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Report No.: SZEM141100656503

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FCC Test Report

Application No.: SZEM1411006565CR
Applicant: DEI Sales Inc. dba Definitive Technology
Address of Applicant: One Viper Way Vista, California 92081
Manufacturer: Definitive Technology
Address of Manufacturer: 11433 Cronridge Drive Owings Mills, MD 21117
Factory: Merry Electronics (Shenzhen) Co., Ltd.
Address of Factory: Merry Industrial Park, #484 Hua Rong Rd., Da-Lang, Bao-An, ShenZhen 518109, China
Equipment Under Test (EUT):
EUT Name: Wireless Bluetooth over-ear headphone
Model No.: HPNC
Trade mark: Definitive Technology
FCC ID: IPU-HPNC
Standards: 47 CFR PART 15, Subpart B:2014
Date of Receipt: 2014-12-02
Date of Test: 2014-12-04 to 2015-01-08
Date of Issue: 2015-02-03

Test Result :	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (30MHz to 1GHz) §	47 CFR PART 15,Subpart B:2014	ANSI C63.4:2009	Class B	PASS
Conducted Emission (150kHz to 30MHz)	47 CFR PART 15,Subpart B:2014	ANSI C63.4:2009	Class B	PASS

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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 to 108	1000
108 to 500	2000
500 to 1000	5000
Above 1000	5th harmonic of the highest frequency or 40GHz, whichever is lower





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4 General Information

4.1 Details of E.U.T.

Power Supply: AC 110V 60Hz
Aux in Cable : 100cm (Unshielded)
USB Cable: 200cm (Unshielded)

4.2 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.
iPhone 5	Supplied by Apple	N/A
AC Adapter	Supplied by SGS	RM0201 0005 (Input voltage: AC 100-240V 50/60Hz Output voltage: DC 5V 850mA)

4.3 Standards Applicable for Testing

The customer requested FCC tests for Wireless Bluetooth over-ear headphone..
The standard used was 47 CFR PART 15, Subpart B

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch E&E Lab,
No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China.
518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.



4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

- **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers of SGS-CSTC Standards Technical Services Co., Ltd. have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1 & 4620C-2.

4.6 Deviation from Standards

None.

4.7 Abnormalities from Standard Conditions

None.



5 Equipment List

RE in Chamber					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2015-06-10
2	EMI Test Receiver	Agilent Technologies	N9038A	SEL0312	2015-09-16
3	EMI Test software	AUDIX	E3	SEL0050	N/A
4	Coaxial cable	SGS	N/A	SEL0028	2015-05-29
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0014	2015-10-24
6	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2015-05-16
7	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2015-10-24
8	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEL0168	2015-10-24
9	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2015-10-24
10	Band filter	Amindeon	Asi 3314	SEL0094	2015-05-16
11	Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	2015-10-24

Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)
1	Shielding Room	ZhongYu Electron	GB-88	SEL0042	2015-06-10
2	LISN	Rohde & Schwarz	ENV216	SEL0152	2015-10-24
3	LISN	ETS-LINDGREN	3816/2	SEL0021	2015-05-16
4	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	EMC0120	2015-08-30
5	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	EMC0121	2015-08-30
6	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	EMC0122	2015-08-30
7	EMI Test Receiver	Rohde & Schwarz	ESCI	SEL0022	2015-05-16
8	Coaxial Cable	SGS	N/A	SEL0025	2015-05-29
9	Coaxial Cable	SGS	N/A	SEL0025	2015-05-29



General used equipment					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)
1	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0101	2015-10-24
2	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0102	2015-10-24
3	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0103	2015-10-24
4	Barometer	ChangChun	DYM3	SEL0088	2015-05-16



6 Test Results

6.1 Conducted Emissions Mains Terminals, 150kHz to 30MHz

Test Requirement:	47 CFR PART 15, Subpart B
Test Method:	ANSI C63.4:2009
Frequency Range:	150kHz to 30MHz
Class / Severity:	Class B
Limit:	
0.15M-0.5MHz	66dB(dB μ V)-56dB(dB μ V) quasi-peak, 56dB(dB μ V)-46dB(dB μ V) average
0.5M-5MHz	56dB(dB μ V) quasi-peak, 46dB(dB μ V) average
5M-30MHz	60dB(dB μ V) quasi-peak, 50dB(dB μ V) average
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth)
	Quasi-Peak if maximised peak within 6dB of Quasi-Peak limit

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 °C Humidity: 56 % RH Atmospheric Pressure: 1020 mbar

EUT Operation: Test the EUT in Charge + computer playing mode (pretest was performed at Charge + AUX in mode and Charge + computer playing mode, completed test performed at Charge + computer playing mode since it was the worst case.), keep the EUT working with computer.

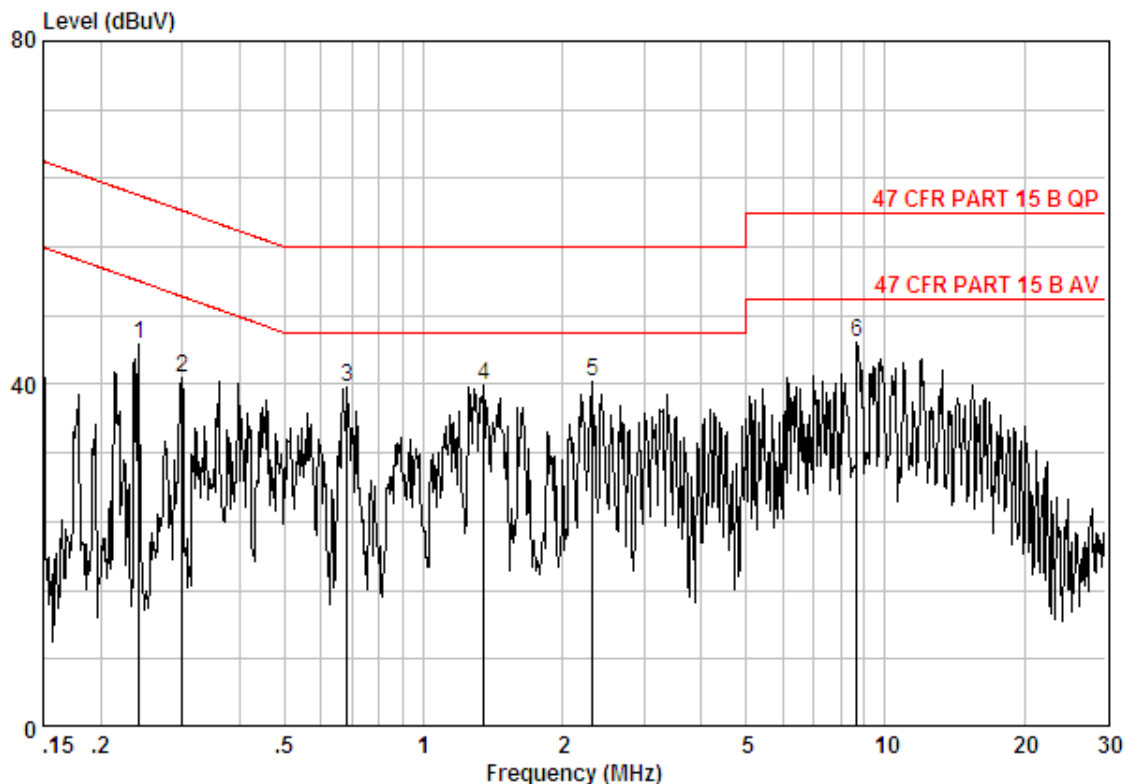
6.1.2 Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.



Live line

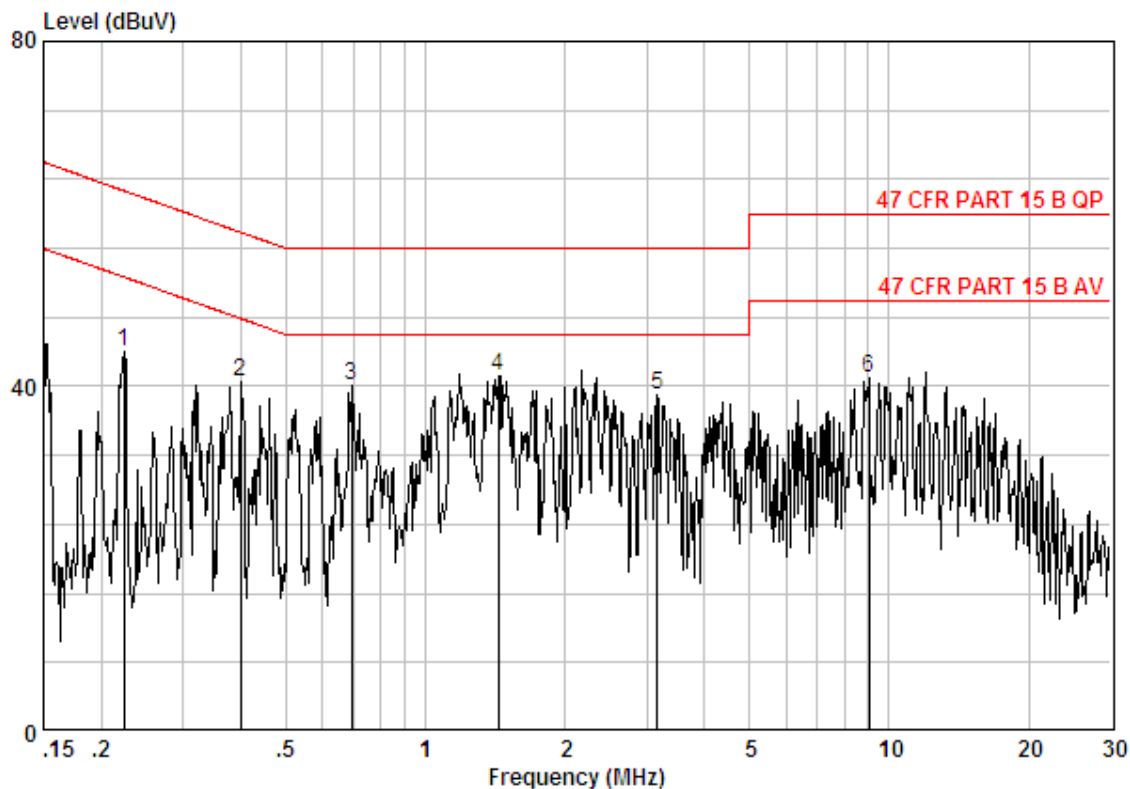


Site : Shielding Room
Condition : 47 CFR PART 15 B AV CE LINE
Job No. : 6565CR

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.24165	0.02	9.70	34.89	44.60	52.04	-7.43	Peak
2	0.30028	0.01	9.70	31.02	40.73	50.24	-9.51	Peak
3	0.68263	0.02	9.80	29.96	39.78	46.00	-6.22	Peak
4	1.352	0.02	9.80	30.06	39.88	46.00	-6.12	Peak
5	2.321	0.02	9.82	30.45	40.28	46.00	-5.72	Peak
6	8.683	0.01	10.00	34.99	45.00	50.00	-5.00	Peak



Neutral line



Site : Shielding Room
Condition : 47 CFR PART 15 B AV CE NEUTRAL
Job No. : 6565CR

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.22319	0.02	9.70	34.26	43.98	52.70	-8.72	Peak
2	0.39974	0.01	9.80	30.84	40.65	47.86	-7.21	Peak
3	0.69357	0.02	9.80	30.22	40.04	46.00	-5.96	Peak
4 @	1.433	0.02	9.80	31.45	41.27	46.00	-4.73	Peak
5	3.156	0.02	9.85	29.12	38.99	46.00	-7.01	Peak
6	9.059	0.01	10.00	31.05	41.06	50.00	-8.94	Peak



6.2 Radiated Emissions, 30MHz to 1GHz

Test Requirement:	47 CFR PART 15, Subpart B
Test Method:	ANSI C63.4:2009
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Class:	Class B
Limit:	40.0 dB μ V/m between 30MHz & 88MHz 43.5 dB μ V/m between 88MHz & 216MHz 46.0 dB μ V/m between 216MHz & 960MHz 54.0 dB μ V/m above 960MHz
Detector:	Peak for pre-scan (120kHz resolution bandwidth) Quasi-Peak if maximised peak within 6dB of limit

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.0 °C Humidity: 56% RH Atmospheric Pressure: 1020 mbar

EUT Operation: Test the EUT in Charge + computer playing mode (pretest was performed at Charge + AUX in mode and Charge + computer playing mode, completed test performed at Charge + computer playing mode since it was the worst case.), keep the EUT working with computer.

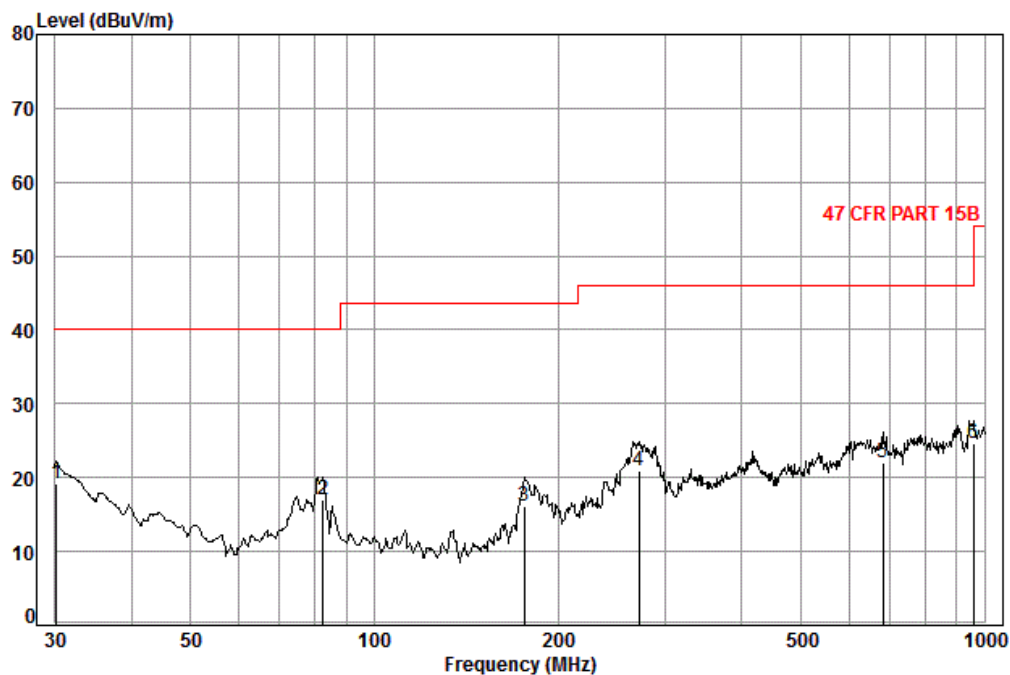
6.2.2 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.



Horizontal

Data: 68



Condition: 47 CFR PART 15B 3m 3142C Horizontal

Job No. : 6565CR

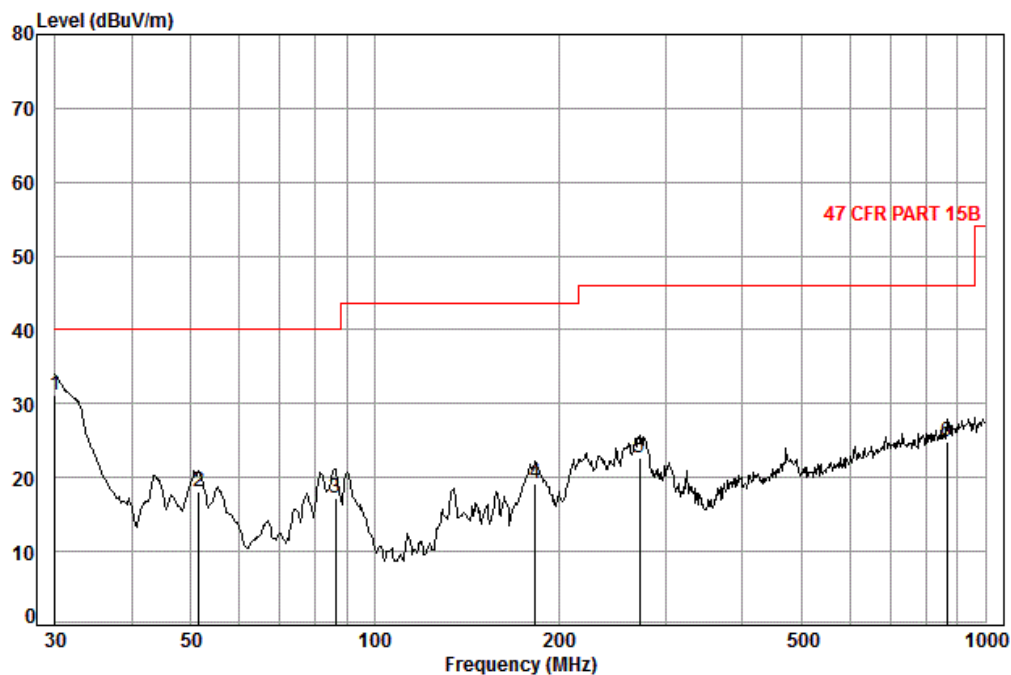
	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	30.11	0.60	18.64	27.36	27.30	19.18	40.00	-20.82
2	82.36	1.10	7.94	27.23	35.29	17.10	40.00	-22.90
3	176.27	1.36	9.75	26.79	31.72	16.04	43.50	-27.46
4	271.32	1.77	12.73	26.47	32.80	20.83	46.00	-25.17
5	682.35	2.87	21.46	27.43	25.22	22.12	46.00	-23.88
6	958.79	3.66	23.30	26.51	24.19	24.64	46.00	-21.36





Vertical

Data: 69



Condition: 47 CFR PART 15B 3m 3142C Vertical

Job No. : 6565CR

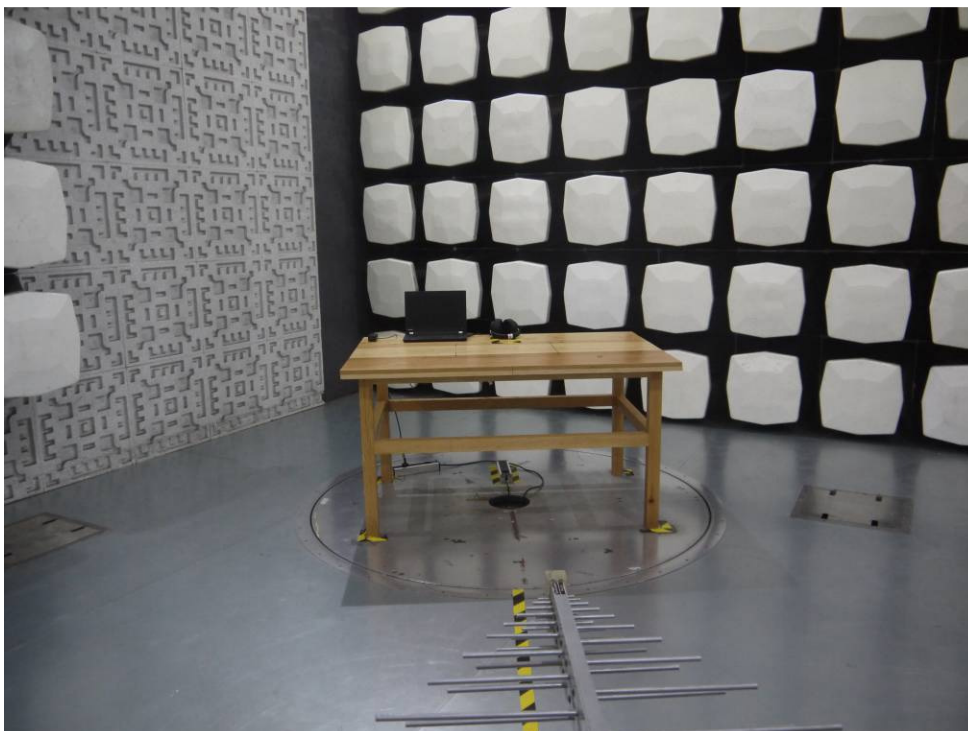
	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	30.00	0.60	18.70	27.36	39.16	31.10	40.00	-8.90
2	51.48	0.80	8.48	27.29	36.01	18.00	40.00	-22.00
3	86.20	1.10	8.32	27.22	35.00	17.20	40.00	-22.80
4	183.20	1.37	9.96	26.76	34.64	19.21	43.50	-24.29
5	271.32	1.77	12.73	26.47	34.70	22.73	46.00	-23.27
6	866.09	3.47	22.79	26.96	25.54	24.84	46.00	-21.16

7 Photographs

7.1 Conducted Emission Test Setup



7.2 Radiated Emission Test Setup





7.3 EUT Constructional Details

Refer to Report No. SZEM141100656501 for EUT internal and external photos.