



TEST REPORT	
ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) EN 55032: 2015+AC:2016+A11:2020/EN 55035: 2017+A11:2020 EN IEC 61000-3-2:2019/EN 61000-3-3:2013+A1:2019	
Report Reference No.....	HTT202302300E-1
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Approved by (position+printed name+signature)..:	Kevin Yang
Date of issue.....	Feb.24,2023
Testing Laboratory Name.....	Shenzhen HTT Technology Co., Ltd.
Address.....	1F, B Building, Huafeng International Robotics Industrial Park, Gushu, Xixiang Street, Bao'an District, Shenzhen
Applicant's name :	SHENZHEN COMISO DIGITAL TECHNOLOGY LIMITED
Address.....	12/F,XinLong Technology Park,SongGang Town, BaoAn District,ShenZhen City,China
Test specification	
Standard.....	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) EN 55032: 2015+AC:2016+A11:2020/EN 55035: 2017+A11:2020 EN IEC 61000-3-2:2019/EN 61000-3-3:2013+A1:2019
Test item description.....	Bluetooth wireless speaker
Trade Mark.....	COMISO
Manufacturer.....	SHENZHEN COMISO DIGITAL TECHNOLOGY LIMITED 12/F,XinLong Technology Park,SongGang Town, BaoAn District,ShenZhen City,China
Model/Type reference.....	X26L
Serial Model.....	Signature Speaker
Ratings.....	DC 3.7V/6000mAh From Battery and DC 5V/2A From External Circuit
Result.....	PASS



TEST REPORT

Test Report No. :	HTT202302300E-1	Feb.24,2023
		Date of issue

Equipment under Test : Bluetooth wireless speaker

Model Name : X26L

Serial Model : Signature Speaker

Trade Mark : COMISO

Applicant : SHENZHEN COMISO DIGITAL TECHNOLOGY LIMITED

Address : 12/F,XinLong Technology Park,SongGang Town,
BaoAn District,ShenZhen City,China

Manufacturer : SHENZHEN COMISO DIGITAL TECHNOLOGY LIMITED

Address : 12/F,XinLong Technology Park,SongGang Town,
BaoAn District,ShenZhen City,China

Test Result	PASS
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The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



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1. TEST STANDARDS

The tests were performed according to following standards:

ETSI EN 301 489-1 V2.2.3 (2019-11)–ElectroMagnetic Compatibility (EMC) standard for radio equipment and services;Part 1: Common technical requirements;Harmonised Standard for ElectroMagnetic Compatibility

ETSI EN 301 489-17 V3.2.4 (2020-09)–ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard for ElectroMagnetic Compatibility

EN 55032: 2015+AC:2016+A11:2020 Electromagnetic compatibility of multimedia equipment - Emission Requirements

EN 55035: 2017+A11:2020 Electromagnetic compatibility of multimedia equipment - Immunity requirements

EN IEC 61000-3-2:2019 Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)

EN 61000-3-3:2013+A1:2019 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.

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2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Feb.20,2023
Testing commenced on	:	Feb.20,2023
Testing concluded on	:	Feb.24,2023

2.2. Product Description

Product Name:	Bluetooth wireless speaker
Model:	X26L
Trade Mark:	COMISO
Power:	DC 3.7V/6000mAh From Battery and DC 5V/2A From External Circuit

BR+EDR	
Operation frequency:	2402MHz-2480MHz
Modulation Type:	GFSK,8DPSK, π /4DQPSK
Channel separation:	1MHz
Channel number:	79

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2.3. 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.

Test Mode	Description
Mode 1	BT Mode
Mode 2	Charging Mode

Pre-scan above all test mode, found below test mode which it was worse case mode.

Test item	Test mode (Worse case mode)
EMI	Mode 1
EMS	Mode 1

2.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- - supplied by the manufacturer
- - supplied by the lab

○ /	M/N: /
	Manufacturer: /

2.5. Modifications

No modifications were implemented to meet testing criteria.

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3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen HTT Technology Co., Ltd.

1F, B Building, Huafeng International Robotics Industrial Park, Gushu, Xixiang Street, Bao'an District, Shenzhen

3.2. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature	25°C
Relative Humidity	55 %
Air Pressure	989 hPa

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3.3. Test Description

Emission Measurement		
Radiated Emission	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) EN 55032: 2015+AC:2016+A11:2020	PASS
Conducted Emission(AC Mains)	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) EN 55032: 2015+AC:2016+A11:2020	PASS
Harmonic Current Emissions	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) EN IEC 61000-3-2:2019	N/A
Voltage Fluctuations and Flicker	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) EN 61000-3-3:2013+A1:2019	N/A
Immunity Measurement		
Electrostatic Discharge	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) EN 55035: 2017+A11:2020	PASS
RF Electromagnetic Field	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) EN 55035: 2017+A11:2020	PASS
Fast Transients Common Mode	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) EN 55035: 2017+A11:2020	PASS
RF Common Mode 0,15 MHz to 80 MHz	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) EN 55035: 2017+A11:2020	PASS
Voltage Dips and Interruptions	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) EN 55035: 2017+A11:2020	PASS
Surges	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) EN 55035: 2017+A11:2020	PASS

Remark:1. N/A means "not applicable".

2.The measurement uncertainty is not included in the test result.

3.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“and is documented in the Shenzhen Shenzhen HTT Technology Co., Ltd. acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen HTT Technology Co., Ltd. for Products Quality is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	3.45 dB	(1)
Radiated Emission	1~6GHz	3.54 dB	(1)
Conducted Disturbance	0.15~30MHz	2.66 dB	(1)
Harmonic current emission	/	0.634%	(1)
Voltage fluctuations & flicker	/	0.780%	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.5. Equipments Used during the Test

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Calibration Due Date
1	EMI Test Receiver	Rohde & Schwarz	ESCS30	845550/030	2022/05/23	2023/05/22
2	Artificial Mains	Rohde & Schwarz	ESH3-Z5	100181	2022/05/23	2023/05/22
3	Attenuator	Robinson	6810.17A	6810.17A	2022/05/23	2023/05/22
4	Cable Line	Robinson	Z302S-NJ-BNCJ-1.5M	18126545	2022/05/23	2023/05/22
5	EMI Test Receiver	Rohde & Schwarz	ESCI7	100920	2022/05/23	2023/05/22
6	Composite logarithmic antenna	SCHWARZBECK	VULB 9168	00931	2022/05/29	2023/05/28
7	Horn Antenna	SCHWARZBECK	BBHA9120D	01990	2022/05/29	2023/05/28
8	low frequency Amplifier	Sonoma Instrument	310	323089	2022/05/23	2023/05/22
9	high-frequency Amplifier	HP	8449B	P180313003	2022/05/23	2023/05/22
10	System-Controller	CCS	N/A	N/A	N/A	N/A
11	Turn Table	CCS	N/A	N/A	N/A	N/A
12	Antenna Tower	CCS	N/A	N/A	N/A	N/A
13	RF Line	Robinson	ZT26-NJ-NJ-0.6M	18126549	2022/05/23	2023/05/22



14	RF Line	Robinson	ZT26-NJ-SMAJ-2M	18126550	2022/05/23	2023/05/22
15	RF Line	Robinson	ZT26-NJ-SMAJ-0.6M	18126548	2022/05/23	2023/05/22
16	RF Line	Robinson	ZT26-NJ-SMAJ-8.5M	18126547	2022/05/23	2023/05/22
17	Electric Power Analyzer	EVERFINE	PF6000	P619086TF14 11112	2022/05/26	2023/05/25
18	Harmonics& Flicker Testing Power Source	EVERFINE	HFS-1000	P624484TM14 11115	2022/05/23	2023/05/22
19	ESD Simulators	LIONCEL	ESD-202A	0180801	2022/05/26	2023/05/25
20	ESD Gun	LIONCEL	N/A	N/A	2022/05/26	2023/05/25
21	Signal Generator	Maconi	2022D	119246/003	2022/06/09	2023/06/08
22	Power Amplifier	M2S	A00181-1000	9801-112	2022/06/09	2023/06/08
23	Power Amplifier	M2S	AC8113/800-250A	9801-179	2022/06/09	2023/06/08
24	Power Antenna	SCHAFFNER	CBL6140A	1204	2022/06/09	2023/06/08
25	EFT&Surge Tester	LIONCEL	LSE-545CB	0180601	2022/05/23	2023/05/22
26	Specialized Isolated Voltage Regulator For Surge	EVERFINE	GT2502	P185365CM53 91123	2022/05/23	2023/05/22
27	Coupling Clamp	LIONCEL	EFTC	018071809	2022/05/23	2023/05/22
28	Signal Generator	Maconi	2022D	119246/003	2022/06/09	2023/06/08
29	Power Amplifier	M2S	A00181-1000	9801-112	2022/06/09	2023/06/08
30	CDN	MEB	M3-8016	003683	2022/06/09	2023/06/08
31	Dips Tester	LIONCEL	VSD-1102	0181202	2022/05/23	2023/05/22
33	Voltage-Stabilized Source	LIONCEL	RGL-220	0180901	2022/05/23	2023/05/22
34	Voltage-Stabilized Source	LIONCEL	RGL-220	0180902	2022/05/23	2023/05/22

The calibration interval is 1 year.

4. TEST CONDITIONS AND RESULTS

4.1. EMISSION

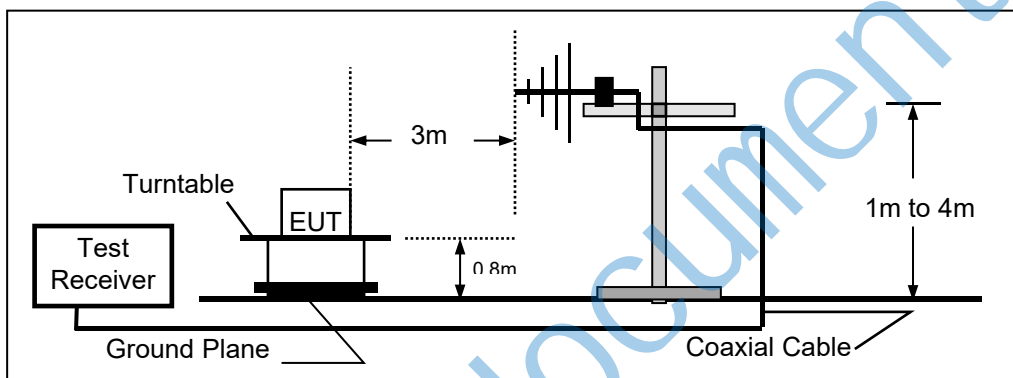
4.1.1. Radiated Emission

LIMIT

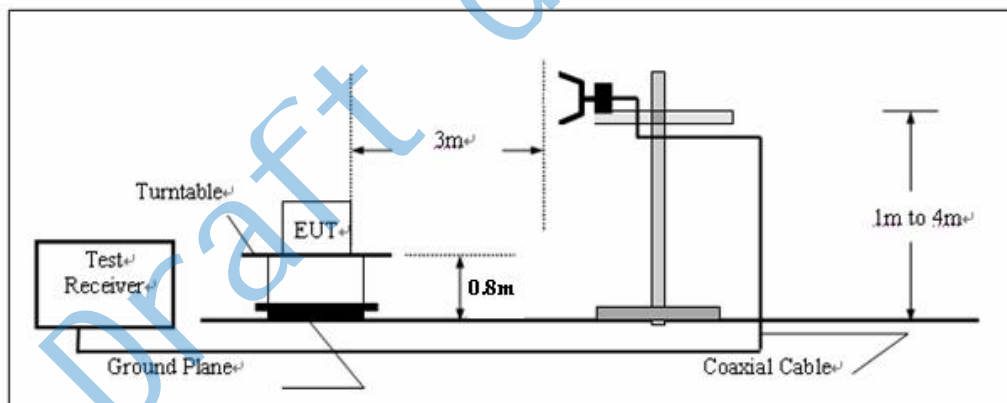
Please refer to ETSI EN301489-1 Clause 8.2.3, Table 4 and EN55032 Annex A, Table A.2,A.3, and Class B

TEST CONFIGURATION

- a) Radiated emission test set-up, frequency below 1000MHz:



- b) Radiated emission test set-up, frequency above 1000MHz



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 8.2.3 and EN55032 Annex A for the measurement methods

TEST RESULTS

Passed

Please refer to the below test data:



30-1000MHz

Test mode:	Mode 1	Polarization	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector	Antenna Height cm	Table Degree	Comment
1		45.3755	33.84	-17.92	15.92	40.00	-24.08	peak			
2		67.2022	36.74	-19.60	17.14	40.00	-22.86	peak			
3		125.4457	39.49	-19.57	19.92	40.00	-20.08	peak			
4	*	183.8440	43.22	-18.66	24.56	40.00	-15.44	peak			
5		240.8304	40.94	-19.19	21.75	47.00	-25.25	peak			
6		345.5952	46.23	-17.91	28.32	47.00	-18.68	peak			



Test mode:

Mode 1

Polarization

Vertical



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dB/m	Over dB	Detector	Antenna Height cm	Table Degree	Comment
1	43.5057	40.62	-18.19	22.43	40.00	-17.57	peak			
2	59.6493	41.97	-18.74	23.23	40.00	-16.77	peak			
3	80.9275	45.72	-20.86	24.86	40.00	-15.14	peak			
4	108.2667	44.87	-20.26	24.61	40.00	-15.39	peak			
5	173.2051	42.86	-16.81	26.05	40.00	-13.95	peak			
6 *	495.9344	51.16	-14.94	36.22	47.00	-10.78	peak			



1000-6000 MHz

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
V	1327.56	56.59	-17.52	39.07	70.00	30.93	peak
V	1327.75	53.66	-17.47	36.19	70.00	33.81	AVG
V	1573.92	62.33	-12.32	50.01	70.00	19.99	peak
V	1571.38	58.47	-12.23	46.24	50.00	3.76	AVG
V	3325.56	66.75	-10.52	56.23	74.00	17.77	peak
V	3325.52	55.71	-10.41	45.30	54.00	8.70	AVG
H	1349.49	69.31	-17.55	51.76	70.00	18.24	peak
H	1249.42	62.09	-17.47	44.62	50.00	5.38	AVG
H	3524.32	65.49	-12.63	52.86	70.00	17.14	peak
H	3524.42	46.47	-12.32	34.15	50.00	15.85	AVG
H	4026.56	68.34	-8.65	59.69	74.00	14.31	peak
H	4026.52	58.64	-8.78	49.86	54.00	4.14	AVG

Remark:

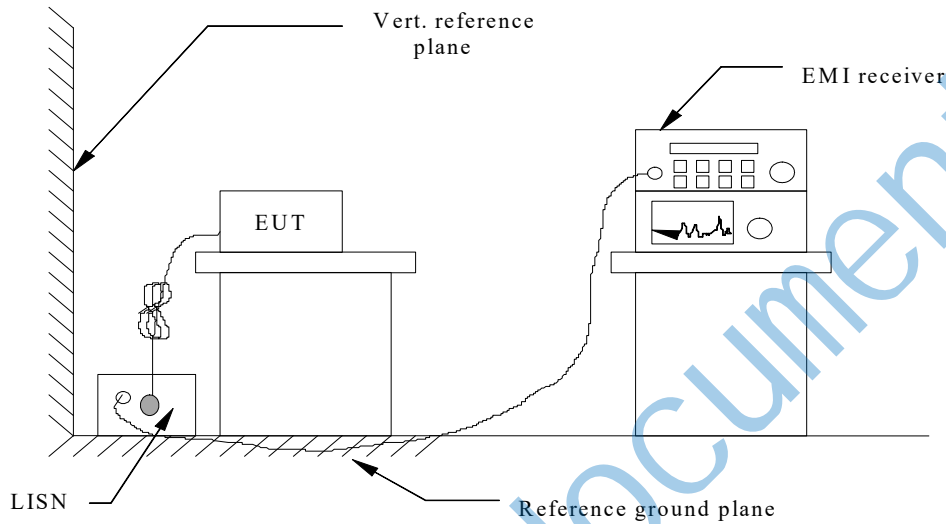
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit

4.1.2. Conducted Emission (AC Mains)

LIMIT

Please refer to ETSI EN301489-1 Clause 8.4.3, Table 8 and EN55032 Annex A, Table A.10, A.12

TEST CONFIGURATION



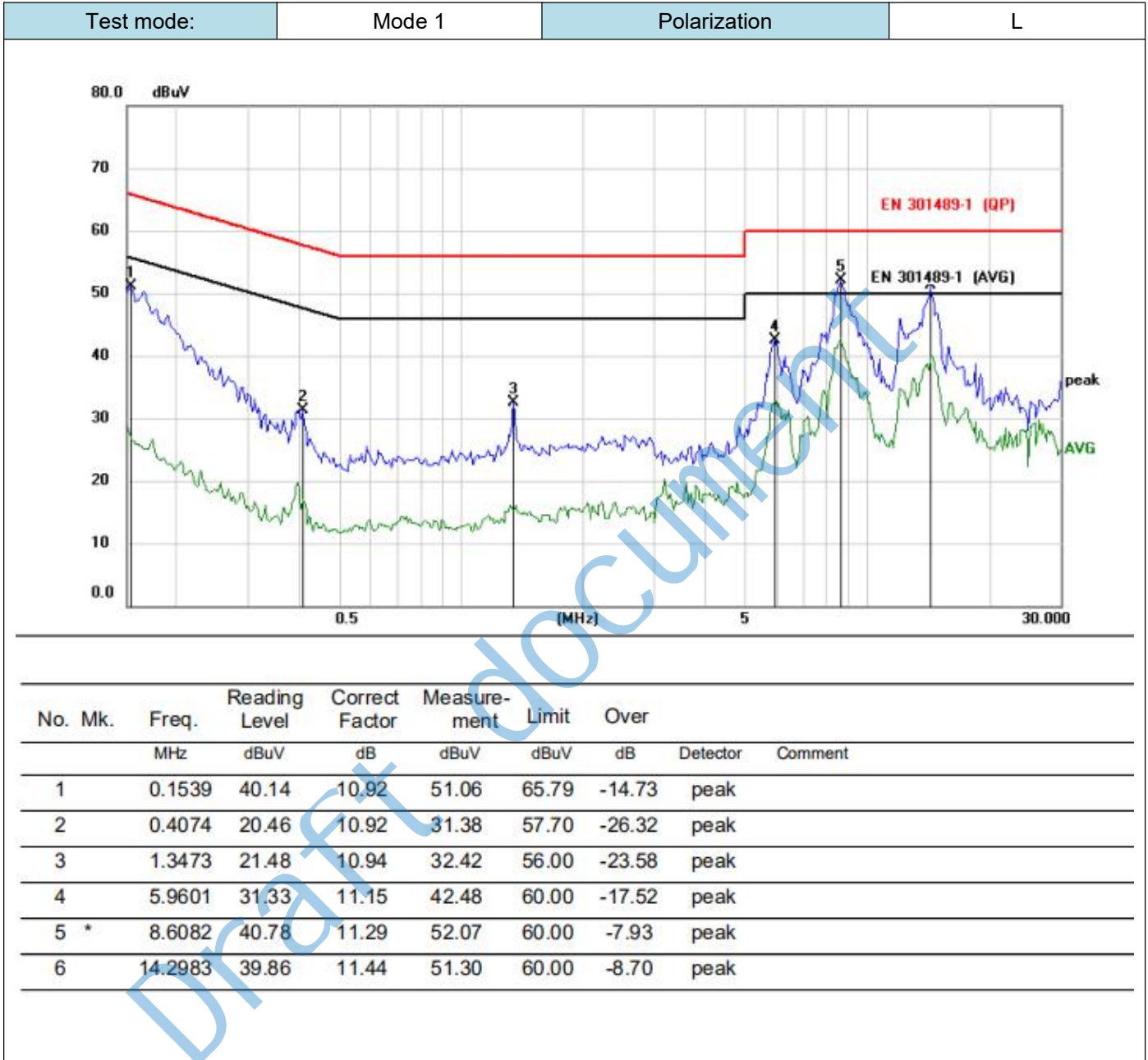
TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 8.4.3 and EN55032 Annex A for the measurement methods.

TEST RESULTS

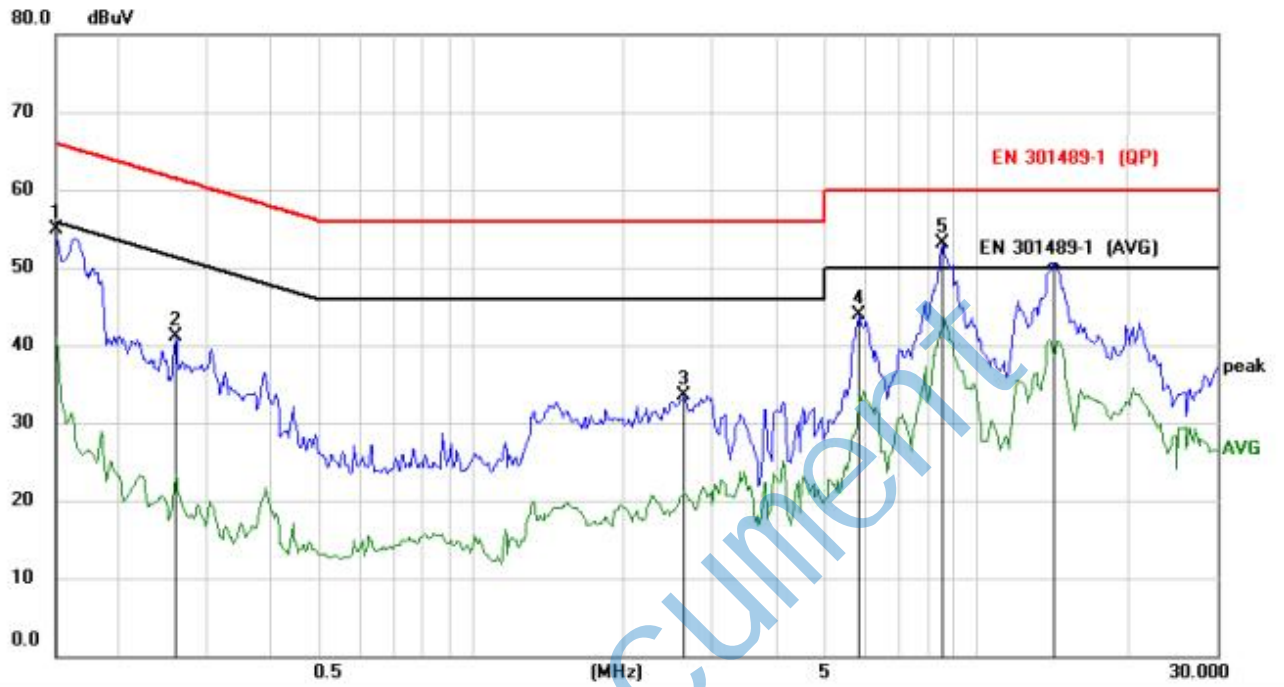
Passed

Please refer to the below test data:





Test mode:	Mode 1	Polarization	N
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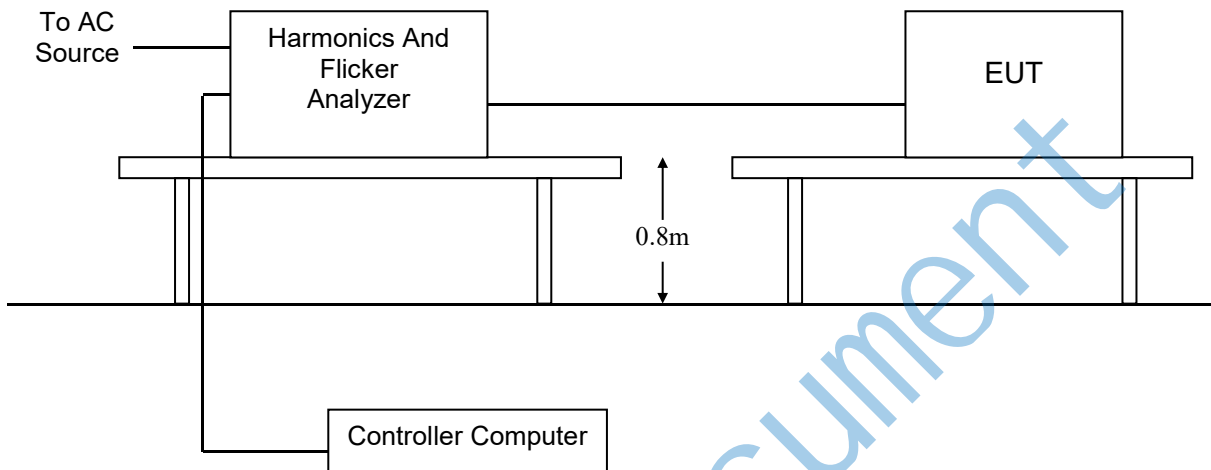
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	44.00	10.92	54.92	66.00	-11.08	peak	
2		0.2590	30.16	10.92	41.08	61.46	-20.38	peak	
3		2.6381	22.51	11.00	33.51	56.00	-22.49	peak	
4		5.8430	32.68	11.15	43.83	60.00	-16.17	peak	
5	*	8.5768	41.88	11.29	53.17	60.00	-6.83	peak	
6		14.2710	39.07	11.44	50.51	60.00	-9.49	peak	

4.1.3. Harmonic Current Emission

LIMIT

Please refer to EN 61000-3-2

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN 61000-3-2 for the measurement methods.

TEST RESULTS

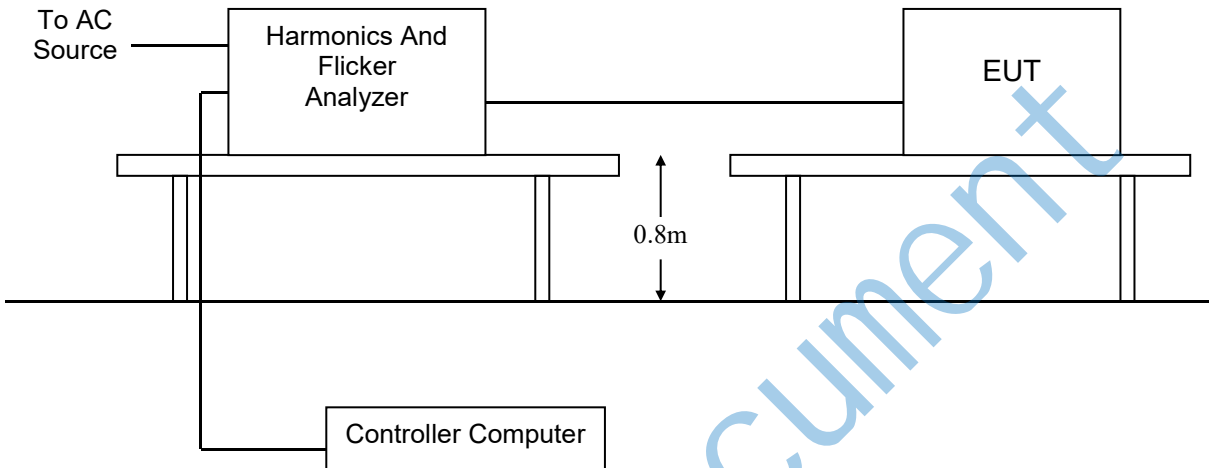
Note: The active input power of the EUT is less than 75W. No limits apply for equipment with an active input power up to and including 75W

4.1.4. Voltage Fluctuation and Flicker

LIMIT

Please refer to EN 61000-3-3

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN 61000-3-3 for the measurement methods.

TEST RESULTS

The maximum input power of the EUT is less than 20W, which is unlikely to produce significant voltage fluctuation. Therefore, this test item is not applicable for the EUT.

See clause 6.1*** *** EN 61000-3-3:2013+A1:2019, clause 6.1: " ... Tests need not be made on equipment which is unlikely to produce significant voltage fluctuations or flicker. ...".

4.2. IMMUNITY

4.2.1. Performance criteria

■ ETSI EN301489-17

General performance criteria

- Performance criteria A for immunity tests with phenomena of a continuous nature;
- Performance criteria B for immunity tests with phenomena of a transient nature;
- Performance criteria C for immunity tests with power interruptions exceeding a certain time.

The equipment shall meet the minimum performance criteria as specified in the following.

Criteria	During test	After test
A	<p>Shall operate as intended. (see note 1). Shall be no loss of function. Shall be no unintentional transmissions.</p>	<p>Shall operate as intended. Shall be no degradation of performance (see note 3). Shall be no loss of function. Shall be no loss of stored data or user programmable functions.</p>
B	<p>May show loss of function (one or more). May show degradation of performance (see note 2). Shall be no unintentional transmissions</p>	<p>Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no degradation of performance (see note 3). Shall be no loss of stored data or user programmable functions.</p>
C	<p>May be loss of function (one or more).</p>	<p>Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no degradation of performance (see note 3)</p>

NOTE 1:

Operate as intended during the test allows a level of degradation not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

NOTE 2:

Degradation of performance during the test is understood as a degradation to a level not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance.

If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

NOTE 3:

No degradation of performance after the test is understood as no degradation below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some



cases the specified minimum performance level may be replaced by a permissible degradation of performance. After the test no change of actual operating data or user retrievable data is allowed. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

Performance criteria for Continuous phenomena applied to Transmitters (CT)

The performance criteria A shall apply.

Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an ACKnowledgement (ACK) or Not ACKnowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

Performance criteria for Transient phenomena applied to Transmitters (TT)

The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply.

Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or not-acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

Performance criteria for Continuous phenomena applied to Receivers (CR)

The performance criteria A shall apply.

Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

Performance criteria for Transient phenomena applied to Receivers (TR)

The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration for which performance criteria C shall apply.

Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

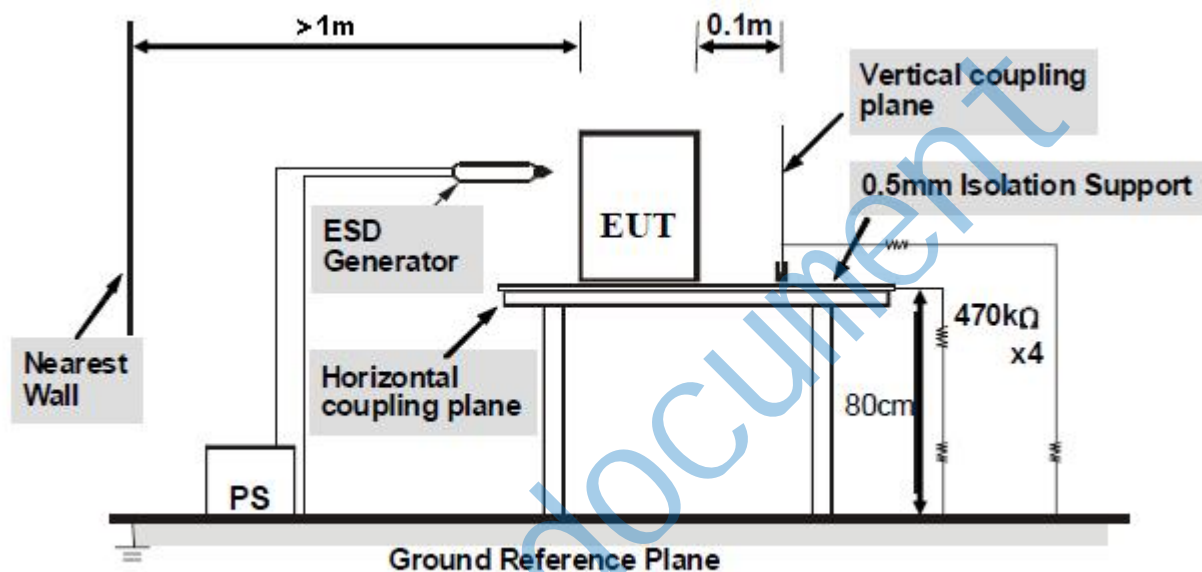
4.2.2. Electrostatic Discharge

LIMIT

SEVERITY LEVELS OF ELECTROSTATIC DISCHARGE

Test level: Contact Discharge at $\pm 2\text{KV}$, $\pm 4\text{KV}$ Air Discharge at $\pm 2\text{KV}$, $\pm 4\text{KV}$, $\pm 8\text{KV}$

TEST CONFIGURATION



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.3.2 , EN 55035 and EN 61000-4-2 for the measurement methods.

Contact Discharge:

The ESD generator is held perpendicular to the surface to which the discharge is applied and the tip of the discharge electrode touch the surface of EUT. Then turn the discharge switch. The generator is then re-triggered for a new single discharge and repeated at least 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

Air Discharge:

Air discharge is used where contact discharge can't be applied. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated at least 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

Indirect discharge for horizontal coupling plane:

At least 10 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT.

Indirect discharge for vertical coupling plane:

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

**TEST MODE**

Please reference to the section 2.3

TEST RESULTS

Direct discharge				
Type of discharge	Discharge voltage (KV)	Observations Performance	Criteria Level	Result
Contact discharge	± 2	No degradation in performance of the EUT was observed (A)	B	Pass
	± 4	A	B	
Air discharge	± 2	A	B	
	± 4	A	B	
	± 8	A	B	
Indirect discharge				
Type of discharge	Discharge voltage (KV)	Observations Performance	Criteria Level	Result
HCP (6 sides)	± 2	A	B	Pass
	± 4	A	B	
VCP (4 sides)	± 2	A	B	
	± 4	A	B	

Remark: The ancillary equipment's specification for an acceptable level of performance or degradation of performance during and/or after the ESD tests.

4.2.3. RF Electromagnetic Field

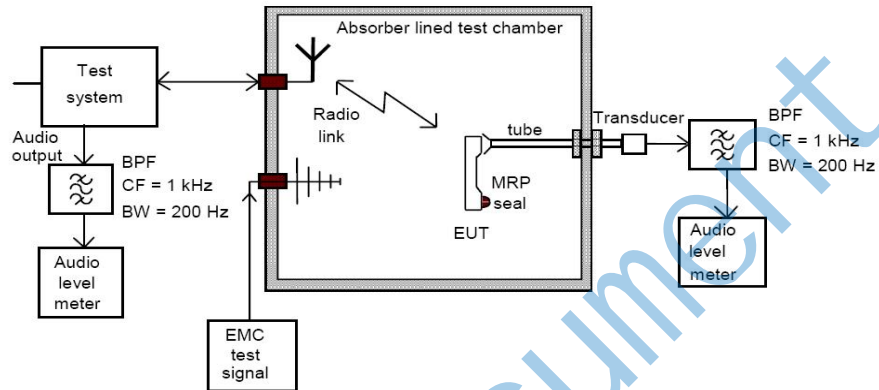
PERFORMANCE CRITERION

Criteria A

TEST LEVEL

3V/m (80%, 1kHz Amplitude Modulation)

TEST CONFIGURATION



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.2.2 and EN 61000-4-3 for the measurement methods.

TEST MODE

Please reference to the section 2.3

TEST RESULTS

Frequency	Level	Modulation	Antenna Polarization	EUT Face	Observations (Performance Criterion)	Result
80MHz-6GHz	3 V/m	1 kHz, 80 % Amp. Mod, 1 % increment, dwell time=3seconds	V	Front	A	Pass
			H		A	Pass
			V	Rear	A	Pass
			H		A	Pass
			V	Left	A	Pass
			H		A	Pass
			V	Right	A	Pass
			H		A	Pass
			V	Top	A	Pass
			H		A	Pass
			V	Bottom	A	Pass
			H		A	Pass

Remark: A: No degradation in performance of the EUT was observed.

4.2.4. Surges

PERFORMANCE CRITERION

Criteria B

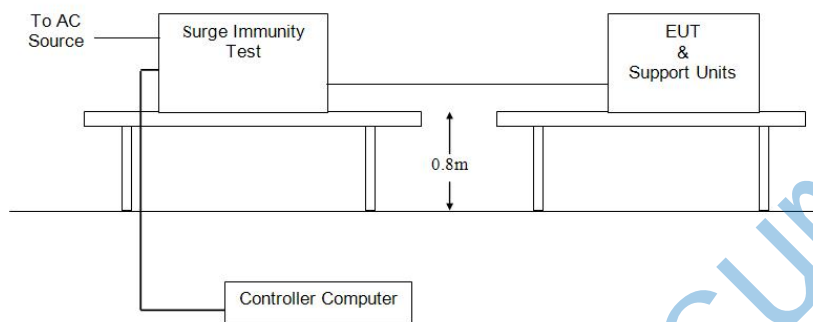
TEST LEVEL

1kV Line to Line: Differential mode

2kV Line to Ground: Common mode

(Voltage Waveform: 1.2/50 us; Current Waveform: 8/20 us)

TEST CONFIGURATION



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.8.2 and EN 61000-4-5 for the measurement methods.

TEST MODE

Please reference to the section 2.3

TEST RESULTS

Location	Level(kV)	Pulse No	Surge Interval	Phase(deg)	Observations (Performance Criterion)	Result
L-N	± 1	5	60s	0°	A	Pass
				90°	A	Pass
				180°	A	Pass
				270°	A	Pass

Remark: A: No degradation in performance of the EUT was observed.

4.2.5. RF- Common Mode 0.15MHz to 80MHz

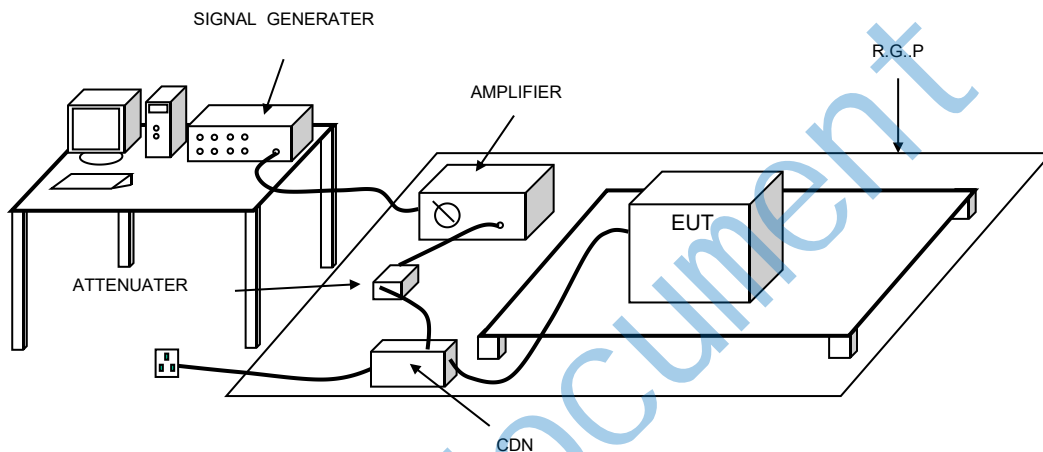
PERFORMANCE CRITERION

Criteria A

TEST LEVEL

3Vrms on AC main port (80%, 1kHz Amplitude Modulation)

TEST CONFIGURATION



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.5.2 and EN 61000-4-6 for the measurement methods.

TEST MODE

Please reference to the section 2.3

TEST RESULTS

Frequency	Injected Position	Level	Modulation	Observations (Performance Criterion)	Result
150kHz to 80MHz	AC Mains	3Vrms	1 kHz, 80 % Amp. Mod, 1 % increment, dwell time=3seconds	A	Pass

Remark: A: No degradation in performance of the EUT was observed

4.2.6. Fast Transients Common Mode

PERFORMANCE CRITERION

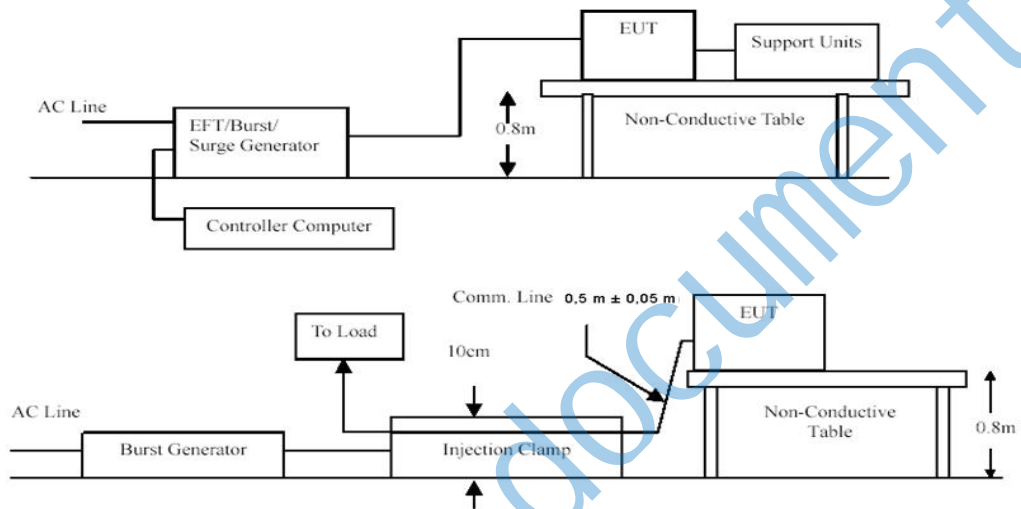
Criteria B

TEST LEVEL

1KV for AC main port

(Impulse Frequency: 5 kHz; Tr/Th: 5/50ns; Burst Duration: 15ms; Burst Period: 3Hz)

TEST CONFIGURATION



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.4.2 , EN55035 and EN 61000-4-4 for the measurement methods.

TEST MODE

Please reference to the section 2.3

TEST RESULTS

Lead under Test	Level (\pm kV)	Coupling Direct/Clamp	Observations (Performance Criterion)	Result
L	± 1	Direct	A	Pass
N	± 1	Direct	A	Pass
L-N	± 1	Direct	A	Pass

Remark: A: No degradation in performance of the EUT was observed.

4.2.7. Voltage Dips and Interruptions

PERFORMANCE CRITERION

>95% VD, 0.5 period----Performance criterion: B

>95% VD, 1.0 period----Performance criterion: B

30% VD, 25 period----Performance criterion: C

>95% VI, 250 period----Performance criterion: C

TEST LEVEL

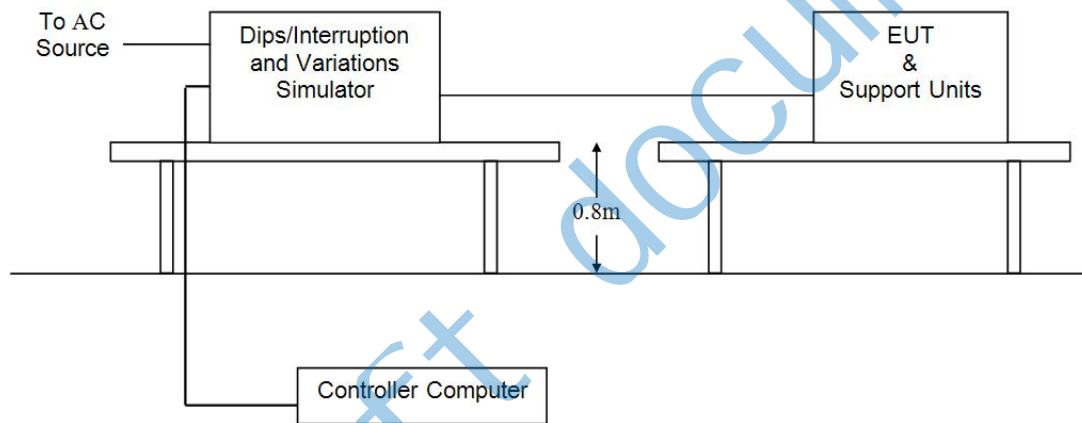
0% of VT(Supply Voltage) for 0.5 period

0% of VT(Supply Voltage) for 1.0 period

70% of VT(Supply Voltage) for 25 period

0% of VT(Supply Voltage) for 250 period

TEST CONFIGURATION



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.7.2 and EN 61000-4-11 for the measurement methods.

TEST MODE

Please reference to the section 2.3

TEST RESULTS

Test Level % UT	Duration (Periods)	Phase angle	No. of drop out	Time between dropout	Observations (Performance Criterion)	Result
0	0.5	0°, 90°, 180°, 270°	3	10s	A	Pass
0	1.0	0°, 90°, 180°, 270°	3	10s	A	Pass
70	25	0°, 90°, 180°, 270°	3	10s	A	Pass
0	250	0°, 90°, 180°, 270°	3	10s	B	Pass

Remark :

A: No degradation in performance of the EUT was observed.

B: During the test, the power shut down, after the experiment, the function can automatically return to normal.

5. Test Set-up Photos of the EUT



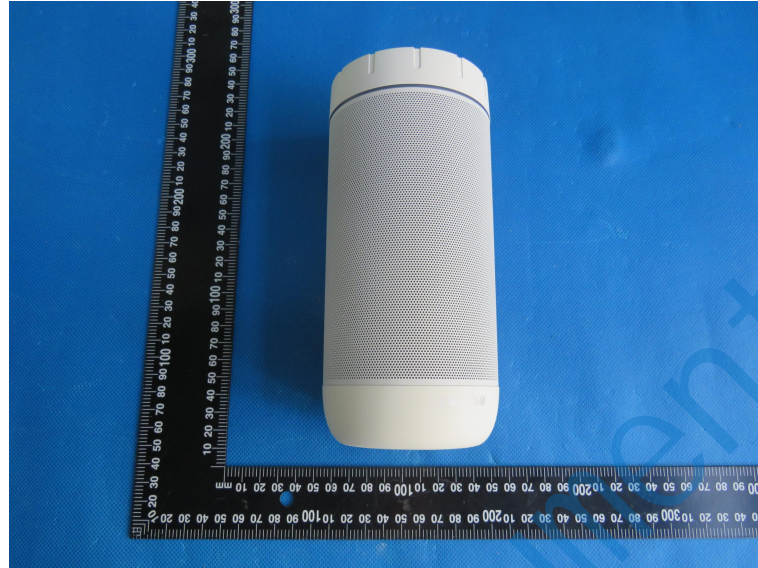
6. External and Internal Photos of the EUT



Overall view of the apparatus



Overall view of the apparatus



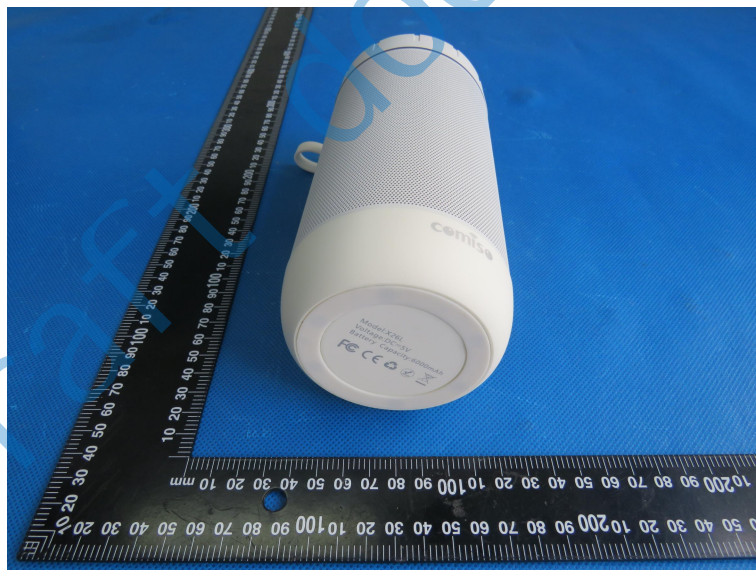
Overall view of the apparatus



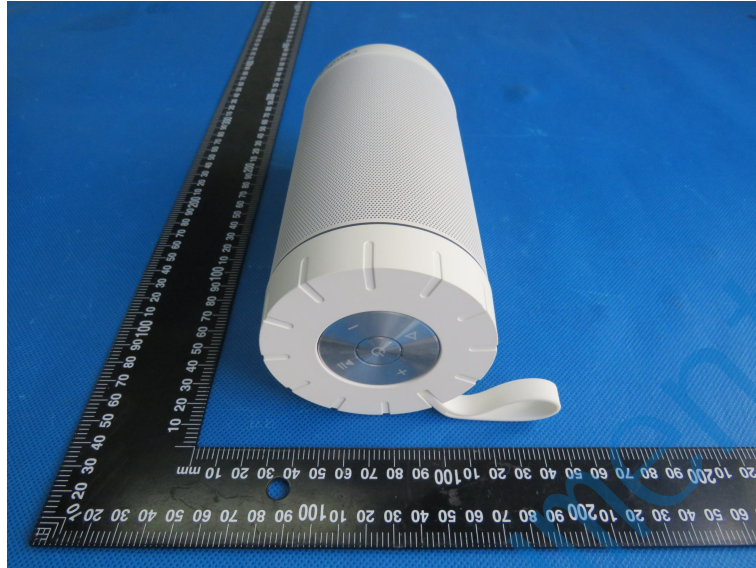
Overall view of the apparatus



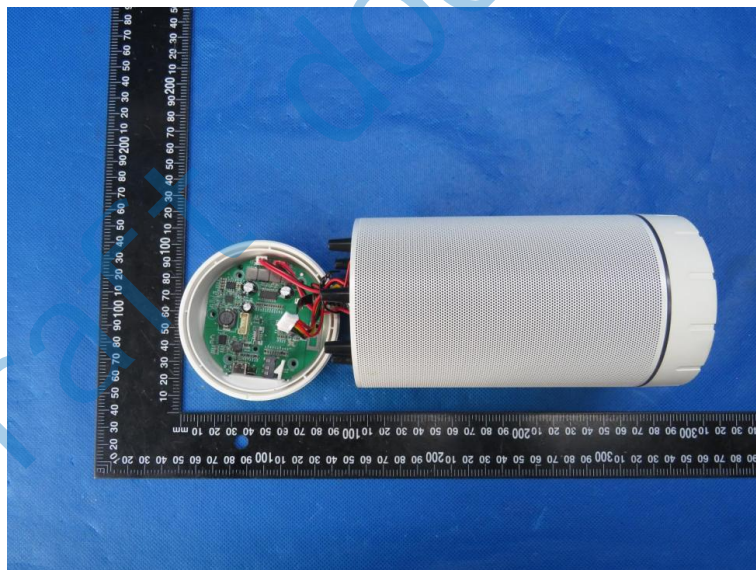
Overall view of the apparatus



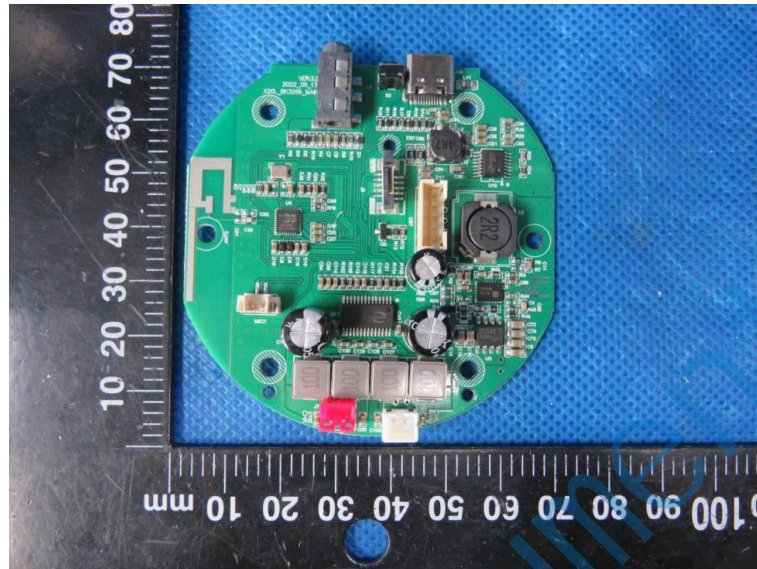
Overall view of the apparatus



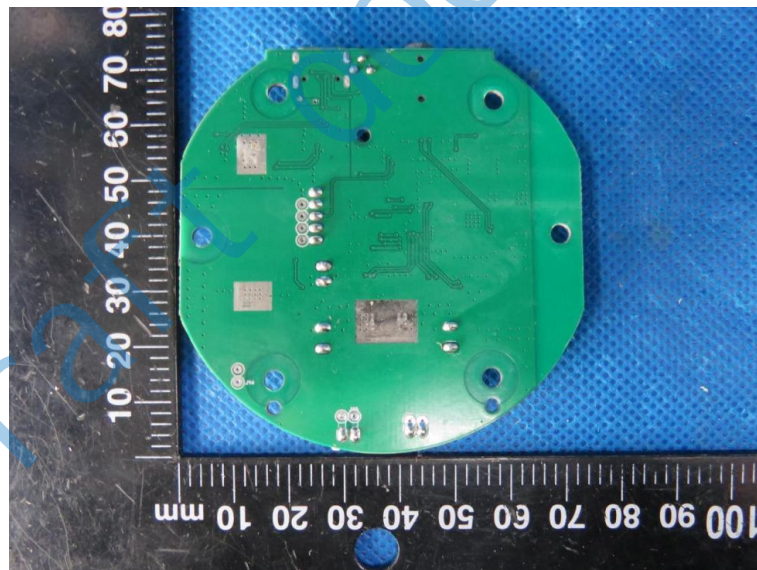
Overall view of the apparatus



Internal view of the apparatus



Internal view of the apparatus



Internal view of the apparatus

.....End of Report.....