Certificate #7130.01

FCC Radio Test Report

FCC ID: 2BH7FT4EV3

This report concerns:Original Grant

Project No.	:	2409G020
Equipment	:	AC1200 Wi-Fi Bluetooth PCIe Adapter
Brand Name	:	tp-link
Test Model	:	Archer T4E
Series Model	:	Archer T5E
Applicant	:	TP-Link Systems Inc.
Address	:	10 Mauchly, Irvine, CA 92618
Manufacturer	:	TP-Link Systems Inc.
Address	:	10 Mauchly, Irvine, CA 92618
Date of Receipt	:	Oct. 18, 2024
Date of Test	:	Oct. 23, 2024 ~ Dec. 13, 2024
Issued Date	:	Jan. 03, 2025
Report Version	:	R00
Test Sample	:	Engineering Sample No.: DG2024101862 for radiated and ac power line conducted, DG2024101863 for others.
Standard(s)	:	FCC CFR Title 47, Part 15, Subpart C

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

Prepared by : Chella Zheng

Approved by : Chay Cai

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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 assumes no responsibility for the data provided by the customer, any statements, inferences or generalizations drawn by the customer or others from the reports issued by BTL.

The report must not be used by the client to claim product certification, approval, or endorsement by A2LA or any agency of the U.S. Government.

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: 2017 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.

Table of Contents Page

Table of Contents Page

Table of Contents Page

REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-2-2409G020	R00	OriginalReport.	Jan. 03, 2025	Valid

1. APPLICABLE STANDARDS

According to the specifications of the manufacturer, the EUT must comply with the requirements of the followingstandards:
ANSI C63.10-2013
The following reference test guidance is not within the scope of accreditation of A2LA:
KDB 558074 D01 15.247 Meas Guidance v05r02

2. 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 APPENDIX D	PASS	------
15.247(a)(2)	Bandwidth	APPENDIX E	PASS	------
15.247(b)(3)	Maximum Output Power	APPENDIX F	PASS	------
15.247(d)	ConductedSpurious Emission	APPENDIX G	PASS	------
15.247(e)	Power Spectral Density	APPENDIX H	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 non-standard antenna jack were considered sufficient to comply with the provisions of 15.203.

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of 1-2/F, 4/F, Building A, 1-2/F, Building B, 3/F, Building C, No.3, Jinshagang 1st Road, Dalang Town, Dongguan City, Guangdong People's Republic of China.
BTL's Registration Number for FCC: 747969
BTL's Designation Number for FCC: CN1377

2.2 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 95.45% confidence level (based on a coverage factor (k=2))
The BTL measurement uncertainty as below table:

A. AC power line conducted emissions Measurement:

Test Site	Method	Measurement Frequency Range	*U*,(dB)
DG-C02	CISPR	150kHz ~ 30MHz	2.88

B. Radiated emissions Measurement:

Test Site	Method	Measurement Frequency Range	*U*,(dB)
DG-CB01	CISPR	9kHz ~ 30MHz	2.36

Test Site	Method	Measurement Frequency Range	Ant. H / V	*U*,(dB)
DG-CB03 (3m)	CISPR	30MHz ~ 200MHz	V	4.40
		30MHz ~ 200MHz	H	3.62
		200MHz ~ 1,000MHz	V	4.58
		200MHz ~ 1,000MHz	H	3.98

Test Site	Method	Measurement Frequency Range	*U*,(dB)
DG-CB03 (3m)	CISPR	1GHz ~ 6GHz	4.08
		6GHz ~ 18GHz	4.62

Test Site	Method	Measurement Frequency Range	*U*,(dB)
DG-CB03 (1m)	CISPR	18 ~ 26.5 GHz	3.36

C. Other Measurement:

Test Item	Uncertainty
Bandwidth	0.90 %
Maximum Output Power	1.3 dB
Conducted Spurious Emission	1.9 dB
Power Spectral Density	1.4 dB
Temperature	0.8 °C
Humidity	2.2 %

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

2.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By	Test Date
AC Power Line Conducted Emissions	25°C	48%	AC 120V/60Hz	Hayden Chen	Nov. 11, 2024
Radiated Emissions-9 kHz to 30 MHz	26°C	50%	DC 3.3V	Hayden Chen	Oct. 31, 2024
Radiated Emissions-30 MHz to 1000 MHz	24°C	51%	DC 3.3V	Calvin Wen	Oct. 29, 2024
Radiated Emissions-Above 1000 MHz	22°C	50-51%	DC 3.3V	Allen Tong Calvin Wen	Nov. 01, 2024- Dec. 04, 2024
Bandwidth	22-24°C	47-51%	DC 3.3V	Parker Yang Arvin Tong	Nov. 11, 2024- Dec. 05, 2024
Maximum Output Power	24°C	49%	DC 3.3V	Steve Zhou	Dec. 13, 2024
Conducted Spurious Emission	22-24°C	47-51%	DC 3.3V	Parker Yang Arvin Tong	Nov. 11, 2024- Dec. 05, 2024
Power Spectral Density	22-24°C	47-51%	DC 3.3V	Parker Yang Arvin Tong	Nov. 11, 2024- Dec. 05, 2024

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	AC1200 Wi-Fi Bluetooth PCIe Adapter
Brand Name	tp-link
Test Model	Archer T4E
Series Model	Archer T5E
Model Difference(s)	Only differ in model name.
Hardware Version	Archer T4EV3
PowerSource	Supplied from PC PCIe Slot.
Power Rating	DC 3.3V
Operation Frequency	2402 MHz ~ 2480 MHz
Modulation Type	GFSK
Bit Rate of Transmitter	1Mbps, 2Mbps, 500kbps(S2), 125kbps(S8)
Max. Output Power	125kbps(S8): 9.86 dBm (0.0097 W)

Note:

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

2. 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

3. Table for Filed Antenna:

Ant.	Manufacturer	P/N	Antenna Type	Connector	Gain (dBi)
1	TP-LINK CORPORATION PTE. LTD.	3101504693	Dipole	N/A	1

3.2DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	TX Mode_1Mbps Channel 00/19/39
Mode 2	TX Mode_2Mbps Channel 00/19/39
Mode 3	TX Mode_500kbps(S2) Channel 00/19/39
Mode 4	TX Mode_125kbps(S8) Channel 00/19/39
Mode 5	TX Mode_125kbps(S8) Channel 19

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test	
Final Test Mode	Description
Mode 5	TX Mode_125kbps(S8) Channel 19

Radiated emissions test - Below 1GHz	
Final Test Mode	Description
Mode 5	TX Mode_125kbps(S8) Channel 19

Radiated emissions test - Above 1GHz	
Final Test Mode	Description
Mode 1	TX Mode_1Mbps Channel 00/19/39
Mode 2	TX Mode_2Mbps Channel 00/19/39
Mode 3	TX Mode_500kbps(S2) Channel 00/19/39
Mode 4	TX Mode_125kbps(S8) Channel 00/19/39

Conducted test	
Final Test Mode	Description
Mode 1	TX Mode_1Mbps Channel 00/19/39
Mode 2	TX Mode_2Mbps Channel 00/19/39
Mode 3	TX Mode_500kbps(S2) Channel 00/19/39
Mode 4	TX Mode_125kbps(S8) Channel 00/19/39

Note:

(1) For radiated emission above 1GHz test, the spurious points of 1GHz~26.5GHz have been pre-tested and in this report only recorded the worst case.The remaining spurious points are all below the limit value of 20dB.

(2) For AC power line conducted emissions and radiated emissions below 1 GHz test, the 125kbps(S8) Channel 19 is found to be the worst case and recorded.

(3) For radiated emission Harmonic 18-26.5GHz test, only tested the worst case and recorded.

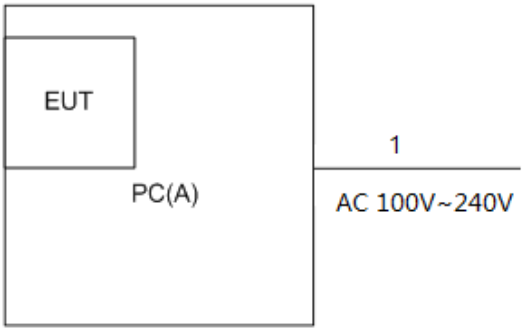
(4) For radiated emission above 1 GHz test, the polarization of Vertical and Horizontal are evaluated, the worst case is Vertical and recorded.

3.3PARAMETERS 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 11ac 8822CE PCIE WLAN NIC Massproduction Kit		
Frequency (MHz)	2402	2440	2480
1Mbps	0x3c	0x3c	0x3d
2Mbps	0x3c	0x3c	0x3d
500kbps(S2)	0x3c	0x3d	0x3d
125kbps(S8)	0x3c	0x3d	0x3d

3.4BLOCKDIAGRAMSHOWINGTHECONFIGURATIONOFSYSTEMTESTED



3.5SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
A	PC	DELL	DELL XPS	8920-D15N8

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	AC Cable	NO	NO	1.5m

3.6CUSTOMER INFORMATION DESCRIPTION

1) The antenna gain is provided by the manufacturer.
2) Except for AC power line conducted emissions and radiated emissions, the results of all test items include cable losses. All cable losses are provided by the testing laboratory.

4.AC POWER LINE CONDUCTED EMISSIONS

4.1LIMIT

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.

4.2TEST 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 equipmentpowered 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 groundplane 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.

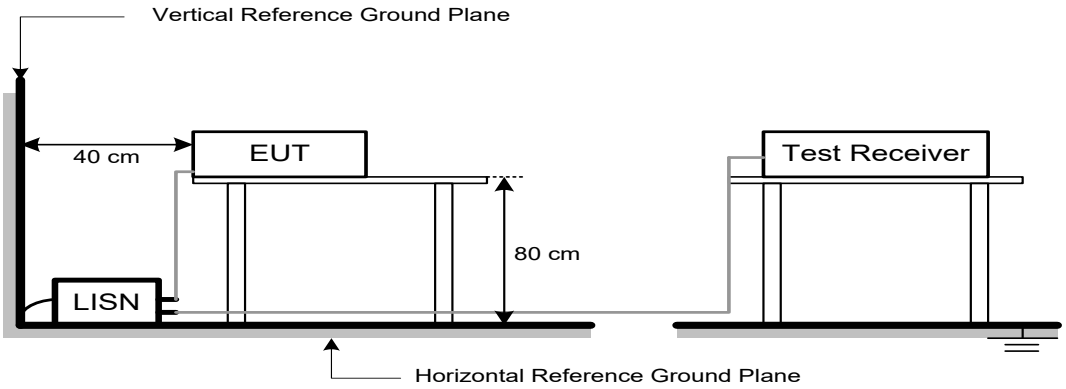
The following table is the setting of the receiver:

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

4.3DEVIATIONFROMTESTSTANDARD

No deviation.

4.4TESTSETUP



4.5EUT 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.

4.6 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 30MHz.

5. RADIATED EMISSIONS

5.1LIMIT

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-1000MHz)

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 1000MHz)

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

(5)

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

$20\log (d_{limit}/d_{measure})=20\log (3/1)=9.5$ 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.

5.2TEST 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 1GHz)
b. The measuring distance of 3 m or 1m 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 1GHz)
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 1GHz.
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 1GHz)
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 1GHz)
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)	1MHz / 3MHz for PK value 1MHz / 1/THz for AVG value

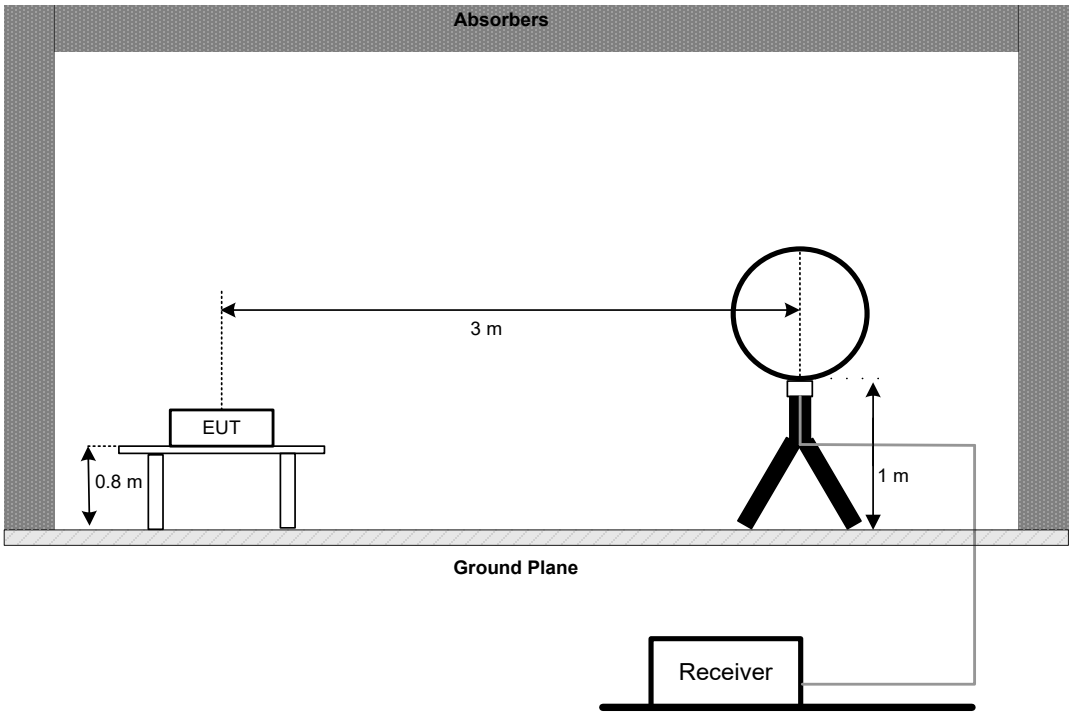
Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector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

5.3DEVIATIONFROMTESTSTANDARD

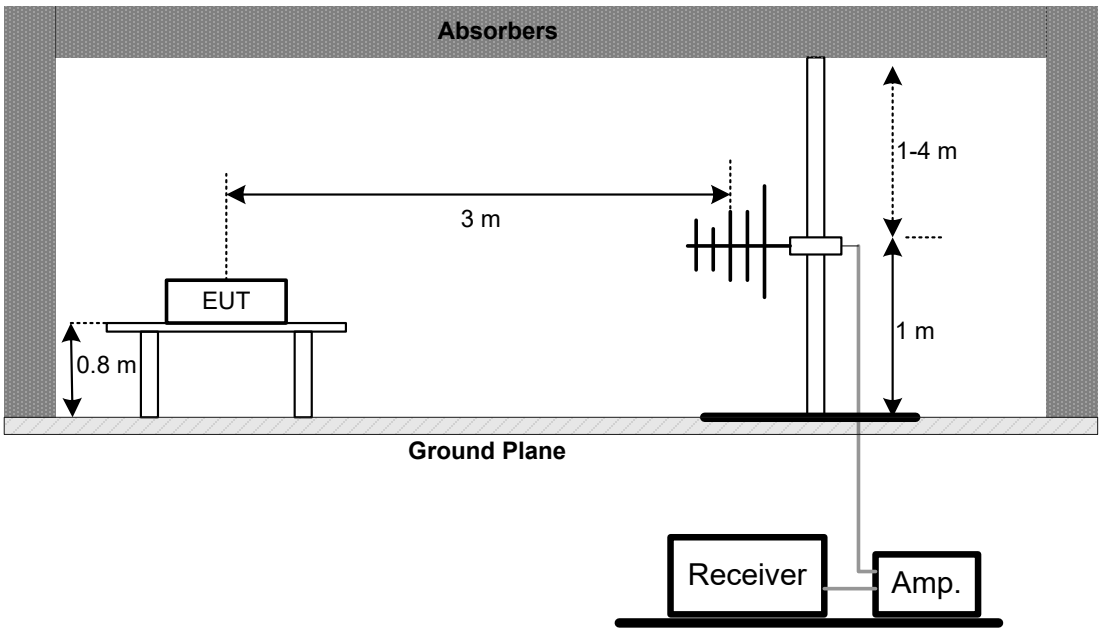
No deviation.

5.4TESTSETUP

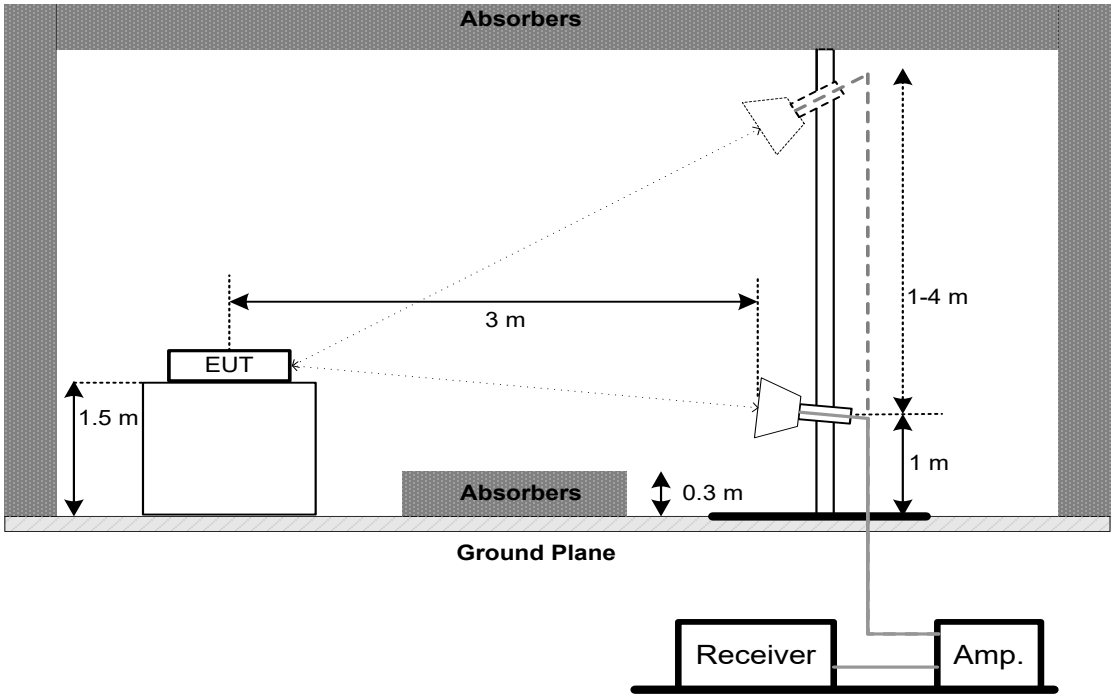
9 kHz to 30 MHz



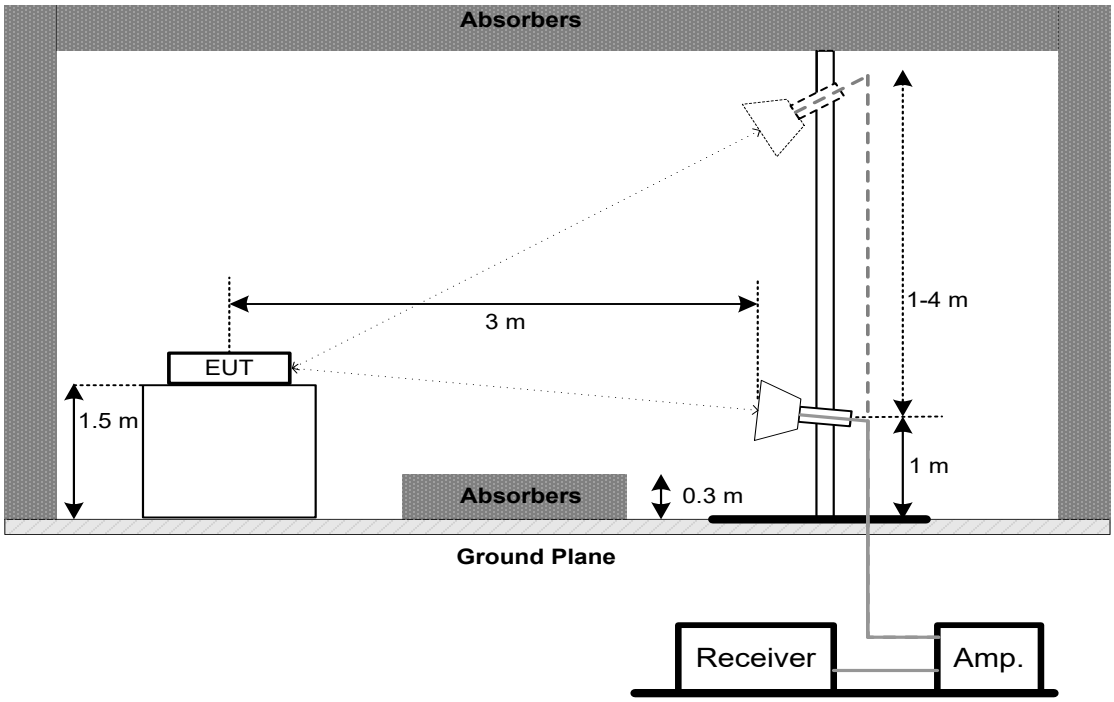
30 MHz to 1 GHz



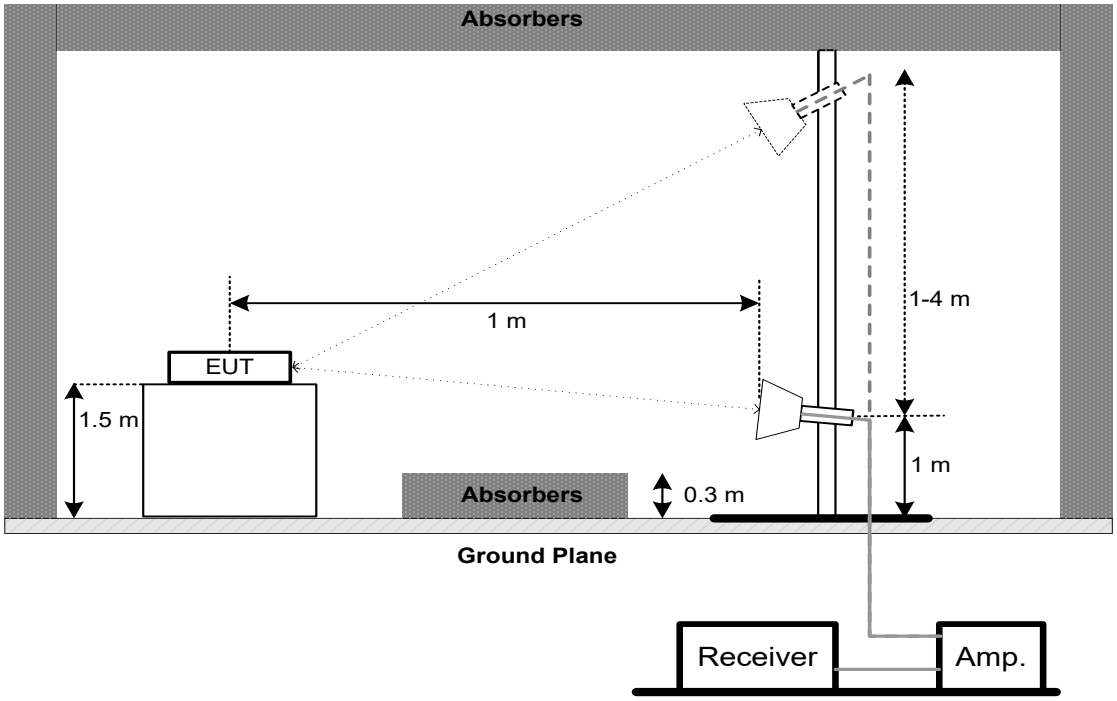
Above 1 GHz
Band edge



Harmonic(1 GHz to 18 GHz)



Harmonic(18 GHz to 26.5 GHz)



5.5EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULT- 9kHz TO 30MHz

Please refer to the APPENDIX B.

Remark:

(1) Distance extrapolation factor = 40 log (specific distance / test distance) (dB).
(2) Limit line = specific limits (dBuV) + distance extrapolation factor.

5.7 TEST RESULT- 30MHz TO 1000MHz

Please refer to the APPENDIX C.

5.8 TEST RESULT- ABOVE 1000MHz

Please refer to the APPENDIX D.

Remark:

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

6.BANDWIDTH

6.1LIMIT

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

6.2TEST 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	300kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

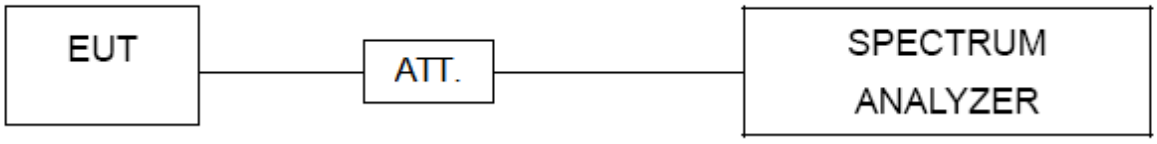
For 99% Emission Bandwidth:

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

6.3DEVIATION FROM STANDARD

No deviation.

6.4TEST SETUP



6.5EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6TESTRESULTS

Please refer to the APPENDIXE.

7.MAXIMUM OUTPUT POWER

7.1LIMIT

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

7.2TEST PROCEDURE

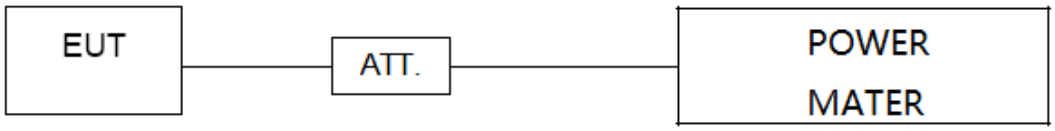
a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

b. The maximum conducted output power was performed in accordance with method 11.9.2.3.1 of ANSI C63.10-2013 and FCC KDB 662911 D01 v02r01 Multiple Transmitter Output.

7.3DEVIATION FROM STANDARD

No deviation.

7.4TEST SETUP



7.5EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6TESTRESULTS

Please refer to the APPENDIXF.

8.CONDUCTED SPURIOUS EMISSION

8.1LIMIT

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.

8.2TEST PROCEDURE

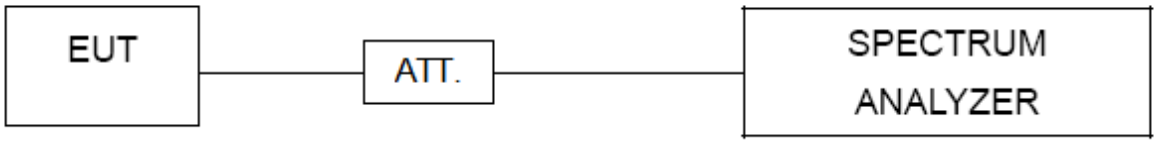
a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. The following table is the setting of the spectrum analyzer:

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

8.3DEVIATION FROM STANDARD

No deviation.

8.4TEST SETUP



8.5EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULTS

Please refer to the APPENDIXG.

9.POWER SPECTRAL DENSITY

9.1LIMIT

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

9.2TEST PROCEDURE

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

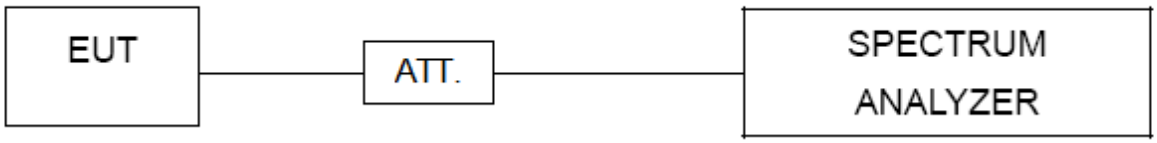
b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Span Frequency	2 MHz (1 Mbps) / 4 MHz (2 Mbps) / 500kbps(S2) / 125kbps(S8)
RBW	3 kHz
VBW	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

9.3DEVIATION FROM STANDARD

No deviation.

9.4TEST SETUP



9.5EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

9.6 TEST RESULTS

Please refer to the APPENDIXH.

10. MEASUREMENT INSTRUMENTS LIST

AC Power Line Conducted Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI TEST RECEIVER	R&S	ESCI	100382	Dec. 22, 2024
2	TWO-LINE V-NETWORK	R&S	ENV216	101447	Dec. 22, 2024
3	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
4	Cable	N/A	SFT205-NMNM-9M -001	9M	Nov. 27, 2024
5	643 Shield Room	ETS	6*4*3	N/A	N/A

Radiated Emissions - 9 kHzto 30MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Active Loop Antenna	Schwarzbeck	FMZB 1513-60B	1513-60 B-034	Mar. 30, 2025
2	MXE EMI Receiver	Keysight	N9038A	MY56400091	Dec. 22, 2024
3	Cable	N/A	RW2350-3.8A-NMB M-1.5M	N/A	Jun. 09, 2025
4	Cable	N/A	LMR400-NMNM-8 M	N/A	Sep. 09, 2025
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
6	966 Chamber room	ETS	9*6*6	N/A	May 16, 2025

Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	1462	Dec. 13, 2024
2	Attenuator	EMC INSTRUMENT	EMCI-N-6-06	AT-06009	Dec. 13, 2024
3	Preamplifier	EMC INSTRUMENT	EMC001330	980998	Nov. 17, 2024
4	Cable	RegalWay	LMR400-NMNM -12.5m	N/A	Jun. 06, 2025
5	Cable	RegalWay	LMR400-NMNM-3 m	N/A	Jun. 06, 2025
6	Cable	RegalWay	LMR400-NMNM-0. 5m	N/A	Jun. 06, 2025
7	Receiver	Agilent	N9038A	MY52130039	Dec. 22, 2024
8	Positioning Controller	MF	MF-7802	N/A	N/A
9	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
10	966 Chamber room	CM	9*6*6	N/A	May 16, 2025

Radiated Emissions - Above 1GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Receiver	Agilent	N9038A	MY52130039	Dec. 22, 2024
2	Preamplifier	EMC INSTRUMENT	EMC118A45SE	980888	Nov. 17, 2024
3	Double Ridged Guide Antenna	ETS	3115	75789	Jun. 15, 2025
4	Cable	RegalWay	RWLP50-4.0A-SMSM-12.5M	N/A	Jul. 03, 2025
5	Cable	RegalWay	RWLP50-4.0A-NMRASM-2.5M	N/A	Jul. 03, 2025
6	Cable	RegalWay	RWLP50-4.0A-NMRASMRA-0.8M	N/A	Jul. 03, 2025
7	966 Chamber room	CM	9*6*6	N/A	May 19, 2025
8	Attenuator	Talent Microwave	TA10A2-S-18	N/A	N/A
9	Filter	STI	STI15-9912	N/A	May 31, 2025
10	Positioning Controller	MF	MF-7802	N/A	N/A
11	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

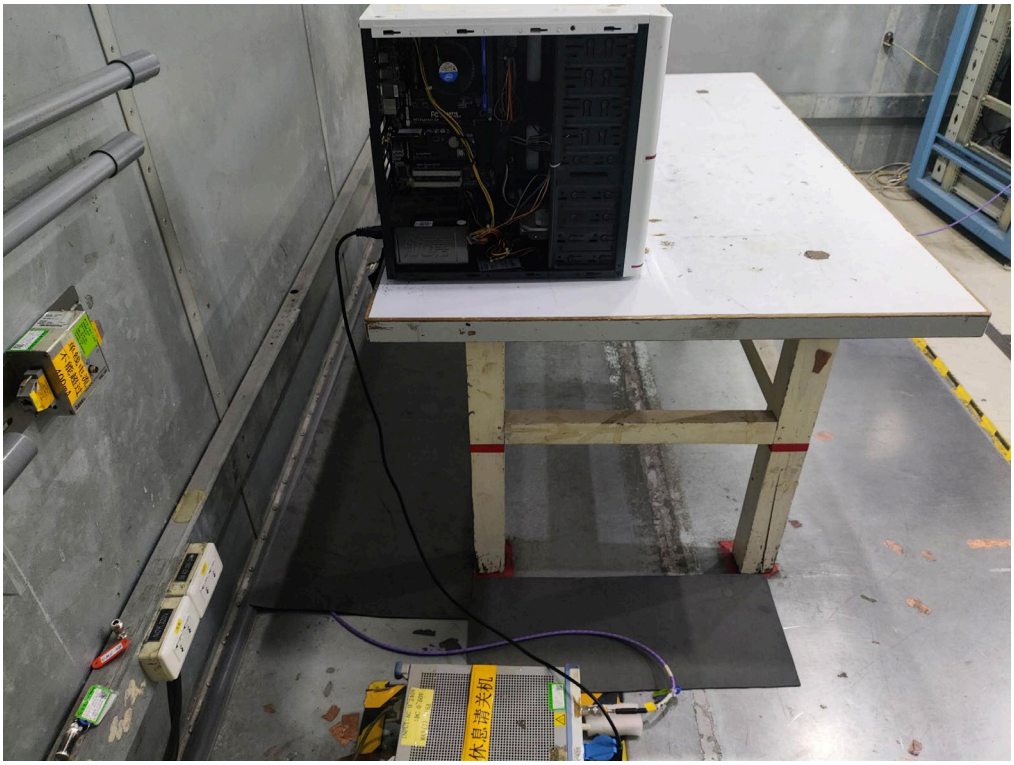
Bandwidth& Power Spectral Density& Conducted Spurious Emission					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	May 31, 2025
2	Measurement Software	BTL	BTL Conducted Test	N/A	N/A
3	Isolation attenuator	Z-Link	ASMA-16-18-2W	N/A	N/A

Maximum Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Sensor	Agilent	U2021XA	MY53320006	May. 31, 2025
2	BTL TestSystem	BTL	TestSoftware	N/A	N/A
3	Cable	Woke	20210802 001	RWP50-402-SMSM-1M	N/A
4	Isolation attenuator	Z-Link	ASMA-10-18-2W	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.

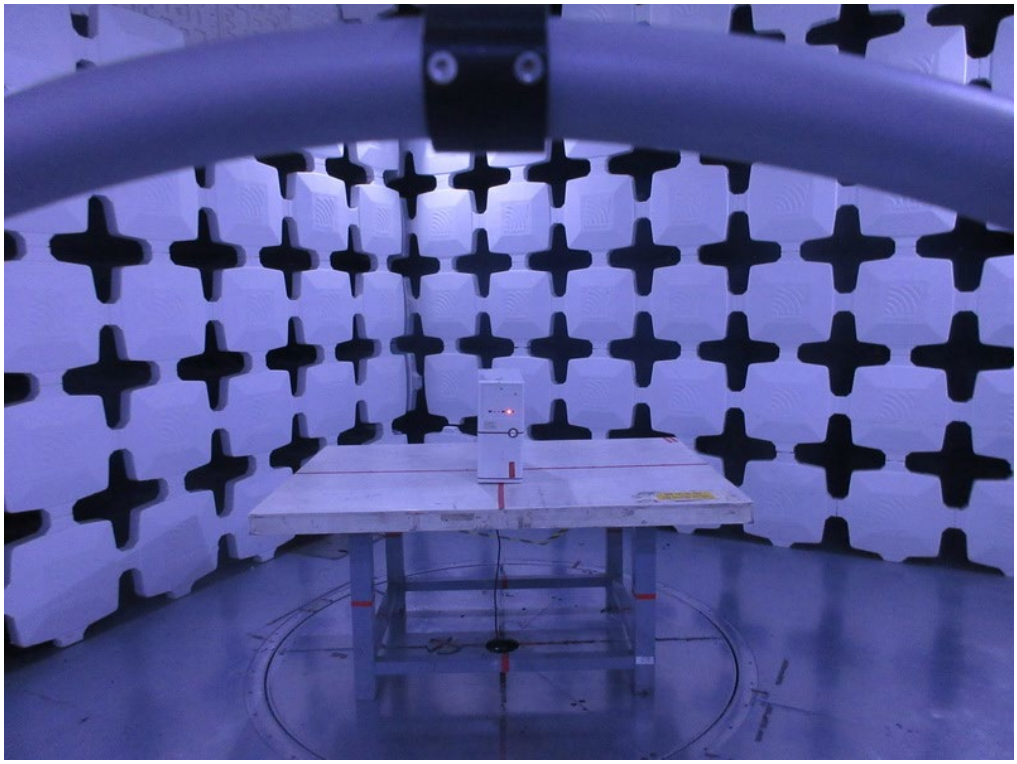
11.EUT TEST PHOTO

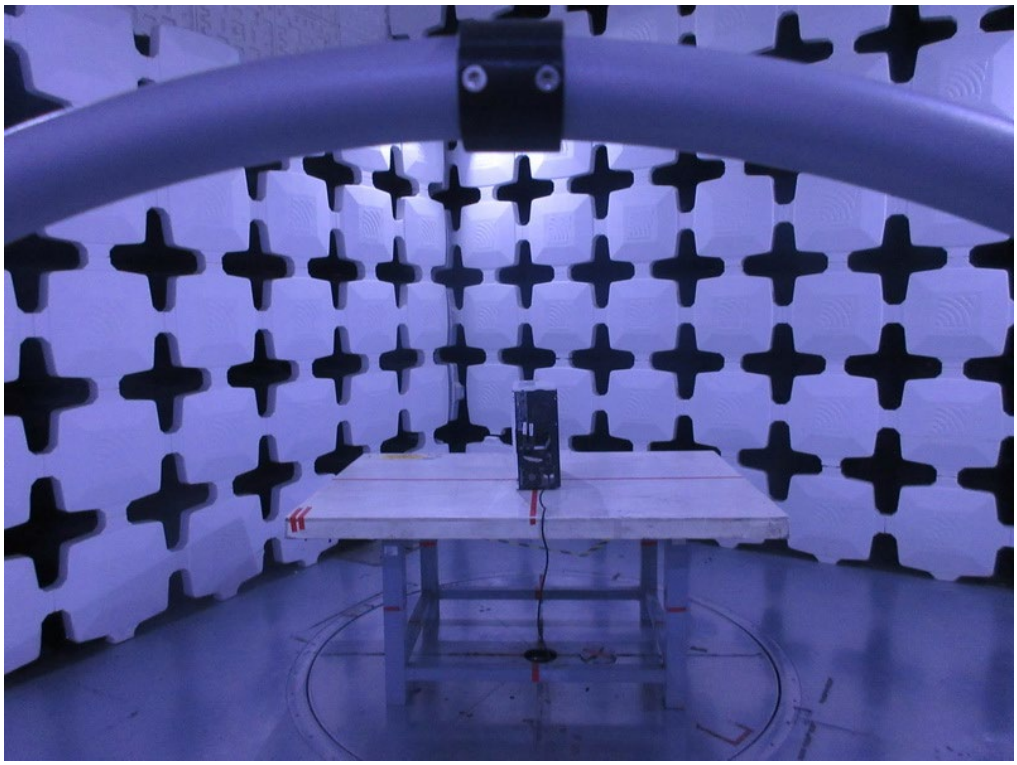
AC Power Line Conducted Emissions Test Photos



Radiated Emissions Test Photos

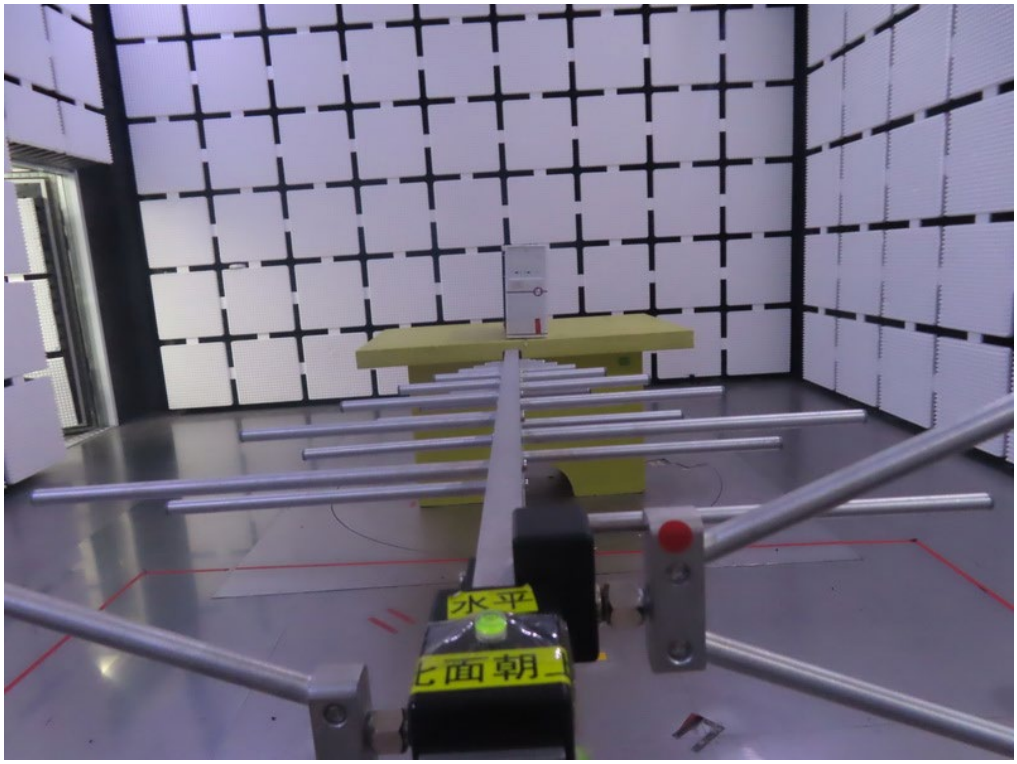
9 kHz to 30 MHz

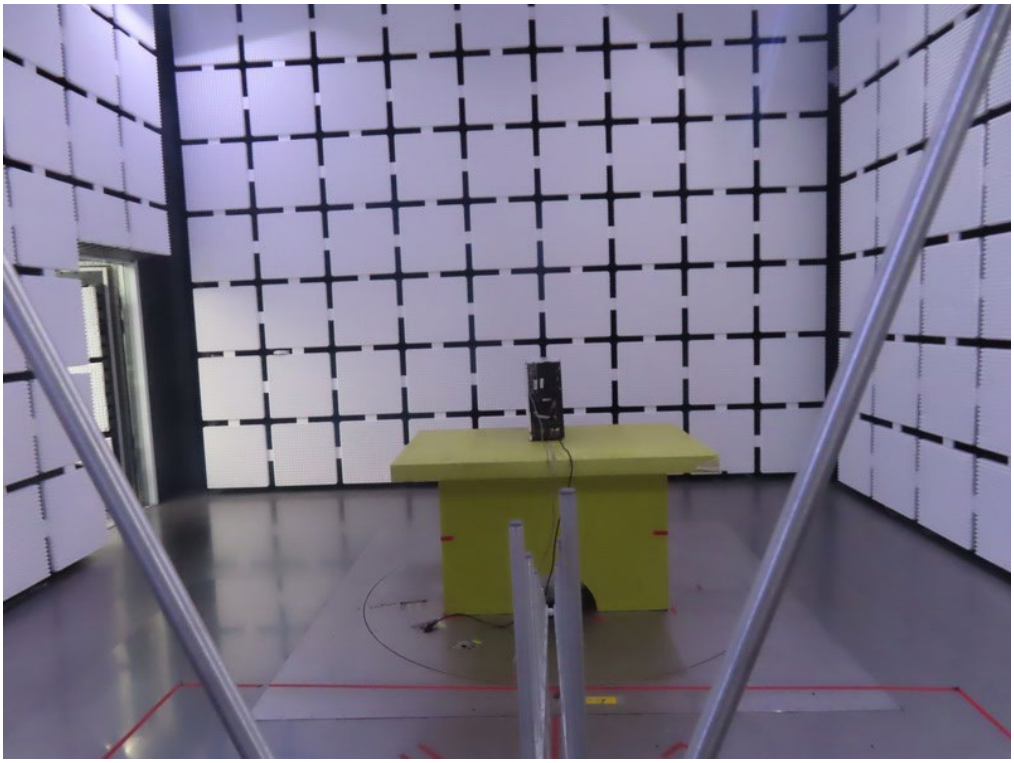




Radiated Emissions Test Photos

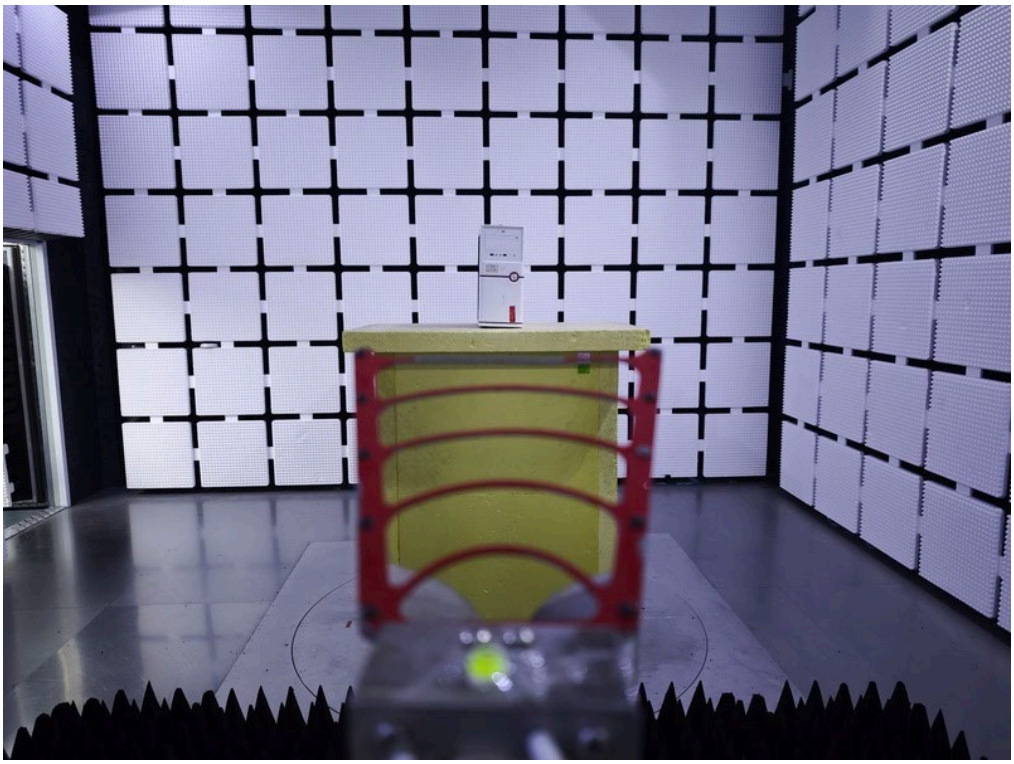
30MHz to 1000MHz

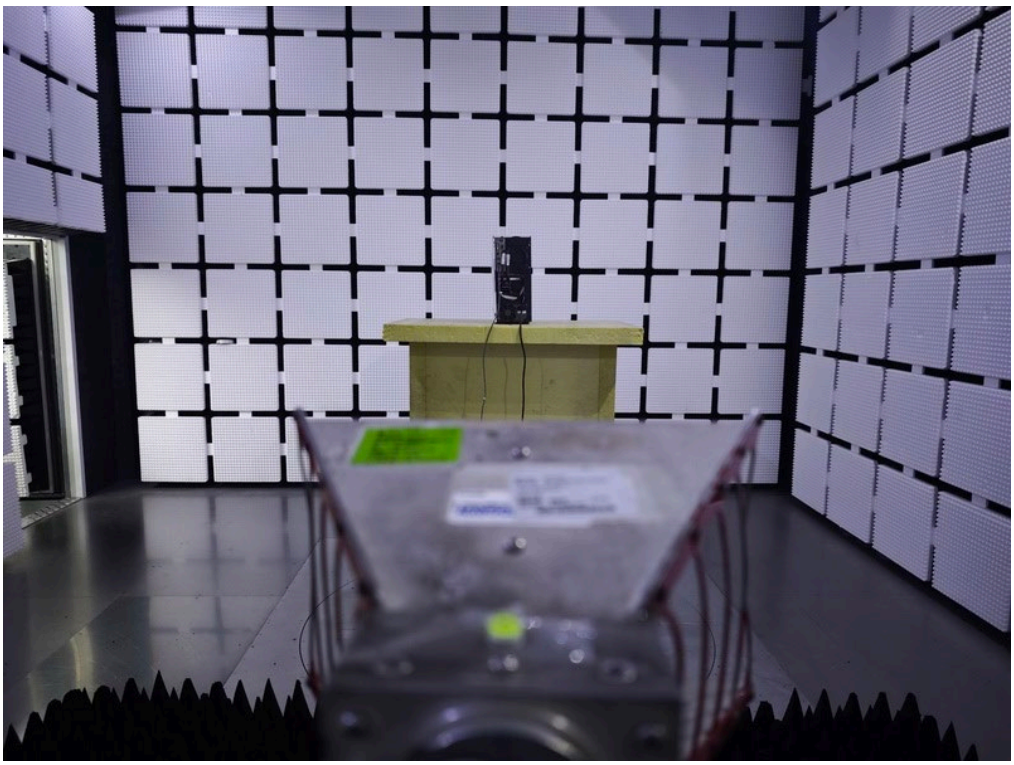




Radiated Emissions Test Photos

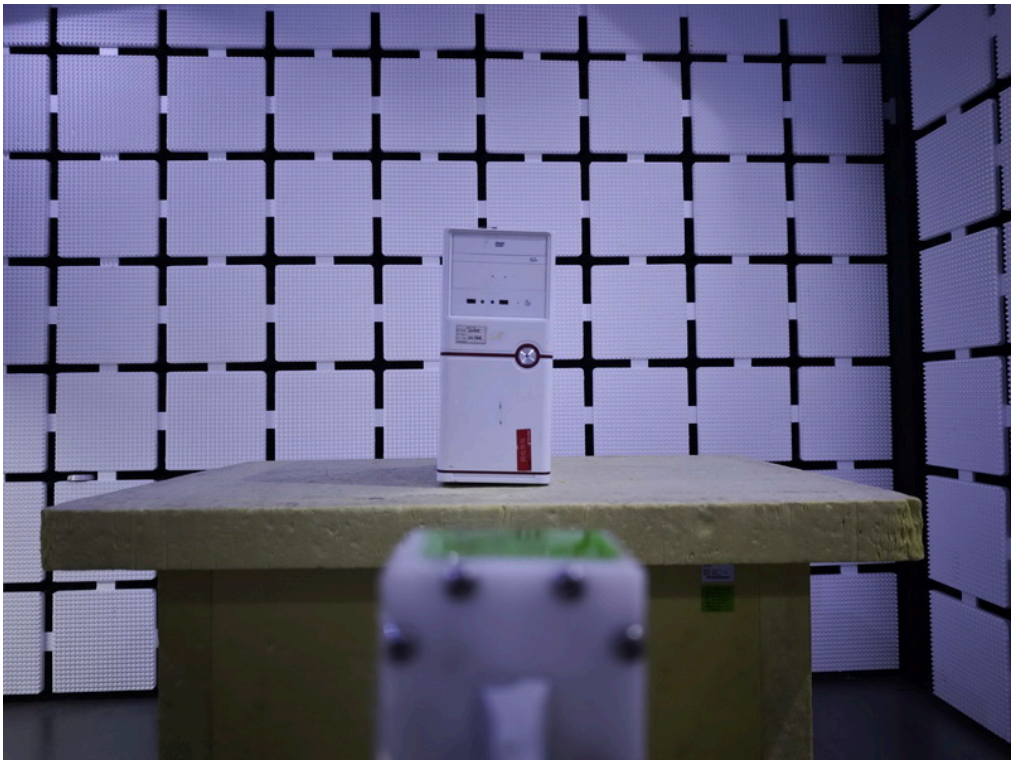
Harmonic(1 GHz to 18 GHz) & Band edge

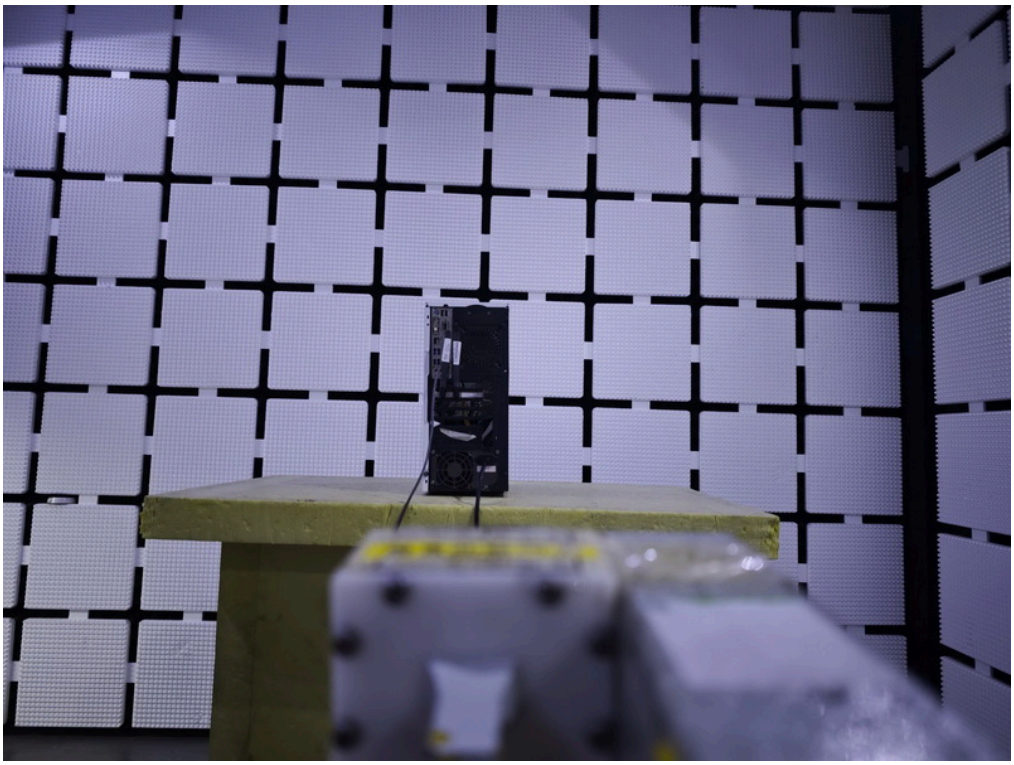




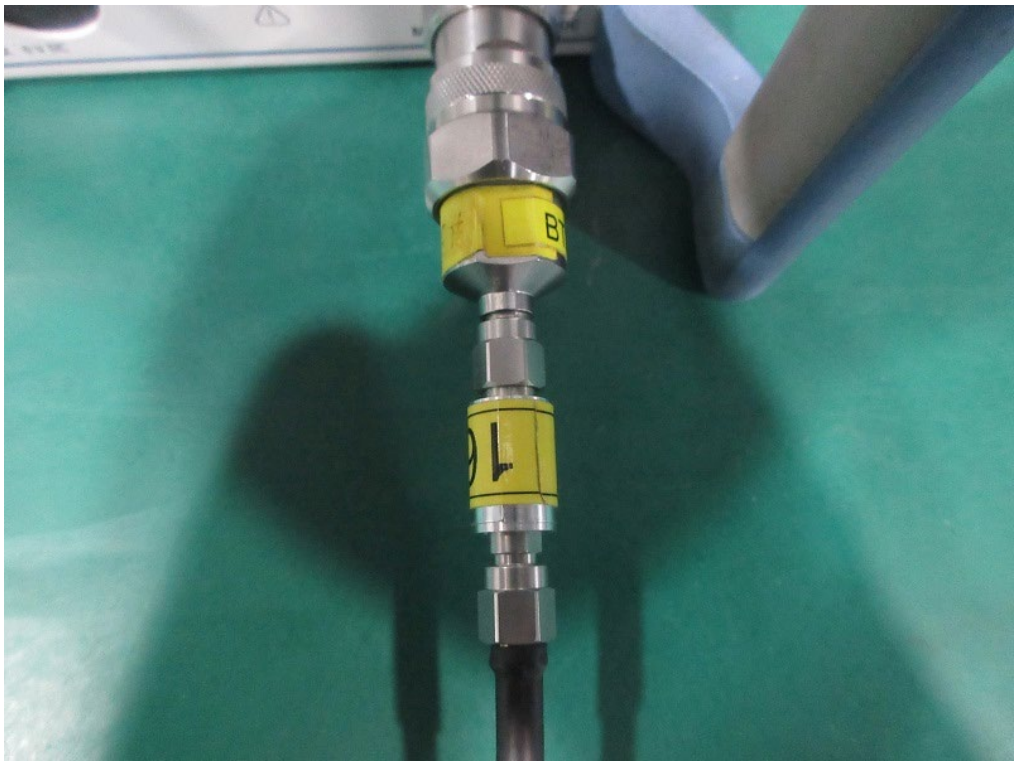
Radiated Emissions Test Photos

Harmonic(Above 18 GHz)



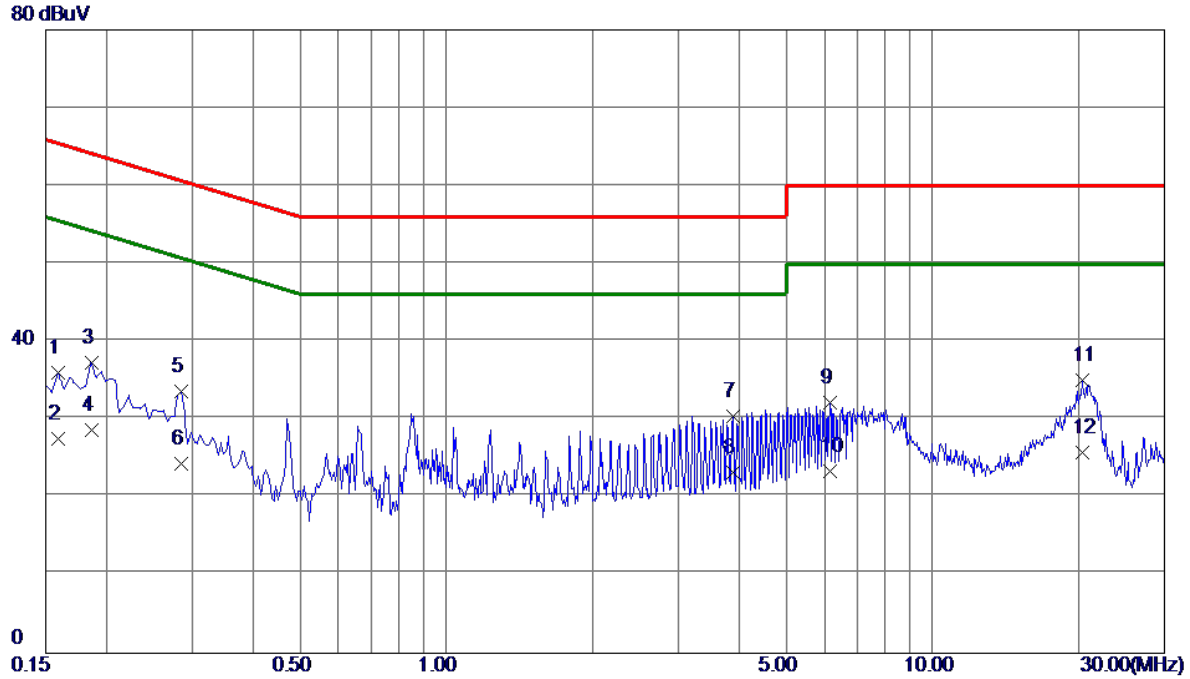


Conducted Test Photos



APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

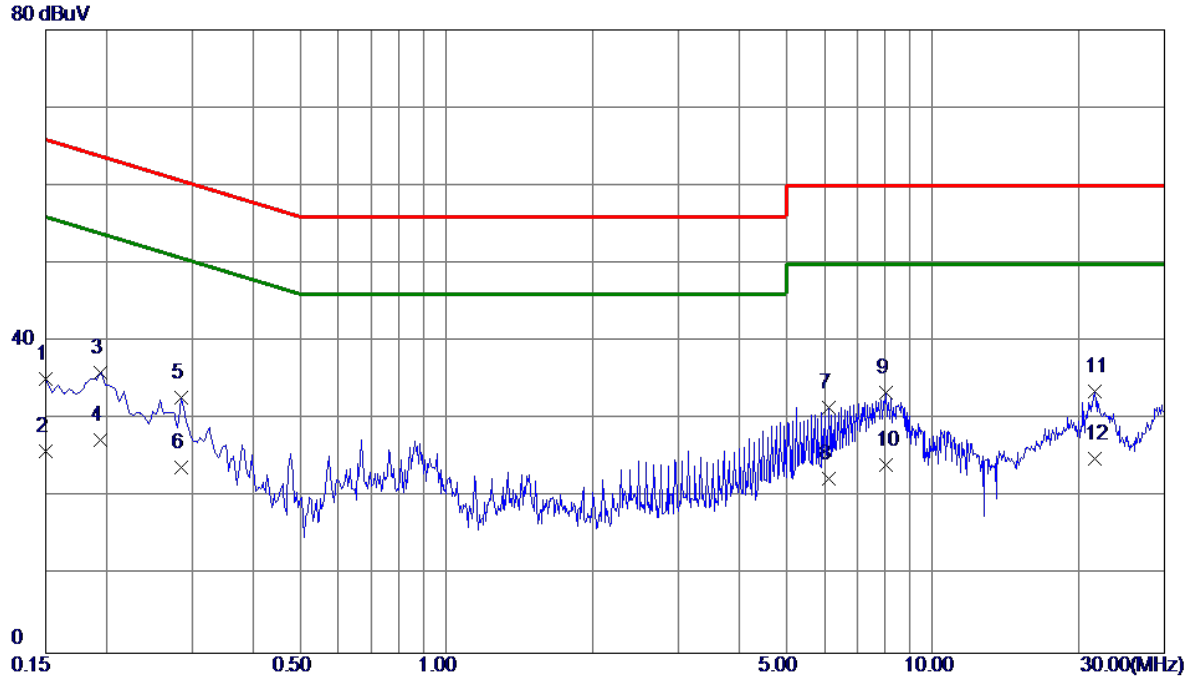
Test Mode	TX Mode_125kbps(S8) Channel 19	Phase	Line



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1590	26.36	9.70	36.06	65.52	-29.46	QP	
2	0.1590	17.80	9.70	27.50	55.52	-28.02	AVG	
3	0.1860	27.61	9.70	37.31	64.21	-26.90	QP	
4	0.1860	18.90	9.70	28.60	54.21	-25.61	AVG	
5	0.2850	23.86	9.72	33.58	60.67	-27.09	QP	
6	0.2850	14.60	9.72	24.32	50.67	-26.35	AVG	
7	3.8940	20.67	9.80	30.47	56.00	-25.53	QP	
8 *	3.8940	13.40	9.80	23.20	46.00	-22.80	AVG	
9	6.1440	22.25	9.89	32.14	60.00	-27.86	QP	
10	6.1440	13.40	9.89	23.29	50.00	-26.71	AVG	
11	20.2875	24.94	10.13	35.07	60.00	-24.93	QP	
12	20.2875	15.60	10.13	25.73	50.00	-24.27	AVG	

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

Test Mode	TX Mode_125kbps(S8) Channel 19	Phase	Neutral

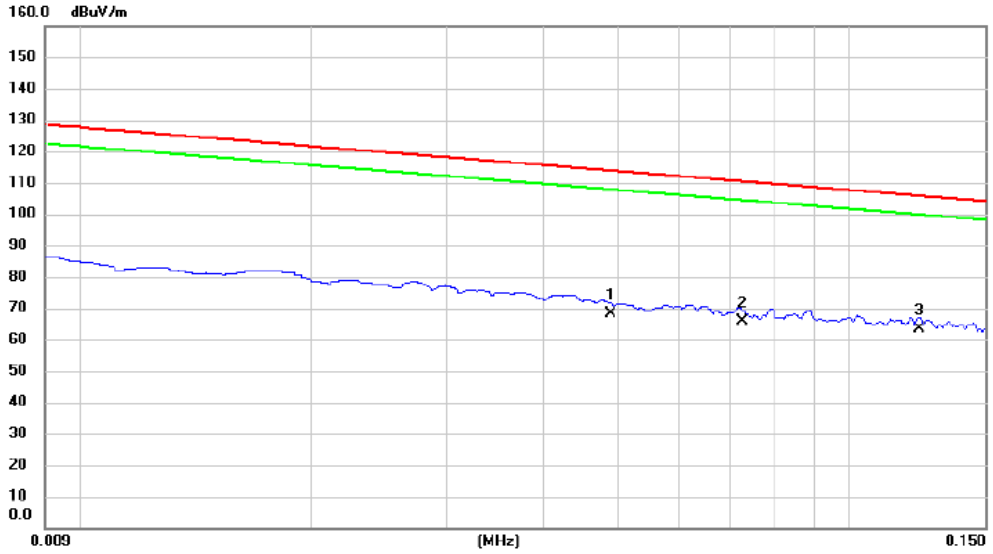


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1500	25.71	9.55	35.26	66.00	-30.74	QP	
2	0.1500	16.30	9.55	25.85	56.00	-30.15	AVG	
3	0.1949	26.41	9.56	35.97	63.83	-27.86	QP	
4	0.1949	17.80	9.56	27.36	53.83	-26.47	AVG	
5	0.2850	23.18	9.58	32.76	60.67	-27.91	QP	
6	0.2850	14.20	9.58	23.78	50.67	-26.89	AVG	
7	6.1080	21.85	9.74	31.59	60.00	-28.41	QP	
8	6.1080	12.70	9.74	22.44	50.00	-27.56	AVG	
9	8.0295	23.46	9.93	33.39	60.00	-26.61	QP	
10	8.0295	14.30	9.93	24.23	50.00	-25.77	AVG	
11	21.5790	23.61	10.03	33.64	60.00	-26.36	QP	
12 *	21.5790	14.90	10.03	24.93	50.00	-25.07	AVG	

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

APPENDIX B - RADIATED EMISSION -9 KHZ TO 30 MHZ

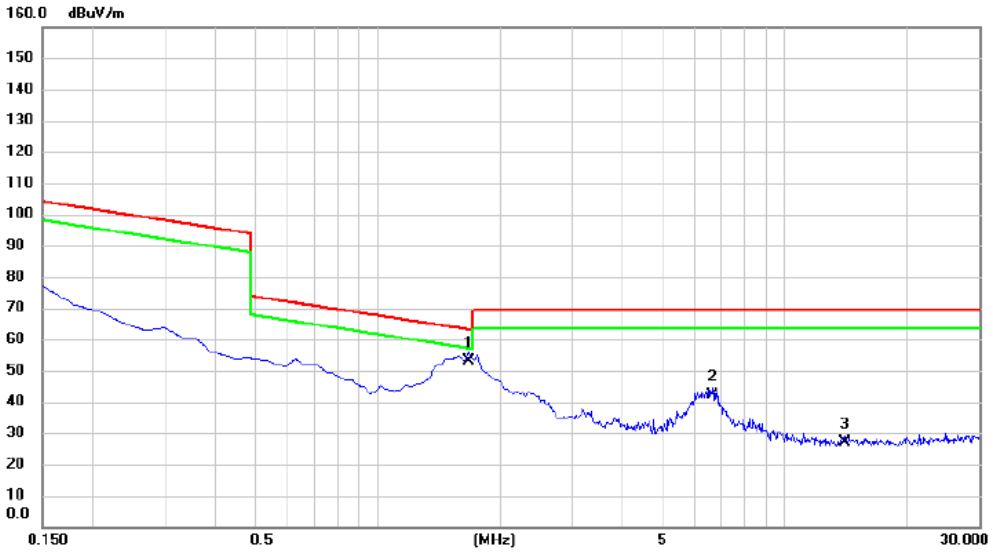
Test Mode	TX Mode_125kbps(S8) Channel 19	Polarization	Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.049	47.09	21.20	68.29	113.80	-45.51	AVG	
2		0.072	44.68	21.27	65.95	110.40	-44.45	AVG	
3	*	0.123	42.03	21.32	63.35	105.80	-42.45	QP	

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

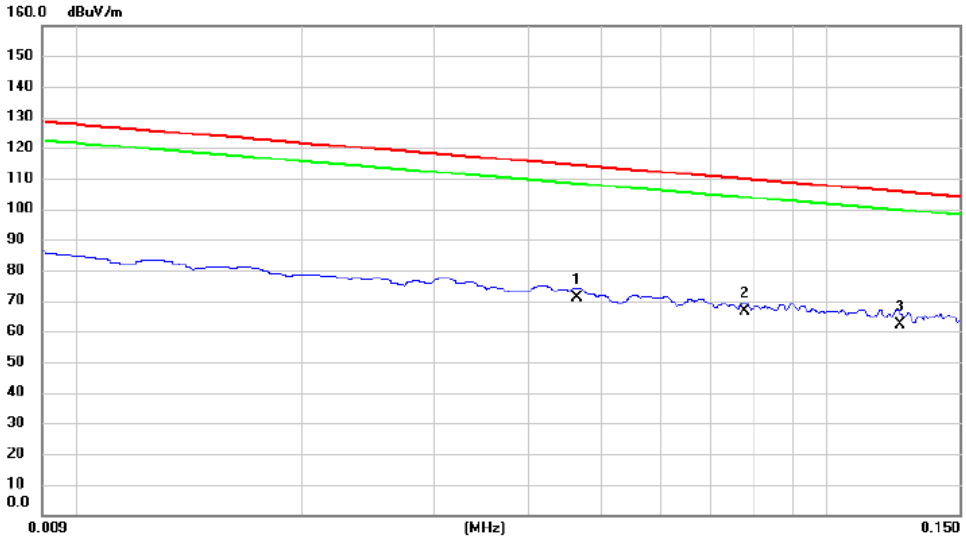
Test Mode	TX Mode_125kbps(S8) Channel 19	Polarization	Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	1.672	31.69	21.17	52.86	63.14	-10.28	QP	
2		6.657	20.85	21.29	42.14	69.54	-27.40	QP	
3		14.060	5.41	21.60	27.01	69.54	-42.53	QP	

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

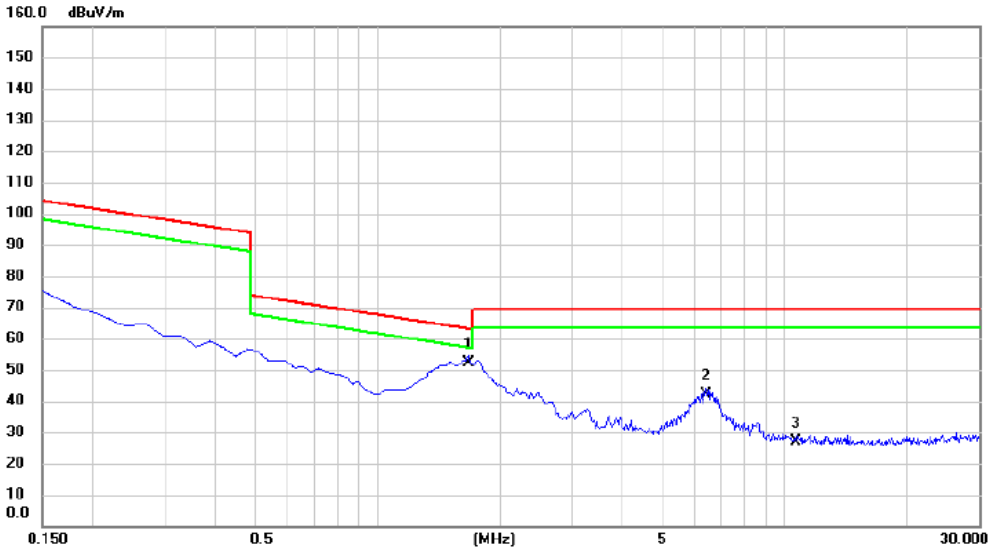
Test Mode	TX Mode_125kbps(S8) Channel 19	Polarization	Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.046	49.85	21.18	71.03	114.26	-43.23	AVG	
2		0.078	45.13	21.29	66.42	109.80	-43.38	AVG	
3		0.125	40.69	21.32	62.01	105.66	-43.65	QP	

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

Test Mode	TX Mode_125kbps(S8) Channel 19	Polarization	Ant 90°

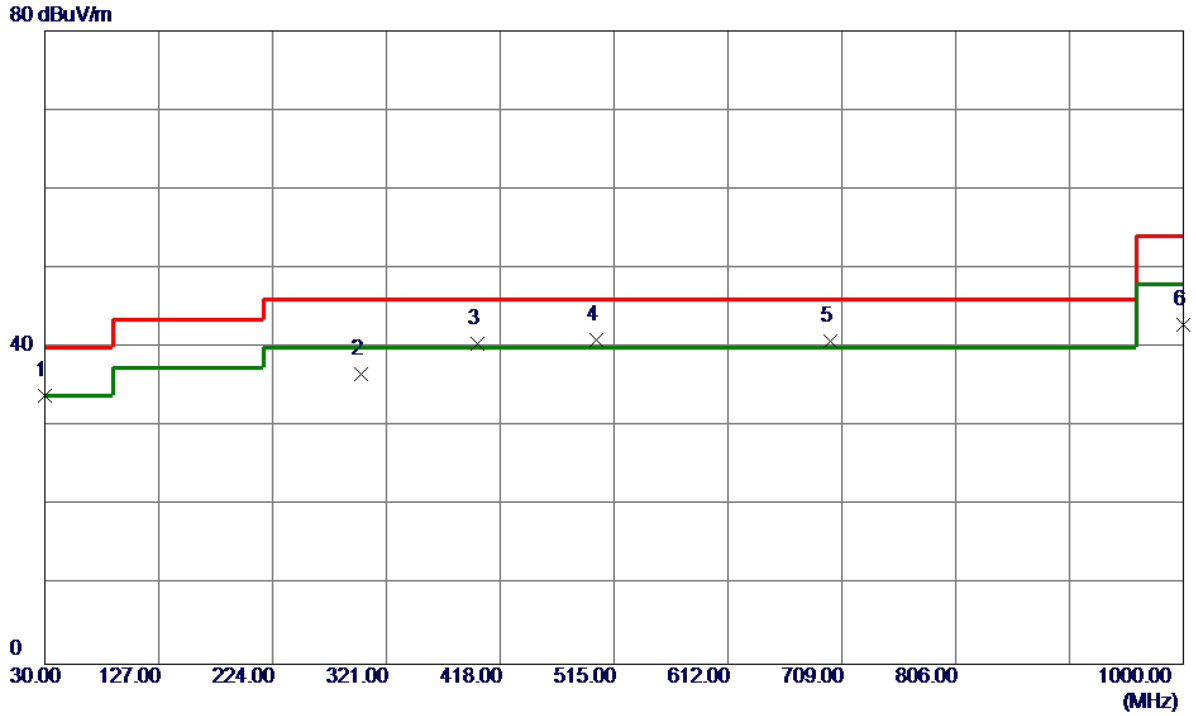


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	1.672	31.06	21.17	52.23	63.14	-10.91	QP	
2		6.418	21.09	21.29	42.38	69.54	-27.16	QP	
3		10.687	5.43	21.42	26.85	69.54	-42.69	QP	

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

APPENDIX C - RADIATED EMISSION-30 MHZ TO 1000 MHZ

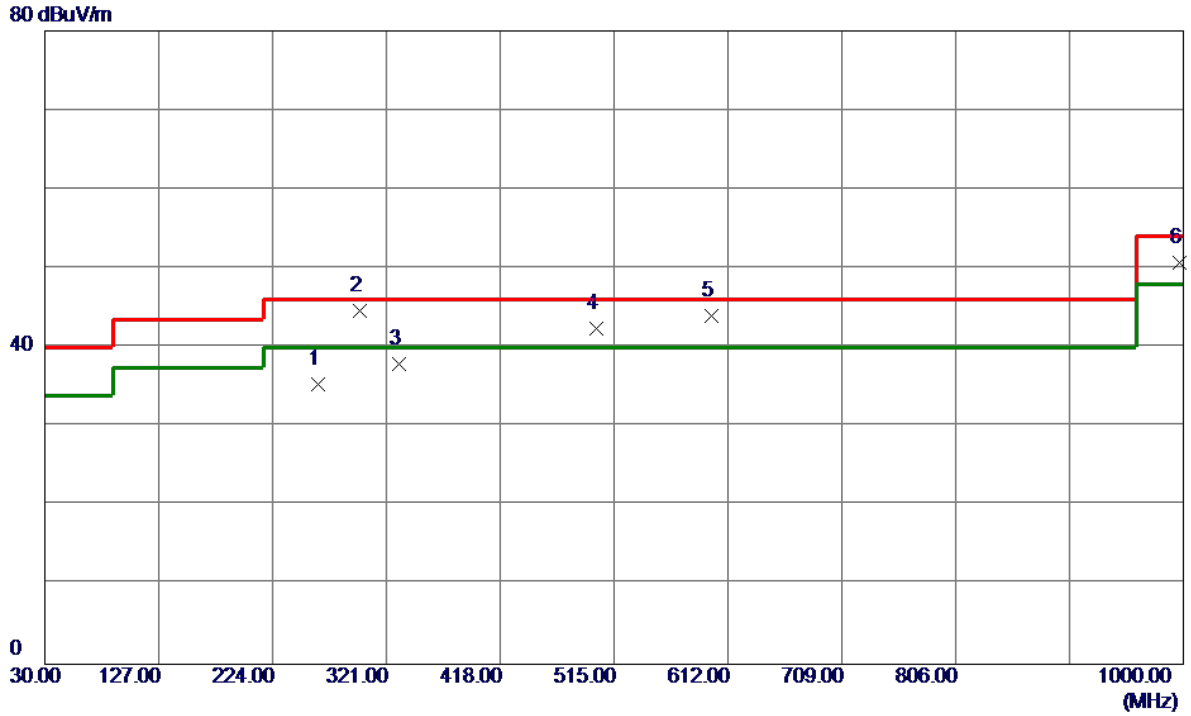
Test Mode	TX Mode_125kbps(S8) Channel 19	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	30.0000	47.07	-13.12	33.95	40.00	-6.05	Peak	
2	299.6600	47.28	-10.59	36.69	46.00	-9.31	Peak	
3	399.0850	48.47	-8.06	40.41	46.00	-5.59	Peak	
4 *	499.9650	47.05	-6.02	41.03	46.00	-4.97	Peak	
5	699.7849	43.09	-2.30	40.79	46.00	-5.21	Peak	
6	999.5150	41.92	0.99	42.91	54.00	-11.09	Peak	

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

Test Mode	TX Mode_125kbps(S8) Channel 19	Polarization	Horizontal

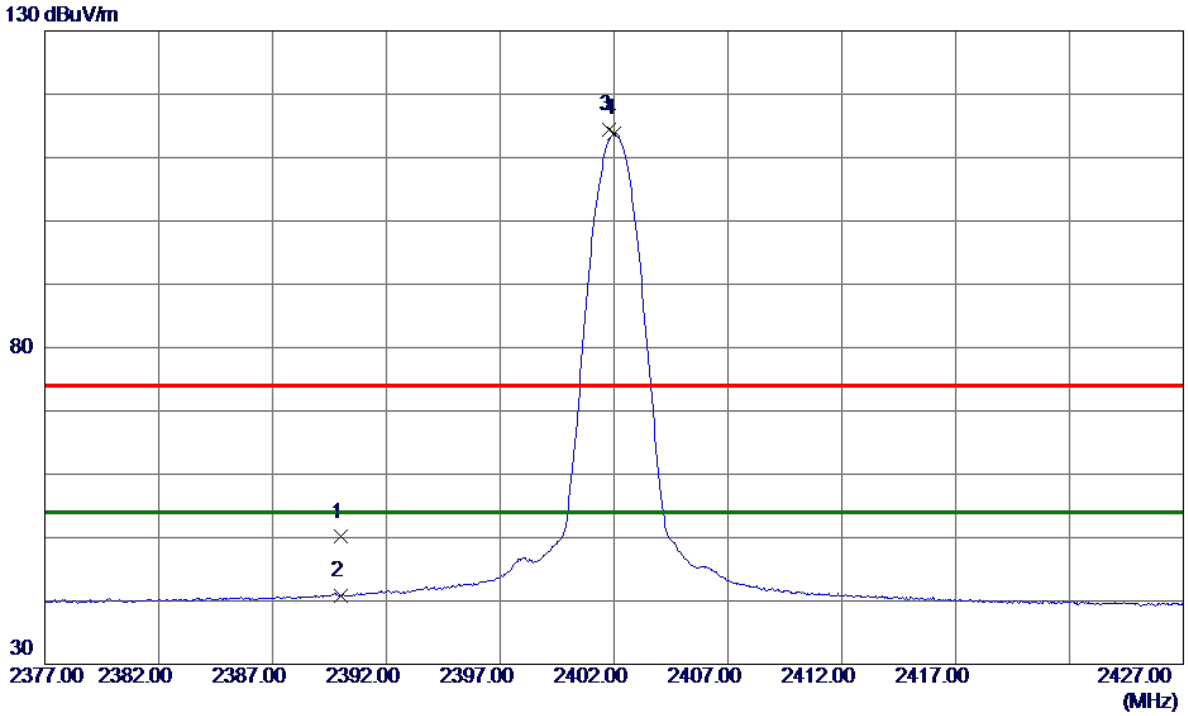


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	263.2850	47.25	-11.89	35.36	46.00	-10.64	Peak	
2 *	298.6900	55.24	-10.61	44.63	46.00	-1.37	QP	
3	332.1550	47.62	-9.64	37.98	46.00	-8.02	Peak	
4	499.9650	48.48	-6.02	42.46	46.00	-3.54	QP	
5	597.9350	47.62	-3.65	43.97	46.00	-2.03	Peak	
6	997.0900	49.75	0.96	50.71	54.00	-3.29	Peak	

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

APPENDIX D - RADIATED EMISSION - ABOVE 1000 MHZ

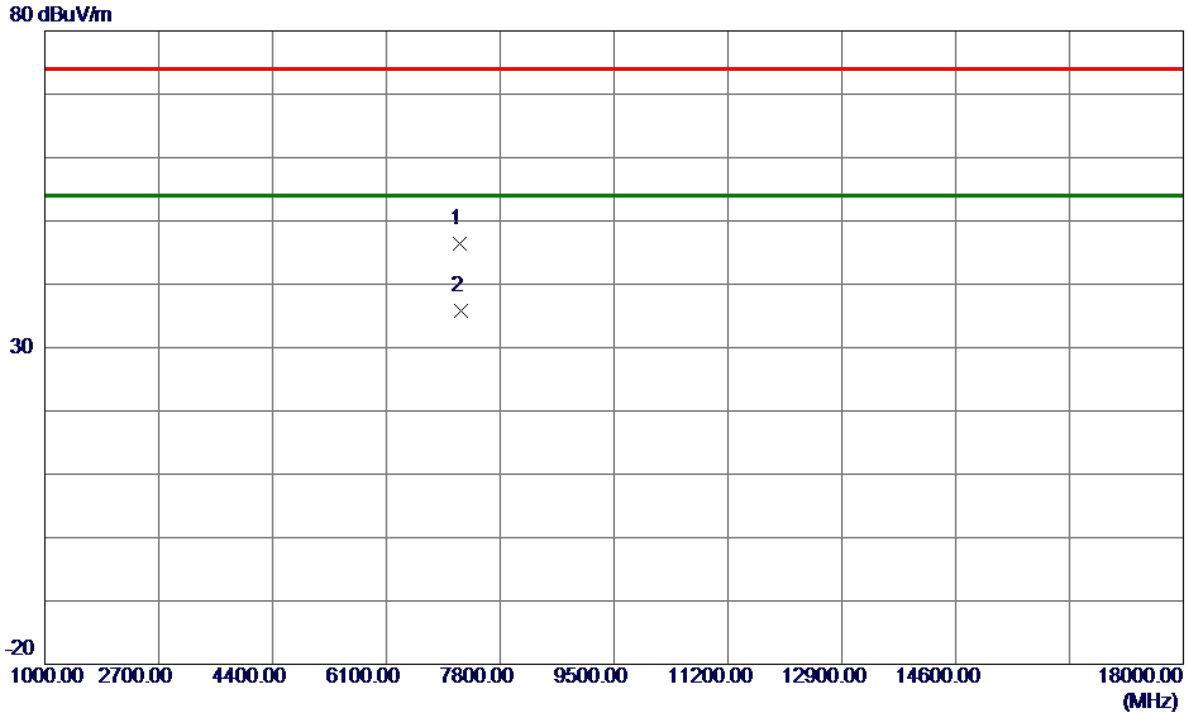
Test Mode	TX 2402 MHz_CH00_1Mbps	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	42.61	7.49	50.10	74.00	-23.90	Peak	
2	2390.0000	33.38	7.49	40.87	54.00	-13.13	AVG	
3	2401.8000	106.96	7.50	114.46	74.00	40.46	Peak	No Limit
4 *	2402.0250	106.24	7.50	113.74	54.00	59.74	AVG	No Limit

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

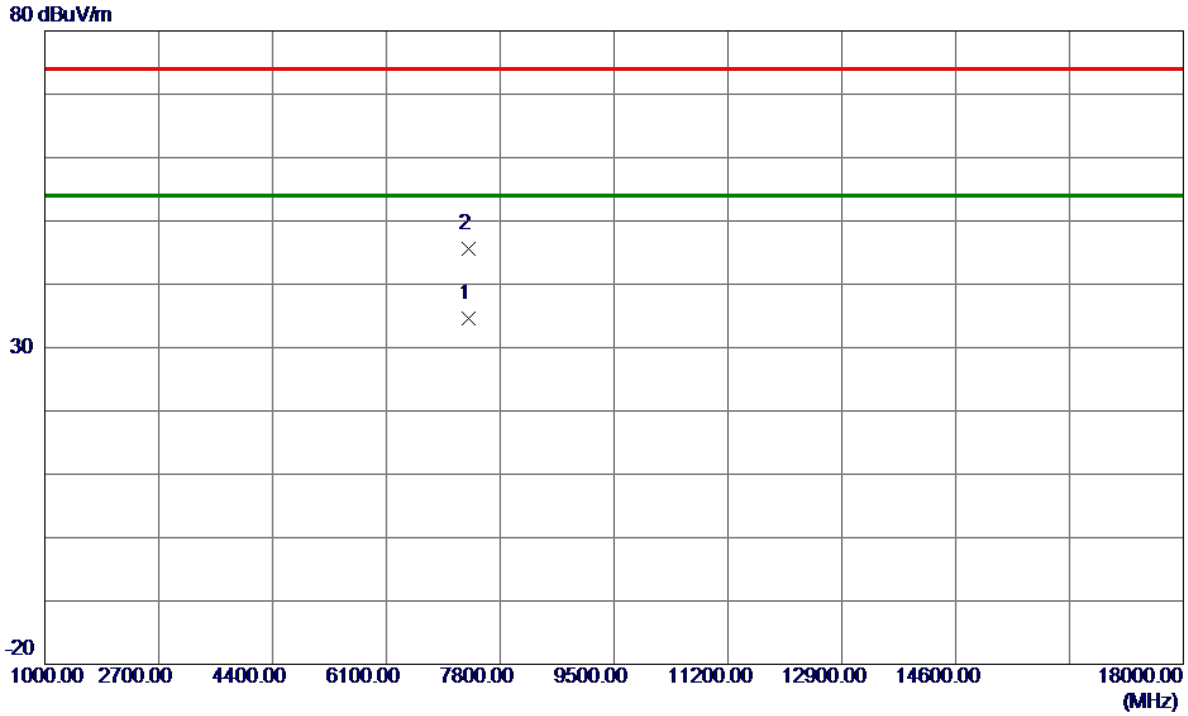
Test Mode	TX 2402 MHz_CH00_1Mbps	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	7187.6250	38.11	8.25	46.36	74.00	-27.64	Peak	
2 *	7205.2000	27.53	8.26	35.79	54.00	-18.21	AVG	

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

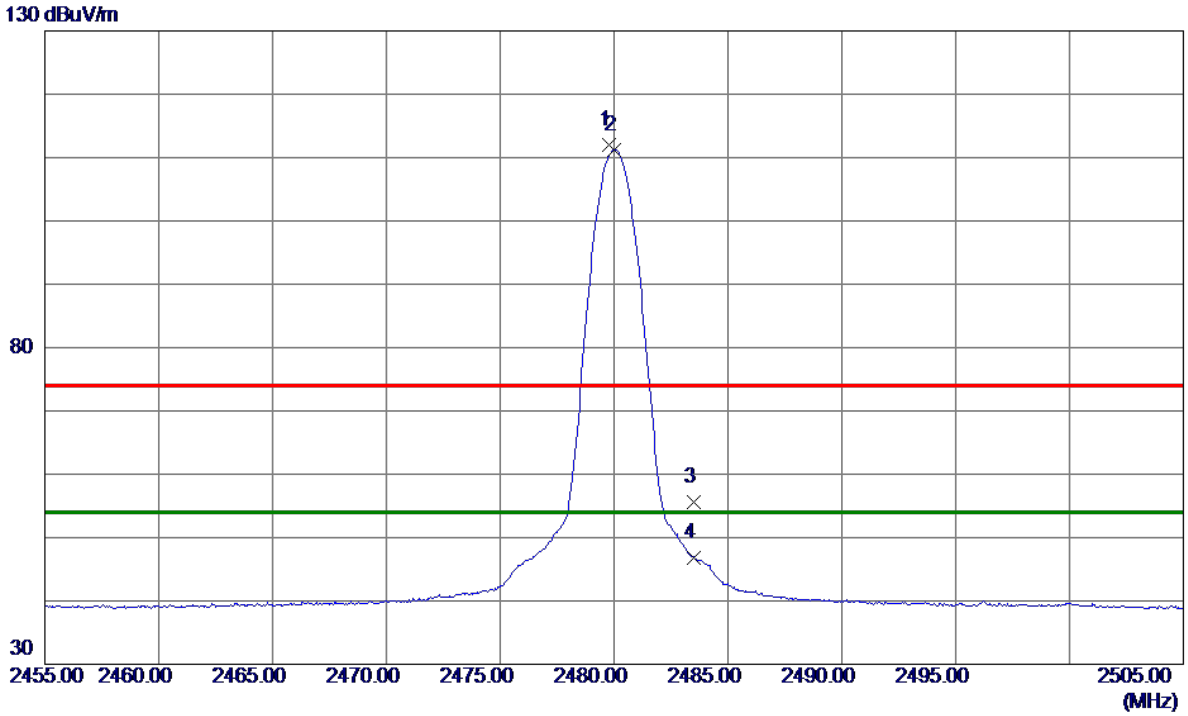
Test Mode	TX 2440 MHz_CH19_1Mbps	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	7323.8750	26.37	8.30	34.67	54.00	-19.33	AVG	
2	7328.8750	37.36	8.30	45.66	74.00	-28.34	Peak	

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

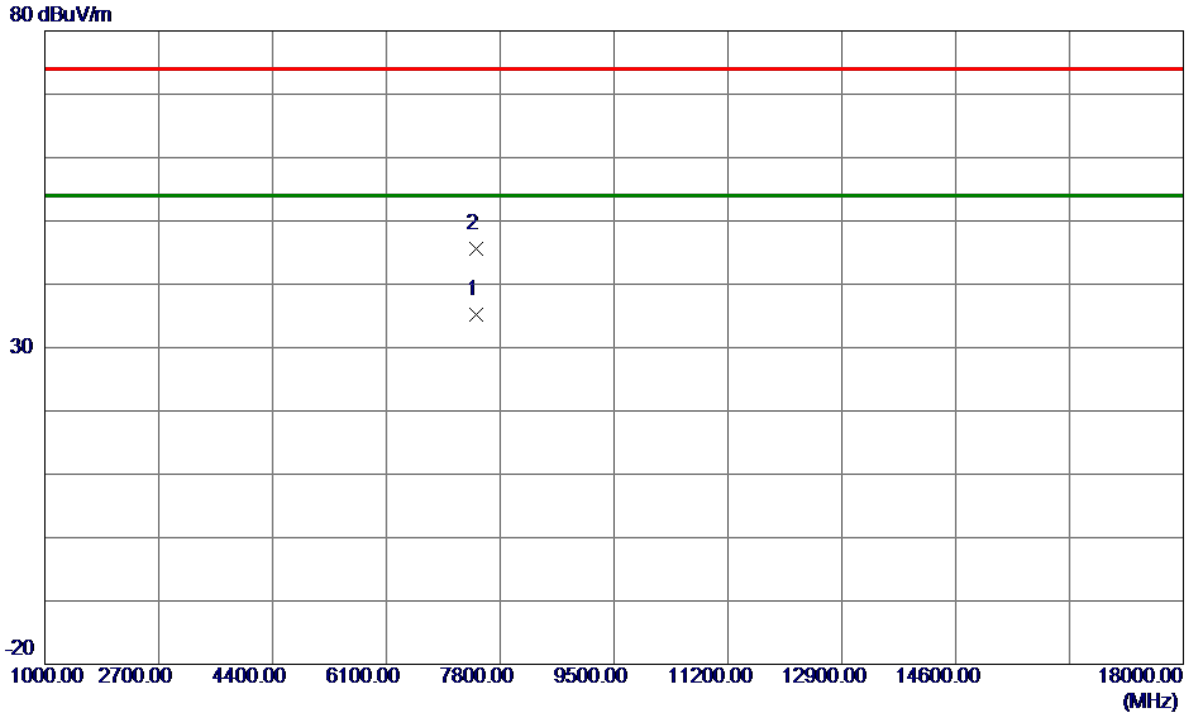
Test Mode	TX 2480 MHz_CH39_1Mbps	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2479.8000	104.35	7.59	111.94	74.00	37.94	Peak	No Limit
2 *	2480.0250	103.70	7.59	111.29	54.00	57.29	AVG	No Limit
3	2483.5000	48.01	7.59	55.60	74.00	-18.40	Peak	
4	2483.5000	39.16	7.59	46.75	54.00	-7.25	AVG	

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

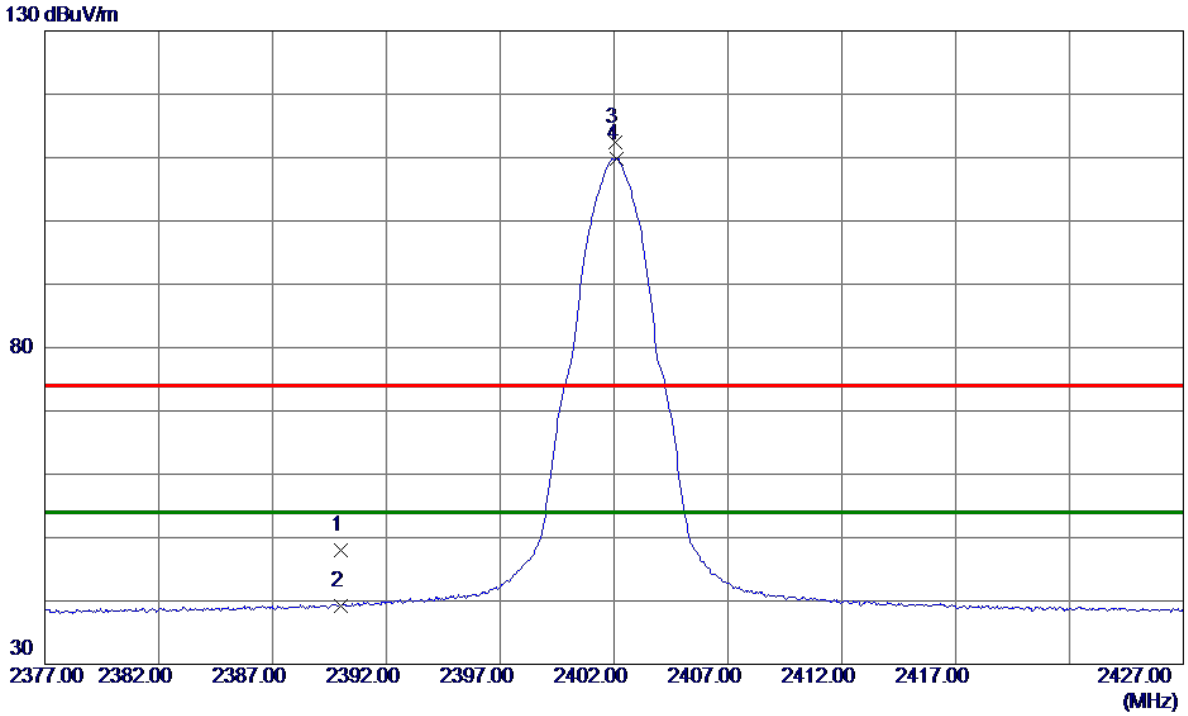
Test Mode	TX 2480 MHz_CH39_1Mbps	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	7445.8750	26.84	8.34	35.18	54.00	-18.82	AVG	
2	7447.3000	37.18	8.34	45.52	74.00	-28.48	Peak	

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

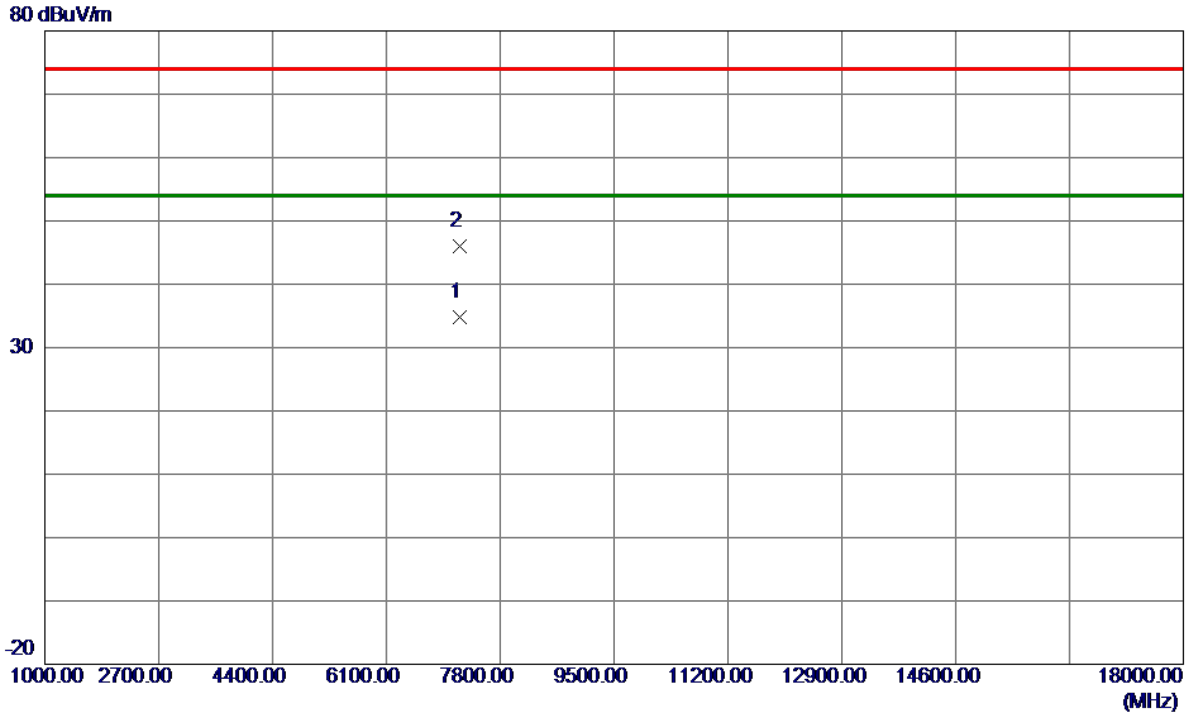
Test Mode	TX 2402 MHz_CH00_2Mbps	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	40.52	7.49	48.01	74.00	-25.99	Peak	
2	2390.0000	31.74	7.49	39.23	54.00	-14.77	AVG	
3	2402.0500	104.97	7.50	112.47	74.00	38.47	Peak	No Limit
4 *	2402.1250	102.39	7.50	109.89	54.00	55.89	AVG	No Limit

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

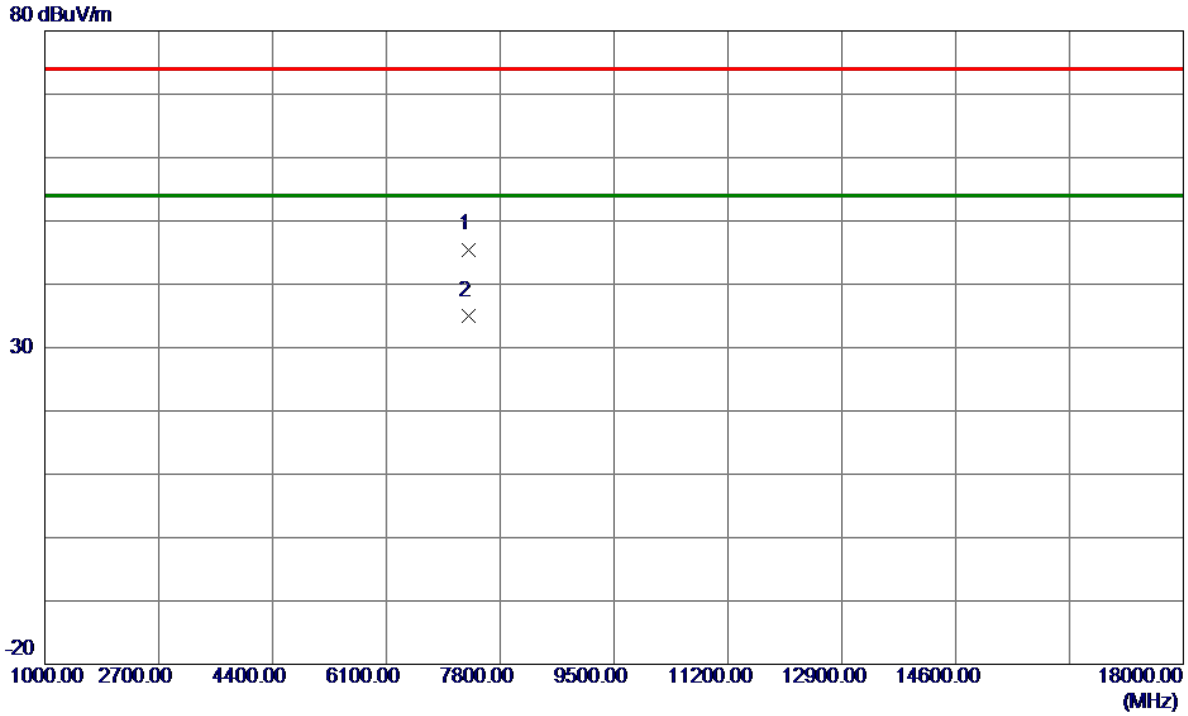
Test Mode	TX 2402 MHz_CH00_2Mbps	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	7202.1500	26.45	8.26	34.71	54.00	-19.29	AVG	
2	7204.6600	37.70	8.26	45.96	74.00	-28.04	Peak	

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

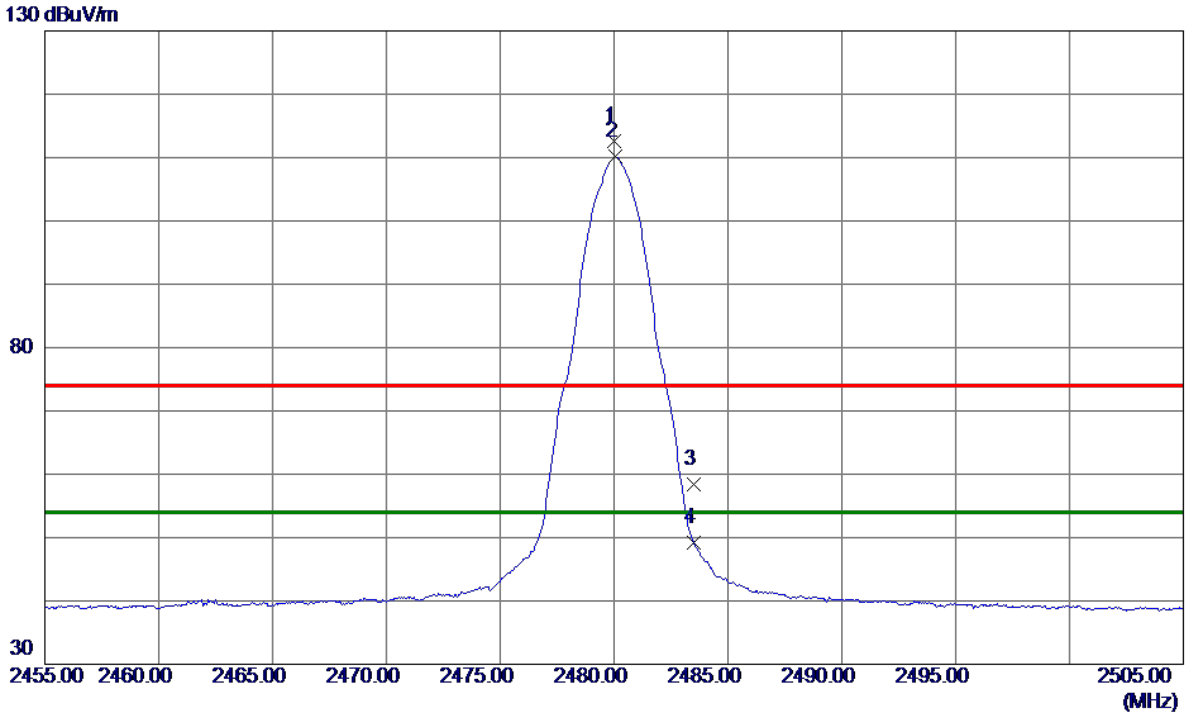
Test Mode	TX 2440 MHz_CH19_2Mbps	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	7326.8300	37.20	8.30	45.50	74.00	-28.50	Peak	
2 *	7327.1500	26.73	8.30	35.03	54.00	-18.97	AVG	

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

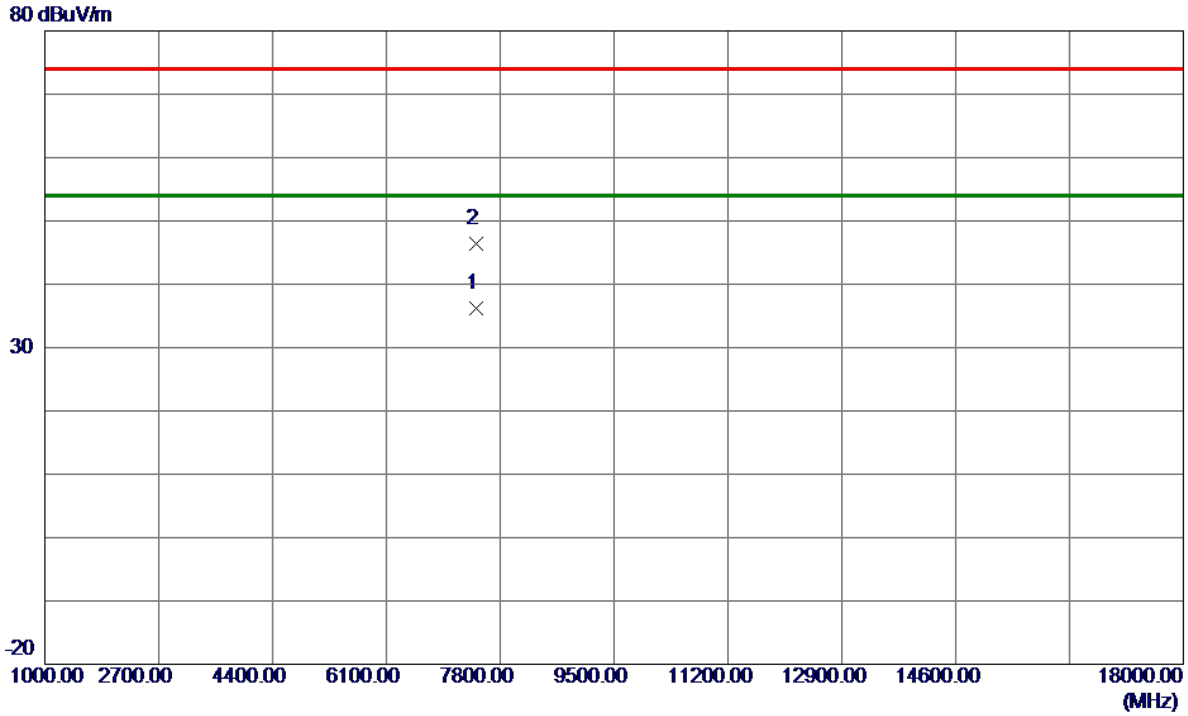
Test Mode	TX 2480 MHz_CH39_2Mbps	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2480.0250	105.06	7.59	112.65	74.00	38.65	Peak	No Limit
2 *	2480.0500	102.52	7.59	110.11	54.00	56.11	AVG	No Limit
3	2483.5000	50.76	7.59	58.35	74.00	-15.65	Peak	
4	2483.5000	41.52	7.59	49.11	54.00	-4.89	AVG	

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

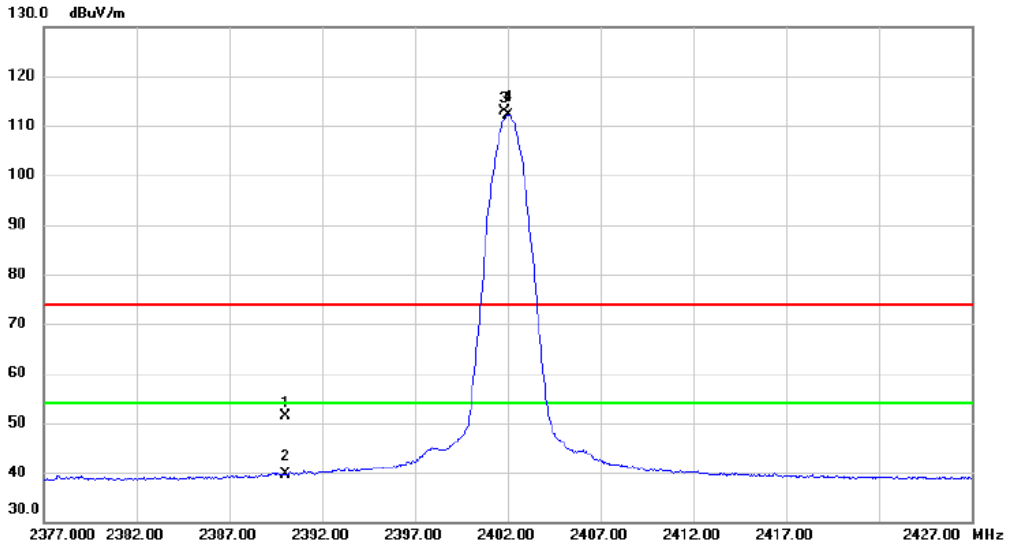
Test Mode	TX 2480 MHz_CH39_2Mbps	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	7441.7750	27.94	8.34	36.28	54.00	-17.72	AVG	
2	7446.7000	38.14	8.34	46.48	74.00	-27.52	Peak	

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

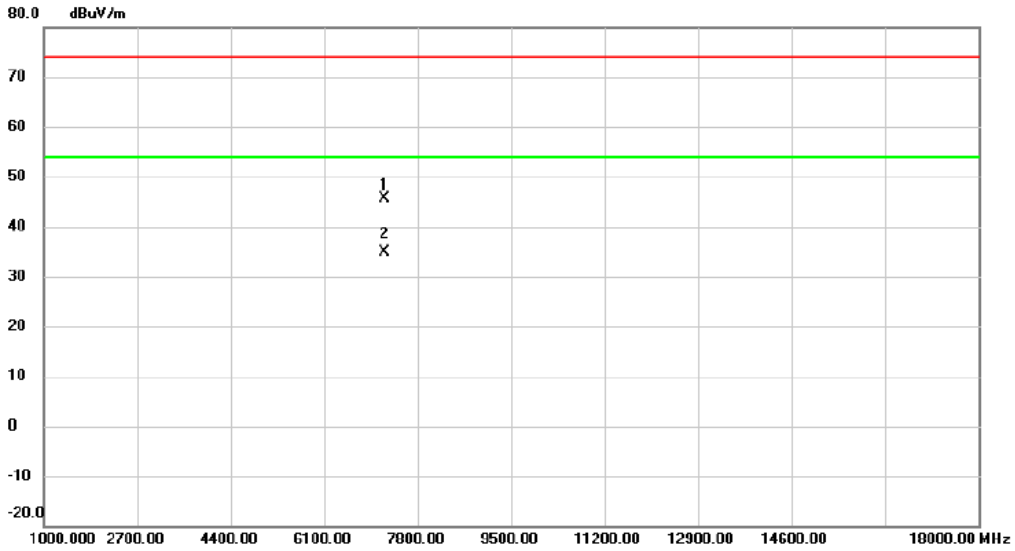
Test Mode	TX 2402 MHz_CH00_500kbps(S2)	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	43.97	7.49	51.46	74.00	-22.54	peak	
2		2390.000	32.09	7.49	39.58	54.00	-14.42	AVG	
3	X	2401.800	105.38	7.50	112.88	74.00	38.88	peak	No Limit
4	*	2402.050	104.72	7.50	112.22	54.00	58.22	AVG	No Limit

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

Test Mode	TX 2402 MHz_CH00_500kbps(S2)	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7200.190	37.39	8.26	45.65	74.00	-28.35	peak	
2	*	7202.450	26.66	8.26	34.92	54.00	-19.08	AVG	

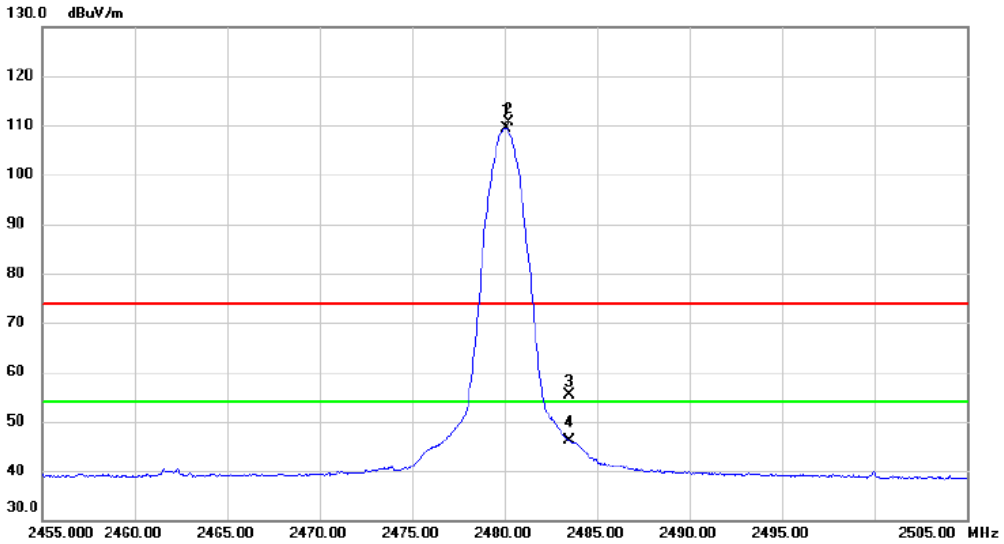
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX 2440 MHz_CH19_500kbps(S2)	Polarization	Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7314.620	37.10	8.29	45.39	74.00	-28.61	peak	
2	*	7325.820	26.36	8.30	34.66	54.00	-19.34	AVG	

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

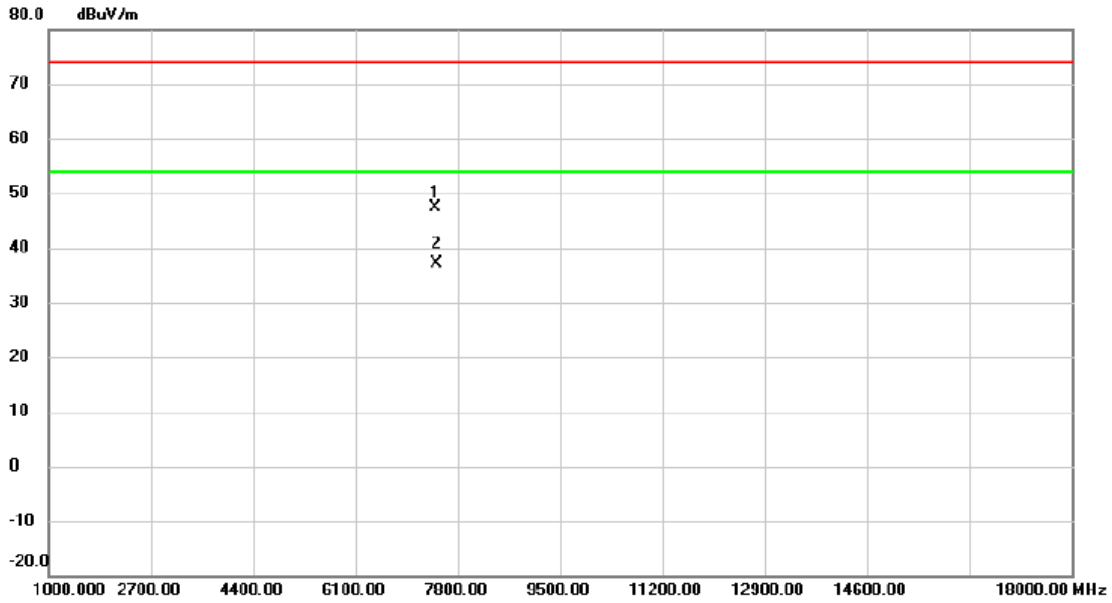
Test Mode	TX 2480 MHz_CH39_500kbps(S2)	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2480.075	101.91	7.59	109.50	54.00	55.50	AVG	No Limit
2	X	2480.250	103.10	7.59	110.69	74.00	36.69	peak	No Limit
3		2483.500	47.77	7.60	55.37	74.00	-18.63	peak	
4		2483.500	38.48	7.60	46.08	54.00	-7.92	AVG	

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

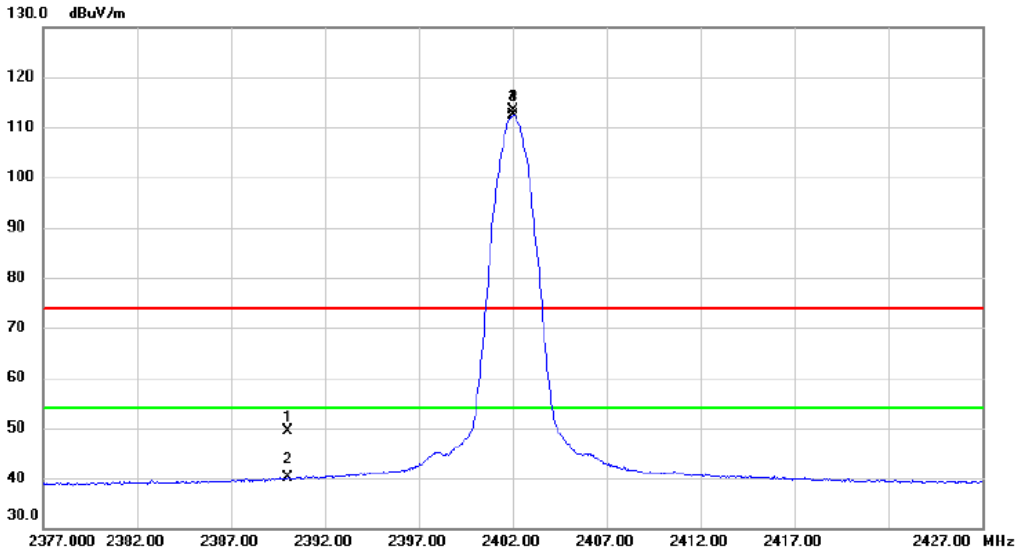
Test Mode	TX 2480 MHz_CH39_500kbps(S2)	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7437.300	39.07	8.34	47.41	74.00	-26.59	peak	
2	*	7443.120	28.79	8.34	37.13	54.00	-16.87	AVG	

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

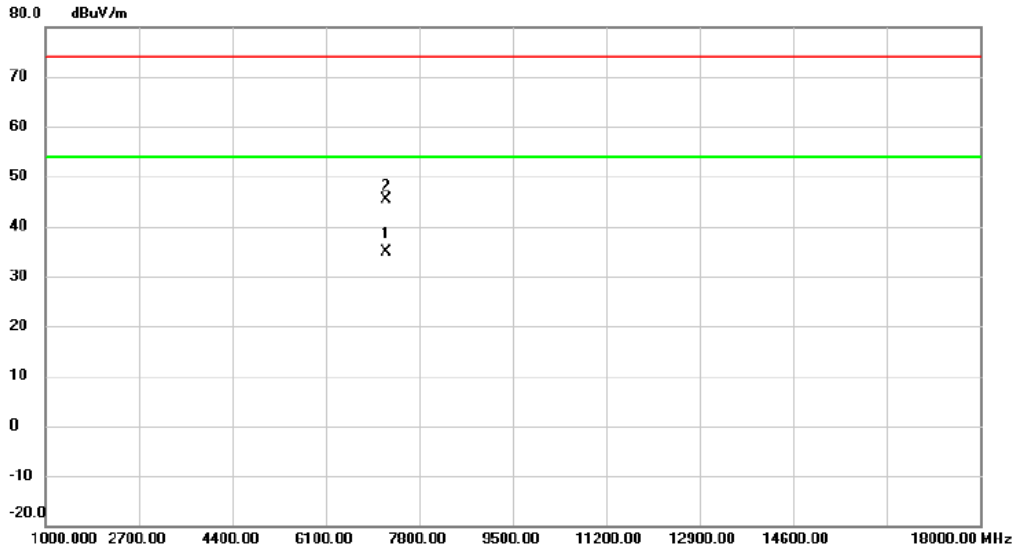
Test Mode	TX 2402 MHz_CH00_125kbps(S8)	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	41.89	7.49	49.38	74.00	-24.62	peak	
2		2390.000	32.61	7.49	40.10	54.00	-13.90	AVG	
3	X	2402.050	105.85	7.50	113.35	74.00	39.35	peak	No Limit
4	*	2402.050	104.82	7.50	112.32	54.00	58.32	AVG	No Limit

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

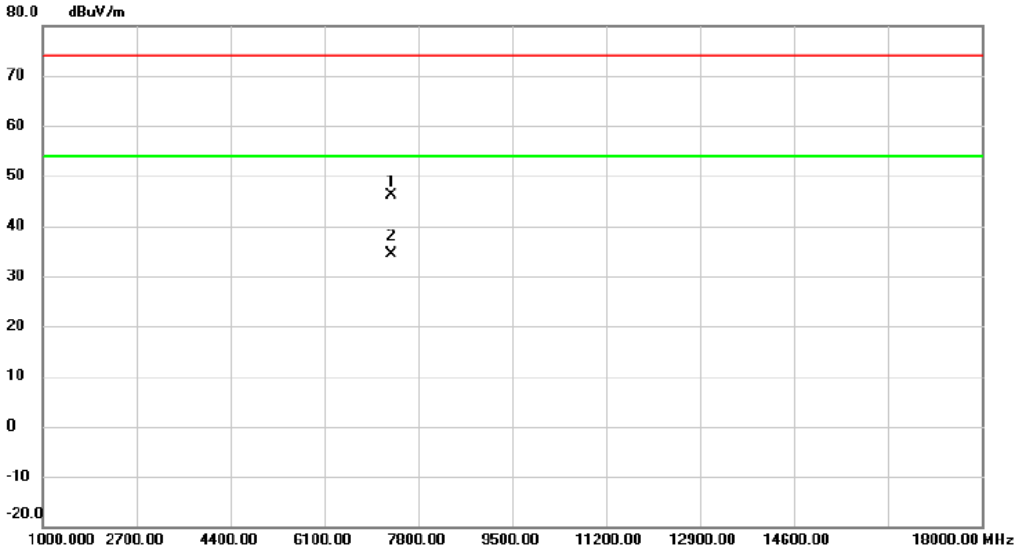
Test Mode	TX 2402 MHz_CH00_125kbps(S8)	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	7200.630	26.50	8.26	34.76	54.00	-19.24	AVG	
2		7207.720	37.08	8.25	45.33	74.00	-28.67	peak	

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

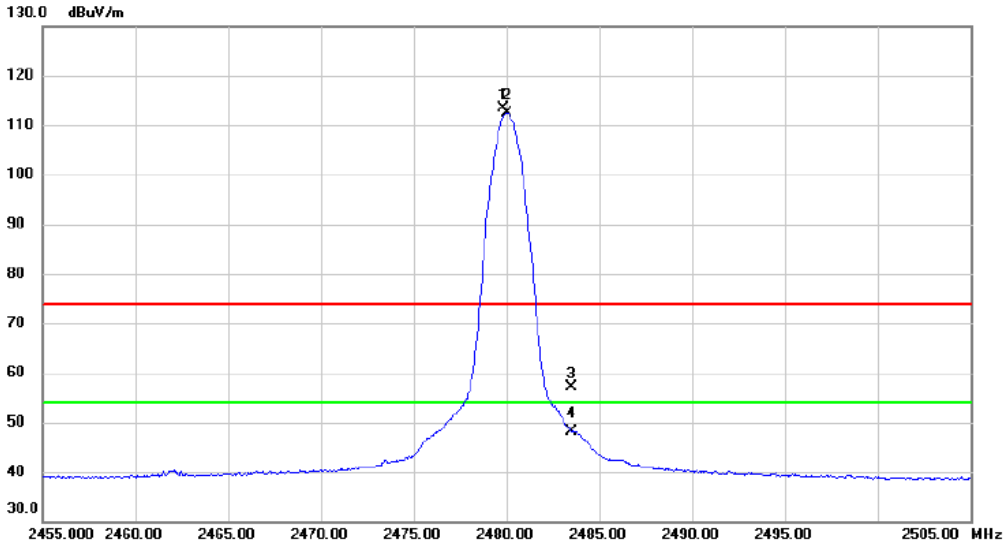
Test Mode	TX 2440 MHz_CH19_125kbps(S8)	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7314.820	37.89	8.29	46.18	74.00	-27.82	peak	
2	*	7315.170	26.19	8.29	34.48	54.00	-19.52	AVG	

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

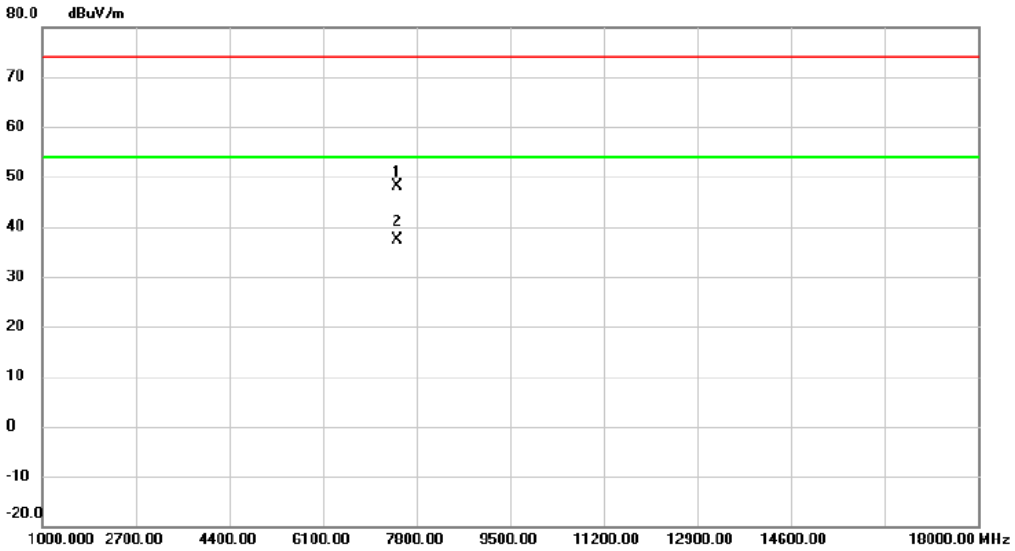
Test Mode	TX 2480 MHz_CH39_125kbps(S8)	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2479.825	105.69	7.59	113.28	74.00	39.28	peak	No Limit
2	*	2480.025	104.83	7.59	112.42	54.00	58.42	AVG	No Limit
3		2483.500	49.52	7.60	57.12	74.00	-16.88	peak	
4		2483.500	40.62	7.60	48.22	54.00	-5.78	AVG	

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

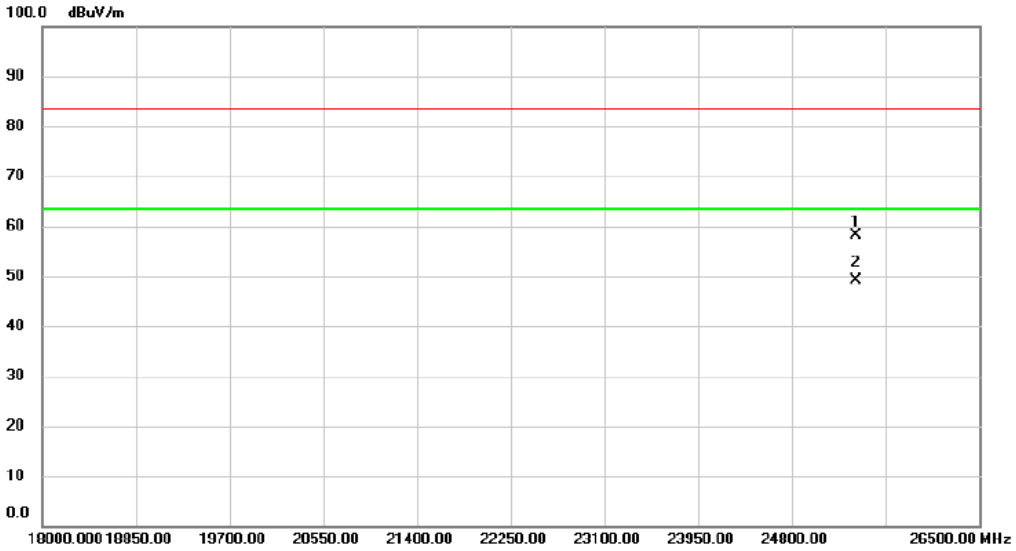
Test Mode	TX 2480 MHz_CH39_125kbps(S8)	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7440.100	39.74	8.34	48.08	74.00	-25.92	peak	
2	*	7445.400	29.15	8.33	37.48	54.00	-16.52	AVG	

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

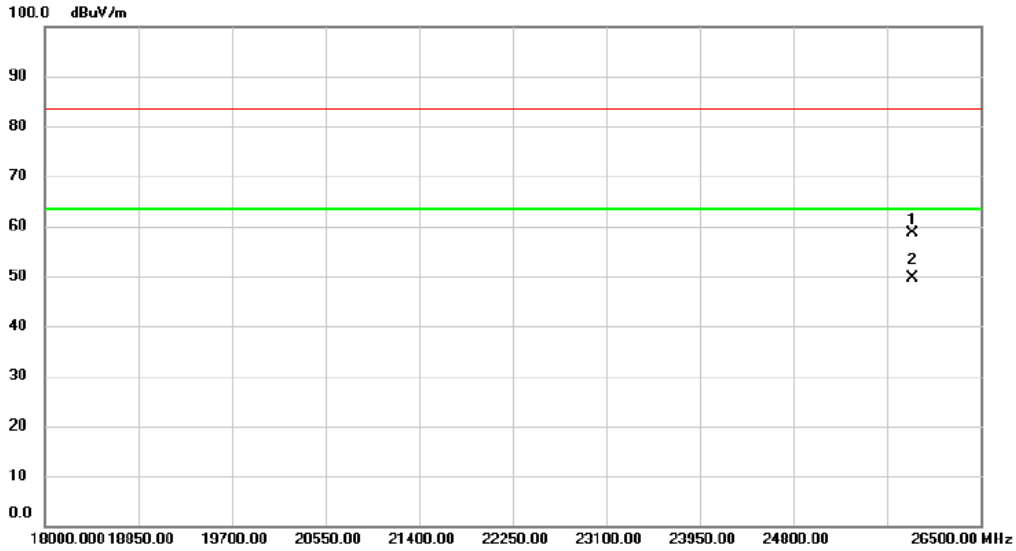
Test Mode	TX Mode_125kbps(S8) Channel 19	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		25382.250	45.96	12.19	58.15	83.50	-25.35	peak	
2	*	25382.250	36.82	12.19	49.01	63.50	-14.49	AVG	

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

Test Mode	TX Mode_125kbps(S8) Channel 19	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		25883.750	46.33	12.29	58.62	83.50	-24.88	peak	
2	*	25883.750	37.41	12.29	49.70	63.50	-13.80	AVG	

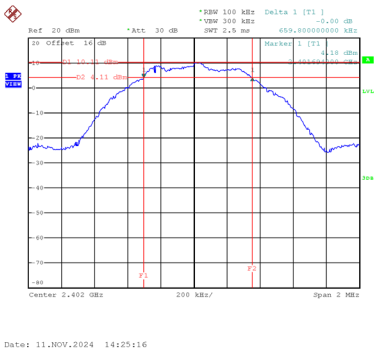
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIXE - BANDWIDTH

Test Mode	TX Mode _1Mbps

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Test Result
00	2402	0.660	1.032	0.5	Pass
19	2440	0.650	1.020	0.5	Pass
39	2480	0.659	1.024	0.5	Pass

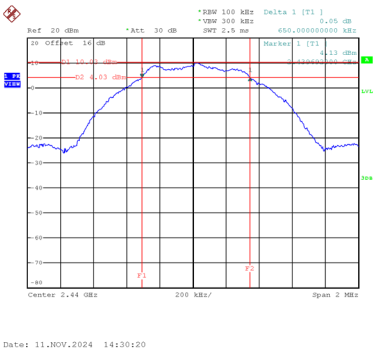
CH00



Date: 11.NOV.2024 14:25:16

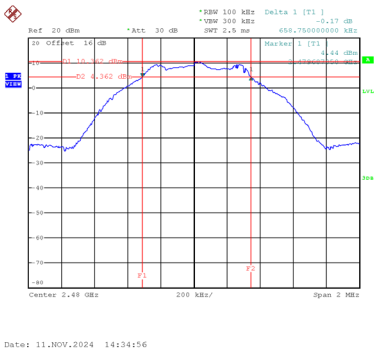
CH19

6dB Bandwidth



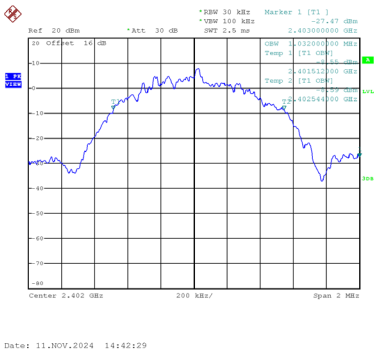
Date: 11.NOV.2024 14:30:20

CH39

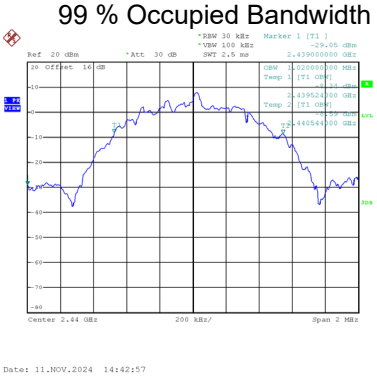


Date: 11.NOV.2024 14:34:56

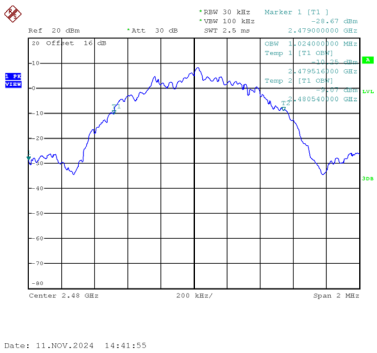
99 % Occupied Bandwidth



Date: 11.NOV.2024 14:42:29



Date: 11.NOV.2024 14:42:57

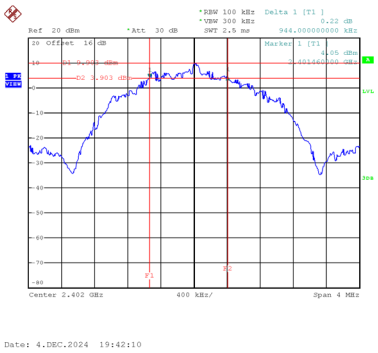


Date: 11.NOV.2024 14:41:55

Test Mode	TX Mode _2Mbps

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Test Result
00	2402	0.944	2.048	0.5	Pass
19	2440	1.112	2.040	0.5	Pass
39	2480	1.114	2.056	0.5	Pass

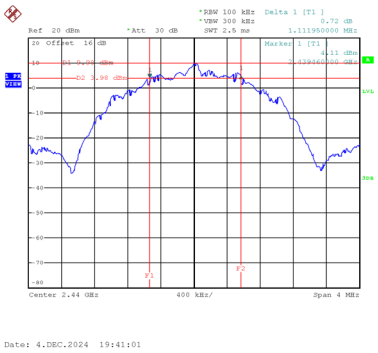
CH00



Date: 4.DEC.2024 19:42:10

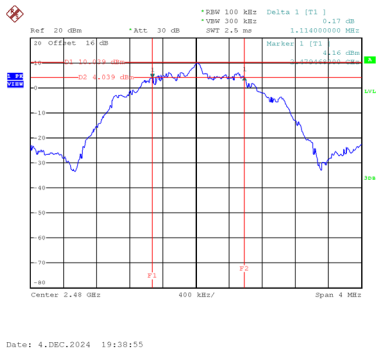
CH19

6dB Bandwidth



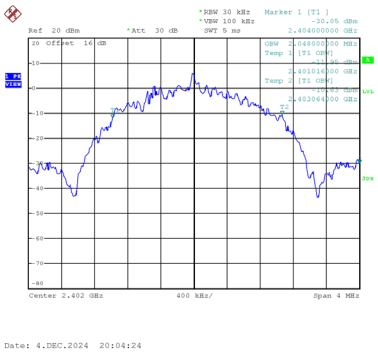
Date: 4.DEC.2024 19:41:01

CH39

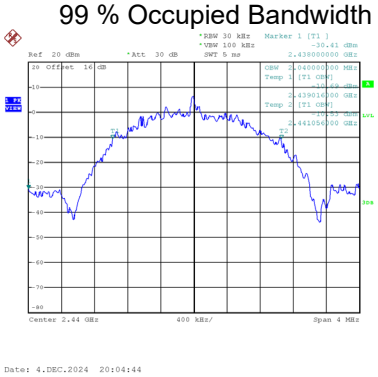


Date: 4.DEC.2024 19:38:55

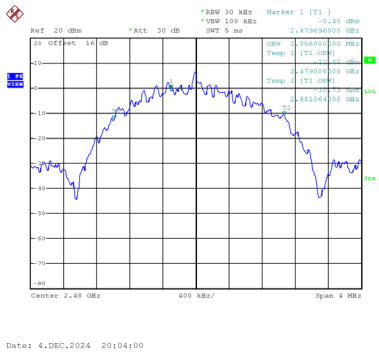
99 % Occupied Bandwidth



Date: 4.DEC.2024 20:04:24



Date: 4.DEC.2024 20:04:44



Date: 4.DEC.2024 20:04:00

Test Mode	TX Mode _500kbps(S2)

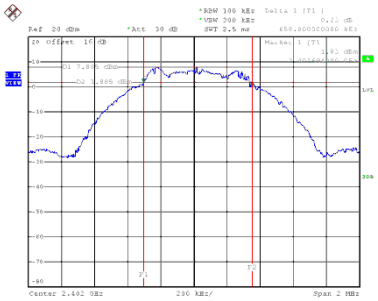
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Test Result
00	2402	0.658	1.012	0.5	Pass
19	2440	0.658	1.016	0.5	Pass
39	2480	0.651	1.020	0.5	Pass

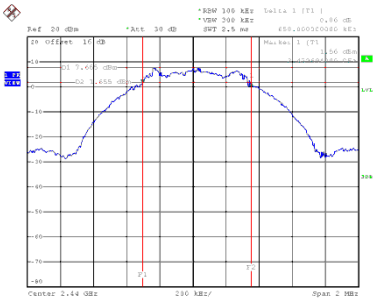
CH00

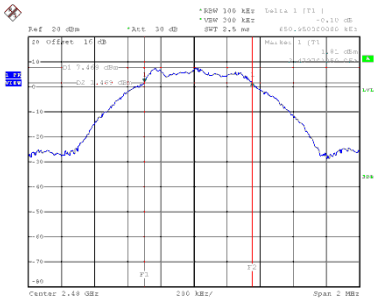
CH19

6dB Bandwidth

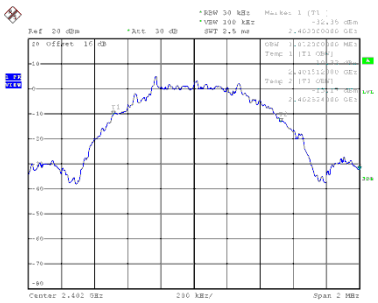
CH39

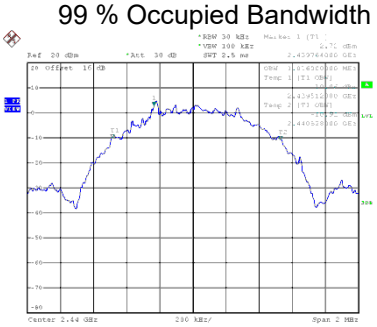


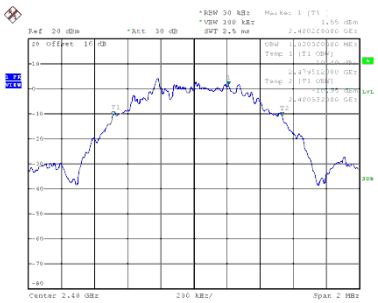




99 % Occupied Bandwidth







Test Mode	TX Mode _125kbps(S8)

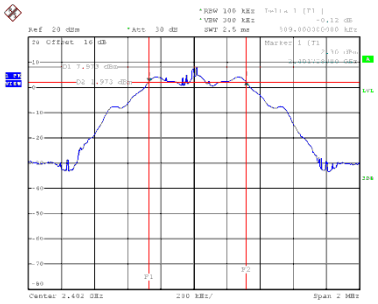
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Test Result
00	2402	0.590	1.048	0.5	Pass
19	2440	0.590	1.044	0.5	Pass
39	2480	0.590	1.048	0.5	Pass

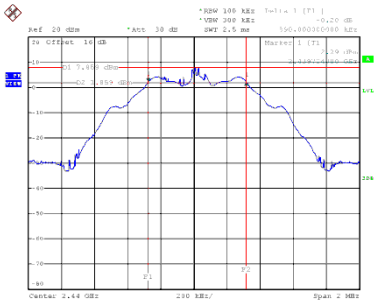
CH00

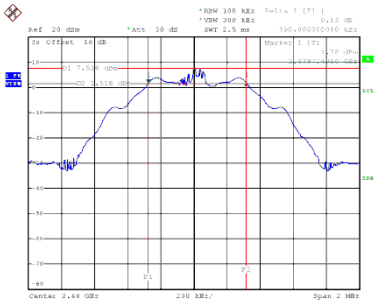
CH19

CH39

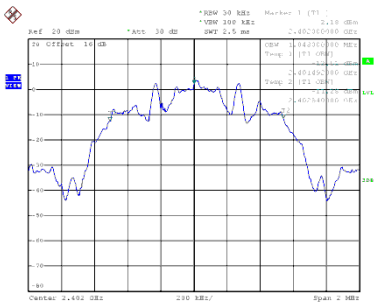
6 dB Bandwidth

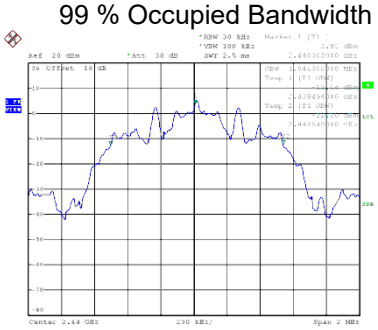


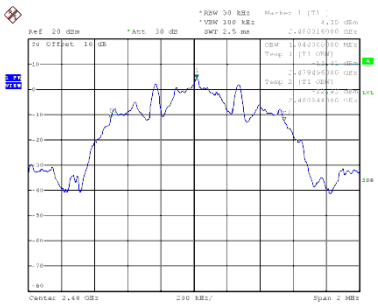




99 % Occupied Bandwidth







APPENDIXF - 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	9.57	0.0091	30.00	1.0000	Pass
2440	9.53	0.0090	30.00	1.0000	Pass
2480	9.45	0.0088	30.00	1.0000	Pass

Test Mode	TX Mode _2Mbps

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	9.65	0.0092	30.00	1.0000	Pass
2440	9.57	0.0091	30.00	1.0000	Pass
2480	9.57	0.0091	30.00	1.0000	Pass

Test Mode	TX Mode _500kbps(S2)

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	9.47	0.0089	30.00	1.0000	Pass
2440	9.73	0.0094	30.00	1.0000	Pass
2480	9.52	0.0090	30.00	1.0000	Pass

Test Mode	TX Mode _125kbps(S8)

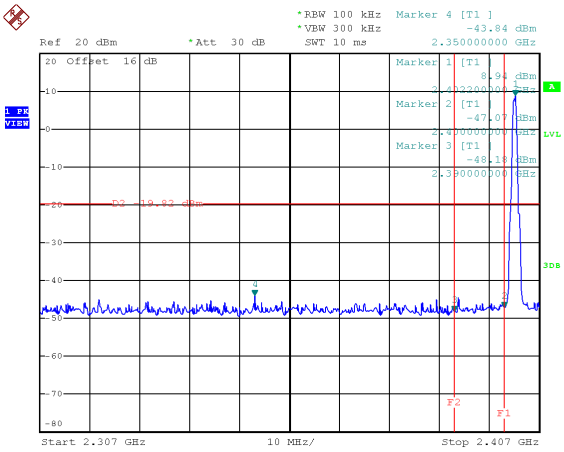
Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	9.75	0.0094	30.00	1.0000	Pass
2440	9.86	0.0097	30.00	1.0000	Pass
2480	9.55	0.0090	30.00	1.0000	Pass

Note: Output power = Measure result + Cable loss

APPENDIXG - CONDUCTED SPURIOUS EMISSION

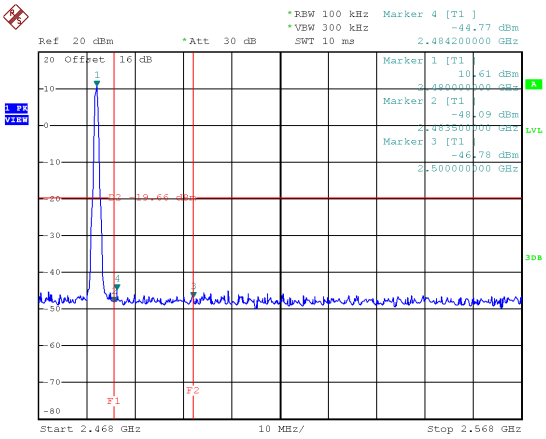
Test Mode	TX Mode _1Mbps

BandedgeCH00 (Lower)



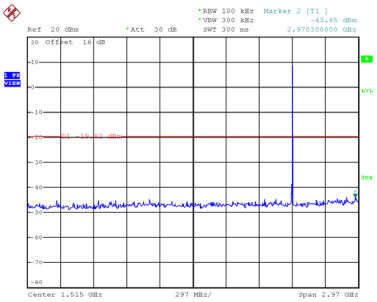
Date: 11.NOV.2024 14:49:15

Bandedge CH39(Upper)

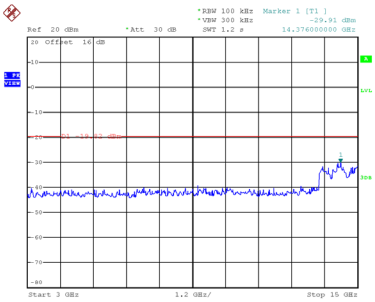


Date: 11.NOV.2024 14:52:56

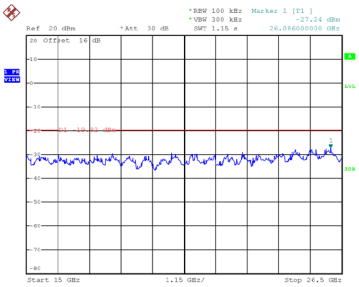
CH00–10th Harmonic of the fundamental frequency



Date: 11.NOV.2024 14:51:32

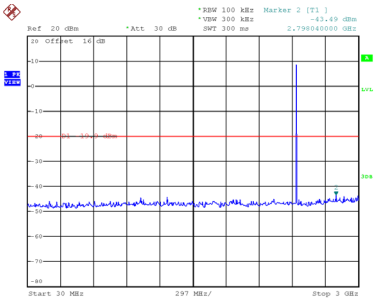


Date: 11.NOV.2024 14:50:50

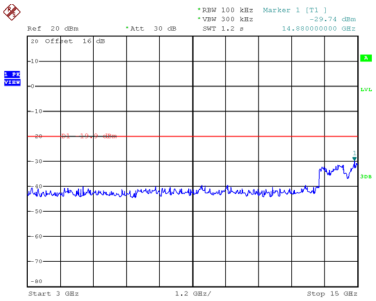


Date: 11.NOV.2024 14:50:57

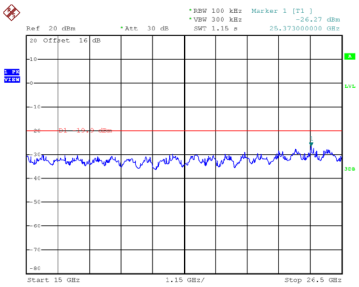
CH19–10th Harmonic of the fundamental frequency



Date: 11.NOV.2024 14:48:13

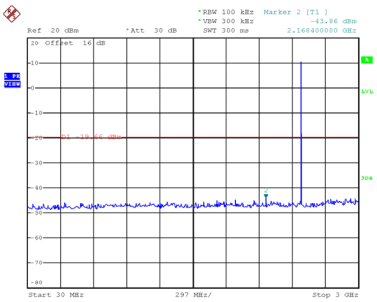


Date: 11.NOV.2024 14:56:09

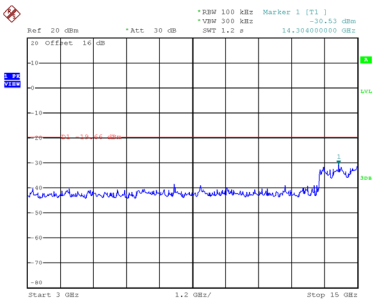


Date: 11.NOV.2024 14:47:37

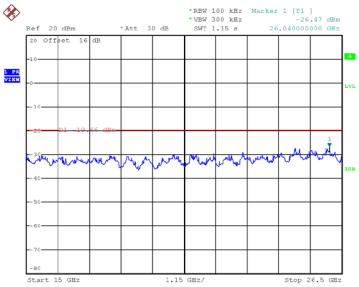
CH39–10th Harmonic of the fundamental frequency



Date: 11.NOV.2024 14:55:11



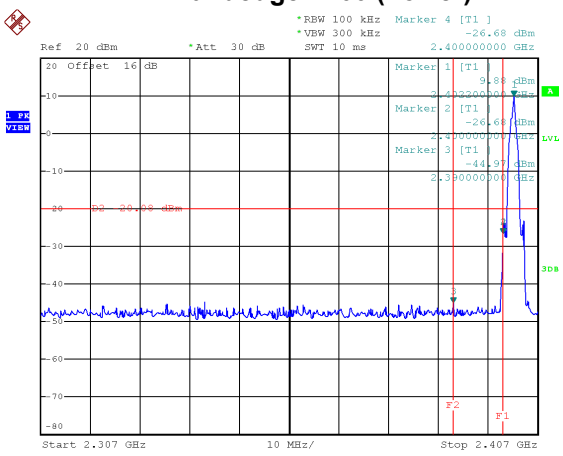
Date: 11.NOV.2024 14:54:25



Date: 11.NOV.2024 14:54:34

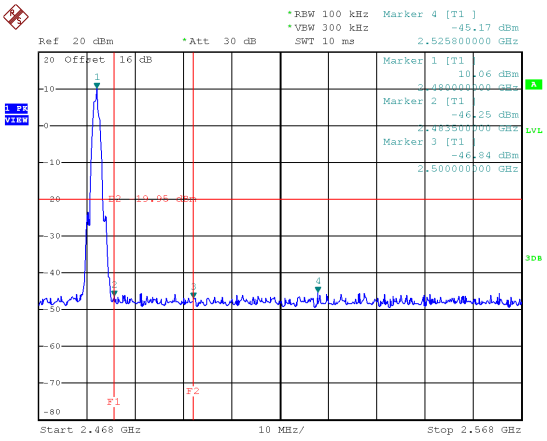
Test Mode	TX Mode _2Mbps

BandedgeCH00 (Lower)



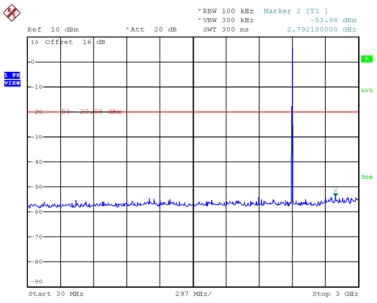
Date: 4.DEC.2024 19:48:33

Bandedge CH39(Upper)

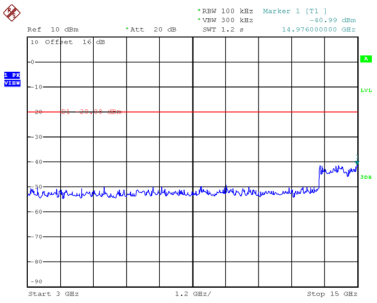


Date: 4.DEC.2024 19:59:03

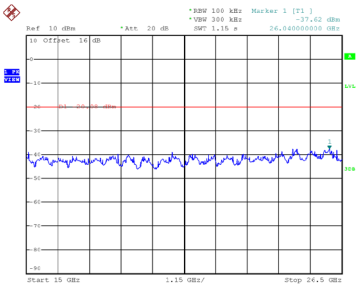
CH00–10th Harmonic of the fundamental frequency



Date: 4.DEC.2024 19:51:44

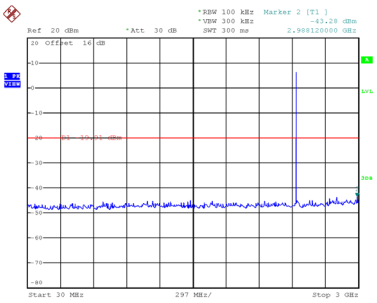


Date: 4.DEC.2024 19:50:12

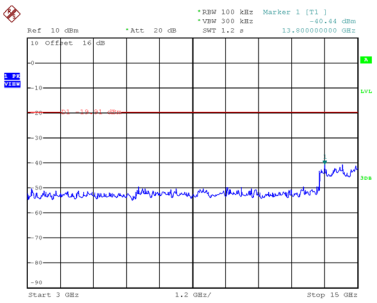


Date: 4.DEC.2024 19:50:20

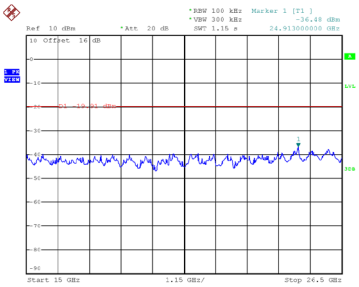
CH19–10th Harmonic of the fundamental frequency



Date: 4.DEC.2024 19:57:20

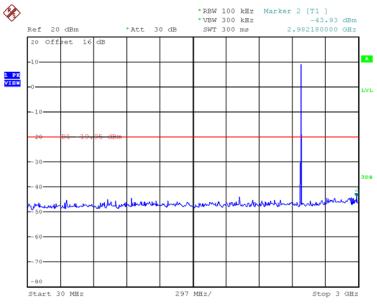


Date: 4.DEC.2024 19:56:18

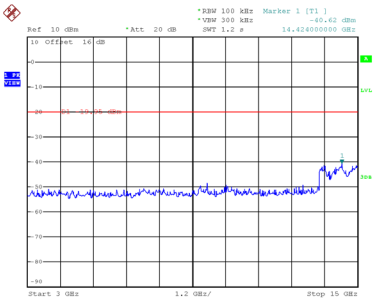


Date: 4.DEC.2024 19:56:26

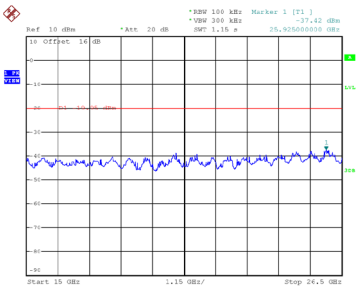
CH39–10th Harmonic of the fundamental frequency



Date: 4.DEC.2024 20:00:18



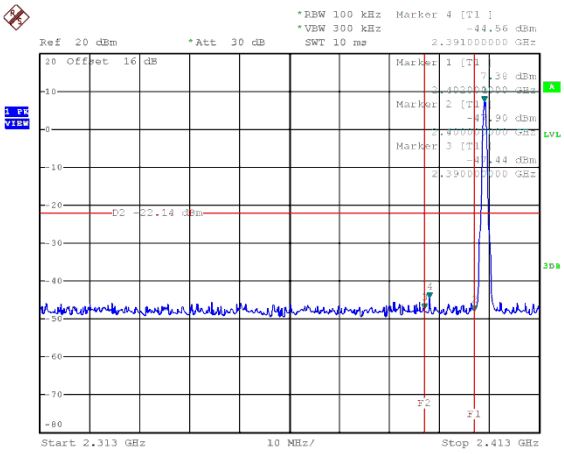
Date: 4.DEC.2024 20:01:40



Date: 4.DEC.2024 20:01:48

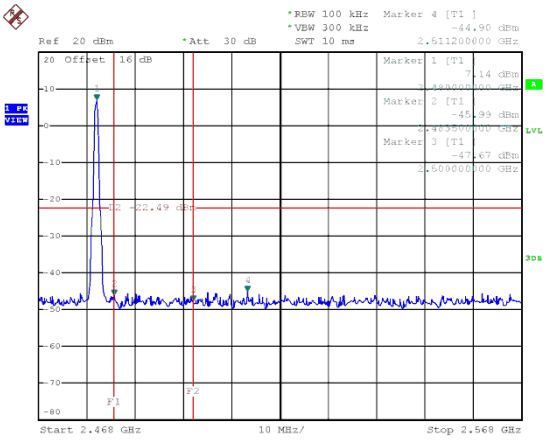
Test Mode	TX Mode _500kbps(S2)

BandedgeCH00 (Lower)



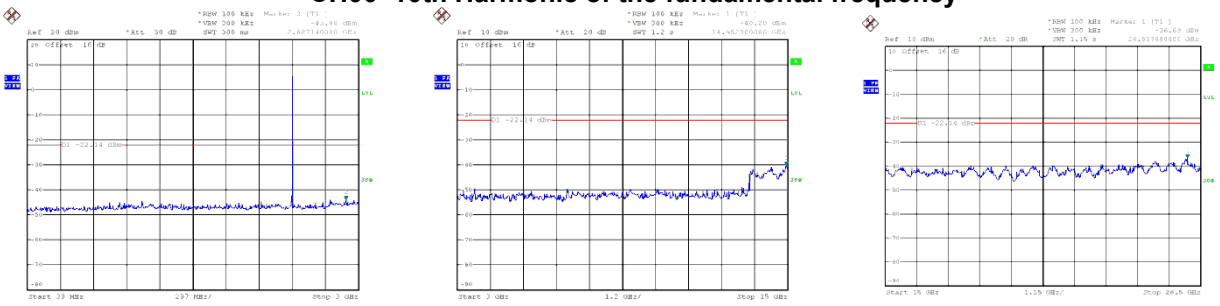
Date: 5.DEC.2024 09:16:44

Bandedge CH39(Upper)



Date: 5.DEC.2024 09:24:43

CH00–10th Harmonic of the fundamental frequency

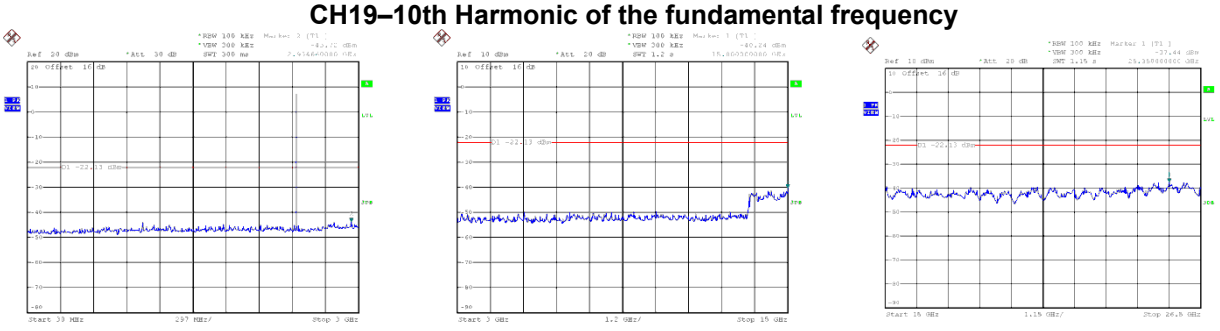


Date: 5.DEC.2024 09:17:58

Date: 5.DEC.2024 09:19:12

Date: 5.DEC.2024 09:19:20

CH19–10th Harmonic of the fundamental frequency

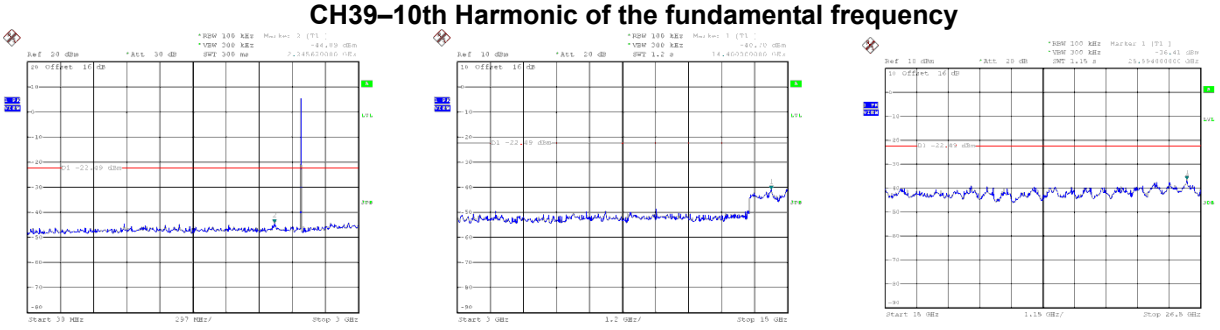


Date: 5.DEC.2024 09:21:23

Date: 5.DEC.2024 09:22:02

Date: 5.DEC.2024 09:22:10

CH39–10th Harmonic of the fundamental frequency



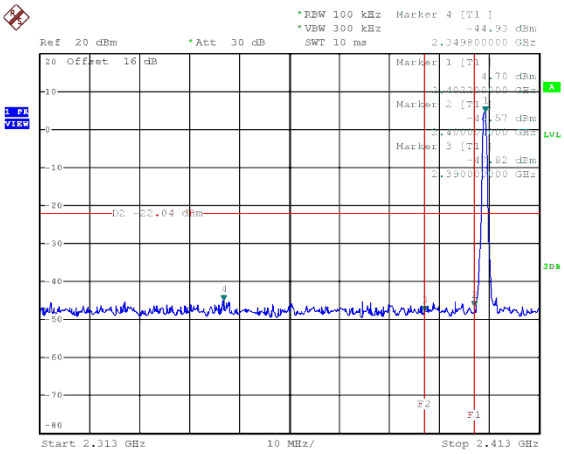
Date: 5.DEC.2024 09:25:49

Date: 5.DEC.2024 09:26:33

Date: 5.DEC.2024 09:26:41

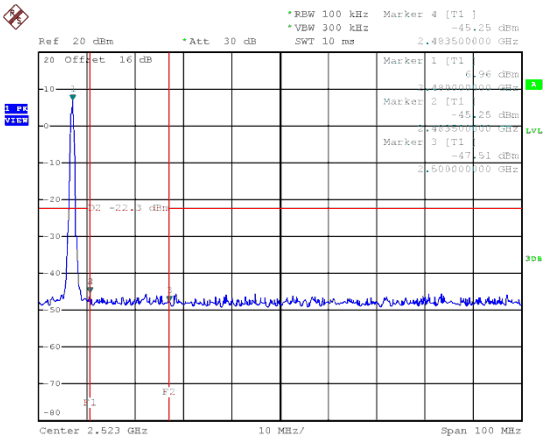
Test Mode	TX Mode _125kbps(S8)

Bandedge CH00 (Lower)



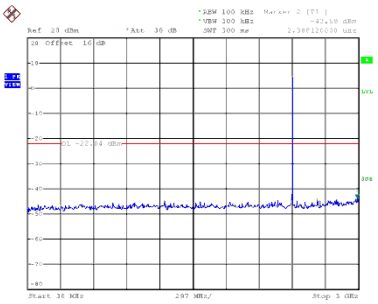
Date: 5.DEC.2024 09:46:10

Bandedge CH39 (Upper)

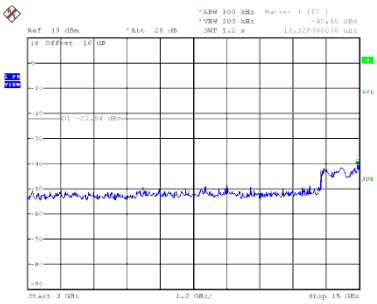


Date: 5.DEC.2024 10:15:50

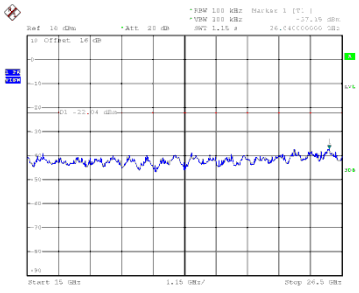
CH00 – 10th Harmonic of the fundamental frequency



Date: 5.DEC.2024 09:47:07

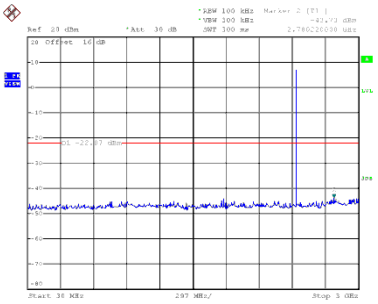


Date: 5.DEC.2024 09:47:52

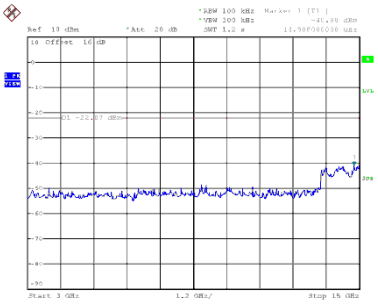


Date: 5.DEC.2024 09:48:00

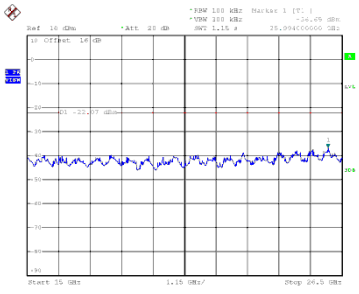
CH19 – 10th Harmonic of the fundamental frequency



Date: 5.DEC.2024 09:51:27

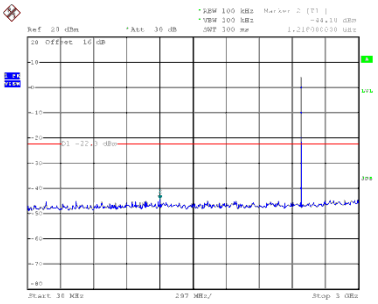


Date: 5.DEC.2024 09:52:05

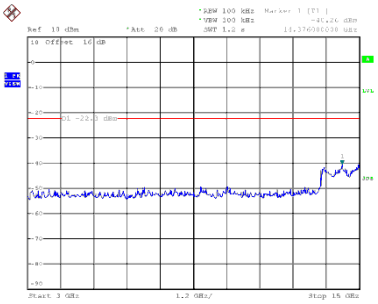


Date: 5.DEC.2024 09:52:13

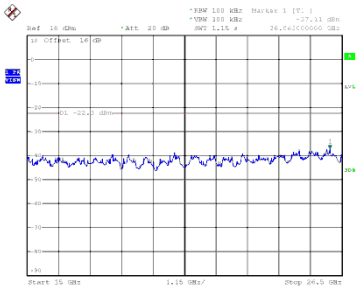
CH39 – 10th Harmonic of the fundamental frequency



Date: 5.DEC.2024 10:17:14



Date: 5.DEC.2024 10:18:13



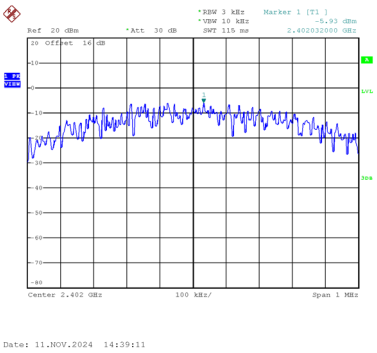
Date: 5.DEC.2024 10:18:21

APPENDIXH - POWER SPECTRAL DENSITY

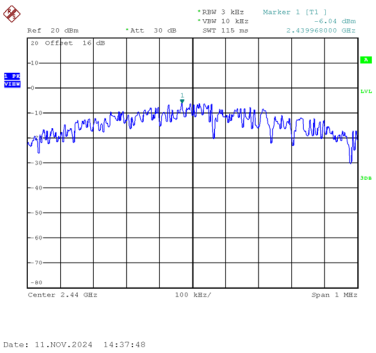
Test Mode	TX Mode _1Mbps

Channel	Frequency (MHz)	Power SpectralDensity (dBm/3 kHz)	Max. Limit (dBm/3 kHz)	Test Result
00	2402	-5.93	8.00	Pass
19	2440	-6.04	8.00	Pass
39	2480	-4.24	8.00	Pass

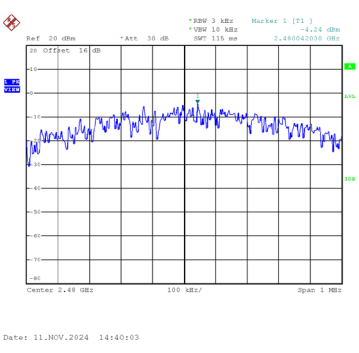
CH00



CH19



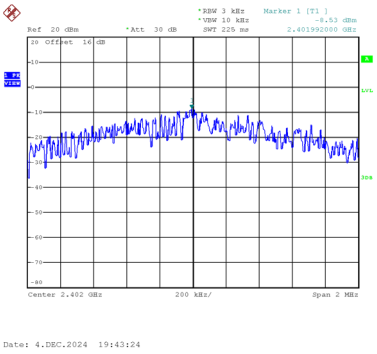
CH39



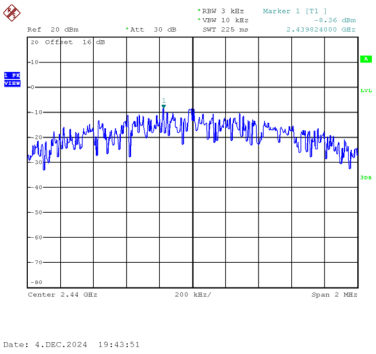
Test Mode	TX Mode _2Mbps

Channel	Frequency (MHz)	Power SpectralDensity (dBm/3 kHz)	Max. Limit (dBm/3 kHz)	Test Result
00	2402	-8.53	8.00	Pass
19	2440	-8.36	8.00	Pass
39	2480	-7.03	8.00	Pass

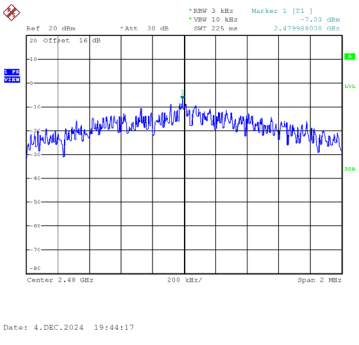
CH00



CH19



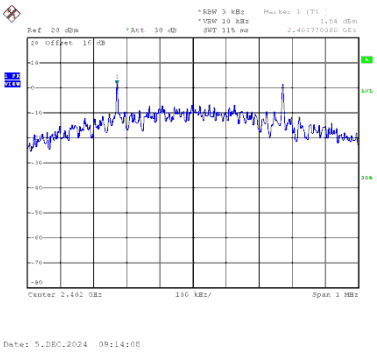
CH39



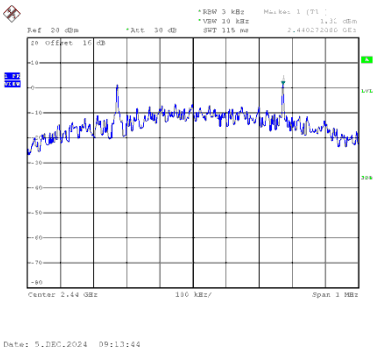
Test Mode	TX Mode _500kbps(S2)

Channel	Frequency (MHz)	Power SpectralDensity (dBm/3 kHz)	Max. Limit (dBm/3 kHz)	Test Result
00	2402	1.54	8.00	Pass
19	2440	1.32	8.00	Pass
39	2480	1.10	8.00	Pass

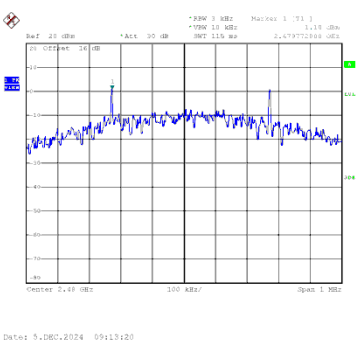
CH00



CH19



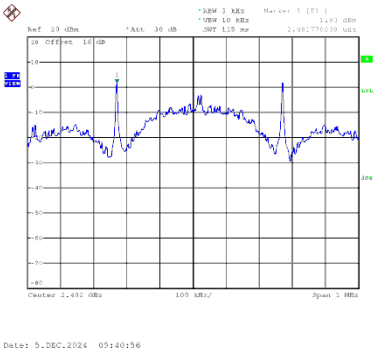
CH39



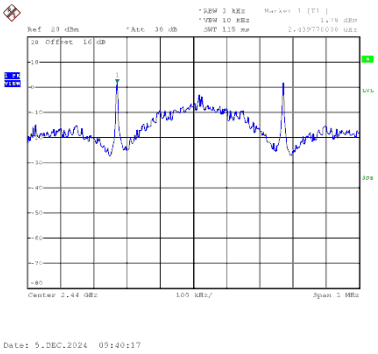
Test Mode	TX Mode _125kbps(S8)

Channel	Frequency (MHz)	Power Spectral Density (dBm/3 kHz)	Max. Limit (dBm/3 kHz)	Test Result
00	2402	1.83	8.00	Pass
19	2440	1.78	8.00	Pass
39	2480	1.45	8.00	Pass

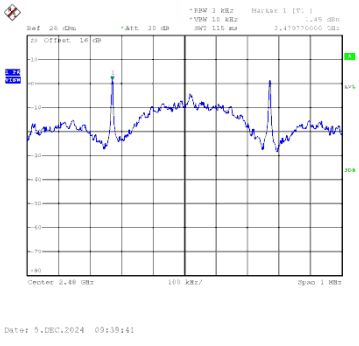
CH00



CH19



CH39



End of Test Report