

# FCC CERTIFICATION REPORT

**Test Report No. :** E1/2017/80103

**Applicant :** Sharp Corporation, IoT Communication B.U.

**Address :** 2-13-1, Hachihonmatsu-lida, Higashi-hiroshima-shi, Hiroshima  
739-0192, Japan

**Manufacturer :** Sharp Corporation

**Address :** 1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan

**Equipment Under Test (EUT) :**

**Product Name :** Smart Phone

**Standards :** FCC Part 15:2017, Subpart B, Class B

**FCC Designation Numbers :** 916890 / TW1087

**Date of Receipt :** Aug. 10, 2017

**Date of Test :** Aug. 10 ~ Sep. 06, 2017

**Date of Issue :** Sep. 14, 2017

<b>Test Result :</b>	<b>PASS</b>
----------------------	-------------

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.

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**Tested By:**

*Ivan Hsieh*

**Date**

Sep. 14, 2017

**Ivan Hsieh (Engineer)**

**Approved By**

*Eddy Cheng*

**Date**

Sep. 14, 2017

**Eddy Cheng (Asst. Supervisor)**



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## Revision History

Report Number	Revision	Description	Issue Date
E1/2017/80103	Rev.00	Initial creation of document	Sep. 14, 2017

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# 1. General Information

## 1.1 Applicant & Manufacturer Information

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Manufacturer : Sharp Corporation  
Address of Manufacturer : 1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan

## 1.2 General Description of EUT

Product Name : Smart Phone

## 1.3 Details of EUT

Power Supply : AC 100~240V, 50~60Hz  
Worst case : CE worst case : Config 1  
Below / Above RE worst case : Config 3  
Highest operate description : 2480 MHz  
Battery : Model No.: UBATIA283AFN2  
Supplier: SCUD(FUJIAN) Electronics Co., Ltd.

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SK43	Config 1	Config2	Config 3
Applicable standard	FCC 15B		
Accessories	EUT + AC Adaptor(TypeC AC ADAPTER 01) +USB Cable +PHF	EUT +USB Cable +PHF	EUT + AC Adaptor(TypeC AC ADAPTER 01) +USB Cable +PHF
Main function	<i>Speech</i>	<i>Data Link</i>	<i>Camera</i>
Additional function	BT+WiFi +NFC		
Description			
radiated emission	GSM 850/1900 WCDMA B5 LTE B5/B17	Data R/W	MP3/ ;REC mode (Front/Back) ;play REC
conducted emission (DC Power)	NA	NA	NA
conducted emission (AC Power)	GSM 850/1900 WCDMA B5 LTE B5/B12/B17	Data R/W	MP3/ ;REC mode (Front/Back) ;play REC

## 1.4 Operation Procedure

### Config 1

1. Let EUT connect to Adapter & USB Cable & Earphone and turn it on.
2. Executed BT & WIFI & GPS & NFC & GSM 850/1900 or WCDMA B5 or LTE B5/B17 Link.
3. Started the test.

### Config 2

1. Let EUT connect to Earphone & USB Cable and NB Link.
2. Executed BT & WIFI & GPS & NFC Link.
3. NB and mobile phone USB data transmission (Reader / Write)
4. Started the test.

### Config 3

1. Let EUT connect to Adapter & USB Cable & Earphone and turn it on.
2. Turned on front / rear camera to record / play the video or play music.
3. Executed BT & WIFI & GPS & NFC Link.
4. Started the test.

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## 1.5 Description of Support Units

PRODUCT	MANUFACTURER	MODEL NO.	SERIAL NO.
SIM Card	R&S	CMW-Z05	8952530076180167200
BT Speaker	Creative	MF8090	YFMF8090245R00855Y
Radio Communication Analyzer	R&S	CMU200	102189
Radio Communication Analyzer	R&S	CMW500	1201.002K50-152303-Zr
AP	BUFFALO	WZR-HP-G300NH2	44066221202559[[G]]
GPS Signal Generator	Spectracom	GSG53 GNSS4	200218
Notebook	DELL	Latitude E5430	COVZYW1
Mouse	DELL	MS111-T	CN-OKW2YH-71616-345-OL7T
Printer	HP	VCVRA-1004	CN33K19J3F
Micro SD	Transcend	Micro SDHC (Class4)	N/A
Adapter	PHIHONG	AC ADAPTER 01	N/A
Earphone	SONY	MDR-EX15AP	N/A

## Support Equipment Used in Tested Cable

Cable Type	Core	Length	Shielding/Non-shielding
USB cable	N/A	0.95m	Shielding
Earphone cable	N/A	1.25m	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
N/A	N/A	N/A	N/A

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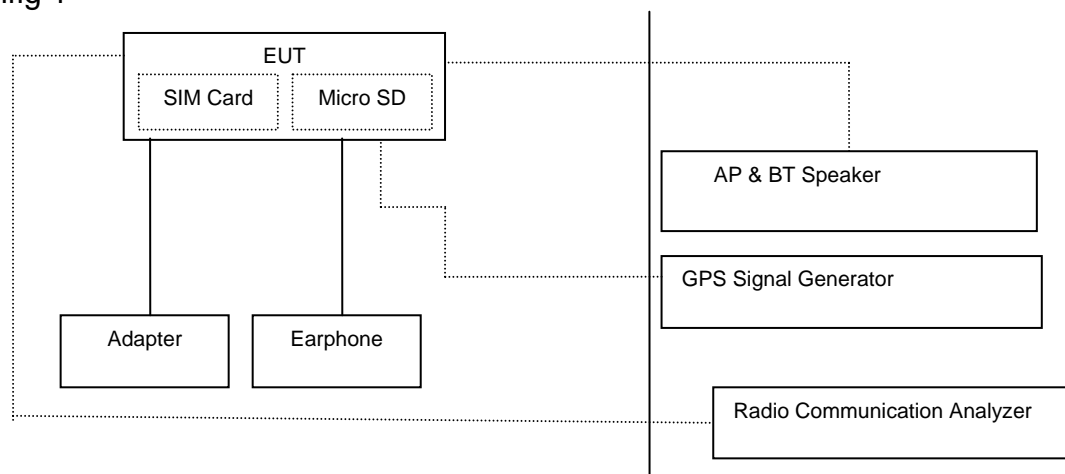
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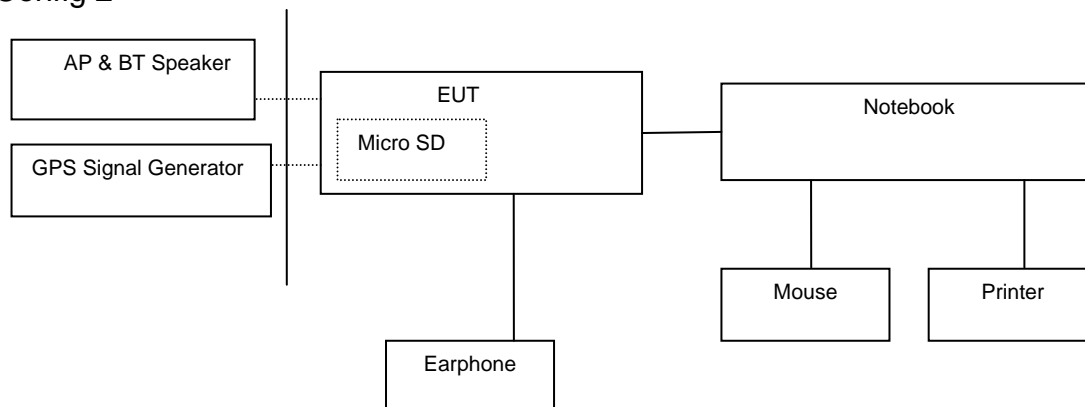
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## 1.8 Test Set-Up Configuration

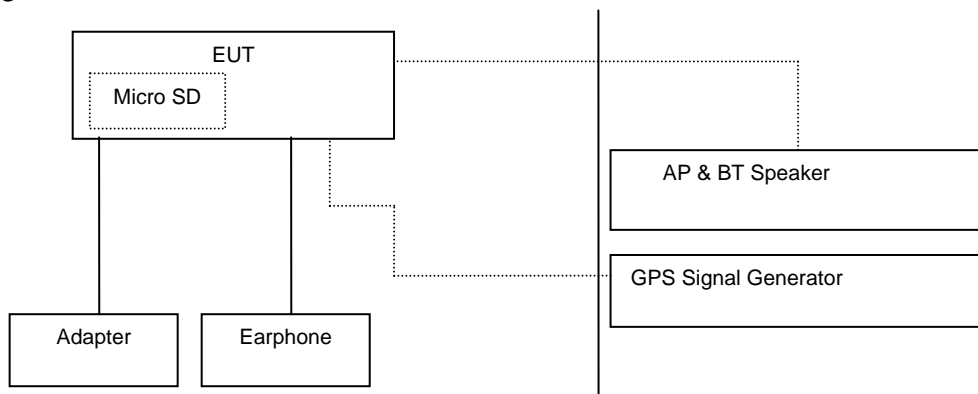
Config 1



Config 2



Config 3



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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	Conducted Emission	PASS	Line	20.3940	-12.60 (QP)
			Neutral	20.6980	-11.14 (QP)
	Radiated Emission	PASS	Ver.	130.3400	-8.50 (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 Upper frequency of measurement  
used in the device or on which the range (MHz)  
device operates or tunes (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)	Class B (at 3m)
	dBuV/m	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	79.3	59.3	73.9	53.9

#### CISPR 22 Limit:

- Detector Function : Quasi – Peak

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 10m)
	dBuV/m	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	2017/6/23	2018/6/22
Coaxial Cables	EMC Instruments Corp	EMCRG58-BM-BM-3000	160812	2017/8/30	2018/8/29
LISN	SCHWARZBECK	NSLK 8127	8127-648	2017/6/18	2018/6/17
Pulse Limiter	Narda S.T.S.	PMM PL01	1110X30602	2017/8/12	2018/8/11
LISN	FCC	FCC-LISN-50/250-25-2-01	4034	2017/3/19	2018/3/18
Universal Digital Radio Communication Tester	R&S	CMU 200	122498	2016/11/9	2017/11/8
Wideband Radio Communication Tester	R&S	CMW 500	152303	2017/2/23	2018/2/22
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 2.25 dB					

### 2.4.2 Operating Environment

Temperature : 25 degree C

Humidity : 64 %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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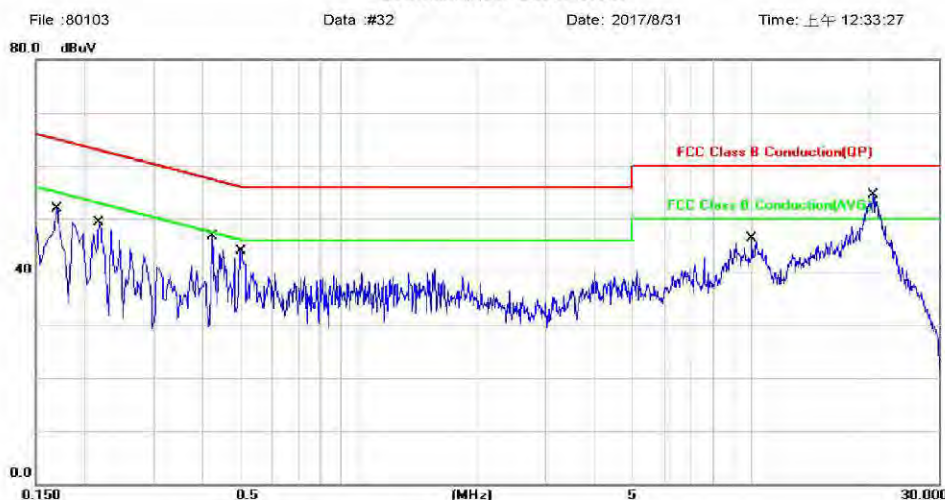
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## 2.4.4 Measurement Data:

## Config\_1\_L

Site : Conduction Room Phase: **L1** Temperature: 25 °C  
Limit: FCC Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 64 %  
Mode: Config 1 GSM 850  
Note: Hynix

## Conducted Emission



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	Factor	ment	dBuV	dB	Detector	Comment
1		0.1700	47.10	0.34	47.44	64.96	-17.52	QP	
2		0.1700	30.60	0.34	30.94	54.96	-24.02	AVG	
3		0.2180	42.30	0.33	42.63	62.89	-20.26	QP	
4		0.2180	26.40	0.33	26.73	52.89	-26.16	AVG	
5		0.4220	38.10	0.34	38.44	57.41	-18.97	QP	
6		0.4220	24.70	0.34	25.04	47.41	-22.37	AVG	
7		0.5020	40.00	0.35	40.35	56.00	-15.65	QP	
8		0.5020	28.00	0.35	28.35	46.00	-17.65	AVG	
9		10.0700	38.70	0.89	39.59	60.00	-20.41	QP	
10		10.0700	30.70	0.89	31.59	50.00	-18.41	AVG	
11	*	20.3940	46.40	1.00	47.40	60.00	-12.60	QP	
12		20.3940	31.30	1.00	32.30	50.00	-17.70	AVG	

\*:Maximum data x:Over limit l:over margin

File :80103\Data :#32

Page: 1

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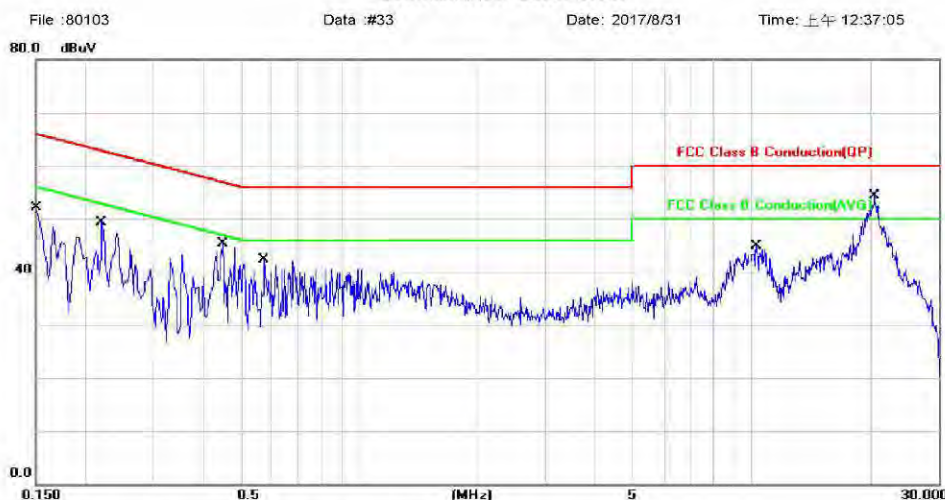
## Config\_1\_N

Site : Conduction Room  
Limit: FCC Class B Conduction(QP)  
Mode: Config 1 GSM 850  
Note: Hynix

Phase: **N**  
Power: AC 120V/60Hz

Temperature: 25 °C  
Humidity: 64 %

## Conducted Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	49.00	0.42	49.42	66.00	-16.58	QP	
2		0.1500	32.20	0.42	32.62	56.00	-23.38	AVG	
3		0.2220	43.50	0.41	43.91	62.74	-18.83	QP	
4		0.2220	27.90	0.41	28.31	52.74	-24.43	AVG	
5		0.4500	41.40	0.42	41.82	56.88	-15.06	QP	
6		0.4500	29.00	0.42	29.42	46.88	-17.46	AVG	
7		0.5740	36.70	0.42	37.12	56.00	-18.88	QP	
8		0.5740	26.40	0.42	26.82	46.00	-19.18	AVG	
9		10.2940	38.00	0.67	38.67	60.00	-21.33	QP	
10		10.2940	28.90	0.67	29.57	50.00	-20.43	AVG	
11	*	20.6980	48.10	0.76	48.86	60.00	-11.14	QP	
12		20.6980	32.00	0.76	32.76	50.00	-17.24	AVG	

\*:Maximum data x:Over limit l:over margin

File :80103\Data :#33

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## Config\_2\_L

Site : Conduction Room Phase: **L1** Temperature: 25 °C  
 Limit: FCC Class B Conduction(QP) Power: From System Humidity: 64 %  
 Mode: Config 2  
 Note: Hynix , AC 120V/60Hz , Internal Sotrage Write

### Conducted Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1700	47.00	0.34	47.34	64.96	-17.62	QP	
2		0.1700	36.50	0.34	36.84	54.96	-18.12	AVG	
3		0.2260	37.60	0.33	37.93	62.60	-24.67	QP	
4		0.2260	23.00	0.33	23.33	52.60	-29.27	AVG	
5		0.2820	32.30	0.33	32.63	60.76	-28.13	QP	
6		0.2820	19.70	0.33	20.03	50.76	-30.73	AVG	
7		0.4540	33.90	0.34	34.24	56.80	-22.56	QP	
8		0.4540	21.10	0.34	21.44	46.80	-25.36	AVG	
9		1.6500	26.70	0.42	27.12	56.00	-28.88	QP	
10		1.6500	19.60	0.42	20.02	46.00	-25.98	AVG	
11		4.0420	25.30	0.58	25.88	56.00	-30.12	QP	
12		4.0420	19.30	0.58	19.88	46.00	-26.12	AVG	

\*:Maximum data x:Over limit l:over margin

File :80103\Data :#9

Page: 1

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## Config\_2\_N

Site : Conduction Room Phase: **N** Temperature: 25 °C  
Limit: FCC Class B Conduction(QP) Power: From System Humidity: 64 %  
Mode: Config 2  
Note: Hynix , AC 120V/60Hz , Internal Sotrage Write

## Conducted Emission



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	Factor	ment	dBuV	dB	Detector	Comment
1		0.1740	45.70	0.42	46.12	64.77	-18.65	QP	
2		0.1740	31.30	0.42	31.72	54.77	-23.05	AVG	
3		0.2220	37.20	0.41	37.61	62.74	-25.13	QP	
4		0.2220	24.00	0.41	24.41	52.74	-28.33	AVG	
5		0.4660	33.60	0.42	34.02	56.58	-22.56	QP	
6 *		0.4660	28.40	0.42	28.82	46.58	-17.76	AVG	
7		1.6580	24.10	0.44	24.54	56.00	-31.46	QP	
8		1.6580	16.80	0.44	17.24	46.00	-28.76	AVG	
9		4.5780	24.80	0.48	25.28	56.00	-30.72	QP	
10		4.5780	19.70	0.48	20.18	46.00	-25.82	AVG	
11		22.1700	27.20	0.81	28.01	60.00	-31.99	QP	
12		22.1700	21.50	0.81	22.31	50.00	-27.69	AVG	

\*:Maximum data x:Over limit l:over margin

File :80103\Data :#10

Page: 1

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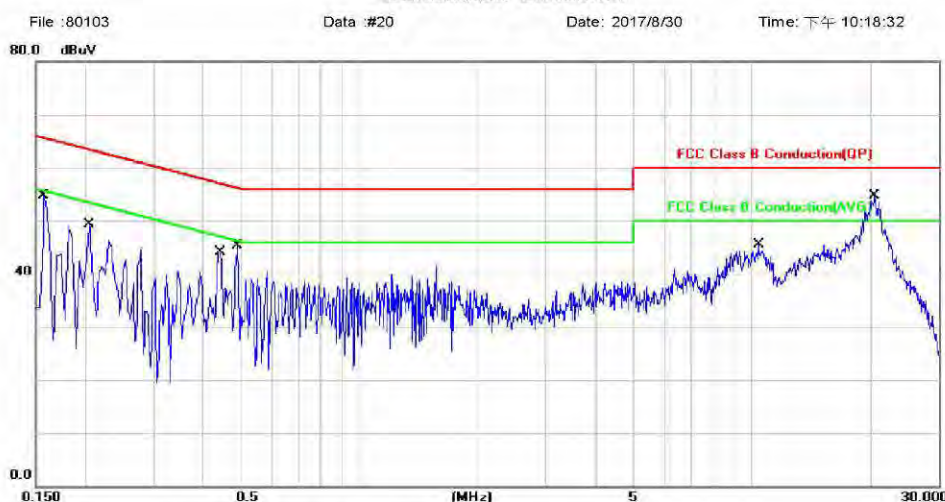
## Config\_3\_L

Site : Conduction Room  
Limit: FCC Class B Conduction(QP)  
Mode: Config 3 MP3  
Note: Hynix

Phase: L1  
Power: AC 120V/60Hz

Temperature: 25 °C  
Humidity: 64 %

## Conducted Emission



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	Factor	ment	dBuV	dB	Detector	Comment
1		0.1580	48.90	0.34	49.24	65.57	-16.33	QP	
2		0.1580	32.80	0.34	33.14	55.57	-22.43	AVG	
3		0.2060	45.00	0.33	45.33	63.37	-18.04	QP	
4		0.2060	28.80	0.33	29.13	53.37	-24.24	AVG	
5		0.4460	41.90	0.34	42.24	56.95	-14.71	QP	
6		0.4460	32.10	0.34	32.44	46.95	-14.51	AVG	
7		0.4900	41.20	0.34	41.54	56.17	-14.63	QP	
8		0.4900	28.10	0.34	28.44	46.17	-17.73	AVG	
9		10.4260	38.70	0.89	39.59	60.00	-20.41	QP	
10		10.4260	31.10	0.89	31.99	50.00	-18.01	AVG	
11	*	20.6620	46.80	1.01	47.81	60.00	-12.19	QP	
12		20.6620	29.40	1.01	30.41	50.00	-19.59	AVG	

\*:Maximum data x:Over limit l:over margin

File :80103\Data :#20

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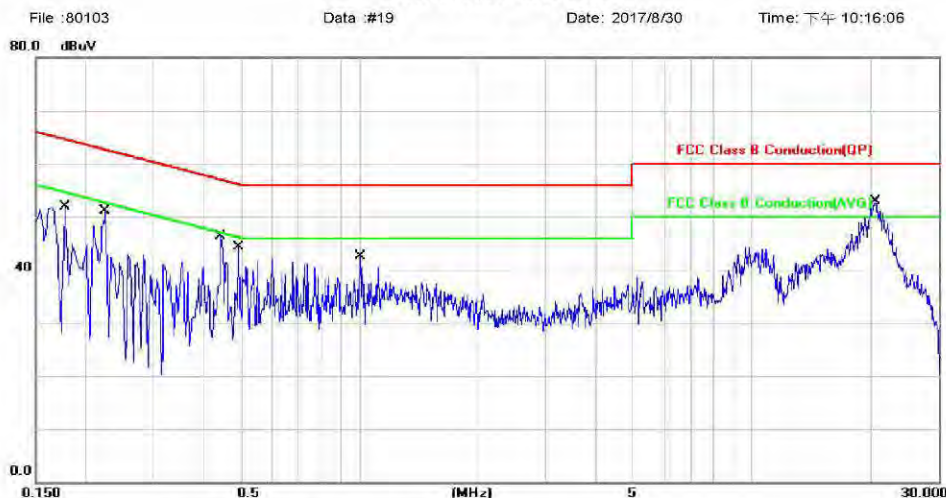
## Config\_3\_N

Site : Conduction Room  
Limit: FCC Class B Conduction(QP)  
Mode: Config 3 MP3  
Note: Hynix

Phase: **N**  
Power: AC 120V/60Hz

Temperature: 25 °C  
Humidity: 64 %

### Conducted Emission



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV	dBuV	dB		
1		0.1780	43.90	0.41	44.31	64.58	-20.27	QP	
2		0.1780	27.80	0.41	28.21	54.58	-26.37	AVG	
3		0.2260	42.80	0.41	43.21	62.60	-19.39	QP	
4		0.2260	27.10	0.41	27.51	52.60	-25.09	AVG	
5		0.4460	38.20	0.42	38.62	56.95	-18.33	QP	
6		0.4460	25.60	0.42	26.02	46.95	-20.93	AVG	
7		0.4940	39.80	0.42	40.22	56.10	-15.88	QP	
8		0.4940	30.10	0.42	30.52	46.10	-15.58	AVG	
9		1.0100	34.30	0.43	34.73	56.00	-21.27	QP	
10		1.0100	27.90	0.43	28.33	46.00	-17.67	AVG	
11 *		20.7733	46.60	0.77	47.37	60.00	-12.63	QP	
12		20.7733	31.40	0.77	32.17	50.00	-17.83	AVG	

\*:Maximum data x:Over limit l:over margin

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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 7	100924	2016/9/30	2017/9/29
EMI Test Receiver	R&S	ESCI 3	101343	2016/12/21	2017/12/20
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	2017/3/31	2018/3/30
Pre Amplifier	EMC Instruments Corp.	EMC330	980179	2017/3/31	2018/3/30
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
Universal Digital Radio Communication Tester	R&S	CMU 200	122498	2016/11/9	2017/11/8
Wideband Radio Communication Tester	R&S	CMW 500	152303	2017/2/23	2018/2/22
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	2016/12/31	2017/12/31
Test S/W	Farad	EZ-EMC	Ver. SGS-03A2	N.C.R.	N.C.R.

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Measurement Uncertainty of Radiated Emission  
Expanded uncertainty of radiated emission is 4.09 dB. (30MHz ~ 1000MHz)

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**Above 1GHz**

SGS Radiated_Above_1GHz HWAYA 966B_EMC					
EQUIPMENT TYPE	Manufacturer	Model Number	Serial Number	Calibration Date	Calibration Due
Spectrum Analyzer	R&S	FSV 40	101419	2017/3/1	2018/2/28
EMI Test Receiver	R&S	ESR 7	101507	2017/5/27	2018/5/26
Horn Antenna	SCHWARZBEC K	BBHA9120D	BBHA9120D67 3	2016/10/14	2017/10/13
Pre Amplifier	R&S	SCU-18	100203	2017/3/26	2018/3/26
Coaxial Cable	EMC Instruments	EMC104-SM- SM	140923	2016/9/30	2017/9/29
Coaxial Cable	EMC Instruments	EMC104-SM- SM	140925	2016/9/30	2017/9/29
Coaxial Cable	EMC Instruments	EMC104-SM- SM	140927	2016/9/30	2017/9/29
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	MY 2152/2	2017/6/5	2018/6/4
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	MY 2153/2	2017/6/5	2018/6/4
Universal Digital Radio Communication Tester	R&S	CMU 200	122498	2016/11/9	2017/11/8
Wideband Radio Communication Tester	R&S	CMW 500	152303	2017/2/23	2018/2/22
Controller	MF-7802	N/A	N/A	N.C.R.	N.C.R.
Antenna Master	N/A	N/A	N/A	N.C.R.	N.C.R.
Turn Table	N/A	N/A	N/A	N.C.R.	N.C.R.
Site VSWR	SGS	966 Chamber B	SAC-B	2016/10/8	2017/10/7
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 5.06 dB. (1-6GHz) Expanded uncertainty (k=2) of radiated emission measurement is 5.15 dB. (6-18GHz)					

**2.5.2 Operating Environment**

Temperature : 25 degree C

Humidity : 65 %RH

Atmospheric Pressure : 996 mBar

**2.5.3 Measurement Level Calculation**

Correction Factor = Antenna Factor + Cable loss- Amplifier Gain

Measurement Level = Reading Level + Correction Factor

Over (Margin) = Measurement Level – Limit

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## 2.5.4 Measurement Data

## Below 1GHz

## Config\_1\_H

Site: SGS 10m Chamber  
 Limit: CISPR22 Class B 10M Radiation  
 Mode: Config\_1  
 Note: Sample 3 LTE B5 Link

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

Temperature: 25 °C  
 Humidity: 65 %

## Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		54.4300	27.06	-11.76	15.30	30.00	-14.70	QP	
2		138.2400	30.29	-12.39	17.90	30.00	-12.10	QP	
3		165.9800	25.88	-11.78	14.10	30.00	-15.90	QP	
4		825.6600	25.04	-0.14	24.90	37.00	-12.10	QP	
5		943.0300	24.96	1.74	26.70	37.00	-10.30	QP	
6 *		967.3800	25.24	1.86	27.10	37.00	-9.90	QP	

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

File :80103\Data :#16

Page: 1

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## Config\_1\_V

Site: SGS 10m Chamber  
 Limit: CISPR22 Class B 10M Radiation  
 Mode: Config\_1  
 Note: Sample 3 LTE B5 Link

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

Temperature: 25 °C  
 Humidity: 65 %

### Radiated Emission



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		42.1100	26.11	-11.31	14.80	30.00	-15.20	QP	
2	*	129.7500	32.22	-12.42	19.80	30.00	-10.20	QP	
3		164.6300	26.84	-11.74	15.10	30.00	-14.90	QP	
4		788.3400	24.52	-0.42	24.10	37.00	-12.90	QP	
5		909.6300	24.35	1.05	25.40	37.00	-11.60	QP	
6		985.2700	24.48	1.72	26.20	37.00	-10.80	QP	

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

File: 80103\Data: #15

Page: 1

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## Config\_2\_H

Site: SGS 10m Chamber  
Limit: CISPR22 Class B 10M Radiation  
Mode: Config\_2  
Note: Sample 3 SD Card Read

Polarization: **Horizontal**  
Power: From System  
Distance:

Temperature: 25 °C  
Humidity: 65 %

## Radiated Emission



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		54.4700	25.96	-11.76	14.20	30.00	-15.80	QP	
2		166.9100	26.51	-11.81	14.70	30.00	-15.30	QP	
3		203.9900	31.04	-14.94	16.10	30.00	-13.90	QP	
4		852.2200	24.97	0.13	25.10	37.00	-11.90	QP	
5		928.6000	24.97	1.43	26.40	37.00	-10.60	QP	
6 *		969.1400	25.04	1.86	26.90	37.00	-10.10	QP	

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

File: 80103\Data: #20

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## Config\_2\_V

Site: SGS 10m Chamber  
Limit: CISPR22 Class B 10M Radiation  
Mode: Config\_2  
Note: Sample 3 SD Card Read

Polarization: **Vertical**  
Power: From System  
Distance:

Temperature: 25 °C  
Humidity: 65 %

### Radiated Emission



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		51.5200	26.22	-11.12	15.10	30.00	-14.90	QP	
2		133.1400	26.05	-12.15	13.90	30.00	-16.10	QP	
3		847.4900	24.52	-0.02	24.50	37.00	-12.50	QP	
4		875.7600	24.29	0.51	24.80	37.00	-12.20	QP	
5		914.4600	24.41	1.09	25.50	37.00	-11.50	QP	
6 *		977.8700	24.57	1.63	26.20	37.00	-10.80	QP	

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

File: 80103\Data: #19

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### Config\_3\_H

Site: SGS 10m Chamber  
 Limit: CISPR22 Class B 10M Radiation  
 Mode: Config\_3  
 Note: Sample 3 REC Front

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

Temperature: 25 °C  
 Humidity: 65 %

### Radiated Emission



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		39.8800	25.81	-11.71	14.10	30.00	-15.90	QP	
2		135.9500	29.30	-12.50	16.80	30.00	-13.20	QP	
3		163.4500	27.10	-11.70	15.40	30.00	-14.60	QP	
4		895.4000	25.06	0.74	25.80	37.00	-11.20	QP	
5		939.5200	24.93	1.67	26.60	37.00	-10.40	QP	
6 *		972.1900	25.05	1.85	26.90	37.00	-10.10	QP	

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

File: 80103\Data: #18

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## Config\_3\_V

Site: SGS 10m Chamber  
Limit: CISPR22 Class B 10M Radiation  
Mode: Config\_3  
Note: Sample 3 REC Front

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

Temperature: 25 °C  
Humidity: 65 %

### Radiated Emission



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		39.8400	26.61	-11.51	15.10	30.00	-14.90	QP	
2		86.9900	32.88	-17.08	15.80	30.00	-14.20	QP	
3 *		130.3400	33.87	-12.37	21.50	30.00	-8.50	QP	
4		167.8600	28.09	-11.89	16.20	30.00	-13.80	QP	
5		966.4900	24.60	1.50	26.10	37.00	-10.90	QP	
6		996.0400	24.75	1.85	26.60	37.00	-10.40	QP	

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

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Above 1GHz

Config\_1\_H

Site: SGS 966 Chamber A

Polarization: *Horizontal*

Temperature: 23 °C

Limit: FCC Class B 3M Radiation(1G-40G)(Pea

Power: AC 120V/60Hz

Humidity: 72 %

Mode: Config\_1

Distance:

Note: GSM 850 , Sample 3 (Micron)

## Radiated Emission

File :E1-2017-80103

Data :#34

Date: 2017/8/25

Time: 下午 09:56:20



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3601.000	57.76	-11.08	46.68	74.00	-27.32	peak	
2		4043.000	57.29	-9.38	47.91	74.00	-26.09	peak	
3		4451.000	57.01	-9.22	47.79	74.00	-26.21	peak	
4		4893.000	57.25	-7.63	49.62	74.00	-24.38	peak	
5		5284.000	57.42	-6.85	50.57	74.00	-23.43	peak	
6		5777.000	57.01	-5.99	51.02	74.00	-22.98	peak	
7 *		5777.000	43.86	-5.99	37.87	54.00	-16.13	AVG	

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

File :E1-2017-80103\Data :#34

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## Config\_1\_V

Site: SGS 966 Chamber A

Polarization: **Vertical**

Temperature: 23 °C

Limit: FCC Class B 3M Radiation(1G-40G)(Pea

Power: AC 120V/60Hz

Humidity: 72 %

Mode: Config\_1

Distance:

Note: GSM 850 , Sample 3 (Micron)

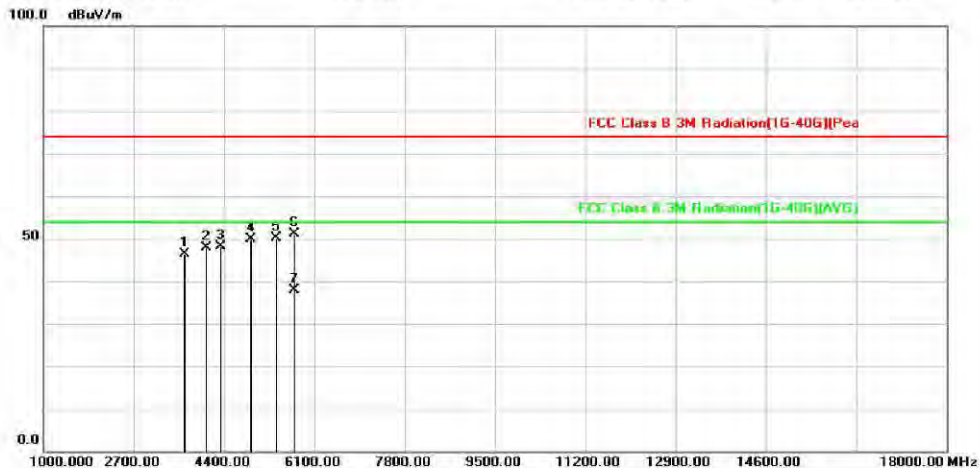
## Radiated Emission

File :E1-2017-80103

Data :#33

Date: 2017/8/25

Time: 下午 09:54:00



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1		3652.000	57.22	-10.87	46.35	74.00	-27.65	peak	
2		4060.000	57.30	-9.38	47.92	74.00	-26.08	peak	
3		4332.000	57.36	-9.27	48.09	74.00	-25.91	peak	
4		4910.000	57.44	-7.57	49.87	74.00	-24.13	peak	
5		5386.000	56.97	-6.73	50.24	74.00	-23.76	peak	
6		5726.000	57.24	-6.10	51.14	74.00	-22.86	peak	
7 *		5726.000	44.01	-6.10	37.91	54.00	-16.09	AVG	

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

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## Config\_2\_H

Site: SGS 966 Chamber A Polarization: **Horizontal** Temperature: 23 °C  
Limit: FCC Class B 3M Radiation(1G-40G)(Pea Power: From System Humidity: 72 %  
Mode: Config\_2 Distance:  
Note: Internal Shared Storage Write , Sample 3 (Micron)

## Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1		1595.000	65.61	-19.49	46.12	74.00	-27.88	peak	
2		3618.000	56.95	-11.00	45.95	74.00	-28.05	peak	
3		4077.000	57.64	-9.37	48.27	74.00	-25.73	peak	
4		4995.000	57.41	-7.22	50.19	74.00	-23.81	peak	
5		5488.000	56.81	-6.61	50.20	74.00	-23.80	peak	
6		5811.000	57.59	-5.91	51.68	74.00	-22.32	peak	
7 *		5811.000	43.76	-5.91	37.85	54.00	-16.15	AVG	

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

File :E1-2017-80103>Data :#36

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## Config\_2\_V

Site: SGS 966 Chamber A Polarization: **Vertical** Temperature: 23 °C  
Limit: FCC Class B 3M Radiation(1G-40G)(Pea Power: From System Humidity: 72 %  
Mode: Config\_2 Distance:  
Note: Internal Shared Storage Write , Sample 3 (Micron)

## Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1		1595.000	65.95	-19.49	46.46	74.00	-27.54	peak	
2		3584.000	57.00	-11.15	45.85	74.00	-28.15	peak	
3		4128.000	57.28	-9.35	47.93	74.00	-26.07	peak	
4		4944.000	56.90	-7.42	49.48	74.00	-24.52	peak	
5		5318.000	57.30	-6.83	50.47	74.00	-23.53	peak	
6		5777.000	57.01	-5.99	51.02	74.00	-22.98	peak	
7 *		5777.000	43.88	-5.99	37.89	54.00	-16.11	AVG	

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

File :E1-2017-80103>Data :#35

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## Config\_3\_H

Site: SGS 966 Chamber A

Polarization: **Horizontal**

Temperature: 23 °C

Limit: FCC Class B 3M Radiation(1G-40G)(Pea

Power: AC 120V/60Hz

Humidity: 72 %

Mode: Config\_3

Distance:

Note: REC Front , Sample 3 (Micron)

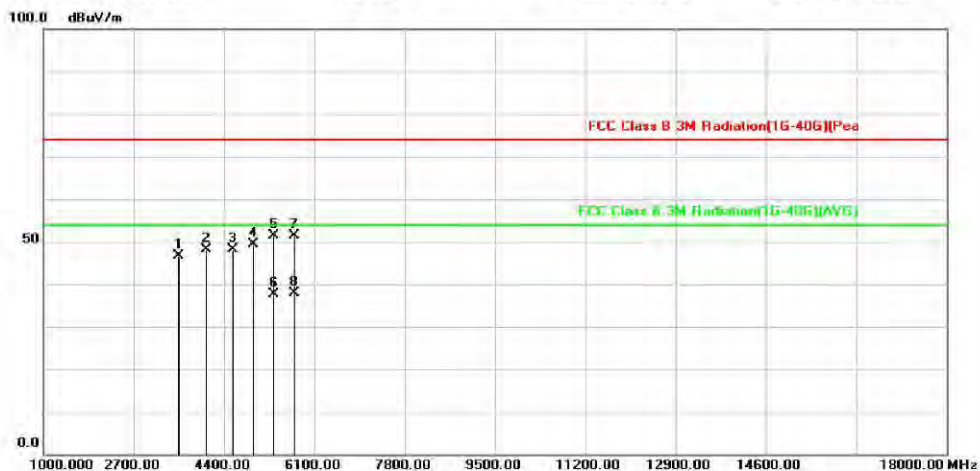
## Radiated Emission

File :E1-2017-80103

Data :#38

Date: 2017/8/25

Time: 下午 11:38:36



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3550.000	57.98	-11.29	46.69	74.00	-27.31	peak	
2		4060.000	57.49	-9.38	48.11	74.00	-25.89	peak	
3		4570.000	56.99	-8.93	48.06	74.00	-25.94	peak	
4		4961.000	56.86	-7.36	49.50	74.00	-24.50	peak	
5		5335.000	58.23	-6.79	51.44	74.00	-22.56	peak	
6		5335.000	44.33	-6.79	37.54	54.00	-16.46	AVG	
7		5726.000	57.49	-6.10	51.39	74.00	-22.61	peak	
8 *		5726.000	44.09	-6.10	37.99	54.00	-16.01	AVG	

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

File :E1-2017-80103\Data :#38

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## Config\_3\_V

Site: SGS 966 Chamber A

Polarization: **Vertical**

Temperature: 23 °C

Limit: FCC Class B 3M Radiation(1G-40G)(Pea

Power: AC 120V/60Hz

Humidity: 72 %

Mode: Config\_3

Distance:

Note: REC Front , Sample 3 (Micron)

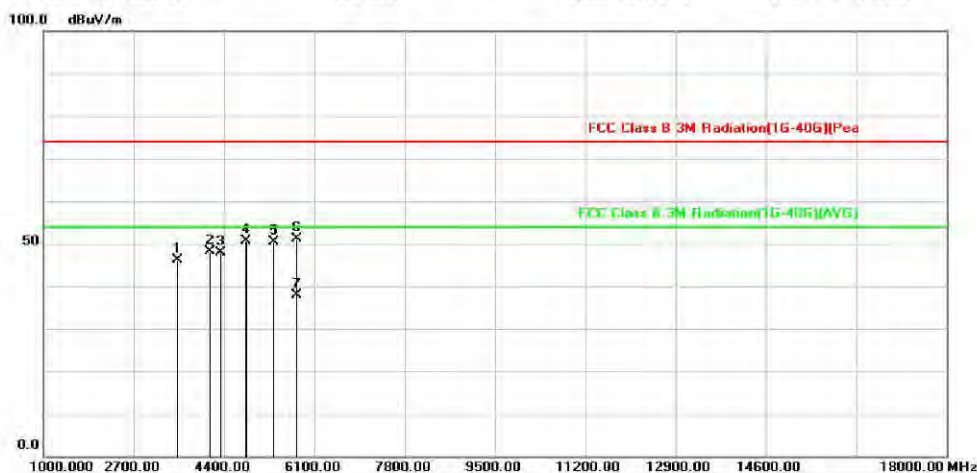
## Radiated Emission

File :E1-2017-80103

Data :#37

Date: 2017/8/25

Time: 下午 11:36:19



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1		3516.000	57.46	-11.43	46.03	74.00	-27.97	peak	
2		4128.000	57.43	-9.35	48.08	74.00	-25.92	peak	
3		4349.000	57.24	-9.26	47.98	74.00	-26.02	peak	
4		4825.000	58.59	-7.90	50.69	74.00	-23.31	peak	
5		5335.000	57.15	-6.79	50.36	74.00	-23.64	peak	
6		5777.000	57.23	-5.99	51.24	74.00	-22.76	peak	
7 *		5777.000	43.84	-5.99	37.85	54.00	-16.15	AVG	

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

File :E1-2017-80103\Data :#37

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