Application for Certification
For a Transmitter.

MedLite ID Inc.
Atwood Innovation Plaza, Suite 108
453 S 600 E
St George, UT 84770

Medical Device Periodic Transmitter

M/N: IDA01US

FCC ID: 2ATMC-IDA01US
IC : 26774-IDA01US

REPORT # UT16044A-001

This report was prepared in accordance with the requirements of the FCC Rules and Regulations Part 2, Subpart J, 2.1033, Part 15.231, RSS-210 Issue 10, and other applicable sections of the rules as indicated herein.

Prepared By:

DNB Engineering, Inc.
1100 E Chalk Creek Road
Coalville, UT 84017

29 Jan 2021

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Paragraph numbers in this report follow the application section numbers found in the FEDERAL COMMUNICATIONS COMMISSION Rules and Regulations, Part 2, Subpart J for Certification of electronic equipment.

1.0 ADMINISTRATIVE DATA

1.1 Certifications and Qualifications

I certify that DNB Engineering, Inc conducted the tests performed in order to obtain the technical data presented in this application. Also, based on the results of the enclosed data, I have concluded that the equipment tested meets or exceeds the requirements of the Rules and Regulations governing this application.

1.2 Measurement Repeatability Information

The test data presented in this report has been acquired using the guidelines set forth in FCC Part 2.1031 through 2.1057, Part 15. The test results presented in this document are valid only for the equipment identified herein under the test conditions described. Repeatability of these test results will only be achieved with identical measurement conditions. These conditions include: The same test distance, EUT Height, Measurement Site Characteristics, and the same EUT System Components. The system must have the same Interconnecting Cables arranged in identical placement to that in the test set-up, with the system and/or EUT functioning in the identical mode of operation (i.e. software and so on) as on the date of the test. Any deviation from the test conditions and the environment on the date of the test may result in measurement repeatability difficulties.

All changes made to the EUT during the course of testing as identified in this test report must be incorporated into the EUT or identical models to ensure compliance with the FCC regulations.

C. L. Payne III (Para. 1.1)
Facility Manager
Coalville Facility.
DNB Engineering, Inc.
Tel. (435) 336-4433
FAX (435) 336-4436

1.3 Test Equipment List

TEST EQUIPMENT LIST - CONDUCTED EMISSIONS					
Description	**Manufacturer**	**Model No.**	**Asset #**	**Serial #**	**Cal Due**
LISN	Fisher Custom Communications	FCCLISN5032401	U-286	2020	03 Feb 2021
Spectrum Analyzer	Rhode & Schwarz	FSV30	U-248	101367	27 Aug 2021
TILE Software	ETS Lindgren	3.4.11.13	U-317	8112006	07 Mar 2021

TEST EQUIPMENT LIST - RADIATED EMISSIONS					
Description	**Manufacturer**	**Model No.**	**Asset #**	**Serial #**	**Cal Due**
Pre-Amplifier	Hewlett Packard	8447D	U-068	2727A06184	04 Aug 2021
Pre-Amplifier	DNB	S-21G	U-095	U-095-1	03 Feb 2021
BiConiLog Antenna	ETS - Lindgren	3142E	U-255	154973	03 Sep 2021
DRG Horn Antenna	AH Systems	SAS-571	U-071	417	11 Jul 2021
Spectrum Analyzer	Rhode & Schwarz	FSV30	U-248	101367	27 Aug 2021
TILE Software	ETS- Lindgren	3.4.11.13	U-317	8112006	07 Mar 2021

TEST EQUIPMENT LIST - ANTENNA CONDUCTED					
Description	**Manufacturer**	**Model No.**	**Asset #**	**Serial #**	**Cal Due**
Spectrum Analyzer	Rhode & Schwarz	FSV30	U-248	101367	27 Aug 2021

1.4 Test Summary Cross Reference

Test Item	FCC Requirement	IC Requirement	Test Method	Result
Antenna Requirement	15.203	RSS-Gen 6.8	---	Pass
Conducted Emissions (General Provisions)	15.207	RSS-Gen 8.8	ANSI C63.10-2013 Clause 6.2	N/A
Radiated Emissions (General Provisions)	15.209	RSS-Gen 8.9	ANSI C63.10-2013 Clause 6.5	Pass
Field Strength Limits - Fundamental	15.231 (b)	RSS-210 (A.1.2)	ANSI C63.10-2013 Clause 6.5	Pass
Field Strength Limits - Spurious	15.231 (b)	RSS-210 (A.1.2)	ANSI C63.10-2013 Clause 6.5	Pass
Dwell Time	15.231 (a)	RSS-210 (A.1.1)		Pass
20dB Bandwidth	15.231 (c)	RSS-210 (A.1.3)	ANSI C63.10-2013 Clause 6.9	Pass
99% Occupied Bandwidth	N/A	RSS-Gen 6.7	ANSI C63.10 Clause 6.9	Pass
Restricted Bands	15.205	RSS-Gen 8.10	ANSI C63.10-2013 Clause 11.12.2	Pass

RSS-GEN Issue 5 Mar 2019
RSS-210 Issue 10 Dec 2019

Preliminary scans were performed to determine worst case modulation, packet length, and data rates. Only worst case data has been recorded within the body of the test report.

1.5 Measurement Uncertainty

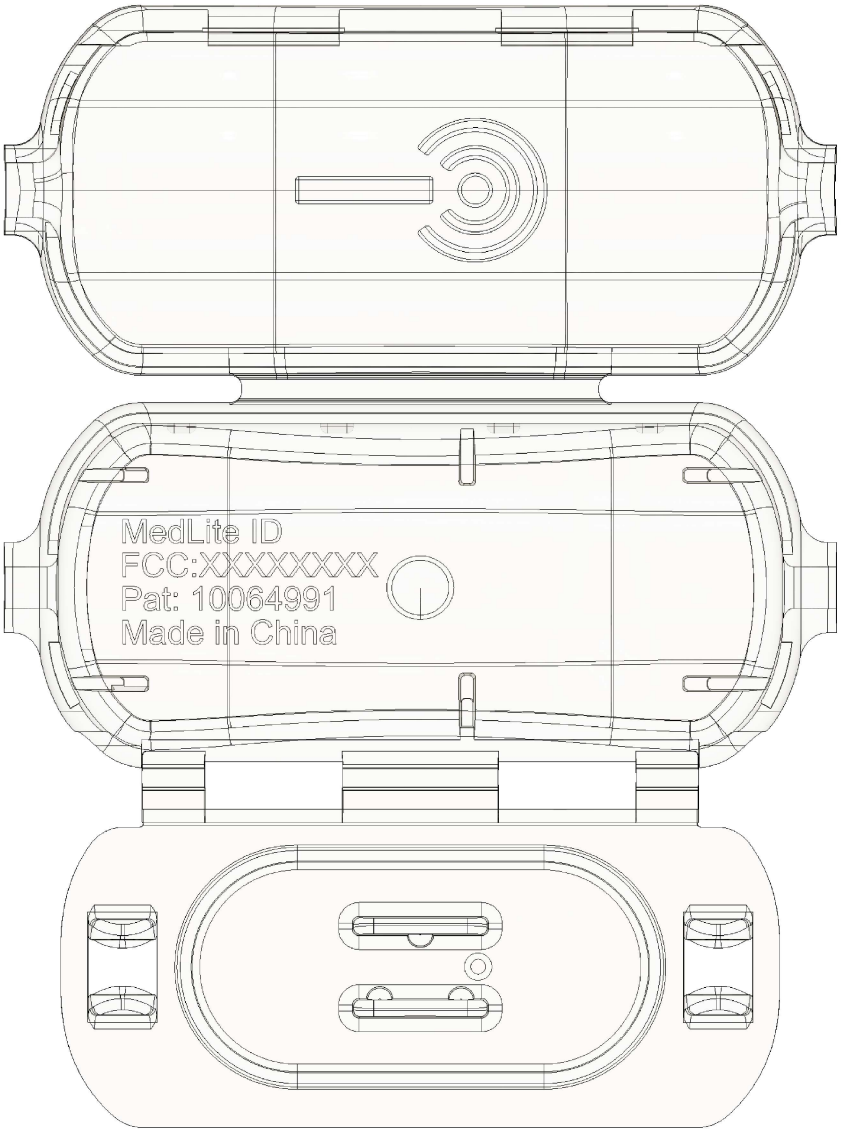
Measurement Type	Uncertainty
AC Conducted Emissions	± 1.67 dB
OATS - Radiated Emissions - Vertical Biconical (30-300MHz)	± 4.17 dB
OATS - Radiated Emissions - Horizontal Biconical (30-300MHz)	± 4.22 dB
OATS - Radiated Emissions - Vertical Log Periodic (300-100MHz)	± 4.92 dB
OATS - Radiated Emissions - Horizontal Log Periodic (300-1000MHz)	± 4.79 dB
OATS - Radiated Emissions - Vertical DRG Horn (> 1GHz)	± 5.74 dB
OATS - Radiated Emissions - Horizontal DRG Horn (>1GHz)	± 5.80 dB
Antenna Conducted Measurements	± 1.96 dB

2.1033 (b) (1) Application for Certification

Name of Applicant:	MedLite ID Inc. Atwood Innovation Plaza, Suite 108 453 S 600 E St George, UT 84770
FRN Number:	0028553477
Description:	Medical Device Periodic Transmitter
Model Number(s):	IDA01US
Anticipated Production Quantity:	Multiple Units
Channel Frequency Band:	915 MHz
Number of Channels	1
Field Strength:	66.43dBuV/m at 3 meters
Type of Signal:	FSK
Antenna Type:	ILA - Integral - Trace - Monopole
Antenna Gain:	2.0 dBi

2.1033 (b,2) FCC Identifier

Model Number: IDA01US
FCC ID: 2ATMC-IDA01US
IC: 26774-IDA01US
HVIN: IDA01US



RSS-Gen 4.2 ISED Identifier

Model Number/PMN: IDA01US
IC: 26774-IDA01US
HVIN: IDA01US

Excerpt from email with ISED confirming acceptability of applying IC ID and HVIN on packaging card:

From: "Certification Bureau / Bureau homologation (IC)" <ic.certificationbureau-bureauhomologation.ic@canada.ca>
Subject: RE: Selling FCC listed device in Canada
Date: December 7, 2020 at 6:36:42 AM MST
To: Jon Hart <jon@swarmeffect.com>

Good Day Jon,

Thank you for the additional information.
ISED will accept the product label information in the packaging card. Please proceed with this approach.

Regards,

Engineering, Planning and Standards Branch (14)
Innovation, Science and Economic Development Canada / Government of Canada
Tel: 613-990-4218 / TTY: 1-866-694-8389

Direction générale du génie, de la planification et des normes (14)
Innovation, Sciences et Développement économique Canada / Gouvernement du Canada
Tél: 613-990-4218 / ATS: 1-866-694-8389
ic.certificationbureau-bureauhomologation.ic@canada.ca

2.1033 (b,3)	Installation and Operating Instructions -	Supplied separately.
2.1033 (b,4)	Brief Description of Circuit Function -	Supplied separately.
2.1033 (b,5)	Block Diagram -	Supplied separately.
2.1033 (b,7)	Equipment Photographs -	Supplied separately.

2.1033 (b,6) Report of Measurements

15.203 Antenna 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 shall be considered sufficient to comply with the provisions of this section. 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Pass - Antenna gain is equal to or less than 2.0dBi

Pass - Antenna is an integral monopole trace ILA antenna

15.207 Conducted Emissions - Not Applicable - Battery Operated

15.209 Radiated Emissions (General Provisions)

Test Procedure: ANSI C63.10-2013

The EUT was measured on an open area test site (OATS).

A measuring distance of at least 3 m shall be used for measurements at frequencies up to 1 GHz. For frequencies above 1 GHz, any suitable measuring distance may be used. The equipment size (excluding the antenna) shall be less than 20 % of the measuring distance.

Sufficient precautions shall be taken to ensure that reflections from extraneous objects adjacent to the site do not degrade the measurement results, in particular:

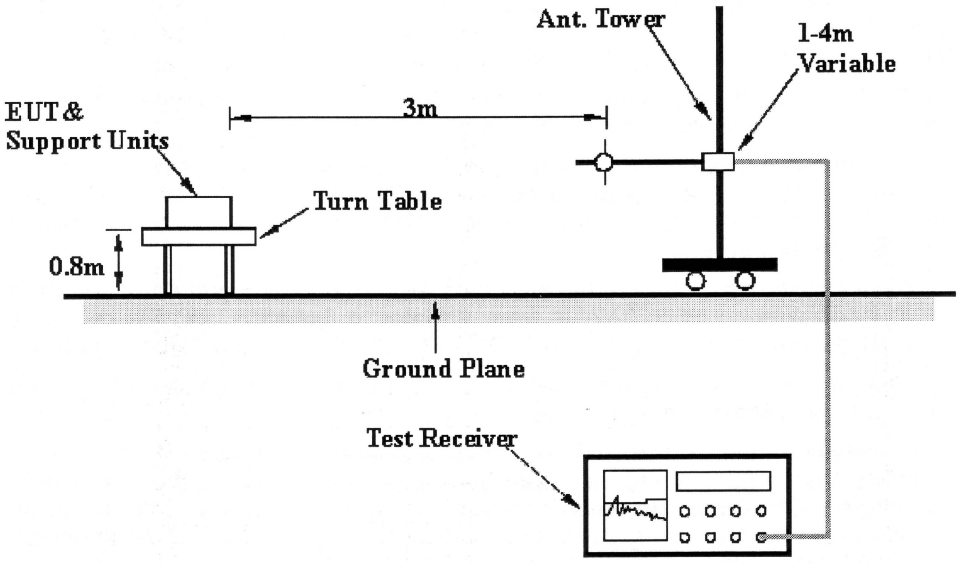
- no extraneous conducting objects having any dimension in excess of a quarter wavelength of the highest frequency tested shall be in the immediate vicinity of the site;

- all cables shall be as short as possible; as much of the cables as possible shall be on the ground plane or preferably below; and the low impedance cables shall be screened.

- EUT was positioned in three orthogonal axis - only the worst case data (X-Axis) has been recorded

The EUT shall be placed upon a non-conductive table (wooden for below 1GHz and styrene above 1GHz) 0.80 meters above the ground plane for frequencies from 30 to 1000MHz and 1.5 meters above the ground plane above 1 Ghz and shall be placed in the “worst case” transmitting mode. The EUT shall be rotated 360 degrees to find the azimuth maxima. The receive antenna shall then be raised and lowered between 1 to 4 meters to find the maximum signal emanating from the EUT. This signal strength is then recorded on the data sheets.

Frequency (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measurement Distance (meters)
.0009 - 0.490	2400/F(kHz)	$20*(\text{Log}_{10}(2400/F(kHz))$	300
0.490 - 1.705	24000/F(kHz)	$20*(\text{Log}_{10}(24000/F(kHz))$	30
1.705 - 30.0	30	29.5	30
30 - 88	100	40.0	3
88 - 216	150	43.5	3
216 - 960	200	46.0	3
Above 960	500	54.0	3


Ant. Tower
1-4m
Variable
EUT &
Support Units
3m
Turn Table
0.8m
Ground Plane
Test Receiver

1100 E Chalk Creek Road
Coalville, UT 84017
(435) 336-4433
FAX (435) 336-4436

Radiated Emissions (General)

DNB Job Number:	16044	Date: 5 Nov 2020	Specification
Customer:	MedLite ID Inc.		[X] 15.209
Model Number:	IDA01US		[X] ANSI C63.10-2013
Description:	Medical Device Periodic Transmitter		

EUT is in conformance with FCC 15.209	X	YES		NO	Signed	*Y Staples*

Radiated Emissions

FREQ (Mhz)	S/A Reading	Correction Factors (dB)			dBuV/m			Positions			
		Ant	Cbl	Amp	Corr	Lim	Delta	Typ	Tbl	Pl	Hgt
59.936	34.8	10.6	1.2	26.5	20.11	40.00	-19.89	Pk	0 to 360	Horz	1 to 4
170.333	29.5	14.5	2.1	26.2	19.85	40.00	-20.15	Pk	0 to 360	Horz	1 to 4
236.010	29.7	15.7	2.7	25.9	22.17	47.00	-24.83	Pk	0 to 360	Horz	1 to 4
476.313	26.2	22.5	4.1	27.0	25.81	47.00	-21.19	Pk	0 to 360	Horz	1 to 4
556.375	27.5	23.7	4.5	27.3	28.39	47.00	-18.61	Pk	0 to 360	Horz	1 to 4
701.538	24.2	27.6	5.2	27.5	29.47	47.00	-17.53	Pk	0 to 360	Horz	1 to 4
33.443	28.6	18.0	1.1	26.6	21.09	40.00	-18.91	Pk	0 to 360	Vert	1 to 4
69.994	36.0	11.2	1.3	26.5	21.98	40.00	-18.02	Pk	0 to 360	Vert	1 to 4
248.801	26.6	16.3	2.8	25.9	19.75	47.00	-27.25	Pk	0 to 360	Vert	1 to 4
396.163	24.0	21.8	3.7	26.5	22.98	47.00	-24.02	Pk	0 to 360	Vert	1 to 4
541.763	24.9	23.4	4.5	27.2	25.58	47.00	-21.42	Pk	0 to 360	Vert	1 to 4
948.288	25.1	27.8	5.9	27.1	31.70	47.00	-15.30	Pk	0 to 360	Vert	1 to 4

EUT was placed in the normal operating position.

15.231 (b) Field Strength Limits - Fundamental ANSI C63.10-2013 Clause 6.5

In addition to the provisions of §15.205, 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 emissions (microvolts/meter)
40.66 - 40.70	2,250	250
70 -130	1,250	125
130 - 174	[1]1,250 to 3,750	[1]125 to 375
174 - 260	3,750	375
260 - 470	[1]3,750 to 12,500	[1]375 to 1,250
Above 470	12,500	1,250

[1]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.

Use the following spectrum analyzer settings:

Span	=	wide enough to fully capture the emission being measured
RBW	=	1 MHz for f ≥ 1 GHz, 120 kHz for f < 1 GHz
VBW	=	≥ RBW
Sweep	=	auto
Detector function	=	Quasi-peak below 1GHz , Average and Peak above 1GHz
Trace	=	max hold

Follow the guidelines in ANSI C63.10-2013with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The quasi-peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data.

Client: MedLite ID Inc. Date: 5 Nov 2020 DNB Job: 16044

EUT: Medical Device Periodic Transmitter Model No: IDA01US

Requirement: 15.231 (b) Tech: Y Staples

Channel Frequency: 915 MHz Result: Pass

Field Strength - Fundamental												
Freq in MHz	Meter Reading (dBuV/m)	Pre-Amp (dB)	Cable (dB)	Antenna (dB)	Corr'd Reading (dBuV/m)	Limit (dBuV/m)	Delta	Azimuth (degrees)	Height (m)	Polarity	Meas Type	Axis
915.000	46.5	27.0	6.7	28.3	54.53	81.94	-27.42	47	1.00	Vert	QP	X
915.000	55.3	27.0	6.7	28.3	63.33	81.94	-18.62	320	1.00	Horz	QP	X
915.000	58.4	27.0	6.7	28.3	66.43	81.94	-15.52	0	1.00	Vert	QP	Y
915.000	57.4	27.0	6.7	28.3	65.43	81.94	-16.52	28	1.00	Horz	QP	Y
915.000	55.6	27.0	6.7	28.3	63.63	81.94	-18.32	217	1.10	Vert	QP	Z
915.000	49.8	27.0	6.7	28.3	57.78	81.94	-24.17	23	3.91	Horz	QP	Z

15.231 (b) Field Strength Limits - Spurious ANSI C63.10-2013 Clause 6.6

In addition to the provisions of §15.205, 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 emissions (microvolts/meter)
40.66 - 40.70	2,250	250
70 -130	1,250	125
130 - 174	[1]1,250 to 3,750	[1]125 to 375
174 - 260	3,750	375
260 - 470	[1]3,750 to 12,500	[1]375 to 1,250
Above 470	12,500	1,250

[1]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.

Use the following spectrum analyzer settings:

Span	=	wide enough to fully capture the emission being measured
RBW	=	1 MHz for f ≥ 1 GHz, 120 kHz for f < 1 GHz
VBW	=	≥ RBW
Sweep	=	auto
Detector function	=	Quasi-peak below 1GHz , Average and Peak above 1GHz
Trace	=	max hold

Follow the guidelines in ANSI C63.10-2013with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. Submit this data.

Now repeat the measurement using the average detector of the spectrum analyzer. Submit this data.

Note 1: The average reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified..

Note 2: Highest frequency investigated was the tenth harmonic of the fundamental.

Client: MedLite ID Inc. Date: 5 Nov 2020 DNB Job: 16044

EUT: Medical Device Periodic Transmitter Model No: IDA01US

Requirement: 15.231 (b) Tech: Y Staples

Channel Frequency: 915 MHz Result: Pass

Field Strength - Spurious												
Freq in MHz	Meter Reading (dBuV/m)	Pre-Amp (dB)	Cable (dB)	Antenna (dB)	Corr'd Reading (dBuV/m)	Limit (dBuV/m)	Delta	Azimuth (degrees)	Height (m)	Polarity	Meas Type	Axis
1830.000	32.6	26.2	3.3	27.3	36.97	61.9	-24.97	276	1.00	Vert	Peak	X
1830.000	21.2	26.2	3.3	27.3	25.63	61.9	-36.31	276	1.00	Vert	Ave	X
2745.000	32.1	26.2	4.2	30.1	40.31	61.9	-21.63	0	1.00	Vert	Peak	X
2745.000	21.0	26.2	4.2	30.1	29.17	61.9	-32.77	0	1.00	Vert	Ave	X
3660.000	33.3	26.0	5.1	31.0	43.39	61.9	-18.55	0	1.00	Vert	Peak	X
3660.000	21.2	26.0	5.1	31.0	31.30	61.9	-30.64	0	1.00	Vert	Ave	X
4575.000	35.1	25.8	5.8	32.3	47.41	61.9	-14.53	210	1.48	Vert	Peak	X
4575.000	24.0	25.8	5.8	32.3	36.37	61.9	-25.57	210	1.48	Vert	Ave	X
5490.000	31.7	25.6	6.1	34.9	47.13	61.9	-14.82	0	1.00	Vert	Peak	X
5490.000	21.5	25.6	6.1	34.9	36.96	61.9	-24.99	0	1.00	Vert	Ave	X
6405.000	32.2	25.7	6.5	36.0	48.89	61.9	-13.05	0	1.00	Vert	Peak	X
6405.000	22.6	25.7	6.5	36.0	39.32	61.9	-22.62	0	1.00	Vert	Ave	X
7320.000	31.0	25.5	7.3	37.1	49.88	61.9	-12.06	0	1.00	Vert	Peak	X
7320.000	19.5	25.5	7.3	37.1	38.36	61.9	-23.58	0	1.00	Vert	Ave	X
8235.000	30.1	25.1	8.2	37.4	50.62	61.9	-11.32	0	1.00	Vert	Peak	X
8235.000	19.2	25.1	8.2	37.4	39.70	61.9	-22.24	0	1.00	Vert	Ave	X
9150.000	31.1	24.8	9.0	37.6	52.89	61.9	-9.05	0	1.00	Vert	Peak	X
9150.000	20.1	24.8	9.0	37.6	41.91	61.9	-20.03	0	1.00	Vert	Ave	X
1830.000	31.8	26.2	3.3	27.3	36.18	61.9	-25.76	0	1.00	Horz	Peak	X
1830.000	21.1	26.2	3.3	27.3	25.46	61.9	-36.48	0	1.00	Horz	Ave	X
2745.000	31.9	26.2	4.2	30.1	40.13	61.9	-21.81	11	1.00	Horz	Peak	X
2745.000	21.3	26.2	4.2	30.1	29.45	61.9	-32.49	11	1.00	Horz	Ave	X
3660.000	33.5	26.0	5.1	31.0	43.65	61.9	-18.29	0	1.00	Horz	Peak	X
3660.000	21.1	26.0	5.1	31.0	31.21	61.9	-30.73	0	1.00	Horz	Ave	X
4575.000	34.6	25.8	5.8	32.3	46.95	61.9	-14.99	113	1.53	Horz	Peak	X
4575.000	23.4	25.8	5.8	32.3	35.71	61.9	-26.23	113	1.53	Horz	Ave	X
5490.000	32.7	25.6	6.1	34.9	48.13	61.9	-13.82	0	1.00	Horz	Peak	X
5490.000	21.6	25.6	6.1	34.9	37.03	61.9	-24.92	0	1.00	Horz	Ave	X
6405.000	34.5	25.7	6.5	36.0	51.26	61.9	-10.68	0	1.00	Horz	Peak	X
6405.000	22.6	25.7	6.5	36.0	39.37	61.9	-22.57	0	1.00	Horz	Ave	X
7320.000	32.4	25.5	7.3	37.1	51.24	61.9	-10.70	0	1.00	Horz	Peak	X
7320.000	19.6	25.5	7.3	37.1	38.40	61.9	-23.54	0	1.00	Horz	Ave	X
8235.000	31.9	25.1	8.2	37.4	52.34	61.9	-9.60	0	1.00	Horz	Peak	X
8235.000	19.0	25.1	8.2	37.4	39.49	61.9	-22.45	0	1.00	Horz	Ave	X
9150.000	30.6	24.8	9.0	37.6	52.40	61.9	-9.54	0	1.00	Horz	Peak	X
9150.000	20.0	24.8	9.0	37.6	41.81	61.9	-20.13	0	1.00	Horz	Ave	X

Client: MedLite ID Inc. Date: 5 Nov 2020 DNB Job: 16044

EUT: Medical Device Periodic Transmitter Model No: IDA01US

Requirement: 15.231 (b) Tech: Y Staples

Channel Frequency: 915 MHz Result: Pass

Field Strength - Spurious												
Freq in MHz	Meter Reading (dBuV/m)	Pre-Amp (dB)	Cable (dB)	Antenna (dB)	Corr'd Reading (dBuV/m)	Limit (dBuV/m)	Delta	Azimuth (degrees)	Height (m)	Polarity	Meas Type	Axis
1830.000	34.0	26.2	3.3	27.3	38.42	61.9	-23.52	0	1.00	Vert	Peak	Y
1830.000	21.2	26.2	3.3	27.3	25.65	61.9	-36.29	0	1.00	Vert	Ave	Y
2745.000	33.9	26.2	4.2	30.1	42.09	61.9	-19.85	0	1.00	Vert	Peak	Y
2745.000	21.0	26.2	4.2	30.1	29.16	61.9	-32.78	0	1.00	Vert	Ave	Y
3660.000	33.2	26.0	5.1	31.0	43.29	61.9	-18.65	0	1.18	Vert	Peak	Y
3660.000	21.1	26.0	5.1	31.0	31.20	61.9	-30.74	0	1.18	Vert	Ave	Y
4575.000	37.2	25.8	5.8	32.3	49.51	61.9	-12.43	50	1.00	Vert	Peak	Y
4575.000	27.7	25.8	5.8	32.3	39.98	61.9	-21.96	50	1.00	Vert	Ave	Y
5490.000	33.3	25.6	6.1	34.9	48.75	61.9	-13.20	0	1.00	Vert	Peak	Y
5490.000	21.6	25.6	6.1	34.9	37.02	61.9	-24.93	0	1.00	Vert	Ave	Y
6405.000	33.2	25.7	6.5	36.0	49.96	61.9	-11.98	0	1.00	Vert	Peak	Y
6405.000	22.7	25.7	6.5	36.0	39.41	61.9	-22.53	0	1.00	Vert	Ave	Y
7320.000	32.1	25.5	7.3	37.1	50.98	61.9	-10.96	0	1.00	Vert	Peak	Y
7320.000	19.7	25.5	7.3	37.1	38.50	61.9	-23.44	0	1.00	Vert	Ave	Y
8235.000	30.1	25.1	8.2	37.4	50.62	61.9	-11.32	0	1.00	Vert	Peak	Y
8235.000	19.3	25.1	8.2	37.4	39.80	61.9	-22.14	0	1.00	Vert	Ave	Y
9150.000	33.4	24.8	9.0	37.6	55.21	61.9	-6.73	0	1.00	Vert	Peak	Y
9150.000	20.1	24.8	9.0	37.6	41.91	61.9	-20.03	0	1.00	Vert	Ave	Y
1830.000	34.7	26.2	3.3	27.3	39.09	61.9	-22.85	0	1.00	Horz	Peak	Y
1830.000	21.3	26.2	3.3	27.3	25.67	61.9	-36.27	0	1.00	Horz	Ave	Y
2745.000	34.4	26.2	4.2	30.1	42.59	61.9	-19.35	0	1.00	Horz	Peak	Y
2745.000	21.8	26.2	4.2	30.1	29.95	61.9	-31.99	0	1.00	Horz	Ave	Y
3660.000	32.4	26.0	5.1	31.0	42.50	61.9	-19.44	0	1.00	Horz	Peak	Y
3660.000	21.1	26.0	5.1	31.0	31.24	61.9	-30.70	0	1.00	Horz	Ave	Y
4575.000	33.0	25.8	5.8	32.3	45.34	61.9	-16.60	0	1.00	Horz	Peak	Y
4575.000	21.1	25.8	5.8	32.3	33.43	61.9	-28.51	0	1.00	Horz	Ave	Y
5490.000	32.2	25.6	6.1	34.9	47.64	61.9	-14.31	0	1.00	Horz	Peak	Y
5490.000	21.8	25.6	6.1	34.9	37.18	61.9	-24.77	0	1.00	Horz	Ave	Y
6405.000	33.1	25.7	6.5	36.0	49.88	61.9	-12.06	0	1.00	Horz	Peak	Y
6405.000	22.6	25.7	6.5	36.0	39.38	61.9	-22.56	0	1.00	Horz	Ave	Y
7320.000	31.7	25.5	7.3	37.1	50.50	61.9	-11.44	0	1.00	Horz	Peak	Y
7320.000	19.6	25.5	7.3	37.1	38.43	61.9	-23.51	0	1.00	Horz	Ave	Y
8235.000	32.0	25.1	8.2	37.4	52.49	61.9	-9.45	0	1.00	Horz	Peak	Y
8235.000	19.3	25.1	8.2	37.4	39.81	61.9	-22.13	0	1.00	Horz	Ave	Y
9150.000	32.8	24.8	9.0	37.6	54.63	61.9	-7.31	0	1.00	Horz	Peak	Y
9150.000	20.1	24.8	9.0	37.6	41.87	61.9	-20.07	0	1.00	Horz	Ave	Y

Client: MedLite ID Inc. Date: 5 Nov 2020 DNB Job: 16044

EUT: Medical Device Periodic Transmitter Model No: IDA01US

Requirement: 15.231 (b) Tech: Y Staples

Channel Frequency: 915 MHz Result: Pass

Field Strength - Spurious												
Freq in MHz	Meter Reading (dBuV/m)	Pre-Amp (dB)	Cable (dB)	Antenna (dB)	Corr'd Reading (dBuV/m)	Limit (dBuV/m)	Delta	Azimuth (degrees)	Height (m)	Polarity	Meas Type	Axis
1830.000	34.6	26.2	3.3	27.3	39.01	61.9	-22.93	0	1.00	Vert	Peak	Z
1830.000	21.1	26.2	3.3	27.3	25.48	61.9	-36.46	0	1.00	Vert	Ave	Z
2745.000	33.7	26.2	4.2	30.1	41.89	61.9	-20.05	88	1.00	Vert	Peak	Z
2745.000	21.6	26.2	4.2	30.1	29.74	61.9	-32.20	88	1.00	Vert	Ave	Z
3660.000	33.8	26.0	5.1	31.0	43.96	61.9	-17.98	0	1.00	Vert	Peak	Z
3660.000	21.2	26.0	5.1	31.0	31.36	61.9	-30.58	0	1.00	Vert	Ave	Z
4575.000	34.1	25.8	5.8	32.3	46.46	61.9	-15.48	20	1.00	Vert	Peak	Z
4575.000	22.0	25.8	5.8	32.3	34.30	61.9	-27.64	20	1.00	Vert	Ave	Z
5490.000	33.0	25.6	6.1	34.9	48.40	61.9	-13.55	352	1.00	Vert	Peak	Z
5490.000	21.6	25.6	6.1	34.9	37.07	61.9	-24.88	352	1.00	Vert	Ave	Z
6405.000	33.5	25.7	6.5	36.0	50.24	61.9	-11.70	0	1.00	Vert	Peak	Z
6405.000	22.7	25.7	6.5	36.0	39.39	61.9	-22.55	0	1.00	Vert	Ave	Z
7320.000	32.2	25.5	7.3	37.1	51.07	61.9	-10.87	0	1.00	Vert	Peak	Z
7320.000	19.6	25.5	7.3	37.1	38.44	61.9	-23.50	0	1.00	Vert	Ave	Z
8235.000	31.9	25.1	8.2	37.4	52.42	61.9	-9.52	0	1.00	Vert	Peak	Z
8235.000	19.3	25.1	8.2	37.4	39.77	61.9	-22.17	0	1.00	Vert	Ave	Z
9150.000	32.6	24.8	9.0	37.6	54.41	61.9	-7.53	0	1.00	Vert	Peak	Z
9150.000	20.1	24.8	9.0	37.6	41.91	61.9	-20.03	0	1.00	Vert	Ave	Z
1830.000	34.1	26.2	3.3	27.3	38.48	61.9	-23.46	0	1.00	Horz	Peak	Z
1830.000	21.3	26.2	3.3	27.3	25.66	61.9	-36.28	0	1.00	Horz	Ave	Z
2745.000	33.9	26.2	4.2	30.1	42.09	61.9	-19.85	102	1.00	Horz	Peak	Z
2745.000	21.7	26.2	4.2	30.1	29.88	61.9	-32.06	102	1.00	Horz	Ave	Z
3660.000	31.6	26.0	5.1	31.0	41.70	61.9	-20.24	0	1.00	Horz	Peak	Z
3660.000	21.1	26.0	5.1	31.0	31.24	61.9	-30.70	0	1.00	Horz	Ave	Z
4575.000	33.6	25.8	5.8	32.3	45.96	61.9	-15.98	0	1.00	Horz	Peak	Z
4575.000	22.5	25.8	5.8	32.3	34.82	61.9	-27.12	0	1.00	Horz	Ave	Z
5490.000	32.4	25.6	6.1	34.9	47.81	61.9	-14.14	0	1.00	Horz	Peak	Z
5490.000	21.6	25.6	6.1	34.9	37.05	61.9	-24.90	0	1.00	Horz	Ave	Z
6405.000	34.0	25.7	6.5	36.0	50.76	61.9	-11.18	0	1.00	Horz	Peak	Z
6405.000	22.7	25.7	6.5	36.0	39.42	61.9	-22.52	0	1.00	Horz	Ave	Z
7320.000	32.7	25.5	7.3	37.1	51.54	61.9	-10.40	0	1.00	Horz	Peak	Z
7320.000	19.6	25.5	7.3	37.1	38.46	61.9	-23.48	0	1.00	Horz	Ave	Z
8235.000	32.4	25.1	8.2	37.4	52.91	61.9	-9.03	0	1.00	Horz	Peak	Z
8235.000	19.6	25.1	8.2	37.4	40.09	61.9	-21.85	0	1.00	Horz	Ave	Z
9150.000	30.3	24.8	9.0	37.6	52.10	61.9	-9.84	0	1.00	Horz	Peak	Z
9150.000	20.1	24.8	9.0	37.6	41.86	61.9	-20.08	0	1.00	Horz	Ave	Z

15.231 (a) Dwell Time

Time of occupancy (dwell time)

The EUT shall have its channel frequency transmitting. Use the following spectrum analyzer settings:

a) Span: Zero span, centered on a hopping channel.

b) RBW shall be ≤ channel spacing and where possible RBW should be set >> 1 / T, where T is the expected dwell time per channel.

c) Sweep: As necessary to capture the entire dwell time per hopping channel; where possible use a video trigger and trigger delay so that the transmitted signal starts a little to the right of the start of the plot. The trigger level might need slight adjustment to prevent triggering when the system hops on an adjacent channel; a second plot might be needed with a longer sweep time to show two successive hops on a channel.

d) Detector function: Peak.

e) Trace: Max hold.

Use the marker-delta function to determine the transmit time on parameter. If this value varies with different modes of operation (data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation in transmit time. Submit the data.

The sweep time shall be equal to, or less than, the period specified in the requirements.

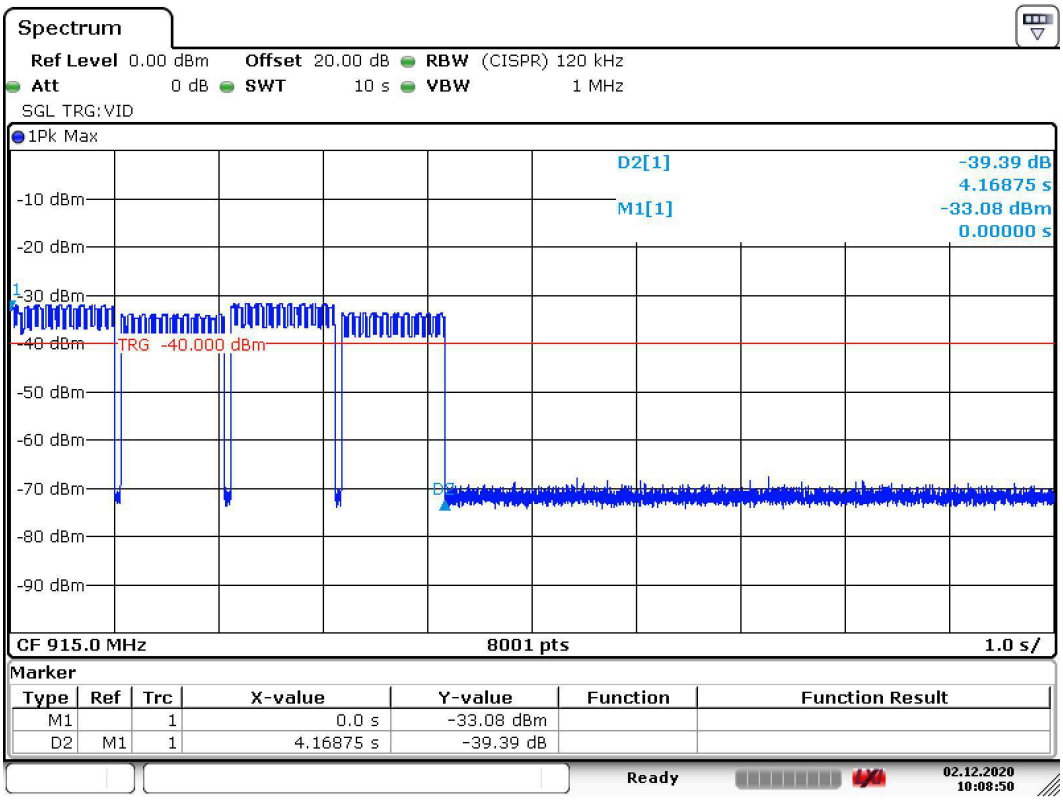
Requirement: A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

Client: MedLite ID Inc. Date: 2 Dec 2020 DNB Job: 16044

EUT: Medical Device Periodic Transmitter Model No: IDA01US

Requirement ≤ 5 seconds Tech: CL Payne

Channel Frequency: 915MHz Result: Pass



Date: 2.DEC.2020 10:08:50

15.231 (c) 20 dB Bandwidth ANSI C63.10-2013 Clause 6.9

20dB bandwidth measurement procedure

a) Set RBW = 10 kHz
b) Set the VBW ≥ [3 x RBW]
* per ANSI C63.10-2013 clause 6.9.2 Set the span to 2 to 5 times the OBW
c) Detector = peak
d) Trace mode = max hold
e) Sweep = auto couple
f) Allow trace to stabilize
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission.
h) Submit this plot(s).

Requirement: FCC Part 15.231 Clause (c)

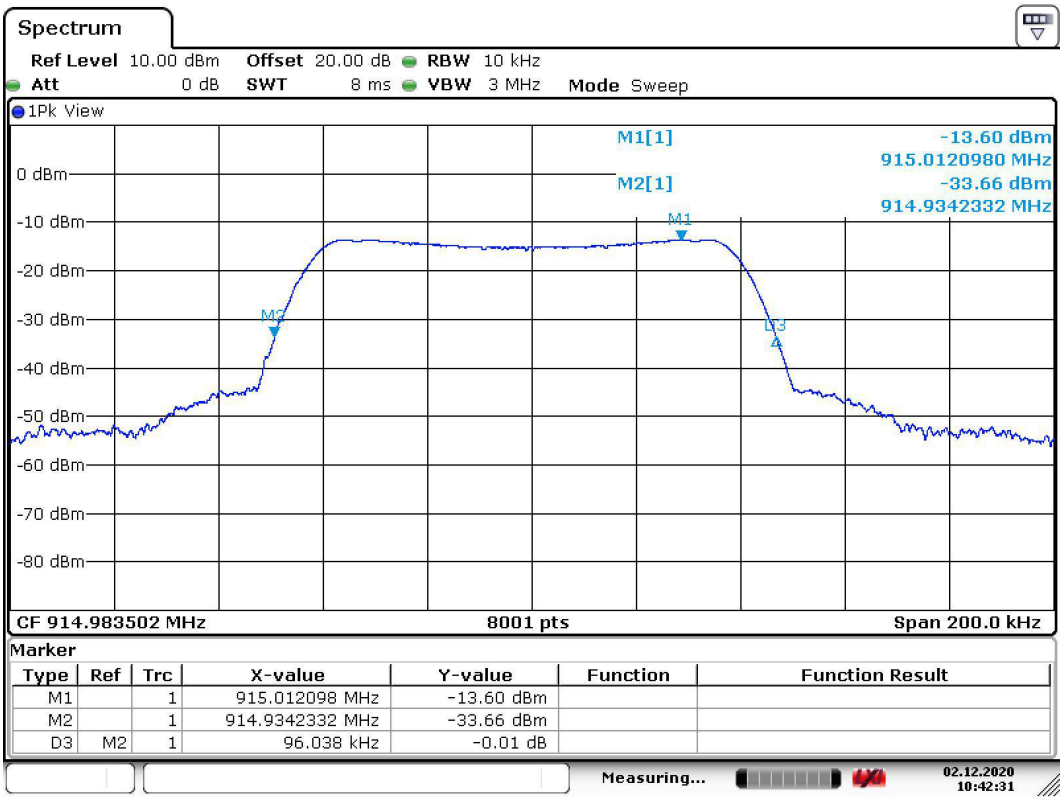
The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Client: MedLite ID Inc. Date: 2 Dec 2020 DNB Job: 16044

EUT: Medical Device Periodic Transmitter Model No: IDA01US

Requirement: ≤ 0.5% of the Center Frequency Tech: CL Payne

Channel Frequency: 915MHz Result: Pass



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Occupied bandwidth—power bandwidth (99%) measurement procedure

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.

b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.

c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.

d) Step a) through step c) might require iteration to adjust within the specified range.

e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.

f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.

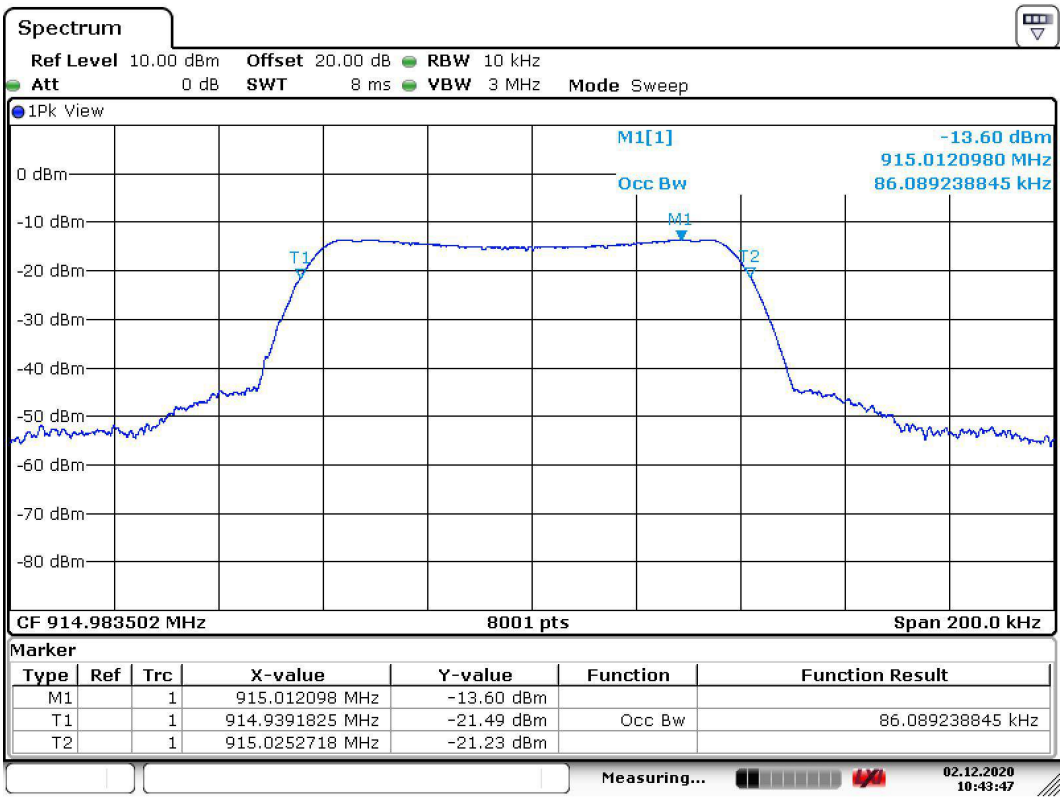
h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

Client: MedLite ID Inc. Date: 2 Dec 2020 DNB Job: 16044

EUT: Medical Device Periodic Transmitter Model No: IDA01US

Requirement: Record the result Tech: CL Payne

Channel Frequency: 915MHz Result: Pass



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11.12.2 Antenna-port conducted measurements

11.12.2.1 General

Antenna-port conducted measurements may also be used as an alternative to radiated measurements for determining compliance in the restricted frequency bands requirements. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case emissions is required.

11.12.2.2 General procedure for conducted measurements in restricted bands

The general procedure for conducted measurements in restricted bands is as follows:

a) Measure the conducted output power (in dBm) using the detector specified by the appropriate regulatory agency (see 11.12.2.3 through 11.12.2.5 for guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).

b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP (see 11.12.2.6 for guidance on determining the applicable antenna gain).

c) Add the appropriate maximum ground reflection factor to the EIRP (6 dB for frequencies ≤ 30 MHz; 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive; and 0 dB for frequencies > 1000 MHz).

d) For MIMO devices, measure the power of each chain and sum the EIRP of all chains in linear terms (i.e., watts and mW).

e) Convert the resultant EIRP to an equivalent electric field strength using the following relationship:

$E = \text{EIRP} - 20 \log d + 104.8$
where
E is the electric field strength in dBμV/m
EIRP is the equivalent isotropically radiated power in dBm
d is the specified measurement distance in m

f) Compare the resultant electric field strength level with the applicable regulatory limit.

g) Perform the radiated spurious emission test.

15.247 (d) Restricted Bands - *continued*

Note: With respect to steps e) and f) a limit line (EIRP) based upon the dBuV/m limit was calculated and put on the plots to satisfy the requirement of step f) above. Formula is: (E + 20 log *d*) - 104.8 = (EIRP limit). The appropriate correction factor from step c) was included in the final calculation.

Limit Calculation:

Formula: E – 104.8 + 20log(3) – antenna gain – ground reflection factor

30 MHz - 88 MHz	40 - 104.8 + 20log(d) - 2 - 4.7	= -61.96 dBm
88 MHz - 216 MHz	43 - 104.8 + 20log(d) - 2 - 4.7	= -58.96 dBm
216 MHz - 960 MHz	46 - 104.8 + 20log(d) - 2 - 4.7	= -55.96 dBm
960 MHz - 1000 MHz	54 - 104.8 + 20log(d) - 2 - 4.7	= -47.96 dBm
> 1000 MHz	54 - 104.8 + 20log(d) - 2 - 0	= -43.26 dBm

Note: (d) = Measurement distance in meters = 3 meters

Requirement: FCC Part 15.205

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

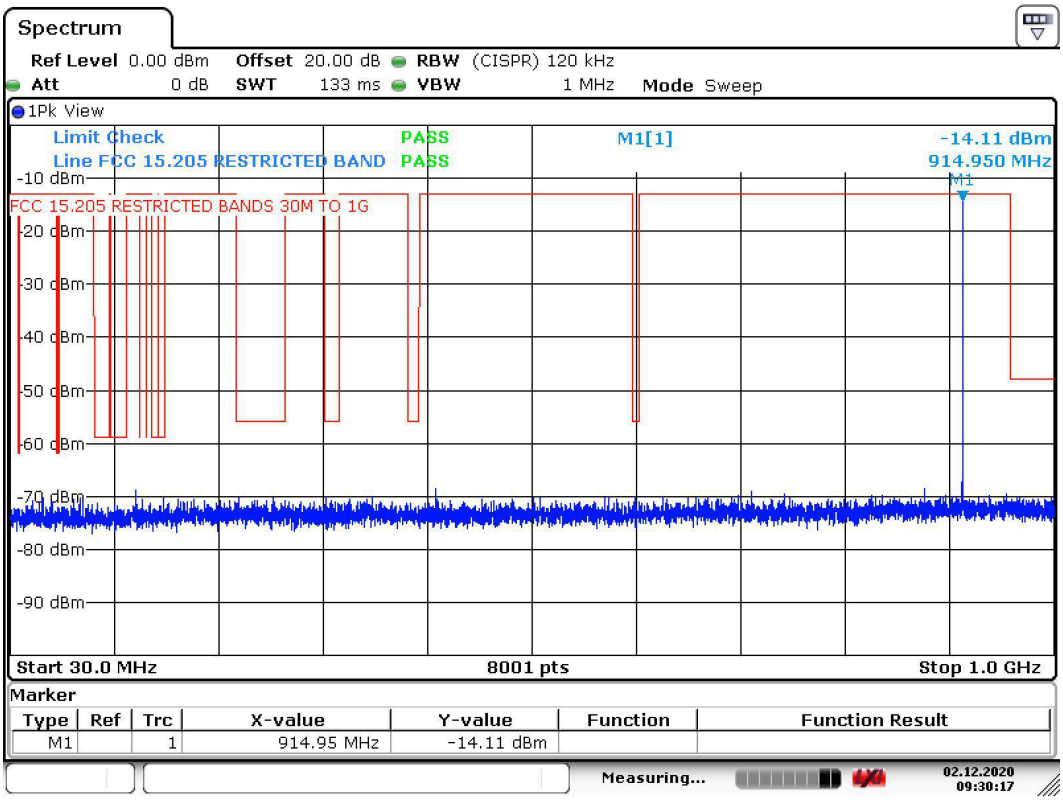
Client: MedLite ID Inc. Date: 2 Dec 2020 DNB Job: 16044

EUT: Medical Device Periodic Transmitter Model No: IDA01US

Requirement: Emissions Below Restricted Band Limits Tech: CL Payne

Center Frequency: 915 MHz Detector Function: Peak

Frequency Range: 30 MHz to 1000 MHz Result: Pass



Date: 2.DEC.2020 09:30:18

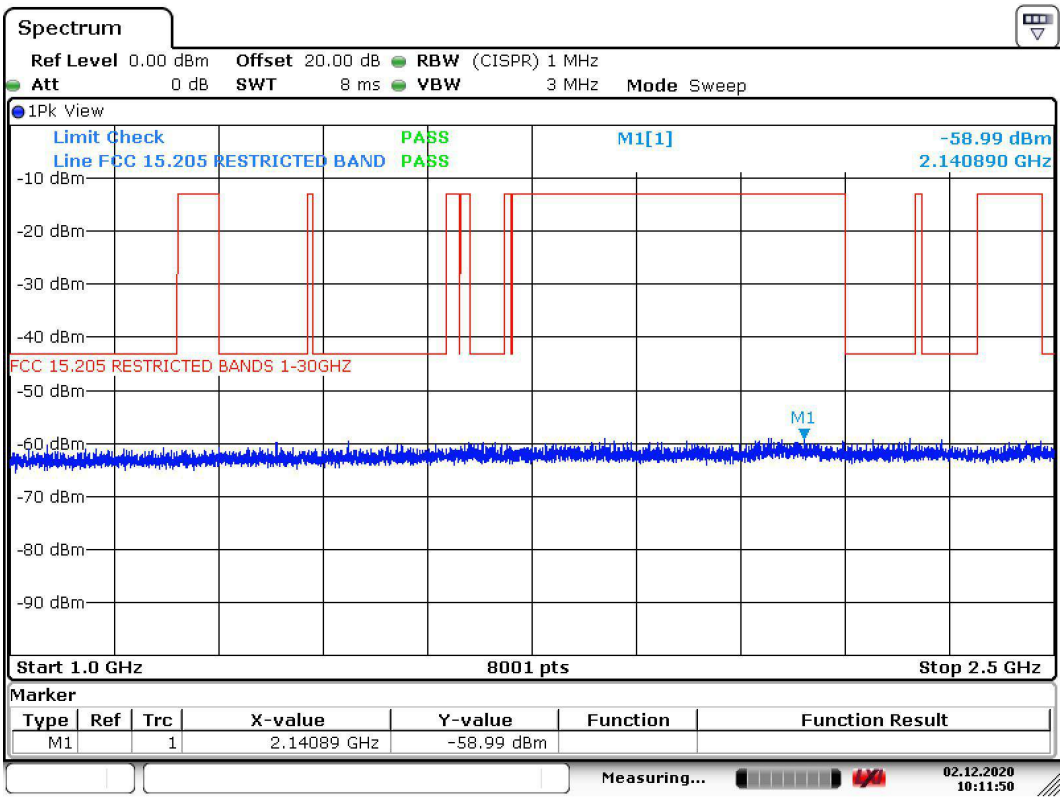
Client: MedLite ID Inc. Date: 2 Dec 2020 DNB Job: 16044

EUT: Medical Device Periodic Transmitter Model No: IDA01US

Requirement: Emissions Below Restricted Band Limits Tech: CL Payne

Center Frequency: 915 MHz Detector Function: Peak

Frequency Range: 1000 MHz to 2500 MHz Result: Pass



Date: 2.DEC.2020 10:11:50

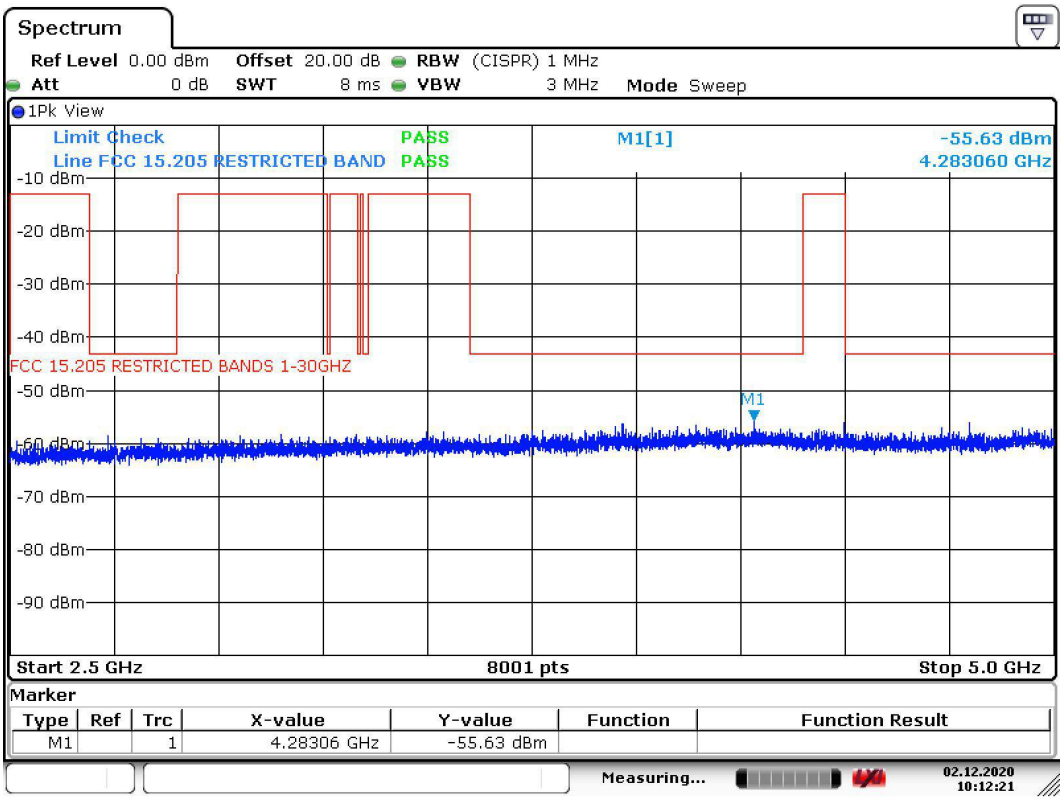
Client: MedLite ID Inc. Date: 2 Dec 2020 DNB Job: 16044

EUT: Medical Device Periodic Transmitter Model No: IDA01US

Requirement: Emissions Below Restricted Band Limits Tech: CL Payne

Center Frequency: 915 MHz Detector Function: Peak

Frequency Range: 2500 MHz to 5000 MHz Result: Pass



Date: 2.DEC.2020 10:12:21

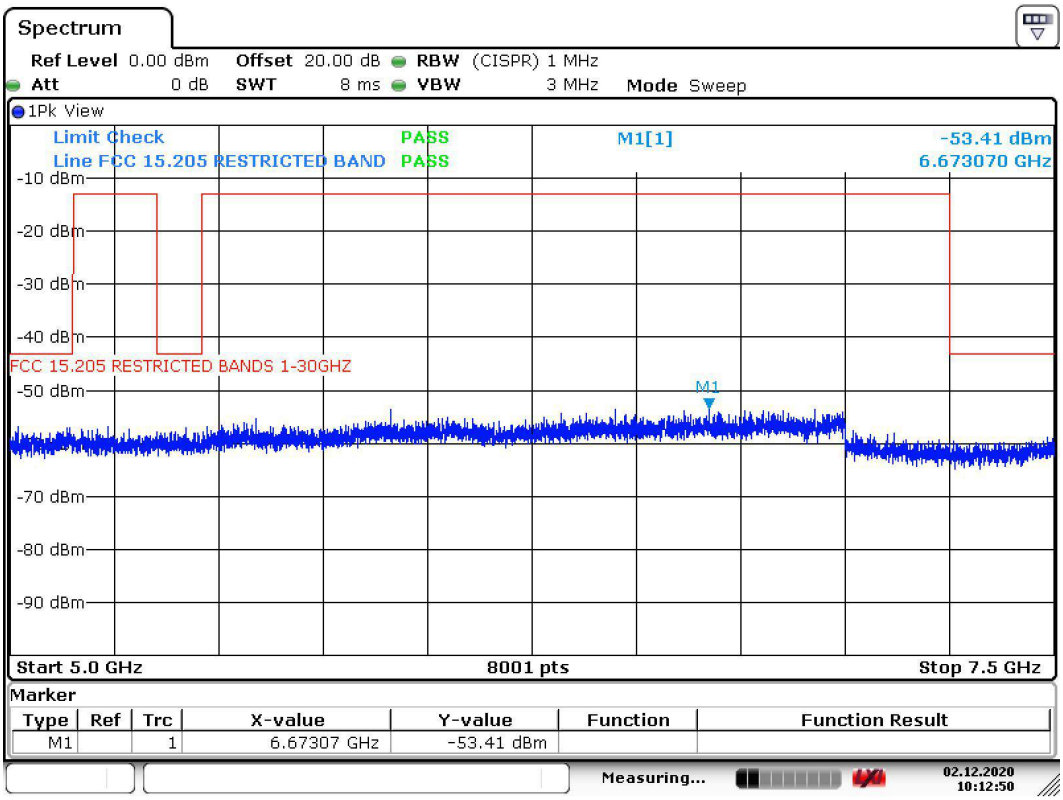
Client: MedLite ID Inc. Date: 2 Dec 2020 DNB Job: 16044

EUT: Medical Device Periodic Transmitter Model No: IDA01US

Requirement: Emissions Below Restricted Band Limits Tech: CL Payne

Center Frequency: 915 MHz Detector Function: Peak

Frequency Range: 5000 MHz to 7500 MHz Result: Pass



Date: 2.DEC.2020 10:12:50

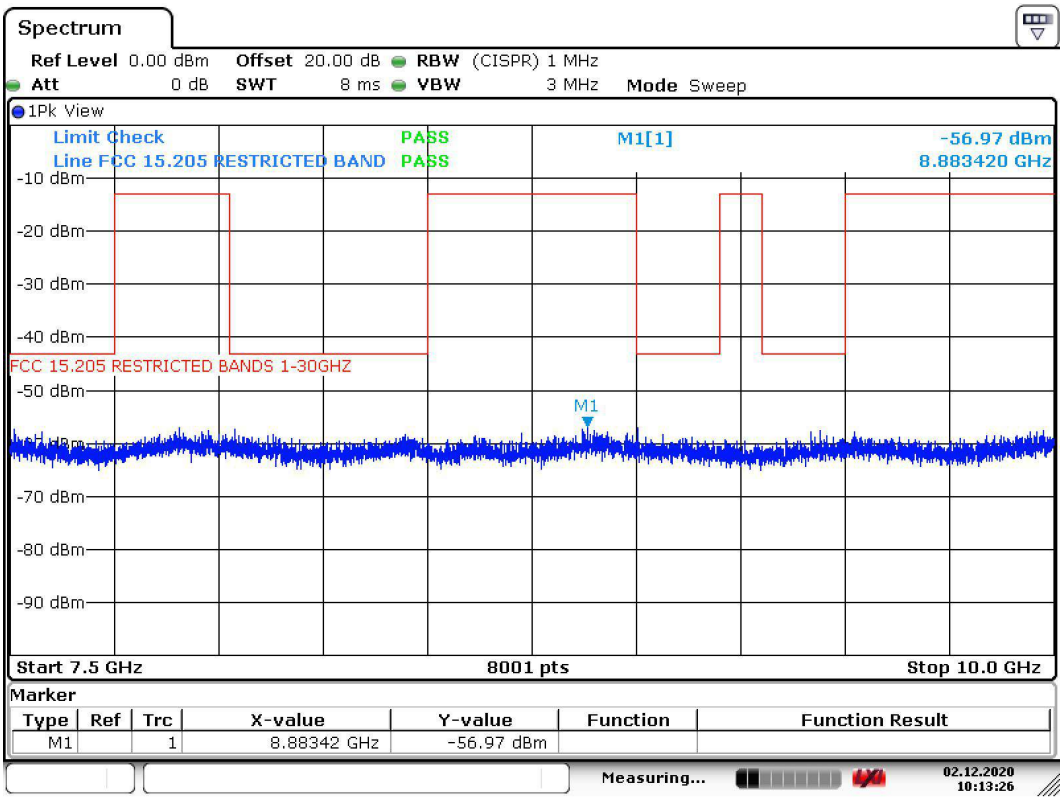
Client: MedLite ID Inc. Date: 2 Dec 2020 DNB Job: 16044

EUT: Medical Device Periodic Transmitter Model No: IDA01US

Requirement: Emissions Below Restricted Band Limits Tech: CL Payne

Center Frequency: 915 MHz Detector Function: Peak

Frequency Range: 7500 MHz to 10000 MHz Result: Pass



Client: MedLite ID Inc.	Date: 2 Nov 2020	DNB Job: 16044
EUT: Medical Device Periodic Transmitter		Model No: IDA01US
Requirement: Emissions Below Restricted Band Limits		Tech: CL Payne
Center Frequency: 915 MHz		Detector Function: Peak
Frequency Range: 30 MHz to 1000 MHz		Result: Pass

End of Report UT16044A-001