

## FCC Test Report

### (PART 27)

**Report No.:** RF171221C06-8 R1

**FCC ID:** VQK-F04K

**Test Model:** F-04K

**Received Date:** Dec. 21, 2017

**Test Date:** Feb. 17, 2018 ~ Feb. 24, 2018

**Issued Date:** Apr. 16, 2018

**Applicant:** Fujitsu Limited

**Address:** 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki 211-8588, Japan

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan  
( R.O.C )

**Test Location (1):** No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan  
Hsien 333, Taiwan, R.O.C.

**FCC Registration /  
Designation Number:** 788550 / TW0003



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agency

## Table of Contents

<b>Release Control Record .....</b>	<b>3</b>
<b>1 Certificate of Conformity .....</b>	<b>4</b>
<b>2 Summary of Test Results.....</b>	<b>5</b>
2.1 Measurement Uncertainty.....	6
2.2 Test Site and Instruments .....	7
<b>3 General Information .....</b>	<b>9</b>
3.1 General Description of EUT .....	9
3.2 Configuration of System under Test.....	10
3.2.1 Description of Support Units .....	10
3.3 Test Mode Applicability and Tested Channel Detail .....	11
3.4 EUT Operating Conditions .....	13
3.5 General Description of Applied Standards.....	13
<b>4 Test Types and Results .....</b>	<b>14</b>
4.1 Output Power Measurement.....	14
4.1.1 Limits of Output Power Measurement .....	14
4.1.2 Test Procedures.....	14
4.1.3 Test Setup.....	15
4.1.4 Test Results .....	16
4.2 Frequency Stability Measurement .....	20
4.2.1 Limits of Frequency Stability Measurement.....	20
4.2.2 Test Procedure .....	20
4.2.3 Test Setup.....	20
4.2.4 Test Results .....	21
4.3 Occupied Bandwidth Measurement.....	27
4.3.1 Limits of Occupied Bandwidth Measurement .....	27
4.3.2 Test Procedure .....	27
4.3.3 Test Setup.....	27
4.3.4 Test Result .....	28
4.4 Band Edge Measurement .....	31
4.4.1 Limits of Band Edge Measurement .....	31
4.4.2 Test Setup.....	31
4.4.3 Test Procedures.....	31
4.4.4 Test Results .....	32
4.5 Peak to Average Ratio .....	38
4.5.1 Limits of Peak to Average Ratio Measurement .....	38
4.5.2 Test Setup.....	38
4.5.3 Test Procedures.....	38
4.5.4 Test Results .....	39
4.6 Conducted Spurious Emissions .....	42
4.6.1 Limits of Conducted Spurious Emissions Measurement.....	42
4.6.2 Test Setup.....	42
4.6.3 Test Procedure .....	42
4.6.4 Test Results .....	43
4.7 Radiated Emission Measurement.....	49
4.7.1 Limits of Radiated Emission Measurement .....	49
4.7.2 Test Procedure .....	49
4.7.3 Deviation from Test Standard .....	49
4.7.4 Test Setup.....	50
4.7.5 Test Results .....	51
<b>5 Pictures of Test Arrangements.....</b>	<b>81</b>
<b>Appendix – Information on the Testing Laboratories .....</b>	<b>82</b>

### Release Control Record

Issue No.	Description	Date Issued
RF171221C06-8	Original Release	Mar. 05, 2018
RF171221C06-8 R1	Revise battery voltage	Apr. 16, 2018

## 1 Certificate of Conformity

**Product:** Smart Phone

**Brand:** FUJITSU

**Test Model:** F-04K

**Sample Status:** Identical Prototype

**Applicant:** Fujitsu Limited

**Test Date:** Feb. 17, 2018 ~ Feb. 24, 2018

**Standards:** FCC Part 27, Subpart C

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

**Prepared by :** Ivonne Wu, **Date:** Apr. 16, 2018  
Ivonne Wu / Supervisor

**Approved by :** Dylan Chiou, **Date:** Apr. 16, 2018  
Dylan Chiou / Project Engineer

## 2 Summary of Test Results

Applied Standard: FCC Part 27 & Part 2 (LTE 12)			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(c)(10)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049 27.53(g)	Occupied Bandwidth	Pass	Meet the requirement of limit.
27.50(d)(5)	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(g)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(g)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(g)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -31.32 dB at 1403.00 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 17)			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(c)(10)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049 27.53(g)	Occupied Bandwidth	Pass	Meet the requirement of limit.
27.50(d)(5)	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(g)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(g)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(g)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -35.56 dB at 1418.00 MHz.

## 2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) ( $\pm$ )
Radiated Emissions up to 1 GHz	30 MHz ~ 200 MHz	2.93 dB
	200 MHz ~ 1000 MHz	2.95 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

## 2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY52260177	Jul. 05, 2017	Jul. 04, 2018
Spectrum Analyzer Agilent	N9010A	MY52220314	Nov. 24, 2017	Nov. 23, 2018
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	100115	Nov. 23, 2017	Nov. 22, 2018
Double Ridge Guide Horn Antenna EMCO	3115	5619	Nov. 30, 2017	Nov. 29, 2018
BILOG Antenna SCHWARZBECK	VULB 9168	9168-153	Dec. 06, 2017	Dec. 05, 2018
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(R FC-SMS-100-SM S-120+RFC-SMS -100-SMS-400)	Jun. 23, 2017	Jun. 22, 2018
MXG Vector signal generator Agilent	N5182B	MY53050430	Oct. 24, 2017	Oct. 23, 2018
Preamplifier EMCI	EMC 012645	980115	Oct. 20, 2017	Oct. 19, 2018
Preamplifier EMCI	EMC 184045	980116	Oct. 20, 2017	Oct. 19, 2018
Preamplifier EMCI	EMC 330H	980112	Oct. 13, 2017	Oct. 12, 2018
Power Meter Anritsu	ML2495A	1012010	Aug. 15, 2017	Aug. 14, 2018
Power Sensor Anritsu	MA2411B	1315050	Aug. 15, 2017	Aug. 14, 2018
RF Coaxial Cable HUBER+SUHNNER	EMC104-SM-SM-8 000&3000	140811+170717	Oct. 20, 2017	Oct. 19, 2018
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM- 1000(140807)	Oct. 20, 2017	Oct. 19, 2018
RF Coaxial Cable Worken	8D-FB	Cable-Ch10-01	Oct. 20, 2017	Oct. 19, 2018
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Temperature & Humidity Chamber	GTH-120-40-CP-A R	MAA1306-019	Sep. 08, 2017	Sep. 07, 2018
DC Power Supply Topward	33010D	807748	Oct. 25, 2016	Oct. 24, 2018
Digital Multimeter Fluke	87-III	70360742	Jun. 30, 2017	Jun. 29, 2018

- Note: 1. The calibration interval of the above test instruments is 12 / 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.
3. The horn antenna and preamplifier (model: EMC 184045) are used only for the measurement of emission frequency above 1 GHz if tested.
4. The IC Site Registration No. is IC7450F-10.



### 3 General Information

#### 3.1 General Description of EUT

<b>Product</b>	Smart Phone	
<b>Brand</b>	FUJITSU	
<b>Test Model</b>	F-04K	
<b>Status of EUT</b>	Identical Prototype	
<b>Power Supply Rating</b>	5.0 Vdc (adapter or host equipment) 3.8 Vdc (Li-ion battery)	
<b>Normal Testing Voltage</b>	3.9 Vdc	
<b>Modulation Type</b>	LTE	QPSK, 16QAM
<b>Frequency Range</b>	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	699.7 ~ 715.3 MHz
	LTE Band 12 (Channel Bandwidth: 3 MHz)	700.5 ~ 714.5 MHz
	LTE Band 12 (Channel Bandwidth: 5 MHz)	701.5 ~ 713.5 MHz
	LTE Band 12 (Channel Bandwidth: 10 MHz)	704.0 ~ 711.0 MHz
	LTE Band 17 (Channel Bandwidth: 5 MHz)	706.5 ~ 713.5 MHz
	LTE Band 17 (Channel Bandwidth: 10 MHz)	709.0 ~ 711.0 MHz
<b>Emission Designator</b>	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	1M09W7D
	LTE Band 12 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE Band 12 (Channel Bandwidth: 5 MHz)	4M49W7D
	LTE Band 12 (Channel Bandwidth: 10 MHz)	8M96W7D
	LTE Band 17 (Channel Bandwidth: 5 MHz)	4M48W7D
	LTE Band 17 (Channel Bandwidth: 10 MHz)	8M95W7D
<b>Max. ERP Power</b>	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	115.88 mW
	LTE Band 12 (Channel Bandwidth: 3 MHz)	140.60 mW
	LTE Band 12 (Channel Bandwidth: 5 MHz)	144.88 mW
	LTE Band 12 (Channel Bandwidth: 10 MHz)	149.97 mW
	LTE Band 17 (Channel Bandwidth: 5 MHz)	124.74 mW
	LTE Band 17 (Channel Bandwidth: 10 MHz)	126.47 mW
<b>Antenna Type</b>	$\lambda$ /4 Monopole Antenna	
<b>Accessory Device</b>	Refer to Note as below	
<b>Data Cable Supplied</b>	Refer to Note as below	

Note:

1. The EUT contains following accessory devices.

Product	Brand	Model	Description
Battery	FUJITSU CONNECTED TECHNOLOGIES Ltd.	CA54310-0067	3.8 Vdc, 2580 mAh

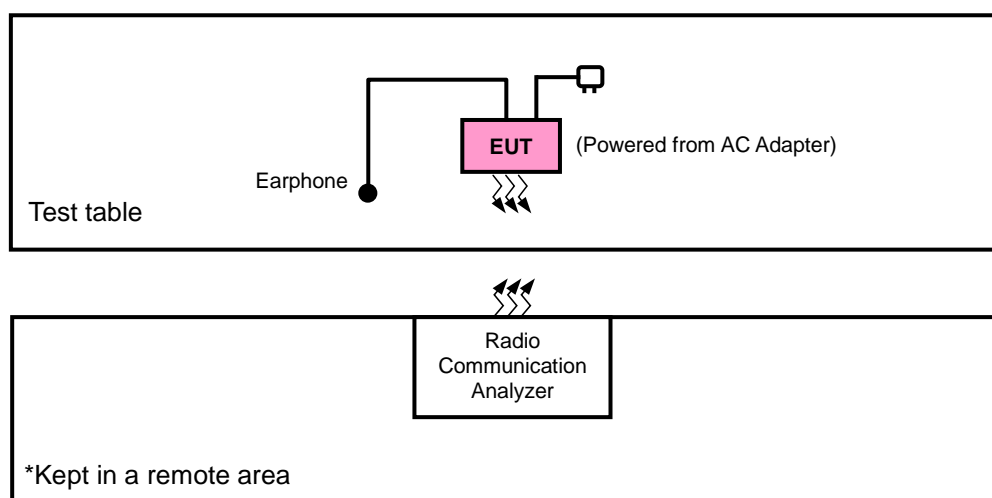
2. The EUT uses following adapter which provided by client as support unit.

Product	Brand	Model	Description
Adapter	NTT docomo	AC Adapter 01	I/P: 100-240Vac, 0.8A, O/P: 5.0Vdc, 3.0A

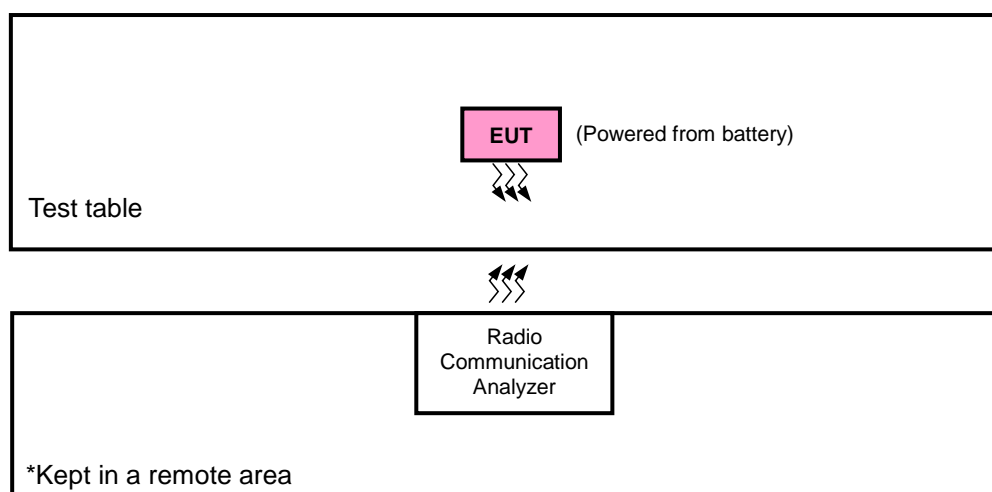
3. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

## 3.2 Configuration of System under Test

### <Radiated Emission Test>



### <E.R.P. / E.I.R.P. Test>



#### 3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	Radio Communication Analyzer	Anritsu	MT8820C	6201300640	N/A
2.	Earphone	Apple	MD827FE	N/A	N/A

No.	Signal Cable Description Of The Above Support Units
1.	N/A
2.	N/A

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item 1 acted as communication partners to transfer data.

### 3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis, and antenna ports

The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

Band	ERP	Radiated Emission
LTE Band 12	X-plane	Y-axis
LTE Band 17	X-plane	Y-axis

#### LTE Band 12

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	ERP	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Frequency Stability	23017 to 23173	23017, 23173	1.4 MHz	QPSK	1 RB / 0 RB Offset
		23025 to 23165	23025, 23165	3 MHz	QPSK	1 RB / 0 RB Offset
		23035 to 23155	23035, 23155	5 MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23130	10 MHz	QPSK	1 RB / 0 RB Offset
-	Occupied Bandwidth	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
-	Peak to Average Ratio	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Band Edge	23017 to 23173	23017	1.4 MHz	QPSK	1 RB / 0 RB Offset
			23173	1.4 MHz	QPSK	6 RB / 0 RB Offset
		23025 to 23165	23025	3 MHz	QPSK	1 RB / 5 RB Offset
			23165	3 MHz	QPSK	15 RB / 0 RB Offset
		23035 to 23155	23035	5 MHz	QPSK	1 RB / 14 RB Offset
			23155	5 MHz	QPSK	15 RB / 0 RB Offset
		23060 to 23130	23035	5 MHz	QPSK	1 RB / 0 RB Offset
			23155	5 MHz	QPSK	25 RB / 0 RB Offset
		23060 to 23130	23060	10 MHz	QPSK	1 RB / 24 RB Offset
			23130	10 MHz	QPSK	25 RB / 0 RB Offset
		23060 to 23130	23060	10 MHz	QPSK	1 RB / 0 RB Offset
			23130	10 MHz	QPSK	50 RB / 0 RB Offset
-	Conducted Emission	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK	1 RB / 49 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK	50 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK	1 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK	1 RB / 0 RB Offset

**Note:** This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

#### LTE Band 17

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	ERP	23755 to 23825	23755, 23790, 23825	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Frequency Stability	23755 to 23825	23755, 23825	5 MHz	QPSK	1 RB / 0 RB Offset
		23780 to 23800	23780, 23800	10 MHz	QPSK	1 RB / 0 RB Offset
-	Occupied Bandwidth	23755 to 23825	23755, 23790, 23825	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
-	Peak to Average Ratio	23755 to 23825	23755, 23790, 23825	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Band Edge	23755 to 23825	23755	5 MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
		23780 to 23800	23825	5 MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
			23780	10 MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
-	Conducted Emission	23755 to 23825	23755, 23790, 23825	5 MHz	QPSK	1 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10 MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission	23755 to 23825	23755, 23790, 23825	5 MHz	QPSK	1 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10 MHz	QPSK	1 RB / 0 RB Offset

**Note:** This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

#### Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
ERP / EIRP	25 deg. C, 65 % RH	3.9 Vdc	Jisyong Wang
Frequency Stability	25 deg. C, 65 % RH	3.9 Vdc	Carlos Chen
Occupied Bandwidth	25 deg. C, 65 % RH	3.9 Vdc	Carlos Chen
Band Edge	25 deg. C, 65 % RH	3.9 Vdc	Carlos Chen
Peak to Average Ratio	25 deg. C, 65 % RH	3.9 Vdc	Carlos Chen
Conducted Emission	25 deg. C, 65 % RH	3.9 Vdc	Carlos Chen
Radiated Emission	25 deg. C, 65 % RH	120 Vac, 60 Hz	Jisyong Wang

### **3.4 EUT Operating Conditions**

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

### **3.5 General Description of Applied Standards**

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 27**

**KDB 971168 D01 Power Meas License Digital Systems v02r02**

**ANSI/TIA/EIA-603-E 2016**

**ANSI 63.26-2015**

**Note:** All test items have been performed and recorded as per the above standards.

## 4 Test Types and Results

### 4.1 Output Power Measurement

#### 4.1.1 Limits of Output Power Measurement

Portable stations (hand-held devices) operating in the 698-716 MHz band are limited to 3 watts ERP

#### 4.1.2 Test Procedures

##### **EIRP / ERP Measurement:**

- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 10 MHz for LTE mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step b. Record the power level of S.G.
- d.  $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$ . E.R.P power can be calculated from E.I.R.P power by subtracting the gain of dipole,  $E.R.P \text{ power} = E.I.P.R \text{ power} - 2.15 \text{ dBi}$ .

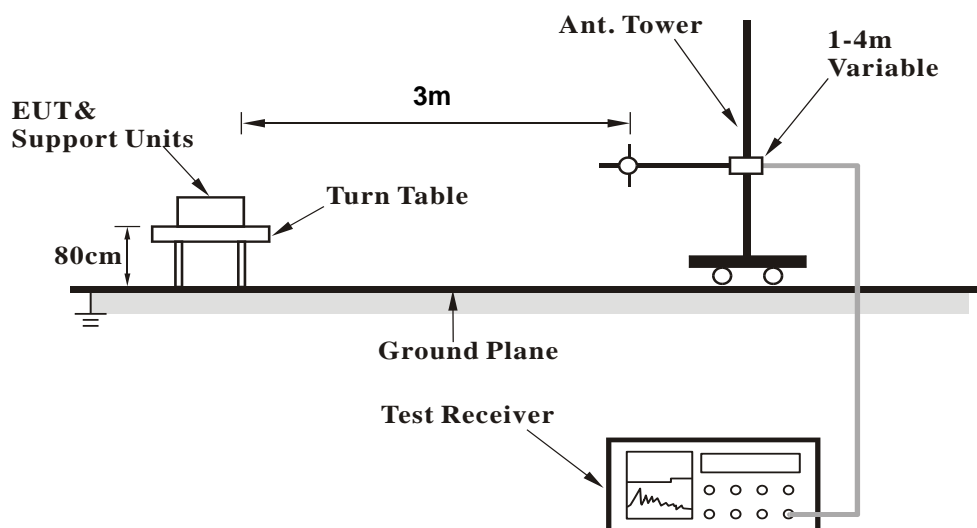
##### **Conducted Power Measurement:**

- a. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
- b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

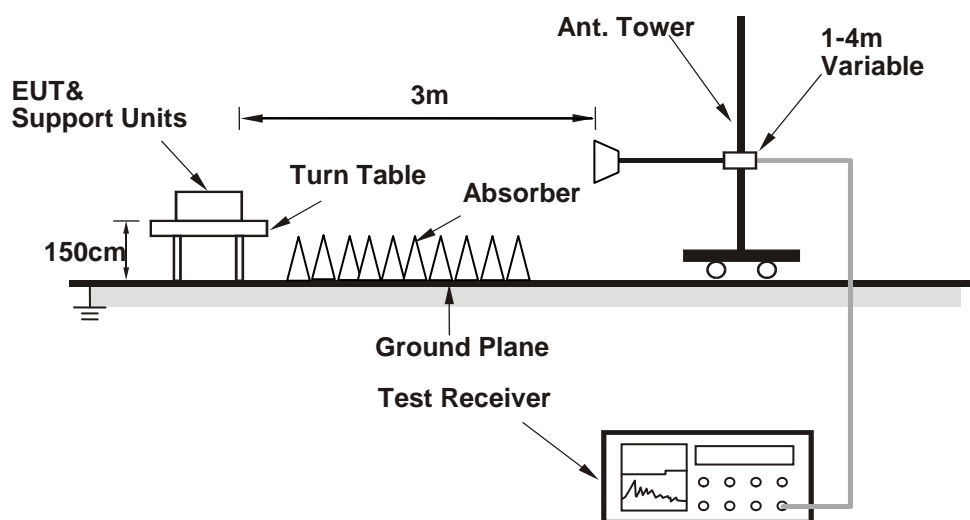
#### 4.1.3 Test Setup

##### EIRP / ERP Measurement:

<Radiated Emission below or equal 1 GHz>

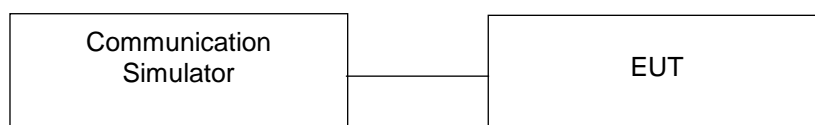


<Radiated Emission above 1 GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).

##### Conducted Power Measurement:



#### 4.1.4 Test Results

#### Conducted Output Power (dBm)

LTE Band 12															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23060	23095	23130				Channel		23035	23095	23155	
		Frequency (MHz)		704.0	707.5	711.0				Frequency (MHz)		701.5	707.5	713.5	
10M	QPSK	1	0	22.93	22.98	23.00	0	5M	QPSK	1	0	22.86	22.92	22.94	0
		1	24	22.89	22.96	22.98	0			1	12	22.80	22.89	22.92	0
		1	49	22.76	22.85	22.91	0			1	24	22.66	22.76	22.85	0
		25	0	21.97	21.98	22.00	1			12	0	21.84	21.90	21.97	1
		25	12	21.92	21.95	21.94	1			12	6	21.77	21.88	21.90	1
		25	25	21.87	21.90	21.95	1			12	13	21.72	21.75	21.81	1
		50	0	21.90	21.96	21.98	1			25	0	21.78	21.84	21.88	1
	16QAM	1	0	21.96	21.97	22.00	1		16QAM	1	0	21.89	21.97	21.98	1
		1	24	21.94	21.99	21.97	1			1	12	21.83	21.93	21.96	1
		1	49	21.78	21.87	21.80	1			1	24	21.62	21.77	21.82	1
		25	0	20.93	21.00	20.93	2			12	0	20.79	20.89	20.96	2
		25	12	20.85	20.98	20.89	2			12	6	20.70	20.84	20.93	2
		25	25	20.82	20.87	20.75	2			12	13	20.65	20.71	20.83	2
		50	0	20.84	20.94	20.84	2			25	0	20.70	20.79	20.91	2
3M	QPSK	1	0	22.79	22.88	22.90	0	1.4M	QPSK	1	0	22.73	22.81	22.85	0
		1	7	22.68	22.82	22.88	0			1	2	22.61	22.77	22.81	0
		1	14	22.60	22.67	22.73	0			1	5	22.46	22.59	22.65	0
		8	0	21.74	21.79	21.90	1			3	0	22.31	22.39	22.48	0
		8	3	21.60	21.76	21.79	1			3	1	22.23	22.35	22.39	0
		8	7	21.57	21.61	21.68	1			3	3	22.12	22.18	22.25	0
		15	0	21.59	21.72	21.76	1			6	0	21.45	21.61	21.65	1
	16QAM	1	0	21.82	21.90	21.92	1		16QAM	1	0	21.77	21.88	21.90	1
		1	7	21.73	21.86	21.90	1			1	2	21.71	21.82	21.88	1
		1	14	21.61	21.70	21.79	1			1	5	21.60	21.64	21.74	1
		8	0	20.71	20.82	20.91	2			3	0	21.27	21.42	21.48	1
		8	3	20.65	20.78	20.82	2			3	1	21.13	21.36	21.42	1
		8	7	20.52	20.58	20.68	2			3	3	21.06	21.13	21.23	1
		15	0	20.65	20.73	20.78	2			6	0	20.47	20.60	20.66	2

LTE Band 17															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23780	23790	23800				Channel		23755	23790	23825	
		Frequency (MHz)		709.0	710.0	711.0				Frequency (MHz)		706.5	710.0	713.5	
10M	QPSK	1	0	23.00	22.94	22.96	0	5M	QPSK	1	0	22.93	22.89	22.91	0
		1	24	22.95	22.90	22.92	0			1	12	22.90	22.84	22.87	0
		1	49	22.80	22.73	22.76	0			1	24	22.71	22.66	22.68	0
		25	0	21.99	21.93	21.95	1			12	0	21.99	21.87	21.89	1
		25	12	21.84	21.96	21.90	1			12	6	21.90	21.83	21.85	1
		25	25	21.95	21.90	21.92	1			12	13	21.81	21.75	21.77	1
		50	0	21.95	21.92	21.94	1			25	0	21.83	21.77	21.79	1
	16QAM	1	0	22.00	21.97	21.98	1		16QAM	1	0	21.98	21.91	21.95	1
		1	24	21.94	21.91	21.98	1			1	12	21.95	21.86	21.89	1
		1	49	21.75	21.73	21.82	1			1	24	21.74	21.67	21.70	1
		25	0	21.00	20.98	20.91	2			12	0	20.95	20.88	20.91	2
		25	12	20.96	20.93	21.00	2			12	6	20.92	20.84	20.86	2
		25	25	20.87	20.85	20.89	2			12	13	20.81	20.71	20.73	2
		50	0	20.89	20.87	20.93	2			25	0	20.84	20.73	20.77	2



**ERP Power (dBm)**

LTE Band 12							
Channel Bandwidth: 1.4 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23017	699.7	-7.57	30.36	20.64	115.88	H
	23095	707.5	-7.59	30.17	20.43	110.41	
	23173	715.3	-7.90	30.17	20.12	102.80	
	23017	699.7	-12.99	32.03	16.89	48.87	V
	23095	707.5	-13.33	31.98	16.50	44.67	
	23173	715.3	-13.56	32.06	16.35	43.15	
Channel Bandwidth: 1.4 MHz / 16QAM							
X	23017	699.7	-8.62	30.36	19.59	90.99	H
	23095	707.5	-8.68	30.17	19.34	85.90	
	23173	715.3	-8.91	30.17	19.11	81.47	
	23017	699.7	-14.07	32.03	15.81	38.11	V
	23095	707.5	-14.40	31.98	15.43	34.91	
	23173	715.3	-14.62	32.06	15.29	33.81	

LTE Band 12							
Channel Bandwidth: 3 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23025	700.5	-6.54	30.17	21.48	140.60	H
	23095	707.5	-6.78	30.17	21.24	133.05	
	23165	714.5	-6.99	30.18	21.04	127.06	
	23025	700.5	-12.25	31.96	17.56	57.02	V
	23095	707.5	-12.38	31.98	17.45	55.59	
	23165	714.5	-12.84	32.03	17.04	50.58	
Channel Bandwidth: 3 MHz / 16QAM							
X	23025	700.5	-7.62	30.17	20.40	109.65	H
	23095	707.5	-7.79	30.17	20.23	105.44	
	23165	714.5	-8.02	30.18	20.01	100.23	
	23025	700.5	-13.31	31.96	16.50	44.67	V
	23095	707.5	-13.41	31.98	16.42	43.85	
	23165	714.5	-13.89	32.03	15.99	39.72	

LTE Band 12							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23035	701.5	-6.41	30.17	21.61	144.88	H
	23095	707.5	-6.61	30.17	21.41	138.36	
	23155	713.5	-6.95	30.18	21.08	128.23	
	23035	701.5	-11.97	31.96	17.84	60.81	V
	23095	707.5	-12.22	31.98	17.61	57.68	
	23155	713.5	-12.57	32.03	17.31	53.83	
Channel Bandwidth: 5 MHz / 16QAM							
X	23035	701.5	-7.46	30.17	20.56	113.76	H
	23095	707.5	-7.69	30.17	20.33	107.89	
	23155	713.5	-7.96	30.18	20.07	101.62	
	23035	701.5	-12.98	31.96	16.83	48.19	V
	23095	707.5	-13.28	31.98	16.55	45.19	
	23155	713.5	-13.63	32.03	16.25	42.17	

LTE Band 12							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23060	704.0	-6.26	30.17	21.76	149.97	H
	23095	707.5	-6.46	30.17	21.56	143.22	
	23130	711.0	-6.79	30.18	21.24	133.05	
	23060	704.0	-11.87	31.96	17.94	62.23	V
	23095	707.5	-12.14	31.98	17.69	58.75	
	23130	711.0	-12.43	32.03	17.45	55.59	
Channel Bandwidth: 10 MHz / 16QAM							
X	23060	704.0	-7.35	30.17	20.67	116.68	H
	23095	707.5	-7.47	30.17	20.55	113.50	
	23130	711.0	-7.82	30.18	20.21	104.95	
	23060	704.0	-12.90	31.96	16.91	49.09	V
	23095	707.5	-13.18	31.98	16.65	46.24	
	23130	711.0	-13.49	32.03	16.39	43.55	

LTE Band 17							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23755	706.5	-7.25	30.36	20.96	124.74	H
	23790	710.0	-7.44	30.17	20.58	114.29	
	23825	713.5	-7.63	30.17	20.39	109.40	
	23755	706.5	-12.07	32.03	17.81	60.39	V
	23790	710.0	-12.34	31.98	17.49	56.10	
	23825	713.5	-12.73	32.06	17.18	52.24	
Channel Bandwidth: 5 MHz / 16QAM							
X	23755	706.5	-8.31	30.36	19.90	97.72	H
	23790	710.0	-8.45	30.17	19.57	90.57	
	23825	713.5	-8.72	30.17	19.30	85.11	
	23755	706.5	-13.16	32.03	16.72	46.99	V
	23790	710.0	-13.42	31.98	16.41	43.75	
	23825	713.5	-13.76	32.06	16.15	41.21	

LTE Band 17							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23780	709.0	-7.00	30.17	21.02	126.47	H
	23790	710.0	-7.28	30.17	20.74	118.58	
	23800	711.0	-7.53	30.18	20.50	112.20	
	23780	709.0	-11.86	31.96	17.95	62.37	V
	23790	710.0	-12.18	31.98	17.65	58.21	
	23800	711.0	-12.55	32.03	17.33	54.08	
Channel Bandwidth: 10 MHz / 16QAM							
X	23780	709.0	-8.02	30.17	20.00	100.00	H
	23790	710.0	-8.30	30.17	19.72	93.76	
	23800	711.0	-8.55	30.18	19.48	88.72	
	23780	709.0	-12.88	31.96	16.93	49.32	V
	23790	710.0	-13.24	31.98	16.59	45.60	
	23800	711.0	-13.64	32.03	16.24	42.07	

## 4.2 Frequency Stability Measurement

### 4.2.1 Limits of Frequency Stability Measurement

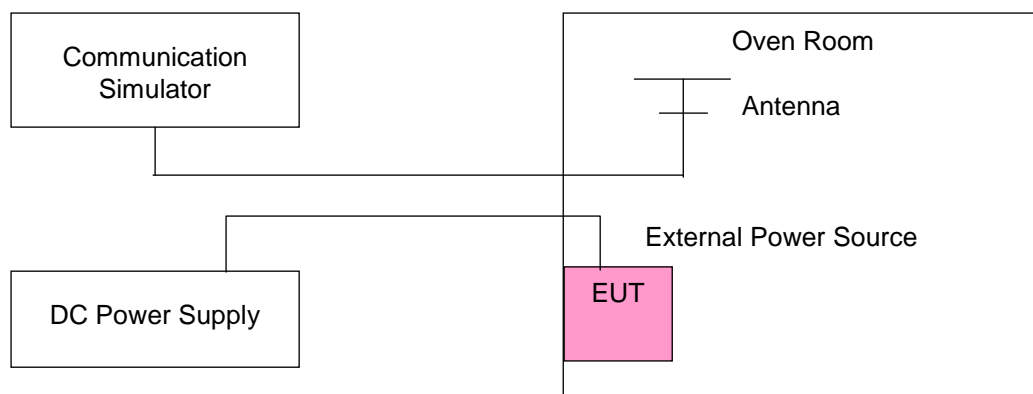
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

### 4.2.2 Test Procedure

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5$  °C during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

**Note:** The frequency error was recorded frequency error from the communication simulator.

### 4.2.3 Test Setup



#### 4.2.4 Test Results

##### Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 1.4 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.9	699.700003	0.005	715.300004	0.006	2.5
3.51	699.700002	0.002	715.300003	0.004	2.5
4.29	699.700002	0.002	715.300003	0.004	2.5

**Note:** The applicant defined the normal working voltage of the battery is from 3.51 Vdc to 4.29 Vdc.

##### Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 1.4 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	699.700002	0.003	715.300001	0.002	2.5
-20	699.700002	0.002	715.300001	0.002	2.5
-10	699.700003	0.004	715.300001	0.001	2.5
0	699.700001	0.002	715.300002	0.003	2.5
10	699.700001	0.001	715.300003	0.004	2.5
20	699.699998	-0.003	715.299996	-0.005	2.5
30	699.699998	-0.003	715.299998	-0.003	2.5
40	699.699996	-0.005	715.299998	-0.003	2.5
50	699.699999	-0.002	715.299996	-0.005	2.5
55	699.699997	-0.004	715.299998	-0.003	2.5

### Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 3 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.9	700.500002	0.002	714.500001	0.002	2.5
3.51	700.500002	0.003	714.500002	0.002	2.5
4.29	700.500003	0.005	714.500004	0.005	2.5

**Note:** The applicant defined the normal working voltage of the battery is from 3.51 Vdc to 4.29 Vdc.

### Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 3 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	700.500003	0.004	714.500003	0.005	2.5
-20	700.500003	0.004	714.500001	0.002	2.5
-10	700.500002	0.003	714.500003	0.004	2.5
0	700.500003	0.004	714.500002	0.003	2.5
10	700.500001	0.002	714.500002	0.002	2.5
20	700.499996	-0.005	714.499998	-0.003	2.5
30	700.499997	-0.004	714.499997	-0.004	2.5
40	700.499997	-0.005	714.499998	-0.003	2.5
50	700.499996	-0.005	714.499997	-0.004	2.5
55	700.499997	-0.004	714.499997	-0.004	2.5

### Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 5 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.9	701.500003	0.004	713.500002	0.003	2.5
3.51	701.500003	0.004	713.500004	0.005	2.5
4.29	701.500002	0.003	713.500003	0.004	2.5

**Note:** The applicant defined the normal working voltage of the battery is from 3.51 Vdc to 4.29 Vdc.

### Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 5 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	701.500002	0.003	713.500003	0.004	2.5
-20	701.500001	0.002	713.500002	0.003	2.5
-10	701.500004	0.005	713.500002	0.003	2.5
0	701.500003	0.004	713.500003	0.004	2.5
10	701.500004	0.005	713.500004	0.006	2.5
20	701.499999	-0.001	713.499996	-0.005	2.5
30	701.499998	-0.004	713.499997	-0.005	2.5
40	701.499998	-0.003	713.499997	-0.004	2.5
50	701.499998	-0.002	713.499998	-0.003	2.5
55	701.499998	-0.002	713.499998	-0.003	2.5

### Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 10 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.9	704.000003	0.005	711.000001	0.001	2.5
3.51	704.000003	0.004	711.000004	0.006	2.5
4.29	704.000002	0.003	711.000002	0.003	2.5

**Note:** The applicant defined the normal working voltage of the battery is from 3.51 Vdc to 4.29 Vdc.

### Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 10 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	704.000002	0.003	711.000002	0.003	2.5
-20	704.000003	0.004	711.000003	0.004	2.5
-10	704.000004	0.006	711.000002	0.003	2.5
0	704.000002	0.003	711.000002	0.002	2.5
10	704.000002	0.003	711.000002	0.003	2.5
20	703.999996	-0.006	710.999999	-0.002	2.5
30	703.999997	-0.004	710.999999	-0.002	2.5
40	703.999997	-0.005	710.999998	-0.003	2.5
50	703.999997	-0.004	710.999996	-0.005	2.5
55	703.999998	-0.003	710.999996	-0.005	2.5



### Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 17				Limit (ppm)
	Channel Bandwidth: 5 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.9	706.500003	0.004	713.500001	0.002	2.5
3.51	706.500001	0.002	713.500002	0.002	2.5
4.29	706.500002	0.003	713.500002	0.003	2.5

**Note:** The applicant defined the normal working voltage of the battery is from 3.51 Vdc to 4.29 Vdc.

### Frequency Error vs. Temperature

Temp. (°C)	LTE Band 17				Limit (ppm)
	Channel Bandwidth: 5 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	706.500004	0.006	713.500002	0.002	2.5
-20	706.500002	0.003	713.500002	0.003	2.5
-10	706.500002	0.003	713.500004	0.005	2.5
0	706.500002	0.003	713.500003	0.004	2.5
10	706.500003	0.004	713.500002	0.002	2.5
20	706.499998	-0.003	713.499997	-0.004	2.5
30	706.499999	-0.002	713.499998	-0.003	2.5
40	706.499998	-0.003	713.499998	-0.003	2.5
50	706.499997	-0.004	713.499998	-0.002	2.5
55	706.499999	-0.002	713.499996	-0.005	2.5

### Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 17				Limit (ppm)
	Channel Bandwidth: 10 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.9	709.000002	0.003	711.000002	0.003	2.5
3.51	709.000003	0.005	711.000004	0.005	2.5
4.29	709.000003	0.004	711.000001	0.002	2.5

**Note:** The applicant defined the normal working voltage of the battery is from 3.51 Vdc to 4.29 Vdc.

### Frequency Error vs. Temperature

Temp. (°C)	LTE Band 17				Limit (ppm)
	Channel Bandwidth: 10 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	709.000002	0.003	711.000001	0.002	2.5
-20	709.000002	0.002	711.000003	0.004	2.5
-10	709.000002	0.003	711.000003	0.004	2.5
0	709.000002	0.003	711.000003	0.004	2.5
10	709.000004	0.005	711.000003	0.004	2.5
20	708.999996	-0.005	710.999999	-0.002	2.5
30	708.999997	-0.005	710.999999	-0.002	2.5
40	708.999998	-0.003	710.999997	-0.004	2.5
50	708.999997	-0.004	710.999997	-0.005	2.5
55	708.999998	-0.003	710.999998	-0.003	2.5

### 4.3 Occupied Bandwidth Measurement

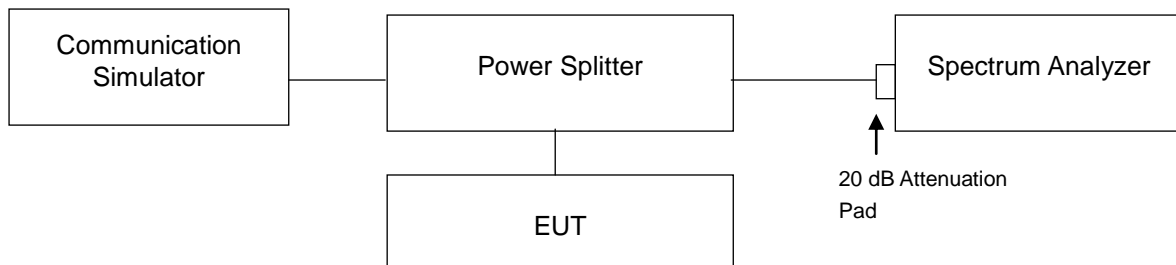
#### 4.3.1 Limits of Occupied Bandwidth Measurement

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

#### 4.3.2 Test Procedure

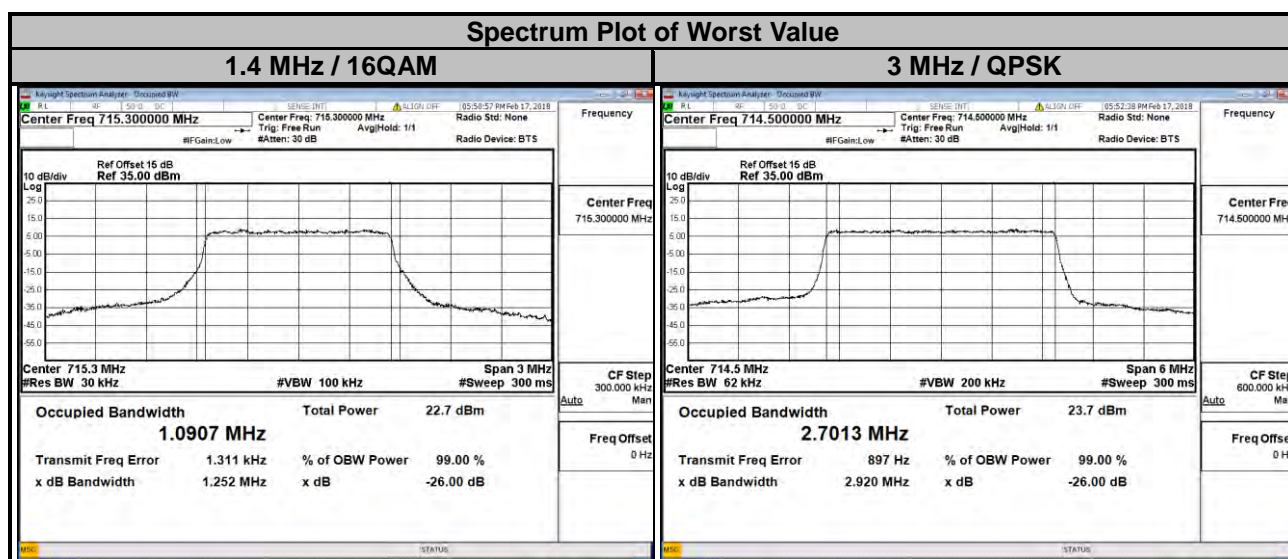
- The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

#### 4.3.3 Test Setup



#### 4.3.4 Test Result

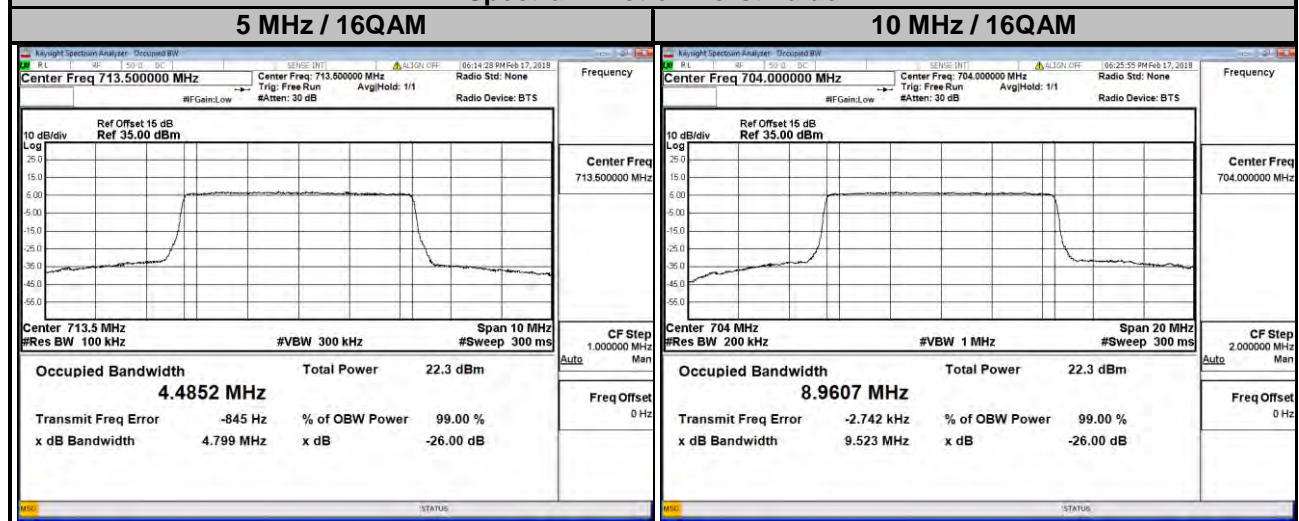
LTE Band 12							
Channel Bandwidth: 1.4 MHz				Channel Bandwidth: 3 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
23017	699.7	1.0865	1.0876	23025	700.5	2.6970	2.6940
23095	707.5	1.0853	1.0884	23095	707.5	2.6997	2.6960
23173	715.3	1.0882	1.0907	23165	714.5	2.7013	2.6986



### LTE Band 12

Channel Bandwidth: 5 MHz				Channel Bandwidth: 10 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
23035	701.5	4.4792	4.4796	23060	704.0	8.9569	8.9607
23095	707.5	4.4803	4.4835	23095	707.5	8.9566	8.9595
23155	713.5	4.4828	4.4852	23130	711.0	8.9389	8.9442

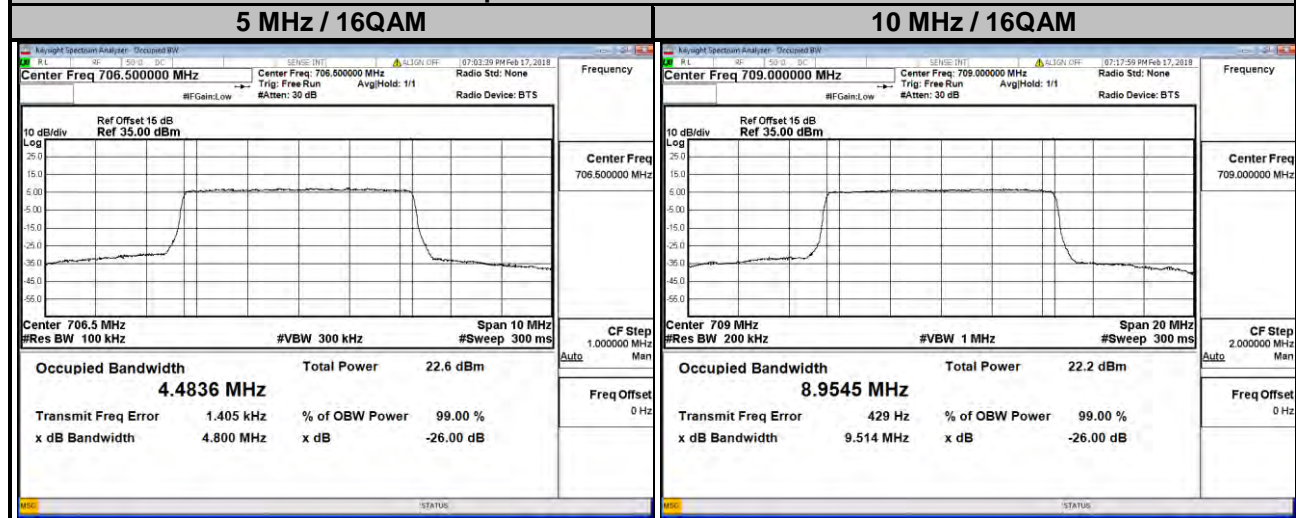
### Spectrum Plot of Worst Value



### LTE Band 17

Channel Bandwidth: 5 MHz				Channel Bandwidth: 10 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
23755	706.5	4.4821	4.4836	23780	709.0	8.9474	8.9545
23790	710.0	4.4783	4.4831	23790	710.0	8.9399	8.9421
23825	713.5	4.4829	4.4829	23800	711.0	8.9392	8.9443

### Spectrum Plot of Worst Value



## 4.4 Band Edge Measurement

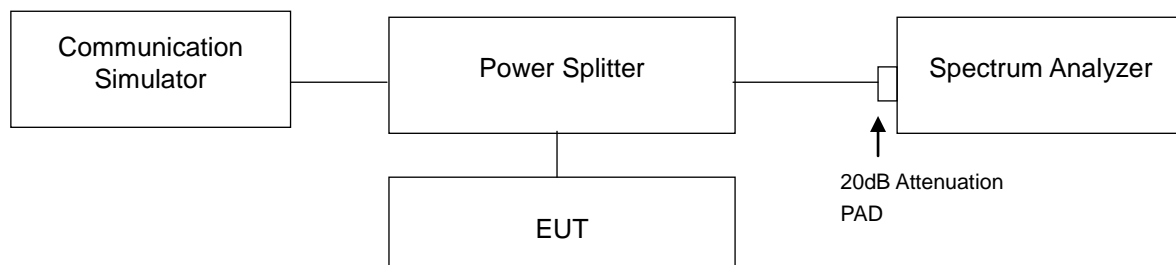
### 4.4.1 Limits of Band Edge Measurement

For operations in the 698-716 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log(P)$  dB. 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.

For operations in the 1710–1755 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB.

### 4.4.2 Test Setup

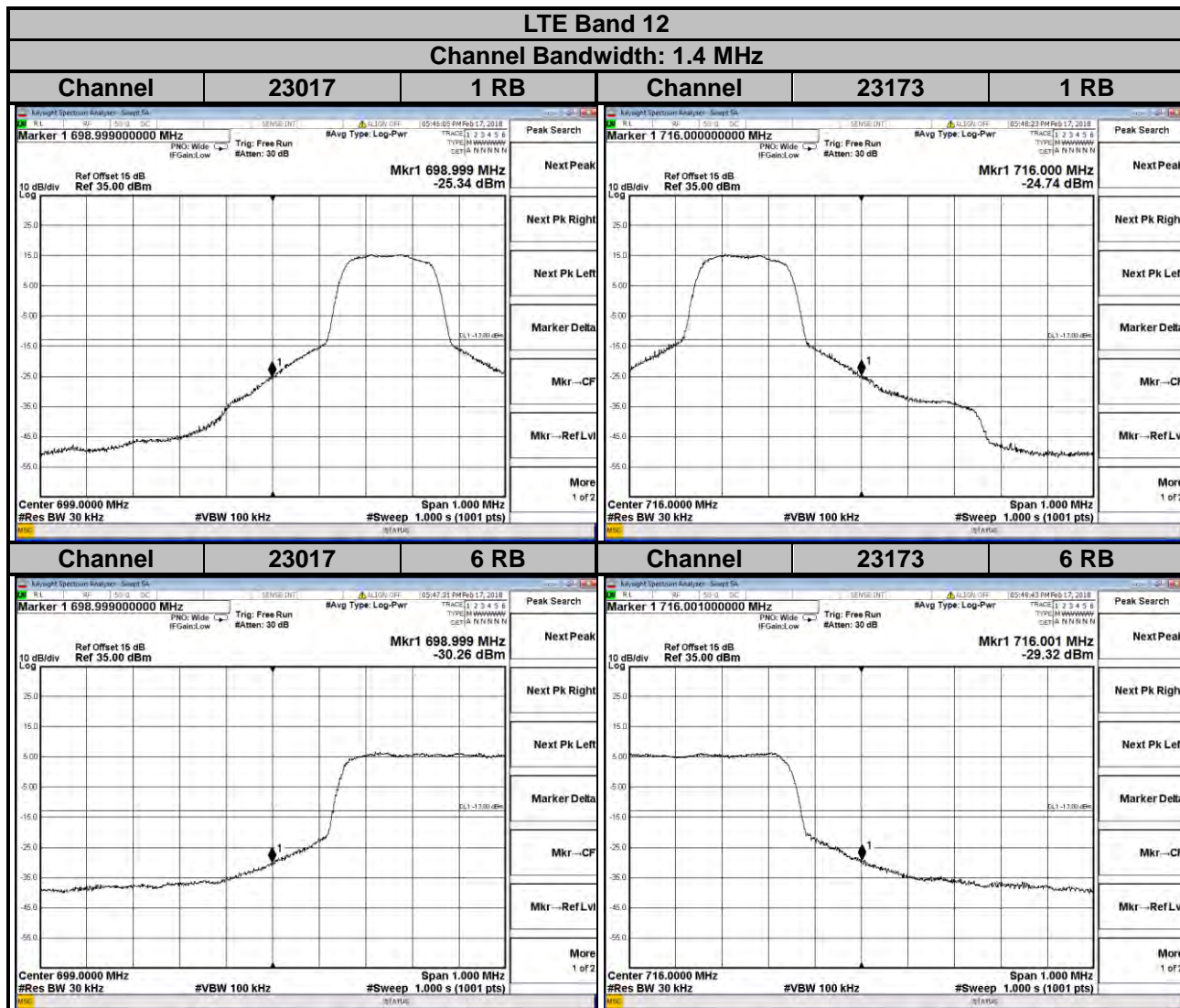


### 4.4.3 Test Procedures

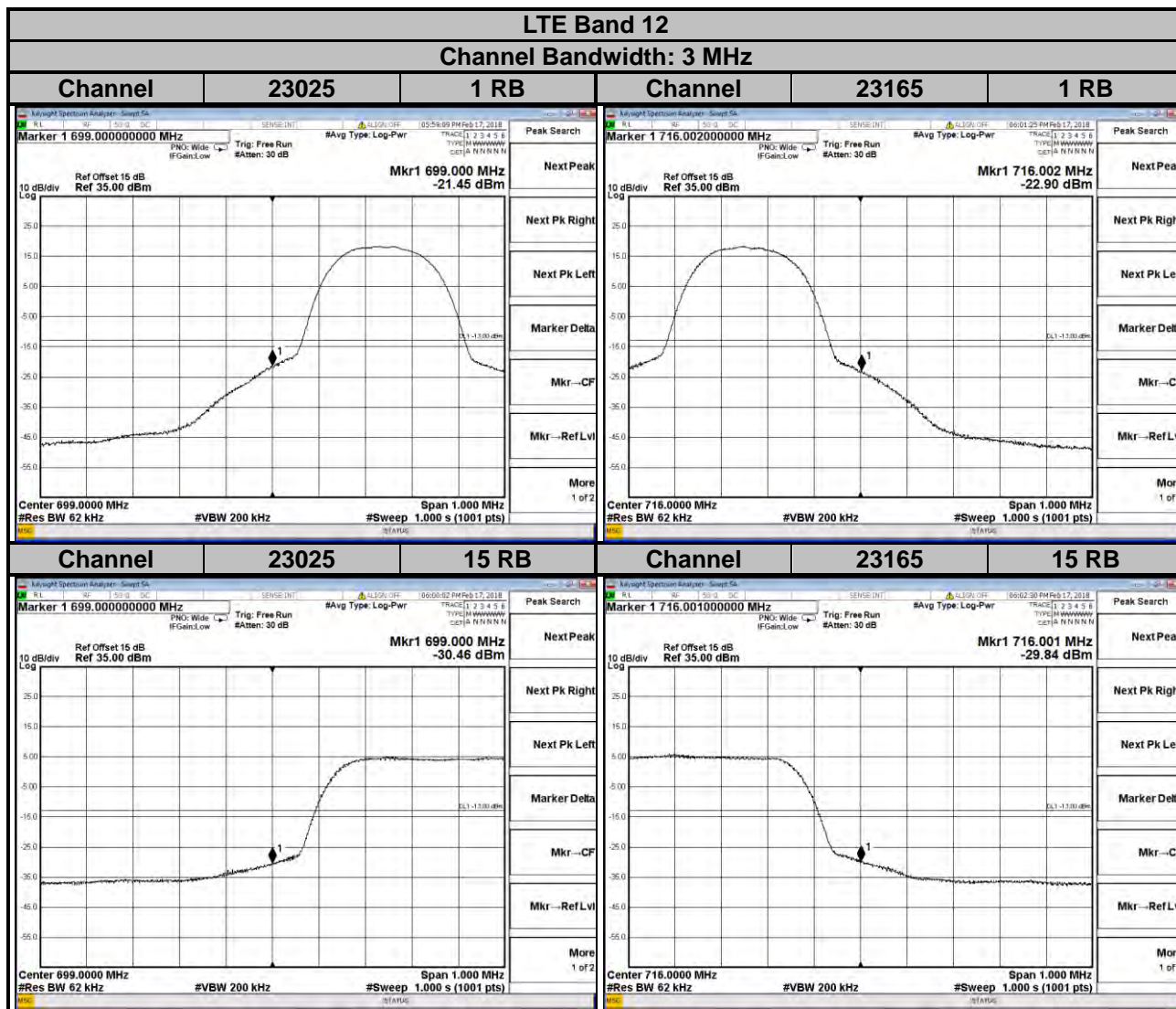
- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 13 kHz and VB of the spectrum is 51 kHz (LTE Bandwidth 1.4 MHz).
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 30 kHz and VB of the spectrum is 100 kHz (LTE Bandwidth 3 MHz).
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 100 kHz and VB of the spectrum is 300 kHz (LTE Bandwidth 5 MHz/10 MHz).
- Record the max. trace plot into the test report.

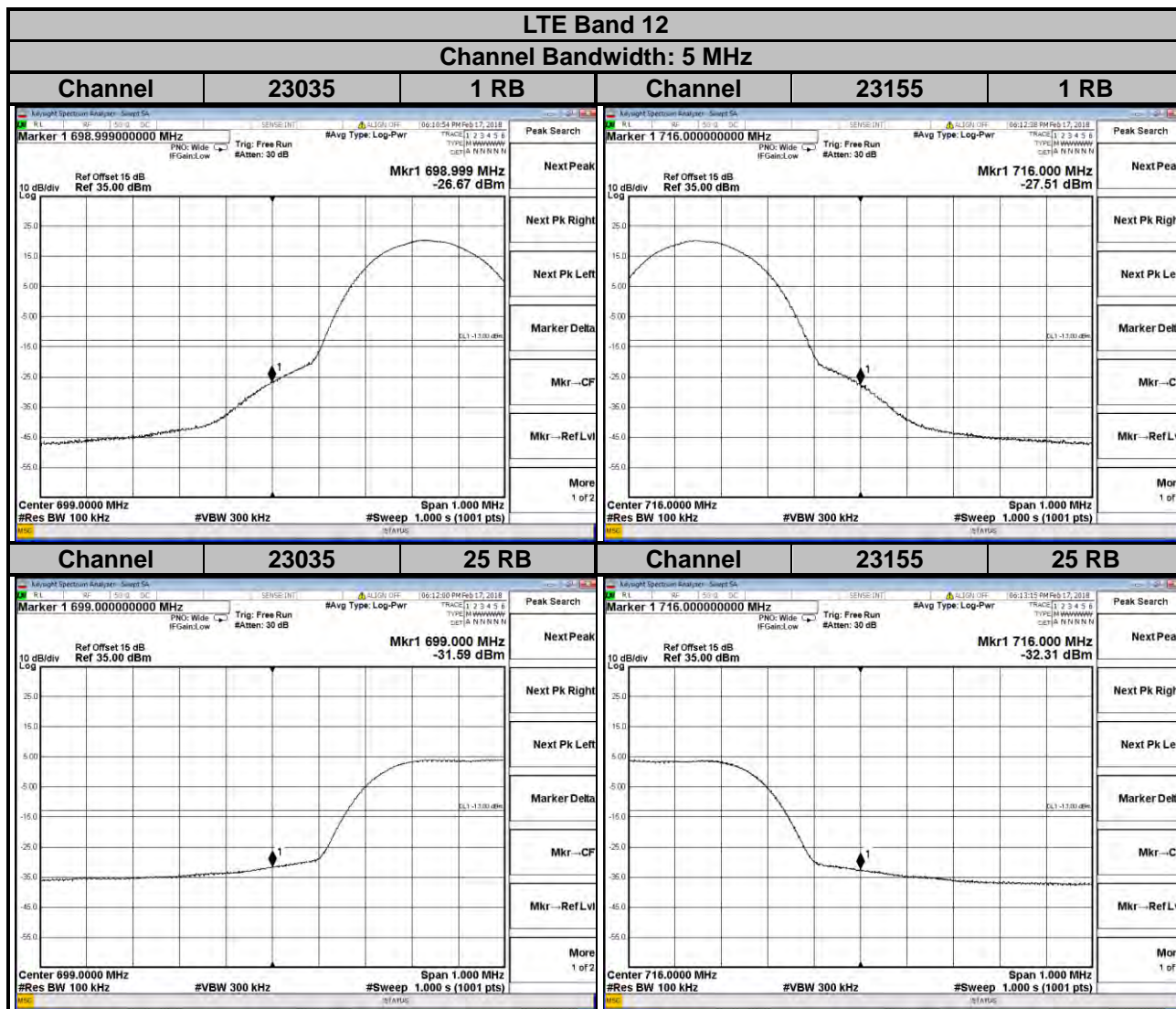


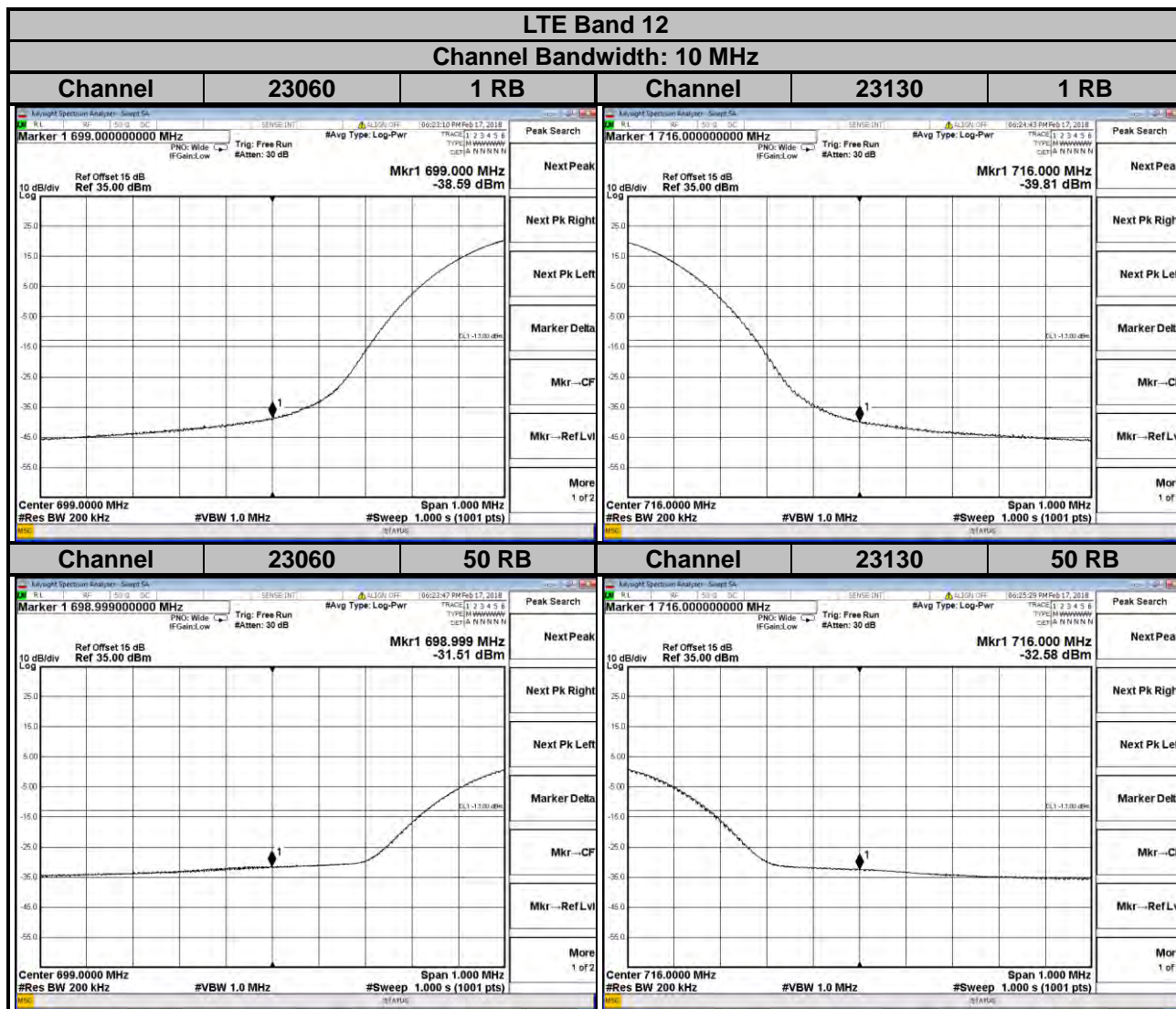
#### 4.4.4 Test Results



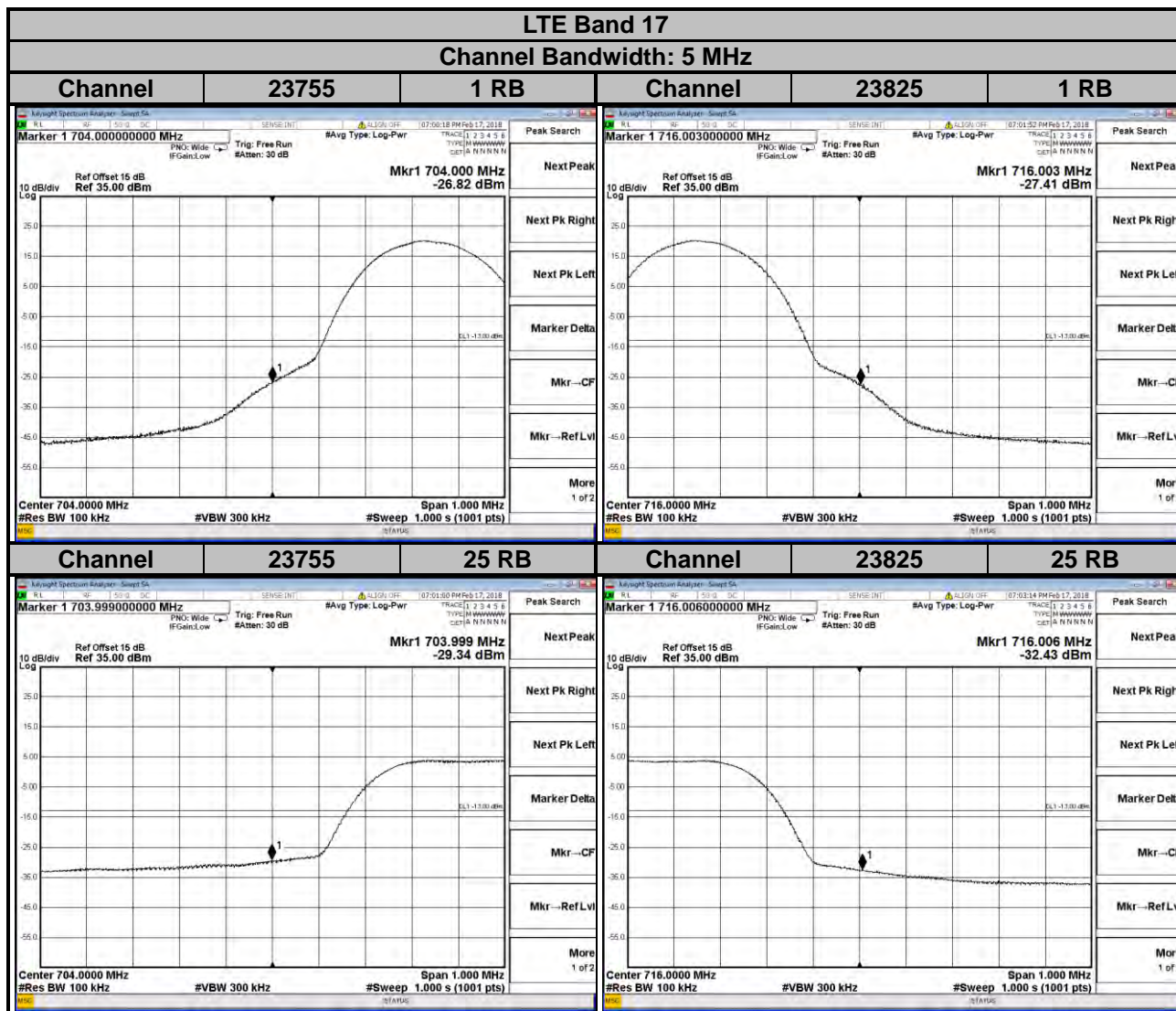


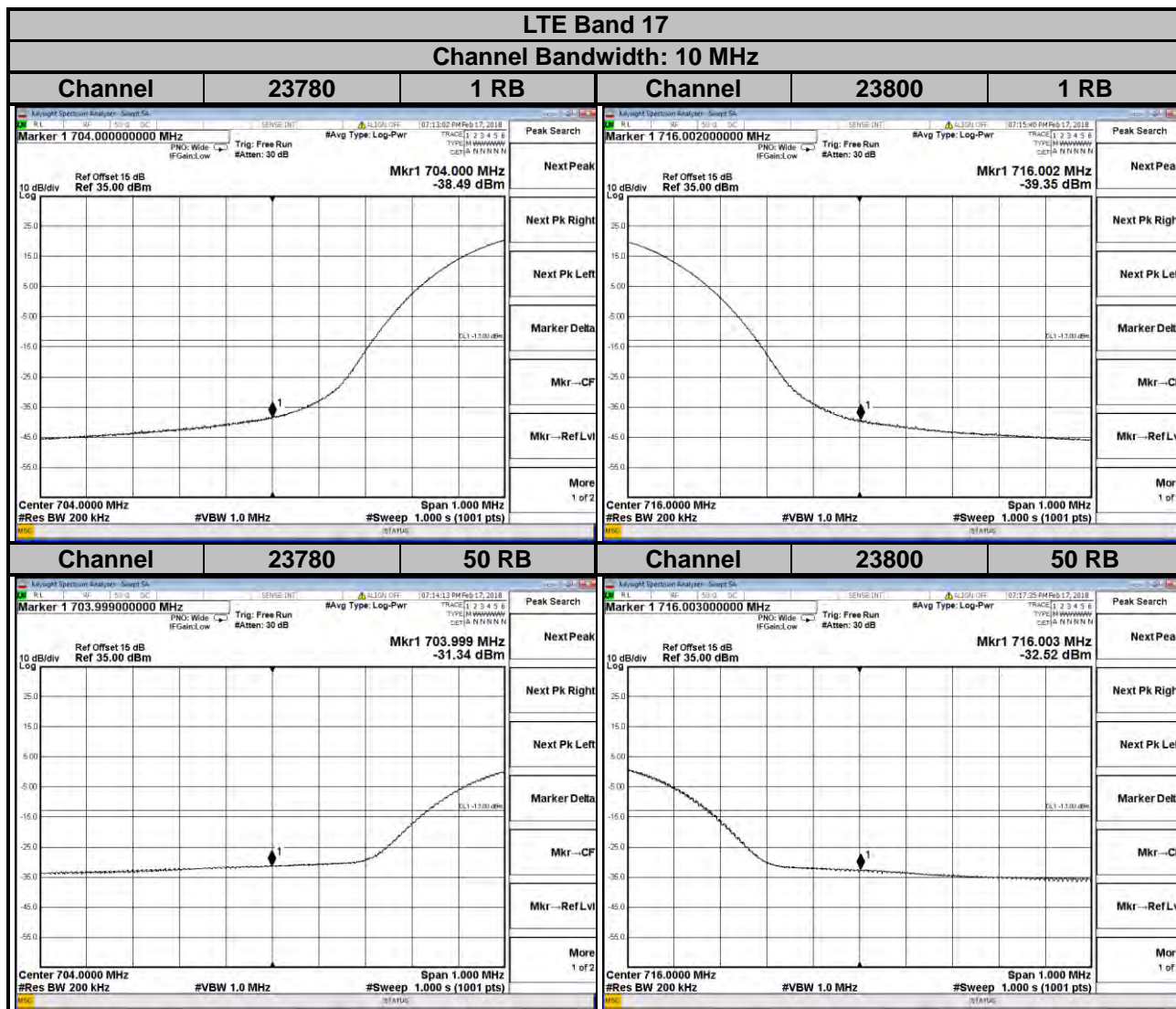










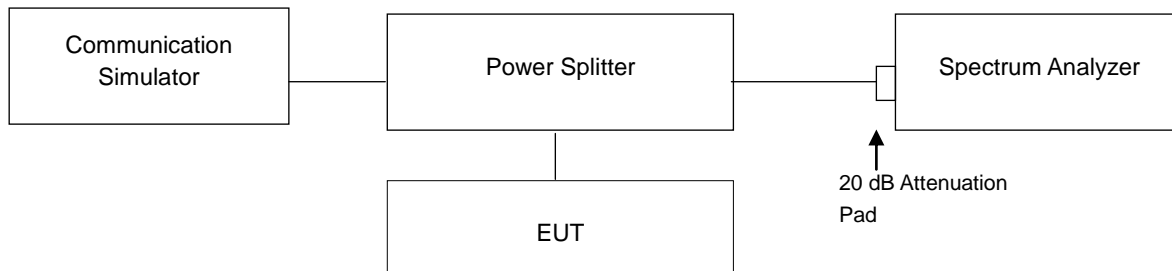


## 4.5 Peak to Average Ratio

### 4.5.1 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

### 4.5.2 Test Setup

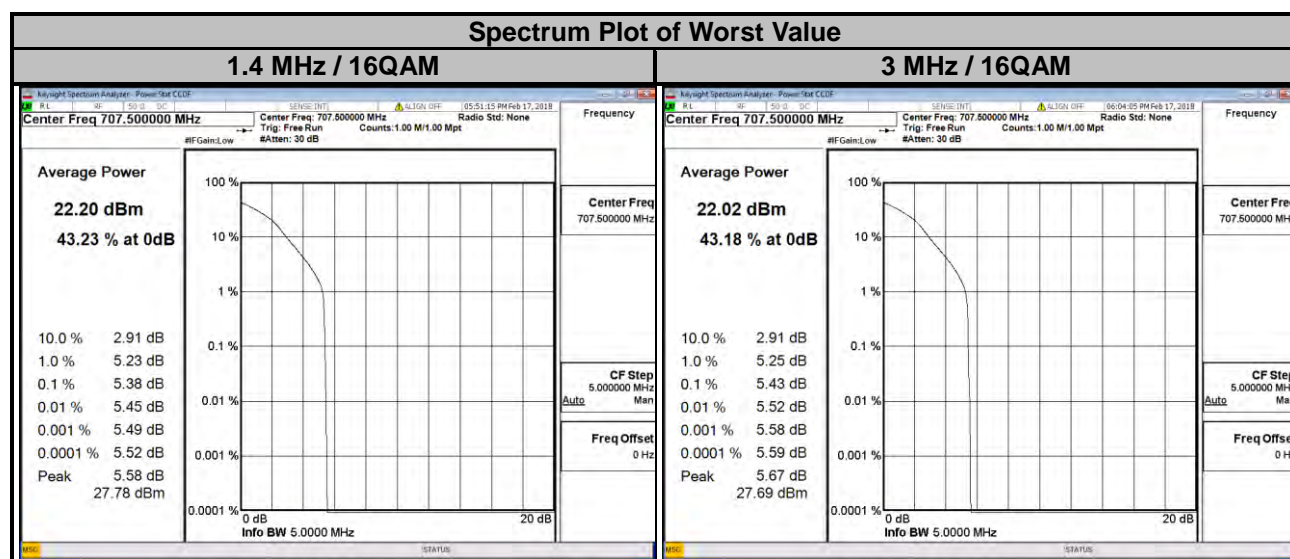


### 4.5.3 Test Procedures

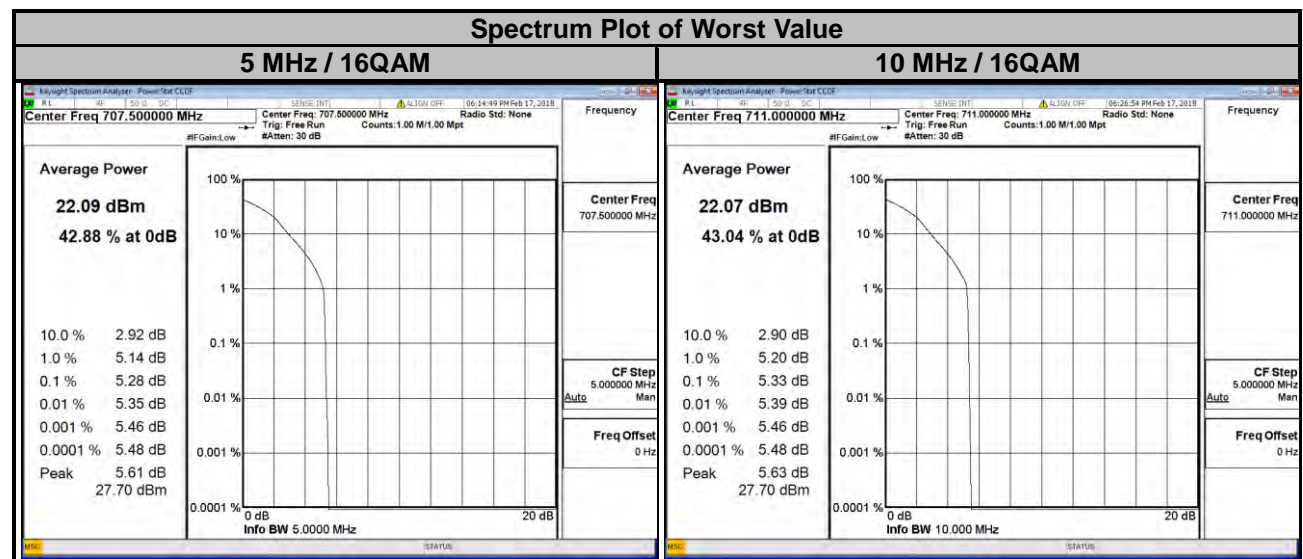
1. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1 %.

#### 4.5.4 Test Results

LTE Band 12							
Channel Bandwidth: 1.4 MHz				Channel Bandwidth: 3 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
23017	699.7	4.35	5.32	23025	700.5	4.32	5.28
23095	707.5	4.49	5.38	23095	707.5	4.50	5.43
23173	715.3	4.13	5.11	23165	714.5	4.23	5.11



LTE Band 12							
Channel Bandwidth: 5 MHz				Channel Bandwidth: 10 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
23035	701.5	4.31	5.16	23060	704.0	4.27	5.17
23095	707.5	4.46	5.28	23095	707.5	4.44	5.26
23155	713.5	4.37	5.25	23130	711.0	4.48	5.33

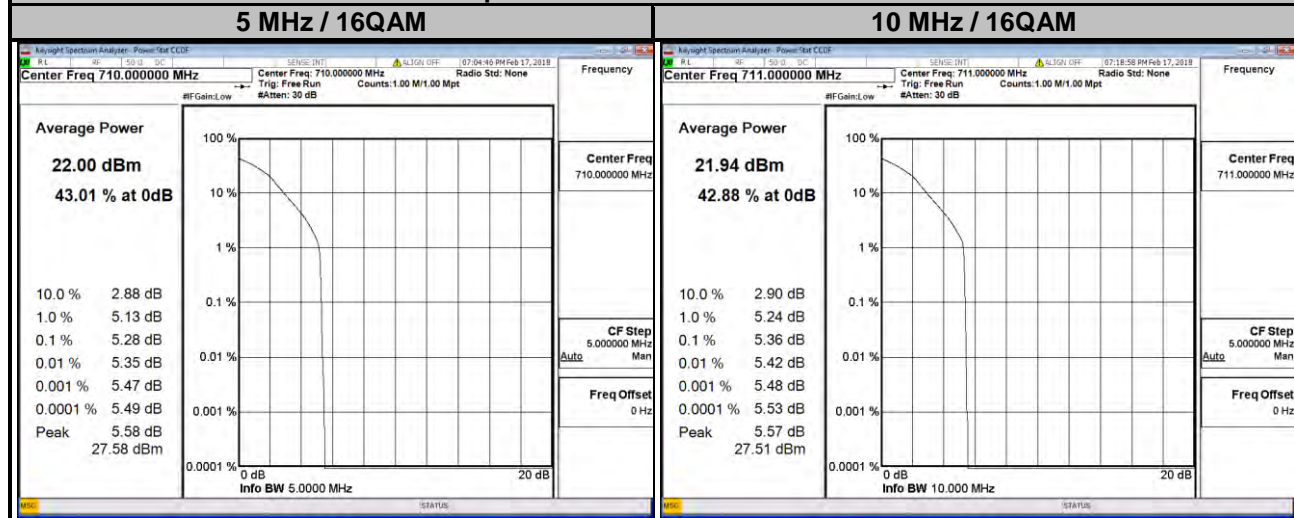




### LTE Band 17

Channel Bandwidth: 5 MHz				Channel Bandwidth: 10 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
23755	706.5	4.47	5.22	23780	709.0	4.42	5.29
23790	710.0	4.51	5.28	23790	710.0	4.51	5.35
23825	713.5	4.34	5.15	23800	711.0	4.52	5.36

### Spectrum Plot of Worst Value

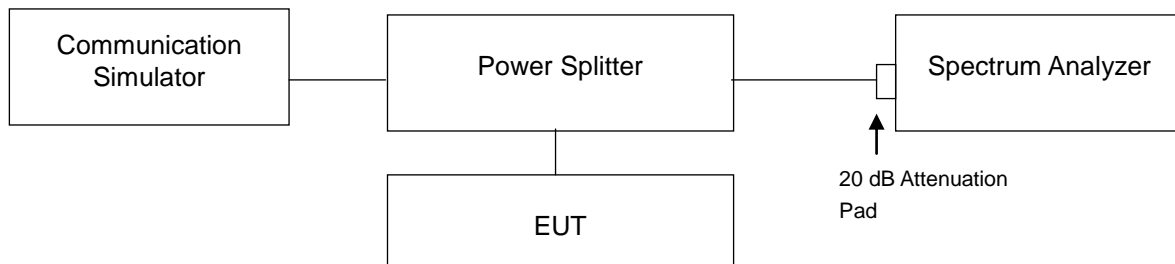


## 4.6 Conducted Spurious Emissions

### 4.6.1 Limits of Conducted Spurious Emissions Measurement

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB. The limit of emission is equal to -13 dBm.

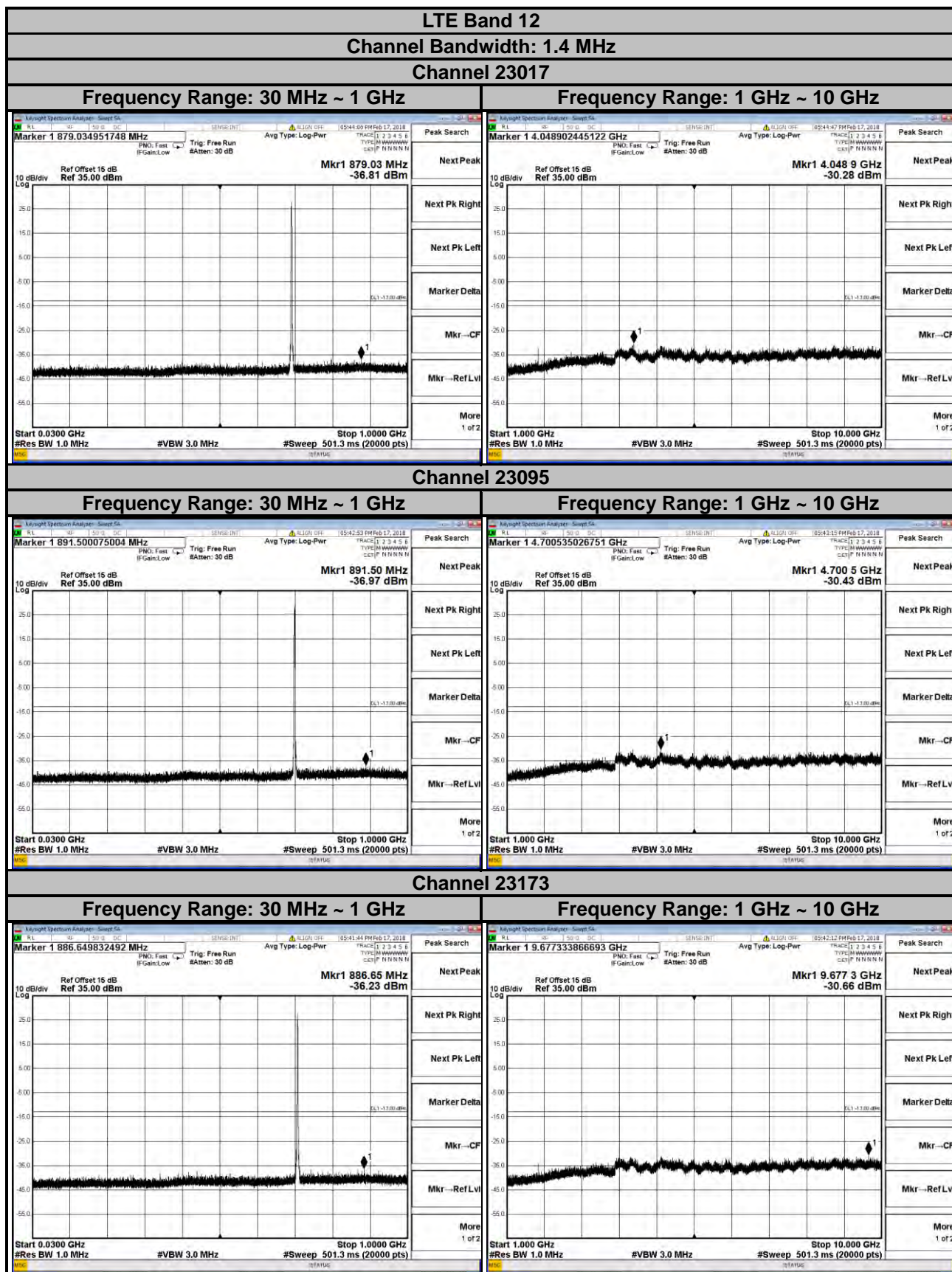
### 4.6.2 Test Setup



### 4.6.3 Test Procedure

- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 30 MHz to 10 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz are used for conducted emission measurement.

## 4.6.4 Test Results



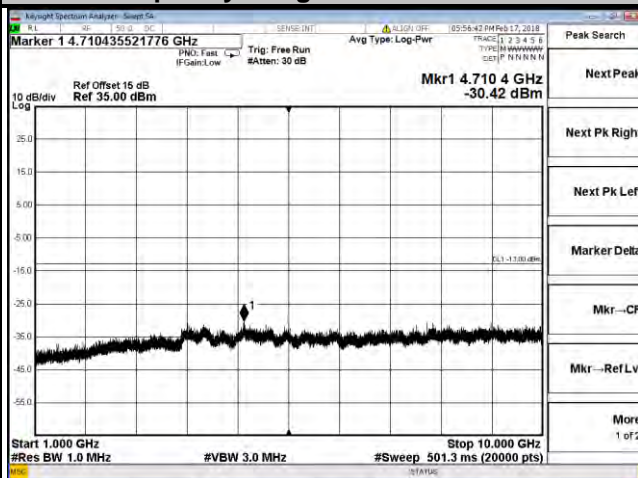
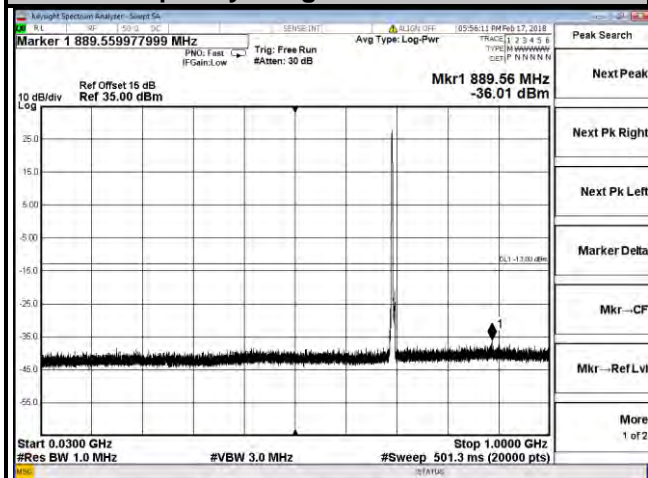
## LTE Band 12

Channel Bandwidth: 3 MHz

Channel 23025

Frequency Range: 30 MHz ~ 1 GHz

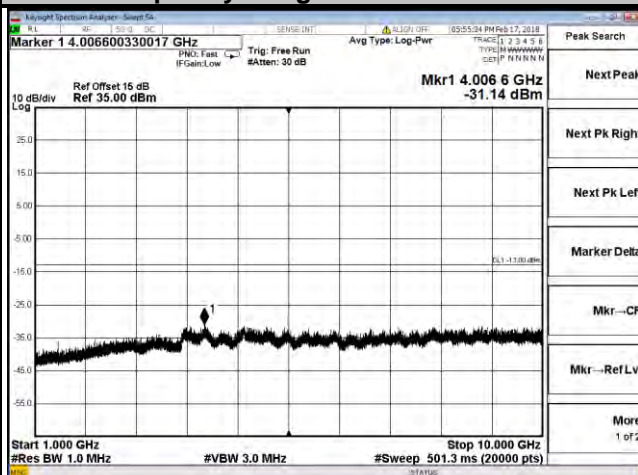
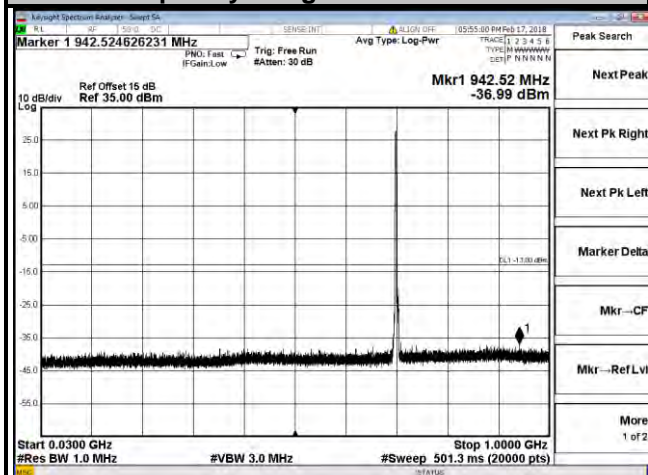
Frequency Range: 1 GHz ~ 10 GHz



Channel 23095

Frequency Range: 30 MHz ~ 1 GHz

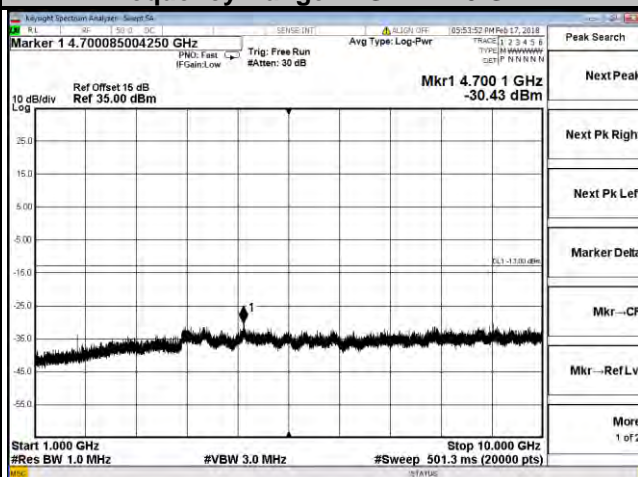
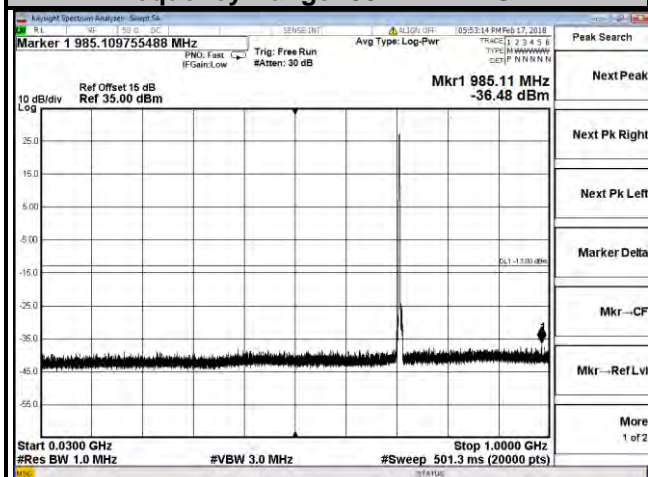
Frequency Range: 1 GHz ~ 10 GHz



Channel 23165

Frequency Range: 30 MHz ~ 1 GHz

Frequency Range: 1 GHz ~ 10 GHz





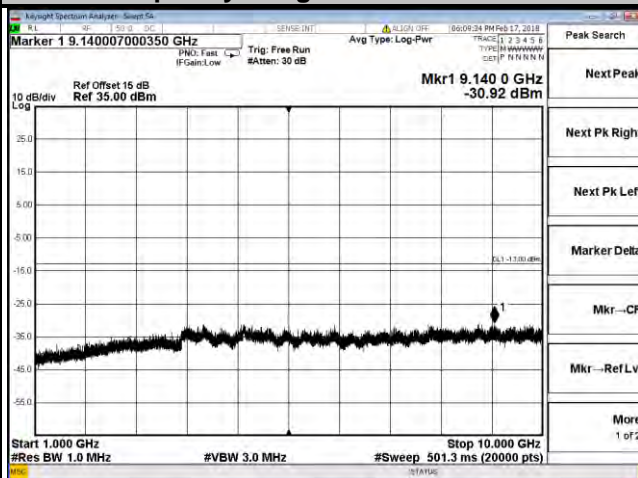
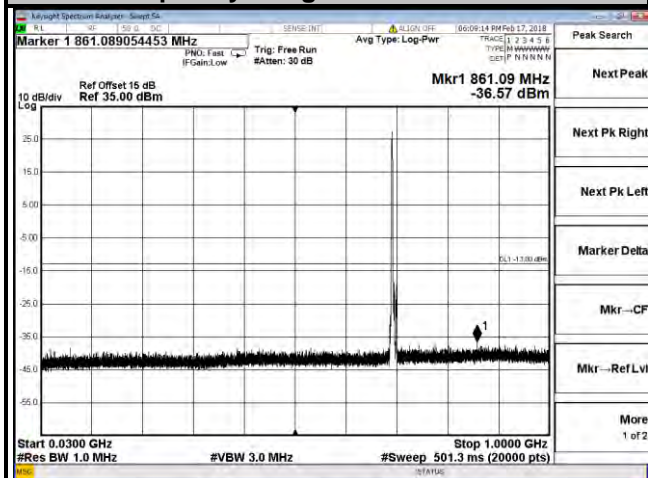
## LTE Band 12

Channel Bandwidth: 5 MHz

Channel 23035

Frequency Range: 30 MHz ~ 1 GHz

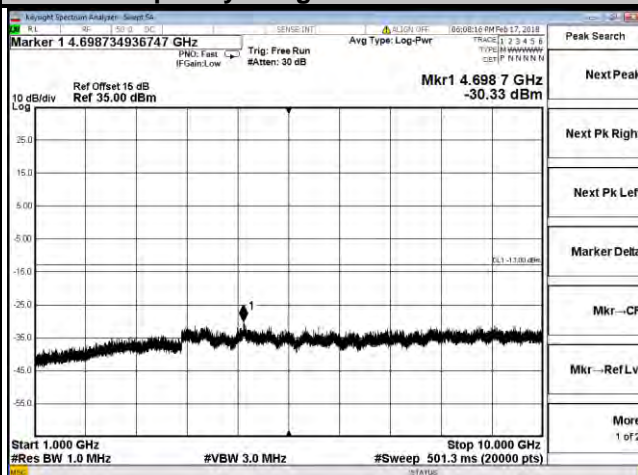
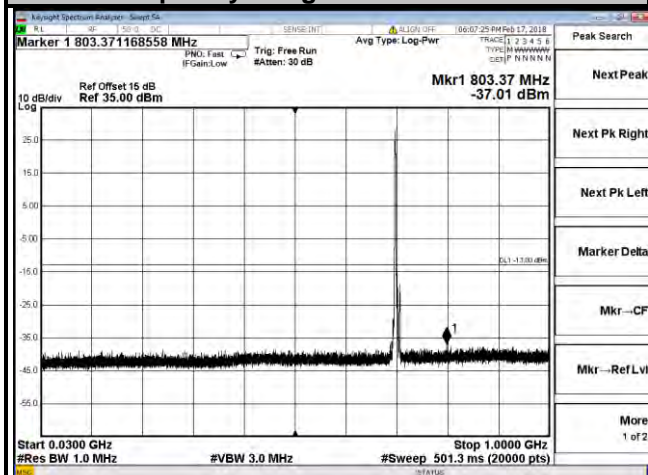
Frequency Range: 1 GHz ~ 10 GHz



## Channel 23095

Frequency Range: 30 MHz ~ 1 GHz

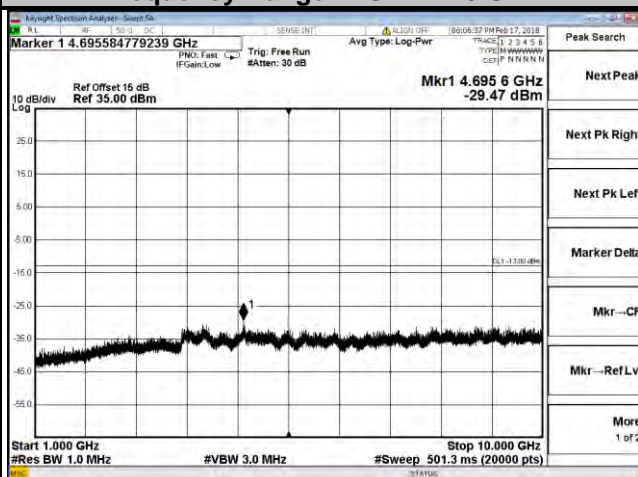
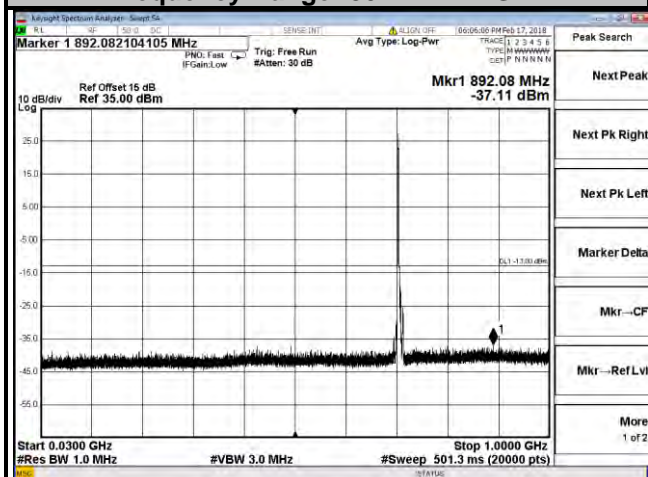
Frequency Range: 1 GHz ~ 10 GHz

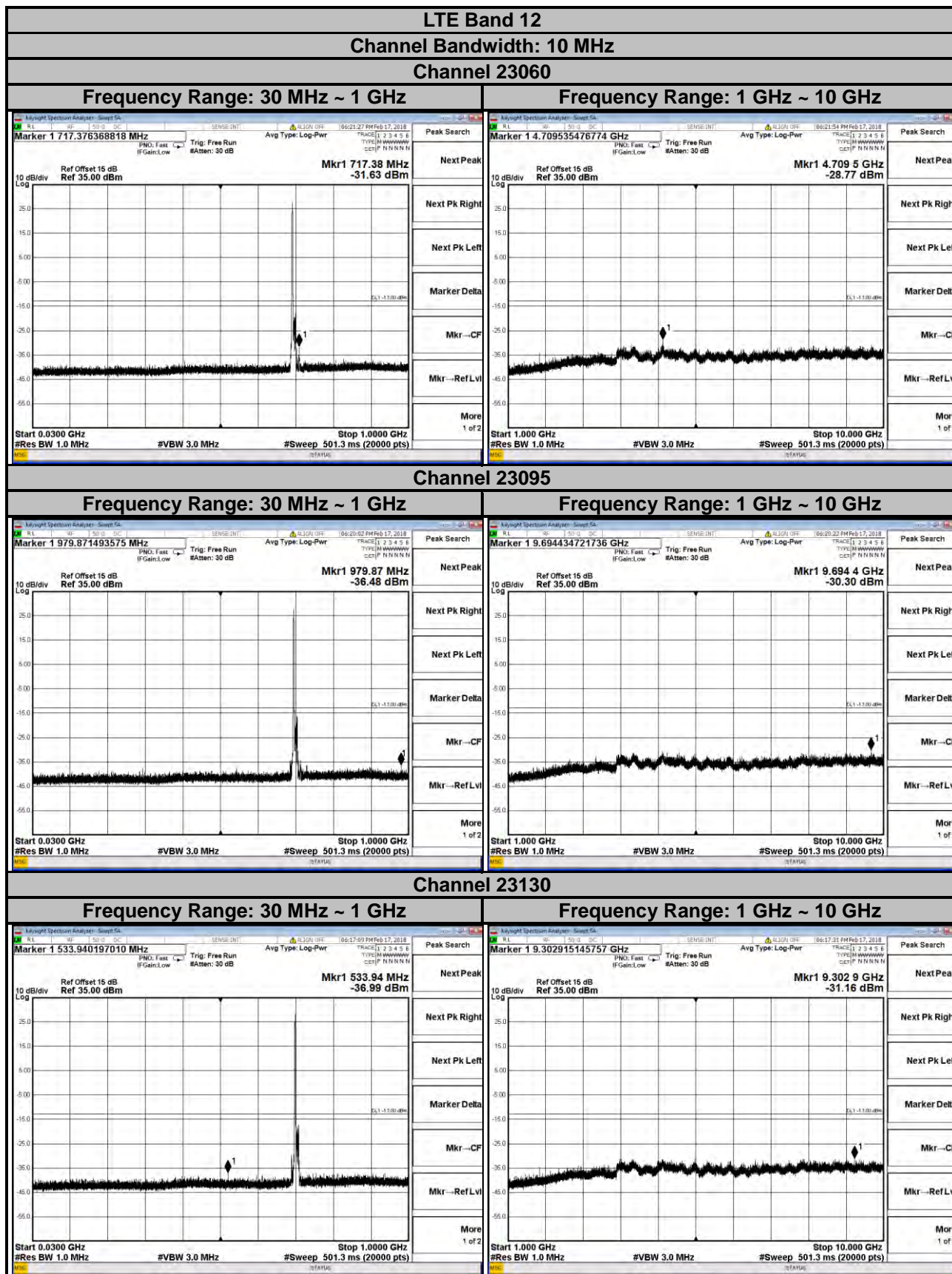


## Channel 23155

Frequency Range: 30 MHz ~ 1 GHz

Frequency Range: 1 GHz ~ 10 GHz





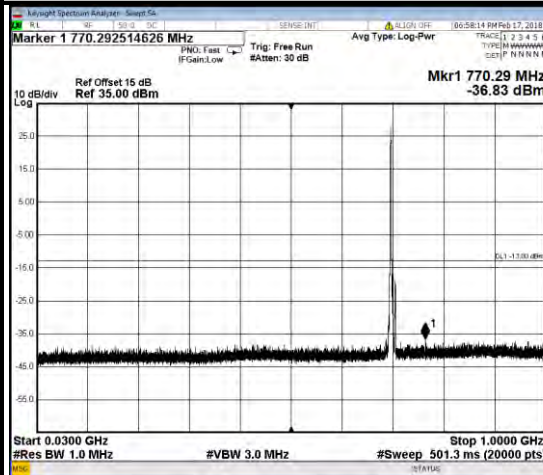


## LTE Band 17

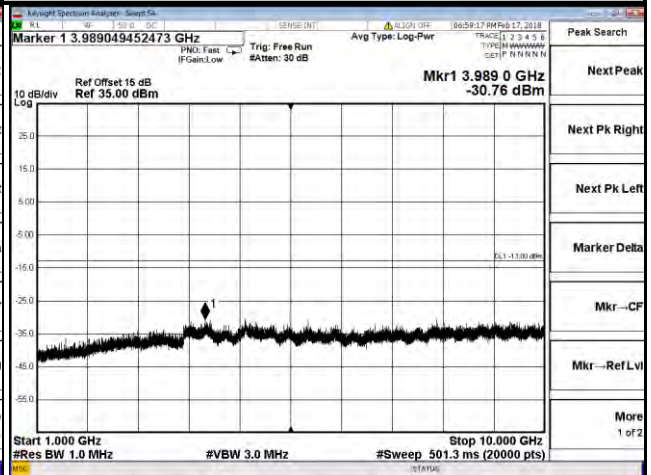
Channel Bandwidth: 5 MHz

Channel 23755

Frequency Range: 30 MHz ~ 1 GHz

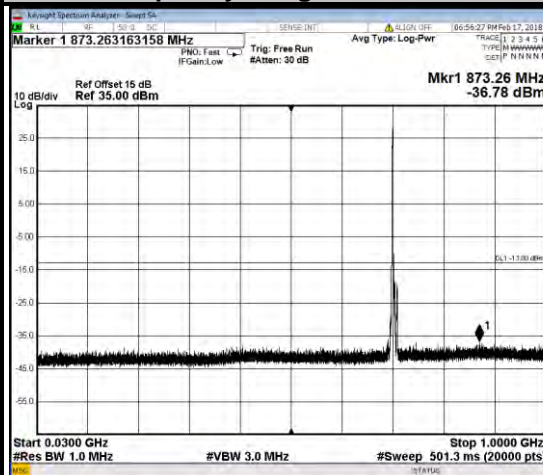


Frequency Range: 1 GHz ~ 10 GHz

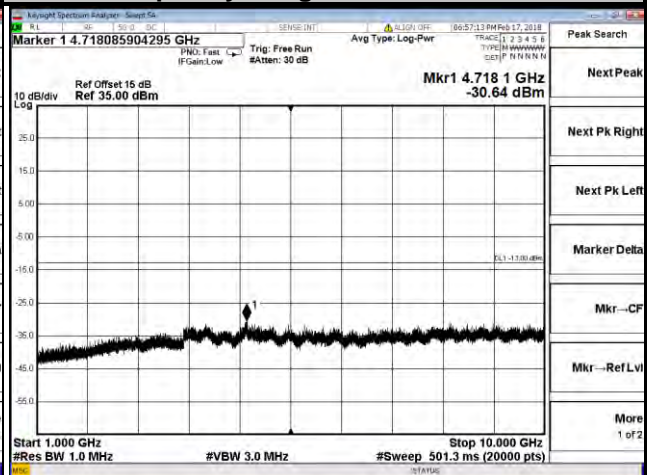


## Channel 23790

Frequency Range: 30 MHz ~ 1 GHz

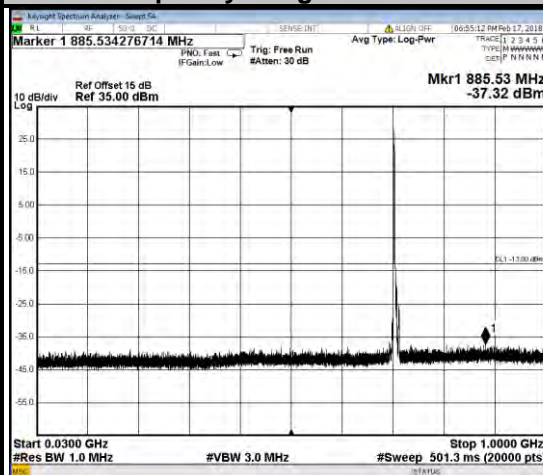


Frequency Range: 1 GHz ~ 10 GHz

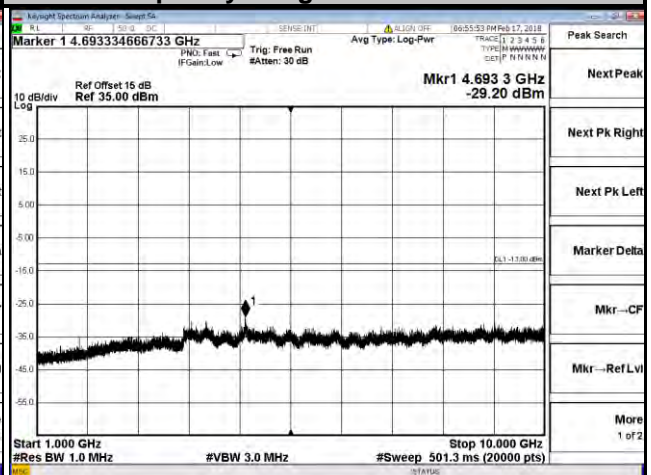


## Channel 23825

Frequency Range: 30 MHz ~ 1 GHz



Frequency Range: 1 GHz ~ 10 GHz

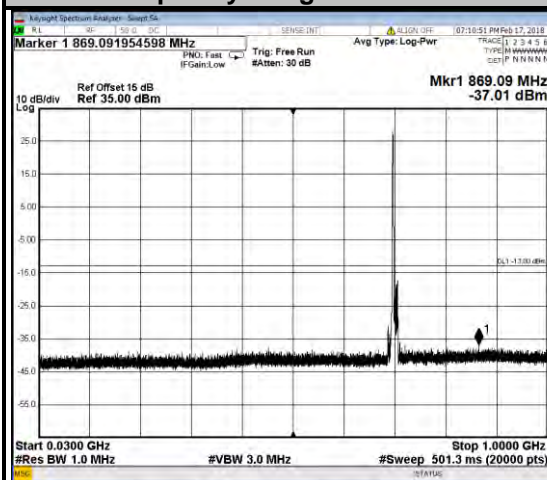


## LTE Band 17

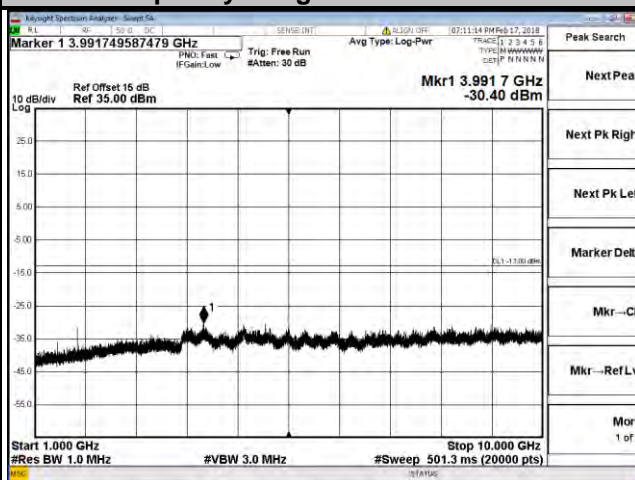
Channel Bandwidth: 10 MHz

Channel 23780

Frequency Range: 30 MHz ~ 1 GHz

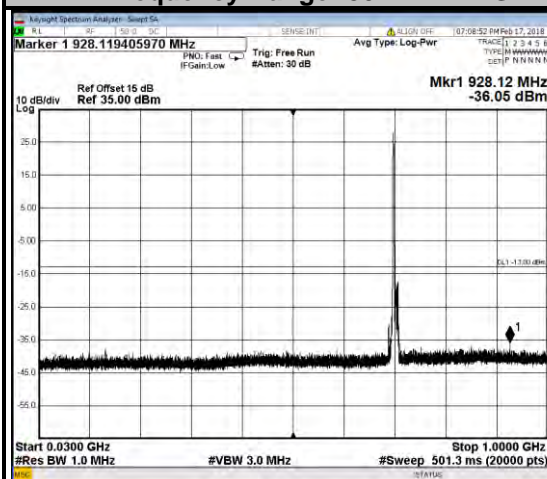


Frequency Range: 1 GHz ~ 10 GHz

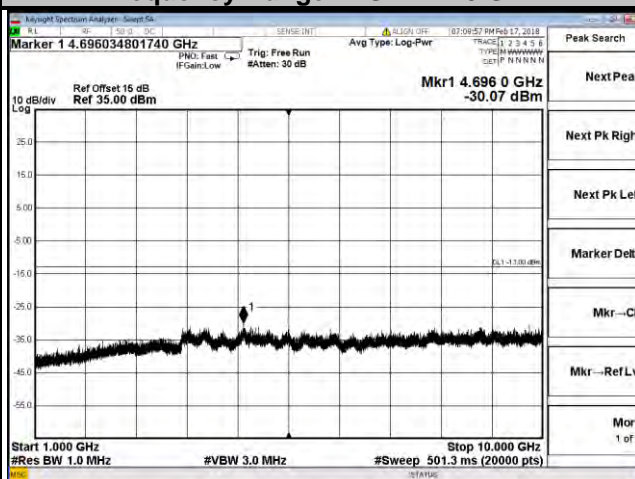


## Channel 23790

Frequency Range: 30 MHz ~ 1 GHz

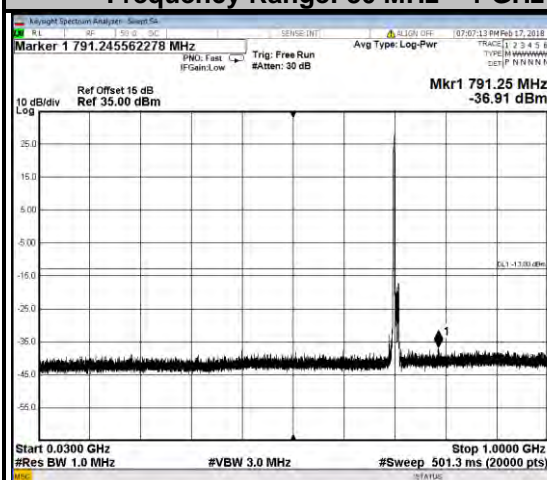


Frequency Range: 1 GHz ~ 10 GHz

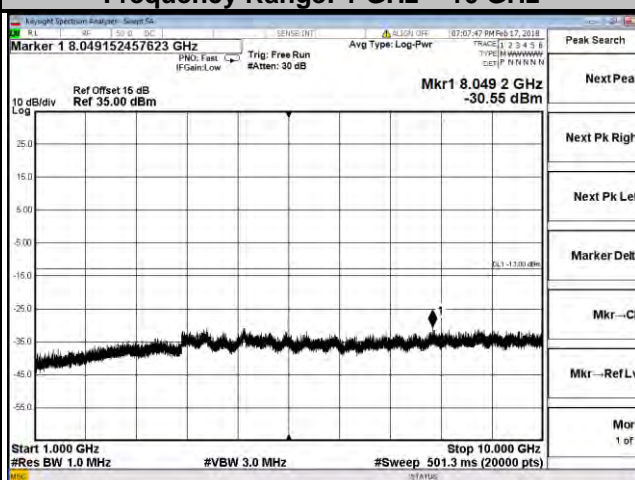


## Channel 23800

Frequency Range: 30 MHz ~ 1 GHz



Frequency Range: 1 GHz ~ 10 GHz





## 4.7 Radiated Emission Measurement

### 4.7.1 Limits of Radiated Emission Measurement

- a. The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB. The limit of emission is equal to -13 dBm.

### 4.7.2 Test Procedure

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- c.  $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$ .
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  $E.R.P \text{ power} = E.I.P.R \text{ power} - 2.15 \text{ dBi}$ .

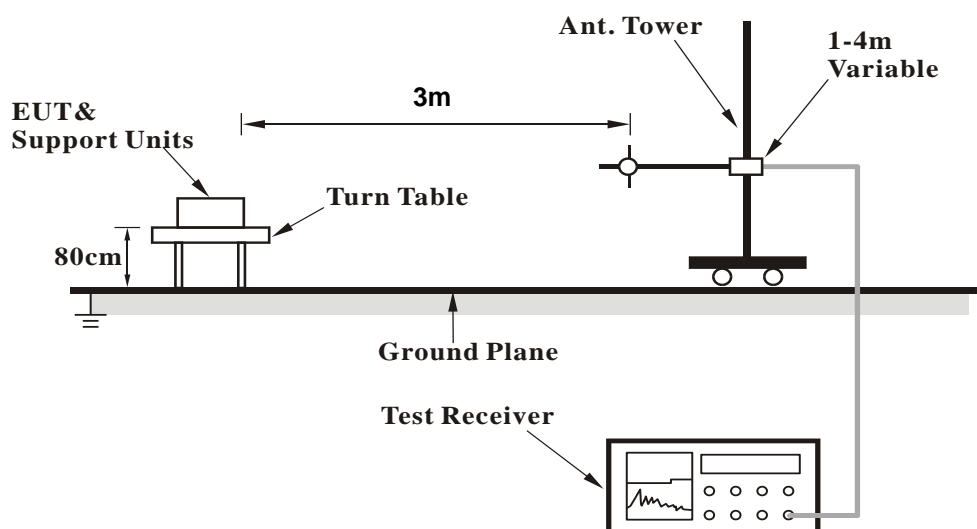
**Note:** The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

### 4.7.3 Deviation from Test Standard

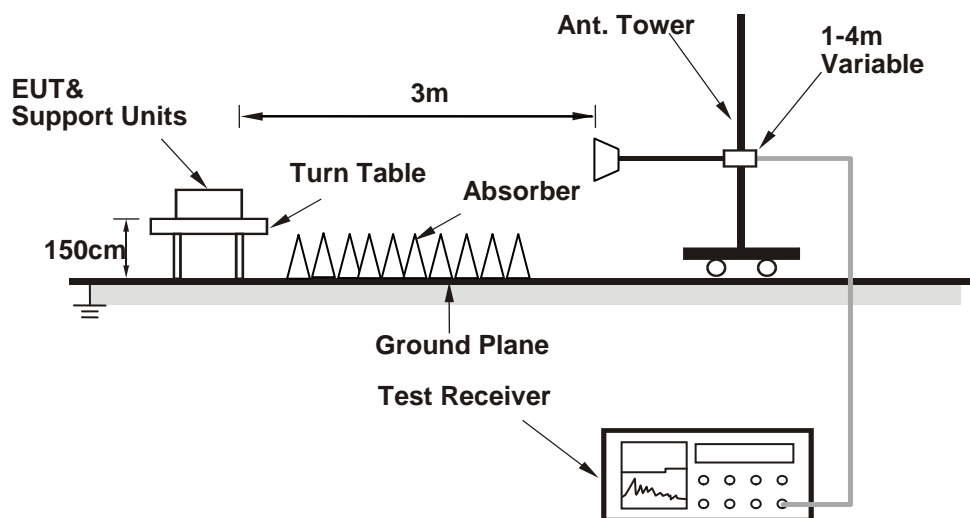
No deviation.

#### 4.7.4 Test Setup

##### <Radiated Emission below or equal 1 GHz>



##### <Radiated Emission above 1 GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### 4.7.5 Test Results

LTE Band 12

Channel Bandwidth: 1.4 MHz / QPSK

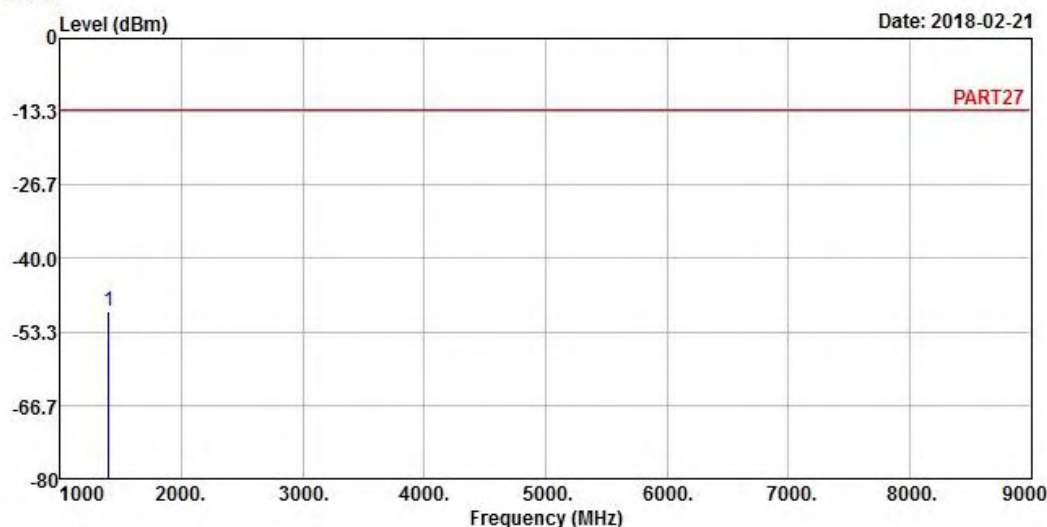
Low Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_1.4M Link\_L-CH

Tested by: Jisyong Wang

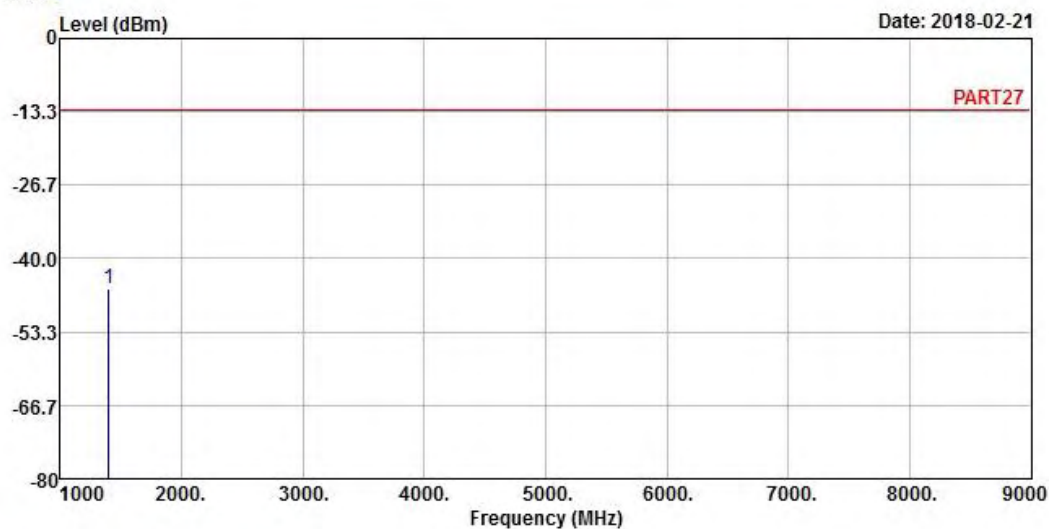
		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1399.40	-49.61	-35.17	-13.00	-36.61	-14.44	Peak



# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5  
 Condition: PART27 VERTICAL  
 Remak : LTE Band 12 QPSK\_1.4M Link\_L-CH  
 Tested by: Jisyong Wang

Freq	Level	Read	Limit	Over		Factor	Remark
		Level	Line	Limit	Limit		
MHz	dBm	dBm	dBm	dB	dB	dB	
1 pp 1399.40	-45.53	-31.09	-13.00	-32.53	-14.44		Peak

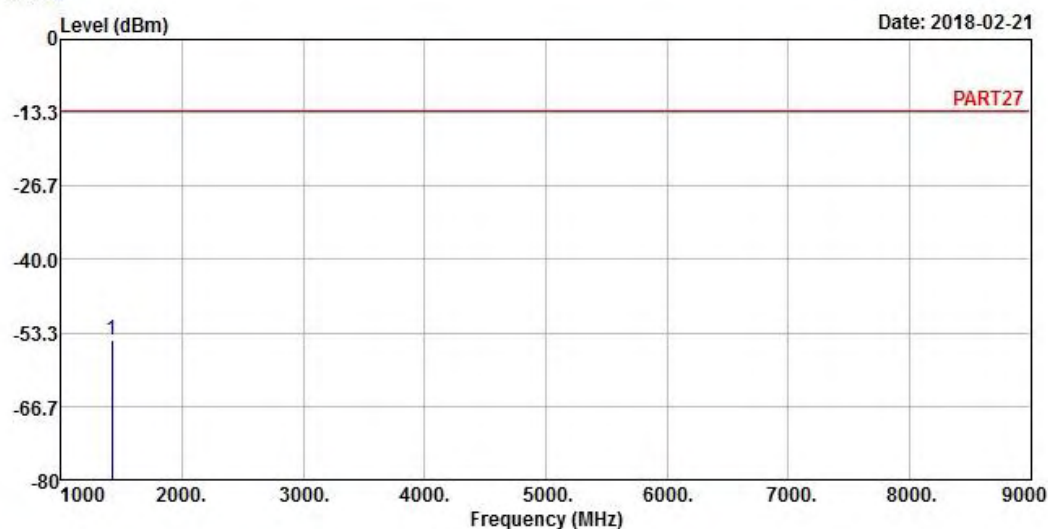
# Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remak : LTE Band 12 QPSK\_1.4M Link\_M-CH  
Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1415.00	-54.73	-40.39	-13.00	-41.73	-14.34	Peak

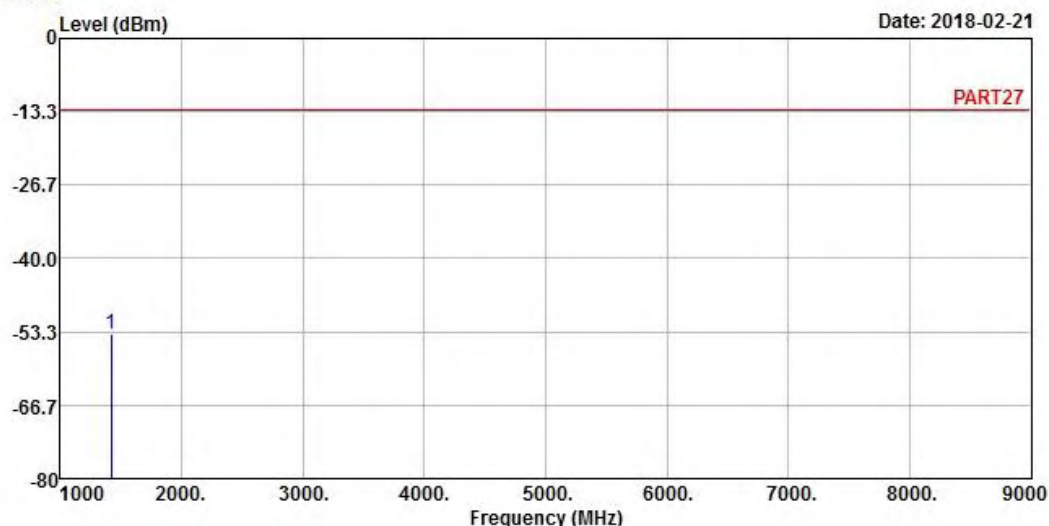


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2018-02-21



Site : 966 Chamber 5  
Condition: PART27 VERTICAL  
Remak : LTE Band 12 QPSK\_1.4M Link\_M-CH  
Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1415.00	-53.61	-39.27	-13.00	-40.61	-14.34	Peak

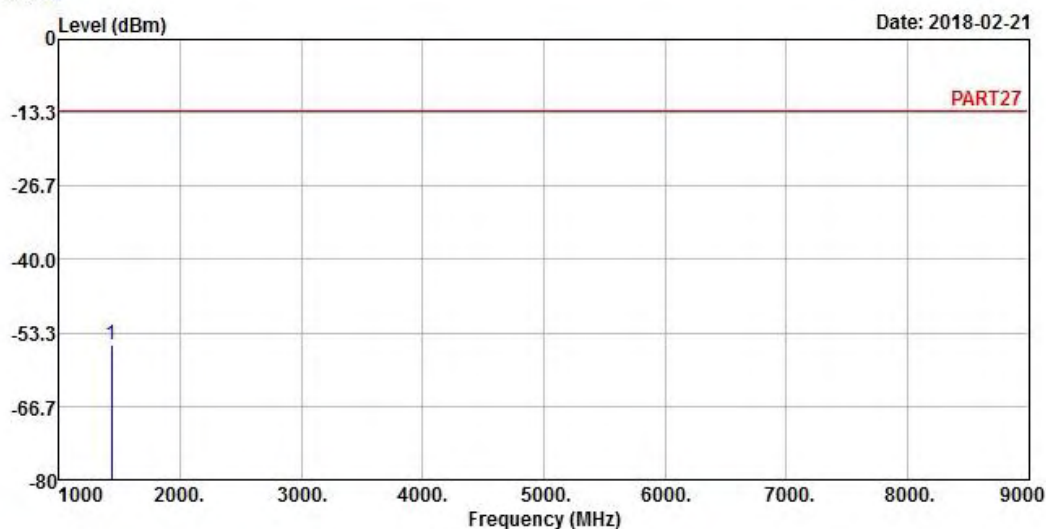
## High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5  
 Condition: PART27 HORIZONTAL  
 Remak : LTE Band 12 QPSK\_1.4M Link\_H-CH  
 Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1430.60	-55.46	-41.22	-13.00	-42.46	-14.24	Peak

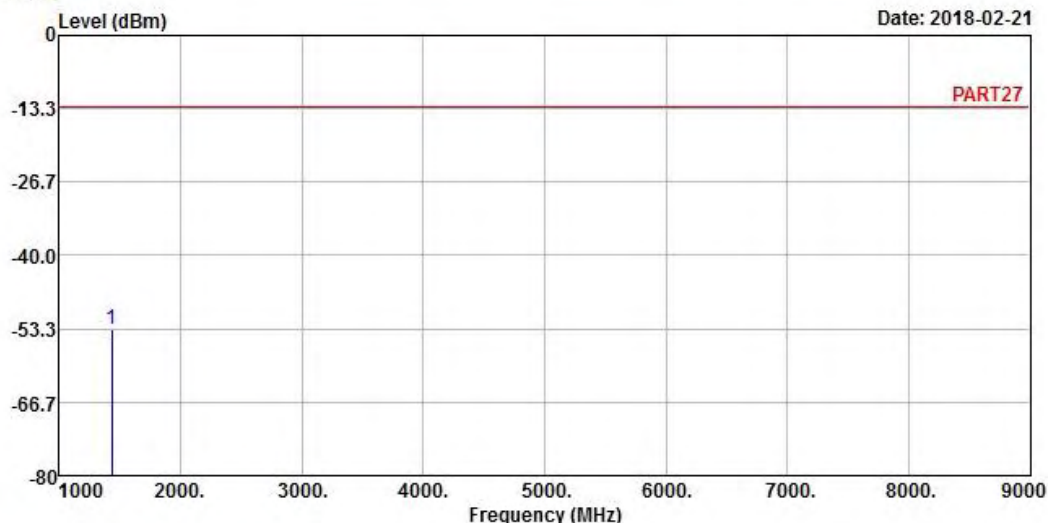


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2018-02-21



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_1.4M Link\_H-CH

Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1430.60	-53.35	-39.11	-13.00	-40.35	-14.24	Peak



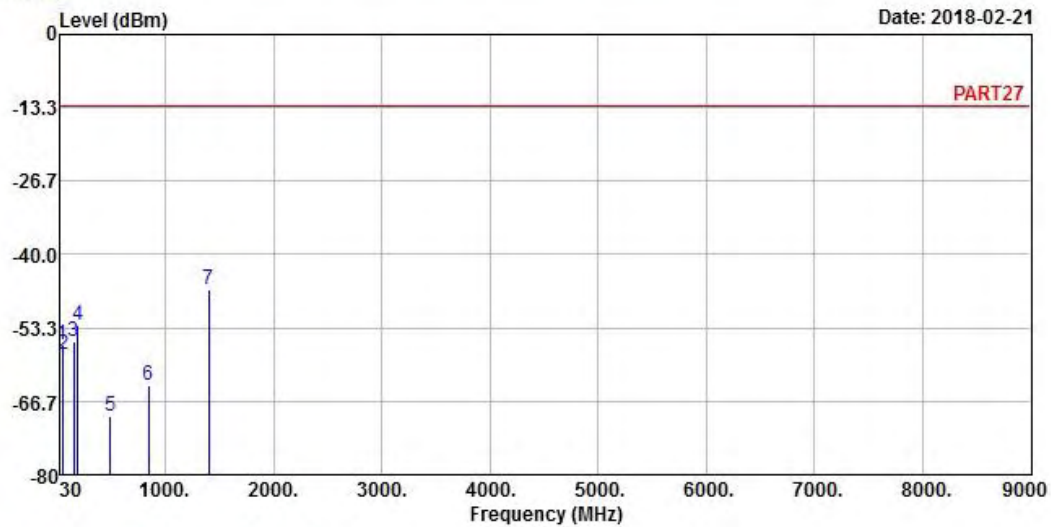
LTE Band 12  
Channel Bandwidth: 5 MHz / QPSK  
Low Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remak : LTE Band 12 QPSK\_5M Link\_L-CH  
Tested by: Jisyong Wang

			Read	Limit	Over		
	Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	43.58	-56.50	-55.03	-13.00	-43.50	-1.47	Peak
2	54.25	-58.21	-52.14	-13.00	-45.21	-6.07	Peak
3	153.19	-55.74	-48.98	-13.00	-42.74	-6.76	Peak
4	188.11	-52.96	-45.81	-13.00	-39.96	-7.15	Peak
5	490.75	-69.46	-64.67	-13.00	-56.46	-4.79	Peak
6	843.83	-63.62	-63.96	-13.00	-50.62	0.34	Peak
7 pp	1403.00	-46.30	-31.86	-13.00	-33.30	-14.44	Peak

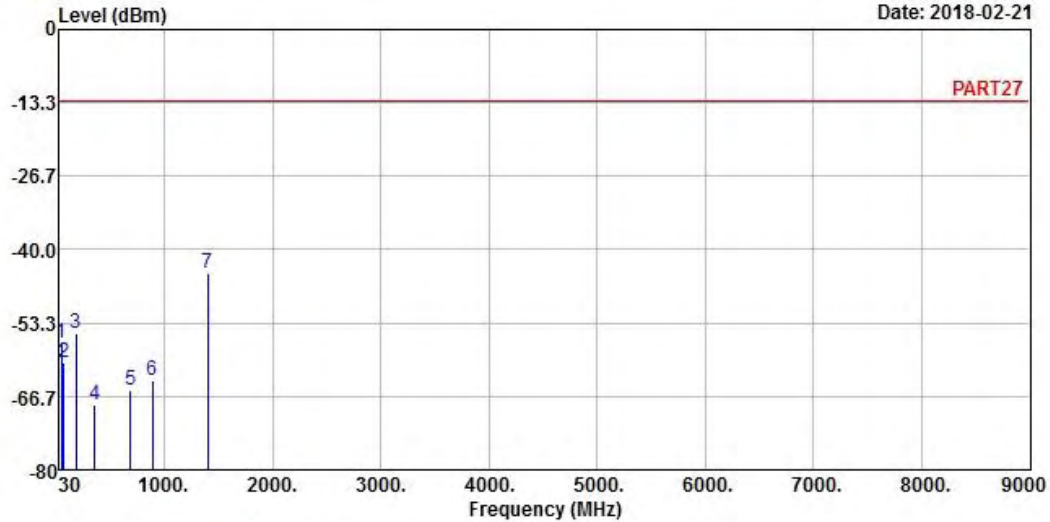


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 2018-02-21



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_5M Link\_L-CH

Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	43.58	-57.01	-55.54	-13.00	-44.01	-1.47	Peak
2	67.83	-60.61	-52.36	-13.00	-47.61	-8.25	Peak
3	185.20	-55.35	-48.11	-13.00	-42.35	-7.24	Peak
4	354.95	-68.30	-62.09	-13.00	-55.30	-6.21	Peak
5	684.75	-65.61	-65.27	-13.00	-52.61	-0.34	Peak
6	887.48	-63.90	-64.40	-13.00	-50.90	0.50	Peak
7 pp	1403.00	-44.32	-29.88	-13.00	-31.32	-14.44	Peak

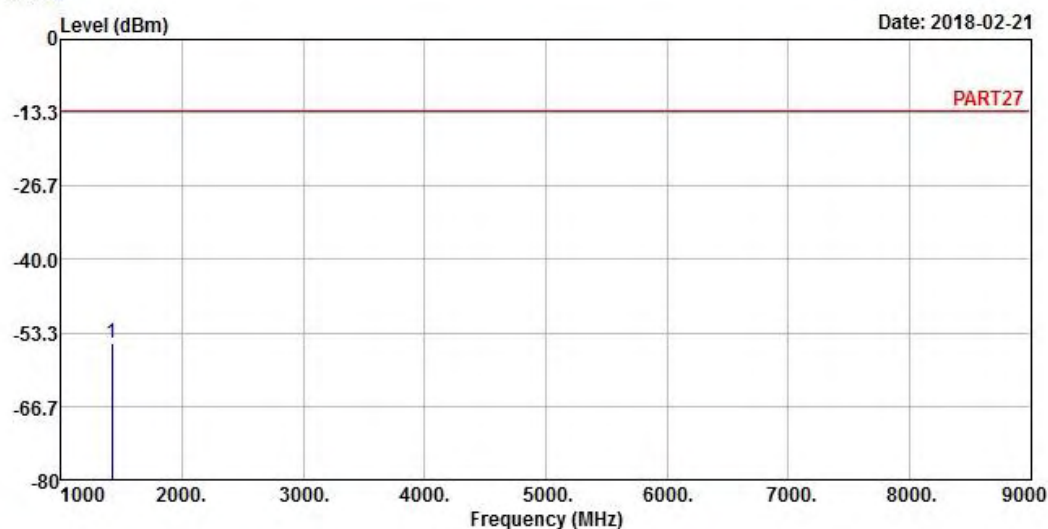
# Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5  
 Condition: PART27 HORIZONTAL  
 Remak : LTE Band 12 QPSK\_5M Link\_M-CH  
 Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1415.00	-55.34	-41.00	-13.00	-42.34	-14.34	Peak

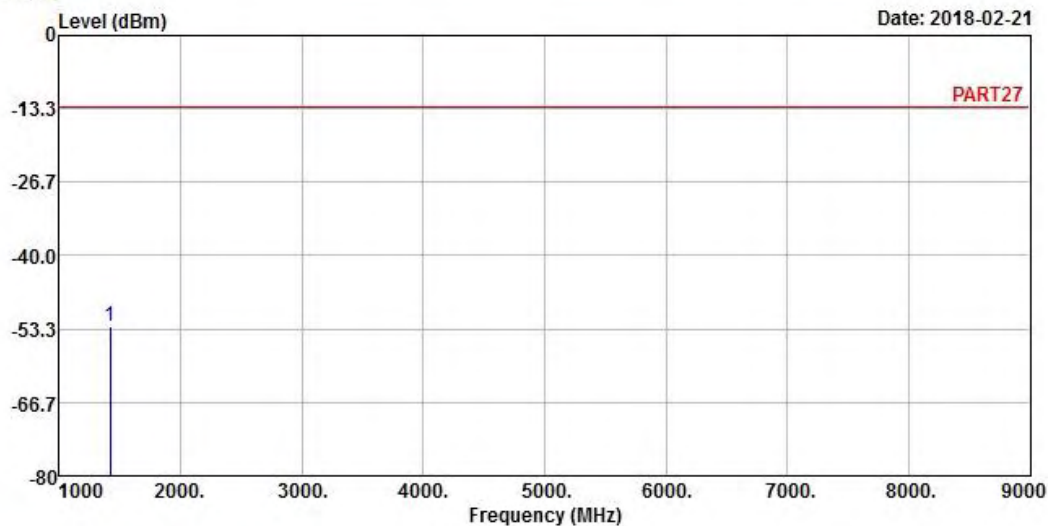


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2018-02-21



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_5M Link\_M-CH

Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	

1 pp 1415.00 -52.77 -38.43 -13.00 -39.77 -14.34 Peak

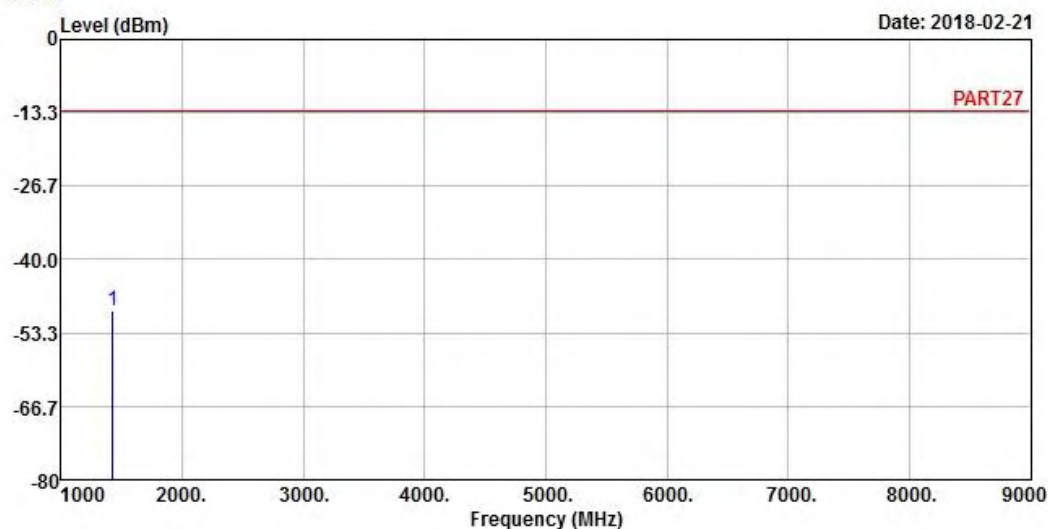
# High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5  
 Condition: PART27 HORIZONTAL  
 Remak : LTE Band 12 QPSK\_5M Link\_H-CH  
 Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1427.00	-49.21	-34.97	-13.00	-36.21	-14.24	Peak

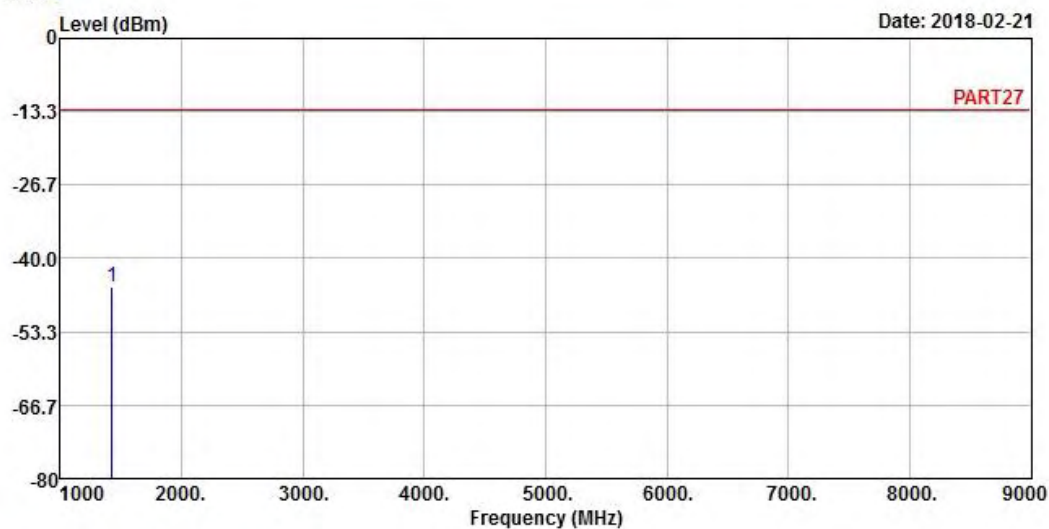


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2018-02-21



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_5M Link\_H-CH

Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1427.00	-45.22	-30.98	-13.00	-32.22	-14.24	Peak



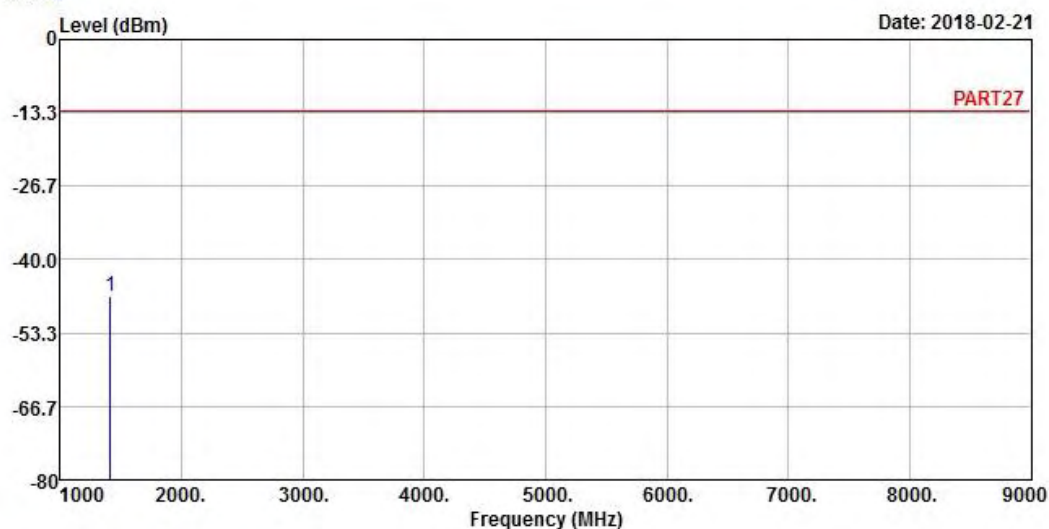
LTE Band 12  
Channel Bandwidth: 10 MHz / QPSK  
Low Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remak : LTE Band 12 QPSK\_10M Link\_L-CH  
Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1408.00	-46.78	-32.44	-13.00	-33.78	-14.34	Peak

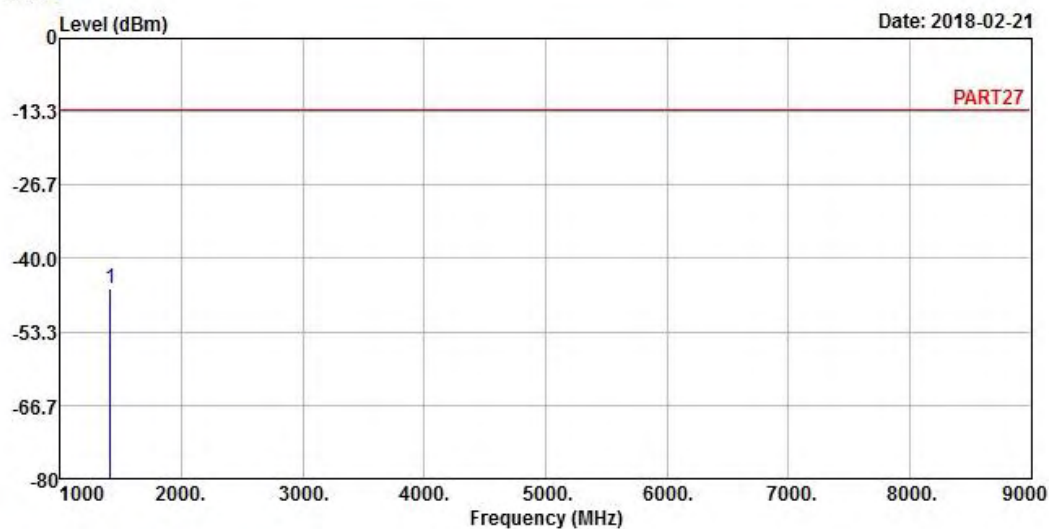


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2018-02-21



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_10M Link\_L-CH

Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	

1 pp 1408.00 -45.57 -31.23 -13.00 -32.57 -14.34 Peak



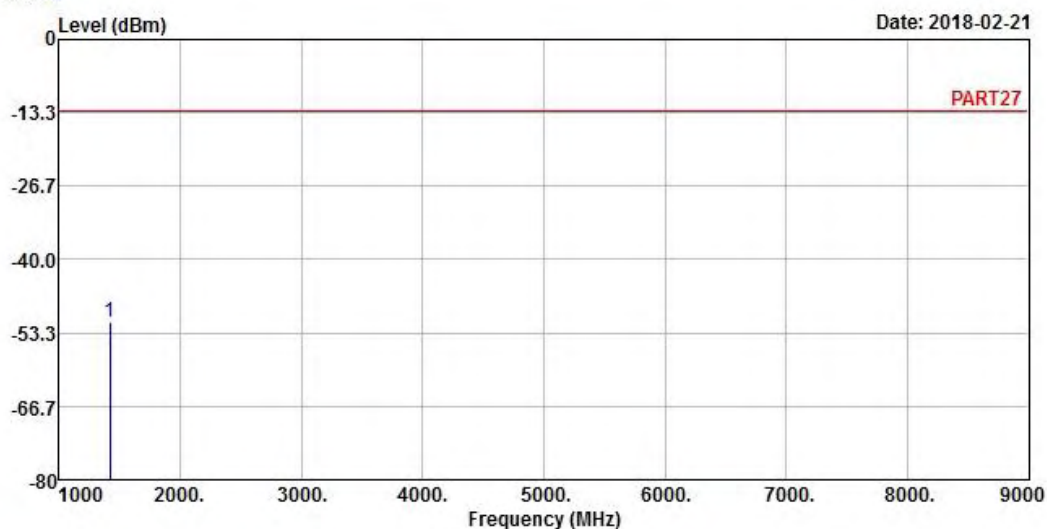
## Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5  
 Condition: PART27 HORIZONTAL  
 Remak : LTE Band 12 QPSK\_10M Link\_M-CH  
 Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1415.00	-51.43	-37.09	-13.00	-38.43	-14.34	Peak

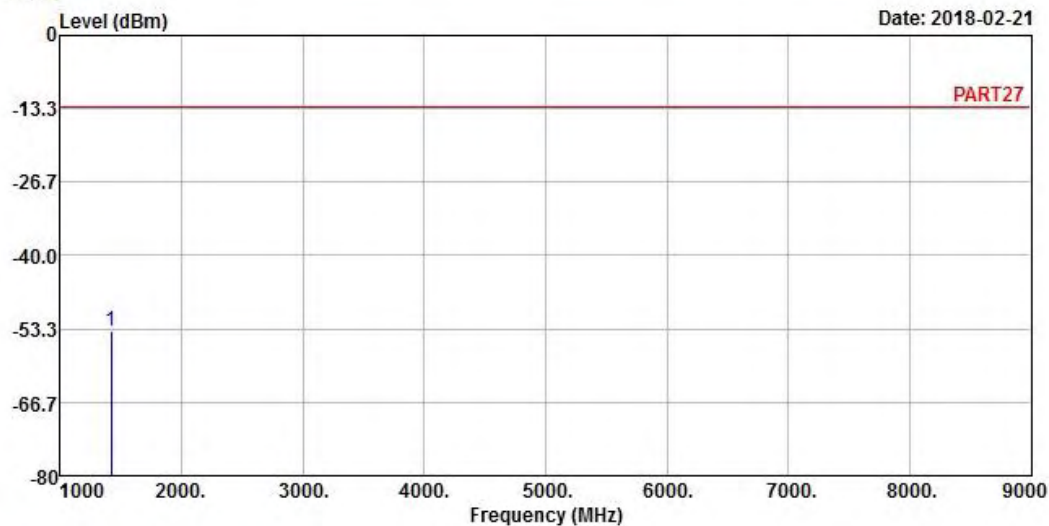


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2018-02-21



Site : 966 Chamber 5  
Condition: PART27 VERTICAL  
Remak : LTE Band 12 QPSK\_10M Link\_M-CH  
Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1415.00	-53.67	-39.33	-13.00	-40.67	-14.34	Peak

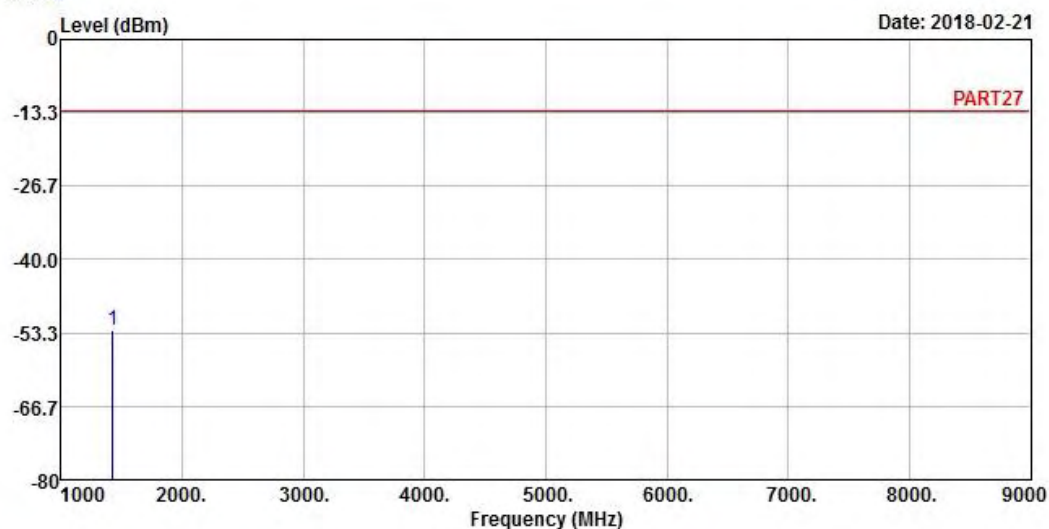
## High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5  
 Condition: PART27 HORIZONTAL  
 Remak : LTE Band 12 QPSK\_10M Link\_H-CH  
 Tested by: Jisyong Wang

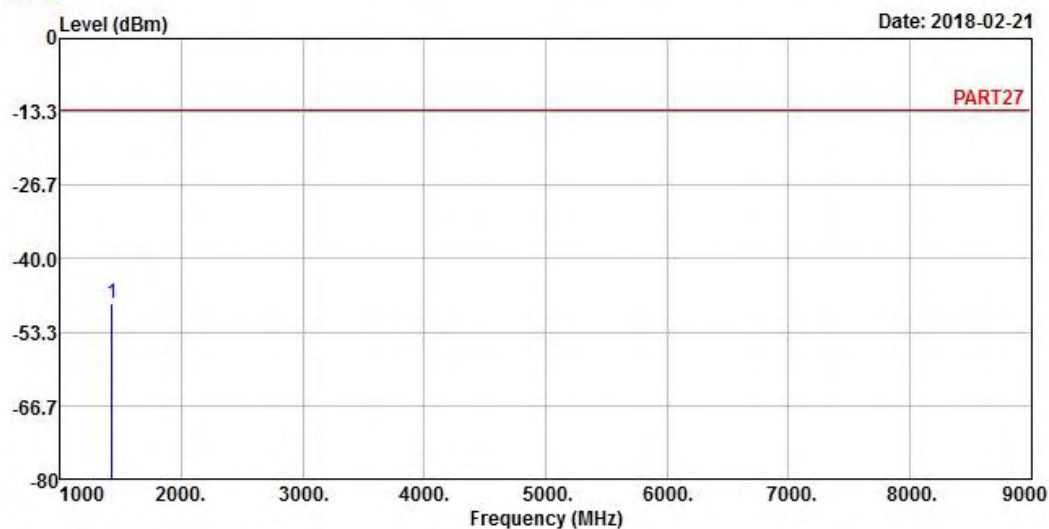
		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1422.00	-52.93	-38.59	-13.00	-39.93	-14.34	Peak



# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4



Site : 966 Chamber 5  
 Condition: PART27 VERTICAL  
 Remak : LTE Band 12 QPSK\_10M Link\_H-CH  
 Tested by: Jisyong Wang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1422.00	-48.23	-33.89	-13.00	-35.23	-14.34	Peak

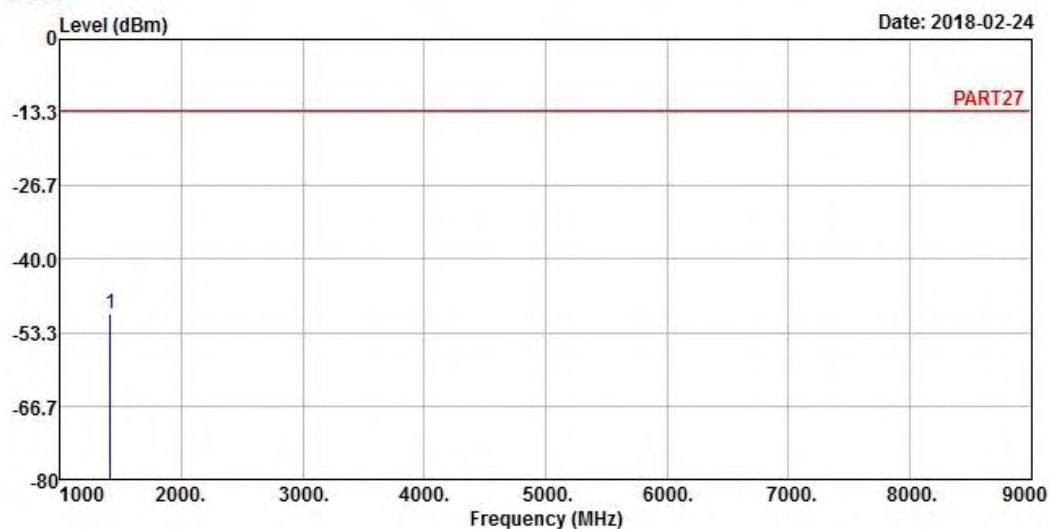
LTE Band 17  
Channel Bandwidth: 5 MHz / QPSK  
Low Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remark : LTE Band 17 QPSK\_5M Link\_L-CH  
Tested by: Getaz Yang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1413.00	-49.99	-35.65	-13.00	-36.99	-14.34	Peak

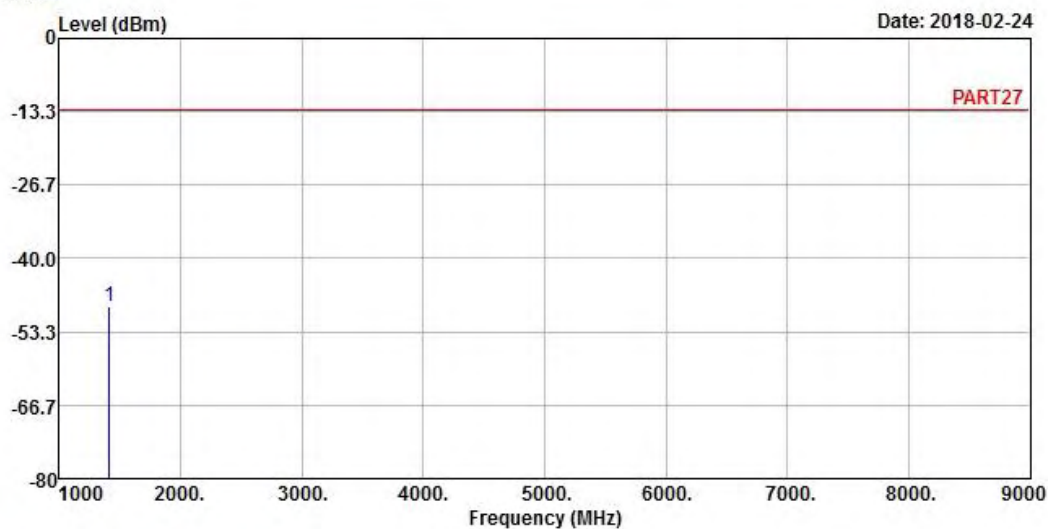


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 2018-02-24



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remark : LTE Band 17 QPSK\_5M Link\_L-CH

Tested by: Getaz Yang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1413.00	-48.63	-34.29	-13.00	-35.63	-14.34	Peak

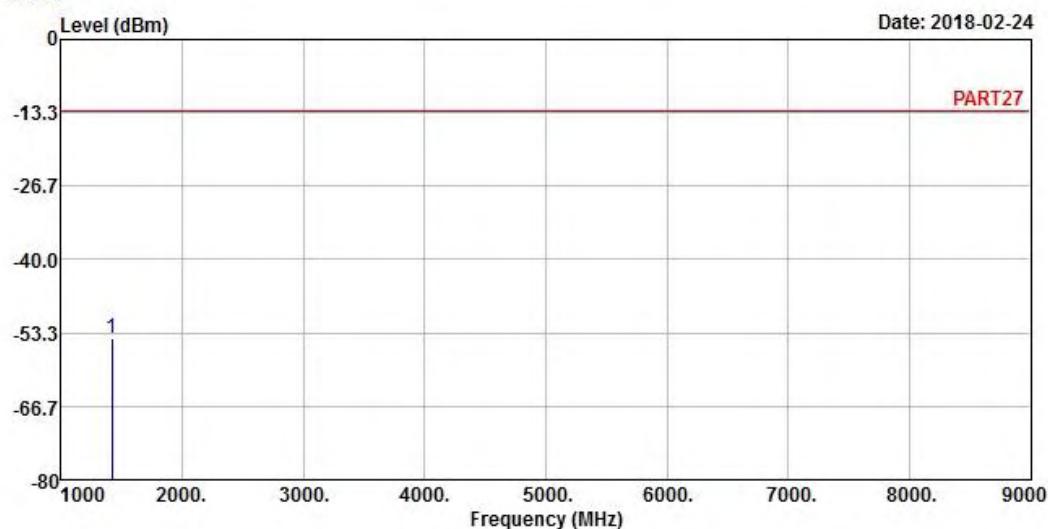
# Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remark : LTE Band 17 QPSK\_5M Link\_M-CH  
Tested by: Getaz Yang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1420.00	-54.22	-39.88	-13.00	-41.22	-14.34	Peak



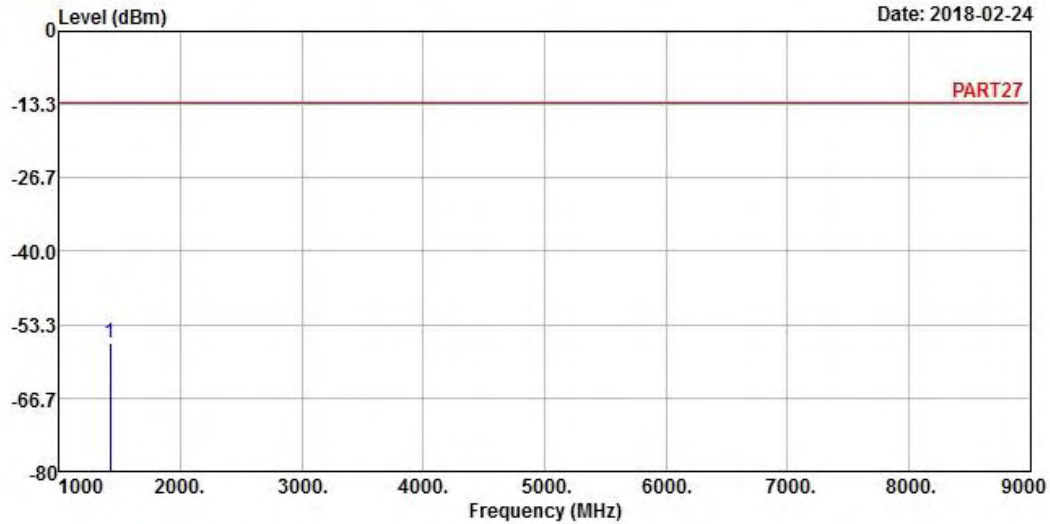


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 2018-02-24



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remark : LTE Band 17 QPSK\_5M Link\_M-CH

Tested by: Getaz Yang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1420.00	-56.79	-42.45	-13.00	-43.79	-14.34	Peak



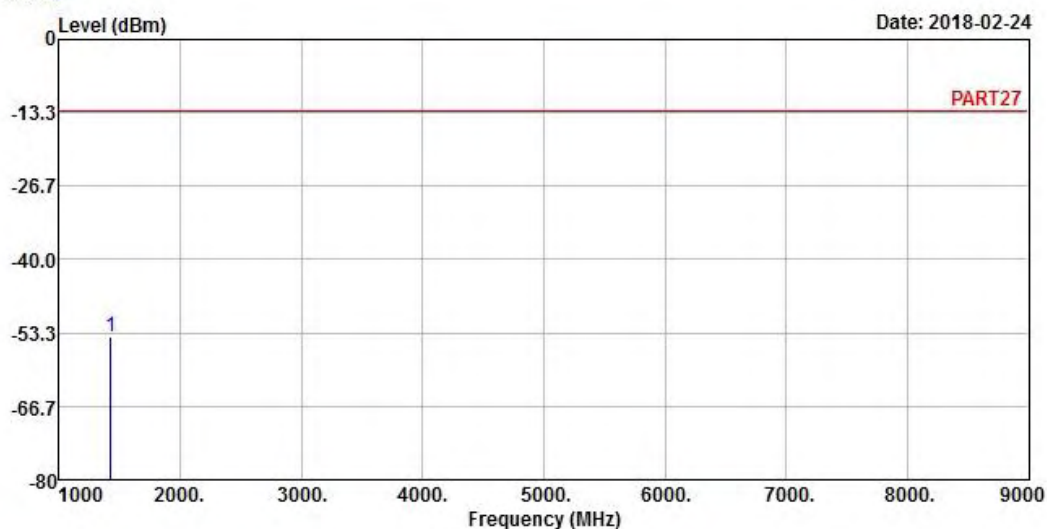
# High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5  
 Condition: PART27 HORIZONTAL  
 Remark : LTE Band 17 QPSK\_5M Link\_H-CH  
 Tested by: Getaz Yang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1427.00	-54.01	-39.77	-13.00	-41.01	-14.24	Peak

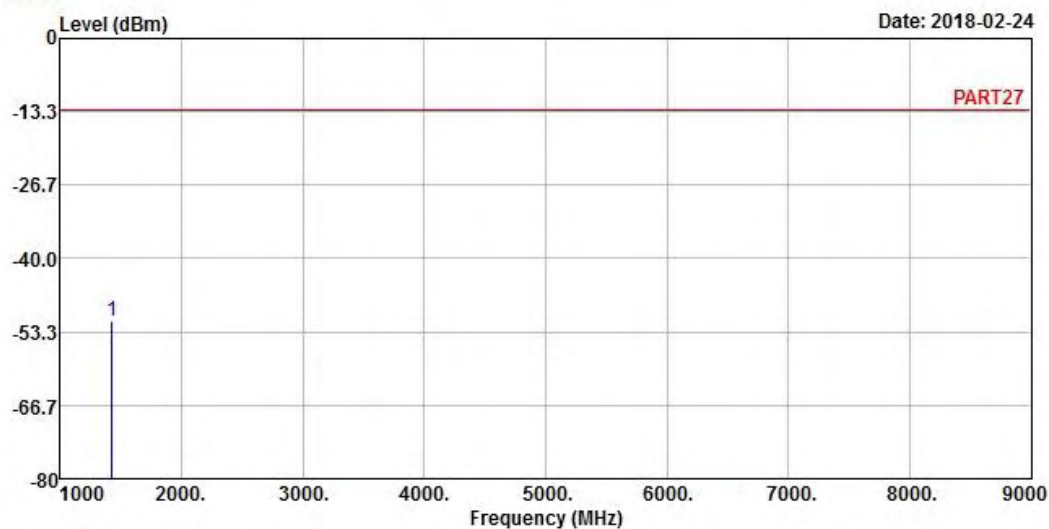


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 2018-02-24



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remark : LTE Band 17 QPSK\_5M Link\_H-CH

Tested by: Getaz Yang

Freq	Level	Read	Limit	Over			Remark
		Level	Line	Limit	Factor		
MHz	dBm	dBm	dBm	dB	dB		
1 pp 1427.00	-51.40	-37.16	-13.00	-38.40	-14.24	Peak	

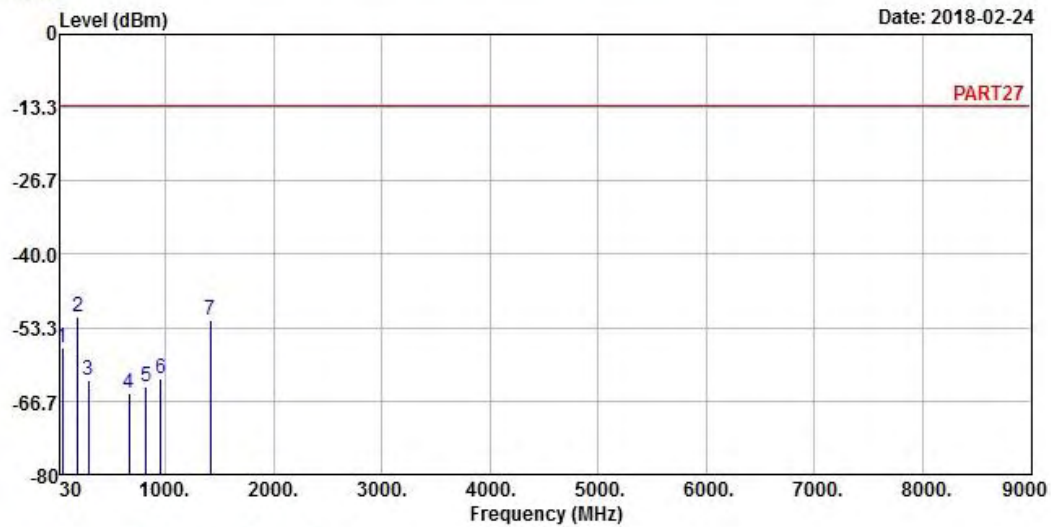
LTE Band 17  
Channel Bandwidth: 10 MHz / QPSK  
Low Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 7



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remark : LTE Band 17 QPSK\_10M Link\_L-CH  
Tested by: Getaz Yang

			Read	Limit	Over		
	Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	43.58	-56.98	-55.51	-13.00	-43.98	-1.47	Peak
2 pp	191.99	-51.35	-44.07	-13.00	-38.35	-7.28	Peak
3	288.02	-62.90	-56.13	-13.00	-49.90	-6.77	Peak
4	664.38	-65.30	-64.64	-13.00	-52.30	-0.66	Peak
5	820.55	-64.05	-64.60	-13.00	-51.05	0.55	Peak
6	960.23	-62.47	-64.65	-13.00	-49.47	2.18	Peak
7	1418.00	-51.85	-37.51	-13.00	-38.85	-14.34	Peak

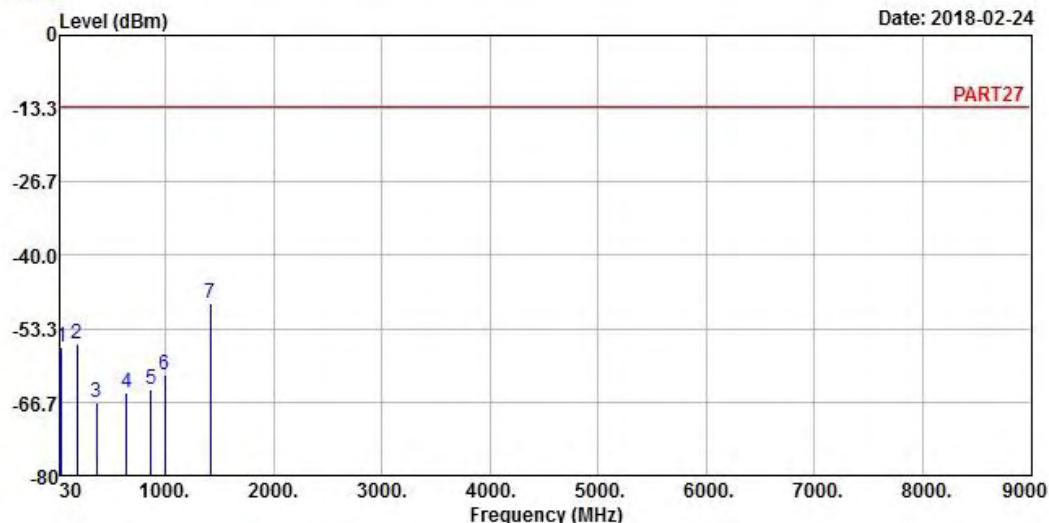


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 8

Date: 2018-02-24



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remark : LTE Band 17 QPSK\_10M Link\_L-CH

Tested by: Getaz Yang

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	42.61	-56.57	-55.63	-13.00	-43.57	-0.94	Peak
2	181.32	-55.97	-48.60	-13.00	-42.97	-7.37	Peak
3	366.59	-66.86	-60.72	-13.00	-53.86	-6.14	Peak
4	643.04	-64.95	-64.08	-13.00	-51.95	-0.87	Peak
5	863.23	-64.37	-64.74	-13.00	-51.37	0.37	Peak
6	993.21	-61.70	-65.04	-13.00	-48.70	3.34	Peak
7 pp	1418.00	-48.56	-34.22	-13.00	-35.56	-14.34	Peak

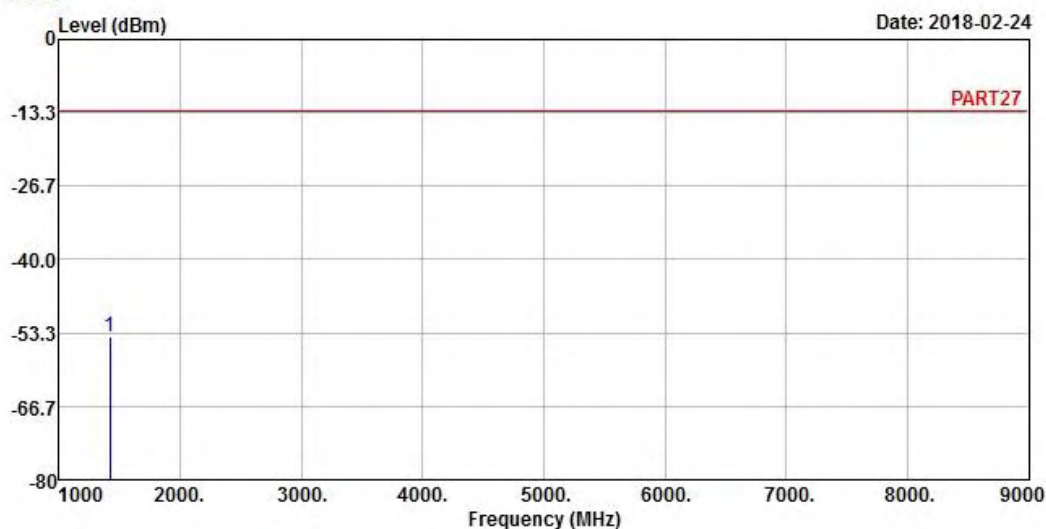
# Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remark : LTE Band 17 QPSK\_10M Link\_M-CH

Tested by: Getaz Yang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1420.00	-54.06	-39.72	-13.00	-41.06	-14.34	Peak

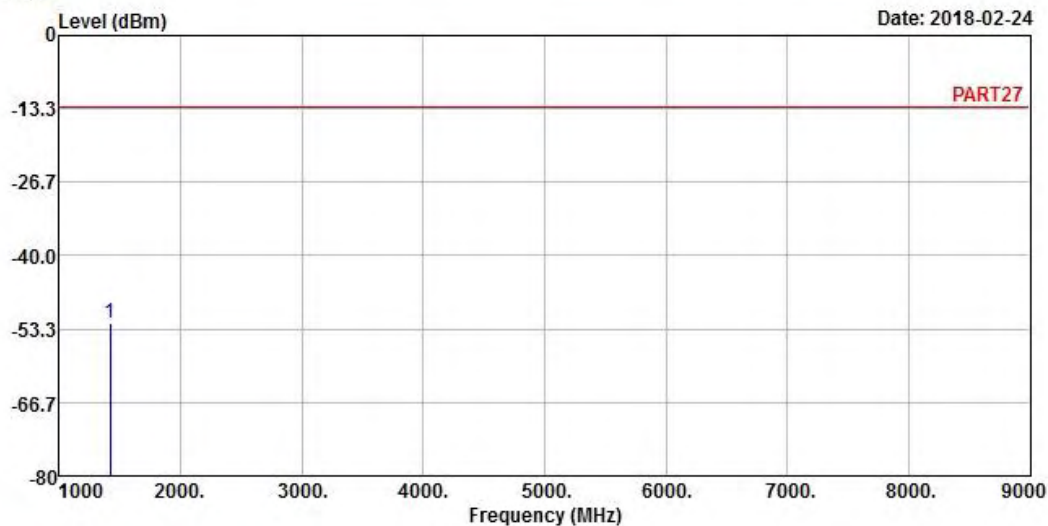


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 2018-02-24



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remark : LTE Band 17 QPSK\_10M Link\_M-CH

Tested by: Getaz Yang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1420.00	-52.21	-37.87	-13.00	-39.21	-14.34	Peak



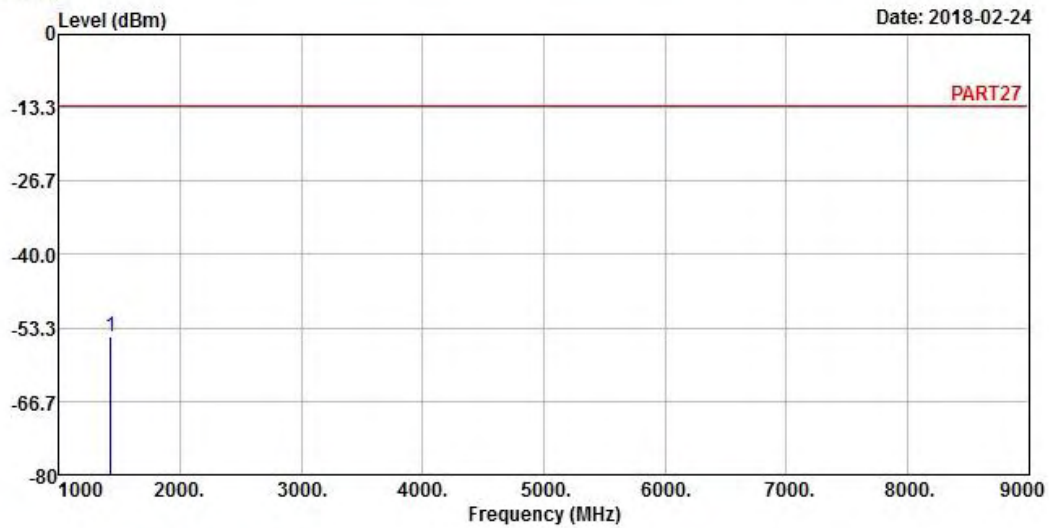
# High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remark : LTE Band 17 QPSK\_10M Link\_H-CH  
Tested by: Getaz Yang

		Read	Limit	Over		
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
1 pp 1422.00	-54.92	-40.58	-13.00	-41.92	-14.34	Peak

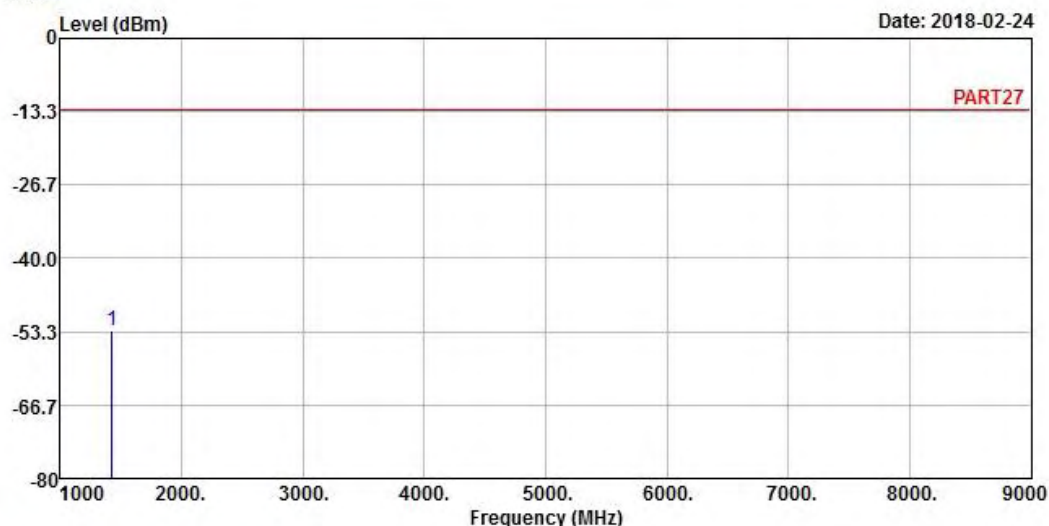


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 2018-02-24



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remark : LTE Band 17 QPSK\_10M Link\_H-CH

Tested by: Getaz Yang

Freq	Level	Read	Limit	Over		Factor	Remark
		Level	Line	Limit	Limit		
MHz	dBm	dBm	dBm	dB	dB	dB	
1 pp 1422.00	-53.08	-38.74	-13.00	-40.08	-14.34		Peak



## 5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

## Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

**Linko EMC/RF Lab**

Tel: 886-2-26052180

Fax: 886-2-26051924

**Hsin Chu EMC/RF/Telecom Lab**

Tel: 886-3-6668565

Fax: 886-3-6668323

**Hwa Ya EMC/RF/Safety**

Tel: 886-3-3183232

Fax: 886-3-3270892

**Email:** [service.adt@tw.bureauveritas.com](mailto:service.adt@tw.bureauveritas.com)

**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

The address and road map of all our labs can be found in our web site also.

--- END ---