13.56 MHz Radio Test Report

FCC ID: 2AC9W-CMC161

This report concerns (check ne): ☒ Original Grant ☐ Class II Change

Project No.	**:**	1407C153
Equipment	**:**	Portable Scanner
Model Name	:	CMC161
Applicant	**:**	FUTAIHUA INDUSTRIAL (SHENZHEN) CO.,LTD.
Address	**:**	B District, Foxconn Technology Park, Guanlan Town, Baoan, Shenzhen, GuangDong, China

Date of Receipt	**:**	Jul. 21, 2014
Date of Test	**:**	Jul. 21, 2014~ Oct. 13, 2014
Issued Date	**:**	Oct. 14, 2014
Tested by	**:**	BTL Inc.

Testing Engineer : David Mao
(David Mao)

Technical Manager : Leo Hung
(Leo Hung)

Authorized Signatory : Steven Lu
(Steven Lu)

BTL INC.

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Declaration

BTLrepresents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C**., or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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.

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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-2-1407C153	Original Issue.	Oct. 14, 2014

1. CERTIFICATION

Equipment	:	Portable Scanner
Brand Name	:	CMCID
Model Name	:	CMC161
Applicant	:	FUTAIHUA INDUSTRIAL (SHENZHEN) CO.,LTD.
Manufacturer	:	FUTAIHUA INDUSTRIAL (SHENZHEN) CO.,LTD.
Address	:	B District, Foxconn Technology Park, Guanlan Town, Baoan, Shenzhen, GuangDong, China
Factory	:	FUTAIHUA INDUSTRIAL (SHENZHEN) CO.,LTD.
Address	:	B District, Foxconn Technology Park, Guanlan Town, Baoan, Shenzhen, GuangDong, China
Date of Test	:	Jul. 21, 2014~ Oct. 13, 2014
Test Sample	:	ENGINEERING SAMPLE
Standard(s)	:	FCC Part 15, Subpart C: 15.225 / ANSI C63.4: 2009

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-2-1407C153) 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).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part 15, Subpart C: 15.225			
Standard(s) Section	Test Item	Judgment	Remark
15.207	Conducted emission	PASS	
15.35 / 15.205 / 15.209 / 15.225	Radiated emission	PASS	
15.225(e)	Frequency Stability	PASS	
15.203	Antenna Requirement	PASS	
-	20dB Occupied Bandwidth Measurement	PASS	

NOTE:

(1) ”N/A” denotes test is not applicable in this test report.

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-C02** and **DG-CB03** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China.523792
BTL's test firm number for FCC: 319330

2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty is not specified by FCC rules and for reference only.
The reported uncertainty of measurement **y ± U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95**%.
The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U，(dB)	NOTE
DG-C02	CISPR	150 KHz ~ 30MHz	3.4	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U，(dB)	Note
DG-CB03	CISPR	9KHz~30MHz	V	3.79	
		9KHz~30MHz	H	3.57	
		30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	H	3.68	
		18GHz~40GHz	V	4.15	
		18GHz~40GHz	H	4.14	

3.GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Portable Scanner	
Brand Name	CMCID	
Model Name	CMC161	
Model Difference	N/A	
Product Description	Operation Frequency:	13.56 MHz
	Antenna Designation:	Loop Antenna
	More details of EUT technical specification, please refer to the User's Manual.	
Power Source	#1 DC voltage supplied from Li-ion battery Brand/Model:HUAWEI/HB5A2H #2 Supplied from USB system for charging	
Power Rating	#1 DC 3.7V 1150mAh (1.3Wh) #2 I/P: AC 120V/60Hz O/P: DC 5V	
Connecting I/O Port(s)	Please refer to the User's Manual	

Note:

1. Table for Filed Antenna

Ant.	Manufacturer	Model Name	Antenna Type
1	N/A	N/A	Loop Antenna

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Test Mode	Description
Mode 1	TX MODE

Conducted emission test	
Final Test Mode	Description
Mode 1	TX MODE

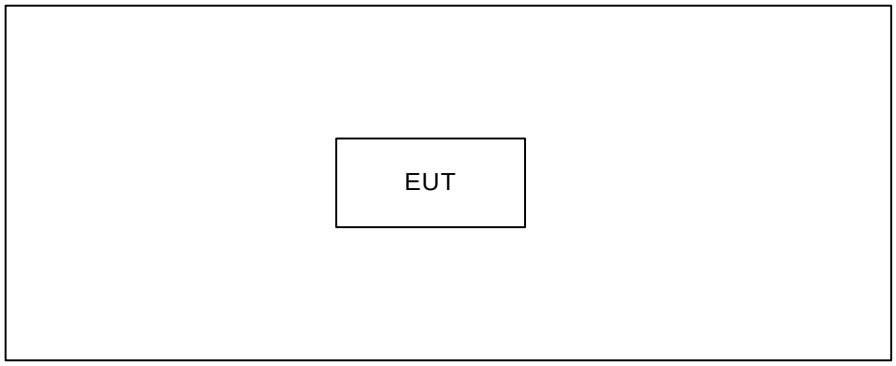
Radiated emission test	
Final Test Mode	Description
Mode 1	TX MODE

Frequency Stability test/ Antenna Requirement test/ 20dB Occupied Bandwidth Measurement	
Final Test Mode	Description
Mode 1	TX MODE

Note:

(1) The EUT is considered a portable unit; it was pre-tested on the positioned of each 3 axis. The worst case was found positioned on z-plane. Therefore only the test data of this z-plane was used for radiated emission measurement test.

3.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



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/IC	Series No.	Note
-	-	-	-	-	-	

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS (Frequency Range 150KHz-30MHz)

Frequency (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.1.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

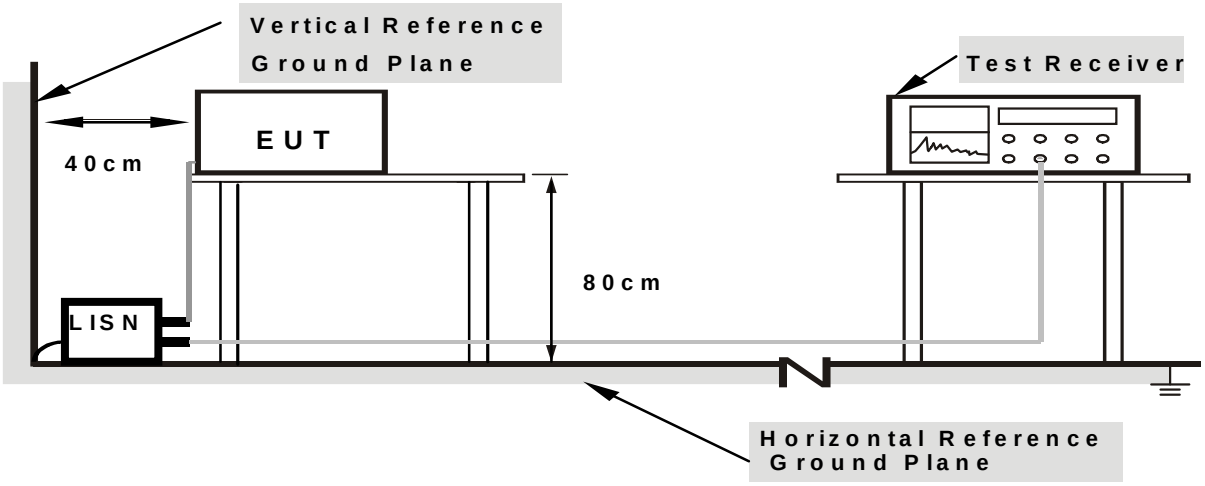
d. LISN at least 80 cm from nearest part of EUT chassis.

e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 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

4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.
The EUT was programmed to be in continuously transmitting mode.

4.1.6 EUT TEST CONDITIONS

Temperature: 25°C
Relative Humidity: 55%
Test Voltage: AC120V/60Hz

4.1.7 TEST RESULTS

Please refer to the Attachment A.

Remark

(1) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn‘t perform in this case, a “*” marked in AVG Mode column of Interference Voltage Measured.
(2) Measuring frequency range from 150KHz to 30MHz.

4.2 RADIATED EMISSION TEST

4.2.1 LIMIT

FCC Part 15.209				
Frequency (MHz)	Field Strength Limitation		Field Strength Limitation at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
0.009 – 0.490	2400 / F(KHz)	300m	10000 * 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 – 1.705	24000 / F(KHz)	30m	100 * 24000/F(KHz)	20log 24000/F(KHz) + 40
1.705 – 30.00	30	30m	100* 30	20log 30 + 40
30.0 – 88.0	100	3m	100	20log 100
88.0 – 216.0	150	3m	150	20log 150
216.0 – 960.0	200	3m	200	20log 200
Above 960.0	500	3m	500	20log 500
FCC Part 15.225(a)/(b)/(c)				
Frequency (MHz)	Field Strength Limitation		Field Strength Limitation at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
13.553 – 13.567	15,848	30 m	15,848*100	124
13.567 – 13.710	334	30 m	334*100	90.5
13.110 – 13.410 13.710 – 14.010	106	30 m	106*100	80.5

Note
:

(1) The tighter limit shall apply at the boundary between two frequency range.
(2) Limitation expressed in dBuV/m is calculated by 20log Emission Level (uV/m).
(3) If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of $L_{d1} = L_{d2} * (d_2/d_1)^2$.
Example:
F.S Limit at 30m distance is 30uV/m , then F.S Limitation at 3m distance is adjusted as $L_{d1} = L_1 = 30uV/m * (10)^2 = 100 * 30$ uV/m
(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
Margin Level = Measurement Value – Limit Value

4.2.2 TEST PROCEDURE

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

NOTE: (FCC PART 15.209)

a. Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode with Detector BW=120 kHz.
b. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform.

NOTE: (FCC PART 15.225)

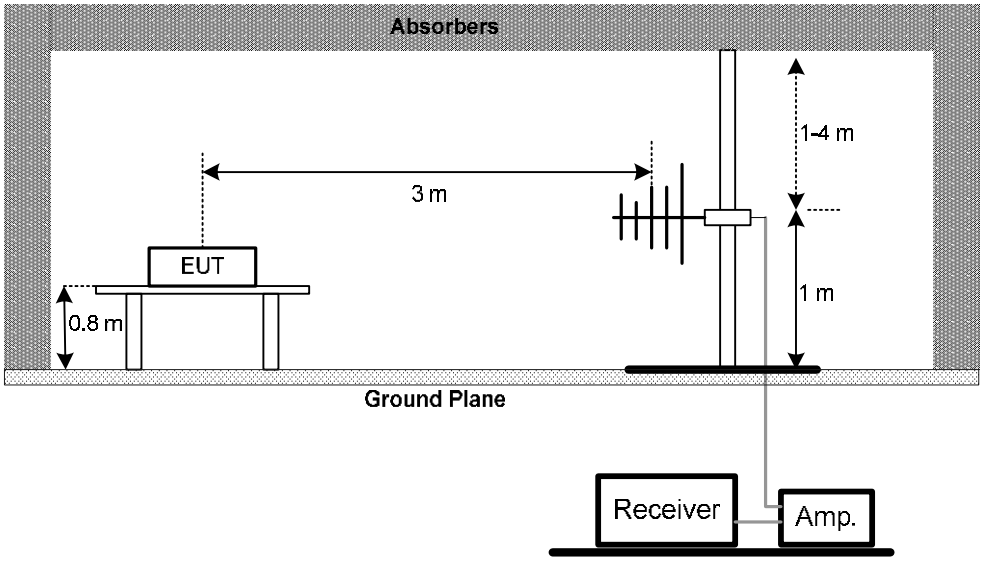
a. Spectrum Setting:
   9 KHz – 150 KHz, RBW= 200Hz, VBW=200Hz, Sweep time = 200 ms.
   150 K Hz – 30 MHz, RBW= 10 KHz, VBW=10 KHz, Sweep time = 200 ms.
   30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.
b. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform.
c. The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.

4.2.3 DEVIATION FROM TEST STANDARD

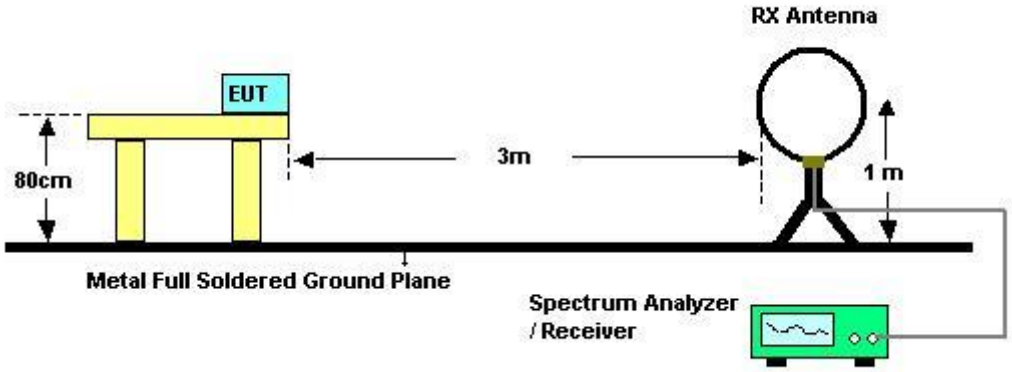
No deviation

4.2.4 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) For radiated emissions below 30MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.5** Unless otherwise a special operating condition is specified in the follows during the testing.

4.2.6 EUT TEST CONDITIONS

Temperature: 25°C
Relative Humidity: 55%
Test Voltage: DC 3.7V

4.2.7 TEST RESULTS (BELOW 30MHZ) - FCC PART 15.209

Please refer to the Attachment B.

4.2.8 TEST RESULTS - (30-1000MHZ) - FCC PART 15.209

Please refer to the Attachment C.

4.2.9 TEST RESULTS- FCC PART 15.225

Please refer to the Attachment D.

4.3 FREQUENCY STABILITY MEASUREMENT

4.3.1 LIMIT

FCC Part 15.225(e)
The frequency tolerance of the carrier signal shall be maintained within +/-0.01% of the operating frequency over a temperature variation of - 20 degrees to + 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

4.3.2 TEST PROCEDURE

a. The equipment under test was connected to an external AC power supply and the RF output was connected to a frequency counter via feed through attenuators. The EUT was placed inside the temperature chamber.
After the temperature stabilized for approximately 20 minutes, the frequency of the output signal was recorded from the counter.
b. At room temperature (25±5˚C), an external variable AC power supply was connected to the EUT. The frequency of the transmitter was measured for 115%, 100% and 85% of the nominal operating input voltage.

4.3.3 DEVIATION FROM TEST STANDARD

No deviation

4.3.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.5** Unless otherwise a special operating condition is specified in the follows during the testing.

4.3.5 EUT TEST CONDITIONS

Temperature: 25˚C
Relative Humidity: 55%
Test Voltage: DC 3.7V

4.3.6 TEST RESULTS

Please refer to the Attachment E.

5. 20dB SPECTRUM BANDWIDTH MEASUREMENT

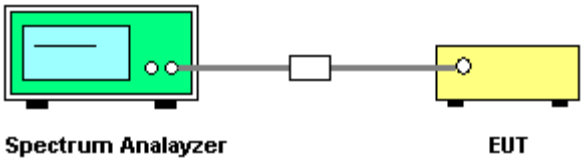
5.1. LIMIT OF 20dB BANDWIDTH MEASUREMENT

The 20dB bandwidth shall be specified in operating frequency band.

5.2.TEST PROCEDURES

The bandwidth of the fundamental frequency was measured by spectrum analyzer with 10kHz RBW and 10kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

5.3. TEST SETUP LAYOUT



5.4. TEST DEVIATION

There is no deviation with the original standard.

5.5. EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

5.6. TEST RESULT

Please refer to the Attachment F.

6. MEASUREMENT INSTRUMENTS LIST

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	00052765	Mar. 29, 2015
2	LISN	R&S	ENV216	100087	Mar. 29, 2015
3	Test Cable	N/A	C_17	N/A	Mar. 14, 2015
4	EMI TEST RECEIVER	R&S	ESCS30	826547/022	Mar. 29, 2015
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Mar. 29, 2015
6	Measurement Software	Fara	EZ-EMC Ver.NB-03A1-01	N/A	N/A

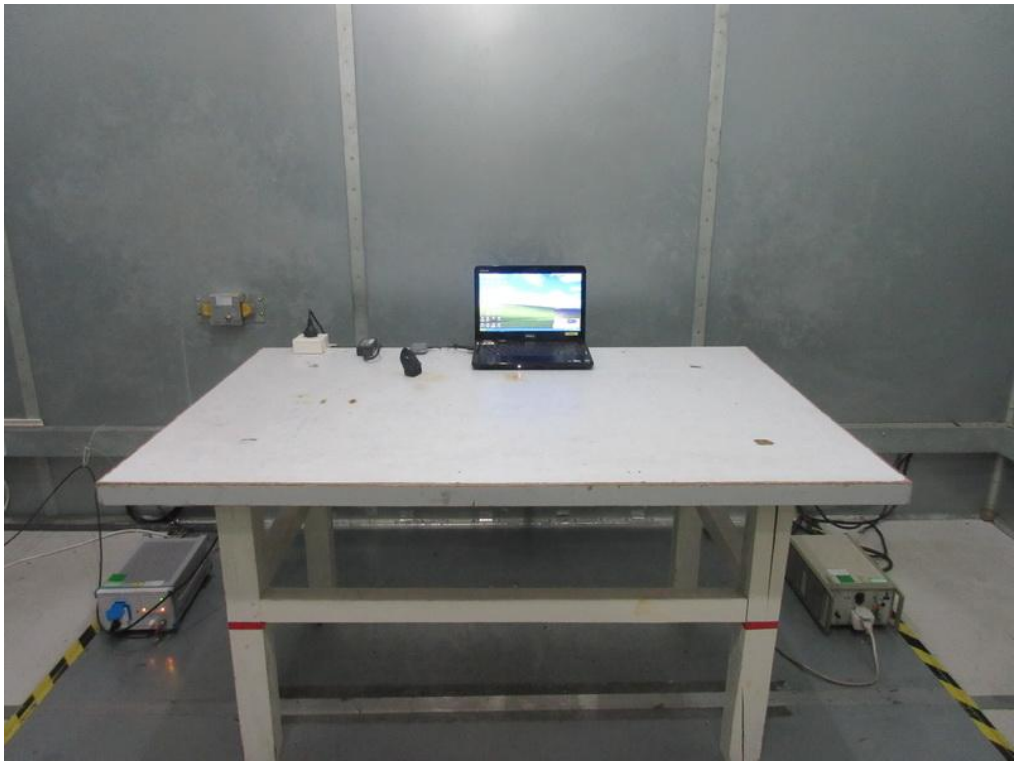
Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 29, 2015
2	Amplifier	HP	8447D	2944A09673	Mar. 29, 2015
3	Receiver	AGILENT	N9038A	MY52130039	Sep. 30, 2015
4	Test Cable	N/A	C-01_CB03	N/A	Jul. 01, 2015
5	Controller	CT	SC100	N/A	N/A
6	Measurement Software	Fara	EZ-EMC Ver.NB-03A1-01	N/A	N/A
7	Spectrum	Agilent	E4408B	US39240143	Nov. 09, 2014
8	Test Cable	HUBER+SUHNER	C-45	N/A	Apr. 29, 2015
9	Controller	CT	SC100	N/A	N/A
10	Horn Antenna	EMCO	3115	9605-4803	Apr. 24, 2015
11	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Apr. 24, 2015

6dB Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014

Remark: ”N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

7. EUT TEST PHOTO

Conducted Measurement Photos



Radiated Measurement Photos

9KHz to 30MHz

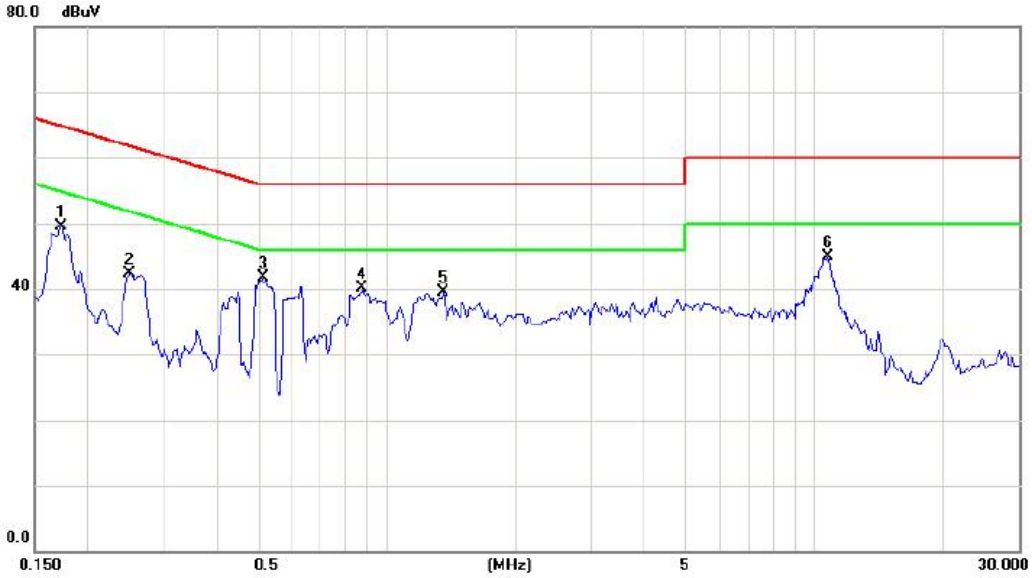
Radiated Measurement Photos

30MHz to 1000MHz

ATTACHMENT A - CONDUCTED EMISSION

Test Mode :	TX MODE

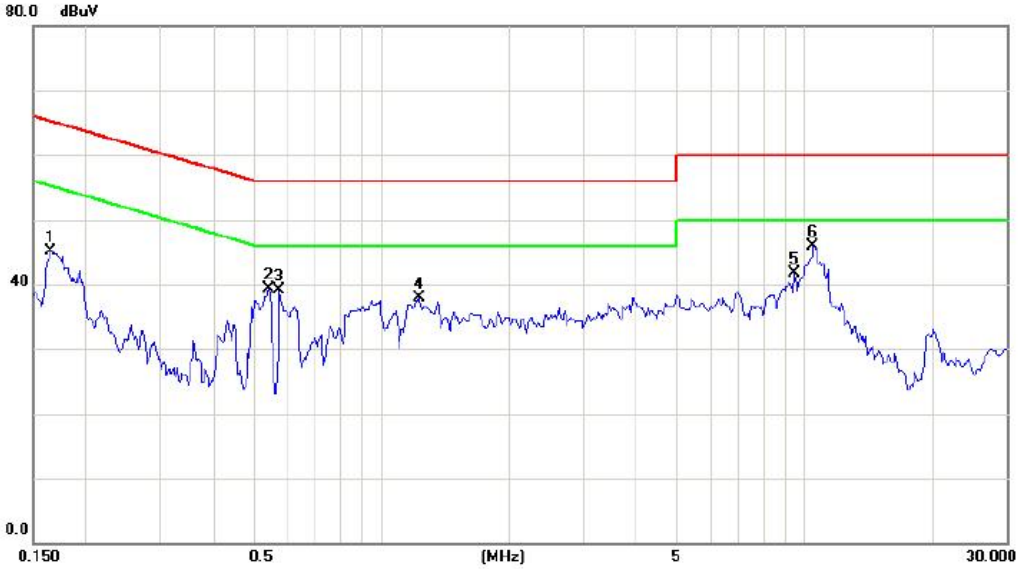
Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1733	40.07	9.53	49.60	64.80	-15.20	peak	
2		0.2515	32.80	9.57	42.37	61.71	-19.34	peak	
3	*	0.5131	31.99	9.69	41.68	56.00	-14.32	peak	
4		0.8764	30.49	9.67	40.16	56.00	-15.84	peak	
5		1.3570	29.81	9.70	39.51	56.00	-16.49	peak	
6		10.7577	34.86	10.11	44.97	60.00	-15.03	peak	

Test Mode :	TX MODE

Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1655	35.55	9.62	45.17	65.18	-20.01	peak	
2		0.5403	29.66	9.64	39.30	56.00	-16.70	peak	
3		0.5756	29.50	9.65	39.15	56.00	-16.85	peak	
4		1.2280	28.13	9.69	37.82	56.00	-18.18	peak	
5		9.4801	31.59	10.06	41.65	60.00	-18.35	peak	
6	*	10.5076	35.77	10.11	45.88	60.00	-14.12	peak	

ATTACHMENT B - RADIATED EMISSION (9KHZ-30MHZ)

Test Mode ：	TX Mode

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0155	0°	14.46	24.59	39.05	103.80	-64.75	AVG
0.0134	0°	13.29	24.59	37.88	123.80	-85.92	PEAK
0.0357	0°	8.48	23.31	31.79	96.55	-64.77	AVG
0.0357	0°	6.72	23.31	30.03	116.55	-86.53	PEAK
0.0368	0°	5.46	23.24	28.70	96.29	-67.59	AVG
0.0368	0°	3.31	23.24	26.55	116.29	-89.74	PEAK
0.0472	0°	2.47	22.58	25.05	94.13	-69.08	AVG
0.0472	0°	0.92	22.58	23.50	114.13	-90.63	PEAK
2.0718	0°	30.33	19.46	49.79	69.54	-19.75	QP
3.2967	0°	21.53	18.93	40.46	69.54	-29.08	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0152	90°	14.39	24.30	38.69	123.97	-85.28	AVG
0.0152	90°	13.23	24.30	37.53	143.97	-106.44	PEAK
0.0337	90°	8.24	23.43	31.67	117.05	-85.38	AVG
0.0337	90°	6.37	23.43	29.80	137.05	-107.25	PEAK
0.0371	90°	5.42	23.22	28.64	116.22	-87.58	AVG
0.0371	90°	3.23	23.22	26.45	136.22	-109.77	PEAK
0.0462	90°	2.54	22.64	25.18	114.31	-89.13	AVG
0.0462	90°	0.93	22.64	23.57	134.31	-110.74	PEAK
2.3249	90°	30.35	19.31	49.66	69.54	-19.88	QP
3.2527	90°	21.67	18.93	40.60	69.54	-28.94	QP

Remark:

(1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported。

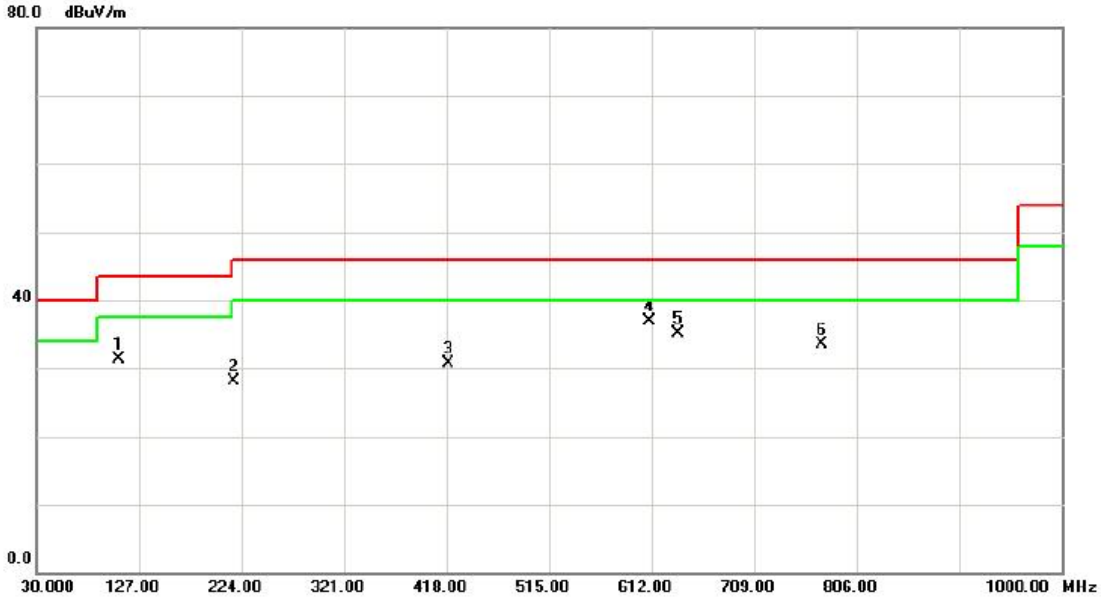
(2) Distance extrapolation factor = 40 log (specific distance / test distance) (dB);。

(3) Limit line = specific limits (dBuV) + distance extrapolation factor.。

ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)

Test Mode:	TX MODE

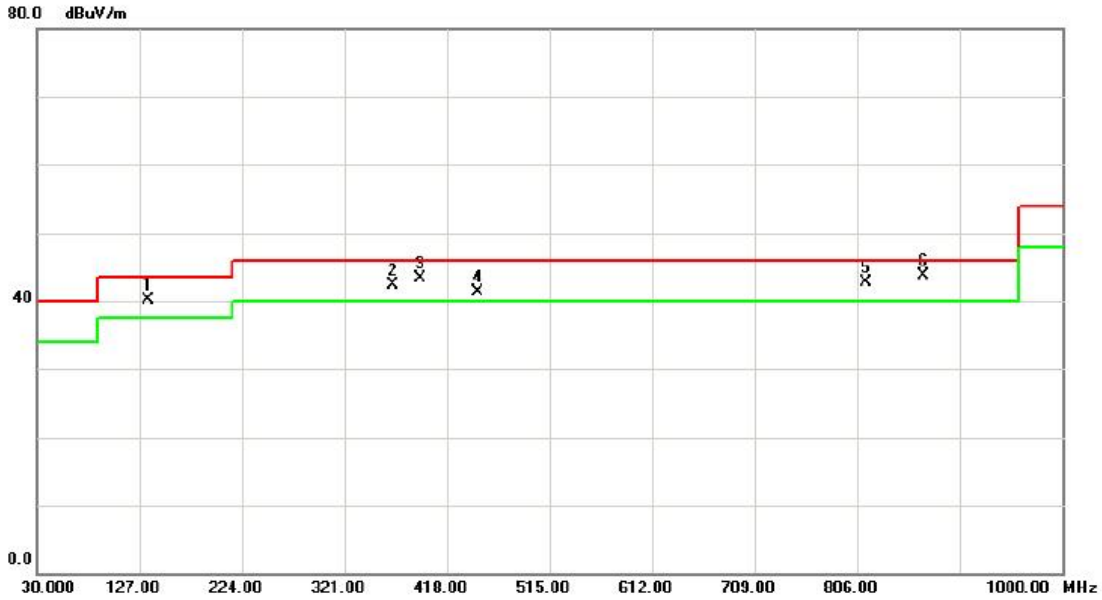
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		108.5700	46.70	-15.44	31.26	43.50	-12.24	peak	
2		217.2100	43.09	-15.03	28.06	46.00	-17.94	peak	
3		419.9400	39.83	-9.17	30.66	46.00	-15.34	peak	
4	*	610.0600	44.17	-7.36	36.81	46.00	-9.19	peak	
5		637.2200	41.04	-5.86	35.18	46.00	-10.82	peak	
6		773.0200	37.40	-3.82	33.58	46.00	-12.42	peak	

Test Mode:	TX MODE

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	135.7300	53.24	-13.12	40.12	43.50	-3.38	peak	
2	!	366.5900	53.33	-11.03	42.30	46.00	-3.70	peak	
3	!	392.7800	53.26	-9.86	43.40	46.00	-2.60	peak	
4	!	447.1000	49.98	-8.67	41.31	46.00	-4.69	peak	
5	!	813.7600	45.58	-2.97	42.61	46.00	-3.39	peak	
6	*	868.0800	46.22	-2.56	43.66	46.00	-2.34	peak	

ATTACHMENT D - RADIATED EMISSION (FCC PART 15.225)

Test Mode	TX MODE

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
13.560	0°	27.25	21.27	48.52	124.00	-75.48	
27.120	0°	12.17	21.77	33.94	69.54	-35.60	

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
13.560	90°	26.38	21.27	47.65	124.00	-76.35	
27.120	90°	11.19	21.77	32.96	69.54	-36.58	

ATTACHMENT E - FREQUENCY STABILITY MEASUREMENT

Test Mode:	TX MODE

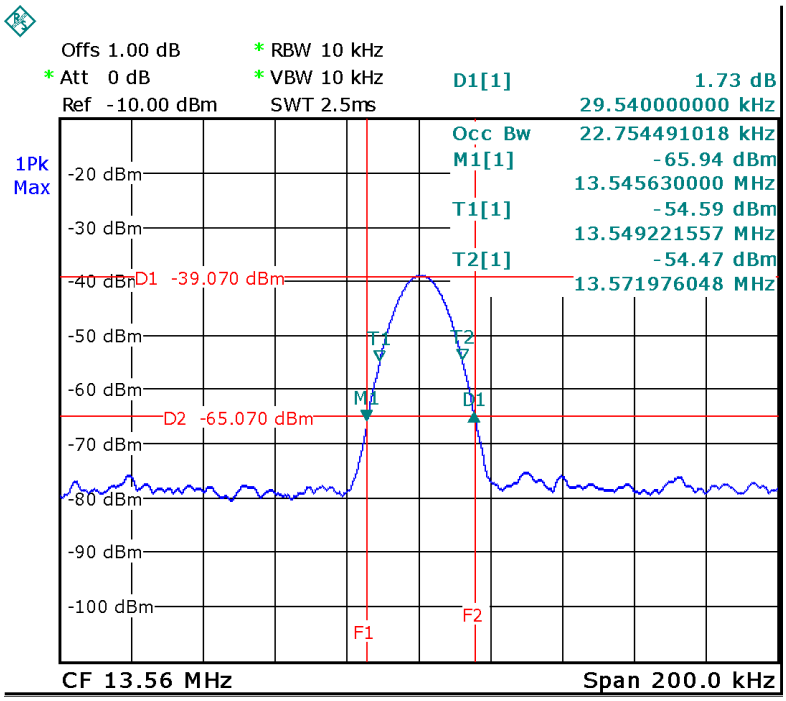
Frequency Stability Versus Environmental Temperature						
	Temperature (°C)	**Voltage (DC)**	**Frequency (MHz)**	**Frequency Error (kHz)**	**Limit (kHz)**	**Result**
	20	120V	13.5585			
0 min	00	120V	13.5598	-0.0002	+/- 1.356	PASS
	40	120V	13.5624	0.0024	+/- 1.356	PASS
2 min	00	120V	13.5631	0.0031	+/- 1.356	PASS
	40	120V	13.5579	-0.0021	+/- 1.356	PASS
5 min	00	120V	13.5586	-0.0014	+/- 1.356	PASS
	40	120V	13.5624	0.0024	+/- 1.356	PASS
10 min	00	120V	13.5576	-0.0024	+/- 1.356	PASS
	40	120V	13.5685	0.0085	+/- 1.356	PASS

Fuequency Stability Versus Input Voltage						
Temperature (°C)	**Voltage (AC)**		**Frequency (MHz)**	**Frequency Error (kHz)**	**Limit (kHz)**	**Result**
20	**V-nom**	120V	13.5596	-0.0004		
20	**V-min**	102V	13.5623	0.0023	+/- 1.356	PASS
20	**V-max**	138V	13.5594	-0.0006	+/- 1.356	PASS

ATTACHMENT F - 20dB SPECTRUM BANDWIDTH MEASUREMENT

Test Mode : TX Mode

TX CH 01



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