RED-Radio Test Report

Report No.	:	**1812C40196912504W**
Applicant	:	**Zhejiang Lingzhu Technology Co., Ltd.**
Address	:	**Room 302,No 1 Building Huace Center,Xihu District, Hangzhou City, Zhejiang Province,China**
Product Name	:	**Smart Camera**
Report Date	:	**Apr. 28, 2025**

Shenzhen Anbotek Compliance Laboratory Limited

Contents

TEST REPORT

Applicant	:	Zhejiang Lingzhu Technology Co., Ltd.
Manufacturer	:	Zhejiang Lingzhu Technology Co., Ltd.
Product Name	:	Smart Camera
Model No.	:	SC319-WBR8, SC319-WBR8A, SC319-WBR8B, SC319-WBR8C, SC319-WBR8D, SC319-WBR8E, SC319-WBR8F, SC319-WBR8G
Trade Mark	:	N/A
Rating(s)	:	Input: 5V⎓2A
Test Standard(s)	:	**ETSI EN 300 328 V2.2.2 (2019-07)**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with above listed standard(s) requirements.
This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt: Dec. 26, 2024

Date of Test: Dec. 26, 2024 to Apr. 15, 2025

Prepared By: Lene Chen

(Lene Chen)

Approved & Authorized Signer: KingKong Jin

(KingKong Jin)

Revision History

Report Version	Description	Issued Date
R00	Original Issue.	Apr. 28, 2025

1. General Information

1.1. Client Information

Applicant	:	Zhejiang Lingzhu Technology Co., Ltd.
Address	:	Room 302,No 1 Building Huace Center,Xihu District, Hangzhou City, Zhejiang Province,China
Manufacturer	:	Zhejiang Lingzhu Technology Co., Ltd.
Address	:	Room 302,No 1 Building Huace Center,Xihu District, Hangzhou City, Zhejiang Province,China
Factory	:	Shenzhen Interthings Technology Co., Ltd.
Address	:	701, Building 1, Lechuanghui Building, No.1211 Guanguang Road, Longhua District, Shenzhen,China

1.2. Description of Device (EUT)

Product Name	:	Smart Camera
Model No.	:	SC319-WBR8, SC319-WBR8A, SC319-WBR8B, SC319-WBR8C, SC319-WBR8D, SC319-WBR8E, SC319-WBR8F, SC319-WBR8G (Note: All samples are the same except the model number, so we prepare "SC319-WBR8" for test only.)
Trade Mark	:	N/A
Test Power Supply	:	DC 5V from adapter input AC 230V/50Hz
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Adapter	:	Model: BS10A-0502000EU Input: 100-240V~50/60Hz 0.35A Max. Output: 5.0V⎓2.0A 10.0W
RF Specification		
Operation Frequency	:	2402MHz to 2480MHz
Number of Channel	:	40
Modulation Type	:	GFSK
Antenna Type	:	FPC Antenna
Antenna Gain(Peak)	:	2.24dBi
Remark: (1) All of the RF specification are provided by customer. (2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		

1.3. Auxiliary Equipment Used During Test

Title	Manufacturer	Model No.	Serial No.
/	/	/	/

1.4. Operation channel list

Operation Band:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

1.5. Description of Test Modes

Pretest Modes	Descriptions
TM1	Keep the EUT in continuously transmitting mode(BLE 1M)
TM2	Keep the EUT in continuously transmitting mode(BLE 2M)
TM3	Keep the EUT in continuously receiving mode
TM4	Keep the EUT in normal link mode

1.6. Environment Conditions

ENV	Temperature (°C)	Voltage (VAC)
HTNV	45	230
LTNV	-10	230
NTNV	25	230

1.7. Measurement Uncertainty

Parameter	Uncertainty
Conducted Output Power	0.76dB
Power Spectral Density	0.76dB
Occupied Bandwidth	925Hz
Conducted Spurious Emission	1.24dB
Radiated spurious emissions (30MHz~1GHz)	Horizontal: 3.70dB; Vertical: 4.42dB
Radiated spurious emissions (above 1GHz)	1G-6GHz: 4.64dB; 6G-18GHz: 4.82dB
The measurement uncertainty and decision risk evaluated according to AB/WI-RF-F-032. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

1.8. Test Summary

Test Items	Test Modes	Status
RF Power	Mode1,2	P
Power Spectral Density	Mode1,2	P
Occupied Channel Bandwidth	Mode1,2	P
Transmitter unwanted emissions in the out-of-band domain	Mode1,2	P
Transmitter unwanted emissions in the spurious domain, conducted	Mode1,2	P
Receiver spurious emissions, conducted	Mode3	P
Transmitter unwanted emissions in the spurious domain (30MHz to 1GHz)	Mode1,2	P
Transmitter unwanted emissions in the spurious domain (above 1GHz)	Mode1,2	P
Receiver spurious emissions (30MHz to 1GHz)	Mode3	P
Receiver spurious emissions (above 1GHz)	Mode3	P
Receiver Blocking	Mode4	P
Note: P: Pass N: N/A, not applicable		

1.9. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.:434132
Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 434132.

ISED-Registration No.: 8058A
Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location
Shenzhen Anbotek Compliance Laboratory Limited.
Sogood Industrial Zone Laboratory & 1/F. of Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Subdistrict, Bao'an District, Shenzhen, Guangdong, China.

1.10. Disclaimer

1. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
2. The test report is invalid if there is any evidence and/or falsification.
3. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
4. This document may not be altered or revised in any way unless done so by Anbotek and all revisions are duly noted in the revisions section.
5. Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
6. The authenticity of the information provided by the customer is the responsibility of the customer and the laboratory is not responsible for its authenticity.
7. The data in this report will be synchronized with the corresponding national market supervision and management departments and cross-border e-commerce platforms as required by regulatory agencies.

The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

1.11. Test Equipment List

Transmitter unwanted emissions in the spurious domain, conducted Receiver spurious emissions, conducted Receiver Blocking RF Power Power Spectral Density Occupied Channel Bandwidth Transmitter unwanted emissions in the out-of-band domain						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	MXG RF Vector Signal Generator	Agilent	N5182A	MY47420822	2024-03-11	2025-03-10
					2025-02-21	2026-02-20
2	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	N/A	2024-10-14	2025-10-13
3	MXA Spectrum Analysis	KEYSIGHT	N9020A	MY53280032	2024-09-09	2025-09-08
4	Signal Generator	Agilent	E4421B	MY41000743	2024-10-10	2025-10-09
5	RF Control Unit	Tonscend	JS0806-2	21G8060455	2024-09-09	2025-09-08
6	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	104209	2024-09-09	2025-09-08

Transmitter unwanted emissions in the spurious domain (30MHz to 1GHz) Receiver spurious emissions (30MHz to 1GHz)						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	EMI Test Receiver(RE2/3#)	Rohde & Schwarz	ESR26	101481	2024-01-23	2025-01-22
					2025-01-14	2026-01-13
2	Pre-amplifier	SONOMA	310N	186860	2024-01-17	2025-01-16
					2025-01-14	2026-01-13
3	Bilog Broadband Antenna	Schwarzbeck	VULB9163	345	2022-10-23	2025-10-22
4	Loop Antenna (9K-30M)	Schwarzbeck	FMZB1519 B	00053	2024-09-12	2025-09-11
5	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	/	/

Transmitter unwanted emissions in the spurious domain (above 1GHz) Receiver spurious emissions (above 1GHz)						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	EMI Test Receiver(RE2/3#)	Rohde & Schwarz	ESR26	101481	2024-01-23	2025-01-22
					2025-01-14	2026-01-13
2	EMI Preamplifier	SKET Electronic	LNPA-0118G-45	SKET-PA-002	2024-01-17	2025-01-16
					2025-01-13	2026-01-12
3	Double Ridged Horn Antenna	SCHWARZBECK	BBHA 9120D	02555	2022-10-16	2025-10-15
4	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	/	/
5	Horn Antenna	A-INFO	LB-180400-KF	J211060628	2024-01-22	2027-01-21
6	Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102150	2024-05-06	2025-05-05
7	Amplifier	Talent Microwave	TLLA18G40G-50-30	23022802	2024-05-07	2025-05-06

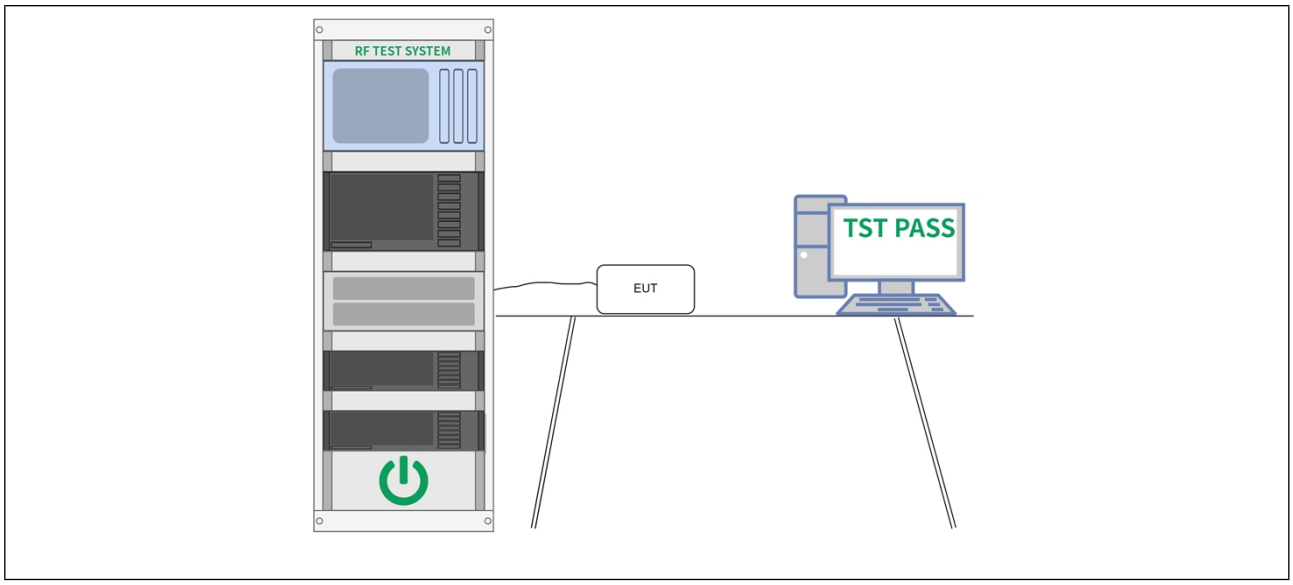
2. RF Power

Test Requirement:	Clause 4.3.2.2.1
Test Limit:	<=20dBm
Test Method:	Clause 5.4.2.2.1
Procedure:	Clause 5.4.2.2.1.2

2.1. EUT Operation

Operating Environment:	
Test mode:	1: TX mode(BLE 1M): Keep the EUT in continuously transmitting mode(BLE 1M) 2: TX mode(BLE 2M): Keep the EUT in continuously transmitting mode(BLE 2M)

2.2. Test Setup



2.3. Test Data

Temperature:	19.6 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa

Please Refer to Appendix for Details.

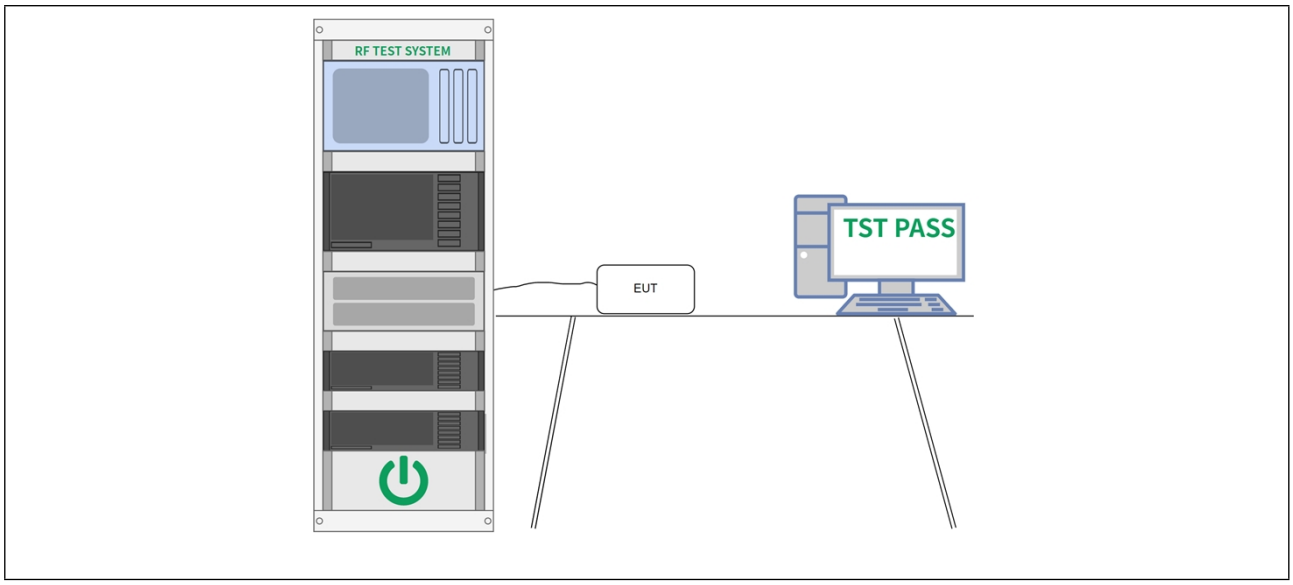
3. Power Spectral Density

Test Requirement:	Clause 4.3.2.3.1
Test Limit:	<=10dBm/MHz
Test Method:	Clause 5.4.3.2.1
Procedure:	Clause 5.4.3.2.1

3.1. EUT Operation

Operating Environment:	
Test mode:	1: TX mode(BLE 1M): Keep the EUT in continuously transmitting mode(BLE 1M) 2: TX mode(BLE 2M): Keep the EUT in continuously transmitting mode(BLE 2M)

3.2. Test Setup



3.3. Test Data

Temperature:	19.6 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa

Please Refer to Appendix for Details.

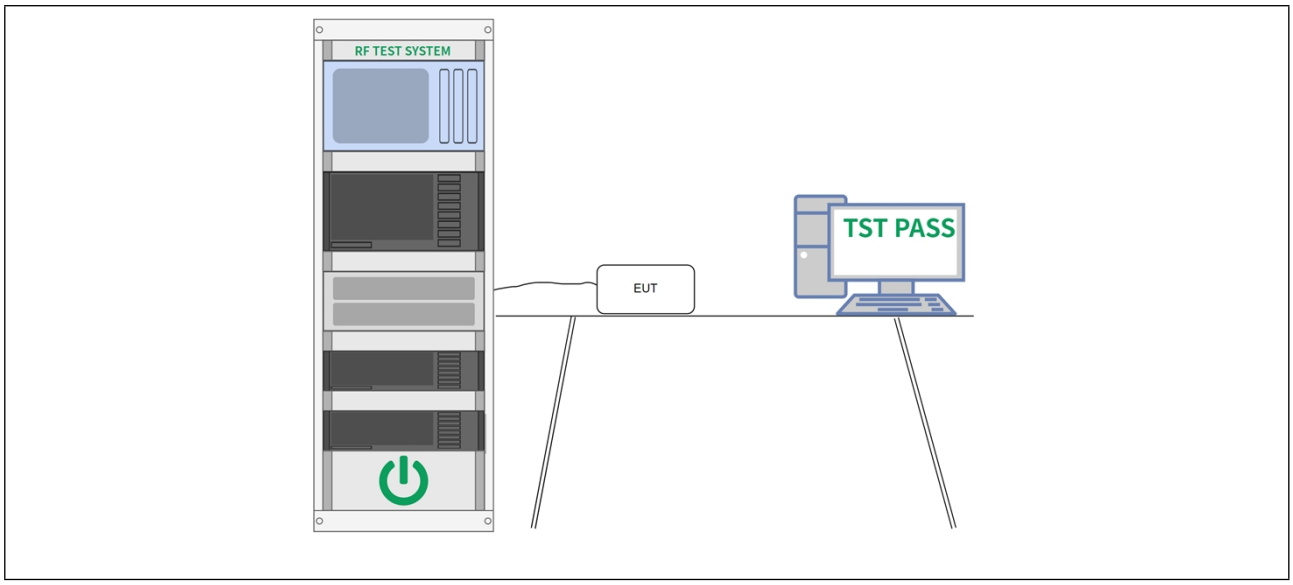
4. Occupied Channel Bandwidth

Test Requirement:	Clause 4.3.2.7.1
Test Limit:	Clause 4.3.2.7.3
Test Method:	Clause 5.4.7.2.1
Procedure:	Clause 5.4.7.2

4.1. EUT Operation

Operating Environment:	
Test mode:	1: TX mode(BLE 1M): Keep the EUT in continuously transmitting mode(BLE 1M) 2: TX mode(BLE 2M): Keep the EUT in continuously transmitting mode(BLE 2M)

4.2. Test Setup



4.3. Test Data

Temperature:	19.6 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa

Please Refer to Appendix for Details.

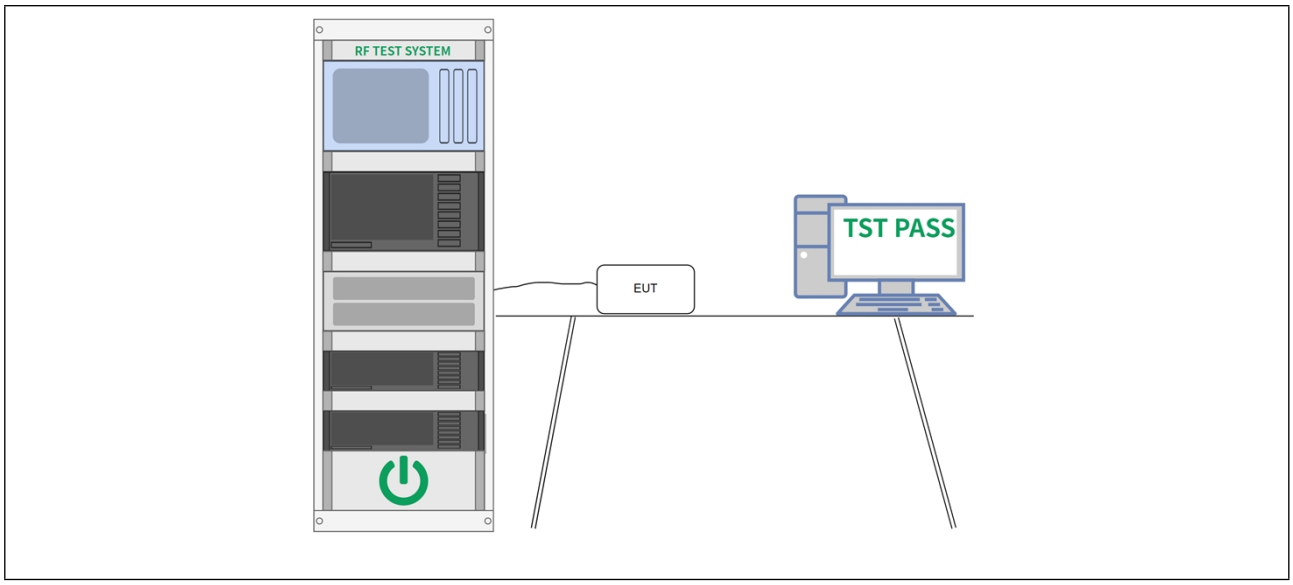
5. Transmitter unwanted emissions in the out-of-band domain

Test Requirement:	Clause 4.3.2.8.1
Test Limit:	Clause 4.3.2.8.3
Test Method:	Clause 5.4.8.2.1
Procedure:	Clause 5.4.8.2.1

5.1. EUT Operation

Operating Environment:	
Test mode:	1: TX mode(BLE 1M): Keep the EUT in continuously transmitting mode(BLE 1M) 2: TX mode(BLE 2M): Keep the EUT in continuously transmitting mode(BLE 2M)

5.2. Test Setup



5.3. Test Data

Temperature:	19.6 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa

Please Refer to Appendix for Details.

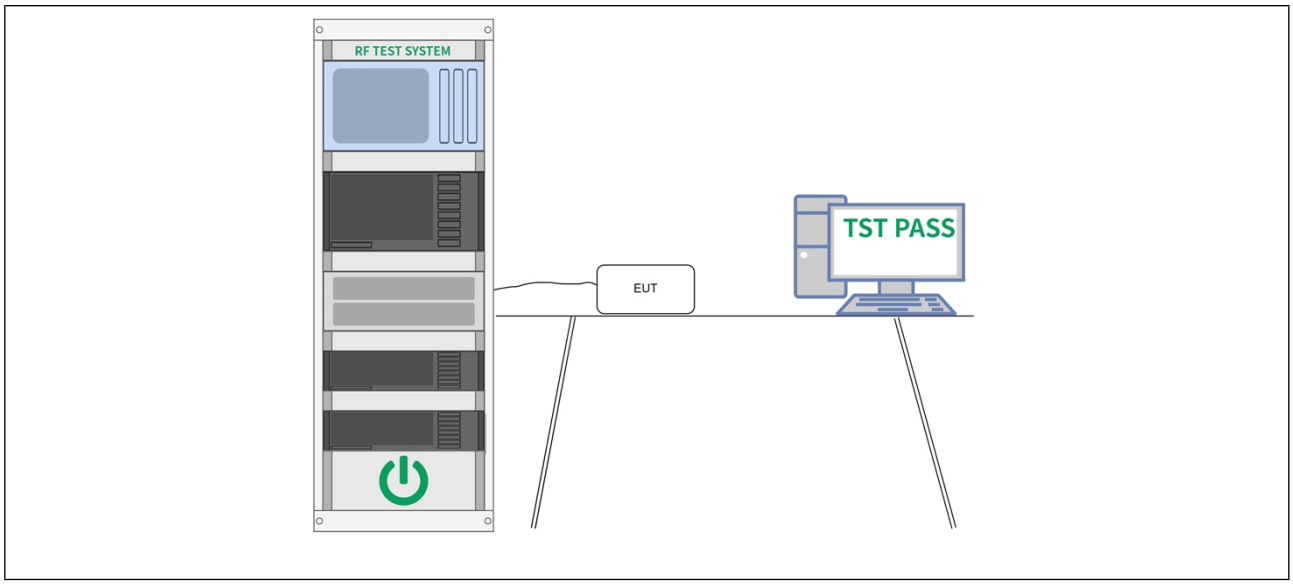
6. Transmitter unwanted emissions in the spurious domain, conducted

Test Requirement:	Clause 4.3.2.9.1
Test Limit:	Clause 4.3.2.9.3
Test Method:	Clause 5.4.9.2.1
Procedure:	Clause 5.4.9.2.1

6.1. EUT Operation

Operating Environment:	
Test mode:	1: TX mode(BLE 1M): Keep the EUT in continuously transmitting mode(BLE 1M) 2: TX mode(BLE 2M): Keep the EUT in continuously transmitting mode(BLE 2M)

6.2. Test Setup



6.3. Test Data

Temperature:	19.6 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa

Please Refer to Appendix for Details.

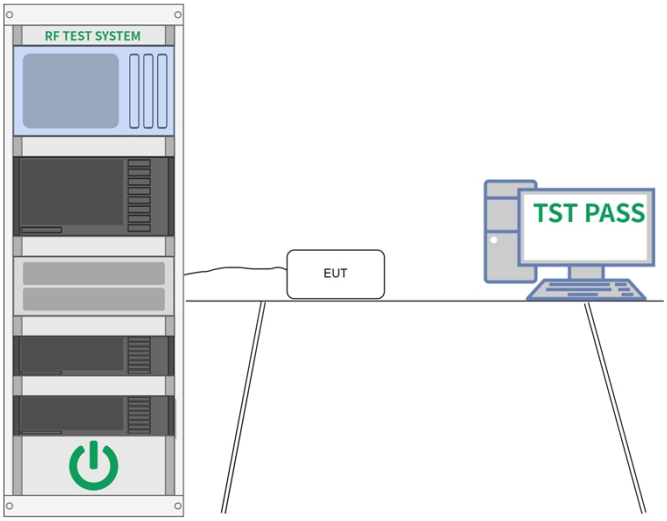
7. Receiver spurious emissions, conducted

Test Requirement:	Clause 4.3.2.10.1
Test Limit:	Clause 4.3.2.10.3
Test Method:	Clause 5.4.10.2.1
Procedure:	Clause 5.4.10.2.1

7.1. EUT Operation

Operating Environment:	
Test mode:	3: RX mode: Keep the EUT in continuously receiving mode

7.2. Test Setup



7.3. Test Data

Temperature:	19.6 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa

Please Refer to Appendix for Details.

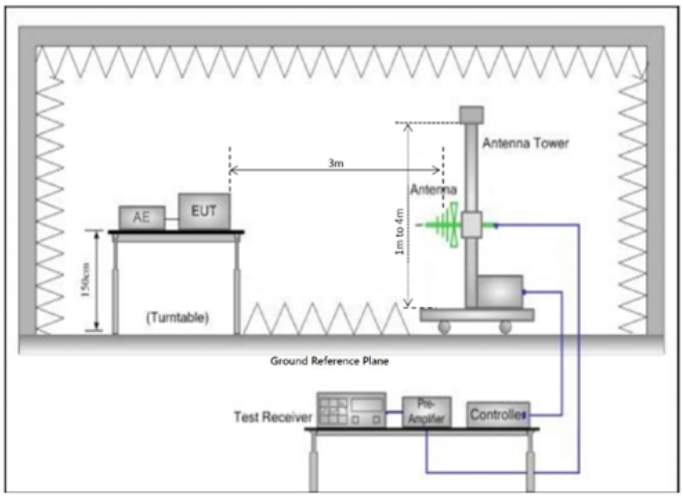
8. Transmitter unwanted emissions in the spurious domain (30MHz to 1GHz)

Test Requirement:	Clause 4.3.2.9.1
Test Limit:	Clause 4.3.2.9.3
Test Method:	Clause 5.4.9.2.2
Procedure:	Clause 5.4.9.2.2

8.1. EUT Operation

Operating Environment:	
Test mode:	1: TX mode(BLE 1M): Keep the EUT in continuously transmitting mode(BLE 1M) 2: TX mode(BLE 2M): Keep the EUT in continuously transmitting mode(BLE 2M)

8.2. Test Setup



8.3. Test Data

Temperature:	19.6 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa

TM1 / CH: L					
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
56.85	-74.02	-54.00	-20.02	H	PASS
144.77	-68.55	-36.00	-32.55	H	
379.67	-68.28	-36.00	-32.28	H	
522.28	-72.21	-54.00	-18.21	H	
506.50	-68.79	-54.00	-14.79	H	
823.84	-66.81	-36.00	-30.81	H	
69.10	-69.40	-54.00	-15.40	V	
146.24	-67.18	-36.00	-31.18	V	
386.05	-68.69	-36.00	-32.69	V	
637.30	-71.91	-54.00	-17.91	V	
596.48	-69.45	-54.00	-15.45	V	
842.18	-74.03	-36.00	-38.03	V	
TM1 / CH: H					
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
62.30	-69.00	-54.00	-15.00	H	PASS
159.42	-65.38	-36.00	-29.38	H	
339.88	-67.33	-36.00	-31.33	H	
616.66	-67.79	-54.00	-13.79	H	
647.00	-68.50	-54.00	-14.50	H	
711.28	-72.27	-36.00	-36.27	H	
61.28	-73.22	-54.00	-19.22	V	
162.64	-68.11	-36.00	-32.11	V	
317.31	-69.69	-36.00	-33.69	V	
519.72	-71.60	-54.00	-17.60	V	
660.24	-72.07	-54.00	-18.07	V	
910.79	-73.14	-36.00	-37.14	V	

Note:
1. Only record the worst data in the report.
2. Margin(dB)= Limit (dBm)- Level(dBm)

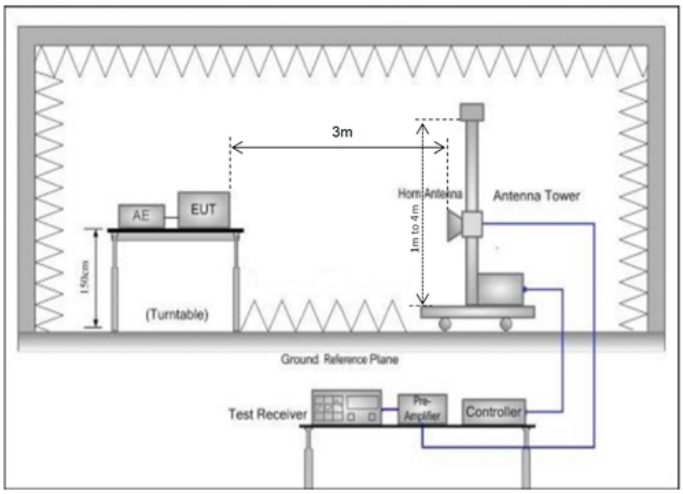
9. Transmitter unwanted emissions in the spurious domain (above 1GHz)

Test Requirement:	Clause 4.3.2.9.1
Test Limit:	Clause 4.3.2.9.3
Test Method:	Clause 5.4.9.2.2
Procedure:	Clause 5.4.9.2.2

9.1. EUT Operation

Operating Environment:	
Test mode:	1: TX mode(BLE 1M): Keep the EUT in continuously transmitting mode(BLE 1M) 2: TX mode(BLE 2M): Keep the EUT in continuously transmitting mode(BLE 2M)

9.2. Test Setup



9.3. Test Data

Temperature:	19.6 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa

TM1 / CH: L					
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
3937.66	-62.26	-30.00	-32.26	H	PASS
4804.07	-59.77	-30.00	-29.77	H	
7206.67	-63.46	-30.00	-33.46	H	
4071.73	-66.45	-30.00	-36.45	V	
4804.13	-60.26	-30.00	-30.26	V	
7206.77	-60.62	-30.00	-30.62	V	
TM1 / CH: H					
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
3930.97	-62.43	-30.00	-32.43	H	PASS
4960.35	-66.91	-30.00	-36.91	H	
7440.09	-66.98	-30.00	-36.98	H	
3900.01	-67.91	-30.00	-37.91	V	
4960.41	-60.48	-30.00	-30.48	V	
7440.30	-64.25	-30.00	-34.25	V	

Note:
1. Only record the worst data in the report.
2. Margin(dB)= Limit (dBm)- Level(dBm)

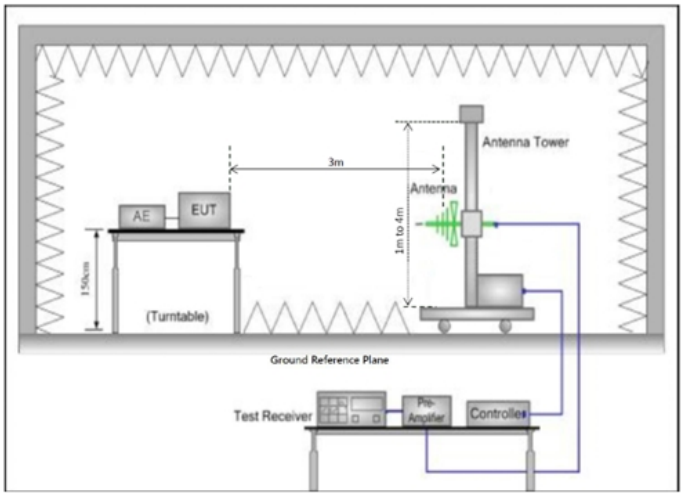
10. Receiver spurious emissions (30MHz to 1GHz)

Test Requirement:	Clause 4.3.2.10.1
Test Limit:	Clause 4.3.2.10.3
Test Method:	Clause 5.4.10.2.2
Procedure:	Clause 5.4.10.2.2

10.1. EUT Operation

Operating Environment:	
Test mode:	3: RX mode: Keep the EUT in continuously receiving mode

10.2. Test Setup



10.3. Test Data

Temperature:	19.6 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa

TM3 / CH: L					
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
54.47	-67.63	-57.00	-10.63	H	PASS
129.49	-66.01	-57.00	-9.01	H	
271.00	-69.95	-57.00	-12.95	H	
680.82	-66.42	-57.00	-9.42	H	
488.82	-68.59	-57.00	-11.59	H	
859.20	-67.04	-57.00	-10.04	H	
56.94	-66.67	-57.00	-9.67	V	
130.90	-69.68	-57.00	-12.68	V	
460.87	-70.69	-57.00	-13.69	V	
514.57	-70.54	-57.00	-13.54	V	
606.78	-67.51	-57.00	-10.51	V	
871.27	-70.25	-57.00	-13.25	V	
TM3 / CH: H					
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
67.90	-68.12	-57.00	-11.12	H	PASS
126.54	-65.37	-57.00	-8.37	H	
276.77	-70.14	-57.00	-13.14	H	
599.16	-67.53	-57.00	-10.53	H	
581.04	-69.32	-57.00	-12.32	H	
908.12	-74.72	-57.00	-17.72	H	
62.33	-71.23	-57.00	-14.23	V	
154.17	-67.81	-57.00	-10.81	V	
267.33	-68.46	-57.00	-11.46	V	
577.16	-74.61	-57.00	-17.61	V	
676.07	-66.73	-57.00	-9.73	V	
858.04	-72.25	-57.00	-15.25	V	

Note:
1. Only record the worst data(BLE_1M) in the report.
2. Margin(dB)= Limit (dBm)- Level(dBm)

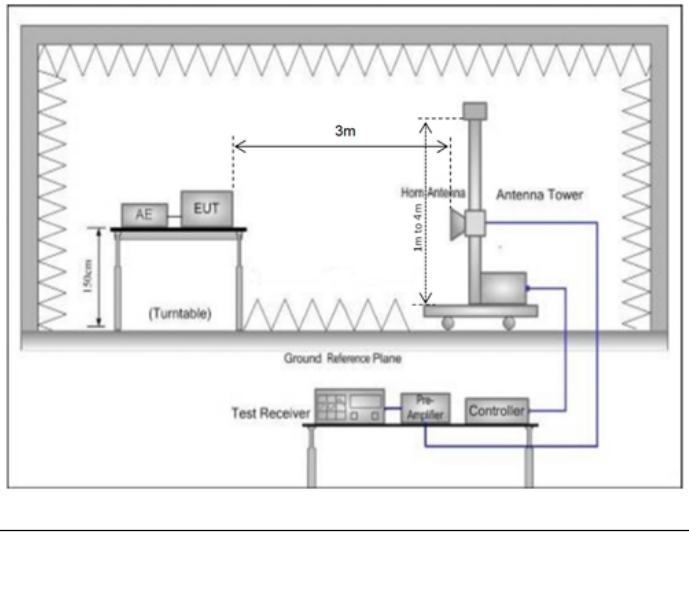
11. Receiver spurious emissions (above 1GHz)

Test Requirement:	Clause 4.3.2.10.1
Test Limit:	Clause 4.3.2.10.3
Test Method:	Clause 5.4.10.2.2
Procedure:	Clause 5.4.10.2.2

11.1. EUT Operation

Operating Environment:	
Test mode:	3: RX mode: Keep the EUT in continuously receiving mode

11.2. Test Setup



11.3. Test Data

Temperature:	19.6 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa

TM3 / CH: L					
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
3983.06	-59.12	-47.00	-12.12	H	PASS
3300.16	-67.07	-47.00	-20.07	H	
6600.18	-64.92	-47.00	-17.92	H	
4097.36	-59.49	-47.00	-12.49	V	
3500.86	-63.09	-47.00	-16.09	V	
6500.22	-59.53	-47.00	-12.53	V	
TM3 / CH: H					
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
3915.46	-57.38	-47.00	-10.38	H	PASS
3300.97	-64.50	-47.00	-17.50	H	
6600.65	-66.38	-47.00	-19.38	H	
4029.39	-58.29	-47.00	-11.29	V	
3500.93	-63.73	-47.00	-16.73	V	
6500.07	-59.19	-47.00	-12.19	V	

Note:
1. Only record the worst data(BLE_1M) in the report.
2. Margin(dB)= Limit (dBm)- Level(dBm)

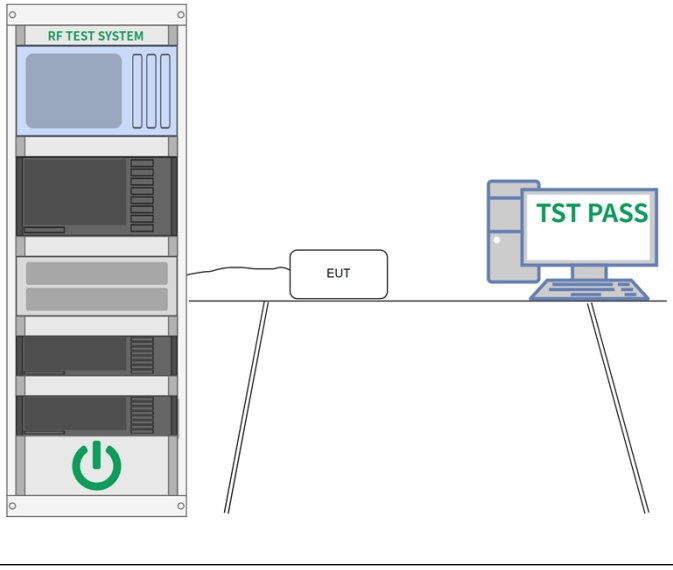
12. Receiver Blocking

Test Requirement:	Clause 4.3.2.11.1
Test Limit:	Clause 4.3.2.11.4
Test Method:	Clause 5.4.11.2.1
Procedure:	Clause 5.4.11.2.1

12.1. EUT Operation

Operating Environment:	
Test mode:	4: Normal mode: Keep the EUT in normal link mode

12.2. Test Setup



12.3. Test Data

Temperature:	19.6 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa

Test Mode	Test Channel	Wanted Signal Mean Power from Companion Device (dBm/MHz)	Blocking Signal Frequency (MHz)	Blocking Signal Power (dBm)	Type of Blocking Signal	PER (%)	Test Result
GFSK	CH00	-68.86	2380	-31.76	CW	4.42	PASS
			2504			4.87	PASS
			2300			4.29	PASS
			2584			4.68	PASS
	CH39	-68.85	2380	-31.76	CW	4.15	PASS
			2504			4.18	PASS
			2300			4.23	PASS
			2584			4.84	PASS

Note:

1. According to ETSI EN 300328 clause 5.4.11.1. Only the lowest data rate (BLE_1M) mode was tested and recorded.
2. Antenna Gain (Peak) is 2.24dBi, so the above table is given with the calculated levels.

APPENDIX I -- TEST SETUP PHOTOGRAPH

Please refer to separated files Appendix I -- Test Setup Photograph_RF

APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to separated files Appendix II -- External Photograph

APPENDIX III -- INTERNAL PHOTOGRAPH

Please refer to separated files Appendix III -- Internal Photograph

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