

FC	C Radio Test Report
	CC ID: QISB525S-65A
This report conce	erns (check one): ⊠Original Grant ⊡Class II Change
Project No. Equipment Model Name Applicant Address	
Date of Receipt Date of Test Issued Date Tested by	: Mar. 03, 2017
Technical Engine	er : <u>Shawn Xiao</u> (Shawn Xiao)
Authorized Signa	atory : <u>Seeen Lu</u> (Steven Lu)
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#### Declaration

**BTL** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

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**BTL**'s laboratory quality assurance procedures are in compliance with the **ISO Guide17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

#### Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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#### **REPORT ISSUED HISTORY**

Issued No.	Description	Issued Date
BTL-FCCP-5-1701C181A	Original Issue.	Mar. 03, 2017





#### **1. CERTIFICATION**

Equipment : Brand Name :	
Model Name :	
Applicant :	Huawei Technologies Co. ,Ltd.
Manufacturer :	Huawei Technologies Co. ,Ltd.
Address :	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District Shenzhen, 518129, P.R.C
Factory :	Shenzhen Zowee Technology.co.,Itd
Address :	Shenzhen songgang town pond under chung industrial avenue with rich industrial area
Date of Test :	Feb. 21, 2017 ~ Mar. 02, 2017
Test Sample :	Engineering Sample
Standard(s) :	47 CFR FCC Part 27
	47 CFR FCC Part 2 & ANSI/TIA-603-D-2010

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-5-1701C181A) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

Test results included in this report is only for the LTE Band 4, 7, 38, 41 RSE part.



### 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part 27 & Part 2					
Standard(s) Section Test Item Judgment Tested By					
2.1053 27.53(h)	Radiated Spurious Emissions	PASS	Biao Chen		

NOTE:

(1)" N/A" denotes test is not applicable to this device.



#### 2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China. BTL's test firm number for FCC: 319330

#### 2.2 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. The BTL measurement uncertainty is less than the CISPR 16-4-2  $U_{cispr}$  requirement.

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Test Site	Method	Measurement Frequency Range		U,(dB)
DG-CB03 (3m) CISPR		9KHz ~ 30MHz	V	3.79
	CISPR	9KHz ~ 30MHz		3.57
		30MHz ~ 200MHz	V	3.82
		30MHz ~ 200MHz	Н	3.78
		200MHz ~ 1,000MHz		4.10
		200MHz ~ 1,000MHz	Н	4.06

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03 CICDD	1GHz ~ 18GHz	V	3.12	
(3m) CISPR		1GHz ~ 18GHz	Н	3.68

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03	CISPR	18GHz ~ 40GHz	V	4.15
(1m)	CISPR	18GHz ~ 40GHz	Н	4.14

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.



#### **3. GENERAL INFORMATION**

#### 3.1 GENERAL DESCRIPTION OF EUT

Equipment	LTE CPE						
Brand Name	HUAWEI	HUAWEI					
Model Name	B525s-65a						
Model Difference	N/A						
Modulation Type	LTE	QPSK, 16QAM					
	LTE 4 (Channel Bandwidth: 1.4MHz)	1710.7 ~ 1754.3 MHz					
	LTE 4 (Channel Bandwidth: 3MHz)	1711.5 ~ 1753.5 MHz					
	LTE 4 (Channel Bandwidth: 5MHz)	1712.5 ~ 1752.5 MHz					
	LTE 4 (Channel Bandwidth: 10MHz)	1715.0 ~ 1750.0 MHz					
	LTE 4 (Channel Bandwidth: 15MHz)	1717.5 ~ 1747.5 MHz					
	LTE 4 (Channel Bandwidth: 20MHz)	1720.0 ~ 1745.0 MHz					
	LTE 7 (Channel Bandwidth: 5MHz)	2502.5 ~ 2567.5 MHz					
	LTE 7 (Channel Bandwidth: 10MHz)	2505.0 ~ 2565.0 MHz					
	LTE 7 (Channel Bandwidth: 15MHz)	2507.5 ~ 2562.5 MHz					
Operation Frequency	LTE 7 (Channel Bandwidth: 20MHz)	2510.0 ~ 2560.0 MHz					
	LTE 38 (Channel Bandwidth: 5MHz)	2572.5 ~ 2617.5 MHz					
	LTE 38 (Channel Bandwidth: 10MHz)	2575.0 ~ 2615.0 MHz					
	LTE 38 (Channel Bandwidth: 15MHz)	2577.5 ~ 2612.5 MHz					
	LTE 38 (Channel Bandwidth: 20MHz)	2580.0 ~ 2610.0 MHz					
	LTE 41 (Channel Bandwidth: 5MHz)	2498.5 ~ 2687.5 MHz					
	LTE 41 (Channel Bandwidth: 10MHz)	2501.0 ~ 2685.0 MHz					
	LTE 41 (Channel Bandwidth: 15MHz)	2503.5 ~ 2682.5 MHz					
	LTE 41 (Channel Bandwidth: 20MHz)	2506.0 ~ 2680.0 MHz					
Antenna Type	Internal Antenna & External Antenna						
Antenna Gain for Internal	1.5 dBi for LTE 4, 2 dBi for LTE 4						
Antenna Gain for External	1,3 dBi for LTE						
Hardware Version	WL1B525I						
Softwarre Version	11.232.08.DM.00						

Softwarre Version	11.232.08.DM.00		
IMEI No.1	Radiated 864005030005106		
Power Source	DC Voltage supplied from AC/DC adapter. #1 Manufacturer / Model: Fu Hua / HW-120200U01(US) #2 Manufacturer / Model: Ou Lu Tong / HW-120200U01(US)		
Power Rating	DC12V 2A		

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.



#### 3.2 DESCRIPTION OF TEST MODES AND TEST CONDITION

Following channel(s) was (were) selected for the final test as listed below:

LTE BAND 4					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
	19957 to 20393	20175	1.4MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission	20050 to 20300	20175	20MHz	QPSK	1 RB / 0 RB Offset

LTE BAND 7						
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode	
Radiated	20775 to 21425	21100	5MHz	QPSK	1 RB / 0 RB Offset	
Emission	20850 to 21350	21100	20MHz (Note)	QPSK	1 RB / 0 RB Offset	

LTE BAND 38							
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode		
Radiated	37775 to 38225	38225	5MHz	QPSK	1 RB / 0 RB Offset		
Emission	37850 to 38150 38150		20MHz (Note)	QPSK	1 RB / 0 RB Offset		

LTE BAND 41							
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode		
Radiated	39675 to 41565	39675	5MHz	QPSK	1 RB / 0 RB Offset		
Emission	39750 to 41490	39750	20MHz (Note)	QPSK	1 RB / 0 RB Offset		

Note: For 18G to 26.5G, the hightest bandwidth is worst case and recording in the test report.





### **EUT TEST CONDITIONS: Environmental Conditions Test Voltage** Test Item AC 120V/60Hz **Radiated Emission** 25°C, 60%RH 3.3 BLOCKDIGRAMSHOWINGTHECONFIGURATIONOFSYSTEMTESTED FOR RADIATED EUT 1 EUT Adapter **3.4 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. Item Equipment Mfr/Brand Model/Type No. FCC ID Series No. -\_ ----Shielded Item Ferrite Core Length Note Type NO AC Cable 1 NO 1.5m



### 4. TEST RESULT

#### 4.1 RADIATED EMISSIONS MEASUREMENT

#### 4.1.1 LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to -13dBm.

#### 4.1.2 TEST PROCEDURES

- 1. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m 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 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- 2. 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
- 3. EIRP = Output power level of S.G TX cable loss + Antenna gain of substitution horn.
- 4. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power 2.15dBi.
- 5. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

#### 4.1.3 TESTSETUP LAYOUT

This test setup layout is the same as that shown in section 4.1.3.

#### 4.1.4 TESTDEVIATION

No deviation

#### 4.1.5 TEST RESULTS

Please refer to the Attachment A.



### 5. LIST OF MEASUREMENT EQUIPMENTS

	Radiated Emission							
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until			
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 27, 2017			
2	Double Ridged Guide Antenna	ETS	3115	75789	Mar. 27, 2017			
3	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Apr. 23, 2017			
4	Amplifier	Agilent	8449B	3008A02274	Mar. 10, 2017			
5	Amplifier	HP	8447D	2944A09673	Mar. 10, 2017			
6	HighPass Filter	Wairrwright Instruments Gmbh	WHK 1.5/15G-10ST	11	Mar. 10, 2017			
7	Band Reject Filter	Wairrwright Instruments Gmbh	WRCG 1710/1785-1690 /1805-60/12SS	38	Feb. 24, 2018			
8	Band Reject Filter	Wairrwright Instruments Gmbh	WRCG 824/849-810/86 3-60/9SS	7	Feb. 24, 2018			
9	Band Reject Filter	Wairrwright Instruments Gmbh	WRCG 880/915-860/93 5-60/9SS	14	Feb. 24, 2018			
10	Band Reject Filter	Wairrwright Instruments Gmbh	WRCG 1850/1910-1830 /1930-60/10SS	17	Feb. 24, 2018			
11	HighPass Filter	Wairrwright Instruments Gmbh	WHK3.1/18G-10 SS	24	Mar. 10, 2017			
12	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 27, 2017			





13	Receiver	Agilent	N9038A	MY52130039	Sep. 04, 2017
14	wideband radio communication tester	R&S	CMW500	152372	Mar. 27, 2017
15	High pass filter	ZHPF-M1000-4000 -1	ZHPF-M3-12.75 G-3869	B2015073763	Aug. 04, 2017
16	High pass filter	ZHPF-M3-12.75G- 3869	ZHPF-M1000-40 00-1	B2015073762	Aug. 04, 2017
17	High pass filter	ZHPF-M6-18G-172 7	ZHPF-M6-186-1 727	B2015073764	Aug. 04, 2017
18	Cable	emci	LMR-400(30MH z-1GHz)(8m+5m )	N/A	Jun. 27, 2017
19	Cable	emci	EMC104-SM-S M-12000(12m)	N/A	Jul. 06, 2017
20	Controller	ETS-Lindgren	2090	N/A	N/A
21	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Remark: "N/A" denotes no model name, serial no. or calibration specified.

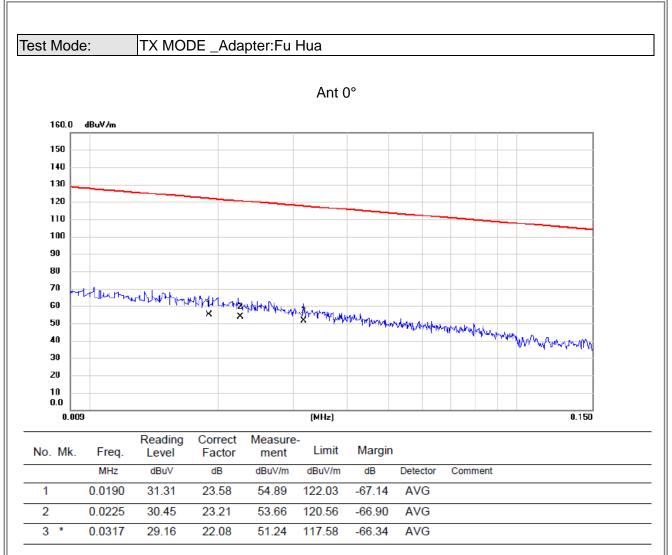
All calibration period of equipment list is one year.



### ATTACHMENT A - RADIATED EMISSION

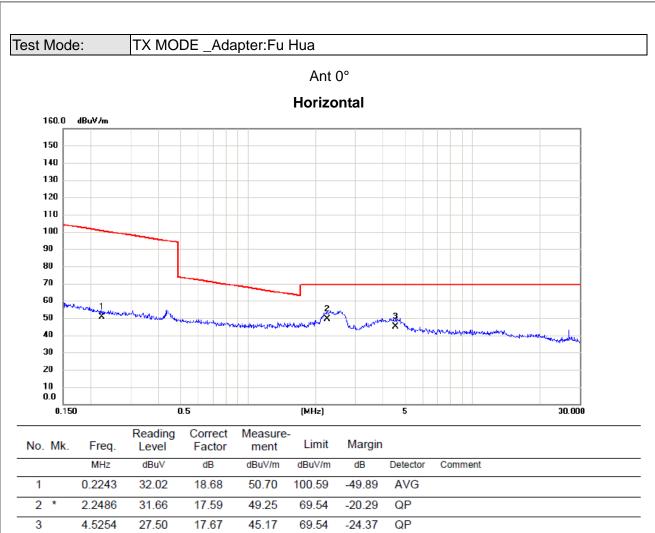






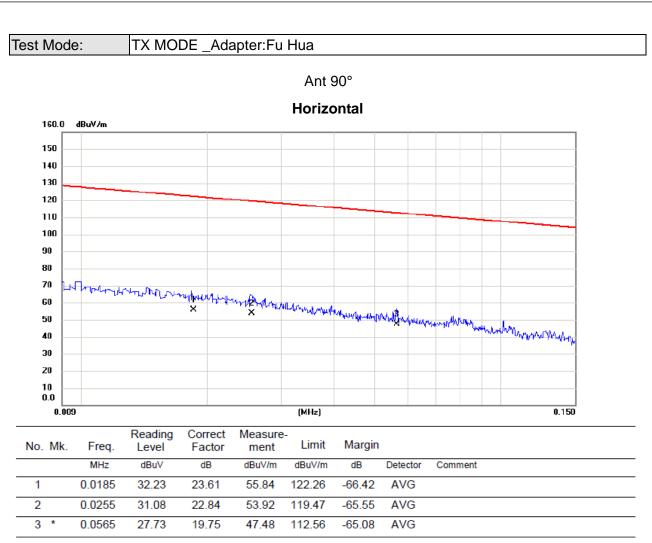






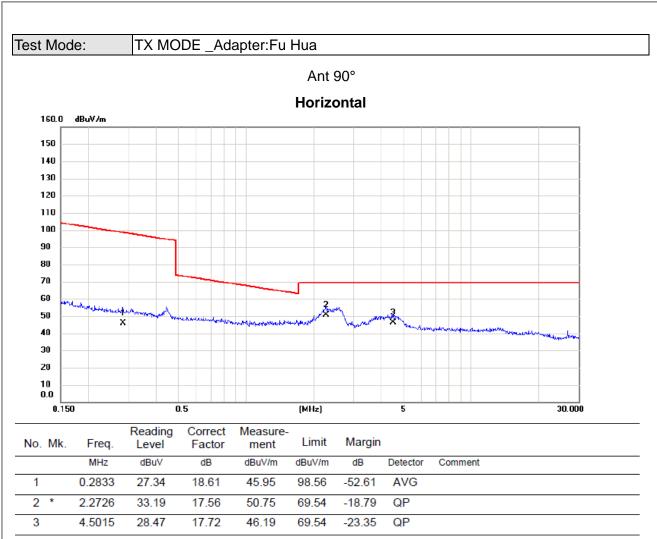






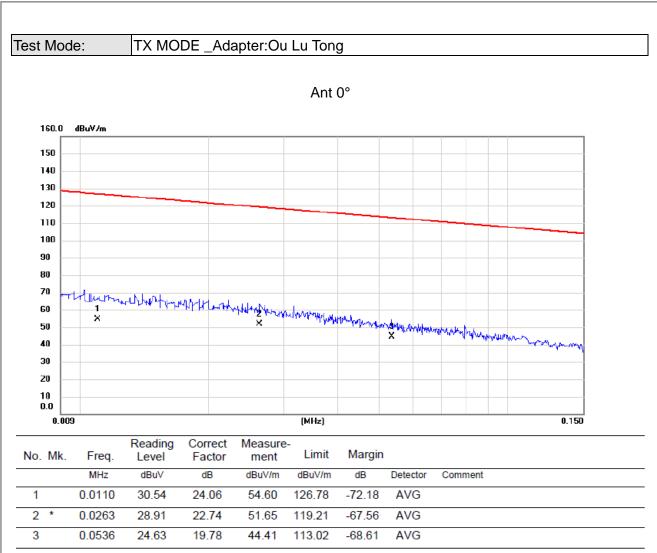






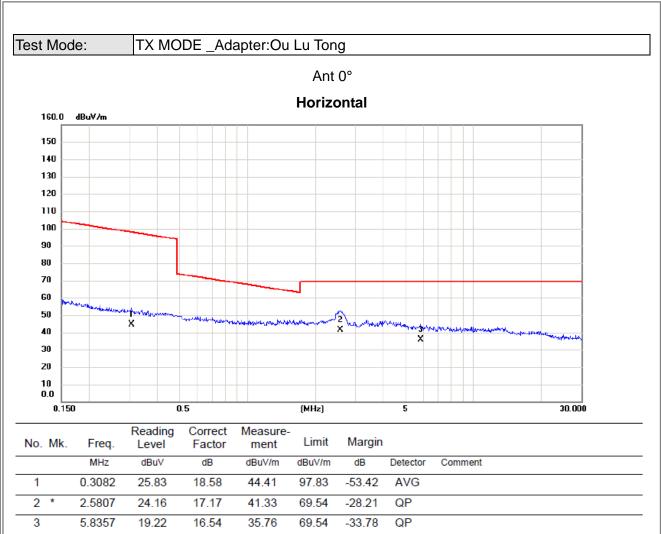






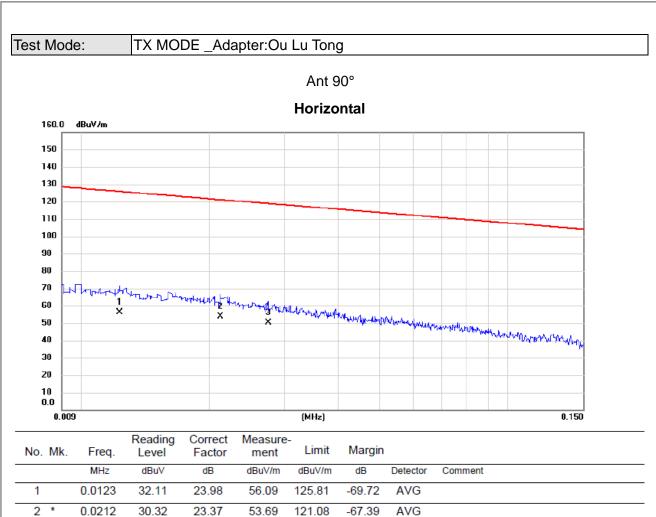












AVG

-68.42

0.0275

3

27.81

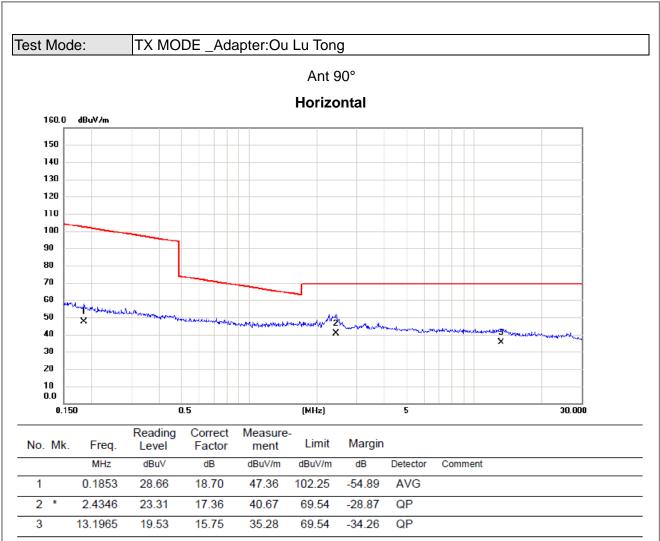
22.59

50.40

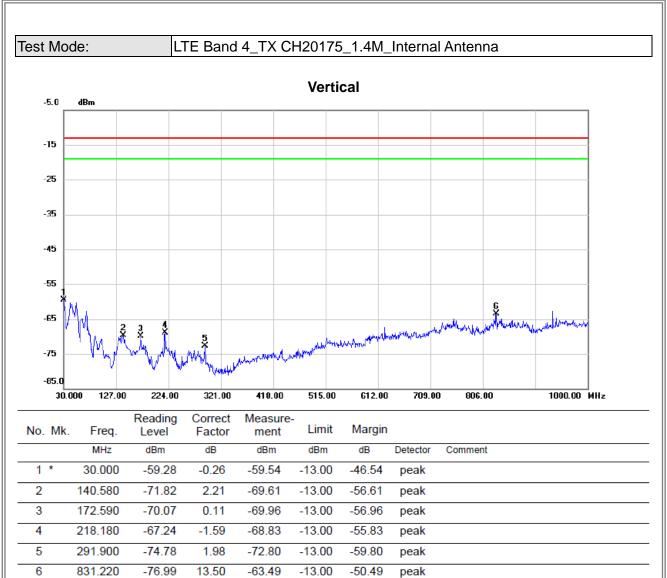
118.82





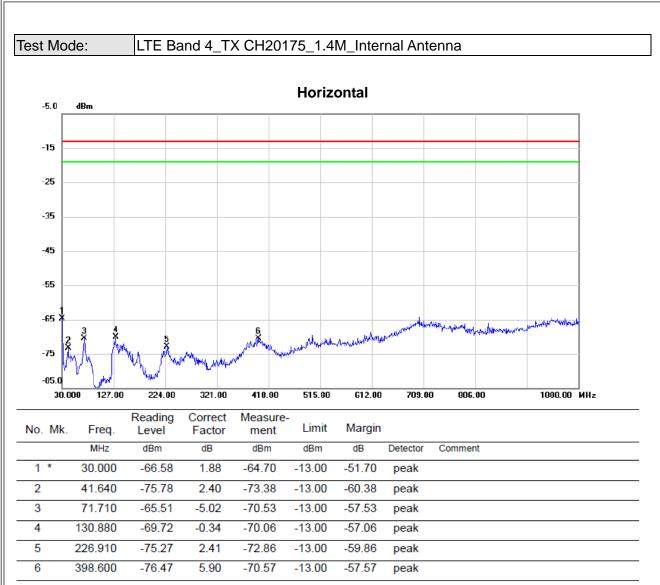




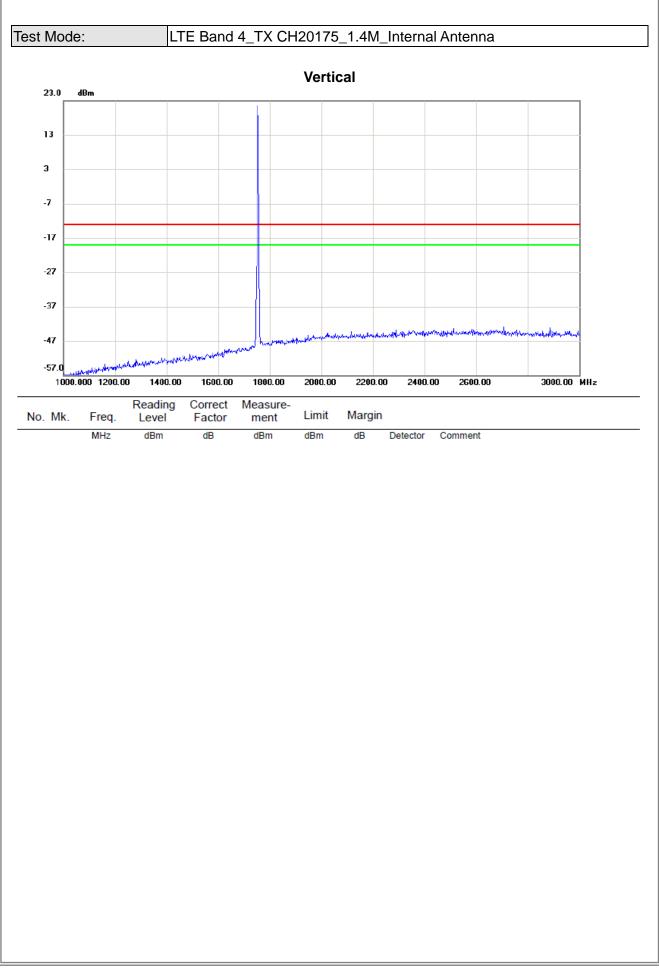






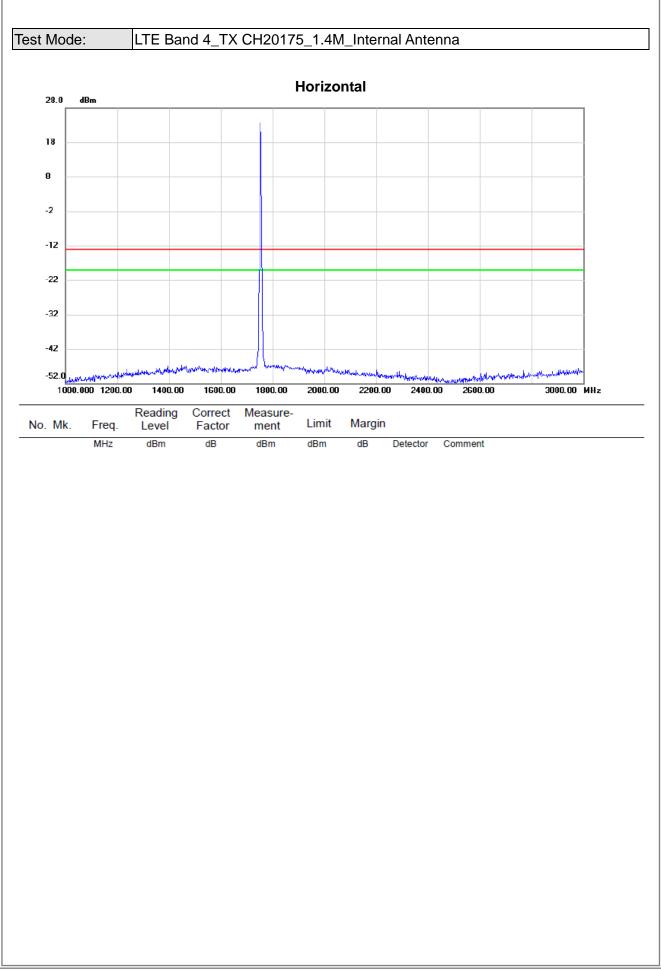




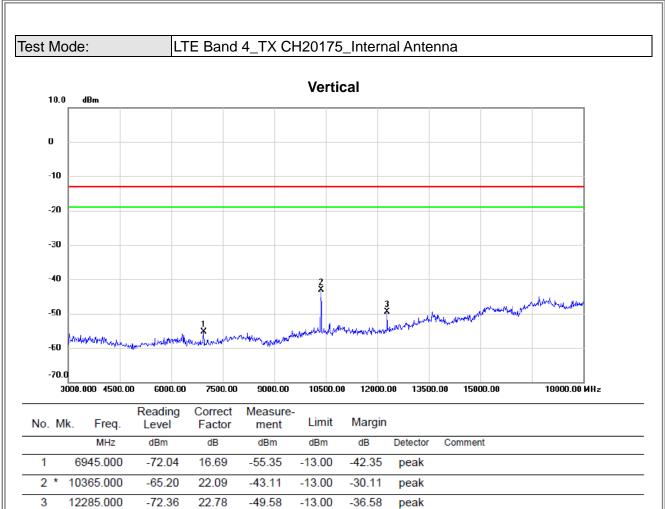






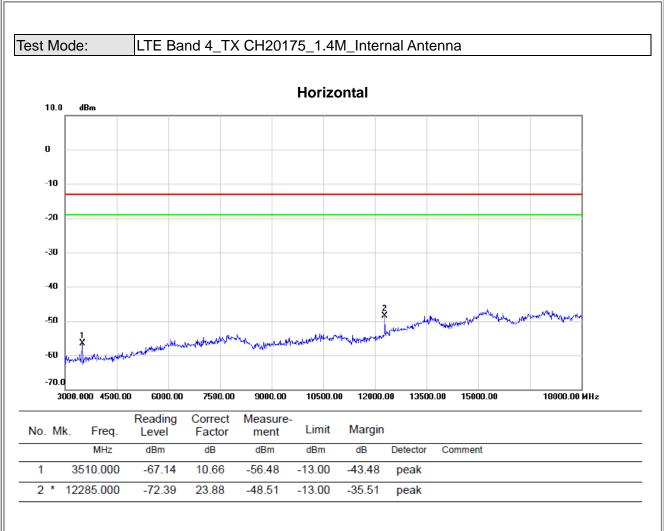




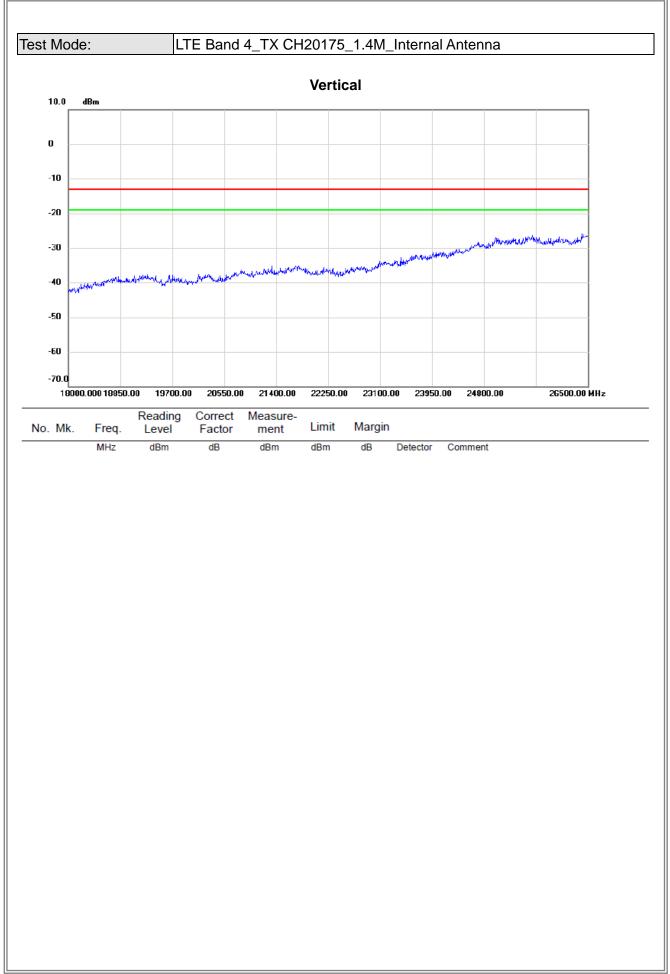






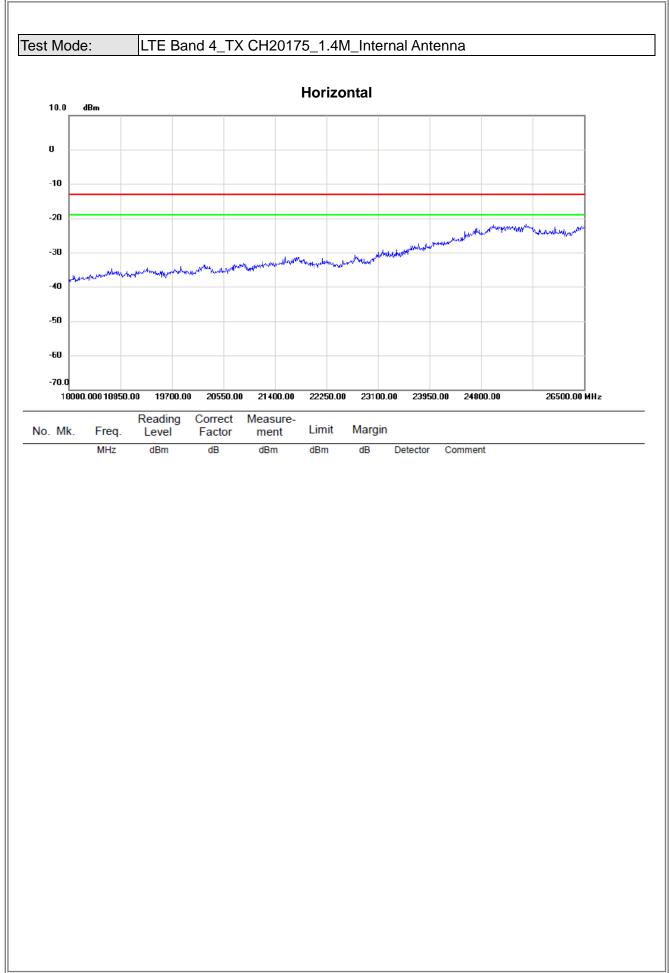






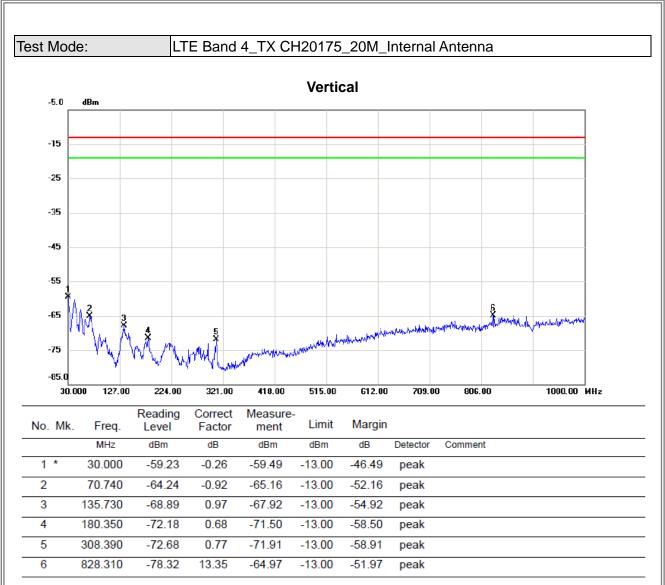






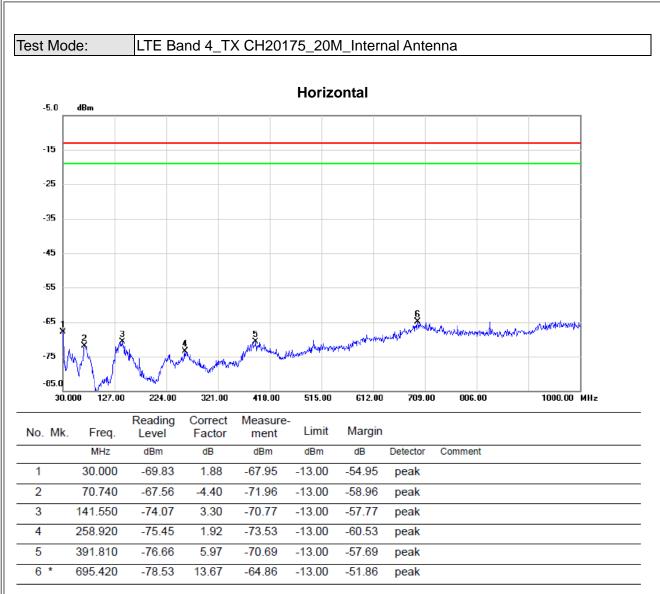
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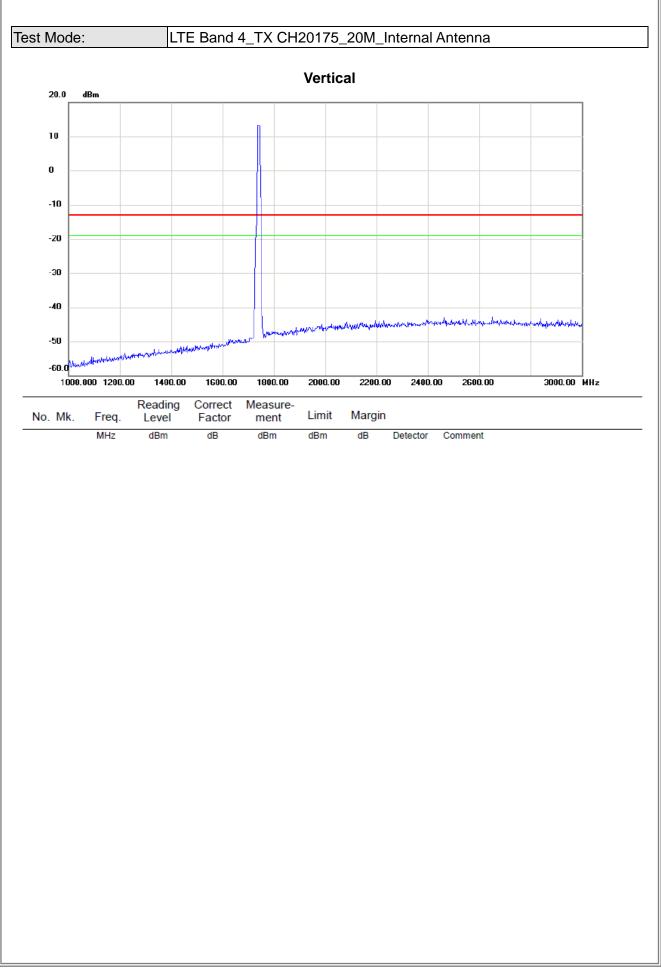






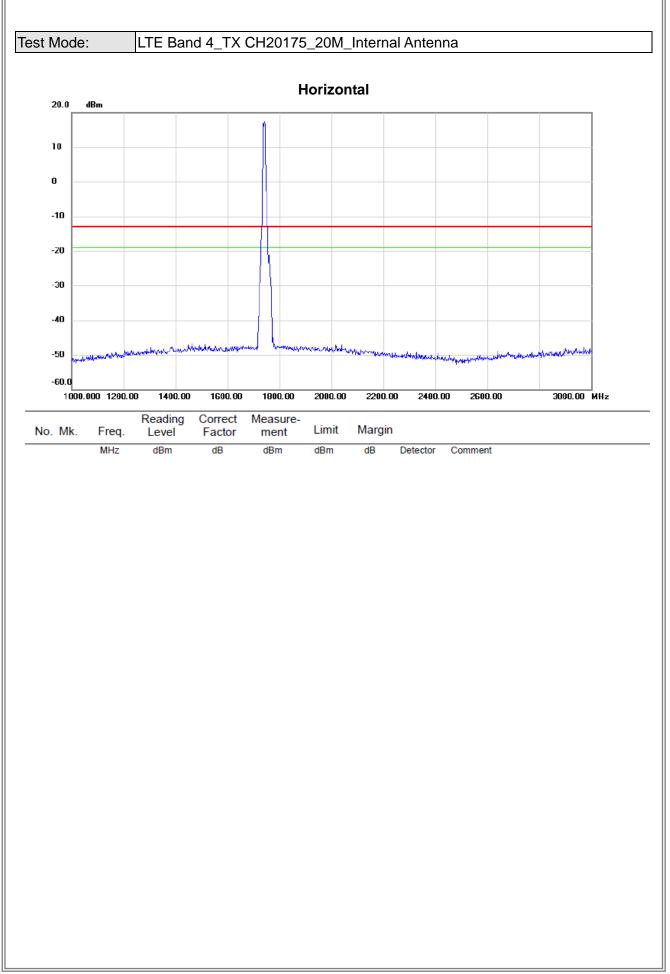




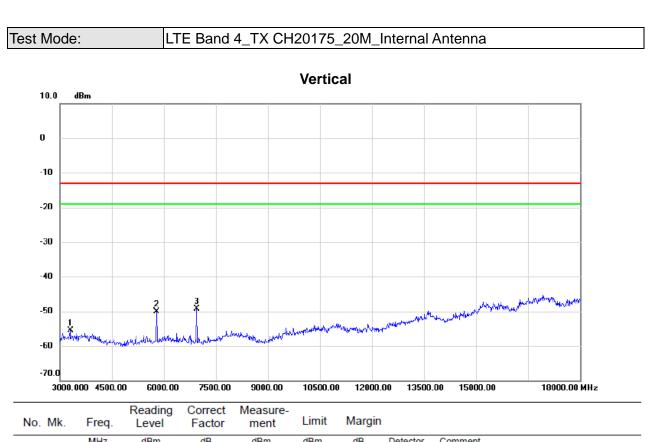








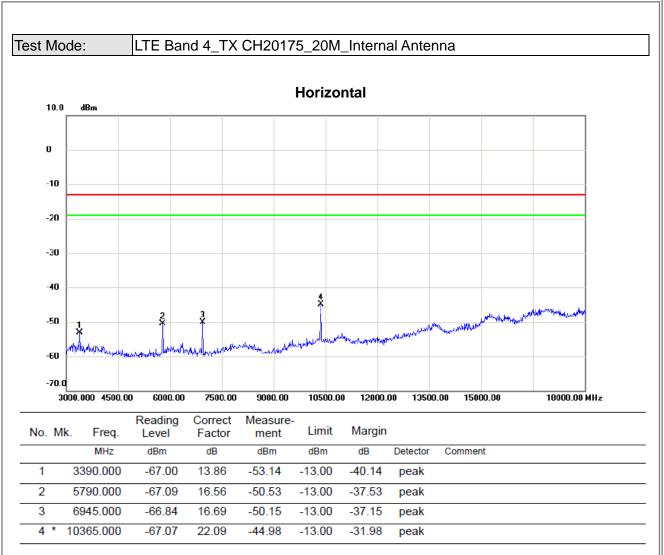




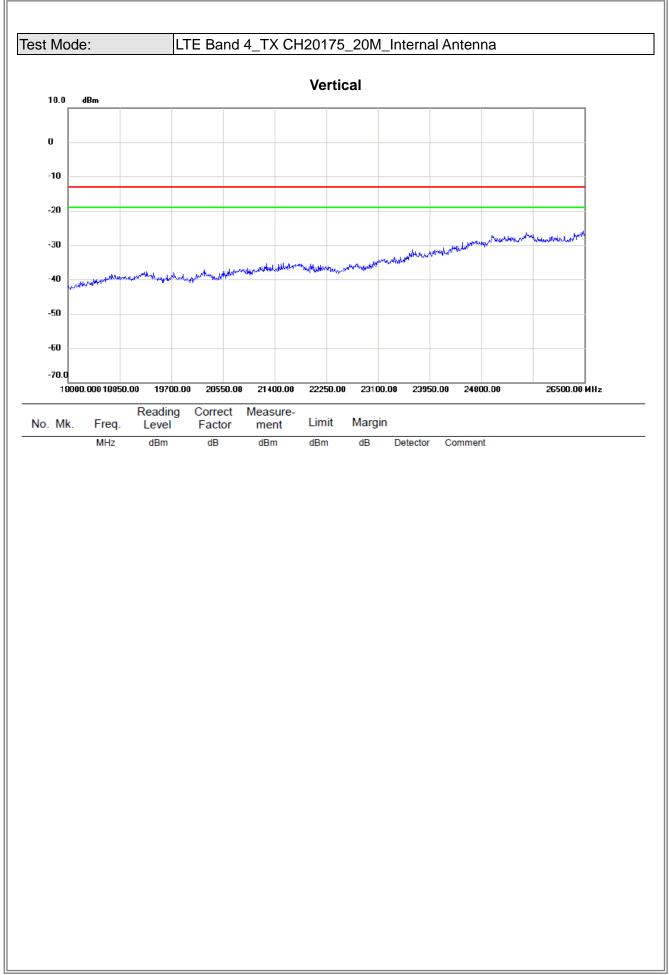
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	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
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2	5790.000	-66.67	16.56	-50.11	-13.00	-37.11	peak	
3 *	6945.000	-65.93	16.69	-49.24	-13.00	-36.24	peak	





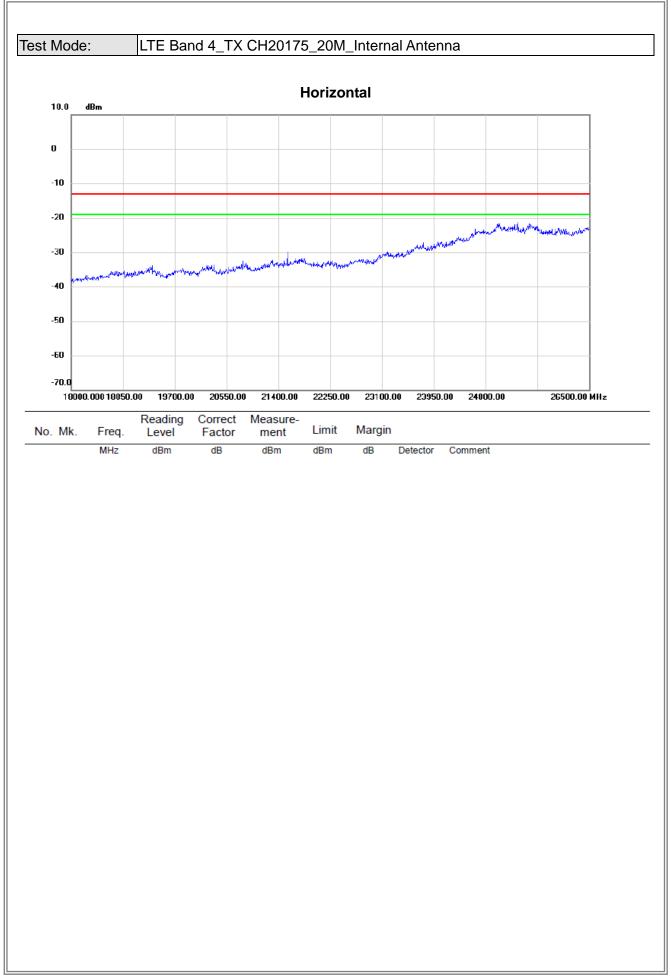






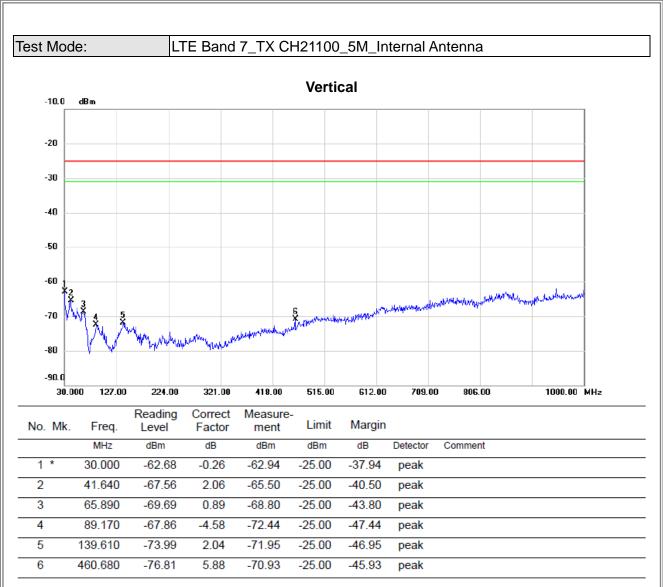






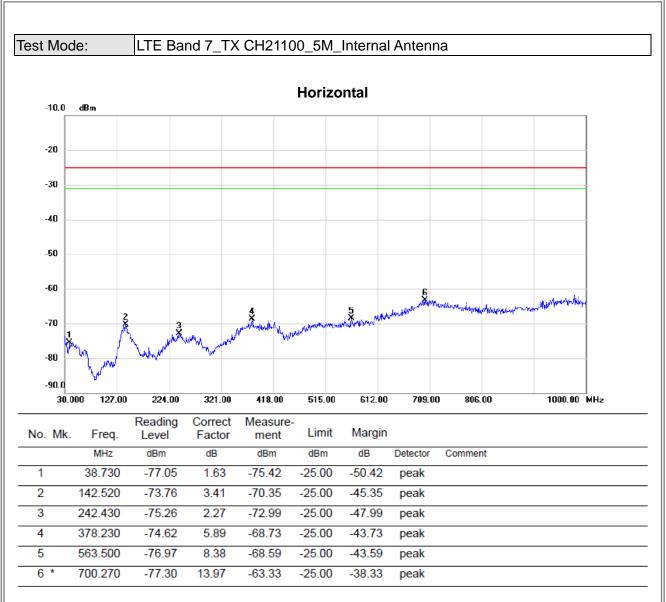
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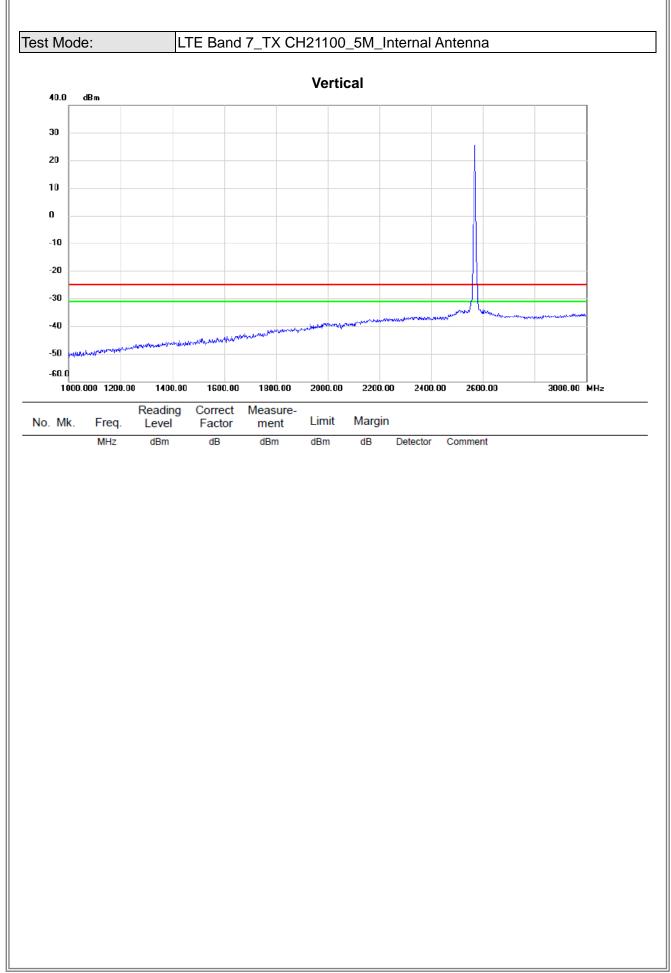






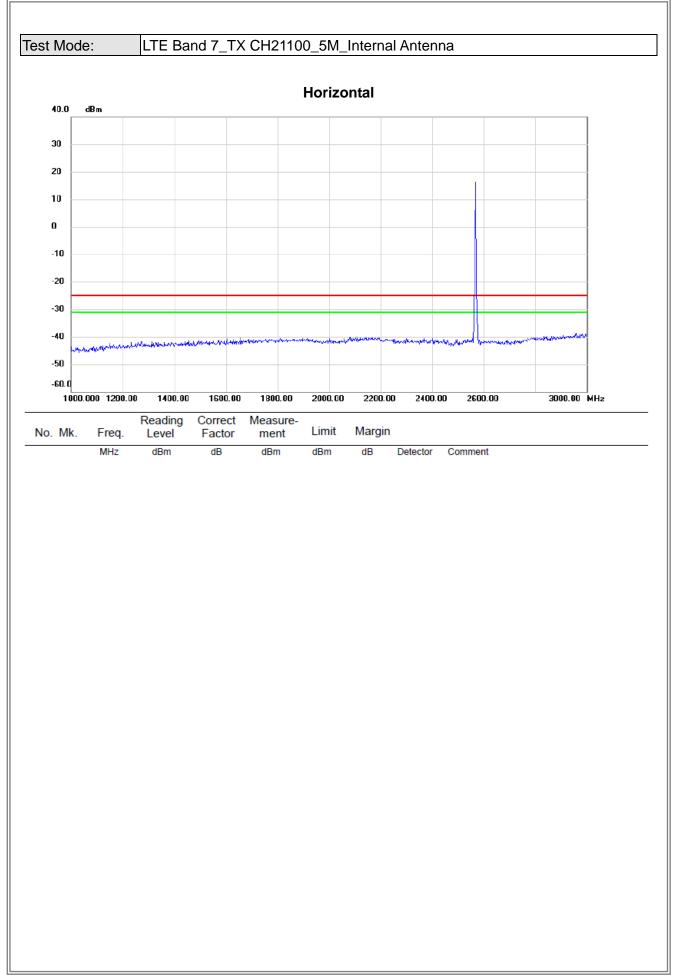




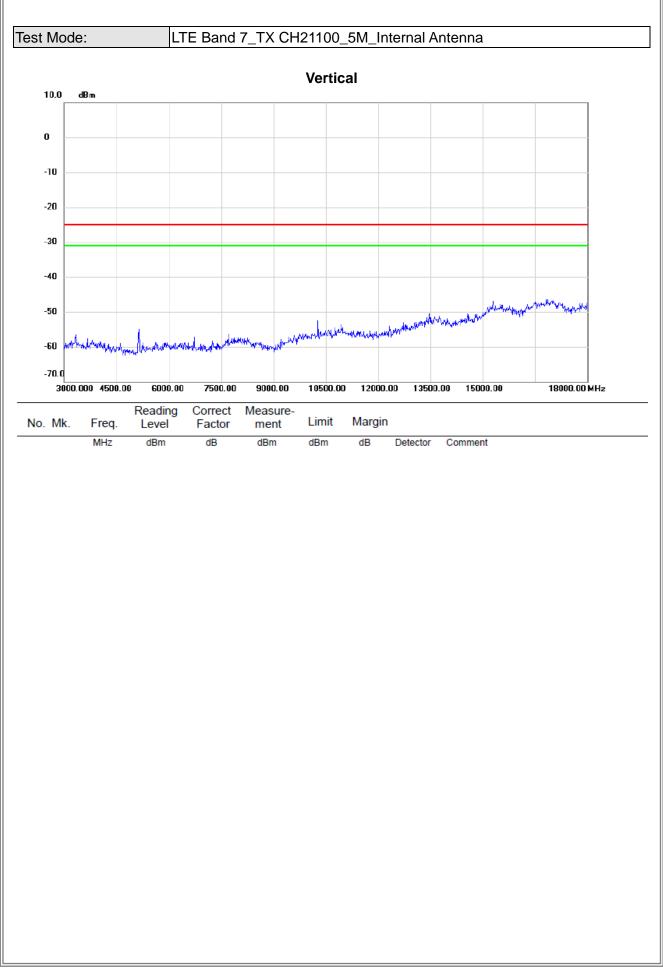






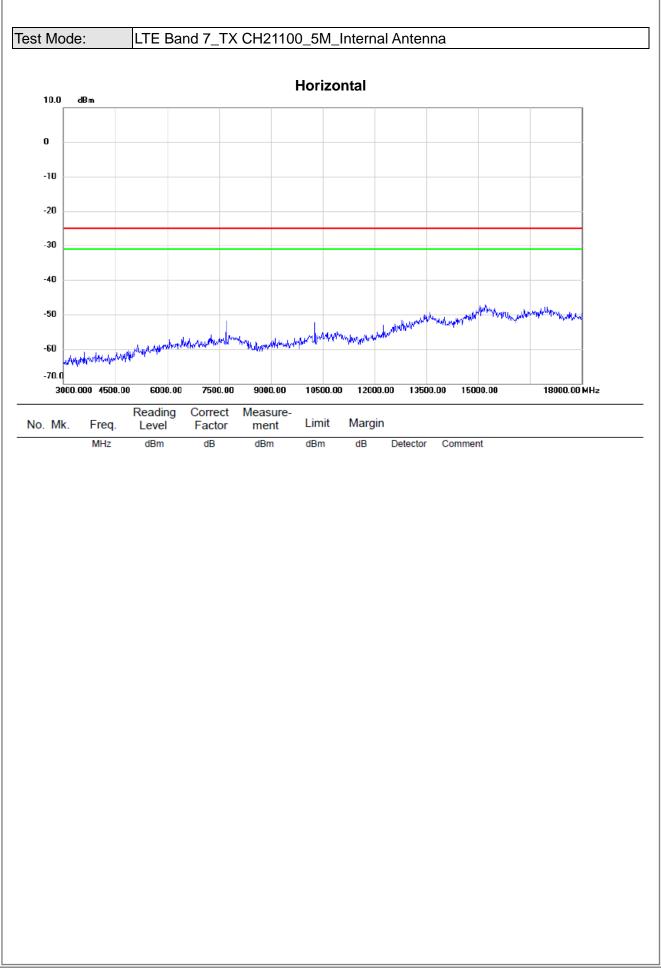




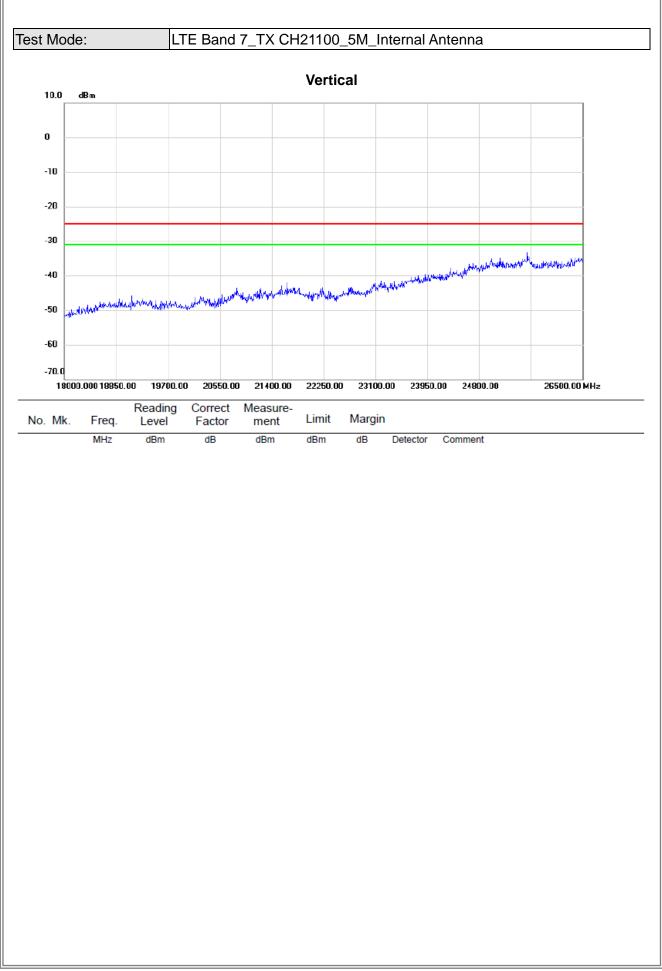






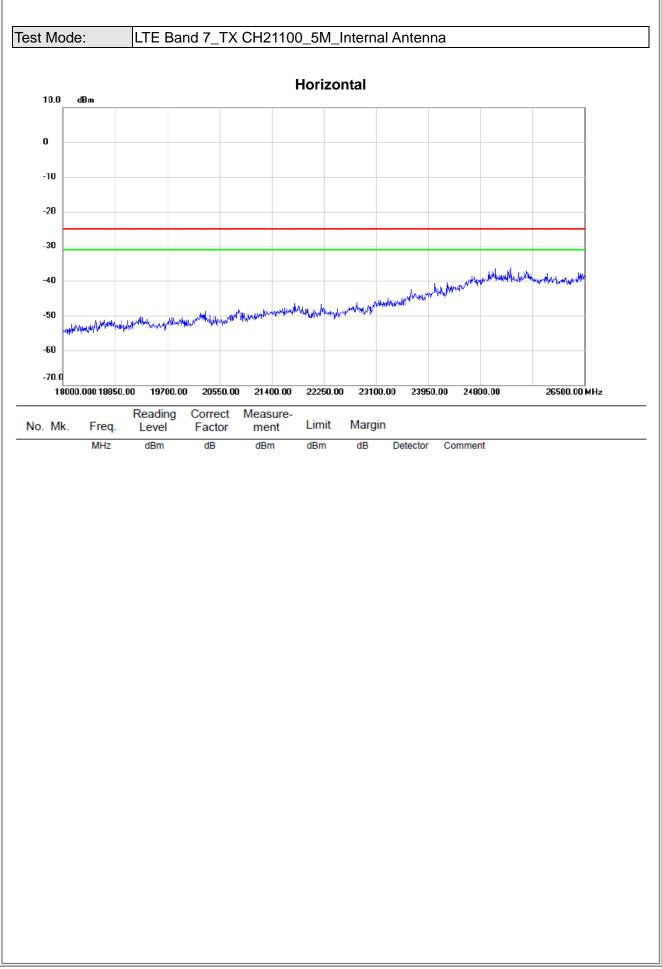




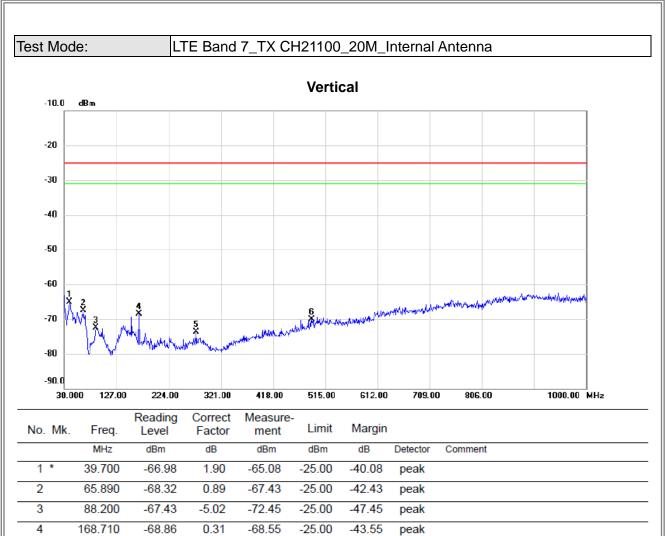












275.410

489.780

5

6

-76.15

-77.08

2.44

6.95

-73.71

-70.13

-25.00

-25.00

-48.71

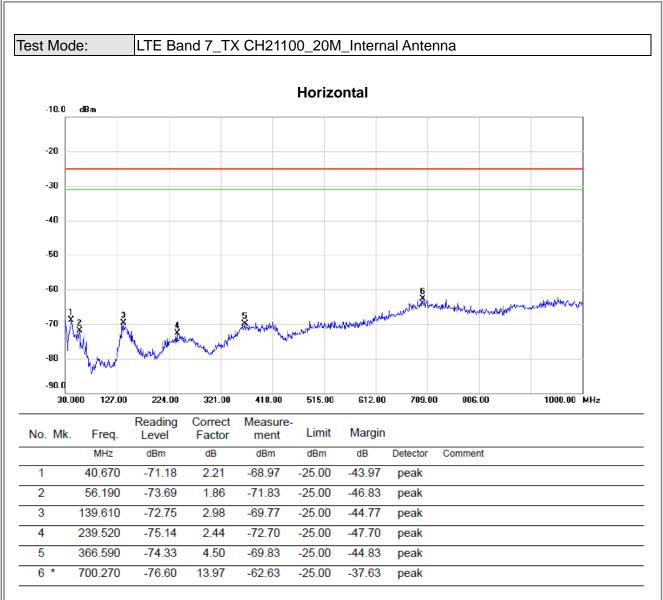
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peak

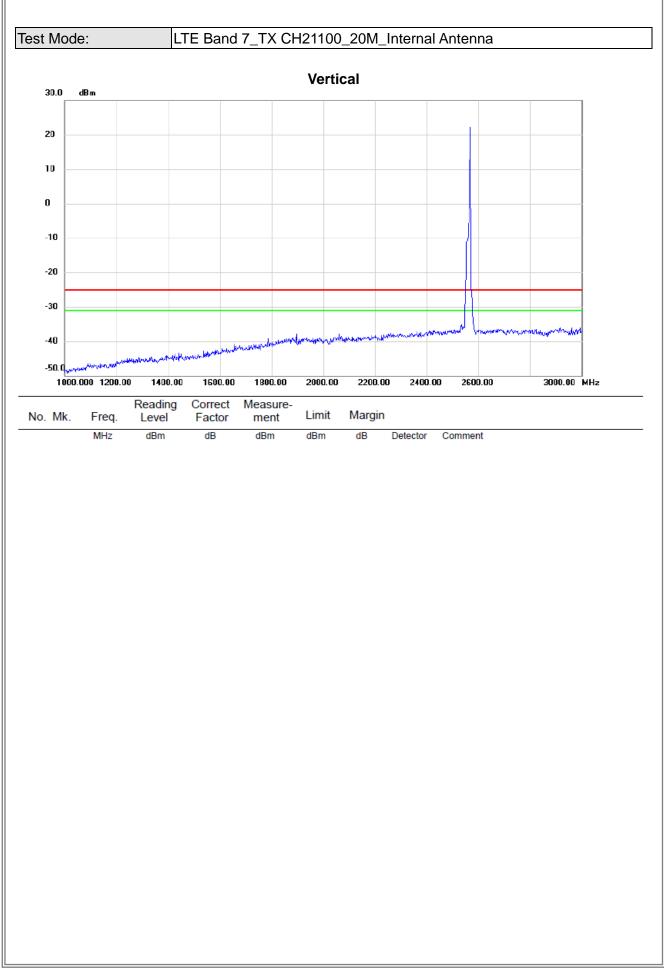
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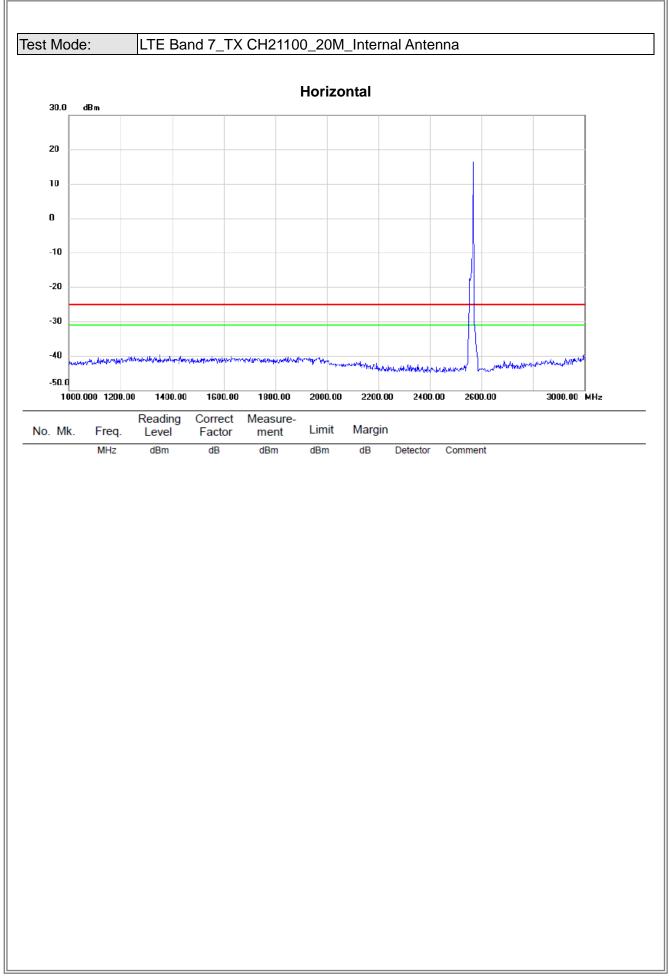




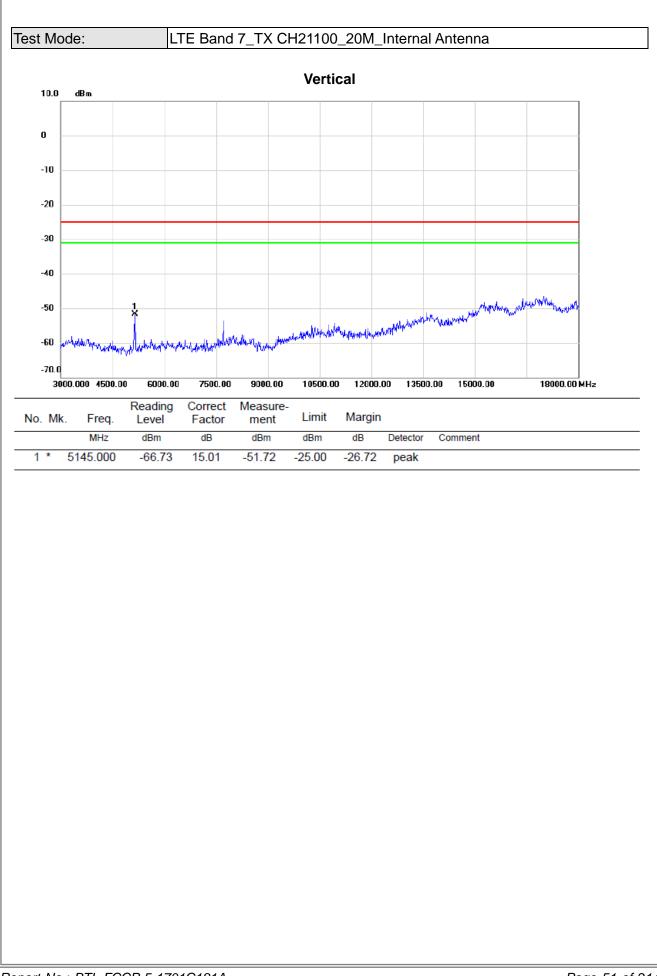






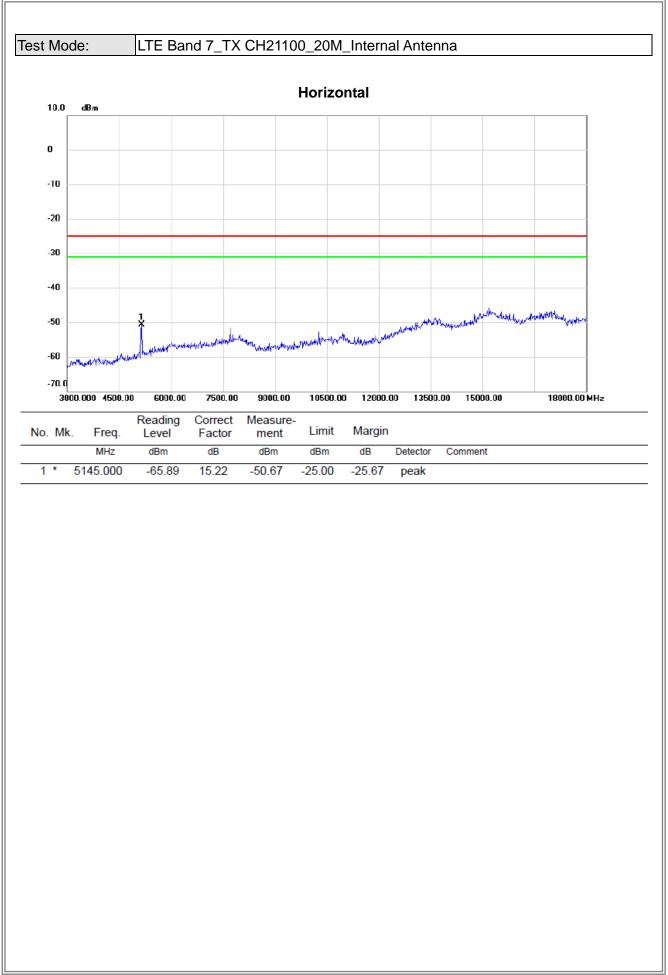




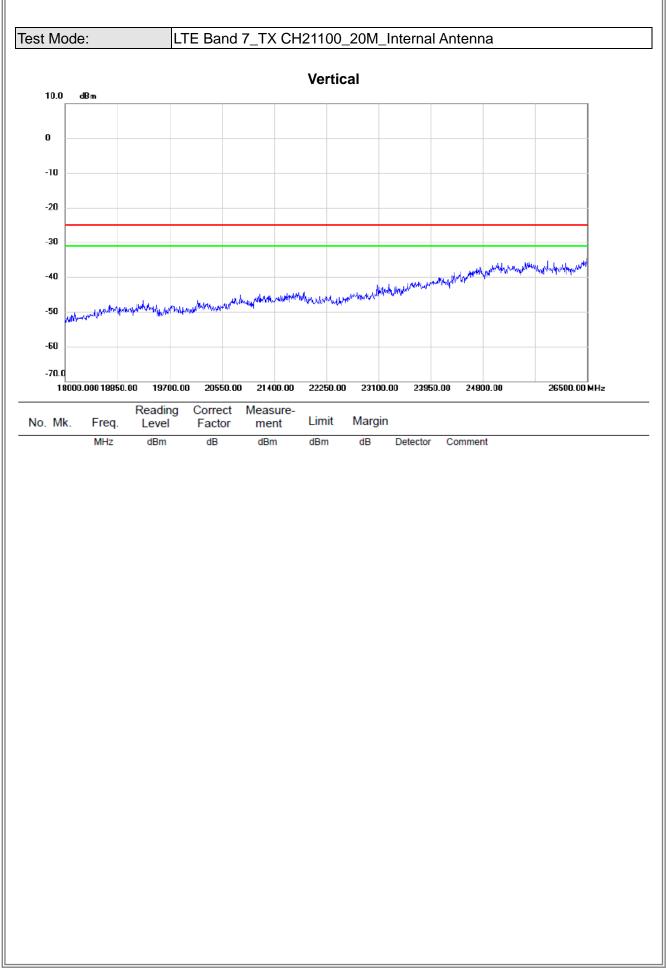






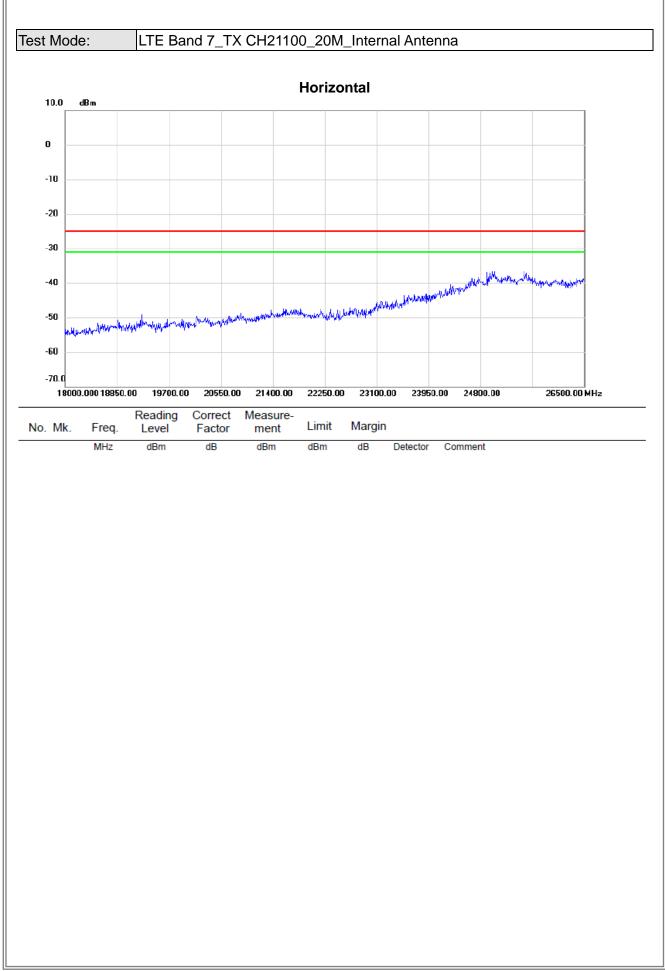




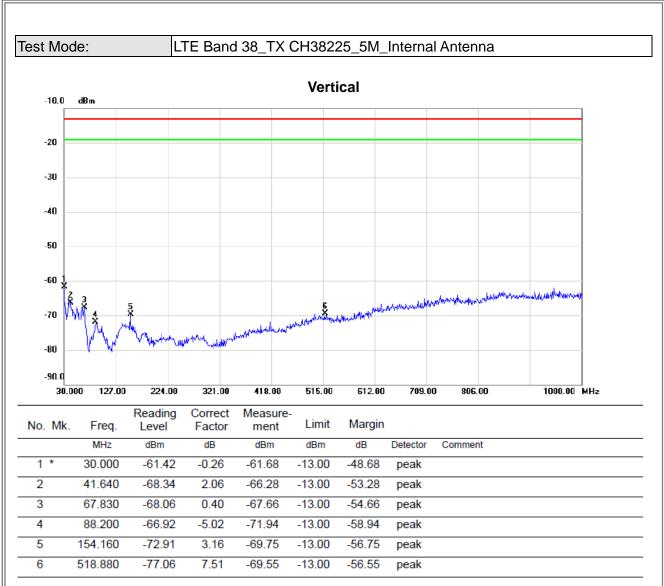






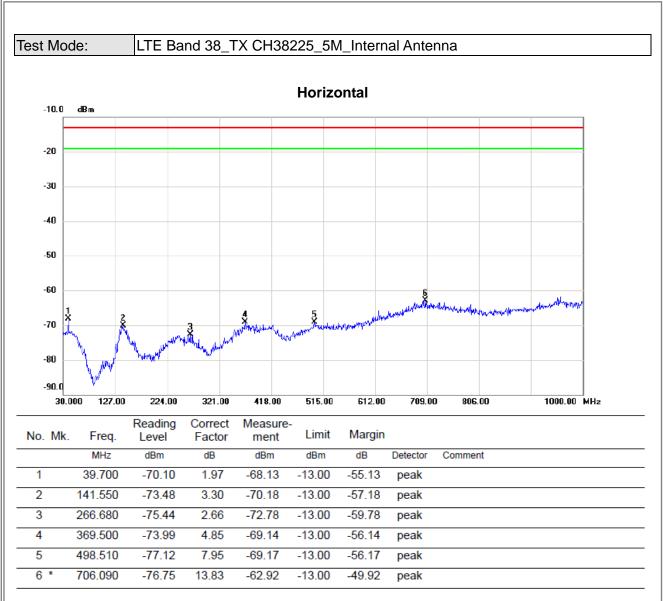




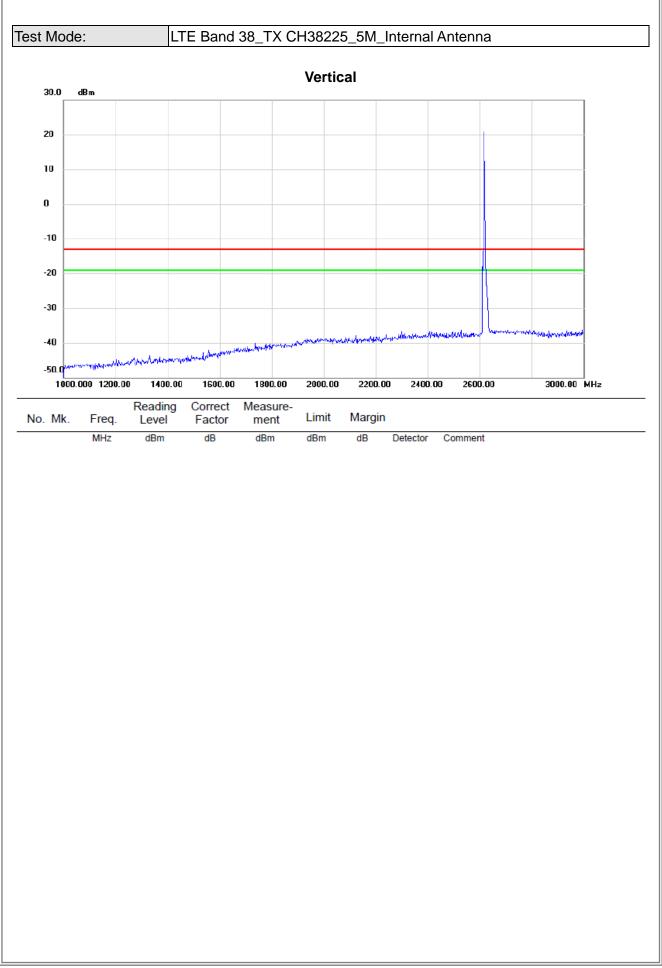






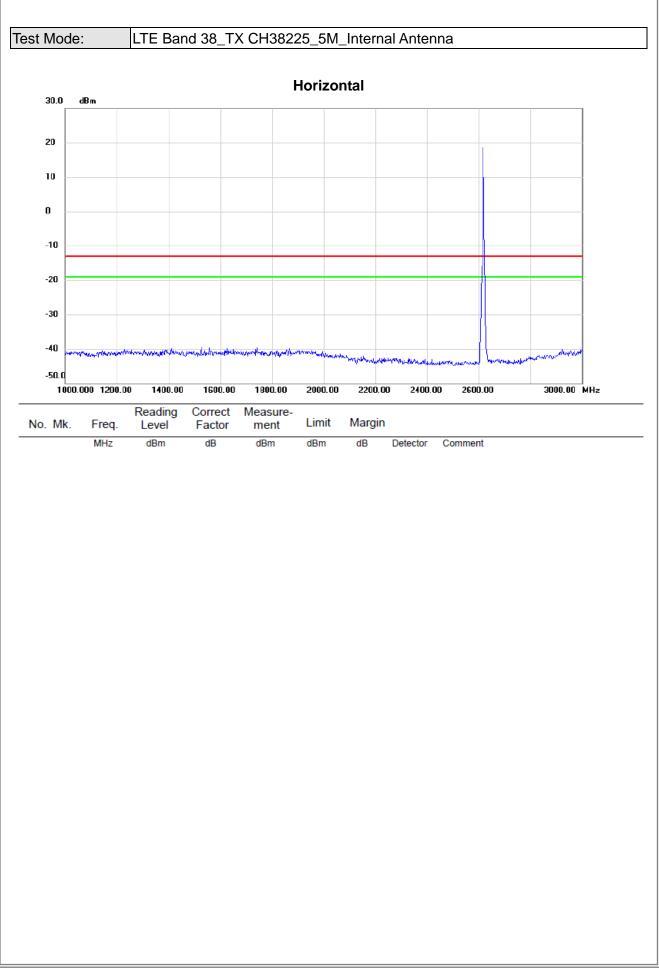




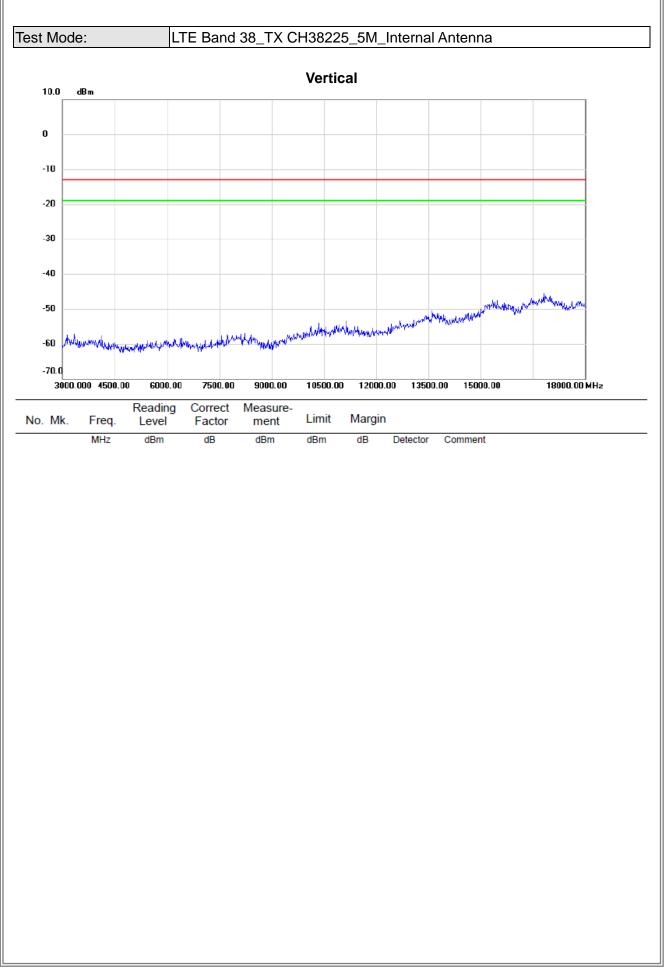






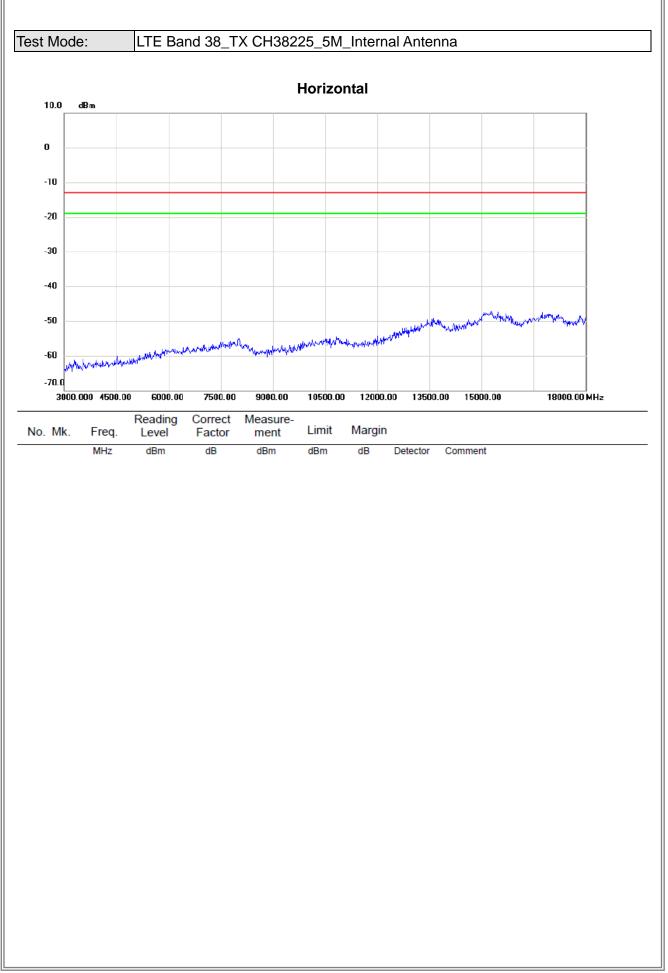




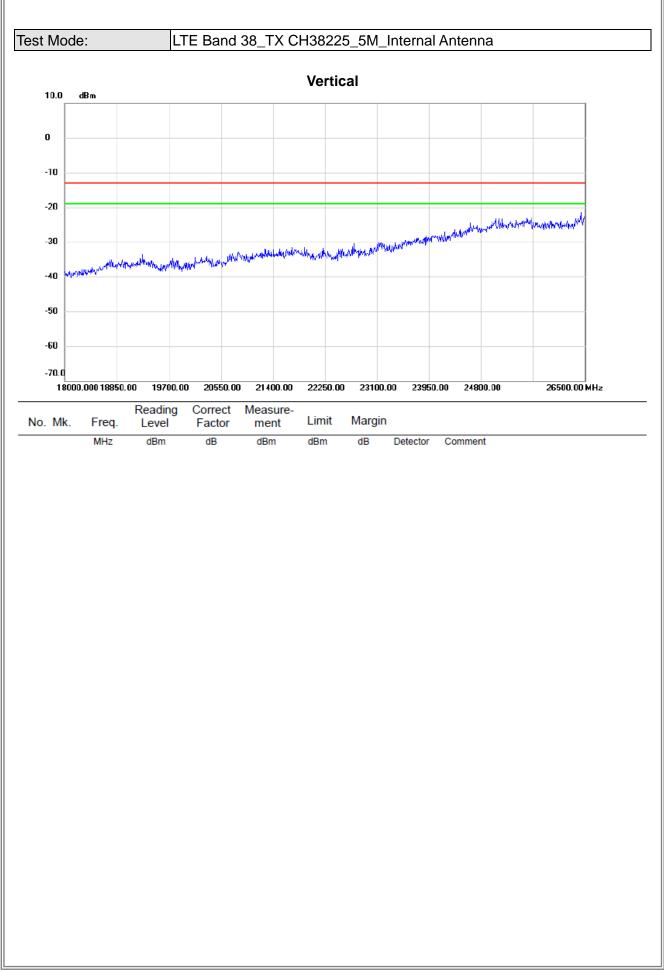






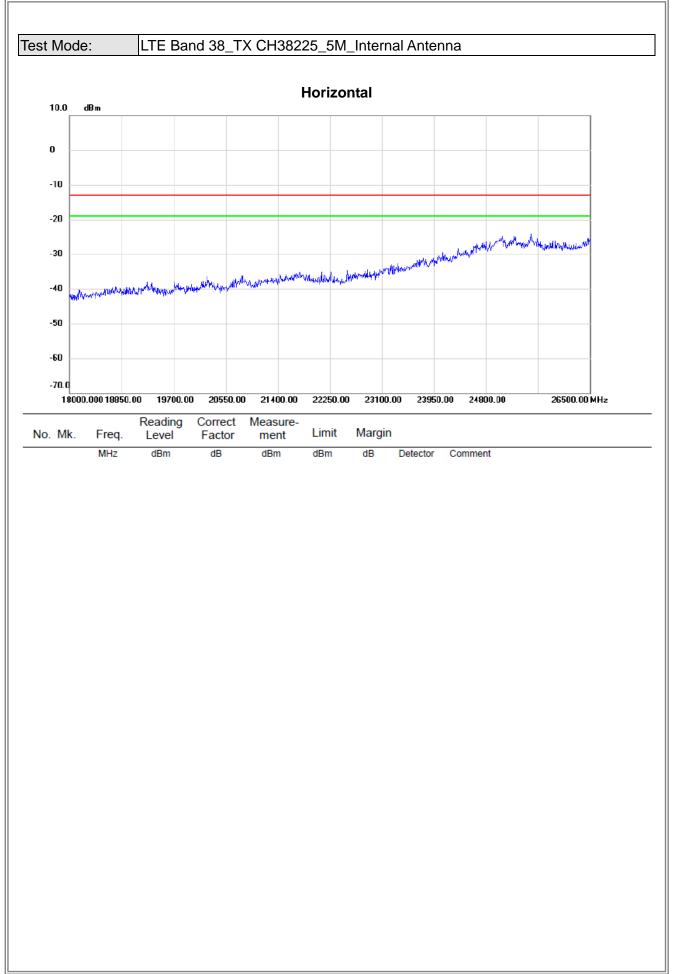






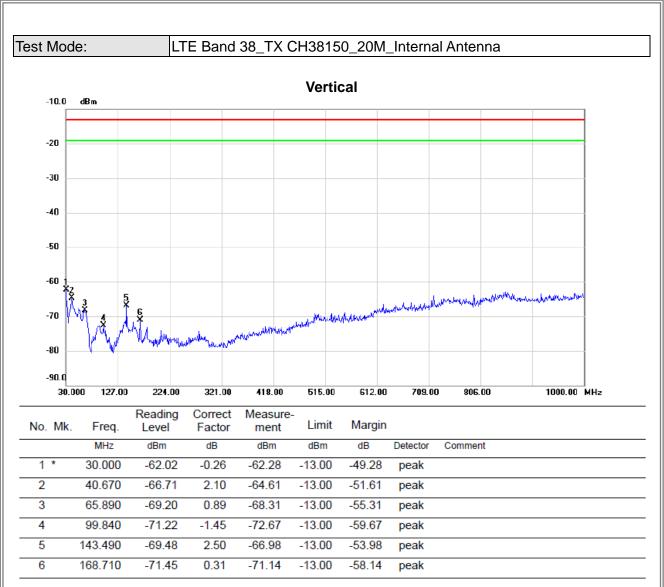






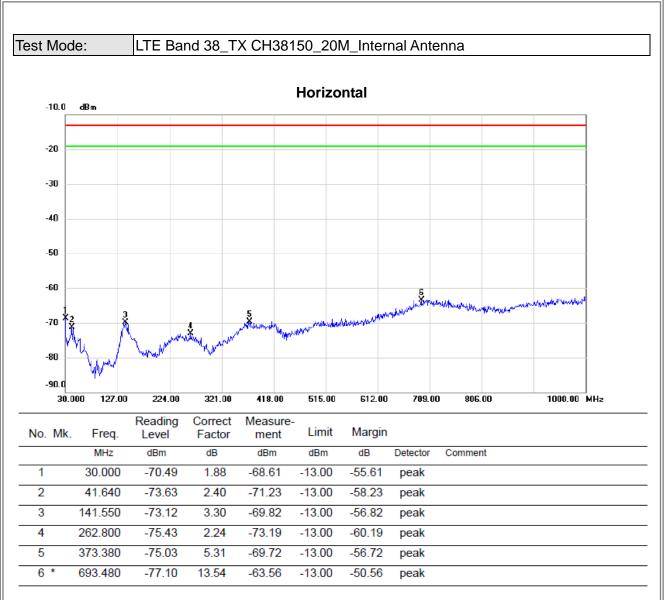
# **3**TL



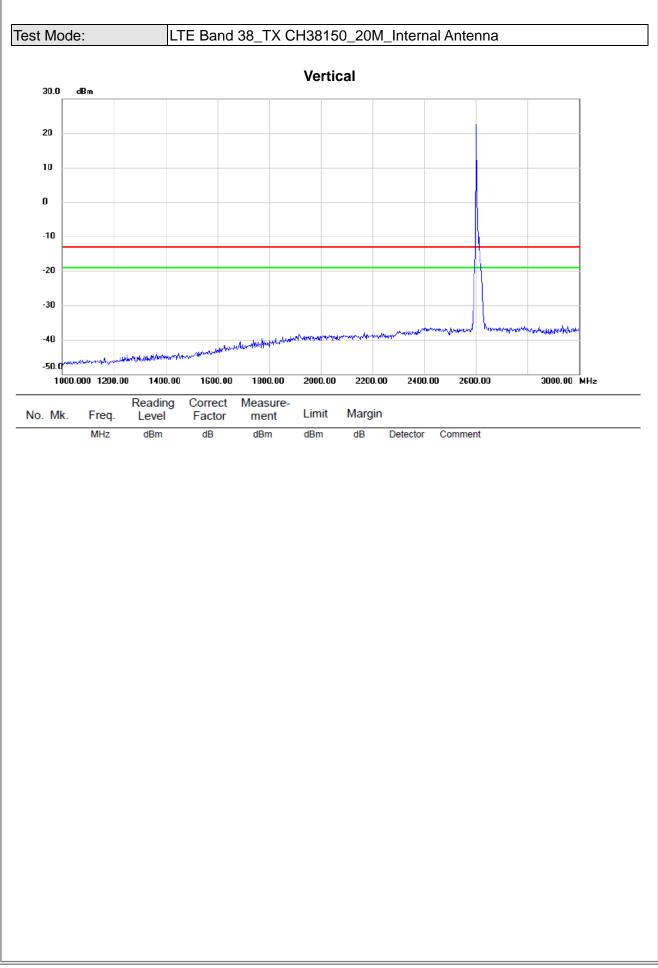






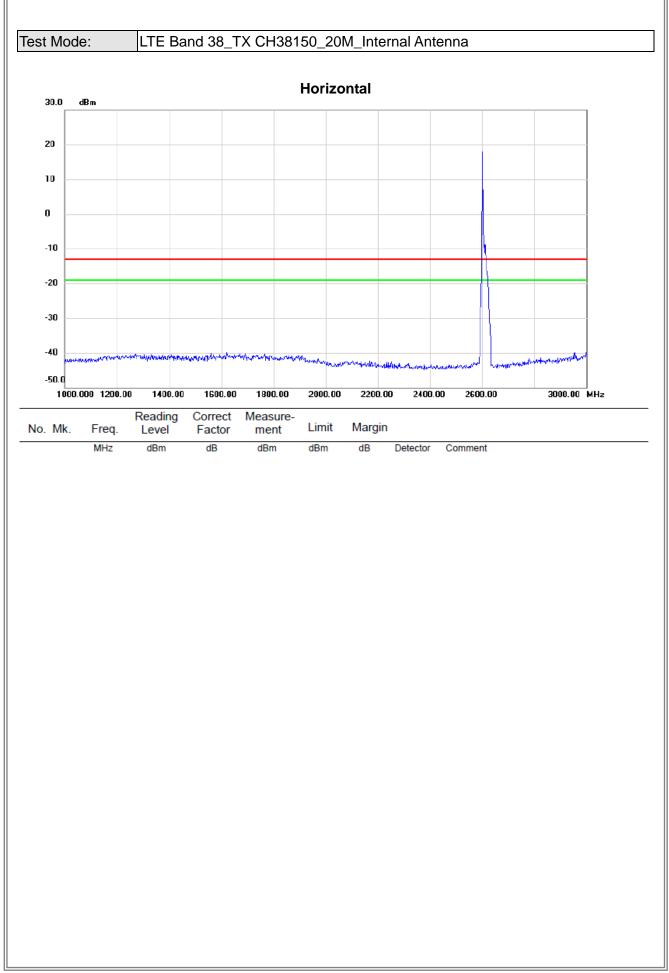




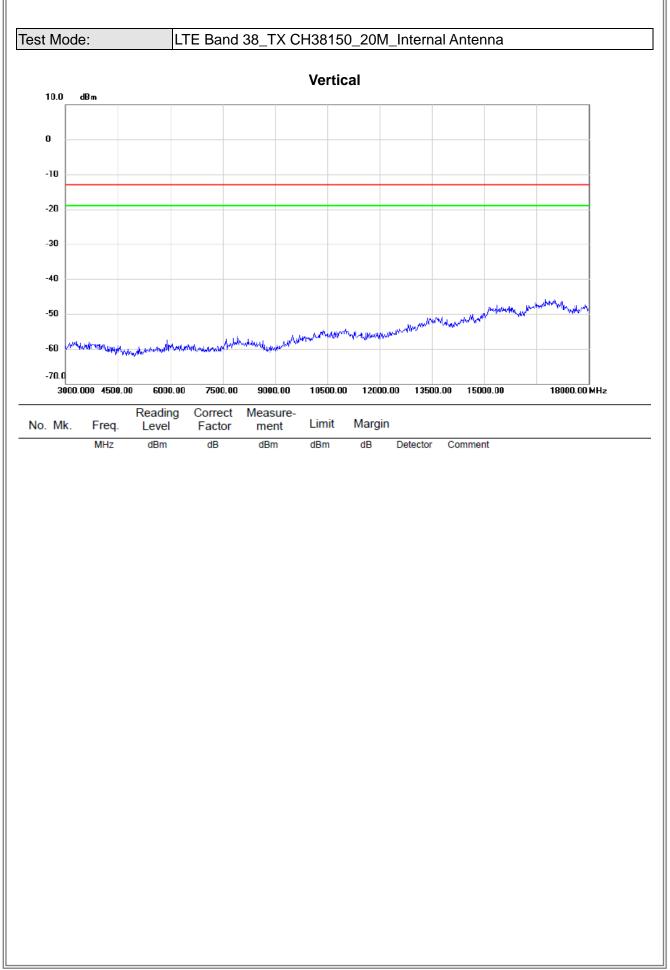






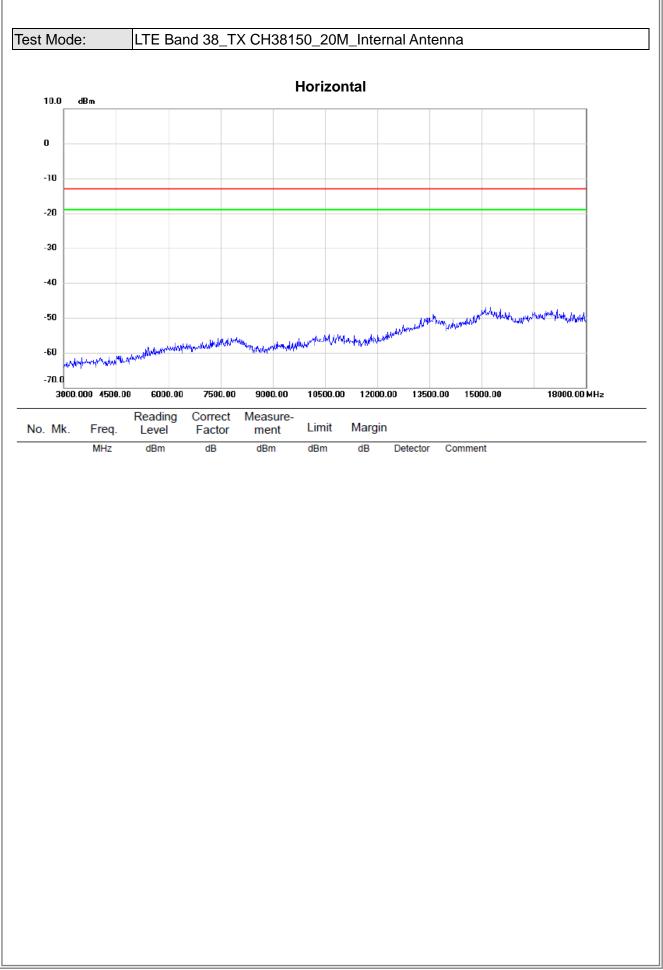




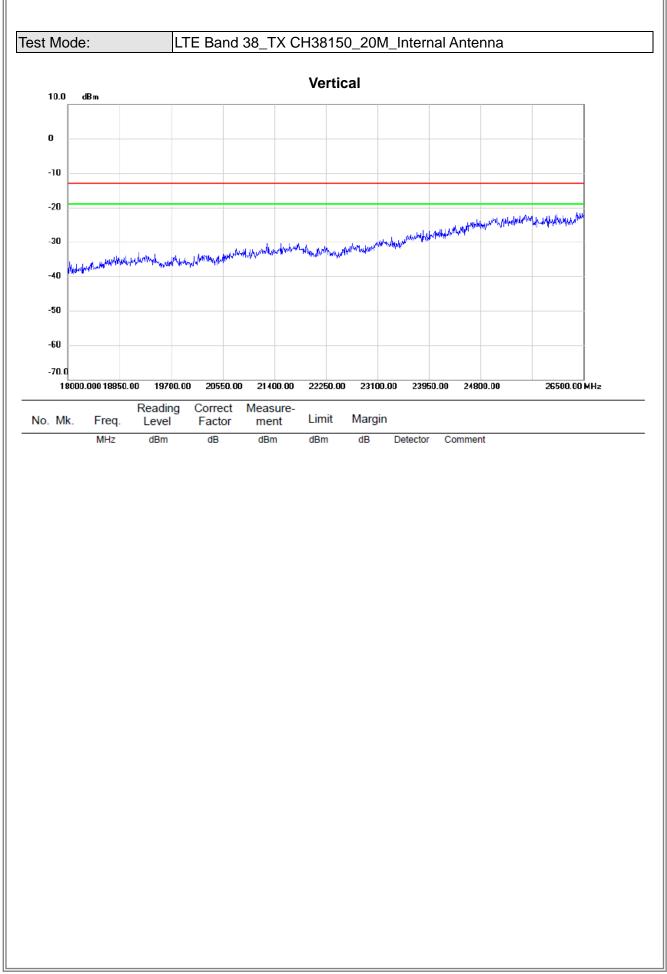






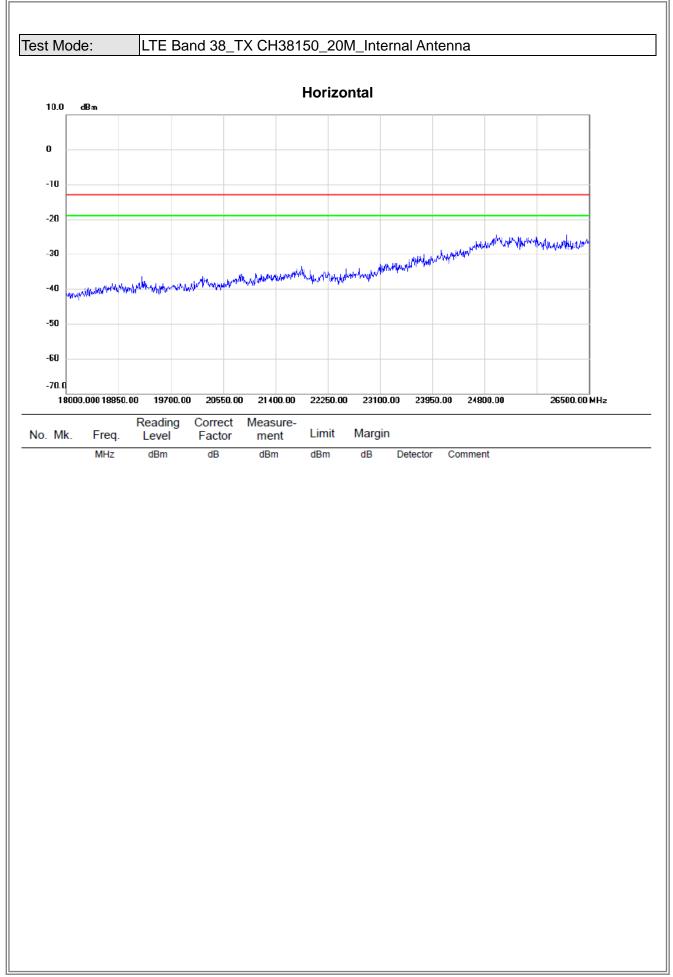






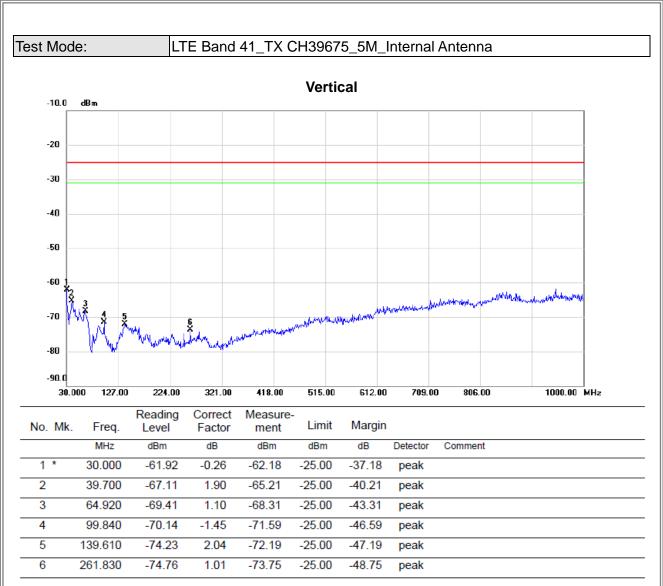






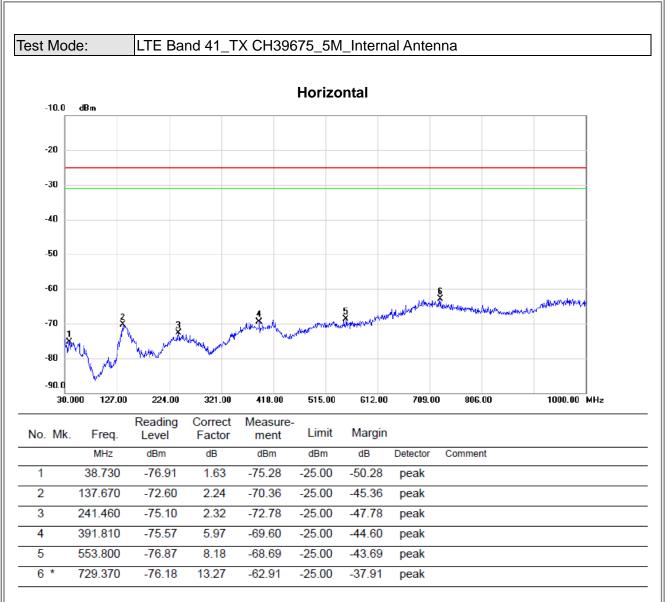
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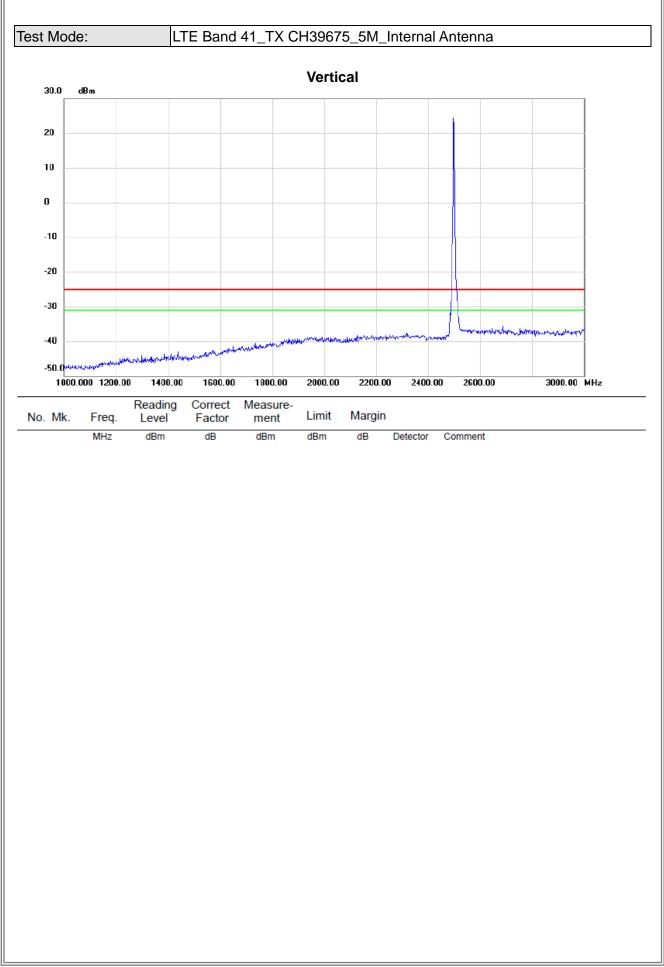






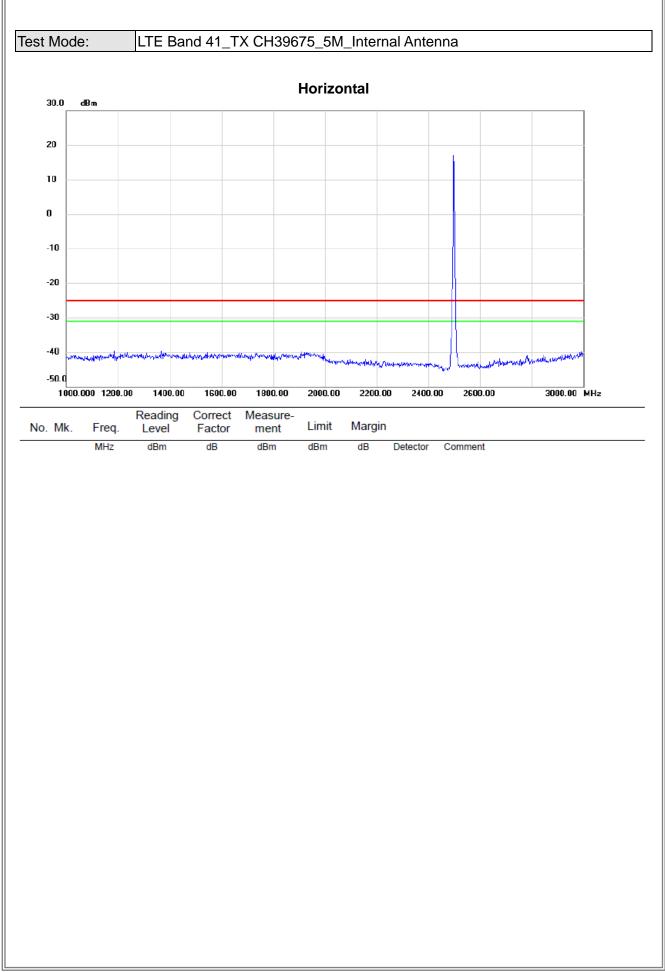




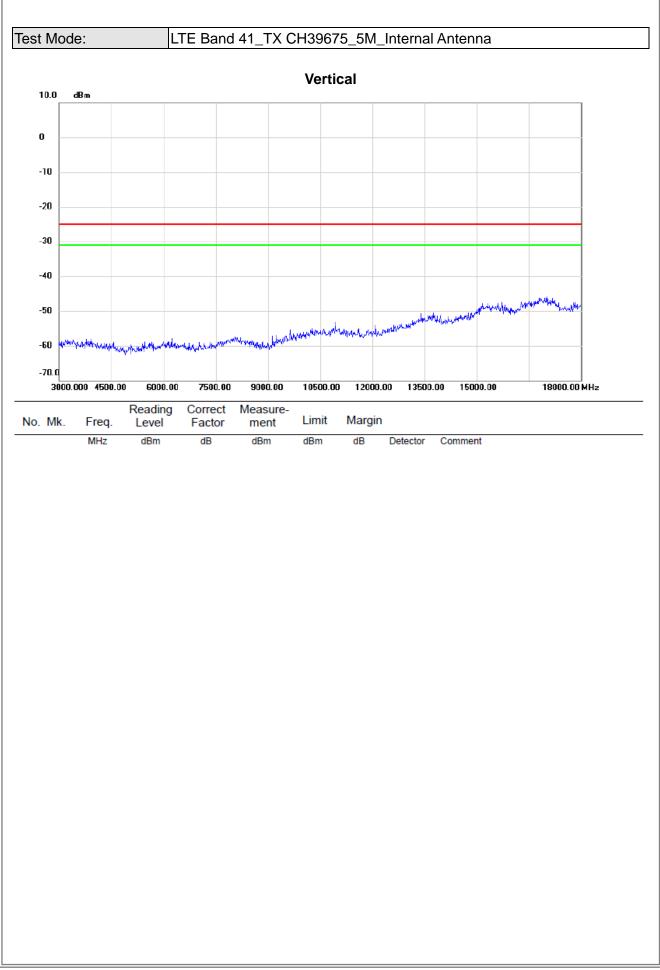






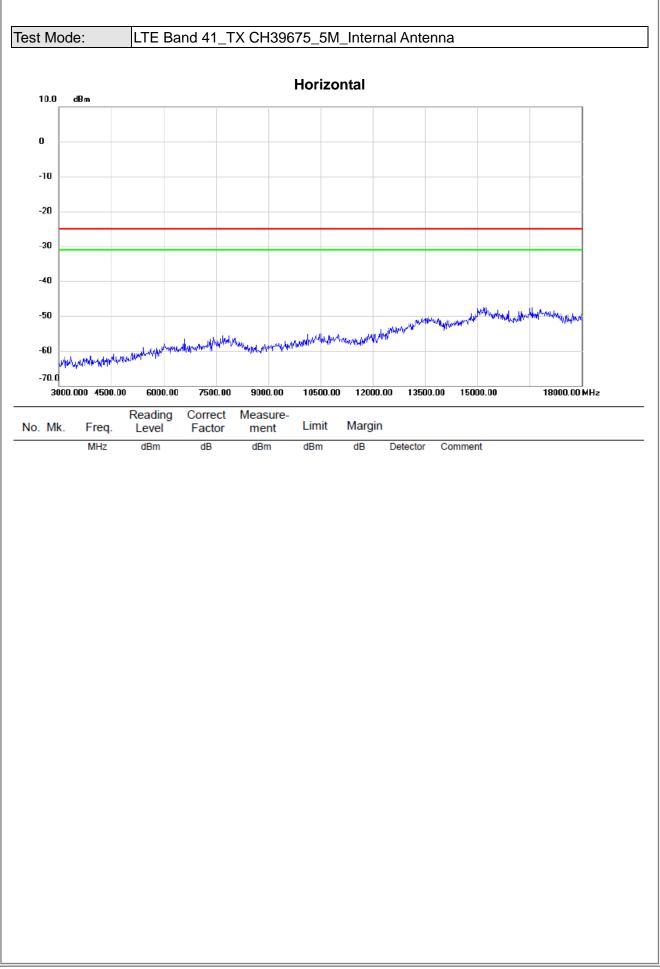




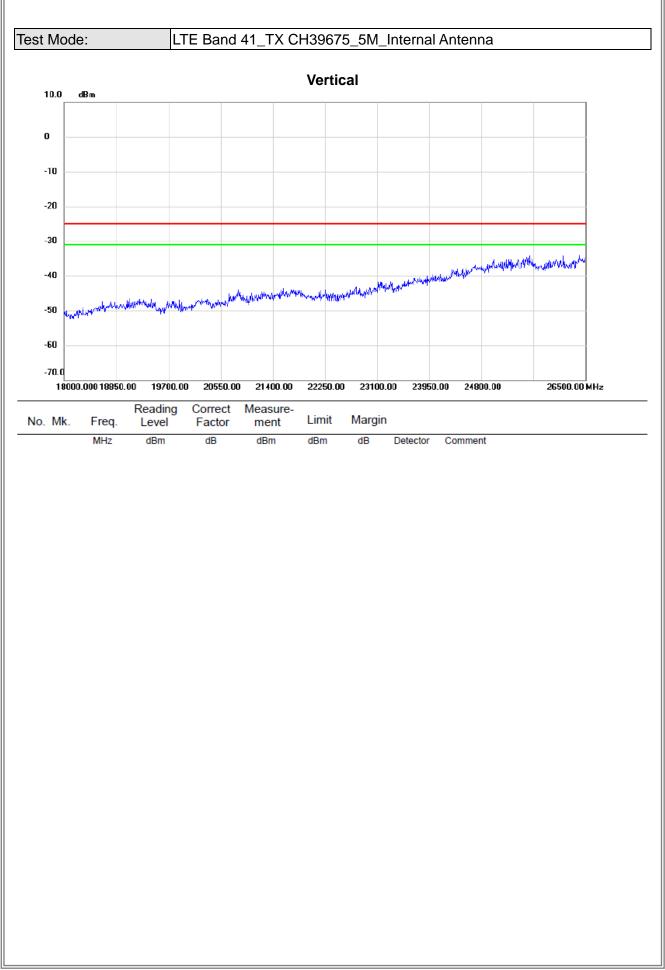






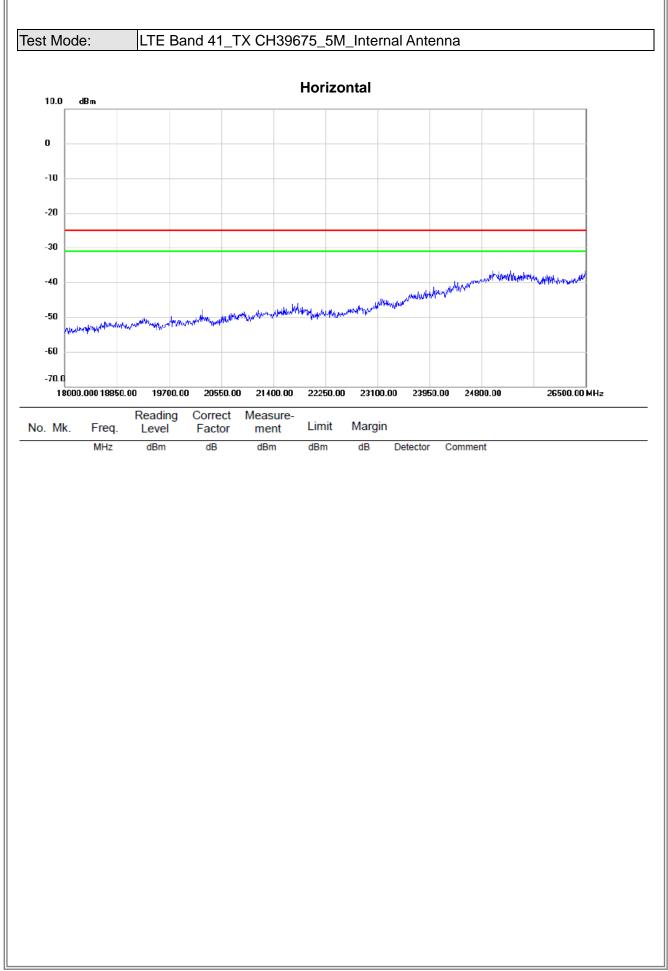




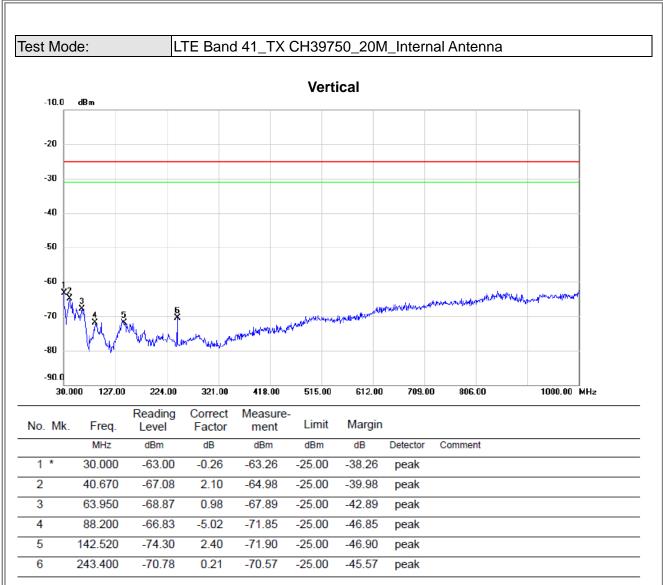






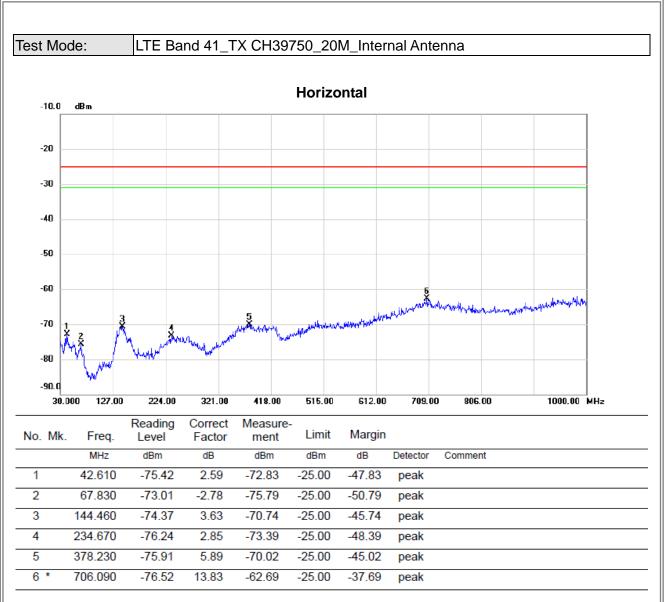




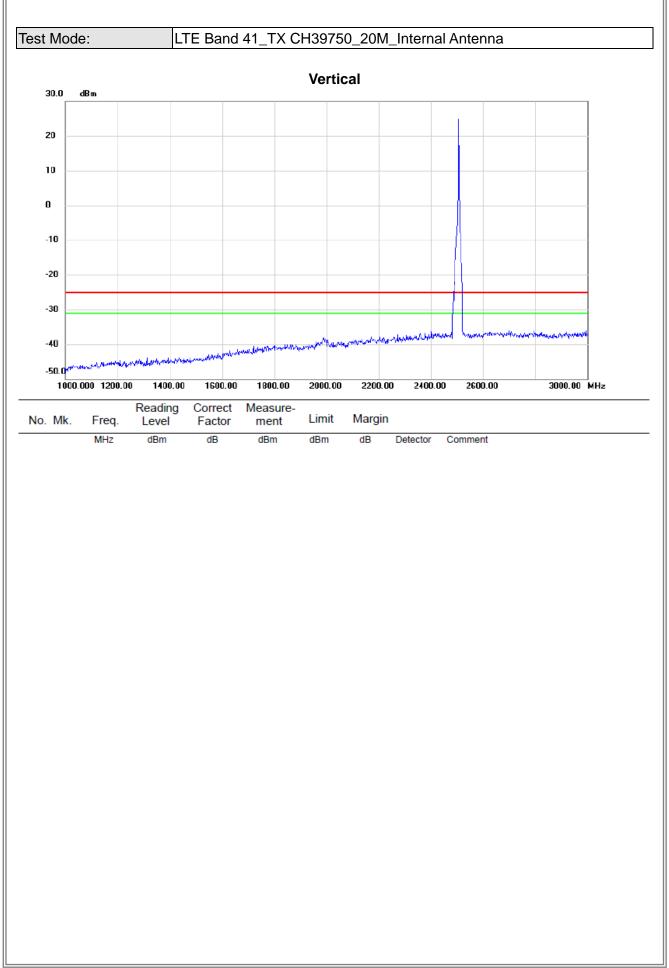






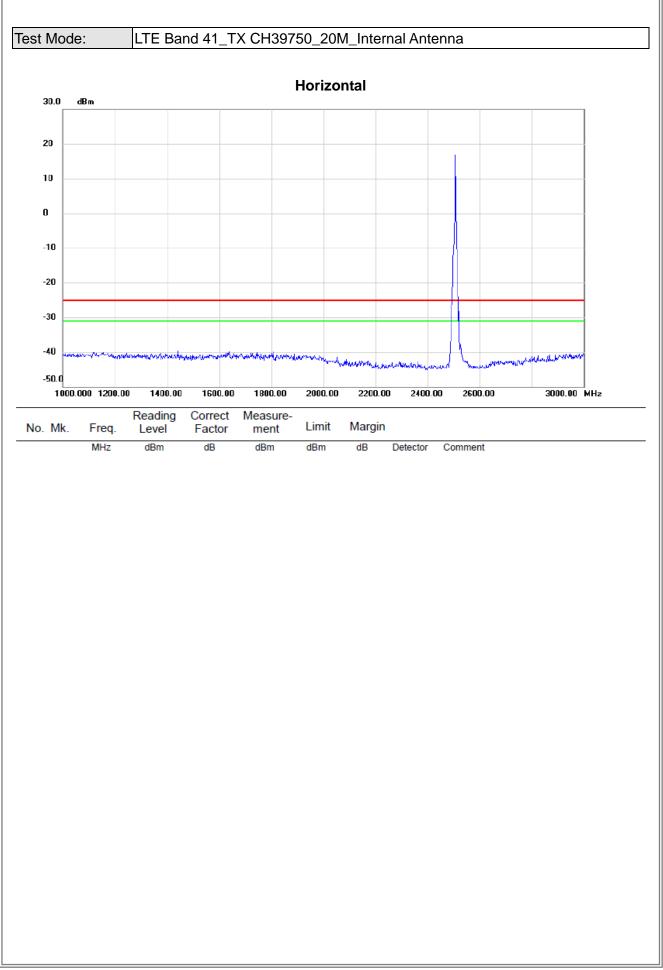




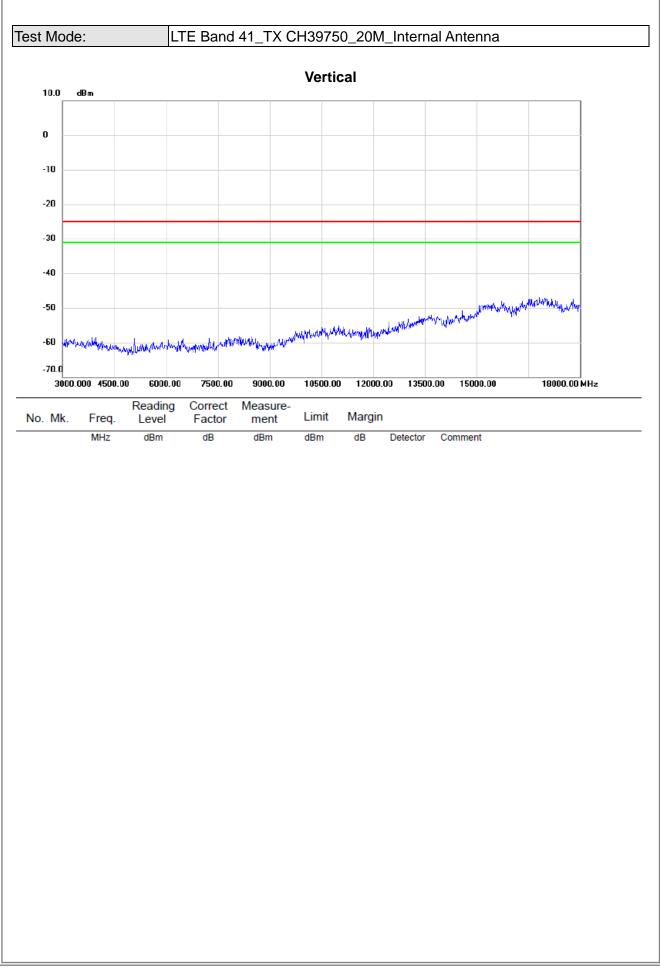






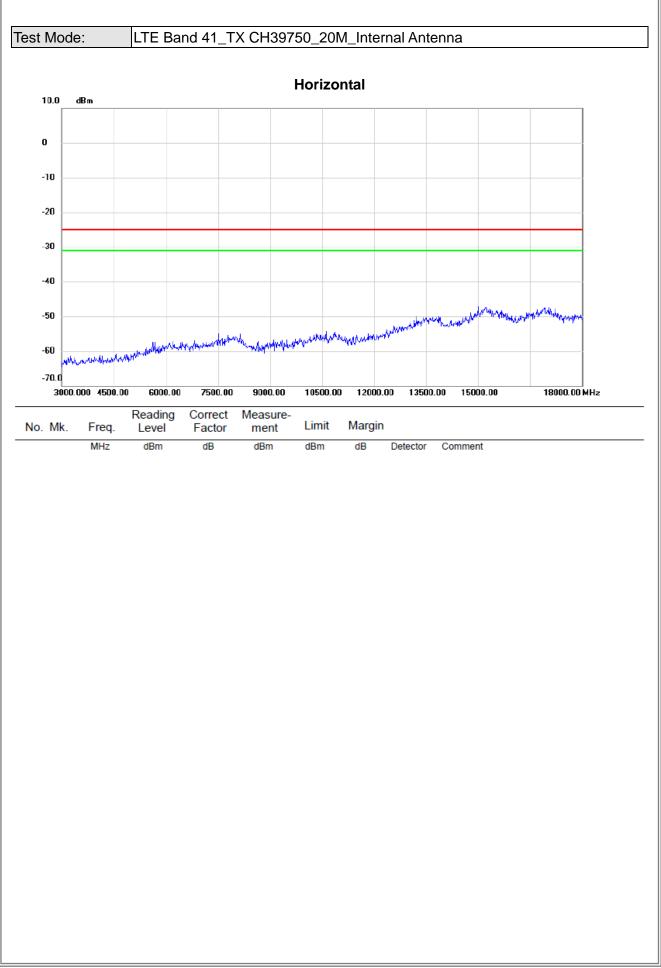




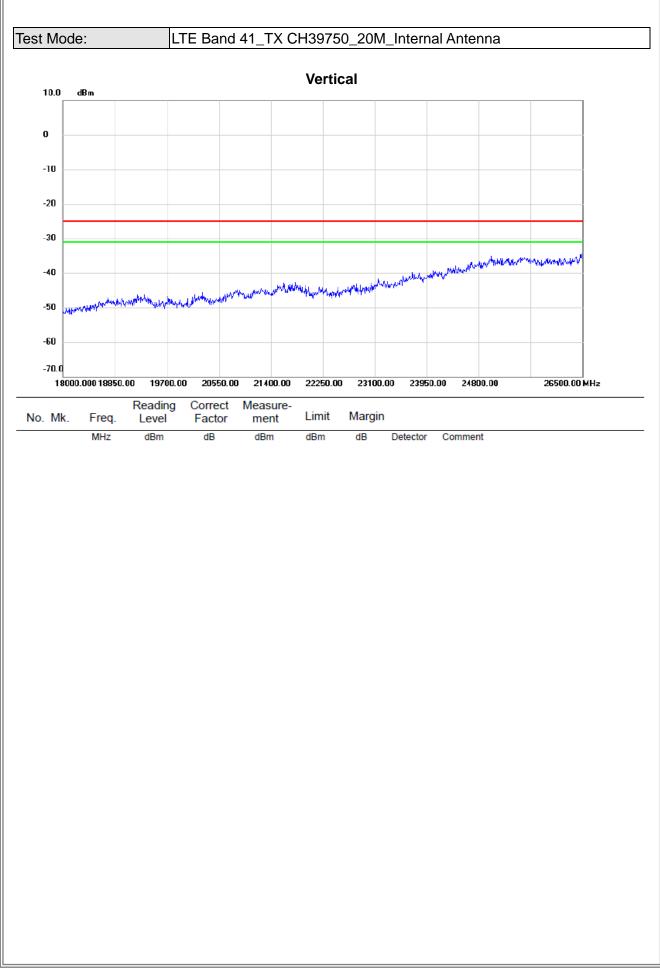






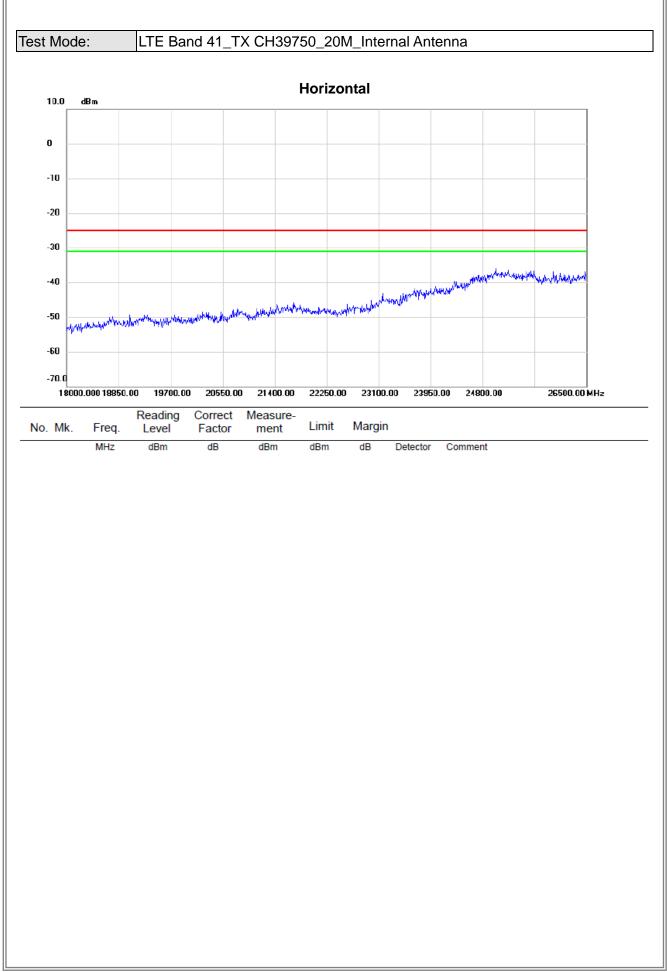






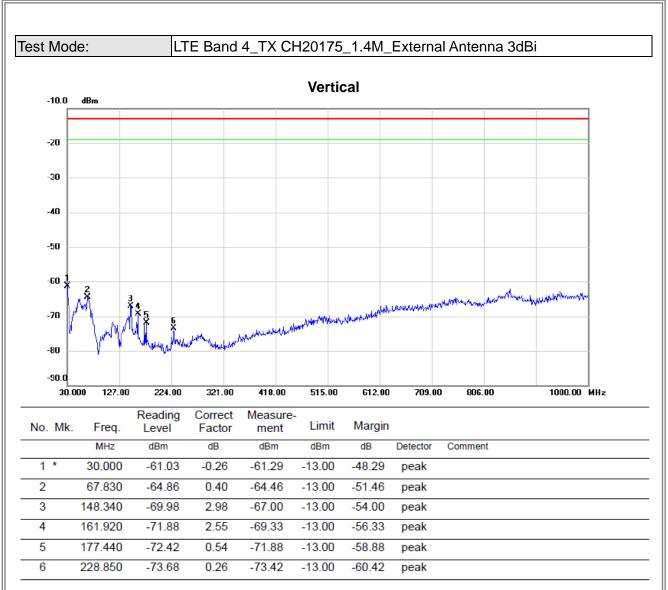






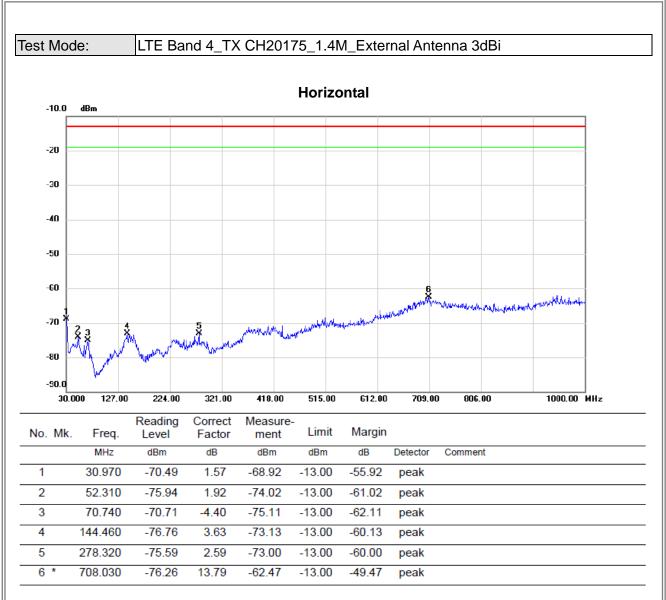
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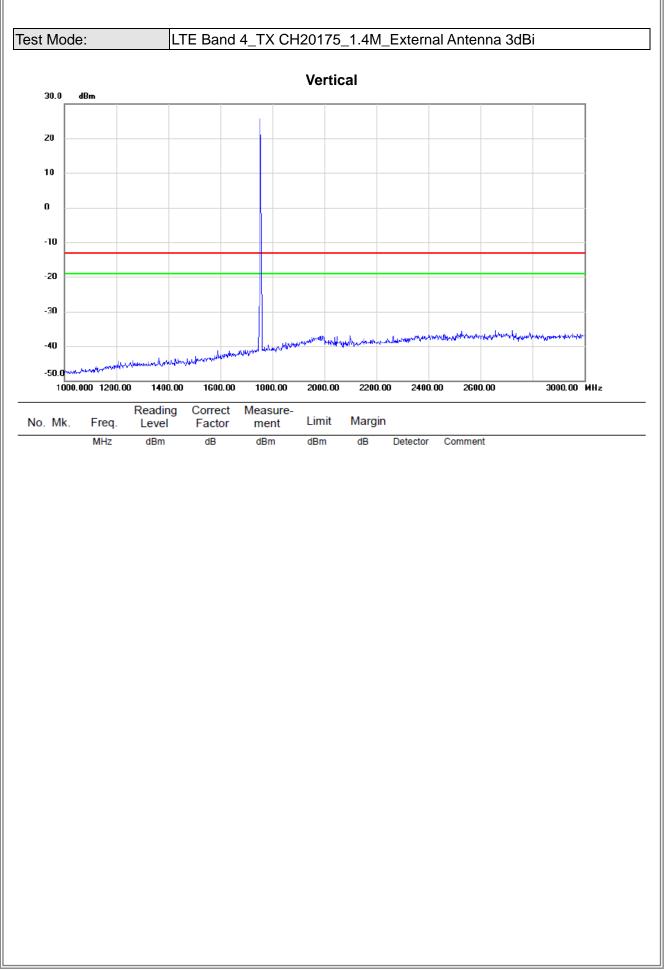






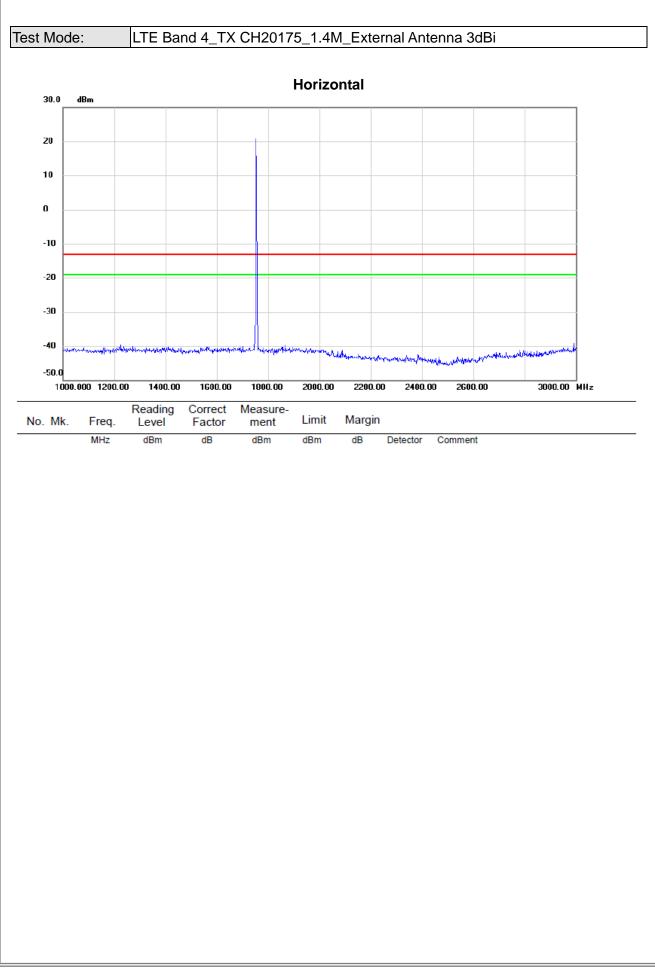




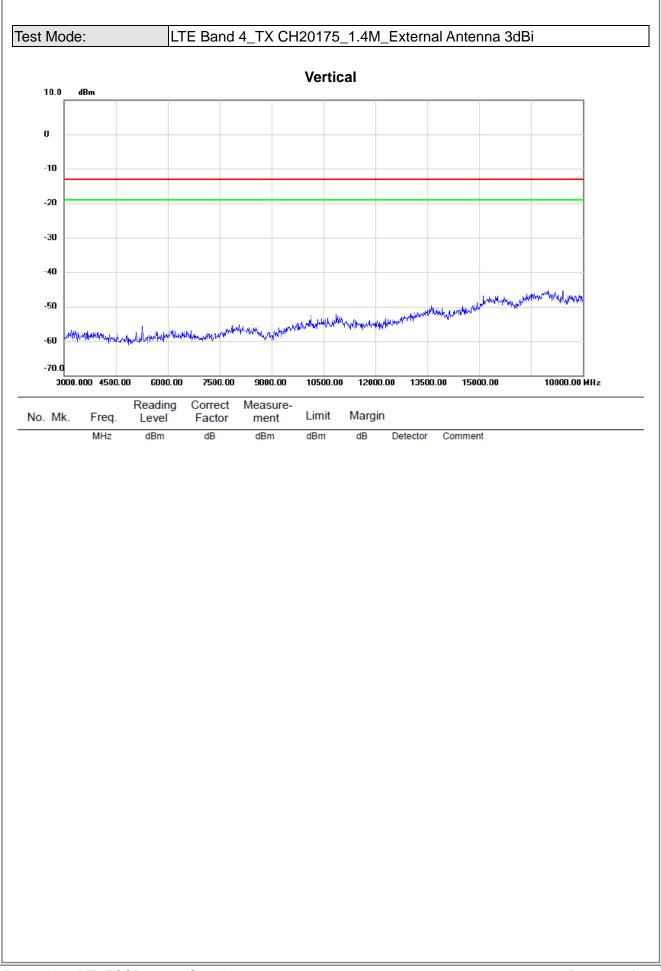






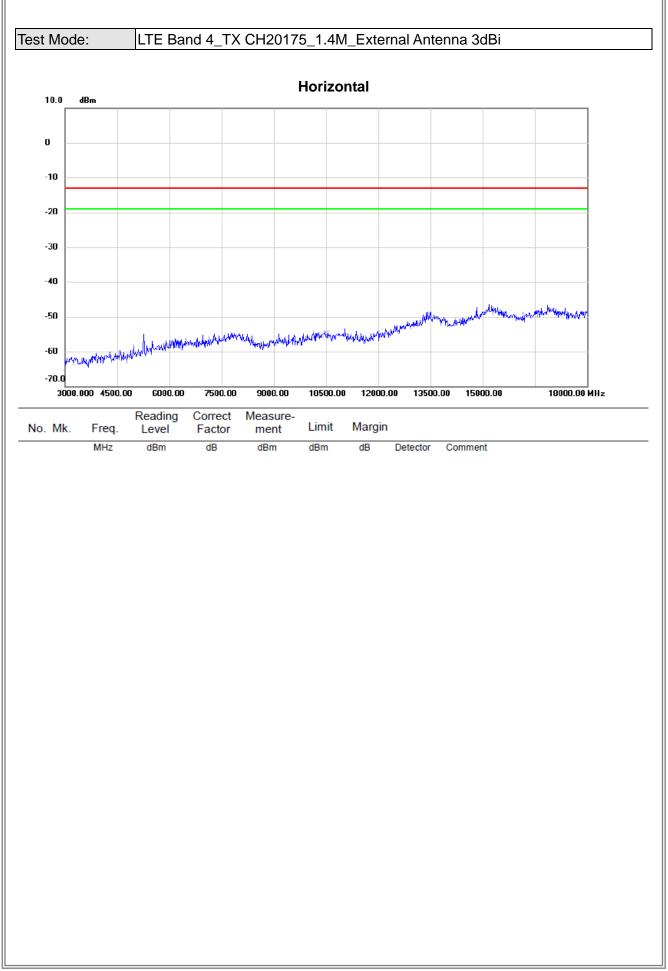




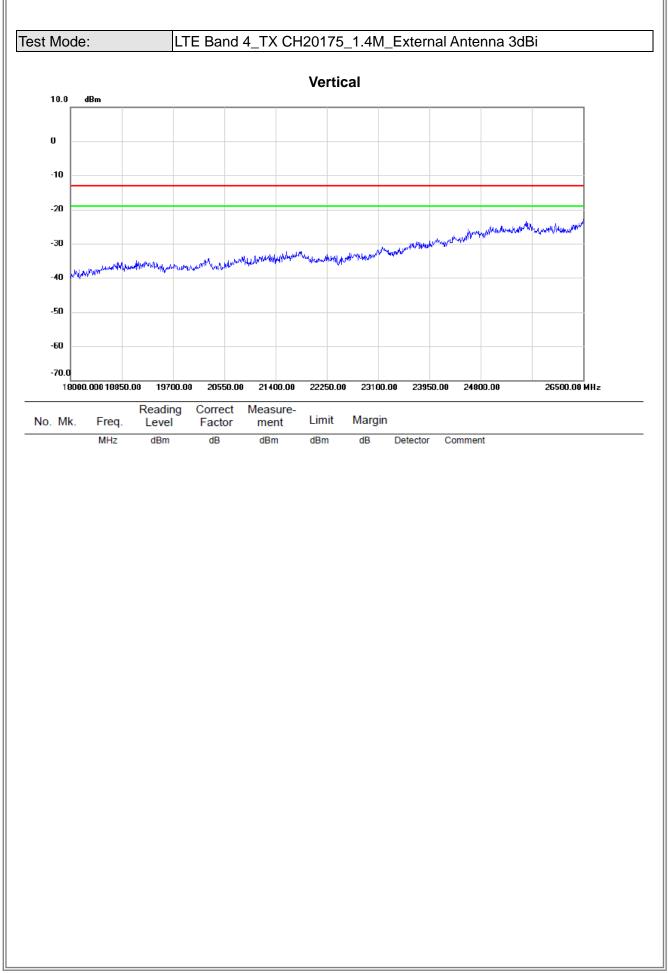






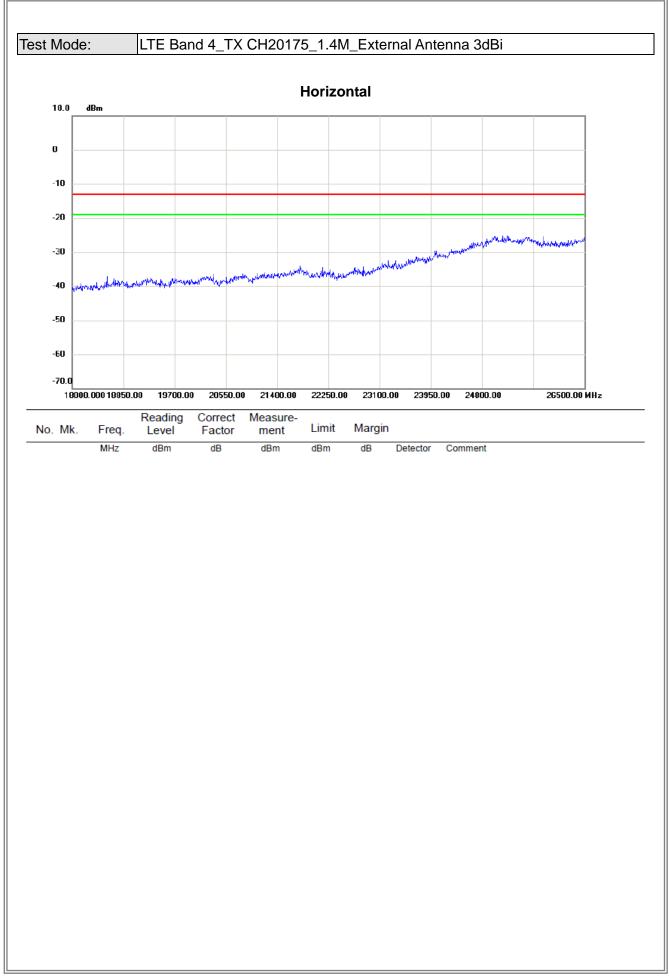




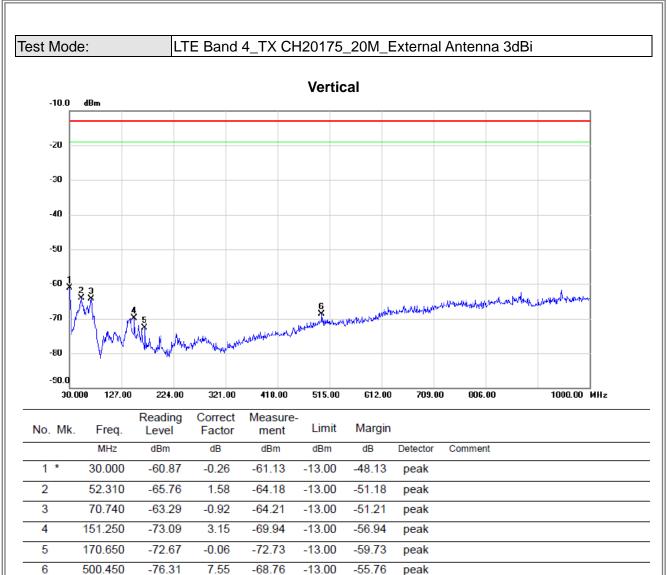






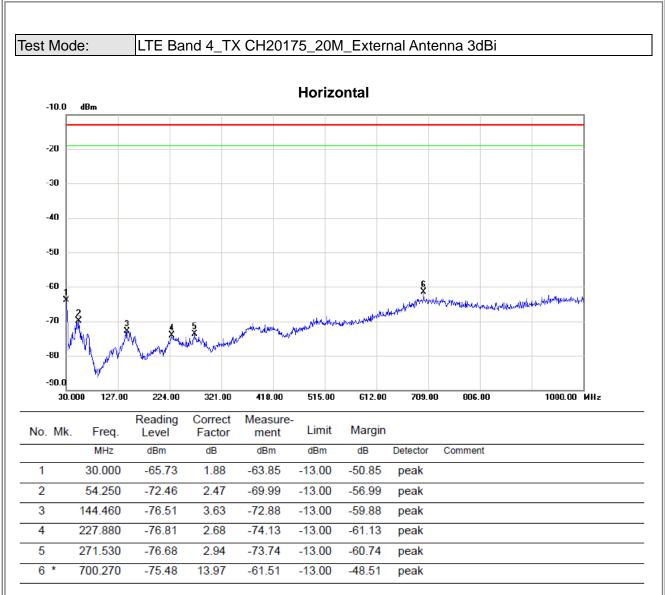




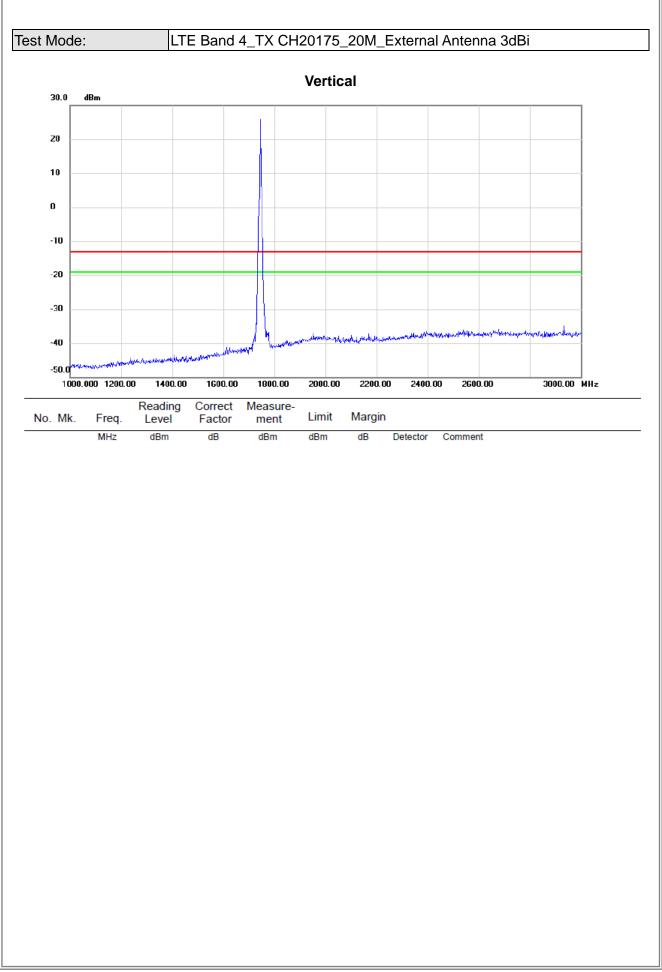






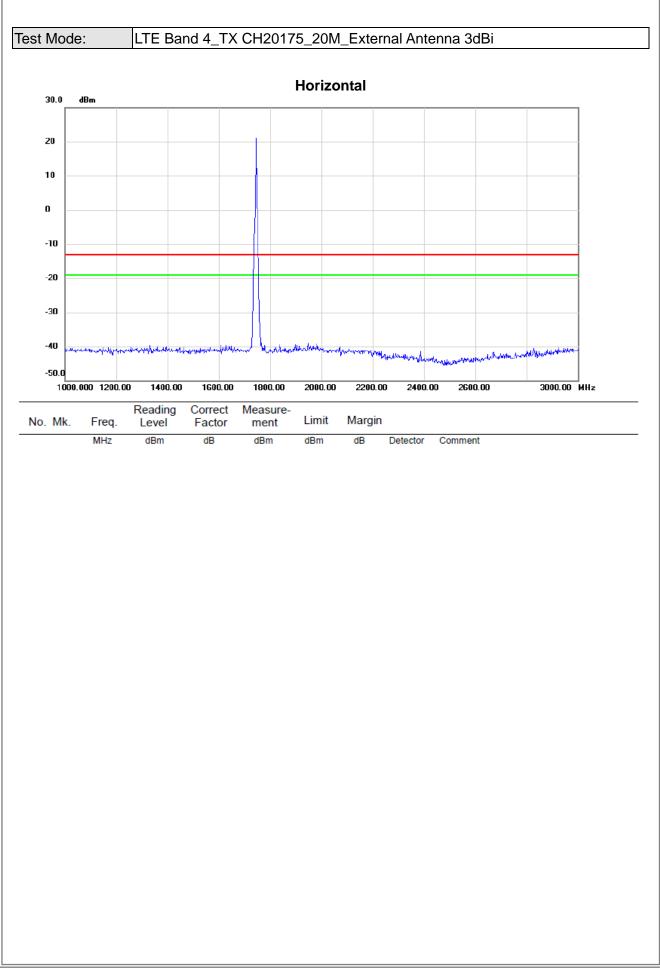




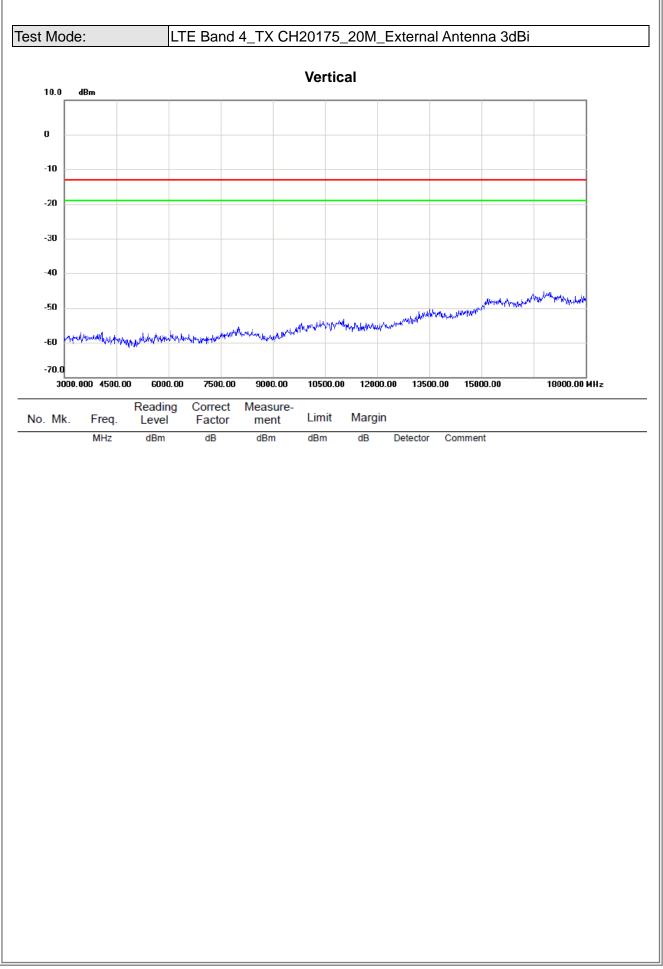






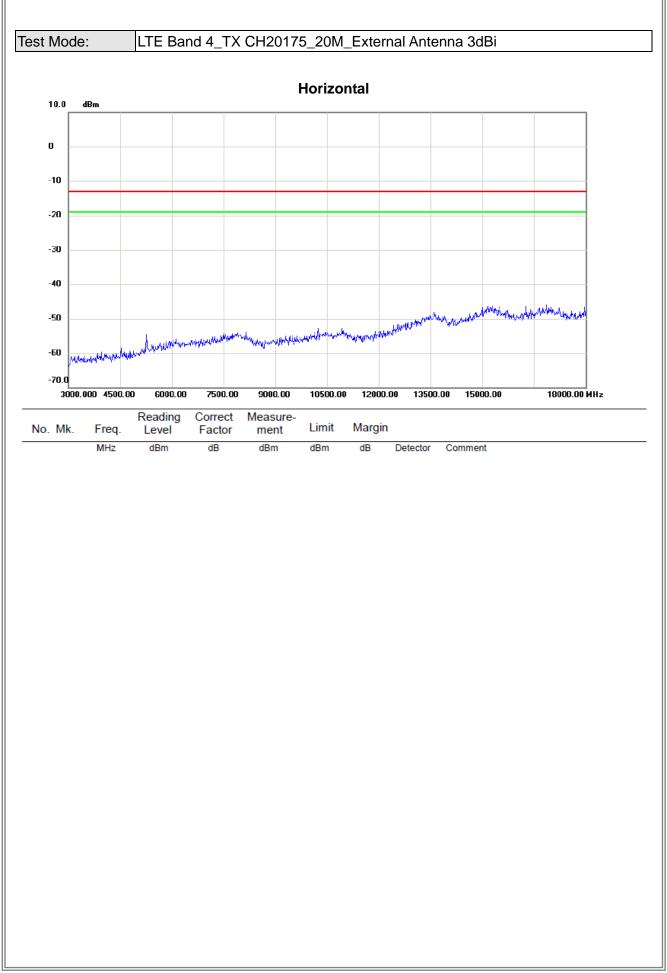




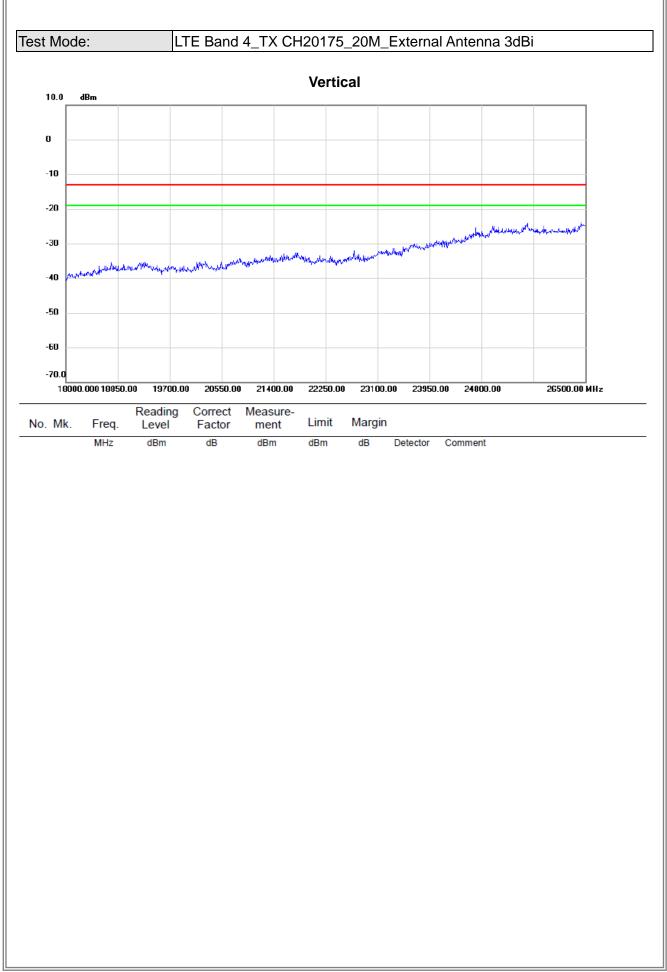






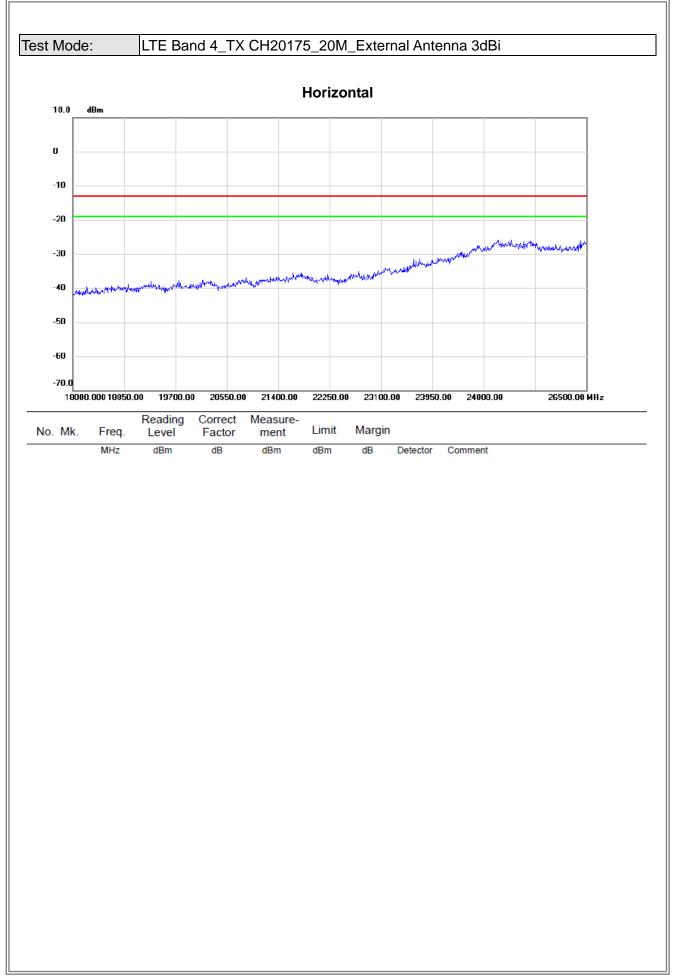






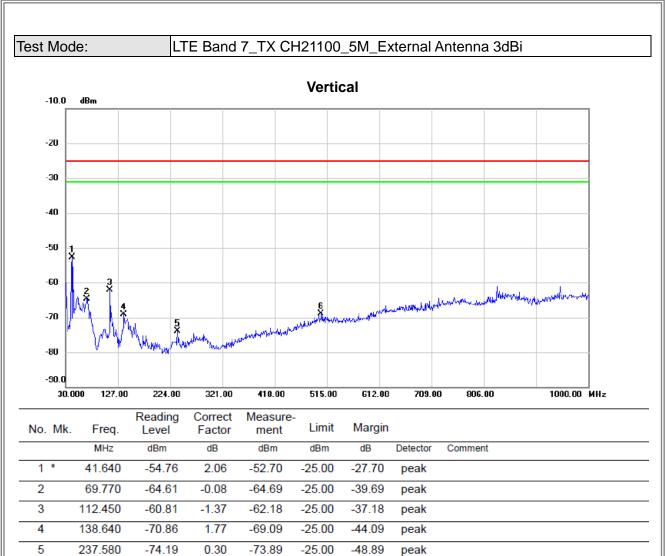






# **3**TL





504.330

6

-76.49

7.54

-68.95

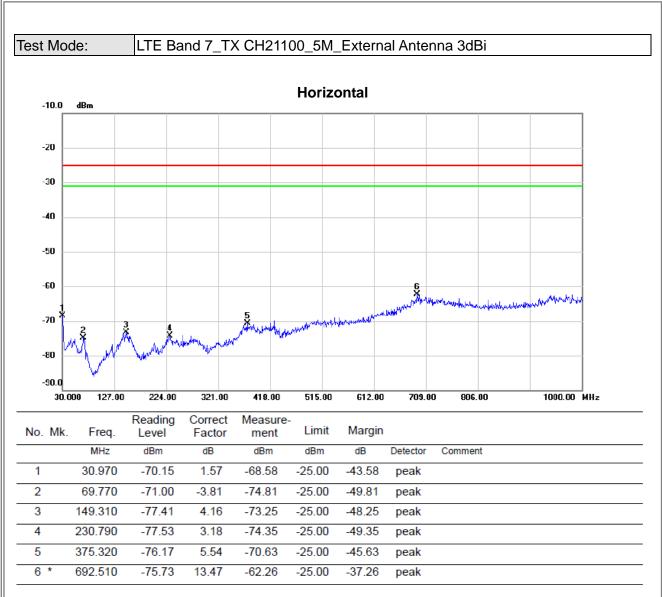
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-43.95

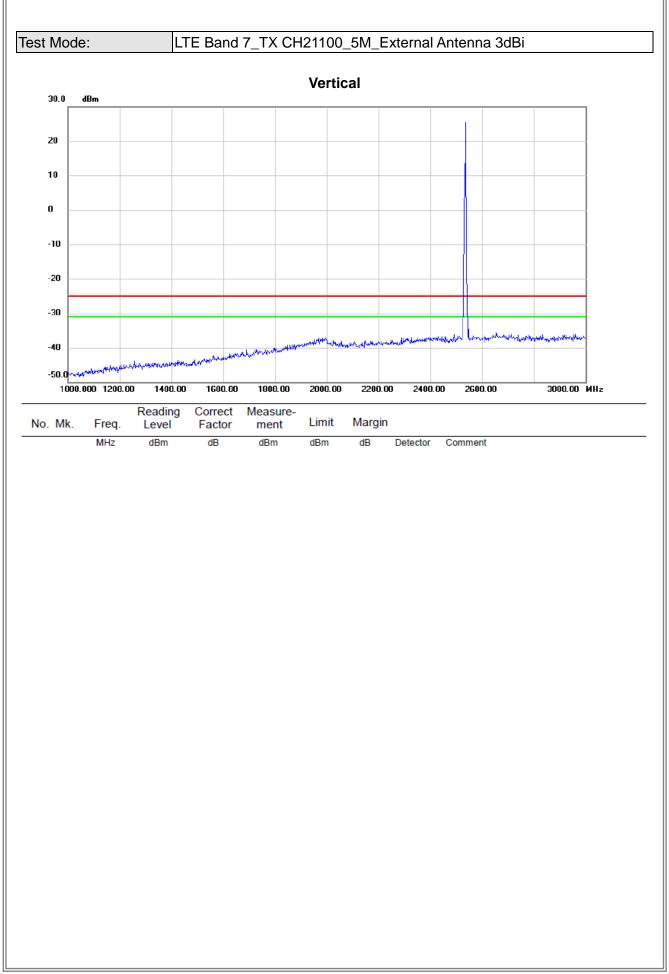
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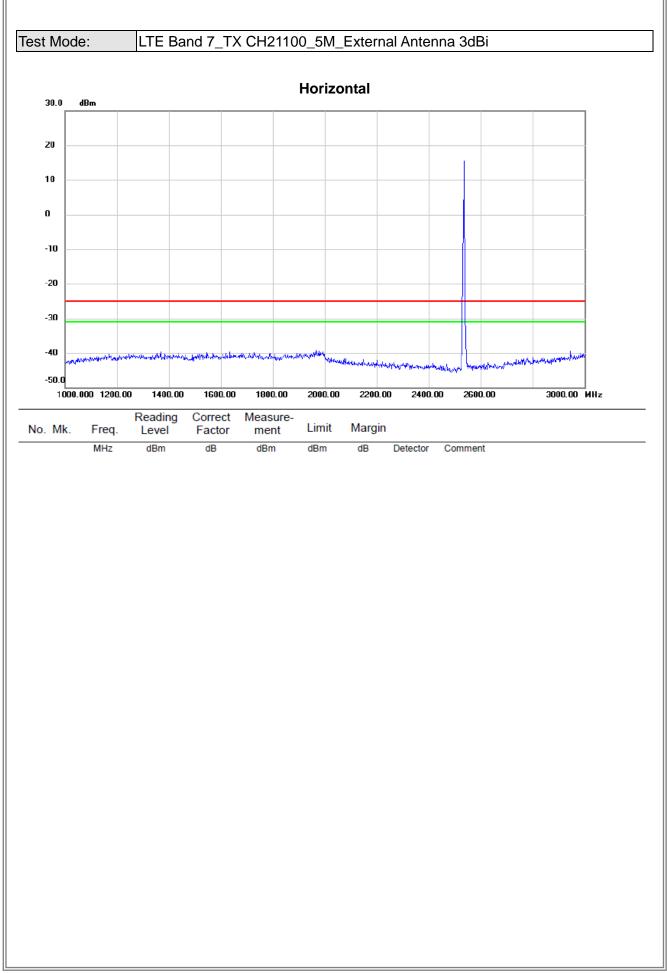




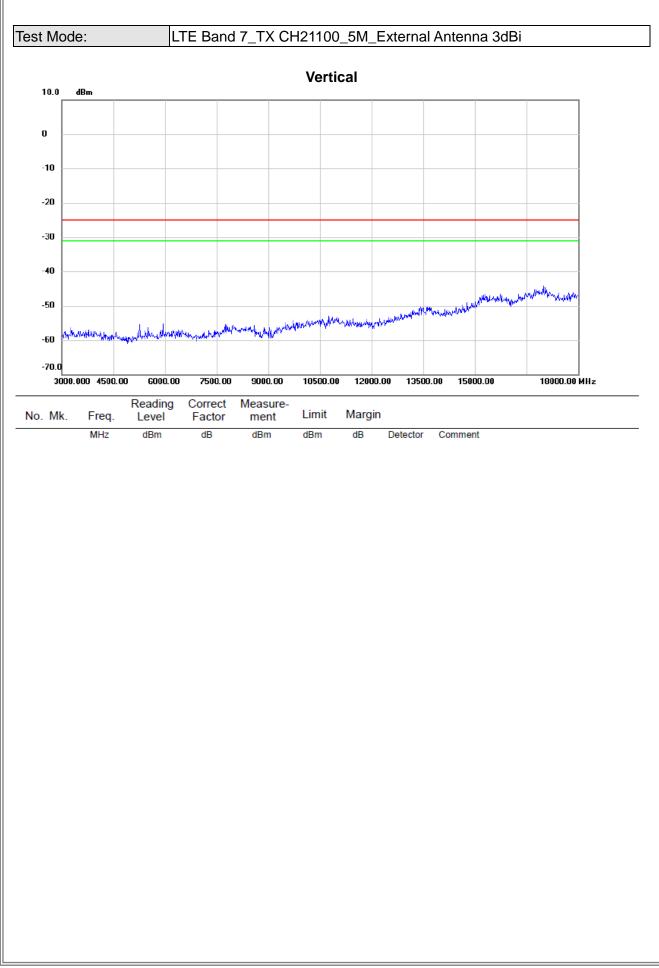






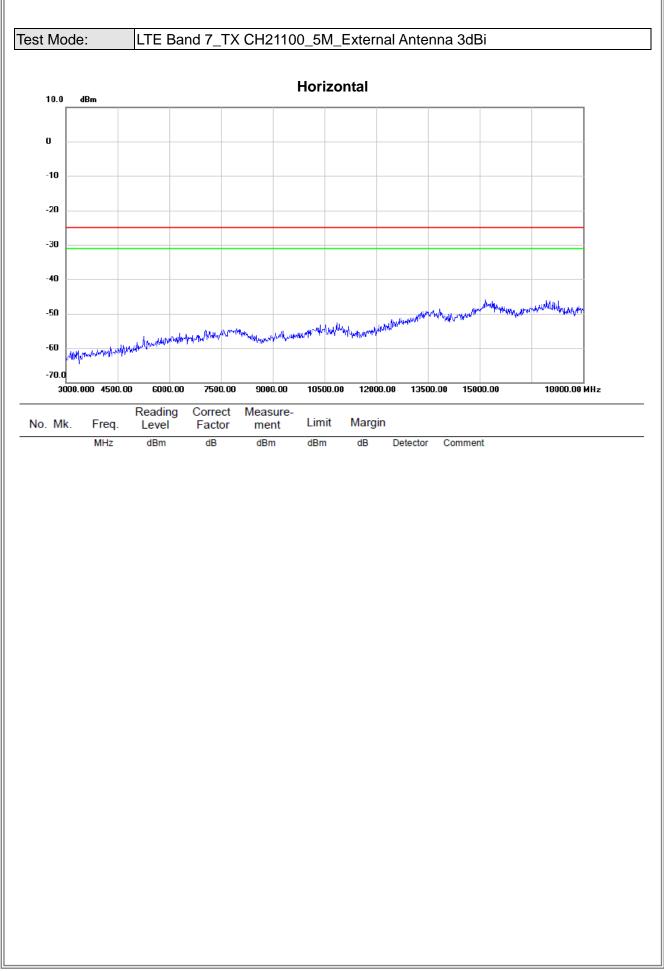




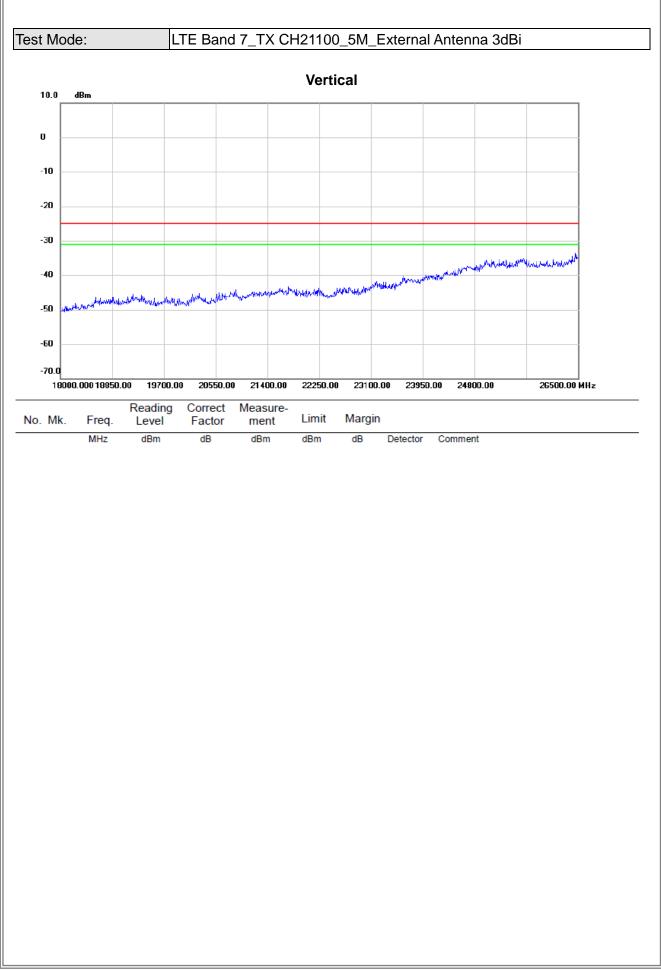






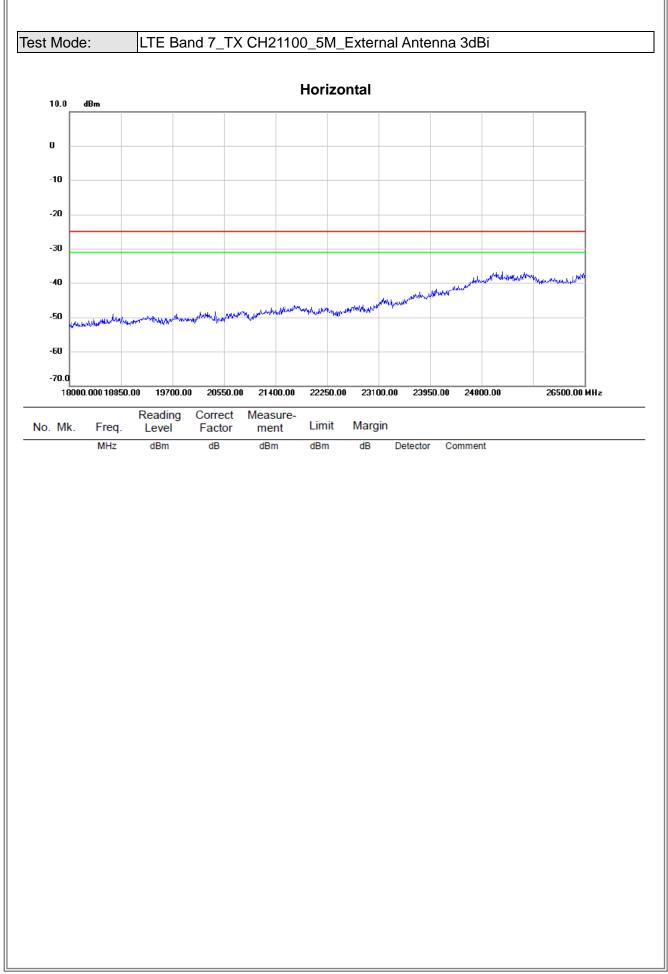






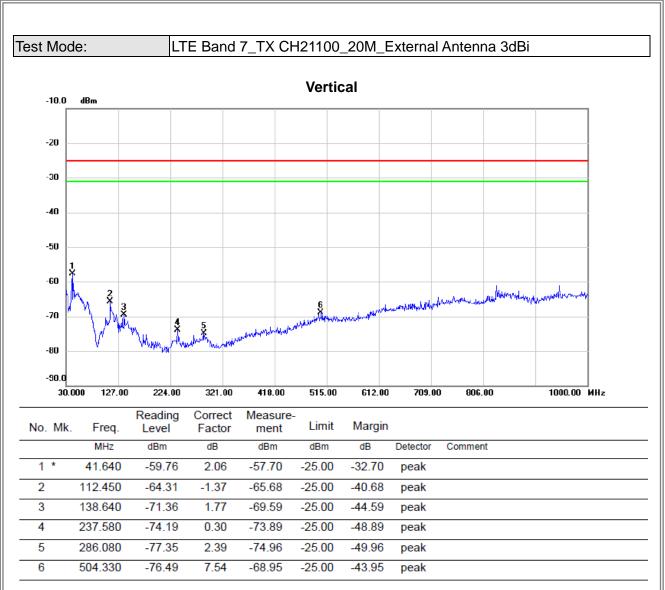






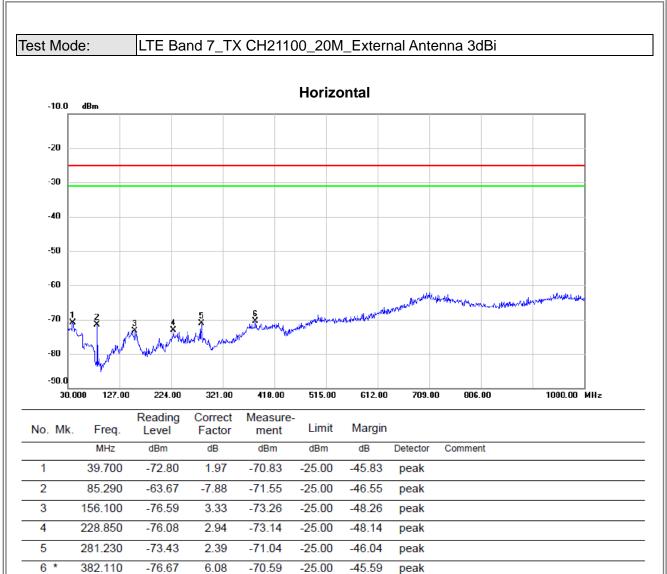
# **3**TL



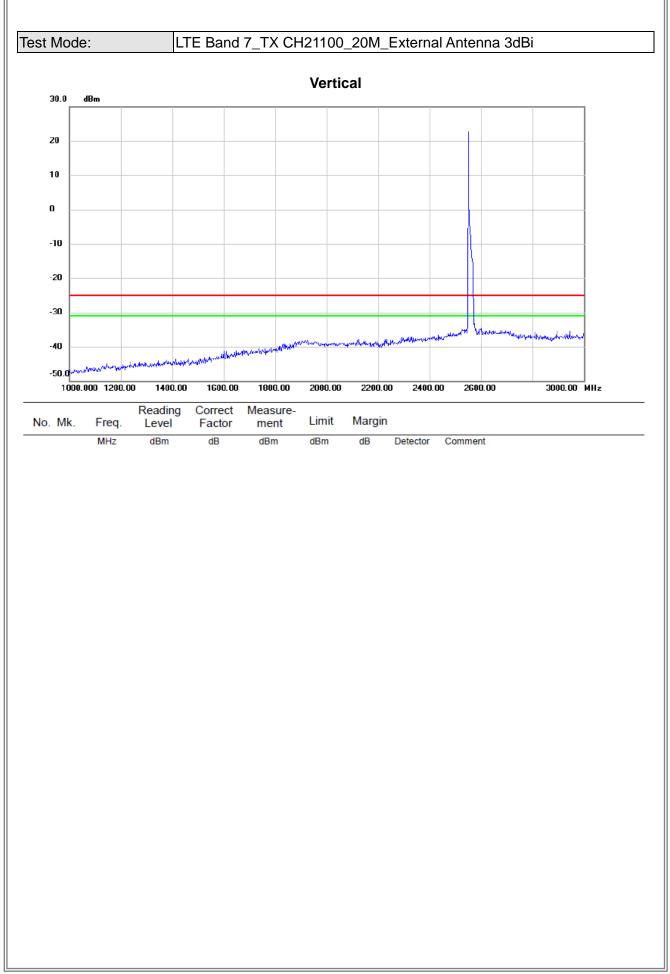






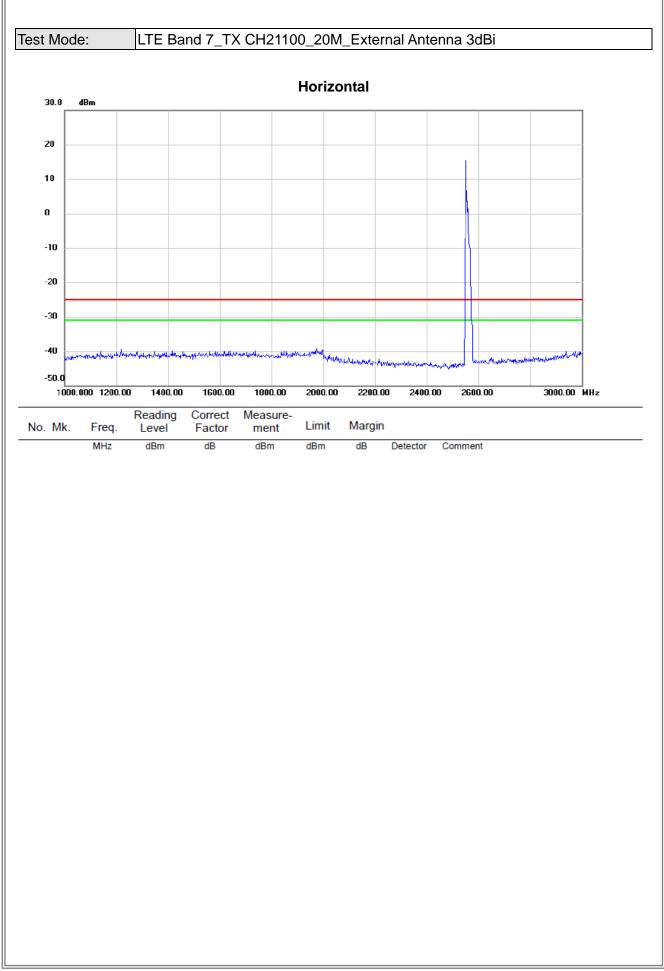




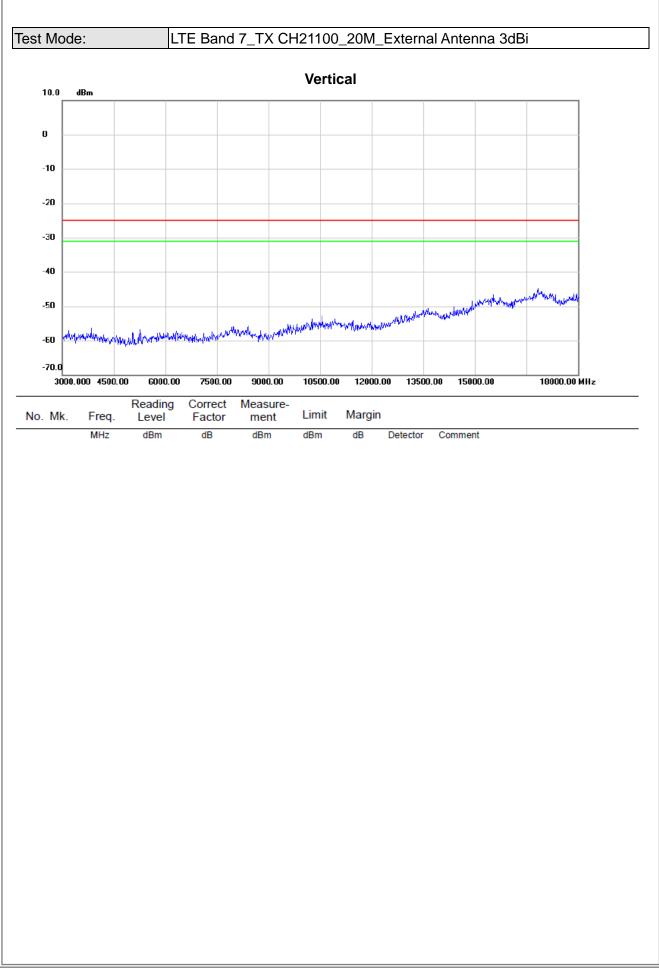






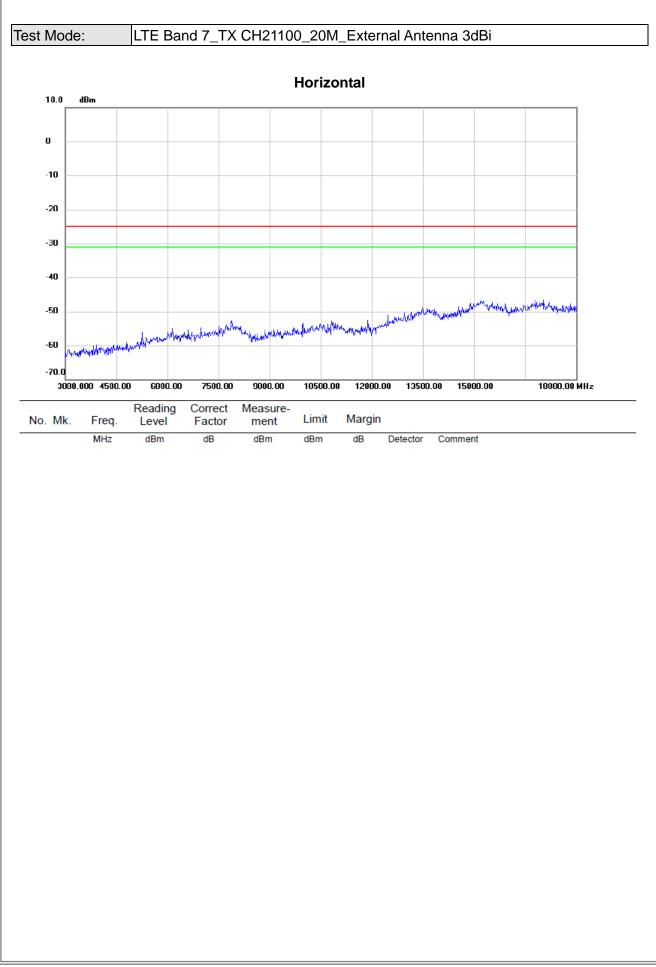




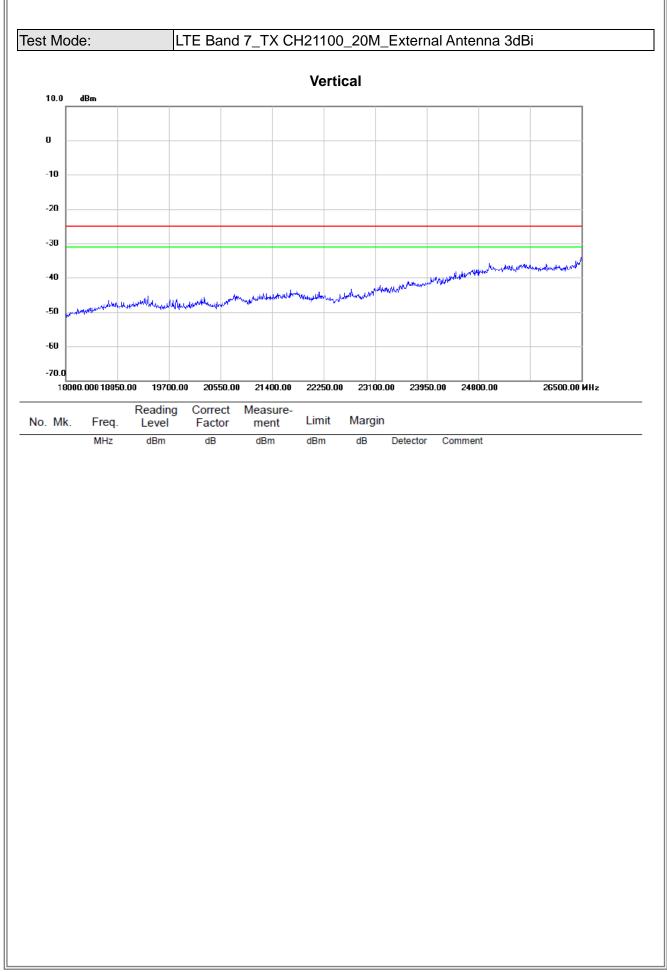






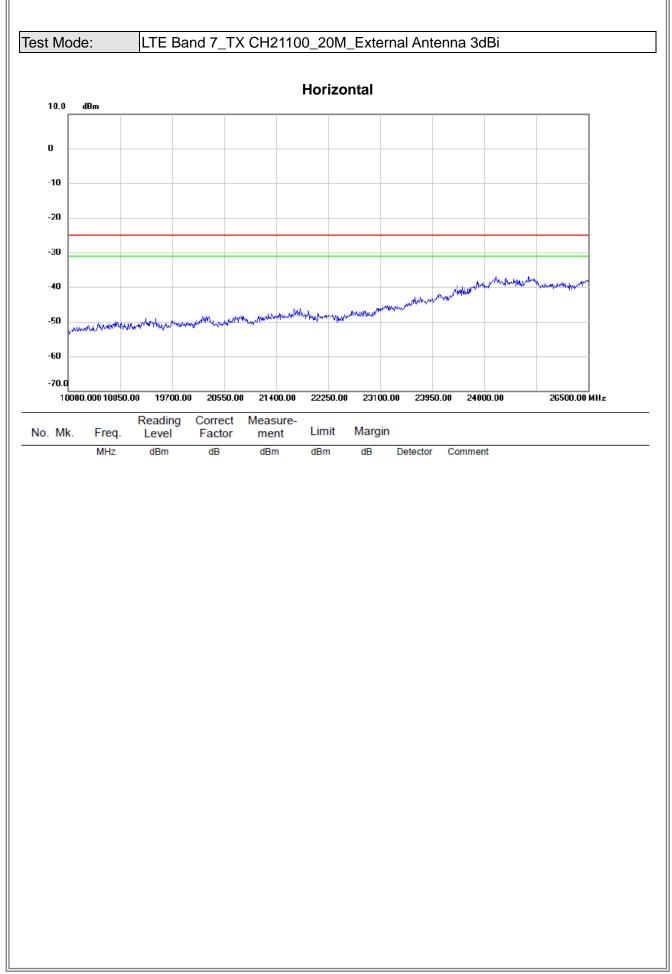




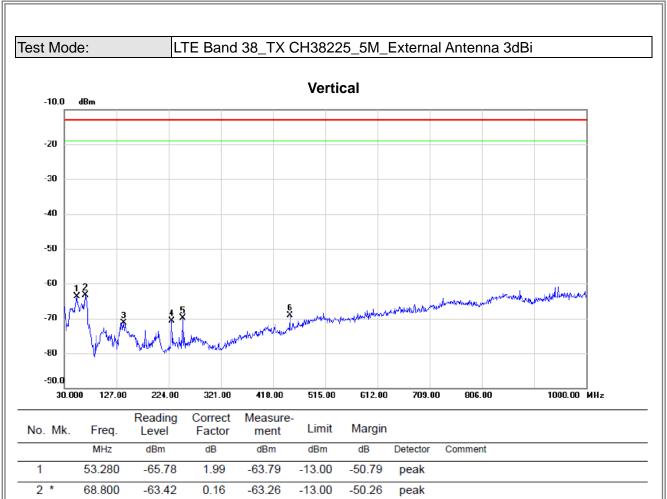












140.580

229.820

250.190

449.040

3

4

5

6

-73.51

-71.18

-70.04

-74.05

2.21

0.45

0.16

5.04

-71.30

-70.73

-69.88

-69.01

-13.00

-13.00

-13.00

-13.00

-58.30

-57.73

-56.88

-56.01

peak

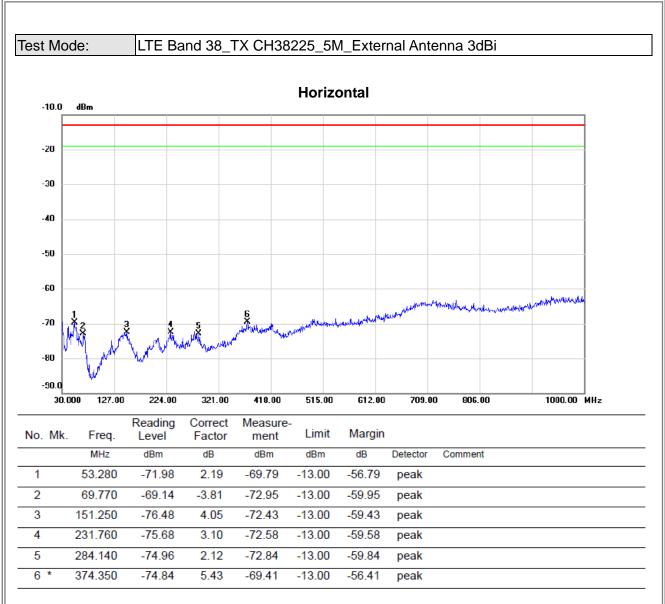
peak

peak

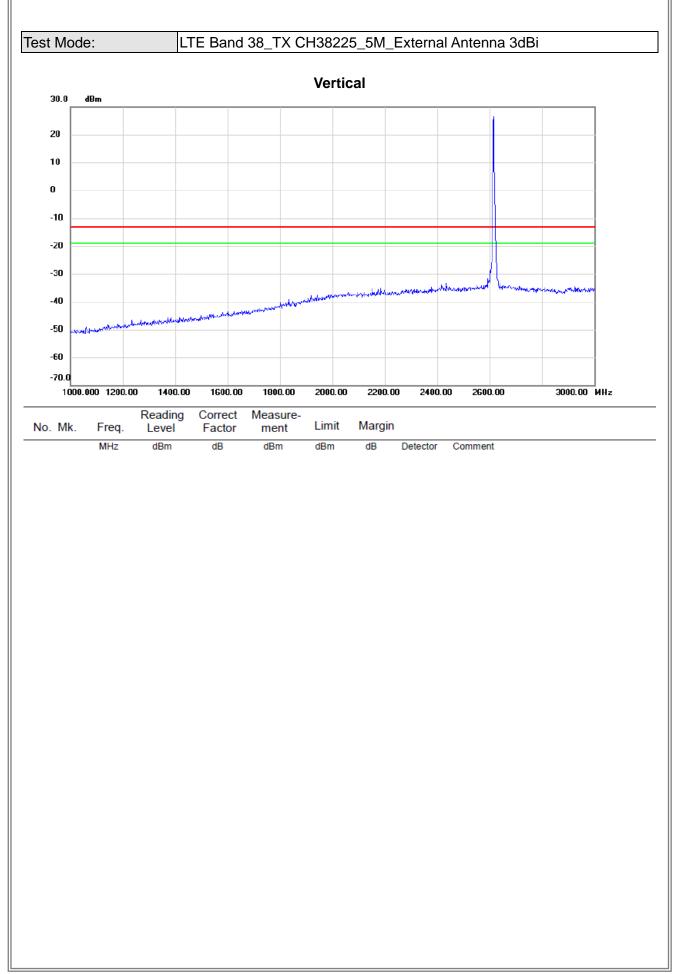
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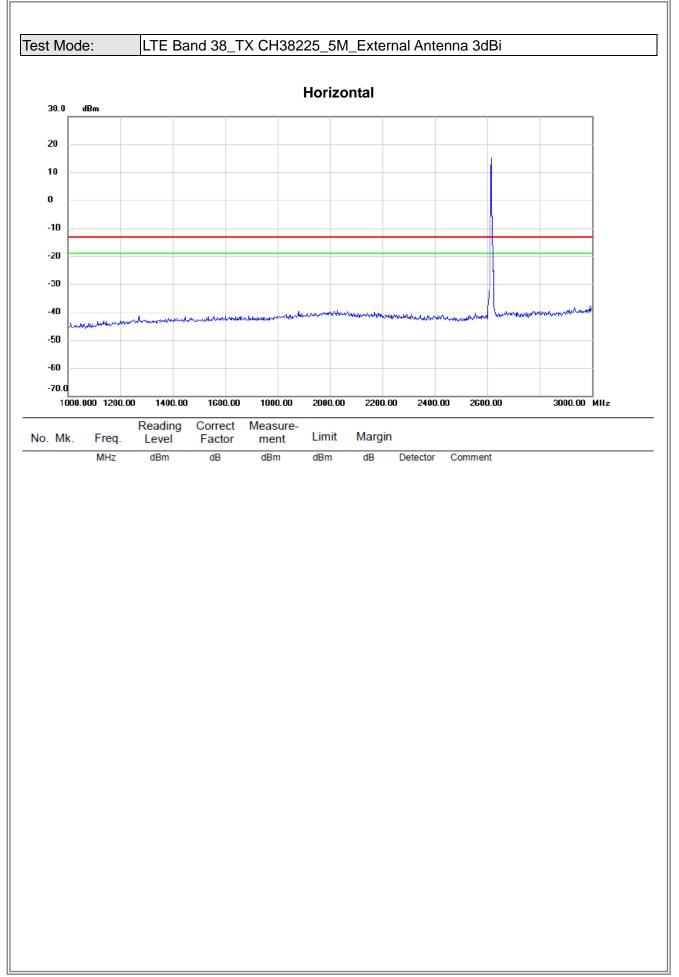




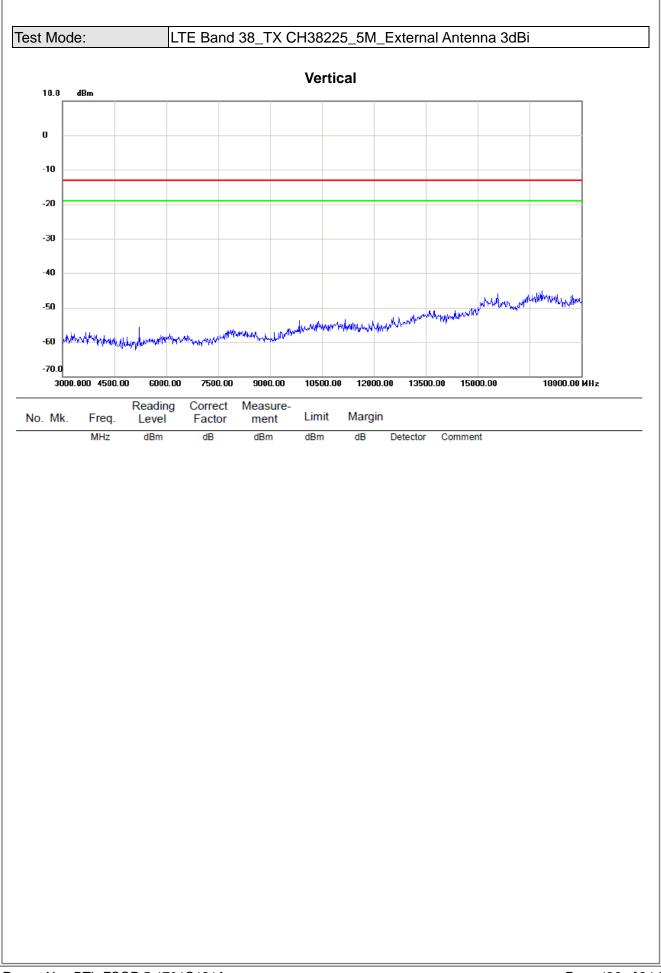






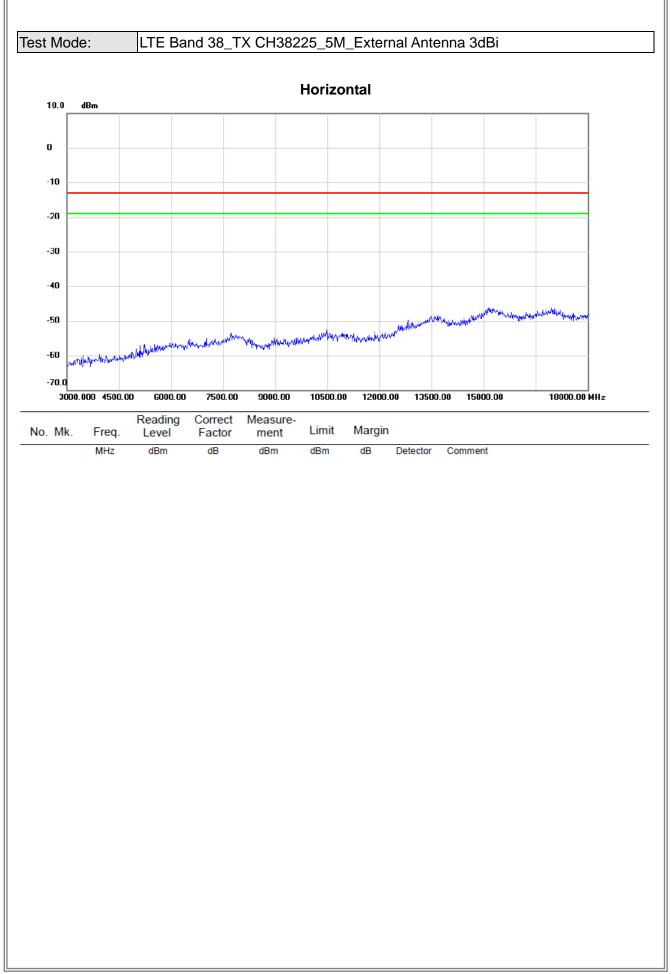




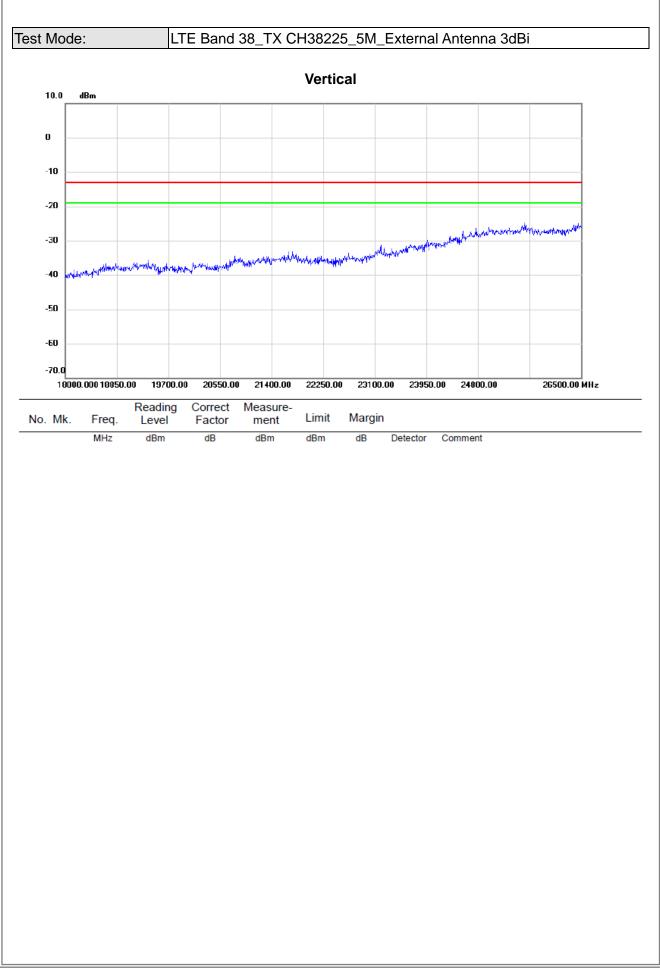






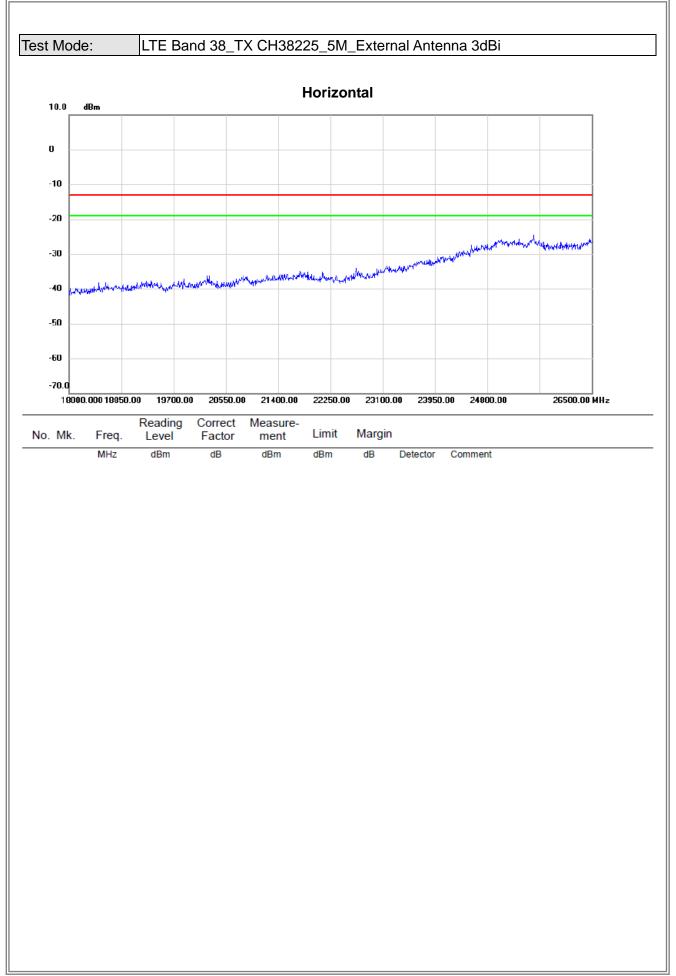




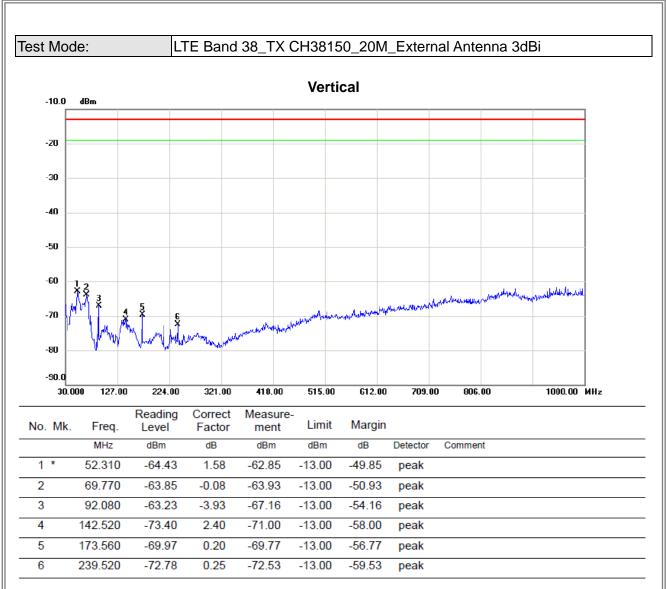






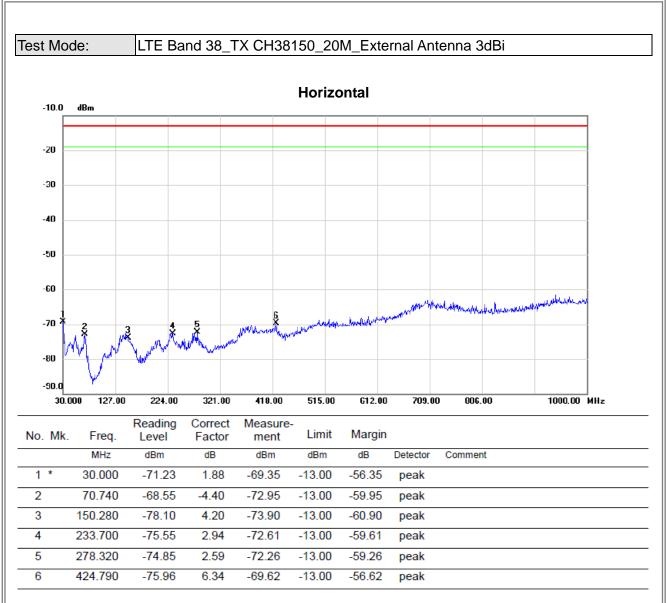




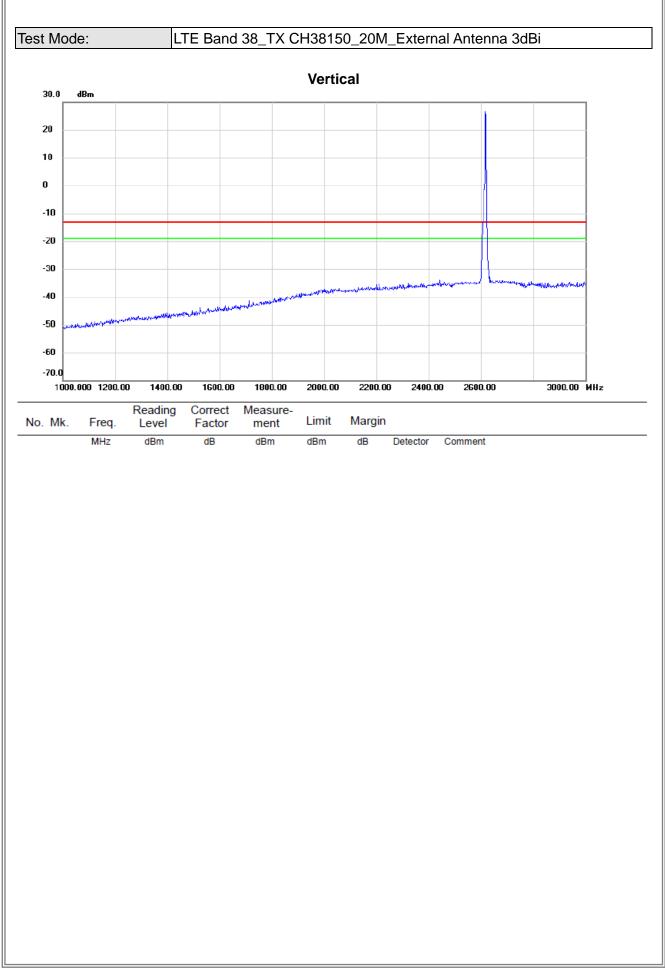






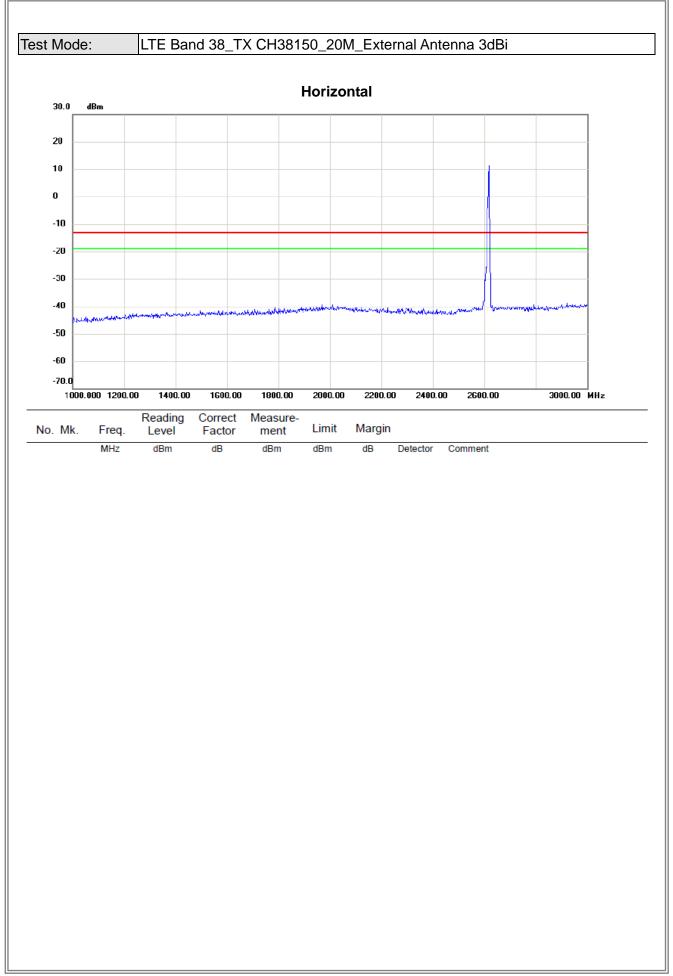




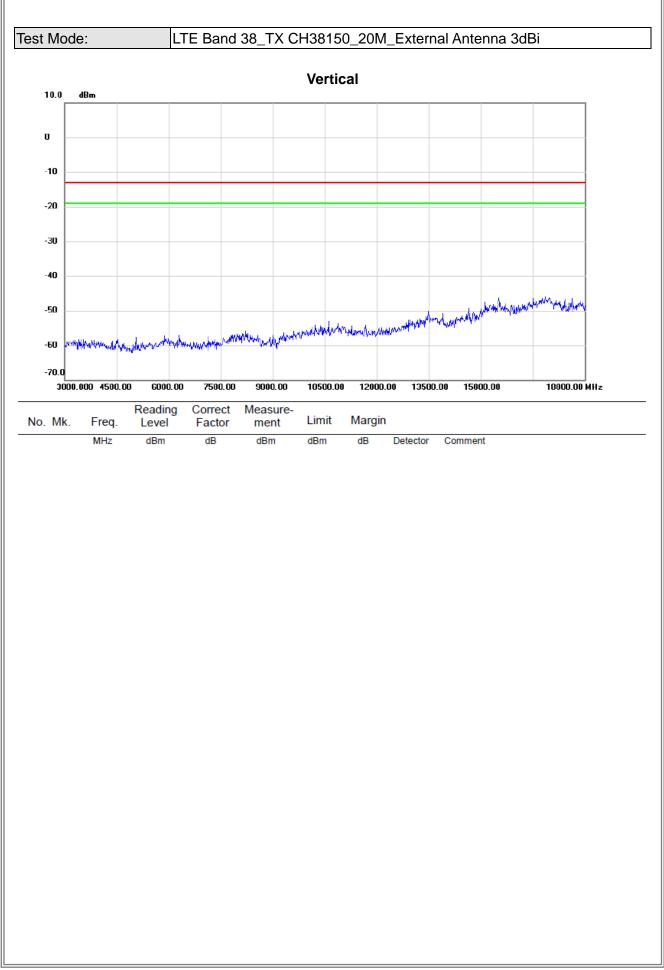






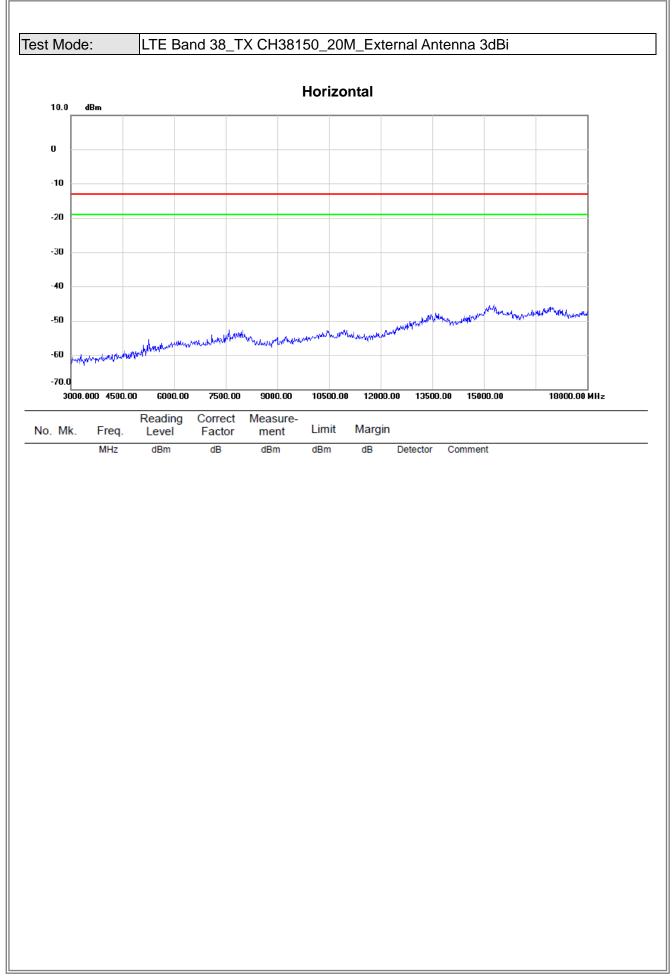




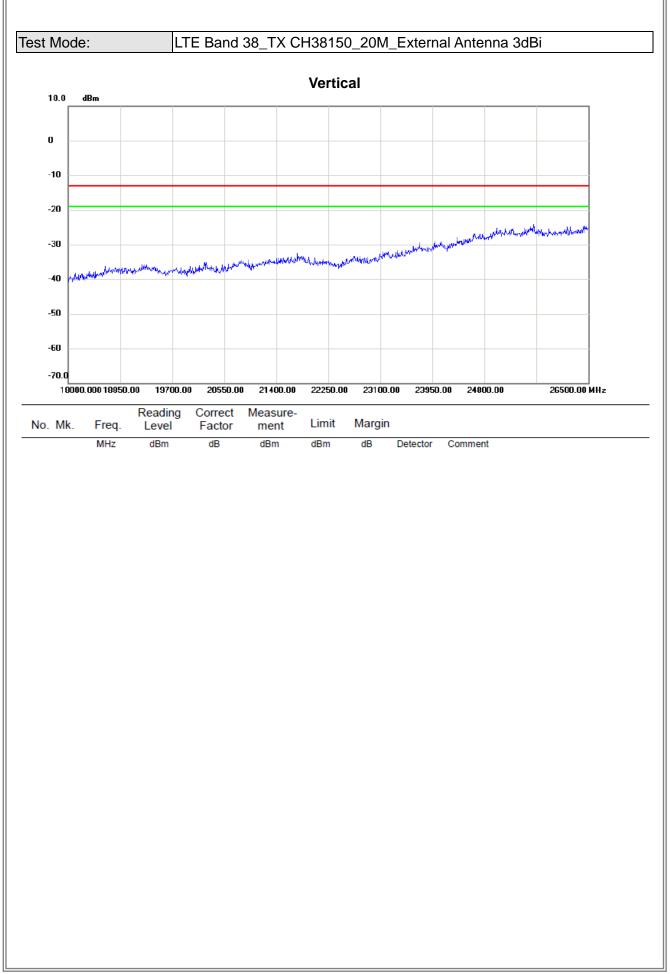






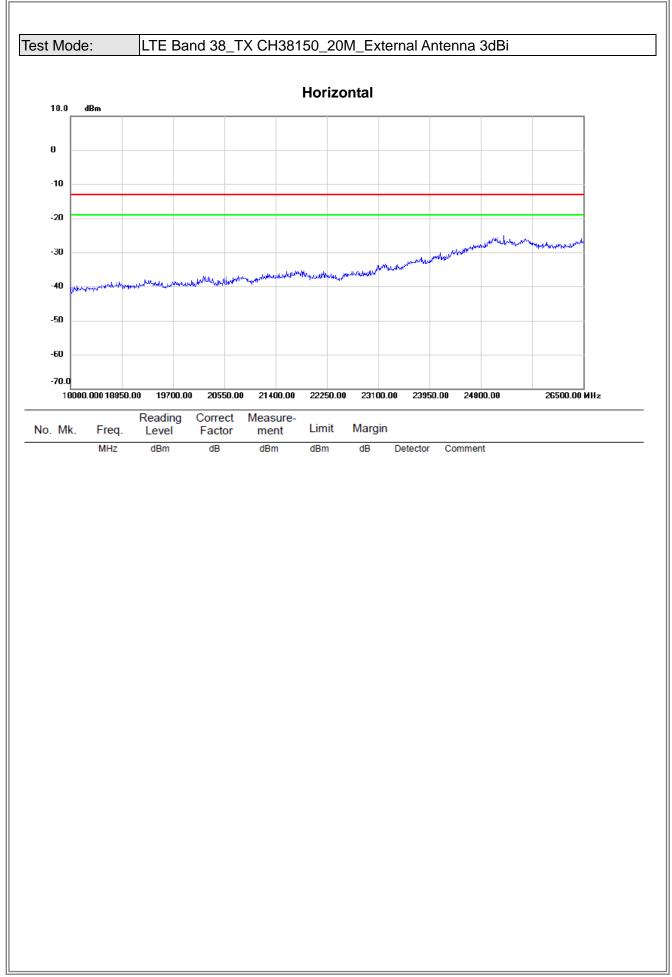












5

6

417.030

768.170

-72.52

-75.84

4.57

12.26

-67.95

-63.58

-25.00

-25.00

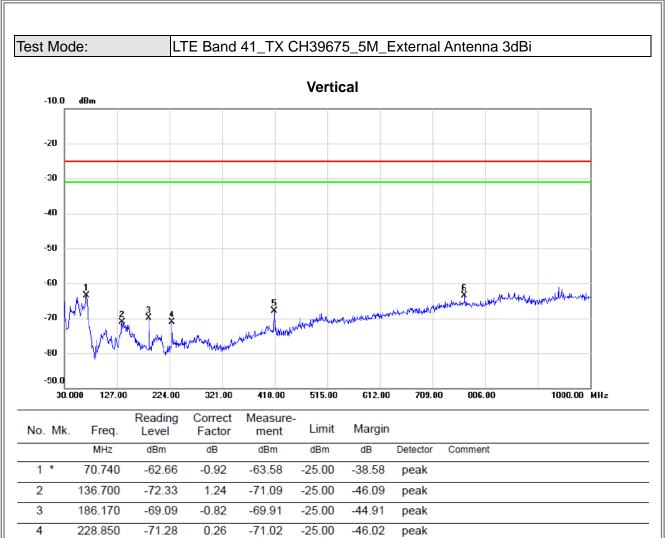
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-38.58

peak

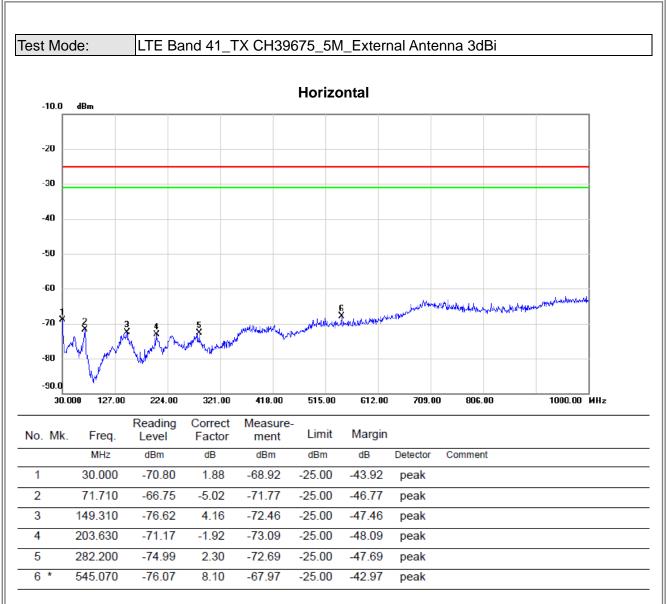
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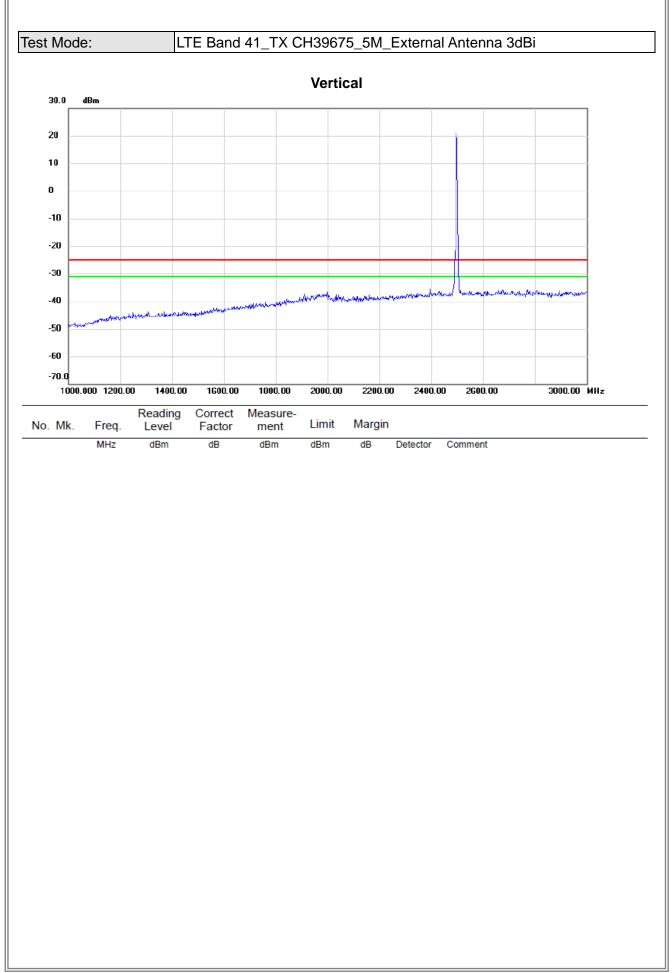






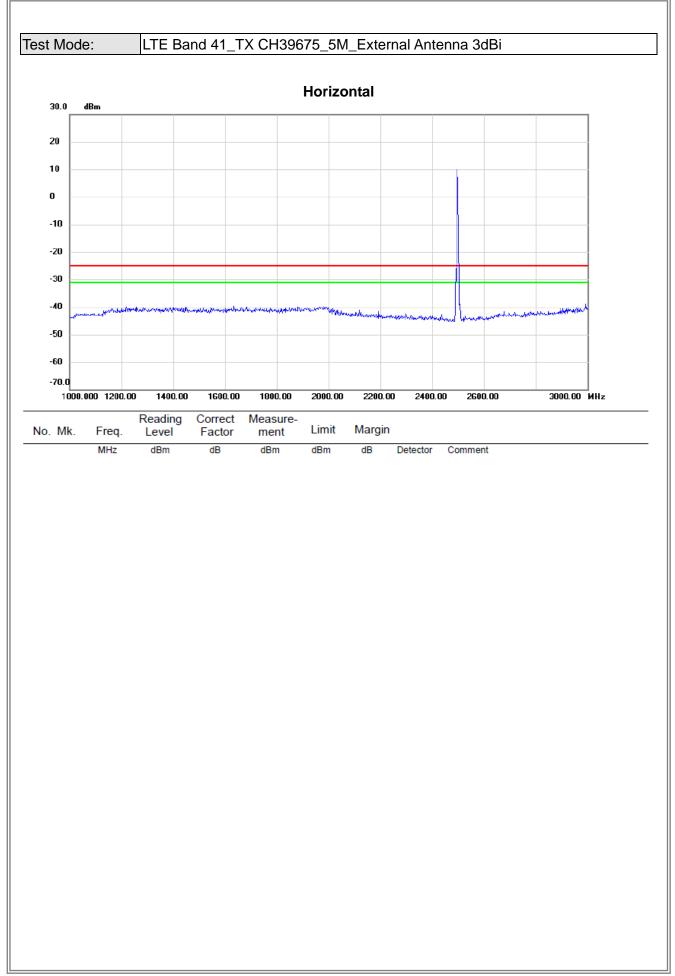




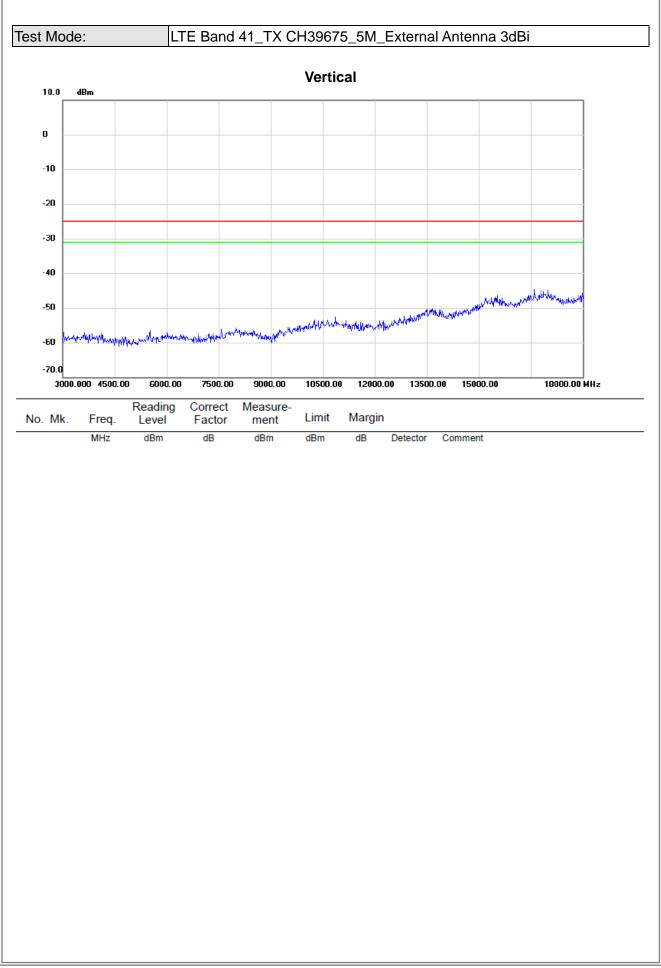






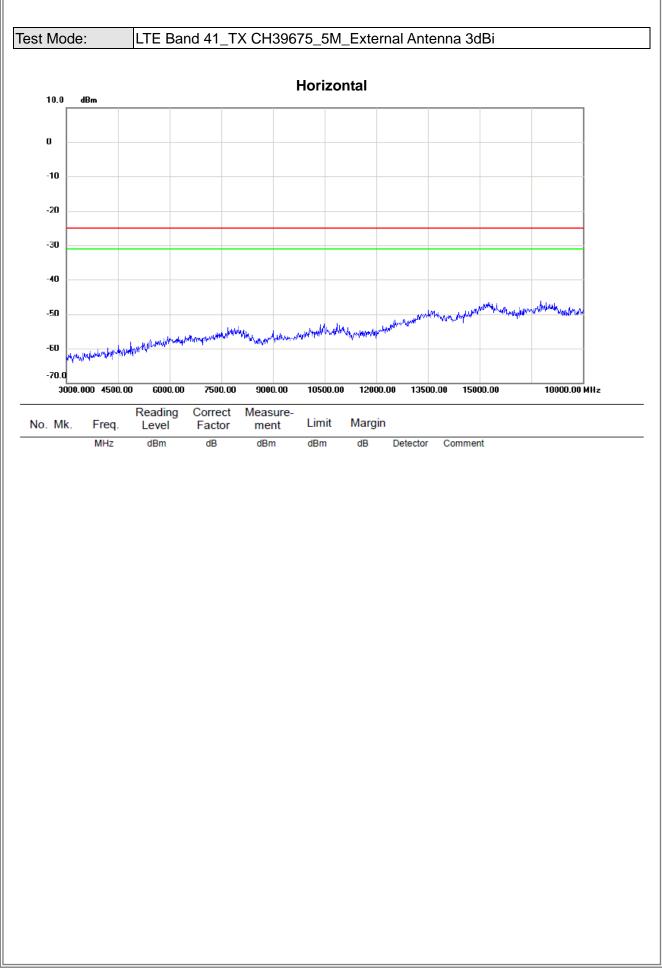




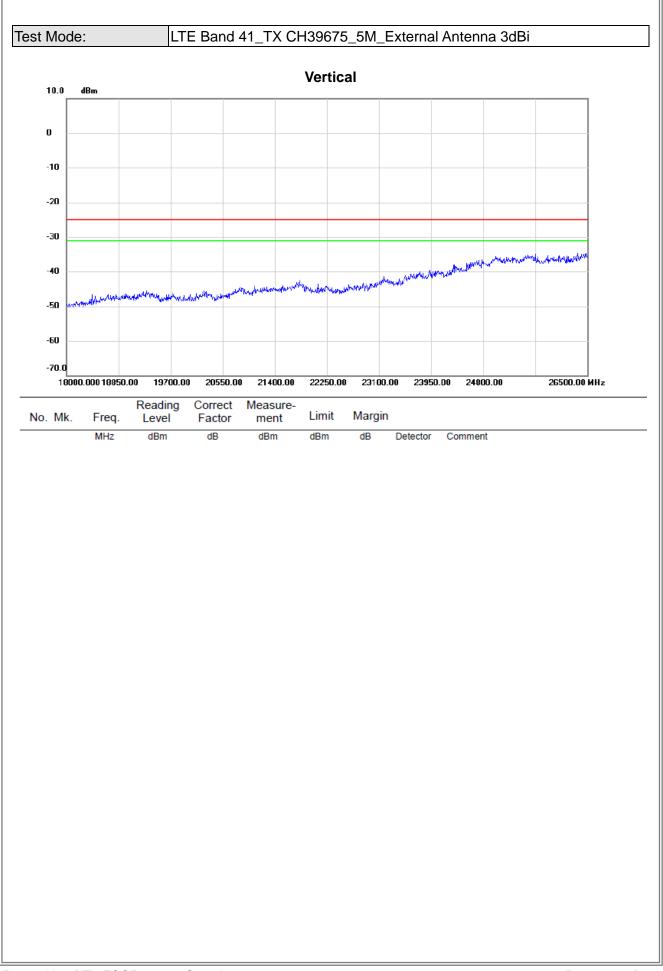






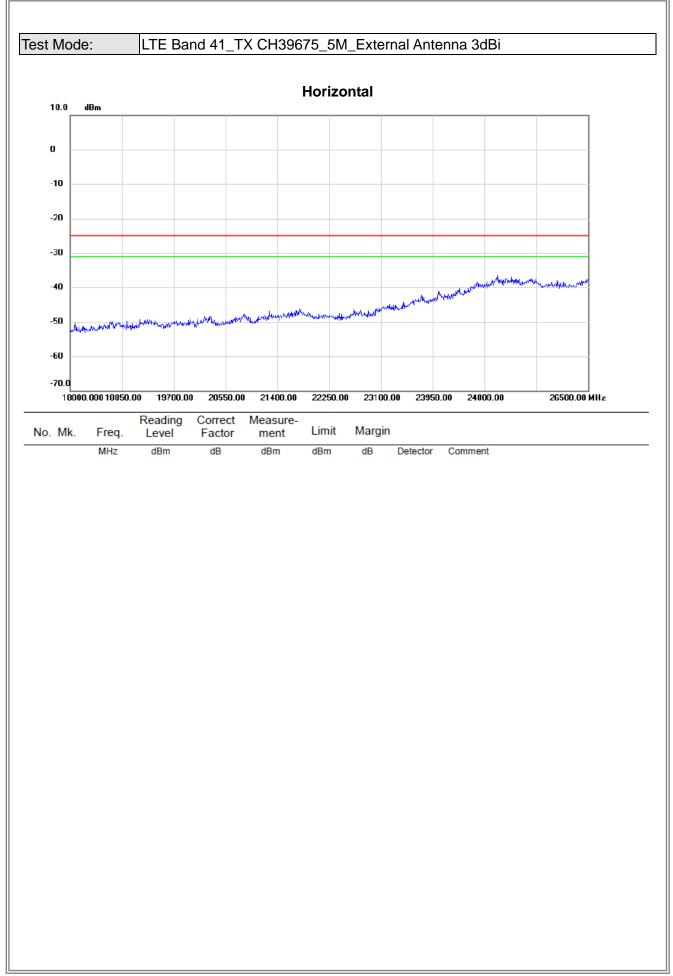












# **S**TL

5

6

504.330

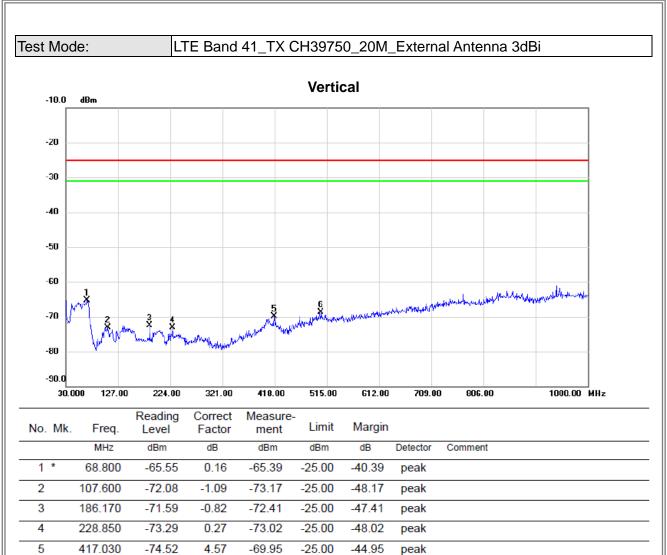
-76.27

7.54

-68.73

-25.00





-44.95

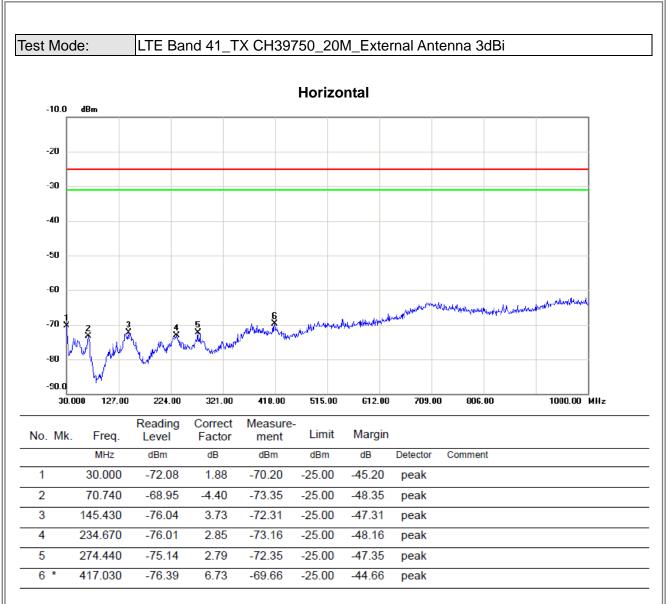
-43.73

peak

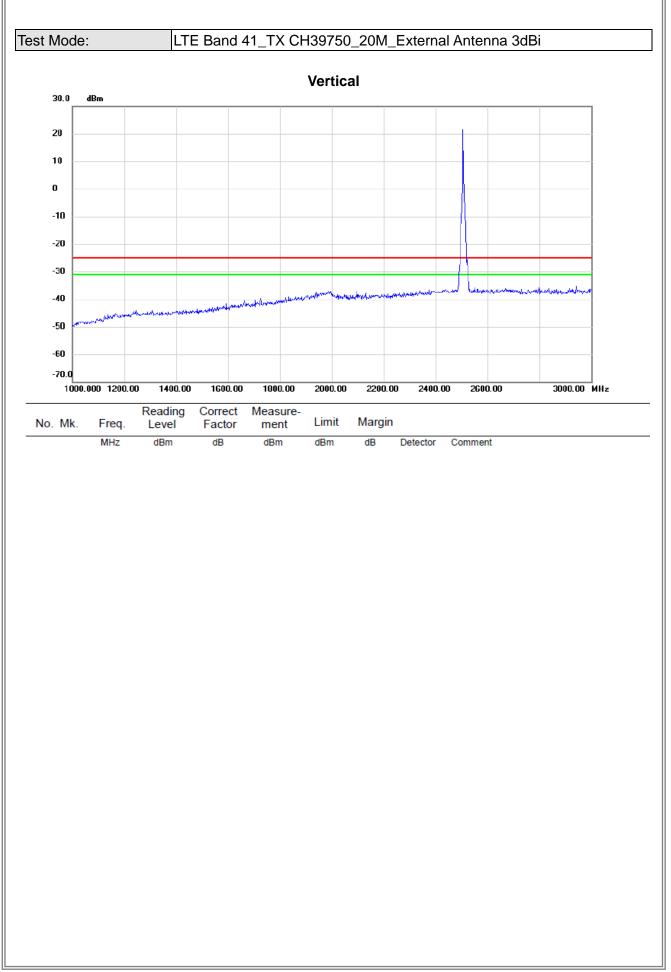
peak





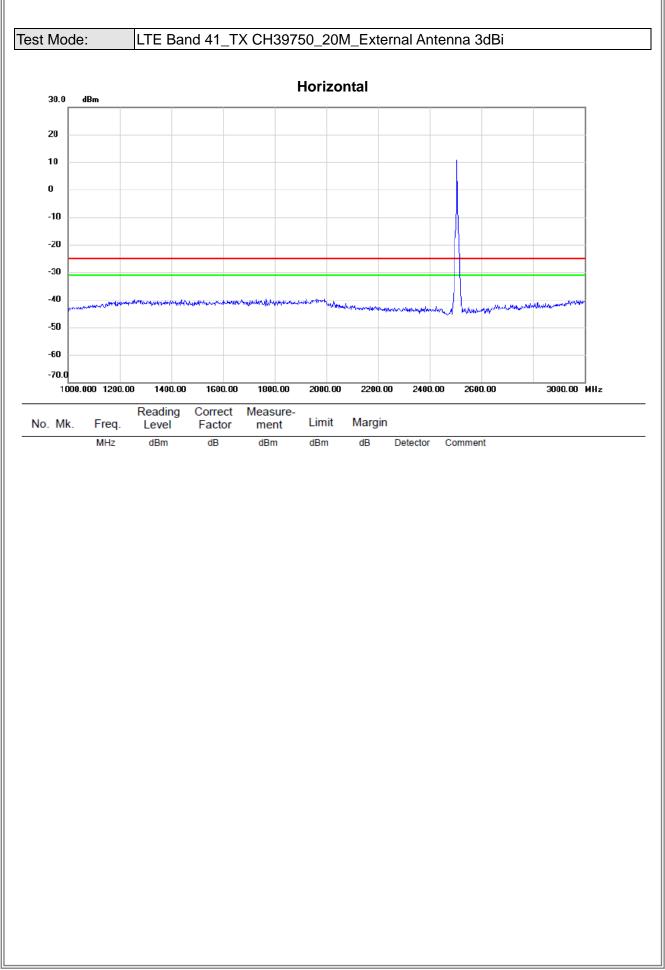




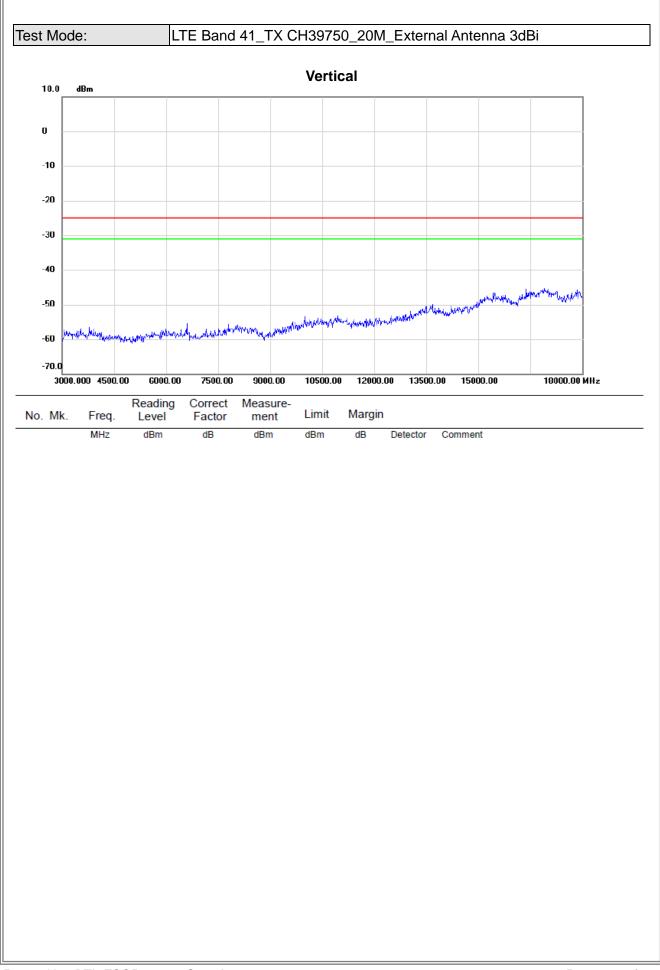






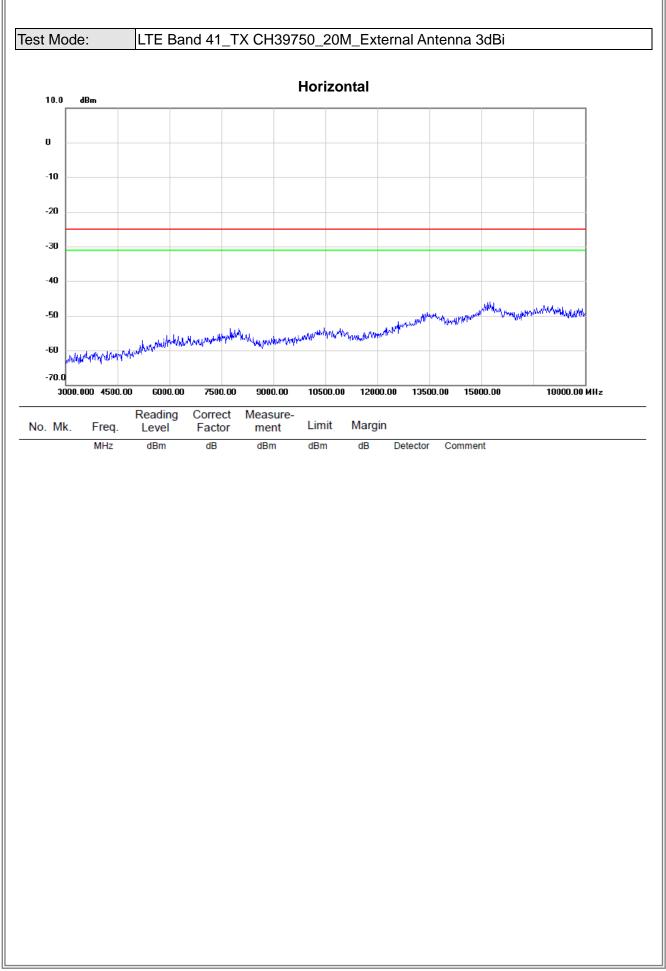




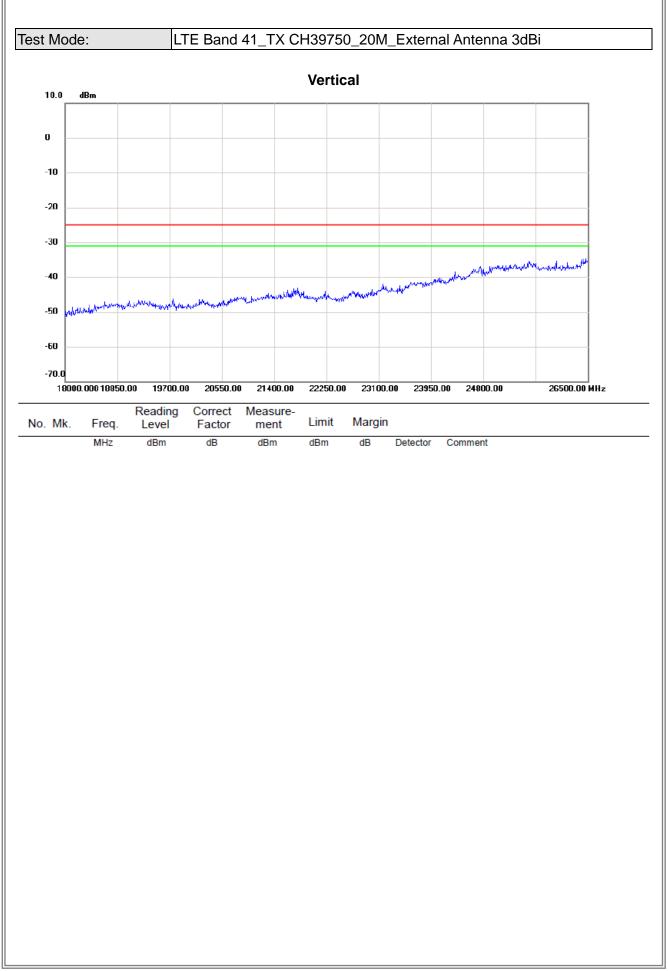






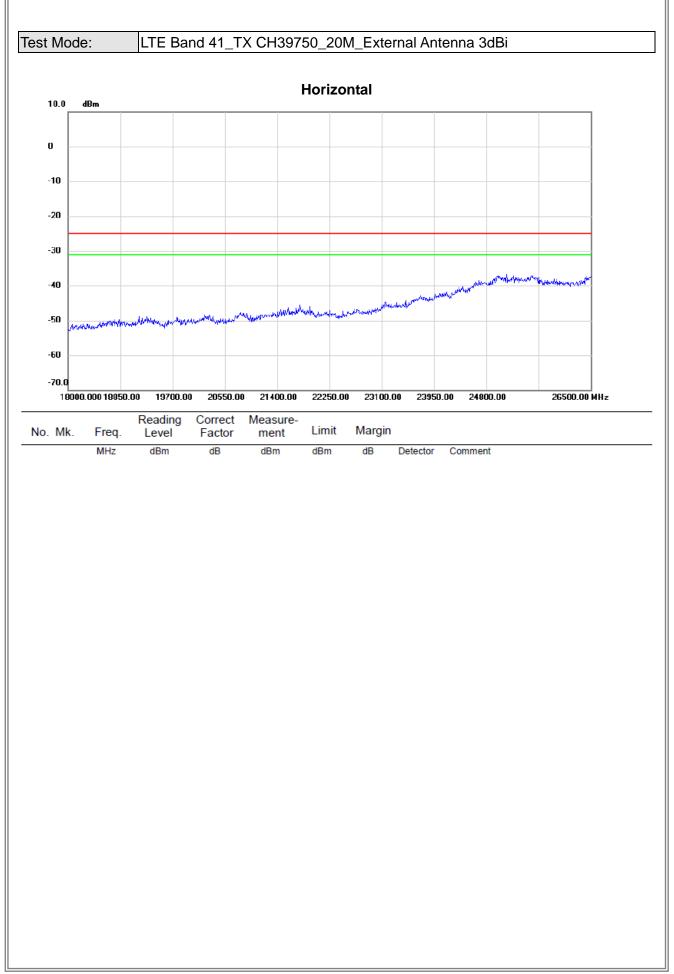






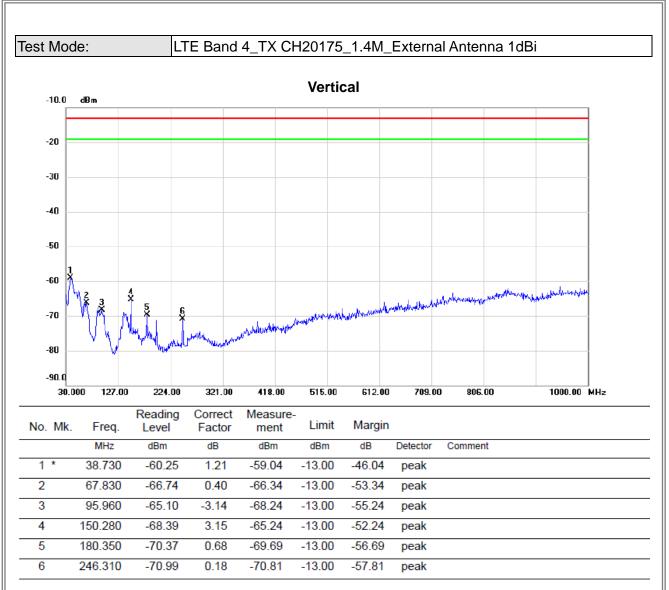






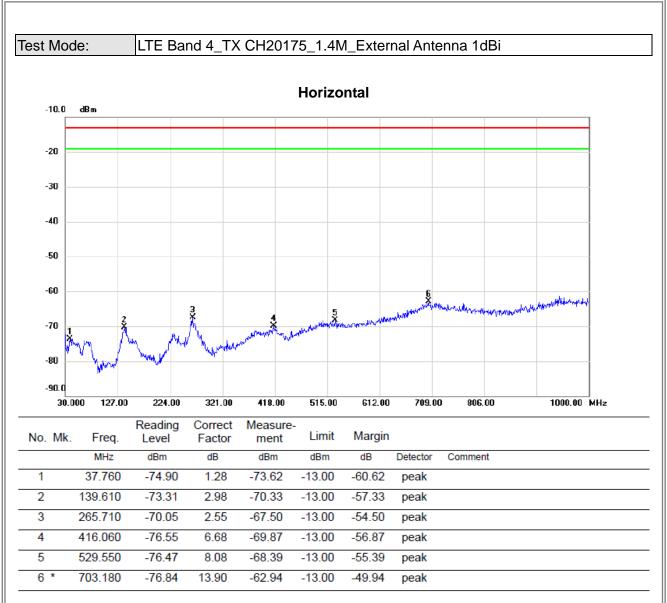
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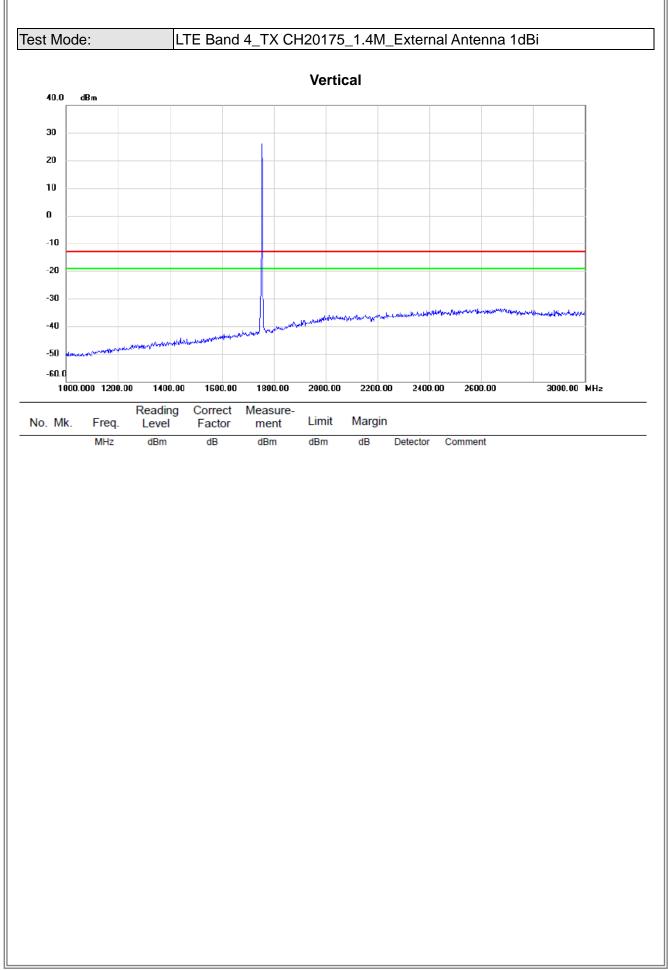






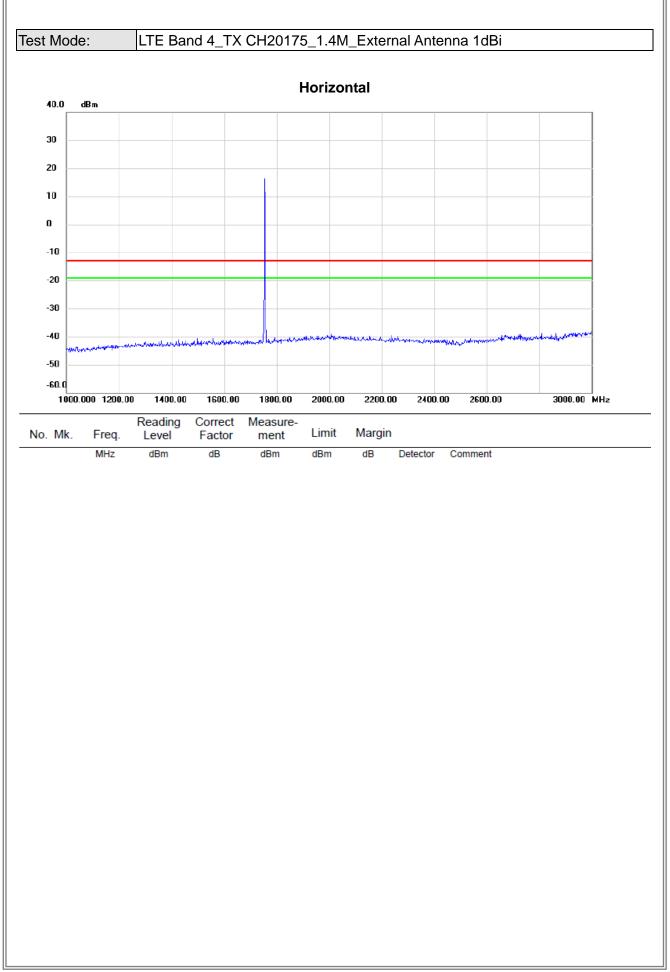




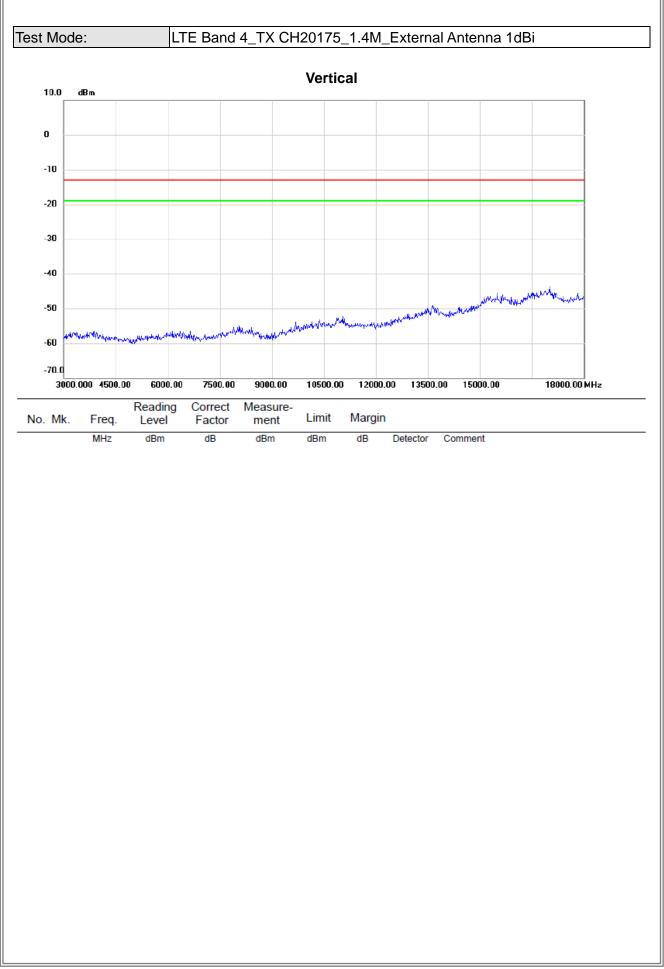






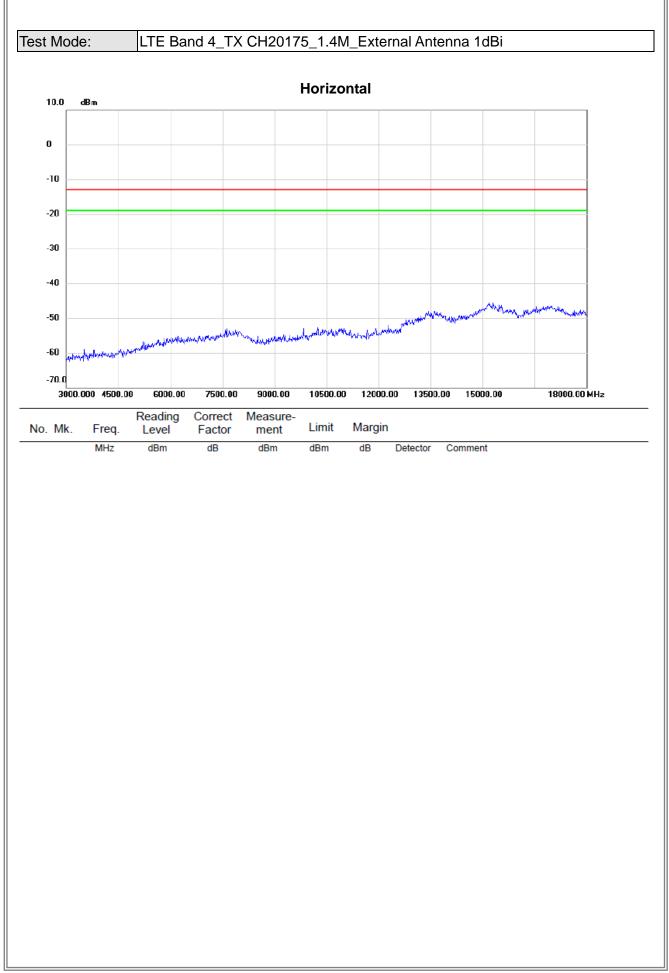




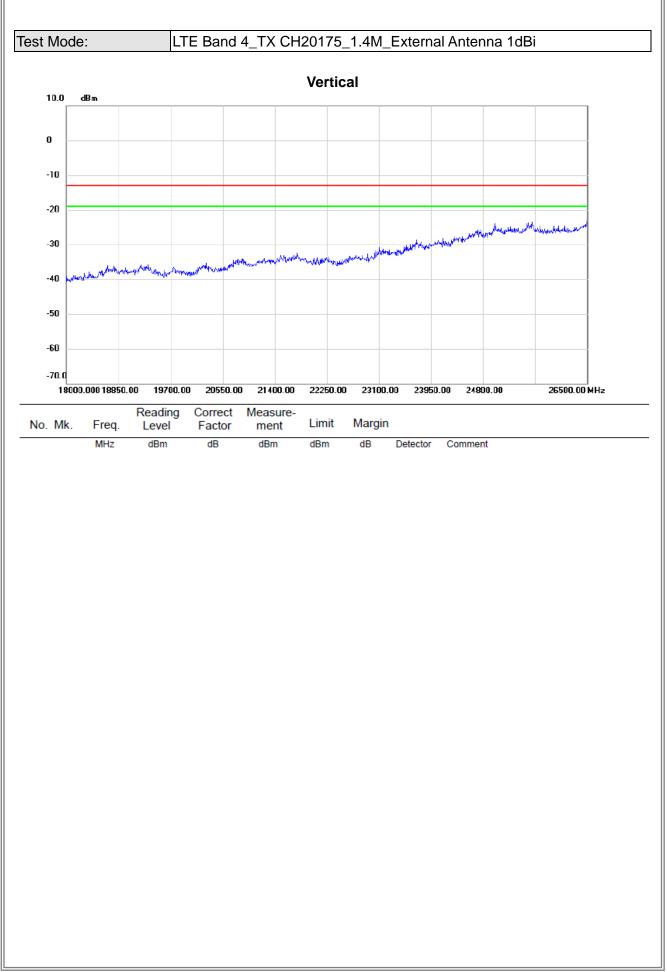






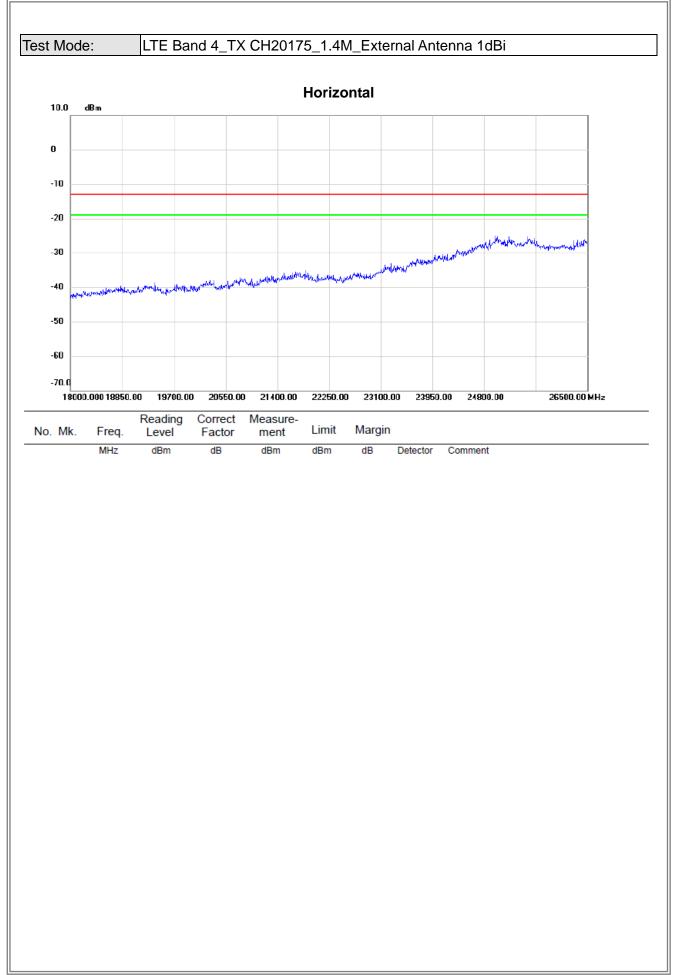




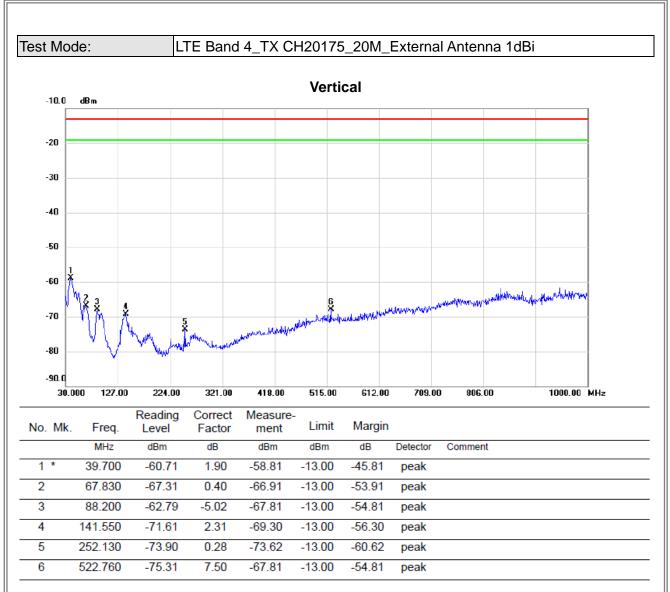






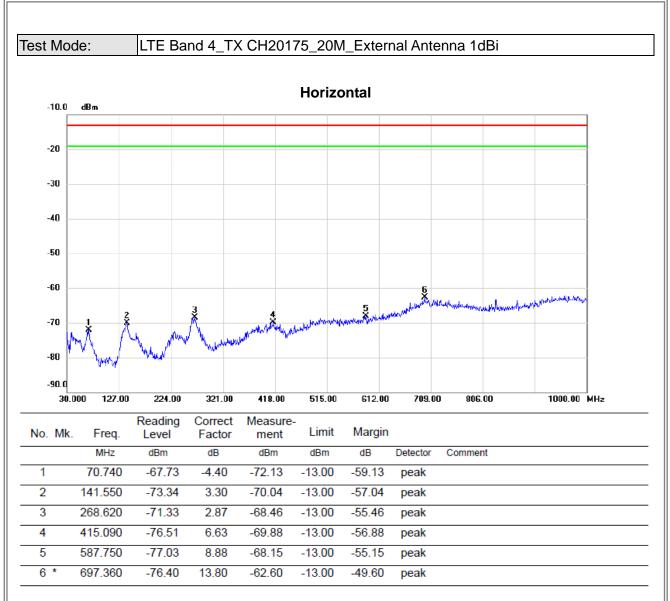




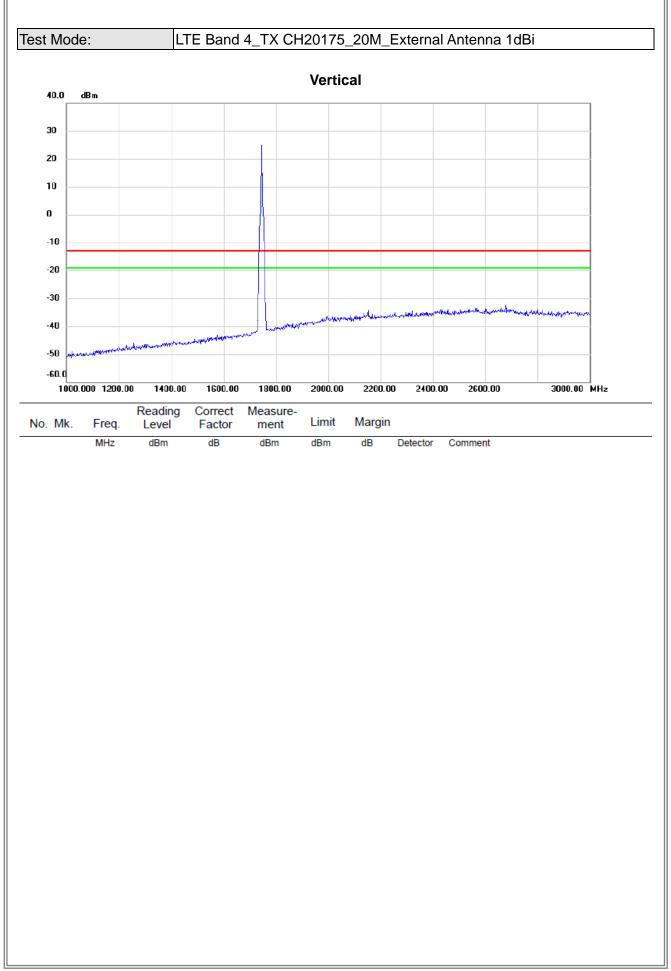






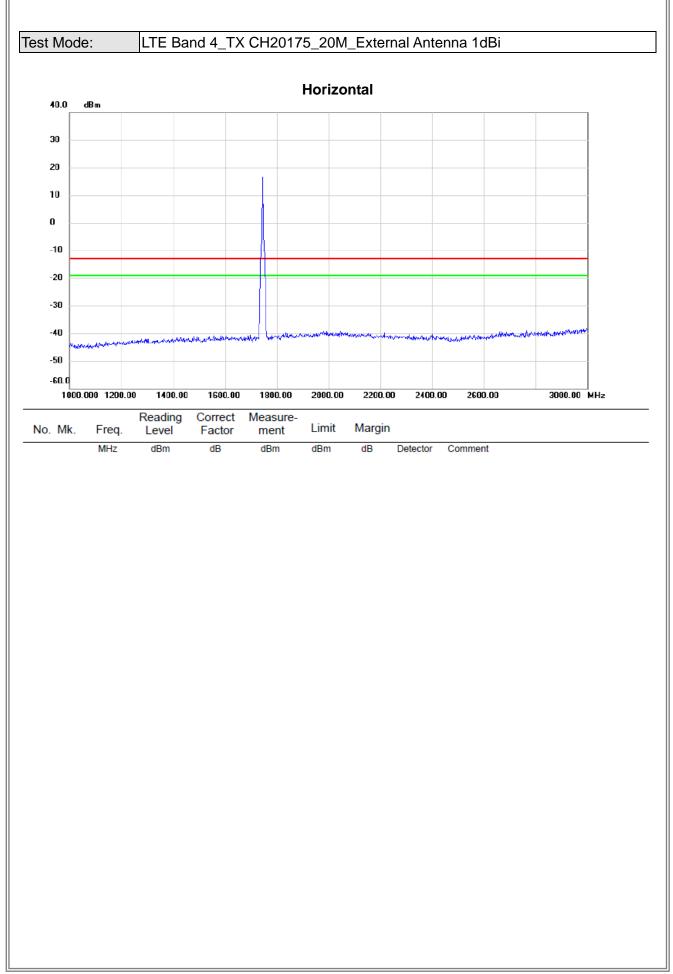




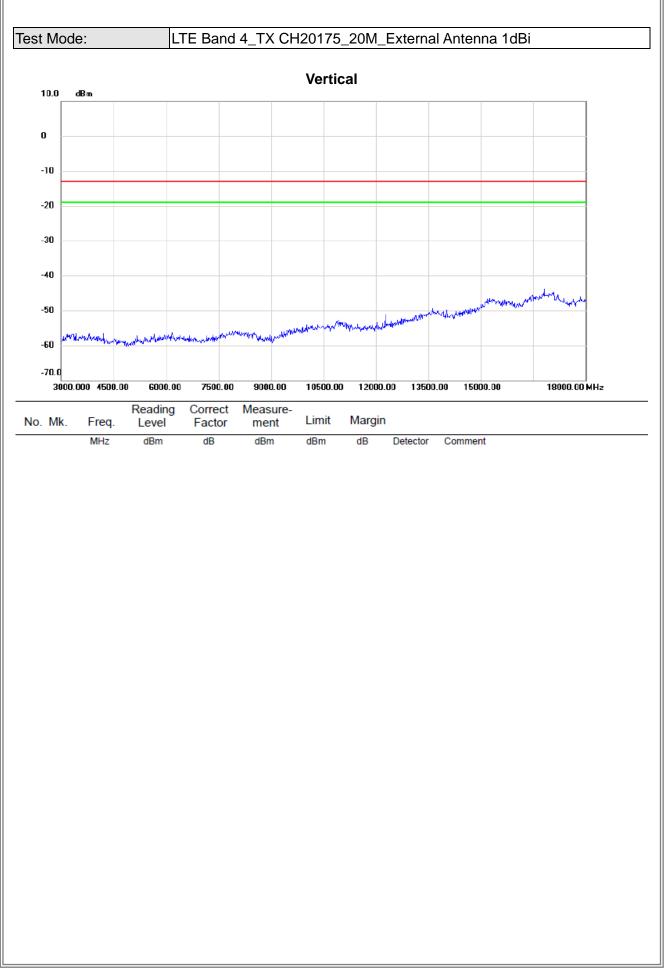






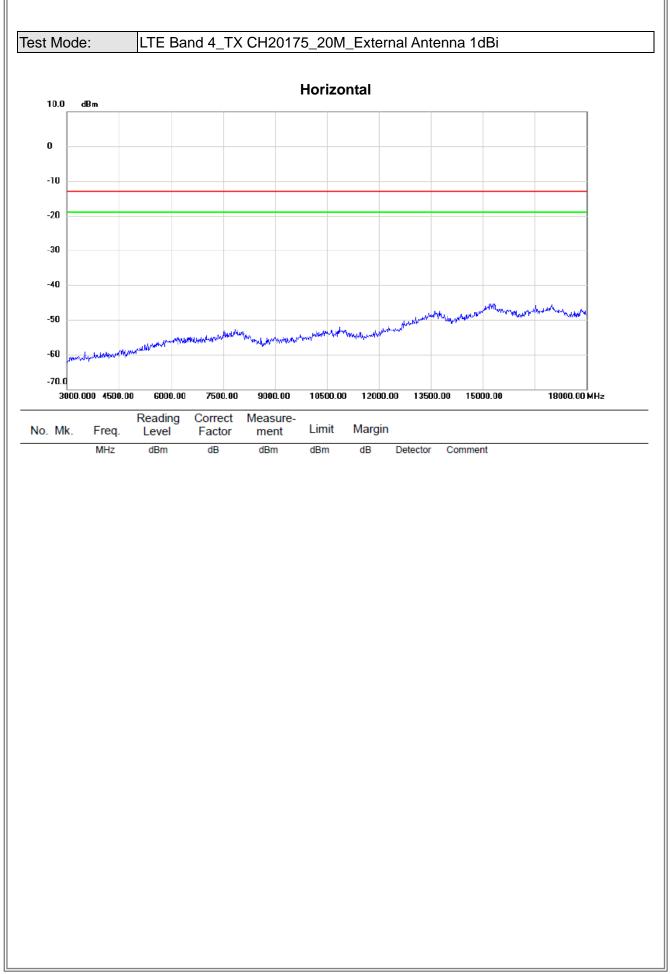




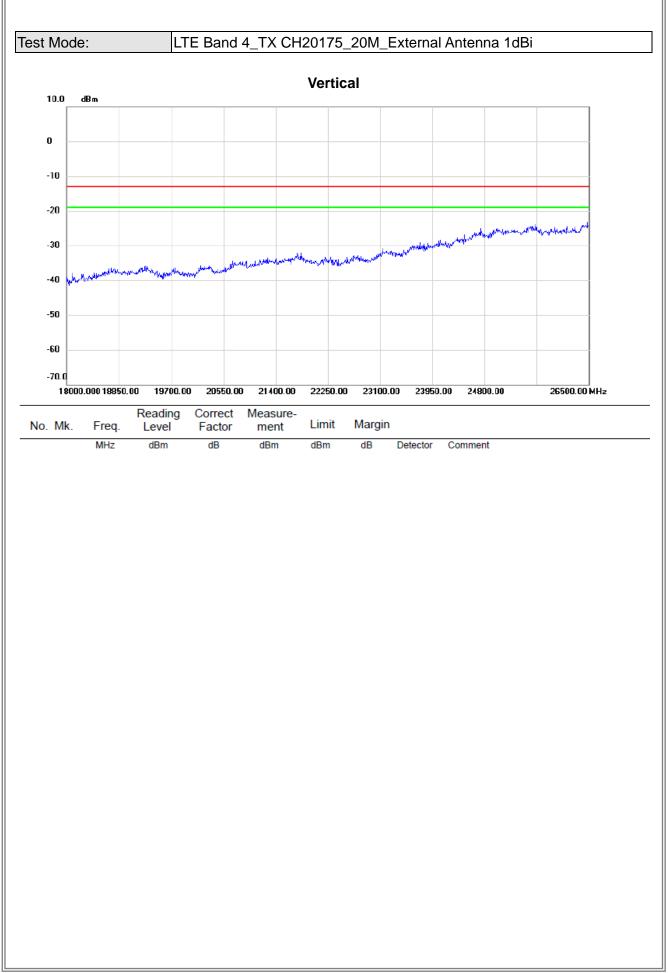






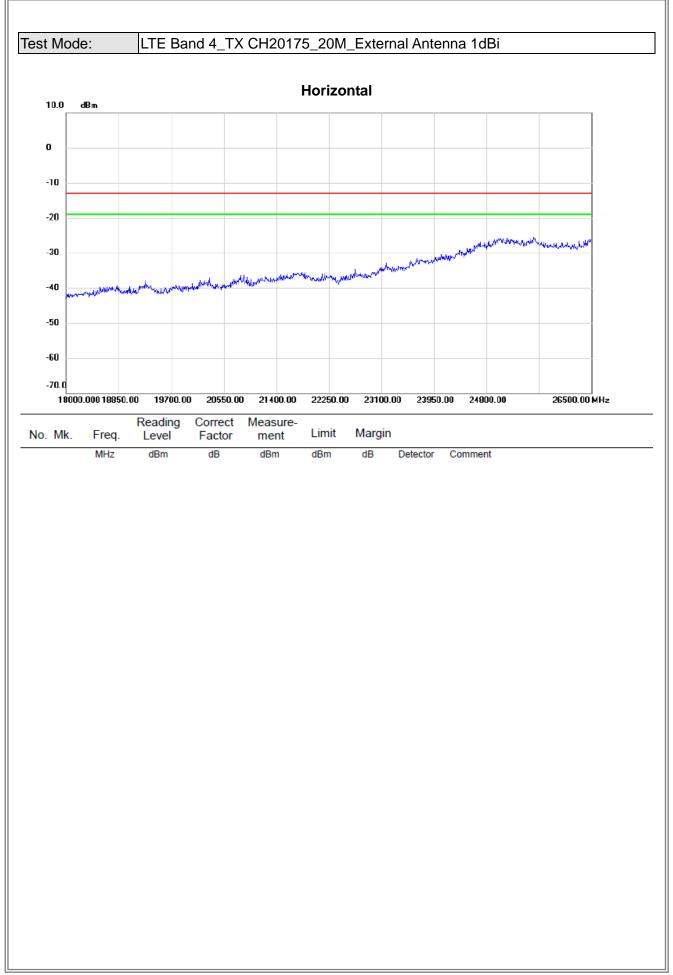




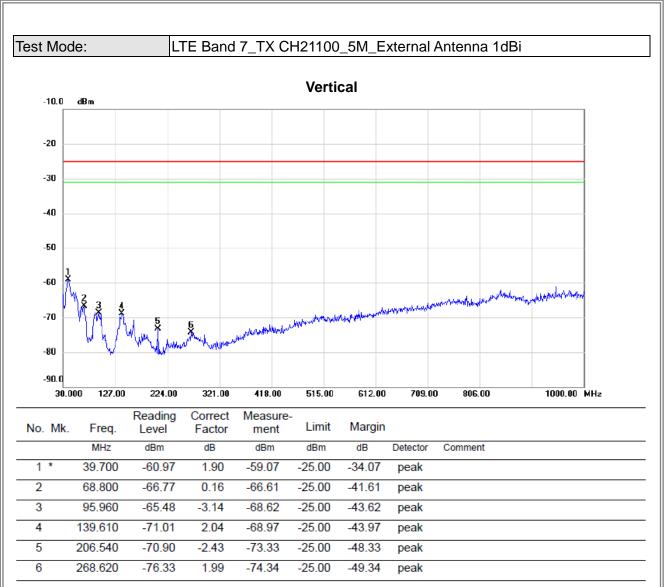






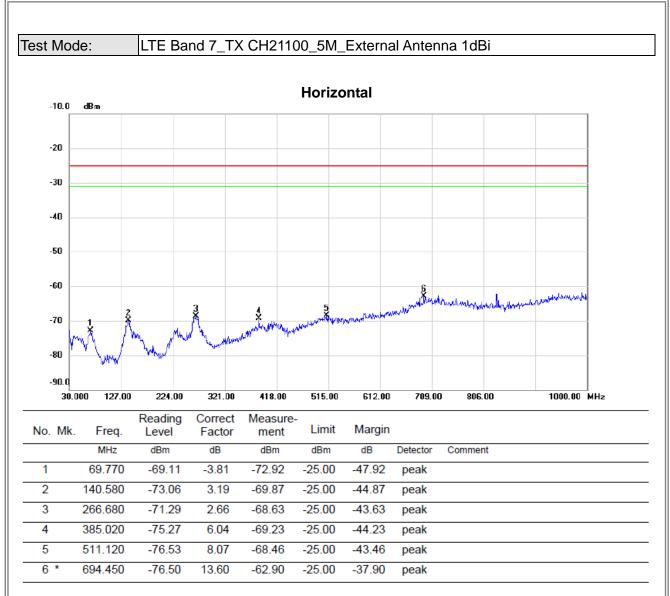




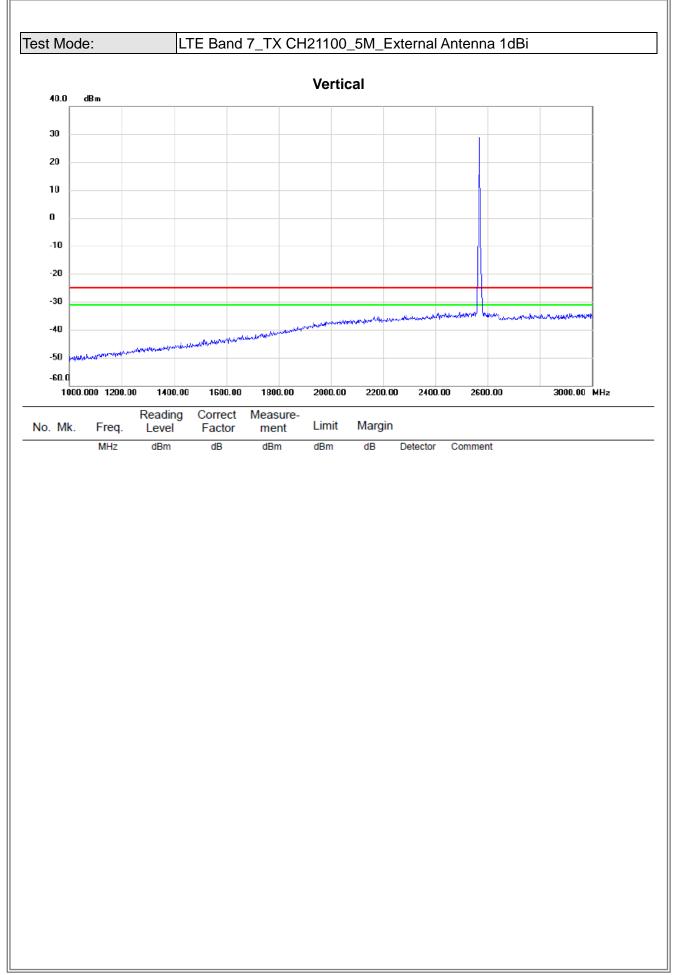






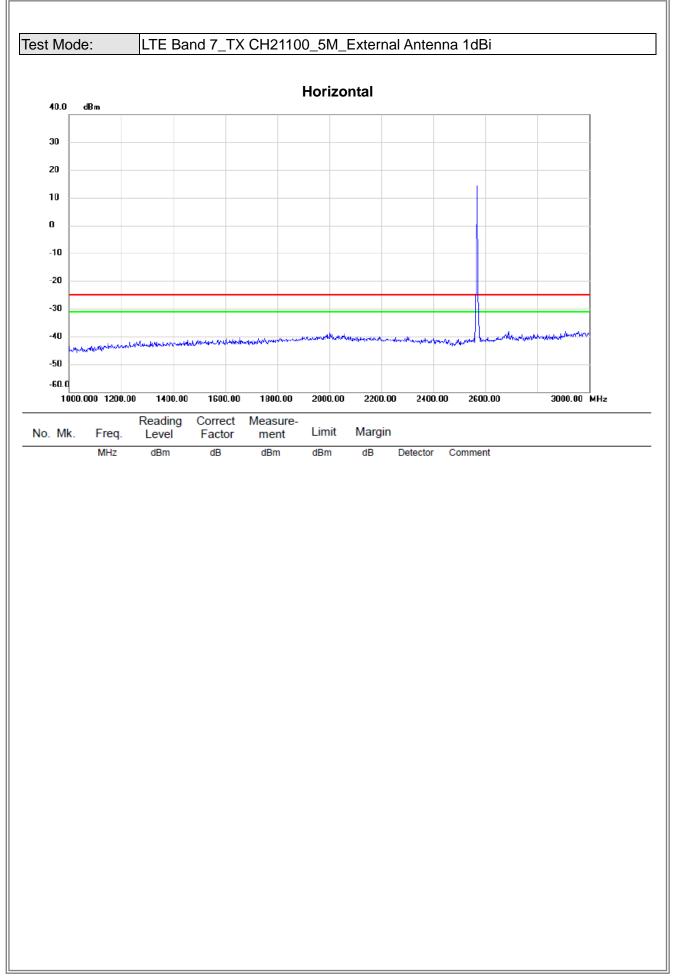




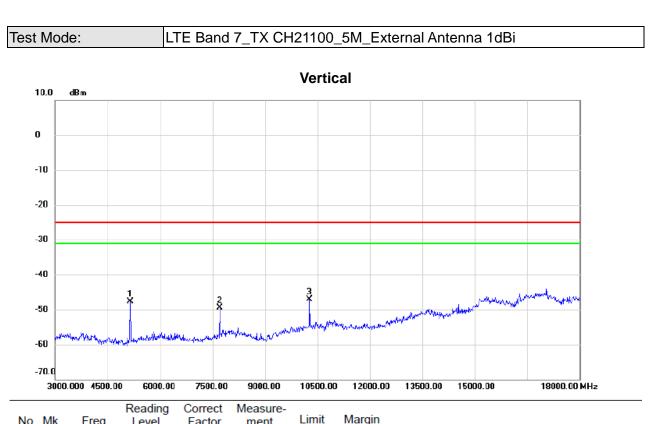








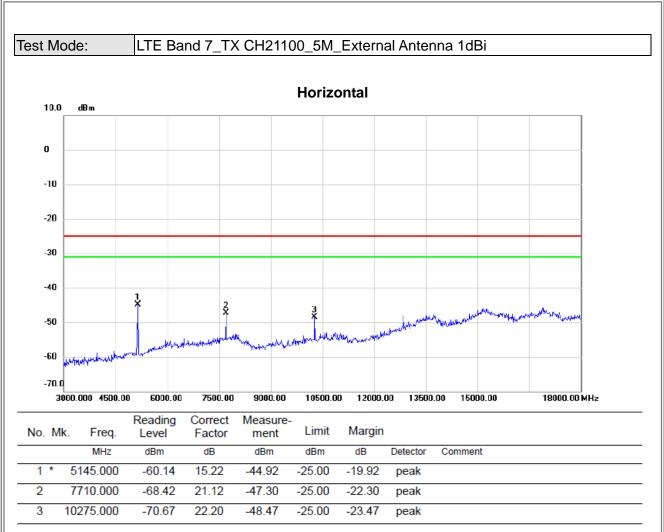




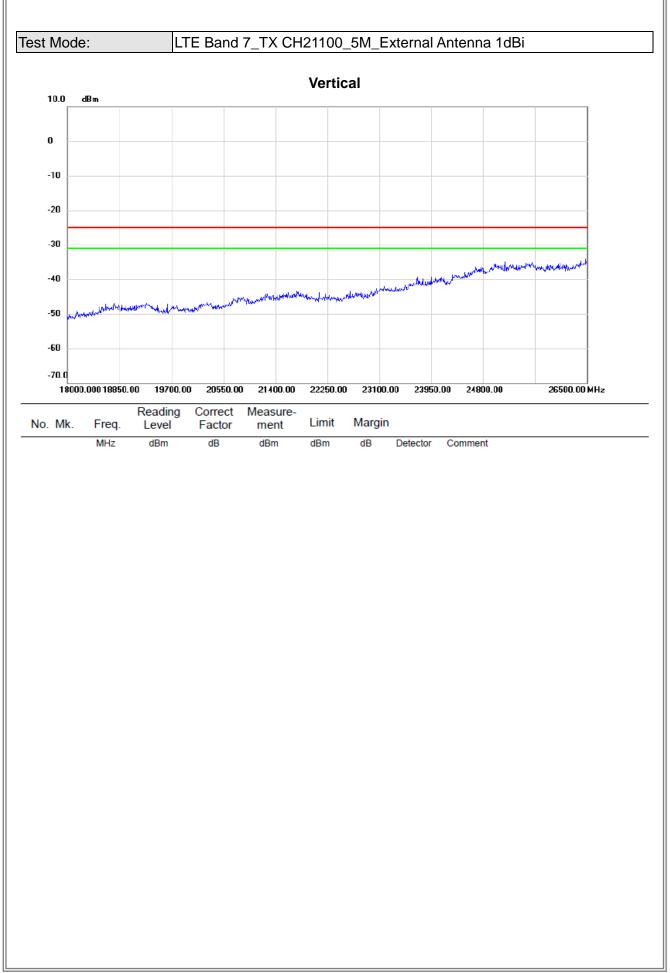
No. N	1k.	Freq.	Level			Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	51	45.000	-62.73	15.01	-47.72	-25.00	-22.72	peak	
2	77	10.000	-68.04	18.61	-49.43	-25.00	-24.43	peak	
3 *	102	75.000	-69.04	21.86	-47.18	-25.00	-22.18	peak	





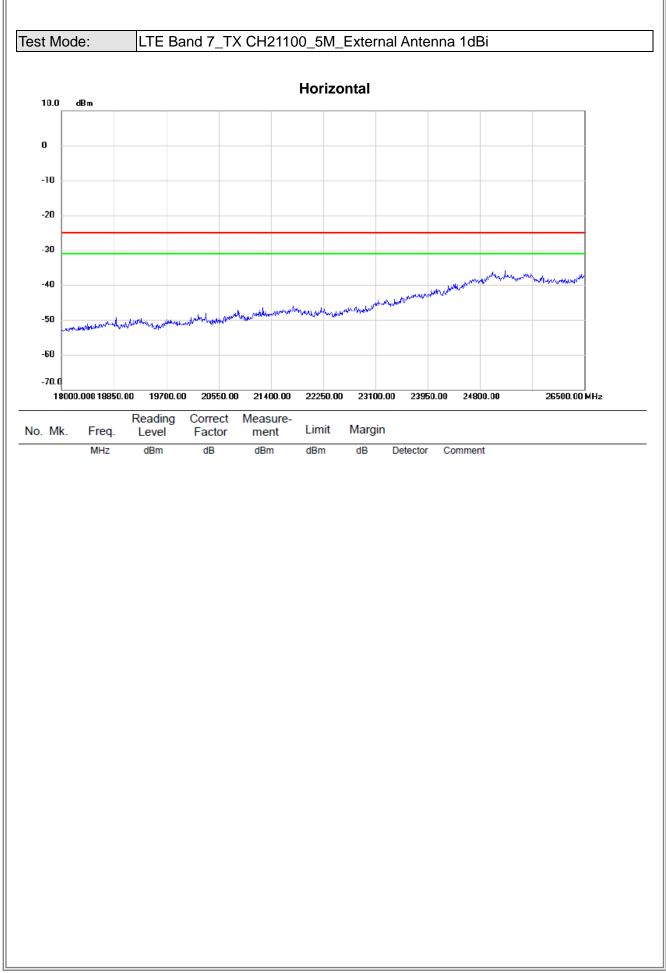




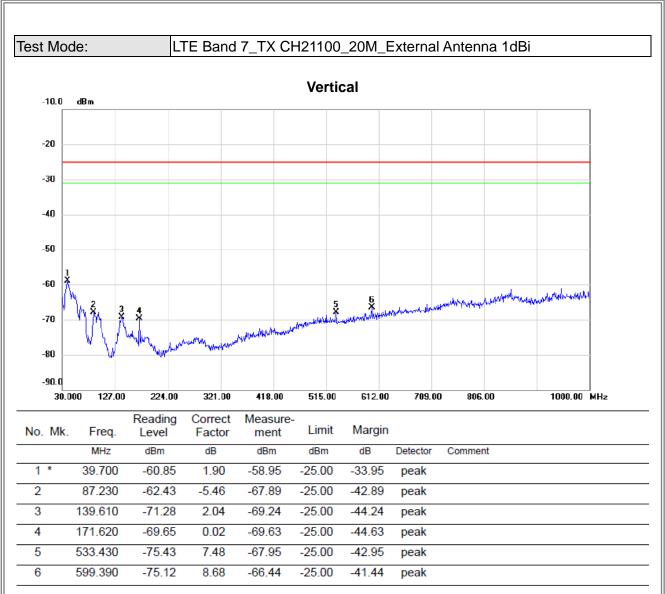






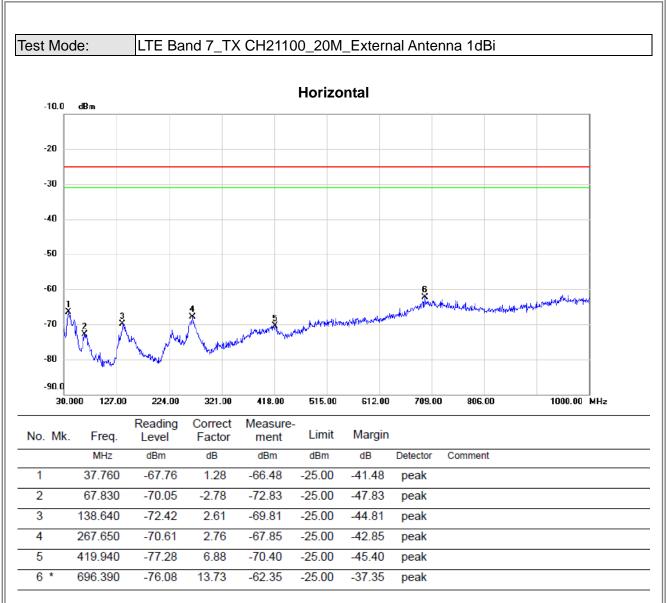




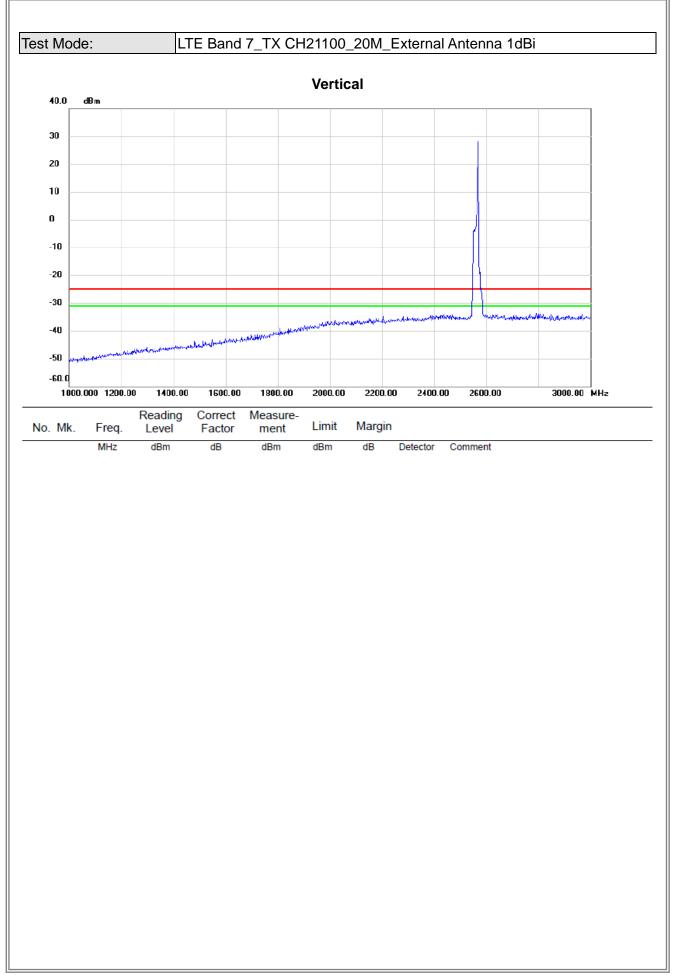






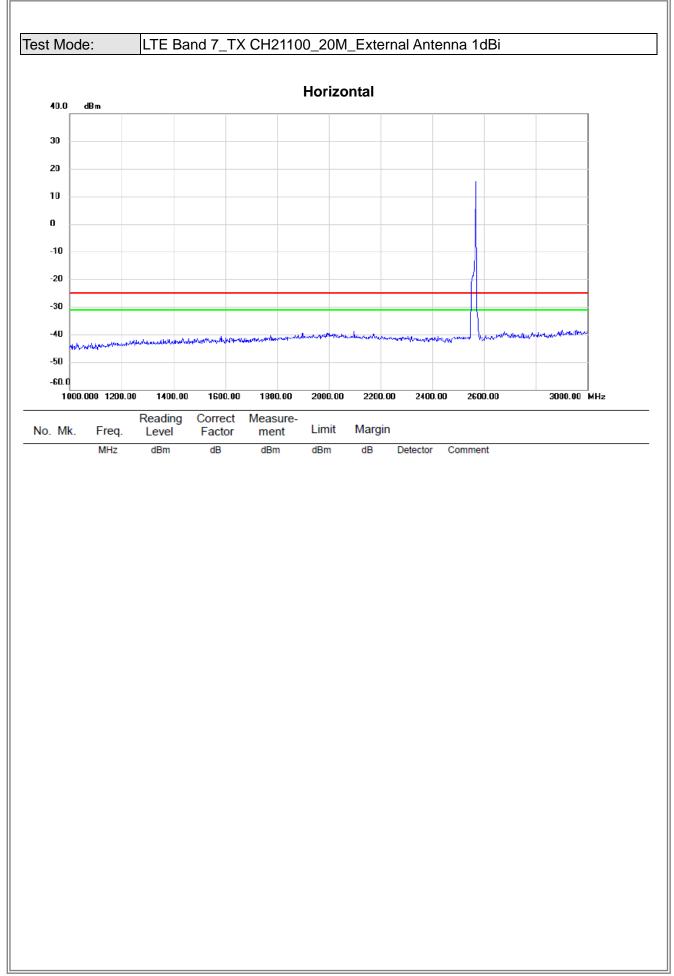




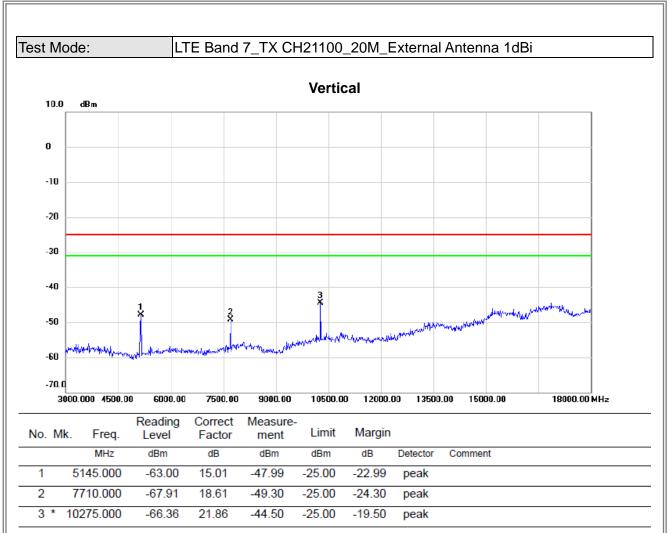






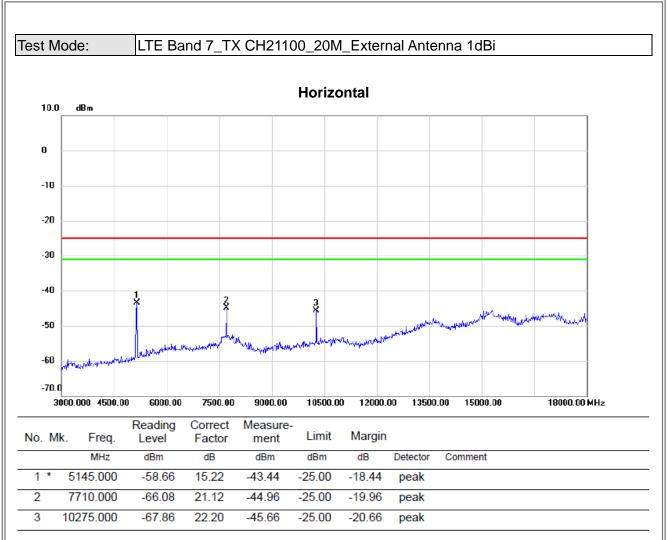




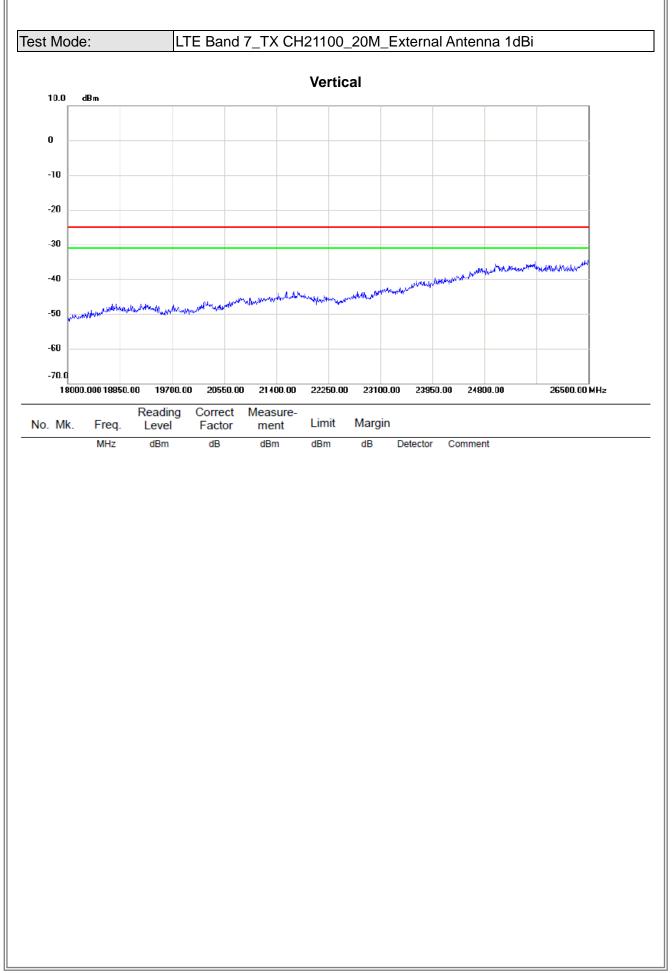






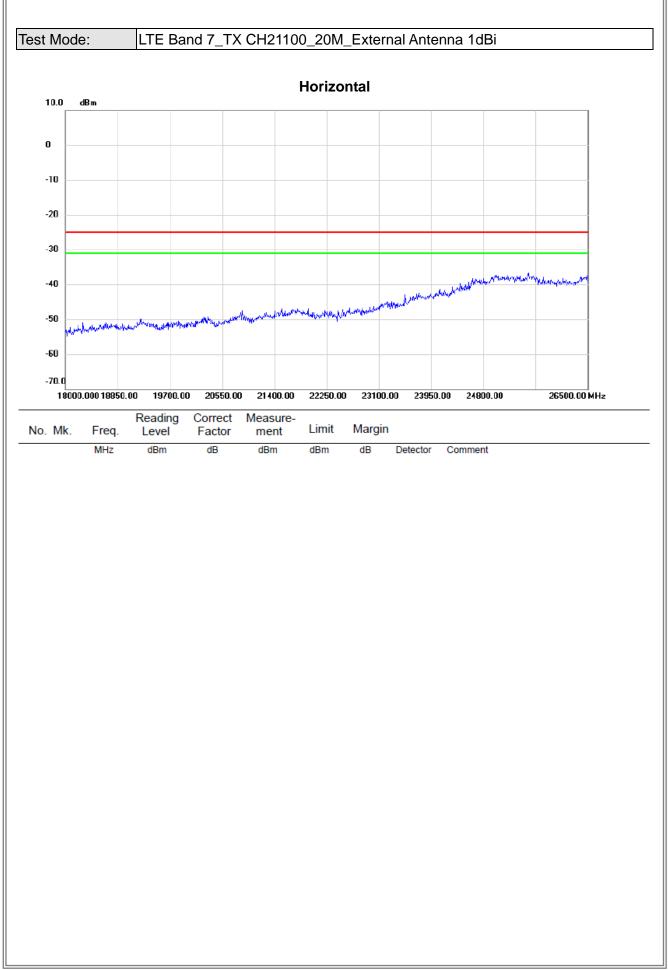




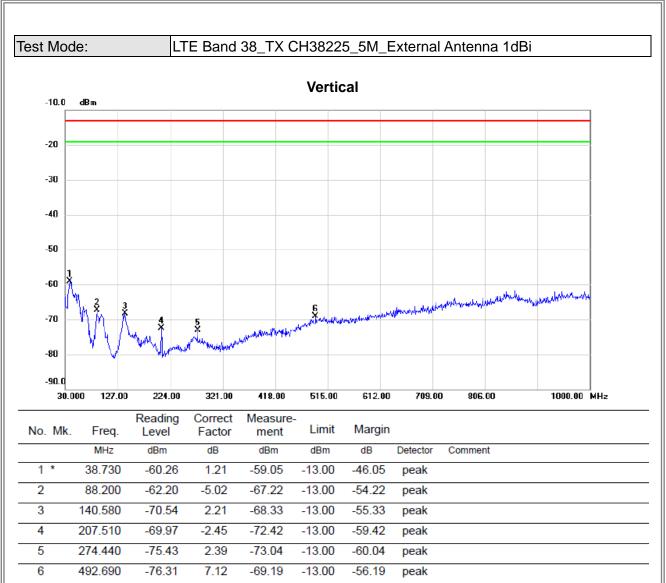






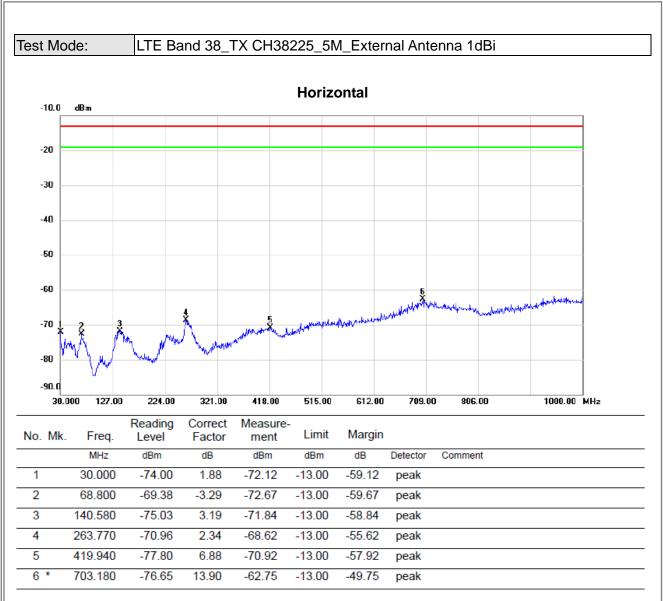




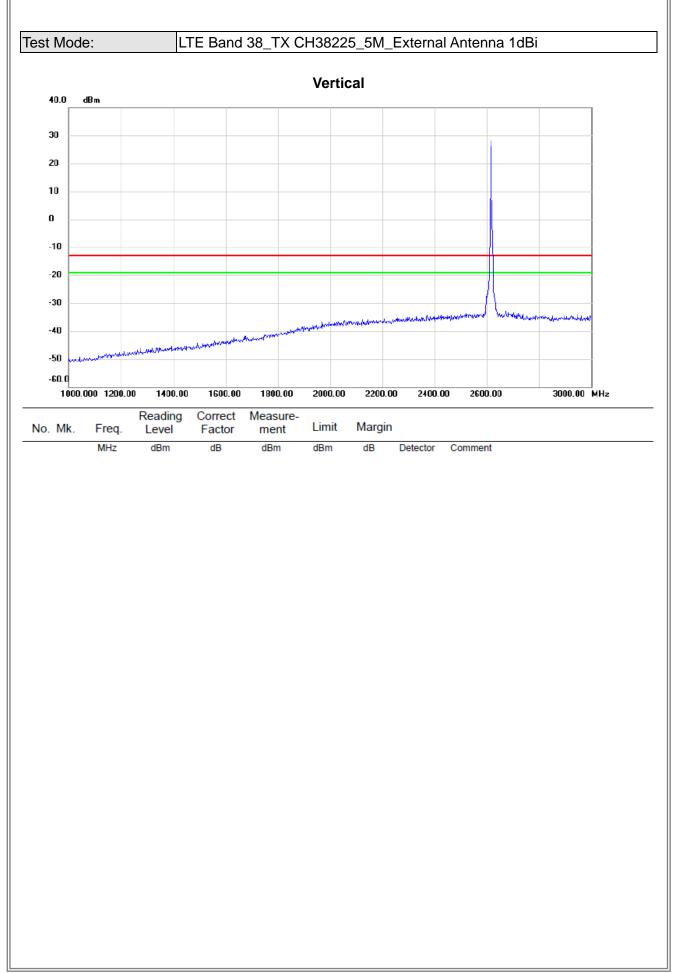






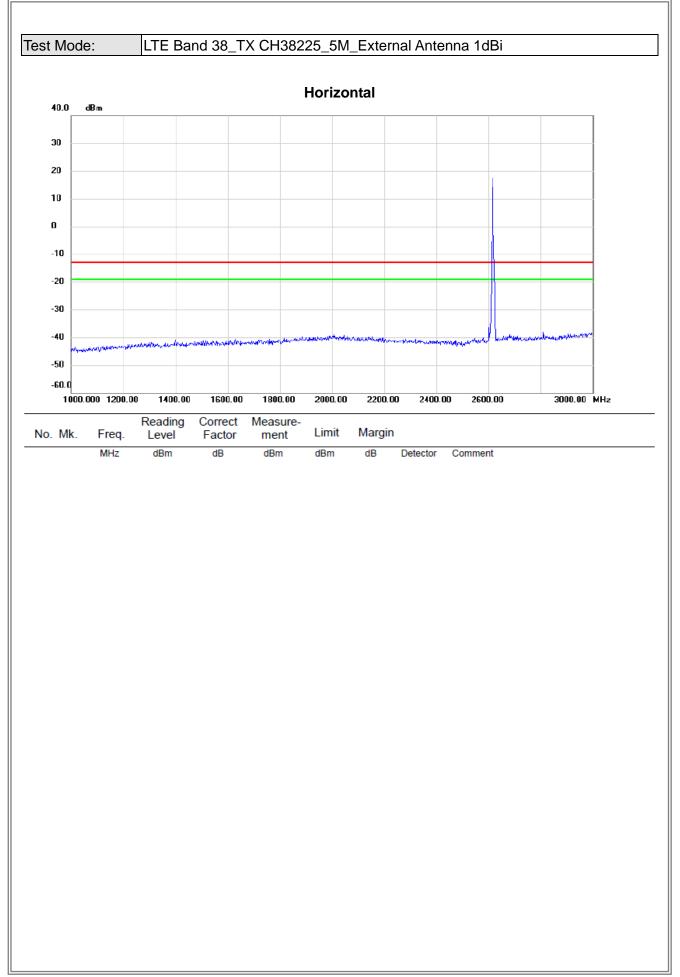












3

10485.000

-71.27

22.40

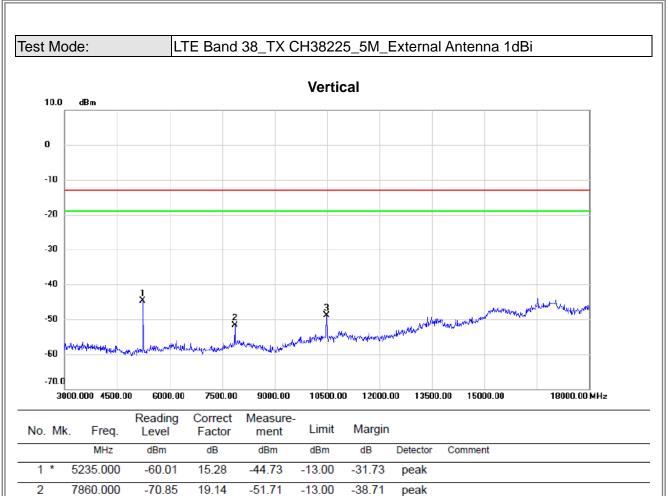
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-13.00

-35.87

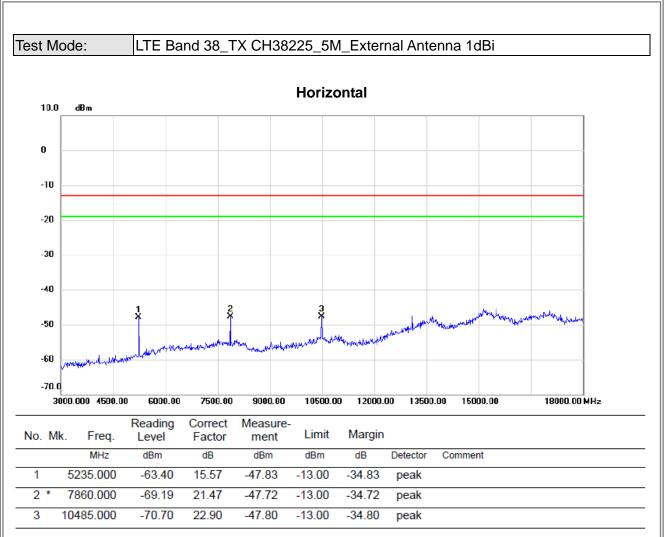
peak



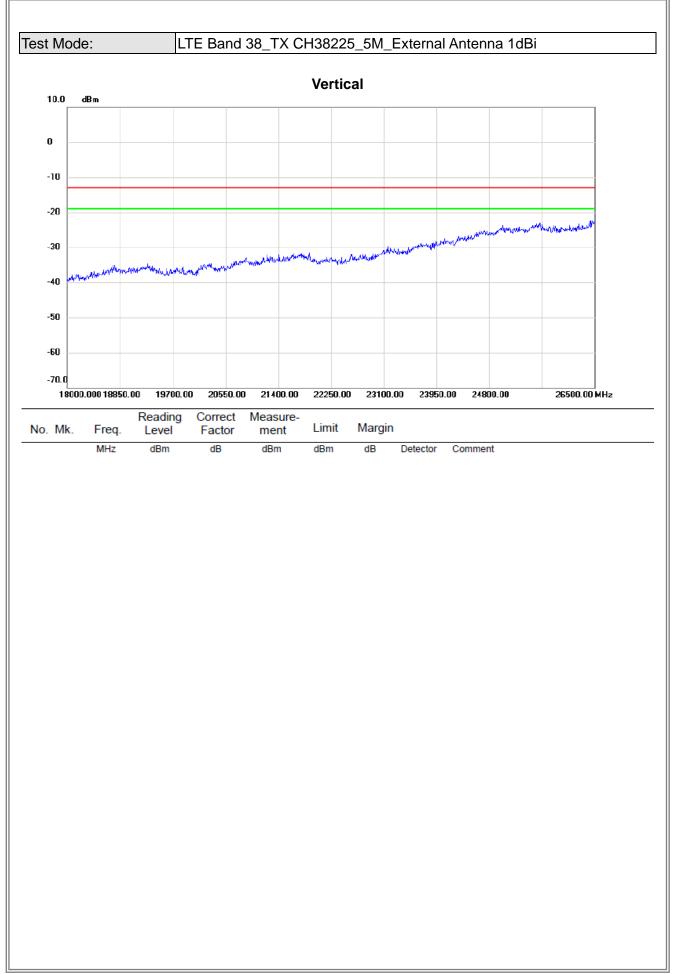






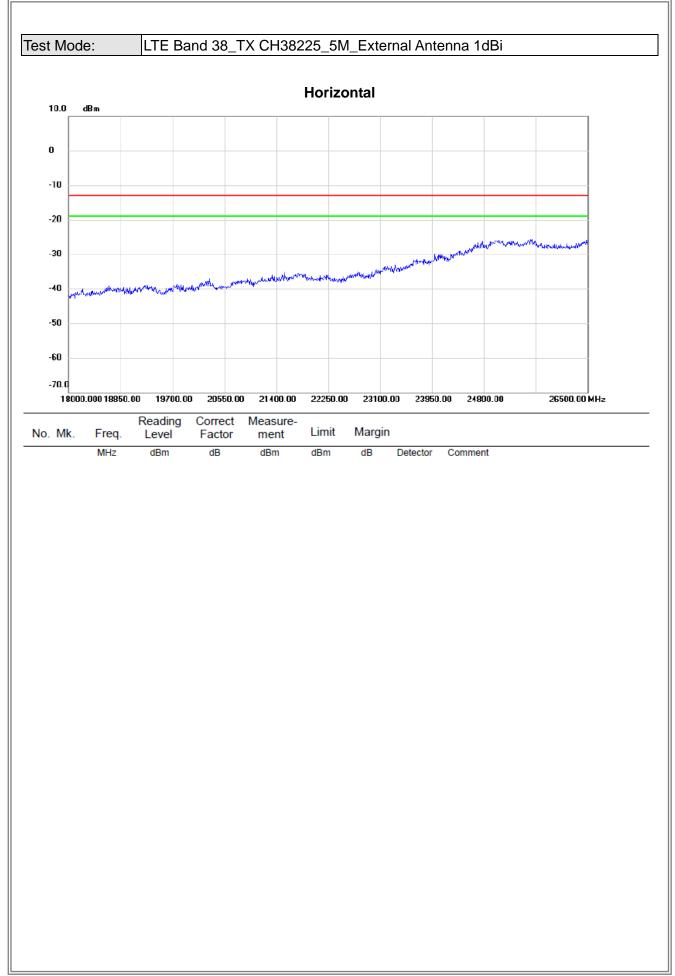




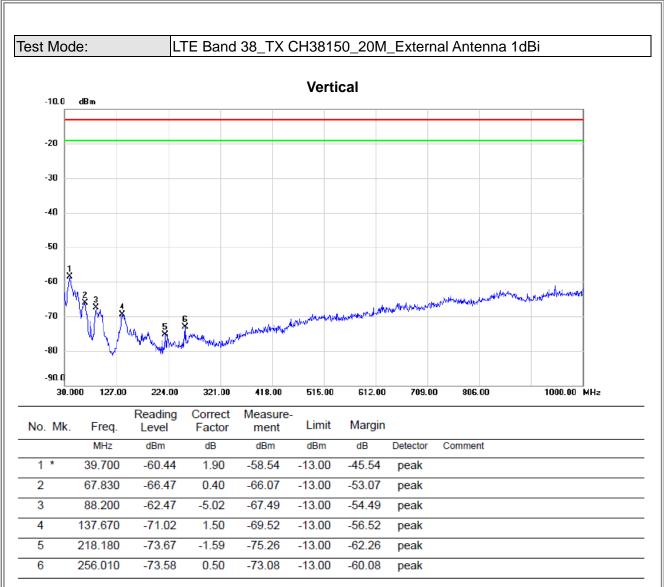






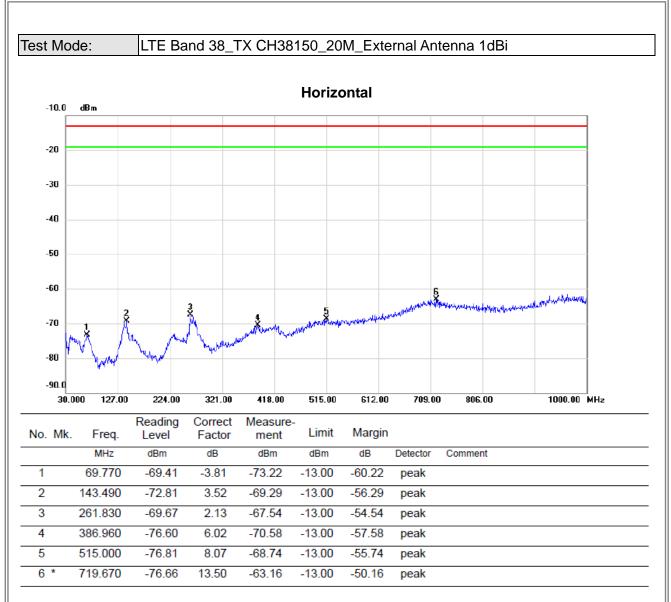




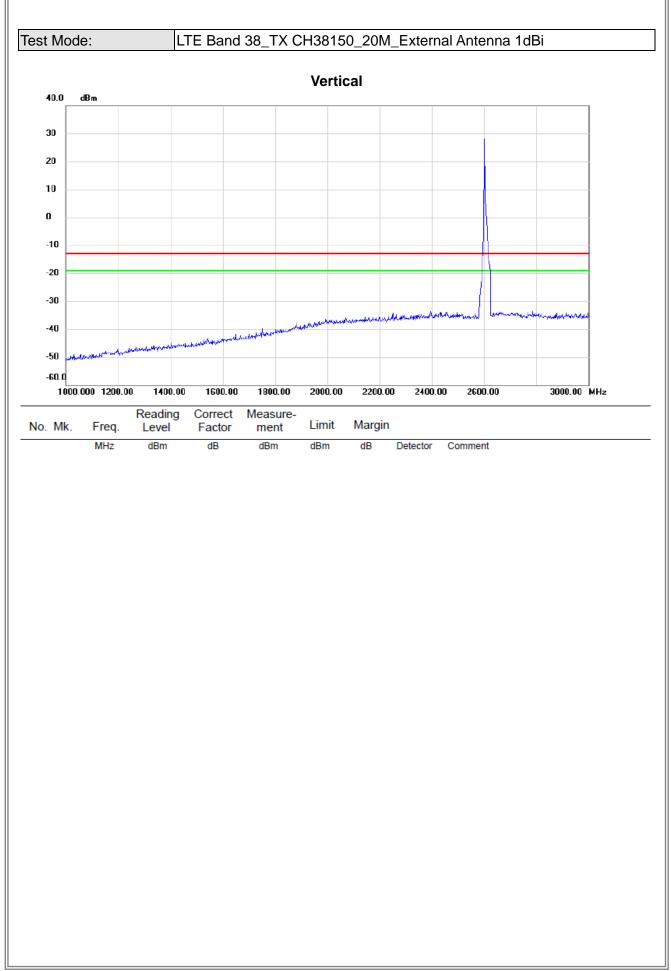






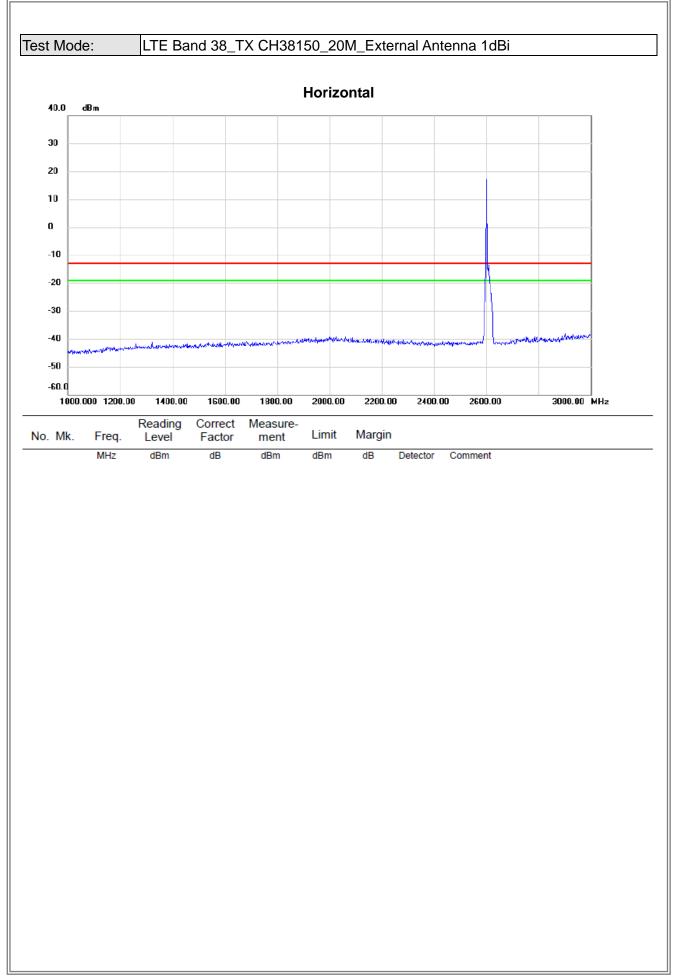




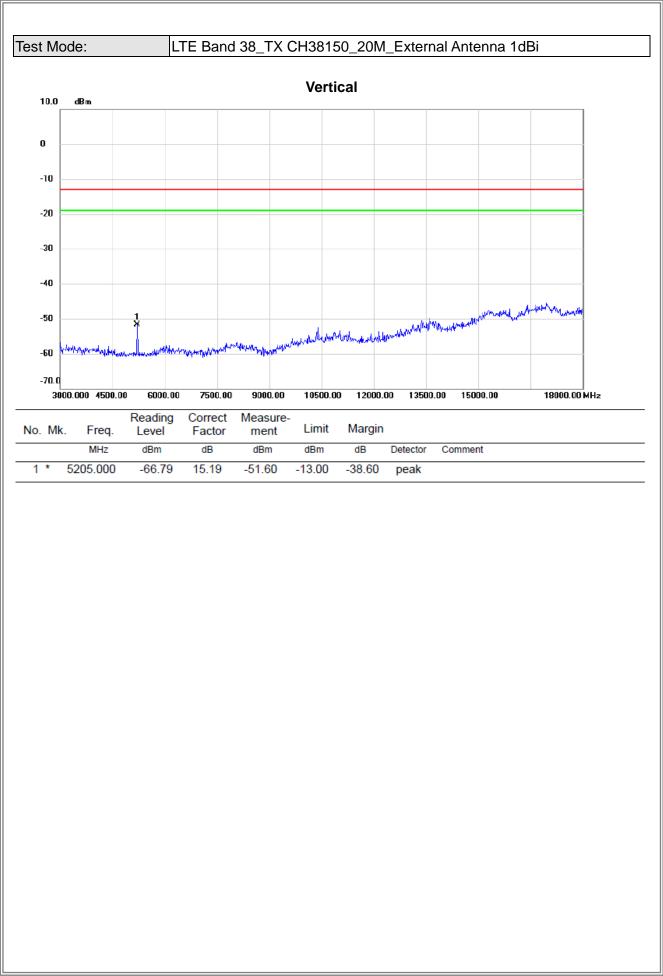






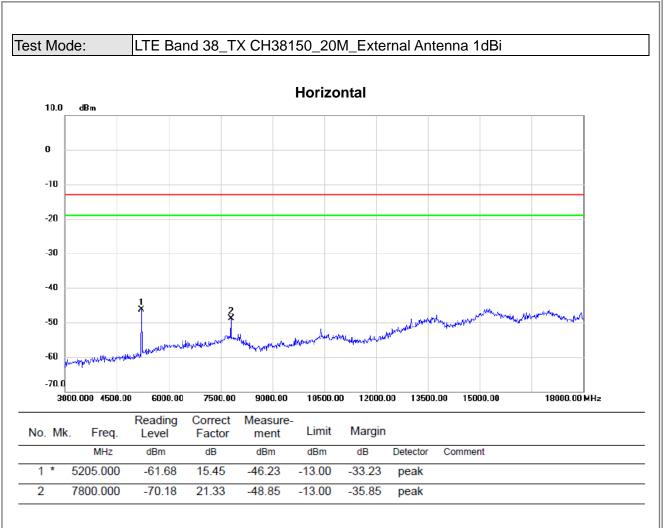




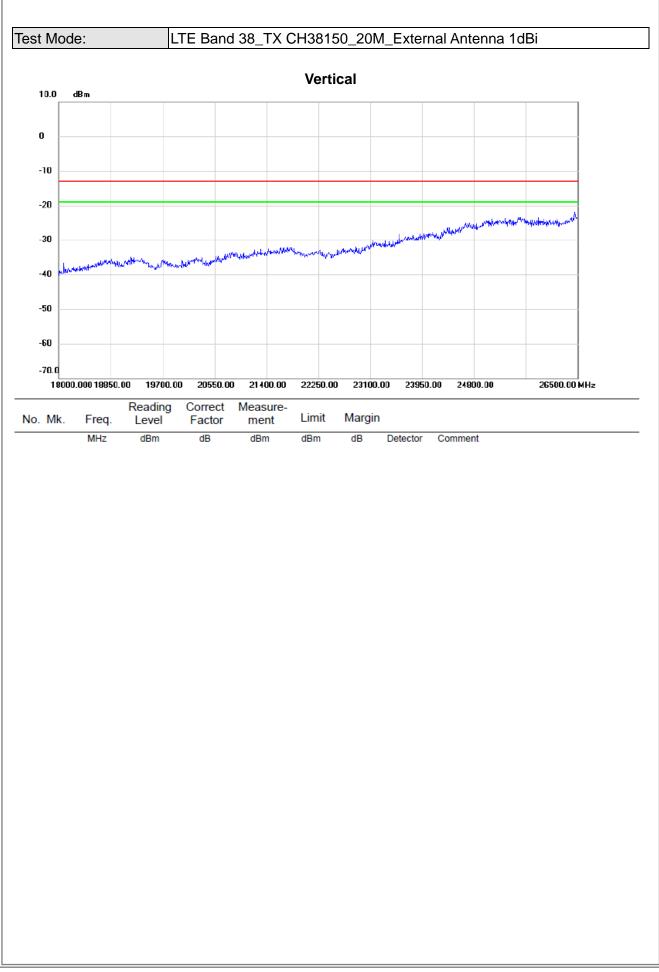






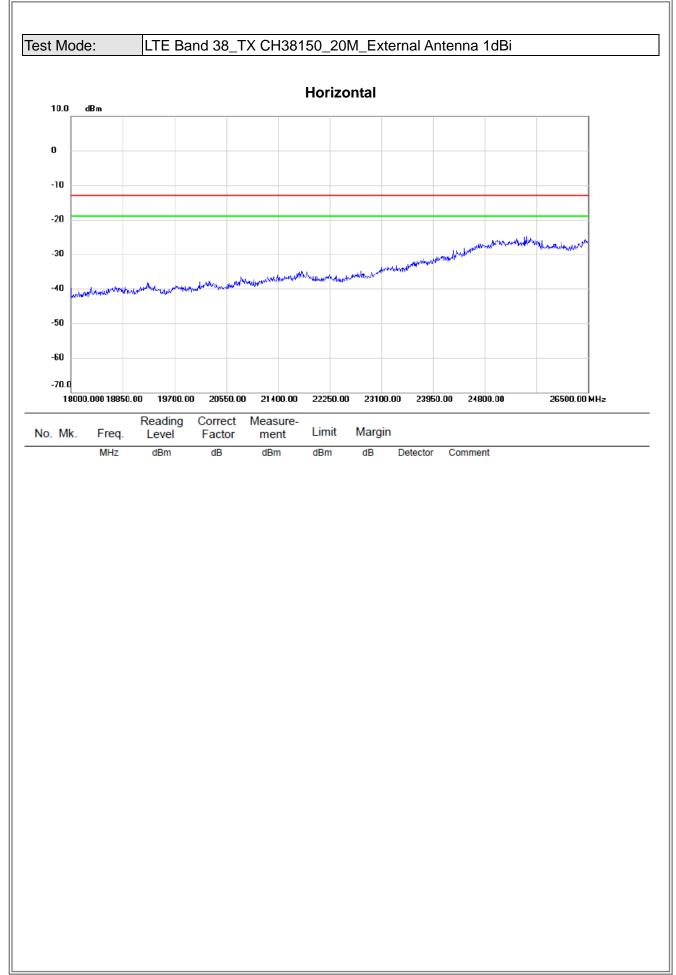












# **3**TL



