





# **FCC Radio Test Report**

# FCC ID: 2BH7FEAP668ODHD

This report concerns: Original Grant

**Project No.** : 2411G014

**Equipment**: AX3600 Indoor/Outdoor Wi-Fi 6 Access Point

Brand Name : tp-link

Test Model : EAP668-Outdoor HD

Series Model : N/A

**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 : Nov. 07, 2024

**Date of Test** : Nov. 08, 2024 ~ Mar. 26, 2025

**Issued Date** : Apr. 07, 2025

Report Version : R00

Test Sample : Engineering Sample No.: DG2024110783 for AC power line conducted

and radiated below 1GHz, DG2025022844 for radiated above 1GHz,

DG2025022845 for power and conducted.

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.

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**B**TL 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.

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**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.



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# **REPORT ISSUED HISTORY**

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-1-2411G014	R00	Original Report.	Apr. 07, 2025	Valid



#### 1. APPLICABLE STANDARDS

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

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	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		
15.247(a)(2)	Bandwidth	APPENDIX E	PASS	
15.247(b)(3)	Maximum Output Power	APPENDIX F	PASS	
15.247(d)	Conducted Spurious 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 permanently attached antenna 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

1#For radiated 1GHz to 18GHz: Room 102 & Room 702, Building 3, No.9, Jinshagang 1st Road, Dalang Town, Dongguan City, Guangdong People's Republic of China.

2#For others: 1-2/F, 4/F, Building A, 1-2/F, Building B, 3/F, Building C, No.3, Jinshagang 1st Road, Dalang Town, Dongquan 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)
		30MHz ~ 200MHz	V	4.40
DG-CB03	CISPR	30MHz ~ 200MHz	Н	3.62
(3m)	CISPR	200MHz ~ 1,000MHz	V	4.58
		200MHz ~ 1,000MHz	Н	3.98

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB18	CISPR	1GHz ~ 6GHz	4.48
(3m)	CIOPR	6GHz ~ 18GHz	3.88

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB03	CISPR	18 ~ 26.5 GHz	3.36
(1m)	CISPR	26.5 ~ 40 GHz	3.58

#### 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	52%	PoE 48V	Hayden Chen	Nov. 19, 2024
Radiated Emissions-9 kHz to 30 MHz	26°C	47%	PoE 48V	Hayden Chen	Nov. 13, 2024
Radiated Emissions-30 MHz to 1000 MHz	24°C	53%	PoE 48V	Calvin Wen	Nov. 26, 2024
Radiated Emissions-Above	23°C	48%	PoE 48V	Drew Tan	Mar. 26, 2025
1000 MHz	22°C	50%	PoE 48V	Calvin Wen	Dec. 02, 2024
Bandwidth	24°C	51%	PoE 48V	Jensen Zhou	Mar. 16, 2025
Maximum Output Power	25°C	60%	PoE 48V	Alex Yin	Mar. 17, 2025
Conducted Spurious Emission	25°C	49%	PoE 48V	Hayden Chen	Mar. 26, 2025
Power Spectral Density	24°C	51%	PoE 48V	Jensen Zhou	Mar. 16, 2025



# 3. GENERAL INFORMATION

# 3.1 GENERAL DESCRIPTION OF EUT

Equipment	AX3600 Indoor/Outdoor Wi-Fi 6 Access Point
Brand Name	tp-link
Test Model	EAP668-Outdoor HD
Series Model	N/A
Model Difference(s)	N/A
Software Version	V1
Hardware Version	V1
Power Source	PoE supplied.
Power Rating	PoE Input: 41.1-57V == 1.73A 802.3at/bt
rower raung	PoE Output: 39-55V == 0.6A Pins: 1/2(+), 3/6(-)
Operation Frequency	2402 MHz ~ 2480 MHz
Modulation Type	GFSK
Bit Rate of Transmitter	1Mbps
Max. Output Power	1Mbps: 18.38 dBm (0.0689 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	Model Name	Antenna Type	Connector	Gain (dBi)
1	TP-Link Systems Inc.	EAP668 Outdoor HD	Dipole	IPEX	5



#### 3.2 DESCRIPTION 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_1Mbps Channel 00		

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 2 TX Mode_1Mbps Channel 00		

Radiated emissions test - Below 1GHz			
Final Test Mode Description			
Mode 2 TX Mode_1Mbps Channel 00			

Radiated emissions test - Above 1GHz		
Final Test Mode Description		
Mode 1 TX Mode_1Mbps Channel 00/19/39		

Conducted test			
Final Test Mode Description			
Mode 1 TX Mode_1Mbps Channel 00/19/39			

#### Note

- (1) For radiated emission above 1 GHz 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 1Mbps Channel 00 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 for Band edge, Horizontal for Harmonic. In this report only recorded the worst case.

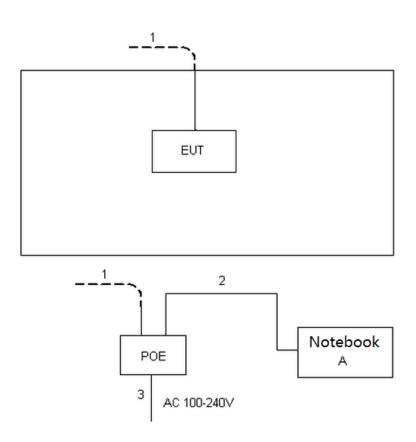
#### 3.3 PARAMETERS OF TEST SOFTWARE

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	QPST		
Frequency (MHz)	2402	2440	2480
1Mbps	20	20	20



#### 3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



# 3.5 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
Α	Notebook	Dell	Inspiron 15-7559	N/A

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	RJ45 Cable	NO	NO	10m
2	Network Cable	NO	NO	1m
3	AC Cable	NO	NO	1.5m

# 3.6 CUSTOMER 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

#### 4.1 LIMIT

Frequency of Emission (MHz)	Limit (dBµV)		
Frequency of Emission (MHZ)	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

#### **4.2 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:

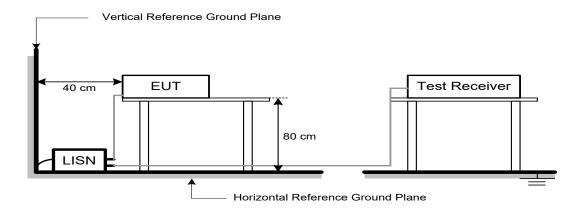
Receiver Parameters	Setting
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

#### 4.3 DEVIATION FROM TEST STANDARD

No deviation.



#### 4.4 TEST SETUP



#### 4.5 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.

#### 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 <code>Note</code>. 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.



#### 5. RADIATED EMISSIONS

#### **5.1 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	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(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)
r requestey (iiii iz)	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)

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

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

FS<sub>limit</sub>: Harmonic at 3m Peak and Average limit.

FS<sub>max</sub>: Harmonic at 1m Peak and Average Maximum value.

d<sub>limit</sub>: Harmonic at 3m test distance. d<sub>measure</sub>: Harmonic Actual test distance.



#### **5.2 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 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 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	1 MHz / 3 MHz for PK value	
(Emission in restricted band)	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

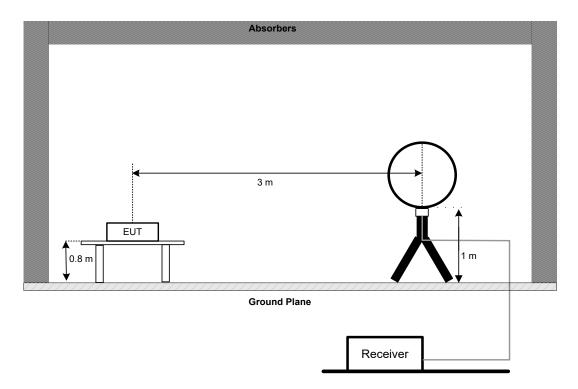


# **5.3 DEVIATION FROM TEST STANDARD**

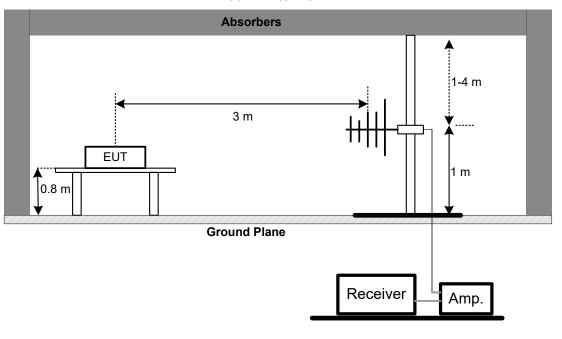
No deviation.

# **5.4 TEST SETUP**

#### 9 kHz to 30 MHz

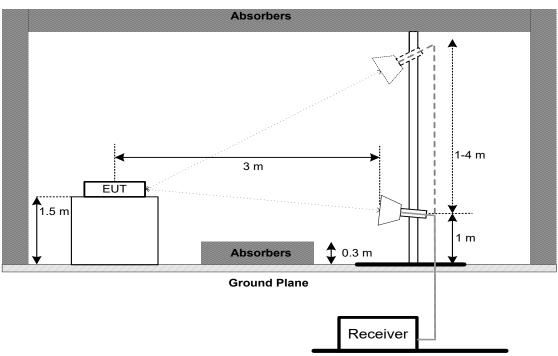


# 30 MHz to 1 GHz

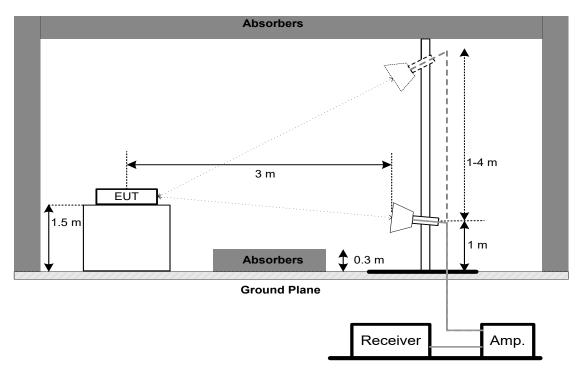






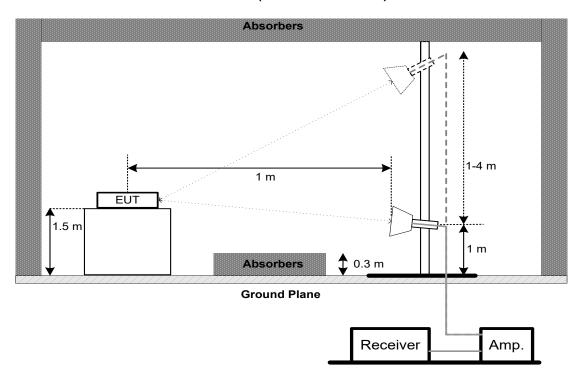


# Harmonic(1 GHz to 18 GHz)





#### Harmonic(18 GHz to 26.5 GHz)



#### 5.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 5.6 TEST RESULT - 9 kHz TO 30 MHz

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 - 30 MHz TO 1000 MHz

Please refer to the APPENDIX C.

#### 5.8 TEST RESULT - ABOVE 1000 MHz

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

#### **6.1 LIMIT**

Section	Test Item	Limit
500 45 045( )(0)	6 dB Bandwidth	>= 500 kHz
FCC 15.247(a)(2)	99% Emission Bandwidth	-

#### **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:

#### For 6 dB Bandwidth:

I OI O GD Dailgwigtii.		
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:

O 3370 LITISSION DANGWICK	1.	
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	

#### **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. MAXIMUM OUTPUT POWER

#### **7.1 LIMIT**

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

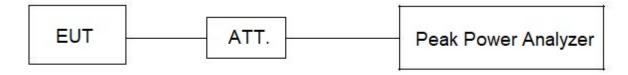
#### 7.2 TEST PROCEDURE

- a. The EUT was directly connected to the peak power 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 (for AVG power) of ANSI C63.10-2013 and FCC KDB 662911 D01 v02r01 Multiple Transmitter Output.

#### 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. CONDUCTED SPURIOUS EMISSION

#### **8.1 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.

#### **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
Start Frequency	30 MHz
Stop Frequency	26.5 GHz
RBW	100 kHz
VBW	300 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. POWER SPECTRAL DENSITY

#### **9.1 LIMIT**

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

# 9.2 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

#### 9.3 DEVIATION FROM STANDARD

No deviation.

#### 9.4 TEST SETUP



#### 9.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 9.6 TEST RESULTS

Please refer to the APPENDIX H.



# 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. 11, 2025			
5	643 Shield Room	ETS	6*4*3	N/A	N/A			

	Radiated Emissions - 9 kHz to 30 MHz							
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		RW4950-3.8A-NMS M-1.5	N/A	Nov. 12, 2025			
4	Cable	N/A	'A LMR400-NMNM-8 N/A		Sep. 09, 2025			
5	Measurement Software	Harad   ————		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	tem Kind of Equipment Manufac		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	May 31, 2025			
4	Cable	RegalWay	LMR400-NMNM-12 .5m	N/A	Jun. 06, 2025			
5	Cable	RegalWay LMR400-NMNM-3 m N/A		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 1 GHz							
Item	Calibrated until							
1	Multi-Device Controller	ETS-Lindgren	N/A	N/A	N/A			
2	MXA Signal Analyzer	KEYSIGHT	N9020B	MY63430227	Oct. 29, 2025			
3	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A			
4	Cable	RegalWay	RWLP50-4.0A-SMS M-1.3M	N/A	Jan. 07, 2026			
5	Cable	RegalWay	RWLP50-2.6A-3.5 M2.92MRA-3M	N/A	Jan. 07, 2026			
6	Cable	RegalWay	RWLP50-4.0A-SMS M-9M	N/A	Jan. 07, 2026			
7	966 Chamber room	ETS	RFD-100(SVSWR)	Q2179	Jan. 07, 2026			
8	Double Ridged Horn Antenna	EMC INSTRUMENT	DRH18-E	210509A18ES	Aug. 28, 2025			
9	Preamplifier	EMC INSTRUMENT	EMC118A45SE	981001	May 31, 2025			
10	Attenuator	Talent Microwave	TA10A2-S-18	N/A	N/A			
11	Filter	STI	STI15-9912	N/A	Oct. 29, 2025			

	Radiated Emissions - Above 18 GHz							
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until			
1	EXA Spectrum Analyzer	Keysight	N9010A	MY55150209	Aug. 20, 2025			
2	Preamplifier	EMC INSTRUMENT	EMC184045SE	980905	Oct. 29, 2025			
3	Cable	Cable RegalWay RWLP50-2.6A-2.92 M2.92M-1.1M		N/A	Jul. 25, 2025			
4	Cable	Tonscend	HF160-KMKM-3M	N/A	Jul. 25, 2025			
5	Broad-Band Horn Antenna	Schwarzbeck	BBHA9170(3m)	9170-319	Jun. 16, 2025			
6	966 Chamber room CM		9*6*6	N/A	May 19, 2025			
7	Positioning Controller	Positioning Controller MF		N/A	N/A			
8	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A			

Bandwidth & Power Spectral Density & Conducted Spurious Emission							
Item	Kind of Equipment	ment Manufacturer Type No. Serial No. Calibrated					
1	Measurement Software	BTL	BTL Conducted Test	N/A	N/A		
2	Isolation attenuator	Z-Link	ASMA-16-18-2W	N/A	N/A		
3	Spectrum Analyzer	R&S	FSP38	100852	May 31, 2025		

	Maximum Output Power							
Item Kind of Equipment Manufacturer Type No. Serial No. Calibration								
1	Peak Power Analyzer	Keysight	8990B	MY51000506	May 31, 2025			
2	2 Wideband power sensor Keysight		N1923A	MY58310004	May 31, 2025			
3	3 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

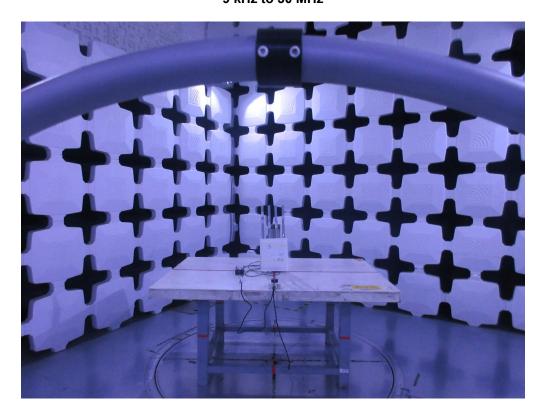
# **AC Power Line Conducted Emissions Test Photos**

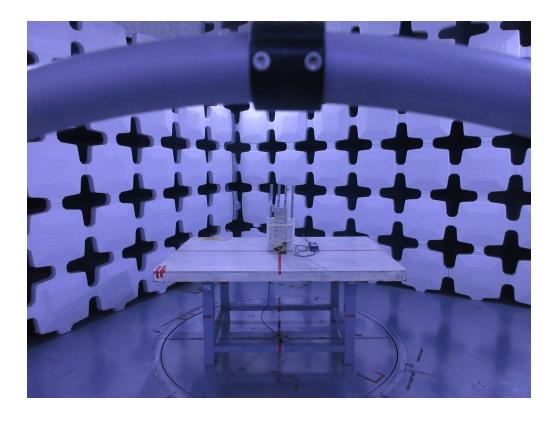






# Radiated Emissions Test Photos 9 kHz to 30 MHz

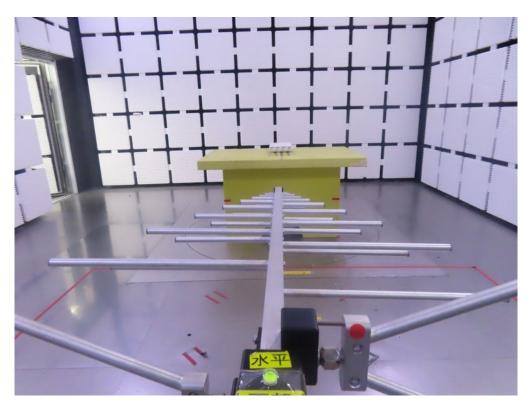


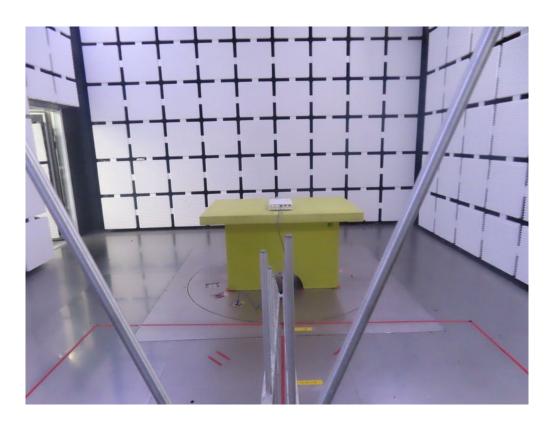




# **Radiated Emissions Test Photos**

# 30 MHz to 1000 MHz

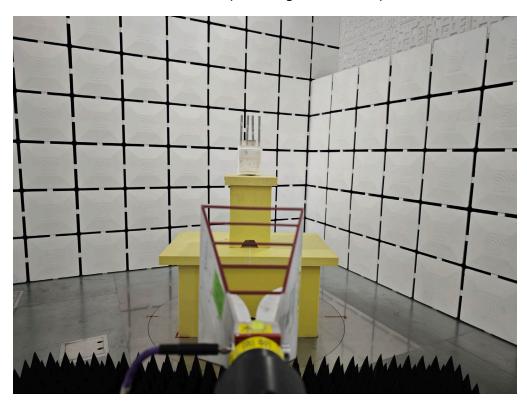


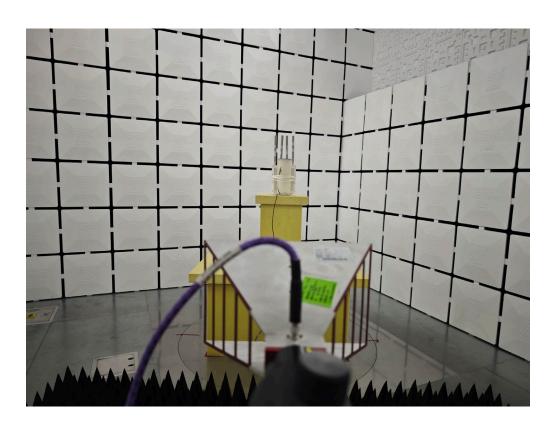




# **Radiated Emissions Test Photos**

# Above 1 GHz(Band edge & Harmonic)

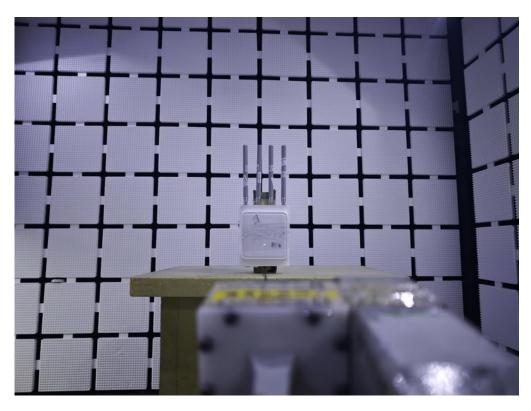






# **Radiated Emissions Test Photos**

# Above 18 GHz







# **Conducted Test Photos**



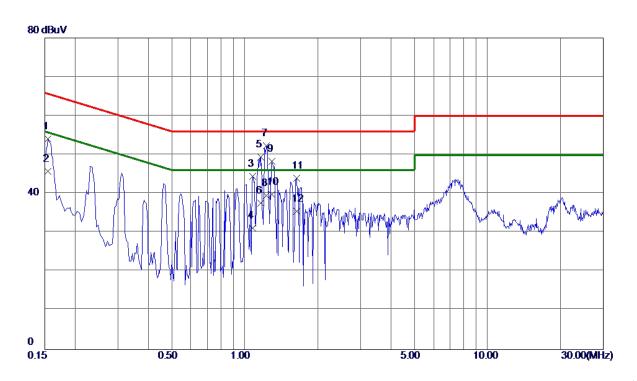




APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS







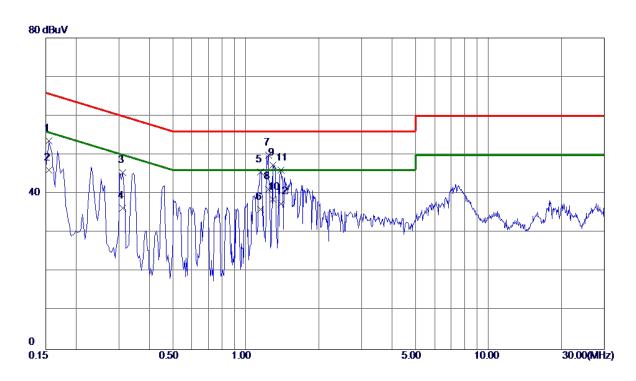
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0. 1545	44. 42	9. 70	<b>54</b> . 12	65. 75	-11. 63	QP	
2	0. 1545	36. 10	9. 70	<b>45.80</b>	55. 75	-9. 95	AVG	
3	1.0770	34. 77	9. 74	44. 51	56.00	-11 <b>. 49</b>	QP	
4	1.0770	21. 40	9. 74	31. 14	46.00	-14. 86	AVG	
5	1. 1670	39. 72	9. 74	49. 46	56.00	-6. 54	QP	
6	1. 1670	27. 90	9. 74	37. 64	46.00	-8. 36	AVG	
7 *	1. 2300	42. 58	9. 74	52. 32	56.00	-3. 68	QP	
8	1. 2300	29. 80	9. 74	39. 54	46.00	-6. 46	AVG	
9	1. 2930	38. 55	9. 74	48. 29	56.00	-7. 71	QP	
10	1. 2930	30. 10	9. 74	39. 84	46. 00	-6. 16	AVG	
11	1.6350	34. 20	9. 74	43. 94	56.00	-12.06	QP	
12	1. 6350	25. 80	9. 74	35. 54	46. 00	-10. 46	AVG	

#### **REMARKS**:

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







No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0. 1545	44. 11	9. 55	53. 66	65. 75	-12. 09	QP	
2	0. 1545	36. 50	9. 55	46. 05	55. 75	<b>-9.</b> 70	AVG	
3	0.3120	35. 88	9. 58	<b>45.46</b>	59. 92	-14. 46	QP	
4	0. 3120	26. 70	9. 58	36. 28	49. 92	-13. 64	AVG	
5	1. 1490	35. 97	9. 60	45. 57	56.00	-10. 43	QP	
6	1. 1490	26. 40	9. 60	36. 00	46.00	-10.00	AVG	
7	1. 2390	40. 32	9. 60	<b>49</b> . <b>9</b> 2	56.00	-6. 08	QP	
8 *	1. 2390	31. 60	9. 60	41. 20	46.00	<b>-4.80</b>	AVG	
9	1. 2975	37. 78	9. 60	47. 38	56. 00	-8. 62	QP	
10	1. 2975	28. 90	9. 60	38. 50	46. 00	-7. 50	AVG	
11	1. 3965	36. 48	9. 60	46. 08	56. 00	-9. 92	QP	
12	1. 3965	27. 80	9. 60	37. 40	46. 00	-8. 60	AVG	

# REMARKS:

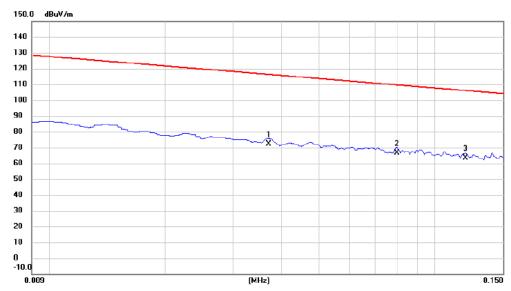
- (1) Measurement Value = Reading Level + Correct Factor.
  (2) Margin Level = Measurement Value Limit Value.



# **APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ**



Test Mode	TX Mode_1Mbps Channel 00	Polarization	Ant 0°



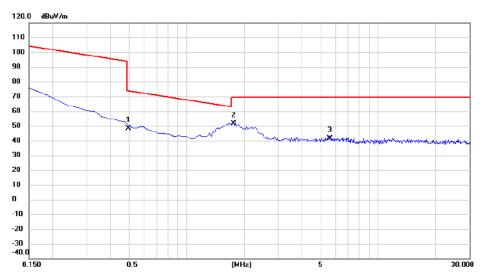
No. Mk.	Freq.		Correct Factor	Measure- ment Limit		Margin		
	MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.0371	51.03	21.18	72.21	116.22	-44.01	AVG	
2	0.0796	45.29	21.34	66.63	109.59	-42.96	AVG	
3 *	0.1200	42.03	21.31	63.34	106.02	-42.68	AVG	

# REMARKS:

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





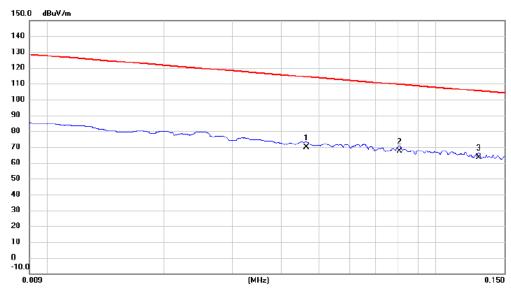


No. Mk.	Freq.			Measure- ment		Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.4967	27.13	21.06	48.19	73.68	-25.49	QP	
2 *	1.7620	30.20	21.13	51.33	69.54	-18.21	QP	
3	5.6125	20.33	21.16	41.49	69.54	-28.05	QP	

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



Test Mode	TX Mode_1Mbps Channel 00	Polarization	Ant 90°

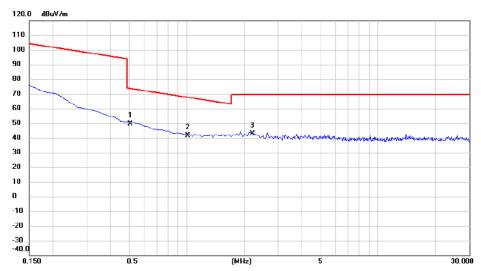


No. Mk.	Freq.		Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.0464	48.63	21.22	69.85	114.27	-44.42	AVG	
2	0.0805	45.92	21.34	67.26	109.49	-42.23	AVG	
3 *	0.1290	42.03	21.30	63.33	105.40	-42.07	AVG	

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



Test Mode TX Mode\_1Mbps Channel 00 Polarization Ant 90°



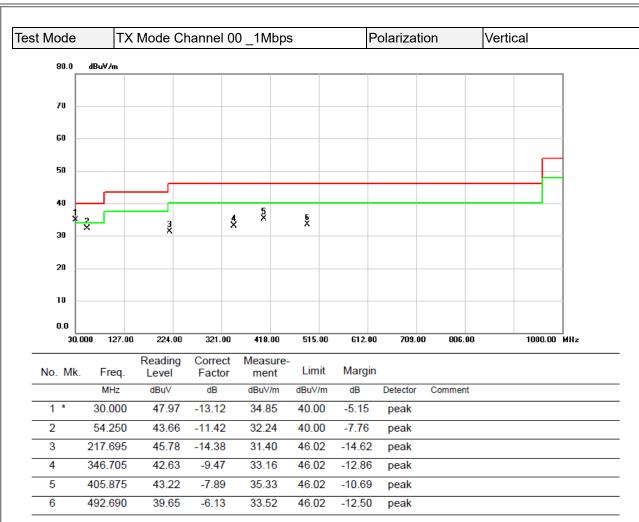
No. Mk.	Freq.		Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	0.5082	28.42	21.06	49.48	73.48	-24.00	QP	
2	1.0156	20.31	21.20	41.51	67.47	-25.96	QP	
3	2.2096	21.49	21.11	42.60	69.54	-26.94	QP	

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



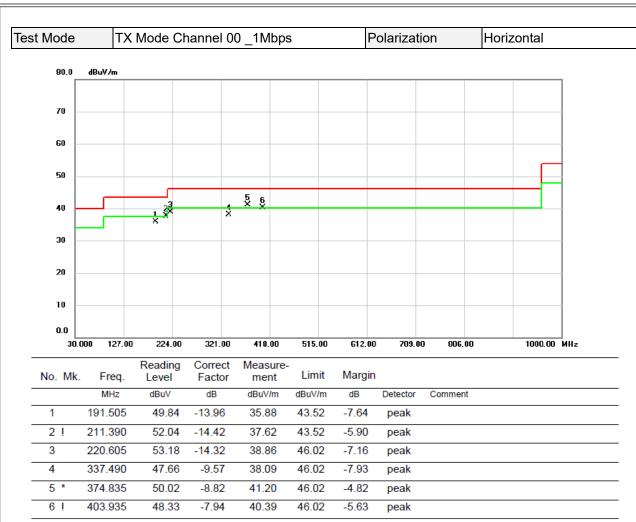
APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ





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





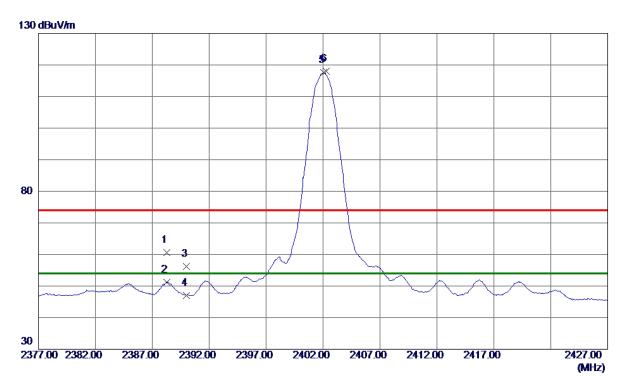
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



APPENDIX D - RADIATED EMISSION - ABOVE 1000 MHZ



Test Mode	TX 2402 MHz	CH00_1Mbps	Polarization	Vertical

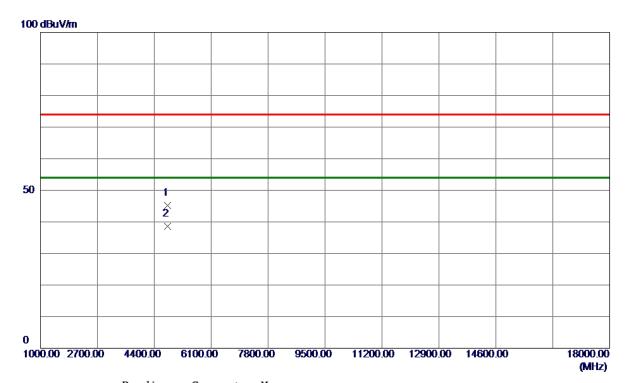


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2388. 2500	51. 91	8. 66	60. 57	74.00	-13. 43	Peak	
2	2388. 2500	42. 53	8. 66	51. 19	54.00	-2.81	AVG	
3	2390. 0000	47. 45	8. 66	56. 11	74.00	-17. 89	Peak	
4	2390. 0000	38. 28	8. 66	46. 94	54.00	-7. 06	AVG	
5 *	2402. 0500	108. 83	8. 69	117. 52	54. 00	63. 52	AVG	No Limit
6	2402, 2500	109. 23	8. 69	117. 92	74.00	43. 92	Peak	No Limit

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



Test Mode	TX 2402 MHz _CH00_1Mbps	Polarization	Horizontal

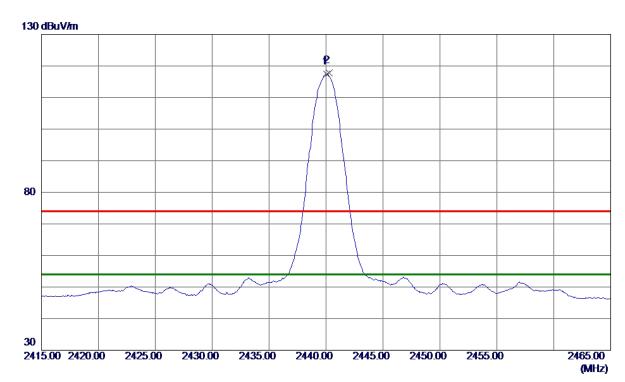


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4803. 2799	41. 12	4. 04	45. 16	74.00	-28. 84	Peak	
2 *	4804. 0400	34. 50	4. 05	38. 55	54.00	<b>-15.45</b>	AVG	

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



Test Mode	TX 2440 MHz _CH19_1Mbps	Polarization	Vertical

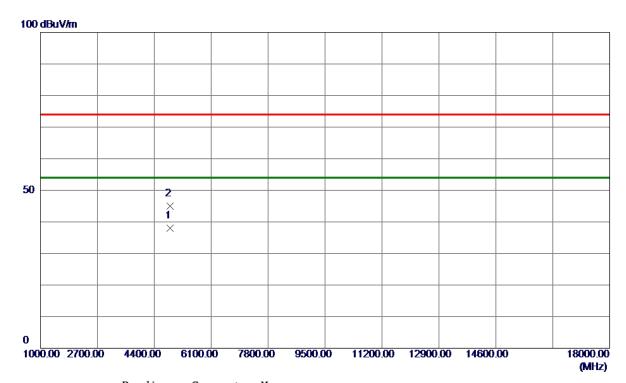


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2440. 0500	108.65	8. 79	117. 44	54.00	63. 44	AVG	No Limit
2	2440. 2500	109. 05	8. 79	117.84	74. 00	43.84	Peak	No Limit

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



Test Mode	TX 2440 MHz _	CH19_1Mbps	Polarization	Horizontal

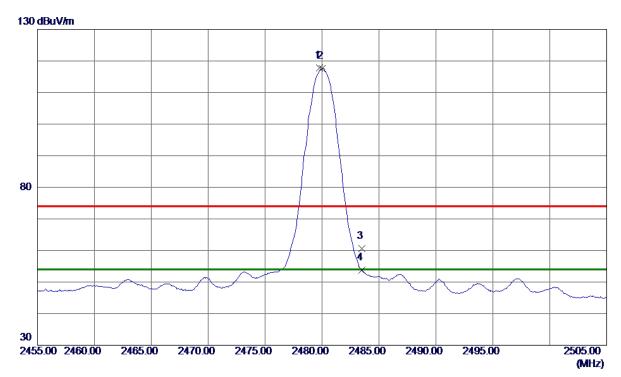


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4879. 9800	33. 93	4. 15	38. 08	54.00	-15.92	AVG	
2	4880. 4200	40. 94	4. 15	45. 09	74. 00	-28. 91	Peak	

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



Test Mode	TX 2480 MHz CH39 1Mbps	Polarization	Vertical

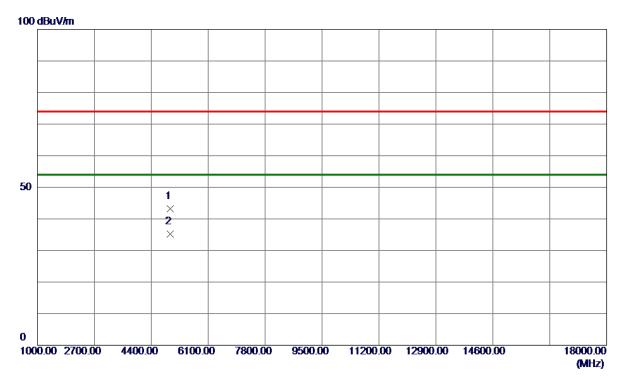


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2479. 8000	108. 97	8. 89	117. 86	74.00	43.86	Peak	No Limit
2 *	2480. 0000	108. 63	8. 89	117. 52	54.00	63. 52	AVG	No Limit
3	2483. 5000	51. 64	8. 89	60. 53	74.00	-13. 47	Peak	
4	2483. 5000	44. 92	8. 89	53. 81	54.00	-0. 19	AVG	

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



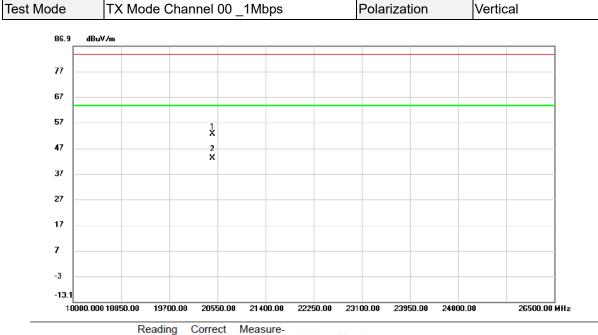
Test Mode	TX 2480 MHz _CH39_1Mbps	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4959. 5000	38. 97	4. 26	43. 23	74.00	-30. 77	Peak	
2 *	4960. 1000	30. 93	4. 26	35. 19	54. 00	-18. 81	AVG	

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

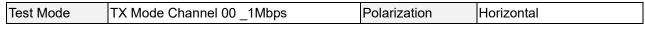


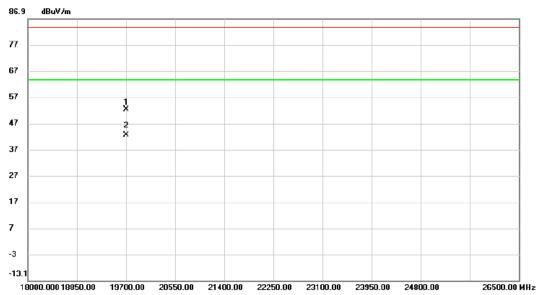


No.	Mk	. Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2	20469.250	52.95	-0.49	52.46	83.50	-31.04	peak	
2	* 2	20469.250	43.61	-0.49	43.12	63.50	-20.38	AVG	

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







No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	1	9700.000	53.32	-1.03	52.29	83.50	-31.21	peak	
2	* 1	9700.000	43.65	-1.03	42.62	63.50	-20.88	AVG	

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

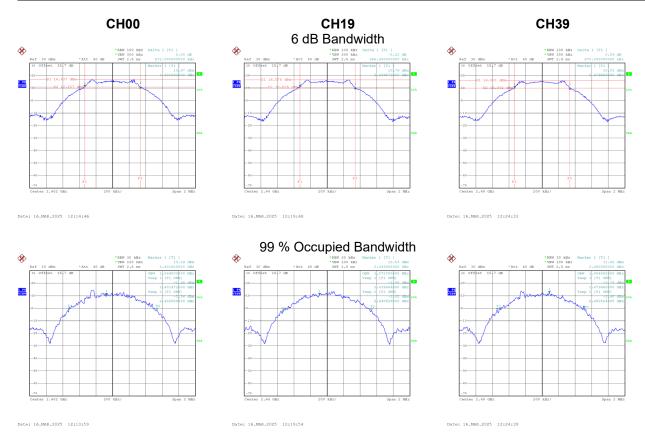


APPENDIX E - BANDWIDTH



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	0.672	1.064	0.5	Pass
19	2440	0.666	1.072	0.5	Pass
39	2480	0.670	1.064	0.5	Pass





APPENDIX F - MAXIMUM OUTPUT POWER



Toot Mode	TV Mode 1Mbps	
lest Mode	I X Mode _1Mbps	

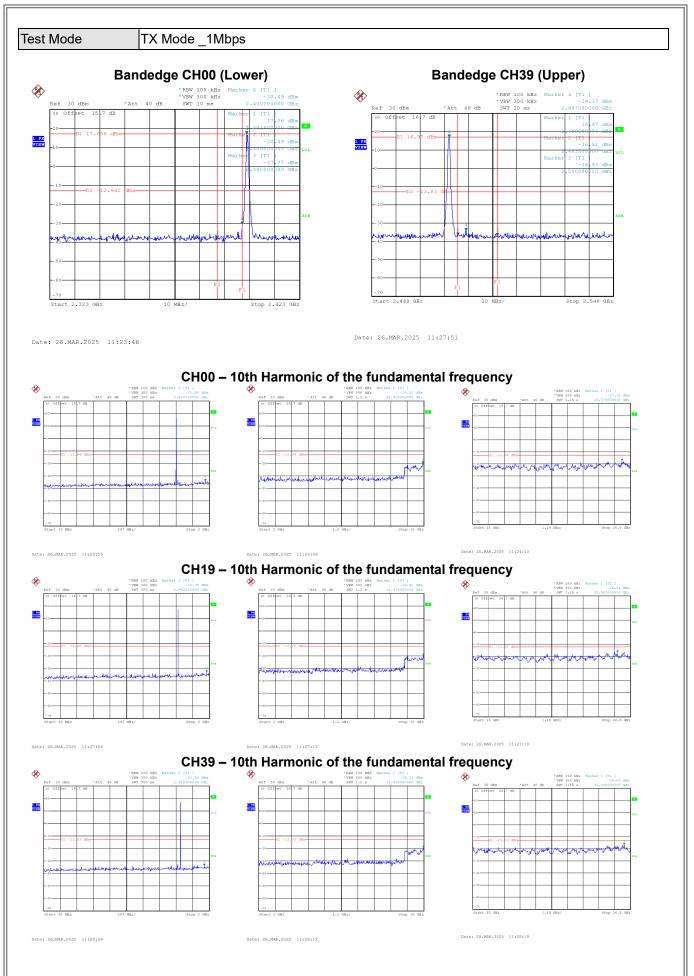
Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
2402	18.38	0.00	18.38	30.00	1.0000	Complies
2440	18.23	0.00	18.23	30.00	1.0000	Complies
2480	17.85	0.00	17.85	30.00	1.0000	Complies

Note: Output power = Measure result + Cable loss



APPENDIX G - CONDUCTED SPURIOUS EMISSION		







# **APPENDIX H - POWER SPECTRAL DENSITY**



I	Test Mode	TX Mode _	1Mbps

Channel	Frequency (MHz)	Power Spectral Density (dBm/3 kHz)	Max. Limit (dBm/3 kHz)	Test Result
00	2402	3.09	8.00	Pass
19	2440	2.51	8.00	Pass
39	2480	3.92	8.00	Pass



# **End of Test Report**