

FCC PART 15B

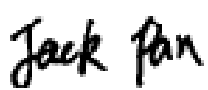
TEST REPORT

For

Beijing SinoXtar Technology Co., Ltd.

Room B1-310, 3rd Floor, Zone B, 1# No.1 Disheng West Road, BDA, Beijing

FCC ID: 2ATVYCHN-I

Report Type: Original Report	Product Type: EW Series
Report Number:	RBJ190618050-00
Report Date:	2019-07-01
Reviewed By:	Jack Pan EMC Engineer 
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan). This report must not be used by the customer to claim product certification, approval, or endorsement by A2LA* or any agency of the Federal Government. * This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk “*”.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:	EW Series
EUT Model:	CHN-I
Rated Input Voltage:	12Vdc from adapter
The Highest Operating Frequency:	2.7GHz
I/O Ports:	HDMI, USB2.0, BNC, RJ45, DC Power
EUT Function:	Video decoding
External Dimension:	285mm(L)* 240mm(W)* 65mm(H)
Serial Number:	190618050
EUT Received Date:	2019.06.24

Objective

This report is prepared on behalf of **Beijing SinoXtar Technology Co., Ltd.** in accordance with Part 2, Part J, and Part 15, Subpart A and B of the Federal Communications Commission's rules..

The objective is to determine the compliance of EUT with:
FCC Part 15B.Class B.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014 American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

Measurement Uncertainty

Parameter	Measurement Uncertainty
Unwanted Emissions, radiated	30M~200MHz: 4.55 dB, 200M~1GHz: 5.92 dB, 1G~6GHz: 4.98 dB, 6G~18GHz: 5.89 dB, 18G~26.5G: 5.47 dB, 26.5G~40G: 5.63 dB
Temperature	±1℃
Humidity	±5%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier : CN0022.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user).

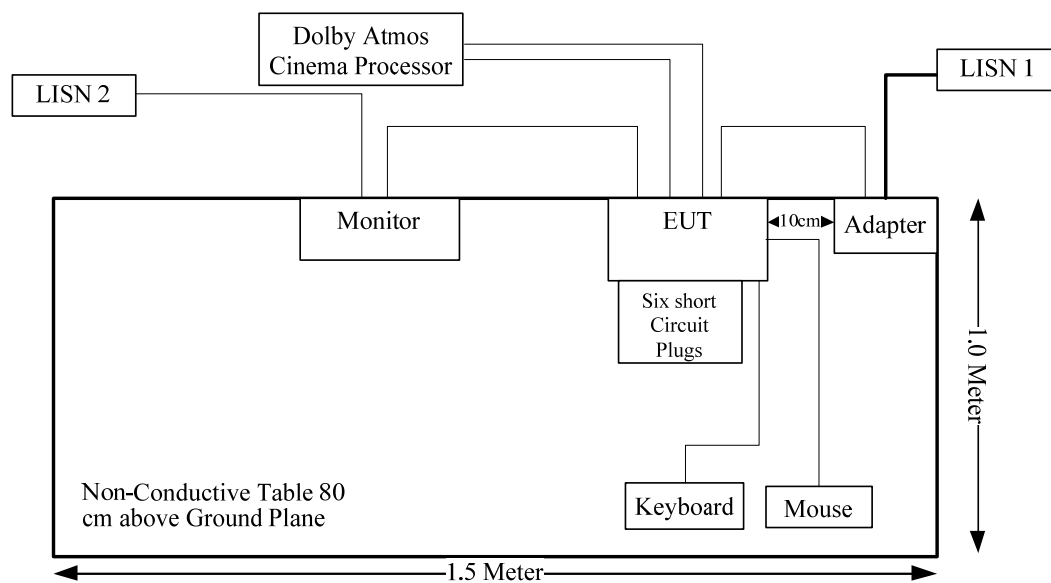
Equipment Modifications

No modification was made to the EUT.

EUT Exercise Software

No EUT software was used for testing.

Block Diagram of Test Setup



Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Monitor	U30114	CN-OPH5NY-74445-17M-114L
DELL	Keyboard	SK-8115	CN-0J4628-71616-52H-0RT6
DELL	Mouse	MO56UOA	F0Y02P7Y
Unknown	Short circuit plug	75Ω Impedance	Unknown
Dolby	Dolby Atmos Cinema Processor	CP850	Unknown
Huntkey	SWITCHING ADAPTER	HKA06012050-7C	Unknown

Support Cable List and Details

Cable Description	Shielding Cable	Ferrite Core	Length (m)	From Port	To
Power Cable	No	Yes	1.5	adapter	EUT
HDMI Cable	Yes	Yes	2	EUT	Monitor
USB Cable	No	No	2	EUT	Keyboard
USB Cable	No	No	2	EUT	Mouse
RJ45 Cable	No	No	3	EUT	Dolby Atmos Cinema Processor
RJ45 Cable	No	No	3	EUT	Dolby Atmos Cinema Processor
AC Power Cable	No	No	1.5	AC Power Supply	adapter

Test Equipment List

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted emission					
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-01	2018-09-05	2019-09-05
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A
R&S	Two-line V-network	ENV 216	101614	2018-12-10	2019-12-10
R&S	EMI Test Receiver	ESPI	100120	2019-05-09	2020-05-09
Radiated emissions below 1GHz					
R&S	EMI Test Receiver	ESR3	102453	2018-06-26	2019-06-26
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Sunol Sciences	Antenna	JB3	A060611-1	2017-11-10	2020-11-10
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2018-09-05	2019-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2018-09-05	2019-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-1400-01	2019-05-06	2020-05-06
HP	Amplifier	8447D	2727A05902	2018-09-05	2019-09-05
Radiated emissions above 1GHz					
Agilent	Spectrum Analyzer	E4440A	SG43360054	2019-05-09	2020-05-09
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
ETS-Lindgren	Horn Antenna	3115	000 527 35	2018-10-12	2021-10-12
Unknown	Coaxial Cable	C-SJSJ-50	C-0800-01	2018-09-05	2019-09-05
MITEQ	Amplifier	AFS42-00101800-25-S-42	2001271	2018-09-05	2019-09-05

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

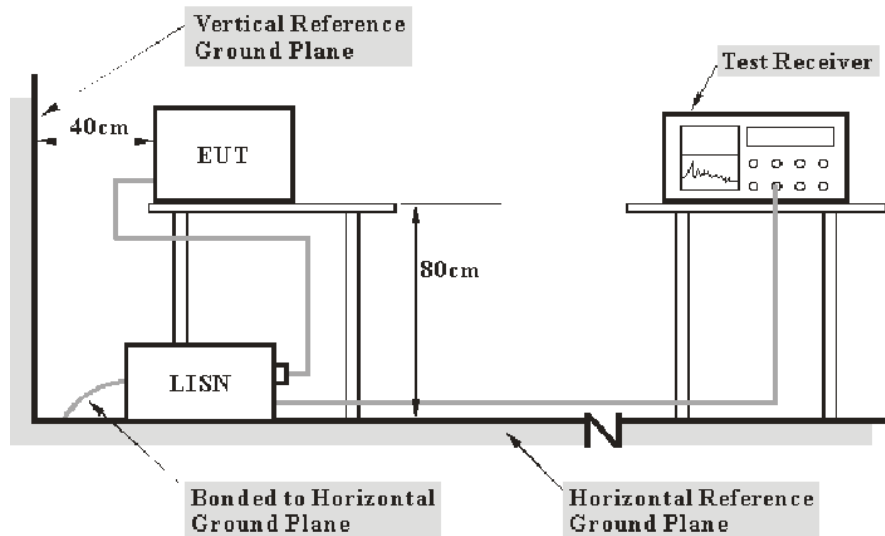
Environmental Conditions

Temperature:	27~27.6 °C
Relative Humidity:	48~58%
ATM Pressure:	100.1kPa
Tester:	Vern Shen, Neil Liao, Lily Xie
Test Date:	2019.06.25

SUMMARY OF TEST RESULTS

SN	Rule and Clause	Description of Test	Test Result
1	FCC §15.107	Conducted emissions	Compliance
2	FCC §15.109	Radiated emissions	Compliance

EUT Setup



Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$

Herein,

V_C : corrected voltage amplitude

V_R : reading voltage amplitude

A_C : attenuation caused by cable loss

VDF: voltage division factor of AMN or ISN

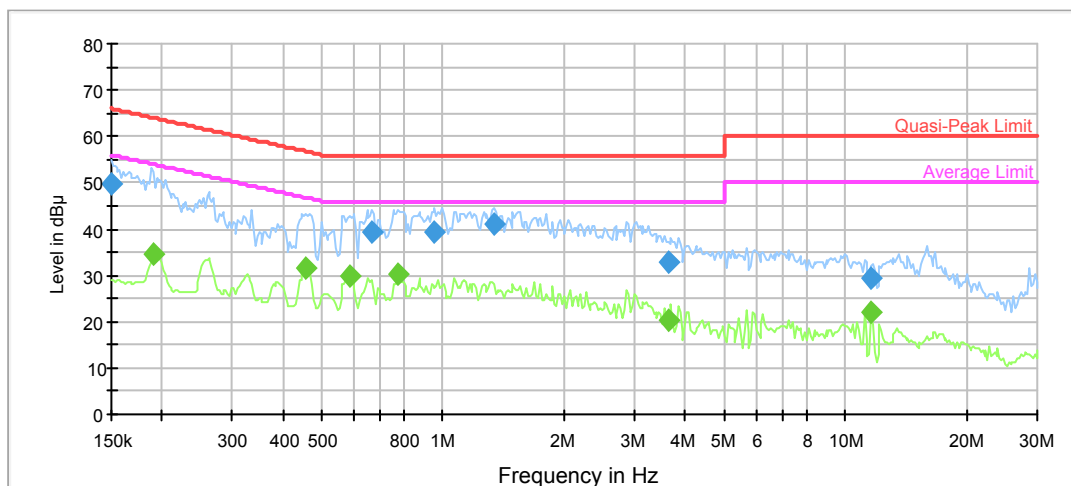
The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Data

Please refer to following table and plots:

Model Number: CHN-I
 Port: L
 Test Mode: Operating
 Power Source: AC 120V/60Hz
 Note:



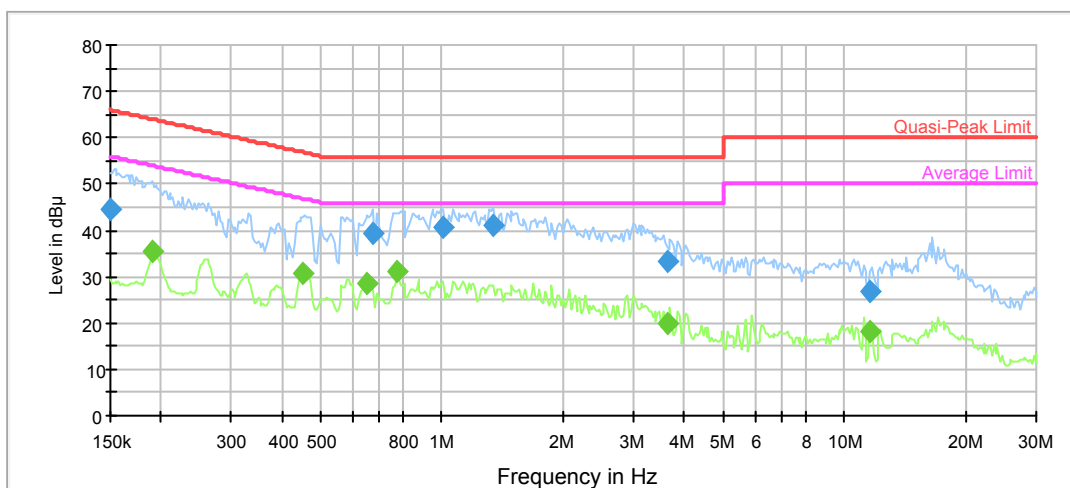
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150000	49.6	9.000	L1	11.2	16.4	66.0
0.667264	39.6	9.000	L1	9.8	16.4	56.0
0.954700	39.4	9.000	L1	9.8	16.6	56.0
1.339041	41.1	9.000	L1	9.8	14.9	56.0
3.621856	32.9	9.000	L1	9.8	23.1	56.0
11.601974	29.5	9.000	L1	9.8	30.5	60.0

Final Result 2

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.190460	34.4	9.000	L1	11.2	21.6	56.0
0.457178	31.7	9.000	L1	9.9	15.0	46.7
0.586300	29.7	9.000	L1	9.8	16.3	46.0
0.774673	30.5	9.000	L1	9.8	15.5	46.0
3.621856	20.1	9.000	L1	9.8	25.9	46.0
11.601974	22.0	9.000	L1	9.8	28.0	50.0

Model Number: CHN-I
Port: N
Test Mode: Operating
Power Source: AC 120V/60Hz
Note:



Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150000	44.5	9.000	N	11.2	21.5	66.0
0.673937	39.2	9.000	N	9.8	16.8	56.0
1.003400	40.5	9.000	N	9.8	15.5	56.0
1.339041	41.2	9.000	N	9.8	14.8	56.0
3.621856	33.3	9.000	N	9.8	22.7	56.0
11.601974	26.9	9.000	N	9.8	33.1	60.0

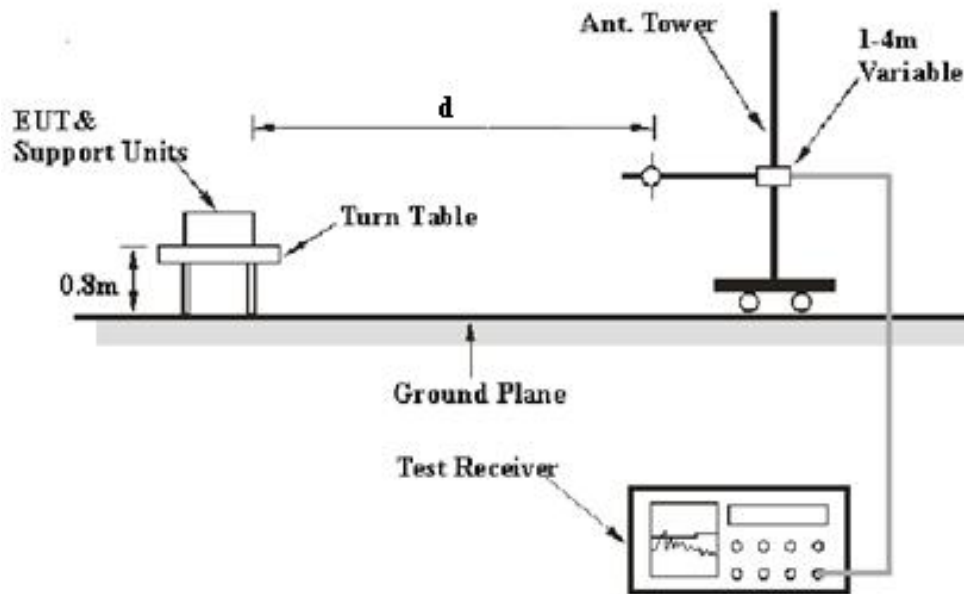
Final Result 2

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.191000	35.5	9.000	N	11.2	23.5	56.0
0.452652	30.8	9.000	N	9.9	16.1	46.8
0.647640	28.4	9.000	N	9.8	17.6	46.0
0.774673	31.0	9.000	N	9.8	15.0	46.0
3.621856	19.7	9.000	N	9.8	26.3	46.0
11.601974	18.3	9.000	N	9.8	31.7	50.0

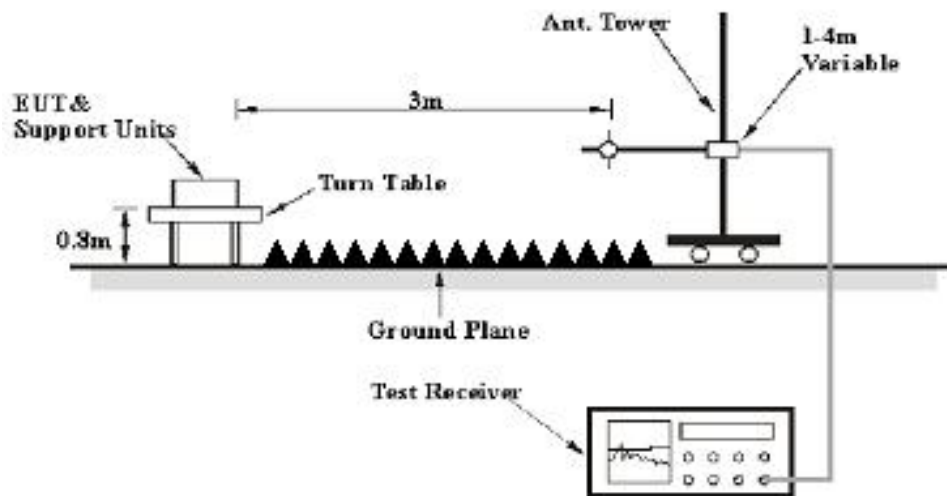
2 - RADIATED EMISSIONS

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission below 1GHz tests were performed in test site Chamber A at the 3 meters distance, above 1GHz were performed in test site Chamber B at the 3 meters distance, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class B limits.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 14 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	Peak
	1 MHz	10Hz	/	AVG

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

Test Procedure

During the radiated emissions, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The data was recorded in the Quasi-peak detection mode for below 1 GHz, peak and average detection mode above 1 GHz.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Meter Reading+ Corrected

Note:

Corrected = Antenna Factor + Cable Loss - Amplifier Gain

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

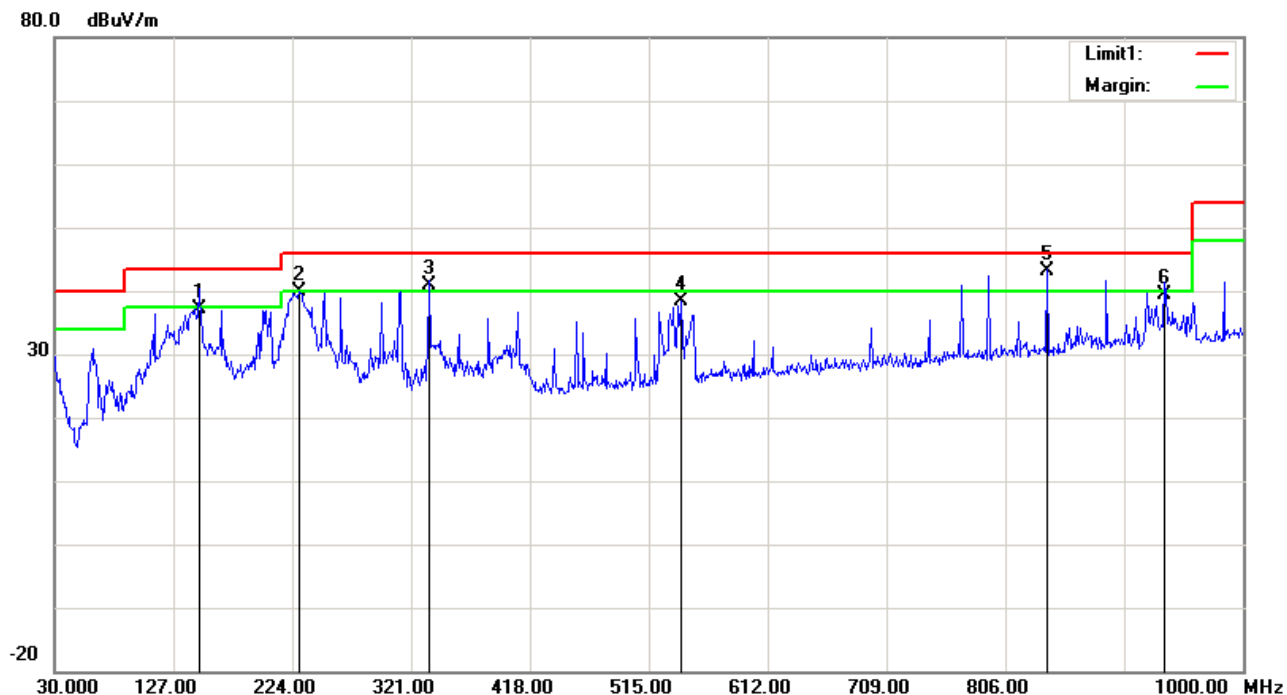
$$\text{Margin} = \text{Limit} - \text{Result}$$

Test Data

Please refer to following table and plots:

Condition: FCC Part 15B Class B
EUT: EW Series
Model: CHN-I
Test Mode: Operating
Note:

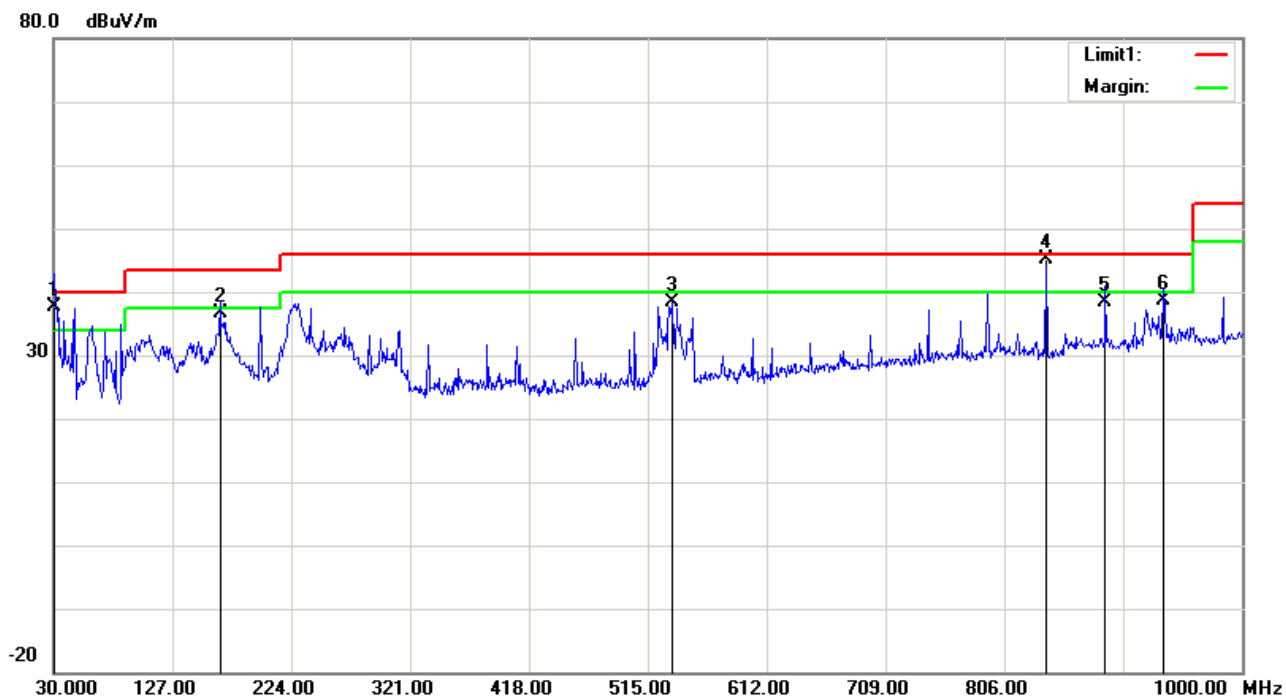
Polarization: Horizontal
Power: DC 12V
Distance: 3m



No.	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1	148.3400	43.30	QP	-6.05	37.25	43.50	6.25
2	229.8200	46.36	peak	-6.42	39.94	46.00	6.06
3	335.5500	44.21	QP	-3.36	40.85	46.00	5.15
4	541.1900	38.05	peak	0.32	38.37	46.00	7.63
5	839.9500	38.00	QP	5.07	43.07	46.00	2.93
6	935.9800	38.70	QP	0.76	39.46	46.00	6.54

Condition: FCC Part 15B Class B
EUT: EW Series
Model: CHN-I
Test Mode: Operating
Note:

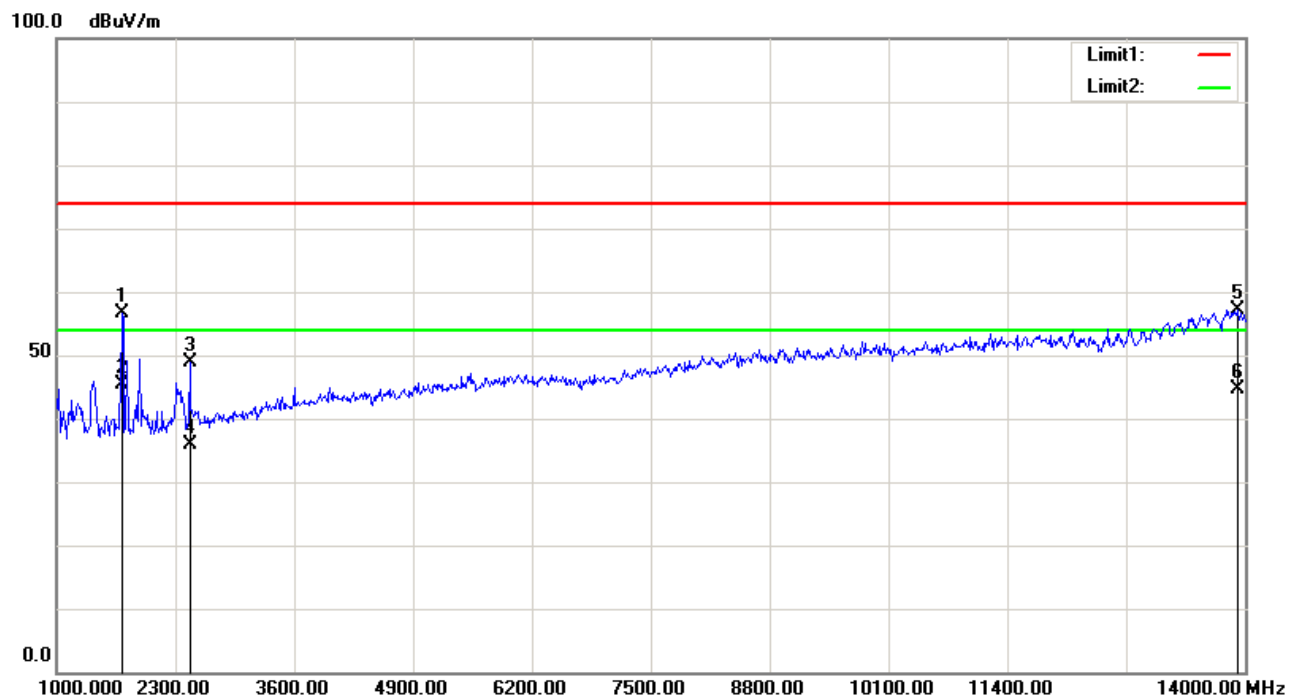
Polarization: Vertical
Power: DC 12V
Distance: 3m



No.	Frequency (MHz)	Reading (dB μ V)	Detector	Corrected (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1	30.0000	35.90	QP	1.72	37.62	40.00	2.38
2	165.8000	42.80	QP	-6.21	36.59	43.50	6.91
3	534.4000	38.02	peak	0.32	38.34	46.00	7.66
4	839.9500	40.10	QP	5.07	45.17	46.00	0.83
5	888.4500	38.70	QP	-0.22	38.48	46.00	7.52
6	935.9800	37.97	QP	0.76	38.73	46.00	7.27

Condition: FCC Part 15B Class B
EUT: EW Series
Model: CHN-I
Test Mode: Operating
Note:

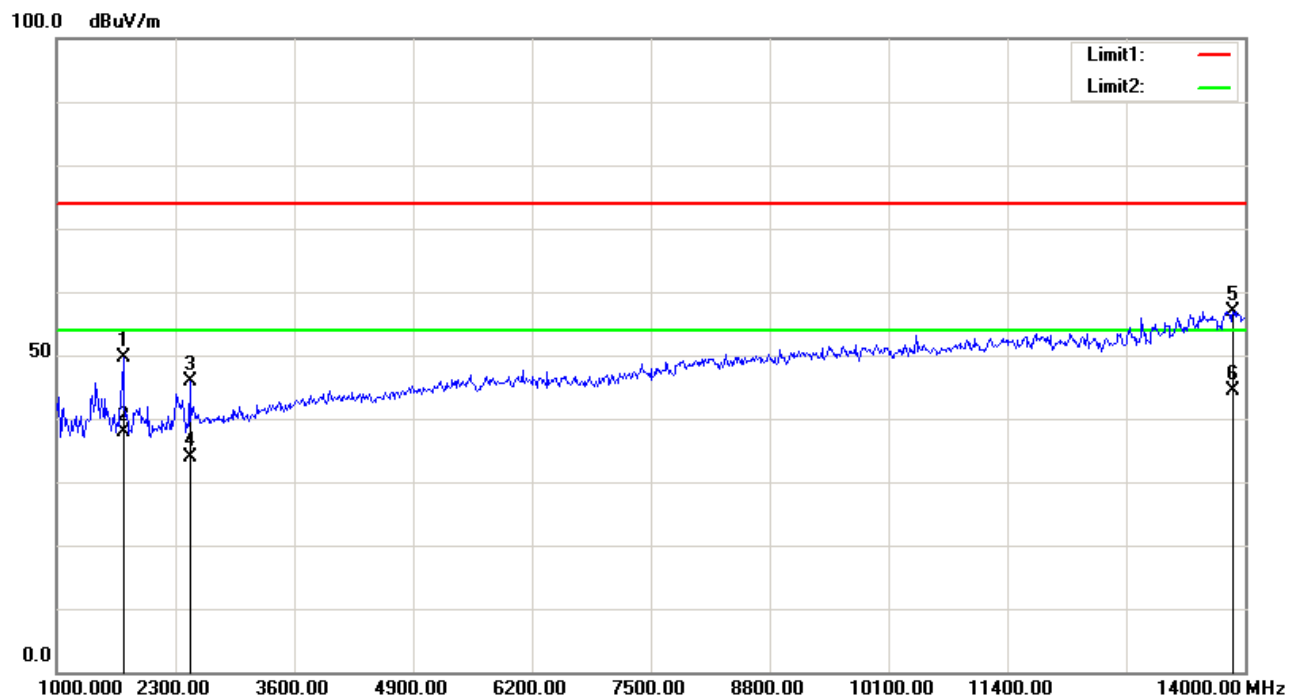
Polarization: Horizontal
Power: DC 12V
Distance: 3m



No.	Frequency (MHz)	Reading (dB μ V)	Detector	Corrected (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1	1721.500	64.95	peak	-8.32	56.63	74.00	17.37
2	1721.500	53.60	AVG	-8.32	45.28	54.00	8.72
3	2462.500	55.27	peak	-6.33	48.94	74.00	25.06
4	2462.500	42.11	AVG	-6.33	35.78	54.00	18.22
5	13928.500	47.74	peak	9.30	57.04	74.00	16.96
6	13928.500	35.21	AVG	9.30	44.51	54.00	9.49

Condition: FCC Part 15B Class B
EUT: EW Series
Model: CHN-I
Test Mode: Operating
Note:

Polarization: Vertical
Power: DC 12V
Distance: 3m



No.	Frequency (MHz)	Reading (dB μ V)	Detector	Corrected (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1	1728.000	57.85	peak	-8.27	49.58	74.00	24.42
2	1728.000	46.26	AVG	-8.27	37.99	54.00	16.01
3	2462.500	52.21	peak	-6.33	45.88	74.00	28.12
4	2462.500	40.12	AVG	-6.33	33.79	54.00	20.21
5	13876.500	47.70	peak	9.28	56.98	74.00	17.02
6	13876.500	35.11	AVG	9.28	44.39	54.00	9.61

*****END OF REPORT*****