RF TEST REPORT

Report No.: Q190505S005-FCC-R2

Supersede Report No.: N/A

Applicant	3Dconnexion
Product Name	CADMOUSE PRO WIRELESS LEFT
Main Model	3DX-600066
Serial Model	3DX-700079
Test Standard	FCC Part 15.249; ANSI C63.10: 2013
Test Date	May 12 to June 12, 2019
Issue Date	June 13, 2019
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Aaron Liang	David Huang	
Aaron Liang Test Engineer	David Huang Checked By	

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Test result presented in this test report is applicable to the tested sample only

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

Zone A, Floor 1, Building 2 Wan Ye Long Technology Park

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Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.

In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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CONTENTS

1. Report Revision History

Report No.	Report Version	Description	Issue Date
Q190505S005-FCC-R2	NONE	Original	June 13, 2019

2. Customer information

Applicant Name	3Dconnexion
Applicant Add	7, Boulevard du Jardin Exotique, 98000 Monaco
Manufacturer	3Dconnexion
Manufacturer Add	7, Boulevard du Jardin Exotique, 98000 Monaco

3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao'an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	535293
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

4. Equipment under Test (EUT) Information

Description of EUT:	CADMOUSE PRO WIRELESS LEFT
Main Model:	3DX-600066
Serial Model:	3DX-700079
Date EUT received:	May 05, 2019
Test Date(s):	May 12 to June 12, 2019
Antenna Gain:	0.5dBi
Antenna Type:	Ceramic Antenna
Maximum field strength:	100.28dBuV
Type of Modulation:	GFSK
RF Operating Frequency (ies):	2404-2477MHz
Number of Channels:	5CH
Input Power:	Battery: Model: 603450 Spec: 3.7V, 1100mAh, 4.07Wh Limited Charge Voltage: 4.2V
Port:	Please refer to the user's manual
Trade Name :	3Dconnexion
FCC ID:	2AAHQ-CMPWL

5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.207(a)	AC Line Conducted Emissions	Compliance
§15.205, §15.209, §15.249(a), §15.249(d)	Radiated Fundamental / Radiated Spurious Emissions	Compliance
§15.249©	20 dB Bandwidth	Compliance
§15.249(d)	Band Edge	Compliance

Measurement Uncertainty

Emissions		
Test Item	**Description**	**Uncertainty**
Band Edge and Radiated Spurious Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

6.1 Antenna Requirement

Standard Requirement:

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.
c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Antenna Connector Construction

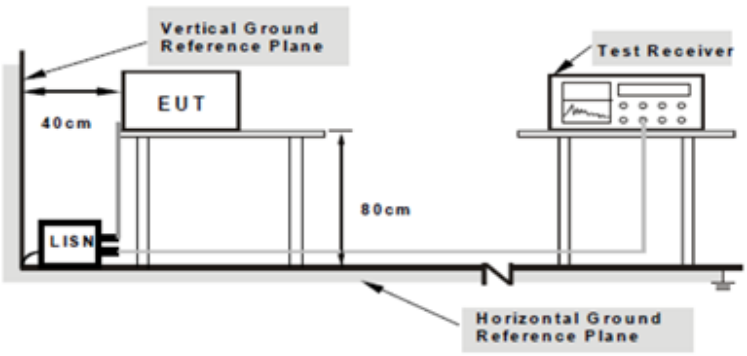
The EUT has 1 antenna:

A permanently attached Ceramic antenna for BLE/2.4G, the gain is 0.5dBi for BLE/2.4G.

Test Result: Pass

6.2 AC Line Conducted Emissions

Temperature	25°C
Relative Humidity	57%
Atmospheric Pressure	1019mbar
Test date :	May 30, 2019
Tested By :	Evans He

<table>
<tr><th>Spec</th><th>Item</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td>§15.207</td><td>a)</td><td>For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 [mu]H/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequencies ranges.
<table>
<tr><th rowspan="2">Frequency ranges (MHz)</th><th colspan="2">Limit (dBμV)</th></tr>
<tr><th>QP</th><th>Average</th></tr>
<tr><td>0.15 ~ 0.5</td><td>66 – 56</td><td>56 – 46</td></tr>
<tr><td>0.5 ~ 5</td><td>56</td><td>46</td></tr>
<tr><td>5 ~ 30</td><td>60</td><td>50</td></tr>
</table></td><td>☑</td></tr>
<tr><td>Test Setup</td><td colspan="3"> 

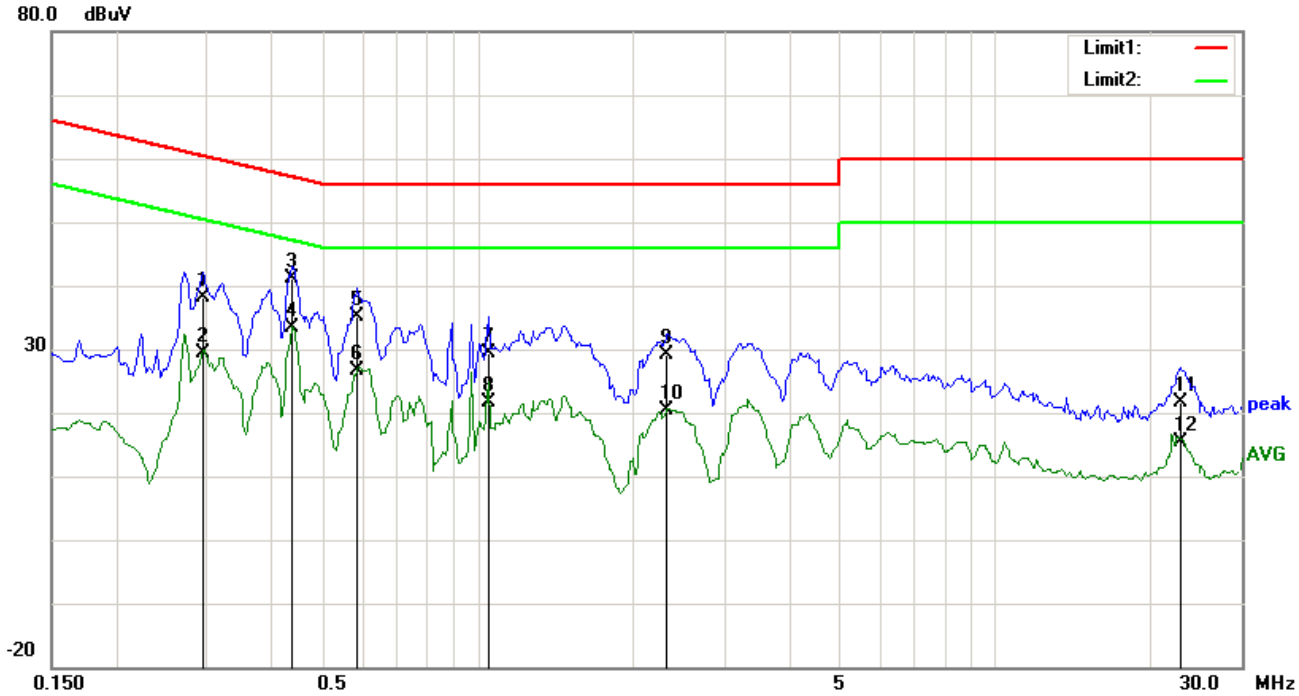
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</td></tr>
<tr><td>Procedure</td><td colspan="3">1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table.
2. The power supply for the EUT was fed through a 50W/50mH EUT LISN, connected to filtered mains.
3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.</td></tr>
</table>

	4. All other supporting equipment were powered separately from another main supply. 5. The EUT was switched on and allowed to warm up to its normal operating condition. 6. A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power) over the required frequency range using an EMI test receiver. 7. High peaks, relative to the limit line, The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 kHz. 8. Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).
Remark	
Result	☑ Pass ☐ Fail ☐ N/A

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

Test Mode:	Transmitting Mode

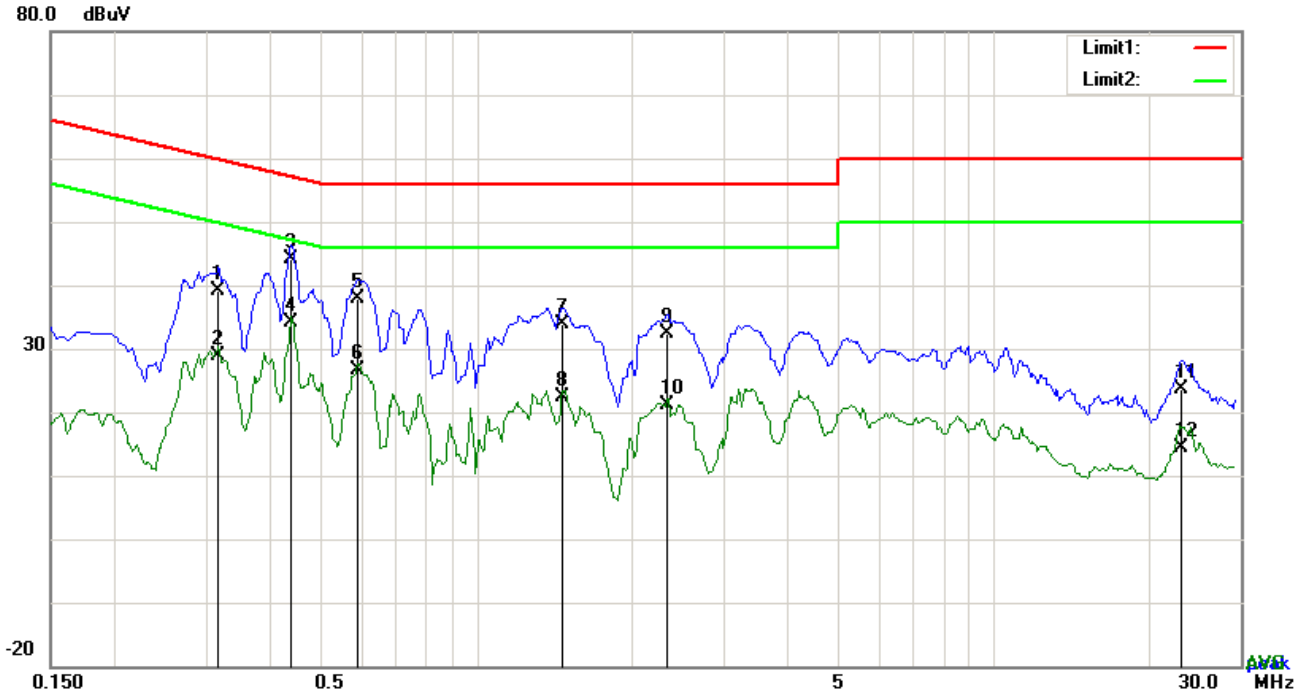


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)
1	L1	0.2943	28.07	QP	10.03	38.10	60.40	-22.30
2	L1	0.2943	19.35	AVG	10.03	29.38	50.40	-21.02
3	L1	0.4386	31.18	QP	10.03	41.21	57.09	-15.88
4	L1	0.4386	23.25	AVG	10.03	33.28	47.09	-13.81
5	L1	0.5868	25.00	QP	10.03	35.03	56.00	-20.97
6	L1	0.5868	16.55	AVG	10.03	26.58	46.00	-19.42
7	L1	1.0509	19.46	QP	10.03	29.49	56.00	-26.51
8	L1	1.0509	11.52	AVG	10.03	21.55	46.00	-24.45
9	L1	2.3301	19.02	QP	10.05	29.07	56.00	-26.93
10	L1	2.3301	10.32	AVG	10.05	20.37	46.00	-25.63
11	L1	22.7886	11.20	QP	10.35	21.55	60.00	-38.45
12	L1	22.7886	4.94	AVG	10.35	15.29	50.00	-34.71

Test Mode:	Transmitting Mode



Test Data

Phase Neutral Plot at 120Vac, 60Hz

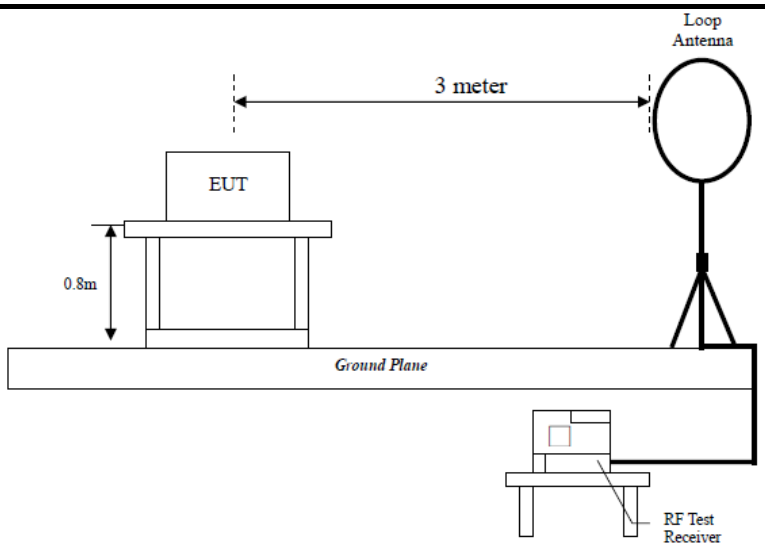
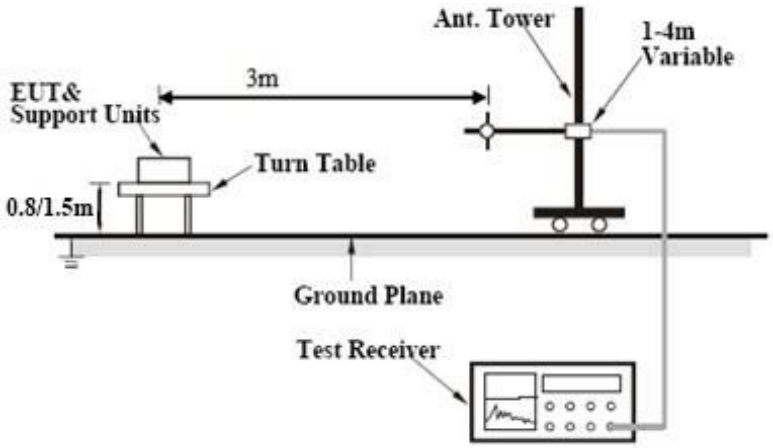
No.	P/L	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)
1	N	0.3177	29.12	QP	10.02	39.14	59.77	-20.63
2	N	0.3177	18.91	AVG	10.02	28.93	49.77	-20.84
3	N	0.4386	34.23	QP	10.02	44.25	57.09	-12.84
4	N	0.4386	24.08	AVG	10.02	34.10	47.09	-12.99
5	N	0.5907	27.74	QP	10.02	37.76	56.00	-18.24
6	N	0.5907	16.55	AVG	10.02	26.57	46.00	-19.43
7	N	1.4643	23.73	QP	10.03	33.76	56.00	-22.24
8	N	1.4643	12.41	AVG	10.03	22.44	46.00	-23.56
9	N	2.3457	22.31	QP	10.04	32.35	56.00	-23.65
10	N	2.3457	11.06	AVG	10.04	21.10	46.00	-24.90
11	N	23.0421	13.30	QP	10.31	23.61	60.00	-36.39
12	N	23.0421	4.00	AVG	10.31	14.31	50.00	-35.69

6.3 Radiated Emissions

Temperature	25°C
Relative Humidity	57%
Atmospheric Pressure	1019mbar
Test date :	May 30, 2019
Tested By :	Evans He

Requirement(s):

<table>
<tr><th>Spec</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td>§15.209, §15.205, §15.249(a) & §15.249(d)</td><td>
The emissions from the Low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges.
The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:
<table>
<tr><th>Fundamental frequency</th><th>Field strength of fundamental (millivolts/meter)</th><th>Field strength of harmonics (microvolts/meter)</th></tr>
<tr><td>902– 928 MHz</td><td>50</td><td>500</td></tr>
<tr><td>2400– 2483.5 MHz</td><td>50</td><td>500</td></tr>
<tr><td>5725– 5875 MHz</td><td>50</td><td>500</td></tr>
<tr><td>24.0– 24.25 GHz</td><td>250</td><td>2500</td></tr>
</table>
(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.
<table>
<tr><th>Frequency range (MHz)</th><th>Field Strength (μV/m)</th></tr>
<tr><td>0.009~0.490</td><td>2400/F(KHz)</td></tr>
<tr><td>0.490~1.705</td><td>24000/F(KHz)</td></tr>
<tr><td>1.705~30.0</td><td>30</td></tr>
<tr><td>30 – 88</td><td>100</td></tr>
<tr><td>88 – 216</td><td>150</td></tr>
<tr><td>216 960</td><td>200</td></tr>
<tr><td>Above 960</td><td>500</td></tr>
</table>
</td><td>☑</td></tr>
</table>

Test Setup	 
Procedure	- Setup the configuration according to figure 1. Turn on EUT and make sure that it is in normal function - For emission frequencies measured below 1GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies of higher emissions will be checked on a open test site. As the same purpose, for emission frequencies measured above 1GHZ, a pre-scan also be performed with a meter measuring distance before final test. - For emission frequencies measured below and above 1GHz, set the spectrum analyzer on a 100kHz and 1MHz resolution bandwidth respectively for each frequency measured in step 2. - The search antenna is to be raised and lowered over a range from 1 to 4m in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, the change the orientation of EUT on the test table over a range from 0 to 360°. With a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer.

	Vary the antenna position again and record the highest value as a final reading. - Repeat step 4 until all frequencies need to be measured was complete. - Repeat step5 with search antenna in vertical polarized orientations.
Remark	
Result	☑ Pass ☐ Fail

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

Test Result (worst case):

Test Mode:	Transmitting Mode

Frequency range: 9KHz - 30MHz

Freq. (MHz)	Detection value	Factor (dB/m)	Reading (dBuV/m)	Result (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)
--	--	--	--	--	--	>20
--	--	--	--	--	--	>20

Note:

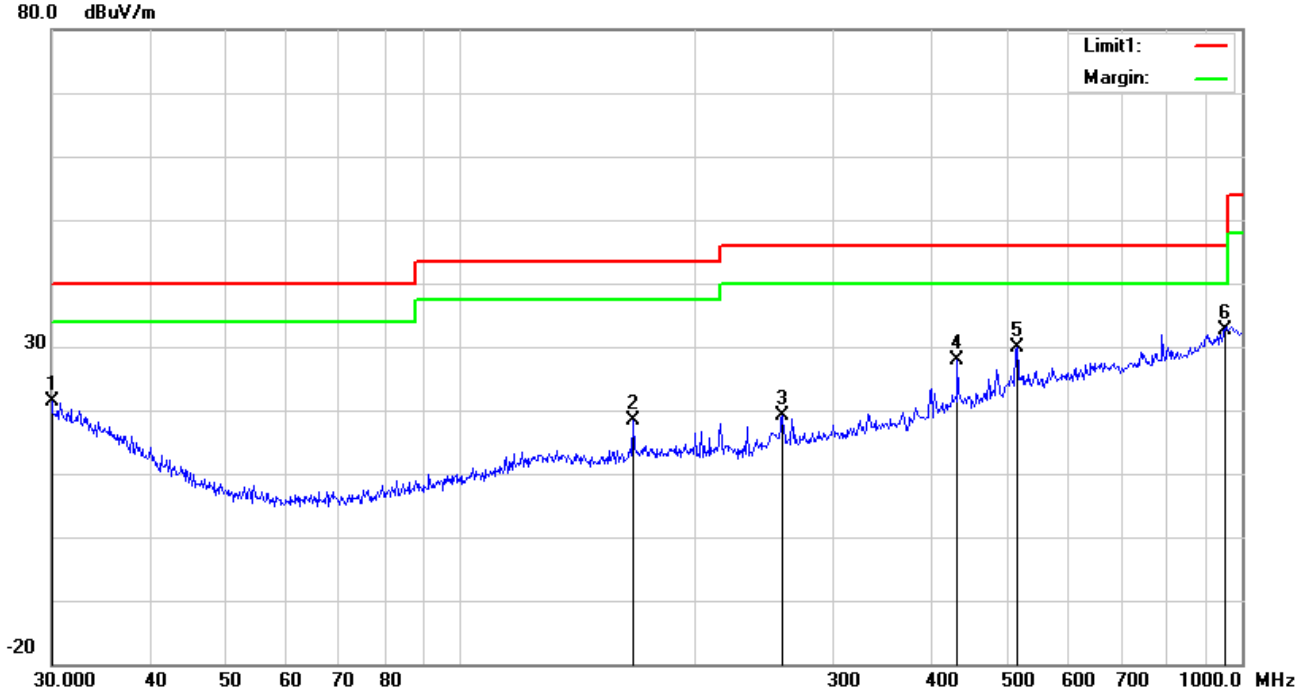
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

Test Model :	Normal Working

(Below 1GHz)

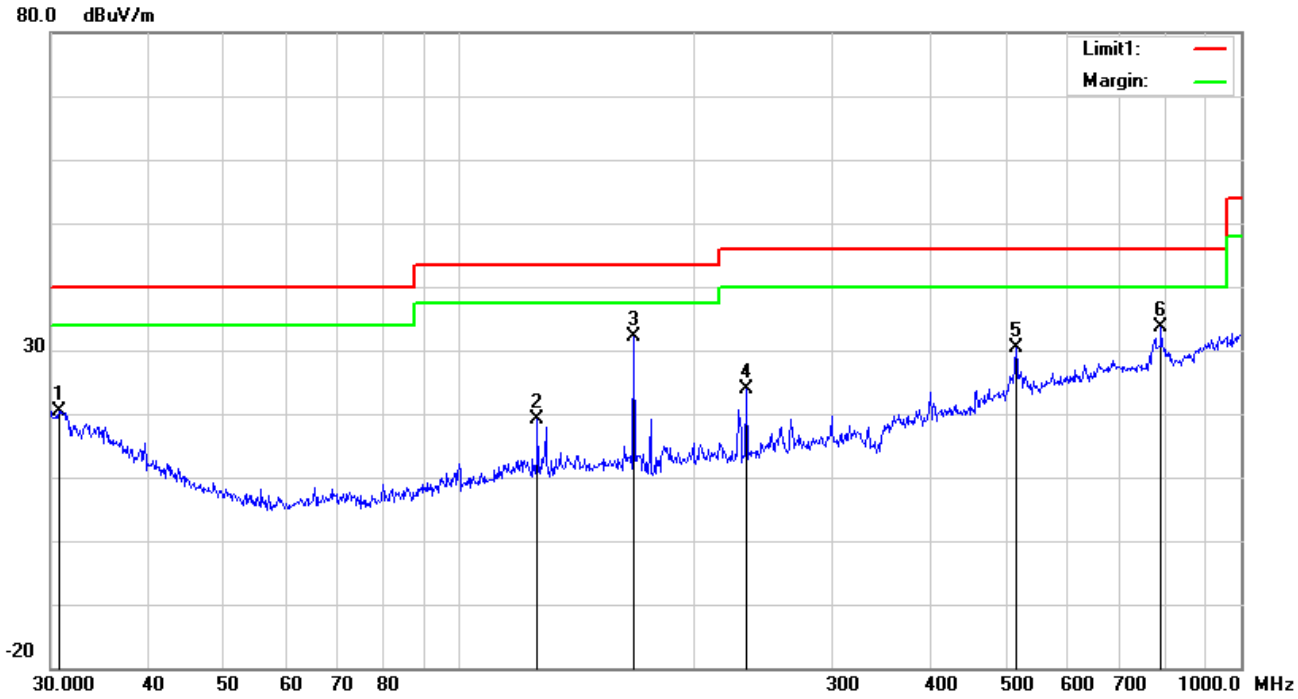


Test Data

Horizontal Polarity Plot @3m

No.	P/L	Frequency	Reading	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)	(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)
1	H	30.0000	23.51	20.10	22.28	0.13	21.46	40.00	-18.54	100	66
2	H	166.0680	28.12	11.09	22.26	1.36	18.31	43.50	-25.19	100	109
3	H	258.3264	27.45	12.30	22.29	1.63	19.09	46.00	-26.91	100	90
4	H	432.5457	30.93	16.96	21.94	1.98	27.93	46.00	-18.07	100	238
5	H	515.4374	30.44	19.01	21.77	2.17	29.85	46.00	-16.15	100	347
6	H	952.0937	27.00	23.70	20.78	2.70	32.62	46.00	-13.38	100	146

(Below 1GHz)



Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency	Reading	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)	(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)
1	V	30.7455	22.92	19.62	22.28	0.13	20.39	40.00	-19.61	100	191
2	V	125.8864	28.80	11.67	22.37	1.03	19.13	43.50	-24.37	100	164
3	V	167.2368	41.82	11.11	22.26	1.37	32.04	43.50	-11.46	200	104
4	V	233.3487	33.06	11.57	22.32	1.59	23.90	46.00	-22.10	100	154
5	V	515.4374	31.05	19.01	21.77	2.17	30.46	46.00	-15.54	100	277
6	V	790.6188	30.13	22.11	21.17	2.54	33.61	46.00	-12.39	100	344

Above 1GHz

Test Mode:	Transmitting Mode

Low Channel (2404 MHz)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	DETECTOR(PK/AV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (MM)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2396.17	55.81	PK	74	-18.19	100	257	69.46	-13.65
2	2396.17	31.33	AV	54	-22.67	100	223	44.98	-13.65
3	*2404	86.31	PK	114	-27.69	100	329	100.28	-13.97
4	*2404	61.83	AV	94	-32.17	100	190	75.8	-13.97
5	4808	50.66	PK	74	-23.34	100	132	54.41	-3.75
6	4808	26.18	AV	54	-27.82	200	247	29.93	-3.75
7	7212	54.11	PK	74	-19.89	100	132	54.69	-0.58
8	7212	29.63	AV	54	-24.37	100	346	30.21	-0.58

ANTENNA POLARITY & TEST DISTANCE: Vertical AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	DETECTOR(PK/AV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (MM)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2396	51.31	PK	74	-22.69	100	300	64.96	-13.65
2	2396	26.83	AV	54	-27.17	100	253	40.48	-13.65
3	*2404	81.68	PK	114	-32.32	100	85	95.65	-13.97
4	*2404	57.2	AV	94	-36.8	100	223	71.17	-13.97
5	4808	50.12	PK	74	-23.88	100	310	53.87	-3.75
6	4808	25.64	AV	54	-28.36	100	16	29.39	-3.75
7	7212	53.95	PK	74	-20.05	100	291	54.53	-0.58
8	7212	29.47	AV	54	-24.53	100	249	30.05	-0.58

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

Middle Channel (2442 MHz)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	DETECTOR(PK/AV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (MM)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2442	85.14	PK	114	-28.86	100	319	98.16	-13.02
2	*2442	60.66	AV	94	-33.34	100	198	73.68	-13.02
3	4884	50.32	PK	74	-23.68	100	203	54.28	-3.96
4	4884	25.84	AV	54	-28.16	100	180	29.8	-3.96
5	7326	54.32	PK	74	-19.68	200	321	55.08	-0.76
6	7326	29.84	AV	54	-24.16	100	185	30.6	-0.76

ANTENNA POLARITY & TEST DISTANCE: Vertical AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	DETECTOR(PK/AV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (MM)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2442	80.19	PK	114	-33.81	100	293	93.21	-13.02
2	*2442	55.71	AV	94	-38.29	100	22	68.73	-13.02
3	4884	50.04	PK	74	-23.96	100	293	54	-3.96
4	4884	25.56	AV	54	-28.44	100	138	29.52	-3.96
5	7326	54.21	PK	74	-19.79	200	9	54.97	-0.76
6	7326	29.73	AV	54	-24.27	100	27	30.49	-0.76

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

High Channel (2477 MHz)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	DETECTOR(PK/AV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (MM)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2484.09	54.29	PK	74	-19.71	100	104	67.94	-13.65
2	2484.09	29.81	AV	54	-24.19	100	195	43.46	-13.65
3	*2477	83.12	PK	114	-30.88	100	161	97.09	-13.97
4	*2477	58.64	AV	94	-35.36	100	238	72.61	-13.97
5	4954	51.36	PK	74	-22.64	100	112	55.11	-3.75
6	4954	26.88	AV	54	-27.12	100	312	30.63	-3.75
7	7431	54.84	PK	74	-19.16	200	252	55.42	-0.58
8	7431	30.36	AV	54	-23.64	100	301	30.94	-0.58

ANTENNA POLARITY & TEST DISTANCE: Vertical AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	DETECTOR(PK/AV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (MM)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2483.84	50.04	PK	74	-23.96	100	272	63.69	-13.65
2	2483.84	25.56	AV	54	-28.44	100	272	39.21	-13.65
3	* 2477	76.01	PK	114	-37.99	100	138	89.98	-13.97
4	* 2477	51.53	AV	94	-42.47	100	326	65.5	-13.97
5	4954	50.46	PK	74	-23.54	100	82	54.21	-3.75
6	4954	25.98	AV	54	-28.02	100	330	29.73	-3.75
7	7431	53.46	PK	74	-20.54	200	194	54.04	-0.58
8	7431	28.98	AV	54	-25.02	100	60	29.56	-0.58

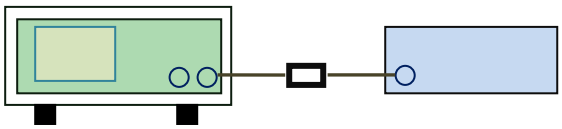
REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

6.4 20dB Bandwidth Testing

Temperature	24°C
Relative Humidity	55%
Atmospheric Pressure	1015mbar
Test date :	June 05, 2019
Tested By :	Aaron Liang

Requirement(s):

Spec	Item	Requirement	Applicable
§15.215(c)	a)	Radiated Emissions Measurement Uncertainty All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 1GHz (3m & 10m) & 1GHz above (3m) is +5.6/-4.5dB.	☑
Test Setup			
Test Procedure	- -Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator. - Position the EUT on the test table without connection to measurement instrument. Turn on the EUT. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value. - Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth. - Repeat above procedures until all frequencies measured were complete.		
Remark			

Result	☑ Pass	☐ Fail

Test Data ☑ Yes ☐ N/A

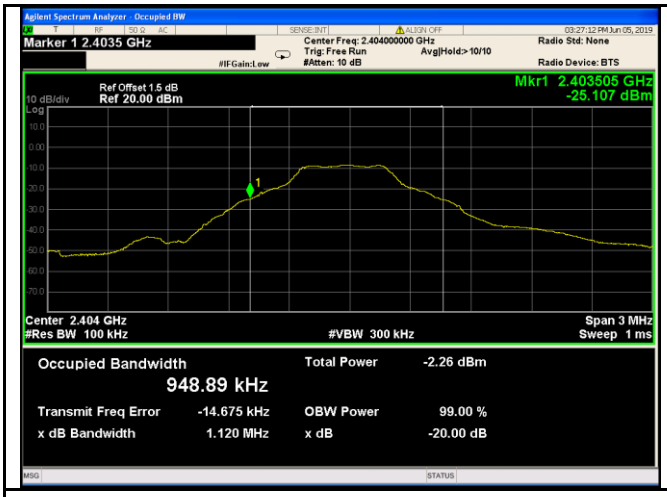
Test Plot ☑ Yes (See below) ☐ N/A

20dB Bandwidth measurement result

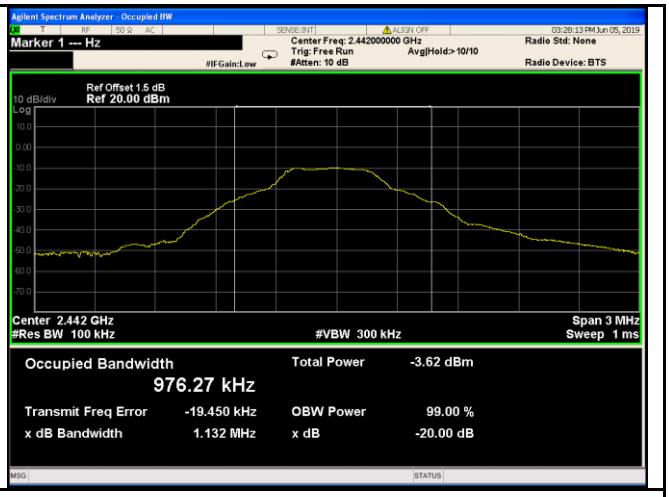
CH	Fundamental Frequency (MHz)	20dB Bandwidth (MHz)	Result
Low	2404	1.120	Pass
Middle	2442	1.132	Pass
High	2477	1.128	Pass

Test Plots

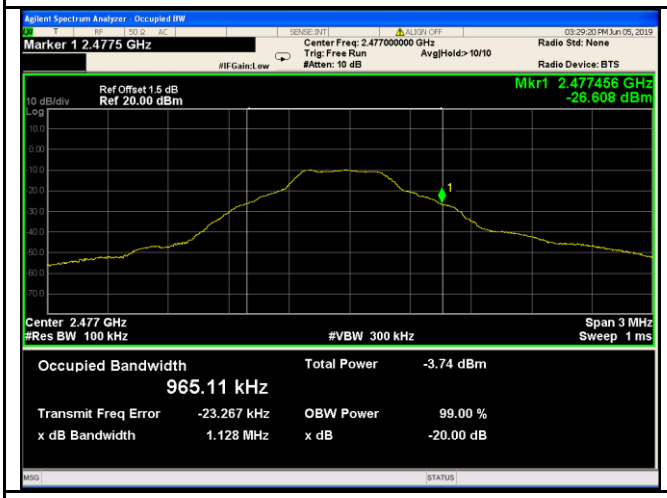
20dB Bandwidth measurement result



20dB Bandwidth – Low CH 2425



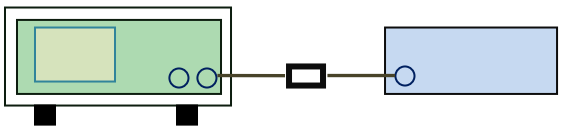
20dB Bandwidth - Middle CH 2450



20dB Bandwidth – High CH 2475

6.5 Band Edge

Temperature	25°C
Relative Humidity	57%
Atmospheric Pressure	1022mbar
Test date :	May 28, 2019
Tested By :	Aaron Liang

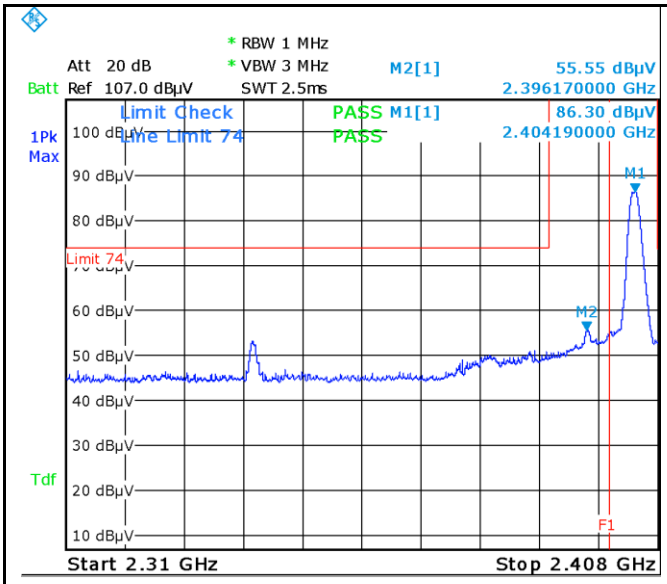
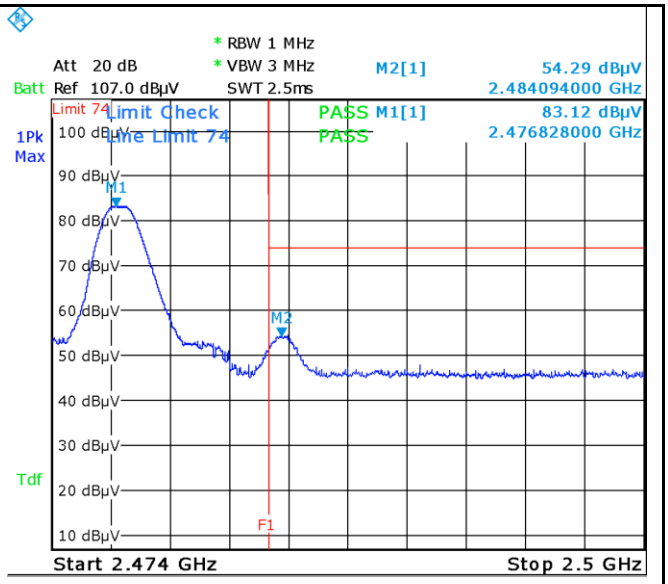
Spec	Item	Requirement	Applicable
§15.249(d)	a)	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.	☑
Test Setup	 Spectrum Analyzer EUT		
Test Procedure	- Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator. - Position the EUT without connection to measurement instrument. Put it on the Rotated table and turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range. - Set both RBW and VBW of spectrum analyzer to 1MHz. - Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency. - Repeat above procedures until all measured frequencies were complete.		
Remark			
Result	☑ Pass ☐ Fail		

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

Test Plots

Band Edge measurement result (worst case)

<table>
<tr>
<td> 
</td>
<td> 
</td>
</tr>
<tr>
<td>Band Edge, Left Side (Peak)
Note: F1 is frequency 2390MHz; F2 is frequency 2400MHz</td>
<td>Band Edge, Right Side (Peak)
Note: F1 is frequency 2483.5MHz</td>
</tr>
<tr>
<td>Note: (no need if PK value less than the AV limit)</td>
<td>Note: (no need if PK value less than the AV limit)</td>
</tr>
<tr>
<td>Band Edge, Left Side-AV</td>
<td>Band Edge, Right Side-AV</td>
</tr>
</table>

Note: Both Horizontal and vertical polarities were investigated.

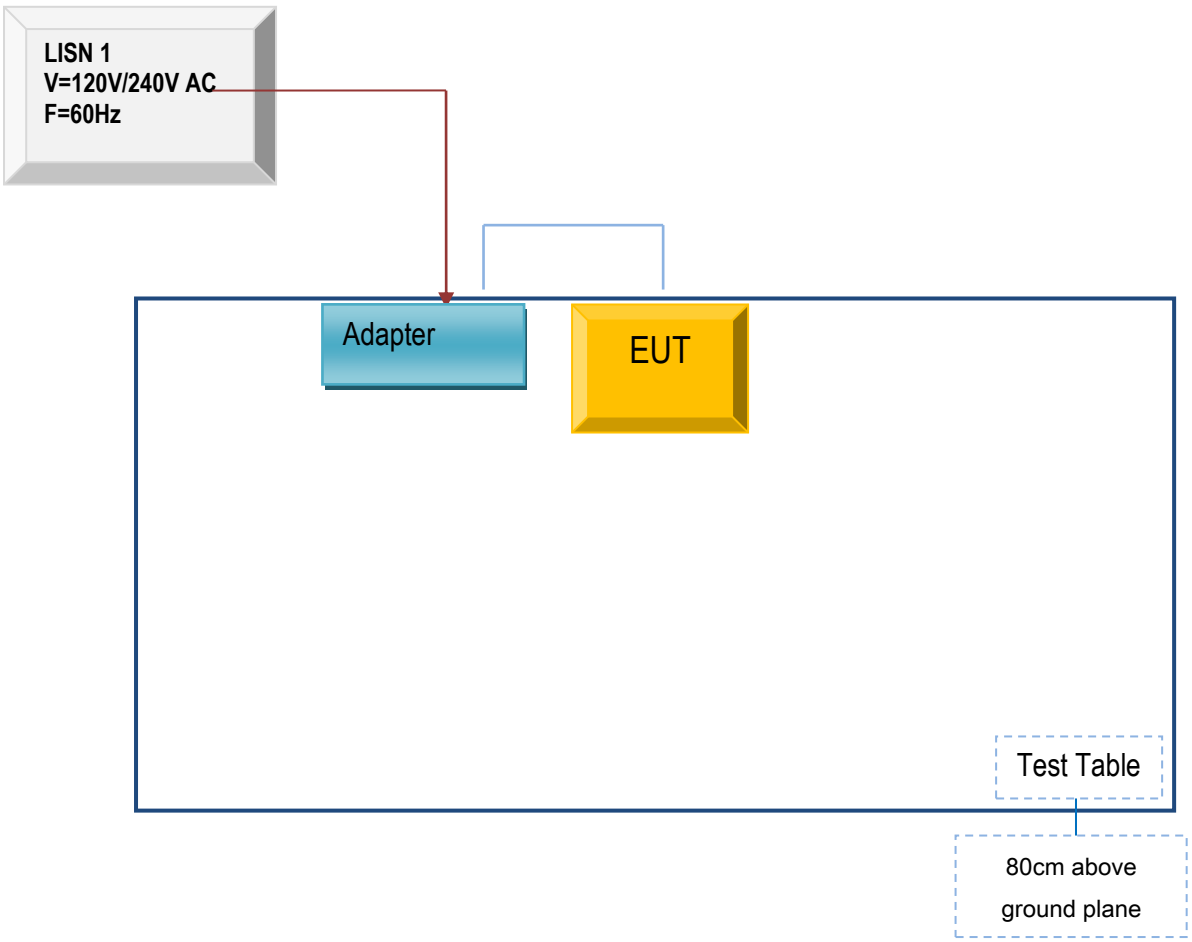
Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due
AC Line Conducted Emissions				
EMI test receiver	ESCS30	8471241027	01/04/2019	01/03/2020
Artificial Mains Network	8127	8127713	01/04/2019	01/03/2020
ISN	ISN T800	34373	01/04/2019	01/03/2020
Radiated Emissions				
EMI test receiver	ESL6	1300.5001K06-100262-eQ	01/04/2019	01/03/2020
Active Antenna	AL-130	121031	02/07/2019	02/06/2020
3m Semi-anechoic Chamber	9m*6m*6m	N/A	10/18/2018	10/17/2019
Signal Amplifier	8447E	443008	01/24/2019	01/23/2020
MXA signal analyzer	N9020A	MY49100060	01/04/2019	01/03/2020
Horn Antenna	HAH-118	71259	01/25/2019	01/24/2020
Horn Antenna	HAH-118	71283	02/01/2019	01/31/2020
AMPLIFIER	EM01G26G	60613	01/24/2019	01/23/2020
AMPLIFIER	Emc012645	980077	01/04/2019	01/03/2020
Bilog Antenna (30MHz~6GHz)	JB6	A110712	02/07/2019	02/06/2020
RF Conducted				
DC Power Supply	E3640A	MY40004013	01/04/2019	01/03/2020
MXA Signal Analyzer	N9020A	MY49100060	01/04/2019	01/03/2020
MXG Vector Signal Generator	N5182A	MY50140530	01/04/2019	01/03/2020
Series Signal Generator	E4421B	US40051152	05/12/2018	05/11/2019
RF control unit	JS0806-0806-2	188060112	04/24/2019	04/23/2020
RF control unit	JS0806-0806-2	188060112	04/24/2019	04/23/2020
Wireless Connectivity Tester	CMW270	1201.0002K75-101601-PE	04/24/2019	04/23/2020
Wireless Connectivity Tester	CMW270	1201.0002K75-101601-PE	04/24/2019	04/23/2020
Weinschel	1580-1	TL177	01/04/2019	01/03/2020
Universal Radio Communica	CMU200	121393	02/10/2019	02/09/2020

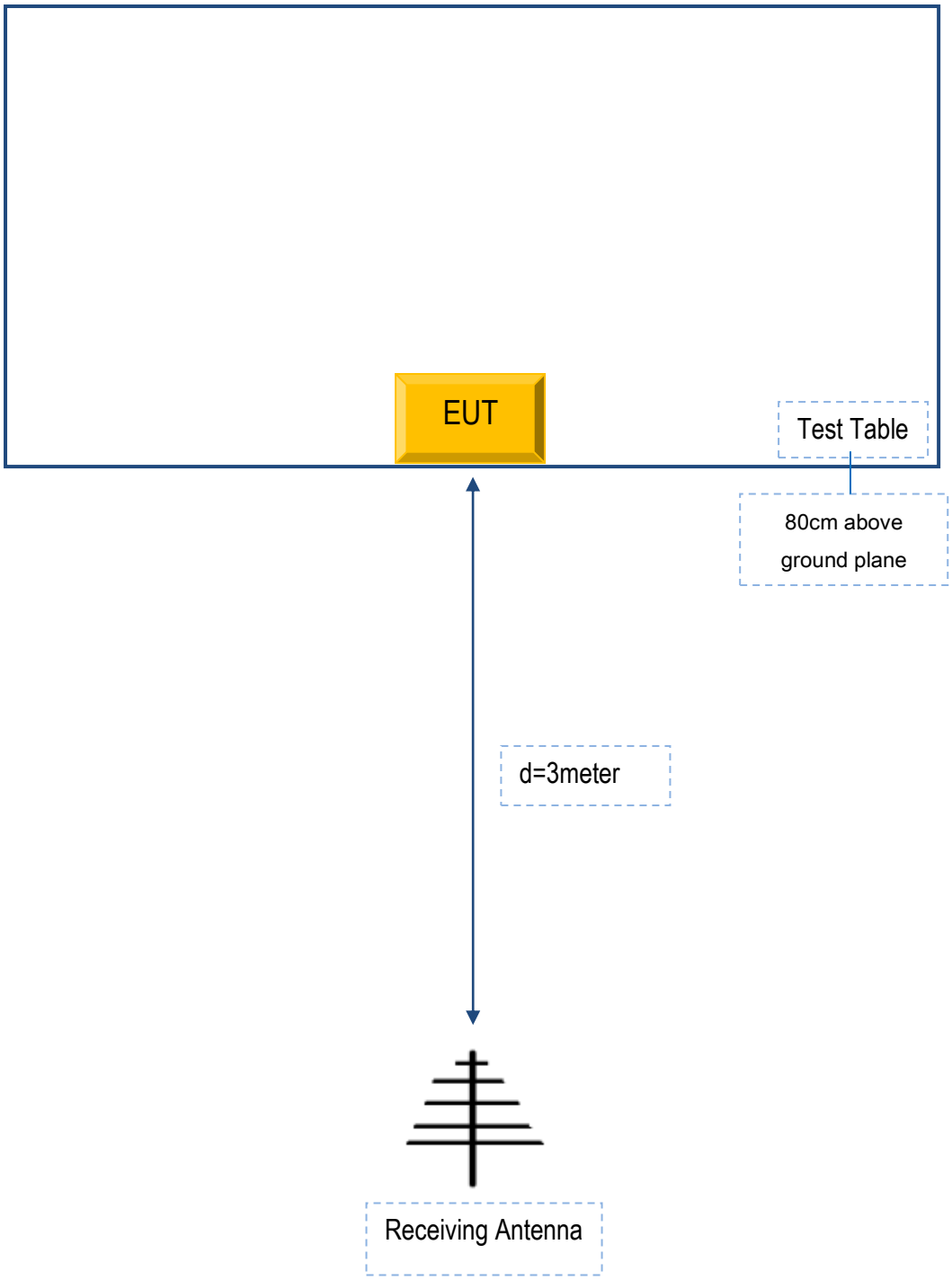
Annex B. TEST SETUP AND SUPPORTING EQUIPMENT

Annex B.i. TEST SET UP BLOCK

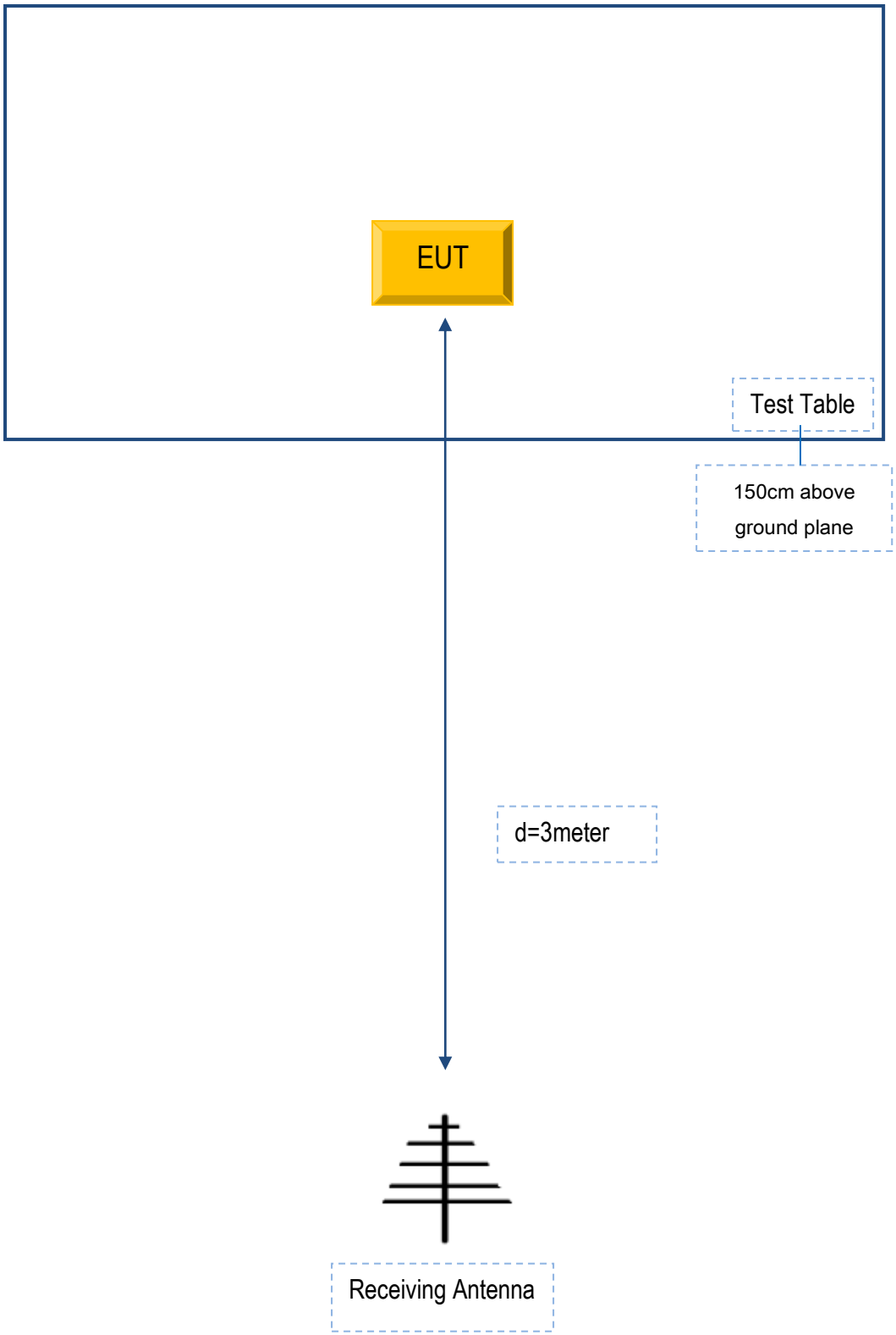
Block Configuration Diagram for AC Line Conducted Emissions



Block Configuration Diagram for Radiated Emissions （Below 1GHz）.



Block Configuration Diagram for Radiated Emissions （Above 1GHz）.



Annex B. ii. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

Supporting Equipment:

Manufacturer	Equipment Description	Model	Serial No
Tecno	adapter	CU-52JT	N/A

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
-	-	-	-	-

Annex C. User Manual / Block Diagram / Schematics / Partlist

Please see attachment

Annex D. DECLARATION OF SIMILARITY

3D Connexion

To: SIEMIC.INC
775 Montague Expressway Mlpitas,CA 95035,USA

Declaration Letter

Dear Sir,

For our business issue and marketing requirement, we would like to list serial model numbers on the reports, as following:

Model No: 3DX-600066,

Serial Model No: 3DX-700079

We declare that : all models the same PCB , accessories ,the difference of these is listed as below
Thank you very much.

Main Model No	Serial Model No	Difference
3DX-600066,	3DX-700079	3DX-600066 is Product model 3DX-700079 is Market model

Sincerely,

Client's signature:

Second Party
Address : 33, Rue du Portier, 98000 Monaco
Name of Corporation: 3Dconnexion.
Name: Xiaobing Lin
Date: 2019-6-18