

# FCC 47 CFR PART 15 SUBPART B TEST REPORT

for

## Infotainment Remote Display; Host Gateway MODEL: xxxxACD-521RHxxxxxxxxx; xxxxACG-203xxxxxxxxxx (Where x is 0-9, A-Z, a-z, - or blank)

Test Report Number: T131022D05-F

Issued to:

## **AAEON Technology Inc.**

5F, No.135, Lane 235, Pao Chiao Rd, Hsin-Tien Dist., New Taipei City, Taiwan, R.O.C.

Issued by:

Compliance Certification Services Inc.

Xindian Lab.

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Issued Date: October 29, 2013



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### **Revision History**

Rev.	lssue Date	Revisions	Effect Page	Revised By
00	October 29, 2013	Initial Issue	ALL	Eva Fan



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## **1 TEST RESULT CERTIFICATION**

Product:	Infotainment Remote Display; Host Gateway	
Model:	xxxxACD-521RHxxxxxxxx; xxxxACG-203xxxxxxxxx (Where x is 0-9, A-Z, a-z, - or blank)	
Brand:	AAEON	
Applicant:	<b>AAEON Technology Inc.</b> 5F, No.135, Lane 235, Pao Chiao Rd, Hsin-Tien Dist., New Taipei City, Taiwan, R.O.C.	
Manufacturer:	AAEON Technology Inc. 5F, No.135, Lane 235, Pao Chiao Rd, Hsin-Tien Dist., New Taipei City, Taiwan, R.O.C.	
Tested:	October 24, 2013 & October 29, 2013	

EMISSION			
Standard	ltem	Result	Remarks
FCC 47 CFR Part 15 Subpart B, ICES-003 Issue 5-2012	Conducted (Power Port)	PASS	Meet Class A limit
ANSI C63.4-2009	Radiated	PASS	Meet Class A limit

**Note:** 1. The statements of test result on the above are decided by the request of test standard only; the measurement uncertainties are not factored into this compliance determination.

2. The information of measurement uncertainty is available upon the customer's request.

#### Deviation from Applicable Standard

None

The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by:

Sam Mu

Sam Hu Assistant Manager

Reviewed by:

1SM

Vesta Hsu Supervisor of report document dept.



## 2 EUT DESCRIPTION

Product	Infotainment Remote Display; Host Gateway
Brand Name	AAEON
Model	xxxxACD-521RHxxxxxxxxx; xxxxACG-203xxxxxxxx (Where x is 0-9, A-Z, a-z, - or blank)
Applicant	AAEON Technology Inc.
Housing material	Metal Case
Identify Number	T131022D05
Received Date	October 22, 2013
EUT Power Rating	12VDC from AC Adaptor
AC Power During Test	120VAC / 60Hz to AC Adaptor
AC Adaptor Manufacturer	ACD-521RHT-A1-1010: FSP GROUP INC. ACG-203-A2-1010: EDAC
AC Adaptor Model Number	ACD-521RHT-A1-1010: FSP060-DBAB1 ACG-203-A2-1010: EA1050A-120
AC Adaptor Power Rating	ACD-521RHT-A1-1010: Input: 100-240VAC~1.5A, 50-60Hz; Output: 12VDC 5A
	ACG-203-A2-1010: Input: 100-240VAC~1.8A, 50-60Hz; Output: 12VDC 5A
DC Power Cord Type	ACD-521RHT-A1-1010: Unshielded, 1.0m (Non-Detachable, with a core) to AC Adapter ACG-203-A2-1010: Unshielded, 1.0m (Non-Detachable, with a core) to AC Adapter
OSC/Clock Frequencies	ACD-521RHT-A1-1010: 25MHz; 30MHz; 24.576MHz ACG-203-A2-1010: 25MHz; 27MHz

#### **Model Differences**

Model Name	Differences	Tested (Check)
ACD-521RHT-A1-1010	Infotainment Remote Display	$\boxtimes$
ACG-203-A2-1010	Host Gateway	
xxxxACD-521RHxxxxxxxxx;	1. For marketing purpose only.	
xxxxxACG-203xxxxxxxxxx	2. Where x is 0-9, A-Z, a-z, - or blank	



#### I/O PORT

#### Model: ACD-521RHT-A1-1010

I/O PORT TYPES	Q'TY	TESTED WITH
1. LAN Port	2	1

#### Model: ACG-203-A2-1010

I/O PORT TYPES	Q'TY	TESTED WITH
1. DVI Port	1	1
2. LAN Port	1	1
3. Audio Port	1	N/A
4. USB Port	1	N/A

## **3 TEST METHODOLOGY**

## 3.1. DECISION OF FINAL TEST MODE

The EUT was tested together with the above additional components, and a configuration, which produced the worst emission levels, was selected and recorded in this report.

The test configuration/ modes are as the following:

#### **Conduction Modes:**

No.	Model	Operate State
1	TF-AGD-317RHTT-A2-1010	Normal Mode
2	TF-ACG-203-A2-1010	Normal Mode

#### Radiation Mode:

No.	Model	Operate State
	TF-AGD-317RHTT-A2-1010;	Normal Mode
1	TF-ACG-203-A2-1010	Normal Mode / 1-2GHz

Conduction: Mode 2 Radiation: Mode 1

## 3.2. EUT SYSTEM OPERATION

- 1. Windows 7 boots system.
- 2. Run Emctest.exe to activate all peripherals and display "H" pattern on monitor screen.

Note: Test program is self-repeating throughout the test.

## 4 SETUP OF EQUIPMENT UNDER TEST

## 4.1. 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.

#### **EUT Devices:**

#### Model: ACD-521RHT-A1-1010

No.	Equipment	Model No.	Brand Name
1	LED Panel (21.5", 1920x1080)	M215HW03	AUO
2	CPU (312MHz)	AST1500A3-GP	ASPEED
3	RAM (DDRII-SDRAM / 400MHz)	N/A	EtronTech
4	AC Adaptor	FSP060-DBAB1	FSP GROUP INC.

#### Model: ACG-203-A2-1010

No.	Equipment	Model No.	Brand Name
1	CPU (312MHz)	AST1500A3-GP	ASPEED
2	RAM (DDRII-SDRAM / 400MHz)	N/A	EtronTech
3	AC Adaptor	EA1050A-120	EDAC

#### **Peripherals Devices:**

No.	Equipment	Model No.	Model No. Serial No.		Brand Name	Data Cable	Power Cord
1	USB Mouse	M-UAE96	F93A90A5BU90L20	DOC BSMI: T41126	hp	Shielded, 1.8m	N/A
2	USB Keyboard	KU-0316	BC3870FVBWH079	DOC BSMI: R33001	hp	Shielded, 1.8m	N/A
3	Modem	AL-56ERM	N/A	DOC	GALILEO	Shielded, 1.0m	Unshielded, 1.8m with a core
4	Host PC	T3500	7X36VBX	DOC BSMI: R33002	DELL	Shielded, 1.8m with two cores	Unshielded, 1.8m
5	Printer	Deskjet D2360	TH73C1492F	DOC BSMI: R33001	HP	Shielded, 1.8m	Unshielded, 1.8m

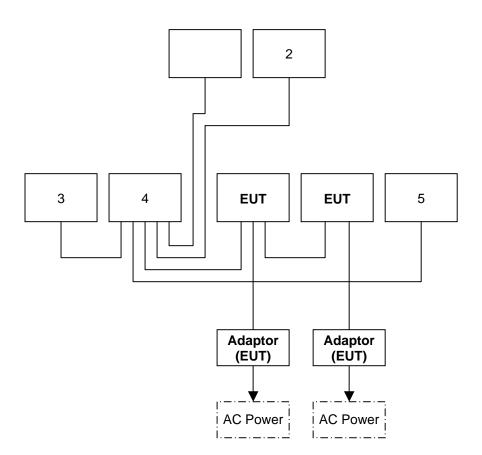
#### Note:

1) All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2) Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



## 4.2. CONFIGURATION OF SYSTEM UNDER TEST



## **5 FACILITIES AND ACCREDITATIONS**

## 5.1. FACILITIES

All measurement facilities used to collect the measurement data are located at CCSrf Taiwan Xindian Lab. at No.163-1, Jhongsheng Rd., Xindian Dist., New Taipei City, 23151 Taiwan.

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-3, CISPR 16-1-4 and CISPR 16-1-5.

## 5.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

Taiwan	TAF
USA	A2LA

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	Industry Canada
Norway	Nemko
Japan	VCCI
Taiwan	BSMI
USA	FCC

Copies of granted accreditation certificates are available for downloading from our web site, <u>http:///www.ccsrf.com</u>

## **5.3. 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:

Measurement	Frequency	Uncertainty
Conducted emissions 0.15MHz ~ 30MHz		± 1.56
	30MHz ~ 1000MHz	± 3.88
Radiated emissions	1000MHz ~ 18000MHz	± 3.23
Radiated emissions	18000MHz ~ 26000MHz	± 3.07
	26000MHz ~ 40000MHz	± 3.42

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

Consistent with industry standard (e.g. CISPR 22: 2005, clause 11, Measurement Uncertainty) determining compliance with the limits shall be base on the results of the compliance measurement. Consequently the measure emissions being less than the maximum allowed emission result in this be a compliant test or passing test.

The acceptable measurement uncertainty value without requiring revision of the compliance statement is base on conducted and radiated emissions being less than  $U_{CISPR}$  which is 3.6dB and 5.2dB respectively. CCS values (called  $U_{Lab}$  in CISPR 16-4-2) is less than  $U_{CISPR}$  as shown in the table above. Therefore, MU need not be considered for compliance.

## **6 CONDUCTED EMISSION MEASUREMENT**

## 6.1. LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class /	A (dBuV)	Class B (dBuV)		
	Quasi-peak	Average	Quasi-peak	Average	
0.15 - 0.5	79	66	66 - 56	56 - 46	
0.50 - 5.0	73	60	56	46	
5.0 - 30.0	73	60	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 0.15 to 0.50 MHz.

(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.

## **6.2. TEST INSTRUMENTS**

Conducted Emission room # A									
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due					
TEST RECEIVER	R&S	ESCI	101201	09/15/2014					
LISN (EUT)	SCHWARZBECK	NSLK 8127	8127527	12/11/2013					
LISN	SCHWARZBECK	NSLK 8127	8127526	12/11/2013					
BNC CABLE	EMCI	5Dr	BNC A6	12/11/2013					
Pulse Limiter	R&S	ESH3-Z2	C3010026-2	09/05/2014					
THERMO- HYGRO METER	WISEWIND	201A	No. 02	05/14/2014					
Test S/W	EZ-EMC								

**NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. N.C.R = No Calibration Request.

#### 6.3. TEST PROCEDURES (please refer to measurement standard or CCS SOP PA-031)

#### Procedure of Preliminary Test

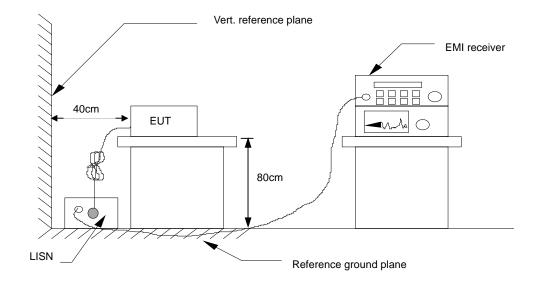
- The EUT and support equipment, if needed, were set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor standing equipment, it is placed on the ground plane, which has a 12 mm non-conductive covering to insulate the EUT from the ground plane.
- All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- The test equipment EUT installed by AC 120VAC/60Hz main power, through a Line Impedance Stabilization Network (LISN), which was supplied power source and was grounded to the ground plane.
- All support equipment power by from a second LISN.
- The test program of the EUT was started. Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
- The Receiver scanned from 150kHz to 30MHz for emissions in each of the test modes.
- During the above scans, the emissions were maximized by cable manipulation.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test.
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The worst configuration of EUT and cable of the above highest emission level were recorded for reference of the final test.

#### **Procedure of Final Test**

- EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.
- The test data of the worst-case condition(s) was recorded.



## 6.4. TEST SETUP



• For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

## 6.5. DATA SAMPLE

Freq.	Reading	Factor	Result	Limit	Margin	Detector	Line
(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	(P/Q/A)	(L1/L2)
X.XX	42.95	0.55	43.50	73	-29.50	Q	

Freq.	= Emission frequency in MHz
Reading	= Uncorrected Analyzer/Receiver reading
Factor	= Insertion loss of LISN + Cable Loss + Pulse Limit
Result	= Reading + Factor
Limit	= Limit stated in standard

- Margin = Reading in reference to limit
- P = Peak Reading
- Q = Quasi-peak Reading
- A = Average Reading
- L1 = Hot side
- L2 = Neutral side

#### **Calculation Formula**

Margin (dB) = Result (dBuV) – Limit (dBuV)

## 6.6. TEST RESULTS

Model No.	ACG-203-A2-1010	6dB Bandwidth	9 kHz
Environmental Conditions	22°C, 62% RH	Test Mode	Mode 2
Tested by	Kevin Wang	Phase	L1
Standard	FCC CLASS A		

100.0 dBvV

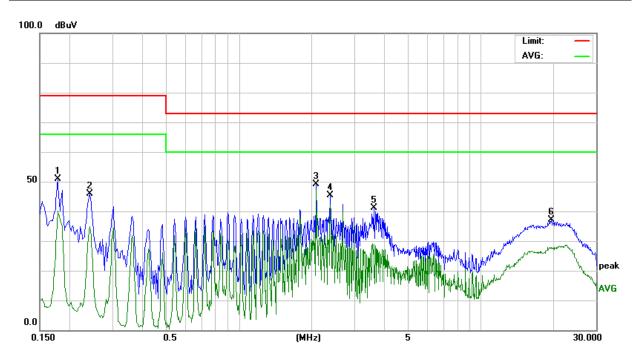
Conducted Emission Readings								
Frequ	uency Rang	je Investig	gated		150 kHz to	30 MHz		
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)	
0.1819	41.70	10.03	51.73	79.00	-27.27	Р	L1	
0.2420	35.87	10.01	45.88	79.00	-33.12	Р	L1	
1.7900	30.87	10.17	41.04	73.00	-31.96	Р	L1	
2.0900	38.61	10.18	48.79	73.00	-24.21	Р	L1	
2.3860	34.86	10.20	45.06	73.00	-27.94	Р	L1	
3.6180	30.65	10.26	40.91	73.00	-32.09	Р	L1	

**Note:** 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

2. The emission level was or more than 2dB below the Average limit, so no re-check anymore.



Model No.	ACG-203-A2-1010	6dB Bandwidth	9 kHz
Environmental Conditions	22°C, 62% RH	Test Mode	Mode 2
Tested by	Kevin Wang	Phase	L2
Standard	FCC CLASS A		



Conducted Emission Readings								
Frequ	lency Rang	je Investig	gated		150 kHz to	30 MHz		
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)	
0.1780	40.94	10.01	50.95	79.00	-28.05	Р	L2	
0.2420	35.83	9.99	45.82	79.00	-33.18	Р	L2	
2.0900	38.89	10.17	49.06	73.00	-23.94	Р	L2	
2.3900	35.11	10.19	45.30	73.00	-27.70	Р	L2	
3.6140	30.98	10.25	41.23	73.00	-31.77	Р	L2	
19.5580	26.32	10.73	37.05	73.00	-35.95	Р	L2	

Note: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

2. The emission level was or more than 2dB below the Average limit, so no re-check anymore.

## 7 RADIATED EMISSION MEASUREMENT

## 7.1. LIMITS OF RADIATED EMISSION MEASUREMENT

#### Below 1GHz (for digital device)

FREQUENCY (MHz)	dBuV/m (At 10m)				
	Class A	Class B			
30 ~ 230	40	30			
230 ~ 1000	47	37			

#### Limit tables for non-digital device:

#### Class A Radiated Emission limit at 10m (for others)

Frequency (MHZ)	Field Strength Limit (uV/m)Q.P.	Field Strength Limit (dBuV/m)Q.P.
30 - 88	90	39
88 - 216	150	43.5
216 – 960	210	46.4
Above 960	300	49.5

#### Class B Radiated Emission limit at 3m (for others)

Frequency (MHZ)	Field Strength Limit (uV/m)Q.P.	Field Strength Limit (dBuV/m)Q.P.
30 - 88	100	40
88 - 216	150	43.5
216 – 960	200	46
Above 960	500	54

#### Above 1GHz(for all device)

Frequency	Class A (dBu)	V/m) (At 10m)	Class B (dBuV/m) (At 3m)		
(MHZ)	Average Peak		Average	Peak	
Above 1000	49.5	69.5	54	74	

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

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

(3) The measurement above 1GHz is at close-in distances 3m,and determine the limit L2 corresponding to the close-in distance d2 by applying the following relation: L2 = L1 (d1/d2), where L1 is the specified limit in microvolts per metre (uV/m) at the distance d1 (10m), L2 is the new limit for distance d2 (3m).

So the new Class A limit above 1GHz at 3m is as following table:

Frequency	Class A (dBu	ıV/m) (At 3m)
(MHZ)	Average	Peak
Above 1000	60	80



According to FCC Part 15.33 (b), for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5 <sup>th</sup> harmonic of the highest frequency or 40GHz, whichever is lower

# G

## 7.2. TEST INSTRUMENTS

Open Area Test Site # I								
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due				
MEASURE RECEIVER	R&S	ESCI	101339	01/21/2014				
SPECTRUM ANALYZER	ADVANTEST	R3132	120900008	No Calibration Required				
ANTENNA	SUNOL	JB1	A100209-3	09/09/2014				
AMPLIFIER	SCHAFFNER	CPA9231A	3626	10/06/2014				
CABLE	EMCI	8Dr	N-TYPE #I5、I6	01/31/2014				
THERMO- HYGRO METER	WISEWIND	201A	No. 03	06/10/2014				
Test S/W EZ-EMC								
	Above 1GHz Used							
SPECTRUM ANALYZER (9kHz-30GHz)	R&S	FSP 30	100112	10/22/2014				
ANTENNA (1-18GHz)	ETS	S 3117 00139062		11/04/2013				
AMPLIFIER (1-26.5GHz)	HP	8449B	3008A01266	12/16/2013				
CABLE (1-40GHz)	HUBER +SUHNER	SUCOFLEX 102	33106/2	12/16/2013				
CABLE (1-40GHz)	HUBER +SUHNER	SUCOFLEX 102	33633/2	12/16/2013				
CABLE (1-26.5GHz)	HUBER +SUHNER	SUCOFLEX 104PEA	33960/4PEA	12/16/2013				
THERMO- HYGRO METER	WISEWIND	201A	No. 02	05/14/2014				
Test S/W		EZ-E	MC					

**NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. N.C.R = No Calibration Request.

#### 7.3. TEST PROCEDURES (please refer to measurement standard or CCS SOP PA-031)

#### Procedure of Preliminary Test

- The equipment was set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane. When the EUT is a floor standing equipment, it is placed on the ground plane which has a 12 mm non-conductive covering to insulate the EUT from the ground plane.
- Support equipment, if needed, was placed as per ANSI C63.4.
- All I/O cables were positioned to simulate typical usage as per ANSI C63.4.
- The EUT received AC 120VAC/60Hz power source from the outlet socket under the turntable. All support equipment power received from another socket under the turntable.
- The antenna was placed at 3 or 10 meter away from the EUT as stated in ANSI C63.4. The antenna connected to the Spectrum Analyzer via a cable and at times a pre-amplifier would be used.
- The Analyzer / Receiver quickly scanned from 30MHz to 40GHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test:
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The worst configuration of EUT and cable of the above highest emission level were recorded for reference of the final test.

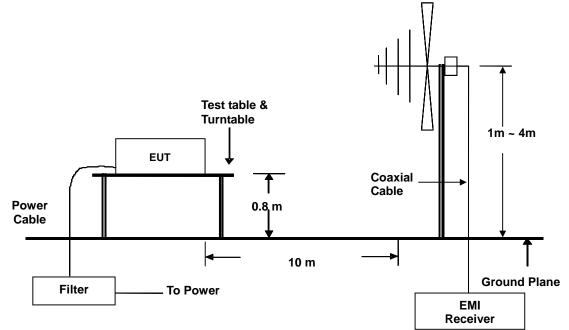
#### Procedure of Final Test

- EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test.
- The Analyzer / Receiver scanned from 30MHz to 40GHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 or 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- Recording at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. Below 1GHz the Q.P. reading and above 1GHz the Peak and Average reading are presented.
- The test data of the worst-case condition(s) was recorded.

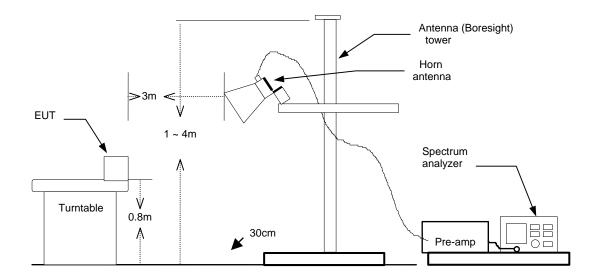


## 7.4. TEST SETUP

#### Below 1GHz



#### Above 1GHz



• For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.



## 7.5. DATA SAMPLE

#### **Below 1GHz**

Freq.	Reading	Factor	Result	Limit	Margin	Detector	Pol.
(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(P/Q)	(H/V)
x.xx	14.0	12.2	26.2	40	-13.8	Q	

#### Above 1GHz

Freq.	Reading	Factor	Result	Limit	Margin	Detector	Pol.
(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(P/A)	(H/V)
x.xx	42.95	0.55	43.50	60	-16.50	А	

Freq. = Emission frequency in MHz

Reading = Uncorrected Analyzer/Receiver reading

- Factor = Antenna Factor + Cable Loss Amplifier Gain
- Result = Reading + Factor
- Limit = Limit stated in standard
- Margin = Reading in reference to limit
- P = Peak Reading
- Q = Quasi-peak Reading
- A = Average Reading
- H = Antenna Polarization: Horizontal

V = Antenna Polarization: Vertical

#### **Calculation Formula**

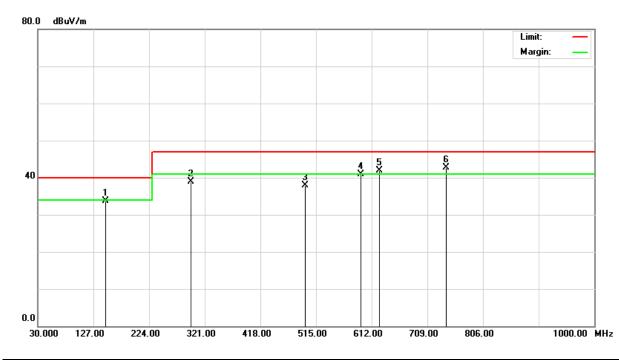
Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)



## 7.6. TEST RESULTS

#### **Below 1GHz**

	ACD-521RHT-A1-1010; ACG-203-A2-1010	Test Mode	Mode 1			
Environmental Conditions	23°C, 78% RH	6dB Bandwidth	120 kHz			
Antenna Pole	Vertical	Antenna Distance	10m			
<b>Detector Function</b>	Quasi-peak.	Tested by	Kevin Wang			
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT					



Radiated Emission Readings										
Frequency Range Investigated						30 N	/IHz to 10	00 MHz a	t 10m	
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Lin (dBu)		Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
148.3500	48.60	-14.86	33.74	40.	.00	-6.26	100	295	Q	V
296.7280	52.60	-13.68	38.92	47.	.00	-8.08	100	166	Q	V
495.6200	46.20	-8.36	37.84	47.	.00	-9.16	400	152	Q	V
592.6200	48.20	-7.37	40.83	47.	.00	-6.17	400	62	Q	V
625.0000	48.40	-6.46	41.94	47.	.00	-5.06	400	106	Q	V
741.8500	46.80	-4.16	42.64	47.	.00	-4.36	400	69	Q	V

Note: 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.

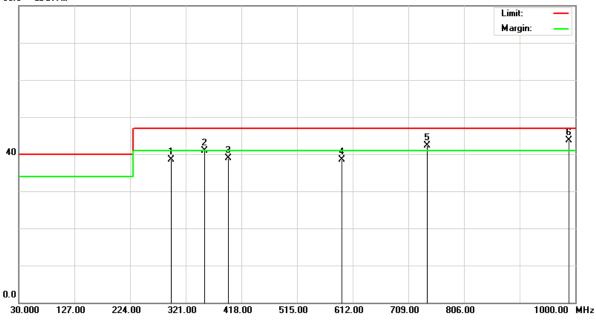
2. The other emission levels were very low against the limit.

3. P= Peak Reading; Q= Quasi-peak Reading.



	ACD-521RHT-A1-1010; ACG-203-A2-1010	Test Mode	Mode 1		
Environmental Conditions	23°C, 78% RH	6dB Bandwidth	120 kHz		
Antenna Pole	Horizontal	Antenna Distance	10m		
<b>Detector Function</b>	Quasi-peak.	Tested by	Kevin Wang		
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT				

80.0 dBuV/m



Radiated Emission Readings										
Frequency Range Investigated				30 MHz to 1000 MHz at 10m						
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Lin (dBu'		Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
295.7800	52.20	-13.69	38.51	47.	.00	-8.49	400	296	Q	Н
353.9800	53.40	-12.49	40.91	47.	.00	-6.09	400	162	Q	Н
394.7200	50.30	-11.44	38.86	47.	.00	-8.14	400	135	Q	Н
592.6200	45.90	-7.37	38.53	47.	.00	-8.47	100	241	Q	Н
741.8200	46.50	-4.16	42.34	47.	.00	-4.66	100	105	Q	Н
988.3600	44.30	-0.65	43.65	47.	00	-3.35	100	267	Q	Н

**Note:** 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.

2. The other emission levels were very low against the limit.

3. P= Peak Reading; Q= Quasi-peak Reading.



#### Above 1GHz

	ACD-521RHT-A1-1010; ACG-203-A2-1010	Test Mode	Mode 1
Environmental Conditions	24°C, 62% RH	6dB Bandwidth	1 MHz
Antenna Pole	enna Pole Vertical / Horizontal		3m
Highest frequency generated or used	312MHz	Upper frequency	2000MHz
Detector Function	Peak and average.	Tested by	Kevin Wang
Standard	FCC CLASS A		

Radiated Emission Readings									
Frequency Range Investigated				Above 1GHz at 3m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)		
1085.000	61.66	-11.21	50.45	80.00	-29.55	Р	V		
1240.000	56.15	-10.46	45.69	80.00	-34.31	Р	V		
2000.000	50.40	-6.37	44.03	80.00	-35.97	Р	V		

Radiated Emission Readings								
Frequency Range Investigated				Above 1GHz at 3m				
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)	
1085.000	60.98	-11.21	49.77	80.00	-30.23	Р	Н	
1210.000	58.14	-10.60	47.54	80.00	-32.46	Р	Н	
2000.000	53.63	-6.37	47.26	80.00	-32.74	Р	Н	

Note: 1. The other emission levels were very low against the limit.

2. P= Peak Reading; A= Average Reading.



# 8 PHOTOGRAPHS OF THE TEST CONFIGURATION CONDUCTED EMISSION TEST







T131022D05 T131022D05

## **RADIATED EMISSION TEST**