



# TEST REPORT



**DT&C Co., Ltd.**

42, Yurim-ro, 154Beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea, 17042  
Tel : 031-321-2664, Fax : 031-321-1664

1. Report No : DRTFCC1808-0209
2. Customer
  - Name : LG Electronics USA, Inc.
  - Address : 1000 Sylvan Ave. Englewood Cliffs, New Jersey, United States 07632
3. Use of Report : FCC Original Grant
4. Product Name / Model Name : Mobile Phone / LET  
FCC ID : ZNFLET
5. Test Method Used : KDB971168 D01v03r01, ANSI/TIA-603-E-2016, ANSI C63.26-2015  
Test Specification : §2, §27
6. Date of Test : 2018.07.11 ~ 2018.07.23
7. Testing Environment : Refer to appended test report.
8. Test Result : Refer to the attached test result.

Affirmation	Tested by		Reviewed by	 (Signature)
	Name : InHee Bae		Name : Geunki Son	

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**2018 . 08 . 14 .**

**DT&C Co., Ltd.**

If this report is required to confirmation of authenticity, please contact to [report@dtnc.net](mailto:report@dtnc.net)

## Test Report Version

Test Report No.	Date	Description
DRTFCC1808-0209	Aug. 14, 2018	Initial issue

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## 1. GENERAL INFORMATION

**Applicant Name** : LG Electronics USA, Inc  
**Address** : 1000 Sylvan Avenue, Englewood Cliffs NJ 07632 United States  
**FCC ID** : ZNFLET  
**FCC Classification** : PCS Licensed Transmitter held to ear (PCE)  
**EUT Type** : Mobile Phone  
**Model Name** : LET  
**Add Model Name** : NA  
**Supplying power** : DC 3.85 V  
**Antenna Information** : PIFA Antenna

Mode	TX Frequency (MHz)	Emission Designator	Modulation	ERP	
				Max power (dBm)	Max power (W)
LTE Band 17	709 ~ 711	8M98G7D	QPSK	21.31	0.135
LTE Band 17	709 ~ 711	8M94W7D	16QAM	20.14	0.103
LTE Band 17	706.5 ~ 713.5	4M50G7D	QPSK	21.65	0.146
LTE Band 17	706.5 ~ 713.5	4M48W7D	16QAM	20.54	0.113

## 2. INTRODUCTION

### 2.1 EUT DESCRIPTION

The Equipment Under Test (EUT) supports GSM/WCDMA/LTE Phone with Bluetooth, WLAN.

### 2.2. EUT CAPABILITIES

This EUT contains the following capabilities:

850/1900 GSM/EDGE, 850 WCDMA/HSUPA, LTE, 802.11b/g/n WLAN(2.4GHz), 802.11a/n/ac WLAN(5GHz), Bluetooth(BDR, EDR, LE).

### 2.3. TESTING ENVIRONMENT

Ambient Condition	
▪ Temperature	+22 °C ~ +26 °C
▪ Relative Humidity	43 % ~ 47 %

### 2.4 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

### 2.5. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of  $k = 2$  to indicate a 95 % level of confidence.

Parameter	Measurement uncertainty
Radiated Disturbance (Below 1 GHz)	5.1 dB (The confidence level is about 95 %, $k = 2$ )
Radiated Disturbance (1 GHz ~ 18 GHz)	5.4 dB (The confidence level is about 95 %, $k = 2$ )
Radiated Disturbance (Above 18 GHz)	5.3 dB (The confidence level is about 95 %, $k = 2$ )

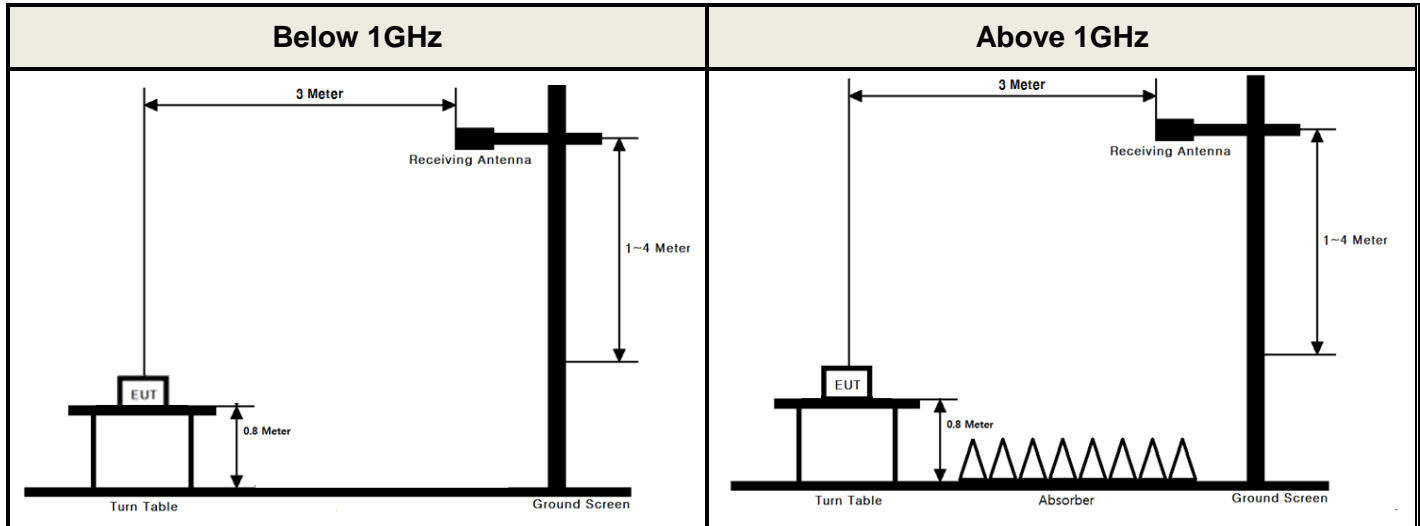
### 2.6. TEST FACILITY

<b>DT&amp;C Co., Ltd.</b>		
The 3 m test site and conducted measurement facility used to collect the radiated data are located at the 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 17042. The test site complies with the requirements of § 2.948 according to ANSI C63.4-2014.		
<b>- FCC MRA Accredited Test Firm No. : KR0034</b>		
<a href="http://www.dtnc.net">www.dtnc.net</a>		
Telephone	:	+ 82-31-321-2664
FAX	:	+ 82-31-321-1664

### 3. DESCRIPTION OF TESTS

#### 3.1 ERP & EIRP (Effective Radiated Power & Equivalent Isotropic Radiated Power)

##### *Test Set-up*



These measurements were performed at 3 m test site. The equipment under test is placed on a non-conductive table 0.8-meters above a turntable which is flush with the ground plane and 3 meters from the receive antenna. For measurements above 1GHz absorbers are placed on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1 GHz, the absorbers are removed.

##### *Test Procedure*

- ANSI/TIA-603-E-2016 - Section 2.2.17
- KDB971168 D01v03r01 - Section 5.2.2
- ANSI C63.26-2015 – Section 5.2.4.4.1

##### Test setting

1. Set span to 2 x to 3 x the OBW.
2. Set RBW = 1% to 5% of the OBW.
3. Set VBW  $\geq 3 \times$  RBW.
4. Set number of points in sweep  $\geq 2 \times$  span / RBW.
5. Sweep time:
  - 1) Set = auto-couple, or
  - 2) Set  $\geq [10 \times (\text{number of points in sweep}) \times (\text{transmission period})]$  for single sweep (automation-compatible) measurement. Transmission period is the on and off time of the transmitter.
6. Detector = power averaging (rms).
7. If the EUT can be configured to transmit continuously, then set the trigger to free run.
8. If the EUT cannot be configured to transmit continuously, then use a sweep trigger with the level set to enable triggering only on full power bursts and configure the EUT to transmit at full power for the entire duration of each sweep. Verify that the sweep time is less than or equal to the transmission burst duration. Time gating can also be used under similar constraints (i.e., configured such that measurement data is collected only during active full-power transmissions).
9. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over multiple symbols, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.

10. Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band or channel power measurement function, with the band/channel limits set equal to the OBW band edges. If the instrument does not have a band or channel power function, then sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

The receiver antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer.

A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminal of the substitute antenna is measured.

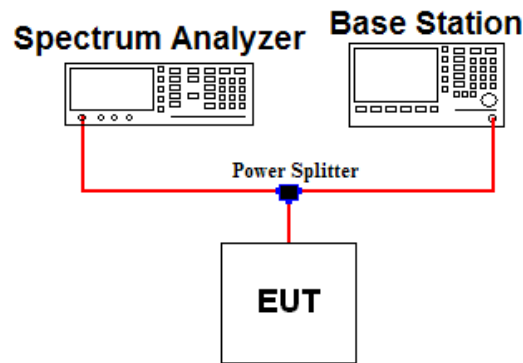
The ERP/EIRP is calculated using the following formula:

**ERP/EIRP = The conducted power at the substitute antenna's terminal [dBm] + Substitute Antenna gain [dBd for ERP, dBi for EIRP]**

For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn antenna and an isotropic antenna are taken into consideration.

### 3.2 OCCUPIED BANDWIDTH.

#### *Test set-up*



#### *Test Procedure*

- KDB971168 D01v03r01 - Section 4.3
- ANSI C63.26-2015 – Section 5.4.4

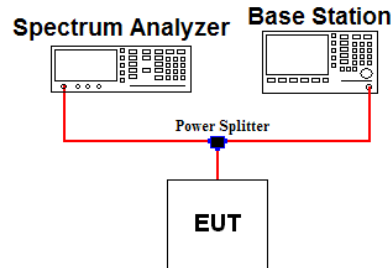
The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power of a given emission.

#### Test setting

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99 % occupied bandwidth and the 26 dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2.  $RBW = 1 \sim 5 \%$  of the expected OBW &  $VBW \geq 3 \times RBW$
3. Detector = Peak
4. Trance mode = Max hold
5. Sweep = Auto couple
6. The trace was allowed to stabilize
7. If necessary, step 2 ~ 6 were repeated after changing the RBW such that it would be within 1 ~ 5 % of the 99 % occupied bandwidth observed in step 6.

### 3.3 BAND EDGE EMISSIONS AT ANTENNA TERMINAL

#### Test set-up



#### Test Procedure

- KDB971168 D01v03r01 - Section 6
- ANSI C63.26-2015 – Section 5.7

All out of band emissions are measured by means of a calibrated spectrum analyzer. The EUT was setup to maximum output power at its lowest and highest channel with all bandwidths, modulations and RB configurations.

The power of any spurious emission shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB.

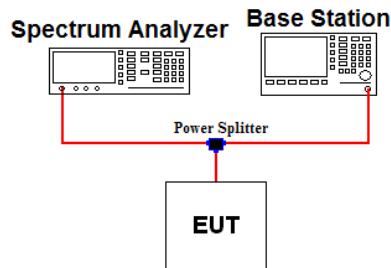
#### Test setting

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW  $\geq 1$  % of the emission bandwidth
4. VBW  $\geq 3 \times$  RBW
5. Detector = RMS & Trace mode = Max hold
6. Sweep time = Auto couple or 1 s for band edge
7. Number of sweep point  $\geq 2 \times$  span / RBW
8. The trace was allowed to stabilize

Note 1: Per Part 27(g) for operations in the 600 MHz band and the 698-746 MHz band, compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

### 3.4 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL

#### *Test set-up*



#### *Test Procedure*

- KDB971168 D01v03r01 - Section 6
- ANSI C63.26-2015 – Section 5.7

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The EUT was setup to maximum output power at its low, middle, high channel with all bandwidths, modulations and RB configurations. The spectrum is scanned from 9 kHz up to a frequency including its 10<sup>th</sup> harmonic.

The power of any spurious emission shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB.

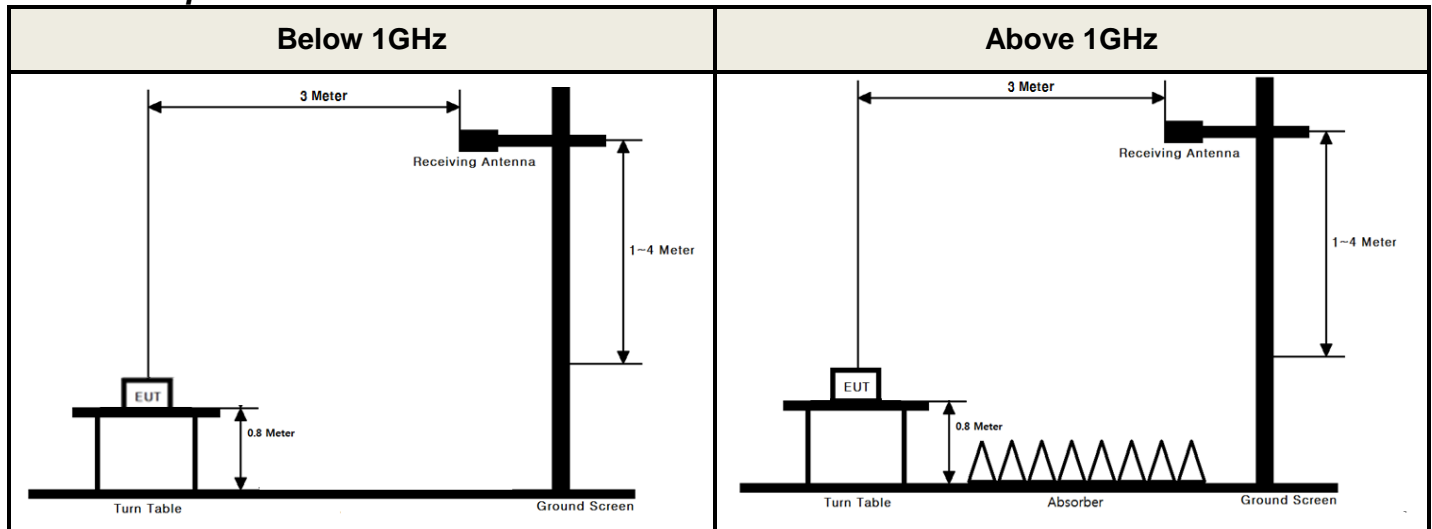
#### Test setting

1. RBW = 100 kHz(Below 1 GHz) or 1 MHz(Above 1 GHz) & VBW  $\geq 3 \times$  RBW ( Refer to Note 1)
2. Detector = RMS & Trace mode = Max hold
3. Sweep time = Auto couple
4. Number of sweep point  $\geq 2 \times$  span / RBW
5. The trace was allowed to stabilize

Note 1: Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1GHz and 1MHz or greater for frequencies greater than 1GHz.

### 3.5 UNDESIRABLE EMISSIONS

#### Test Set-up



These measurements were performed at 3 test site. The equipment under test is placed on a non-conductive table 0.8-meters above a turntable which is flush with the ground plane and 3 meters from the receive antenna. For measurements above 1GHz absorbers are placed on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1 GHz, the absorbers are removed.

#### Test Procedure

- ANSI/TIA-603-E-2016 - Section 2.2.12
- KDB971168 D01v03r01 - Section 5.8
- ANSI C63.26-2015 – Section 5.5

#### Test setting

1. RBW = 100 kHz for below 1 GHz and 1 MHz for above 1 GHz / VBW  $\geq 3 \times$  RBW
2. Detector = RMS & Trace mode = Max hold
3. Sweep time = Auto couple
4. Number of sweep point  $\geq 2 \times$  span / RBW
5. The trace was allowed to stabilize

The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer.

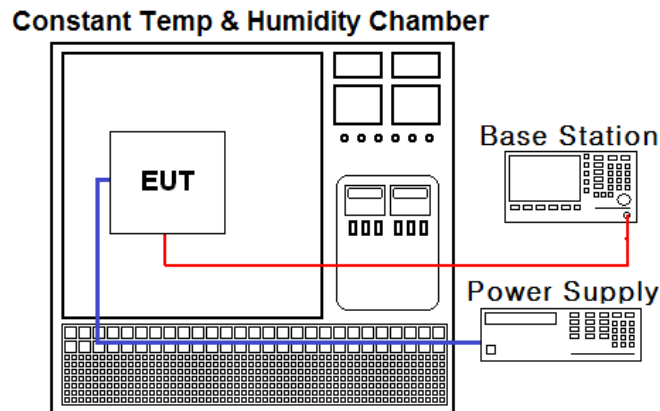
For radiated power measurements below 1 GHz, a half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading.

For radiated power measurements above 1 GHz, a Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. The difference between the gain of the horn and an isotropic antenna are taken into consideration.

This measurement was performed with the EUT oriented in 3 orthogonal axis.

### 3.6 FREQUENCY STABILITY

#### Test Set-up



#### Test Procedure

- ANSI/TIA-603-E-2016
- KDB971168 D01v03r01 - Section 9

The frequency stability of the transmitter is measured by:

a.) **Temperature:**

The temperature is varied from - 30 °C to + 50 °C 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.

#### Specification:

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block for Part 24, 27. The frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5$  ppm) of the center frequency for Part 22.

#### Time Period and Procedure:

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 one minute 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.

## 4. LIST OF TEST EQUIPMENT

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal. Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	18/07/09	19/07/09	MY46471251
Spectrum Analyzer	Agilent Technologies	N9020A	17/12/26	18/12/26	MY50200828
DC Power Supply	Agilent Technologies	66332A	18/07/02	19/07/02	GB42110550
Multimeter	FLUKE	17B	17/12/26	18/12/26	26030065WS
Power Splitter	Anritsu	K241B	17/12/27	18/12/27	016681
Temp & Humi Test Chamber	SJ Science	SJ-TH-S50	17/12/28	18/12/28	SJ-TH-S50120203
Thermohygrometer	BODYCOM	BJ5478	18/01/03	19/01/03	120612-2
Thermohygrometer	BODYCOM	BJ5478	18/01/02	19/01/02	090205-4
Radio Communication Analyzer	Anritsu	MT8820C	17/09/07	19/09/07	6201127429
Signal Generator	R&S	SMBV100A	17/12/28	18/12/28	255571
Signal Generator	R&S	SMF100A	17/12/27	18/12/27	102341
Loop Antenna	Schwarzbeck	FMZB1513	18/01/30	20/01/30	1513-128
Bilog Antenna	Schwarzbeck	VULB9160	18/07/13	20/07/13	3359
Dipole Antenna	Schwarzbeck	VHA9103	17/03/14	19/03/14	2116
Dipole Antenna	Schwarzbeck	VHA9103	18/04/13	20/04/13	2117
Dipole Antenna	Schwarzbeck	UHA9105	17/03/14	19/03/14	2261
Dipole Antenna	Schwarzbeck	UHA9105	18/04/13	20/04/13	2262
HORN ANT	ETS	3117	18/05/10	20/05/10	00140394
HORN ANT	ETS	3117	17/08/02	19/08/02	00154312
PreAmplifier	EMPOWER	BBS3Q7ELU	18/07/10	19/07/10	1020
PreAmplifier	TSJ	MLA-010K01-B01- 27	18/03/05	19/03/05	1844539
Amplifier	Agilent	8449B	18/07/05	19/07/05	3008A02108
High-pass filter	Wainwright	WHKX12-935-1000- 15000-40SS	18/07/05	19/07/05	7
CABLE	DTNC	CABLE	18/02/28	19/02/28	C-016-4
CABLE	DTNC	CABLE	18/02/28	19/02/28	RF-81
CABLE	Radiall	TESTPRO3	18/02/28	19/02/28	RF-74
CABLE	DTNC	CABLE-RF	18/02/28	19/02/28	RF-76
CABLE	DTNC	CABLE-RF	18/02/28	19/02/28	RF-54
CABLE	DTNC	CABLE-RF	18/02/28	19/02/28	RF-32
CABLE	Radiall	TESTPRO3	18/02/28	19/02/28	RF-66
CABLE	HUBER+SUHNER	SUCOFLEX103	18/02/28	19/02/28	RF-75

Note: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017.

Note2: The cable is not a regular calibration item, so it has been calibrated by DT & C itself.

## 5. SUMMARY OF TEST RESULTS

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Status <small>Note 1</small>
2.1046	Conducted Output Power	N/A	Conducted	<b>C</b> <small>Note2</small>
2.1049	Occupied Bandwidth	N/A		<b>C</b>
2.1051 27.53(g)	Band Edge / Conducted Spurious Emissions	> 43 + 10log <sub>10</sub> (P) dB at Band edge and for all out-of-band emissions		<b>C</b>
2.1055 27.54	Frequency Stability	Fundamental emissions must stay within Authorized frequency block		<b>C</b>
27.50(c.10)	Radiated Output Power	< 3 Watts max. ERP	Radiated	<b>C</b>
2.1053 27.53(g)	Undesirable Emissions	> 43 + 10log <sub>10</sub> (P) dB for all out-of-band emissions		<b>C</b>
Note 1: <b>C</b> =Comply <b>NC</b> =Not Comply <b>NT</b> =Not Tested <b>NA</b> =Not Applicable Note 2: Refer to RF Exposure Report (Test Report SAR)				

## 6. SAMPLE CALCULATION

### A. Emission Designator

#### LTE Band 17(QPSK)

Emission Designator = **8M98G7D**

LTE OBW = 8.983 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data Transmission

#### LTE Band 17(16QAM)

Emission Designator = **8M94W7D**

LTE OBW = 8.939 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data Transmission

### B. For substitution method

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Spectrum Reading Value(dBm)	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
5	710	QPSK	1/12	-14.86	X	H	20.37	1.28	21.65	0.146

#### ERP or EIRP = Level @ Ant Terminal LEVEL(dBm) + Tx Ant. Gain

- 1) The EUT mounted on a non-conductive turntable is 0.8 meter above test site ground level.
- 2) During the test, the turn table is rotated until the maximum signal is found.
- 3) Record the field strength meter's level.
- 4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
- 6) The signal generator output level with substituted antenna gain is the rating of ERP, EIRP or Radiated spurious emission.

## 7. TEST DATA

### 7.1 OCCUPIED BANDWIDTH

- Plots of the EUT's Occupied Bandwidth are shown in Clause 8.1

### 7.2 BAND EDGE EMISSIONS (Conducted)

- Plots of the EUT's Band Edge Emissions are shown in Clause 8.3

### 7.3 SPURIOUS AND HARMONICS EMISSIONS (Conducted)

- Plots of the EUT's Spurious Emissions are shown in Clause 8.4

## 7.4 ERP & EIRP

### 7.4.1 LTE Band 17

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
10	709	QPSK	1/25	H	19.85	1.28	21.13	0.130
		16QAM	1/25	H	18.80	1.28	20.08	0.102
	711	QPSK	1/25	H	20.03	1.28	21.31	0.135
		16QAM	1/25	H	18.86	1.28	20.14	0.103
5	706.5	QPSK	1/12	H	19.54	1.28	20.82	0.121
		16QAM	1/12	H	18.39	1.28	19.67	0.093
	710	QPSK	1/12	H	20.37	1.28	21.65	0.146
		16QAM	1/12	H	19.26	1.28	20.54	0.113
	713.5	QPSK	1/12	H	19.59	1.28	20.87	0.122
		16QAM	1/12	H	18.43	1.28	19.71	0.094

Note: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.

## 7.5 UNDESIRABLE EMISSIONS (Radiated)

### 7.5.1 LTE Band 17

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
								(dBm)	(dBc)	
10	709	1/25	QPSK	1418.02	H	-57.32	2.87	-54.45	75.58	34.13
				-	-	-	-	-	-	
			16QAM	1417.97	H	-57.73	2.87	-54.86	74.94	33.08
				-	-	-	-	-	-	
	711	1/25	QPSK	1422.17	H	-55.81	2.92	-52.89	74.20	34.31
				-	-	-	-	-	-	
			16QAM	1422.07	H	-56.67	2.92	-53.75	73.89	33.14
				-	-	-	-	-	-	
5	706.5	1/12	QPSK	1412.88	H	-56.10	2.82	-53.28	74.10	33.82
				-	-	-	-	-	-	
			16QAM	1413.03	H	-56.96	2.82	-54.14	73.81	32.67
				-	-	-	-	-	-	
	710	1/12	QPSK	1419.85	H	-55.72	2.89	-52.83	74.48	34.65
				-	-	-	-	-	-	
			16QAM	4120.14	H	-52.09	6.93	-45.16	65.70	33.54
				-	-	-	-	-	-	
	713.5	1/12	QPSK	1426.94	H	-54.52	2.96	-51.56	72.43	33.87
				-	-	-	-	-	-	
			16QAM	1427.06	H	-56.01	2.97	-53.04	72.75	32.71
				-	-	-	-	-	-	

Note 1: Limit Calculation =  $43 + 10\log_{10}(P[\text{Watts}])$

Note 2: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.

Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

## 7.6 FREQUENCY STABILITY

### 7.6.1 LTE Band 17

OPERATING FREQUENCY : 710 MHz

REFERENCE VOLTAGE : 3.85 VDC

LIMIT : The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (°C)	FREQUENCY (Hz)	FREQ.Dev (Hz)	Deviation	
					(ppm)	(%)
100%	3.85	+20(Ref)	710,000,003	3	0.0042	0.000000423
100%		-30	709,999,998	-2	-0.0028	-0.000000282
100%		-20	710,000,001	1	0.0014	0.000000141
100%		-10	709,999,997	-3	-0.0042	-0.000000423
100%		0	710,000,004	4	0.0056	0.000000563
100%		+10	710,000,001	1	0.0014	0.000000141
100%		+20	710,000,003	3	0.0042	0.000000423
100%		+30	710,000,004	4	0.0056	0.000000563
100%		+40	710,000,005	5	0.0070	0.000000704
100%		+50	710,000,002	2	0.0028	0.000000282
115%	4.43	+20	710,000,001	1	0.0014	0.000000141
BATT.ENDPOINT	3.60	+20	709,999,997	-3	-0.0042	-0.000000423

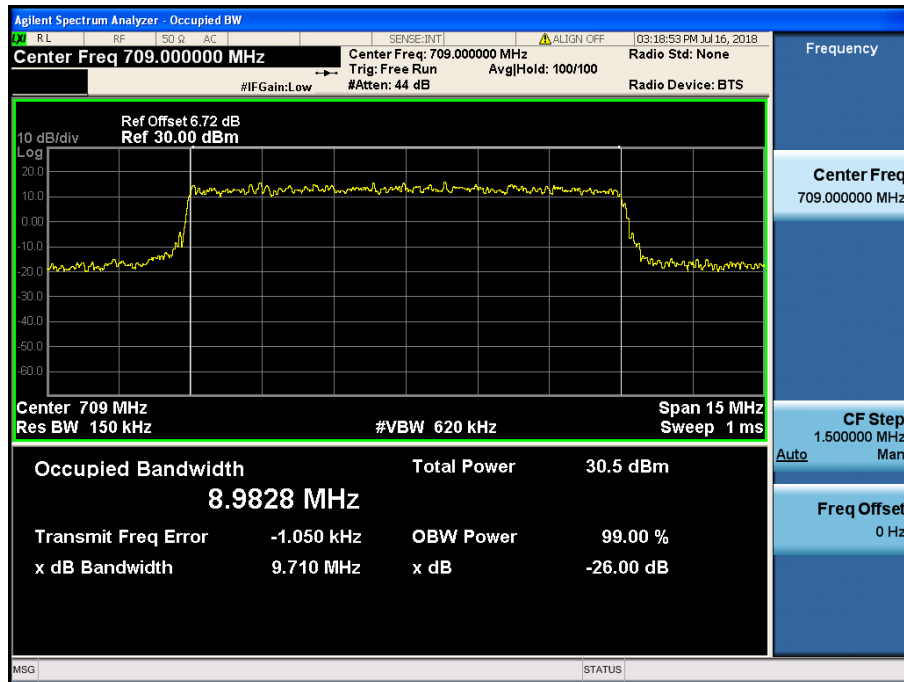
**Note.** Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. as such it is determined that the channels at the band edge would remain inband when the maximum measured frequency deviation noted during the frequency stability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

## 8. TEST PLOTS

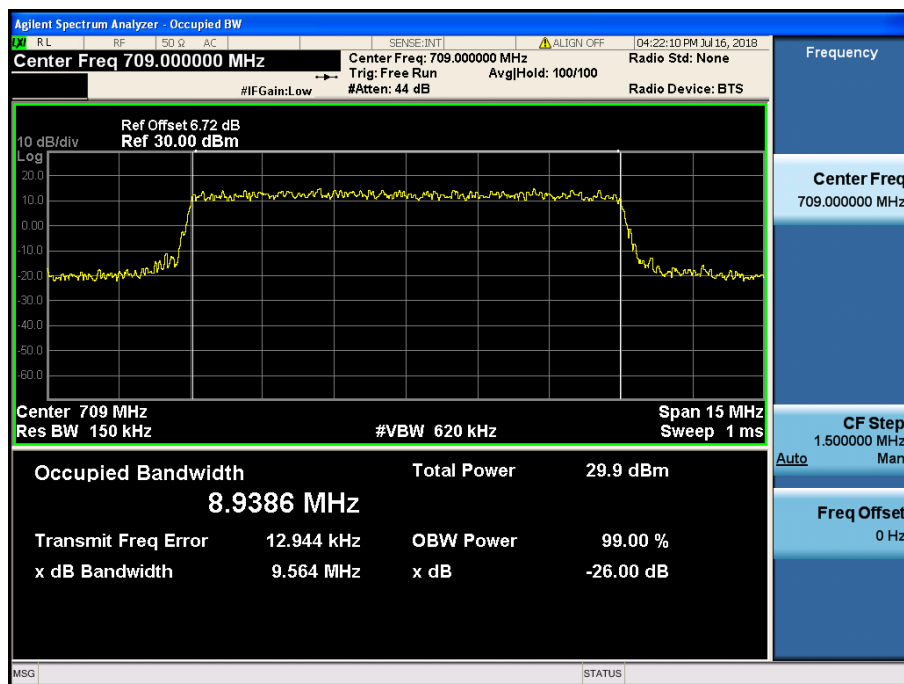
Note: All bandwidths, RB configurations, and modulations were investigated.  
The worst case test results are reported.

### 8.1 OCCUPIED BANDWIDTH

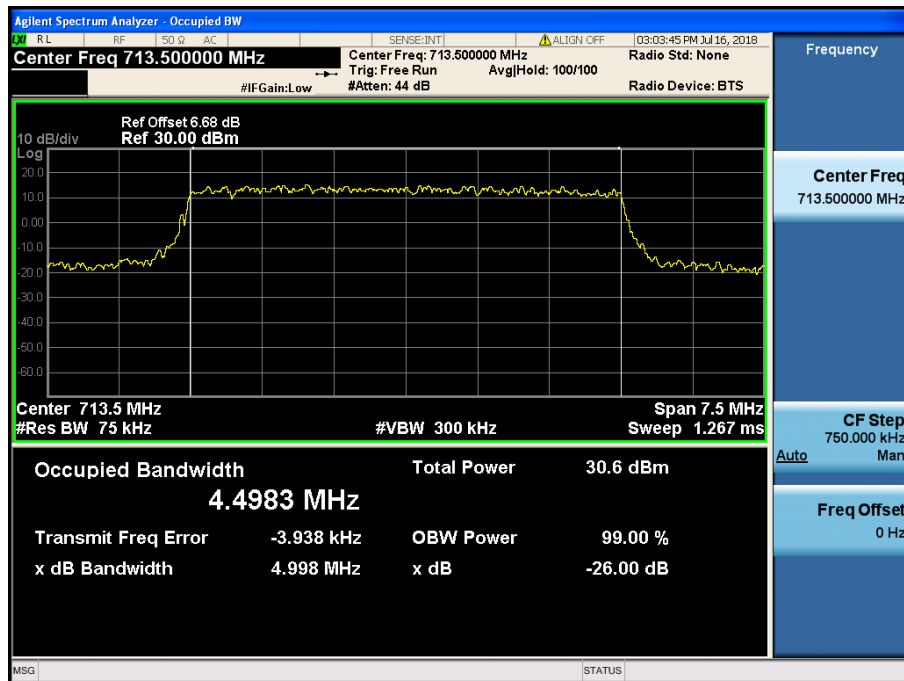
#### 8.1.1 LTE Band 17



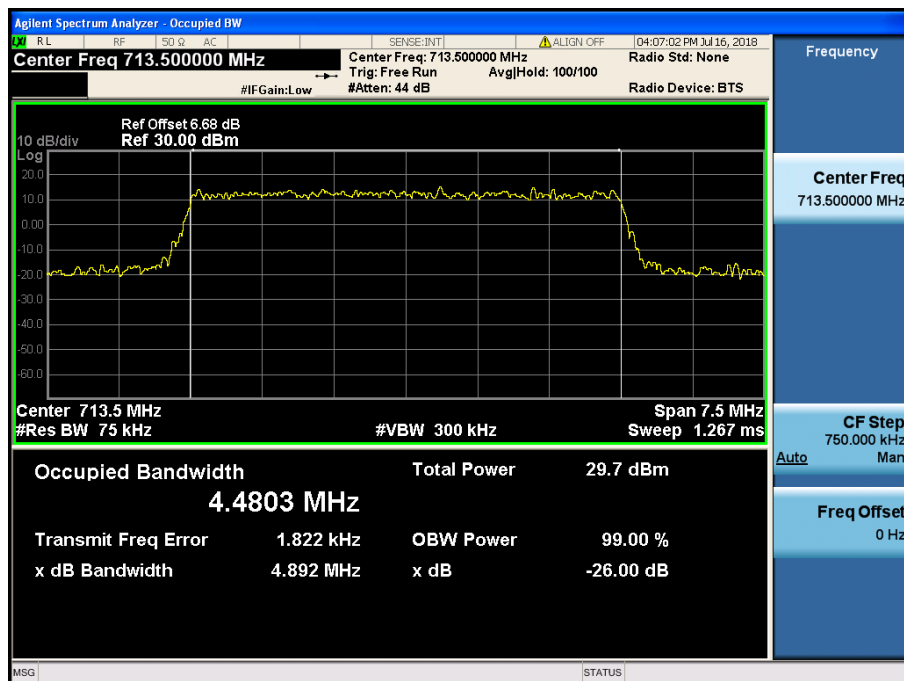
LTE Band 17 / 10 MHz / QPSK - RB Size 50



LTE Band 17 / 10 MHz / 16QAM - RB Size 50



LTE Band 17 / 5 MHz / QPSK - RB Size 25



LTE Band 17 / 5 MHz / 16QAM - RB Size 25

## 8.2 BAND EDGE EMISSIONS(Conducted)

### 8.2.1 LTE Band 17

- Lower Band Edge



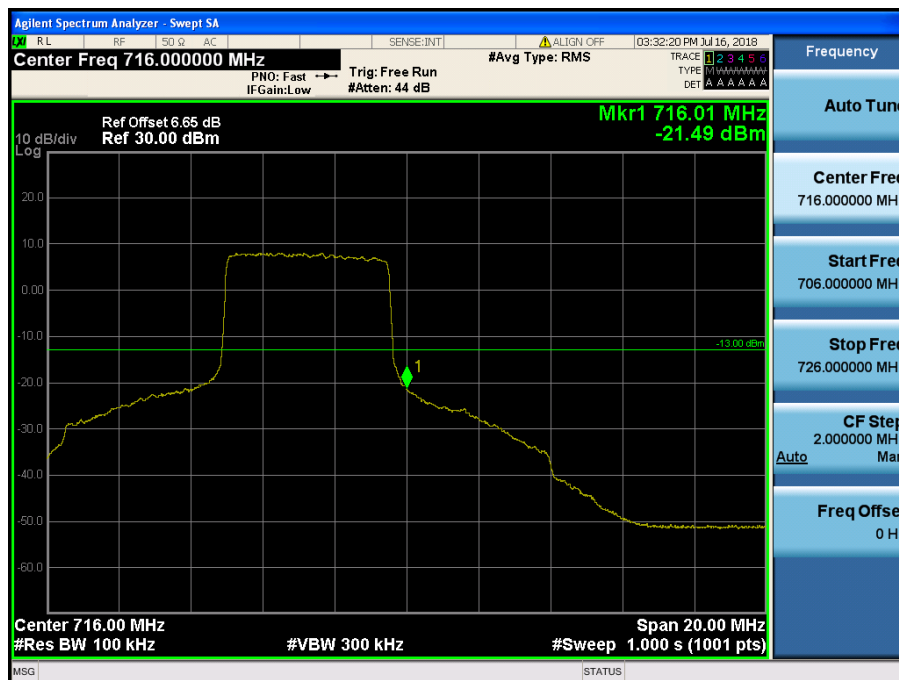
LTE Band 17 / 10MHz / QPSK - RB Size/Offset (25/0)

- Lower Extended Band Edge



LTE Band 17 / 10MHz / QPSK - RB Size/Offset (25/0)

- Upper Band Edge



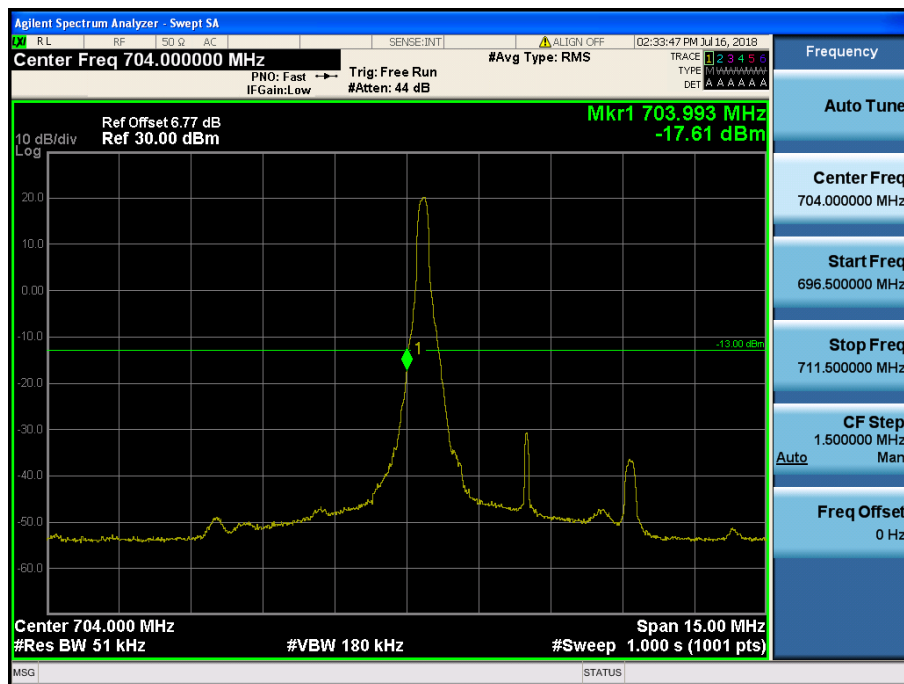
LTE Band 17 / 10MHz / QPSK - RB Size/Offset (25/25)

- Upper Extended Band Edge



LTE Band 17 / 10MHz / QPSK - RB Size/Offset (25/25)

- Lower Band Edge



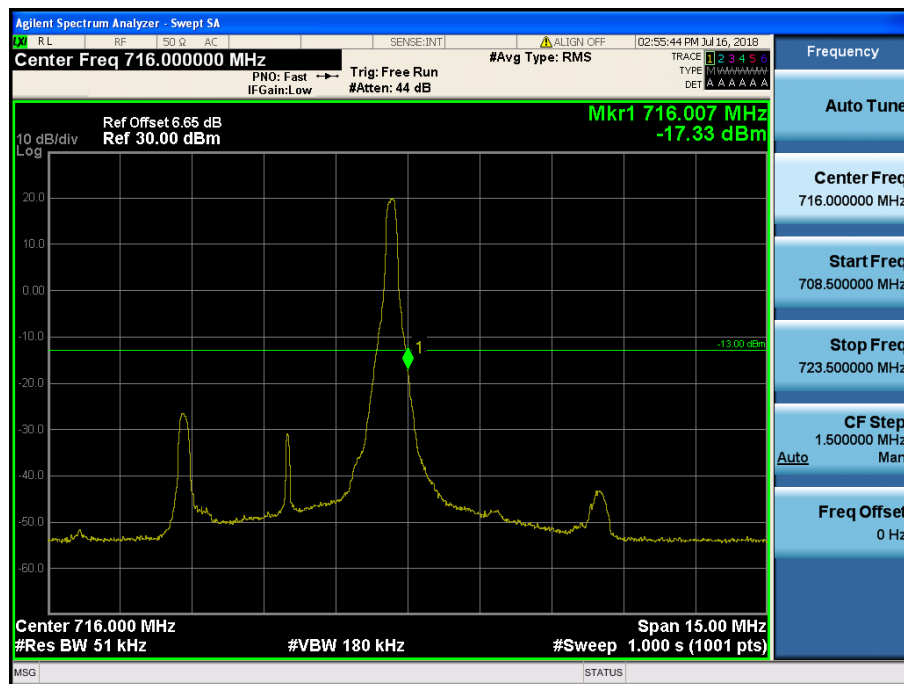
LTE Band 17 / 5MHz / QPSK RB Size/Offset (1/0)

- Lower Extended Band Edge



LTE Band 17 / 5MHz / QPSK RB Size/Offset (12/0)

- Upper Band Edge



LTE Band 17 / 5MHz / QPSK - RB Size/Offset (1/24)

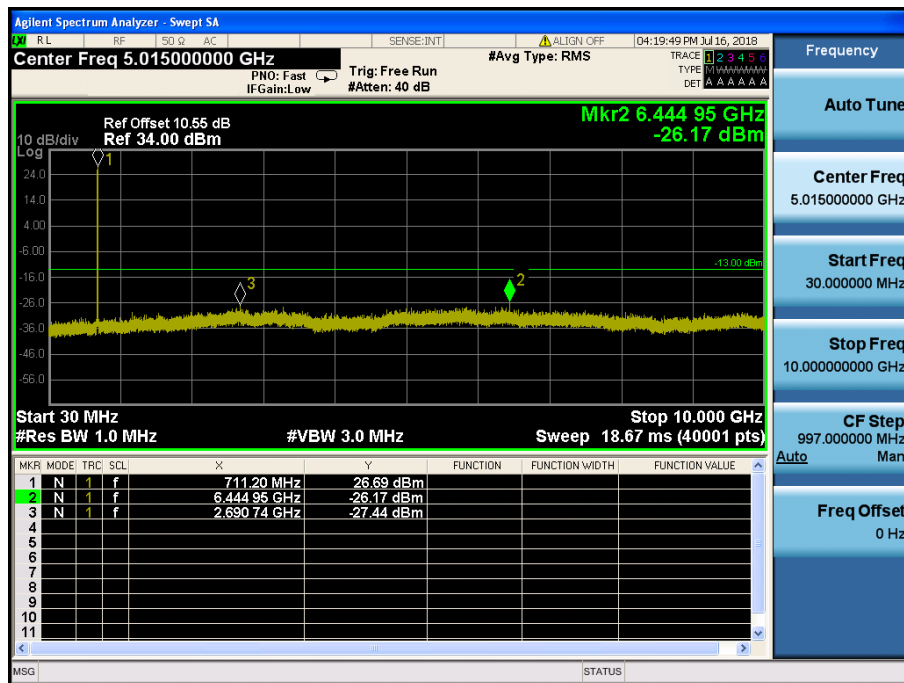
- Upper Extended Band Edge



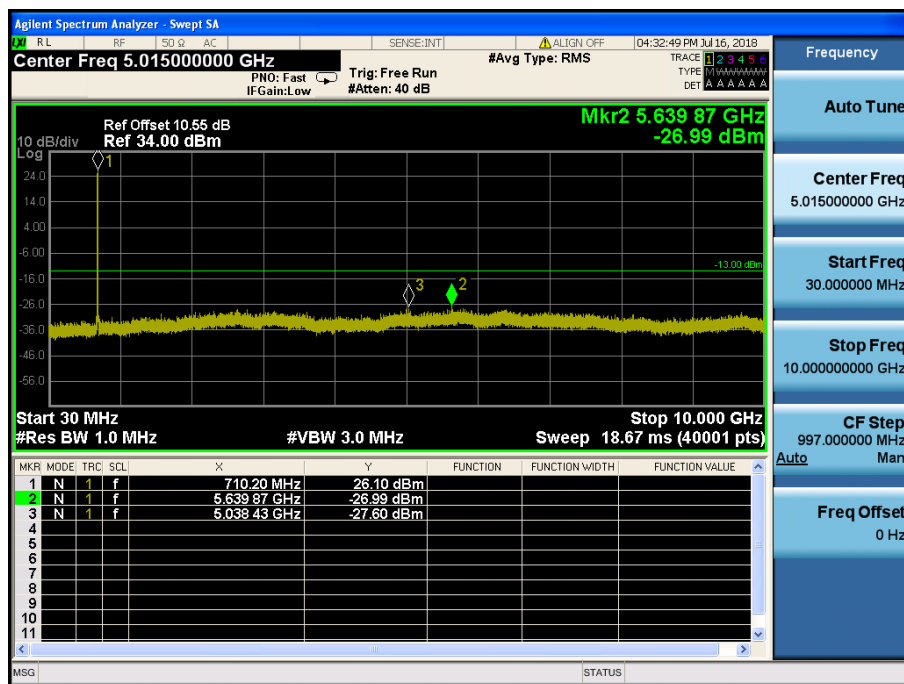
LTE Band 17 / 5MHz / QPSK - RB Size/Offset (12/24)

## 8.3 SPURIOUS AND HARMONICS EMISSIONS(Conducted)

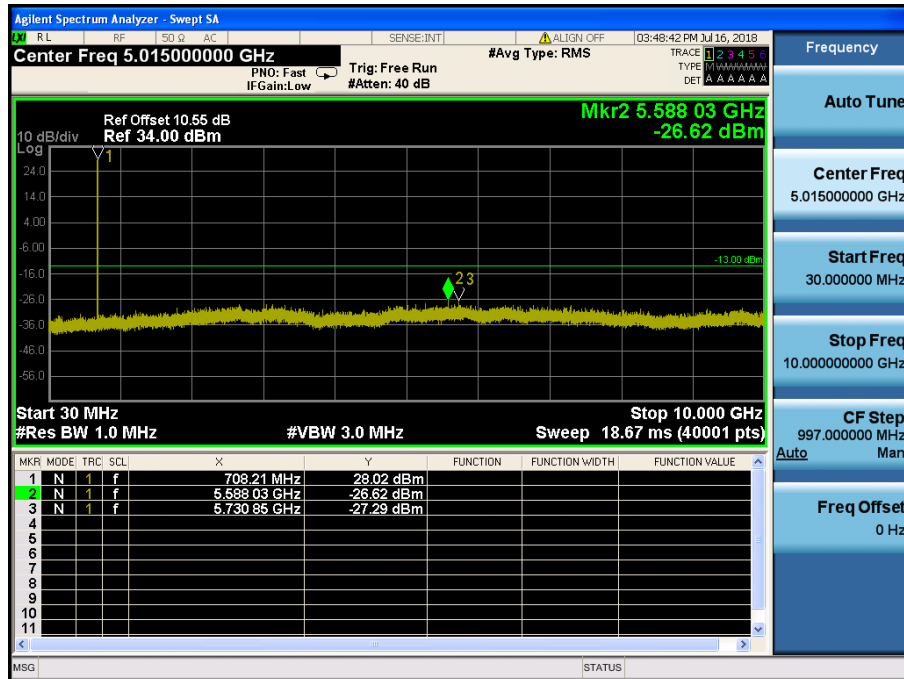
### 8.3.1 LTE Band 17



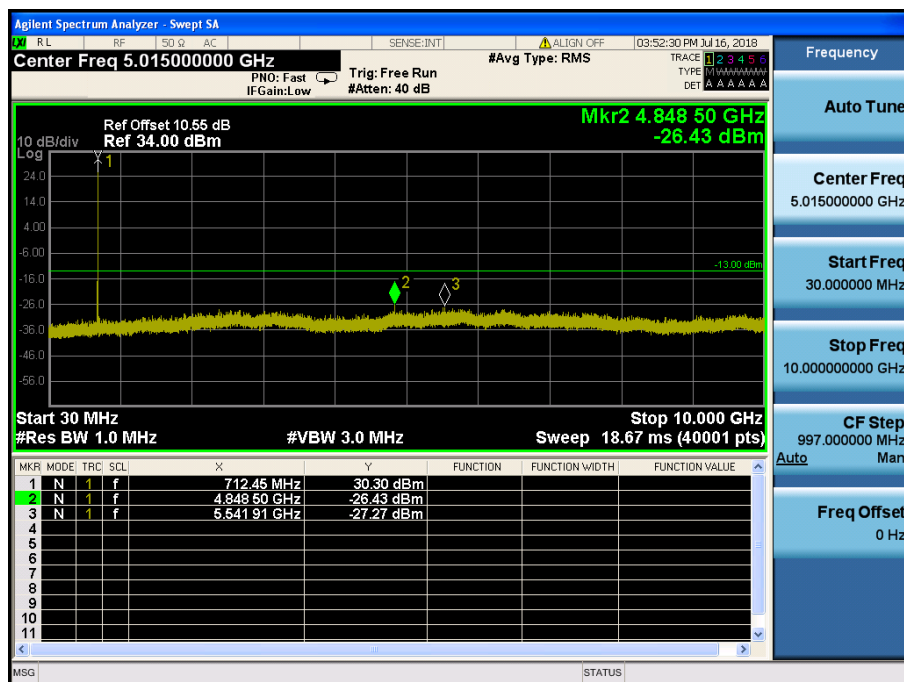
LTE Band 17 / 10MHz / 16QAM - RB Size/Offset (25/12) – Low Channel



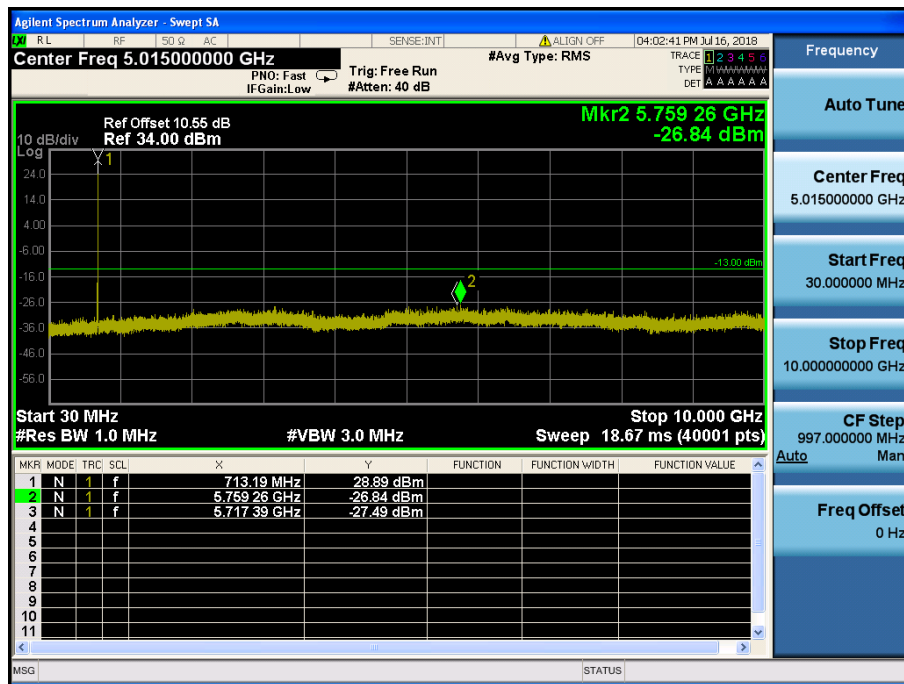
LTE Band 17 / 10MHz / 16QAM - RB Size/Offset (25/0) – High Channel



LTE Band 17 / 5MHz / 16QAM - RB Size/Offset (12/13) – Low Channel



LTE Band 17 / 5MHz / 16QAM - RB Size/Offset (1/24)–Mid Channel



LTE Band 17 / 5MHz / 16QAM - RB Size/Offset (12/0) – High Channel