



FCC Radio Test Report

FCC ID: ACJ-EAH-AZ80

This report concerns: Original Grant

Project No. 2208C065

Digital Wireless Stereo Earphones **Equipment**

Brand Name Technics Test Model : EAH-AZ80

Series Model : N/A

Applicant : Panasonic Corporation of North America

Address : Two Riverfront Plaza, 9th Floor Newark, New Jersey 07102-5490

United States

Manufacturer : Panasonic Entertainment & Communication Co., Ltd.

Address : 1-10-12 Yagumo-higashi-machi, Moriguchi City, Osaka 570-0021,

Japan

Factory : Panasonic System Networks Malaysia Sdn. Bhd.

: PLO No.1, Kawasan Perindustrian Senai, K B No. 104, 81400 Senai, **Address**

Johor Darul Takzim. Malaysia

Date of Receipt : Aug. 10, 2022

Date of Test : Aug. 12, 2022 ~ Aug. 30, 2022

Issued Date : Sep. 28, 2022

Report Version : R00

Test Sample : Engineering Sample No.: DG2022081179 for conducted,

DG2022081178 for radiated.

: FCC CFR Title 47, Part 15, Subpart C Standard(s)

FCC KDB 558074 D01 15.247 Meas Guidance v05r02

ANSI C63.10-2013

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

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TESTING CERT #5123.02

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Declaration

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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-4-2208C065	R00	Original Report.	Sep. 28, 2022	Valid



1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC CFR Title 47, Part 15, Subpart C					
Standard(s) Section	Standard(s) Section Test Item Test Result				
15.207	AC Power Line Conducted Emissions				
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)	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.



1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 3 Jinshagang 1st Rd. Shixia, Dalang Town Dongguan City, Guangdong 523792 People's Republic of China.

BTL's Registration Number for FCC: 357015 BTL's Designation Number for FCC: CN1240

1.2 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% 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	2.60

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	30MHz ~ 200MHz	V	4.36	
	CISPR	30MHz ~ 200MHz	Н	3.32
(3m)	CIOPK	200MHz ~ 1,000MHz	V	4.08
		200MHz ~ 1,000MHz	Н	3.96

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB03 CISPR	1GHz ~ 6GHz	3.80	
(3m)	CIOPK	6GHz ~ 18GHz	4.82

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB03	18 ~ 26.5 GHz	3.62	
(1m)	CISPR	26.5 ~ 40 GHz	4.00

C. Other Measurement:

Test Item	Uncertainty
Bandwidth	±3.8 %
Maximum Output Power	±0.95 dB
Conducted Spurious Emission	±2.71 dB
Power Spectral Density	±0.86 dB
Temperature	±0.08 °C
Humidity	±1.5%

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



1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
AC Power Line Conducted Emissions	23°C	53%	AC 120V/60Hz	Burak Luo
Radiated Emissions-9 kHz to 30 MHz	25°C	55%	DC 5V	Farun Liang
Radiated Emissions-30 MHz to 1000 MHz	25°C	55%	DC 5V	Meers Zhang
Radiated Emissions-Above 1000 MHz	25°C	55%	DC 5V	Meers Zhang
Bandwidth	23°C	56%	DC 5V	Ansel Yang
Maximum Output Power	23°C	56%	DC 5V	Ansel Yang
Conducted Spurious Emission	23°C	56%	DC 5V	Ansel Yang
Power Spectral Density	23°C	56%	DC 5V	Ansel Yang



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Digital Wireless Stereo Earphones	
Brand Name	Technics	
Test Model	EAH-AZ80	
Series Model	N/A	
Model Difference(s)	N/A	
Power Source	For Earphones: 1# Supplied from charging case. 2# Supplied from battery. Model: 1454 For Charging Case: 1# Supplied from USB port. 2# Supplied from battery. Model: 102427 3# Supplied from wireless charging base	
Power Rating	For Earphones: 1# 4.7V===85mA x 2 2# DC 3.7V 0.32Wh For Charging Case: 1# 5.0V===500mA 2# DC 3.7V 700mAh 2.59Wh 3# DC 5V	
Operation Frequency	2402 MHz ~ 2480 MHz	
Modulation Type	GFSK	
Bit Rate of Transmitter	1Mbps, 2Mbps	
Max. Output Power 2Mbps: 9.59 dBm (0.0091 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.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Daisho Denshi	Inverted-F Antenna	FPC	N/A	-6.7

Note: The antenna gain is provided by the manufacturer.



2.2 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_2Mbps Channel 00/19/39		
Mode 3	TX Mode_2Mbps 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 3 TX Mode_2Mbps Channel 00			

Radiated emissions test - Below 1GHz			
Final Test Mode Description			
Mode 3 TX Mode_2Mbps Channel 00			

Radiated emissions test - Above 1GHz (Bandedge)			
Final Test Mode Description			
Mode 1	TX Mode_1Mbps Channel 00/39		
Mode 2	TX Mode_2Mbps Channel 00/39		

Radiated emissions test - Above 1GHz (Harmonic)			
Final Test Mode Description			
Mode 1	TX Mode_1Mbps Channel 00/19/39		
Mode 2	TX Mode_2Mbps 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		

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 2Mbps Channel 00 is found to be the worst case and recorded.
- (3) For radiated emission above 1 GHz test: The polarization of vertical and horizontal are evaluated, the worst case is vertical and recorded.



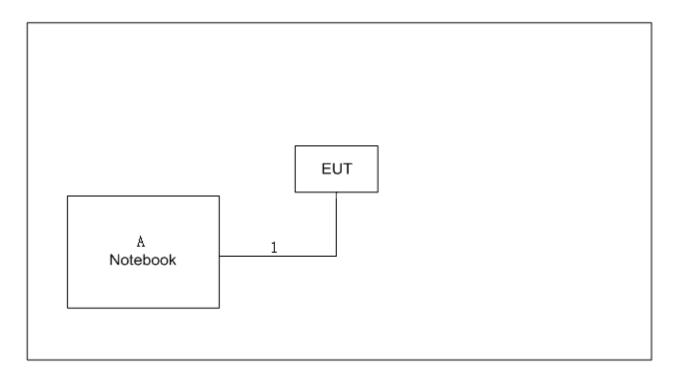
2.3 PARAMETERS OF TEST SOFTWARE

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

Test Software Version	Airoha.Tool.Kit_V2.9.2.1		
Frequency (MHz)	2402	2440	2480
1Mbps	59	59	59
2Mbps	59	59	59



2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.5 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
Α	Notebook	HONOR	NBLK-WAX9X	N/A

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	USB Cable	NO	NO	0.22m



3. AC POWER LINE CONDUCTED EMISSIONS

3.1 LIMIT

Frequency of Emission (MHz)	Limit (dl	ΒμV)
	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.

3.2 TEST PROCEDURE

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

The following table is the setting of the receiver:

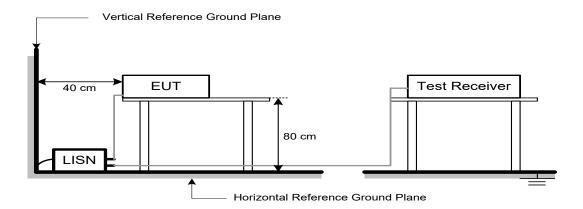
Receiver Parameters	Setting
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.3 DEVIATION FROM TEST STANDARD

No deviation.



3.4 TEST SETUP



3.5 EUT OPERATING CONDITIONS

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

3.6 TEST RESULTS

Please refer to the APPENDIX A.

Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of <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.



4. RADIATED EMISSIONS

4.1 LIMIT

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

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

Frequency	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)	(dBuV/m at 3 m)	
Frequency (MHz)	Peak	Average
Above 1000	74	54

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).



4.2 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 shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1 GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
- f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1 GHz)
- h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1 GHz)
- i. For the actual test configuration, please refer to the related Item –EUT Test Photos.

The following table is the setting of the receiver:

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

Spectrum Parameters	Setting
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW	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

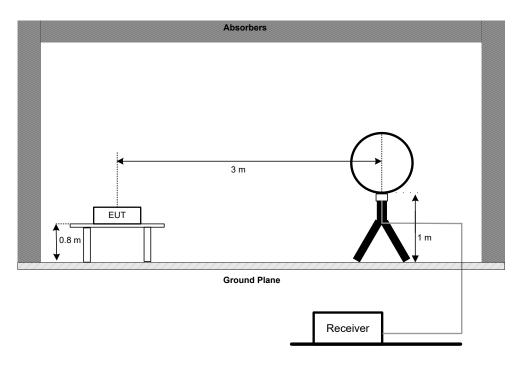


4.3 DEVIATION FROM TEST STANDARD

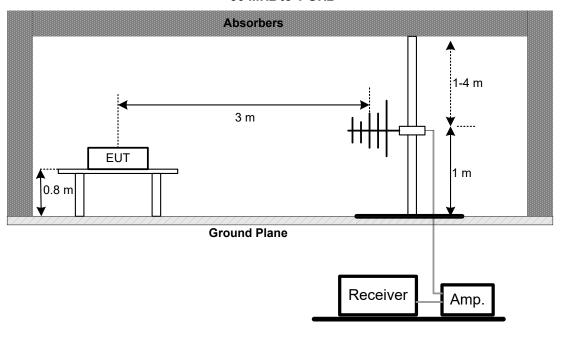
No deviation.

4.4 TEST SETUP

9 kHz to 30 MHz

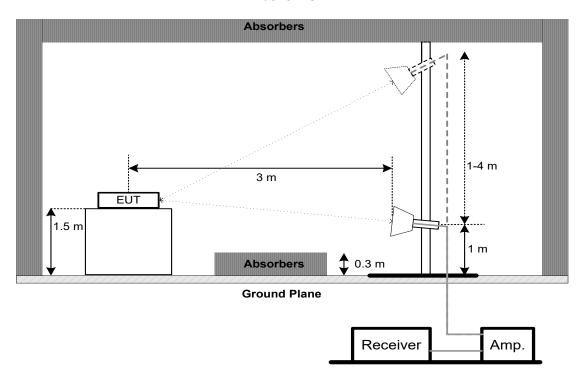


30 MHz to 1 GHz





Above 1 GHz



4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 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.

4.7 TEST RESULT - 30 MHz TO 1000 MHz

Please refer to the APPENDIX C.

4.8 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.



5. BANDWIDTH

5.1 LIMIT

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

5.2 TEST PROCEDURE

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

For 6 dB Bandwidth:

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

For 99% Emission Bandwidth:

O 3370 Emission Danawidti		
Spectrum Parameters	Setting	
Span Frequency	Between 1.5 times and 5.0 times the OBW	
RBW	30 kHz	
VBW	100 kHz	
Detector	Peak	
Trace	Max Hold	
Sweep Time	Auto	

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULTS

Please refer to the APPENDIX E.



6. MAXIMUM OUTPUT POWER

6.1 LIMIT

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

6.2 TEST PROCEDURE

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

Spectrum Parameters	Setting
Span Frequency	≥ 3×RBW
RBW	3 MHz
VBW	3 MHz
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 F.



7. CONDUCTED SPURIOUS EMISSION

7.1 LIMIT

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

7.2 TEST PROCEDURE

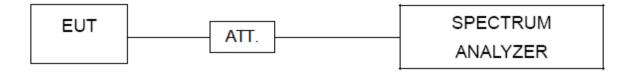
- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. The following table is the setting of the spectrum analyzer:

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

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULTS

Please refer to the APPENDIX G.



8. POWER SPECTRAL DENSITY

8.1 LIMIT

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

8.2 TEST PROCEDURE

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

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

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULTS

Please refer to the APPENDIX H.



9. 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	Jan. 22, 2023							
2	LISN	EMCO	3816/2	52765	Jan. 23, 2023							
3	TWO-LINE V-NETWORK	R&S	ENV216	101447	Jan. 23, 2023							
4	50Ω Terminator	SHX	TF5-3	15041304	Jan. 22, 2023							
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A							
6	Cable	N/A	RG223	12m	Mar. 08, 2023							
7	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	MXE EMI Receiver	Keysight	N9038A	MY56400091	Jan. 22, 2023							
2*	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Aug. 23, 2024							
3	Cable	N/A	RG 213/U(9kHz~1GHz)	N/A	Jun. 17, 2023							
4	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A							
5	966 Chamber Room	ETS	9*6*6	N/A	Jul. 17, 2023							

	Radiated Emissions - Above 1 GHz											
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until							
1	Double Ridged Horn Antenna	ARA	DRG-118A	16554	Apr. 18, 2023							
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	May 27, 2023							
3	Amplifier	Agilent	8449B	3008A02584	Jul. 03, 2023							
4	Controller	CT	SC100	N/A	N/A							
5	Controller	MF	MF-7802	MF780208416	N/A							
6	Receiver	Agilent	N9038A	MY52130039	Jan. 22, 2023							
7	EXA Spectrum Analyzer	Keysight	N9010A	MY56480488	Jan. 22, 2023							
8*	Low Noise Amplifier	CONNPHY	CLN-18G40G-4330 -K	619413	Jul. 05, 2025							
9	Cable	Talent microwave	A81-SMAMSMAM- 12.5M	N/A	Oct. 15, 2022							
10	Cable	Talent microwave	A40-2.92M2.92M-2. 5M	N/A	Nov. 30, 2022							
11	Filter	STI	STI15-9912	N/A	Jul. 03, 2023							
12	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A							
13	966 Chamber Room	RM	9*6*6	N/A	Jul. 24, 2023							



	Bandwidth & Maximum Output Power & Power Spectral Density & Conducted Spurious Emission									
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until					
1	Spectrum Analyzer	R&S	FSP40	100185	Jul. 03, 2023					
2	Attenuator	WOKEN	6SM3502	VAS1214NL	N/A					
3	RF Cable	Tongkaichuan	N/A	N/A	N/A					
4	DC Block	Mini	N/A	N/A	N/A					

Remark: "N/A" denotes no model name, serial no. or calibration specified.

"*" calibration period of equipment list is three year.

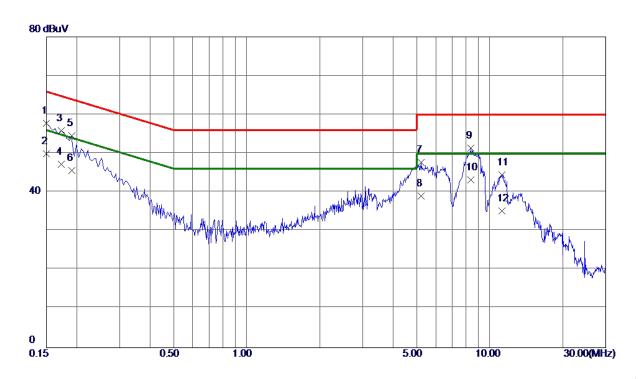
Except * item, all calibration period of equipment list is one year.



APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS







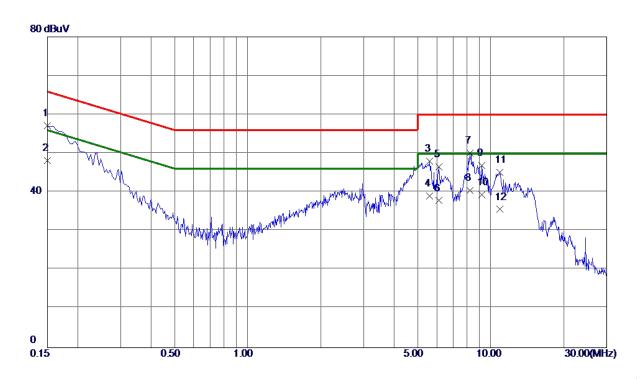
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0. 1500	48. 08	9. 65	57. 73	66.00	-8. 27	QP	
2 *	0. 1500	40. 21	9. 65	49.86	56.00	-6. 14	AVG	
3	0. 1725	46. 24	9. 67	55. 91	64.84	-8. 93	QP	
4	0. 1725	37. 60	9. 67	47. 27	54.84	-7. 57	AVG	
5	0. 1905	44. 82	9. 68	54. 50	64. 01	-9. 51	QP	
6	0. 1905	35. 91	9. 68	45. 59	54. 01	-8. 42	AVG	
7	5. 2125	37. 53	10. 14	47. 67	60.00	-12. 33	QP	
8	5. 2125	28. 90	10. 14	39. 04	50.00	-10. 96	AVG	
9	8. 3580	41. 01	10. 38	51. 39	60.00	-8. 61	QP	
10	8. 3580	32. 80	10. 38	43. 18	50.00	-6. 82	AVG	
11	11. 2065	33. 97	10. 51	44. 48	60.00	-15. 52	QP	
12	11. 2065	24. 70	10. 51	35. 21	50.00	-14. 79	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. 1500	47. 35	9. 70	57. 05	66.00	-8. 95	QP	
2 *	0. 1500	38. 41	9. 70	48. 11	56.00	-7. 89	AVG	
3	5. 6040	37. 77	10. 20	47. 97	60.00	-12. 03	QP	
4	5. 6040	28. 90	10. 20	39. 10	50.00	-10. 90	AVG	
5	6. 1215	36. 37	10. 24	46. 61	60.00	-13. 39	QP	
6	6. 1215	27. 60	10. 24	37. 84	50.00	-12. 16	AVG	
7	8. 2094	39. 72	10. 38	50. 10	60.00	-9. 90	QP	
8	8. 2094	30. 10	10. 38	40. 48	50.00	-9. 52	AVG	
9	9. 2084	36. 45	10. 43	46. 88	60.00	-13. 12	QP	
10	9. 2084	28. 90	10. 43	39. 33	50.00	-10. 67	AVG	
11	10. 9095	34. 60	10. 50	45. 10	60.00	-14. 90	QP	
12	10. 9095	25. 10	10. 50	35. 60	50.00	-14. 40	AVG	

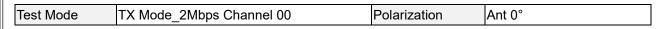
REMARKS:

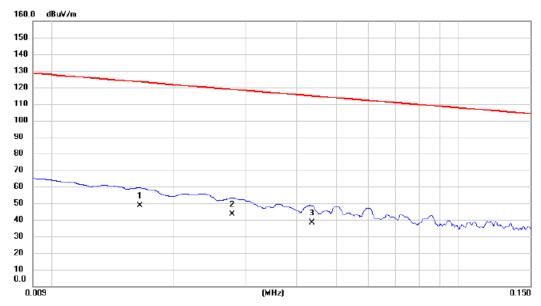
- (1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value Limit Value.



APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ





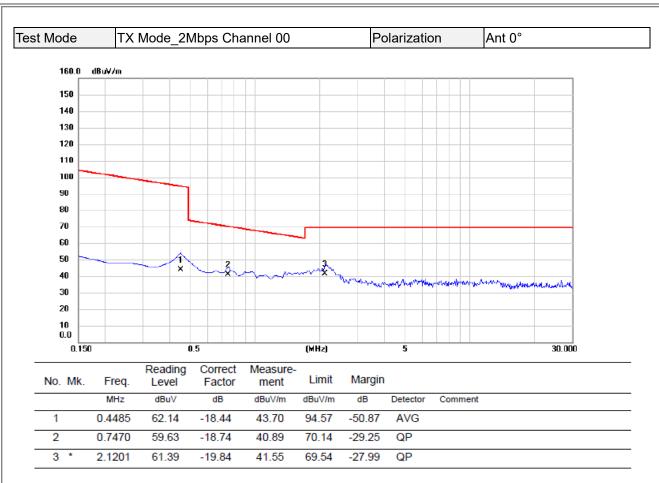


No. Mk.	Freq.			Measure ment		Margin		
	MHz	dBu∨	dB	dBuV/m	dBu∀/m	dB	Detector	Comment
1 *	0.0165	65.25	-16.78	48.47	123.26	-74.79	AVG	
2	0.0278	61.03	-17.79	43.24	118.72	-75.48	AVG	
3	0.0435	56.49	-18.15	38.34	114.84	-76.50	AVG	

REMARKS:

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





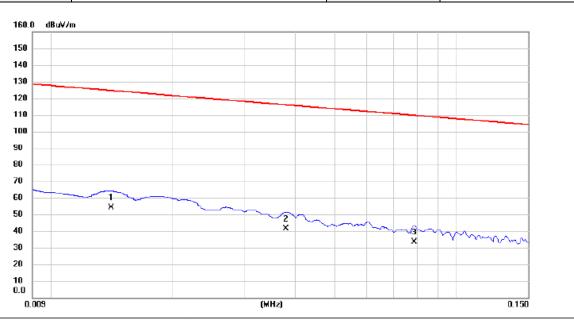
REMARKS:

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

Ant 90°



Test Mode



Polarization

No.	Mk.	Freq.			Measure- ment		Margin		
		MHz	dBu∀	dB	dBuV/m	dBu∀/m	dB	Detector	Comment
1	*	0.0141	70.25	-16.09	54.16	124.62	-70.46	AVG	
2		0.0380	59.31	-18.02	41.29	116.01	-74.72	AVG	
3		0.0785	51.74	-18.26	33.48	109.71	-76.23	AVG	

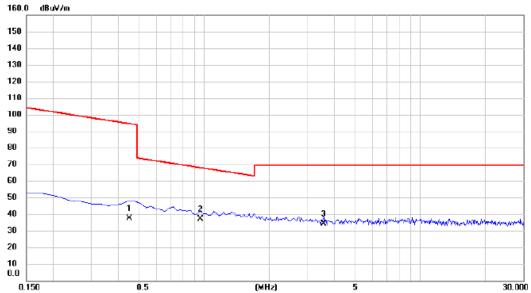
REMARKS:

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

TX Mode_2Mbps Channel 00







No. Mk.	Freq.	Reading Level		Measure- ment		Margin		
	MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.4485	56.03	-18.44	37.59	94.57	-56.98	AVG	
2 *	0.9560	55.86	-18.95	36.91	68.00	-31.09	QP	
3	3.5530	54.19	-20.15	34.04	69.54	-35.50	QP	

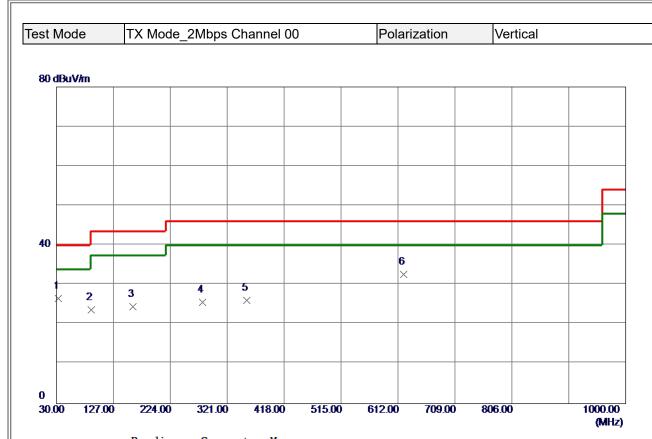
REMARKS:

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



APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 N	ИHZ





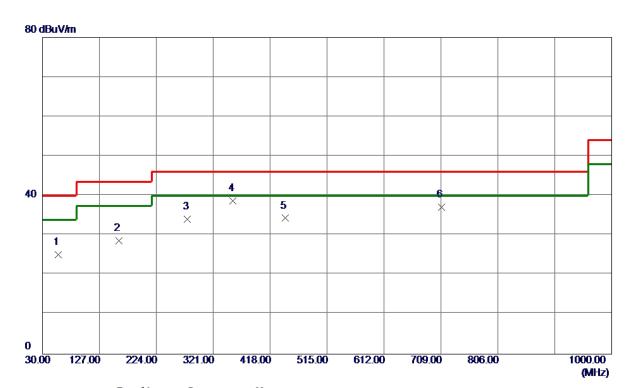
2 89. 1700 42. 48 -18. 73 23. 75 43. 50 -19. 75 Peak 3 159. 9800 37. 13 -12. 72 24. 41 43. 50 -19. 09 Peak 4 279. 2900 37. 38 -11. 75 25. 63 46. 00 -20. 37 Peak 5 353. 9800 36. 17 -10. 12 26. 05 46. 00 -19. 95 Peak	No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
2 89. 1700 42. 48 -18. 73 23. 75 43. 50 -19. 75 Peak 3 159. 9800 37. 13 -12. 72 24. 41 43. 50 -19. 09 Peak 4 279. 2900 37. 38 -11. 75 25. 63 46. 00 -20. 37 Peak 5 353. 9800 36. 17 -10. 12 26. 05 46. 00 -19. 95 Peak		MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
3 159. 9800 37. 13 -12. 72 24. 41 43. 50 -19. 09 Peak 4 279. 2900 37. 38 -11. 75 25. 63 46. 00 -20. 37 Peak 5 353. 9800 36. 17 -10. 12 26. 05 46. 00 -19. 95 Peak	1 *	32. 9100	42. 26	-15. 63	26. 63	40.00	-13. 37	Peak	
4 279. 2900 37. 38 -11. 75 25. 63 46. 00 -20. 37 Peak 5 353. 9800 36. 17 -10. 12 26. 05 46. 00 -19. 95 Peak	2	89. 1700	42. 48	-18. 73	23. 75	43. 50	-19. 75	Peak	
5 353. 9800 36. 17 -10. 12 26. 05 46. 00 -19. 95 Peak	3	159. 9800	37. 13	-12. 72	24. 41	43. 50	-19. 09	Peak	
	4	279. 2900	37. 38	-11. 75	25. 63	46. 00	-20. 37	Peak	
6 621.7000 37.06 -4.45 32.61 46.00 -13.39 Peak	5	353. 9800	36. 17	-10. 12	26. 05	46. 00	-19. 95	Peak	
	6	621. 7000	37. 06	-4. 4 5	32. 61	46. 00	-13. 39	Peak	

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/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	57. 1600	39. 70	-14. 54	25. 16	40.00	-14. 84	Peak	
2	159. 9800	41. 33	-12. 72	28. 61	43. 50	-14. 89	Peak	
3	277. 3500	45. 97	-11. 87	34. 10	46.00	-11. 90	Peak	
4 *	354. 9500	48. 75	-10. 09	38. 66	46.00	-7. 34	Peak	
5	444. 1900	41. 99	-7. 67	34. 32	46.00	-11. 68	Peak	
6	709. 9699	39. 83	-2. 72	37. 11	46. 00	-8. 89	Peak	

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

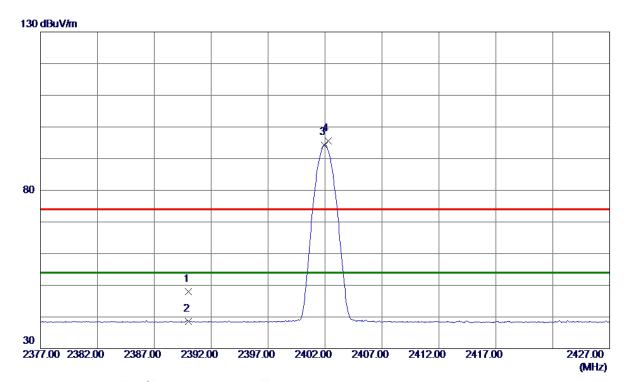


A	PPENDIX D - RADIATED EMISSION - ABOVE 1000 MHZ



Bandedge



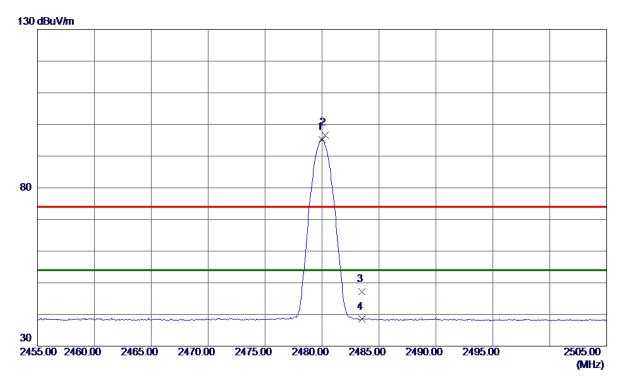


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	40. 74	7. 17	47. 91	74.00	-26. 09	Peak	
2	2390. 0000	31. 37	7. 17	38. 54	54.00	-15. 46	AVG	
3 *	2401. 9500	87. 13	7. 17	94. 30	54.00	40. 30	AVG	No Limit
4	2402. 2500	88. 49	7. 17	95. 66	74.00	21.66	Peak	No Limit

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





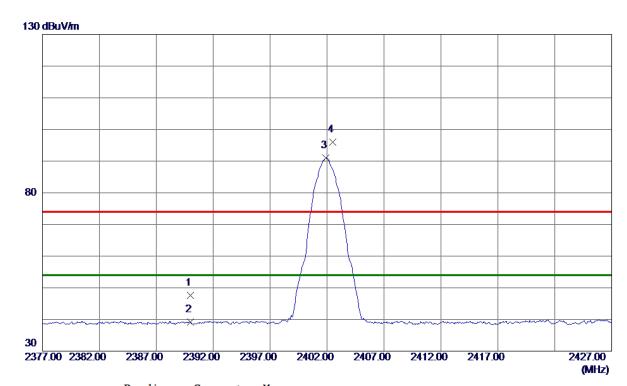


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2480. 0000	88. 00	7. 19	95. 19	54.00	41. 19	AVG	No Limit
2	2480. 2500	89. 37	7. 19	96. 56	74.00	22. 56	Peak	No Limit
3	2483. 5000	40. 03	7. 19	47. 22	74.00	-26. 78	Peak	
4	2483. 5000	31. 31	7. 19	38. 50	54. 00	-15. 50	AVG	

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



Test Mode	TX 2402 MHz CH00 2Mbps	Polarization	Vertical

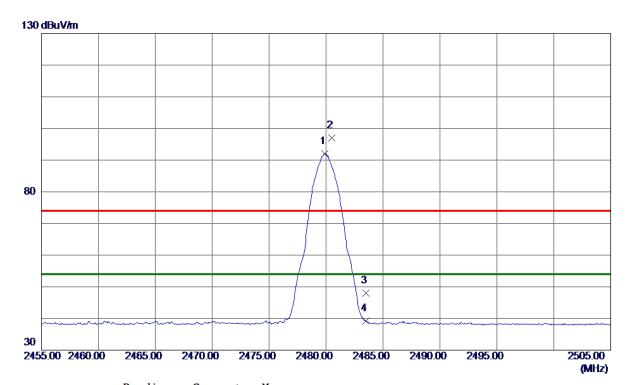


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	40. 36	7. 17	47. 53	74.00	-26. 47	Peak	
2	2390.0000	31. 94	7. 17	39. 11	54.00	-14. 89	AVG	
3 *	2401. 9000	83. 74	7. 17	90. 91	54.00	36. 91	AVG	No Limit
4	2402. 5000	88. 87	7. 17	96. 04	74. 00	22. 04	Peak	No Limit

- (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 *	2479. 9000	84. 82	7. 19	92. 01	54.00	38. 01	AVG	No Limit
2	2480. 5000	89. 87	7. 19	97. 06	74.00	23. 06	Peak	No Limit
3	2483. 5000	40. 82	7. 19	48. 01	74.00	-25. 99	Peak	
4	2483. 5000	32. 09	7. 19	39. 28	54.00	-14. 72	AVG	

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

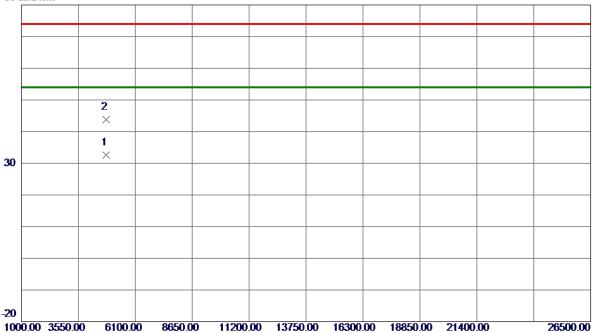
(MHz)



Harmonic

Test Mode	TX 2402 MHz CH00 1I	Mbps	Polarization	Vertical



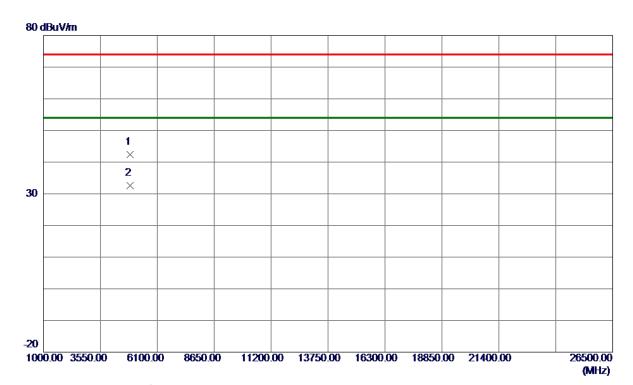


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4799. 6700	28. 53	4. 16	32. 69	54.00	-21. 31	AVG	
2	4804, 3400	39. 70	4. 17	43. 87	74. 00	-30. 13	Peak	

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



Test Mode	TX 2440 MHz _CH19_1Mbps	Polarization	Vertical

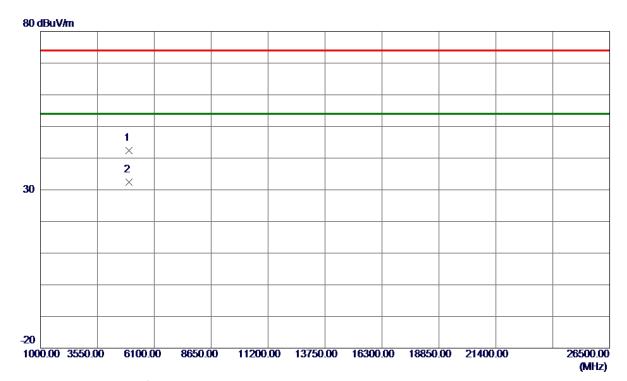


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4875. 2599	38. 02	4. 38	42. 40	74.00	-31. 60	Peak	
2 *	4877. 7799	28. 29	4. 39	32. 68	54.00	-21. 32	AVG	

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



Test Mode	TX 2480 MHz CH39 1Mbps	Polarization	Vertical

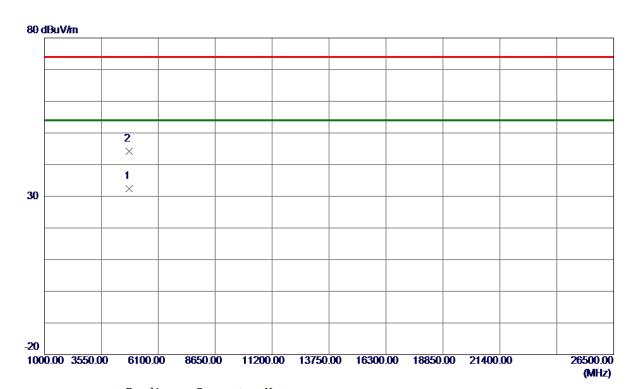


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4961. 0000	37. 86	4. 63	42. 49	74.00	-31. 51	Peak	
2 *	4961. 4300	27. 85	4. 64	32. 49	54. 00	-21. 51	AVG	

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



Test Mode	TX 2402 MHz	CH00_2Mbps	Polarization	Vertical

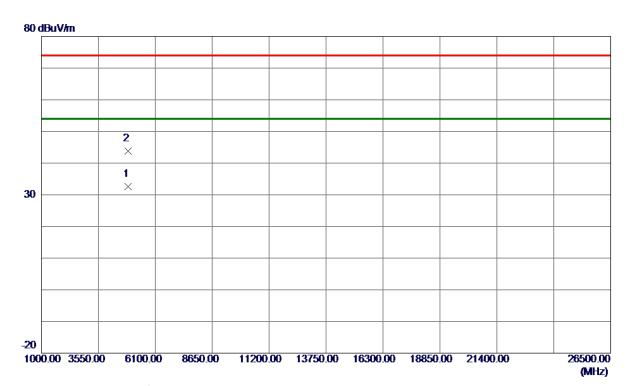


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4804. 1250	28. 19	4. 17	32. 36	54.00	-21. 64	AVG	
2	4804. 9500	39. 98	4. 17	44. 15	74.00	-29.85	Peak	

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



Test Mode	TX 2440 MHz _CH19_2Mbps	Polarization	Vertical

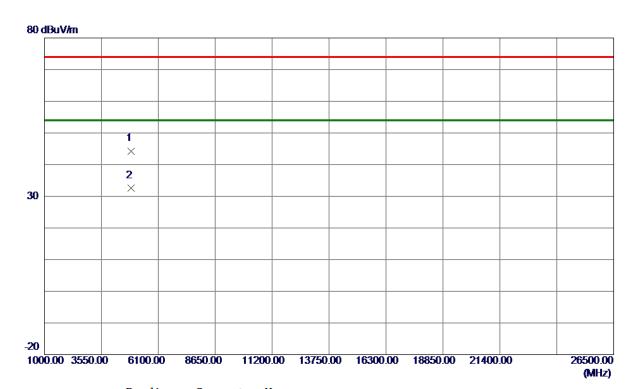


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4880. 6349	28. 21	4. 40	32. 61	54.00	-21. 39	AVG	
2	4881. 5500	39. 34	4. 40	43. 74	74. 00	-30. 26	Peak	

- (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	4878. 5600	39. 91	4. 39	44. 30	74.00	-29. 70	Peak	
2 *	4882. 2100	28. 19	4. 40	32. 59	54.00	-21. 41	AVG	

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

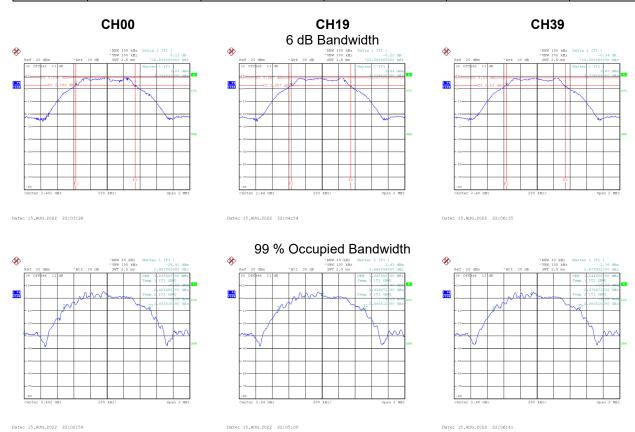


APPENDIX E - BANDWIDTH	



Test Mode TX Mode 1Mbps

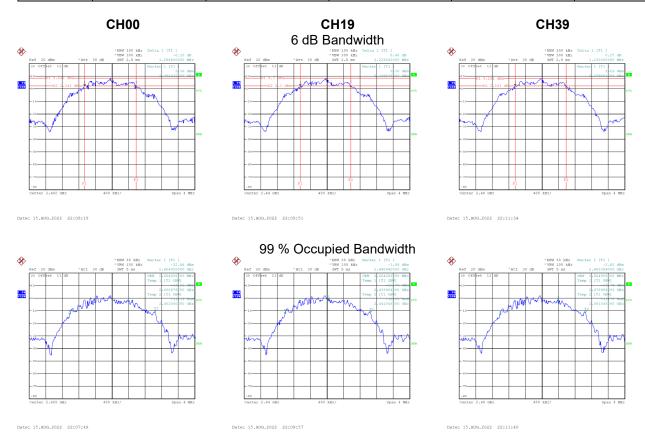
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Test Result
00	2402	0.716	1.036	0.5	Pass
19	2440	0.722	1.040	0.5	Pass
39	2480	0.714	1.044	0.5	Pass





Test Mode TX Mode 2Mbps

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Test Result
00	2402	1.256	2.064	0.5	Pass
19	2440	1.228	2.064	0.5	Pass
39	2480	1.230	2.064	0.5	Pass



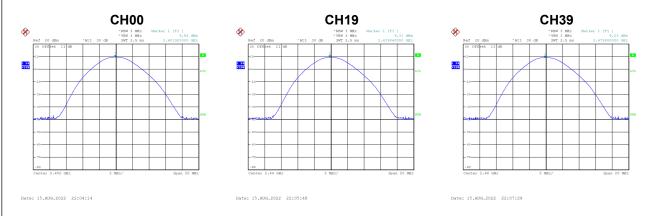


APPENDIX F - MAXIMUM OUTPUT POWER



Test Mode	TX Mode _1	Mbps

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	9.54	0.0090	30.00	1.0000	Pass
2440	9.31	0.0085	30.00	1.0000	Pass
2480	9.23	0.0084	30.00	1.0000	Pass



Test Mode	TX Mode 2Mbps
100t Wiodo	117 Mode _EMBpe

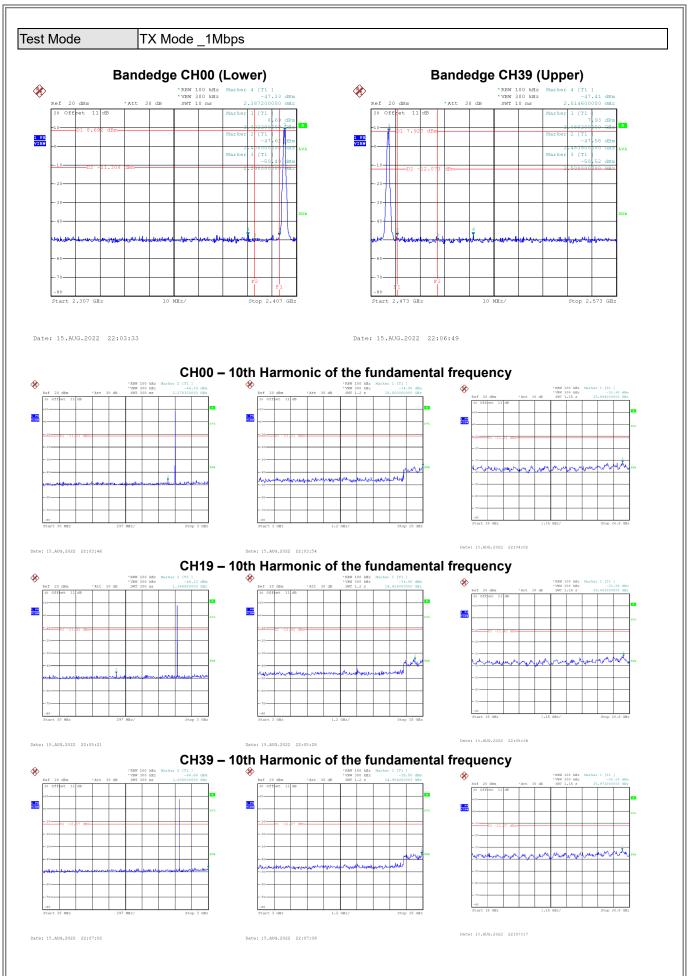
Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	9.59	0.0091	30.00	1.0000	Pass
2440	9.40	0.0087	30.00	1.0000	Pass
2480	9.29	0.0085	30.00	1.0000	Pass



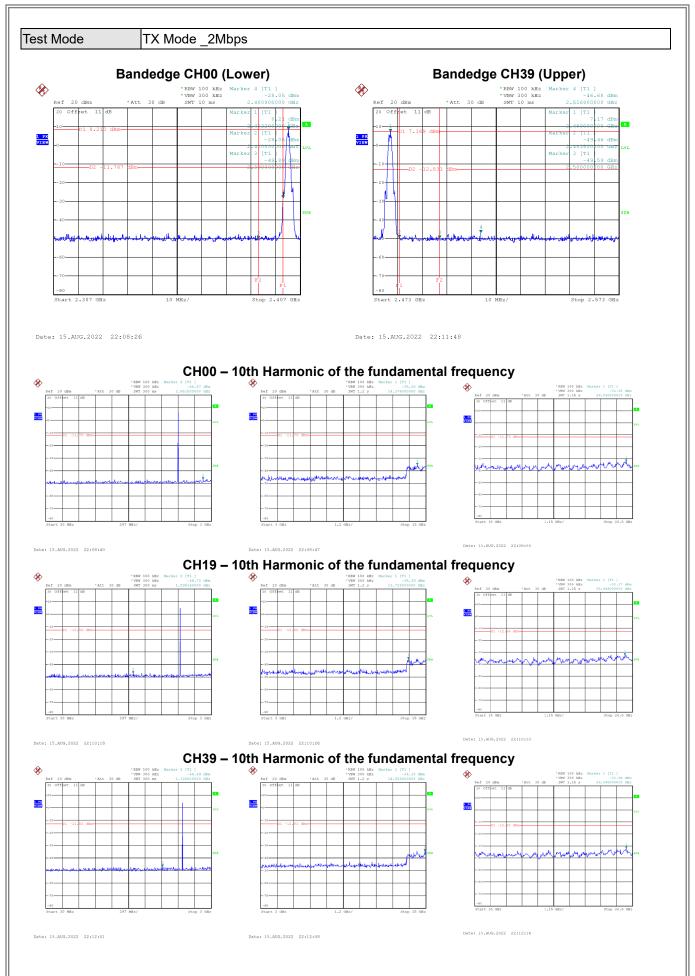


APPENDIX G - CONDUCTED SPURIOUS EMISSION		











APPENDIX H - POWER SPECTRAL DENSITY



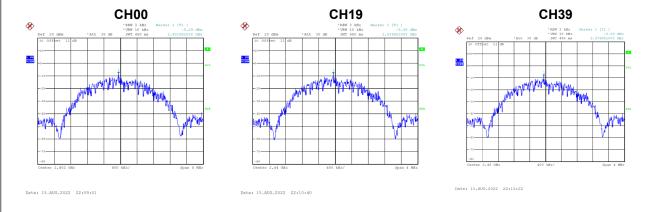
Test Mode	TX Mode _1	Mbps

Channel	Frequency (MHz)	Power Spectral Density (dBm/3 kHz)	Max. Limit (dBm/3 kHz)	Test Result
00	2402	-6.03	8.00	Pass
19	2440	-6.05	8.00	Pass
39	2480	-6.25	8.00	Pass



Test Mode	TX Mode _2Mbps	
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Channel	Frequency (MHz)	Power Spectral Density (dBm/3 kHz)	Max. Limit (dBm/3 kHz)	Test Result
00	2402	-8.29	8.00	Pass
19	2440	-8.48	8.00	Pass
39	2480	-8.69	8.00	Pass



End of Test Report