

# Status Research & Development GmbH

# CE TEST REPORT

## SCOPE OF WORK:

EMC directive (2014/30/EU) – EMC report

**Model:**  
Shell

**REPORT NUMBER**  
2510B0393SHA-001

**ISSUE DATE**  
November 14, 2025

**DOCUMENT CONTROL NUMBER**  
TTRF55032\_V1  
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**TEST REPORT**Telephone: 86 21 6127 8200  
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Report no. 2510B0393SHA-001

**Applicant** : Status Research & Development GmbH  
Baarerstrasse 10, 6302 Zug, Switzerland**Manufacturer** : Status Research & Development GmbH  
Baarerstrasse 10, 6302 Zug, Switzerland**Manufacturing site** : ALTYOR Industries (Shanghai) Co., Ltd.  
152/1421 Zhuan Xing Dong Road Minhang District Shanghai,  
201108, CHINA**Summary**

The equipment complies with the requirements according to the following standard(s) or Specification:

**CISPR 32:2015+A1:2019, EN 55032:2015+A1:2020:** Electromagnetic compatibility of multimedia equipment - Emission requirements**CISPR 35:2016, EN 55035:2017+A11:2020:** Electromagnetic compatibility of multimedia equipment - Immunity requirements**IEC 61000-3-2:2018+A1:2020+A2:2024, EN IEC 61000-3-2:2019+A1:2021+A2:2024:** Electromagnetic compatibility (EMC) Part 3-2: Limits — Limits for harmonic current emissions (equipment input current <=16A per phase)**IEC 61000-3-3:2013+A1:2017+A2:2021, EN 61000-3-3:2013+A1:2019+A2:2021:** Electromagnetic compatibility (EMC) Part 3-3: Limits — Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤16 A per phase and not subject to conditional connection**PREPARED BY:****REVIEWED BY:**

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Project Engineer

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Reviewer

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**Revision History**

Report No.	Version	Description	Issued Date
2510B0393SHA-001	Rev. 01	Initial issue of report	November 14, 2025

## Measurement result summary

TEST ITEM	TEST RESULT	NOTE
Conducted disturbance voltage at mains terminals	Pass	
Conducted disturbance for asymmetric mode	Pass	
Conducted differential voltage emission	NA	The product is not Class B broadcasting receiver
Radiation emission	Pass	
Harmonic current emission	Pass	
Voltage fluctuations and flicker	Pass	
Electrostatic discharges	Pass	
Continuous RF disturbances	Pass	
Continuous induced RF disturbances	Pass	
Power frequency magnetic field	NA	The product does not contain devices susceptible to magnetic fields.
Electrical fast transients/burst	Pass	
Surges	Pass	
Voltage dips and interruptions	Pass	
Broadband impulsive conducted disturbances	NA	There's no xDSL ports

Notes: 1: NA =Not Applicable

2: Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

3: Additions, Deviations and Exclusions from Standards: None.

## 1 GENERAL INFORMATION

### 1.1 Description of Equipment Under Test (EUT)

Product Name : Smart card adapter

Type/Model : Shell

Description of EUT : One model was tested and the worst data was listed as the representative.

Rating : Input: 5VDC 1A (USBC),  
Battery: 3.7VDC 800mAh

Brand name : Keycard

Category of EUT :  Class B  
 Class A

EUT type :  Table-top  
 Floor standing

Highest internal frequency : <250MHz

Cable supplied : USB-C to USB-C cable

Date of test : October 22, 2025 – October 27, 2025

## 1.2 Description of Test Laboratories

Name : Intertek Testing Services (Shanghai FTZ) Co., Ltd.

Address : Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China

Telephone : 86 21 61278200

Telefax : 86 21 54262353

The test facility is recognized, certified, or accredited by these organizations

: CNAS Accreditation Lab  
Registration No. CNAS L21189  
FCC Accredited Lab  
Designation Number: CN0175  
IC Registration Lab  
IC Registration Lab: CN0014  
VCCI Registration Lab  
Registration No.: R-14243, G-10845, C-14723, T-12252  
A2LA Accreditation Lab  
Certificate Number: 3309.02

## 2 TEST SPECIFICATIONS

### 2.1 Normative references

CISPR 32:2015+A1:2019, EN 55032:2015+A1:2020: Electromagnetic compatibility of multimedia equipment - Emission requirements

CISPR 35:2016, EN 55035:2017+A11:2020: Electromagnetic compatibility of multimedia equipment - Immunity requirements

IEC 61000-3-2:2018+A1:2020+A2:2024, EN IEC 61000-3-2:2019+A1:2021+A2:2024: Electromagnetic compatibility (EMC) Part 3-2: Limits — Limits for harmonic current emissions (equipment input current <=16A per phase)

IEC 61000-3-3:2013+A1:2017+A2:2021, EN 61000-3-3:2013+A1:2019+A2:2021: Electromagnetic compatibility (EMC) Part 3-3: Limits — Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current  $\leq 16$  A per phase and not subject to conditional connection

**TEST REPORT****2.2 Mode of operation during the test**

Within this test report, EUT was tested in both charging mode and working mode, with an additional AC/DC adapter used for the charging mode.

**2.3 Test peripherals used**

Item No	Description	Band and Model	S/No
1	AC/DC adaptor	TAILI, K-86	-
2	-	-	-

**2.4 Record of climatic conditions**

Test Item	Temperature (°C)	Relative Humidity (%)	Pressure (Kpa)
Conducted disturbance voltage at mains terminals	24	43	NA
Conducted disturbance for asymmetric mode	NA	NA	NA
Conducted differential voltage emission	NA	NA	NA
Radiation emission	24	43	NA
Harmonic current emission	NA	NA	NA
Voltage fluctuations and flicker	NA	NA	NA
Electrostatic discharges	23	51	101
Continuous RF disturbances	25	48	NA
Continuous induced RF disturbances	26	52	NA
Power frequency magnetic field	NA	NA	NA
Electrical fast transients/burst	25	47	NA
Surges	25	47	NA
Voltage dips and interruptions	25	47	NA
Broadband impulsive conducted disturbances	NA	NA	NA

Notes: NA =Not Applicable

## 2.5 Instrument list

Conducted Emission/Disturbance Power/Tri-loop Test/CDN method					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
<input checked="" type="checkbox"/>	Test Receiver	R&S	ESR7	EC 6194	2026-02-17
<input checked="" type="checkbox"/>	Attenuator	Hua Xiang	Ts5-10db-6g	EC 6194-1	2026-01-14
<input checked="" type="checkbox"/>	A.M.N.	R&S	ESH2-Z5	EC 3119	2026-07-22
<input checked="" type="checkbox"/>	I.S.N.	FCC	FCC-TLISN -T8-02	EC 3756	2026-03-21
Radiated Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
<input checked="" type="checkbox"/>	Test Receiver	R&S	ESIB 26	EC 3045	2026-08-05
<input checked="" type="checkbox"/>	TRILOG broadband Antenna	Schwarzbeck	VULB9168	EC 6402	2026-04-06
<input checked="" type="checkbox"/>	Pre-amplifier	Tonscend	tap01018050	EC 6432-1	2025-12-03
<input checked="" type="checkbox"/>	Horn antenna	Tonscend	bha9120d	EC 6432-2	2026-04-10
ESD					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
<input checked="" type="checkbox"/>	ESD generator	TESEQ	NSG 437	EC 4792-4	2026-03-20
EFT/Surge/Voltage Dips					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
<input checked="" type="checkbox"/>	Capacity clamp	EM TEST	HKF	EC 2959	2026-12-04
<input checked="" type="checkbox"/>	Conduct immunity system	EM TEST	Compact nx	EC 6202	2025-12-03
<input checked="" type="checkbox"/>	Automatic transformer	EM TEST	Variac nx1-260-16	EC 6425	2025-12-03
Conducted Immunity					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
<input checked="" type="checkbox"/>	Signal generator	R&S	SML 01	EC 2338	2026-02-17
<input checked="" type="checkbox"/>	Power amplifier	AR	75A250	EC 3043-1	2026-05-12
<input checked="" type="checkbox"/>	Attenuator	Hua Xiang	Dts200-6-1	EC 6680-1	2026-01-14
<input checked="" type="checkbox"/>	CDN	Frankonia	CDN M2M3-32	EC 6349	2026-03-11
<input checked="" type="checkbox"/>	CDN	EM TEST	CDN M1/32A	EC4792-10	2027-02-17
<input checked="" type="checkbox"/>	EM clamp	EM TEST	EM 101	EC 3043-6	2026-11-12
Radiated Immunity					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
<input checked="" type="checkbox"/>	Signal generator	R&S	SMR 20	EC 3044-1	2026-01-14

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<input checked="" type="checkbox"/>	Power amplifier	AR	250W1000B	EC 5818-2	2026-05-12
<input checked="" type="checkbox"/>	Power amplifier	BONN	BLMA1060-100	EC 5818-4	2026-06-12
<input checked="" type="checkbox"/>	Log-period antenna	AR	AT 1080	EC 3044-7	2026-08-22
<input checked="" type="checkbox"/>	Horn antenna	Schwarzbeck	STLP 9149	EC 5881	2026-04-10
<input checked="" type="checkbox"/>	Field meter	AR	FL17000	EC 5818-1	2025-10-30
<input checked="" type="checkbox"/>	Power sensor	Keysight	N1914A	EC 5818-3	2026-03-11
<input checked="" type="checkbox"/>	Signal generator	Agilent	N5181A	EC 6171	2026-08-05
<b>Test Site</b>					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
<input checked="" type="checkbox"/>	Shielded room	Zhongyu	-	EC 2838	2027-01-08
<input checked="" type="checkbox"/>	Shielded room	Zhongyu	-	EC 2839	2027-01-08
<input checked="" type="checkbox"/>	Semi-anechoic chamber	Albatross project	-	EC 3048	2026-07-11
<input checked="" type="checkbox"/>	Fully-anechoic chamber	Albatross project	-	EC 3047	2026-07-11
<b>Additional instrument</b>					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
<input checked="" type="checkbox"/>	Thermo-Hygrograph	Testo	175h1	EC 6640	2026-08-03
<input checked="" type="checkbox"/>	Thermo-Hygrograph	Testo	175h1	EC 6641	2026-08-03
<input checked="" type="checkbox"/>	Thermo-Hygrograph	Testo	175h1	EC6642	2026-08-03
<input checked="" type="checkbox"/>	Thermo-Hygrograph	Testo	175h1	EC 6643	2026-08-25
<input checked="" type="checkbox"/>	Pressure meter	YM3	Shanghai Mengde	EC 3320	2026-08-04
<b>Test software</b>					
Used	Test project	Software name	Version		
<input checked="" type="checkbox"/>	Ham/Flicker	Net Control	V3.2.8		
<input checked="" type="checkbox"/>	CE	EMC-I	V1.5.0.4		
<input checked="" type="checkbox"/>	CS	EMC-S	V1.4.0.16		
<input checked="" type="checkbox"/>	RE	EMC-I	V1.5.0.4		
<input checked="" type="checkbox"/>	RS	EMC-S	V1.4.0.57		

**2.6 Measurement Uncertainty**

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted emission at mains ports	9kHz ~ 150kHz	3.52 dB
	150kHz ~ 30MHz	3.19 dB
Continuous disturbance voltage at telecom ports	150kHz ~ 30MHz	3.64 dB
Continuous disturbance current at telecom ports	150kHz ~ 30MHz	2.62 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	4.90 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.02 dB
	6GHz ~ 18GHz	5.28 dB
Harmonic current emission	-	3.90%
Voltage fluctuations and flicker	-	10.34%
ESD	-	6.65%
Radiated susceptibility	-	2.38%
EFT test at main terminal	-	11.57%
EFT test at signal/telecom terminal	-	11.62%
Surge test at main terminal	-	11.57%
Injected current test at main terminal	-	1.88 dB
Injected current test at unshielded signal terminal	-	3.41 dB
Voltage dips and interruption	-	6.05%

### 3 Conducted disturbance voltage at mains terminals

Test result: Pass

#### 3.1 Limits

##### 3.1.1 Limits for class A equipment

Frequency range (MHz)	Quasi-peak (dBuV)	Average (dBuV)
0.15 ~ 0.5	79	66
0.5 ~ 30	73	60

Note: 1. Coupling device is AMN  
2. Detector type is Quasi Peak or Average  
3. Bandwidth is 9 kHz

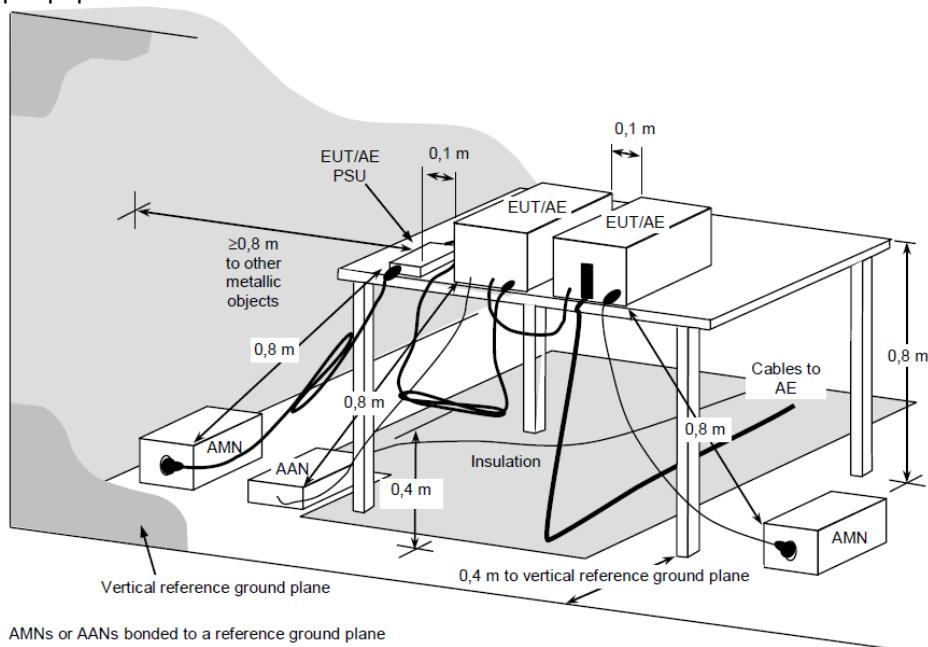
##### 3.1.2 Limits for class B equipment

Frequency range (MHz)	Quasi-peak (dBuV)	Average (dBuV)
0.15 ~ 0.5	66 ~ 56 *	56 ~ 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

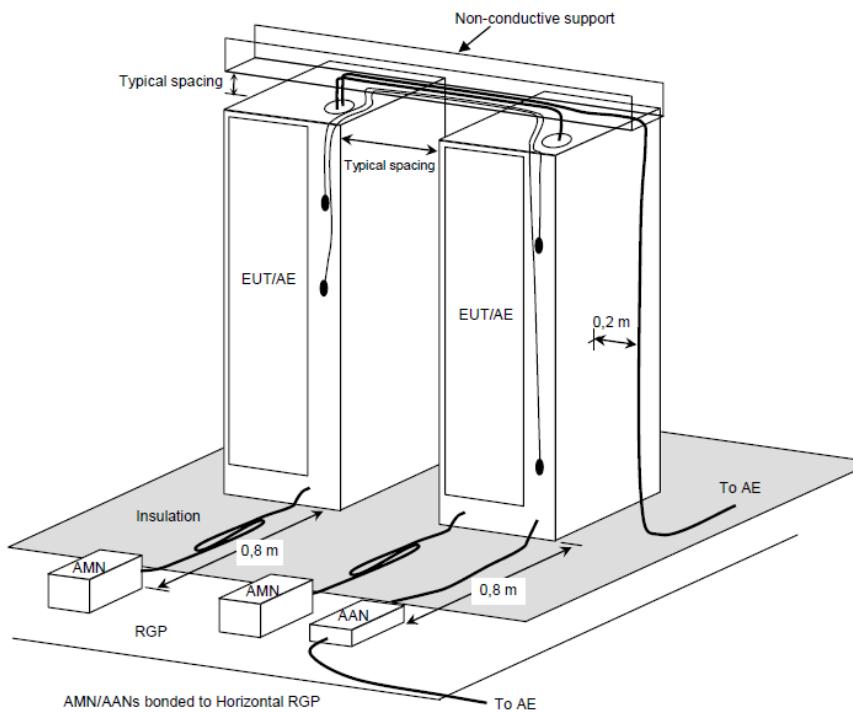
Note: 1. \* Means the limit decreasing linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz  
2. Coupling device is AMN  
3. Detector type is Quasi Peak or Average  
4. Bandwidth is 9 kHz

### 3.2 Test setup

For table-top equipment



For floor standing equipment



### **3.3 Test Procedure**

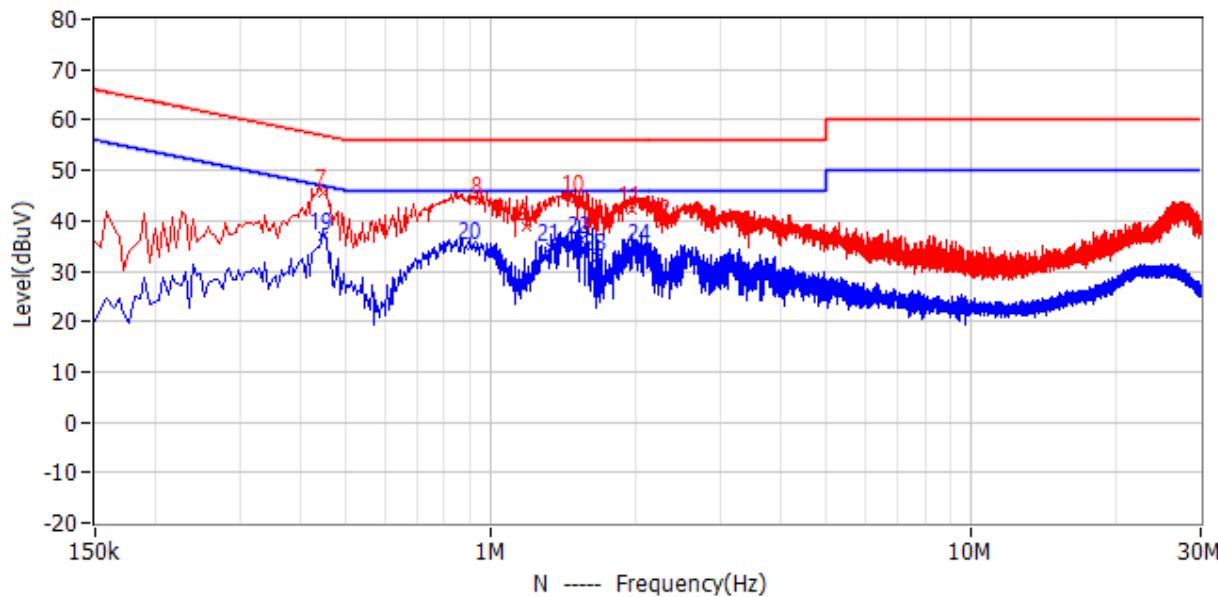
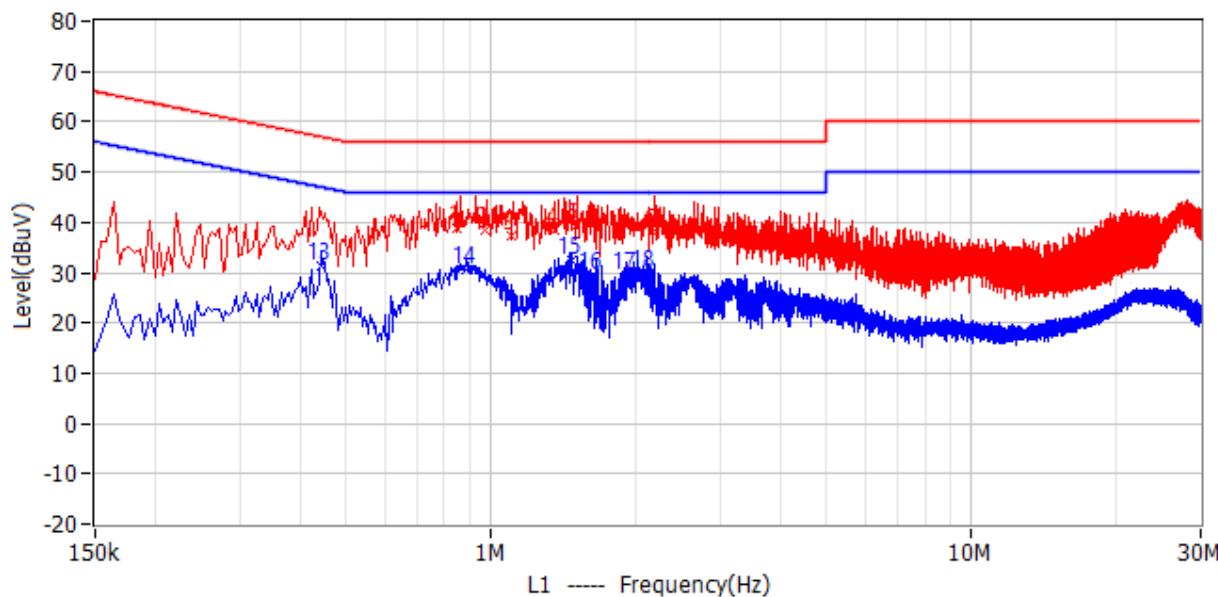
Measurement was performed in shielded room, and instruments used were followed CISPR 16-2-1 clause 7.

Detailed test procedure was following clause 7 of CISPR 16-2-1.

Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

### 3.4 Test Result

**Charging mode:**



No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector	Phase
1	852.000kHz	56.00	38.68	-17.32	28.38	10.30	QP	L1
2	973.500kHz	56.00	38.61	-17.39	28.31	10.30	QP	L1
3	1.104MHz	56.00	37.14	-18.86	26.84	10.30	QP	L1
4	1.356MHz	56.00	38.45	-17.55	28.15	10.30	QP	L1
5	1.505MHz	56.00	39.25	-16.75	28.95	10.30	QP	L1
6	2.175MHz	56.00	37.94	-18.06	27.54	10.40	QP	L1
7	447.000kHz	56.93	45.49	-11.44	35.29	10.20	QP	N
8	946.500kHz	56.00	44.11	-11.89	33.81	10.30	QP	N
9	1.185MHz	56.00	38.72	-17.28	28.42	10.30	QP	N

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No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector	Phase
10	1.505MHz	56.00	44.33	-11.67	33.93	10.40	QP	N
11	1.973MHz	56.00	42.02	-13.98	31.52	10.50	QP	N
12	2.279MHz	56.00	39.69	-16.31	29.19	10.50	QP	N
13	442.500kHz	47.01	31.26	-15.75	21.06	10.20	CAV	L1
14	888.000kHz	46.00	30.38	-15.62	20.08	10.30	CAV	L1
15	1.478MHz	46.00	32.37	-13.63	22.07	10.30	CAV	L1
16	1.631MHz	46.00	29.55	-16.45	19.15	10.40	CAV	L1
17	1.919MHz	46.00	29.36	-16.64	18.96	10.40	CAV	L1
18	2.099MHz	46.00	29.79	-16.21	19.39	10.40	CAV	L1
19	447.000kHz	46.93	36.76	-10.17	26.56	10.20	CAV	N
20	910.500kHz	46.00	35.06	-10.94	24.76	10.30	CAV	N
21	1.338MHz	46.00	34.83	-11.17	24.43	10.40	CAV	N
22	1.541MHz	46.00	36.14	-9.86	25.74	10.40	CAV	N
23	1.676MHz	46.00	32.96	-13.04	22.56	10.40	CAV	N
24	2.054MHz	46.00	34.72	-11.28	24.22	10.50	CAV	N

Remark: 1. Factor = LISN Factor + Cable Loss + Attenuator, the value was added to Original Receiver Reading by the software automatically.

2. Level = Reading + Factor

3. Delta = Level - Limit

4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

Example: Assuming LISN Factor = 10.00dB, Cable Loss = 2.00dB, Attenuator = 10.00dB

Original Receiver Reading = 10.00dBuV, Limit = 66.00dBuV.

Then Factor = 10.00 + 2.00 + 10.00 = 22.00dB;

Level = 10dBuV + 22.00dB = 32.00dBuV;

Delta = 32.00dBuV - 66.00dBuV = -34.00dB.

## 4 Conducted disturbance for asymmetric mode

Test result: NA

### 4.1 Limits

#### 4.1.1 Limits for class A equipment

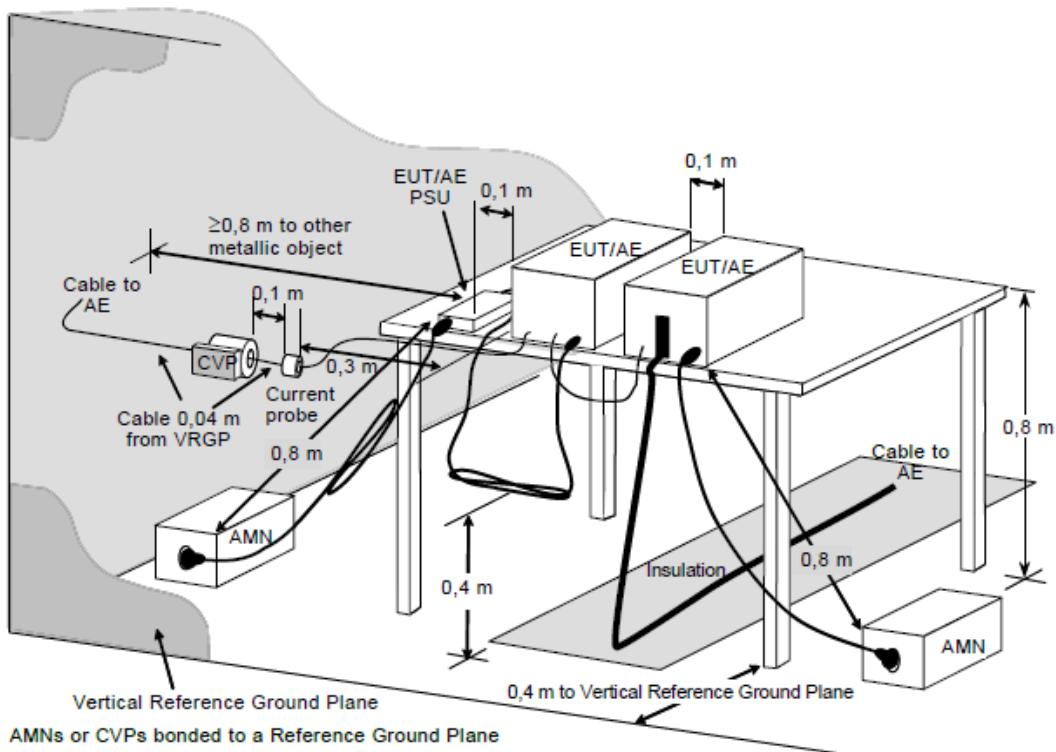
Frequency range (MHz)	Voltage Limits dB(µV)		Current limits dB(µA)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 ~ 0.5	97 ~ 87	84 ~ 74	53 ~ 43	40 ~ 30
0.5 ~ 30	87	74	43	30
Note: if "150Ω to 50Ω adaptor" applied, correction factor of 9.5dB should be added to the test data.				

#### 4.1.2 Limits for class B equipment

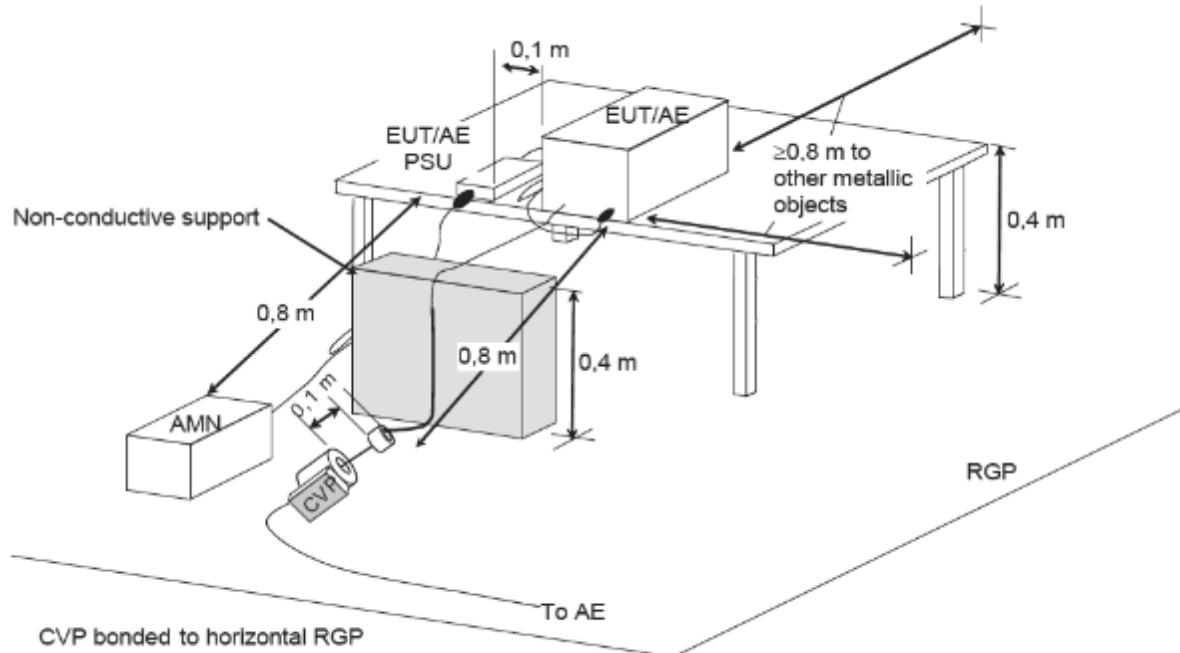
Frequency range (MHz)	Voltage Limits dB(µV)		Current limits dB(µA)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 ~ 0.5	84 ~ 74	74 ~ 64	40 ~ 30	30 ~ 20
0.5 ~ 30	74	64	30	20
Note: if "150Ω to 50Ω adaptor" applied, correction factor of 9.5dB should be added to the test data.				

**TEST REPORT**
**4.2 Test setup**

Coupling device: CVP and Current probe (alternative method 1)

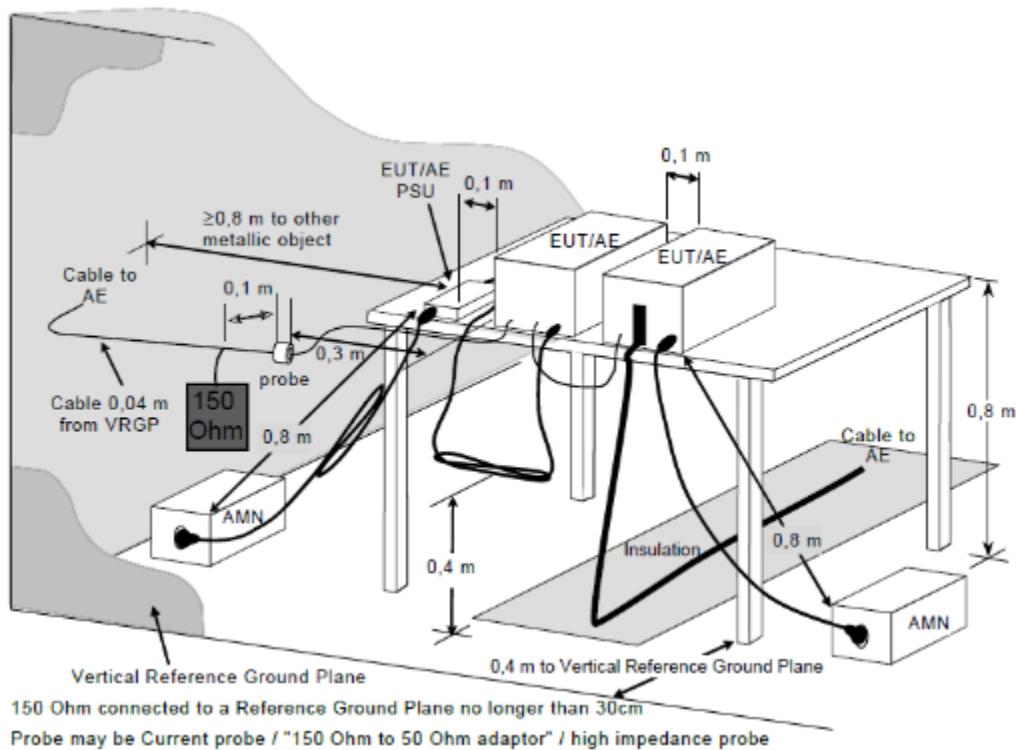


Coupling device: CVP and Current probe (alternative method 2)

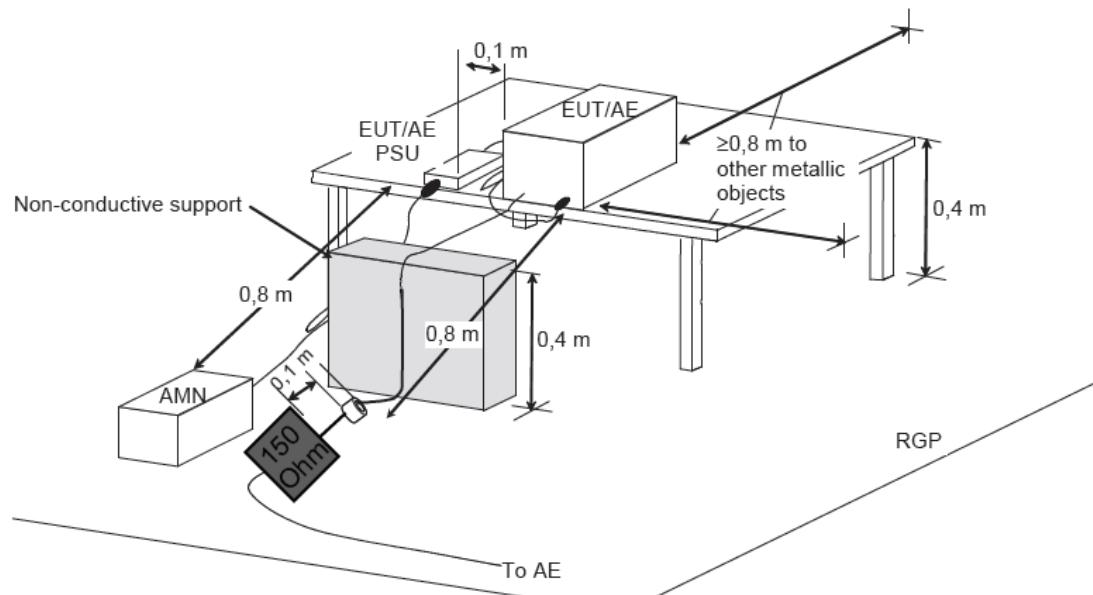


**TEST REPORT**

Coupling device: Current probe / "150Ω to 50Ω adaptor" / high impedance probe (alternative method 1)

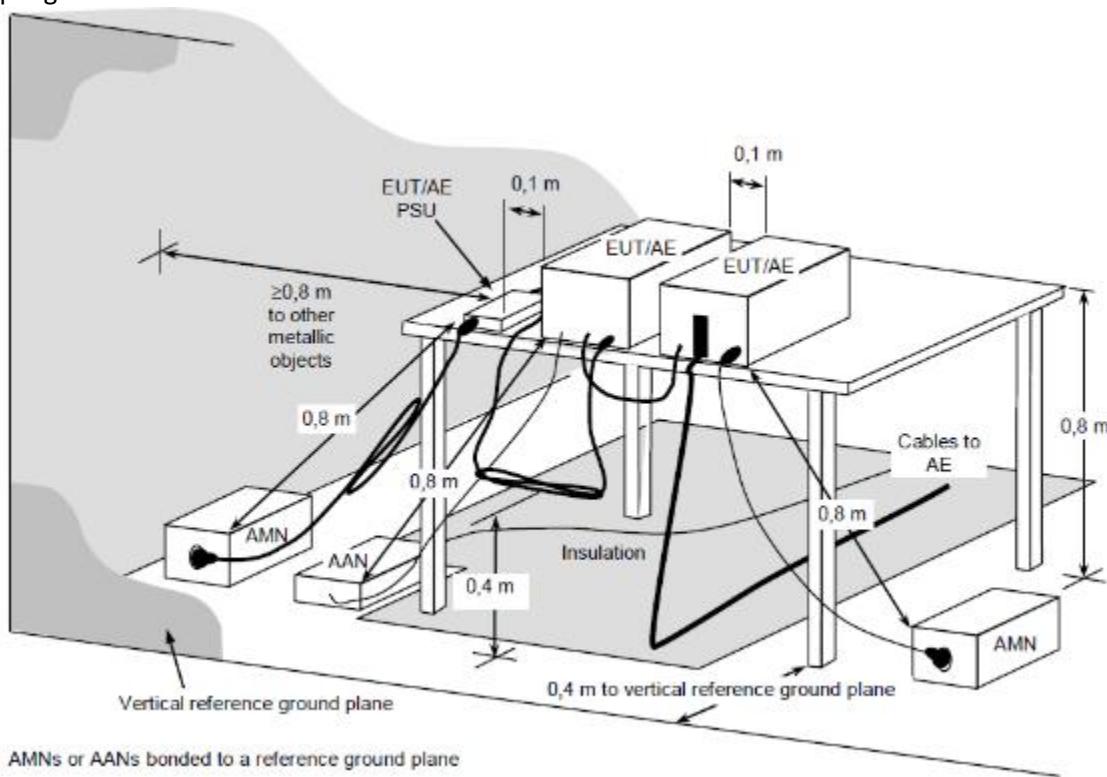


Coupling device: Current probe / "150Ω to 50Ω adaptor" / high impedance probe (alternative method 2)



**TEST REPORT**

Coupling device: AAN



#### 4.3 Test Procedure

Measurement was performed in shielded room, and instruments used were followed EN 55032 clause C.4.1.

Detailed test procedure was following clause C.4.1 of EN 55032.

Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

Used	Data Port	Measurement type	Coupling device	No. of Pairs
<input type="checkbox"/>	Balanced Unscreened	Voltage	AAN	≤ 4
<input type="checkbox"/>	Balanced Unscreened	Voltage and Current	CVP & Current probe	>4 or unable to AAN
<input type="checkbox"/>	Screened or Coaxial	Voltage	AAN	N/A
<input type="checkbox"/>	Screened or Coaxial	Voltage or Current	Current probe / "150Ω to 50Ω adaptor" / high impedance probe	N/A
<input type="checkbox"/>	Unbalanced cables	Voltage and Current	CVP & Current probe	N/A

**4.4 Test Result**

- Remark:
1. Factor = ISN Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically.
  2. Level = Reading + Factor
  3. Delta = Level - Limit
  4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

Example: Assuming LISN Factor = 10.00dB, Cable Loss = 2.00dB

Original Receiver Reading = 10.00dBuV, Limit = 66.00dBuV.

Then Factor = 10.00 + 2.00 = 12.00dB;

Level = 10dBuV + 12.00dB = 22.00dBuV;

Delta = 22.00dBuV - 66.00dBuV = -44.00dB.

## 5 Conducted differential voltage emission

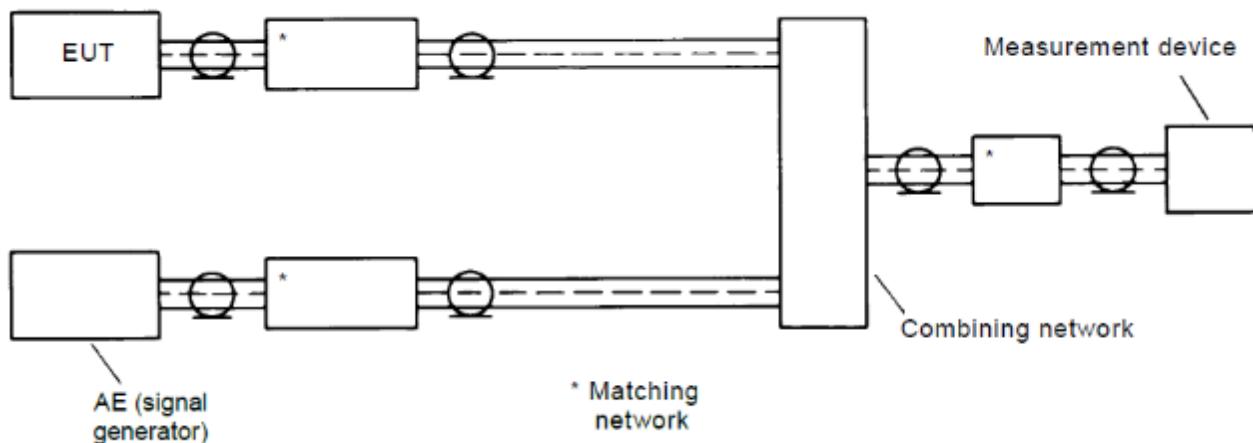
**Test result:** NA

### 5.1 Limits

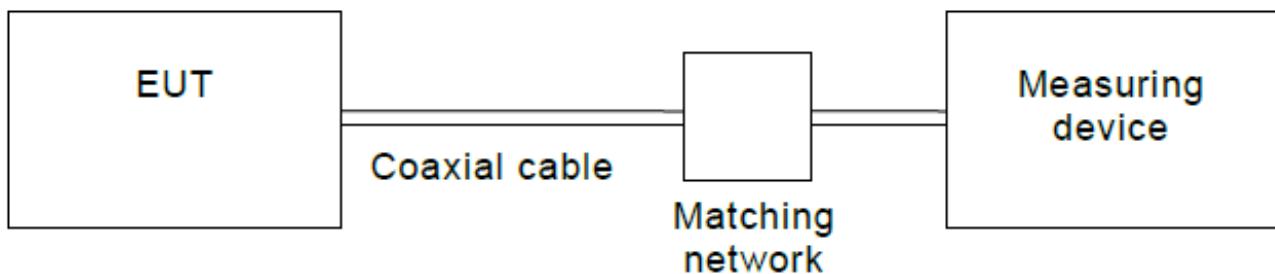
Applicability	Frequency range (MHz)	Differential voltage limit @ 75Ω (dBuV)		
		Other	Local Oscillator Fundamental	Local Oscillator Harmonics
Television receivers; video recorders; PC TV broadcast receiver tuner cards; Digital audio receivers;	30 ~ 950	46	46	46
	950 ~ 2150	46	54	54
Tuner units (not the LNB) for satellite signal reception	950 ~ 2150	46	54	54
FM audio receivers and PC tuner cards	30 ~ 300	46	54	50
	300 ~ 1000	46	54	52
FM car radios	30 ~ 300	46	66	59
	300 ~ 1000	46	66	52
RF modulator output ports connect to TV broadcast receiver tuner ports	30 ~ 950	46	76	46
	950 ~ 2150	46	/	54

### 5.2 Test setup

TV/FM broadcast receiver tuner ports



RF modulator output port



### 5.3 Test Procedure

Measurement was performed in shielded room, and instruments used were followed EN 55032 clause C4.2 and C4.3.

Detailed test procedure and arrangement was followed EN 55032 clause C.4.2 and C.4.3.

Frequency range 30MHz – 2150MHz was checked and EMI receiver measurement bandwidth was set to 120kHz / 1MHz.

## 5.4 Test Result

### Test Curve:

### Test Data:

TV/FM broadcast receiver tuner ports

Receiving Frequency (MHz)	Oscillator Frequency (MHz)	Harmonics No.	Measured dB(μV)	Limits dB(μV)	Result
88.1					
98.1					
107.9					
Other					

RF modulator output port

Frequency (MHz)	Disturbance level dB(μV)	Permitted limit dB(μV)
Harmonics		
Harmonics		
Other		
Other		

## 6 Radiated emission

Test result: Pass

### 6.1 Limits

#### 6.1.1 Limits for radiated disturbance of class A Equipment

Frequency (MHz)	Permitted limit in dB $\mu$ V/m (Quasi-peak) of Measurement Distance 3m	Permitted limit in dB $\mu$ V/m (Quasi-peak) of Measurement Distance 10M
30-230	50	40
230-1000	57	47

Note: for the measurement distance other than 3m and 10m, the limit is varied according to 20dB/10 decades.

Frequency range GHz	Average limit of Measurement Distance 3m dB( $\mu$ V/m)	Peak limit of Measurement Distance 3m dB( $\mu$ V/m)
1 to 3	56	76
3 to 6	60	80

NOTE The lower limit applies at the transition frequency.

#### 6.1.2 Limits for radiated disturbance of class B Equipment

Frequency (MHz)	Permitted limit in dB $\mu$ V/m (Quasi-peak) of Measurement Distance 3m	Permitted limit in dB $\mu$ V/m (Quasi-peak) of Measurement Distance 10M
30-230	40	30
230-1000	47	37

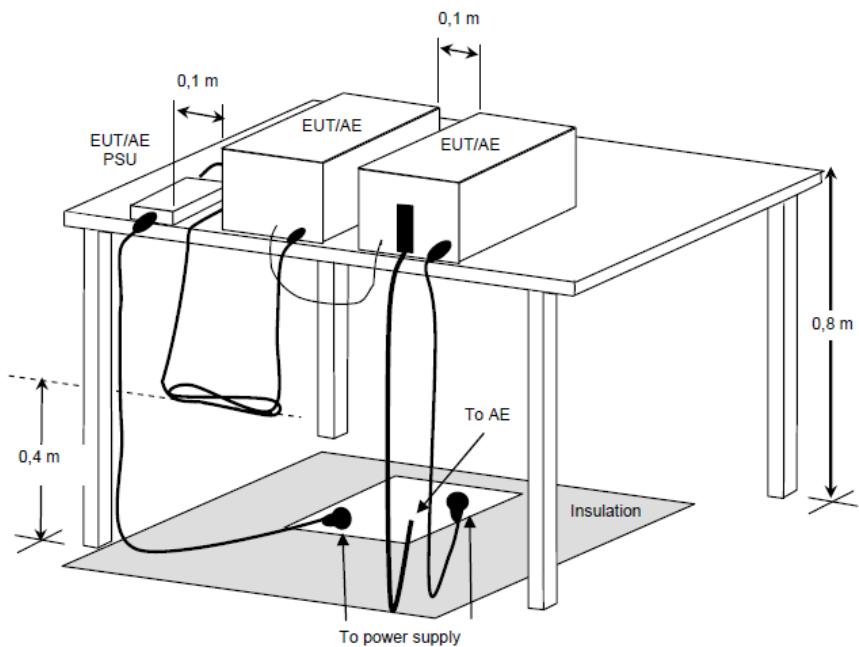
Note: for the measurement distance other than 3m and 10m, the limit is varied according to 20dB/10 decades.

Frequency range GHz	Average limit of Measurement Distance 3m dB( $\mu$ V/m)	Peak limit of Measurement Distance 3m dB( $\mu$ V/m)
1 to 3	50	70
3 to 6	54	74

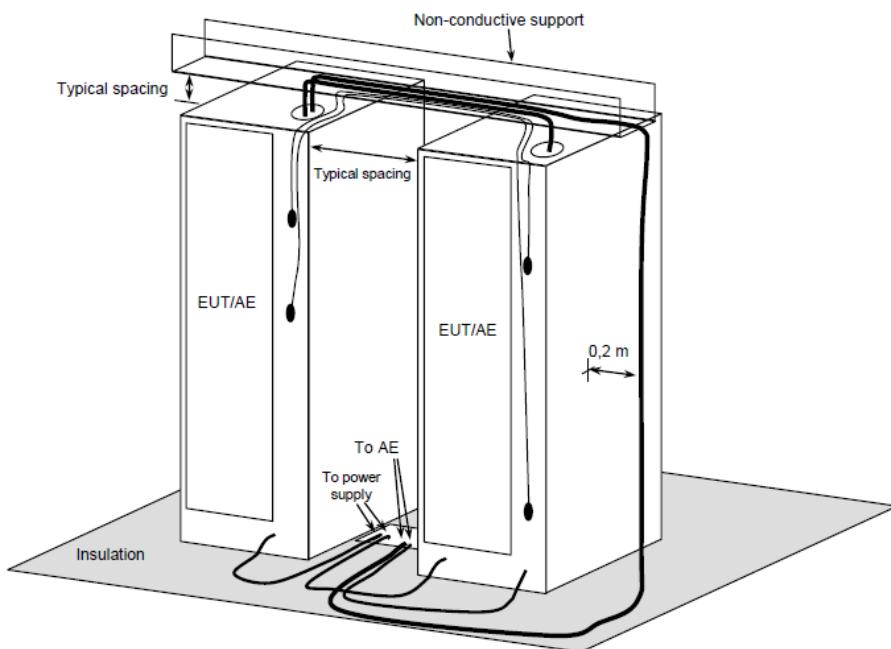
Note: The lower limit applies at the transition frequency.

## 6.2 Block diagram of test set up

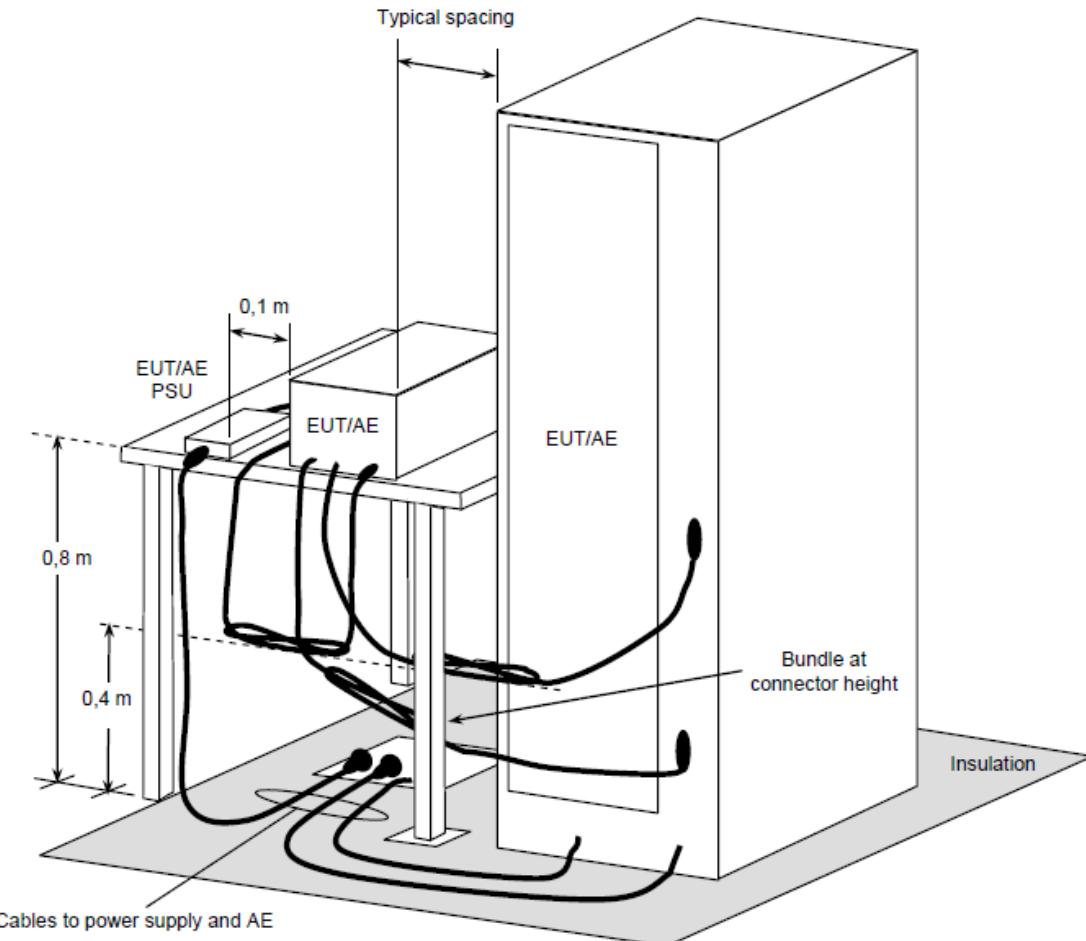
For table-top equipment



For floor standing equipment



For combination equipment



### 6.3 Test Procedure

The measurement was performed in a semi-anechoic chamber.

The distance from EUT to receiving antenna is 3 meters.

Measurement was performed according to clause 7.3 of CISPR 16-2-3.

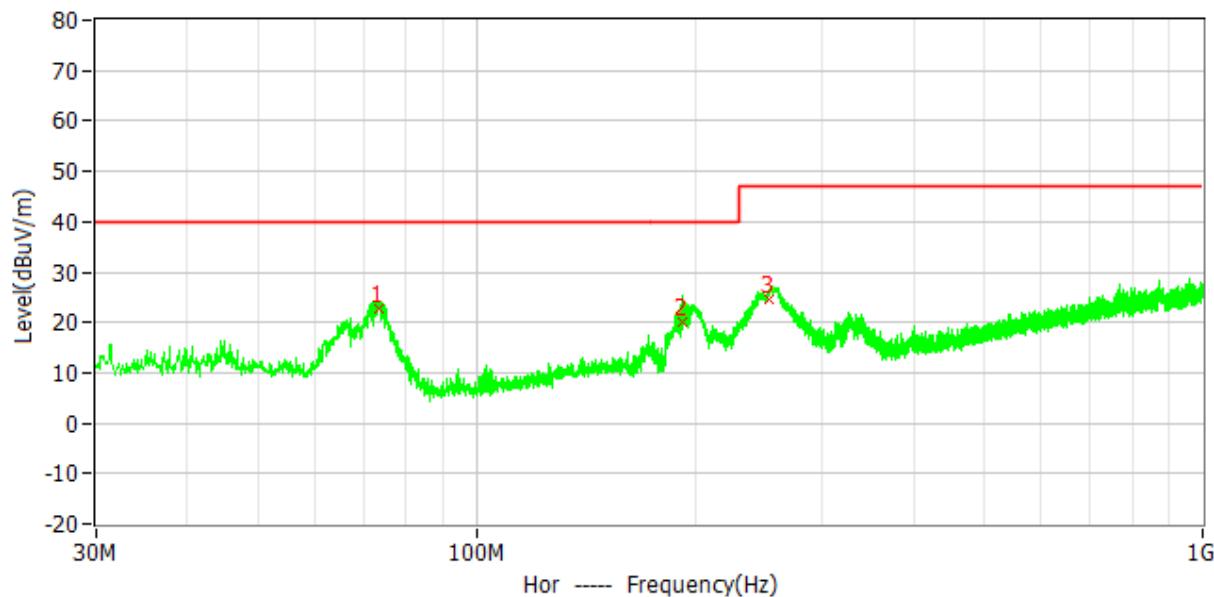
Highest internal frequency (Fx)	Highest measured frequency for radiated measurement	Measured Bandwidth
$F_x \leq 108 \text{ MHz}$	1 GHz	120kHz
$108 \text{ MHz} < F_x \leq 500 \text{ MHz}$	2 GHz	1MHz
$500 \text{ MHz} < F_x \leq 1 \text{ GHz}$	5 GHz	1MHz
$F_x > 1 \text{ GHz}$	$5 \times F_x$ up to a maximum of 6 GHz	1MHz

Note: 1. For FM and TV broadcast receivers, Fx is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.  
2. For outdoor units of home satellite Equipment receiving systems highest measured frequency shall be 18GHz.

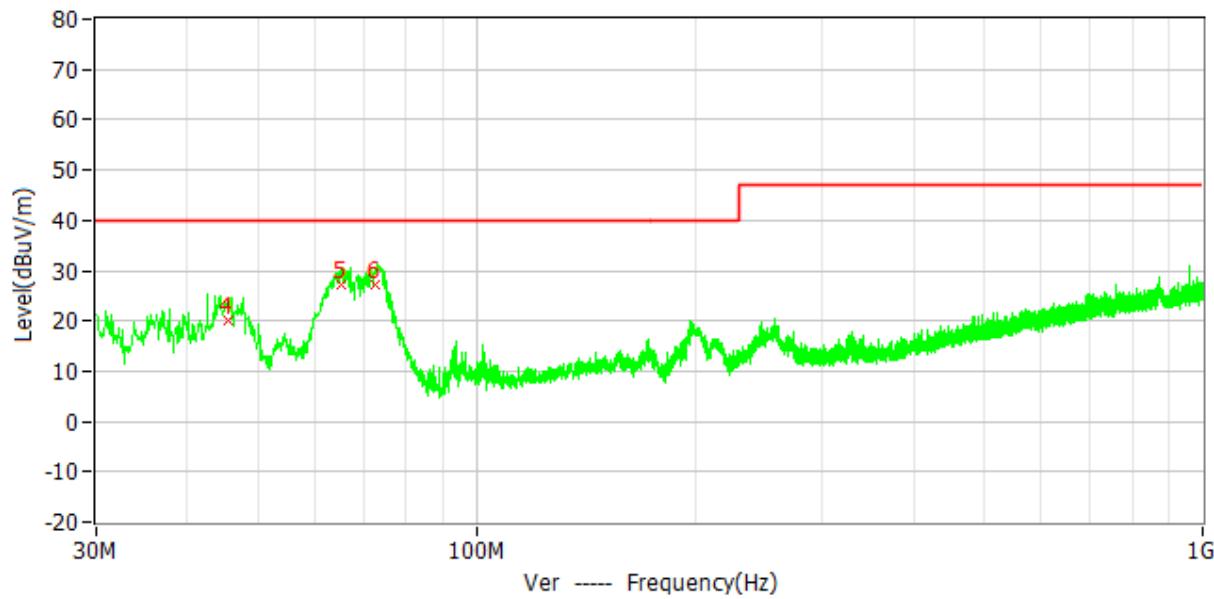
## 6.4 Test Result

**Charging mode:**

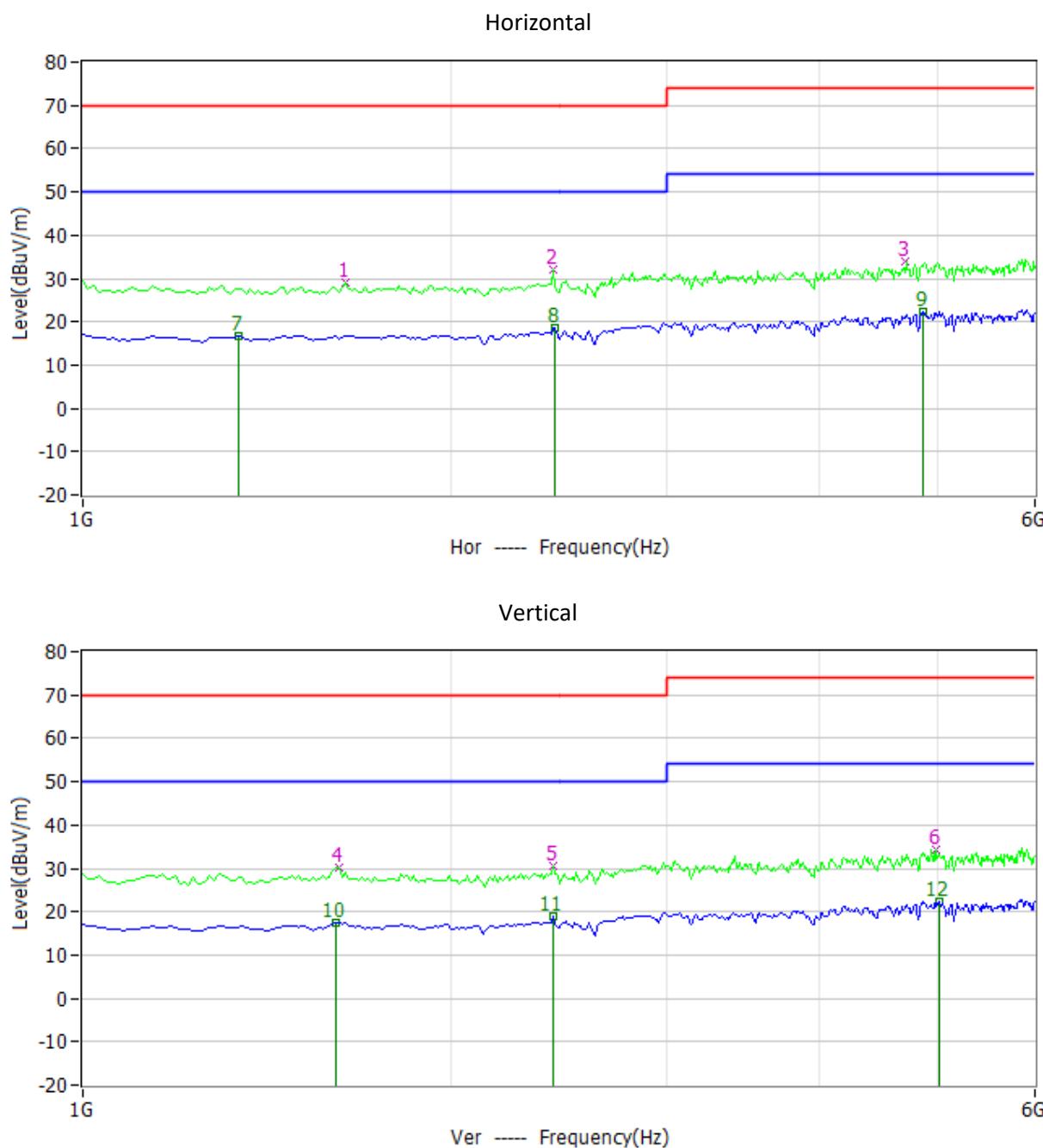
Horizontal



Vertical



No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar
1	73.424MHz	40.0	22.6	-17.4	10.9	11.7	QP	Hor
2	192.354MHz	40.0	20.1	-19.9	8.0	12.1	QP	Hor
3	252.689MHz	47.0	24.5	-22.5	10.7	13.8	QP	Hor
4	45.656MHz	40.0	20.2	-19.8	5.9	14.3	QP	Ver
5	65.160MHz	40.0	27.2	-12.8	13.9	13.3	QP	Ver
6	72.697MHz	40.0	27.3	-12.7	15.4	11.9	QP	Ver



No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar
1	1.641GHz	70.00	28.97	-41.03	52.52	-23.55	PK	Hor
2	2.423GHz	70.00	31.99	-38.01	53.05	-21.06	PK	Hor
3	4.707GHz	74.00	33.93	-40.07	48.34	-14.41	PK	Hor
4	1.621GHz	70.00	30.26	-39.74	53.84	-23.58	PK	Ver
5	2.423GHz	70.00	30.51	-39.49	51.57	-21.06	PK	Ver
6	4.978GHz	74.00	34.25	-39.75	47.60	-13.35	PK	Ver
7	1.341GHz	50.00	16.61	-33.39	40.58	-23.97	AV	Hor
8	2.433GHz	50.00	18.44	-31.56	39.47	-21.03	AV	Hor
9	4.858GHz	54.00	22.45	-31.55	36.23	-13.78	AV	Hor

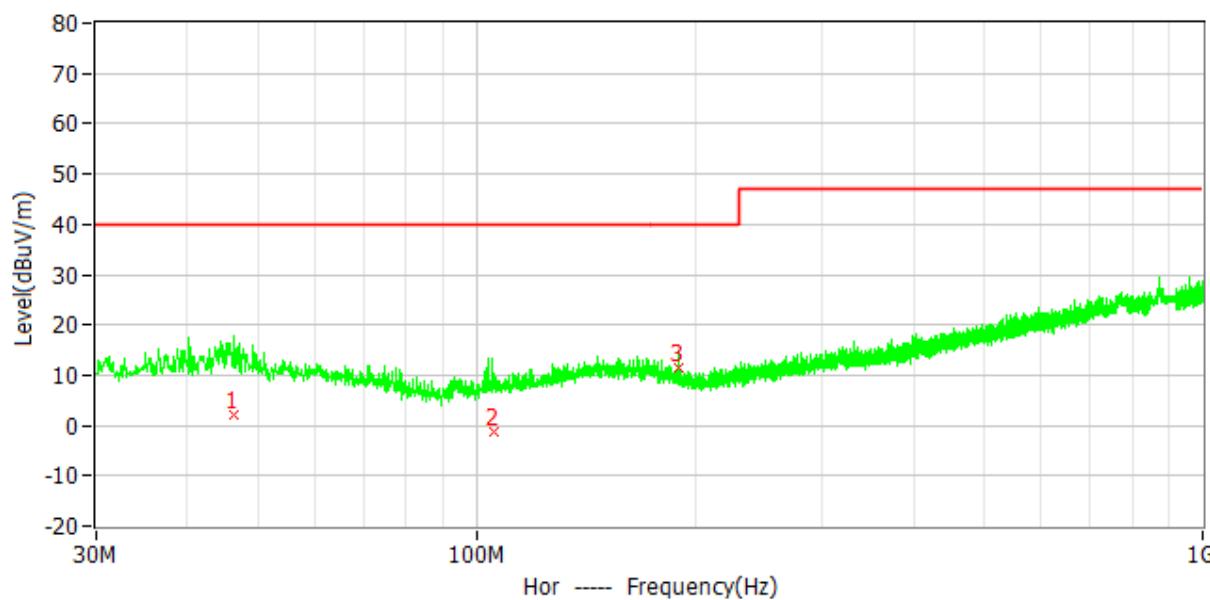
**TEST REPORT**

Report No. 2510B0393SHA-001

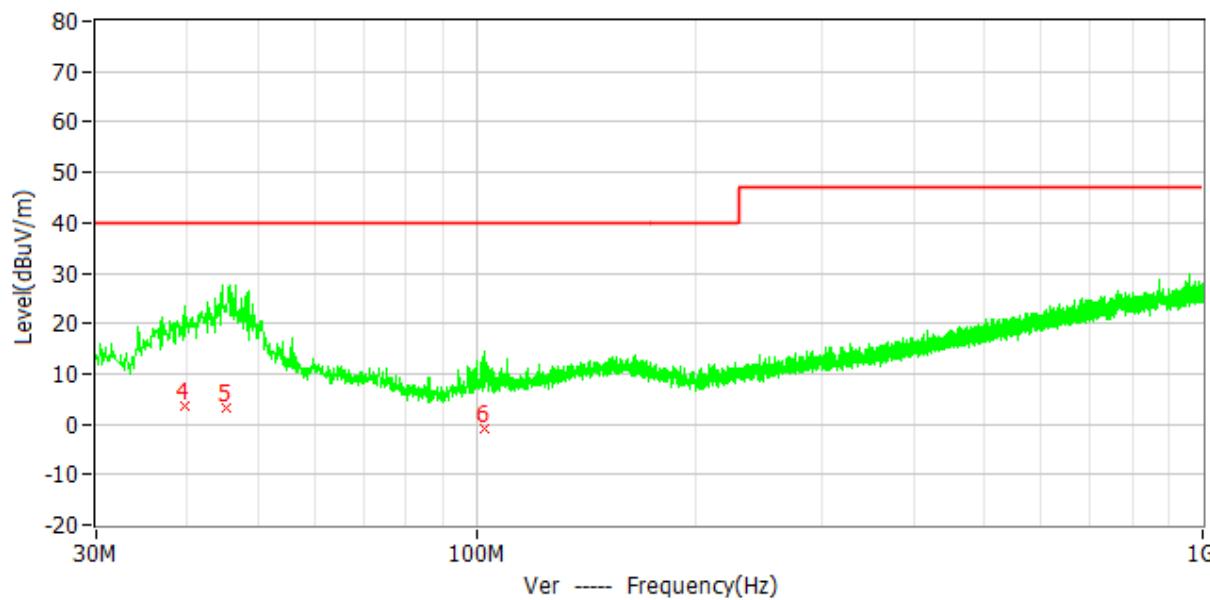
No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar
10	1.611GHz	50.00	17.37	-32.63	40.96	-23.59	AV	Ver
11	2.423GHz	50.00	19.09	-30.91	40.15	-21.06	AV	Ver
12	5.008GHz	54.00	22.24	-31.76	35.55	-13.31	AV	Ver

**Working mode:**

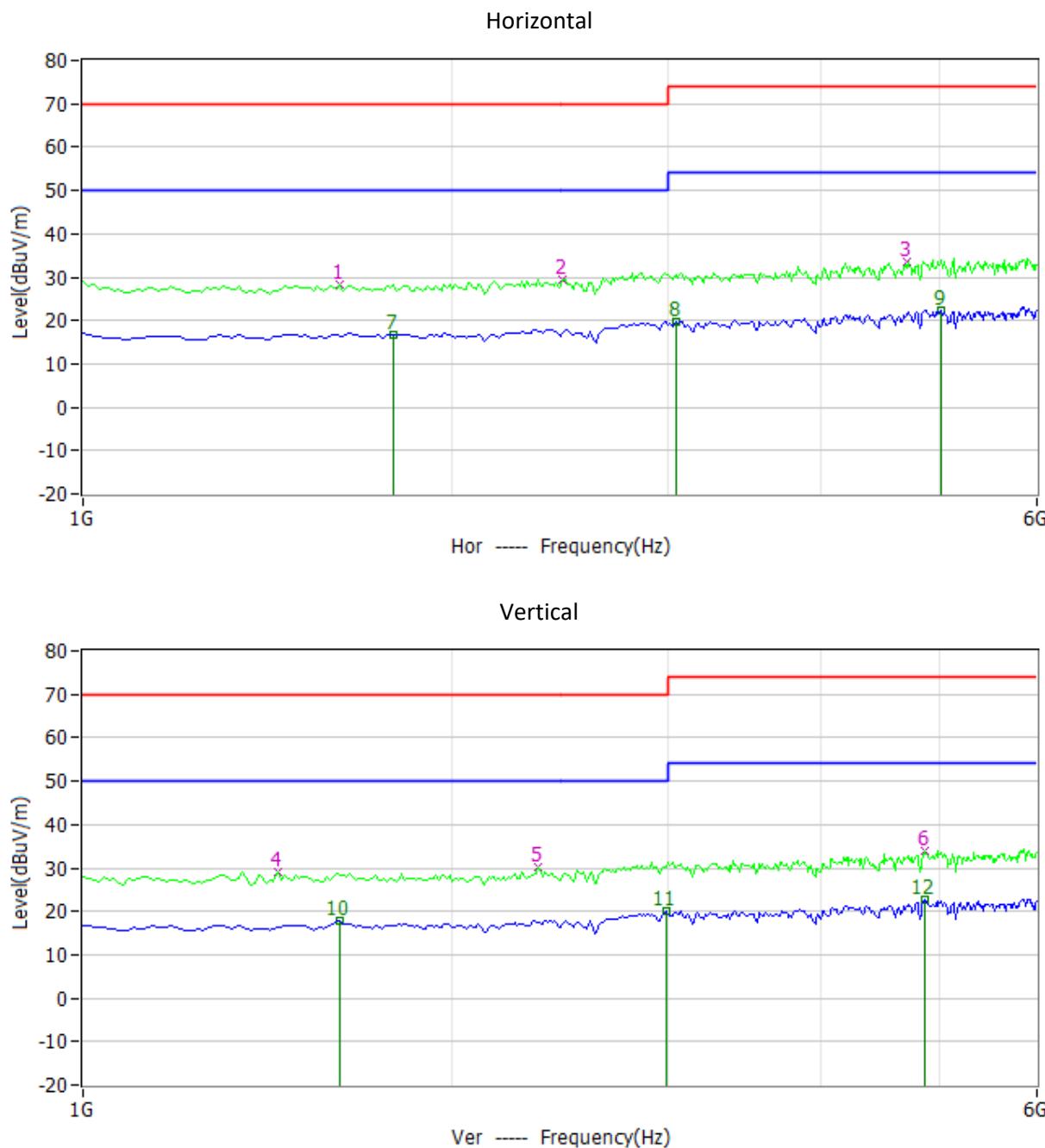
Horizontal



Vertical



No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar
1	46.503MHz	40.0	2.1	-37.9	-12.3	14.4	QP	Hor
2	105.632MHz	40.0	-1.2	-41.2	-11.8	10.6	QP	Hor
3	189.988MHz	40.0	11.6	-28.4	-0.7	12.3	QP	Hor
4	39.837MHz	40.0	3.6	-36.4	-10.4	14.0	QP	Ver
5	45.280MHz	40.0	3.2	-36.8	-11.1	14.3	QP	Ver
6	102.726MHz	40.0	-1.0	-41.0	-11.3	10.3	QP	Ver



No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar
1	1.621GHz	70.00	28.21	-41.79	51.79	-23.58	PK	Hor
2	2.463GHz	70.00	29.49	-40.51	50.40	-20.91	PK	Hor
3	4.707GHz	74.00	33.68	-40.32	48.09	-14.41	PK	Hor
4	1.441GHz	70.00	28.97	-41.03	52.86	-23.89	PK	Ver
5	2.353GHz	70.00	30.30	-39.70	51.67	-21.37	PK	Ver
6	4.858GHz	74.00	33.95	-40.05	47.73	-13.78	PK	Ver
7	1.792GHz	50.00	16.85	-33.15	40.01	-23.16	AV	Hor
8	3.044GHz	54.00	19.62	-34.38	37.98	-18.36	AV	Hor
9	5.018GHz	54.00	22.49	-31.51	35.80	-13.31	AV	Hor

**TEST REPORT**

No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar
10	1.621GHz	50.00	17.70	-32.30	41.28	-23.58	AV	Ver
11	2.994GHz	50.00	19.96	-30.04	38.40	-18.44	AV	Ver
12	4.858GHz	54.00	22.58	-31.42	36.36	-13.78	AV	Ver

Remark: 1. Factor = Antenna Factor + Cable Loss (+ Amplifier, for higher than 1GHz)

2. Level = Original Receiver Reading + Factor

3. Delta = Level - Limit

4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

Example: Assuming Antenna Factor = 30.20dB/m, Cable Loss = 2.00dB,

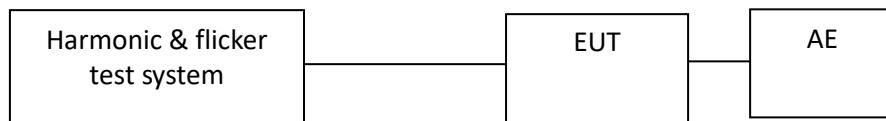
Gain of Preamplifier = 32.00dB, Original Receiver Reading = 10.00dBuV, limit = 40.00dBuV/m.

Then Factor =  $30.20 + 2.00 - 32.00 = 0.20\text{dB/m}$ ; Level =  $10.00\text{dBuV} + 0.20\text{dB/m} = 10.20\text{dBuV/m}$ ; Delta =  $10.20\text{dBuV/m} - 40.00\text{dBuV/m} = -29.80\text{dB}$ .

## 7 Harmonic current emission

Test result: Pass

### 7.1 Test Setup



### 7.2 Test Procedure

Harmonics of the fundamental current were measured up to 40 order harmonics using a digital power meter with an analogue output and frequency analyzer which was integrated in the harmonic & flicker test system. The measurements were carried out under steady conditions.

- Measuring instrumentation according to IEC 61000-4-7:2002+A1:2008
- This product is not defined as lighting equipment, and has rated power less than 75W, therefore, no limit applies according to EN 61000-3-2
- The EUT is kitchen machines as listed in the scope of IEC 60335-2-14, therefore, is deemed to conform to the harmonic current limits of this standard without further testing.



Total Quality. Assured.

## TEST REPORT

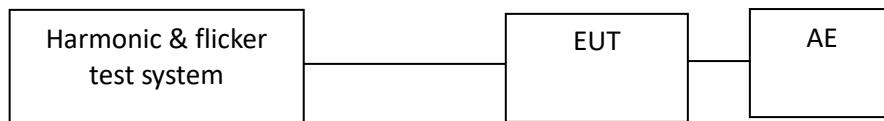
Report No. 2510B0393SHA-001

### 7.3 Test Result

## 8 Voltage fluctuations and flicker

**Test result:** Pass

### 8.1 Test Setup



### 8.2 Test Procedure

#### 8.2.1 Definition

Flicker: impression of unsteadiness of visual sensation induced by a lighting stimulus whose luminance or spectral distribution fluctuates with time.

Pst: Short-term flicker indicator the flicker severity evaluated over a short period (in minutes); Pst=1 is the conventional threshold of irritability

Plt: long-term flicker indicator; the flicker severity evaluated over a long period (a few hours) using successive Pst values.

dc: the relative steady-state voltage change

dmax: the maximum relative voltage change

d(t): the value during a voltage change

#### 8.2.2 Test Procedure

The following limits apply

- "Plt" shall not exceed 0.65.
- "Pst" shall not exceed 1.0.
- "dc" shall not exceed 3.3%.
- "d(t)" shall not exceed 3.3% for more than 500ms.
- "dmax" shall not exceed:

- 4% without additional conditions,
- 6% switched manually or automatically more than twice per day,
- 7% attended whilst in use or switched automatically for no more than twice per day or attended while in use.
- For manual switch, dmax is measured in accordance with Annex B of standard, average dmax is calculated from 24 times measurement.
- The EUT is unlikely to produce significant voltage fluctuations or flicker by technical analysis and evaluation. So it is deemed to fulfil the requirements without testing.



Total Quality. Assured.

## TEST REPORT

Report No. 2510B0393SHA-001

### 8.3 Test Result

## Immunity Test

### Performance criteria

The performance criteria are based on the general criteria of the standard and derived from the product specification

Criteria A: The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state 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 may reasonably expect from the equipment if used as intended.

Criteria B: During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test. After the test, 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), or recovery time, 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.

Criteria 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. A reboot or re-start operation is allowed.

Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

## 9 Electrostatic Discharges (ESD)

Test result                      Pass

### 9.1 Severity Level and Performance Criterion

#### 9.1.1 Test level

Contact discharge		Air discharge	
Level	Test voltage (kV)	Level	Test voltage (Kv)
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15
X	Special	X	Special

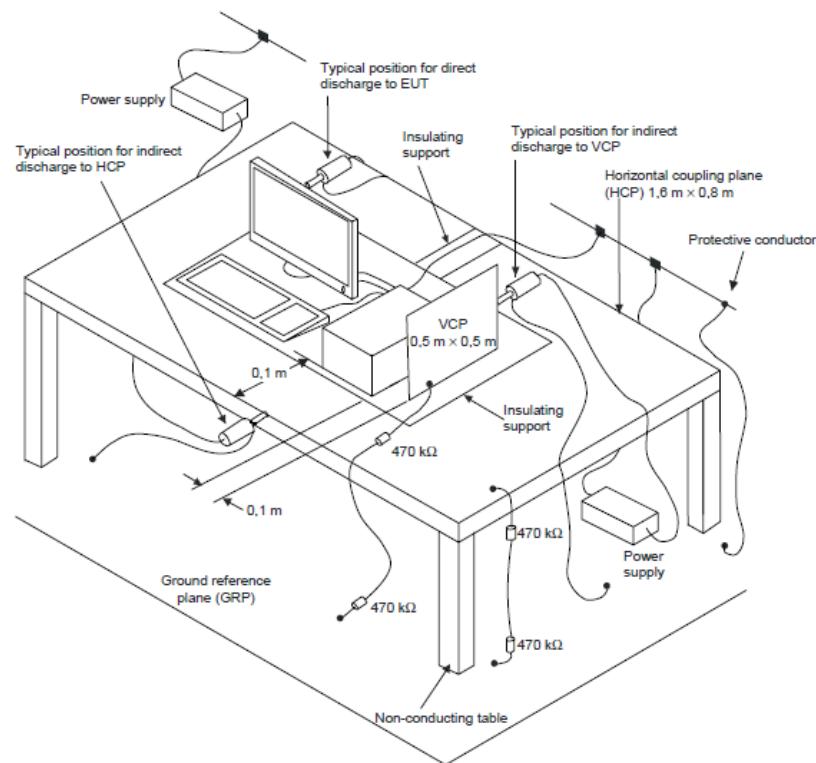
Notes: 1. "X" is an open level. The level has to be specified in the dedicated equipment specification.  
If higher voltages than those shown are specified, special test equipment may be needed.  
2. The gray rows were the selected test level.

#### 9.1.2 Performance Criterion

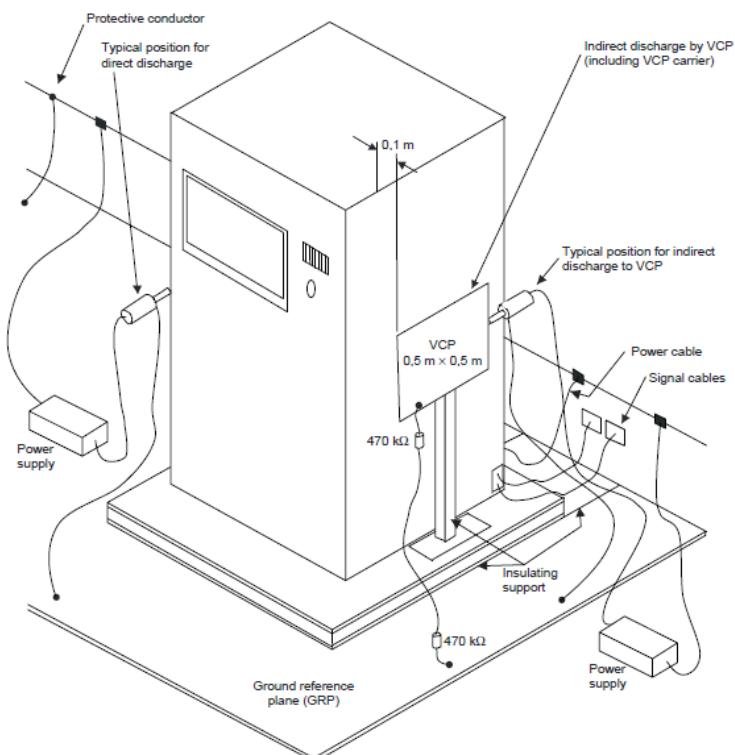
Criterion B

## 9.2 Test Setup

For table-top equipment



For floor standing equipment



### **9.3 Test Procedure**

Measurement was performed in shielded room.

Measurement procedure was applied according to EN 61000-4-2 clause 8.

The test method and equipment were specified by EN 61000-4-2.

**TEST REPORT**
**9.4 Test Result**

Direct discharges were applied at the following selected points:

Test level [kV]	Air/ Contact	Polarity (+/-)	Pass/Fail/NA	Comment
2/4	Contact	+/-	Pass	Accessible metal parts of the EUT
2/4	Contact	+/-	Pass	All touchable screws of enclosure
2/4/8	Air	+/-	Pass	Air gap of the switch, button
2/4/8	Air	+/-	Pass	Slots around the EUT

Indirect contact discharges were applied to the VCP and the HCP at the following selected points:

For table-top equipment

Position	Description	Point	Pass/Fail/NA
HCP front	0,1m from the front of the EUT	Edge of centre on HCP	Pass
HCP back	0,1m from the back of the EUT	Edge of centre on HCP	Pass
HCP right	0,1m from the right side of the EUT	Edge of centre on HCP	Pass
HCP left	0,1m from the left side of the EUT	Edge of centre on HCP	Pass
VCP front	0,1m from the front of the EUT	Edge of centre on VCP	Pass
VCP back	0,1m from the back of the EUT	Edge of centre on VCP	Pass
VCP right	0,1m from the right of the EUT	Edge of centre on VCP	Pass
VCP left	0,1m from the left of the EUT	Edge of centre on VCP	Pass

For floor standing equipment

Position	Description	Point	Pass/Fail/NA
CP front	0,1m from the front of the EUT	Edge of centre on VCP	NA
CP back	0,1m from the back of the EUT	Edge of centre on VCP	NA
CP right	0,1m from the right of the EUT	Edge of centre on VCP	NA
CP left	0,1m from the left of the EUT	Edge of centre on VCP	NA

**Observation:** Both charging mode and working mode were tested. All the functions were operated as normal after the test. No error occurred.

**Conclusion:** The EUT can meet the requirement of Performance Criterion B.

## 10 Continuous RF disturbances

Test result                      Pass

### 10.1 Severity Level and Performance Criterion

#### 10.1.1 Test level

Level	Test field strength V/m
1	1
2	3
3	10
X	Special

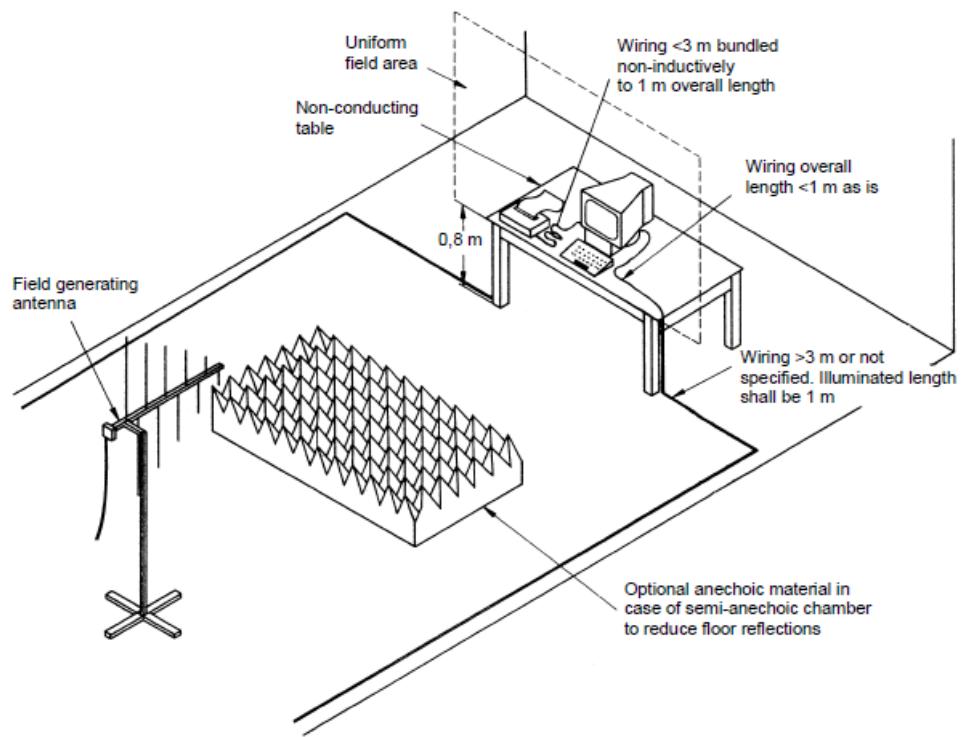
Note: 1. X is an open test level. This level may be given in the product specification.  
2. The gray rows were the selected test level.

#### 10.1.2 Performance Criterion

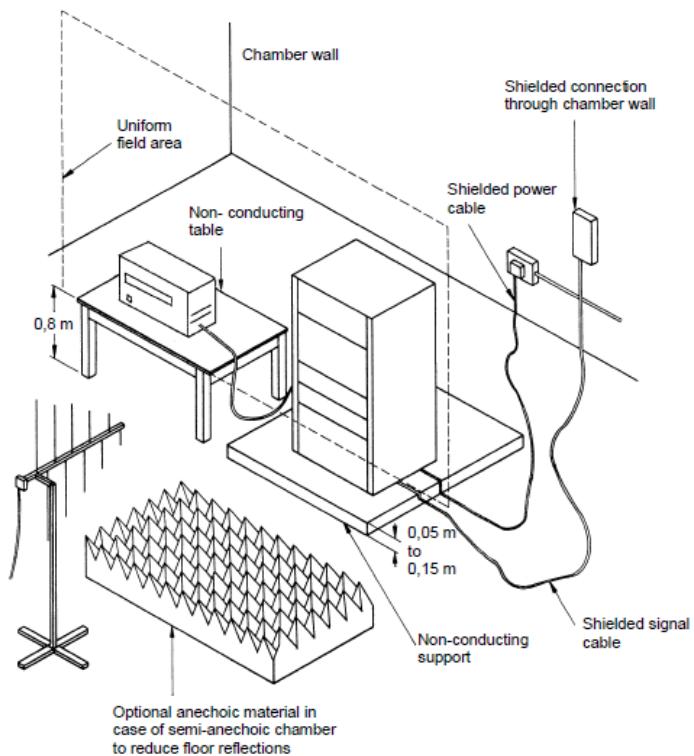
Criterion A

## 10.2 Test Setup

For table-top equipment



For floor standing equipment



**10.3 Test Procedure**

Measurement was performed in full-anechoic chamber.

Measurement procedure was applied according to EN 61000-4-3 clause 8.

The test method and equipment were specified by EN 61000-4-3.

**10.4 Test Result**

Test no.	Frequency (MHz)	Polarization	Test level (V/m)	Modulation	Exposed location	Pass/Fail/NA
1	80-1000	H & V	3	1 kHz, 80% AM 1 % increment	All sides	Pass
2	1800	H & V	3	1 kHz, 80% AM 1 % increment	All sides	Pass
3	2600	H & V	3	1 kHz, 80% AM 1 % increment	All sides	Pass
4	3500	H & V	3	1 kHz, 80% AM 1 % increment	All sides	Pass
5	5000	H & V	3	1 kHz, 80% AM 1 % increment	All sides	Pass

**Observation:** Both charging mode and working mode were tested. All the functions were operated as normal during and after test.

**Conclusion:** The EUT can meet the requirement of Performance Criterion A.

## 11 Continuous induced RF disturbances

Test result                      Pass

### 11.1 Severity Level and Performance Criterion

#### 11.1.1 Test level

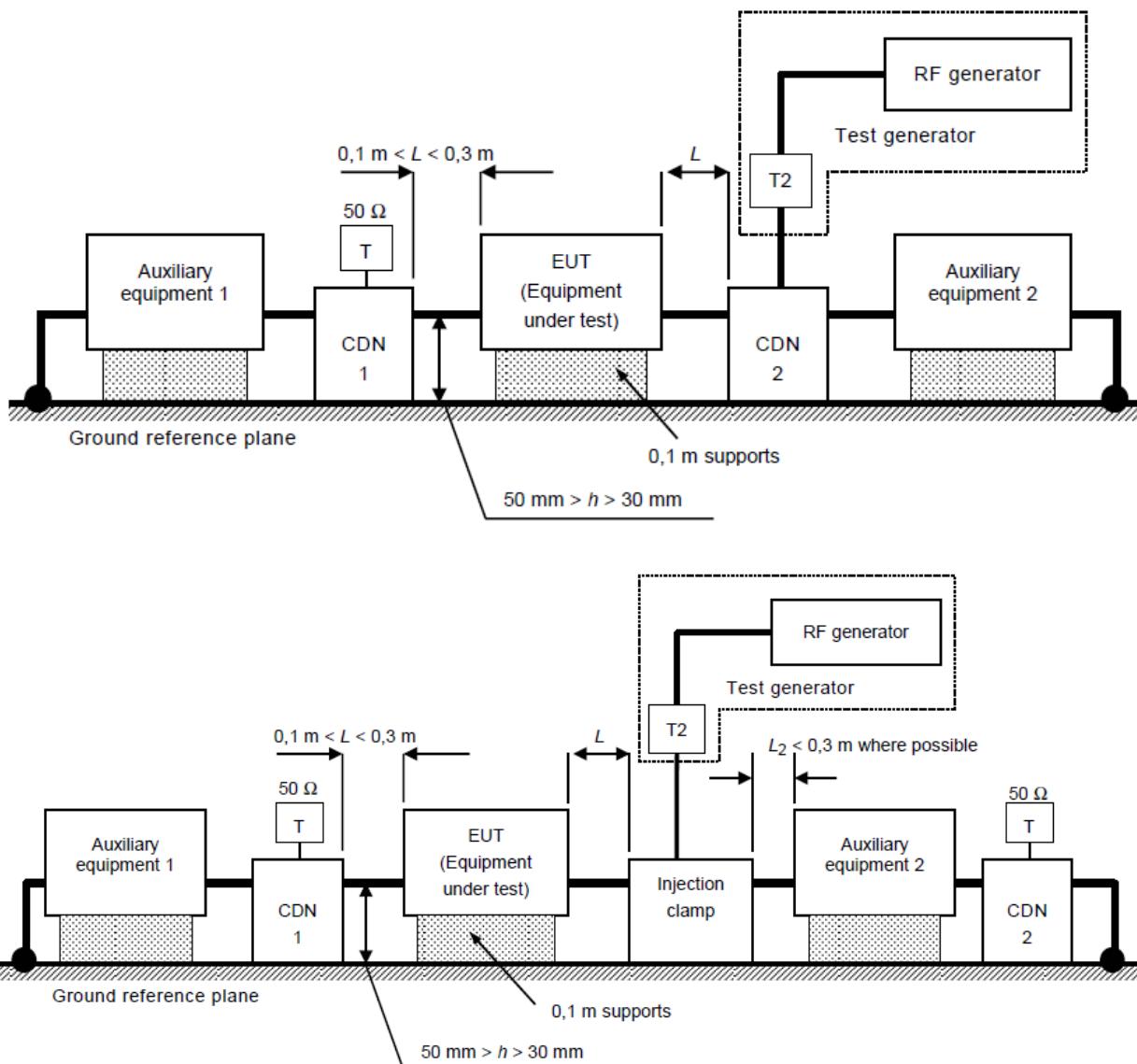
Frequency range 150kHz – 80MHz		
Level	Voltage level	
	U <sub>0</sub> (dBuV)	U <sub>0</sub> (V)
1	120	1
2	130	3
3	140	10
X	Special	Special

Notes: 1. "X" is an open level  
2. The gray rows were the selected test level.

#### 11.1.2 Performance Criterion

Criterion A

## 11.2 Block Diagram of Test Setup



T termination  $50 \Omega$

T2 power attenuator (6 dB)

CDN coupling and decoupling network

## 11.3 Test Procedure

Measurement procedure was applied according to EN 61000-4-6 clause 8.  
The test method and equipment were specified by EN 61000-4-6.

**TEST REPORT****11.4 Test Result**

Test No.	Frequency (MHz)	Level (V)	Modulation	Injected point	Pass/Fail/NA
1	0.15~10	3	80%, 1 kHz, AM	AC mains power ports	Pass
2	10~30	3 to 1	80%, 1 kHz, AM	AC mains power ports	Pass
3	30~80	1	80%, 1 kHz, AM	AC mains power ports	Pass
4	0.15~10	3	80%, 1 kHz, AM	analogue/digital data ports	NA
5	10~30	3 to 1	80%, 1 kHz, AM	analogue/digital data ports	NA
6	30~80	1	80%, 1 kHz, AM	analogue/digital data ports	NA

**Observation:** Charging mode was tested. All the functions were operated as normal during and after test. No error occurred.

**Conclusion:** The EUT can meet the requirements of Performance Criterion A.

## 12 Power Frequency Magnetic field

Test result                    NA

### 12.1 Severity Level and Performance Criterion

#### 12.1.1 Test level

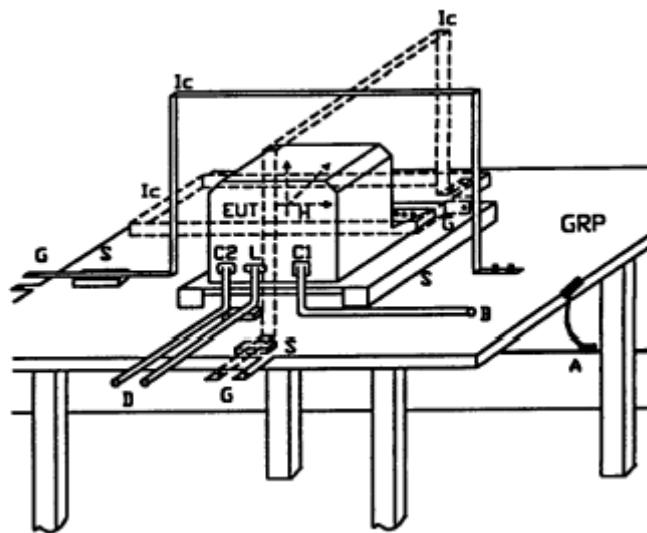
Level	Magnetic field strength A/m
1	1
2	3
3	10
4	30
5	100
X	Special

Note: 1. X is an open test level; this level may be given in the product specification.  
2. The gray rows were the selected test level.

#### 12.1.2 Performance Criterion

Criterion A

## 12.2 Test Setup



## 12.3 Test Procedure

Measurement was performed in shielded room.

Measurement procedure was applied according to EN 61000-4-8 clause 8.

The test method and equipment were specified by EN 61000-4-8.

**12.4 Test Result**

Test No.	Level A/m	Axis	Result	Comment
1	1	X	NA	
2	1	Y	NA	
3	1	Z	NA	

**Observation:****Conclusion:**

## 13 Electrical fast transients/burst

Test result                      Pass

### 13.1 Severity Level and Performance Criterion

#### 13.1.1 Test level

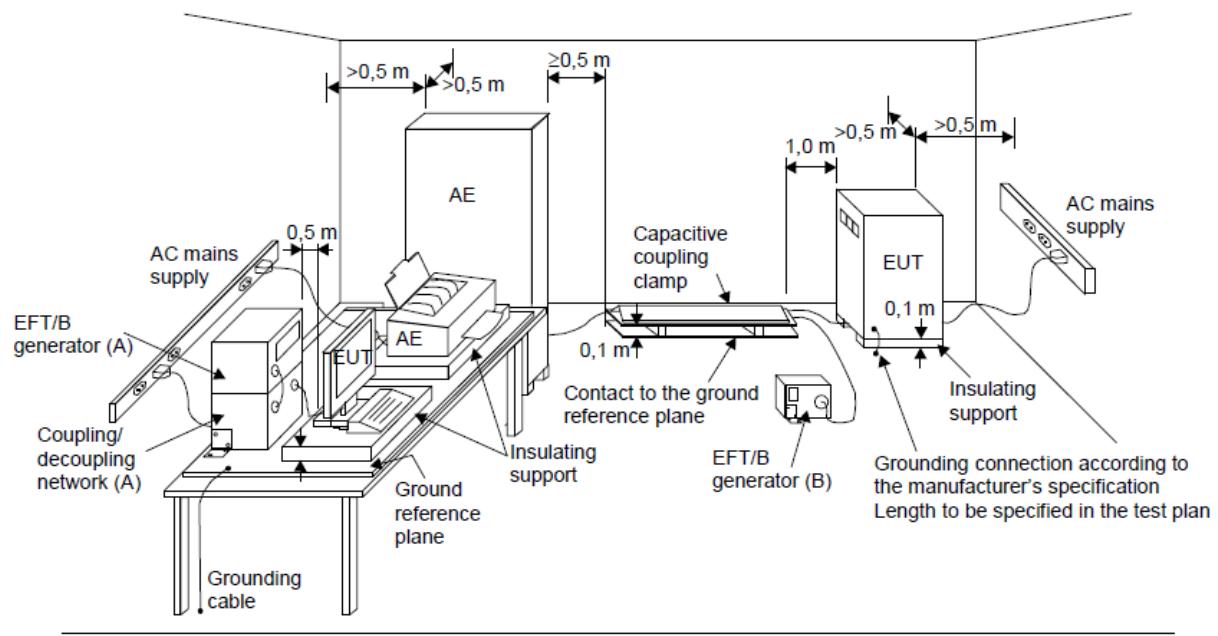
Open circuit output test voltage and repetition rate of the impulses				
Level	AC mains power input ports		Signal ports, wired network ports, control ports, DC power input ports	
	Voltage peak (kV)	Repetition rate (kHz)	Voltage peak (kV)	Repetition rate (kHz)
1	0.5	5	0.25	5/100
2	1	5	0.5	5/100
3	2	5	1	5/100
4	4	2.5	2	5/100
X	Special	Special	Special	Special

Notes: 1. "X" is an open level. The level has to be specified in the dedicated equipment specification.  
2. The gray rows were the selected test level.

#### 13.1.2 Performance Criterion

Criterion B

## 13.2 Test Setup



- (A) location for supply line coupling
  - (B) location for signal lines coupling

### 13.3 Test Procedure

Measurement was performed in shielded room.

Measurement procedure was applied according to EN 61000-4-4 clause 8.

The test method and equipment were specified by EN 61000-4-4.

**13.4 Test Result**

Test No.	Level (kV)	Polarity (+/-)	Line for test	Pass/Fail/NA
1	1	+/-	AC mains power input ports	Pass
2	0.5	+/-	Signal port	NA

**Observation:** Charging mode was tested. All the functions were operated as normal during and after test. No error occurred.

**Conclusion:** The EUT can meet the requirements of Performance Criterion A.

## 14 Surges

Test result      Pass

### 14.1 Severity Level and Performance Criterion

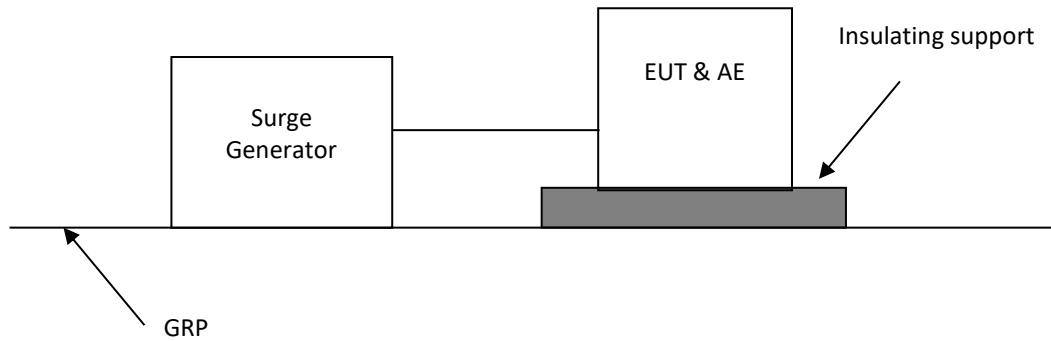
#### 14.1.1 Test level

Level	Open-circuit test voltage (kV)
1	0.5
2	1.0
3	2.0
4	4.0
X*	Special

Notes: 1."X" is an open class. This level can be specified in the product specification  
2. The gray rows were the selected level.

#### 14.1.2 Performance Criterion

Criterion B

**14.2 Test Setup****14.3 Test Procedure**

Measurement was performed in shielded room.

Measurement procedure was applied according to EN 61000-4-5 clause 8.

The test method and equipment were specified by EN 61000-4-5.

**TEST REPORT****14.4 Test Result**

Test No.	Level [kV]	Polarity +/-	Line for test	Pass/Fail/NA
1	0.5/1	+/-	AC mains power ports (line to line)	Pass
2	0.5/1/2	+/-	AC mains power ports (line to earth)	NA
3	1	+/-	unshielded symmetrical ports (line to ground)	NA

**Observation:** Charging mode was tested. All the functions were operated as normal during and after test. No error occurred.

**Conclusion:** The EUT can meet the requirements of Performance Criterion A.

## 15 Voltage dips and interruptions

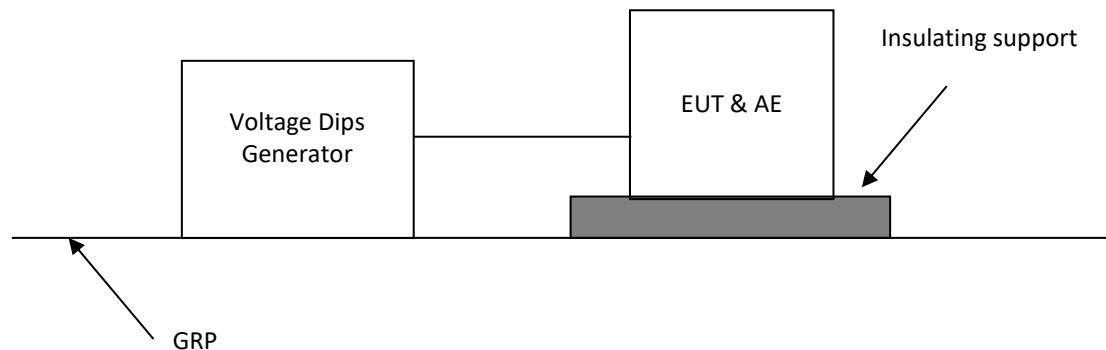
**Test result** Pass

### 15.1 Severity Level and Performance Criterion

#### 15.1.1 Test level and performance criterion

Test level (% Ut)	Voltage dip and short interruptions (% Ut)	Duration (in period)	Performance criterion
0	100	0.5	B
0	100	250 for 50 Hz / 300 for 60 Hz	C
70	30	25 for 50 Hz / 30 for 60 Hz	C

Notes: The gray rows were selected test level.

**15.2 Test Setup****15.3 Test Procedure**

Measurement was performed in shielded room.

Measurement procedure was applied according to EN 61000-4-11 clause 8.

The test method and equipment were specified by EN 61000-4-11.

**15.4 Test Result**

Test no.	Dips to (% Ut)	Voltage dip and short interruptions (% Ut)	Duration (in periods)	Pass/Fail/NA
1	70	30%	25	Pass
2	0	100%	0.5	Pass
3	0	100%	250	Pass

**Observation:** Charging mode was tested. For test no.1 and no.2, all the functions were operated as normal after test and no error occurred. For test no.3, the EUT stopped working during the test and all the functions were recovered as normal after the test.

**Conclusion:** The EUT can meet the requirements of the standard.

## 16 Broadband impulsive conducted disturbances

Test result                    NA

### 16.1 Severity Level and Performance Criterion

#### 16.1.1 Test level

Broadband impulse noise disturbances, repetitive	
Frequency range(MHz)	Level(V)
0.15~0.5	107
0.5~10	107~36
10~30	36~30

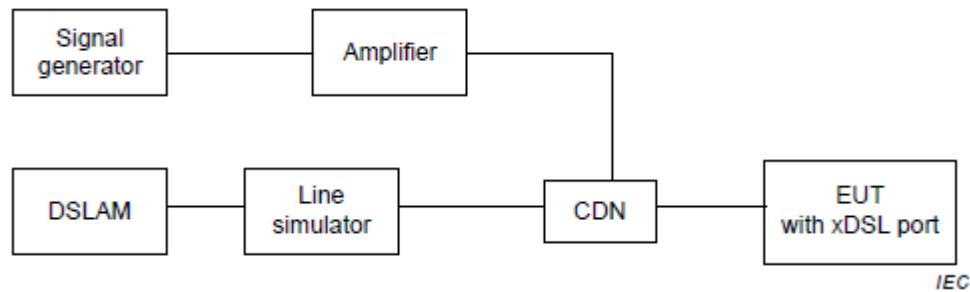
Broadband impulse noise disturbances, isolated	
Frequency range(MHz)	Level(V)
0.15~30	110

#### 16.1.2 Performance Criterion

Broadband impulse noise disturbances, repetitive: Criterion A

Broadband impulse noise disturbances, isolated: Criterion B

## 16.2 Test Setup



## 16.3 Test Procedure

Measurement procedure was applied according to EN 55035 clause 4.2.7.  
The test method and equipment were specified by EN 55035 clause 4.2.7.

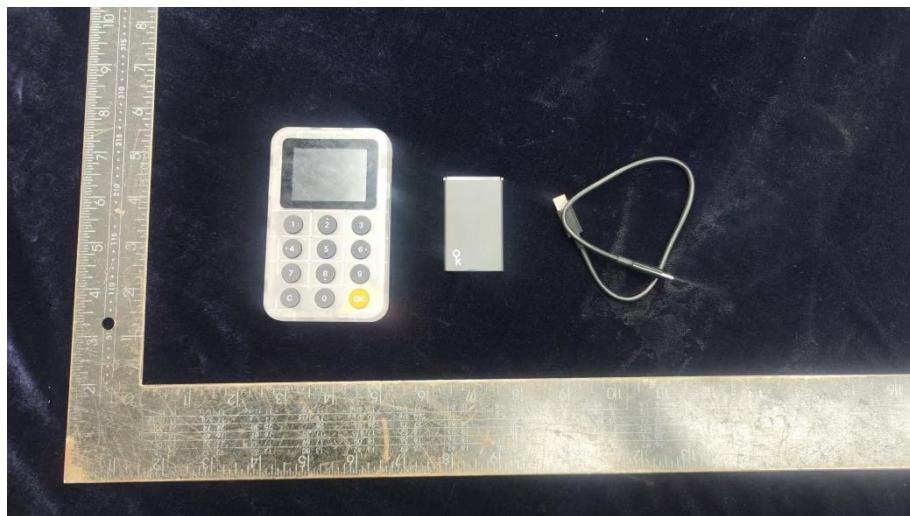
**TEST REPORT****16.4 Test Result**

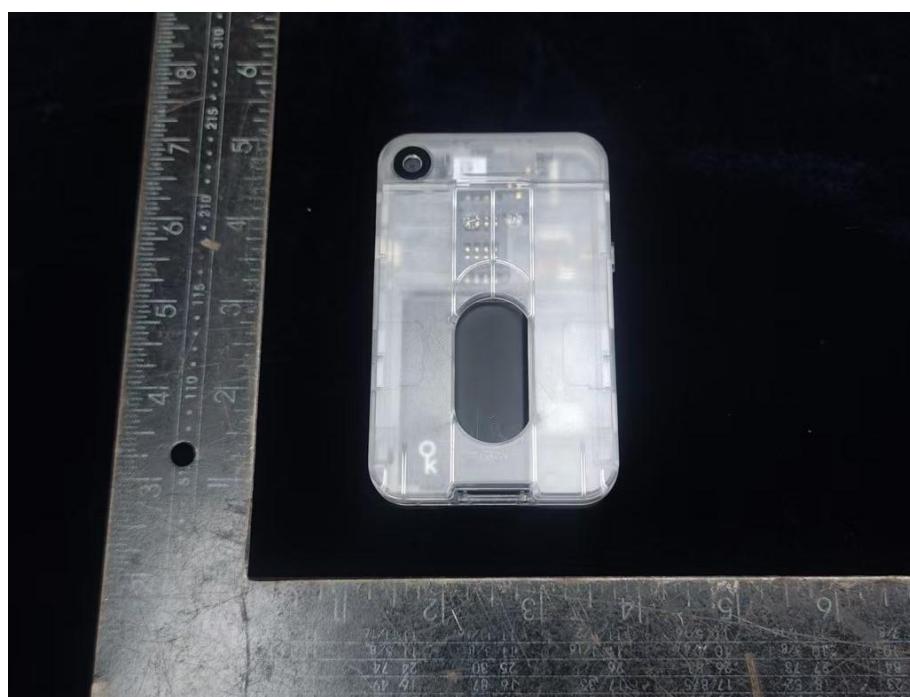
Test No.	Frequency [MHz]	Level [dB $\mu$ V]	Burst period [ms]	Impulse type	Pass/Fail/NA
1	0.15~0.5				NA
2	0.5~10				NA
3	10~30				NA

**Observation:****Conclusion:**

Test No.	Frequency [MHz]	Level [dB $\mu$ V]	Burst duration [ms]	Impulse type	Pass/Fail/NA
1	0.15~30				NA
2	0.15~30				NA
3	0.15~30				NA

**Observation:****Conclusion:**

**Appendix I: Photograph of equipment under test**



\*\*\*END of the report\*\*\*