

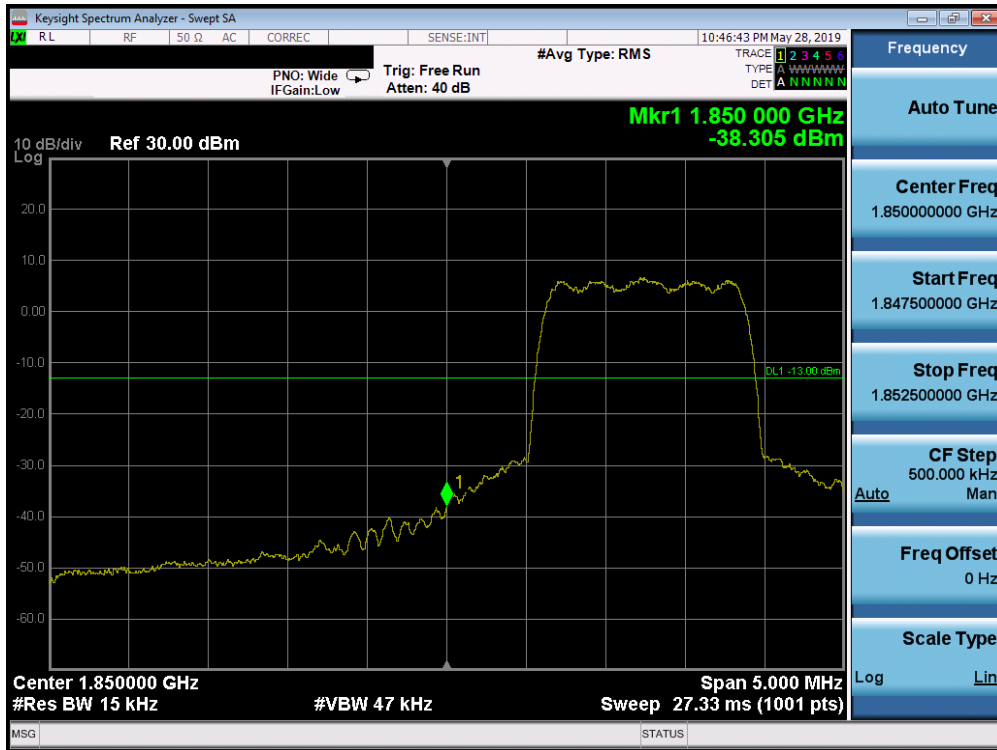
Plot 7-81. Band Edge Plot (Cellular CDMA Mode - High Channel)



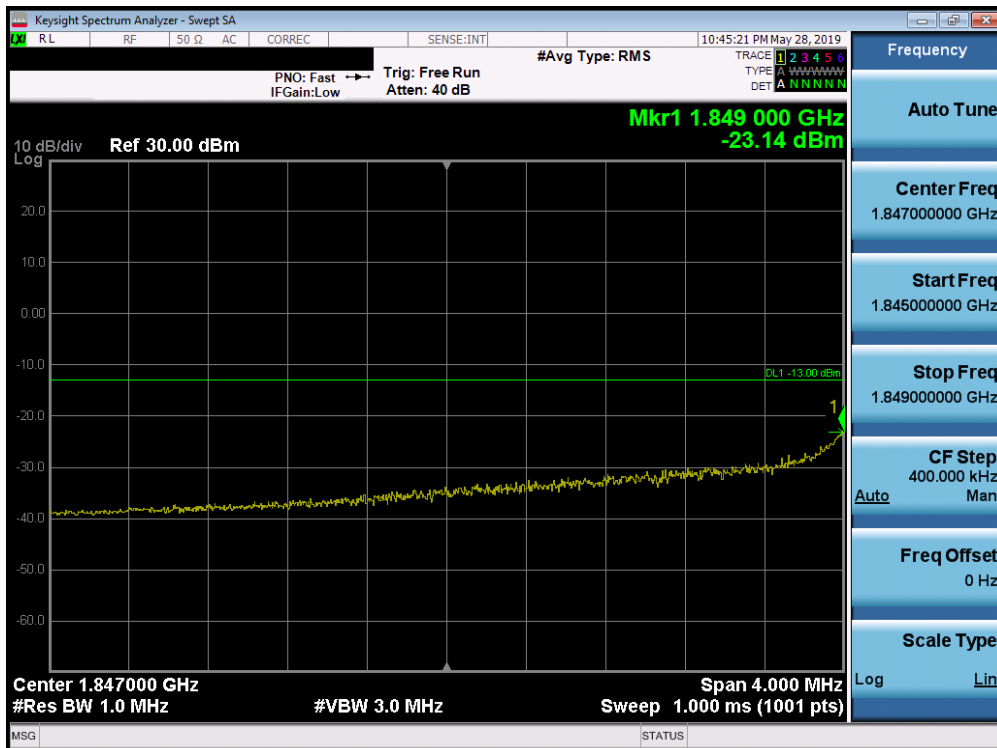
Plot 7-82. 4MHz Span Plot (Cellular CDMA Mode - High Channel)

FCC ID: A3LSMN975U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 60 of 113

**PCS CDMA Mode**



**Plot 7-83. Band Edge Plot (PCS CDMA Mode - Low Channel)**

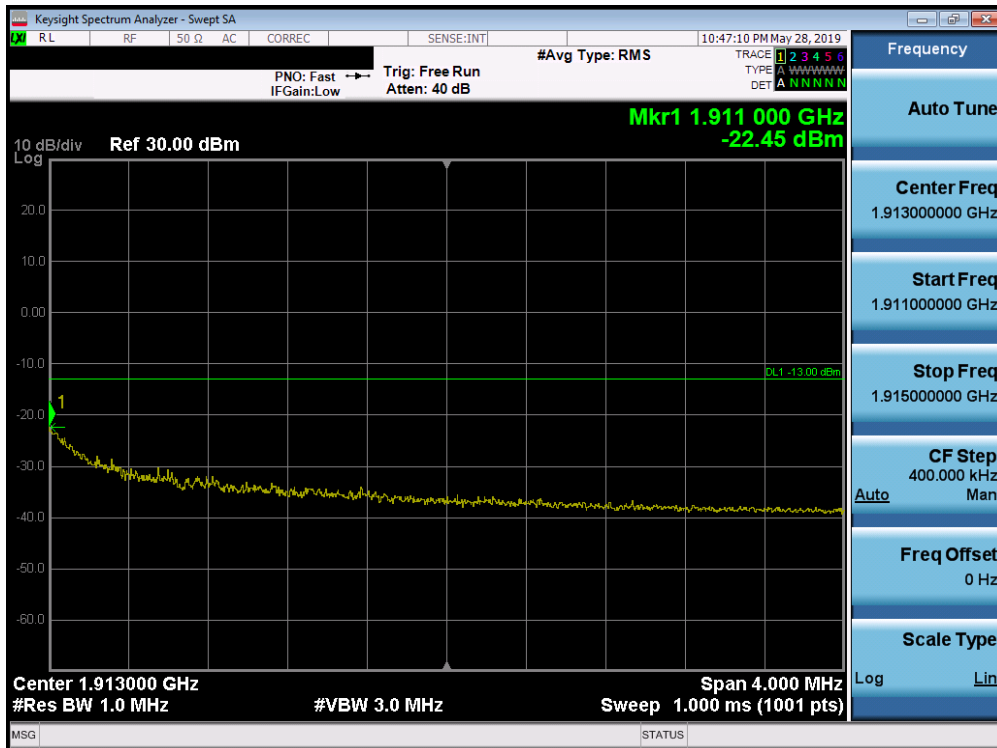


**Plot 7-84. 4MHz Span Plot (PCS CDMA Mode - Low Channel)**

FCC ID: A3LSMN975U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 61 of 113



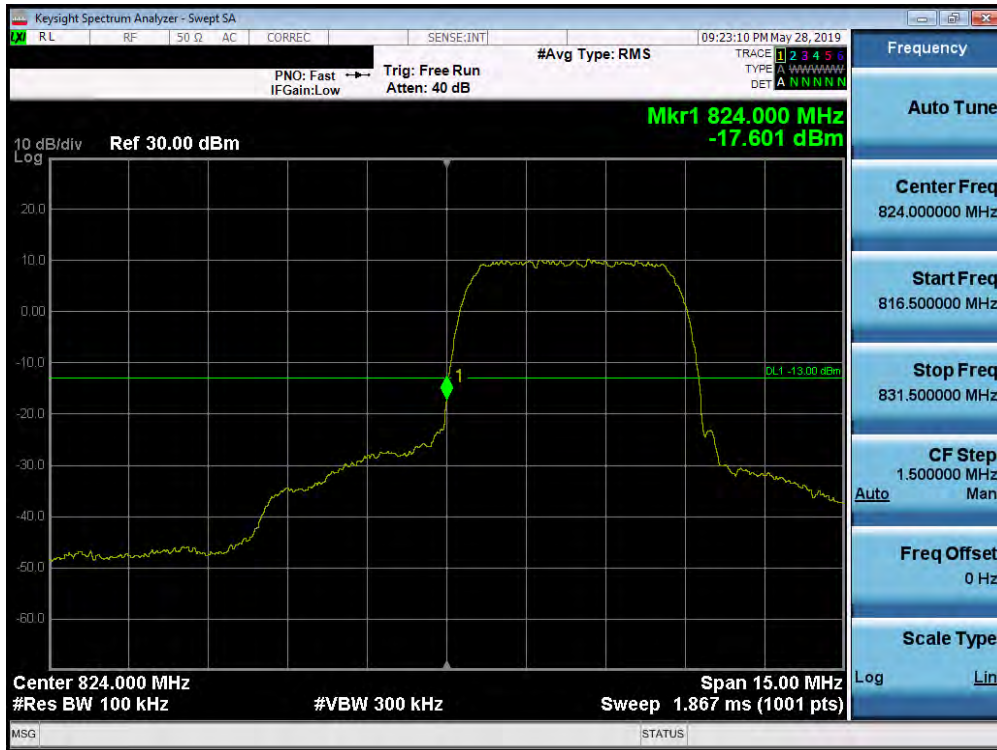
Plot 7-85. Band Edge Plot (PCS CDMA Mode - High Channel)



Plot 7-86. 4MHz Span Plot (PCS CDMA Mode - High Channel)

FCC ID: A3LSMN975U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 62 of 113

**Cellular WCDMA Mode**



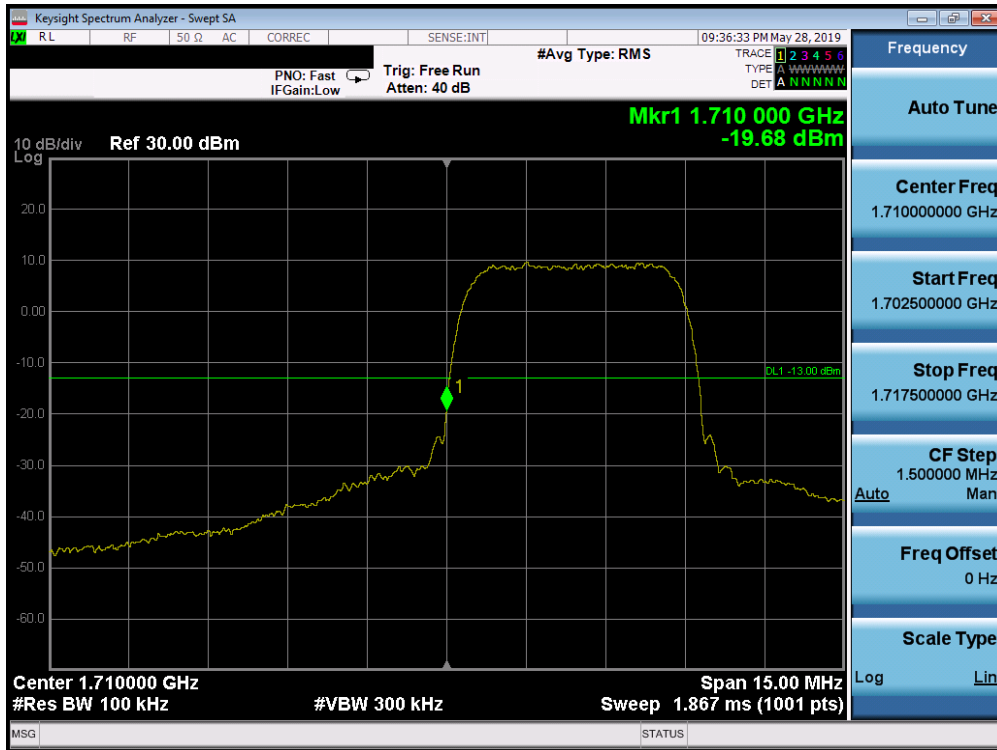
**Plot 7-87. Band Edge Plot (Cellular WCDMA Mode - Low Channel)**



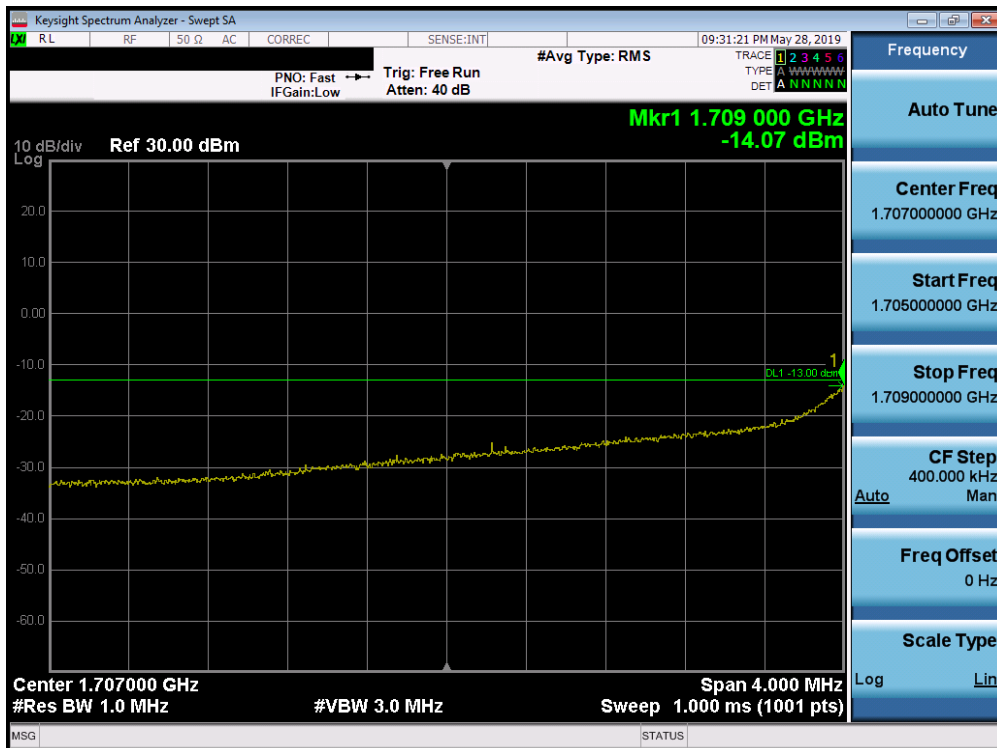
**Plot 7-88. Band Edge Plot (Cellular WCDMA Mode - High Channel)**

FCC ID: A3LSMN975U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 63 of 113

**AWS WCDMA Mode**

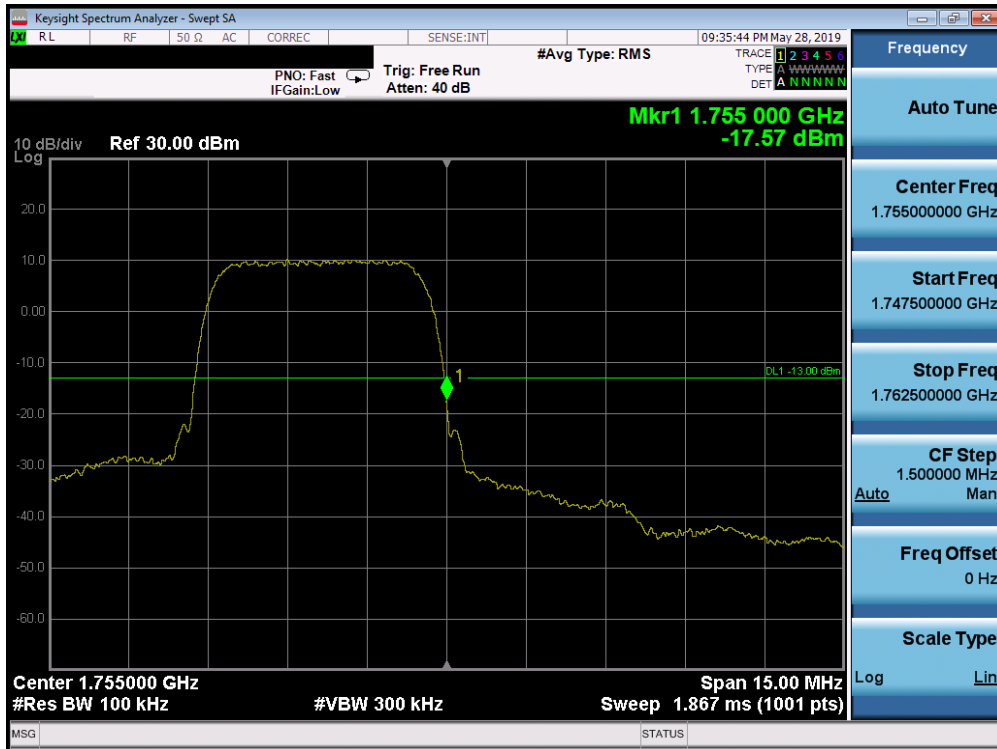


**Plot 7-89. Band Edge Plot (AWS WCDMA Mode - Low Channel)**

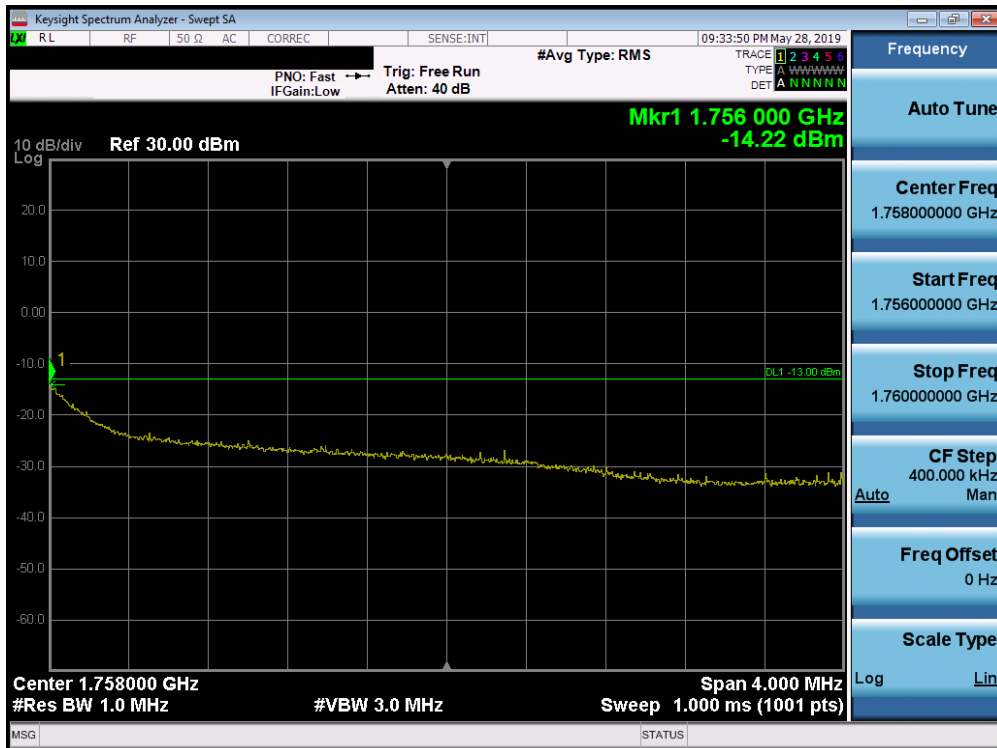


**Plot 7-90. 4MHz Span Plot (AWS WCDMA Mode - Low Channel)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 64 of 113



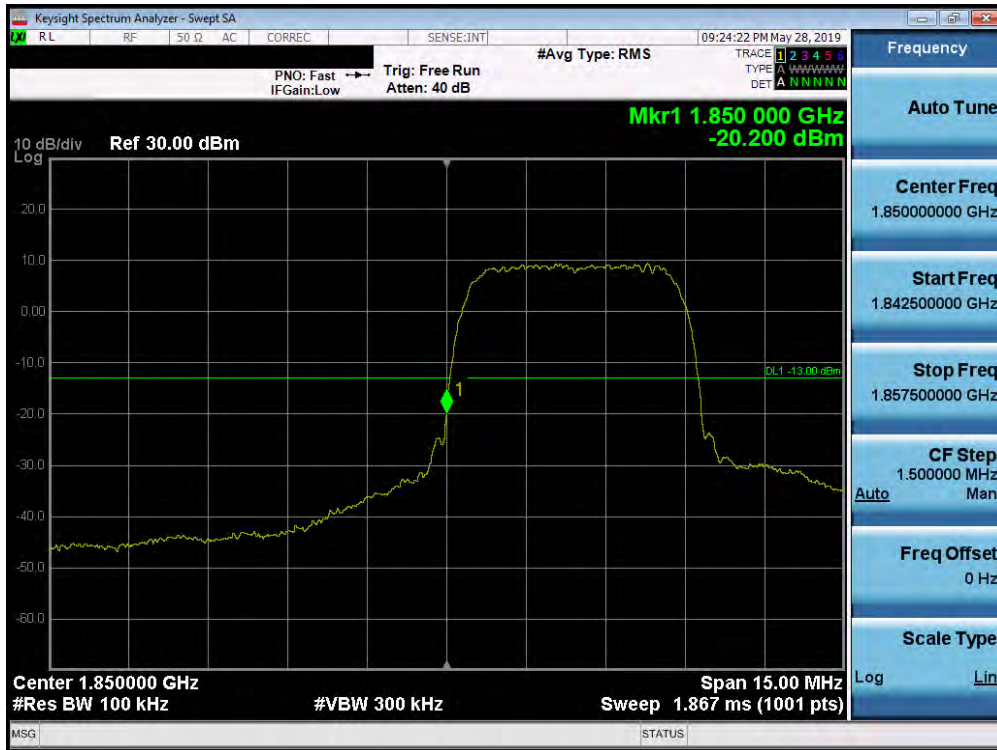
**Plot 7-91. Band Edge Plot (AWS WCDMA Mode - High Channel)**



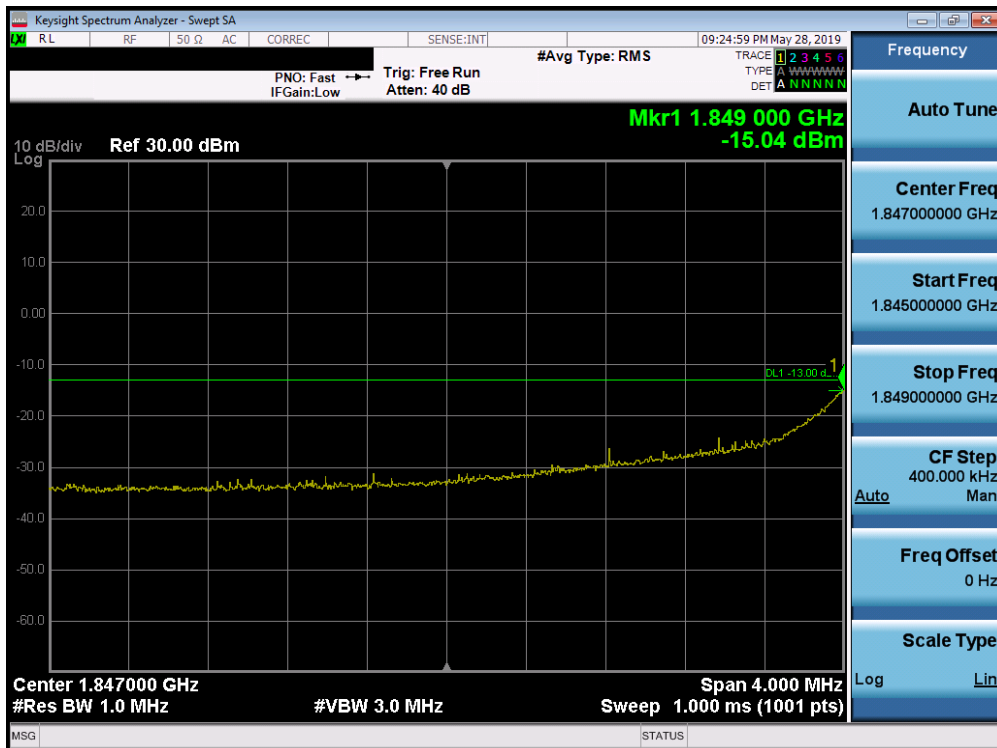
**Plot 7-92. 4MHz Span Plot (AWS WCDMA Mode - High Channel)**

FCC ID: A3LSMN975U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 65 of 113

**PCS WCDMA Mode**

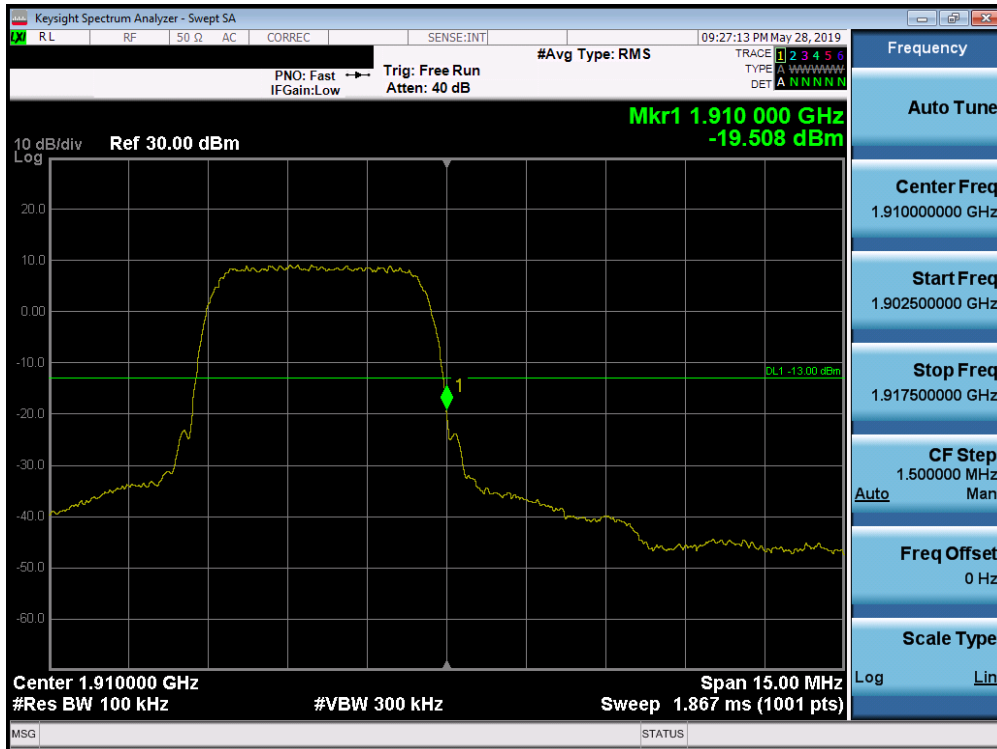


**Plot 7-93. Band Edge Plot (PCS WCDMA Mode - Low Channel)**

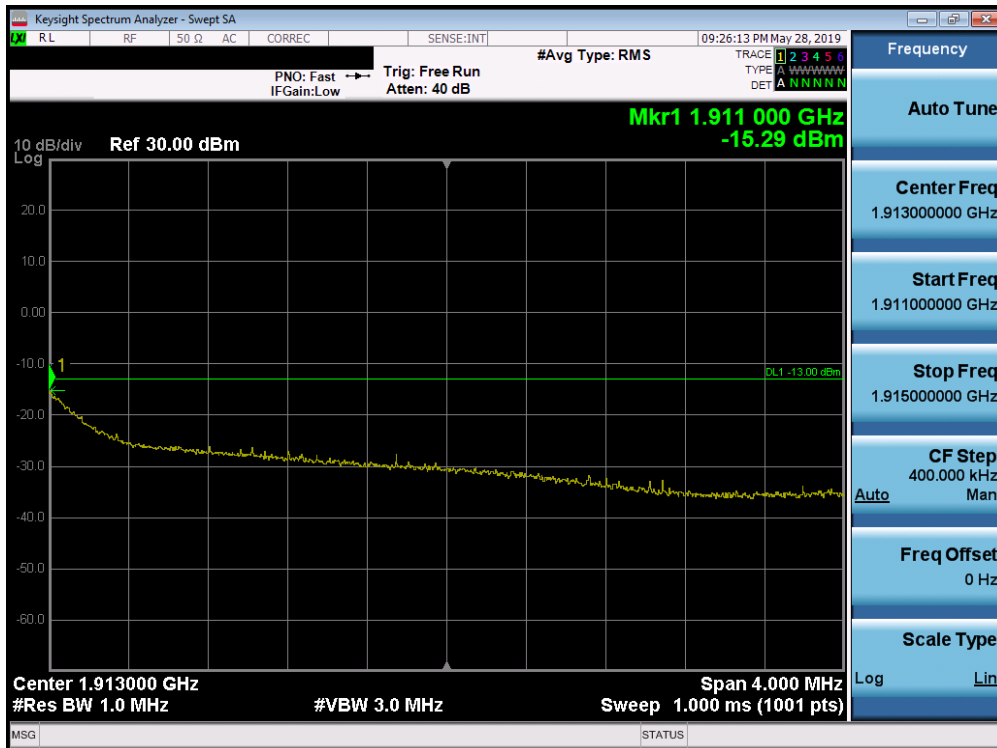


**Plot 7-94. 4MHz Span Plot (PCS WCDMA Mode - Low Channel)**

FCC ID: A3LSMN975U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 66 of 113



**Plot 7-95. Band Edge Plot (PCS WCDMA Mode - High Channel)**



**Plot 7-96. 4MHz Span Plot (PCS WCDMA Mode - High Channel)**

FCC ID: A3LSMN975U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 67 of 113

## 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

KDB 971168 D01 v03r01 – Section 5.7.1

### Test Settings

1. The signal analyzer’s CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
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.

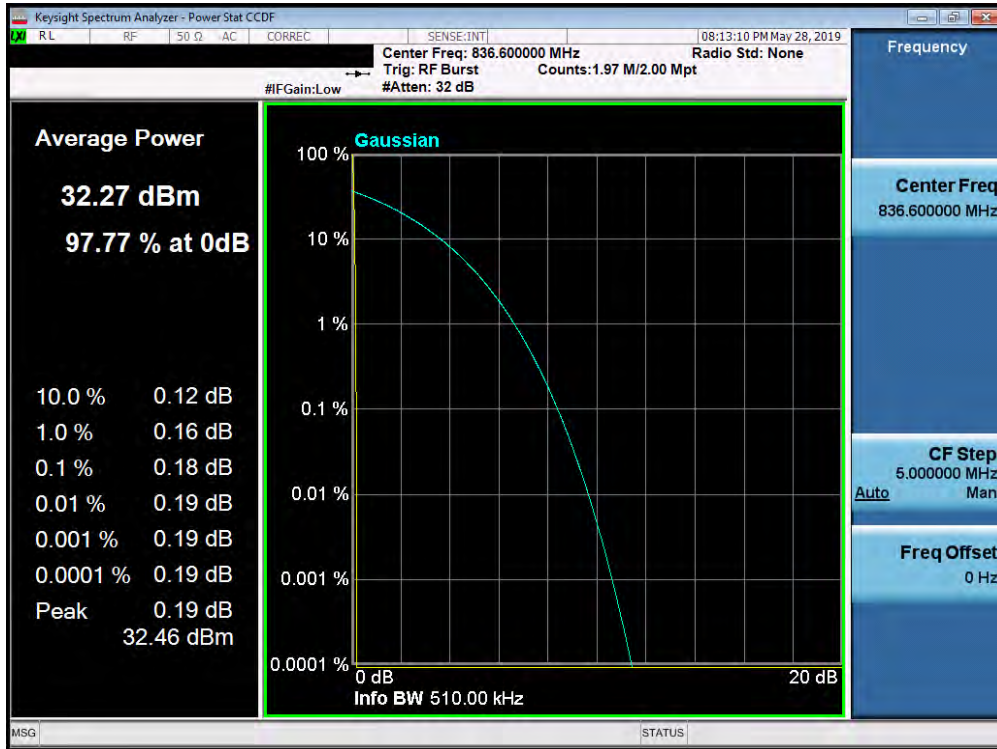


Figure 7-4. Test Instrument & Measurement Setup

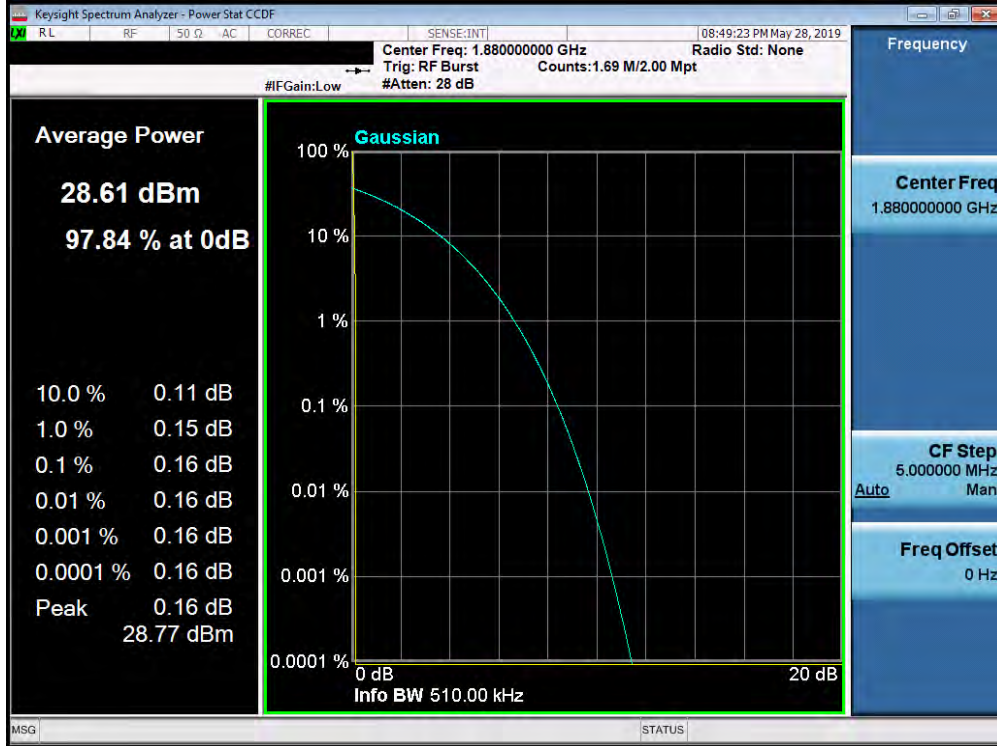
### Test Notes

None

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset	Page 68 of 113	

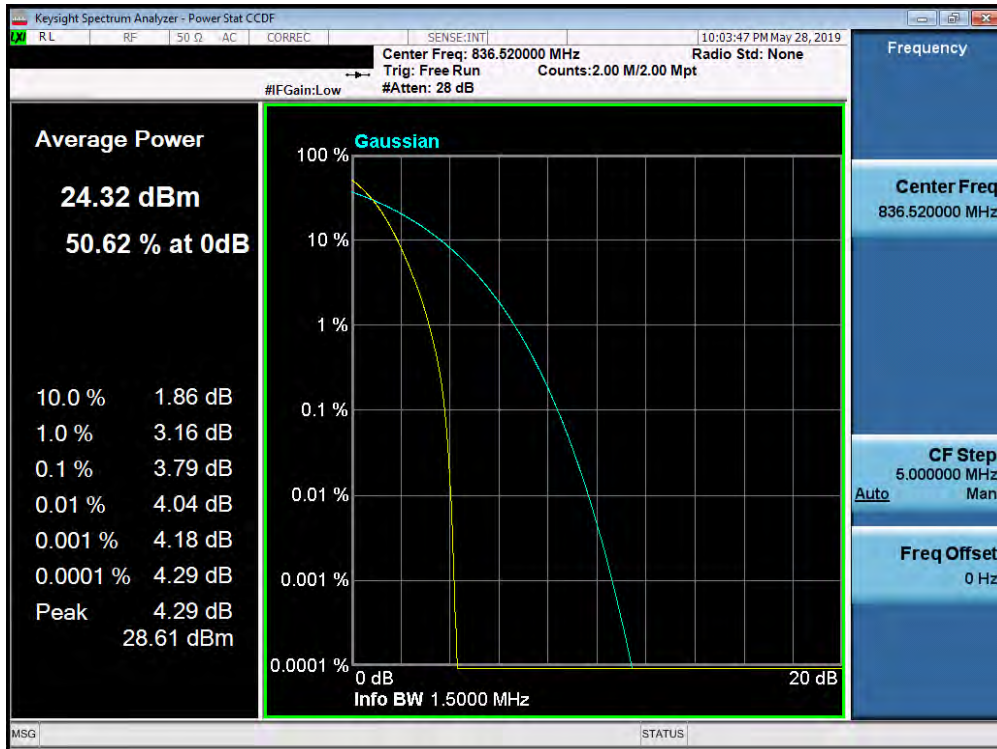


Plot 7-97. Peak-Average Ratio Plot (Cellular GPRS Mode)

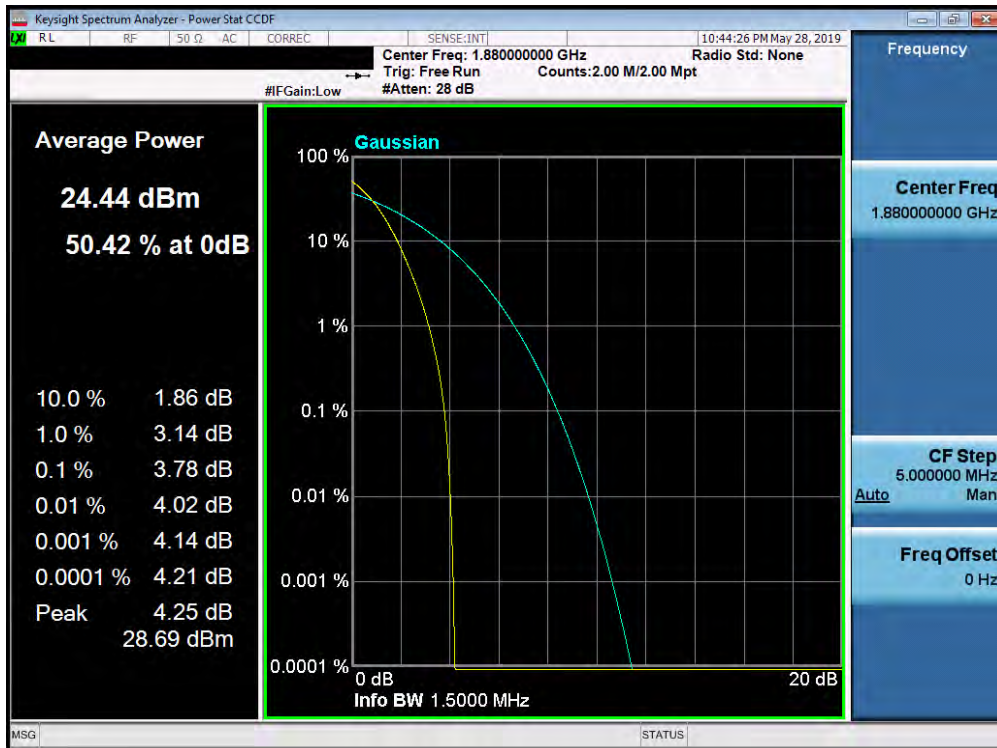


Plot 7-98. Peak-Average Ratio Plot (PCS GPRS Mode)

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 69 of 113

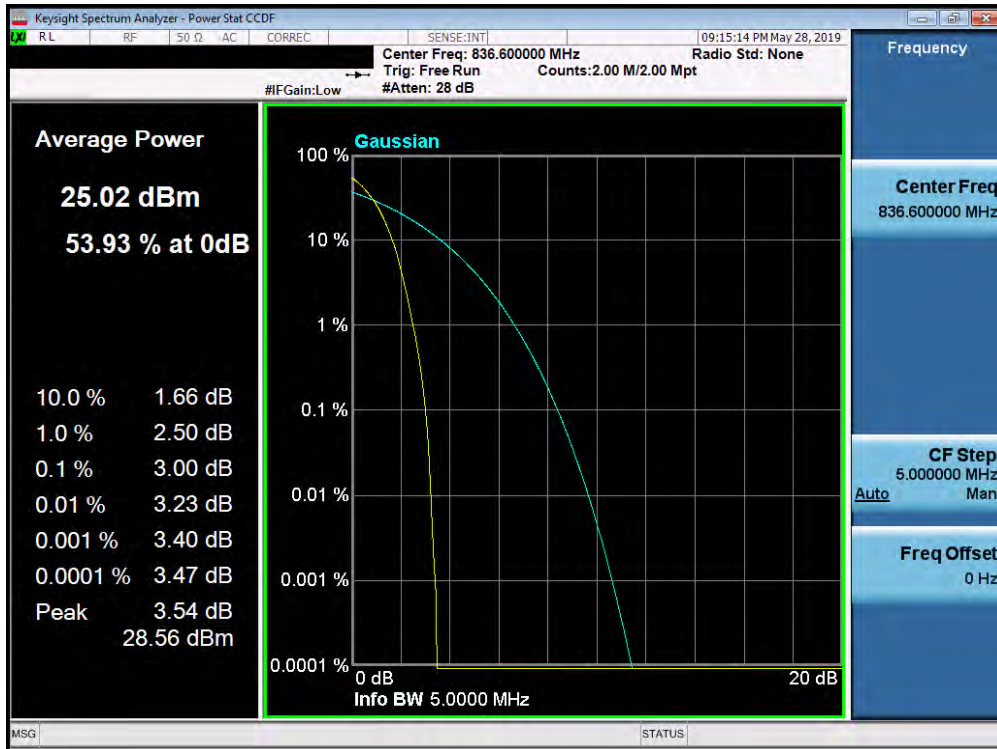


Plot 7-99. Peak-Average Ratio Plot (Cellular CDMA Mode)

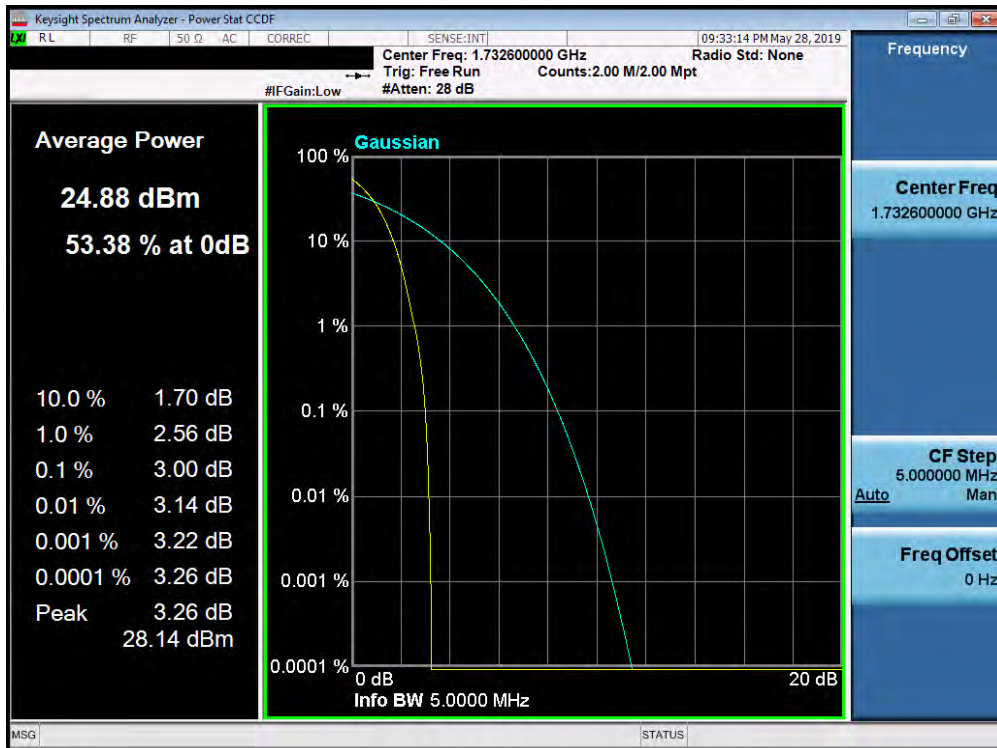


Plot 7-100. Peak-Average Ratio Plot (PCS CDMA Mode)

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 70 of 113

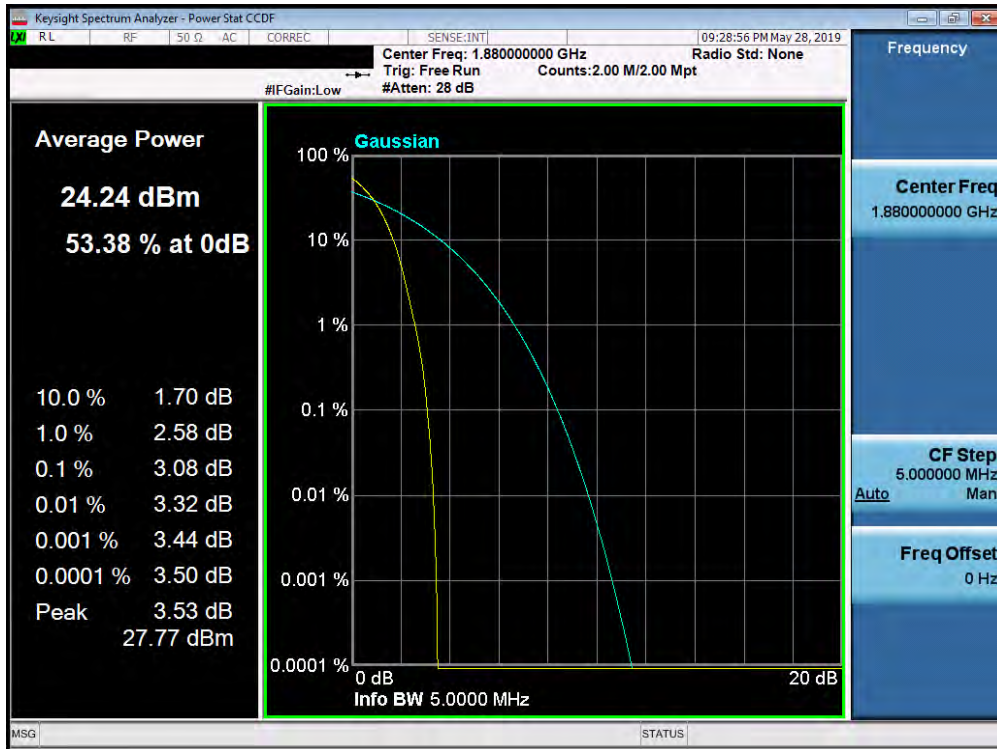


Plot 7-101. Peak-Average Ratio Plot (Cellular WCDMA Mode)



Plot 7-102. Peak-Average Ratio Plot (AWS WCDMA Mode)

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 71 of 113



Plot 7-103. Peak-Average Ratio Plot (PCS WCDMA Mode)

FCC ID: A3LSMN975U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 72 of 113

## 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/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz 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

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

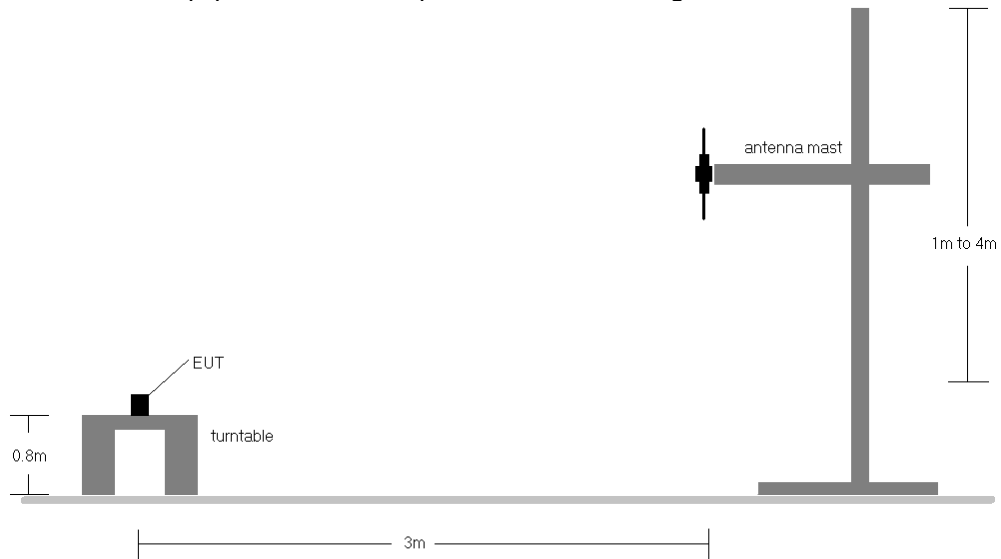
### Test Settings

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

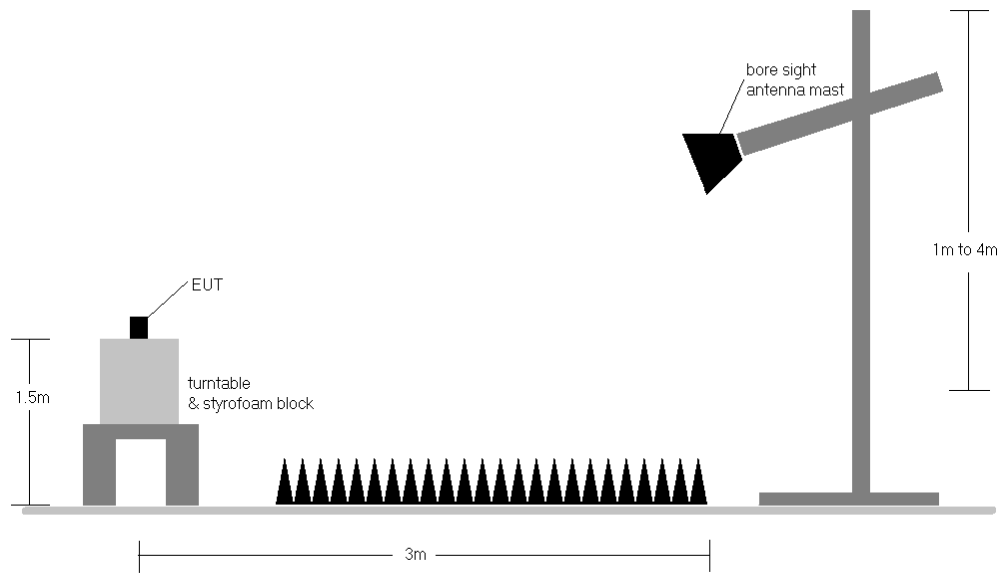
FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset	Page 73 of 113	

### Test Setup

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



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



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

FCC ID: A3LSMN975U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 74 of 113

**Test Notes**

- 1) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.
- 2) This device employs UMTS technology with WCDMA (AMR/RMC), HSDPA, and HSUPA capabilities. For WCDMA and HSUPA transmission, all configurations were investigated and the worst case UMTS emissions were found in RMC WCDMA mode at 12.2kbps with HSDPA inactive and TPC bits all set to "1."
- 3) For CDMA, this device was tested under all RC and SO combinations and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 4) This unit was tested with its standard battery.
- 5) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
824.20	GPRS850	V	202	102	19.56	6.70	24.11	38.45	-14.34	26.26	40.61	-14.35
836.60	GPRS850	V	212	105	20.52	6.70	25.07	38.45	-13.38	27.22	40.61	-13.39
848.80	GPRS850	V	138	106	21.47	6.70	<b>26.02</b>	38.45	-12.43	<b>28.17</b>	40.61	-12.44
848.80	GPRS850	H	245	251	19.94	6.70	24.49	38.45	-13.96	26.64	40.61	-13.97
848.80	EDGE850	V	138	106	16.02	6.70	<b>20.57</b>	38.45	-17.88	<b>22.72</b>	40.61	-17.89
848.80	GPRS850 (WCP)	V	141	328	19.19	6.70	23.74	38.45	-14.71	25.89	40.61	-14.72

**Table 7-2. ERP/EIRP (Cellular GPRS)**

FCC ID: A3LSMN975U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>			<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1905200079-02.A3L	<b>Test Dates:</b> 05/20 - 07/04/2019	<b>EUT Type:</b> Portable Handset		Page 75 of 113	

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
824.70	CDMA850	V	261	284	14.29	6.30	18.44	38.45	-20.01	20.59	40.61	-20.02
836.52	CDMA850	V	270	269	14.55	6.40	18.80	38.45	-19.65	20.95	40.61	-19.66
848.31	CDMA850	V	265	299	15.06	6.50	<b>19.41</b>	38.45	-19.04	<b>21.56</b>	40.61	-19.05
848.31	CDMA850	H	212	269	12.74	6.50	17.09	38.45	-21.36	19.24	40.61	-21.37
848.31	CDMA850 (WCP)	V	130	331	12.89	6.50	17.24	38.45	-21.21	19.39	40.61	-21.22

**Table 7-3. ERP/EIRP (Cellular CDMA)**

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
826.40	WCDMA850	H	130	111	14.02	6.30	18.17	0.066	38.45	-20.28	20.32	0.108	40.61	-20.29
836.60	WCDMA850	H	127	109	14.55	6.40	18.80	0.076	38.45	-19.65	20.95	0.124	40.61	-19.66
846.60	WCDMA850	H	120	95	14.64	6.50	<b>18.99</b>	<b>0.079</b>	38.45	-19.46	<b>21.14</b>	<b>0.130</b>	40.61	-19.47
846.60	WCDMA850	V	130	276	12.71	6.50	17.06	0.051	38.45	-21.39	19.21	0.083	40.61	-21.40
846.60	WCDMA850 (WCP)	V	132	345	10.74	6.50	15.09	0.032	38.45	-23.36	17.24	0.053	40.61	-23.37

**Table 7-4. ERP/EIRP (Cellular WCDMA)**

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
1712.40	WCDMA1700	H	113	172	13.75	9.43	23.18	30.00	-6.82
1732.60	WCDMA1700	H	100	177	14.78	9.31	<b>24.09</b>	30.00	-5.91
1752.60	WCDMA1700	H	100	176	13.11	9.21	22.32	30.00	-7.68
1732.60	WCDMA1700	V	146	213	13.99	9.31	23.30	30.00	-6.70
1732.60	WCDMA1700 (WCP)	H	100	198	12.93	9.31	22.24	30.00	-7.76

**Table 7-5. EIRP (AWS WCDMA)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 76 of 113

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
1850.20	GPRS1900	H	117	161	18.91	9.48	28.39	33.01	-4.62
1880.00	GPRS1900	H	103	193	19.84	9.90	<b>29.74</b>	33.01	-3.27
1909.80	GPRS1900	H	100	185	18.62	10.26	28.88	33.01	-4.13
1880.00	GPRS1900	V	198	179	17.20	9.90	27.10	33.01	-5.91
1880.00	EDGE1900	H	103	193	14.78	9.90	<b>24.68</b>	33.01	-8.33
1880.00	GPRS1900 (WCP)	H	105	233	17.06	9.90	26.96	33.01	-6.05

Table 7-6. EIRP (PCS GPRS)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
1851.25	CDMA1900	H	115	359	14.85	9.49	24.34	33.01	-8.67
1880.00	CDMA1900	H	100	355	15.81	9.90	<b>25.71</b>	33.01	-7.30
1908.75	CDMA1900	H	100	0	13.83	10.25	24.08	33.01	-8.93
1880.00	CDMA1900	V	100	14	13.10	9.90	23.00	33.01	-10.01
1880.00	CDMA1900 (WCP)	H	122	317	14.08	9.90	23.98	33.01	-9.03

Table 7-7. EIRP (PCS CDMA)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
1852.40	WCDMA1900	H	117	189	13.88	9.51	23.39	33.01	-9.62
1880.00	WCDMA1900	H	102	192	14.49	9.90	<b>24.39</b>	33.01	-8.62
1907.60	WCDMA1900	H	100	192	12.35	10.24	22.59	33.01	-10.42
1880.00	WCDMA1900	V	119	271	13.13	9.90	23.03	33.01	-9.98
1880.00	WCDMA1900 (WCP)	H	100	226	13.47	9.90	23.37	33.01	-9.64

Table 7-8. EIRP (PCS WCDMA)

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 77 of 113	

## 7.7 Radiated Spurious Emissions Measurements

### Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using horizontally and vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as peak measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

### Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

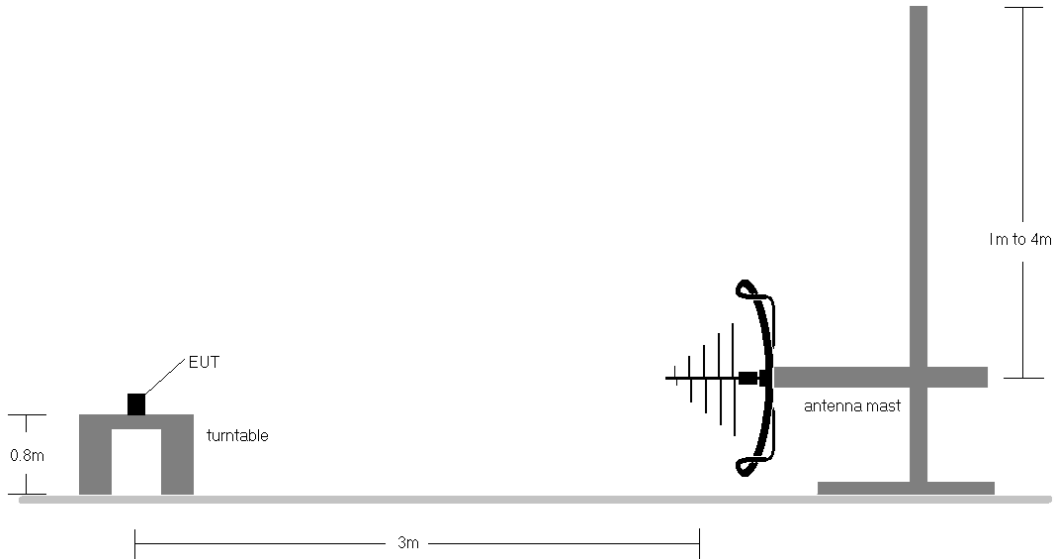
### Test Settings

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

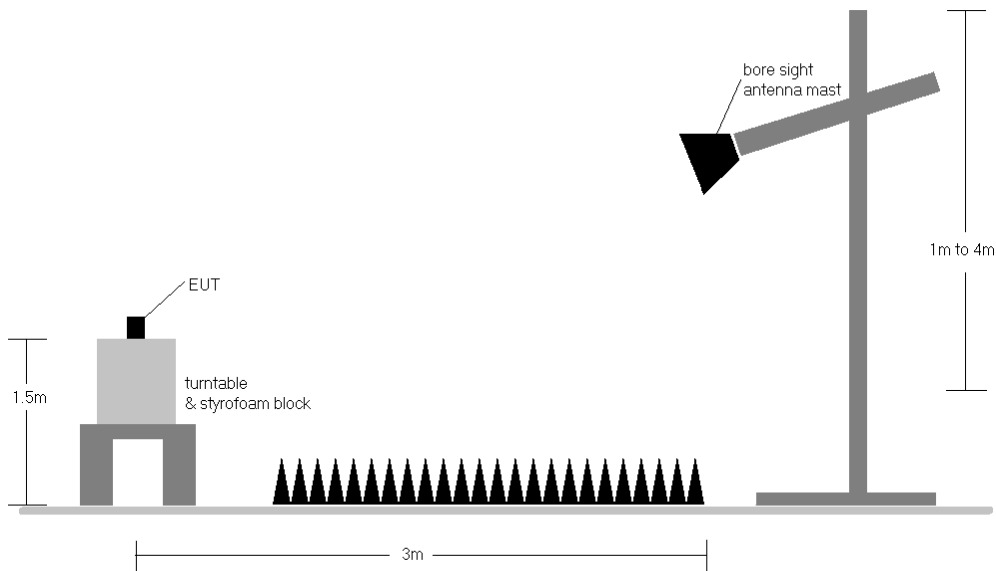
FCC ID: A3LSMN975U	 <b>MEASUREMENT REPORT (CERTIFICATION)</b> 		<b>Approved by:</b> Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset	Page 78 of 113

**Test Setup**

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



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



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

**Test Notes**

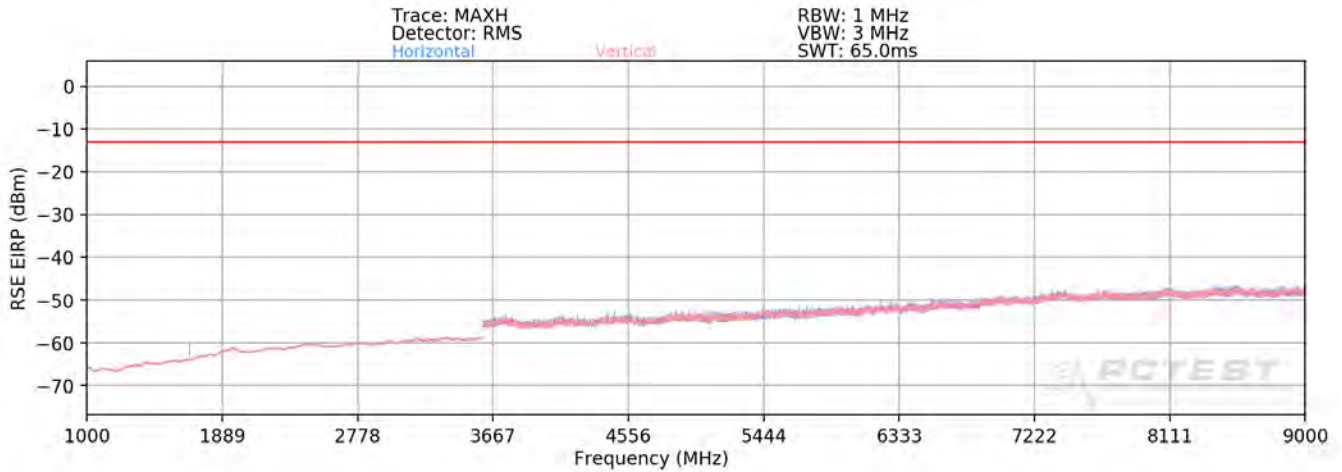
- 1) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.
- 2) This device employs UMTS technology with WCDMA (AMR/RMC), HSDPA, and HSUPA capabilities. For WCDMA and HSUPA transmission, all configurations were investigated and the worst case UMTS emissions were found in RMC WCDMA mode at 12.2kbps with HSDPA inactive and TPC bits all set to "1."

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 79 of 113

- 3) For CDMA, this device was tested under all RC and SO combinations and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 4) This unit was tested with its standard battery.
- 5) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.
- 6) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 7) 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.
- 8) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

FCC ID: A3LSMN975U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1905200079-02.A3L	<b>Test Dates:</b> 05/20 - 07/04/2019	<b>EUT Type:</b> Portable Handset	Page 80 of 113	

### Cellular GPRS Mode



**Plot 7-104. Radiated Spurious Plot above 1GHz (Cellular GPRS Mode)**

OPERATING FREQUENCY: 824.20 MHz  
 MODULATION SIGNAL: GPRS (GMSK)  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1648.40	H	112	43	-71.87	8.94	-62.93	-49.9
2472.60	H	111	41	-65.63	9.64	-55.99	-43.0
3296.80	H	-	-	-76.24	9.57	-66.66	-53.7
4121.00	H	-	-	-76.74	10.17	-66.57	-53.6

**Table 7-9. Radiated Spurious Data (Cellular GPRS Mode – Ch. 128)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 81 of 113

OPERATING FREQUENCY: 836.60 MHz  
 MODULATION SIGNAL: GPRS (GMSK)  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.20	H	-	-	-81.11	8.95	-72.16	-59.2
2509.80	H	111	43	-63.34	9.75	-53.59	-40.6
3346.40	H	-	-	-75.54	9.60	-65.94	-52.9
4183.00	H	-	-	-75.97	10.35	-65.62	-52.6

Table 7-10. Radiated Spurious Data (Cellular GPRS Mode – Ch. 190)

OPERATING FREQUENCY: 848.80 MHz  
 MODULATION SIGNAL: GPRS (GMSK)  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1697.60	H	113	131	-61.10	8.95	-52.15	-39.1
2546.40	H	147	38	-59.31	9.74	-49.57	-36.6
3395.20	H	-	-	-74.06	9.78	-64.28	-51.3
4244.00	H	-	-	-73.96	10.58	-63.39	-50.4

Table 7-11. Radiated Spurious Data (Cellular GPRS Mode – Ch. 251)

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset	Page 82 of 113	

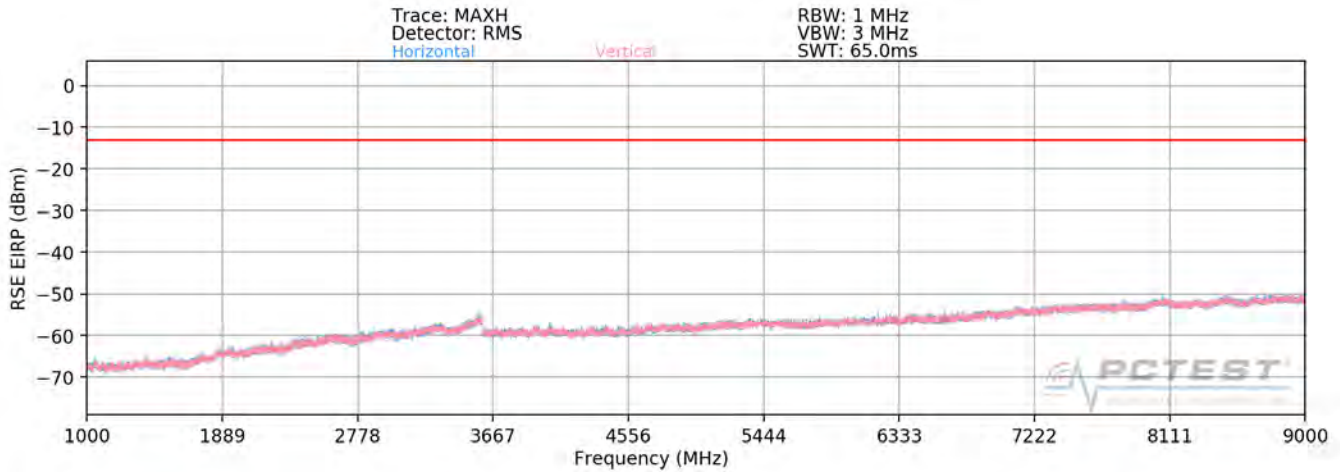
OPERATING FREQUENCY: 848.80 MHz  
 MODULATION SIGNAL: GPRS (GMSK)  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1697.60	H	173	215	-58.67	8.95	-49.72	-36.7
2546.40	H	147	350	-63.74	9.74	-54.00	-41.0
3395.20	H	-	-	-73.98	9.78	-64.20	-51.2
4244.00	H	-	-	-74.25	10.58	-63.68	-50.7

Table 7-12. Radiated Spurious Data with WCP (Cellular GPRS Mode – Ch.251)

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset	Page 83 of 113	

# Cellular CDMA Mode



**Plot 7-105. Radiated Spurious Plot above 1GHz (Cellular CDMA Mode)**

OPERATING FREQUENCY: 824.70 MHz  
 MODULATION SIGNAL: CDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1649.40	H	-	-	-80.00	8.95	-71.06	-58.1
2474.10	H	-	-	-77.24	9.65	-67.59	-54.6

**Table 7-13. Radiated Spurious Data (Cellular CDMA Mode – Ch. 1013)**

OPERATING FREQUENCY: 836.52 MHz  
 MODULATION SIGNAL: CDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.04	H	-	-	-79.17	8.95	-70.22	-57.2
2509.56	H	-	-	-77.31	9.75	-67.55	-54.6

**Table 7-14. Radiated Spurious Data (Cellular CDMA Mode – Ch. 384)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 84 of 113

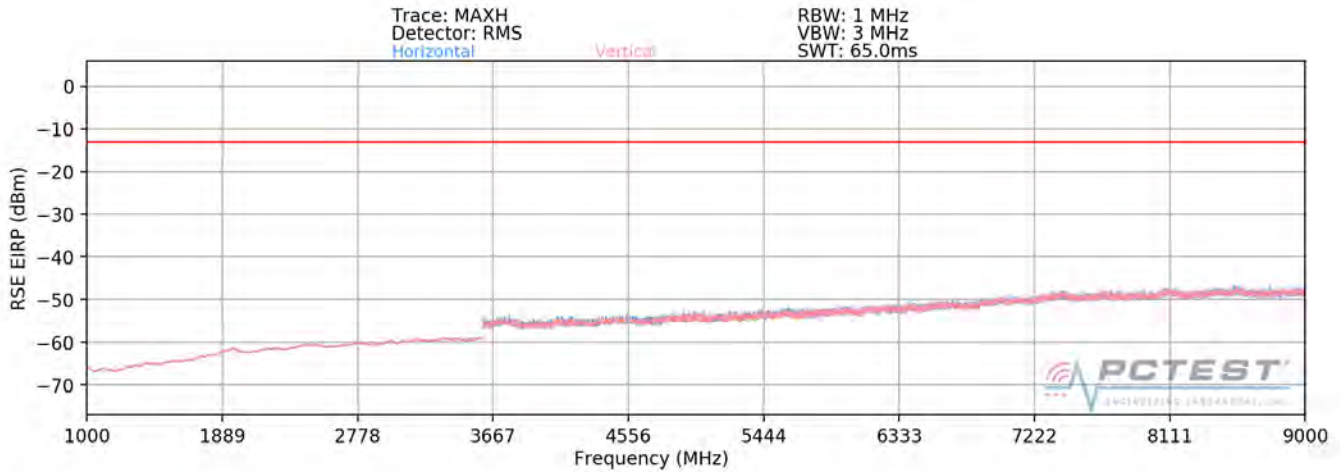
OPERATING FREQUENCY: 848.31 MHz  
 MODULATION SIGNAL: CDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1696.62	H	-	-	-79.58	8.95	-70.63	-57.6
2544.93	H	-	-	-77.11	9.74	-67.36	-54.4

Table 7-15. Radiated Spurious Data (Cellular CDMA Mode – Ch. 777)

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 85 of 113	

### Cellular WCDMA Mode



**Plot 7-106. Radiated Spurious Plot above 1GHz (Cellular WCDMA Mode)**

OPERATING FREQUENCY: 826.40 MHz  
 MODULATION SIGNAL: WCDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1652.80	H	145	205	-63.06	3.61	-59.45	-46.5
2479.20	H	389	220	-59.91	4.23	-55.68	-42.7
3305.60	H	-	-	-60.86	5.80	-55.06	-42.1
4132.00	H	-	-	-64.37	7.63	-56.74	-43.7

**Table 7-16. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4132)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 86 of 113

OPERATING FREQUENCY: 836.60 MHz  
 MODULATION SIGNAL: WCDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.20	H	145	205	-63.37	3.62	-59.75	-46.7
2509.80	H	138	219	-59.06	4.34	-54.72	-41.7
3346.40	H	-	-	-65.82	5.92	-59.90	-46.9
4183.00	H	-	-	-64.41	7.70	-56.71	-43.7
5019.60	H	-	-	-64.96	8.56	-56.39	-43.4
5856.20	H	-	-	-63.92	8.87	-55.05	-42.1

**Table 7-17. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4183)**

OPERATING FREQUENCY: 846.60 MHz  
 MODULATION SIGNAL: WCDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1693.20	H	337	65	-63.89	3.63	-60.26	-47.3
2539.80	H	-	-	-59.76	4.52	-55.25	-42.2
3386.40	H	-	-	-61.00	6.10	-54.91	-41.9
4233.00	H	-	-	-64.85	7.77	-57.08	-44.1
5079.60	H	-	-	-64.69	8.62	-56.07	-43.1
5926.20	H	-	-	-63.31	8.86	-54.45	-41.4

**Table 7-18. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4233)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 87 of 113

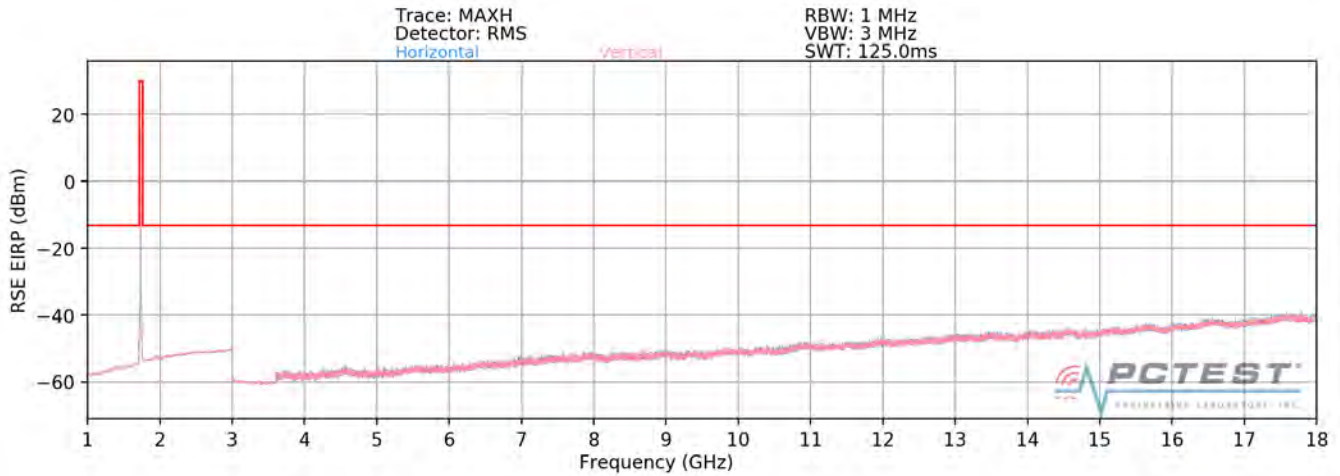
OPERATING FREQUENCY: 846.60 MHz  
 MODULATION SIGNAL: WCDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1693.20	H	100	297	-63.07	3.63	-59.44	-46.4
2539.80	H	-	-	-60.97	4.52	-56.46	-43.5
3386.40	H	-	-	-60.74	6.10	-54.65	-41.6
4233.00	H	-	-	-64.79	7.77	-57.02	-44.0
5079.60	H	-	-	-64.83	8.62	-56.21	-43.2
5926.20	H	-	-	-63.31	8.86	-54.45	-41.4

**Table 7-19. Radiated Spurious Data with WCP (Cellular WCDMA Mode – Ch. 4233)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset	Page 88 of 113	

### AWS WCDMA Mode



**Plot 7-107. Radiated Spurious Plot above 1GHz (AWS WCDMA Mode)**

OPERATING FREQUENCY: 1712.40 MHz  
 MODULATION SIGNAL: WCDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3424.80	H	-	-	-59.85	6.20	-53.65	-40.7
5137.20	H	-	-	-64.86	8.66	-56.19	-43.2
6849.60	H	-	-	-60.63	8.77	-51.86	-38.9
8562.00	H	-	-	-59.58	9.12	-50.45	-37.5
10274.40	H	-	-	-57.99	9.64	-48.35	-35.3

**Table 7-20. Radiated Spurious Data (AWS WCDMA Mode – Ch. 1312)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 89 of 113	

OPERATING FREQUENCY: 1732.60 MHz  
 MODULATION SIGNAL: WCDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3465.20	H	323	6	-60.68	6.27	-54.42	-41.4
5197.80	H	-	-	-64.58	8.71	-55.87	-42.9
6930.40	H	-	-	-60.89	8.72	-52.18	-39.2
8663.00	H	-	-	-60.18	9.27	-50.90	-37.9

Table 7-21. Radiated Spurious Data (AWS WCDMA Mode – Ch. 1413)

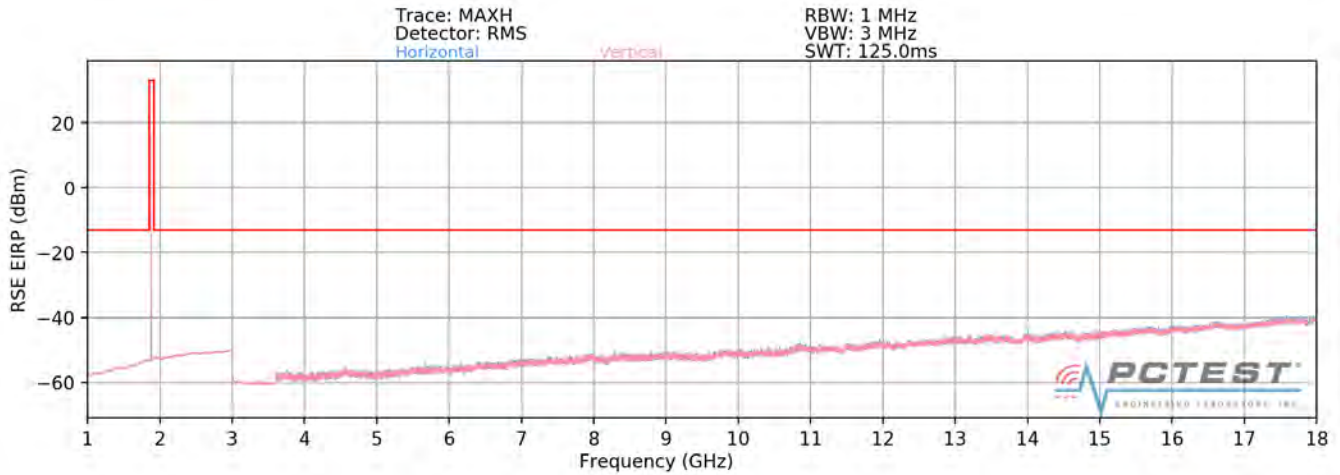
OPERATING FREQUENCY: 1752.60 MHz  
 MODULATION SIGNAL: WCDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3505.20	H	-	-	-59.89	6.34	-53.55	-40.6
5257.80	H	-	-	-64.75	8.72	-56.03	-43.0
7010.40	H	-	-	-61.20	8.75	-52.44	-39.4
8763.00	H	-	-	-60.49	9.49	-50.99	-38.0

Table 7-22. Radiated Spurious Data (AWS WCDMA Mode – Ch. 1513)

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 90 of 113

# PCS GPRS Mode



**Plot 7-108. Radiated Spurious Plot above 1GHz (PCS GPRS Mode)**

OPERATING FREQUENCY: 1850.20 MHz  
 MODULATION SIGNAL: GPRS (GMSK)  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3700.40	V	386	69	-63.59	6.56	-57.03	-44.0
5550.60	V	113	218	-61.49	8.72	-52.77	-39.8
7400.80	V	-	-	-59.54	8.41	-51.13	-38.1
9251.00	V	-	-	-59.74	9.47	-50.28	-37.3
11101.20	V	-	-	-56.86	9.31	-47.55	-34.5

**Table 7-23. Radiated Spurious Data (PCS GPRS Mode – Ch. 512)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 91 of 113	

OPERATING FREQUENCY: 1880.00 MHz  
 MODULATION SIGNAL: GPRS (GMSK)  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	V	105	121	-62.70	6.67	-56.03	-43.0
5640.00	V	102	320	-59.63	8.81	-50.82	-37.8
7520.00	V	-	-	-59.43	8.48	-50.94	-37.9
9400.00	V	-	-	-58.73	9.32	-49.41	-36.4
11280.00	V	-	-	-56.34	9.24	-47.11	-34.1

Table 7-24. Radiated Spurious Data (PCS GPRS Mode – Ch. 661)

OPERATING FREQUENCY: 1909.80 MHz  
 MODULATION SIGNAL: GPRS (GMSK)  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3819.60	V	398	291	-61.46	7.00	-54.46	-41.5
5729.40	V	120	318	-61.33	8.77	-52.56	-39.6
7639.20	V	-	-	-60.23	8.54	-51.70	-38.7
9549.00	V	-	-	-59.09	9.43	-49.67	-36.7
11458.80	V	-	-	-55.75	9.17	-46.57	-33.6

Table 7-25. Radiated Spurious Data (PCS GPRS Mode – Ch. 810)

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 92 of 113

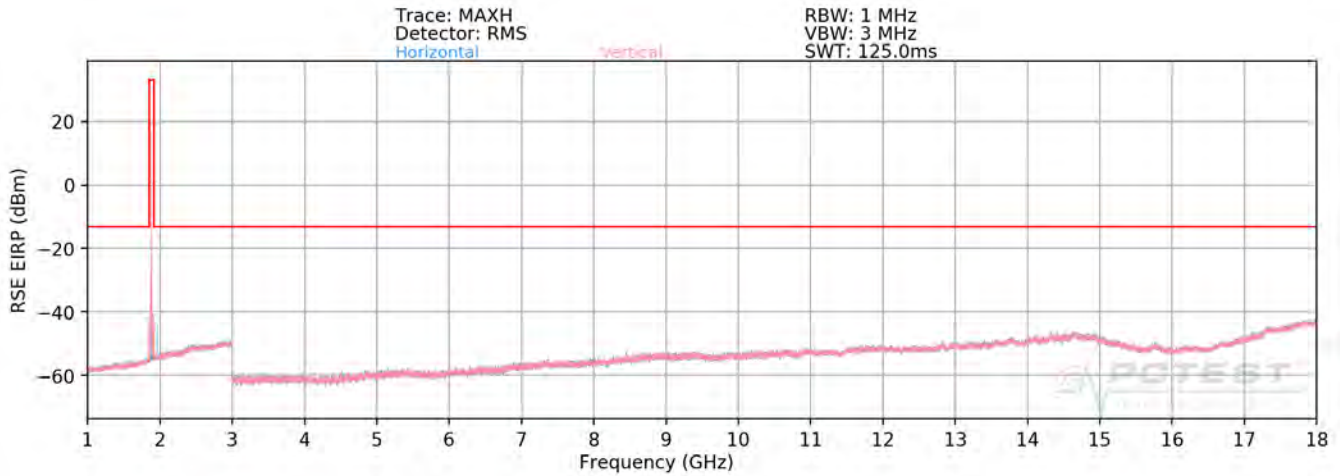
OPERATING FREQUENCY: 1880.00 MHz  
 MODULATION SIGNAL: GPRS (GMSK)  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	V	124	102	-60.43	6.67	-53.76	-40.8
5640.00	V	119	271	-61.15	8.81	-52.34	-39.3
7520.00	V	-	-	-59.83	8.48	-51.34	-38.3
9400.00	V	-	-	-58.80	9.32	-49.48	-36.5
11280.00	V	-	-	-56.47	9.24	-47.24	-34.2

**Table 7-26. Radiated Spurious Data with WCP (PCS GPRS Mode – Ch. 661)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset	Page 93 of 113	

### PCS CDMA Mode



**Plot 7-109. Radiated Spurious Plot above 1GHz (PCS CDMA Mode)**

OPERATING FREQUENCY: 1851.25 MHz  
 MODULATION SIGNAL: CDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3702.50	V	-	-	-71.69	9.58	-62.11	-49.1
5553.75	V	113	300	-68.35	10.95	-57.40	-44.4
7405.00	V	-	-	-68.23	10.96	-57.27	-44.3
9256.25	V	116	49	-62.99	11.63	-51.36	-38.4
11107.50	V	-	-	-66.01	12.74	-53.28	-40.3

**Table 7-27. Radiated Spurious Data (PCS CDMA Mode – Ch. 25)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 94 of 113

OPERATING FREQUENCY: 1880.00 MHz  
 MODULATION SIGNAL: CDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	V	-	-	-71.95	9.37	-62.58	-49.6
5640.00	V	111	306	-68.34	11.17	-57.17	-44.2
7520.00	V	-	-	-68.60	11.11	-57.48	-44.5
9400.00	V	113	50	-61.35	11.57	-49.78	-36.8
11280.00	V	-	-	-65.89	12.72	-53.17	-40.2

Table 7-28. Radiated Spurious Data (PCS CDMA Mode – Ch. 600)

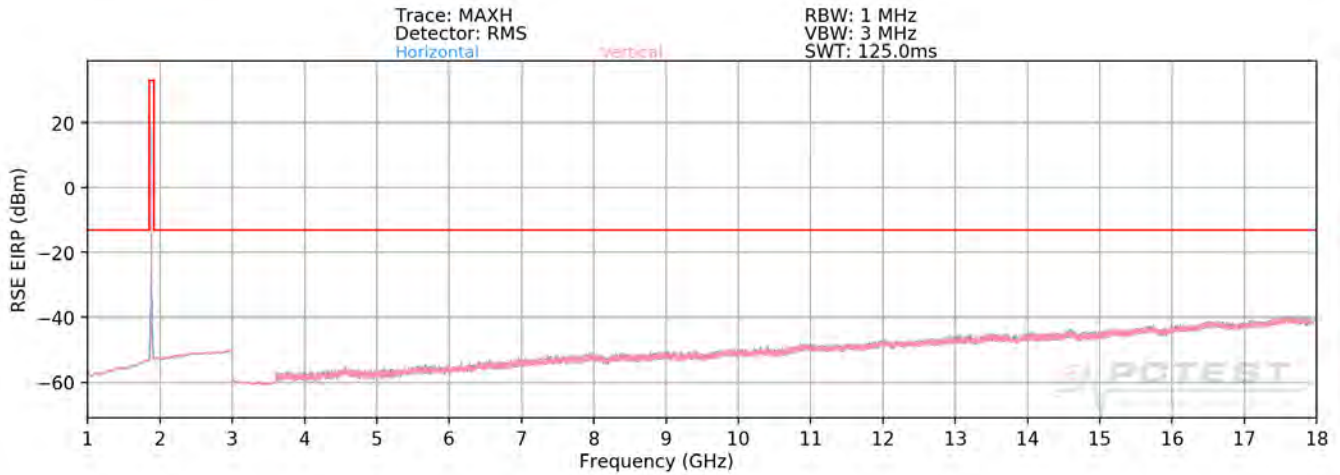
OPERATING FREQUENCY: 1908.75 MHz  
 MODULATION SIGNAL: CDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3817.50	V	-	-	-70.87	9.30	-61.57	-48.6
5726.25	V	112	304	-65.66	11.38	-54.29	-41.3
7635.00	V	-	-	-68.86	11.32	-57.53	-44.5
9543.75	V	111	45	-61.05	11.78	-49.27	-36.3
11452.50	V	-	-	-65.66	12.82	-52.84	-39.8

Table 7-29. Radiated Spurious Data (PCS CDMA Mode – Ch. 1175)

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 95 of 113

# PCS WCDMA Mode



**Plot 7-110. Radiated Spurious Plot above 1GHz (PCS WCDMA Mode)**

OPERATING FREQUENCY: 1852.40 MHz  
 MODULATION SIGNAL: WCDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3704.80	V	-	-	-62.11	6.57	-55.54	-42.5
5557.20	V	-	-	-61.84	8.72	-53.12	-40.1
7409.60	V	-	-	-58.36	8.41	-49.95	-37.0
9262.00	V	123	202	-57.79	9.44	-48.35	-35.4
11114.40	V	-	-	-56.05	9.31	-46.74	-33.7

**Table 7-30. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9262)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 96 of 113	

OPERATING FREQUENCY: 1880.00 MHz  
 MODULATION SIGNAL: WCDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	V	-	-	-61.59	6.67	-54.92	-41.9
5640.00	V	-	-	-62.70	8.81	-53.89	-40.9
7520.00	V	-	-	-58.63	8.48	-50.14	-37.1
9400.00	V	117	323	-55.82	9.32	-46.50	-33.5
11280.00	V	-	-	-56.54	9.24	-47.31	-34.3

Table 7-31. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9400)

OPERATING FREQUENCY: 1907.60 MHz  
 MODULATION SIGNAL: WCDMA  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3815.20	V	-	-	-62.01	6.97	-55.04	-42.0
5722.80	V	-	-	-63.09	8.77	-54.32	-41.3
7630.40	V	-	-	-59.32	8.52	-50.80	-37.8
9538.00	V	105	326	-54.82	9.42	-45.40	-32.4
11445.60	V	-	-	-56.36	9.18	-47.18	-34.2

Table 7-32. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9538)

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 97 of 113

## 7.8 Frequency Stability / Temperature Variation

### Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. 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 22, RSS-132, and RSS-133, the frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5$  ppm) of the center frequency. For Part 24, Part 27, and RSS-139, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.***

### Test Procedure Used

ANSI/TIA-603-E-2016

### 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: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset	Page 98 of 113	

## Frequency Stability / Temperature Variation

OPERATING FREQUENCY:	836,600,000	Hz
CHANNEL:	190	
REFERENCE VOLTAGE:	4.25	VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.25	- 30	836,599,733	-267	-0.0000319
100 %		- 20	836,599,979	-21	-0.0000025
100 %		- 10	836,599,961	-39	-0.0000047
100 %		0	836,600,031	31	0.0000037
100 %		+ 10	836,600,014	14	0.0000017
100 %		+ 20	836,599,718	-282	-0.0000337
100 %		+ 30	836,600,153	153	0.0000183
100 %		+ 40	836,600,042	42	0.0000050
100 %		+ 50	836,600,230	230	0.0000275
BATT. ENDPOINT	3.38	+ 20	836,599,989	-11	-0.0000013

**Table 7-33. Frequency Stability Data (Cellular GPRS Mode – Ch. 190)**

FCC ID: A3LSMN975U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>			Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 99 of 113	

## Frequency Stability / Temperature Variation

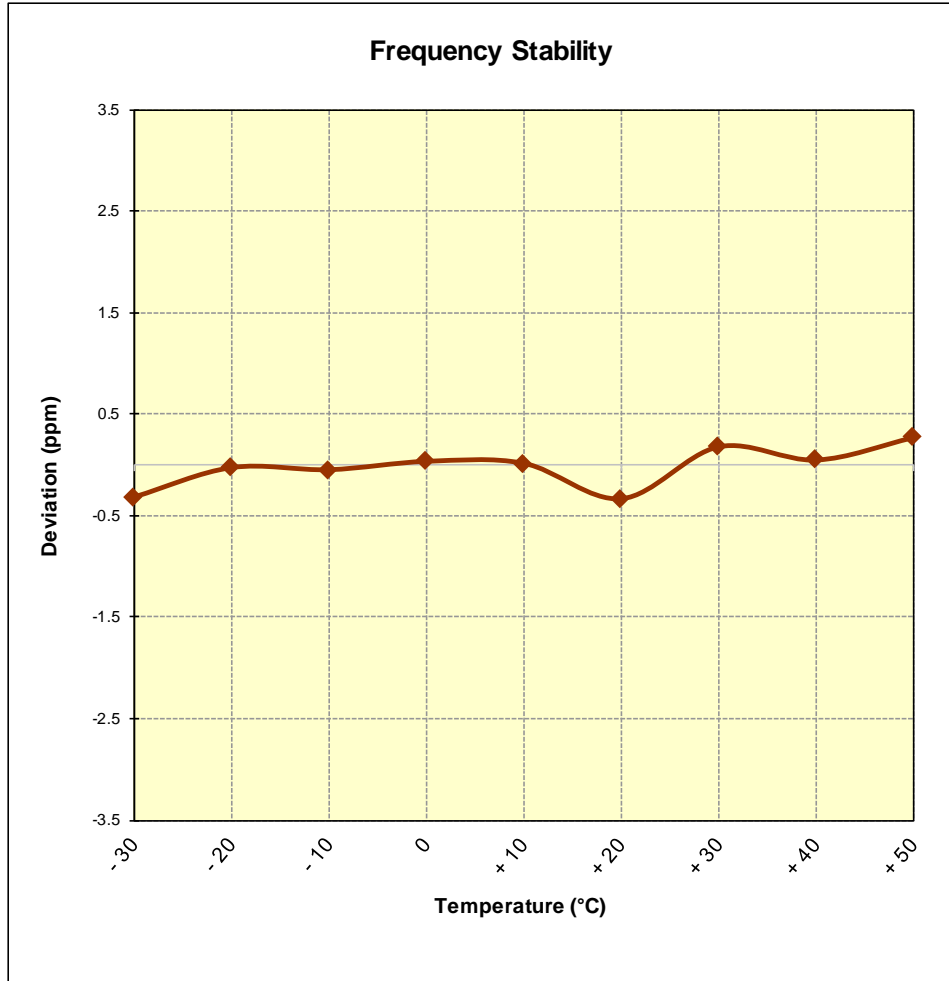


Figure 7-9. Frequency Stability Graph (Cellular GPRS Mode – Ch. 190)

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 100 of 113

## Frequency Stability / Temperature Variation

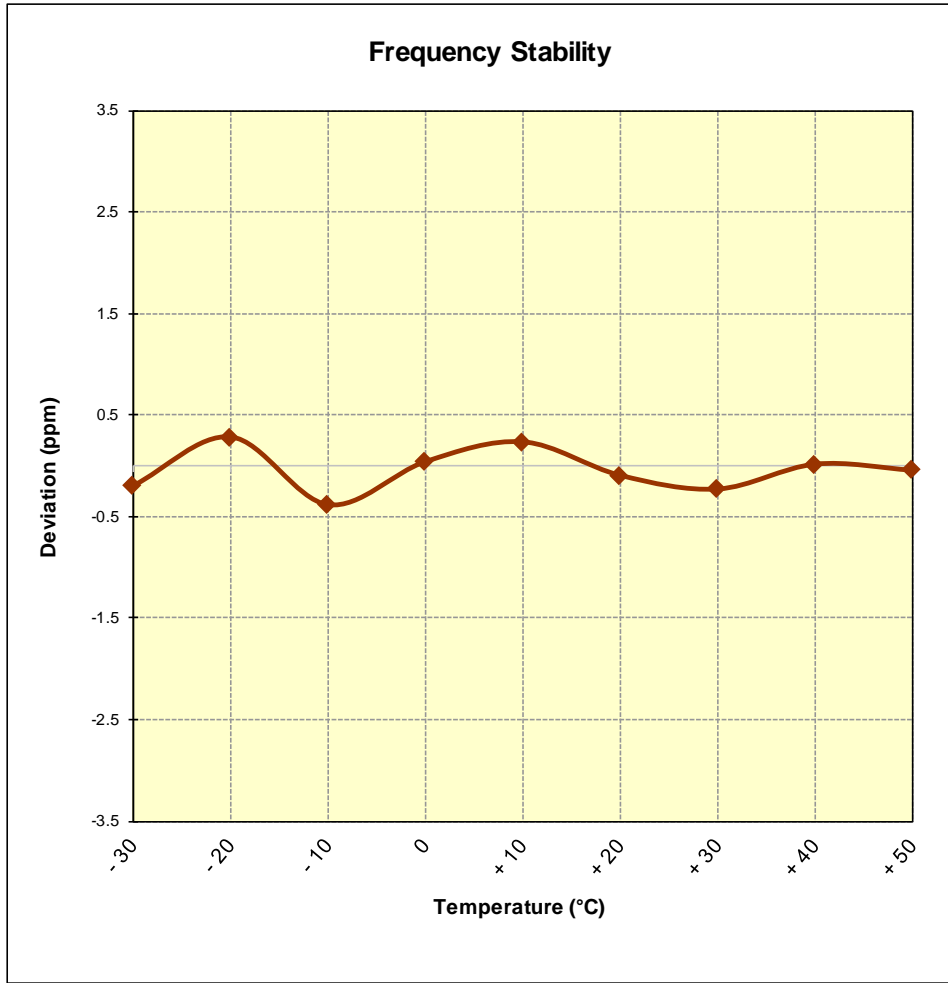
OPERATING FREQUENCY: 836,520,000 Hz  
 CHANNEL: 384  
 REFERENCE VOLTAGE: 4.25 VDC  
 DEVIATION LIMIT:  $\pm 0.00025$  % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.25	- 30	836,519,837	-163	-0.0000195
100 %		- 20	836,520,234	234	0.0000280
100 %		- 10	836,519,681	-319	-0.0000381
100 %		0	836,520,033	33	0.0000039
100 %		+ 10	836,520,194	194	0.0000232
100 %		+ 20	836,519,920	-80	-0.0000096
100 %		+ 30	836,519,809	-191	-0.0000228
100 %		+ 40	836,520,012	12	0.0000014
100 %		+ 50	836,519,962	-38	-0.0000045
BATT. ENDPOINT	3.38	+ 20	836,519,858	-142	-0.0000170

**Table 7-34. Frequency Stability Data (Cellular CDMA Mode – Ch. 384)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset	Page 101 of 113	

**Frequency Stability / Temperature Variation**



**Figure 7-10. Frequency Stability Graph (Cellular CDMA Mode – Ch. 384)**

<b>FCC ID:</b> A3LSMN975U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>	 <b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1905200079-02.A3L	<b>Test Dates:</b> 05/20 - 07/04/2019	<b>EUT Type:</b> Portable Handset	Page 102 of 113

## Frequency Stability / Temperature Variation

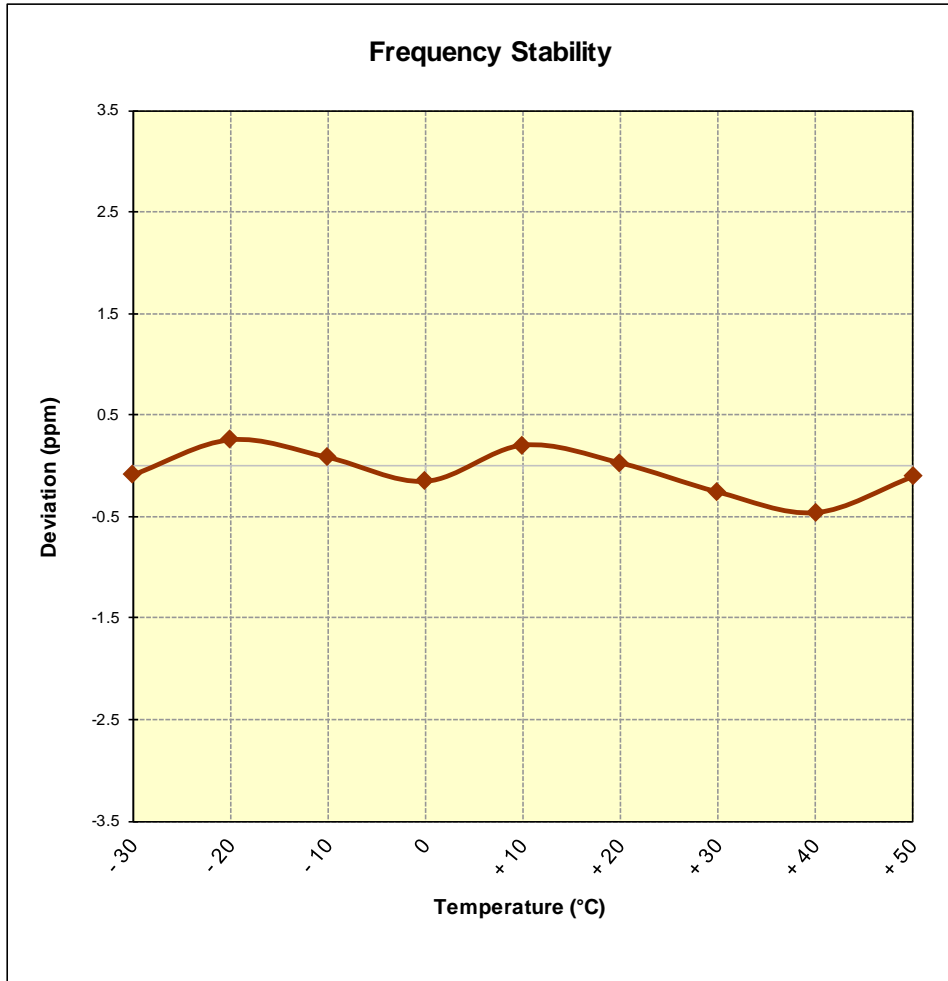
OPERATING FREQUENCY: 836,600,000 Hz  
 CHANNEL: 4183  
 REFERENCE VOLTAGE: 4.25 VDC  
 DEVIATION LIMIT:  $\pm 0.00025$  % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.25	- 30	836,599,929	-71	-0.0000085
100 %		- 20	836,600,215	215	0.0000257
100 %		- 10	836,600,070	70	0.0000084
100 %		0	836,599,875	-125	-0.0000149
100 %		+ 10	836,600,171	171	0.0000204
100 %		+ 20	836,600,025	25	0.0000030
100 %		+ 30	836,599,787	-213	-0.0000255
100 %		+ 40	836,599,618	-382	-0.0000457
100 %		+ 50	836,599,912	-88	-0.0000105
BATT. ENDPOINT	3.38	+ 20	836,600,080	80	0.0000096

**Table 7-35. Frequency Stability Data (Cellular WCDMA Mode – Ch. 4183)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset	Page 103 of 113	

**Frequency Stability / Temperature Variation**



**Figure 7-11. Frequency Stability Graph (Cellular WCDMA Mode – Ch. 4183)**

<b>FCC ID:</b> A3LSMN975U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>	 <b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1905200079-02.A3L	<b>Test Dates:</b> 05/20 - 07/04/2019	<b>EUT Type:</b> Portable Handset	Page 104 of 113

## Frequency Stability / Temperature Variation

OPERATING FREQUENCY: 1,732,600,000 Hz  
 CHANNEL: 1413  
 REFERENCE VOLTAGE: 4.25 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.25	- 30	1,732,599,562	-438	-0.0000253
100 %		- 20	1,732,599,837	-163	-0.0000094
100 %		- 10	1,732,599,892	-108	-0.0000062
100 %		0	1,732,599,787	-213	-0.0000123
100 %		+ 10	1,732,600,199	199	0.0000115
100 %		+ 20	1,732,600,152	152	0.0000088
100 %		+ 30	1,732,599,866	-134	-0.0000077
100 %		+ 40	1,732,600,312	312	0.0000180
100 %		+ 50	1,732,599,984	-16	-0.0000009
BATT. ENDPOINT	3.38	+ 20	1,732,599,879	-121	-0.0000070

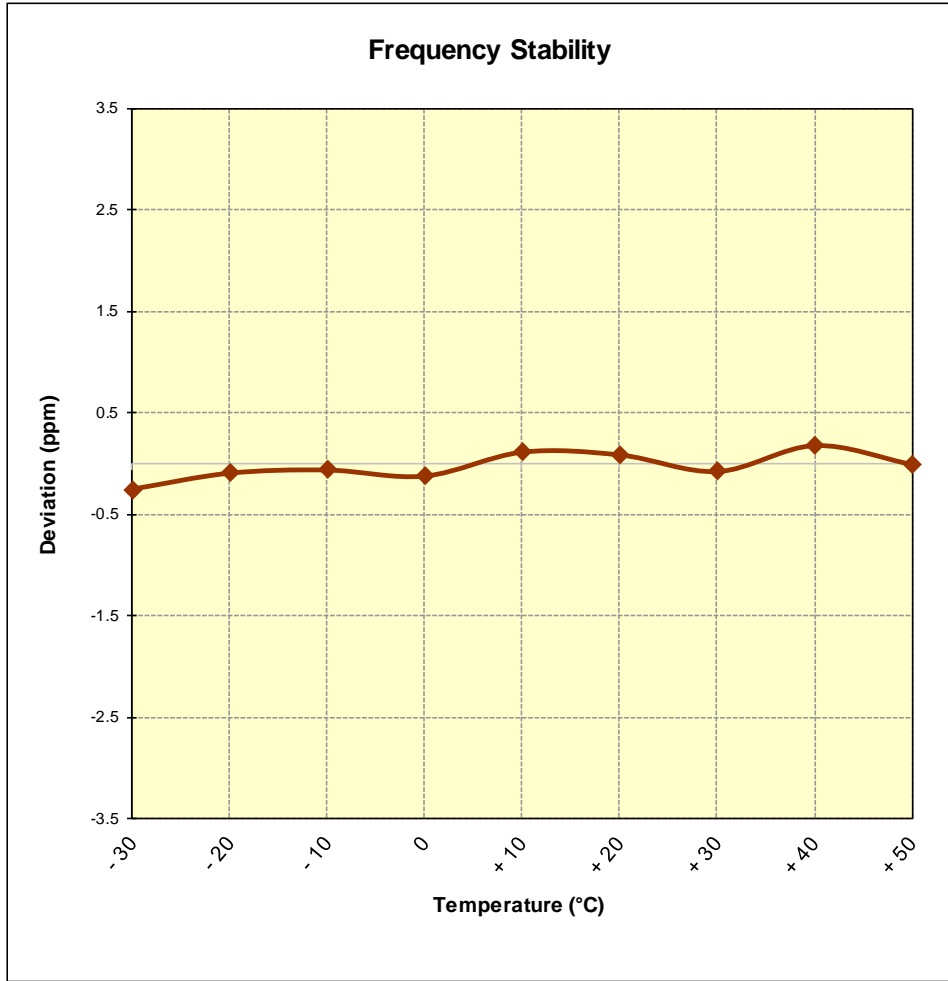
**Table 7-36. Frequency Stability Data (AWS WCDMA Mode – Ch. 1413)**

**Note:**

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 105 of 113

**Frequency Stability / Temperature Variation**



**Figure 7-12. Frequency Stability Graph (AWS WCDMA Mode – Ch. 1413)**

<b>FCC ID:</b> A3LSMN975U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>	 <b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1905200079-02.A3L	<b>Test Dates:</b> 05/20 - 07/04/2019	<b>EUT Type:</b> Portable Handset	Page 106 of 113

## Frequency Stability / Temperature Variation

OPERATING FREQUENCY: 1,880,000,000 Hz  
 CHANNEL: 661  
 REFERENCE VOLTAGE: 4.25 VDC  
 DEVIATION LIMIT:  $\pm 0.00025$  % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.25	- 30	1,880,000,320	320	0.0000170
100 %		- 20	1,880,000,103	103	0.0000055
100 %		- 10	1,879,999,761	-239	-0.0000127
100 %		0	1,880,000,139	139	0.0000074
100 %		+ 10	1,880,000,063	63	0.0000034
100 %		+ 20	1,879,999,918	-82	-0.0000044
100 %		+ 30	1,879,999,802	-198	-0.0000105
100 %		+ 40	1,879,999,838	-162	-0.0000086
100 %		+ 50	1,880,000,031	31	0.0000016
BATT. ENDPOINT		3.38	+ 20	1,880,000,181	181

**Table 7-37. Frequency Stability Data (PCS GPRS Mode – Ch. 661)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 107 of 113	

## Frequency Stability / Temperature Variation

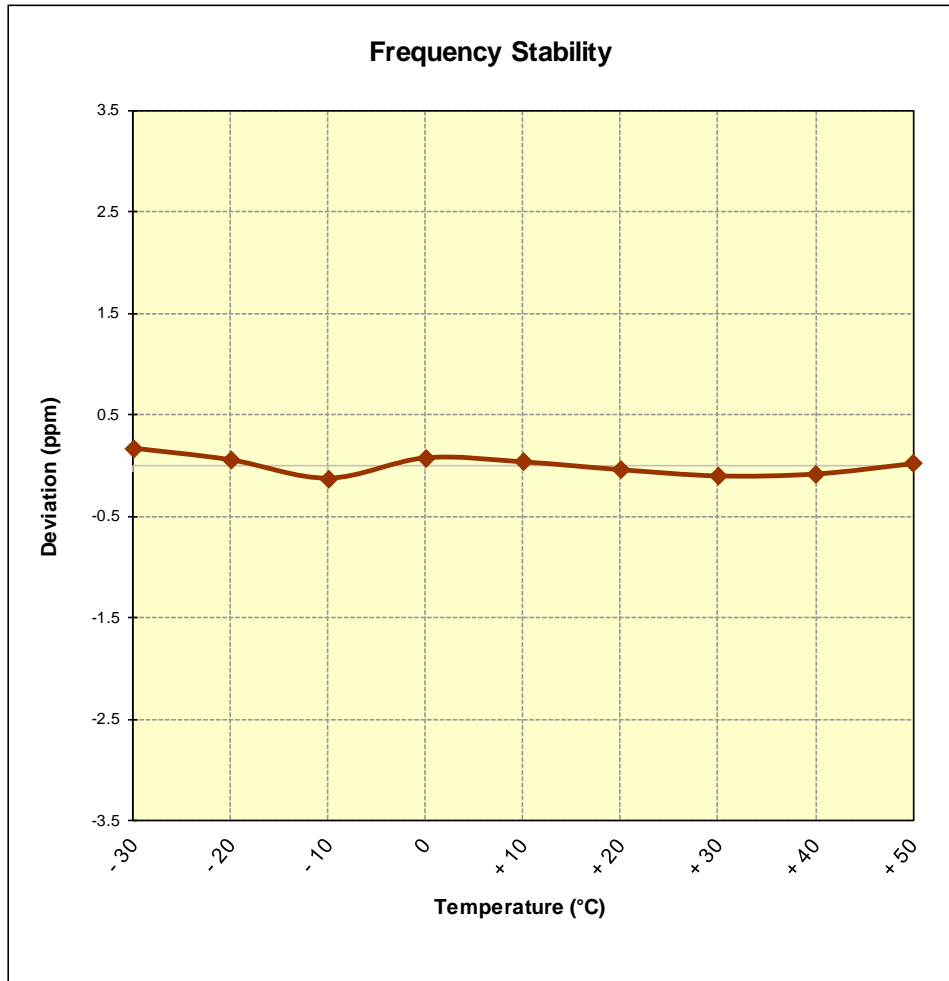


Figure 7-13. Frequency Stability Graph (PCS GPRS Mode – Ch. 661)

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 108 of 113

## Frequency Stability / Temperature Variation

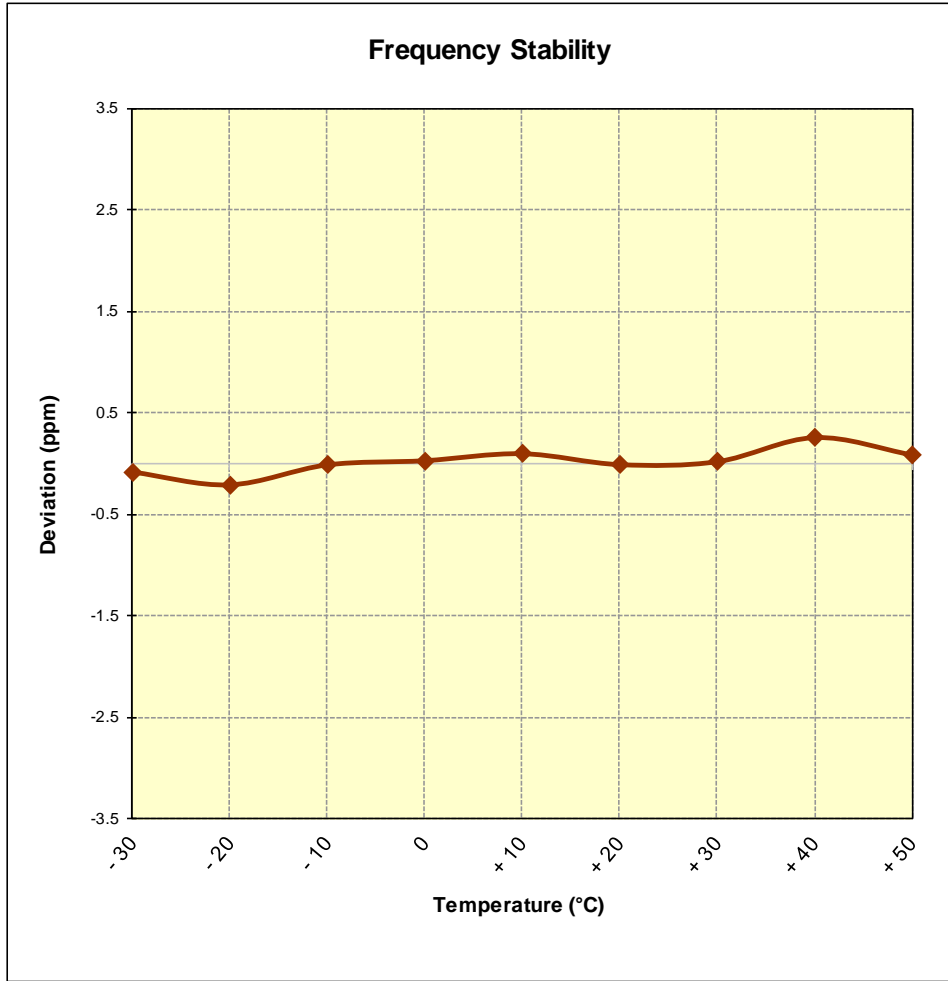
OPERATING FREQUENCY: 1,880,000,000 Hz  
 CHANNEL: 600  
 REFERENCE VOLTAGE: 4.25 VDC  
 DEVIATION LIMIT:  $\pm 0.00025$  % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.25	- 30	1,879,999,844	-156	-0.0000083
100 %		- 20	1,879,999,602	-398	-0.0000212
100 %		- 10	1,879,999,975	-25	-0.0000013
100 %		0	1,880,000,054	54	0.0000029
100 %		+ 10	1,880,000,185	185	0.0000098
100 %		+ 20	1,879,999,980	-20	-0.0000011
100 %		+ 30	1,880,000,036	36	0.0000019
100 %		+ 40	1,880,000,487	487	0.0000259
100 %		+ 50	1,880,000,160	160	0.0000085
BATT. ENDPOINT	3.38	+ 20	1,880,000,014	14	0.0000007

**Table 7-38. Frequency Stability Data (PCS CDMA Mode – Ch. 600)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 109 of 113	

**Frequency Stability / Temperature Variation**



**Figure 7-14. Frequency Stability Graph (PCS CDMA Mode – Ch. 600)**

<b>FCC ID:</b> A3LSMN975U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>	 <b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1905200079-02.A3L	<b>Test Dates:</b> 05/20 - 07/04/2019	<b>EUT Type:</b> Portable Handset	Page 110 of 113

## Frequency Stability / Temperature Variation

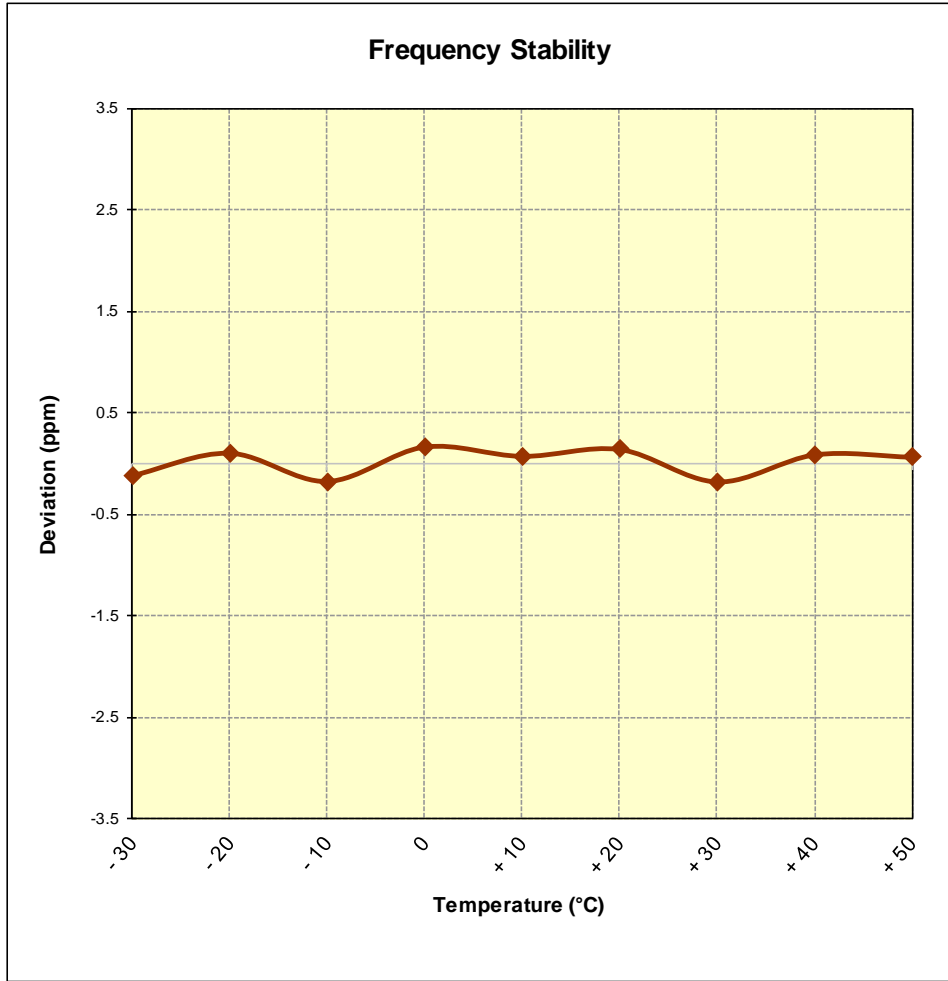
OPERATING FREQUENCY: 1,880,000,000 Hz  
 CHANNEL: 9400  
 REFERENCE VOLTAGE: 4.25 VDC  
 DEVIATION LIMIT:  $\pm 0.00025$  % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.25	- 30	1,879,999,770	-230	-0.0000122
100 %		- 20	1,880,000,197	197	0.0000105
100 %		- 10	1,879,999,664	-336	-0.0000179
100 %		0	1,880,000,314	314	0.0000167
100 %		+ 10	1,880,000,138	138	0.0000073
100 %		+ 20	1,880,000,267	267	0.0000142
100 %		+ 30	1,879,999,655	-345	-0.0000184
100 %		+ 40	1,880,000,166	166	0.0000088
100 %		+ 50	1,880,000,121	121	0.0000064
BATT. ENDPOINT	3.38	+ 20	1,879,999,828	-172	-0.0000091

**Table 7-39. Frequency Stability Data (PCS WCDMA Mode – Ch. 9400)**

FCC ID: A3LSMN975U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905200079-02.A3L	Test Dates: 05/20 - 07/04/2019	EUT Type: Portable Handset		Page 111 of 113	

**Frequency Stability / Temperature Variation**



**Figure 7-15. Frequency Stability Graph (PCS WCDMA Mode – Ch. 9400)**

<b>FCC ID:</b> A3LSMN975U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>	 <b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1905200079-02.A3L	<b>Test Dates:</b> 05/20 - 07/04/2019	<b>EUT Type:</b> Portable Handset	Page 112 of 113

## 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMN975U** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules.

<b>FCC ID:</b> A3LSMN975U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1905200079-02.A3L	<b>Test Dates:</b> 05/20 - 07/04/2019	<b>EUT Type:</b> Portable Handset	Page 113 of 113	