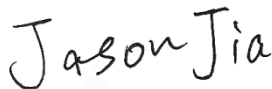


FCC Test Report

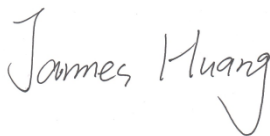
APPLICANT : ZTE CORPORATION
EQUIPMENT : Mobile Broadband Internet Device
BRAND NAME : ZTE
MODEL NAME : K83V
FCC ID : SRQ-K83V
STANDARD : 47 CFR Part 15 Subpart B
CLASSIFICATION : Certification

The product was received on Apr. 10, 2019 and testing was completed on Apr. 26, 2019. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Kunshan) Inc., the test report shall not be reproduced except in full.



Reviewed by: Jason Jia / Supervisor



Approved by: James Huang / Manager



Sporton International (Kunshan) Inc.

**No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China**



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC941004	Rev. 01	Initial issue of report	Jun. 11, 2019



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	Under limit 5.07 dB at 0.697 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 1.87 dB at 41.64 MHz for Quasi-Peak



1. General Description

1.1. Applicant

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057,
P.R.China

1.2. Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Broadband Internet Device
Brand Name	ZTE
Model Name	K83V
FCC ID	SRQ-K83V
EUT supports Radios application	LTE/GNSS WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
IMEI Code	Conduction: 867598040010725 Radiation: 867598040011715
HW Version	K83VHW1.0
SW Version	K83VSBLV1.0.0B03
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.3. Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 13 : 779.5 MHz ~ 784.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Rx Frequency	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 13 : 748.5 MHz ~ 753.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz GNSS : 1559 MHz ~ 1610 MHz
Antenna Type	WWAN : PIFA Antenna WLAN : PIFA Antenna Bluetooth : PIFA Antenna GNSS: PIFA Antenna
Type of Modulation	LTE: QPSK / 16QAM 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n/ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) Bluetooth LE : GFSK Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : $\pi/4$ -DQPSK Bluetooth (3Mbps) : 8-DPSK GNSS : BPSK

1.4. Modification of EUT

No modifications are made to the EUT during all test items.

1.5. Test Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CO01-KS 03CH02-KS	CN1257	314309

1.6. Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR Part 15 Subpart B
- ♦ ANSI C63.4-2014

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2. Test Configuration of Equipment Under Test

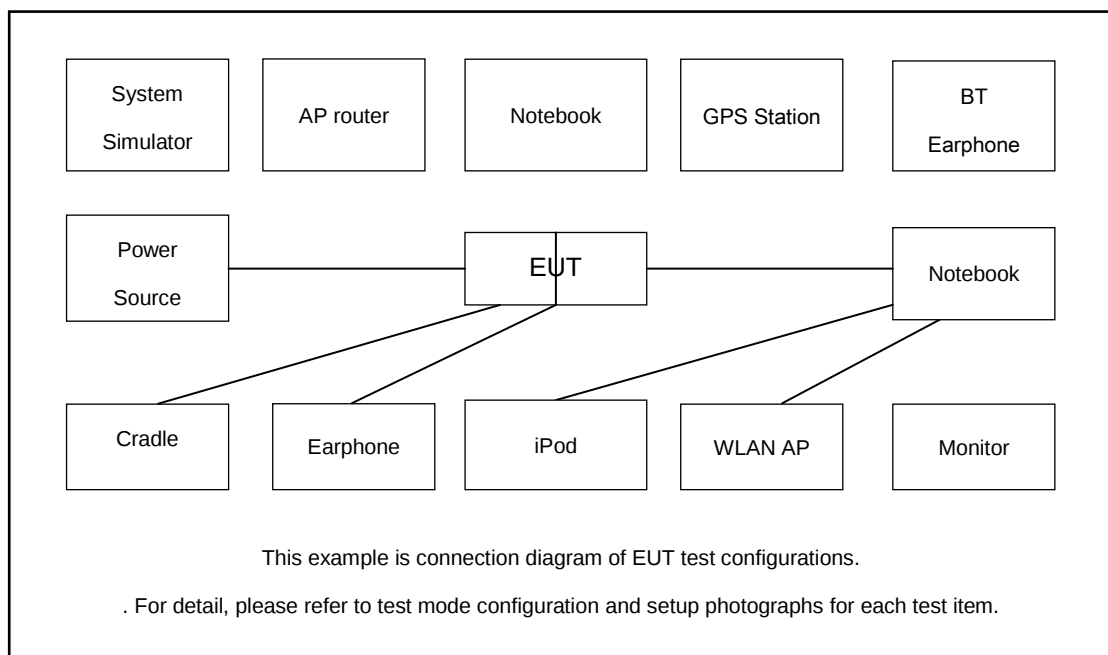
2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Test Items	Function Type
AC Conducted Emission	Mode 1: LTE Band 5 Rx(Middle) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + USB Cable1(Charging from Adapter 1) + Battery
	Mode 2: LTE Band 4 Rx + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + USB Cable2(Charging from Adapter 2) + Battery
	Mode 3: LTE Band 2 Rx + Bluetooth Idle + WLAN (2.4G) Idle + MPEG4 + Earphone + USB Cable1(Charging from Adapter 1) + Battery
	Mode 4: LTE Band 13 Rx(High) + Bluetooth Idle + WLAN (5G) Idle + GNSS Rx + Earphone + USB Cable1(Data Link with Notebook) + Battery
	Mode 5: LTE Band 5 Rx(Middle) + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx + Earphone + USB Cable2(Data Link with Notebook) + Battery
Radiated Emissions	Mode 1: LTE Band 5 Rx(Middle) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + USB Cable1(Charging from Adapter 1) + Battery
	Mode 2: LTE Band 4 Rx + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + USB Cable2(Charging from Adapter 2) + Battery
	Mode 3: LTE Band 2 Rx + Bluetooth Idle + WLAN (2.4G) Idle + MPEG4 + Earphone + USB Cable2(Charging from Adapter 2) + Battery
	Mode 4: LTE Band 13 Rx(High) + Bluetooth Idle + WLAN (5G) Idle + GNSS Rx + Earphone + USB Cable1(Data Link with Notebook) + Battery
	Mode 5: LTE Band 4 Rx + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx + Earphone + USB Cable2(Data Link with Notebook) + Battery
Remark: - The worst case of AC is mode 1; only the test data of this mode is reported. - The worst case of RE is mode 2; only the test data of this mode is reported. - Data Link with Notebook means data application transferred mode between EUT and Notebook.	

2.2.Connection Diagram of Test System



2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Lenovo	LBH308	N/A	N/A	N/A
2.	Bluetooth Earphone	Lenovo	LYEJ02LM	N/A	N/A	N/A
3.	Notebook	DELL	MT320	N/A	N/A	shielded cable DC O/P 1.8m , Unshielded AC I/P cable 1.8m
4.	Notebook	Lenovo	G480	PRC4	N/A	shielded cable DC O/P 1.8m , Unshielded AC I/P cable 1.8m
5.	Notebook	Lenovo	Latitude 3480	N/A	N/A	shielded cable DC O/P 1.8m , Unshielded AC I/P cable 1.8m
6.	WLAN AP	LINKSYS	WRT600N	Q87-WRT600NV11	N/A	shielded cable DC O/P1.8m , Unshielded AC I/P1.8m
7.	WLAN AP	TP-LINK	TL-WDR5600	N/A	N/A	Unshielded,1.8m
8.	WLAN AP	D-link	DIR-855	KA2DIR855A2	N/A	Unshielded,1.8m
9.	Earphone	Lenovo	LH102	N/A	N/A	Unshielded,1.2m
10.	Vector Signal Generator	R&S	SMBV100A	258305	N/A	N/A
11.	iPod	Apple	A1199	Fcc DoC	Shielded, 1.2m	N/A
12.	SD Card	Kingston	SDC4/4GB	N/A	N/A	N/A
13.	SD Card	SanDisk	Uitra	N/A	N/A	N/A
14.	Signal Generator	R&S	GSS7000	NA	NA	Unshielded,1.8m
15.	LTE Base Station	Anritus	MT8820C	N/A	N/A	Unshielded,1.8m
16.	Signal Generator	R&S	SMBV100A	NA	NA	Unshielded,1.8m

2.4. EUT Operation Test Setup

The EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

1. Data application is transferred between notebook and EUT via USB cable.
2. Turn on camera to capture images.
3. Turn on MPEG4 function.
4. Turn on GNSS function to make the EUT receive continuous signals from GNSS station.

3. Test Result

3.1. Test of AC Conducted Emission Measurement

3.1.1 Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

<Class B Limit>

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

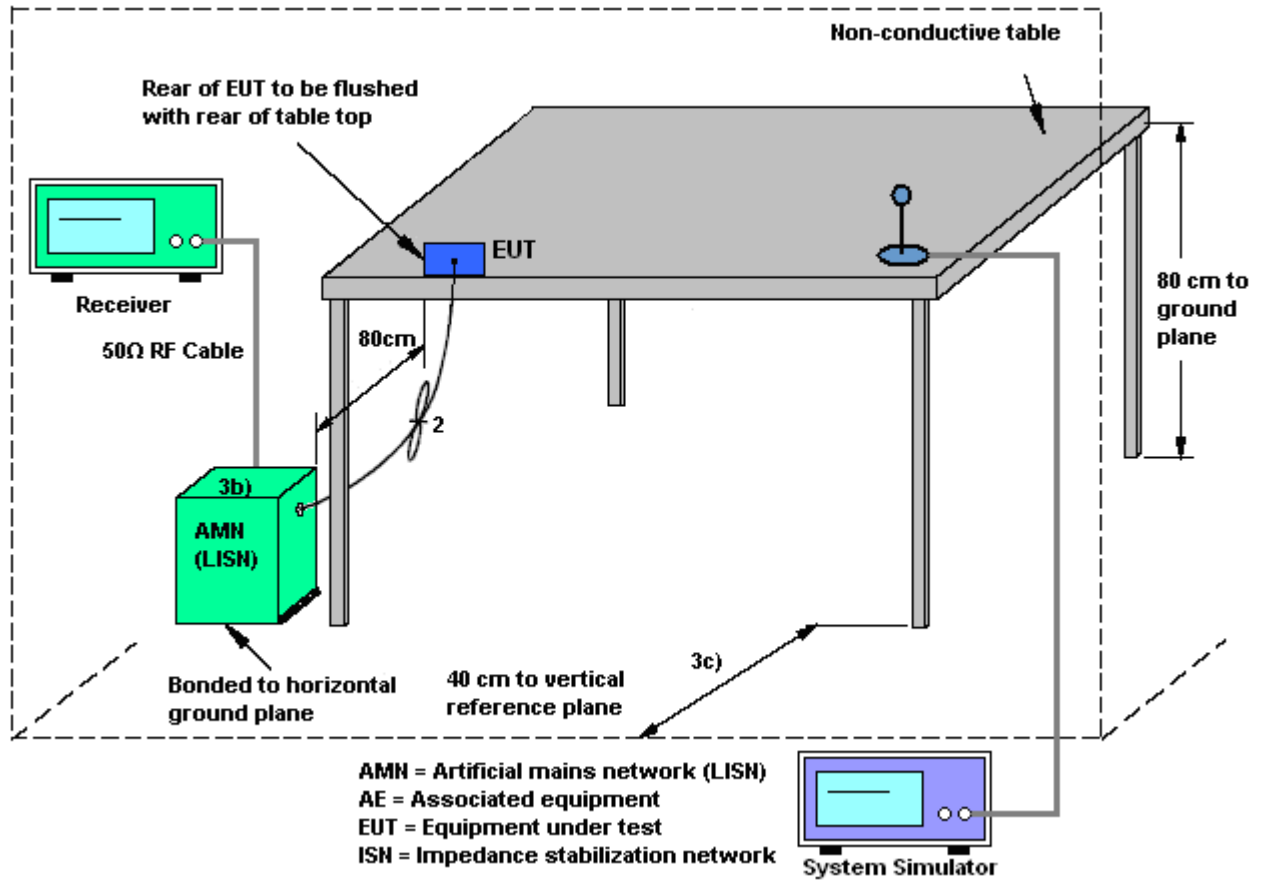
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedure

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

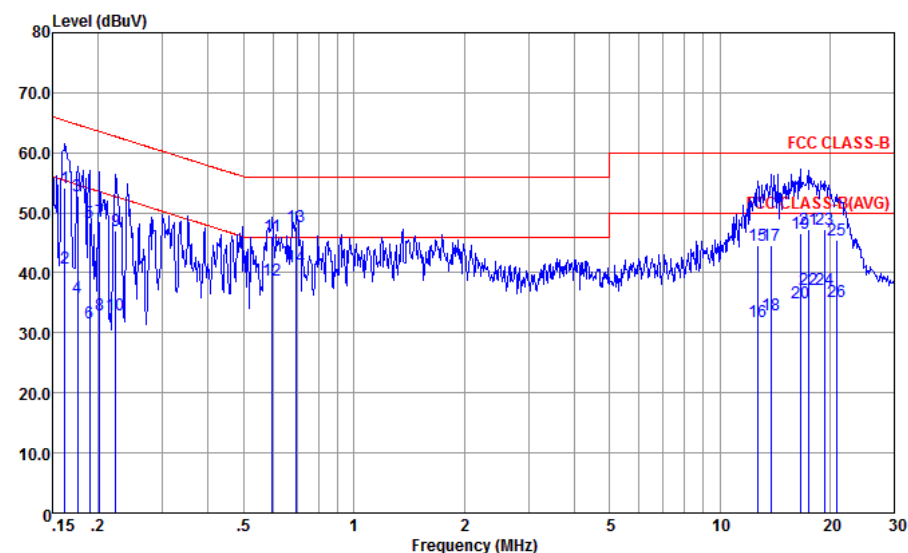
3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

Test Engineer :	Amos Zhang	Temperature :	23.6~24.2℃
		Relative Humidity :	31~33%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

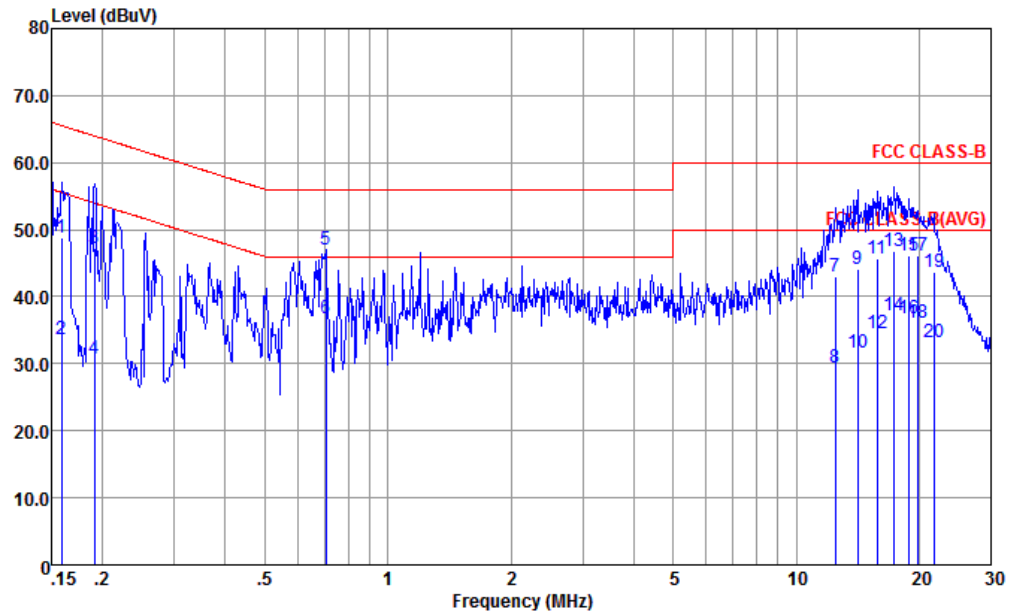


Site : CO01-KS
Condition : FCC CLASS-B LISN-L-181119-060105 LINE

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.162	54.15	-11.19	65.34	43.60	0.10	10.45	QP
2	0.162	40.85	-14.49	55.34	30.30	0.10	10.45	Average
3	0.176	52.72	-11.96	64.68	42.19	0.11	10.42	QP
4	0.176	35.82	-18.86	54.68	25.29	0.11	10.42	Average
5	0.189	48.30	-15.76	64.06	37.81	0.11	10.38	QP
6	0.189	31.70	-22.36	54.06	21.21	0.11	10.38	Average
7	0.202	48.68	-14.86	63.54	38.20	0.12	10.36	QP
8	0.202	33.08	-20.46	53.54	22.60	0.12	10.36	Average
9	0.223	47.08	-15.62	62.70	36.60	0.13	10.35	QP
10	0.223	33.08	-19.62	52.70	22.60	0.13	10.35	Average
11	0.598	46.02	-9.98	56.00	35.60	0.18	10.24	QP
12	0.598	38.72	-7.28	46.00	28.30	0.18	10.24	Average
13	0.697	47.63	-8.37	56.00	37.20	0.19	10.24	QP
14 *	0.697	40.93	-5.07	46.00	30.50	0.19	10.24	Average
15	12.716	44.51	-15.49	60.00	33.91	0.23	10.37	QP
16	12.716	31.81	-18.19	50.00	21.21	0.23	10.37	Average
17	13.841	44.51	-15.49	60.00	33.89	0.23	10.39	QP
18	13.841	32.91	-17.09	50.00	22.29	0.23	10.39	Average
19	16.573	46.54	-13.46	60.00	35.90	0.21	10.43	QP
20	16.573	34.94	-15.06	50.00	24.30	0.21	10.43	Average
21	17.568	47.26	-12.74	60.00	36.60	0.21	10.45	QP
22	17.568	37.26	-12.74	50.00	26.60	0.21	10.45	Average
23	19.428	47.29	-12.71	60.00	36.61	0.20	10.48	QP
24	19.428	37.29	-12.71	50.00	26.61	0.20	10.48	Average
25	20.924	45.49	-14.51	60.00	34.60	0.38	10.51	QP
26	20.924	35.19	-14.81	50.00	24.30	0.38	10.51	Average



Test Engineer :	Amos Zhang	Temperature :	23.6~24.2℃
		Relative Humidity :	31~33%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
Condition : FCC CLASS-B LISN-N-181119-060105 NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.159	48.83	-16.69	65.52	38.19	0.18	10.46	QP
2	0.159	33.73	-21.79	55.52	23.09	0.18	10.46	Average
3	0.191	47.15	-16.83	63.98	36.60	0.17	10.38	QP
4	0.191	30.75	-23.23	53.98	20.20	0.17	10.38	Average
5 *	0.705	46.98	-9.02	56.00	36.60	0.14	10.24	QP
6	0.705	36.68	-9.32	46.00	26.30	0.14	10.24	Average
7	12.449	43.11	-16.89	60.00	32.60	0.14	10.37	QP
8	12.449	29.41	-20.59	50.00	18.90	0.14	10.37	Average
9	14.138	44.12	-15.88	60.00	33.60	0.13	10.39	QP
10	14.138	31.72	-18.28	50.00	21.20	0.13	10.39	Average
11	15.801	45.73	-14.27	60.00	35.20	0.12	10.41	QP
12	15.801	34.43	-15.57	50.00	23.90	0.12	10.41	Average
13	17.383	46.76	-13.24	60.00	36.20	0.11	10.45	QP
14	17.383	37.16	-12.84	50.00	26.60	0.11	10.45	Average
15	18.920	46.09	-13.91	60.00	35.51	0.11	10.47	QP
16	18.920	36.79	-13.21	50.00	26.21	0.11	10.47	Average
17	19.845	46.10	-13.90	60.00	35.50	0.11	10.49	QP
18	19.845	36.20	-13.80	50.00	25.60	0.11	10.49	Average
19	21.715	43.62	-16.38	60.00	32.60	0.50	10.52	QP
20	21.715	33.22	-16.78	50.00	22.20	0.50	10.52	Average

3.2. Test of Radiated Emission Measurement

3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

<Class B Limit>

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.2.2. Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

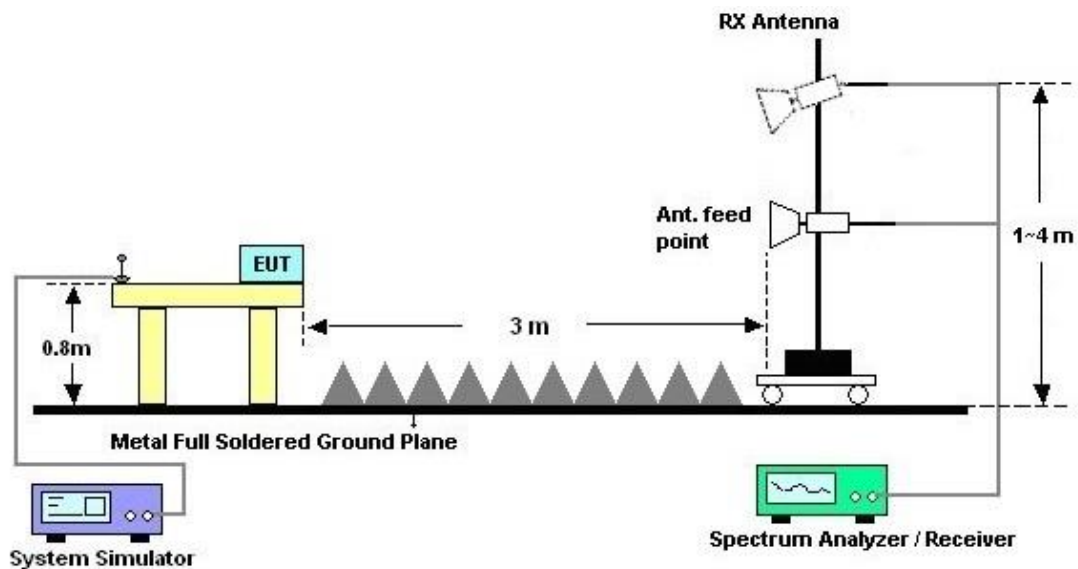
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dBμV/m) = 20 log Emission level (μV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz

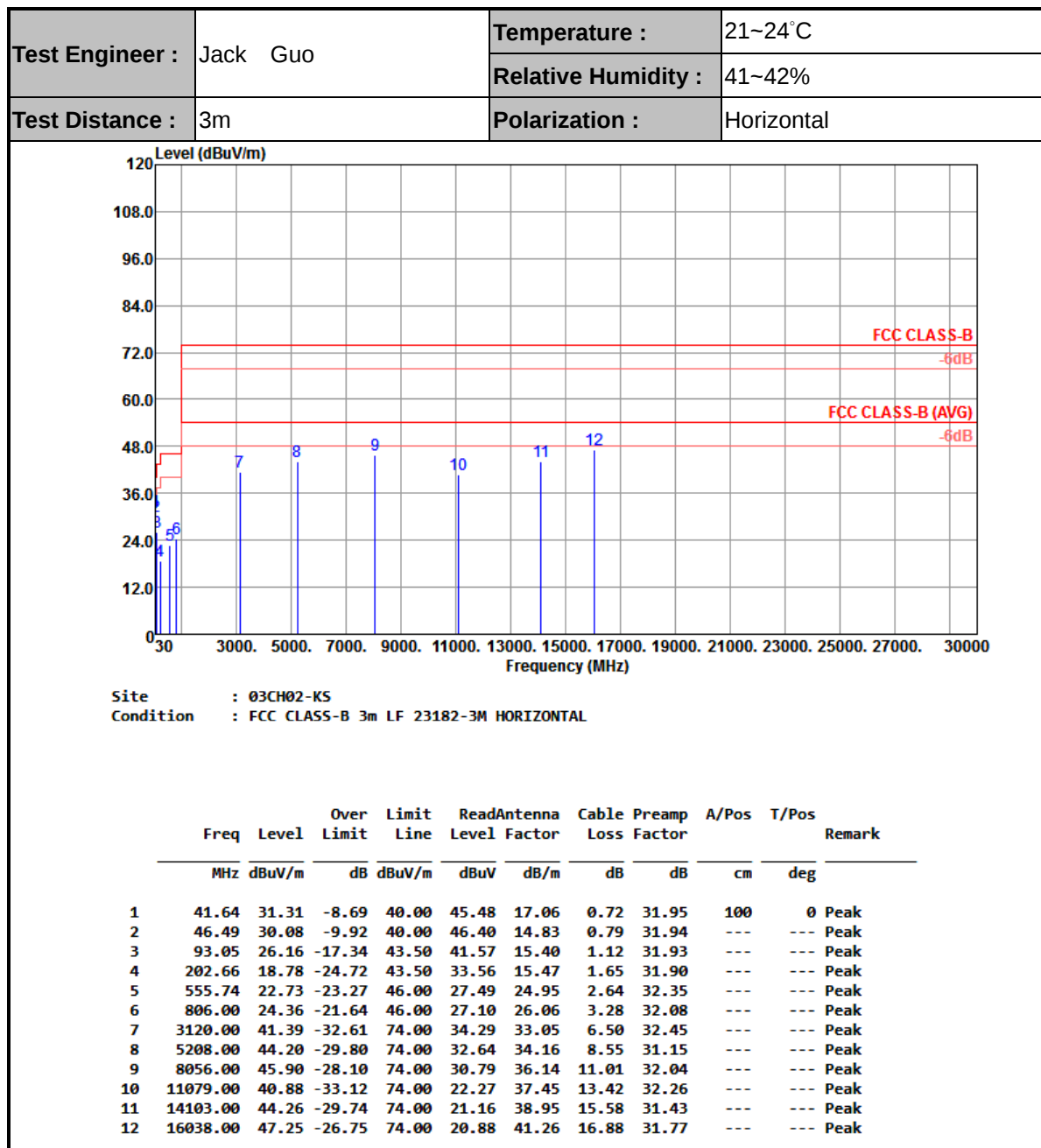


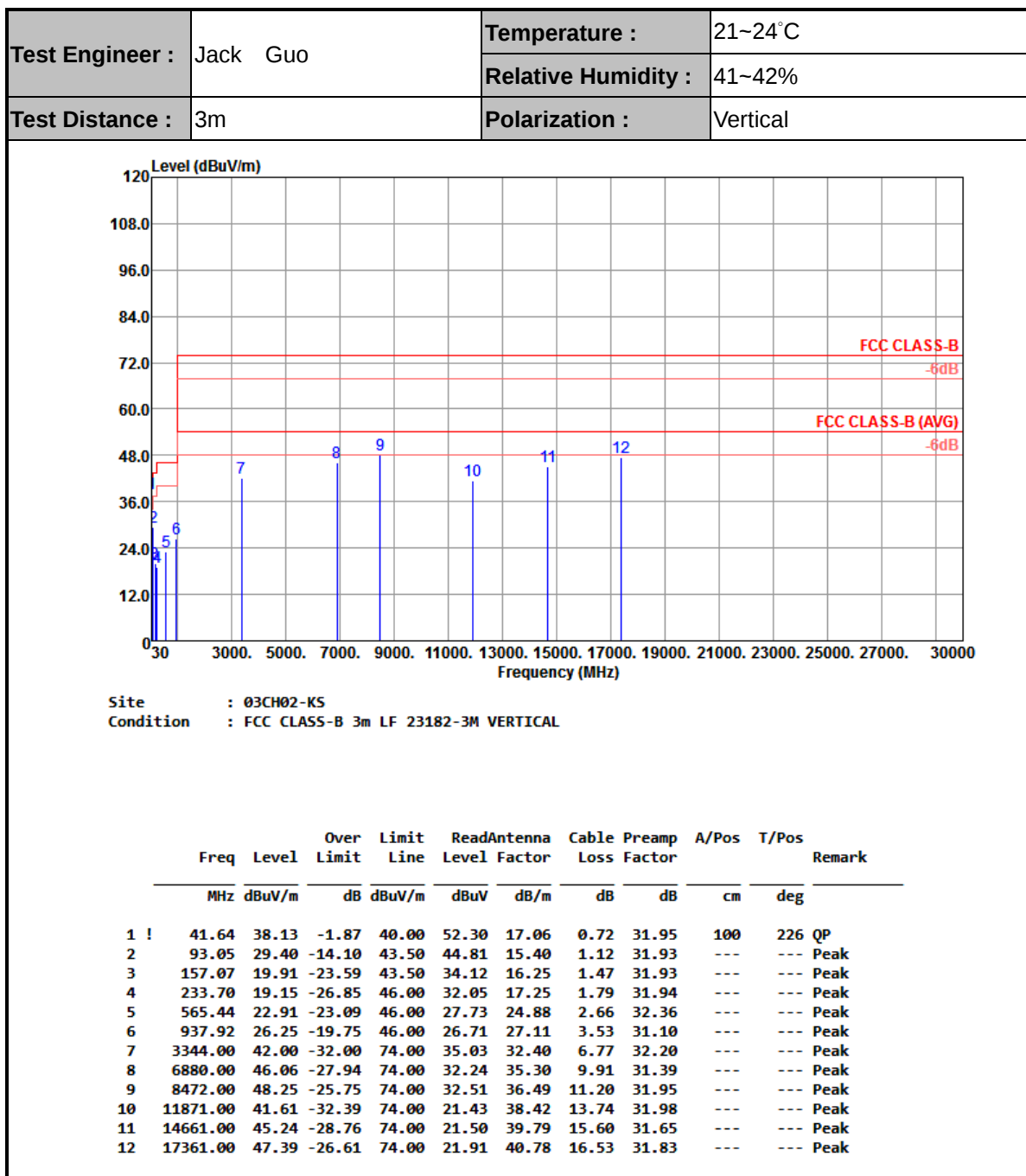
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission







4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 16, 2019	Apr. 26, 2019	Apr. 15, 2020	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 12, 2018	Apr. 26, 2019	Oct. 11, 2019	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Nov. 19, 2018	Apr. 26, 2019	Nov. 18, 2019	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 12, 2018	Apr. 26, 2019	Oct. 11, 2019	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz;Ma x 30dBm	Aug. 06, 2018	Apr. 21, 2019	Aug. 05, 2019	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz~44G,MAX 30dB	Apr. 16, 2019	Apr. 21, 2019	Apr. 15, 2020	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6112D	23182	30MHz~2GHz	Dec. 29, 2018	Apr. 21, 2019	Dec. 28, 2019	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75959	1GHz~18GHz	Jan. 27, 2019	Apr. 21, 2019	Jan. 26, 2020	Radiation (03CH02-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2019	Apr. 21, 2019	Jan. 04, 2020	Radiation (03CH02-KS)
Amplifier	MITEQ	TTA1840-35-H G	1887435	18~40GHz	Jan. 14, 2019	Apr. 21, 2019	Jan. 13, 2020	Radiation (03CH02-KS)
Amplifier	SONOMA	310N	187289	9KHz~1GHz	Aug. 06, 2018	Apr. 21, 2019	Aug. 05, 2019	Radiation (03CH02-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5G Hz	Apr. 15, 2019	Apr. 21, 2019	Apr. 14, 2020	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Apr. 21, 2019	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Apr. 21, 2019	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Apr. 21, 2019	NCR	Radiation (03CH02-KS)

NCR: No Calibration Required

5. Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.9dB
--	-------

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.9dB
--	-------

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
--	-------