

TEST REPORT ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09)	
Report Reference No.....:	RLT2608027-02
Compiled by (position+printed name+signature)..:	Quinn Quinn
Supervised by (position+printed name+signature)..:	Cindy Yang Cindy yang
Approved by (position+printed name+signature)..:	Daniel Wan Daniel Wan
Date of issue.....:	Aug, 07, 2026
Testing Laboratory Name.....:	Rhenish-Lab Certification & Testing (Shenzhen) Co., Ltd.
Address.....:	101, Building B, Bailu Plaza, No. 48, Gonghe Industrial Road, Gonghe Community, Xixiang Street, Baoan District, Shenzhen, Guangdong, China
Applicant's name :	Hyperkin, Inc.
Address.....:	1939 West Mission Blvd. Pomona, CA 91766
Test specification	
Standard.....:	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09)
Test item description.....:	Pixelbyte Controller
Trade Mark.....:	Hyperkin
Manufacturer.....:	Hyperkin, Inc.
Model/Type reference.....:	M09999
Serial Model.....:	M09999-AOT,M09999-OPxx, M09999-APxx, M09999-Fnxx
Ratings.....:	Input: DC5V, 1A
Result.....:	PASS

TEST REPORT

Equipment under Test : Pixelbyte Controller

Model /Type : M09999

Listed Models : M09999-AOT,M09999-OPxx,M09999-APxx,M09999-Fnxx

Applicant : Hyperkin, Inc.

Address : 1939 West Mission Blvd. Pomona, CA 91766

Manufacturer : DONGGUAN KING SHENG ELECTRONICS TECHNOLOGY CO.,LTD

Address : No 39,XinFu Road,Lin Cun Village,TangXia Town, Dongguan City, Guangdong province, 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) tandard 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

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Aug. 04, 2026
Testing commenced on	:	Aug. 04, 2026 to Aug. 07, 2026
Testing concluded on	:	Aug. 11, 2026

2.2. Product Description

Product Name:	Pixelbyte Controller
Model:	M09999
Serial Model:	M09999-AOT, M09999-OPxx, M09999-APxx, M09999-Fnxx
Model Difference:	Different in appearance, the rest are all the same
Trade Mark:	Hyperkin
Frequency range:	BLE: 2402MHz to 2480MHz Bluetooth: 2402-2480MHz
Channel number:	BLE: 40channel BT:79 channel
Modulation Type:	GFSK
Power Supply:	Input: DC5V, 1A

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	Normal working 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.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Rhenish-Lab Certification & Testing (Shenzhen) Co., Ltd.
101, Building B, Bailu Plaza, No. 48, Gonghe Industrial Road, Gonghe Community, Xixiang Street, Baoan District, Shenzhen, Guangdong, ChinaEnvironmental conditions

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

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

3.1. 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)	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)	PASS
Harmonic Current Emissions	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09)	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)	PASS
Immunity Measurement		
Electrostatic Discharge	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09)	PASS
RF Electromagnetic Field	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09)	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)	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)	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)	PASS
Surges	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09)	PASS

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

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

3.2. Statement of the 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 %.

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)

3.3. Equipments Used during the Test

Item	Test Equipment	Manufacturer	Model No.	Serial No.
1	EMI Test Receiver	Rohde & Schwarz	ESCS30	845550/030
2	Artificial Mains	Rohde & Schwarz	ESH3-Z5	100181
3	Attenuator	Robinson	6810.17A	6810.17A
4	Cable Line	Robinson	Z302S-NJ-BNCJ-1.5M	18126545
5	EMI Test Receiver	Rohde & Schwarz	ESC17	100920
6	Composite logarithmic antenna	SCHWARZBECK	VULB 9168	00931
7	Horn Antenna	SCHWARZBECK	BBHA9120D	01990
8	low frequency Amplifier	Sonoma Instrument	310	323089
9	high-frequency Amplifier	HP	8449B	P180313003
10	System-Controller	CCS	N/A	N/A
11	Turn Table	CCS	N/A	N/A
12	Antenna Tower	CCS	N/A	N/A
13	RF Line	Robinson	ZT26-NJ-NJ-0.6M	18126549
14	RF Line	Robinson	ZT26-NJ-SMAJ-2M	18126550
15	RF Line	Robinson	ZT26-NJ-SMAJ-0.6M	18126548
16	RF Line	Robinson	ZT26-NJ-SMAJ-8.5M	18126547
17	Electric Power Analyzer	EVERFINE	PF6000	P619086TF14 11112

18	Harmonics& Flicker Testing Power Source	EVERFINE	HFS-1000	P624484TM14 11115
19	ESD Simulators	LIONCEL	ESD-202A	0180801
20	ESD Gun	LIONCEL	N/A	N/A
21	Signal Generator	Maconi	2023D	119246/003
22	Power Amplifier	M2S	A00181- 1000	9801-112
23	Power Amplifier	M2S	AC8113/ 800-250A	9801-179
24	Power Antenna	SCHAFFNER	CBL6140A	1204
25	EFT&Surge Tester	LIONCEL	LSE-545CB	0180601
26	Specialized Isolated Voltage Regulator For Surge	EVERFINE	GT2502	P185365CM53 91123
27	Coupling Clamp	LIONCEL	EFTC	018071809
28	Signal Generator	Maconi	2023D	119246/003
29	Power Amplifier	M2S	A00181- 1000	9801-112
30	CDN	MEB	M3-8016	003683
31	Dips Tester	LIONCEL	VSD-1102	0181202
33	Voltage-Stabilized Source	LIONCEL	RGL-220	0180901
34	Voltage-Stabilized Source	LIONCEL	RGL-220	0180902

The calibration interval is 1 year.



4. TEST CONDITIONS AND RESULTS

4.1. EMISSION

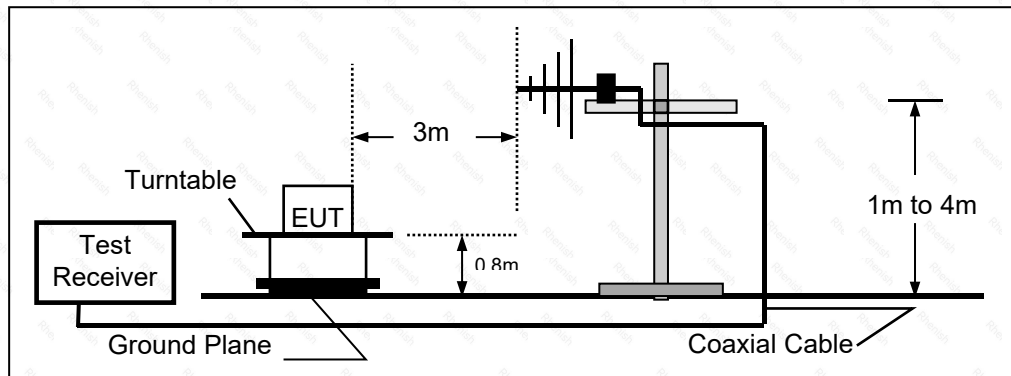
4.1.1. Radiated Emission

LIMIT

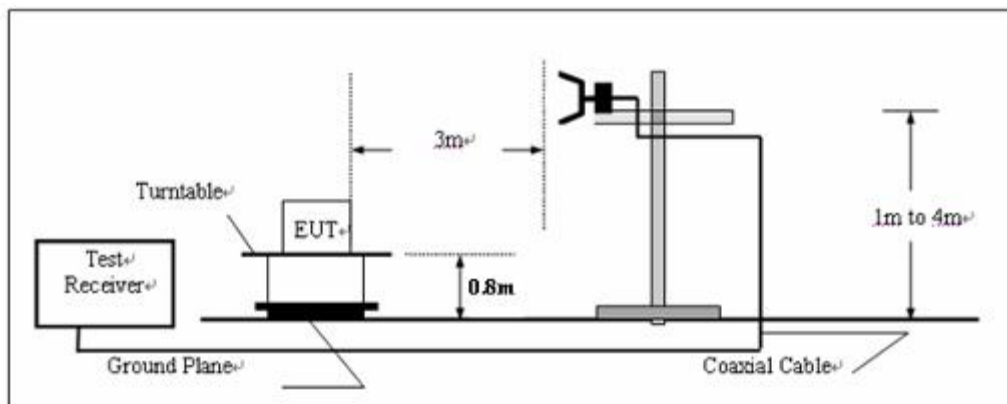
Please refer to ETSI EN301489-1 Clause 8.2.3, Table 4

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 for the measurement methods

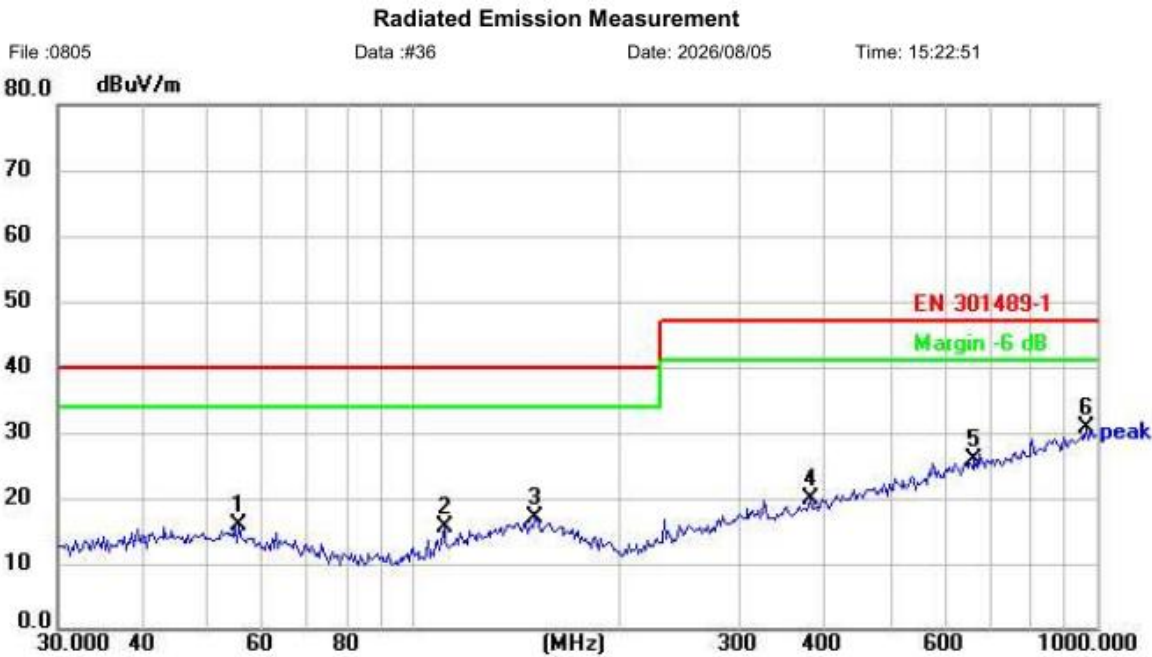
TEST RESULTS

Passed

Please refer to the below test data:

30-1000MHz

Test mode:	Mode 1	Polarization	Horizontal
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Site LAB
Limit: EN 301489-1
EUT: N09999
M/N:
Mode:
Note:

Polarization: **Horizontal** Temperature: °C
Power: Humidity: %
Distance: 3m

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		55.2207	27.79	-11.79	16.00	40.00	-24.00	peak	
2		109.7960	29.30	-13.78	15.52	40.00	-24.48	peak	
3		150.5377	27.08	-9.95	17.13	40.00	-22.87	peak	
4		379.9141	28.26	-8.39	19.87	47.00	-27.13	peak	
5		661.1504	28.33	-2.44	25.89	47.00	-21.11	peak	
6	*	965.5420	28.88	1.81	30.69	47.00	-16.31	peak	

Test mode:

Mode 1

Polarization

Vertical

Radiated Emission Measurement

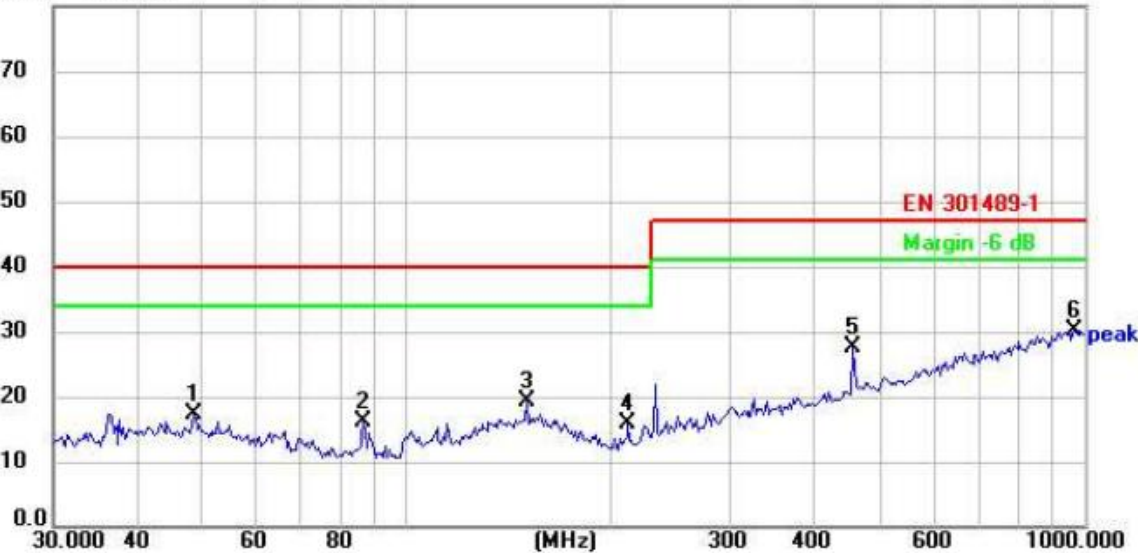
File :0805

Data :#35

Date: 2026/08/05

Time: 15:22:23

80.0 dBuV/m



Site LAB

Limit: EN 301489-1

EUT: N09999

M/N:

Mode:

Note:

Polarization: Vertical

Power:

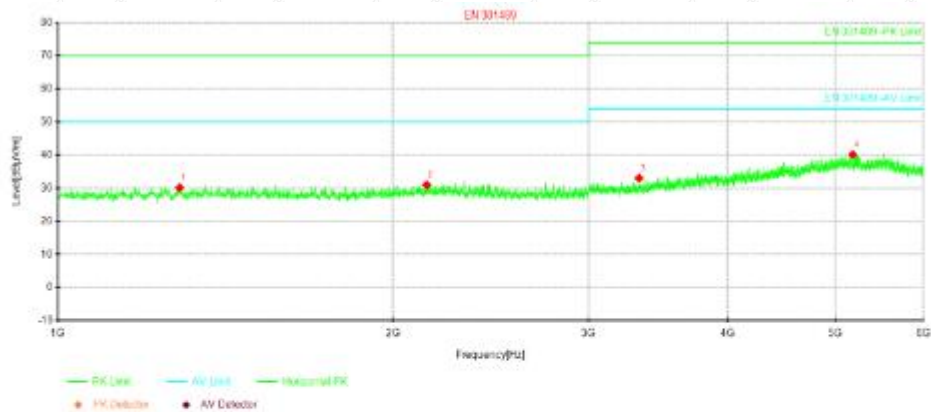
Distance: 3m

Temperature: °C

Humidity: %

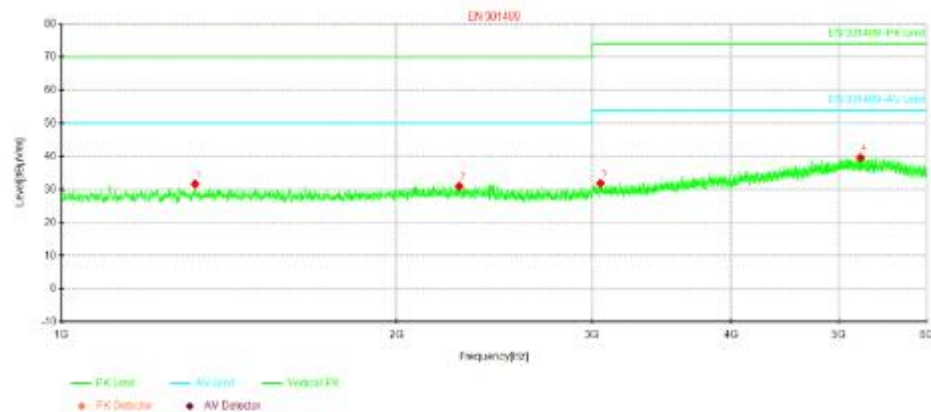
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		48.3316	28.61	-11.39	17.22	40.00	-22.78	peak	
2		85.8983	31.44	-15.41	16.03	40.00	-23.97	peak	
3		150.5377	29.30	-9.95	19.35	40.00	-20.65	peak	
4		210.7860	29.98	-14.17	15.81	40.00	-24.19	peak	
5		455.9058	33.72	-6.13	27.59	47.00	-19.41	peak	
6	*	965.5420	28.34	1.81	30.15	47.00	-16.85	peak	

1000-6000 MHz



Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1286.87	55.48	30.14	-25.34	70.00	39.86	100	160	Horizontal
2	2146.25	53.38	30.99	-22.39	70.00	39.01	100	190	Horizontal
3	3330.62	53.03	33.01	-20.02	74.00	40.99	100	100	Horizontal
4	5183.12	54.12	40.16	-13.96	74.00	33.84	100	60	Horizontal



Suspected Data List

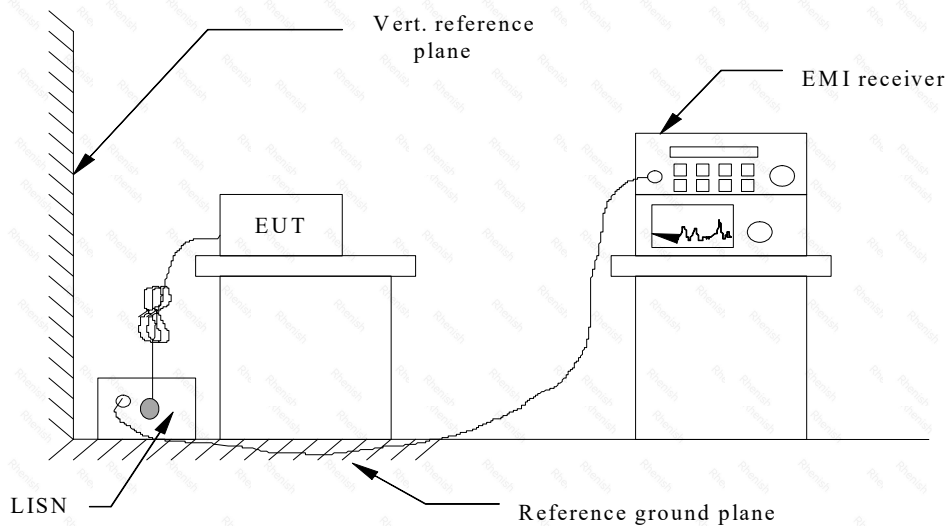
NO.	Freq. [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1318.75	56.91	31.67	-25.24	70.00	38.33	100	130	Vertical
2	2278.75	53.03	30.99	-22.04	70.00	39.01	100	100	Vertical
3	3051.87	51.89	31.85	-20.04	74.00	42.15	100	70	Vertical
4	5228.75	53.54	39.58	-13.96	74.00	34.42	100	60	Vertical

4.1.2. Conducted Emission (AC Mains)

LIMIT

Please refer to ETSI EN301489-1 Clause 8.4.3, Table 8

TEST CONFIGURATION



TEST PROCEDURE

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

TEST RESULTS

PASS

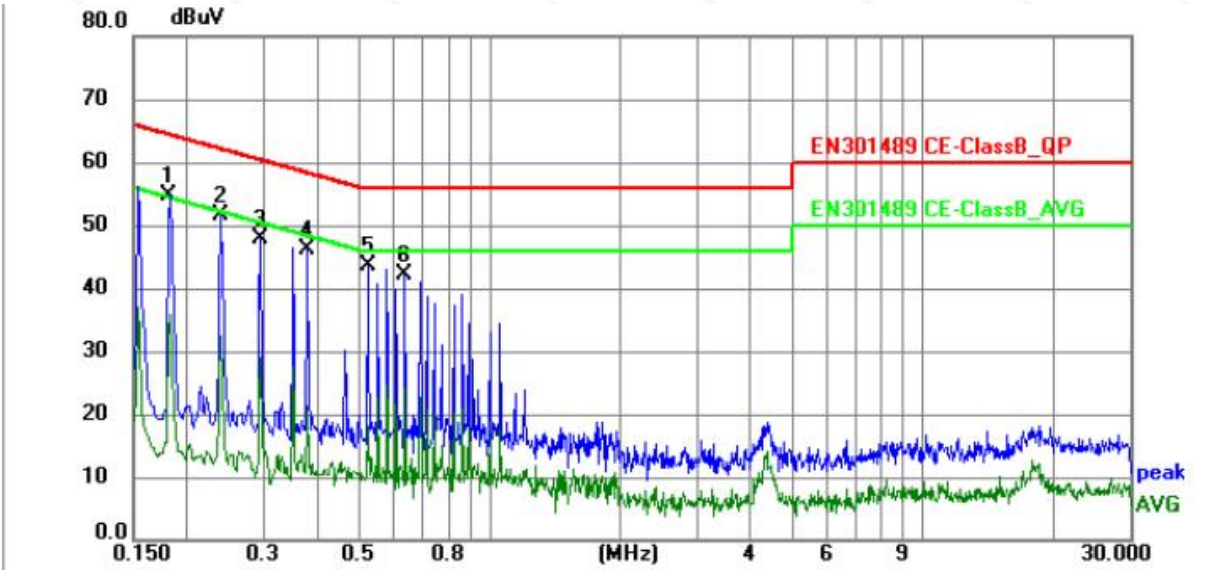
Please refer to the below test data:

Test mode:

Mode 1

Polarization

Line



Site LAB
Limit: EN301489 CE-ClassB_QP
EUT:
M/N:
Mode:
Note:

Phase: L1
Power:
Temperature: 26 °C
Humidity: 54 %RH

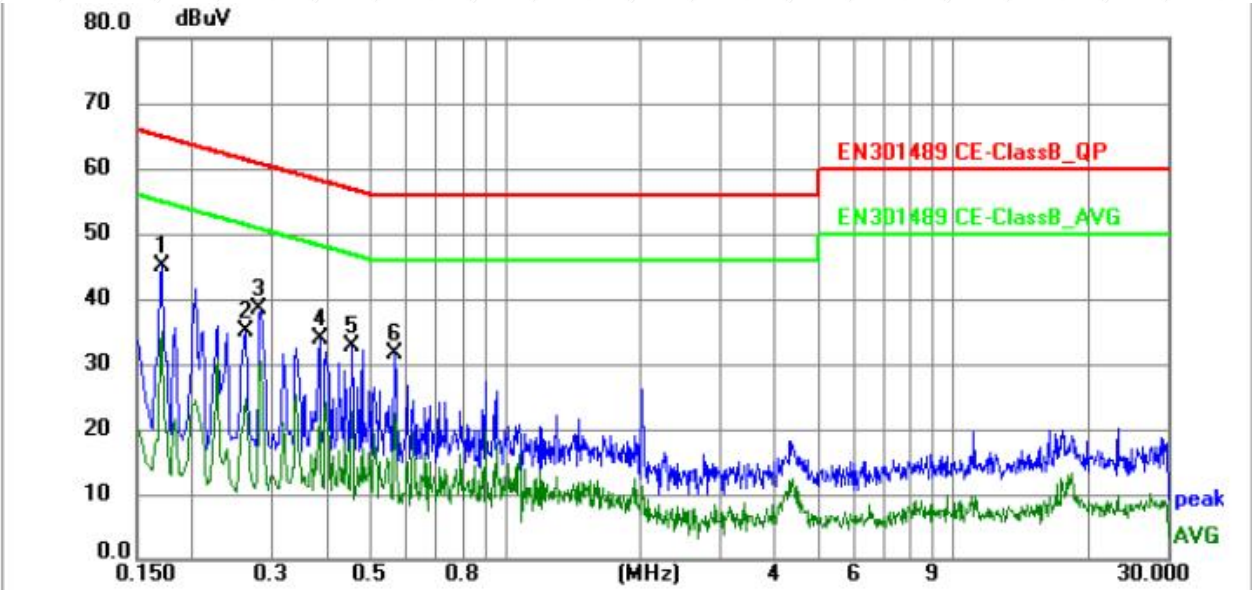
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.182	44.75	10.10	54.85	64.39	-9.54	peak	P	
2	0.238	41.35	10.10	51.45	62.17	-10.72	peak	P	
3	0.294	37.81	10.10	47.91	60.41	-12.50	peak	P	
4	0.378	36.06	10.10	46.16	58.32	-12.16	peak	P	
5	0.522	33.45	10.10	43.55	56.00	-12.45	peak	P	
6	0.634	32.17	10.10	42.27	56.00	-13.73	peak	P	

Test mode:

Mode 1

Polarization

Neutral



Site LAB
Limit: EN301489 CE-ClassB_QP
EUT:
M/N:
Mode:
Note:

Phase: N
Power:
Temperature: 26 °C
Humidity: 54 %RH

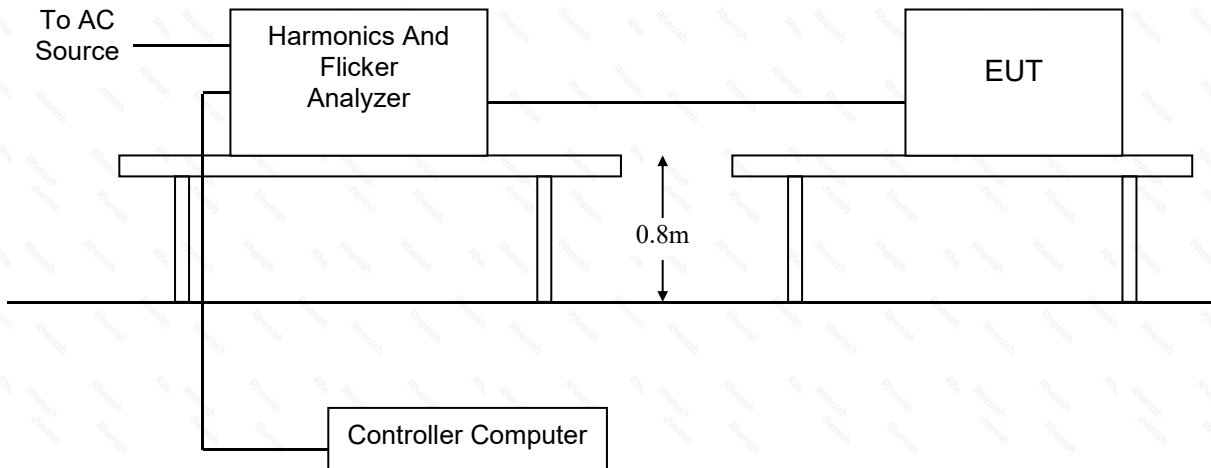
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.170	35.01	10.10	45.11	64.96	-19.85	peak	P	
2	0.262	25.00	10.10	35.10	61.37	-26.27	peak	P	
3	0.282	28.46	10.10	38.56	60.76	-22.20	peak	P	
4	0.382	23.87	10.10	33.97	58.24	-24.27	peak	P	
5	0.454	22.72	10.10	32.82	56.80	-23.98	peak	P	
6	0.566	21.61	10.10	31.71	56.00	-24.29	peak	P	

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

N/A

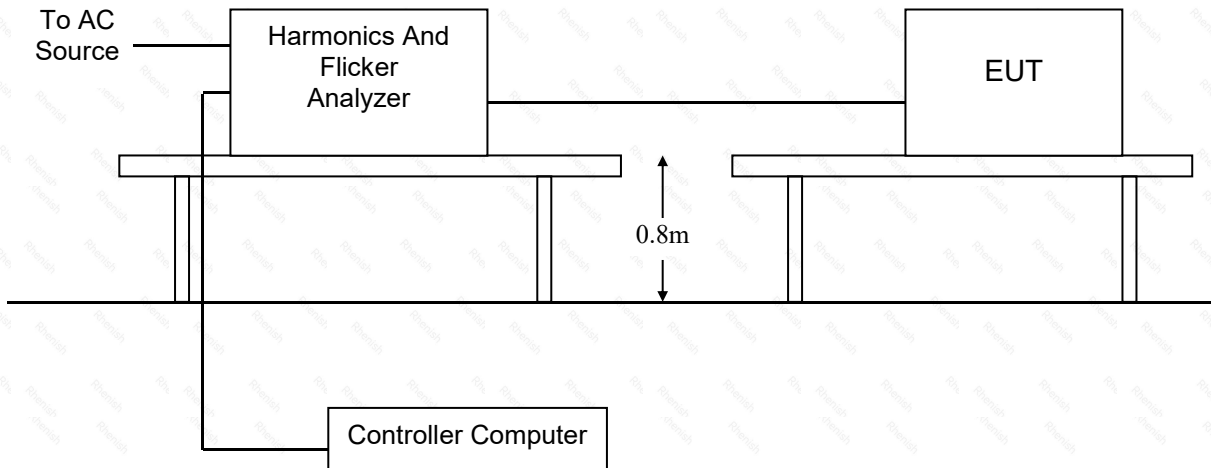
Note: The active input power of the EUT is less than 75W. No limits apply for equipment with an active input power up to and including 75W

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

Pass

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	Shall operate as intended. (see note 1). Shall be no loss of function. Shall be no unintentional transmissions.	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.
B	May show loss of function (one or more). May show degradation of performance (see note 2). Shall be no unintentional transmissions	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.
C	May be loss of function (one or more).	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no degradation of performance (see note 3)

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.

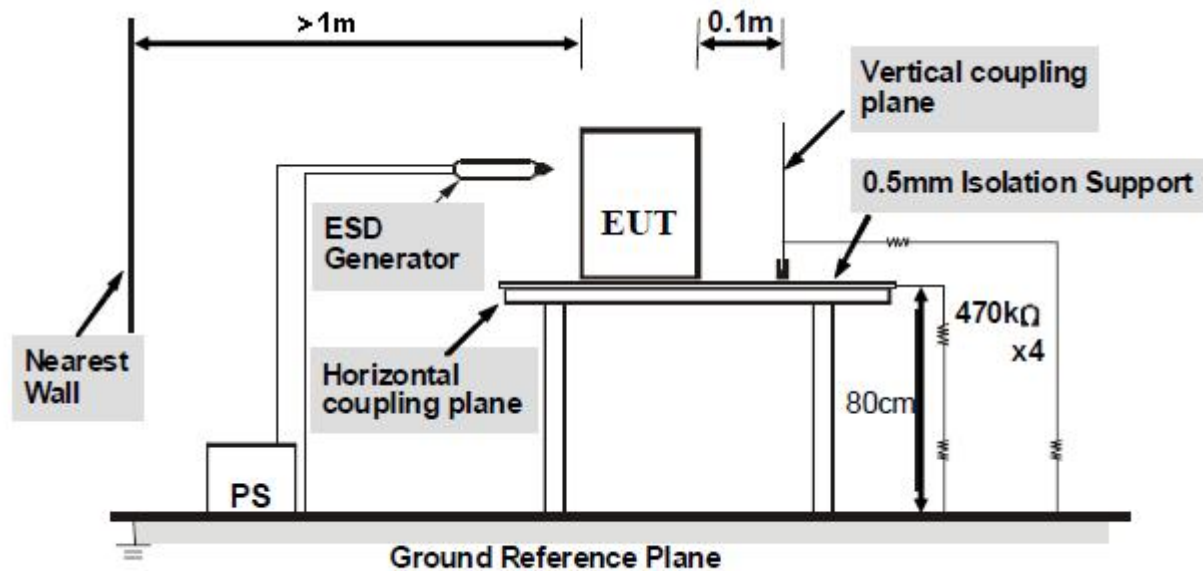
4.2.2. Electrostatic Discharge

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 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		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

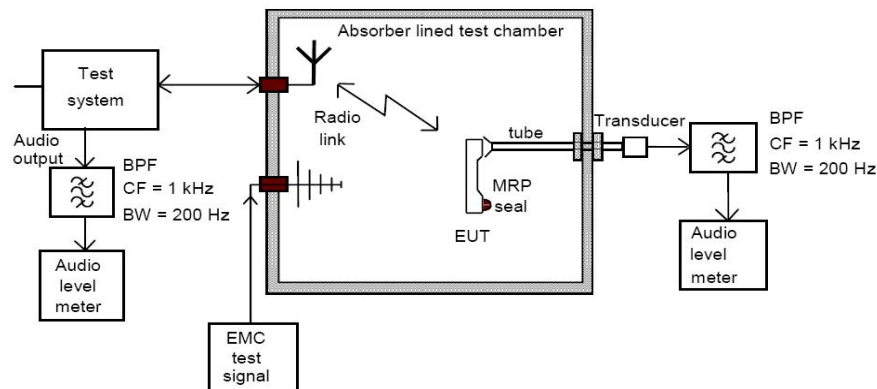
PERFORMANCE CRITERION

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

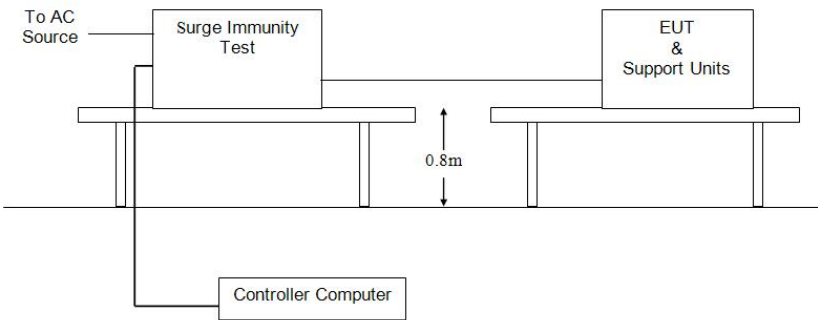
TEST LEVEL

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

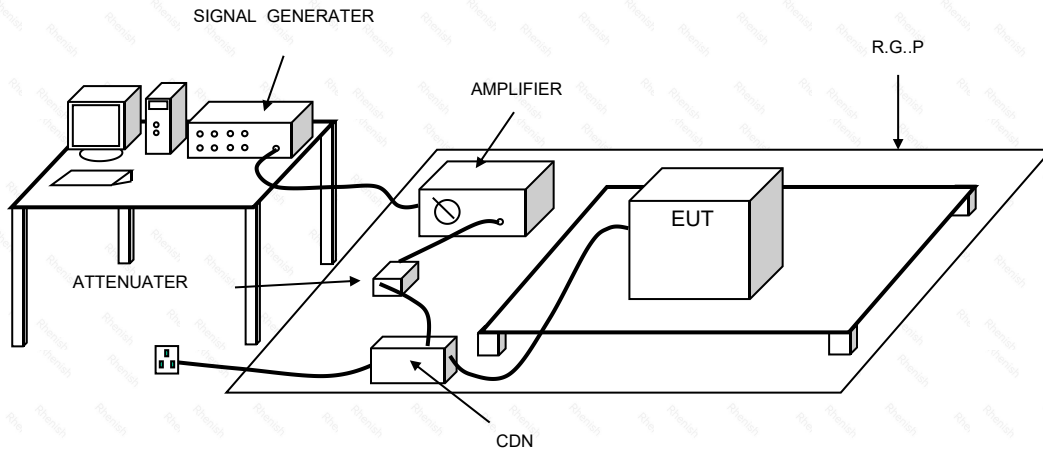
PERFORMANCE CRITERION

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

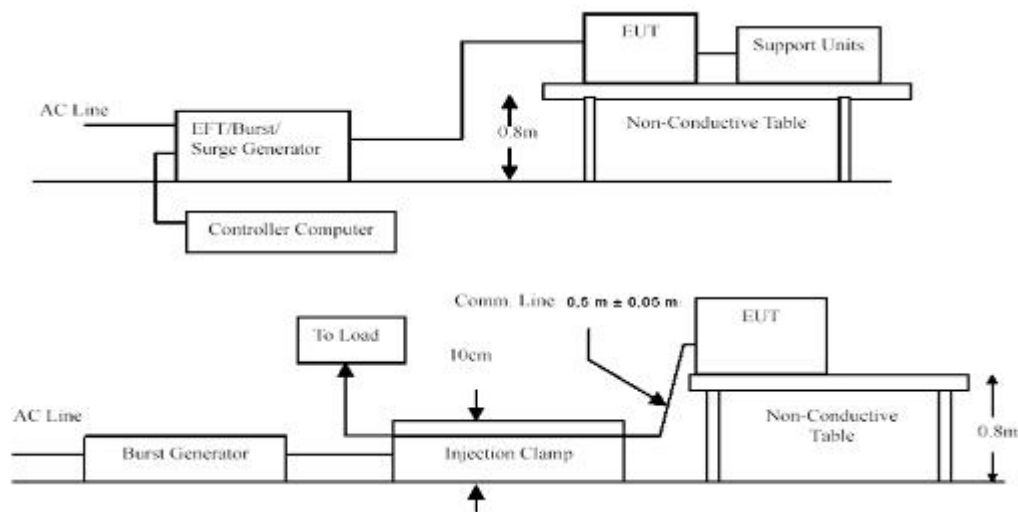
Criteria B

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 EN 61000-4-4 for the measurement methods.

TEST MODE

Please reference to the section 2.3

TEST RESULTS

Lead under Test	Level (±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

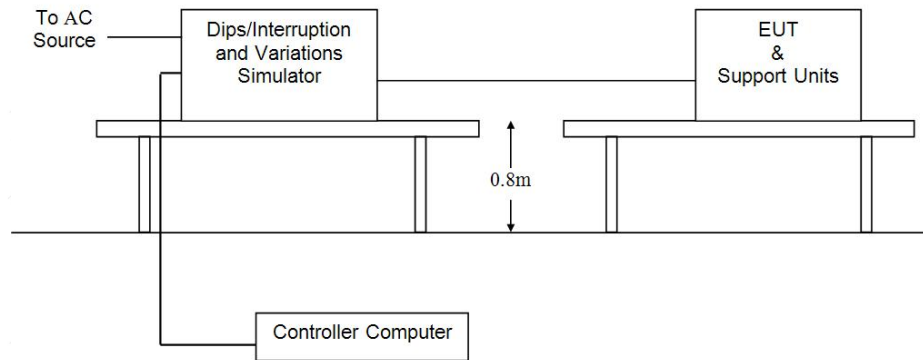
0% of VT(Supply Voltage) for 0.5 period

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. External and Internal Photos of the EUT



Photo 1



Photo 2

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