



FCC CERTIFICATION REPORT

Test Report No. : E1/2016/70099

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 : Smart Phone

Brand Name : HUAWEI

Model No. : HUAWEI MLA-L12,MLA-L12,HUAWEI MLA-L02

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Revision History

Report Number	Revision	Description	Issue Date
E1/2016/70099	Rev.00	Initial creation of document	Aug. 05, 2016

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1. General Information

1.1 Applicant & Manufacturer Information

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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 : Smart Phone
Brand Name : HUAWEI
Model No. : HUAWEI MLA-L12, MLA-L12, HUAWEI MLA-L02

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Worst case

Mode 3. Earphone:Hong sheng+BT Link+WiFi
Link+GPS Link+USB:FOXCONN
+ADP:HW-050200U01 #BYD+GSM:850 Link
Mode 4. Earphone:Hong sheng+BT Link+WiFi
Link+GPS Link+USB:Luxshareict
+ADP:HW-050200U01 #BYD+3G:B1 Link
Mode 5. Earphone:Hong sheng+BT Link+WiFi
Link+GPS Link+USB:Hongin
+ADP:HW-050200U01 #BYD+LTE:B7 Link
Mode 6. Earphone:Hong sheng+BT Link+WiFi
Link+GPS Link+USB:Luxshareict
+ADP:HW-050200U01 #BYD+FM
Mode 7. Earphone:Hong sheng+BT Link+WiFi
Link+GPS Link+USB:FOXCONN
+ADP:HW-050200U01 #Phltek
+Camera Front REC
Mode 8. Earphone:Hong sheng+BT Link+WiFi
Link+GPS Link+USB:FOXCONN
+ADP:HW-050200U01 #Huntkey
+Camera Front REC
Mode 9. PC LINK Micro SD Write
Mode 10. PC LINK Micro SD Read

: CE Worst :Mode 8. Earphone:Hong sheng+BT
Link+WiFi Link+GPS Link
+USB:FOXCONN
+ADP:HW-050200U01
#Huntkey
+Camera Front REC

RE Worst :Mode 8. Earphone:Hong sheng+BT
Link+WiFi Link+GPS Link
+USB:FOXCONN
+ADP:HW-050200U01
#Huntkey
+Camera Front REC

Highest operate description

: 2480MHz

Adapter

: Model No.:HW-050200U01

Supplier : HUAWEI

I/P :100-240V, 50/60Hz, 0.5A

O/P : 5V, 2A

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1.4 Operation Procedure

Test Mode: 1, 7, 8

1. EUTconnected to AC ADAPTER power supply, EUT WiFi and NB connected to the same AP data link. Open BT LINK Speaker, GPS LINK GPS simulator, AUDIO Port access Earphone
2. Turn on the camera Front REC.
3. Start the test.

Test Mode: 2

1. EUTconnected to AC ADAPTER power supply, EUT WiFi and NB connected to the same AP data link. Open BT LINK Speaker, GPS LINK GPS simulator, AUDIO Port access Earphone
2. Turn on the camera Rear REC.
3. Start the test.

Test Mode: 3, 4, 5

1. EUTconnected to AC ADAPTER power supply, EUT WiFi and NB connected to the same AP data link. Open BT LINK Speaker, GPS LINK GPS simulator, AUDIO Port access Earphone
2. EUT inserted a SIM card, open the GSM LINK Phone: 2G: 850 & 3G: B2 & LTE: B7 call
3. Start the test.

Test Mode: 6

1. EUTconnected to AC ADAPTER power supply, EUT WiFi and NB connected to the same AP data link. Open BT LINK Speaker, GPS LINK GPS simulator,
2. FM LINK FM signal generator.
3. Start the test.

Test Mode: 9

1. EUT AUDIO Port pick Earphone.
2. PC data write in Micro SD.
3. Start the test.

Test Mode: 10

1. EUT AUDIO Port pick Earphone.
2. Micro SD write data to PC.
3. Start the test.

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1.5 Description of Support Units

PRODUCT	MANUFACTURER	MODEL NO.	SERIAL NO.
SIM Card	R&S	CMW-Z05	8.95253E+18
BT Speaker	Creative	MF8090	YFMF8090245R00855Y
AP	BUFFALO	WZR-HP-G300NH2	44066221202559[[G]]
GPS Signal Generator	Spectracom	GSG53 GNSS4	200218
Notebook	DELL	Latitude E6440	CYRVQ32
Mouse	DELL	MS111-T	CN-OKW2YH-71616-345-OL7T
Printer	HP	VCVRA-1004	CN33K19J3F
Micro SD	Transcend	Micro SDHC (Class4)	N/A
TMC/FM Generator	Levear	VP-8194D	0821170LA

1.6 Modification List

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

1.7 Cable List

Cable Type	Core	Length	Category	Shielding/Non-shielding
USB cable (Foxconn)	N/A	0.93m	N/A	Shielding
USB cable (Luxshare)	N/A	0.97m	N/A	Shielding
USB cable (Honglin)	N/A	0.94m	N/A	Shielding
Earphone cable (Hong Sheng)	N/A	1.15m	N/A	Non-shielding
Earphone cable (Quancheng)	N/A	1.1m	N/A	Non-shielding

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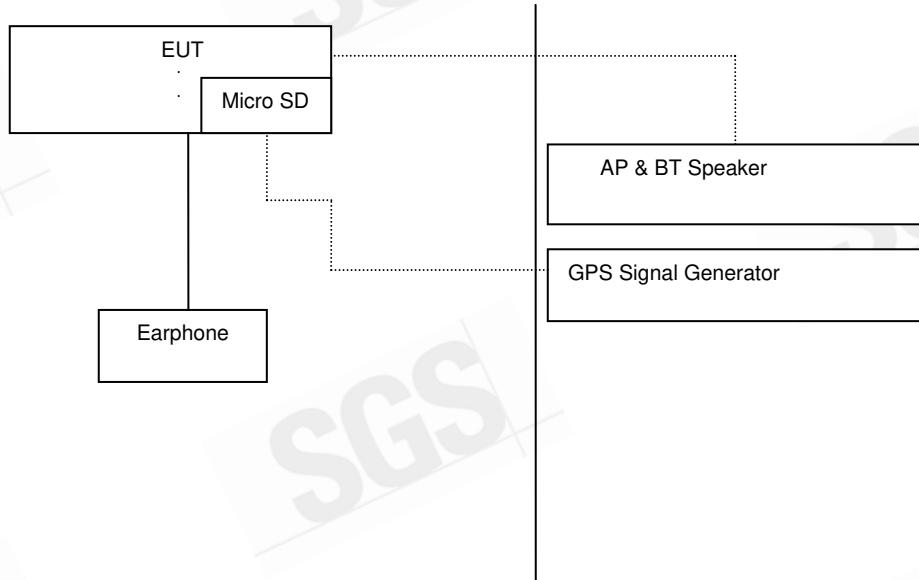
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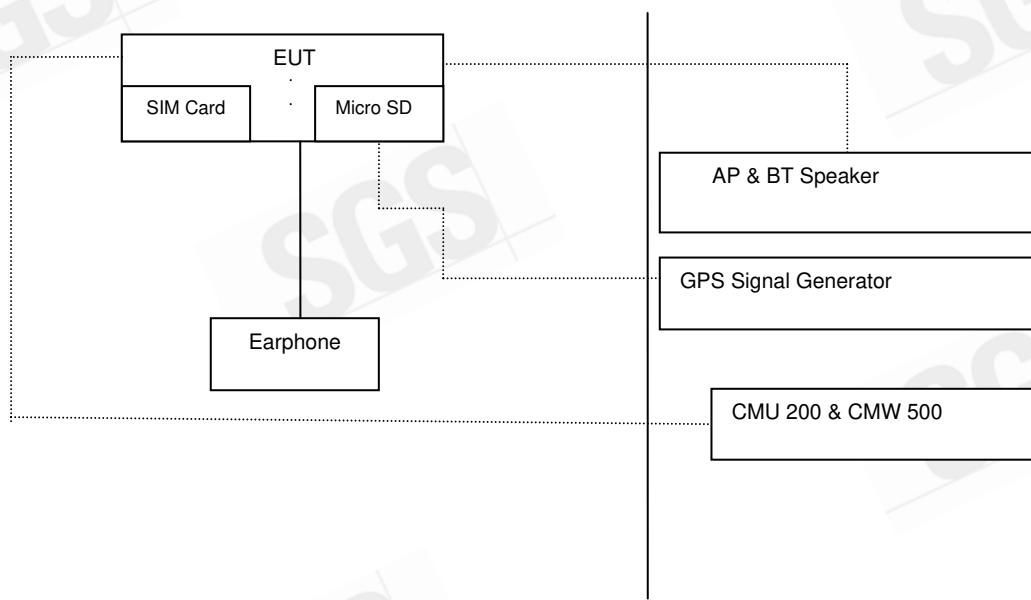


1.8 Test Set-Up Configuration

Mode 1~2



Mode 3~5,7,8



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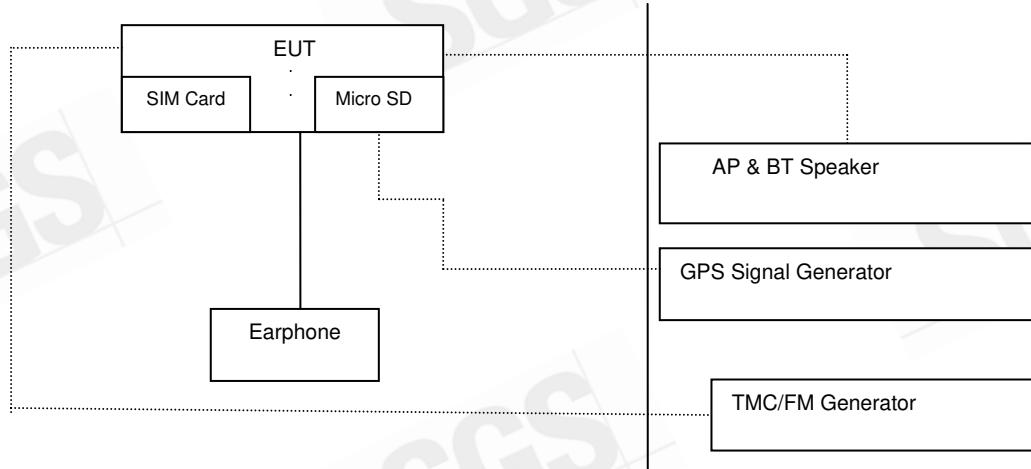
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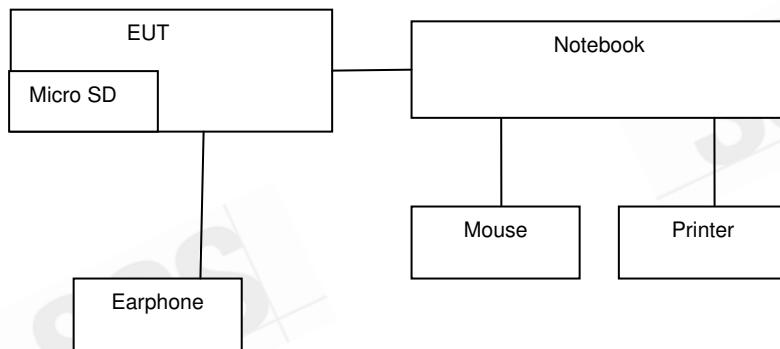
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Mode 6



Mode 9~10



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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 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

Test Standards	Status
FCC Part 15, Subpart B	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	0.6508	-9.58 (QP)
			Neutral	0.6900	-13.48 (AVG)
	Radiated Emission	PASS	Ver.	30.2400	-5.80 (QP)

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2. EMISSION

2.1 Test Results

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2.3.2 Limits of Radiated Emissions for FCC Part 15, Subpart B/CISPR 22

FCC 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 1000-18000	79.3	59.3	73.9	53.9

CISPR 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 : The lower limit applies at the transition frequency.



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	N/A	N30N30-1042-150	N/A	2016/2/6	2017/2/5
LISN	SCHWARZBECK	NSLK 8127	8127-648	2016/6/13	2017/6/12
Pulse Limiter	Narda S.T.S.	PMM PL01	1110X30602	2015/8/13	2016/8/12
LISN	Schwarzbeck	NSLK 8128	NSLK8127-300	2016/6/22	2017/6/21
Universal Digital Radio Communication Tester	R&S	CMU 200	120239	2015/11/24	2016/11/23
Wideband Radio Communication Tester	R&S	CMW 500	131121	2015/8/23	2016/8/22
Test S/W	Farad	EZ-EMC	Ver. SGS-03A2	N.C.R.	N.C.R.

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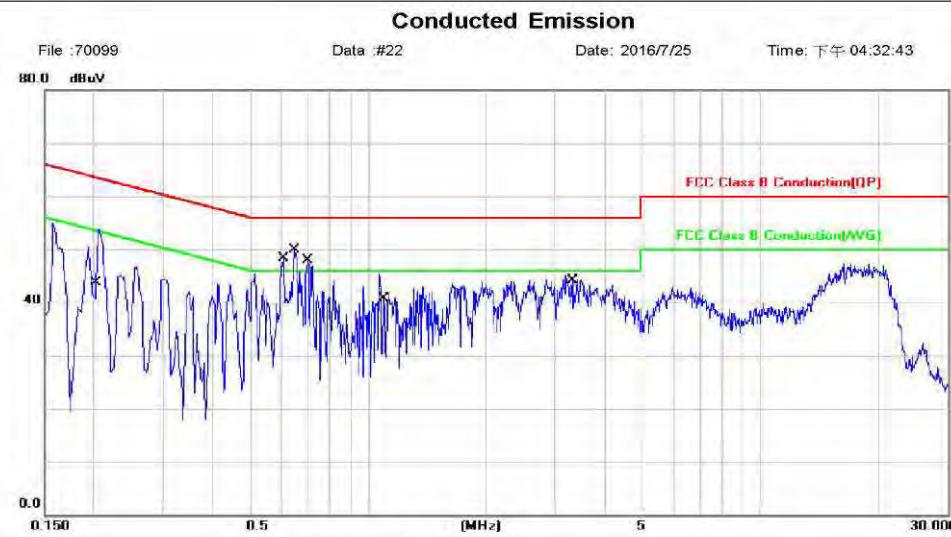
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2.4.4 Measurement Data:

Mode_8_L

Site : Conduction Room Phase: **L1** Temperature: 24 °C
 Limit: FCC Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 56 %
 Mode: Mode 8
 Note:



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		0.2014	46.50	0.16	46.66	63.55	-16.89	QP	
2		0.2014	37.10	0.16	37.26	53.55	-16.29	AVG	
3		0.6110	44.11	0.16	44.27	56.00	-11.73	QP	
4		0.6110	31.06	0.16	31.22	46.00	-14.78	AVG	
5 *		0.6508	46.25	0.17	46.42	56.00	-9.58	QP	
6		0.6508	35.34	0.17	35.51	46.00	-10.49	AVG	
7		0.7085	42.77	0.16	42.93	56.00	-13.07	QP	
8		0.7085	28.16	0.16	28.32	46.00	-17.68	AVG	
9		1.1085	39.76	0.16	39.92	56.00	-16.08	QP	
10		1.1085	27.45	0.16	27.61	46.00	-18.39	AVG	
11		3.2970	35.76	0.23	35.99	56.00	-20.01	QP	
12		3.2970	25.35	0.23	25.58	46.00	-20.42	AVG	

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

Mode_8_N

Site : Conduction Room
 Limit: FCC Class B Conduction(QP)
 Mode: Mode 8
 Note:

Phase: **N**
 Power: AC 120V/60Hz
 Temperature: 24 °C
 Humidity: 56 %

Conducted Emission



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Comment
			Level	Factor	ment			
		MHz	dBuV	dB	dBuV	dB	Detector	
1		0.2028	45.86	0.19	46.05	63.50	-17.45	QP
2		0.2028	33.09	0.19	33.28	53.50	-20.22	AVG
3		0.6110	40.06	0.20	40.26	56.00	-15.74	QP
4		0.6110	29.71	0.20	29.91	46.00	-16.09	AVG
5		0.6900	40.85	0.21	41.06	56.00	-14.94	QP
6 *		0.6900	32.31	0.21	32.52	46.00	-13.48	AVG
7		2.3530	36.39	0.25	36.64	56.00	-19.36	QP
8		2.3530	27.32	0.25	27.57	46.00	-18.43	AVG
9		3.0100	35.27	0.26	35.53	56.00	-20.47	QP
10		3.0100	27.33	0.26	27.59	46.00	-18.41	AVG
11		20.5340	40.77	0.66	41.43	60.00	-18.57	QP
12		20.5340	27.63	0.66	28.29	50.00	-21.71	AVG

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



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	100950	2015/12/8	2016/12/7
EMI Test Receiver	R&S	ESCI 3	101343	2015/12/25	2016/12/24
Broadband Antenna	SCHWAZBECK	VULB9168	9168-628	2015/9/23	2016/9/22
Broadband Antenna	SCHWAZBECK	VULB9168	9168-629	2015/9/23	2016/9/22
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	2015/9/18	2016/9/17
Coaxial Cable	EMC Instruments	EMCCFD400-NM-NM	150919	2015/9/18	2016/9/17
Coaxial Cable	EMC Instruments	EMCCFD400-NM-NM	150820	2015/9/18	2016/9/17
Coaxial Cable	EMC Instruments	EMCCFD400-NM-NM	150918	2015/9/18	2016/9/17
Coaxial Cable	EMC Instruments	EMCCFD400-NM-NM	150821	2015/9/18	2016/9/17
Coaxial Cable	EMC Instruments	EMCCFD400-NM-NM	150822	2015/9/18	2016/9/17
Universal Digital Radio Communication Tester	R&S	CMU 200	120239	2015/11/24	2016/11/23
Wideband Radio Communication Tester	R&S	CMW 500	131121	2015/8/23	2016/8/22
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	2015/12/31	2016/12/30
Test S/W	Farad	EZ-EMC	Ver. SGS-03A2	N.C.R.	N.C.R.

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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	2015/10/8	2016/10/7
Horn Antenna	Schwarzbeck	BBHA9170	BBHA9170-184	2015/12/11	2016/12/10
Pre Amplifier	EMC Instruments Corp.	EMC012645B	980216	2015/9/30	2016/9/29
Pre Amplifier	EMC Instruments Corp.	EMC184045B	980135	2015/10/27	2016/10/26
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
Universal Digital Radio Communication Tester	R&S	CMU 200	120239	2015/11/24	2016/11/23
Wideband Radio Communication Tester	R&S	CMW 500	131121	2015/8/23	2016/8/22
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.

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2.5.2 Operating Environment

Temperature : 18 degree C Humidity : 71 %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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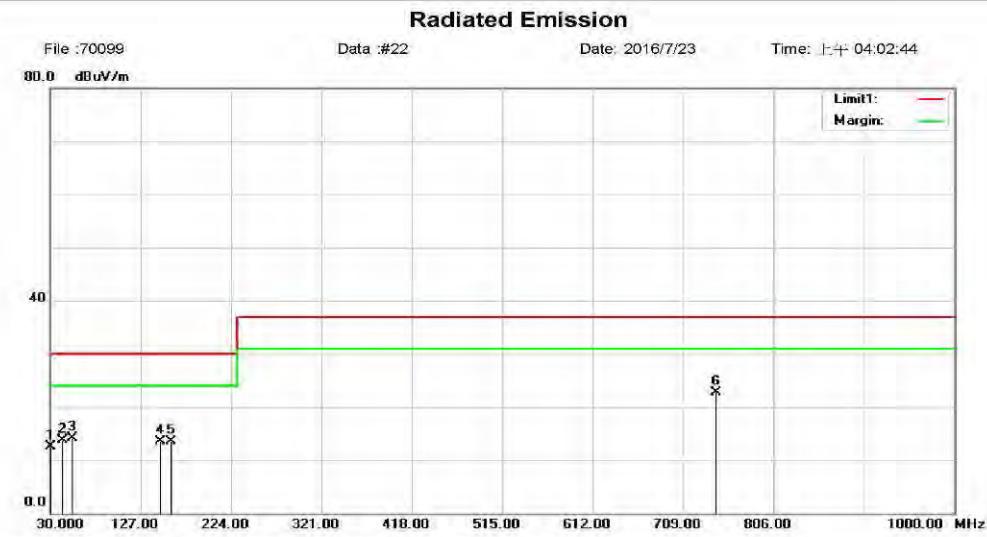
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2.5.4 Measurement Data

Below 1GHz

Mode_8_H

Site SGS 10m Chamber Polarization: **Horizontal** Temperature: 18 °C
 Limit: CISPR22 Class B 10M Radiation Power: AC 120V/60Hz Humidity: 71 %
 Mode: Mode_8 Distance:
 Note:



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
MHz		dBuV	dB	dBuV/m	dBuV/m	dB			
1		30.4800	25.41	-12.81	12.60	30.00	-17.40	QP	
2		43.4200	25.32	-11.52	13.80	30.00	-16.20	QP	
3		53.5200	25.79	-11.69	14.10	30.00	-15.90	QP	
4		147.6900	25.60	-12.10	13.50	30.00	-16.50	QP	
5		159.3100	25.12	-11.52	13.60	30.00	-16.40	QP	
6 *		743.2300	24.80	-2.00	22.80	37.00	-14.20	QP	

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

Mode_8_V

Site: SGS 10m Chamber Polarization: **Vertical** Temperature: 18 °C
Limit: CISPR22 Class B 10M Radiation Power: AC 120V/60Hz Humidity: 71 %
Mode: Mode_8 Distance:
Note:

Radiated Emission

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Comment
			Level	Factor	ment			
1	*	30.2400	36.69	-12.49	24.20	30.00	-5.80	QP
2		39.5200	27.27	-11.57	15.70	30.00	-14.30	QP
3		56.4100	26.58	-11.48	15.10	30.00	-14.90	QP
4		81.0500	30.33	-16.03	14.30	30.00	-15.70	QP
5		140.4000	27.09	-11.99	15.10	30.00	-14.90	QP
6		167.9600	25.46	-11.36	14.10	30.00	-15.90	QP

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

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Above 1GHz**Mode_2_H**

Site SGS 966 Chamber A

Polarization: **Horizontal**

Temperature: 22 °C

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

Power: AC 120V/60Hz

Humidity: 68 %

Mode: Mode_2

Distance:

Note:

Radiated Emission

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Comment
			Level	Factor	ment			
1		2598.000	58.45	-14.47	43.98	74.00	-30.02	peak
2		3176.000	58.70	-14.94	43.76	74.00	-30.24	peak
3		4043.000	57.63	-12.11	45.52	74.00	-28.48	peak
4		4655.000	58.84	-10.98	47.86	74.00	-26.14	peak
5		5437.000	58.26	-8.69	49.57	74.00	-24.43	peak
6 *		5709.000	57.90	-8.14	49.76	74.00	-24.24	peak

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

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Mode_2_V

Site SGS 966 Chamber A Polarization: **Vertical** Temperature: 22 °C
 Limit: FCC Class B 3M Radiation(1G-40G)(Pea) Power: AC 120V/60Hz Humidity: 68 %
 Mode: Mode_2 Distance:
 Note:

Radiated Emission



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over
			Level	Factor	ment		
		MHz	dB μ V	dB	dB μ V/m	dB μ V/m	dB
1		2343.000	60.72	-17.72	43.00	74.00	-31.00
2		3533.000	58.30	-14.05	44.25	74.00	-29.75
3		4349.000	57.34	-11.64	45.70	74.00	-28.30
4		4740.000	58.37	-10.74	47.63	74.00	-26.37
5		5488.000	58.31	-8.53	49.78	74.00	-24.22
6 *		5777.000	58.52	-8.02	50.50	74.00	-23.50

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

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** End of Report **

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