

TEST REPORT

of

FCC Part 15 Subpart C

New Application; Class I PC; Class II PC

Product : Thermometer Module
Brand: AULISA
Model: GA-TM0001
Model Difference: N/A
FCC ID: 2AI5QTB0001
FCC Rule Part: §15.249
Applicant: Taiwan Aulisa Medical Devices Technologies, Inc.
Address: 10F., No.3-2, YuanQu St., Nangang Dist., Taipei City, Taiwan

Test Performed by:
International Standards Laboratory Corp.

<LT Lab.>

*Site Registration No.

BSMI: SL2-IN-E-0013; MRA TW0997; TAF: 0997; IC: IC4067B-4 ;

*Address:

No. 120, Lane 180, Hsin Ho Rd.

Lung-Tan Dist., Tao Yuan City 325, Taiwan

*Tel : 886-3-407-1718; Fax: 886-3-407-1738

Report No.: **ISL-20LR200FC**

Issue Date : **2020/09/11**



Test results given in this report apply only to the specific sample(s) tested and are traceable to national or international standard through calibration of the equipment and evaluating measurement uncertainty herein.

The uncertainty of the measurement does not include in consideration of the test result unless the customer required the determination of uncertainty via the agreement, regulation or standard document specification.

This test report shall not be reproduced except in full, without the written approval of International Standards Laboratory Corp.

VERIFICATION OF COMPLIANCE

Applicant: Taiwan Aulisa Medical Devices Technologies, Inc.
Product Description: Thermometer Module
Brand Name: AULISA
Model No.: GA-TM0001
Model Difference: N/A
FCC ID: 2AI5QTB0001
Date of test: 2020/08/25 ~ 2020/09/09
Date of EUT Received: 2020/08/25

We hereby certify that:

All the tests in this report have been performed and recorded in accordance with the standards described above and performed by an independent electromagnetic compatibility consultant, International Standards Laboratory Corp.

The test results contained in this report accurately represent the measurements of the characteristics and the energy generated by sample equipment under test at the time of the test. The sample equipment tested as described in this report is in compliance with the limits of above standards.

Test By:

Kevin Yao

Date:

2020/09/10

Kevin Yao / Senior Engineer

Prepared By:

Elisa Chen

Date:

2020/09/10

Elisa Chen / Senior Engineer

Approved By:

Jerry Liu

Date:

2020/09/10

Jerry Liu / Technical Manager

Version

Version No.	Date	Description
00	2020/09/10	Initial creation of document

Uncertainty of Measurement

Description Of Test	Uncertainty
Conducted Emission (AC power line)	2.586 dB
Field Strength of Spurious Radiation	≤30MHz: 2.96dB 30-1GHz: 4.22 dB 1-40 GHz: 4.08 dB
Conducted Power	2.412 GHz: 1.30 dB 5.805 GHz: 1.55 dB
Power Density	2.412 GHz: 1.30 dB 5.805 GHz: 1.67 dB
Frequency	0.0032%
Time	0.01%
DC Voltage	1%

Table of Contents

1.	GENERAL INFORMATION	5
1.1.	PRODUCT DESCRIPTION	5
1.2.	RELATED SUBMITTAL(S) / GRANT (S)	6
1.3.	TEST METHODOLOGY.....	6
1.4.	TEST FACILITY	6
1.5.	SPECIAL ACCESSORIES.....	6
1.6.	EQUIPMENT MODIFICATIONS	6
2.	SYSTEM TEST CONFIGURATION	7
2.1.	EUT CONFIGURATION.....	7
2.2.	EUT EXERCISE	7
2.3.	TEST PROCEDURE.....	7
2.4.	LIMITATION	8
2.5.	CONFIGURATION OF TESTED SYSTEM.....	10
3.	SUMMARY OF TEST RESULTS	11
4.	CONDUCTED EMISSIONS TEST	12
4.1	MEASUREMENT PROCEDURE:	12
4.2	TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	12
4.3	MEASUREMENT EQUIPMENT USED:	12
4.4	MEASUREMENT RESULT:	12
5.	RADIATED EMISSION TEST	13
5.1	MEASUREMENT PROCEDURE.....	13
5.2	TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	13
5.3	MEASUREMENT EQUIPMENT USED:	14
5.4	FIELD STRENGTH CALCULATION	15
5.5	MEASUREMENT RESULT	16
6.	20 DB BAND WIDTH MEASUREMENT.....	24
6.1	MEASUREMENT PROCEDURE.....	24
6.2	TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	24
6.3	MEASUREMENT EQUIPMENT USED:	24
6.4	MEASUREMENT RESULTS:.....	24

1. General Information

1.1. Product Description

General:

Product Name	Thermometer Module
Brand Name	AULISA
Model Name	GA-TM0001
Model Difference	N/A
Power Supply	5V from USB

Frequency Range(MHz)	2402MHz – 2480MHz
Modulation type	GFSK
Channel Number	40
Measured Power	55.87dBuV/m at 3 m
Antenna Designation:	PCB Antenna / 2.5dBi

1.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: 2AI5QTB0001** filing to comply with Section 15.249 of the FCC Part 15, Subpart C Rules.

1.3. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.10: 2013. Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4. Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of **International Standards Laboratory Corp.** <LT Lab.> No. 120, Lane 180, Hsin Ho Rd., Lung-Tan Dist., Tao Yuan City 325, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.10: 2013. FCC Registration Number is: 487532; Designation Number is: TW0997, Canada Registration Number: 4067B-4.

1.5. Special Accessories

Not available for this EUT intended for grant.

1.6. Equipment Modifications

Not available for this EUT intended for grant.

2. System Test Configuration

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2. EUT Exercise

The Transmitter was operated in the engineering operating mode. the Tx frequency was fixed at 2457MHz which were for the purpose of the measurements.

2.3. Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 6 of ANSI C63.10: 2013. Con-ducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR 16-1-1 Quasi-Peak and Average detector mode.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m/1.5m(Frequency above 1GHz) above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 6 and 11 of ANSI C63.10: 2013.

2.4. Limitation

(1) Conducted Emission

According to §15.207, frequency range within 150kHz to 30MHz shall not exceed the Limit table as below.

Frequency range MHz	Limits dB(uV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Note

- 1.The lower limit shall apply at the transition frequencies
- 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

(2) Radiated Emission 15.249(a)

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following.

Frequency (MHz)	Field strength of Fundamental	Field strength of Harmonics	Distance (m)
902 - 928	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3
2400 – 2483.5	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3
5725 – 5875	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3

(3) Radiated Emission 15.249 (d)

Emission Radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in Section 15.209 and RSS-Gen as below, whichever is the lesser attenuation.

Frequency (MHz)	Field strength $\mu\text{V/m}$	Distance (m)	Field strength at 3m $\text{dB}\mu\text{V/m}$
1.705-30	30	30	69.54
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

(4) Radiated Emission 15.249(e)

For frequencies above 1000MHz, the above field strength limits are based on average limits. The peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20dB under any condition of modulation.

- Remark:
1. Emission level in $\text{dB}\mu\text{V/m} = 20 \log (\mu\text{V/m})$
 2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
 3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ 15.205
 4. Emission spurious frequency which appearing within the Restricted Bands specified in provision of ξ 15.205, then the general radiated emission limits in ξ 15.209 apply.

2.5. Configuration of Tested System

Fig. 1 Configuration of Tested System



Table 1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	Notebook	ASUS	N/A	N/A	Non-shielded	Non-shielded

Note: All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

Grounding: Grounding was in accordance with the manufacturer's requirements and conditions for the intended use.

3. Summary of Test Results

FCC Rules	Description Of Test	Result
§15.207	Conducted Emission	N/A
§15.249(a)(d)(e)	Field Strength Measurement	Compliant
§15.215(c)	20dB band width Measurement	Compliant

Description of test modes

The EUT has been tested under operating condition.

Test program used to control the EUT for staying in continuous transmitting and receive mode is programmed.

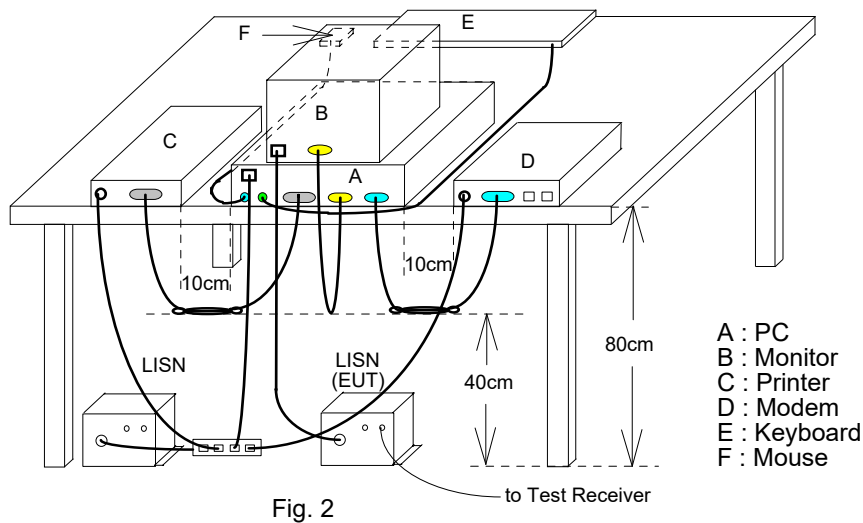
Channel Low (2402MHz), Channel Mid (2441MHz), and Channel High (2480MHz) with highest data rate are chosen for full testing.

4. Conducted Emissions Test

4.1 Measurement Procedure:

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

4.2 Test SET-UP (Block Diagram of Configuration)



4.3 Measurement Equipment Used:

Location	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Conduction 03	EMI Receiver 15	ROHDE & SCHWARZ	ESCI	101166	07/29/2020	07/29/2021
Conduction 03	ISN T4 09	Teseq GmbH	ISN T400A	49914	08/10/2020	08/10/2021
Conduction 03	ISNT8 09	Teseq GmbH	ISN T800	36190	09/20/2019	09/20/2020
Conduction 03	LISN 15	R&S	ENV216	101335	12/12/2019	12/12/2020
Conduction 03	LISN 22	R&S	ENV216	101478	08/10/2020	08/10/2021
Conduction 03	Conduction Cable 04-3	WOKEN	CFD 300-NL	conduction 04-3	08/29/2020	08/29/2021
Conduction 03	Capacitive Voltage Probe	FCC	F-CVP-1	68	01/17/2020	01/17/2021
Conduction 03	Current Probe	SCHAFFNER	SMZ 11	18030	01/17/2020	01/17/2021

4.4 Measurement Result:

N/A

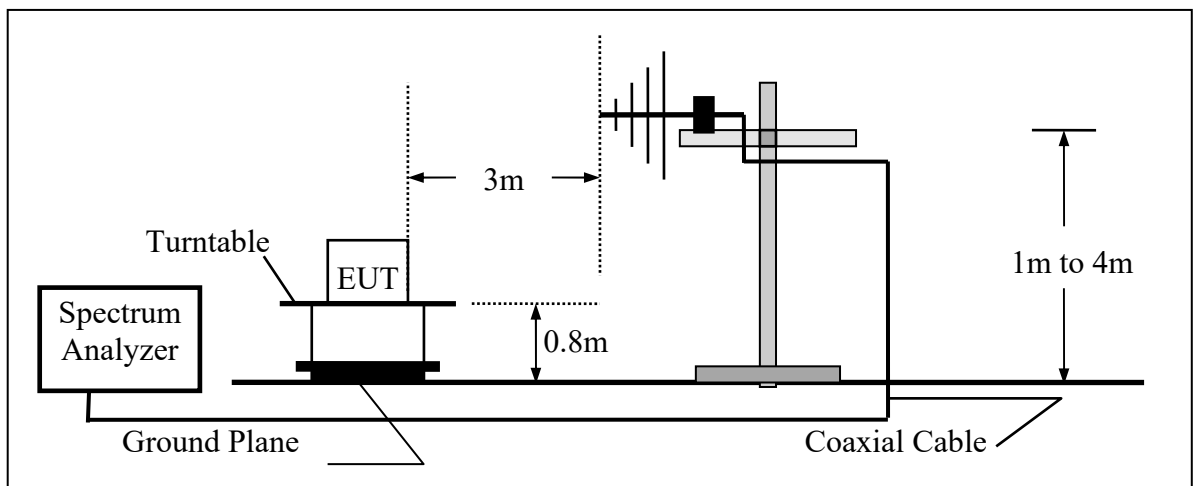
5. Radiated Emission Test

5.1 Measurement Procedure

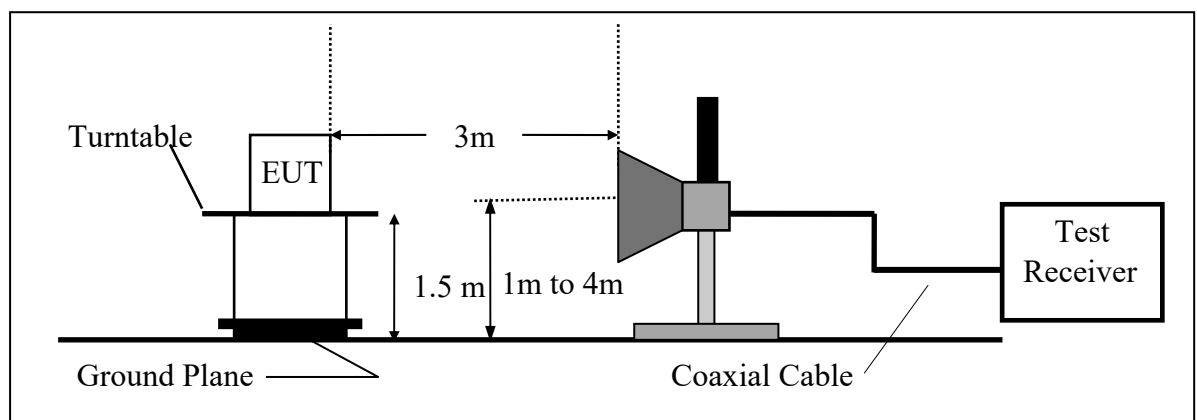
1. The EUT was placed on a turntable that is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

5.2 Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-Up Frequency Over 1 GHz



5.3 Measurement Equipment Used:

Location Conducted	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Chamber 19	Spectrum analyzer	R&S	FSV40	101884	11/14/2019	11/14/2020
Chamber 19	EMI Receiver	R&S	ESR3	102461	05/05/2020	05/05/2021
Chamber 19	Loop Antenna	EM	EM-6879	271	05/21/2020	05/21/2021
Chamber 19	Bilog Antenna (30MHz-1GHz)	Schwarzbeck	VULB9168 w 5dB Att.	736	02/11/2020	02/11/2021
Chamber 19	Horn antenna (1GHz-18GHz)	EM	EM-AH-10180	2011090207	03/26/2020	03/26/2021
Chamber 19	Horn antenna (18GHz-26GHz)	Com-power	AH-826	081001	11/25/2019	11/25/2020
Chamber 19	Horn antenna (26GHz-40GHz)	Com-power	AH-640	100A	03/13/2020	03/13/2021
Chamber 19	Preamplifier (9kHz-1GHz)	HP	8447F	3113A04621	06/19/2020	06/19/2021
Chamber 19	Preamplifier (1GHz-26GHz)	EM	EM01M26G	060681	05/04/2020	05/04/2021
Chamber 19	Preamplifier (26GHz-40GHz)	MITEQ	JS4-26004000-27-5A	818471	05/04/2020	05/04/2021
Chamber 19	RF Cable (9kHz-18GHz)	HUBER SUHNER	Sucoflex 104A	MY1397/4A	01/10/2020	01/10/2021
Chamber 19	RF Cable (18GHz-40GHz)	HUBER SUHNER	Sucoflex 102	27963/2&37421/2	11/21/2019	11/21/2020
Chamber 19	Signal Generator	Anritsu	MG3692A	20311	01/06/2020	01/06/2021
Chamber 19	Test Software	Audix	E3 Ver:6.12023	N/A	N/A	N/A

5.4 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

5.5 Measurement Result

Fundamental Emission Measurement Result

Operation Mode : TX mode
Temp./ Hum. : 25°C/60%

Test Date : 2020/09/04
Test By : Kevin

CH Low:

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2402.21	68.39	-16.11	52.28	114.00	-61.72	Peak	VERTICAL
1	2401.83	71.98	-16.11	55.87	114.00	-58.13	Peak	HORIZONTAL

CH Mid:

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2441.79	67.38	-16.09	51.29	114.00	-62.71	Peak	VERTICAL
1	2441.93	70.76	-16.09	54.67	114.00	-59.33	Peak	HORIZONTAL

CH High:

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2480.08	66.71	-16.00	50.71	114.00	-63.29	Peak	VERTICAL
1	2479.80	69.64	-16.00	53.64	114.00	-60.36	Peak	HORIZONTAL

Remark:

- 1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency
- 2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.
- 3 Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.
- 4 Spectrum AV mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 10Hz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode : TX CH Low Test Date : 2020/09/04
Temp./ Hum. : 25°C/60% Test By : Kevin

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	62.01	30.05	-6.20	23.85	40.00	-16.15	Peak	VERTICAL
2	155.13	27.88	-4.95	22.93	43.50	-20.57	Peak	VERTICAL
3	327.79	27.82	-3.23	24.59	46.00	-21.41	Peak	VERTICAL
4	460.68	28.26	-1.01	27.25	46.00	-18.75	Peak	VERTICAL
5	644.98	31.86	2.01	33.87	46.00	-12.13	Peak	VERTICAL
6	815.70	29.19	4.78	33.97	46.00	-12.03	Peak	VERTICAL
1	91.11	36.39	-11.46	24.93	43.50	-18.57	Peak	HORIZONTAL
2	191.99	34.53	-7.27	27.26	43.50	-16.24	Peak	HORIZONTAL
3	348.16	28.28	-2.95	25.33	46.00	-20.67	Peak	HORIZONTAL
4	364.65	28.83	-2.69	26.14	46.00	-19.86	Peak	HORIZONTAL
5	480.08	36.53	-0.78	35.75	46.00	-10.25	Peak	HORIZONTAL
6	719.67	30.30	3.25	33.55	46.00	-12.45	Peak	HORIZONTAL

Remark:

- 1 No further spurious emissions detected from the lowest internal frequency and 30MHz.
- 2 Measuring frequencies from the lowest internal frequency to the 1GHz.
- 3 Radiated emissions measured in frequency range from 9kHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP
- 4 Measurement result within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Operation Mode : TX CH Mid
Temp./ Hum. : 25°C/60%

Test Date : 2020/09/04
Test By : Kevin

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	164.83	27.76	-4.87	22.89	43.50	-20.61	Peak	VERTICAL
2	347.19	27.87	-2.96	24.91	46.00	-21.09	Peak	VERTICAL
3	481.05	28.23	-0.78	27.45	46.00	-18.55	Peak	VERTICAL
4	620.73	28.81	1.73	30.54	46.00	-15.46	Peak	VERTICAL
5	785.63	28.94	4.44	33.38	46.00	-12.62	Peak	VERTICAL
6	842.86	27.87	5.19	33.06	46.00	-12.94	Peak	VERTICAL
1	90.14	33.73	-11.38	22.35	43.50	-21.15	Peak	HORIZONTAL
2	190.05	34.04	-7.18	26.86	43.50	-16.64	Peak	HORIZONTAL
3	444.19	28.12	-1.19	26.93	46.00	-19.07	Peak	HORIZONTAL
4	480.08	30.64	-0.78	29.86	46.00	-16.14	Peak	HORIZONTAL
5	672.14	31.18	2.34	33.52	46.00	-12.48	Peak	HORIZONTAL
6	820.55	28.62	5.00	33.62	46.00	-12.38	Peak	HORIZONTAL

Remark:

- 1 No further spurious emissions detected from the lowest internal frequency and 30MHz.
- 2 Measuring frequencies from the lowest internal frequency to the 1GHz.
- 3 Radiated emissions measured in frequency range from 9kHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP
- 4 Measurement result within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Operation Mode : TX CH High
Temp./ Hum. : 25°C/60%

Test Date : 2020/09/04
Test By : Kevin

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	70.74	36.57	-7.96	28.61	40.00	-11.39	Peak	VERTICAL
2	150.28	28.07	-5.05	23.02	43.50	-20.48	Peak	VERTICAL
3	391.81	28.28	-2.16	26.12	46.00	-19.88	Peak	VERTICAL
4	535.37	28.85	0.02	28.87	46.00	-17.13	Peak	VERTICAL
5	702.21	28.60	3.08	31.68	46.00	-14.32	Peak	VERTICAL
6	859.35	28.52	5.47	33.99	46.00	-12.01	Peak	VERTICAL
1	92.08	34.67	-11.45	23.22	43.50	-20.28	Peak	HORIZONTAL
2	190.05	31.19	-7.18	24.01	43.50	-19.49	Peak	HORIZONTAL
3	421.88	28.06	-1.67	26.39	46.00	-19.61	Peak	HORIZONTAL
4	630.43	29.11	1.89	31.00	46.00	-15.00	Peak	HORIZONTAL
5	817.64	28.77	4.87	33.64	46.00	-12.36	Peak	HORIZONTAL
6	882.63	27.88	5.80	33.68	46.00	-12.32	Peak	HORIZONTAL

Remark:

- 1 No further spurious emissions detected from the lowest internal frequency and 30MHz.
- 2 Measuring frequencies from the lowest internal frequency to the 1GHz.
- 3 Radiated emissions measured in frequency range from 9kHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP
- 4 Measurement result within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode : TX CH Low Test Date : 2020/09/04
Temp./ Hum. : 25 °C/60% Test By : Kevin

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4804.00	55.64	-6.72	48.92	74.00	-25.08	Peak	VERTICAL
2	7206.00	47.92	-2.52	45.40	74.00	-28.60	Peak	VERTICAL
1	4804.00	57.92	-6.72	51.20	74.00	-22.80	Peak	HORIZONTAL
2	7206.00	47.91	-2.52	45.39	74.00	-28.61	Peak	HORIZONTAL

Remark:

- 1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency
- 2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.
- 3 “F” denotes fundamental frequency; “H” denotes harmonics frequency. “S” denotes spurious frequency.
- 4 Measurement of data within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5 Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.
- 6 Spectrum AV mode if bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Operation Mode : TX CH Mid
Temp./ Hum. : 25 °C/60%

Test Date : 2020/09/04
Test By : Kevin

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4884.00	54.97	-6.45	48.52	74.00	-25.48	Peak	VERTICAL
2	7326.00	47.69	-2.61	45.08	74.00	-28.92	Peak	VERTICAL
1	4884.00	58.26	-6.45	51.81	74.00	-22.19	Peak	HORIZONTAL
2	7326.00	47.26	-2.61	44.65	74.00	-29.35	Peak	HORIZONTAL

Remark:

- 1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency
- 2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.
- 3 “F” denotes fundamental frequency; “H” denotes harmonics frequency. “S” denotes spurious frequency.
- 4 Measurement of data within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5 Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.
- 6 Spectrum AV mode if bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Operation Mode : TX CH High
Temp./ Hum. : 25 °C/60%

Test Date : 2020/09/04
Test By : Kevin

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4960.00	53.77	-6.19	47.58	74.00	-26.42	Peak	VERTICAL
2	7440.00	46.51	-2.61	43.90	74.00	-30.10	Peak	VERTICAL
1	4960.00	57.91	-6.19	51.72	74.00	-22.28	Peak	HORIZONTAL
2	7440.00	46.16	-2.61	43.55	74.00	-30.45	Peak	HORIZONTAL

Remark:

- 1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency
- 2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.
- 3 “F” denotes fundamental frequency; “H” denotes harmonics frequency. “S” denotes spurious frequency.
- 4 Measurement of data within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5 Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.
- 6 Spectrum AV mode if bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (Band Edge)

Operation Mode : Band Edge Test Date : 2020/09/04
 Temp./Hum. : 25 °C / : 60% Test By : Kevin

CH Low

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2390.00	57.62	-16.15	41.47	74.00	-32.53	Peak	VERTICAL
2	2400.00	58.74	-16.12	42.62	74.00	-31.38	Peak	VERTICAL
3	2401.79	66.54	-16.11	50.43	F	--	Peak	VERTICAL
1	2390.00	57.15	-16.15	41.00	74.00	-33.00	Peak	HORIZONTAL
2	2400.00	61.25	-16.12	45.13	74.00	-28.87	Peak	HORIZONTAL
3	2401.88	71.35	-16.11	55.24	F	--	Peak	HORIZONTAL

CH High

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2479.71	71.81	-16.00	55.81	F	--	Peak	VERTICAL
2	2483.50	60.57	-15.99	44.58	74.00	-29.42	Peak	VERTICAL
1	2480.28	70.47	-16.00	54.47	F	--	Peak	HORIZONTAL
2	2483.50	59.31	-15.99	43.32	74.00	-30.68	Peak	HORIZONTAL

Remark:

- 1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency
- 2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.
- 3 Measurement of data within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.
- 5 Spectrum AV mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 10Hz.

6. 20 dB Band Width Measurement

6.1 Measurement Procedure

The EUT was placed on a turn table which is 0.8m above ground plane and Set the EUT in continuously operating mode.

Spectrum Analyzer Setting:

1. Center frequency = nominal center frequency
2. Set span = 2 times to 5 times the OBW.
3. RBW = 1% to 5% of the OBW
4. VBW $\geq 3 \times$ RBW.
5. Detector = Peak.
6. Trace mode = max hold.
7. Sweep = auto couple.
8. Allow the trace to stabilize.
9. Use 20-dB BW measurement function.

6.2 Test SET-UP (Block Diagram of Configuration)

Same as 4.2 Radiated Emission Measurement.

6.3 Measurement Equipment Used:

Same as 4.2 Radiated Emission Measurement.

6.4 Measurement Results:

CH Low 20dB BW = 1.217MHz

CH Mid 20dB BW = 1.177MHz

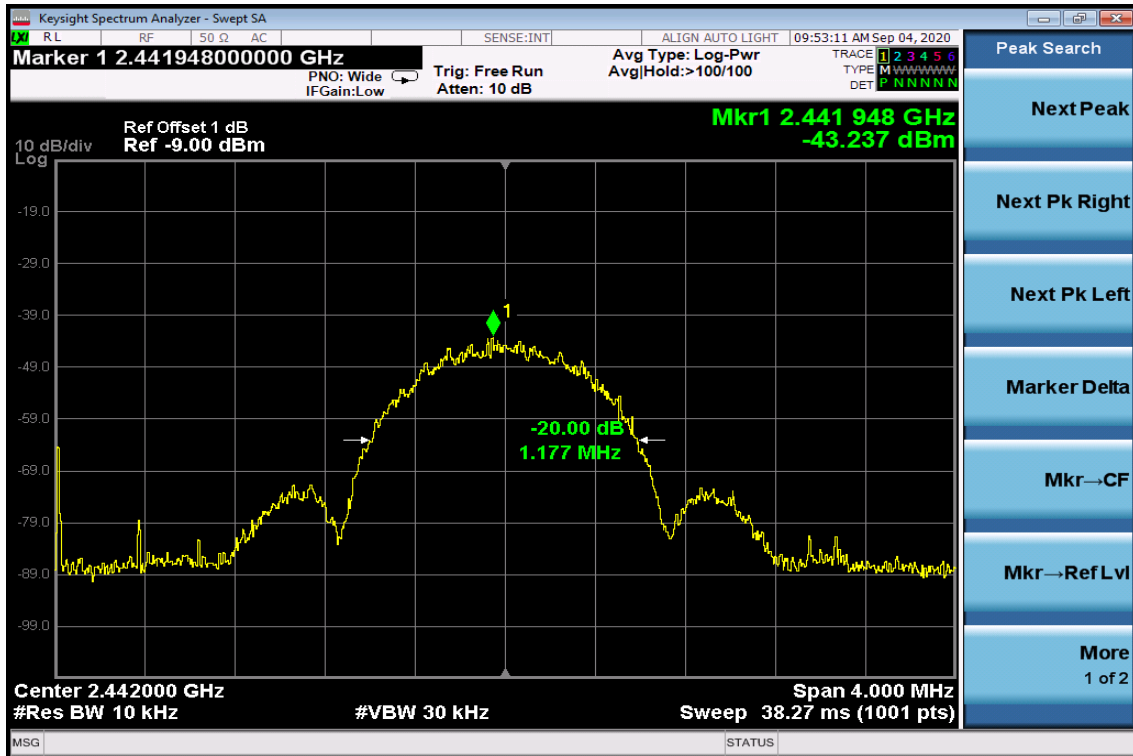
CH High 20dB BW = 1.184MHz

Refer to attached data chart.

20dB Band Width Test Plot CH Low



CH Mid



CH High

