ETSI EN 300 328 V2.2.2 (2019-07)

TEST REPORT

For

Xiamen Milesight IoT Co., Ltd.

4/F, NO. 63-2 Wanghai Road, 2nd Software Park, Xiamen, China

Tested Model: UG65-L00E-868M-EA
Multiple Models: UG65-L00E-868M, UG65-868M-EA, UG65-868M, UG65-L04EU-868M-EA, UG65-L04EU-868M

Report Type:	**Product Type:**
Original Report	LoRaWAN Gateway

Report Number: RXM200911053-22A

Report Date: 2021-02-03

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Note: BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	LoRaWAN Gateway
Tested Model	UG65-L00E-868M-EA
Multiple Models	UG65-L00E-868M, UG65-868M-EA, UG65-868M, UG65-L04EU-868M-EA, UG65-L04EU-868M
Model Differences	Refer to the DoS letter
Frequency Range	Wi-Fi: 2412~2472MHz/2422-2462MHz
Maximum EIRP	12.16dBm
Modulation Technique	Wi-Fi: DSSS, OFDM
Antenna Specification*	1.5dBi (provided by the manufacturer)
Voltage Range	DC12.0V from adapter or DC 48V from POE
Date of Test	2020-10-11 to 2021-02-03
Sample serial number	RXM200911053-RF-S1(Assigned by BACL, Shenzhen)
Received date	2020-09-11
Sample/EUT Status	Good condition
Adapter information	Model: OH-1015A1201000U3-VDE Input: AC 100-240V, 50/60Hz, 0.35A Output: DC 12.0V, 1.0 A, 12.0W

Objective

This test report is in accordance with ETSI EN 300 328 V2.2.2 (2019-07), Wideband transmission systems; Data transmission equipment operating in the 2.4 GHz band; Harmonised Standard for access to radio spectrum

The objective is to determine the compliance of EUT with ETSI EN 300 328 V2.2.2 (2019-07).

Test Methodology

All measurements contained in this report were conducted with ETSI EN 300 328 V2.2.2 (2019-07).

Measurement Uncertainty

Parameter	Flab
Occupied Channel Bandwidth	±5%
RF output power, conducted	±0.73dB
Unwanted Emission, conducted	±1.6dB
Below 1GHz emissions, radiated	±4.75dB
Above 1GHz emissions, radiated	±4.88dB
Temperature	±1℃
Supply voltages	±0.4%
Time	±1%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

For 802.11b, 802.11g and 802.11n-HT20 mode, 13 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	12	2467
6	2437	13	2472
7	2442	/	/

EUT was tested with Channel 1, 7 and 13.

For 802.11n-HT40 mode, 9 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2422	6	2447
2	2427	7	2452
3	2432	8	2457
4	2437	9	2462
5	2442	/	/

EUT was tested with Channel 1, 5 and 9.

EUT Exercise Software

“PUTTY”* exercise software was used. The software was provided by the manufacturer.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

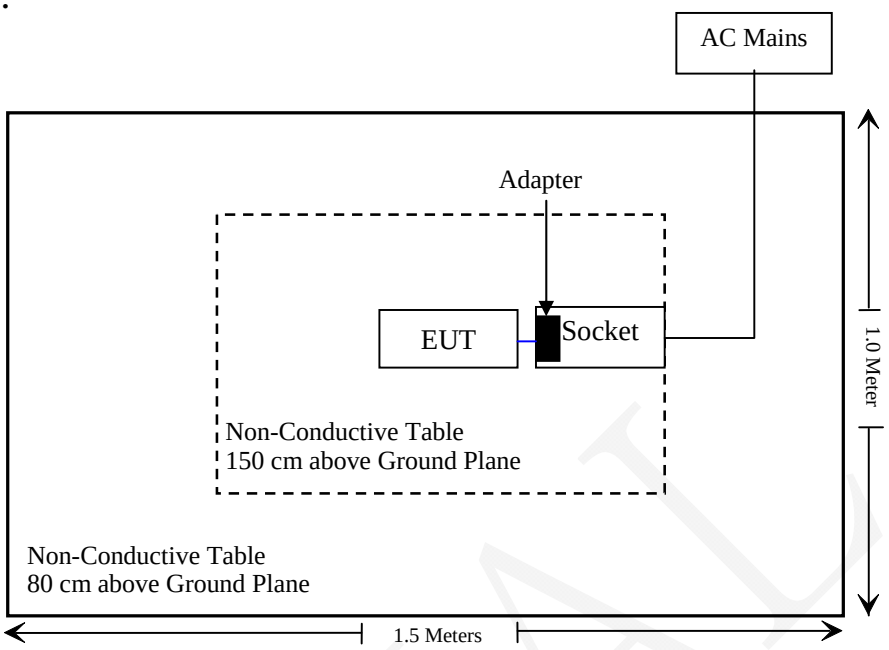
Manufacturer	Description	Model	Serial Number
SHENZHEN GOSPELL DIGITAL TECHNOLOGY CO.,LTD.	POE	G0720-480-050	G0720-480-050

External I/O Cable

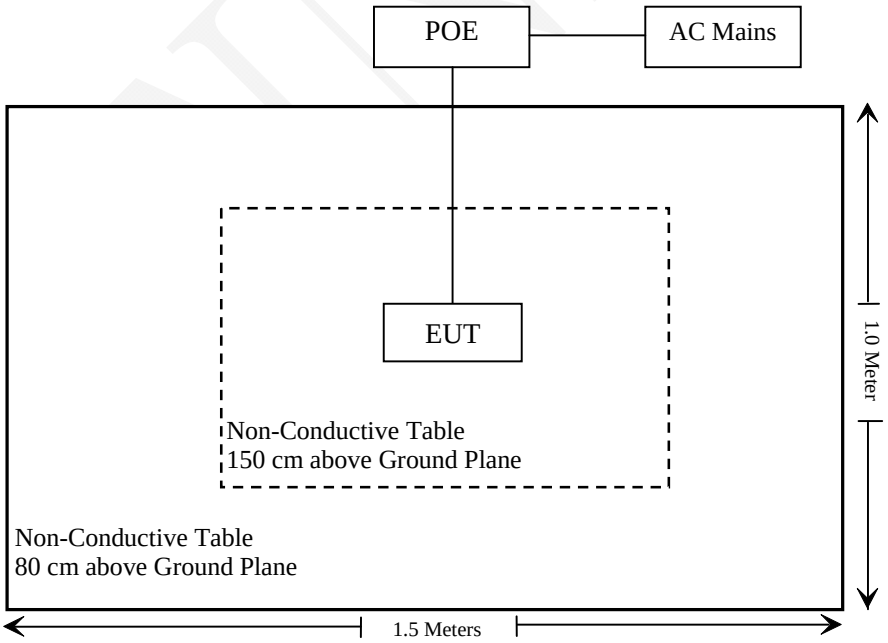
Cable Description	Length (m)	From/Port	To
Un-shielding Un-Detachable AC Cable	1.0	Socket	AC Mains
Un-shielding Un-Detachable DC Cable	2.5	Adapter	EUT
Un-shielding Detachable AC Cable	1.2	POE	AC Mains
Un-shielding Detachable RJ45 Cable	3.0	POE	EUT

Block Diagram of Test Setup

For Adapter:



For POE:



SUMMARY OF TEST RESULTS

ETSI EN 300 328 V2.2.2 (2019-07)	Description of Test	Test Result
§4.3.2.2	RF output power	Compliance*
§ 4.3.2.3	Power Spectral Density	Compliance*
§ 4.3.2.4	Duty Cycle, Tx-sequence, Tx-gap	Not Applicable
§ 4.3.2.5	Medium Utilization (MU) factor	Not Applicable
§ 4.3.2.6	Adaptivity	Compliance*
§ 4.3.2.7	Occupied Channel Bandwidth	Compliance*
§ 4.3.2.8	Transmitter unwanted emissions in the out-of-band domain	Compliance*
§ 4.3.2.9	Transmitter unwanted emissions in the spurious domain	Compliance
§ 4.3.2.10	Receiver spurious emissions	Compliance
§ 4.3.2.11	Receiver Blocking	Compliance
§ 4.3.2.12	Geo-location capability	Not Applicable**

Note:

The supplier declared that the equipment is adaptive equipment

Compliance*: The EUT has a certified Wi-Fi module (Model: F89FTSM13-W3) and its antenna gain is less than the original. So the related test items can refers to the module report: NTC1709097EV00, which was issued by Dongguan Nore Testing Center Co., Ltd. on November 20, 2017.

Not Applicable – This item only for non-adaptive equipment
Not Applicable** –The supplier declared that the equipment has no this function.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
R&S	EMI Test Receiver	ESR3	102455	2020/08/04	2021/08/03
Sonoma instrument	Pre-amplifier	310 N	186238	2020/08/04	2021/08/03
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2017/12/22	2020/12/21
COM-POWER	Dipole Antenna	AD-100	721027	NCR	NCR
Unknown	Cable 2	RF Cable 2	F-03-EM197	2019/11/29	2020/11/28
Unknown	Cable	Chamber Cable 1	F-03-EM236	2019/11/29	2020/11/28
Rohde & Schwarz	Spectrum Analyzer	FSV40-N	102259	2020/08/04	2021/08/03
COM-POWER	Pre-amplifier	PA-122	181919	2019/11/29	2020/11/28
Sunol Sciences	Horn Antenna	DRH-118	A052604	2017/12/22	2020/12/21
A.H.System	Horn Antenna	SAS-200/571	135	2018/09/01	2021/08/31
Insulted Wire Inc.	RF Cable	SPS-2503-3150	02222010	2019/11/29	2020/11/28
Unknown	RF Cable	W1101-EQ1 OUT	F-19-EM005	2019/11/29	2020/11/28
SNSD	Band Reject filter	BSF2402-2480MN-0898-001	2.4G filter	2020/04/20	2021/04/19
RF Conducted Test					
Agilent	Signal Generator	N5183A	MY51040755	2020/12/04	2021/12/03
Rohde & Schwarz	SPECTRUM ANALYZER	FSU26	200120	2020/04/03	2021/04/02
Agilent	MXG Vector Signal Generator	N5182B	MY53051503	2020/08/04	2021/08/03
Rohde & Schwarz	Signal and Spectrum Analyzer	FSV40	101473	2020/08/04	2021/08/03
Tonscend Corporation	RF control Unit	JS0806-2	19D8060154	2020/08/04	2021/08/03
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-146520-wh	2020/08/04	2021/08/03

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

ETSI EN 300 328 V2.2.2 (2019-07) §4.3.2.9 – TRANSMITTER UNWANTED EMISSION IN THE SPURIOUS DOMAIN

Applicable Standard

In the present document, transmitter unwanted emissions in the spurious domain are emissions outside the allocated band and outside the Out-of-band Domain as indicated in figure 3 when the equipment is in Transmit mode.

The transmitter unwanted emissions in the spurious domain shall not exceed the values given in table 12.

In case of equipment with antenna connectors, these limits apply to emissions at the antenna port (conducted). For emissions radiated by the cabinet or emissions radiated by integral antenna equipment (without antenna connectors), these limits are e.r.p. for emissions up to 1 GHz and as e.i.r.p. for emissions above 1 GHz.

Transmitter limits for spurious emissions

Frequency Range	Maximum power e.r.p (≤ 1 GHz) e.i.r.p (> 1 GHz)	Bandwidth
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87,5 MHz	-36 dBm	100 kHz
87,5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	100 kHz
470 MHz to 694 MHz	-54 dBm	100 kHz
694 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 12,75 GHz	-30 dBm	1MHz

Test Procedure

Conducted measurement

In case of conducted measurements, the radio equipment shall be connected to the measuring equipment via a suitable attenuator.
The spectrum in the spurious domain (see figures 1 or 3) shall be searched for emissions that exceed the limit values given in table or that come to within 6 dB below these limits. Each occurrence shall be recorded.

The measurement procedure refer to ETSI EN 300 328 V2.2.2 (2019-07) §5.4.9.2.1

Radiated measurement:

The test site as described in annex B and applicable measurement procedures as described in Annex A shall be used.

The test procedure is further as described under clause 5.4.9.2.1.

Test Data

Environmental Conditions

Temperature:	28~31.7 ℃
Relative Humidity:	54~58 %
ATM Pressure:	100.9~101.0 kPa

The testing was performed by Holland Yang on 2020-10-11 for below 1GHz and Alan He on 2020-10-19 for above 1GHz.

EUT operation mode: Transmitting

Note: Pretest with 802.11b, 802.11g, 802.11n-HT20 and 802.11n-HT40, the worst case was 802.11b mode.

Test Result: Pass

Please refer to the below table for the worst case.

Below 1GHz:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	EN 300 328	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
For Adapter										
Low Channel										
216.0	37.55	287	1.8	H	-62.5	0.57	0.0	-63.07	-54	9.07
216.0	38.57	190	2.4	V	-60.7	0.57	0.0	-61.27	-54	7.27
High Channel										
216.1	37.51	263	2.1	H	-62.5	0.57	0.0	-63.07	-54	9.07
216.1	38.63	132	1.5	V	-60.7	0.57	0.0	-61.27	-54	7.27
For POE										
Low Channel										
216.0	37.59	185	2.1	H	-62.5	0.57	0.0	-63.07	-54	9.07
216.0	38.47	20	1.6	V	-60.8	0.57	0.0	-61.37	-54	7.37
High Channel										
216.1	37.62	2	2.0	H	-62.4	0.57	0.0	-62.97	-54	8.97
216.1	38.48	305	1.1	V	-60.8	0.57	0.0	-61.37	-54	7.37

Above 1GHz:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	EN 300 328	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
Low Channel										
1199.98	62.54	220	2.4	H	-45.5	1.50	6.80	-40.20	-30	10.20
1199.98	61.35	73	1.9	V	-46.4	1.50	6.80	-41.10	-30	11.10
4824.00	44.74	37	2.3	H	-56.3	1.60	12.10	-45.80	-30	15.80
4824.00	44.69	219	2.0	V	-55.3	1.60	12.10	-44.80	-30	14.80
High Channel										
1199.98	62.35	127	1.8	H	-45.7	1.50	6.80	-40.40	-30	10.40
1199.98	61.62	32	1.3	V	-46.1	1.50	6.80	-40.80	-30	10.80
4944.00	45.52	250	1.7	H	-55.6	1.60	12.10	-45.10	-30	15.10
4944.00	45.96	185	2.1	V	-55.4	1.60	12.10	-44.90	-30	14.90

Note 1: The unit of antenna gain is dBd for frequency below 1GHz and is dBi for frequency above 1GHz.
Note 2:
Absolute Level = SG Level - Cable loss + Antenna Gain
Margin = Limit- Absolute Level

ETSI EN 300 328 V2.2.2 (2019-07) §4.3.2.10 – RECEIVER SPURIOUS EMISSIONS

Applicable Standard

According to ETSI EN 300 328 V2.2.2 (2019-07) §4.3.2.10, the receiver spurious emissions are emissions at any frequency when the equipment is in receive mode.

The spurious emissions of the receiver shall not exceed the values given in table 13.
In case of non-FHSS equipment with antenna connectors, these limits apply to emissions at the antenna port (conducted). For emissions radiated by the cabinet or for emissions radiated by integral antenna equipment (without antenna connectors), these limits are e.r.p. for emissions up to 1 GHz and e.i.r.p. for emissions above 1 GHz.

Frequency range	Maximum power, e.r.p.	Measurement bandwidth
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 12,75 GHz	-47 dBm	1 MHz

Test Procedure

Conducted measurement:

In case of conducted measurements, the radio equipment shall be connected to the measuring equipment via a suitable attenuator.
The spectrum in the spurious domain (see figures 1 or 3) shall be searched for emissions that exceed the limit values given in table or that come to within 6 dB below these limits. Each occurrence shall be recorded.

The measurement procedure refer to ETSI EN 300 328 V2.2.2 (2019-07) §5.4.10.2.1

Radiated measurement

The test site as described in annex B and applicable measurement procedures as described in Annex A shall be used.

The test procedure is further as described under clause 5.4.10.2.1.

Test Data

Environmental Conditions

Temperature:	28~31.7 ℃
Relative Humidity:	54~58 %
ATM Pressure:	100.9~101.0 kPa

The testing was performed by Holland Yang on 2020-10-11 for below 1GHz and Alan He on 2020-10-19 for above 1GHz.

EUT operation mode: Receiving

Note: Pretest with 802.11b, 802.11g, 802.11n-HT20 and 802.11n-HT40, the worst case was 802.11b mode.

Test Result: Pass

Please refer to the below table for the worst case.

Below 1GHz:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	EN 300 328	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
For Adapter										
Low Channel										
216.0	37.55	179	1.7	H	-62.5	0.57	0.0	-63.07	-57	6.07
216.0	38.47	339	2.2	V	-60.8	0.57	0.0	-61.37	-57	4.37
High Channel										
215.9	37.59	219	2.1	H	-62.5	0.57	0.0	-63.07	-57	6.07
215.9	38.44	327	1.4	V	-60.9	0.57	0.0	-61.47	-57	4.47
For POE										
Low Channel										
215.9	37.56	222	1.7	H	-62.5	0.57	0.0	-63.07	-57	6.07
215.9	38.42	58	2.4	V	-60.9	0.57	0.0	-61.47	-57	4.47
High Channel										
216.0	37.61	143	1.5	H	-62.4	0.57	0.0	-62.97	-57	5.97
216.0	38.57	173	1.3	V	-60.7	0.57	0.0	-61.27	-57	4.27

Above 1GHz:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	EN 300 328	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
Low Channel										
1493.52	42.69	32	2.3	H	-66.0	1.60	8.50	-59.10	-47	12.10
1493.52	41.04	129	1.5	V	-67.9	1.60	8.50	-61.00	-47	14.00
High Channel										
1488.64	42.73	231	1.2	H	-65.9	1.60	8.50	-59.00	-47	12.00
1488.64	41.91	206	1.9	V	-67.0	1.60	8.50	-60.10	-47	13.10

Note 1: The unit of antenna gain is dBd for frequency below 1GHz and is dBi for frequency above 1GHz.
Note 2:
Absolute Level = SG Level - Cable loss + Antenna Gain
Margin = Limit- Absolute Level

ETSI EN 300 328 V2.2.2 (2019-07) §4.3.2.11 - RECEIVER BLOCKING

Applicable Standard

This requirement applies to all receiver categories as defined in clause 4.2.3.

Receiver blocking is a measure of the ability of the equipment to receive a wanted signal on its operating channel without exceeding a given degradation due to the presence of an unwanted input signal (blocking signal) at frequencies other than those of the operating band and spurious responses.

Performance Criteria:

For equipment that supports a PER or FER test to be performed, the minimum performance criterion shall be a PER or FER less than or equal to 10 %.

For equipment that does not support a PER or a FER test to be performed, the minimum performance criterion shall be no loss of the wireless transmission function needed for the intended use of the equipment.

Limit:

While maintaining the minimum performance criteria as defined in clause 4.3.2.11.3, the blocking levels at specified frequency offsets shall be equal to or greater than the limits defined for the applicable receiver category provided in table 14, table 15 or table 16.

Table 14: Receiver Blocking parameters for Receiver Category 1 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 4)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 4)	Type of blocking signal
(-133 dBm + 10 × $\log_{10}$(OCBW)) or -68 dBm whichever is less (see note 2)	2 380 2 504	-34	CW
(-139 dBm + 10 × $\log_{10}$(OCBW)) or -74 dBm whichever is less (see note 3)	2 300 2 330 2 360 2 524 2 584 2 674		
NOTE 1: OCBW is in Hz.			
NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 26 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.			
NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 20 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.			
NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.			

Table 15: Receiver Blocking parameters receiver Category 2 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
(-139 dBm + 10 × $\log_{10}$(OCBW) + 10 dB) or (-74 dBm + 10 dB) whichever is less (see note 2)	2 380 2 504 2 300 2 584	-34	CW

NOTE 1: OCBW is in Hz.
NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 26 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.
NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Table 16: Receiver Blocking parameters receiver Category 3 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
(-139 dBm + 10 × $\log_{10}$(OCBW) + 20 dB) or (-74 dBm + 20 dB) whichever is less (see note 2)	2 380 2 504 2 300 2 584	-34	CW

NOTE 1: OCBW is in Hz.
NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 30 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.
NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Test Procedure

Conducted measurement:

For systems using multiple receive chains only one chain (antenna port) need to be tested. All other receiver inputs shall be terminated.

Figure 6 shows the test set-up which can be used for performing the receiver blocking test.

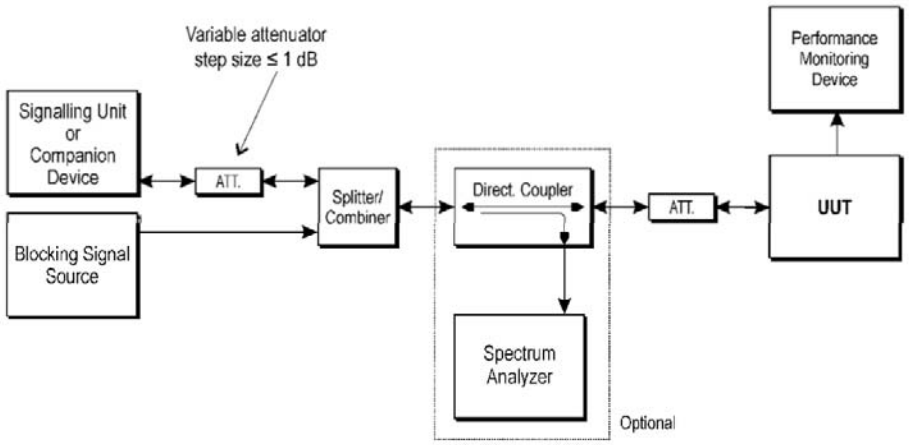


Figure 6: Test Set-up for receiver blocking

The procedure in step 1 to step 6 below shall be used to verify the receiver blocking requirement as described in clause 4.3.1.12 or clause 4.3.2.11. The performance monitoring device is capable of verifying the performance criteria as defined in clause 4.3.1.12.3 or clause 4.3.2.11.3.

Table 6, table 7 and table 8 in clause 4.3.1.12.4 contain the applicable blocking frequencies and blocking levels for each of the receiver categories for testing Receiver Blocking on FHSS equipment.

Table 14, table 15 and table 16 in clause 4.3.2.11.4 contain the applicable blocking frequencies and blocking levels for each of the receiver categories for testing Receiver Blocking on non-FHSS equipment.

Step 1:

• For non-FHSS equipment, the UUT shall be set to the lowest operating channel on which the blocking test has to be performed (see clause 5.4.11.1).

Step 2:

• The blocking signal generator is set to the first frequency as defined in the appropriate table corresponding to the receiver category and type of equipment.

Step 3:

• With the blocking signal generator switched off, a communication link is established between the UUT and the associated companion device using the test setup shown in figure 6.

• Unless the option provided in note 2 of the applicable table referred to in clause 5.4.11.2.1 is used, the level of the wanted signal shall be set to the value provided in the table corresponding to the receiver category and type of equipment. The test procedure defined in clause 5.4.2, and more in particular clause 5.4.2.2.1.2, can be used to measure the (conducted) level of the wanted signal however no correction shall be made for antenna gain of the companion device (step 6 in clause 5.4.2.2.1.2 shall be ignored). This level may be measured directly at the output of the companion device and a correction is made for the coupling loss into the UUT. The actual level for the wanted signal shall be recorded in the test report.

• When the option provided in note 2 of the applicable table referred to in clause 5.4.11.2.1 is used, the attenuation of the variable attenuator shall be increased in 1 dB steps to a value at which the minimum performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is still met. The resulting level for the wanted signal at the input of the UUT is Pmin. This signal level (Pmin) is increased by the value provided in note 2 of the applicable table corresponding to the receiver category and type of equipment.

Step 4:

• The blocking signal at the UUT is set to the level provided in the table corresponding to the receiver category and type of equipment.

• If the performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 are met then proceed to step 6.

Step 5:

• If the performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is not met, step 3 and step 4 shall be repeated after that the frequency of the blocking signal set in step 2 has been increased with a value equal to the Occupied Channel Bandwidth except:

- For the blocking frequency 2 380 MHz, where this frequency offset shall be less than or equal to 10 MHz. If this frequency offset is more than 7 MHz, the level of the wanted signal shall be increased by 3 dB.
- For the blocking frequency 2 503,5 MHz, where this frequency offset shall be less than or equal to 10 MHz. If this frequency offset is more than 7 MHz, the level of the wanted signal shall be decreased by 3 dB.

• If the performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is still not met, step 3 and step 4 shall be repeated after that the frequency of the blocking signal set in step 2 has been decreased with a value equal to the Occupied Channel Bandwidth except:

- For the blocking frequency 2 380 MHz, where this frequency offset shall be less than or equal to 10 MHz. If this frequency offset is more than 7 MHz, the level of the wanted signal shall be decreased by 3 dB.
- For the blocking frequency 2 503,5 MHz, where this frequency offset shall be less than or equal to 10 MHz. If this frequency offset is more than 7 MHz, the level of the wanted signal shall be increased by 3 dB.

• If the performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is still not met, the UUT fails to comply with the Receiver Blocking requirement and step 6 and step 7 are no longer required.

• It shall be recorded in the test report whether the shift of blocking frequencies as described in the present step was used.

Step 6:

• Repeat step 4 and step 5 for each remaining combination of frequency and level for the blocking signal as provided in the table corresponding to the receiver category and type of equipment.

Step 7:

• For non-FHSS equipment, repeat step 2 to step 6 with the UUT operating at the highest operating channel on which the blocking test has to be performed (see clause 5.4.11.1).

Step 8:

• It shall be assessed and recorded in the test report whether the UUT complies with the Receiver Blocking requirement.

Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Coco Liu on 2021-02-03.

EUT operation mode: Receiving (Worst case)

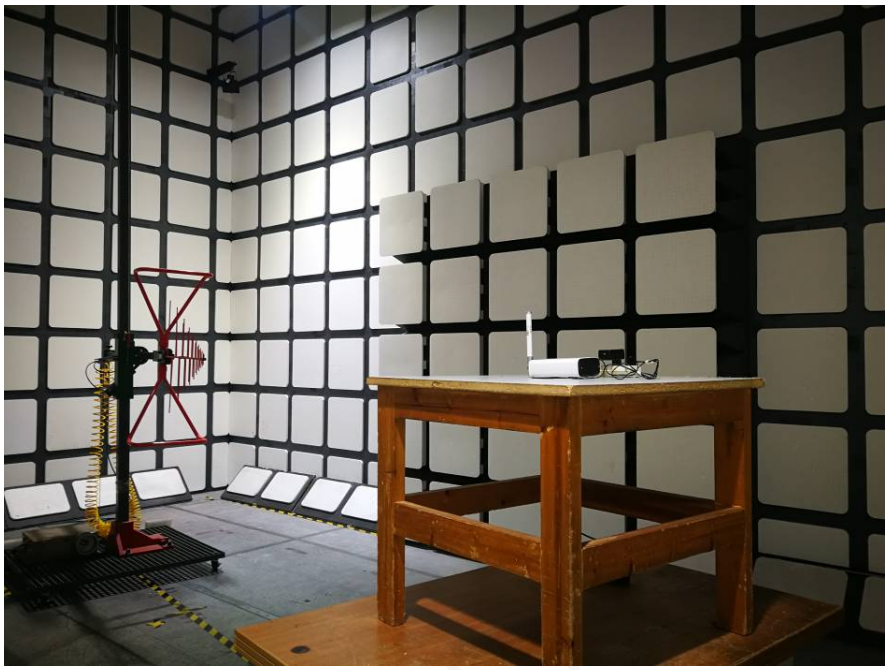
Test Result: Compliant. Please refer to the Appendix.

EXHIBIT B - EUT PHOTOGRAPHS

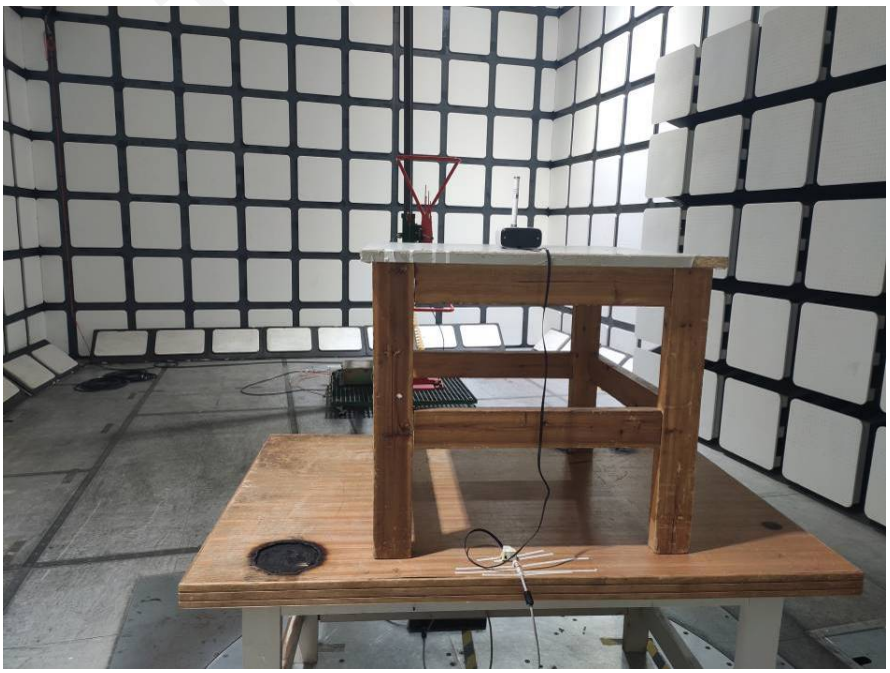
Please refer to the Attachment.

EXHIBIT C - TEST SETUP PHOTOGRAPHS

Radiated Spurious Emissions View (Below 1GHz, For Adapter)



Radiated Spurious Emissions View (Below 1GHz, For POE)



Radiated Spurious Emissions View (Above 1GHz)

APPENDIX

Appendix A: Receiver Blocking

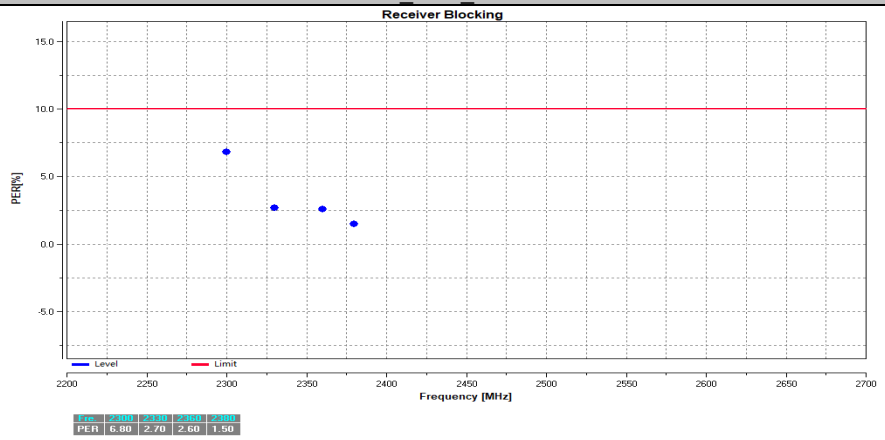
Test Result

Test Mode	Antenna	Channel	Wanted signal[dBm]	Freq.[MHz]	CW [dBm]	PER[%]	Limit [%]	Verdict
11B	Ant1	2412	-74	2300	-32.5	6.80	<=10	PASS
			-74	2330	-32.5	2.70	<=10	PASS
			-74	2360	-32.5	2.60	<=10	PASS
			-68	2380	-32.5	1.50	<= 10	PASS
		2472	-68	2504	-32.5	4.70	<=10	PASS
			-74	2524	-32.5	1.10	<=10	PASS
			-74	2584	-32.5	2.50	<=10	PASS
			-74	2674	-32.5	1.80	<= 10	PASS

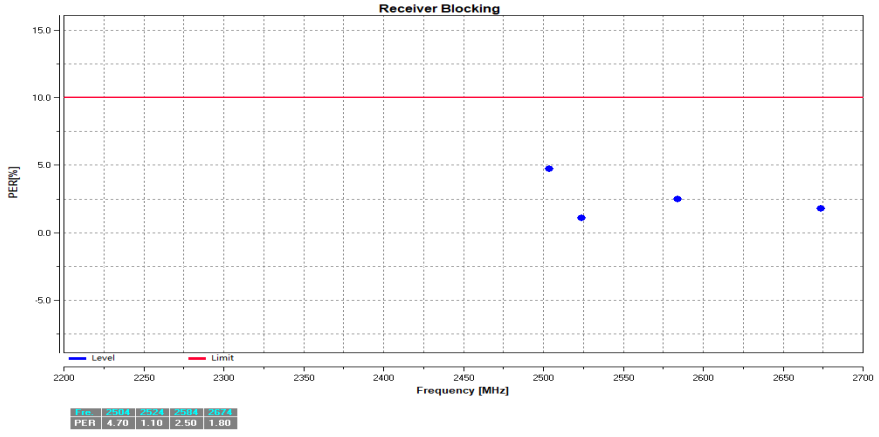
Note：The Maximum EIRP is 12.16dBm>10dBm and the EUT is an adaptive device, so it belongs to the receiver category 1.

Test Graphs

11B_Ant1_2412



11B_Ant1_2472



***** END OF REPORT *****