FCC CERTIFICATION REPORT
Canada ISED ICES-003 TEST REPORT

Test Report No. : **E1/2016/C0157**

Applicant : **Huawei Technologies Co., Ltd.**

Address : **Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C**

Manufacturer : **Huawei Technologies Co., Ltd.**

Address : **Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C**

Equipment Under Test (EUT) :

Product Name : **HUAWEI MateBook**

Brand Name : **HUAWEI**

Model No. : **BL-W09**

Added Model(s) : **BL-W19**

Standards : **FCC Part 15:2017, Subpart B, Class B**
Canada ICES-003 Issue 6(June 2016), Class B

FCC Registration Numbers : 916890

Date of Receipt : **Dec. 27, 2016**
Date of Test : **Dec. 27, 2016 ~ Jan. 20, 2017**
Date of Issue : **Mar. 21, 2017**

Test Result :	**PASS**

In the configuration tested, the EUT complied with the standards specified above.

Remarks :

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report shall not be reproduced except in full, without the written approval of the laboratory. 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.

Tested By: Johnny Ho **Date** Mar. 21, 2017

Johnny Ho (Engineer)

Approved By Wisely Huang **Date** Mar. 21, 2017

Wisely Huang (Asst. Supervisor)

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Revision History

Report Number	Revision	Description	Issue Date
E1/2016/C0157	Rev.00	Initial creation of document	Mar. 21, 2017

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1. General Information

1.1 Applicant & Manufacturer Information

Applicant	: Huawei Technologies Co., Ltd.
Address of Applicant	: Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C
Manufacturer	: Huawei Technologies Co., Ltd.
Address of Manufacturer	: Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

1.2 General Description of EUT

Product Name	: HUAWEI MateBook
Brand Name	: HUAWEI
Model No.	: BL-W09
Added Model(s)	: BL-W19
Model Difference	: Marketing purpose

1.3 Details of EUT

Power Supply	: AC 100-240V, 50/60Hz
Modes/Function	: Mode 1. Cartier_1 + Adapter (SALCOMP / HW-59C200UHPQ1)+ Keyboard/Darfon+BT Link + WiFi Link + Camera + Play 1kHz+Burn in+ DPI 2160*1440 Mode 2. Cartier_2 +Adapter (HUNTKEY / HW-59C200EHPQ1)+ Keyboard/Darfon+BT Standby + WiFi Link + Camera + Play 1kHz+ Burn in+ DPI 2160*1440

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Mode 3. Cartier_3 +Adapter
(BYD / HW-59C200UHPQ1)+
Keyboard/Darfon+BT Link +
WiFi Standby + Camera + Play 1kHz+
Burn in+ DPI 2160*1440

Mode 4. Cartier_4 +C-USB A 3.0 Cable+
Keyboard/Darfon+BT Standby +
WiFi Standby + Camera + Play 1kHz+
Burn in+ DPI 2160*1440

Mode 5. Cartier_1 +Adapter
(HUAWEI / HW-200200EP0)+
Ruby /AD11+Keyboard/Darfon+BT Link+
WiFi Link + Camera + Play 1kHz+
Burn in + HDMI cable +DPI 2160*1440

Mode 6. Cartier_1 +Adapter
(HUAWEI / HW-200200EP0)+
Ruby /AD11+Keyboard/Darfon+BT Link+
WiFi Link + Camera + Play 1kHz+
Burn in+ VGA cable +DPI 2160*1440

Worst case : CE_Worst : Mode 5. Cartier_1 +Adapter
(HUAWEI / HW-200200EP0)+
Ruby /AD11+Keyboard/Darfon+BT Link+
WiFi Link + Camera + Play 1kHz+
Burn in + HDMI cable +
DPI 2160*1440

RE _Worst : Mode 1. Cartier_1 + Adapter
(SALCOMP / HW-59C200UHPQ1)+
Keyboard/Darfon+BT Link + WiFi Link +
Camera + Play 1kHz+Burn in+
DPI 2160*1440

Highest operate description : 5 GHz

Adapter : SALCOMP(US)-Model : HW-59C200UHPQ1
Input : 100-240, 50Hz/60Hz, 1.0A
Output : 5V, 2A / 9V, 2A / 12V, 2A

BYD(US)-Model : HW-59C200UHPQ1
Input : 100-240, 50Hz/60Hz, 1.0A
Output : 5V, 2A / 9V, 2A / 12V, 2A

HUAWEI(US)-Model : HW-200200UP0
Input : 100-240, 50Hz/60Hz, 1.2A
Output : 5V, 3A / 9V, 3A / 12V, 3A / 15V, 2.66A / 20V, 2A

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CPU	:	Supplier : Intel Max. frequency up to 1.2GHz
Memory	:	Maximum to 8GB
M.2 slot	:	M.2 device
Panel	:	12.2" LCD PANEL
Camera	:	One Camera optional
WLAN	:	Supplier : INTEL FUWCS8275BMX
Battery Pack	:	Model No.: HB25B7N4EBC Supplier : Sunwoda / Desay
Keyboard	:	Model No.: AF21 Supplier : Darfon
C-USB A 3.0	:	4071438
C-C Cable	:	4071153
Docking Station	:	Model No.: AD11 Supplier : HUAWEI

1.4 Operation Procedure

Mode: 1

1. Let EUT connect to the Keyboard and Adapter.
2. BT Link, Wifi Link, Play 1kHz, Camera On, Burnin Test Software Ver 8.0.
3. Started the test.

Mode: 2

1. Let EUT connect Keyboard & Adapter.
2. BT Stand by, Wifi Link, Play 1kHz, Camera On, Burnin Test Software Ver 8.0.
3. Started the test.

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Mode: 3

1. Let EUT connect Keyboard & Adapter.
2. BT Link, Wifi Stand by, Play 1kHz, Camera On, Burnin Test Software Ver 8.0.
3. Started the test.

Mode: 4

1. Let EUT connect to the Keyboard and C-USB A Cable connect to HD.
2. BT Standby, Wifi Stand by, Play 1kHz, Camera On, Burnin Test Software Ver 8.0.
3. Started the test.

Mode: 5

1. Let EUT connect to the Keyboard, AD11/Ruby connect to EUT & Adapter, HDMI cable connect to Monitor, USB 3.0 connect to HD.
2. BT Link, Wifi Link, Play 1kHz, Camera On, Burn in.
3. Started the test.

Mode: 6

1. Let EUT connect to the Keyboard, AD11/Ruby connect to EUT & Adapter, VGA cable connect to Monitor, USB 3.0 connect to HD.
2. BT Link, Wifi Link, Play 1kHz, Camera On, Burn in.
3. Started the test.

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1.5 Description of Support Units

PRODUCT	MANUFACTURER	MODEL NO.	SERIAL NO.
AP	BUFFALO	WZR-HP-G300NH2	44066221202559[[G]]
BT Speaker	Creative	MF8090	YFMF8090245R00855Y
USB 3.0 HD	WD PASSPORT	WDBKXH5000ABL-01	WX61EB2E0724
Monitor	DELL	U2410	N/A
Earphone	HTC	N/A	N/A

Support Equipment Used in Tested Cable

Cable Type	Core	Length	Shielding/Non-shielding
USB 3.0 HD Cable X2	N/A	1.0 m	Shielding
HDMI Cable X1	N/A	1.8 m	Shielding
VGA Cable	Near AE & EUT	1.8 m	Shielding
Earphone	N/A	1.2 m	Non-shielding

1.6 Modification List

No modification was made by SGS Taiwan Electronics & Communication Laboratory.

1.7 Accessories Cable List

Cable Type	Core	Length	Shielding/Non-shielding
Type C cable	N/A	1.8m	Shielding
USB-C to USB-A	N/A	0.1m	Shielding

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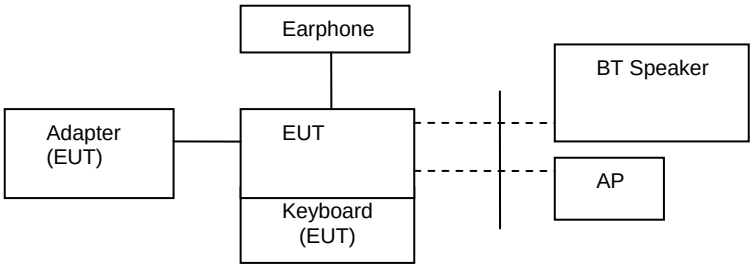
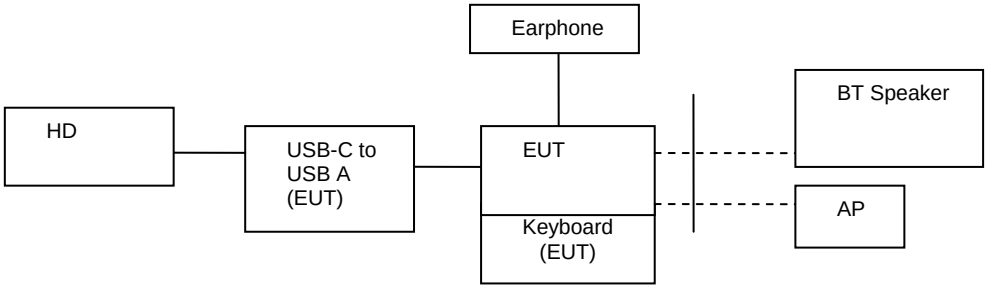
1.8 Test Set-Up Configuration

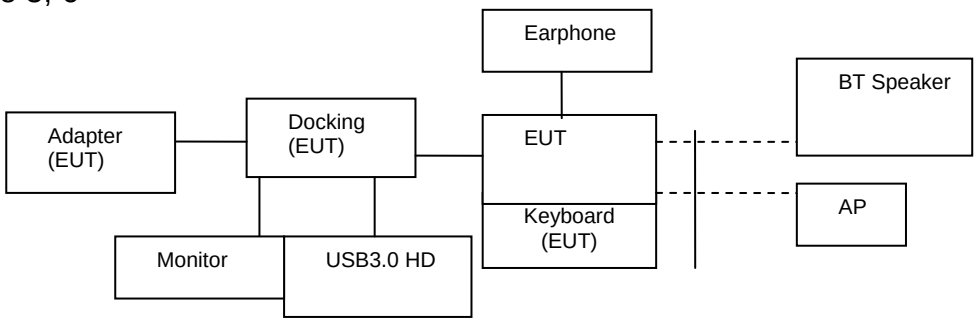
Mode 1-3



Mode 4



Mode 5, 6



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1.9 Measurement Procedure

Conducted Emission Testing was performed according to ANSI C63.4:2014 in a shielded room with peripherals placed on a table, 0.8m high over a metal floor. It was located more than required distance away from the shielded room wall.

Radiated Emission Testing was performed according to ANSI C63.4:2014 at the 3/10m semi-anechoic chamber. The EUT was placed on a 0.8m high table along with the peripherals. The turn table was placed 10m distance from the antenna. Cables were placed in a position to produce maximum emissions as determined by experimentation, and operation mode was selected for production of maximum emission.

The frequencies and amplitudes of maximum emission were measured at varying azimuths, antenna heights and antenna polarities. Maximum emission levels are then reported.

1.10 Standards Applicable for Testing

Tests to be carried out under FCC Part 15, Subpart B/CISPR 22

Test Standards	Status
FCC Part 15, Subpart B/ CISPR 22	Applicable
Deviation from Standard	No deviation

1.11 Summary of Results

Highest Emission					
Standard	Test Type	Result	Phase/Pol.	Frequency(MHz)	Margin(dB)
FCC Part 15 Subpart B Class B Canada ICES-003 Issue 6 (June 2016),Class B	Conducted Emission	PASS	Line	0.5220	-12.14 (AVG)
			Neutral	0.5140	-11.34 (AVG)
	Radiated Emission	PASS	Hor.	890.1100	-4.32 (QP)

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2. EMISSION

2.1 Test Results

	Results
Conducted Emission	**Pass**
Radiated Emission	**Pass**

2.2 Frequency Range

FCC Part 15, Subpart B:

Conducted Emission : 150 kHz - 30 MHz

Radiated Emission : See below 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	5th harmonic of the highest frequency or 40 GHz, whichever is lower

2.3 Limits of Conducted and Radiated Emission

2.3.1 Limits of Conducted Emission

FCC Part 15, Subpart B/CISPR 22:

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	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

Note : (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected there to, shall not exceed the level of field strengths specified above.

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2.3.2 Limits of Radiated Emissions

FCC Part 15, Subpart B Limit:

- Detector Function : Quasi – Peak

FREQUENCY (MHz)	Class A (at 10m) dBuV/m	Class B (at 3m) dBuV/m
30~88	39	40
88~216	43.5	43.5
216~960	46.44	46
Above 960	49.54	54

- Detector Function : Peak , Average

FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	Peak	Average	Peak	Average
Above 1000-18000	79.3	59.3	73.9	53.9

CISPR 22 Limit:

- Detector Function : Quasi – Peak

FREQUENCY (MHz)	Class A (at 10m) dBuV/m	Class B (at 10m) dBuV/m
30-230	40	30
230-1000	47	37

NOTE 1 The lower limit shall apply at the transition frequency.
NOTE 2 Additional provisions may be required for cases where interference occurs.

FREQUENCY (GHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	Average	Peak	Average	Peak
1~3	56	76	50	70
3~6	60	80	54	74

NOTE The lower limit applies at the transition frequency.

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2.4.Test of Conducted Emission

2.4.1 Test Equipments

SGS Conducted_Emission HWAYA Conducted Room No.A_EMC					
EQUIPMENT TYPE	Manufacturer	Model Number	Serial Number	Calibration Date	Calibration Due
EMI Test Receiver	R&S	ESCI 3	101311	2016/6/23	2017/6/22
Coaxial Cables	EMC Instruments Corp	EMCRG58-BM-BM-3000	160812	2016/8/30	2017/8/29
LISN	SCHWARZBECK	NSLK 8127	8127-648	2016/6/13	2017/6/12
Pulse Limiter	Narda S.T.S.	PMM PL01	1110X30602	2016/8/12	2017/8/11
LISN	Schwarzbeck	NSLK 8128	NSLK8127-300	2016/6/22	2017/6/21
Test S/W	Farad	EZ-EMC	Ver. SGS-03A2	N.C.R.	N.C.R.
SGS Taiwan LTD. Electronics & Communication Laboratory No.2, Keji 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) Measurement Uncertainty of Conducted Emission Expanded uncertainty (K=2) of conducted emission is 2.20 dB					

2.4.2 Operating Environment

Temperature : 22 degree C Humidity : 56 %RH

Atmospheric Pressure : 992 mBar

2.4.3 Measurement Level Calculation

Factor = LISN insertion loss + Cable loss + Pulse Limiter Insertion Loss

Measurement Level = Reading Level + Factor

Over (Margin) = Measurement Level – Limit

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2.4.4 Measurement Data:

Model No.:BL-W09
Mode_1_L

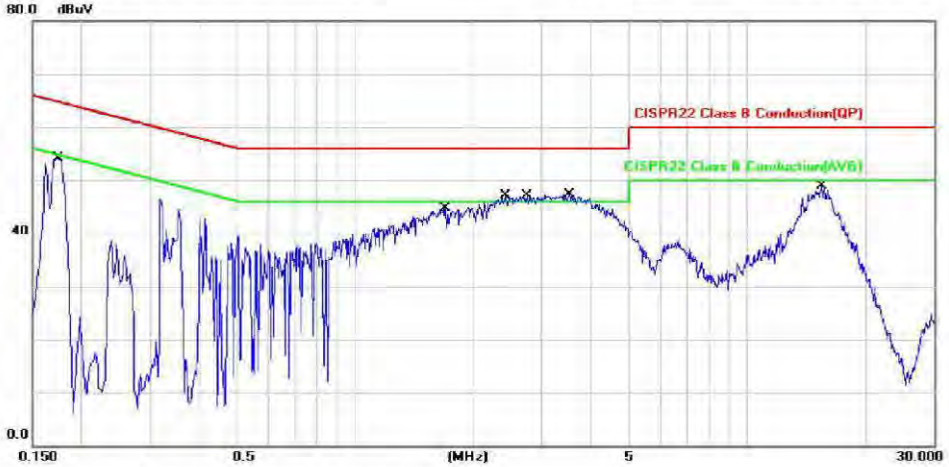
Site : Conduction Room
Limit: CISPR22 Class B Conduction(QP)
Mode: Mode_1
Note:

Phase: L1
Power: AC 120V/60Hz

Temperature: 23 ℃
Humidity: 56 %

Conducted Emission

File :E1-2016-C0157 Data :#1 Date: 2017/1/9 Time: 下午 02:54:37



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1740	50.20	0.34	50.54	64.77	-14.23	QP	
2		0.1740	34.84	0.34	35.18	54.77	-19.59	AVG	
3		1.7020	41.36	0.38	41.74	56.00	-14.26	QP	
4		1.7020	26.30	0.38	26.68	46.00	-19.32	AVG	
5		2.4180	43.25	0.39	43.64	56.00	-12.36	QP	
6		2.4180	28.81	0.39	29.20	46.00	-16.80	AVG	
7		2.7500	43.34	0.39	43.73	56.00	-12.27	QP	
8		2.7500	29.20	0.39	29.59	46.00	-16.41	AVG	
9	*	3.5100	43.48	0.40	43.88	56.00	-12.12	QP	
10		3.5100	31.07	0.40	31.47	46.00	-14.53	AVG	
11		15.4900	41.67	0.70	42.37	60.00	-17.63	QP	
12		15.4900	35.07	0.70	35.77	50.00	-14.23	AVG	

*:Maximum data x:Over limit !:over margin

File :E1-2016-C0157\Data :#1 *Page: 1*

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Mode_1_N

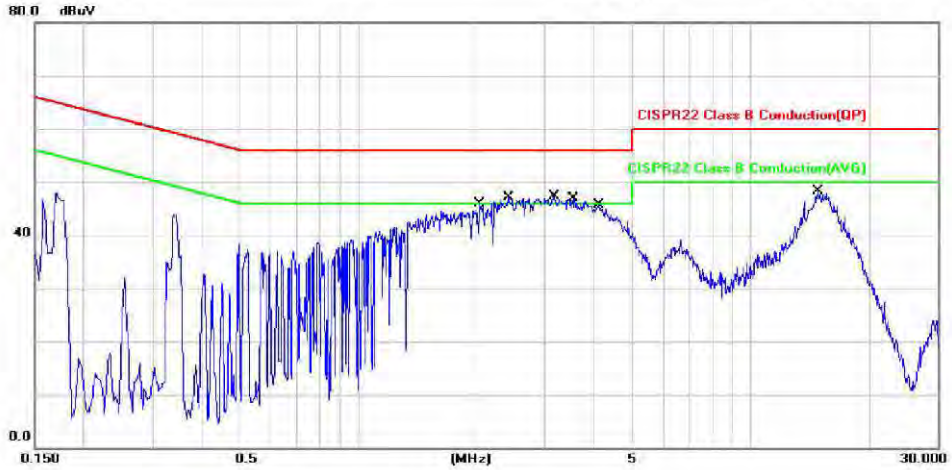
Site : Conduction Room
Limit: CISPR22 Class B Conduction(QP)
Mode: Mode_1
Note:

Phase: N
Power: AC 120V/60Hz

Temperature: 23 ℃
Humidity: 56 %

Conducted Emission

File :E1-2016-C0157 Data :#2 Date: 2017/1/9 Time: 下午 02:56:13



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		2.0540	42.05	0.42	42.47	56.00	-13.53	QP	
2		2.0540	27.21	0.42	27.63	46.00	-18.37	AVG	
3		2.4180	43.19	0.42	43.61	56.00	-12.39	QP	
4		2.4180	28.78	0.42	29.20	46.00	-16.80	AVG	
5		3.1660	43.23	0.43	43.66	56.00	-12.34	QP	
6		3.1660	30.12	0.43	30.55	46.00	-15.45	AVG	
7	*	3.5620	43.23	0.44	43.67	56.00	-12.33	QP	
8		3.5620	30.93	0.44	31.37	46.00	-14.63	AVG	
9		4.1100	41.51	0.44	41.95	56.00	-14.05	QP	
10		4.1100	29.46	0.44	29.90	46.00	-16.10	AVG	
11		14.8540	41.55	0.72	42.27	60.00	-17.73	QP	
12		14.8540	34.63	0.72	35.35	50.00	-14.65	AVG	

*:Maximum data x:Over limit !:over margin

File :E1-2016-C0157\Data :#2 *Page: 1*

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Mode_5_L

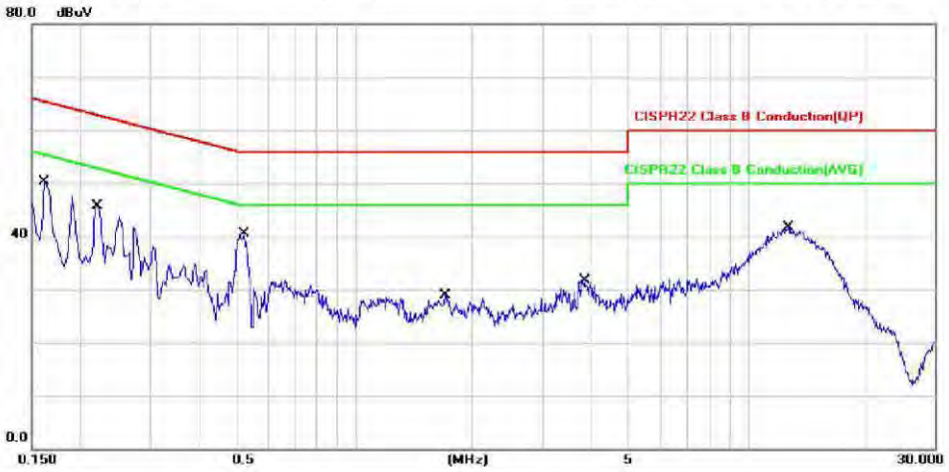
Site : Conduction Room
Limit: CISPR22 Class B Conduction(QP)
Mode: Mode_5
Note:

Phase: L1
Power: AC 120V/60Hz

Temperature: 22 ℃
Humidity: 56 %

Conducted Emission

File :E1-2016-C0157 Data :#7 Date: 2017/3/6 Time: 下午 04:26:12



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1620	47.40	0.34	47.74	65.36	-17.62	QP	
2		0.1620	34.10	0.34	34.44	55.36	-20.92	AVG	
3		0.2220	42.30	0.36	42.66	62.74	-20.08	QP	
4		0.2220	30.70	0.36	31.06	52.74	-21.68	AVG	
5		0.5220	39.90	0.36	40.26	56.00	-15.74	QP	
6	*	0.5220	33.50	0.36	33.86	46.00	-12.14	AVG	
7		1.6980	25.30	0.37	25.67	56.00	-30.33	QP	
8		1.6980	20.30	0.37	20.67	46.00	-25.33	AVG	
9		3.8260	27.50	0.40	27.90	56.00	-28.10	QP	
10		3.8260	20.70	0.40	21.10	46.00	-24.90	AVG	
11		12.6260	37.70	0.65	38.35	60.00	-21.65	QP	
12		12.6260	33.10	0.65	33.75	50.00	-16.25	AVG	

*:Maximum data x:Over limit !:over margin

File :E1-2016-C0157\Data :#7 *Page: 1*

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Mode_5_N

Site : Conduction Room
Limit: CISPR22 Class B Conduction(QP)
Mode: Mode_5
Note:

Phase: N
Power: AC 120V/60Hz

Temperature: 22 ℃
Humidity: 56 %

Conducted Emission

File :E1-2016-C0157 Data :#8 Date: 2017/3/6 Time: 下午 04:30:45

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	49.50	0.33	49.83	66.00	-16.17	QP	
2		0.1500	33.50	0.33	33.83	56.00	-22.17	AVG	
3		0.2020	44.50	0.36	44.86	63.53	-18.67	QP	
4		0.2020	32.50	0.36	32.86	53.53	-20.67	AVG	
5		0.2820	42.80	0.36	43.16	60.76	-17.60	QP	
6		0.2820	32.90	0.36	33.26	50.76	-17.50	AVG	
7		0.5140	40.40	0.36	40.76	56.00	-15.24	QP	
8	*	0.5140	34.30	0.36	34.66	46.00	-11.34	AVG	
9		3.7740	27.40	0.40	27.80	56.00	-28.20	QP	
10		3.7740	20.40	0.40	20.80	46.00	-25.20	AVG	
11		13.1460	38.40	0.66	39.06	60.00	-20.94	QP	
12		13.1460	33.90	0.66	34.56	50.00	-15.44	AVG	

*:Maximum data x:Over limit !:over margin

File :E1-2016-C0157\Data :#8 *Page: 1*

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2.5 Test of Radiated Emission

2.5.1 Test Equipments

Below 1GHz

SGS Radiated_Below_1GHz HWAYA 10m_EMC					
EQUIPMENT TYPE	Manufacturer	Model Number	Serial Number	Calibration Date	Calibration Due
EMI Test Receiver	R&S	ESCI 3	101342	2016/3/5	2017/3/4
EMI Test Receiver	R&S	ESCI 3	101343	2015/12/25	2016/12/24
Broadband Antenna	SCHWAZBECK	VULB9168	9168-628	2016/9/22	2017/9/21
Broadband Antenna	SCHWAZBECK	VULB9168	9168-629	2016/9/22	2017/9/21
Pre Amplifier	EMC Instruments Corp.	EMC330	980178	2016/3/31	2017/3/30
Pre Amplifier	EMC Instruments Corp.	EMC330	980179	2016/3/31	2017/3/30
Coaxial Cable	EMC Instruments	EMCCFD400-NM-NM	150917	2016/9/18	2017/9/17
Coaxial Cable	EMC Instruments	EMCCFD400-NM-NM	150919	2016/9/18	2017/9/17
Coaxial Cable	EMC Instruments	EMCCFD400-NM-NM	150820	2016/9/18	2017/9/17
Coaxial Cable	EMC Instruments	EMCCFD400-NM-NM	150918	2016/9/18	2017/9/17
Coaxial Cable	EMC Instruments	EMCCFD400-NM-NM	150821	2016/9/18	2017/9/17
Coaxial Cable	EMC Instruments	EMCCFD400-NM-NM	150822	2016/9/18	2017/9/17
Controller	MF	MF-7802	N/A	N.C.R.	N.C.R.
Controller	MF	MF-7802	N/A	N.C.R.	N.C.R.
Antenna Master	MF	N/A	N/A	N.C.R.	N.C.R.
Antenna Master	MF	N/A	N/A	N.C.R.	N.C.R.
Antenna Master	MF	N/A	N/A	N.C.R.	N.C.R.
Turn Table	MF	N/A	N/A	N.C.R.	N.C.R.
Site NSA	Chance Most	10M Chamber	10M SAC	2015/12/31	2016/12/30
Test S/W	Farad	EZ-EMC	Ver. SGS-03A2	N.C.R.	N.C.R.
SGS Taiwan LTD. Electronics & Communication Laboratory No.2, Keji 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) Measurement Uncertainty of Radiated Emission Expanded uncertainty of radiated emission is 4.16 dB. (30MHz ~ 1000MHz)					

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Above 1GHz

SGS Radiated_Above_1GHz HWAYA 966A_EMC					
EQUIPMENT TYPE	Manufacturer	Model Number	Serial Number	Calibration Date	Calibration Due
Spectrum Analyzer	R&S	FSV 40	101419	2016/2/25	2017/2/24
EMI Test Receiver	R&S	ESR 7	101459	2016/2/22	2017/2/21
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA9120D673	2016/10/14	2017/10/13
Pre Amplifier	EMC Instruments Corp.	EMC012645B	980216	2016/4/25	2017/4/24
Coaxial Cable	JUNFLOW	MWX221-NMSNMS	J0778929	2016/4/23	2017/4/22
Coaxial Cable	Huber+Suhner	SUCCOFLEX 104PEA	30255/4PEA	N.C.R.	N.C.R.
Coaxial Cable	EMC Instruments	EMC104-SM-SM	140927	2016/4/23	2017/4/22
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	MY 2152/2	2016/6/5	2017/6/4
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	MY 2153/2	2016/6/5	2017/6/4
Controller	MF	MF-7802	N.C.R.	N.C.R.	N.C.R.
Antenna Master	MF	N/A	N/A	N.C.R.	N.C.R.
Turn Table	MF	N/A	N/A	N.C.R.	N.C.R.
Site VSWR	SGS	966 Chamber A	SAC-A	2016/1/12	2017/1/11
Test S/W	Farad	EZ-EMC	Ver. SGS-03A2	N.C.R.	N.C.R.

SGS Taiwan LTD. Electronics & Communication Laboratory
No.2, Keji 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
Measurement Uncertainty of Radiated Emission
Expanded uncertainty (k=2) of radiated emission measurement is 4.96 dB. (1-6GHz)
Expanded uncertainty (k=2) of radiated emission measurement is 5.14 dB. (6-18GHz)
Expanded uncertainty (k=2) of radiated emission measurement is 4.86 dB. (18-26GHz)
Expanded uncertainty (k=2) of radiated emission measurement is 4.81 dB. (26-40GHz)

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Mode 5

SGS Radiated_Above_1GHz HWAYA 966A_EMC					
EQUIPMENT TYPE	Manufacturer	Model Number	Serial Number	Calibration Date	Calibration Due
Spectrum Analyzer	R&S	FSV 40	101059	2016/12/7	2017/12/6
EMI Test Receiver	R&S	ESR 7	101459	2017/2/17	2018/2/16
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA9120D673	2016/10/14	2017/10/13
Pre Amplifier	EMC Instruments Corp.	EMC012645B	980216	2016/4/25	2017/4/24
Coaxial Cable	JUNFLOW	MWX221-NMSNMS	J0778929	2016/4/23	2017/4/22
Coaxial Cable	Huber+Suhner	SUCCOFLEX 104PEA	30255/4PEA	N.C.R.	N.C.R.
Coaxial Cable	EMC Instruments	EMC104-SM-SM	140927	2016/4/23	2017/4/22
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	MY 2152/2	2016/6/5	2017/6/4
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	MY 2153/2	2016/6/5	2017/6/4
Controller	MF	MF-7802	N.C.R.	N.C.R.	N.C.R.
Antenna Master	MF	N/A	N/A	N.C.R.	N.C.R.
Turn Table	MF	N/A	N/A	N.C.R.	N.C.R.
Site VSWR	SGS	966 Chamber A	SAC-A	2017/1/12	2018/1/11
Test S/W	Farad	EZ-EMC	Ver. SGS-03A2	N.C.R.	N.C.R.
SGS Taiwan LTD. Electronics & Communication Laboratory No.2, Keji 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) Measurement Uncertainty of Radiated Emission Expanded uncertainty (k=2) of radiated emission measurement is 4.96 dB. (1-6GHz) Expanded uncertainty (k=2) of radiated emission measurement is 5.14 dB. (6-18GHz) Expanded uncertainty (k=2) of radiated emission measurement is 4.86 dB. (18-26GHz) Expanded uncertainty (k=2) of radiated emission measurement is 4.81 dB. (26-40GHz)					

2.5.2 Operating Environment

Temperature : 21 degree C Humidity : 60 %RH

Atmospheric Pressure : 996 mBar

2.5.3 Measurement Level Calculation

Factor = Antenna Factor + Cable Loss – Amplifier Gain

Measurement Level = Reading Level + Factor

Over (Margin) = Measurement Level – Limit

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2.5.4 Measurement Data

Below 1GHz

Model No.:BL-W09

Mode_1_H

Site SGS 10m Chamber
Limit: CISPR22 Class B 10M Radiation
Mode: Mode_1
Note:

Polarization: *Horizontal*
Power: AC 120V/60Hz
Distance: 10m

Temperature: 23 ℃
Humidity: 71 %

Radiated Emission

File :E1-2016-C0157 Data :#4 Date: 2016/12/13 Time: 下午 03:51:39

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		106.6300	32.98	-15.55	17.43	30.00	-12.57	QP	
2		216.2400	35.18	-15.05	20.13	30.00	-9.87	QP	
3		231.7600	33.53	-14.11	19.42	37.00	-17.58	QP	
4		746.8300	27.27	-0.99	26.28	37.00	-10.72	QP	
5	*	890.1100	32.00	0.68	32.68	37.00	-4.32	QP	
6		989.0100	28.92	1.73	30.65	37.00	-6.35	QP	

*:Maximum data x:Over limit !:over margin

File :E1-2016-C0157\Data :#4 *Page: 1*

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Mode_1_V

Site SGS 10m Chamber
Limit: CISPR22 Class B 10M Radiation
Mode: Mode_1
Note:

Polarization: *Vertical*
Power: AC 120V/60Hz
Distance: 10m

Temperature: 23 ℃
Humidity: 71 %

Radiated Emission

File :E1-2016-C0157 Data :#3 Date: 2016/12/13 Time: 下午 03:51:38

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		31.0100	34.84	-12.64	22.20	30.00	-7.80	QP	
2		43.4100	34.63	-11.23	23.40	30.00	-6.60	QP	
3		106.8400	34.66	-15.12	19.54	30.00	-10.46	QP	
4		741.9800	28.82	-0.83	27.99	37.00	-9.01	QP	
5	*	890.1100	31.16	0.89	32.05	37.00	-4.95	QP	
6		989.0000	27.16	1.69	28.85	37.00	-8.15	QP	

*:Maximum data x:Over limit !:over margin

File :E1-2016-C0157\Data :#3 *Page: 1*

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Mode_5_H

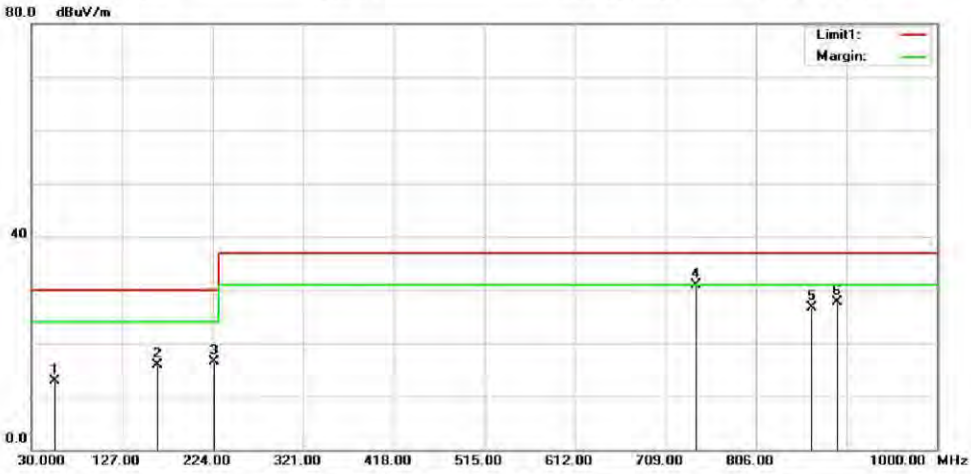
Site SGS 10m Chamber
Limit: CISPR22 Class B 10M Radiation
Mode: Mode_5
Note:

Polarization: *Horizontal*
Power: AC 120V/60Hz
Distance: 10m

Temperature: 19 ℃
Humidity: 75 %

Radiated Emission

File :E1-2016-C0157 Data :#8 Date: 2017/2/24 Time: 下午 04:12:17



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		55.0200	24.76	-11.90	12.86	30.00	-17.14	QP	
2		164.0400	27.68	-11.75	15.93	30.00	-14.07	QP	
3		225.3600	31.06	-14.65	16.41	30.00	-13.59	QP	
4	*	741.7470	31.97	-1.13	30.84	37.00	-6.16	QP	
5		865.9800	26.39	0.39	26.78	37.00	-10.22	QP	
6		892.8700	26.94	0.71	27.65	37.00	-9.35	QP	

*:Maximum data x:Over limit !:over margin

File :E1-2016-C0157\Data :#8 *Page: 1*

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Mode_5_V

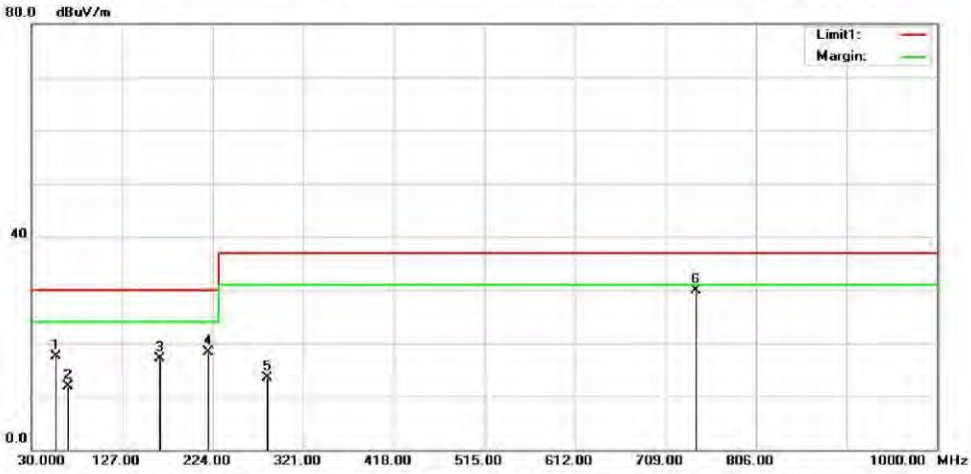
Site SGS 10m Chamber
Limit: CISPR22 Class B 10M Radiation
Mode: Mode_5
Note:

Polarization: *Vertical*
Power: AC 120V/60Hz
Distance: 10m

Temperature: 19 ℃
Humidity: 75 %

Radiated Emission

File :E1-2016-C0157 Data :#7 Date: 2017/2/24 Time: 下午 04:12:15



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		56.1800	28.91	-11.47	17.44	30.00	-12.56	QP	
2		69.7060	25.34	-13.44	11.90	30.00	-18.10	QP	
3		167.0100	28.53	-11.48	17.05	30.00	-12.95	QP	
4		218.9800	32.91	-14.51	18.40	30.00	-11.60	QP	
5		281.6700	24.72	-11.17	13.55	37.00	-23.45	QP	
6	*	741.7600	30.72	-0.84	29.88	37.00	-7.12	QP	

*:Maximum data x:Over limit !:over margin

File :E1-2016-C0157\Data :#7 *Page: 1*

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Above 1GHz

Model No.:BL-W09

Mode_1_H

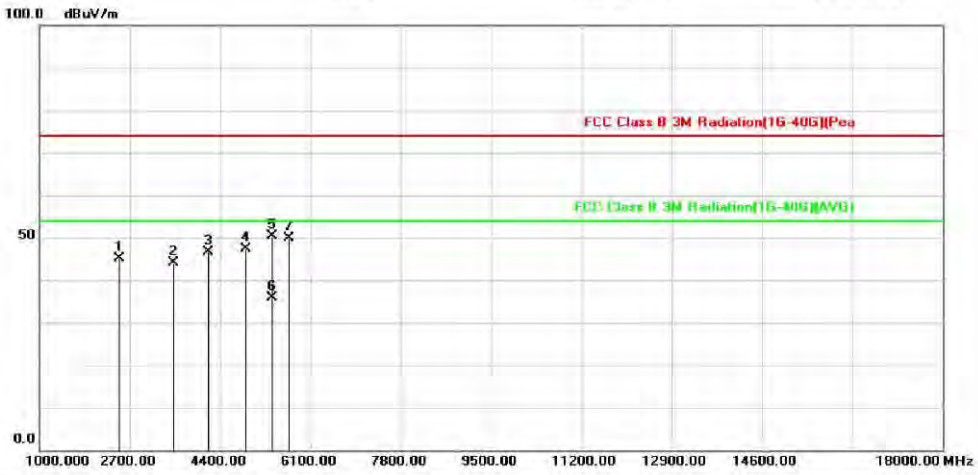
Site SGS 966 Chamber A
Limit: FCC Class B 3M Radiation(1G-40G)(Pea
Mode: Mode_1
Note:

Polarization: *Horizontal*
Power: AC 120V/60Hz
Distance:

Temperature: 20 ℃
Humidity: 70 %

Radiated Emission

File :C0157 Data :#4 Date: 2017/1/8 Time: 下午 01:06:24



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2513.000	62.31	-17.15	45.16	74.00	-28.84	peak	
2		3533.000	58.29	-14.23	44.06	74.00	-29.94	peak	
3		4179.000	59.29	-12.70	46.59	74.00	-27.41	peak	
4		4876.000	57.93	-10.44	47.49	74.00	-26.51	peak	
5		5386.000	59.49	-8.99	50.50	74.00	-23.50	peak	
6	*	5386.000	44.79	-8.99	35.80	54.00	-18.20	AVG	
7		5692.000	58.10	-8.33	49.77	74.00	-24.23	peak	

*:Maximum data x:Over limit !:over margin

File :C0157\Data :#4 *Page: 1*

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Mode_1_V

Site SGS 966 Chamber A
Limit: FCC Class B 3M Radiation(1G-40G)(Pea
Mode: Mode_1
Note:

Polarization: *Vertical*
Power: AC 120V/60Hz
Distance:

Temperature: 20 ℃
Humidity: 70 %

Radiated Emission

File :C0157 Data :#3 Date: 2017/1/8 Time: 下午 01:03:50

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2598.000	60.23	-16.84	43.39	74.00	-30.61	peak	
2		2870.000	59.38	-15.87	43.51	74.00	-30.49	peak	
3		3618.000	58.32	-14.04	44.28	74.00	-29.72	peak	
4		4026.000	59.38	-13.12	46.26	74.00	-27.74	peak	
5		5369.000	57.92	-9.03	48.89	74.00	-25.11	peak	
6		5777.000	58.20	-8.16	50.04	74.00	-23.96	peak	
7	*	5777.000	44.55	-8.16	36.39	54.00	-17.61	AVG	

*:Maximum data x:Over limit !:over margin

File :C0157\Data :#3 *Page: 1*

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Mode_5_H

Site SGS 966 Chamber A
Limit: FCC Class B 3M Radiation(1G-40G)(Pea
Mode: Mode_5
Note:

Polarization: *Horizontal*
Power: AC 120V/60Hz
Distance:

Temperature: 17 ℃
Humidity: 76 %

Radiated Emission

File :C0157 Data :#14 Date: 2017/2/28 Time: 下午 03:55:31

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1051.000	69.59	-23.48	46.11	74.00	-27.89	peak	
2		1340.000	68.91	-22.20	46.71	74.00	-27.29	peak	
3		1629.000	67.11	-20.95	46.16	74.00	-27.84	peak	
4		2054.000	64.16	-19.15	45.01	74.00	-28.99	peak	
5		2581.000	59.77	-14.67	45.10	74.00	-28.90	peak	
6		5182.000	60.20	-9.51	50.69	74.00	-23.31	peak	
7	*	5182.000	48.70	-9.51	39.19	54.00	-14.81	AVG	

*:Maximum data x:Over limit !:over margin

File :C0157\Data :#14 *Page: 1*

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Mode_5_V

Site SGS 966 Chamber A
Limit: FCC Class B 3M Radiation(1G-40G)(Pea
Mode: Mode_5
Note:

Polarization: *Vertical*
Power: AC 120V/60Hz
Distance:

Temperature: 17 ℃
Humidity: 76 %

Radiated Emission

File :C0157 Data :#13 Date: 2017/2/28 Time: 下午 03:51:39

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1119.000	72.88	-23.18	49.70	74.00	-24.30	peak	
2		1119.000	54.92	-23.18	31.74	54.00	-22.26	AVG	
3		1391.000	73.37	-21.98	51.39	74.00	-22.61	peak	
4		1391.000	54.36	-21.98	32.38	54.00	-21.62	AVG	
5		1731.000	67.97	-20.52	47.45	74.00	-26.55	peak	
6		2275.000	63.93	-18.22	45.71	74.00	-28.29	peak	
7		3992.000	59.79	-12.30	47.49	74.00	-26.51	peak	
8		5182.000	60.41	-9.51	50.90	74.00	-23.10	peak	
9	*	5182.000	48.85	-9.51	39.34	54.00	-14.66	AVG	

*:Maximum data x:Over limit !:over margin

File :C0157\Data :#13 *Page: 1*

The frequency band during 18GHz till 26.5 GHz that was not reported was verified with no extra obvious finding except ambient signals.

** End of Report **

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