

TEST REPORT

Product : Automatic Tissue Processor
Trade mark : DAKEWE
Model/Type reference : HP300 Plus
Serial Number : 02040001
Report Number : EED32O80387801
Date of Issue : Jan. 13, 2023
Test Standards : 47 CFR Part 15 Subpart C
Test result : PASS

Prepared for:

Dakewe (Shenzhen) Medical Equipment Co., Ltd.
Floor 5, Building B, No.2 Luhui Road, Jinsha Community, Kengzi Street,
Pingshan District, Shenzhen, China

Prepared by:

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Date of issue:

Jan. 13, 2023

Check No.:9525220322



1 Version

Version No.	Date	Description
00	Jan. 13, 2023	Original

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3 Test Summary

Test Item	FCC Test Requirement	Test Method	Result
Antenna Requirement	47 CFR Part 15, Subpart C Section 15.203	ANSI C63.10 2013	Pass
Conducted Emission (150KHz to 30MHz)	47 CFR Part 15, Subpart C Section 15.207	ANSI C63.10 2013	Pass
Electric Field Strength of Fundamental and Outside the Allocated bands	47 CFR Part 15, Subpart C Section 15.225(a)/(b)/(c)	ANSI C63.10 2013	Pass
Radiated Emission	47 CFR Part 15, Subpart C Section 15.225(d)/15.209	ANSI C63.10 2013	Pass
Frequency Tolerance	47 CFR Part 15, Subpart C Section 15.225(e)	ANSI C63.10 2013	Pass
20dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section 15.215	ANSI C63.10 2013	Pass

Remark:

Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

4 General Information

4.1 Client Information

Applicant:	Dakewe (Shenzhen) Medical Equipment Co., Ltd.
Address of Applicant:	Floor 5, Building B, No.2 Luhui Road, Jinsha Community, Kengzi Street, Pingshan District, Shenzhen, China
Manufacturer:	Dakewe (Shenzhen) Medical Equipment Co., Ltd.
Address of Manufacturer:	Floor 5, Building B, No.2 Luhui Road, Jinsha Community, Kengzi Street, Pingshan District, Shenzhen, China
Factory:	Dakewe (Shenzhen) Medical Equipment Co., Ltd.
Address of Factory:	Floor 5, Building B, No.2 Luhui Road, Jinsha Community, Kengzi Street, Pingshan District, Shenzhen, China

4.2 General Description of EUT

Product Name:	Automatic Tissue Processor
Test Mode No.:	HP300 Plus
Trade mark:	DAKEWE
Product Type:	<input type="checkbox"/> Mobile <input type="checkbox"/> Portable <input checked="" type="checkbox"/> Fix Location
Operation Frequency:	13.56MHz
Modulation Type:	ASK
Antenna Type:	PCB antenna
Power Supply:	AC 100-120V
Test Voltage:	AC 120V
Sample Received Date:	Dec. 20, 2022
Sample tested Date:	Dec. 20, 2022 to Dec. 21, 2022

4.3 Test Environment & Test Mode

Operating Environment:	
Radiated Emissions:	
Temperature:	22~25.0 °C
Humidity:	50~55 % RH
Atmospheric Pressure:	1010mbar
Conducted Emissions:	
Temperature:	22~25.0 °C
Humidity:	50~55 % RH
Atmospheric Pressure:	1010mbar
Test Mode:	
Mode a:	Keep EUT working in continuous transmitting mode with 100% duty cycle.

4.4 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	Certification	Supplied by
/	/	/	/	/

4.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.6 Deviation from Standards

None.

4.7 Abnormalities from Standard Conditions

None.

4.8 Other Information Requested by the Customer

None.

4.9 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	3.3dB (9kHz-30MHz)
		4.3dB (30MHz-1GHz)
		4.5dB (1GHz-12.75GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

4.10 Equipment List

Equipment	Manufacturer	Model No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
3M Chamber & Accessory Equipment	TDK	SAC-3	---	05/22/2022	05/21/2025
Receiver	R&S	ESCI7	100938-003	09/28/2022	09/27/2023
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	9163-618	05/22/2022	05/21/2023
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-076	04/17/2021	04/16/2024
Multi device Controller	maturio	NCD/070/10711112	---	---	---
Horn Antenna	ETS-LINGREN	BBHA 9120D	9120D-1869	04/17/2021	04/16/2024
Microwave Preamplifier	Agilent	8449B	3008A02425	06/20/2022	06/19/2023
high-low temperature test chamber	Dong Guang Qin Zhuo	LK-80GA	QZ20150611879	12-24-2021	12-23-2022
Receiver	R&S	ESCI	100009	05-12-2022	05-11-2023

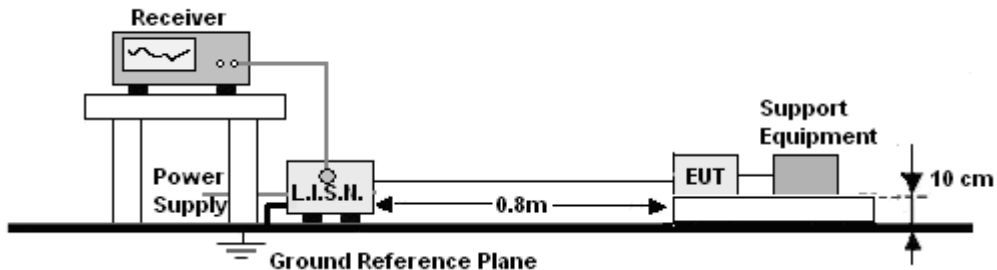
Conducted disturbance Test					
Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Receiver	R&S	ESCI	100435	05-06-2022	05-05-2023
Temperature/ Humidity Indicator	Defu	TH128	/	---	---
LISN	R&S	ENV216	100098	09-27-2022	09-26-2023
Barometer	changchun	DYM3	1188	---	---

5 Test results and Measurement Data

5.1 Antenna Requirement

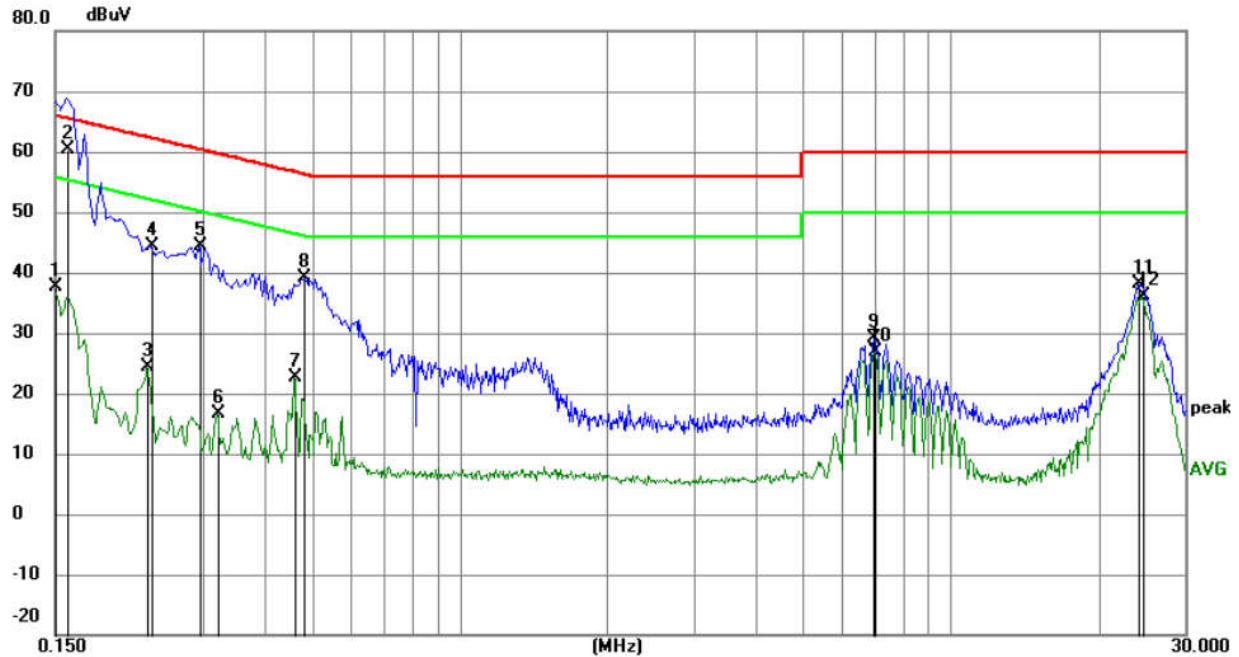
Standard requirement:	47 CFR Part15 C Section 15.203
15.203 requirement:	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
EUT Antenna:	
The antenna is PCB antenna.	

5.2 Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207		
Test Method:	ANSI C63.10: 2013		
Test Frequency Range:	150kHz to 30MHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	* Decreases with the logarithm of the frequency.		
Test Procedure:	<p>1) The mains terminal disturbance voltage test was conducted in a shielded room.</p> <p>2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.</p> <p>3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.</p> <p>4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.</p> <p>5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.</p>		
Test Setup:			
Test Mode:	Transmitting with ASK modulation.		
Test Results:	Pass		

Measurement Data

Live line:

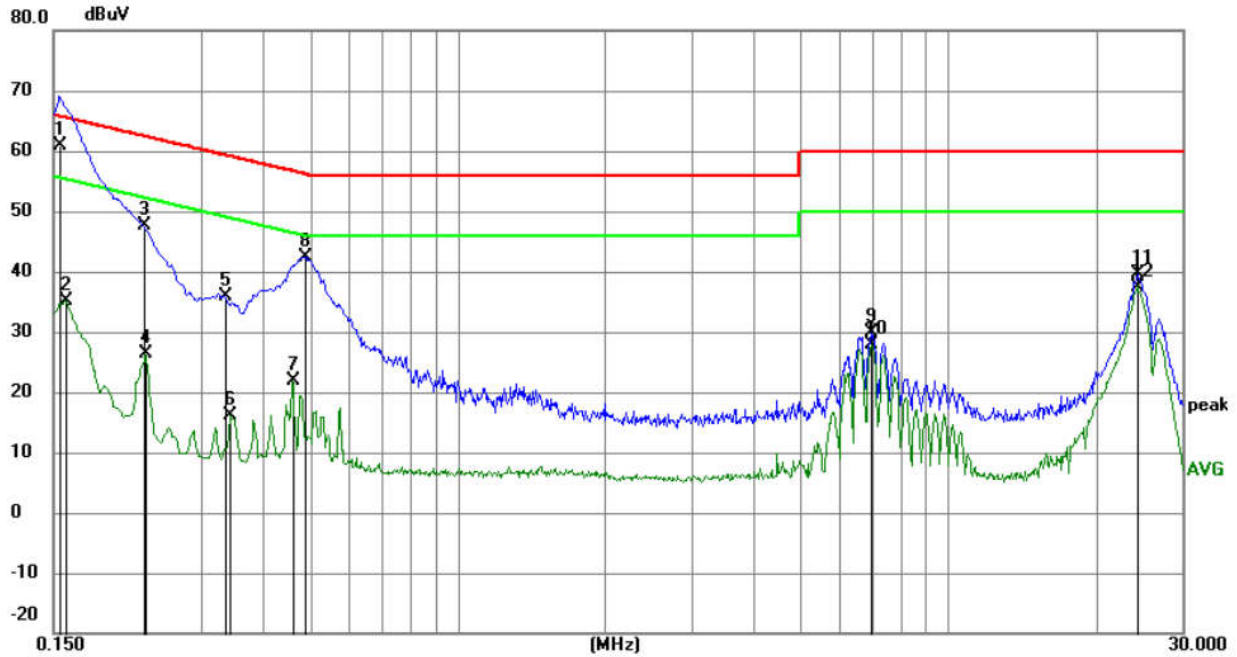


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1500	27.72	9.87	37.59	56.00	-18.41	AVG	
2	*	0.1590	50.53	9.87	60.40	65.52	-5.12	QP	
3		0.2310	14.45	9.93	24.38	52.41	-28.03	AVG	
4		0.2355	34.49	9.94	44.43	62.25	-17.82	QP	
5		0.2940	34.34	10.06	44.40	60.41	-16.01	QP	
6		0.3209	6.66	10.05	16.71	49.68	-32.97	AVG	
7		0.4605	12.75	9.96	22.71	46.68	-23.97	AVG	
8		0.4830	29.13	9.95	39.08	56.29	-17.21	QP	
9		6.9810	19.22	9.79	29.01	60.00	-30.99	QP	
10		6.9990	17.11	9.79	26.90	50.00	-23.10	AVG	
11		24.0540	28.13	9.99	38.12	60.00	-21.88	QP	
12		24.6120	26.02	10.00	36.02	50.00	-13.98	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral line:

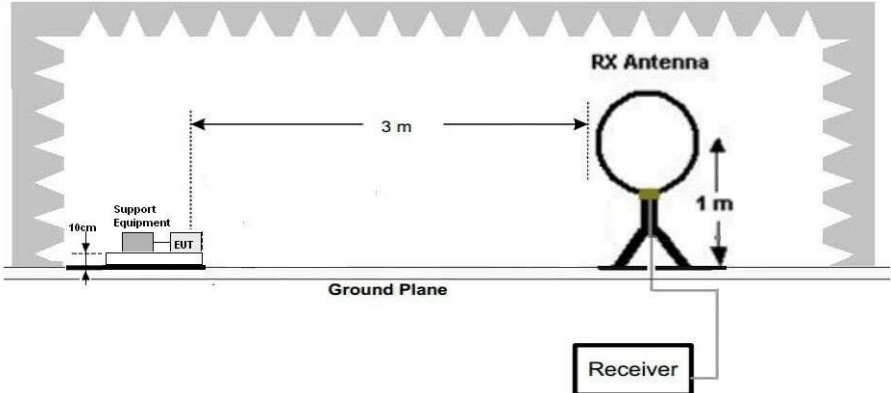


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1545	50.93	9.87	60.80	65.75	-4.95	QP	
2		0.1590	25.15	9.87	35.02	55.52	-20.50	AVG	
3		0.2280	37.64	9.93	47.57	62.52	-14.95	QP	
4		0.2310	16.47	9.93	26.40	52.41	-26.01	AVG	
5		0.3345	25.91	10.04	35.95	59.34	-23.39	QP	
6		0.3435	6.02	10.03	16.05	49.12	-33.07	AVG	
7		0.4605	12.00	9.96	21.96	46.68	-24.72	AVG	
8		0.4875	32.48	9.95	42.43	56.21	-13.78	QP	
9		6.9810	20.06	9.79	29.85	60.00	-30.15	QP	
10		6.9810	18.09	9.79	27.88	50.00	-22.12	AVG	
11		24.2744	29.52	10.00	39.52	60.00	-20.48	QP	
12		24.2744	27.50	10.00	37.50	50.00	-12.50	AVG	

Remark:

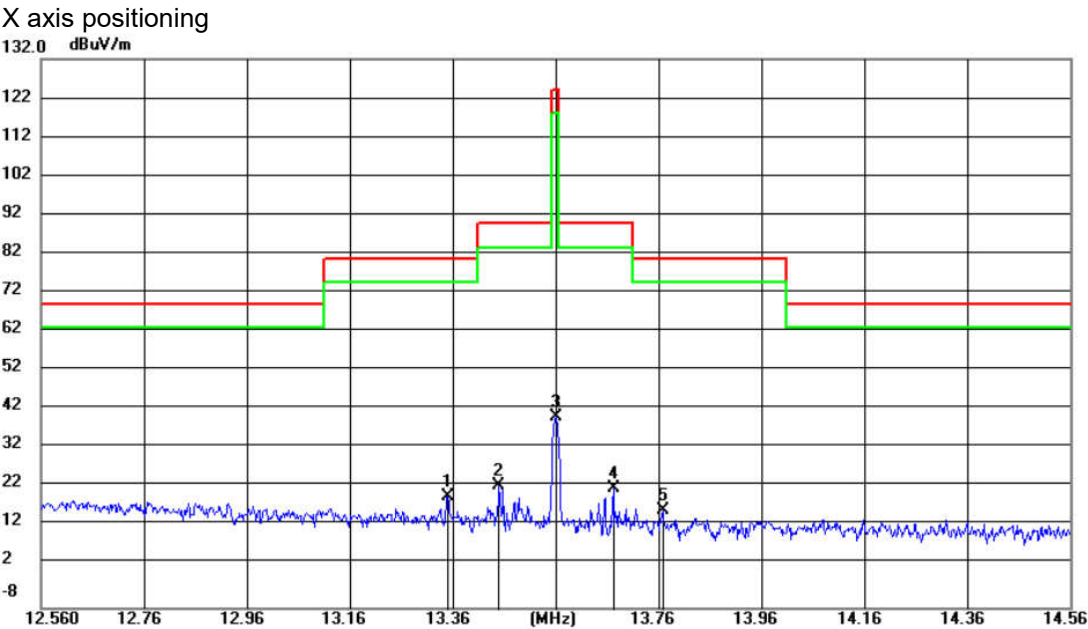
1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

5.3 Electric Field Strength of Fundamental and Outside the Allocated bands

Test Requirement:	47 CFR Part 15, Subpart C Section 15.225(a)/(b)/(c)																																							
Test Method:	ANSI C63.10: 2013																																							
Test Site:	3m (Semi-Anechoic Chamber)																																							
Receiver Setup:	<table><tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr><tr><td>0.009MHz-0.090MHz</td><td>Peak</td><td>10kHz</td><td>30kHz</td><td>Peak</td></tr><tr><td>0.009MHz-0.090MHz</td><td>Average</td><td>10kHz</td><td>30kHz</td><td>Average</td></tr><tr><td>0.090MHz-0.110MHz</td><td>Quasi-peak</td><td>10kHz</td><td>30kHz</td><td>Quasi-peak</td></tr><tr><td>0.110MHz-0.490MHz</td><td>Peak</td><td>10kHz</td><td>30kHz</td><td>Peak</td></tr><tr><td>0.110MHz-0.490MHz</td><td>Average</td><td>10kHz</td><td>30kHz</td><td>Average</td></tr><tr><td>0.490MHz -30MHz</td><td>Quasi-peak</td><td>10kHz</td><td>30kHz</td><td>Quasi-peak</td></tr></table>					Frequency	Detector	RBW	VBW	Remark	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
Frequency	Detector	RBW	VBW	Remark																																				
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak																																				
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0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak																																				
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0.110MHz-0.490MHz	Average	10kHz	30kHz	Average																																				
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak																																				
Limit:	<table><tr><th>Frequency Range(MHz)</th><th>E-field Strength Limit @ 30 m (μV/m)</th><th>E-field Strength Limit @ 3 m (dBμV/m)</th></tr><tr><td>13.560 ± 0.007</td><td>15848</td><td>124</td></tr><tr><td>13.410 to 13.553 13.567 to 13.710</td><td>334</td><td>90</td></tr><tr><td>13.110 to 13.410 13.710 to 14.010</td><td>106</td><td>81</td></tr></table> <p>Note: Where the limits have been defined at one distance, and a signal level measured at another, the limits have been extrapolated using the following formula:</p> <p>Extrapolation(dB)=40log₁₀(Measurement Distance/Specification Distance)</p>					Frequency Range(MHz)	E-field Strength Limit @ 30 m (μV/m)	E-field Strength Limit @ 3 m (dBμV/m)	13.560 ± 0.007	15848	124	13.410 to 13.553 13.567 to 13.710	334	90	13.110 to 13.410 13.710 to 14.010	106	81																							
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13.110 to 13.410 13.710 to 14.010	106	81																																						
Test Setup:	 <p>Figure 1. Below 30MHz</p>																																							
Test Procedure:	<ol style="list-style-type: none">1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.																																							

	<ol style="list-style-type: none"> 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. 7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.
Test Mode:	Transmitting with ASK modulation.
Test Result:	Pass

Measurement Data



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Antenna	Table	
		MHz	dBuV	Factor	ment	dBuV/m	dB	Height	Degree	Comment
1	*	13.3500	-0.25	20.67	20.42	81.00	-60.58	peak	100	2
2		13.4500	2.78	20.66	23.44	90.00	-66.56	peak	100	355
3		13.5600	20.18	20.66	40.84	124.00	-83.16	peak	100	297
4		13.6720	1.96	20.65	22.61	90.00	-67.39	peak	100	2
5		13.7680	-3.79	20.65	16.86	81.00	-64.14	peak	100	297

Remark:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier.

The basic equation with a sample calculation is as follows:

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

5.4 Radiated Emissions

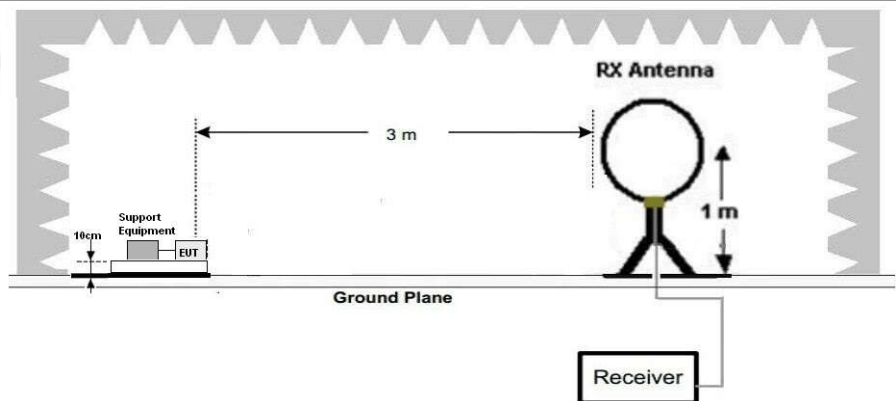
Test Requirement:	47 CFR Part 15C Section 15.209 and 15.225(d),				
Test Method:	ANSI C63.10: 2013				
Test Site:	3m (Semi-Anechoic Chamber)				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Peak	100 kHz	300kHz	Peak
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m) @ 3 m	Remark	
	0.009MHz-0.490MHz	2400/F(kHz) @300m	128.5-93.8	Quasi-peak	
	0.490MHz-1.705MHz	24000/F(kHz) @30m	73.8-63	Quasi-peak	
	1.705MHz-30MHz	30 @30m	70	Quasi-peak	
	30MHz-88MHz	100 @3m	40.0	Quasi-peak	
	88MHz-216MHz	150 @3m	43.5	Quasi-peak	
	216MHz-960MHz	200 @3m	46.0	Quasi-peak	
	960MHz-1GHz	500 @3m	54.0	Quasi-peak	
Note: Where the limits have been defined at one distance, and a signal level measured at another, the limits have been extrapolated using the following formula: Extrapolation(dB)=40log ₁₀ (Measurement Distance/Specification Distance)					
Test Setup:					

Figure 1. Below 30MHz

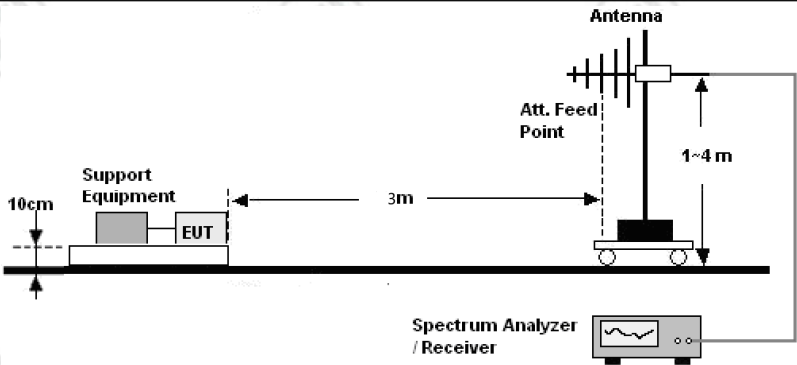


Figure 2. 30MHz to 1GHz

Test Procedure:

5. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
6. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
7. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
8. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Test Mode:

Transmitting with ASK modulation.

Test Result:

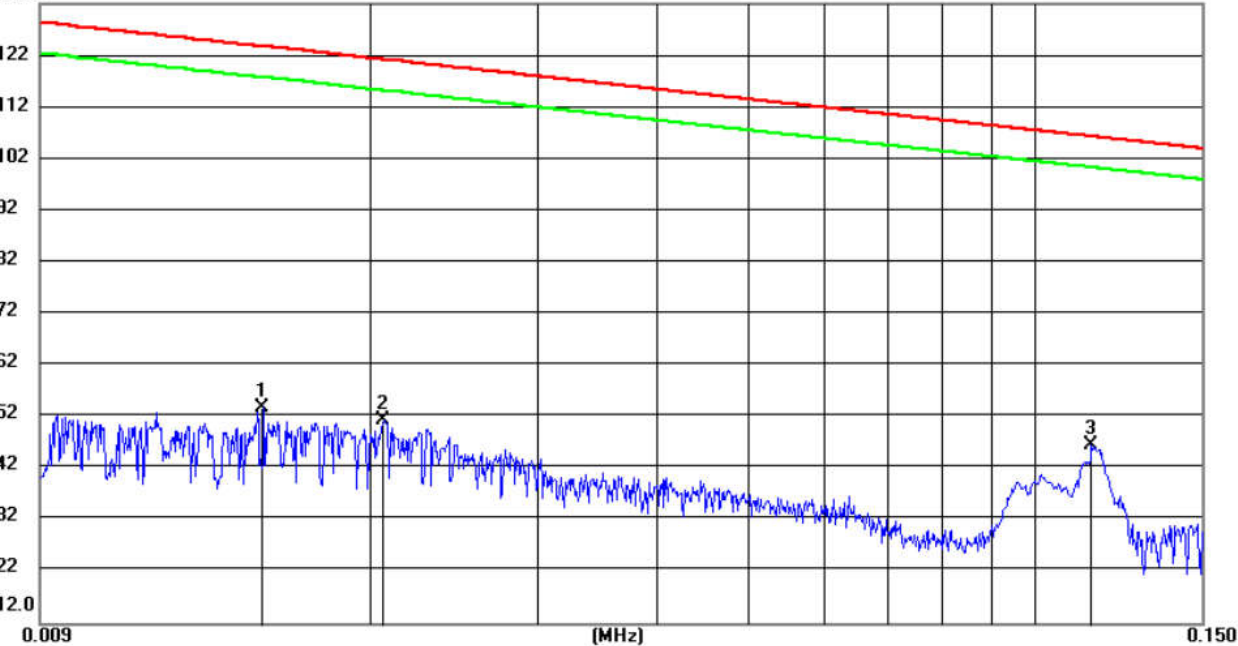
Pass

Measurement Data

X axis positioning

9kHz – 150KHz:

132.0 dBuV



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	Comment
			dBuV	dB	dBuV	dBuV	dB	cm	degree	
1		0.0154	32.77	20.98	53.75	123.69	-69.94	peak	100	78
2		0.0206	30.68	20.83	51.51	121.17	-69.66	peak	100	178
3	*	0.1146	26.08	20.55	46.63	106.35	-59.72	peak	100	222

Remark:

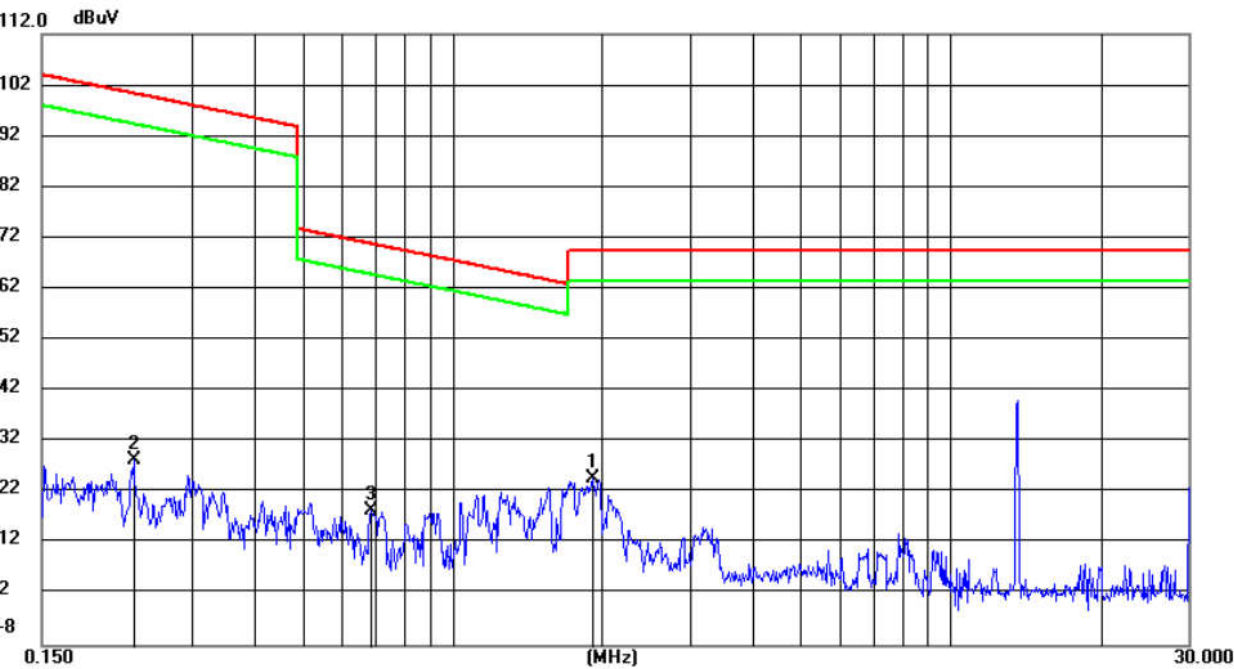
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

X axis positioning
150KHz-30MHz:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	1.9076	4.48	20.39	24.87	69.54	-44.67	peak	100	55
2		0.2290	7.93	20.53	28.46	100.37	-71.91	peak	100	142
3		0.6862	-1.76	20.43	18.67	70.87	-52.20	peak	100	37

Remark:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

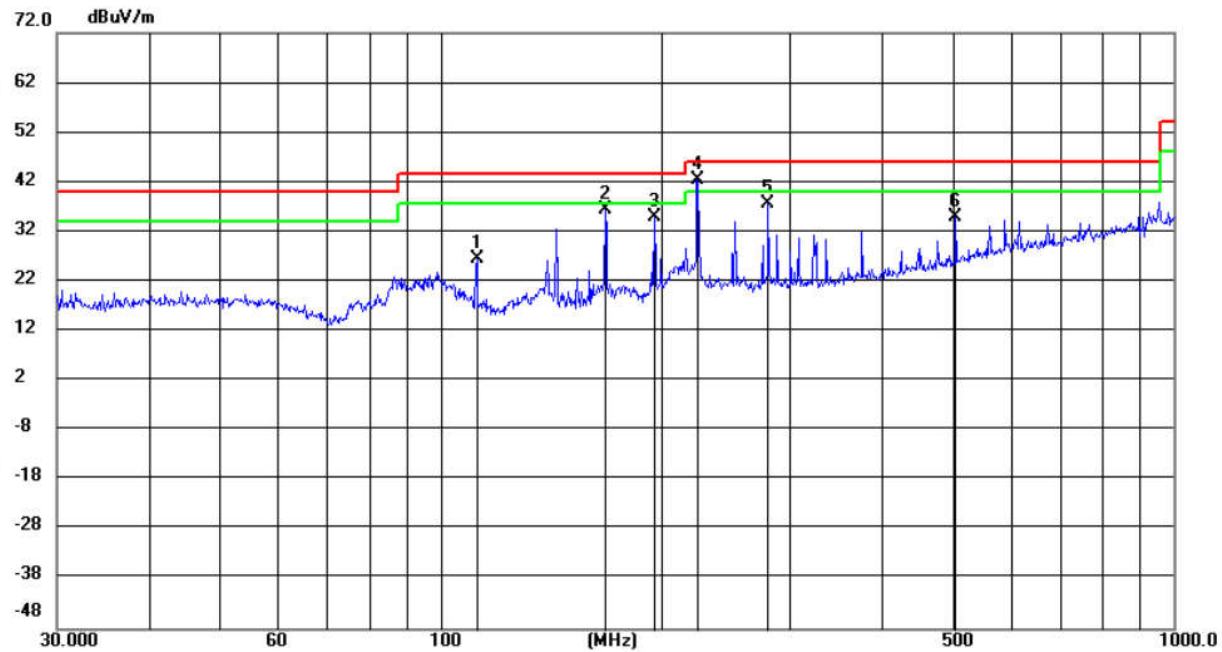
Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

30MHz-1GHz

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		112.1303	14.32	12.33	26.65	43.50	-16.85	peak	100	89
2		167.8242	25.53	10.95	36.48	43.50	-7.02	peak	100	110
3		195.8219	21.93	12.92	34.85	43.50	-8.65	peak	200	4
4	*	224.5192	27.81	14.63	42.44	46.00	-3.56	peak	200	4
5		280.0237	21.18	16.56	37.74	46.00	-8.26	peak	200	197
6		504.7062	13.39	21.66	35.05	46.00	-10.95	peak	200	145

Remark:

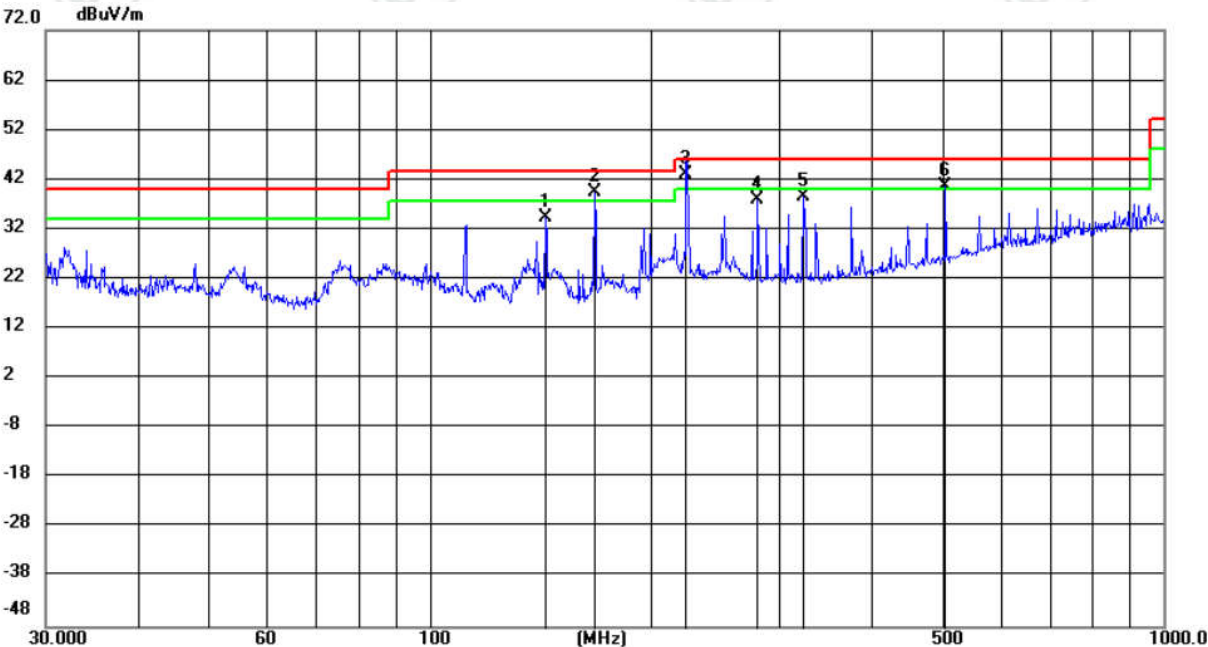
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

Vertical



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Antenna	Table	
		MHz	dBuV	Factor	ment			Height	Degree	Comment
1		143.8295	24.95	9.50	34.45	43.50	-9.05	peak	100	281
2	!	167.8242	28.47	10.95	39.42	43.50	-4.08	peak	100	345
3	*	223.7333	28.39	14.60	42.99	46.00	-3.01	QP	200	78
4		280.0237	21.34	16.56	37.90	46.00	-8.10	peak	200	99
5		323.3203	20.94	17.75	38.69	46.00	-7.31	peak	100	197
6	!	504.7062	18.95	21.66	40.61	46.00	-5.39	peak	200	120

Remark:

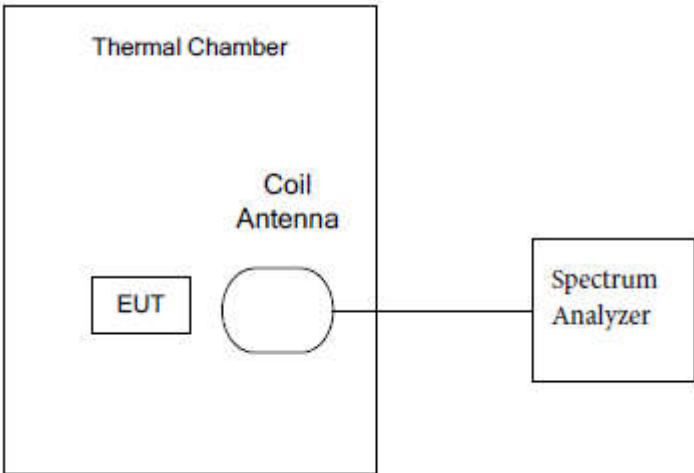
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

5.5 Frequency Stability

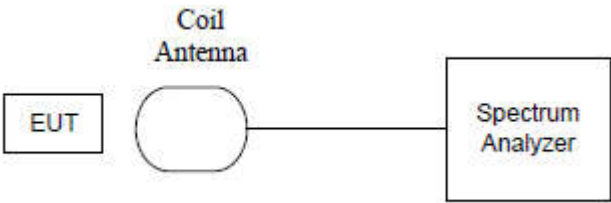
Test Requirement:	47 CFR Part 15 C Section 15.225(e)
Test Method:	ANSI C63.10: 2013
Test Setup:	 <p>The diagram illustrates the test setup. A large rectangular box labeled 'Thermal Chamber' contains two components: a smaller rectangle labeled 'EUT' (Equipment Under Test) and an oval labeled 'Coil Antenna'. A line connects the 'Coil Antenna' to a rectangle labeled 'Spectrum Analyzer' located outside the 'Thermal Chamber'.</p>
Frequency Range:	Operation within the band 13.110-14.010 MHz
Requirements:	The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to $+50$ degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.
Method of Measurement:	The EUT was placed in an environmental test chamber and powered such that control element received normal voltage and the transmitter provided maximum RF output.
Test Result:	The unit does meet the FCC Part 15 C Section 15.225(e) requirements.

Test Frequency: 13.56MHz			Temperature:23°C	
Supply Voltage (V) AC	Test Result (MHz)	Deviation (kHz)	Limit ±0.01% (kHz)	Result
120	13.55976	-0.24	1.3560	Pass
120	13.55973	-0.27	1.3560	Pass
100	13.55965	-0.35	1.3560	Pass

Test Frequency: 13.56MHz			Normal Voltage:120Vac	
Temperature (°C)	Test Result (MHz)	Deviation (kHz)	Limit ±0.01% (kHz)	Result
-20	13.55972	-0.28	1.3560	Pass
-10	13.55971	-0.29	1.3560	
0	13.55974	-0.26	1.3560	
10	13.55971	-0.29	1.3560	
20	13.55979	-0.21	1.3560	
30	13.55973	-0.27	1.3560	
40	13.55978	-0.22	1.3560	
50	13.55970	-0.30	1.3560	

Note: Deviation (KHz) = (Test Result-13.56MHz)*1000

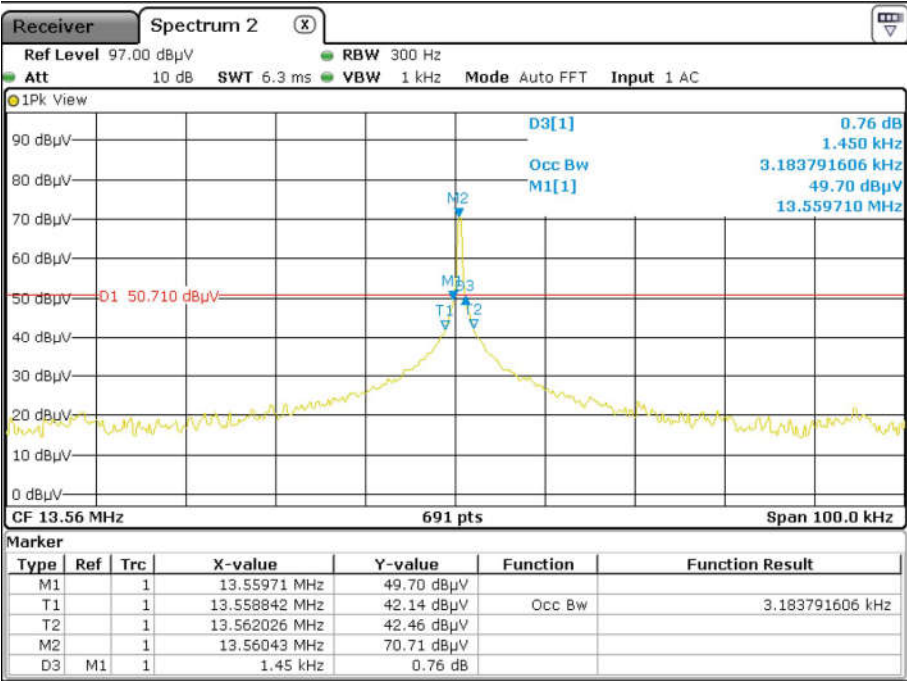
5.6 20dB Occupied Bandwidth

Test Requirement:	47 CFR Part 15 C Section 15.215 (C)
Test Method:	ANSI C63.10: 2013
Test Setup:	
Frequency Range:	Operation within the band 13.110 – 14.010 MHz
Requirements:	Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §15.217 through §15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the 20 dB bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.
Limit:	For 13.56 MHz the permitted frequency band is 14kHz, so the limit is 11.2 kHz.

Test Data:

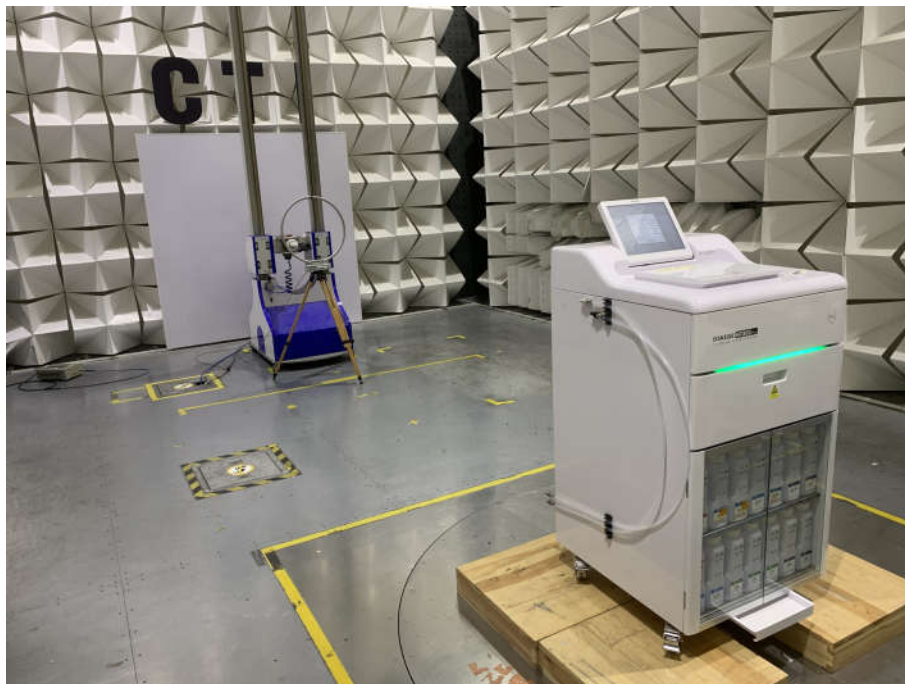
20dB bandwidth (kHz)	FL (MHz)	FH (MHz)	Limit(MHz)	Result
1.45	13.55971	13.56116	13.110 – 14.010	Pass

Test plot as follows:



APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

Test Model No.:HP300 Plus



Radiated Spurious Emissions Test Setup (9kHz~30MHz)



Radiated Spurious Emissions Test Setup (30MHz~1GHz)



Conducted Emission

APPENDIX 2 PHOTOGRAPHS OF EUT

Test mode No.: HP300 Plus



View of Product-1



View of Product-2



View of Product-3



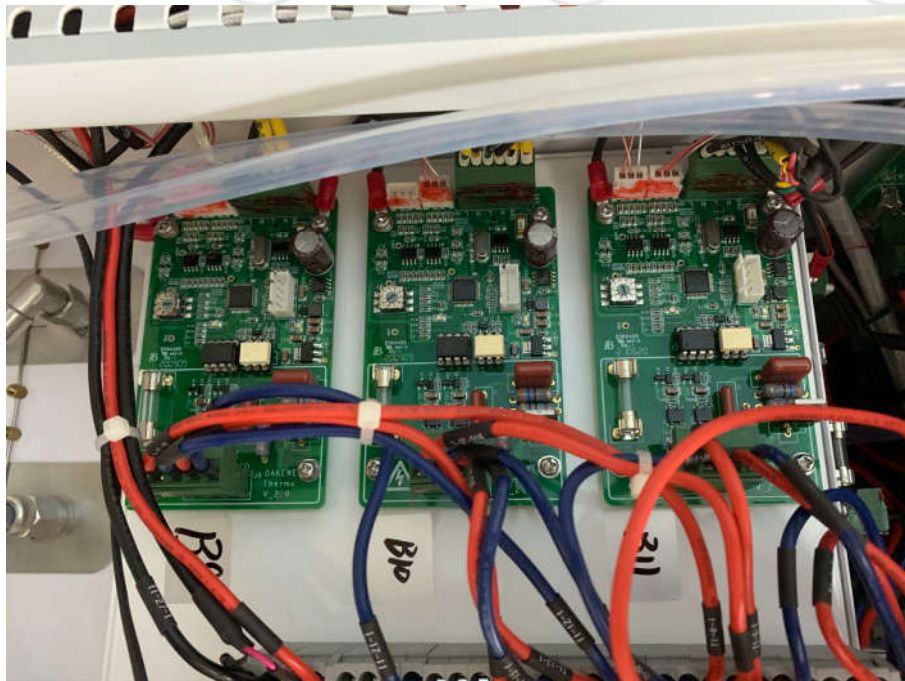
View of Product-4



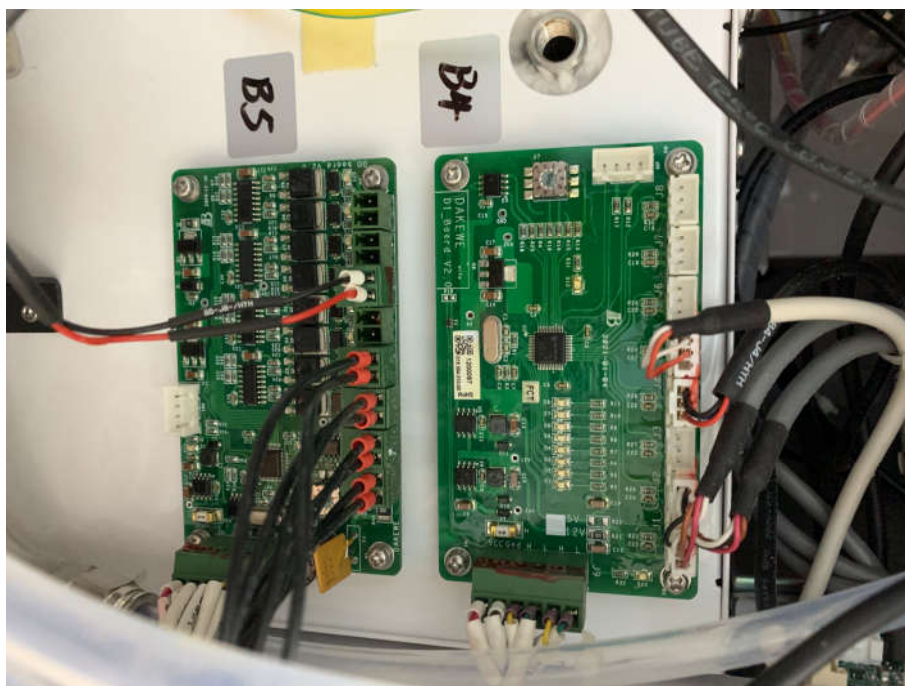
View of Product-5



View of Product-6



View of Product-7



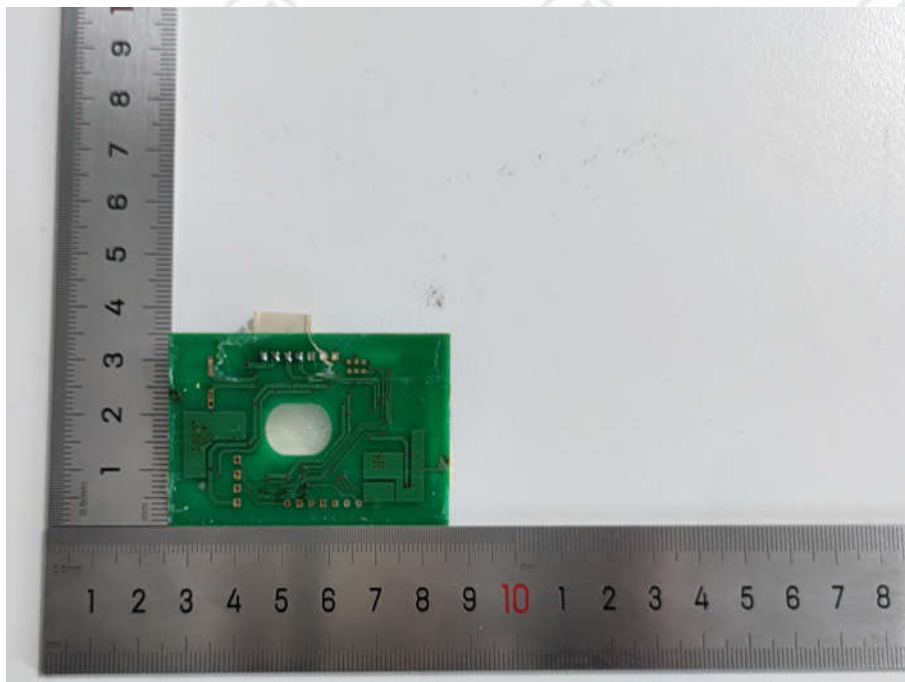
View of Product-8



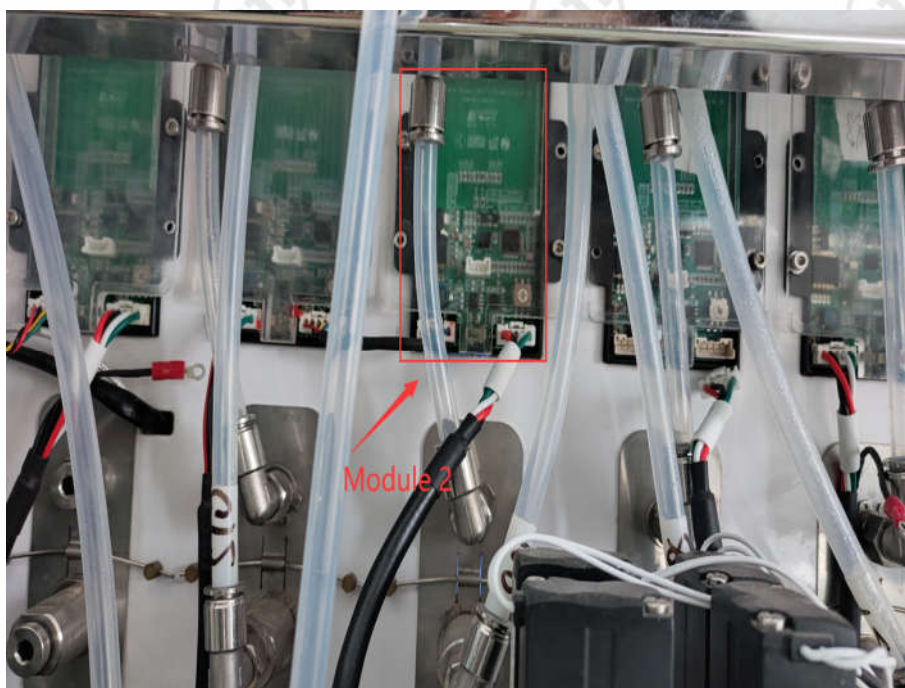
View of Product-9



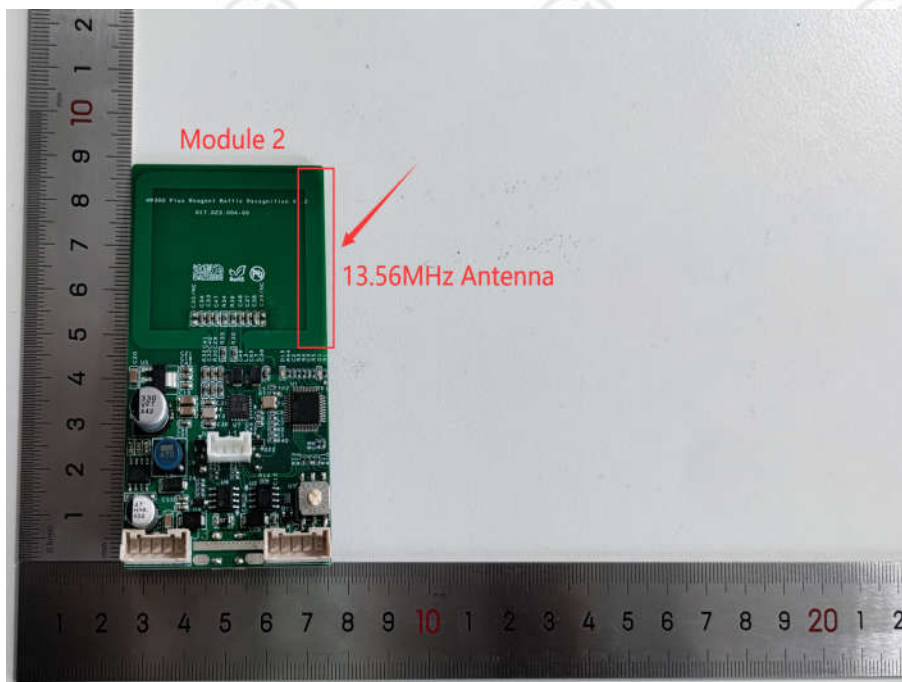
View of Product-10



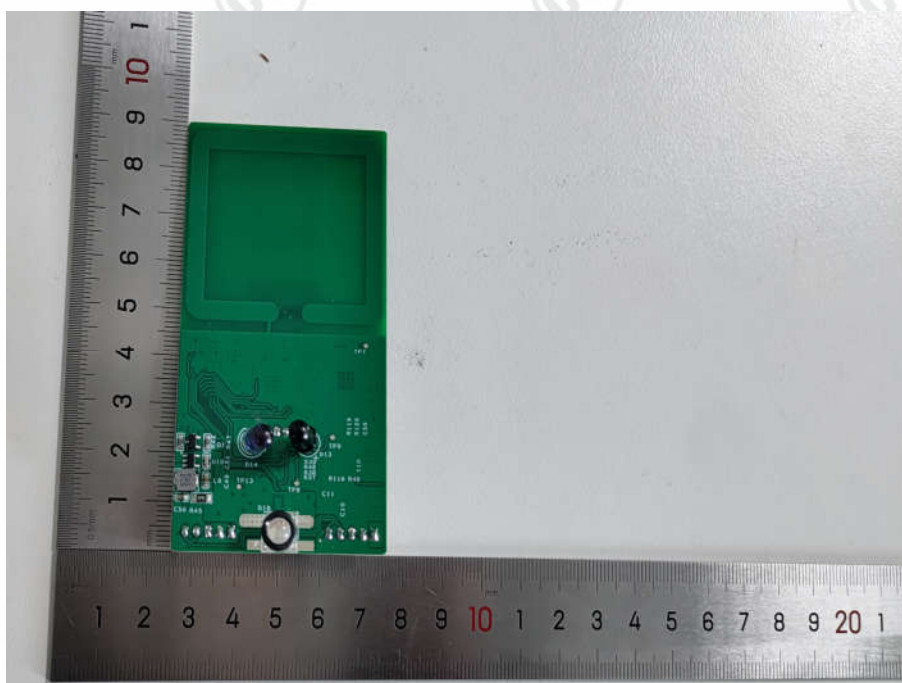
View of Product-11



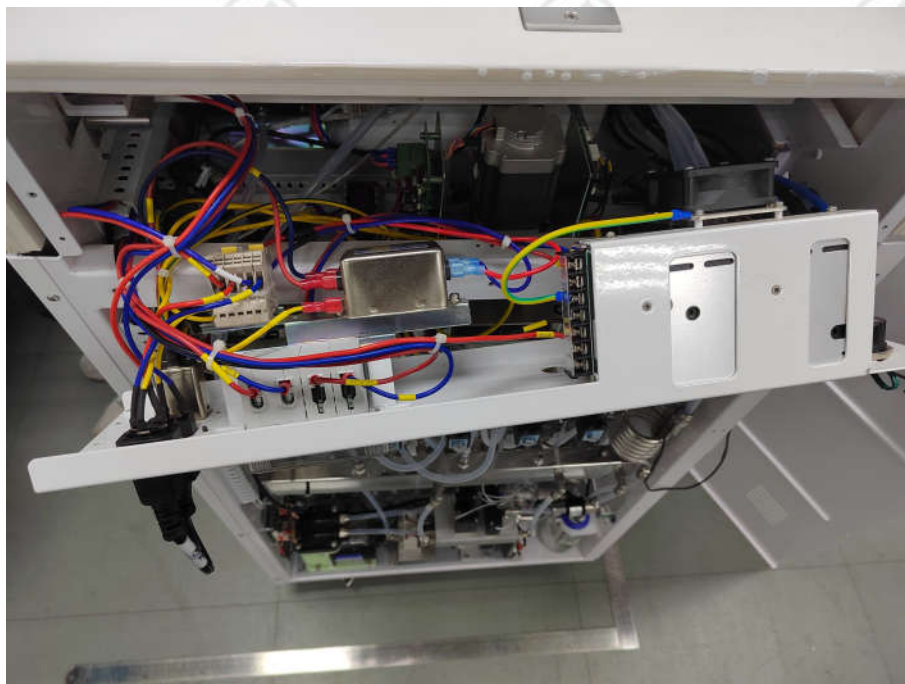
View of Product-12



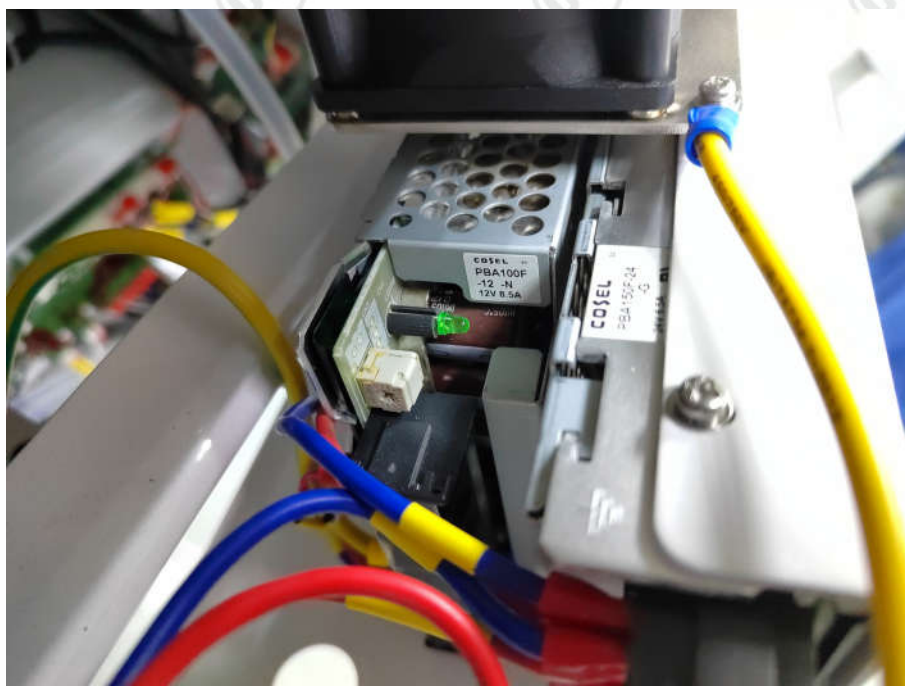
View of Product-13



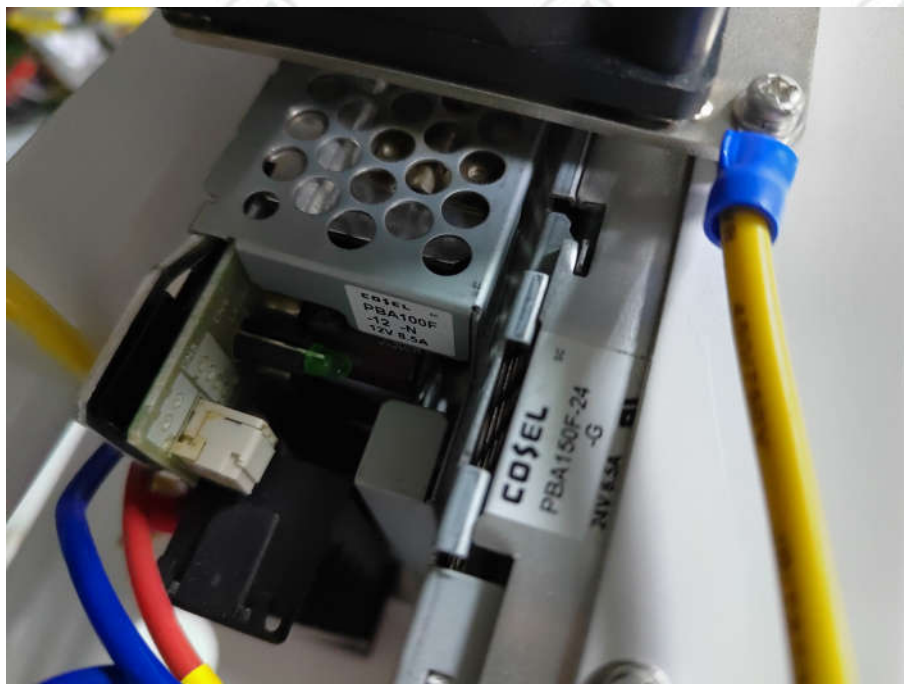
View of Product-14



View of Product-15



View of Product-16



View of Product-17



View of Product-18



View of Product-19

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***