FCC Radio Test Report

FCC ID: 2BH7FC425V2

Report No.	:	BTL-FCCP-1-2410G041
Equipment	:	Smart Wire-Free Indoor/Outdoor Security Camera Battery-Powered Outdoor Security Camera Wire-Free Indoor/Outdoor Security Camera
Model Name	:	Tapo C425, TC85
Brand Name	:	tapo, tp-link
Applicant	:	TP-Link Systems Inc.
Address	:	10 Mauchly, Irvine, CA 92618
Manufacturer	:	TP-Link Systems Inc.
Address	:	10 Mauchly, Irvine, CA 92618
Radio Function	:	Bluetooth Low Energy
FCC Rule Part(s)	:	FCC CFR Title 47, Part 15, Subpart C (15.247)
Measurement Procedure(s)	:	ANSI C63.10-2013
Date of Receipt	:	2025/3/13
Date of Test	:	2025/3/14~2025/3/24
Issued Date	:	2025/3/28

The above equipment has been tested and found in compliance with the requirement of the above standards by BTL Inc.

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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REVISION HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-1-2410G041	R00	Original Report.	2025/3/28	Valid

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC CFR Title 47, Part 15, Subpart C				
Standard(s) Section	**Test Item**	**Test Result**	**Judgment**	**Remark**
15.207	AC Power Line Conducted Emissions	APPENDIX A	PASS	------
15.247(d) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C	PASS	------
15.247(a)(2)	Bandwidth	APPENDIX D	PASS	------
15.247(b)(3)	Maximum Output Power	APPENDIX E	PASS	------
15.247(d)	Conducted Spurious Emission	APPENDIX F	PASS	------
15.247(e)	Power Spectral Density	APPENDIX G	PASS	------
15.203	Antenna Requirement	------	PASS	**Note(2)**

Note:

(1) “N/A” denotes test is not applicable to this device.

(2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.

1.1 TEST FACILITY

The test locations stated below are under the TAF Accreditation Number 0659.
The test location(s) used to collect the test data in this report are:
No. 64, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (FCC DN: TW0659)
☒ C01 ☒ CB20
No. 68-2, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (FCC DN: TW0659)
☒ SR06

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± U**, where expanded uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k = 2**, providing a level of confidence of approximately **95 %**. The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.

A. AC Power Line Conducted Emissions Measurement:

Test Site	Method	Measurement Frequency Range	U (dB)
C01	CISPR	150 kHz ~ 30MHz	3.44

B. Radiated emissions Measurement:

Test Site	Measurement Frequency Range (GHz)	U (dB)
CB20 (3m)	0.03~0.2	4.01
	0.02~1	4.64
	1 ~ 6	5.91
	6 ~ 18	6.24
	18 ~ 26	3.93
	26 ~ 40	4.06

C. Other Measurement:

Test Item	U
Occupied Bandwidth	86 %
Output power	0.8412 dB
Power Spectral Density	0.8602 dB
Conducted Spurious emissions	1.8304 dB
Conducted Band edges	1.8338 dB

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Environment Condition	Test Voltage	Tested By
AC Power Line Conducted Emissions	25°C, 45%	AC 120V/60Hz	Ken Lu
Radiated Emissions-30 MHz to 1000 MHz	25°C, 65%	AC 120V/60Hz	Benny Cao
Radiated Emissions-Above 1000 MHz	25°C, 65%	AC 120V/60Hz	Benny Cao
Bandwidth	25°C, 50%	AC 120V/60Hz	Cheng Tsai
Maximum Output Power	25°C, 50%	AC 120V/60Hz	Cheng Tsai
Conducted Spurious Emission	25°C, 50%	AC 120V/60Hz	Cheng Tsai
Power Spectral Density	25°C, 50%	AC 120V/60Hz	Cheng Tsai

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Smart Wire-Free Indoor/Outdoor Security Camera Battery-Powered Outdoor Security Camera Wire-Free Indoor/Outdoor Security Camera
Brand Name	tapo, tp-link
Model Name	Tapo C425, TC85
Model Difference(s)	Tapo C425 and TC85 are only differ in model name and product name.
Software Version	V2.0
Hardware Version	V2.0
Power Source	1# DC Voltage supplied from AC adapter. Model: A8A-050200U-US1 2# Battery supplied. Model: LR2170SZ
Power Rating	1# I/P:100-240V ~ 50/60Hz 0.35A O/P:5V⎓2A 2# 3.6Vdc, Rate capacity: 4900mAh, nominal capacity: 5000mAh
Operation Band	2400 MHz ~ 2483.5 MHz
Operation Frequency	2402 MHz ~ 2480 MHz
Modulation Type	GFSK
Bit Rate of Transmitter	1Mbps
Max. Output Power	1Mbps: 0.33 dBm (0.0011 W)
Test Model	Tapo C425

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Equipment and Model Matching Table:

Model	Equipment
Tapo C425	Smart Wire-Free Indoor/Outdoor Security Camera Battery-Powered Outdoor Security Camera
TC85	Wire-Free Indoor/Outdoor Security Camera Battery-Powered Outdoor Security Camera

3. Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	20	2442
01	2404	21	2444
02	2406	22	2446
03	2408	23	2448
04	2410	24	2450
05	2412	25	2452
06	2414	26	2454
07	2416	27	2456
08	2418	28	2458
09	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

4. Table for Filed Antenna:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	tp-link	3101507068	Dipole	N/A	0

Note: The above Antenna information are derived from the antenna data sheet provided by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2.2 DESCRIPTION OF TEST MODES

Test Items	Test mode	Channel	Note
AC power line conducted emissions	Normal	-	-
Transmitter Radiated Emissions (below 1GHz)	1Mbps	00	-
Transmitter Radiated Emissions (above 1GHz)	1Mbps	00/39	Bandedge
		00/19/39	Harmonic
Transmitter Radiated Emissions (above 18GHz)	1Mbps	00	-
Bandwidth & Output Power & Conducted Spurious Emission & Power Spectral Density	1Mbps	00/19/39	-

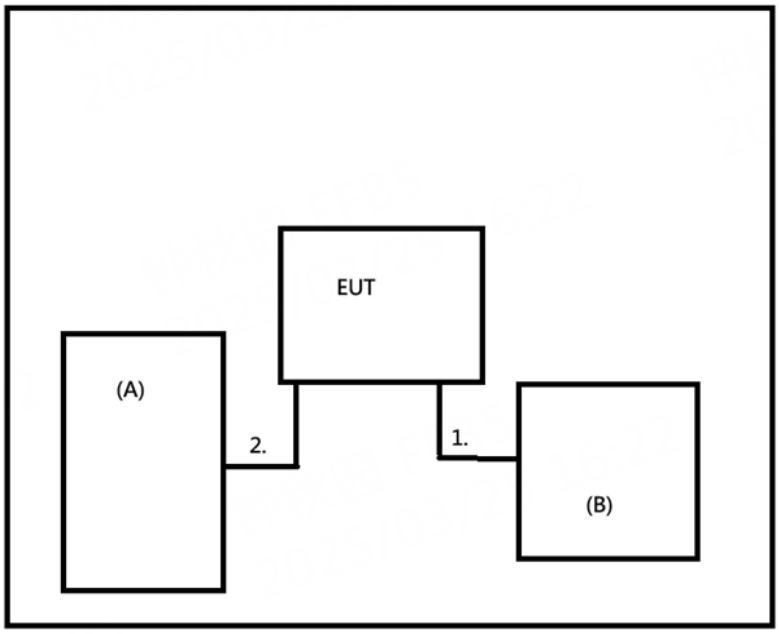
Note:
(1) For AC power line conducted emissions and radiated emissions below 1 GHz test, the 1Mbps Channel 00 is found to be the worst case and recorded.
(2) For radiated emission Harmonic 18-26.5GHz test, only tested the worst case and recorded.
(3) For radiated emission band edge test, both Vertical and Horizontal are evaluated, but only the worst case (Horizontal) is recorded.

2.3 PARAMETERS OF TEST SOFTWARE

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

Test Software Version	Realtek Bluetooth MP Kit Setup Package For Ameba_v90(164578)		
Frequency (MHz)	2402	2440	2480
1Mbps	0x2A	0x29	0x2A

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.5 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	Notebook	Lenovo	ThinkBook 14 G4 IAP	MP28KHAH	Furnished by test lab
B	Adapter	tp-link	A8A-050200U-US1	N/A	Supplied by test requester

Item	Cable Type	Shielded	Ferrite Core	Length	Remarks
1	Type-C Cable	YES	NO	1m	Supplied by test requester
2	Fixture Cable	NO	NO	0.5m	Furnished by test lab

3. AC POWER LINE CONDUCTED EMISSIONS

3.1 LIMIT

Frequency of Emission (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

Note:

(1) The tighter limit applies at the band edges.
(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
(3) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor (if use)
Margin Level = Measurement Value – Limit Value
Calculation example:

Reading Level (dBuV)		Correct Factor (dB)		Measurement Value (dBuV)
38.22	+	3.45	=	41.67

Measurement Value (dBuV)		Limit Value (dBuV)		Margin Level (dB)
41.67	-	60	=	-18.33

3.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

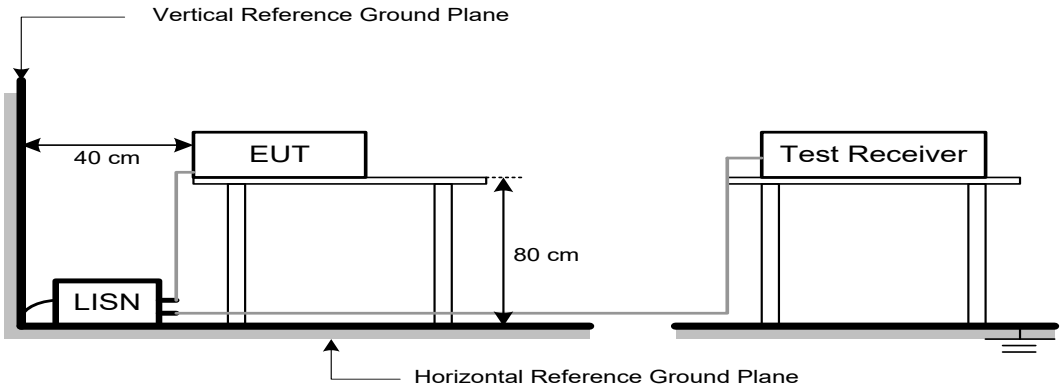
The following table is the setting of the receiver:

Receiver Parameters	Setting
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.3 DEVIATION FROM TEST STANDARD

No deviation.

3.4 TEST SETUP



3.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.6 TEST RESULTS

Please refer to the APPENDIX A.

Remark:

(1) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform.In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.

(2) Measuring frequency range from 150 kHz to 30 MHz.

4. RADIATED EMISSIONS

4.1 LIMIT

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-1000 MHz)

Frequency (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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	Band edge/ Harmonic at 3m (dBµV/m)		Harmonic at 1m (dBµV/m)	
	Peak	Average	Peak	Average
Above 1000	74	54	83.5 (Note 5)	63.5 (Note 5)

Note:

(1) The limit for radiated test was performed according to FCC CFR Title 47, Part 15, Subpart C.
(2) The tighter limit applies at the band edges.
(3) Emission level (dBuV/m)=20log Emission level (uV/m).
(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value
Calculation example:

Reading Level (dBuV)		Correct Factor (dB/m)		Measurement Value (dBuV/m)
19.11	+	2.11	=	21.22

Measurement Value (dBuV/m)		Limit Value (dBuV/m)		Margin Level (dB)
21.22	-	54	=	-32.78

(5)

$$FS_{\text{limit}} = FS_{\max} - 20\log\left(\frac{d_{\text{limit}}}{d_{\text{measure}}}\right)$$

$20\log (d_{limit}/d_{measure})=20\log (3/1)=9.5$ dB.
FS_{limit}: Harmonic at 3m Peak and Average limit.
FS_{max}: Harmonic at 1m Peak and Average Maximum value.
d_{limit}: Harmonic at 3m test distance.
$d_{measure}$: Harmonic Actual test distance.

4.2 TEST PROCEDURE

a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
b. The measuring distance of 3 m or 1 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1 GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform. (below 1 GHz)
h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1 GHz)
i. For the actual test configuration, please refer to the related Item – EUT Test Photos.

The following table is the setting of the receiver:

Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~150 kHz for RBW 200 Hz
Start ~ Stop Frequency	0.15 MHz~30 MHz for RBW 9 kHz
Start ~ Stop Frequency	30 MHz~1000 MHz for RBW 100 kHz

Spectrum Parameters	Setting
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1 MHz / 3 MHz for PK value 1 MHz / 1/T Hz for AVG value

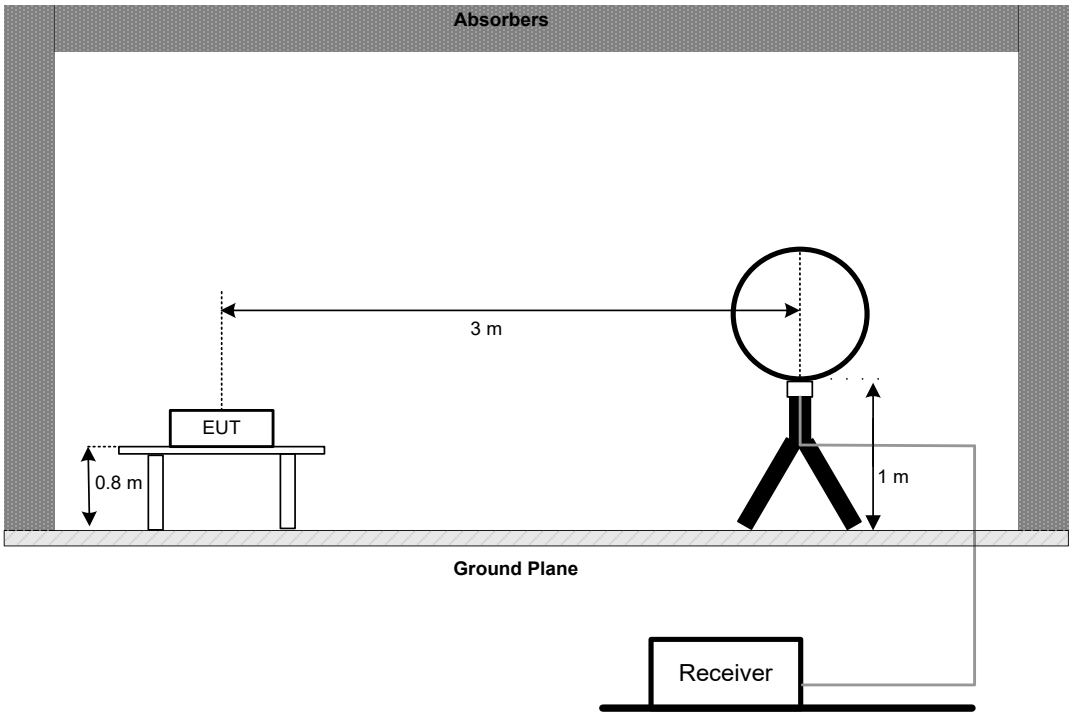
Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30 MHz~1000 MHz for QP detector
Start ~ Stop Frequency	1 GHz~26.5 GHz for PK/AVG detector

4.3 DEVIATION FROM TEST STANDARD

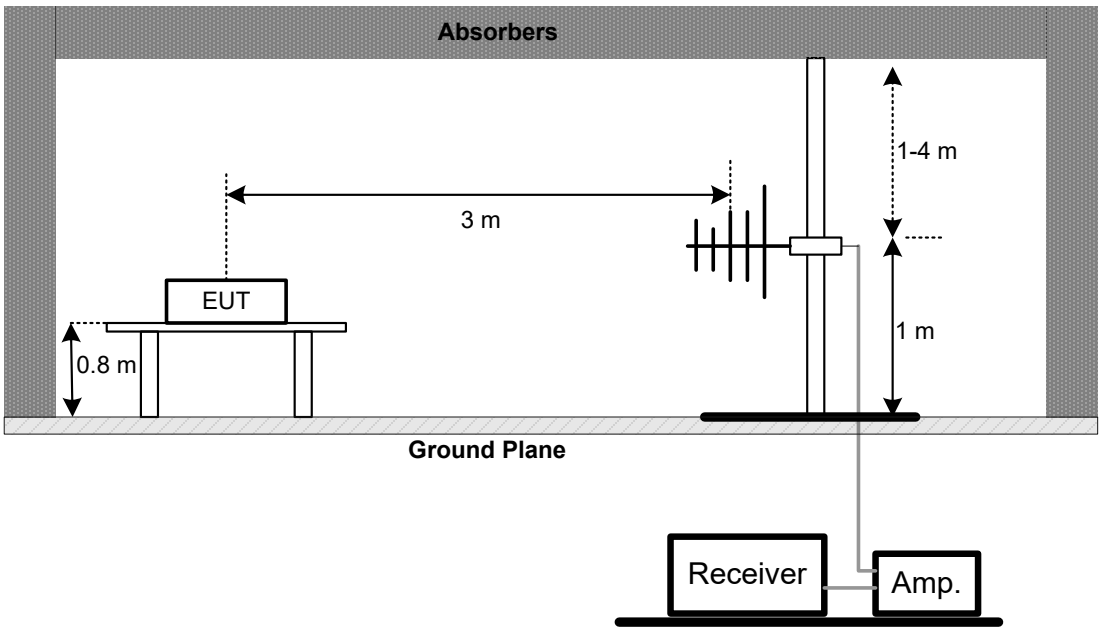
No deviation.

4.4 TEST SETUP

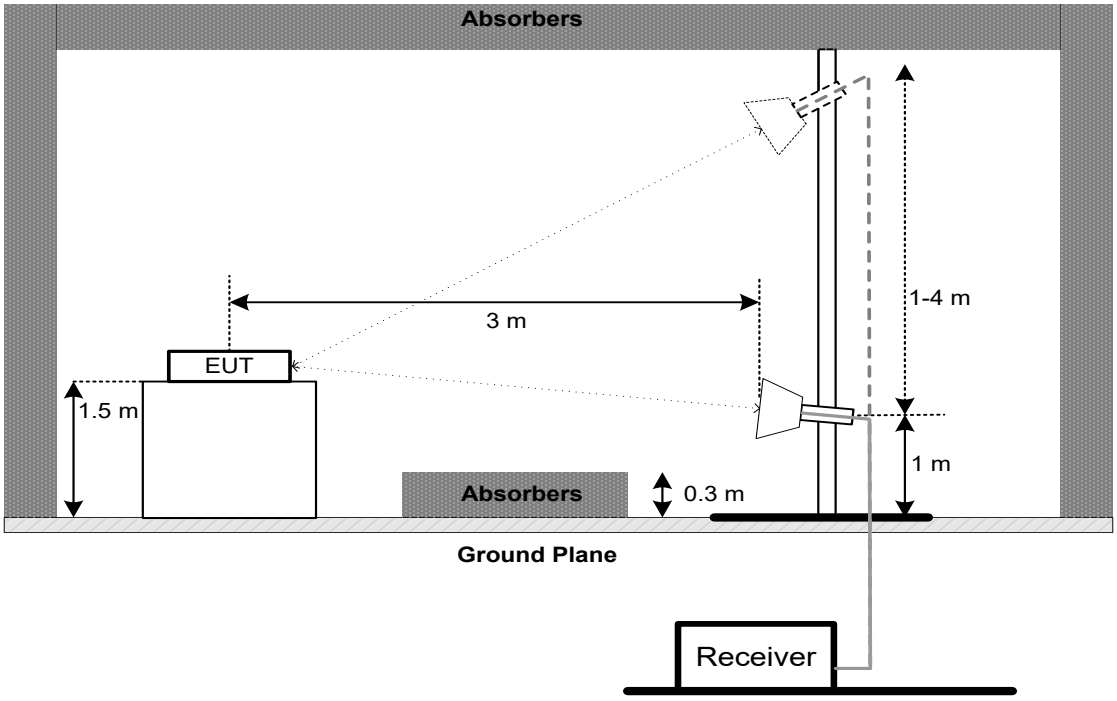
9 kHz to 30 MHz



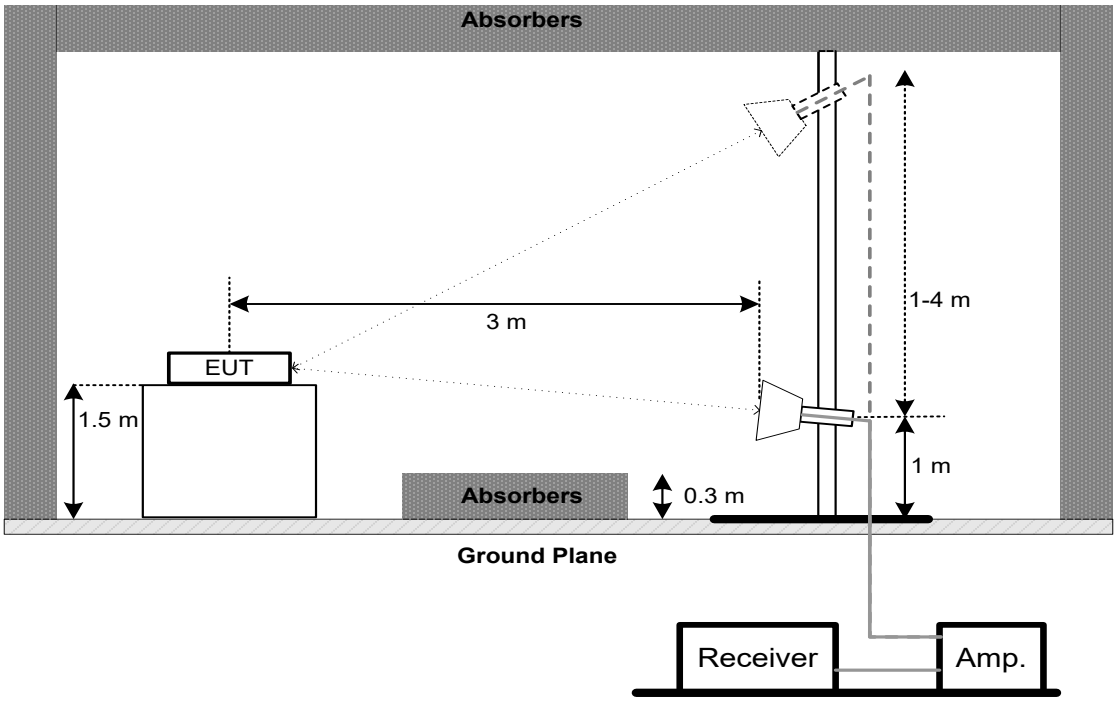
30 MHz to 1 GHz



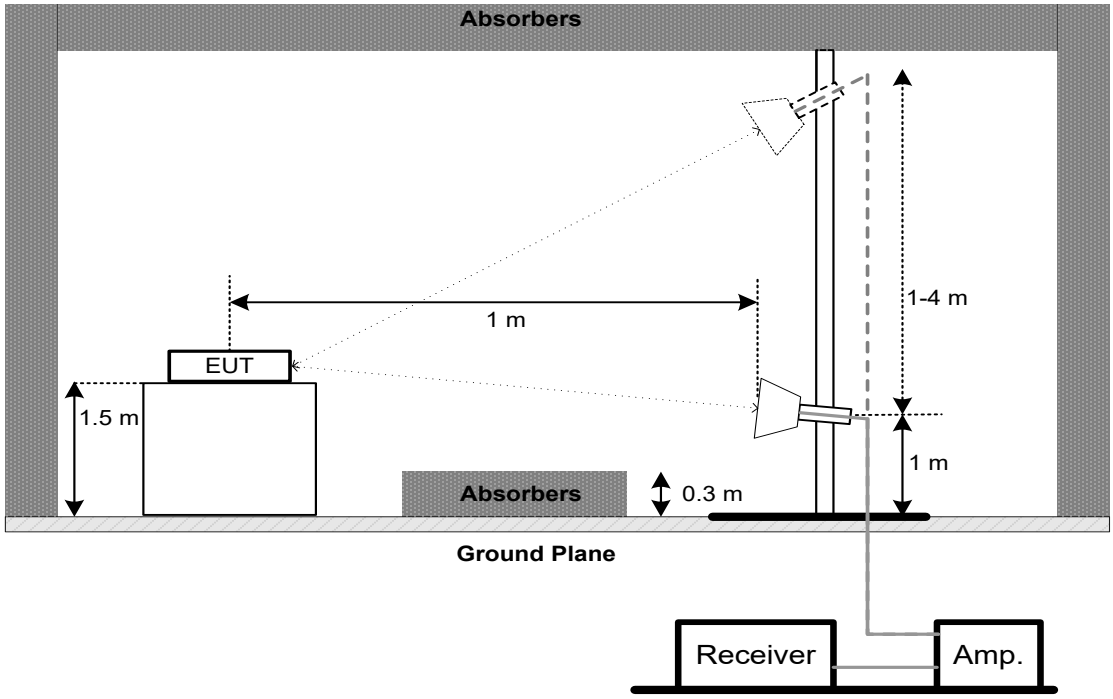
Above 1 GHz
Band edge



Harmonic(1 GHz to 18 GHz)



Harmonic(18 GHz to 26.5 GHz)



4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULT - 9 kHz TO 30 MHz

There were no emissions found below 30 MHz within 20 dB of the limit.

4.7 TEST RESULT - 30 MHz TO 1000 MHz

Please refer to the APPENDIX B.

4.8 TEST RESULT - ABOVE 1000 MHz

Please refer to the APPENDIX C.

Remark:

(1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

5. BANDWIDTH

5.1 LIMIT

Section	Test Item	Limit
FCC 15.247(a)(2)	6 dB Bandwidth	>= 500 kHz
	99% Emission Bandwidth	-

5.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

b. The following table is the setting of the spectrum analyzer:

For 6 dB Bandwidth:

Spectrum Parameters	Setting
Span Frequency	> Measurement Bandwidth
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

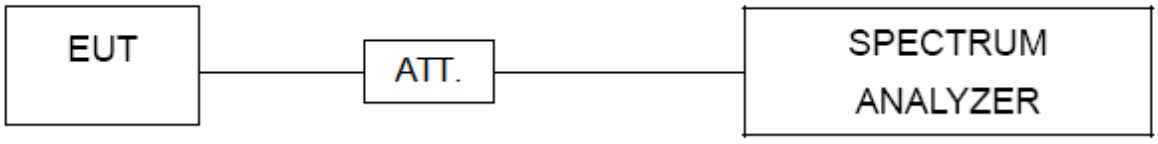
For 99% Emission Bandwidth:

Spectrum Parameters	Setting
Span Frequency	Between 1.5 times and 5.0 times the OBW
RBW	30 kHz
VBW	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULTS

Please refer to the APPENDIX D.

6. MAXIMUM OUTPUT POWER

6.1 LIMIT

Section	Test Item	Limit
FCC 15.247(b)(3)	Maximum Output Power	1.0000 watt or 30.00 dBm

6.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

b. The following table is the setting of the spectrum analyzer:

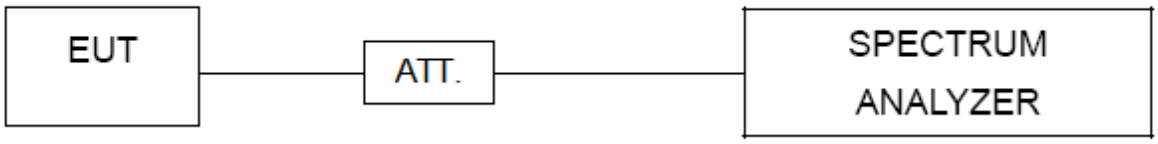
Spectrum Parameters	Setting
Span Frequency	At least 1.5 times the OBW
RBW	1% to 5% of the OBW, not to exceed 1 MHz
VBW	≥ 3×RBW
Detector	RMS
Trace	Max Hold
Sweep Time	≤ (number of points in sweep) × T **(Note)**

Note: Where T is defined in 11.6 of ANSI C63.10-2013.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULTS

Please refer to the APPENDIX E.

7. CONDUCTED SPURIOUS EMISSION

7.1 LIMIT

In any 100 kHz 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 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required.

7.2 TEST PROCEDURE

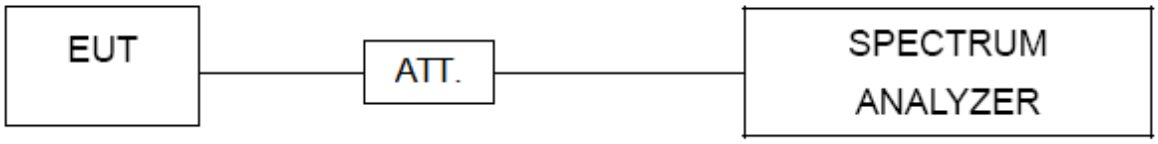
a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Start Frequency	30 MHz
Stop Frequency	26.5 GHz
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULTS

Please refer to the APPENDIX F.

8. POWER SPECTRAL DENSITY

8.1 LIMIT

Section	Test Item	Limit
FCC 15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)

8.2 TEST PROCEDURE

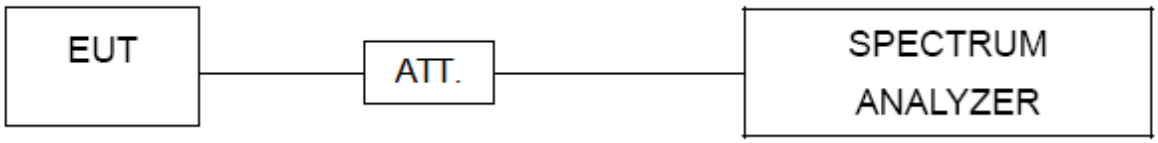
a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Span Frequency	2 MHz (1 Mbps)
RBW	3 kHz
VBW	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULTS

Please refer to the APPENDIX G.

9. MEASUREMENT INSTRUMENTS LIST

AC Power Line Conducted Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Two-Line V-Network	R&S	ENV216	101051	2024/6/26	2025/6/25
2	Test Cable	EMCI	EMCRG58-BM-BM-9000	210501	2024/12/10	2025/12/9
3	EMC Receiver	Keysight	N9038A	MY54130009	2024/6/27	2025/6/26
4	Measurement Software	Farad	EZ_EMC (Ver. NB-03A1-01)	N/A	N/A	N/A

Radiated Emissions - Below 1GHz						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	01207	2024/12/4	2025/12/3
2	EMC Receiver	Keysight	N9038A	MY54130009	2024/6/27	2025/6/26
3	Pre-Amplifier	EMCI	EMC001330-20201222	980807	2024/12/9	2025/12/8
4	Test Cable	EMCI	EMC-8D-NM-NM-5000	150106	2024/12/9	2025/12/8
5	Test Cable	EMCI	EMC-CFD-400-NM-NM-8000	200348	2024/12/9	2025/12/8
6	Test Cable	EMCI	EMC-CFD-400-NM-NM-3300	200343	2024/12/9	2025/12/8
7	Measurement Software	Farad	EZ_EMC (Ver. NB-03A1-01)	N/A	N/A	N/A

Radiated Emissions - Above 1GHz						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Broad-Band Horn Antenna	RFSPIN	DRH18-E	210109A18E	2025/1/14	2026/1/13
2	Pre-Amplifier	EMCI	EMC118A45SE	981030	2024/12/10	2025/12/9
3	Test Cable	EMCI	EMC105-SM-SM-1000	210119	2024/12/10	2025/12/9
4	Test Cable	EMCI	EMC105-SM-SM-3000	210118	2024/12/10	2025/12/9
5	Test Cable	EMCI	EMC105-SM-SM-7000	210117	2024/12/10	2025/12/9
6	EXA Spectrum Analyzer	keysight	N9020B	MY59050137	2024/11/24	2025/11/25
7	Measurement Software	Farad	EZ_EMC (Ver. NB-03A1-01)	N/A	N/A	N/A

Radiated Emissions - Above 18GHz						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Pre-Amplifier	EMCI	EMC184045SE	980512	2024/12/10	2025/12/9
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	340	2024/6/27	2025/6/26
3	Test Cable	EMCI	EMC102-KM-KM-1000	220328	2024/12/10	2025/12/9
4	Test Cable	EMCI	EMC101G-KM-KM-3000	220330	2024/12/10	2025/12/9
5	Measurement Software	Farad	EZ_EMC (Ver. NB-03A1-01)	N/A	N/A	N/A

Bandwidth & Output Power & Conducted Spurious Emission & Power Spectral Density						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 30	100854	2024/6/27	2025/6/26
2	10dbAttenuator	INMET	AHC-10dB	1	2024/11/26	2025/11/25
3	BTL-ConducredTest	BTL	1247788684	N/A	N/A	N/A

Remark: “N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

10. EUT TEST PHOTO

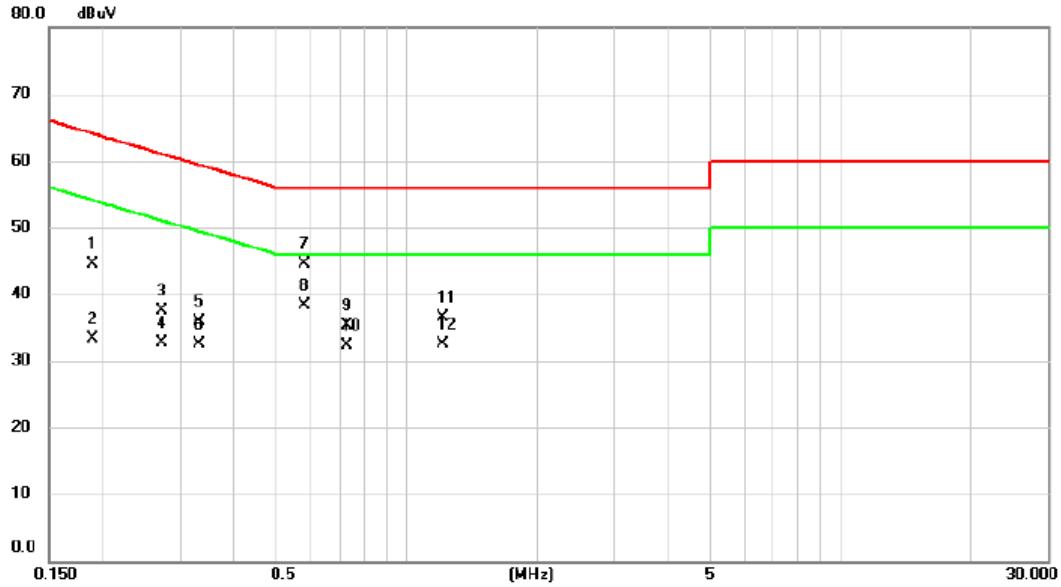
Please refer to document Appendix No.: TP-2410G041-1 (APPENDIX-TEST PHOTOS).

11. EUT PHOTOS

Please refer to document Appendix No.: EP-2410G041-1 (APPENDIX-EUT PHOTOS).

APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

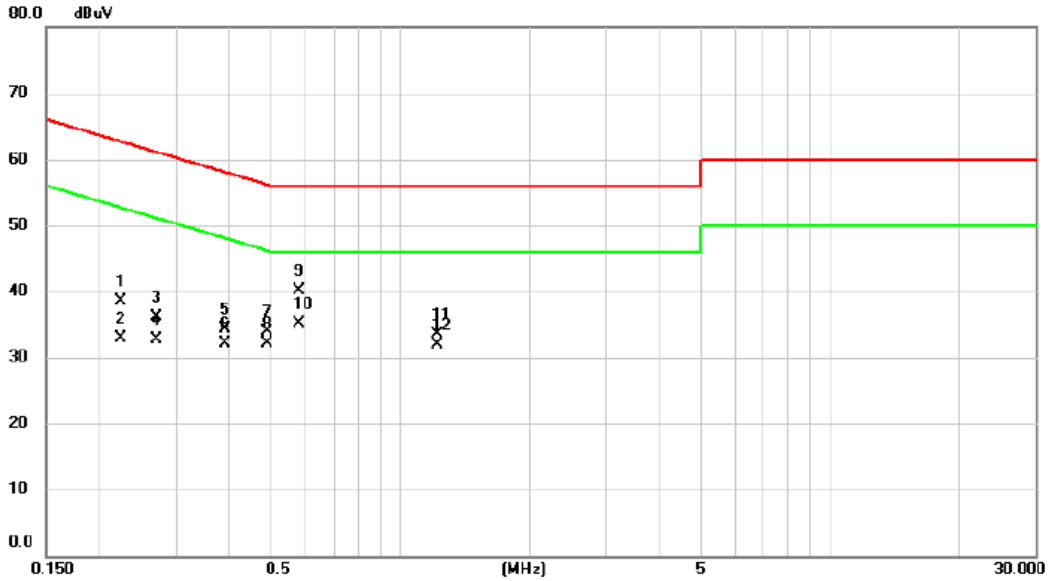
Test Mode	Normal	Tested Date	2025/3/21
Test Frequency	-	Phase	Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1884	34.86	9.63	44.49	64.11	-19.62	QP	
2		0.1884	23.75	9.63	33.38	54.11	-20.73	AVG	
3		0.2732	27.92	9.61	37.53	61.02	-23.49	QP	
4		0.2732	23.00	9.61	32.61	51.02	-18.41	AVG	
5		0.3331	26.20	9.61	35.81	59.37	-23.56	QP	
6		0.3331	22.86	9.61	32.47	49.37	-16.90	AVG	
7		0.5810	34.86	9.62	44.48	56.00	-11.52	QP	
8	*	0.5810	28.77	9.62	38.39	46.00	-7.61	AVG	
9		0.7250	25.62	9.62	35.24	56.00	-20.76	QP	
10		0.7250	22.68	9.62	32.30	46.00	-13.70	AVG	
11		1.2065	26.86	9.64	36.50	56.00	-19.50	QP	
12		1.2065	22.92	9.64	32.56	46.00	-13.44	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	Normal	Tested Date	2025/3/21
Test Frequency	-	Phase	Neutral

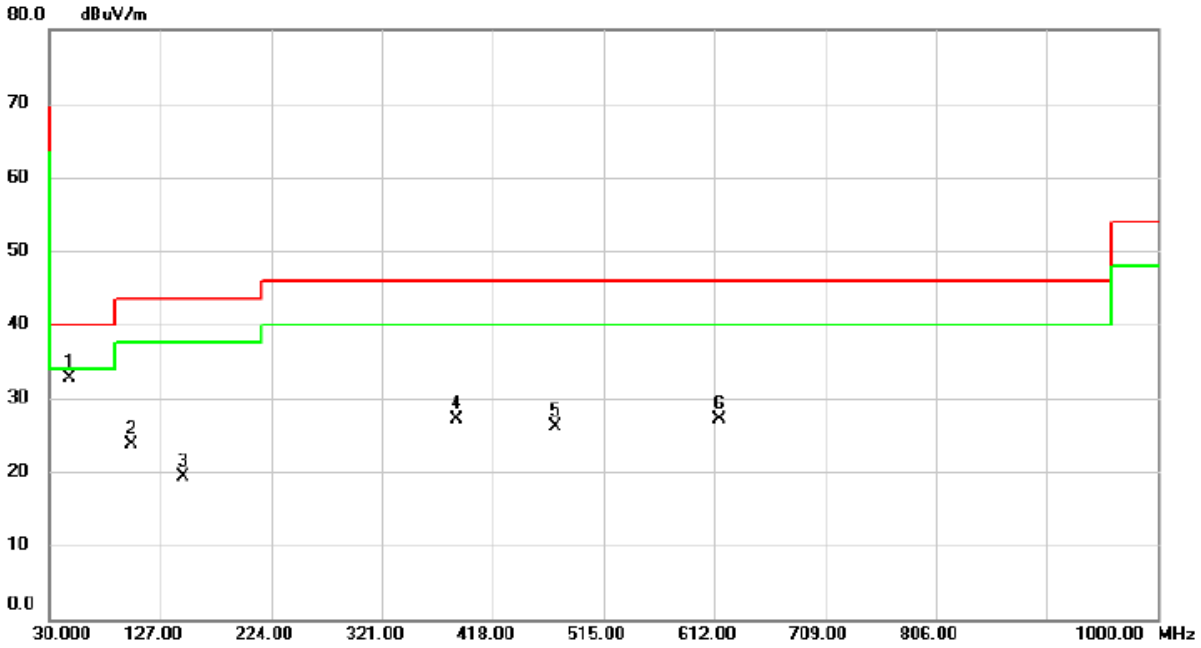


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2228	28.92	9.62	38.54	62.71	-24.17	QP	
2		0.2228	23.27	9.62	32.89	52.71	-19.82	AVG	
3		0.2714	26.42	9.61	36.03	61.07	-25.04	QP	
4		0.2714	23.06	9.61	32.67	51.07	-18.40	AVG	
5		0.3912	24.71	9.60	34.31	58.04	-23.73	QP	
6		0.3912	22.52	9.60	32.12	48.04	-15.92	AVG	
7		0.4902	24.33	9.60	33.93	56.16	-22.23	QP	
8		0.4902	22.44	9.60	32.04	46.16	-14.12	AVG	
9		0.5810	30.59	9.61	40.20	56.00	-15.80	QP	
10	*	0.5810	25.57	9.61	35.18	46.00	-10.82	AVG	
11		1.2200	23.92	9.64	33.56	56.00	-22.44	QP	
12		1.2200	22.34	9.64	31.98	46.00	-14.02	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX B - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

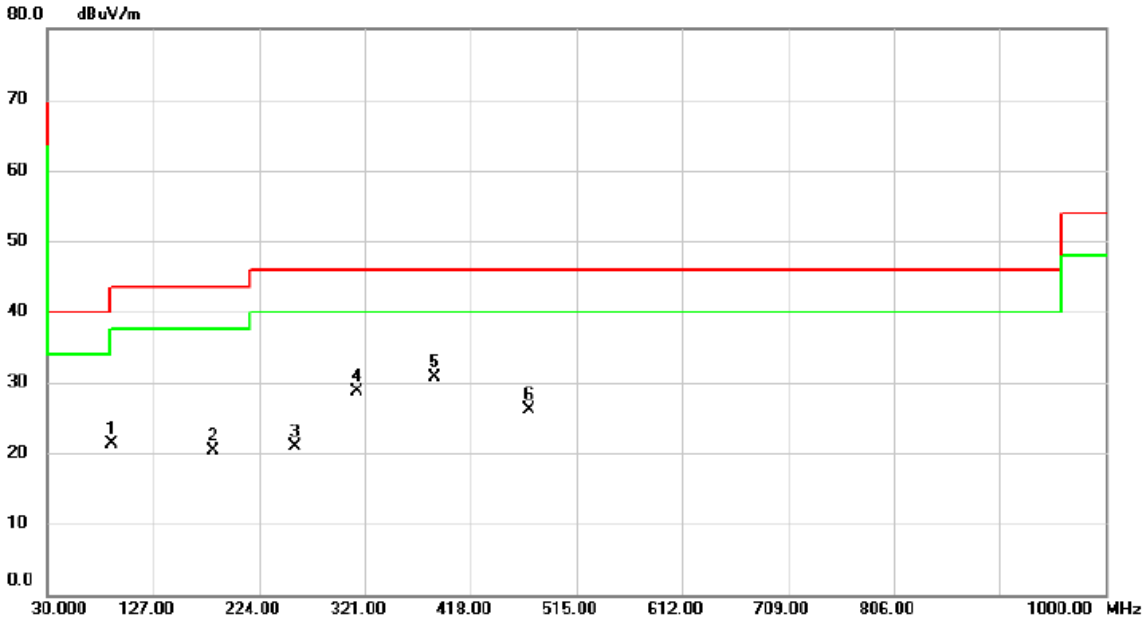
Test Mode	1Mbps	Test Date	2025/3/21
Test Frequency	2402 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	47.4600	44.14	-11.41	32.73	40.00	-7.27	peak			
2		101.7800	39.57	-15.83	23.74	43.50	-19.76	peak			
3		147.3700	30.56	-11.22	19.34	43.50	-24.16	peak			
4		385.9900	34.53	-7.48	27.05	46.00	-18.95	peak			
5		472.3200	31.57	-5.40	26.17	46.00	-19.83	peak			
6		616.8500	29.02	-1.89	27.13	46.00	-18.87	peak			

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	1Mbps	Test Date	2025/3/21
Test Frequency	2402 MHz	Polarization	Horizontal

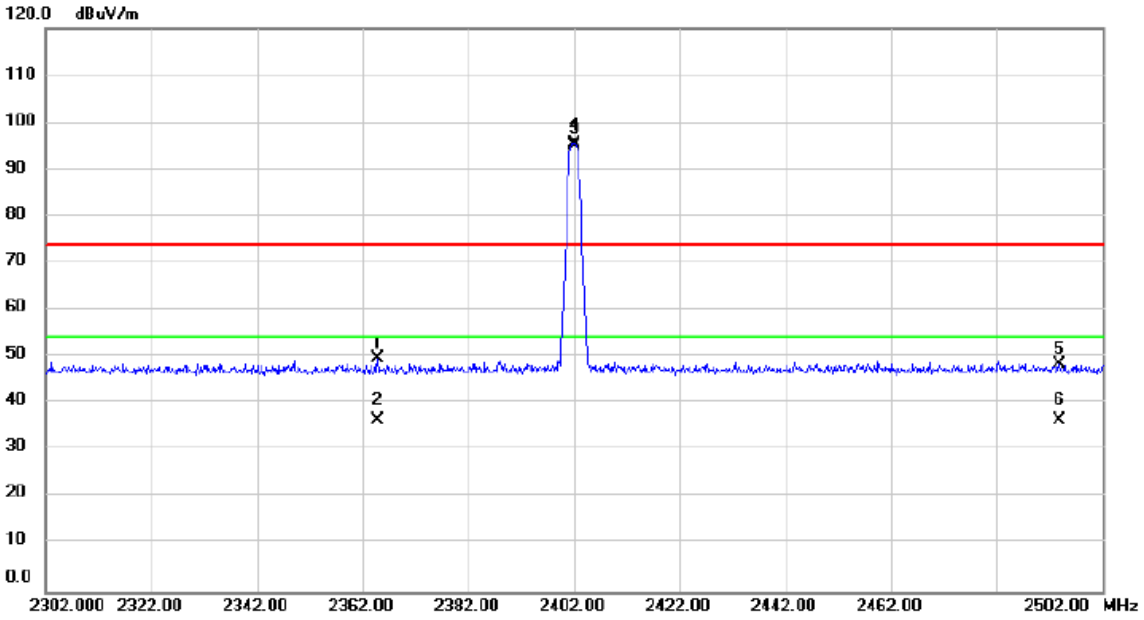


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		88.2000	38.14	-16.88	21.26	43.50	-22.24	peak			
2		182.2900	33.33	-13.08	20.25	43.50	-23.25	peak			
3		256.9800	32.39	-11.53	20.86	46.00	-25.14	peak			
4		313.2400	38.40	-9.64	28.76	46.00	-17.24	peak			
5	*	385.0200	38.12	-7.51	30.61	46.00	-15.39	peak			
6		471.3500	31.51	-5.41	26.10	46.00	-19.90	peak			

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX C - RADIATED EMISSION - ABOVE 1000 MHZ

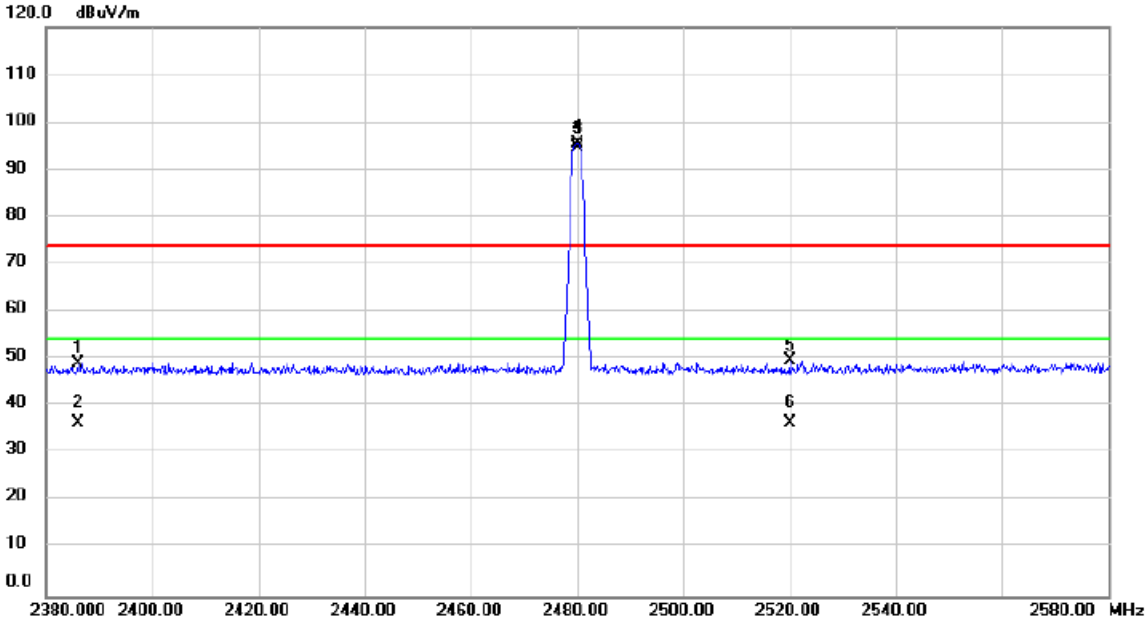
Test Mode	1Mbps	Test Date	2025/3/21
Test Frequency	2402 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2364.800	44.34	5.20	49.54	74.00	-24.46	peak			
2		2364.800	31.18	5.20	36.38	54.00	-17.62	AVG			
3	X	2402.000	90.24	5.26	95.50	74.00	21.50	peak			No Limit
4	*	2402.000	89.66	5.26	94.92	54.00	40.92	AVG			No Limit
5		2493.800	43.02	5.42	48.44	74.00	-25.56	peak			
6		2493.800	30.98	5.42	36.40	54.00	-17.60	AVG			

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

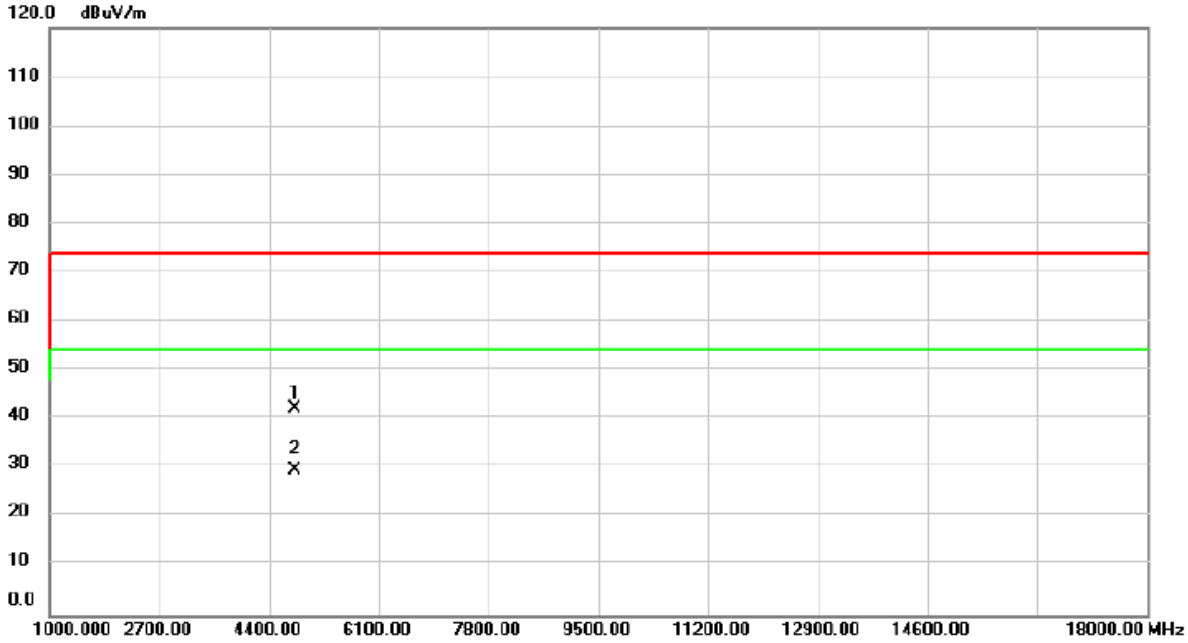
Test Mode	1Mbps	Test Date	2025/3/21
Test Frequency	2480 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2386.000	43.85	5.23	49.08	74.00	-24.92	peak			
2		2386.000	31.10	5.23	36.33	54.00	-17.67	AVG			
3	X	2480.000	90.09	5.41	95.50	74.00	21.50	peak			No Limit
4	*	2480.000	89.32	5.41	94.73	54.00	40.73	AVG			No Limit
5		2520.000	44.26	5.52	49.78	74.00	-24.22	peak			
6		2520.000	30.99	5.52	36.51	54.00	-17.49	AVG			

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

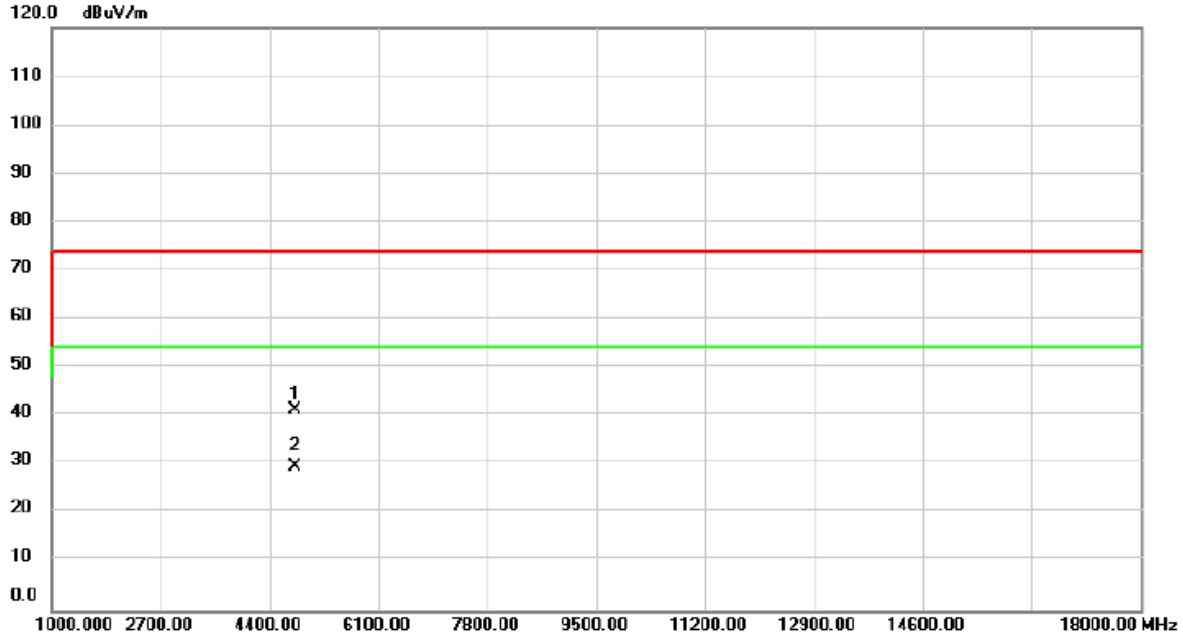
Test Mode	1Mbps	Test Date	2025/3/21
Test Frequency	2402 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4804.000	40.50	1.76	42.26	74.00	-31.74	peak			
2	*	4804.000	27.76	1.76	29.52	54.00	-24.48	AVG			

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

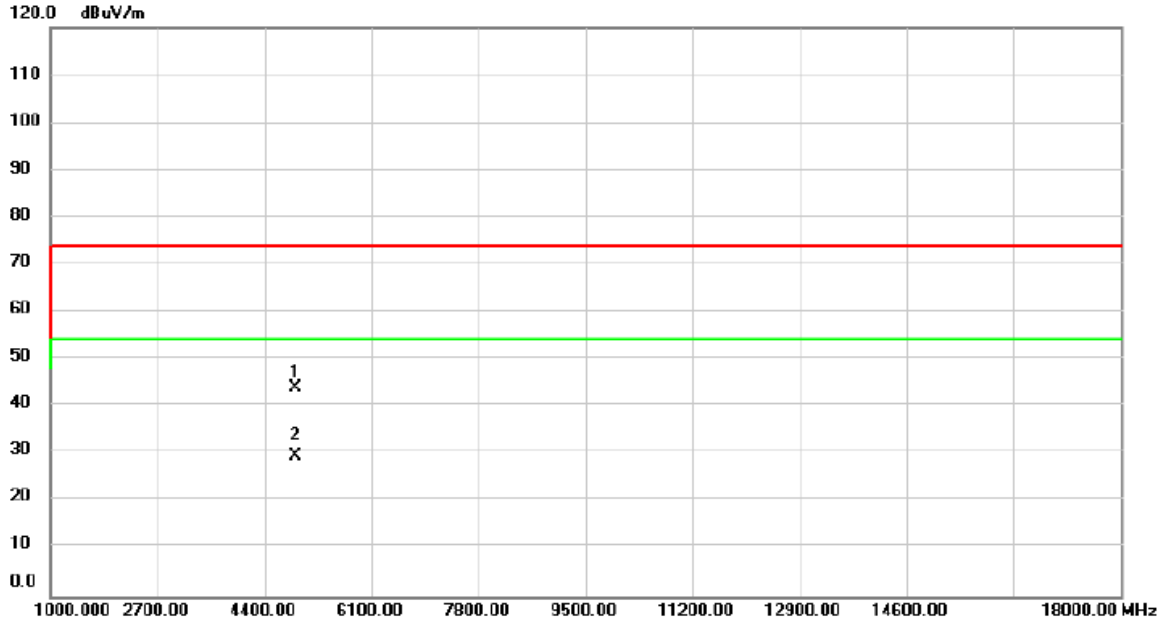
Test Mode	1Mbps	Test Date	2025/3/21
Test Frequency	2402 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4804.000	39.61	1.76	41.37	74.00	-32.63	peak			
2	*	4804.000	27.75	1.76	29.51	54.00	-24.49	AVG			

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

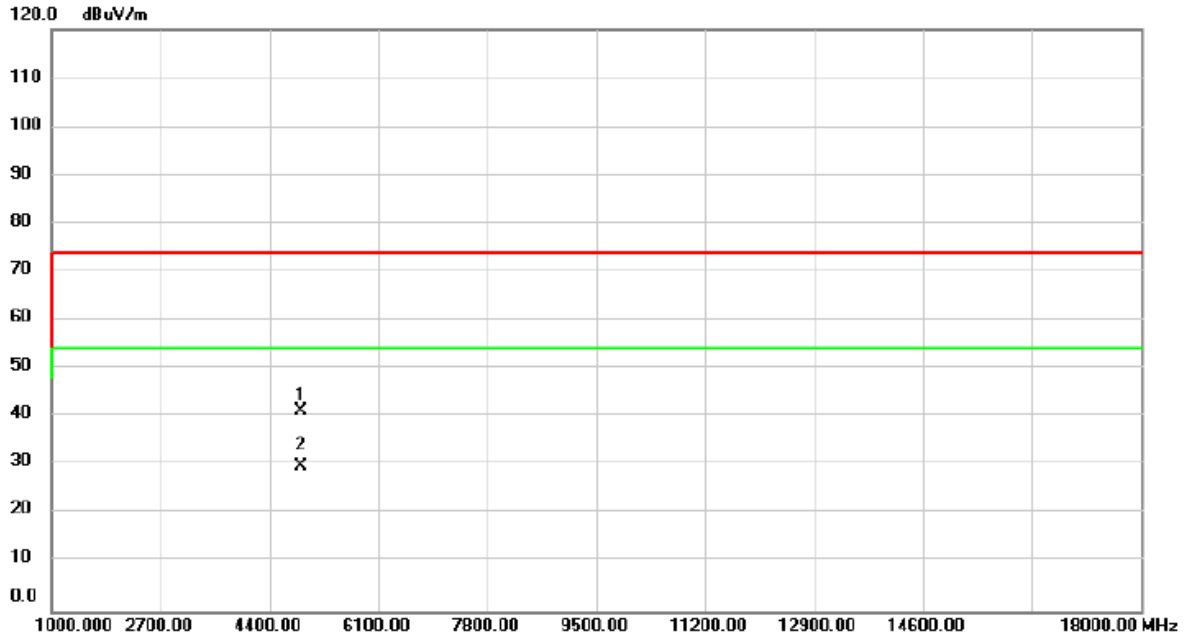
Test Mode	1Mbps	Test Date	2025/3/21
Test Frequency	2440 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4880.000	41.93	1.88	43.81	74.00	-30.19	peak			
2	*	4880.000	27.79	1.88	29.67	54.00	-24.33	AVG			

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

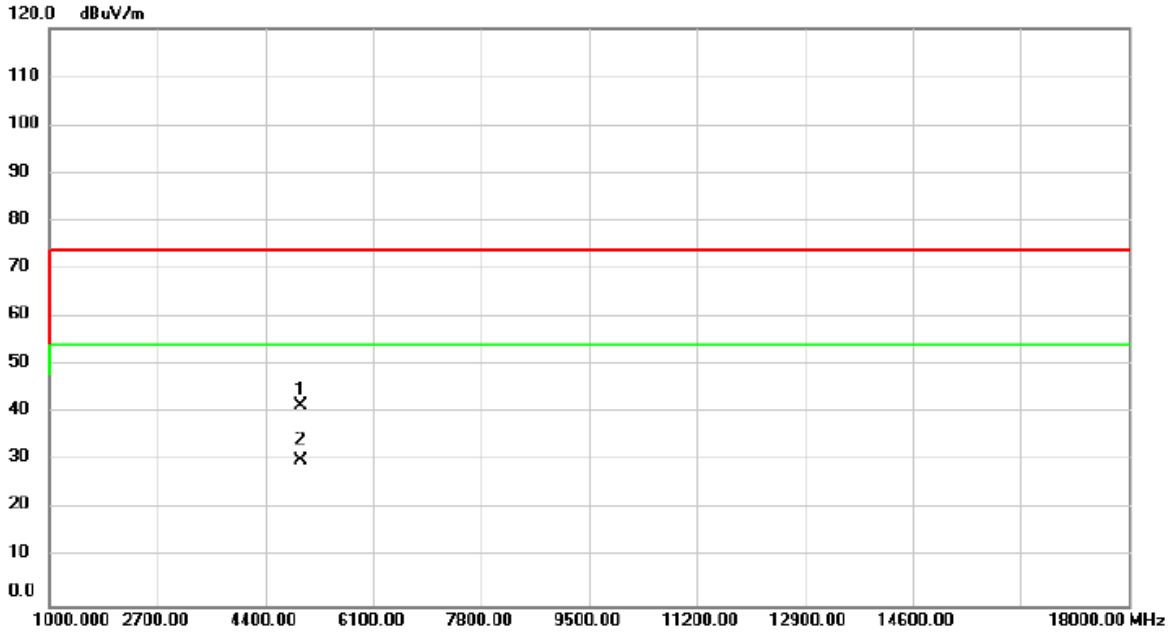
Test Mode	1Mbps	Test Date	2025/3/21
Test Frequency	2440 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4880.000	39.42	1.88	41.30	74.00	-32.70	peak			
2	*	4880.000	27.87	1.88	29.75	54.00	-24.25	AVG			

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

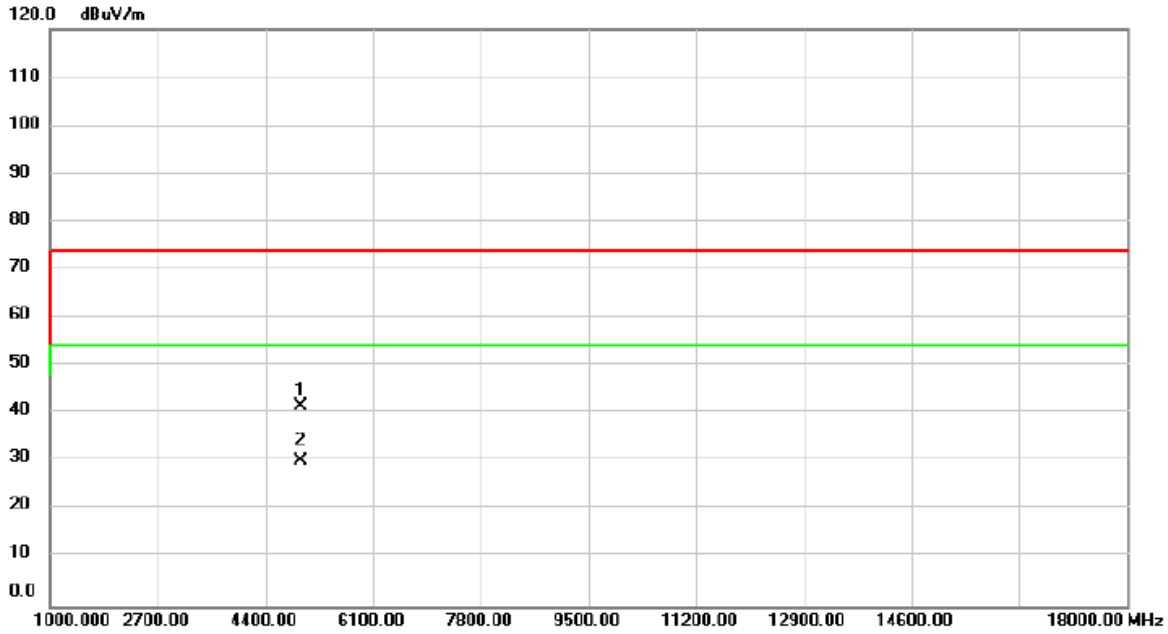
Test Mode	1Mbps	Test Date	2025/3/21
Test Frequency	2480 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4960.000	39.53	2.02	41.55	74.00	-32.45	peak			
2	*	4960.000	28.08	2.02	30.10	54.00	-23.90	AVG			

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

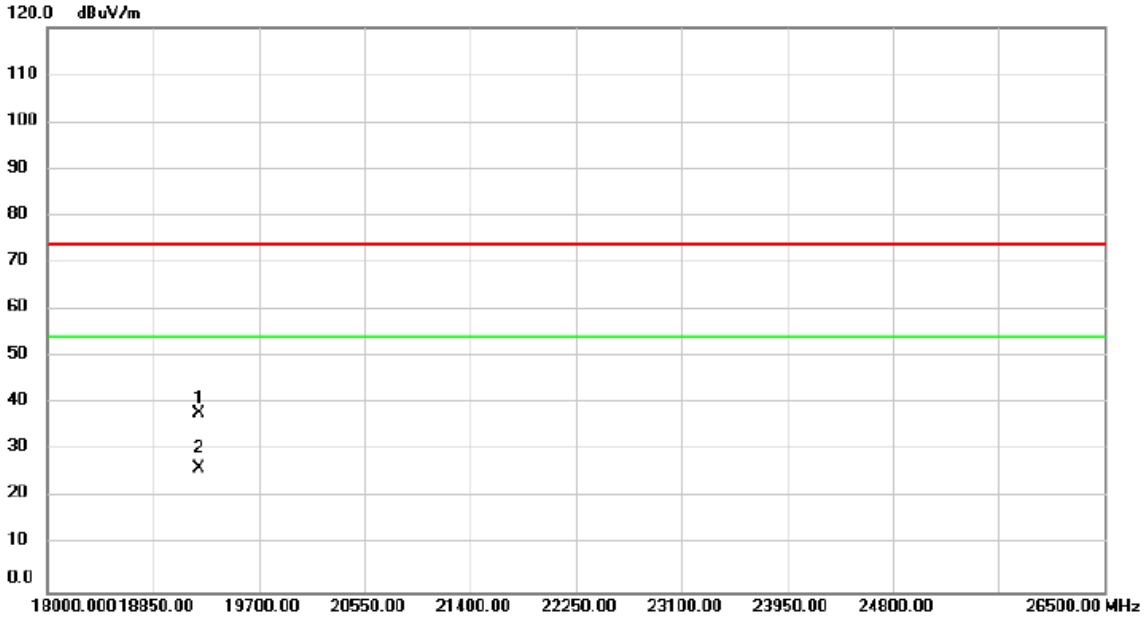
Test Mode	1Mbps	Test Date	2025/3/21
Test Frequency	2480 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4960.000	39.55	2.02	41.57	74.00	-32.43	peak			
2	*	4960.000	28.15	2.02	30.17	54.00	-23.83	AVG			

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

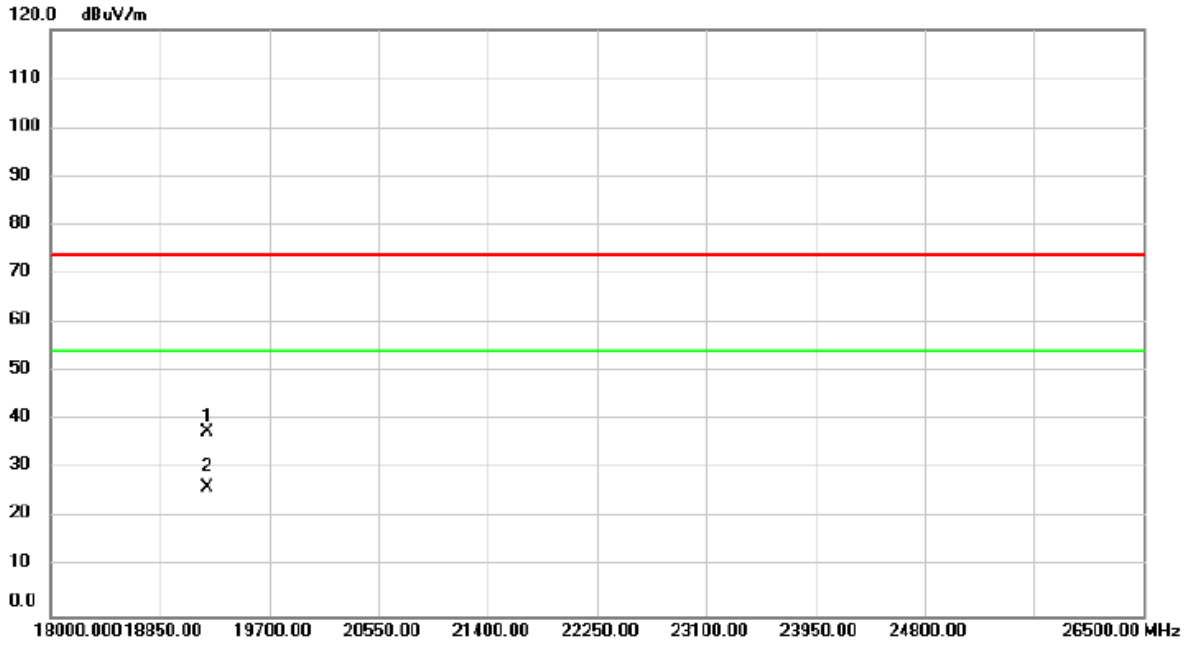
Test Mode	1Mbps	Test Date	2025/3/21
Test Frequency	2402 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		19216.00	48.13	-10.05	38.08	74.00	-35.92	peak			
2	*	19216.00	36.45	-10.05	26.40	54.00	-27.60	AVG			

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	1Mbps	Test Date	2025/3/21
Test Frequency	2402 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		19216.00	47.83	-10.05	37.78	74.00	-36.22	peak			
2	*	19216.00	36.40	-10.05	26.35	54.00	-27.65	AVG			

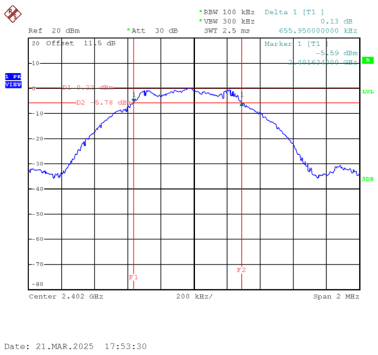
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX D - BANDWIDTH

Test Mode	TX Mode _1Mbps

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Test Result
00	2402	0.656	1.036	0.5	Pass
19	2440	0.666	1.032	0.5	Pass
39	2480	0.663	1.024	0.5	Pass

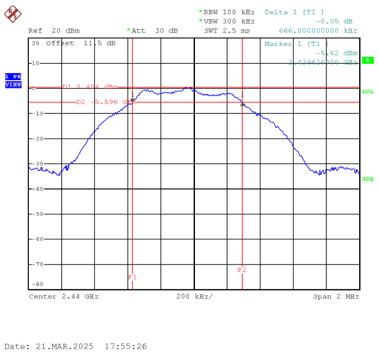
CH00



Date: 21.MAR.2025 17:53:30

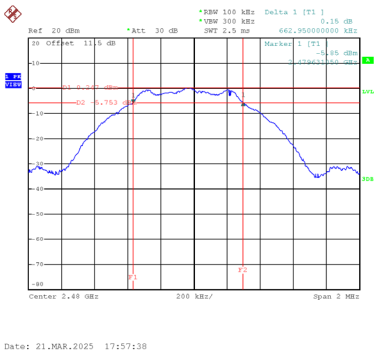
CH19

6 dB Bandwidth

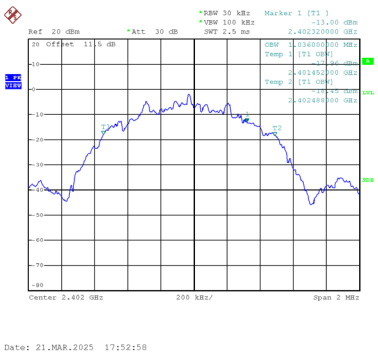


Date: 21.MAR.2025 17:55:26

CH39

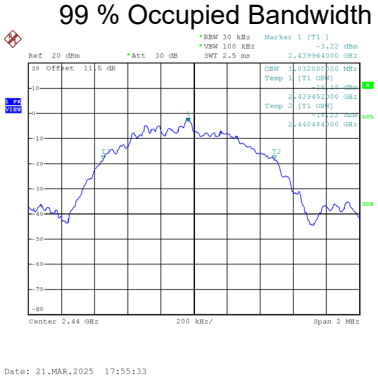


Date: 21.MAR.2025 17:57:38

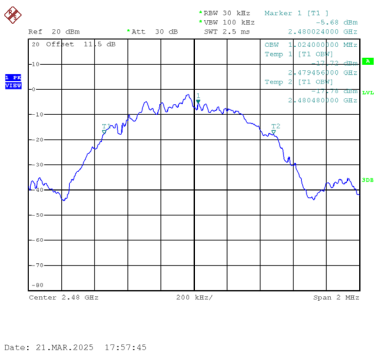


Date: 21.MAR.2025 17:52:58

99 % Occupied Bandwidth



Date: 21.MAR.2025 17:55:33



Date: 21.MAR.2025 17:57:45

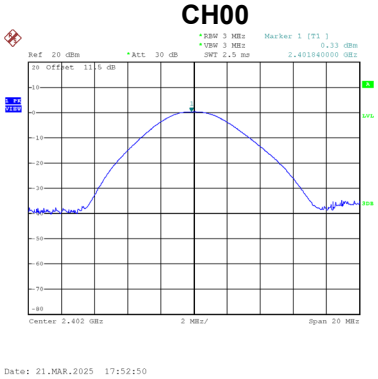
APPENDIX E - MAXIMUM OUTPUT POWER

Test Mode	TX Mode _1Mbps

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	0.33	0.0011	30.00	1.0000	Pass
2440	-0.03	0.0010	30.00	1.0000	Pass
2480	0.25	0.0011	30.00	1.0000	Pass

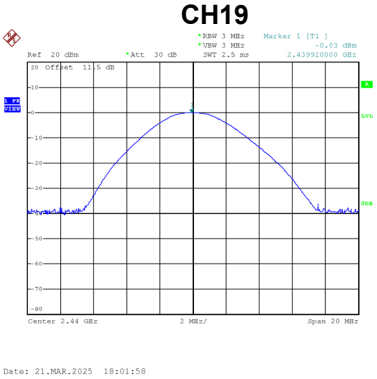
Note: Output power = Measure result + Cable loss

CH00



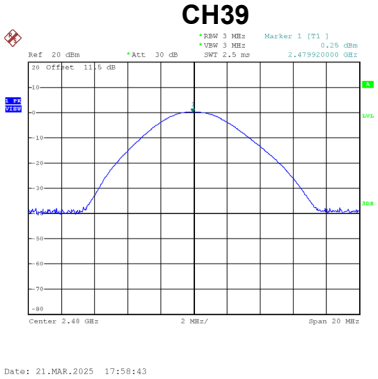
Date: 21.MAR.2025 17:52:50

CH19



Date: 21.MAR.2025 18:01:58

CH39

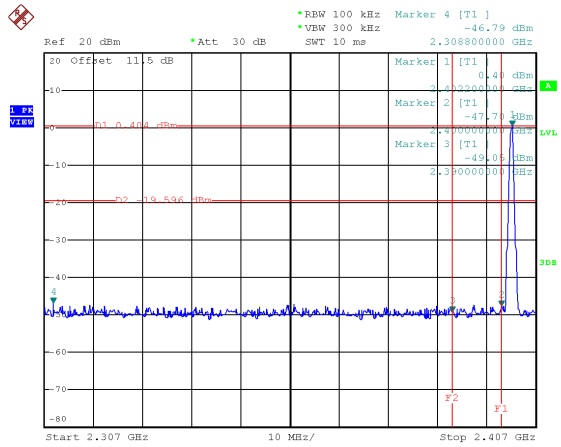


Date: 21.MAR.2025 17:58:43

APPENDIX F - CONDUCTED SPURIOUS EMISSION

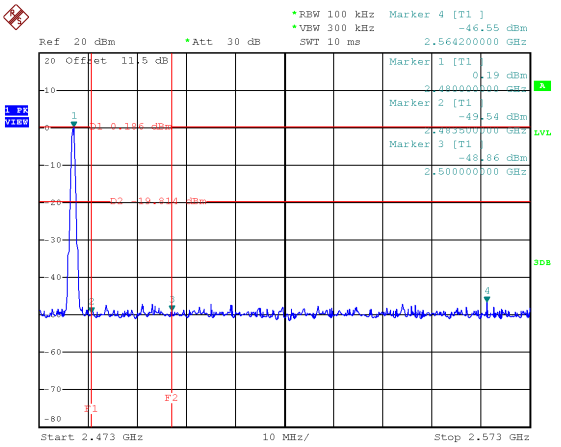
Test Mode	TX Mode _1Mbps

Bandedge CH00 (Lower)



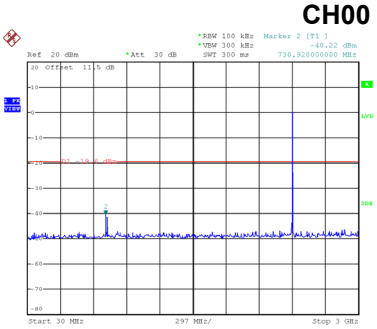
Date: 21.MAR.2025 17:53:39

Bandedge CH39 (Upper)

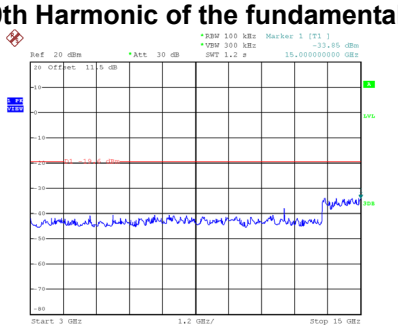


Date: 21.MAR.2025 17:57:55

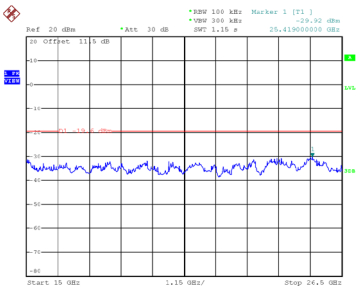
CH00 – 10th Harmonic of the fundamental frequency



Date: 21.MAR.2025 17:53:54

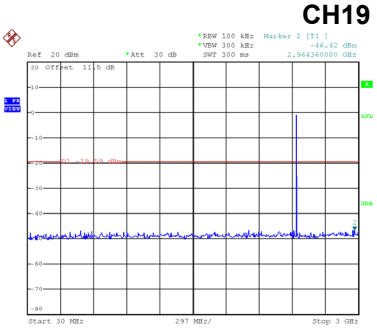


Date: 21.MAR.2025 17:54:03

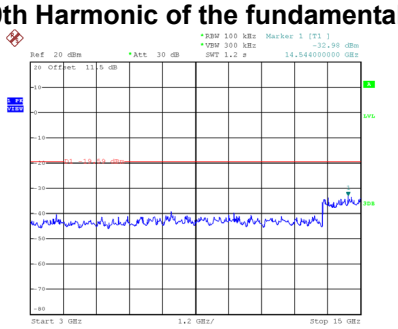


Date: 21.MAR.2025 17:54:12

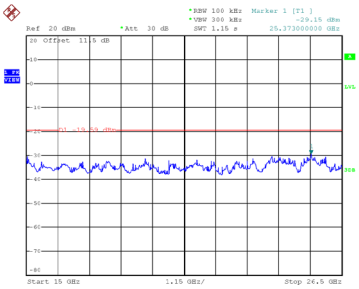
CH19 – 10th Harmonic of the fundamental frequency



Date: 21.MAR.2025 17:55:57

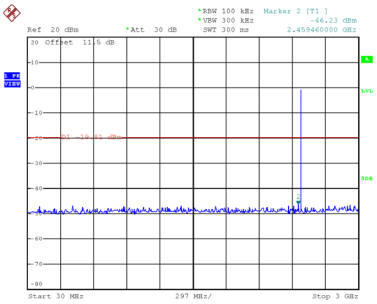


Date: 21.MAR.2025 17:56:06

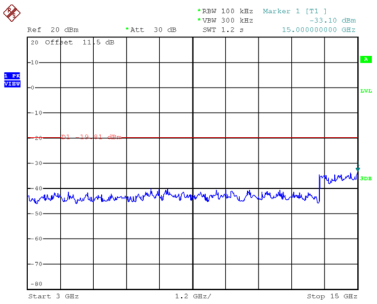


Date: 21.MAR.2025 17:56:16

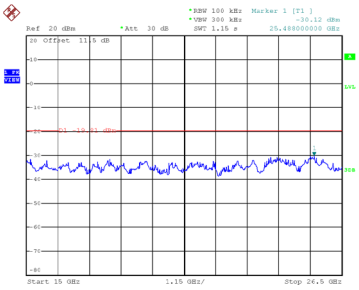
CH39 – 10th Harmonic of the fundamental frequency



Date: 21.MAR.2025 17:58:10



Date: 21.MAR.2025 17:58:19



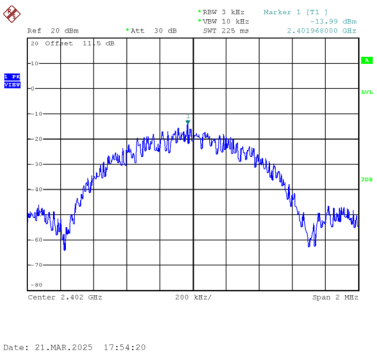
Date: 21.MAR.2025 17:58:28

APPENDIX G - POWER SPECTRAL DENSITY

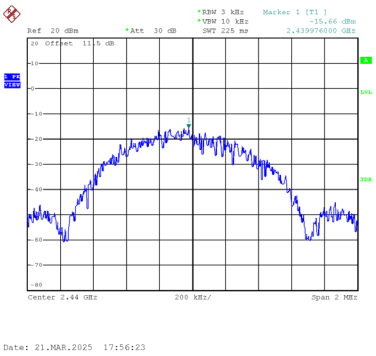
Test Mode	TX Mode _1Mbps

Channel	Frequency (MHz)	Power Spectral Density (dBm/3 kHz)	Max. Limit (dBm/3 kHz)	Test Result
00	2402	-13.99	8.00	Pass
19	2440	-15.66	8.00	Pass
39	2480	-14.36	8.00	Pass

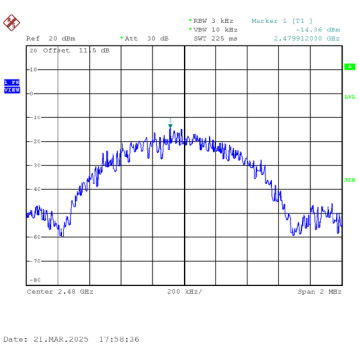
CH00



CH19



CH39



End of Test Report