FCC Part 15.231

TEST REPORT

For

Superior Electronics Corporation.

No.10, Lane 31, Chongde St., Sinyi District, Taipei City 110, Taiwan (R.O.C.)

FCC ID: K4E951T1SW

Report Type: Original Report	**Product Type:** High Frequency Long Range Remote Transmitter

Report Producer : Coco Lin

Report Number : RXZ220526002RF01

Report Date : 2022-08-23

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Revision History

Revision	No.	Report Number	Issue Date	Description	Author/ Revised by
0.0	RXZ220526002	RXZ220526002RF01	2022-08-23	Original Report	Coco Lin

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1 General Information

1.1 Product Description for Equipment under Test (EUT)

Manufacturer	Superior Electronics Corporation.
	No.10, Lane 31, Chongde St., Sinyi District, Taipei City 110, Taiwan (R.O.C.)
Brand(Trade) Name	ENFORCER SECO-LARM
Product (Equipment)	High Frequency Long Range Remote Transmitter
Main Model Name	HL-951T1-SWQ
Series Model Name	HL-951T1-SWUQ/HL-951T1-SDQ/HL-951T1-SDUQ
Model Discrepancy	The major electrical and mechanical constructions of series models are identical to the basic model, except different as follows. The model, HL-951T1-SWQ is the testing sample, and the final test data are shown on this test report. HL-951T1-SWQ is one button with 4 wires and logo and no dip switch HL-951T1-SWUQ is one button with 4 wires and no logo and no dip switch HL-951T1-SDQ is one button with dip switch and logo and no 4 wires HL-951T1-SDUQ is one button with dip switch and no logo and no 4 wires
Frequency Range	917 MHz
Modulation Technique	SRD
Antenna Specification	Chip Antenna / 0.8 dBi
Power Operation (Voltage Range)	☐ AC Type ☐ Adapter ☐ By AC Power Cord ☐ PoE
	☒ DC Type ☒ Battery 3V ☒ DC Power Supply ☐ External from USB Cable ☐ External DC Adapter
	☐ Host System
Received Date	May 27, 2022
Date of Test	Jun. 01, 2022 ~ Aug. 23, 2022

*All measurement and test data in this report was gathered from production sample serial number: RXZ220526002-01 (Assigned by BACL, New Taipei Laboratory).

1.2 Objective

This report is prepared on behalf of Superior Electronics Corporation. all the test measurements were performed according to the measurement procedure described in ANSI C63.10 - 2013.

1.3 Related Submittal(s)/Grant(s)

N/A.

1.4 Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

1.5 Statement

Decision Rule: No, (The test results do not include MU judgment)

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
The determination of the test results does not require consideration of the uncertainty of the measurement, unless the assessment is required by customer agreement, regulation or standard document specification.
Bay Area Compliance Laboratories Corp. (New Taipei Laboratory) is not responsible for the authenticity of the information provided by the applicant that affects the test results.

1.6 Measurement Uncertainty

Parameter		Uncertainty
AC Mains		±2.36 (dB)
RF output power, conducted		±0.93 (dB)
Power Spectral Density, conducted		±0.92 (dBm/kHz)
Occupied Bandwidth		±0.35 (MHz)
Unwanted Emissions, conducted		±1.69 (dB)
Emissions, radiated	30 MHz~1GHz	±5.22(dB)
	1 GHz~18 GHz	±6.12(dB)
	18 GHz~40 GHz	±4.99(dB)
Temperature		+/- 1.27 °C
Humidity		+/- 3 %

1.7 Environmental Conditions

Test Site	Test Date	Temperature (℃)	Relative Humidity (%)	ATM Pressure (hPa)	Test Engineer
AC Line Conducted Emissions	2022/6/15	22.4	47	1010	Andy Cheng
Radiation Spurious Emissions	2022/6/1~8/23	22.4	62	1010	Aaron Pan
Deactivation Test	2022/7/21	24.1	47	1010	Andy Cheng
Emissions Bandwidth	2022/7/22	25.9	44	1010	Andy Cheng

1.8 Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (New Taipei Laboratory) to collect test data is located on

☒70, Lane 169, Sec. 2, Datong Road, Xizhi Dist., New Taipei City 22183, Taiwan, R.O.C.

Bay Area Compliance Laboratories Corp. (New Taipei Laboratory) Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 3732) and the FCC designation No.TW3732 under the Mutual Recognition Agreement (MRA) in FCC Test.

2 System Test Configuration

2.1 Description of Test Configuration

Channel list:

Channel	Frequency (MHz)
1	917 MHz

2.2 Equipment Modifications

No modification was made to the EUT.

2.3 EUT Exercise Software

No test software was used

2.4 Test Mode

Full System (model: HL-951T1-SWQ) for all test item.

2.5 Support Equipment List and Details

Description	Manufacturer	Model Number	S/N
DC Power Supply	KIKUSUI	PMC35-2	MK002127

2.6 External Cable List and Details

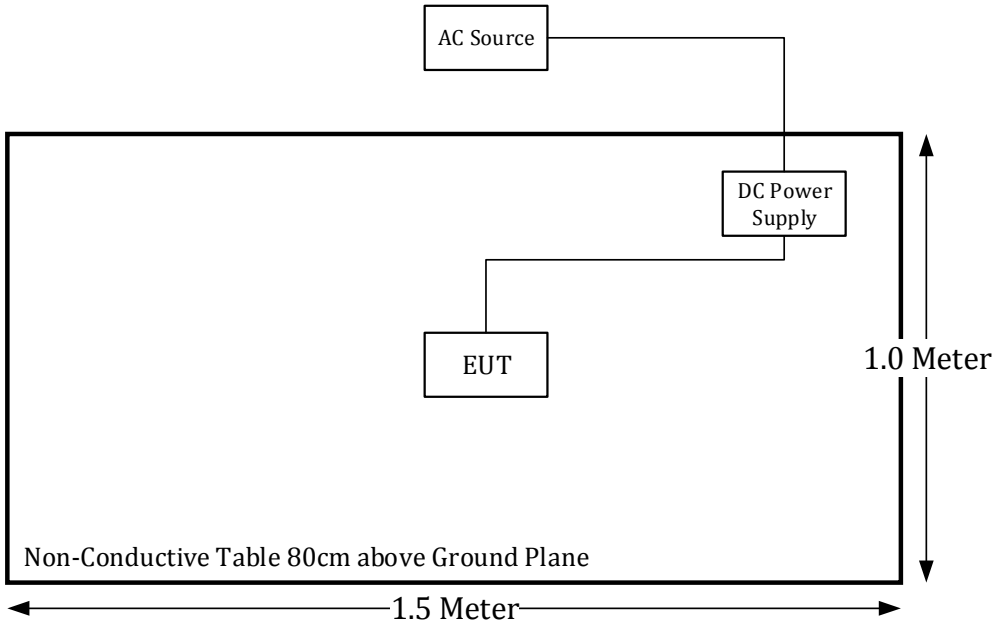
Cable Description	Length (m)	From	To
Power Cable	1.5m	EUT	DC Power Supply

2.7 Block Diagram of Test Setup

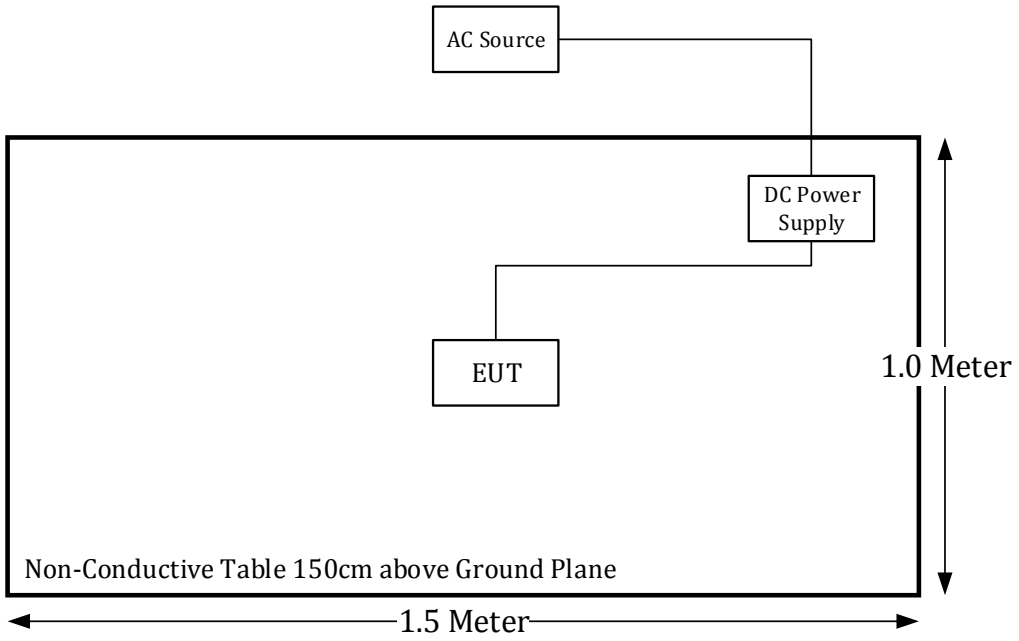
See test photographs attached in setup photos for the actual connections between EUT and support equipment.

Radiation:

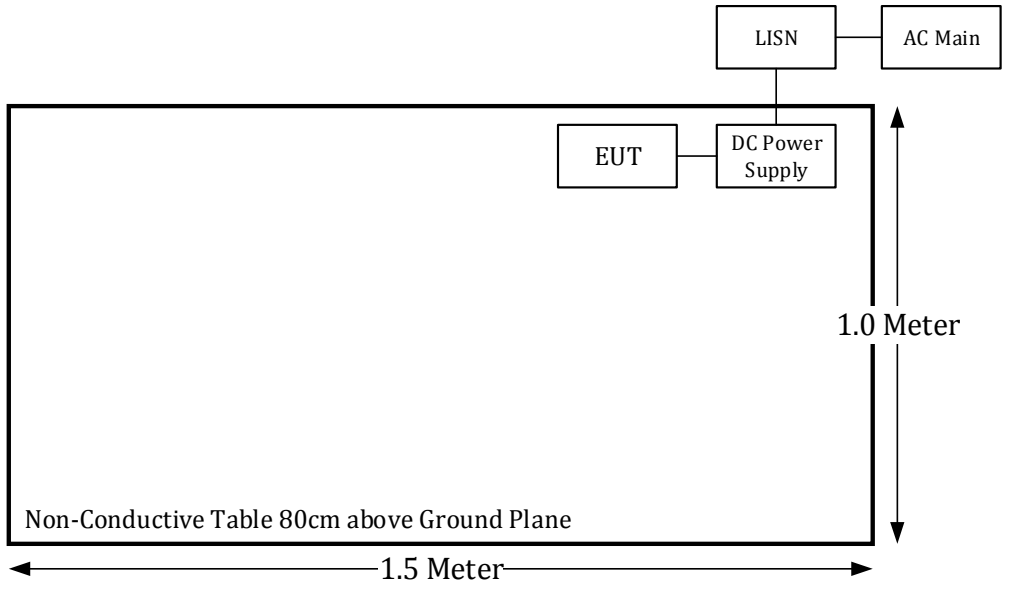
Below 1GHz:



Above 1GHz:



Conduction:


LISN
AC Main
EUT
DC Power Supply
1.0 Meter
Non-Conductive Table 80cm above Ground Plane
1.5 Meter

3 Summary of Test Results

FCC Rules	Description of Test	Results
§15.203	Antenna Requirement	Compliance
§15.207(a)	Conducted Emissions	Compliance
§15.205, §15.209, §15.231(b)	Radiated Emissions	Compliance
§15.231(a)(1)	Deactivation Test	Compliance
§15.231(c)	20dB Emission Bandwidth	Compliance
§1.1307(b)(3)(i)	RF Exposure	Compliance

4 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
AC Line Conduction Room (CON-A)					
LISN	Rohde & Schwarz	ENV216	101612	2022/01/14	2023/01/13
LISN	Rohde & Schwarz	ENV216	101248	2022/6/22	2023/6/21
EMI Test Receiver	Rohde & Schwarz	ESW8	100947	2021/7/23	2022/7/22
Pulse Limiter	Rohde & Schwarz	ESH3Z2	TXZEM104	2021/7/29	2022/7/28
RF Cable	EMEC	EM-CB5D	1	2022/6/7	2023/6/6
Software	AUDIX	E3	V9.150826k	N.C.R	N.C.R
Radiation 3M Room (966-A)					
Bilog Antenna with 6 dB Attenuator	SUNOL SCIENCES & MINI-CIRCUITS	JB6/UNAT-6+	A050115/15542_01	2022/02/14	2023/02/13
Horn Antenna	EMCO	3115	9809-55583	2021/8/26	2022/8/25
Preamplifier	Sonoma	310N	130602	2022/6/8	2023/6/7
Preamplifier	A.H. system Inc.	PAM-0118P	466	2021/11/4	2022/11/3
Spectrum Analyzer	Rohde & Schwarz	FSV40	101435	2021/12/27	2022/12/26
EMI Test Receiver	Rohde & Schwarz	ESR7	101419	2021/11/9	2022/11/8
Micro flex Cable	UTIFLEX	UFB197C-1-2362-70U-70U	225757-001	2022/1/24	2023/1/23
Coaxial Cable	COMMATE	PEWC	8Dr	2021/12/24	2022/12/23
Coaxial Cable	UTIFLEX	UFB311A-Q-1440-300300	220490-006	2022/1/24	2023/1/23
Coaxial Cable	JUNFLON	J12J102248-00-B-5	AUG-07-15-044	2021/12/24	2022/12/23
Cable	EMC	EMC105-SM-SM-10000	201003	2022/1/24	2023/1/23
Coaxial Cable	ROSNOL	K1K50-UP0264-K1K50-450CM	160309-1	2022/1/24	2023/1/23
Coaxial Cable	ROSNOL	K1K50-UP0264-K1K50-50CM	15120-1	2022/1/18	2023/1/17
Software	Audix	e3	18621a bacl	N.C.R	N.C.R
Conducted Room					
Spectrum Analyzer	Rohde & Schwarz	FSV40	101435	2022/1/13	2023/1/12
Cable	UTIFLEX	UFA210A	9435	2021/10/5	2022/10/4

***Statement of Traceability:** BACL Corp. attests that all of the calibrations on the equipment items listed above were traceable to the SI System of Units via the R.O.C. Center for Measurement Standards of the Electronics Testing Center, Taiwan (ETC) or to another internationally recognized National Metrology Institute (NMI), and were compliant with the current Taiwan Accreditation Foundation (TAF) requirements.

5 FCC §15.203 – Antenna Requirements

5.1 Applicable Standard

An intentional radiator shall be designed to ensure that no antenna other than that furnished by theresponsible 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 shall be considered sufficient to comply with the provisions of this section.

5.2 Antenna Connected Construction

The EUT has one internal antenna arrangement for SRD and the antenna gain is 0.8 dBi; fulfill the requirement of this section. Please refer to EUT photos.

Result: Compliant.

6 FCC §15.207(a) – AC Line Conducted Emissions

6.1 Applicable Standard

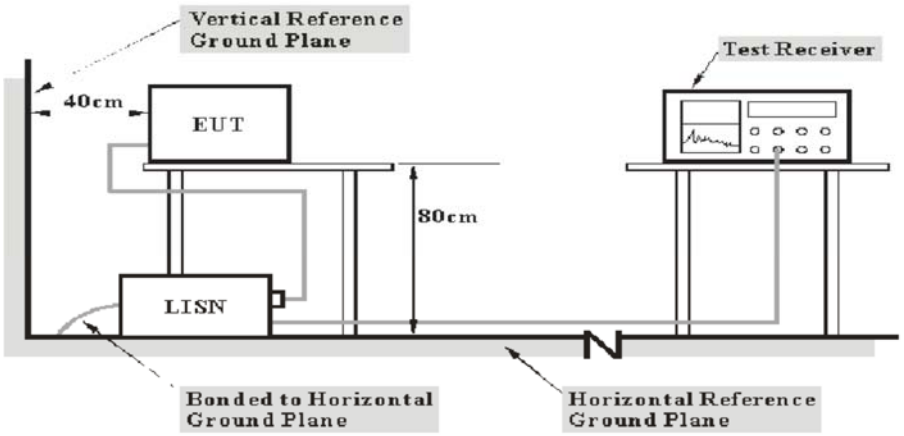
According to §15.207

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56 Note 1	56 to 46 Note 1
0.5-5	56	46
5-30	60	50

Note 1: Decreases with the logarithm of the frequency.

6.2 EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

6.3 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150kHz to 30MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations

Frequency Range	IF B/W
150kHz – 30MHz	9kHz

6.4 Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

6.5 Corrected Factor & Margin Calculation

The factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

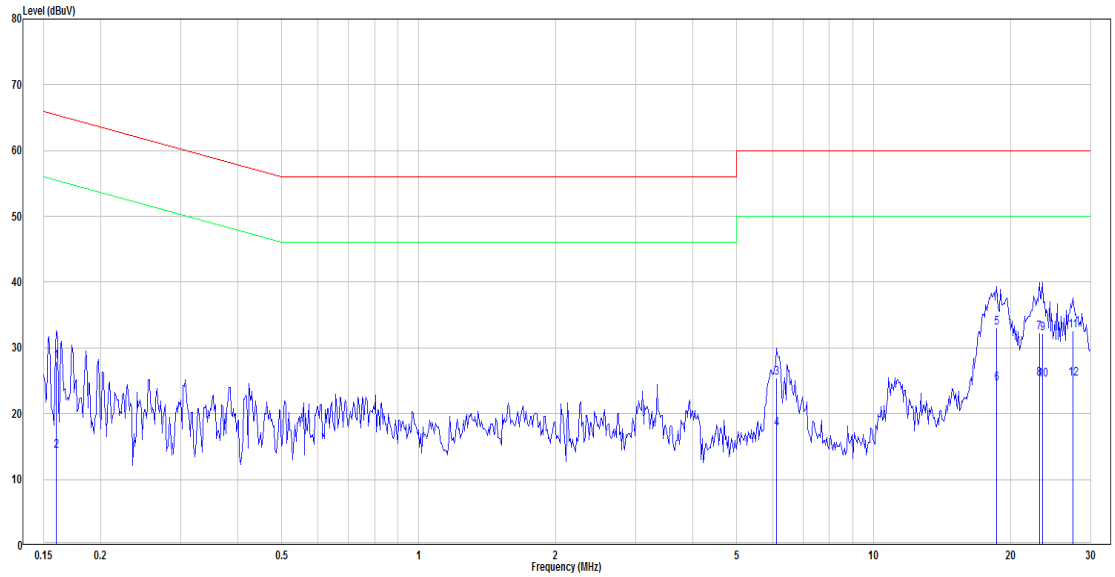
Factor = LISN VDF + Cable Loss + Transient Limiter Attenuation

The “Over Limit” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an over limit of -7 dB means the emission is 7 dB below the limit. The equation for Over Limit calculation is as follows:

Over Limit = Level – Limit Line

6.6 Test Results

Main: AC120 V, 60 Hz, Line



No.	Frequency	Reading	Correct	Result	Limit	Over limit	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	
1	0.160	8.37	19.50	27.87	65.47	-37.60	QP
2	0.160	-5.13	19.50	14.37	55.47	-41.10	Average
3	6.121	5.71	19.68	25.39	60.00	-34.61	QP
4	6.121	-1.95	19.68	17.73	50.00	-32.27	Average
5	18.622	13.29	19.81	33.10	60.00	-26.90	QP
6	18.622	4.71	19.81	24.53	50.00	-25.47	Average
7	23.140	12.38	19.88	32.26	60.00	-27.74	QP
8	23.140	5.41	19.88	25.29	50.00	-24.71	Average
9	23.511	12.28	19.89	32.16	60.00	-27.84	QP
10	23.511	5.33	19.89	25.21	50.00	-24.79	Average
11	27.416	12.61	19.94	32.55	60.00	-27.45	QP
12	27.416	5.32	19.94	25.26	50.00	-24.74	Average

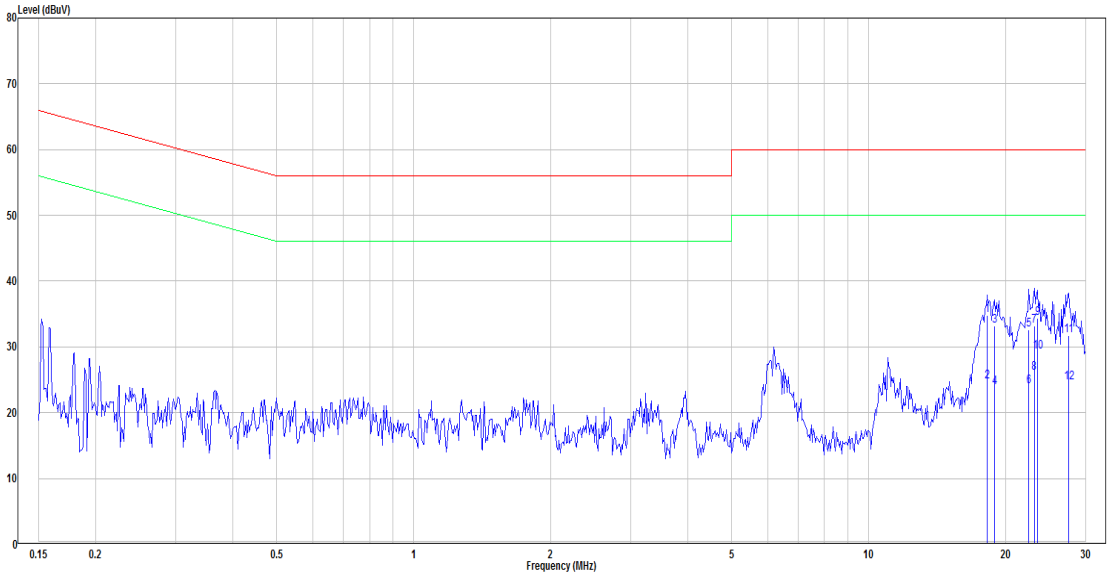
Note:

Level = Read Level + Factor

Over Limit = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

Main: AC120 V, 60 Hz, Neutral



No.	Frequency	Reading	Correct	Result	Limit	Over limit	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	
1	18.232	14.91	19.87	34.78	60.00	-25.22	QP
2	18.232	4.85	19.87	24.72	50.00	-25.28	Average
3	18.920	13.38	19.88	33.25	60.00	-26.75	QP
4	18.920	4.02	19.88	23.90	50.00	-26.10	Average
5	22.535	12.61	19.94	32.54	60.00	-27.46	QP
6	22.535	4.08	19.94	24.01	50.00	-25.99	Average
7	23.140	13.22	19.95	33.17	60.00	-26.83	QP
8	23.140	6.09	19.95	26.04	50.00	-23.96	Average
9	23.511	14.43	19.95	34.39	60.00	-25.61	QP
10	23.511	9.23	19.95	29.18	50.00	-20.82	Average
11	27.562	11.74	20.00	31.74	60.00	-28.26	QP
12	27.562	4.51	20.00	24.51	50.00	-25.49	Average

Note:

Level = Read Level + Factor

Over Limit = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

7 FCC §15.209, §15.205 , §15.231(b) – Radiated Emissions

7.1 Applicable Standard

FCC §15.205, §15.209, §15.231 (b)

According to FCC §15.231(b), the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emission (microvolts/meter)
40.66 – 40.70	2250	225
70 – 130	1250	125
130 – 174	1250 to 3750 **	125 to 375 **
174 – 260	3750	375
160 – 470	3750 to 12500 **	375 to 1250 **
Above 470	12500	1250

**: Linear interpolations.

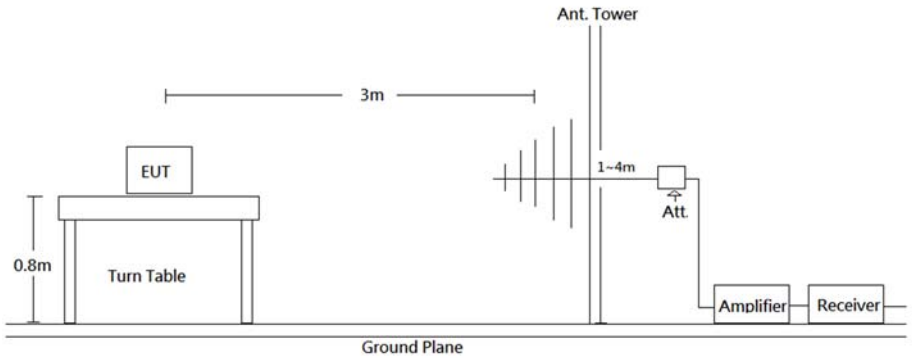
(1) The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.

(2) Intentional radiators operating under the provisions of this section shall demonstrate compliance with the limits on the field strength of emissions, as shown in the above table, based on the average value of the measured emissions. As an alternative, compliance with the limits in the above table may be based on the use of measurement instrumentation with a CISPR quasi-peak detector. The specific method of measurement employed shall be specified in the application for equipment authorization. If average emission measurements are employed, the provisions in §15.35 for averaging pulsed emissions and for limiting peak emissions apply. Further, compliance with the provisions of §15.205 shall be demonstrated using the measurement instrumentation specified in that section.

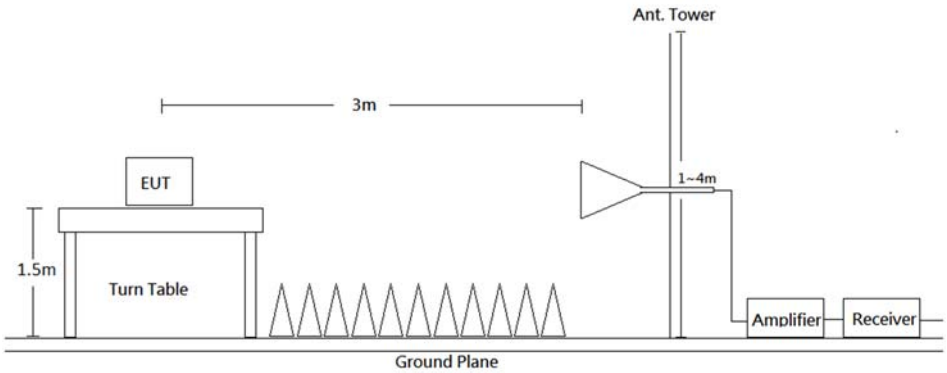
(3) The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in §15.209, whichever limit permits a higher field strength.

7.2 EUT Setup

Below 1 GHz:



Above 1 GHz:



Radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC Part 15.209 and FCC 15.231 Limits.

7.3 EMI Test Receiver & Spectrum Analyzer Setup

The system was studied from 30 MHz to 10 GHz. During radiated emission testing, the EMI test setup refers to ANSI C63.10 4.1.4.2.4.

7.4 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detector mode from 30 MHz to 1 GHz and PK and average detector modes for frequencies above 1 GHz and Fundamental.

7.5 Corrected Factor & Margin Calculation

The Correct Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

Margin = Result – Limit

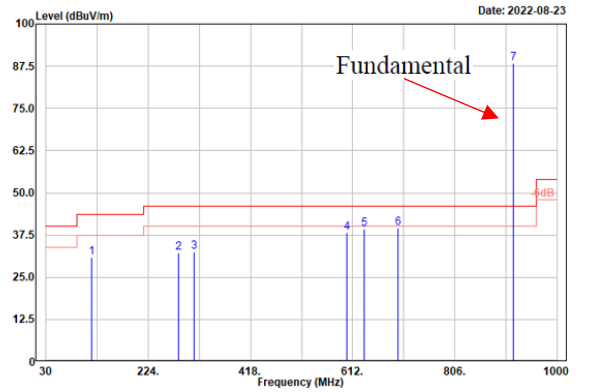
7.6 Test Results

Test Mode: Transmitting

(Pre-scan with three orthogonal axis, and worse case as Z axis.)

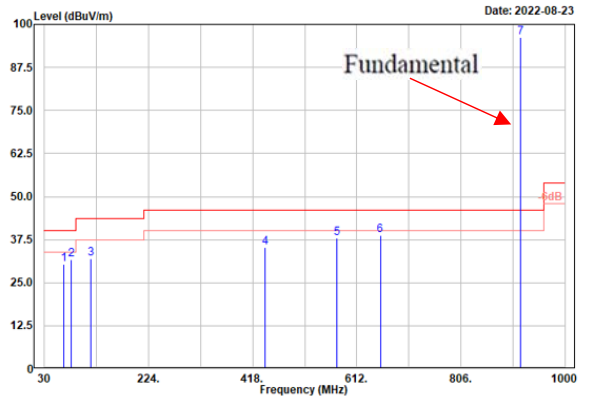
30MHz-1GHz:

Horizontal



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
117.300	39.73	-8.74	30.99	43.50	-12.51	100	247	Peak
281.230	40.12	-7.86	32.26	46.00	-13.74	100	309	Peak
311.300	39.74	-7.13	32.61	46.00	-13.39	100	265	Peak
600.360	39.68	-1.57	38.11	46.00	-7.89	100	253	Peak
634.310	39.21	0.12	39.33	46.00	-6.67	100	229	Peak
698.330	38.54	0.95	39.49	46.00	-6.51	100	318	Peak
917.000	82.63	5.68	88.31			100	56	Peak

Vertical



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
65.890	45.37	-15.04	30.33	40.00	-9.67	100	166	Peak
79.470	46.82	-15.07	31.75	40.00	-8.25	100	106	Peak
116.330	40.98	-8.90	32.08	43.50	-11.42	100	317	Peak
441.280	38.79	-3.59	35.20	46.00	-10.80	100	99	Peak
575.140	39.17	-1.31	37.86	46.00	-8.14	100	37	Peak
655.650	38.53	0.27	38.80	46.00	-7.20	100	293	Peak
917.000	90.64	5.68	96.32			100	226	Peak

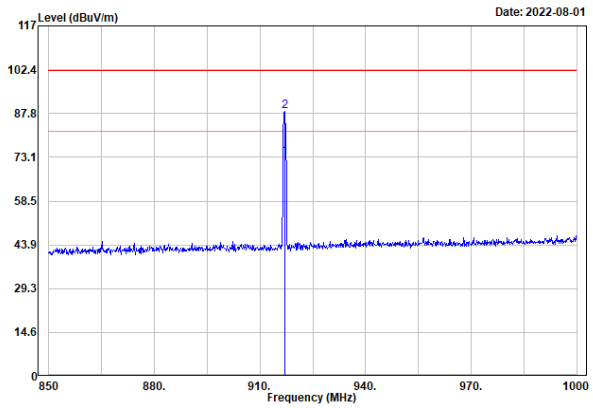
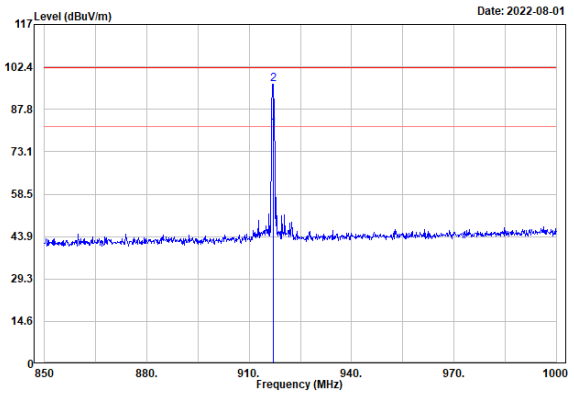
Note 1: If the spurious emissions maximized peak measured value complies with the QP/Average limit, it is unnecessary to perform an QP/Average measurement.

Note 2:

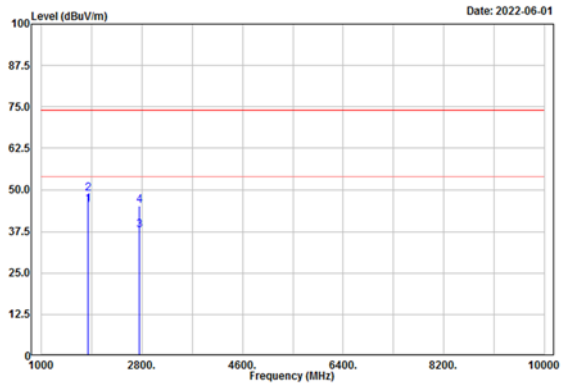
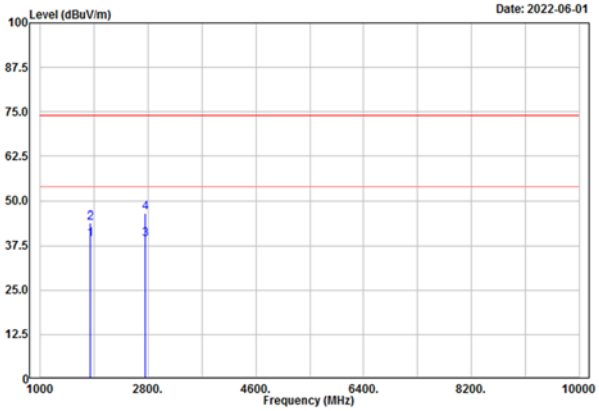
Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)

Margin (dB) = Level (dBμV /m) – Limit (dBμV/m)

Fundamental:

Horizontal	Vertical
	

1GHz-10GHz:

Horizontal	Vertical
	

Above 1GHz

Horizontal

917 MHz								
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin dB	Height (cm)	Degree (°)	Remark
917.000	88.31	-14.84	73.47	81.94	-8.47	100	56	Average
917.000	82.63	5.68	88.31	101.94	-13.63	100	56	Peak
1834.000	48.91	-14.84	34.07	54.00	-19.93	128	44	Average
1834.000	59.97	-11.06	48.91	74.00	-25.09	128	44	Peak
2751.000	45.20	-14.84	30.36	54.00	-23.64	158	250	Average
2751.000	53.92	-8.72	45.20	74.00	-28.80	158	250	Peak

Vertical

917 MHz								
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin dB	Height (cm)	Degree (°)	Remark
917.000	96.32	-14.84	81.48	81.94	-0.46	100	226	Average
917.000	90.64	5.68	96.32	101.94	-5.62	100	226	Peak
1834.000	43.78	-14.84	28.94	54.00	-25.06	137	215	Average
1834.000	54.84	-11.06	43.78	74.00	-30.22	137	215	Peak
2751.000	46.60	-14.84	31.76	54.00	-22.24	167	39	Average
2751.000	55.32	-8.72	46.60	74.00	-27.40	167	39	Peak

Note 1:

Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)

Margin (dB) = Result (dBµV /m) – Limit (dBµV/m)

Note 2:

Calculate Average value based on Duty Cycle correction factor:

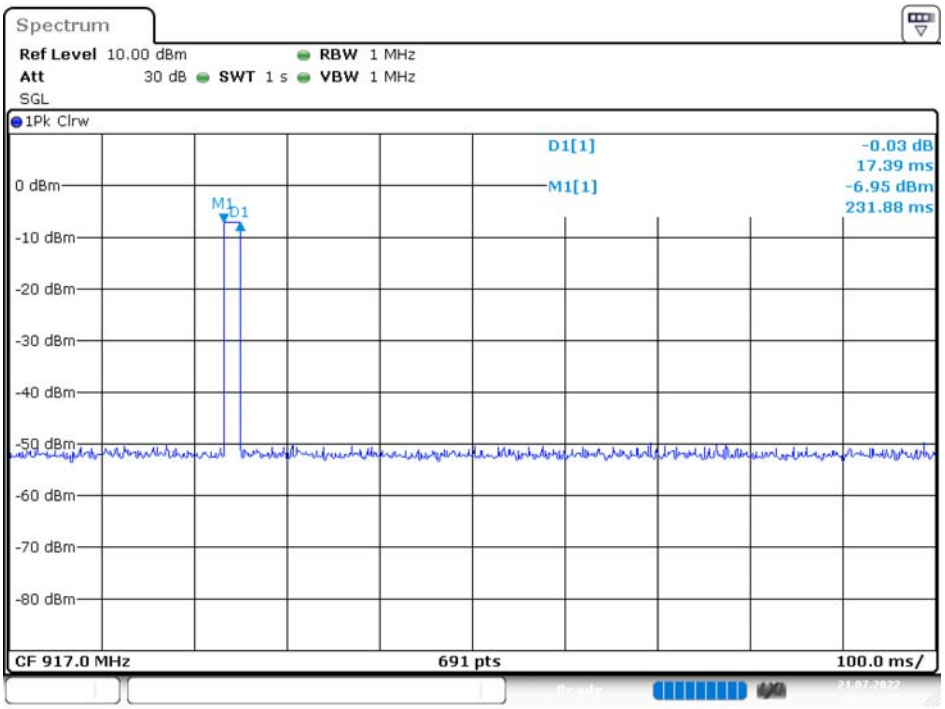
Tp = 100ms

Ton = 18.12ms

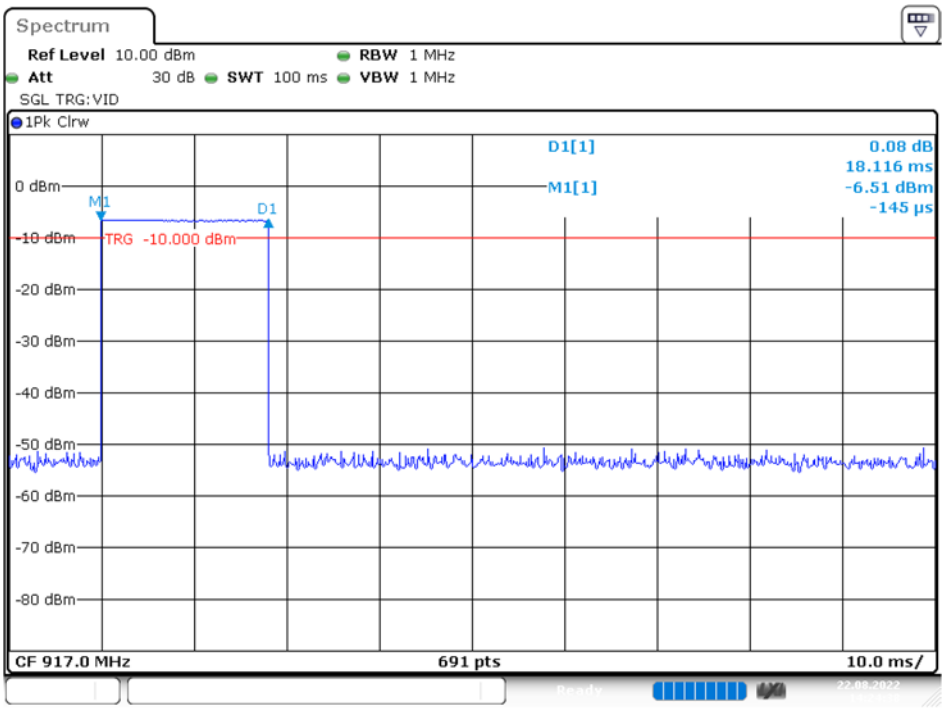
Duty Cycle Corrected Factor = 20*log(Ton/Tp) = 20*log(18.12ms/100ms) = -14.84 dB

Average value = Peak value + Duty Cycle Corrected Factor

Duty Cycle



Date: 21.JUL.2022 07:54:58



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8 FCC §15.231(a)(1) –Deactivation Testing

8.1 Applicable Standard

Per FCC §15.231(a) (1), A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released

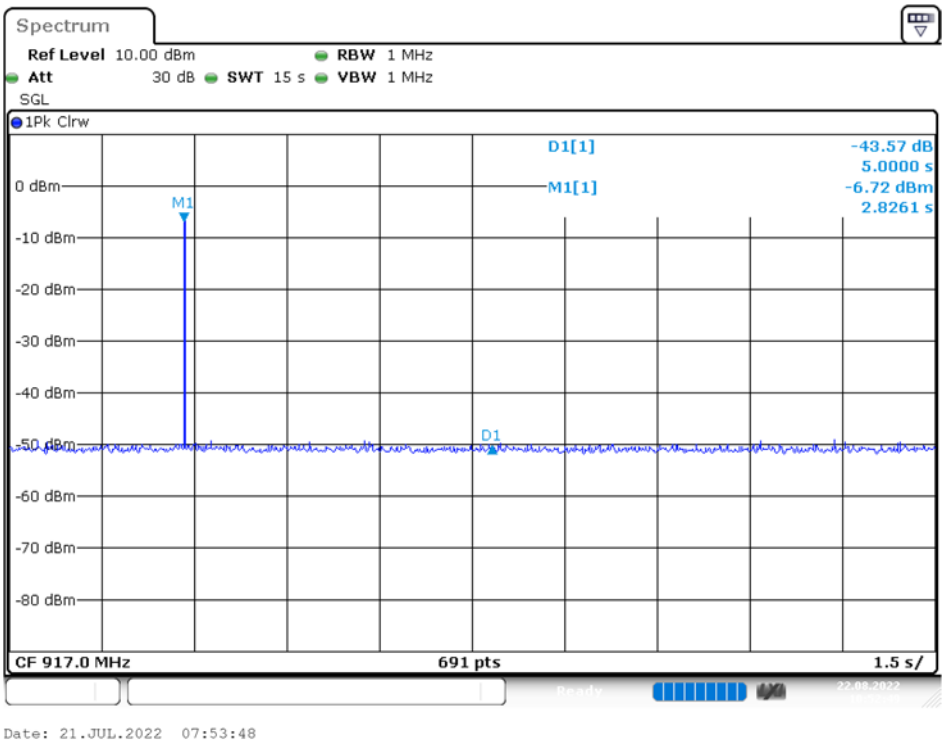
8.2 Test Procedure

1. With the EUT's antenna attached, the waveform was received by the test antenna which was connected to the spectrum analyzer.
2. Set center frequency of spectrum analyzer=operating frequency.
3. Set the spectrum analyzer as RBW=100k VBW=300k Span=0Hz.
4. Repeat above procedures until all frequency measured was complete.

8.3 Test Results

Test mode: Transmitting

5S



9 FCC §15.231(c) – 20 dB Emission Bandwidth Testing

9.1 Applicable Standard

Per 15.231(c), The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

9.2 Test Procedure

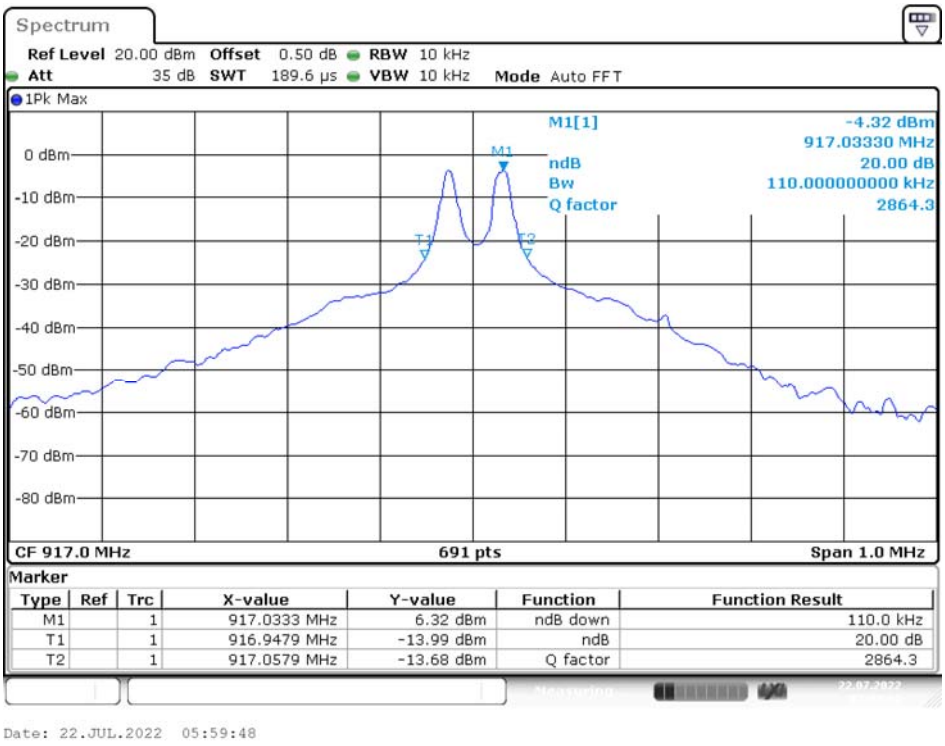
With the EUT's antenna attached, the waveform was received by the test antenna which was connected to the spectrum analyzer, plot the 20 dB bandwidth.

9.3 Test Results

Frequency (MHz)	20 dB Emission Bandwidth (kHz)	Limit (kHz)	Result
917	110.00	4585	Compliance

Note: Limit = 0.5% * Center Frequency = 0.5% * 917 MHz = 4585 kHz

20 dB Emission Bandwidth



10 FCC §1.1307(b)(3)(i)–RF Exposure

10.1 Applicable Standard

According to subpart 15.247(i) and subpart §1.1307(b)(3)(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

For single RF sources (*i.e.,* any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);
(B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold *Pth* (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). *Pth* is given by:

$$P_{th}\ (\text{mW}) = \begin{cases} ERP_{20\ cm}(d/20\ \text{cm})^x & d \le 20\ \text{cm} \\ ERP_{20\ cm} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases}$$

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ cm}\sqrt{f}}\right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20\ cm}\ (\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases}$$

(C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

Expand Table

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

10.2 Calculated Data:

Calculate the EIRP from the radiated field strength in the far field using Equation

EIRP= E_{Meas} + 20log (d_{Meas})−104.7

EIRP= 96.32 dBμV/m -95.2 = 1.12 dBm

Tune-up power = 1.5dBm

Project info

Band	Freq (MHz)	Turn-up (dBm)	Distances (mm)	Turn-up (mW)	ERP (dBm)	ERP (mW)
SRD	917	1.5	5	1.41	-0.65	0.86

Option A

The available maximum time-averaged power is no more than 1 mW

Band	Freq (MHz)	Result Option A
SRD	917	not exempt

Option C

The minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates

ERP (watts) is no more than the calculated value prescribed for that frequency

R must be at least λ/2π

λ is the free-space operating wavelength in meters

Band	Freq (MHz)	λ/2π (mm)	Distances applies	ERP Limit (mW)	Result Option C
SRD	917	52.07	not apply	0.29	not apply

Option B

The available maximum time-averaged power or effective radiated power (ERP), whichever is greater

This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive).

Band	Freq (MHz)	Pth (mW)	X	ERP 20cm (mW)	Result Option B
SRD	917	8.11	1.475	1870.68	exempt

******* END OF REPORT *******