EMC Test Report

Report No.	:	TB14129680
Applicant	:	BIOMEDIS TECHNOLOGIES CO., LIMITED
Equipment Under Test (EUT)		
EUT Name	:	Device for generating modulated signals “BIOMEDIS”
Model No.	:	BM2
Brand Name	:	BIOMEDIS
Receipt Date	:	2014-12-09
Test Date	:	2014-12-09 to 2014-12-18
Issue Date	:	2014-12-22
Standards	:	EN 55022: 2010 EN 55024: 2010 EN 61000-3-2: 2006+A1: 2009+A2: 2009 EN 61000-3-3: 2008
Conclusions	:	**PASS** In the configuration tested, the EUT complied with the standards specified above. The EUT technically complies with the 2004/108/EC directive requirements
Test/Witness Engineer	:	
Approved & Authorized	:	

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 the report.

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1. General Information

1.1. Client Information

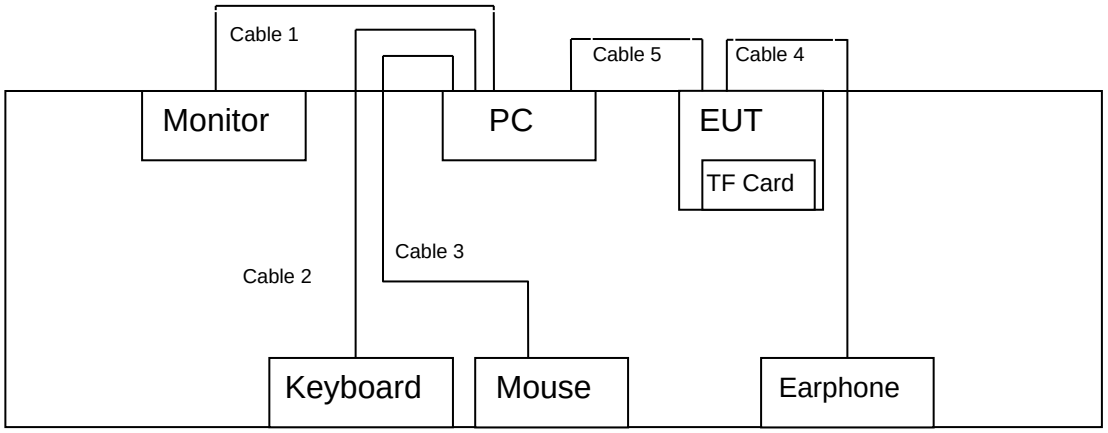
Applicant	:	BIOMEDIS TECHNOLOGIES CO., LIMITED
Address	:	UNIT E223, 3/F WING TAT COMM BLDG 97 BONHAM STRAND EAST SHEUNG WAN HONG KONG
Manufacturer	:	BIOMEDIS TECHNOLOGIES CO., LIMITED
Address	:	UNIT E223, 3/F WING TAT COMM BLDG 97 BONHAM STRAND EAST SHEUNG WAN HONG KONG

1.2. General Description of EUT (Equipment Under Test)

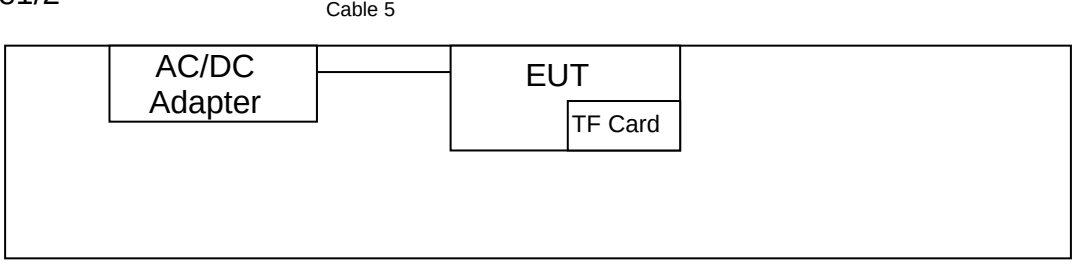
EUT Name	:	Device for generating modulated signals “BIOMEDIS”
Model No.	:	BM2
Model Difference	:	N/A
Power Supply	:	DC 5V by USB Cable from PC system. DC 3.7V by 1500mAh Li-ion Battery. Input: AC 100~240V, 50/60 Hz, 0.2A Max. Output: DC 5V 1.5A

1.3. Block Diagram Showing the Configuration of System Tested

Mode 3



Mode1/2



Control Room

Notebook

1.4. Description of Support Units

Equipment Information				
Name	**Model**	**S/N**	**Manufacturer**	**Used "√"**
Printer	HP1505n	VNF3G06957	HP	√
LCD Monitor	E170Sc	----	DELL	√
PC	OPTIPLEX380	----	DELL	√
Keyboard	L100	U01C	DELL	√
Mouse	M-UARDEL7	----	DELL	√
TF Card	1GB	----	Kingston	√
Notebook	B470A2450	VNF3G06957	Lenovo	√
Earphone	----	----	Apple	√
Cable Information				
Number	**Shielded Type**	**Ferrite Core**	**Length**	**Note**
Cable 1	YES	YES(2)	1.8M	
Cable 2	YES	YES(1)	2.0M	
Cable 3	YES	NO	1.5M	
Cable 4	YES	NO	1.5M	
Cable 5	YES	NO	0.8M	Accessories

1.5. Description of Test Mode

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	AC Charging with TF card Playing
Mode 2	AC Charging with Camera working
Mode 3	USB Loading with PC

The EUT system operated these modes were found to be the worst case during the pre-scanning test as Following:

For EMI Test	
Final Test Mode	**Description**
Mode 1	AC Charging with TF card Playing
Mode 2	AC Charging with Camera working
Mode 3	USB Loading with PC
For EMS Test	
Final Test Mode	**Description**
Mode 1	AC Charging with TF card Playing
Mode 2	AC Charging with Camera working
Mode 3	USB Loading with PC

1.6. Performance Criterion

Criterion A: The equipment shall continue to operate as intended without operator intervention. No degradation of performance of loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

Criterion B: After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended.

Criterion C: Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions.

1.7. Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)
The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

FCC List No.: (811562)
The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562.

IC Registration No.: (11950A-1)
The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.

May 22, 2014 certificated by TUV Rheinland(China) Co., Ltd. with TUV certificate No.: UA 50282953 0001 and report No.: 17026822 002. The certificate is valid until the next scheduled audit or up to 18 months, at the discretion of TUV Rhineland.

2. Test Results Summary

Test procedures according to the technical standards:

EMC Emission				
Standard	**Test Item**	**Limit**	**Judgment**	**Remark**
EN 55022: 2010	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	
EN 61000-3-2:2006+ A1:2009+A2:2009	Harmonic Current Emission	Class A or D NOTE(2)	PASS	**Class A**
EN 6000-3-3:2008	Voltage Fluctuations& Flicker		PASS	
EMC Immunity				
Section	**Test Item**	**Performance Criteria**	**Judgment**	**Remark**
EN 61000-4-2:2009	Electrostatic Discharge	B	PASS	
EN 61000-4-3:2006 +A1:2008+A2:2010	RF electromagnetic field	A	PASS	
EN 61000-4-4:2012	Fast transients	B	PASS	
EN 61000-4-5:2006	Surges	B	PASS	
EN 61000-4-6:2009	Injected Current	A	PASS	
EN 61000-4-8:2009	Magnetic Field Susceptibility	A		N/A(3)
EN 61000-4-11:2004	Volt. Interruptions Volt. Dips	B / C / C NOTE (4)	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

(2) The power consumption of EUT is less than 75W and no Limits apply.

(3) The EUT no containing devices susceptible to magnetic fields.

(4)Voltage dip: 100% reduction – Performance Criteria B

Voltage dip: 70% reduction – Performance Criteria C

Voltage Interruption: 0% Interruption – Performance Criteria C

3. Test Equipment Used

Conducted Emission Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Aug. 08, 2014	Aug.07, 2015
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Aug. 08, 2014	Aug.07, 2015
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Aug. 08, 2014	Aug.07, 2015
LISN	Rohde & Schwarz	ENV216	101131	Aug. 08, 2014	Aug.07, 2015
Radiation Emission Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Spectrum Analyzer	Agilent	E4407B	MY45106456	Mar. 20, 2014	Mar. 19, 2015
Spectrum Analyzer	Rohde & Schwarz	FSP30	DE25181	Aug. 08, 2014	Aug.07, 2015
EMI Test Receiver	Rohde & Schwarz	ESCI	101165	Aug. 08, 2014	Aug.07, 2015
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar. 07, 2014	Mar.06, 2015
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar. 07, 2014	Mar.06, 2015
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar. 07, 2014	Mar.06, 2015
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar. 07, 2014	Mar.06, 2015
Pre-amplifier	HP	11909A	185903	Mar. 07, 2014	Mar.06, 2015
Pre-amplifier	HP	8447B	3008A00849	Mar. 07, 2014	Mar.06, 2015
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar. 07, 2014	Mar.06, 2015
Signal Generator	Rohde & Schwarz	SML03	IKW682-054	Feb. 11, 2014	Feb.10, 2015
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Harmonic Current and Voltage Fluctuation and Flicker Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Harmonic Flicker Test System	CI	5001ix-CTS-400	100321	Aug. 08, 2014	Aug.07, 2015
5K VA	CI	500liX	59468	Aug. 08, 2014	Aug.07, 2015
Discharge Immunity Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
ESD Tester	TESEQ	NSG437	304	Aug. 08, 2014	Aug.07, 2015
ESD Generator	HAFELY	PESD 1610	H808671	Apr. 10, 2014	Aug. 09, 2015
Radiated Immunity Test					

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Signal Generator	Rohde & Schwarz	SMT03	200754	Feb. 26, 2014	Feb. 25, 2015
Power Meter	Rohde & Schwarz	NRVD	110562	Feb. 26, 2014	Feb. 25, 2015
Voltage Probe	Rohde & Schwarz	URV5-Z2	12056	Feb. 26, 2014	Feb. 25, 2015
Voltage Probe	Rohde & Schwarz	URV5-Z2	12074	Feb. 26, 2014	Feb. 25, 2015
RF Amplifier	AR	50S1G4A	326720	Feb. 26, 2014	Feb. 25, 2015
Bilog Antenna	ETS	3142C	00047662	Feb. 26, 2014	Feb. 25, 2015
Horn Antenna	ARA	DRG-118A	16554	Feb. 26, 2014	Feb. 25, 2015
Electrical Fast Transient/ Surge/ Voltage Dip and Interruption Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Simulator	EMTEST	UCS500N5	V0948105575	Aug. 08, 2014	Aug.07, 2015
Auto-transforme r	EMTEST	V4780S2	0109-41	Aug. 08, 2014	Aug.07, 2015
Coupling Clamp	EMTEST	HFK	1109-04	Aug. 08, 2014	Aug.07, 2015
Conducted Immunity Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
RF Generator	FRANKONIA	CIT-10/75	126B1126	Aug. 08, 2014	Aug.07, 2015
Attenuator	FRANKONIA	59-6-33	A413	Aug. 08, 2014	Aug.07, 2015
M-CDN	LUTHI	L-801 M2/M3	2599	Aug. 08, 2014	Aug.07, 2015
AF2-CDN	LUTHI	L-801:AF2	2538	Aug. 08, 2014	Aug.07, 2015
EM Injection Clamp	LUTHI	EM101	35958	Aug. 08, 2014	Aug.07, 2015
Power-frequency Magnetic Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Power Frequency Magnetic Field Generator	EVERFINE	EMS61000-8K	EV008030	Mar. 20, 2014	Mar. 19, 2015

4. Conducted Emission Test

4.1. Test Standard and Limit

4.1.1. Test Standard

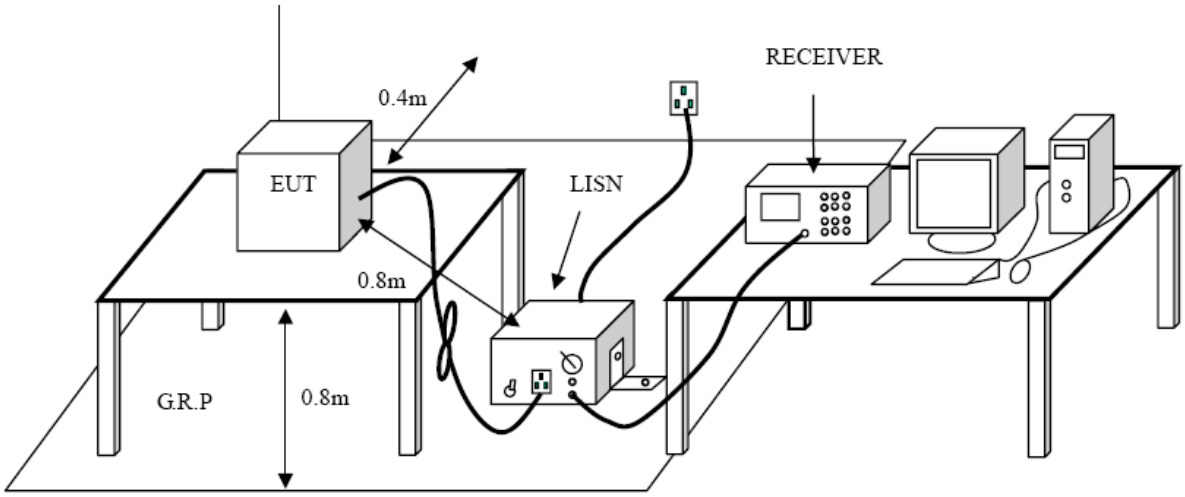
EN 55022:2010.

4.1.2. Test Limit

Conducted Disturbance Test Limit (Class B)

Frequency	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

4.2. Test Setup



4.3. Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis.
The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

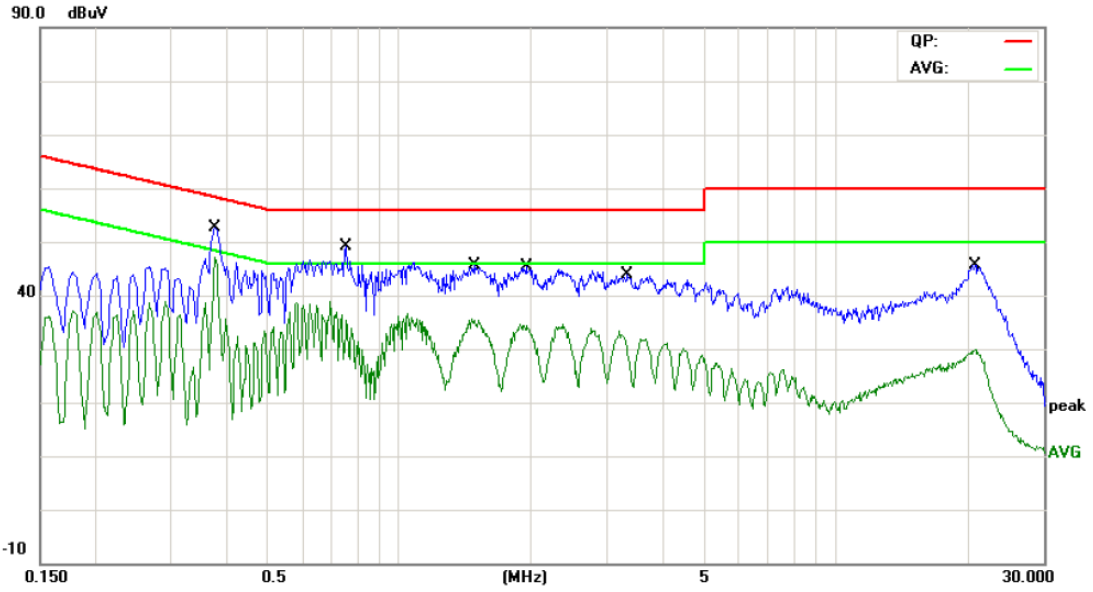
4.4. Test Condition

Temperature	:	25 ℃
Relative Humidity	:	48 %
Pressure	:	1010 hPa
Test Power	:	AC 230V/50Hz

4.5. Test Data

Please refer to the following pages.

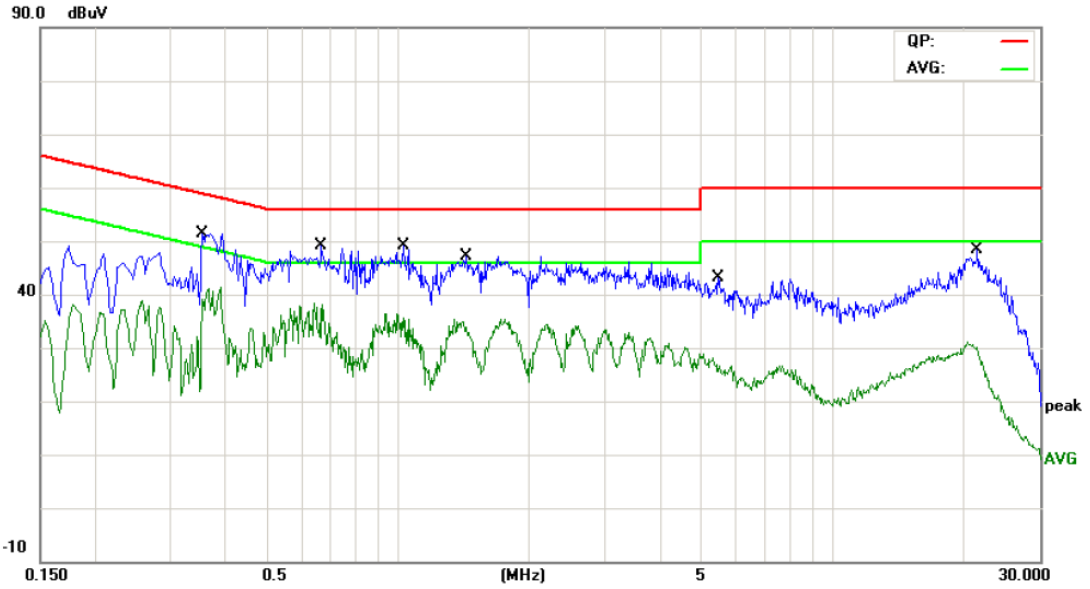
EUT:	Device for generating modulated signals “BIOMEDIS”	**Model Name :**	BM2
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	AC 230V/50 Hz		
Terminal:	Line		
Test Mode:	Mode1:AC Charging with TF card Playing		
Remark:	Only report the worst case.		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.3780	41.30	10.02	51.32	58.32	-7.00	QP
2	*	0.3780	35.67	10.02	45.69	48.32	-2.63	AVG
3		0.7580	37.07	10.11	47.18	56.00	-8.82	QP
4		0.7580	25.27	10.11	35.38	46.00	-10.62	AVG
5		1.4860	35.15	10.06	45.21	56.00	-10.79	QP
6		1.4860	22.84	10.06	32.90	46.00	-13.10	AVG
7		1.9580	32.23	10.06	42.29	56.00	-13.71	QP
8		1.9580	19.33	10.06	29.39	46.00	-16.61	AVG
9		3.3300	31.68	10.02	41.70	56.00	-14.30	QP
10		3.3300	22.54	10.02	32.56	46.00	-13.44	AVG
11		20.8860	29.37	10.16	39.53	60.00	-20.47	QP
12		20.8860	19.10	10.16	29.26	50.00	-20.74	AVG

Emission Level= Read Level+ Correct Factor

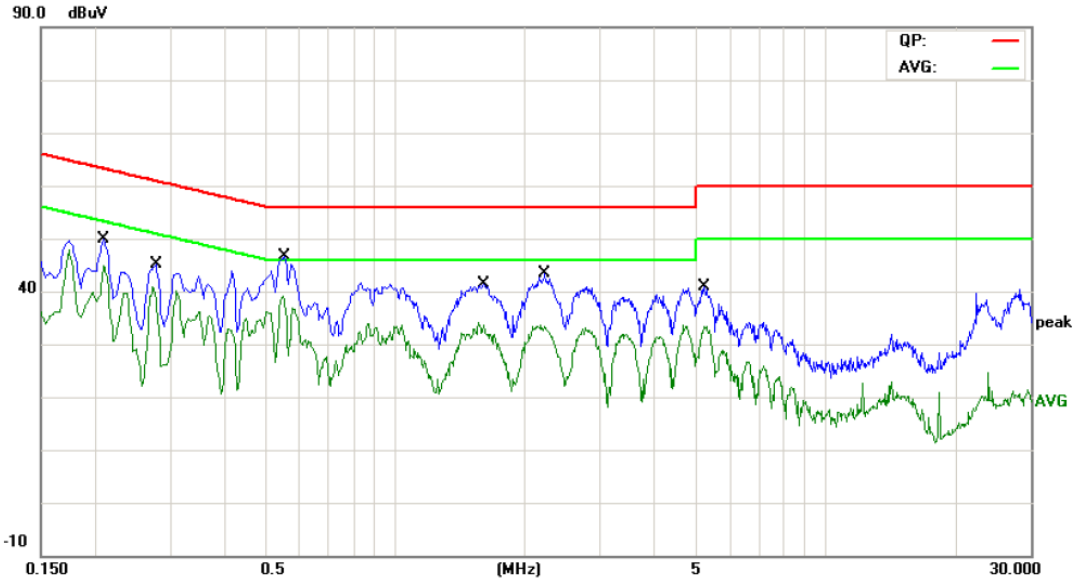
EUT:	Device for generating modulated signals “BIOMEDIS”	**Model Name :**	BM2
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	AC 230V/50 Hz		
Terminal:	Neutral		
Test Mode:	Mode1:AC Charging with TF card Playing		
Remark:	Only report the worst case.		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.3540	36.29	10.02	46.31	58.87	-12.56	QP
2		0.3540	24.04	10.02	34.06	48.87	-14.81	AVG
3	*	0.6660	34.54	10.10	44.64	56.00	-11.36	QP
4		0.6660	23.49	10.10	33.59	46.00	-12.41	AVG
5		1.0300	33.80	10.06	43.86	56.00	-12.14	QP
6		1.0300	23.90	10.06	33.96	46.00	-12.04	AVG
7		1.4340	32.70	10.06	42.76	56.00	-13.24	QP
8		1.4340	23.46	10.06	33.52	46.00	-12.48	AVG
9		5.4660	24.88	9.98	34.86	60.00	-25.14	QP
10		5.4660	14.99	9.98	24.97	50.00	-25.03	AVG
11		21.5660	28.95	10.16	39.11	60.00	-20.89	QP
12		21.5660	17.44	10.16	27.60	50.00	-22.40	AVG

Emission Level= Read Level+ Correct Factor

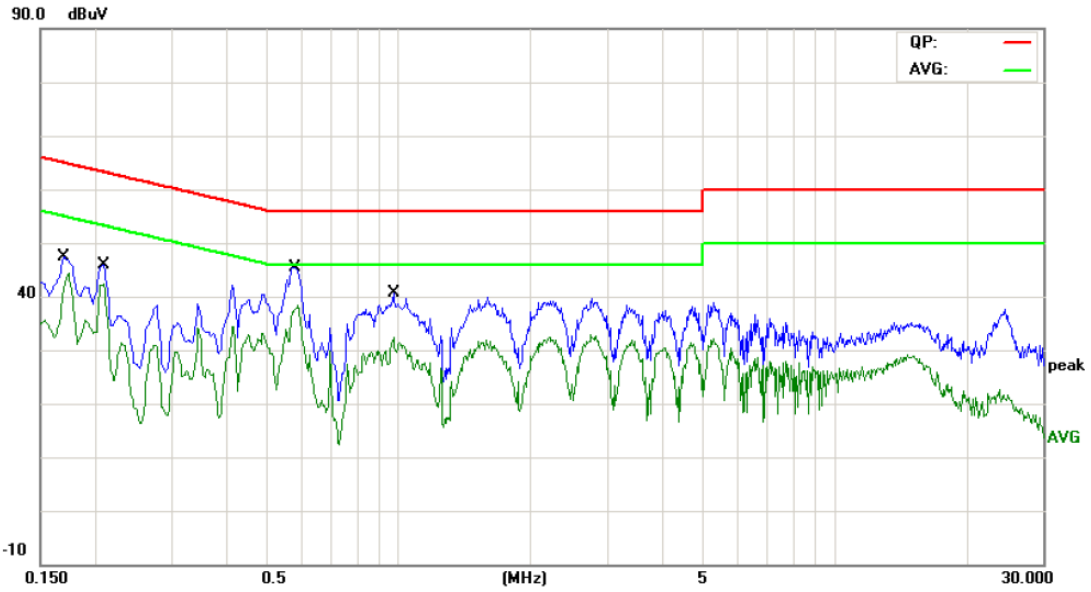
EUT:	Device for generating modulated signals “BIOMEDIS”	**Model Name :**	BM2
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	AC 230V/50 Hz		
Terminal:	Line		
Test Mode:	Mode3:USB Charging with Loading data		
Remark:	Only report the worst case.		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.2100	38.12	10.02	48.14	63.20	-15.06	QP
2		0.2100	34.83	10.02	44.85	53.20	-8.35	AVG
3		0.2779	33.77	10.02	43.79	60.88	-17.09	QP
4		0.2779	27.55	10.02	37.57	50.88	-13.31	AVG
5		0.5540	36.11	10.05	46.16	56.00	-9.84	QP
6	*	0.5540	28.06	10.05	38.11	46.00	-7.89	AVG
7		1.6060	29.21	10.06	39.27	56.00	-16.73	QP
8		1.6060	22.92	10.06	32.98	46.00	-13.02	AVG
9		2.2260	28.09	10.05	38.14	56.00	-17.86	QP
10		2.2260	22.96	10.05	33.01	46.00	-12.99	AVG
11		5.2420	26.03	9.97	36.00	60.00	-24.00	QP
12		5.2420	22.77	9.97	32.74	50.00	-17.26	AVG

Emission Level= Read Level+ Correct Factor

EUT:	Device for generating modulated signals “BIOMEDIS”	**Model Name :**	BM2
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	AC 230V/50 Hz		
Terminal:	Neutral		
Test Mode:	Mode3:USB Charging with Loading data		
Remark:	Only report the worst case.		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1700	36.19	10.12	46.31	64.96	-18.65	QP
2		0.1700	32.81	10.12	42.93	54.96	-12.03	AVG
3		0.2100	34.27	10.12	44.39	63.20	-18.81	QP
4		0.2100	31.64	10.12	41.76	53.20	-11.44	AVG
5		0.5780	34.69	10.02	44.71	56.00	-11.29	QP
6	*	0.5780	27.28	10.02	37.30	46.00	-8.70	AVG
7		0.9700	28.24	10.15	38.39	56.00	-17.61	QP
8		0.9700	22.26	10.15	32.41	46.00	-13.59	AVG

Emission Level= Read Level+ Correct Factor

5. Radiated Emission Test

5.1 Test Standard and Limit

5.1.1. Test Standard

EN 55022:2010

5.1.2. Test Limit

Bellow 1GHz

Frequency	Limit (dBμV/m) (3m)	
	Quasi-peak Level	
	Class A	Class B
30MHz~230MHz	50	40
230MHz~1000MHz	57	47
Remark: 1. The lower limit shall apply at the transition frequency. 2. The test distance is 3m.		

Above 1GHz

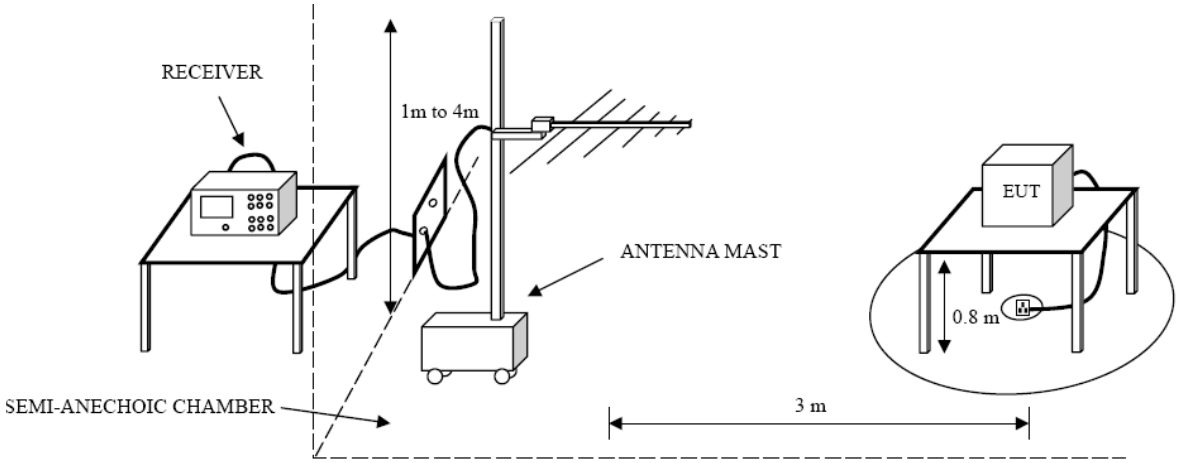
Frequency (GHz)	Limit (dBμV/m) (3m)			
	Class A		Class B	
	Peak	Average	Peak	Average
1~3	76	56	70	50
3~6	80	60	74	54
Remark: 1. The lower limit shall apply at the transition frequency. 2. The test distance is 3m.				

Note: According to EN 55022: 2010 Clause 6.2: Conditional testing procedure, the measurement frequency range shown in the following table:

Highest frequency generated or used within the EUT or on which the EUT operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Less than 108	1000
108~500	2000
500~1000	5000
Above 1000	5 times of the highest frequency or 6GHz, whichever is less

Remark: The EUT maximum operating frequency is higher than 108MHz, so requirement for the radiated disturbance for above 1GHz.

5.2 Test Setup



5.3 Test Procedure

The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m. The table was rotated 360 degrees to determine the position of the highest radiation.
The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

The initial step in collecting radiated emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range.

If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.

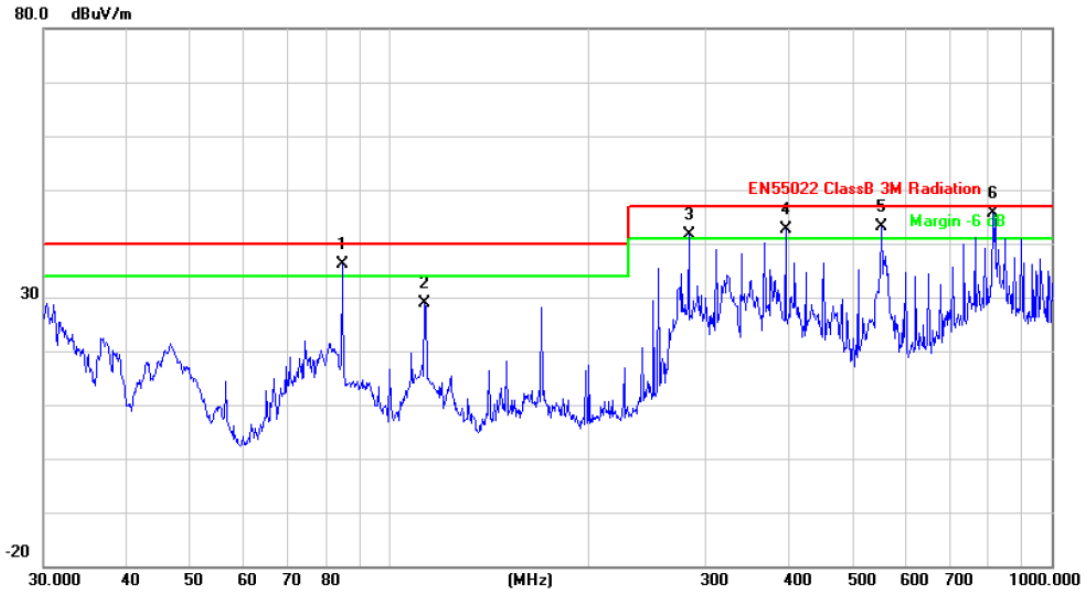
5.4 Test Condition

Temperature	:	25 ℃
Relative Humidity	:	48 %
Pressure	:	1010 hPa
Test Power	:	AC 230V/50Hz

5.5 Test Data

Please refer to the following pages.

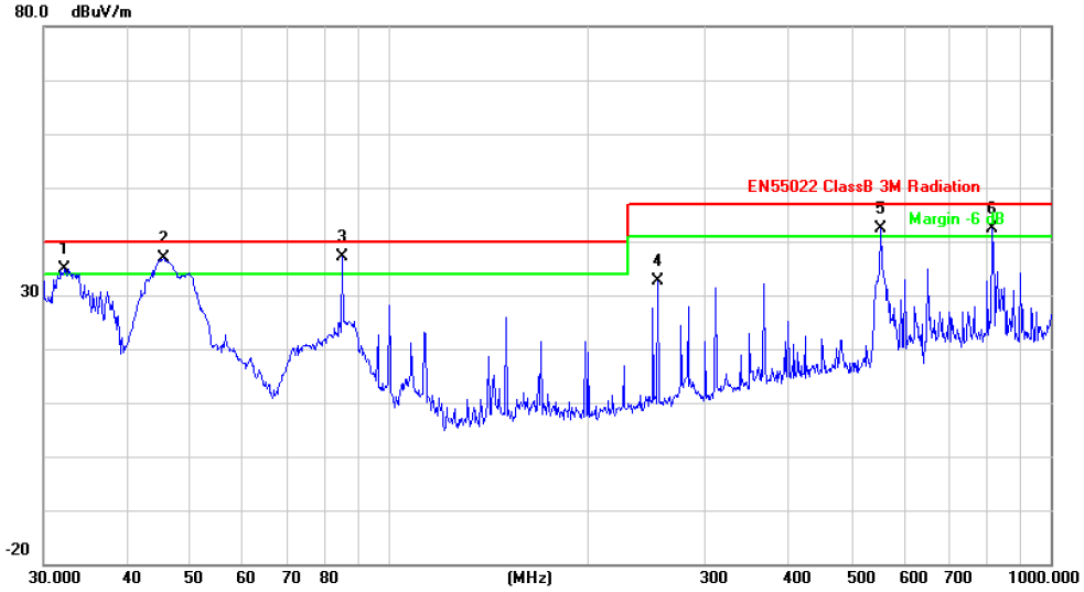
EUT:	Device for generating modulated signals “BIOMEDIS”	**Model Name :**	BM2
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	AC 230V/50 Hz		
Ant. Pol.	Horizontal		
Test Mode:	Mode 1: AC Charging with TF card Playing		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	!	84.7018	59.14	-23.01	36.13	40.00	-3.87	peak
2		112.9196	50.97	-22.06	28.91	40.00	-11.09	peak
3	!	282.9852	59.04	-17.42	41.62	47.00	-5.38	peak
4	!	396.2414	55.72	-13.05	42.67	47.00	-4.33	peak
5	!	552.8832	53.27	-10.13	43.14	47.00	-3.86	peak
6	*	815.9678	51.96	-6.37	45.59	47.00	-1.41	peak

Emission Level= Read Level+ Correct Factor

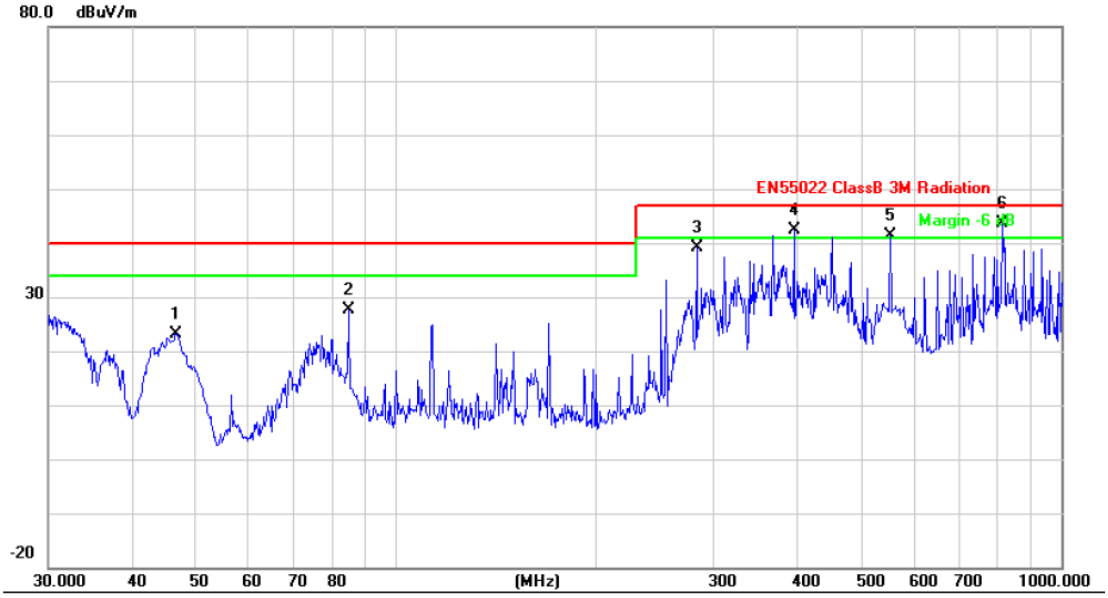
EUT:	Device for generating modulated signals “BIOMEDIS”	**Model Name :**	BM2
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	AC 230V/50 Hz		
Ant. Pol.	Vertical		
Test Mode:	Mode 1: AC Charging with TF card Playing		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	!	32.2924	50.23	-15.38	34.85	40.00	-5.15	peak
2	!	45.5347	59.49	-22.51	36.98	40.00	-3.02	peak
3	*	84.7018	60.02	-23.01	37.01	40.00	-2.99	peak
4		254.7283	50.54	-18.02	32.52	47.00	-14.48	peak
5	!	552.8832	52.53	-10.13	42.40	47.00	-4.60	peak
6	!	815.9678	48.78	-6.37	42.41	47.00	-4.59	peak

Emission Level= Read Level+ Correct Factor

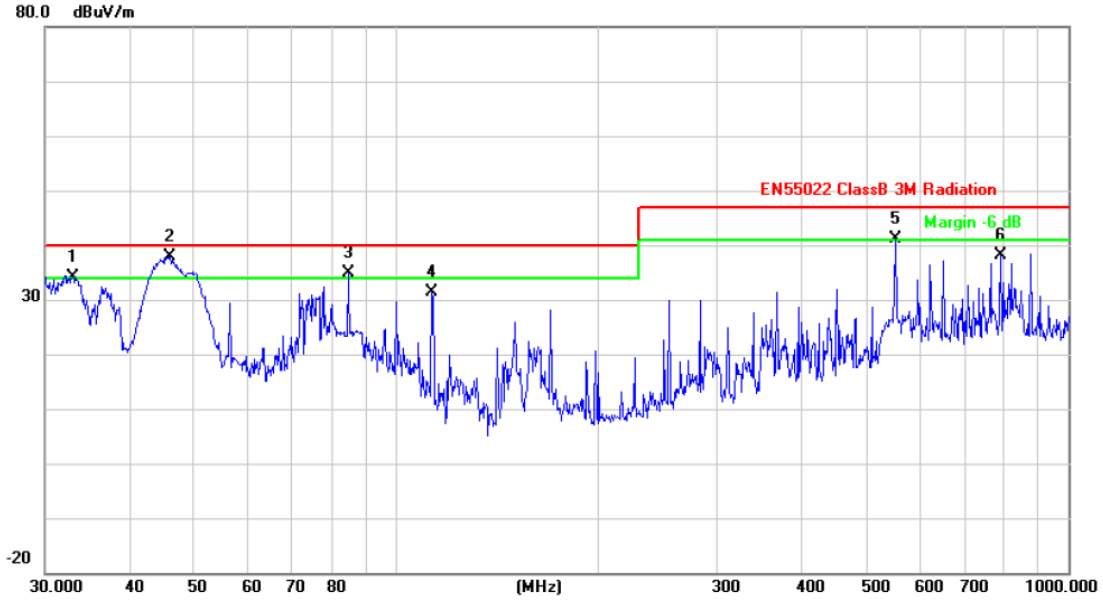
EUT:	Device for generating modulated signals “BIOMEDIS”	Model Name :	BM2
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 230V/50 Hz		
Ant. Pol.	Horizontal		
Test Mode:	Mode 2: AC Charging with Camera working		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		46.6664	46.24	-22.99	23.25	40.00	-16.75	peak
2		84.7018	50.55	-23.01	27.54	40.00	-12.46	peak
3		282.9852	56.55	-17.42	39.13	47.00	-7.87	peak
4	!	396.2414	55.55	-13.05	42.50	47.00	-4.50	peak
5	!	552.8832	51.43	-10.13	41.30	47.00	-5.70	peak
6	*	815.9678	49.88	-6.37	43.51	47.00	-3.49	peak

Emission Level= Read Level+ Correct Factor

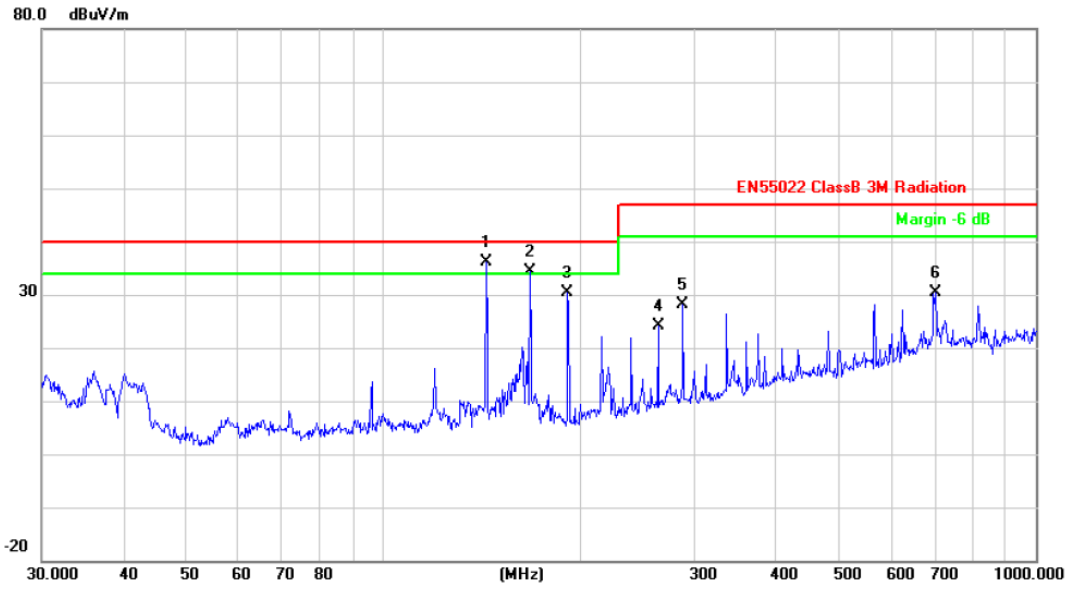
EUT:	Device for generating modulated signals “BIOMEDIS”	**Model Name :**	BM2
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	AC 230V/50 Hz		
Ant. Pol.	Vertical		
Test Mode:	Mode 2: AC Charging with Camera working		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	!	32.9791	50.03	-15.80	34.23	40.00	-5.77	peak
2	*	46.0162	60.70	-22.71	37.99	40.00	-2.01	peak
3	!	84.7018	57.89	-23.01	34.88	40.00	-5.12	peak
4		112.9196	53.37	-22.06	31.31	40.00	-8.69	peak
5	!	552.8832	51.30	-10.13	41.17	47.00	-5.83	peak
6		793.3958	44.81	-6.57	38.24	47.00	-8.76	peak

Emission Level= Read Level+ Correct Factor

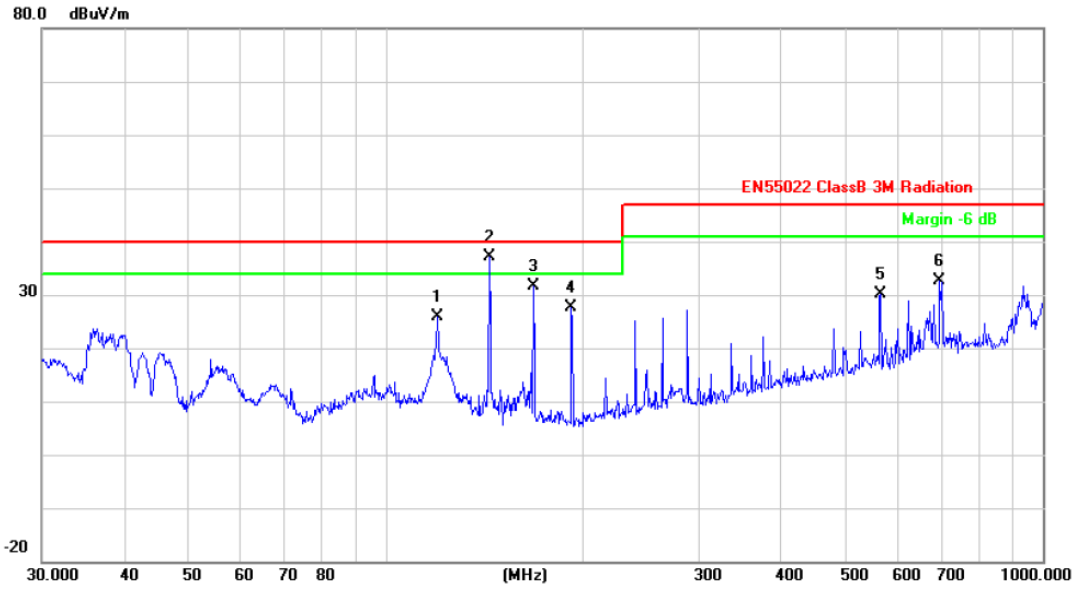
EUT:	Device for generating modulated signals “BIOMEDIS”	Model Name :	BM2
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 230V/50 Hz		
Ant. Pol.	Horizontal		
Test Mode:	Mode 3: USB Loading with PC		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	143.8295	57.72	-21.67	36.05	40.00	-3.95	peak
2	!	167.8243	55.30	-21.04	34.26	40.00	-5.74	peak
3		191.7450	51.10	-20.81	30.29	40.00	-9.71	peak
4		263.8190	41.98	-17.82	24.16	47.00	-22.84	peak
5		287.9904	45.47	-17.32	28.15	47.00	-18.85	peak
6		701.7610	37.16	-6.88	30.28	47.00	-16.72	peak

Emission Level= Read Level+ Correct Factor

EUT:	Device for generating modulated signals “BIOMEDIS”	**Model Name :**	BM2
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	AC 230V/50 Hz		
Ant. Pol.	Vertical		
Test Mode:	Mode 3: USB Loading with PC		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		119.8556	48.36	-22.50	25.86	40.00	-14.14	peak
2	*	143.8295	58.69	-21.67	37.02	40.00	-2.98	peak
3		167.8243	52.65	-21.04	31.61	40.00	-8.39	peak
4		191.7450	48.35	-20.81	27.54	40.00	-12.46	peak
5		566.6223	40.19	-10.12	30.07	47.00	-16.93	peak
6		696.8567	39.67	-6.95	32.72	47.00	-14.28	peak

Emission Level= Read Level+ Correct Factor

6. Harmonic Current Emission Test

6.1 Test Standard and Limit

6.1.1. Test Standard

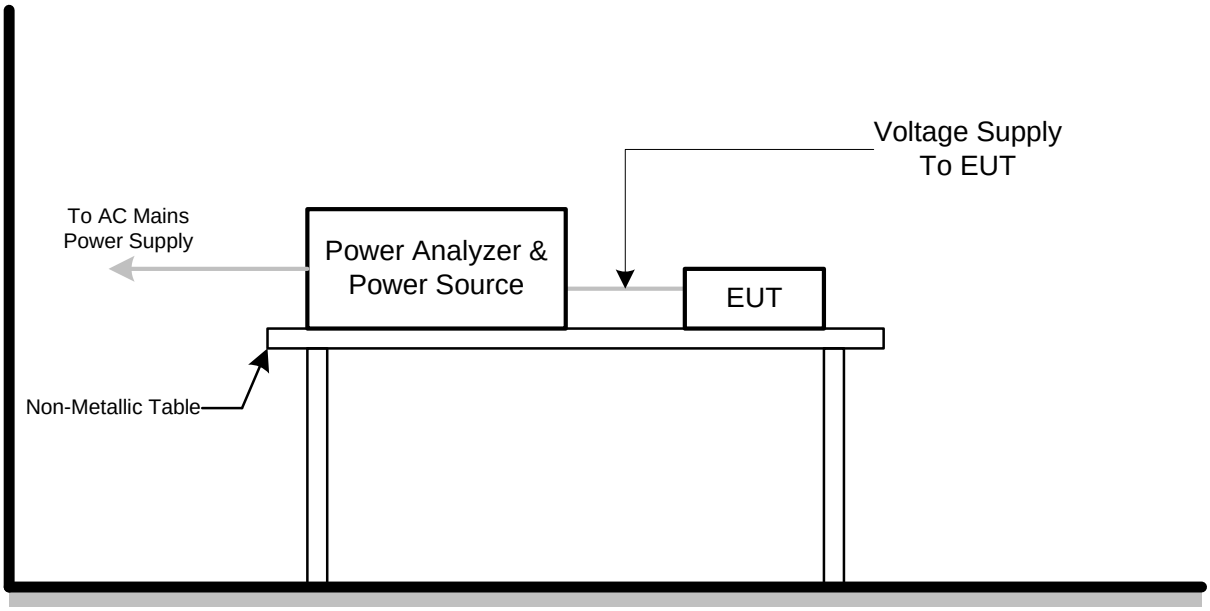
EN 61000-3-2:2006+A1: 2009+A2:2009

6.1.2. Limits

Harmonic Current Test Limit (Class D)

Harmonic order (n)	Maximum permissible harmonic current per watt (mA/W)	Maximum permissible harmonic current (A)
3	3.4	2.30
5	1.9	1.14
7	1.0	0.77
9	0.5	0.40
11	0.35	0.33
13≤n≤39 (odd harmonics only)	3.85/n	0.15×15/n

6.2 Test Setup



6.3 Test Procedure

The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the maximum harmonic components under normal operating conditions.

The classification of EUT is according to section 5 of EN 61000-3-2: 2006.The EUT is classified as follows:

Class A: Balanced three-phase equipment, Household appliances excluding equipment as Class D, Tools excluding portable tools, Dimmers for incandescent lamps, audio equipment, equipment not specified in one of the three other classes.

Class B: Portable tools. Arc welding equipment which is not professional equipment.

Class C: Lighting equipment.

Class D: Equipment having a specified power less than or equal to600 W of the following types: Personal computers and personal computer monitors and television receivers.

6.4 Test Condition

Temperature	:	25 ℃
Relative Humidity	:	48 %
Pressure	:	1010 hPa
Test Power	:	AC 230V/50Hz

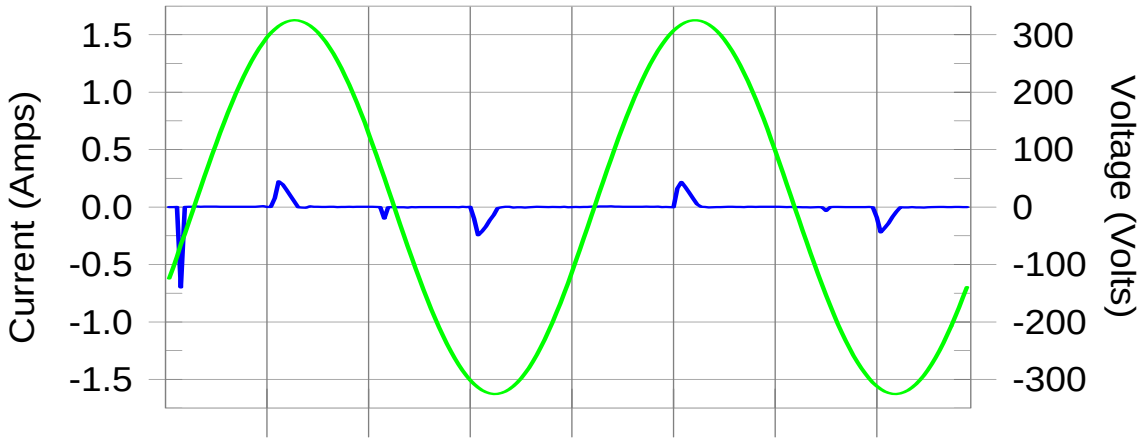
6.5 Test Data

Harmonics – Class-A per Ed. 3.0 (2006)(Run time)

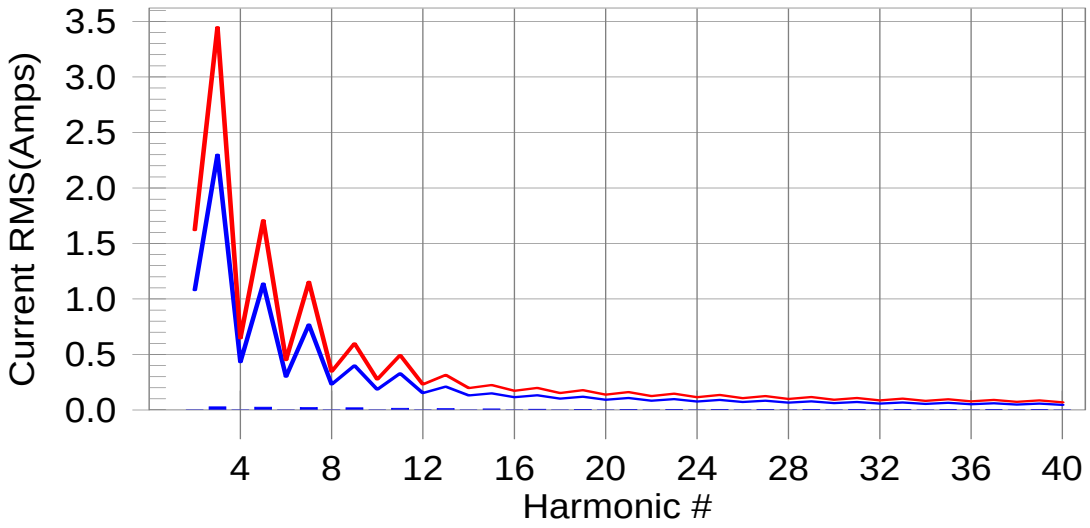
EUT: Device for generating modulated signals "BIOMEDIS" Tested by: toby
Test category: Class-A per Ed. 3.0 (2006) (European limits) Test Margin: 100
Test date: 2014-12-10 Start time: 16:59:15 End time: 17:09:37
Test duration (min): 10 Data file name: H-000106.cts_data
Comment: BM2
Customer: Customer

Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line **European Limits**



Test result: Pass Worst harmonic was #15 with 6.26% of the limit.

Current Test Result Summary (Run time)

EUT: Device for generating modulated signals “BIOMEDIS” Tested by: toby
Test category: Class-A per Ed. 3.0 (2006) (European limits) Test Margin: 100
Test date: 2014-12-10 Start time: 16:59:15 End time: 17:09:37
Test duration (min): 10 Data file name: H-000106.cts_data
Comment: BM2
Customer: Customer

Test Result: Pass Source qualification: Normal
THC(A): 0.05 I-THD(%): 191.40 POHC(A): 0.000 POHC Limit(A): 0.320
Highest parameter values during test:

V_RMS (Volts):	230.23	Frequency(Hz):	50.00
I_Peak (Amps):	1.211	I_RMS (Amps):	0.067
I_Fund (Amps):	0.029	Crest Factor:	20.397
Power (Watts):	6.5	Power Factor:	0.465

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	0.0	0.001	1.620	0.07	Pass
3	0.026	2.300	1.1	0.028	3.450	0.81	Pass
4	0.001	0.430	0.0	0.001	0.645	0.14	Pass
5	0.024	1.140	2.1	0.026	1.710	1.50	Pass
6	0.000	0.300	0.0	0.001	0.450	0.13	Pass
7	0.022	0.770	2.8	0.023	1.155	1.99	Pass
8	0.000	0.230	0.0	0.000	0.345	0.14	Pass
9	0.019	0.400	4.6	0.020	0.600	3.25	Pass
10	0.000	0.184	0.0	0.000	0.276	0.18	Pass
11	0.015	0.330	4.7	0.016	0.495	3.24	Pass
12	0.000	0.153	0.0	0.000	0.230	0.21	Pass
13	0.012	0.210	5.8	0.013	0.315	3.99	Pass
14	0.000	0.131	0.0	0.000	0.197	0.24	Pass
15	0.009	0.150	6.3	0.010	0.225	4.26	Pass
16	0.000	0.115	0.0	0.000	0.173	0.25	Pass
17	0.007	0.132	5.4	0.007	0.199	3.64	Pass
18	0.000	0.102	0.0	0.000	0.153	0.27	Pass
19	0.005	0.118	4.6	0.006	0.178	3.22	Pass
20	0.000	0.092	0.0	0.000	0.138	0.29	Pass
21	0.005	0.107	4.4	0.005	0.161	3.16	Pass
22	0.000	0.084	0.0	0.000	0.125	0.29	Pass
23	0.005	0.098	0.0	0.005	0.147	3.36	Pass
24	0.000	0.077	0.0	0.000	0.115	0.31	Pass
25	0.004	0.090	0.0	0.005	0.135	3.55	Pass
26	0.000	0.071	0.0	0.000	0.106	0.35	Pass
27	0.004	0.083	0.0	0.004	0.125	3.57	Pass
28	0.000	0.066	0.0	0.000	0.099	0.37	Pass
29	0.004	0.078	0.0	0.004	0.116	3.41	Pass
30	0.000	0.061	0.0	0.000	0.092	0.39	Pass
31	0.003	0.073	0.0	0.003	0.109	3.08	Pass
32	0.000	0.058	0.0	0.000	0.086	0.39	Pass
33	0.003	0.068	0.0	0.003	0.102	2.76	Pass
34	0.000	0.054	0.0	0.000	0.081	0.37	Pass
35	0.002	0.064	0.0	0.002	0.096	2.48	Pass
36	0.000	0.051	0.0	0.000	0.077	0.36	Pass
37	0.002	0.061	0.0	0.002	0.091	2.36	Pass
38	0.000	0.048	0.0	0.000	0.073	0.36	Pass
39	0.002	0.058	0.0	0.002	0.087	2.40	Pass
40	0.000	0.046	0.0	0.000	0.069	0.39	Pass

Voltage Source Verification Data (Run time)

EUT: Device for generating modulated signals "BIOMEDIS" Tested by: toby
Test category: Class-A per Ed. 3.0 (2006) (European limits) Test Margin: 100
Test date: 2014-12-10 Start time: 16:59:15 End time: 17:09:37
Test duration (min): 10 Data file name: H-000106.cts_data
Comment: BM2
Customer: Customer

Test Result: Pass Source qualification: Normal

Highest parameter values during test:

Voltage (Vrms):	230.23	Frequency(Hz):	50.00
I_Peak (Amps):	1.211	I_RMS (Amps):	0.067
I_Fund (Amps):	0.029	Crest Factor:	20.397
Power (Watts):	6.5	Power Factor:	0.465

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.065	0.460	14.17	OK
3	0.543	2.072	26.20	OK
4	0.051	0.460	11.10	OK
5	0.057	0.921	6.23	OK
6	0.022	0.460	4.76	OK
7	0.035	0.690	5.12	OK
8	0.007	0.460	1.57	OK
9	0.032	0.460	6.86	OK
10	0.012	0.460	2.66	OK
11	0.018	0.230	7.97	OK
12	0.010	0.230	4.21	OK
13	0.012	0.230	5.34	OK
14	0.005	0.230	2.19	OK
15	0.012	0.230	5.21	OK
16	0.008	0.230	3.28	OK
17	0.010	0.230	4.34	OK
18	0.008	0.230	3.61	OK
19	0.008	0.230	3.36	OK
20	0.009	0.230	4.09	OK
21	0.007	0.230	2.92	OK
22	0.003	0.230	1.47	OK
23	0.005	0.230	2.34	OK
24	0.003	0.230	1.34	OK
25	0.007	0.230	3.20	OK
26	0.002	0.230	1.01	OK
27	0.006	0.230	2.60	OK
28	0.003	0.230	1.11	OK
29	0.009	0.230	4.05	OK
30	0.003	0.230	1.22	OK
31	0.007	0.230	3.05	OK
32	0.002	0.230	1.02	OK
33	0.007	0.230	2.83	OK
34	0.002	0.230	0.98	OK
35	0.005	0.230	2.22	OK
36	0.002	0.230	0.83	OK
37	0.006	0.230	2.69	OK
38	0.002	0.230	0.77	OK
39	0.004	0.230	1.65	OK
40	0.005	0.230	1.98	OK

7 Voltage Fluctuation and Flicker Test

7.1 Test Standard and Limit

7.1.1. Test Standard

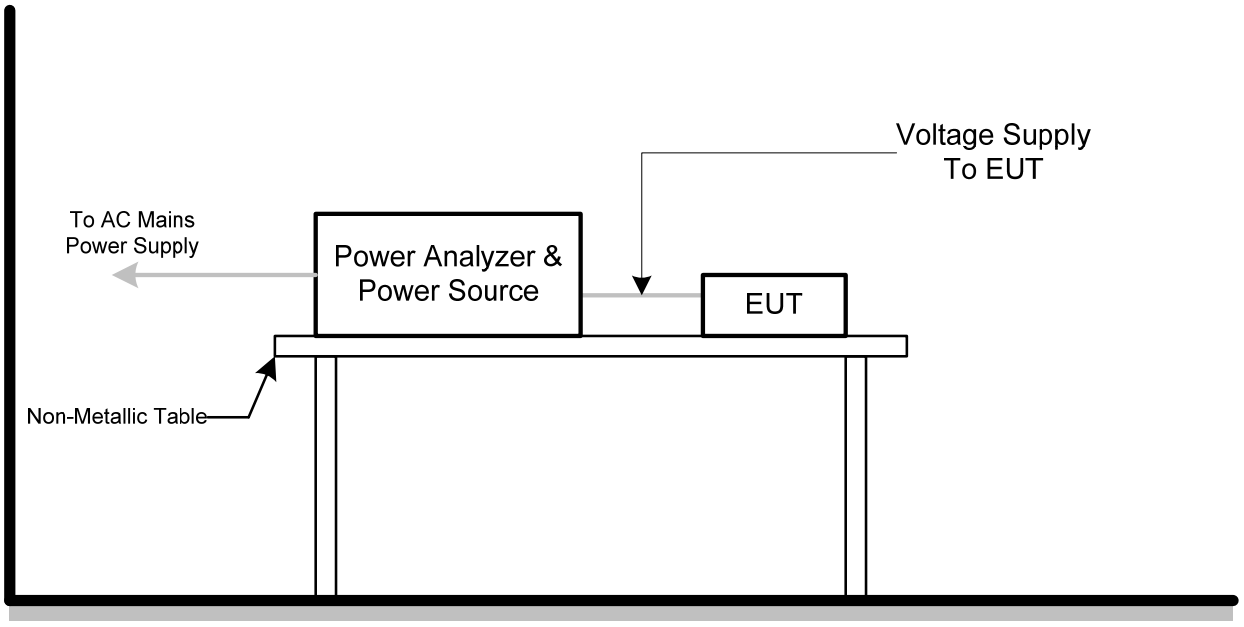
EN 61000-3-3:2008

7.1.2. Limit

Voltage Fluctuation and Flicker Test Limit

Test Items	Limits
Pst	1.0
dc	3.3%
dmax	4.0%
dt	Not exceed 3.3% for 500ms

7.2 Test Setup



7.3 Test Procedure

7.3.1 Harmonic Current Test

Test was performed according to the procedures specified in Clause 5.0 of IEC555-2 and/or Sub-clause 6.2 of IEC/EN 61000-3-2 depend on which standard adopted for compliance measurement.

7.3.2 Fluctuation and Flickers Test:

Tests was performed according to the Test Conditions/Assessment of Voltage Fluctuations specified in Clause 5.0/6.0 of IEC555-3 and/or Clause 6.0/4.0 of IEC/EN 61000-3-3 depend on which standard adopted for compliance measurement.

All types of harmonic current and/or voltage fluctuation in this report are assessed by direct measurement using flicker-meter.

For the actual test configuration, please refer to the related Item –Block Diagram of system tested (please refer to 1.3).

7.3 Test Condition

Temperature	:	25 ℃
Relative Humidity	:	48 %
Pressure	:	1010 hPa
Test Power	:	AC 230V/50Hz

7.4 Test Data

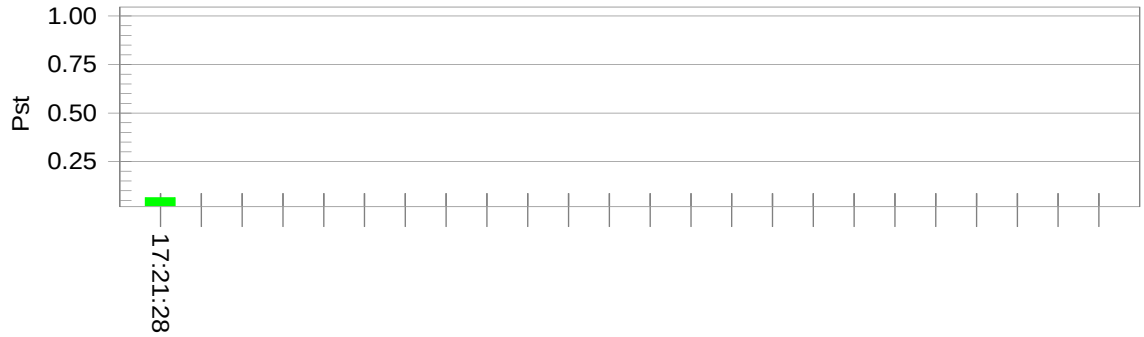
Please refer to the following pages.

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

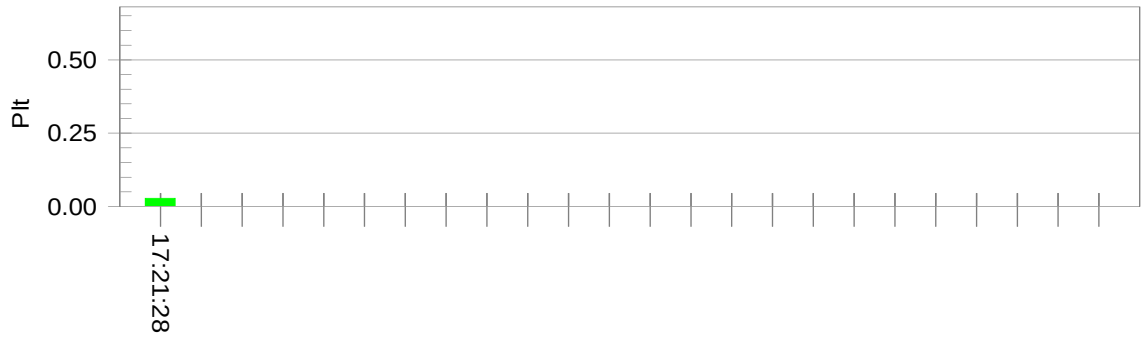
EUT: Device for generating modulated signals "BIOMEDIS" Tested by: TOBY
Test category: All parameters (European limits) Test Margin: 100
Test date: 2014-12-10 Start time: 17:11:08 End time: 17:21:29
Test duration (min): 10 Data file name: F-000107.cts_data
Comment: BM2
Customer: Customer

Test Result: Pass Status: Test Completed

Pst_i and limit line **European Limits**



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	**230.26**			
Highest dt (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Time(mS) > dt:	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.064**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.028**	**Test limit:**	**0.650**	**Pass**

8 Electrostatic Discharge Immunity Test

8.1 Test Requirements

8.1.1 Test Standard

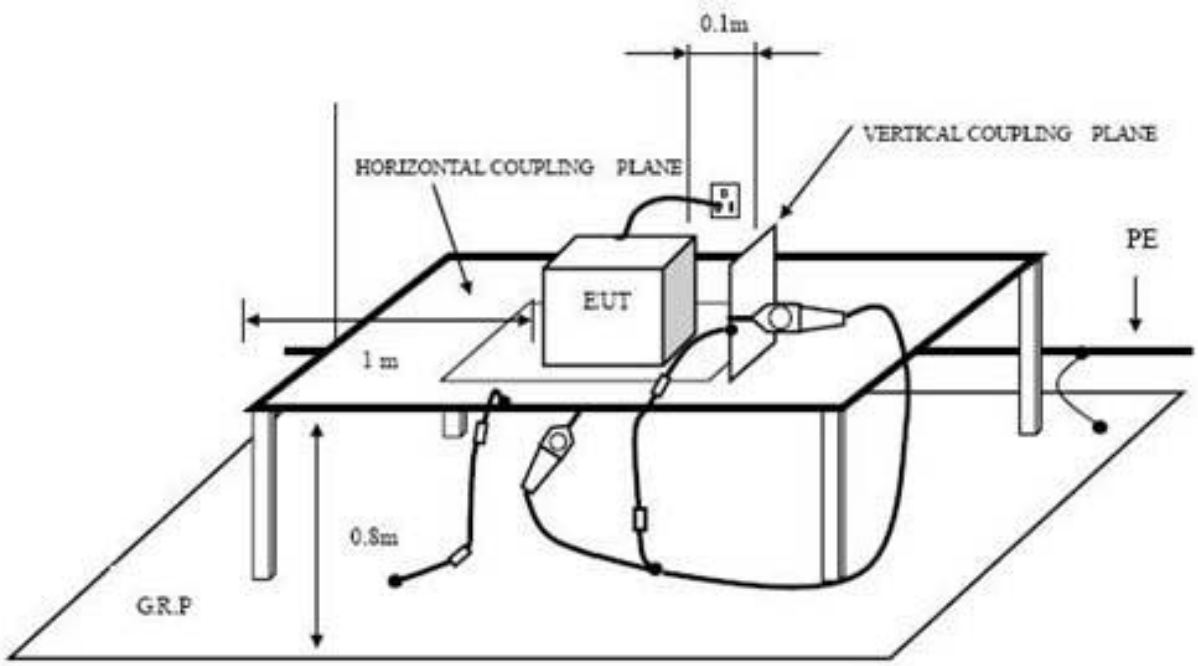
EN 55024:2010 (EN 61000-4-2:2009)

8.1.2 Test Level

Characteristics	Test Levels
Air Discharge	±8 kV
Contact Discharge	±4 kV

8.1.3 Performance criterion: **B**

8.2 Test Setup



INDIRECT DISCHARGE SETUP

8.3 Test Procedure

8.3.1 Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for

each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

8.3.2 Contact Discharge:

All the procedure shall be same as air discharge. Except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

8.3.3 Indirect discharge for horizontal coupling plane

At least 10 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

8.3.4 Indirect discharge for vertical coupling plane

At least 10 single discharges (in the most sensitive polarity) shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

8.4 Test Data

Please refer to the following pages.

Electrostatic Discharge Test Result

EUT	:	Device for generating modulated signals “BIOMEDIS”	M/N	:	BM2
Temperature	:	25℃	Humidity	:	50%
Power supply	:	AC 230V/50Hz	Test Mode	:	Mode 1/2/3

Required Performance Criteria: B

Air Discharge: ±2/±4/±8kV Contact Discharge: ±2/±4kV

Air/Contac Discharge: For each point positive 10 times and negative 10 times discharge.

Air/Contac Discharge: For each point positive 25 times and negative 25 times discharge.

Location	**Kind** A:Air Discharge C:Contact Discharge	**Actual Performance Criteria**	**Judgment**
Slot of the EUT	A	**A**	**PASS**
Power Port	A	**A**	**PASS**
TF Card Port	A	**A**	**PASS**
USB Port	A	**B**	**PASS**
Camera	A	**A**	**PASS**
Button	A	**A**	**PASS**
HCP	C	**A**	**PASS**
VCP of front	C	**A**	**PASS**
VCP of rear	C	**A**	**PASS**
VCP of left	C	**A**	**PASS**
VCP of right	C	**A**	**PASS**

Remark:

1) Criteria A: There was no change operated with initial operating during the test.
2) Criteria B: The EUT function loss during the test, but self-recoverable after the test.
3) Criteria C: The system shut down during the test.

9 Radiated Electromagnetic Field Immunity Test

9.1 Test Requirements

9.1.1. Test Standard

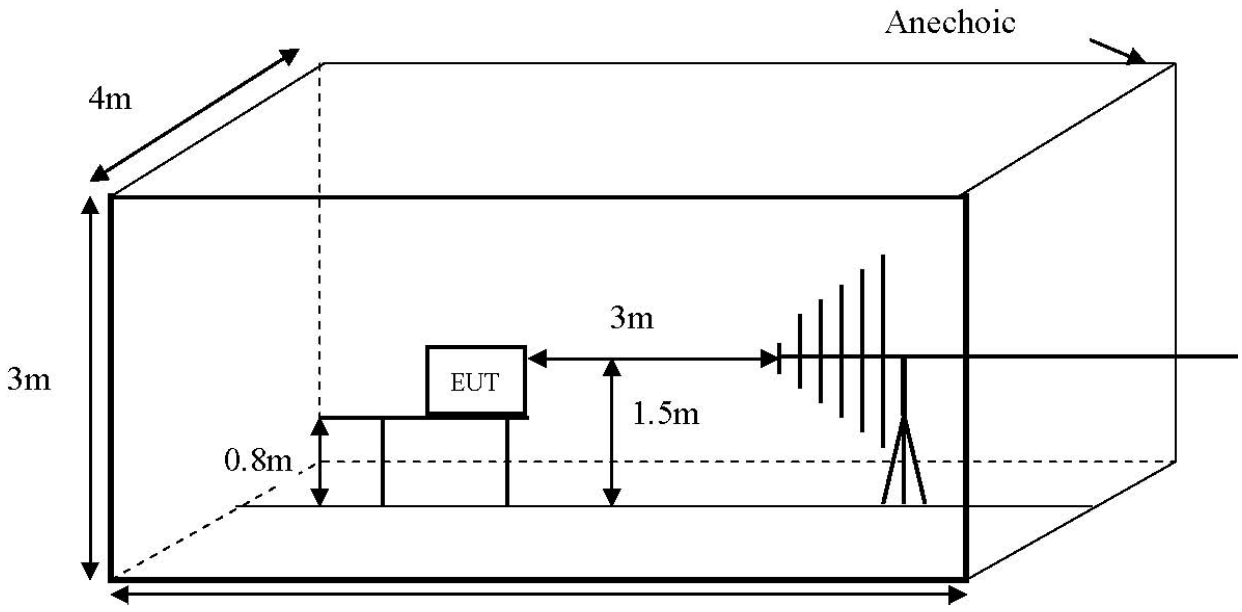
EN 55024:2010 (EN 61000-4-3:2006+A1:2008+A2:2010)

9.1.2. Test Level

Characteristics	Test Levels
Frequency Range	80 MHz to 1000 MHz
Test Level	3 V/m (unmodulated)
Modulation	1 kHz, 80 % AM

9.1.3. Performance criterion: **A**

9.1 Test Setup



9.2 Test Procedure

The EUT are placed on a table, which is 0.8 meter high above the ground. The EUT is set 3 meters away from the transmitting antenna, which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna is set on test. Each of the four sides of the EUT must be faced this transmitting antenna and measured individually.

In order to judge the EUT performance, a camera is used to monitor its screen.

All the scanning conditions are as following:

Condition of Test	Remark
Fielded strength	3V/m (Severity Level 2)
Radiated signal	Modulated
Scanning frequency	80-1000MHz
Sweep time of radiated	0.0015 Decade/s
Dwell time	1 Sec.

9.3 Test Data

Please refer to the following pages.

RF Field Strength Susceptibility Test Results

EUT	:	Device for generating modulated signals “BIOMEDIS”	M/N	:	BM2
Temperature	:	22℃	Humidity	:	50%
Power supply	:	AC230V/50Hz	Test Mode	:	Mode 1/2

Required Performance Criteria: A

Modulation: AM 80%

Pulse: 1 kHz

EUT Position	**Actual Performance Criteria**				**Judgment**
	Frequency Range 1: 80~1000MHz		Frequency Range 2: /		
	Horizontal	**Vertical**	**Horizontal**	**Vertical**	
Front	**A**	**A**	/	/	**PASS**
Right	**A**	**A**	/	/	**PASS**
Rear	**A**	**A**	/	/	**PASS**
Left	**A**	**A**	/	/	**PASS**

Remark:

1) Criteria A: There was no change operated with initial operating during the test.
2) Criteria B: The EUT function loss during the test, but self-recoverable after the test.
3) Criteria C: The system shut down during the test.

10 Electrical Fast Transient/Burst Test

10.1 Test Requirements

10.1.1.Test Standard

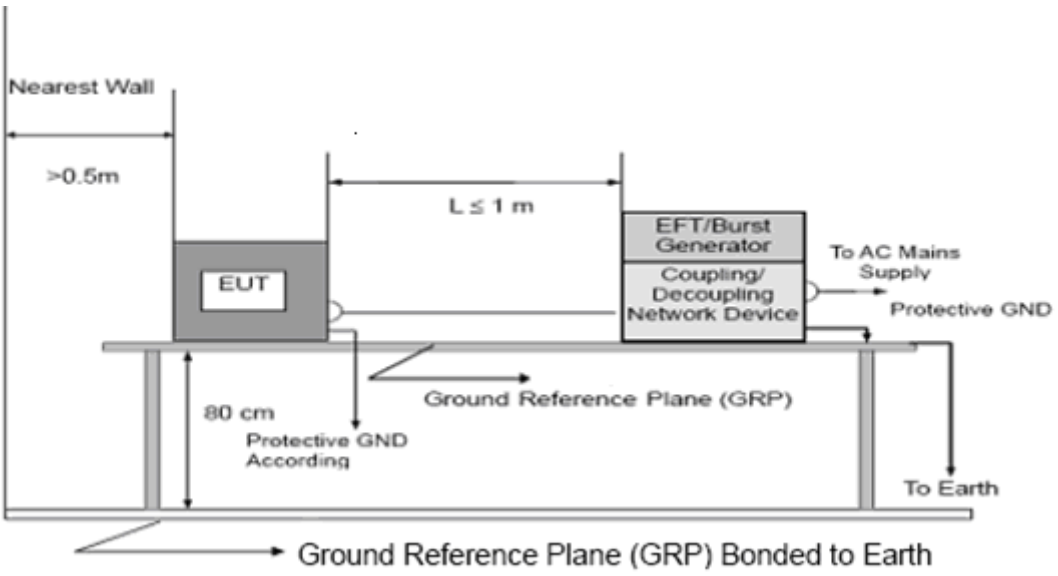
EN 55024:2010 (EN 61000-4-4:2012)

10.1.2.Level

Electrical Fast Transient Test			
Signal ports and telecommunication ports /Input dc power port		**Input ac power ports**	
Level	0.5 kV (peak)	Level	1 kV (peak)
Tr/Th ns	5/50	Tr/Th ns	5/50
Frequency	5 kHz	Frequency	5 kHz

10.1.3.Performance criterion: B

10.2 Test Setup



10.3 Test Procedure

10.3.1 For input and output AC power ports:

The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 1minute.

10.3.2 For signal lines and control lines ports:

A coupling clamp is use to couple the EFT interference signal to the signal and

control lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 1 minute.

10.3.3For DC input and DC output power ports:

The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 1 minute.

10.4 Test Data

Please refer to the following pages.

Electrical Fast Transient/Burst Test Results

EUT	:	Device for generating modulated signals “BIOMEDIS”	M/N	:	BM2
Temperature	:	22℃	Humidity	:	50%
Power supply	:	AC230V/50Hz	Test Mode	:	Mode 1/2

Required Performance Criteria: B

Line : ☒ AC Mains Coupling : ☒ Direct

Line : ☐ Signal ☐ I/O Cable Coupling : ☐ Capacitive

Line	Voltage(kV)	Required Performance Criteria		Actual Performance Criteria		Judgment
		(+)	(-)	(+)	(-)	
L	1.0	B	B	A	A	PASS
N	1.0	B	B	A	A	PASS
L-N	1.0	B	B	A	A	PASS
L-PE	/	B	B	/	/	/
N-PE	/	B	B	/	/	/
L-N-PE	/	B	B	/	/	/

Remark:

1) Criteria A: There was no change operated with initial operating during the test.
2) Criteria B: The EUT function loss during the test, but self-recoverable after the test.
3) Criteria C: The system shut down during the test.

11 Surge Immunity Test

11.1 Test Requirements

11.1.1.Test Standard

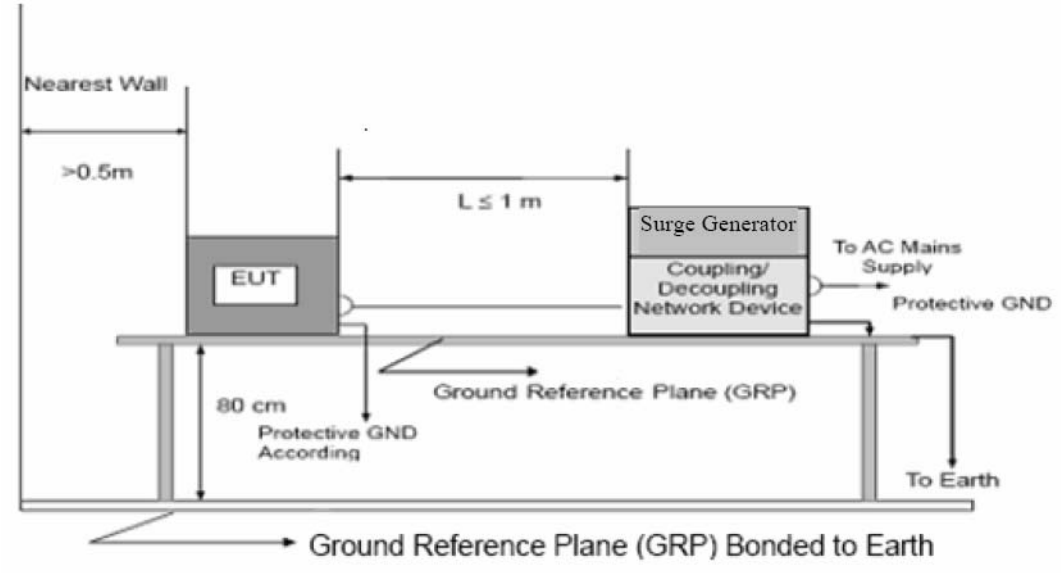
EN 55024:2010 (EN 61000-4-5:2006)

11.1.2.Level

Surge test for signal ports and telecommunication ports		
Characteristics		**Test Level**
Wave-shape data		10/700 us
Injected Level	Primary protection in intended	4 kV(peak)
	Other	1 kV(peak)
Surge test for DC power ports		
Characteristics		**Test Level**
Wave-shape data		1.2/50 (8/20) us
Injected Level		0.5 kV (peak)
Surge test for AC power ports		
Characteristics		**Test Level**
Wave-shape data		1.2/50 (8/20) us
Injected Level	Line to line	1 kV(peak)
	Line to earth or ground	2 kV(peak)

11.1.3.Performance criterion: **B**

11.2 Test Setup



11.3 Test Procedure

11.3.1 Set up the EUT and test generator as shown on Section 11.1.2.

11.3.2 For line to line coupling mode, provide a 1.0 KV 1.2/50us voltage surge

(at open-circuit condition) and 8/20us current surge to EUT selected points.

11.3.3 At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.

11.3.4 Different phase angles are done individually.

11.3.5 Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

11.4 Test Data

Please refer to the following pages.

Surge Immunity Test Results

EUT	:	Device for generating modulated signals “BIOMEDIS”	M/N	:	BM2
Temperature	:	22℃	Humidity	:	50%
Power supply	:	AC230V/50Hz	Test Mode	:	Mode 1/2

Required Performance Criteria: **B**

Injected Line	**Voltage (kV)**	**Phase**	**Actual Performance Criteria**		**Result**	
			(+)	**(-)**	**(+)**	**(-)**
L-N	1.0	0°	**A**	**A**	**PASS**	**PASS**
		90°	**A**	**A**	**PASS**	**PASS**
		180°	**A**	**A**	**PASS**	**PASS**
		270°	**A**	**A**	**PASS**	**PASS**
L-PE	2.0	0°				
		90°				
		180°				
		270°				
N-PE	2.0	0°				
		90°				
		180°				
		270°				

Remark:

1) Criteria A: There was no change operated with initial operating during the test.
2) Criteria B: The EUT function loss during the test, but self-recoverable after the test.
3) Criteria C: The system shut down during the test.

12 Radio-Frequency Continuous Conducted Immunity Test

12.1 Test Requirements

12.1.1.Test Standard

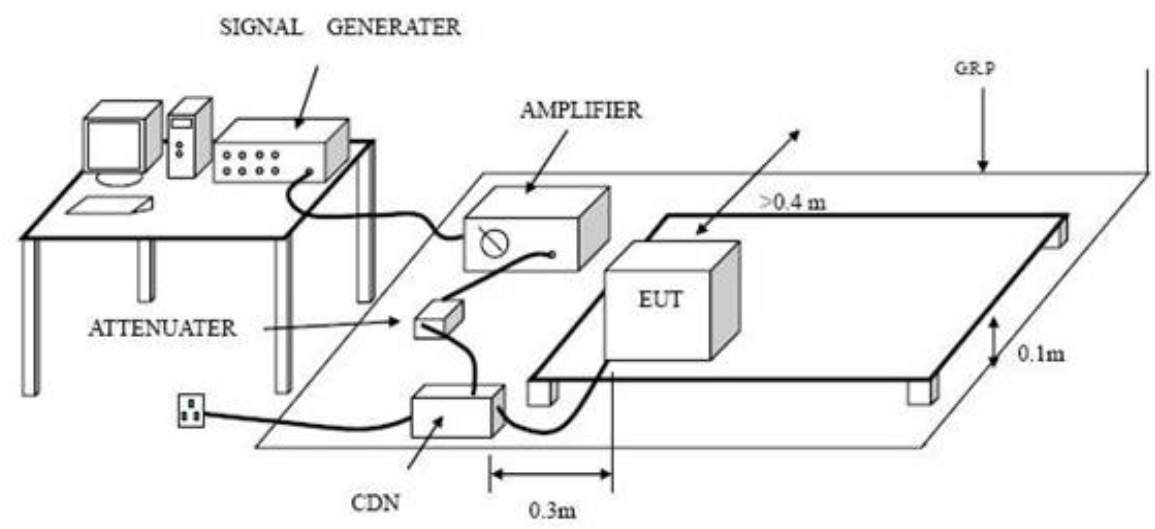
EN 55024:2010 (EN 61000-4-6:2009)

12.1.2.Level

Radio-frequency continuous conducted immunity test		
Signal and Control lines	DC Power Ports	AC Power Ports
0.15 MHz to 80 MHz 3V r.m.s 1 kHz, 80% AM, since wave		

12.1.3.Performance criterion: **A**

12.2 Test Setup



12.3 Test Procedure

12.3.1 Set up the EUT, CDN and test generators.

12.3.2 Let the EUT work in test mode and test it.

12.3.3 The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).

12.3.4 The disturbance signal description below is injected to EUT through CDN.

12.3.5 The EUT operates within its operational mode(s) under intended climatic conditions after power on.

12.3.6 The frequency range is swept from 0.150MHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.

12.3.7 The rate of sweep shall not exceed 1.5*10-3decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.

12.3.8 Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

12.4 Test Data

Please refer to the following pages.

Injected Currents Susceptibility Test Results

EUT	:	Device for generating modulated signals “BIOMEDIS”	M/N	:	BM2
Temperature	:	22℃	Humidity	:	50%
Power supply	:	AC230V/50Hz	Test Mode	:	Mode 1/2

Required Performance Criteria: **A**

Frequency Range (MHz)	Injected Position	Voltage Level (e.m.f.)	Required Performance Criteria	Actual Performance Criteria	Judgment
0.15 ~ 80	AC Mains	3V(rms), AM 80% Modulated with 1 kHz	**A**	A	PASS
0.15 ~ 80	DC Mains	3V(rms), AM 80% Modulated with 1 kHz	**A**	/	/
0.15 ~ 80	Signal Line	3V(rms), AM 80% Modulated with 1 kHz	**A**	/	/

Remark:

1) Criteria A: There was no change operated with initial operating during the test.
2) Criteria B: The EUT function loss during the test, but self-recoverable after the test.
3) Criteria C: The system shut down during the test.

13 Power Frequency Magnetic Field

13.1 Test Requirements

12.1.4.Test Standard

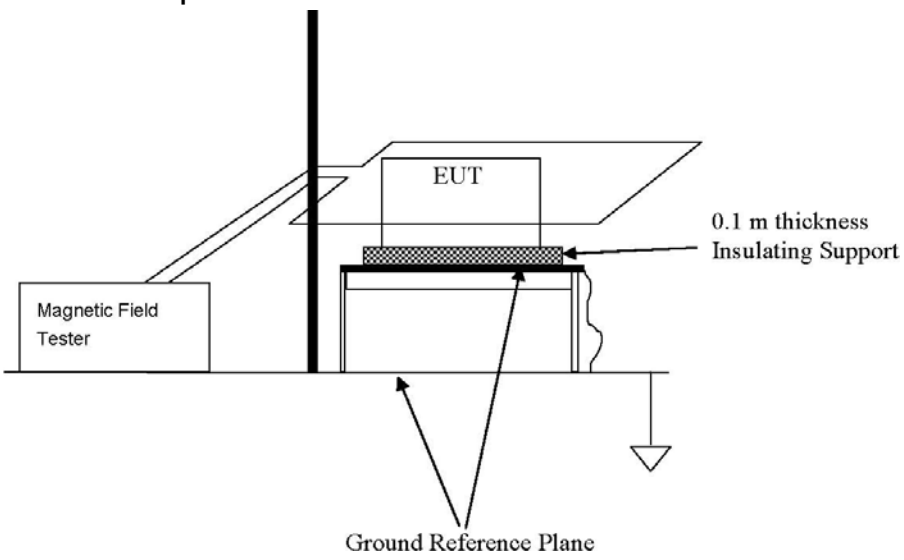
EN 55024:2010 (EN 61000-4-8:2009)

12.1.5.Level

Power Frequency Magnetic Fields	
Characteristics	Test Levels
Field frequency	50/60 Hz
Test level	1 A/m

12.1.6.Performance criterion: **A**

13.2 Test Setup



13.3 Test Procedure

The EUT is placed in the on a table which is 0.8 meter above ground plane measured at least 1m*1m min. The test magnetic field shall be placed at central of the induction coil.

The test magnetic field shall be applied 10 minutes by the immersion method to the EUT. And the induction coil shall be rotated by 90° in order to expose the EUT to the test field with different orientation (X, Y, Z Orientations)

13.4 Test Data

NOTE: The EUT no containing devices susceptible to magnetic fields. No requirement for this test.

14 Voltage Dips and Interruptions Immunity Test

14.1 Test Requirements

13.1.1.Test Standard

EN 55024:2010 (EN 61000-4-11:2004)

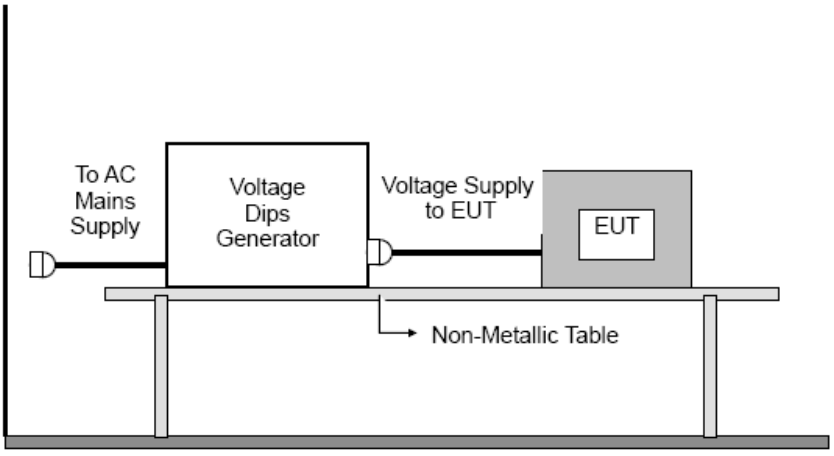
13.1.2.Level

Test Level for Voltage Dips and Interruptions

Voltage Dips and Interruptions Immunity Test		
Test Level %U_T	**Voltage dip and short interruptions %U_T**	**Duration (in period)**
0	100	250
0	100	0.5
70	30	25

13.1.3.Performance criterion: **B&C**

13.2. Test Setup



13.3. Test Procedure

Set up the EUT and test generator as shown above. The EUT is tested for each selected combination of test level and duration with a sequence of three dips/interruptions with intervals of 10s minimum.

13.4. Test Data

Please refer to the following page.

Voltage Dips and Interruptions Test Results

EUT	:	Device for generating modulated signals “BIOMEDIS”	M/N	:	BM2
Temperature	:	25℃	Humidity	:	50%
Power supply	:	AC 230V/50Hz	Test Mode	:	Mode 1/2

Criterion: B&C

Test Level % UT	Voltage Dips & Short Interruptions % UT	Duration (in period)	Phase Angle	Required Performance Criteria	Actual Performance Criteria	Judgment
0	100	250P	0°	**C**	C	Pass
70	30	25P	0°	**C**	C	Pass
0	100	0.5P	0°	**B**	A	Pass

Remark: U_T is the rated voltage for the equipment.

1) Criteria A: There was no change operated with initial operating during the test.
2) Criteria B: The EUT function loss during the test, but self-recoverable after the test.
3) Criteria C: The system shut down during the test.

15 Photographs - Constructional Details

Photo 1 Appearance of EUT

Photo 2 Appearance of EUT

Photo 3 Appearance of EUT

Photo 4 Appearance of EUT

Photo 5 Appearance of Adapter

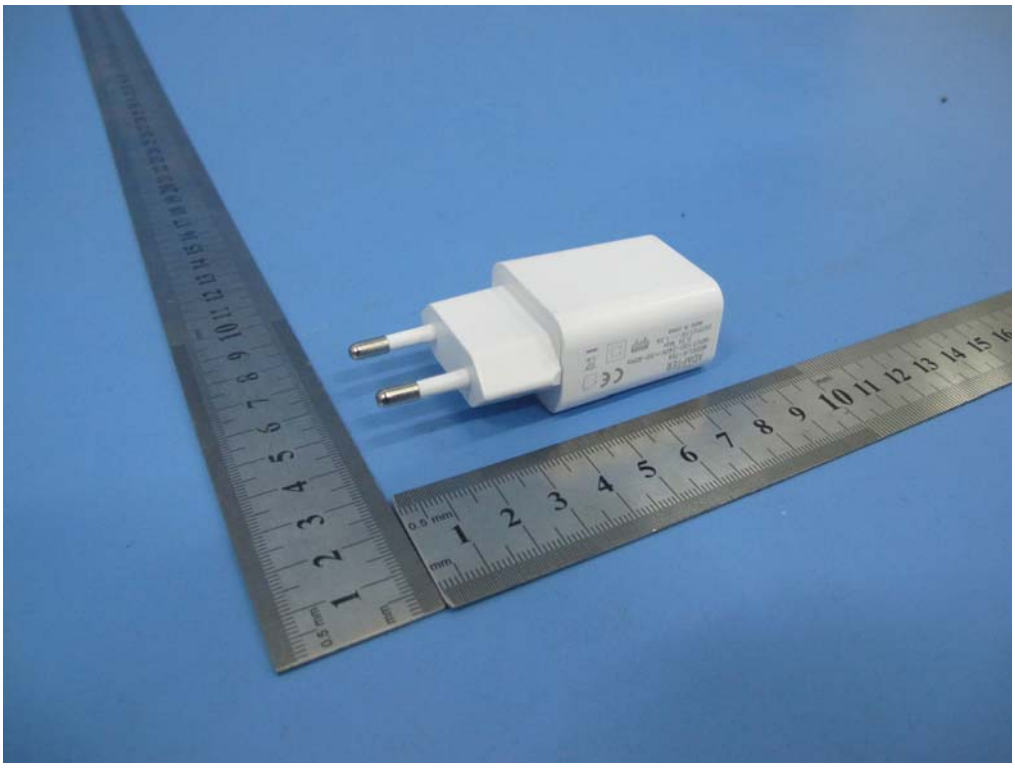


Photo 6 Appearance of Adapter

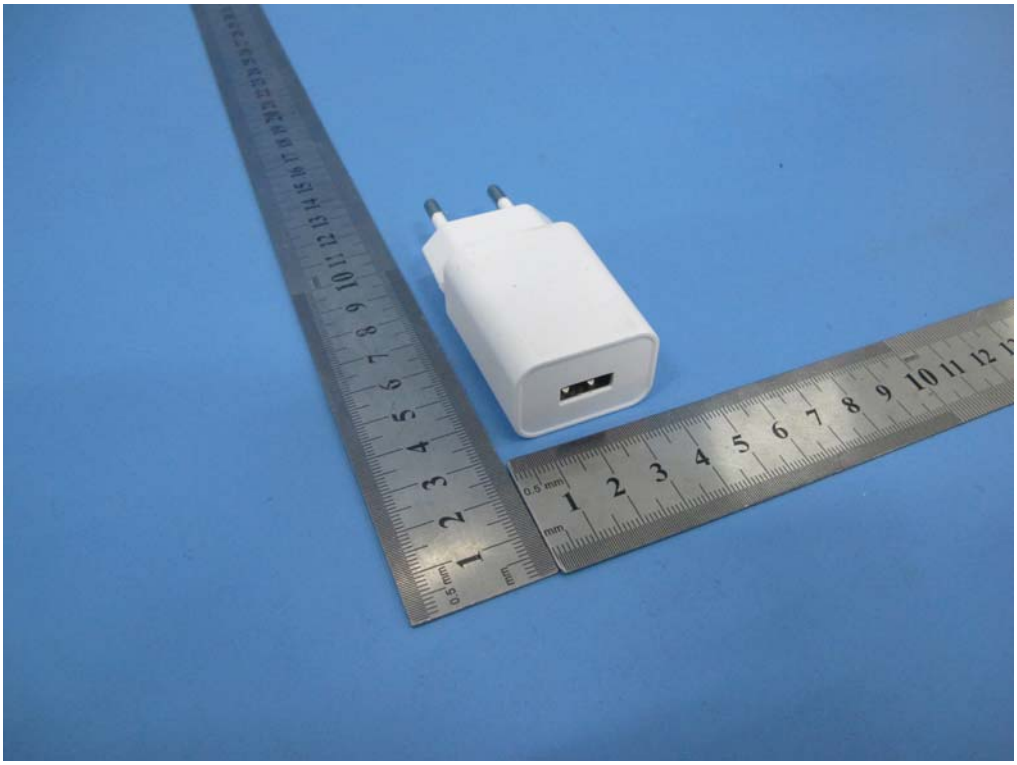


Photo 7 Internal of EUT

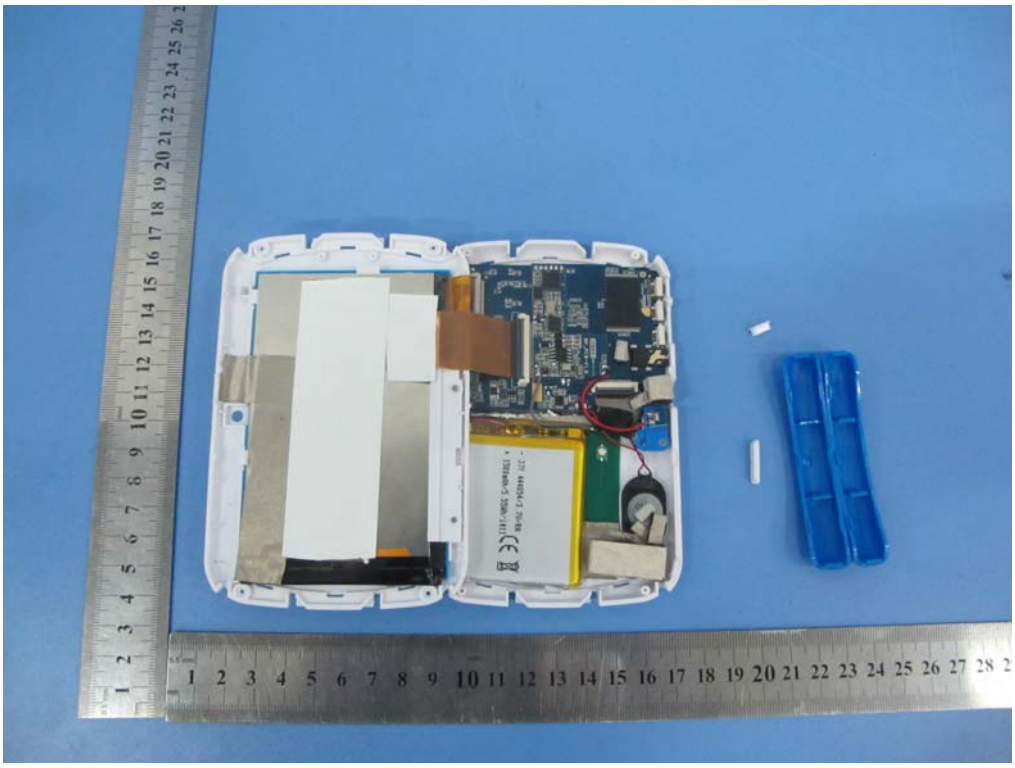


Photo 8 Appearance of PCB

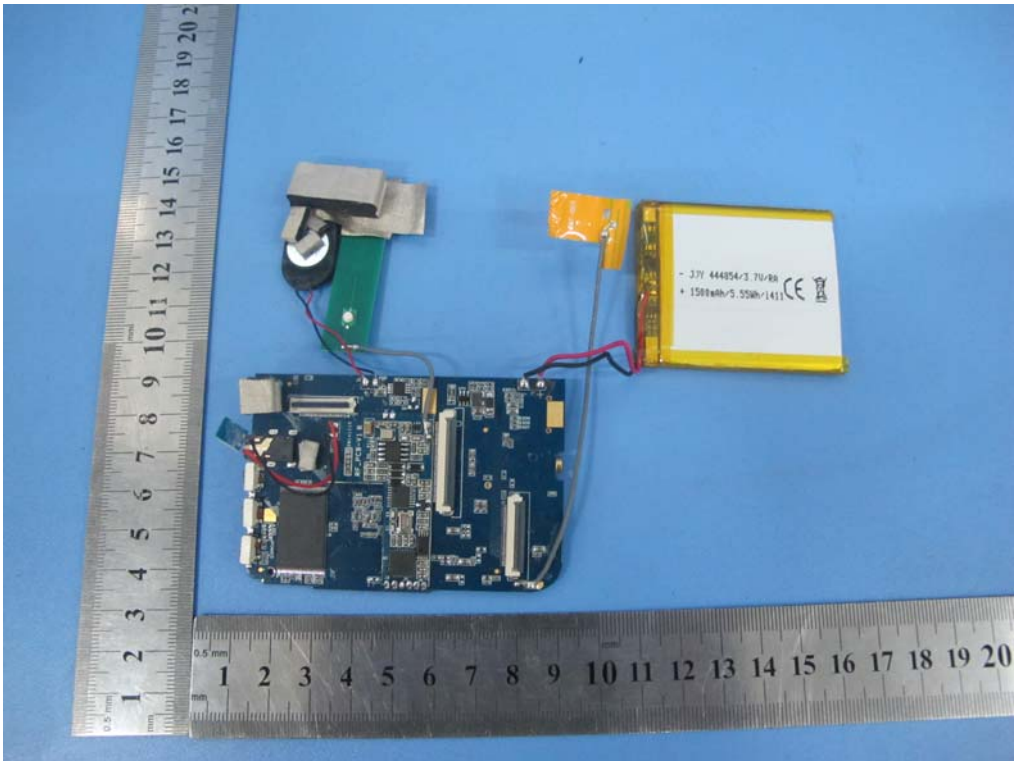


Photo 9 Appearance of PCB

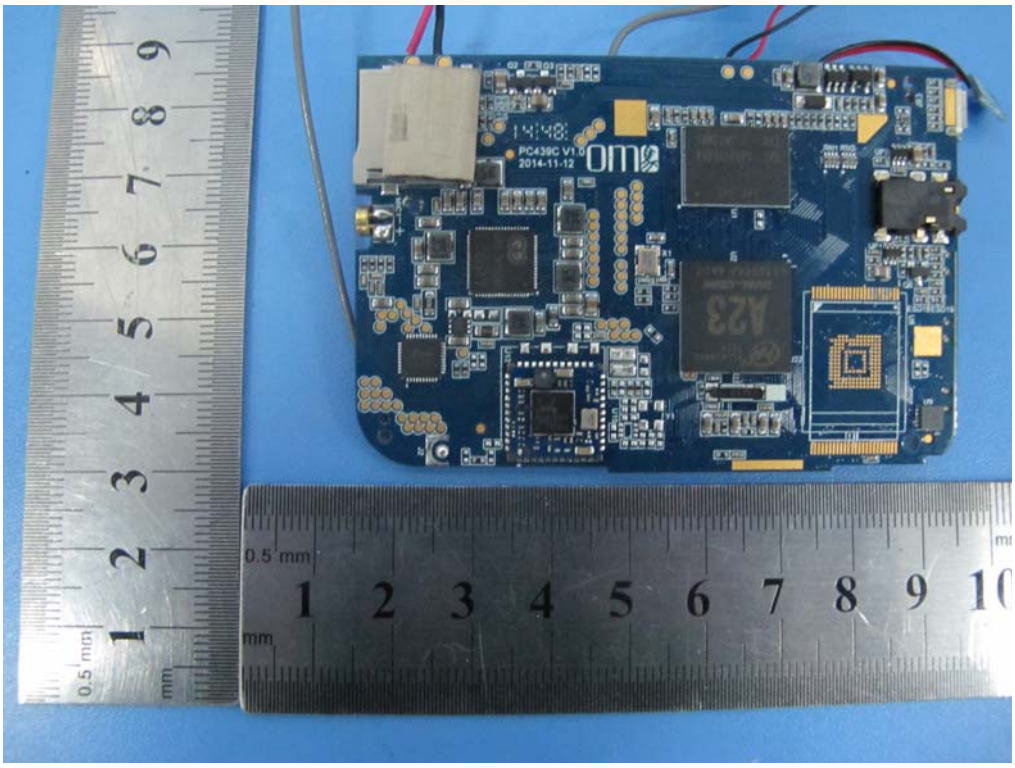


Photo 10 Appearance of PCB

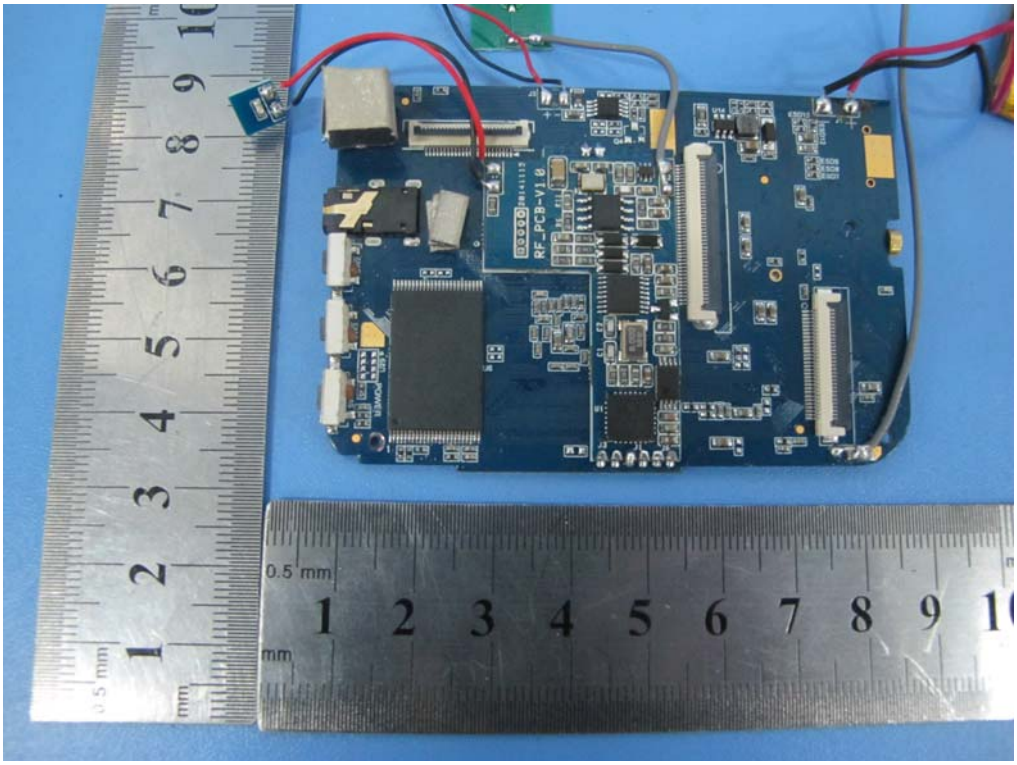


Photo 11 Appearance of Screen

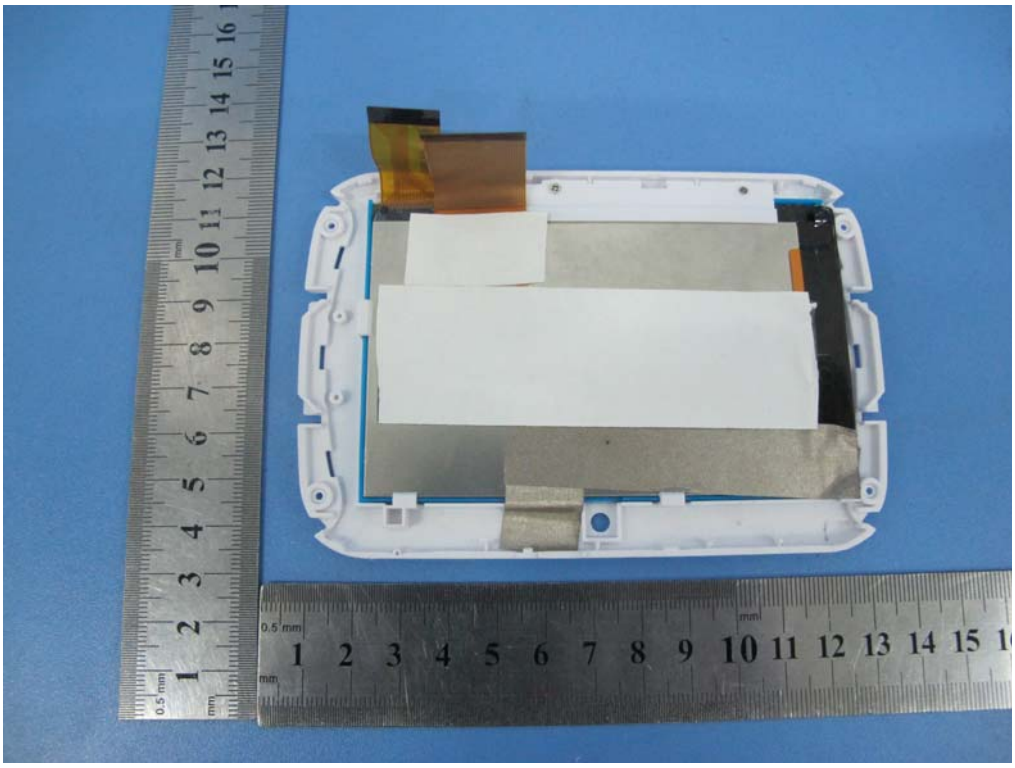
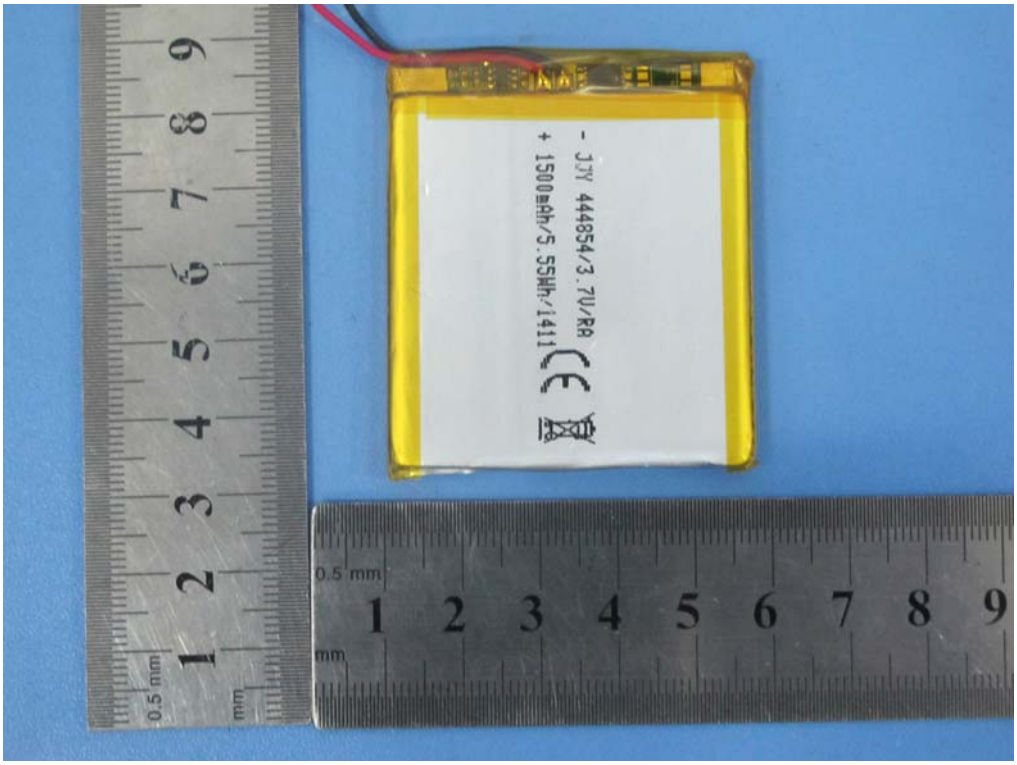


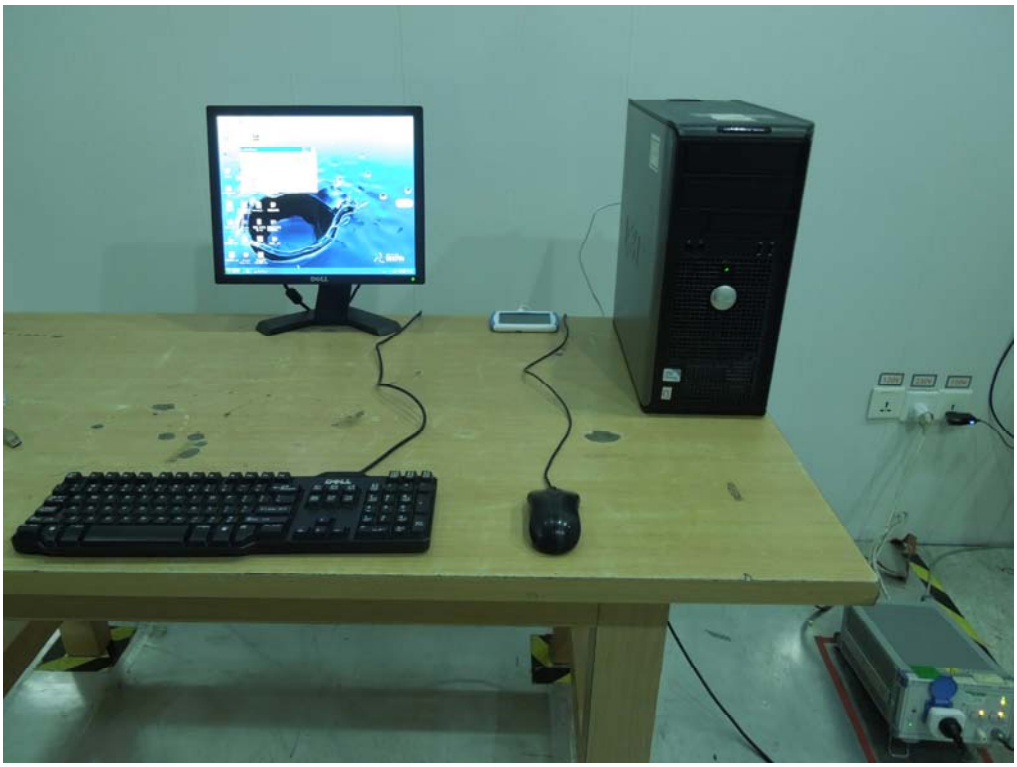
Photo 12 Appearance of Battery



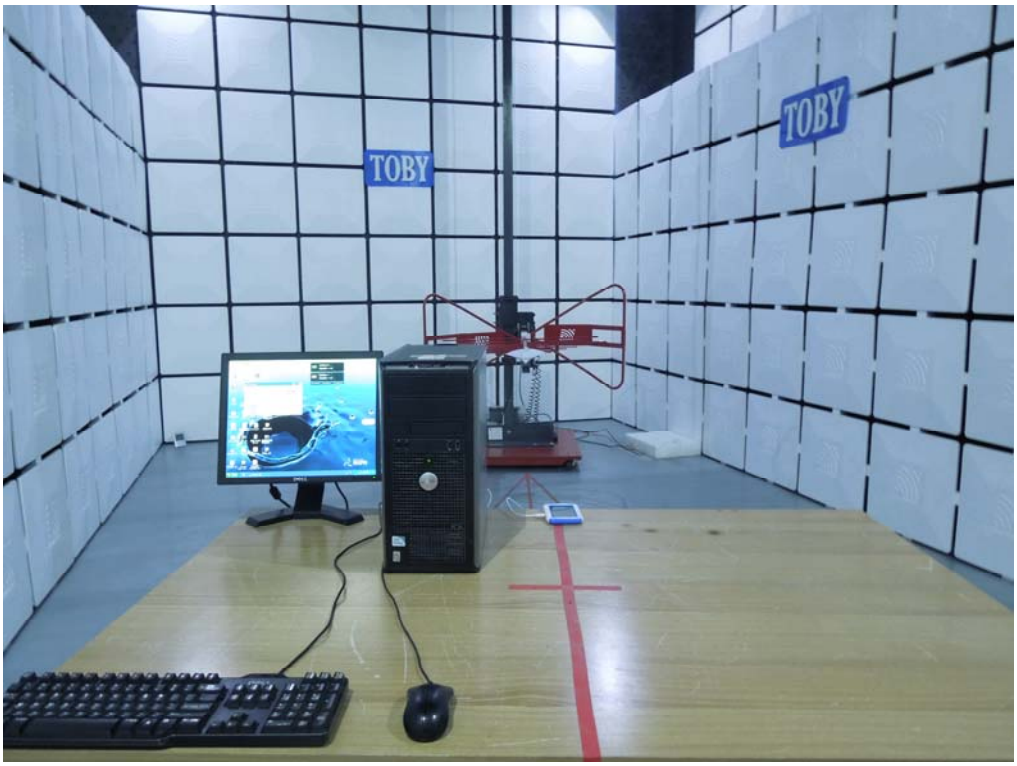
16 Photographs – Test Setup Photos

Conducted Emission Test Setup

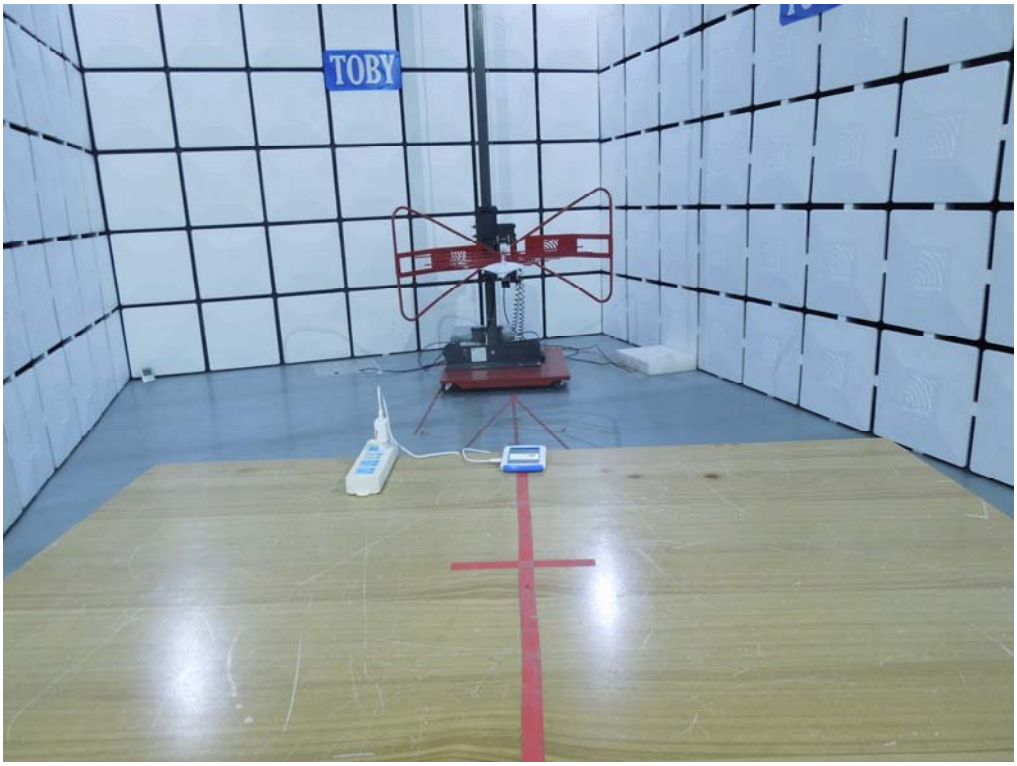
Conducted Emission Test Setup



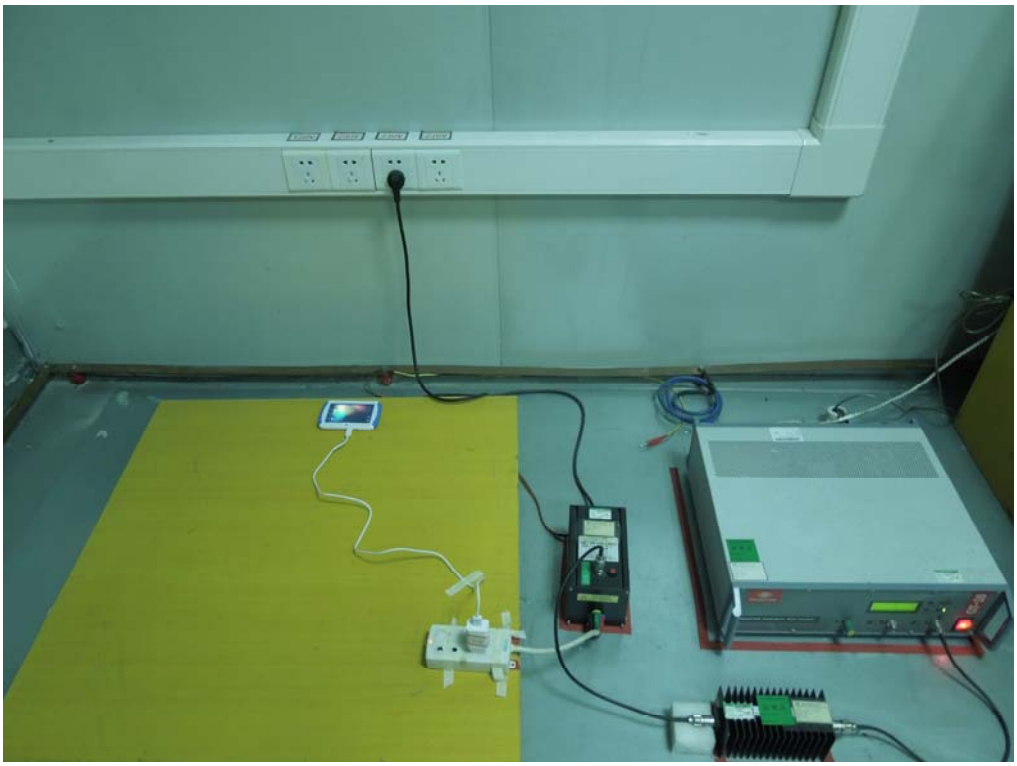
Radiation Test Setup



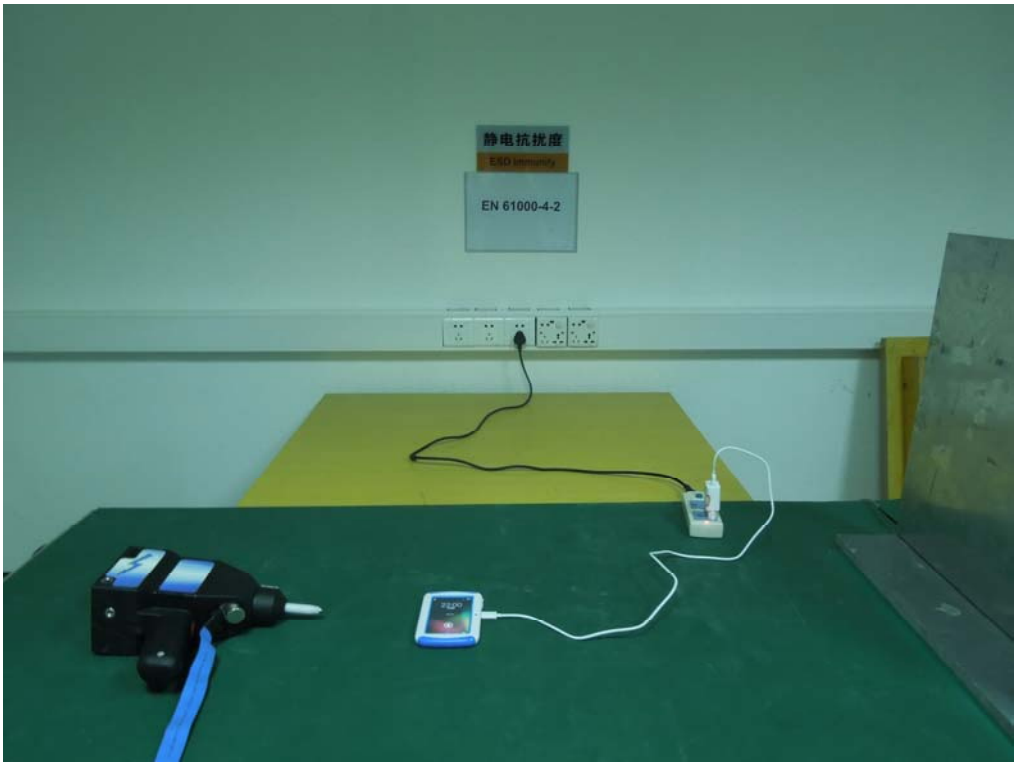
Radiation Test Setup



Injection Current Test Setup



Electrostatic discharge Test Setup



EFT, Surge, Voltage Dips Test Setup

Harmonic and Voltage Flicker Test Setup