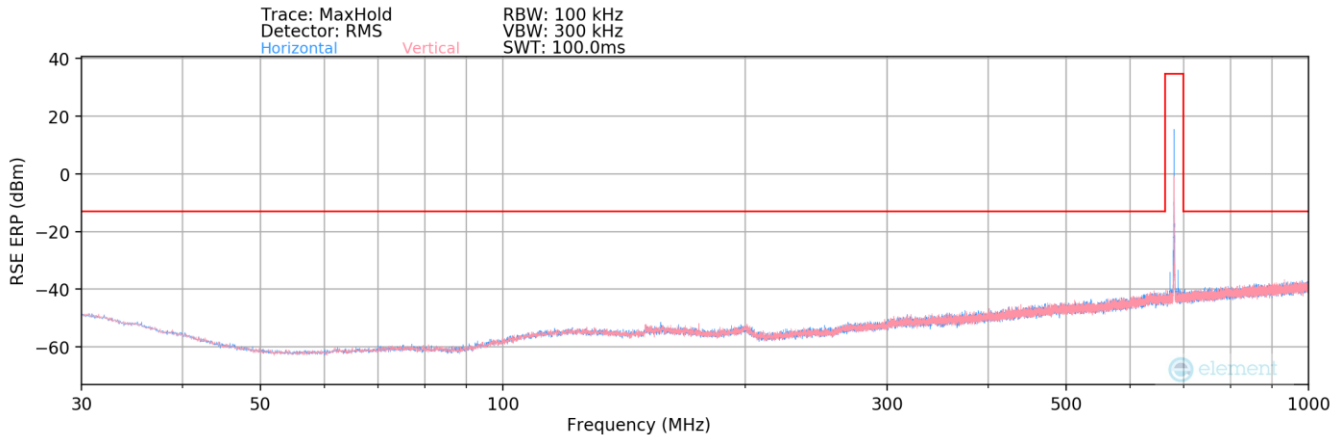
FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Test Notes

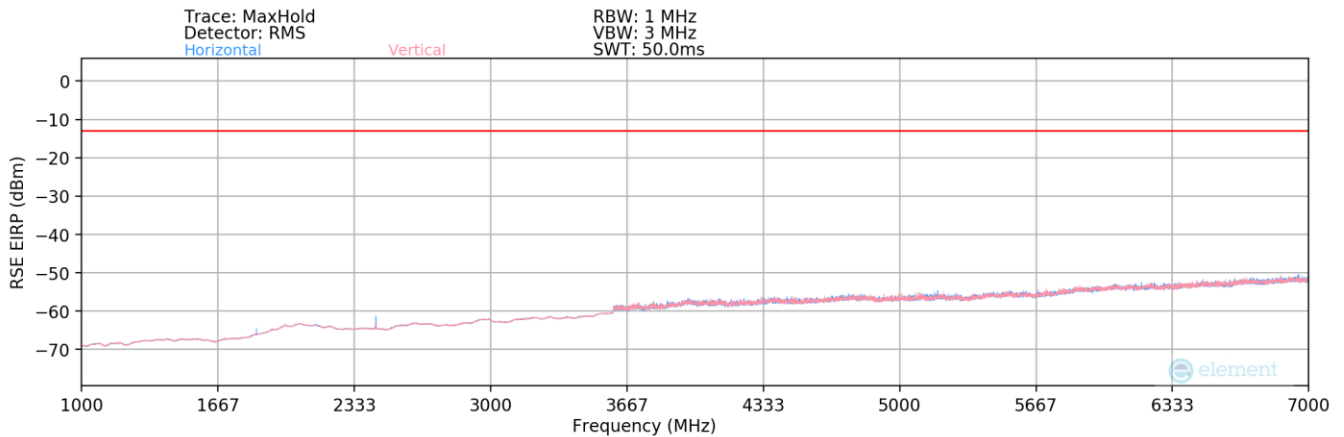
- 1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
 - a) $E(\text{dB}\mu\text{V}/\text{m}) = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
 - b) $\text{EIRP (dBm)} = E(\text{dB}\mu\text{V}/\text{m}) + 20\log D - 104.8$; 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) ULCA spurious emissions measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device.
- 8) 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.
- 9) 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 are 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 71 – Ant1



Plot 7-201. Radiated Spurious Plot (LTE Band 71) – Ant1



Plot 7-202. Radiated Spurious Plot (LTE Band 71) – Ant1

Mode:	Stand Alone
Channel:	680.5
Frequency (MHz):	1 / 50
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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]
182.00	V	-	-	-83.92	18.50	41.58	-55.83	-13.00	-42.83
311.00	V	-	-	-83.85	21.53	44.68	-52.73	-13.00	-39.73

Table 7-18. Radiated Spurious Data (LTE Band 71 –Below 1GHz) – Ant1

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth (MHz):	20
Frequency (MHz):	673
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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]
1346.00	V	268	10	-75.30	-7.00	24.70	-70.56	-13.00	-57.56
2019.00	V	-	-	-76.43	-3.11	27.46	-67.79	-13.00	-54.79
2692.00	V	-	-	-76.47	-2.69	27.84	-67.42	-13.00	-54.42
3365.00	V	-	-	-76.67	-1.18	29.15	-66.11	-13.00	-53.11

Table 7-19. Radiated Spurious Data (LTE Band 71 – Low Channel) – Ant1

Bandwidth (MHz):	20
Frequency (MHz):	680.5
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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]
1361.00	V	138	11	-74.38	-7.06	25.56	-69.69	-13.00	-56.69
2041.50	V	175	370	-76.29	-2.87	27.84	-67.41	-13.00	-54.41
2722.00	V	-	-	-76.57	-2.94	27.49	-67.77	-13.00	-54.77
3402.50	V	-	-	-76.81	-1.21	28.98	-66.28	-13.00	-53.28
4083.00	V	-	-	-78.27	1.54	30.27	-64.99	-13.00	-51.99

Table 7-20. Radiated Spurious Data (LTE Band 71 – Mid Channel) – Ant1

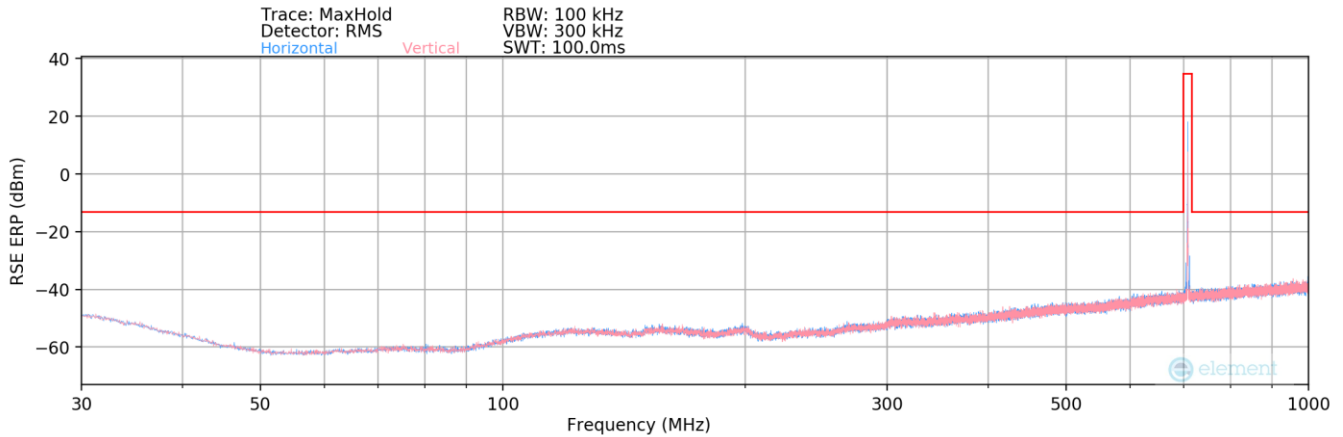
Bandwidth (MHz):	20
Frequency (MHz):	688
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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]
1376.00	V	130	9	-75.65	-6.85	24.50	-70.76	-13.00	-57.76
2064.00	V	141	325	-74.18	-2.76	30.06	-65.19	-13.00	-52.19
2752.00	V	-	-	-76.91	-3.04	27.05	-68.20	-13.00	-55.20
3440.00	V	-	-	-76.84	-1.02	29.14	-66.11	-13.00	-53.11
4128.00	V	-	-	-77.41	1.54	31.13	-64.13	-13.00	-51.13

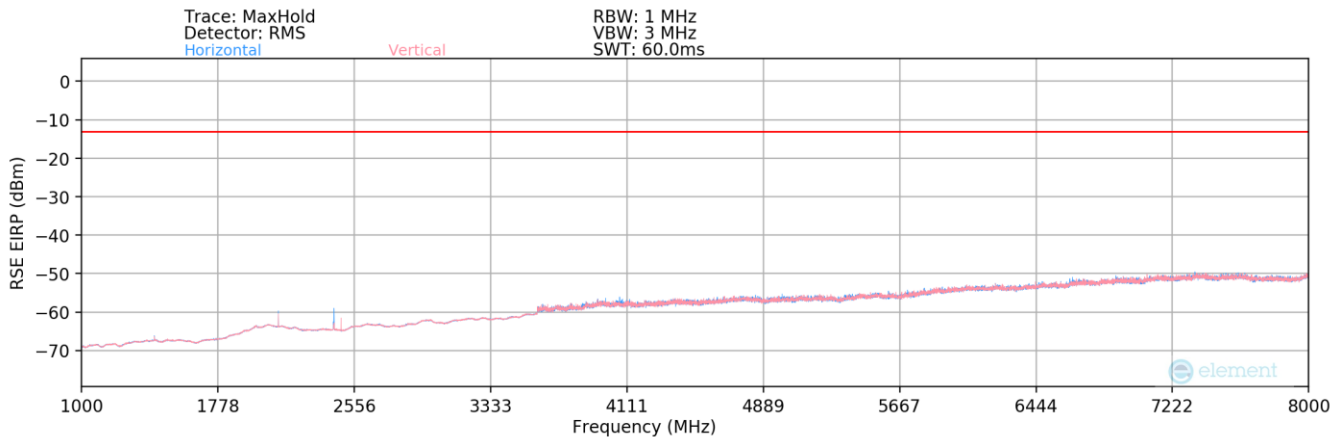
Table 7-21. Radiated Spurious Data (LTE Band 71 – High Channel) – Ant1

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 12 – Ant1



Plot 7-203. Radiated Spurious Plot (LTE Band 12) – Ant1



Plot 7-204. Radiated Spurious Plot (LTE Band 12) – Ant1

Mode:	Stand Alone
Channel:	707.5
Frequency (MHz):	1 / 25
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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]
165.00	H	-	-	-83.90	19.57	42.67	-54.73	-13.00	-41.73
234.00	H	-	-	-83.88	18.93	42.05	-55.35	-13.00	-42.35
495.00	H	-	-	-83.72	26.42	49.70	-47.71	-13.00	-34.71

Table 7-22. Radiated Spurious Data (LTE Band 12 – Below 1GHz) – Ant1

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth (MHz):	10
Frequency (MHz):	704
RB / Offset:	1 / 25
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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	323	356	-75.25	-6.80	24.95	-70.31	-13.00	-57.31
2112.00	H	164	354	-69.18	-2.83	34.99	-60.27	-13.00	-47.27
2816.00	H	-	-	-77.13	-2.91	26.96	-68.30	-13.00	-55.30
3520.00	H	-	-	-77.11	-0.45	29.44	-65.82	-13.00	-52.82
4224.00	H	-	-	-77.18	1.43	31.25	-64.01	-13.00	-51.01

Table 7-23. Radiated Spurious Data (LTE Band 12 – Low Channel) – Ant1

Bandwidth (MHz):	10
Frequency (MHz):	707.5
RB / Offset:	1 / 25
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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	165	361	-73.46	-6.86	26.68	-68.58	-13.00	-55.58
2122.50	H	157	342	-67.51	-2.97	36.52	-58.74	-13.00	-45.74
2830.00	H	-	-	-76.98	-2.85	27.17	-68.09	-13.00	-55.09
3537.50	H	-	-	-77.02	-0.17	29.81	-65.45	-13.00	-52.45
4245.00	H	-	-	-77.42	1.50	31.08	-64.18	-13.00	-51.18

Table 7-24. Radiated Spurious Data (LTE Band 12 – Mid Channel) – Ant1

Bandwidth (MHz):	10
Frequency (MHz):	711
RB / Offset:	1 / 25
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

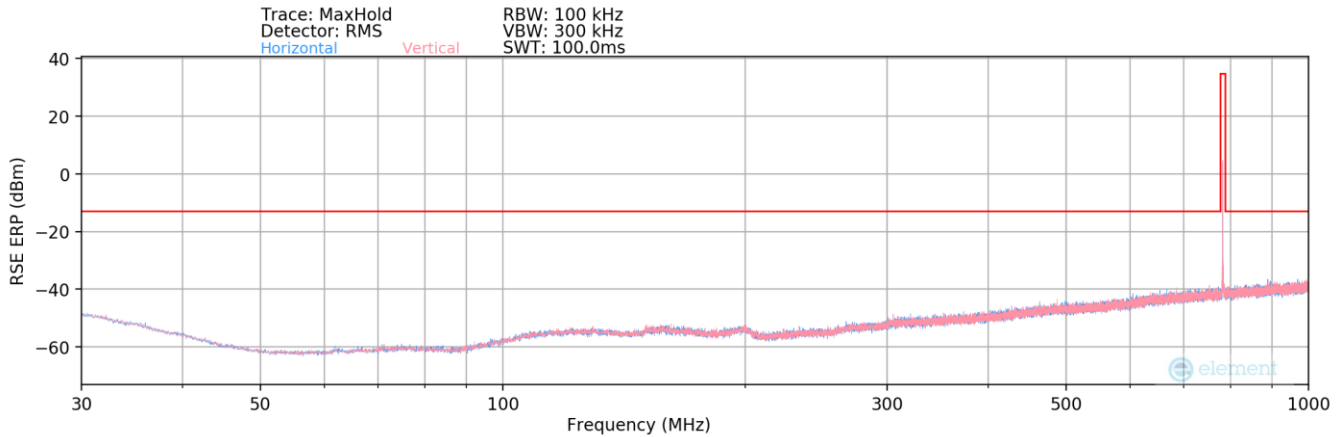
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1422.00	H	155	337	-73.09	-6.90	27.01	-68.24	-13.00	-55.24
2133.00	H	202	7	-69.68	-3.11	34.21	-61.05	-13.00	-48.05
2844.00	H	-	-	-76.82	-2.80	27.38	-67.87	-13.00	-54.87
3555.00	H	-	-	-76.99	-0.04	29.97	-65.29	-13.00	-52.29
4266.00	H	-	-	-77.74	1.56	30.82	-64.44	-13.00	-51.44

Table 7-25. Radiated Spurious Data (LTE Band 12 – High Channel) – Ant1

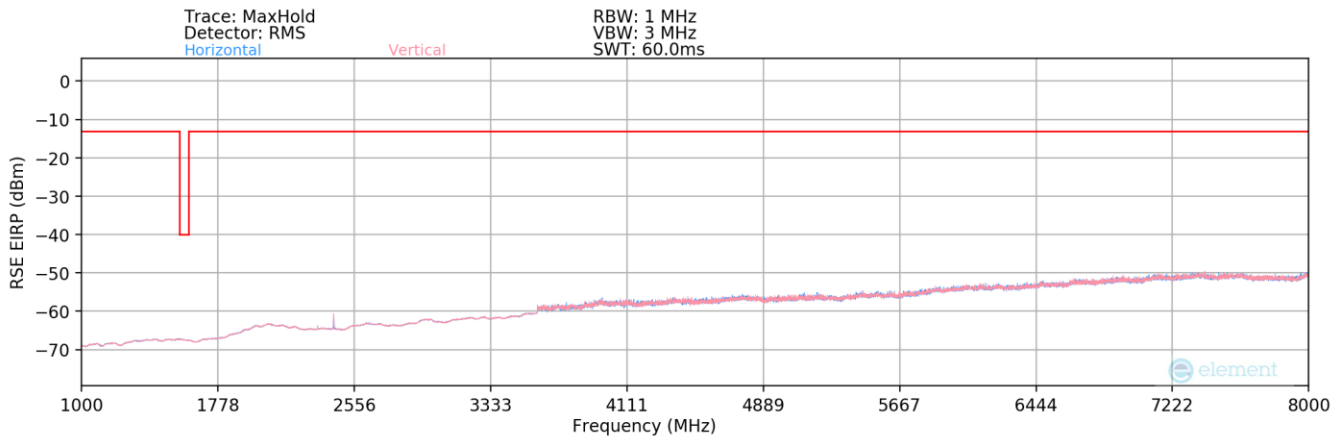
FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 13 – Ant1



Plot 7-205. Radiated Spurious Plot (LTE Band 13) – Ant1



Plot 7-206. Radiated Spurious Plot (LTE Band 13) – Ant1

Mode:	Stand Alone
Channel:	782
Frequency (MHz):	1 / 25
Detector / Trace Mode:	RMS / Average
RBW / VBW:	100kHz / 300kHz

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]
161.00	H	-	-	-83.95	19.93	42.98	-54.42	-13.00	-41.42
393.00	H	-	-	-83.90	23.36	46.46	-50.95	-13.00	-37.95
508.00	H	-	-	-83.77	25.96	49.19	-48.22	-13.00	-35.22

Table 7-26. Radiated Spurious Data (LTE Band 13 – Below 1GHz) – Ant1

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth (MHz):	10
Frequency (MHz):	782
RB / Offset:	1 / 25
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

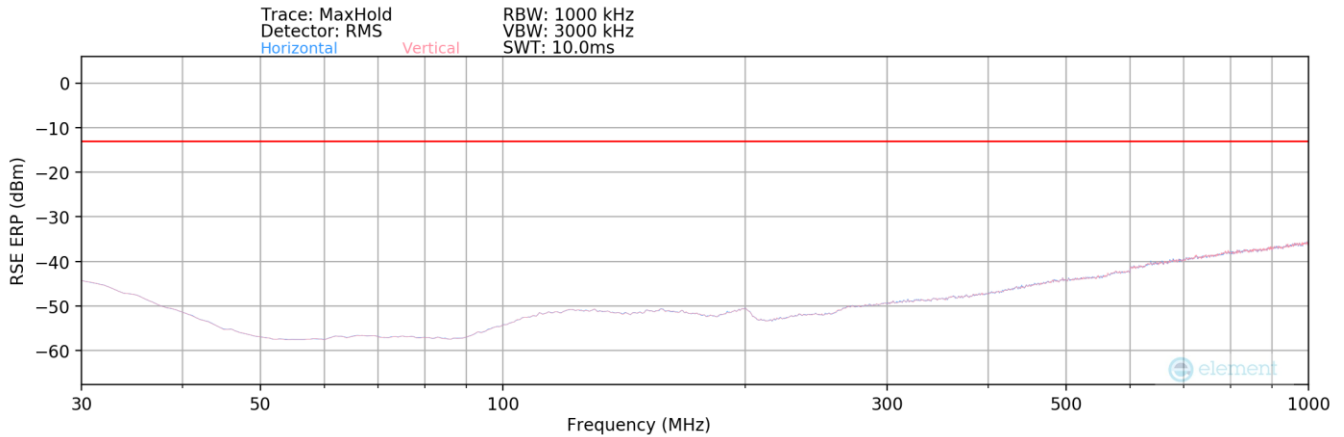
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1564.00	H	-	-	-75.97	-6.76	24.27	-70.98	-40.00	-30.98
2346.00	H	171	315	-73.75	-3.91	29.34	-65.92	-13.00	-52.92
3128.00	H	-	-	-76.75	-1.74	28.51	-66.75	-13.00	-53.75
3910.00	H	-	-	-78.21	1.28	30.07	-65.18	-13.00	-52.18
4692.00	H	-	-	-77.78	2.73	31.95	-63.31	-13.00	-50.31

Table 7-27. Radiated Spurious Data (LTE Band 13 – Mid Channel) – Ant1

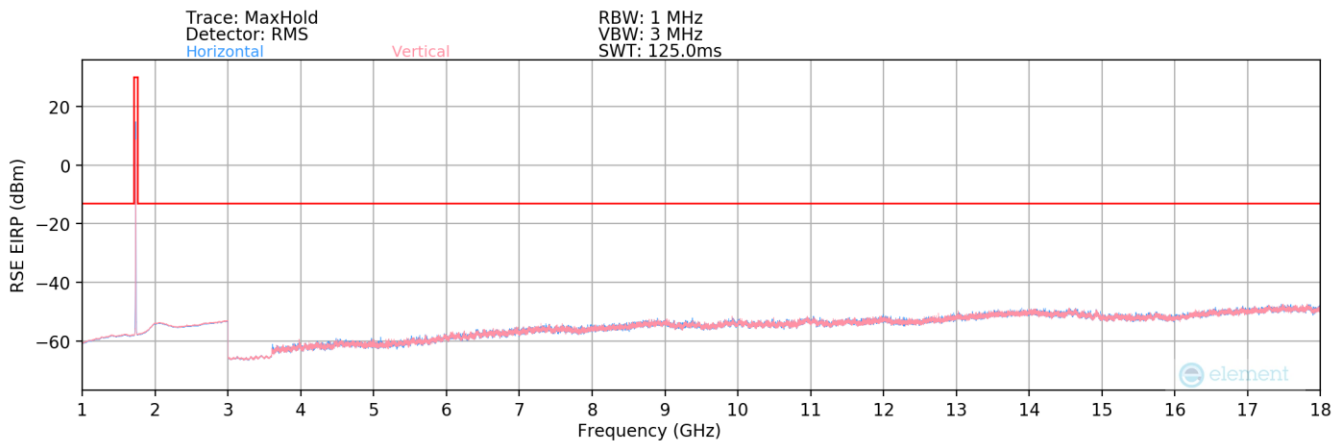
FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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WCDMA AWS – Ant1



Plot 7-207. Radiated Spurious Plot (WCDMA AWS) – Ant1



Plot 7-208. Radiated Spurious Plot (WCDMA AWS) – Ant1

Mode:	Stand Alone
Channel:	1413
Frequency (MHz):	1732.6
Detector / Trace Mode:	RMS / Average
RBW / VBW:	100kHz / 300kHz

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]
902.00	H	-	-	-89.53	31.20	48.67	-48.74	-13.00	-35.74

7-28. Radiated Spurious Data (WCDMA AWS – Below 1GHz) – Ant1

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Mode:	WCDMA RMC
Channel:	1312
Frequency (MHz):	1712.4
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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	-	-	-77.20	0.11	29.91	-65.35	-13.00	-52.35
5137.20	H	-	-	-78.61	3.16	31.55	-63.71	-13.00	-50.71
6849.60	H	-	-	-78.63	8.50	36.87	-58.39	-13.00	-45.39

7-29. Radiated Spurious Data (WCDMA AWS – Low Channel) – Ant1

Mode:	WCDMA RMC
Channel:	1413
Frequency (MHz):	1732.6
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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	-	-	-77.05	0.25	30.20	-65.06	-13.00	-52.06
5197.80	H	-	-	-78.56	3.46	31.90	-63.35	-13.00	-50.35
6930.40	H	-	-	-78.57	8.24	36.67	-58.59	-13.00	-45.59

Table 7-30. Radiated Spurious Data (WCDMA AWS – Mid Channel) – Ant1

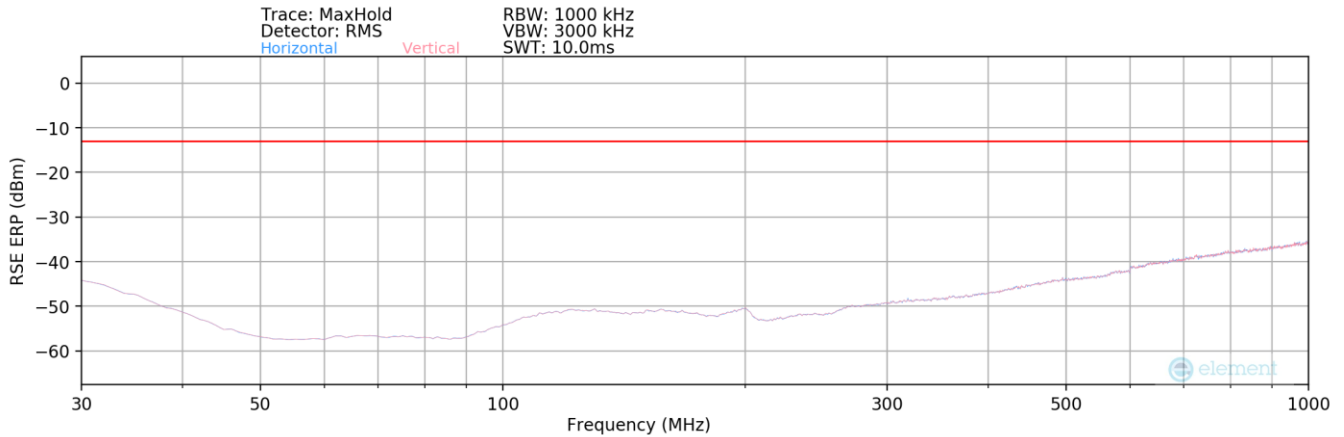
Mode:	WCDMA RMC
Channel:	1513
Frequency (MHz):	1752.6
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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	-	-	-76.85	-0.21	29.94	-65.32	-13.00	-52.32
5257.80	H	-	-	-78.42	3.35	31.93	-63.33	-13.00	-50.33
7010.40	H	-	-	-78.53	7.71	36.18	-59.07	-13.00	-46.07

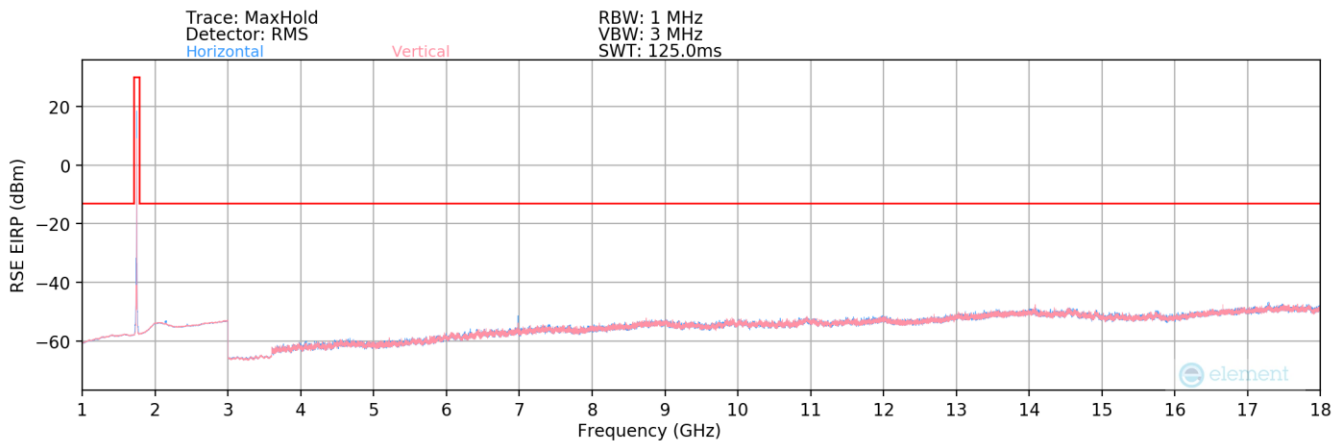
Table 7-31. Radiated Spurious Data (WCDMA AWS – High Channel) – Ant1

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 66/4 – Ant1



Plot 7-209. Radiated Spurious Plot (LTE Band 66/4) – Ant1



Plot 7-210. Radiated Spurious Plot (LTE Band 66/4) – Ant1

Mode:	Stand Alone
Channel:	1745
Frequency (MHz):	1 / 50
Detector / Trace Mode:	RMS / Average
RBW / VBW:	100kHz / 300kHz

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]
165.00	H	-	-	-83.88	19.57	42.69	-54.71	-13.00	-41.71
261.00	H	-	-	-83.84	19.75	42.91	-54.50	-13.00	-41.50
496.00	H	-	-	-83.79	25.71	48.92	-48.49	-13.00	-35.49

Table 7-32. Radiated Spurious Data (LTE Band 66/4 – Below 1GHz) – Ant1

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth (MHz):	20
Frequency (MHz):	1720
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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	-	-	-77.00	0.26	30.26	-64.99	-13.00	-51.99
5160.00	H	-	-	-78.04	3.27	32.23	-63.03	-13.00	-50.03
6880.00	H	159	35	-68.04	8.28	47.24	-48.02	-13.00	-35.02
8600.00	H	-	-	-79.98	10.78	37.80	-57.46	-13.00	-44.46
10320.00	H	-	-	-79.85	11.26	38.41	-56.85	-13.00	-43.85
12040.00	H	-	-	-80.37	13.38	40.01	-55.24	-13.00	-42.24

Table 7-33. Radiated Spurious Data (LTE Band 66/4 – Low Channel) – Ant1

Bandwidth (MHz):	20
Frequency (MHz):	1745
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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	-	-	-76.99	-0.08	29.93	-65.32	-13.00	-52.32
5235.00	H	-	-	-78.26	3.24	31.98	-63.28	-13.00	-50.28
6980.00	H	254	67	-72.29	7.55	42.26	-52.99	-13.00	-39.99
8725.00	H	-	-	-79.23	10.82	38.59	-56.67	-13.00	-43.67
10470.00	H	-	-	-80.27	12.23	38.96	-56.29	-13.00	-43.29
12215.00	H	-	-	-80.06	12.81	39.75	-55.51	-13.00	-42.51

Table 7-34. Radiated Spurious Data (LTE Band 66/4 – Mid Channel) – Ant1

Bandwidth (MHz):	20
Frequency (MHz):	1770
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

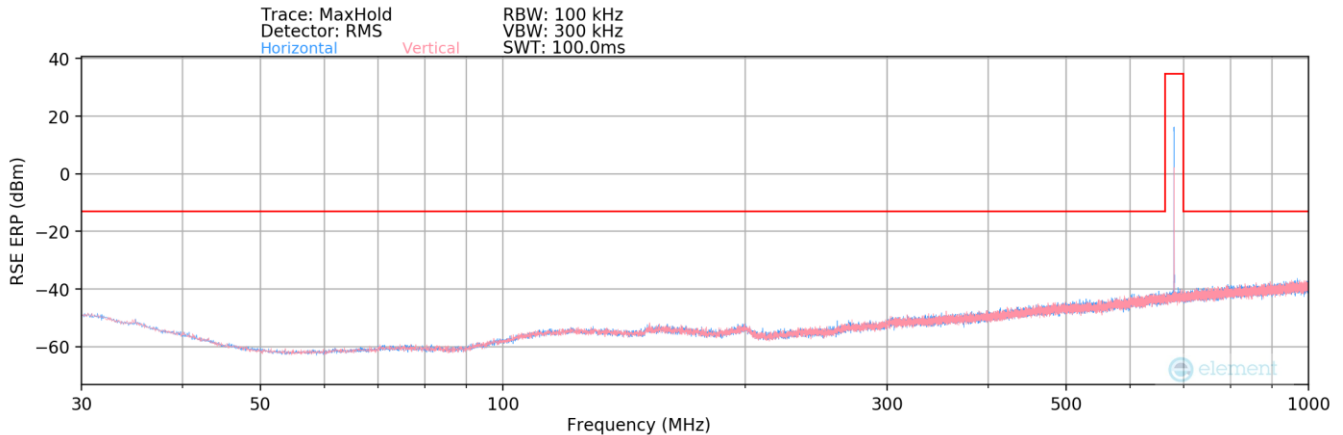
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3540.00	H	-	-	-77.55	-0.26	29.19	-66.07	-13.00	-53.07
5310.00	H	-	-	-78.22	3.07	31.85	-63.41	-13.00	-50.41
7080.00	H	152	61	-69.03	8.25	46.22	-49.04	-13.00	-36.04
8850.00	H	-	-	-78.83	10.85	39.02	-56.24	-13.00	-43.24
10620.00	H	-	-	-80.63	12.12	38.49	-56.77	-13.00	-43.77
12390.00	H	-	-	-80.31	12.82	39.51	-55.74	-13.00	-42.74

Table 7-35. Radiated Spurious Data (LTE Band 66/4 – High Channel) – Ant1

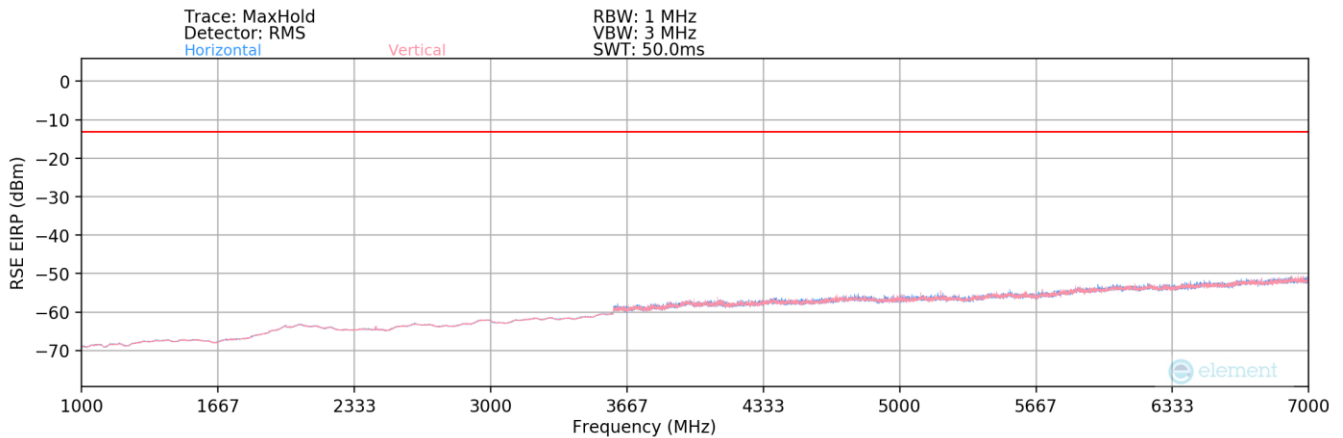
FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n71 – Ant1



Plot 7-211. Radiated Spurious Plot (NR Band n71) – Ant1



Plot 7-212. Radiated Spurious Plot (NR Band n71) – Ant1

Mode:	Stand Alone
Channel:	680.5
Frequency (MHz):	1 / 53
Detector / Trace Mode:	RMS / Average
RBW / VBW:	100kHz / 300kHz

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]
123.00	H	-	-	-83.94	20.42	43.48	-53.93	-13.00	-40.93
232.98	H	-	-	-83.83	18.88	42.05	-55.36	-13.00	-42.36
489.42	H	-	-	-83.74	25.54	48.80	-48.61	-13.00	-35.61

Table 7-36. Radiated Spurious Data (NR Band n71 – Below 1GHz) – Ant1

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth (MHz):	20
Frequency (MHz):	673
RB / Offset:	1 / 53
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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]
1346.00	H	183	36	-75.48	-7.00	24.52	-70.74	-13.00	-57.74
2019.00	H	-	-	-76.13	-3.11	27.76	-67.49	-13.00	-54.49
2692.00	H	-	-	-76.39	-2.69	27.92	-67.34	-13.00	-54.34
3365.00	H	-	-	-76.77	-1.18	29.05	-66.21	-13.00	-53.21

Table 7-37. Radiated Spurious Data (NR Band n71 – Low Channel) – Ant1

Bandwidth (MHz):	20
Frequency (MHz):	680.5
RB / Offset:	1 / 53
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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]
1361.00	H	170	358	-74.58	-7.06	25.36	-69.89	-13.00	-56.89
2041.50	H	127	18	-75.24	-2.87	28.89	-66.36	-13.00	-53.36
2722.00	H	-	-	-76.55	-2.94	27.51	-67.75	-13.00	-54.75
3402.50	H	-	-	-76.88	-1.21	28.91	-66.35	-13.00	-53.35
4083.00	H	-	-	-78.00	1.54	30.54	-64.72	-13.00	-51.72

Table 7-38. Radiated Spurious Data (NR Band n71 – Mid Channel) – Ant1

Bandwidth (MHz):	20
Frequency (MHz):	688
RB / Offset:	1 / 53
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

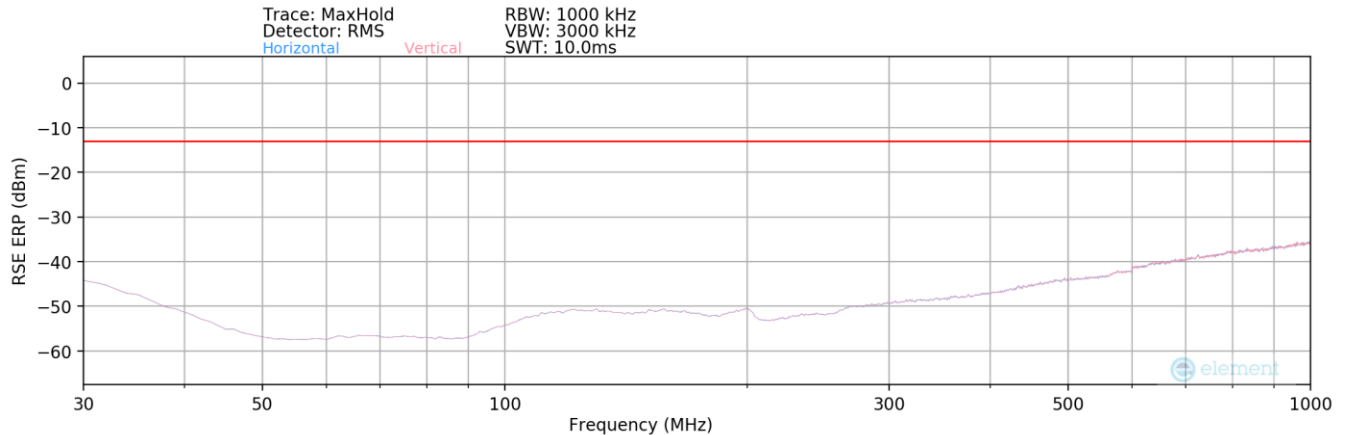
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1376.00	H	153	29	-75.26	-6.85	24.89	-70.37	-13.00	-57.37
2064.00	H	130	3	-74.64	-2.76	29.60	-65.65	-13.00	-52.65
2752.00	H	-	-	-76.48	-3.04	27.48	-67.77	-13.00	-54.77
3440.00	H	-	-	-76.69	-1.02	29.29	-65.96	-13.00	-52.96
4128.00	H	-	-	-77.40	1.54	31.14	-64.12	-13.00	-51.12

Table 7-39. Radiated Spurious Data (NR Band n71 – High Channel) – Ant1

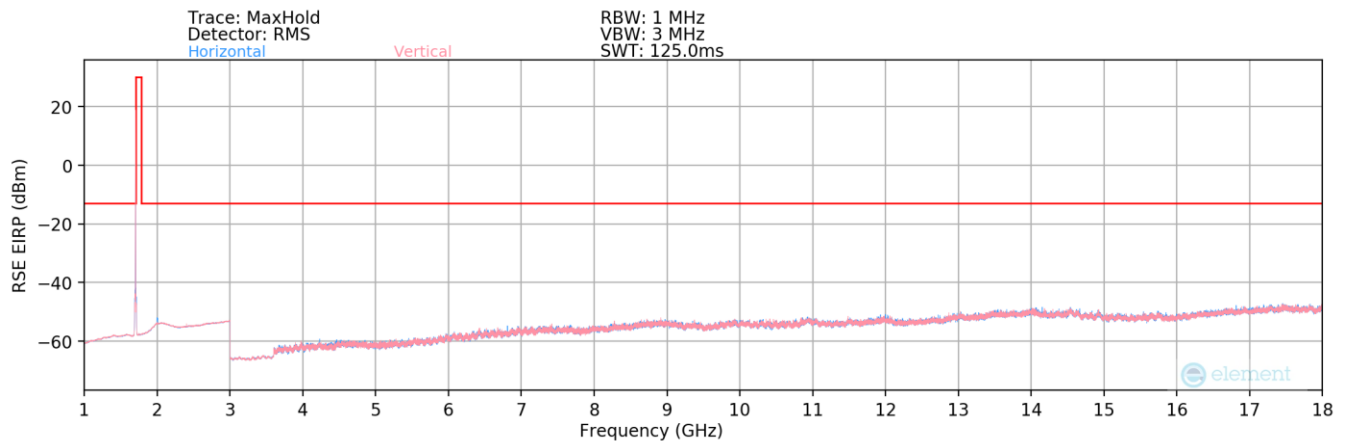
FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2309070100-03.A3L	Test Dates: 9/8/2023 - 11/2/2023	EUT Type: Portable Handset	Page 162 of 179



NR Band n70 – Ant1



Plot 7-213. Radiated Spurious Plot (NR Band n70) – Ant1



Plot 7-214. Radiated Spurious GHz Plot (NR Band n70) – Ant1

Mode:	Stand Alone
Channel:	340500
Frequency (MHz):	1702.5
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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]
101.47	H	-	-	-83.97	17.52	40.55	-56.85	-13.00	-43.85
192.43	H	-	-	-83.78	18.99	42.21	-55.20	-13.00	-42.20
510.70	H	-	-	-83.76	25.89	49.13	-48.28	-13.00	-35.28

Table 7-40. Radiated Spurious Data (NR Band n70 – Below 1GHz) – Ant1

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth (MHz):	15
Frequency (MHz):	1702.5
RB / Offset:	1 / 39
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

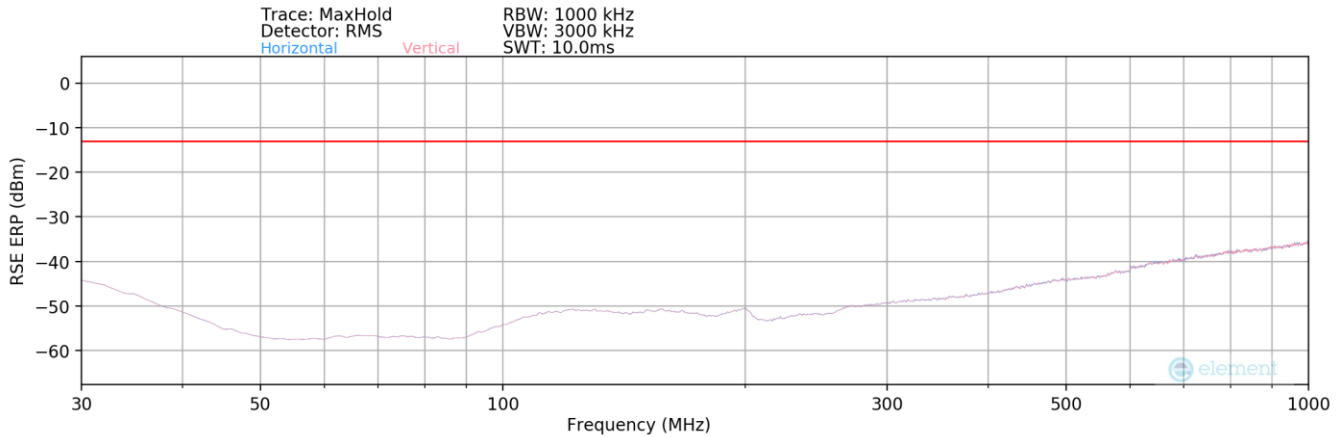
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3405.00	H	-	-	-76.96	-0.10	29.94	-65.32	-13.00	-52.32
5107.50	H	-	-	-78.42	3.34	31.92	-63.34	-13.00	-50.34
6810.00	H	273	38	-74.58	8.45	40.87	-54.39	-13.00	-41.39
8512.50	H	-	-	-79.76	10.24	37.48	-57.77	-13.00	-44.77
10215.00	H	-	-	-79.77	11.56	38.79	-56.46	-13.00	-43.46
11917.50	H	-	-	-80.16	12.91	39.75	-55.51	-13.00	-42.51

Table 7-41. Radiated Spurious Data (NR Band n70 – Mid Channel) – Ant1

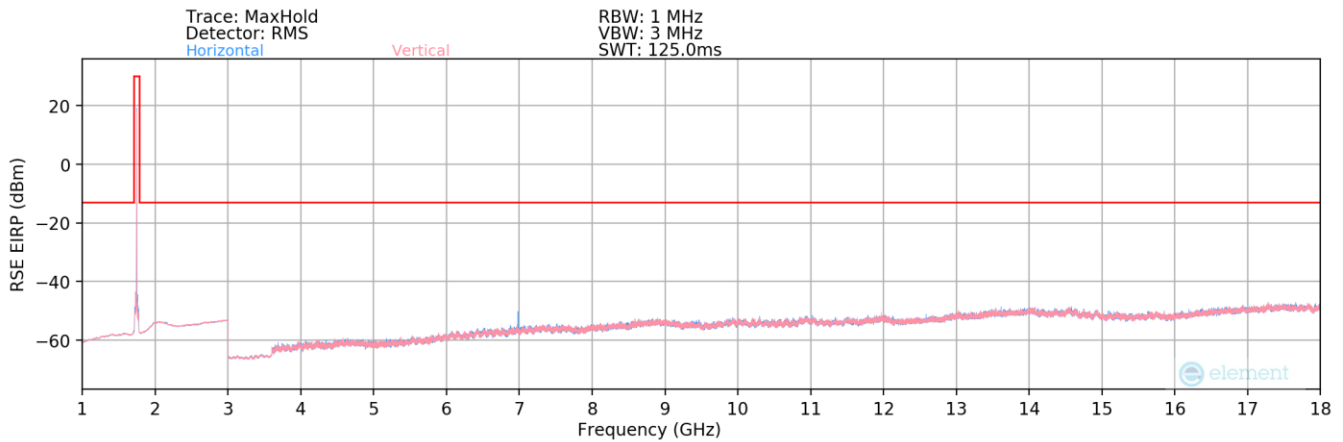
FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n66 – Ant1



Plot 7-215. Radiated Spurious Plot (NR Band n66) – Ant1



Plot 7-216. Radiated Spurious Plot (NR Band n66) – Ant1

Mode:	Stand Alone
Channel:	1745
Frequency (MHz):	1 / 108
Detector / Trace Mode:	RMS / Average
RBW / VBW:	100kHz / 300kHz

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]
191.82	H	-	-	-83.75	18.89	42.14	-55.27	-13.00	-42.27
483.10	H	-	-	-83.80	25.88	49.08	-48.33	-13.00	-35.33
587.33	H	-	-	-83.82	27.05	50.23	-47.18	-13.00	-34.18

Table 7-42. Radiated Spurious Data (NR Band n66 – Below 1GHz) – Ant1

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth (MHz):	40
Frequency (MHz):	1730
RB / Offset:	1 / 108
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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]
3460.00	H	-	-	-77.05	0.28	30.23	-65.03	-13.00	-52.03
5190.00	H	-	-	-78.52	3.49	31.97	-63.28	-13.00	-50.28
6920.00	H	154	32	-74.53	8.36	40.83	-54.43	-13.00	-41.43
8650.00	H	-	-	-79.83	10.99	38.16	-57.10	-13.00	-44.10
10380.00	H	-	-	-80.13	11.75	38.62	-56.64	-13.00	-43.64
12110.00	H	-	-	-80.30	12.97	39.67	-55.59	-13.00	-42.59

Table 7-43. Radiated Spurious Data (NR Band n66 – Low Channel) – Ant1

Bandwidth (MHz):	40
Frequency (MHz):	1745
RB / Offset:	1 / 108
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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	-	-	-76.93	-0.08	29.99	-65.26	-13.00	-52.26
5235.00	H	-	-	-78.49	3.24	31.75	-63.51	-13.00	-50.51
6980.00	H	132	76	-73.80	7.55	40.75	-54.50	-13.00	-41.50
8725.00	H	-	-	-79.21	10.82	38.61	-56.65	-13.00	-43.65
10470.00	H	-	-	-80.26	12.23	38.97	-56.28	-13.00	-43.28
12215.00	H	-	-	-80.04	12.81	39.77	-55.49	-13.00	-42.49

Table 7-44. Radiated Spurious Data (NR Band n66 – Mid Channel) – Ant1

Bandwidth (MHz):	40
Frequency (MHz):	1760
RB / Offset:	1 / 108
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

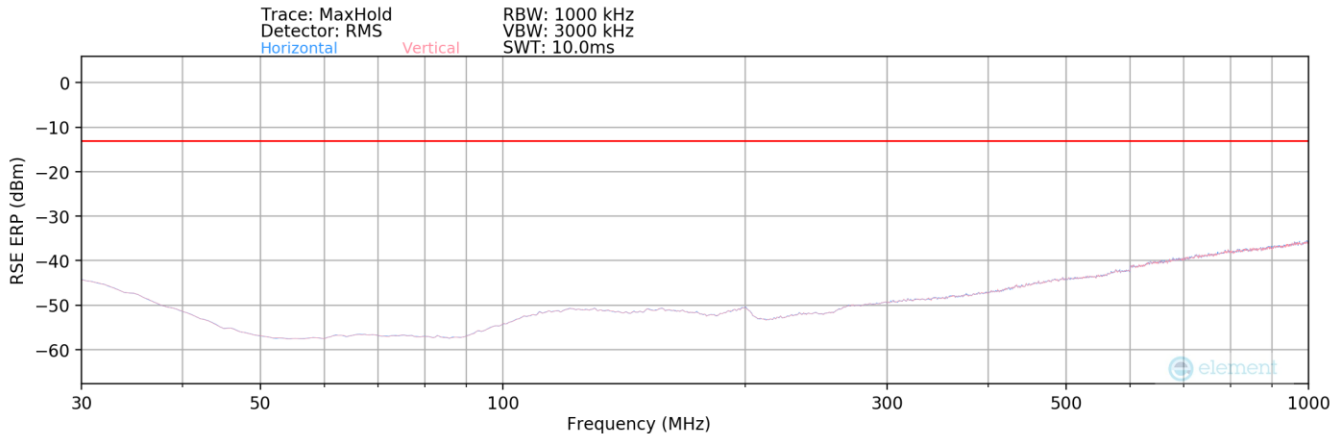
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3520.00	H	-	-	-77.68	-0.16	29.16	-66.09	-13.00	-53.09
5280.00	H	-	-	-78.29	3.34	32.05	-63.21	-13.00	-50.21
7040.00	H	142	73	-71.28	7.70	43.42	-51.84	-13.00	-38.84
8800.00	H	-	-	-78.99	10.78	38.79	-56.47	-13.00	-43.47
10560.00	H	-	-	-80.35	12.23	38.88	-56.38	-13.00	-43.38
12320.00	H	-	-	-80.28	12.74	39.46	-55.80	-13.00	-42.80

Table 7-45. Radiated Spurious Data (NR Band n66 – High Channel) – Ant1

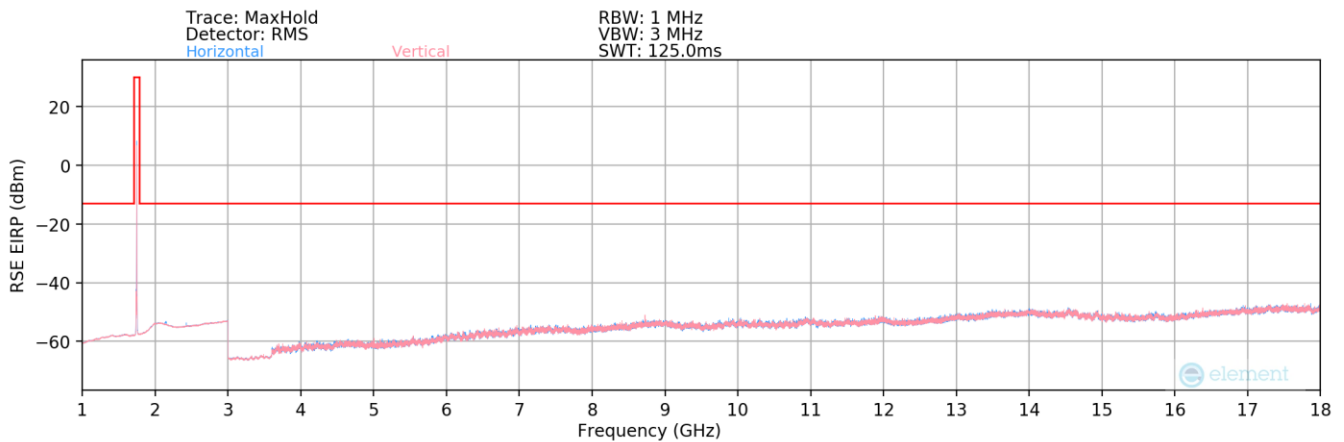
FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 66/4 – Ant2



Plot 7-217. Radiated Spurious Plot (LTE Band 66/4) – Ant2



Plot 7-218. Radiated Spurious Plot (LTE Band 66/4) – Ant2

Mode:	Stand Alone
Channel:	1745
Frequency (MHz):	1 / 50
Detector / Trace Mode:	RMS / Average
RBW / VBW:	100kHz / 300kHz

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]
725.00	H	-	-	-89.52	29.56	47.04	-50.37	-13.00	-37.37

Table 7-46. Radiated Spurious Data (LTE Band 66/4 – Below 1GHz) – Ant2

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth (MHz):	20
Frequency (MHz):	1720
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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	132	189	-69.28	0.26	37.98	-57.27	-13.00	-44.27
5160.00	H	122	18	-77.04	3.27	33.23	-62.03	-13.00	-49.03
6880.00	H	261	348	-78.77	8.28	36.51	-58.75	-13.00	-45.75
8600.00	H	-	-	-81.22	10.78	36.56	-58.70	-13.00	-45.70
10320.00	H	122	175	-79.42	11.26	38.84	-56.42	-13.00	-43.42
12040.00	H	-	-	-81.87	13.38	38.51	-56.74	-13.00	-43.74

Table 7-47. Radiated Spurious Data (LTE Band 66/4 – Low Channel) – Ant2

Bandwidth (MHz):	20
Frequency (MHz):	1745
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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	125	194	-77.72	-0.08	29.20	-66.05	-13.00	-53.05
5235.00	H	-	-	-79.06	3.24	31.18	-64.08	-13.00	-51.08
6980.00	H	-	-	-78.91	7.55	35.64	-59.61	-13.00	-46.61
8725.00	H	343	306	-78.95	10.82	38.87	-56.39	-13.00	-43.39
10470.00	H	-	-	-81.72	12.23	37.51	-57.74	-13.00	-44.74

Table 7-48. Radiated Spurious Data (LTE Band 66/4 – Mid Channel) – Ant2

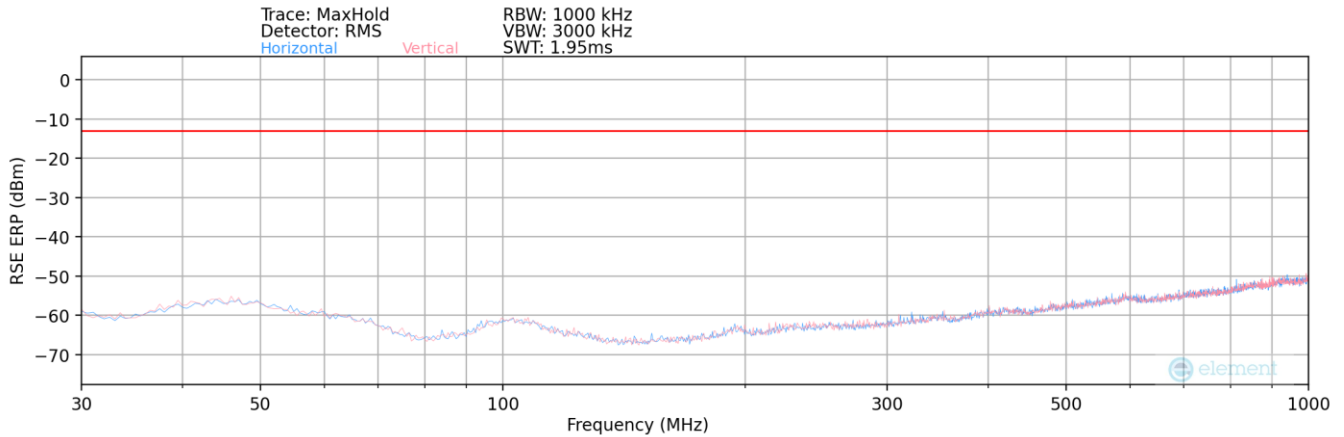
Bandwidth (MHz):	20
Frequency (MHz):	1770
RB / Offset:	1 / 50
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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	137	189	-70.82	-0.26	35.92	-59.34	-13.00	-46.34
5310.00	H	121	7	-78.27	3.07	31.80	-63.46	-13.00	-50.46
7080.00	H	-	-	-79.03	8.25	36.22	-59.04	-13.00	-46.04
8850.00	H	-	-	-79.80	10.85	38.05	-57.21	-13.00	-44.21
10620.00	H	-	-	-82.19	12.12	36.93	-58.33	-13.00	-45.33

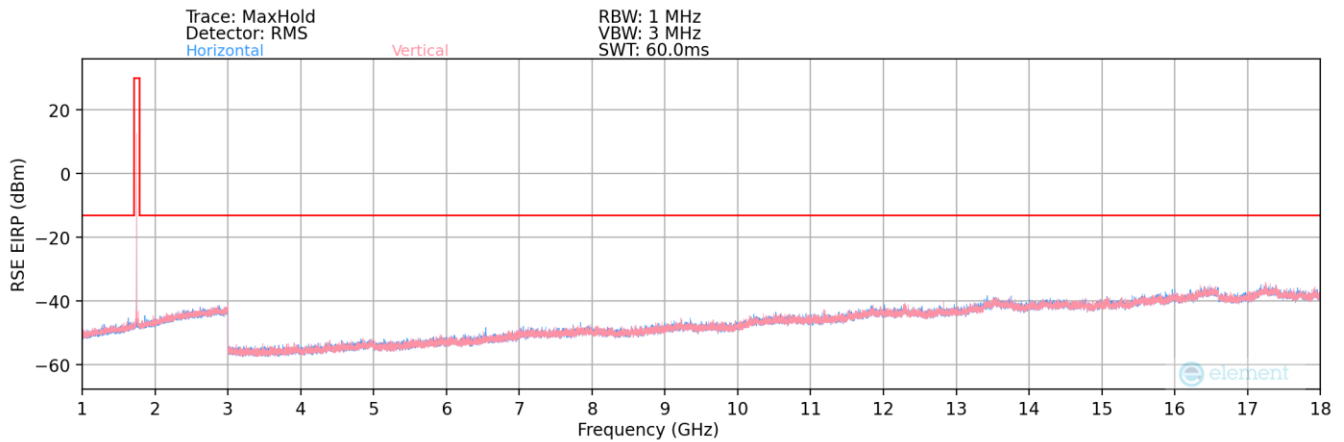
Table 7-49. Radiated Spurious Data (LTE Band 66/4 – High Channel) – Ant2

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n66 – Ant2



Plot 7-219. Radiated Spurious Plot (NR Band n66) – Ant2



Plot 7-220. Radiated Spurious Plot (NR Band n66) – Ant2

Mode:	Stand Alone
Bandwidth (MHz):	40
Frequency (MHz):	1745
Detector / Trace Mode:	RMS / Average
RBW / VBW:	100kHz / 300kHz

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]
825.00	H	-	-	-77.06	0.83	30.77	-66.64	-13.00	-53.64

Table 7-50. Radiated Spurious Data (NR Band n66 – Below 1GHz) – Ant2

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth (MHz):	40
Frequency (MHz):	1730
RB / Offset:	1 / 108
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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]
3460.00	H	124	226	-73.67	6.82	40.15	-55.11	-13.00	-42.11
5190.00	H	-	-	-81.22	10.27	36.05	-59.21	-13.00	-46.21
6920.00	H	-	-	-81.80	13.50	38.70	-56.56	-13.00	-43.56
8650.00	H	-	-	-83.48	16.96	40.48	-54.78	-13.00	-41.78

Table 7-51. Radiated Spurious Data (NR Band n66 – Low Channel) – Ant2

Bandwidth (MHz):	40
Frequency (MHz):	1745
RB / Offset:	1 / 108
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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	-	-	-79.70	6.95	34.25	-61.01	-13.00	-48.01
5235.00	H	-	-	-81.20	10.00	35.80	-59.46	-13.00	-46.46
6980.00	H	-	-	-82.01	13.74	38.73	-56.53	-13.00	-43.53

Table 7-52. Radiated Spurious Data (NR Band n66 – Mid Channel) – Ant2

Bandwidth (MHz):	40
Frequency (MHz):	1760
RB / Offset:	1 / 108
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

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]
3520.00	H	157	226	-74.77	6.93	39.16	-56.10	-13.00	-43.10
5280.00	H	-	-	-81.00	10.15	36.15	-59.11	-13.00	-46.11
7040.00	H	-	-	-82.05	14.78	39.73	-55.52	-13.00	-42.52
8800.00	H	-	-	-83.01	16.70	40.69	-54.57	-13.00	-41.57

Table 7-53. Radiated Spurious Data (NR Band n66 – High Channel) – Ant2

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7.9 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.

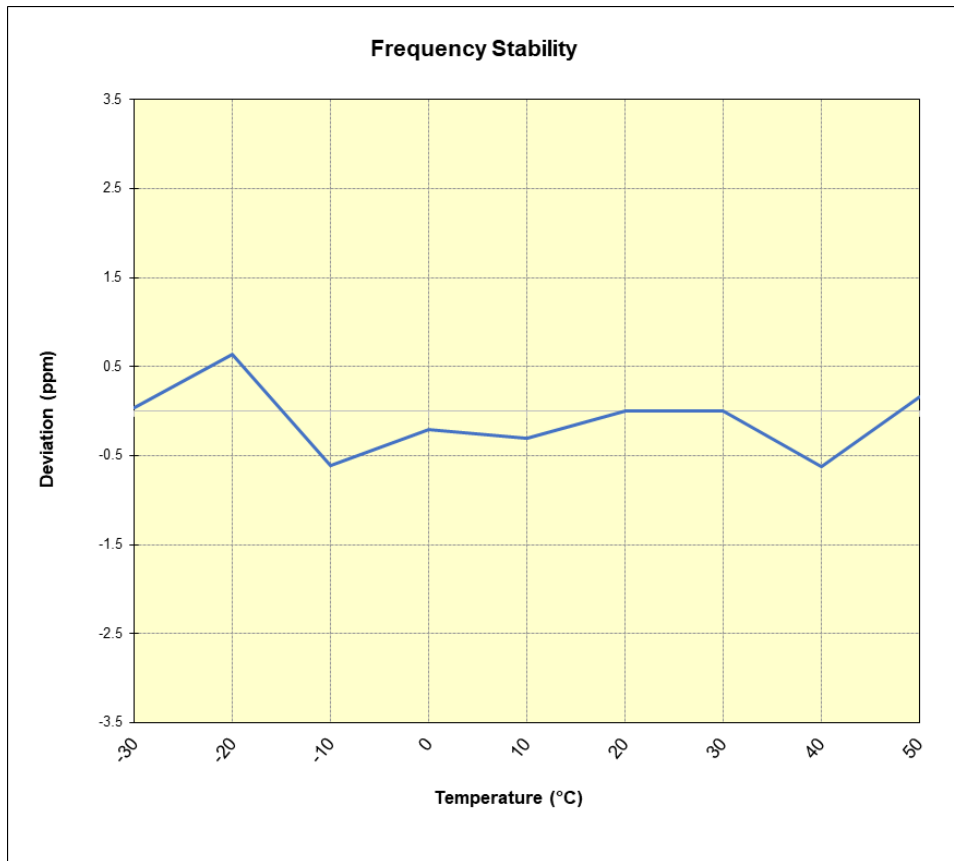
Test Notes

None

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LTE Band 71					
		Operating Frequency (Hz):		680,500,000	
		Ref. Voltage (VDC):		4.358	
		Deviation Limit:		± 0.00025% or 2.5 ppm	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.358	- 30	680,499,900	29	0.0000043
		- 20	680,500,310	439	0.0000645
		- 10	680,499,456	-415	-0.0000610
		0	680,499,733	-137	-0.0000202
		+ 10	680,499,661	-210	-0.0000308
		+ 20 (Ref)	680,499,871	0	0.0000000
		+ 30	680,499,870	-1	-0.0000001
		+ 40	680,499,450	-421	-0.0000619
Battery Endpoint	3.372	+ 20	680,498,828	-1,043	-0.0001533

Table 7-54. LTE Band 71 Frequency Stability Data



Plot 7-221. LTE Band 71 Frequency Stability Chart

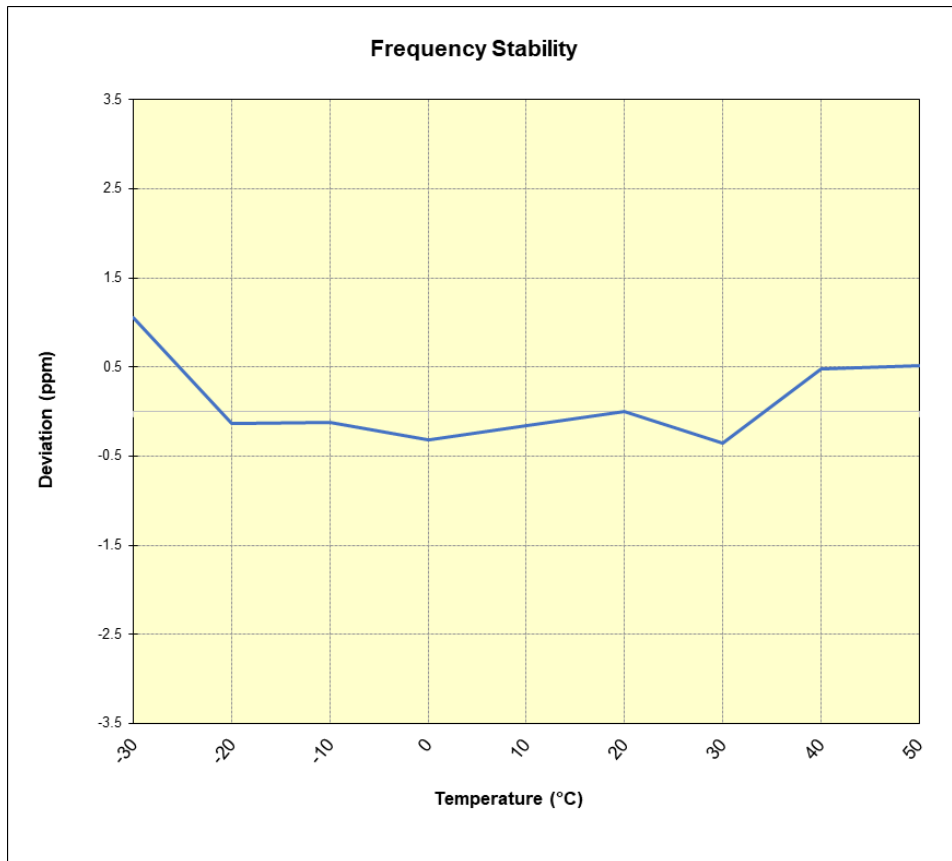
FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 12

Operating Frequency (Hz):	707,500,000
Ref. Voltage (VDC):	4.358
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.358	- 30	707,499,372	749	0.0001058
		- 20	707,498,532	-91	-0.0000129
		- 10	707,498,537	-86	-0.0000122
		0	707,498,401	-222	-0.0000314
		+ 10	707,498,514	-109	-0.0000155
		+ 20 (Ref)	707,498,623	0	0.0000000
		+ 30	707,498,378	-245	-0.0000347
		+ 40	707,498,966	342	0.0000483
		+ 50	707,498,993	369	0.0000522
Battery Endpoint	3.372	+ 20	707,499,064	440	0.0000622

Table 7-55. LTE Band 12 Frequency Stability Data



Plot 7-222. LTE Band 12 Frequency Stability Chart

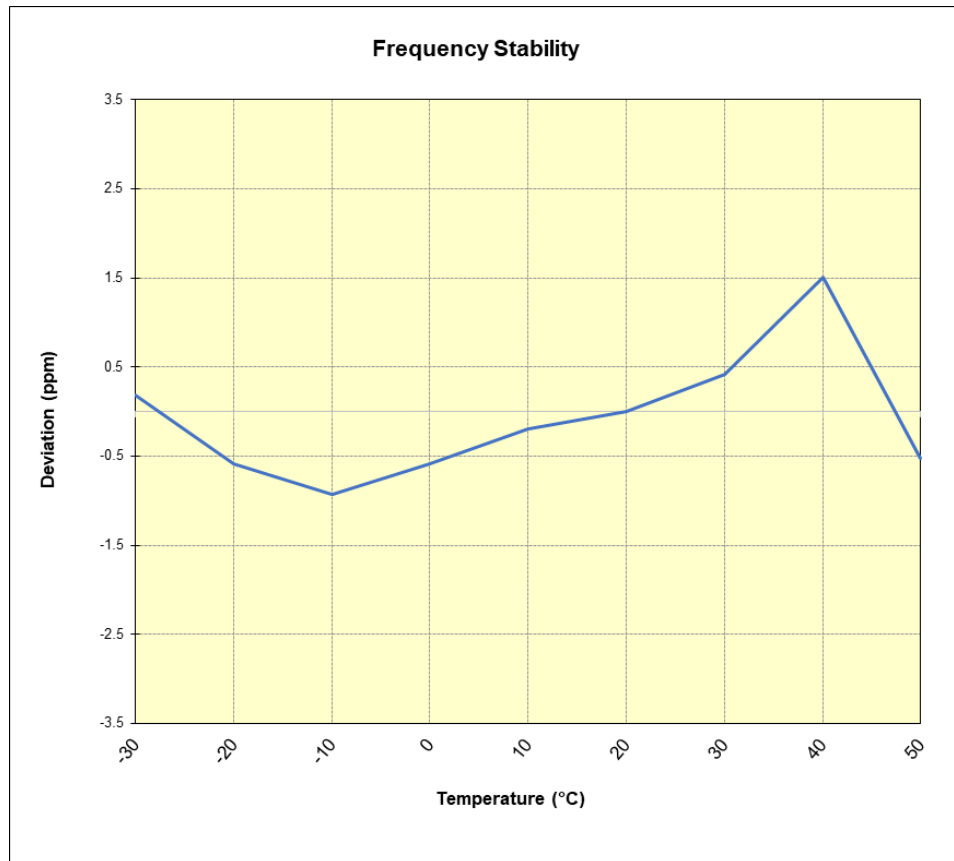
FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 13

Operating Frequency (Hz):	782,000,000
Ref. Voltage (VDC):	4.358
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.358	- 30	781,999,863	142	0.0000182
		- 20	781,999,268	-453	-0.0000579
		- 10	781,998,997	-724	-0.0000926
		0	781,999,263	-458	-0.0000586
		+ 10	781,999,568	-153	-0.0000195
		+ 20 (Ref)	781,999,721	0	0.0000000
		+ 30	782,000,045	324	0.0000415
		+ 40	782,000,906	1,185	0.0001515
		+ 50	781,999,314	-407	-0.0000520
Battery Endpoint	3.372	+ 20	781,999,612	-109	-0.0000139

Table 7-56. LTE Band 13 Frequency Stability Data



Plot 7-223. LTE Band 13 Frequency Stability Chart

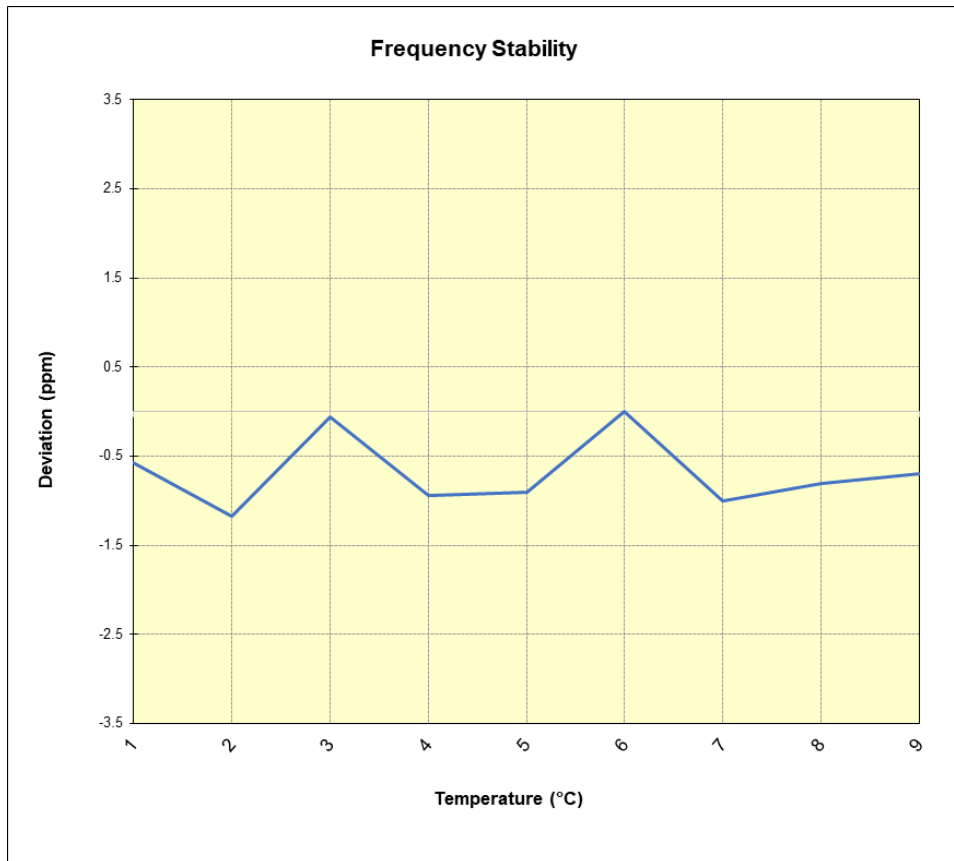
FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 66

Operating Frequency (Hz):	1,745,000,000
Ref. Voltage (VDC):	4.358
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.358	- 30	1,744,999,849	-1,008	-0.0000578
		- 20	1,744,998,810	-2,047	-0.0001173
		- 10	1,745,000,757	-100	-0.0000057
		0	1,744,999,218	-1,639	-0.0000939
		+ 10	1,744,999,289	-1,568	-0.0000899
		+ 20 (Ref)	1,745,000,857	0	0.0000000
		+ 30	1,744,999,119	-1,738	-0.0000996
		+ 40	1,744,999,463	-1,394	-0.0000799
		+ 50	1,744,999,636	-1,221	-0.0000700
Battery Endpoint	3.372	+ 20	1,744,999,172	-1,685	-0.0000966

Table 7-57. LTE Band 66/4 Frequency Stability Data

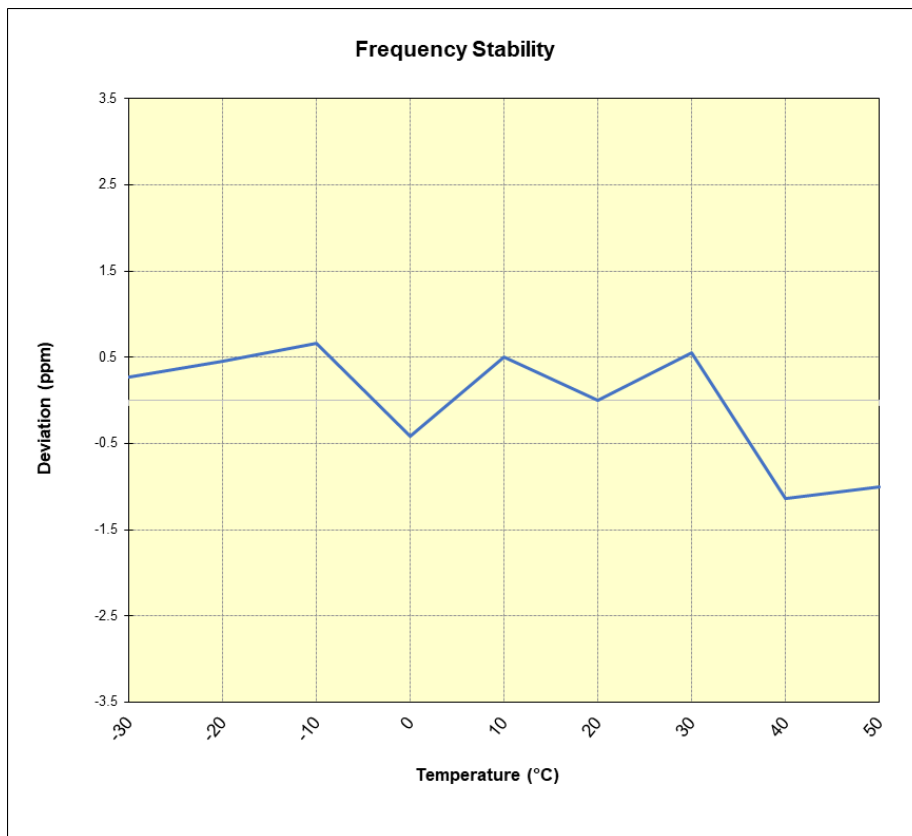


Plot 7-224. LTE Band 66/4 Frequency Stability Chart

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NR Band n71					
		Operating Frequency (Hz):		680,500,000	
		Ref. Voltage (VDC):		4.358	
		Deviation Limit:		± 0.00025% or 2.5 ppm	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.358	- 30	680,492,670	186	0.0000273
		- 20	680,492,794	309	0.0000455
		- 10	680,492,937	453	0.0000665
		0	680,492,201	-284	-0.0000417
		+ 10	680,492,832	347	0.0000510
		+ 20 (Ref)	680,492,485	0	0.0000000
		+ 30	680,492,861	377	0.0000553
		+ 40	680,491,715	-770	-0.0001131
Battery Endpoint	3.372	+ 20	680,492,580	95	0.0000140

Table 7-58. NR Band n71 Frequency Stability Data

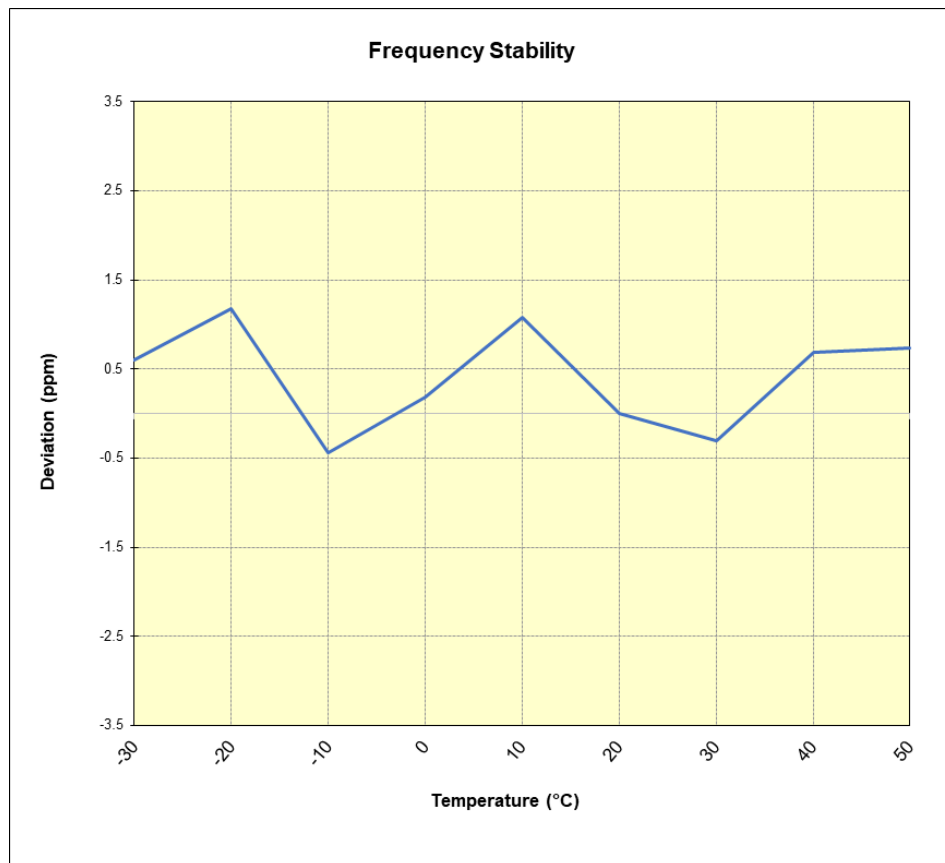


Plot 7-225. NR Band n71 Frequency Stability Chart

FCC ID: A3LSMA156U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n70					
Operating Frequency (Hz):		1,702,500,000			
Ref. Voltage (VDC):		4.358			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.358	- 30	1,702,492,498	1,031	0.0000605
		- 20	1,702,493,472	2,004	0.0001177
		- 10	1,702,490,732	-736	-0.0000432
		0	1,702,491,795	327	0.0000192
		+ 10	1,702,493,314	1,846	0.0001084
		+ 20 (Ref)	1,702,491,468	0	0.0000000
		+ 30	1,702,490,957	-511	-0.0000300
		+ 40	1,702,492,635	1,167	0.0000686
		+ 50	1,702,492,716	1,248	0.0000733
Battery Endpoint	3.372	+ 20	1,702,491,114	-354	-0.0000208

Table 7-59. NR Band n70 Frequency Stability Data

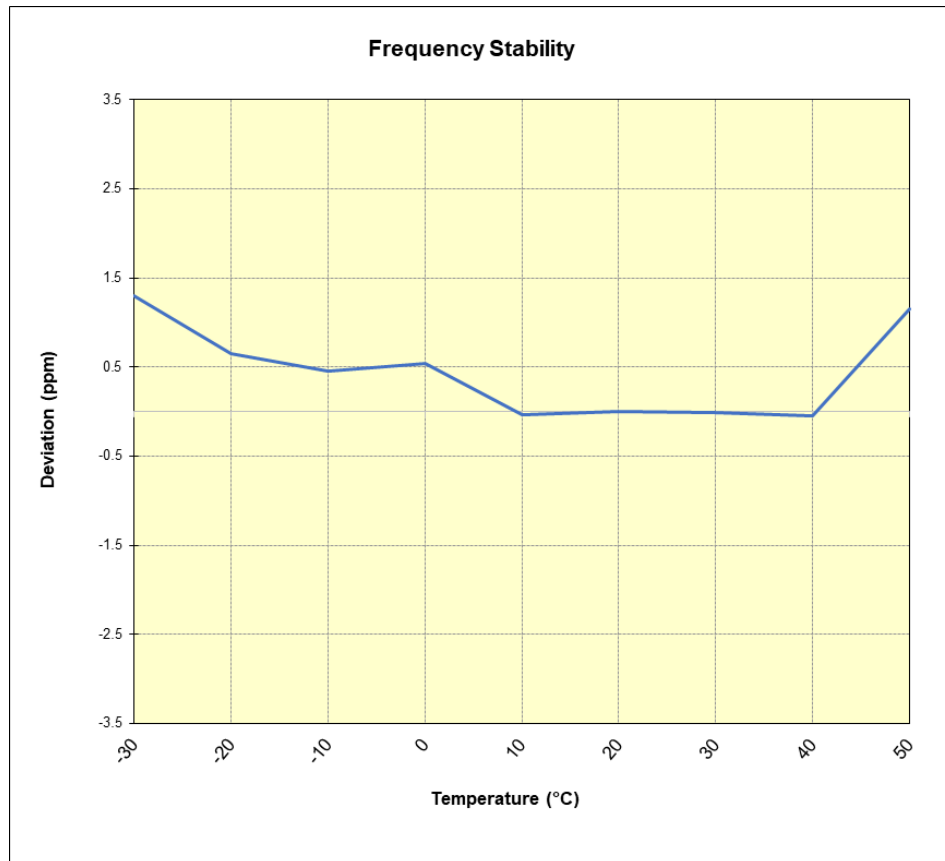


Plot 7-226. NR Band n70 Frequency Stability Chart

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NR Band n66					
Operating Frequency (Hz):		1,745,000,000			
Ref. Voltage (VDC):		4.358			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.358	- 30	1,744,993,258	2,271	0.0001301
		- 20	1,744,992,132	1,145	0.0000656
		- 10	1,744,991,780	793	0.0000455
		0	1,744,991,927	940	0.0000539
		+ 10	1,744,990,920	-67	-0.0000038
		+ 20 (Ref)	1,744,990,987	0	0.0000000
		+ 30	1,744,990,977	-10	-0.0000006
		+ 40	1,744,990,899	-88	-0.0000050
		+ 50	1,744,993,001	2,014	0.0001154
Battery Endpoint	3.372	+ 20	1,744,992,590	1,603	0.0000919

Table 7-60. NR Band n66 Frequency Stability Data



Plot 7-227. 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: A3LSMA156U** complies with all the requirements of Part 27 of the FCC rules.

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