



FCC RADIO TEST REPORT

FCC ID : A4RGGH2X
Equipment : Phone
Model Name : GGH2X, GC15S
Applicant : Google LLC
1600 Amphitheatre Parkway,
Mountain View, CA 94043 USA
Standard : 47 CFR FCC Part 15.119

The product was received on Jan. 03, 2024, and testing was performed from Jan. 10, 2024 to Apr. 10, 2024. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issue Date
FR3D2001J	01	Initial issue of report	May 17, 2024
FR3D2001J	02	Revise Section 2.2, 3.2.5 and 3.5.6 This report is an updated version, replacing the report issued on May 17, 2024.	May 27, 2024
FR3D2001J	03	Revise Section 2.2 This report is an updated version, replacing the report issued on May 27, 2024.	May 28, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1	15.203	Antenna Requirement	PASS	15.203
3.1	15.207	AC Power-line Conducted Emissions	PASS	15.207
3.2	15.503	UWB Bandwidth	PASS	≥ 500MHz
3.3	15.519(a)(1)	Technical requirements for Hand Held UWB systems	PASS	15.519(a)(1)
3.4	15.519(e)	Peak Power Measurement	PASS	≤ 0 dBm/50MHz
3.5	15.519(c) /15.519(d)	Radiated Emissions	PASS	UWB Emissions: 15.519(c) GPS Emissions: 15.519(d) Digital Emissions: 15.209

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty".

Disclaimer:

1. The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.
2. The GGH2X and GC15S are 100% identical in Hardware / Software to each other, and only have different model names for marketing segmentation. The test sample are all model GGH2X.

Reviewed by: William Chen

Report Producer: Lucy Wu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature		
General Specs GSM/WCDMA/LTE/5G NR, Bluetooth, BLE, BLE channel sounding, Thread, Wi-Fi 802.11be, UWB, NFC, WPC Rx, NTN and GNSS		
Antenna Type UWB: <Ranging Antenna>: ILA Antenna <Common AoA Antenna>: Patch Antenna		

Antenna information (Open Mode)		
6489.6 MHz	Peak Gain (dBi)	<Ranging Antenna>: -2.9 <Common AoA Antenna>: -1.1
7987.2 MHz	Peak Gain (dBi)	<Ranging Antenna>: -1.5 <Common AoA Antenna>: -1.1

Antenna information (Close Mode)		
6489.6 MHz	Peak Gain (dBi)	<Ranging Antenna>: -3.4 <Common AoA Antenna>: -3.7
7987.2 MHz	Peak Gain (dBi)	<Ranging Antenna>: -3.9 <Common AoA Antenna>: -3.7

Remark: The above EUT's information was declared by manufacturer. Please refer to Disclaimer in report summary.

EUT Information List	
S/N	Performed Test Item
3C181FDKD00006	Equivalent Isotropic Radiated Power
	Radiated Spurious Emission
41251FDKD0005X	Conducted Emission

1.2 Modification of EUT

No modifications are made to the EUT during all test items.

1.3 Type of EUT

Operational Condition	
EUT Power Type	AC mains: AC voltage 120 V
Type of EUT	
<input checked="" type="checkbox"/>	Stand-alone
<input type="checkbox"/>	Combined (EUT where the radio part is fully integrated within another device) Combined Equipment - Brand Name / Model No.: ...
<input type="checkbox"/>	Plug-in radio (EUT intended for a variety of host systems) Host System - Brand Name / Model No.: ...
<input type="checkbox"/>	Other:

1.4 Testing Applied Standards

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

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01

Remark: The TAF code is not including all the FCC KDB listed without accreditation.

1.5 Testing Location Information

Test Site	Sporton International Inc. Wensan Laboratory	
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855	
Test Site No.	Sporton Site No.	
	CO07-HY	03CH20-HY

Note: The test site complies with ANSI C63.4 2014 requirement.
FCC designation No.: TW3786

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
Conduction	CO07-HY	Louis Chung	22.3~24.6 °C 54.4~67.2 %	Apr. 10, 2024
Radiated	03CH20-HY	John Chuang, David Dai and Howard Huang	18~20 °C 65~69 %	Jan. 10, 2024~ Mar. 26, 2024

1.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
AC Conduction (150kHz ~ 30MHz)	3.44 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1000MHz)	6.4 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 6GHz)	4.5 dB	Confidence levels of 95%
Radiated Emission (6GHz ~ 18GHz)	4.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	5.4 dB	Confidence levels of 95%



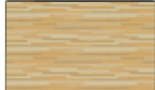
2 Test Configuration of EUT

2.1 Test Mode

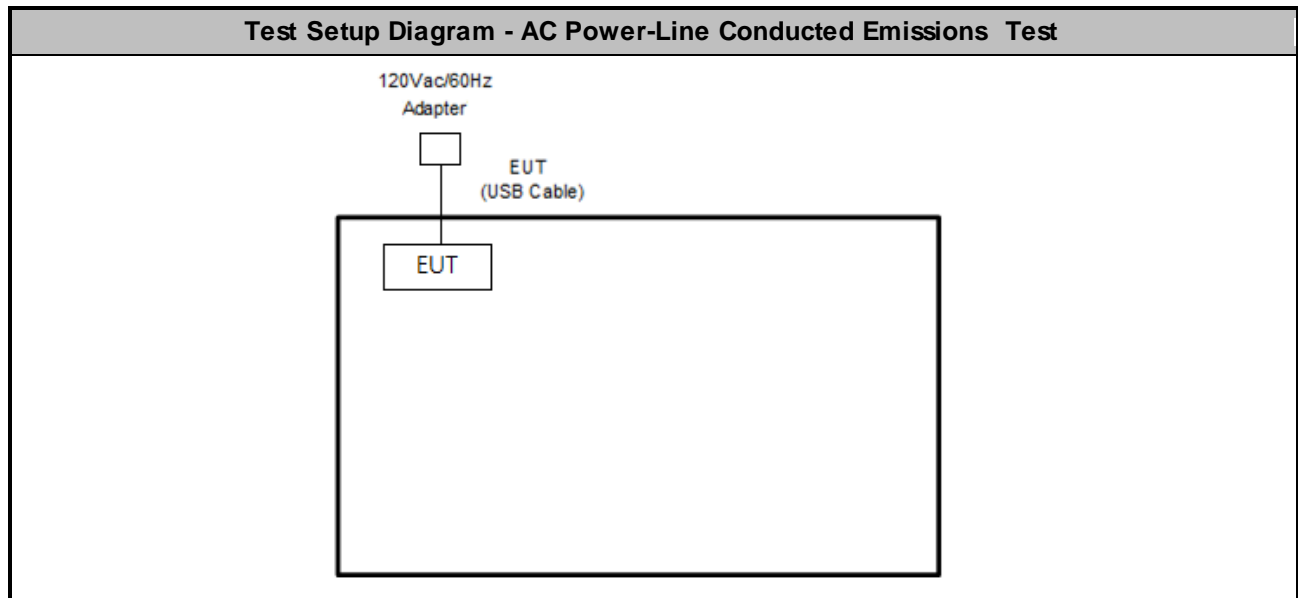
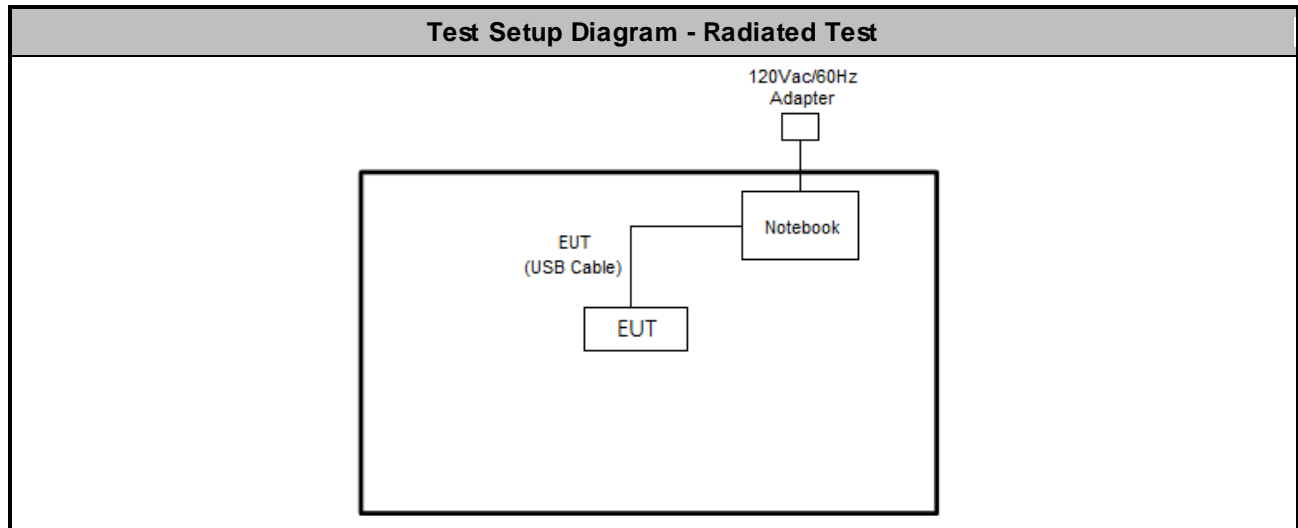
Test Configuration						
Config	Antenna	Channel	Modulation	UWB Frame	HPRF Set #	Payload Length (bytes)
Mode 1	Ranging Antenna	5	BPRF	0	N/A	125
Mode 2	Ranging Antenna	9	BPRF	0	N/A	125
Mode 3	Common AoA	5	BPRF	0	N/A	125
Mode 4	Common AoA	9	BPRF	0	N/A	125
Mode 5	Ranging Antenna	5	BPRF	1	N/A	125
Mode 6	Ranging Antenna	9	BPRF	1	N/A	125
Mode 7	Common AoA	5	BPRF	1	N/A	125
Mode 8	Common AoA	9	BPRF	1	N/A	125
Mode 9	Ranging Antenna	5	BPRF	3	N/A	NA
Mode 10	Ranging Antenna	9	BPRF	3	N/A	NA
Mode 11	Common AoA	5	BPRF	3	N/A	NA
Mode 12	Common AoA	9	BPRF	3	N/A	NA
Mode 13	Ranging Antenna	5	HPRF	N/A	13	150
Mode 14	Ranging Antenna	9	HPRF	N/A	13	150
Mode 15	Common AoA	5	HPRF	N/A	13	150
Mode 16	Common AoA	9	HPRF	N/A	13	150
Mode 17	Ranging Antenna	5	HPRF	N/A	15	150
Mode 18	Ranging Antenna	9	HPRF	N/A	15	150
Mode 19	Common AoA	5	HPRF	N/A	15	150
Mode 20	Common AoA	9	HPRF	N/A	15	150
Mode 21	Ranging Antenna	5	HPRF	N/A	21	N/A
Mode 22	Ranging Antenna	9	HPRF	N/A	21	N/A
Mode 23	Common AoA	5	HPRF	N/A	21	N/A
Mode 24	Common AoA	9	HPRF	N/A	21	N/A
Mode 25	Ranging Antenna	5	HPRF	N/A	31	N/A
Mode 26	Ranging Antenna	9	HPRF	N/A	31	N/A
Mode 27	Common AoA	5	HPRF	N/A	31	N/A
Mode 28	Common AoA	9	HPRF	N/A	31	N/A

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	CTX
1	Adapter Mode
Remark: 1. Please refer to 15.207 which states, "Measurements to demonstrate compliance with the conducted limits are not required for devices employ Battery for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines". 2. For Conducted Emission Test Cases, the tests were performed with USB Cable 1.	

The Worst Case Mode for Following Conformance Tests			
Tests Item	UWB Bandwidth, Peak Power Measurement, Radiated Emissions		
Test Condition	Radiated measurement		
Operating Mode	CTX		
1	Open Mode		
Mode 1 configuration was tested and found to be the worst case and measured during the test.			
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
For Ranging Antenna CH05		V	
For Ranging Antenna CH09			V
For Common AoA CH05			V
For Common AoA CH09			V
Remark:			
1. The measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT (Open and Close) and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape) and accessory (Adapter or Earphone or Notebook), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find as worst plane, and recorded in this report.			
2. For Radiated Test Cases, the tests were performed with USB Cable 1.			

2.3 Test Setup Diagram



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Notebook	DELL	Latitude5310	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
2.	Adapter	Chicony	G9BR1	N/A	N/A	N/A

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

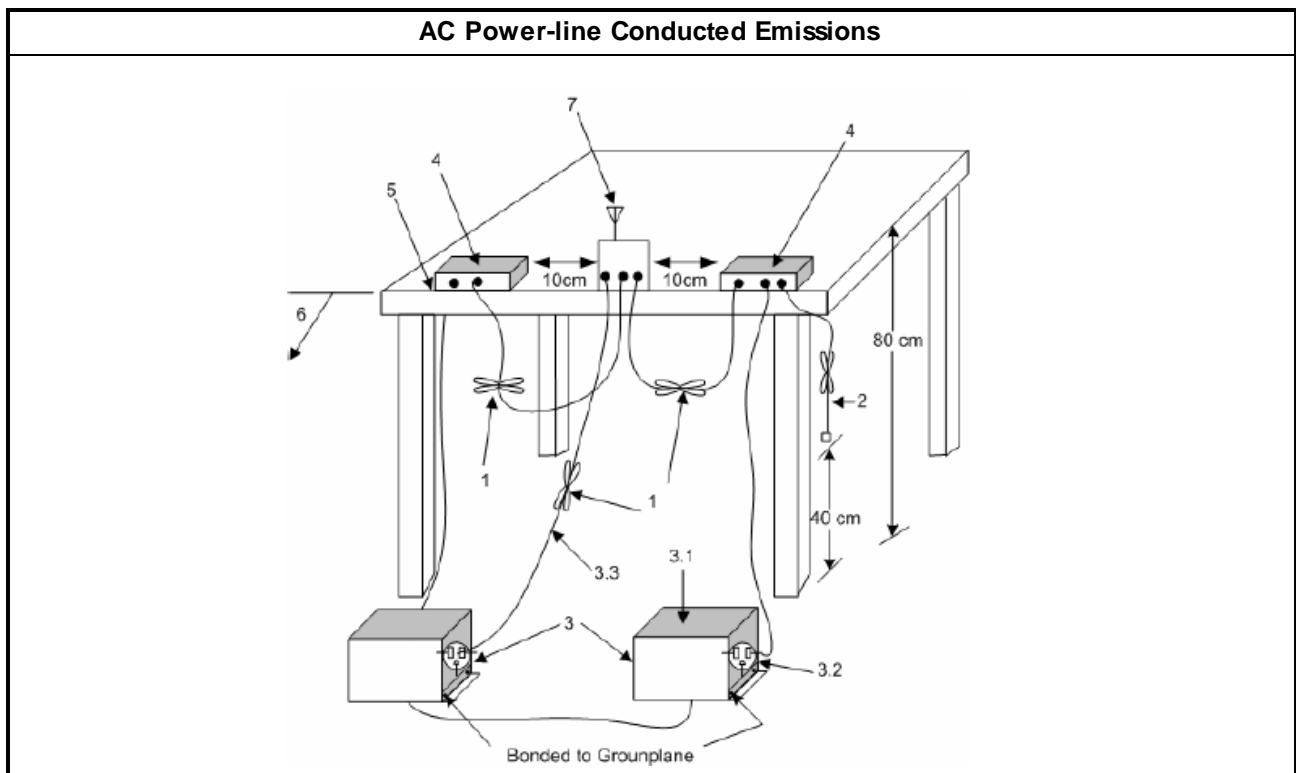
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
■ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup



3.1.5 Test Result

Please refer to Appendix A.

3.2 UWB bandwidth

3.2.1 UWB bandwidth Limit

UWB bandwidth Limit
UWB bandwidth ≥ 500 MHz or Fractional bandwidth ≥ 0.2 ; Fractional bandwidth $= 2(f_H - f_L) / (f_H + f_L)$

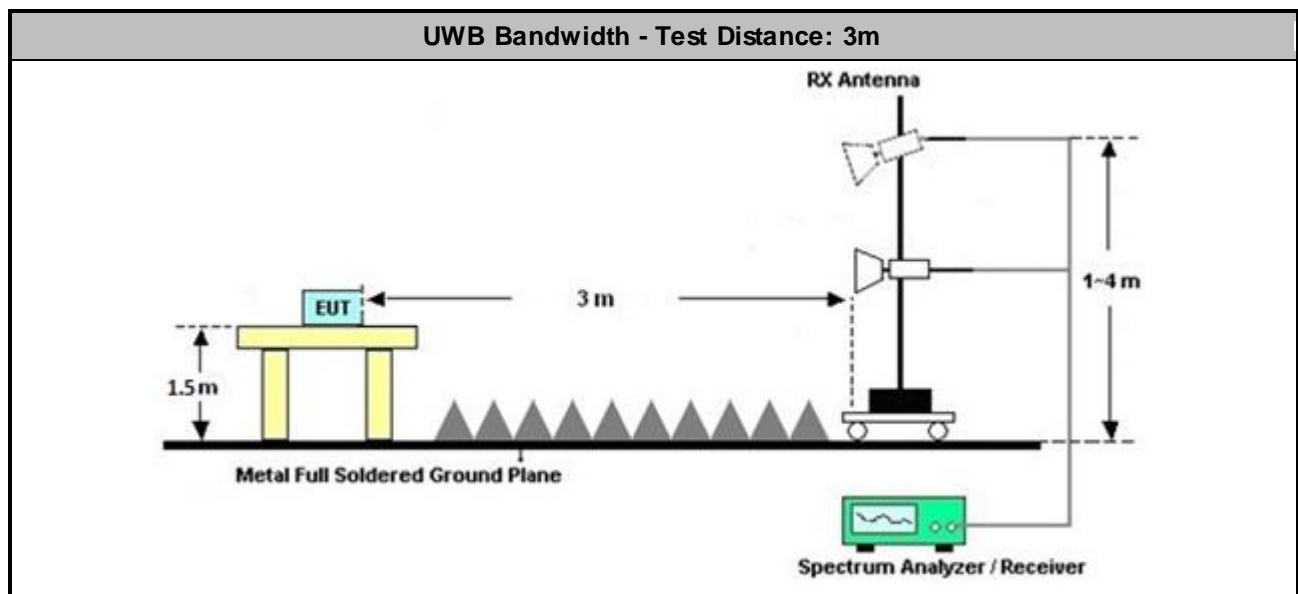
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method
■ For the UWB bandwidth shall be measured using one of the options below:
■ Refer as ANSI C63.10, clause 6.9.2 and clause 10.1 for UWB bandwidth testing.

3.2.4 Test Setup



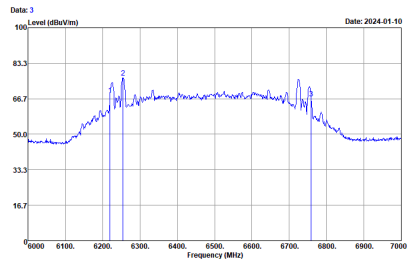
3.2.5 Test Result of UWB Bandwidth

Test mode	F _L (MHz)	F _H (MHz)	UWB Bandwidth (MHz)	Bandwidth limit (MHz)	Result	Pol [H/V]
1	6220	6759	539	≥ 500	Pass	H
2	7694	8259	565	≥ 500	Pass	H
3	6221	6757	536	≥ 500	Pass	V
4	7718	8257	539	≥ 500	Pass	H
5	6220	6758	538	≥ 500	Pass	H
6	7706	8257	551	≥ 500	Pass	H
7	6221	6758	537	≥ 500	Pass	V
8	7719	8257	538	≥ 500	Pass	H
9	6220	6758	538	≥ 500	Pass	H
10	7704	8269	565	≥ 500	Pass	H
11	6222	6757	535	≥ 500	Pass	V
12	7717	8258	541	≥ 500	Pass	H
13	6218	6761	543	≥ 500	Pass	H
14	7716	8258	542	≥ 500	Pass	H
15	6221	6758	537	≥ 500	Pass	V
16	7717	8258	541	≥ 500	Pass	H
17	6220	6758	538	≥ 500	Pass	H
18	7706	8256	550	≥ 500	Pass	H
19	6223	6755	532	≥ 500	Pass	V
20	7720	8256	536	≥ 500	Pass	H
21	6220	6758	538	≥ 500	Pass	H
22	7717	8257	540	≥ 500	Pass	H
23	6220	6758	538	≥ 500	Pass	V
24	7718	8257	539	≥ 500	Pass	H
25	6220	6758	538	≥ 500	Pass	H
26	7698	8271	573	≥ 500	Pass	H
27	6222	6755	533	≥ 500	Pass	V
28	7719	8257	538	≥ 500	Pass	H



UWB Bandwidth

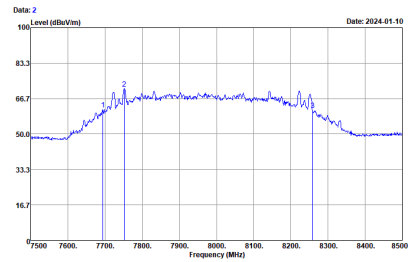
Mode 1



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		
		dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6220.00	68.51	-----	58.05	34.24	14.17	37.95	---	Peak
2	6255.00	76.54	-----	66.00	34.31	14.19	37.96	---	Peak
3	6759.00	66.94	-----	54.48	35.90	14.74	38.18	---	Peak

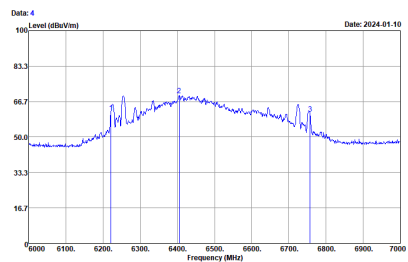
Mode 2



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		
		dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	7694.00	61.44	-----	48.00	36.68	15.69	38.93	---	Peak
2	7752.00	71.25	-----	57.66	36.81	15.76	38.98	---	Peak
3	8259.00	61.33	-----	47.50	37.20	16.03	39.40	---	Peak

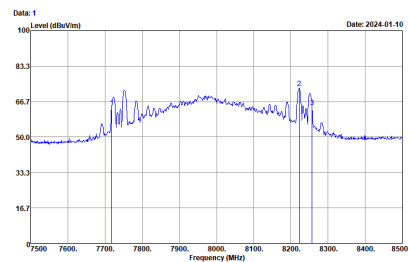
Mode 3



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		
		dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6221.00	61.46	-----	51.00	34.24	14.17	37.95	---	Peak
2	6485.00	69.53	-----	58.20	34.91	14.32	37.98	---	Peak
3	6757.00	60.92	-----	48.46	35.90	14.74	38.18	---	Peak

Mode 4



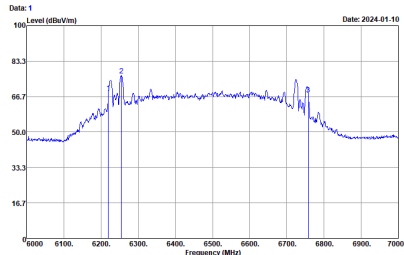
Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		
		dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	7718.00	64.07	-----	50.56	36.74	15.72	38.95	---	Peak
2	8223.00	73.00	-----	59.38	37.09	15.90	39.37	---	Peak
3	8257.00	64.05	-----	50.23	37.20	16.02	39.40	---	Peak



UWB Bandwidth

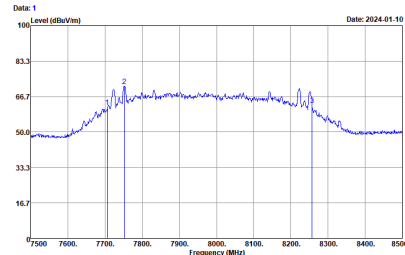
Mode 5



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level Factor	Loss Factor	Factor	cm	deg	
1	6228.00	68.40	-----	57.94	34.24	14.17	37.95	---	---	Peak
2	6255.00	76.74	-----	66.20	34.31	14.19	37.96	---	---	Peak
3	6758.00	67.76	-----	55.30	35.90	14.74	38.18	---	---	Peak

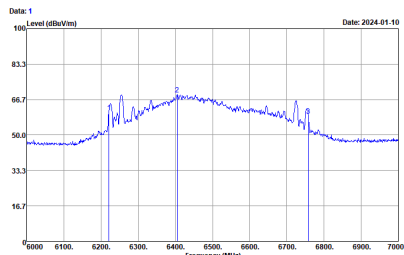
Mode 6



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level Factor	Loss Factor	Factor	cm	deg	
1	7706.00	61.74	-----	48.27	36.71	15.70	38.94	---	---	Peak
2	7752.00	71.72	-----	58.13	36.81	15.76	38.98	---	---	Peak
3	8257.00	62.57	-----	48.75	37.20	16.82	39.48	---	---	Peak

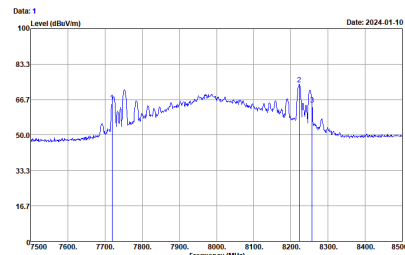
Mode 7



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level Factor	Loss Factor	Factor	cm	deg	
1	6221.00	68.86	-----	58.40	34.24	14.17	37.95	---	---	Peak
2	6485.00	69.07	-----	57.82	34.91	14.32	37.98	---	---	Peak
3	6758.00	59.13	-----	46.67	35.90	14.74	38.18	---	---	Peak

Mode 8



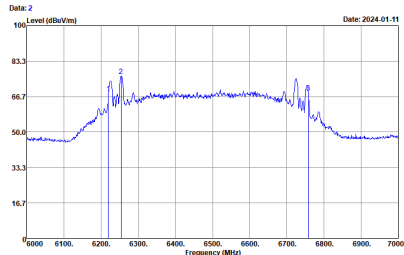
Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level Factor	Loss Factor	Factor	cm	deg	
1	7719.00	65.34	-----	51.83	36.74	15.72	38.95	---	---	Peak
2	8223.00	73.74	-----	60.12	37.09	15.90	39.37	---	---	Peak
3	8257.00	64.46	-----	50.64	37.20	16.82	39.48	---	---	Peak



UWB Bandwidth

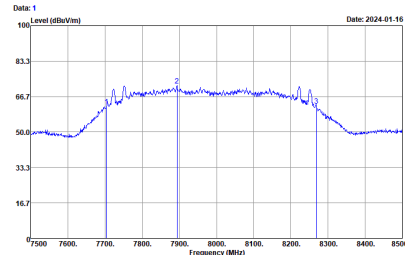
Mode 9



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : 3
HPRF Set # : N/A
Payload Length : N/A
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	cm	deg
1	6228.00	68.35	-----	-----	57.89	34.24	14.17	37.95	---	Peak
2	6254.00	76.40	-----	-----	65.86	34.31	14.19	37.96	---	Peak
3	6758.00	68.43	-----	-----	55.97	35.90	14.74	38.18	---	Peak

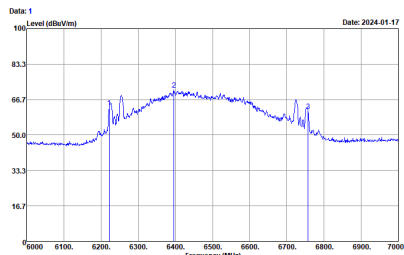
Mode 10



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : BPRF
UWB Frame : 3
HPRF Set # : N/A
Payload Length : N/A
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	cm	deg
1	7704.00	62.14	-----	-----	48.47	36.71	15.90	38.94	---	Peak
2	7894.00	71.90	-----	-----	57.79	37.10	16.11	39.10	---	Peak
3	8269.00	62.27	-----	-----	48.09	37.20	16.39	39.41	---	Peak

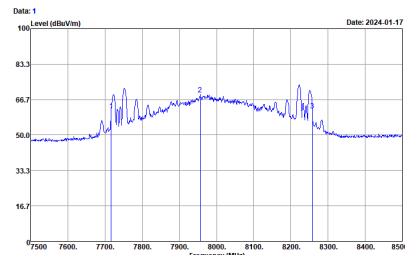
Mode 11



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : 3
HPRF Set # : N/A
Payload Length : N/A
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	cm	deg
1	6222.00	62.94	-----	-----	52.38	34.24	14.27	37.95	---	Peak
2	6396.00	71.34	-----	-----	60.01	34.88	14.43	37.98	---	Peak
3	6757.00	61.35	-----	-----	48.73	35.90	14.90	38.18	---	Peak

Mode 12



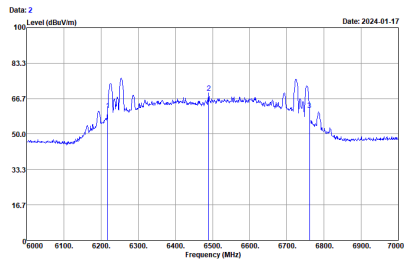
Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : BPRF
UWB Frame : 3
HPRF Set # : N/A
Payload Length : N/A
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	cm	deg
1	7717.00	61.67	-----	-----	47.97	36.73	15.92	38.95	---	Peak
2	7956.00	69.18	-----	-----	54.93	37.22	16.18	39.15	---	Peak
3	8258.00	61.58	-----	-----	47.41	37.20	16.37	39.40	---	Peak



UWB Bandwidth

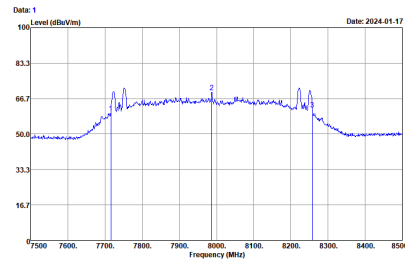
Mode 13



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Length : 150
Pilot : Y Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6218.00	61.24	-----	58.68	34.24	14.27	37.95	---	---	Peak
2	6490.00	69.41	-----	57.54	35.32	14.55	38.80	---	---	Peak
3	6761.00	61.24	-----	48.62	35.90	14.90	38.18	---	---	Peak

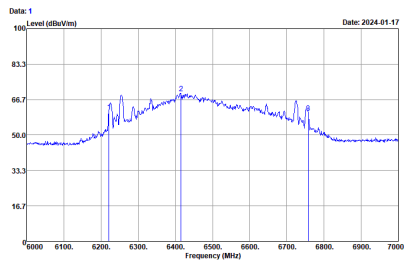
Mode 14



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Length : 150
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	7716.00	59.79	-----	46.18	36.73	15.91	38.95	---	---	Peak
2	7987.00	69.68	-----	55.29	37.35	16.22	39.18	---	---	Peak
3	8258.00	61.44	-----	47.27	37.20	16.37	39.40	---	---	Peak

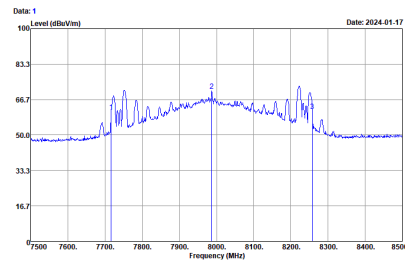
Mode 15



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Length : 150
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6221.00	68.87	-----	58.31	34.24	14.27	37.95	---	---	Peak
2	6415.00	69.64	-----	58.24	34.93	14.45	37.98	---	---	Peak
3	6758.00	68.35	-----	47.73	35.90	14.90	38.18	---	---	Peak

Mode 16



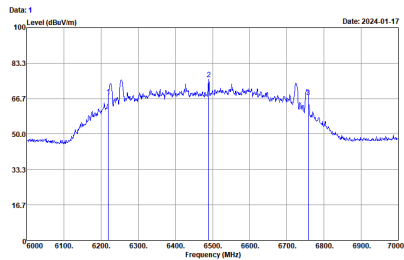
Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Length : 150
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	7717.00	68.95	-----	47.25	36.73	15.92	38.95	---	---	Peak
2	7987.00	70.62	-----	56.23	37.35	16.22	39.18	---	---	Peak
3	8258.00	61.27	-----	47.10	37.20	16.37	39.40	---	---	Peak



UWB Bandwidth

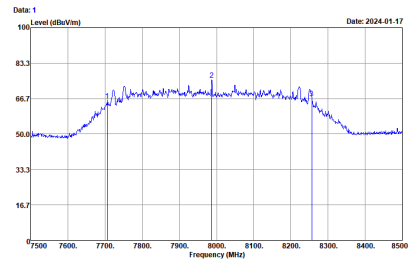
Mode 17



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 15
Payload Length : 150
Pilot : Y Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6220.00	67.67	-----	57.11	34.24	14.27	37.95	---	---	Peak
2	6490.00	75.80	-----	63.93	35.32	14.55	38.80	---	---	Peak
3	6758.00	67.48	-----	54.86	35.90	14.90	38.18	---	---	Peak

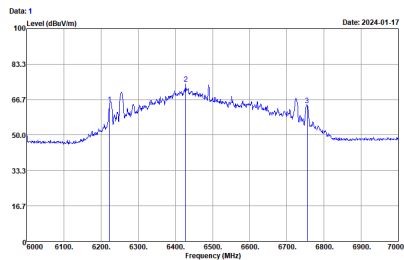
Mode 18



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 15
Payload Length : 150
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	7786.00	65.66	-----	51.98	36.71	15.91	38.94	---	---	Peak
2	7987.00	75.50	-----	61.11	37.35	16.22	39.18	---	---	Peak
3	8256.00	66.89	-----	52.71	37.20	16.37	39.39	---	---	Peak

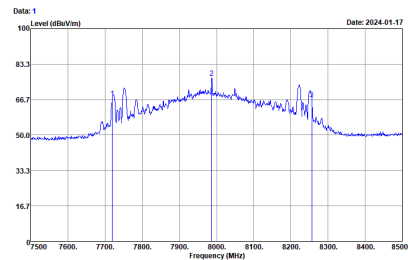
Mode 19



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 15
Payload Length : 150
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6223.00	64.51	-----	53.94	34.25	14.27	37.95	---	---	Peak
2	6428.00	74.15	-----	62.71	34.96	14.47	37.99	---	---	Peak
3	6755.00	64.17	-----	51.56	35.90	14.89	38.18	---	---	Peak

Mode 20



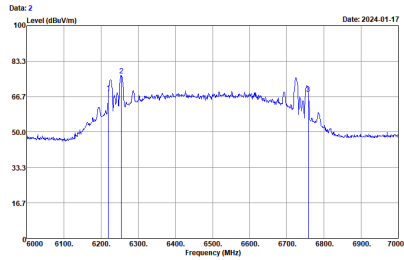
Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 15
Payload Length : 150
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	7720.00	67.43	-----	53.72	36.74	15.92	38.95	---	---	Peak
2	7987.00	76.80	-----	62.41	37.35	16.22	39.18	---	---	Peak
3	8256.00	66.84	-----	52.66	37.20	16.37	39.39	---	---	Peak



UWB Bandwidth

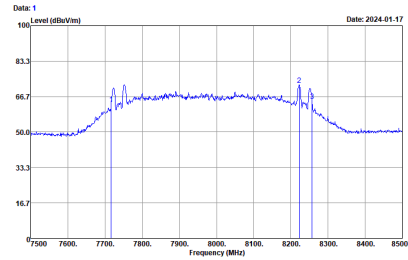
Mode 21



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 21
Payload Length : 0
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6220.00	68.43	-----	57.87	34.24	14.27	37.95	---	---	Peak
2	6255.00	76.72	-----	66.07	34.31	14.30	37.96	---	---	Peak
3	6758.00	68.07	-----	55.45	35.90	14.90	38.18	---	---	Peak

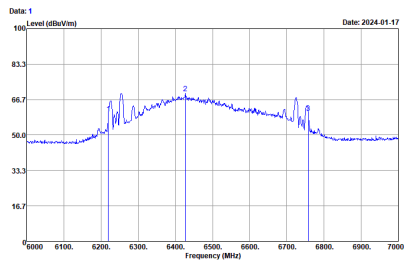
Mode 22



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 21
Payload Length : 0
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	7717.00	63.28	-----	49.58	36.73	15.92	38.95	---	---	Peak
2	8223.00	72.18	-----	58.14	37.09	16.32	39.37	---	---	Peak
3	8257.00	64.52	-----	50.35	37.20	16.37	39.40	---	---	Peak

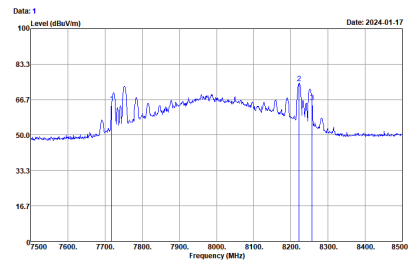
Mode 23



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 21
Payload Length : 0
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6220.00	68.26	-----	49.70	34.24	14.27	37.95	---	---	Peak
2	6427.00	69.73	-----	58.30	34.95	14.47	37.99	---	---	Peak
3	6758.00	68.42	-----	47.00	35.90	14.90	38.18	---	---	Peak

Mode 24



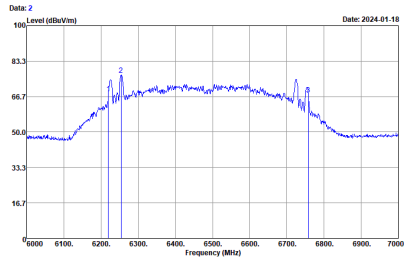
Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 21
Payload Length : 0
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	7718.00	64.84	-----	51.13	36.74	15.92	38.95	---	---	Peak
2	8222.00	74.41	-----	60.38	37.09	16.31	39.37	---	---	Peak
3	8257.00	65.32	-----	51.15	37.20	16.37	39.40	---	---	Peak



UWB Bandwidth

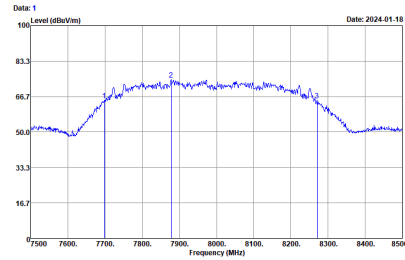
Mode 25



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 31
Payload Length : 0
Pulse : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	dB	cm	deg	
1	6220.00	68.31	-----	57.75	34.24	14.27	37.95	---	---	Peak
2	6254.00	76.92	-----	66.27	34.31	14.38	37.96	---	---	Peak
3	6758.00	67.75	-----	55.13	35.90	14.90	38.18	---	---	Peak

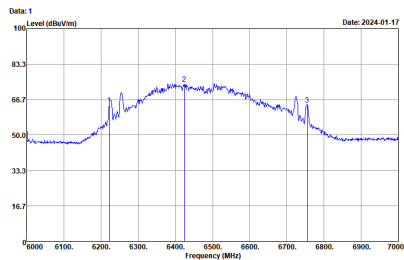
Mode 26



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 31
Payload Length : 0
Pulse : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	dB	cm	deg	
1	7698.00	64.86	-----	51.20	36.69	15.90	38.93	---	---	Peak
2	7878.00	74.57	-----	60.47	37.18	16.89	39.69	---	---	Peak
3	8271.00	64.93	-----	50.75	37.20	16.39	39.41	---	---	Peak

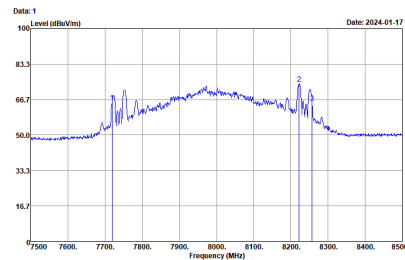
Mode 27



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 31
Payload Length : 0
Pulse : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	dB	cm	deg	
1	6222.00	64.36	-----	53.80	34.24	14.27	37.95	---	---	Peak
2	6424.00	74.21	-----	62.79	34.95	14.46	37.99	---	---	Peak
3	6755.00	64.24	-----	51.63	35.90	14.89	38.18	---	---	Peak

Mode 28



Site : 03CH20-HY
Condition : 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:3.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 31
Payload Length : 0
Pulse : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	dB	cm	deg	
1	7719.00	65.35	-----	51.64	36.74	15.92	38.95	---	---	Peak
2	8222.00	74.21	-----	60.18	37.09	16.31	39.37	---	---	Peak
3	8257.00	65.26	-----	51.09	37.20	16.37	39.48	---	---	Peak

3.3 Technical requirements for hand held UWB systems

3.3.1 Technical Requirements for transmission Limit

FCC 15.519(a) (1) A UWB device operating under the provisions of this section shall transmit only when it is sending information to an associated receiver. The UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received. An acknowledgment of reception must continue to be received by the UWB intentional radiator at least every 10 seconds or the UWB device must cease transmitting.

3.3.2 Measuring Instruments

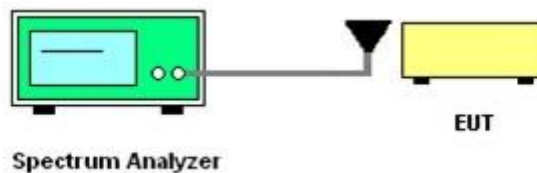
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedure

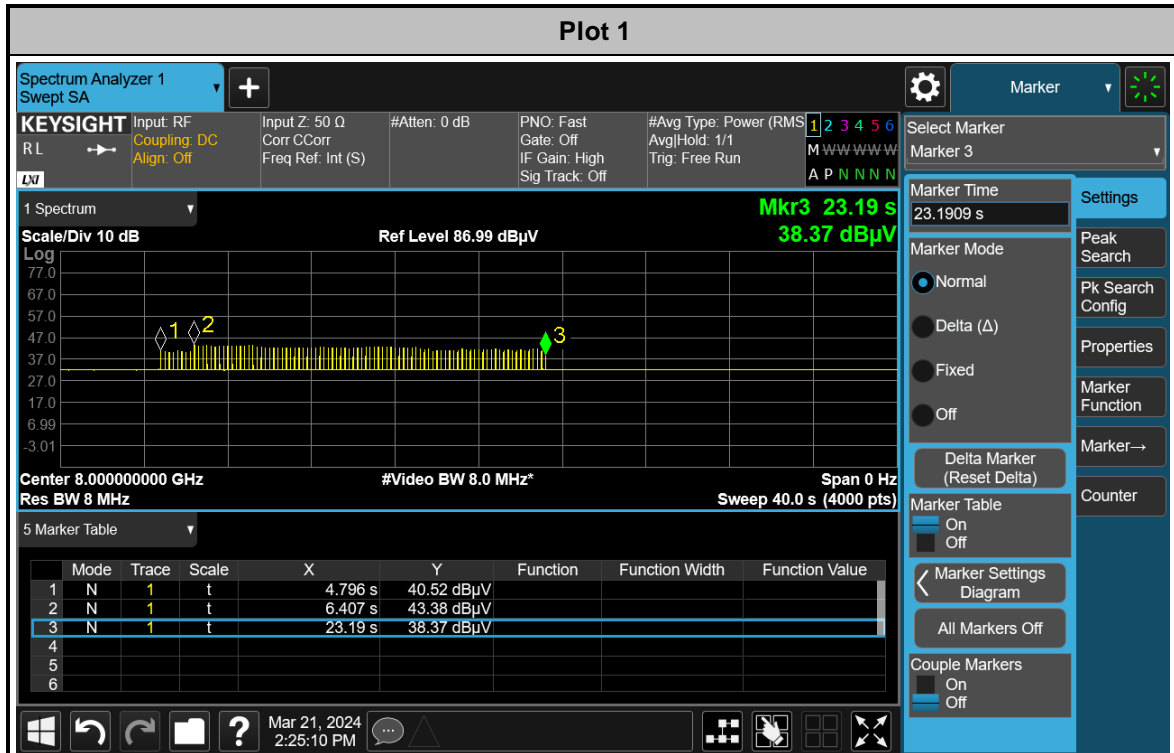
Follow the test step as below:

1. Turn on both EUT and companion receiver.
2. Set the EUT to TX mode, and EUT starts polling.
3. Set the companion receiver to associate EUT and EUT starts to transmit.
4. Disable the RX function of the companion receiver to disassociate the EUT.
5. Check if EUT stop transmitting once step 4 is made.

3.3.4 Test Setup



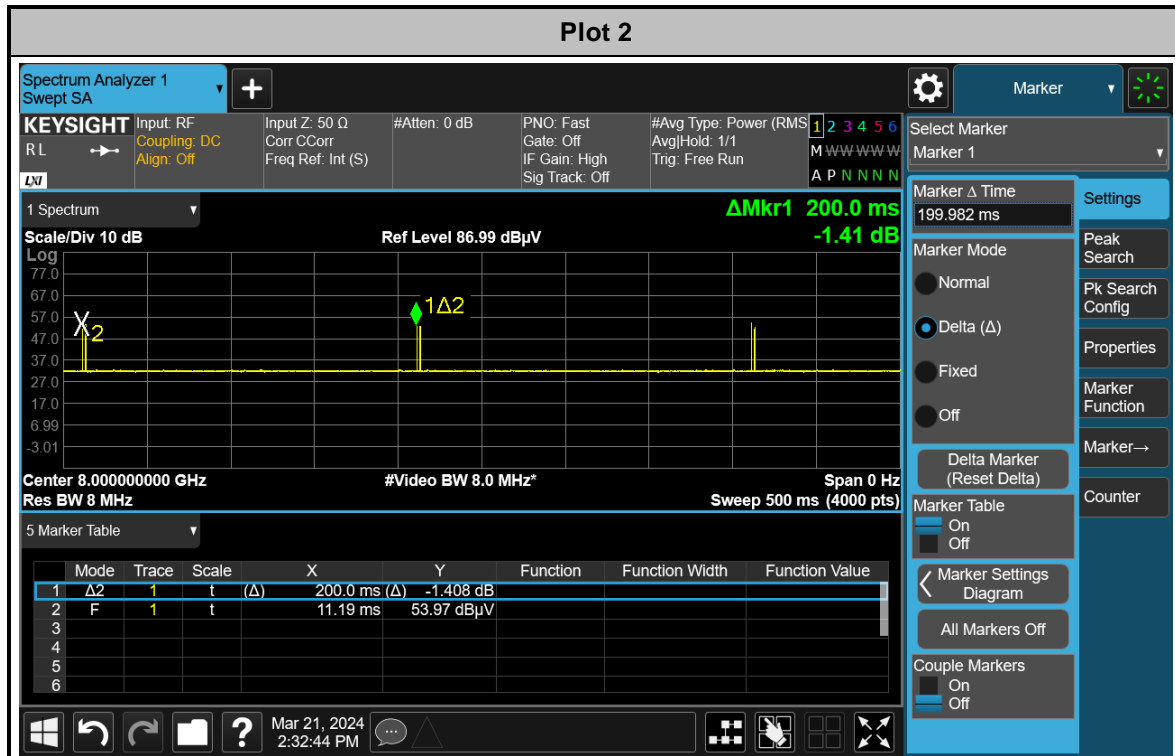
3.3.5 Test Result



M1 to M2: Set the EUT to TX mode, and EUT starts polling.

M2 to M3: Set the companion receiver to associate EUT and EUT starts to transmit.

M3: Disable the TX function of EUT. EUT stops transmitting and polling.



M1 to M2: Set the EUT to TX mode, and EUT starts polling.

M2 to M3: Set the companion receiver to associate EUT and EUT starts to transmit.

M3: RX function of the companion receiver is disabled. EUT disassociates the companion receiver and stops transmitting, but continues polling.



Plot 3 is zoom in plot of M2 to M3 (transmission)

Plot 4 is zoom in plot after M3 (polling only)

3.4 Peak Power Measurement

3.4.1 Peak Power Measurement Limit

Peak Power Measurement Limit
$P_{e\text{irp}} = 0 \text{ dBm/50MHz}$

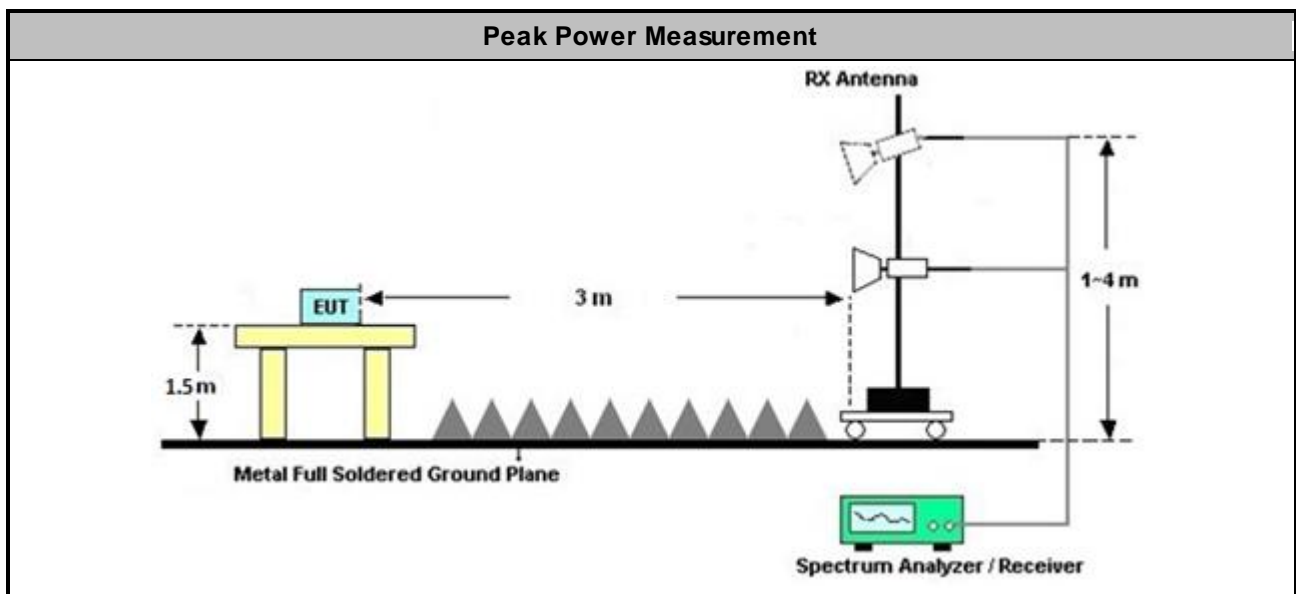
3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method
<ul style="list-style-type: none"> Peak Power Measurement
<ul style="list-style-type: none"> Refer as ANSI C63.10, clause 10.3.1 for radiated measurement procedure testing. Refer as ANSI C63.10, clause 10.3.2 for measurement distance is 3m. Refer as ANSI C63.10, clause 10.3.5 for peak detector procedure testing. Refer as ANSI C63.10, clause 10.3.6 for bandwidth conversion of peak power.
<ul style="list-style-type: none"> Frequency of max peak power is pre-located: The span bandwidth is continuously reduced to find the worst frequency. Once the worst frequency is found, the setting of spectrum analyzer is set as below: <ul style="list-style-type: none"> Central frequency: Worst frequency point Span: Zero span RBW: 50MHz VBW: 80MHz Detector: Peak detector Trace: Max hold

3.4.4 Test Setup



3.4.5 Test Result of Peak Power Measurement

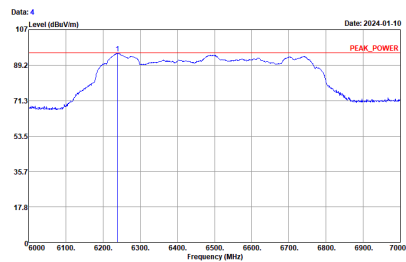
Peak Measurement Result							
Test Mode	Freq. (MHz)	E-Field (dBuV/m)	ERIP _{50MHz} (dBm)	ERIP _{50MHz} Limit (dBm)	Margin (dB)	Result	Pol [H/V]
1	6239	95.12	-0.11	0	-0.11	Pass	H
2	7984	93.43	-1.80	0	-1.80	Pass	H
3	6481	92.50	-2.73	0	-2.73	Pass	V
4	7986	93.54	-1.69	0	-1.69	Pass	H
5	6239	95.19	-0.04	0	-0.04	Pass	H
6	7987	92.74	-2.49	0	-2.49	Pass	H
7	6486	92.22	-3.01	0	-3.01	Pass	V
8	7983	93.30	-1.93	0	-1.93	Pass	H
9	6239	95.02	-0.21	0	-0.21	Pass	H
10	8239	90.95	-4.28	0	-4.28	Pass	H
11	6239	87.45	-7.78	0	-7.78	Pass	V
12	8241	92.49	-2.74	0	-2.74	Pass	H
13	6240	95.12	-0.11	0	-0.11	Pass	H
14	8238	91.22	-4.01	0	-4.01	Pass	H
15	6486	92.53	-2.70	0	-2.70	Pass	V
16	8238	91.81	-3.42	0	-3.42	Pass	H
17	6240	94.76	-0.47	0	-0.47	Pass	H
18	8239	91.21	-4.02	0	-4.02	Pass	H
19	6282	87.94	-7.29	0	-7.29	Pass	V
20	8237	91.75	-3.48	0	-3.48	Pass	H
21	6241	94.91	-0.32	0	-0.32	Pass	H
22	7738	90.86	-4.37	0	-4.37	Pass	H
23	6237	87.51	-7.72	0	-7.72	Pass	V
24	8236	92.53	-2.70	0	-2.70	Pass	H
25	6239	95.11	-0.12	0	-0.12	Pass	H
26	7737	91.02	-4.21	0	-4.21	Pass	H
27	6428	87.79	-7.44	0	-7.44	Pass	V
28	8238	92.50	-2.73	0	-2.73	Pass	H

Note 1: EIRP [dBm] = E-Field [dBuV/m] - 95.23;
 Note 2: Measurement worst emissions of receive antenna polarization.



Pre-located worst frequency Plots

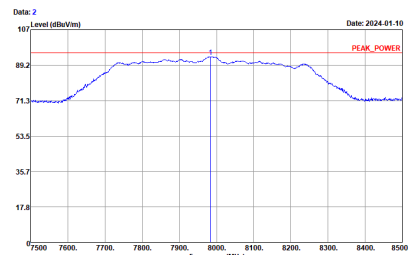
Mode 1



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Length : 125
Plane : Y open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6239.00	95.12	-0.11	95.23	84.61	34.28	14.18	37.95	--- Peak

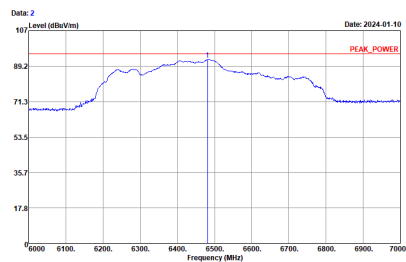
Mode 2



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	7984.00	93.43	-1.80	95.23	79.19	37.34	16.08	39.18	--- Peak

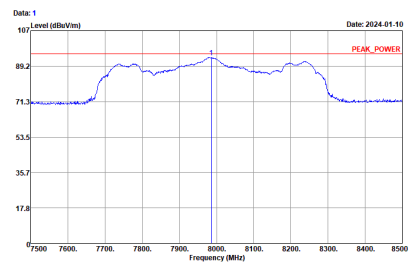
Mode 3



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 VERTICAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6481.00	92.50	-2.73	95.23	88.85	35.25	14.40	38.00	--- Peak

Mode 4



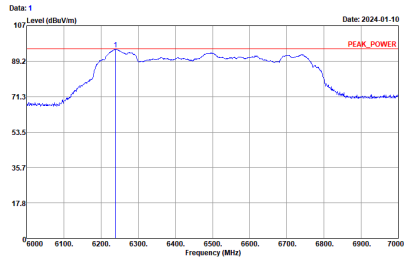
Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	7986.00	93.54	-1.69	95.23	79.30	37.34	16.08	39.18	--- Peak



Pre-located worst frequency Plots

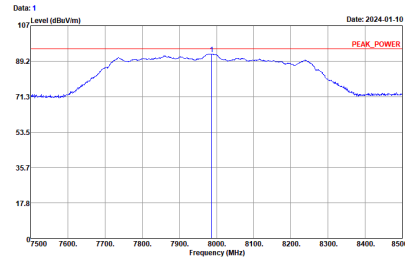
Mode 5



Site : 03CH20-HY
Condition : PEAK_POWER 3m 9120D_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Length : 125
Plane : Y open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		
	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	6239.00	95.19	-0.04	95.23	84.68	34.28	14.18	37.95	--- Peak

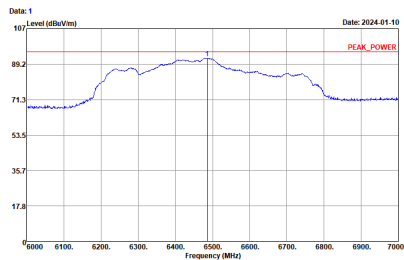
Mode 6



Site : 03CH20-HY
Condition : PEAK_POWER 3m 9120D_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH09
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		
	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7987.00	92.74	-2.49	95.23	78.49	37.35	16.08	39.18	--- Peak

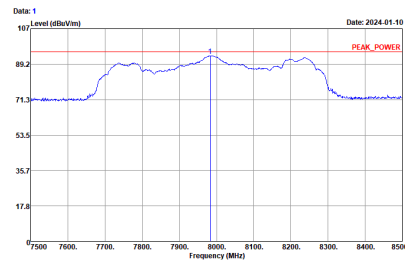
Mode 7



Site : 03CH20-HY
Condition : PEAK_POWER 3m 9120D_02360_231030 VERTICAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		
	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	6486.00	92.22	-3.01	95.23	80.52	35.29	14.41	38.00	--- Peak

Mode 8



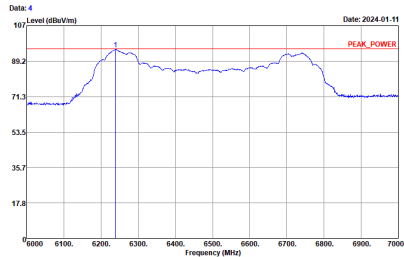
Site : 03CH20-HY
Condition : PEAK_POWER 3m 9120D_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH09
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		
	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	7983.00	93.30	-1.93	95.23	79.07	37.33	16.08	39.18	--- Peak



Pre-located worst frequency Plots

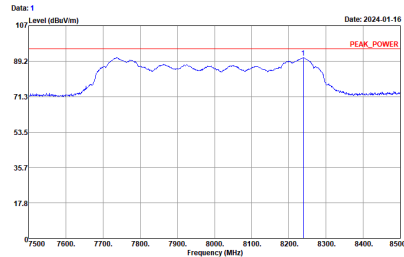
Mode 9



Site : 03CH20-HY
Condition : PEAK_POWER 3m 9120D_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : 3
HPRF Set # : N/A
Payload Length : N/A
Plane : Z open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	Limit	Line	Level Factor	Loss Factor	Loss Factor	dB	dB	
1	6239.00	95.02	-0.21	95.23	84.51	34.28	14.18	37.95	--- Peak

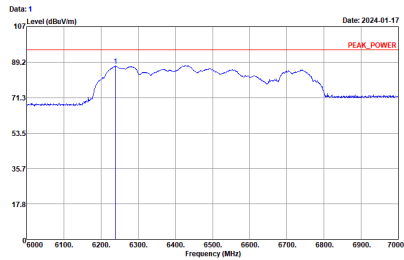
Mode 10



Site : 03CH20-HY
Condition : PEAK_POWER 3m 9120D_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH09
Modulation : BPRF
UWB Frame : 3
HPRF Set # : N/A
Payload Length : N/A
Plane : Z open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	Limit	Line	Level Factor	Loss Factor	Loss Factor	dB	dB	
1	8239.00	90.95	-4.28	95.23	76.83	37.16	16.34	39.38	--- Peak

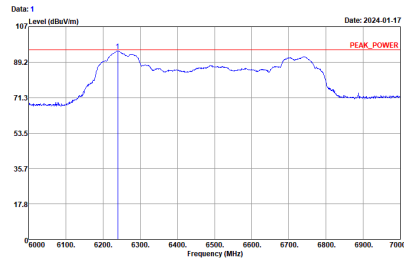
Mode 11



Site : 03CH20-HY
Condition : PEAK_POWER 3m 9120D_02360_231030 VERTICAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : 3
HPRF Set # : N/A
Payload Length : N/A
Plane : Z open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	Limit	Line	Level Factor	Loss Factor	Loss Factor	dB	dB	
1	6239.00	87.45	-7.78	95.23	76.83	34.28	14.29	37.95	--- Peak

Mode 12



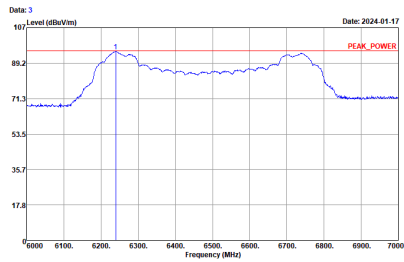
Site : 03CH20-HY
Condition : PEAK_POWER 3m 9120D_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : N/A
HPRF Set # : 15
Payload Length : 150
Plane : Y Open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	Limit	Line	Level Factor	Loss Factor	Loss Factor	dB	dB	
1	6240.00	94.76	-8.47	95.23	84.14	34.28	14.29	37.95	--- Peak



Pre-located worst frequency Plots

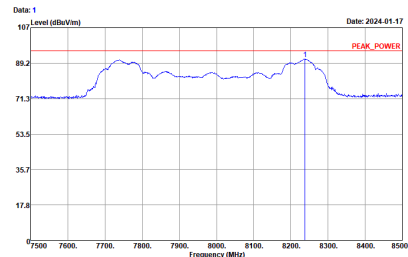
Mode 13



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Length : 150
Plane : Z open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6240.00	95.12	-0.11	95.23	84.58	34.28	14.29	37.95	--- --- Peak

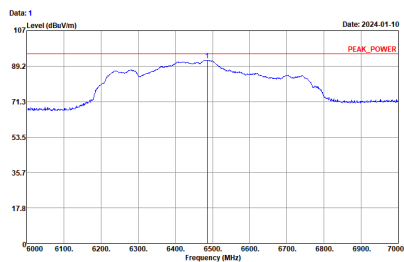
Mode 14



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Length : 150
Plane : Z open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	8238.00	91.22	-4.01	95.23	77.11	37.15	16.34	39.38	--- --- Peak

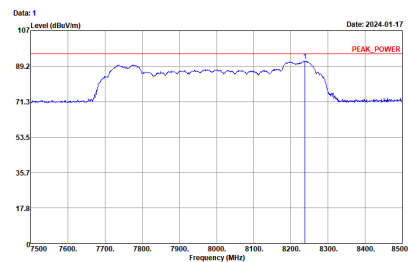
Mode 15



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 VERTICAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH05
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Length : 125
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6486.00	92.22	-3.01	95.23	88.52	35.29	14.41	38.00	--- --- Peak

Mode 16



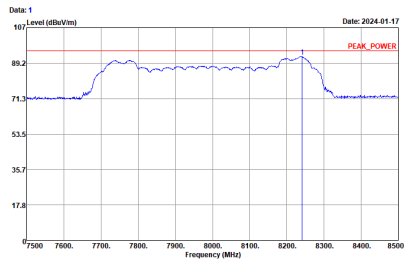
Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Length : 150
Plane : Z open

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	8238.00	91.81	-3.42	95.23	77.70	37.15	16.34	39.38	--- --- Peak



Pre-located worst frequency Plots

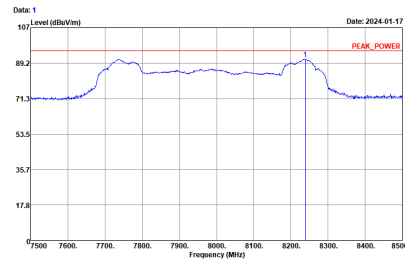
Mode 17



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 15
Payload Length : 150
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm deg
1	8241.00	92.49	-2.74	95.23	78.37	37.16	16.34	39.38 --- --- Peak

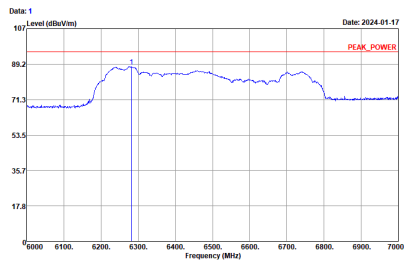
Mode 18



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 15
Payload Length : 150
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm deg
1	8239.00	91.21	-4.02	95.23	77.89	37.16	16.34	39.38 --- --- Peak

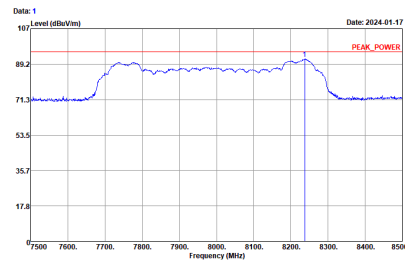
Mode 19



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 VERTICAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 15
Payload Length : 150
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm deg
1	6282.00	87.94	-7.29	95.23	77.22	34.36	14.32	37.96 --- --- Peak

Mode 20



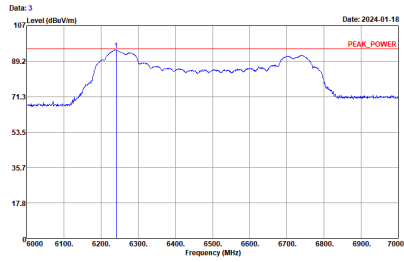
Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 15
Payload Length : 150
Plane : Z Open

Freq	Level	Over	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm deg
1	8237.00	91.75	-3.48	95.23	77.64	37.15	16.34	39.38 --- --- Peak



Pre-located worst frequency Plots

Mode 21



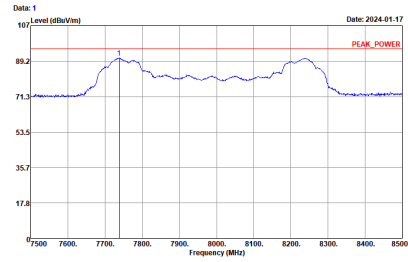
Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec

Detector : Peak

Channel : CH05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 21
Payload Length : 0
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6241.00	94.91	-0.32	95.23	84.29	34.28	14.29	37.95	---	Peak

Mode 22



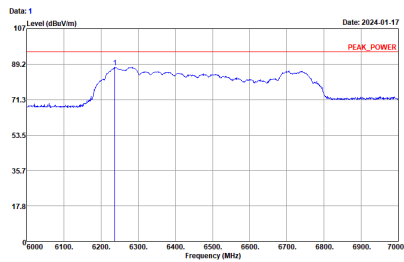
Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec

Detector : Peak

Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 21
Payload Length : 0
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	7738.00	90.86	-4.37	95.23	77.11	36.78	15.93	38.96	---	Peak

Mode 23



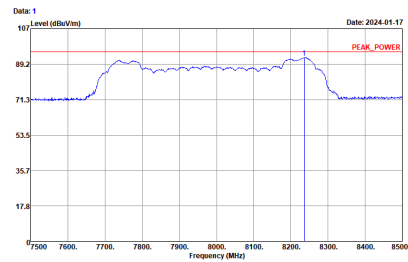
Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 VERTICAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec

Detector : Peak

Channel : CH05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 21
Payload Length : 0
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6237.00	87.51	-7.72	95.23	76.91	34.27	14.28	37.95	---	Peak

Mode 24



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec

Detector : Peak

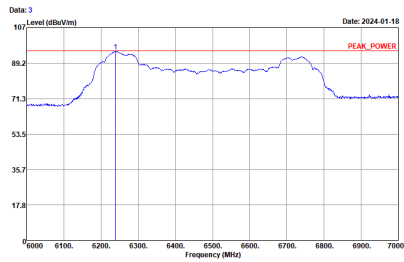
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 21
Payload Length : 0
Pilot : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	8236.00	92.53	-2.70	95.23	78.43	37.14	16.34	39.38	---	Peak



Pre-located worst frequency Plots

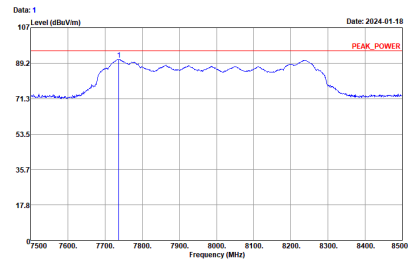
Mode 25



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
: RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 31
Payload Length : 0
Plane : Y Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6239.00	95.11	-0.12	95.23	84.49	34.28	14.29	37.95	---	--- Peak

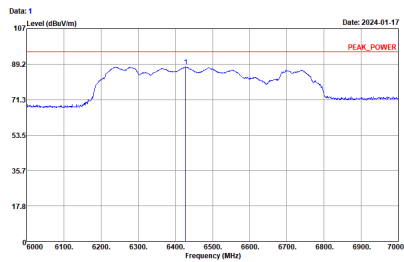
Mode 26



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
: RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 31
Payload Length : 0
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	7737.00	91.02	-4.21	95.23	77.28	36.77	15.93	38.96	---	--- Peak

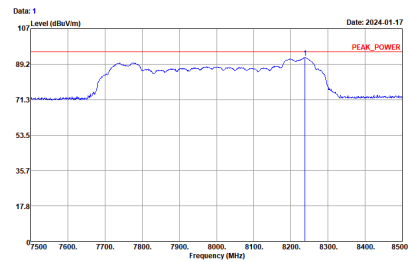
Mode 27



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 VERTICAL
: RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 31
Payload Length : 0
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	6428.00	87.79	-7.44	95.23	76.35	34.96	14.47	37.99	---	--- Peak

Mode 28



Site : 03CH20-HY
Condition : PEAK_POWER 3m 91200_02360_231030 HORIZONTAL
: RBW:50000.000KHz VBW:80000.000KHz SWT:1.000sec
Detector : Peak
Channel : CH09
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 31
Payload Length : 0
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	8238.00	92.50	-2.73	95.23	78.39	37.15	16.34	39.38	---	--- Peak

3.5 Radiated Emissions

3.5.1 Radiated Emissions Limit

Radiated Emissions below 960MHz and Emissions from Digital Circuitry Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Radiated Emissions above 960MHz Limit	
Frequency Range (MHz)	EIRP (dBm), RBW = 1MHz
960-1610	-75.3
1610-1990	-63.3
1990-3100	-61.3
3100-10600	-41.3
Above 10600	-61.3

Note: Distance extrapolation factor = 20 log (test distance [X m]/specific distance [3 m]) (dB)

Radiated Emissions in GPS Bands Limit	
Frequency Range (MHz)	EIRP (dBm), RBW ≥ 1kHz
1164-1240	-85.3
1559-1610	-85.3

Note E (dBuV/m) = EIRP (dBm) + 95.23, example, E(dBuV/m) = -85.3 + 95.23 = 9.93dBuV/m

3.5.2 Measuring Instruments

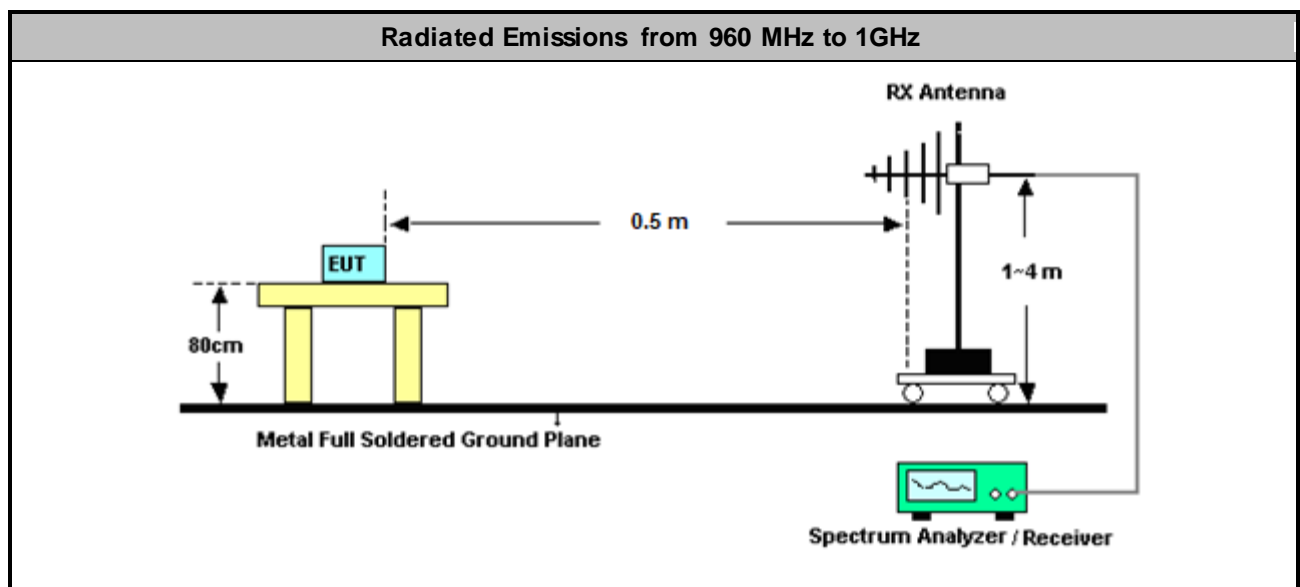
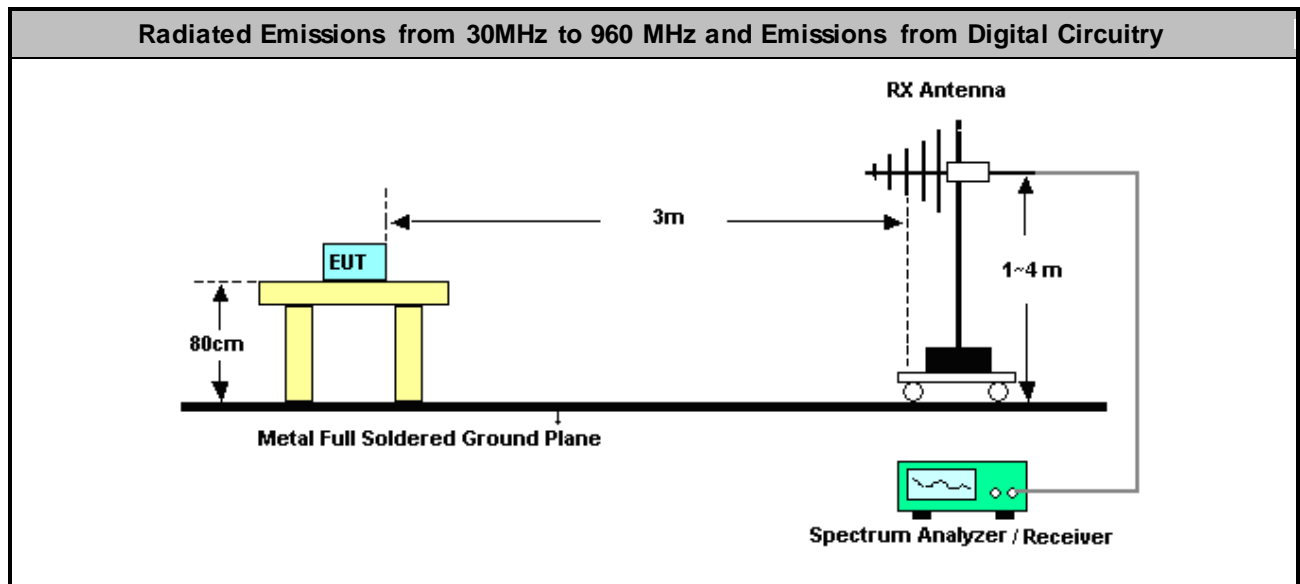
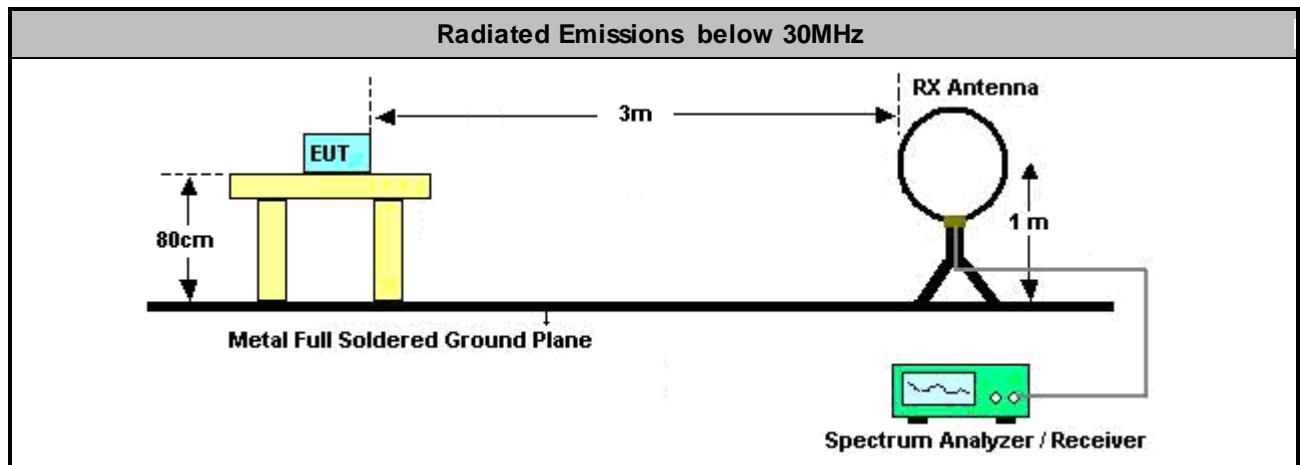
Refer a test equipment and calibration data table in this test report.

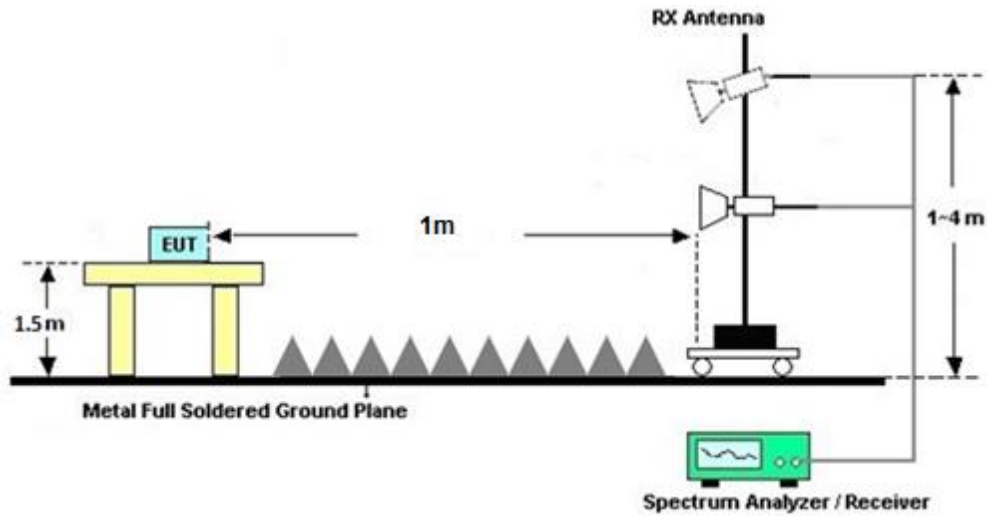
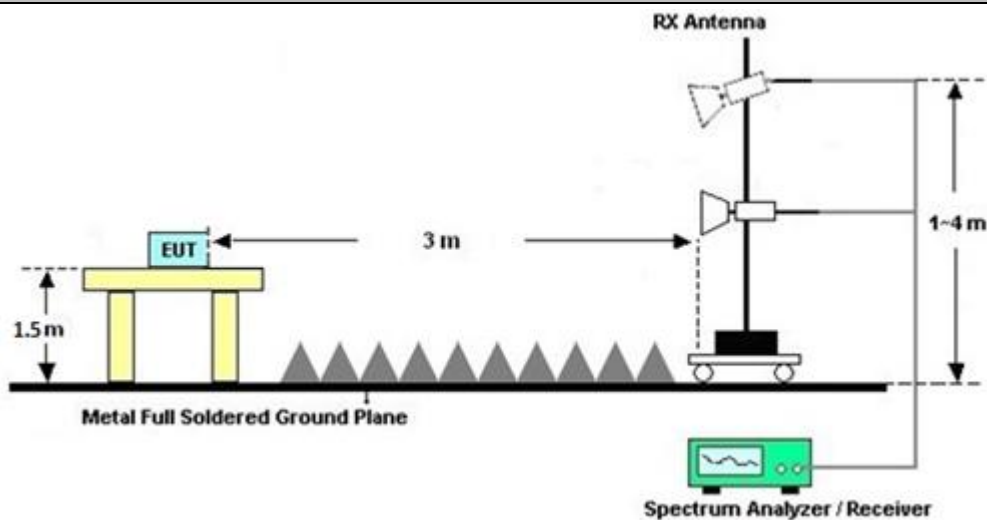
3.5.3 Test Procedures

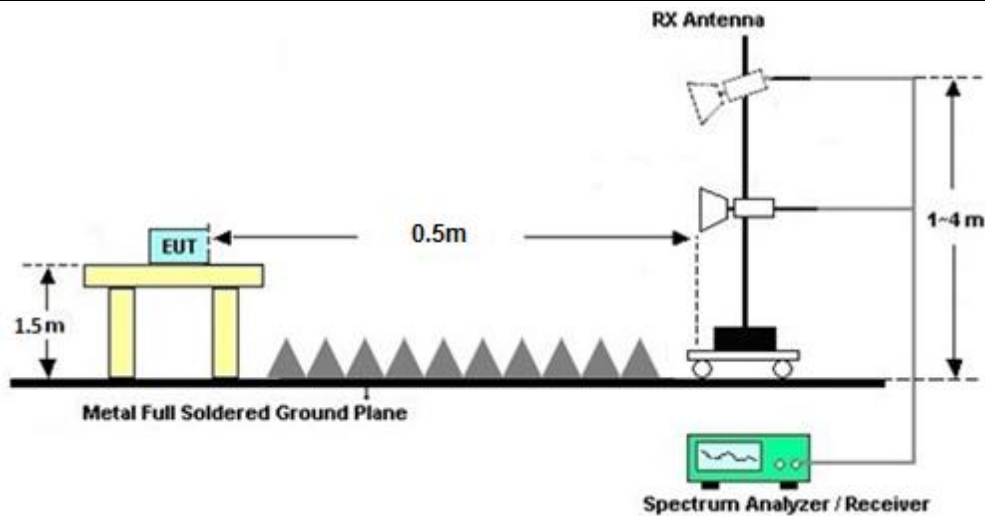
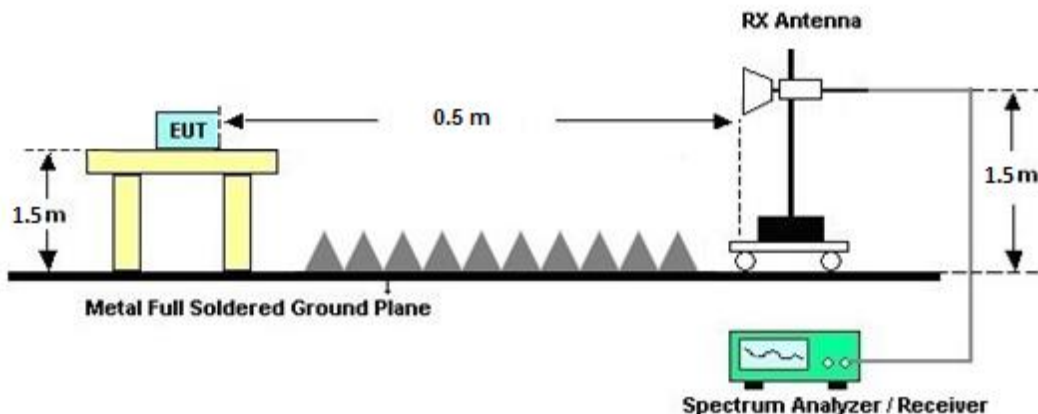
Test Method for Radiated Emissions above 960MHz	
■ Radiated Emissions above 960MHz	
■	Refer as ANSI C63.10, clause 10.3.1 for radiated measurement procedure testing.
■	Refer as ANSI C63.10, clause 10.3.2 for measurement distance is 3m. In some cases, it may be necessary to measure the radiated UWB emissions at a closer distance to obtain enough signal and margin to overcome the measurement system noise floor. Distance extrapolation factor = 20 log (test distance [X m]/specific distance [3 m]) (dB)
■	Refer as ANSI C63.10, clause 10.3.4 for rms detector procedure testing.
■	Refer as ANSI C63.10, clause 10.3.7 for evaluating AVG-PSD (RBW=1MHz).
■	Refer as ANSI C63.10, clause 10.3.10 for evaluating AVG-PSD in GPS Band (RBW≥1kHz).
■ For radiated measurement.	
■	Refer as ANSI C63.10, clause 10.3.8 following eirp can be used radiated test configuration.
■	Refer as ANSI C63.10, clause 10.3.9 following eirp can be directly determined using the field strength.

Test Method for Radiated Emissions below 960MHz and Emissions from Digital Circuitry	
■ Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements) for above 30MHz-960MHz; 40dB/decade for frequency below 30MHz.	
■ For the transmitter unwanted emissions shall be measured using following options below:	
■	Refer as ANSI C63.10, clause 4.1.4 Detector functions and selection of bandwidth
□	Refer as ANSI C63.10, clause 4.1.4.2.4 average value of pulsed emissions. Adjusted by a “duty cycle correction factor”, derived from 20log (dwell time/100 ms). Average emission = peak emission + 20 log (duty cycle).
■	Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.
■ For radiated measurement.	
■	Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
■	Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
■	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1 GHz and test distance is 3m.
■	If the noise floor can't meet the limit, the test distance will be shorten and described in the report.
■ Any unwanted emissions level shall not exceed the fundamental emission level.	

3.5.4 Test Setup



Radiated Emissions from 1GHz to 1.61 GHz

Radiated Emissions from 1.61 GHz to 10.60 GHz


Radiated Emissions from 10.60 GHz to 18GHz

Radiated Emissions above 18GHz


Note 1: Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna. Electric field tests shall be performed in the frequency range of 30 MHz to 1000 MHz using a calibrated bi-log antenna and the frequency range of 1 GHz to 40 GHz using a calibrated horn antenna.

Note 2: If test distance other than 3m is used, the used test distance will be recorded in test result.

3.5.5 Radiated Emissions (Below 30MHz)

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

3.5.6 Average Power Spectral Density

Test mode	Frequency (MHz)	Emission Level (dBuV/m)	Emission Limit (dBm/MHz)	Emission Limit (dBuV/m)	Margin (dB)	Result	Pol [H/V]
1	6615	53.87	-41.3	53.93	-0.06	Pass	H
2	7886	53.88	-41.3	53.93	-0.05	Pass	H
3	6412	53.57	-41.3	53.93	-0.36	Pass	V
4	7956	53.61	-41.3	53.93	-0.32	Pass	H
5	6521	53.89	-41.3	53.93	-0.04	Pass	H
6	7886	53.78	-41.3	53.93	-0.15	Pass	H
7	6412	53.85	-41.3	53.93	-0.08	Pass	V
8	7972	53.78	-41.3	53.93	-0.15	Pass	H
9	6614	52.49	-41.3	53.93	-1.44	Pass	H
10	7891	53.79	-41.3	53.93	-0.14	Pass	H
11	6419	53.53	-41.3	53.93	-0.40	Pass	V
12	7980	51.88	-41.3	53.93	-2.05	Pass	H
13	6600	53.78	-41.3	53.93	-0.15	Pass	H
14	7891	53.52	-41.3	53.93	-0.41	Pass	H
15	6427	53.89	-41.3	53.93	-0.04	Pass	V
16	7973	53.91	-41.3	53.93	-0.02	Pass	H
17	6599	53.83	-41.3	53.93	-0.10	Pass	H
18	7892	53.79	-41.3	53.93	-0.14	Pass	H
19	6428	53.88	-41.3	53.93	-0.05	Pass	V
20	7964	53.79	-41.3	53.93	-0.14	Pass	H
21	6414	53.79	-41.3	53.93	-0.14	Pass	H
22	7891	53.79	-41.3	53.93	-0.14	Pass	H
23	6427	53.78	-41.3	53.93	-0.15	Pass	V
24	7973	53.87	-41.3	53.93	-0.06	Pass	H
25	6424	51.71	-41.3	53.93	-2.22	Pass	H
26	7890	53.68	-41.3	53.93	-0.25	Pass	H
27	6410	53.52	-41.3	53.93	-0.41	Pass	V
28	7972	51.72	-41.3	53.93	-2.21	Pass	H



Radiated Emissions (Fundamental)

Operating Function

Open Mode

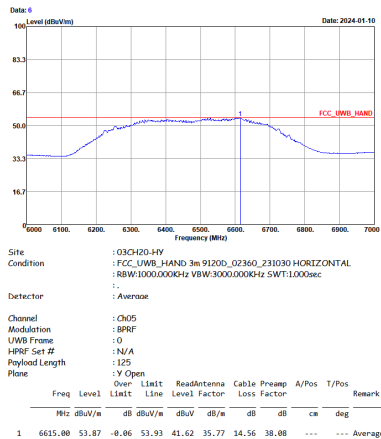
Polarization

H for Mode 1, 2, 4
V for Mode 3

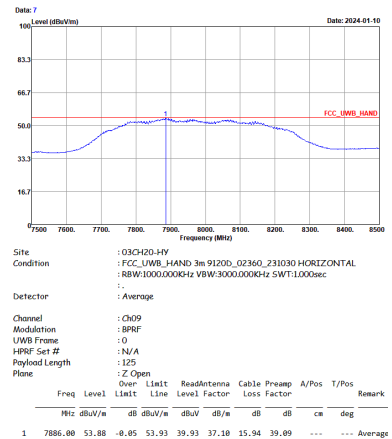
Test Distance

3m

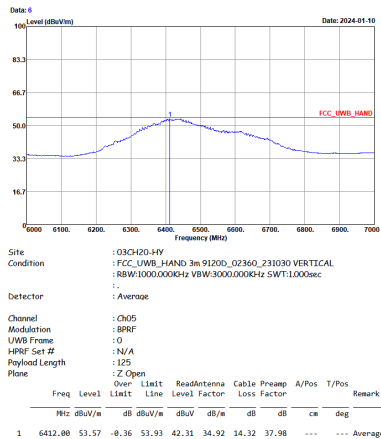
Mode 1



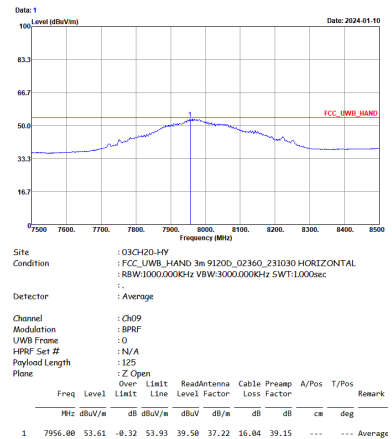
Mode 2



Mode 3



Mode 4





Radiated Emissions (Fundamental)									
Operating Function	Open Mode	Polarization		H for Mode 5, 6,8 V for Mode 7					
		Test Distance		3m					
Mode 5					Mode 6				
<div><div><div>Date: 2</div><div>Level (dBuV/m)</div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div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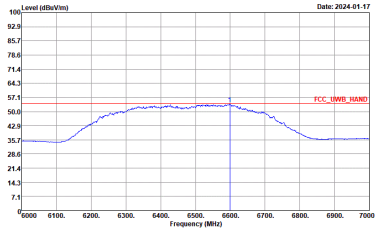
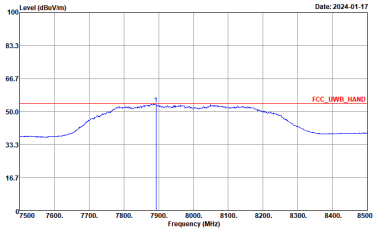
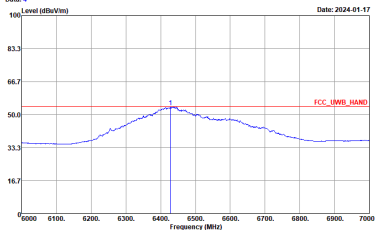
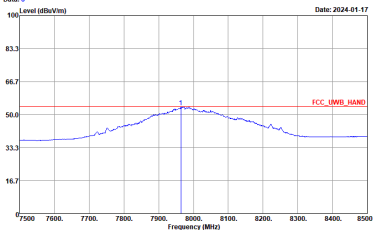


Radiated Emissions (Fundamental)																																																																							
Operating Function	Open Mode	Polarization		H for Mode 9, 10,12 V for Mode 11																																																																			
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<div><div><div>Date: 7</div><div>Level (dBuV/m)</div><div>Date: 2024-01-11</div></div><div></div><div><div>Site : 03CH20-HY Condition : FCC_UWB_HAND 3m 91200_02360_231030 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:1.000sec Detector : Average Channel : CH05 Modulation : BPRF UWB Frame : 3 HPRF Set # : N/A Payload Length : N/A Plane : Y Open</div><table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>6614.00</td><td>52.49</td><td>-1.44</td><td>53.93</td><td>40.24</td><td>35.77</td><td>14.56</td><td>38.08</td><td>--- Average</td></tr></table></div></div>						Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	cm	deg		1	6614.00	52.49	-1.44	53.93	40.24	35.77	14.56	38.08	--- Average	<div><div><div>Date: 3</div><div>Level (dBuV/m)</div><div>Date: 2024-01-16</div></div><div></div><div><div>Site : 03CH20-HY Condition : FCC_UWB_HAND 3m 91200_02360_231030 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:1.000sec Detector : Average Channel : CH09 Modulation : BPRF UWB Frame : 3 HPRF Set # : N/A Payload Length : N/A Plane : Z Open</div><table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>7891.00</td><td>53.79</td><td>-8.14</td><td>53.93</td><td>39.69</td><td>37.10</td><td>16.10</td><td>39.10</td><td>--- Average</td></tr></table></div></div>						Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	cm	deg		1	7891.00	53.79	-8.14	53.93	39.69	37.10	16.10	39.10	--- Average
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Radiated Emissions (Fundamental)

Operating Function

Open Mode

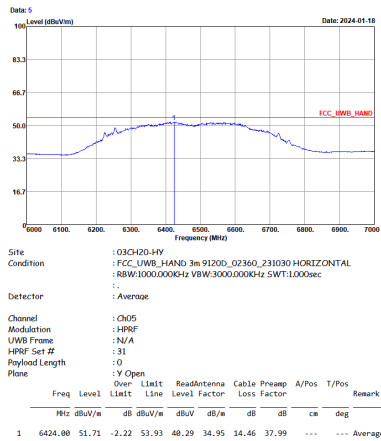
Polarization

H for Mode 25, 26, 28
V for Mode 27

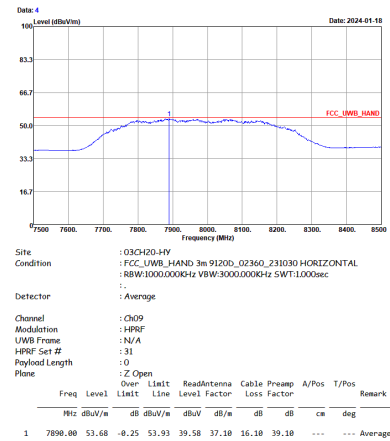
Test Distance

3m

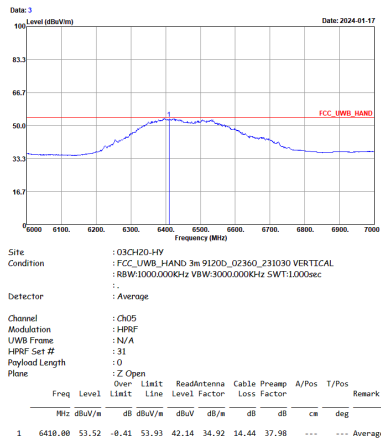
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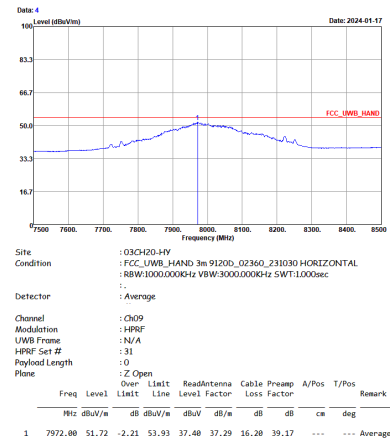
Mode 26



Mode 27

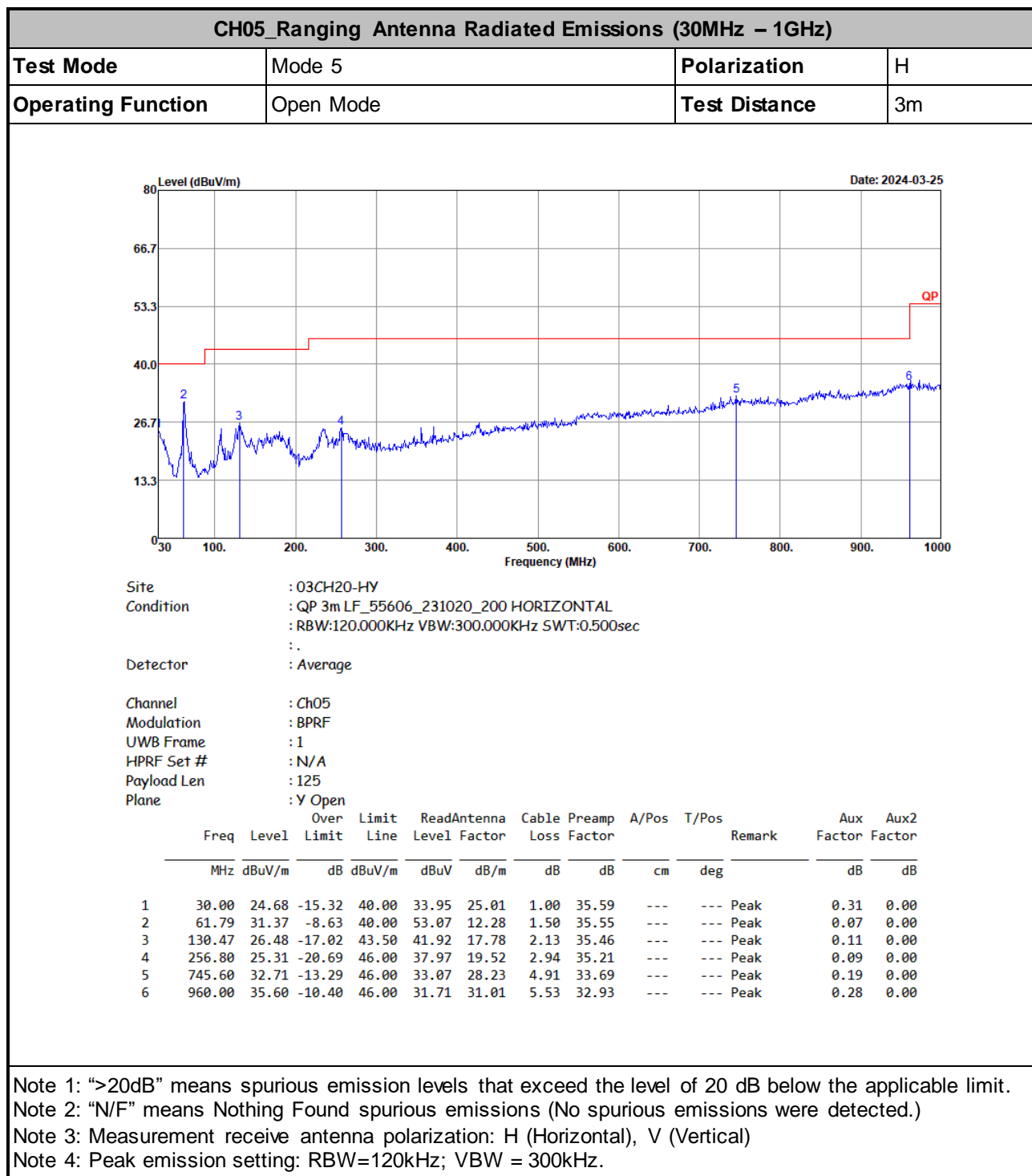


Mode 28





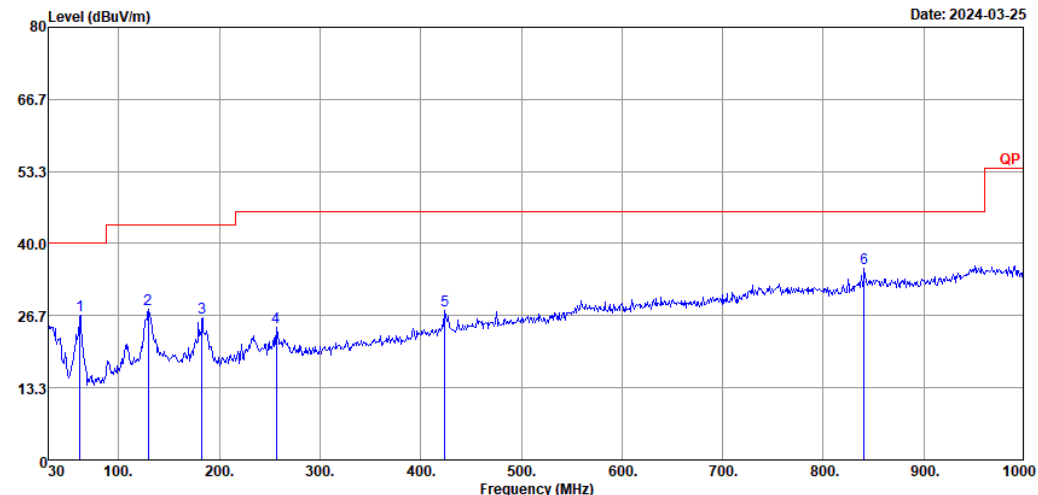
3.5.7 Radiated Emissions (30MHz – 1GHz)





CH05_Ranging Antenna Radiated Emissions (30MHz – 1GHz)

Test Mode	Mode 5	Polarization	V
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : QP 3m LF_55606_231020_200 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:0.500sec
: .
Detector : Average

Channel : Ch05
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Len : 125
Plane : Y Open

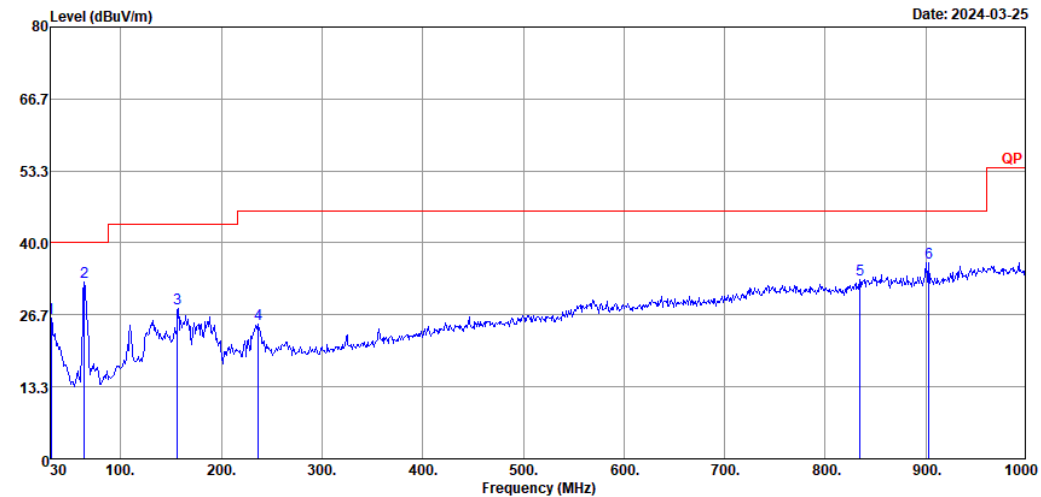
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Aux	Aux2
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	dB	dB
1	61.28	26.64	-13.36	40.00	48.33	12.30	1.49	35.55	---	---	Peak	0.07 0.00
2	129.45	27.83	-15.67	43.50	43.31	17.74	2.13	35.46	---	---	Peak	0.11 0.00
3	182.49	26.31	-17.19	43.50	44.03	15.05	2.50	35.36	---	---	Peak	0.09 0.00
4	256.80	24.50	-21.50	46.00	37.16	19.52	2.94	35.21	---	---	Peak	0.09 0.00
5	424.00	27.58	-18.42	46.00	35.82	22.64	3.75	34.76	---	---	Peak	0.13 0.00
6	840.80	35.53	-10.47	46.00	34.62	28.89	5.16	33.41	---	---	Peak	0.27 0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: Peak emission setting: RBW=120kHz; VBW = 300kHz.



CH09_Ranging Antenna Radiated Emissions (30MHz – 1GHz)

Test Mode	Mode 2	Polarization	H
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HV
Condition : QP 3m LF_55606_231020_200 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:0.500sec
: ..
Detector : Average
Channel : Ch09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Len : 125
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark	Aux Factor	Aux2 Factor
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		dB	dB
1	30.68	26.04	-13.96	40.00	35.69	24.64	1.01	35.59	---	---	Peak	0.29	0.00
2	63.83	32.76	-7.24	40.00	54.50	12.23	1.52	35.55	---	---	Peak	0.06	0.00
3	156.65	27.95	-15.55	43.50	44.03	16.90	2.33	35.41	---	---	Peak	0.10	0.00
4	236.80	25.01	-20.99	46.00	40.41	16.94	2.82	35.25	---	---	Peak	0.09	0.00
5	834.40	33.17	-12.83	46.00	32.59	28.60	5.14	33.42	---	---	Peak	0.26	0.00
6	903.20	36.37	-9.63	46.00	34.96	28.97	5.37	33.16	---	---	Peak	0.23	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

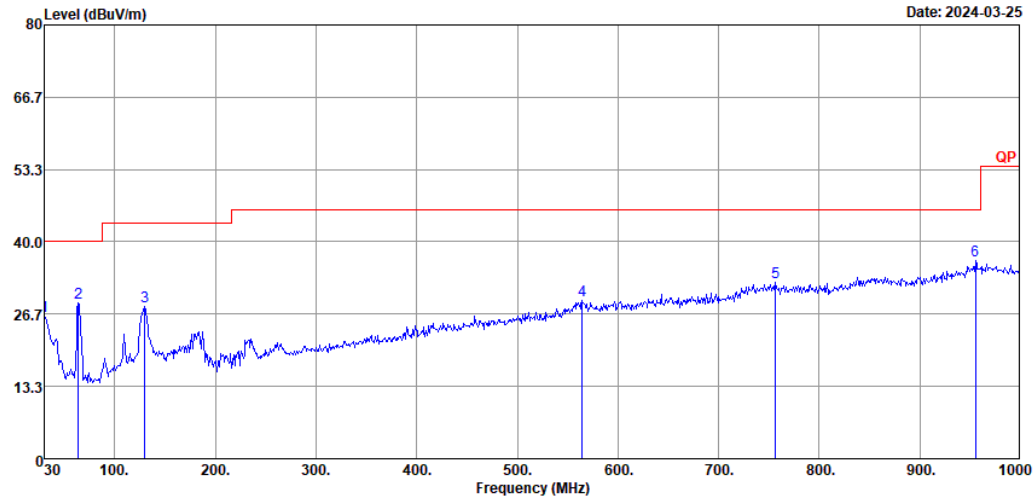
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Peak emission setting: RBW=120kHz; VBW = 300kHz.



CH09_Ranging Antenna Radiated Emissions (30MHz – 1GHz)

Test Mode	Mode 2	Polarization	V
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : QP 3m LF_55606_231020_200 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:0.500sec
Detector : Average

Channel : Ch09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Len : 125
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark	Aux Factor	Aux2 Factor	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	dB	dB	
1	30.00	26.30	-13.70	40.00	35.57	25.01	1.00	35.59	---	---	Peak	0.31	0.00
2	63.66	28.68	-11.32	40.00	50.42	12.23	1.52	35.55	---	---	Peak	0.06	0.00
3	129.79	28.07	-15.43	43.50	43.54	17.75	2.13	35.46	---	---	Peak	0.11	0.00
4	564.80	29.23	-16.77	46.00	32.77	26.32	4.30	34.35	---	---	Peak	0.19	0.00
5	756.80	32.51	-13.49	46.00	32.73	28.29	4.94	33.64	---	---	Peak	0.19	0.00
6	955.20	36.57	-9.43	46.00	32.79	30.95	5.52	32.96	---	---	Peak	0.27	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

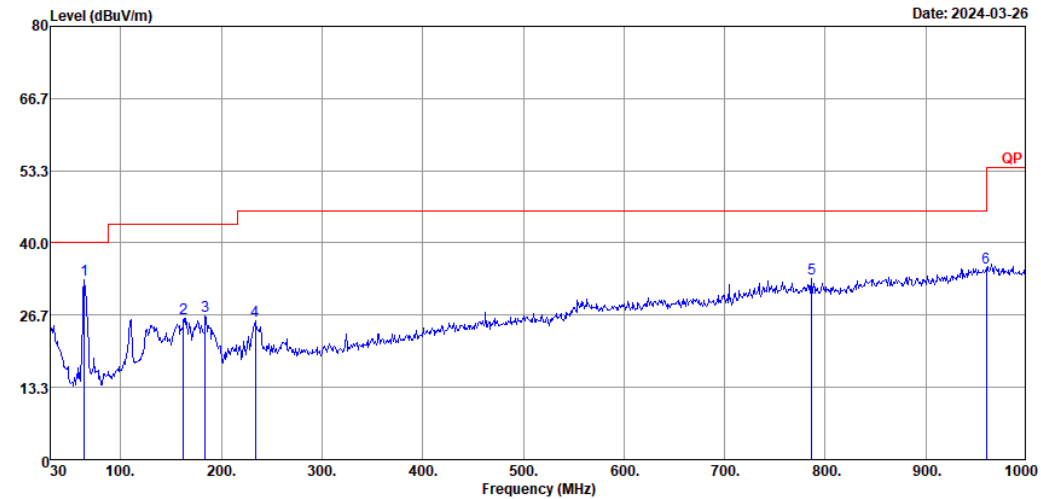
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Peak emission setting: RBW=120kHz; VBW = 300kHz.



CH05_Common AoA Antenna Radiated Emissions (30MHz – 1GHz)

Test Mode	Mode 15	Polarization	H
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : QP 3m LF_55606_231020_200 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:0.500sec
: .
Detector : Average
Channel : Ch05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark	Aux Factor	Aux2 Factor	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	dB	dB	
1	63.66	33.24	-6.76	40.00	54.98	12.23	1.52	35.55	---	---	Peak	0.06	0.00
2	162.09	26.12	-17.38	43.50	42.74	16.32	2.37	35.40	---	---	Peak	0.09	0.00
3	183.68	26.43	-17.07	43.50	44.17	15.02	2.51	35.36	---	---	Peak	0.09	0.00
4	233.60	25.58	-20.42	46.00	41.32	16.62	2.80	35.25	---	---	Peak	0.09	0.00
5	786.40	33.50	-12.50	46.00	33.71	28.09	5.02	33.52	---	---	Peak	0.20	0.00
6	960.00	35.33	-10.67	46.00	31.44	31.01	5.53	32.93	---	---	Peak	0.28	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

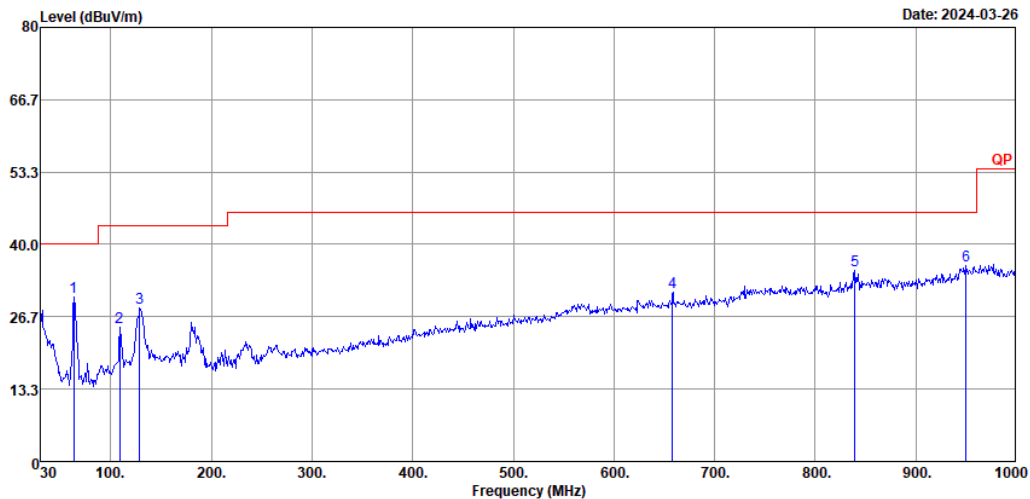
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Peak emission setting: RBW=120kHz; VBW = 300kHz.



CH05_Common AoA Antenna Radiated Emissions (30MHz – 1GHz)

Test Mode	Mode 15	Polarization	V
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : QP 3m LF_55606_231020_200 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:0.500sec
Detector : Average

Channel : Ch05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

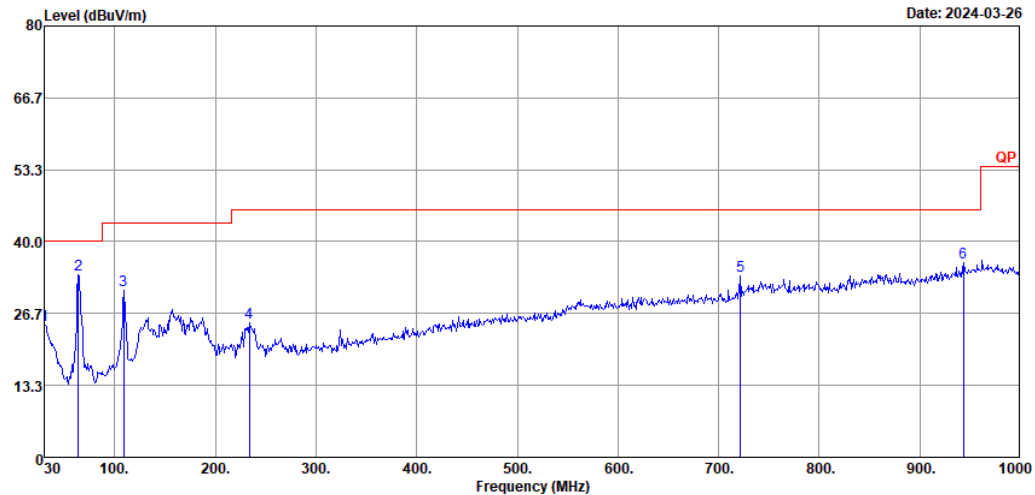
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark	Aux Factor	Aux2 Factor
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		dB	dB
1	63.49	30.40	-9.60	40.00	52.15	12.23	1.51	35.55	---	---	Peak	0.06	0.00
2	108.71	24.66	-18.84	43.50	40.88	17.22	1.96	35.49	---	---	Peak	0.09	0.00
3	128.77	28.26	-15.24	43.50	43.76	17.73	2.12	35.46	---	---	Peak	0.11	0.00
4	658.40	31.25	-14.75	46.00	34.12	26.45	4.62	34.11	---	---	Peak	0.17	0.00
5	839.20	35.11	-10.89	46.00	34.28	28.82	5.15	33.41	---	---	Peak	0.27	0.00
6	949.60	36.07	-9.93	46.00	32.51	30.77	5.50	32.98	---	---	Peak	0.27	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: Peak emission setting: RBW=120kHz; VBW = 300kHz.



CH09_Common AoA Antenna Radiated Emissions (30MHz – 1GHz)

Test Mode	Mode 16	Polarization	H
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : QP 3m LF_55606_231020_200 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:0.500sec
: .
Detector : Average

Channel : Ch09
Modulation : HPRF
UWB Frame : 0
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Aux	Aux2
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	cm	deg		Factor	Factor
			dB	dBuV/m	dBuV	dB/m	dB				dB	dB
1	30.00	24.56	-15.44	40.00	33.83	25.01	1.00	35.59	---	Peak	0.31	0.00
2	64.00	33.84	-6.16	40.00	55.58	12.23	1.52	35.55	---	Peak	0.06	0.00
3	109.05	30.98	-12.52	43.50	47.17	17.25	1.96	35.49	---	Peak	0.09	0.00
4	233.60	24.85	-21.15	46.00	40.59	16.62	2.80	35.25	---	Peak	0.09	0.00
5	721.60	33.67	-12.33	46.00	35.10	27.39	4.83	33.83	---	Peak	0.18	0.00
6	943.20	36.19	-9.81	46.00	33.01	30.45	5.48	33.01	---	Peak	0.26	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

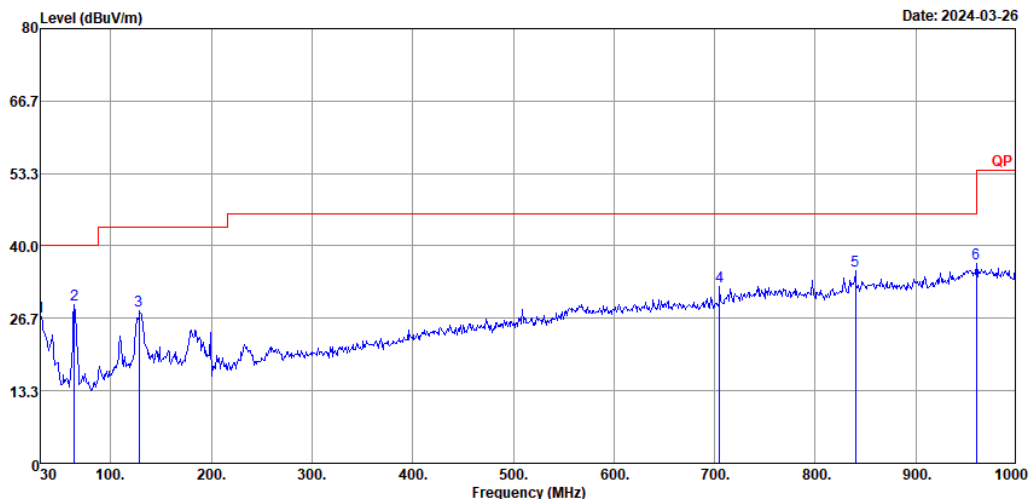
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Peak emission setting: RBW=120kHz; VBW = 300kHz.



CH09_Common AoA Antenna Radiated Emissions (30MHz – 1GHz)

Test Mode	Mode 16	Polarization	V
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : QP 3m LF_55606_231020_200 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:0.500sec
Detector : Average

Channel : Ch09
Modulation : HPRF
UWB Frame : 0
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark	Aux Factor	Aux2 Factor
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		dB	dB
1	30.51	27.00	-13.00	40.00	36.56	24.73	1.01	35.59	---	---	Peak	0.29	0.00
2	64.00	29.26	-10.74	40.00	51.00	12.23	1.52	35.55	---	---	Peak	0.06	0.00
3	128.43	28.07	-15.43	43.50	43.58	17.72	2.12	35.46	---	---	Peak	0.11	0.00
4	704.80	32.49	-13.51	46.00	34.78	26.68	4.78	33.92	---	---	Peak	0.17	0.00
5	840.00	35.35	-10.65	46.00	34.47	28.86	5.16	33.41	---	---	Peak	0.27	0.00
6	960.00	36.77	-9.23	46.00	32.88	31.01	5.53	32.93	---	---	Peak	0.28	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

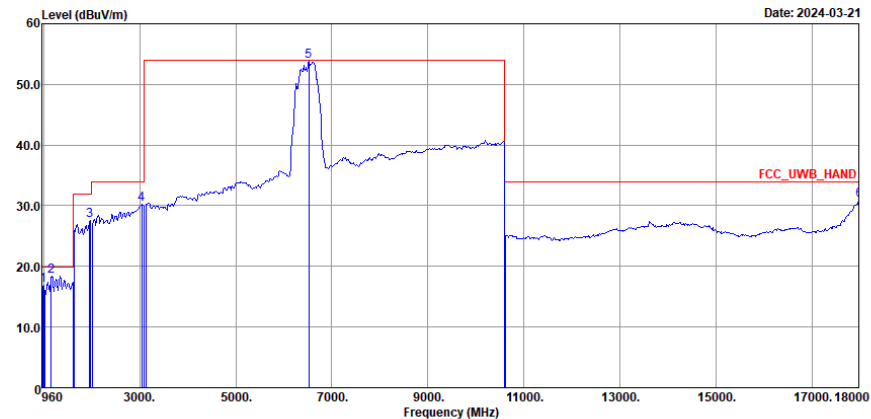
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Peak emission setting: RBW=120kHz; VBW = 300kHz.



3.5.8 Radiated Emissions (960MHz – 18GHz)

CH05_Ranging Antenna Radiated Emissions (960MHz – 18GHz)			
Test Mode	Mode 5	Polarization	H
Operating Function	Open Mode		
Test Distance	The test distance between the receiving antenna and the EUT is as following: 3m for 1.61 GHz ~ 10.60 GHz frequency range, 1 m for 1GHz ~ 1.61 GHz, and 0.5 m for other frequency ranges.		



Site : 03CH20-HY
Condition : FCC_UWB_HAND 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:7.500sec
Detector : Average
Channel : Ch05
Modulation : BPRF
UWB Frame : I
HPRF Set # : N/A
Payload Len : 125
Plane : Y Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Aux	Aux2
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	dB	dB
1	981.96	16.82	-3.11	19.93	28.72	30.60	5.60	32.83	---	---	Average	0.29 -15.56
2	1157.38	18.45	-1.48	19.93	31.73	25.87	6.09	35.70	---	---	Average	-9.54 0.00
3	1953.52	27.59	-4.34	31.93	29.70	26.12	7.85	36.08	---	---	Average	0.00 0.00
4	3042.28	30.30	-3.63	33.93	26.75	29.77	9.91	36.13	---	---	Average	0.00 0.00
5	6520.00	53.80	-0.13	53.93	41.78	35.44	14.59	38.01	---	---	Average	0.00 0.00
6	17992.60	30.84	-3.09	33.93	24.95	42.46	24.57	45.58	---	---	Average	-15.56 0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting outside GPS Bands: RBW=1MHz; VBW=3MHz.

Note 5: Average emission setting in GPS bands: RBW=1kHz; VBW=3kHz.

Note 6: #5 is fundamental signal.

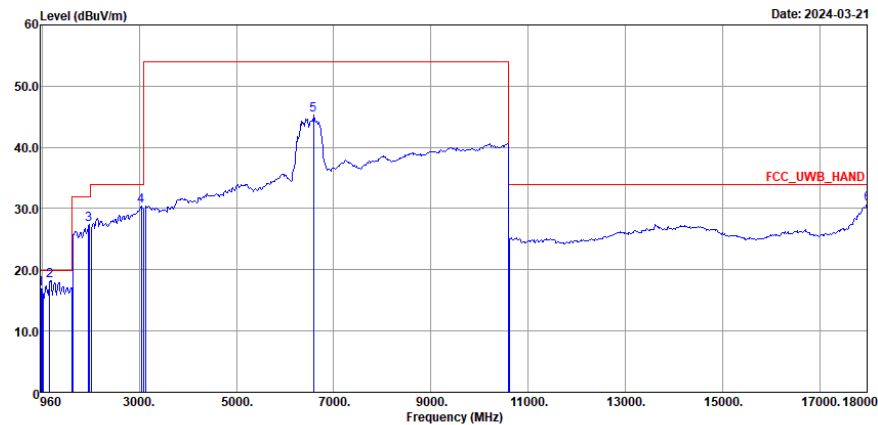
Note 7:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
Example: Distance extrapolation factor = $20 \log (0.5\text{m}/3\text{m}) = -15.56$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux Factor (dB) + Aux 2 Factor (dB) = Level (dBuV/m)
(Note: For test item below 1GHz, Aux = Filter loss; Aux 2 = Distance extrapolation factor)
(Note: For test item above 1GHz, Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)
Example: Corrected Reading: 30.60 (dB/m) + 5.60 (dB) + 28.72 (dBuV) - 32.83 (dB) + 0.29 dB + (-15.56) (dB) = 16.82 (dBuV/m)



CH05_Ranging Antenna Radiated Emissions (960MHz – 18GHz)

Test Mode	Mode 5	Polarization	V
Operating Function	Open Mode		
Test Distance	The test distance between the receiving antenna and the EUT is as following: 3m for 1.61 GHz ~ 10.60 GHz frequency range, 1 m for 1GHz ~ 1.61 GHz, and 0.5 m for other frequency ranges.		



Site : 03CH20-HY
Condition : FCC_UWB_HAND 3m 9120D_02360_231030 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:7.500sec
:

Pretest : #W234398
Channel : Ch05
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Len : 125
Plane : Y Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Aux	Aux2
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor			Factor	Factor
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	dB	dB
1	976.64	16.86	-3.07	19.93	28.60	30.79	5.59	32.85	---	---	Average	0.29 -15.56
2	1158.60	18.30	-1.63	19.93	31.57	25.87	6.10	35.70	---	---	Average	-9.54 0.00
3	1953.14	27.44	-4.49	31.93	29.55	26.12	7.85	36.08	---	---	Average	0.00 0.00
4	3043.39	30.34	-3.59	33.93	26.78	29.77	9.92	36.13	---	---	Average	0.00 0.00
5	6587.50	45.35	-8.58	53.93	33.01	35.72	14.68	38.06	---	---	Average	0.00 0.00
6	17992.60	30.75	-3.18	33.93	24.86	42.46	24.57	45.58	---	---	Average	-15.56 0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting outside GPS Bands: RBW=1MHz; VBW=3MHz.

Note 5: Average emission setting in GPS bands: RBW=1kHz; VBW=3kHz.

Note 6: #5 is fundamental signal.

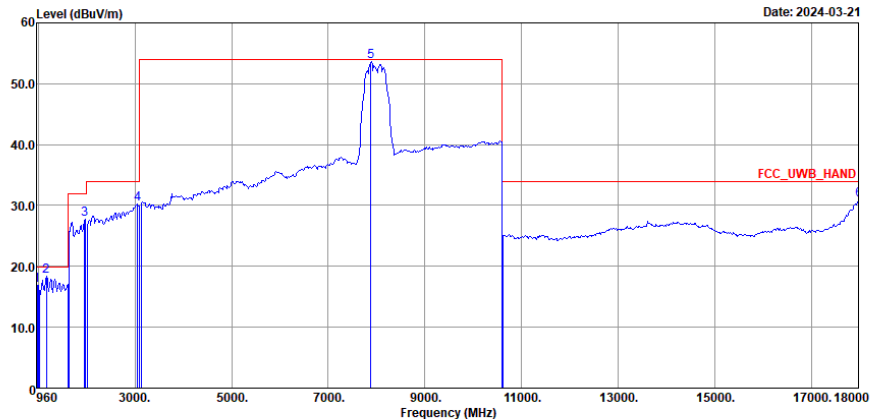
Note 7:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux Factor (dB) = Level (dBuV/m)
(Note: For test item below 1GHz, Aux = Filter loss; Aux 2 = Distance extrapolation factor)
(Note: For test item above 1GHz, Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



CH09_Ranging Antenna Radiated Emissions (960MHz – 18GHz)

Test Mode	Mode 2	Polarization	H
Operating Function	Open Mode		
Test Distance	The test distance between the receiving antenna and the EUT is as following: 3m for 1.61 GHz ~ 10.60 GHz frequency range, 1 m for 1GHz ~ 1.61 GHz, and 0.5 m for other frequency ranges.		



Site : 03CH20-HY
Condition : FCC_UWB_HAND 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:7.500sec
: .

Detector : Average

Channel : Ch09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Len : 125
Plane : Z Open

			Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Aux	Aux2	
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor			Factor	Factor	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	dB	dB	
1	976.40	16.83	-3.10	19.93	28.56	30.81	5.58	32.85	---	---	Average	0.29	-15.56
2	1161.04	18.33	-1.60	19.93	31.61	25.86	6.10	35.70	---	---	Average	-9.54	0.00
3	1951.62	27.72	-4.21	31.93	29.84	26.11	7.85	36.08	---	---	Average	0.00	0.00
4	3048.94	30.25	-3.68	33.93	26.66	29.80	9.93	36.14	---	---	Average	0.00	0.00
5	7885.00	53.72	-0.21	53.93	39.61	37.10	16.10	39.09	---	---	Average	0.00	0.00
6	17992.60	30.87	-3.06	33.93	24.98	42.46	24.57	45.58	---	---	Average	-15.56	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting outside GPS Bands: RBW=1MHz; VBW=3MHz.

Note 5: Average emission setting in GPS bands: RBW=1kHz; VBW=3kHz.

Note 6: #5 is fundamental signal.

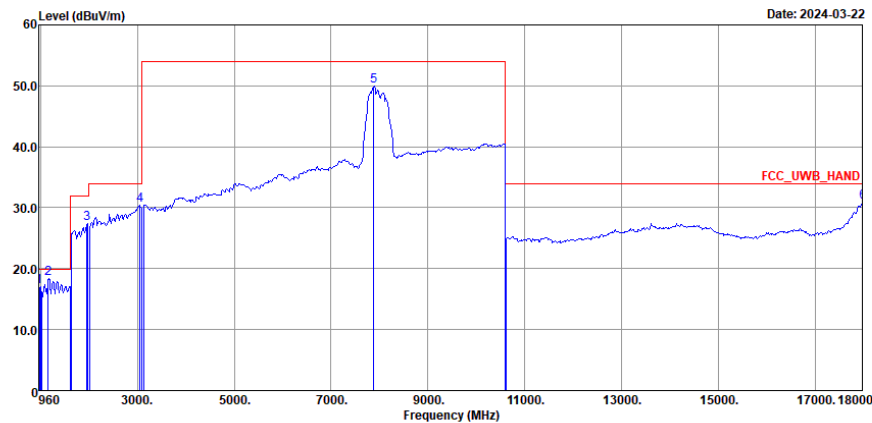
Note 7:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux Factor (dB) = Level (dBuV/m)
(Note: For test item below 1GHz, Aux = Filter loss; Aux 2 = Distance extrapolation factor)
(Note: For test item above 1GHz, Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



CH09_Ranging Antenna Radiated Emissions (960MHz – 18GHz)

Test Mode	Mode 2	Polarization	V
Operating Function	Open Mode		
Test Distance	The test distance between the receiving antenna and the EUT is as following: 3m for 1.61 GHz ~ 10.60 GHz frequency range, 1 m for 1GHz ~ 1.61 GHz, and 0.5 m for other frequency ranges.		



Site : 03CH20-HY
Condition : FCC_UWB_HAND 3m 9120D_02360_231030 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:7.500sec
:
Detector : Average

Channel : Ch09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Len : 125
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Aux	Aux2
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	Factor	Factor
1	978.16	16.99	-2.94	19.93	28.80	30.71	5.59	32.84	---	---	Average	0.29 -15.56
2	1159.21	18.40	-1.53	19.93	31.68	25.86	6.10	35.70	---	---	Average	-9.54 0.00
3	1952.76	27.37	-4.56	31.93	29.48	26.12	7.85	36.08	---	---	Average	0.00 0.00
4	3050.05	30.35	-3.58	33.93	26.76	29.80	9.93	36.14	---	---	Average	0.00 0.00
5	7885.00	49.96	-3.97	53.93	35.85	37.10	16.10	39.09	---	---	Average	0.00 0.00
6	17985.20	30.88	-3.05	33.93	25.04	42.41	24.56	45.57	---	---	Average	-15.56 0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting outside GPS Bands: RBW=1MHz; VBW=3MHz.

Note 5: Average emission setting in GPS bands: RBW=1kHz; VBW=3kHz.

Note 6: #5 is fundamental signal.

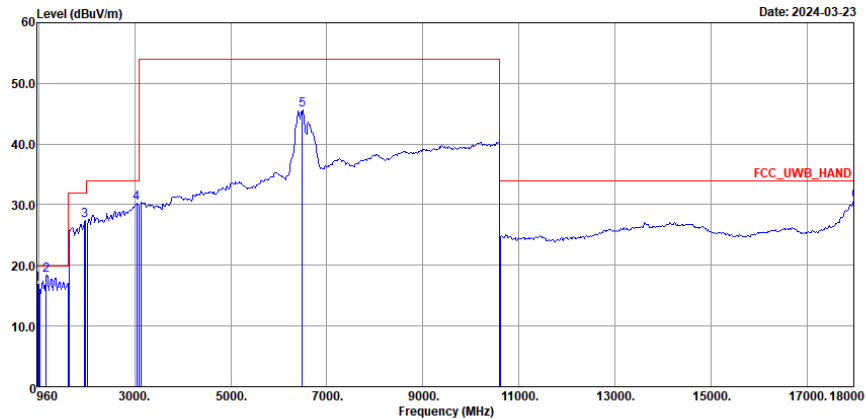
Note 7:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux Factor (dB) = Level (dBuV/m)
(Note: For test item below 1GHz, Aux = Filter loss; Aux 2 = Distance extrapolation factor)
(Note: For test item above 1GHz, Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



CH05_Common AoA Antenna Radiated Emissions (960MHz – 18GHz)

Test Mode	Mode 15	Polarization	H
Operating Function	Open Mode		
Test Distance	The test distance between the receiving antenna and the EUT is as following: 3m for 1.61 GHz ~ 10.60 GHz frequency range, 1 m for 1GHz ~ 1.61 GHz, and 0.5 m for other frequency ranges.		



Site : 03CH20-HY
Condition : FCC_UWB_HAND 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:7.500sec
: .

Detector : Average

Channel : Ch05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Aux	Aux2
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	dB	dB
1	977.40	16.84	-3.09	19.93	28.62	30.75	5.59	32.85	---	---	Average	0.29 -15.56
2	1159.82	18.38	-1.55	19.93	31.66	25.86	6.10	35.70	---	---	Average	-9.54 0.00
3	1955.80	27.35	-4.58	31.93	29.46	26.13	7.85	36.09	---	---	Average	0.00 0.00
4	3042.28	30.27	-3.66	33.93	26.72	29.77	9.91	36.13	---	---	Average	0.00 0.00
5	6490.00	45.67	-8.26	53.93	33.80	35.32	14.55	38.00	---	---	Average	0.00 0.00
6	18000.00	30.60	-3.33	33.93	24.68	42.50	24.57	45.59	---	---	Average	-15.56 0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting outside GPS Bands: RBW=1MHz; VBW=3MHz.

Note 5: Average emission setting in GPS bands: RBW=1kHz; VBW=3kHz.

Note 6: #5 is fundamental signal.

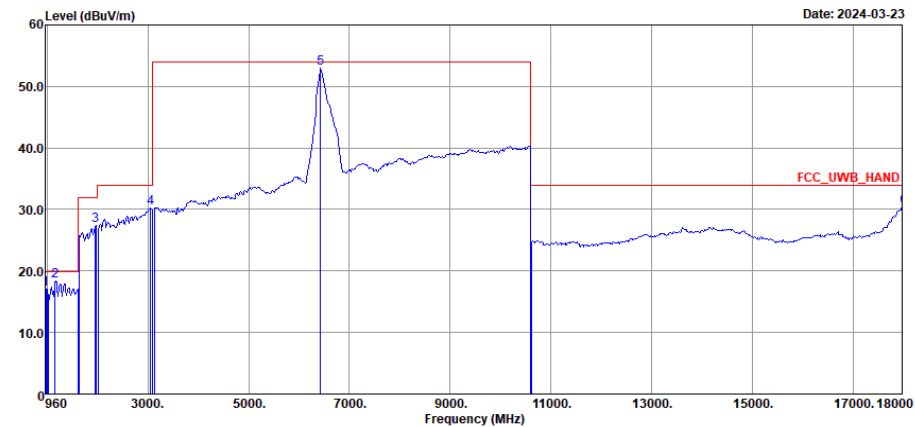
Note 7:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
Example: Distance extrapolation factor = $20 \log (0.5\text{m}/3\text{m}) = -15.56$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux Factor (dB) + Aux 2 Factor (dB) = Level (dBuV/m)
(Note: For test item below 1GHz, Aux = Filter loss; Aux 2 = Distance extrapolation factor)
(Note: For test item above 1GHz, Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



CH05_Common AoA Antenna Radiated Emissions (960MHz – 18GHz)

Test Mode	Mode 15	Polarization	V
Operating Function	Open Mode		
Test Distance	The test distance between the receiving antenna and the EUT is as following: 3m for 1.61 GHz ~ 10.60 GHz frequency range, 1 m for 1GHz ~ 1.61 GHz, and 0.5 m for other frequency ranges.		



Site : 03CH20-HY
Condition : FCC_UWB_HAND 3m 9120D_02360_231030 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:7.500sec
Detector : Average
Channel : Ch05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Aux	Aux2
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	dB	dB
1	976.80	17.04	-2.89	19.93	28.78	30.79	5.59	32.85	---	---	Average	0.29 -15.56
2	1159.82	18.34	-1.59	19.93	31.62	25.86	6.10	35.70	---	---	Average	-9.54 0.00
3	1955.80	27.36	-4.57	31.93	29.47	26.13	7.85	36.09	---	---	Average	0.00 0.00
4	3048.94	30.31	-3.62	33.93	26.72	29.80	9.93	36.14	---	---	Average	0.00 0.00
5	6422.50	52.99	-0.94	53.93	41.58	34.94	14.46	37.99	---	---	Average	0.00 0.00
6	18000.00	30.46	-3.47	33.93	24.54	42.50	24.57	45.59	---	---	Average	-15.56 0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting outside GPS Bands: RBW=1MHz; VBW=3MHz.

Note 5: Average emission setting in GPS bands: RBW=1kHz; VBW=3kHz.

Note 6: #5 is fundamental signal.

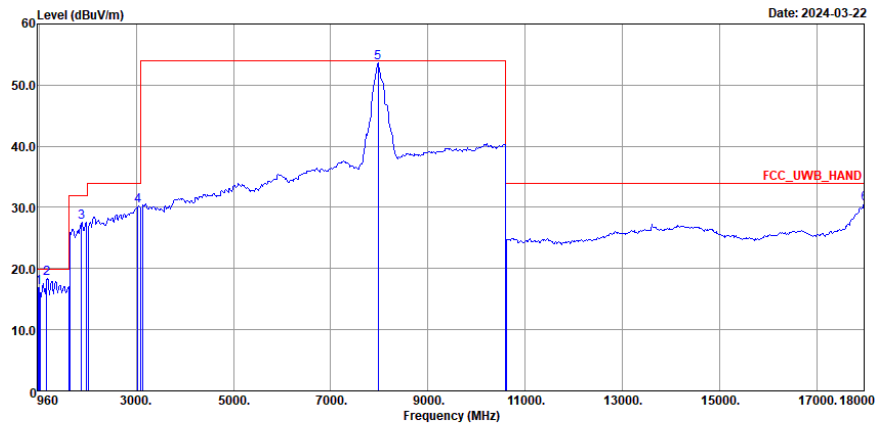
Note 7:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux Factor (dB) = Level (dBuV/m)
(Note: For test item below 1GHz, Aux = Filter loss; Aux 2 = Distance extrapolation factor)
(Note: For test item above 1GHz, Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



CH09_Common AoA Antenna Radiated Emissions (960MHz – 18GHz)

Test Mode	Mode 16	Polarization	H
Operating Function	Open Mode		
Test Distance	The test distance between the receiving antenna and the EUT is as following: 3m for 1.61 GHz ~ 10.60 GHz frequency range, 1 m for 1GHz ~ 1.61 GHz, and 0.5 m for other frequency ranges.		



Site : 03CH20-HY
Condition : FCC_UWB_HAND 3m 9120D_02360_231030 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:7.500sec
:
Detector : Average

Channel : Ch09
Modulation : HPRF
UWB Frame : 0
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark	Aux Factor	Aux2 Factor
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		dB	dB
1	984.36	16.88	-3.05	19.93	28.77	30.59	5.61	32.82	---	---	Average	0.29	-15.56
2	1157.99	18.34	-1.59	19.93	31.62	25.87	6.09	35.70	---	---	Average	-9.54	0.00
3	1867.64	27.60	-4.33	31.93	30.38	25.58	7.68	36.04	---	---	Average	0.00	0.00
4	3033.40	30.27	-3.66	33.93	26.76	29.73	9.90	36.12	---	---	Average	0.00	0.00
5	7975.00	53.66	-0.27	53.93	39.32	37.30	16.21	39.17	---	---	Average	0.00	0.00
6	17985.20	30.55	-3.38	33.93	24.71	42.41	24.56	45.57	---	---	Average	-15.56	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting outside GPS Bands: RBW=1MHz; VBW=3MHz.

Note 5: Average emission setting in GPS bands: RBW=1kHz; VBW=3kHz.

Note 6: #5 is fundamental signal.

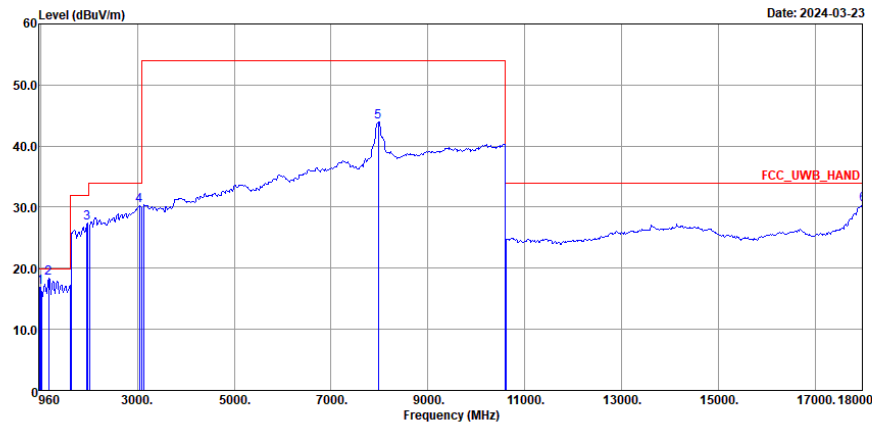
Note 7:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux Factor (dB) = Level (dBuV/m)
(Note: For test item below 1GHz, Aux = Filter loss; Aux 2 = Distance extrapolation factor)
(Note: For test item above 1GHz, Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



CH09_Common AoA Antenna Radiated Emissions (960MHz – 18GHz)

Test Mode	Mode 16	Polarization	V
Operating Function	Open Mode		
Test Distance	The test distance between the receiving antenna and the EUT is as following: 3m for 1.61 GHz ~ 10.60 GHz frequency range, 1 m for 1GHz ~ 1.61 GHz, and 0.5 m for other frequency ranges.		



Site : 03CH20-HY
Condition : FCC_UWB_HAND 3m 9120D_02360_231030 VERTICAL
RBW:1000.000KHz VBW:3000.000KHz SWT:7.500sec
Detector : Average
Channel : Ch09
Modulation : HPRF
UWB Frame : 0
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	A/Pos	T/Pos	Remark	Aux	Aux2
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		dB	dB
1	983.92	16.96	-2.97	19.93	28.83	30.61	5.61	32.82	---	---	Average	0.29	-15.56
2	1160.43	18.34	-1.59	19.93	31.62	25.86	6.10	35.70	---	---	Average	-9.54	0.00
3	1954.66	27.39	-4.54	31.93	29.50	26.13	7.85	36.09	---	---	Average	0.00	0.00
4	3041.17	30.31	-3.62	33.93	26.77	29.76	9.91	36.13	---	---	Average	0.00	0.00
5	7975.00	43.99	-9.94	53.93	29.65	37.30	16.21	39.17	---	---	Average	0.00	0.00
6	17992.60	30.49	-3.44	33.93	24.60	42.46	24.57	45.58	---	---	Average	-15.56	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting outside GPS Bands: RBW=1MHz; VBW=3MHz.

Note 5: Average emission setting in GPS bands: RBW=1kHz; VBW=3kHz.

Note 6: #5 is fundamental signal.

Note 7:

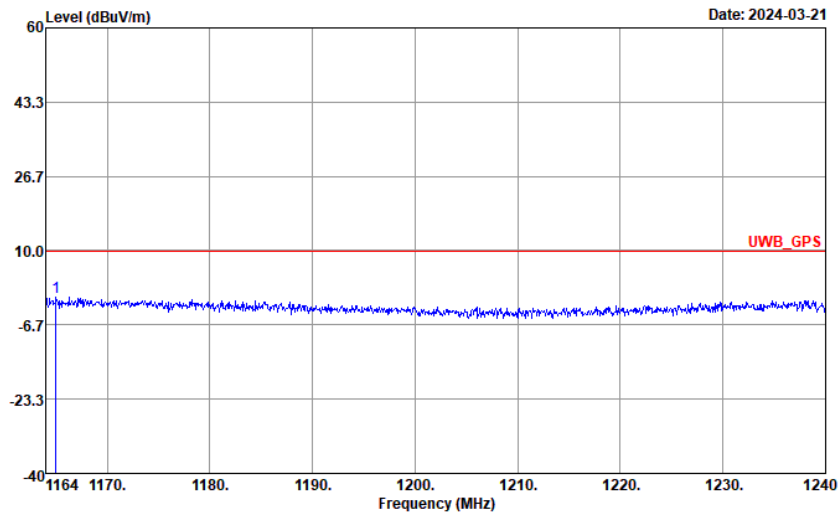
- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
- Corrected Reading: $\text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} + \text{Read Level (dBuV)} - \text{Preamp Factor (dB)} + \text{Aux Factor (dB)} = \text{Level (dBuV/m)}$
(Note: For test item below 1GHz, Aux = Filter loss; Aux 2 = Distance extrapolation factor)
(Note: For test item above 1GHz, Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



3.5.9 Radiated Emissions (1164MHz – 1240MHz)

CH05_Ranging Antenna Radiated Emissions (1164MHz – 1240MHz)

Test Mode	Mode 5	Polarization	H
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 HORIZONTAL
RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
Detector : Peak
Channel : Ch05
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Len : 125
Plane : Y Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1164.99	-0.37	-10.30	9.93	3.39	25.84	6.11	35.71	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

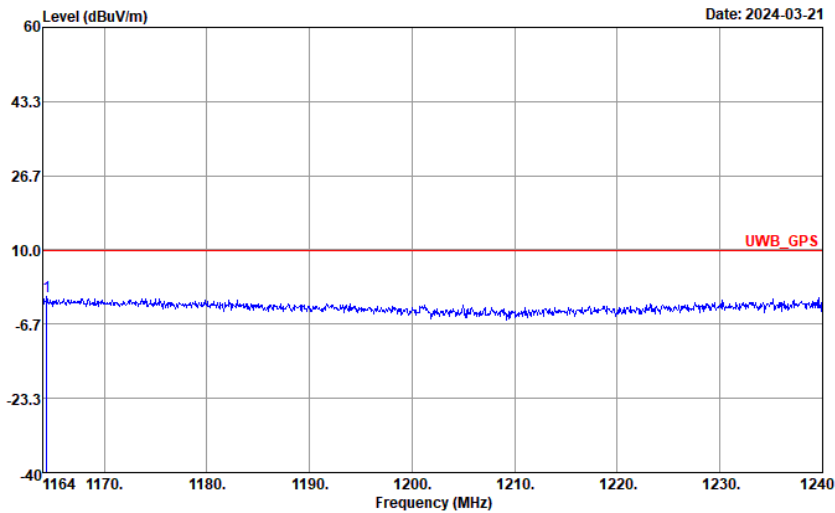
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.

Note 5: E (dBuV/m) = EIRP Limit (dBm) + 95.23. E(dBuV/m) = -85.3 + 95.23 = 9.93dBuV/m.

**CH05_Ranging Antenna Radiated Emissions (1164MHz – 1240MHz)**

Test Mode	Mode 5	Polarization	V
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 VERTICAL
: RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
:
Detector : Peak

Channel : Ch05
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Len : 125
Plane : Y Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	cm	deg
1	1164.38	-0.43	-10.36	9.93	3.33	25.84	6.11	35.71	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

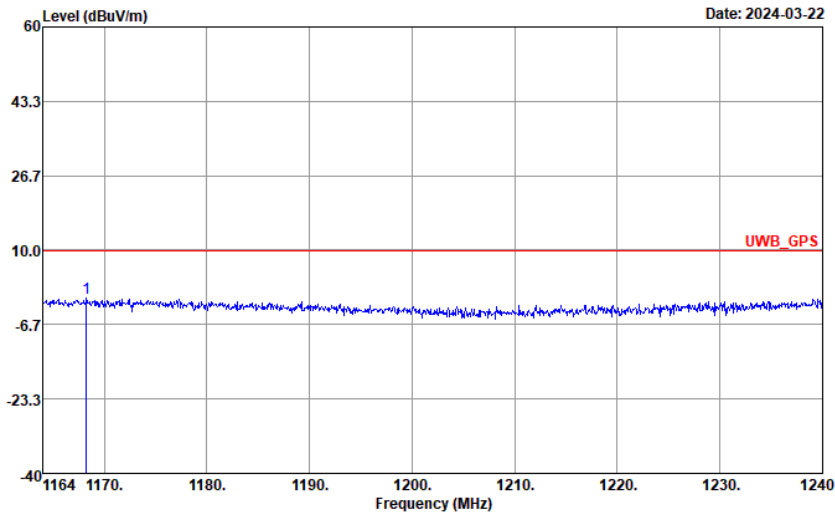
Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.

Note 5: $E \text{ (dBuV/m)} = \text{EIRP Limit (dBm)} + 95.23$. $E \text{ (dBuV/m)} = -85.3 + 95.23 = 9.93 \text{ dBuV/m}$.



CH09_Ranging Antenna Radiated Emissions (1164MHz – 1240MHz)

Test Mode	Mode 2	Polarization	H
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 HORIZONTAL
: RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
Detector : Peak
Channel : Ch09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Len : 125
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamplifier	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	1168.26	-0.82	-10.75	9.93	2.94	25.83	6.12	35.71	---	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

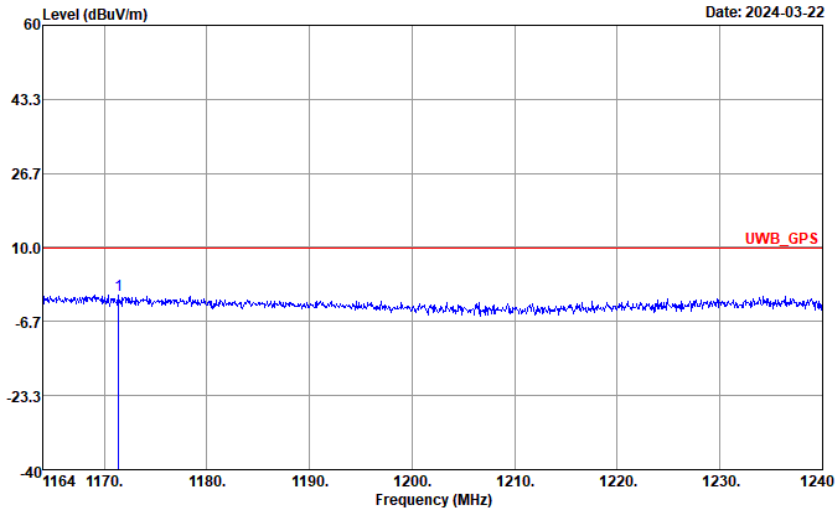
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.

Note 5: $E \text{ (dBuV/m)} = \text{EIRP Limit (dBm)} + 95.23$. $E \text{ (dBuV/m)} = -85.3 + 95.23 = 9.93 \text{ dBuV/m}$.

**CH09_Ranging Antenna Radiated Emissions (1164MHz – 1240MHz)**

Test Mode	Mode 2	Polarization	V
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 VERTICAL
: RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
: .
Detector : Peak

Channel : Ch09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Len : 125
Plane : Z Open

Line	Antenna										Remark
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos		
			Limit							Level	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	1171.37	-0.79	-10.72	9.93	2.98	25.81	6.13	35.71	---	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

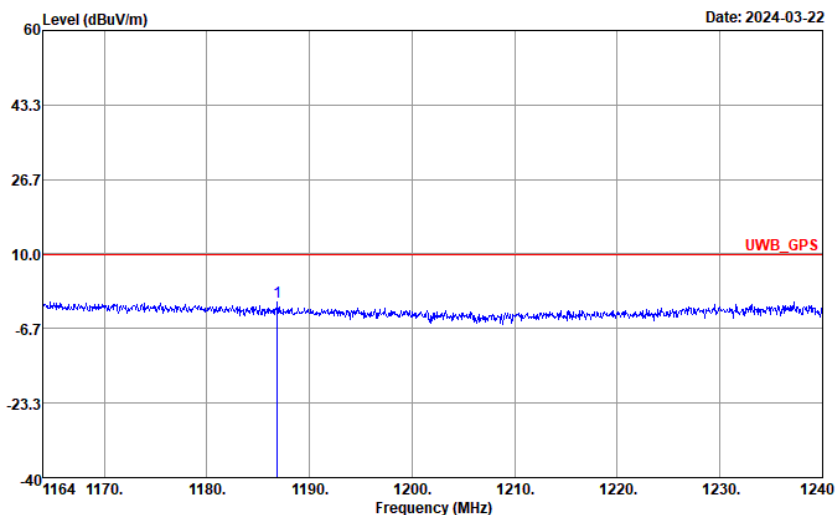
Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.

Note 5: $E \text{ (dBuV/m)} = \text{EIRP Limit (dBm)} + 95.23$. $E \text{ (dBuV/m)} = -85.3 + 95.23 = 9.93 \text{ dBuV/m}$.



CH05_Common AoA Antenna Radiated Emissions (1164MHz – 1240MHz)

Test Mode	Mode 15	Polarization	H
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 HORIZONTAL
RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
Detector : Peak
Channel : Ch05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

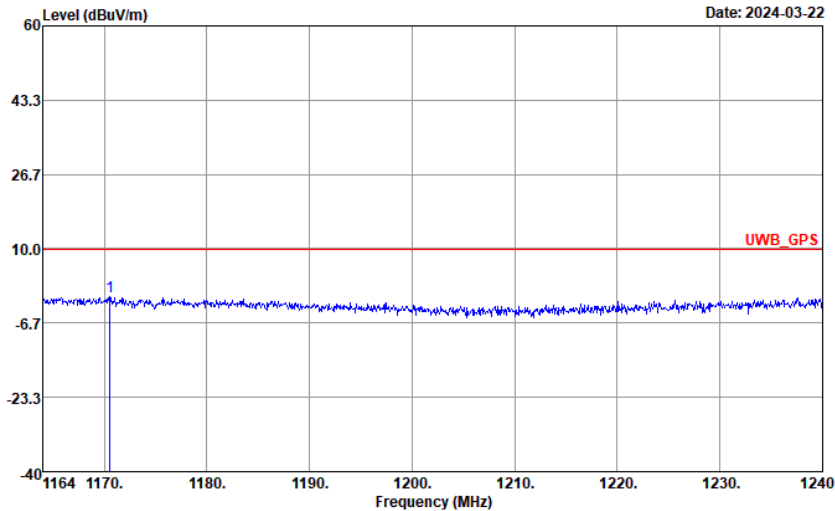
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamplifier Loss	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1186.88	-0.68	-10.61	9.93	3.11	25.75	6.17	35.71	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.
Note 5: E (dBuV/m) = EIRP Limit (dBm) + 95.23. E(dBuV/m) = -85.3 + 95.23 = 9.93dBuV/m.



CH05_Common AoA Antenna Radiated Emissions (1164MHz – 1240MHz)

Test Mode	Mode 15	Polarization	V
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 VERTICAL
: RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
Detector : Peak
Channel : Ch05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

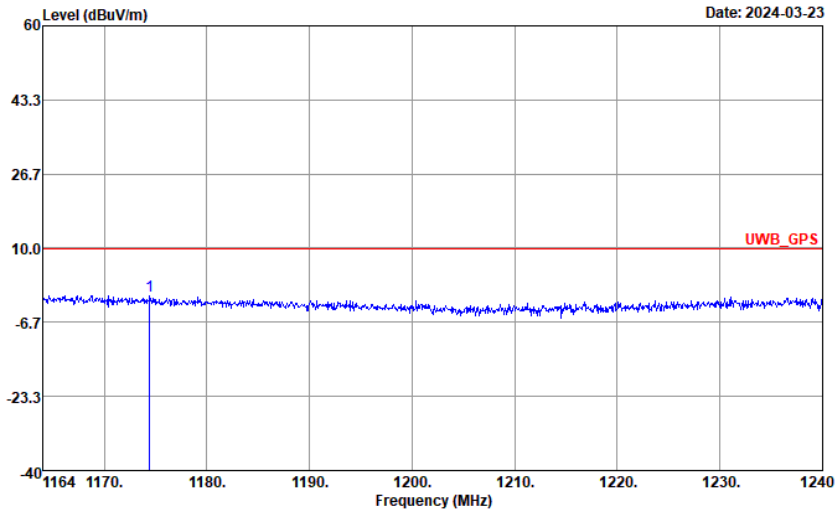
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	1170.54	-0.59	-10.52	9.93	3.17	25.82	6.13	35.71	---	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.
Note 5: $E \text{ (dBuV/m)} = \text{EIRP Limit (dBm)} + 95.23$. $E \text{ (dBuV/m)} = -85.3 + 95.23 = 9.93 \text{ dBuV/m}$.



CH09_Common AoA Antenna Radiated Emissions (1164MHz – 1240MHz)

Test Mode	Mode 16	Polarization	H
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 HORIZONTAL
: RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
: .
Detector : Peak
Channel : Ch09
Modulation : HPRF
UWB Frame : 0
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1174.41	-0.71	-10.64	9.93	3.06	25.80	6.14	35.71	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

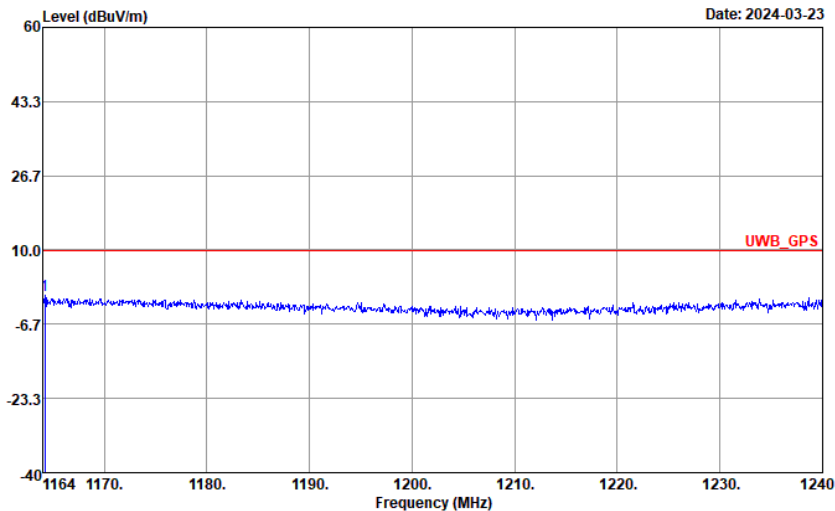
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.

Note 5: E (dBuV/m) = EIRP Limit (dBm) + 95.23. E(dBuV/m) = -85.3 + 95.23 = 9.93dBuV/m.

**CH09_Common AoA Antenna Radiated Emissions (1164MHz – 1240MHz)**

Test Mode	Mode 16	Polarization	V
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 VERTICAL
: RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
:
Detector : Peak

Channel : Ch09
Modulation : HPRF
UWB Frame : 0
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1164.23	-0.03	-9.96	9.93	3.73	25.84	6.11	35.71	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

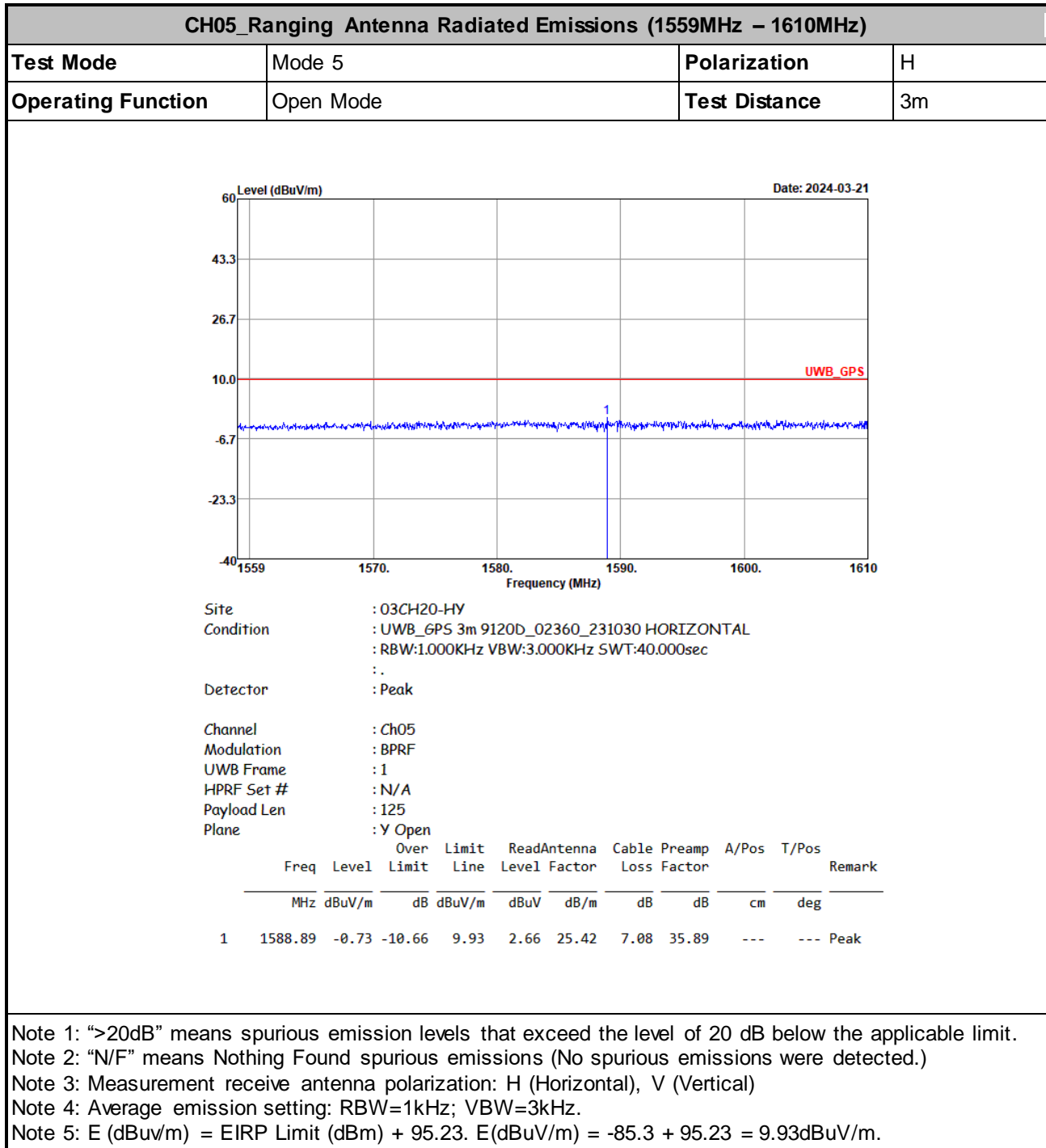
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.

Note 5: E (dBuV/m) = EIRP Limit (dBm) + 95.23. E(dBuV/m) = -85.3 + 95.23 = 9.93dBuV/m.

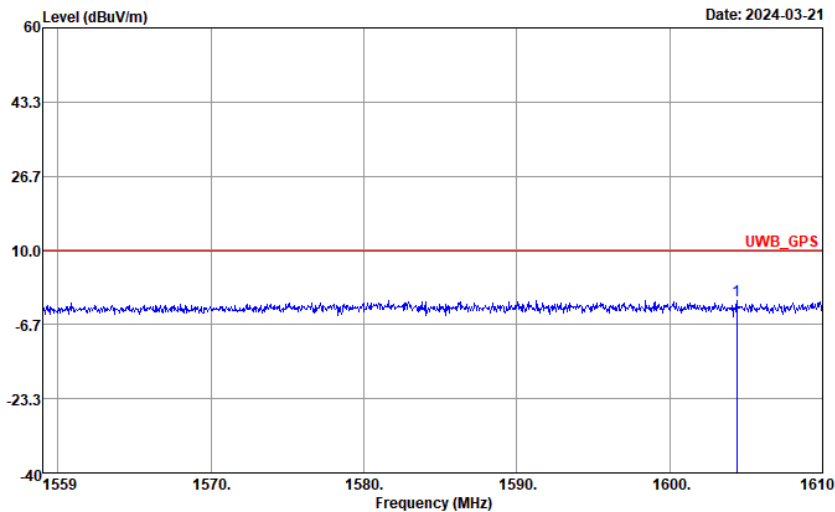


3.5.10 Radiated Emissions (1559MHz – 1610MHz)



**CH05_Ranging Antenna Radiated Emissions (1559MHz – 1610MHz)**

Test Mode	Mode 5	Polarization	V
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 VERTICAL
: RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
:
Detector : Peak

Channel : Ch05
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Len : 125
Plane : Y Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamplifier Loss	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1604.39	-1.16	-11.09	9.93	2.21	25.41	7.12	35.90	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

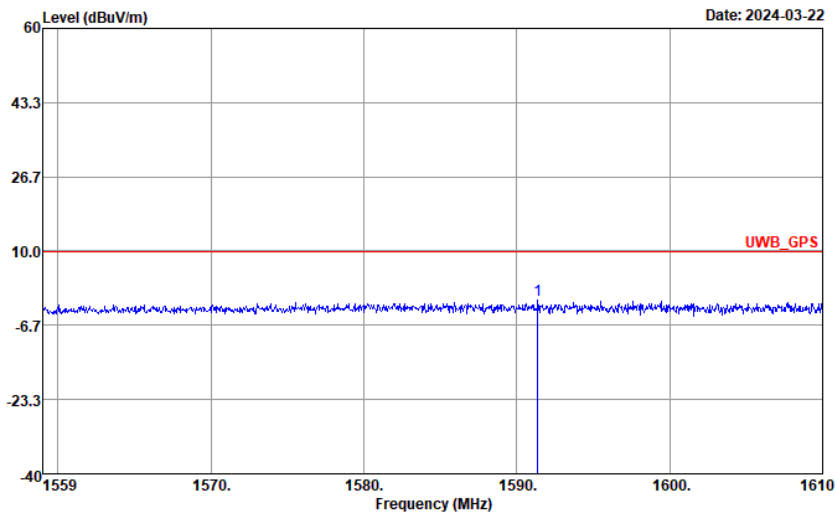
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.

Note 5: E (dBuV/m) = EIRP Limit (dBm) + 95.23. E(dBuV/m) = -85.3 + 95.23 = 9.93dBuV/m.

**CH09_Ranging Antenna Radiated Emissions (1559MHz – 1610MHz)**

Test Mode	Mode 2	Polarization	H
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 HORIZONTAL
: RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
: .
Detector : Peak

Channel : Ch09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Len : 125
Plane : Z Open

	Freq	Level	Over Limit	Limit	ReadAntenna	Cable	Preampl	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1591.39	-0.94	-10.87	9.93	2.44	25.42	7.09	35.89	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

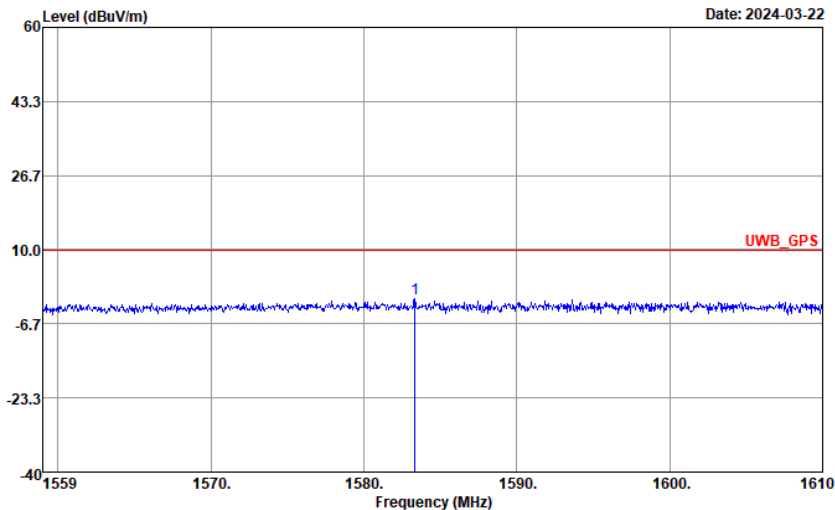
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.

Note 5: $E \text{ (dBuV/m)} = \text{EIRP Limit (dBm)} + 95.23$. $E \text{ (dBuV/m)} = -85.3 + 95.23 = 9.93 \text{ dBuV/m}$.

**CH09_Ranging Antenna Radiated Emissions (1559MHz – 1610MHz)**

Test Mode	Mode 2	Polarization	V
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 VERTICAL
: RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
:
Detector : Peak

Channel : Ch09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Len : 125
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1583.33	-0.98	-10.91	9.93	2.40	25.43	7.07	35.88	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

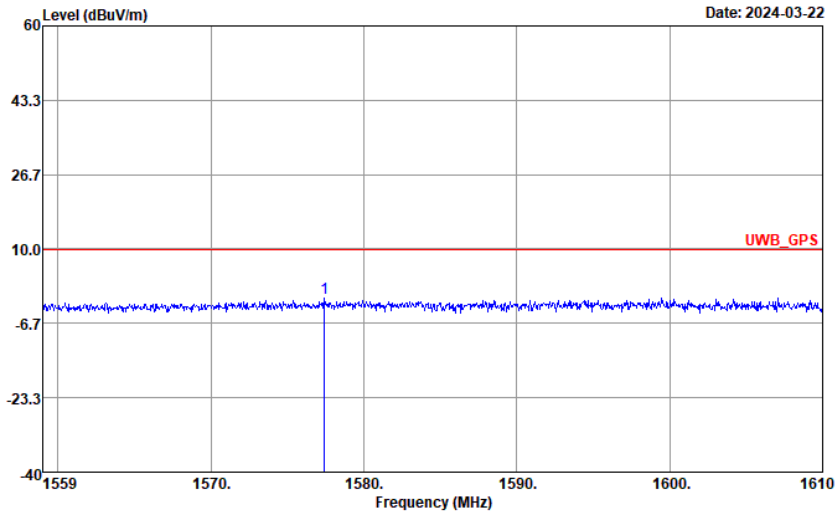
Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.

Note 5: $E \text{ (dBuV/m)} = \text{EIRP Limit (dBm)} + 95.23$. $E \text{ (dBuV/m)} = -85.3 + 95.23 = 9.93 \text{ dBuV/m}$.



CH05_Common AoA Antenna Radiated Emissions (1559MHz – 1610MHz)

Test Mode	Mode 15	Polarization	H
Operating Function	Open Mode	Test Distance	3m



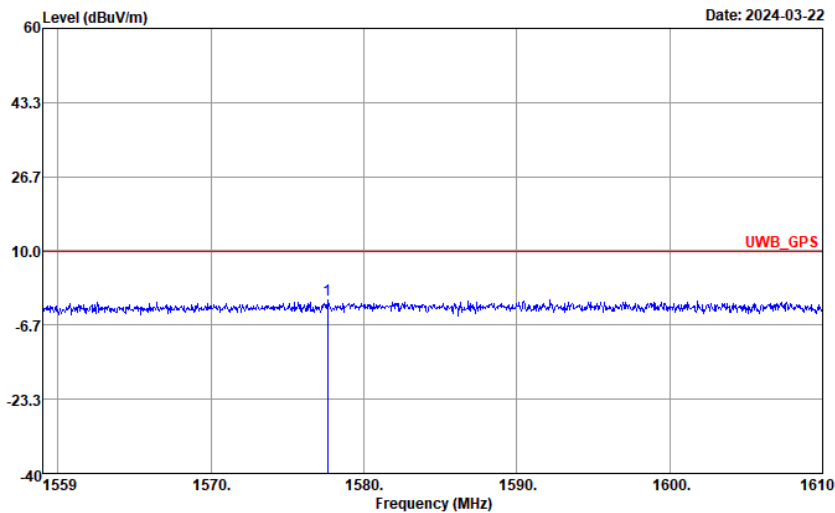
Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 HORIZONTAL
: RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
Detector : Peak
Channel : Ch05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1577.41	-1.07	-11.00	9.93	2.30	25.45	7.06	35.88	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.
Note 5: E (dBuV/m) = EIRP Limit (dBm) + 95.23. E(dBuV/m) = -85.3 + 95.23 = 9.93dBuV/m.

**CH05_Common AoA Antenna Radiated Emissions (1559MHz – 1610MHz)**

Test Mode	Mode 15	Polarization	V
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 VERTICAL
: RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
: .
Detector : Peak

Channel : Ch05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamplifier Loss	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1577.62	-0.93	-10.86	9.93	2.45	25.44	7.06	35.88	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

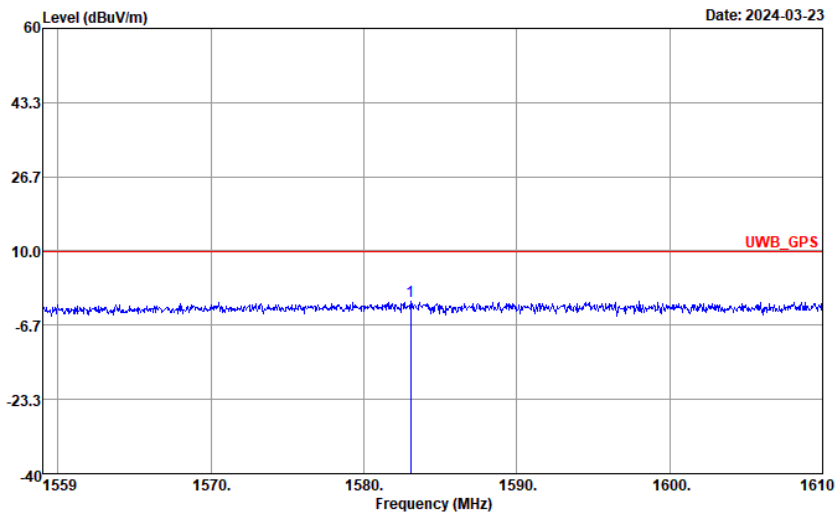
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.

Note 5: E (dBuV/m) = EIRP Limit (dBm) + 95.23. E(dBuV/m) = -85.3 + 95.23 = 9.93dBuV/m.

**CH09_Common AoA Antenna Radiated Emissions (1559MHz – 1610MHz)**

Test Mode	Mode 16	Polarization	H
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 HORIZONTAL
: RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
: .
Detector : Peak

Channel : Ch09
Modulation : HPRF
UWB Frame : 0
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	cm	deg
1	1583.07	-1.19	-11.12	9.93	2.19	25.43	7.07	35.88	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

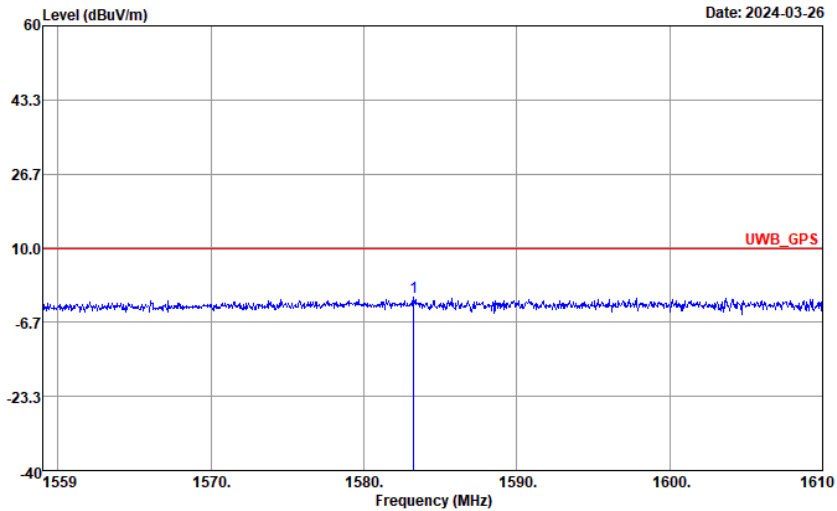
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.

Note 5: E (dBuV/m) = EIRP Limit (dBm) + 95.23. E(dBuV/m) = -85.3 + 95.23 = 9.93dBuV/m.

**CH09_Common AoA Antenna Radiated Emissions (1559MHz – 1610MHz)**

Test Mode	Mode 16	Polarization	V
Operating Function	Open Mode	Test Distance	3m



Site : 03CH20-HY
Condition : UWB_GPS 3m 9120D_02360_231030 VERTICAL
: RBW:1.000KHz VBW:3.000KHz SWT:40.000sec
:
Detector : Peak

Channel : Ch09
Modulation : HPRF
UWB Frame : 0
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1583.28	-1.14	-11.07	9.93	2.24	25.43	7.07	35.88	---	Peak

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

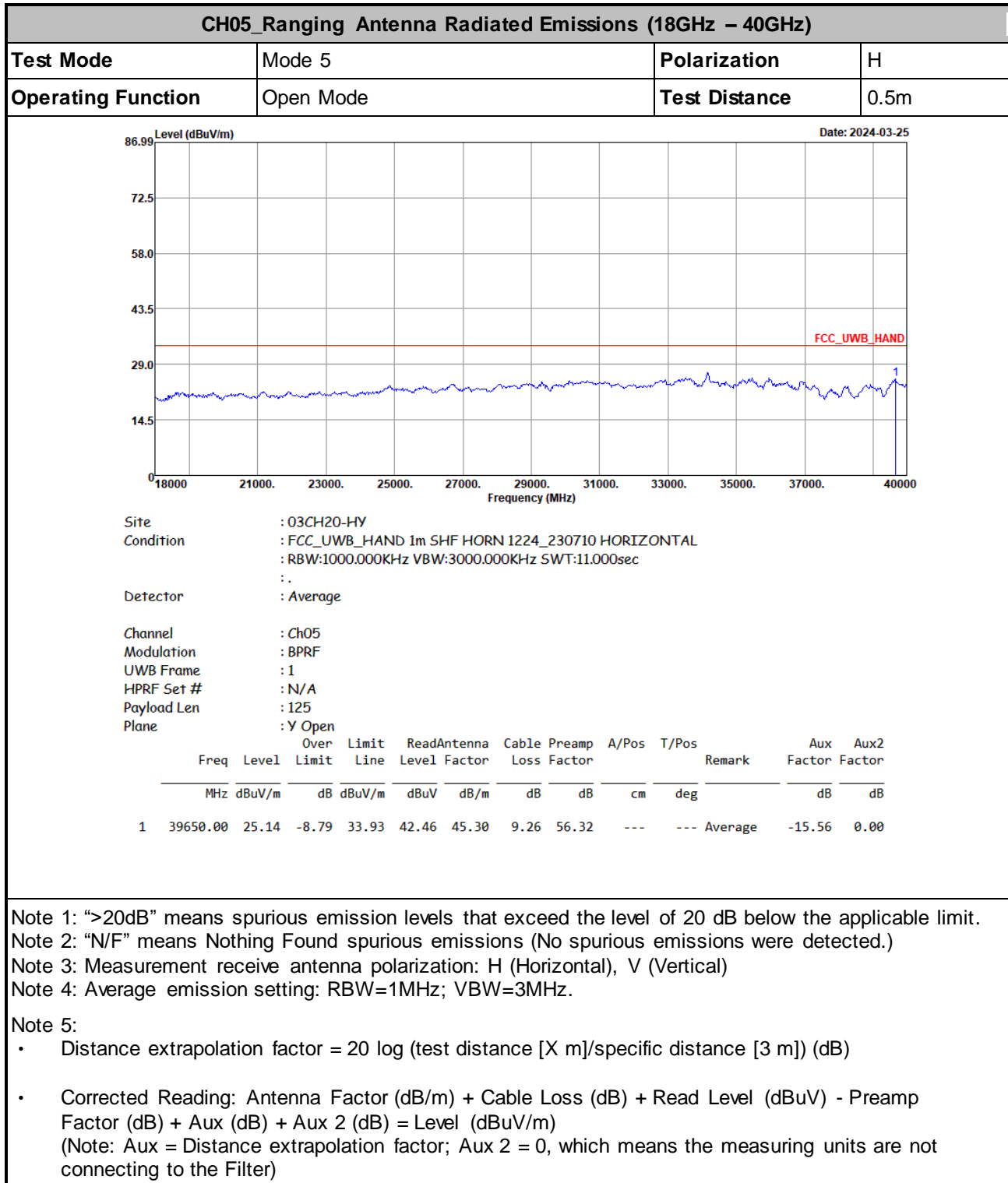
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1kHz; VBW=3kHz.

Note 5: E (dBuV/m) = EIRP Limit (dBm) + 95.23. E(dBuV/m) = -85.3 + 95.23 = 9.93dBuV/m.



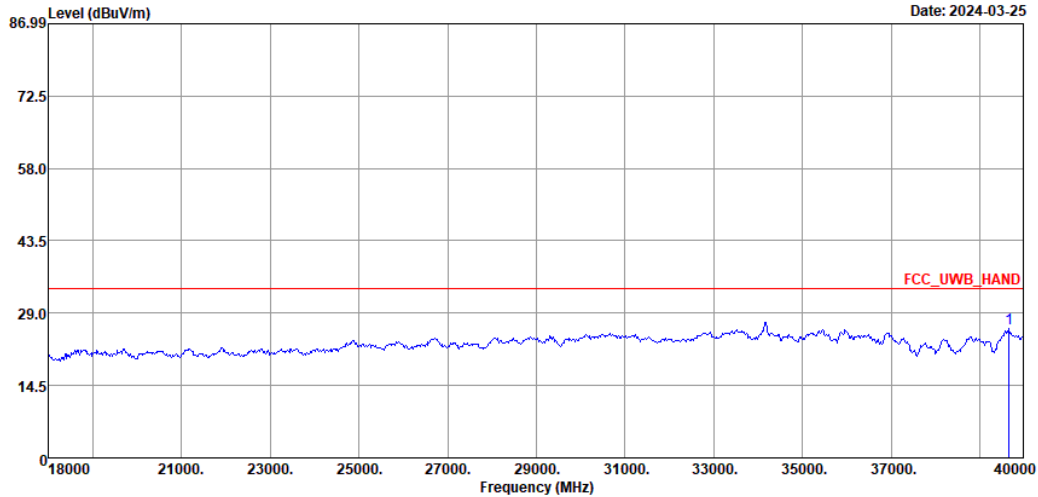
3.5.11 Radiated Emissions (18GHz – 40GHz)





CH05_Ranging Antenna Radiated Emissions (18GHz – 40GHz)

Test Mode	Mode 5	Polarization	V
Operating Function	Open Mode	Test Distance	0.5m



Site : 03CH20-HY
Condition : FCC_UWB_HAND 1m SHF HORN 1224_230710 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:11.000sec
Detector : Average
Channel : Ch05
Modulation : BPRF
UWB Frame : 1
HPRF Set # : N/A
Payload Len : 125
Plane : Y Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark	Aux Factor	Aux2 Factor	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	dB	dB	
1	39650.00	25.84	-8.09	33.93	43.16	45.30	9.26	56.32	---	---	Average	-15.56	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1MHz; VBW=3MHz.

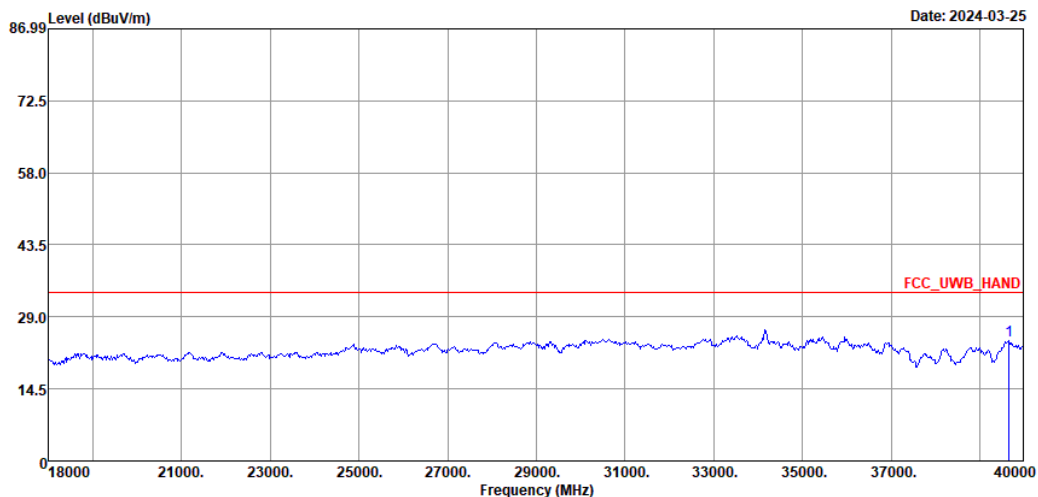
Note 5:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux (dB) + Aux 2 (dB) = Level (dBuV/m)
(Note: Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



CH09_Ranging Antenna Radiated Emissions (18GHz – 40GHz)

Test Mode	Mode 2	Polarization	H
Operating Function	Open Mode	Test Distance	0.5m



Site : 03CH20-HY
Condition : FCC_UWB_HAND 1m SHF HORN 1224_230710 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:11.000sec
: .
Detector : Average
Channel : Ch09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Len : 125
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Loss	A/Pos	T/Pos	Remark	Aux Factor	Aux2 Factor
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		dB	dB
1	39650.00	24.23	-9.70	33.93	41.55	45.30	9.26	56.32	---	---	Average	-15.56	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1MHz; VBW=3MHz.

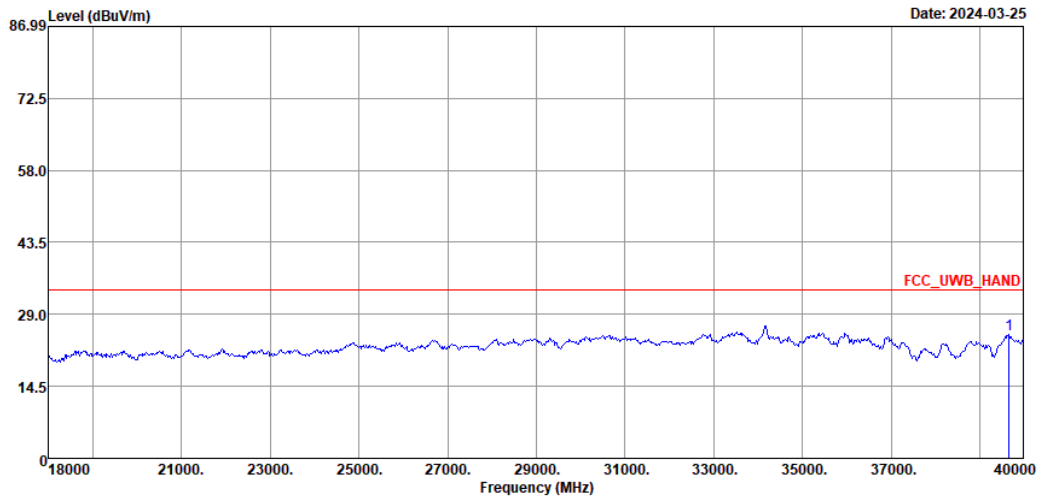
Note 5:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux (dB) + Aux 2 (dB) = Level (dBuV/m)
(Note: Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



CH09_Ranging Antenna Radiated Emissions (18GHz – 40GHz)

Test Mode	Mode 2	Polarization	V
Operating Function	Open Mode	Test Distance	0.5m



Site : 03CH20-HY
Condition : FCC_UWB_HAND 1m SHF HORN 1224_230710 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:11.000sec
: .
Detector : Average
Channel : Ch09
Modulation : BPRF
UWB Frame : 0
HPRF Set # : N/A
Payload Len : 125
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark	Aux Factor	Aux2 Factor
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		dB	dB
1	39650.00	24.91	-9.02	33.93	42.23	45.30	9.26	56.32	---	---	Average	-15.56	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1MHz; VBW=3MHz.

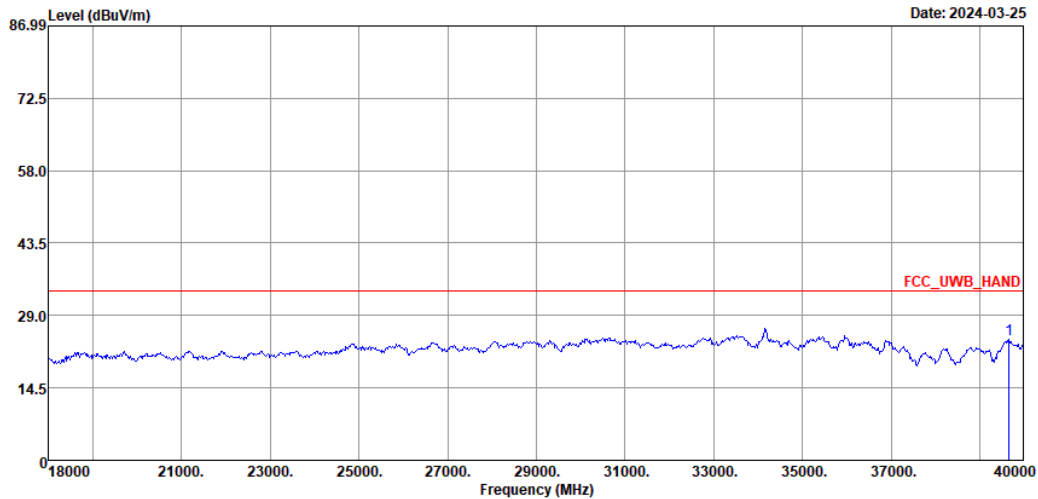
Note 5:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux (dB) + Aux 2 (dB) = Level (dBuV/m)
(Note: Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



CH05_Common AoA Antenna Radiated Emissions (18GHz – 40GHz)

Test Mode	Mode 15	Polarization	H
Operating Function	Open Mode	Test Distance	0.5m



Site : 03CH20-HY
Condition : FCC_UWB_HAND 1m SHF HORN 1224_230710 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:11.000sec
: .
Detector : Average
Channel : Ch05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark	Aux Factor	Aux2 Factor	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	dB	dB	
1	39650.00	24.11	-9.82	33.93	41.43	45.30	9.26	56.32	---	---	Average	-15.56	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1MHz; VBW=3MHz.

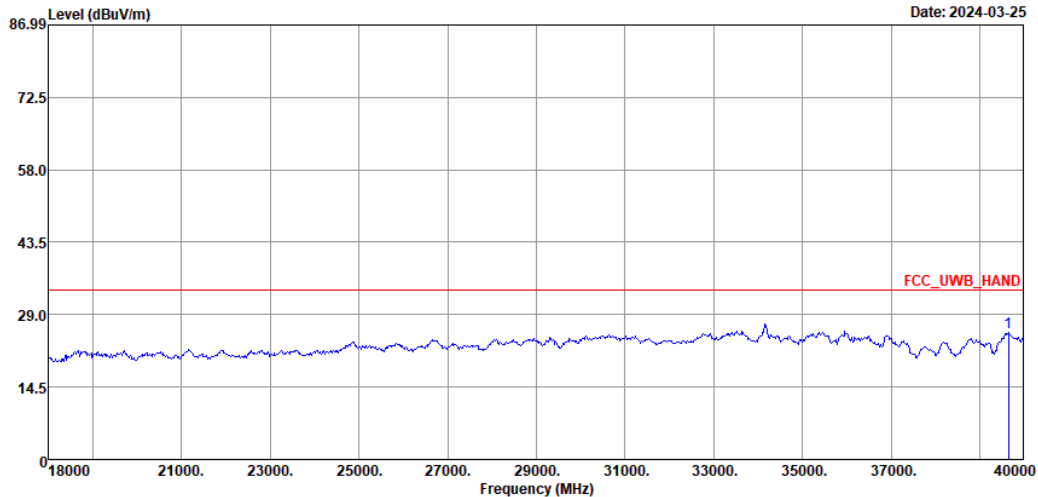
Note 5:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux (dB) + Aux 2 (dB) = Level (dBuV/m)
(Note: Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



CH05_Common AoA Antenna Radiated Emissions (18GHz – 40GHz)

Test Mode	Mode 15	Polarization	V
Operating Function	Open Mode	Test Distance	0.5m



Site : 03CH20-HY
Condition : FCC_UWB_HAND 1m SHF HORN 1224_230710 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:11.000sec
: .
Detector : Average
: .
Channel : Ch05
Modulation : HPRF
UWB Frame : N/A
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark	Aux Factor	Aux2 Factor	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	dB	dB	
1	39636.00	25.53	-8.40	33.93	42.87	45.30	9.26	56.34	---	---	Average	-15.56	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1MHz; VBW=3MHz.

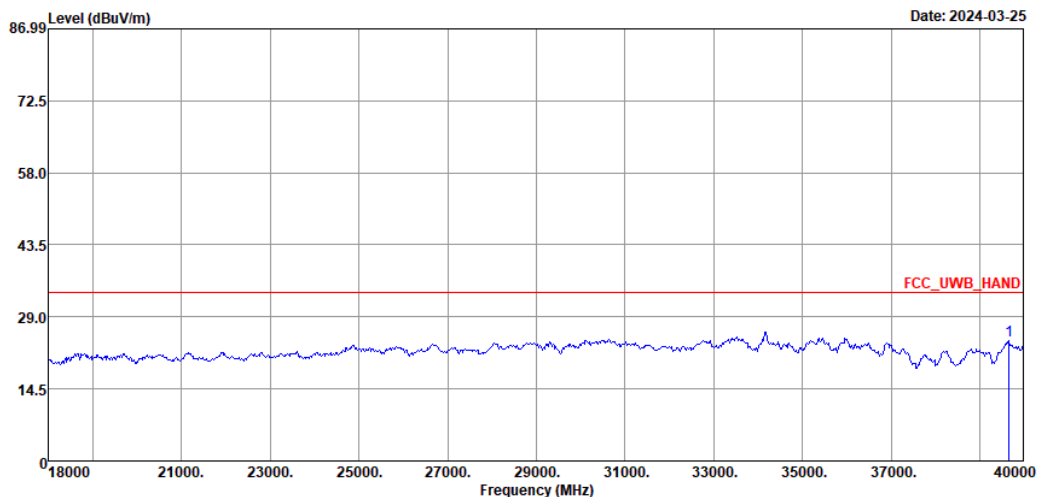
Note 5:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux (dB) + Aux 2 (dB) = Level (dBuV/m)
(Note: Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



CH09_Common AoA Antenna Radiated Emissions (18GHz – 40GHz)

Test Mode	Mode 16	Polarization	H
Operating Function	Open Mode	Test Distance	0.5m



Site : 03CH20-HY
Condition : FCC_UWB_HAND 1m SHF HORN 1224_230710 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:11.000sec
: .
Detector : Average
Channel : Ch09
Modulation : HPRF
UWB Frame : 0
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	12 Open												
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark	Aux Factor	Aux2 Factor	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm		deg	dB	dB
1	39650.00	24.13	-9.80	33.93	41.45	45.30	9.26	56.32	---	---	Average	-15.56	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1MHz; VBW=3MHz.

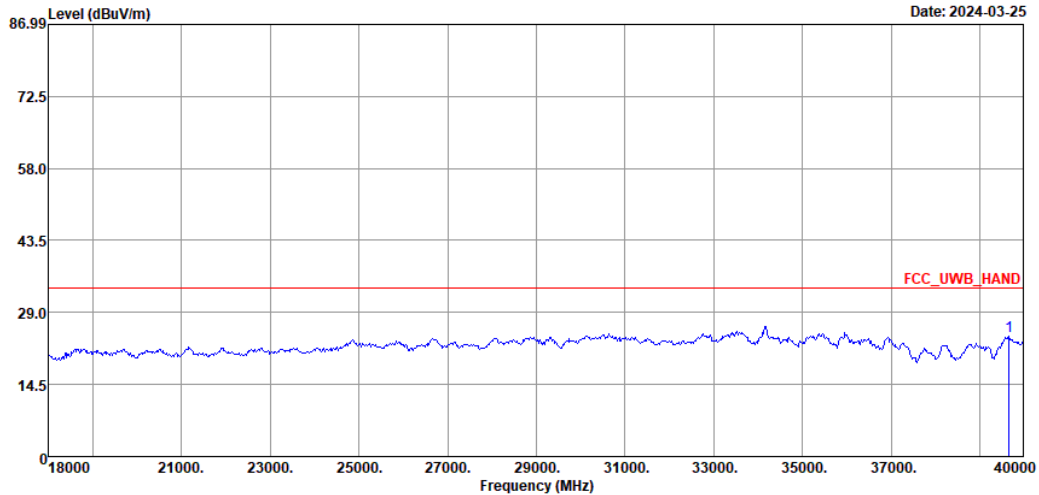
Note 5:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux (dB) + Aux 2 (dB) = Level (dBuV/m)
(Note: Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



CH09_Common AoA Antenna Radiated Emissions (18GHz – 40GHz)

Test Mode	Mode 16	Polarization	V
Operating Function	Open Mode	Test Distance	0.5m



Site : 03CH20-HY
Condition : FCC_UWB_HAND 1m SHF HORN 1224_230710 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz SWT:11.000sec
: .
Detector : Average
Channel : Ch09
Modulation : HPRF
UWB Frame : 0
HPRF Set # : 13
Payload Len : 150
Plane : Z Open

	Freq	Level	Over	Limit	Line	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Aux	Aux2
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		dB	dB
1	39650.00	24.22	-9.71	33.93	41.54	45.30	9.26	56.32	---	---	Average	-15.56	0.00

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: Average emission setting: RBW=1MHz; VBW=3MHz.

Note 5:

- Distance extrapolation factor = $20 \log (\text{test distance [X m]}/\text{specific distance [3 m]})$ (dB)
- Corrected Reading: Antenna Factor (dB/m) + Cable Loss (dB) + Read Level (dBuV) - Preamp Factor (dB) + Aux (dB) + Aux 2 (dB) = Level (dBuV/m)
(Note: Aux = Distance extrapolation factor; Aux 2 = 0, which means the measuring units are not connecting to the Filter)



4 Test Equipment and Calibration Data

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Keysight	N9038A(MXE)	MY54130085	N/A	Oct. 06, 2023	Jan. 10, 2024~ Mar. 26, 2024	Oct. 05, 2024	Radiation (03CH20-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 12, 2023	Jan. 10, 2024~ Mar. 26, 2024	Sep. 11, 2024	Radiation (03CH20-HY)
Controller	ChainTek	EM1000	N/A	Control Turn table & Ant Mast	N/A	Jan. 10, 2024~ Mar. 26, 2024	N/A	Radiation (03CH20-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Jan. 10, 2024~ Mar. 26, 2024	N/A	Radiation (03CH20-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Jan. 10, 2024~ Mar. 26, 2024	N/A	Radiation (03CH20-HY)
Signal Analyzer	Keysight	N9010B	MY60240520	N/A	Dec. 12, 2023	Jan. 10, 2024~ Mar. 26, 2024	Dec. 11, 2024	Radiation (03CH20-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802N1 D01N-06	55606 & 08	30MHz~1GHz	Oct. 20, 2023	Jan. 10, 2024~ Mar. 26, 2024	Oct. 19, 2024	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	02360	1GHz-18GHz	Oct. 30, 2023	Jan. 10, 2024~ Mar. 26, 2024	Oct. 29, 2024	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45SE	980792	N/A	Nov. 13, 2023	Jan. 10, 2024~ Mar. 26, 2024	Nov. 12, 2024	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,8040 15/2,804027/2	N/A	Jan. 18, 2023	Jan. 10, 2024~ Jan. 16, 2024	Jan. 17, 2024	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,8040 15/2,804027/2	N/A	Jan. 17, 2024	Jan. 17, 2024~ Mar. 26, 2024	Jan. 16, 2025	Radiation (03CH20-HY)
Hygrometer	TECPEL	DTM-303B	TP200728	N/A	Mar. 28, 2023	Jan. 10, 2024~ Mar. 26, 2024	Mar. 27, 2024	Radiation (03CH20-HY)
Software	Audix	N/A	RK-002156	N/A	N/A	Jan. 10, 2024~ Mar. 26, 2024	N/A	Radiation (03CH20-HY)
AC Power Source	ACPOWER	AFC-11003G	F317040033	N/A	N/A	Apr. 10, 2024	N/A	Conduction (CO07-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Apr. 10, 2024	N/A	Conduction (CO07-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	9561-F N00373	9kHz-200MHz	Oct. 20, 2023	Apr. 10, 2024	Oct. 19, 2024	Conduction (CO07-HY)
RF Cable	HUBER + SUHNER	RG 214/U	1358175	9kHz~30MHz	Mar. 14, 2024	Apr. 10, 2024	Mar. 13, 2025	Conduction (CO07-HY)
Two-Line V-Network	TESEQ	NNB 51	45051	N/A	Mar. 10, 2024	Apr. 10, 2024	Mar. 09, 2025	Conduction (CO07-HY)
Four-Line V-Network	TESEQ	NNB 52	36122	N/A	Mar. 07, 2024	Apr. 10, 2024	Mar. 06, 2025	Conduction (CO07-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102317	9kHz~3.6GHz	Sep. 20, 2023	Apr. 10, 2024	Sep. 19, 2024	Conduction (CO07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI7	100724	9kHz~7GHz	Feb. 24, 2023	Apr. 10, 2024	Feb. 23, 2024	Conduction (CO07-HY)

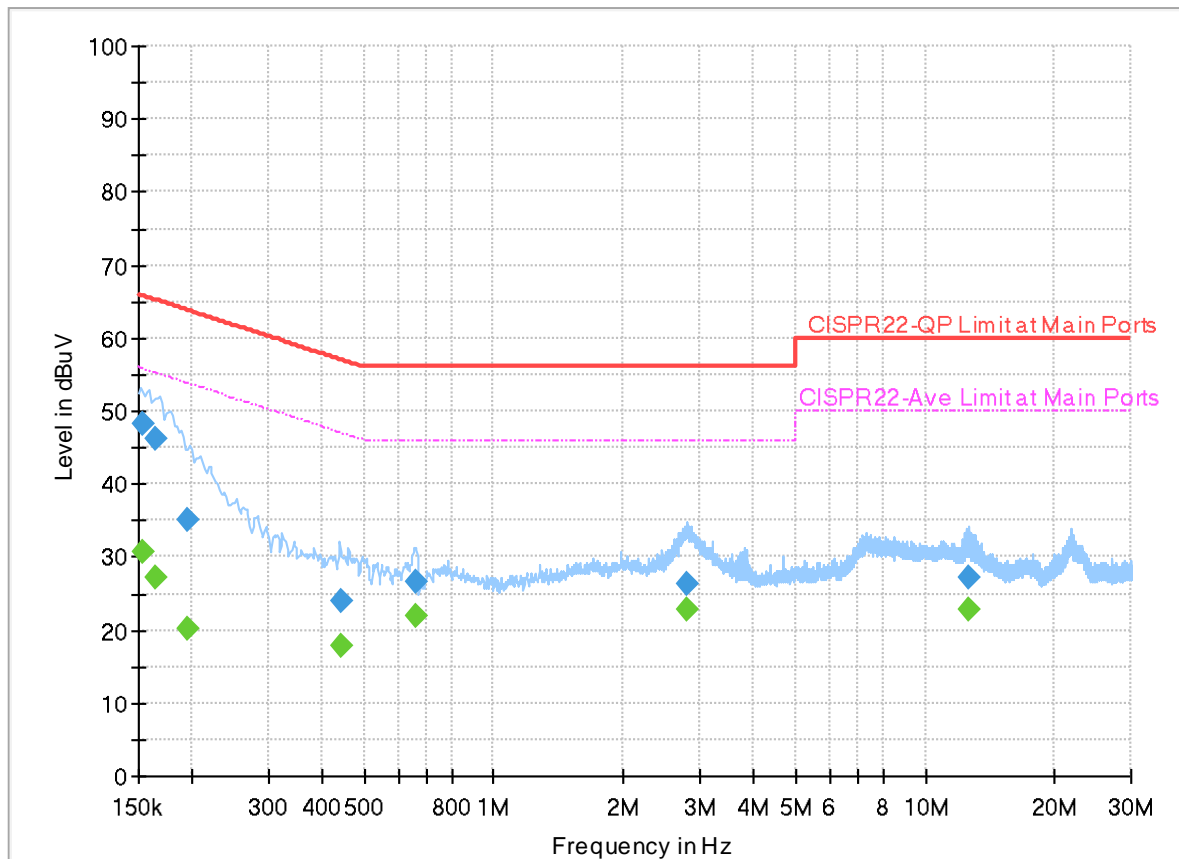


Appendix A. AC Conducted Emission Test Results

EUT Information

Report NO : 3D2001
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Line

Full Spectrum



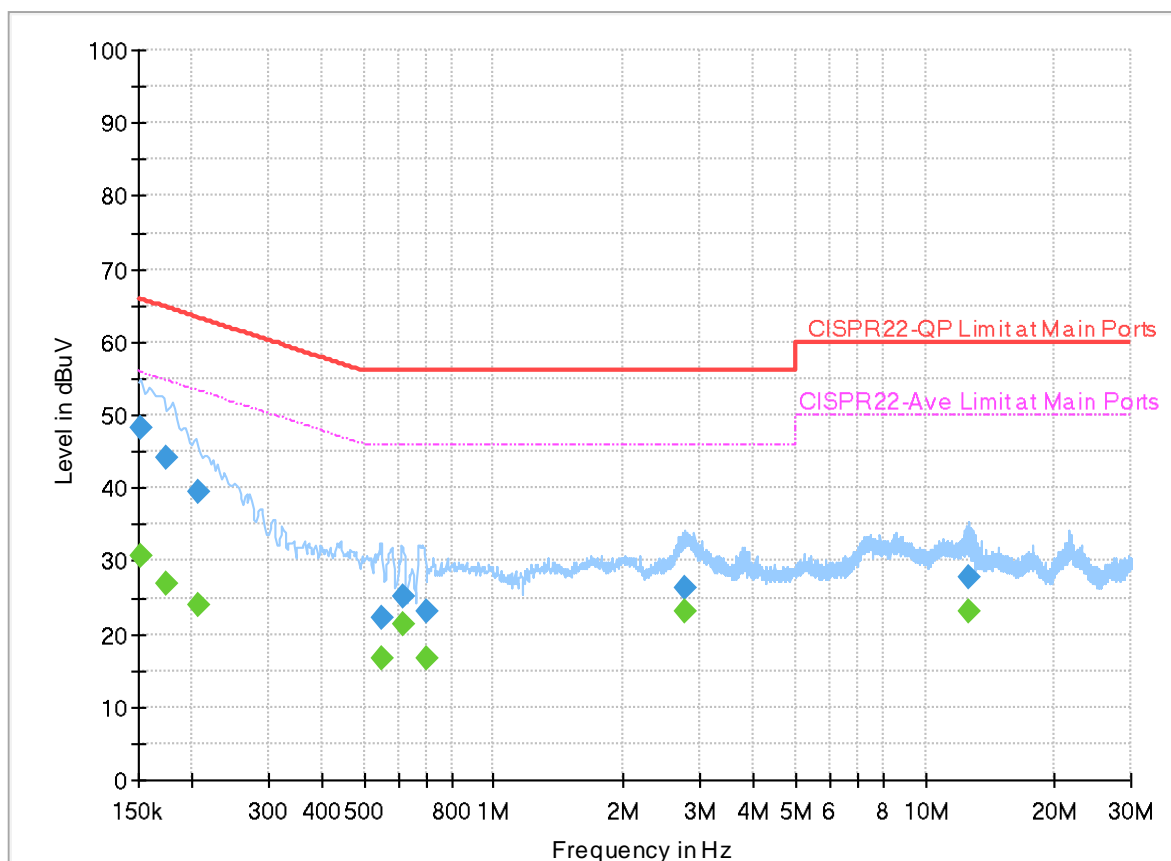
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152835	---	30.78	55.84	25.06	L1	OFF	19.9
0.152835	48.16	---	65.84	17.68	L1	OFF	19.9
0.163680	---	27.12	55.28	28.16	L1	OFF	19.9
0.163680	46.30	---	65.28	18.98	L1	OFF	19.9
0.195000	---	20.04	53.82	33.78	L1	OFF	19.9
0.195000	35.20	---	63.82	28.62	L1	OFF	19.9
0.442500	---	17.92	47.02	29.10	L1	OFF	19.9
0.442500	23.98	---	57.02	33.04	L1	OFF	19.9
0.663000	---	22.01	46.00	23.99	L1	OFF	19.9
0.663000	26.50	---	56.00	29.50	L1	OFF	19.9
2.815170	---	22.88	46.00	23.12	L1	OFF	20.0
2.815170	26.43	---	56.00	29.57	L1	OFF	20.0
12.551280	---	22.92	50.00	27.08	L1	OFF	20.1
12.551280	27.08	---	60.00	32.92	L1	OFF	20.1

EUT Information

Report NO : 3D2001
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.151688	---	30.78	55.91	25.13	N	OFF	19.9
0.151688	48.34	---	65.91	17.57	N	OFF	19.9
0.174750	---	26.78	54.73	27.95	N	OFF	19.9
0.174750	44.16	---	64.73	20.57	N	OFF	19.9
0.205710	---	23.94	53.38	29.44	N	OFF	19.9
0.205710	39.59	---	63.38	23.79	N	OFF	19.9
0.547710	---	16.63	46.00	29.37	N	OFF	19.9
0.547710	22.10	---	56.00	33.90	N	OFF	19.9
0.613680	---	21.21	46.00	24.79	N	OFF	19.9
0.613680	25.01	---	56.00	30.99	N	OFF	19.9
0.694500	---	16.65	46.00	29.35	N	OFF	19.9
0.694500	23.00	---	56.00	33.00	N	OFF	19.9
2.768100	---	22.97	46.00	23.03	N	OFF	20.0
2.768100	26.33	---	56.00	29.67	N	OFF	20.0
12.657210	---	23.16	50.00	26.84	N	OFF	20.1
12.657210	27.64	---	60.00	32.36	N	OFF	20.1

————THE END————