

## **FCC DoC TEST REPORT**

for

## **Desktop Network Appliance**

MODEL: xFWS-2360x; xFWS-2361x (x - Where x may be any combination of alphanumeric characters or "-"or blank.)

> Test Report Number: T180323D02-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.

No.163-1, Jhongsheng Rd., Xindian Dist., New Taipei City, 23151 Taiwan.

TEL: 886-2-22170894

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Issued Date: March 26, 2018







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## **Revision History**

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	March 26, 2018	Initial Issue	ALL	Joy Hsiao

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## TEST RESULT CERTIFICATION

**Product:** Desktop Network Appliance

xFWS-2360x; xFWS-2361x (x - Where x may be any combination of Model:

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alphanumeric characters or "-"or blank.)

**Brand: AAEON** 

Applicant: AAEON Technology Inc.

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: March 24, 2018

EMISSION					
Standard	Item	Result	Remarks		
FCC 47 CFR Part 15 Subpart B, ICES-003 Issue 6-2016	Conducted (Power Port)	PASS	Meet Class A limit		
ANSI C63.4-2014	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 Standar	t
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:	Reviewed by:
Sam Kh	Ten Fan
Sam Hu Assistant Manager	Eva Fan Supervisor of report document dept.



## **2 EUT DESCRIPTION**

Product	Desktop Network Appliance		
Floduct	Desktop Network Appliance		
Brand Name	AAEON		
Model	xFWS-2360x; xFWS-2361x (x - Where x may be any combination of alphanumeric characters or "-"or blank.)		
Applicant	AAEON Technology Inc.		
Housing material	Metal case		
Identify Number	T180323D02		
Received Date	March 23, 2018		
EUT Power Rating	12VDC from Adaptor		
AC Power During Test	120VAC / 60Hz & 230VAC / 60Hz to Adaptor		
Adaptor Manufacturer	AOEM		
Adaptor Model	A0403TD-120033		
Adaptor Power Rating	I/P: 100-240VAC~50-60Hz 1.2A O/P: 12VDC, 3.34A		
DC Power Cable Type	Unshielded, 1.2m (Non-detachable)		

## **Model Differences**

Model	CPU	Fan	Difference	Tested (Check)
FWS-2360E6-A10-A10-00	C3558	Х	Power layout and Input DC	
FWS-2361E6-A10-A10-00	C3758	0	jack are different	
xFWS-2360x; xFWS-2361x	For marketing purpose only     x - Where x may be any combination of alphanumeric characters or "-"or blank			

## I/O PORT

Model: FWS-2360E6-A10-A10-00

I/O PORT TYPES	Q'TY	TESTED WITH
1. USB 3.0 Port	2	2
2. LAN Port	6	6
3. Console Port	1	1
4. VGA Port	2	0



Model: FWS-2361E6-A10-A10-00

I/O PORT TYPES	Q'TY	TESTED WITH
1. USB 3.0 Port	2	2
2. LAN Port	6	6
3. Console Port	1	1
4. VGA Port	1	0

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Note: None.

#### 3 **TEST METHODOLOGY**

## 3.1. DECISION OF FINAL TEST MODE

The EUT was tested together with the below 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	EWS 2260E6 A40 A40 00	1280X1024, VF=60Hz	120VAC / 60Hz
2	FWS-2360E6-A10-A10-00	1280X1024, VF=60Hz	230VAC / 60Hz
3	FWS-2361E6-A10-A10-00	1280X1024, VF=60Hz	120VAC / 60Hz

#### **Radiation Modes:**

No.	Model	Operate State		
1		1280X1024, VF=60Hz	120VAC / 60Hz	
2	FWS-2360E6-A10-A10-00	1280X1024, VF=60Hz	230VAC / 60Hz	
2		1280X1024, VF=60Hz / 1-11GHz	230VAC / 60H2	
3	FWS-2361E6-A10-A10-00	1280X1024, VF=60Hz	120VAC / 60Hz	

Worst:

Conduction: Mode 1 Radiation: Mode 2

## 3.2. EUT SYSTEM OPERATION

1. Windows 8 boots system.

2. Press the start menu, select executive and type ping 192.168.0~5.2 -t (EUT), ping 192.168. 0~5.1 -t (Server PC).

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



## 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.

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## **EUT Devices:**

Model: FWS-2360E6-A10-A10-00

No.	Equipment	Model No.	Brand Name
1	CPU (2.2GHz)	C3558	Intel
2	Memory (32GB)	K4A8G085WB	SEC
4	Power Adaptor	A0403TD-120033	AOEM
3	SSD (32GB)	SSD420K	Transcend

#### Model: FWS-2361E6-A10-A10-00

No.	Equipment	Model No.	Brand Name
1	CPU (2.2GHz)	C3758	Intel
2	Memory (32GB)	K4A8G085WB	SEC
4	Power Adaptor	A0403TD-120033	AOEM
3	SSD (32GB)	SSD420K	Transcend

## **Peripherals Devices:**

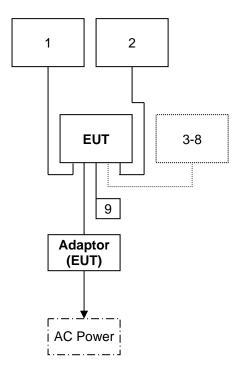
No.	Equipment	Model No.	Serial No.	FCC ID / BSMI ID	Brand Name	Data Cable	Power Cord
1	USB Mouse	M-U0026	810-002181	DOC BSMI: T41126	Logitech	Shielded, 1.8m	N/A
2	USB Keyboard	Y-U0011	N/A	DOC BSMI: T51160	Logitech	Shielded, 1.8m	N/A
3-8	Server PC	T3500	N/A	DOC BSMI: R33002	DELL	Unshielded, 20m	Unshielded, 1.8m
9	Console Cable	N/A	N/A	N/A	N/A	Shielded, 1.8m	N/A

## 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





#### **FACILITIES AND ACCREDITATIONS** 5

## 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.

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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
Japan	VCCI
Taiwan	BSMI
USA	FCC

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

## 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	± 1.07
	30MHz ~ 1000MHz	± 4.82
Radiated emissions	1000MHz ~ 18000MHz	± 4.03
	18000MHz ~ 40000MHz	± 3.23

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 UCISPR which is 3.6dB and 5.2dB respectively. CCS values (called U<sub>Lab</sub> in CISPR 16-4-2) is less than U<sub>CISPR</sub> as shown in the table above. Therefore, MU need not be considered for compliance.



## CONDUCTED EMISSION MEASUREMENT

## 6.1. LIMITS OF CONDUCTED EMISSION MEASUREMENT

EDECLIENCY (MU-)	Class A	(dBuV)	Class B (dBuV)		
FREQUENCY (MHz)	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	

- (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					
BNC Cable	EMEC	EMG178	BNC#A9	03/27/2018					
EMI Test Receiver	R&S	ESCI	101201	08/22/2018					
LISN	Schwarzbeck	NNLK 8129	8129-286	08/15/2018					
LISN(EUT)	Schwarzbeck	NSLK 8127	8127527	08/15/2018					
Pulse Limiter	R&S	ESH3Z2	C3010026-2	08/17/2018					
Thermo-Hygro Meter	Wisewind	201A	No. 02	05/08/2018					
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.

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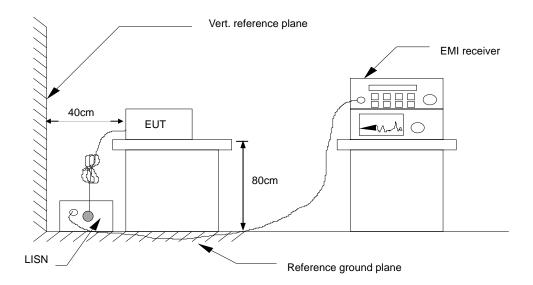
- All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- The test equipment EUT installed by AC main power, through a Line Impedance Stabilization Network (LISN), which was supplied power source and was grounded to the ground plane.
- All support equipment power by from 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

= Reading + Factor Result = Limit stated in standard Limit = Reading in reference to limit Margin

Р = Peak Reading Q = Quasi-peak Reading = Average Reading Α

L1 = Hot side = Neutral side L2

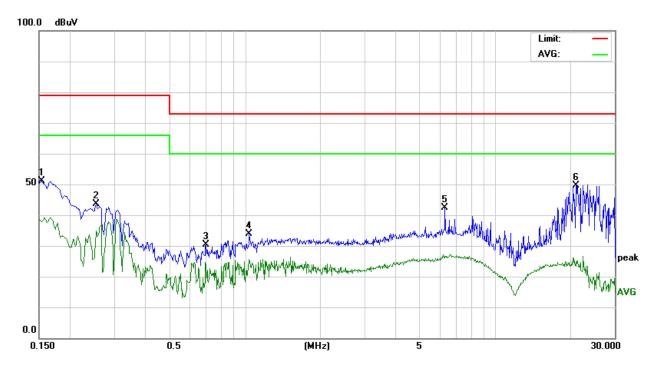
## **Calculation Formula**

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



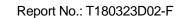
## **6.6. TEST RESULTS**

Model No.	FWS-2360E6-A10-A10-00	6dB Bandwidth	9 kHz
Environmental Conditions	25°C, 58% RH	Test Mode	Mode 1
Tested by	Rax Chen	Phase	L1
Standard	FCC CLASS A		

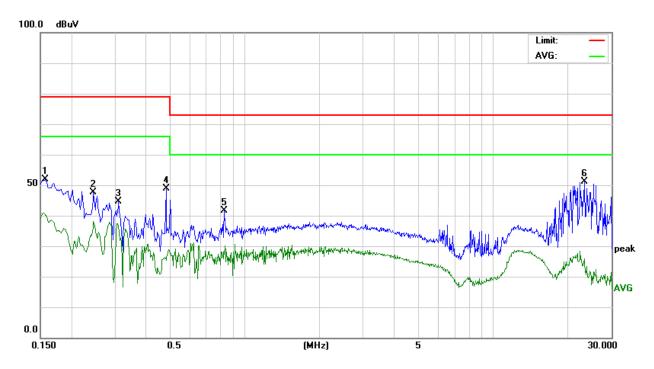


Conducted Emission Readings								
Frequ	uency Rang	je Investiç	gated		150 kHz to	30 MHz		
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)	
0.1539	41.00	10.02	51.02	79.00	-27.98	Р	L1	
0.2540	33.62	10.03	43.65	79.00	-35.35	Р	L1	
0.6980	20.36	10.07	30.43	73.00	-42.57	Р	L1	
1.0420	23.66	10.12	33.78	73.00	-39.22	Р	L1	
6.2938	31.96	10.43	42.39	73.00	-30.61	Р	L1	
21.0060	38.68	10.97	49.65	73.00	-23.35	Р	L1	

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



Model No.	FWS-2360E6-A10-A10-00	6dB Bandwidth	9 kHz
Environmental Conditions	25°C, 58% RH	Test Mode	Mode 1
Tested by	Rax Chen	Phase	L2
Standard	FCC CLASS A		



Conducted Emission Readings								
Frequency Range Investigated					150 kHz to	30 MHz		
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)	
0.1580	41.80	10.02	51.82	79.00	-27.18	Р	L2	
0.2460	37.54	10.03	47.57	79.00	-31.43	Р	L2	
0.3100	34.70	10.03	44.73	79.00	-34.27	Р	L2	
0.4820	38.96	10.04	49.00	79.00	-30.00	Р	L2	
0.8300	31.45	10.09	41.54	73.00	-31.46	Р	L2	
23.3260	40.00	11.07	51.07	73.00	-21.93	Р	L2	

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



## RADIATED EMISSION MEASUREMENT

## 7.1. LIMITS OF RADIATED EMISSION MEASUREMENT

## Below 1GHz (for digital device)

EDECLIENCY (MU-)	dBuV/m (At 10m)				
FREQUENCY (MHz)	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 (dBuV/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

## 7.2. TEST INSTRUMENTS

Open Area Test Site # H								
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due				
Bilog Antenna	Teseq	CBL 6112D	36995	06/27/2018				
Cable	EMEC	CFD400NL-LW	N-Type#H11	08/17/2018				
EMI Test Receiver	R&S	ESCI	101340	03/28/2018				
Pre-Amplifier	HP	8447D	1937A01554	09/28/2018				
Thermo-Hygro Meter	Wisewind	201A	No. 03	06/04/2018				
Test S/W EZ-EMC								
	Α	bove 1GHz Used						
Horn Antenna	EMCO	3115	00022256	08/09/2018				
K-Type Cable	K-Type Cable Rosnol K1K50-UP0264-K1k 170803-1		170803-1	08/22/2018				
Microflex Cable	Rosnol	N1K50-EW0630-N1 k50-7000	170803-1	08/22/2018				
Pre-Amplifier	Com-Power	PAM-118A	551041	06/27/2018				
Signal Analyzer	R&S	FSV40	101269	04/23/2018				
Test S/W		EZ-E	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.

<sup>2.</sup> N.C.R = No Calibration Request.



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

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## **Procedure of Preliminary Test**

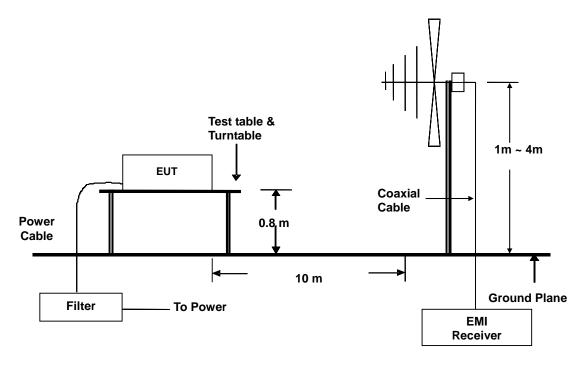
- The equipment was set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane. When the EUT is a floor standing equipment, it is placed on the ground 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 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**

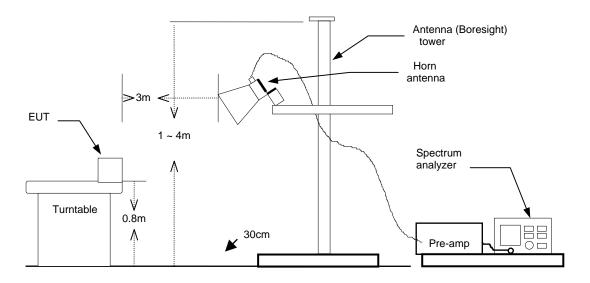
- EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test.
- The Analyzer / Receiver scanned from 30MHz to 40GHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the 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	A	

Freq. = Emission frequency in MHz

= Uncorrected Analyzer/Receiver reading Reading = Antenna Factor + Cable Loss - Amplifier Gain Factor

= Reading + Factor Result Limit = Limit stated in standard = Reading in reference to limit Margin

= Peak Reading Q = Quasi-peak Reading = Average Reading Α

= Antenna Polarization: Horizontal Η = Antenna Polarization: Vertical

## **Calculation Formula**

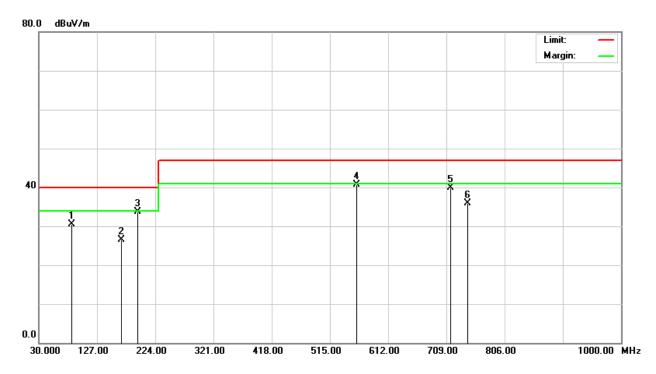
Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)



## **Below 1GHz**

7.6. TEST RESULTS

Model No.	FWS-2360E6-A10-A10-00	Test Mode	Mode 2			
Environmental Conditions	26°C, 60% RH	6dB Bandwidth	120 kHz			
Antenna Pole	Vertical	Antenna Distance	10m			
Detector Function	Quasi-peak. Tested by Rax Chen					
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT					



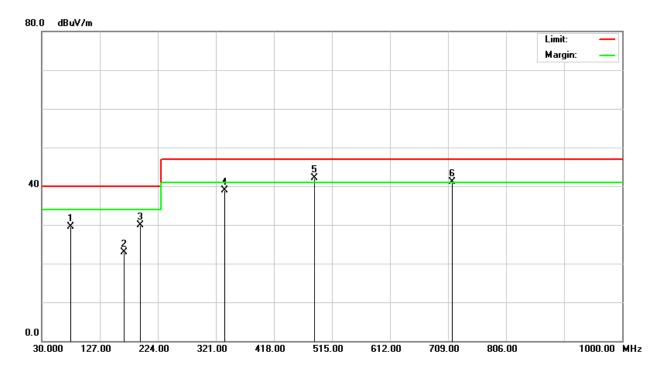
Radiated Emission Readings										
Frequency Range Investigated					30 N	/IHz to 10	00 MHz a	t 10m		
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Lin (dBu)		Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
84.5560	43.20	-12.74	30.46	40.	00	-9.54	100	162	Q	V
167.8560	36.80	-10.33	26.47	40.	00	-13.53	100	133	Q	V
194.3839	44.40	-10.73	33.67	40.	00	-6.33	100	201	Q	٧
559.2610	40.30	0.45	40.75	47.	00	-6.25	400	199	Q	V
715.7960	38.70	1.17	39.87	47.	00	-7.13	400	172	Q	V
743.9680	34.20	1.77	35.97	47.	00	-11.03	400	154	Q	٧

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

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



Model No.	FWS-2360E6-A10-A10-00	Test Mode	Mode 2			
Environmental Conditions	26°C, 60% RH	6dB Bandwidth	120 kHz			
Antenna Pole	Horizontal	Antenna Distance	10m			
Detector Function	Quasi-peak. Tested by Rax Chen					
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT					



Radiated Emission Readings										
Frequency Range Investigated				30 MHz to 1000 MHz at 10m						
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)		Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
78.4560	43.20	-13.76	29.44	40.00		-10.56	400	142	Q	Н
167.6870	33.30	-10.33	22.97	40.00		-17.03	400	168	Q	Η
194.7899	40.70	-10.70	30.00	40.00		-10.00	400	192	Q	I
335.5670	44.40	-5.50	38.90	47.00		-8.10	400	133	Q	Н
485.6920	43.80	-1.70	42.10	47.	.00	-4.90	100	201	Q	Н
715.8350	40.00	1.17	41.17	47.	.00	-5.83	100	117	Q	Н

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

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



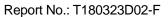
## **Above 1GHz**

Model No.	FWS-2360E6-A10-A10-00	Test Mode	Mode 2
Environmental Conditions	26°C, 60% RH	6dB Bandwidth	1 MHz
Antenna Pole	Vertical / Horizontal	Antenna Distance	3m
Highest frequency generated or used	2200MHz	Upper frequency	11000MHz
Detector Function	Peak and average.	Tested by	Rax Chen
Standard	FCC CLASS A		

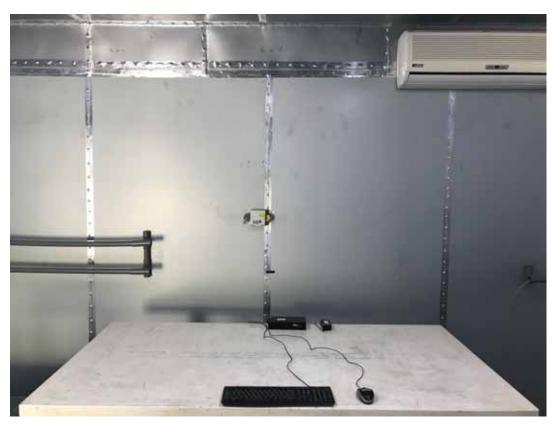
Radiated Emission Readings								
Frequency Range Investigated				Above 1GHz at 3m				
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m		Margin (dB)	Detector (P/A)	Pol. (H/V)	
1000.000	55.08	-9.15	45.93	80.00	-34.07	Р	٧	
1040.000	51.81	-9.07	42.74	80.00	-37.26	Р	٧	
1095.000	53.25	-8.98	44.27	80.00	-35.73	Р	٧	
1200.000	49.70	-8.80	40.90	80.00	-39.10	Р	٧	
1430.000	50.57	-8.39	42.18	80.00	-37.82	Р	٧	
2460.000	47.51	-4.42	43.09	80.00	-36.91	Р	٧	

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)	
1100.000	53.25	-8.97	44.28		80.00	-35.72	Р	Н	
1200.000	48.17	-8.80	39.37	7	80.00	-40.63	Р	Н	
1430.000	47.86	-8.39	39.47	7	80.00	-40.53	Р	Н	
2190.000	46.32	-4.74	41.58	3	80.00	-38.42	Р	Н	
2600.000	47.58	-4.32	43.26	Ĝ	80.00	-36.74	Р	Н	
3170.000	47.69	-4.15	43.54	1	80.00	-36.46	Р	Н	

**Note:** 1. P= Peak Reading; A= Average Reading.



# 8 PHOTOGRAPHS OF THE TEST CONFIGURATION CONDUCTED EMISSION TEST







## **RADIATED EMISSION TEST**



