FCC Test Report

Report No.: AGC05125230705FR01

FCC ID	:	2AKSOX02
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	W+ Link Transmitter
BRAND NAME	:	AIAIAI
MODEL NAME	:	X02
APPLICANT	:	AIAIAI ApS
DATE OF ISSUE	:	Aug. 24, 2023
STANDARD(S)	:	FCC Part 15 Subpart C §15.249
REPORT VERSION	:	V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Aug. 24, 2023	Valid	Initial Release

TABLE OF CONTENTS

1. VERIFICATION OF CONFORMITY

Applicant	AIAIAI ApS
Address	Studiestraede 31, Copenhagen K, 1455 Denmark
Manufacturer	AIAIAI ApS
Address	Studiestraede 31, Copenhagen K, 1455 Denmark
Factory	ASKA Electronics Co., Ltd.
Address	No.5, Puxin Road, Keyuancheng, Tangxia Town, Dongguan, Guangdong, China
Product Designation	W+ Link Transmitter
Brand Name	AIAIAI
Test Model	X02
Date of receipt of test item	Jul. 21, 2023
Date of test	Jul. 21, 2023 to Aug. 24, 2023
Deviation	No any deviation from the test method
Condition of Test Sample	Normal
Test Result	Pass
Report Template	AGCRT-US-2.4G/RF

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.249.

Prepared By	Cici Li (Project Engineer)	Aug. 24, 2023
Reviewed By	Calvin Liu (Reviewer)	Aug. 24, 2023
Approved By	Max Zhang (Authorized Officer)	Aug. 24, 2023

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

A major technical description of EUT is described as following

Operation Frequency	2403.35-2479.35MHz
Maximum field strength	**Antenna A0**:92.59dBuV/m(Peak)@3m **Antenna A0**:89.90dBuV/m(Average)@3m **Antenna A1**:91.83dBuV/m(Peak)@3m **Antenna A1**:89.24dBuV/m(Average)@3m **Antenna B0**:91.59dBuV/m(Peak)@3m **Antenna B0**:88.96dBuV/m(Average)@3m **Antenna B1**:92.92dBuV/m(Peak)@3m **Antenna B1**:90.22dBuV/m(Average)@3m
Modulation	GFSK
Number of channels	39 Channels
Antenna Gain	1.9dBi
Antenna Designation	Chip Antenna (Met 15.203 Antenna requirement)
Hardware Version	V24
Software Version	V40
Power Supply	DC 5.0V

2.2. TABLE OF CARRIER FREQUENCY

Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
1	2403.35	21	2443.35
2	2405.35	22	2445.35
3	2407.35	23	2447.35
4	2409.35	24	2449.35
5	2411.35	25	2451.35
6	2413.35	26	2453.35
7	2415.35	27	2455.35
8	2417.35	28	2457.35
9	2419.35	29	2459.35
10	2421.35	30	2461.35
11	2423.35	31	2463.35
12	2425.35	32	2465.35
13	2427.35	33	2467.35
14	2429.35	34	2469.35
15	2431.35	35	2471.35
16	2433.35	36	2473.35
17	2435.35	37	2475.35
18	2437.35	38	2477.35
19	2439.35	39	2479.35
20	2441.35	--	--

3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

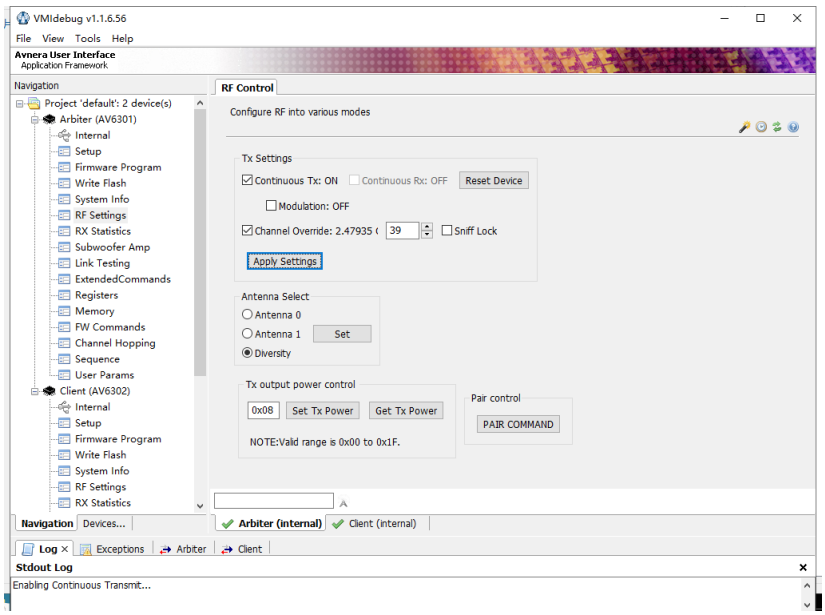
- Uncertainty of Conducted Emission, Uc = ±2.9 dB
- Uncertainty of Radiated Emission below 1GHz, Uc = ±3.9 dB
- Uncertainty of Radiated Emission above 1GHz, Uc = ±4.9 dB
- Uncertainty of Occupied Channel Bandwidth: Uc = ±2 %

4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel TX_2403.35MHz_GFSK
2	Middle channel TX_2443.35MHz_GFSK
3	High channel TX_2479.35MHz_GFSK

Note:
1. Only the result of the worst case was recorded in the report, if no other cases.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
3. The EUT has two 2.4G chips, and both chips can work simultaneously. Each 2.4G chip has two 2.4G antennas, and the one with good signal is automatically selected by the software during normal operation.

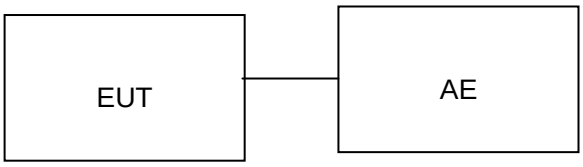
Software Setting



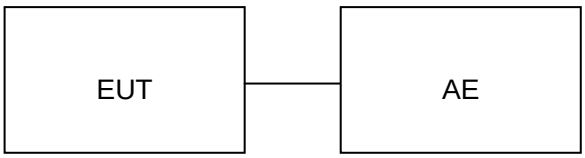
5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM

Radiated Emission Configure:



Conducted Emission Configure:



5.2 EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	W+ Link Transmitter	X02	2AKSOX02	EUT
2	Adapter	HW-200325CP0	Input:100-240V 50/60Hz,1.8A Output:5V2A/9V2A/12V2A/15V3A/20V3.25 A 5V2A/9V2A/12V2A/15V3A/20V3.25A	AE

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.249&15.209	Radiated Emission	Compliant
§15.249	Band Edges	Compliant
§15.215	20dB bandwidth	Compliant
§15.207	Conducted Emission	Compliant

6. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Designation Number	CN1259
FCC Test Firm Registration Number	975832
A2LA Cert. No.	5054.02
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	Jun. 03, 2023	Jun. 02, 2024
LISN	R&S	ESH2-Z5	100086	Jun. 03, 2023	Jun. 02, 2024
Test software	R&S	ES-K1(Ver.V1.71)	N/A	N/A	N/A

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Test Receiver	R&S	ESCI	10096	Feb. 18, 2023	Feb. 17, 2024
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Jun. 01, 2023	May 31, 2024
Signal Analyzer	Aglient	N9020A	MY52090123	Jun. 03, 2023	Jun. 02, 2024
2.4GHz Filter	EM Electronics	N/A	N/A	Mar. 18, 2022	Mar. 19, 2024
Horn Antenna	SCHWARZBEC	BBHA 9170	#768	Oct. 31, 2021	Oct. 30, 2023
Active Loop Antenna (9K-30Mhz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 11, 2024
Double-Ridged Waveguide Horn	ETS	3117	00034609	Apr. 23, 2023	Apr. 22, 2024
Double-Ridged Waveguide Horn	ETS	3117	00154520	Jun. 03, 2023	Jun. 02, 2024
Preamplifier Assembly	ETS	3117PA	00225134	Sep. 01, 2022	Sep. 02, 2024
Wideband Antenna	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 05, 2023	Jan. 04, 2025
Test software	FARA	EZ-EMC (Ver.RA-03A)	N/A	N/A	N/A
Test software	Tonscend	JS32-RE (Ver.2.5)	N/A	N/A	N/A

7. RADIATED EMISSION

7.1TEST LIMIT

Standard FCC15.249

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
900-928MHz	50	500
2400-2483.5MHz	50	500
5725-5875MHz	50	500
24.0-24.25GHz	250	2500

Standard FCC 15.209

Frequency (MHz)	Distance Meters	Field Strengths Limit	
		μV/m	dB(μV)/m
0.009 ~ 0.490	300	2400/F(kHz)	---
0.490 ~ 1.705	30	24000/F(kHz)	---
1.705 ~ 30	30	30	---
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	Other:74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Remark： (1) Emission level dBμV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

7.2. MEASUREMENT PROCEDURE

1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use minimum resolution bandwidth of 1 MHz. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

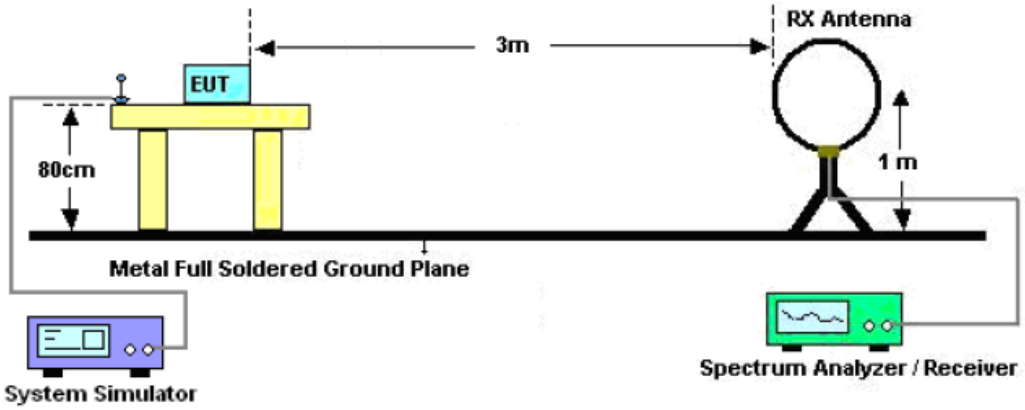
The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
Start ~Stop Frequency	1GHz~26.5GHz RBW 3MHz/ VBW 10MHz for Peak, RBW 3MHz/10Hz for Average

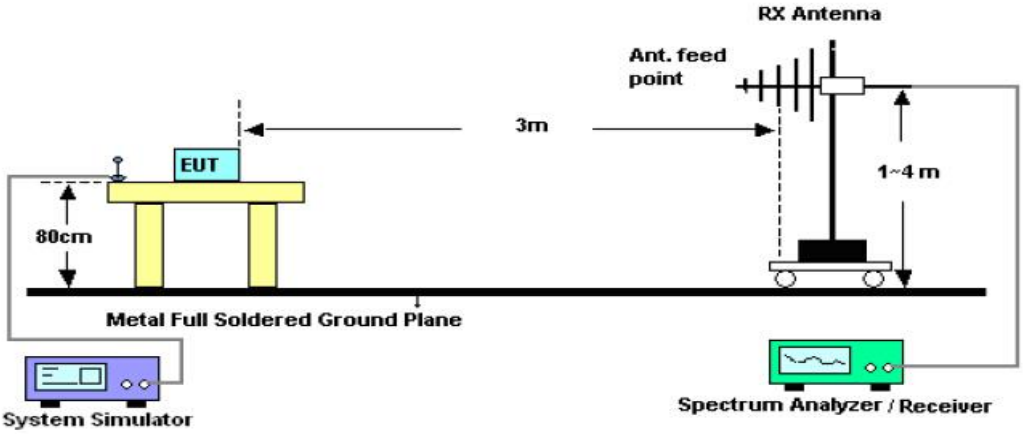
Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

7.3. TEST SETUP

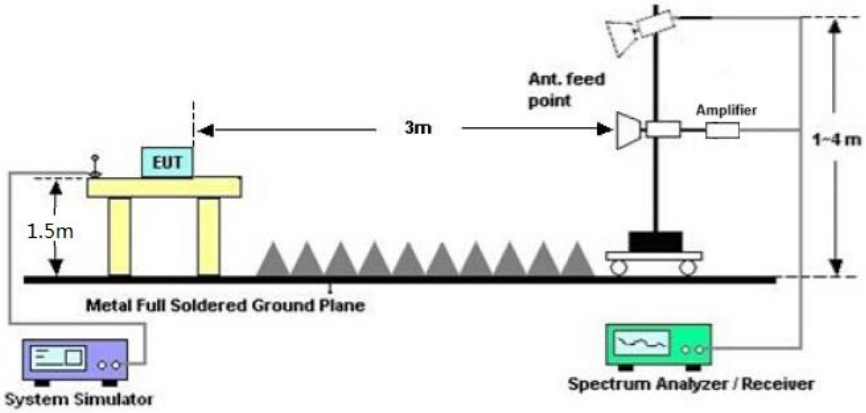
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



7.4. TEST RESULT

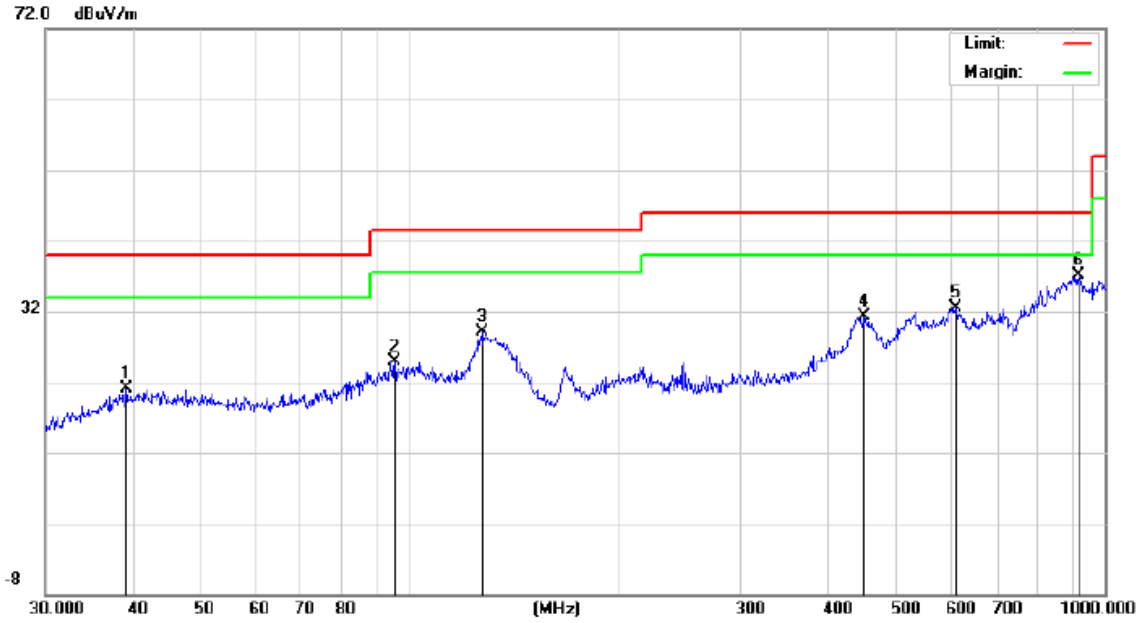
Antenna A0

RADIATED EMISSION BELOW 30MHZ

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

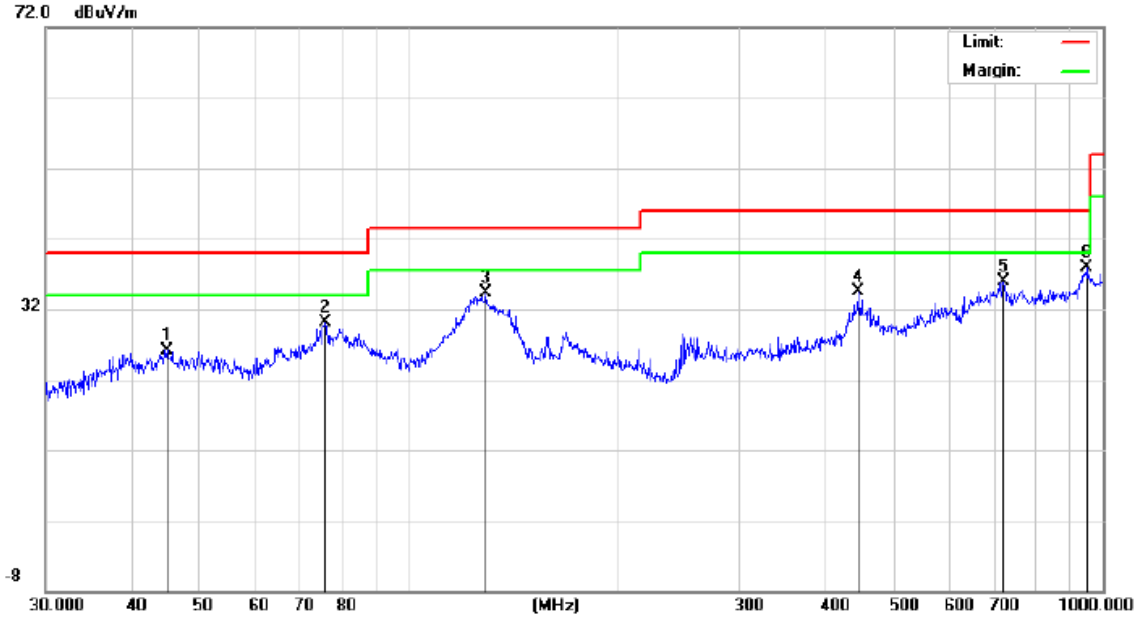
RADIATED EMISSION 30MHz- 1GHZ

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Polarization**	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		39.2991	7.53	13.60	21.13	40.00	-18.87	peak
2		95.4270	9.36	15.49	24.85	43.50	-18.65	peak
3		127.6645	13.12	15.94	29.06	43.50	-14.44	peak
4		451.1349	6.50	24.71	31.21	46.00	-14.79	peak
5		609.9215	7.32	25.15	32.47	46.00	-13.53	peak
6	*	916.0687	7.53	29.55	37.08	46.00	-8.92	peak

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		44.9004	9.18	16.95	26.13	40.00	-13.87	peak
2		75.9770	13.12	16.94	30.06	40.00	-9.94	peak
3		129.0146	16.30	17.92	34.22	43.50	-9.28	peak
4		443.2943	8.52	25.95	34.47	46.00	-11.53	peak
5		719.1992	7.05	28.77	35.82	46.00	-10.18	peak
6	*	948.7608	7.24	30.65	37.89	46.00	-8.11	peak

RESULT: PASS

Note:

Factor=Antenna Factor + Cable loss, Over=Measurement- Limit.

The “Factor” value can be calculated automatically by software of measurement system.

The mode 1 is the worst case, and only the data of the worst case recorded in this test report.

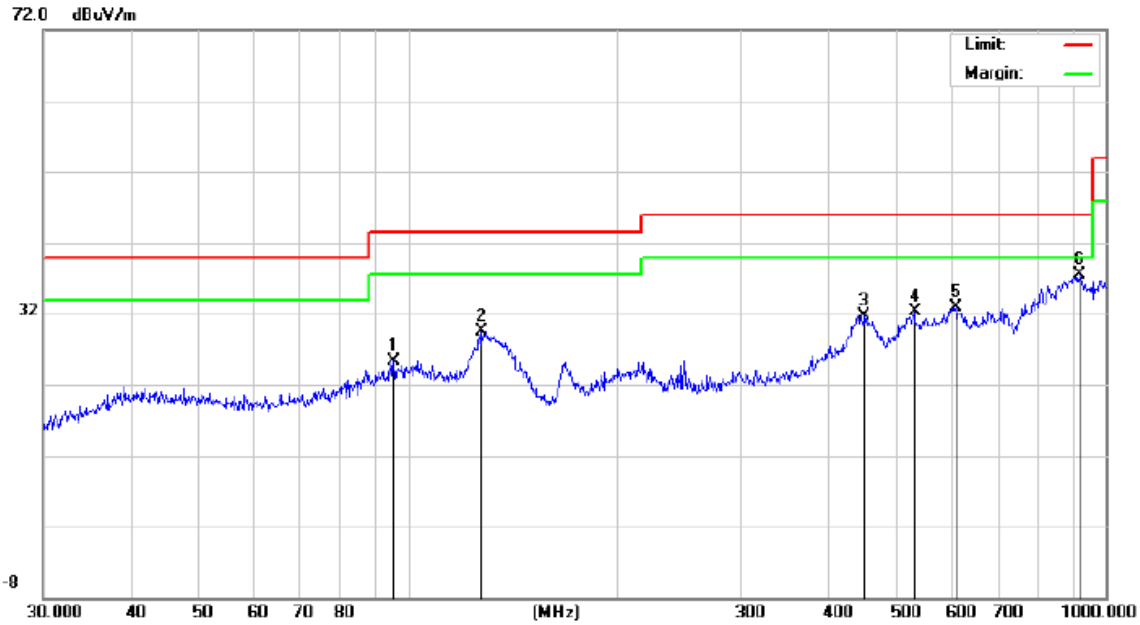
Antenna A1

RADIATED EMISSION BELOW 30MHZ

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

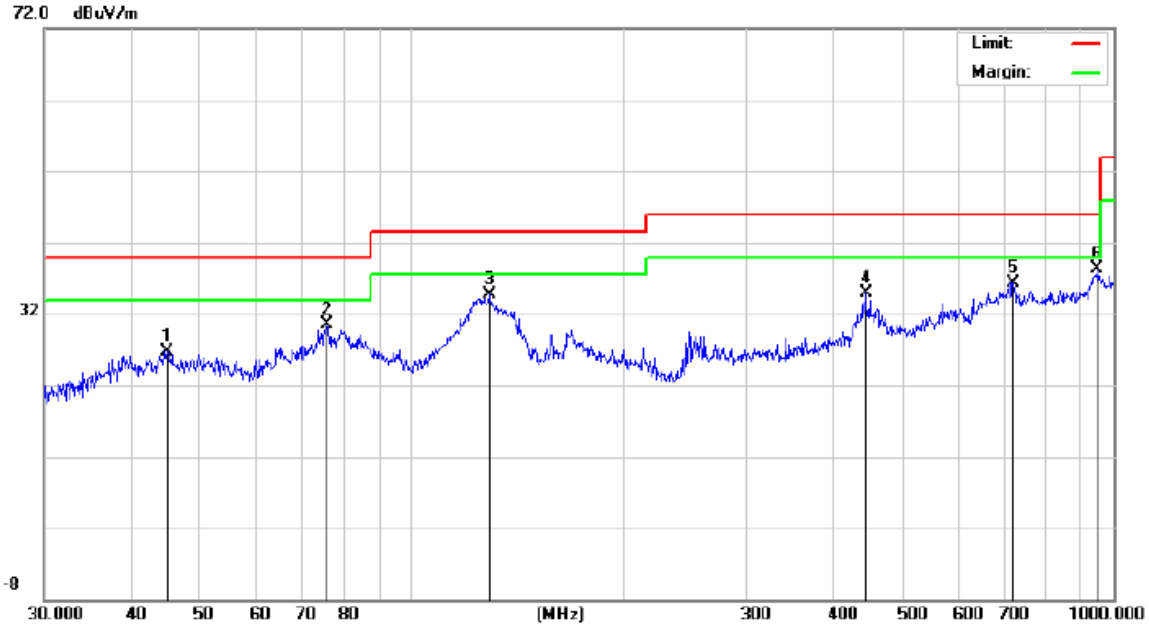
RADIATED EMISSION 30MHz- 1GHZ

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Polarization**	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		95.4270	9.86	15.49	25.35	43.50	-18.15	peak
2		127.6645	13.62	15.94	29.56	43.50	-13.94	peak
3		451.1349	7.00	24.71	31.71	46.00	-14.29	peak
4		531.9633	7.97	24.42	32.39	46.00	-13.61	peak
5		609.9215	7.82	25.15	32.97	46.00	-13.03	peak
6	*	916.0687	8.03	29.55	37.58	46.00	-8.42	peak

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		44.9004	9.68	16.95	26.63	40.00	-13.37	peak
2		75.9770	13.62	16.94	30.56	40.00	-9.44	peak
3		129.0146	16.80	17.92	34.72	43.50	-8.78	peak
4		443.2943	9.02	25.95	34.97	46.00	-11.03	peak
5		719.1992	7.55	28.77	36.32	46.00	-9.68	peak
6	*	948.7608	7.74	30.65	38.39	46.00	-7.61	peak

RESULT: PASS

Note:

Factor=Antenna Factor + Cable loss, Over=Measurement- Limit.

The “Factor” value can be calculated automatically by software of measurement system.

The mode 1 is the worst case, and only the data of the worst case recorded in this test report.

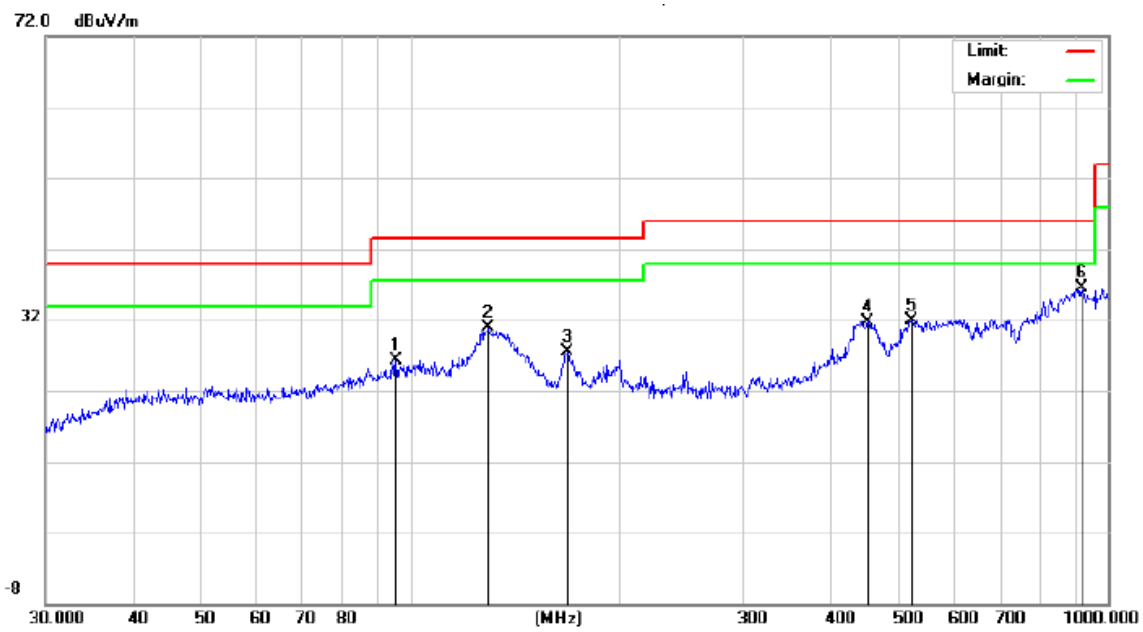
Antenna B0

RADIATED EMISSION BELOW 30MHZ

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

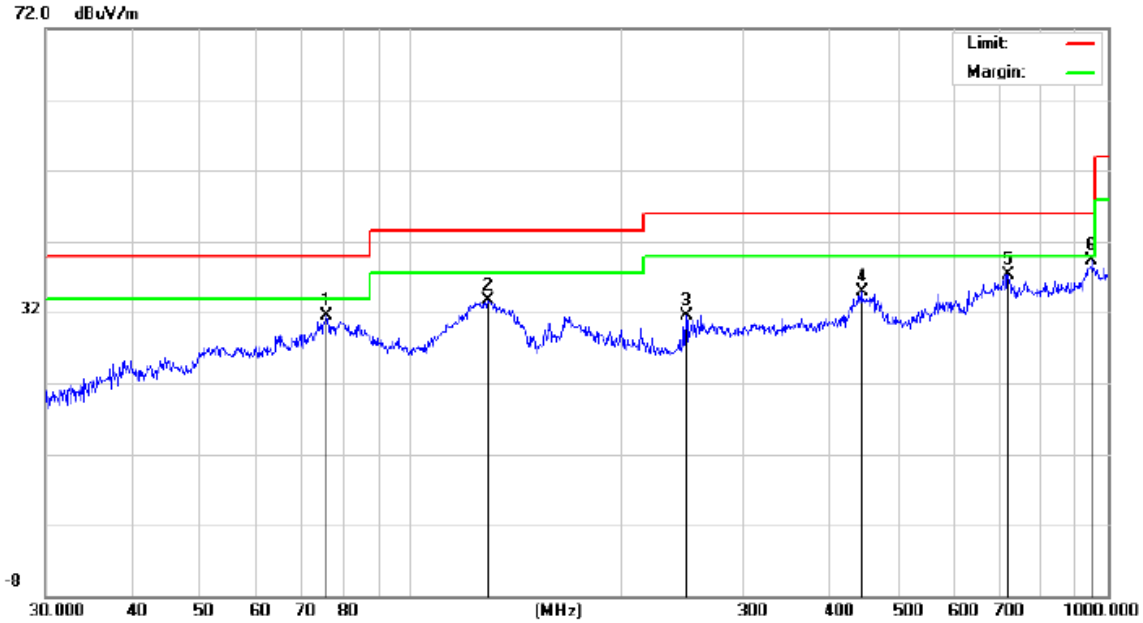
RADIATED EMISSION 30MHz- 1GHZ

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Polarization**	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		95.4270	10.86	15.49	26.35	43.50	-17.15	peak
2		129.4677	15.08	15.83	30.91	43.50	-12.59	peak
3		167.8240	15.36	12.20	27.56	43.50	-15.94	peak
4		452.7196	7.15	24.65	31.80	46.00	-14.20	peak
5		522.7178	6.89	25.02	31.91	46.00	-14.09	peak
6	*	916.0687	7.03	29.55	36.58	46.00	-9.42	peak

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		75.9770	14.62	16.94	31.56	40.00	-8.44	peak
2		129.0146	15.80	17.92	33.72	43.50	-9.78	peak
3		248.5517	14.59	16.94	31.53	46.00	-14.47	peak
4		443.2943	9.02	25.95	34.97	46.00	-11.03	peak
5		719.1992	8.55	28.77	37.32	46.00	-8.68	peak
6	*	948.7608	8.74	30.65	39.39	46.00	-6.61	peak

RESULT: PASS

Note:

Factor=Antenna Factor + Cable loss, Over=Measurement- Limit.

The “Factor” value can be calculated automatically by software of measurement system.

The mode 1 is the worst case, and only the data of the worst case recorded in this test report.

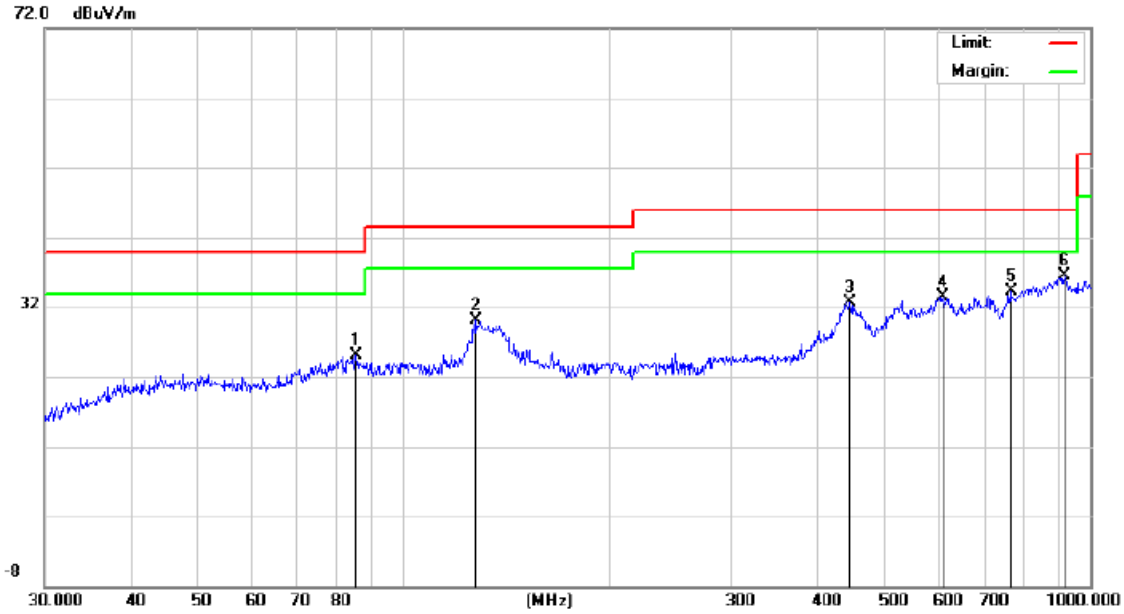
Antenna B1

RADIATED EMISSION BELOW 30MHZ

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

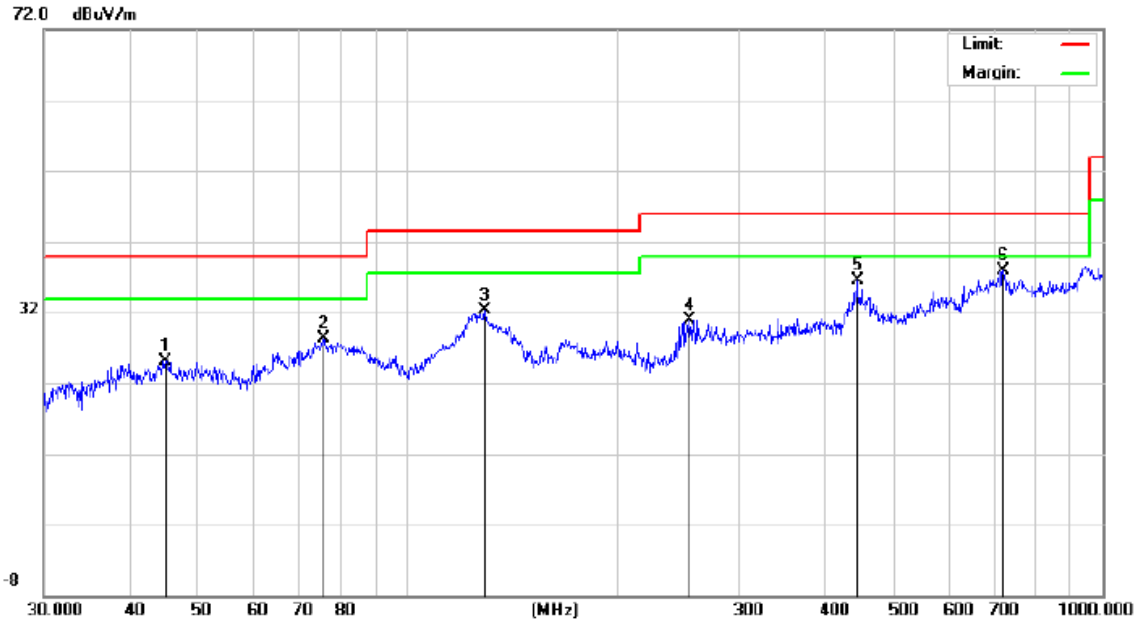
RADIATED EMISSION 30MHz- 1GHZ

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Polarization**	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		85.2980	11.09	13.92	25.01	40.00	-14.99	peak
2		127.6645	14.12	15.94	30.06	43.50	-13.44	peak
3		446.4141	7.76	24.88	32.64	46.00	-13.36	peak
4		609.9215	8.32	25.15	33.47	46.00	-12.53	peak
5		766.0570	9.08	25.26	34.34	46.00	-11.66	peak
6	*	916.0687	7.03	29.55	36.58	46.00	-9.42	peak

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		44.9004	8.18	16.95	25.13	40.00	-14.87	peak
2		75.7112	11.34	16.94	28.28	40.00	-11.72	peak
3		129.0146	14.30	17.92	32.22	43.50	-11.28	peak
4		254.7281	13.49	17.46	30.95	46.00	-15.05	peak
5		443.2943	10.52	25.95	36.47	46.00	-9.53	peak
6	*	719.1992	9.05	28.77	37.82	46.00	-8.18	peak

RESULT: PASS

Note:

Factor=Antenna Factor + Cable loss, Over=Measurement- Limit.

The “Factor” value can be calculated automatically by software of measurement system.

The mode 1 is the worst case, and only the data of the worst case recorded in this test report.

Antenna A0

FIELD STRENGTH OF FUNDAMENTAL

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Modulation	GFSK	**Polarization**	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2403.35	43.54	49.05	92.59	114.00	-21.42	peak
2403.35	40.85	49.05	89.90	94.00	-4.11	AVG
2443.35	42.13	49.12	91.25	114.00	-22.75	peak
2443.35	39.51	49.12	88.63	94.00	-5.37	AVG
2479.35	40.85	49.25	90.10	114.00	-23.90	peak
2479.35	38.21	49.25	87.46	94.00	-6.54	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Modulation	GFSK	**Polarization**	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2403.35	44.37	49.05	90.20	114.00	-23.80	peak
2403.35	29.51	49.05	87.56	94.00	-6.44	AVG
2443.35	45.31	49.12	89.41	114.00	-24.59	peak
2443.35	30.11	49.12	86.33	94.00	-7.68	AVG
2479.35	40.78	49.25	86.52	114.00	-27.48	peak
2479.35	30.48	49.25	83.93	94.00	-10.07	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Antenna A1

FIELD STRENGTH OF FUNDAMENTAL

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Modulation	GFSK	**Polarization**	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2403.35	42.78	49.05	91.83	114.00	-22.17	peak
2403.35	40.19	49.05	89.24	94.00	-4.76	AVG
2443.35	41.51	49.12	90.63	114.00	-23.38	peak
2443.35	39.52	49.12	88.64	94.00	-5.36	AVG
2479.35	41.02	49.25	90.27	114.00	-23.73	peak
2479.35	38.34	49.25	87.59	94.00	-6.41	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Modulation	GFSK	**Polarization**	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2403.35	44.37	49.05	89.95	114.00	-24.05	peak
2403.35	29.51	49.05	87.28	94.00	-6.72	AVG
2443.35	45.31	49.12	88.75	114.00	-25.26	peak
2443.35	30.11	49.12	85.63	94.00	-8.37	AVG
2479.35	40.78	49.25	87.17	114.00	-26.83	peak
2479.35	30.48	49.25	84.53	94.00	-9.47	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Antenna B0

FIELD STRENGTH OF FUNDAMENTAL

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Modulation	GFSK	**Polarization**	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2403.35	42.54	49.05	91.59	114.00	-22.41	peak
2403.35	39.91	49.05	88.96	94.00	-5.04	AVG
2443.35	41.34	49.12	90.46	114.00	-23.54	peak
2443.35	39.21	49.12	88.33	94.00	-5.67	AVG
2479.35	40.18	49.25	89.43	114.00	-24.57	peak
2479.35	37.58	49.25	86.83	94.00	-7.17	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Modulation	GFSK	**Polarization**	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2403.35	44.37	49.05	88.19	114.00	-25.81	peak
2403.35	29.51	49.05	85.65	94.00	-8.35	AVG
2443.35	45.31	49.12	87.99	114.00	-26.01	peak
2443.35	30.11	49.12	85.63	94.00	-8.37	AVG
2479.35	40.78	49.25	87.82	114.00	-26.18	peak
2479.35	30.48	49.25	85.17	94.00	-8.83	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Antenna B1

FIELD STRENGTH OF FUNDAMENTAL

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Modulation	GFSK	**Polarization**	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2403.35	43.88	49.05	92.93	114.00	-21.07	peak
2403.35	41.17	49.05	90.22	94.00	-3.78	AVG
2443.35	42.12	49.12	91.24	114.00	-22.76	peak
2443.35	40.33	49.12	89.45	94.00	-4.55	AVG
2479.35	41.48	49.25	90.73	114.00	-23.27	peak
2479.35	38.86	49.25	88.11	94.00	-5.89	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Modulation	GFSK	**Polarization**	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2403.35	44.37	49.05	88.90	114.00	-25.10	peak
2403.35	29.51	49.05	86.31	94.00	-7.69	AVG
2443.35	45.31	49.12	87.33	114.00	-26.67	peak
2443.35	30.11	49.12	85.69	94.00	-8.31	AVG
2479.35	40.78	49.25	86.93	114.00	-27.07	peak
2479.35	30.48	49.25	84.18	94.00	-9.82	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Antenna A0

RADIATED EMISSION ABOVE 1GHZ

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Polarization**	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4806.7	48.85	3.76	52.61	74.00	-21.39	peak
4806.7	41.63	3.76	45.39	54.00	-8.61	AVG
7210.05	42.41	8.17	50.58	74.00	-23.42	peak
7210.05	36.59	8.17	44.76	54.00	-9.24	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	23.0° C	**Relative Humidity**	51.8%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Polarization**	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4806.7	47.69	3.76	51.45	74.00	-22.55	peak
4806.7	40.35	3.76	44.11	54.00	-9.89	AVG
7210.05	42.47	8.17	50.64	74.00	-23.36	peak
7210.05	35.32	8.17	43.49	54.00	-10.51	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Polarization	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4886.7	47.75	3.78	51.53	74.00	-22.47	peak
4886.7	40.49	3.78	44.27	54.00	-9.73	AVG
7330.05	43.36	8.23	51.59	74.00	-22.41	peak
7330.05	36.52	8.23	44.75	54.00	-9.25	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Polarization	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4886.7	48.59	3.78	52.37	74.00	-21.63	peak
4886.7	41.48	3.78	45.26	54.00	-8.74	AVG
7330.05	44.41	8.23	52.64	74.00	-21.36	peak
7330.05	35.57	8.23	43.80	54.00	-10.20	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4958.7	47.85	3.81	51.66	74.00	-22.34	peak
4958.7	40.36	3.81	44.17	54.00	-9.83	AVG
7438.05	42.59	8.27	50.86	74.00	-23.14	peak
7438.05	32.52	8.27	40.79	54.00	-13.21	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

W+ Link Transmitter	Model Name	X02
22.7°C	Relative Humidity	60.1%
985kPa	Test Voltage	Normal Voltage
Mode 3	Polarization	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4958.7	47.74	3.81	51.55	74.00	-22.45	peak
4958.7	39.58	3.81	43.39	54.00	-10.61	AVG
7438.05	44.45	8.27	52.72	74.00	-21.28	peak
7438.05	33.56	8.27	41.83	54.00	-12.17	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RESULT: PASS

Note: The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.

Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Emission Level-Limit.

The “Factor” value can be calculated automatically by software of measurement system.

Antenna A1

RADIATED EMISSION ABOVE 1GHZ

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Polarization**	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4806.7	48.69	3.76	52.45	74.00	-21.55	peak
4806.7	41.52	3.76	45.28	54.00	-8.72	AVG
7210.05	42.69	8.17	50.86	74.00	-23.14	peak
7210.05	36.74	8.17	44.91	54.00	-9.09	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	23.0° C	**Relative Humidity**	51.8%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Polarization**	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4806.7	47.45	3.76	51.21	74.00	-22.79	peak
4806.7	40.71	3.76	44.47	54.00	-9.53	AVG
7210.05	42.39	8.17	50.56	74.00	-23.44	peak
7210.05	35.56	8.17	43.73	54.00	-10.27	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Polarization	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4886.7	47.74	3.78	51.52	74.00	-22.48	peak
4886.7	40.59	3.78	44.37	54.00	-9.63	AVG
7330.05	43.41	8.23	51.64	74.00	-22.36	peak
7330.05	36.63	8.23	44.86	54.00	-9.14	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Polarization	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4886.7	48.28	3.78	52.06	74.00	-21.94	peak
4886.7	41.59	3.78	45.37	54.00	-8.63	AVG
7330.05	44.41	8.23	52.64	74.00	-21.36	peak
7330.05	35.76	8.23	43.99	54.00	-10.01	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4958.7	47.32	3.81	51.13	74.00	-22.87	peak
4958.7	40.85	3.81	44.66	54.00	-9.34	AVG
7438.05	42.46	8.27	50.73	74.00	-23.27	peak
7438.05	32.69	8.27	40.96	54.00	-13.04	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

W+ Link Transmitter	Model Name	X02
22.7°C	Relative Humidity	60.1%
985kPa	Test Voltage	Normal Voltage
Mode 3	Polarization	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4958.7	47.89	3.81	51.70	74.00	-22.30	peak
4958.7	39.52	3.81	43.33	54.00	-10.67	AVG
7438.05	44.36	8.27	52.63	74.00	-21.37	peak
7438.05	33.62	8.27	41.89	54.00	-12.11	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RESULT: PASS

Note: The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.

Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Emission Level-Limit.

The “Factor” value can be calculated automatically by software of measurement system.

Antenna B0

RADIATED EMISSION ABOVE 1GHZ

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Polarization**	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4806.7	48.74	3.76	52.50	74.00	-21.50	peak
4806.7	41.59	3.76	45.35	54.00	-8.65	AVG
7210.05	42.36	8.17	50.53	74.00	-23.47	peak
7210.05	36.52	8.17	44.69	54.00	-9.31	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	23.0° C	**Relative Humidity**	51.8%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Polarization**	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4806.7	47.58	3.76	51.34	74.00	-22.66	peak
4806.7	40.26	3.76	44.02	54.00	-9.98	AVG
7210.05	42.37	8.17	50.54	74.00	-23.46	peak
7210.05	35.24	8.17	43.41	54.00	-10.59	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Polarization	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4886.7	47.64	3.78	51.42	74.00	-22.58	peak
4886.7	40.35	3.78	44.13	54.00	-9.87	AVG
7330.05	43.29	8.23	51.52	74.00	-22.48	peak
7330.05	36.48	8.23	44.71	54.00	-9.29	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Polarization	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4886.7	48.45	3.78	52.23	74.00	-21.77	peak
4886.7	41.36	3.78	45.14	54.00	-8.86	AVG
7330.05	44.29	8.23	52.52	74.00	-21.48	peak
7330.05	35.51	8.23	43.74	54.00	-10.26	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4958.7	47.74	3.81	51.55	74.00	-22.45	peak
4958.7	40.52	3.81	44.33	54.00	-9.67	AVG
7438.05	42.46	8.27	50.73	74.00	-23.27	peak
7438.05	32.39	8.27	40.66	54.00	-13.34	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4958.7	47.65	3.81	51.46	74.00	-22.54	peak
4958.7	39.48	3.81	43.29	54.00	-10.71	AVG
7438.05	44.33	8.27	52.60	74.00	-21.40	peak
7438.05	33.58	8.27	41.85	54.00	-12.15	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RESULT: PASS

Note: The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.

Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Emission Level-Limit.

The “Factor” value can be calculated automatically by software of measurement system.

Antenna B1

RADIATED EMISSION ABOVE 1GHZ

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	22.7°C	**Relative Humidity**	60.1%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Polarization**	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4806.7	48.62	3.76	52.38	74.00	-21.62	peak
4806.7	41.39	3.76	45.15	54.00	-8.85	AVG
7210.05	42.25	8.17	50.42	74.00	-23.58	peak
7210.05	36.45	8.17	44.62	54.00	-9.38	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	**Model Name**	X02
Temperature	23.0° C	**Relative Humidity**	51.8%
Pressure	985kPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Polarization**	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4806.7	47.69	3.76	51.45	74.00	-22.55	peak
4806.7	40.84	3.76	44.60	54.00	-9.40	AVG
7210.05	42.52	8.17	50.69	74.00	-23.31	peak
7210.05	35.17	8.17	43.34	54.00	-10.66	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Polarization	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4886.7	47.32	3.78	51.10	74.00	-22.90	peak
4886.7	40.59	3.78	44.37	54.00	-9.63	AVG
7330.05	43.84	8.23	52.07	74.00	-21.93	peak
7330.05	36.71	8.23	44.94	54.00	-9.06	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Polarization	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4886.7	48.74	3.78	52.52	74.00	-21.48	peak
4886.7	41.63	3.78	45.41	54.00	-8.59	AVG
7330.05	44.58	8.23	52.81	74.00	-21.19	peak
7330.05	35.45	8.23	43.68	54.00	-10.32	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4958.7	47.92	3.81	51.73	74.00	-22.27	peak
4958.7	40.84	3.81	44.65	54.00	-9.35	AVG
7438.05	42.52	8.27	50.79	74.00	-23.21	peak
7438.05	32.47	8.27	40.74	54.00	-13.26	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4958.7	47.73	3.81	51.54	74.00	-22.46	peak
4958.7	39.45	3.81	43.26	54.00	-10.74	AVG
7438.05	44.62	8.27	52.89	74.00	-21.11	peak
7438.05	33.52	8.27	41.79	54.00	-12.21	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RESULT: PASS

Note: The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.

Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Emission Level-Limit.

The “Factor” value can be calculated automatically by software of measurement system.

8. BAND EDGE EMISSION

8.1TEST LIMIT

Frequency Band	Limit of the Field Strength (dBμV/m)	
	Peak	Average
f≤2400MHz	74	54
f≥2483.5MHz	74	54

8.2. MEASUREMENT PROCEDURE

1. The EUT operates at transmitting mode. The operate channel is tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.

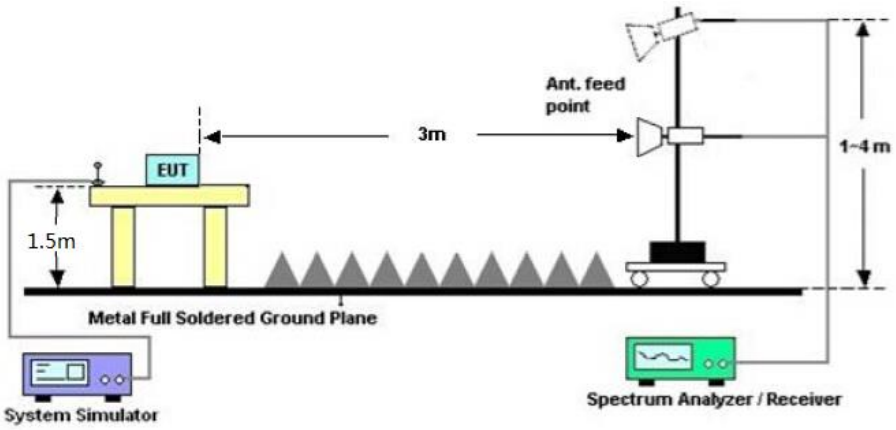
2. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission: (a) PEAK: RBW=1MHz, VBW=3MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz ; VBW=3MHz, Trace mode: Average, Sweep=AUTO

3. Other procedures refer to clause 7.2.

8.3 TEST SETUP

RADIATED EMISSION TEST SETUP



8.4 TEST RESULT

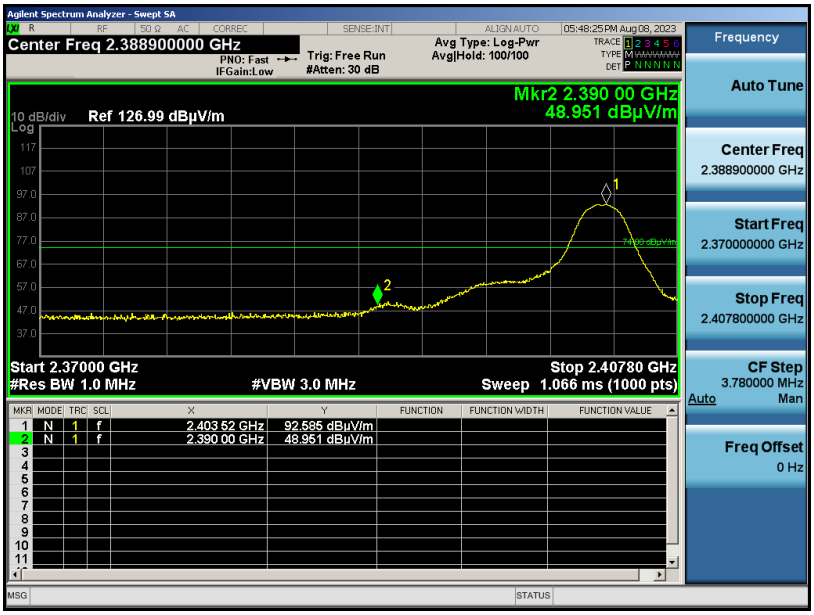
Note:

1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level
2. The factor had been edited in the “Input Correction” of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μV) to represent the Amplitude. Use the F dB(μV/m) to represent the Field Strength. So A=F.

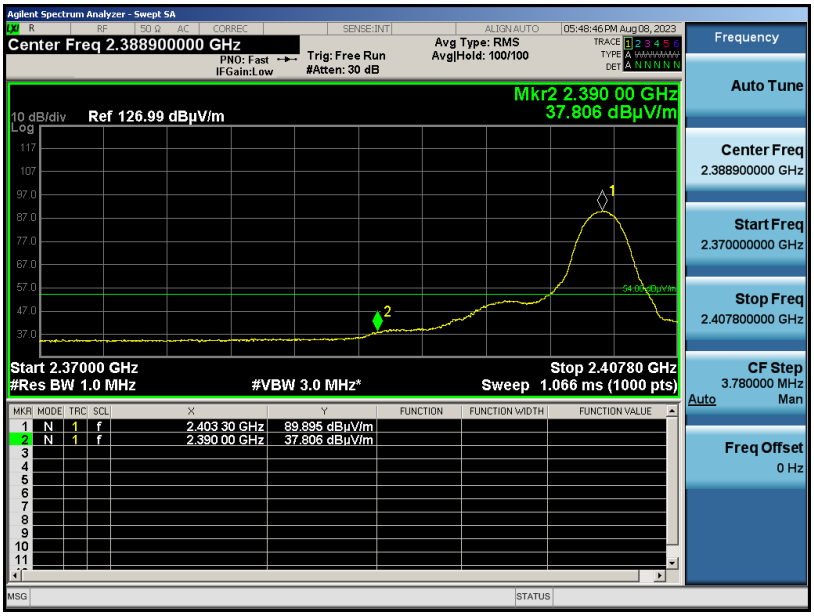
Antenna A0

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Polarization	Horizontal

Peak Value

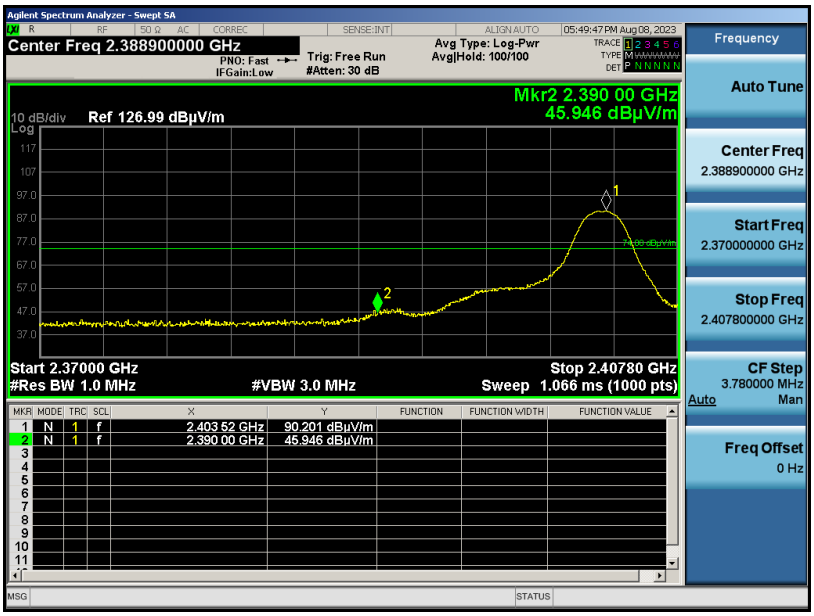


Average Value

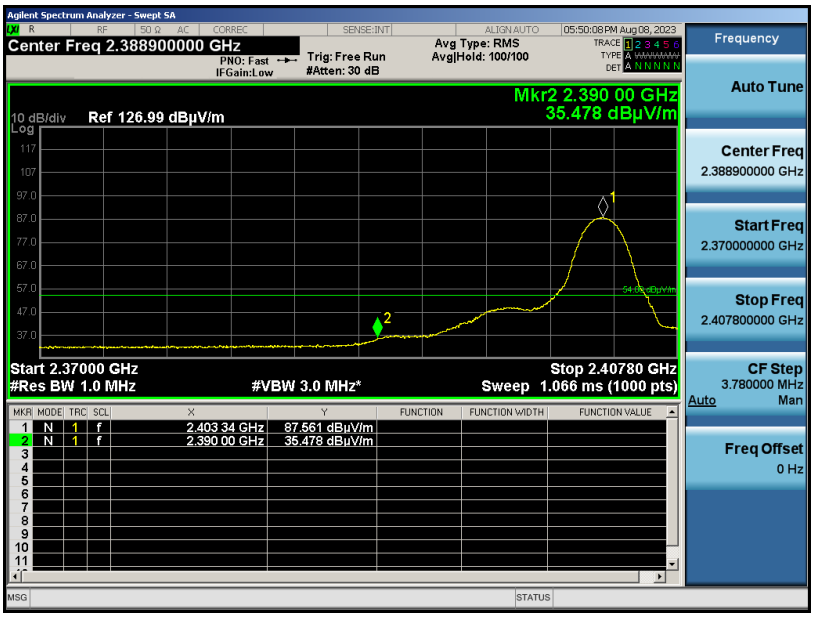


EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Polarization	Vertical

Peak Value

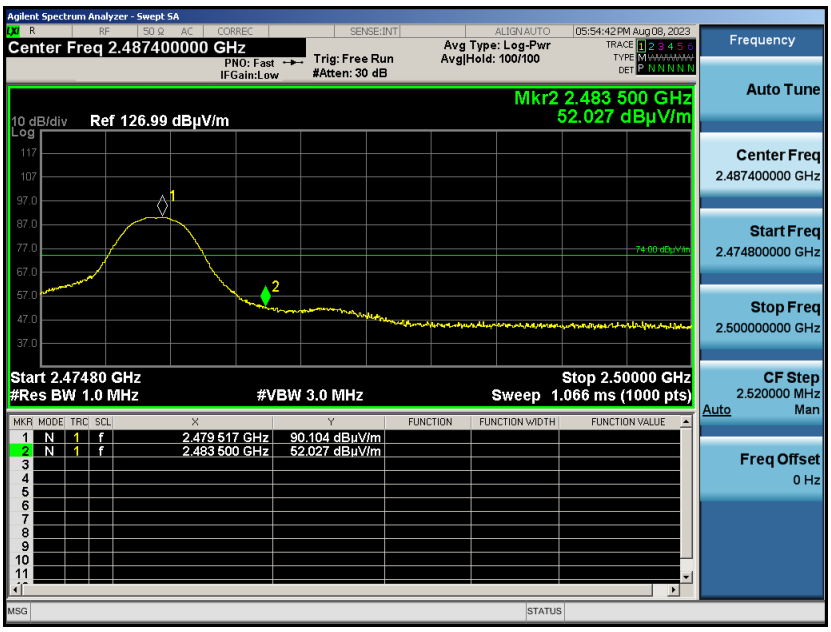


Average Value

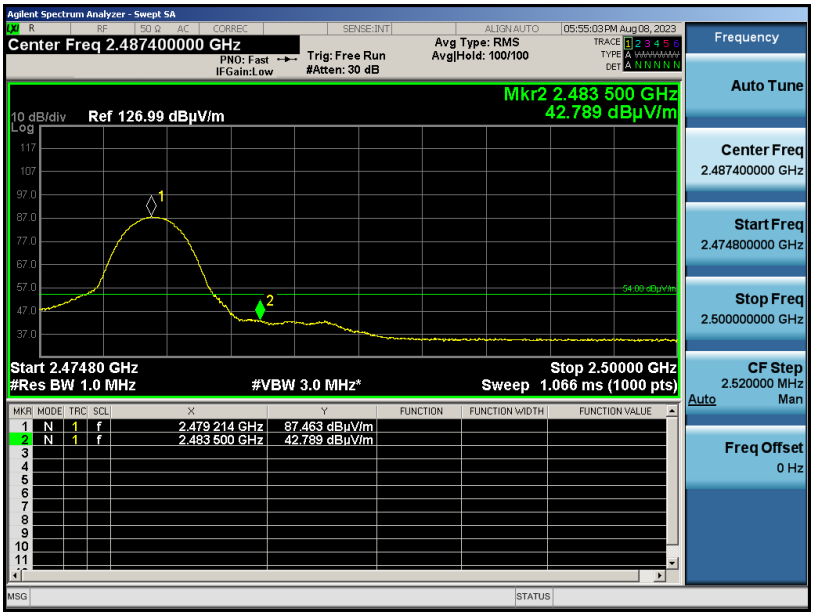


EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Horizontal

Peak Value

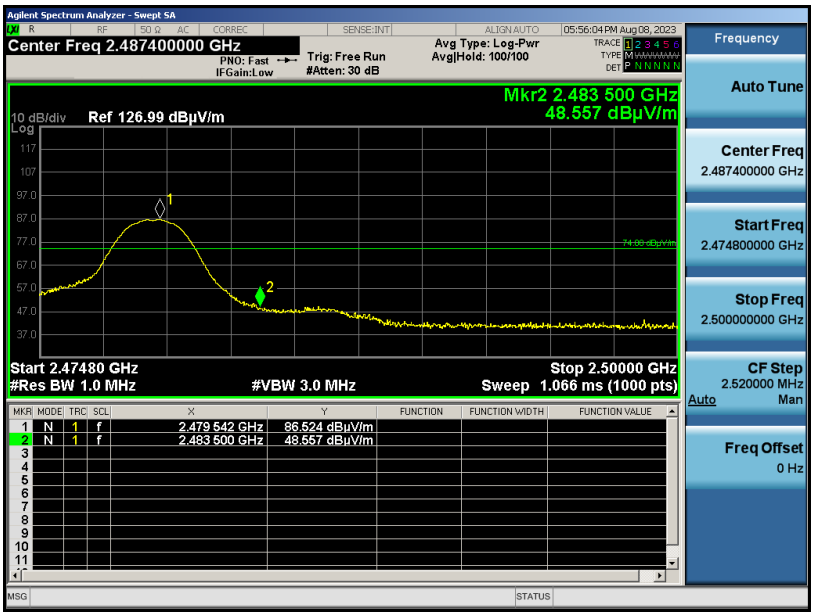


Average Value

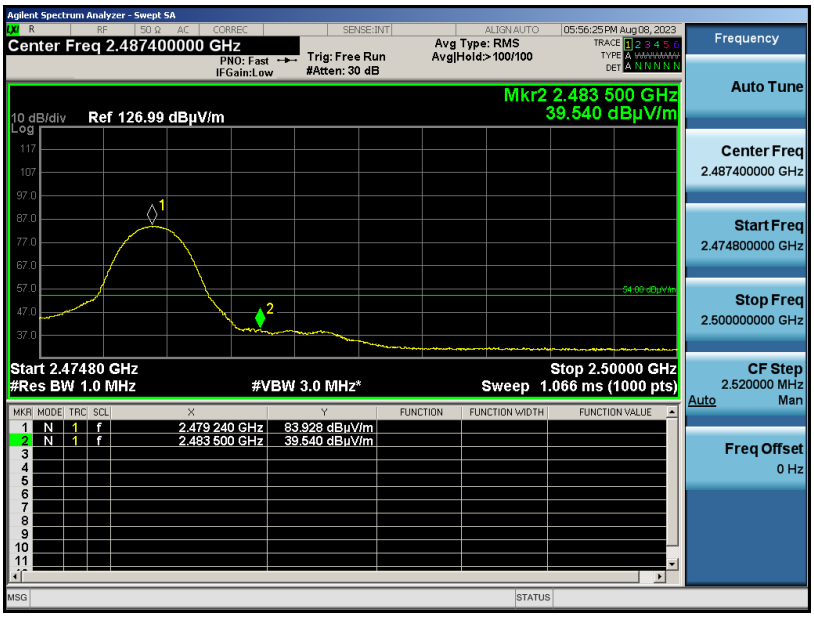


EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Vertical

Peak Value



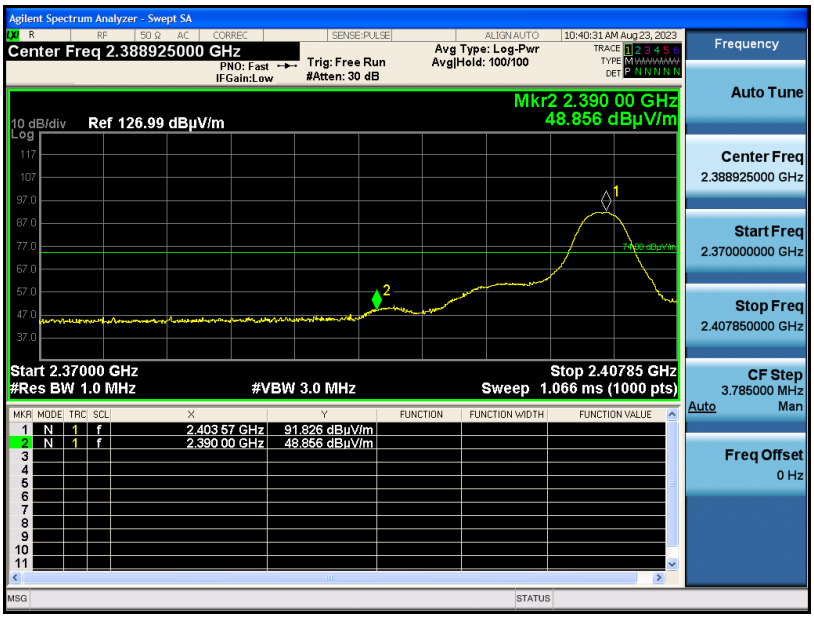
Average Value



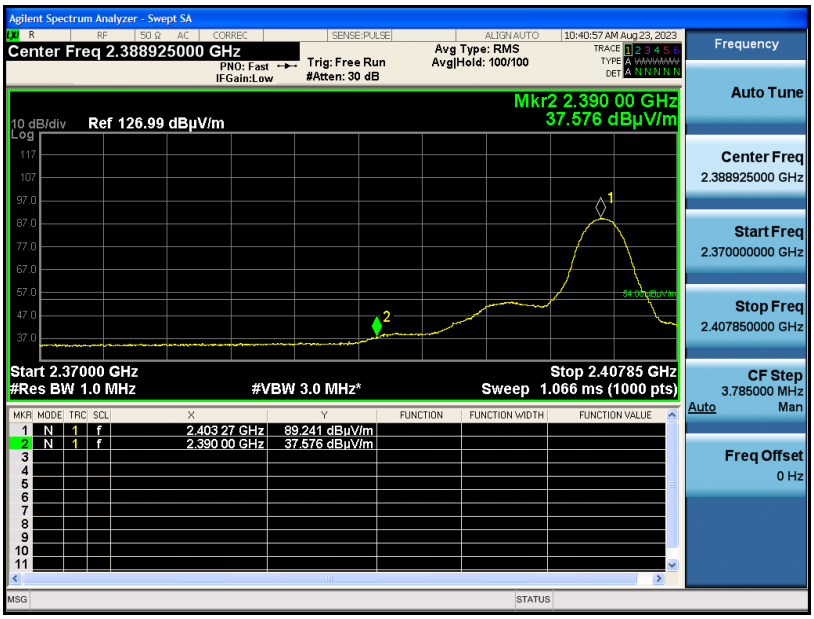
Antenna A1

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Polarization	Horizontal

Peak Value

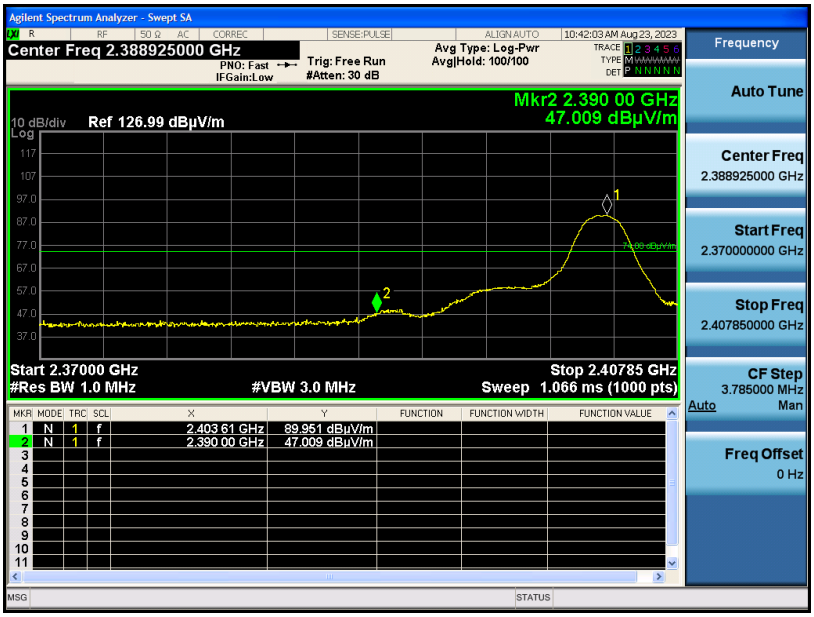


Average Value

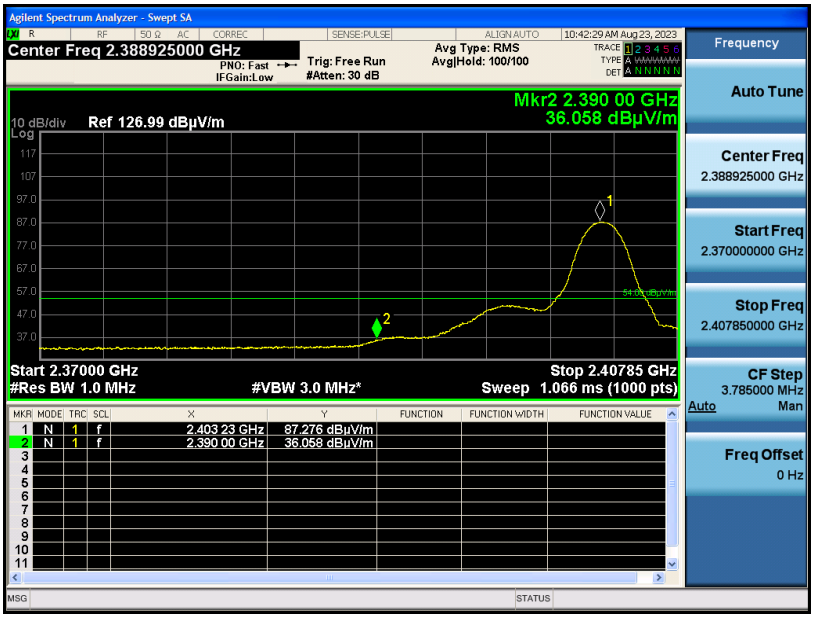


EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Polarization	Vertical

Peak Value

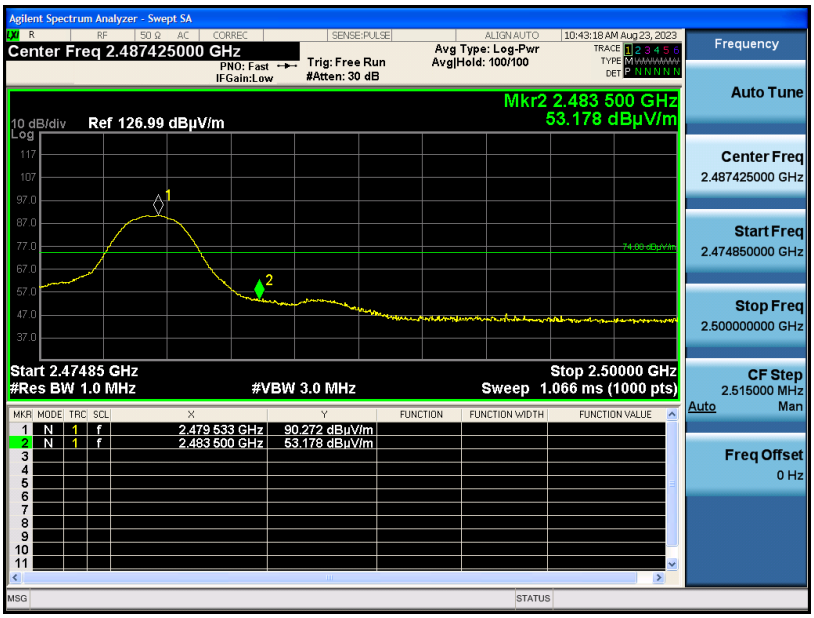


Average Value

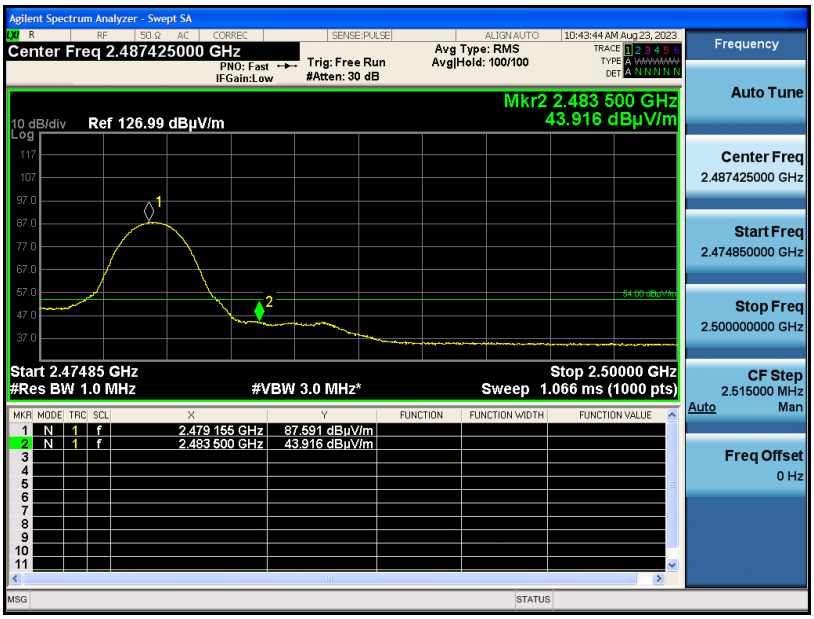


EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Horizontal

Peak Value

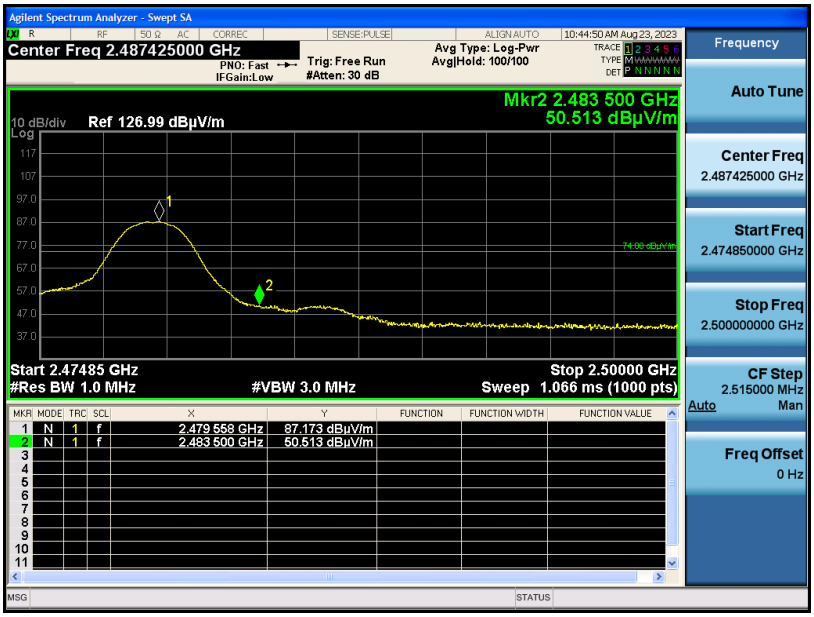


Average Value

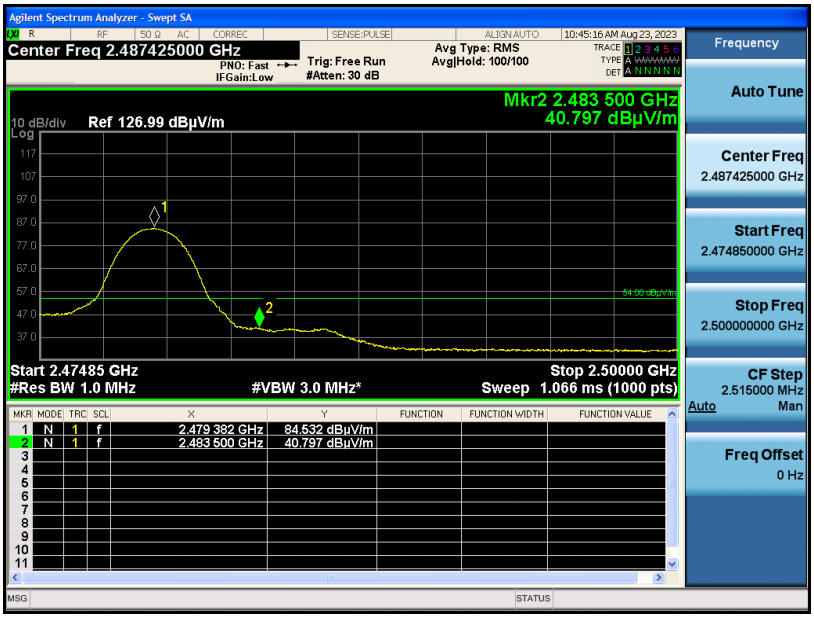


EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Vertical

Peak Value



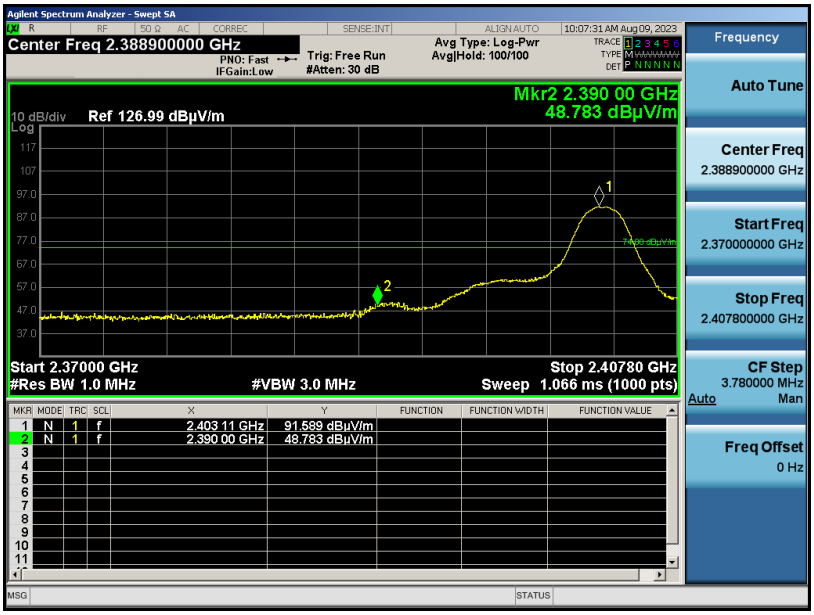
Average Value



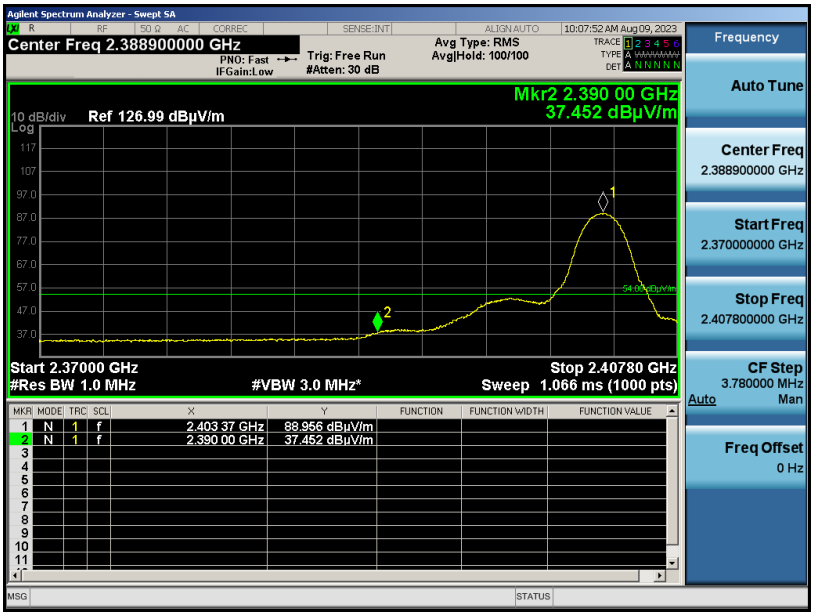
Antenna B0

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Polarization	Horizontal

Peak Value

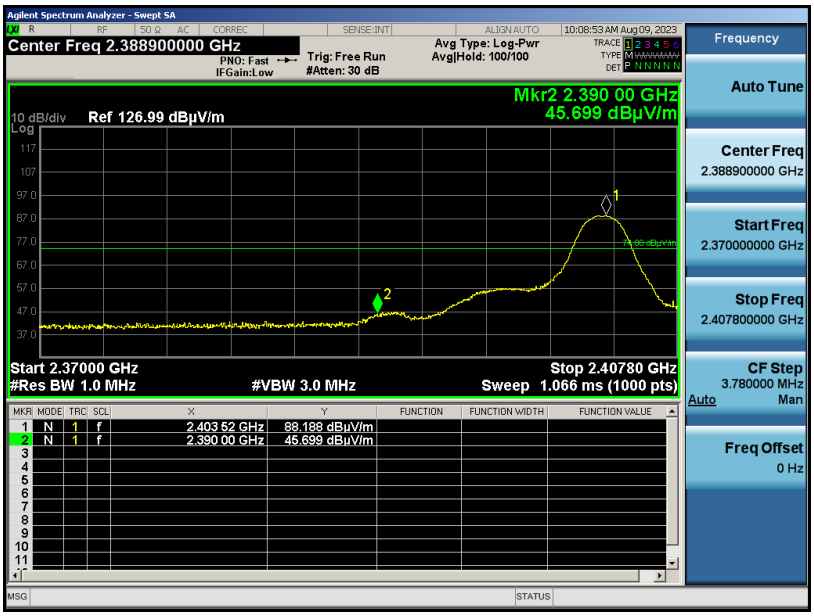


Average Value

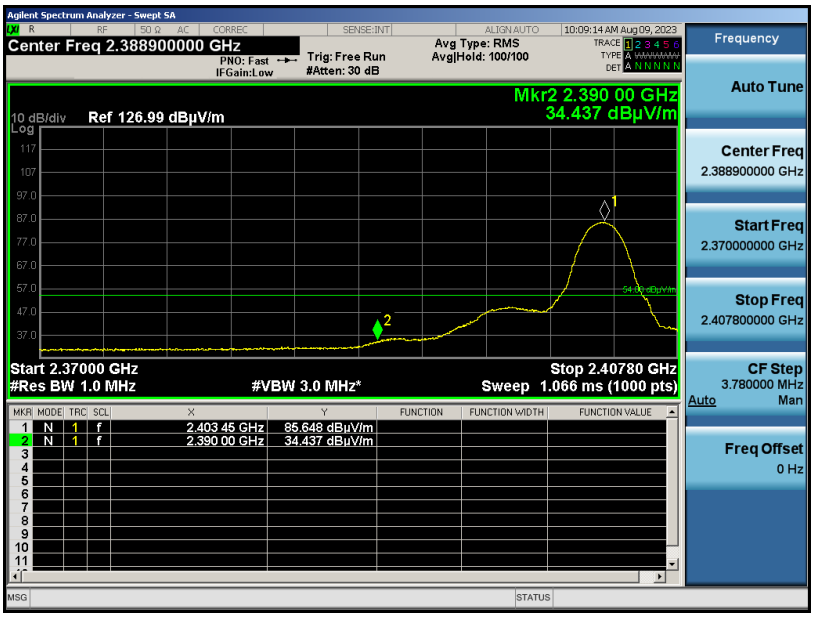


EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Polarization	Vertical

Peak Value

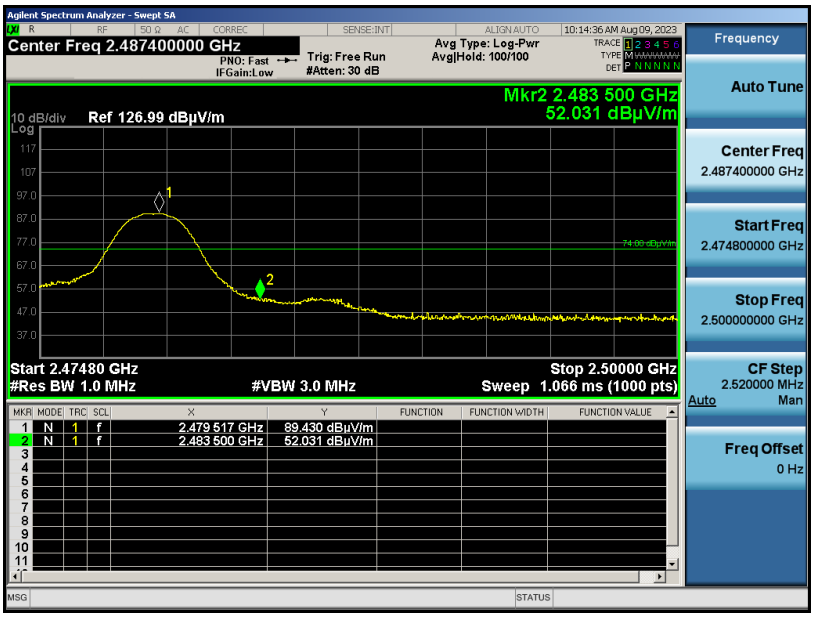


Average Value

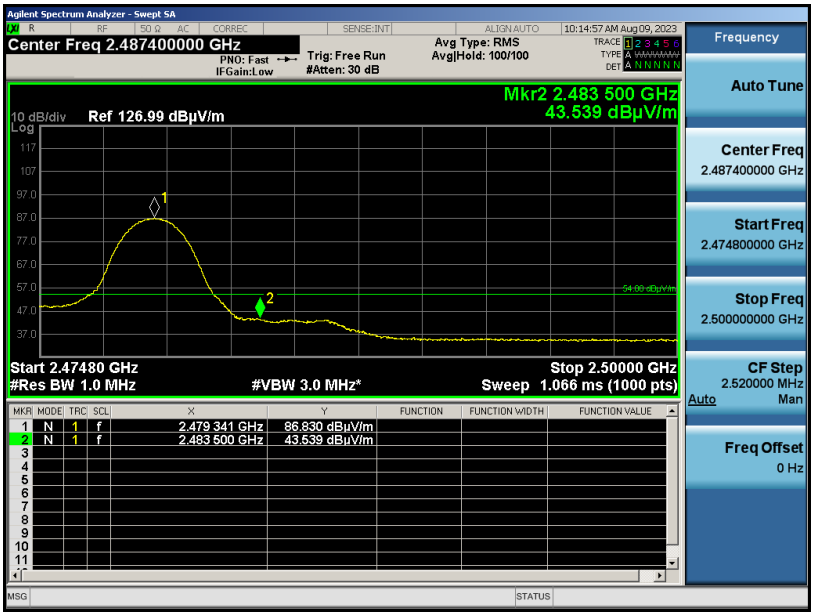


EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Horizontal

Peak Value

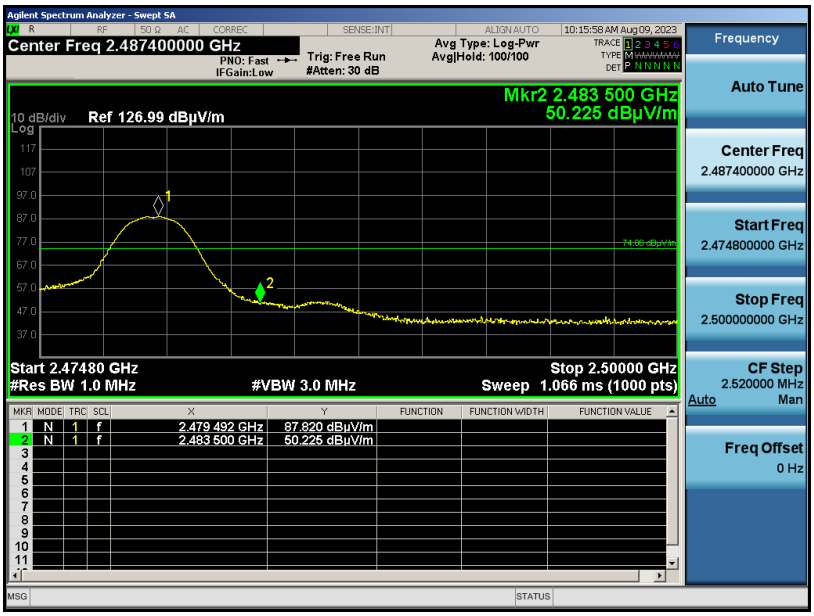


Average Value

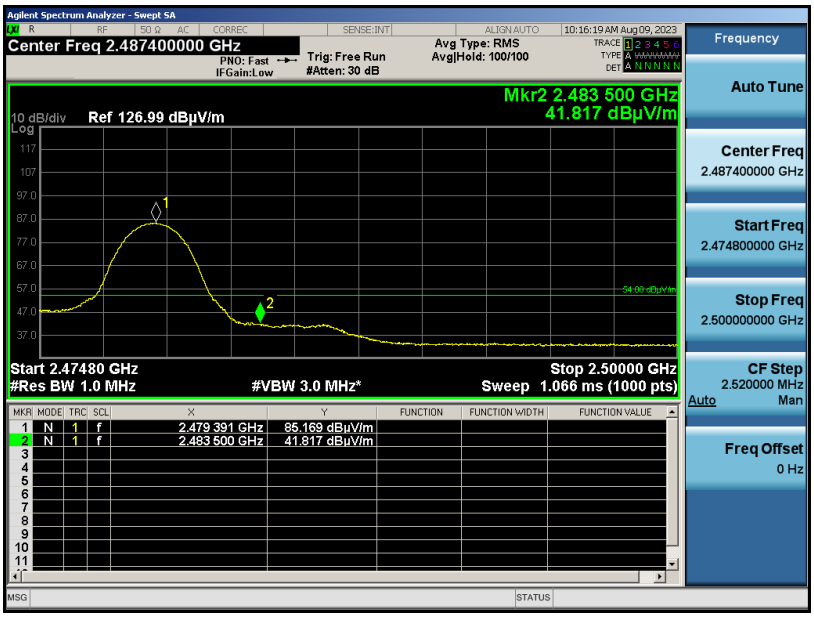


EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Vertical

Peak Value



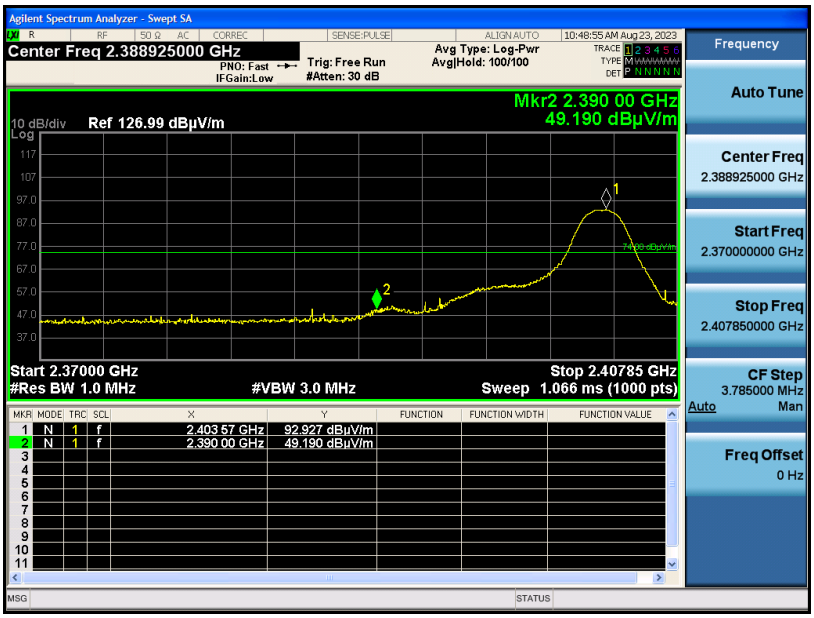
Average Value



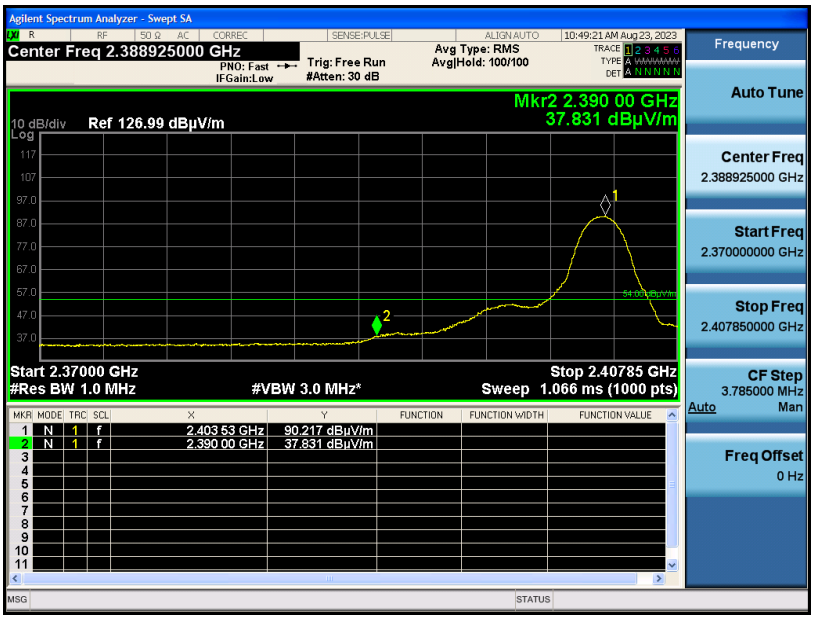
Antenna B1

EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Polarization	Horizontal

Peak Value

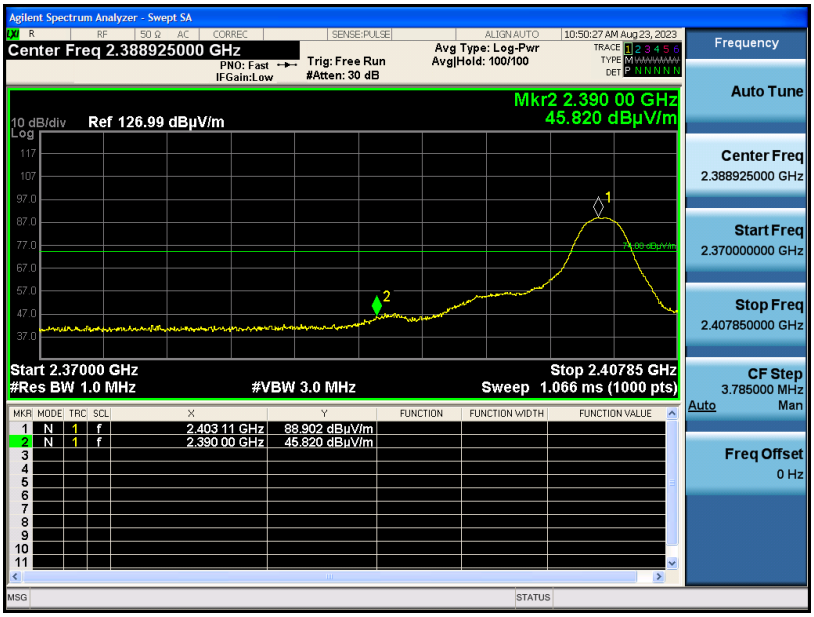


Average Value

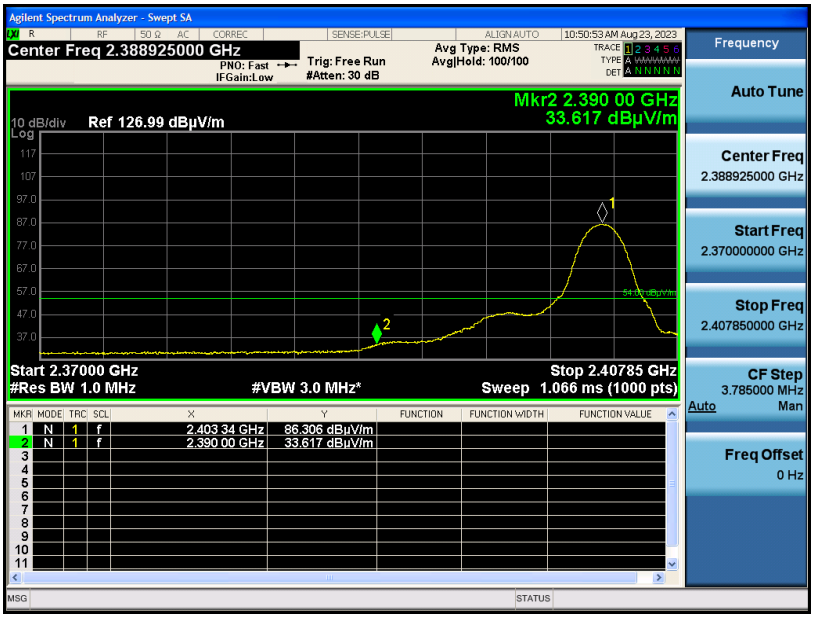


EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Polarization	Vertical

Peak Value

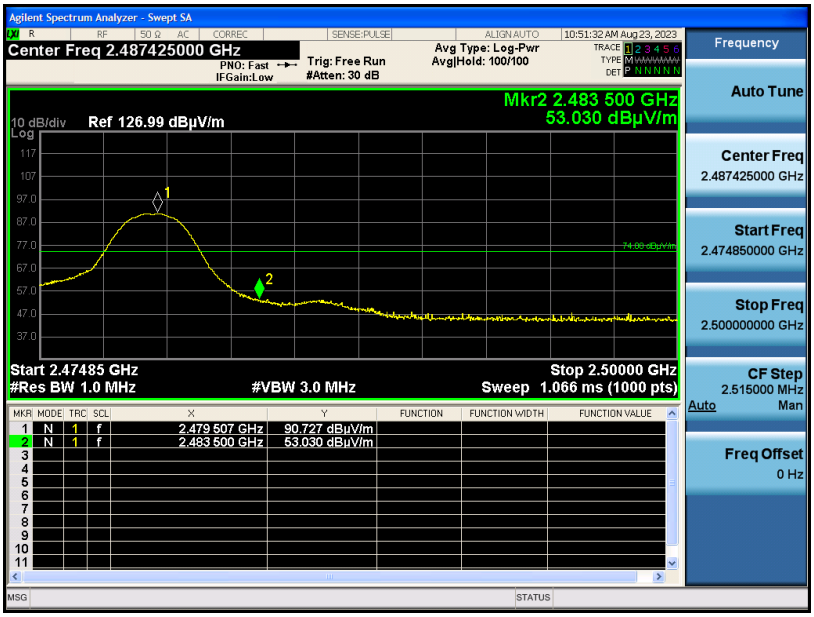


Average Value

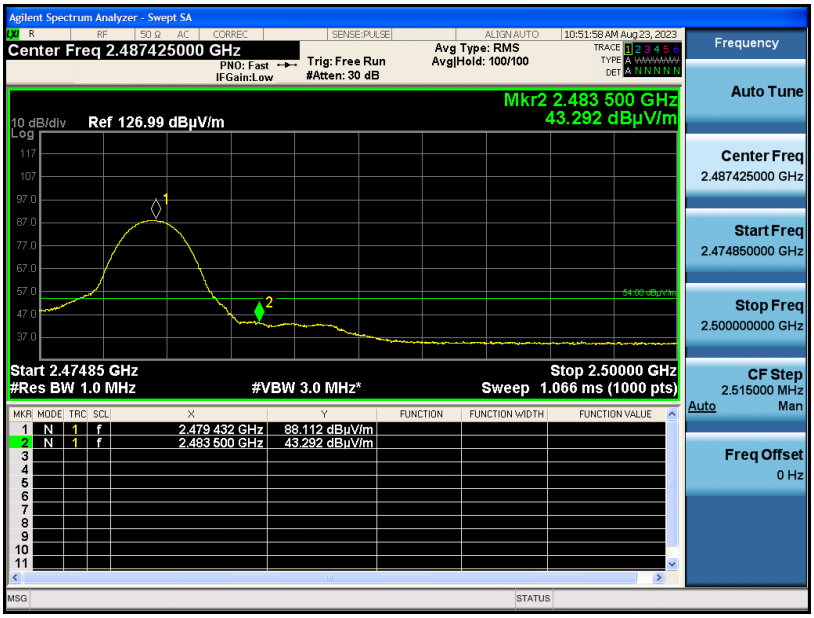


EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Horizontal

Peak Value

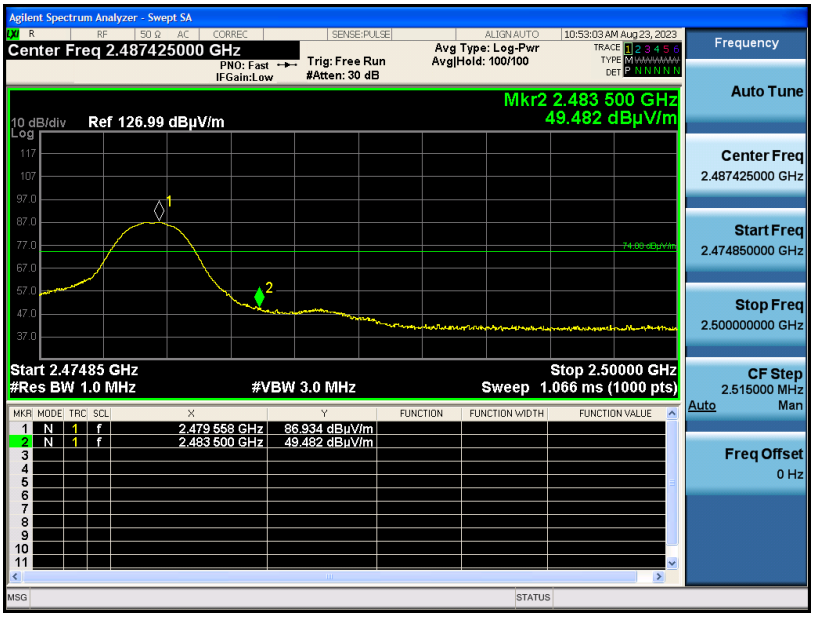


Average Value

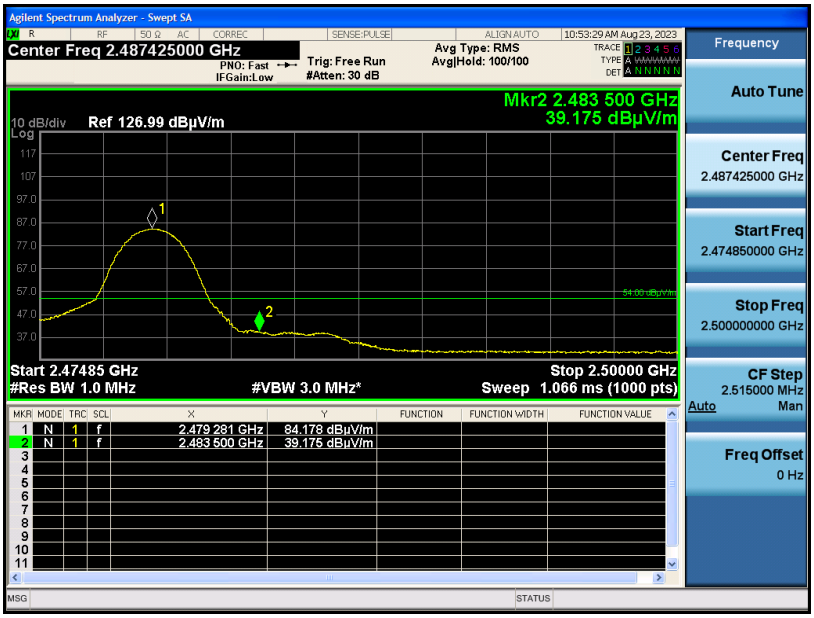


EUT	W+ Link Transmitter	Model Name	X02
Temperature	22.7°C	Relative Humidity	60.1%
Pressure	985kPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Polarization	Vertical

Peak Value



Average Value

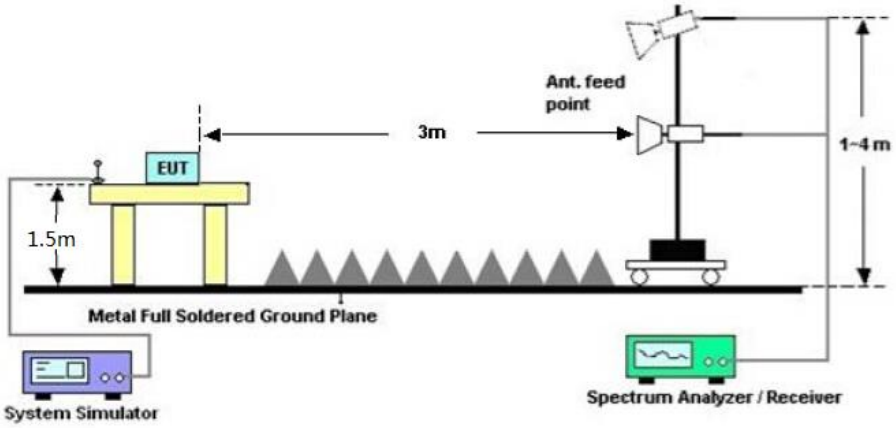


9. BANDWIDTH

9.1. MEASUREMENT PROCEDURE

1. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
2. Set SPA Centre Frequency = Operation Frequency, RBW= 30 KHz, VBW≥ 1×RBW.
3. Set SPA Trace 1 Max hold, then View.

9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



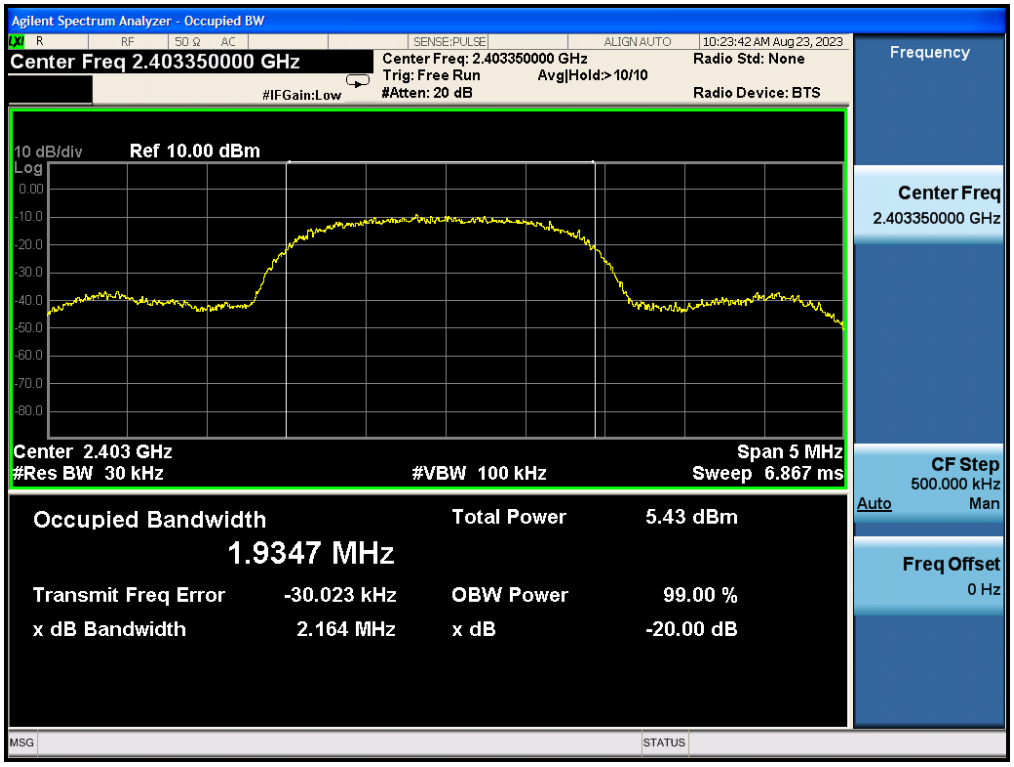
9.3. MEASUREMENT RESULTS

TEST ITEM	20DB BANDWIDTH
TEST MODULATION	GFSK

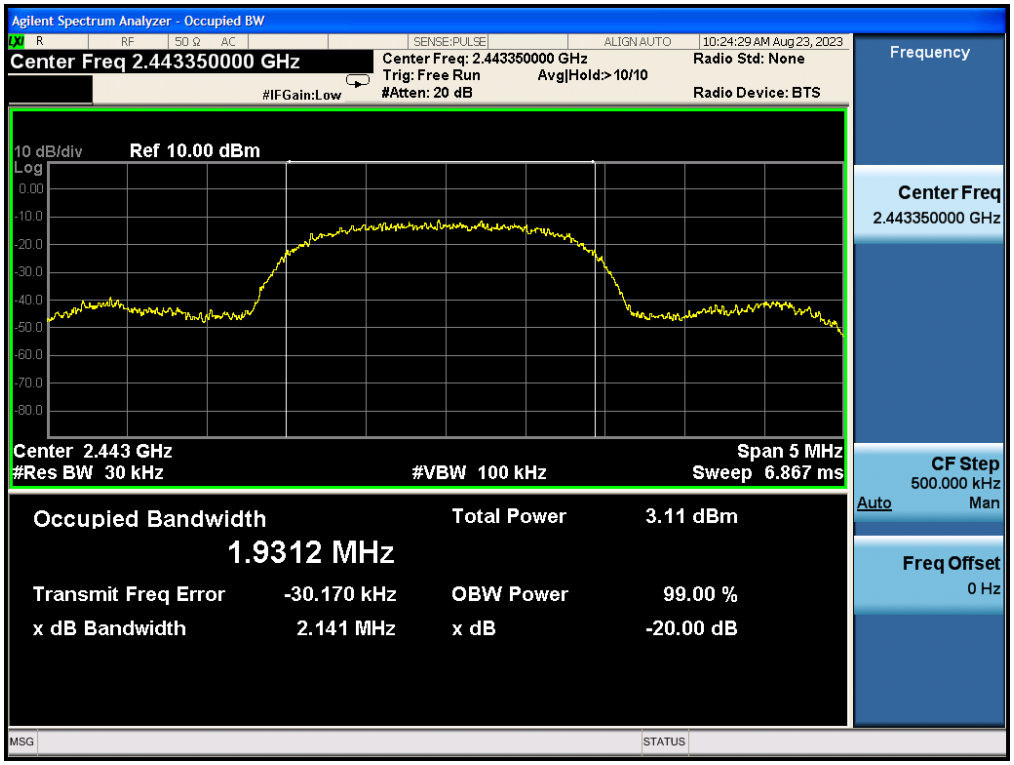
Antenna A0

Test Channel (MHz)	20DB BANDWIDTH (MHz)	99% BANDWIDTH (MHz)	Criteria
2403.35	2.164	1.935	PASS
2443.35	2.141	1.931	PASS
2479.35	2.156	1.918	PASS

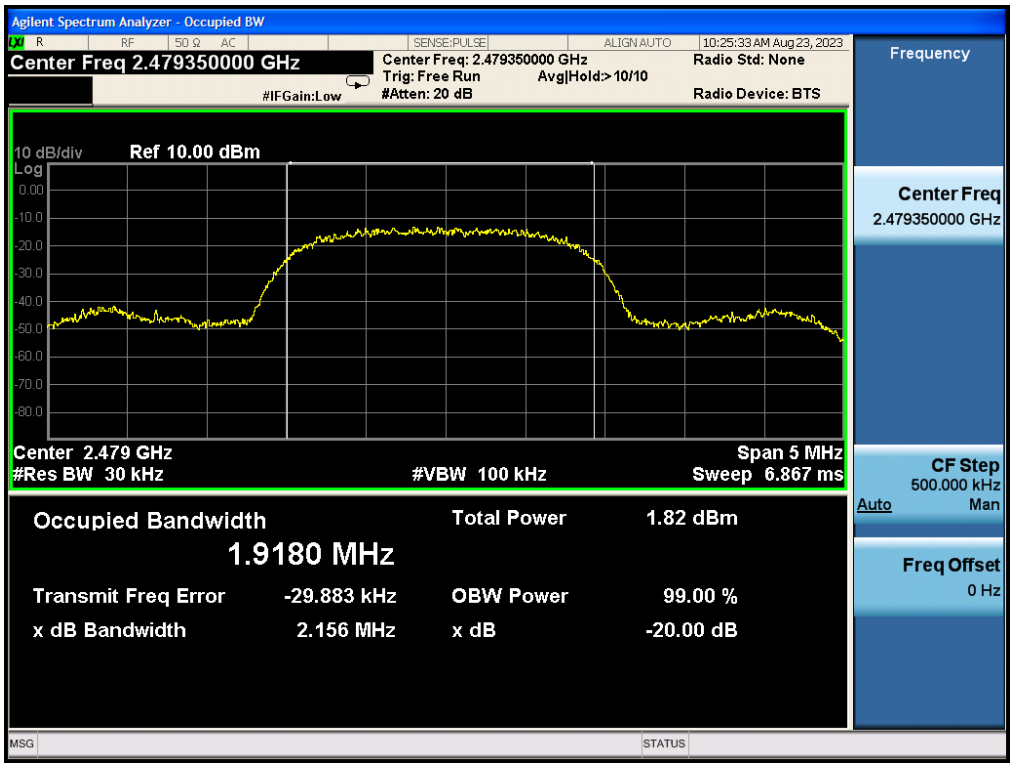
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



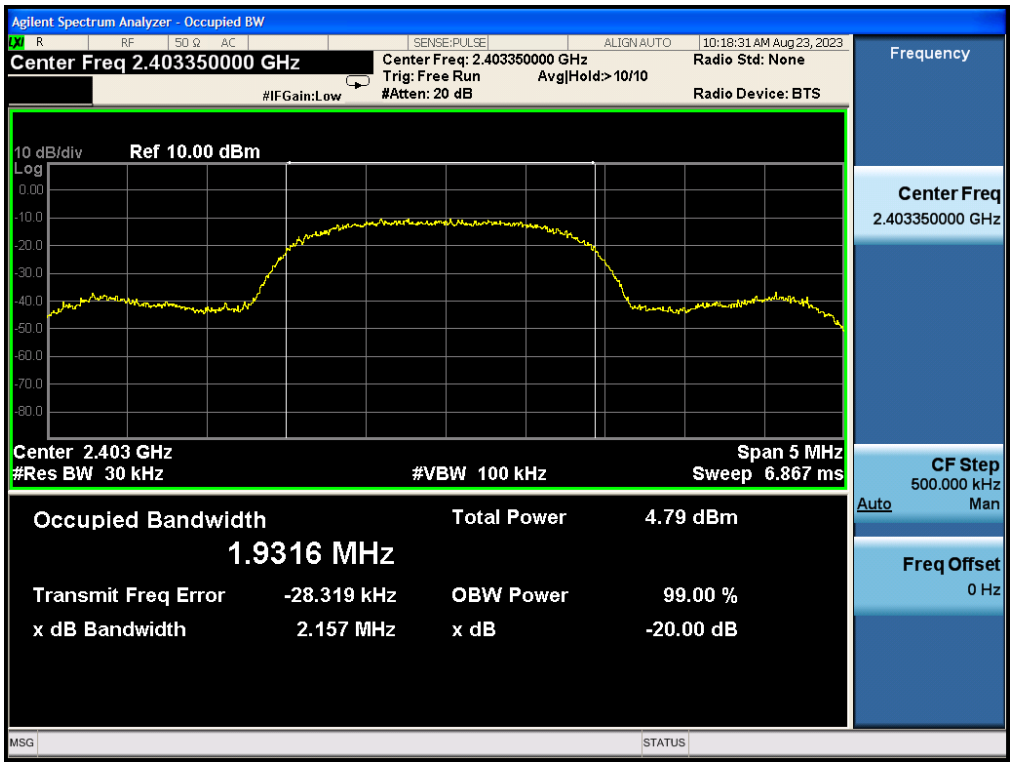
TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



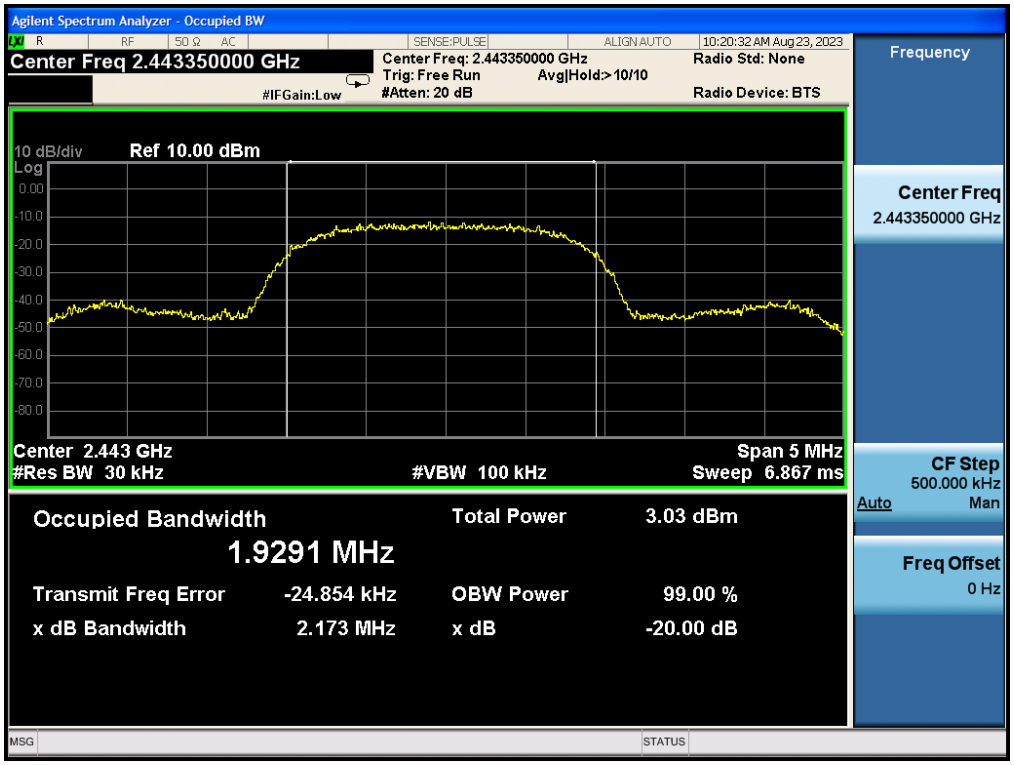
Antenna A1

Test Channel (MHz)	20DB BANDWIDTH (MHz)	99% BANDWIDTH (MHz)	Criteria
2403.35	2.157	1.932	PASS
2443.35	2.173	1.929	PASS
2479.35	2.153	1.915	PASS

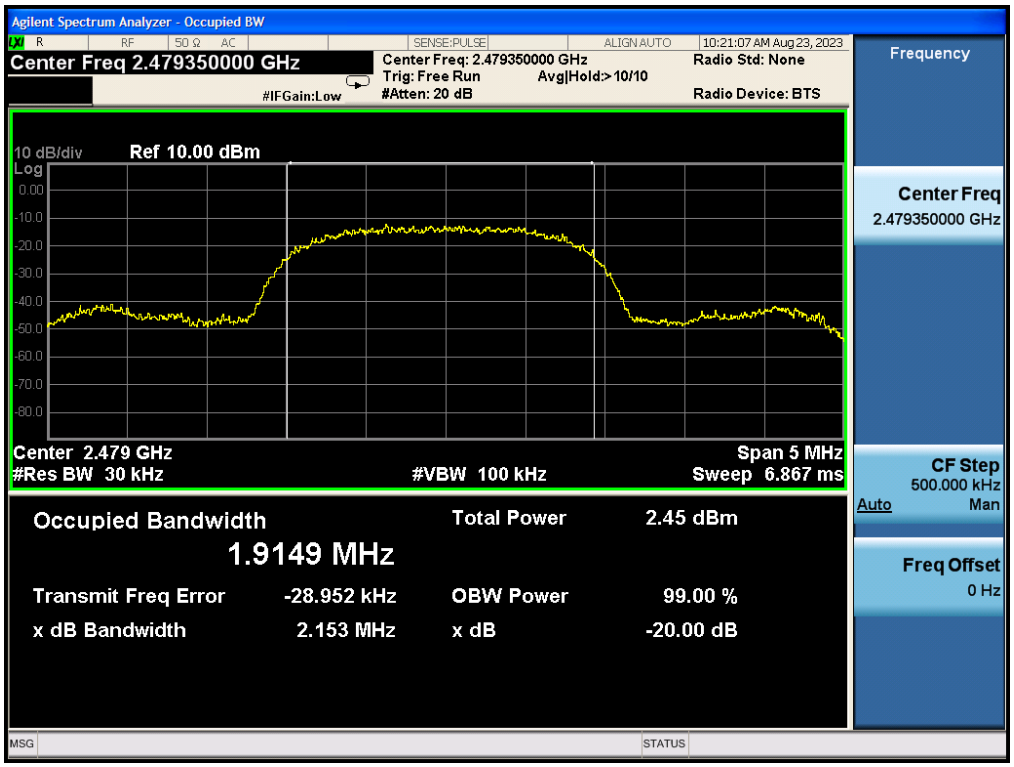
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



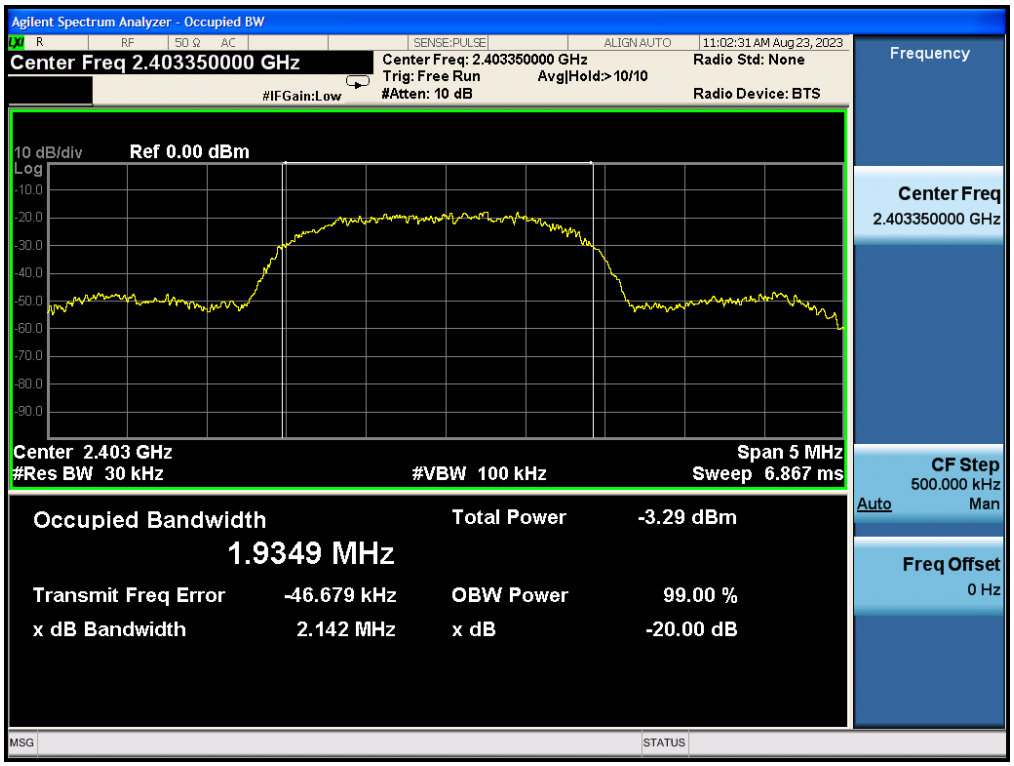
TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



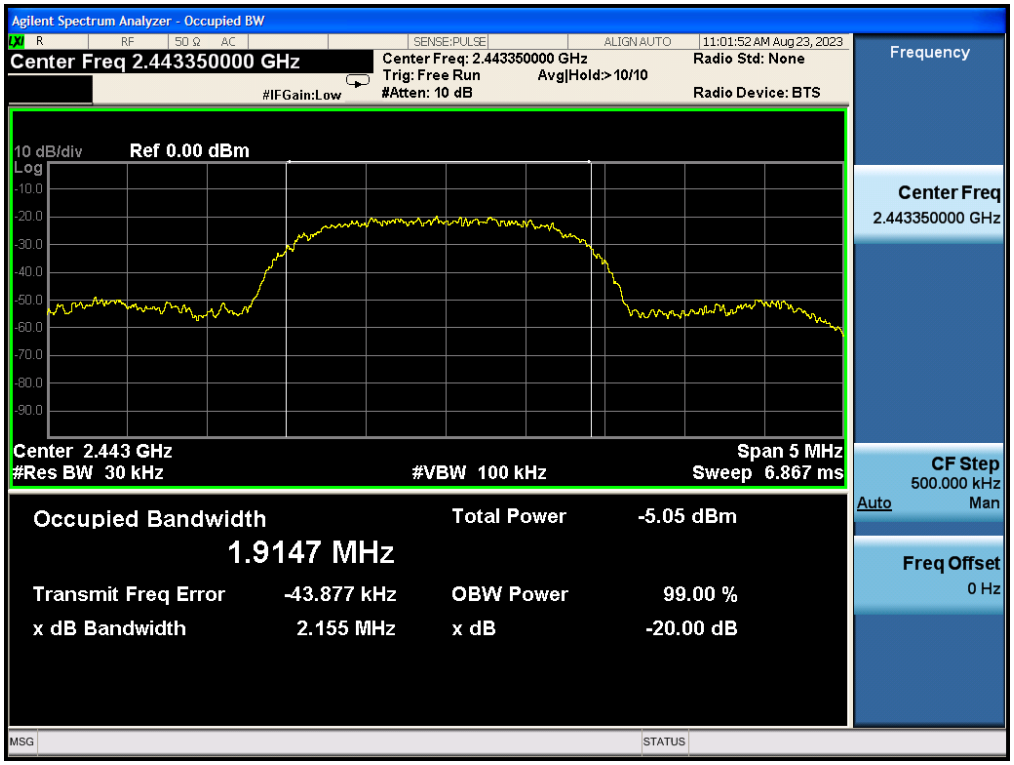
Antenna B0

Test Channel (MHz)	20DB BANDWIDTH (MHz)	99% BANDWIDTH (MHz)	Criteria
2403.35	2.142	1.935	PASS
2443.35	2.155	1.915	PASS
2479.35	2.135	1.934	PASS

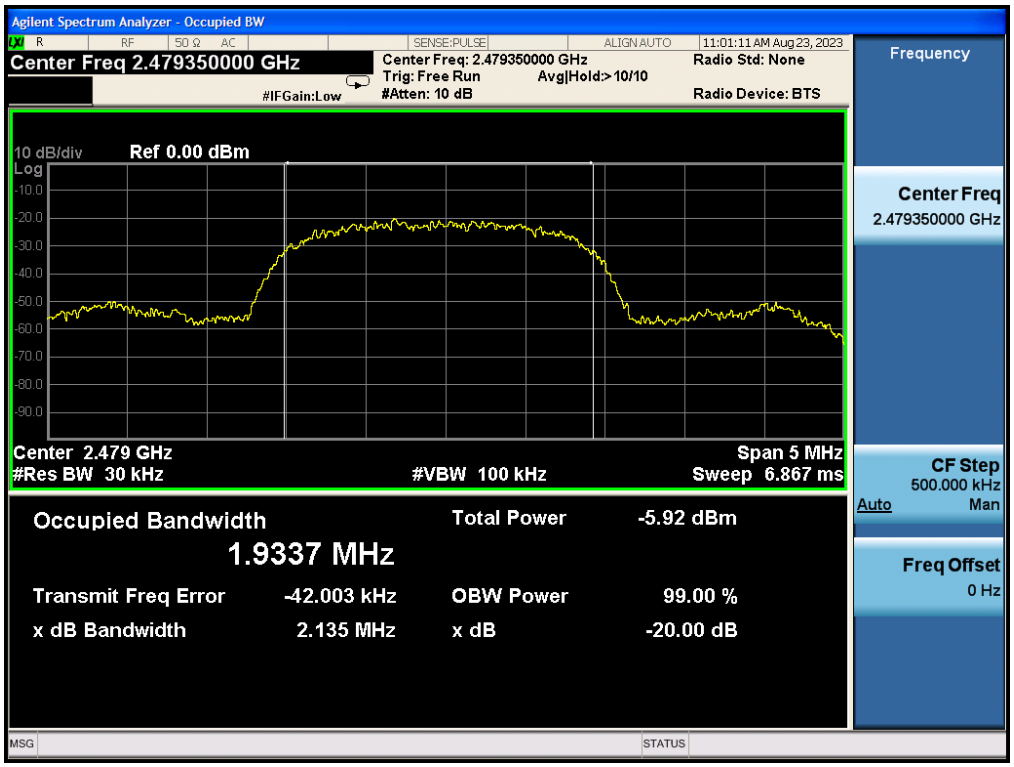
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



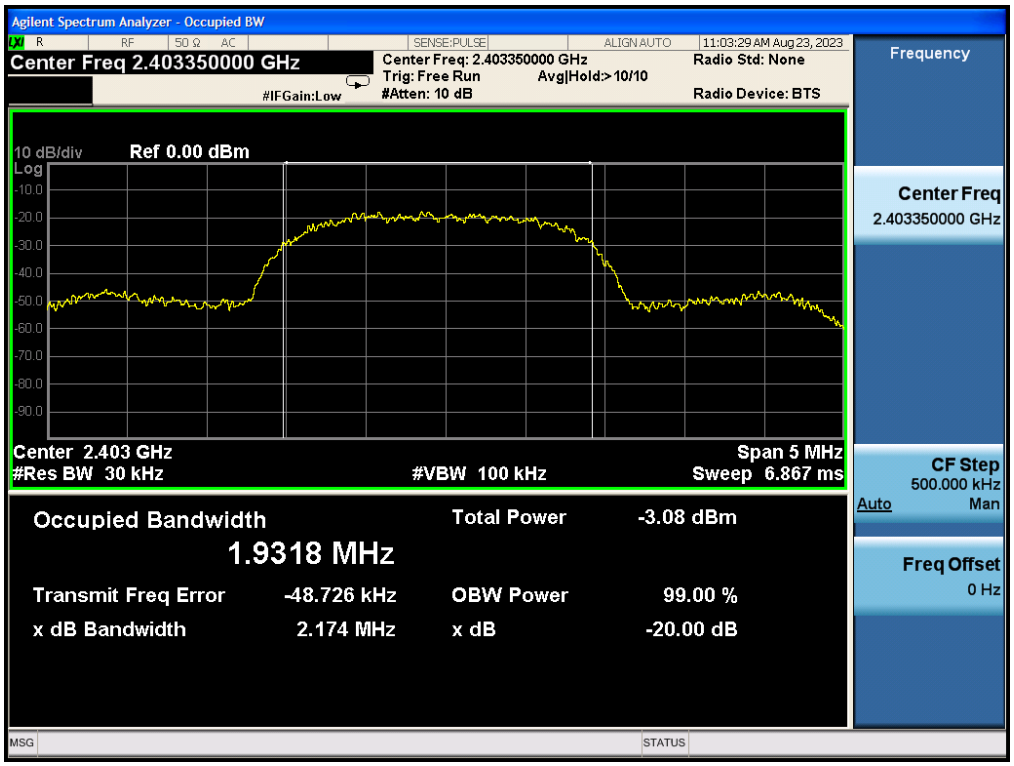
TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



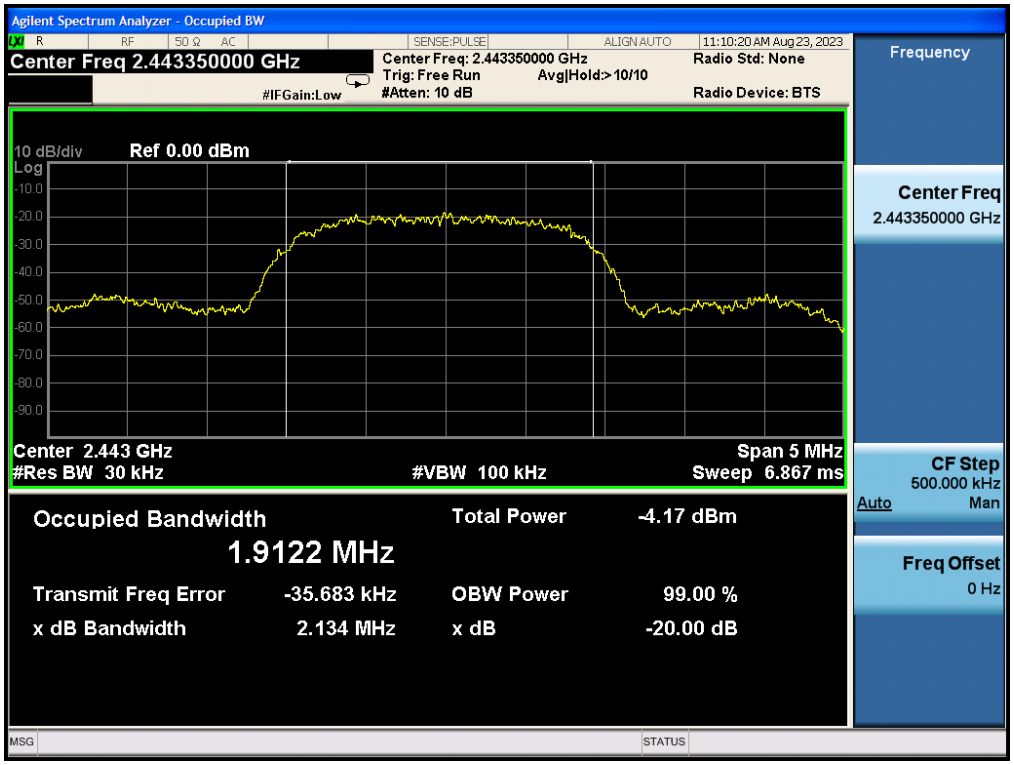
Antenna B1

Test Channel (MHz)	20DB BANDWIDTH (MHz)	99% BANDWIDTH (MHz)	Criteria
2403.35	2.174	1.932	PASS
2443.35	2.134	1.912	PASS
2479.35	2.132	1.916	PASS

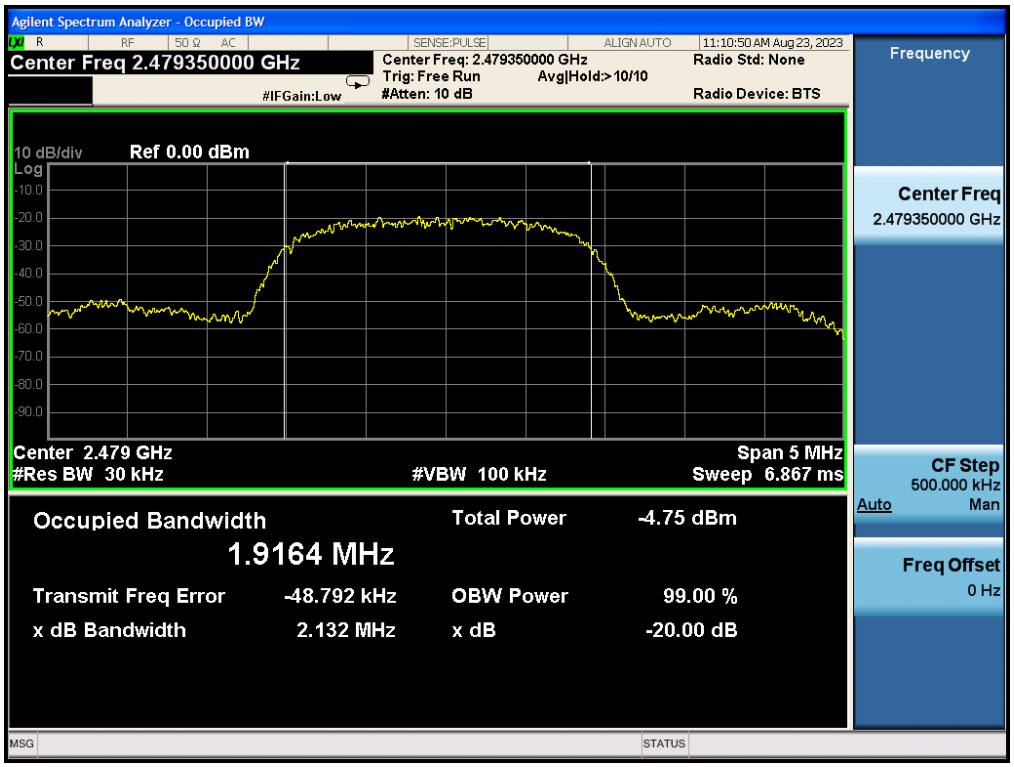
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



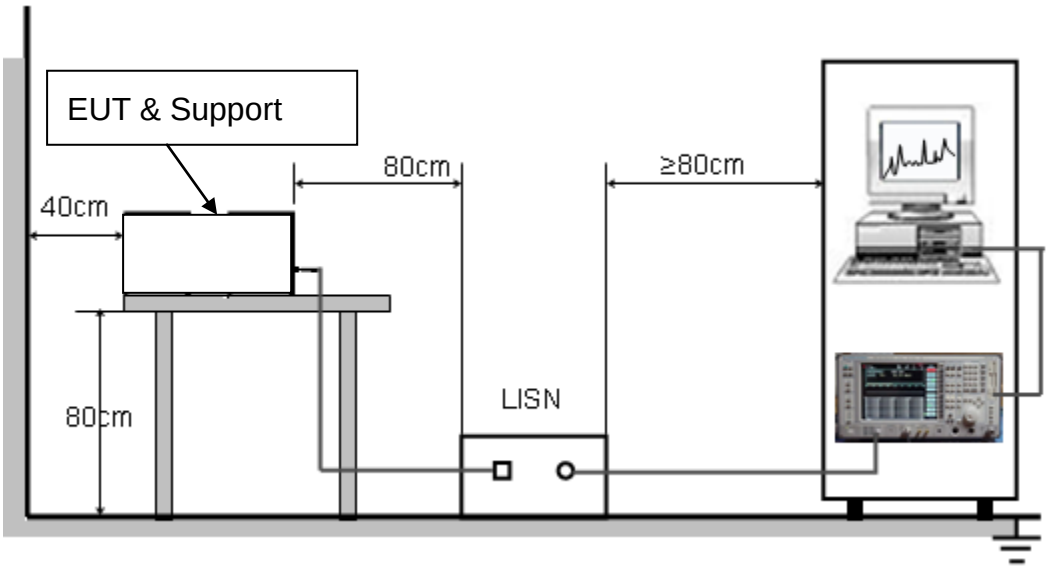
10. FCC LINE CONDUCTED EMISSION TEST

10.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note: 1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

10.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



10.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipment received AC120V/60Hz power from a LISN, if any.
5. The EUT received AC120V/60Hz power from a LISN.
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

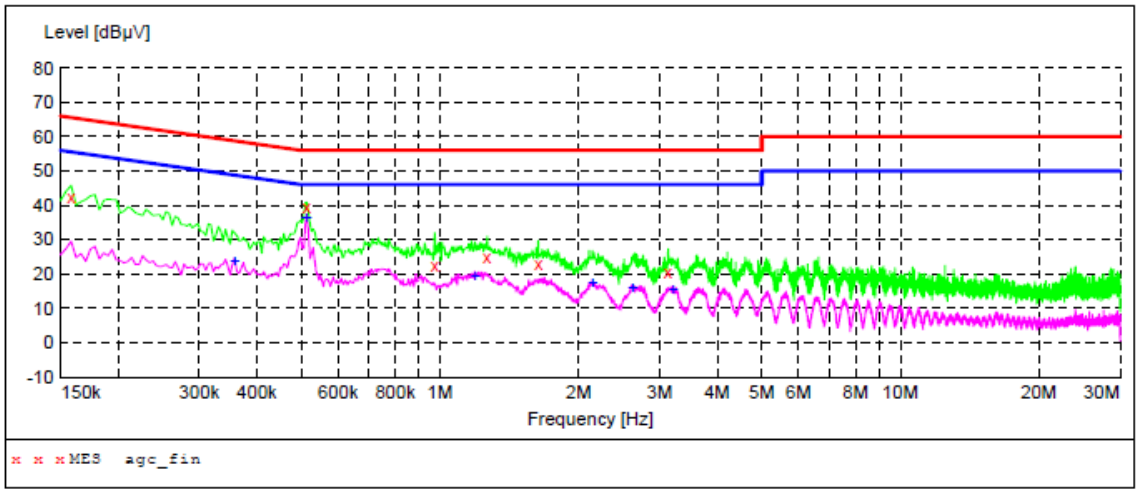
10.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

10.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

Antenna A0

Line Conducted Emission Test Line 1-L



MEASUREMENT RESULT: "agc_fin"

2023/7/31 9:47

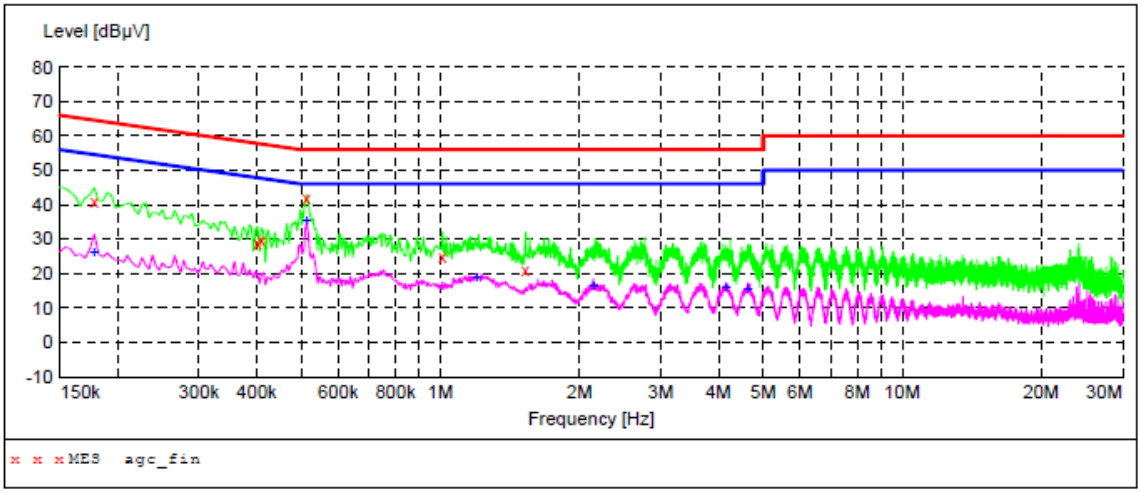
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.158000	42.20	6.1	66	23.4	QP	L1
0.514000	39.50	6.2	56	16.5	QP	L1
0.974000	22.30	6.2	56	33.7	QP	L1
1.266000	24.80	6.2	56	31.2	QP	L1
1.634000	23.10	6.2	56	32.9	QP	L1
3.130000	20.30	6.3	56	35.7	QP	L1

MEASUREMENT RESULT: "agc_fin2"

2023/7/31 9:47

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.358000	23.90	6.1	49	24.9	AV	L1
0.514000	36.60	6.2	46	9.4	AV	L1
1.190000	19.70	6.2	46	26.3	AV	L1
2.142000	17.40	6.2	46	28.6	AV	L1
2.622000	16.20	6.3	46	29.8	AV	L1
3.210000	15.40	6.3	46	30.6	AV	L1

Line Conducted Emission Test Line 2-N



MEASUREMENT RESULT: "agc_fin"

2023/7/31 9:43

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.178000	41.10	6.1	65	23.5	QP	N
0.402000	28.90	6.1	58	28.9	QP	N
0.410000	29.50	6.1	58	28.1	QP	N
0.514000	41.90	6.2	56	14.1	QP	N
1.010000	24.70	6.2	56	31.3	QP	N
1.530000	20.80	6.2	56	35.2	QP	N

MEASUREMENT RESULT: "agc_fin2"

2023/7/31 9:43

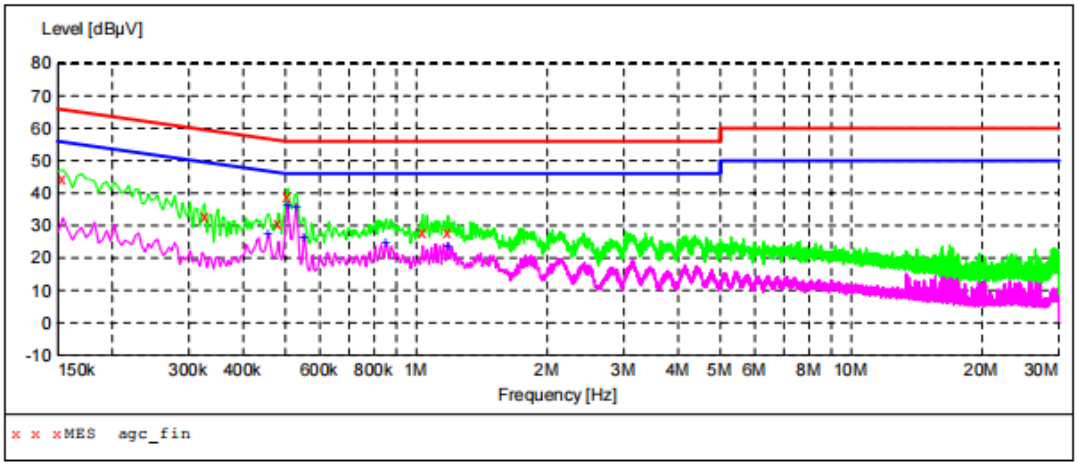
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.178000	26.10	6.1	55	28.5	AV	N
0.514000	35.60	6.2	46	10.4	AV	N
1.198000	18.90	6.2	46	27.1	AV	N
2.142000	16.70	6.2	46	29.3	AV	N
4.158000	16.10	6.3	46	29.9	AV	N
4.634000	15.70	6.3	46	30.3	AV	N

RESULT: PASS

Note: The mode 1 is the worst case, and only the data of the worst case recorded in this test report.

Antenna A1

Line Conducted Emission Test Line 1-L



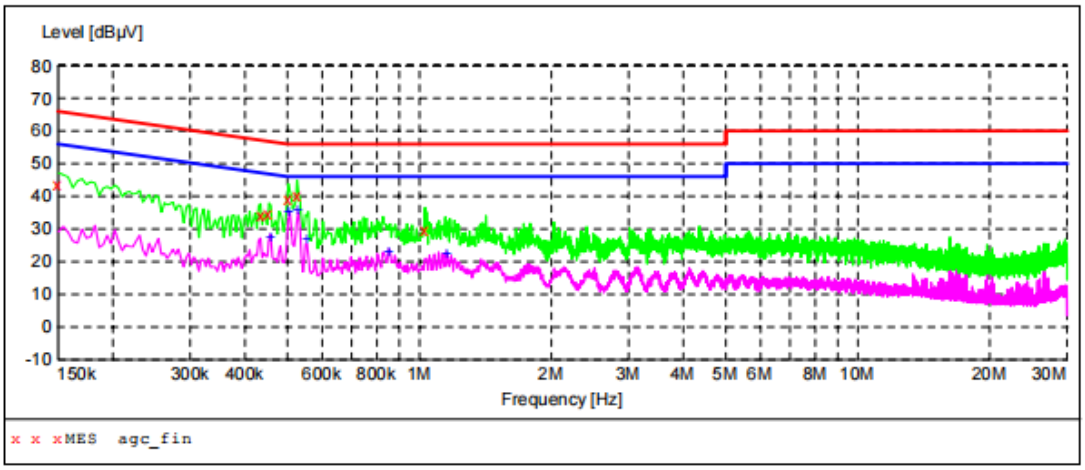
MEASUREMENT RESULT: "agc_fin"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.154000	44.20	6.1	66	21.6	QP	L1
0.326000	32.80	6.1	60	26.8	QP	L1
0.482000	30.90	6.1	56	25.4	QP	L1
0.506000	38.80	6.2	56	17.2	QP	L1
1.034000	27.90	6.2	56	28.1	QP	L1
1.182000	27.80	6.2	56	28.2	QP	L1

MEASUREMENT RESULT: "agc_fin2"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.458000	27.20	6.1	47	19.5	AV	L1
0.506000	36.30	6.2	46	9.7	AV	L1
0.530000	35.70	6.2	46	10.3	AV	L1
0.554000	26.50	6.2	46	19.5	AV	L1
0.854000	24.50	6.2	46	21.5	AV	L1
1.182000	23.40	6.2	46	22.6	AV	L1

Line Conducted Emission Test Line 2-N



MEASUREMENT RESULT: "agc_fin"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.150000	43.50	6.1	66	22.5	QP	N
0.434000	34.10	6.1	57	23.1	QP	N
0.454000	34.40	6.1	57	22.4	QP	N
0.502000	39.10	6.2	56	16.9	QP	N
0.526000	40.20	6.2	56	15.8	QP	N
1.030000	29.90	6.2	56	26.1	QP	N

MEASUREMENT RESULT: "agc_fin2"

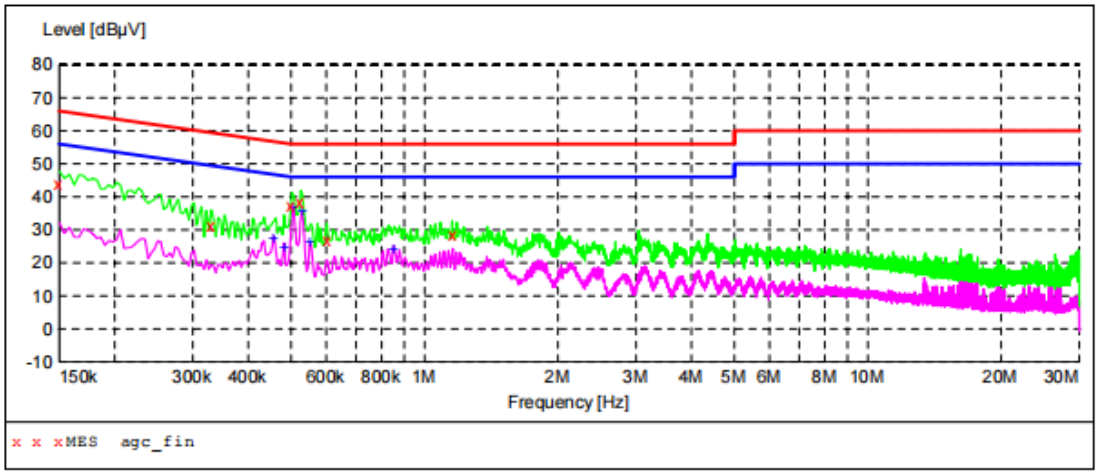
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.458000	27.20	6.1	47	19.5	AV	N
0.506000	35.40	6.2	46	10.6	AV	N
0.530000	35.60	6.2	46	10.4	AV	N
0.554000	26.60	6.2	46	19.4	AV	N
0.854000	23.20	6.2	46	22.8	AV	N
1.154000	22.50	6.2	46	23.5	AV	N

RESULT: PASS

Note: The mode 1 is the worst case, and only the data of the worst case recorded in this test report.

Antenna B0

Line Conducted Emission Test Line 1-L



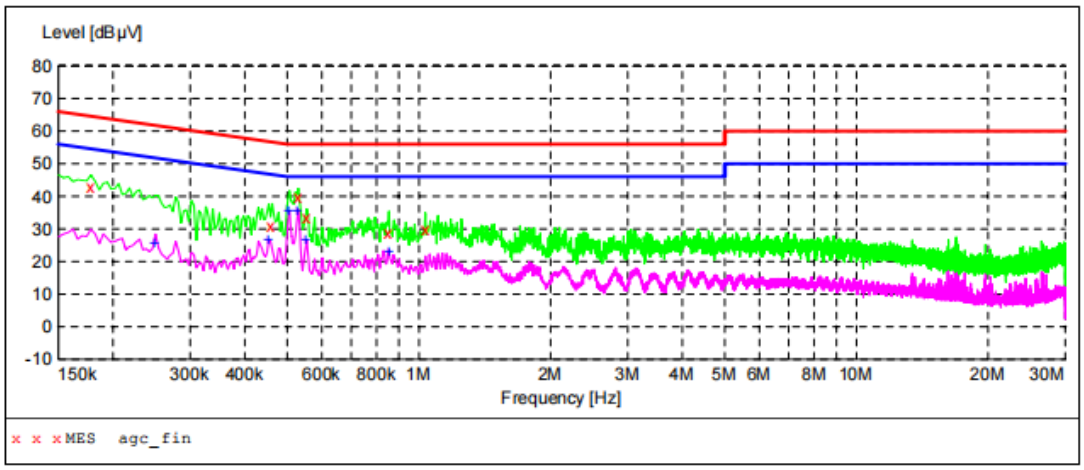
MEASUREMENT RESULT: "agc_fin"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.150000	43.70	6.1	66	22.3	QP	L1
0.330000	31.00	6.1	60	28.5	QP	L1
0.502000	37.50	6.2	56	18.5	QP	L1
0.526000	38.50	6.2	56	17.5	QP	L1
0.602000	27.10	6.2	56	28.9	QP	L1
1.154000	28.30	6.2	56	27.7	QP	L1

MEASUREMENT RESULT: "agc_fin2"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.458000	27.50	6.1	47	19.2	AV	L1
0.482000	24.60	6.1	46	21.7	AV	L1
0.506000	36.50	6.2	46	9.5	AV	L1
0.530000	35.80	6.2	46	10.2	AV	L1
0.554000	26.50	6.2	46	19.5	AV	L1
0.854000	24.30	6.2	46	21.7	AV	L1

Line Conducted Emission Test Line 2-N



MEASUREMENT RESULT: "agc_fin"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.178000	43.00	6.1	65	21.6	QP	N
0.462000	30.80	6.1	57	25.9	QP	N
0.530000	39.90	6.2	56	16.1	QP	N
0.554000	33.60	6.2	56	22.4	QP	N
0.854000	28.80	6.2	56	27.2	QP	N
1.034000	29.90	6.2	56	26.1	QP	N

MEASUREMENT RESULT: "agc_fin2"

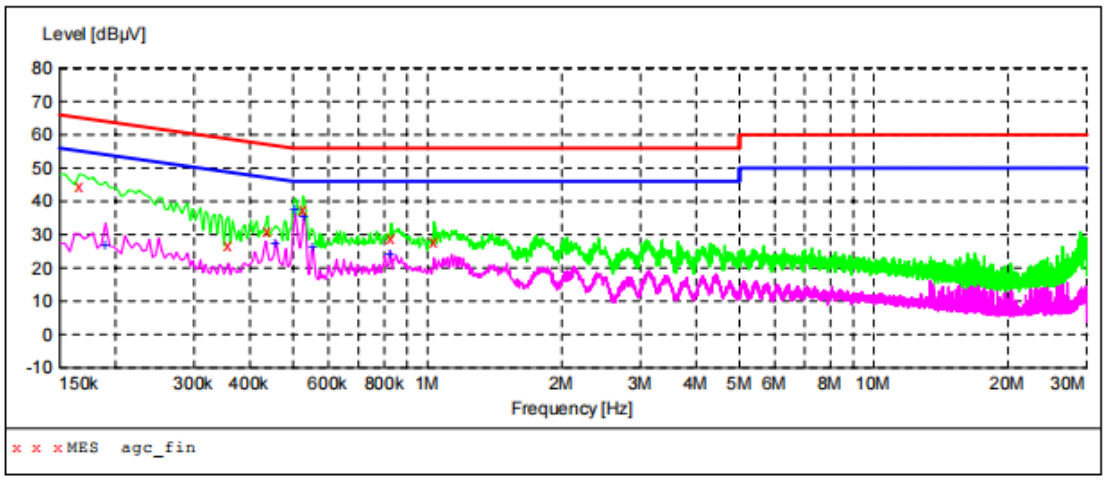
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.250000	25.80	6.1	52	26.0	AV	N
0.454000	26.50	6.1	47	20.3	AV	N
0.506000	35.30	6.2	46	10.7	AV	N
0.530000	35.60	6.2	46	10.4	AV	N
0.554000	26.60	6.2	46	19.4	AV	N
0.854000	23.20	6.2	46	22.8	AV	N

RESULT: PASS

Note: The mode 1 is the worst case, and only the data of the worst case recorded in this test report.

Antenna B1

Line Conducted Emission Test Line 1-L



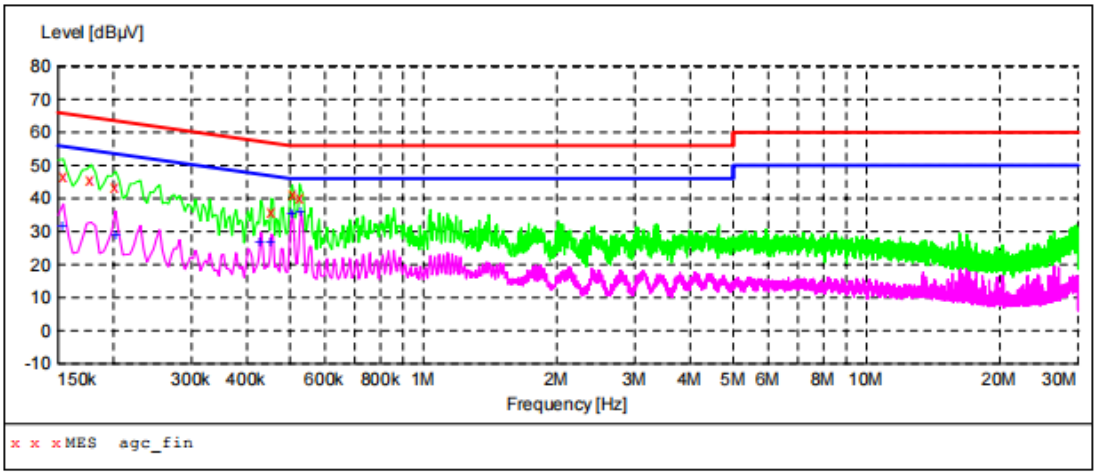
MEASUREMENT RESULT: "agc_fin"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.166000	44.40	6.1	65	20.8	QP	L1
0.358000	26.60	6.1	59	32.2	QP	L1
0.438000	31.00	6.1	57	26.1	QP	L1
0.526000	37.70	6.2	56	18.3	QP	L1
0.830000	29.20	6.2	56	26.8	QP	L1
1.034000	28.00	6.2	56	28.0	QP	L1

MEASUREMENT RESULT: "agc_fin2"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.190000	26.90	6.1	54	27.1	AV	L1
0.458000	27.10	6.1	47	19.6	AV	L1
0.506000	37.60	6.2	46	8.4	AV	L1
0.530000	35.40	6.2	46	10.6	AV	L1
0.554000	26.20	6.2	46	19.8	AV	L1
0.826000	23.90	6.2	46	22.1	AV	L1

Line Conducted Emission Test Line 2-N



MEASUREMENT RESULT: "agc_fin"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.154000	46.90	6.1	66	18.9	QP	N
0.178000	45.40	6.1	65	19.2	QP	N
0.202000	43.60	6.1	64	19.9	QP	N
0.454000	36.00	6.1	57	20.8	QP	N
0.506000	41.30	6.2	56	14.7	QP	N
0.526000	40.50	6.2	56	15.5	QP	N

MEASUREMENT RESULT: "agc_fin2"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.154000	31.70	6.1	56	24.1	AV	N
0.202000	29.20	6.1	54	24.3	AV	N
0.430000	26.70	6.1	47	20.6	AV	N
0.454000	27.00	6.1	47	19.8	AV	N
0.506000	35.50	6.2	46	10.5	AV	N
0.530000	35.90	6.2	46	10.1	AV	N

RESULT: PASS

Note: The mode 1 is the worst case, and only the data of the worst case recorded in this test report.

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC05125230705AP02

APPENDIX B: PHOTOGRAPHS OF THE EUT

Refer to the Report No.: AGC05125230705AP03

----END OF REPORT----

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1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").

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3.The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.

5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.

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8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.

9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.