



FCC RADIO TEST REPORT

Applicant	: Sunitec Technology CO., Limited
Address	: Building C No.725, WeixiangTai Industrial Zone, FuCheng Street, LongHua District, ShenZhen, Guangdong, China.
Equipment	: Bluetooth module
Model No.	: BMS003P
Trade Name	: Sunitec
FCC ID	: 2BHC6BMS003
Standard	: FCC part 15 Subpart C §15.247

I HEREBY CERTIFY THAT:

The sample was received on Nov. 05, 2025 and the testing was completed on Dec. 22, 2025 at Cerpass Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of Cerpass Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Mark Liao / Supervisor

Laboratory Accreditation:

Cerpass Technology Corporation Test Laboratory





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History of this test report

Report No	Issued Date	Description
25110060-TRDFCC02	Dec. 23, 2025	Initial Issue



1. Summary of Test Procedure and Test Results

1.1 Applicable Standards

ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024

FCC Rules and Regulations Part 15 Subpart C §15.247

FCC Rule	. Description of Test	Result
15.203	. Antenna Requirement	Pass
15.207	. AC Power Line Conducted Emission	Pass
15.209 15.205	. Radiated Spurious Emission	Pass
15.247(d)	. Conducted Spurious Emission	Pass
15.247(a)(1)	. Channel Carrier Frequencies Separation	Pass
15.247(a)(1)	. 20dB Bandwidth	Pass
15.247(a)(1)	. Dwell Time	Pass
15.247(b)	. Number of Hopping Channels	Pass
15.247(b)	. Output Power	Pass
Note: Deviations Yes No ■ *The lab has reduced the uncertainty risk factor from test equipment, environment and staff technicians which according to the standard on contract. Therefore, the test result will only be determined by standard requirement, measurement uncertainty evaluation is not considered.		



2. Test Configuration of Equipment under Test

2.1 Feature of Equipment under Test

Equipment	Bluetooth module
Model Name	BMS003P
Model Discrepancy	N/A
Frequency Range	BT/BLE: 2400MHz-2483.5MHz
Modulation Type	BT: GFSK, $\pi/4$ -DQPSK, 8DPSK BLE: GFSK
Data Rate	BT: GFSK: 1Mbps, $\pi/4$ -DQPSK: 2Mbps, 8DPSK: 3Mbps BLE: GFSK: 1Mbps, 2Mbps
EUT Power Rating:	DC 3.3V

Note: For more details, please refer to the User's manual of the EUT.



2.2 Carrier Frequency of Channels

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	20	2422	40	2442	60	2462
01	2403	21	2423	41	2443	61	2463
02	2404	22	2424	42	2444	62	2464
03	2405	23	2425	43	2445	63	2465
04	2406	24	2426	44	2446	64	2466
05	2407	25	2427	45	2447	65	2467
06	2408	26	2428	46	2448	66	2468
07	2409	27	2429	47	2449	67	2469
08	2410	28	2430	48	2450	68	2470
09	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	---	---



2.3 Test Mode & Test Software

- During testing, the interface cables and equipment positions were varied according to ANSI C63.10
- The complete test system included support units and EUT for RF test.
- An executive program, "Airoha.Tool.Kit.exe (Ver.: 3.0.16.1)" under Windows 10 System was executed to transmit and receive data via Bluetooth."
- The following test modes were performed for the test:

Conducted Emissions from the AC mains power ports	
Test Mode	Operating Description
1	GFSK (1Mbps) for AC120V
2	$\pi/4$ -DQPSK (2Mbps) for AC120V
3	8DPSK (3Mbps) for AC120V
4	8DPSK (3Mbps) for AC240V
caused "Test Mode 1 and CH78:2480MHz" generated the worst case, it was reported as the final data.	
Radiation Emissions (Below 1GHz)	
Test Mode	Operating Description
1	GFSK (1Mbps)
2	$\pi/4$ -DQPSK (2Mbps)
3	8DPSK (3Mbps)
caused "Test Mode 1 and CH78:2480MHz" generated the worst case, it was reported as the final data.	
Radiation Emissions (1GHz ~ 25GHz)	
Test Mode	Operating Description
1	GFSK (1Mbps)
2	$\pi/4$ -DQPSK (2Mbps)
3	8DPSK (3Mbps)
caused "Test Mode 1,3" generated the worst case, it was reported as the final data.	



2.4 Description of Test System

AC Power Line Conducted Emission					
Equipment	Brand	Model	Serial No	Length/Type	Power cord/Length/Type
Notebook	ASUS	P2430U	GBNXC13 M064467	N/A	Adapter / 1.8m / NS
TYPE-C(Blue)	kolin	KEX-DLCP08	N/A	1m / NS	N/A
testfixture	N/A	N/A	N/A	N/A	N/A
Radiated Emissions (Below 1G) / Radiated Emissions (Above 1G) / RF Conducted					
Notebook	ASUS	P2430U	GBNXC13 M064467	N/A	Adapter / 1.8m / NS
TYPE-C(Blue)	kolin	KEX-DLCP08	N/A	1m / NS	N/A
testfixture	N/A	N/A	N/A	N/A	N/A



2.5 General Information of Test

Organization	Cerpass Technology Corp.		
Test Site	Cerpass Technology Corporation Test Laboratory Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel:+886-3-3226-888 Fax:+886-3-3226-881		
	FCC	TW1439, TW1079	
	IC	4934E-1, 4934E-2	
Frequency Range Investigated:	Conducted: from 150kHz to 30 MHz Radiation: from 9kHz to 25,000MHz		
Test Distance:	The test distance of radiated emission from antenna to EUT is 3 M.		

Test Item	Test Site	Test period	Environmental Conditions	Tested By
RF Conducted	RFCON01-NK	2025/12/02~2025/12/14	24.5~25.3℃ / 51~52%	Leon Huang
Radiated Emissions	3M03-NK	2025/11/23	24.7℃ / 53%	Leon Huang
Radiated Emissions	3M03-NK	2025/11/25	24.3℃ / 54%	Leon Huang
Radiated Emissions	3M03-NK	2025/12/22	23.9℃ / 51%	Leon Huang
AC Power Line Conducted Emission	CON02-NK	2025/11/26	20.8℃ / 53%	Leon Huang

2.6 Measurement Uncertainty

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

Measurement Item	Uncertainty
AC Power Line Conduction(150kHz~30MHz)	±3.2dB
Radiated Spurious Emission(9kHz~30MHz)	±3.4dB
Radiated Spurious Emission(30MHz~1GHz)	±5.2dB
Radiated Spurious Emission(1GHz~25GHz)	±5.2dB
Conducted Spurious Emission	±2.1dB
6dB Bandwidth	±4.4%
20dB Bandwidth	±4.5%
Occupied Bandwidth	±4.4%
Peak Output Power(Conducted Power Meter)	±1.1dB
Dwell Time / Deactivation Time	±3.5%
Power Spectral Density	±2.0dB
Duty Cycle	±3.5%



3. Test Equipment and Ancillaries Used for Tests

Test period	2025/11/23~2025/11/25				
Test Item	Radiated Emissions				
Test Site	Semi Anechoic Room(3M03-NK)				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
Bilog Antenna	Sunol	JB1	A020514-1	2025/06/11	2026/06/10
Active Loop Antenna	EMCO	6507	00040855	2025/04/28	2026/04/27
Horn Antenna	EMCO	3116	31970	2025/02/20	2026/02/19
Horn Antenna	Schwarzbeck	BBHA 9120 D	2203	2025/03/07	2026/03/06
Spectrum Analyzer	ROHDE & SCHWARZ	FSV 40-N	101329	2025/06/10	2026/06/09
EMI Receiver	ROHDE & SCHWARZ	ESR7	101906	2025/05/19	2026/05/18
Preamplifier	EMC INSTRUMENTS	EMC0518A45SE	981069	2024/12/17	2025/12/16
Preamplifier	EMC INSTRUMENTS	EMC184045	980065	2025/10/13	2026/10/12
Preamplifier	EM Electronics corp.	EM330	60611	2025/03/28	2026/03/27
Cable-4m(9k-3G)	EMEC	RG-223	18274M	2025/07/02	2026/07/01
Cable-8m(10M-26.5G)	HUBER SUHNER	SF126E	587396/126 E	2025/10/15	2026/10/14
Cable-3m(10M-26.5G)	HUBER SUHNER	SF126E	587399/126 E	2025/10/15	2026/10/14
Cable-1m(10M-40G)	HUBER SUHNER	SF102	804619/2	2025/10/13	2026/10/12
Cable-1m(10M-40G)	HUBER SUHNER	SF102	804398/2	2025/10/13	2026/10/12
Cable-1m(1G-26.5G)	HUBER SUHNER	SF126E	589848/126 E	2025/10/15	2026/10/14
Cable-4m(30M-1G)	HUBER SUHNER	RG-214	02953M	2025/07/11	2026/07/10
Cable-1m(30M-1G)	HUBER SUHNER	RG-214	05094M	2025/07/11	2026/07/10
Cable-9m(30M-1G)	HUBER SUHNER	RG-214	00402M	2025/07/11	2026/07/10
E3	AUDIX	v8.2014-8-6	RK-000529	NA	NA
High Pass Filter	Warison	WFIL-H3000-1800 0F-03	WR377WC2 B1	2025/10/15	2026/10/14
Highpass Filter	WOKEN	WFIL-H7000-1800 0F-01	WR377WC2 B2	2025/10/15	2026/10/14



Test period	2025/12/22				
Test Item	Radiated Emissions				
Test Site	Semi Anechoic Room(3M03-NK)				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
Bilog Antenna	Sunol	JB1	A020514-1	2025/06/11	2026/06/10
Active Loop Antenna	EMCO	6507	00040855	2025/04/28	2026/04/27
Horn Antenna	EMCO	3116	31974	2025/10/07	2026/10/06
Horn Antenna	Schwarzbeck	BBHA 9120 D	2203	2025/03/07	2026/03/06
Spectrum Analyzer	ROHDE & SCHWARZ	FSV 40-N	101329	2025/06/10	2026/06/09
EMI Receiver	ROHDE & SCHWARZ	ESR7	101906	2025/05/19	2026/05/18
Preamplifier	Agilent	8449B	3008A01954	2025/02/12	2026/02/11
Preamplifier	EMC INSTRUMENTS	EMC184045	980065	2025/10/13	2026/10/12
Preamplifier	EM Electronics corp.	EM330	60611	2025/03/28	2026/03/27
Cable-4m(9k-3G)	EMEC	RG-223	18274M	2025/07/02	2026/07/01
Cable-8m(10M-26.5G)	HUBER SUHNER	SF126E	587396/126 E	2025/10/15	2026/10/14
Cable-3m(10M-26.5G)	HUBER SUHNER	SF126E	587399/126 E	2025/10/15	2026/10/14
Cable-1m(10M-40G)	HUBER SUHNER	SF102	804619/2	2025/10/13	2026/10/12
Cable-1m(10M-40G)	HUBER SUHNER	SF102	804398/2	2025/10/13	2026/10/12
Cable-1m(1G-26.5G)	HUBER SUHNER	SF126E	589848/126 E	2025/10/15	2026/10/14
Cable-4m(30M-1G)	HUBER SUHNER	RG-214	02953M	2025/07/11	2026/07/10
Cable-1m(30M-1G)	HUBER SUHNER	RG-214	05094M	2025/07/11	2026/07/10
Cable-9m(30M-1G)	HUBER SUHNER	RG-214	00402M	2025/07/11	2026/07/10
E3	AUDIX	v8.2014-8-6	RK-000529	NA	NA
High Pass Filter	Warison	WFIL-H3000-1800 0F-03	WR377WC2 B1	2025/10/15	2026/10/14
Highpass Filter	WOKEN	WFIL-H7000-1800 0F-01	WR377WC2 B2	2025/10/15	2026/10/14

Test Item	RF Conducted				
Test Site	RFCON01-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200207	2025/04/23	2026/04/22
Attenuator	KEYSIGHT	8491B	MY39250703	2025/02/12	2026/02/11
Power Meter	Anritsu	ML2495A	1224005	2025/02/12	2026/02/11
Power Sensor	Anritsu	MA2411B	1207295	2025/02/12	2026/02/11

Test Item	AC Power Line Conducted Emission				
Test Site	CON02-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
EMI Receiver	ROHDE & SCHWARZ	ESR7	101906	2025/05/19	2026/05/18
Line Impedance Stabilization Network	Schwarzbeck	NSLK 8127	1197	2025/02/26	2026/02/25
Two-Line V-Network	ROHDE & SCHWARZ	ENV216	101584	2025/02/26	2026/02/25
Cable-4m(9k-3G)	EMEC	RG-223	18274M	2025/07/02	2026/07/01
E3	AUDIX	v8.2014-8-6	RK-000536	NA	NA



4. Antenna Requirements

4.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.2 Antenna Construction and Directional Gain

Antenna Type	Antenna Gain
PCB Antenna	2.73dBi



5. Test of Conducted Emission

5.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz, according to the methods defined in ANSI C63.10-2020+Cor.1-2023 and ANSI C63.10a-2024. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

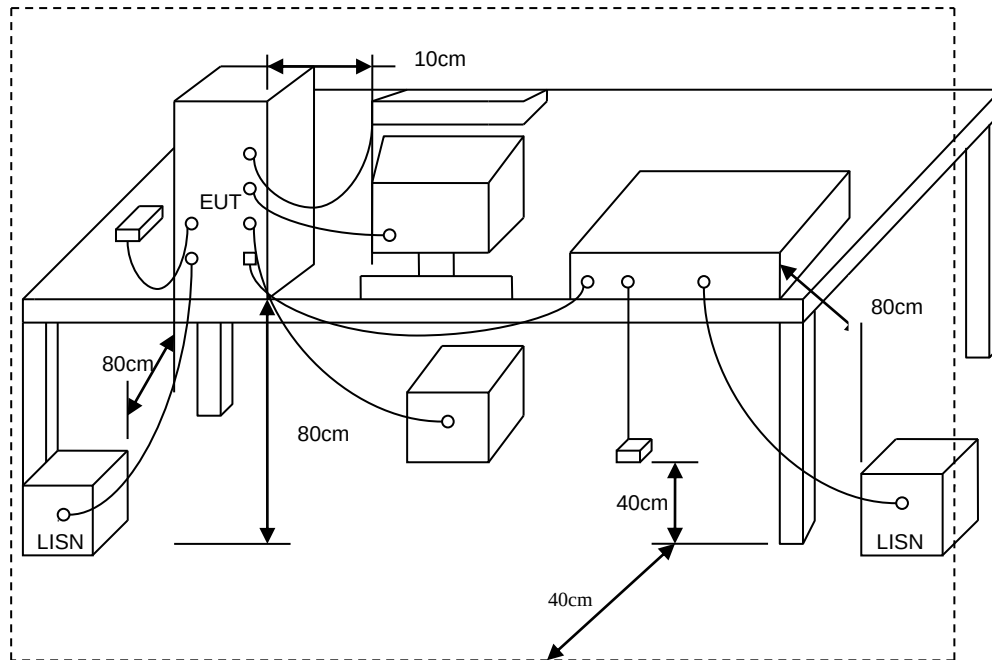
*Decreases with the logarithm of the frequency.

5.2 Test Procedures

- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connecting to the other LISN.
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



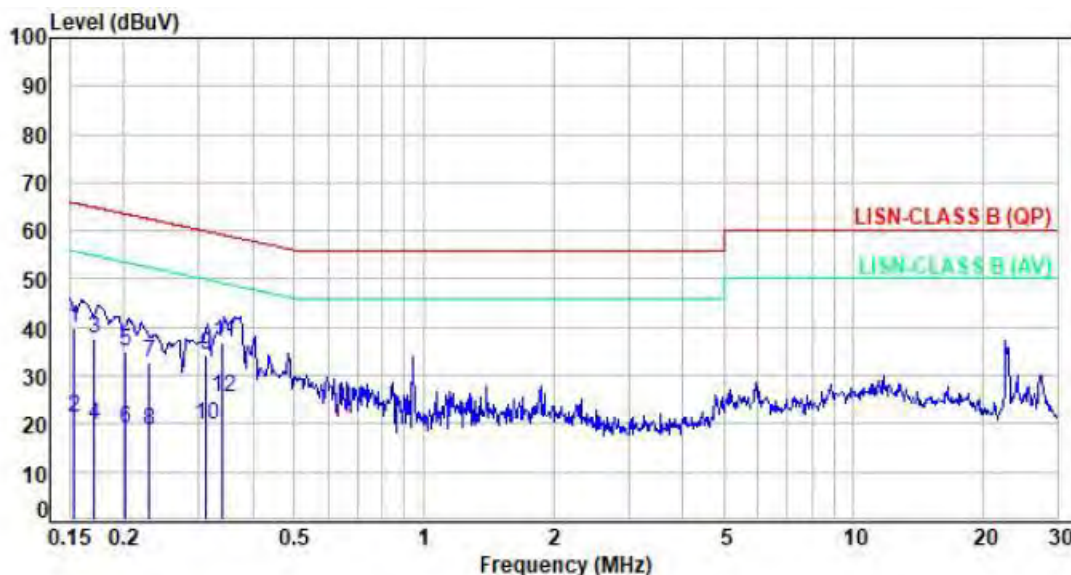
5.3 Typical Test Setup





5.4 Test Result and Data

Power	:	From System (AC 120V/60Hz)	Pol/Phase	:	LINE
Test Mode	:	Mode 1		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV)	Limit (dBUV)	Margin (dB)	Detector	P/F
1	0.1540	9.55	30.37	39.92	65.78	-25.86	QP	P
2	0.1540	9.55	11.65	21.20	55.78	-34.58	Average	P
3	0.1716	9.54	28.24	37.78	64.88	-27.10	QP	P
4	0.1716	9.54	10.29	19.83	54.88	-35.05	Average	P
5	0.2009	9.53	25.53	35.06	63.57	-28.51	QP	P
6	0.2009	9.53	9.63	19.16	53.57	-34.41	Average	P
7	0.2303	9.53	23.23	32.76	62.44	-29.68	QP	P
8	0.2303	9.53	9.20	18.73	52.44	-33.71	Average	P
9	0.3116	9.54	24.69	34.23	59.93	-25.70	QP	P
10	0.3116	9.54	10.24	19.78	49.93	-30.15	Average	P
11	0.3406	9.56	27.25	36.81	59.19	-22.38	QP	P
12	0.3406	9.56	16.05	25.61	49.19	-23.58	Average	P

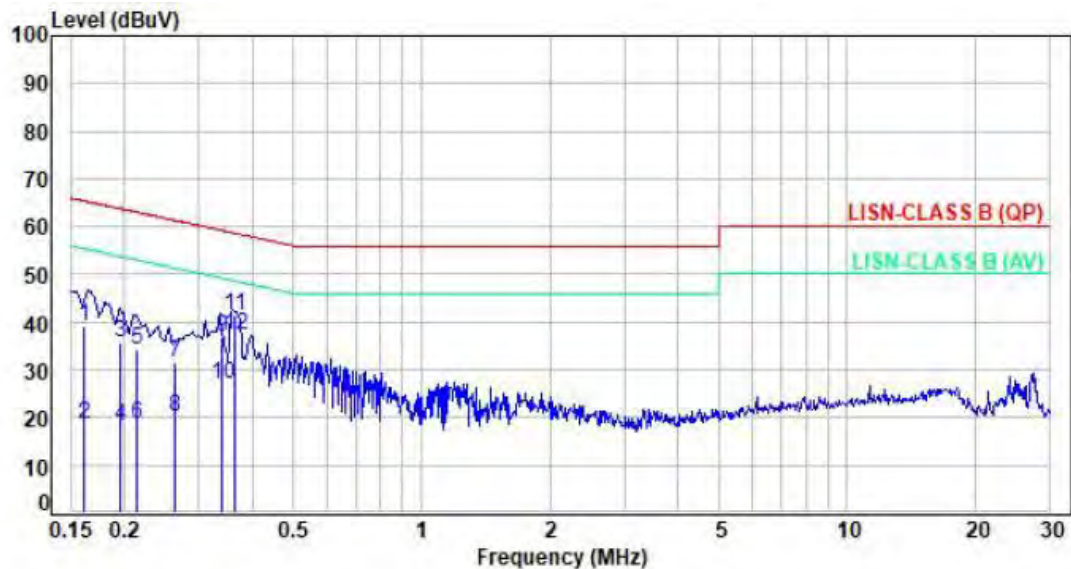
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



Power	:	From System (AC 120V/60Hz)	Pol/Phase	:	NEUTRAL
Test Mode	:	Mode 1		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1612	9.56	29.52	39.08	65.40	-26.32	QP	P
2	0.1612	9.56	9.20	18.76	55.40	-36.64	Average	P
3	0.1963	9.55	26.12	35.67	63.76	-28.09	QP	P
4	0.1963	9.55	8.69	18.24	53.76	-35.52	Average	P
5	0.2139	9.55	24.76	34.31	63.05	-28.74	QP	P
6	0.2139	9.55	9.17	18.72	53.05	-34.33	Average	P
7	0.2622	9.56	21.84	31.40	61.36	-29.96	QP	P
8	0.2622	9.56	10.75	20.31	51.36	-31.05	Average	P
9	0.3387	9.58	27.17	36.75	59.24	-22.49	QP	P
10	0.3387	9.58	17.60	27.18	49.24	-22.06	Average	P
11	0.3638	9.59	31.70	41.29	58.64	-17.35	QP	P
12	0.3638	9.59	27.84	37.43	48.64	-11.21	Average	P

Note: Level=Reading+Factor

Margin=Level-Limit

Factor=(LISN or ISN or Current Probe)Factor + Cable Loss

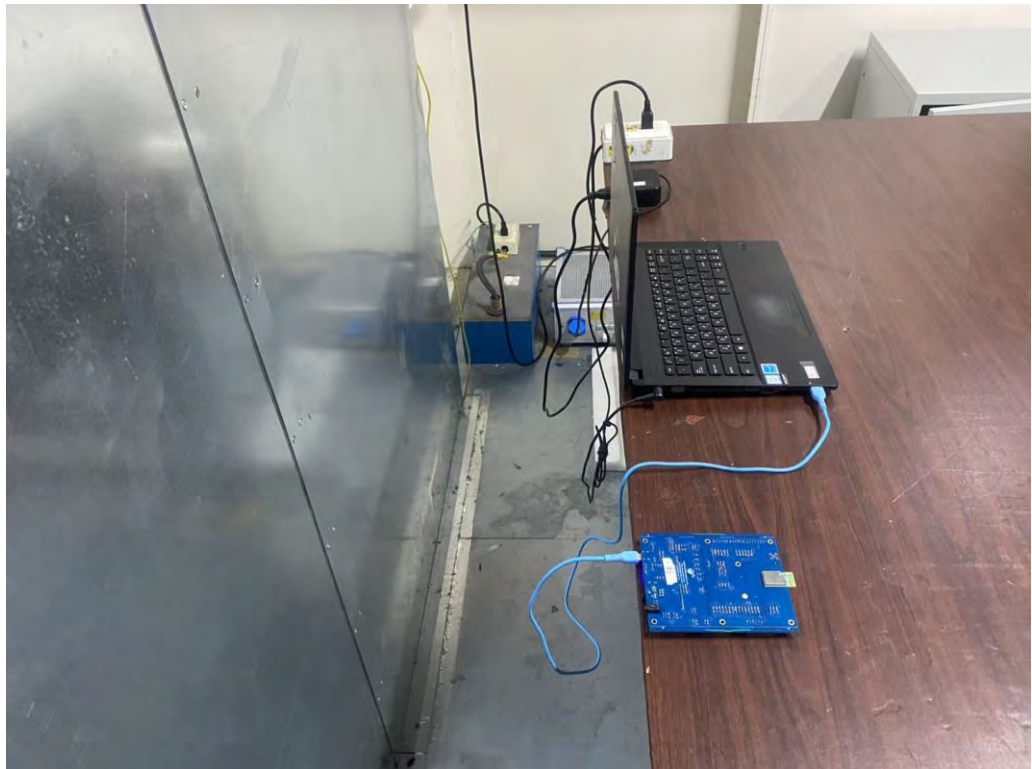


5.5 Test Photographs

Front View



Rear View





6. Test of Radiated Emission

6.1 Test Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

FREQUENCIES(MHz)	FIELD STRENGTH(microvolts/meter)	MEASUREMENT DISTANCE(meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3



6.2 Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground; above 1GHz, the height was 1.5m.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the 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 and reported.
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission 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.
- i. "Cone of radiation" has been considered to be 3dB bandwidth of the measurement antenna.

Note:

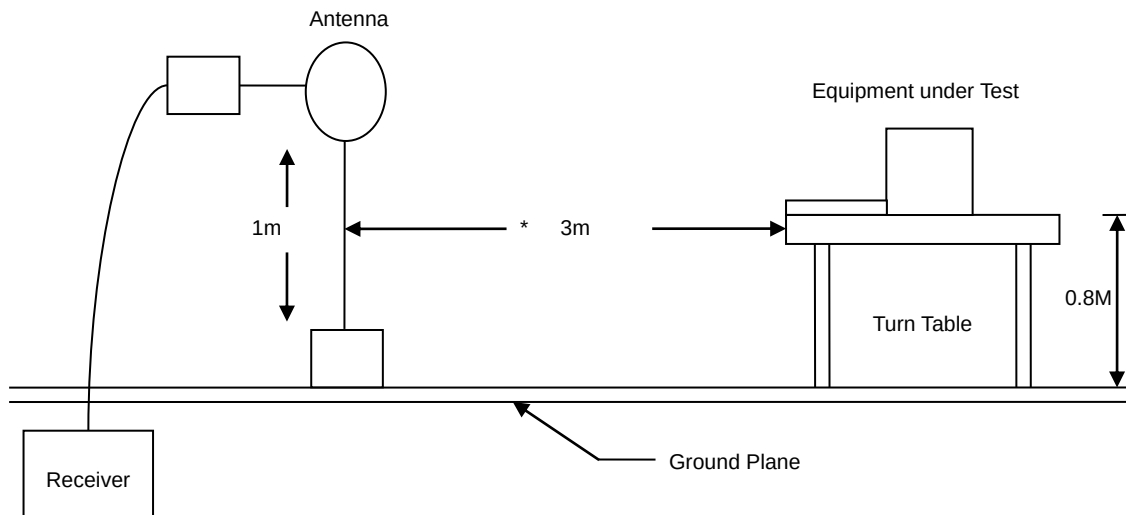
The supporting fixture shall permit orientation of the EUT in each of three orthogonal axis positions such that emissions from the EUT are maximized.

(X AXIS is the worst.)

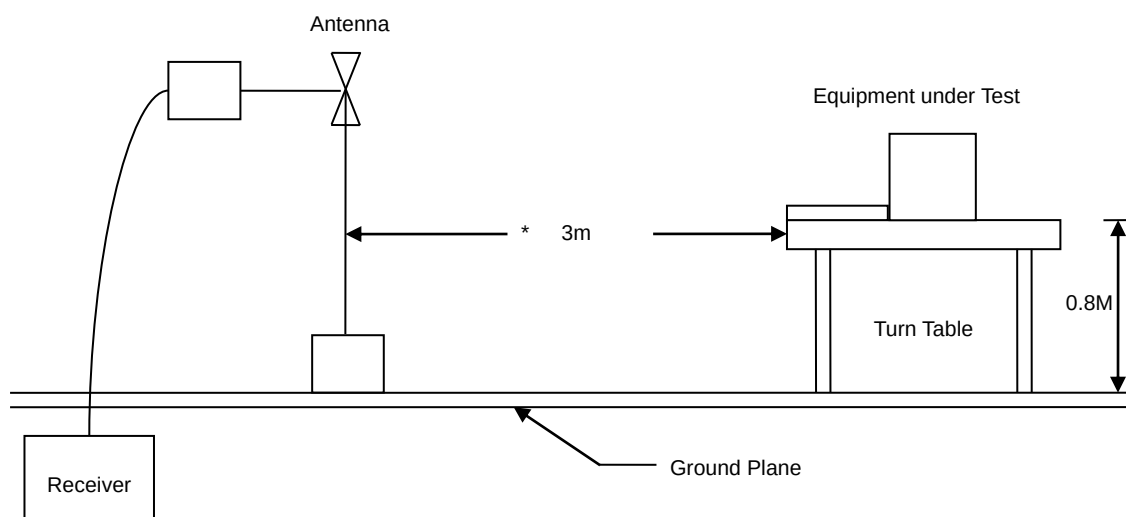


6.3 Typical Test Setup

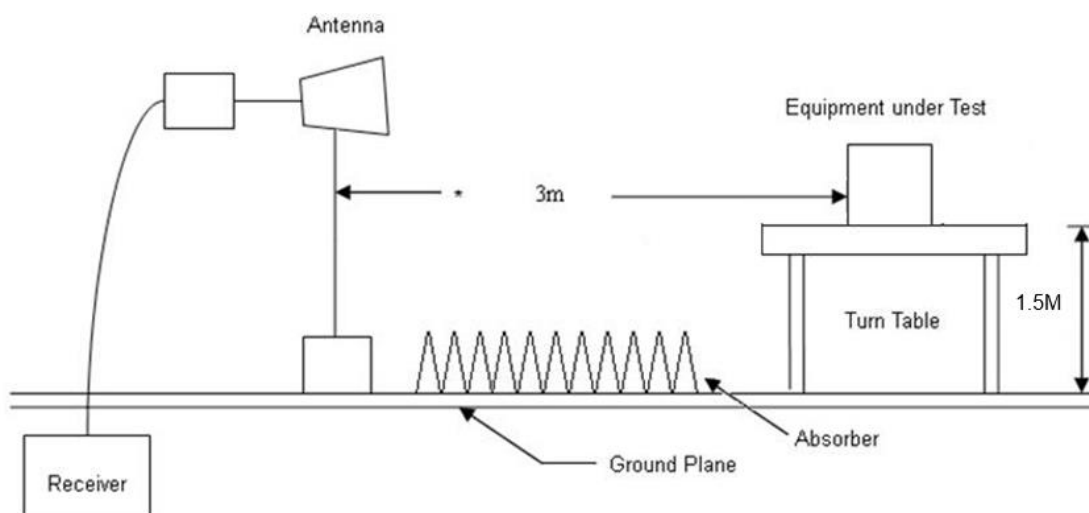
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup



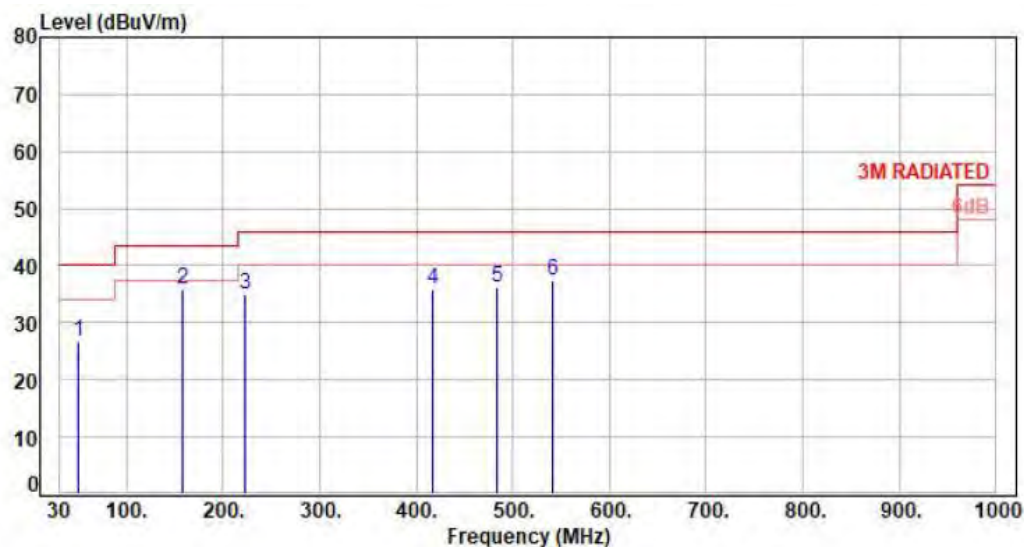


6.4 Test Result and Data (9kHz ~ 30MHz)

The 9kHz-30MHz spurious emission is under limit 20dB more.

6.5 Test Result and Data (30MHz ~ 1GHz)

Power	:	From System(AC 120V/60Hz)	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	50.37	-16.31	42.99	26.68	40.00	-13.32	Peak	100	283	P
2	158.04	-10.27	46.17	35.90	43.50	-7.60	Peak	100	100	P
3	222.06	-11.30	46.21	34.91	46.00	-11.09	Peak	100	315	P
4	417.03	-5.22	41.06	35.84	46.00	-10.16	Peak	100	358	P
5	483.96	-3.62	39.81	36.19	46.00	-9.81	Peak	100	7	P
6	541.19	-3.01	40.36	37.35	46.00	-8.65	Peak	100	308	P

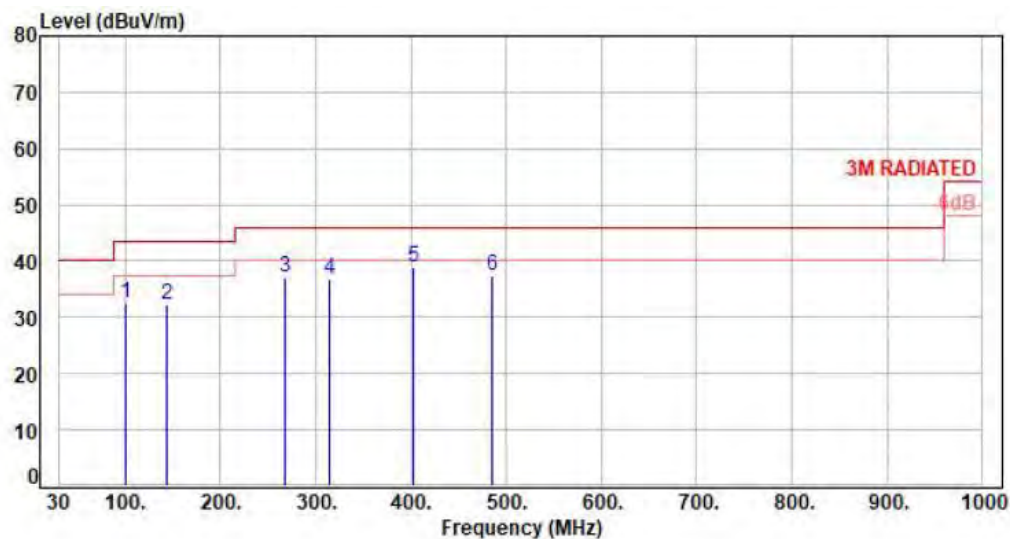
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	:	From System(AC 120V/60Hz)	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	99.84	-12.24	44.91	32.67	43.50	-10.83	Peak	100	297	P
2	143.49	-9.07	41.41	32.34	43.50	-11.16	Peak	100	58	P
3	268.62	-8.65	45.66	37.01	46.00	-8.99	Peak	100	117	P
4	314.21	-7.92	44.74	36.82	46.00	-9.18	Peak	100	151	P
5	403.45	-5.73	44.65	38.92	46.00	-7.08	Peak	100	355	P
6	485.90	-3.60	41.06	37.46	46.00	-8.54	Peak	100	42	P

Note: Level=Reading+Factor

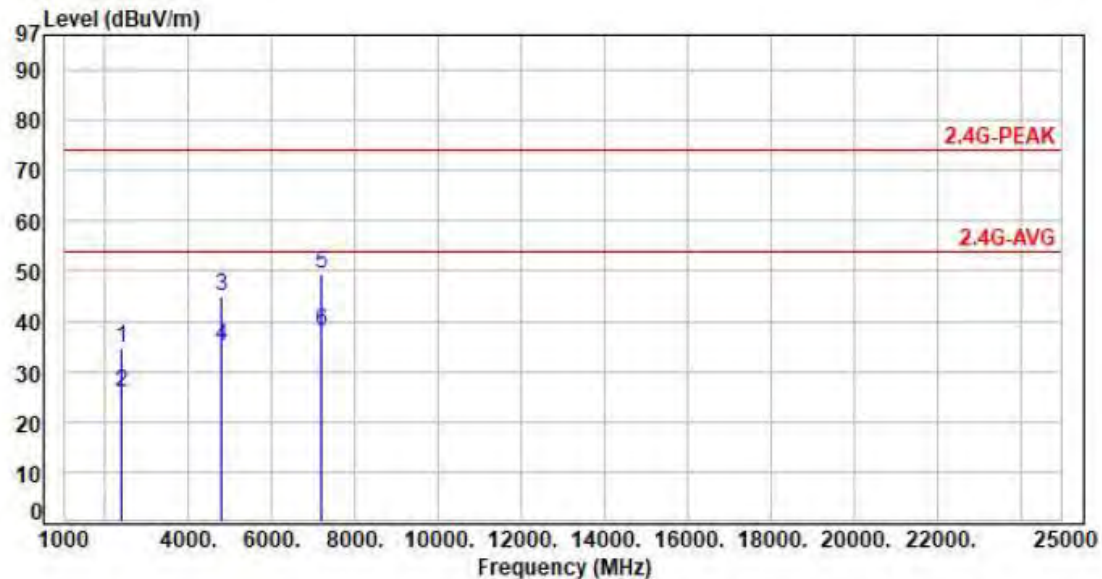
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



6.6 Test Result and Data (1GHz ~ 25GHz)

Power	From System(AC 120V/60Hz)	Pol/Phase	VERTICAL
Test Mode	Mode 1, CH 00	Operation mode	TX

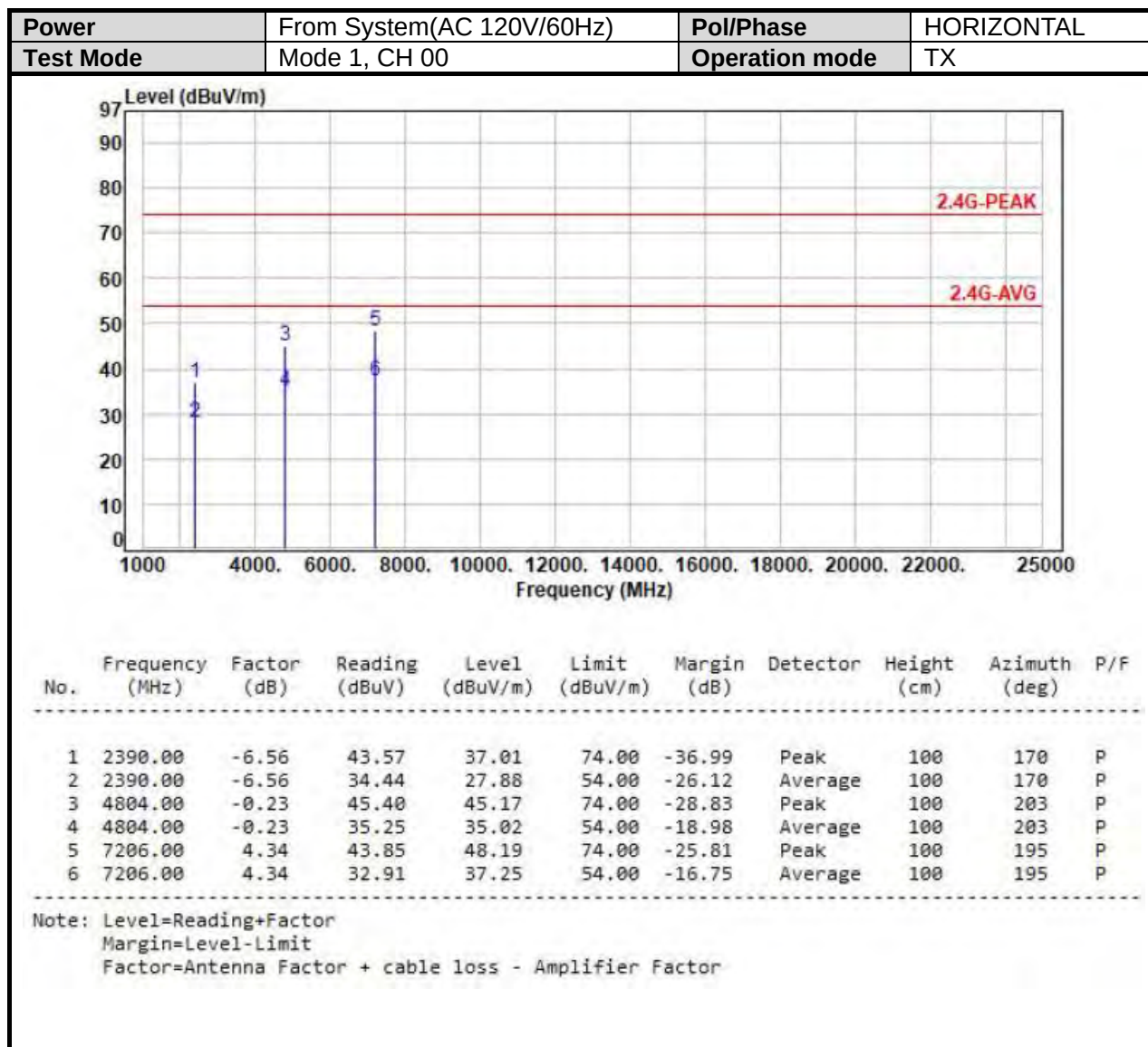


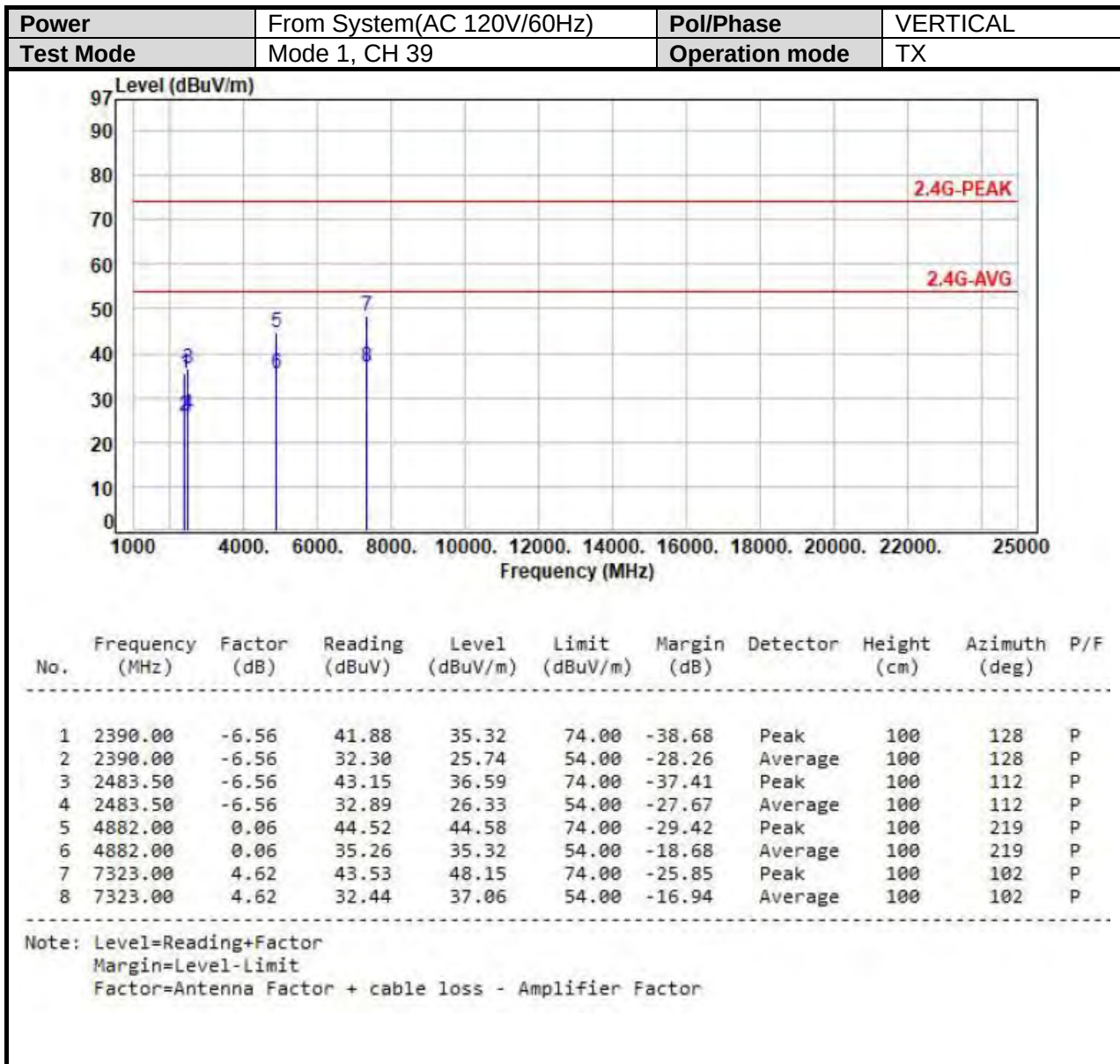
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-6.56	41.35	34.79	74.00	-39.21	Peak	100	94	P
2	2390.00	-6.56	32.38	25.82	54.00	-28.18	Average	100	94	P
3	4804.00	-0.23	45.25	45.02	74.00	-28.98	Peak	100	106	P
4	4804.00	-0.23	35.09	34.86	54.00	-19.14	Average	100	106	P
5	7206.00	4.34	45.07	49.41	74.00	-24.59	Peak	100	239	P
6	7206.00	4.34	33.79	38.13	54.00	-15.87	Average	100	239	P

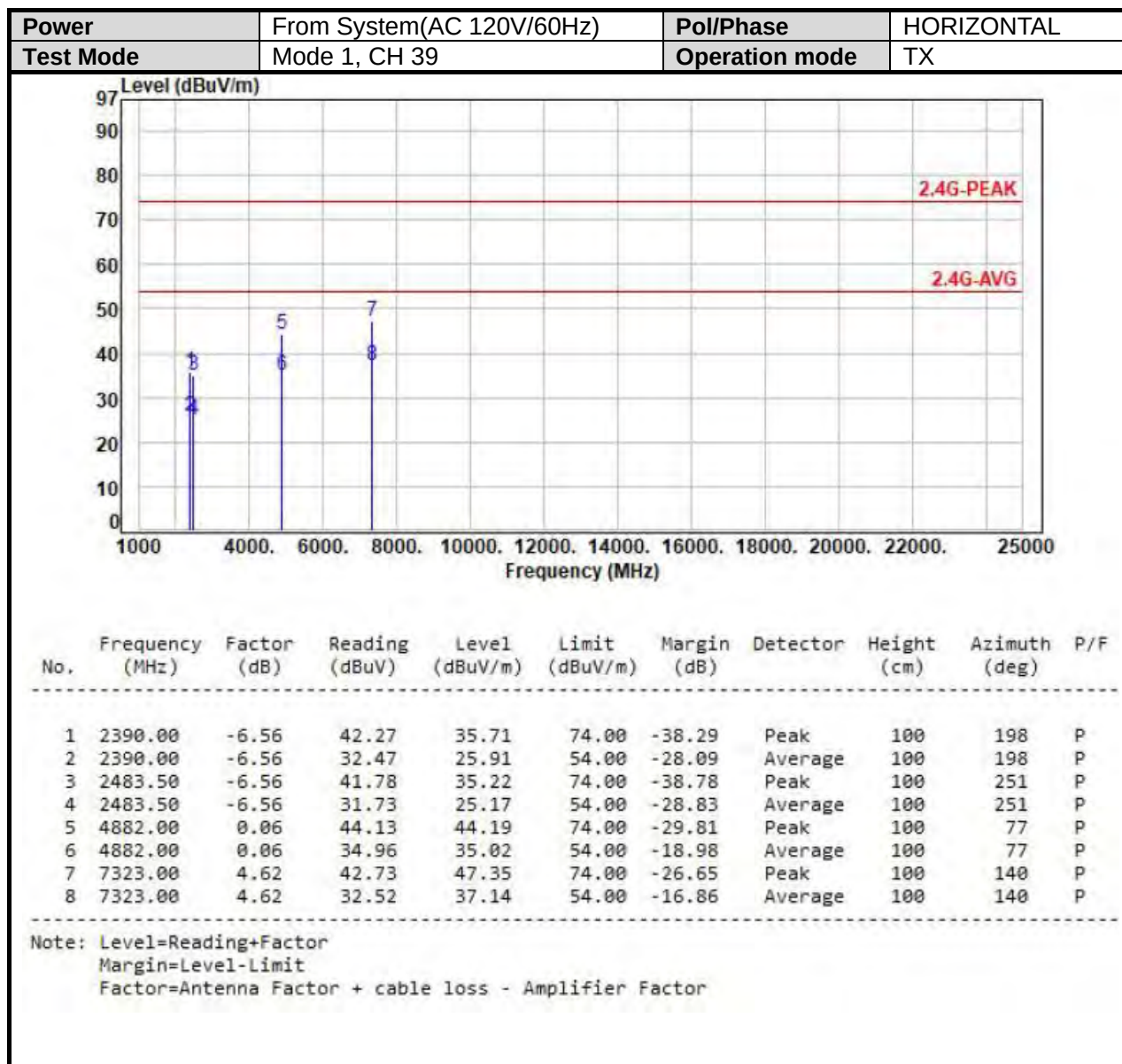
Note: Level=Reading+Factor

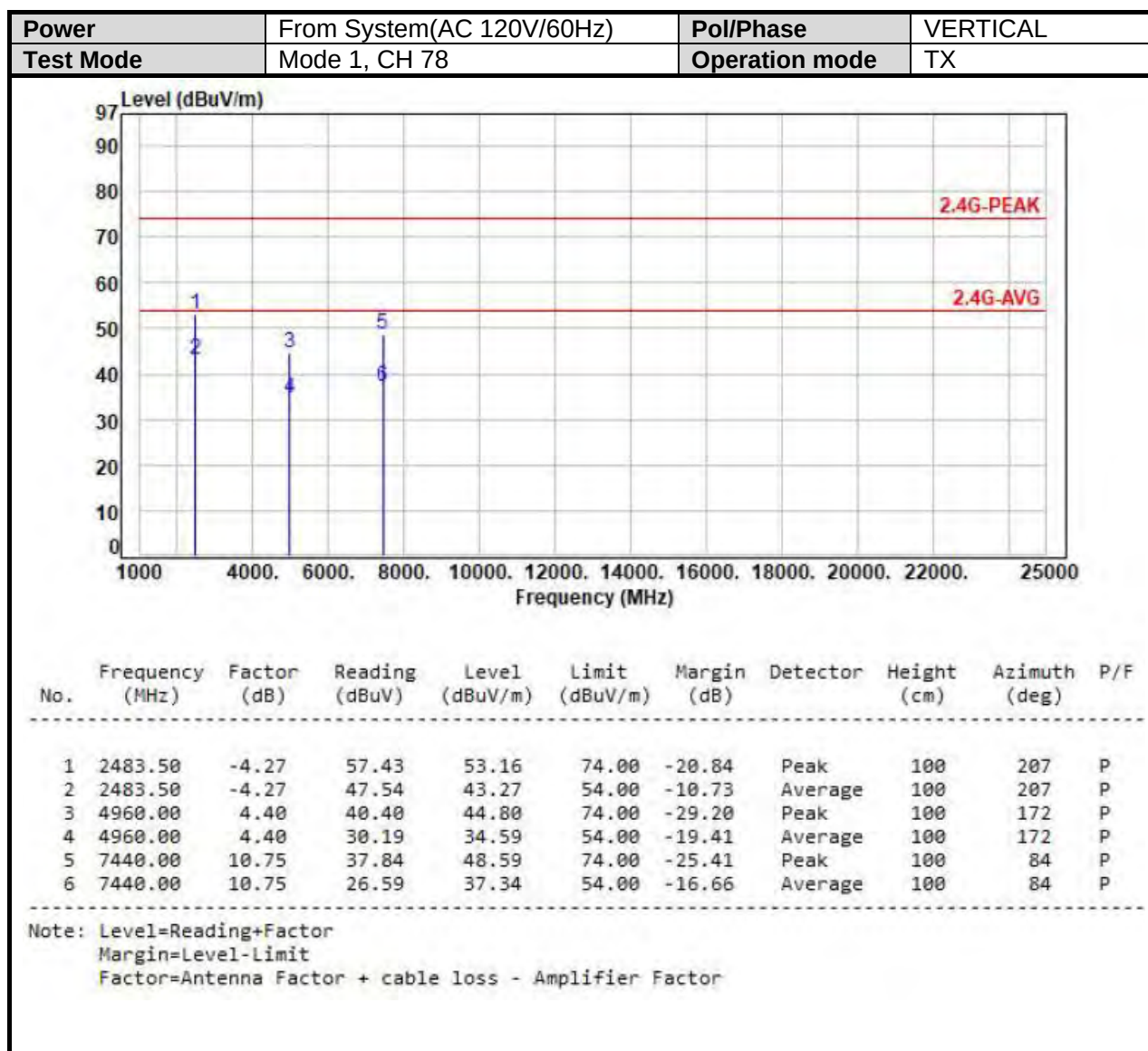
Margin=Level-Limit

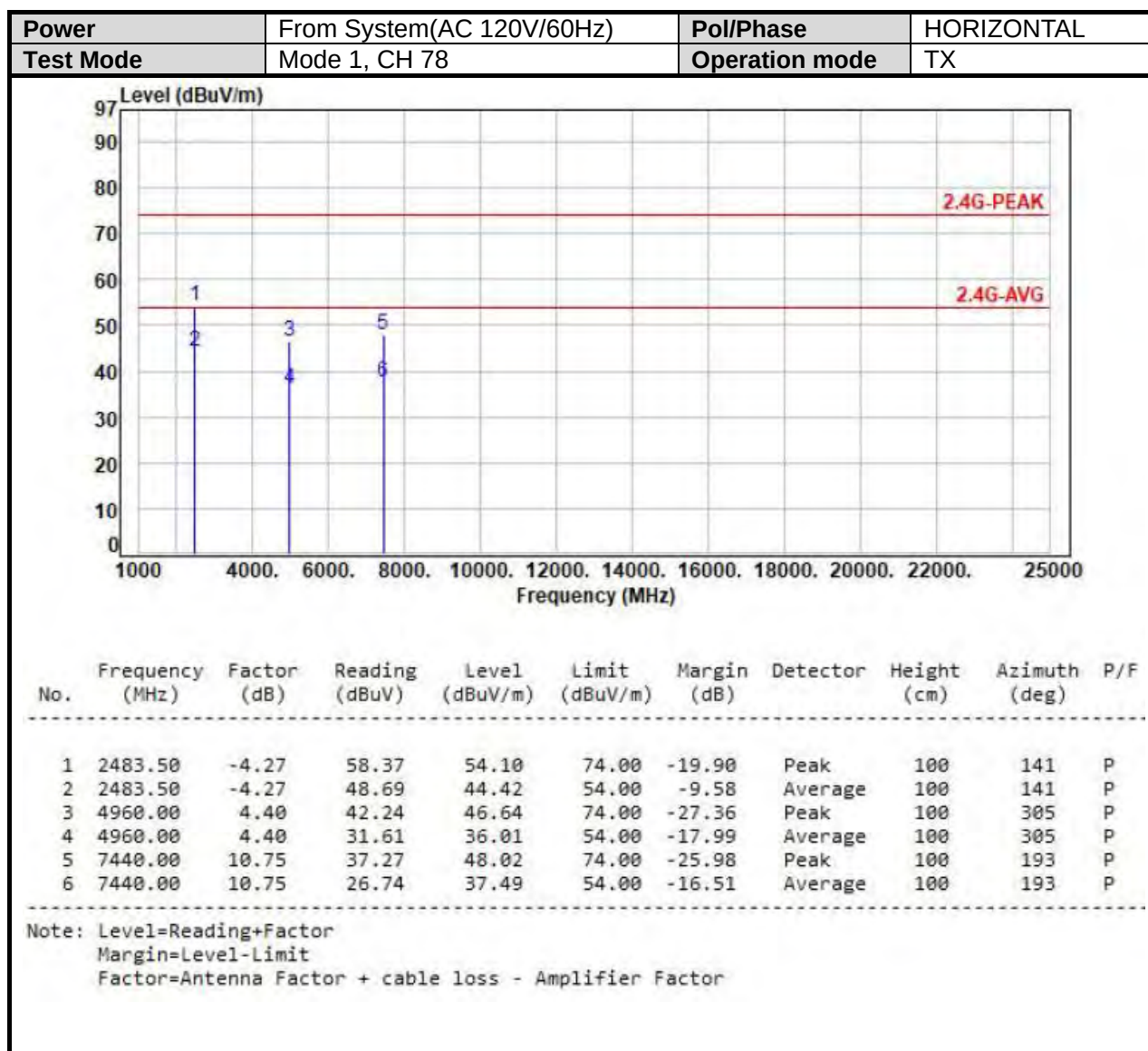
Factor=Antenna Factor + cable loss - Amplifier Factor

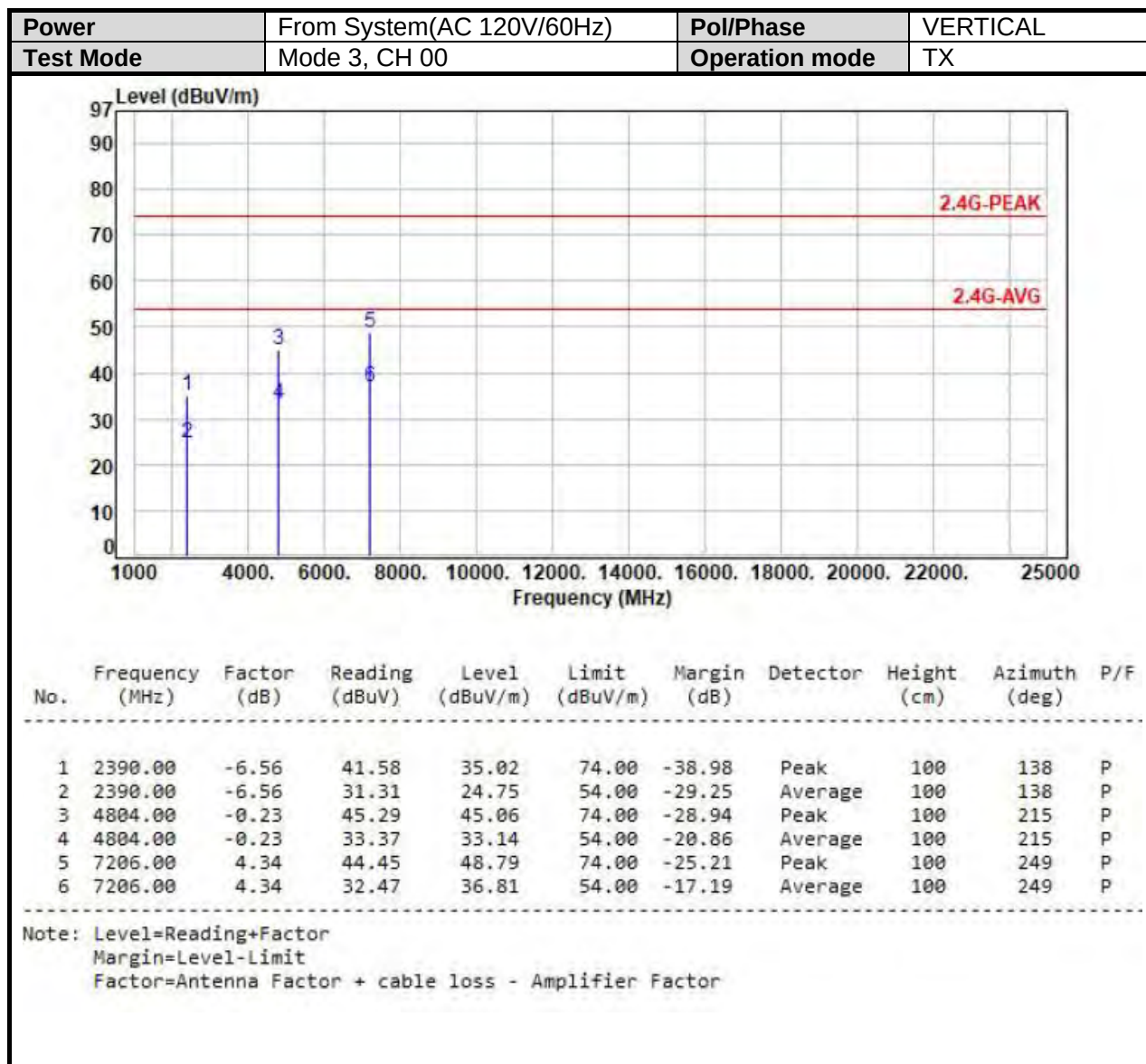


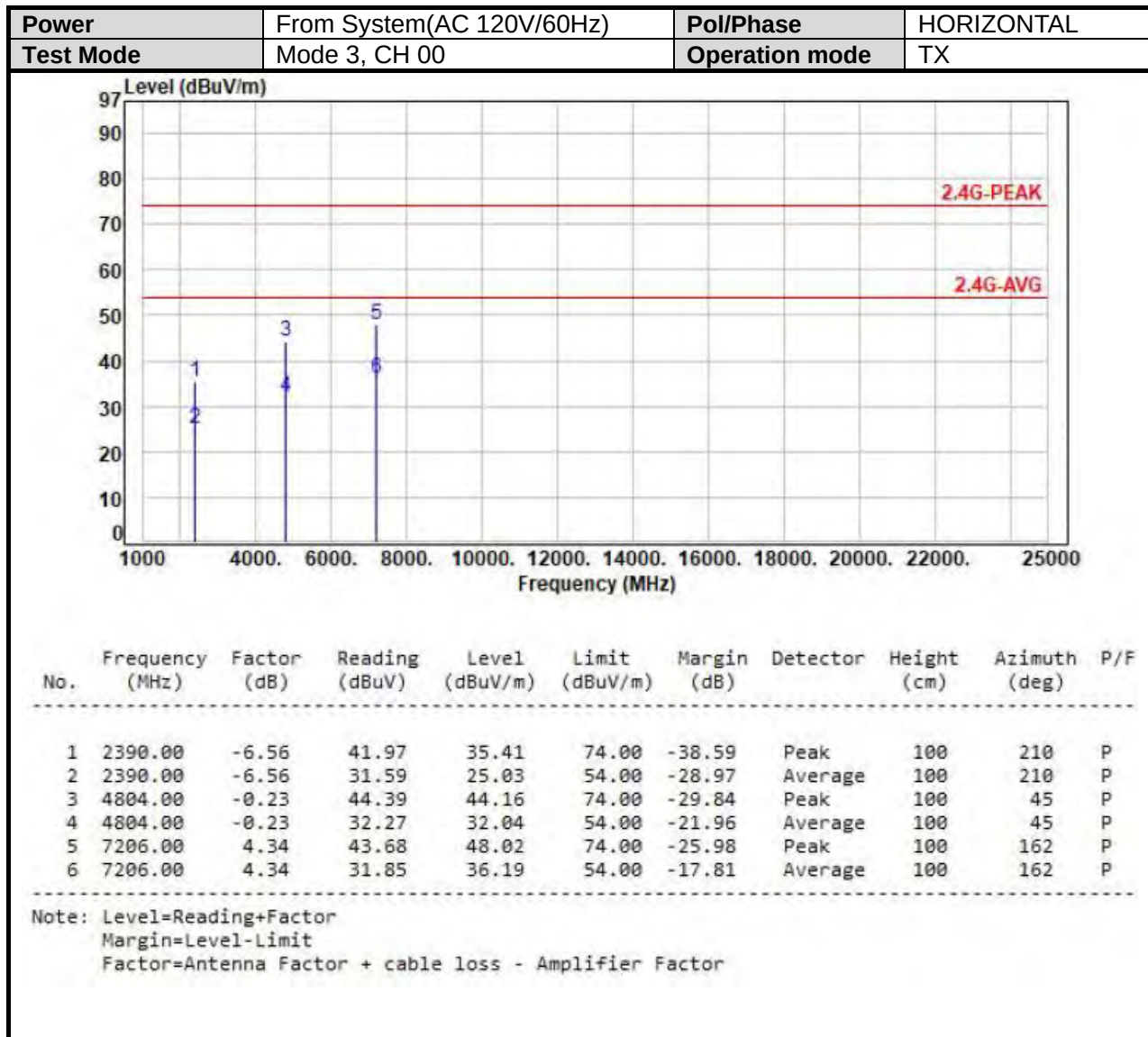


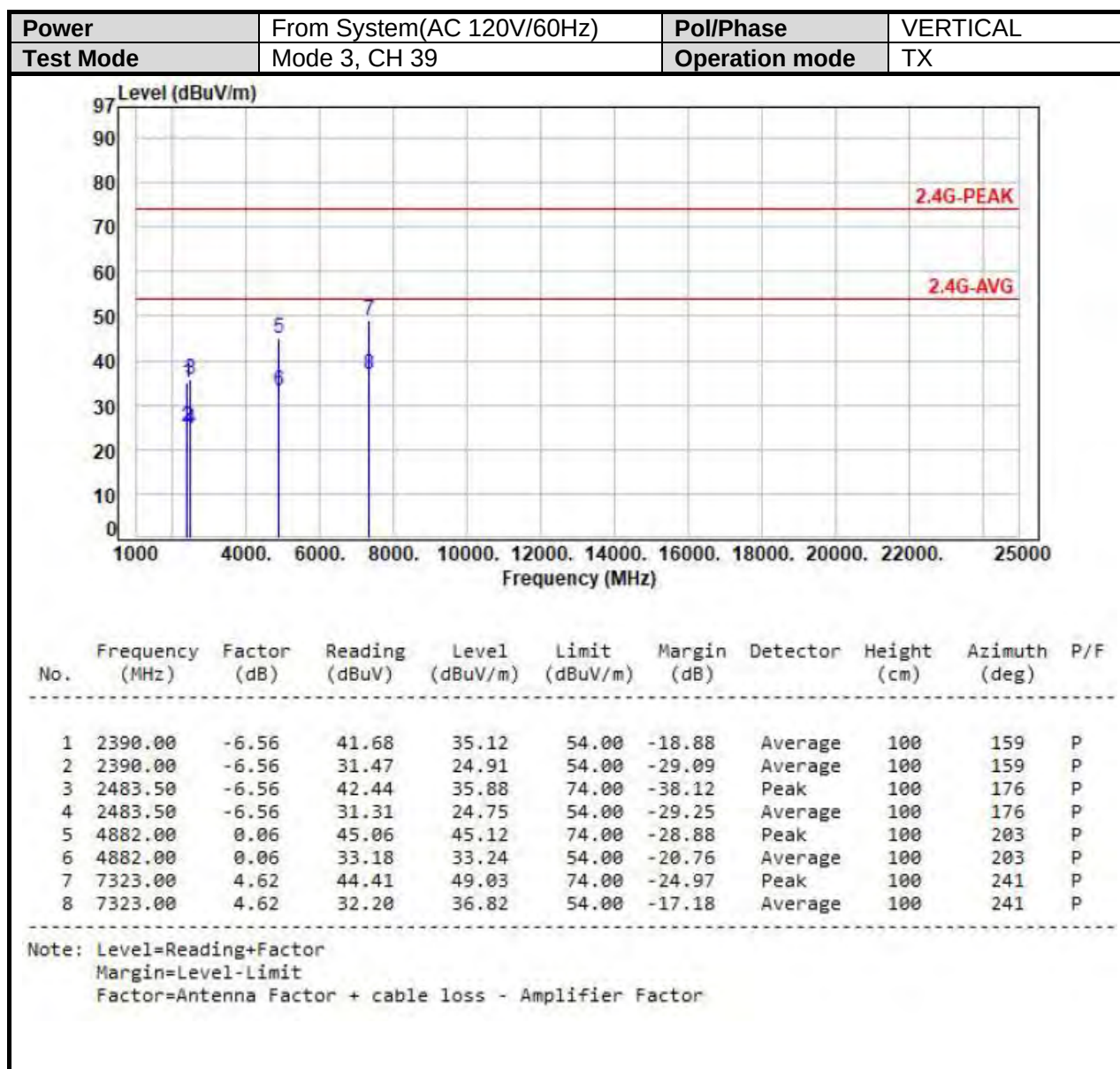


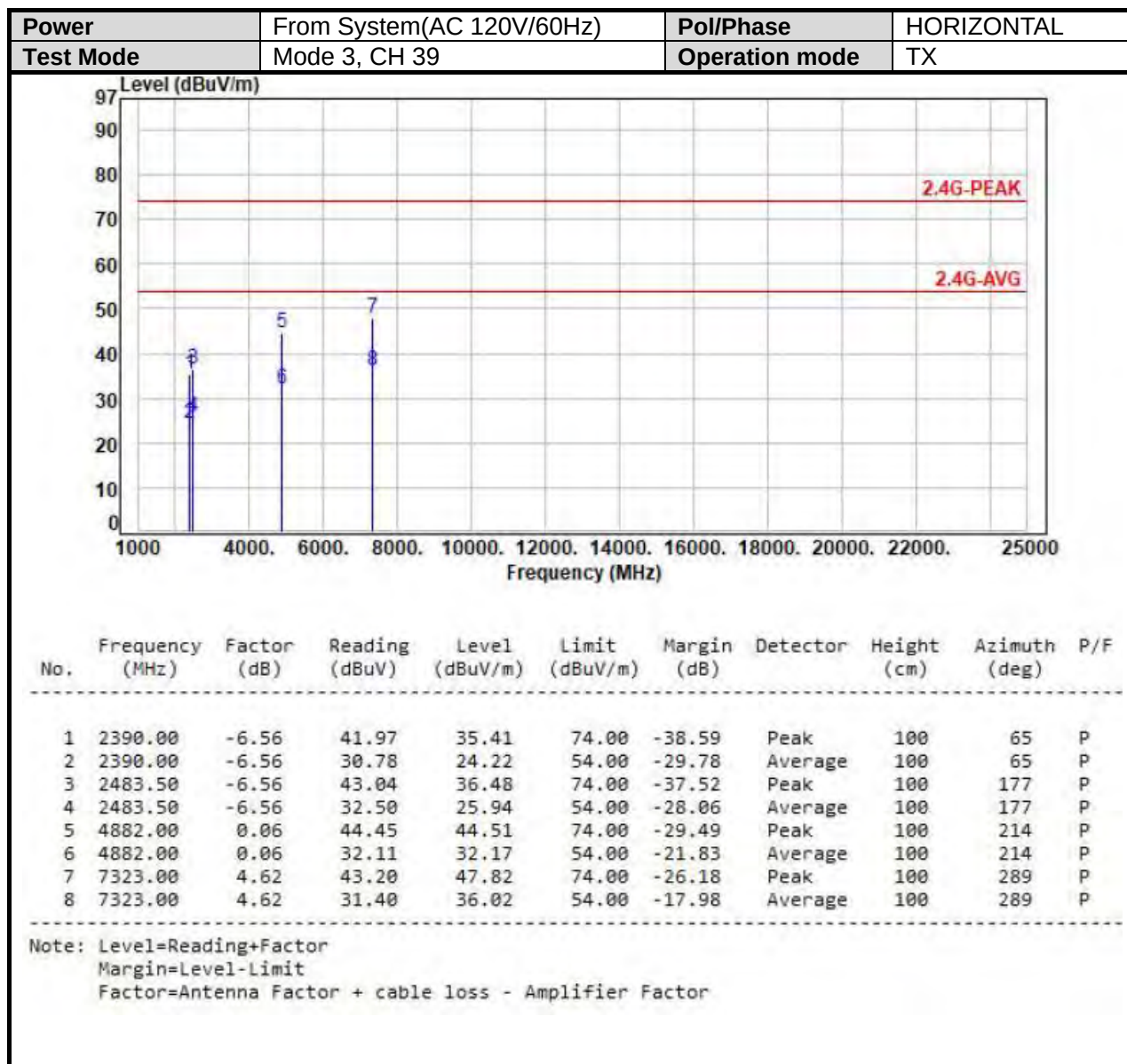


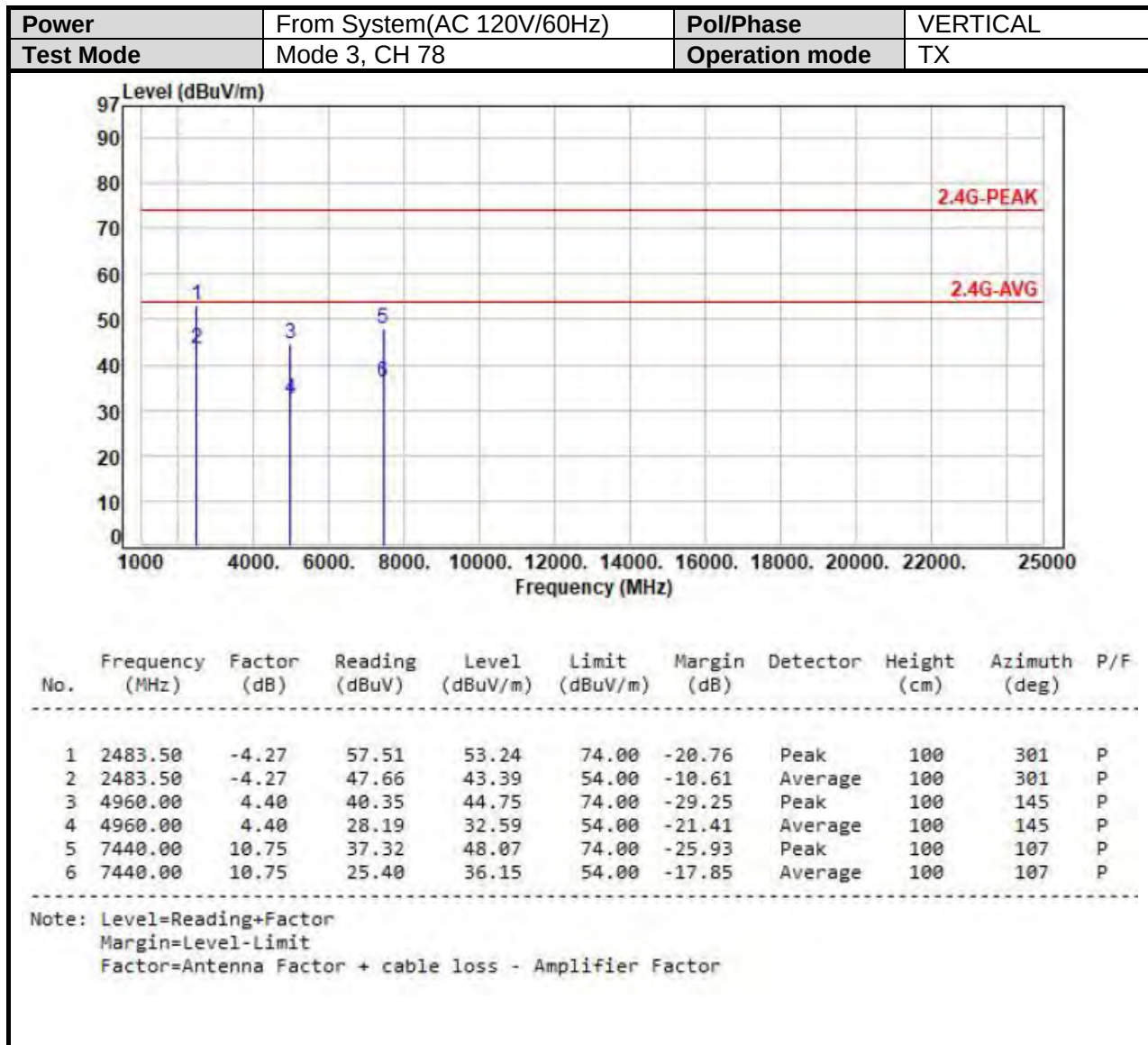


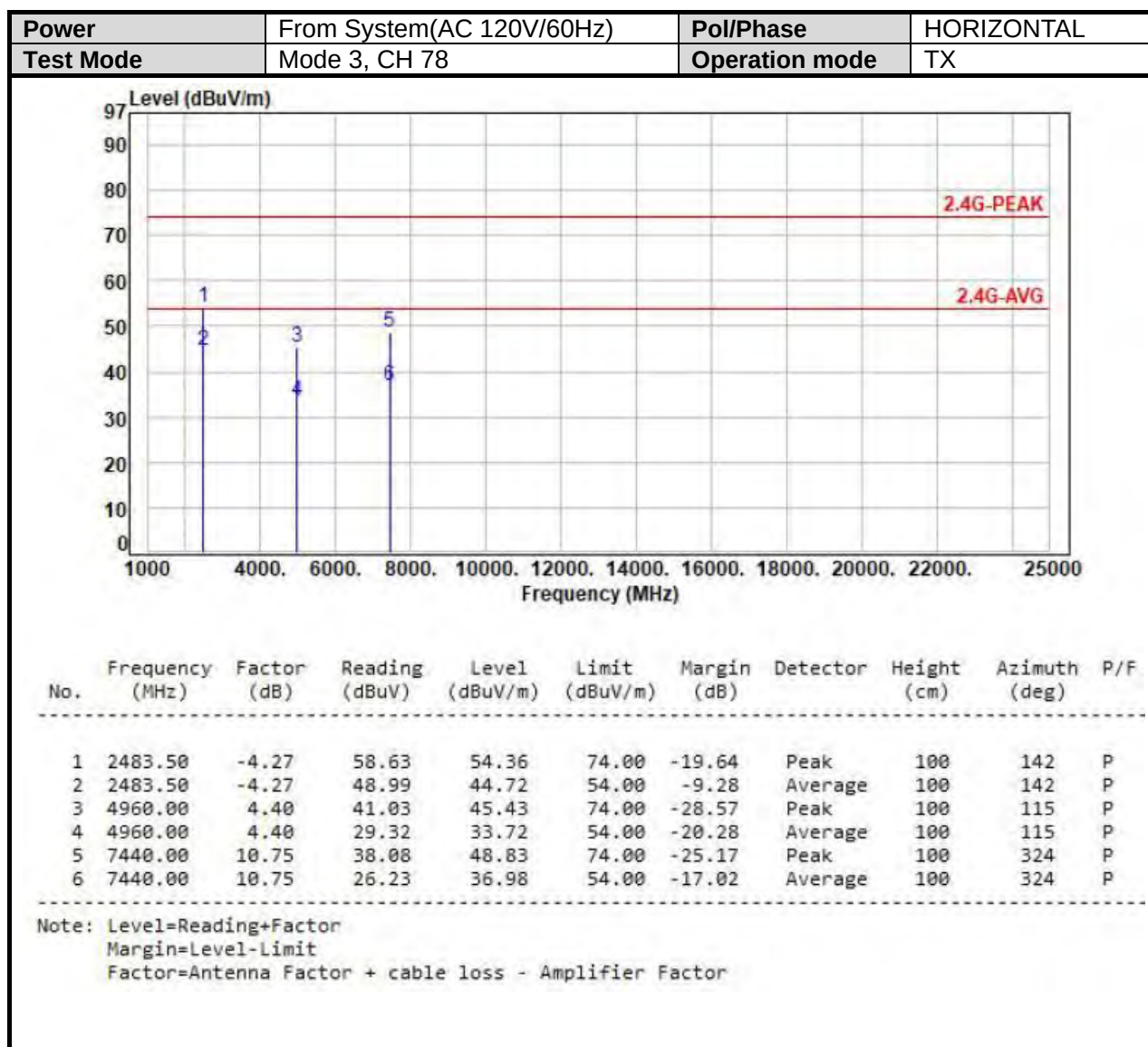














6.7 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

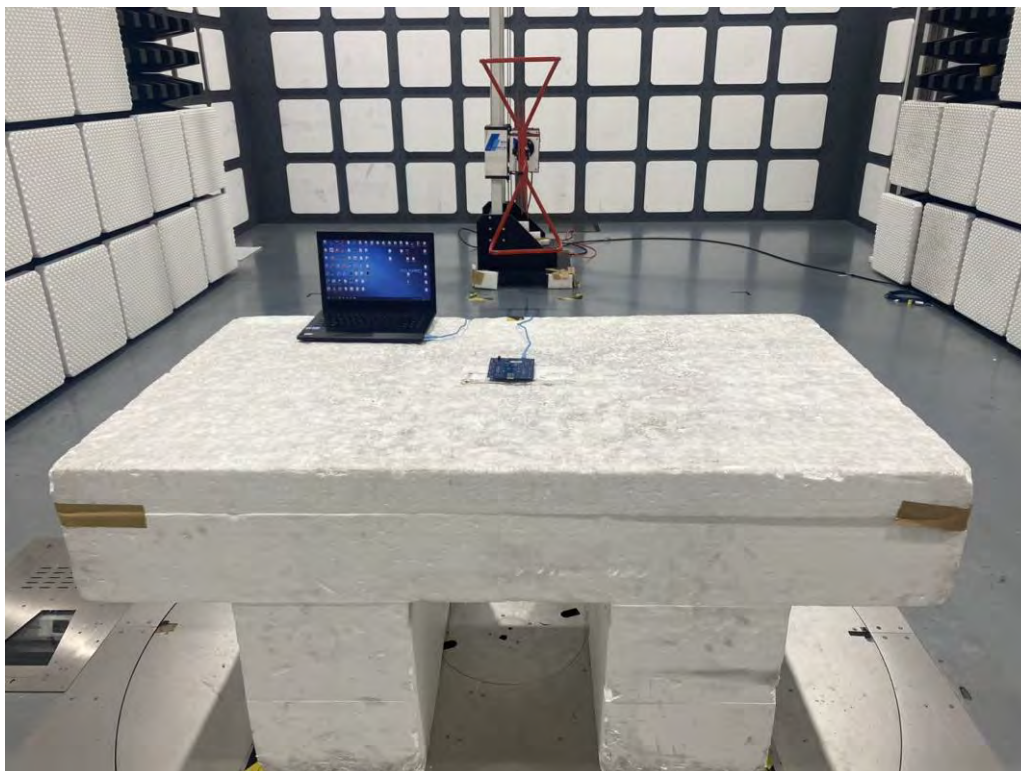
MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

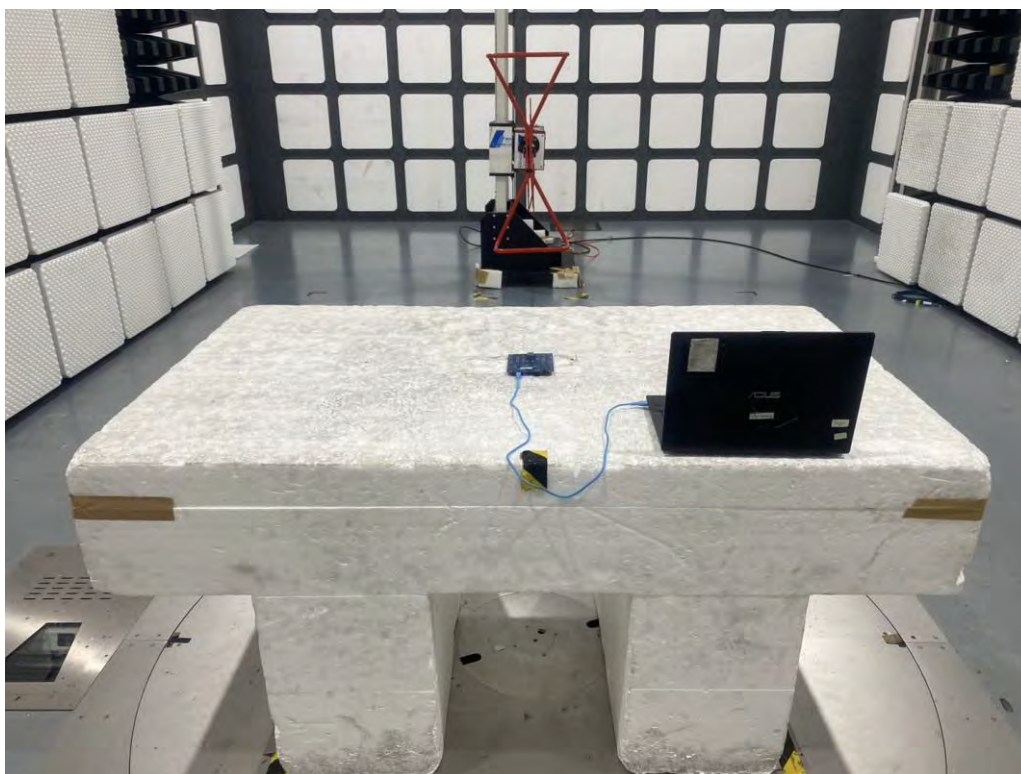


6.8 Test Photographs (30MHz ~ 1GHz)

Front View



Rear View





6.9 Test Photographs (1GHz ~ 25GHz)

Front View

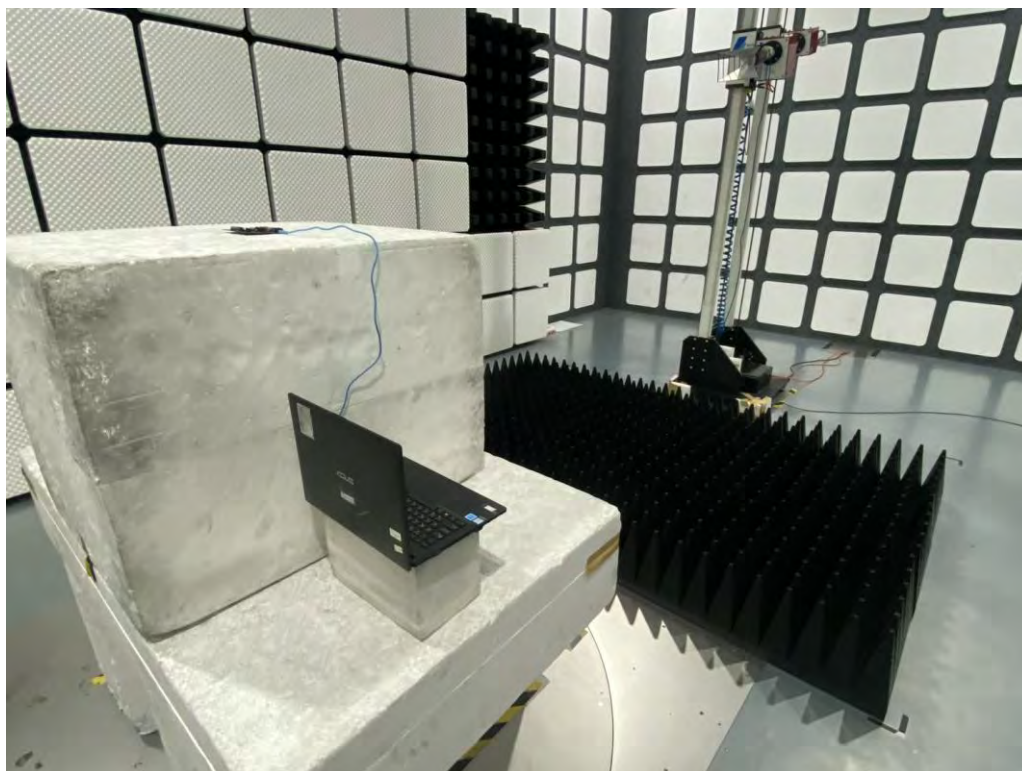


Rear View





Side View





7. Test of Conducted Spurious Emission

7.1 Test Limit

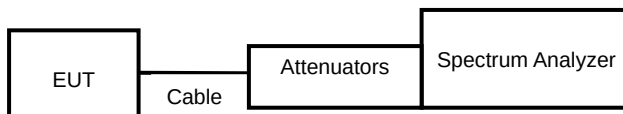
According to the methods defined in ANSI C63.10-2020 Section 7.8.7
Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

7.2 Test Procedure

According to the methods defined in ANSI C63.10-2020

- The transmitter output was connected to the spectrum analyzer via a low loss cable.
- Set RBW of spectrum analyzer to 100 KHz and VBW of spectrum analyzer to 300 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
- The band edges was measured and recorded.

7.3 Test Setup Layout



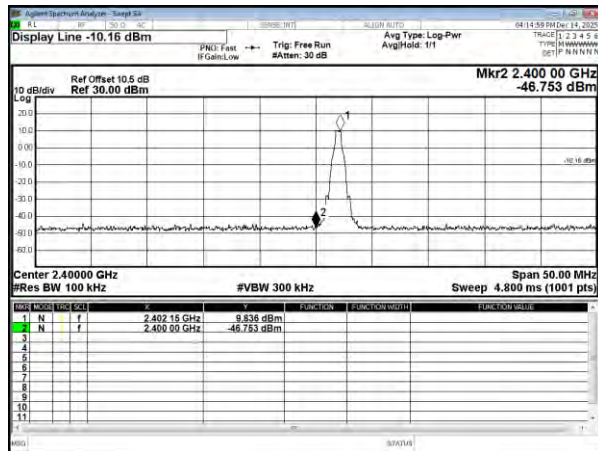
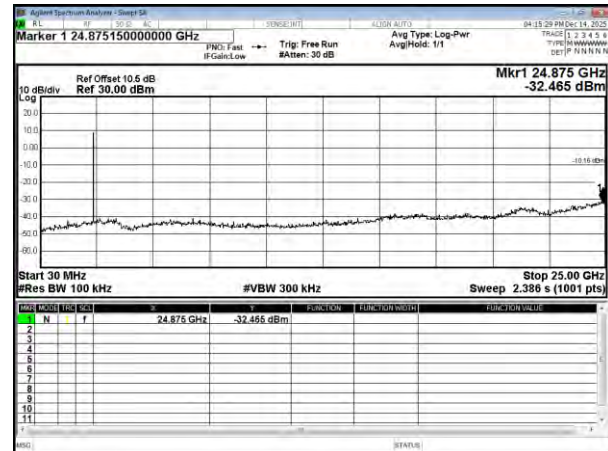
7.4 Test Result and Data

Note: Test plots refer to the following pages.

**Single test**

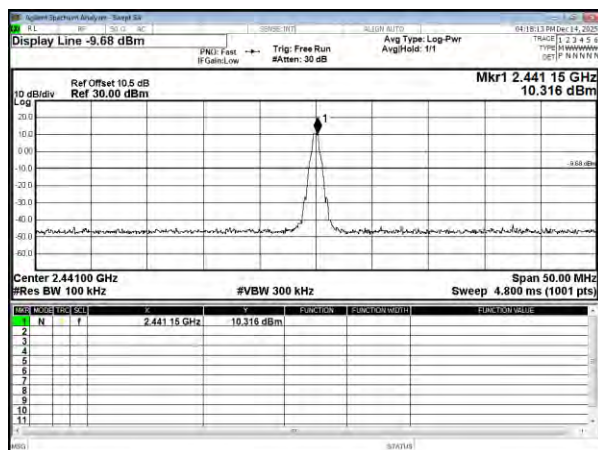
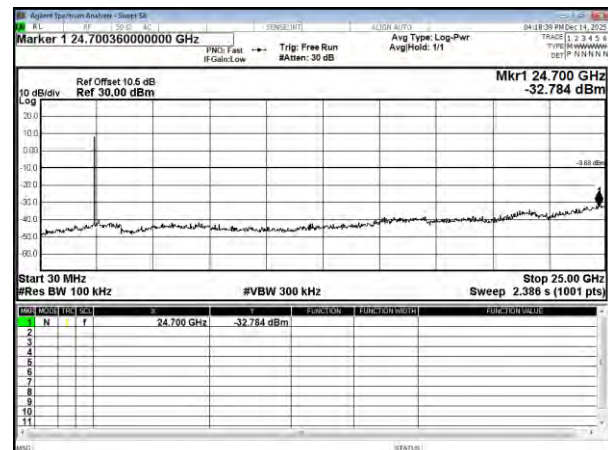
Modulation Standard: GFSK (1Mbps)

Channel: 00



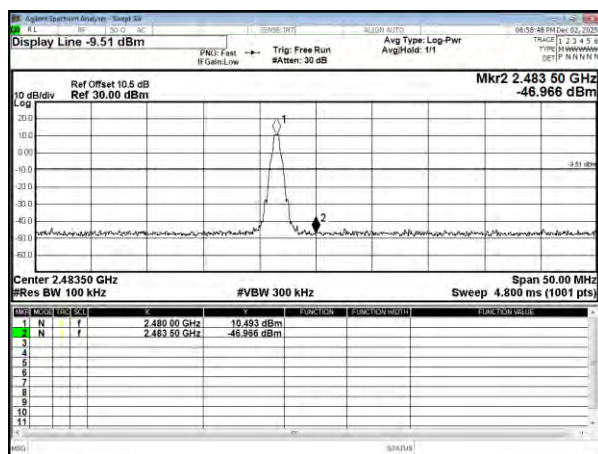
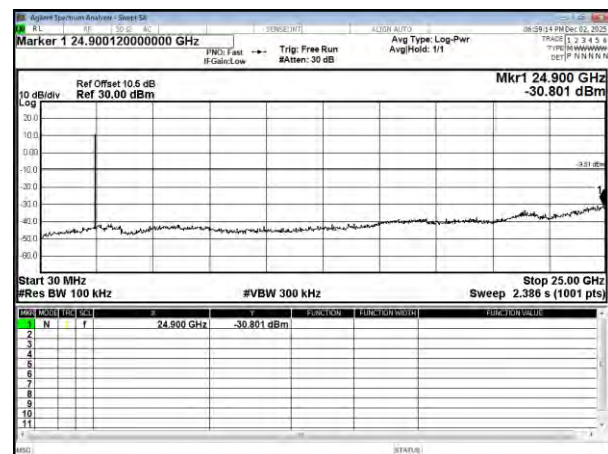
Modulation Standard: GFSK (1Mbps)

Channel: 39



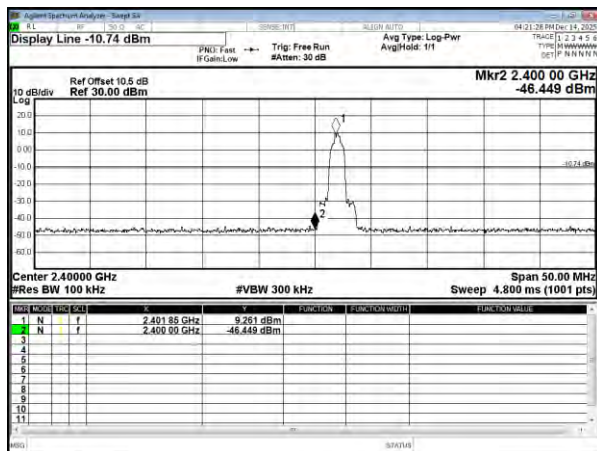
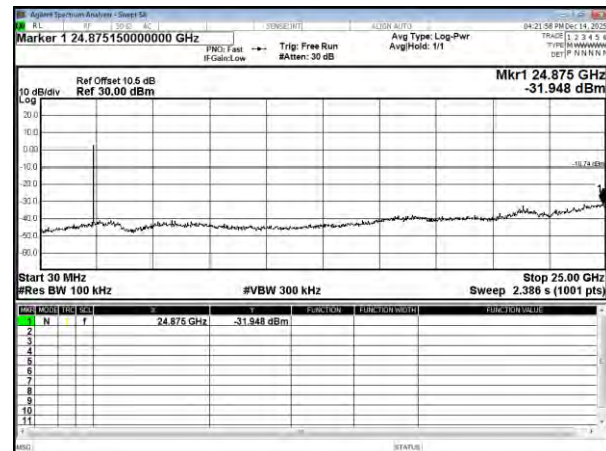
Modulation Standard: GFSK (1Mbps)

Channel: 78

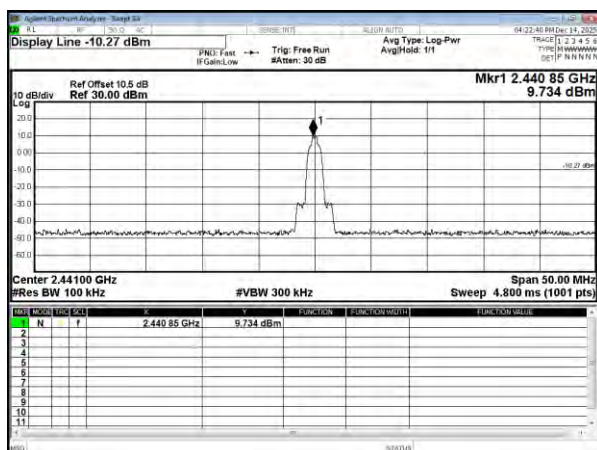
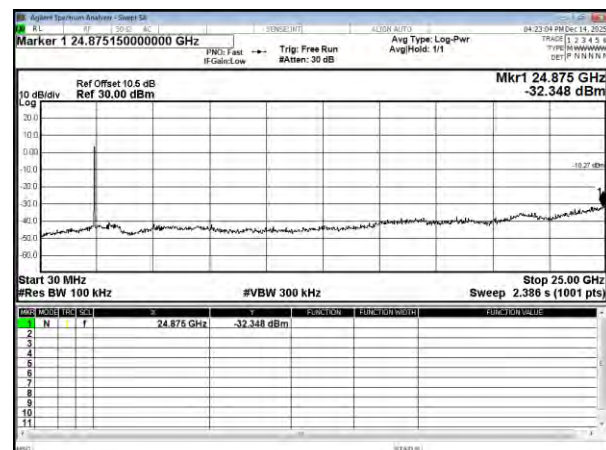




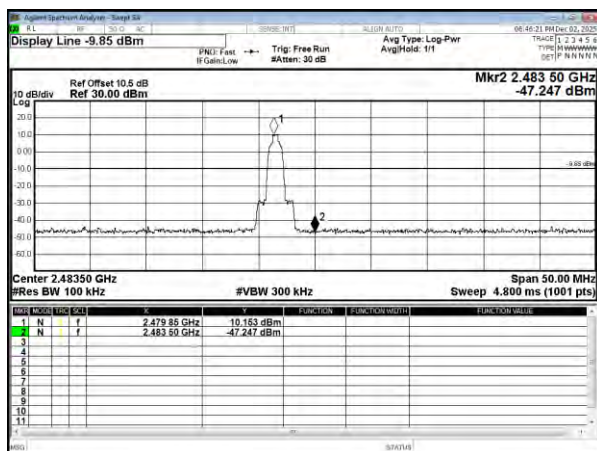
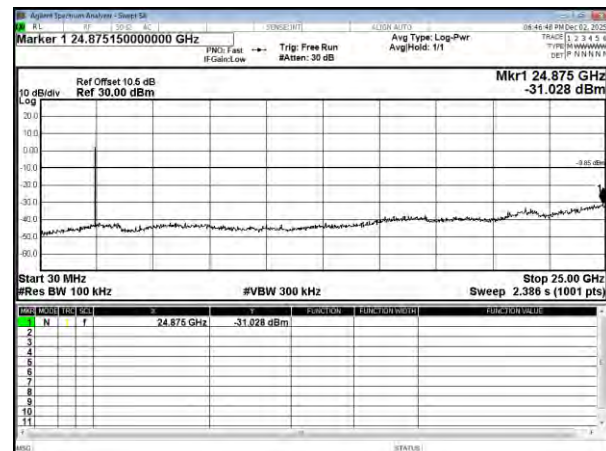
Modulation Standard: $\pi/4$ -DQPSK (2Mbps)
Channel: 00



Modulation Standard: $\pi/4$ -DQPSK (2Mbps)
Channel: 39

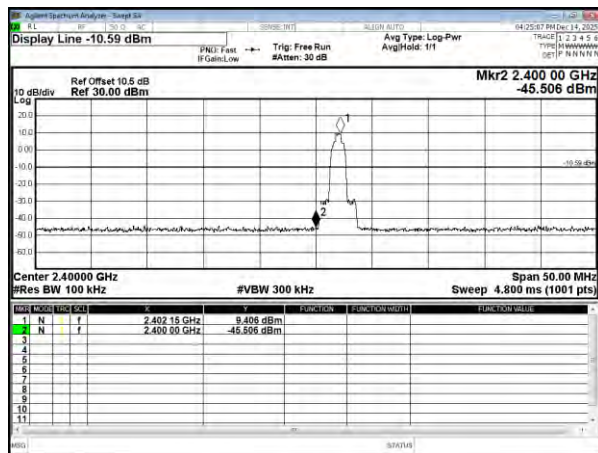
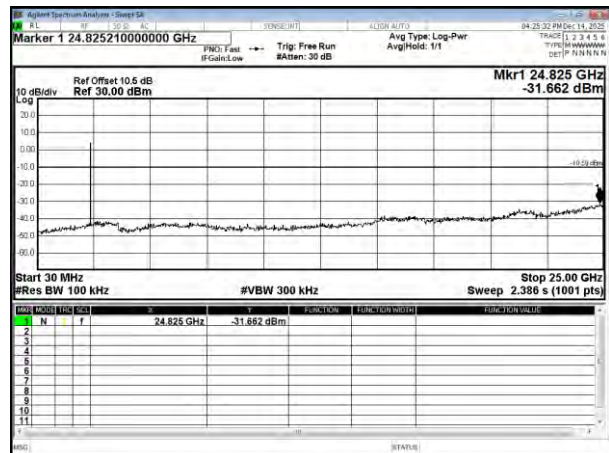


Modulation Standard: $\pi/4$ -DQPSK (2Mbps)
Channel: 78

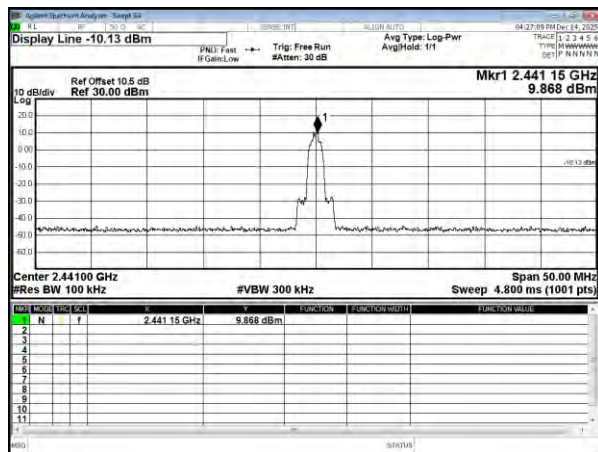
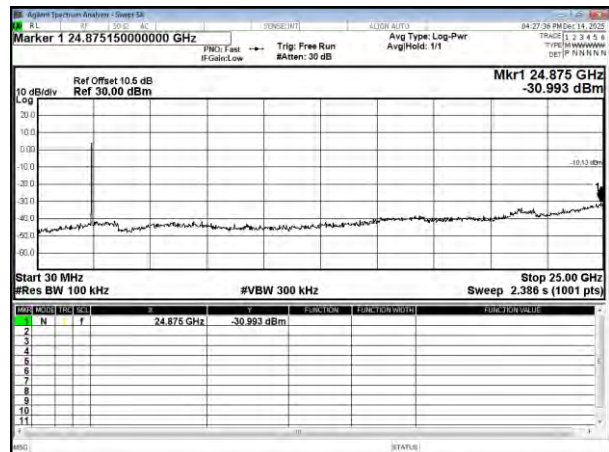




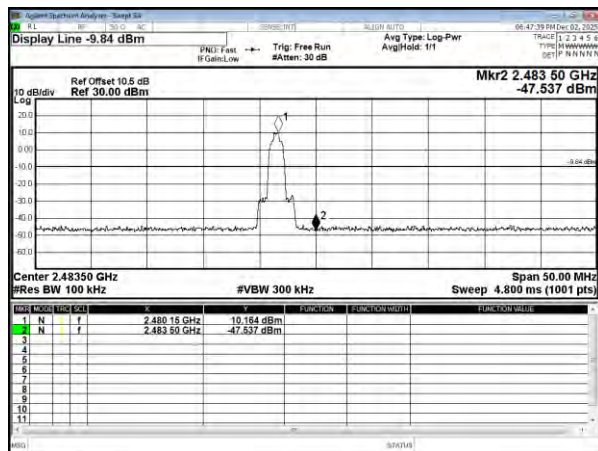
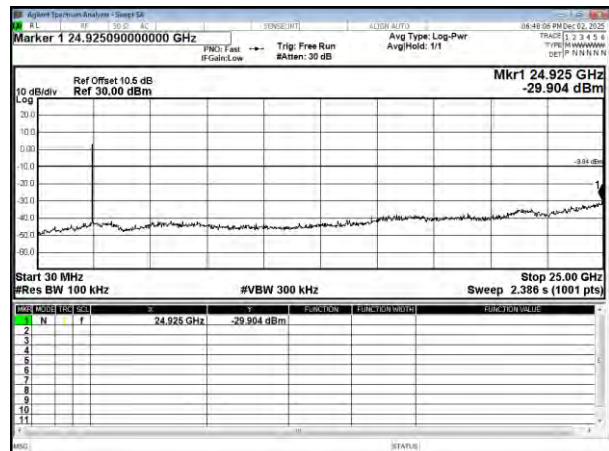
Modulation Standard: 8DPSK (3Mbps)
Channel: 00



Modulation Standard: 8DPSK (3Mbps)
Channel: 39

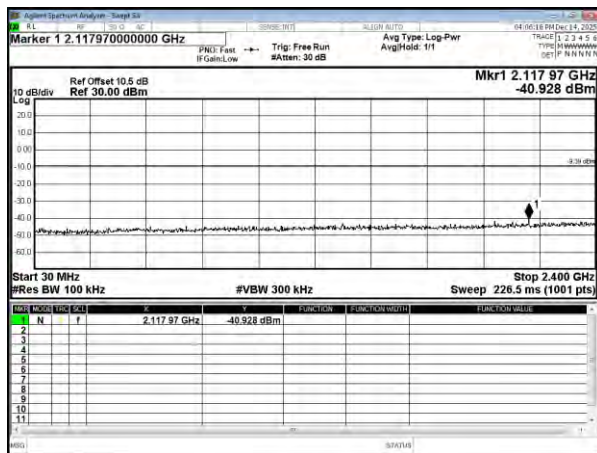


Modulation Standard: 8DPSK (3Mbps)
Channel: 78

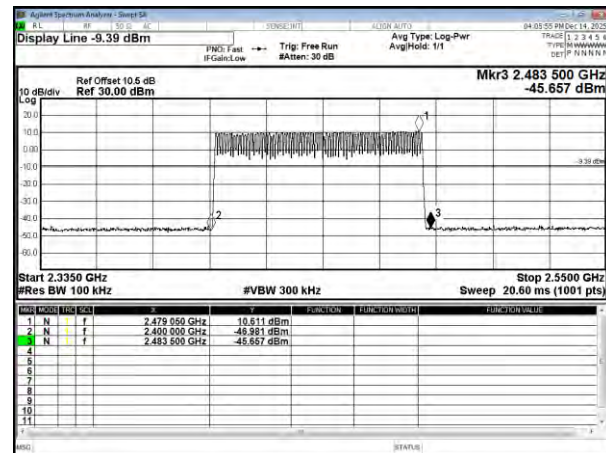


**Hopping test**

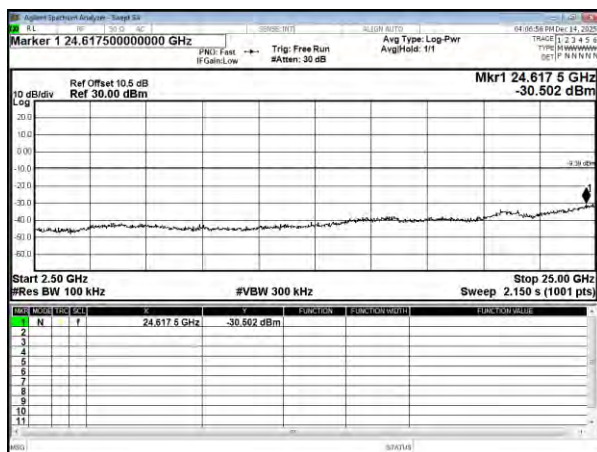
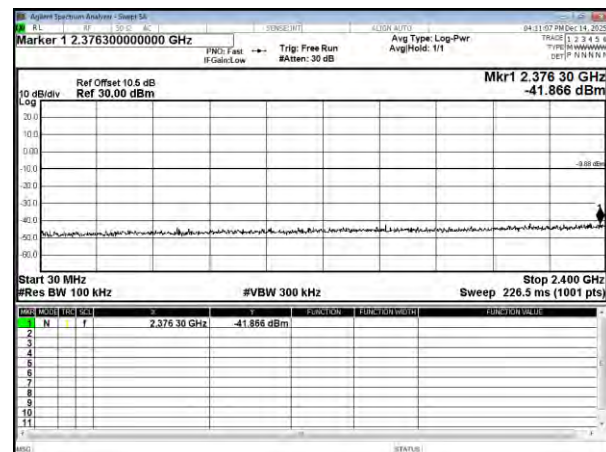
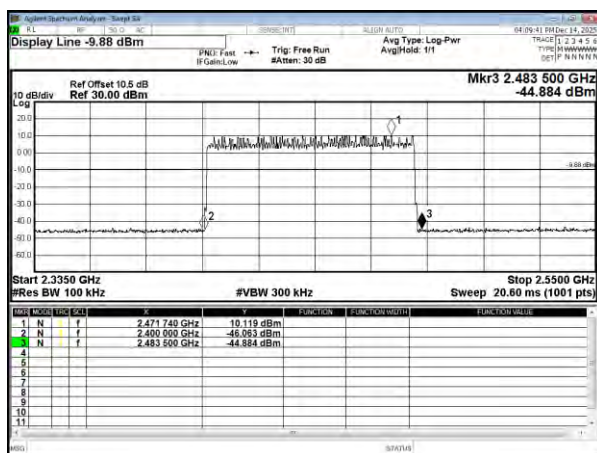
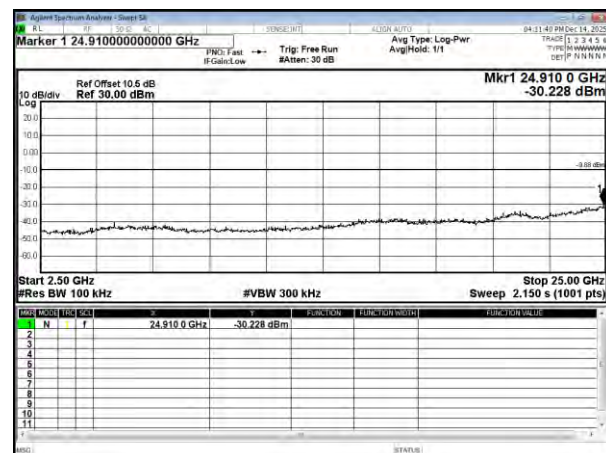
Modulation Standard: GFSK (1Mbps)



Modulation Standard: GFSK (1Mbps)

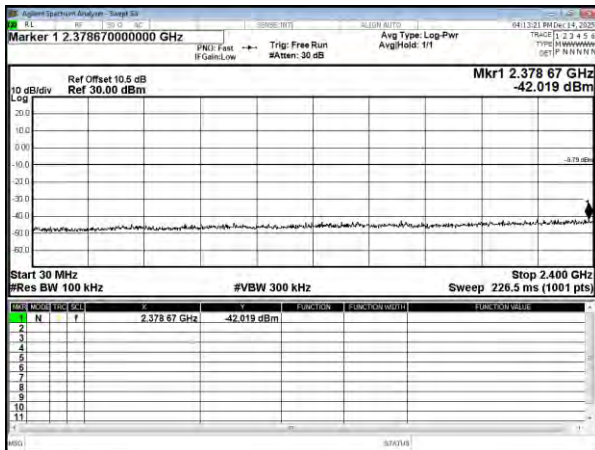


Modulation Standard: GFSK (1Mbps)

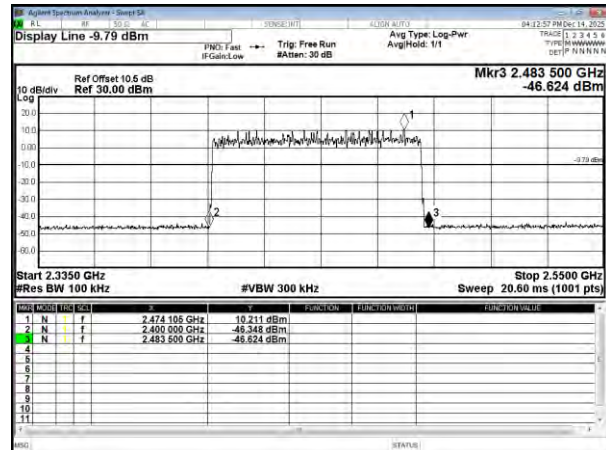
Modulation Standard: $\pi/4$ -DQPSK (2Mbps)Modulation Standard: $\pi/4$ -DQPSK (2Mbps)Modulation Standard: $\pi/4$ -DQPSK (2Mbps)



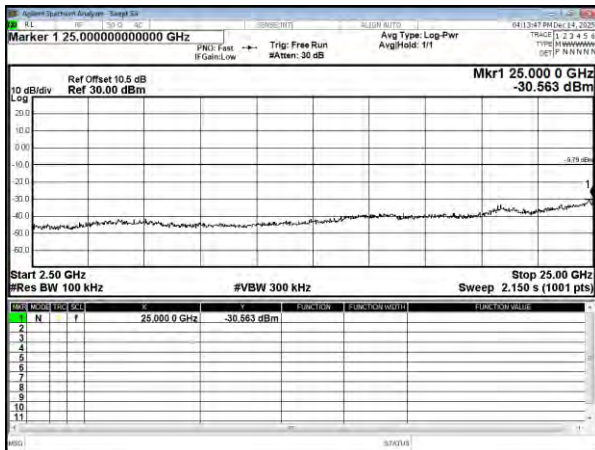
Modulation Standard: 8DPSK (3Mbps)



Modulation Standard: 8DPSK (3Mbps)



Modulation Standard: 8DPSK (3Mbps)





8. 20dB Bandwidth Measurement Data

8.1 Test Limit

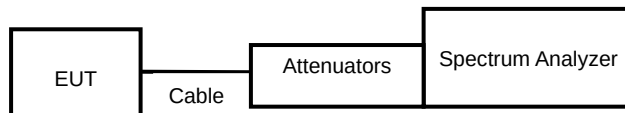
For reference data.

8.2 Test Procedures

According to the methods defined in ANSI C63.10-2020 Section 6.9

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 1% to 5% of the 20dB Bandwidth and VBW to approximately three times RBW.
- The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.

8.3 Test Setup Layout

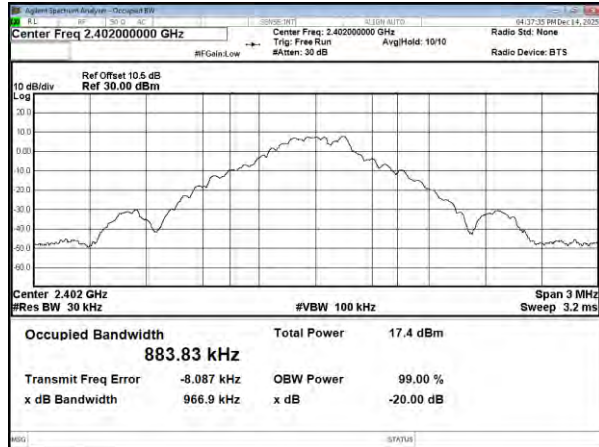


8.4 Test Result and Data

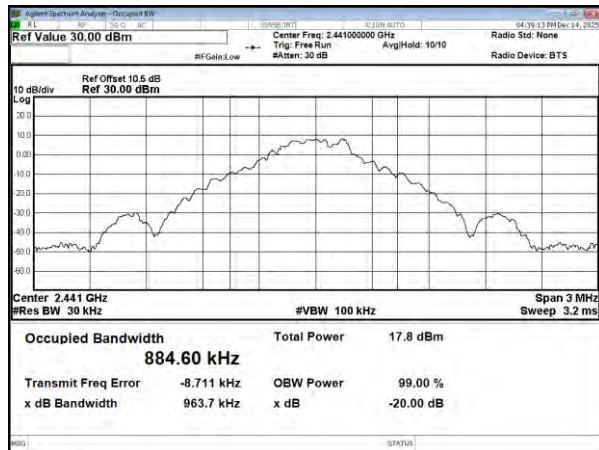
Modulation Type	Channel	Frequency (MHz)	20dB Bandwidth (MHz)	2/3 20dB Bandwidth(MHz)
GFSK (1Mbps)	00	2402	0.967	0.645
	39	2441	0.964	0.642
	78	2480	0.967	0.645
$\pi/4$ -DQPSK (2Mbps)	00	2402	1.236	0.824
	39	2441	1.234	0.823
	78	2480	1.238	0.825
8DPSK (3Mbps)	00	2402	1.280	0.853
	39	2441	1.283	0.855
	78	2480	1.281	0.854
Note	2/3*20dB Bandwidth=20dB Bandwidth x 2/3			



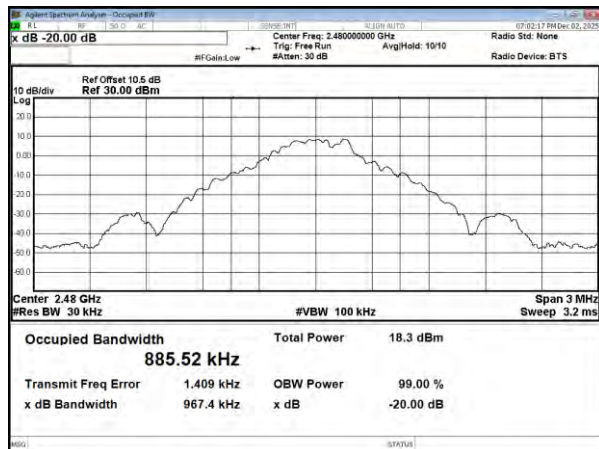
Modulation Type: GFSK (1Mbps)
Channel: 00



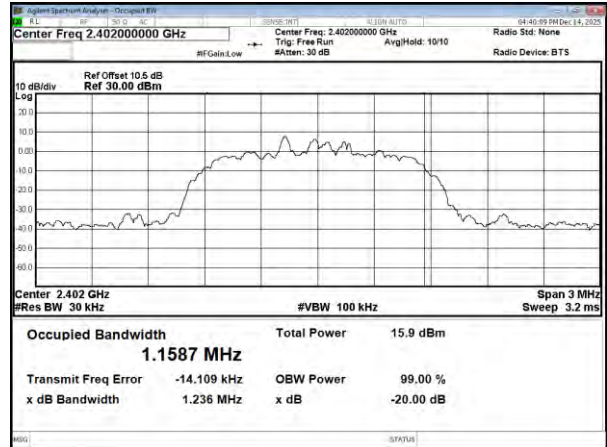
CH39



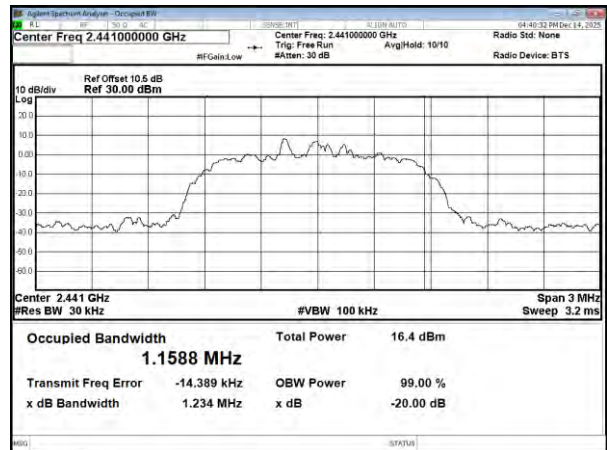
CH78



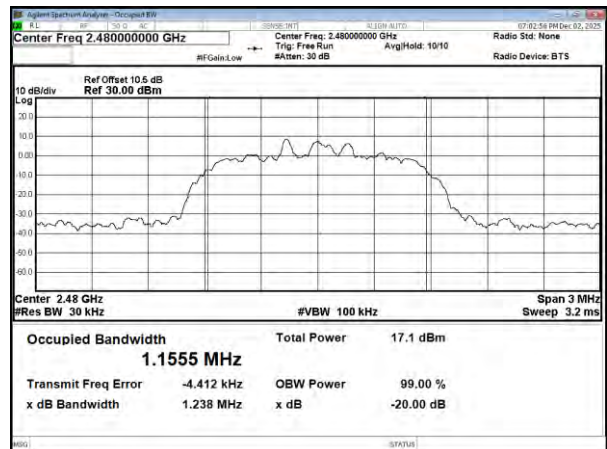
Modulation Type: $\pi/4$ -DQPSK (2Mbps)
Channel: 00



CH39

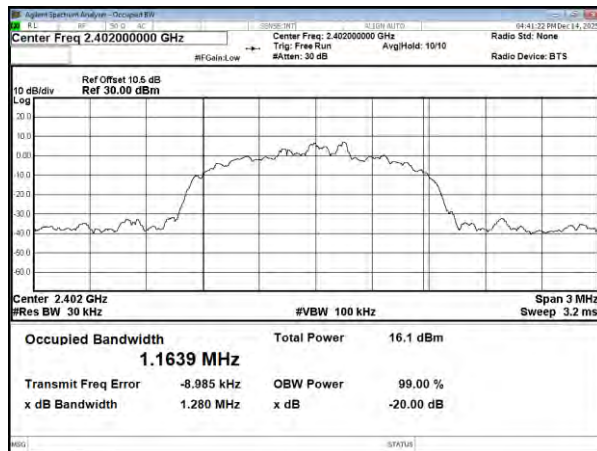


CH78

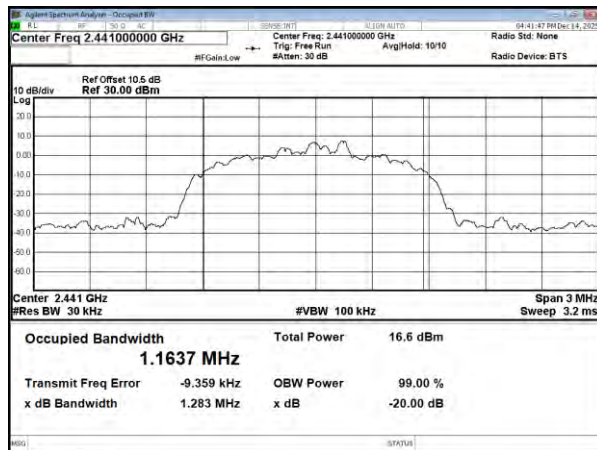




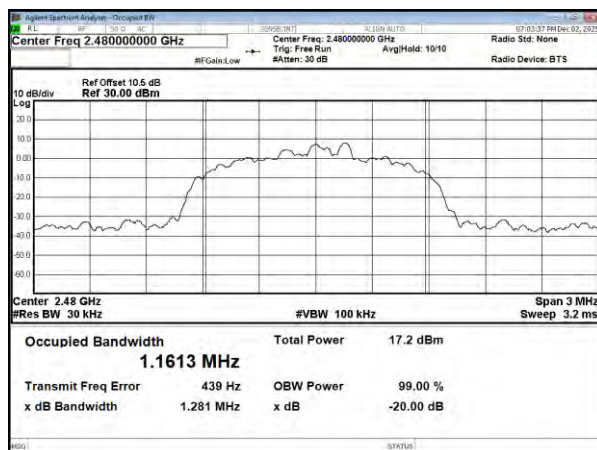
Modulation Type: 8DPSK (3Mbps)
Channel: 00



CH39



CH78





9. Carrier Frequency Separation

9.1 Test Limit

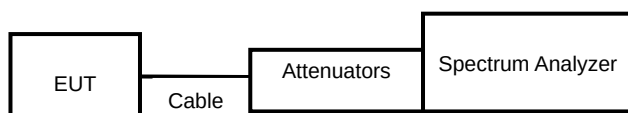
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

9.2 Test Procedures

According to the methods defined in ANSI C63.10-2020+Cor.1-2023 and ANSI C63.10a-2024 Section 7.8.2

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 30 KHz and VBW to 100 KHz.
- By using the Max Hold function record the separation of two adjacent channels.
- Measure the frequency difference of these two adjacent channels.

9.3 Test Setup Layout

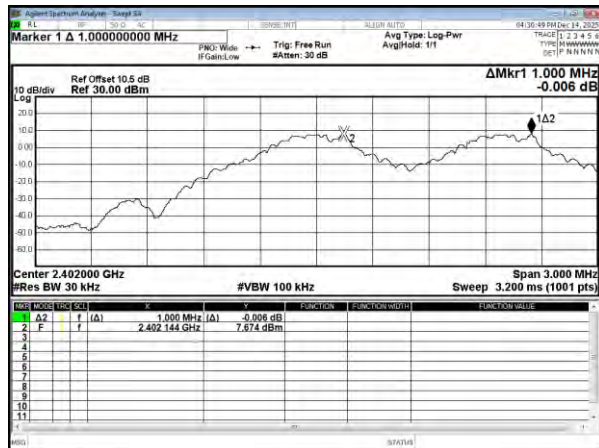


9.4 Test Result and Data

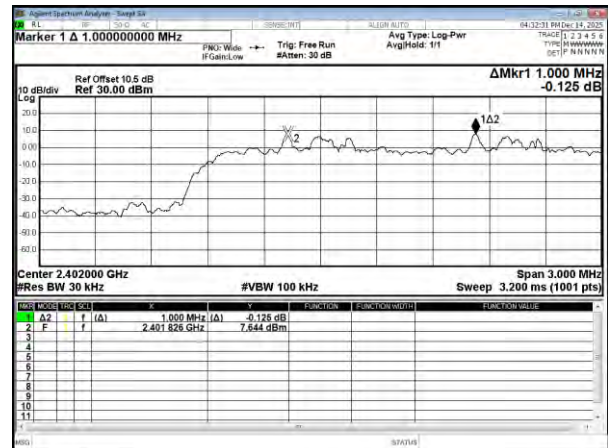
Modulation Type	Channel	Channel Separation (MHz)	Limit (MHz)
GFSK	00	1.000	0.645
	39	1.000	0.642
	78	1.000	0.645
$\pi/4$ -DQPSK	00	1.000	0.824
	39	1.000	0.823
	78	1.000	0.825
8DPSK	00	1.000	0.853
	39	1.000	0.855
	78	1.000	0.854



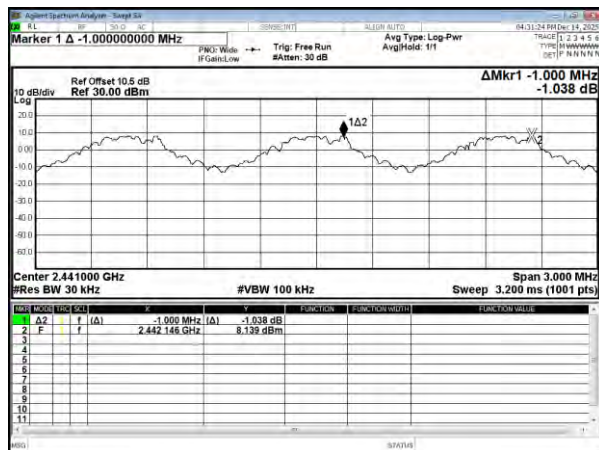
Modulation Type: GFSK (1Mbps)
Channel: 00



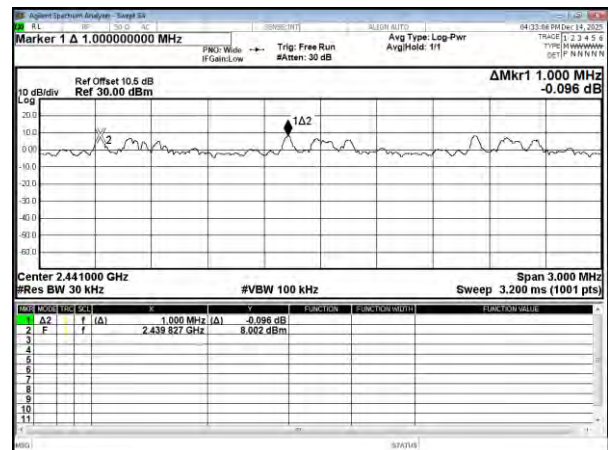
Modulation Type: $\pi/4$ -DQPSK (2Mbps)
Channel: 00



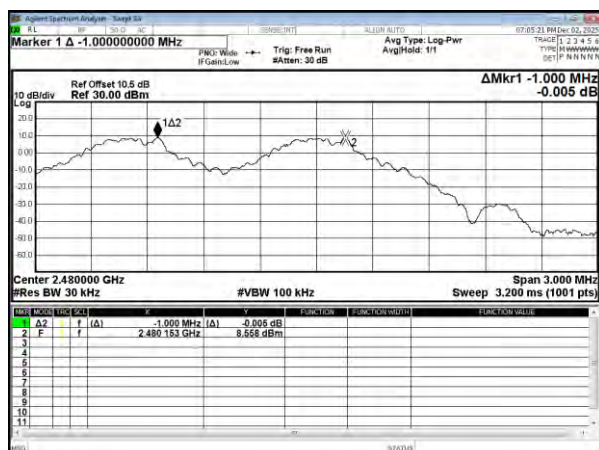
CH39



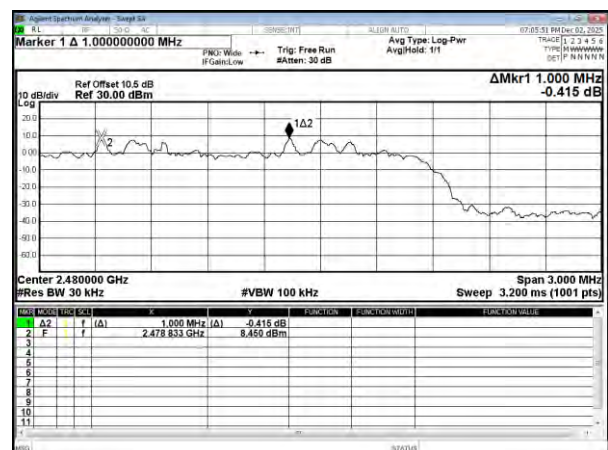
CH39



CH78

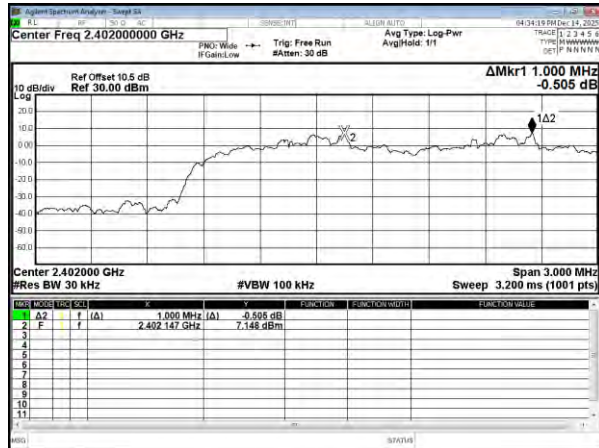


CH78

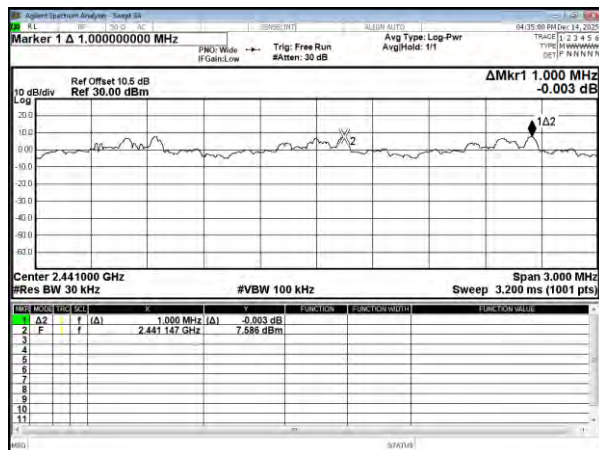




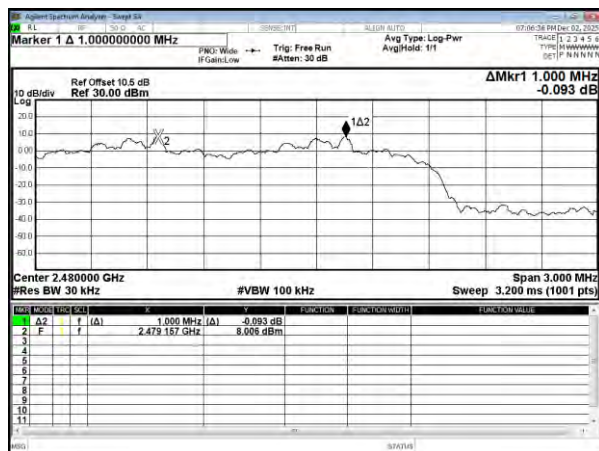
Modulation Type: 8DPSK (3Mbps)
Channel: 00



CH39



CH78





10. Dwell Time on each channel

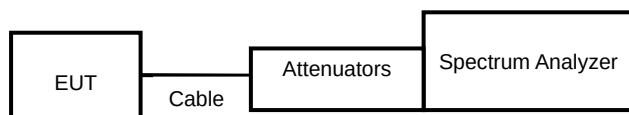
10.1 Test Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

10.2 Test Procedures

1. The transmitter output was connected to the spectrum analyzer.
2. Adjust the center frequency to measure frequency, then set zero span mode.
2. Set RBW of spectrum analyzer to 1 MHz and VBW to 1 MHz.
4. Measure the time duration of one transmission on the measured frequency.

10.3 Test Setup Layout



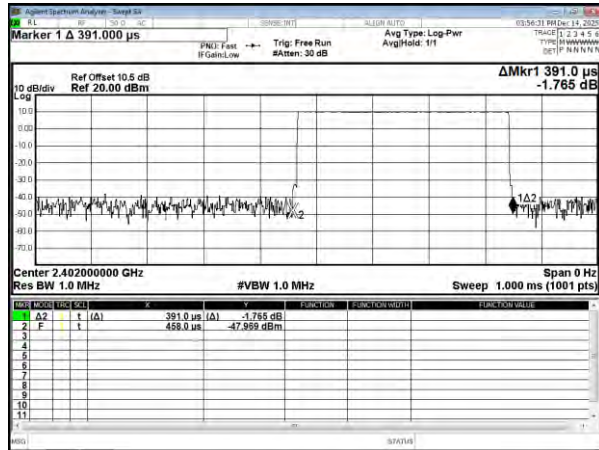
10.4 Test Result and Data

Test Period = 0.4 (second/ channel) x 79 Channel = 31.6 sec

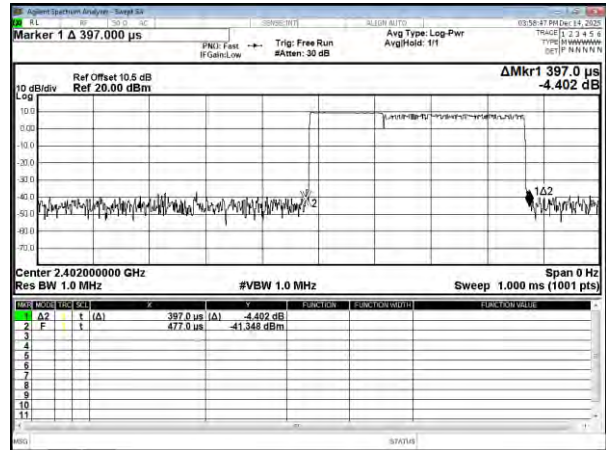
Modulation Type	Frequency (MHz)	Length of transmission time (ms)	Number of transmission in a 31.6 (79 Hopping*0.4)	Dwell Time (ms)	Limit (ms)
GFSK (DH1)	2402	0.391	320.00	125.12	400
GFSK (DH3)	2402	1.650	160.00	264.00	400
GFSK (DH5)	2402	2.910	106.67	310.40	400
$\pi/4$ -DQPSK (DH1)	2402	0.397	320.00	127.04	400
$\pi/4$ -DQPSK (DH3)	2402	1.650	160.00	264.00	400
$\pi/4$ -DQPSK (DH5)	2402	2.905	106.67	309.87	400
8DPSK (DH1)	2402	0.394	320.00	126.08	400
8DPSK (DH3)	2402	1.647	160.00	263.52	400
8DPSK (DH5)	2402	2.905	106.67	309.87	400



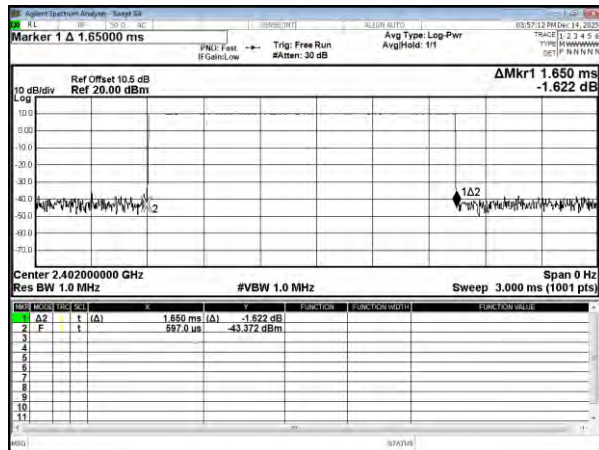
Modulation Type: GFSK (1Mbps)
DH1



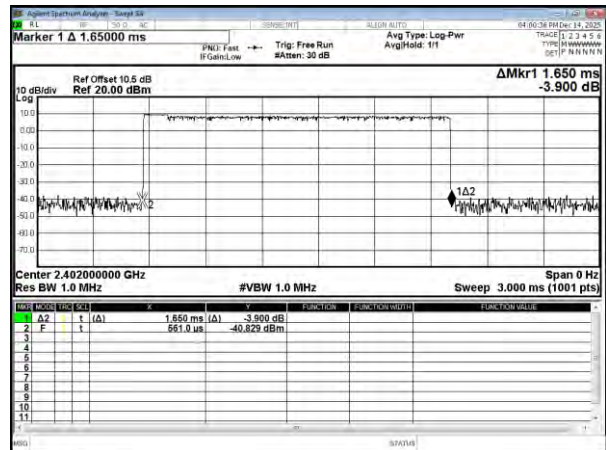
Modulation Type: $\pi/4$ -DQPSK (2Mbps)
DH1



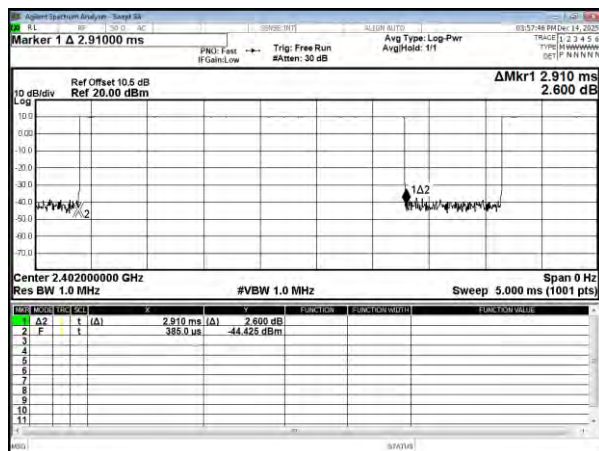
DH3



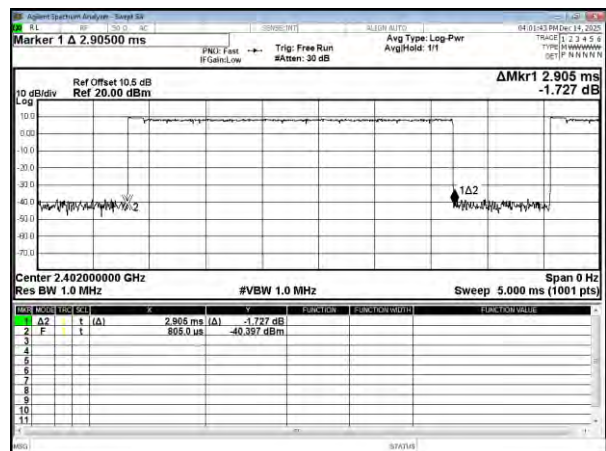
DH3



DH5

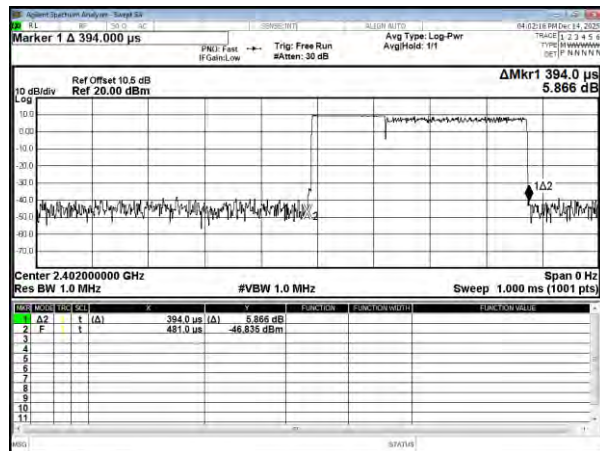


DH5

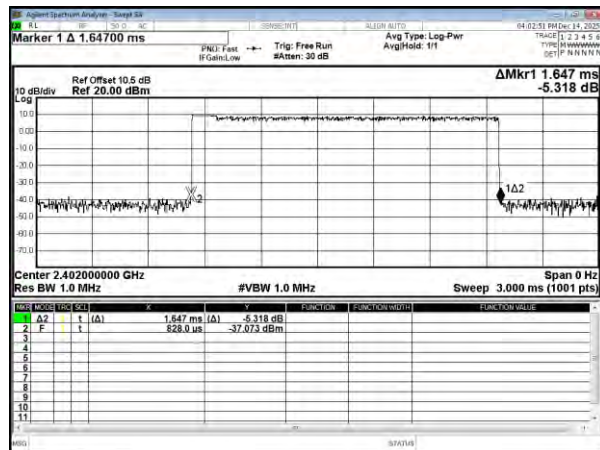




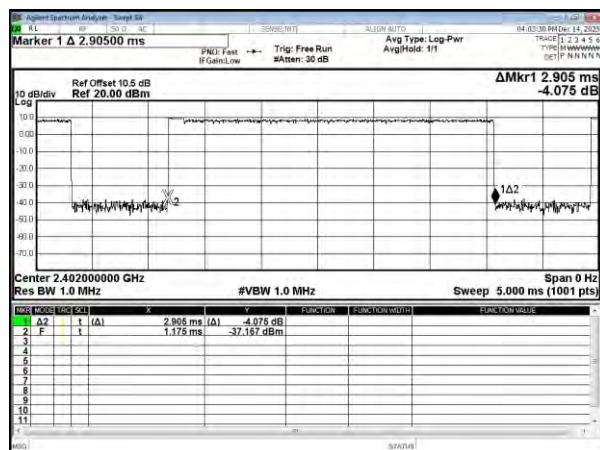
Modulation Type: 8DPSK (3Mbps)
DH1



DH3



DH5

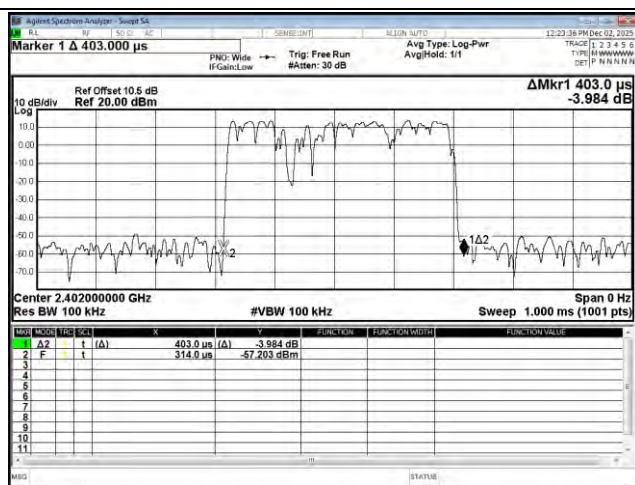




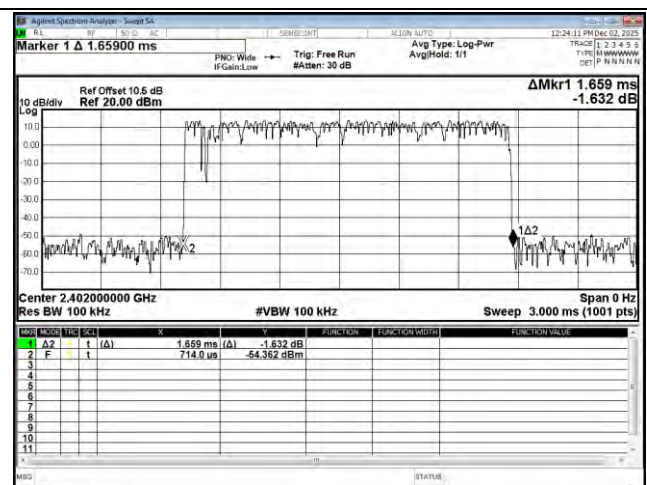
Test Period = 0.4 (second/ channel) x 20 Channel = 8 sec

Modulation Type	Frequency (MHz)	Length of transmission time (ms)	Number of transmission in a 8 (20 Hopping*0.4)	Dwell Time (ms)	Limit (ms)
AFH (DH1)	2402-2421	0.403	160.00	64.48	400
AFH (DH3)	2402-2421	1.68	80.00	134.40	400
AFH (DH5)	2402-2421	2.935	53.33	156.52	400

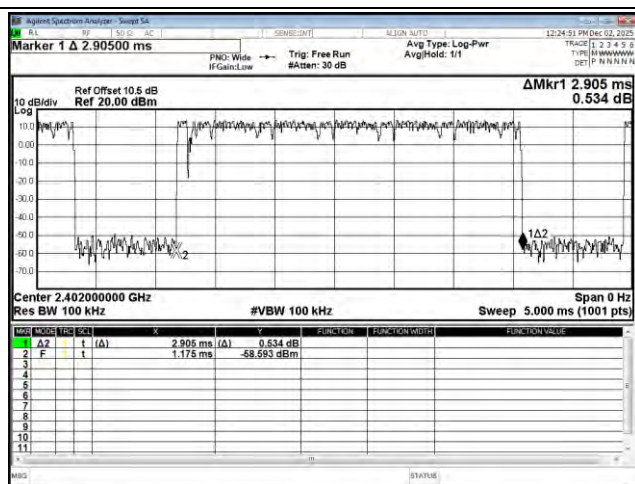
Modulation Type: AFH (DH1)



Modulation Type: AFH (DH3)



Modulation Type: AFH (DH5)





11. Number of Hopping Channels

11.1 Test Limit

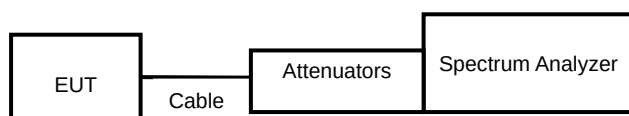
Frequency hopping systems in the 2400 ~ 2483.5 MHz band shall use at least 15 channels.

11.2 Test Procedures

According to the methods defined in ANSI C63.10-2020+Cor.1-2023 and ANSI C63.10a-2024 Section 7.8.3

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 300 KHz and VBW to 300 KHz.
- Set the Max Hold function, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been record.

11.3 Test Setup Layout

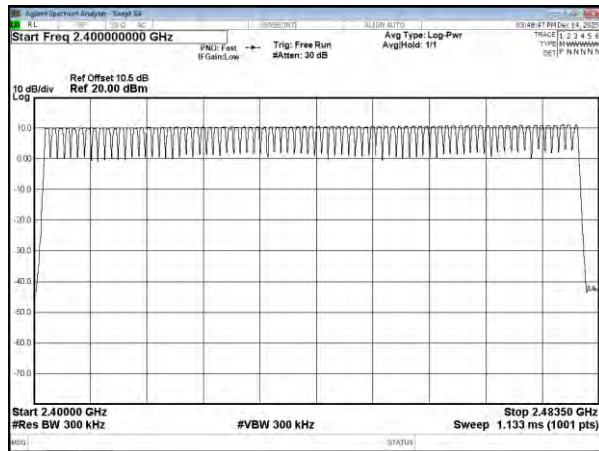


11.4 Test Result and Data

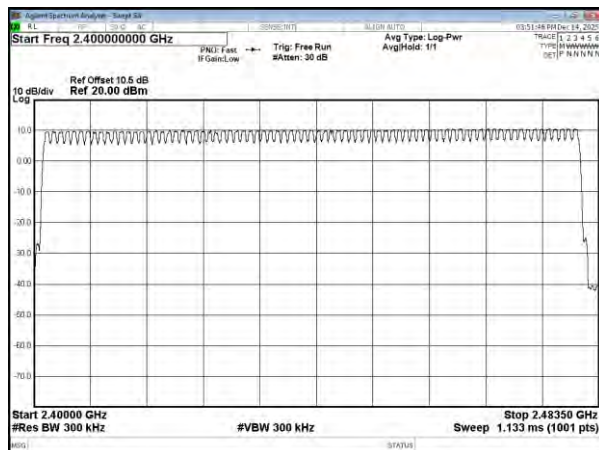
Modulation Type	Number of hopping channels
GFSK	79
$\pi/4$ -DQPSK	79
8DPSK	79



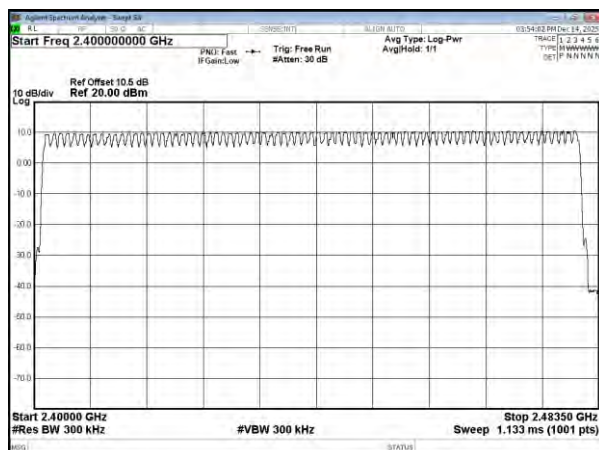
Modulation Standard: GFSK (1Mbps)



Modulation Standard: $\pi/4$ -DQPSK (2Mbps)



Modulation Standard: 8DPSK (3Mbps)





12. Maximum Peak Output Power

12.1 Test Limit

The Maximum Peak Output Power Measurement is 21dBm.

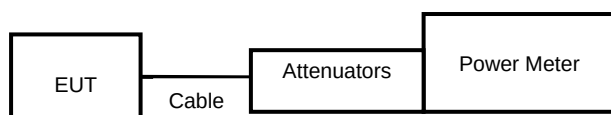
12.2 Test Procedures

According to the methods defined in ANSI C63.10-2020 Section 7.8.5

The antenna port(RF output)of the EUT was connected to the input(RF input)of a power meter.

Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

12.3 Test Setup Layout



12.4 Test Result and Data

Modulation Type	Setting	Channel	Frequency (MHz)	PK Output Power (dBm)	PK Output Power (mW)
GFSK	51	0	2402	9.967	9.924
	51	39	2441	10.416	11.005
	51	78	2480	10.747	11.877
$\pi/4$ -DQPSK	51	0	2402	9.441	8.792
	51	39	2441	9.864	9.692
	51	78	2480	10.226	10.534
8DPSK	51	0	2402	9.459	8.829
	51	39	2441	9.869	9.703
	51	78	2480	10.215	10.508

-----THE END OF REPORT-----