

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+A11:2020+A1:2020, EN 55035: 2017+A11:2020****EN IEC 61000-3-2: 2019+A1: 2021/ EN 61000-3-3: 2013+A2: 2021****Report Reference No.: E01A23030814E00201**

Compiled by

(position+printed name+signature)...: Test Engineer Sunshine Huang

Supervised by

(position+printed name+signature)...: Test Engineer Duke Liu

Approved by

(position+printed name+signature)...: Manager Tiger Xu



Date of issue: April 13, 2023

Representative Laboratory Name ..: Dong Guan Anci Electronic Technology Co., Ltd.

Address.....: 1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan, Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr., China.

Applicant's name: Guangdong SID Technology Co., Ltd.

Address.....: Room 101, Building 5, No. 21, Dongke Road, Dongcheng Street, Dongguan City, Guangdong Province.

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+A11:2020/EN 55035: 2017+A11: 2020/EN IEC 61000-3-2: 2019+A1: 2021/EN 61000-3-3: 2013+A2: 2021**

TRF Originator: GTG

Dong Guan Anci Electronic Technology Co., Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Dong Guan Anci Electronic Technology Co., Ltd. is acknowledged as copyright owner and source of the material. Dong Guan Anci Electronic Technology Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test item description : Base station

Trade Mark: N/A

Model/Type reference.....: SID-ESL-19A

List Model: SID-ESL-0xA (x=1, 2, 3, 4, 6, ..., 100)

Hardware version: V1.0

Software version.....: V1.0

Ratings.....: DC 12.0V, 1.0A from Adapte

Result.....: PASS

TEST REPORT

Test Report No. :	E01A23030814E00201	April 13, 2023
		Date of issue

Equipment under Test : Base station

Model /Type : SID-ESL-19A

Listed Models : SID-ESL-0xA (x=1, 2, 3, 4, 6, ..., 100)

Applicant : **Guangdong SID Technology Co., Ltd.**

Address : Room 101, Building 5, No. 21, Dongke Road, Dongcheng Street, Dongguan City, Guangdong Province.

Manufacturer : **Guangdong SID Technology Co., Ltd.**

Address : Room 101, Building 5, No. 21, Dongke Road, Dongcheng Street, Dongguan City, Guangdong Province.

Test Result	PASS
--------------------	-------------

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.

Contents

1. TEST STANDARDS.....	3
2. SUMMARY.....	4
2.1. General Remarks	4
2.2. Product Description	4
2.3. EUT operation mode	5
2.4. EUT configuration	5
2.5. Modifications	5
3. TEST ENVIRONMENT	6
3.1. Address of the test laboratory	6
3.2. Environmental conditions	6
3.3. Test Description	7
3.4. Statement of the measurement uncertainty	8
3.5. Equipments Used during the Test	9
For Radiated Emission Measurement	9
For Electrostatic Discharge Test	9
For Radio-frequency, Electromagnetic Field Immunity.....	9
4. TEST CONDITIONS AND RESULTS.....	10
4.1. EMISSION	10
4.1.1. Radiated Emission	10
4.1.2. Conducted Emission	17
4.2. IMMUNITY	22
4.2.1. Performance criteria.....	22
4.2.2. Electrostatic Discharge	24
4.2.3. RF Electromagnetic Field.....	26
4.2.4. Surges	27
4.2.5. RF- Common Mode 0.15MHz to 80MHz	28
4.2.6. Fast Transients Common Mode.....	29
4.2.7. Voltage Dips and Interruptions.....	30
5. TEST SET-UP PHOTOS OF THE EUT	31
6. EXTERNAL AND INTERNAL PHOTOS OF THE EUT	36

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 covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU

[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 covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

[EN 55032:2015+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+A1: 2021](#) 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+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

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	March 29, 2023
Testing commenced on	:	March 29, 2023
Testing concluded on	:	April 08, 2023

2.2. Product Description

Product:	Base station		
Model Number:	SID-ESL-19A, SID-ESL-0xA (x=1, 2, 3, 4, 6, ..., 100) (All models are identical except for the model name. We choose SID-ESL-19A for all tests)		
Trademark:	N/A		
Modulation:	GFSK		
	WIFI: DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;		
Frequency Range:	2402-2480MHz		
	<input checked="" type="checkbox"/> WIFI	2412-2472MHz for 802.11b/g/n20 2422-2462MHz for 802.11n40	
Number of Channels:	40 Channels		
	<input checked="" type="checkbox"/> WIFI	13 Channels for 802.11b/g/n20 9Channels for 802.11n40	
Smart system:	<input checked="" type="checkbox"/> RFID	<input checked="" type="checkbox"/> SISO	<input type="checkbox"/> MIMO
	<input checked="" type="checkbox"/> WIFI	<input checked="" type="checkbox"/> SISO	<input type="checkbox"/> MIMO
Antenna:	External antenna		
Antenna Gain:	0.5dBi		
Input rating:	<input checked="" type="checkbox"/> DV 12V, 1A from Adapter		
Test Power supply:	AC 230V/50Hz		
Temperature Extreme Range:	-10°C ~ +50°C		
Product software version:	a.		
Product hardware version:	a.		

2.3. EUT operation mode

Test mode	2.4G RFID	2.4G WIFI	Adapter
1	■		■
2		■	■

Note:

1. ■ is operation mode.
2. 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, Mode 2
Radiated emission	Mode 1, Mode 2
EMS	All Modes

2.4. EUT configuration

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

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

○	Adapter	M/N:	AD-0241200200CN-1
		Manufacturer:	Yajingyuan

2.5. Modifications

N/A.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Test Location 1:

Company name: Dongguan Anci Electronic Technology Co., Ltd.

Address: 1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan Lake
Hi-tech Industrial Development Zone, Dongguan City,
Guangdong Pr., China.

Test Location 2:

Company name: Guangdong Global Testing Technology Co., Ltd.

Address: Room 101,203, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong Pr.,
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. 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+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+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+A1: 2021	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+A2: 2021	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) 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: The measurement uncertainty is not included in the test result.

Note 1: Tested by Guangdong Global Testing Technology Co., Ltd.

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 Dongguan Anci Electronic 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 Dongguan Anci Electronic Technology Co., Ltd. for Products Quality is reported:

Test	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.

3.5. Equipments Used during the Test

For Radiated Emission Measurement

Item	Equipment Type	Manufacturer	Model No.	Serial Number	Calibrated until
1.	EMI Test Receiver	Rohde & Schwarz	ESPI	100502	2023-10-28
2.	EMI Test Receiver	Rohde & Schwarz	FSV40	102257	2023-10-28
3.	Pre-Amplifier	HP	8447D	2727A0617 2	2023-05-12
4.	Pre-Amplifier	A-INFO	LA1018N4009	J101313052 4001	2023-05-12
5.	Bilog Antenna	Schwarzbeck	VULB9163	VULB9163- 588	2023-05-12
6.	Horn Antenna	A-INFO	LB-10180-SF	J203109061 2123	2023-05-12
7.	Cable	N/A	N/A	6#	2023-05-12
8.	Cable	N/A	N/A	1-1#	2023-05-12
9.	Cable	N/A	N/A	1-2#	2023-05-12
10.	Cable	N/A	N/A	7#	2023-05-12
11.	3m Semi-anechoic Chamber	chengyu	9m*6m*6m	N/A	2023-05-12
12.	Test Software	Farad	EZ-EMC Ver:ANCI-3A1	N/A	N/A

For Electrostatic Discharge Test

Item	Equipment Type	Manufacturer	Model No.	Serial Number	Calibrated until
1	ESD Simulator	TESEQ	NSG437	336	2023-05-23

For Radio-frequency, Electromagnetic Field Immunity

Item	Equipment Type	Manufacturer	Model No.	Serial Number	Calibrated until
1	Stacked Log.-Per.- Broadband Antenna	Schwarzbeck	STLP 9129	170	2023-12-7
2	Power amplifier	MiCOTOP	MPA-80-1000- 500	MPA2209336	2023-10-8
3	Power amplifier	MiCOTOP	MPA-1000- 6000-100	MPA2209337	2023-10-8
4	EPM Series Power Meter	Keysight	N1914A	MY53240003	2023-10-8
5	Average Power Sensor	Keysight	E9304A	MY41498925	2023-10-8
6	Average Power Sensor	Keysight	E9304A	MY41497454	2023-10-8
7	EXG Analog Signal Generator	Keysight	N5171B	MY61252624	2023-10-8
8	Field Probe	Narda	EP 601	811ZX11137	2023-10-29
9	RF Switch Unit	HZEMC	HSW06	HSW2218C0 4	N/A
10	Chamber 2	ETS	9*6*6	Q2149	2025-8-30

The calibration interval is one year.

4. TEST CONDITIONS AND RESULTS

4.1. EMISSION

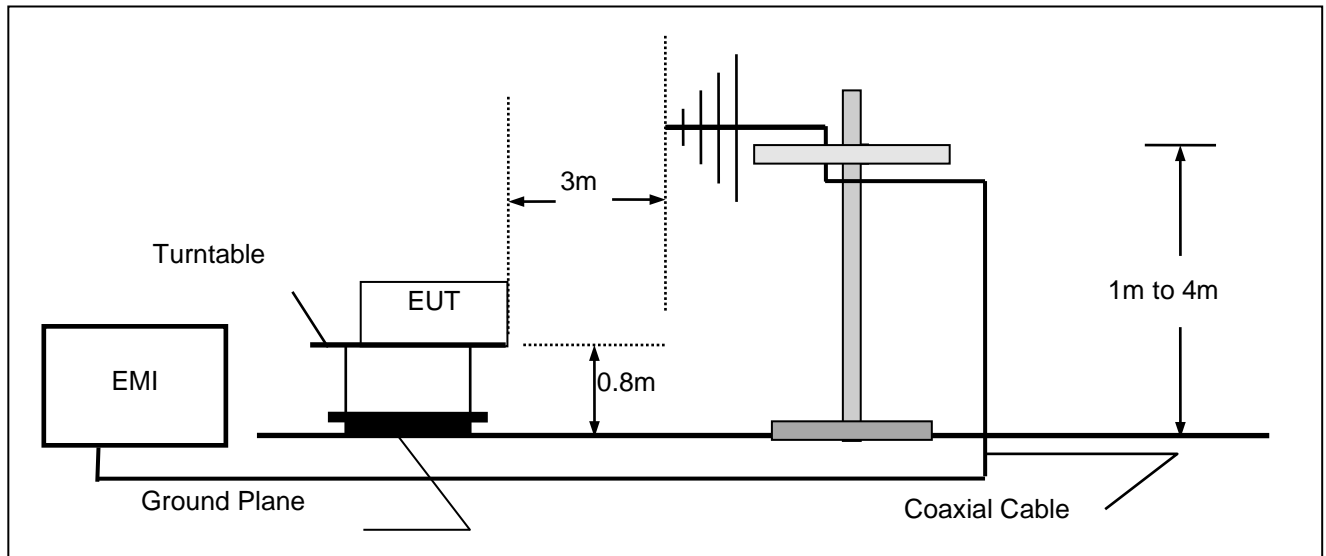
4.1.1. Radiated Emission

LIMIT

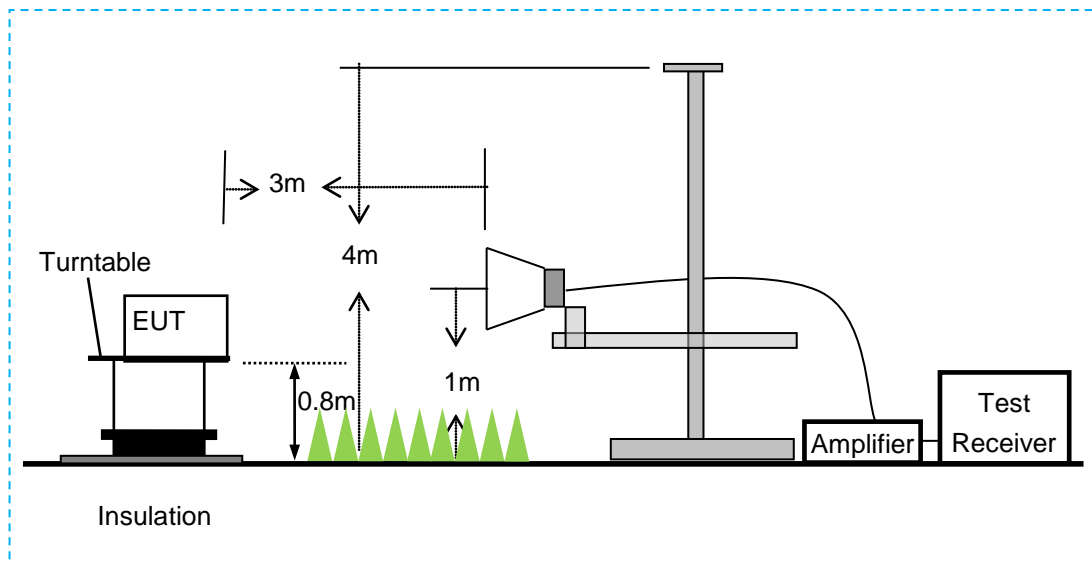
Please refer to ETSI EN301489-1 Clause 8.2.3, Table 4 and EN55032 Annex A, Table A.2,A.3, and Class B

TEST CONFIGURATION

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



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



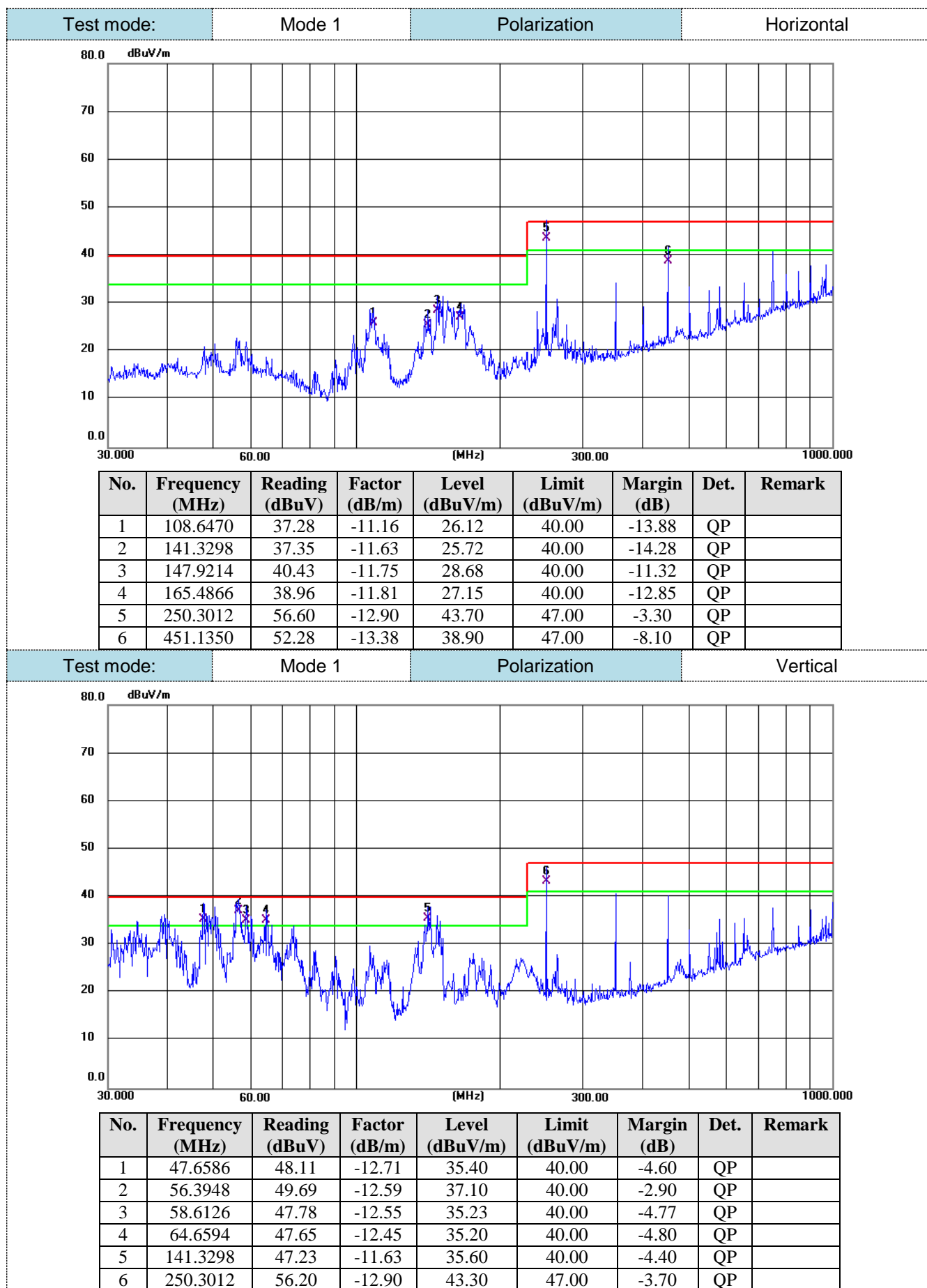
TEST PROCEDURE

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:

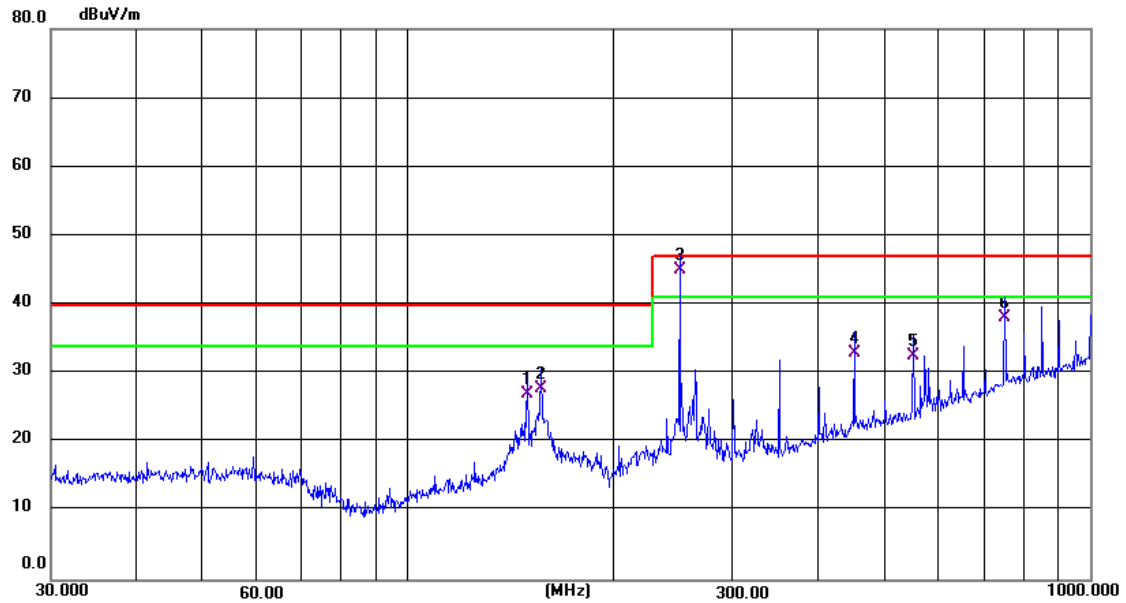


Test mode:

Mode 2

Polarization

Horizontal



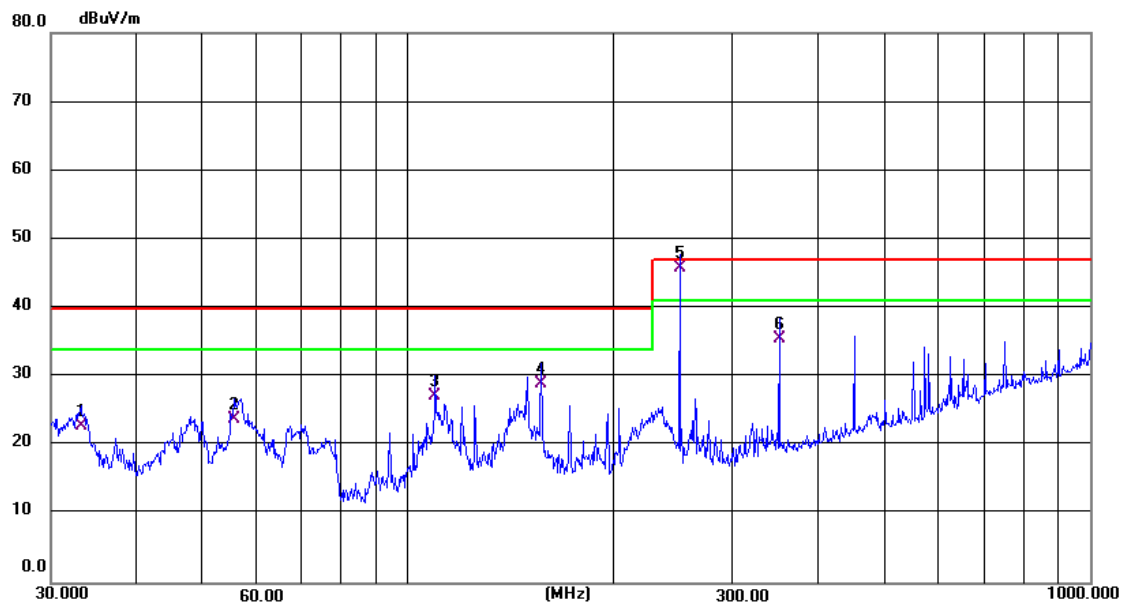
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Remark
1	150.0107	38.82	-11.77	27.05	40.00	-12.95	QP	
2	157.0072	39.69	-11.79	27.90	40.00	-12.10	QP	
3	250.3011	58.00	-12.90	45.10	47.00	-1.90	QP	
4	451.1350	46.28	-13.38	32.90	47.00	-14.10	QP	
5	550.9480	45.63	-13.08	32.55	47.00	-14.45	QP	
6	750.1082	66.51	-28.41	38.10	47.00	-8.90	QP	

Test mode:

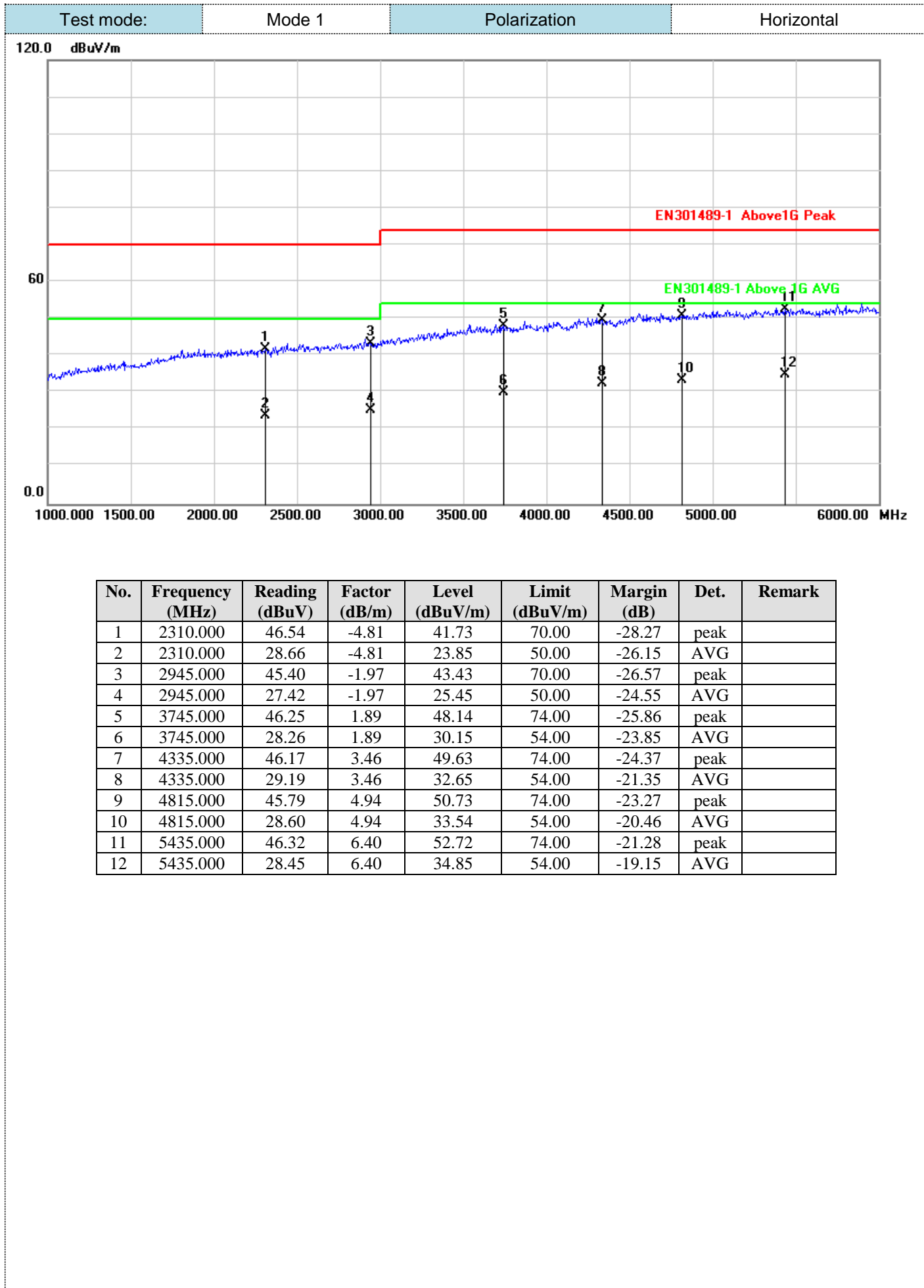
Mode 2

Polarization

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Remark
1	33.2111	35.67	-12.77	22.90	40.00	-17.10	QP	
2	55.8046	36.49	-12.60	23.89	40.00	-16.11	QP	
3	109.7960	38.47	-11.17	27.30	40.00	-12.70	QP	
4	157.0072	40.84	-11.79	29.05	40.00	-10.95	QP	
5	250.3012	58.70	-12.90	45.80	47.00	-1.20	QP	
6	350.4766	48.24	-12.64	35.60	47.00	-11.40	QP	



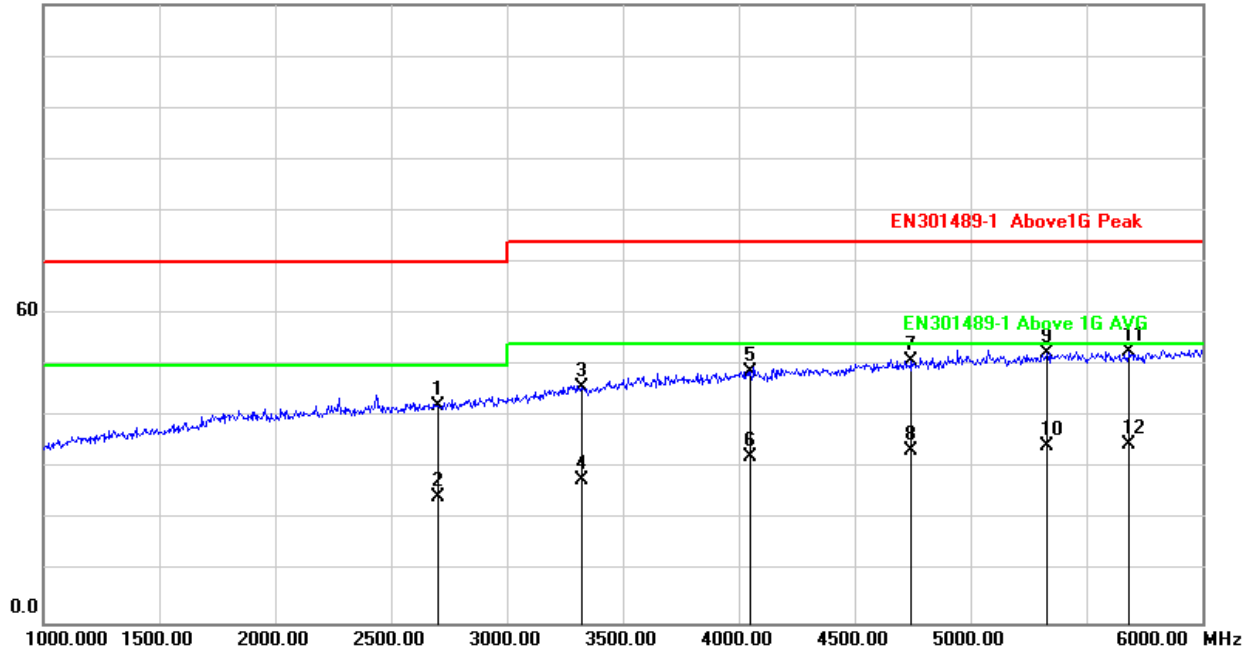
Test mode:

Mode 1

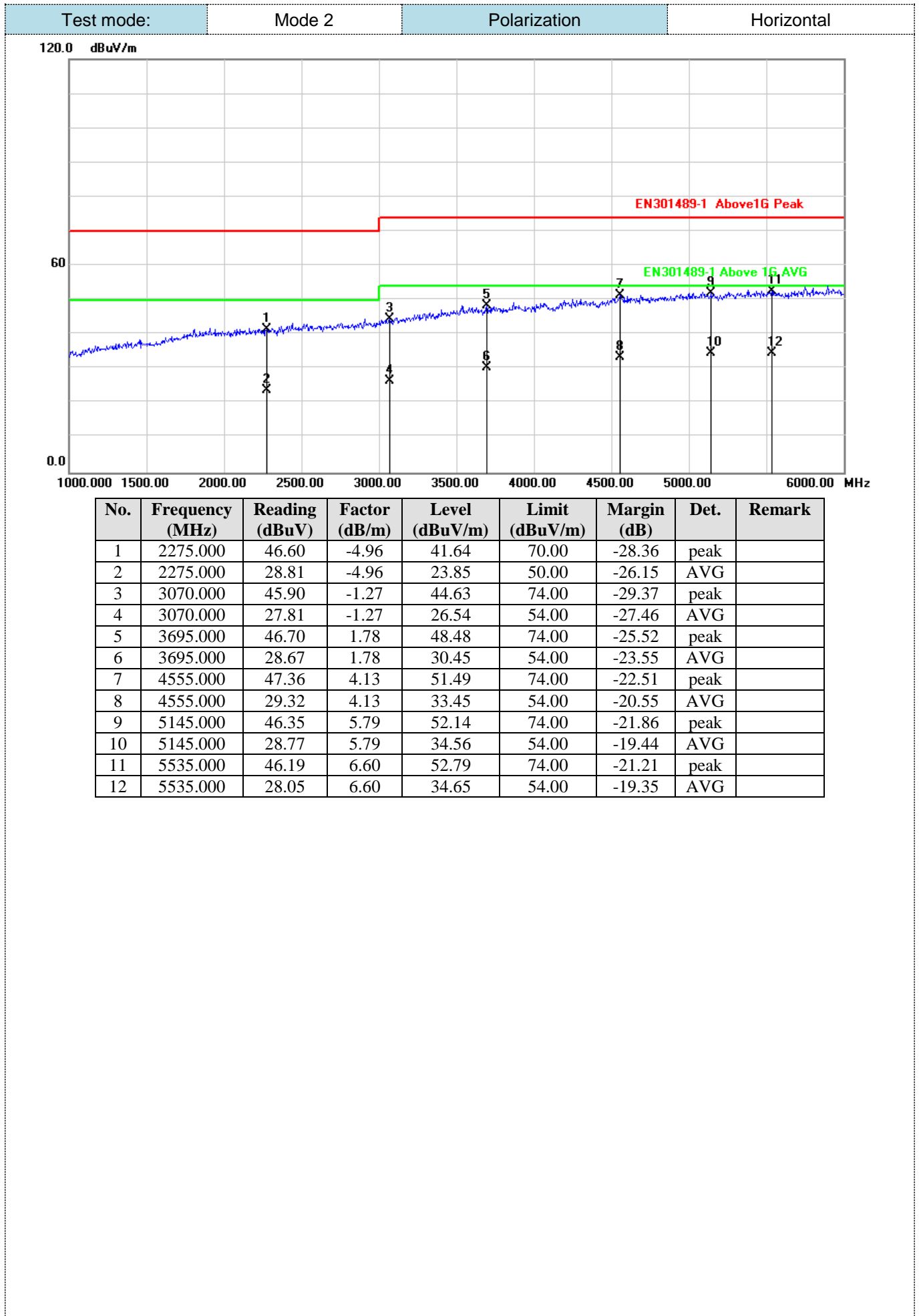
Polarization

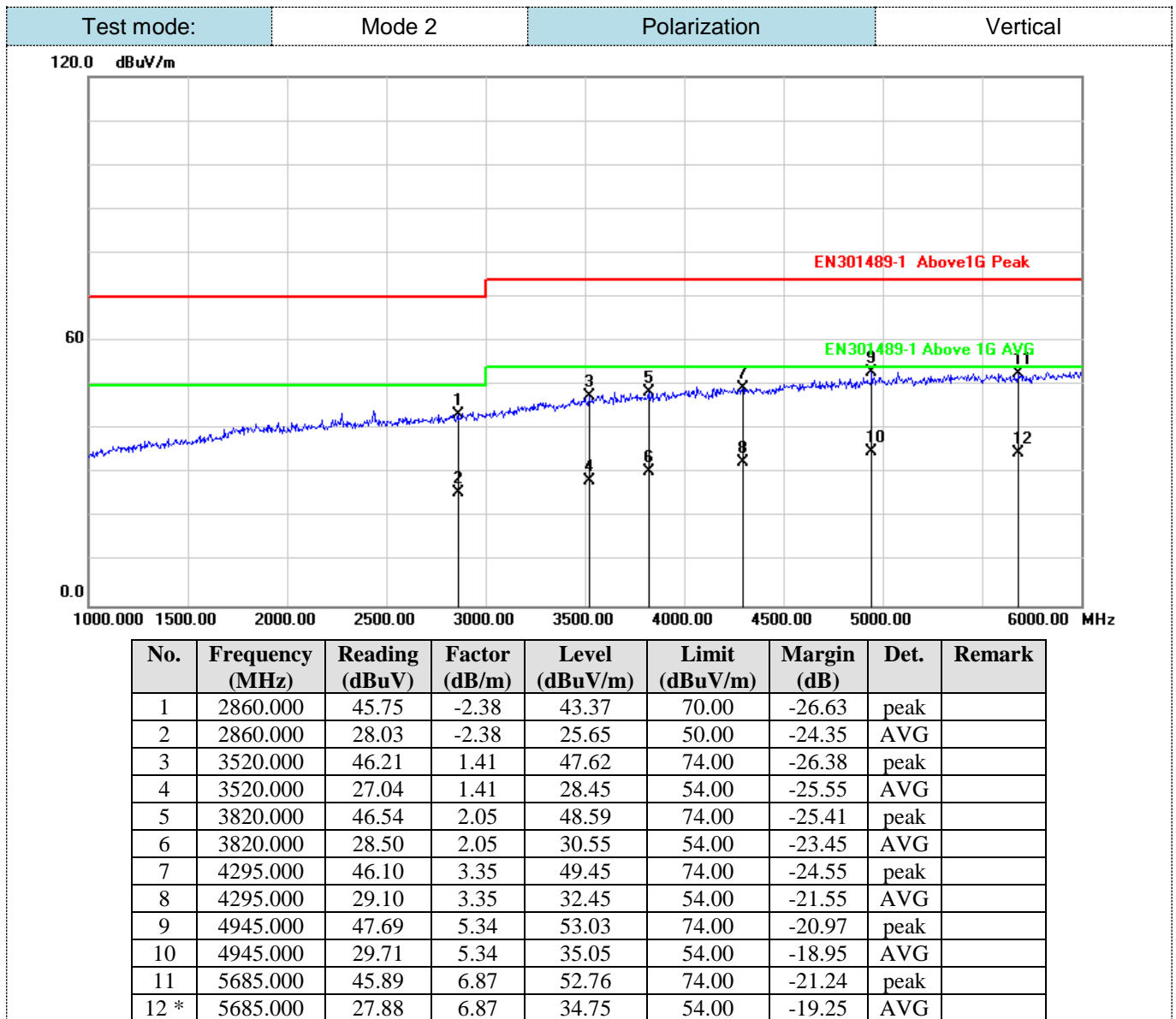
Vertical

120.0 dBuV/m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Remark
1	2700.000	45.39	-3.15	42.24	70.00	-27.76	peak	
2	2700.000	27.67	-3.15	24.52	50.00	-25.48	AVG	
3	3320.000	45.43	0.26	45.69	74.00	-28.31	peak	
4	3320.000	27.54	0.26	27.80	54.00	-26.20	AVG	
5	4050.000	46.15	2.59	48.74	74.00	-25.26	peak	
6	4050.000	29.53	2.59	32.12	54.00	-21.88	AVG	
7	4745.000	46.08	4.72	50.80	74.00	-23.20	peak	
8	4745.000	28.73	4.72	33.45	54.00	-20.55	AVG	
9	5330.000	46.21	6.18	52.39	74.00	-21.61	peak	
10	5330.000	28.32	6.18	34.50	54.00	-19.50	AVG	
11	5685.000	45.89	6.87	52.76	74.00	-21.24	peak	
12	5685.000	27.69	6.87	34.56	54.00	-19.44	AVG	



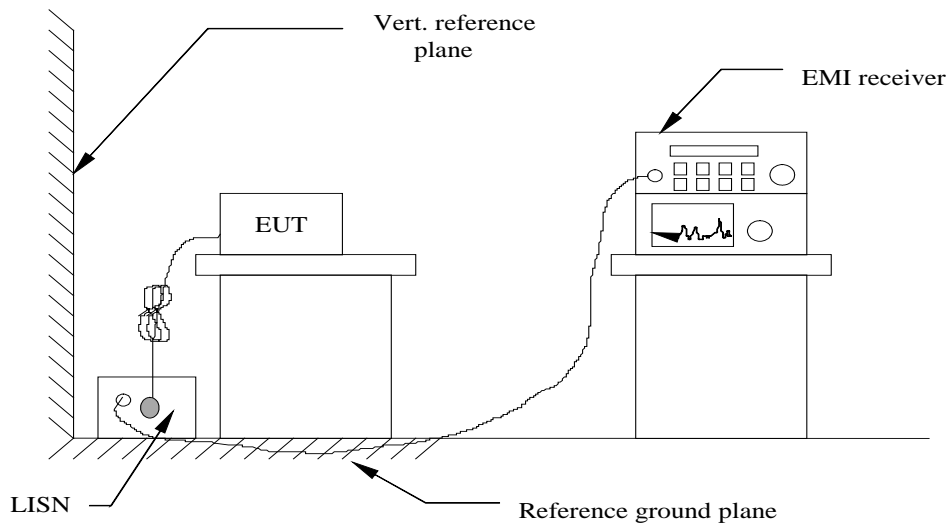


4.1.2. Conducted Emission

LIMIT

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

TEST CONFIGURATION



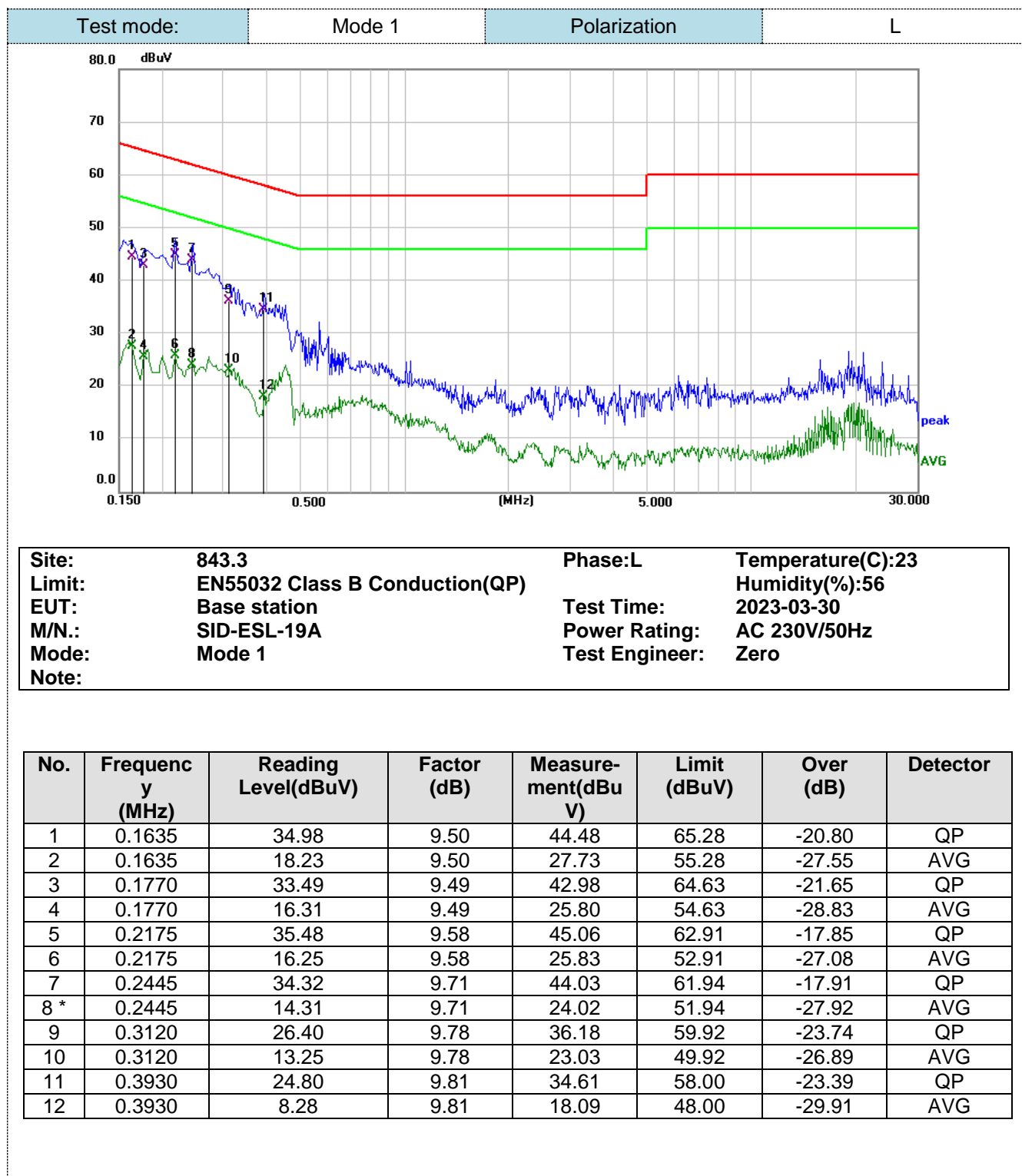
TEST PROCEDURE

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:

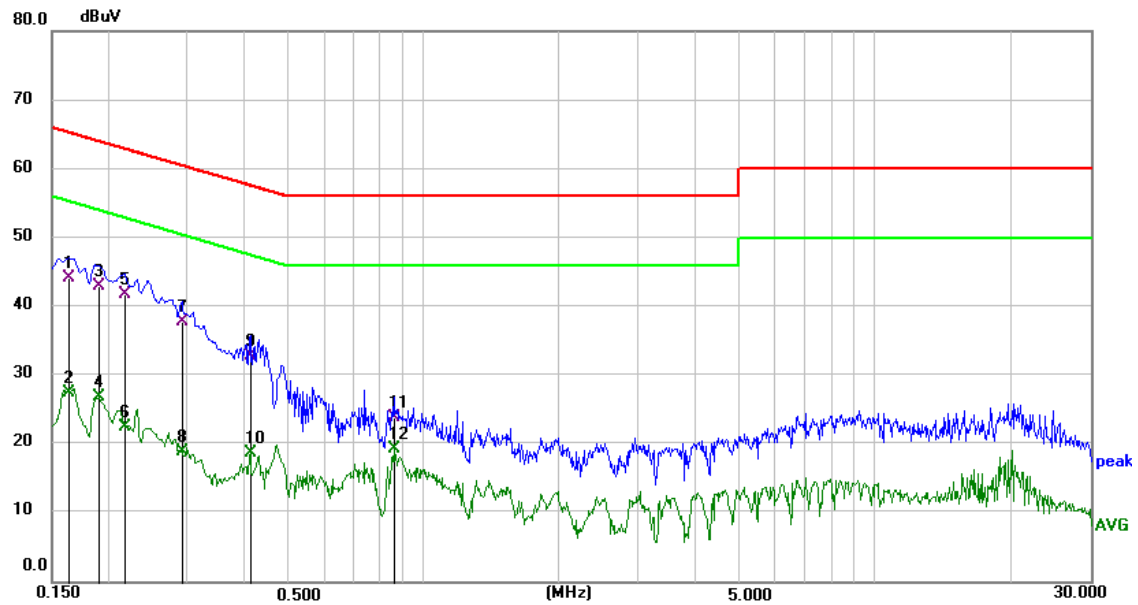


Test mode:

Mode 1

Polarization

N



Site:	843.3	Phase:	N	Temperature(C):	23
Limit:	EN55032 Class B Conduction(QP)			Humidity(%):	56
EUT:	Base station	Test Time:	2023-03-30		
M/N.:	SID-ESL-19A	Power Rating:	AC 230V/50Hz		
Mode:	Mode 1	Test Engineer:	Zero		
Note:					

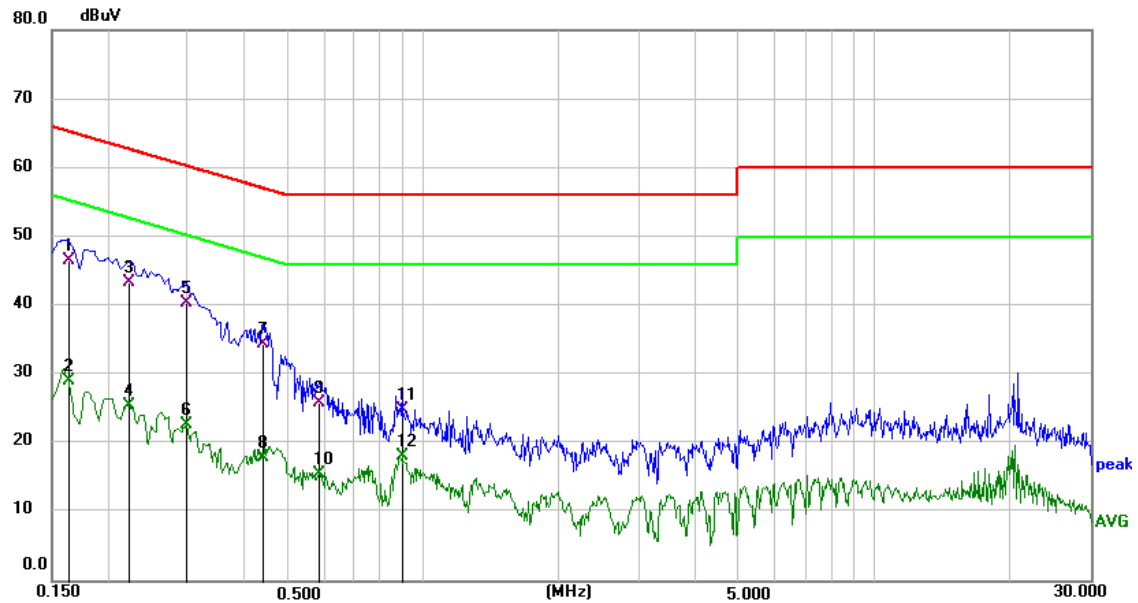
No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measurement(dBuV)	Limit (dBuV)	Over (dB)	Detector
1	0.1635	34.59	9.54	44.13	65.28	-21.15	QP
2	0.1635	17.98	9.54	27.52	55.28	-27.76	AVG
3	0.1905	33.37	9.63	43.00	64.01	-21.01	QP
4	0.1905	17.24	9.63	26.87	54.01	-27.14	AVG
5	0.2175	32.12	9.73	41.85	62.91	-21.06	QP
6	0.2175	12.71	9.73	22.44	52.91	-30.47	AVG
7	0.2895	27.84	9.90	37.74	60.54	-22.80	QP
8	0.2895	9.13	9.90	19.03	50.54	-31.51	AVG
9	0.4110	23.12	9.77	32.89	57.63	-24.74	QP
10	0.4110	8.92	9.77	18.69	47.63	-28.94	AVG
11	0.8610	13.99	9.94	23.93	56.00	-32.07	QP
12	0.8610	9.34	9.94	19.28	46.00	-26.72	AVG

Test mode:

Mode 2

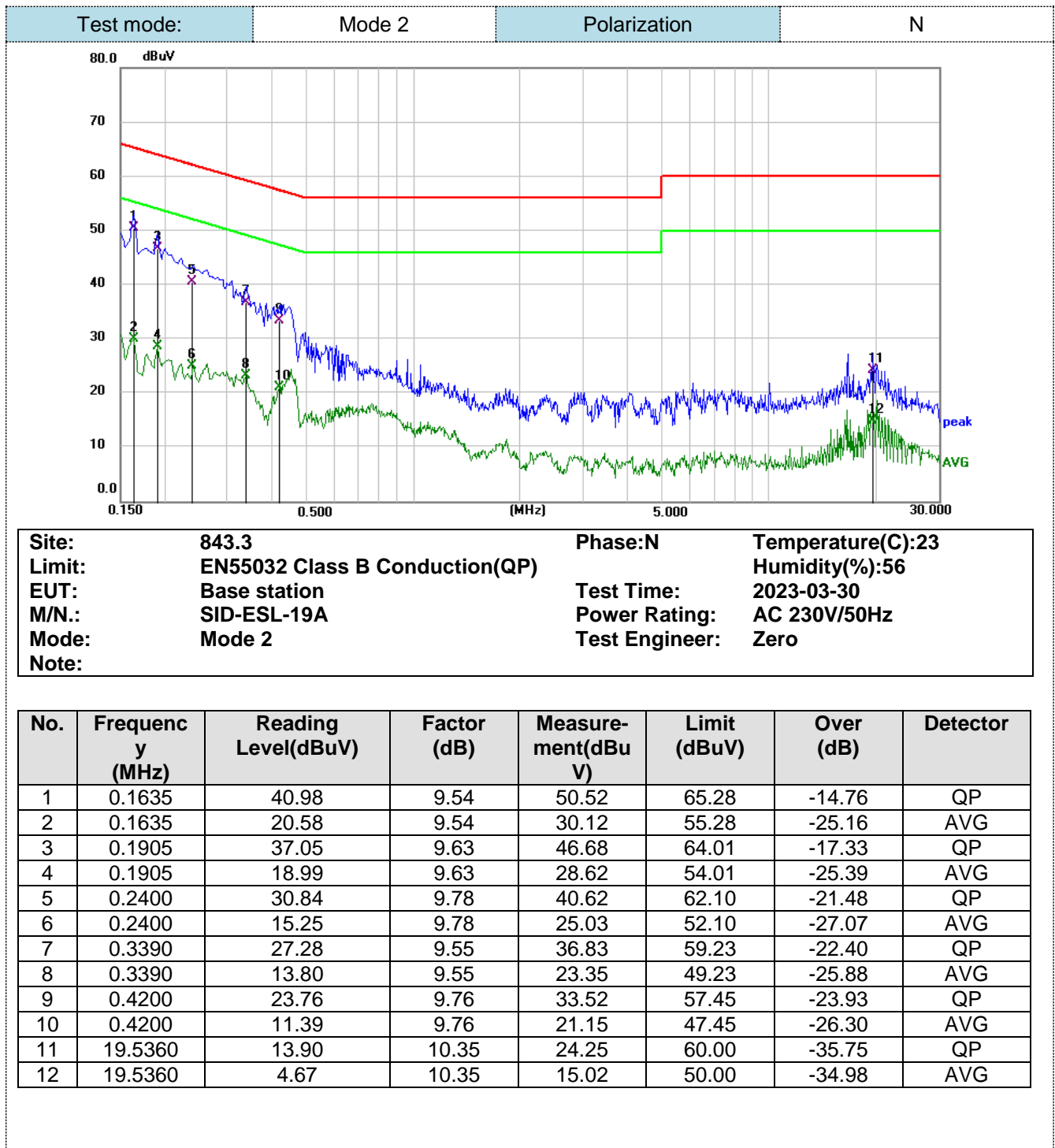
Polarization

L



Site:	843.3	Phase:	L	Temperature(C):	23
Limit:	EN55032 Class B Conduction(QP)			Humidity(%):	56
EUT:	Base station	Test Time:	2023-03-30		
M/N.:	SID-ESL-19A	Power Rating:	AC 230V/50Hz		
Mode:	Mode 2	Test Engineer:	Zero		
Note:					

No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measurement(dBuV)	Limit (dBuV)	Over (dB)	Detector
1	0.1635	37.00	9.54	46.54	65.28	-18.74	QP
2	0.1635	19.55	9.54	29.09	55.28	-26.19	AVG
3	0.2220	33.64	9.74	43.38	62.74	-19.36	QP
4	0.2220	15.67	9.74	25.41	52.74	-27.33	AVG
5	0.2985	30.54	9.93	40.47	60.28	-19.81	QP
6	0.2985	12.87	9.93	22.80	50.28	-27.48	AVG
7	0.4380	24.62	9.75	34.37	57.10	-22.73	QP
8 *	0.4380	8.29	9.75	18.04	47.10	-29.06	AVG
9	0.5865	16.39	9.48	25.87	56.00	-30.13	QP
10	0.5865	6.08	9.48	15.56	46.00	-30.44	AVG
11	0.8970	14.85	10.01	24.86	56.00	-31.14	QP
12	0.8970	8.24	10.01	18.25	46.00	-27.75	AVG



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. May show degradation of performance (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 2). 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 1). No unintentional transmissions.	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no degradation of performance (see note 2). 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 2).

NOTE 1:

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 2:

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.

■ Performance Criterion of EN55035

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.

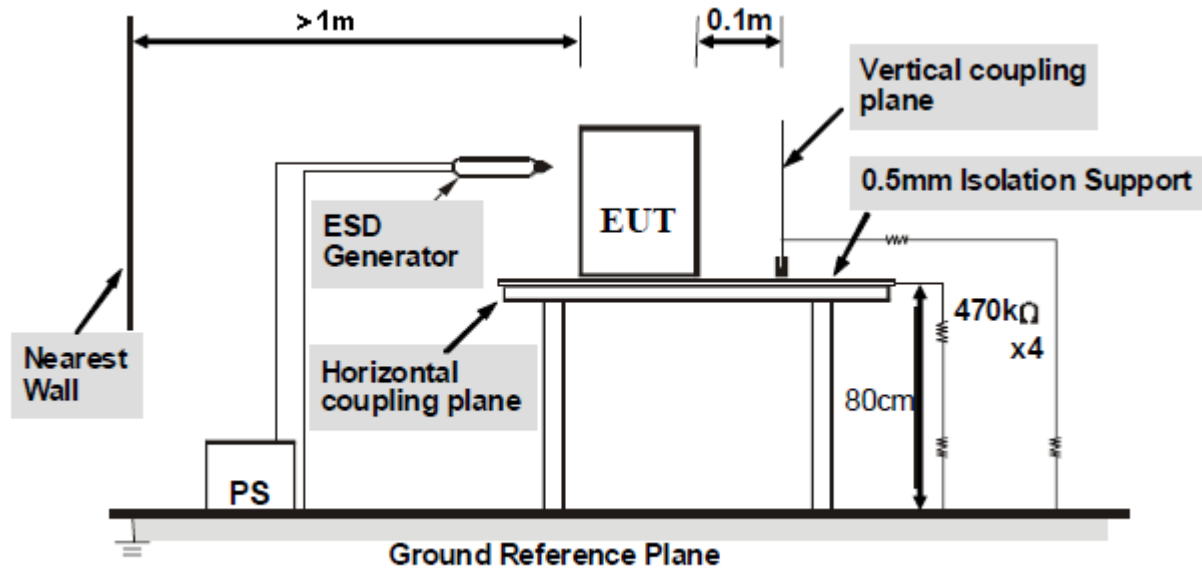
4.2.2. Electrostatic Discharge

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.

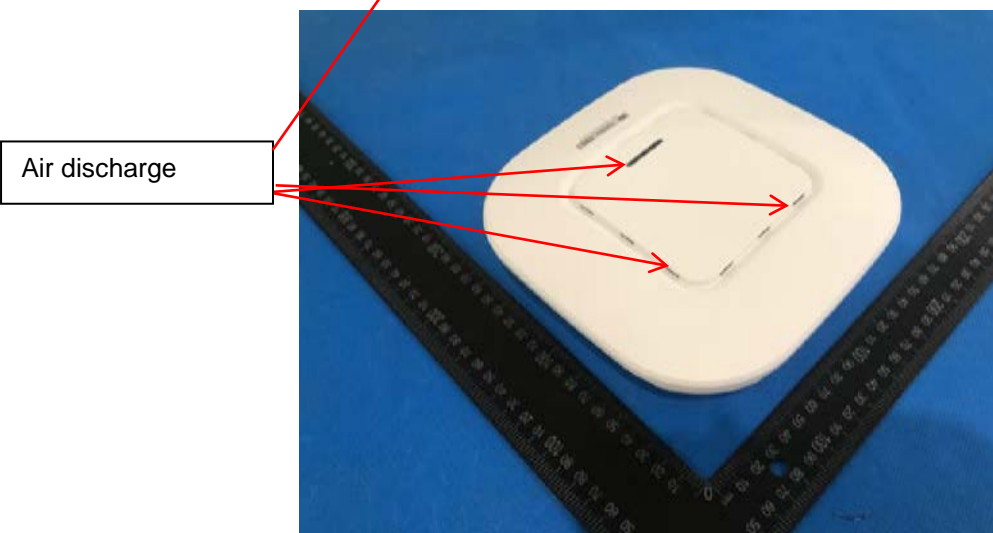
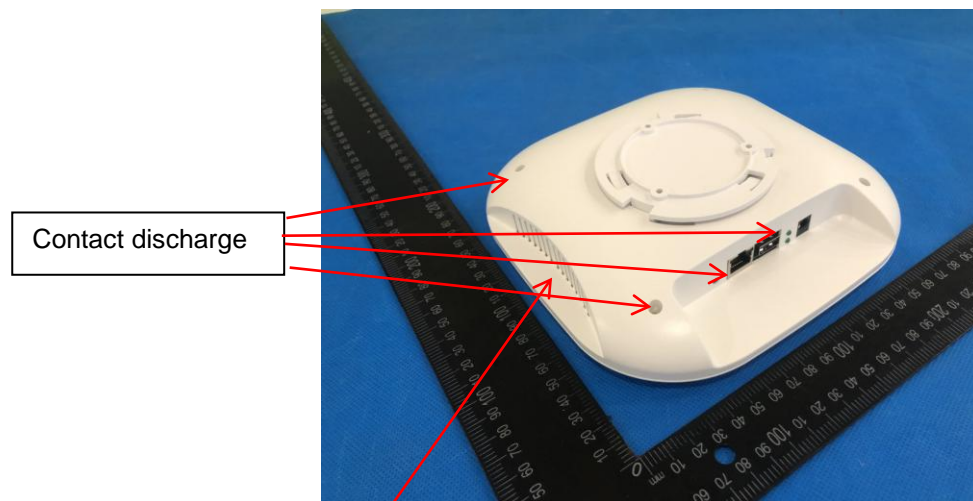
TEST MODE

Please reference to the section 2.3

TEST RESULTS

Temperature: 26°C		Humidity: 55%		Atmospheric pressure: 101kPa	
Direct discharge					
Type of discharge	Discharge voltage (KV)	Observations Performance	Criteria Level	Result	
Contact discharge	±2	A	B	Pass	
	±4	A	B		
Air discharge	±2	B(See Remark)	B		
	±4	B(See Remark)	B		
	±8	B(See Remark)	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. When performing air discharge on the EUT in TF card mode, The EUT sound will be stuck, and it can be restored automatically when the test is completed.

Description of Discharge Point

4.2.3. RF Electromagnetic Field

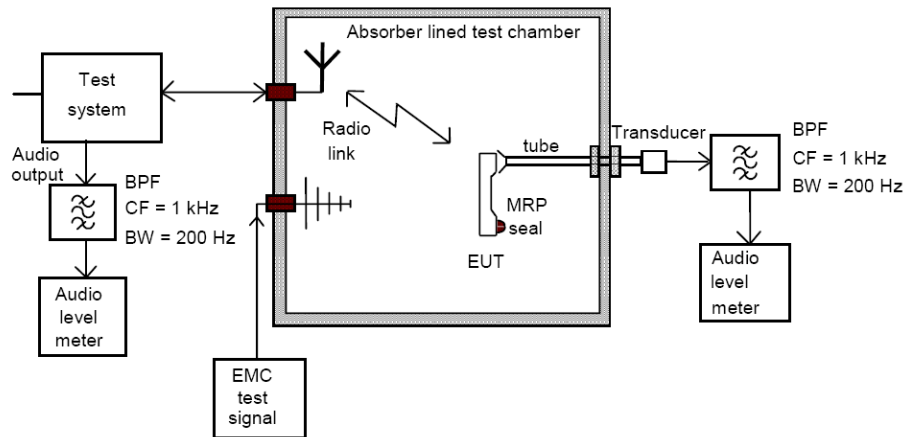
PERFORMANCE CRITERION

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

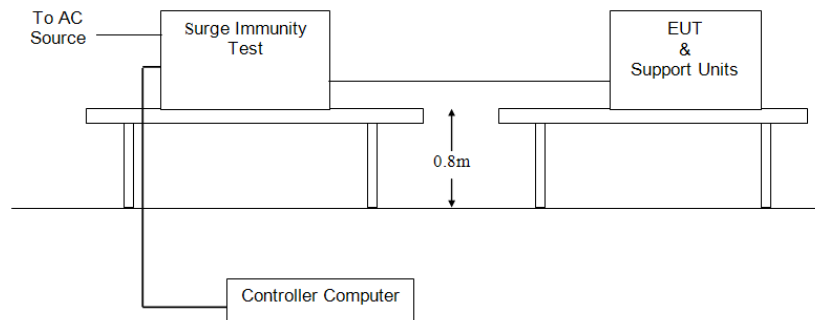
TEST LEVEL

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

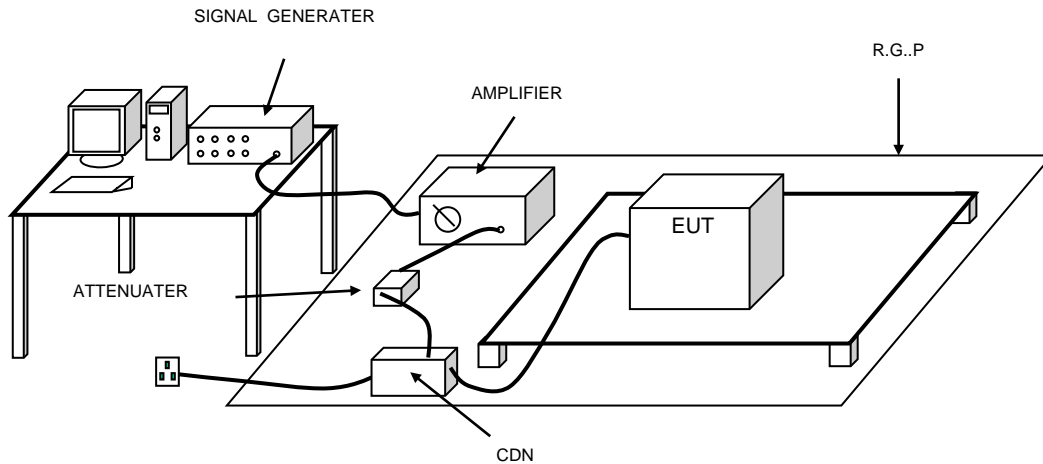
PERFORMANCE CRITERION

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

● Idle mode

Test monitor: BCCH and CCCH

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

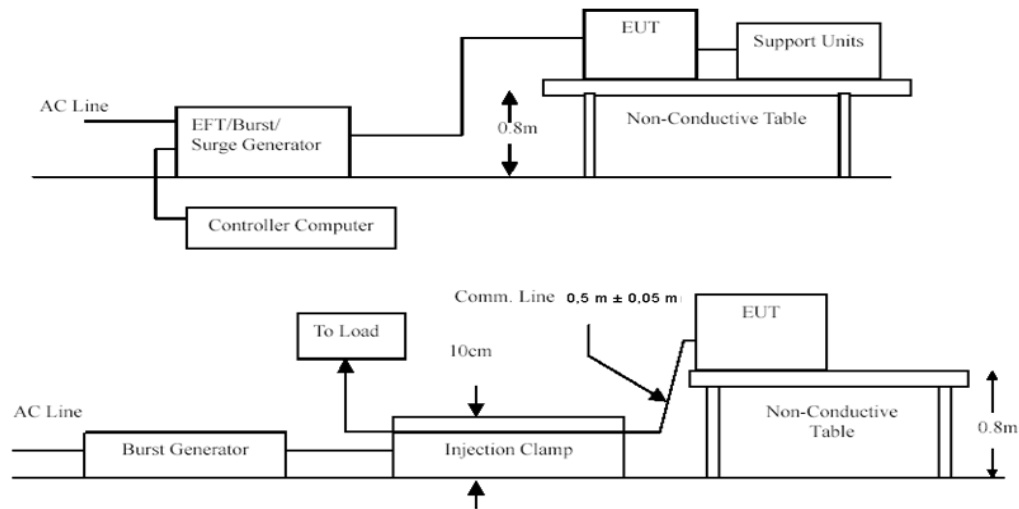
Criteria B

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 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

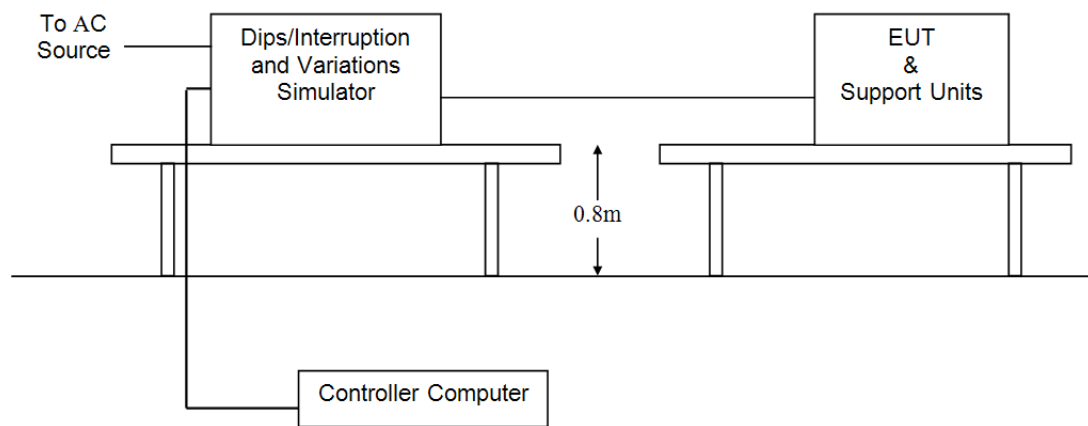
0% of VT(Supply Voltage) for 0.5 period

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

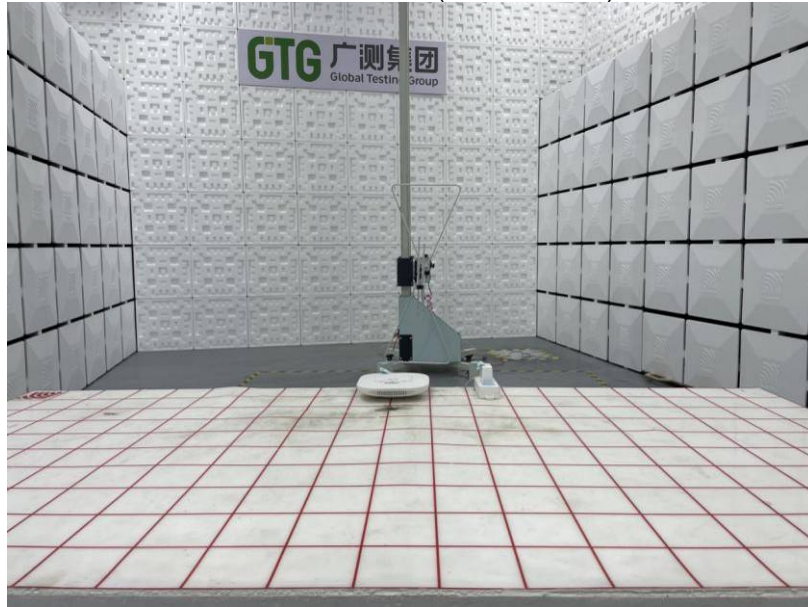
Remark :

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

Radiated Emission (30MHz-1GHz)



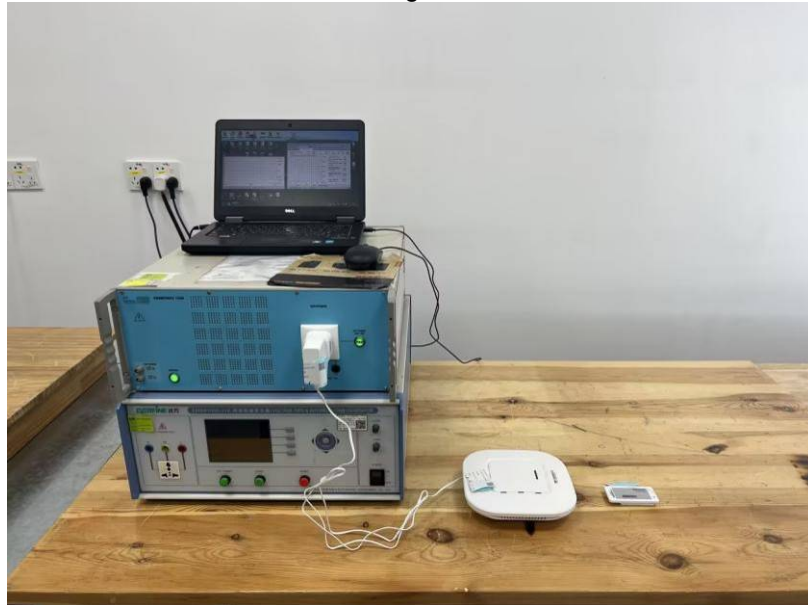
Radiated Emission (1GHz-6GHz)



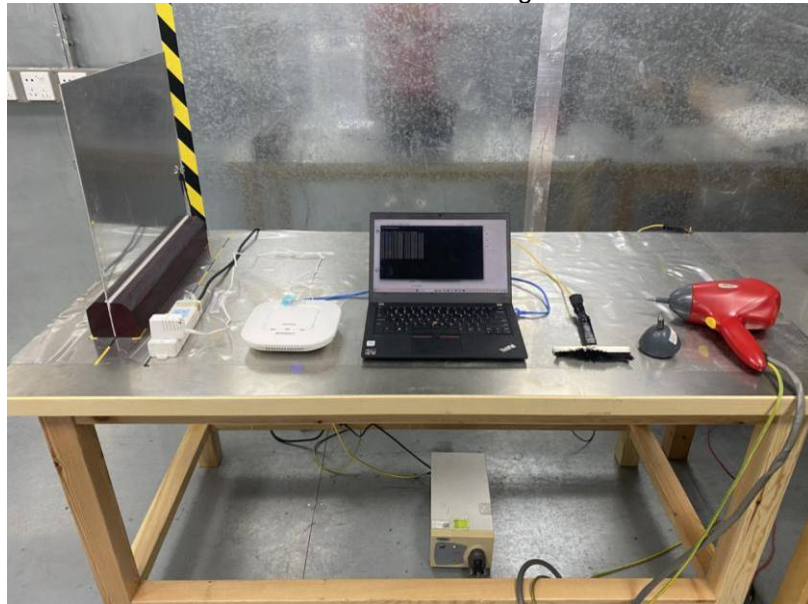
Conducted Emission



Harmonic Current/ Voltage Fluctuation and Flicker



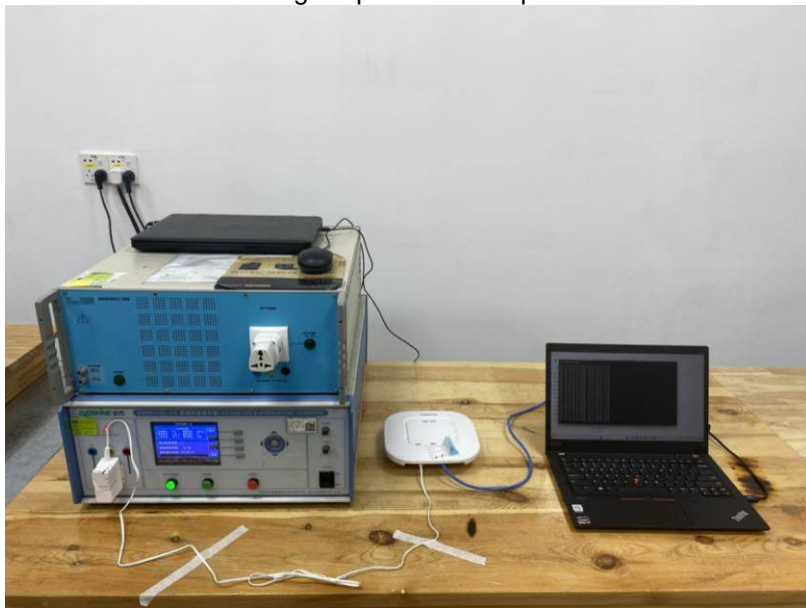
Electrostatic Discharge



Fast Transients Common Mode



Voltage Dips and Interruptions



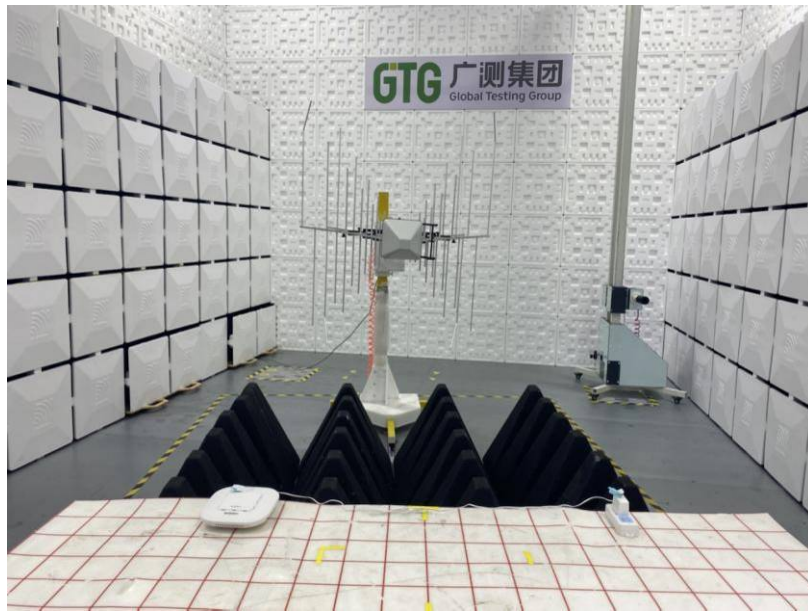
Surges



CS



RS



6. External and Internal Photos of the EUT



Photo1-Overall view



Photo2-Overall view

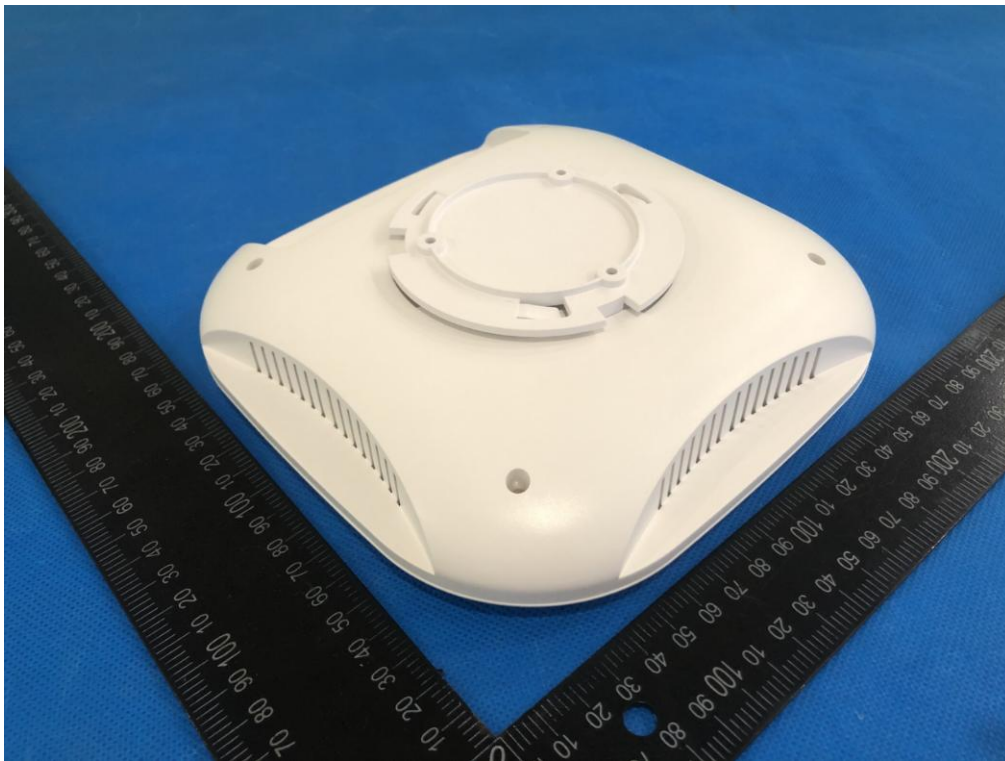


Photo3-Internal view



Photo4-Internal view

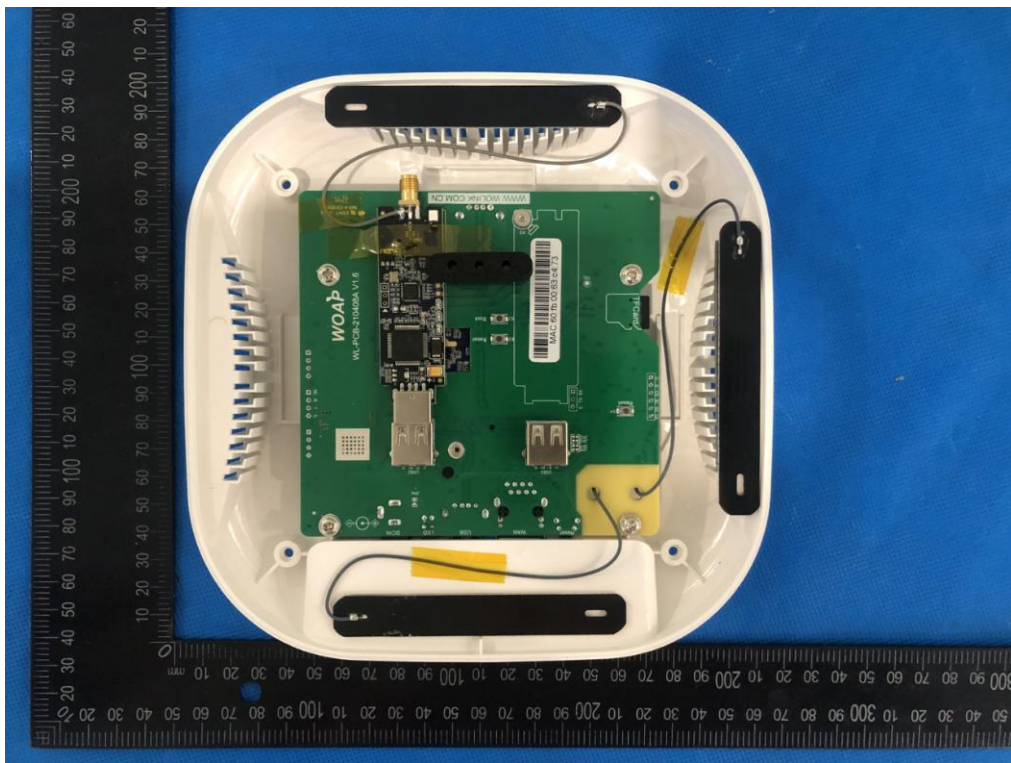


Photo5- Internal view

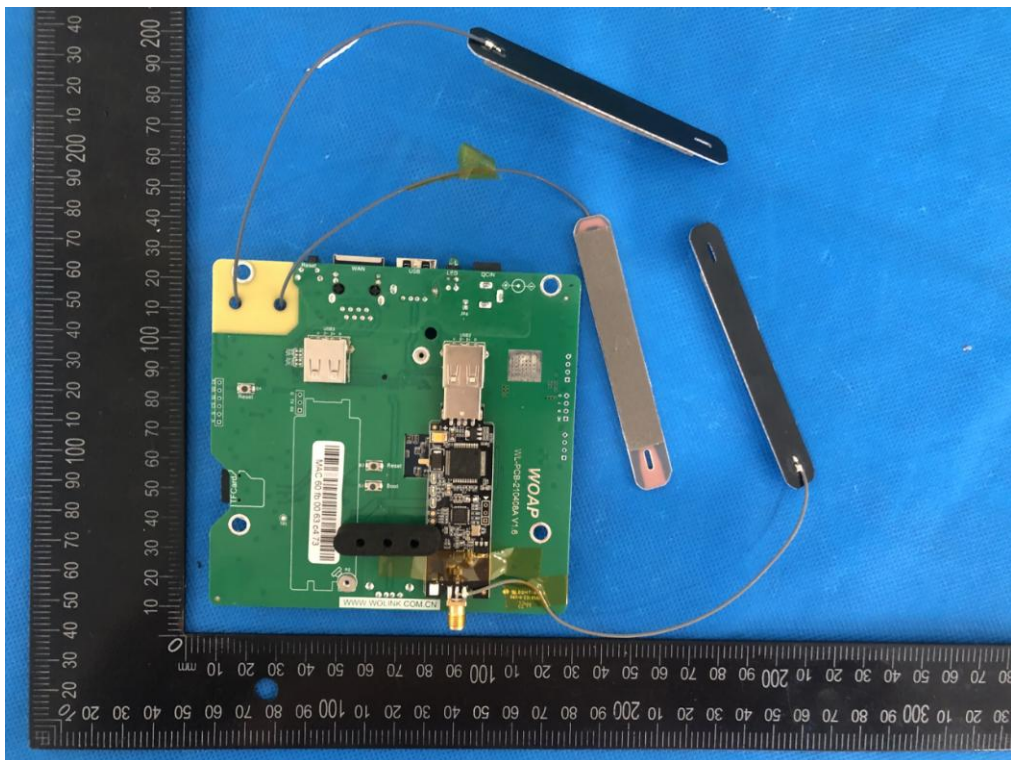


Photo6-Overall PCB

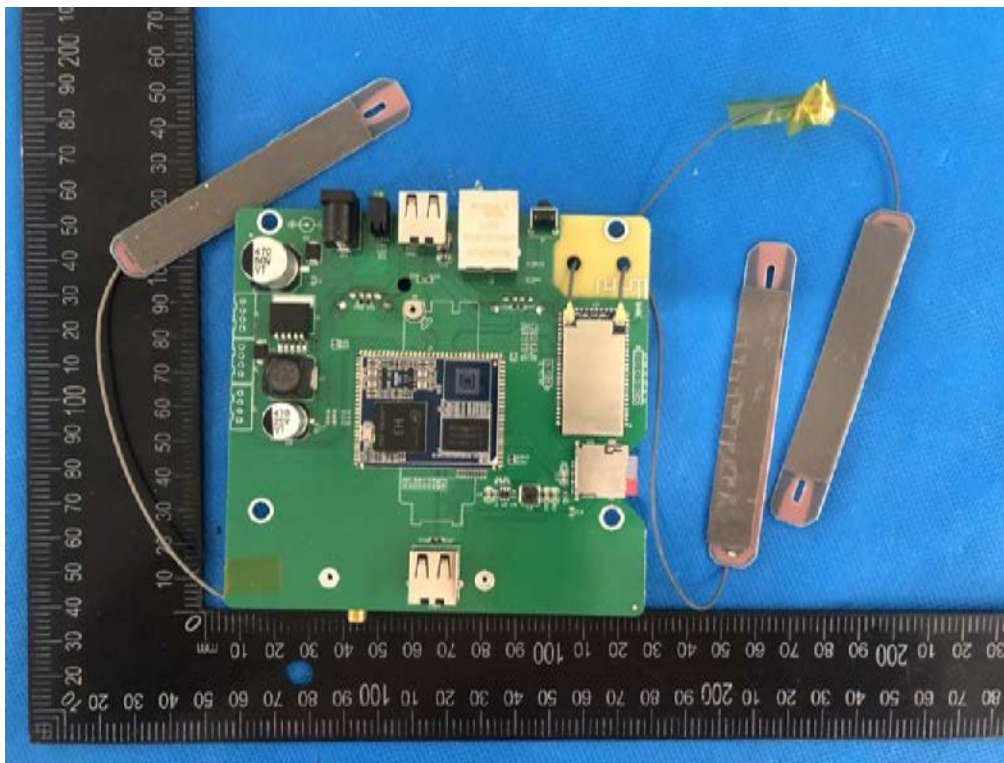


Photo7-Overall PCB



Photo6-Overall Adapter

---End of Report---