

FCC PART 15B
MEASUREMENT AND TEST REPORT

For

Elanview Technology Co., Ltd

Room 605,Building F,No 7001,Zhongchun Road, Minhang District, Shanghai,P.R.China

FCC ID: 2AEKJ-MORE

Report Type: Original Report	Product Type: Elan Selfie
Test Engineer: Phil Zhu <i>Phil Zhu</i>	
Report Number: RSHA170915003-00A	
Report Date: 2017-09-21 Ray Wang <i>Ray. wang</i>	
Reviewed By: EMC Leader	
Prepared By: Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road, Kunshan,Jiangsu province, China Tel: +86-0512-86175000 Fax: +86-0512-88934268 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. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

TABLE OF CONTENTS

GENERAL INFORMATION.....	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
OBJECTIVE	3
RELATED SUBMITTAL(S)/GRANT(S).....	3
TEST METHODOLOGY	3
TEST FACILITY	3
SYSTEM TEST CONFIGURATION.....	4
JUSTIFICATION	4
EUT EXERCISE SOFTWARE	4
SPECIAL ACCESSORIES.....	4
EQUIPMENT MODIFICATIONS	4
SUPPORT EQUIPMENT LIST AND DETAILS	4
EXTERNAL I/O CABLE.....	4
BLOCK DIAGRAM OF TEST SETUP	5
SUMMARY OF TEST RESULTS.....	6
FCC §15.107 –CONDUCTED EMISSIONS	7
APPLICABLE STANDARD	7
MEASUREMENT UNCERTAINTY	7
EUT SETUP	7
EMI TEST RECEIVER SETUP.....	8
TEST PROCEDURE	8
TEST EQUIPMENT LIST AND DETAILS.....	8
CORRECTED FACTOR & MARGIN CALCULATION	8
TEST DATA	9
FCC §15.109 - RADIATED EMISSIONS	11
APPLICABLE STANDARD	11
MEASUREMENT UNCERTAINTY.....	11
EUT SETUP	11
EMI TEST RECEIVER SETUP.....	12
TEST PROCEDURE	12
TEST EQUIPMENT LIST AND DETAILS.....	13
CORRECTED AMPLITUDE & MARGIN CALCULATION	13
TEST DATA	13

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	Elanview Technology Co.,Ltd
Model	More
Product	Elan Selfie
Rate Voltage	DC 5V
Highest Operating Frequency	2462MHz
Dimension	97.5 mm (L) × 70.4 mm (W) ×13.6 mm (H)

** All measurement and test data in this report was gathered from production sample serial number: 20170915003. (Assigned by BACL, Kunshan).The EUT supplied by the applicant was received on 2017-09-15.*

Objective

This report is prepared on behalf of Elanview Technology Co.,Ltd in accordance with Part 2-Subpart J, and Part 15-Subparts A and B of the Federal Communication Commission's rules.

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

Related Submittal(s)/Grant(s)

FCC Part 15.247 DTS submission with FCC ID: 2AEKJ-MORE.

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.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Kunshan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road,Kunshan,Jiangsu province,China.

Bay Area Compliance Laboratories Corp. (Kunshan) Lab is accredited to ISO/IEC 17025 by A2LA (Lab code: 4323.01) and the FCC designation No. CN1185 under the FCC KDB 974614 D01. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 815570. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Justification

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

Test mode: Downloading

EUT Exercise Software

Data transmitting between EUT and notebook by “winthrax.exe”

Special Accessories

No special accessory was used.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Lenovo	Flash	T180	0A1266865200521
DELL	Notebook	E6410	3094742521
DELL	Adapter	FA90PM111	K8WXN
View Sonic	Monitor	VLCDS23895-3W	A1D030300468
Logitech	Keyboard	Y-U0009	1648MG010PW8
Logitech	Mouse	M-U0026	HS529HB

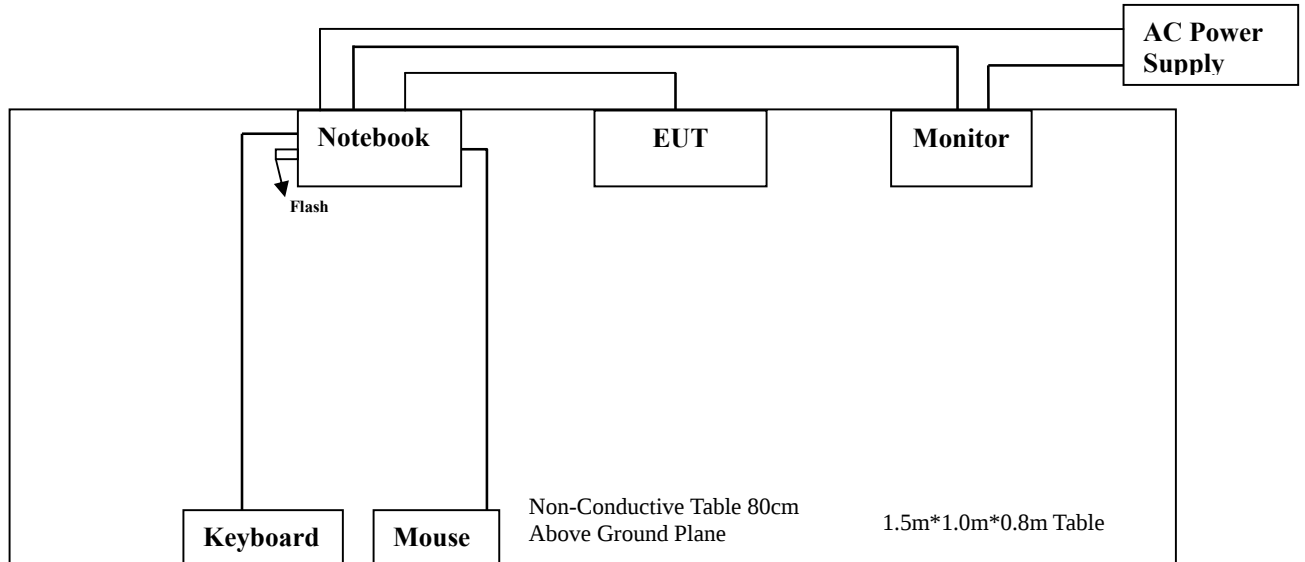
External I/O Cable

Cable Description	Length (m)	From/Port	To
VGA Non Shielding Cable	1.0	Notebook	Monitor
Keyboard USB Non Shielding Cable	1.0	Notebook	Keyboard
Mouse USB Non Shielding Cable	1.0	Notebook	Mouse
USB Non Shielding Cable	0.6	Notebook	EUT
Power Cable	1.0	Notebook	Adapter

Block Diagram of Test Setup

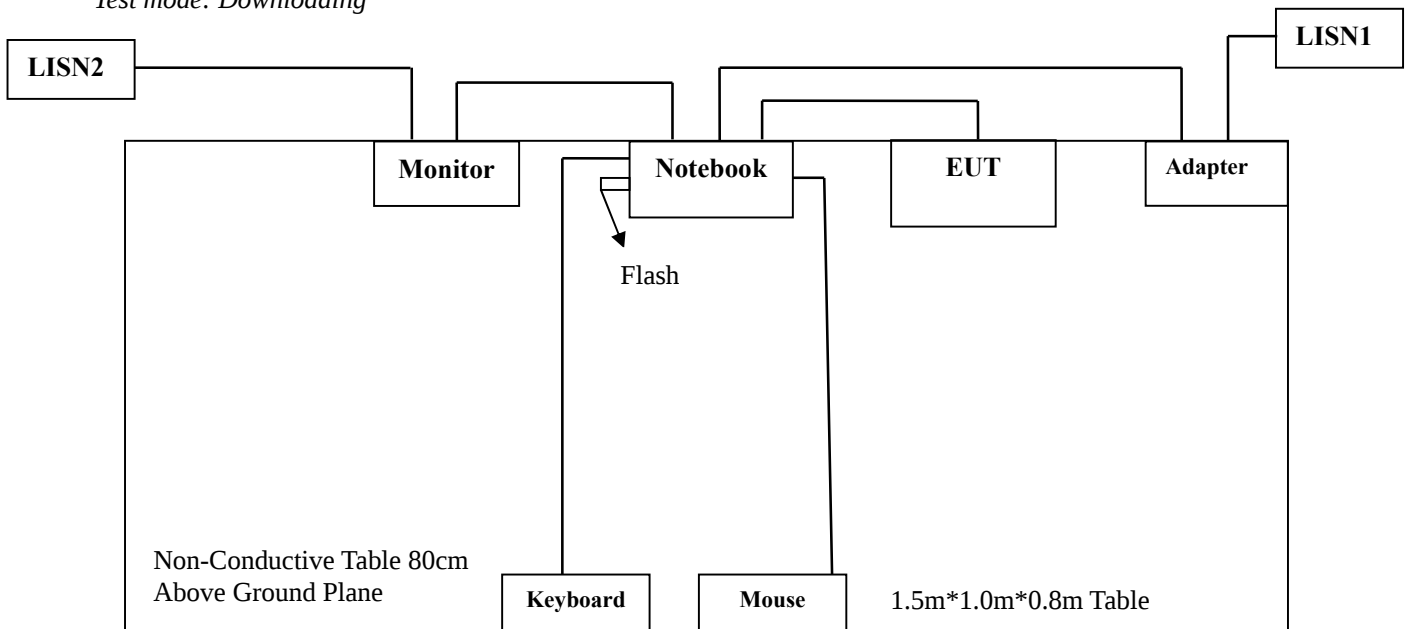
Block Diagram of Radiated Emissions Test Setup

Test mode: Downloading



Block Diagram of Conducted Emissions Test Setup

Test mode: Downloading



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	Conducted Emissions	Compliance
§15.109	Radiated Emissions	Compliance

FCC §15.107 –CONDUCTED EMISSIONS

Applicable Standard

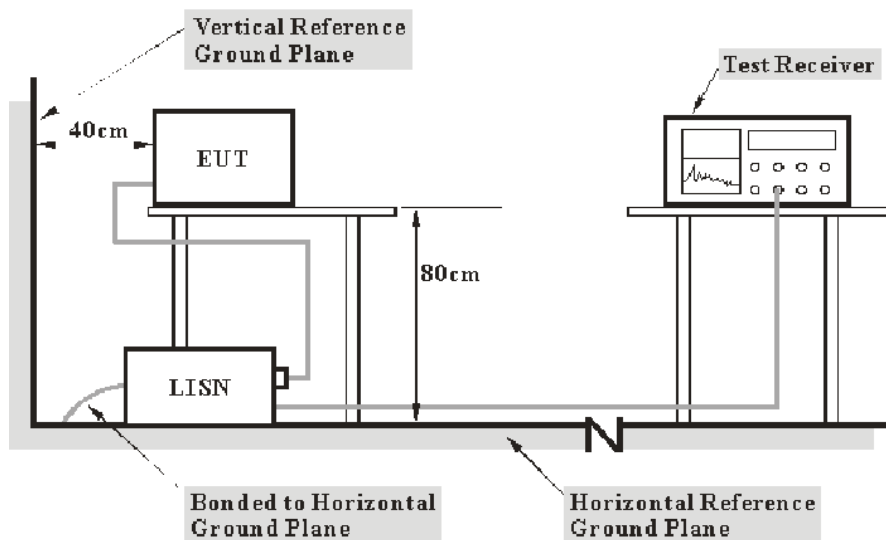
According to FCC§15.107

Measurement Uncertainty

Input quantities to be considered for conducted disturbance measurements may be receiver reading, attenuation of the connection between LISN and receiver, LISN voltage division factor, LISN VDF frequency interpolation and receiver related input quantities, etc.

Item		Measurement Uncertainty	U_{cispr}
AMN	150kHz~30MHz	3.19 dB	3.4 dB

EUT Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The measurement procedure of EUT setup is according with ANSI C63.4-2014. The related limit was specified in FCC Part 15.107 Class B.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

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

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the Adapter of laptop was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2016-11-25	2017-11-24
Rohde & Schwarz	LISN	ESH3-Z5	862770/011	2016-10-10	2017-10-09
ROHDE&SCHWARZ	LISN	ENV216	3560655016	2016-11-25	2017-11-24
BACL	BACL-EMC	V1.0	CE001	--	--
MICRO-COAX	Coaxial Cable	Cable-6	006	2017-09-08	2018-09-07

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

Corrected Factor & Margin Calculation

The Corrected factor is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{VDF} + \text{Cable Loss}$$

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

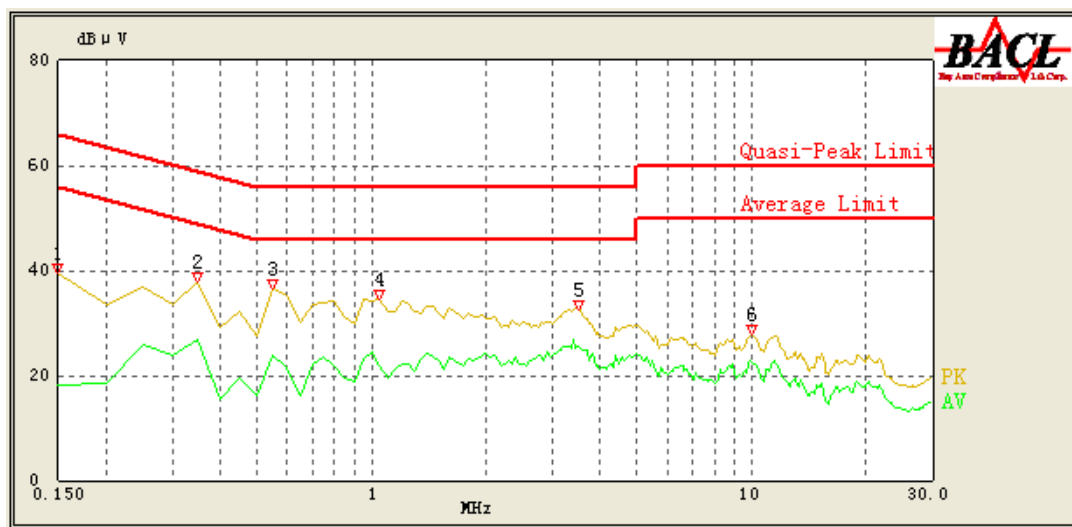
$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Data**Environmental Conditions**

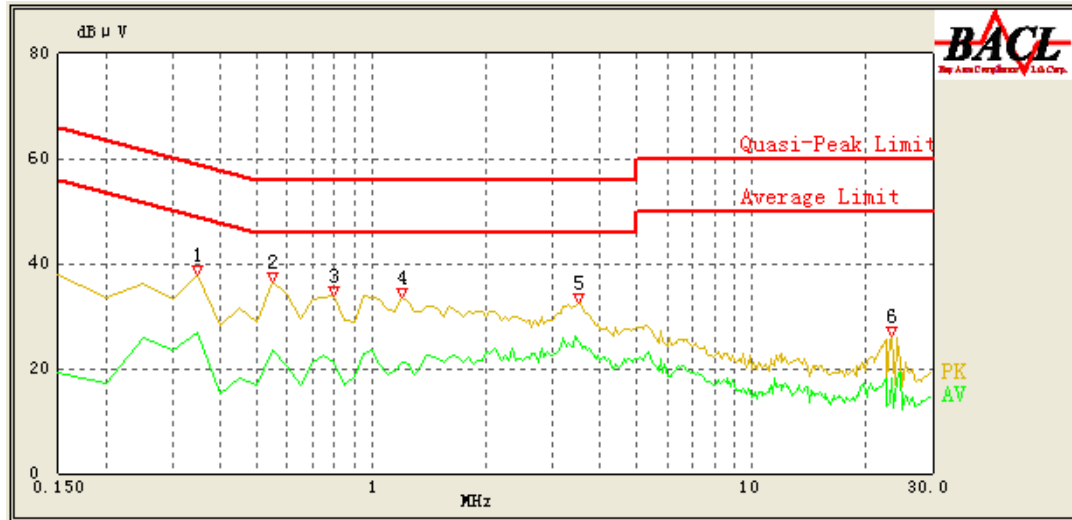
Temperature:	22°C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Phil Zhu on 2017-09-21.

Test mode: Downloading

Line

No.	Frequency (MHz)	Reading (dBμV)	Correction (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/AV/QP)
1	0.150	39.34	16.06	66.00	26.66	QP
2	0.150	18.25	16.06	56.00	37.75	AV
3	0.350	37.87	16.05	60.29	22.42	QP
4	0.350	26.70	16.05	50.29	23.59	AV
5	0.550	36.54	16.05	56.00	19.46	QP
6	0.550	23.70	16.05	46.00	22.30	AV
7	1.050	34.51	15.88	56.00	21.49	QP
8	1.050	21.87	15.88	46.00	24.13	AV
9	3.500	32.38	15.85	56.00	23.62	QP
10	3.500	25.45	15.85	46.00	20.55	AV
11	10.000	27.71	16.06	60.00	32.29	QP
12	10.050	22.61	16.06	50.00	27.39	AV

Neutral

No.	Frequency (MHz)	Reading (dBμV)	Correction (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/AV/QP)
1	0.350	37.87	16.08	60.29	22.42	QP
2	0.350	26.95	16.08	50.29	23.34	AV
3	0.550	36.60	16.08	56.00	19.40	QP
4	0.550	23.44	16.08	46.00	22.56	AV
5	0.800	33.68	15.97	56.00	22.32	QP
6	0.800	21.02	15.97	46.00	24.98	AV
7	1.200	33.35	15.93	56.00	22.65	QP
8	1.200	21.28	15.93	46.00	24.72	AV
9	3.500	32.55	15.89	56.00	23.45	QP
10	3.500	25.20	15.89	46.00	20.80	AV
11	23.450	26.30	16.22	60.00	33.70	QP
12	23.450	18.13	16.22	50.00	31.87	AV

FCC §15.109 - RADIATED EMISSIONS

Applicable Standard

FCC §15.109

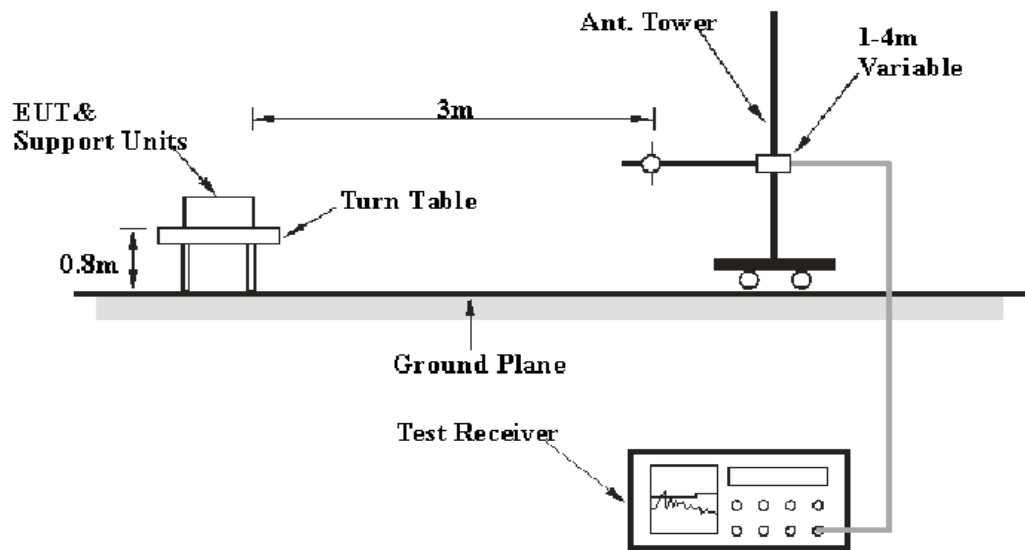
Measurement Uncertainty

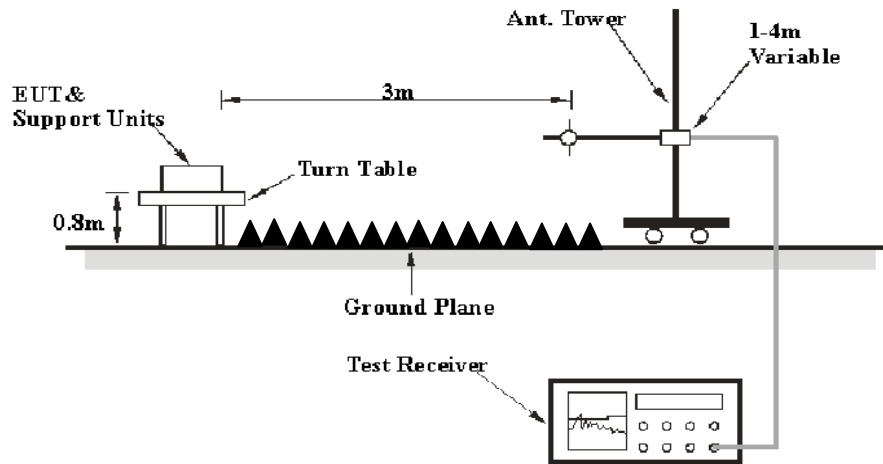
All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Item		Measurement Uncertainty	$U_{\text{cisp}}r$
Radiated Emission	30MHz~1GHz	6.11dB	6.3 dB
	1GHz~6GHz	4.45dB	5.2 dB
	6 GHz ~18 GHz	5.23dB	5.5 dB

EUT Setup

Below 1GHz:



Above 1GHz:

The radiated emission tests were performed in the 3 meters chamber test site, 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 13 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
30MHz – 1000 MHz	120 kHz	300 kHz	120kHz	QP
Above 1 GHz	1MHz	3 MHz	/	Peak
	1MHz	1 Hz	/	Av

Test Procedure

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

All data was recorded in the Quasi-peak detector mode from 30 MHz to 1 GHz, Peak and average detection mode above 1 GHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sonoma Instrument	Amplifier	310N	171205	2017-08-14	2018-08-13
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2016-11-25	2017-11-24
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2016-01-09	2019-01-08
Champrotek	Chamber	Chamber A	T-KSEMC049	-	-
R&S	Auto test Software	EMC32	100361	-	-
ETS	Horn Antenna	3115	6229	2016-01-11	2019-01-10
Rohde & Schwarz	Signal Analyzer	FSIQ26	100048	2016-11-25	2017-11-25
Narda	Pre-amplifier	AFS42-00101800	2001270	2016-12-12	2017-12-11
MICRO-COAX	Coaxial Cable	Cable-8	001	2017-08-15	2018-08-14
MICRO-COAX	Coaxial Cable	Cable-9	002	2017-08-15	2018-08-14
MICRO-COAX	Coaxial Cable	Cable-10	003	2017-08-15	2018-08-14
MICRO-COAX	Coaxial Cable	Cable-4	004	2016-12-12	2017-12-11

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

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

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:

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

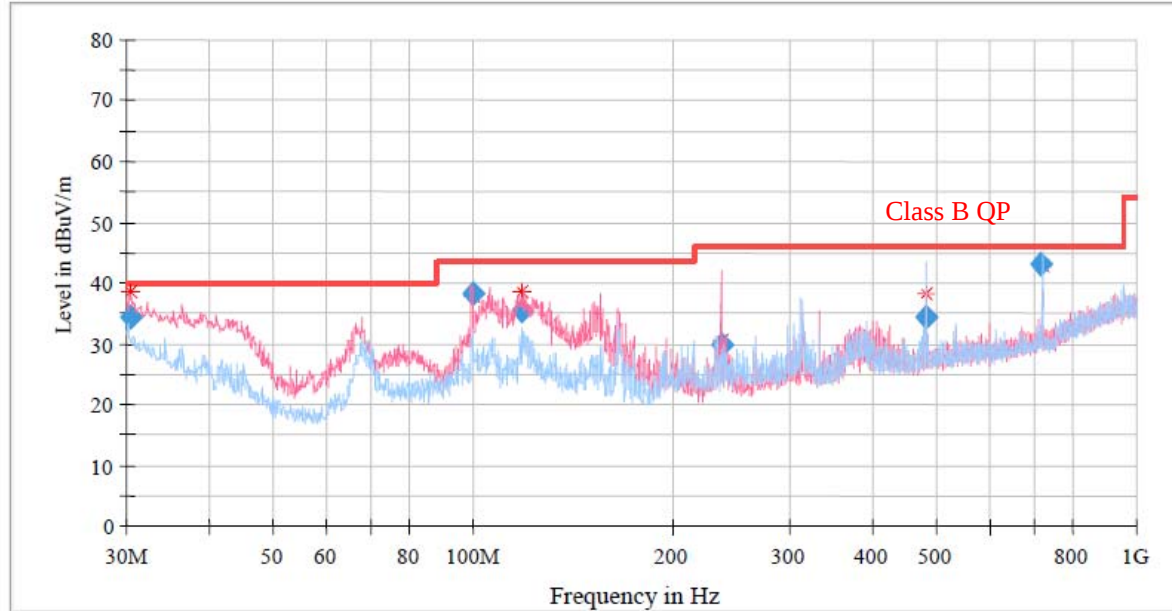
Test Data**Environmental Conditions**

Temperature:	27 °C
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Phil Zhu on 2017-09-21.

Test mode: Downloading

1)30MHz ~ 1GHz:



Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.398130	34.42	40.00	5.58	101.0	V	14.0	-4.8
99.597450	38.39	43.50	5.11	101.0	V	261.0	-15.6
118.266700	35.49	43.50	8.01	101.0	V	158.0	-12.1
237.055050	29.66	46.00	16.34	101.0	V	91.0	-13.7
479.878700	34.47	46.00	11.53	101.0	H	293.0	-7.3
720.701900	42.27	46.00	3.73	101.0	H	112.0	-3.5

Above 1 GHz:

Frequency (MHz)	Max Peak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1797.533333	---	21.65	54.00	32.35	150.0	H	199.0	-6.8
1797.533333	32.94	---	74.00	41.06	150.0	H	199.0	-6.8
2180.233333	33.85	---	74.00	40.15	150.0	H	358.0	-5.5
2180.233333	---	23.25	54.00	30.75	150.0	H	358.0	-5.5
2880.633333	---	25.91	54.00	28.09	150.0	H	269.0	-2.6
2880.633333	36.82	---	74.00	37.18	150.0	H	269.0	-2.6
4823.666667	---	37.57	54.00	16.43	150.0	V	123.0	2.5
4823.666667	45.83	---	74.00	28.17	150.0	V	123.0	2.5
6612.733333	---	35.29	54.00	18.71	150.0	H	235.0	8.6
6612.733333	45.94	---	74.00	28.06	150.0	H	235.0	8.6
17906.166667	53.51	---	74.00	20.49	150.0	V	0.0	23.6
17906.166667	---	42.30	54.00	11.70	150.0	V	0.0	23.6

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