



FC	C Radio Test Report
F	FCC ID: QISALP-LX9
This report conce	erns (check one): ⊠Original Grant ⊡Class II Change
Project No. Equipment Model Name Applicant Address	 : 1708C104 : Smart Phone : ALP-L29 : Huawei Technologies Co.,Ltd. : Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C
Date of Receipt Date of Test Issued Date Tested by	: Aug. 10, 2017 : Aug. 10, 2017 ~ Sep. 11, 2017 : Sep. 12, 2017 : BTL Inc.
Technical Engine	er : James Chiu)
Authorized Signa	atory :(Andy Chiu)
B1, N Nei-H	TLINC. No.37, Lane 365, Yang Guang St., Iu District, Taipei City 114, Taiwan. 2-2657-3299 FAX: +886-2- 2657-3331





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).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

BTL's report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and **BTL-self**, extracts from the test report shall not be reproduced except in full with **BTL**'s authorized written approval.

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.





Table of Contents	Page
REPORT ISSUED HISTORY	4
1. CERTIFICATION	5
2 . SUMMARY OF TEST RESULTS	6
2.1 TEST FACILITY	7
2.2 MEASUREMENT UNCERTAINTY	7
3 . GENERAL INFORMATION	8
3.1 GENERAL DESCRIPTION OF EUT	8
3.2 DESCRIPTION OF TEST MODES AND TEST CONDITION	10
3.3 BLOCKDIGRAMSHOWINGTHECONFIGURATIONOFSYSTEMTESTED I	FOR
RADIATED	10
3.4 DESCRIPTION OF SUPPORT UNITS	10
4 . RADIATED EMISSIONS MEASUREMENT	11
4.1 LIMIT	11
4.2 TEST PROCEDURES	11
4.3 TESTSETUP LAYOUT	12
4.4 TESTDEVIATION	12
4.5 TEST RESULTS	12
5. LIST OF MEASUREMENT EQUIPMENTS	13
APPENDIX A - RADIATED EMISSION	14





REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-3-1708C104	Original Issue.	Sep. 12, 2017





1. CERTIFICATION

Equipment : Brand Name :	
Model Name :	
	Huawei Technologies Co.,Ltd.
Manufacturer :	Huawei Technologies Co.,Ltd.
Address :	Administration Building, Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R.China
Factory :	Huawei Technologies Co.,Ltd.
Address :	Administration Building, Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R.China
Date of Test :	Aug. 10, 2017 ~ Sep. 11, 2017
Test Sample :	Engineering Sample
Standard(s) :	47 CFR FCC Part 22 Subpart H
	47 CFR FCC Part 2
	ANSI/TIA-603-D-2010
	KDB 971168 D01 Power Meas License Digital Systems v02r02

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-3-1708C104) 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 result included in this report is only for RSE part of LTE Band 26.



2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part 22 Subpart H& Part 2			
Standard(s) Section	Test Item	Judgment	Tested By
2.1053 22.917(a)	Radiated Spurious Emissions	PASS	Paul Li

Note:

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





2.1 TEST FACILITY

Radiated emission Test (Below 1 GHz): (FCC RN:674415; FCC DN:TW0659) No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)

Radiated emission Test (Above 1 GHz):

(FCC RN:674415; FCC DN:TW0659)

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)

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 $\mathbf{y} \pm \mathbf{U}$, where expanded uncertainty \mathbf{U} is based on astandard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95**%.

A. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U,(dB)
CB15	CISPR	9kHz ~ 150kHz	2.82
(3m)	CISER	150kHz ~ 30MHz	2.58

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
CB15	CB15 (3m) CISPR	30MHz ~ 200MHz	V	4.20
		30MHz ~ 200MHz	Н	3.64
(3m)		200MHz ~ 1,000MHz	V	4.56
		200MHz ~ 1,000MHz	Н	3.90

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
		1GHz ~ 6GHz	V	4.46
CB15	CISPR	1GHz ~ 6GHz	Н	4.40
(3m)	CISER	6GHz ~ 18GHz	V	3.88
		6GHz ~ 18GHz	Н	4.00

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	Smart Phone			
Brand Name	HUAWEI			
Model Name	ALP-L29			
Model Difference	N/A			
Modulation Type	LTE	QPSK, 16QAM		
	LTE 26 (Channel Bandwidth: 1.4MHz)	825.5 ~ 847.5 MHz		
	LTE 26 (Channel Bandwidth: 3MHz)	826.5 ~ 846.5 MHz		
Operation Frequency	LTE 26 (Channel Bandwidth: 5MHz)	829 ~ 844 MHz		
	LTE 26 (Channel Bandwidth: 10MHz)	831.5 ~ 841.5 MHz		
	LTE 26 (Channel Bandwidth: 15MHz)	826.5 ~ 846.5 MHz		
Antenna Type	Fixed Internal Antenna			
Antenna Gain	-2 dBi(Top Ant),-2.2 dBi(Bottom Ant)			
Hardware Version	HL1AALPSM			
Software Version	ALP-L29 5.0.1.67(C432log)	ALP-L29 5.0.1.67(C432log)		
IMEI No.	866214030024111			
	866214030025118			
Power Source	#1 Supplied from AC/DC adapter. #2 Battery Supplied.			
	#2 Battery Supplied. #1 Input: 100-240V~50/60Hz 0.75A			
Power Rating	Output: 5V === 2A or 5V === 5A	Output: $5V =2A$ or $5V =5A$ or $5V =4.5A$		
	#2 === 3.82V 3900mA			



Note:

ΒĨL

- 1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- 2. The EUT contains following accessory devices.

Item	Mfr/Brand	Model.
	Sunwoda Electronic Co., LTD	HB436486ECW
Battery	SCUD (FUJIAN) Electronics Co., Ltd	HB436486ECW
	Desay Battery Co., Ltd.	HB436486ECW
USB	LUXSHARE-ICT Co., Ltd.	L99UC018-CS-H
Cable	Chang Shu Honglin Technology Co.,Ltd.	130-27309
	DONGGUAN PHITEK ELECTRONICS CO., LTD	
	SHENZHEN HUNTKEY ELECTRONIC CO., LTD.	HW-050450B00 (UK)
Adapter	Salcomp (Shenzhen)Co.,Ltd	HW-050450U00 (US) HW-050450E00 (EU)
	HUAWEI Technologies Co., Ltd.	HW-050450A00 (AU)
	JIANGXI LIANCHUANG HONGSHENG ELECTRONIC CO., LTD	MEMD1632B580C00
Earphone	BOLUO COUNTY QUANCHENG ELECTRONIC CO., LTD	1311-3291-3.5mm-229
	Goer Tek Inc	NA12
	MERRY ELECTRONICS (SHENZHEN) CO., LTD.	EMC309-001



3.2 DESCRIPTION OF TEST MODES AND TEST CONDITION

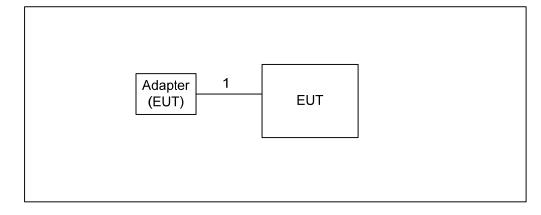
Following channel(s) was (were) selected for the final test as listed below:

		LTE BAN	ND 26 MODE		
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated	26797 to 27033	27033	1.4MHz	QPSK	1 RB / 5 RB Offset
Emission	26865 to 26965	26965	15MHZ	QPSK	1 RB / 0 RB Offset

EUT TEST CONDITIONS:

Test Item	Environmental Conditions	Test Voltage
Radiated Emission	25°C, 60%RH	AC 120V/60Hz

3.3 BLOCKDIGRAMSHOWINGTHECONFIGURATIONOFSYSTEMTESTED FOR RADIATED



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.	
-	-	-	-	-	-	

Item	Shielded Type	Ferrite Core	Length	Note
1	YES	NO	1m	USB cable





4. RADIATED EMISSIONS MEASUREMENT

4.1 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.

4.2 TEST PROCEDURES

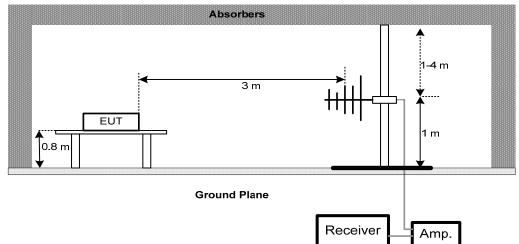
- Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 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.



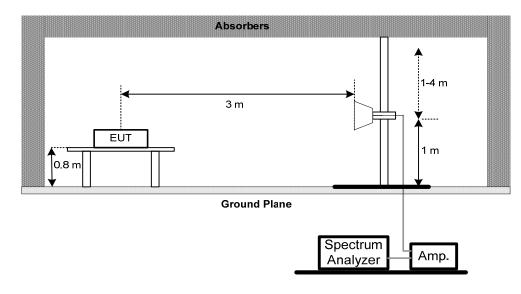


4.3 TESTSETUP LAYOUT

Below 1G



Above 1G



4.4 TESTDEVIATION

No deviation

4.5 TEST RESULTS

Please refer to the Appendix A.



5. LIST OF MEASUREMENT EQUIPMENTS

		Radiated Emis	ssion Measurement		
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Preamplifier	EMCI	012645B	980267	Feb. 28, 2018
2	Preamplifier	EMCI	EMC02325	980217	Dec. 29, 2017
3	Preamplifier	EMCI	EMC2654045	980030	Feb. 14, 2018
4	Test Cable	EMCI	EMC104-SM-SM-80 00	8m	Jan. 04, 2018
5	Test Cable	EMCI	EMC104-SM-SM-80 0	150207	Jan. 04, 2018
6	Test Cable	EMCI	EEMC104-SM-SM-3 000	151205	Jan. 04, 2018
7	MXE EMI Receiver	Agilent	N9038A	MY55420127	Jan. 09, 2018
8	Signal Analyzer	Agilent	N9010A	MY52220990	Feb. 22, 2018
9	Loop Ant	EMCO	6502	42960	Nov. 24, 2017
10	Horm Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	Feb. 28, 2018
11	Horm Ant	Schwarzbeck	BBHA 9170	187	Dec. 07, 2017
12	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-548	Jan. 16, 2018
13	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0623	Jan. 16, 2018

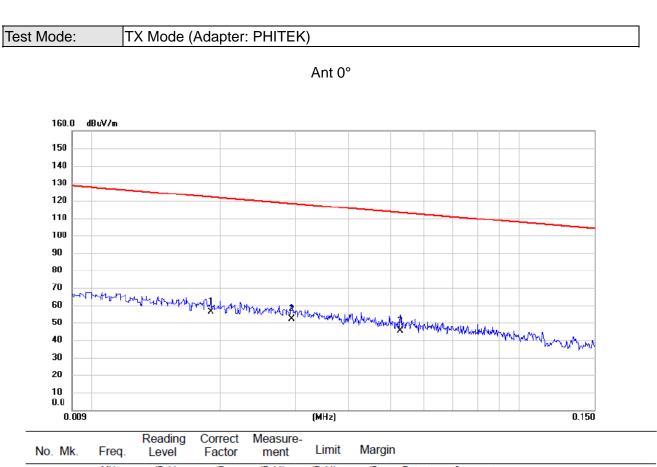




APPENDIX A - RADIATED EMISSION



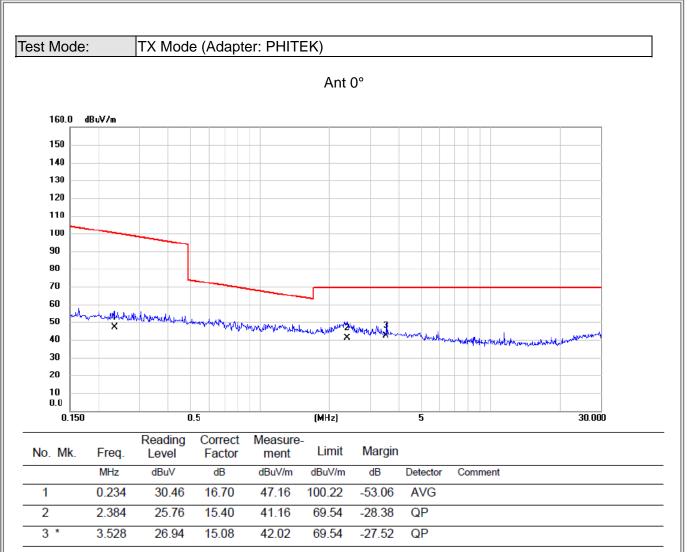




No. Mk.	Freq.	Level	Factor	ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	0.019	36.58	19.75	56.33	122.03	-65.70	AVG	
2	0.029	32.67	19.34	52.01	118.24	-66.23	AVG	
3	0.053	26.57	18.66	45.23	113.15	-67.92	AVG	

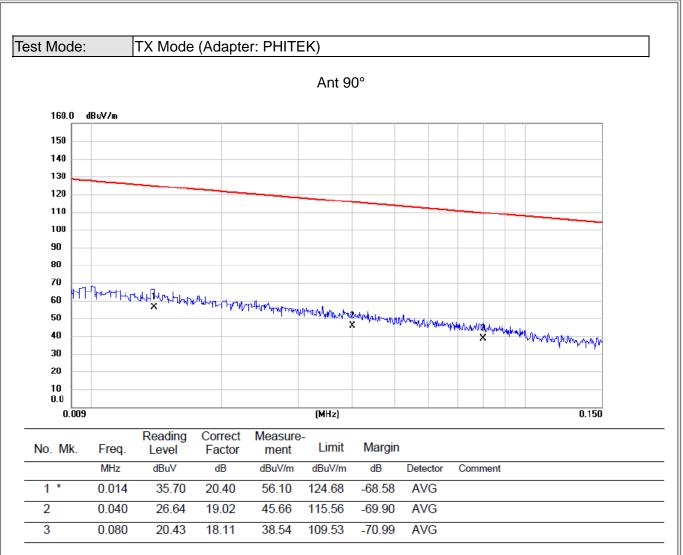














3

3.454

20.84

15.10

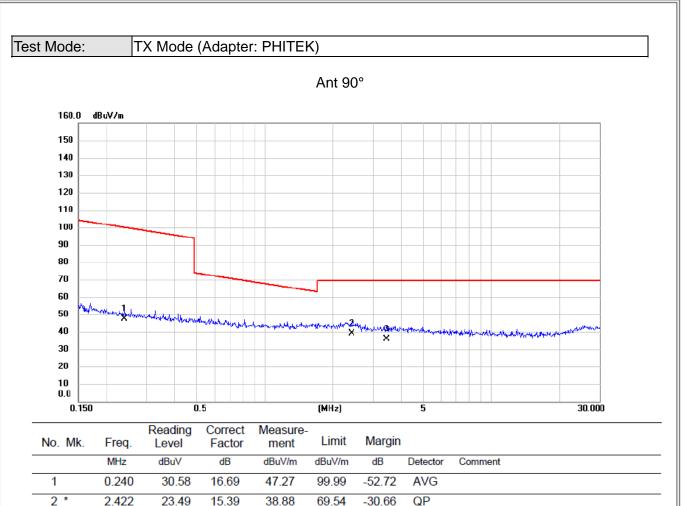
35.94

69.54

-33.60

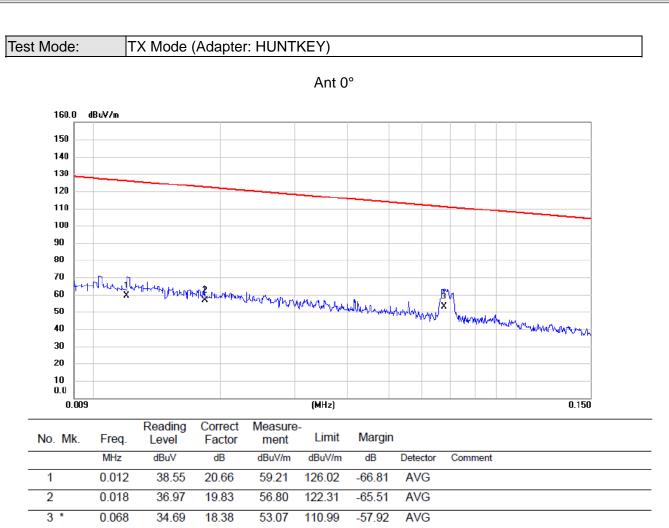
QP





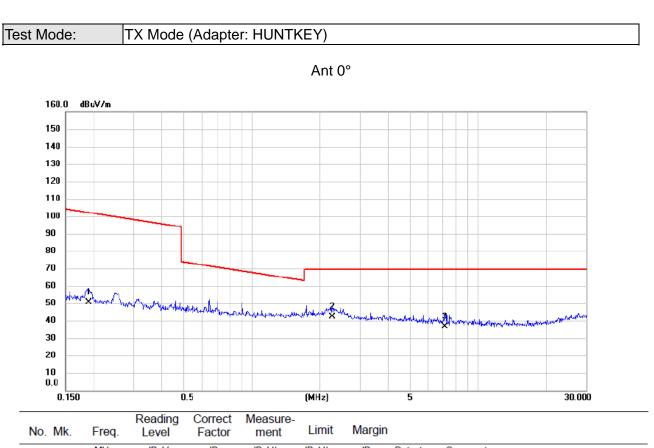








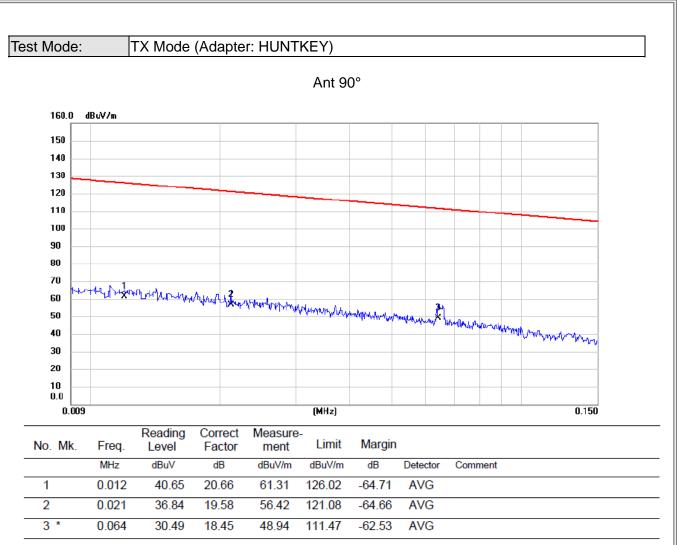




No	o. Mk.	Freq.	Level	Factor	ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	0.190	33.69	16.83	50.52	102.01	-51.49	AVG	
2	2 *	2.273	26.57	15.44	42.01	69.54	-27.53	QP	
	3	7.137	22.63	14.10	36.73	69.54	-32.81	QP	

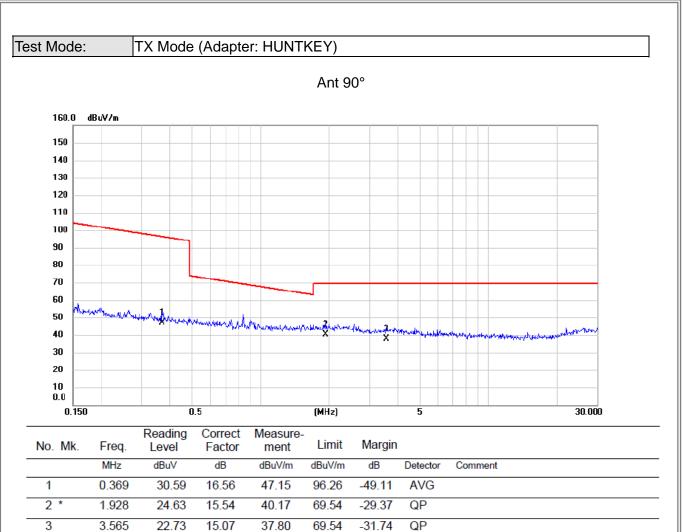






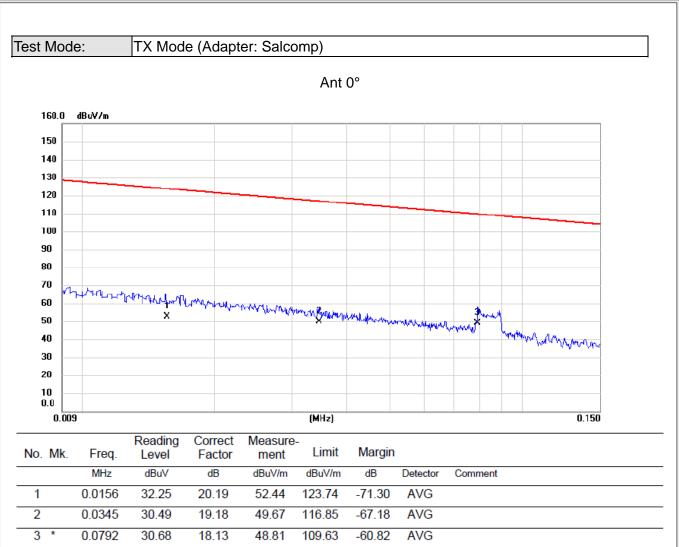






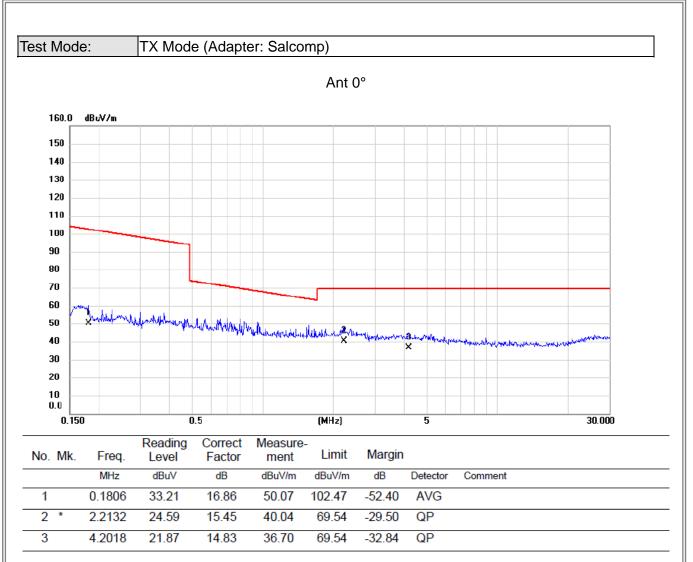






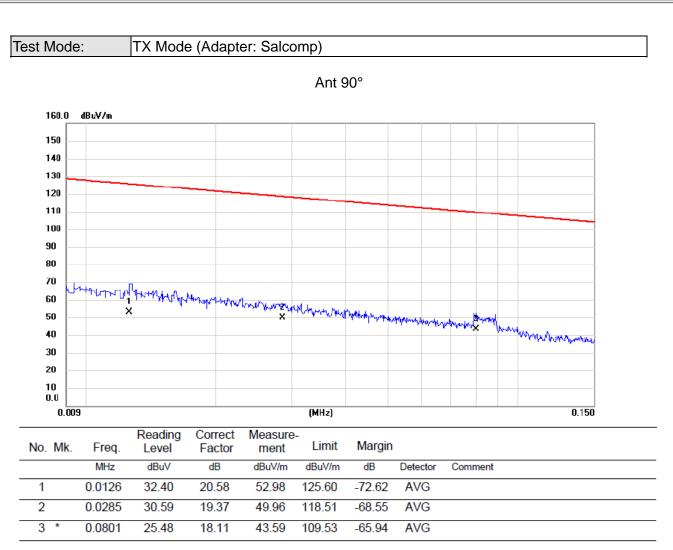






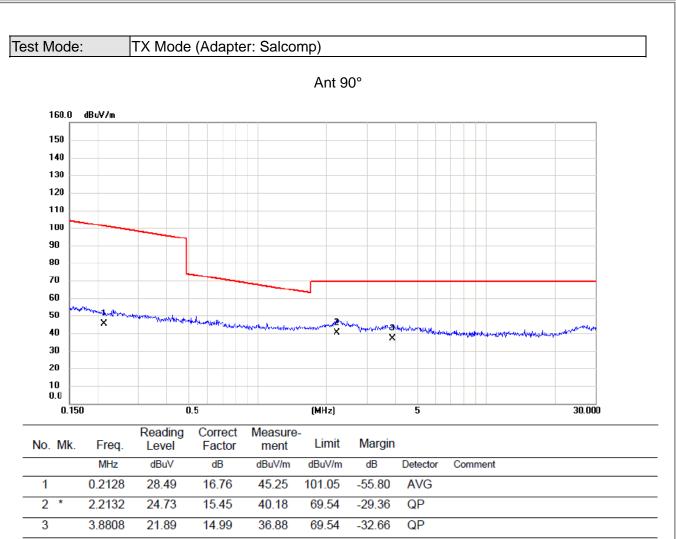






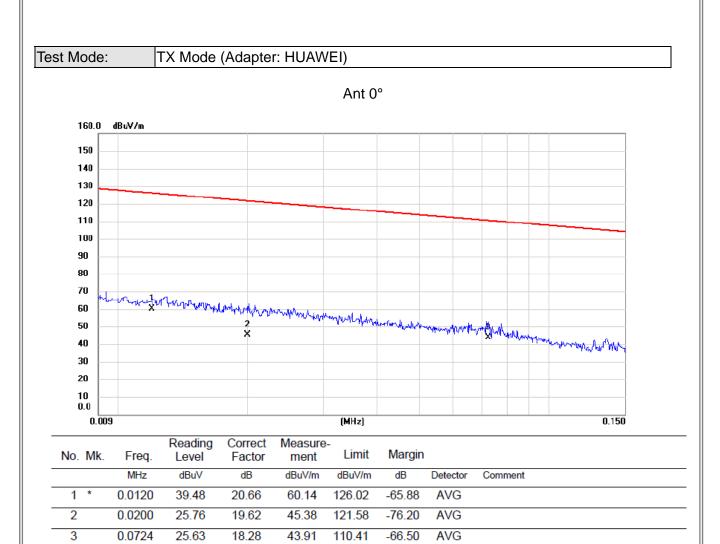






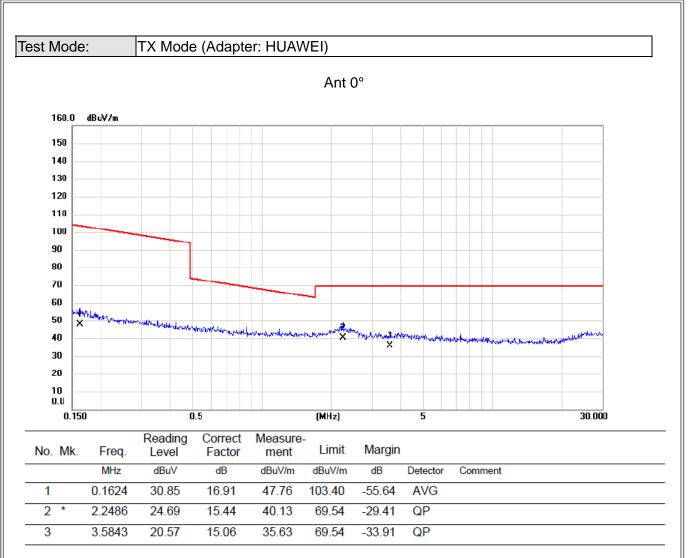






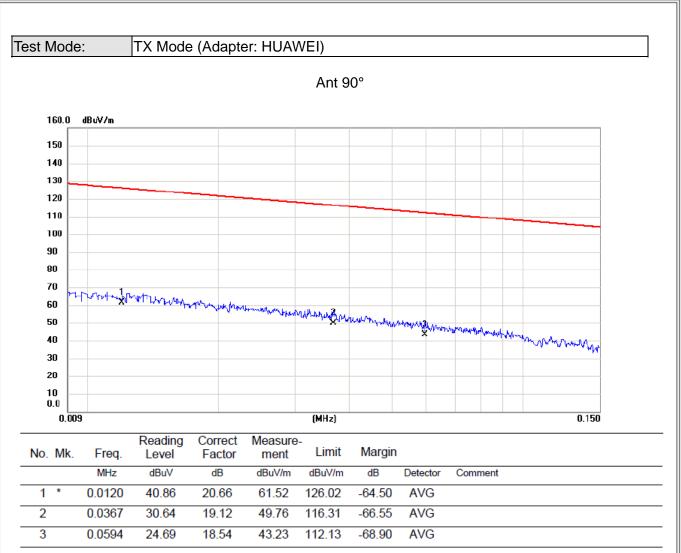






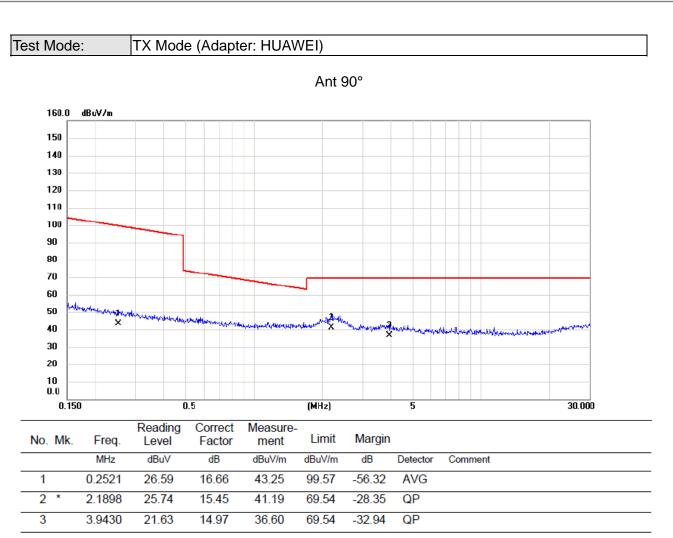










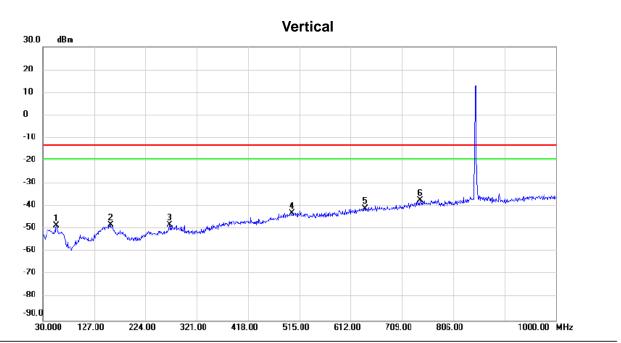








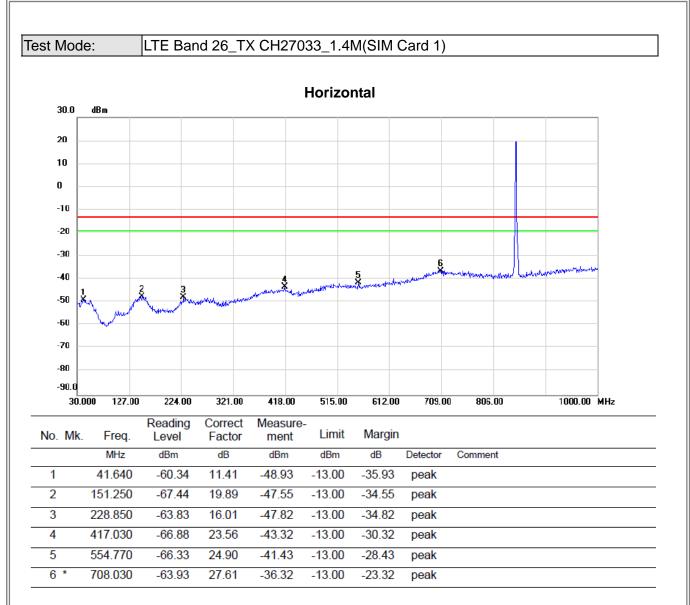
LTE Band 26_TX CH27033_1.4M(SIM Card 1)



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	55.220	-63.12	14.57	-48.55	-13.00	-35.55	peak	
2	158.040	-67.43	19.39	-48.04	-13.00	-35.04	peak	
3	269.590	-65.97	17.83	-48.14	-13.00	-35.14	peak	
4	501.420	-67.69	24.54	-43.15	-13.00	-30.15	peak	
5	639.160	-67.50	26.63	-40.87	-13.00	-27.87	peak	
6 *	742.950	-65.75	28.37	-37.38	-13.00	-24.38	peak	

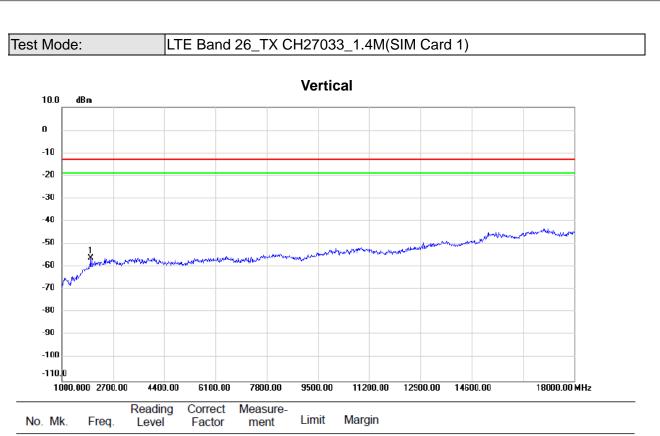








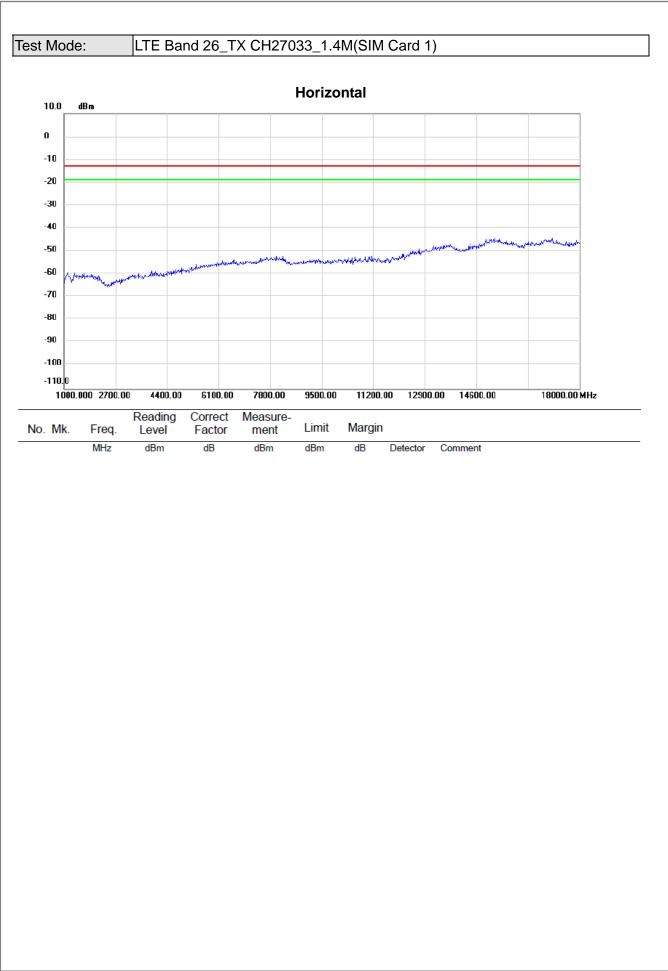




	No. MI	k. Freq.	Level	Factor	ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
_	1 *	1969.000	-67.62	11.33	-56.29	-13.00	-43.29	peak	





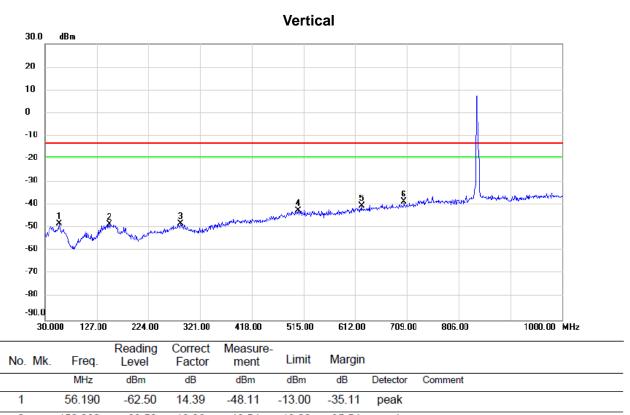








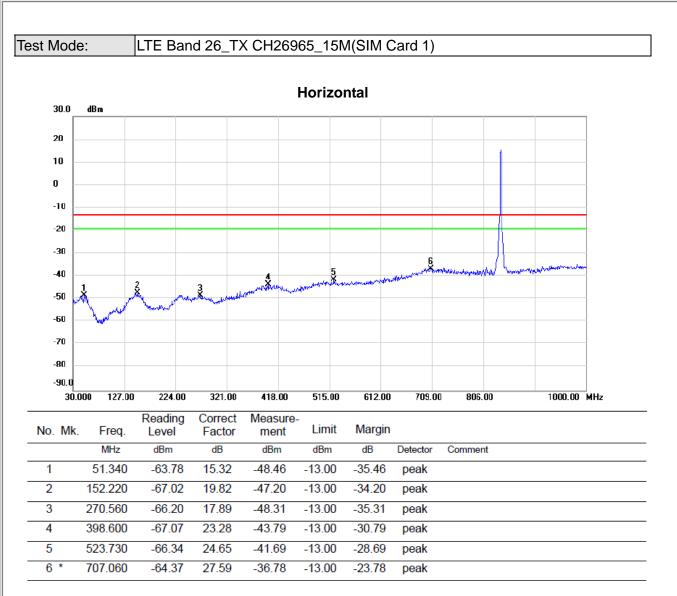
LTE Band 26_TX CH26965_15M(SIM Card 1)



1	56.190	-62.50	14.39	-48.11	-13.00	-35.11	peak	
2	150.280	-68.50	19.96	-48.54	-13.00	-35.54	peak	
3	284.140	-66.83	18.69	-48.14	-13.00	-35.14	peak	
4	505.300	-67.06	24.56	-42.50	-13.00	-29.50	peak	
5	623.640	-66.83	26.39	-40.44	-13.00	-27.44	peak	
6 *	703.180	-66.06	27.50	-38.56	-13.00	-25.56	peak	

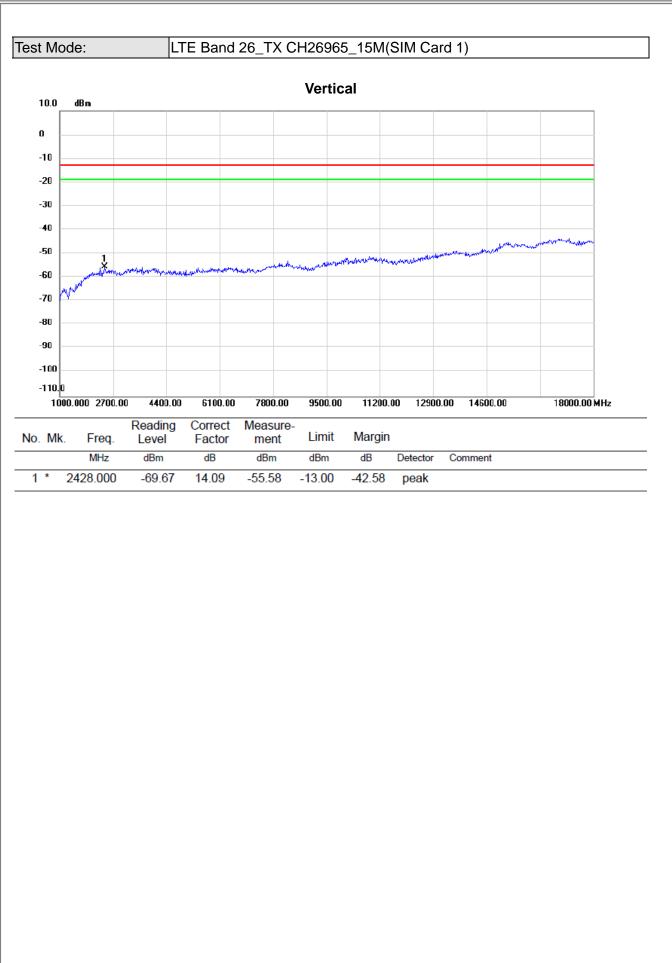






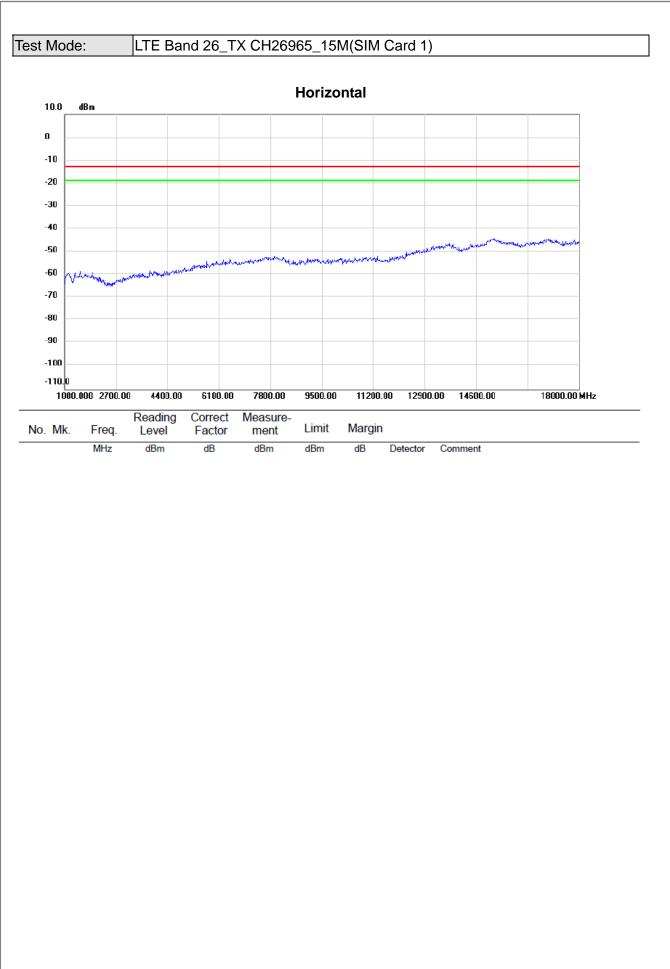










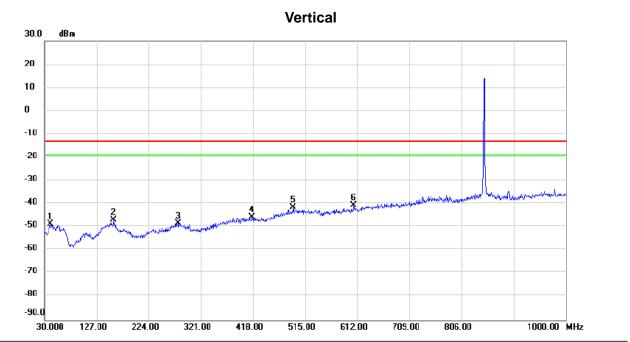








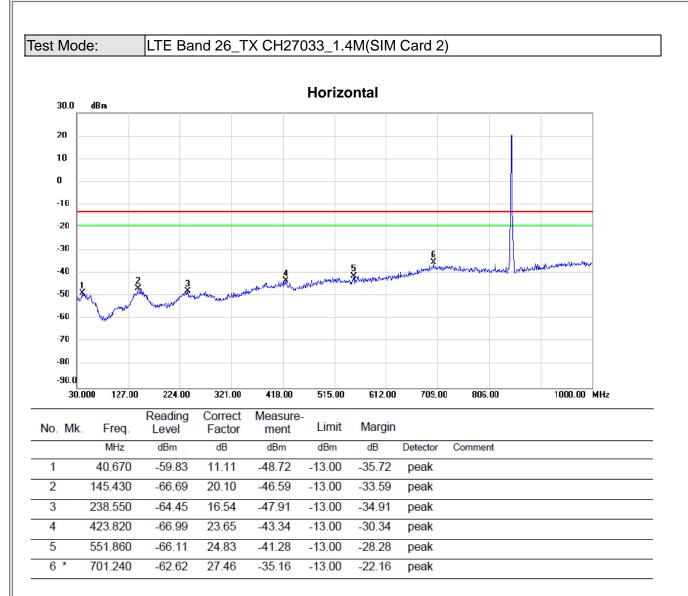
LTE Band 26_TX CH27033_1.4M(SIM Card 2)



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	40.670	-59.97	11.11	-48.86	-13.00	-35.86	peak	
2	159.010	-66.36	19.31	-47.05	-13.00	-34.05	peak	
3	278.320	-66.97	18.51	-48.46	-13.00	-35.46	peak	
4	416.060	-69.29	23.55	-45.74	-13.00	-32.74	peak	
5	492.690	-66.10	24.45	-41.65	-13.00	-28.65	peak	
6 *	605.210	-66.81	26.11	-40.70	-13.00	-27.70	peak	

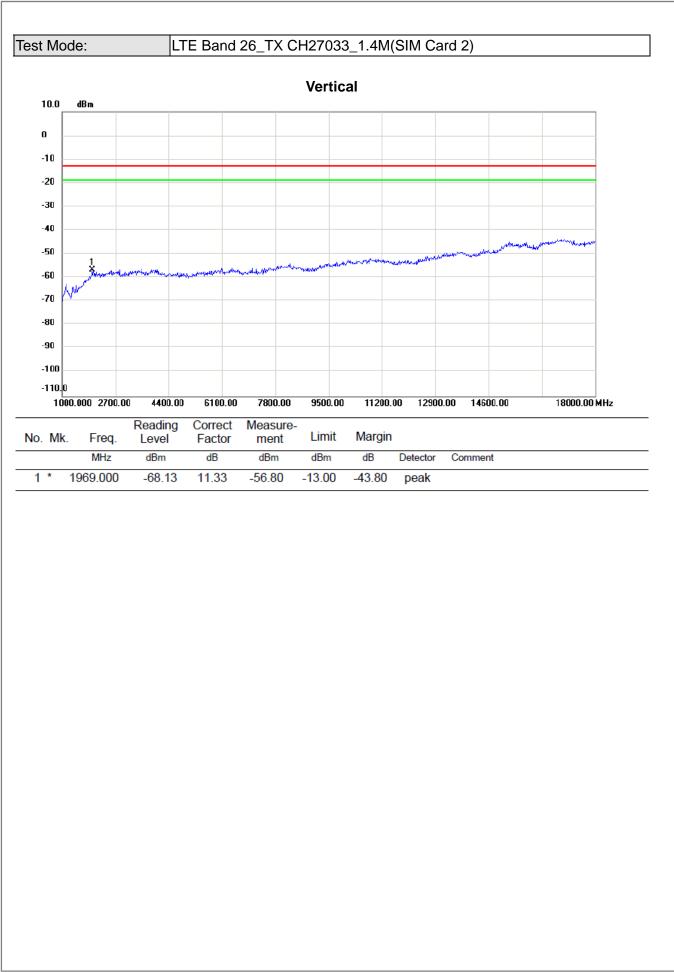






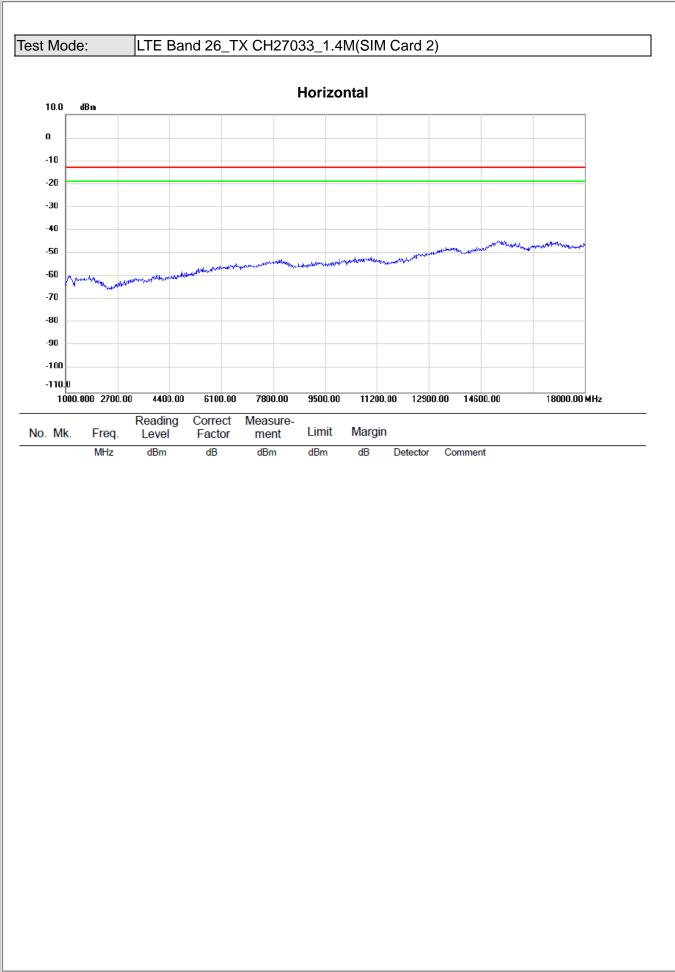










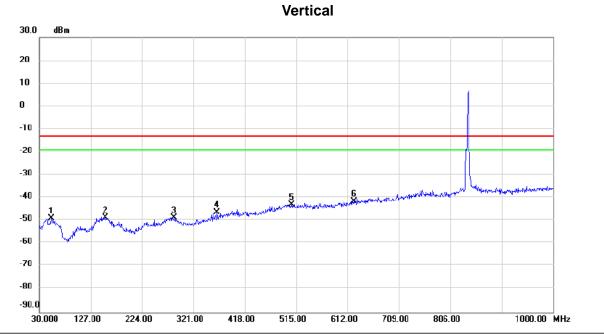








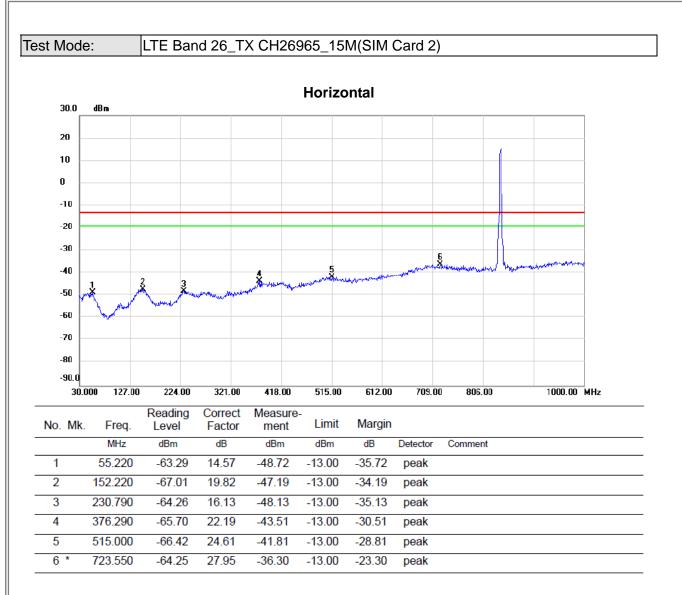
LTE Band 26_TX CH26965_15M(SIM Card 2)



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	52.310	-64.20	15.13	-49.07	-13.00	-36.07	peak	
2	154.160	-68.36	19.67	-48.69	-13.00	-35.69	peak	
3	284.140	-67.37	18.69	-48.68	-13.00	-35.68	peak	
4	365.620	-67.97	21.67	-46.30	-13.00	-33.30	peak	
5	506.270	-67.48	24.56	-42.92	-13.00	-29.92	peak	
6 *	623.640	-67.84	26.39	-41.45	-13.00	-28.45	peak	

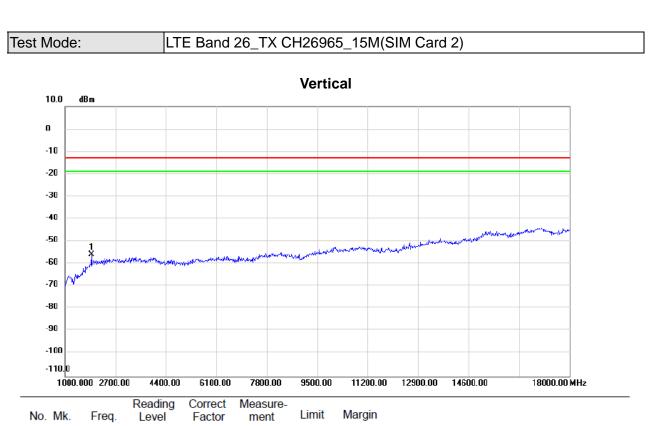












	No. M	. Freq.			ment	Limit	Margin			
-		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
	1 *	1884.000	-67.13	11.23	-55.90	-13.00	-42.90	peak		





