

FCC Test Report

FCC ID : SUFIFT23704A
Equipment : InfoTag 3.7 G3 COLOUR
Model No. : InfoTag 3.7
Brand Name : DIGI
Applicant : DIGI SINGAPORE PTE. LTD.
Address : 4 Leng Kee Rd, #05-03/04/05&11, SIS Building,
Singapore 159088
Standard : 47 CFR FCC Part 15.249
Received Date : May 02, 2023
Tested Date : May 04 ~ May 05, 2023

We, International Certification Corporation, would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:

Approved by:



Along Chen / Assistant Manager



Gary Chang / Manager

Table of Contents

1	GENERAL DESCRIPTION	5
1.1	Information.....	5
1.2	Local Support Equipment List	7
1.3	Test Setup Chart	7
1.4	The Equipment List	8
1.5	Test Standards	8
1.6	Deviation from Test Standard and Measurement Procedure.....	8
1.7	Measurement Uncertainty	9
2	TEST CONFIGURATION.....	10
2.1	Testing Facility	10
2.2	The Worst Test Modes and Channel Details	10
3	TRANSMITTER TEST RESULTS	11
3.1	Unwanted Emission.....	11
3.2	20dB and Occupied Bandwidth.....	14
4	TEST LABORATORY INFORMATION	15

Appendix A. Unwanted Emission

Appendix B. 20dB and Occupied Bandwidth

Release Record

Report No.	Version	Description	Issued Date
FR190603-01	Rev. 01	Initial issue	May 30, 2023
FR190603-01	Rev. 02	Adding Attenuator and filter into the Equipment List.	Jun. 13, 2023

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	AC Power Line Conducted Emissions	Note ¹	N/A
15.249(a)	Field Strength of Fundamental	Meet the requirement of limit	Pass
15.249(a)(d)	Field Strength of Harmonics and Emissions Radiated outside of the Specified Frequency Bands	Meet the requirement of limit	Pass
15.215(c)	20dB bandwidth	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

N/A means Not Applicable.
Note¹: The EUT consumes DC power from battery, so the test is not required.

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

RF General Information				
Frequency Range (MHz)	Modulation	Ch. Freq. (MHz)	Channel Number	Data Rate
2402-2480	GFSK	2402-2480	0-78 [79]	250kbps

1.1.2 Antenna Details

Ant. No.	Brand	Model	Type	Connector	Gain (dBi)
1	DIGI SINGAPORE PTE. LTD.	DIGI2.4GIFA	PCB ANTENNA	LAYOUT ON PCB BOARD	+3.3dB

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Type	3Vdc from battery (Coin Battery x3)
-------------------	-------------------------------------

1.1.4 Accessories

N/A

1.1.5 Channel List

Frequency band (MHz)				2400~2483.5			
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461	---	---

1.1.6 Test Tool and Duty Cycle

Test Tool	SmartRF_Studio_7, Version: 7.0	
Duty Cycle and Duty Factor	Duty Cycle (%)	Duty Factor (dB)
	82.01	0.86

1.1.7 Power Index of Test Tool

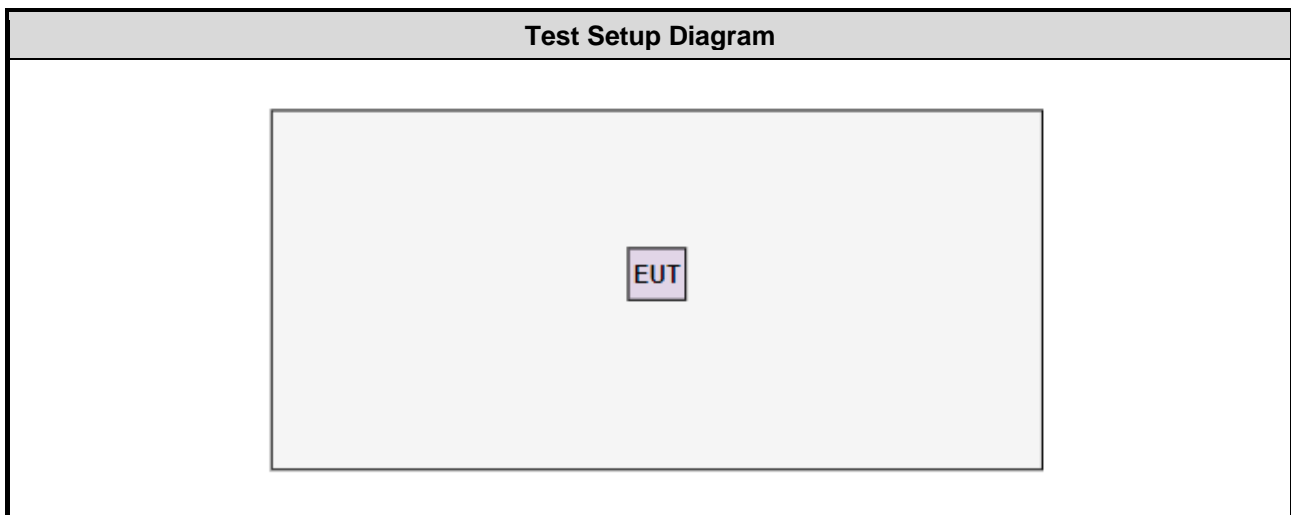
Modulation Mode	Test Frequency (MHz)		
	2402	2440	2480
GFSK	Default	Default	Default

1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	Laptop	DELL	Latitude 5400	DoC	---
2	Fixture	DIGI	SmartRF05EB	---	Provided by applicant.

Note: The support laptop and fixture are disconnected from EUT and removed from testing table after sending command from laptop to control EUT to transmit and receive continuously.

1.3 Test Setup Chart



1.4 The Equipment List

Test Item	Radiated Emission				
Test Site	966 chamber3 / (03CH03-WS)				
Tested Date	May 04 ~ May 05, 2023				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Mar. 03, 2023	Mar. 02, 2024
Spectrum Analyzer	R&S	FSV40	101499	Mar. 16, 2023	Mar. 15, 2024
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 01, 2022	Oct. 31, 2023
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Jun. 28, 2022	Jun. 27, 2023
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Dec. 15, 2022	Dec. 14, 2023
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 27, 2022	Oct. 26, 2023
Preamplifier	EMC	EMC02325	980187	Jul. 16, 2022	Jul. 15, 2023
Preamplifier	EMC	EMC184045SE	980897	Aug. 01, 2022	Jul. 31, 2023
Preamplifier	EMC	EMC184045SE	980903	Jul. 16, 2022	Jul. 15, 2023
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 04, 2022	Oct. 03, 2023
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800-001	Sep. 23, 2022	Sep. 22, 2023
LF cable-3M	EMC	EMC8D-NM-NM-3000	131103	Sep. 23, 2022	Sep. 22, 2023
LF cable-13M	EMC	EMC8D-NM-NM-13000	131104	Sep. 23, 2022	Sep. 22, 2023
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Sep. 23, 2022	Sep. 22, 2023
RF cable-8M	EMC	EMC104-SM-SM-8000	181107	Sep. 23, 2022	Sep. 22, 2023
Attenuator	woken	PE7013-10	10-1	Oct. 14, 2022	Oct. 13, 2023
HIGHPASS FILTER	WI	WHK3.1-18G-10SS	43	Sep. 28, 2022	Sep. 27, 2023
Measurement Software	Sporton	SENSE-15247_DTS	V5.11.3	NA	NA
Measurement Software	Sporton	SENSE-EMI	V5.10.8	NA	NA
Measurement Software	AUDIX	e3	6.120210g	NA	NA

Note: Calibration Interval of instruments listed above is one year.

1.5 Test Standards

47 CFR FCC Part 15.249

ANSI C63.10-2013

1.6 Deviation from Test Standard and Measurement Procedure

None

1.7 Measurement Uncertainty

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

Measurement Uncertainty	
Parameters	Uncertainty
Bandwidth	±34.130 Hz
Unwanted Emission ≤ 1GHz	±3.96 dB
Unwanted Emission > 1GHz	±4.51 dB

2 Test Configuration

2.1 Testing Facility

Test Laboratory	International Certification Corporation
Test Site	TH01-WS
Address of Test Site	No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)
Test Site	03CH03-WS
Address of Test Site	No.14-1, Lane 19, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)

- FCC Designation No.: TW0009
- FCC site registration No.: 207696
- ISED#: 10807C
- CAB identifier: TW2732

2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Unwanted Emissions ≤ 1GHz	GFSK	2402	250 kbps	--
Unwanted Emissions > 1GHz	GFSK	2402, 2440, 2480	250 kbps	--
Field Strength of Fundamental	GFSK	2402, 2440, 2480	250 kbps	--
20dB bandwidth	GFSK	2402, 2440, 2480	250 kbps	--

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Z-plane** results were found as the worst case and were shown in this report.

3 Transmitter Test Results

3.1 Unwanted Emission

This section includes field strength of fundamental, field strength of harmonics and emissions radiated outside of the operating frequency bands.

3.1.1 Limit of field strength of fundamental and field strength of harmonics

Fundamental Frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
2400–2483.5 MHz	50	500

3.1.2 Limit of Unwanted Emissions

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in below table, whichever is the lesser attenuation.

Radiated emission limits			
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:
Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit

Note 2:
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

3.1.3 Test Procedures

1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

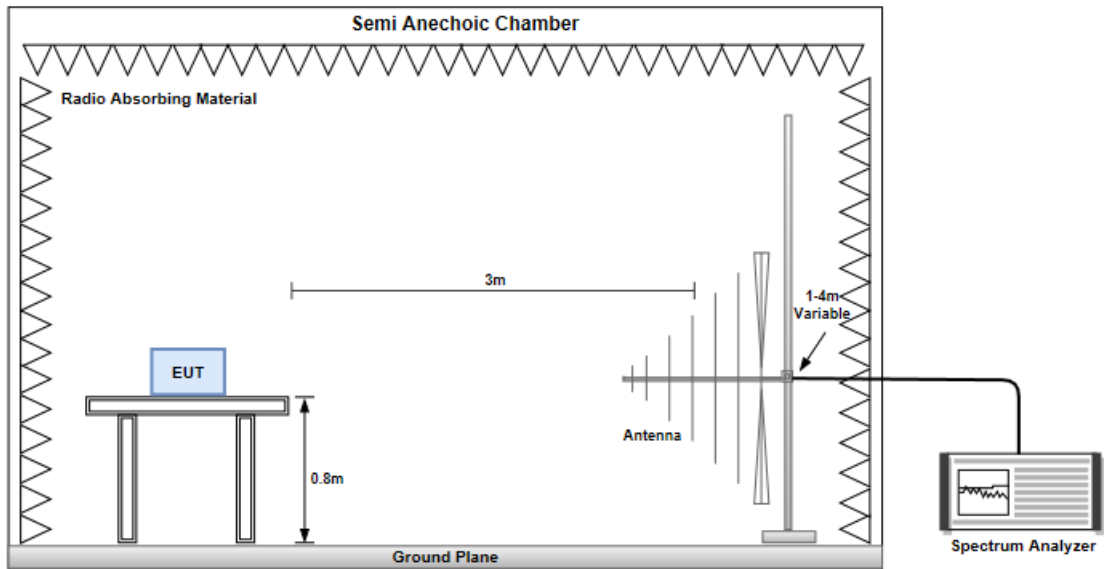
1. Radiated emission below 1GHz
120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission
2. Radiated emission above 1GHz / Peak value except fundamental
RBW=1MHz, VBW=3MHz and Peak detector
3. Radiated emission above 1GHz / Average value for field strength of fundamental and harmonics
The average value is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:

$$20\log(\text{Duty cycle}) = 20\log \frac{0.80797 \times 3\text{ms}}{100 \text{ms}} = -32.31\text{dB}$$

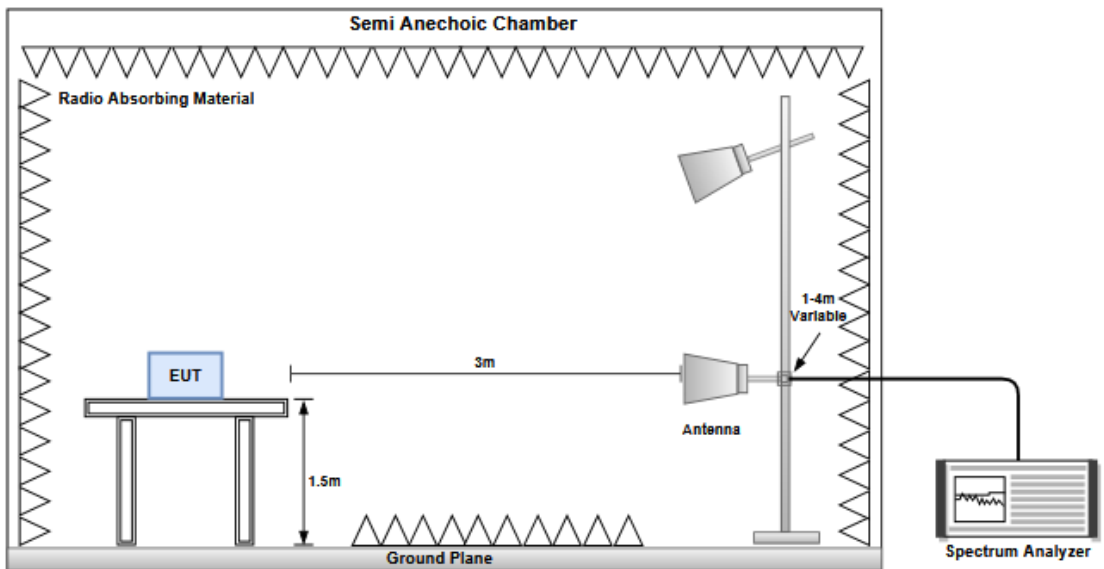
4. Radiated emission above 1GHz / Average value for other emissions
RBW=1MHz, VBW=1/T and Peak detector
5. Radiated emission Peak value for fundamental
RBW=2MHz, VBW=10MHz and Peak detector

3.1.4 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.1.5 Test Results

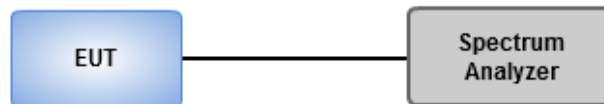
Refer to Appendix A.

3.2 20dB and Occupied Bandwidth

3.2.1 Test Procedures

1. Set resolution bandwidth (RBW) = 10 kHz, Video bandwidth = 30 kHz.
2. Detector = Peak, Trace mode = max hold
3. Sweep = auto couple, Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 20dB relative to the maximum level measured in the fundamental emission.
5. Use the occupied measurement function of spectrum analyzer to measure 99% occupied bandwidth.

3.2.2 Test Setup



3.2.3 Test Results

Ambient Condition	24°C / 65%	Tested By	Paul Lin
--------------------------	------------	------------------	----------

Refer to Appendix B.

4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corporation (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

Linkou

Tel: 886-2-2601-1640

No.30-2, Ding Fwu Tsuen, Lin Kou
District, New Taipei City, Taiwan
(R.O.C.)

Kwei Shan

Tel: 886-3-271-8666

No.3-1, Lane 6, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)
No.2-1, Lane 6, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)

Kwei Shan Site II

Tel: 886-3-271-8640

No.14-1, Lane 19, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)

If you have any suggestion, please feel free to contact us as below information.

Tel: 886-3-271-8666

Fax: 886-3-318-0345

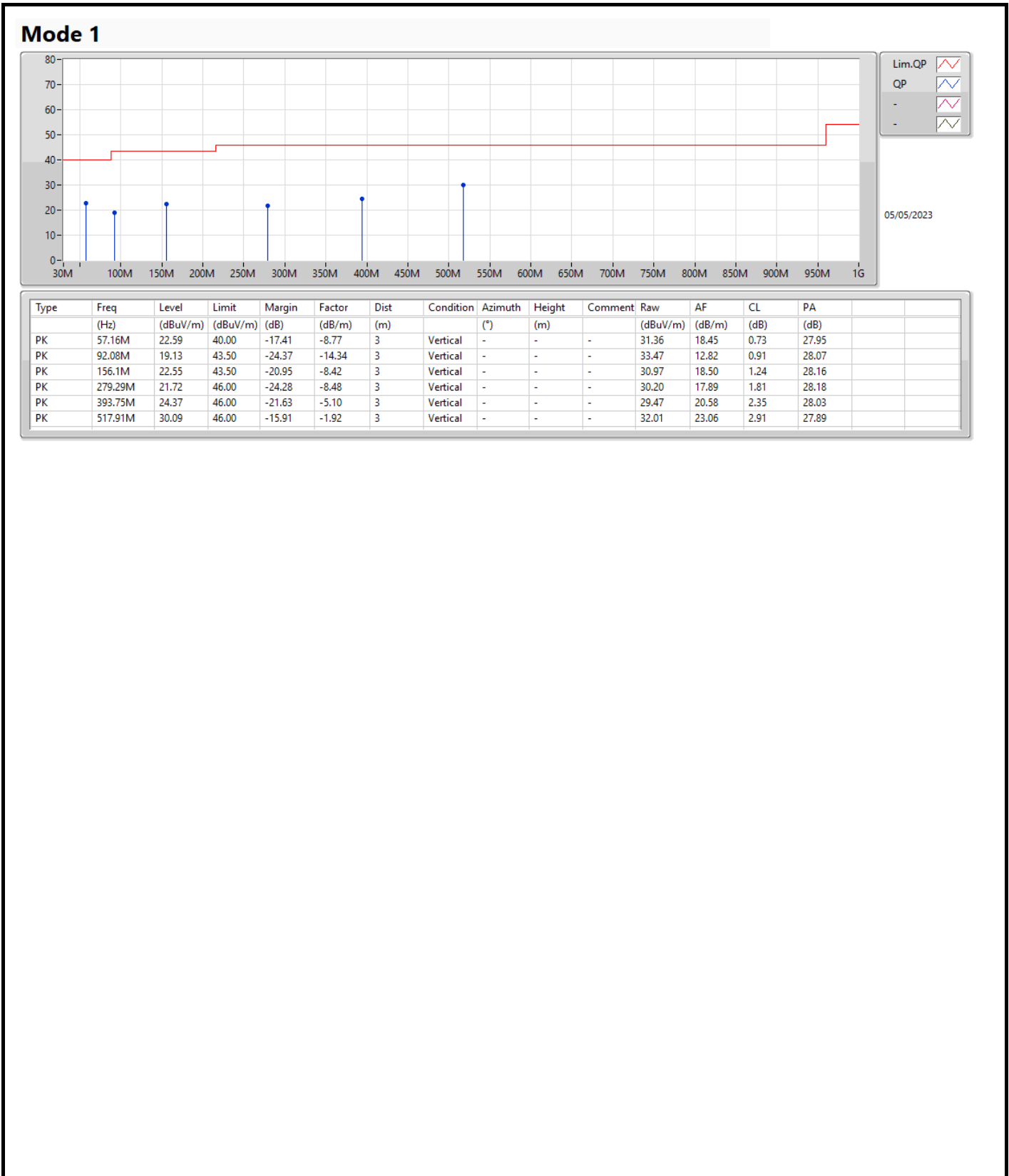
Email: ICC_Service@icertifi.com.tw

==END==



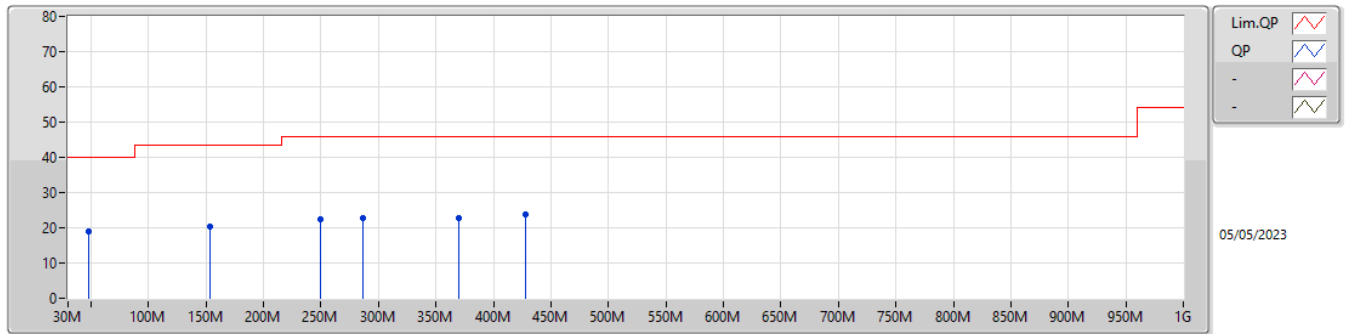
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1 (2402 MHz)	Pass	PK	517.91M	30.09	46.00	-15.91	Vertical





Mode 1



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
PK	47.46M	19.10	40.00	-20.90	-8.43	3	Horizontal	-	-	-	27.53	18.79	0.69	27.91
PK	153.19M	20.30	43.50	-23.20	-8.50	3	Horizontal	-	-	-	28.80	18.42	1.23	28.15
PK	286.08M	22.74	46.00	-23.26	-8.22	3	Horizontal	-	-	-	30.96	18.12	1.84	28.18
PK	249.22M	22.51	46.00	-23.49	-9.64	3	Horizontal	-	-	-	32.15	16.88	1.67	28.19
PK	427.7M	23.95	46.00	-22.05	-4.19	3	Horizontal	-	-	-	28.14	21.31	2.49	27.99
PK	369.5M	22.59	46.00	-23.41	-6.08	3	Horizontal	-	-	-	28.67	19.77	2.22	28.07



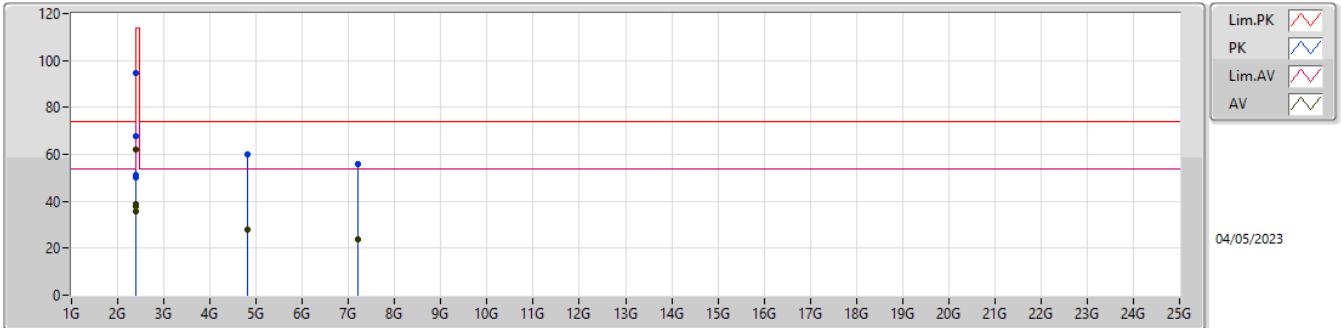
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
SRD	Pass	PK	2.4G	71.64	74.00	-2.36	3	Horizontal	173	1.61	-



2.4-2.4835GHz_SRD

2402MHz_TX

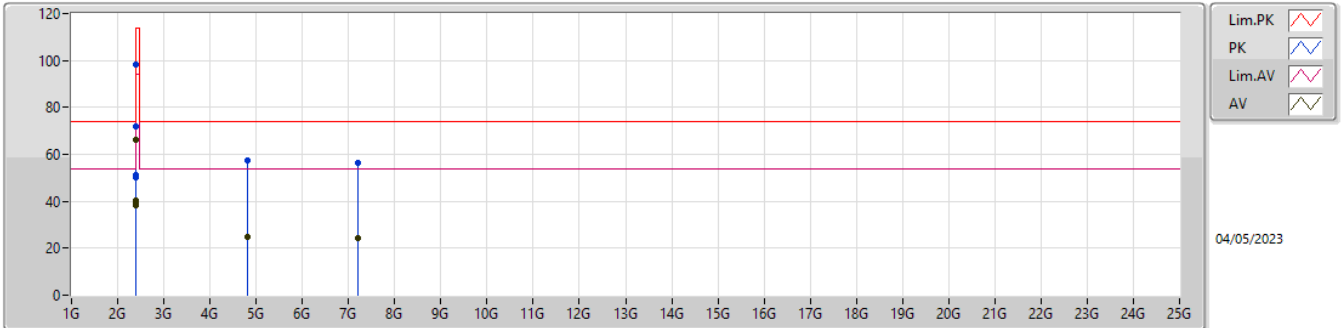


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.386G	50.11	74.00	-23.89	53.88	3	Vertical	271	2.90	-	27.98	4.78	36.53
AV	2.386G	39.03	54.00	-14.97	42.80	3	Vertical	271	2.90	-	27.98	4.78	36.53
PK	2.39G	51.10	74.00	-22.90	54.89	3	Vertical	271	2.90	-	27.96	4.78	36.53
AV	2.39G	38.00	54.00	-16.00	41.79	3	Vertical	271	2.90	-	27.96	4.78	36.53
PK	2.4G	67.79	74.00	-6.21	71.65	3	Vertical	271	2.90	-	27.90	4.78	36.54
AV	2.4G	35.48	54.00	-18.52	-	3	Vertical	271	2.90	-	-	-	-
PK	2.402G	94.40	114.00	-19.60	98.26	3	Vertical	271	2.90	-	27.90	4.78	36.54
AV	2.402G	62.09	94.00	-31.91	-	3	Vertical	271	2.90	-	-	-	-
PK	4.804G	60.19	74.00	-13.81	60.16	3	Vertical	153	1.25	-	31.52	6.83	38.32
AV	4.804G	27.88	54.00	-26.12	-	3	Vertical	153	1.25	-	-	-	-
PK	7.206G	56.08	74.00	-17.92	50.16	3	Vertical	164	1.09	-	36.61	8.53	39.22
AV	7.206G	23.77	54.00	-30.23	-	3	Vertical	164	1.09	-	-	-	-



2.4-2.4835GHz_SRD

2402MHz_TX

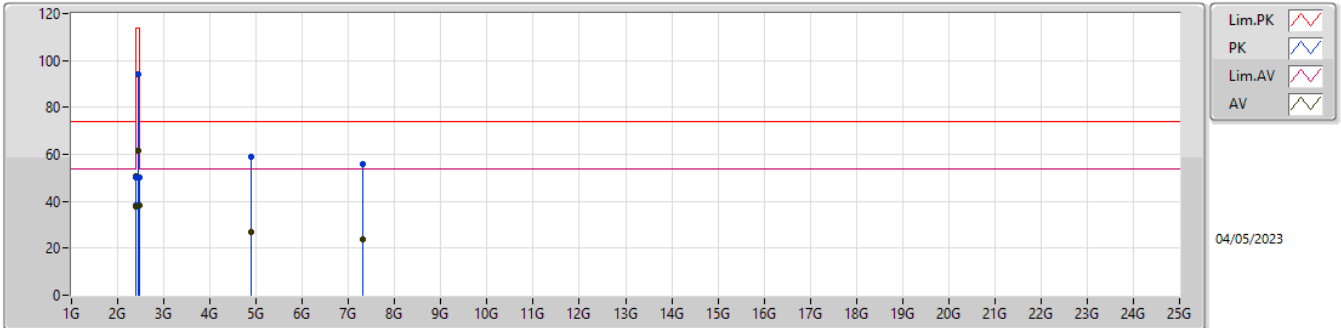


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.386G	51.17	74.00	-22.83	54.94	3	Horizontal	173	1.61	-	27.98	4.78	36.53
AV	2.386G	40.09	54.00	-13.91	43.86	3	Horizontal	173	1.61	-	27.98	4.78	36.53
PK	2.39G	50.18	74.00	-23.82	53.97	3	Horizontal	173	1.61	-	27.96	4.78	36.53
AV	2.39G	38.22	54.00	-15.78	42.01	3	Horizontal	173	1.61	-	27.96	4.78	36.53
PK	2.4G	71.64	74.00	-2.36	75.50	3	Horizontal	173	1.61	-	27.90	4.78	36.54
AV	2.4G	39.33	54.00	-14.67	-	3	Horizontal	173	1.61	-	-	-	-
PK	2.402G	98.39	114.00	-15.61	102.25	3	Horizontal	173	1.61	-	27.90	4.78	36.54
AV	2.402G	66.08	94.00	-27.92	-	3	Horizontal	173	1.61	-	-	-	-
PK	4.804G	57.38	74.00	-16.62	57.35	3	Horizontal	155	2.76	-	31.52	6.83	38.32
AV	4.804G	25.07	54.00	-28.93	-	3	Horizontal	155	2.76	-	-	-	-
PK	7.206G	56.60	74.00	-17.40	50.68	3	Horizontal	136	1.00	-	36.61	8.53	39.22
AV	7.206G	24.29	54.00	-29.71	-	3	Horizontal	136	1.00	-	-	-	-



2.4-2.4835GHz_SRD

2440MHz_TX

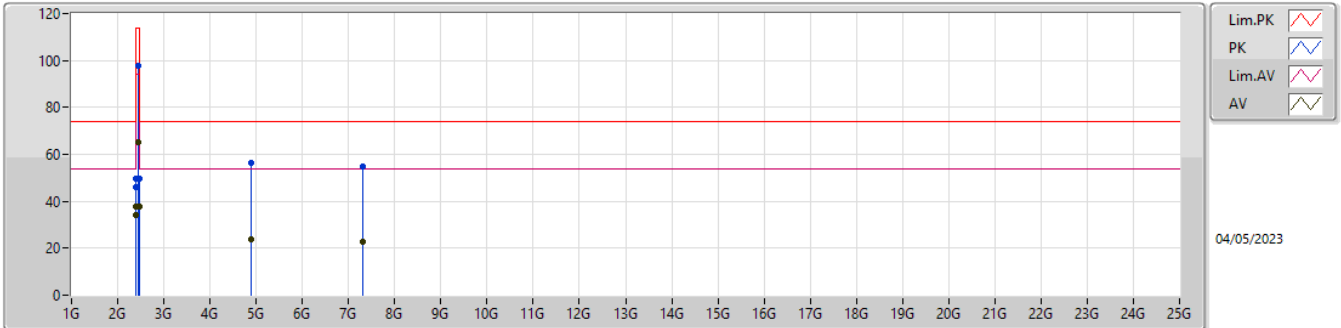


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.39G	50.17	74.00	-23.83	53.96	3	Vertical	256	3.18	-	27.96	4.78	36.53
AV	2.39G	37.81	54.00	-16.19	41.60	3	Vertical	256	3.18	-	27.96	4.78	36.53
PK	2.4G	38.29	74.00	-35.71	42.15	3	Vertical	256	3.18	-	27.90	4.78	36.54
AV	2.4G	50.65	54.00	-3.35	54.51	3	Vertical	256	3.18	-	27.90	4.78	36.54
PK	2.44G	94.10	114.00	-19.90	98.07	3	Vertical	256	3.18	-	27.82	4.79	36.58
AV	2.44G	61.79	94.00	-32.21	-	3	Vertical	256	3.18	-	-	-	-
PK	2.4835G	50.28	74.00	-23.72	54.37	3	Vertical	256	3.18	-	27.73	4.80	36.62
AV	2.4835G	38.24	54.00	-15.76	42.33	3	Vertical	256	3.18	-	27.73	4.80	36.62
PK	4.88G	59.11	74.00	-14.89	59.01	3	Vertical	127	1.18	-	31.58	6.89	38.37
AV	4.88G	26.80	54.00	-27.2	-	3	Vertical	127	1.18	-	-	-	-
PK	7.32G	55.90	74.00	-18.10	49.99	3	Vertical	162	1.06	-	36.66	8.59	39.34
AV	7.32G	23.59	54.00	-30.41	-	3	Vertical	162	1.06	-	-	-	-



2.4-2.4835GHz_SRD

2440MHz_TX

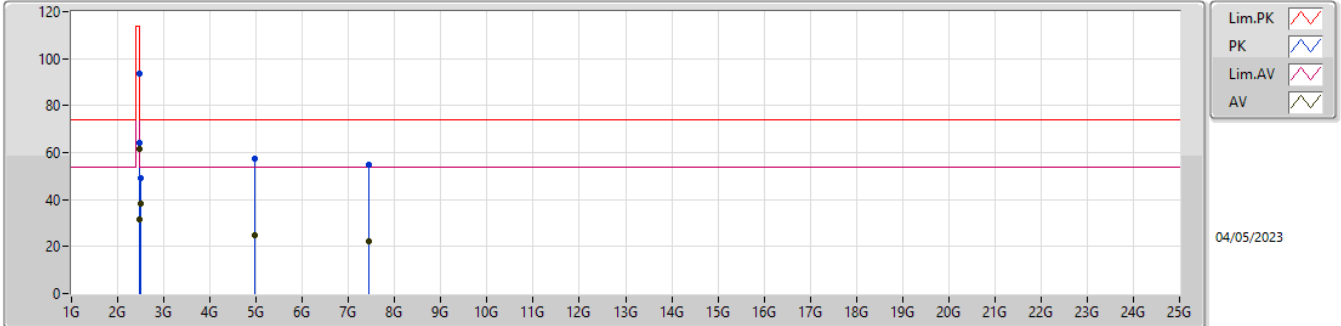


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.39G	49.62	74.00	-24.38	53.41	3	Horizontal	174	1.78	-	27.96	4.78	36.53
AV	2.39G	37.63	54.00	-16.37	41.42	3	Horizontal	174	1.78	-	27.96	4.78	36.53
PK	2.4G	46.04	74.00	-27.96	49.90	3	Horizontal	174	1.78	-	27.90	4.78	36.54
AV	2.4G	33.95	54.00	-20.05	37.81	3	Horizontal	174	1.78	-	27.90	4.78	36.54
PK	2.44G	97.56	114.00	-16.44	101.53	3	Horizontal	174	1.78	-	27.82	4.79	36.58
AV	2.44G	65.25	94.00	-28.75	-	3	Horizontal	174	1.78	-	-	-	-
PK	2.4835G	49.48	74.00	-24.52	53.57	3	Horizontal	174	1.78	-	27.73	4.80	36.62
AV	2.4835G	37.75	54.00	-16.25	41.84	3	Horizontal	174	1.78	-	27.73	4.80	36.62
PK	4.88G	56.20	74.00	-17.80	56.10	3	Horizontal	158	1.00	-	31.58	6.89	38.37
AV	4.88G	23.89	54.00	-30.11	-	3	Horizontal	158	1.00	-	-	-	-
PK	7.32G	55.08	74.00	-18.92	49.17	3	Horizontal	138	1.00	-	36.66	8.59	39.34
AV	7.32G	22.77	54.00	-31.23	-	3	Horizontal	138	1.00	-	-	-	-



2.4-2.4835GHz_SRD

2480MHz_TX

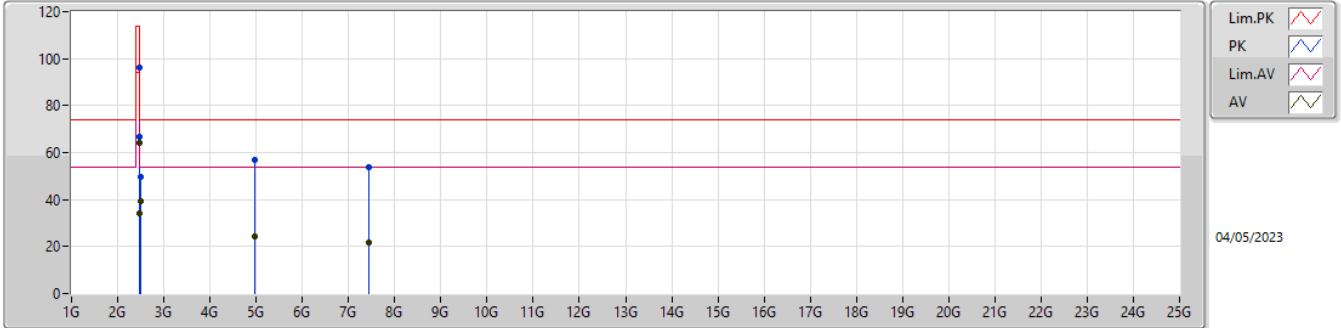


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.48G	93.84	114.00	-20.16	97.92	3	Vertical	252	2.10	-	27.74	4.80	36.62
AV	2.48G	61.53	94.00	-32.47	-	3	Vertical	252	2.10	-	--	-	-
PK	2.4835G	64.00	74.00	-10.00	68.09	3	Vertical	252	2.10	-	27.73	4.80	36.62
AV	2.4835G	31.69	54.00	-22.31	-	3	Vertical	252	2.10	-	-	-	-
PK	2.496G	49.17	74.00	-24.83	53.30	3	Vertical	252	2.10	-	27.71	4.80	36.64
AV	2.496G	38.03	54.00	-15.97	42.16	3	Vertical	252	2.10	-	27.71	4.80	36.64
PK	4.96G	57.30	74.00	-16.70	57.12	3	Vertical	128	1.00	-	31.64	6.96	38.42
AV	4.96G	24.99	54.00	-29.01	-	3	Vertical	128	1.00	-	-	-	-
PK	7.44G	54.70	74.00	-19.30	48.74	3	Vertical	161	1.14	-	36.78	8.64	39.46
AV	7.44G	22.39	54.00	-31.61	-	3	Vertical	161	1.14	-	-	-	-

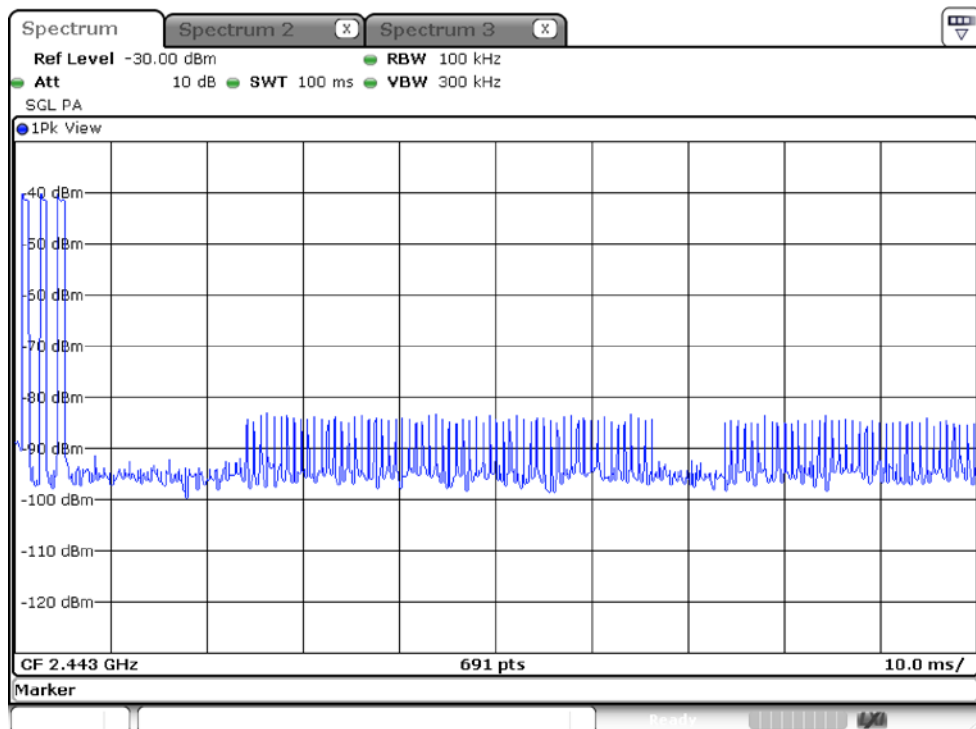
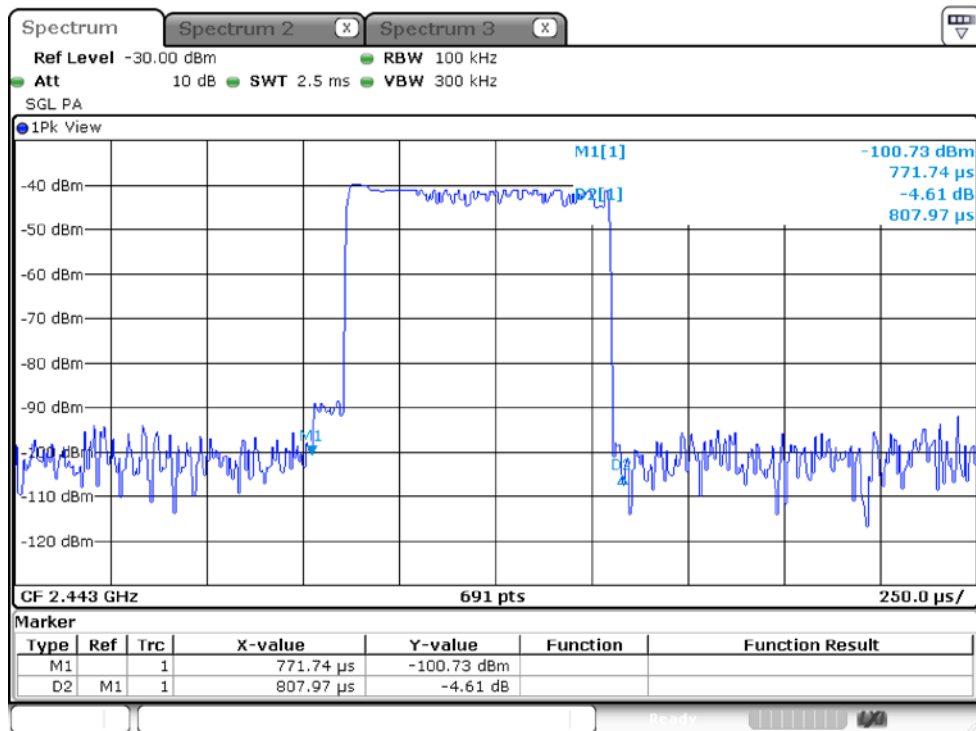


2.4-2.4835GHz_SRD

2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.48G	96.41	114.00	-17.59	100.49	3	Horizontal	173	1.72	-	27.74	4.80	36.62
AV	2.48G	64.10	94.00	-29.90	-	3	Horizontal	173	1.72	-	-	-	-
PK	2.4835G	66.52	74.00	-7.48	70.61	3	Horizontal	173	1.72	-	27.73	4.80	36.62
AV	2.4835G	34.21	54.00	-19.79	-	3	Horizontal	173	1.72	-	-	-	-
PK	2.496G	49.84	74.00	-24.16	53.97	3	Horizontal	173	1.72	-	27.71	4.80	36.64
AV	2.496G	39.23	54.00	-14.77	43.36	3	Horizontal	173	1.72	-	27.71	4.80	36.64
PK	4.96G	56.75	74.00	-17.25	56.57	3	Horizontal	155	1.00	-	31.64	6.96	38.42
AV	4.96G	24.44	54.00	-29.56	-	3	Horizontal	155	1.00	-	-	-	-
PK	7.44G	53.89	74.00	-20.11	47.93	3	Horizontal	137	1.00	-	36.78	8.64	39.46
AV	7.44G	21.58	54.00	-32.42	-	3	Horizontal	137	1.00	-	-	-	-



$$20\log(\text{Duty cycle}) = 20\log \frac{0.80797 \times 3 \text{ ms}}{100 \text{ ms}} = -32.31 \text{ dB}$$



Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
2402	0.414	0.747
2440	0.287	0.553
2480	0.307	0.593

