Test Report

No. TCSH.240811301 **Date:** 2024/10/15

The following sample(s) was/were submitted and identified by the client as:

Applicant	:	HANGZHOU KinCony ELECTRONICS CO.,LTD
Adress	:	Room 321, Building 6, Xixi Century Center, Xihu District, Hangzhou City, Zhejiang Province, China
Sample Description	:	Smart Energy Meter
Style/Item No.	:	N90,N60,N30,N20,N10,M16v2,M1,MB
Sample Receiving Date	:	October 15, 2024
Testing Period	:	October 15, 2024 to November 15, 2024
Testing Performed	:	SELECTED TEST(S) AS REQUESTED BY APPLICANT
Test Requested	:	ETSI EN 301 489-1 V2.2.1(2019-03) ETSI EN 301 489-17 V3.2.0 (2017-03)
Test Result(s)	:	FOR FUTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)
Conclusion	:	THE SUBMITTED SAMPLE MET THE TEST REQUIREMENT

For and on behalf of
Shenzhen Hongtong Testing Technology Co., Ltd

Authorized Signature : _____

Johnson Lee
General Manager -HTS/SHO

Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	November 15, 2024	TCJS.24111 63	ALL	Initial Issue

Note: **Format version** of the report -V01

1. TEST SUMMARY

Test procedures according to the technical standards:
Draft ETSI EN 301 489-17 V3.2.0 (2017-03)

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
EN 55032:2015	Conducted Emission On AC And Telecom Port 150kHz to 30MHz	Class B	N/A	
	Radiated Emission 30MHz to 1000MHz	Class B	PASS	
	Radiated Emission 1GHz to 6GHz	Class B	PASS	NOTE (1)

EMC Immunity				
Section	Test Item	Performance Criteria	Judgment	Remark
EN 61000-4-2:2009	Electrostatic Discharge	B	PASS	
EN 61000-4-3:2006+A1: 2008+ A2:2010	RF electromagnetic field	A	PASS	
EN 61000-4-4:2012	Fast transients	B	N/A	
EN 61000-4-5:2014+A1:2017	Surges	B	N/A	
EN 61000-4-6:2014	Injected Current	A	N/A	
EN 61000-4-11:2004+A1:2017	Volt. Interruptions Volt. Dips	B / C / C	N/A	NOTE (2)

(1) If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz.
If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 Note: MHz, the measurement shall only be made up to 2 GHz.
If the highest frequency of the internal sources of the EUT is between 500 MHz and 1GHz, measurement shall only be made up to 5 GHz.
If the highest frequency of the internal sources of the EUT is above 1 GHz, the
Measurement shall be made up to 5 times the highest frequency or 6 GHz, whichever is less.
(2) Voltage dip: 100% reduction – Performance Criteria B Voltage dip: 30% reduction – Performance Criteria C
Voltage Interruption: 100% Interruption – Performance Criteria C
(3) For client's request and manual description, the test will not be executed.
(4) " N/A" denotes test is not applicable in this Test Report

1.1 TEST FACTORY

Company Name:	Shenzhen Hongtong Testing Technology Co., Ltd.
Address:	Gangshen Innovation Park, No. 38 Huaning Road, Xinshi Community, Dalang Street, Longhua District, Shenzhen
E-mail:	info@zts-lab.com.cn

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± U**, where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95** %.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
HTSC01	ANSI	9KHz-150KHz	2.88	
		150 KHz ~ 30MHz	2.67	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
HTSC02	ANSI	30MHz ~ 200MHz	3.73	
		200MHz ~ 1000MHz	3.92	
		1GHz ~ 6 GHz	3.31	

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name	Smart Energy Meter
Brand Name	/
Main Name	KC868-H32B
Series Model	KC868-H32B, KC868-H16B, KC868-H8B, KC868-H4B, KC868-H2B, KC868-COLB, KC868-COLB-Mini, KC868-A4, KC868-H32BS
Model Difference	/
Product Description	Input Power: DC12V Max.load: 250VAC 10A/gang Wifi standard: 2.4G/b/g/n OR Network:10/100Base-T
Hardware version number	N/A
Software version number	N/A

2.2 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.

Pretest Mode	Description
Mode 1	BT Mode

For Radiated Test	
Final Test Mode	Description
Mode 1	BT Mode

For EMS Test	
Final Test Mode	Description
Mode 1	BT Mode

Note: The test modes were carried out for all operation modes(include link and idle).

The final test mode of the EUT was the for Mode 1, and its test data was showed.

2.3 DESCRIPTION OF TEST SETUP

2.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the teHTC.

Item	Equipment	Mfr/Brand	Model/Type No.
N/A	N/A	N/A	N/A

Item	Shielded Type	Ferrite Core	Length
N/A	N/A	N/A	N/A

Note:
(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in 『Length』column.
(3) “YES” means “shielded” “with core” ; “ NO” means “unshielded” “without core” .

2.5 MEASUREMENT INSTRUMENTS LIST

2.5.1 RADIATED TEST SITE

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
EMI Test Receiver	R&S	ESCI	102086	2020.10.15	2025.10.14
Bilog Antenna	TESEQ	CBL6111D	34678	2020.10.15	2025.10.14
Horn Antenna	SCHWARZBECK	BBHA 9120D	1343	2020.10.15	2025.10.14
Spectrum Analyzer	Agilent	E4407B	MY50140340	2020.10.15	2025.10.14
Pre-mplifier(1G-18G)	Agilent	8449B	60538	2020.10.15	2025.10.14
Spectrum Analyzer	Agilent	N9020A	MY49100060	2020.10.15	2025.10.14
Pre-mplifier(0. 1M-3GHz)	EM	EM330	--	2020.10.15	2025.10.14

2.5.2 ESD

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
ESD TEST GENERATOR	HAEFELY	ONYX 16	173835	2020.10.15	2025.10.14

2.5.3 RS

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
RF Relay matrix tsj	TSJ	RFM-S621	04261	2020.10.15	2025.10.14
Power meter	Agilent	E4419B	QB4331226	2020.10.15	2025.10.14
Power Sensor	Agilent	8481A	MY41092622	2020.10.15	2025.10.14
Power Sensor	Agilent	8481A	US37296783	2020.10.15	2025.10.14
Signal Generator	Agilent	N5182A	MY46240556	2020.10.15	2025.10.14
Power Amplifier	MICOTOP	MPA-80-1000-250	1711489	2020.10.15	2025.10.14
Power Amplifier	MICOTOP	MPA-1000-3000-75	1711488	2020.10.15	2025.10.14
Power Amplifier	MICOTOP	MPA-3000-6000-50	MPA1706275	2020.10.15	2025.10.14
Logarithmic-periodic Antenna	Schwarzbeck	VULP9118E	820	2020.10.15	2025.10.14
Microwave Horn Antenna	Schwarzbeck	BBHA 9120LF	F01008	2020.10.15	2025.10.14

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT 3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note.
(1) The tighter limit applies at the band edges.
(2) The limit of"*"marked band means the limitation decreases linearly with the logarithmofthe frequency in the range.

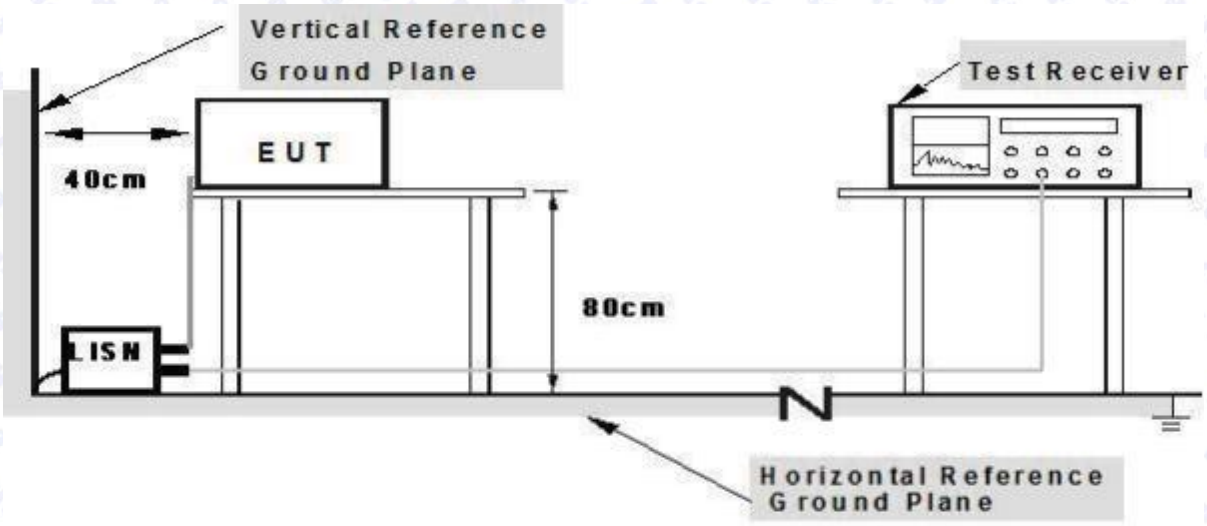
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.1.5 TEST RESULTS

Temperature:	26℃	Relative Humidity:	54%
Phase:	L/N	Test Mode:	N/A
Test Voltage:	250VAC		

Note: DC 6V test is not applicable in this test report.

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT (Below 1000MHz)

FREQUENCY (MHz)	Class A		Class B	
	At 10m	At 3m	At 10m	At 3m
	dBuV/m	dBuV/m	dBuV/m	dBuV/m
30 – 230	40	50	30	40
230 – 1000	47	57	37	47

3.2.2 LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class A (at 3m) dBuV/m		Class B (at 3m) dBuV/m	
	Peak	Avg	Peak	Avg
1000-3000	76	56	70	50
3000-6000	80	60	74	54

Notes:
(1) The limit for radiated test was performed according to as following:CISPR 32.
(2) The tighter limit applies at the band edges.
(3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.3 TEST PROCEDURE

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured, above 1G Average detector mode willbe instead.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP(AV) Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.4 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz

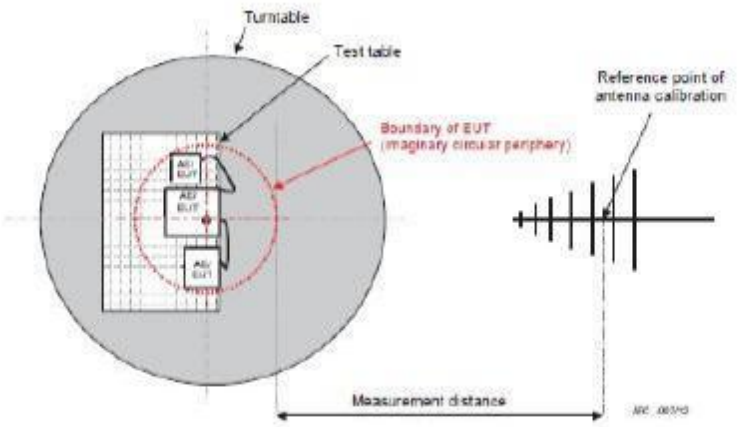


Figure C.1 – Measurement distance

(B) Radiated Emission Test Set-Up Frequency Above 1GHz

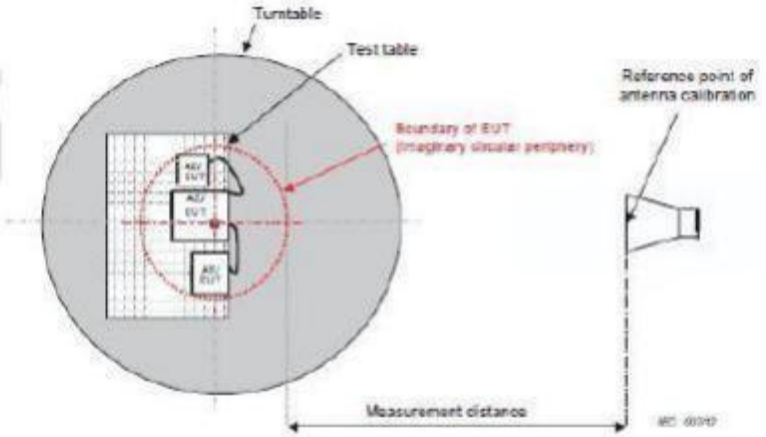


Figure C.1 – Measurement distance

3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.6 TEST RESULTS(30 - 1000 MHz)

Temperature:	25.7℃	Relative Humidity:	63%
Phase:	Horizontal	Test Mode:	Mode 1
Test Voltage:	250VAC		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.3253	37.18	-20.10	17.08	40.00	-22.92	QP
2	68.6310	43.70	-24.14	19.56	40.00	-20.44	QP
3	102.7192	36.65	-18.96	17.69	40.00	-22.31	QP
4	150.0108	35.77	-17.97	17.80	40.00	-22.20	QP
5	316.5890	30.82	-14.28	16.54	47.00	-30.46	QP
6	408.9460	27.41	-11.08	16.33	47.00	-30.67	QP

Remark:
1. All readings are Quasi-Peak.
2. Margin = Result (Result =Reading + Factor)–Limit.
3. Factor= Cable Loss +Antenna Factor-Amplifier Gain

Temperature:	25.7℃	Relative Humidity:	63%
Phase:	Vertical	Test Mode:	Mode 1
Test Voltage:	250VAC		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.9940	35.92	-20.45	15.47	40.00	-24.53	QP
2	66.9670	43.76	-24.17	19.59	40.00	-20.41	QP
3	105.2718	35.57	-18.74	16.83	40.00	-23.17	QP
4	175.0367	35.72	-19.38	16.34	40.00	-23.66	QP
5	501.1790	32.50	-8.90	23.60	47.00	-23.40	QP
6	896.9965	28.36	-2.30	26.06	47.00	-20.94	QP

Remark:
1. All readings are Quasi-Peak.
2. Margin = Result (Result =Reading + Factor)–Limit.
3. Factor= Cable Loss +Antenna Factor-Amplifier Gain

3.2.7 TEST RESULT (1000 - 6000 MHz)

Temperature:	24 ℃	Relative Humidity:	54 %
Test Mode:	Mode 1	Test Power:	250VAC

Freq. (MHz)	Reading (dBuV)	Corr.Factor (dB)	Measured (dBuV/m)	Limits (dBuV/m)	Margins (dBuV/m)	Ant. H/V	Mark
2765.05	67.92	-11.02	56.90	70.00	-13.10	V	PK
2765.05	49.00	-11.02	37.97	50.00	-12.03	V	AVG
3702.46	74.57	-15.36	59.22	74.00	-14.78	V	PK
3702.46	53.33	-15.36	37.97	54.00	-16.03	V	AVG
2765.05	65.34	-11.02	54.31	70.00	-15.69	H	PK
2765.05	49.62	-11.02	38.59	50.00	-11.41	H	AVG
3702.46	74.69	-15.36	59.34	74.00	-14.66	H	PK
3702.46	53.44	-15.36	38.09	54.00	-15.91	H	AVG

Remark:
Absolute Level= Reading Level+ Factor, Margin= Absolute Level - Limit

4. EMC IMMUNITY TEST
4.1 GENERAL PERFORMANCE CRITERIA

4.1.1 PERFORMANCE CRITERIA (Bluetooth)

Accordin to **Draft ETSI EN 301 489-17** standard, the eneral erformance criteria as followin :

Criteria	During the test	After the 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 any 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 FOR 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. TeHTC 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 FOR 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 FOR CT

The performance criteria A shall apply. TeHTC 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 FOR 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.

4.1.2 GENERAL PERFORMANCE CRITERIA TEST SETUP

The EUT tested system was configured as the statements of 2.2 Unless otherwise a special operating condition is specified in the follows during the testing.

4.2 ESD TESTING

4.2.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-2
Discharge Impedance:	330 ohm / 150 pF
Required Performance	B
Discharge Voltage:	Air Discharge: 2kV/4kV/8kV (Direct) Contact Discharge: 2kV/4kV (Direct/Indirect)
Polarity:	Positive & Negative
Number of Discharge:	Air Discharge: min. 20 times at each test point Contact Discharge: min. 200 times in total
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum

4.2.2 TEST PROCEDURE

The test generator necessary to perform direct and indirect application of discharges to the EUT in the following manner:

a. Contact discharge was applied to conductive surfaces and coupling planes of the EUT. During the test, it was performed with single discharges. For the single discharge time between successive single discharges was at least 1 second. The EUT shall be exposed to at least 200 discharges, 100 each at negative and positive polarity, at a minimum of four test points. One of the test points shall be subjected to at least 50 indirect discharges to the center of the front edge of the horizontal coupling plane. The remaining three test points shall each receive at least 50 direct contact discharges.

If no direct contact test points are available, then at least 200 indirect discharges shall be applied in the indirect mode. Test shall be performed at a maximum repetition rate of one discharge per second.

Vertical Coupling Plane (VCP):

The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane.

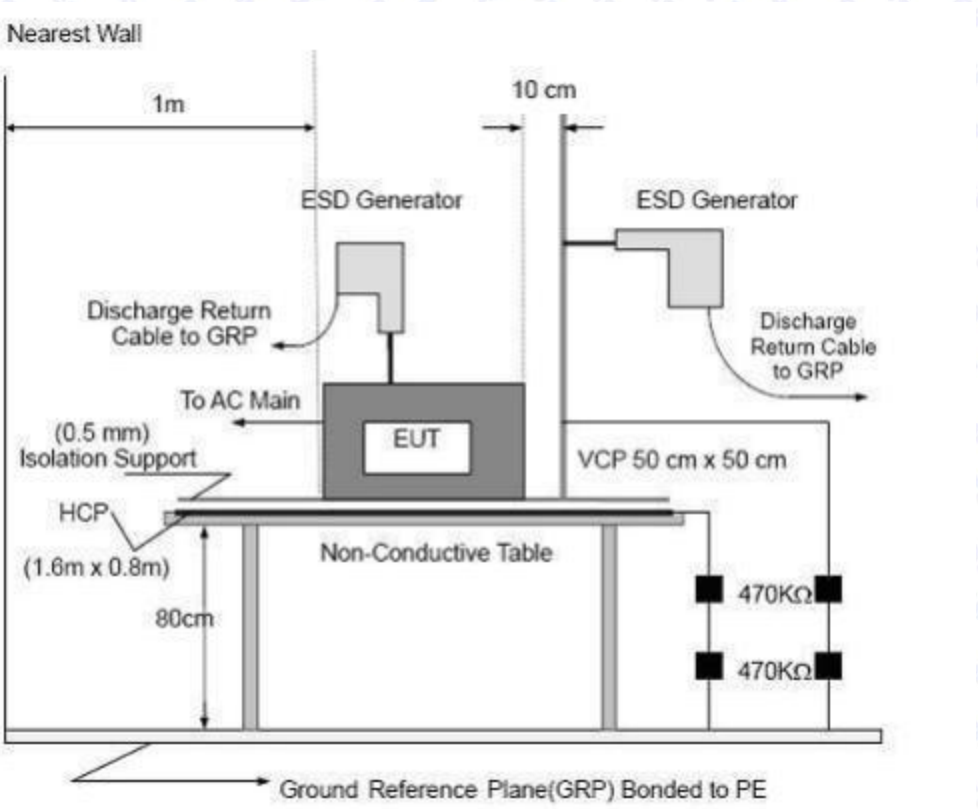
The four faces of the EUT will be performed with electrostatic discharge. Horizontal Coupling Plane (HCP):

The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane. The four faces of the EUT will be performed with electrostatic discharge.

b. Air discharges at insulation surfaces of the EUT.

It was at least ten single discharges with positive and negative at the same selected point.

4.2.3 TEST SETUP



Note:
TABLE-TOP EQUIPMENT
The configuration consisted of a wooden table 0.8 meters high standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum at least 0.25mm thick, and 2.5 meters square connected to the protective grounding system. A Horizontal Coupling Plane (1.6m x 0.8m) was placed on the table and attached to the GRP by means of a cable with 940k total impedance. The equipment under test, was installed in a representative system as described in section 7 of IEC /EN 61000-4-2, and its cables were placed on the HCP and isolated by an insulating support of 0.5mm thickness. A distance of1-meter minimum was provided between the EUT and the walls of the laboratory and any other metallic structure.
FLOOR-STANDING EQUIPMENT
The equipment under test was installed in a representative system as described in section 7 of IEC/EN 61000-4-2, and its cables were isolated from the Ground Reference Plane by an insulating support of0.1-meter thickness. The GRP consisted of a sheet of aluminum that is at least 0.25mm thick, and 2.5meters square connected to the protective grounding system and extended at least 0.5 meters from the EUT on all sides.

4.2.4 TEST RESULT

Temperature:	23.9℃	Relative Humidity:	48%
Pressure:	1010hPa	Test Voltage:	250VAC
Test Mode:	Mode 1		

BT TEST RESULT

Discharge Level	Polarity	Test Points	Contact Discharge	Air Discharge	Criterion	Test Result
4	+/-	VCP/HCP	NOTE	N/A	A	PASS
2,4,8	+/-	1-5	N/A	NOTE	A	PASS

Note: The EUT function was correct during the test. Red Dot —Air Discharged
Blue Dot —Contact Discharged

4.3 RS TESTING

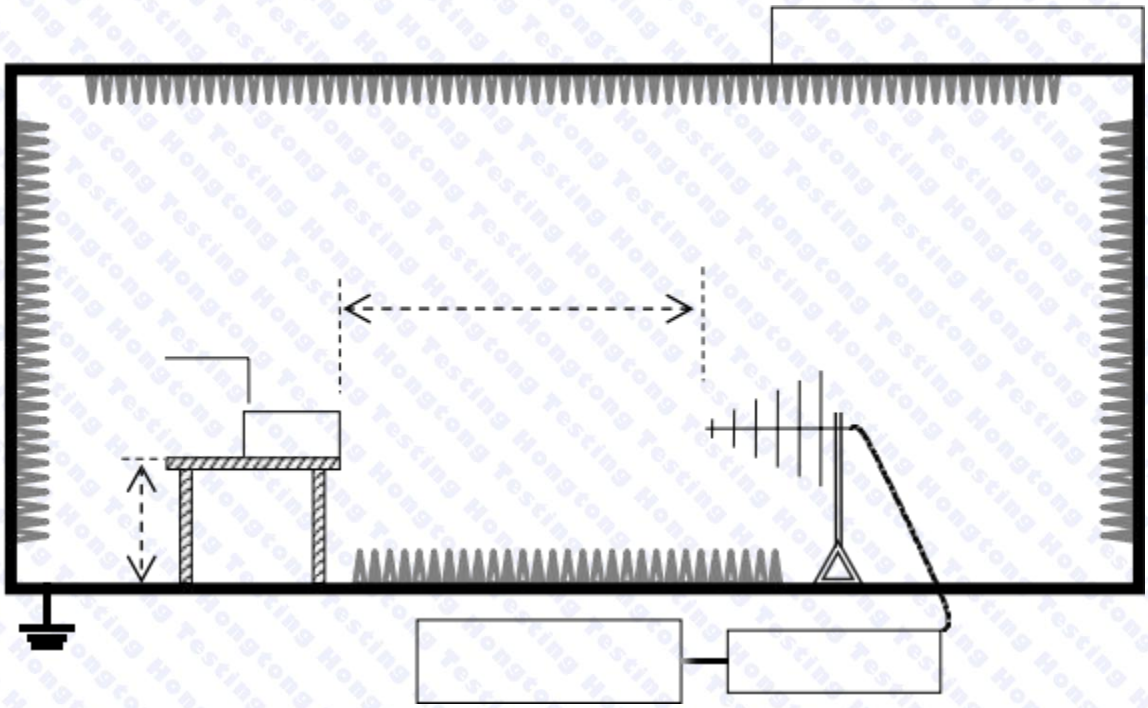
4.3.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-3
Required Performance	A
Frequency Range:	80 MHz - 6000 MHz
Field Strength:	3 V/m
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Polarity of Antenna:	Horizontal and Vertical
Test Distance:	3 m
Antenna Height:	1.5 m
Dwell Time:	at least 3 seconds

4.3.2 TEST PROCEDURE

The EUT and support equipment, which are placed on a table that is 0.8 meter above ground and the testing was performed in a fully-anechoic chamber.
The testing distance from antenna to the EUT was 3 meters. The other condition as following manner:
a. The frequency range is swept from 80 MHz to 6000 MHz with the signal 80%amplitude modulated with a 1kHz sine wave. The rate of sweep did not exceed 1.5x 10 -3 decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
b. The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
c. The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

4.3.3 TEST SETUP



Note:
TABLE-TOP EQUIPMENT
The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive table 0.8 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.
FLOOR-STANDING EQUIPMENT
The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive wood support 0.1 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

4.3.4 TEST RESULTS

Temperature:	24.9℃	Relative Humidity:	50%
Test Voltage:	250VAC	Test Mode:	Mode 1

BT TEST RESULTS

Frequency Range (MHz)	RF Field Position	R.F. Field Strength	Azimuth	Observation	Perform. Criteria	Results	Judgment
80~6000	H / V	3 V/m (rms) AM Modulated 1000Hz, 80%	Front	**CT,CR**	**A**	**A**	**PASS**
			Rear				
			Left				
			Right				

Note: “A” stand for, during test, operate as intended no loss of function, no degradation of performance, no unintentional transmissions and after test, no degradation of performance, no loss of function, no loss of stored data or user programmable functions.

Note:
1) N/A - denotes test is not applicable in this test report.
2) Criteria A: There was no change operated with initial operating during the test.
3) Criteria B: The EUT function loss during the test, but self-recoverable after the test.
4) Criteria C: The system shutdown during the test.

※※※※※END OF THE REPORT※※※※※

1. Test Summary

Standard Clause	Description of test	Test Applicability	Result
4.3.2.2	RF Output power(Conducted)	Applicable	Pass
	RF Output power(Radiated) [1]	Not Applicable	N/A
4.3.2.3	Power Spectral Density(Conducted)	Applicable	Pass
	Power Spectral Density(Radiated) [1]	Not Applicable	N/A
4.3.2.4	Duty Cycle,Tx-sequence,Tx-gap(Conducted)	Applicable	Pass
	Duty Cycle,Tx-sequence,Tx-gap(Radiated) [1]	Not Applicable	N/A
4.3.2.5	Medium Utilization factor(Conducted)	Applicable	Pass
	Medium Utilization factor(Radiated) [1]	Not Applicable	N/A
4.3.2.6	Adaptivity[2]	Not Applicable	N/A
4.3.2.7	Occupied Channel Bandwidth(Conducted)	Applicable	Pass
	Occupied Channel Bandwidth(Radiated) [1]	Not Applicable	N/A
4.3.2.8	Transmitter unwanted emissions in the out-of-band domain (Conducted)	Applicable	Pass
	Transmitter unwanted emissions in the out-of-band domain (Radiated) [1]	Not Applicable	N/A
4.3.2.9	Transmitter unwanted emissions in the spurious domain (Conducted)	Applicable	Pass
	Transmitter unwanted emissions in the spurious domain (Radiated)	Applicable	Pass
4.3.2.10	Receiver Spurious Emissions(Conducted)	Applicable	Pass
	Receiver Spurious Emissions(Radiated)	Applicable	Pass
4.3.2.11	Receiver Blocking[2]	Not Applicable	N/A
4.3.2.12	Geo-location capability[3]	Not Applicable	N/A

Note 1: The item shall only be used for integral antenna equipment that does not have a temporary antenna connector provided. But EUT has a temporary antenna connector, these standard clauses don't apply to the EUT.(N/A)

Note 2: The item does not apply to non-adaptive equipment. And EUT is the non-adaptive equipment. So these standard clauses don't apply to the EUT. (N/A)

Note 4: The item only applies to equipment with geo-location capability. EUT is not with geo-location capability. So this standard clause doesn't apply to EUT. (N/A)

2. General Information

2.1. EUT Description

Product Name	: Smart Energy Meter
Trade Name	: /
Model No.	: N90,N60,N30,N20,N10,M16v2,M1,MB
Type of Modulation	: Modbus
Antenna Type	: ***
oldered on PCB	
Frequency Range	: 2.4G
Channel Separation	: 1MHz
Channel Number	: 1
Antenna Gain	: -5 dBi

2.2. Operational Description

The information contained within this report is intended to show verification of compliance of the EUT to the requirements of ETSI EN 300328 **Electromagnetic compatibility and Radio spectrum Matters (ERM);Wideband transmission systems;Data transmission equipment operating in the 2,1 GHz ISM band and using wide band modulation techniques;Harmonized EN covering the essential requirements of article 3.2 of the RED Directive**.

2.3. Test System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model	Serial No.	Due Date
1	PXA Signal Analyzer	Aglient	N9030A	MY54170284	2025.09.23
2	Shielding Room	ChengYu	5×4×3(m)	CR	2025.09.23
3	Spectrum Analyzer	R&S	FSU26	200880	2025.09.23
4	3m Semi-anechoic Chamber	ChengYu	9.2×6.25×6.15(m)	SAR	2025.09.23
5	BroadBand Log Antenna	Schwarzbeck	VULB 9163	9163-561	2025.09.23
6	Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	9120D-1033	2025.09.23

2.4. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been calculated in accordance with TR 100 028-1.

This uncertainty represents an expanded uncertainty expressed at approximately the 95%

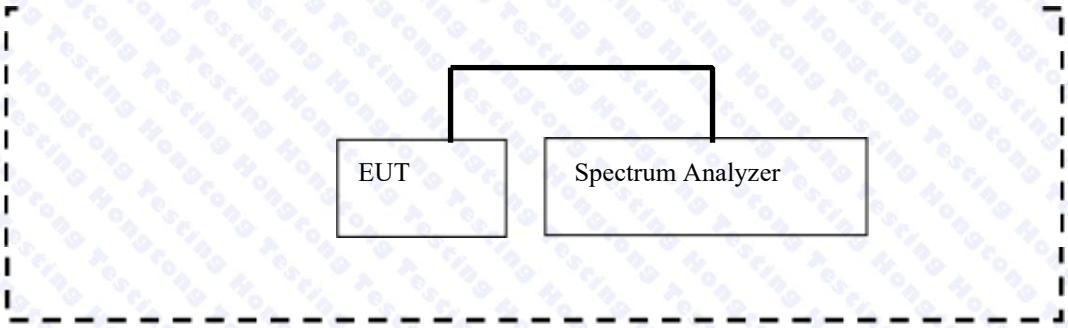
confidence level using a coverage factor of k=2.

This lab's measurement uncertainty ULab, is low than Table 7 : Maximum measurement uncertainty of ETSI EN 300 328, therefore compliance is deemed to occur if no measured disturbance exceeds the disturbance limit.

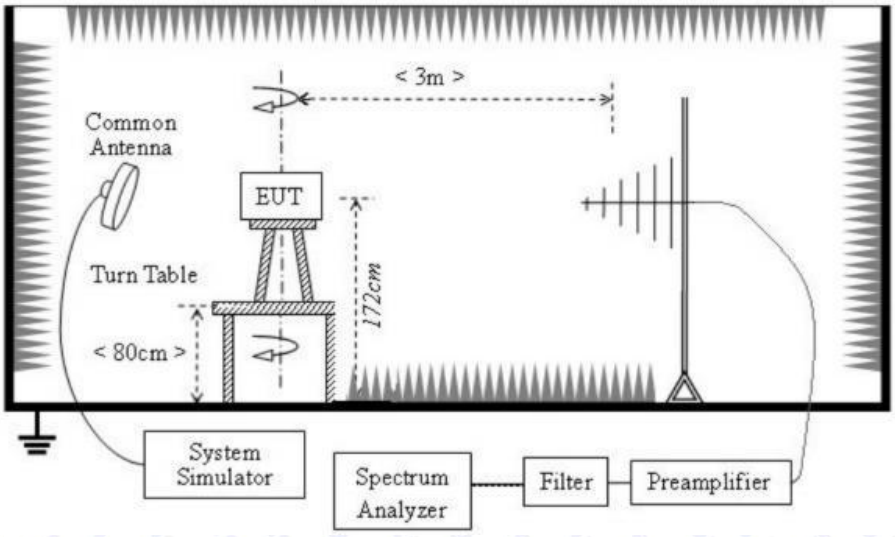
Radio frequency	$\pm 1.0 \times 10^{-7}$
Total RF power, conducted	±0.48dB
RF power density, conducted	±0.48dB
Humidity	±3%
Temperature	±2.0 °C
DC and low frequency voltages	±0.04%

2.5. Configuration of tested System

(1) Configuration of Conducted measurement



(2) Configuration of Radiated measurement



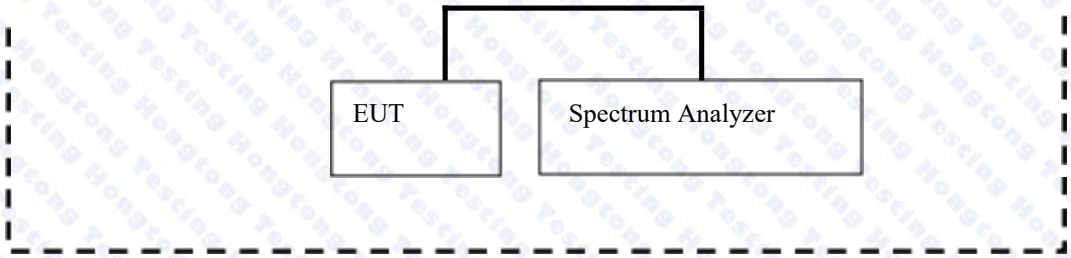
3. RF Output Power(Conducted)

3.1. Test Equipment List

The following test equipment are used during testing the RF Output Power:

Item	Instrument	Manufacturer	Model/Serial No.	Due Date
1	PXA Signal Analyzer	Aglient	N9030A/ MY54170284	2025.09.23

3.2. Test Setup



3.3. Limits

The maximum RF output power for non-adaptive Frequency Hopping equipment shall be declared by the supplier. The supplier declared that the maximum RF output power was 0dBm .

3.4. Test Procedure

Use the following spectrum analyzer setting:

CH1: Center Frequency
2401MHz Span : 1.5 MHz
Resolution Bandwidth (RBW)
: Auto Video Bandwidth
(VBW) : ≥RBW
Sweep : Auto
Trace : Max Hold
Waiting for the trace stabilizing and save the result image.

3.5. EUT Operation

See chapter 2.2 of this test report.

3.6. Test Specification

According to ETSI EN 300 328 V2.2.2 (2019-07) 4.3.2.2 RF output power.

3.7. Test Result

$$p = A + G + Y + c$$

P is the RF output Power; A is the measured power got from the PXA; G is the appliable antenna assemble gain in dBi; Y is the additional beamforming gain; C is the cable loss in dB.

Frequency Point(MHz)	A(dBm)	G(dBi)	Y(dBm)	C(dB)	P(dBm)	Test Result
2401(CH1)	-10.02	-5	0	0.69	-14.33	Pass

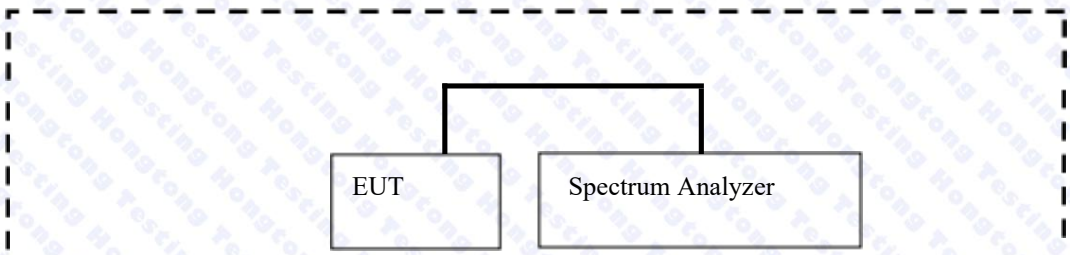
4. Power Spectral Density(Conducted)

4.1. Test Equipment List

The following test equipment are used during testing the Power Spectral Density:

Item	Instrument	Manufacturer	Model/Serial No.	Due Date
1	PXA Signal Analyzer	Aglient	N9030A/ MY54170284	2025.09.23

4.2. Test Setup



4.3. Limits

For equipment using wide band modulations other than FHSS, the maximum Power Spectral Density is limited to 10 dBm/MHz.

4.4. Test Procedure

The EUT is in TX mode.Connect the EUT to PXAand test the mouse of CH1.Use the following spectrum analyzer
setting: CH1: Center Frequency
2401MHz

Span : 1.5 MHz
Resolution Bandwidth (RBW) : Auto Video Bandwidth (VBW) : ≥RBW
Sweep : Auto
Trace : Max Hold
Waiting for the trace stabilizing and save the result image.

4.5. EUT Operation

See chapter 2.2 of this test report.

4.6. Test Specification

According to ETSI ETSI EN 300 328 V2.2.2 (2019-07) 4.3.2.3 Power Spectral Density.

4.7. Test Result

$$psd = A + c$$

PSD is the Power Spectral Density; A is the measured power spectral density in dBm; C is the cable loss in dB.

Frequency Point(MHz)	A(dBm)	C(dB)	PSD(dBm)	Test Result
2401(CH1)	-8.727	0.69	-8.037	Pass

5. Duty Cycle,Tx-sequence,Tx-gap(Conducted)

5.1. Test Equipment List

The following test equipment are used during testing the Duty Cycle,Tx-sequence and Tx-gap:

Item	Instrument	Manufacturer	Model/Serial No.	Due Date
1	PXA Signal Analyzer	Aglient	N9030A/ MY54170284	2025.09.23

5.2. Test Setup

5.3. Limits

The Duty Cycle shall be equal to or less than the maximum value declared by the supplier. The supplier declared that the maximum value of Duty Cycle is 10%.The Tx-sequence time shall be equal to or less than 10 ms. The minimum Tx-gap time following a Tx-sequence shall be equal to the duration of that proceeding Tx-sequence with a minimum of 3.5 ms.

5.4. Test Procedure

The EUT is in TX mode.Connect the EUT to the PXA and test the mouse of CH1 repectively.Use the following spectrum analyzer

setting: CH1: Center Frequency 2401MHz

Span : 0 Hz

Resolution Bandwidth (RBW) :

1.0 MHz Video Bandwidth (VBW)

: 3.0 MHz

Sweep Points:

>8350 Trace:

Max Hold

Waiting for the trace stabilizing and save the result image.

5.5. EUT Operation

See chapter 2.2 of this test report.

5.6. Test Specification

According to ETSI ETSI EN 300 328 V2.2.2 (2019-07) 4.3.2.4 Duty Cycle, Tx-sequence, Tx-gap.

5.7. Test Result

Frequency Point(MHz)	Duty Cycle	Tx-sequence(ms)	Tx-gap(ms)	Test Result
2400(CH1)	5.38%	1.09	21.14	Pass

CH1's duty cycle,Tx-sequence and Tx-gap are shown.

$$Duty\text{-}cycle=\frac{(30.06-28.97)ms\times 5}{101.3ms}\times 100\%=5.38\%$$

$TX\text{-}sequence=30.06ms-28.97ms=1.09ms$ $TX\text{-}gap=51.2ms-30.06ms=21.14ms$

6. Medium Utilization factor(Conducted)

6.1. Test Equipment List

The following test equipments are used during testing the Medium Utilization (MU) factor:

Item	Instrument	Manufacturer	Type No./Serial No.	Due Date
1	PXA Signal Analyzer	Aglient	N9030A/ MY54170284	2025.09.23

6.2. Test Setup

6.3. Limits

For non-adaptive equipment using wide band modulations other than FHSS, the maximum Medium Utilization factor shall be less than 10 %.

6.4. Test Procedure

The EUT is in TX mode. Use the following spectrum analyzer setting: CH1: Center Frequency 2401MHz

Span: 1.5 MHz
Resolution Bandwidth (RBW): Auto Video Bandwidth (VBW): ≥RBW
Sweep : Auto
Trace: Max Hold
Waiting for the trace stabilizing and save the result image.

6.5. EUT Operation

See chapter 2.2 of this test report.

6.6. Test Specification

According to ETSI ETSI EN 300 328 V2.2.2 (2019-07) 4.3.2.5 Medium Utilization (MU) factor.

6.7. Test Result

$$MU = (P / 100mw) \times DC$$

MU is Medium Utilization.P is the RF output power in mW tested in chapter 3.7 of this test report.DC is the Duty Cycle tested in chapter 5.7 of this test report.

Frequency Point(MHz)	P(dBm)	P(mw)	Duty Cycle(%)	MU(%)	Test Result
2401(CH1)	-14.33	0.037	5.38	0.20	Pass

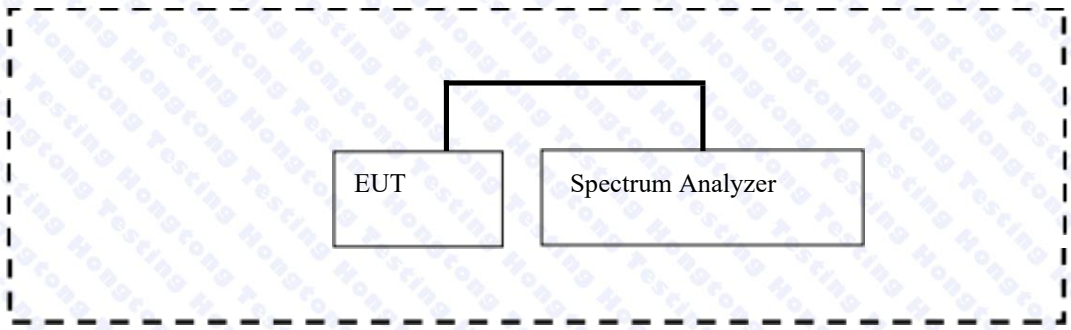
7. Occupied Channel Bandwidth(Conducted)

7.1. Test Equipment List

The following test equipment are used during testing the Occupied Channel Bandwidth:

Item	Instrument	Manufacturer	Model/Serial No.	Due Date
1	PXA Signal Analyzer	Aglient	N9030A/ MY54170284	2025.09.23

7.2. Test Setup



7.3. Limits

This radio equipment is capable of operating in the band 2.4 GHz.

7.4. Test Procedure

The EUT is in TX mode. Use the following spectrum analyzer settings:

Start Frequency:2.4 GHz Stop Frequency:2.46GHz
Resolution Bandwidth (RBW) :620 KHz Video Bandwidth (VBW) :1.8 MHz
Sweep time : 1ms
Trace : Max Hold
Waiting for the trace stabilizing and save the result image.

7.5. EUT Operation

See chapter 2.2 of this test report.

7.6. Test Specification

According to ETSI ETSI EN 300 328 V2.2.2 (2019-07) 4.3.2.7 Occupied Channel Bandwidth.

7.7. Test Result

Occupied Channel Bandwidth is from 2.401GHz, which are shown in Fig.16. This result is less than limit,Pass.

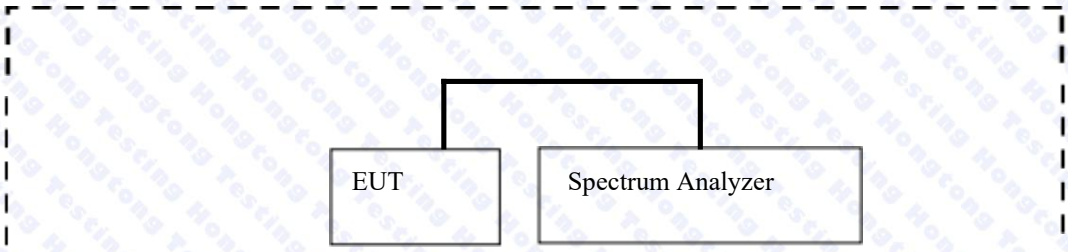
8. Transmitter unwanted emissions in the out of band domain(Conducted)

8.1. Test Equipment List

The following test equipment are used during testing the Transmitter unwanted emissions in the out-of-band domain:

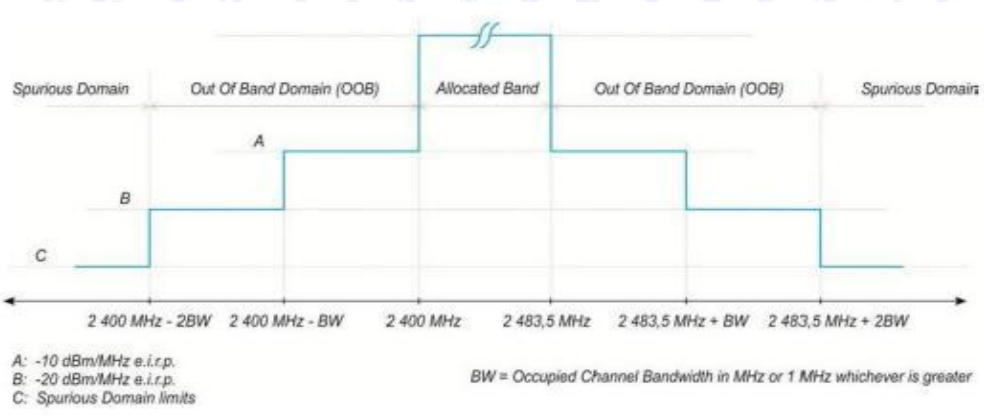
Item	Instrument	Manufacturer	Type No./Serial No.	Due Date
1	PXA Signal Analyzer	Aglient	N9030A/ MY54170284	2025.09.23

8.2. Test Setup



8.3. Limits

The transmitter unwanted emissions in the out-of-band domain but outside the allocated band, shall not exceed the values provided by the mask in t Fig.18.



8.4. Test Procedure

The EUT is in TX mode. Use the following spectrum analyzer settings:
Start
Frequency:2.4835GHz/2.4885GHz/2.395GHz/2.39GHz
Stop
Frequency:2.4885GHz/2.4935GHz/2.4GHz/2.395GHz
Resolution Bandwidth (RBW)
:1.0 MHz Video Bandwidth (VBW)
:3.0 MHz
Sweep time : Auto
Sweep
points:40001
Trace : Max
Hold
Waiting for the trace stabilizing.

8.5. EUT Operation

See chapter 2.2 of this test report.

8.6. Test Specification

According to ETSI ETSI EN 300 328 V2.2.2 (2019-07) 4.3.2.8 Transmitter unwanted emissions in the out-of-band domain.

8.7. Test Result

Frequency Point(MHz)	Test Item Domain	Test Value	Test Result
2401(CH 1)	2483.5MHz to 2488.5MHz	< -10dBm	Pass
	2488.5MHz to 2493.5MHz	< -20dBm	Pass
	2395MHz to 2400MHz	< -10dBm	Pass
	2390MHz to 2395MHz	< -20dBm	Pass
2480(CH 79)	2483.5MHz to 2488.5MHz	< -10dBm	Pass
	2488.5MHz to 2493.5MHz	< -20dBm	Pass
	2395MHz to 2400MHz	< -10dBm	Pass
	2390MHz to 2395MHz	< -20dBm	Pass

9. Transmitter unwanted emissions in the spurious domain(Conducted)

9.1. Test Equipment List

The following test equipment are used during testing the transmitter unwanted emissions in the spurious domain:

Item	Instrument	Manufacturer	Model/Serial No.	Due Date
1	PXA Signal Analyzer	Aglient	N9030A/ MY54170284	2025.09.23

9.2. Test Setup

9.3. Limits

The transmitter unwanted emissions in the spurious domain shall not exceed the values given in Tab.1.

Tab.1

Frequency range	Maximum power	Bandwidth
30MHz to 47MHz	-36dBm	100KHz
47MHz to 74MHz	-54dBm	100KHz
74MHz to87.5MHz	-36dBm	100KHz
87.5MHz to 118MHz	-54dBm	100KHz
118MHz to 174MHz	-36dBm	100KHz
174MHz to 230MHz	-54dBm	100KHz
230MHz to 470MHz	-36dBm	100KHz
470MHz to 862MHz	-54dBm	100KHz
862MHz to 1GHz	-36dBm	100KHz
1GHz to 12.75GHz	-30dBm	1MHz

9.4. Test Procedure

The EUT is in TX mode. Use the following spectrum analyzer setting: Frequency Range:30MHz-1GHz/1GHz-12.75GHz
Resolution Bandwidth (RBW) :100KHz(<1GHz)/1.0 MHz(>1GHz) Video Bandwidth (VBW) :300KHz(<1GHz)/3.0 MHz(>1GHz)
Sweep time : Auto
Sweep points:40001
Trace : Max Hold
Waiting for the trace stabilizing and save the result image.

9.5. EUT Operation

See chapter 2.2 of this test report.

9.6. Test Specification

According to ETSI ETSI EN 300 328 V2.2.2 (2019-07) 4.3.2.9 Transmitter unwanted emissions in the spurious domain.

9.7. Test Result

Channel	Test Item Domain	Test Result
CH1	30MHz to 1GHz	Pass
	1GHz to 12.75GHz	Pass

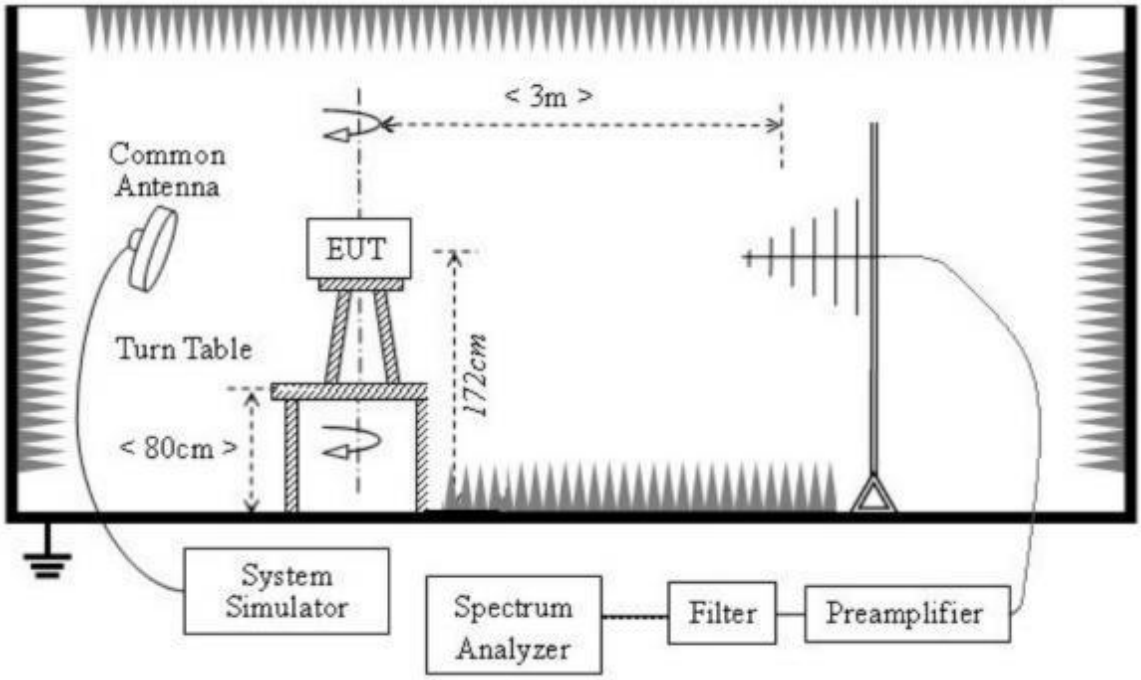
10. Transmitter unwanted emissions in the spurious domain(Radiated)

10.1. Test Equipment List

The following test equipments are used during testing the Transmitter unwanted emissions in the spurious domain:

Item	Instrument	Manufacturer	Type No./Serial No.	Due Date
1	Shielding Room	ChengYu	5×4×3(m)/ CR	2025.09.23
2	Spectrum Analyzer	R&S	FSU26/200880	2025.09.23
3	3m Semi-anechoic Chamber	ChengYu	9.2×6.25×6.15(m)/ SAR	2025.09.23
4	BroadBand Log Antenna	Schwarzbeck	VULB 9163/9163-561	2025.09.23
5	Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D/9120D-1033	2025.09.23

10.2. Test Setup



10.3. Limits

The transmitter unwanted emissions in the spurious domain shall not exceed the values given in Tab.2.

Tab.2

Frequency range	Maximum power	Bandwidth
30MHz to 47MHz	-36dBm	100KHz
47MHz to 74MHz	-54dBm	100KHz
74MHz to87.5MHz	-36dBm	100KHz
87.5MHz to 118MHz	-54dBm	100KHz
118MHz to 174MHz	-36dBm	100KHz
174MHz to 230MHz	-54dBm	100KHz
230MHz to 470MHz	-36dBm	100KHz
470MHz to 862MHz	-54dBm	100KHz
862MHz to 1GHz	-36dBm	100KHz
1GHz to 12.75GHz	-30dBm	1MHz

10.4. Test Procedure

The EUT is in TX mode. The Test is taken in a SAR following the guidance of EN 300328 v1.9.1 Annex C

10.5. EUT Operation

See chapter 2.2 of this test report

10.6. Test Specification

According to ETSI ETSI EN 300 328 V2.2.2 (2019-07) 4.3.2.9 Transmitter unwanted emissions in the spurious domain.

10.7. Test Result

Vertical Polarization:

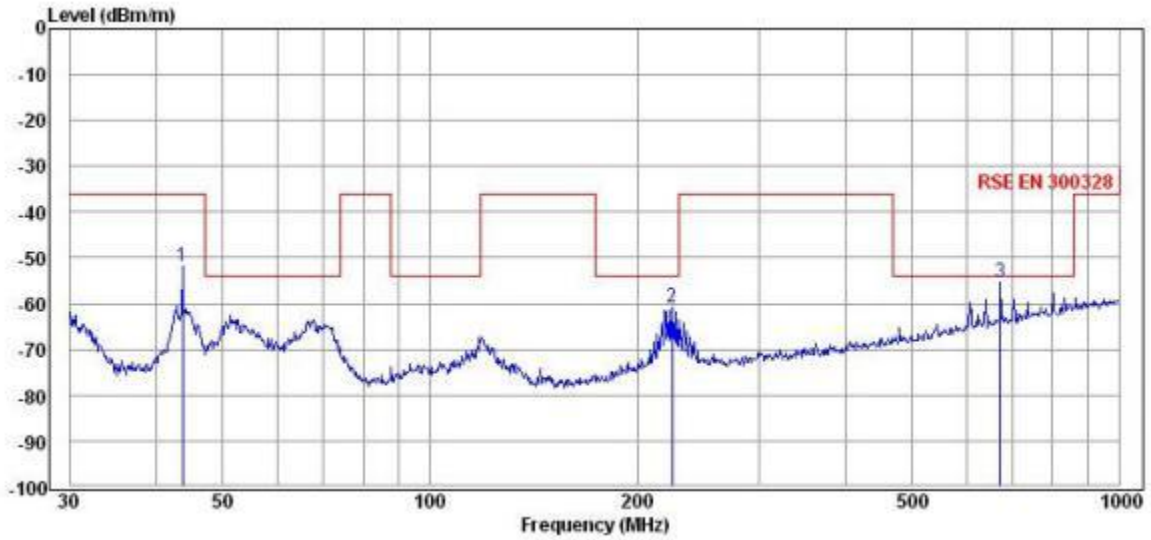


Fig.31

Freq	Reading	C.F	Result	Limit	Margin
MHz	dBm	dB	dBm/m	dBuV/m	dB
43.66	-80.51	28.78	-51.73	-36.00	15.73
224.52	-88.60	27.87	-60.73	-54.00	6.73
672.84	-92.89	37.50	-55.39	-54.00	1.39

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

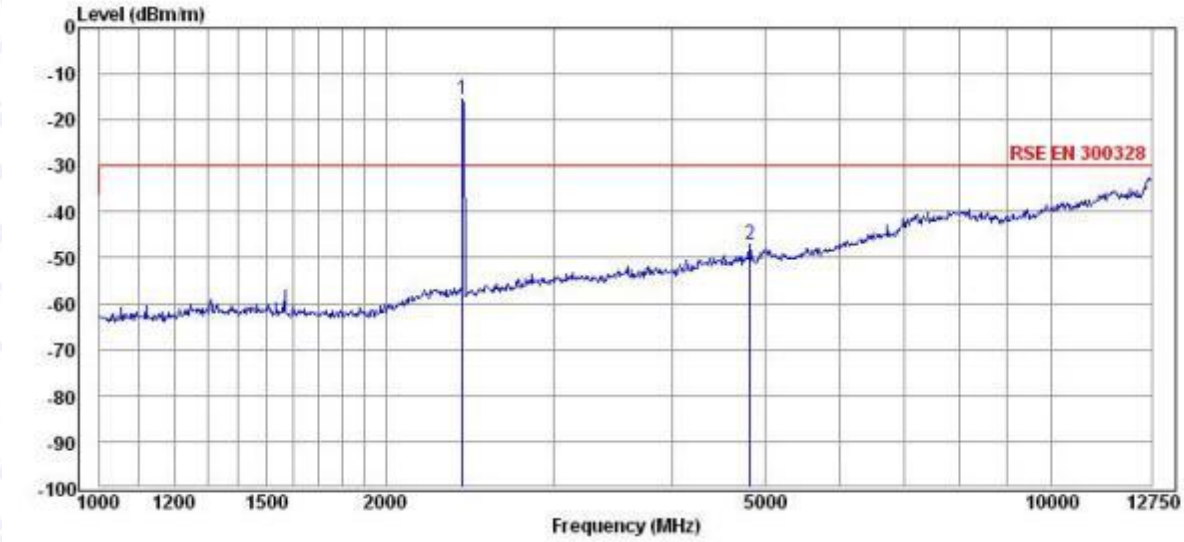


Fig.32

Freq MHz	Reading dBm	C.F dB	Result dBm	Limit dBuV	Margin dB	Detector
2406.58	-24.56	9.11	-15.45	-30.00	-14.55	Peak
4821.76	-65.39	18.34	-47.05	-30.00	17.05	Peak

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

Horizonal polarization:

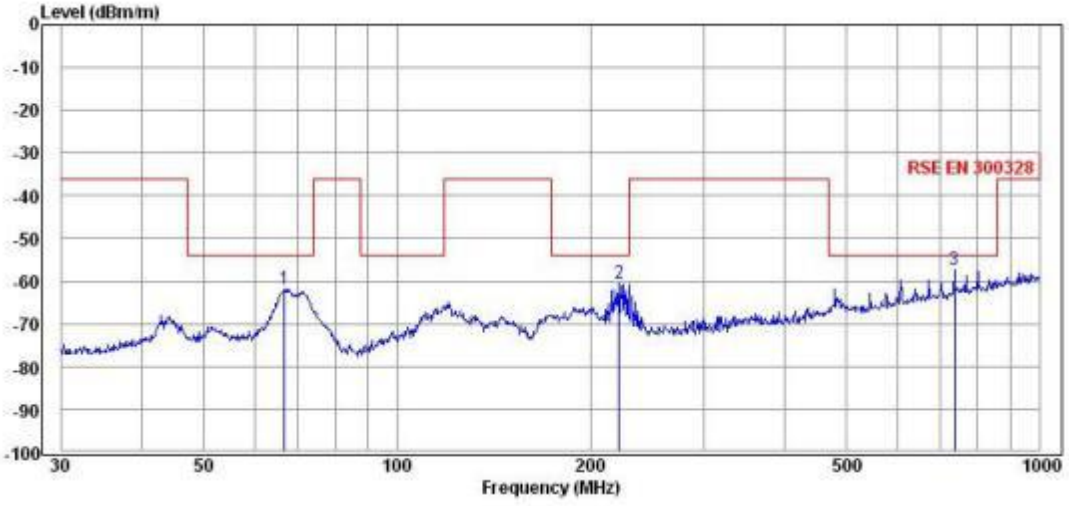


Fig.33

Freq MHz	Reading dBm	C.F dB	Result dBm/m	Limit dBuV/m	Margin dB
66.73	-87.69	25.76	-61.93	-54.00	7.93
221.39	-88.11	27.52	-60.59	-54.00	6.59
737.07	-95.78	38.56	-57.22	-54.00	

3.22 Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

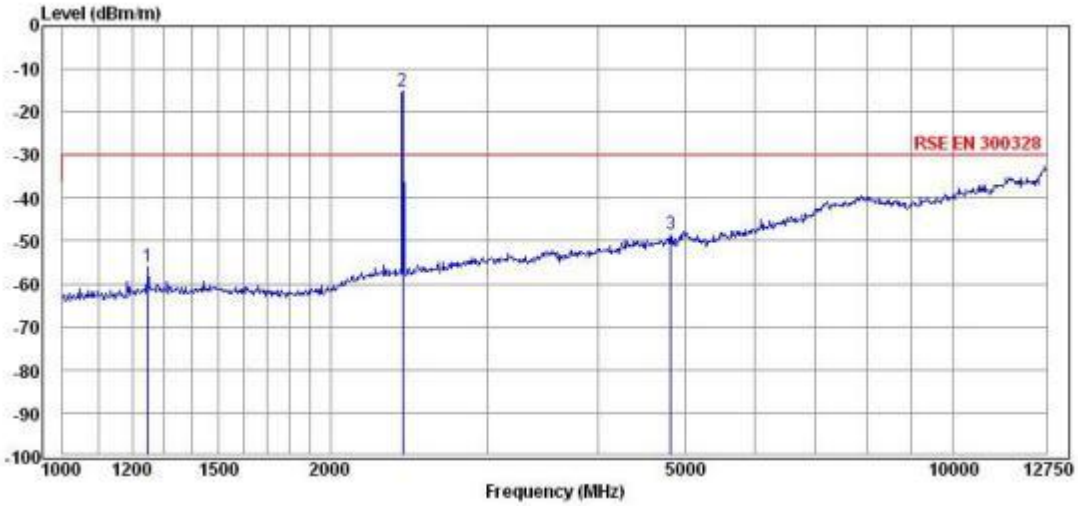


Fig.34

Freq	Reading	C.F	Result	Limit	Margin	Detector
MHz	dBm	dB	dBm	dBuV	dB	
1247.90	-60.36	4.22	-56.14	-30.00	26.14	Peak
2412.72	-24.32	9.13	-15.19	-30.00	-14.81	Peak
4821.76	-66.64	18.34	-48.30	-30.00	18.30	Peak

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

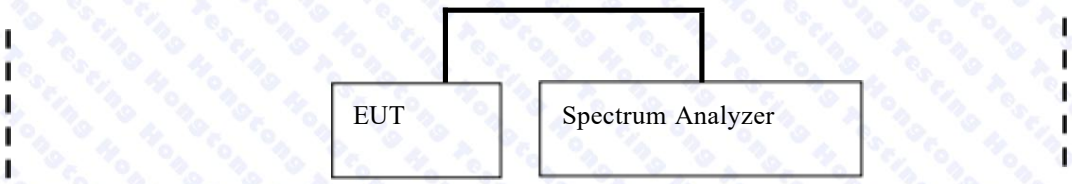
11. Receiver spurious emissions(Conducted)

11.1. Test Equipment List

The following test equipment are used during testing the receiver spurious emissions:

Item	Instrument	Manufacturer	Model/Serial No.	Due Date
1	PXA Signal Analyzer	Aglient	N9030A/ MY54170284	2025.09.23

11.2. Test Setup



11.3. Limits

The receiver spurious emissions shall not exceed the values given in Tab.3.

Tab.3

Frequency range	Maximum power	Bandwidth
30MHz to 1GHz	-57dBm	100KHz
1GHz to 12.75GHz	-47dBm	1MHz

11.4. Test Procedure

The EUT is in RX mode. Use the following spectrum analyzer setting: Frequency Range: 30MHz-1GHz/1GHz-12.75GHz
Resolution Bandwidth (RBW) : 100KHz(<1GHz)/1.0 MHz(>1GHz) Video Bandwidth (VBW) : 300KHz(<1GHz)/3.0 MHz(>1GHz)

Sweep time :
Auto Sweep
points: 40001
Trace : Max Hold
Waiting for the trace stabilizing and save the result image.

11.5. EUT Operation

See chapter 2.2 of this test report.

11.6. Test Specification

According to ETSI ETSI EN 300 328 V2.2.2 (2019-07) 4.3.2.10 Receiver spurious emissions.

11.7. Test Result

Channel	Test Item Domain	Test Result
CH1	30MHz to 1GHz	Pass
	1GHz to 12.75GHz	Pass

12. Receiver spurious emissions(Radiated)

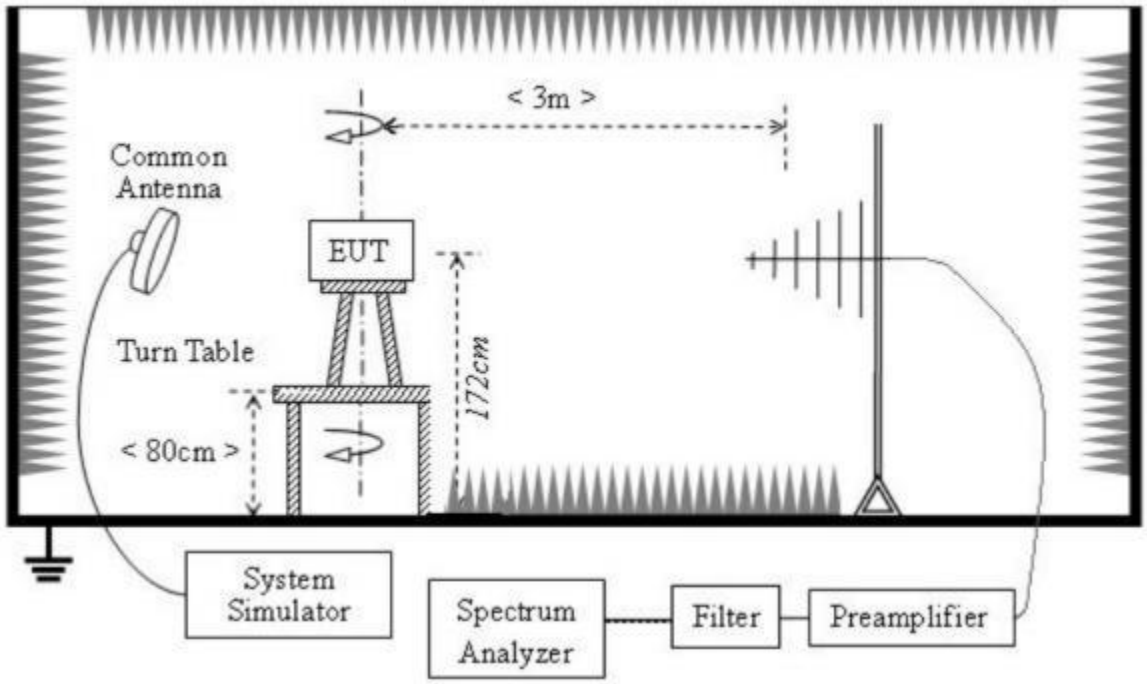
12.1. Test Equipment List

The following test equipments are used during testing the receiver spurious emissions:

Item	Instrument	Manufacturer	Model/Serial No.	Due Date
1	Shielding Room	ChengYu	5×4×3(m)/ CR	2025.09.23

2	Spectrum Analyzer	R&S	FSU26/200880	2025.09.23
3	3m Semi-anechoic Chamber	ChengYu	9.2×6.25×6.15(m)/ SAR	2025.09.23
4	BroadBand Log Antenna	Schwarzbeck	VULB 9163/9163-561	2025.09.23
5	Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D/9120D-1033	2025.09.23

12.2. Test Setup



12.3. Limits

The Receiver spurious emissions shall not exceed the values in Tab.4.

Tab.4

Frequency range	Maximum power	Bandwidth
30MHz to 1GHz	-57dBm	100KHz
1GHz to 12.75GHz	-47dBm	1MHz

12.4. Test Procedure

The EUT is in RX mode. The Test is taken in a SAR following the guidance of EN 300328 v1.9.1 Annex C.

12.5. EUT Operation

See chapter 2.2 of this test report.

12.6. Test Specification

According to ETSI ETSI EN 300 328 V2.2.2 (2019-07) Receiver spurious emissions.

12.7. Test Result

Vertical polarization:

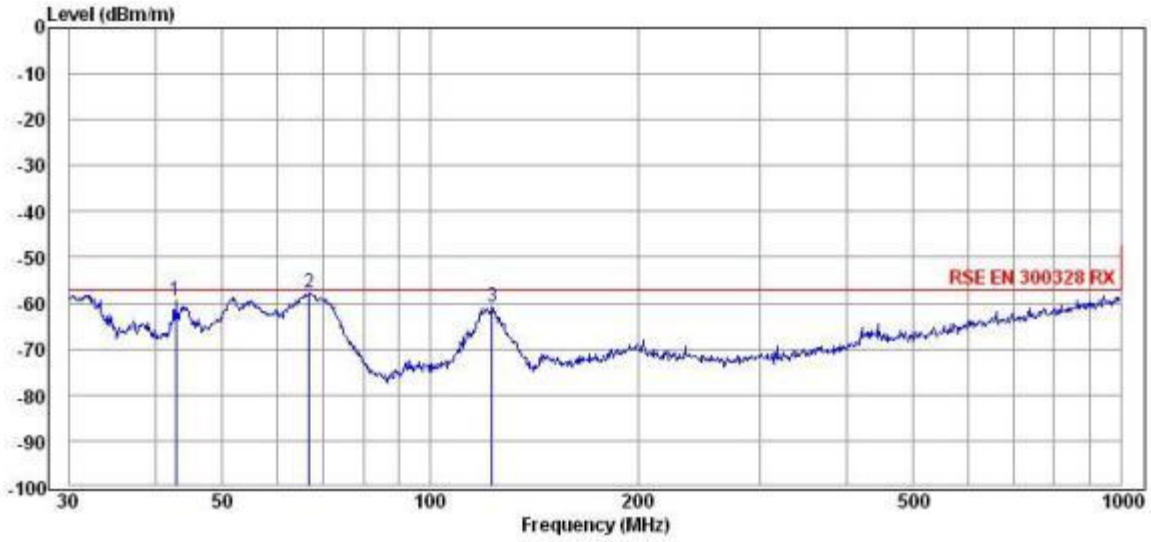


Fig.39

Freq	Reading	C.F	Result	Limit	Margin
MHz	dBm	dB	dBm/m	dBuV/m	dB
42.75	-88.36	28.77	-59.59	-57.00	2.59
66.73	-83.54	25.76	-57.78	-57.00	0.78
122.83	-86.04	25.21	-60.83	-57.00	3.83

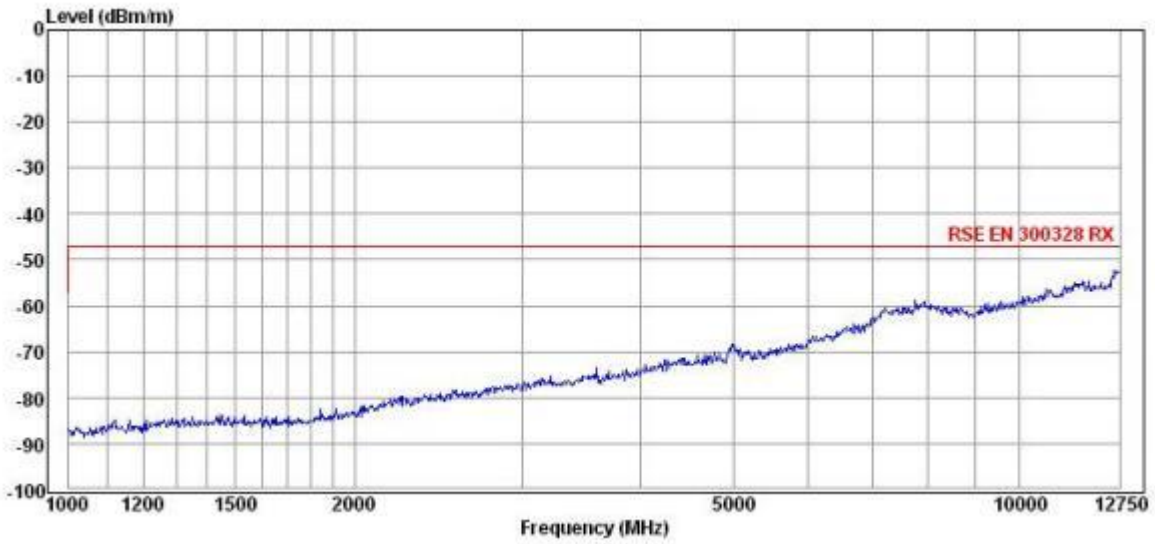


Fig.40

Horizontal polarization:

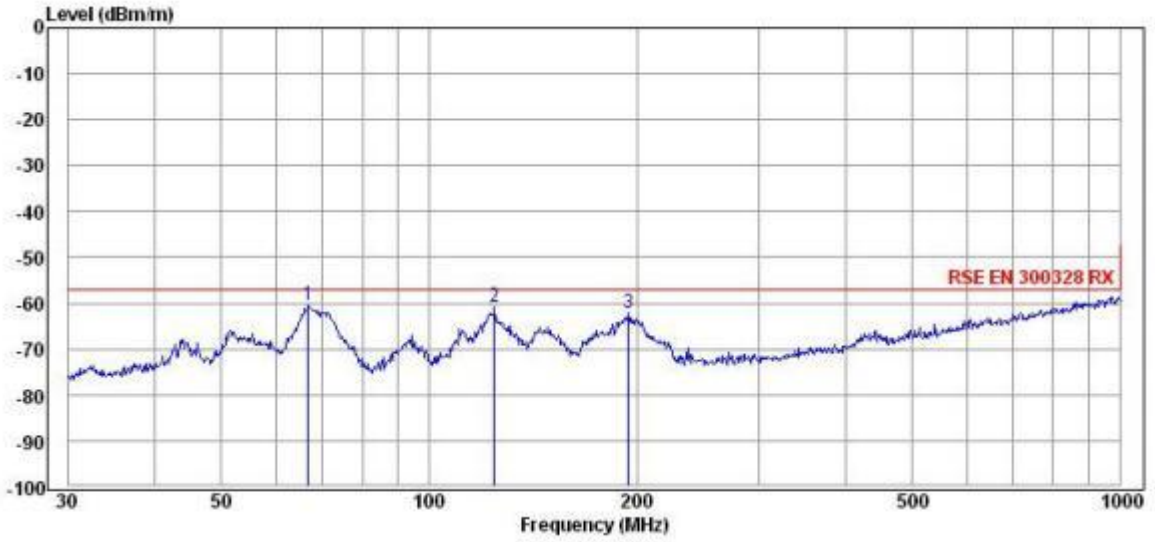
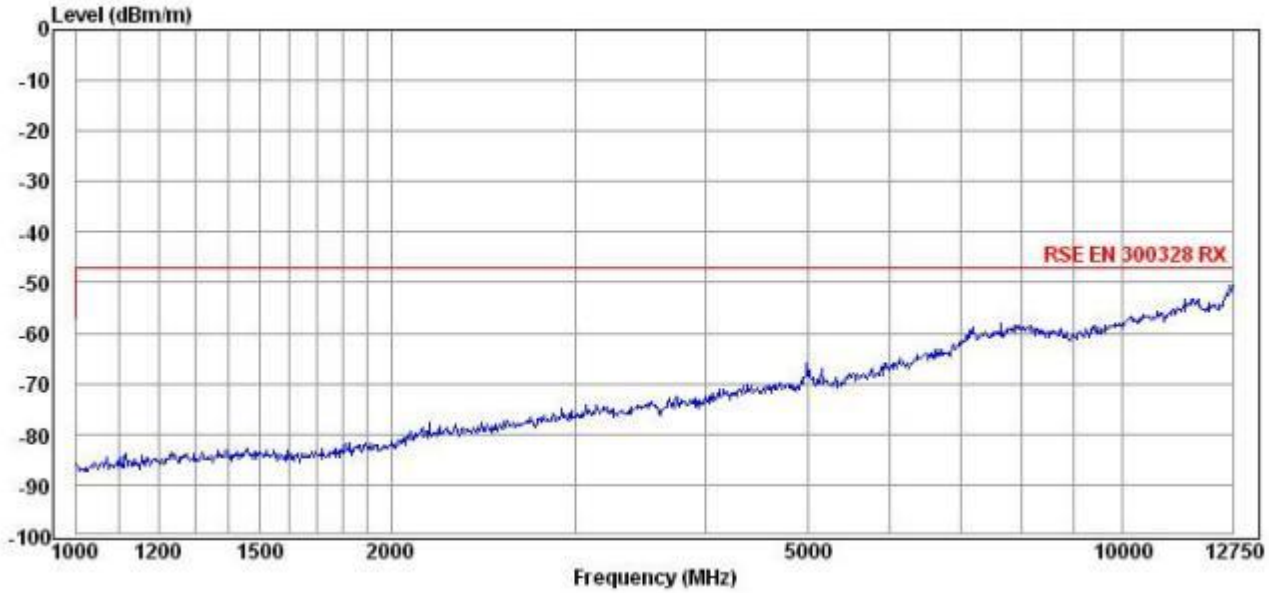


Fig.41

Freq	Reading	C.F	Result	Limit	Margin
MHz	dBm	dB	dBm/m	dBuV/m	dB
66.73	-86.38	25.76	-60.62	-57.00	3.62
124.13	-86.15	25.22	-60.93	-57.00	3.93
194.45	-89.36	27.09	-62.27	-57.00	5.27

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain



*****End of Report*****

Type of equipment, model: Smart Energy Meter
N90,N60,N30,N20,N10,M16v2,M1,MB

Details of:

View:

[X] general

[ ] front

[ ] rear

[ ] right

[ ] left

[ ] top

[ ] bottom

Details of:

View:

[X] general

[ ] front

[ ] rear

[ ] right

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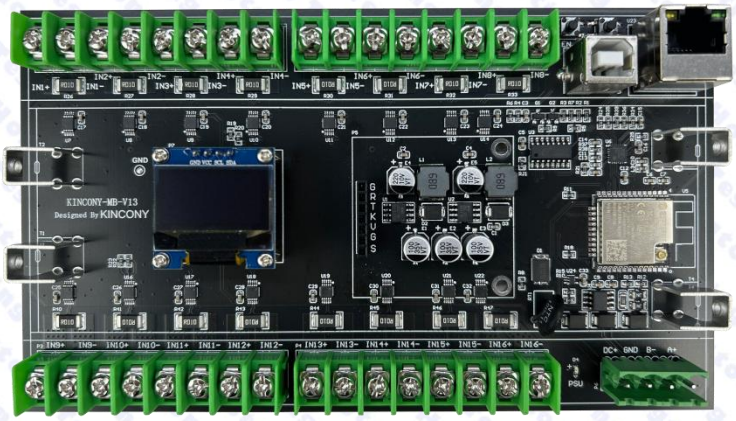

Details of:

View:

[X] general

[ ] front

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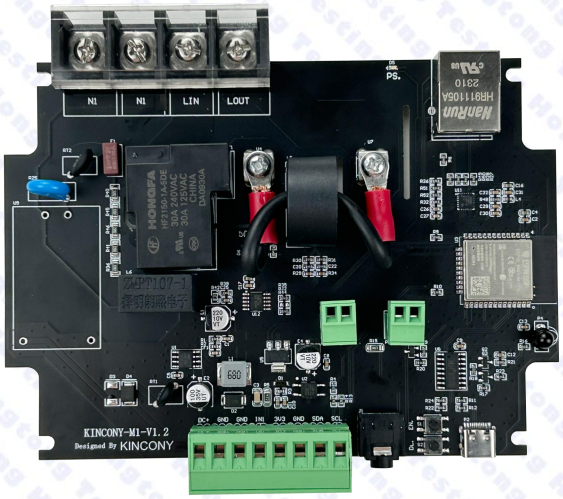

Details of:

View:

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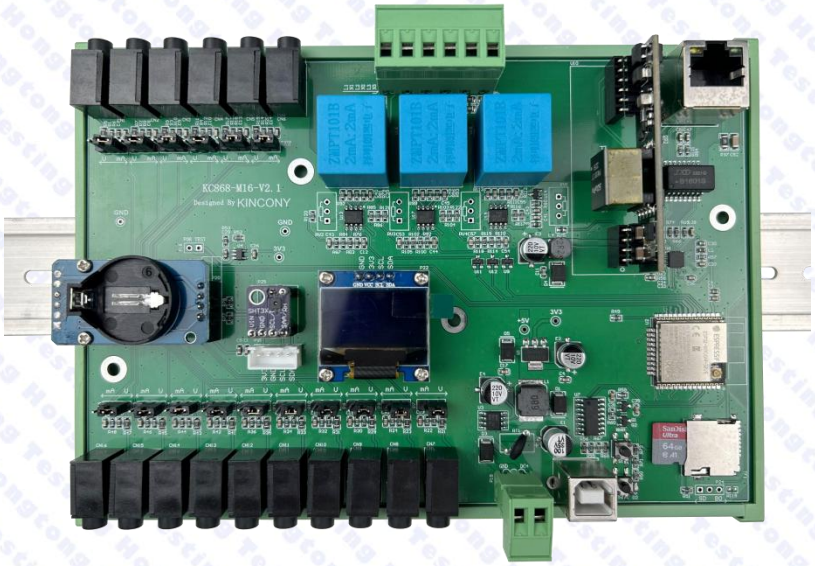

- End of Annex I -