

*Testing Tomorrow's Technology*

**CFR 47 Part 18 Industrial Scientific and Medical Equipment  
Subpart C Technical Standards,  
Part 18.305, Field Strength Limits and Part 18.307, Conducted limits  
Certification Report**

**for the**

**Sharp Corporation**

**Smart Radiant Range-Top With Microwave Drawer Oven  
Model: STR3065HS**

**FCC ID: APYDMR0181**

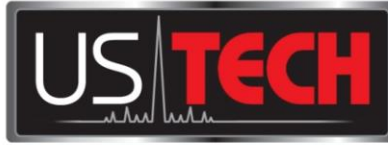
**Test Dates: August 11 – 19, 2022**

**Issue Date: August 23, 2022**

**UST Project No: 22-0219**

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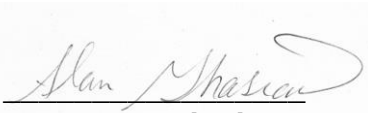
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Testing Tomorrow's Technology

I certify that I am authorized to sign for the manufacturer and that all of the statements in this report and in the exhibits attached hereto are true and correct to the best of my knowledge and belief:

**US Tech (Agent responsible for test):**

By:   
Name: Alan Ghasiani

Title: President – Consulting Engineer

Date: August 23, 2022



TESTING  
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## Table Of Contents

<u>Title</u>	<u>Paragraph</u>	<u>Page</u>
1	General Information .....	5
1.1	Purpose of the Report .....	5
1.2	Product Description .....	5
1.3	Related Submittal(s)/Grant(s).....	5
1.4	Test Methodology.....	6
1.5	Test Facility .....	6
1.6	Test Equipment .....	7
2	System Test Configuration .....	8
2.1	Characterization of Sample Tested .....	8
2.2	EUT Exercise Software .....	8
2.3	Special Accessories .....	8
2.4	Test Rationale .....	8
2.5	Tested System Details .....	8
2.6	Configuration of Tested System .....	9
2.7	Equipment Modifications .....	11
2.8	Test Results .....	11
2.9	Measurement Uncertainty .....	11
2.9.1	Conducted Emissions Measurement Uncertainty .....	11
2.9.2	Radiated Emissions Measurement Uncertainty .....	11
3	Power Line Conducted Emissions Data (47 CFR 18.307) .....	12
3.1	Test Site Description .....	12
4	Radiated Emissions Data (47 CFR 18.301, 18.303, 18.305) .....	14
4.1	Test Site Description .....	14
4.2	Test Limits/Calculations .....	16
4.2.1	Part 18 ISM Test Limits .....	16
4.2.2	General Field Strength Calculation .....	17
5	Variation in Operating Frequency.....	22
5.1	Variation in Operating Frequency Over Time .....	22
5.2	Variation in Operating Frequency with Line Voltage .....	24
6	EUT Power measurements .....	27
6.1	Output Power measurements.....	27
6.2	Input Power .....	29
7	Radiation Hazard Measurement.....	30
8	Test Results .....	31

### List of Tables

Table 1. Test Equipment .....	7
Table 2. EUT and Peripherals .....	8
Table 3. Detail of I/O Cables Attached to EUT .....	9
Table 4. Power Line Conducted Emissions .....	13
Table 6. Radiated Emissions Data 30 MHz to 1 GHz .....	18
Table 7. Radiated Emissions Data 1 GHz to 25 GHz .....	19
Table 10. Measured Frequency Variation .....	22
Table 11. Measured Supply Voltage Variation .....	24
Table 14. Output Power Results .....	27
Table 16. Input Power .....	29

### List of Figures

Figure 1. Block Diagram of Radiated Emissions Test Configuration Below 1GHz .....	9
Figure 2. Block Diagram of Radiated Emissions Test Configuration Above 1GHz .....	10
Figure 3. Block Diagram of AC Power Lines Conducted Emissions Test Configuration....	10
Figure 4. Radiated Emissions Disturbance Measurement Facility Diagram .....	15
Figure 5. Horizontal Antenna Position, 30-1000 MHz .....	20
Figure 6. Vertical Antenna Position, 30-1000 MHz .....	20
Figure 7. Horizontal Antenna Position, 1 – 24 GHz .....	21
Figure 8. Vertical Antenna Position, 1 – 24 GHz .....	21
Figure 9. Frequency Variation at Nominal Voltage .....	23
Figure 10. Frequency Variation at Low Voltage .....	25
Figure 11. Frequency Variation at High Voltage .....	26
Figure 12. Output Power Test Setup .....	28
Figure 13. Input Power Test Setup .....	29
Figure 14. Radiation Leakage Setup .....	30

### List of Attachments

Agency Agreement  
Application Forms  
Letter of Confidentiality  
Equipment Label(s)  
Block Diagram(s)  
Schematic(s)  
Test Configuration Photographs  
Internal Photographs  
External Photographs  
User's Manual

## **1 General Information**

### **1.1 Purpose of the Report**

This report is prepared as a means of conveying test results and information concerning the suitability of this exact product for public distribution according to the FCC Rules and Regulations Part 18.305 and 18.307.

### **1.2 Product Description**

The Equipment under Test (EUT) is the Sharp Corporation SMD2499FSC Smart radiant range-top with microwave drawer oven. The EUT is rated at 900 Watts. The input power is rated at 240/120 VAC, 60Hz. Full Radiated Emissions and Conducted Emissions testing was completed and results with each are reported herein.

The EUT contains a Wi-Fi radio module bearing FCC ID: FX3-B01 and IC: 2878F-B01

The EUT was tested at 100% microwave power setting.

### **1.3 Related Submittal(s)/Grant(s)**

The EUT is subject to the following FCC authorizations:

- a) Certification under FCC CFR 47:2007.
- b) Verification under Part 18.305 and 18.307 Subpart C, Consumer.

The Verification requirement shares many common report elements with the Certification report. Therefore, though this report is mostly intended to provide data for the Certification process, the Verification authorization report (Part 18.305 and 18.307) for the EUT is included herein.

## **1.4 Test Methodology**

The EUT was configured as shown in the block diagram and photographs herein. The sample was tested per FCC measurement Procedure MP-5, "Methods of Measurement of Radio Noise Emissions from Industrial, Scientific and Medical Equipment" (1986) as well as per CFR 47 part 18. Conducted and radiated emissions data were taken with the Test Receiver or Spectrum Analyzer's resolution bandwidth adjusted to 9 kHz and 120 kHz, respectively. At frequencies above 1 GHz, the resolution bandwidth was increased to 1 MHz. The video bandwidth was three times more than resolution bandwidth on the spectrum analyzer. All measurements are peak unless stated otherwise. Interconnecting cables were manipulated as necessary to maximize emissions.

## **1.5 Test Facility**

Testing was performed at US Tech's measurement facility at 3505 Francis Circle, Alpharetta, GA. This site has been fully described and registered with the FCC under site designation number US5301. Additionally, this site has also been fully described and submitted to Industry Canada (IC) and has been approved under IC site number 9900A-1.

US Tech currently is Accredited by the NIST NVLAP organization, Lab Code: 200162-0, and FCC Part 18 is in the Scope of Accreditation.

## 1.6 Test Equipment

The following table details the test equipment used in the evaluation of this product.

**Table 1. Test Equipment**

INSTRUMENT	MODEL NUMBER	MANUFACTURER	SERIAL NUMBER	CALIBRATION DUE DATE
SPECTRUM ANALYZER	8593E	HEWLETT PACKARD	3205A00124	2/28/2024 2 yr.
SPECTRUM ANALYZER	E4407B	AGILENT	US41442935	9/2/2022 2 yr.
SPECTRUM ANALYZER	DSA815	RIGOL	DSA8A180300138	1/6/2024 2 yr.
BICONICAL ANTENNA	3110B	EMCO	9306-1708	8/17/2023 2 yr.
HORN ANTENNA	SAS-571	A. H. SYSTEMS	605	4/28/2024 2 yr.
LOG PERIODIC ANTENNA	3146	EMCO	9110-3236	12/13/2023 2 yr.
PREAMP	8447D	HEWLETT-PACKARD	1937A02980	6/9/2023
PREAMP	8449B	HEWLETT PACKARD	3008A00914	2/11/2023
LISN	9247-50-TS-50-N	SOLAR ELECTRONICS	955824	2/8/2023
LISN	9247-50-TS-50-N	SOLAR ELECTRONICS	955825	2/8/2023
LISN	9247-50-TS-50-N	SOLAR ELECTRONICS	955826	2/8/2023
Isotropic Field Probe	FP4036	AMPLIFIER RESEARCH	305667	6/3/2023
Digital Power Analyzer	2101	VALHALLA	3/1/6350 0:00	Extended 9/15/2022

Note: The calibration interval of the above test instruments is 12 months unless stated otherwise and all calibrations are traceable to NIST/USA.

## 2 System Test Configuration

### 2.1 Characterization of Sample Tested

The sample used for testing was received on August 5, 2022 in good condition.

### 2.2 EUT Exercise Software

No software was exercised while the EUT was being tested. The EUT was programmed to perform at 100% power level. The test was performed using 1000 ml of tap water in a 150 mm diameter cylindrical glass vessel placed in the center of the oven.

### 2.3 Special Accessories

There were not special accessories required for this product testing.

### 2.4 Test Rationale

The EUT, cable and wiring arrangement, and mode of operation that produced the emissions with the highest levels relative to the applicable limits was selected for final measurements.

The interconnect cable(s) and/or power cord(s) were moved into various positions of the most likely configurations to maximize the emissions. In this case the placement of the cables had negligible effects. The test configuration photographs represent the final configuration used for testing.

### 2.5 Tested System Details

**Table 2. EUT and Peripherals**

PERIPHERAL/ MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID	CABLES P/D
Radiant Range Top Microwave Drawer/ Sharp (EUT)	STR3065HS	Engineering Sample	FCC: APYDMR0181 Contains FCC: FX3-B01 IC: 2878F-B01	P

U= unshielded S= shielded P= Power D= Data



**Table 3. Detail of I/O Cables Attached to EUT**

DESCRIPTION OF CABLE	DETAILS OF CABLE			CABLE LENGTH
Power Cable	Manufacturer and Part Number			1.5 m
	CND			
	Shield Type	Shield Termination	Type of Backshell	
	NA	NA	NA	

**Shield Type**

N/A = None  
 F = Foil  
 B = Braided  
 2B = Double Braided  
 CND = Could Not Determine  
 C = Conduit

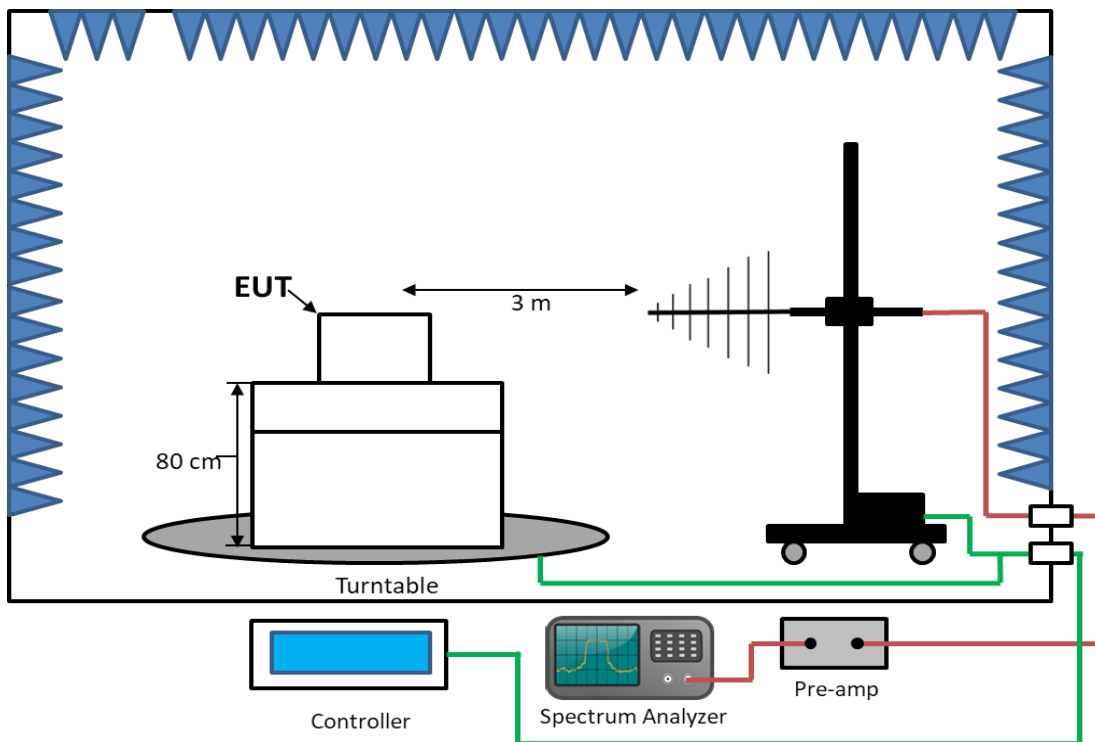
**Shield Termination**

N/A = None  
 360 = 360°  
 P = Pigtail/Drain Wire  
 CND = Could Not Determine

**Type of Backshell**

N/A = Not Applicable  
 PS = Plastic Shielded  
 PU = Plastic Unshielded  
 MS = Metal Shielded  
 MU = Metal Unshielded

**2.6 Configuration of Tested System**



**Figure 1. Block Diagram of Radiated Emissions Test Configuration Below 1GHz**

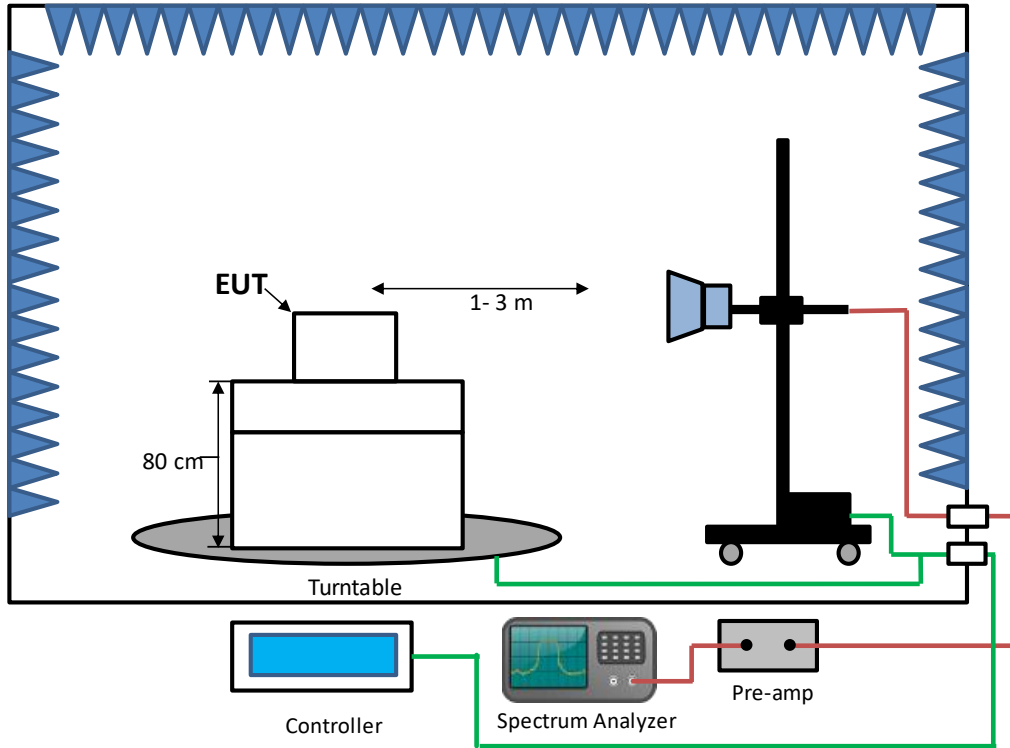


Figure 2. Block Diagram of Radiated Emissions Test Configuration Above 1GHz

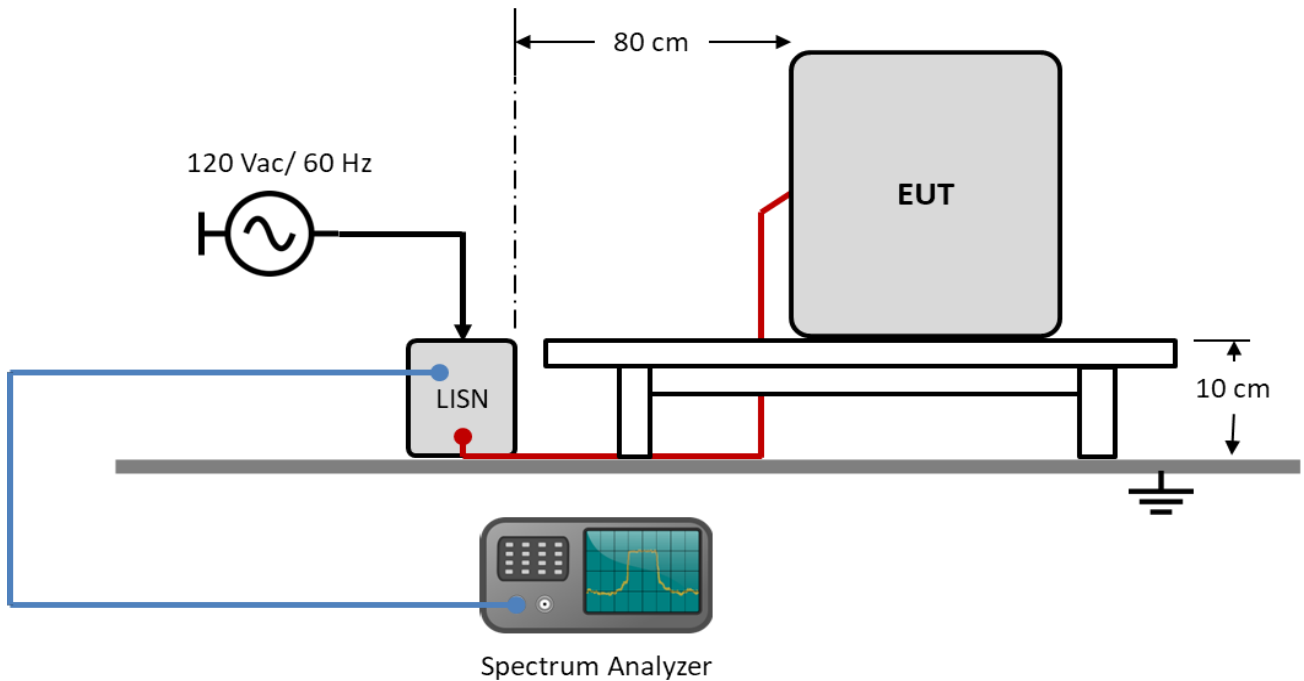


Figure 3. Block Diagram of AC Power Lines Conducted Emissions Test Configuration

## **2.7 Equipment Modifications**

No modifications were made to the EUT in order for it to meet the requirements.

## **2.8 Test Results**

Line conducted emissions testing was conducted and compared to 18.307(b) limits. The worst case line conducted emission was 1.43 dB below the limit at 0.7000 MHz on the Phase line. All other conducted emissions were at least 2.31 dB below the limit.

Radiated emissions testing was conducted and compared to 18.305 (a) and (b) limits. The worst case radiated emission in the frequency range 30 MHz to 24 GHz was 14.6 dB below the limit at 490.64 MHz; all other radiated emissions were at least 18.6 dB below the limit.

## **2.9 Measurement Uncertainty**

### **2.9.1 Conducted Emissions Measurement Uncertainty**

Measurement Uncertainty (within a 95% confidence level) for this test is  $\pm 2.8$  dB.

### **2.9.2 Radiated Emissions Measurement Uncertainty**

At a measurement Distance of 3 m, the measurement uncertainty (with a 95% confidence level) for this test using a Biconical Antenna is  $\pm 5.40$  dB. The measurement uncertainty (with a 95% confidence level) for this test using a Log Periodic Antenna is  $\pm 5.19$  dB. The measurement uncertainty (with a 95% confidence level) for this test using a double ridge horn antenna is  $\pm 5.08$  dB.

### **3 Power Line Conducted Emissions Data (47 CFR 18.307)**

#### **3.1 Test Site Description**

The mains terminal interference measurement facility is a shielded room (Lectro Magnetics, Inc., Type LDC6-0812-8-2793) 4.0 m deep x 2.5 m wide x 2.5 m high. Power for the shielded room is filtered (Lectroline, EMX-1020-2, rated 125/250 V, 20 A, 50/60 Hz).

The artificial mains networks are Solar Electronics models 8028. A nonconductive table 1.5 m deep x 1.0 m wide x 0.8 m high is used for tabletop equipment. All grounded conducting surfaces including the case or cases of one or more artificial mains networks is at least 0.8 m from any surface of the EUT. The EUT is a floor standing unit; therefore, the unit was placed on the floor 50cm away from all vertical coupling surfaces.

The load used for this measurement was with 700 to 1000 ml of water located in the center of the oven.

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 Report Number:  
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 Model:

FCC Part 18 Subpart C Certification  
 22-0219  
 August 23, 2022  
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 APYDMR0181  
 STR3065HS

**Table 4. Power Line Conducted Emissions**

Conducted Emissions 120 VAC/60 Hz						
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB)	Peak Results (dBuV)	Average Limits (dBuV)	Margin (dB)	Detector Used
<b>PHASE 1</b>						
0.1600	51.45	0.27	51.72	56*	4.28	QP
0.1600	30.53	0.27	30.80	46	15.2	AVG
0.7200	38.51	0.45	38.96	46	7.04	PK
1.6100	40.7	0.42	41.12	46	4.88	PK
9.9600	31.19	0.57	31.76	50	18.24	PK
14.7300	35.98	0.81	36.79	50	13.21	PK
24.3500	41.86	1.41	43.27	50	6.73	PK
<b>PHASE 2</b>						
0.1700	40.95	0.27	41.22	46	4.78	PK
0.7000	44.12	0.45	44.57	46	1.43	PK
1.3800	50.1	0.52	50.62	56*	5.38	PK
1.3800	21.78	0.52	22.3	46	23.7	AVG
8.2200	30.9	0.42	31.32	50	18.68	PK
17.8500	34.04	0.97	35.01	50	14.99	PK
24.5500	45.01	1.43	46.44	50	3.56	PK
<b>NEUTRAL</b>						
0.1500	51.29	0.27	51.56	56*	4.44	QP
0.1500	33.69	0.27	33.96	46	12.04	AVG
0.8100	41.81	0.79	42.6	46	3.40	PK
1.4500	50.7	0.52	51.22	56*	4.78	PK
1.4500	21.77	0.52	22.29	46	23.71	AVG
9.7000	30.2	0.52	30.72	50	19.28	PK
10.7300	34.85	0.59	35.44	50	14.56	PK
21.5300	46.46	1.23	47.69	50	2.31	PK

“\*” denotes Quasi-peak limit used.

Sample Calculation at 0.1600 MHz:

Magnitude of Measured Frequency	57.36 dBuV
+Correction Factors	0.27 dB
Corrected Result	54.63 dBuV

Test Date: August 11, 2022

Tested by  
 Signature: *Ian Charboneau*

Name: Ian Charboneau

## **4. Radiated Emissions Data (47 CFR 18.301, 18.303, 18.305)**

### **4.1 Test Site Description**

The radiated emissions disturbance measurement facility consists of an 8.5m meters long by 5.5 meter wide and 5.6 meter high shielded semi anechoic EMC Chamber. The chamber is lined with ferrite core and RF absorbers. The quiet zone is 2.0 meters.

The test facility layout is shown in the figure below. A remotely controlled 2.0 m diameter flush-mounted turntable is provided for rotating (through at least 360 degrees) the EUT. A nonconductive table, 1.5 m long by 1.0 m wide by 0.8 m high is used in conjunction with the turntable for tabletop equipment. Electrical service for the EUT is provided through openings at the center of the turntable.

Provision for receiving antenna power and data wires is provided by junction boxes place at the parameter of the chamber. The receive antenna mast is remotely controlled and can be varied in height from 1 m to 4 m.

Power and data cables for the radiated disturbance measurement facility are run through PVC tubing under the raised floor or are laid directly upon the ground plane.

Radiated emissions were evaluated based on 47 CFR 18.309 and MP-5 (1986). During testing the EUT was tested up to the 10<sup>th</sup> harmonic or the highest detectable emission.

The load used for frequency measurement was 1000 ml of water in the beaker located in the center of the oven. For radiation on second and third harmonic two loads, one of 700 ml and one of 300 ml of water was used. Each load was tested both with the beaker located in the center of the oven and with it in the right front corner.

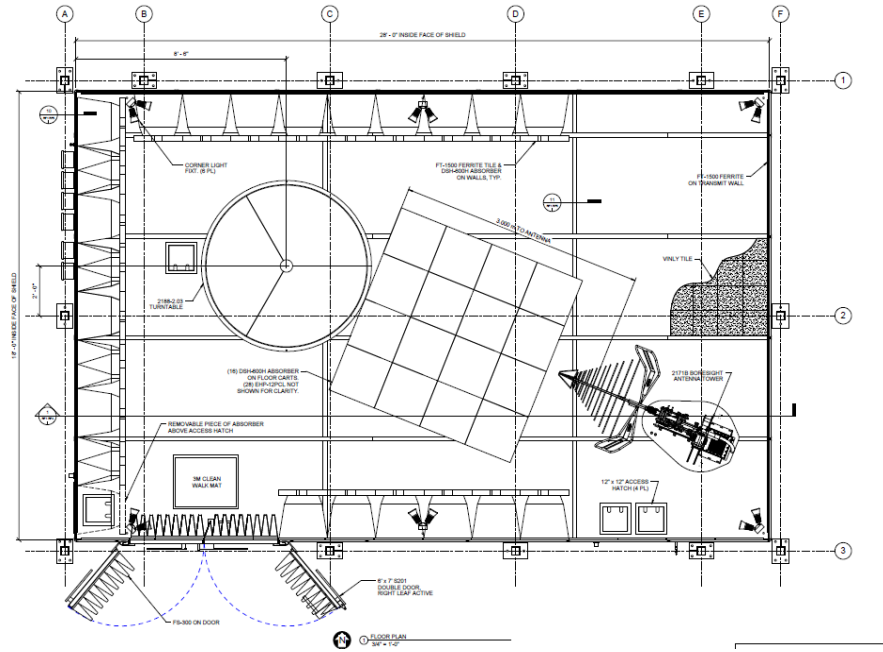


Figure 4. Radiated Emissions Disturbance Measurement Facility Diagram

## 4.2 Test Limits/Calculations

### 4.2.1 Part 18 ISM Test Limits

Per 47 CFR 18.301 the ISM equipment may be operated on any frequency above 9 kHz except as indicated in 47 CFR 18.303. The field strength limit per 47 CFR 18.305 for ISM equipment operating on a frequency specified in 47 CFR 18.301 is permitted unlimited radiated energy in the band specified for that frequency. The field strength levels of emissions which lie outside the bands specified in 47 CFR 18.301 must not exceed the limits detailed in CFR 18.305, unless otherwise indicated.

Per the table in 18.301, the frequency 2450 MHz  $\pm$ 50MHz is allowed unlimited radiated energy. The EUT fundamental frequency is stated to be 2450 MHz.

The field strength levels of emissions which lie outside the bands specified in 18.301, unless otherwise indicated, shall not exceed the following:

Any type of equipment unless otherwise specified that operate above 500 watts: 25 uV/m X SQRT (power/500) at the distance of 300m.

Therefore, the limit converted to dBuV/m is:  $20 \log [(25) * \sqrt{(EUT \text{ power}/500)}] = \text{dBuV/m} + 20 \log(300/\text{test distance used}) = \text{XX.X dBuV/m}$

The measured EUT power P is 900 Watts as rated and tested by the manufacturer. This value was used in the calculation of the limit for this test.

Limit at 3 meters is  $20 \log [(25) * \sqrt{(950/500)}] = 30.75 + 20 \log(300/3) = 70.75 \text{ dBuV/m}$ .



#### 4.2.2 General Field Strength Calculation

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

$$FS = RA + CF - AG$$

where

- FS = Field Strength
- RA = Receiver Amplitude (dBuV)
- CF = Correction Factor (Antenna Factor & Cable Loss) (dB/m)
- AG = Amplifier Gain

Assuming a receiver reading of 100 dBuV and a correction factor of 11.8 dB/m, the following calculation would apply:

$$FS \text{ (dBuV/m)} = 100 \text{ dBuV} + 11.8 \text{ dB/m} = 111.8 \text{ dBuV/m}$$

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FCC Part 18 Subpart C Certification  
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 APYDMR0181  
 STR3065HS

**Table 5. Radiated Emissions Data 30 MHz to 1 GHz**


Radiated Emissions							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	Average Limits (dBuV/m)	Application Test Distance/ Polarization	Margin (dB)	Detector Used
320.96	54.25	-10.98	43.27	70.8	3m./HORZ	27.5	PK
545.06	59.10	-6.93	52.16	70.8	3m./HORZ	18.6	PK
285.68	56.59	-12.51	44.08	70.8	3m./VERT	26.7	PK
490.64	65.05	-8.83	56.22	70.8	3m./VERT	14.6	PK
<b>Measurements were made over the frequency range of 30 MHz – 1000 MHz</b>							

Note: During spurious emissions testing both the microwave oven and WiFi radio were on and transmitting as normally intended. The results above show no increase in spurious emissions due to intermodulation effects or other effects as a result of having both radios operating simultaneously. The results do not warrant additional testing beyond the above test.

Sample Calculation at 320.96 MHz:

Magnitude of Measured Frequency	54.25 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-10.98 dB/m
Corrected Result	43.27 dBuV/m

Test Date: August 17, 2022

Tested by  
 Signature: 

Name: Ian Charboneau

**Table 6. Radiated Emissions Data 1 GHz to 25 GHz**

Radiated Emissions							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	Average Limits (dBuV/m)	Application Test Distance/ Polarization	Margin (dB)	Detector Used
2137.00	36.3	-7.2	29.0	70.8	3.0m./HORZ	41.8	AVG
2614.00	36.4	-5.1	31.3	70.8	3.0m./HORZ	39.5	AVG
4339.00	36.6	-2.3	34.3	70.8	3.0m./HORZ	36.5	AVG
4913.00	38.3	-0.1	38.2	70.8	3.0m./HORZ	32.6	AVG
8598.00	33.9	5.0	38.9	70.8	1.0m./HORZ	31.9	AVG
7086.00	31.3	5.4	36.7	70.8	1.0m./HORZ	34.1	AVG
10081.00	33.3	6.9	40.2	70.8	1.0m./HORZ	30.6	AVG
14736.00	31.6	14.3	45.8	70.8	1.0m./HORZ	25.0	AVG
2137.00	34.6	-7.2	27.3	70.8	3.0m./VERT	43.5	AVG
2614.00	34.1	-5.1	29.1	70.8	3.0m./VERT	41.7	AVG
4339.00	34.7	-2.3	32.4	70.8	3.0m./VERT	38.4	AVG
4913.00	38.3	0.0	38.3	70.8	3.0m./VERT	32.5	AVG
8598.00	36.6	5.1	41.7	70.8	1.0m./VERT	29.1	AVG
7086.00	32.3	5.3	37.6	70.8	1.0m./VERT	33.2	AVG
10081.00	33.3	6.9	40.3	70.8	1.0m./VERT	30.5	AVG
14749.00	32.5	14.4	46.9	70.8	1.0m./VERT	23.9	AVG
<b>Measurements were made over the frequency range of 1 GHz to 25 GHz.            All other emissions were more than 20 dB below the limit.</b>							

Note 1: For measurements made at test distance of 1 meter an extrapolation factor of -9.5 dB was applied to correct the data for a 3 meter test distance.

Note 2: During spurious emissions testing both the microwave oven and WiFi radios were on and transmitting as normally intended. The results above show no increase in spurious emissions due to intermodulation effects or other effects as a result of having both radios operating simultaneously. The results do not warrant additional testing beyond the above test.

Sample Calculation at 2137.00 MHz:

Magnitude of Measured Frequency	36.3 dBuV
+Antenna Factor + Cable Loss+ Amplifier Gain	-7.2 dB/m
Corrected Result	29.0 dBuV/m

Test Date: August 14, 2022

Tested by  
 Signature: 

Name: Ian Charboneau

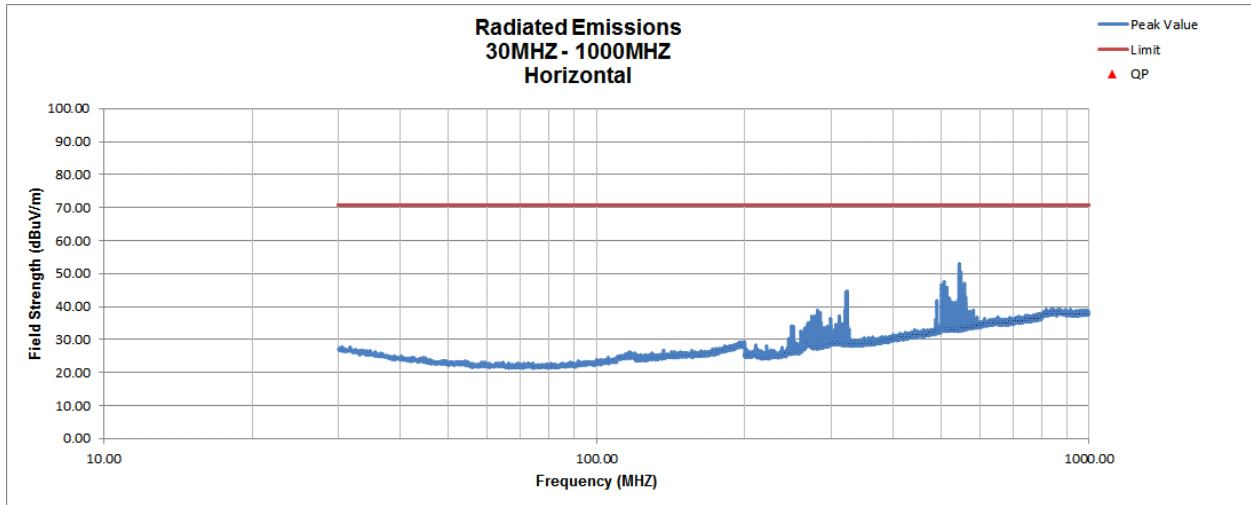


Figure 5. Horizontal Antenna Position, 30-1000 MHz

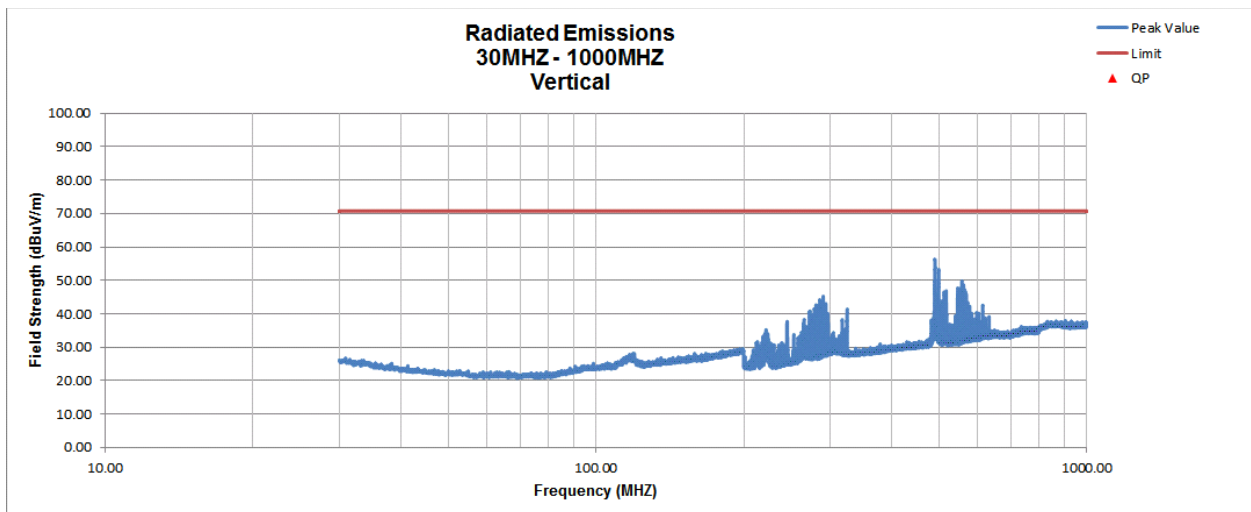
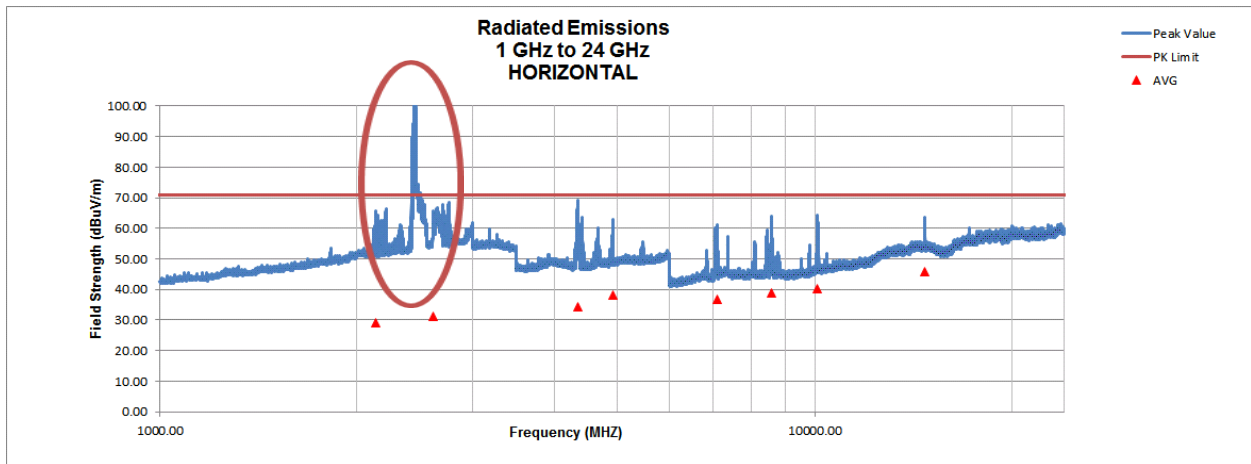


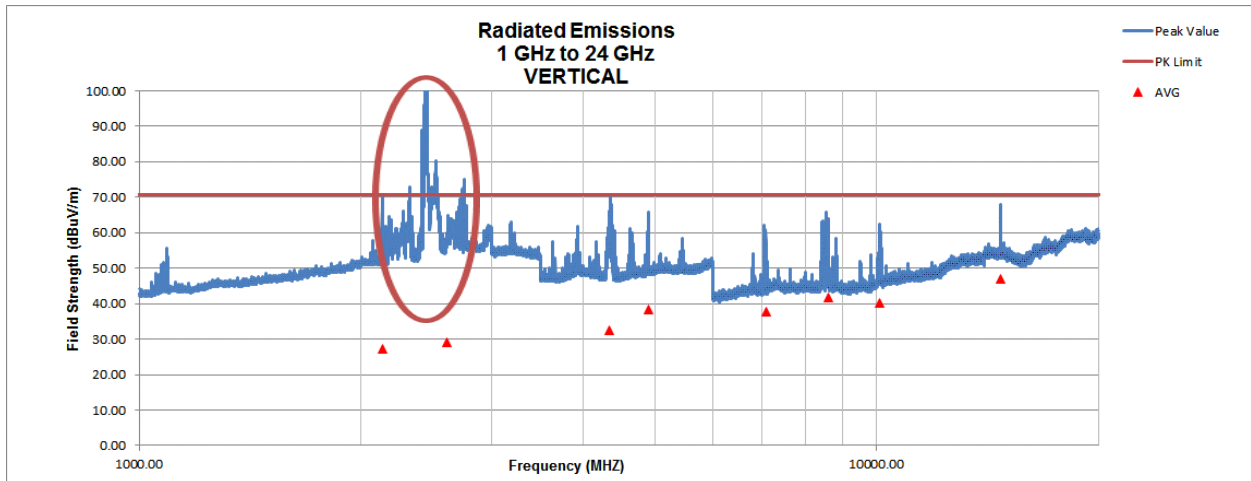
Figure 6. Vertical Antenna Position, 30-1000 MHz



\*Red Circle- Microwave oven and WiFi radio

**Figure 7. Horizontal Antenna Position, 1 – 24 GHz**

**Note: emissions beyond 18 GHz did not exceed the noise-floor level.**



\*Red Circle- Microwave oven and WiFi radio

**Figure 8. Vertical Antenna Position, 1 – 24 GHz**

**Note: emissions beyond 18 GHz did not exceed the noise-floor level.**

## 5 Variation in Operating Frequency

Frequency variation testing was performed per MP-5 section 4.5. The EUT was set up inside the EMC Chamber, and a double ridge horn antenna and spectrum analyzer were used to measure the fundamental frequency of the EUT. The test results are presented following.

### 5.1 Variation in Operating Frequency Over Time

The operating frequency was measured using a spectrum analyzer. Starting with the EUT at room temperature, a 1000 mL water load was placed in the center of the oven and the oven was operated at maximum output power. The fundamental operating frequency was monitored over the length of time taken for the water level to reduce to 20 percent of the original level. In this case, it took 66 mins for the water level to reach 20% or 200 ml.

During the test, the fundamental frequency of the EUT must remain within the ISM frequency band of 2450 MHz  $\pm$ 50 MHz, 2400 MHz to 2500 MHz. The results of this test are presented below.

**Table 7. Measured Frequency Variation**

Low Frequency (MHz)	High Frequency (MHz)
2448	2464

Test Date: August 19, 2022

Tested By  
Signature: 

Name: Ian Charboneau

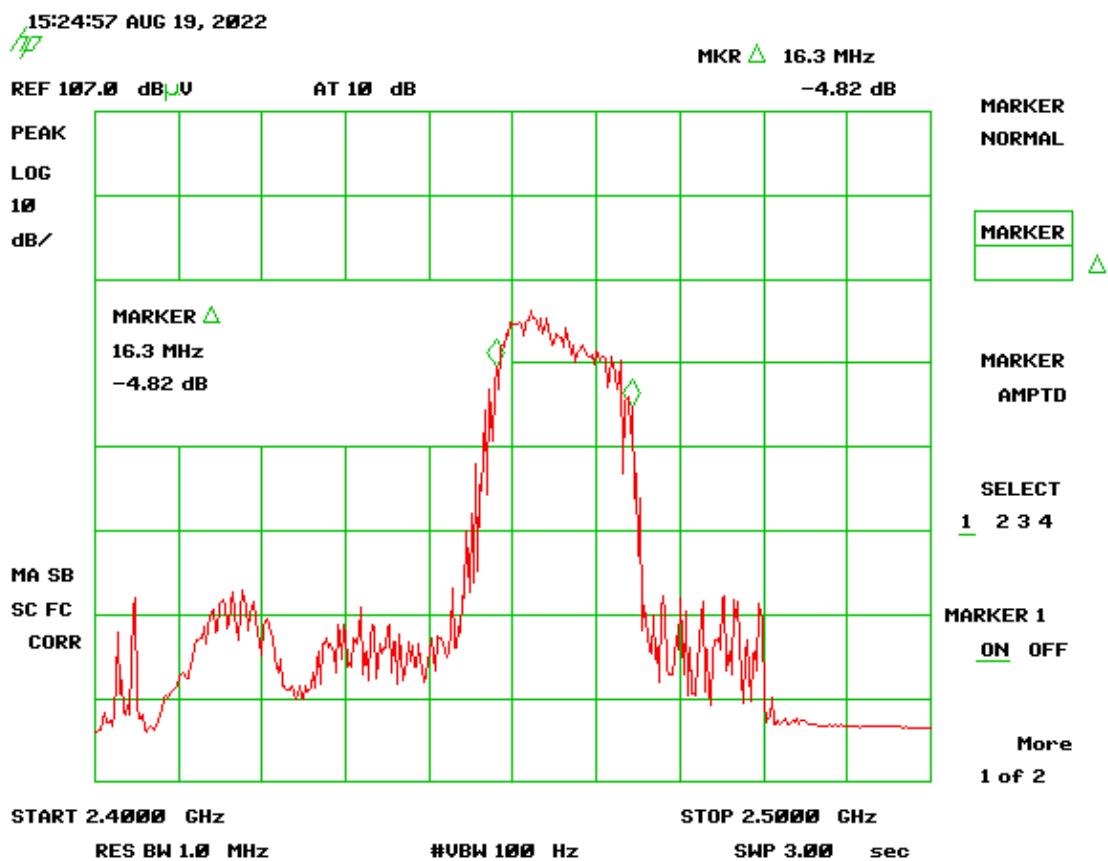


Figure 9. Frequency Variation at Nominal Voltage

## 5.2 Variation in Operating Frequency with Line Voltage

The EUT was operated/warmed up for at least 10 minutes of use with a 1000 mL water load at room temperature at the beginning of the test. Then the operating frequency was monitored as the input voltage was varied between 80 and 125 percent of the nominal rating. At each varied voltage level, the EUT was allowed to operate for at least 5 minutes.

During the test, the fundamental frequency of the EUT must remain within the ISM frequency band of 2450 MHz  $\pm$ 50 MHz, or 2400 - 2500 MHz. The results of this test are presented following.

Line voltage varied from 96 VAC to 150 VAC.

**Table 8. Measured Supply Voltage Variation**

%	Supply Voltage (V) at 60 Hz	Measured Frequency (MHz)	
		Low Frequency	High Frequency
80%	96	2454	2459
125%	150	2448	2459

Test Date: August 19, 2022

Tested By  
Signature: 

Name: Ian Charboneau



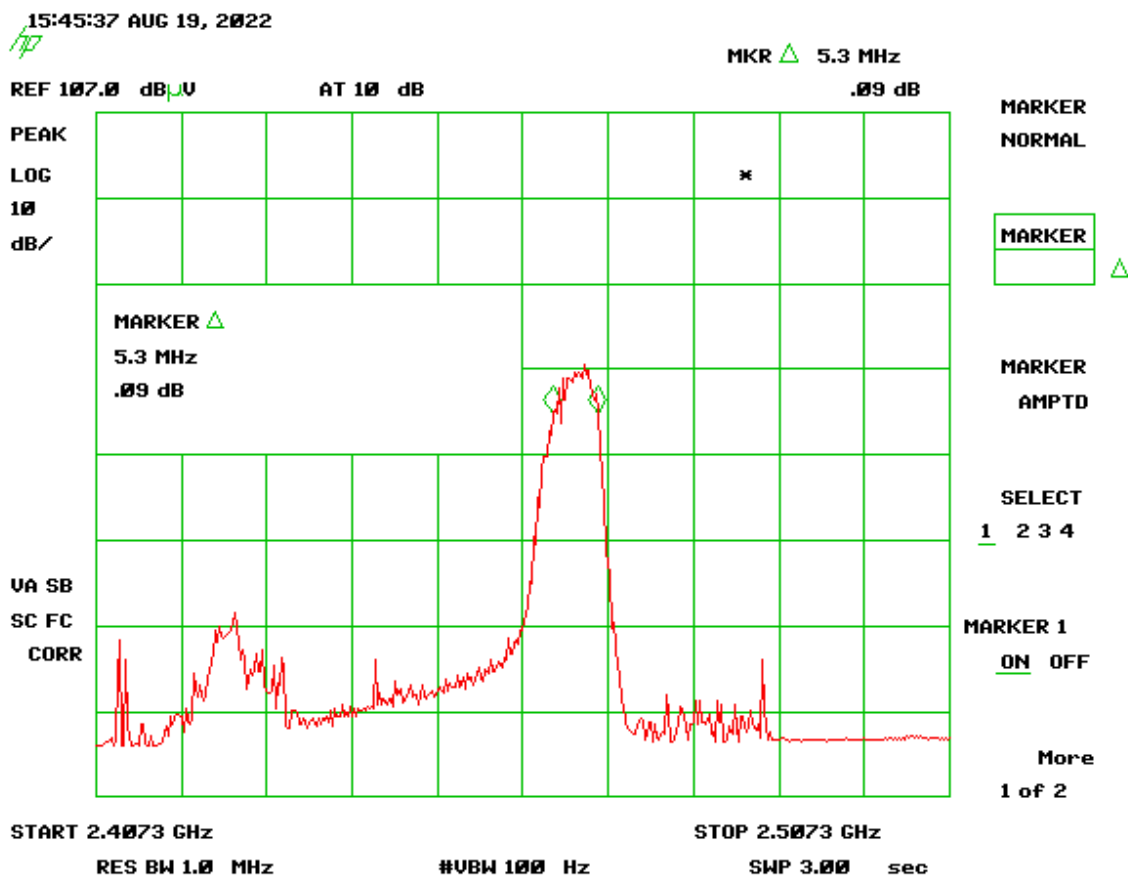


Figure 10. Frequency Variation at Low Voltage

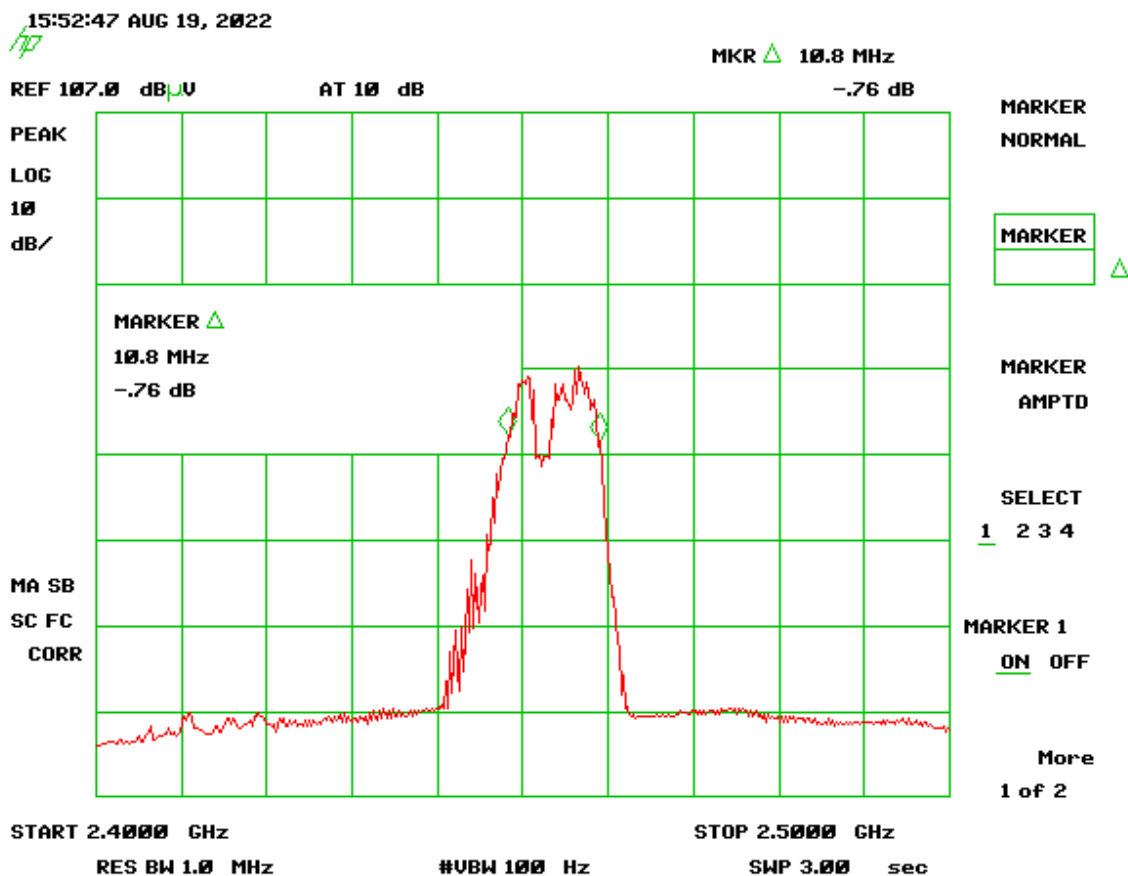


Figure 11. Frequency Variation at High Voltage

## 6.EUT Power measurements

### 6.1 Output Power measurements

The Caloric Method was used to determine maximum output power. The initial temperature of a 1000 ml water load was measured for ovens rated at 1000 watts or less power output. For ovens more than 1000 watts output rating, additional beakers by fraction thereof are used if necessary.

The water load was placed in the center of the oven. The oven was operated at maximum output power for 120 seconds, then the temperature of the water was re-measured.

Three trials were performed and then the results calculated using the following formula:  
Output Power= $((4.2 \text{ Joules/Cal}) * (\text{Volumn in ml}) * (\text{Temp Rise})) / (\text{Time in seconds})$

**Table 9. Output Power Results**

Start Temperature (°C)	Final Temperature (°C)	Temperature Rise	Elapsed Time (seconds)	Water Volume (ml)	RF Power (Watts)
31.1	52.3	21.2	120.0	1000.00	742.0
33.2	52.8	19.6	120.0	1000.00	686.0
29.6	49.1	19.5	120.0	1000.00	682.5

Average from the three trials: 703.5 Watts

Test Date: August 19, 2022

Tested By  
Signature: 

Name: Ian Charboneau



**Figure 12. Output Power Test Setup**

## 6.2 Input Power

Input power and current was measured using a power analyzer. A 1000 mL water load was placed in the center of the oven and the oven was operated at maximum output power. A 1000mL water load was chosen for its compatibility with the procedure commonly used by manufacturers to determine their input ratings.

**Table 10. Input Power**

Input Voltage (VAC/Hz)	Input Current (Amps)	Measured Input Power (Watts)	Rated Input Power (Watts)
114.51/60	12.95	1483	1700

Based on the measured input power, the EUT was found to be operating within the intended specifications.

Test Date: August 19, 2022

Tested By  
Signature: *Ian Charbonneau*

Name: Ian Charbonneau



**Figure 13. Input Power Test Setup**

### 7. Radiation Hazard Measurement

Radiation leakage was measured in the as-received condition with the oven door closed using a microwave leakage meter.

A 1000 mL water load was placed in the center of the oven and the oven was operated at maximum output power.

There was no microwave leakage exceeding a power level of 0.1mW/cm<sup>2</sup> observed at any point 5 cm or more from the external surface of the oven.

A maximum of 1.0 mW/cm<sup>2</sup> is allowed in accordance with the applicable Federal Standards. Hence, microwave leakage in the as-received condition with the oven door closed was below the maximum allowed.



Figure 14. Radiation Leakage Setup

Limit: 1.0 mW/cm<sup>2</sup>  
Signal Strength (V/m) = 3.2 V/m

$$\begin{aligned} \text{Power Flux Density (PFD)} &= \text{V/m}^2/377 = \text{W/m}^2 \\ &= 8.14^2/377 = 0.0271 \text{ W/m}^2 \\ &= (0.027 \text{ W/m}^2) (1\text{m}^2/\text{W}) (0.1 \text{ mW/cm}^2) \\ &= 0.0027\text{mW/cm}^2 \end{aligned}$$

which is << less than S = 1.0 mW/cm<sup>2</sup>

Test Date: August 19, 2022

Tested By  
Signature: Ian Charboneau

Name: Ian Charboneau

US Tech Test Report:  
Report Number:  
Issue Date:  
Customer:  
FCC ID:  
Model:

FCC Part 18 Subpart C Certification  
22-0219  
August 23, 2022  
Sharp Corporation  
APYDMR0181  
STR3065HS

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## **8 Test Results**

The EUT unconditionally passed the Technical Requirements of CFR 47 Part 18 Industrial Scientific and Medical Equipment, Subpart C Technical Standards, Part 18.305, Field Strength Limits and Part 18.307, Conducted limits and meets the criteria.