

EMC TEST REPORT



For Electromagnetic Interference of

Report Reference No.: 14EAS04014 11

Date of issue: 2014-05-09

Testing Laboratory.....: ATT Product Service Co., Ltd.
Address: No. 3, ChangLianShan Industrial Park, ChangAn Town, DongGuan City, GuangDong, China.

Applicant's name.....: SHENZHEN ESER Industrial Design Co.,Ltd
Address: 2010-2011 Huafeng international business building, NO.4018 Road BAOAN,BAOAN District SHENZHEN
Manufacturer.....: SHENZHEN ESER Industrial Design Co.,Ltd

Test specification:

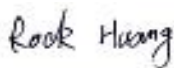
Test item description.....: Health perception computer

Trade Mark.....: --

Model/Type reference: ES99AH1

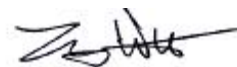
Ratings: I/P: 9Vdc,2A via adapter
Adapter information (Model: MX18W1-0902000V, I/P:100-240V- 0.5A 50/60Hz, O/P:9Vd.c 2A)

Responsible Engineer



(Rock Huang/ Engineer)

Approved by



(Tomy Wu /EMC Manager)

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1. CERTIFICATION

Testing Laboratory.....:	ATT Product Service Co., Ltd.
Address	No. 3, ChangLianShan Industrial Park, ChangAn Town, DongGuan City, GuangDong, China.
Applicant's name.....:	SHENZHEN ESER Industrial Design Co.,Ltd
Address	2010-2011 Huafeng international business building, NO.4018 Road BAOAN,BAOAN District SHENZHEN
Manufacturer.....:	Same as applicant
Address.....:	Same as applicant
Factory.....:	Shin Tech Engineering, Ltd
Address.....:	Dengwulou Industrial District Qiaotou Town Dongguan Guangdong, China
Test specification:	
Test item description.....:	Health perception computer
Trade Mark.....:	--
Model/Type reference	ES99AH1
Test Sample:	ES99AH1
Ratings	I/P: 9Vdc,2A via adapter Adapter information (Model: MX18W1-0902000V, I/P:100-240V- 0.5A 50/60Hz, O/P:9Vd.c 2A)
Tested Power:	AC 230V 50Hz
Standards	EN 55022:2010+AC:2011 EN 55024:2010 EN 61000-3-2:2006+A1:2009+A2:2009 EN 61000-3-3:2008

The device described above was tested by ATT Product Service Co., Ltd to determine the maximum emission levels emanated from the device and severity levels of the device endure and its performance criterion. The measurement results are contained in this test report and ATT Product Service Co., Ltd assumes full responsibility for the accuracy and completeness of these measurements. This report shows the EUT is technically compliance with the above official standards.

This report applies to the above sample only and shall not be reproduced in part without written approval of ATT Product Service Co., Ltd.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
EN 55022:2010+AC:2011	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	
EN61000-3-2:2006+A1:2009+A2:2009	Harmonic Current Emission	Class D	PASS	(2)
EN61000-3-3:2008	Voltage Fluctuations & Flicker	-----	PASS	
EMC Immunity (EN 55024:2010)				
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: 2010	Power Frequency Magnetic Field	A	N/A	(1)
EN 61000-4-11:2004	Volt. Interruptions Volt. Dips	B / C / C	PASS	(3)

REMARK:

- (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) Voltage dip: >95% reduction – Performance Criteria **B**
 Voltage dip: 30% reduction – Performance Criteria **C**
 Voltage Interruption: >95% reduction – Performance Criteria **C**

2.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95** %.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
C01	ANSI	150 KHz ~ 30MHz	2.44	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)	NOTE
R03	ANSI	30MHz ~ 200MHz	V	3.42	
	ANSI	30MHz ~ 200MHz	H	3.52	
	ANSI	200MHz ~ 1G Hz	V	3.52	
	ANSI	200MHz ~ 1GHz	H	3.54	
	ANSI	1GHz ~ 6GHz	V	4.08	
	ANSI	1GHz ~ 6GHz	H	4.08	

Note: The highest internal source of the EUT is 1.2GHz,the measurement shall only be Made up to 6GHz.

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base 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	Video Playing
Mode 2	data transmitting
Mode 3	Connected PC
Mode 4	Health test

For Conducted Test	
Final Test Mode	Description
Mode 1	Video Playing
Mode 2	data transmitting
Mode 3	Health test

For Radiated Test	
Final Test Mode	Description
Mode 1	Video Playing
Mode 2	data transmitting
Mode 3	Connected PC
Mode 4	Health test

For Harmonics / Flicks Test	
Final Test Mode	Description
Mode 1	Video Playing
Mode 2	data transmitting
Mode 3	Health test

For EMS Test	
Final Test Mode	Description
Mode 1	Video Playing
Mode 2	data transmitting
Mode 3	Connected PC
Mode 4	Health test

2.3 EQUIPMENT USED DURING TESTING:

Product Type*	Device	Manufacturer	Model No.	Comments
AE	PC	Lenovo	Jiayue E R500	SS09845833
AE	Mouse	Lenovo	45J4886	44F0301
AE	keyboard	Lenovo	JME7053	2C087729
AE	Monitor	Lenovo	L1961WC	8M04771C2513094
AE	Printer	Epson	P952B	AXQ0018586
AE	Headphone	Senicc	ST-2688	1.8m Non-Shielding
CABL	USB Cable	---	---	1.2m Shielding with core

*Note: Use abbreviations:

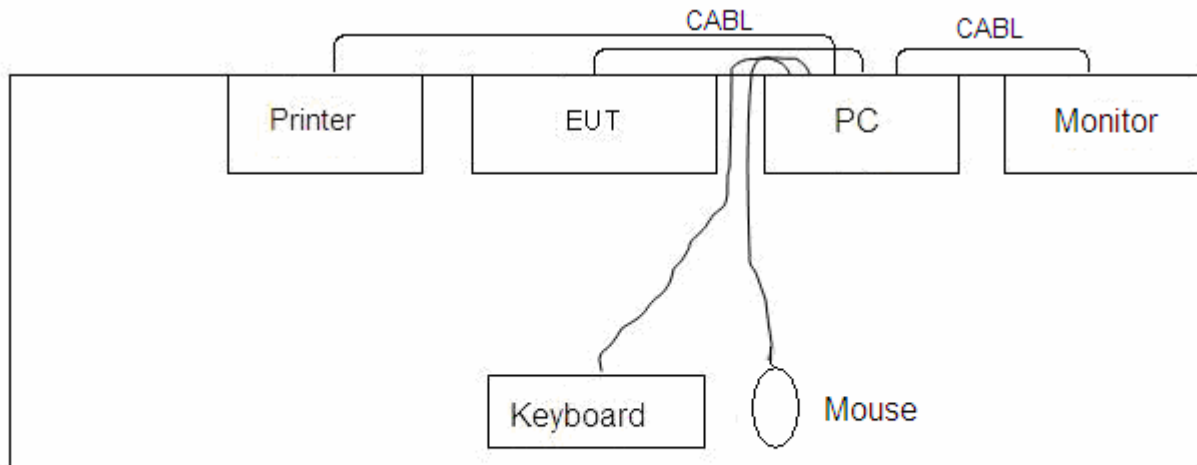
EUT - Equipment Under Test,

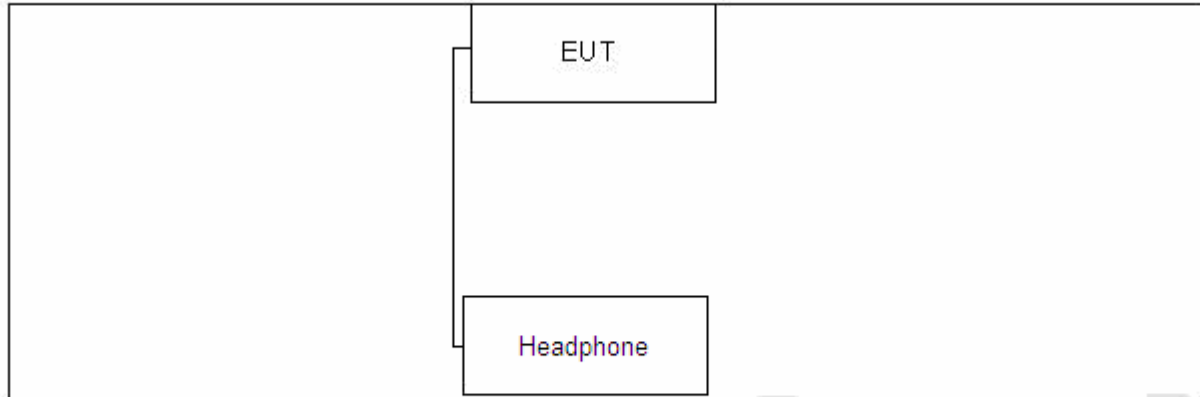
AE - Auxiliary/Associated Equipment, or

SIM - Simulator (Not Subjected to Test)

CABL – Connecting cables

2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED





3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

3.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Pulse Limiter	MTS-systemtechnik	MTS-IMP-136	261115-010-0024	12/21/2014
2	EMI Test Receiver	R&S	ESCI	101308	12/21/2014
3	LISN	AFJ	LS16	16011103219	12/21/2014
4	LISN	Schwarzbeck	NSLK 8127	8127-432	12/21/2014

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

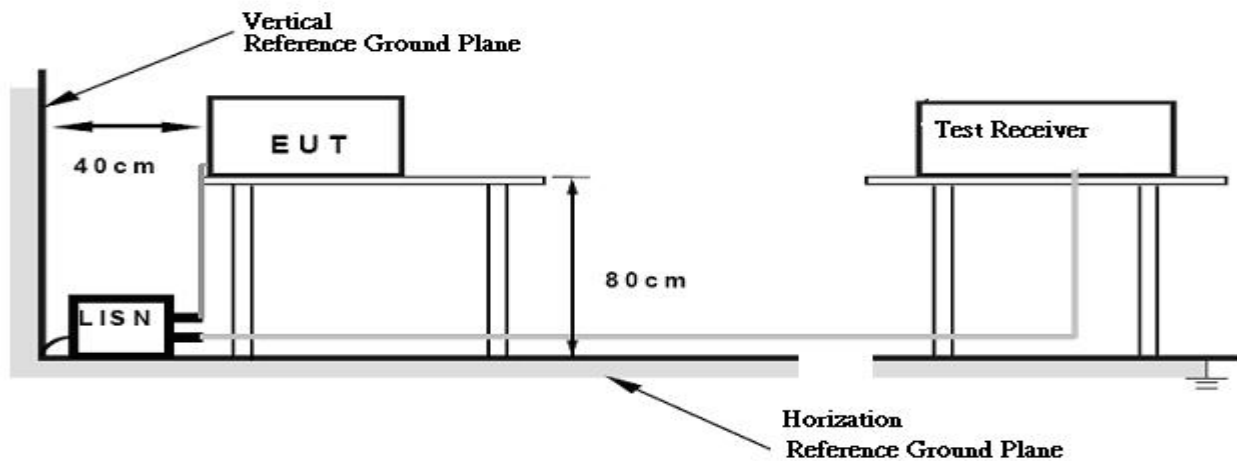
3.1.3 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal reference ground plane and 0.4meters from vertical reference 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.
- b. 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.
- c. 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.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.4 DEVIATION FROM TEST STANDARD

No deviation

3.1.5 TEST SETUP



3.1.6 EUT OPERATING CONDITIONS

The EUT exercise program used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use.

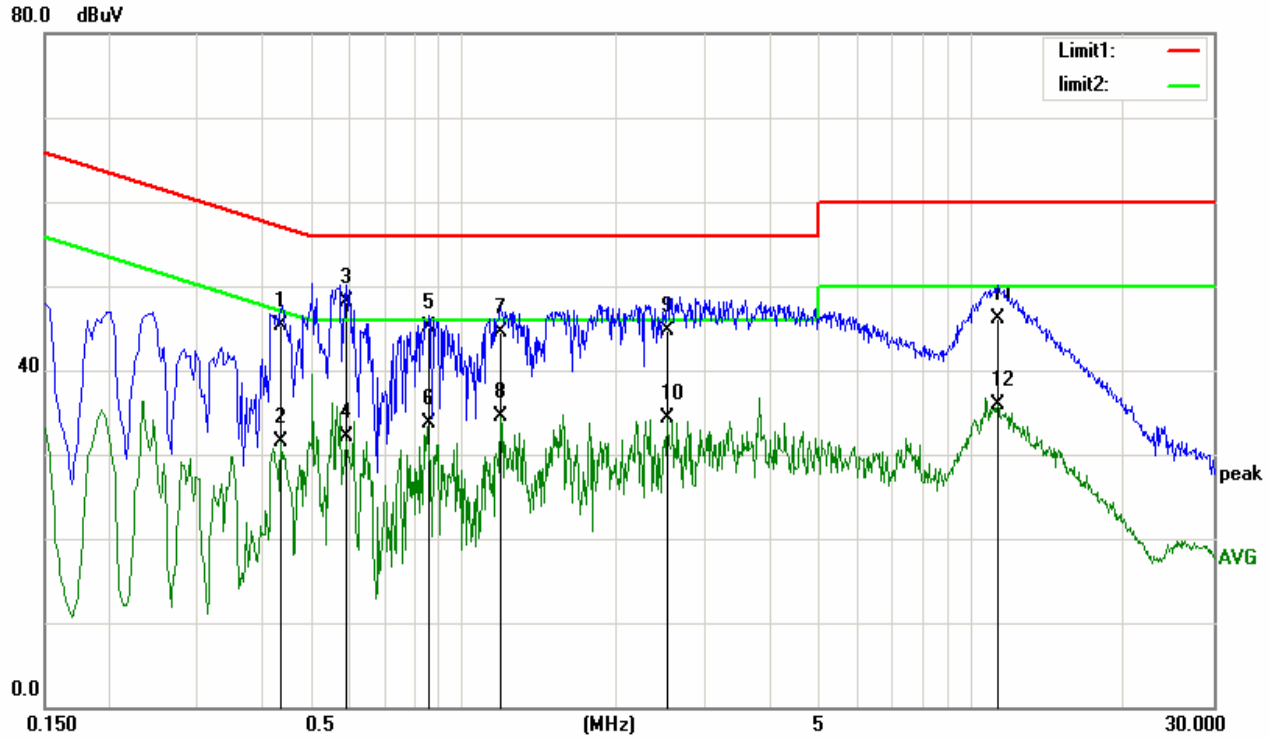
3.1.7 TEST RESULTS

EUT:	Health perception computer	Model No. :	ES99AH1
Temperature:	24°C	Relative Humidity:	55 %
Pressure:	1008 hPa	Test Power :	AC 230V/50Hz
Test Mode :	Video Playing/ data transmitting mode/ Health test		

Remark:

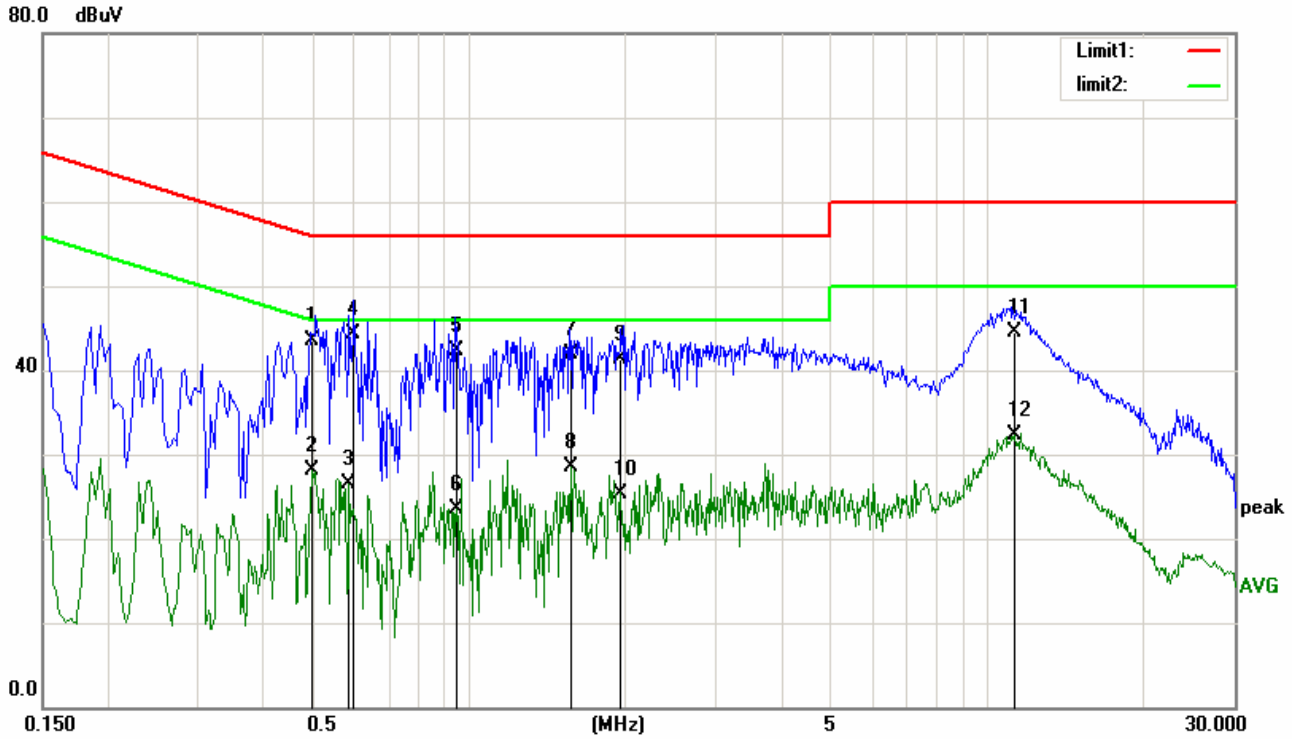
- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Sweep. Time = 0.3 sec./MHz. Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Sweep. Time =0.3 sec./MHz.
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 『Note』 . If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform.In this case, a “ * ” marked in AVG Mode column of Interference Voltage Measured.
- (3) Measuring frequency range from 150KHz to 30MHz.

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Probe:	L1	Test Power:	AC 230V/50Hz
Standard:	(CE)EN55022 class B_QP	Test Result:	Pass
Test Mode:	Video Playing	Test By:	Vito



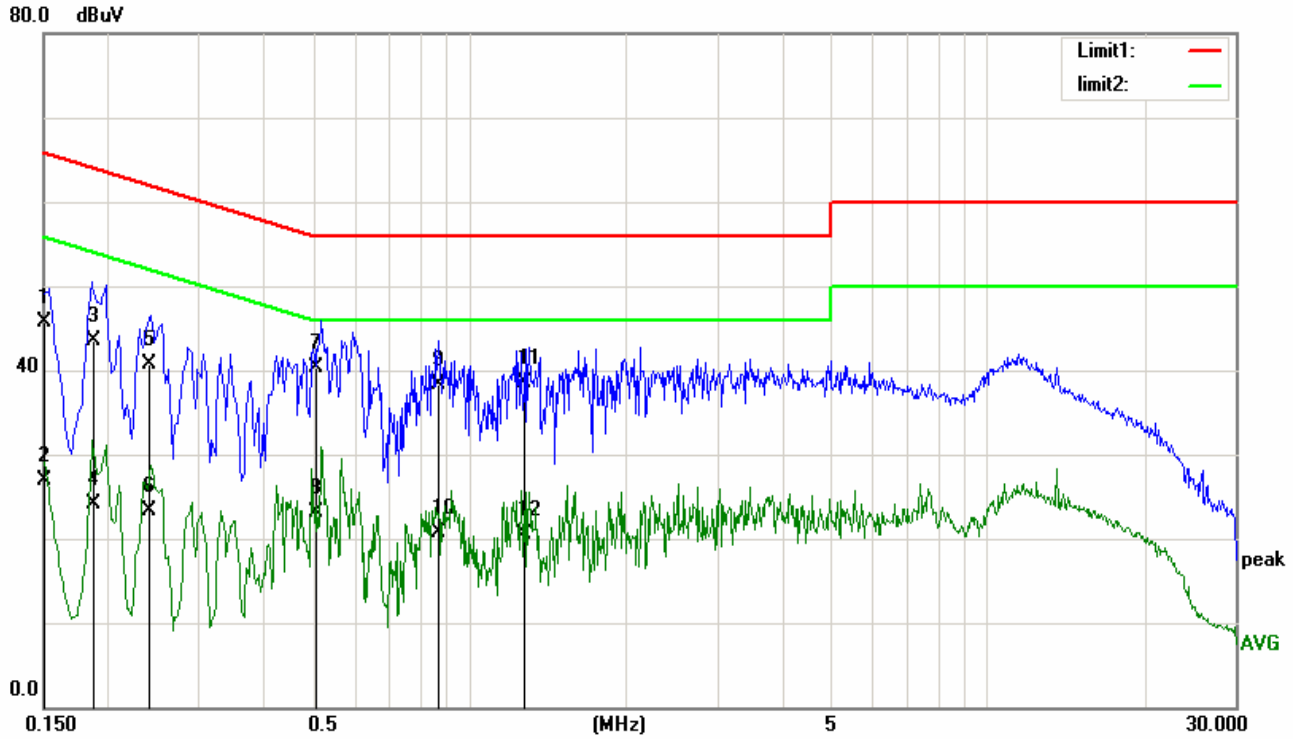
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.4380	34.96	10.26	45.22	57.10	-11.88	QP
2	0.4380	21.30	10.26	31.56	47.10	-15.54	AVG
3	0.5898	37.98	10.15	48.13	56.00	-7.87	QP
4	0.5898	21.89	10.15	32.04	46.00	-13.96	AVG
5	0.8498	34.96	10.09	45.05	56.00	-10.95	QP
6	0.8498	23.66	10.09	33.75	46.00	-12.25	AVG
7	1.1898	34.31	10.10	44.41	56.00	-11.59	QP
8	1.1898	24.34	10.10	34.44	46.00	-11.56	AVG
9	2.5219	34.49	10.13	44.62	56.00	-11.38	QP
10	2.5219	24.22	10.13	34.35	46.00	-11.65	AVG
11	11.3018	35.98	10.15	46.13	60.00	-13.87	QP
12	11.3018	25.73	10.15	35.88	50.00	-14.12	AVG

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Probe:	N	Test Power:	AC 230V/50Hz
Standard:	(CE)EN55022 class B_QP	Test Result:	Pass
Test Mode:	Video Playing	Test By:	Vito



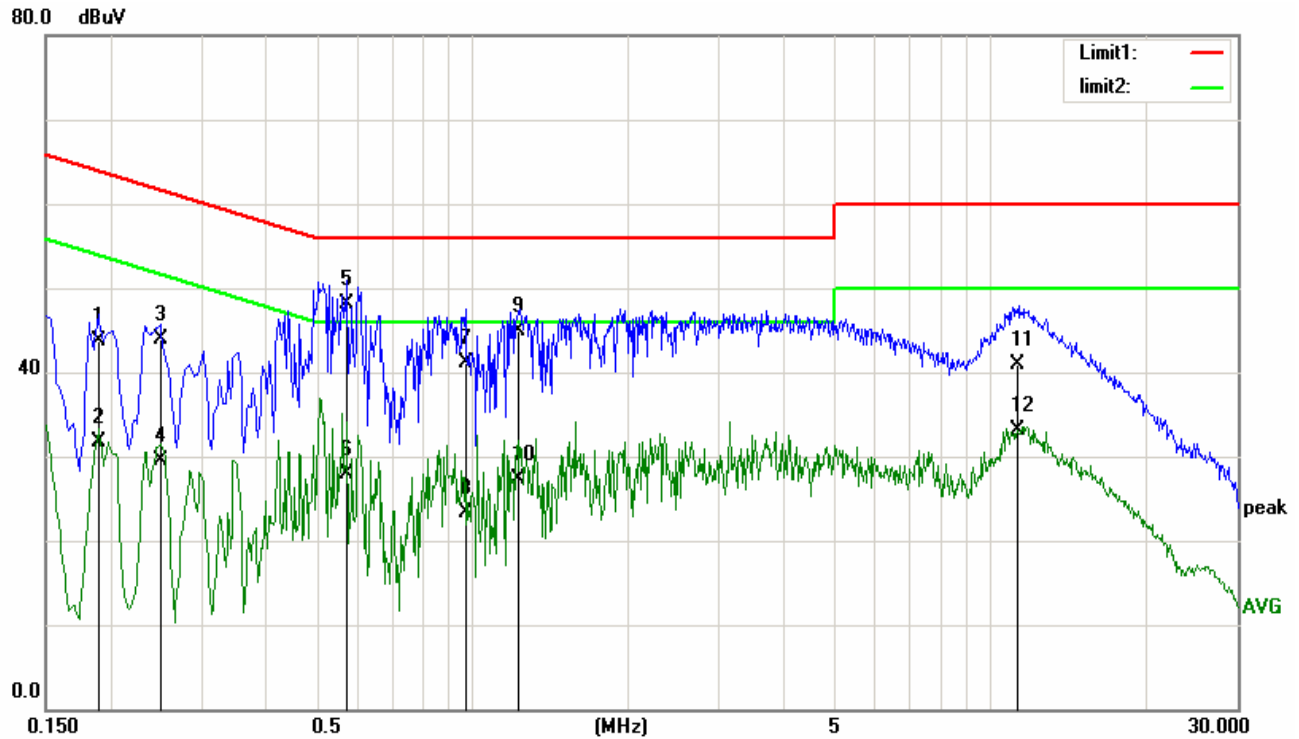
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.4979	33.29	10.18	43.47	56.03	-12.56	QP
2	0.4979	17.95	10.18	28.13	46.03	-17.90	AVG
3	0.5856	16.28	10.15	26.43	46.00	-19.57	AVG
4	0.5955	34.09	10.15	44.24	56.00	-11.76	QP
5	0.9457	32.18	10.10	42.28	56.00	-13.72	QP
6	0.9457	13.33	10.10	23.43	46.00	-22.57	AVG
7	1.5740	31.81	10.11	41.92	56.00	-14.08	QP
8	1.5740	18.35	10.11	28.46	46.00	-17.54	AVG
9	1.9617	31.25	10.11	41.36	56.00	-14.64	QP
10	1.9617	15.28	10.11	25.39	46.00	-20.61	AVG
11	11.2979	34.37	10.15	44.52	60.00	-15.48	QP
12	11.2979	22.07	10.15	32.22	50.00	-17.78	AVG

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Probe:	N	Test Power:	AC 230V/50Hz
Standard:	(CE)EN55022 class B_QP	Test Result:	Pass
Test Mode:	Data transmitting mode	Test By:	Vito



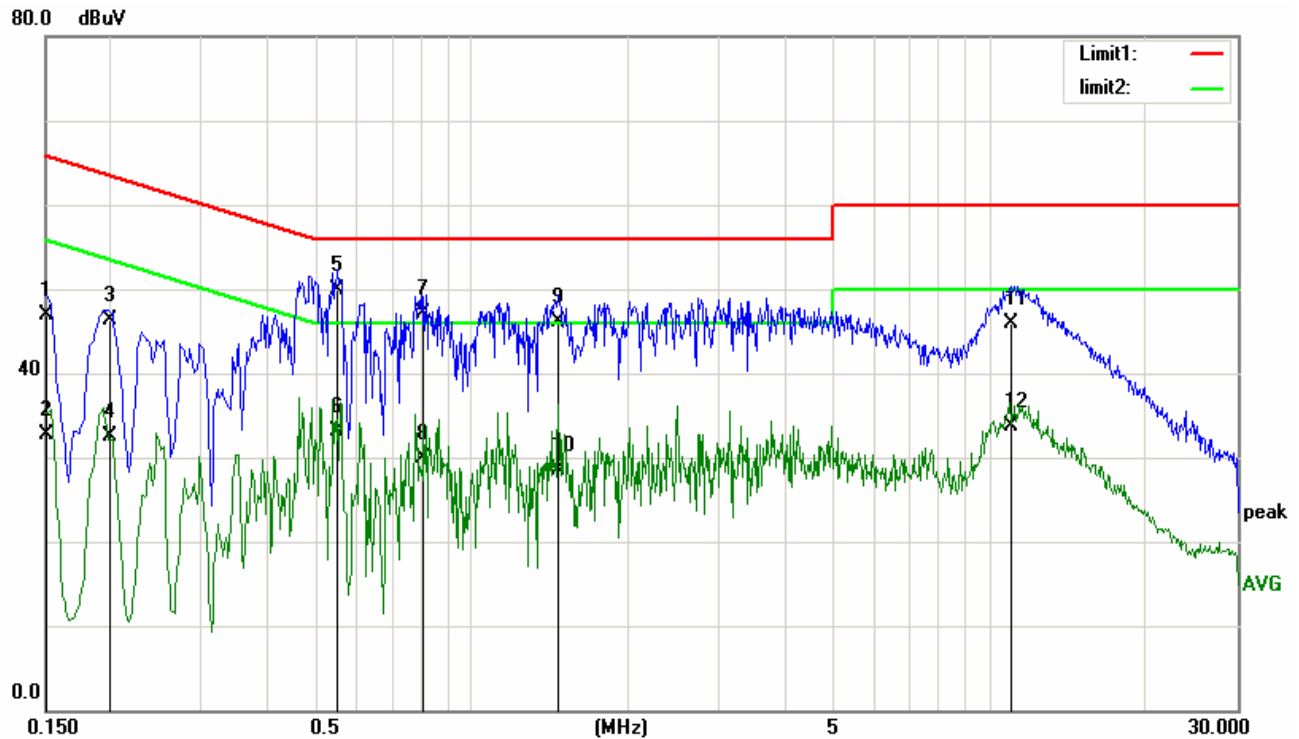
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1504	34.30	11.47	45.77	65.97	-20.20	QP
2	0.1504	15.44	11.47	26.91	55.97	-29.06	AVG
3	0.1876	32.20	11.21	43.41	64.14	-20.73	QP
4	0.1876	12.83	11.21	24.04	54.14	-30.10	AVG
5	0.2387	29.91	10.86	40.77	62.14	-21.37	QP
6	0.2387	12.43	10.86	23.29	52.14	-28.85	AVG
7	0.5049	30.22	10.18	40.40	56.00	-15.60	QP
8	0.5049	13.02	10.18	23.20	46.00	-22.80	AVG
9	0.8678	28.20	10.09	38.29	56.00	-17.71	QP
10	0.8678	10.60	10.09	20.69	46.00	-25.31	AVG
11	1.2681	28.33	10.10	38.43	56.00	-17.57	QP
12	1.2681	10.32	10.10	20.42	46.00	-25.58	AVG

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Probe:	L1	Test Power:	AC 230V/50Hz
Standard:	(CE)EN55022 class B_QP	Test Result:	Pass
Test Mode:	Data transmitting mode	Test By:	Vito



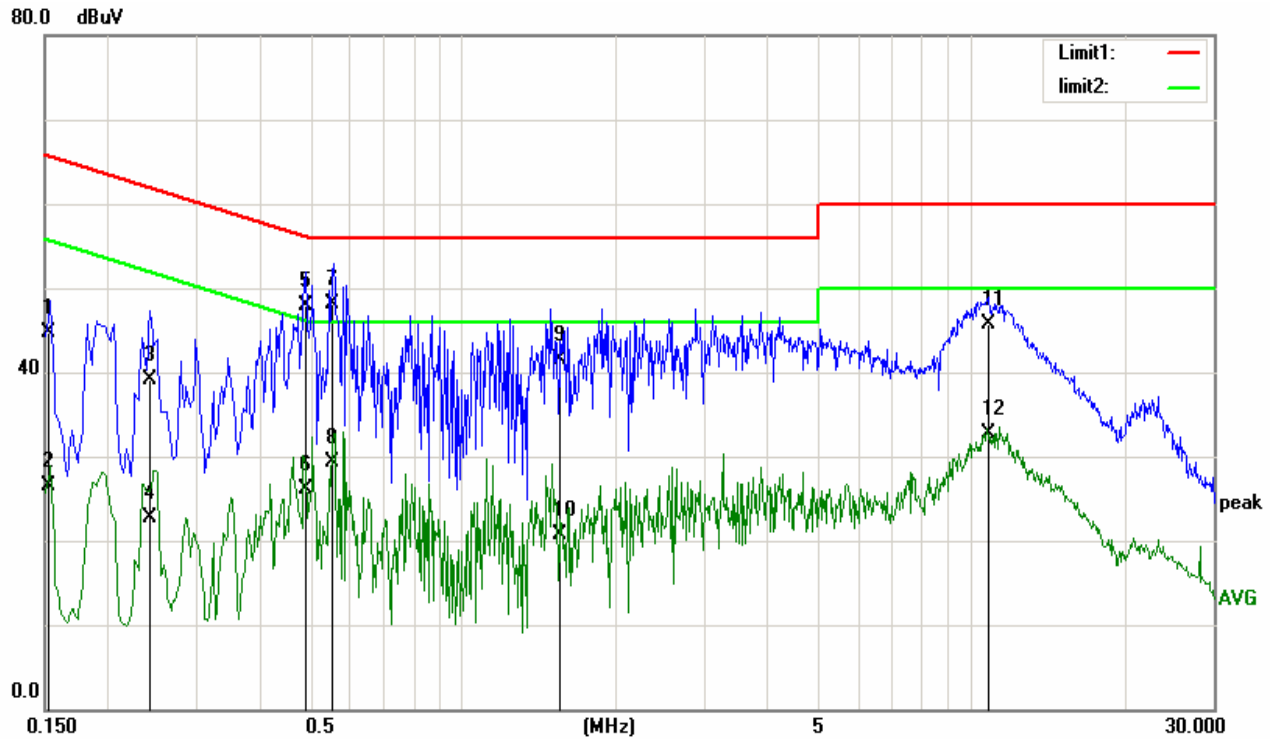
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1888	32.54	11.20	43.74	64.08	-20.34	QP
2	0.1888	20.59	11.20	31.79	54.08	-22.29	AVG
3	0.2498	33.06	10.78	43.84	61.76	-17.92	QP
4	0.2498	18.81	10.78	29.59	51.76	-22.17	AVG
5	0.5757	37.98	10.16	48.14	56.00	-7.86	QP
6	0.5757	17.72	10.16	27.88	46.00	-18.12	AVG
7	0.9666	31.03	10.09	41.12	56.00	-14.88	QP
8	0.9666	13.18	10.09	23.27	46.00	-22.73	AVG
9	1.2236	34.90	10.10	45.00	56.00	-11.00	QP
10	1.2236	17.29	10.10	27.39	46.00	-18.61	AVG
11	11.2819	30.68	10.15	40.83	60.00	-19.17	QP
12	11.2819	23.04	10.15	33.19	50.00	-16.81	AVG

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Probe:	L1	Test Power:	AC 230V/50Hz
Standard:	(CE)EN55022 class B_QP	Test Result:	Pass
Test Mode:	Health test	Test By:	Vito



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1514	35.41	11.46	46.87	65.92	-19.05	QP
2	0.1514	21.25	11.46	32.71	55.92	-23.21	AVG
3	0.2000	35.27	11.13	46.40	63.61	-17.21	QP
4	0.2000	21.42	11.13	32.55	53.61	-21.06	AVG
5	0.5534	39.78	10.16	49.94	56.00	-6.06	QP
6	0.5534	23.02	10.16	33.18	46.00	-12.82	AVG
7	0.8058	37.00	10.09	47.09	56.00	-8.91	QP
8	0.8058	19.74	10.09	29.83	46.00	-16.17	AVG
9	1.4695	35.98	10.10	46.08	56.00	-9.92	QP
10	1.4695	18.48	10.10	28.58	46.00	-17.42	AVG
11	10.9952	35.74	10.15	45.89	60.00	-14.11	QP
12	10.9952	23.62	10.15	33.77	50.00	-16.23	AVG

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Probe:	N	Test Power:	AC 230V/50Hz
Standard:	(CE)CISPR22 class B_QP	Test Result:	Pass
Test Mode:	Health test	Test By:	Vito



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1521	33.30	11.45	44.75	65.88	-21.13	QP
2	0.1521	15.06	11.45	26.51	55.88	-29.37	AVG
3	0.2409	28.28	10.84	39.12	62.06	-22.94	QP
4	0.2409	11.95	10.84	22.79	52.06	-29.27	AVG
5	0.4876	37.61	10.20	47.81	56.21	-8.40	QP
6	0.4876	15.99	10.20	26.19	46.21	-20.02	AVG
7	0.5502	37.88	10.16	48.04	56.00	-7.96	QP
8	0.5502	19.17	10.16	29.33	46.00	-16.67	AVG
9	1.5401	31.44	10.11	41.55	56.00	-14.45	QP
10	1.5401	10.66	10.11	20.77	46.00	-25.23	AVG
11	10.8118	35.52	10.15	45.67	60.00	-14.33	QP
12	10.8118	22.61	10.15	32.76	50.00	-17.24	AVG

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT FOR CLASS B (Below 1GHz)

FREQUENCY (MHz)	Field strengths limits at 3m Measuring distance: dBuV/m
30 – 230	40
230 – 1000	47

LIMITS OF RADIATED EMISSION MEASUREMENT FOR CLASS B (Above 1GHz)

FREQUENCY (GHz)	Field strengths limits at 3m Measuring distance: dBuV/m (PK)	Field strengths limits at 3m Measuring distance: dBuV/m (AV)
1 – 3	70	50
3 – 6	74	54

Notes:

- (1) The limit for radiated test was performed according to as following: EN55022.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Log-Bicon Antenna	SCHWARZBECK	VULB9168	VULB9168-192	12/27/2014
2	Pre-Amplifier	HP	8447F	3113A05680	12/21/2014
3	EMI Test Receiver	R&S	ESCI	101307	12/21/2014
4	Spectrum Analyzer	Agilent	E4407B	US40240708	07/17/2014
5	Horn Antenna	Schwarzbeck	BBHA 9120D	BBHA 9120D 1065	12/21/2014
6	Pre-Amplifier	CY	EMC011830	980136	12/22/2014
7	Turn Table	UC	UC3000	N/A	N/A
8	Antenna Mast	UC	UC3000	N/A	N/A

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

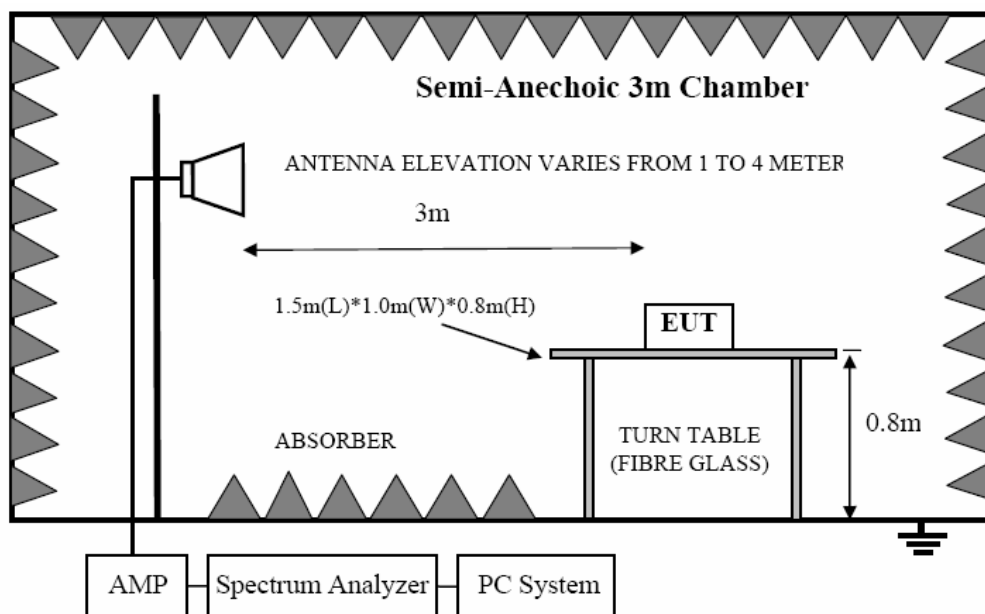
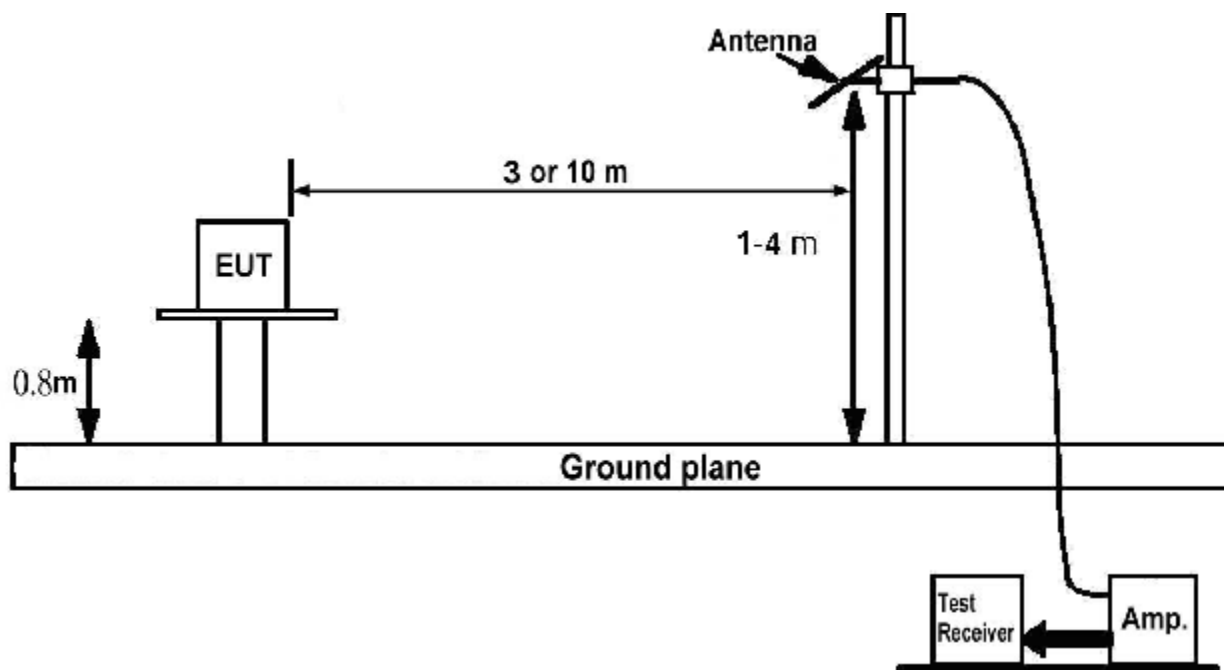
3.2.3 TEST PROCEDURE

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m or 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. 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.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. 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.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.
- g. For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure, Detector is at PK; RBW is set at 1MHz, VBW is set at 1Hz for Average measure, Detector is at AV.

3.2.4 DEVIATION FROM TEST STANDARD

No deviation

3.2.5 TEST SETUP



3.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.2** Unless otherwise a special operating condition is specified in the follows during the testing.

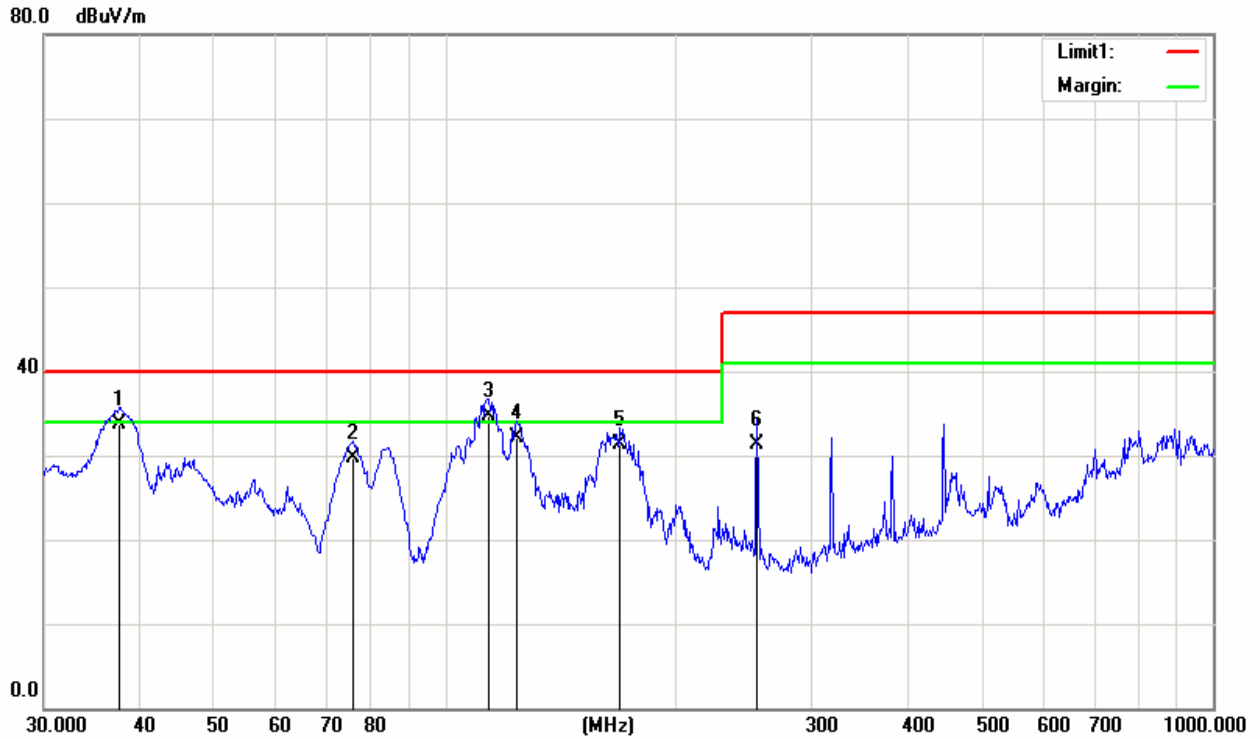
3.2.7 TEST RESULTS

EUT:	Health perception computer	Model No. :	ES99AH1
Temperature:	24°C	Relative Humidity:	55 %
Pressure:	1008 hPa	Test Power :	AC 230V/50Hz
Test Mode :	Video Playing/ data transmitting mode/ Connected PC/ Health test		

Remark:

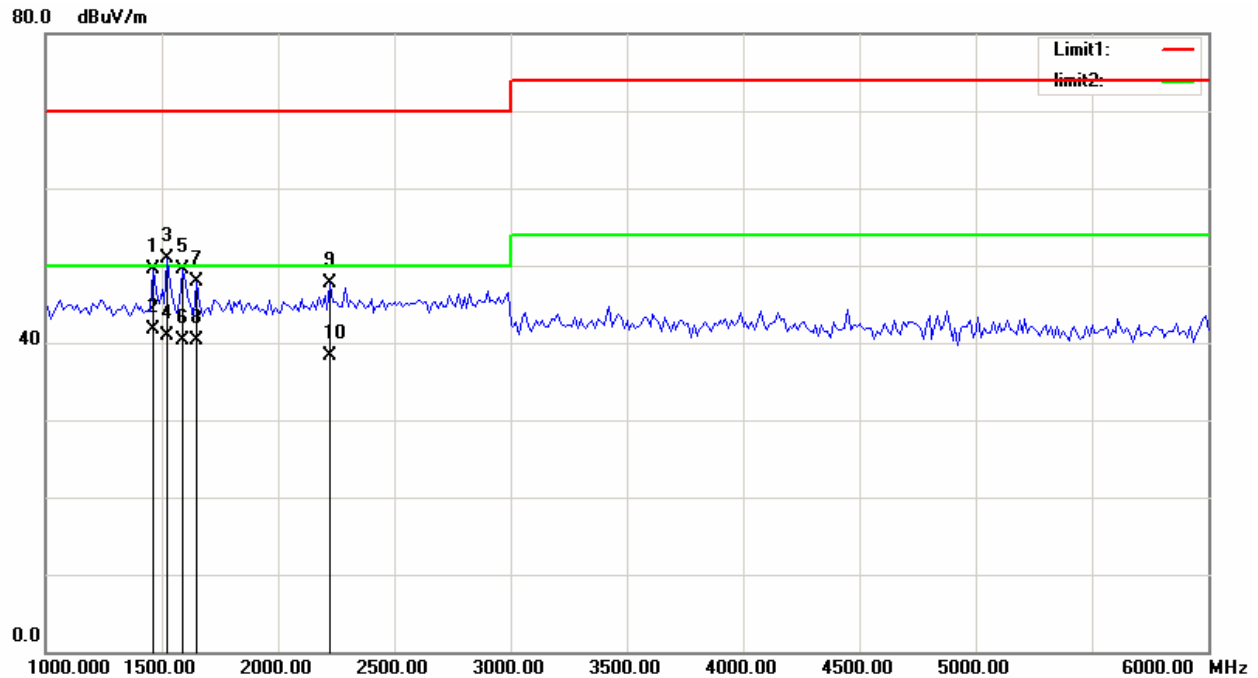
- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz; SPA setting in RBW=120KHz, VBW =120KHz, Sweep. Time = 0.3 sec./MHz.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (3) Measuring frequency range from 30MHz to 6000MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table.

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Vertical	Test Result:	Pass
Standard:	(RE)EN55022 class B 3m	Test By:	Vito
Test Mode:	Video Playing		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	37.6798	46.35	-12.65	33.70	40.00	-6.30	QP
2	75.9771	43.40	-13.70	29.70	40.00	-10.30	QP
3	113.3162	46.17	-11.44	34.73	40.00	-5.27	QP
4	123.6984	43.41	-11.34	32.07	40.00	-7.93	QP
5	169.0054	39.40	-8.14	31.26	40.00	-8.74	QP
6	254.7283	40.03	-8.67	31.36	47.00	-15.64	QP

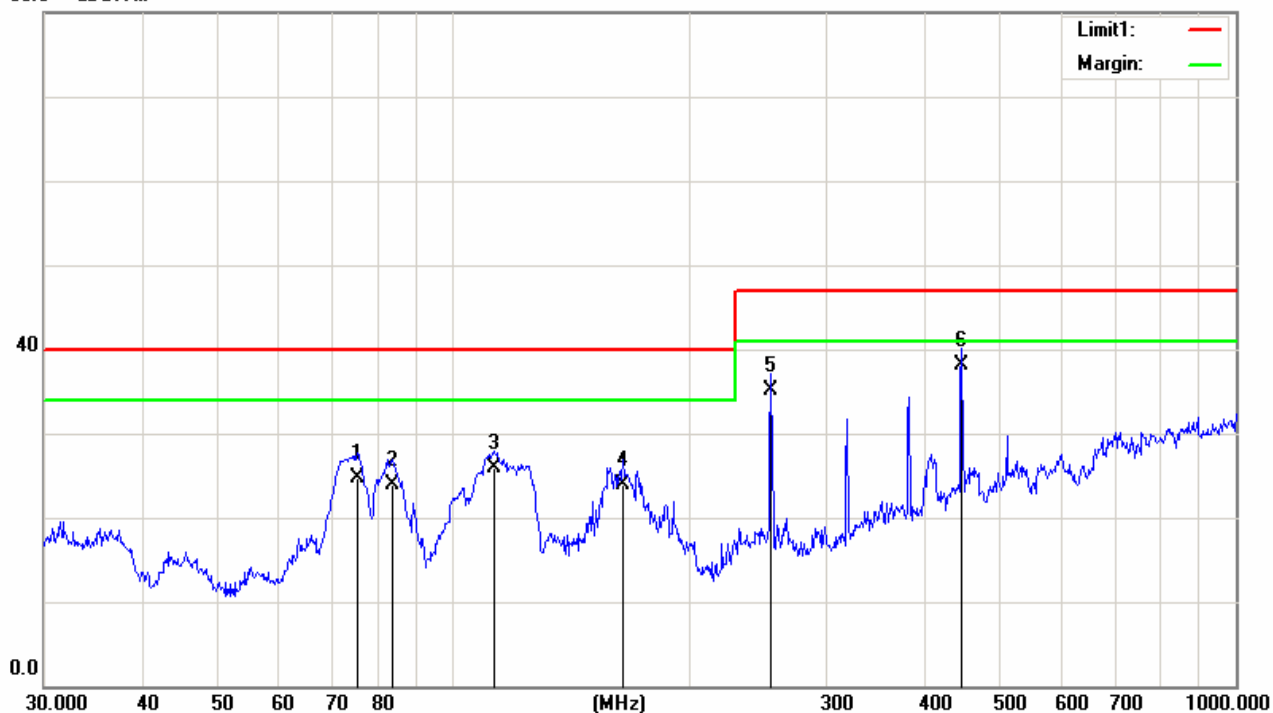
EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Vertical	Test Result:	Pass
Standard:	(RE)EN55022 class B 3m	Test By:	Vito
Test Mode:	Video Playing		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1462.500	53.35	-3.77	49.58	70.00	-20.42	peak
2	1462.500	45.50	-3.77	41.73	50.00	-8.27	AVG
3	1525.000	54.62	-3.79	50.83	70.00	-19.17	peak
4	1525.000	44.60	-3.79	40.81	50.00	-9.19	AVG
5	1587.500	53.35	-3.82	49.53	70.00	-20.47	peak
6	1587.500	44.10	-3.82	40.28	50.00	-9.72	AVG
7	1650.000	51.48	-3.52	47.96	70.00	-22.04	peak
8	1650.000	43.90	-3.52	40.38	50.00	-9.62	AVG
9	2225.000	47.89	-0.11	47.78	70.00	-22.22	peak
10	2225.000	38.40	-0.11	38.29	50.00	-11.71	AVG

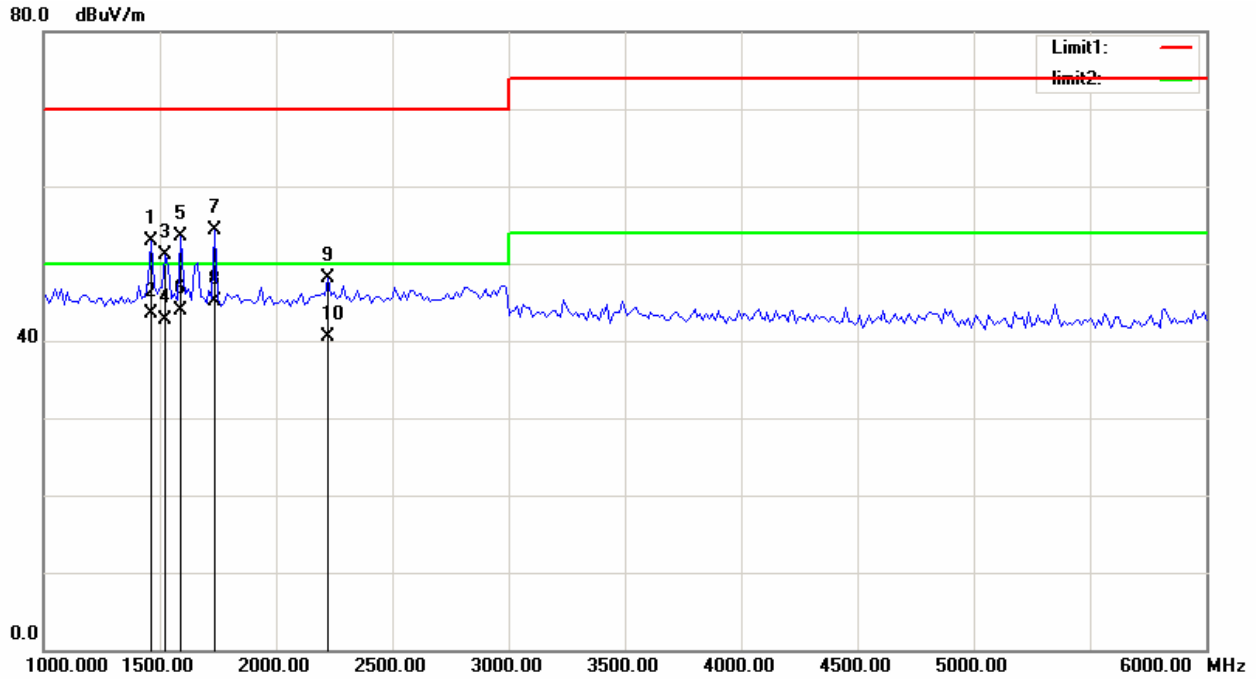
EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Horizontal	Test Result:	Pass
Standard:	(RE)EN55022 class B 3m	Test By:	Vito
Test Mode:	Video Playing		

80.0 dBuV/m



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	75.4463	39.28	-14.61	24.67	40.00	-15.33	QP
2	83.5221	41.10	-17.19	23.91	40.00	-16.09	QP
3	112.9196	41.41	-15.49	25.92	40.00	-14.08	QP
4	164.9074	35.70	-11.75	23.95	40.00	-16.05	QP
5	254.7284	45.70	-10.67	35.03	47.00	-11.97	QP
6	446.4141	40.32	-2.25	38.07	47.00	-8.93	QP

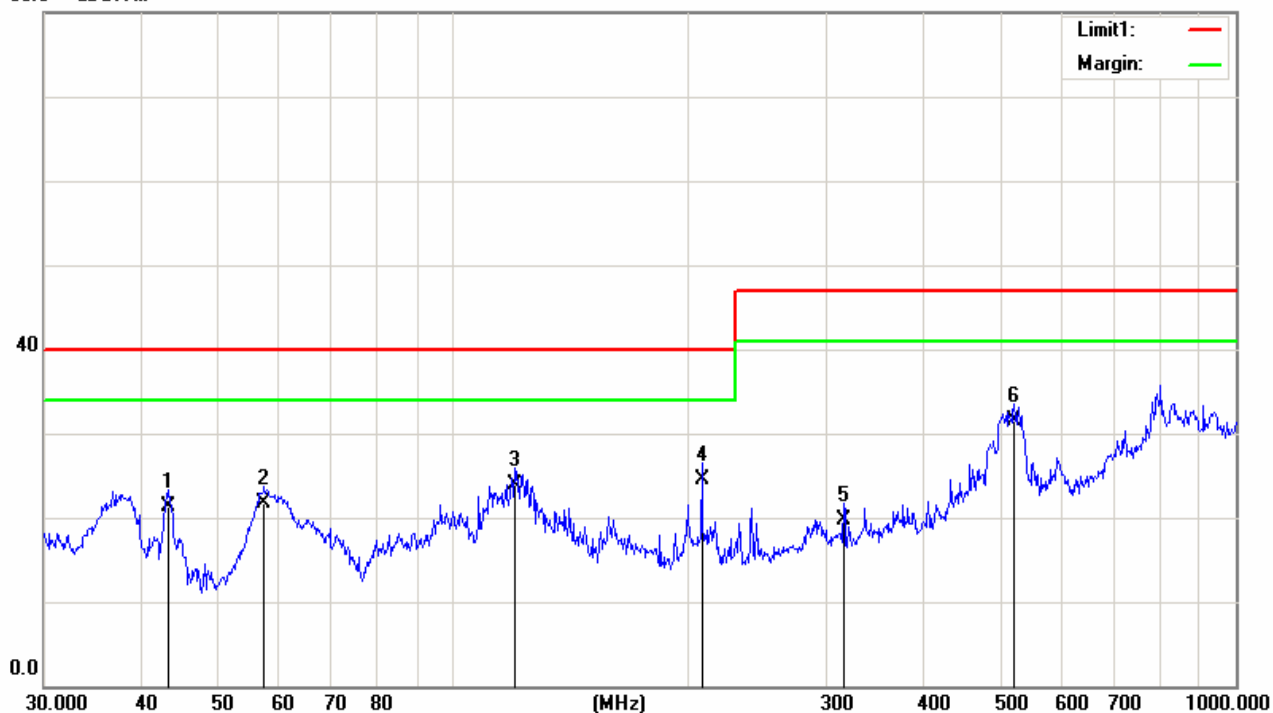
EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Horizontal	Test Result:	Pass
Standard:	(RE)EN55022 class B 3m	Test By:	Vito
Test Mode:	Video Playing		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1462.500	56.77	-3.77	53.00	70.00	-17.00	peak
2	1462.500	47.20	-3.77	43.43	50.00	-6.57	AVG
3	1525.000	54.93	-3.79	51.14	70.00	-18.86	peak
4	1525.000	46.50	-3.79	42.71	50.00	-7.29	AVG
5	1587.500	57.36	-3.82	53.54	70.00	-16.46	peak
6	1587.500	47.80	-3.82	43.98	50.00	-6.02	AVG
7	1737.500	57.25	-2.98	54.27	70.00	-15.73	peak
8	1737.500	48.10	-2.98	45.12	50.00	-4.88	AVG
9	2225.000	48.16	-0.11	48.05	70.00	-21.95	peak
10	2225.000	40.60	-0.11	40.49	50.00	-9.51	AVG

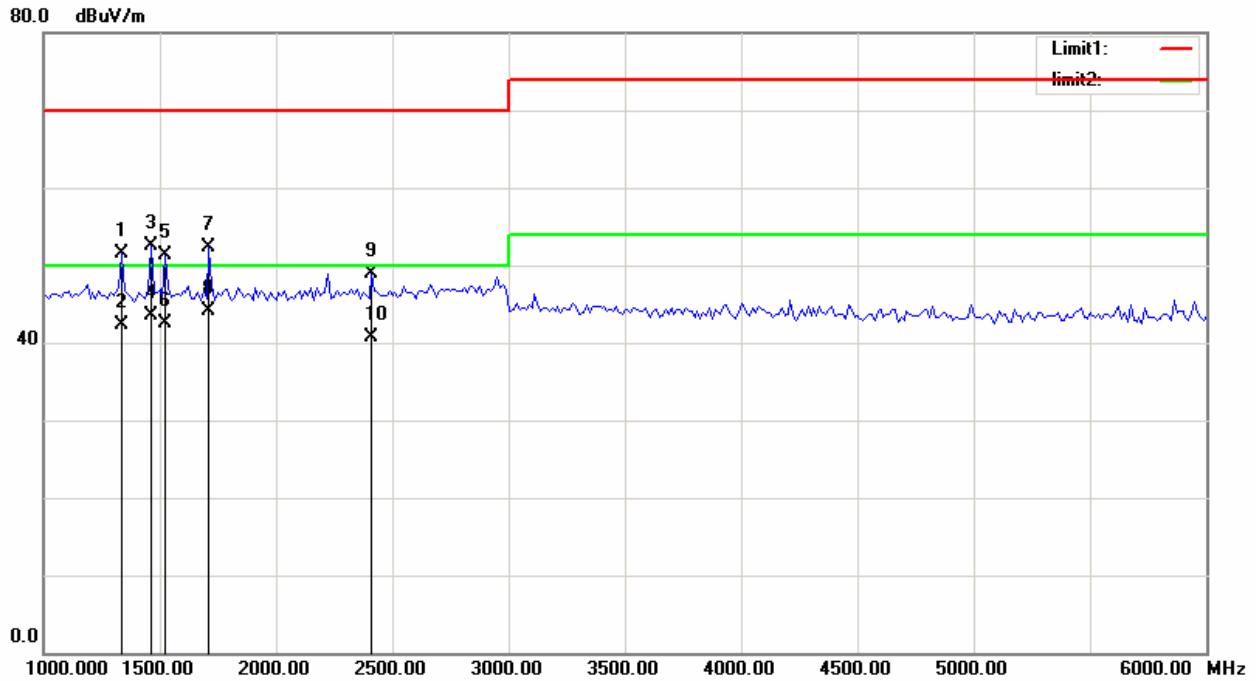
EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Vertical	Test Result:	Pass
Standard:	(RE)EN55022_Class B_3m	Test By:	Vito
Test Mode:	Connected PC		

80.0 dBuV/m



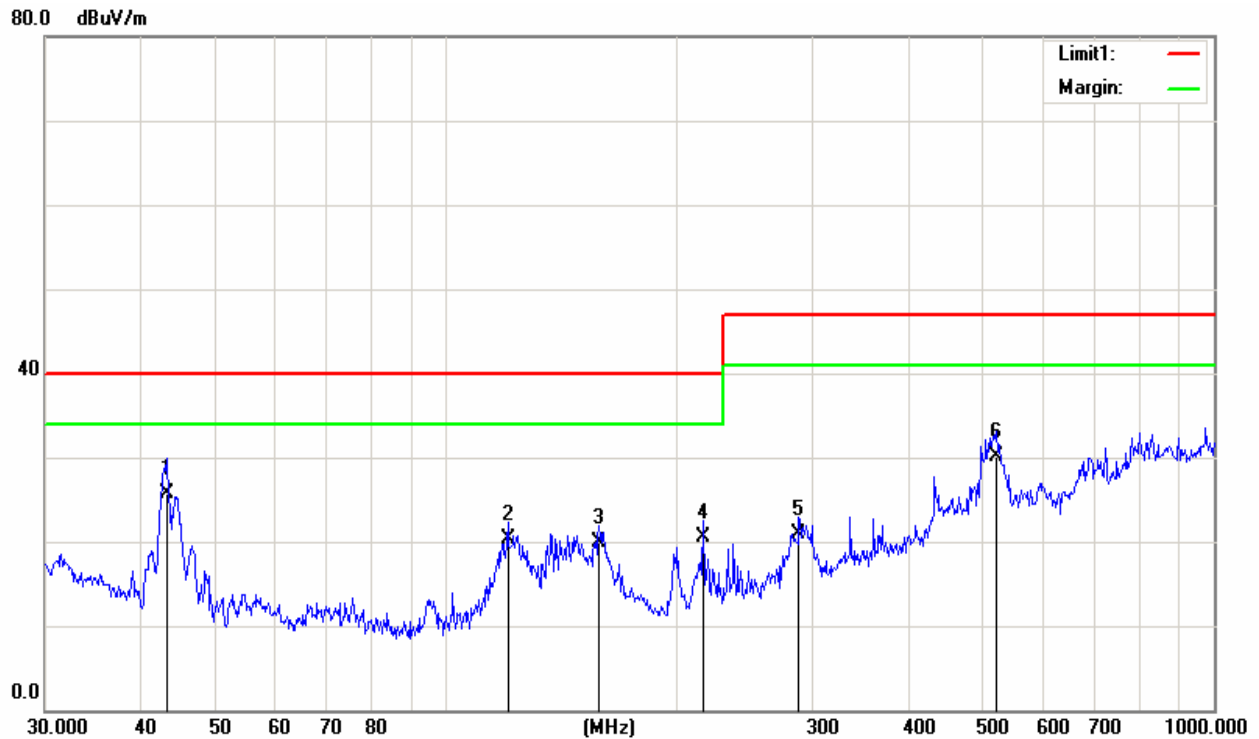
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.2017	35.24	-13.99	21.25	40.00	-18.75	QP
2	57.3922	34.07	-12.43	21.64	40.00	-18.36	QP
3	119.8555	35.45	-11.57	23.88	40.00	-16.12	QP
4	207.8500	33.09	-8.54	24.55	40.00	-15.45	QP
5	315.4806	26.52	-6.76	19.76	47.00	-27.24	QP
6	520.8881	31.89	-0.30	31.59	47.00	-15.41	QP

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Vertical	Test Result:	Pass
Standard:	(RE)EN55022_Class B_3m	Test By:	Vito
Test Mode:	Connected PC		



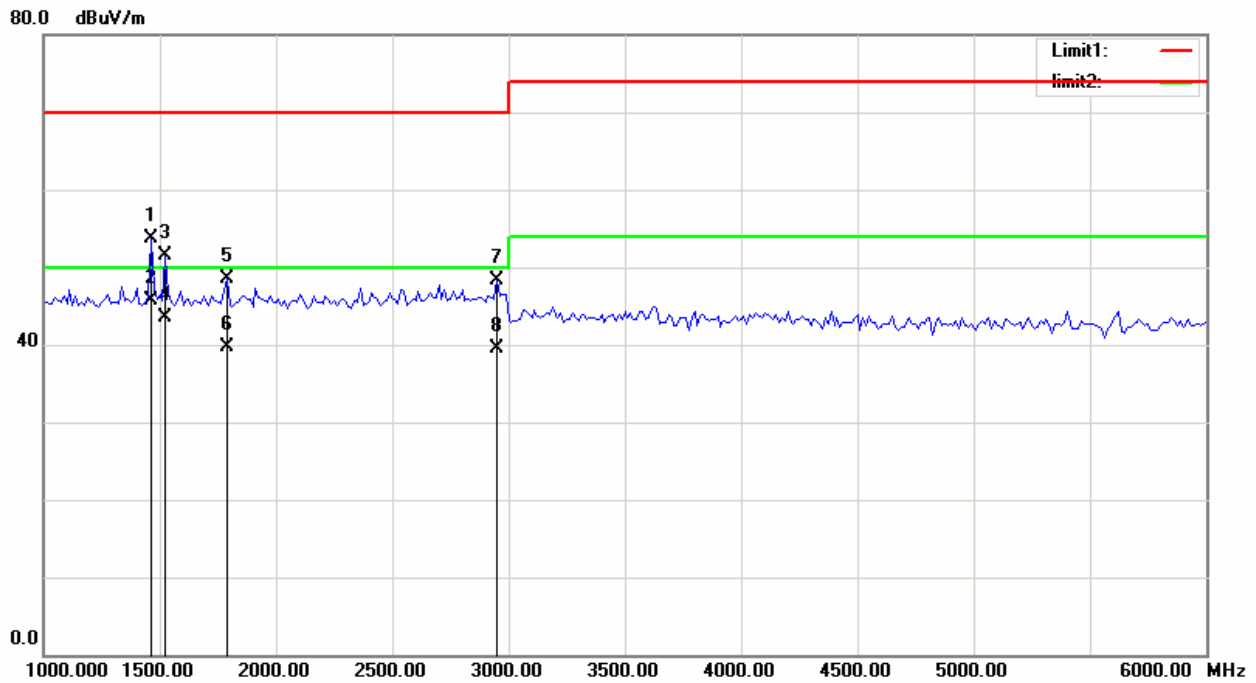
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1337.500	80.96	-29.54	51.42	70.00	-18.58	peak
2	1337.500	71.94	-29.54	42.40	50.00	-7.60	AVG
3	1462.500	81.86	-29.34	52.52	70.00	-17.48	peak
4	1462.500	72.84	-29.34	43.50	50.00	-6.50	AVG
5	1525.000	80.53	-29.24	51.29	70.00	-18.71	peak
6	1525.000	71.84	-29.24	42.60	50.00	-7.40	AVG
7	1712.500	81.34	-28.94	52.40	70.00	-17.60	peak
8	1712.500	73.04	-28.94	44.10	50.00	-5.90	AVG
9	2412.500	77.11	-28.13	48.98	70.00	-21.02	peak
10	2412.500	68.83	-28.13	40.70	50.00	-9.30	AVG

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Horizontal	Test Result:	Pass
Standard:	(RE)EN55022_Class B_3m	Test By:	Vito
Test Mode:	Connected PC		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.2017	39.51	-13.71	25.80	40.00	-14.20	QP
2	120.2766	33.84	-13.50	20.34	40.00	-19.66	QP
3	158.1123	31.37	-11.50	19.87	40.00	-20.13	QP
4	216.0240	32.88	-12.31	20.57	40.00	-19.43	QP
5	287.9904	29.47	-8.58	20.89	47.00	-26.11	QP
6	520.8882	30.22	-0.12	30.10	47.00	-16.90	QP

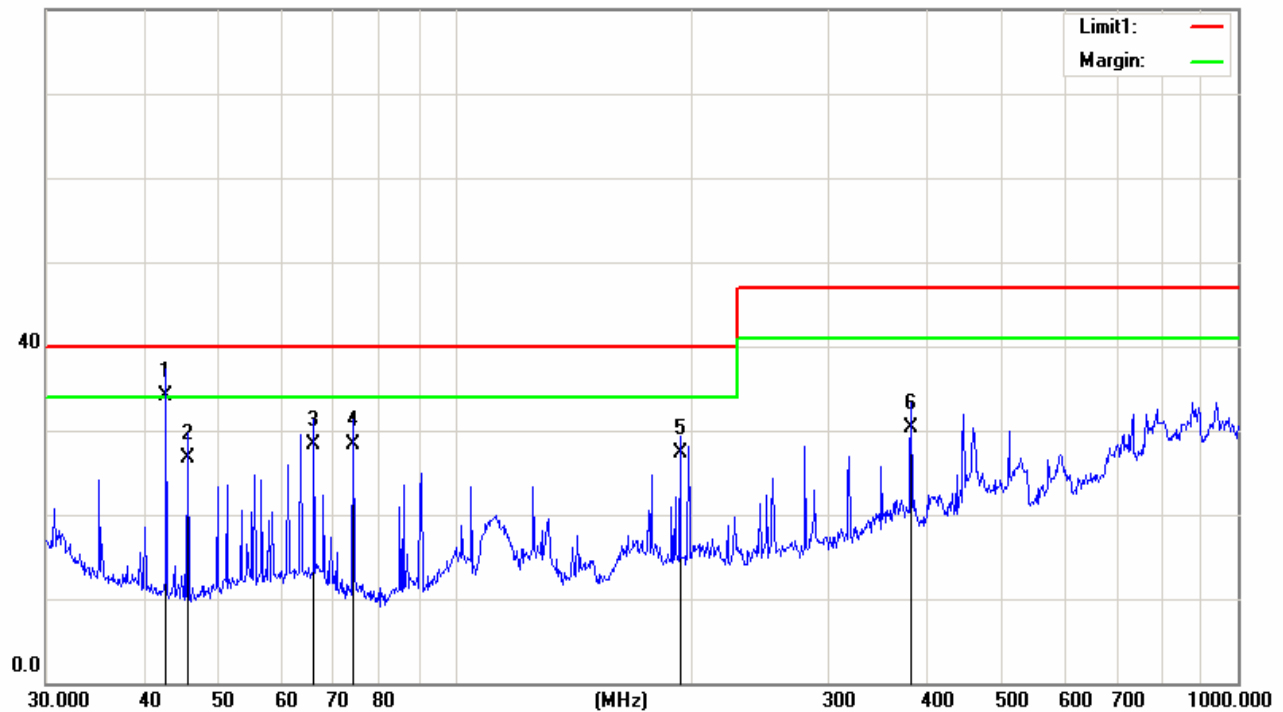
EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Horizontal	Test Result:	Pass
Standard:	(RE)EN55022_Class B_3m	Test By:	Vito
Test Mode:	Connected PC		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1462.500	83.09	-29.34	53.75	70.00	-16.25	peak
2	1462.500	75.14	-29.34	45.80	50.00	-4.20	AVG
3	1525.000	80.79	-29.24	51.55	70.00	-18.45	peak
4	1525.000	72.84	-29.24	43.60	50.00	-6.40	AVG
5	1787.500	77.23	-28.82	48.41	70.00	-21.59	peak
6	1787.500	68.62	-28.82	39.80	50.00	-10.20	AVG
7	2950.000	75.87	-27.66	48.21	70.00	-21.79	peak
8	2950.000	67.26	-27.66	39.60	50.00	-10.40	AVG

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Vertical	Test Result:	Pass
Standard:	(RE)EN55022_Class B_3m	Test By:	Vito
Test Mode:	Data transmitting mode		

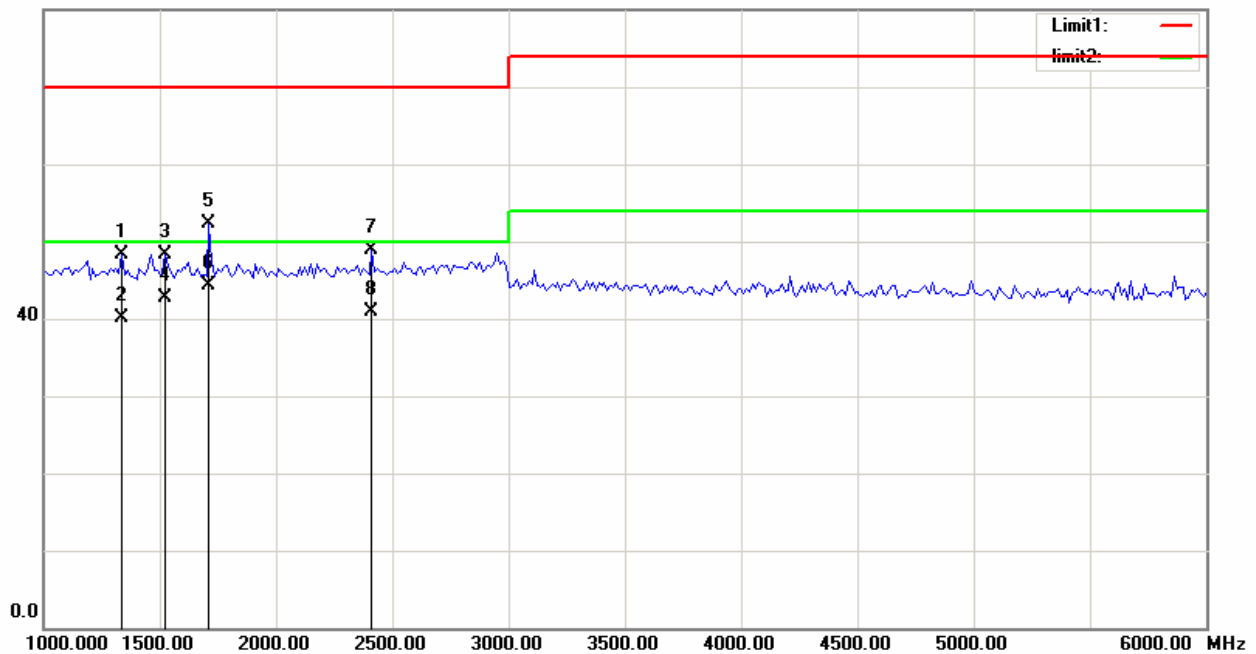
80.0 dBuV/m



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	42.7496	48.10	-13.90	34.20	40.00	-5.80	QP
2	45.5347	40.95	-14.27	26.68	40.00	-13.32	QP
3	66.0340	40.41	-12.09	28.32	40.00	-11.68	QP
4	74.1350	41.82	-13.46	28.36	40.00	-11.64	QP
5	193.7727	36.82	-9.47	27.35	40.00	-12.65	QP
6	382.5878	35.16	-4.89	30.27	47.00	-16.73	QP

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Vertical	Test Result:	Pass
Standard:	(RE)EN55022_Class B_3m	Test By:	Vito
Test Mode:	Data transmitting mode		

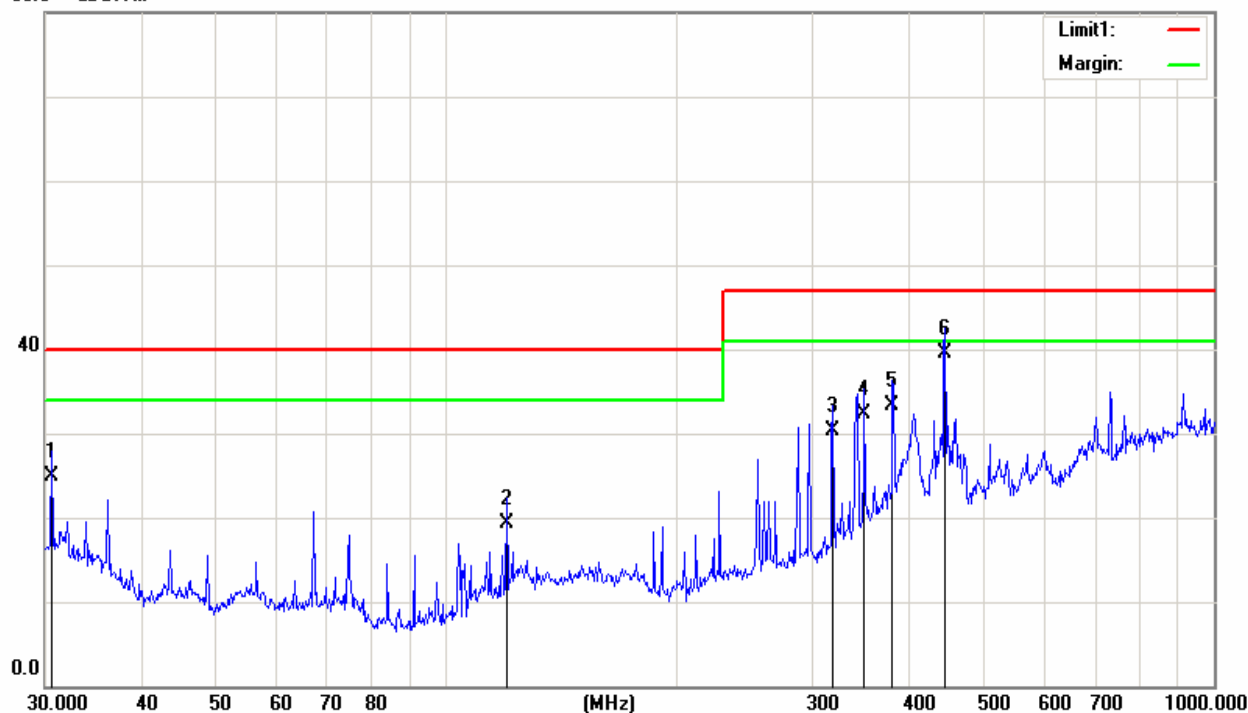
80.0 dBuV/m



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1337.500	77.90	-29.54	48.36	70.00	-21.64	peak
2	1337.500	69.64	-29.54	40.10	50.00	-9.90	AVG
3	1525.000	77.46	-29.24	48.22	70.00	-21.78	peak
4	1525.000	72.04	-29.24	42.80	50.00	-7.20	AVG
5	1712.500	81.34	-28.94	52.40	70.00	-17.60	peak
6	1712.500	73.24	-28.94	44.30	50.00	-5.70	AVG
7	2412.500	77.11	-28.13	48.98	70.00	-21.02	peak
8	2412.500	69.03	-28.13	40.90	50.00	-9.10	AVG

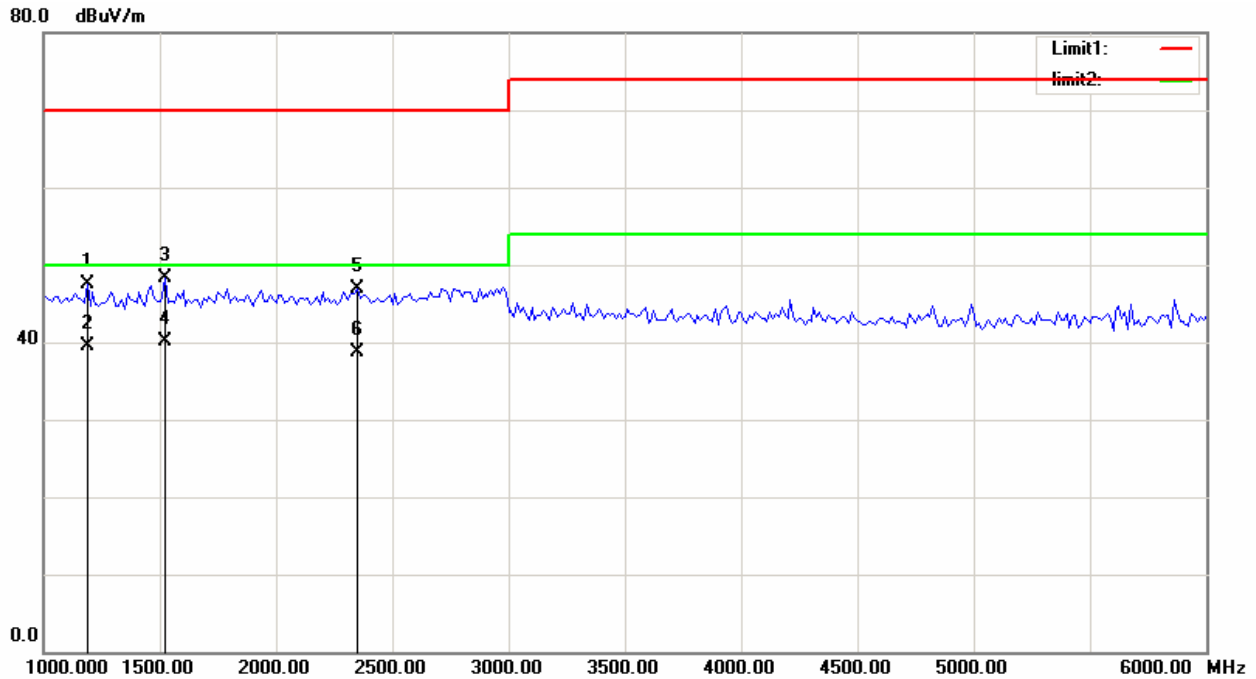
EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Horizontal	Test Result:	Pass
Standard:	(RE)EN55022_Class B_3m	Test By:	Vito
Test Mode:	Data transmitting mode		

80.0 dBuV/m



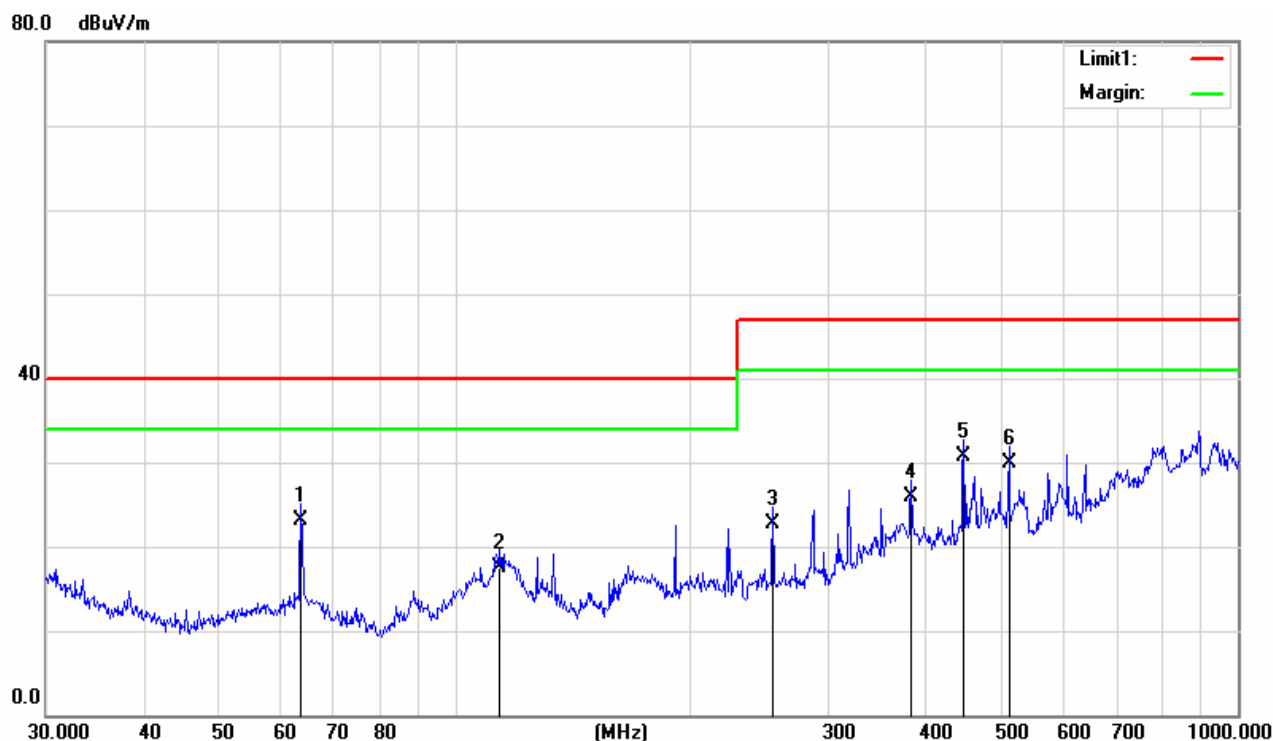
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.6378	33.48	-8.52	24.96	40.00	-15.04	QP
2	119.8555	32.85	-13.63	19.22	40.00	-20.78	QP
3	318.8170	37.98	-7.66	30.32	47.00	-16.68	QP
4	350.4768	39.12	-6.88	32.24	47.00	-14.76	QP
5	381.2487	39.25	-5.92	33.33	47.00	-13.67	QP
6	446.4141	41.76	-2.25	39.51	47.00	-7.49	QP

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Horizontal	Test Result:	Pass
Standard:	(RE)EN55022_Class B_3m	Test By:	Vito
Test Mode:	Data transmitting mode		



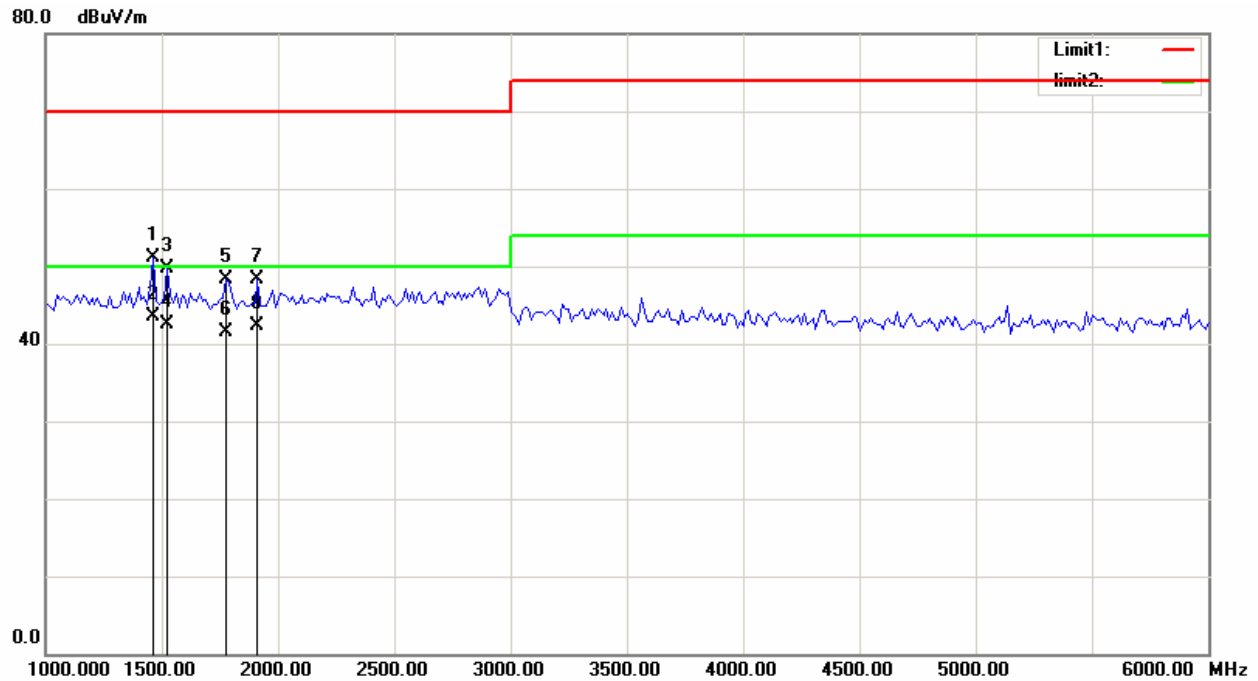
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1187.500	77.23	-29.78	47.45	70.00	-22.55	peak
2	1187.500	69.28	-29.78	39.50	50.00	-10.50	AVG
3	1525.000	77.46	-29.24	48.22	70.00	-21.78	peak
4	1525.000	69.44	-29.24	40.20	50.00	-9.80	AVG
5	2350.000	75.05	-28.18	46.87	70.00	-23.13	peak
6	2350.000	66.88	-28.18	38.70	50.00	-11.30	AVG

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Vertical	Test Result:	Pass
Standard:	(RE)EN55022 class B 3m	Test By:	Vito
Test Mode:	Health test		



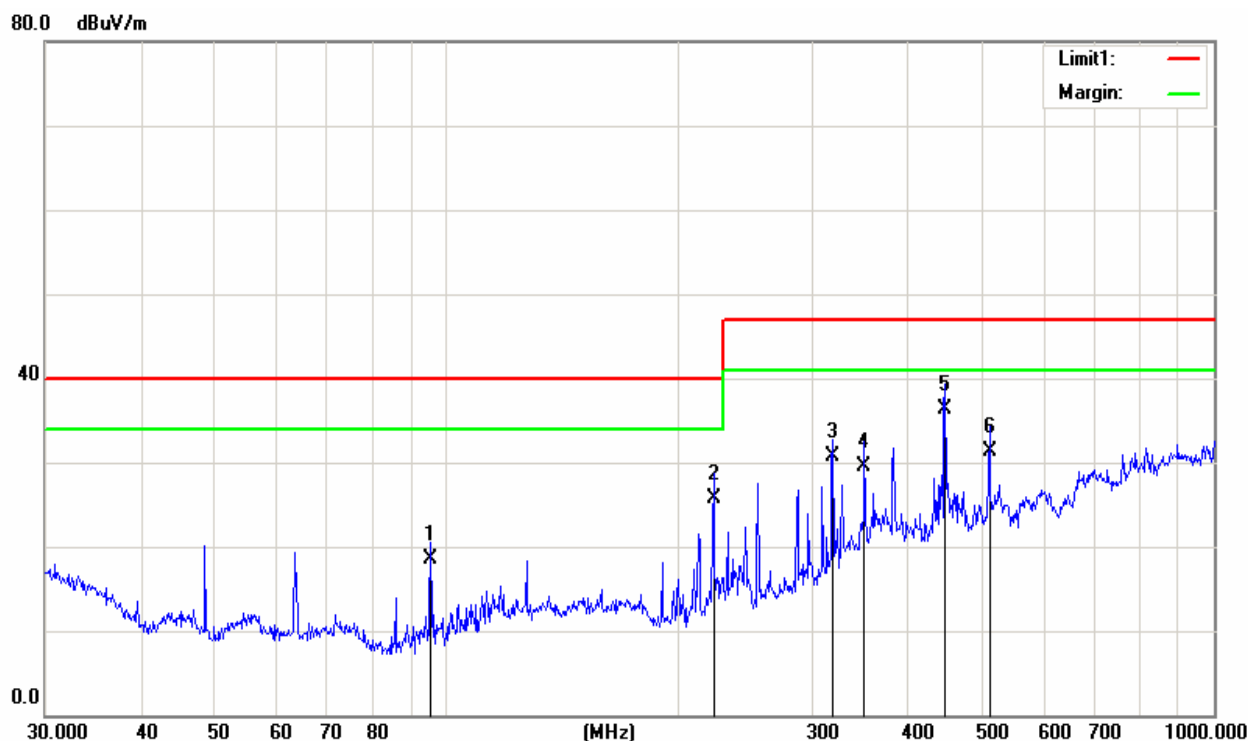
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	63.5356	34.95	-11.87	23.08	40.00	-16.92	QP
2	114.1136	28.94	-11.34	17.60	40.00	-22.40	QP
3	254.7283	31.33	-8.67	22.66	47.00	-24.34	QP
4	382.5878	30.76	-4.89	25.87	47.00	-21.13	QP
5	446.4141	33.86	-3.25	30.61	47.00	-16.39	QP
6	510.0436	31.50	-1.61	29.89	47.00	-17.11	QP

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Vertical	Test Result:	Pass
Standard:	(RE)EN55022 class B 3m	Test By:	Vito
Test Mode:	Health test		



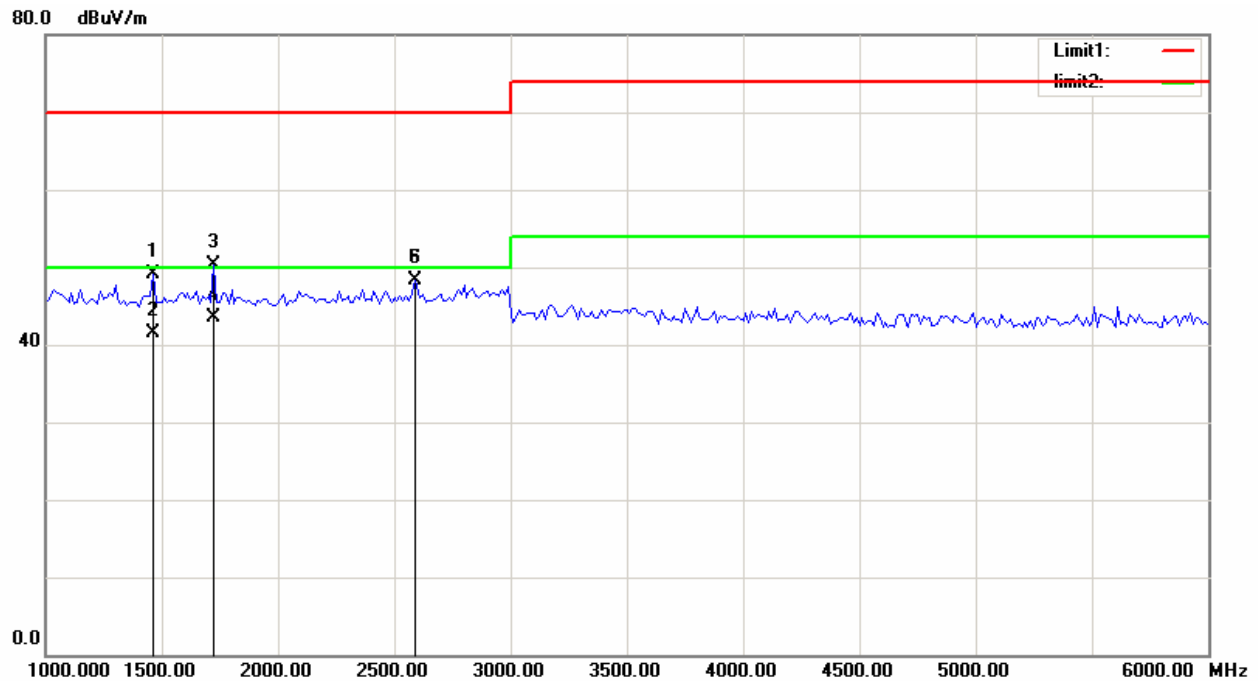
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1462.500	80.50	-29.34	51.16	70.00	-18.84	peak
2	1462.500	72.94	-29.34	43.60	50.00	-6.40	AVG
3	1525.000	78.99	-29.24	49.75	70.00	-20.25	peak
4	1525.000	71.74	-29.24	42.50	50.00	-7.50	AVG
5	1775.000	77.05	-28.84	48.21	70.00	-21.79	peak
6	1775.000	70.44	-28.84	41.60	50.00	-8.40	AVG
7	1912.500	76.98	-28.62	48.36	70.00	-21.64	peak
8	1912.500	71.02	-28.62	42.40	50.00	-7.60	AVG

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Horizontal	Test Result:	Pass
Standard:	(RE)EN55022 class B 3m	Test By:	Vito
Test Mode:	Health test		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	95.4270	35.34	-16.92	18.42	40.00	-21.58	QP
2	222.9499	37.14	-11.38	25.76	40.00	-14.24	QP
3	318.8170	38.42	-7.66	30.76	47.00	-16.24	QP
4	350.4768	36.35	-6.88	29.47	47.00	-17.53	QP
5	446.4141	38.59	-2.25	36.34	47.00	-10.66	QP
6	510.0436	31.86	-0.61	31.25	47.00	-15.75	QP

EUT:	Health perception computer	Model No.:	ES99AH1
Temperature:	24°C	Relative Humidity:	55%
Distance:	3m	Test Power:	AC 230V/50Hz
Polarization:	Horizontal	Test Result:	Pass
Standard:	(RE)EN55022 class B 3m	Test By:	Vito
Test Mode:	Health test		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1462.500	52.93	-3.77	49.16	70.00	-20.84	peak
2	1462.500	45.27	-3.77	41.50	50.00	-8.50	AVG
3	1725.000	53.40	-3.06	50.34	70.00	-19.66	peak
4	1725.000	46.56	-3.06	43.50	50.00	-6.50	AVG
5	2587.500	47.83	0.51	48.34	70.00	-21.66	peak
6	2587.500	47.83	0.51	48.34	50.00	-1.66	AVG

3.3 HARMONICS CURRENT MEASUREMENT

Current Test Result Summary (Run time)			
EUT:	Health perception computer	Model No. :	ES99AH1
Temperature:	24°C	Relative Humidity:	55 %
Pressure:	1008 hPa	Test Power :	AC 230V/50Hz
Highest parameter values during test:			

Remark: This rated power of EUT is under 75W, therefore it isn't specified in this standard.

3.4 VOLTAGE FLUCTUATION AND FLICKS MEASUREMENT

3.4.1 LIMITS OF VOLTAGE FLUCTUATION AND FLICKS MEASUREMENT

Tests	Limits		Descriptions
	IEC555-3	IEC/EN 61000-3-2	
Pst	≤ 1.0, Tp= 10 min.	≤ 1.0, Tp= 10 min.	Short Term Flicker Indicator
Plt	N/A	≤ 0.65, Tp=2 hr.	Long Term Flicker Indicator
dc	≤ 3 %	≤ 3.3 %	Relative Steady-State V-Chang
dmax	≤ 4 %	≤ 4 %	Maximum Relative V-change
d (t)	N/A	≤ 3.3% for > 500 ms	Relative V-change characteristic

3.4.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Low Frequency Measurement System	EMC-Partner	HARMONIC1000	130488	12/25/2014

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

3.4.3 TEST PROCEDURE

a. 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.

b. 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.

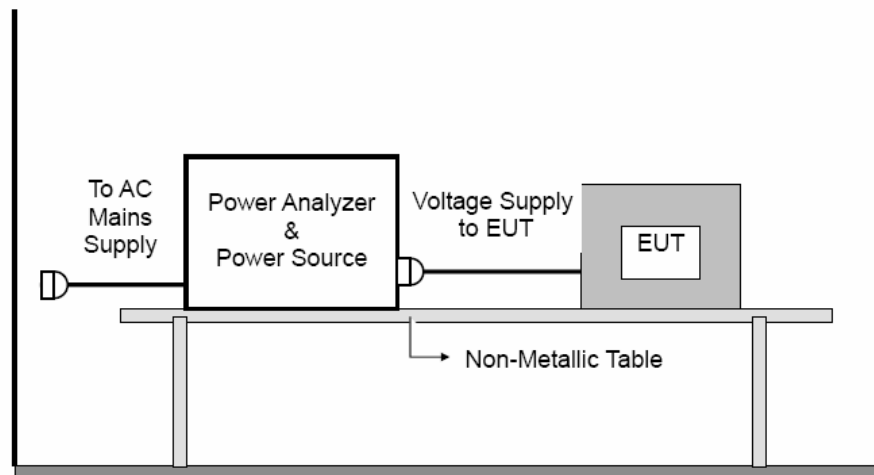
c. All types of harmonic current and/or voltage fluctuation in this report are assessed by direct measurement using flicker-meter.

d. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.4.4 DEVIATION FROM TEST STANDARD

No deviation

3.4.5 TESTSETUP



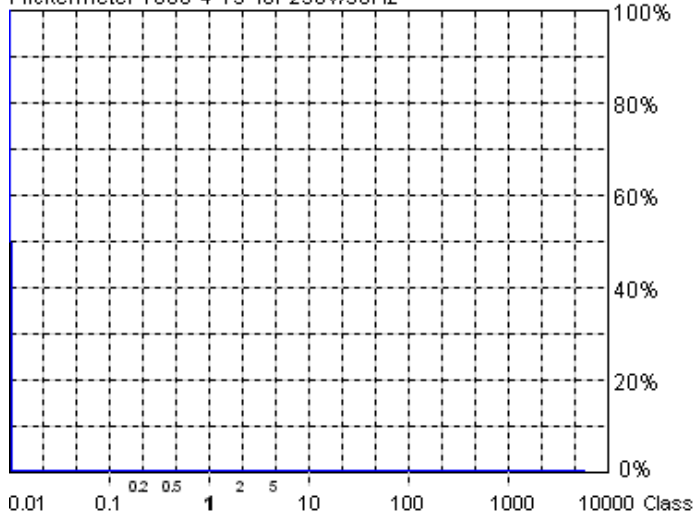
3.4.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.2** Unless otherwise a special operating condition is specified in the follows during the testing.

3.4.7 TEST RESULTS

EUT:	Health perception computer	Model No. :	ES99AH1
Temperature:	24°C	Relative Humidity:	55 %
Pressure:	1008 hPa	Test Power :	AC 230V/50Hz

Flickermeter 1000-4-15 for 230V/50Hz



Actual Flicker (Fli): 0.00
Short-term Flicker (Pst): 0.07
 Limit (Pst): 1.00
Long-term Flicker (Ptt): 0.07
 Limit (Ptt): 0.65
Maximum Relative Volt. Change (dmax): 0.04%
 Limit (dmax): 4.00%
Relative Steady-state Voltage Change (dc): 0.01%
 Limit (dc): 3.30%
Maximum Interval exceeding 3.30% (dt): 0.00ms
 Limit (dt>Lim): 500ms

Flicker Emission - IEC 61000-3-3 , EN 61000-3-3 , (EN60555-3)

Urms = 229.9 V P = 15.07 W
 Irms = 0.164 A pf = 0.399

ES99AH1

Test completed, Result: PASSED

2014-4-29 AM 10:10:5

Range: 2 A
 V-nom: 230 V
 TestTime: 10 min (100%)

HAR-1000 EMC-Partner

4. EMC IMMUNITY TEST

4.1 STANDARD COMPLIANCE/SERVRITY LEVEL/CRITERIA

Tests Standard No.	TEST SPECIFICATION Level	Test Mode Test Ports	Perform. Criteria	Remark
1. ESD IEC/EN 61000-4-2	8KV air discharge 4KV contact discharge	Direct Mode	B	
	4KV HCP discharge 4KV VCP discharge	Indirect Mode	B	
2. RS IEC/EN 61000-4-3	80 MHz to 1000 MHz 3V/m(rms), 1 KHz, 80%, AM modulated	Enclosure	A	
3. EFT/Burst IEC/EN 61000-4-4	1.0KV(peak) 5/50ns Tr/Th 5KHz Repetition Freq.	AC Power Port	B	
	0.5 KV(peak) 5/50ns Tr/Th 5KHz Repetition Freq.	CTL/Signal Data Line Port	B	N/A
4. Surges IEC/EN 61000-4-5	1 KV(5P/5N) 1.2/50(8/20) Tr/Th us	L-N	B	
	2 KV(5P/5N) 1.2/50(8/20) Tr/Th us	L-PE N-PE	B	N/A
5 Injected Current IEC/EN 61000-4-6	0.15 MHz to 80 MHz 3V(rms), 1KHz 80%, AM Modulated 150Ω source impedance	CTL/Signal Port	A	N/A
	0.15 MHz to 80 MHz 3V(rms), 1KHz 80%, AM Modulated 150Ω source impedance	AC Power Port	A	
	0.15 MHz to 80 MHz 3V(rms), 1KHz 80%, AM Modulated 150Ω source impedance	DC Power Port	A	N/A
6. Power Frequency Magnetic Field IEC/EN 61000-4-8	50 Hz, 1A/m	Enclosure	A	N/A
7. Volt. Interruptions Volt. Dips IEC/EN 61000-4-11	Voltage dip > 95% / 30% Interruption > 95%	AC Power Port	B / C C	

* Remark:

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

:

4.2 GENERAL PERFORMANCE CRITERIA

According to **EN55024** standard, the general performance criteria as following:

Criterion A	The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user product description and documentation, and by what the user may reasonably expect from the equipment if 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 phenomenon below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed. However, no change of operating state if stored data allowed to persist after the test. If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if 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. Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

4.3 GENERAL PERFORMANCE CRITERIA TEST SETUP

The EUT tested system was configured as the statements of **4.2** Unless otherwise a special operating condition is specified in the follows during the testing.

4.4 ESD TESTING

4.4.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-2
Discharge Impedance:	330 ohm / 150 pF
Required Performance	B
Discharge Voltage:	Air Discharge: 2kV/4kV/8kV (Direct) Contact Discharge: 2kV/4kV (Direct/Indirect)
Polarity:	Positive & Negative
Number of Discharge:	Air Discharge: min. 25 times at each test point Contact Discharge: min. 200 times in total
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum

4.4.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Electrostatic Discharge Simulator	NOISEKEN	ESS-2002	ESS0625214	12/22/2014

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

4.4.3 TEST PROCEDURE

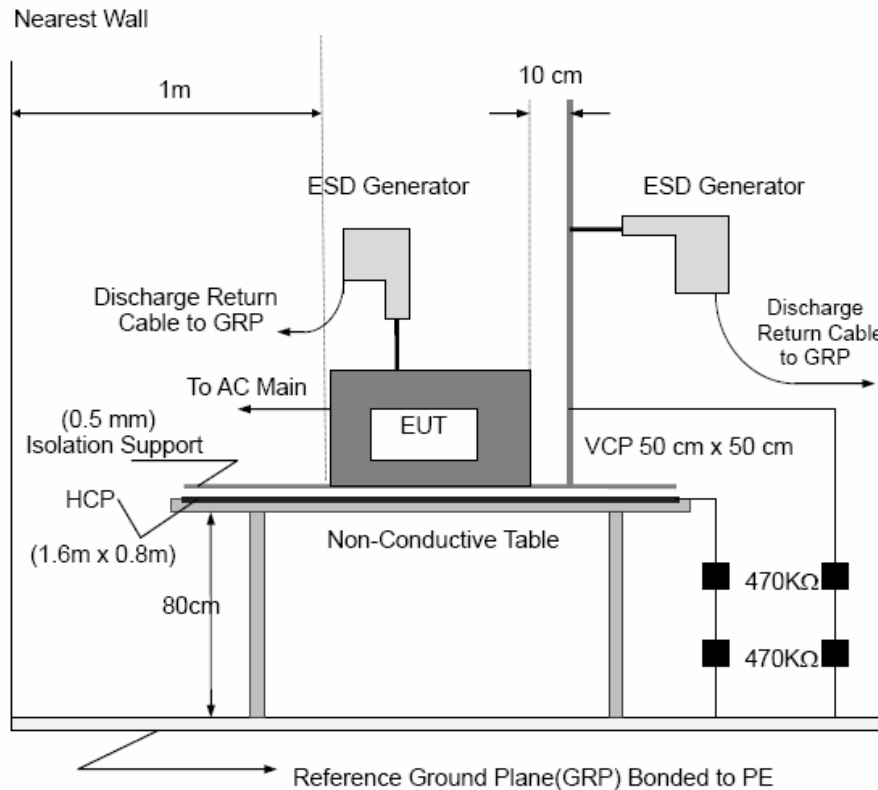
The test generator necessary to perform direct and indirect application of discharges to the EUT in the following manner:

- a. Contact discharge was applied to conductive surfaces and coupling planes of the EUT. During the test, it was performed with single discharges. For the single discharge time between successive single discharges was at least 1 second. The EUT shall be exposed to at least 200 discharges, 100 each at negative and positive polarity, at a minimum of four test points. One of the test points shall be subjected to at least 50 indirect discharges to the center of the front edge of the horizontal coupling plane. The remaining three test points shall each receive at least 50 direct contact discharges.
If no direct contact test points are available, then at least 200 indirect discharges shall be applied in the indirect mode. Test shall be performed at a maximum repetition rate of one discharge per second.
Vertical Coupling Plane (VCP):
The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane.
The four faces of the EUT will be performed with electrostatic discharge.
Horizontal Coupling Plane (HCP):
The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.
The four faces of the EUT will be performed with electrostatic discharge.
- b. Air discharges at insulation surfaces of the EUT.
It was at least ten single discharges with positive and negative at the same selected point.
- c. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table 0.8 meters high standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum at least 0.25mm thick, and 2.5 meters square connected to the protective grounding system. A Horizontal Coupling Plane (1.6m x 0.8m) was placed on the table and attached to the GRP by means of a cable with 940k total impedance. The equipment under test, was installed in a representative system as described in section 7 of IEC /EN 61000-4-2, and its cables were placed on the HCP and isolated by an insulating support of 0.5mm thickness. A distance of 1 meter minimum was provided between the EUT and the walls of the laboratory and any other metallic structure.

FLOOR-STANDING EQUIPMENT

The equipment under test was installed in a representative system as described in section 7 of IEC/EN 61000-4-2, and its cables were isolated from the Ground Reference Plane by an insulating support of 0.1-meter thickness. The GRP consisted of a sheet of aluminum that is at least 0.25mm thick, and 2.5meters square connected to the protective grounding system and extended at least 0.5 meters from the EUT on all sides.

4.4.6 TEST RESULTS

EUT:	Health perception computer	Model No. :	ES99AH1
Temperature:	24°C	Relative Humidity:	55 %
Pressure:	1008 hPa	Test Power :	AC 230V/50Hz
Test Mode :	Video Playing/ data transmitting mode/ Health test		

Mode	Air Discharge								Contact Discharge							
	2KV		4KV		8KV		12KV		2KV		4KV		6KV		8KV	
Location	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P	N
Metal Rack									A	A	A	A				
Screws									A	A	A	A				
Slot	A	A	A	A	A	A										
Screen	A	A	A	A	B	B										
Button	A	A	A	A	A	A										
Connector	A	A	A	A	B	B										
Criteria	B								B							
Result	B								A							
Judgment	PASS								PASS							

Mode	HCP Discharge								VCP Discharge							
	2KV		4KV		6KV		8KV		2KV		4KV		6KV		8KV	
Location	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P	N
Front	A	A	A	A					A	A	A	A				
Rear	A	A	A	A					A	A	A	A				
Left	A	A	A	A					A	A	A	A				
Right	A	A	A	A					A	A	A	A				
Criteria	B								B							
Result	A								A							
Judgment	PASS								PASS							

Note:

- 1) P/N denotes the Positive/Negative polarity of the output voltage.
- 2) Test condition:
Direct / Indirect (HCP/VCP) discharges: Minimum 50 times (Positive/Negative) at each point. Air discharges: Minimum 50 times (Positive/Negative) at each point.
- 3) Test location(s) in which discharge (Air and contact discharge) to be applied illustrated by photos shown in next page(s)
- 4) The Indirect (HCP/VCP) discharges description of test point as following:
1.left side 2.right side 3.front side 4.rear side
- 5) N/A - denotes test is not applicable in this test report
- 6) Criteria B: The EUT function loss during the test, but self-recoverable after the test.

4.5 RS TESTING

4.5.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-3
Required Performance	A
Frequency Range:	80 MHz - 1000 MHz
Field Strength:	3 V/m
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Polarity of Antenna:	Horizontal and Vertical
Test Distance:	3 m
Antenna Height:	1.5 m
Dwell Time:	at least 3 seconds

4.5.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Signal Generator	Agilent	N517113-50B	MY53050160	12/24/2014
2	Amplifier	A&R	150W1000M3	313157	11/11/2014
3	Log-periodic Antenna	Schwarzbeck	STLP 9128E	9128E-012	02/19/2015
4	Isotropic Field Probe	A&R	FL7006	0342652	11/20/2014
5	Amplifier	A&R	50SIG6M2	0342835	11/20/2014
6	Antenna	Schwarzbeck	STLP9149	9149.222	11/24/2014

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

4.5.3 TEST PROCEDURE

The EUT and support equipment, which are placed on a table that is 0.8 meter above ground and the testing was performed in a fully-anechoic chamber.

The testing distance from antenna to the EUT was 3 meters.

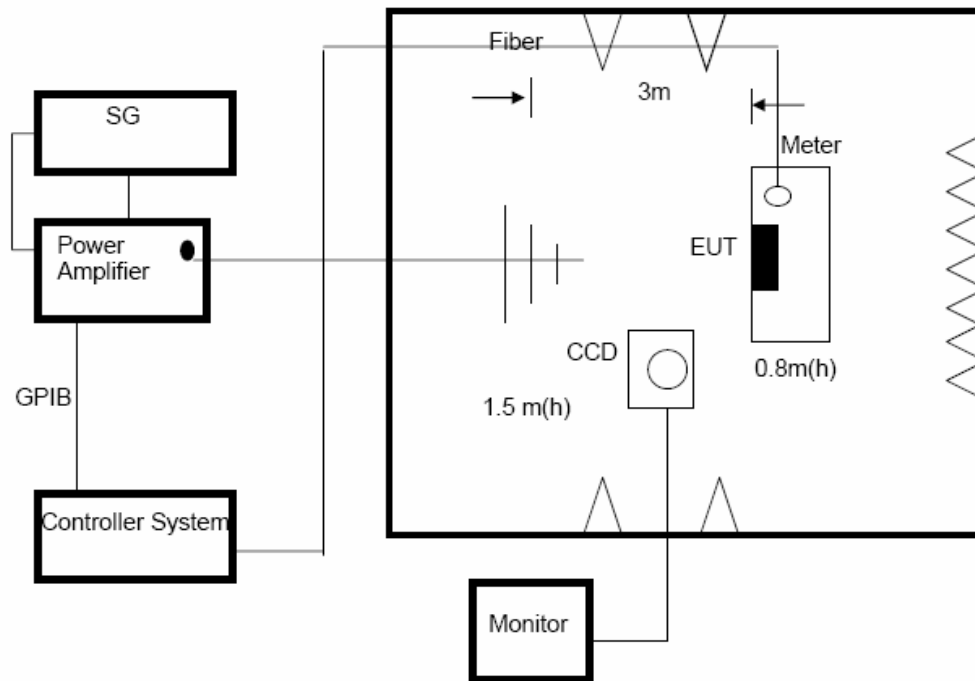
The other condition as following manner:

- a. The field strength level was 3V/m.
- b. The frequency range is swept from 80 MHz to 1000 MHz, with the signal 80%amplitude modulated with a 1kHz sine wave. The rate of sweep did not exceed 1.5×10^{-3} decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
- c. The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
- d. The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive table 0.8 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

FLOOR-STANDING EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive wood support 0.1 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

4.5.6 TEST RESULTS

EUT:	Health perception computer	Model No. :	ES99AH1
Temperature:	24°C	Relative Humidity:	55 %
Pressure:	1008 hPa	Test Power :	AC 230V/50Hz
Test Mode :	Video Playing/ data transmitting mode/ Health test		

Frequency Range (MHz)	RF Field Position	R.F. Field Strength	Azimuth	Perform. Criteria	Results	Judgment
80MHz - 1000MHz	H / V	3 V/m (rms) AM Modulated 1000Hz, 80%	0	A	A	PASS
			90			
			180			
			270			

Note:

- 1) P/N denotes the Positive/Negative polarity of the output voltage.
- 2) N/A - denotes test is not applicable in this test report.
- 3) Criteria A: There was no change operated with initial operating during the test.
- 4) Criteria B: The EUT function loss during the test, but self-recoverable after the test.
- 5) Criteria C: The system shut down during the test.

4.6 EFT/BURST TESTING

4.6.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-4
Required Performance	B
Test Voltage:	Power Line: 1 kV
Polarity:	Positive & Negative
Impulse Frequency:	5 kHz
Impulse Wave shape :	5/50 ns
Burst Duration:	15 ms
Burst Period:	300 ms
Test Duration:	Not less than 1 min.

4.6.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Transient 3000 Test System	EMC-Partner	TRA3000	F-D-V-1501	12/21/2014
2	Capacitive Coupling Clamp	EMC-Partner	CN-EFT1000	709	12/21/2014

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

4.6.3 TEST PROCEDURE

The EUT and support equipment, are placed on a table that is 0.8 meter above a metal ground plane measured 1m*1m min. and 0.65mm thick min.

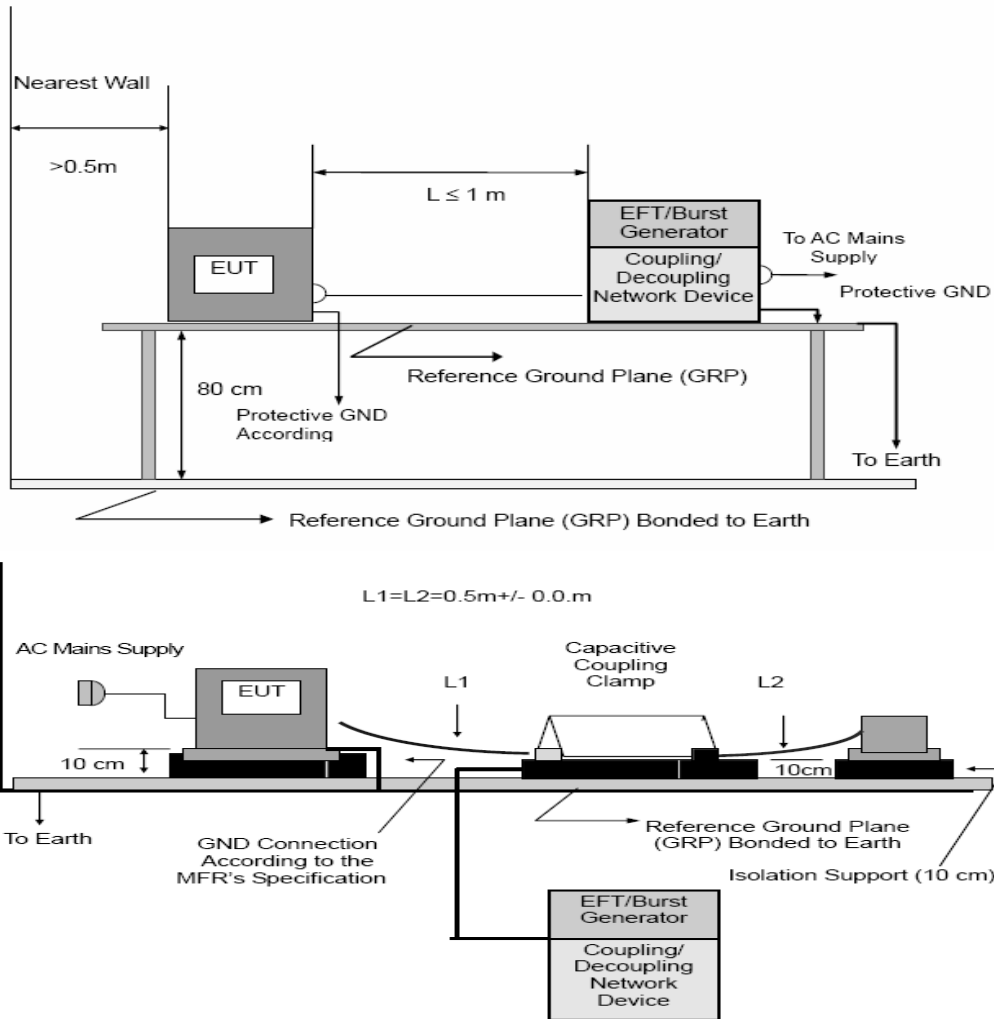
The other condition as following manner:

- a. The length of power cord between the coupling device and the EUT should not exceed 1 meter.
- b. Both positive and negative polarity discharges were applied.
- c. The duration time of each test sequential was 1 minute
- d. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table (0.8m high) standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum (at least 0.25mm thick and 2.5m square) connected to the protective grounding system. A minimum distance of 0.5m was provided between the EUT and the walls of the laboratory or any other metallic structure.

FLOOR-STANDING EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-4 and its cables, were isolated from the Ground Reference Plane by an insulating support that is 0.1meter thick. The GRP consisted of a sheet of aluminum (at least 0.25mm thick and 2.5m square) connected to the protective grounding system.

4.6.6 TEST RESULTS

EUT:	Health perception computer	Model No. :	ES99AH1
Temperature:	24℃	Relative Humidity:	55 %
Pressure:	1008 hPa	Test Power :	AC 230V/50Hz
Test Mode :	Video Playing/ data transmitting mode/ Health test		

Mode	(X) AC Power Line		() DC Power Line		() Signal/Control Line	
Test Level	1KV		0.5KV		0.5KV	
Port(s)	Polarity	Results	Polarity	Results	Polarity	Results
Line (L)	P	B	P		P	
	N	B	N		N	
Neutral (N)	P	B	P		P	
	N	B	N		N	
Line + Neutral (L+N)	P	B	P		P	
	N	B	N		N	
Ground (PE)	P		P		P	
	N		N		N	
Line + Ground (L+PE)	P		P		P	
	N		N		N	
Neutral + Ground (N+PE)	P		P		P	
	N		N		N	
Line + Neutral + Ground(L+N+PE)	P		P		P	
	N		N		N	
Signal/Control Line	P		P		P	
	N		N		N	
Criteria	B		B		B	
Result	B		N/A		N/A	
Judgment	PASS		N/A		N/A	

Note:

- 1) P/N denotes the Positive/Negative polarity of the output voltage.
- 2) N/A - denotes test is not applicable in this test report
- 3) Criteria A: There was no change operated with initial operating during the test.
- 4) Criteria B: The EUT function loss during the test, but self-recoverable after the test.
- 5) Criteria C: The system shut down during the test.

4.7 SURGE TESTING

4.7.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-5
Required Performance	B
Wave-Shape:	Combination Wave 1.2/50 us Open Circuit Voltage 8 /20 us Short Circuit Current
Test Voltage:	Power Line: 1 kV
Surge Input/Output:	L-N
Generator Source:	2 ohm between networks
Impedance:	12 ohm between network and ground
Polarity:	Positive/Negative
Phase Angle:	0 /90/180/270
Pulse Repetition Rate:	1 time / min. (maximum)
Number of Tests:	5 positive and 5 negative at selected points

4.7.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Lightning Surge Generator	Prima	SUG61005BG	PR08055179	07/15/2014

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

4.7.3 TEST PROCEDURE

a. For EUT Switching Adapter:

The surge is to be applied to the EUT Switching Adapter terminals via the capacitive coupling network. Decoupling networks are required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines, and to provide sufficient decoupling impedance to the surge wave. The power cord between the EUT and the coupling/decoupling networks shall be 2meters in length (or shorter).

b. For test applied to unshielded unsymmetrically operated interconnection lines of EUT:

The surge is applied to the lines via the capacitive coupling. The coupling /decoupling networks shall not influence the specified functional conditions of the EUT. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

c. For test applied to unshielded symmetrically operated interconnection /telecommunication lines of EUT:

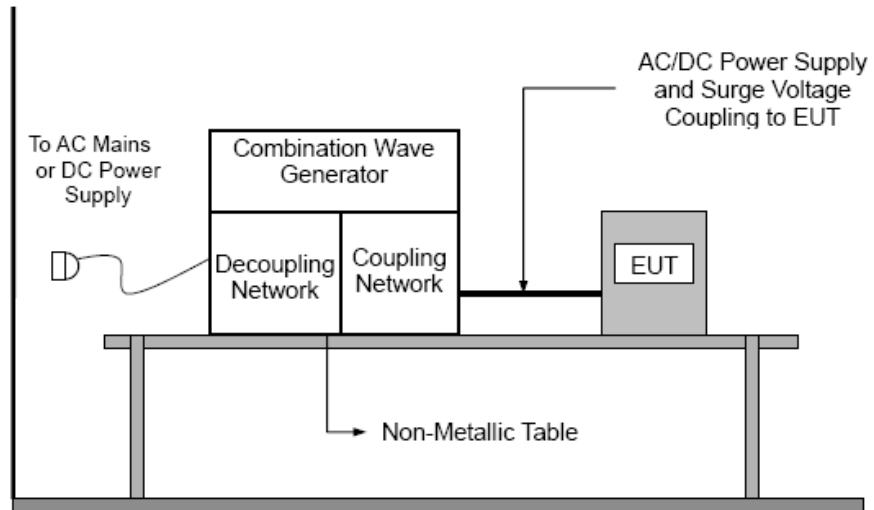
The surge is applied to the lines via gas arrestors coupling. Test levels below the ignition point of the coupling arrestor cannot be specified. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

d. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.7.4 DEVIATION FROM TEST STANDARD

No deviation

4.7.5 TEST SETUP



4.7.6 TEST RESULTS

EUT:	Health perception computer	Model No. :	ES99AH1
Temperature:	24℃	Relative Humidity:	55 %
Pressure:	1008 hPa	Test Power :	AC 230V/50Hz
Test Mode :	Video Playing/ data transmitting mode/ Health test		

Wave Form EUT Ports Tested	1.2/50(8/20)Ti/Th us						Criteria	Judgment
	Polarity	Phase	Voltage					
			0.5kV	1kV	1.5kV	2kV		
L - N	+/-	0°		B			B	PASS
	+/-	90°		B				
	+/-	180°		B				
	+/-	270°		B				
L - PE	+/-	0°					B	N/A
	+/-	90°						
	+/-	180°						
	+/-	270°						
N - PE	+/-	0°					B	N/A
	+/-	90°						
	+/-	180°						
	+/-	270°						
Signal Line (N/A)	+/-	0°					B	N/A
	+/-	90°						
	+/-	180°						
	+/-	270°						

Note:

- 1) P/N denotes the Positive/Negative polarity of the output voltage.
- 2) Polarity and Numbers of Impulses: 5 Pst / Ngt at each tested mode
- 3) N/A - denotes test is not applicable in this Test Report
- 4) All voltages of the lower levels shall be satisfied

4.8 INJECTION CURRENT TESTING

4.8.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-6
Required Performance	A
Frequency Range:	0.15 MHz - 80 MHz
Field Strength:	3 Vr.m.s.
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Dwell Time:	at least 3 seconds

4.8.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Conducted Immunity Test System	Frankonia	CIT-10	102D1253	11/11/2014
2	CDN	Frankonia	CDN M2+M3	A3011059	11/11/2014
3	EM Clamp	Schaffner	KEMZ 801	21044	11/11/2014
4	Attenuation	Bird	DAM75W(6dB)	29750	11/11/2014

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

4.8.3 TEST PROCEDURE

The EUT and support equipment, are placed on a table that is 0.8 meter above a metal ground plane measured 1m*1m min. and 0.65mm thick min.

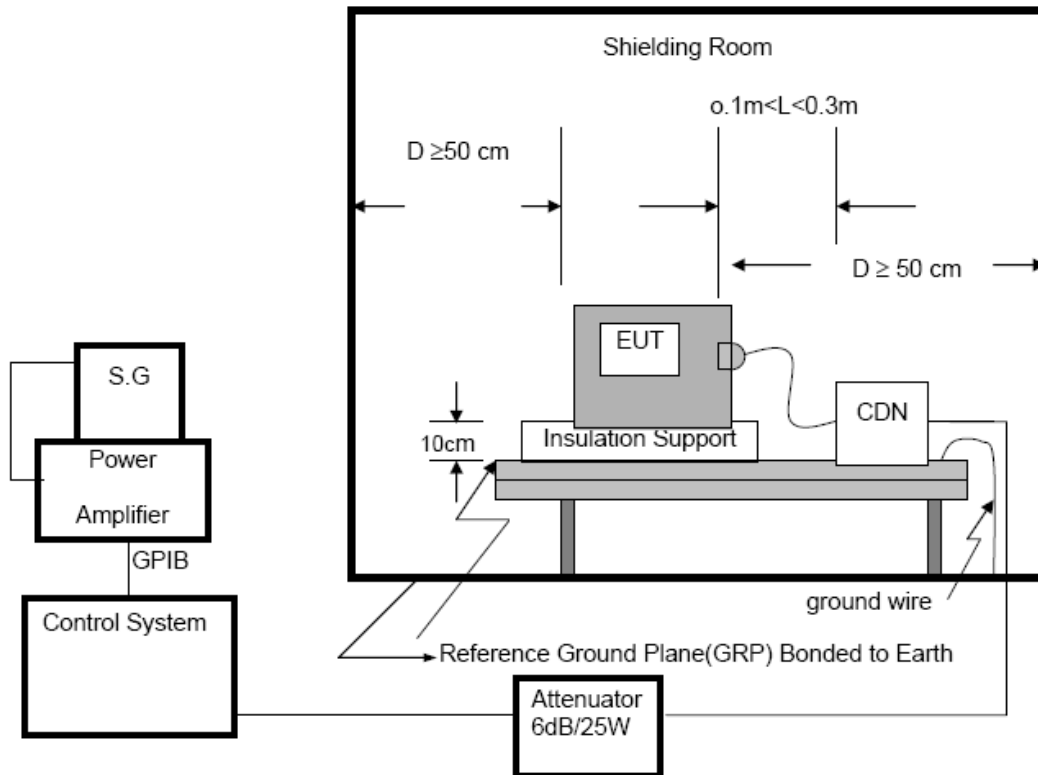
The other condition as following manner:

- a. The field strength level was 3V.
- b. The frequency range is swept from 150 KHz to 80 MHz, with the signal 80%amplitude modulated with a 1kHz sine wave. The rate of sweep did not exceed 1.5×10^{-3} decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
- c. The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
- d. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.8.4 DEVIATION FROM TEST STANDARD

No deviation

4.8.5 TEST SETUP



For the actual test configuration, please refer to the related Item –EUT Test Photos.

NOTE:

FLOOR-STANDING EQUIPMENT

The equipment to be tested is placed on an insulating support of 0.1 meters height above a ground reference plane. All relevant cables shall be provided with the appropriate coupling and decoupling devices at a distance between 0.1 meters and 0.3 meters from the projected geometry of the EUT on the ground reference plane.

4.8.6 TEST RESULTS

EUT:	Health perception computer	Model No. :	ES99AH1		
Temperature:	24°C	Relative Humidity:	55 %		
Pressure:	1008 hPa	Test Power :	AC 230V/50Hz		
Test Mode :	Video Playing/ data transmitting mode/ Health test				
Test Ports (Mode)	Freq. Range MHz)	Field Strength	Perform. Criteria	Results	Judgment
Input/ Output AC. Power Port	0.15 ---80	3V(rms) AM Modulated 1000Hz, 80%	A	A	PASS
Input/ Output DC. Power Port	0.15 --- 80		A	N/A	N/A
Signal Line (N/A)	0.15 --- 80		A	N/A	N/A

Note:

- 1) P/N denotes the Positive/Negative polarity of the output voltage.
- 2) N/A - denotes test is not applicable in this Test Report.

4.9 VOLTAGE INTERRUPTION/DIPS TESTING

4.9.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-11
Required Performance:	B (For >95% Voltage Dips) C (For 30% Voltage Dips) C (For >95% Voltage Interruptions)
Test Duration Time:	Minimum three test events in sequence
Interval between Event:	Minimum ten seconds
Phase Angle:	0°
Test Cycle:	3 times

4.9.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Transient 3000 Test System	EMC-Partner	TRA3000	F-D-V-1501	12/21/2014

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

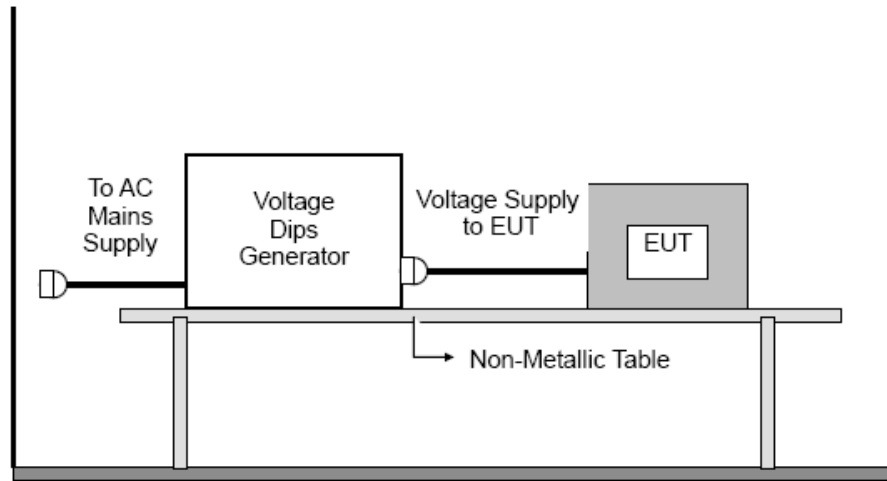
4.9.3 TEST PROCEDURE

The EUT shall be tested for each selected combination of test levels and duration with a sequence of three dips/interruptions with intervals of 10 s minimum (between each test event). Each representative mode of operation shall be tested. Abrupt changes in supply voltage shall occur at zero crossings of the voltage waveform.

4.9.4 DEVIATION FROM TEST STANDARD

No deviation

4.9.5 TEST SETUP



For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.9.6 TEST RESULTS

EUT:	Health perception computer	Model No. :	ES99AH1
Temperature:	24℃	Relative Humidity:	55 %
Pressure:	1008 hPa	Test Power :	AC 230V/50Hz
Test Mode :	Video Playing/ data transmitting mode/ Health test		

Voltage Reduction	Periods	Perform Criteria	Results	Judgment
Voltage dip >95%	0.5	B	A	PASS
Voltage dip 30%	25	C	A	PASS
Interruption >95%	250	C	A	PASS

Note:

- 1) P/N denotes the Positive/Negative polarity of the output voltage.
- 2). N/A - denotes test is not applicable in this test report.

5. EUT TEST PHOTO

Conducted Measurement Photos



Radiated Measurement Photos



Harmonic & Flicker Measurement Photos



ESD Measurement Photos



EFT/ V-Dip Burst Measurement Photos



Surge Measurement Photos



EUT Photo

