

TEST REPORT

ACCORDING TO: FCC 47CFR part 15 subpart C §15.209

FOR:

Medtronic (Given Imaging Ltd.)

**PillCam Genius SB Capsule
Endoscopy Kit**

Model: Genius SB capsule

FCC ID: O8PGSB

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1 Applicant information

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Contact name: Mr. Elad Tiran

2 Equipment under test attributes

Product name: PillCam Genius SB Capsule Endoscopy Kit
Product type: Transmitter
Model(s): Genius SB capsule
Part number: ASM-0831-01
Capsule ID: JCP9WGE
Hardware version: REV01
Software release: NA
Receipt date 27-Mar-23

3 Manufacturer information

Manufacturer name: Given Imaging Inc.
Address: 15 Hampshire Street Mansfield MA 02048, USA
Telephone: +972 52-3142169
E-Mail: Avishag.metzer@medtronic.com
Contact name: Avishag Metzer

4 Test details




Project ID: 49769
Location: Hermon Laboratories Ltd. P.O. Box 23, Binyamina 3055001, Israel
Test started: 27-Apr-23
Test completed: 27-Apr-23
Test specification(s): FCC 47CFR part 15 subpart C §15.209

5 Tests summary

Test	Status
Transmitter characteristics	
Section 15.209, Field strength of emissions	Pass
Section 15.215, Occupied bandwidth	Pass
Section 15.207(a), Conducted emission	Not required
Section 15.203, Antenna requirements	Pass
Unintentional emissions	
Section 15.109, Radiated emission	Pass

Testing was completed against all relevant requirements of the test standard. The results obtained indicate that the product under test complies in full with the requirements tested.

The test results relate only to the items tested. Pass/ fail decision was based on nominal values.

	Name and Title	Date	Signature
Tested by:	Mrs. E. Pitt, test engineer, EMC & Radio	27-Apr-23	
Reviewed by:	Mrs. S. Peysahov Sheynin, certification specialist, EMC & Radio	03-Aug-23	
Approved by:	Mr. M. Nikishin, group leader, EMC & Radio	15-Aug-23	

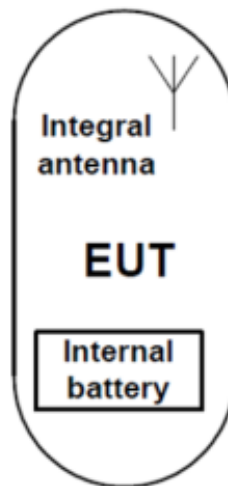
6 EUT description

Note: The following data in this clause is provided by the customer and represents his sole responsibility

6.1 General information

The PillCam Genius SB Capsule Endoscopy Kit is comprised of (1) Genius SB capsule and (2) Genius link device. The EUT is the PillCam Genius SB capsule, a low power transmitter enclosed in a capsule and is intended for gastrointestinal imaging. The capsule transmits the acquired images by using a 435 MHz wireless RF communication link to the Genius link device which is worn by the patient and located outside the body. The Capsule receives control commands from the Genius link device via a 13.56 MHz wireless RF communication link.

6.2 Test configuration



6.3 Changes made in EUT

No changes were implemented in the EUT during testing.



Test specification: Section 15.209, Field strength of emissions			
Test procedure: ANSI C63.10, Section 6.4, 6.5			
Test mode: Compliance		Verdict: PASS	
Date(s): 27-Apr-23			
Temperature: 23 °C	Relative Humidity: 43 %	Air Pressure: 1012 hPa	Power: 3 VDC
Remarks:			

7 Transmitter tests according to 47CFR part 15 subpart C

7.1 Field strength of emissions

7.1.1 General

This test was performed to measure field strength of fundamental and spurious emissions from the EUT. Specification test limits are given Table 7.1.1.

Table 7.1.1 Radiated spurious emissions limits

Frequency, MHz	Field strength at 3 m, dB(μV/m)		
	Within restricted bands		
	Peak	Quasi Peak	Average
0.009 – 0.090	148.5 – 128.5	NA	128.5 – 108.5**
0.090 – 0.110	NA	108.5 – 106.8**	NA
0.110 – 0.490	126.8 – 113.8	NA	106.8 – 93.8**
0.490 – 1.705	NA	73.8 – 63.0**	NA
1.705 – 30.0*		69.5	
30 – 88		40.0	
88 – 216		43.5	
216 – 960		46.0	
960 - 1000		54.0	
1000 – 10 th harmonic	74.0	NA	54.0

*- The limit for 3 m test distance was calculated using the inverse square distance extrapolation factor as follows:

$$\text{Lims}_2 = \text{Lims}_1 + 40 \log (S_1/S_2),$$

where S_1 and S_2 – standard defined and test distance respectively in meters.

** - The limit decreases linearly with the logarithm of frequency.

7.1.2 Test procedure for fundamental and spurious emission field strength measurements in 9 kHz to 30 MHz

7.1.2.1 The EUT was set up as shown in Figure 7.1.1, energized and the performance check was conducted.

7.1.2.2 The specified frequency range was investigated with a loop antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360°, the measuring antenna was rotated around its vertical axis. The measuring antenna polarization was switched from vertical to horizontal.

7.1.2.3 The worst test results (the lowest margins) were recorded in Table 7.1.2 and shown in the associated plots.

7.1.3 Test procedure for spurious emission field strength measurements above 30 MHz

7.1.3.1 The EUT was set up as shown in Figure 7.1.2, energized and the performance check was conducted.

7.1.3.2 The specified frequency range was investigated with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360°, the measuring antenna height was changed from 1 to 4 m, its polarization was switched from vertical to horizontal.

7.1.3.3 The worst test results (the lowest margins) were recorded in Table 7.1.3 and shown in the associated plots.



Test specification:		Section 15.209, Field strength of emissions	
Test procedure:		ANSI C63.10, Section 6.4, 6.5	
Test mode:		Verdict: PASS	
Date(s):			
27-Apr-23			
Temperature: 23 °C	Relative Humidity: 43 %	Air Pressure: 1012 hPa	Power: 3 VDC
Remarks:			

Figure 7.1.1 Setup for spurious emission field strength measurements below 30 MHz

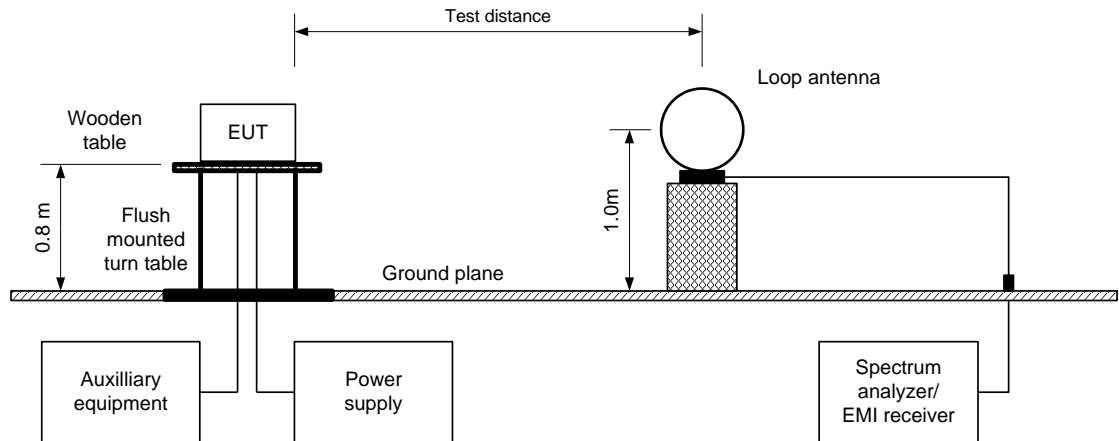
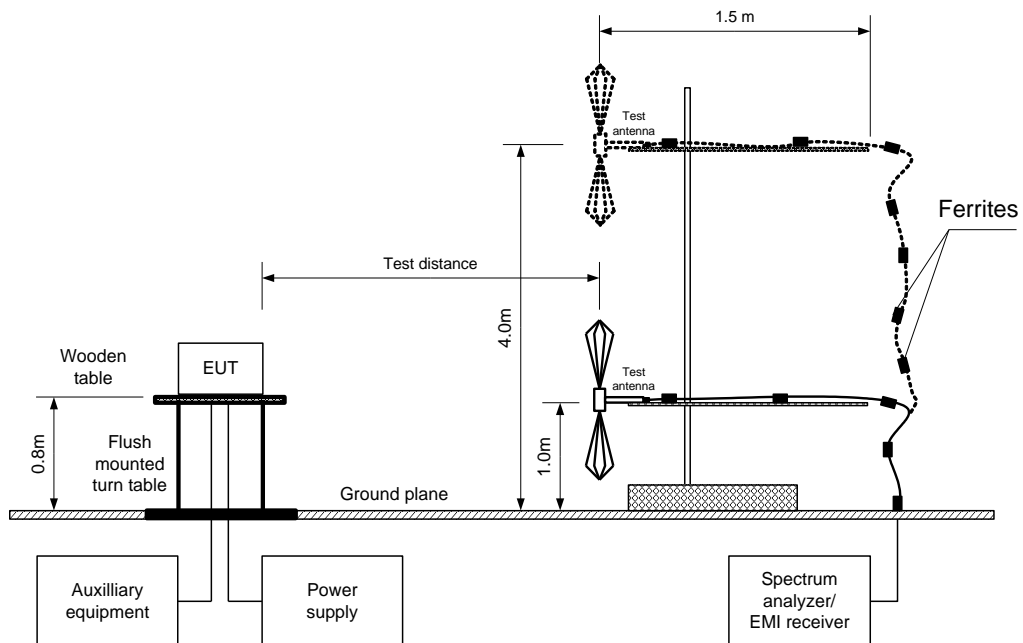


Figure 7.1.2 Setup for spurious emission field strength measurements above 30 MHz





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Test specification:		Section 15.209, Field strength of emissions	
Test procedure:		ANSI C63.10, Section 6.4, 6.5	
Test mode:		Verdict: PASS	
Date(s):			
27-Apr-23			
Temperature: 23 °C	Relative Humidity: 43 %	Air Pressure: 1012 hPa	Power: 3 VDC
Remarks:			

Table 7.1.2 Radiated emission test results

EUT SET UP: TABLE-TOP
TEST SITE: SEMI ANECHOIC CHAMBER
TEST DISTANCE: 1 m
FREQUENCY RANGE: 0.009 – 1000 MHz
RESOLUTION BANDWIDTH: 1 kHz (9 kHz – 150 kHz)
9.0 kHz (150 kHz – 30 MHz)
120 kHz (30 MHz – 1000 MHz)
VIDEO BANDWIDTH: ≥ Resolution bandwidth
TEST ANTENNA TYPE: Active loop (9 kHz – 30 MHz)
Biconilog (30 MHz – 1000 MHz)
CAPSUL RATE: HFR 5.5 bps

Frequency, MHz	Peak emission, dB(μV/m)	Quasi-peak			Antenna polarizati on	Antenn a height, m	Turn-table position**, degrees	Verdict Pass
		Measured emission, dB(μV/m)	Limit at 3m dB(μV/m)	Margin, dB*				
435	35.55	NA	46	-10.45	Horizontal	1.4	-120	

Table 7.1.3 Radiated emission test results

TEST SITE: SEMI ANECHOIC CHAMBER
TEST DISTANCE: 3 m
DETECTORS USED: PEAK
FREQUENCY RANGE: 1000 MHz – 5000 MHz
RESOLUTION BANDWIDTH: 1000 kHz

Frequency, MHz	Peak			Average			Antenna polarization	Antenna height, m	Turn-table position**, degrees	Verdict
	Measured emission, dB(μV/m)	Limit, dB(μV/m)	Margin, dB*	Measured emission, dB(μV/m)	Limit, dB(μV/m)	Margin, dB*				
No signals were found										Pass

Reference numbers of test equipment used

HL 5288	HL 4933	HL 3818	HL 7585	HL 3903	HL 5902	HL 0446	
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Full description is given in Appendix A.

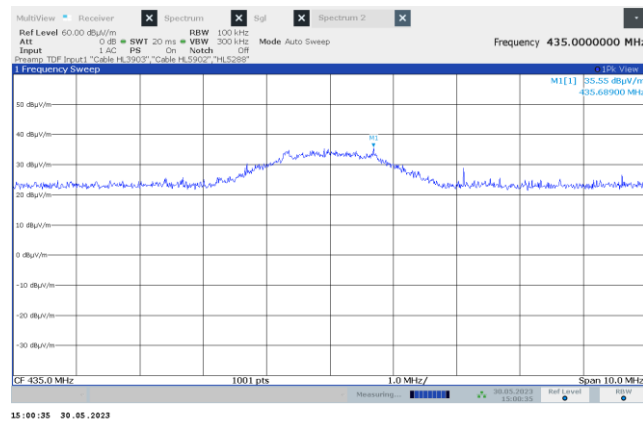


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Test specification:		Section 15.209, Field strength of emissions	
Test procedure:		ANSI C63.10, Section 6.4, 6.5	
Test mode:		Verdict: PASS	
Date(s):			
27-Apr-23			
Temperature: 23 °C	Relative Humidity: 43 %	Air Pressure: 1012 hPa	Power: 3 VDC
Remarks:			

Plot 7.1.1 Radiated emission measurements at 435 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 1 m
MODULATION: MSK
CAPSULE RATE: HFR 5.5 bps





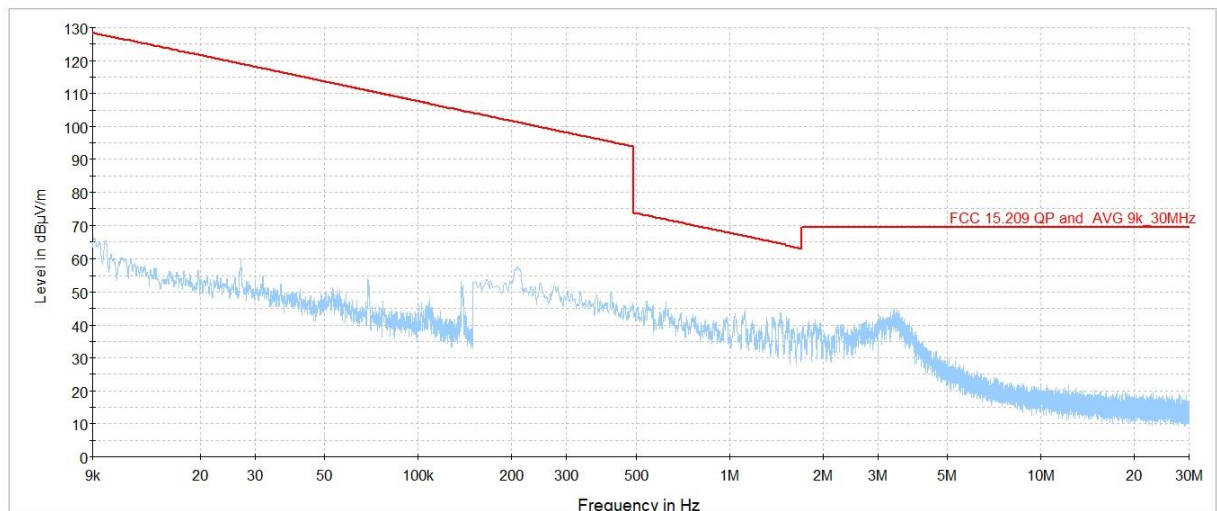
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Report ID: GIVRAD_FCC.49769_435MHz.docx
Date of Issue: 15-Aug-23

Test specification:		Section 15.209, Field strength of emissions	
Test procedure:		ANSI C63.10, Section 6.4, 6.5	
Test mode:		Verdict: PASS	
Date(s):			
27-Apr-23			
Temperature: 23 °C	Relative Humidity: 43 %	Air Pressure: 1012 hPa	Power: 3 VDC
Remarks:			

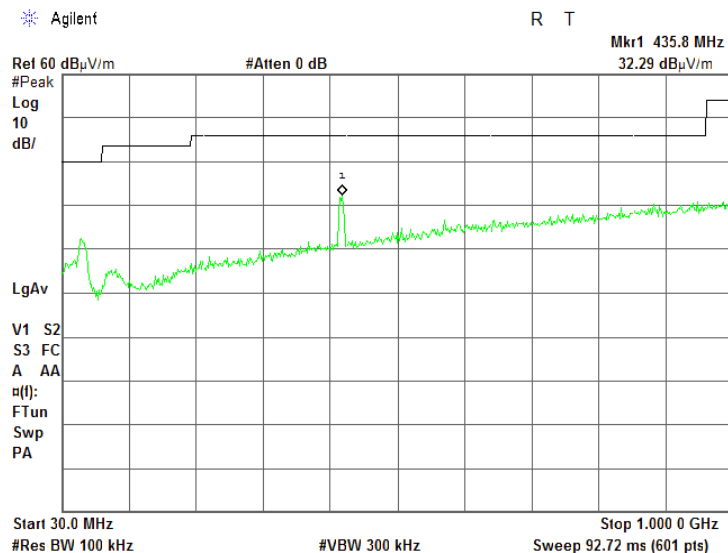
Plot 7.1.2 Radiated emission measurements in 9 kHz-30 MHz range

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3m



Plot 7.1.3 Radiated emission measurements in 30-1000 MHz range

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 1 m
ANTENNA POLARIZATION: Vertical & Horizontal



Note: Limit according at 3m distance



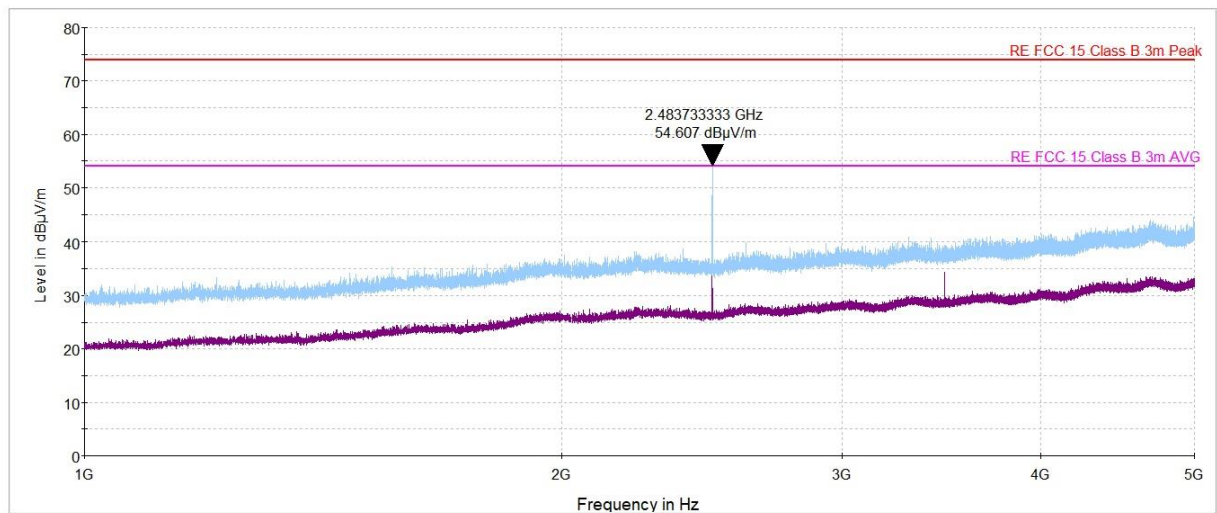
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Report ID: GIVRAD_FCC.49769_435MHz.docx
Date of Issue: 15-Aug-23

Test specification:		Section 15.209, Field strength of emissions	
Test procedure:		ANSI C63.10, Section 6.4, 6.5	
Test mode:		Verdict: PASS	
Date(s):			
27-Apr-23			
Temperature: 23 °C	Relative Humidity: 43 %	Air Pressure: 1012 hPa	Power: 3 VDC
Remarks:			

Plot 7.1.4 Radiated emission measurements above 1000 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical & Horizontal



Note: Frequencie 2.483 GHz – BLE and Wi-Fi signal in the Genius link device



Test specification: Section 15.215 / RSS-Gen, Section 6.7, Occupied bandwidth			
Test procedure: ANSI C63.10, Section 6.9.2			
Test mode: Compliance		Verdict: PASS	
Date(s): 24-Jul-19			
Temperature: 23 °C	Relative Humidity: 43 %	Air Pressure: 1012 hPa	Power: 3 VDC
Remarks:			

7.2 Occupied bandwidth test

7.2.1 General

This test was performed to measure transmitter occupied bandwidth. Specification test limits are given in Table 7.2.1. The test results are provided in Table 7.2.2 and associated plots.

Table 7.2.1 Occupied bandwidth limits FCC 15.209

Assigned frequency, MHz	Modulation envelope reference points*, dBc	Maximum allowed bandwidth, of the carrier frequency
435	20 dBc	NA

*- Modulation envelope reference points provided in terms of attenuation below modulated carrier.

7.2.2 Test procedure

7.2.2.1 The EUT was set up as shown in Figure 7.2.1, energized and its proper operation was checked.

7.2.2.2 The EUT was set to transmit modulated carrier.

7.2.2.3 The transmitter occupied bandwidth was measured with spectrum analyzer as frequency delta between reference points on modulation envelope and provided in Table 7.2.2 and associated plot.

Figure 7.2.1 Occupied bandwidth test setup





Test specification: Section 15.215 / RSS-Gen, Section 6.7, Occupied bandwidth			
Test procedure: ANSI C63.10, Section 6.9.2			
Test mode: Compliance		Verdict: PASS	
Date(s): 24-Jul-19			
Temperature: 23 °C	Relative Humidity: 43 %	Air Pressure: 1012 hPa	Power: 3 VDC
Remarks:			

Table 7.2.2 Occupied bandwidth 20 dBc test results

DETECTOR USED: Peak hold
RESOLUTION BANDWIDTH: 100 kHz
VIDEO BANDWIDTH: 300 kHz
MODULATION ENVELOPE REFERENCE POINTS: 20 dBc
MODULATION: OOK
BIT RATE: 390 bps

Carrier frequency, MHz	Occupied bandwidth, MHz	Verdict
435	3.457	Pass

Reference numbers of test equipment used

HL 4355								
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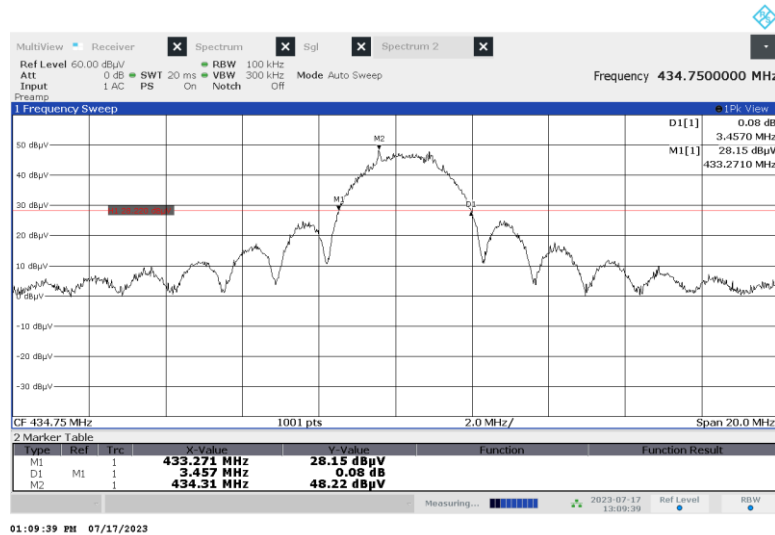
Full description is given in Appendix A.



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Test specification:		Section 15.215 / RSS-Gen, Section 6.7, Occupied bandwidth	
Test procedure:		ANSI C63.10, Section 6.9.2	
Test mode:		Verdict: PASS	
Date(s):			
24-Jul-19			
Temperature: 23 °C	Relative Humidity: 43 %	Air Pressure: 1012 hPa	Power: 3 VDC
Remarks:			

Plot 7.2.1 20dBc occupied bandwidth test result





Test specification:		Section 15.109, Class B Radiated emission	
Test procedure:		ANSI C63.4, Sections 8.3 and 12.2.5	
Test mode:		Verdict: PASS	
Date(s):			
24-Jul-19			
Temperature: 23 °C	Relative Humidity: 43 %	Air Pressure: 1012 hPa	Power: 3 VDC
Remarks:			

8 Unintentional emissions according to 47CFR part 15 subpart B

8.1 Radiated emission measurements

8.1.1 General

This test was performed to measure radiated emissions from the EUT enclosure. Specification test limits are given in Table 8.1.1.

Table 8.1.1 Radiated emission limits according to FCC Part 15, Section 109 and ICES-003, Section 6.2

Frequency, MHz	Class B limit, dB(μV/m)	
	10 m distance	3 m distance
30 - 88	29.5*	40.0
88 - 216	33.0*	43.5
216 - 960	35.5*	46.0
960 - 5 th harmonic**	43.5*	54.0

* - The limit for test distance other than specified was calculated using the inverse linear distance extrapolation factor as follows: $Lims_2 = Lims_1 + 20 \log(S_1/S_2)$, where S_1 and S_2 – standard defined and test distance respectively in meters.

8.1.2 Test procedure for measurements in semi-anechoic chamber

8.1.2.1 The EUT was set up as shown in Figure 8.1.1 and associated photograph/s, energized and the performance check was conducted.

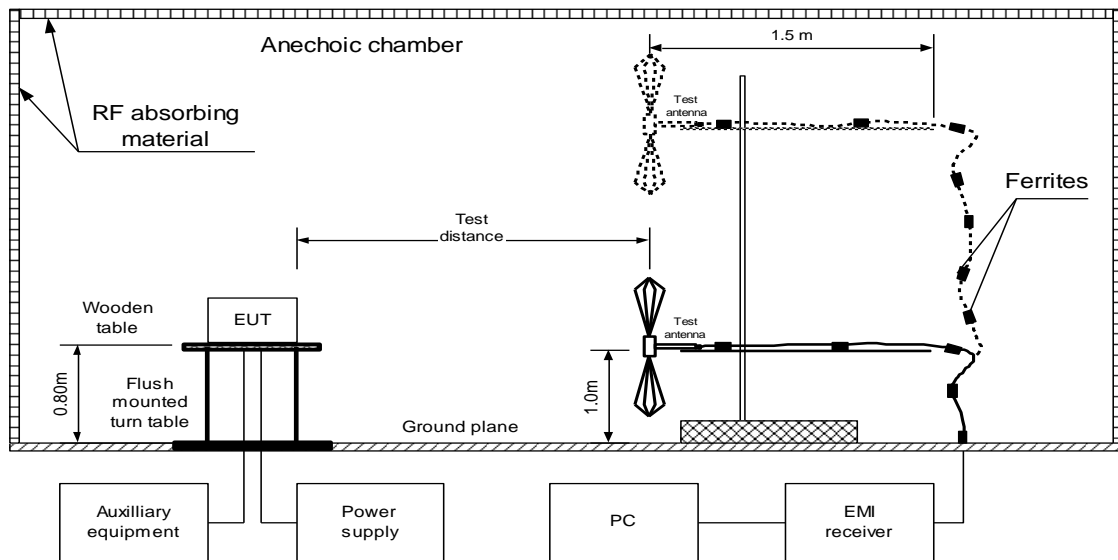
8.1.2.2 The specified frequency range was investigated with biconilog antenna connected to EMI receiver. To find maximum radiation the turntable was rotated 360°, the measuring antenna height was changed from 1 to 4 m, its polarization was switched from vertical to horizontal and the EUT cables position was varied.

8.1.2.3 The worst test results (the lowest margins) were provided in the associated tables and plots.



Test specification:		Section 15.109, Class B Radiated emission	
Test procedure:		ANSI C63.4, Sections 8.3 and 12.2.5	
Test mode:		Verdict: PASS	
Date(s):			
24-Jul-19			
Temperature: 23 °C	Relative Humidity: 43 %	Air Pressure: 1012 hPa	Power: 3 VDC
Remarks:			

Figure 8.1.1 Setup for radiated emission measurements, table-top equipment





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Test specification:		Section 15.109, Class B Radiated emission	
Test procedure:		ANSI C63.4, Sections 8.3 and 12.2.5	
Test mode:		Verdict: PASS	
Date(s):			
24-Jul-19			
Temperature: 23 °C	Relative Humidity: 43 %	Air Pressure: 1012 hPa	Power: 3 VDC
Remarks:			

Table 8.1.2 Radiated emission test results

EUT SET UP: TABLE-TOP
LIMIT: Class B
EUT OPERATING MODE: Stand-by
TEST SITE: SEMI ANECHOIC CHAMBER
TEST DISTANCE: 3 m
FREQUENCY RANGE: 30 MHz – 1000 MHz
RESOLUTION BANDWIDTH: 120 kHz

RESOLUTION BANDWIDTH: 120 KHz					Antenna polarization	Antenna height, m	Turn-table position**, degrees	Verdict
Frequency, MHz	Peak emission, dB(μV/m)	Quasi-peak						
		Measured emission, dB(μV/m)	Limit, dB(μV/m)	Margin, dB*				
No emissions were found								Pass

* - Margin = Measured emission - specification limit.

**- EUT front panel refer to 0 degrees position of turntable.

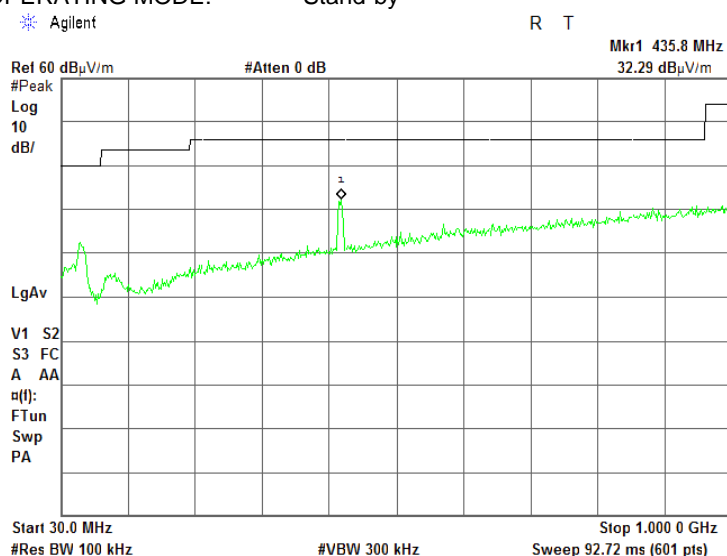
Reference numbers of test equipment used

HL 5288	HL 4933	HL 3818	HL 7585	HL 3903	HL 5902		
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Full description is given in Appendix A.

Plot 8.1.1 Radiated emission measurements in 30 - 1000 MHz range, vertical and horizontal antenna polarization

TEST SITE: Semi anechoic chamber
LIMIT: Class B
TEST DISTANCE: 3 m
EUT OPERATING MODE: Stand-by





Test specification: Section 15.203 / RSS Gen Section 6.8, Antenna requirements			
Test procedure: Visual inspection			
Test mode: Compliance		Verdict: PASS	
Date(s): 27-Apr-23			
Temperature: 23 °C	Relative Humidity: 43 %	Air Pressure: 1012 hPa	Power: 3 VDC
Remarks:			

8.2 Antenna requirements

The EUT was verified for compliance with antenna requirements. A transmitter shall be designed to ensure that no antenna other than that furnished by the responsible party will be used with the device. It may be either permanently attached or employs a unique antenna connector for every antenna proposed for use with the EUT. This requirement does not apply to professionally installed transmitters.

The rationale for compliance with the above requirements was either visual inspection results or supplier declaration. The summary of results is provided in Table 8.2.1

Table 8.2.1 Antenna requirements

Requirement	Rationale	Verdict
The transmitter antenna is permanently attached	Visual inspection	Comply
The transmitter employs a unique antenna connector	NA	
The transmitter requires professional installation	NA	

9 APPENDIX A Test equipment and ancillaries used for tests

HL No	Description	Manufacturer	Model	Ser. No.	Last Cal./ Check	Due Cal./ Check
0446	Antenna, Loop, Active, 10 (9) kHz - 30 MHz	EMCO	6502	2857	07-Mar-23	07-Mar-24
3818	PSA Series Spectrum Analyzer, 3 Hz- 44 GHz	Agilent Technologies	E4446A	MY48250288	19-Jul-22	19-Jul-23
3903	Microwave Cable Assembly, 40.0 GHz, 1.5 m, SMA/SMA	Huber-Suhner	SUCOFL EX 102A	1226/2A	16-Apr-23	16-Apr-24
4933	Active Horn Antenna, 1 GHz to 18 GHz	COM-POWER CORPORATION	AHA-118	701046	19-Jan-23	19-Jan-24
5288	Trilog Antenna, 25 MHz - 8 GHz, 100W	Frankonia	ALX-8000E	00809	24-Mar-22	24-Mar-25
5902	RF cable, 18 GHz, 6.0m, N-type	Huber-Suhner	SF126EA/11N/11N/6000	NA	08-Dec-22	08-Dec-23
7585	EMI Test Receiver, 1 Hz to 44 GHz	Rohde & Schwarz	ESW44	103130	19-May-22	19-Nov-23

10 APPENDIX B Test equipment correction factors

HL 0446: Active Loop Antenna
EMCO, model: 6502, s/n 2857

Frequency,	Measured antenna factor, dBS/m	Measurement uncertainty, dB
10	-33.4	±1.0
20	-37.8	±1.0
50	-40.5	±1.0
75	-41.0	±1.0
100	-41.2	±1.0
150	-41.2	±1.0
250	-41.1	±1.0
500	-41.2	±1.0
750	-41.3	±1.0
1000	-41.3	±1.0

Frequency,	Measured antenna factor, dBS/m	Measurement uncertainty, dB
2000	-41.4	±1.0
3000	-41.4	±1.0
4000	-41.5	±1.0
5000	-41.5	±1.0
10000	-41.7	±1.0
15000	-42.1	±1.0
20000	-42.7	±1.0
25000	-44.2	±1.0
30000	-45.8	±1.0

The antenna factor shall be added to receiver reading in dB μ V to obtain field strength in dB μ V/m.

HL 4933: Active Horn Antenna
COM-POWER CORPORATION, model: AHA-118, s/n 701046

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
1000	-16.1
1500	-15.1
2000	-10.9
2500	-11.9
3000	-11.1
3500	-10.6
4000	-8.6
4500	-8.3
5000	-5.9
5500	-5.7
6000	-3.3
6500	-4.0
7000	-2.2
7500	-1.7
8000	1.1
8500	-0.8
9000	-1.5
9500	-0.2

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
10000	1.8
10500	1.0
11000	0.3
11500	-0.5
12000	3.1
12500	1.4
13000	-0.3
13500	-0.4
14000	2.5
14500	2.2
15000	1.9
15500	0.5
16000	2.1
16500	1.2
17000	0.6
17500	3.1
18000	4.2

The antenna factor shall be added to receiver reading in dB μ V to obtain field strength in dB μ V/m.

HL 5288: Trilog Antenna
Frankonia, model: ALX-8000E, s/n: 00809
30-1000 MHz

Frequency, MHz	Antenna factor, dB/m
30	14.96
35	15.33
40	16.37
45	17.56
50	17.95
60	16.87
70	13.22
80	10.56
90	13.61
100	15.46
120	14.03
140	12.23

Frequency, MHz	Antenna factor, dB/m
160	12.67
180	13.34
200	15.40
250	16.42
300	17.28
400	19.98
500	21.11
600	22.90
700	24.13
800	25.25
900	26.35
1000	27.18

The antenna factor shall be added to receiver reading in dB μ V to obtain field strength in dB μ V/m.

above 1000 MHz

Frequency, MHz	Antenna factor, dB/m
1000	26.9
1100	28.1
1200	28.4
1300	29.6
1400	29.1
1500	30.4
1600	30.7
1700	31.5
1800	32.3
1900	32.6
2000	32.5
2100	32.9
2200	33.5
2300	33.2
2400	33.7
2500	34.6
2600	34.7
2700	34.6
2800	35.0
2900	35.5
3000	36.2
3100	36.8
3200	36.8
3300	37.0
3400	37.5
3500	38.2

Frequency, MHz	Antenna factor, dB/m
3600	38.9
3700	39.4
3800	39.4
3900	39.6
4000	39.7
4100	39.8
4200	40.5
4300	40.9
4400	41.1
4500	41.4
4600	41.3
4700	41.6
4800	41.9
4900	42.3
5000	42.7
5100	43.0
5200	42.9
5300	43.5
5400	43.6
5500	44.3
5600	44.7
5700	45.0
5800	45.0
5900	45.3
6000	45.9

The antenna factor shall be added to receiver reading in dB μ V to obtain field strength in dB μ V/m.

11 APPENDIX C Measurement uncertainties

Expanded uncertainty at 95% confidence in Hermon Labs EMC measurements

Test description	Expanded uncertainty
Conducted emissions with LISN	9 kHz to 150 kHz: ± 3.9 dB 150 kHz to 30 MHz: ± 3.8 dB
Radiated emissions at 10 m measuring distance Horizontal polarization Vertical polarization	Biconilog antenna: ± 5.0 dB Biconical antenna: ± 5.0 dB Log periodic antenna: ± 5.1 dB Double ridged horn antenna: ± 5.3 dB Biconilog antenna: ± 5.5 dB Biconical antenna: ± 5.5 dB Log periodic antenna: ± 5.6 dB Double ridged horn antenna: ± 5.8 dB
Radiated emissions at 3 m measuring distance Horizontal polarization Vertical polarization	Biconilog antenna: ± 5.3 dB Biconical antenna: ± 5.0 dB Log periodic antenna: ± 5.3 dB Double ridged horn antenna: ± 5.3 dB Biconilog antenna: ± 6.0 dB Biconical antenna: ± 5.7 dB Log periodic antenna: ± 6.0 dB Double ridged horn antenna: ± 6.0 dB
Conducted emissions at RF antenna connector	9 kHz to 2.9 GHz: ± 2.6 dB 2.9 GHz to 6.46 GHz: ± 3.5 dB 6.46 GHz to 13.2 GHz: ± 4.3 dB 13.2 GHz to 22.0 GHz: ± 5.0 dB 22.0 GHz to 26.8 GHz: ± 5.5 dB 26.8 GHz to 40.0 GHz: ± 4.8 dB
Duty cycle, timing (Tx ON / OFF) and average factor measurements	± 1.0 %
Occupied bandwidth	± 8.0 %

Hermon Laboratories is accredited by A2LA for calibration according to present requirements of ISO/IEC 17025 and NCSL Z540-1. The accreditation is granted to perform calibration of parameters that are listed in the Scope of Hermon Laboratories Accreditation.

Hermon Laboratories calibrates its reference and transfer standards by calibration laboratories accredited to ISO/IEC 17025 by a mutually recognized Accreditation Body or by a recognized national metrology institute. All reference and transfer standards used in the calibration system are traceable to national or international standards.

In-house calibration of all test and measurement equipment is performed on a regular basis according to Hermon Laboratories calibration procedures, manufacturer calibration/verification procedures or procedures defined in the relevant standards. The Hermon Laboratories test and measurement equipment is calibrated within the tolerances specified by the manufacturers and/or by the relevant standards.

12 APPENDIX D Test facility description

Tests were performed at Hermon Laboratories Ltd., which is a fully independent, private, EMC, Radio, Safety, Environmental and Telecommunication testing facility.

Hermon Laboratories is recognized and accredited by the Federal Communications Commission (USA) for relevant parts of Code of Federal Regulations 47 (CFR 47), Test Firm Registration Number is 927748, Designation Number is IL1001; Recognized by Innovation, Science and Economic Development Canada for wireless and terminal testing (ISED), ISED #2186A, CAB identifier is IL1001; Certified by VCCI, Japan (the registration numbers are R-10808 for OATS, R-1082 for anechoic chamber, G-10869 for RE measurements above 1 GHz, C-10845 for conducted emissions site and T-11606 for conducted emissions at telecommunication ports).

The laboratory is accredited by American Association for Laboratory Accreditation (USA) according to ISO/IEC 17025 for electromagnetic compatibility, product safety, telecommunications testing, environmental simulation and calibration (for exact scope please refer to Certificate No. 839.01, 839.03 and 839.04).

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13 APPENDIX E Specification references

47CFR part 15: 2020	Radio Frequency Devices.
ANSI C63.10: 2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

14 APPENDIX F

Abbreviations and acronyms

A	ampere
AC	alternating current
AM	amplitude modulation
AVRG	average (detector)
cm	centimeter
dB	decibel
dBm	decibel referred to one milliwatt
dB(μ V)	decibel referred to one microvolt
dB(μ V/m)	decibel referred to one microvolt per meter
dB(μ A)	decibel referred to one microampere
DC	direct current
EIRP	equivalent isotropically radiated power
ERP	effective radiated power
EUT	equipment under test
F	frequency
GHz	gigahertz
GND	ground
H	height
HL	Hermon laboratories
Hz	hertz
k	kilo
kHz	kilohertz
LO	local oscillator
m	meter
MHz	megahertz
min	minute
mm	millimeter
ms	millisecond
μ s	microsecond
NA	not applicable
NB	narrow band
OATS	open area test site
Ω	Ohm
PM	pulse modulation
PS	power supply
ppm	part per million (10^{-6})
QP	quasi-peak
RE	radiated emission
RF	radio frequency
rms	root mean square
Rx	receive
s	second
T	temperature
Tx	transmit
V	volt
WB	wideband

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