

TEST REPORT

ETSI EN 301 489

Equipment under Test : Wireless Baby Monitor
Trade Mark : N/A
Model /Type : SP851
Listed Models : SP850,SP810,VB603,VB601,VB605,WRC892

Applicant : Shenzhen Kingfit Technology Co., Ltd.
: 3 floor,9 Building, Guoxia industrial area Sanlian
Address : village,Longhua Subdistrict, Baoan town,
Shenzhen, PRC

Manufacturer : Shenzhen Kingfit Technology Co., Ltd.
: 3 floor,9 Building, Guoxia industrial area Sanlian
Address : village,Longhua Subdistrict, Baoan town,
Shenzhen, PRC

Laboratory : Dongguan Yaxu (AiT) Technology Limited
Address : No.22, Jinqianling Third Street, Jitigang,
Huangjiang,Dongguan, Guangdong, China
Tel : 0769-85120499
Fax : 0769-85120499

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.

Test Result:	PASS
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TEST REPORT

Applicant's name..... : Shenzhen Kingfit Technology Co., Ltd.
Address.....: 3 floor,9 Building, Guoxia industrial area Sanlian village,Longhua Subdistrict, Baoan town, Shenzhen, PRC
Manufacturer.....: Shenzhen Kingfit Technology Co., Ltd.
Address.....: 3 floor,9 Building, Guoxia industrial area Sanlian village,Longhua Subdistrict, Baoan town, Shenzhen, PRC
Test item description : Wireless Baby Monitor
Model/Type reference.....: SP851
List Model: SP850,SP810,VB603,VB601,VB605,WRC892
Standard: **ETSI EN 301 489-1 V2.1.1 (2016-11)**
ETSI EN 301 489-3 V2.1.0 (2016-09)
EN61000-3-2:2014 EN61000-3-3:2013
Date of receipt of test sample.....: Jul. 26, 2017
Date of testing.....: Jul. 26, 2017- Aug. 02, 2017
Date of issue.....: Aug. 02, 2017
Result.....: **PASS**

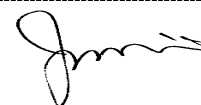
Compiled by File administrators
 (position+printed name+signature)...: Seal.Chen



Supervised by Technique principal
 (position+printed name+signature)...: Seal.Chen



Approved by Manager
 (position+printed name+signature)...: Jackie.Deng



Testing Laboratory Name : Dongguan Yaxu (AiT) Technology Limited
Address.....: No.22, Jinqianling Third Street, Jitigang, Huangjiang,Dongguan, Guangdong, China



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1. Test Standards and Test description

1.1. Test Standards

The tests were performed according to following standards:

[ETSI EN 301 489-1 V2.1.1 \(2016-11\)](#)–Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

[ETSI EN 301 489-3 V2.1.0:2016-09](#)–Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment; Part 3: Specific conditions for Short-Range Devices (SRD)operating on frequencies between 9 kHz and 40 GHz

[EN 61000-3-2: 2014](#) 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](#) 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

1.2. Test Description

Test item	Standards requirement	Result
Radiated Emission	ETSI EN301 489-1 Clause 7.1/ EN 55022: 2010	Pass
Conducted Emission (AC Mains)	ETSI EN301 489-1 Clause 7.1/ EN 55022: 2010	Pass
Harmonic Current Emissions	ETSI EN301 489-1 Clause 7.1/ EN 61000-3-2: 2014	Pass
Voltage Fluctuations and Flicker	ETSI EN301 489-1 Clause 7.1/EN 61000-3-3: 2013	Pass
Electrostatic Discharge	ETSI EN301 489-1 Clause 7.2/ EN 55024: 2010	Pass
RF Electromagnetic Field	ETSI EN301 489-1 Clause 7.2/ EN 55024: 2010	Pass
Fast Transients Common Mode	ETSI EN301 489-1 Clause 7.2/ EN 55024: 2010	Pass
Surges, Line to Line and Line to Ground	ETSI EN301 489-1 Clause 7.2/ EN 55024: 2010	Pass
RF Common Mode 0,15 MHz to 80 MHz	ETSI EN301 489-1 Clause 7.2 EN 55024: 2010	Pass
Voltage Dips and Interruptions	ETSI EN301 489-1 Clause 7.2/ EN 55024: 2010	Pass
Power Frequency Magnetic Field Susceptibility Test	EN 55024: 2010	N/A

Remark: The measurement uncertainty is not included in the test result.



2. Summary

2.1. Product Description

Product Name:	Wireless Baby Monitor
Model/Type reference:	SP851
List Model:	SP850,S810,VB603,VB601,VB605,WRC892
Power supply:	TX:DC 5V RX:DC 5V for charge ,DC 3.7V by li-battery
Adapter information:	M/N:SBJ-001 Input:100-240V~, 50/60Hz, 0.5A Output:DC 5V, 1A
Modulation:	GFSK
Operation frequency:	2410.875MHz-2471.625MHz
Channel number:	3



2.2. EUT operation mode

Test mode	TX
1	■
2	■
3	■
4	■

Note:

1. ■ is operation mode.

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

Test item	Test mode (Worse case mode)
Conducted emission	Mode 1
Radiated emission	Mode 4
EMS	RS,CS: Mode 1 and Mode 4 Others: All Modes

2.3. EUT configuration

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

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

<input type="radio"/>	Power Cable	Length (m) :	/
		Shield :	/
		Detachable :	/
<input type="radio"/>	Multimeter	Manufacturer :	/
		Model No. :	/

2.4. Modifications

No modifications were implemented to meet testing criteria.

3. Test Environment

3.1. Address of the test laboratory

Shenzhen AiT Testing Technology Co.,Ltd.
7 / F, Xinwei Building, Gushu Village, Xixiang Town, Baoan District, Shenzhen, China

3.2. Environmental conditions

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

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

3.3. 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 AiT quality system 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 Huatongwei laboratory is reported:

Test Item	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.24 dB	(1)
Radiated Emission	1~18GHz	5.16 dB	(1)
Conducted Disturbance	0.15~30MHz	3.39 dB	(1)

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

3.4. Equipments Used during the Test

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Ultr-Broadband Antenna	Rohde&Schwarz	HL562	100015	2016/08/14
2	EMI Test Receiver	Rohde&Schwarz	ESI 26	100009	2016/08/14
3	RF Test Panel	Rohde&Schwarz	TS / RSP	335015/ 0017	N/A
4	Turetable	ETS	2088	2149	N/A
5	Antenna Mast	ETS	2075	2346	N/A
6	EMI Test Software	Rohde&Schwarz	ESK1	N/A	N/A
7	Horn Antenna	Rohde&Schwarz	HF906	100039	2016/08/14
8	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	538	2016/08/14
9	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	539	2016/08/14
10	HORN ANTENNA	ShwarzBeck	9120D	1011	2016/08/14
11	TURNTABLE	MATURO	TT2.0	----	N/A
12	ANTENNA MAST	MATURO	TAM-4.0-P	----	N/A
13	EMI Test Software	Audix	E3	N/A	N/A

Electrostatic Discharge					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ESD Simulator	EM TEST	DITOC0103Z	0301-04	2016/08/14

Conducted Susceptibility Test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal Generator	IFR	2023A	202304/060	2016/08/14
2	Amplifier	AR	75A250	302205	2016/08/14
3	Dual Directional Coupler	AR	DC2600	302389	2016/08/14
4	6db Attenuator	EMTEST	ATT6/75	0010230A	2016/08/14
5	EM Clamp	LÜTHI	EM101	335625	2016/08/14
6	CDN	EMTEST	CDN M3	0802-03	2016/08/14
7	Audio Analyzer	Rohde&Schwarz	UPL	SB3439	2016/08/14
8	Universal Radio Communication Tester	Rohde&Schwarz	CMU200	112012	2016/08/14

RF Electromagnetic Field					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal Generator	IFR	2032	203002/100	2016/08/14
2	AMPLIFIER	AR	150W1000	301584	2016/08/14
3	DUAL DIRECTIONAL COUPLER	AR	DC6080	301508	2016/08/14
4	POWER HEAD	AR	PH2000	301193	2016/08/14
5	POWER METER	AR	PM2002	302799	2016/08/14
6	TRANSMITTING AERIAL	AR	AT1080	28570	2016/08/14
7	POWER AMPLIFIER	AR	25S1G4A	0325511	2016/08/14
8	DUAL DIRECTIONAL COUPLER	AR	DC7144A	0325100	2016/08/14
9	TRANSMITTING AERIAL	AR	AT4002A	0324848	2016/08/14
10	Audio Analyzer	Rohde&Schwarz	UPL	SB3439	2016/08/14
11	Universal Radio Communication Tester	Rohde&Schwarz	CMU200	112012	2016/08/14



Voltage Fluctuation and Flicker & Harmonic Current					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Purified Power Source	CALIFORNIA INSTRUMENTS	HFS500	54513	2016/08/14
2	Harmonic And Flicker Analyzer	EM TEST	DPA503S1	0500-10	2016/08/14

Electrical Fast Transient/Burst Test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Ultra Compact Simulator	EM TEST	UCS500M6	0500-19	2016/08/14
2	Coupling Clamp	EM TEST	HFK	1501-14	2016/08/14

Conducted Disturbance					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	Rohde&Schwarz	ESCI	100106	2016/08/14
2	Artificial Mains	Rohde&Schwarz	ESH2-Z5	100028	2016/08/14
3	Pulse Limiter	Rohde&Schwarz	ESHSZ2	100044	2016/08/14
4	EMI Test Software	Rohde&Schwarz	ESK1	N/A	2016/08/14

Voltage Dips and Interruptions					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Ultra Compact Simulator	EM TEST	UCS500M6	0500-19	2016/08/14
2	Motor Driven Voltage Transformer	EM TEST	MV2616	0301-11	2016/08/14

The Calibration Interval was one year.

4. Test conditions and Results

4.1. EMISSION

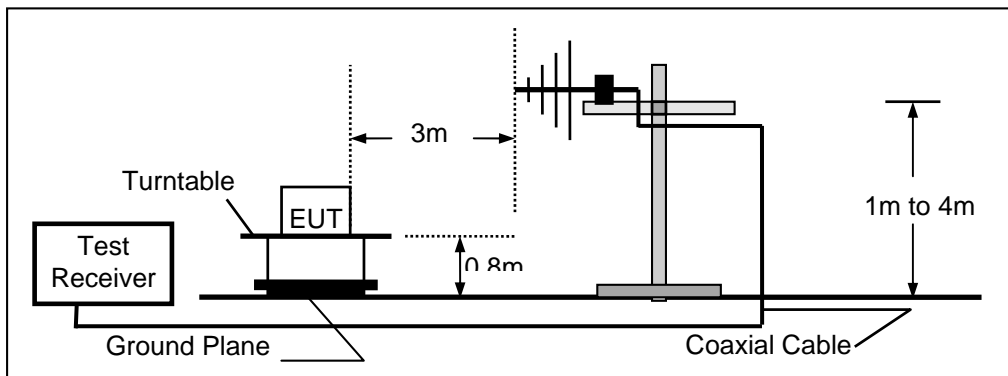
4.1.1. Radiated Emission

LIMIT

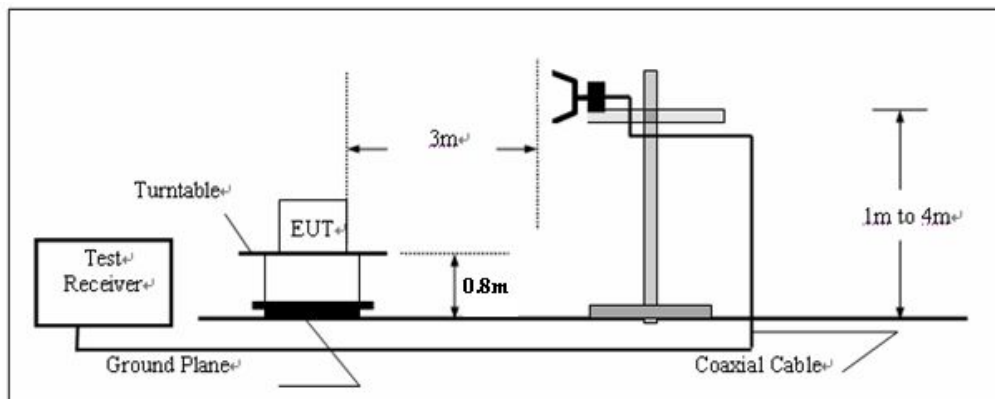
Please refer to ETSI EN301489-1 Clause 8.2.3, Table 4 and EN55022 Clause 6, Table 6, and Class B

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 EN 55022 Clause 6 for the measurement methods

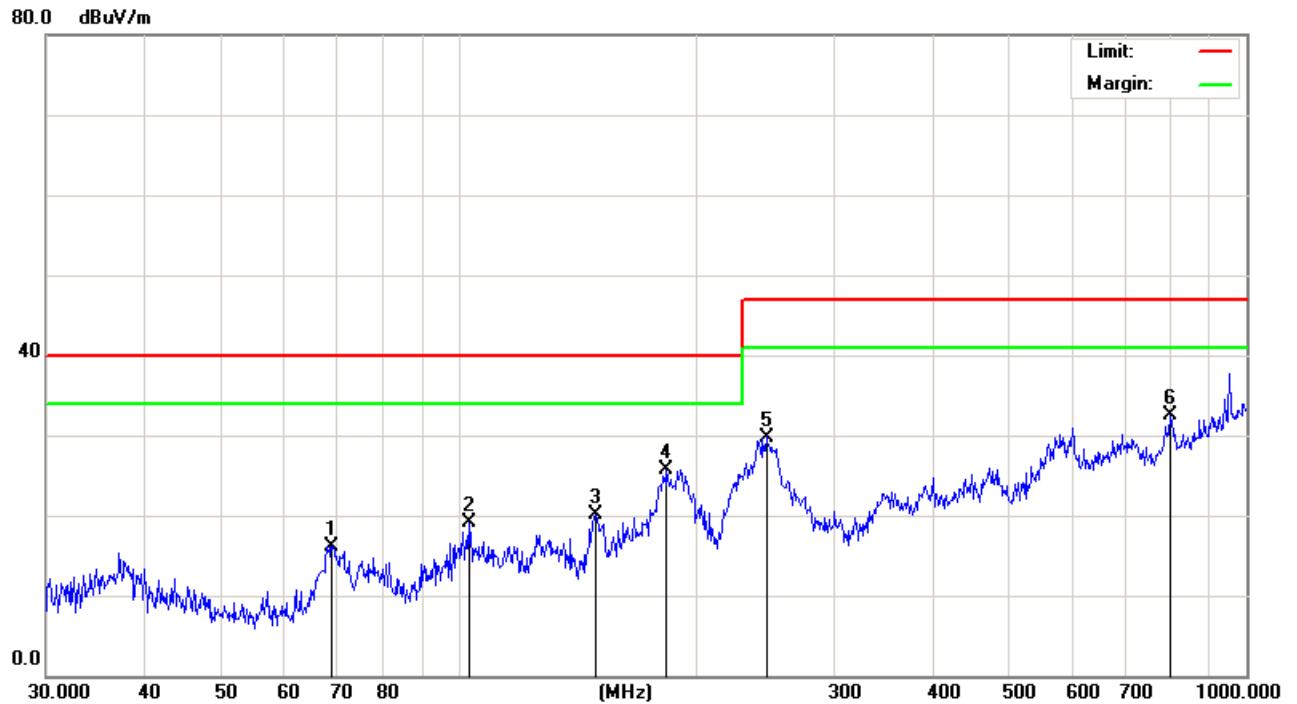
TEST RESULTS

-----Passed-----

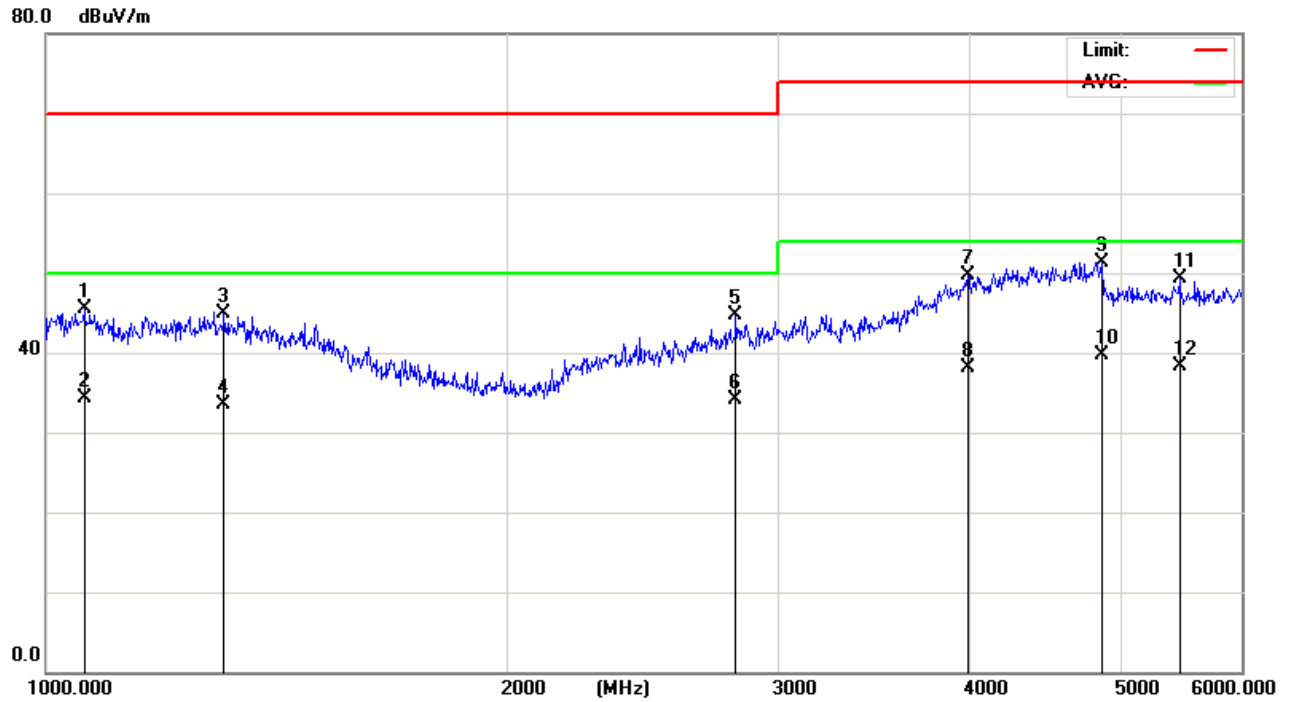
Please refer to the below test data:



Test mode: Mode 4 Polarization Horizontal



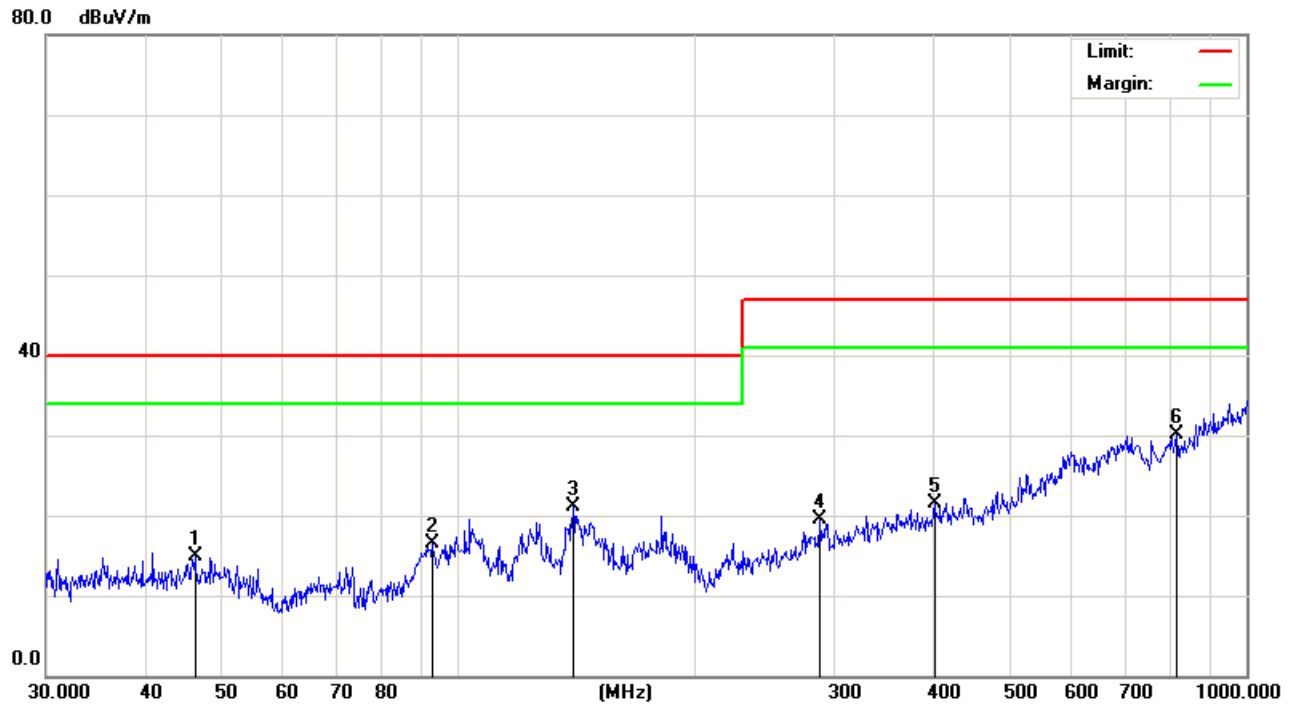
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		69.1140	35.13	-19.04	16.09	40.00	-23.91	QP			
2		103.0799	32.77	-13.72	19.05	40.00	-20.95	QP			
3		149.4857	35.55	-15.47	20.08	40.00	-19.92	QP			
4	*	183.8439	41.30	-15.52	25.78	40.00	-14.22	QP			
5		245.9508	43.70	-13.90	29.80	47.00	-17.20	QP			
6		798.9796	29.04	3.44	32.48	47.00	-14.52	QP			



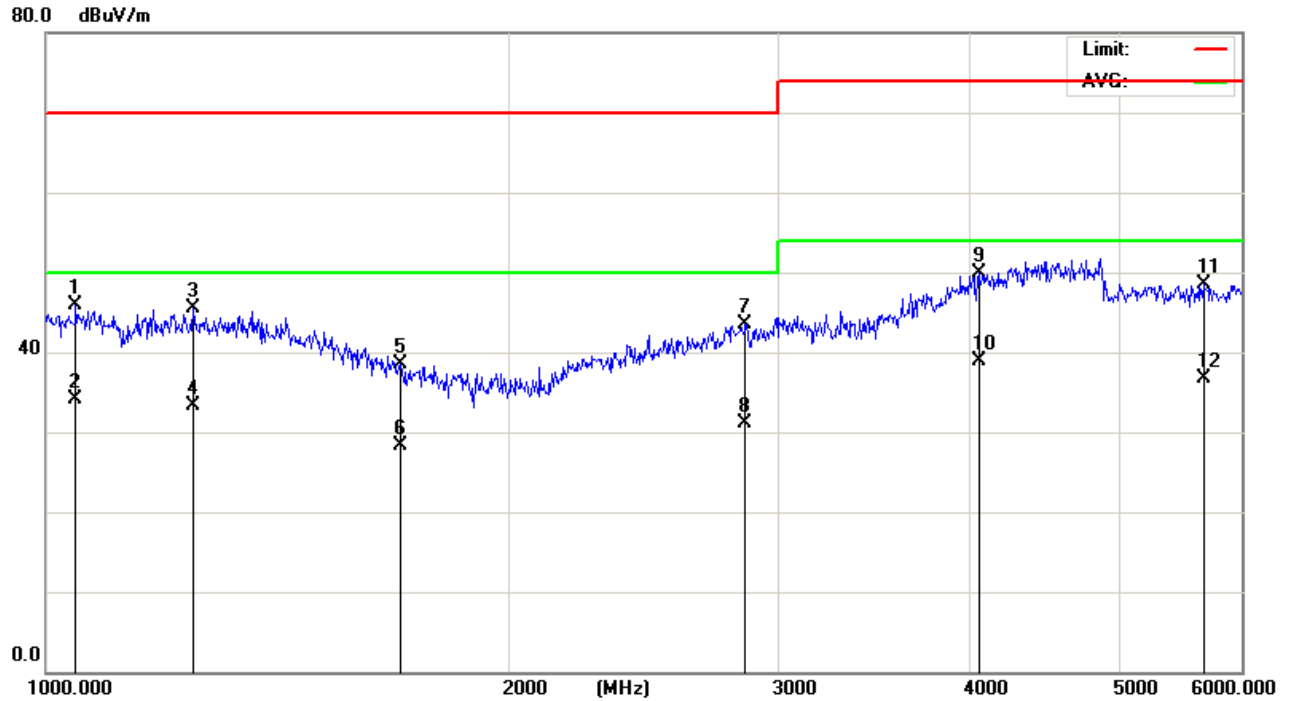
Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1059.012	56.37	-10.83	45.54	70	-24.46	peak
1059.012	45.16	-10.83	34.33	50	-15.67	AVG
1306.004	55.14	-10.32	44.82	70	-25.18	peak
1306.004	43.75	-10.32	33.43	50	-16.57	AVG
2811.857	47.43	-2.78	44.65	70	-25.35	peak
2811.857	36.84	-2.78	34.06	50	-15.94	AVG
3980.656	45.92	3.7	49.62	74	-24.38	peak
3980.656	34.39	3.7	38.09	54	-15.91	AVG
4821.277	46.15	5.13	51.28	74	-22.72	peak
4821.277	34.57	5.13	39.7	54	-14.3	AVG
7232.58	45.42	3.98	49.4	74	-24.6	peak
7232.58	34.26	3.98	38.24	54	-15.76	AVG



Test mode: Mode 4 Polarization Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		46.3402	29.20	-14.32	14.88	40.00	-25.12	peak		
2		92.7871	33.07	-16.66	16.41	40.00	-23.59	peak		
3		139.8508	35.94	-14.90	21.04	40.00	-18.96	peak		
4		287.9904	29.89	-10.45	19.44	47.00	-27.56	peak		
5		401.8385	28.32	-6.84	21.48	47.00	-25.52	peak		
6	*	815.9678	29.40	0.75	30.15	47.00	-16.85	peak		



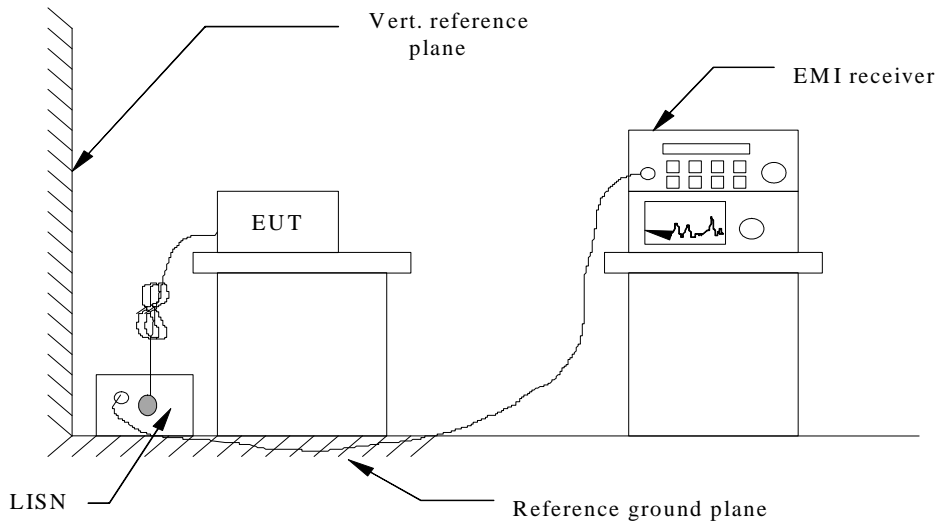
Freq. dBuV	Reading Level dB	Correct Factor dBuV/m	Measure- ment dBuV/m	Limit dB	Over Detector	Detector
1045.812	56.76	-10.85	45.91	70	-24.09	peak
1045.812	45	-10.85	34.15	50	-15.85	AVG
1246.558	56.02	-10.47	45.55	70	-24.45	peak
1246.558	43.7	-10.47	33.23	50	-16.77	AVG
1702.593	48.21	-9.62	38.59	70	-31.41	peak
1702.593	37.89	-9.62	28.27	50	-21.73	AVG
2852.453	46.05	-2.6	43.45	70	-26.55	peak
2852.453	33.64	-2.6	31.04	50	-18.96	AVG
4821.277	46	3.9	49.9	74	-24.1	peak
4821.277	34.98	3.9	38.88	54	-15.12	AVG
7232.58	44.54	3.94	48.48	74	-25.52	peak
7232.58	32.79	3.94	36.73	54	-17.27	AVG

4.1.2. Conducted Emission (AC Mains)

LIMIT

Please refer to ETSI EN301489-1 Clause 8.4.3, Table 8 and EN55022 Clause 5, Table 2, and Class B

TEST CONFIGURATION



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 8.4.3 and EN 55022 Clause 5 for the measurement methods

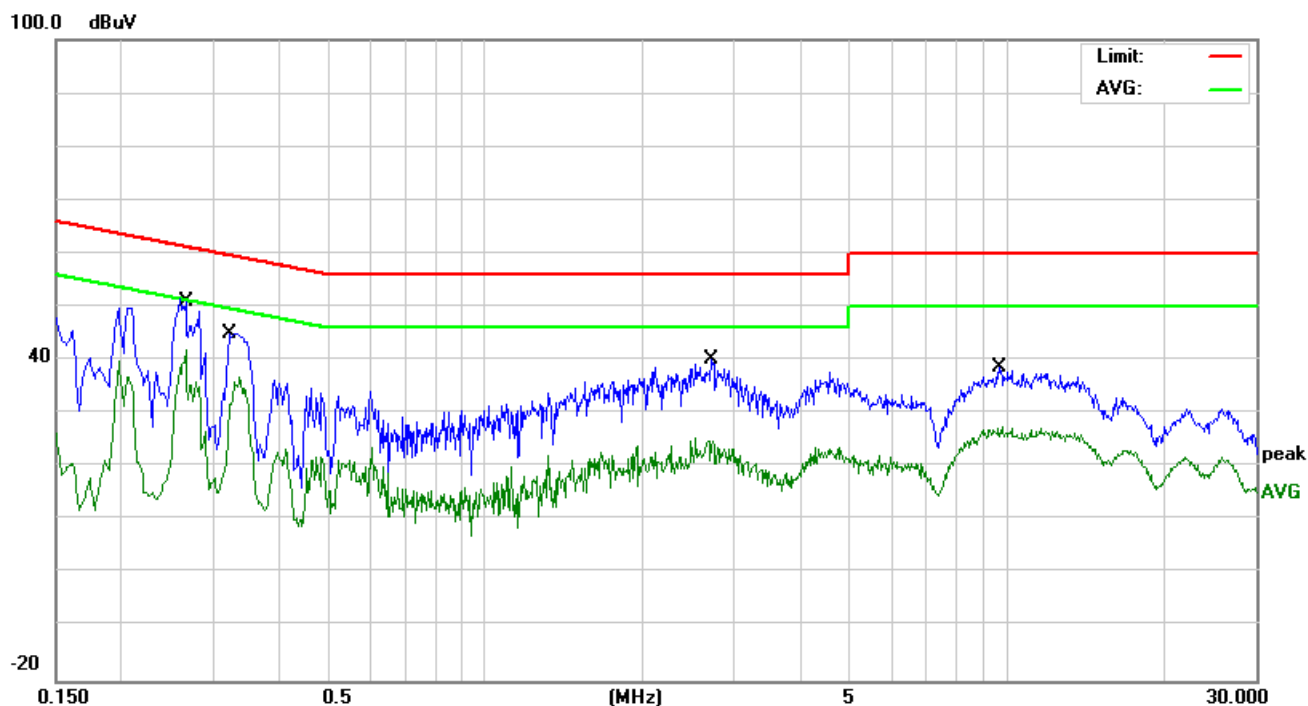
TEST RESULTS

-----Passed-----

Please refer to the below test data:

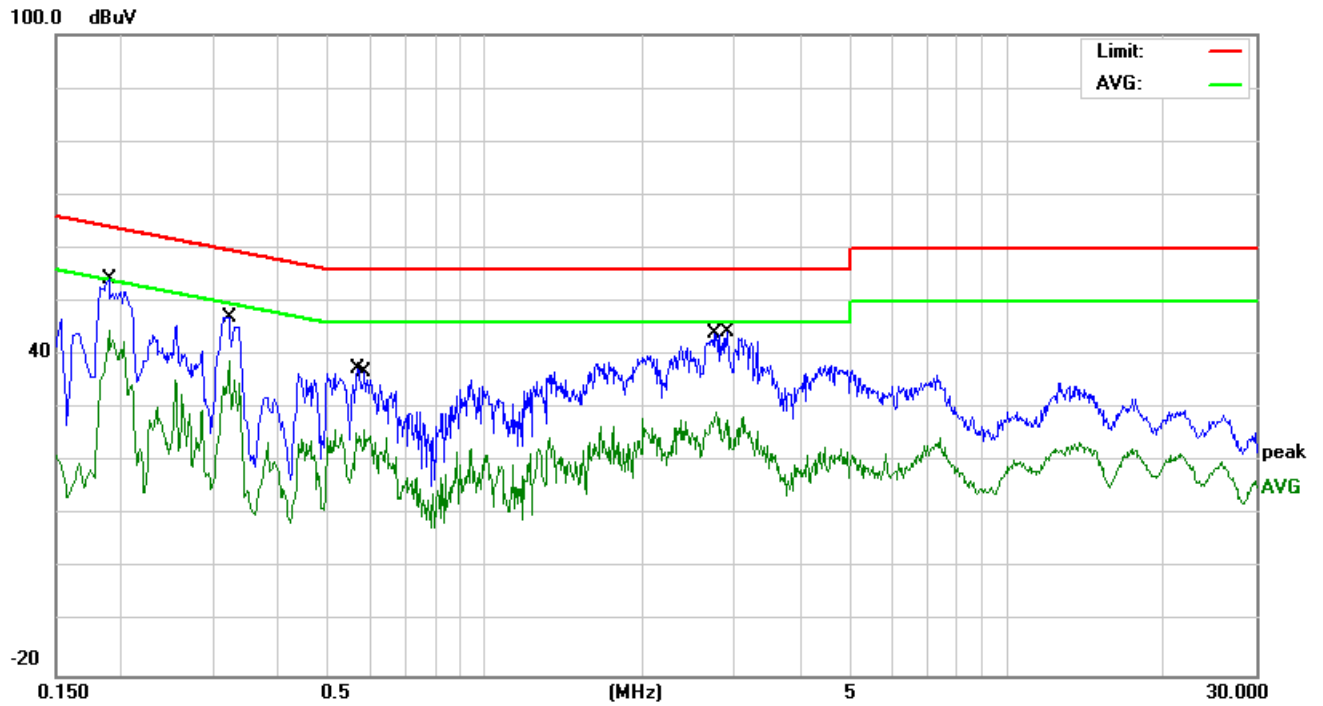


Test mode: Mode 1 Polarization L



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.2660	44.89	10.43	55.32	61.24	-5.92	QP	
2		0.2660	31.61	10.43	42.04	51.24	-9.20	AVG	
3		0.3220	34.67	10.42	45.09	59.65	-14.56	QP	
4		0.3220	26.43	10.42	36.85	49.65	-12.80	AVG	
5		2.7100	29.59	10.46	40.05	56.00	-15.95	QP	
6		2.7100	14.43	10.46	24.89	46.00	-21.11	AVG	
7		9.6659	28.06	10.58	38.64	60.00	-21.36	QP	
8		9.7699	16.99	10.59	27.58	50.00	-22.42	AVG	

Test mode:	Mode 1	Polarization	N
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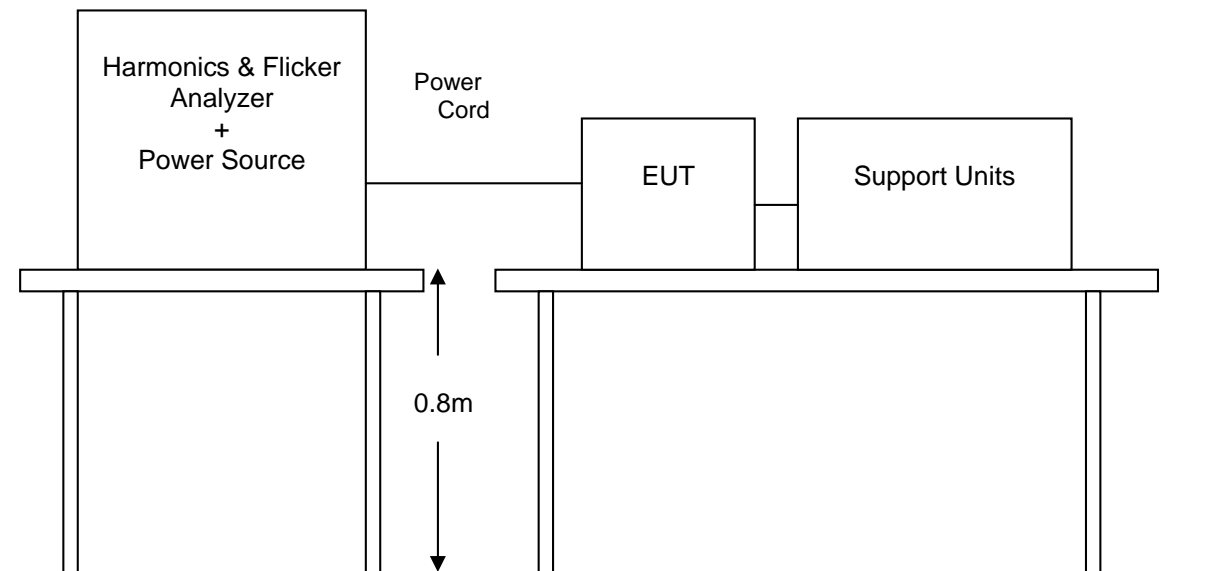
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1900	43.93	10.40	54.33	64.03	-9.70	QP	
2	*	0.1900	34.23	10.40	44.63	54.03	-9.40	AVG	
3		0.3220	36.77	10.42	47.19	59.65	-12.46	QP	
4		0.3220	28.43	10.42	38.85	49.65	-10.80	AVG	
5		0.5700	27.00	10.41	37.41	56.00	-18.59	QP	
6		0.5860	15.74	10.41	26.15	46.00	-19.85	AVG	
7		2.7659	19.00	10.46	29.46	46.00	-16.54	AVG	
8		2.9100	33.88	10.45	44.33	56.00	-11.67	QP	

4.1.3. Harmonic Current Emission

LIMIT

Please refer to EN61000-3-2

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN61000-3-2 for the measurement methods.

TEST RESULTS

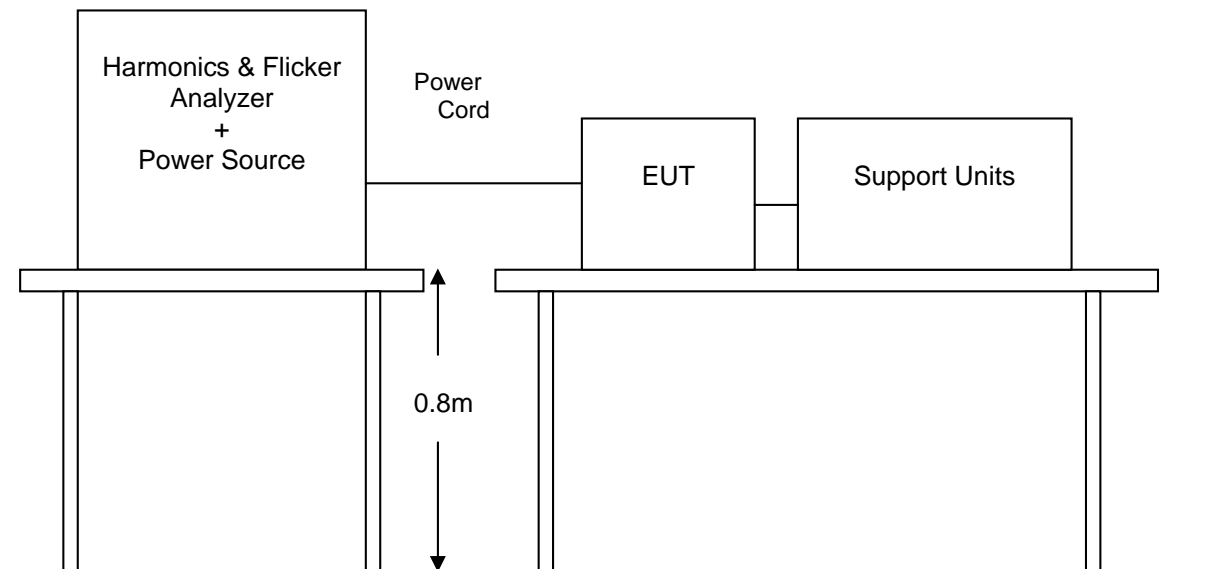
The power of the Adpter is less than 75W, So this test item is not applicable for the EUT.

4.1.4. Voltage Fluctuation and Flicker

LIMIT

Please refer to EN61000-3-3

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN61000-3-3 for the measurement methods.

TEST RESULTS

The maximum input power of the EUT is less than 20W, which 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, 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

n EN301489-3

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 the test	After the test
A	Operate as intended No loss of function For equipment type II the minimum performance shall be 12 dB SINAD No unintentional responses	Operate as intended For equipment type II the communication link shall be maintained No loss of function No degradation of performance No loss of stored data or user programmable functions
B	May be loss of function (one or more) No unintentional responses	Operate as intended Lost function(s) shall be self-recoverable No degradation of performance No loss of stored data or user programmable functions

Note: please refer to EN301 489-3 clause 6.3.

Performance criteria for Continuous phenomena applied to Transmitter (CT)

For equipment of type II or type III that requires a communication link that is maintained during the test, it shall be verified by appropriate means supplied by the manufacturer that the communication link is maintained during each individual exposure in the test sequence.

Where the EUT is a transmitter, tests shall be repeated with the EUT in standby mode to ensure that any unintentional transmission does not occur.

Performance criteria for Transient phenomena applied to Transmitter (TT)

For equipment of type II or type III that requires a communication link that is maintained during the test, this shall be verified by appropriate means supplied by the manufacturer during each individual exposure in the test sequence. Where the EUT is a transmitter, tests shall be repeated with the EUT in standby mode to ensure that any unintentional transmission does not occur.

Performance criteria for Continuous phenomena applied to Receiver (CR)

For equipment of type II or III that requires a communication link that is maintained during the test, it shall be verified by appropriate means supplied by the manufacturer that the communication link is maintained during each individual exposure in the test sequence. Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.

Performance criteria for Transient phenomena applied to Receiver (TR)



For equipment of type II or type III that requires a communication link that is maintained during the test, this shall be verified by appropriate means supplied by the manufacturer during each individual exposure in the test sequence. Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.

n Performance Criterion of EN55024

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

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

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

4.2.2. Electrostatic Discharge

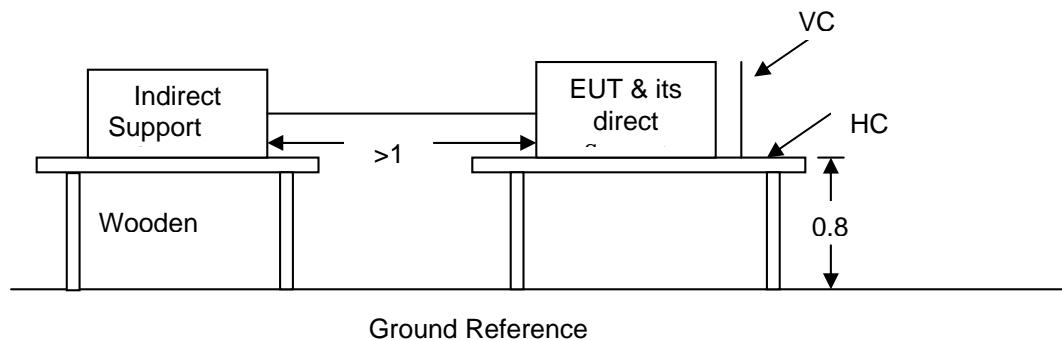
PERFORMANCE CRITERION

Criteria B

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

-----Passed-----

Please refer to the below test data:

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

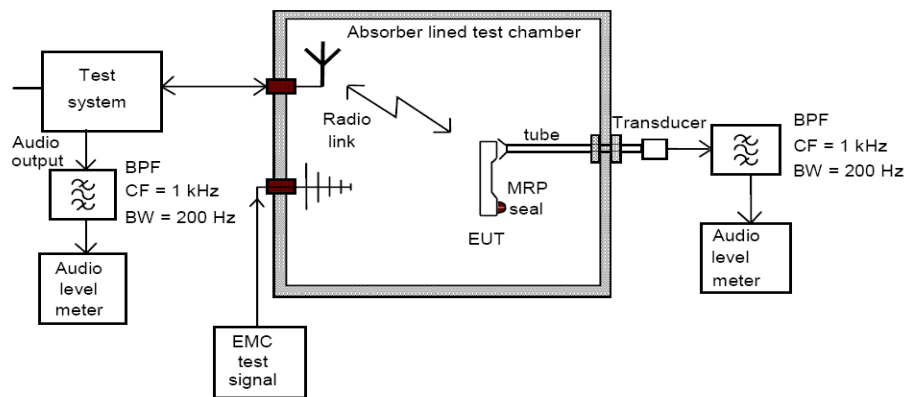
PERFORMANCE CRITERION

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

-----Passed-----

Please refer to the below test data:

I TX

Frequency	Level	Modulation	Antenna Polarization	EUT Face	Observations (Performance Criterion)	Result
80 MHz-1 GHz 1 GHz-6 GHz	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. Fast Transients Common Mode

PERFORMANCE CRITERION

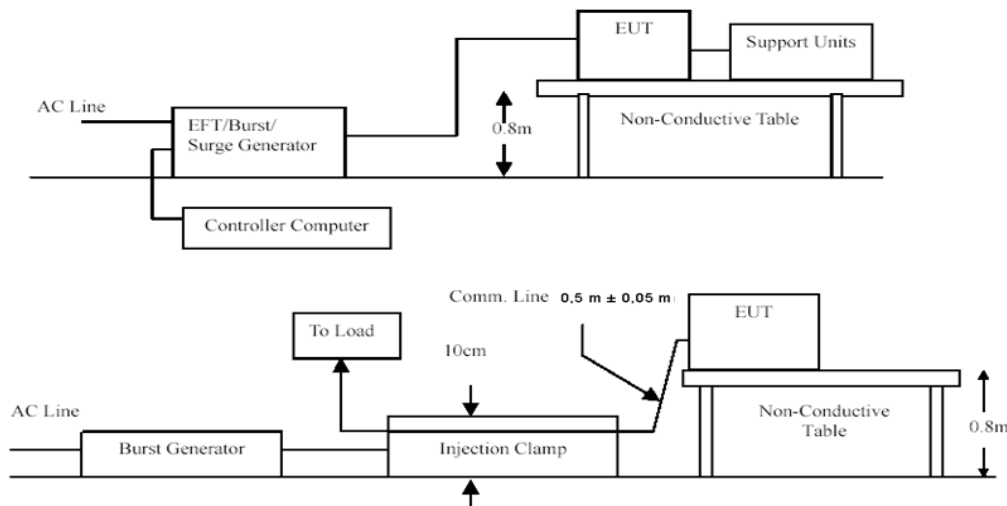
Criteria B

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 and EN 61000-4-4 for the measurement methods.

TEST MODE

Please reference to the section 2.3

TEST RESULTS

-----Passed-----

Please refer to the below test data:

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.

4.2.5. Surge

PERFORMANCE CRITERION

Criteria B

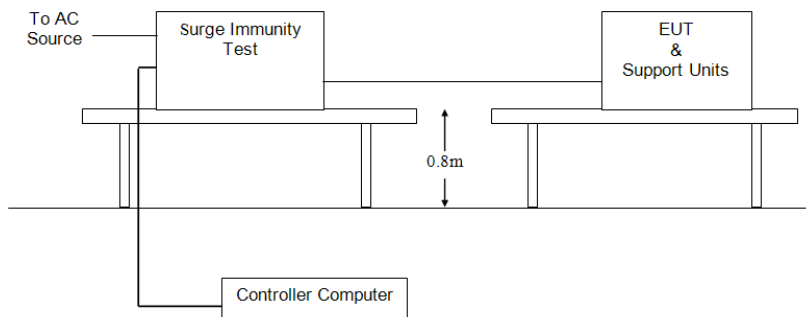
TEST LEVEL

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

-----Passed-----

Please refer to the below test data:

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.

4.2.6. Radio frequency common mode

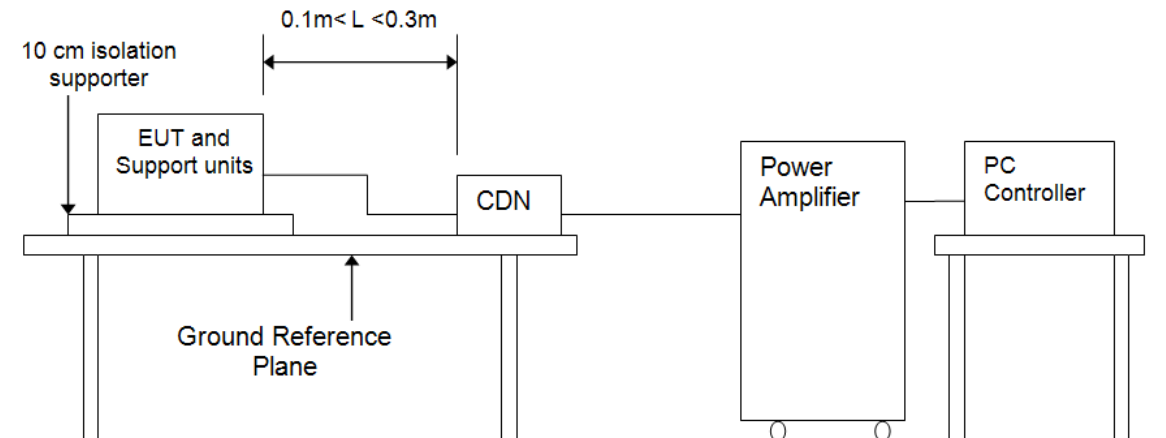
PERFORMANCE CRITERION

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

-----Passed-----

Please refer to the below test data:

I TX

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.

4.2.7. 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

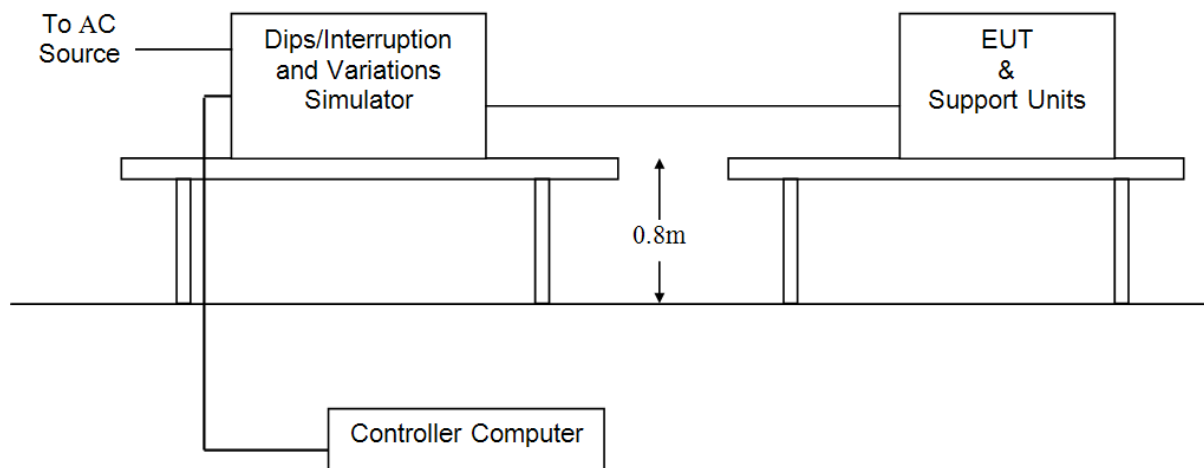
0% of VT(Supply Voltage) for 0.5 period

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

-----Passed-----

Please refer to the below test data:

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

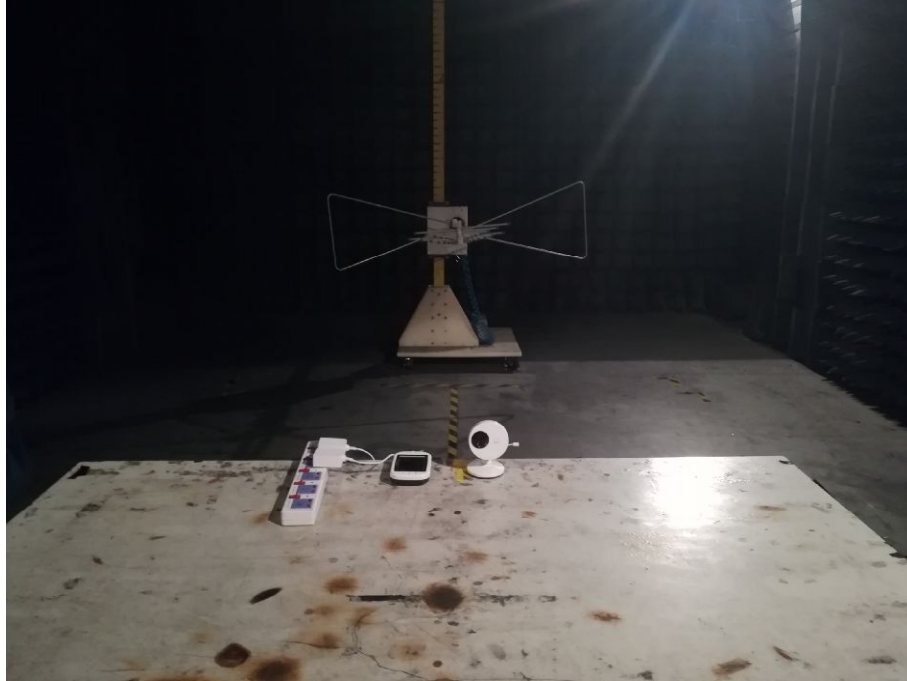
Remark :

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 Setup Photos

Radiated Emission



Conducted Emission (AC Mains)



6. External and Internal Photos of the EUT

PLEASE REFER TO APPENDIX-A

-----End of Report-----