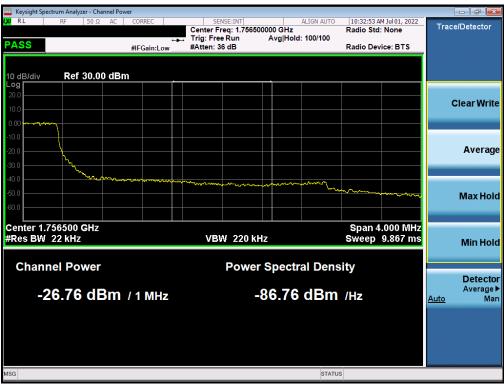


	oectrum Analyze										
L <mark>XI</mark> RL	RF	50 Ω AC	CORREC	SENS	E:INT	#Avg Typ	ALIGN AUTO		1 Jul 01, 2022 E 1 2 3 4 5 6	F	requency
PASS			PNO: Wide ↔ IFGain:Low	Trig: Free #Atten: 36		#*** 9 **JP		TYP DE	TAPNNN		
10 dB/div Log	Ref 25.	00 dBm					Mkr1 1	.755 007 -24.	7 5 GHz 79 dBm		Auto Tune
15.0	e 1 Pass										Center Freq 5000000 GHz
-5.00			Aus-Au-Ar-AsaA							1.75	Start Freq 1250000 GHz
-15.0					1					1.75	Stop Freq 8750000 GHz
-35.0 محمير -45.0	had the second s			1	hormon	theman	www	m	Mys	<u>Auto</u>	CF Step 750.000 kHz Man
-55.0									· ••••••••		Freq Offset 0 Hz
-65.0											Scale Type
Center 1. #Res BW	755000 0	Hz	41 (D1A)	240 64-			Cure on f	Span 7	.500 MHz	Log	Lin
#Res BW	75 KHZ		#VBW	240 kHz				8.800 ms (TOUT PIS)		
150							STATU	3			

Plot 7-78. Upper Band Edge Plot (LTE Band 4 – 3MHz QPSK – Full RB)



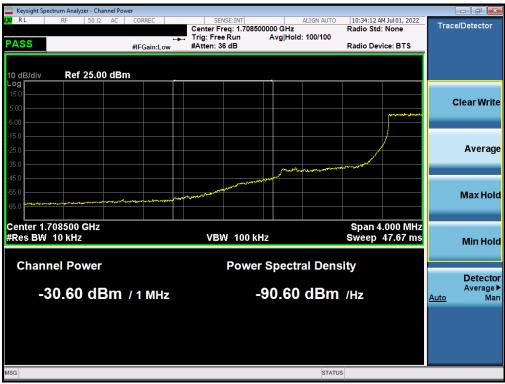
Plot 7-79. Upper Extended Band Edge Plot (LTE Band 4 – 3MHz QPSK – Full RB)

FCC ID: A3LSMF721JPN		Approved by: Technical Manager	
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Plot 7-80. Lower Band Edge Plot (LTE Band 4 – 1.4MHz QPSK – Full RB)



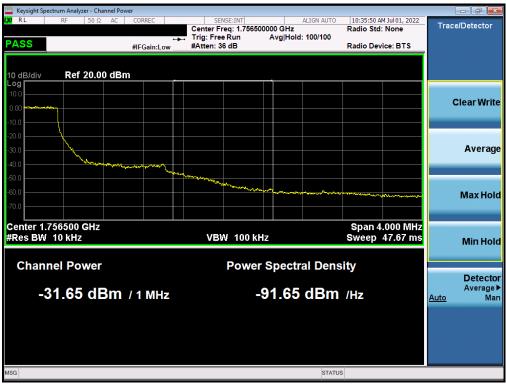
Plot 7-81. Lower Extended Band Edge Plot (LTE Band 4 – 1.4MHz QPSK – Full RB)

FCC ID: A3LSMF721JPN		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	Test Dates: EUT Type:	
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Plot 7-82. Upper Band Edge Plot (LTE Band 4 – 1.4MHz QPSK – Full RB)



Plot 7-83. Upper Extended Band Edge Plot (LTE Band 4 – 1.4MHz QPSK – Full RB)

FCC ID: A3LSMF721JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates: EUT Type:		Dega 50 of 95
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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 ≥ 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

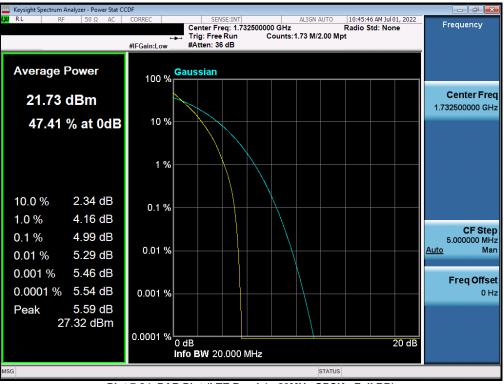
Test Notes

None.

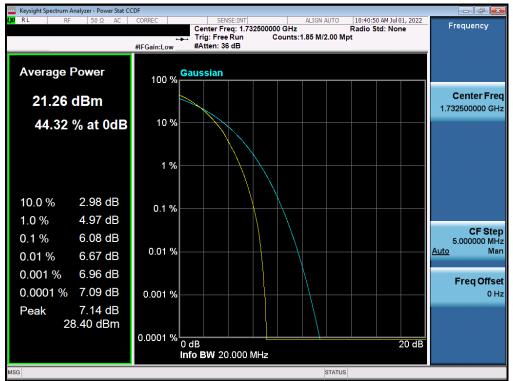
FCC ID: A3LSMF721JPN		PART 27 MEASUREMENT REPORT		
Test Report S/N:	Test Dates:	Test Dates: EUT Type:		
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LTE Band 4



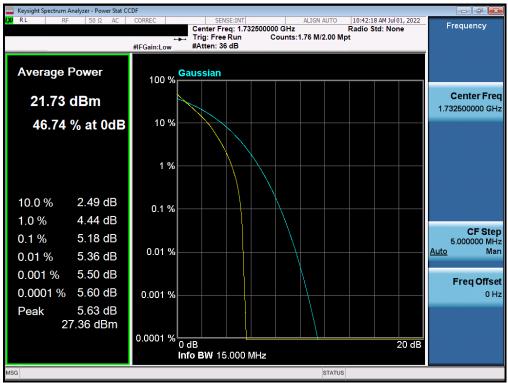
Plot 7-84. PAR Plot (LTE Band 4 - 20MHz QPSK - Full RB)

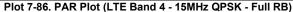


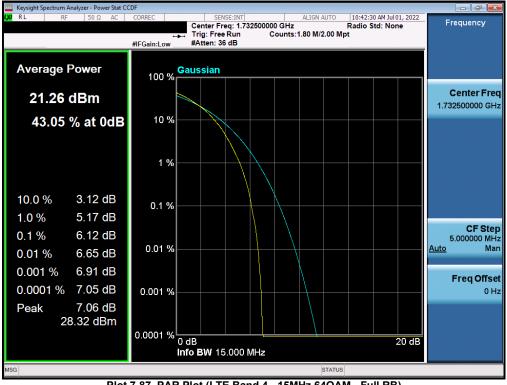
Plot 7-85. PAR Plot (LTE Band 4 - 20MHz 64QAM - Full RB)

FCC ID: A3LSMF721JPN		PART 27 MEASUREMENT REPORT		
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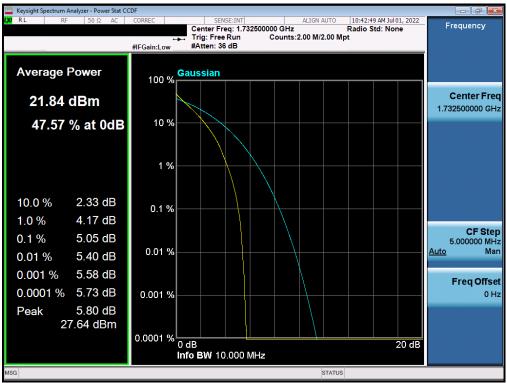




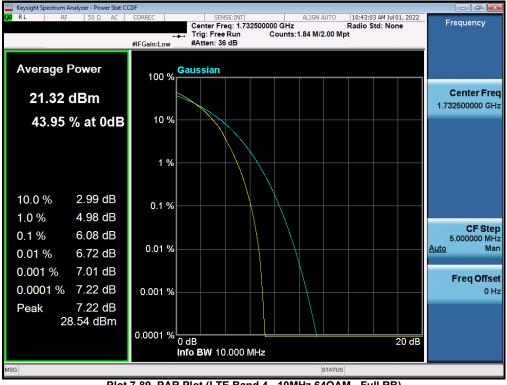
Plot 7-87. PAR Plot (LTE Band 4 - 15MHz 64QAM - Full RB)

FCC ID: A3LSMF721JPN		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	Test Dates: EUT Type:	
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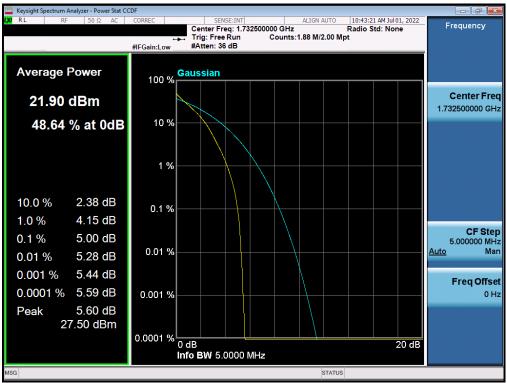


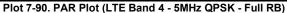


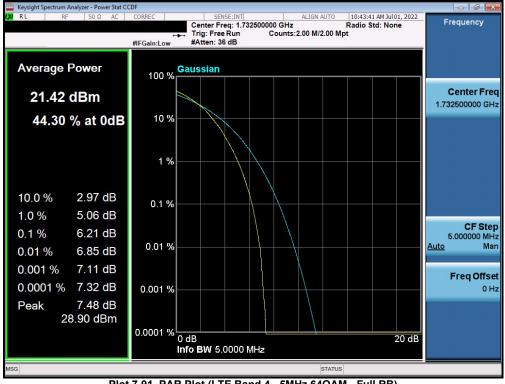
Plot 7-89. PAR Plot (LTE Band 4 - 10MHz 64QAM - Full RB)

FCC ID: A3LSMF721JPN		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	Test Dates: EUT Type:	
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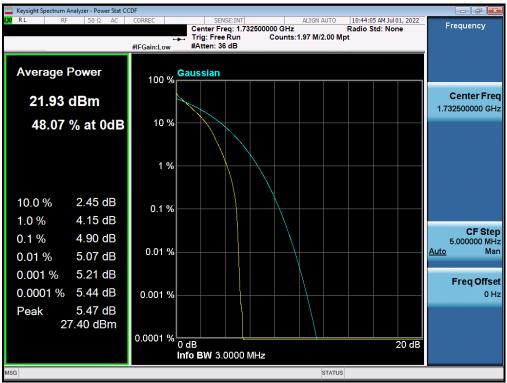




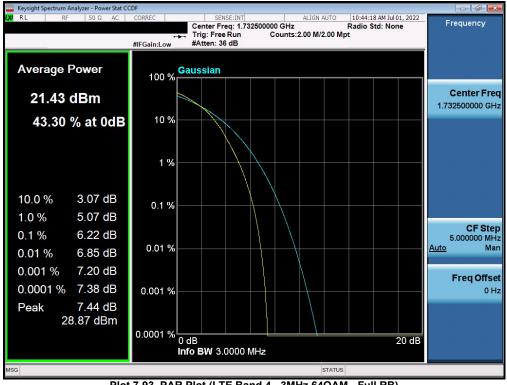
Plot 7-91. PAR Plot (LTE Band 4 - 5MHz 64QAM - Full RB)

FCC ID: A3LSMF721JPN		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	Test Dates: EUT Type:	
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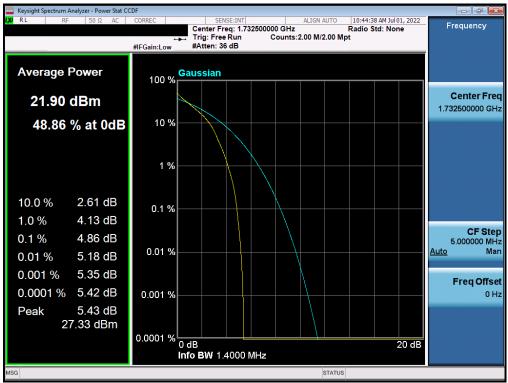


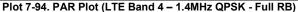


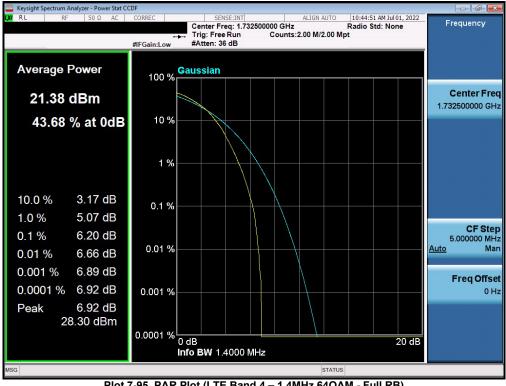
Plot 7-93. PAR Plot (LTE Band 4 - 3MHz 64QAM - Full RB)

FCC ID: A3LSMF721JPN		Approved by: Technical Manager	
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Plot 7-95. PAR Plot (LTE Band 4 – 1.4MHz 64QAM - Full RB)

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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

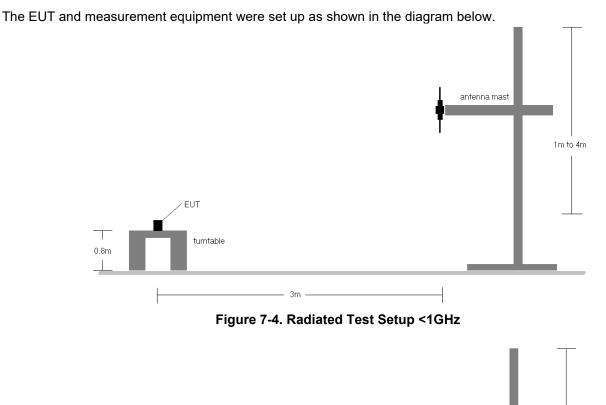
ANSI C63.26-2015 - Section 5.2.4.4

Test Settings

- 1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer's "time domain power" measurement capability is used.
- 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". Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration.
- 8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation. For signals with burst transmission, the "gating" function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power.
- 9. Trace mode = trace averaging (RMS) over 100 sweeps
- 10. The trace was allowed to stabilize.

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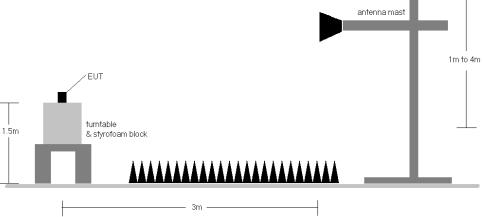


Figure 7-6. Radiated Test Setup < 1GHz

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.

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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]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
z	QPSK	704.0	V	192	333	1.34	1 / 49	19.20	20.54	0.113	36.99	-16.45	18.39	0.069	34.77	-16.38
MHz	QPSK	707.5	V	189	331	1.33	1 / 49	19.53	20.86	0.122	36.99	-16.13	18.71	0.074	34.77	-16.06
10	QPSK	711.0	V	190	313	1.33	1 / 49	19.84	21.17	0.131	36.99	-15.82	19.02	0.080	34.77	-15.76
	16-QAM	711.0	V	190	313	1.33	1 / 49	19.08	20.41	0.110	36.99	-16.58	18.26	0.067	34.77	-16.52
N	QPSK	701.5	V	192	333	1.35	1/0	19.14	20.49	0.112	36.99	-16.50	18.34	0.068	34.77	-16.43
MHz	QPSK	707.5	V	189	331	1.33	1 / 12	19.56	20.89	0.123	36.99	-16.10	18.74	0.075	34.77	-16.03
2 2	QPSK	713.5	V	190	313	1.32	1 / 24	19.92	21.24	0.133	36.99	-15.75	19.09	0.081	34.77	-15.69
	16-QAM	713.5	V	190	313	1.32	1 / 24	19.25	20.57	0.114	36.99	-16.42	18.42	0.069	34.77	-16.36
N	QPSK	700.5	V	192	333	1.35	1 / 14	19.02	20.37	0.109	36.99	-16.62	18.22	0.066	34.77	-16.55
MHz	QPSK	707.5	V	189	331	1.33	1/7	19.51	20.84	0.121	36.99	-16.15	18.69	0.074	34.77	-16.08
3 M	QPSK	714.5	V	190	313	1.32	1/7	19.90	21.22	0.132	36.99	-15.77	19.07	0.081	34.77	-15.71
	16-QAM	714.5	V	190	313	1.32	1/7	19.10	20.42	0.110	36.99	-16.57	18.27	0.067	34.77	-16.51
N	QPSK	699.7	V	192	333	1.35	1/5	18.89	20.24	0.106	36.99	-16.75	18.09	0.064	34.77	-16.68
MHz	QPSK	707.5	V	189	331	1.33	1/0	19.49	20.82	0.121	36.99	-16.17	18.67	0.074	34.77	-16.10
4	QPSK	715.3	V	190	313	1.32	1/5	19.87	21.19	0.131	36.99	-15.80	19.04	0.080	34.77	-15.74
-	16-QAM	715.3	V	190	313	1.32	1/5	19.14	20.46	0.111	36.99	-16.53	18.31	0.068	34.77	-16.47
10 MHz	Opposite Pol.	711.0	н	103	194	1.33	1/0	18.86	20.19	0.104	36.99	-16.80	18.04	0.064	34.77	-16.74
	WCP	711.0	V	153	351	1.33	1 / 25	13.78	15.11	0.032	36.99	-21.88	12.96	0.020	34.77	-21.82
5 MHz	QPSK (Open)	713.5	V	100	286	1.32	1 / 24	18.97	20.29	0.107	36.99	-16.70	18.14	0.065	34.77	-16.64

Table 7-2. ERP Data (LTE Band 12) – HALF OPEN

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	782.0	V	159	338	1.17	1 / 49	19.01	20.18	0.104	36.99	-16.81	18.03	0.064	34.77	-16.74
	16-QAM	782.0	V	159	338	1.17	1 / 49	18.30	19.47	0.088	36.99	-17.52	17.32	0.054	34.77	-17.45
	QPSK	779.5	V	159	338	1.17	1 / 12	18.83	20.01	0.100	36.99	-16.98	17.86	0.061	34.77	-16.91
5 MHz	QPSK	782.0	V	159	338	1.17	1 / 12	18.94	20.11	0.103	36.99	-16.88	17.96	0.062	34.77	-16.81
3 WI112	QPSK	784.5	V	159	338	1.16	1 / 24	18.65	19.81	0.096	36.99	-17.18	17.66	0.058	34.77	-17.11
	16-QAM	782.0	V	159	338	1.17	1 / 12	18.27	19.44	0.088	36.99	-17.55	17.29	0.054	34.77	-17.48
	Opposite Pol.	782.0	н	230	200	1.17	1/0	17.08	18.25	0.067	36.99	-18.74	16.10	0.041	34.77	-18.67
10 MHz	WCP	782.0	V	140	245	1.17	1 / 49	17.27	18.44	0.070	36.99	-18.55	16.29	0.043	34.77	-18.48
	QPSK (Open)	782.0	V	147	230	1.17	1 / 49	18.73	19.90	0.098	36.99	-17.09	17.75	0.060	34.77	-17.02

Table 7-3. ERP Data (LTE Band 13) – HALF OPEN

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]
	QPSK	1720.0	V	139	325	8.70	1/0	12.31	21.01	0.126	30.00	-8.99
20 MHz	QPSK	1732.5	V	144	334	8.70	1/0	11.75	20.45	0.111	30.00	-9.55
	QPSK	1745.0	V	135	341	8.70	1/0	10.92	19.62	0.092	30.00	-10.38
	16-QAM	1720.0	V	139	325	8.70	1/0	12.06	20.76	0.119	30.00	-9.24
	QPSK	1717.5	V	139	325	8.70	1 / 37	12.38	21.08	0.128	30.00	-8.92
15 MHz	QPSK	1732.5	V	144	334	8.70	1 / 37	11.74	20.44	0.111	30.00	-9.56
	QPSK	1747.5	V	135	341	8.70	1 / 37	10.91	19.61	0.091	30.00	-10.39
	16-QAM	1717.5	V	139	325	8.70	1 / 37	12.14	20.84	0.121	30.00	-9.16
	QPSK	1715.0	V	139	325	8.70	1 / 25	12.48	21.18	0.131	30.00	-8.82
10 MHz	QPSK	1732.5	V	144	334	8.70	1 / 25	11.72	20.42	0.110	30.00	-9.58
	QPSK	1750.0	V	135	341	8.70	1 / 25	10.98	19.68	0.093	30.00	-10.32
	16-QAM	1715.0	V	139	325	8.70	1 / 25	12.16	20.86	0.122	30.00	-9.14
	QPSK	1712.5	V	139	325	8.70	1 / 12	12.45	21.15	0.130	30.00	-8.85
5 MHz	QPSK	1732.5	V	144	334	8.70	1 / 12	11.72	20.42	0.110	30.00	-9.58
3 10112	QPSK	1752.5	V	135	341	8.70	1 / 12	10.95	19.65	0.092	30.00	-10.35
	16-QAM	1712.5	V	139	325	8.70	1 / 12	12.06	20.76	0.119	30.00	-9.24
	QPSK	1711.5	V	139	325	8.70	1/7	12.47	21.17	0.131	30.00	-8.83
3 MHz	QPSK	1732.5	V	144	334	8.70	1/7	11.68	20.38	0.109	30.00	-9.62
	QPSK	1753.5	V	135	341	8.70	1/7	10.96	19.66	0.093	30.00	-10.34
	16-QAM	1711.5	V	139	325	8.70	1/7	12.07	20.77	0.119	30.00	-9.23
	QPSK	1710.7	V	139	325	8.70	1/3	12.38	21.08	0.128	30.00	-8.92
1.4 MHz	QPSK	1732.5	V	144	334	8.70	1/3	11.65	20.35	0.108	30.00	-9.65
	QPSK	1754.3	V	135	341	8.70	1/3	10.95	19.65	0.092	30.00	-10.35
	16-QAM	1710.7	V	139	325	8.70	1/3	11.97	20.67	0.117	30.00	-9.33
20 MHz	Opposite Pol.	1720.0	Н	132	196	8.70	1 / 99	11.78	20.48	0.112	30.00	-9.52
20 MH2	WCP	1720.0	V	142	298	8.70	1/0	8.48	17.18	0.052	30.00	-12.82
10 MHz	QPSK (Open)	1715.0	V	136	318	8.70	1 / 25	12.40	21.10	0.129	30.00	-8.90

Table 7-4. EIRP Data (LTE Band 4) – HALF OPEN

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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

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

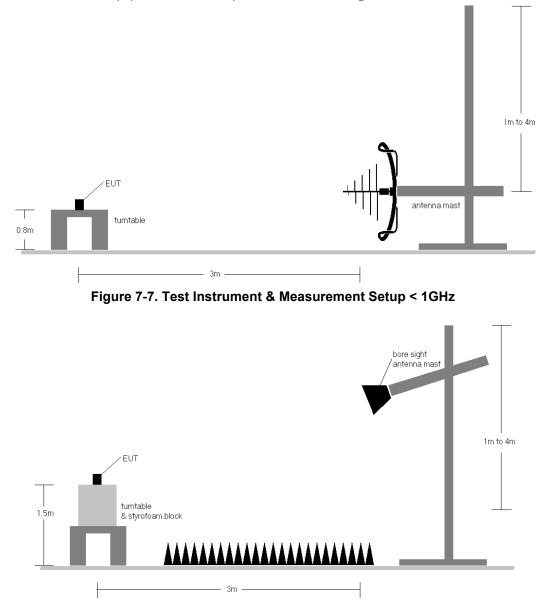


Figure 7-8. Test Instrument & Measurement Setup > 1GHz

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Test Notes

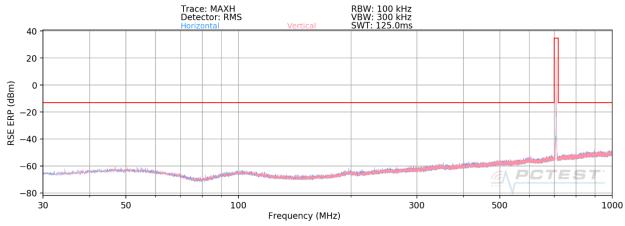
- 1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
 - a) $E(dB\mu V/m)$ = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m) b) EIRP (dBm) = $E(dB\mu V/m)$ + 20logD - 104.8; where D is the measurement distance 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.

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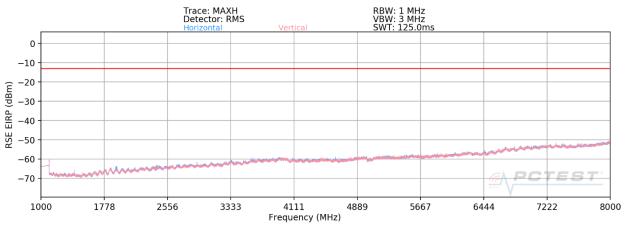
LTE Band 12





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]
919.76	V	-	-	-93.21	25.24	39.03	-56.23	-13.00	-43.23
919.76	v	- 75 Padia						-13.00	-43

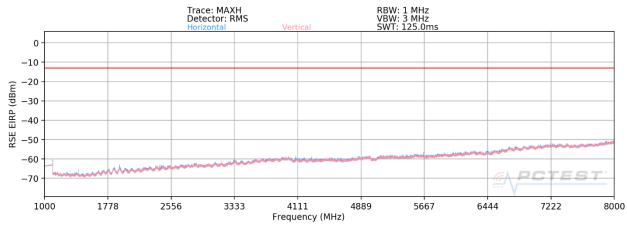
 Table 7-5. Radiated Spurious Data (LTE Band 12) – OPEN





FCC ID: A3LSMF721JPN		PART 27 MEASUREMENT REPORT				
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10
704
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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	V	275	259	-70.93	-8.24	27.83	-67.43	-13.00	-54.43
2112.00	V	-	-	-75.91	-5.73	25.36	-69.90	-13.00	-56.90
2816.00	V	-	-	-76.83	-3.00	27.17	-68.08	-13.00	-55.08
3520.00	V	-	-	-76.45	-0.72	29.83	-65.43	-13.00	-52.43
4224.00	V	-	-	-77.73	0.91	30.18	-65.08	-13.00	-52.08

Table 7-6. Radiated Spurious Data (LTE Band 12 – Low Channel) – OPEN

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	V	273	282	-71.18	-8.29	27.53	-67.72	-13.00	-54.72
2122.50	V	-	-	-75.75	-5.73	25.52	-69.74	-13.00	-56.74
2830.00	V	-	-	-76.54	-3.01	27.45	-67.81	-13.00	-54.81
3537.50	V	-	-	-77.05	-0.63	29.32	-65.94	-13.00	-52.94
4245.00	V	-	-	-77.28	0.86	30.58	-64.68	-13.00	-51.68

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

FCC ID: A3LSMF721JPN		PART 27 MEASUREMENT REPORT				
Test Report S/N:	Test Dates:	EUT Type:	Daga 74 of 95			
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Bandwidth (MHz):	10
Frequency (MHz):	711
RB / Offset:	1 / 25

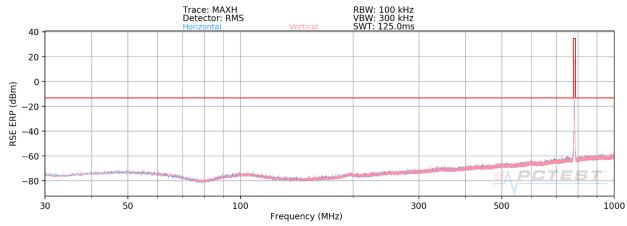
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1422.00	V	266	278	-73.02	-8.44	25.54	-69.71	-13.00	-56.71
2133.00	V	-	-	-75.49	-5.66	25.85	-69.41	-13.00	-56.41
2844.00	V	-	-	-76.20	-3.01	27.79	-67.46	-13.00	-54.46
3555.00	V	-	-	-77.51	-0.27	29.22	-66.04	-13.00	-53.04
4266.00	V	-	-	-76.98	1.18	31.20	-64.06	-13.00	-51.06

Table 7-8. Radiated Spurious Data (LTE Band 12 – High Channel) – OPEN

FCC ID: A3LSMF721JPN		PART 27 MEASUREMENT REPORT				
Test Report S/N:	Test Dates:	EUT Type:	Dega 75 of 95			
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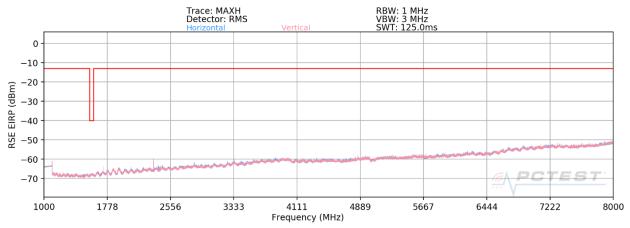
LTE Band 13





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]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
917.21	Н	-	-	-93.37	25.24	38.87	-56.39	-13.00	-43.39

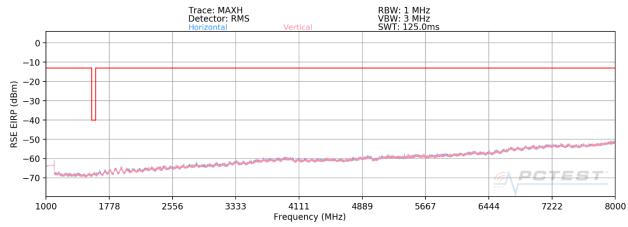
 Table 7-9. Radiated Spurious Data (LTE Band 13) – HALF OPEN





FCC ID: A3LSMF721JPN		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dama 70 af 05
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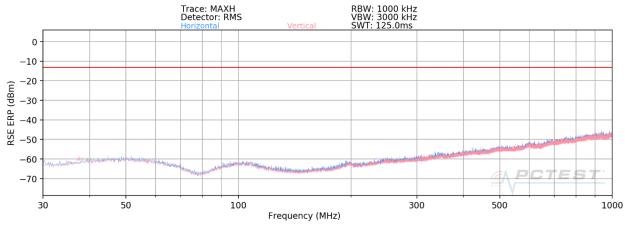
Bandwidth (MHz):		10							
Frequency (MHz):		782							
RB / Offset:		1 / 49							
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1564.00	н	148	228	-74.95	-8.26	23.79	-71.47	-40.00	-31.47
2346.00	Н	151	222	-74.98	-4.81	27.21	-68.05	-13.00	-55.05
3128.00	н	-	-	-77.65	-1.29	28.06	-67.19	-13.00	-54.19
3910.00	н	-	-	-77.28	1.38	31.10	-64.16	-13.00	-51.16
4692.00	Н	-	-	-77.65	1.27	30.62	-64.63	-13.00	-51.63
5474.00	Н	-	-	-78.28	3.47	32.19	-63.07	-13.00	-50.07

Table 7-10. Radiated Spurious Data (LTE Band 13 – Mid Channel) – HALF OPEN

FCC ID: A3LSMF721JPN		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 77 of 95
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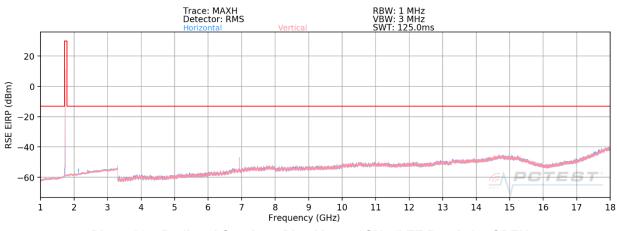
LTE Band 4





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]
997.34	Н	-	-	-87.26	25.88	45.62	-49.64	-13.00	-36.64

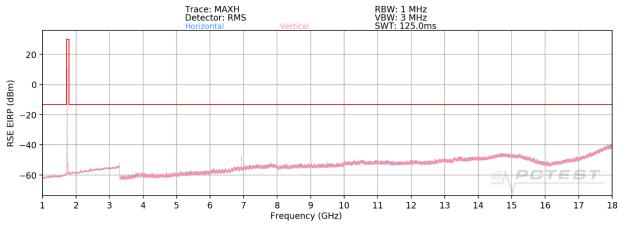






FCC ID: A3LSMF721JPN		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
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20
1720
1 / 50

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	Н	-	-	-76.73	0.23	30.50	-64.76	-13.00	-51.76
5160.00	Н	118	312	-76.29	3.20	33.91	-61.35	-13.00	-48.35
6880.00	Н	101	306	-70.57	7.54	43.97	-51.29	-13.00	-38.29
8600.00	Н	123	302	-82.50	11.20	35.70	-59.56	-13.00	-46.56
10320.00	Н	-	-	-84.50	14.50	37.00	-58.25	-13.00	-45.25
12040.00	Н	-	-	-85.33	15.57	37.24	-58.02	-13.00	-45.02
13760.00	Н	-	-	-84.57	17.72	40.15	-55.11	-13.00	-42.11
15480.00	H	-	-	-85.10	16.94	38.84	-56.41	-13.00	-43.41

Table 7-12. Radiated Spurious Data (LTE Band 4 – Low Channel) – OPEN

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	Н	-	-	-76.79	0.13	30.34	-64.92	-13.00	-51.92
5197.50	Н	109	314	-73.76	3.04	36.28	-58.97	-13.00	-45.97
6930.00	Н	101	309	-68.58	7.89	46.31	-48.94	-13.00	-35.94
8662.50	Н	101	304	-81.02	11.22	37.20	-58.05	-13.00	-45.05
10395.00	Н	-	-	-83.57	13.78	37.21	-58.05	-13.00	-45.05
12127.50	Н	-	-	-84.68	15.52	37.84	-57.41	-13.00	-44.41
13860.00	Н	-	-	-85.19	18.24	40.05	-55.21	-13.00	-42.21
15592.50	Н	-	-	-84.54	16.25	38.71	-56.54	-13.00	-43.54

Table 7-13. Radiated Spurious Data (LTE Band 4 – Mid Channel) – OPEN

FCC ID: A3LSMF721JPN		Approved by: Technical Manager	
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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	Н	-	-	-76.11	0.29	31.18	-64.08	-13.00	-51.08
5235.00	Н	101	313	-75.12	2.90	34.78	-60.48	-13.00	-47.48
6980.00	Н	101	302	-69.89	8.01	45.12	-50.14	-13.00	-37.14
8725.00	Н	112	302	-81.08	11.03	36.95	-58.31	-13.00	-45.31
10470.00	Н	-	-	-83.77	13.74	36.97	-58.29	-13.00	-45.29
12215.00	Н	-	-	-85.08	16.16	38.08	-57.18	-13.00	-44.18
13960.00	Н	-	-	-85.51	18.50	39.99	-55.27	-13.00	-42.27
15705.00	Н	-	-	-84.49	16.38	38.89	-56.36	-13.00	-43.36

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

FCC ID: A3LSMF721JPN		Approved by: Technical Manager	
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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

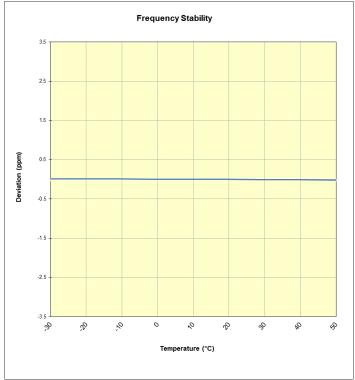
FCC ID: A3LSMF721JPN		Approved by: Technical Manager	
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Frequency Stability / Temperature Variation

LTE Band 12							
	Operating F	requency (Hz):	707,50	00,000			
	Ref.	Voltage (VDC):	4.	25			
		Deviation Limit:	± 0.00025%	o or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)		
		- 30	707,500,007	9	0.0000013		
		- 20	707,500,007	9	0.0000013		
		- 10	707,500,008	10	0.0000014		
		0	707,500,003	5	0.000007		
100 %	4.25	+ 10	707,500,004	6	0.0000008		
		+ 20 (Ref)	707,499,998	0	0.0000000		
		+ 30	707,499,994	-4	-0.0000006		
		+ 40	707,499,991	-6	-0.0000009		
		+ 50	707,499,989	-9	-0.0000012		
Battery Endpoint	3.58	+ 20	707,499,995	-2	-0.000003		

Table 7-15. LTE Band 12 Frequency Stability Data



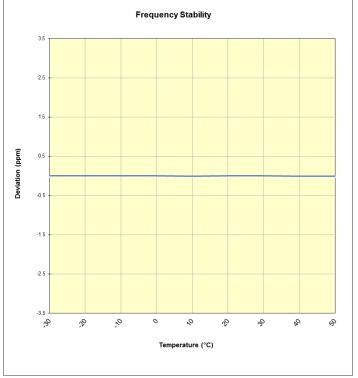
Plot 7-105. LTE Band 12 Frequency Stability Chart

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LTE Band 13							
	Operating F	requency (Hz):	782,00	00,000			
	Ref.	Voltage (VDC):	4.	25			
		Deviation Limit:	± 0.00025%	o or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)		
		- 30	782,000,008	4	0.000006		
		- 20	782,000,009	5	0.000007		
		- 10	782,000,010	6	0.0000007		
		0	782,000,008	4	0.0000005		
100 %	4.25	+ 10	781,999,996	-8	-0.0000011		
		+ 20 (Ref)	782,000,004	0	0.0000000		
		+ 30	782,000,006	2	0.000003		
		+ 40	781,999,998	-6	-0.000007		
		+ 50	781,999,996	-8	-0.0000010		
Battery Endpoint	3.58	+ 20	782,000,005	1	0.000002		

Table 7-16. LTE Band 13 Frequency Stability Data



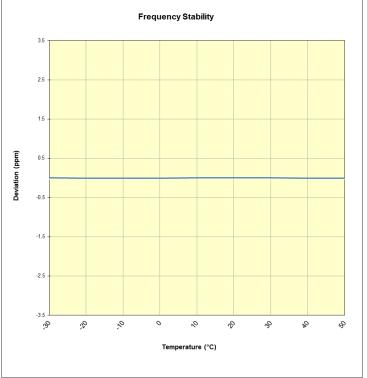
Plot 7-106. LTE Band 13 Frequency Stability Chart

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LTE Band 4								
	Operating F	requency (Hz):	1,732,500,000]			
	Ref. Voltage (VDC):		4.25					
	Deviation Limit:		± 0.00025% or 2.5 ppm					
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)			
100 %	4.25	- 30	1,732,500,007	11	0.0000006			
		- 20	1,732,499,986	-9	-0.0000005			
		- 10	1,732,499,987	-9	-0.0000005			
		0	1,732,499,991	-4	-0.0000003			
		+ 10	1,732,500,003	8	0.0000005			
		+ 20 (Ref)	1,732,499,996	0	0.0000000			
		+ 30	1,732,500,003	7	0.0000004			
		+ 40	1,732,499,986	-9	-0.0000005			
		+ 50	1,732,499,983	-12	-0.0000007			
Battery Endpoint	3.58	+ 20	1,732,499,995	-1	-0.0000001			

Table 7-17. LTE Band 4 Frequency Stability Data



Plot 7-107. LTE Band 4 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: A3LSMF721JPN** complies with all the requirements of Part 27 of the FCC rules.

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Test Report S/N:	Test Dates:	EUT Type:	Page 85 of 85	
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