



RF MEASUREMENT REPORT

FCC ID: YIY-ASMB0935
Applicant: Industrea Mining Technology Pty Ltd
Product: Mini RF UWB Module DW3000
Model No.: ASMB0935
Brand Name: Digital Mining Technology
FCC Classification: Wideband Transmitter (WBT)
FCC Rule Part(s): Part 15 Subpart C (Section 15.250)
Received Date: 2025-03-17
Test Date: 2025-04-08 ~ 2025-04-23

Reviewed By:

Denise Zhou

Approved By:

Robin Wu



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
R25S1033034-U201	V01	Initial Report	2025-05-15	Valid

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1. General Information

1.1. Applicant

Industrea Mining Technology Pty Ltd

T/A Digital Mining Technology

3 Co-Wyn Close, Fountaindale, NSW 2258, Australia

1.2. Manufacturer

Industrea Mining Technology Pty Ltd

T/A Digital Mining Technology

3 Co-Wyn Close, Fountainsdale, NSW 2258, Australia

1.3. Testing Facility

☒	Test Site – MRT Suzhou Laboratory
	Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
	Laboratory Location (Suzhou - SIP) 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China
	Laboratory Location (Suzhou - Wujiang) Building 1, No.1 Xingdong Road, Wujiang, Suzhou, Jiangsu, People's Republic of China
	Laboratory Accreditations
	A2LA: 3628.01 FCC: CN1166 VCCI: ☐ R-20025 ☐ G-20034 ☐ C-20020 ☐ T-20020 ☐ R-20141 ☐ G-20134 ☐ C-20103 ☐ T-20104
	CNAS: L10551 ISED: CN0001
☐	Test Site – MRT Shenzhen Laboratory
	Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China
	Laboratory Accreditations
	A2LA: 3628.02 FCC: CN1284
CNAS: L10551 ISED: CN0105	
☐	Test Site – MRT Taiwan Laboratory
	Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
	Laboratory Accreditations
	TAF: 3261 FCC: 291082, TW3261
ISED: TW3261	

1.4. Product Information

Product Name	Mini RF UWB Module DW3000
Model No.	ASMB0935
EUT Identification No.	20250317Sample#14
UWB Specification	6489.6MHz
Antenna Information	Refer to Section 1.6
Module Voltage	3.3V
Operation Temperature	-40 ~ 85° C
Remark: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Radio Specification under Test

Operation Frequency	6489.6MHz
No. of channels	1
Type of modulation	BPM-BPSK

1.6. Antennas Details

Antenna Type	Antenna Name	Peak Gain (dBi)
Monopole	PCUWB65.4111	3.70
Dipole	TU.60.3H31	3.17
Dipole	TU.63.2111	3.44

2. Test Configuration

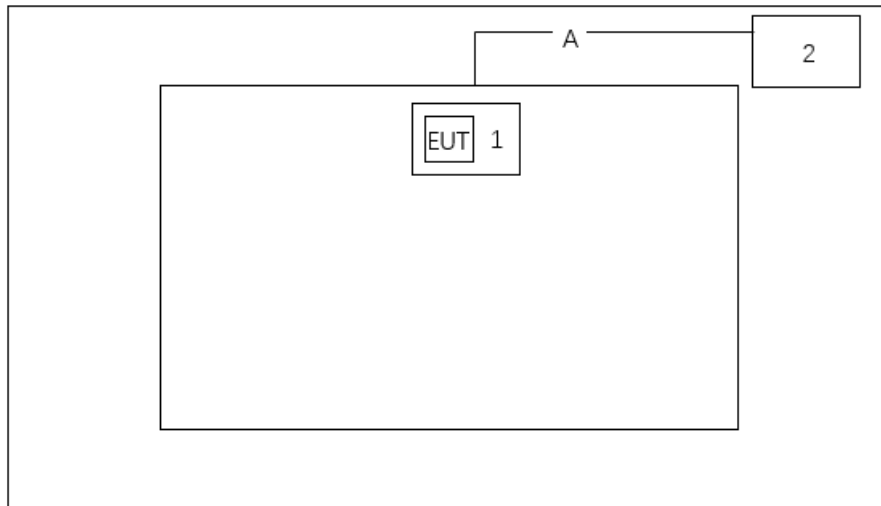
2.1. Test Mode

Mode 1: Transmit by 6489.6 MHz

2.2. Test System Connection Diagram

The device was tested per the guidance ANSI C63.10: 2013 was used to reference the appropriate EUT setup for radiated emissions testing.

Connection Diagram



Cable Type		Cable Description	Length
A	Power Cable	Non shielded	>10m
Product		Manufacturer	Model No.
1	Test Fixture	N/A	N/A
2	DC Power Supply	MESTEK	DP3010B

2.3. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15.250
- ANSI C63.10-2013

2.4. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20 ~ 75%RH

3. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
TRILOG Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2026-03-22	WZ-AC2
EMI Test Receiver	Agilent	N9038A	MRTSUE06125	1 year	2025-05-08	WZ-AC2
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06171	1 year	2025-09-23	WZ-AC2
Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2025-05-06	WZ-AC2
Anechoic Chamber	RIKEN	WZ-AC2	MRTSUE06213	1 year	2025-04-18	WZ-AC2
					2026-04-17	WZ-AC2
Thermohygrometer	testo	608-H1	MRTSUE11263	1 year	2025-10-16	WZ-AC2
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06597	1 year	2025-11-03	WZ-AC2
Preamplifier	EMCI	EMC184045SE	MRTSUE06640	1 year	2026-01-09	WZ-AC2
Loop Antenna	Schwarzbeck	FMZB 1519 B	MRTSUE06937	1 year	2026-01-04	WZ-AC2
Signal Analyzer	R&S	FSW26	MRTSUE07225	1 year	2025-07-31	WJ-AC1
Anechoic Chamber	TDK	WJ-AC1	MRTSUE07115	1 year	2025-05-17	WJ-AC1
Thermohygrometer	testo	608-H1	MRTSUE11333	1 year	2025-06-24	WJ-AC1
Thermohygrometer	testo	608-H1	MRTSUE11402	1 year	2025-12-01	WJ-AC1
Horn Antenna	ETS	3117	MRTSUE06257	1 year	2025-09-08	WJ-AC1
Microwave Broadband Preamplifier	Schwarzbeck	BBV 9718 D	MRTSUE07084	1 year	2025-12-22	WJ-AC1

Software	Version	Function
e3	230711	RE & CE
Controller_MF 7802	1.02	RE Antenna & Turntable
CONTROLLER CO3000	v 1.03.02	RE Antenna & Turntable

4. Antenna Requirements

Excerpt from §15.203 of the FCC Rules/Regulations:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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 shall be considered sufficient to comply with the provisions of this section.”

Conclusion:

The unit complies with the requirement of §15.203.

5. Measurement Uncertainty

5.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2.
(Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Radiated Emission Measurement	
The maximum measurement uncertainty is evaluated as:	
Coaxial:	9kHz~30MHz: 2.35dB
Coplanar:	9kHz~30MHz: 2.37dB
Horizontal:	30MHz~200MHz: 3.47dB
	200MHz~1GHz: 4.17dB
	1GHz~40GHz: 4.97dB
Vertical:	30MHz~200MHz: 4.07dB
	200MHz~1GHz: 5.28dB
	1GHz~40GHz: 4.84dB
Occupied Bandwidth	
Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$):	
3.2%	

6. Test Result

6.1. Summary

FCC Section(s)	Test Description	Test Condition	Verdict
15.250(a) & (b)	-10dB Bandwidth	Radiated	Pass
15.250(d)(1) & (3)	Average and Peak Power Spectral Density		Pass
15.250 (d)(1) & (2) & (4) & (5) 15.209	Radiated Emissions		Pass
15.207	AC Conducted Emissions 150kHz - 30MHz	Line Conducted	N/A

Note 1: For radiated emission test, every axis (X, Y, Z) was also verified and showed the worst axis in the test setup photos. The test results shown in the following sections represent the worst-case emissions.

Note 2: N/A means the item not applicable, details refer to relevant section.

Note 3: For “Radiated Emissions”, the antenna port selected for testing depends on the higher average power spectral density.

6.2. -10dB Bandwidth Measurement

6.2.1. Test Limit

§15.250(a): The -10 dB bandwidth of a device operating under the provisions of this section must be contained within the 5925-7250 MHz band under all conditions of operation including the effects from stepped frequency, frequency hopping or other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage.

§15.250(b): The -10 dB bandwidth of the fundamental emission shall be at least 50 MHz. For transmitters that employ frequency hopping, stepped frequency or similar modulation types, measurement of the -10 dB minimum bandwidth specified in this paragraph shall be made with the frequency hop or step function disabled and with the transmitter operating continuously at a fundamental frequency following the provisions of § 15.31(m).

6.2.2. Test Procedure

ANSI C63.10 - 2013 - Section 10.1

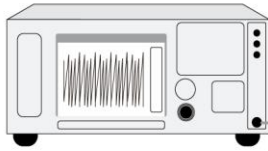
6.2.3. Test Setting

The frequency at which the maximum power level is measured with the peak detector is designated f_M . The peak power measurements shall be made using a spectrum analyzer or EMI receiver with a 1 MHz resolution bandwidth and a video bandwidth of 1 MHz or greater. The instrument shall be set to peak detection using the maximum-hold trace mode. The outermost 1 MHz segments above and below f_M , where the peak power falls by 10 dB relative to the level at f_M , are designated as f_H and f_L , respectively:

- a) For the lowest frequency bound f_L , the emission is searched from a frequency lower than f_M that has, by inspection, a peak power much lower than 10 dB less than the power at f_M and increased toward f_M until the peak power indicates 10 dB less than the power at f_M . The frequency of that segment is recorded.
- b) This process is repeated for the highest frequency bound f_H , beginning at a frequency higher than f_M that has, by inspection, a peak power much lower than 10 dB below the power at f_M . The frequency of that segment is recorded.
- c) The two recorded frequencies represent the highest f_H and lowest f_L bounds of the UWB transmission, and the -10 dB bandwidth ($B - 10$) is defined as $(f_H - f_L)$. The center frequency (f_c) is mathematically determined from $(f_H + f_L) / 2$.

6.2.4. Test Setup

Spectrum Analyzer



DC Block
&
Attenuator



6.2.5. Test Result

Refer to Appendix A.1.

6.3. Average and Peak Power Spectral Density

6.3.1. Test Limit

§15.250 (d)(1) The radiated emissions from a device operating under the provisions of this section shall not exceed the following RMS average limits based on measurements using a 1 MHz resolution bandwidth:

Frequency (MHz)	EIRP in dBm
5925 - 7250	-41.3

§15.250 (d)(3) There is a limit on the peak level of the emissions contained within a 50 MHz bandwidth centered on the frequency at which the highest radiated emission occurs and this 50 MHz bandwidth must be contained within the 5925-7250 MHz band. The peak EIRP limit is $20 \log (RBW/50)$ dBm where RBW is the resolution bandwidth in megahertz that is employed by the measurement instrument.

6.3.2. Test Procedure

ANSI C63.10 - 2013 - Section 10.3

6.3.3. Test Setting

Peak Power within 50 MHz bandwidth

The peak detector of the instrument is selected and the maximum hold feature activated.

It is acceptable to employ an RBW of less than 50 MHz (but no less than 1 MHz) when performing the required peak power measurements. The video bandwidth of the measurement instrument shall not be less than RBW.

Maximum Average Emissions

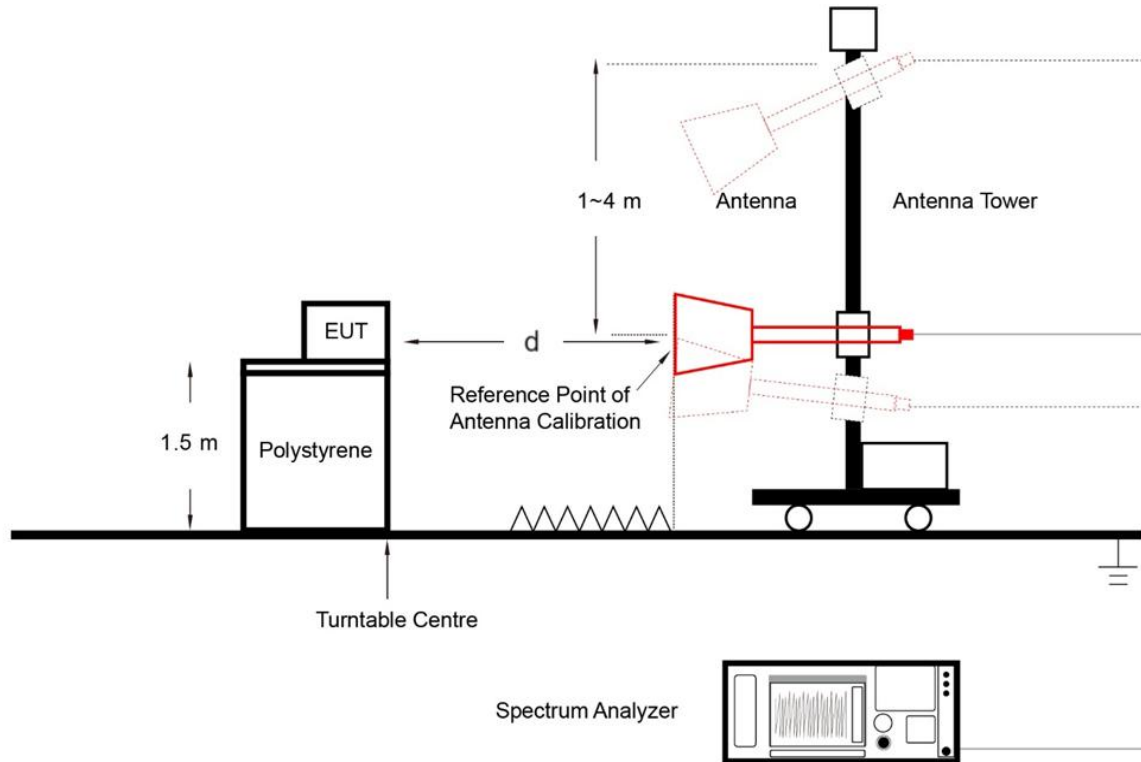
The following procedure shall be used for evaluating rms-average power spectral density:

- Set the RBW to 1 MHz
- Set the VBW to 3 MHz
- Set the frequency span to examine the spectrum across a convenient frequency segment
- Select the power averaging (rms) detector
- Set the sweep time so that there is no more than a 1 ms integration period over each measurement bin.

The field-strength method was used for the test and the test distance is 1m for average power and 3m for peak power, the UWB emission limits are expressed as EIRP, so the formula was used to convert field-strength to EIRP.

$EIRP \text{ (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20 \cdot \log(d[\text{m}]) - 104.77$, where E is field strength and d is test distance.

6.3.4. Test Setup



Note: d is 1m for average power test and 3m for peak power test.

6.3.5. Test Result

Refer to Appendix A.2.

6.4. Radiated Emission Measurement

6.4.1. Test Limit

§15.250 (d)(1) The radiated emissions above 960 MHz from a device operating under the provisions of this section shall not exceed the following RMS average limits based on measurements using a 1 MHz resolution bandwidth:

Frequency [MHz]	EIRP [dBm]
960 – 1610	-75.3
1610 – 1990	-63.3
1990 – 3100	-61.3
3100 – 5925	-51.3
5925 – 7250	-41.3
7250 – 10600	-51.3
Above 10600	-61.3

§15.250 (d)(2) In addition to the radiated emission limits specified in the table in paragraph (d)(1) of this section, transmitters operating under the provisions of this section shall not exceed the following RMS average limits when measured using a resolution bandwidth of no less than 1 kHz:

Frequency [MHz]	EIRP [dBm]
1164 – 1240	-85.3
1559 – 1610	-85.3

§15.250 (d)(4) Radiated emissions at or below 960 MHz shall not exceed the emission levels in § 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [μV/m]	Measured Distance [Meters]
0.009 – 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 – 30	30	30
30 – 88	100	3
88 – 216	150	3
216 – 960	200	3

6.4.2. Test Procedure

ANSI C63.10 - 2013 - Section 10.2 & 10.3

ANSI C63.10 - 2013 - Section 6.3 (General Requirements)

ANSI C63.10 - 2013 - Section 6.4 (Standard test method below 30MHz)

ANSI C63.10 - 2013 - Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10 - 2013 - Section 6.6 (Standard test method above 1GHz)

6.4.3. Test Setting

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 960 MHz	100 ~ 120 kHz

Peak Measurements above 960MHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz (1kHz for GPS band)
3. VBW = 3 * RBW
4. Detector = Peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 960MHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz (1kHz for GPS band)
3. VBW = 3 * RBW
4. Detector = Average
5. Sweep points = 2 * Span / RBW
6. Sweep time = Sweep points * 1ms
7. Trace mode = average
8. Trace was allowed to stabilize

Quasi-Peak Measurements below 960MHz

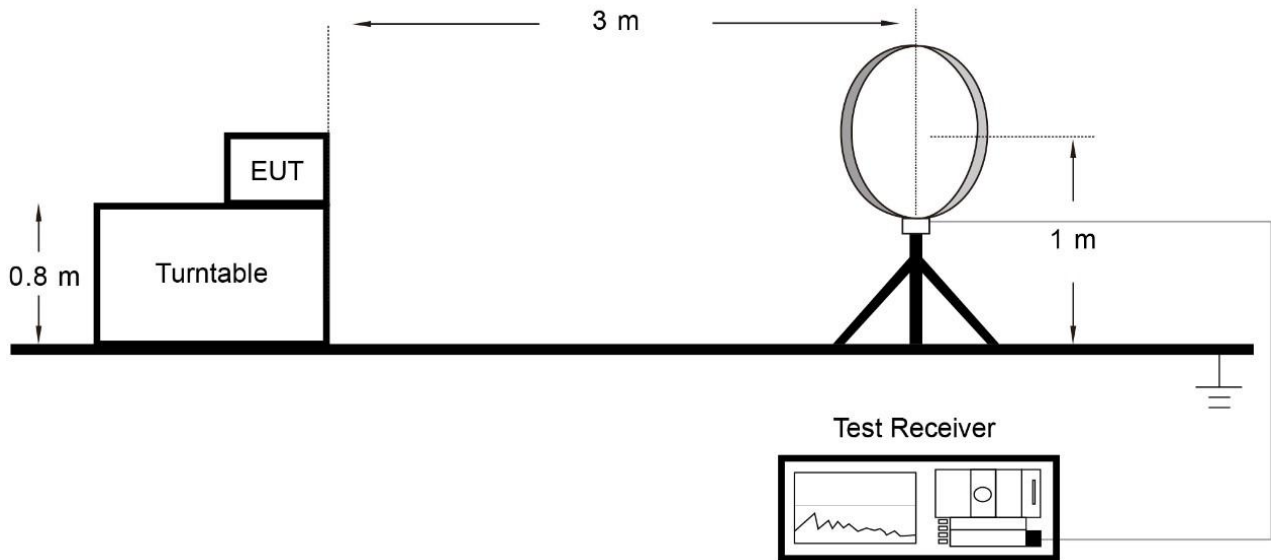
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = as specified in Table 1
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

The field-strength method was used for the test and the test distance is 1m, the UWB emission limits are expressed as EIRP, so the formula was used to convert field-strength to EIRP.

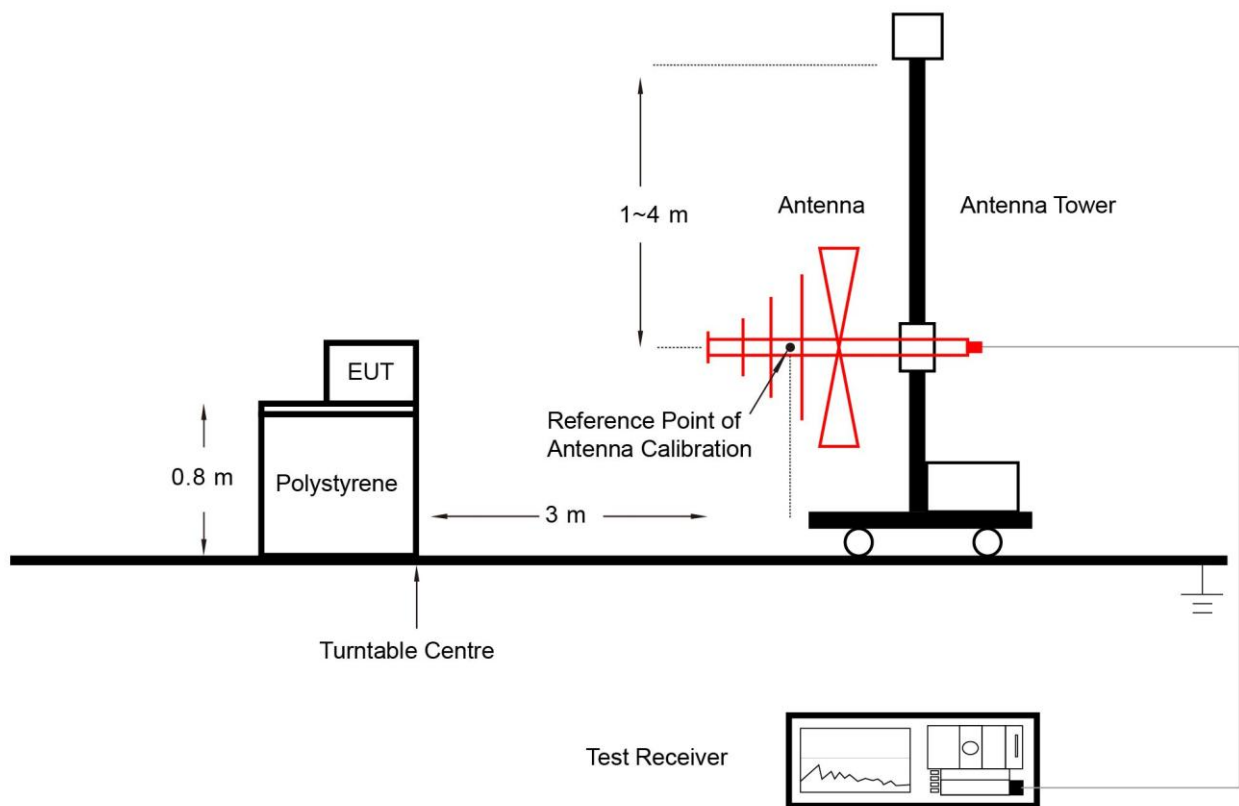
$EIRP\ (dBm) = E\ (dB_{\mu V/m}) + 20 \cdot \log(d[m]) - 104.77$, where E is field strength and d is test distance.

6.4.4. Test Setup

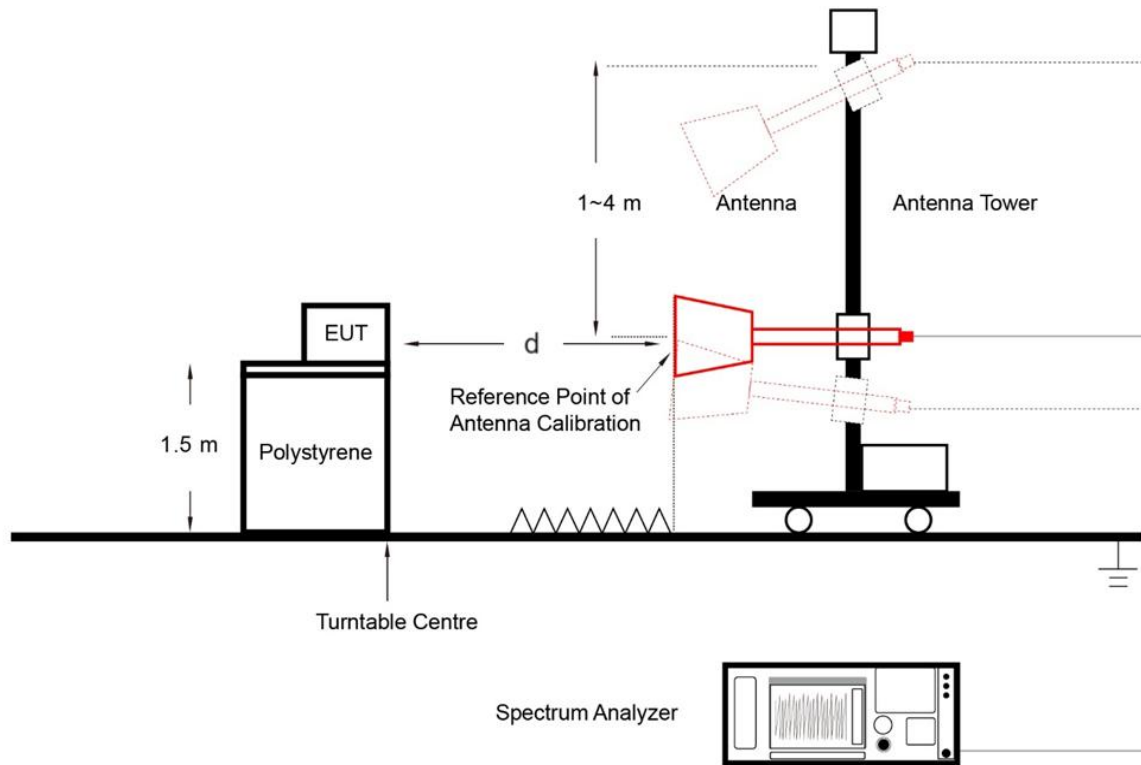
Below 30MHz Test Setup



Above 30MHz Test Setup:



Above 960MHz Test Setup:



Note: d is 1m.

6.4.5. Test Result

Refer to Appendix A.3.

6.5. AC Conducted Emissions Measurement

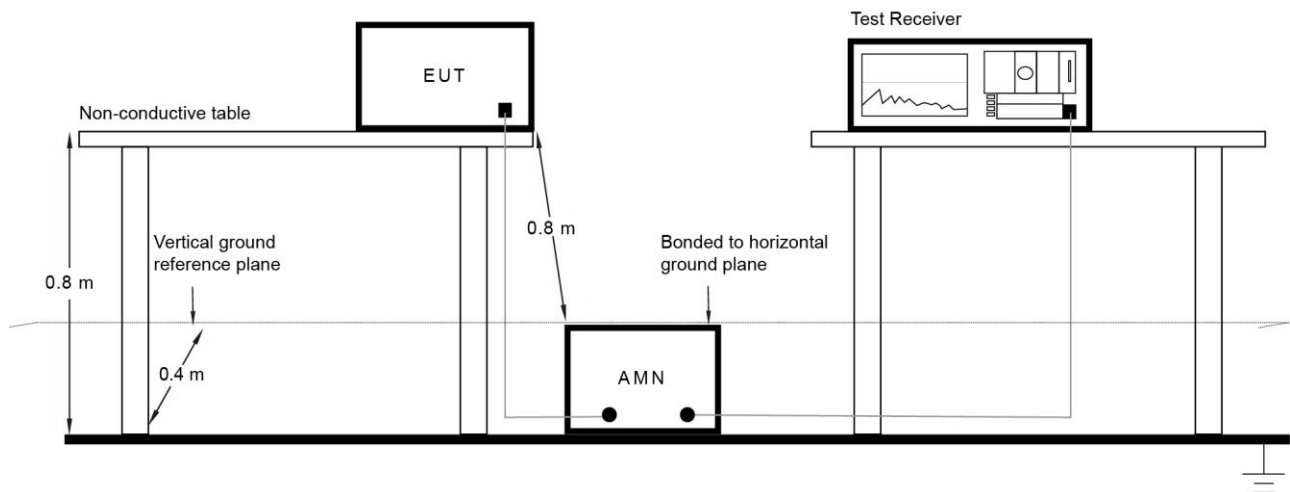
6.5.1. Test Limit

FCC Part 15.207 Limits		
Frequency (MHz)	QP (dB μ V)	AV (dB μ V)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

6.5.2. Test Setup



6.5.3. Test Result

The EUT is a module for vehicle use which has no possibility to connect to AC main, so the item is not applicable.

Appendix A - Test Result

A.1 -10dB Bandwidth Test Result

Antenna: PCUWB65.4111

Test Site	WZ-AC2	Test Engineer	Amy Zhang
Test Date	2025-04-08	Antenna Port	1

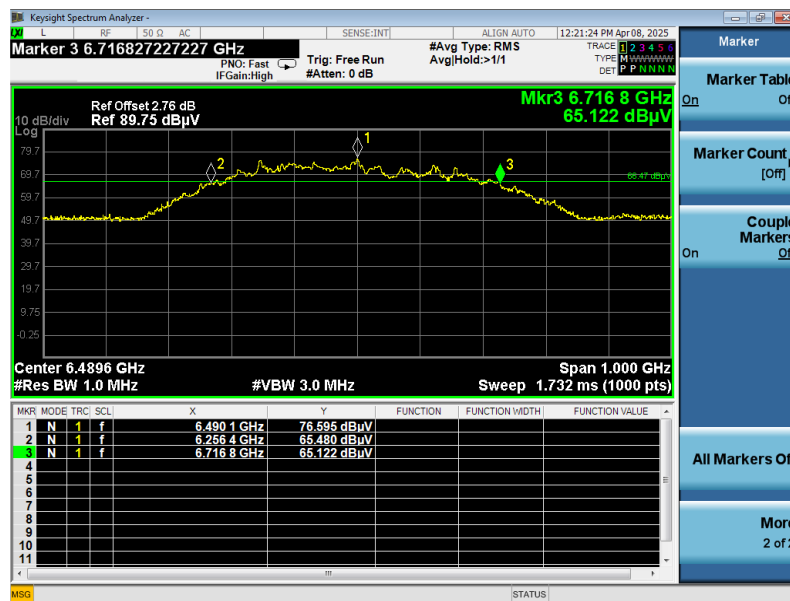
Test Mode	F _L (MHz)	Limit (MHz)	F _H (MHz)	Limit (MHz)	Result
Mode 1	6256.4	≥5925	6716.8	≤7250	Pass

Test Mode	-10dB Bandwidth (MHz)	Limit (MHz)	Result	F _C (MHz)
Mode 1	460.4	≥ 50	Pass	6486.6

Note 1: -10dB Bandwidth = F_H - F_L = 6716.8 – 6256.4 = 460.4 MHz

Note 2: F_C = (F_H + F_L) / 2 = 6486.6MHz

-10dB Bandwidth



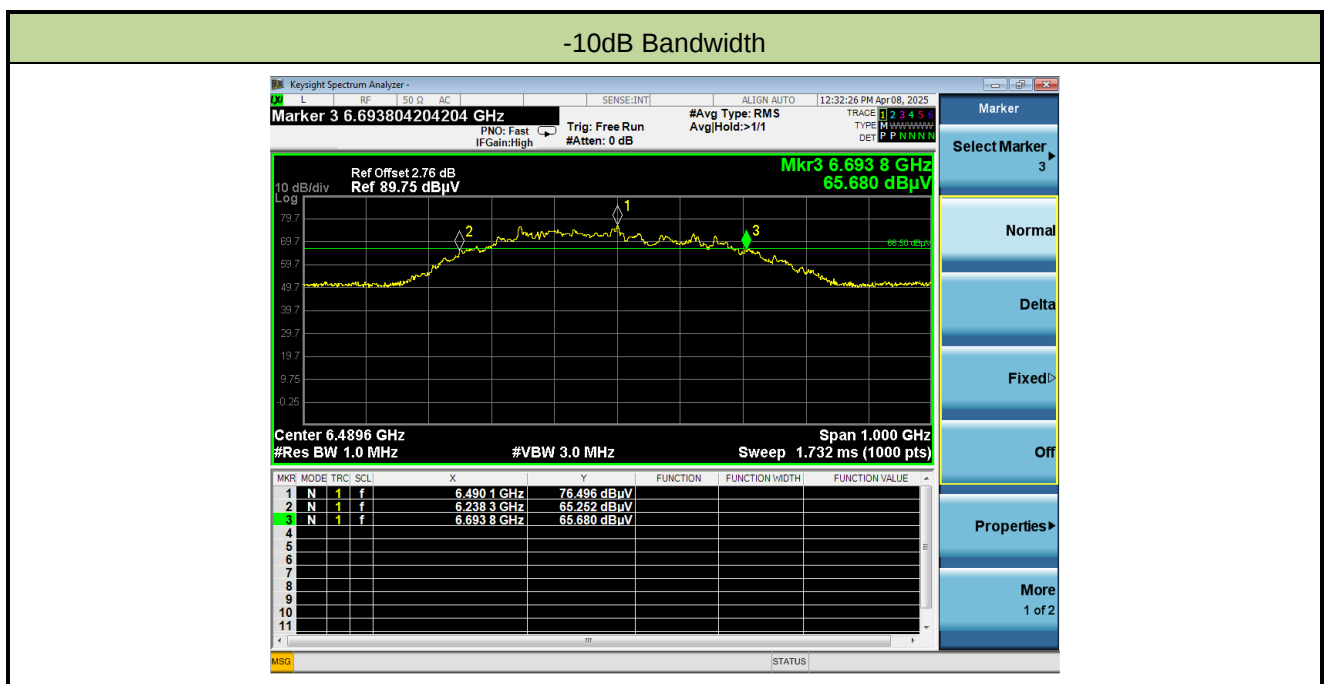
Test Site	WZ-AC2	Test Engineer	Amy Zhang
Test Date	2025-04-08	Antenna Port	2

Test Mode	F _L (MHz)	Limit (MHz)	F _H (MHz)	Limit (MHz)	Result
Mode 1	6238.3	≥5925	6693.8	≤7250	Pass

Test Mode	-10dB Bandwidth (MHz)	Limit (MHz)	Result	F _C (MHz)
Mode 1	455.5	≥ 50	Pass	6466.1

Note 1: -10dB Bandwidth = F_H - F_L = 6693.8 – 6238.3 = 455.5 MHz

Note 2: F_C = (F_H + F_L) / 2 = 6466.1 MHz



Antenna: TU63.2111

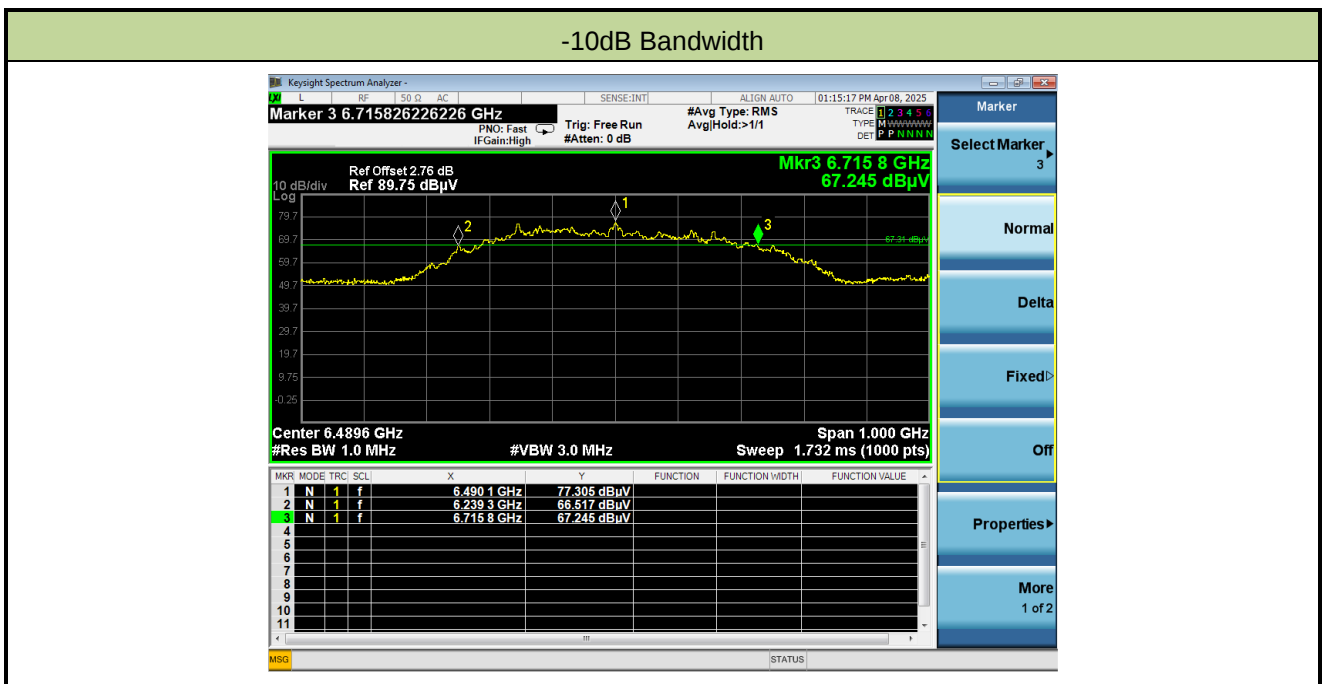
Test Site	WZ-AC2	Test Engineer	Amy Zhang
Test Date	2025-04-08	Antenna Port	1

Test Mode	F _L (MHz)	Limit (MHz)	F _H (MHz)	Limit (MHz)	Result
Mode 1	6239.3	≥5925	6715.8	≤7250	Pass

Test Mode	-10dB Bandwidth (MHz)	Limit (MHz)	Result	F _C (MHz)
Mode 1	476.5	≥ 50	Pass	6477.6

Note 1: -10dB Bandwidth = F_H - F_L = 6715.8 – 6239.3 = 476.5 MHz

Note 2: F_C = (F_H + F_L) / 2 = 6477.6 MHz



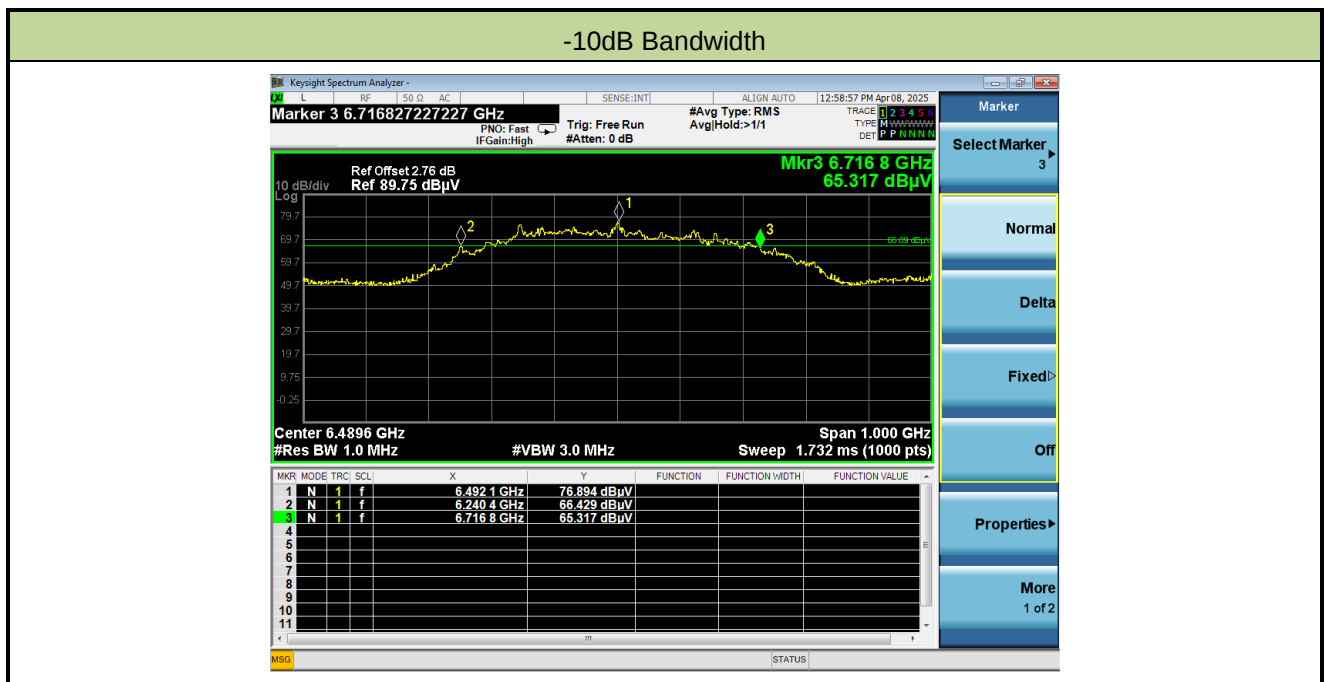
Test Site	WZ-AC2	Test Engineer	Amy Zhang
Test Date	2025-04-08	Antenna Port	2

Test Mode	F _L (MHz)	Limit (MHz)	F _H (MHz)	Limit (MHz)	Result
Mode 1	6240.4	≥5925	6716.8	≤7250	Pass

Test Mode	-10dB Bandwidth (MHz)	Limit (MHz)	Result	F _C (MHz)
Mode 1	476.4	≥ 50	Pass	6478.6

Note 1: -10dB Bandwidth = F_H - F_L = 6716.8 – 6240.4 = 476.4 MHz

Note 2: F_C = (F_H + F_L) / 2 = 6478.6 MHz



A.2 Average and Peak Power Spectral Density Test Result

Test Site	WZ-AC2 & WJ-AC1	Test Engineer	Amy Zhang
Test Date	2025-04-08 & 2025-04-17		

Antenna	Antenna Port	Average EIRP (dBμV/m/MHz)	Average EIRP (dBm/MHz)	Average EIRP Limit (dBm/MHz)	Peak EIRP (dBμV/m/50MHz)	Peak EIRP (dBm/50MHz)	Peak EIRP Limit (dBm/50MHz)	Result
PCUWB65.4111	1	63.129	-41.64	≤ -41.3	87.22	-8.01	0	Pass
	2	63.225	-41.55	≤ -41.3	86.61	-8.62	0	Pass
TU63.2111	1	63.210	-41.56	≤ -41.3	84.91	-10.32	0	Pass
	2	63.146	-41.62	≤ -41.3	85.57	-9.66	0	Pass



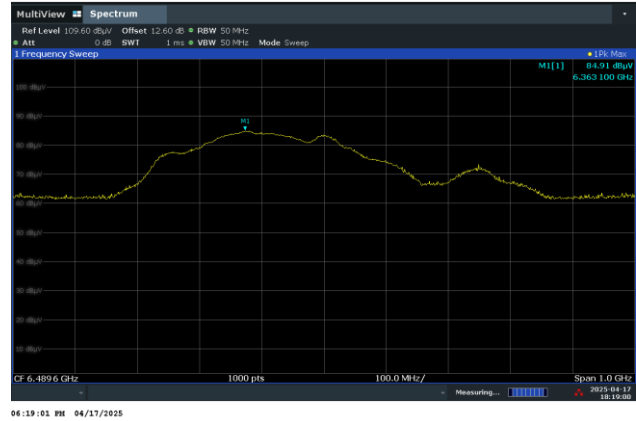
Antenna: TU63.2111

Port 1

Average Power



Peak Power

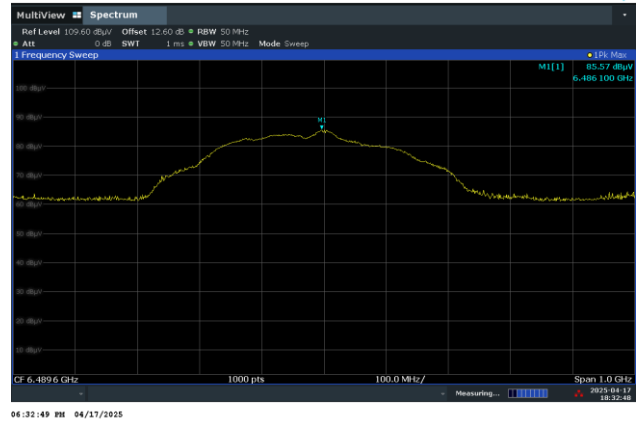


Port 2

Average Power



Peak Power



A.3 Radiated Emission Test Result

Antenna: PCUWB65.4111

Test Site	WZ-AC2	Test Engineer	Amy Zhang
Test Date	2025-04-23		

Frequency Range (MHz)	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Polarization
960 ~ 1610	1265.5	43.1	-19.6	23.5	-81.3	-75.3	-6.0	Peak	Horizontal
	1527.9	43.7	-19.4	24.3	-80.5	-75.3	-5.2	Peak	Vertical
1610 ~ 1990	1769.1	43.7	-19.5	24.2	-80.6	-63.3	-17.3	Peak	Horizontal
	1744.8	45.7	-19.7	26.0	-78.8	-63.3	-15.5	Peak	Vertical
1990 ~ 3100	2365.3	42.9	-16.4	26.5	-78.3	-61.3	-17.0	Peak	Horizontal
	2238.4	42.4	-16.1	26.3	-78.5	-61.3	-17.2	Peak	Vertical
3100 - 5925	5099.1	40.4	-9.8	30.6	-74.2	-51.3	-22.9	Peak	Horizontal
	4996.5	40.0	-9.9	30.1	-74.7	-51.3	-23.4	Peak	Vertical
5925 - 7250	6985.4	54.7	-5.9	48.8	-56.0	-41.3	-14.7	Peak	Horizontal
	6987.9	52.3	-5.9	46.4	-58.4	-41.3	-17.1	Peak	Vertical
7250 - 10600	9906.3	45.0	0.4	45.4	-59.4	-51.3	-8.1	Peak	Horizontal
	9914.4	45.1	0.4	45.5	-59.3	-51.3	-8.0	Peak	Vertical
Above 10600	12978.9	41.0	1.5	42.5	-62.3	-61.3	-1.0	Average	Horizontal
	12978.9	40.8	1.5	42.3	-62.5	-61.3	-1.2	Average	Vertical

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Note 2: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Note 3: Measure Level (dBm) = Measure Level (dBμV/m) + 20*log(1) – 104.77.

Note 4: Fundamental emission is excluded which has been evaluated in Appendix A.2.

Antenna: TU63.2111

Test Site	WZ-AC2	Test Engineer	Amy Zhang
Test Date	2025-04-23		

Frequency Range (MHz)	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Polarization
960 ~ 1610	1442.8	42.9	-19.4	23.5	-81.3	-75.3	-6.0	Peak	Horizontal
	1431.6	42.4	-19.4	23.0	-81.8	-75.3	-6.5	Peak	Vertical
1610 ~ 1990	1721.4	43.1	-19.6	23.5	-81.3	-63.3	-18.0	Peak	Horizontal
	1841.5	42.7	-19.0	23.7	-81.1	-63.3	-17.8	Peak	Vertical
1990 ~ 3100	2258.7	42.2	-15.9	26.3	-78.5	-61.3	-17.2	Peak	Horizontal
	2404.0	42.3	-16.2	26.1	-78.7	-61.3	-17.4	Peak	Vertical
3100 - 5925	5345.7	40.7	-9.8	30.9	-73.9	-51.3	-22.6	Peak	Horizontal
	5107.2	40.5	-9.7	30.8	-74.0	-51.3	-22.7	Peak	Vertical
5925 - 7250	7648.0	49.8	-5.1	44.7	-60.1	-41.3	-18.8	Peak	Horizontal
	7611.9	49.5	-5.1	44.4	-60.4	-41.3	-19.1	Peak	Vertical
7250 - 10600	10102.5	45.7	0.4	46.1	-58.7	-51.3	-7.4	Peak	Horizontal
	9816.3	45.9	0.1	46.0	-58.8	-51.3	-7.5	Peak	Vertical
Above 10600	12978.9	37.6	1.5	39.1	-65.7	-61.3	-4.4	Average	Horizontal
	12978.9	39.1	1.5	40.6	-64.2	-61.3	-2.9	Average	Vertical

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Note 2: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Note 3: Measure Level (dBm) = Measure Level (dBμV/m) + 20*log(1) – 104.77.

Note 4: Fundamental emission is excluded which has been evaluated in Appendix A.2.

Antenna: PCUWB65.4111

Test Site	WZ-AC2	Test Engineer	Amy Zhang
Test Date	2025-04-23		

GPS Band

Frequency Range (MHz)	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Polarization
1164 ~ 1240	1197.3	22.7	-21.0	1.7	-103.1	-85.3	-17.8	Peak	Horizontal
	1233.2	22.5	-20.8	1.7	-103.1	-85.3	-17.8	Peak	Horizontal
	1190.3	21.4	-21.0	0.4	-104.4	-85.3	-19.1	Peak	Vertical
	1229.6	22.0	-20.8	1.2	-103.6	-85.3	-18.3	Peak	Vertical
1559 ~ 1610	1577.2	22.4	-20.4	2.0	-102.8	-85.3	-17.5	Peak	Horizontal
	1595.9	22.6	-20.3	2.3	-102.5	-85.3	-17.2	Peak	Horizontal
	1573.6	20.8	-20.4	0.4	-104.4	-85.3	-19.1	Peak	Vertical
	1585.2	20.5	-20.3	0.2	-104.6	-85.3	-19.3	Peak	Vertical

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Note 2: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Note 3: Measure Level (dBm) = Measure Level (dBμV/m) + 20*log(1) – 104.77.

Antenna: TU63.2111

Test Site	WZ-AC2	Test Engineer	Amy Zhang
Test Date	2025-04-23		

GPS Band

Frequency Range (MHz)	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Polarization
1164 ~ 1240	1180.1	23.6	-21.0	2.6	-102.2	-85.3	-16.9	Peak	Horizontal
	1209.6	21.9	-21.0	0.9	-103.9	-85.3	-18.6	Peak	Horizontal
	1178.1	22.0	-21.0	1.0	-103.8	-85.3	-18.5	Peak	Vertical
	1223.9	22.3	-20.9	1.4	-103.4	-85.3	-18.1	Peak	Vertical
1559 ~ 1610	1565.7	22.0	-20.3	1.7	-103.1	-85.3	-17.8	Peak	Horizontal
	1599.7	22.2	-20.3	1.9	-102.9	-85.3	-17.6	Peak	Horizontal
	1563.7	21.4	-20.3	1.1	-103.7	-85.3	-18.4	Peak	Vertical
	1607.9	22.0	-20.4	1.6	-103.2	-85.3	-17.9	Peak	Vertical

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

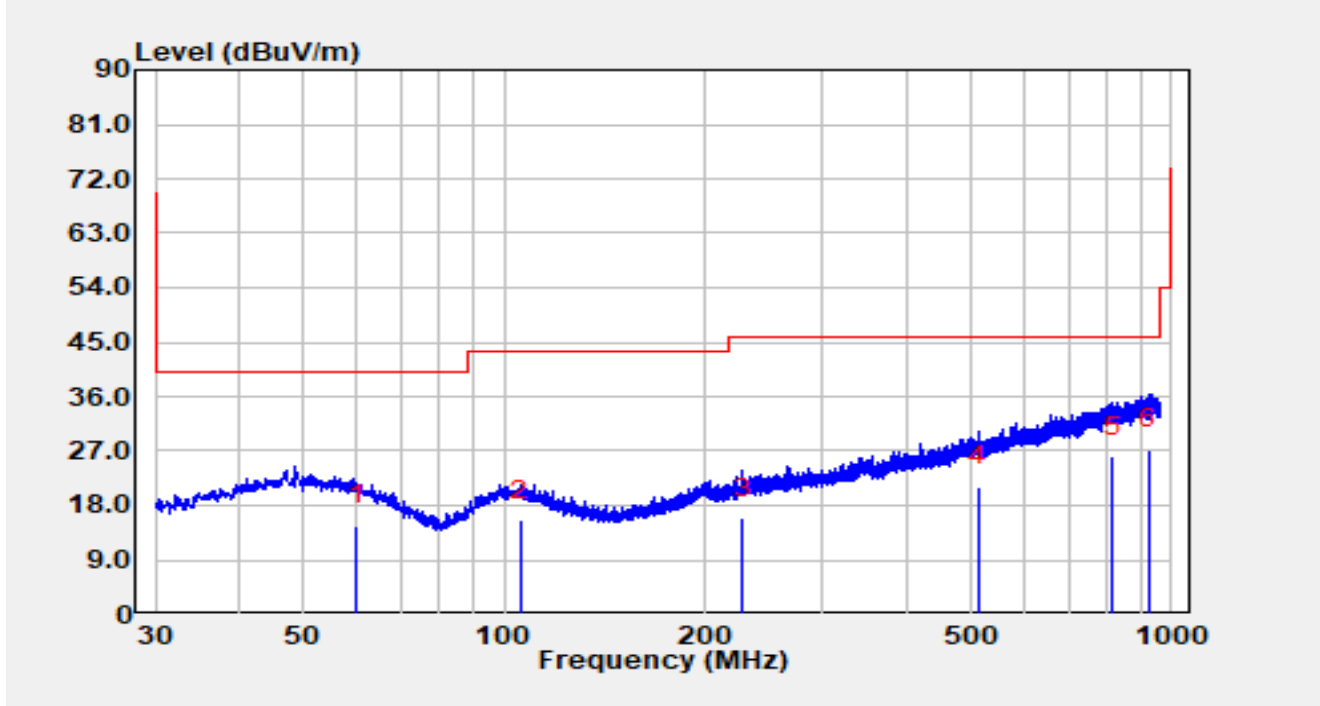
Note 2: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Note 3: Measure Level (dBm) = Measure Level (dBμV/m) – 101.25.

The Result of Radiated Emission below 1GHz:

Antenna: PCUWB65.4111

Site	WZ-AC2	Test Date	2025-04-23
Temperature	26.4 °C	Humidity	41.6 %
Limit	FCC_Part 15.209_RSE (3m)	Test Engineer	Dick Shen
Factor	VULB 9162_00047	Polarity	Horizontal
EUT	Mini RF UWB Module DW3000	Test Voltage	DC 12V
Test Mode	Mode 1		

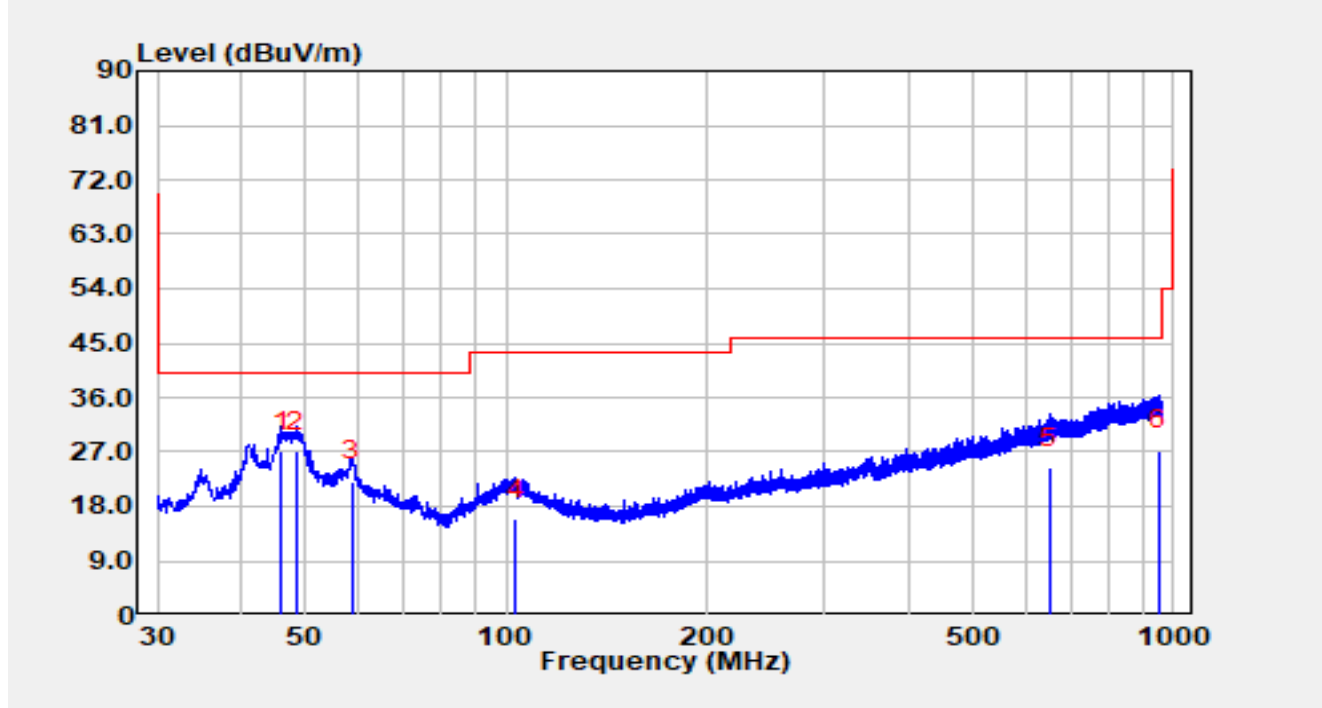


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		60.13	-4.71	19.36	14.65	-25.35	40.00	QP
2		105.89	-3.22	18.73	15.50	-28.00	43.50	QP
3		227.72	-3.43	19.36	15.93	-30.07	46.00	QP
4		512.11	-4.18	25.37	21.19	-24.81	46.00	QP
5		814.46	-4.74	30.82	26.08	-19.92	46.00	QP
6	*	924.01	-4.12	31.35	27.23	-18.77	46.00	QP

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
4. The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 40GHz) are that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Site	WZ-AC2	Test Date	2025-04-23
Temperature	26.4 °C	Humidity	41.6 %
Limit	FCC_Part 15.209_RSE (3m)	Test Engineer	Dick Shen
Factor	VULB 9162_00047	Polarity	Vertical
EUT	Mini RF UWB Module DW3000	Test Voltage	DC 12V
Test Mode	Mode 1		



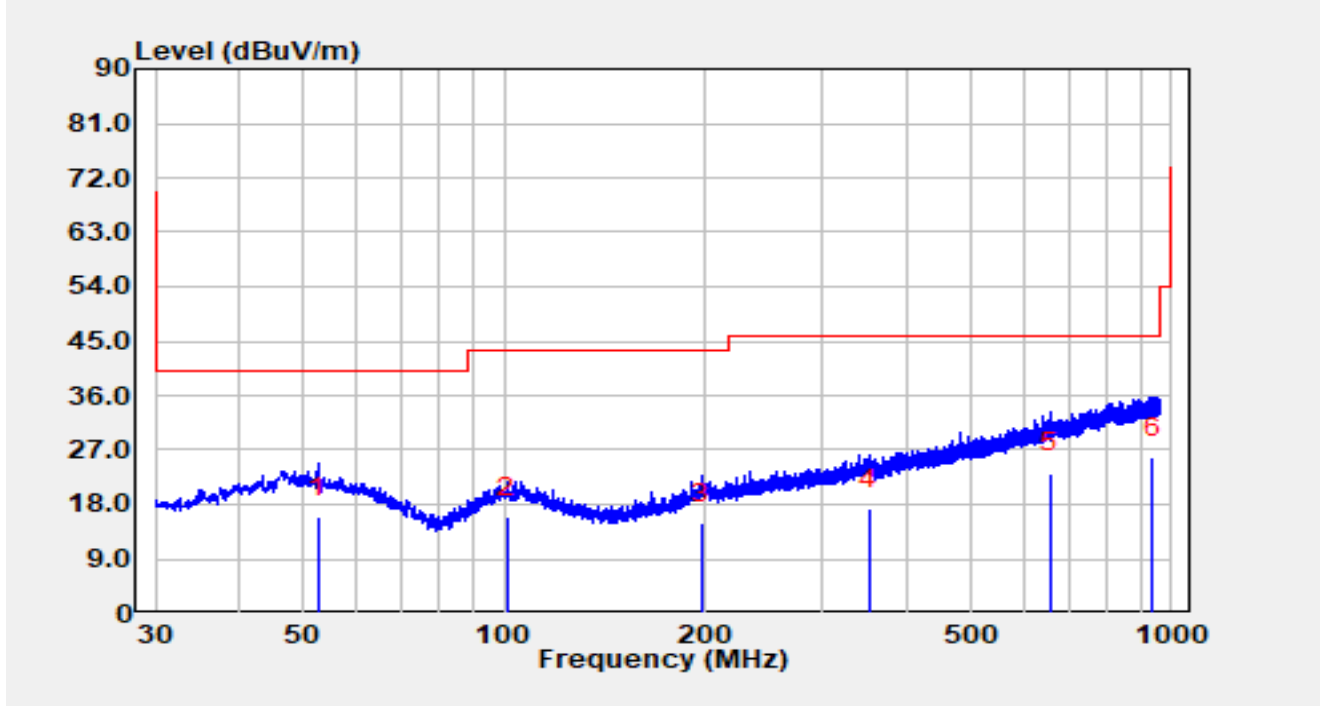
No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		46.00	6.64	20.44	27.08	-12.92	40.00	QP
2	*	48.51	6.58	20.53	27.11	-12.89	40.00	QP
3		58.83	2.56	19.67	22.24	-17.76	40.00	QP
4		103.10	-3.01	18.83	15.82	-27.68	43.50	QP
5		650.40	-3.75	28.07	24.32	-21.68	46.00	QP
6		950.24	-4.49	31.68	27.19	-18.81	46.00	QP

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
4. The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 40GHz) are that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Antenna: TU63.2111

Site	WZ-AC2	Test Date	2025-04-23
Temperature	26.4 °C	Humidity	41.6 %
Limit	FCC_Part 15.209_RSE (3m)	Test Engineer	Dick Shen
Factor	VULB 9162_00047	Polarity	Horizontal
EUT	Mini RF UWB Module DW3000	Test Voltage	DC 12V
Test Mode	Mode 1		

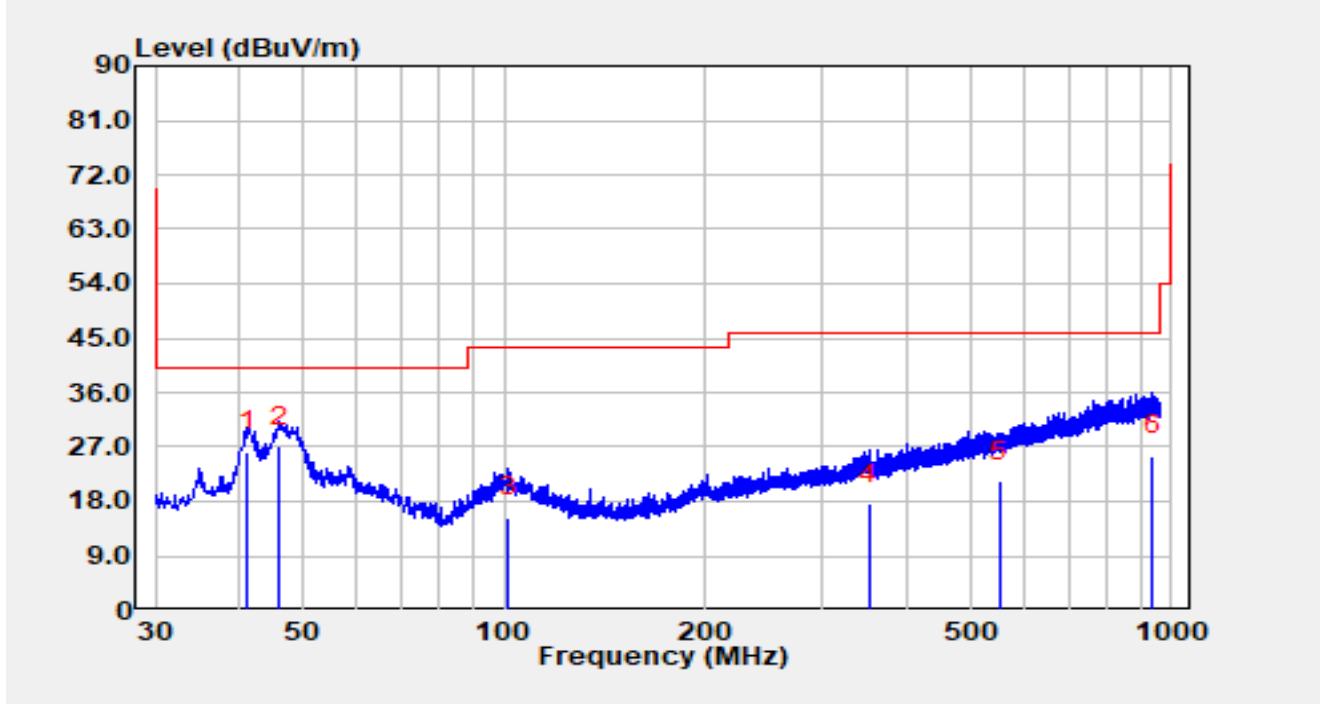


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		52.51	-4.53	20.38	15.85	-24.15	40.00	QP
2		101.05	-2.96	18.77	15.81	-27.69	43.50	QP
3		197.31	-4.28	19.06	14.77	-28.73	43.50	QP
4		352.62	-5.68	22.87	17.18	-28.82	46.00	QP
5		657.01	-5.04	28.28	23.24	-22.76	46.00	QP
6	*	938.33	-5.88	31.64	25.76	-20.24	46.00	QP

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
4. The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 40GHz) are that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Site	WZ-AC2	Test Date	2025-04-23
Temperature	26.4 °C	Humidity	41.6 %
Limit	FCC_Part 15.209_RSE (3m)	Test Engineer	Dick Shen
Factor	VULB 9162_00047	Polarity	Vertical
EUT	Mini RF UWB Module DW3000	Test Voltage	DC 12V
Test Mode	Mode 1		



No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		41.25	6.56	19.66	26.22	-13.78	40.00	QP
2	*	46.09	6.70	20.46	27.16	-12.84	40.00	QP
3		101.52	-3.34	18.78	15.44	-28.06	43.50	QP
4		352.80	-5.24	22.86	17.62	-28.38	46.00	QP
5		551.36	-4.90	26.14	21.24	-24.76	46.00	QP
6		935.54	-5.95	31.54	25.59	-20.41	46.00	QP

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
4. The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 40GHz) are that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Appendix B - Test Setup Photograph

Refer to "R25S1033034-UT" file.

Appendix C - EUT Photograph

Refer to "R25S1033034-UE" file.

The End
