

EMC TEST REPORT

Applicant:	ecom instruments GmbH
Address:	Industriestraße. 2, 97959 Assamstadt, Germany

Manufacturer or Supplier	ecom instruments GmbH
Address	Industriestraße. 2, 97959 Assamstadt, Germany
Product	LTE Smartphone
Brand Name	ecom MOBILE SAFETY /Sonim
Model	Smart-Ex 01
Additional Model & Model Difference	N/A
Date of tests	Oct. 06, 2014~ Nov. 10, 2014

The submitted sample of the above equipment has been tested for according to the requirements of the following standards:

☒ **FCC Part 15, Subpart B, Class B**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Jeffery Lee Project Engineer / EMC Department	Approved by Sam Tung Supervisor / EMC Department
	 Date: Mar. 23, 2015

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Test Report No.: FV150319N004

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FV141112N046	Original release	Nov. 19, 2014
FV150319N004	Based on the original report FV141112N046 changing Type number, Brand name & SW version, cancelling LTE Band 12 and adding LTE Band14.	Mar. 23, 2015



1 GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF EUT

PRODUCT	LTE Smartphone	
MODEL NO.	Smart-Ex 01	
TYPE NO.	L16V012AB	
NOMINAL VOLTAGE	5.0Vdc (adapter or host equipment) 3.7Vdc (Li-ion)	
BATTERY	Brand Name: ECOM Model Name: Ex-BP H09 Power Rating: DC 3.7V, 3600mAh, Li-ion	
MODULATION TYPE	WLAN	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
	Bluetooth	GFSK, $\pi/4$ -DQPSK, 8DPSK
	GPS	C/A code
	GSM	GMSK, 8PSK
	WCDMA	BPSK/QPSK
	LTE	QPSK/16QAM
	NFC	ASK
OPERATING FREQUENCY	WLAN	2412-2462MHz for 11b/g/n(HT20) 2422-2452MHz for 11n(HT40) 5180~5240MHz, 5260~5320MHz and 5500~5700MHz, 5745~5805MHz for 11a/n(HT20)/n(HT40)
	Bluetooth	2402MHz~2480MHz
	GPS	1575.42MHz
	GSM	824.2MHz ~ 848.8MHz (FOR GSM 850) 1850.2MHz ~ 1909.8MHz (FOR PCS 1900)
	WCDMA	1852.4MHz ~ 1907.6MHz (FOR WCDMA 850) 826.4MHz ~ 846.6MHz (FOR WCDMA 1900)
	LTE	1850MHz ~ 1910MHz (FOR LTE Band2) 1710MHz ~ 1755MHz (FOR LTE Band4) 824MHz ~ 849MHz (FOR LTE Band5) 2500MHz ~ 2570MHz (FOR LTE Band7) 788MHz ~ 798MHz (FOR LTE Band14) 704MHz ~ 716MHz (FOR LTE Band17)
	NFC	13.56 MHz
HW Version	A	
SW Version	7A.1.0.01-4.4.4-10.00.00	
I/O PORTS	Refer to user's manual	
CABLE	USB Cable: Shielded, Detachable, 1.1m	

**ACCESSORY
DEVICES**

Refer to note as below

NOTE:

1. The EUT was powered by the following adapter:

ADAPTER	
BRAND:	Sonim
MODEL:	S11C02
INPUT:	AC 100-240V, 450mA
OUTPUT:	DC 5V, 2100mA

2. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.



1.2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart B			
Standard Section	Test Item	Result	Remark
FCC Part 15, Subpart B, Class B	Conducted Test	PASS	Meets limits minimum passing margin is – 7.16 dB at 0.61920 MHz
	Radiated Emission Test (30MHz ~ 1GHz)	PASS	Meets Class B Limit Minimum passing margin is - 5.81dB at 130.759 MHz
	Radiated Emission Test (Above 1GHz)	PASS	Meets Class B Limit Minimum passing margin is -16.68dB at 3374.21MHz

1.3 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:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz ~ 30MHz	+/-2.66dB
Radiated emissions	30MHz ~ 1GHz	+/-4.06dB
	1GHz ~ 18GHz	+/-4.58dB



1.4 DESCRIPTION OF TEST MODES

Test Mode	Test Condition
Radiated emission test	
1	GSM850 Idle+ Adapter + USB cable+ Camera+Battery+ Earphone +BT Idle + Wifi Idle(2.4G)
2	PCS1900 Idle + USB Link + USB cable + MPEG 4+ Battery + Earphone +BT Idle + Wifi Idle (5G)
3	LTE B2 Idle+ Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(2.4G)+ GPS Rx
4	LTE B4 Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(5G)+ GPS Rx
5	LTE B5 Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(2.4G)+ GPS Rx
6	LTE B7 Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(5G)+ GPS Rx
7	LTE B17Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(2.4G)+ GPS Rx
8	LTE B14 Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(5G)+ GPS Rx
9	WCDMA Band II Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(2.4G)+ GPS Rx + NFC Idle
10	WCDMA Band V Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(5G)+ GPS Rx + NFC Idle
Conducted emission test	
1	GSM850 Idle+ Adapter + USB cable+ Camera+ Battery+ Earphone +BT Idle + Wifi Idle(2.4G)
2	PCS1900 Idle+ USB Link + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(5G)+ MPEG4
3	WCDMA Band II Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(2.4G)+ GPS Rx + NFC Idle
4	WCDMA Band V Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(5G)+ GPS Rx + NFC Idle
5	LTE B2 Idle+ Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(2.4G)+ GPS Rx
6	LTE B4 Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(5G)+ GPS Rx
7	LTE B5 Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(2.4G)+ GPS Rx
8	LTE B7 Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(5G)+ GPS Rx
9	LTE B17Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(2.4G)+ GPS Rx
10	LTE B14 Idle + Adapter + USB cable+ Battery+ Earphone +BT Idle + Wifi Idle(5G)+ GPS Rx

NOTE:

1. For conducted emission test, test mode 2 was the worst case and only this mode was presented in this report.
2. For radiated emission test, test mode 2 was the worst case and only this mode was presented in this report.

1.5 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.

FOR EMISSION TESTS

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Universal Radio Communication Tester	R&S	CMU200	123259	N/A
2	Wireless AP	ABOCOM	WR224GR	060500749P	D43064
3	Bluetooth Earphone	FAP00	H6080	12098	N/A
4	Notebook	DELL	E6420	9H12FS1	N/A
5	Mouse	DELL	M056UOA	01688082	N/A
6	Printer	HP	hp LaserJet 1300	CNSJF75989	N/A
7	Earphone	Minami	ME-816B5-E	N/A	N/A

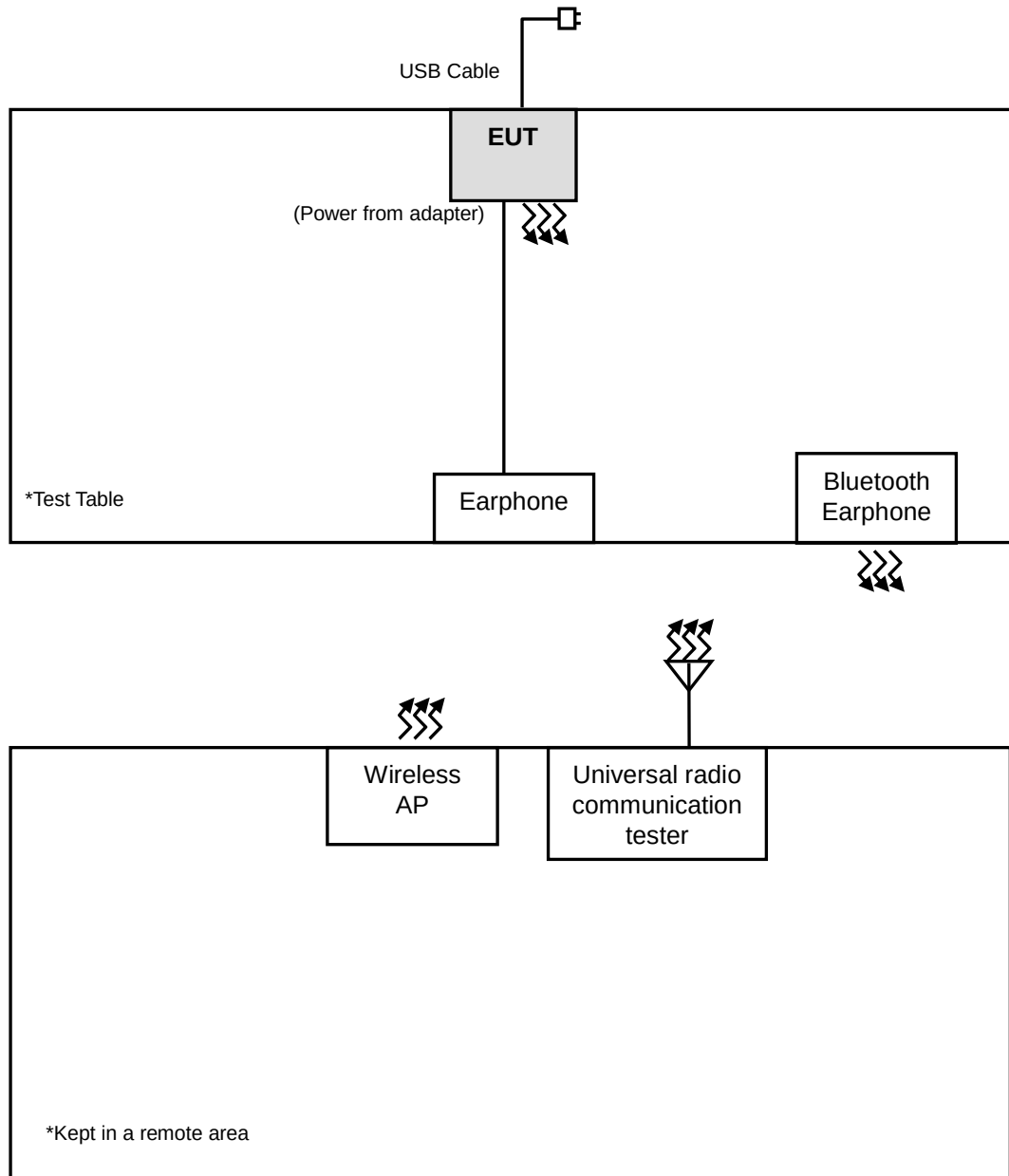
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A
2	N/A
3	N/A
4	DC Line: Unshielded, Undetachable, 2.0m
5	USB Line: Unshielded, Undetachable 1.8m;
6	USB Line: Shielded, Detachable 1.5m;
7	Earphone line: Shielded, Detachable, 1.2m

NOTE:

1. All power cords of the above support units are non shielded (1.8m).
2. Items 3-4 acted as communication partners.



1.6 CONFIGURATION OF SYSTEM UNDER TEST





2 EMISSION TEST

2.1 CONDUCTED EMISSION MEASUREMENT

2.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

TEST STANDARD: FCC Part 15, Subpart B (Section: 15.107)

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

2.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCS30	100340	May 17,14	May 16,15
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	May 13,14	May 12,15
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	May 13,14	May 12,15
Test software	ADT	ADT_Cond_V7.3.7	N/A	N/A	N/A

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in Dongguan Shielded Room 553.



2.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150 kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

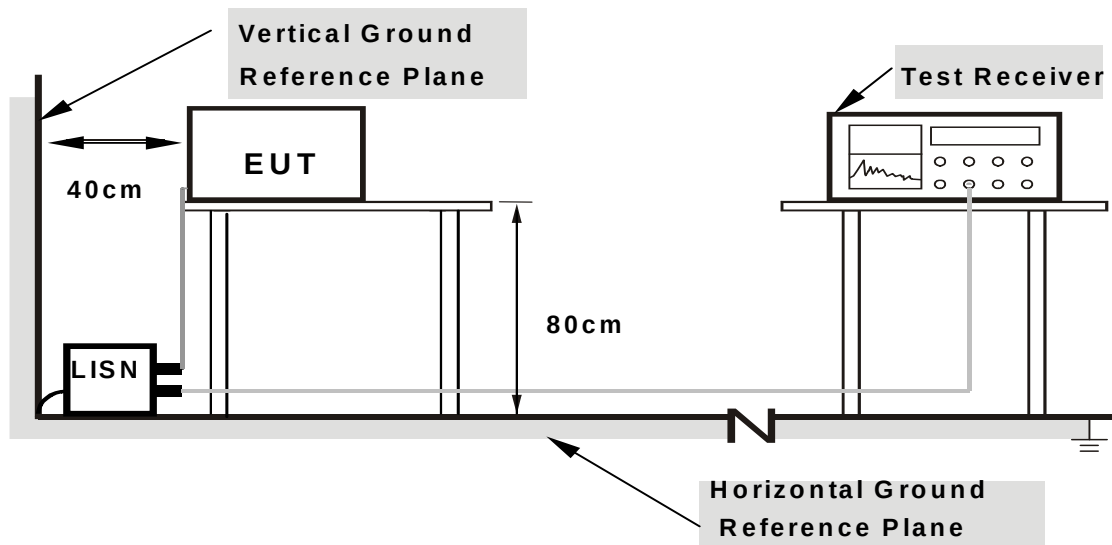
NOTE: All modes of operation were investigated and the worst-case emissions are reported.

2.1.4 DEVIATION FROM TEST STANDARD

No deviation.



2.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

2.1.6 EUT OPERATING CONDITIONS

- a. Turned on the power and connected of all equipment.
- b. EUT was operated according to the use type described in the manufacturer's specifications or the user's manual.

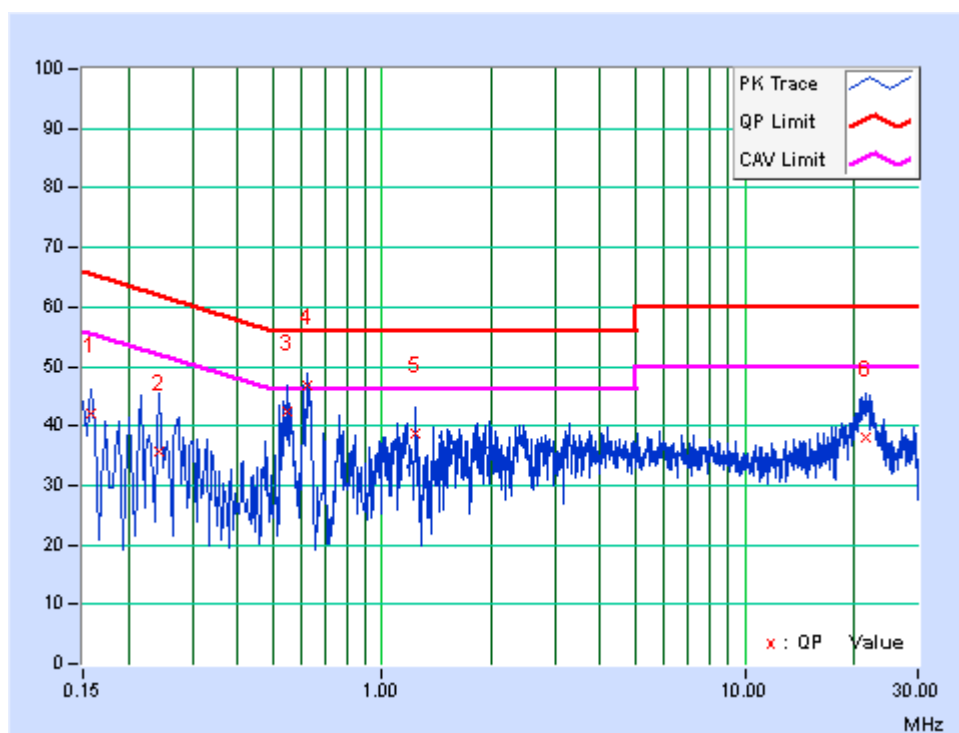


2.1.7 TEST RESULTS

TEST VOLTAGE	DC 5V From Adapter Input 230 Vac, 50 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 40RH	PHASE	Line (L)
TESTED BY	Cheng Zhong		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15782	10.94	31.20	17.34	42.14	28.28	65.58	55.58	-23.44	-27.30
2	0.24384	10.76	25.02	14.48	35.78	25.24	61.96	51.96	-26.18	-26.72
3	0.54882	10.67	31.85	23.88	42.52	34.55	56.00	46.00	-13.48	-11.45
4	0.61920	10.63	36.31	28.21	46.94	38.84	56.00	46.00	-9.06	-7.16
5	1.23698	10.40	28.36	16.50	38.76	26.90	56.00	46.00	-17.24	-19.10
6	21.54943	11.18	26.86	14.78	38.04	25.96	60.00	50.00	-21.96	-24.04

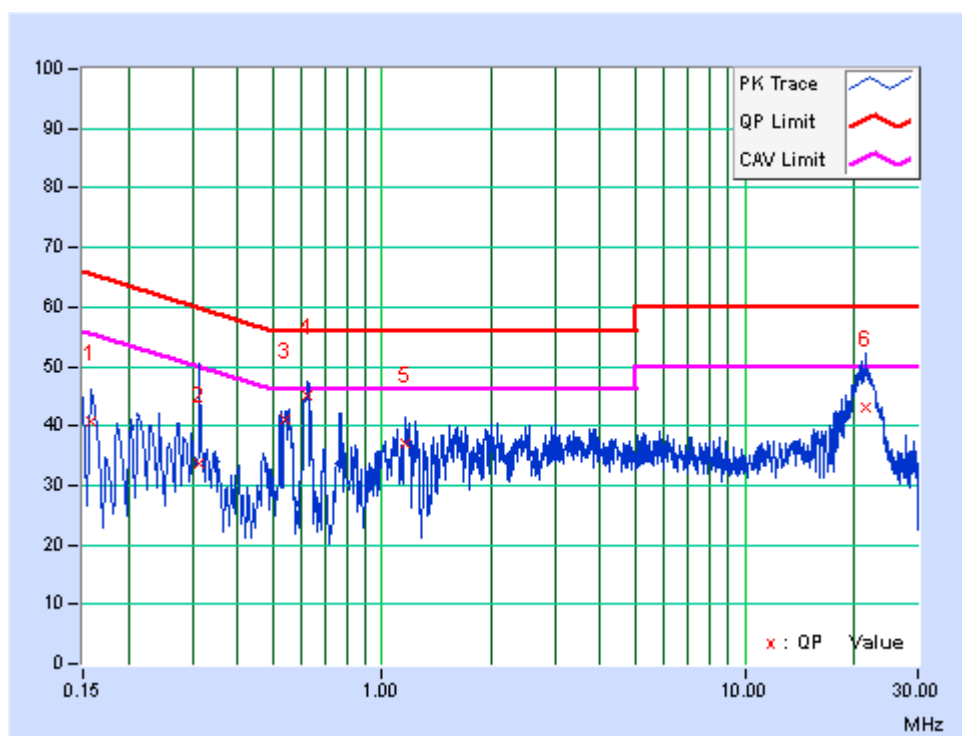
REMARKS: The emission levels of other frequencies were very low against the limit.



TEST VOLTAGE	DC 5V From Adapter Input 230 Vac, 50 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 40RH	PHASE	Neutral(N)
TESTED BY	Cheng Zhong		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15782	10.75	30.04	13.46	40.79	24.21	65.58	55.58	-24.79	-31.37
2	0.31422	10.68	22.85	11.22	33.53	21.90	59.86	49.86	-26.33	-27.96
3	0.54375	10.67	30.38	19.76	41.05	30.43	56.00	46.00	-14.95	-15.57
4	0.62359	10.59	34.49	22.78	45.08	33.37	56.00	46.00	-10.92	-12.63
5	1.15878	10.27	26.69	14.97	36.96	25.24	56.00	46.00	-19.04	-20.76
6	21.48687	11.11	31.98	15.97	43.09	27.08	60.00	50.00	-16.91	-22.92

REMARKS: The emission levels of other frequencies were very low against the limit.





2.2 RADIATED EMISSION MEASUREMENT

2.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

TEST STANDARD: FCC Part 15, Subpart B (Section: 15.109)

Emissions radiated outside of the specified bands, shall be according to the general radiated limits as following:

Radiated Emissions Limits at 10 meters (dBμV/m)				
Frequencies (MHz)	FCC 15B/ ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	39	29.5	40	30
88-216	43.5	33.1		
216-230	46.4	35.6		
230-960				
960-1000	49.5	43.5	47	37
1000-3000	Avg: 49.5	Avg: 43.5	Not defined	Not defined
3000+	Peak: 69.5	Peak: 63.5	Not defined	Not defined

Radiated Emissions Limits at 3 meters (dBμV/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	49.5	40	50.5	40.5
88-216	54	43.5		
216-230	56.9	46		
230-960				
960-1000	60	54	57.5	47.5
1000-3000	Avg: 60 Peak: 80	Avg: 54 Peak: 74	Avg: 56 Peak: 76	Avg: 50 Peak: 70
3000+			Avg: 60 Peak: 80	Avg: 54 Peak: 74

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. Emission level (dB μ V/m) = 20 log Emission level (μ V/m).
 3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.
 4. QP detector shall be applied if not specified.



2.2.2 TEST INSTRUMENTS

For frequency below 1G

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	100962	Mar. 06,14	Mar. 05,15
EMI Test Receiver	Rohde&Schwarz	ESCI	101418	Mar. 28,14	Mar. 27,15
Trilog-Broadband Antenna	SCHWARZBECK	VULB 9168	9168-554	Dec. 03, 13	Dec. 02, 14
Trilog-Broadband Antenna	SCHWARZBECK	VULB 9168	9168-555	Dec. 03, 13	Dec. 02, 14
Signal Amplifier	Agilent	8447D	2944A10488	Jun. 25,14	Jun. 24,15
Signal Amplifier	Agilent	8447D	2944A11174	Jun. 25,14	Jun. 24,15
10m Semi-anechoic Chamber	CHANGLING	21.4m*12.1m*8.8m	NSEMC006	May 15, 14	May 14, 15
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A

Frequency range above 1GHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Horn Antenna	ETS-Lindgren	3117	00085519	Feb. 02,13	Feb. 01,15
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170242	Feb. 13,14	Feb. 12,17
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101003	Apr. 9, 14	Apr. 8, 15
Spectrum Analyzer (9KHz-25GHz)	Agilent	E7405A	MY45118807	May 13,14	May 12,15
Pre-Amplifier (100MHz-26.5GHz)	EMCI	EMC 012645	980077	Jun. 16,14	Jun. 15,15
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 04,13	Nov. 03,14
Test Software	ADT	ADT_Radiated_V7.6.15	N/A	N/A	N/A

- NOTE:**
1. The test was performed in 10m Chamber.
 2. The calibration interval of the above test instruments is 12 months or 24 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
 3. The FCC Site Registration No. is 502831.



2.2.3 TEST PROCEDURE

The basic test procedure was in accordance with ANSI C63.4:2009 (section 12).

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meters Semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 10 meters (below 1GHz) and 3 meters (above 1GHz) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. The bore sight should be used during the test above 1GHz.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test receiver/spectrum was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.

NOTE:

1. The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1GHz.
3. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the receiver antenna.
4. $\text{Emission level(dBuV/m)} = \text{Raw Value(dBuV)} + \text{Correction Factor(dB/m)}$
5. $\text{Correction Factor(dB/m)} = \text{Antenna Factor (dB/m)} + \text{Cable Factor (dB)}$ (if the raw value not contains the amplifier);
6. $\text{Correction Factor(dB/m)} = \text{Antenna Factor (dB/m)} + \text{Cable Factor (dB)} - \text{Amplifier Gain(dB)}$ (if the raw value contains the amplifier).
7. $\text{Margin value} = \text{Emission level} - \text{Limit value}$.

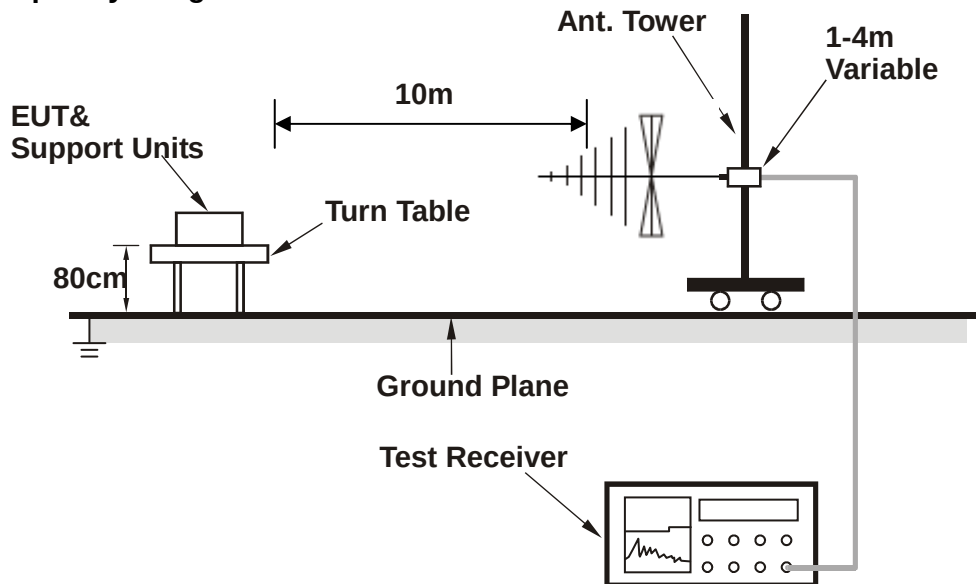
2.2.4 DEVIATION FROM TEST STANDARD

No deviation.

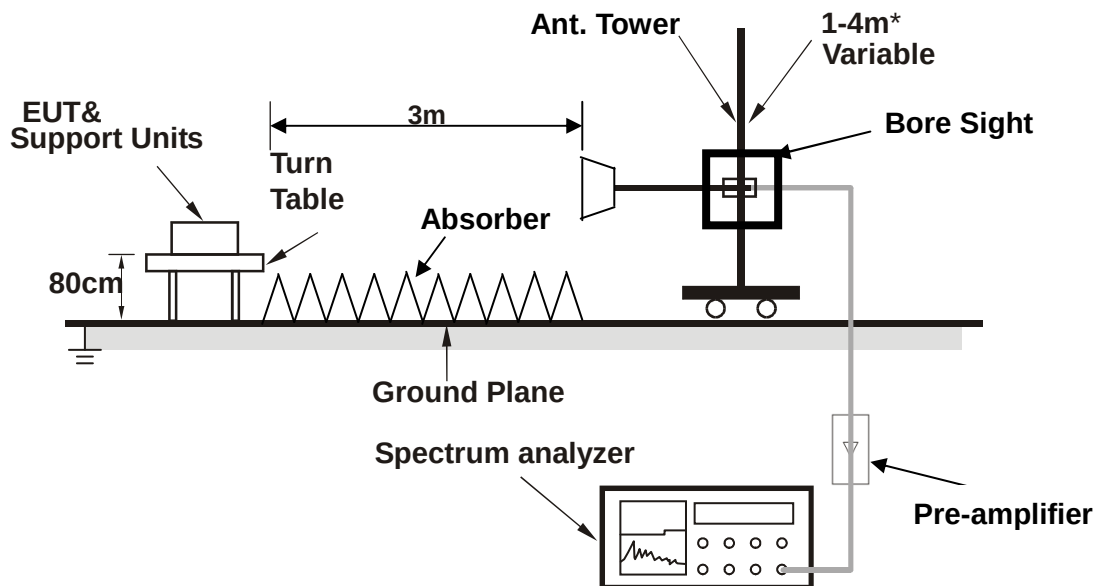


2.2.5 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



* : depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

2.2.6 EUT OPERATING CONDITIONS

Same as item 2.1.6.

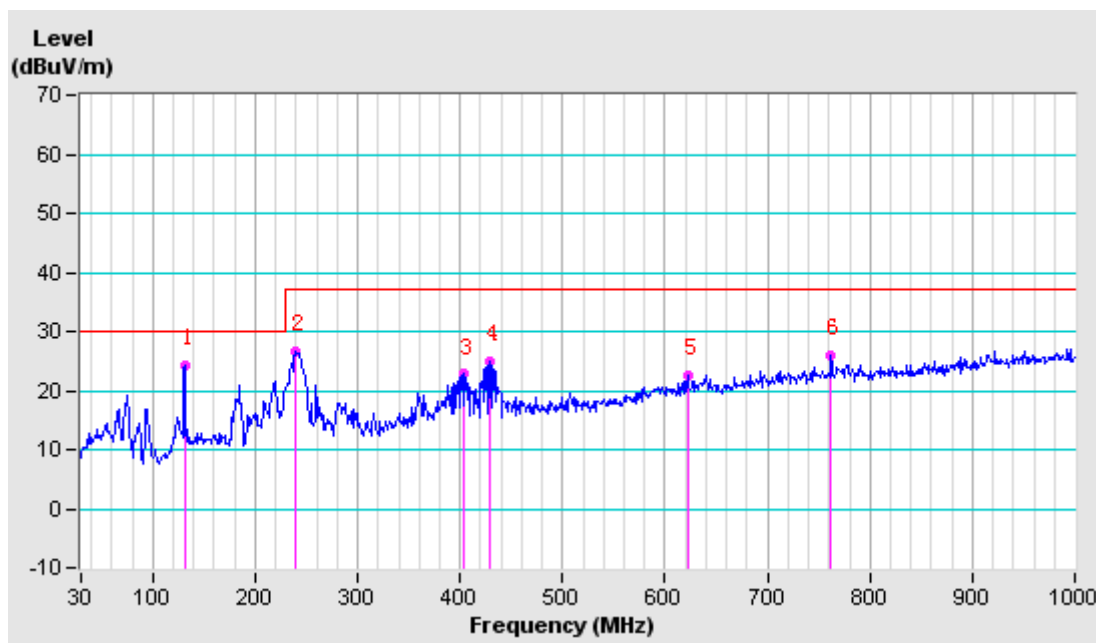


2.2.7 TEST RESULTS

TEST VOLTAGE	DC 5V From Adapter Input 230 Vac, 50 Hz	FREQUENCY RANGE	30-1000 MHz
ENVIRONMENTAL CONDITIONS	22deg. C, 63 %RH	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak , 120 kHz
TESTED BY	Kery He		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 10 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	130.759	-14.97	39.16	24.19	30.00	-5.81	400	55
2	239.641	-13.86	40.46	26.60	37.00	-10.40	400	203
3	403.207	-9.48	32.22	22.74	37.00	-14.26	400	211
4	428.791	-8.84	33.90	25.06	37.00	-11.94	400	63
5	622.428	-4.68	27.30	22.62	37.00	-14.38	400	96
6	761.865	-1.76	27.69	25.93	37.00	-11.07	400	43

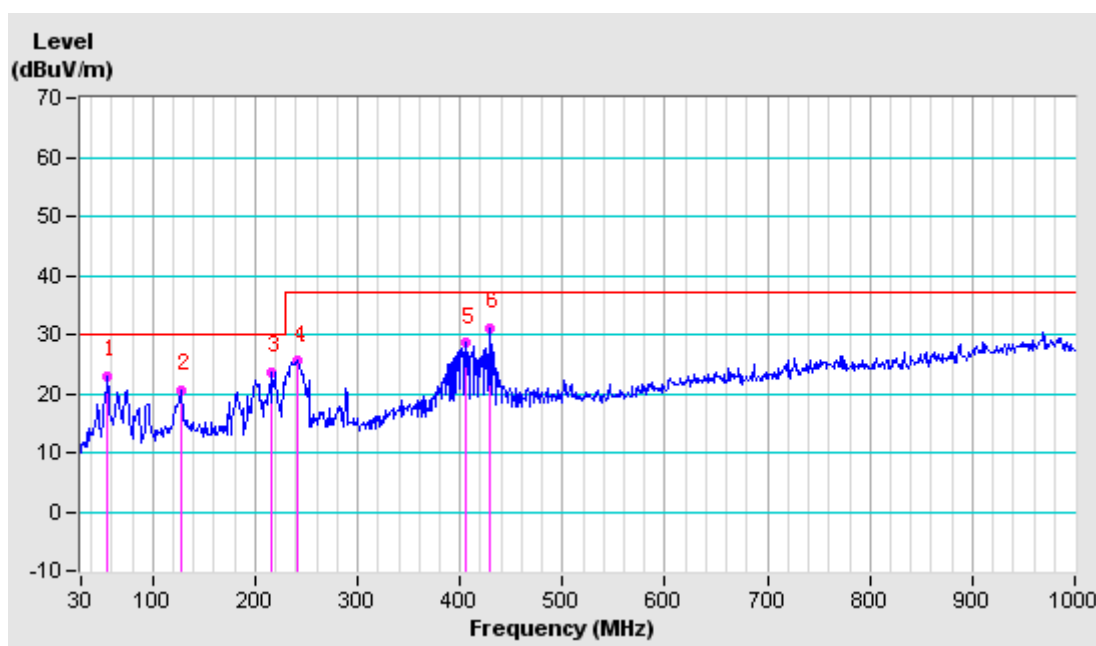
- REMARKS:**
1. Peak detector quick scan is showed on the graph and final quasi-peak detector data is measured corresponding to relevant limit and recorded in the data table.
 2. Negative sign (-) in the margin column signify levels below the limit.
 3. Frequency range scanned: 30MHz to 1000MHz.
 4. Only emissions significantly above equipment noise floor are reported.



TEST VOLTAGE	DC 5V From Adapter Input 230 Vac, 50 Hz	FREQUENCY RANGE	30-1000 MHz
ENVIRONMENTAL CONDITIONS	22deg. C, 63 %RH	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak , 120 kHz
TESTED BY	Kery He		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 10 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	55.826	-14.59	37.45	22.86	30.00	-7.14	100	353
2	127.970	-14.84	35.48	20.64	30.00	-9.36	100	74
3	216.604	-14.95	38.52	23.57	30.00	-6.43	100	357
4	240.732	-13.38	38.88	25.50	37.00	-11.50	100	356
5	404.784	-8.96	37.44	28.48	37.00	-8.52	100	322
6	428.791	-8.35	39.34	30.99	37.00	-6.01	100	343

- REMARKS:**
1. Peak detector quick scan is showed on the graph and final quasi-peak detector data is measured corresponding to relevant limit and recorded in the data table.
 2. Negative sign (-) in the margin column signify levels below the limit.
 3. Frequency range scanned: 30MHz to 1000MHz.
 4. Only emissions significantly above equipment noise floor are reported.





**BUREAU
VERITAS**

Test Report No.: FV150319N004

TEST VOLTAGE	DC 5V From Adapter Input 230 Vac, 50 Hz	FREQUENCY RANGE	1-6 GHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 67% RH	DETECTOR FUNCTION & BANDWIDTH	Peak/Average, 1 MHz
TESTED BY	Kery He		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 10M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	2015.61PK	-8.65	59.09	50.44	74	-23.56	100	25
2	2015.61AV	-8.65	41.19	32.54	54	-21.46	100	25
3	3374.21PK	-5.22	58.11	52.89	74	-21.11	100	180
4	3374.21AV	-5.22	42.54	37.32	54	-16.68	100	180
5	4513.89PK	-2.91	56.64	53.73	74	-20.27	100	36
6	4513.89AV	-2.91	37.05	34.14	54	-19.86	100	36

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 10 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	2249.63PK	-7.91	55.44	47.53	74	-26.47	100	63
2	2249.63AV	-7.91	40.14	32.23	54	-21.77	100	63
3	3346.07PK	-5.27	53.84	48.57	74	-25.43	100	170
4	3346.07AV	-5.27	39.05	33.78	54	-20.22	100	170
5	4853.80PK	-2.57	53.34	50.77	74	-23.23	100	320
6	4853.80AV	-2.57	39.53	36.96	54	-17.04	100	320

- REMARKS:**
1. Peak detector quick scan is showed on the graph and final quasi-peak detector data is measured corresponding to relevant limit and recorded in the data table.
 2. Negative sign (-) in the margin column signify levels below the limit.
 3. Frequency range scanned: 1GHz to 6GHz.
 4. Only emissions significantly above equipment noise floor are reported.



Test Report No.: FV150319N004

3 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

---END---