

TEST REPORT

Applicant: Quectel Wireless Solutions Co., Ltd.
EUT Description: Zigbee & BLE Module
Model: KCMA32S
Brand: Quectel
FCC ID: XMR2025KCMA32S
Standards: FCC 47 CFR Part 15 Subpart C
Date of Receipt: 2025/05/08
Date of Test: 2025/05/08 to 2025/09/03
Date of Issue: 2025/09/03

TOWE. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

the results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of the model are manufactured with identical electrical and mechanical components. All sample tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise. without written approval of TOWE, the test report shall not be reproduced except in full.



A handwritten signature in black ink, appearing to read 'Jim Huang'.

Jim Huang
Approved By:

A handwritten signature in black ink, appearing to read 'Carey Chen'.

Carey Chen
Reviewed By:

Revision History

Rev.	Issue Date	Description	Revised by
01	2025/09/03	Original	Carey Chen

Summary of Test Results

Clause	FCC Part	Test Items	Result
4.1	§15.203/15.247(b)	Antenna Requirement	PASS
4.2	§15.207	AC Power Line Conducted Emission	N/A
4.3	§15.247 (b)(3)	Output Power	PASS
4.4	§15.247 (a)(2)	Occupied Bandwidth	Reporting purposes only
4.5	§15.247 (e)	Power Spectral Density	PASS
4.6	§15.247(d)	Band Edge for Conducted Emissions	PASS
4.7	§15.247(d)	Spurious RF Conducted Emissions	PASS
4.8	§15.205 §15.209	Radiated Spurious emissions and Band Edge	PASS

Test Method: ANSI C63.10:2020, KDB 558074 D01 15.247 Mesa Guidance v05r02.

Remark:

1. Pass is EUT meets standard requirements.
2. The EUT is DC power supply, "N/A" denotes "not applicable".

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1 General Description

1.1 Lab Information

1.1.1 Testing Location

These measurements tests were conducted at the Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. facility located at F401 and F101, Building E, Hongwei Industrial Zone, Liuxian 3rd Road, Bao'an District, Shenzhen, China. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014
Tel.: +86-755-27212361
Contact Email: info@towewireless.com

1.1.2 Test Facility / Accreditations

A2LA (Certificate Number: 7088.01)

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

FCC Designation No.: CN1353

Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. has been recognized as an accredited testing laboratory. Designation Number: CN1353.

ISED CAB identifier: CN0152

Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0152

Company Number: 31000

1.2 Client Information

1.2.1 Applicant

Applicant:	Quectel Wireless Solutions Co., Ltd.
Address:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233

1.2.2 Manufacturer

Manufacturer:	Quectel Wireless Solutions Co., Ltd.
Address:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233

1.3 Product Information

EUT Description:	Zigbee & BLE Module	
Model:	KCMA32S	
Brand:	Quectel	
Hardware Version:	R1.0	
Software Version:	/	
SN:	RF Conducted	E1N25CL0Q000084 E1N25CL0Q000114 E1N25CL0Q000059
	RSE	E1N25GL0Q000099
Operating Mode:	ZigBee 3.0	
Modulation Type:	O-QPSK	
Operation Frequency:	2400MHz~2483.5MHz	
Channel Frequency:	2405 ~ 2480MHz	
Number of Channel:	16	
Antenna Type:	PCB Antenna	
Antenna Gain:	Ant(dBi)	
	1.4dBi	
Remark: The above EUT's information was declared by applicant, please refer to the specifications or user's manual for more detailed description.		

2 Test Configuration

2.1 Test Channel

Operation Frequency of each channel for O-QPSK							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
11	2405MHz	15	2425MHz	19	2445MHz	23	2465MHz
12	2410MHz	16	2430MHz	20	2450MHz	24	2470MHz
13	2415MHz	17	2435MHz	21	2455MHz	25	2475MHz
14	2420MHz	18	2440MHz	22	2460MHz	26	2480MHz
Remark: In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:							
Test Channel				Test Frequency			
The Lowest channel(CH11)				2405MHz			
The Middle channel(CH18)				2440MHz			
The Highest channel(CH26)				2480MHz			

2.2 Worst-case configuration and Mode

Modulation Type	O-QPSK
Transmitting mode	Keep the EUT was programmed to be in continuously transmitting mode
Normal Link	Keep the EUT operation to normal function.

2.3 Support Unit used in test

Description	Manufacturer	Model	Serial Number
Laptop	Lenovo	Thinkbook 14 G4+IAP	YX05AZ13
Development Board*	QUECTEL	KCMA32S-TE-B	E1N25CP0J000047
Development Board*	QUECTEL	KCMA32S-TE-B	E1N25CP0J000037
Development Board*	QUECTEL	KCMA32S-TE-B	E1N25CP0J000026

Remark: *the information are provided by applicant.

2.4 Test Environment

Temperature:	Normal: 15°C ~ 35°C
Humidity:	45 ~ 56 % RH Ambient
Voltage:	DC 3.3V

Remark: The testing environment is within the scope of the EUT user manual and meets the requirements of the standard testing environment.

2.5 Test RF Cable

For all conducted test items: The offset level is set spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

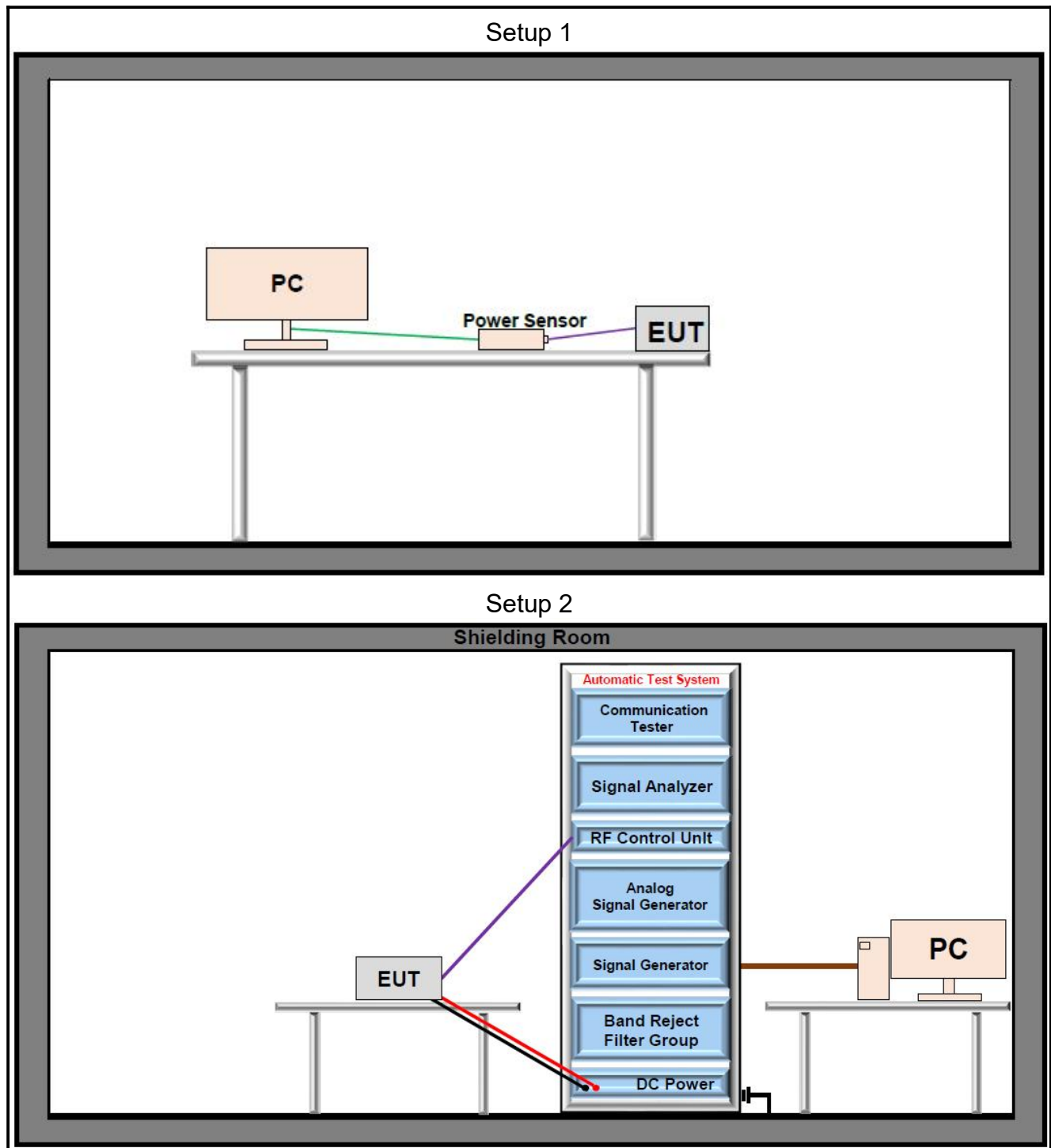
Offset = RF cable loss + attenuator factor.

2.6 Modifications

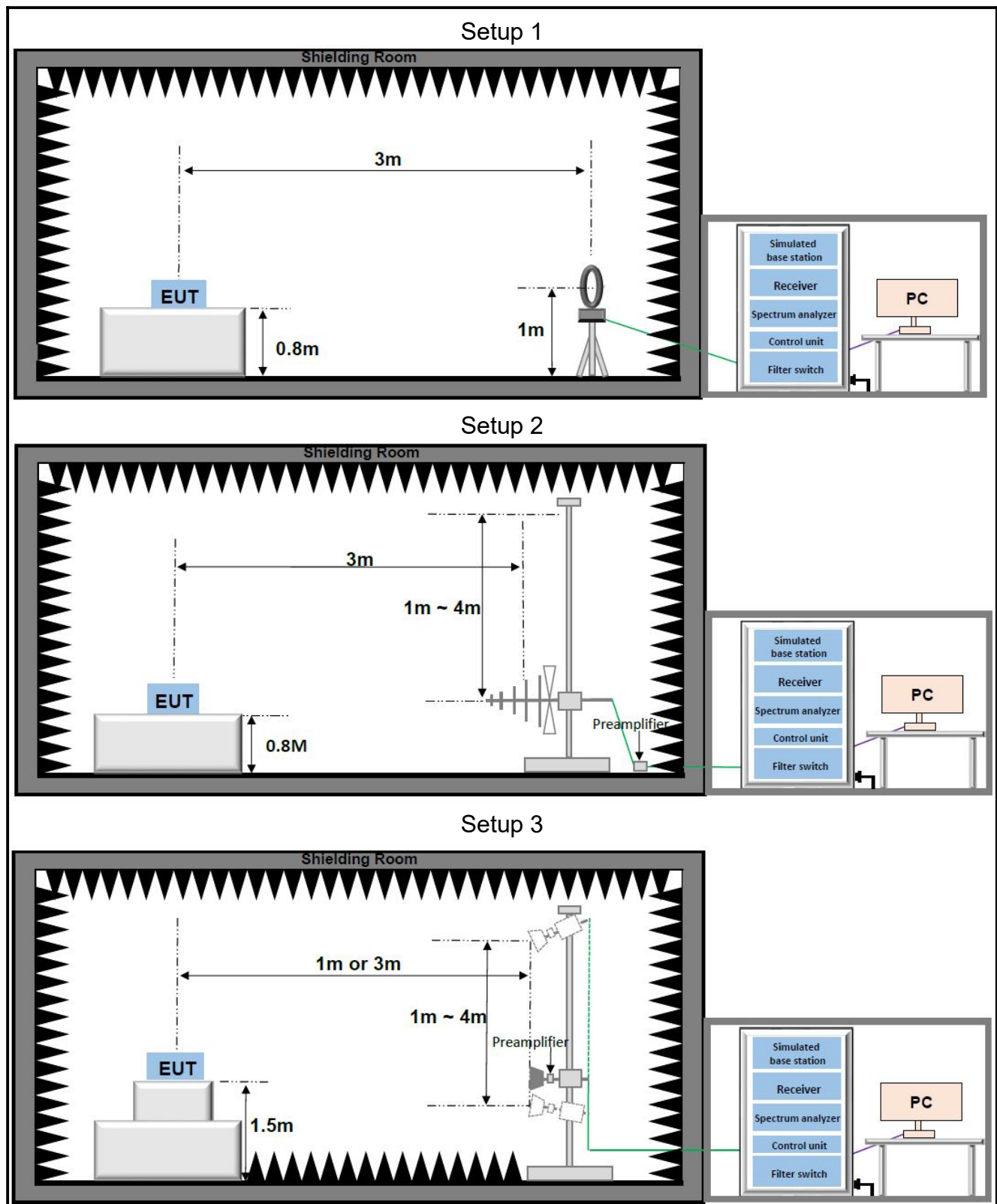
No modifications were made during testing.

2.7 Test Setup Diagram

2.7.1 Conducted Configuration



2.7.2 Radiated Configuration



3 Equipment and Measurement Uncertainty

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, whichever is less, and where applicable is traceable to recognized national standards.

3.1 Test Equipment List

RF Conducted					
Description	Manufacturer	Model	S.N.	Last Due	Cal Due
Signal Analyzer	Keysight	N9020A	US46470429	2025/03/14	2026/03/13
Power Sensor	Anritsu	MA24408A	12520	2024/05/30	2025/05/29
				2025/05/29	2026/05/28
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY63440541	2024/05/30	2025/05/29
				2025/05/29	2026/05/28
Attenuator	Yin Saige	SMA-10dBm	N/A	N/A	N/A
Measurement Software	Tonscend	TS1120-3	10659	N/A	N/A

Radiated Emission					
Description	Manufacturer	Model	S.N.	Last Due	Cal Due
Biconic Logarithmic Periodic Antennas	Schwarzbeck	VULB9163	1643	2023/06/25	2026/06/24
Double-Ridged Horn Antennas	Schwarzbeck	BBHA 9120D	2809	2023/06/25	2026/06/24
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	1290	2023/06/25	2026/06/24
Loop Antenna	Schwarzbeck	FMZB 1519C	1519C-028	2023/06/29	2026/06/28
Signal Analyzer	Keysight	N9020A	MY49100252	2025/03/11	2026/03/10
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY63440541	2024/05/30	2025/05/29
				2025/05/29	2026/05/28
Wideband Radio Communication Tester	R&S	CMW500	150645	2025/03/11	2026/03/10
Low Noise Amplifier	Tonscend	TAP9K3G40	AP23A8060273	2025/03/11	2027/03/10
Low Noise Amplifier	Tonscend	TAP01018050	AP22G806258	2025/03/11	2027/03/10
Low Noise Amplifier	Tonscend	TAP18040048	AP22G806247	2025/03/11	2027/03/10
Hygrometer	BINGYU	HTC-1	N/A	2024/07/29	2025/07/28
				2025/07/25	2026/07/24
Band Reject Filter Group	Townshend	JS0806-F	23A806F0652	N/A	N/A
Test Software	Tonscend	TS+	Version: 5.0.0	N/A	N/A

3.2 Measurement Uncertainty

Parameter	U _{lab}
Frequency Error	679.98Hz
Output Power	0.76dB
Conducted Spurious Emissions	2.22dB
Radiated Emissions(9kHz~30MHz)	2.40dB
Radiated Emissions(30MHz~1000MHz)	4.66dB
Radiated Emissions(1GHz~18GHz)	5.42dB
Radiated Emissions(18GHz~40GHz)	5.46dB

Uncertainty figures are valid to a confidence level of 95%

4 Test Results

4.1 Antenna Requirement

Standard Applicable:	47 CFR Part 15C Section 15.203 /247(b)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
The antenna gain and type as provided by the manufacturer are as follows: The antenna Type is PCB Antenna. With Antenna gain is 1.4dBi. Antenna Anti-Replacement Construction: An embedded-in antenna design is used.	

4.2 Output Power

Limits

If With directional antenna gains less than 6 dBi, the limit is 30dBm.

Test Procedure

ANSI C63.10:2020 Section 11.9.1.2(PKPM1) or 11.9.2.3.2(AVGPM-G)

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously.
2. The power output was measured on the EUT antenna port using RF Cable with an attenuator connected to a power sensor. Output power was read directly from the power sensor.
3. Measure and record the results in the test report.

Test Setup

Refer to section 2.7.1- Setup 1 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix**.

4.3 Occupied Bandwidth

Limits

DTSBW: The minimum 6 dB bandwidth shall be at least 500 kHz.

99%BW: None, for reporting purposes only.

Test Procedure

ANSI C63.10:2020 Section 11.8.2 and 6.9.3

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously.
2. The transmitter output is connected to a spectrum analyzer:
3. RBW = 100kHz(DTS)
4. RBW = 1% - 5%(99%BW)
5. VBW = 3 times the RBW
6. Sweep = Auto
7. Detector = Peak
8. Trace = Max hold
9. The trace was allowed to stabilize
10. Measure and record the results in the test report.

Test Notes

DTS: The signal analyzers' automatic bandwidth measurement capability of the spectrum analyzer was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X= 6. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.

Test Setup

Refer to section 2.7.1- Setup 2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix**.

4.4 Power Spectral Density

Limits

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Test Procedure

ANSI C63.10:2020 Section 11.10.2(PKPSD)

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously
2. The transmitter output is connected to a spectrum analyzer
3. $3\text{kHz} \leq \text{RBW} \leq 100\text{ kHz}$
(If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.)
4. $\text{VBW} \geq 3\text{ times RBW}$
5. Span = 1.5 times the DTS bandwidth
6. Sweep = Auto
7. Detector = Peak
8. Trace = Max hold
9. The trace was allowed to stabilize
10. Measure and record the results in the test report.

Test Setup

Refer to section 2.7.1- Setup 2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix**.

4.5 Band Edge for Conducted Emissions

Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph 15.247(b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Test Procedure

ANSI C63.10:2020 Section 11.11.3

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously
2. The transmitter output is connected to a spectrum analyzer
3. RBW = 100kHz
4. VBW = 300kHz
5. Point $\geq 2 \times \text{span/RBW}$
6. Sweep = Auto
7. Detector = Peak
8. Trace = Max hold
9. The trace was allowed to stabilize
10. Measure and record the results in the test report

Test Setup

Refer to section 2.7.1- Setup 2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix**.

4.6 Spurious RF Conducted Emissions

Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph 15.247(b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Test Procedure

ANSI C63.10:2020 Section 11.11.3

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously.
2. Activate frequency hopping function if necessary.
3. The transmitter output is connected to a spectrum analyzer
4. The spectrum from 30MHz - 26.5GHz
5. RBW = 100kHz
6. VBW = 300kHz
7. Sweep = Auto
8. Detector = Peak
9. Trace = Max hold
10. The trace was allowed to stabilize
11. Measure and record the results in the test report

Test Setup

Refer to section 2.7.1- Setup 2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix**.

4.7 Radiated Spurious Emissions and Band Edge

Limits

Spurious emissions are permitted in an of the frequency bands:

MHz	MHz	MHz	MHz	GHz	GHz
0.090 - 0.110	12.29 - 12.293	149.9 - 150.05	1660 - 1710	4.5 - 5.15	14.47 - 14.5
0.495 - 0.505	12.51975 - 12.52025	156.52475 - 156.52525	1718.8 - 1722.2	5.35 - 5.46	15.35 - 16.2
2.1735 - 2.1905	12.5767 - 12.57725	156.7 - 156.9	2200 - 2300	7.25 - 7.75	17.7 - 21.4
4.125 - 128	13.36 - 13.41	162.0125 - 167.17	2310 - 2390	8.025 - 8.5	22.01 - 23.12
4.17725 - 4.17775	16.42 - 16.423	167.72 - 173.2	2483.5 - 2500	9.0 - 9.2	23.6 - 24.0
4.20725 - 4.20775	16.69475 - 16.69525	240 - 285	2655 - 2900	9.3 - 9.5	31.2 - 31.8
6.215 - 6.218	1680425 - 1680475	322 - 335.4	3260 - 3267	10.6 - 12.7	36.43 - 36.5
6.26775 - 6.26825	25.5 - 25.67	399.9 - 410	3332 - 3339	13.25 - 13.4	
6.31175 - 6.31225	37.5 - 38.25	608 - 614	3345.8 - 3358		
8.291 - 8.294	73 - 74.6	960 - 1240	3600 - 4400		
8.362 - 8.366	74.8 - 75.2	1300 - 1427			
8.37625 - 8.38675	108 - 121.94	1435 - 1626.5			
8.41425 - 8.41475	123 - 138	1645.5 - 1646.5			

Radiated disturbance of an intentional radiator:

Frequency	Field strength (μV/m)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	74.0	Peak	3
		54.0	Average	

Test Procedure

ANSI C63.10:2020 Section 6.4 & 6.5 & 6.6

Test Settings

- For radiated emissions measurements performed at frequencies less than or equal to 1GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80cm above the reference ground plane.
- For radiated emissions measurements performed at frequencies above 1GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80cm above the ground plane.
- Radiated measurements shall be made with the measurement antenna positioned in both horizontal and vertical polarization. The measurement antenna shall be varied from 1m to 4m in height above the reference ground in a search for the relative positioning that produces the maximum radiated signal level (i.e, field strength or received power), when orienting the measurement antenna in vertical polarization, the minimum height of the lowest element of the antenna shall clear the site reference ground plane by at least 25cm.
- For each suspected emission, the EUT was ranged its worst case and then tune the antenna tower(from 1~4m) and turntable(from 0~360°) find the maximum reading. Preamplifier and a high pass filter are used for the test in order get better signal level comply with the guidelines.
- Set to the maximum power setting and enable the EUT transmit continuously.
- The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
- spectrum analyzer setting:
Measurements Below 1000MHz: RBW = 120 kHz; VBW ≥ 300 kHz; Detector = Peak
Measurements Above 1000MHz: RBW = 1 MHz; VBW ≥ 3 MHz; Detector = Peak

Average Measurements Above 1000MHz:

RBW = 1 MHz, VBW $\geq$ 1/T, with peak detector for average measurements.

8. The field strength is calculated by adding the Antenna Factor, Cable Factor. The basic equation with a sample calculation is as follows:

Level = Reading(dB μ V) + AF(dB/m) + Factor(dB):

AF = Antenna Factor(dB/m)

Factor = Cable Factor(dB) - Preamplifier gain(dB)

Margin = Limit(dB μ V/m) – Level(dB μ V/m)

9. Repeat above procedures until all frequencies measured was complete.
10. Measure and record the results in the test report.

Test Notes

1. Emissions below 18GHz were measured at a 3-meter test distance while emissions above 18GHz were measured at a 1-meter test distance with the application of a distance correction factor.
2. Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. the disturbance between 9kHz to 30MHz and 18GHz to 40GHz was very low. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be recorded, so only the harmonics had been displayed.
3. These frequencies which near "-" should be ignored because they are Fundamental frequency.

Test Setup

Refer to section 2.7.2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix**.

5 Test Setup Photos

The detailed test data see: **Appendix A - BLE&Zigbee Setup Photos**

Appendix

DTS Bandwidth Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
ZIGB	Ant1	2405	1.070	2404.340	2405.410	0.5	PASS
ZIGB	Ant1	2440	1.310	2439.350	2440.660	0.5	PASS
ZIGB	Ant1	2480	1.080	2479.400	2480.480	0.5	PASS

Test Graphs



ZIGB-Ant1-2405-PASS



ZIGB-Ant1-2440-PASS



ZIGB-Ant1-2480-PASS

Occupied Channel Bandwidth Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
ZIGB	Ant1	2405	2.2553	2403.8616	2406.1169	---	---
ZIGB	Ant1	2440	2.2298	2438.8656	2441.0954	---	---
ZIGB	Ant1	2480	2.2426	2478.8607	2481.1033	---	---

Test Graphs



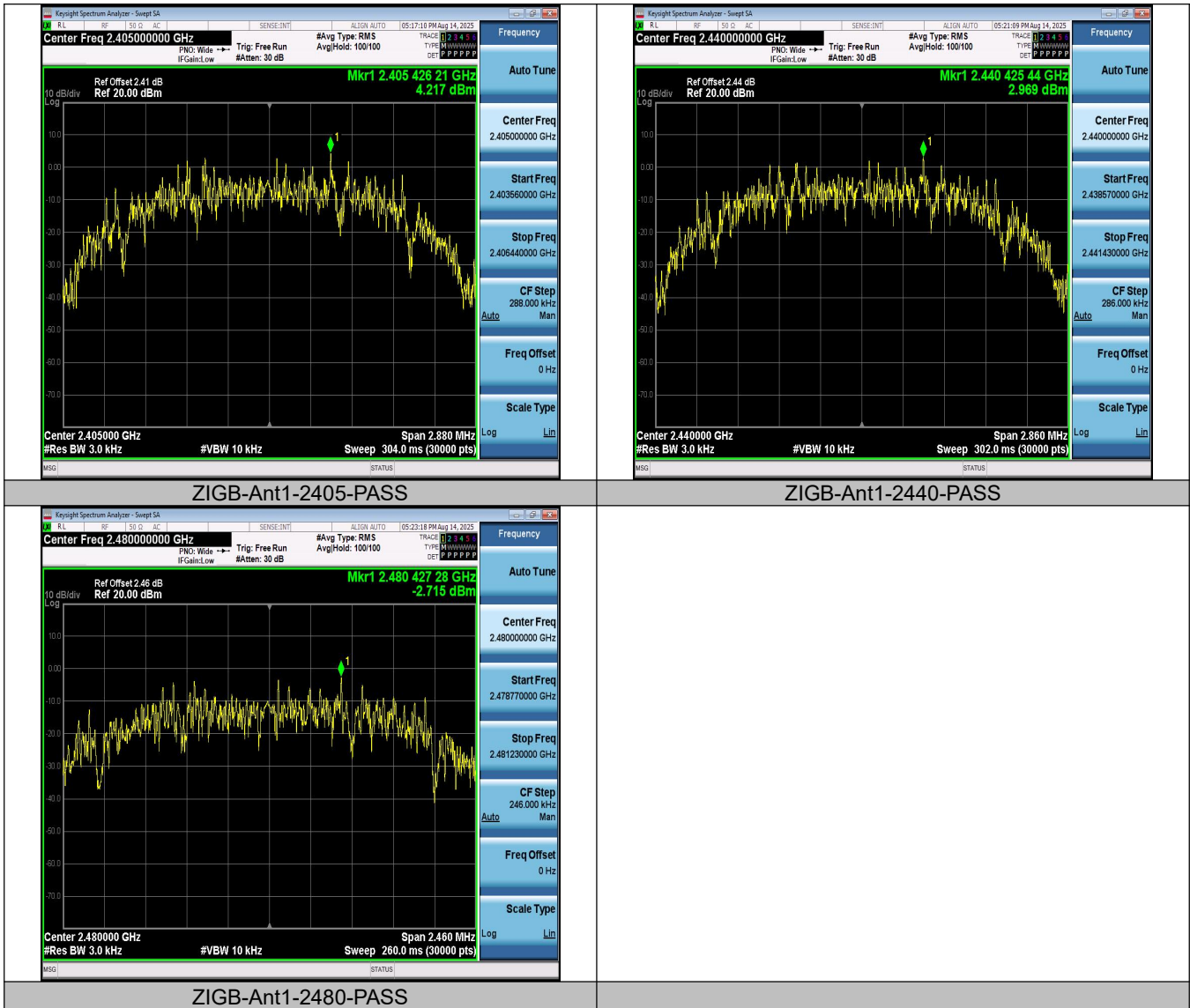
**Maximum conducted output power
Test Result**

TestMode	Antenna	Frequency[MHz]	Average[dBm]	Peak[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	2405	17.604	17.806	≤30	PASS
ZIGB	Ant1	2440	17.461	17.689	≤30	PASS
ZIGB	Ant1	2480	11.882	12.075	≤30	PASS

**Maximum power spectral density
Test Result**

TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
ZIGB	Ant1	2405	4.22	≤8.00	PASS
ZIGB	Ant1	2440	2.97	≤8.00	PASS
ZIGB	Ant1	2480	-2.72	≤8.00	PASS

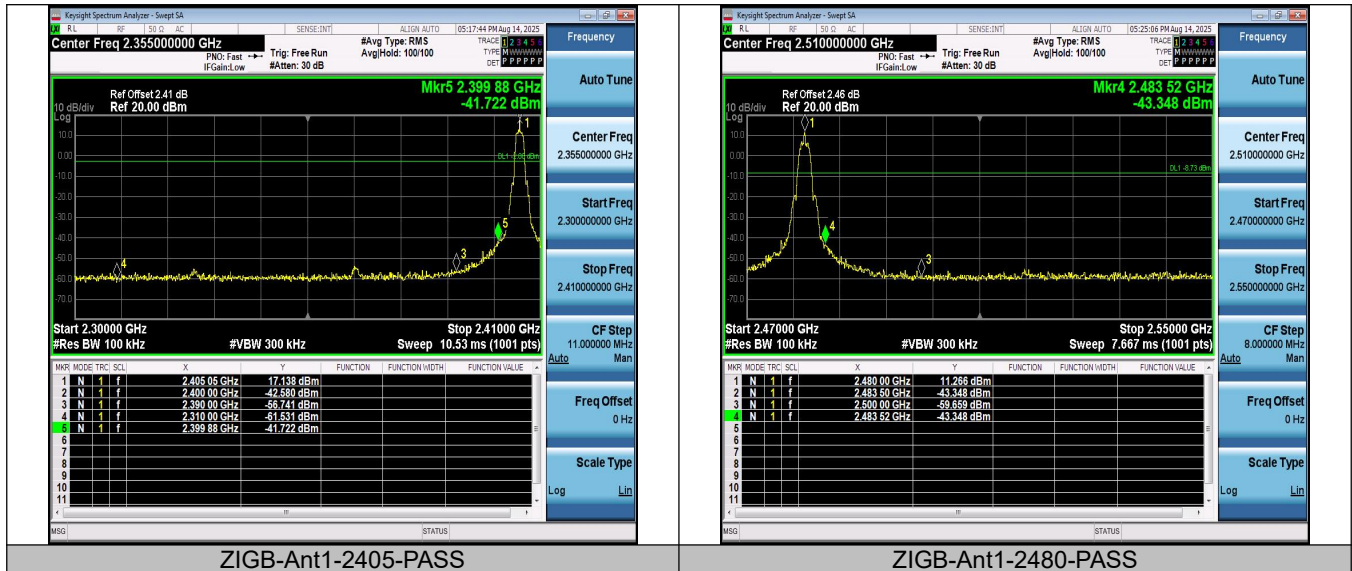
Test Graphs



Band edge measurements
Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	Low	2405	17.14	-41.72	≤ -2.86	PASS
ZIGB	Ant1	High	2480	11.27	-43.35	≤ -8.73	PASS

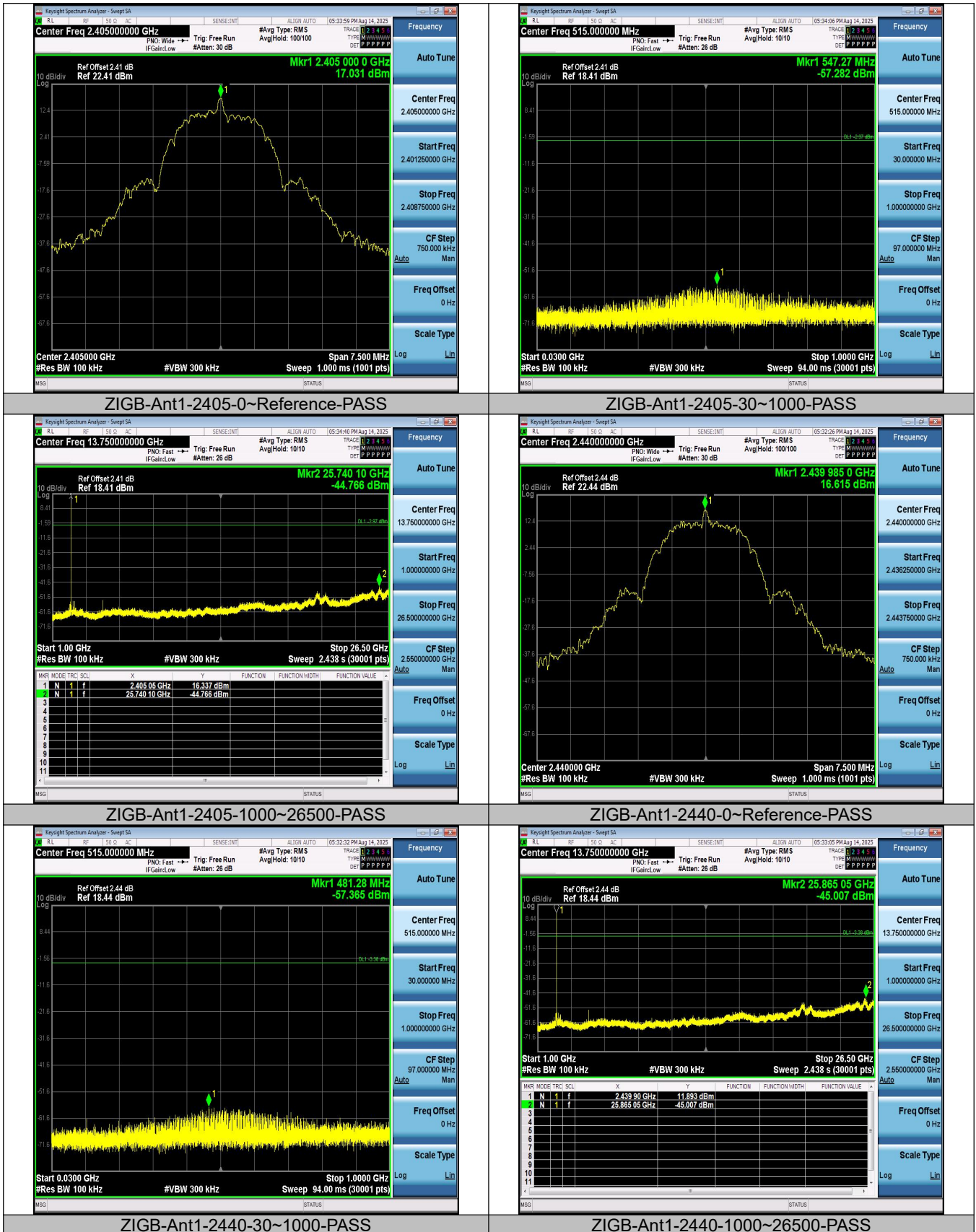
Test Graphs



Conducted Spurious Emission Test Result

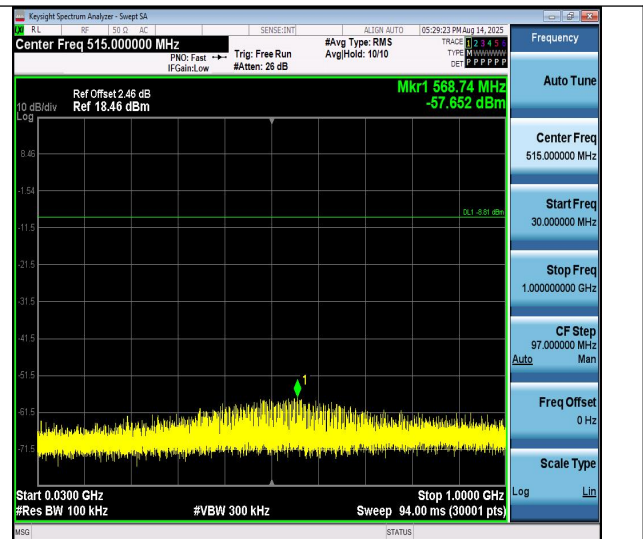
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	2405	0~Reference	17.03	17.03	---	PASS
ZIGB	Ant1	2405	30~1000	17.03	-57.28	≤-2.97	PASS
ZIGB	Ant1	2405	1000~26500	17.03	-44.77	≤-2.97	PASS
ZIGB	Ant1	2440	0~Reference	16.62	16.62	---	PASS
ZIGB	Ant1	2440	30~1000	16.62	-57.37	≤-3.38	PASS
ZIGB	Ant1	2440	1000~26500	16.62	-45.01	≤-3.38	PASS
ZIGB	Ant1	2480	0~Reference	11.19	11.19	---	PASS
ZIGB	Ant1	2480	30~1000	11.19	-57.65	≤-8.81	PASS
ZIGB	Ant1	2480	1000~26500	11.19	-44.74	≤-8.81	PASS

Test Graphs

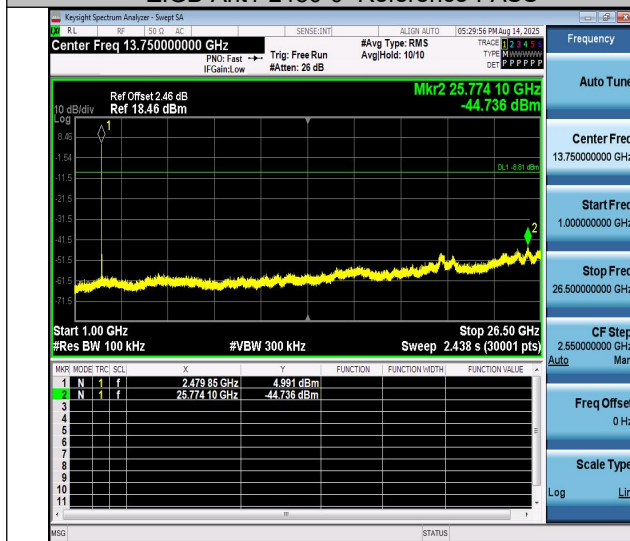




ZIGB-Ant1-2480-0~Reference-PASS



ZIGB-Ant1-2480-30~1000-PASS

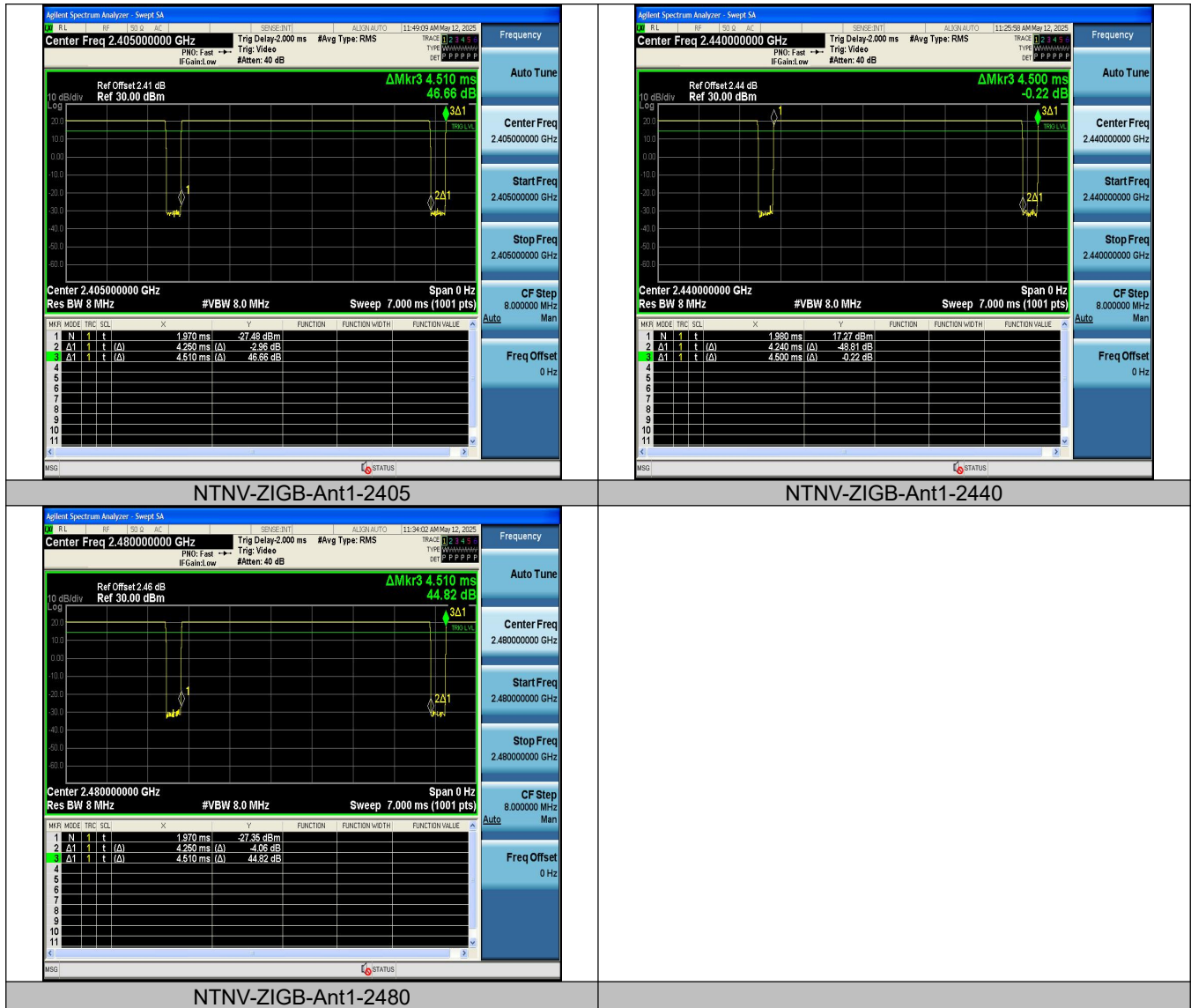


ZIGB-Ant1-2480-1000~26500-PASS

Duty Cycle Test Result

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
ZIGB	Ant1	2405	4.25	4.51	94.24	---	---
ZIGB	Ant1	2440	4.24	4.50	94.22	---	---
ZIGB	Ant1	2480	4.25	4.51	94.24	---	---

Test Graphs

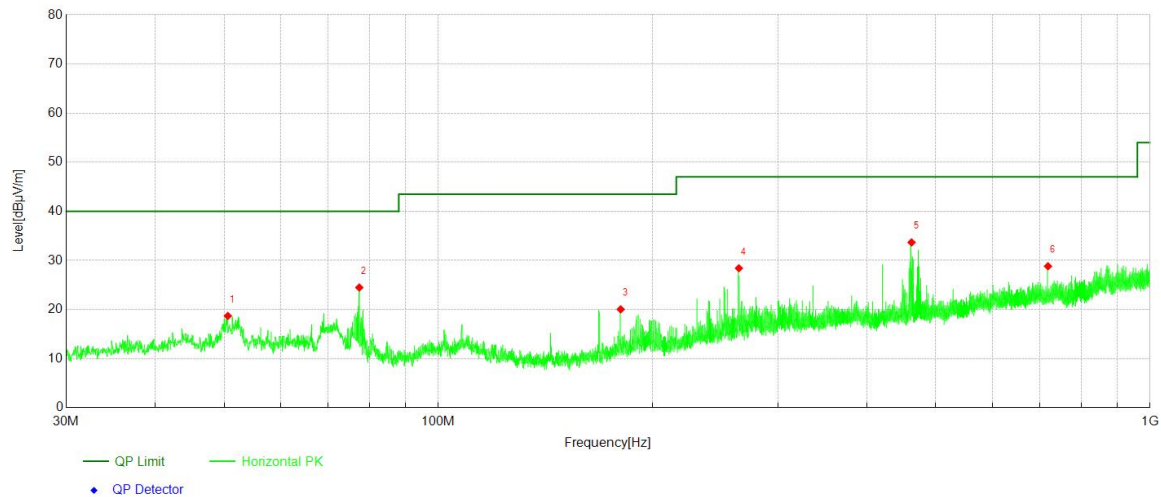


Radiated Spurious Emissions

Test Result Below 1GHz

Project Information			
Mode:	Zigbee	Band:	-
Bandwidth	-	Channel	Low
IMEI:	E1N25GL0Q000099	Engineer:	Tian Shuo
Remark:	Power setting17		

Test Graph

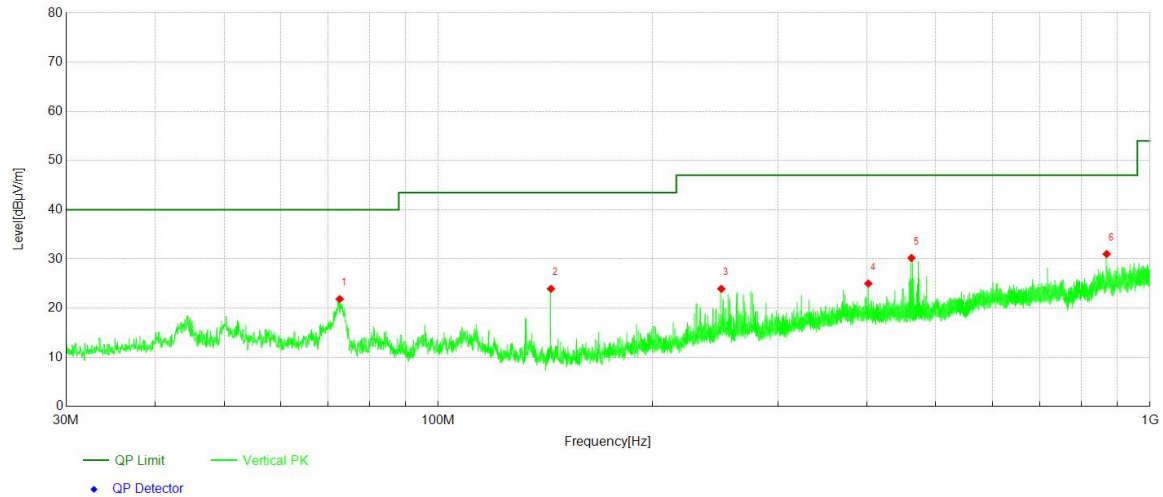


Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Verdict
1	50.61	41.53	-22.84	18.69	40.00	21.31	Horizontal	PASS
2	77.44	51.54	-27.06	24.48	40.00	15.52	Horizontal	PASS
3	180.41	45.19	-25.16	20.03	43.50	23.47	Horizontal	PASS
4	264.46	50.52	-22.12	28.40	47.00	18.60	Horizontal	PASS
5	462.30	50.52	-16.85	33.67	47.00	13.33	Horizontal	PASS
6	718.88	40.60	-11.79	28.81	47.00	18.19	Horizontal	PASS

Project Information

Mode:	Zigbee	Band:	-
Bandwidth	-	Channel	Low
IMEI:	--	Engineer:	Tian Shuo
Remark:	Power setting17		

Test Graph



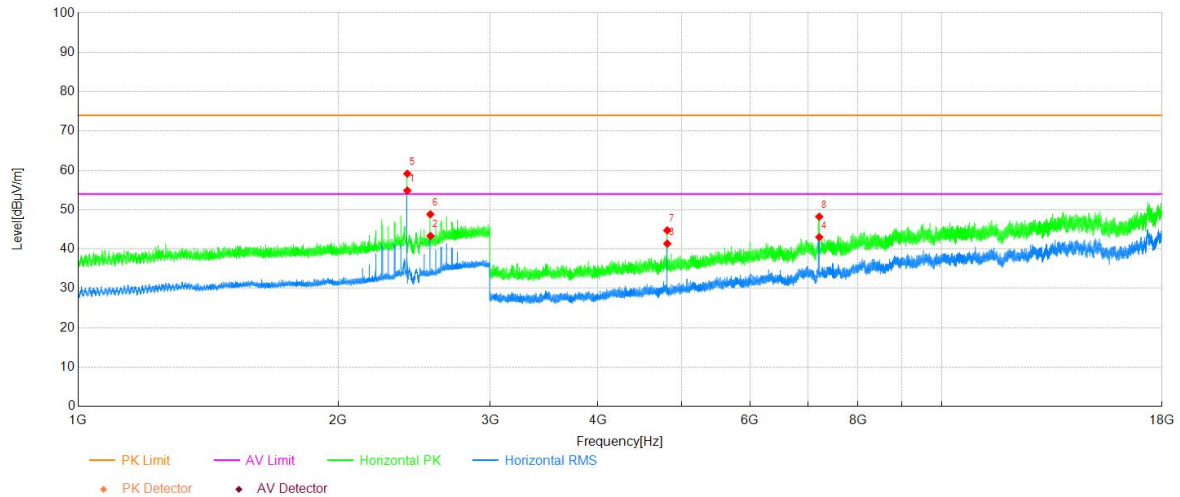
Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Verdict
1	72.68	47.93	-26.10	21.83	40.00	18.17	Vertical	PASS
2	143.98	49.38	-25.46	23.92	43.50	19.58	Vertical	PASS
3	249.86	45.32	-21.40	23.92	47.00	23.08	Vertical	PASS
4	401.97	42.31	-17.31	25.00	47.00	22.00	Vertical	PASS
5	462.11	47.31	-17.11	30.20	47.00	16.80	Vertical	PASS
6	869.09	40.26	-9.25	31.01	47.00	15.99	Vertical	PASS

Test Result Above 1GHz

Project Information			
Mode:	Zigbee	Band:	-
Bandwidth	-	Channel	Low
SN:	-	Engineer:	Ou shuyan
Remark:	Power setting17		

Test Graph

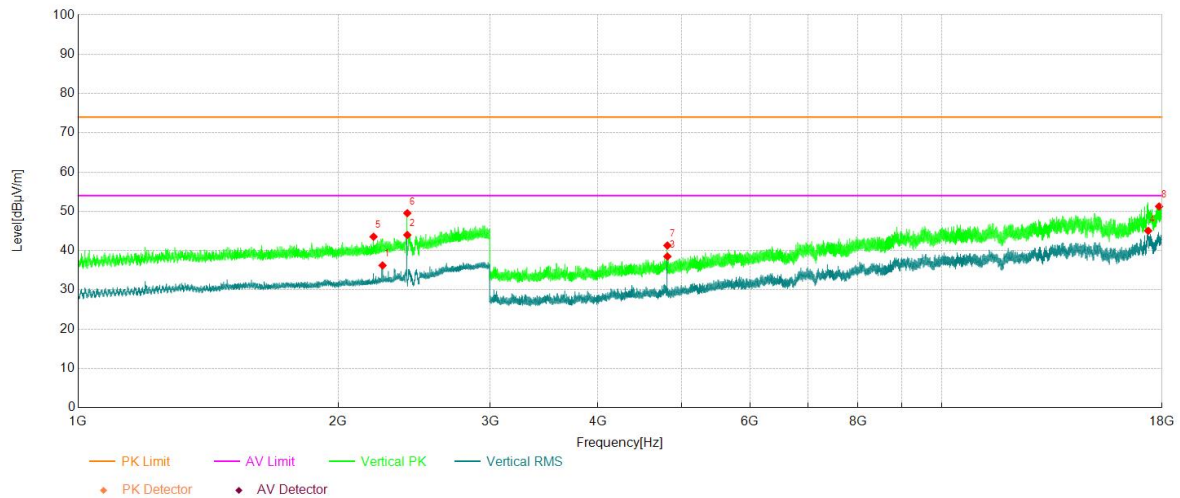


Data List								
NO.	Freq. [MHz]	Reading [dBuV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Verdict
1	2405.60	52.66	2.22	54.88	-	-	Horizontal	NA
2	2559.20	40.91	2.44	43.35	54.00	10.65	Horizontal	PASS
3	4811.50	49.07	-7.68	41.39	54.00	12.61	Horizontal	PASS
4	7217.00	44.46	-1.42	43.04	54.00	10.96	Horizontal	PASS
5	2405.60	56.95	2.22	59.17	-	-	Horizontal	NA
6	2558.00	46.40	2.44	48.84	74.00	25.16	Horizontal	PASS
7	4811.00	52.42	-7.67	44.75	74.00	29.25	Horizontal	PASS
8	7216.50	49.65	-1.41	48.24	74.00	25.76	Horizontal	PASS

Project Information

Mode:	Zigbee	Band:	-
Bandwidth	-	Channel	Low
SN:	-	Engineer:	Ou shuyan
Remark:	Power setting17		

Test Graph



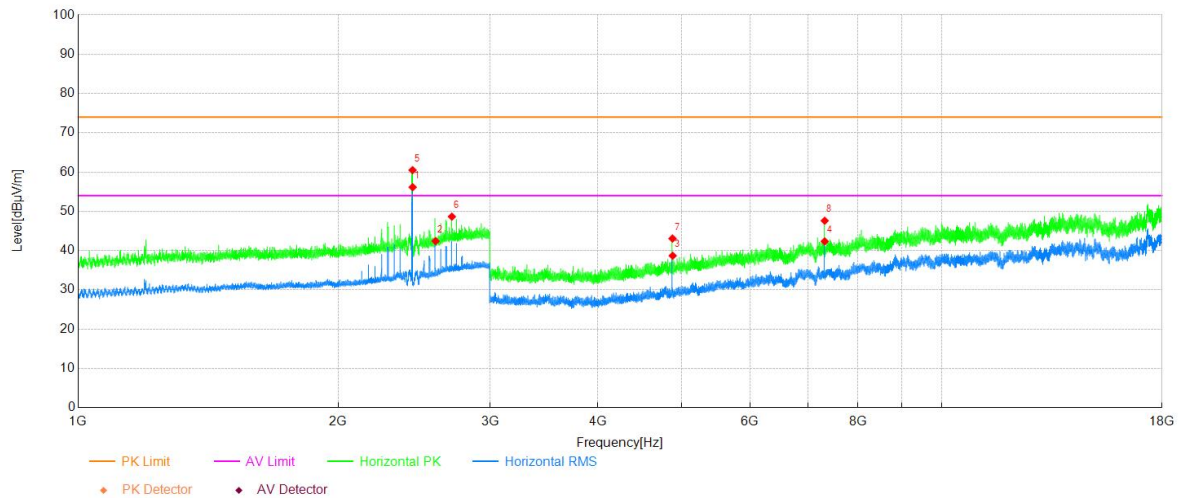
Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Verdict
1	2251.80	34.49	1.73	36.22	54.00	17.78	Vertical	PASS
2	2405.60	41.76	2.22	43.98	-	-	Vertical	NA
3	4813.00	46.20	-7.70	38.50	54.00	15.50	Vertical	PASS
4	17349.50	32.19	12.84	45.03	54.00	8.97	Vertical	PASS
5	2198.40	42.34	1.19	43.53	74.00	30.47	Vertical	PASS
6	2405.40	47.32	2.22	49.54	-	-	Vertical	NA
7	4813.00	48.99	-7.70	41.29	74.00	32.71	Vertical	PASS
8	17858.50	38.54	12.70	51.24	74.00	22.76	Vertical	PASS

Project Information

Mode:	Zigbee	Band:	-
Bandwidth	-	Channel	Mid
SN:	-	Engineer:	Ou shuyan
Remark:	Power setting 17		

Test Graph



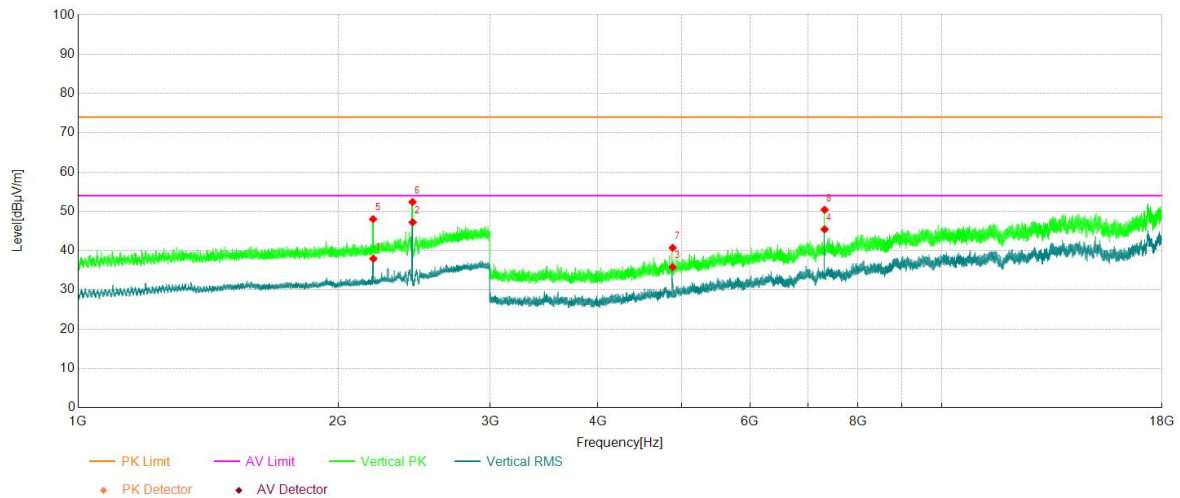
Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Verdict
1	2440.00	53.85	2.29	56.14	-	-	Horizontal	NA
2	2593.80	39.78	2.63	42.41	54.00	11.59	Horizontal	PASS
3	4881.50	46.73	-8.04	38.69	54.00	15.31	Horizontal	PASS
4	7322.00	43.70	-1.35	42.35	54.00	11.65	Horizontal	PASS
5	2439.40	58.19	2.29	60.48	-	-	Horizontal	NA
6	2709.20	44.66	3.99	48.65	74.00	25.35	Horizontal	PASS
7	4879.00	51.12	-8.05	43.07	74.00	30.93	Horizontal	PASS
8	7321.50	48.95	-1.35	47.60	74.00	26.40	Horizontal	PASS

Project Information

Mode:	Zigbee	Band:	-
Bandwidth	-	Channel	Mid
SN:	-	Engineer:	Ou shuyan
Remark:	Power setting 17		

Test Graph



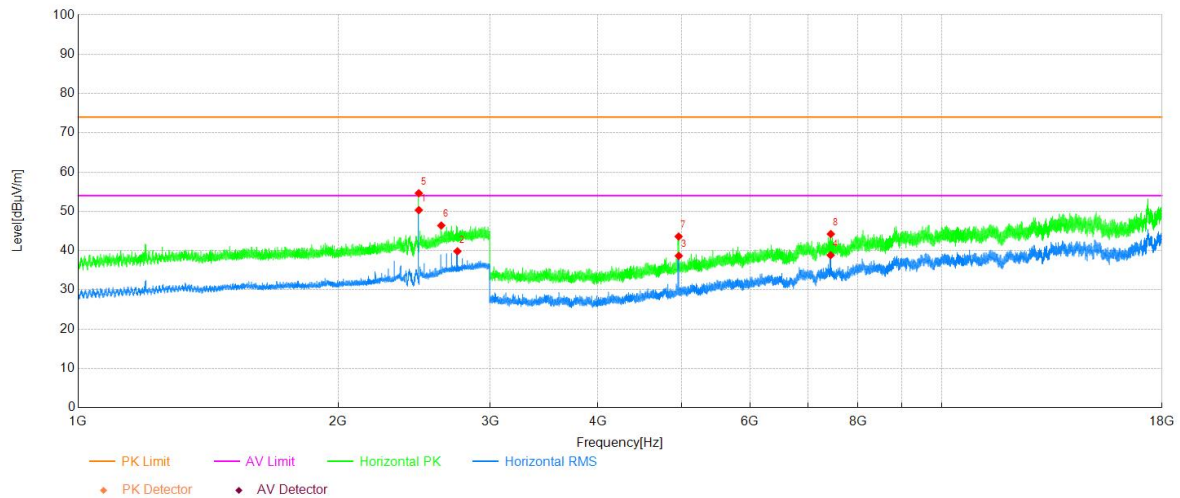
Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Verdict
1	2197.20	36.75	1.18	37.93	54.00	16.07	Vertical	PASS
2	2439.80	44.90	2.29	47.19	-	-	Vertical	NA
3	4879.50	43.84	-8.05	35.79	54.00	18.21	Vertical	PASS
4	7319.00	46.74	-1.33	45.41	54.00	8.59	Vertical	PASS
5	2195.60	46.83	1.18	48.01	74.00	25.99	Vertical	PASS
6	2439.40	50.07	2.29	52.36	-	-	Vertical	NA
7	4881.00	48.75	-8.05	40.70	74.00	33.30	Vertical	PASS
8	7318.00	51.71	-1.32	50.39	74.00	23.61	Vertical	PASS

Project Information

Mode:	Zigbee	Band:	-
Bandwidth	-	Channel	High
SN:	-	Engineer:	Ou shuyan
Remark:	Power setting 12		

Test Graph

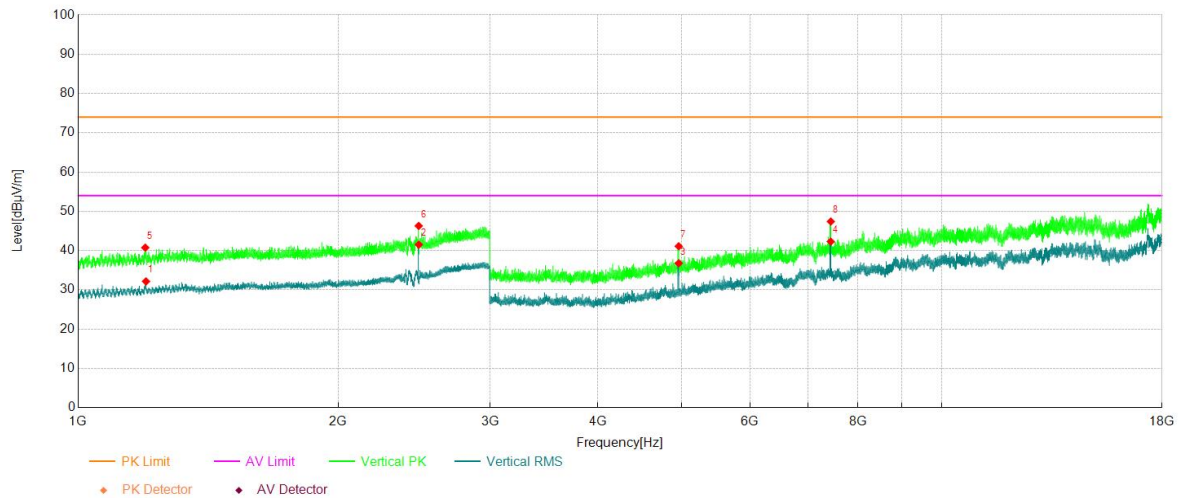


Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Verdict
1	2480.60	47.94	2.37	50.31	-	-	Horizontal	NA
2	2749.40	35.74	4.08	39.82	54.00	14.18	Horizontal	PASS
3	4961.50	46.22	-7.56	38.66	54.00	15.34	Horizontal	PASS
4	7439.00	40.44	-1.63	38.81	54.00	15.19	Horizontal	PASS
5	2480.40	52.23	2.37	54.60	-	-	Horizontal	NA
6	2633.40	43.15	3.23	46.38	74.00	27.62	Horizontal	PASS
7	4959.00	51.14	-7.55	43.59	74.00	30.41	Horizontal	PASS
8	7441.50	45.89	-1.67	44.22	74.00	29.78	Horizontal	PASS

Project Information			
Mode:	Zigbee	Band:	-
Bandwidth	-	Channel	High
SN:	-	Engineer:	Ou shuyan
Remark:	Power setting 12		

Test Graph



Data List

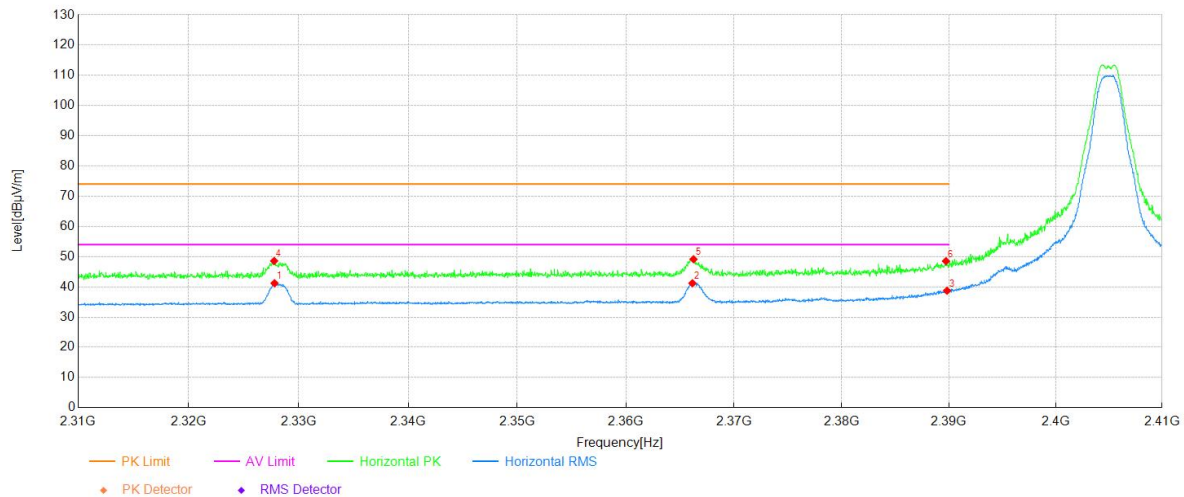
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Verdict
1	1198.40	33.02	-0.86	32.16	54.00	21.84	Vertical	PASS
2	2480.40	39.15	2.37	41.52	-	-	Vertical	NA
3	4960.50	44.32	-7.55	36.77	54.00	17.23	Vertical	PASS
4	7440.50	43.95	-1.65	42.30	54.00	11.70	Vertical	PASS
5	1196.00	41.62	-0.86	40.76	74.00	33.24	Vertical	PASS
6	2479.80	43.92	2.37	46.29	-	-	Vertical	NA
7	4960.00	48.66	-7.55	41.11	74.00	32.89	Vertical	PASS
8	7442.00	49.08	-1.68	47.40	74.00	26.60	Vertical	PASS

Radiated Band Edge

Test Result

Project Information			
Mode:	Zigbee	Band:	-
Bandwidth	-	Channel	Low
IMEI:	E1N25GL0Q000099	Engineer:	Ou shuyan
Remark:	Power setting17		

Test Graph



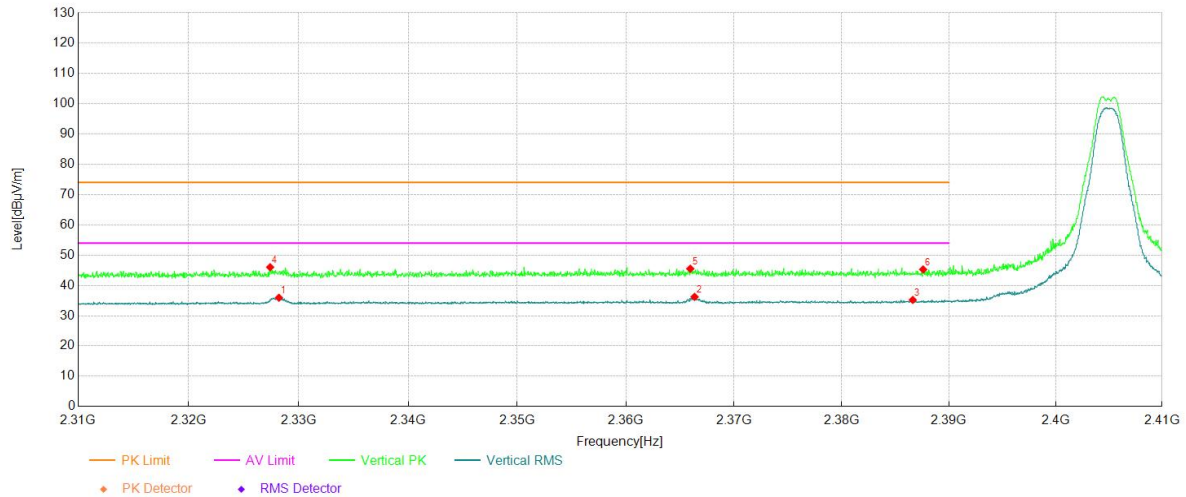
Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Verdict
1	2327.81	39.93	1.26	41.19	54.00	12.81	Horizontal	PASS
2	2366.15	39.76	1.44	41.20	54.00	12.80	Horizontal	PASS
3	2389.83	37.31	1.43	38.74	54.00	15.26	Horizontal	PASS
4	2327.77	47.31	1.26	48.57	74.00	25.43	Horizontal	PASS
5	2366.25	47.69	1.44	49.13	74.00	24.87	Horizontal	PASS
6	2389.73	47.09	1.43	48.52	74.00	25.48	Horizontal	PASS

Project Information

Mode:	Zigbee	Band:	-
Bandwidth	-	Channel	Low
IMEI:	E1N25GL0Q000099	Engineer:	Ou shuyan
Remark:	Power setting17		

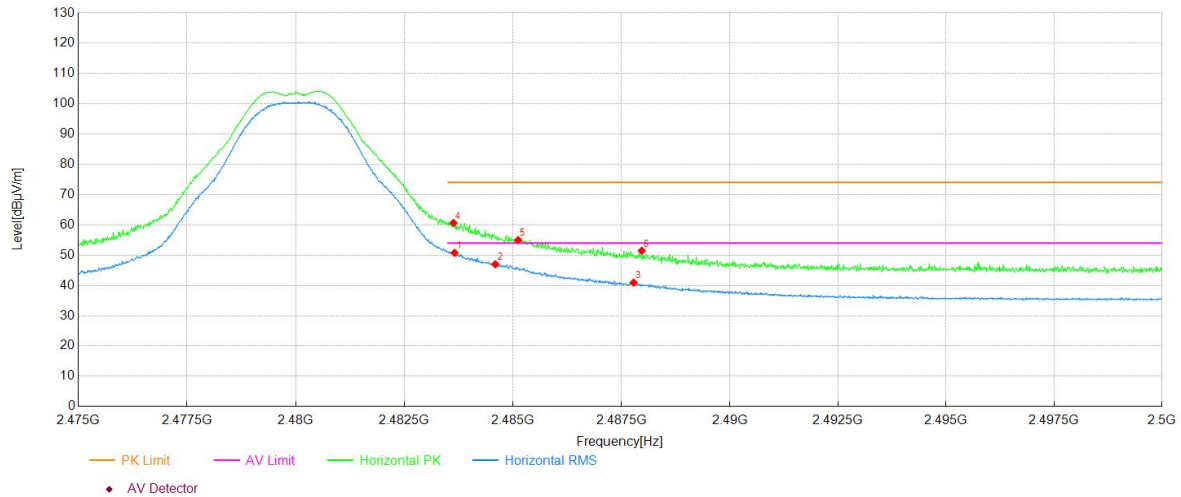
Test Graph



Data List

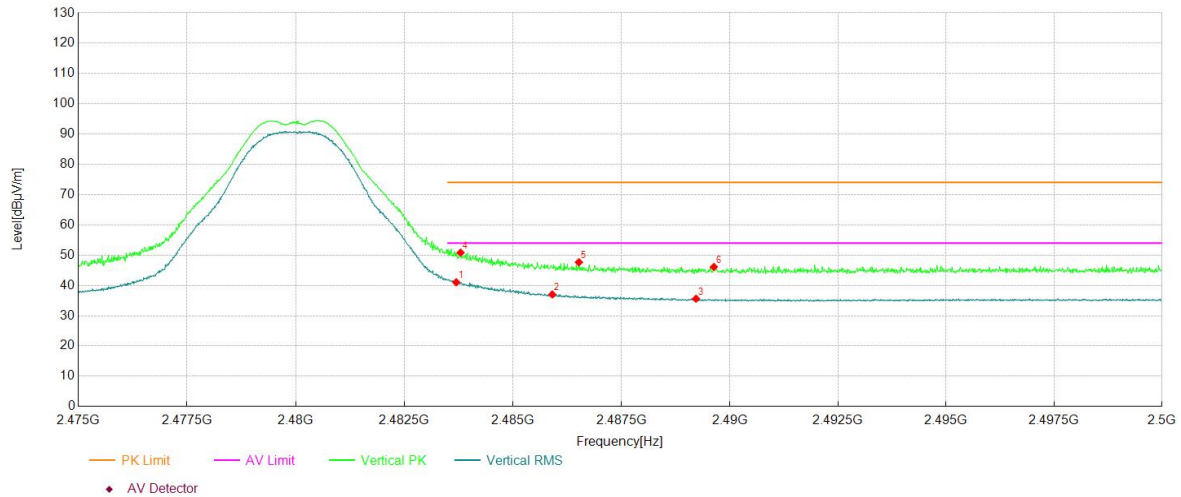
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Verdict
1	2328.21	34.67	1.26	35.93	54.00	18.07	Vertical	PASS
2	2366.35	34.78	1.44	36.22	54.00	17.78	Vertical	PASS
3	2386.63	33.78	1.42	35.20	54.00	18.80	Vertical	PASS
4	2327.41	44.76	1.26	46.02	74.00	27.98	Vertical	PASS
5	2365.95	44.08	1.44	45.52	74.00	28.48	Vertical	PASS
6	2387.59	43.85	1.43	45.28	74.00	28.72	Vertical	PASS

Project Information			
Mode:	Zigbee	Band:	-
Bandwidth	-	Channel	High
IMEI:	E1N25GL0Q000099	Engineer:	Ou shuyan
Remark:	Power setting 12		

Test Graph**Data List**

NO.	Freq. [MHz]	Reading [dBuV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Verdict
1	2483.65	48.88	1.86	50.74	54.00	3.26	Horizontal	PASS
2	2484.59	45.13	1.87	47.00	54.00	7.00	Horizontal	PASS
3	2487.78	39.02	1.90	40.92	54.00	13.08	Horizontal	PASS
4	2483.63	58.78	1.86	60.64	74.00	13.36	Horizontal	PASS
5	2485.12	53.12	1.87	54.99	74.00	19.01	Horizontal	PASS
6	2487.97	49.55	1.90	51.45	74.00	22.55	Horizontal	PASS

Project Information			
Mode:	Zigbee	Band:	-
Bandwidth	-	Channel	High
IMEI:	E1N25GL0Q000099	Engineer:	Ou shuyan
Remark:	Power setting 12		

Test Graph**Data List**

NO.	Freq. [MHz]	Reading [dBuV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Verdict
1	2483.69	39.18	1.86	41.04	54.00	12.96	Vertical	PASS
2	2485.91	35.13	1.88	37.01	54.00	16.99	Vertical	PASS
3	2489.22	33.69	1.92	35.61	54.00	18.39	Vertical	PASS
4	2483.79	48.95	1.87	50.82	74.00	23.18	Vertical	PASS
5	2486.52	45.76	1.89	47.65	74.00	26.35	Vertical	PASS
6	2489.63	44.18	1.92	46.10	74.00	27.90	Vertical	PASS

~The End~