

TEST REPORT

ACCORDING TO: FCC CFR 47 Part 15 subpart C, section 15.231 (e)

FOR:

Given Imaging Ltd.

Bravo Reflux System

Model: Bravo Reflux Capsule

Model number: FGS-0635 and FGS-0636

FCC ID: PHZ-BRAVO100

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1 Applicant information

Client name: Given Imaging Ltd.
Address: P.O. Box 258, Hermon Building, Yoqneam 2069204, Israel
Telephone: +972 4-909 7974
Fax: +972 4-993 8060
E-mail: nir.pnini@medtronic.com
Contact name: Mr. Nir Pnini

2 Equipment under test attributes

Product name: Capsule
Product type: Transmitter
Model: Bravo Reflux Capsule
Model number: FGS-0635, FGS-0636 Note
Serial number: 677F8
Hardware version: PCA ALT-0271-02 ,PCA-0105-07LF, NVE
Software release: 08.03
Receipt date: 21-May-20

Note: According to manufacturer's declaration provided in Appendix F of the test report, both model numbers are of the same exact Bravo capsule device with only packaging difference. Package of FGS-0636 include 1 unit of Bravo delivery and capsule device while package of FGS-0635 include 5 units same exact to the one in FGS-0636.

3 Manufacturer information

Manufacturer name: Given Imaging Inc.
Address: 15 Hampshire Street, Mansfield, MA, 02048, USA

4 Test details

Project ID: 37724
Location: Hermon Laboratories Ltd. P.O. Box 23, Binyamina 3055001, Israel
Test started: 21-May-20
Test completed: 28-Jun-20
Test specification(s): FCC 47CFR part 15, subpart C, §15.231 (e)

5 Tests summary

| Test | Status |
|---|--------------|
| Transmitter characteristics | |
| FCC Part 15, Section 231(a) Periodic operation requirements | Pass |
| FCC Part 15, Section 231(a) Field strength of emissions | Pass |
| FCC Part 15, Section 231(c) Occupied bandwidth | Pass |
| FCC Part 15, Section 207 Conducted emission | Not required |
| FCC Part 15, Section 203 Antenna requirements | Pass |

This test report is issued by Hermon Laboratories for certification of Class II permissive changes, provided that the EUT approved under FCC ID: PHZ-BRAVO100 has been modified as specified in the manufacturer's declaration (see Annex G to the test report). All tests were performed again to confirm the identity of the updated version

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: | Mr. I. Zilberstein, test engineer, EMC & Radio | 21-May-20 – 28-Jun-20 |  |
| Reviewed by: | Mrs. S. Peysahov Sheynin, test engineer, EMC & Radio | 15-Oct-20 |  |
| Approved by: | Mr. S. Samokha, technical manager, EMC & Radio | 28-Oct-20 |  |

6 EUT description

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

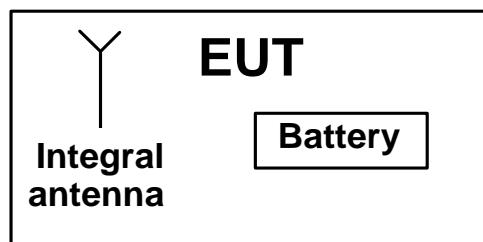
6.1 General information

The EUT, Bravo-Hybrid3 pH probe (capsule), is a transmitter operating at 433.92 MHz, with on/off keying modulation and powered from 3.0V internal battery.

6.2 EUT options/configurations

| Number | Operating mode description | Configuration |
|--------|----------------------------|--|
| 1 | Operation mode | Recorder receives data from the transmitter capsule simulator and saved it |

6.3 Test configuration



6.4 Changes made in EUT

No changes were implemented in the EUT during testing.

6.5 Transmitter characteristics

| | | | | | | |
|---|--|---|--------------|--------------------------------|---|--|
| Type of equipment | | | | | | |
| <input checked="" type="checkbox"/> | Stand-alone (Equipment with or without its own control provisions) | | | | | |
| <input type="checkbox"/> | Combined equipment (Equipment where the radio part is fully integrated within another type of equipment) | | | | | |
| <input type="checkbox"/> | Plug-in card (Equipment intended for a variety of host systems) | | | | | |
| Operating frequencies | | 433.92 MHz | | | | |
| Maximum rated output power | | At transmitter 50 Ω RF output connector | | | dBm | |
| | | Field strength at 3 m distance | | | 55.98 dB(µV/m) -peak 51.55 dB(µV/m)-average | |
| Is transmitter output power variable? | | X | No | | | |
| | | Yes | | continuous variable | | |
| | | | | stepped variable with stepsize | | |
| | | | | dB | | |
| | minimum RF power | | | dBm | | |
| | maximum RF power | | | dBm | | |
| Antenna connection | | | | | | |
| unique coupling | standard connector | | X | integral | with temporary RF connector <input checked="" type="checkbox"/> without temporary RF connector | |
| Antenna/s technical characteristics | | | | | | |
| Type | Manufacturer | | Model number | | Gain | |
| Integral | NA | | NA | | NA | |
| Type of modulation | | ASK | | | | |
| Transmitter aggregate data rate/s | | 1 kbps | | | | |
| Transmitter power source | | | | | | |
| X | Battery | Nominal rated voltage | 3 VDC | Battery type | Silver Oxide | |
| | DC | Nominal rated voltage | VDC | | | |
| | AC mains | Nominal rated voltage | VAC | | | |
| Common power source for transmitter and receiver | | | X | yes | no | |



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Date of Issue: 28-Oct-20

| | | | |
|---|--------------------------------|-------------------------------|---------------------|
| Test specification: FCC Part 15, Section 231(e), Periodic operation requirements | | | |
| Test procedure: Supplier declaration | | | |
| Test mode: Compliance | | Verdict: PASS | |
| Date(s): 03-Jun-20 | | | |
| Temperature: 24 °C | Relative Humidity: 43 % | Air Pressure: 1008 hPa | Power: 3 VDC |
| Remarks: | | | |

7 Transmitter tests according to 47CFR part 15 subpart C requirements

7.1 Periodic operation requirements

7.1.1 General

The EUT was verified for compliance with periodic operation requirements listed below:

- Continuous transmissions such as voice, video and the radio control of toys are not permitted;
- Duration of each transmission shall not be greater than 1 second;
- Silent period between transmissions shall be at least 30 times the duration of the transmission;
- Silent period between transmissions shall be in no case less than 10 seconds.

The rationale for compliance with the above requirements was either test results or supplier declaration. The summary of results is provided in Table 7.1.1.

7.1.2 Test procedure for transmitter shut down test

7.1.2.1 The EUT was set up as shown in Figure 7.1.1

7.1.2.2 The spectrum analyzer center frequency was adjusted to the EUT carrier, span set to zero and video triggered for transmission.

7.1.2.3 The transmitter was activated either manually or automatically. Once manually operated transmitter was activated, the switch was immediately released.

7.1.2.4 The transmission time was captured and shown in the associated plots. The test results were recorded in Table 7.1.2.

Table 7.1.1 Periodic operation requirements

| Requirement | Rationale | Verdict |
|---|----------------------|---------|
| Continuous transmissions are not permitted | Supplier declaration | Comply |
| Duration of each transmission shall not be greater than 1 second | Plot 7.1.1 | Comply |
| Silent period between transmissions shall be at least 30 times the duration of the transmission | Plot 7.1.2 | Comply |
| Silent period between transmissions shall be in no case less than 10 seconds | Plot 7.1.2 | Comply |

Figure 7.1.1 Setup for transmitter shut down test



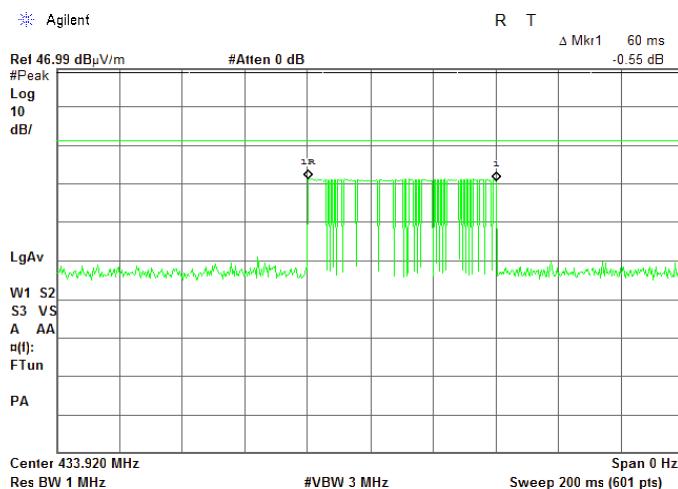


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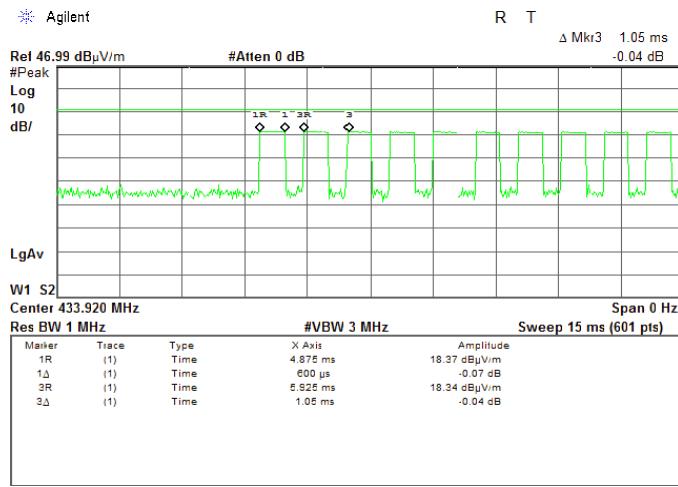
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| | | | |
|---|--------------------------------|-------------------------------|---------------------|
| Test specification: FCC Part 15, Section 231(e), Periodic operation requirements | | | |
| Test procedure: Supplier declaration | | | |
| Test mode: Compliance | | Verdict: PASS | |
| Date(s): 03-Jun-20 | | | |
| Temperature: 24 °C | Relative Humidity: 43 % | Air Pressure: 1008 hPa | Power: 3 VDC |
| Remarks: | | | |

Plot 7.1.1 Transmitter pulse duration



$$Txon \text{ duration} = \text{Pulse duration} * \text{Duty cycle within RF burst} = 60 * 0.57 = 34.28 \text{ ms}$$



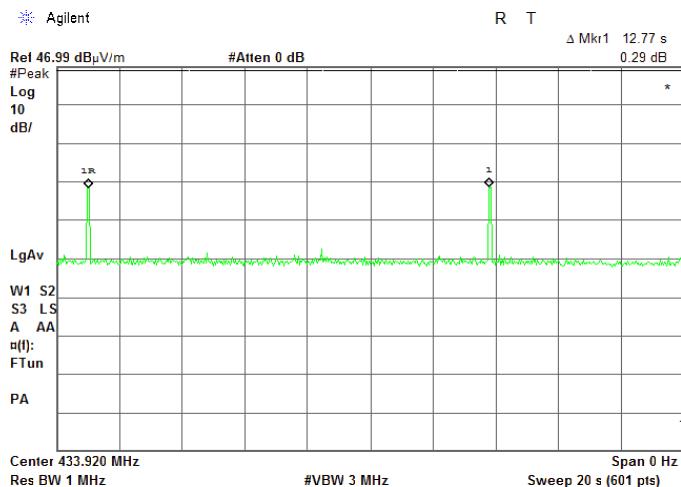
$$\text{Duty cycle within RF burst} = \text{Txon}/(\text{Txon}+\text{off}) = 0.6/1.05 = 0.57$$



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| | | | |
|---|--------------------------------|-------------------------------|---------------------|
| Test specification: FCC Part 15, Section 231(e), Periodic operation requirements | | | |
| Test procedure: | Supplier declaration | | |
| Test mode: | Compliance | | |
| Date(s): | 03-Jun-20 | | |
| Temperature: 24 °C | Relative Humidity: 43 % | Air Pressure: 1008 hPa | Power: 3 VDC |
| Remarks: | | | |

Plot 7.1.2 Transmitter pulse period**Table 7.1.2 Total duration of transmissions**

| Burst Duration, ms | Duty cycle within the burst, % | Txon within the burst, ms | Maximum number of transmissions within 1 hour | Total duration within 1 hour, sec | Limit, sec | Margin, sec | Verdict |
|--------------------|--------------------------------|---------------------------|---|-----------------------------------|------------|-------------|---------|
| 60.0 | 57.14 | 34.28 | 282 | 9.666 | 10.0 | -0.334 | Pass |

Reference numbers of test equipment used

| | | | | | | | |
|---------|--|--|--|--|--|--|--|
| HL 4355 | | | | | | | |
|---------|--|--|--|--|--|--|--|

Full description is given in Appendix A.



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| | | | |
|---|--------------------------------|-------------------------------|---------------------|
| Test specification: FCC Part 15, Section 231(b), Field strength of emissions | | | |
| Test procedure: ANSI C63.10, Section 6.5 / 6.6 | | | |
| Test mode: Compliance | | Verdict: PASS | |
| Date(s): | 02-Jul-20 | | |
| Temperature: 24 °C | Relative Humidity: 43 % | Air Pressure: 1008 hPa | Power: 3 VDC |
| Remarks: | | | |

7.2 Field strength of emissions

7.2.1 General

This test was performed to measure field strength of fundamental and spurious emissions from the EUT. Specification test limits are given in Table 7.2.1 and Table 7.2.2.

Table 7.2.1 Radiated fundamental emission limits

| Fundamental frequency, MHz | Field strength at 3 m, dB(µV/m) | |
|----------------------------|---------------------------------|---------|
| | Peak | Average |
| 433.92 | 92.8 | 72.8 |

Table 7.2.2 Radiated spurious emissions limits

| Frequency, MHz | Field strength at 3 m, dB(µV/m) | | | | |
|----------------|---------------------------------|-----------------|-----------------|--------------------------|---------|
| | Within restricted bands | | | Outside restricted bands | |
| | Peak | Quasi Peak | Average | 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 | | 73.8 – 63.0** | | | |
| 1.705 – 30.0* | | 69.5 | | | |
| 30 – 88 | NA | 40.0 | NA | | |
| 88 – 216 | | 43.5 | | | |
| 216 – 960 | | 46.0 | | | |
| 960 - 1000 | | 54.0 | | | |
| Above 1000 | 74.0 | NA | 54.0 | | |

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

$$\text{Lim}_{S2} = \text{Lim}_{S1} + 40 \log (S_1/S_2)$$

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

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

Note 1: The limit for spurious emissions was 20 dB lower than fundamental emission limit.

The above limits provided in terms of average values, peak limit was 20 dB above the average limit.

The above limits provided in terms of average values, peak limit was 20 dB above the average limit.

Note 2: The above field strength limits applied from the lowest radio frequency generated in the device, without going below 9 kHz up to the tenth harmonic of the highest fundamental frequency.



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|----------------------------|---|-------------------------------|---------------------|
| Test specification: | FCC Part 15, Section 231(b), Field strength of emissions | | |
| Test procedure: | ANSI C63.10, Section 6.5 / 6.6 | | |
| Test mode: | Compliance | Verdict: | PASS |
| Date(s): | 02-Jul-20 | | |
| Temperature: 24 °C | Relative Humidity: 43 % | Air Pressure: 1008 hPa | Power: 3 VDC |
| Remarks: | | | |

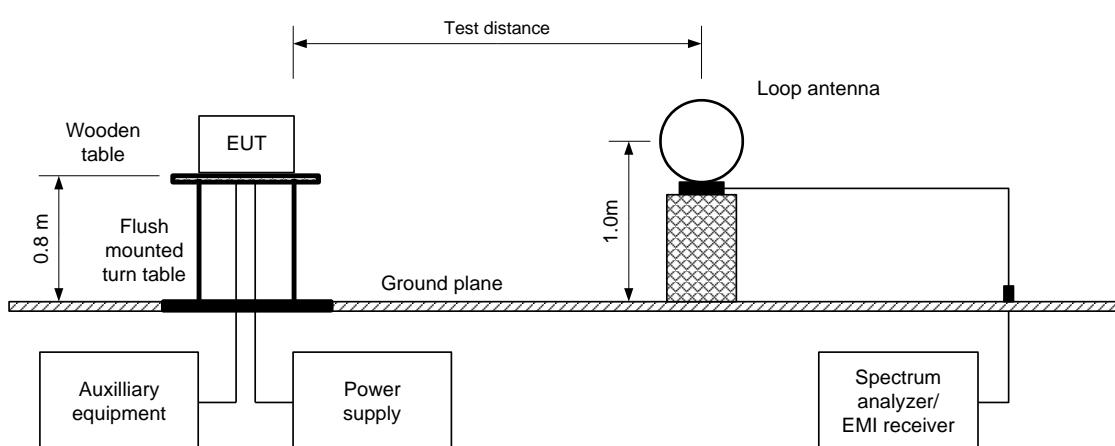
7.2.2 Test procedure for spurious emission field strength measurements in 9 kHz to 30 MHz band

- 7.2.2.1 The EUT was set up as shown in Figure 7.2.1 energized and the performance check was conducted.
- 7.2.2.2 The specified frequency range was investigated with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360° and the measuring antenna was rotated around its vertical axis.
- 7.2.2.3 The worst test results (the lowest margins), recorded in Table 7.2.3, Table 7.2.4 and shown in the associated plots.

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

- 7.2.3.1 The EUT was set up as shown in Figure 7.2.2, Figure 7.2.3, energized and the performance check was conducted.
- 7.2.3.2 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.
- 7.2.3.3 The worst test results (the lowest margins), recorded in Table 7.2.3, Table 7.2.5 and shown in the associated plots.

Figure 7.2.1 Setup for spurious emission field strength measurements below 30 MHz





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| | | | |
|---|--------------------------------|-------------------------------|---------------------|
| Test specification: FCC Part 15, Section 231(b), Field strength of emissions | | | |
| Test procedure: ANSI C63.10, Section 6.5 / 6.6 | | | |
| Test mode: Compliance | | Verdict: PASS | |
| Date(s): 02-Jul-20 | | | |
| Temperature: 24 °C | Relative Humidity: 43 % | Air Pressure: 1008 hPa | Power: 3 VDC |
| Remarks: | | | |

Figure 7.2.2 Setup for spurious emission field strength measurements in 30 -1000 MHz

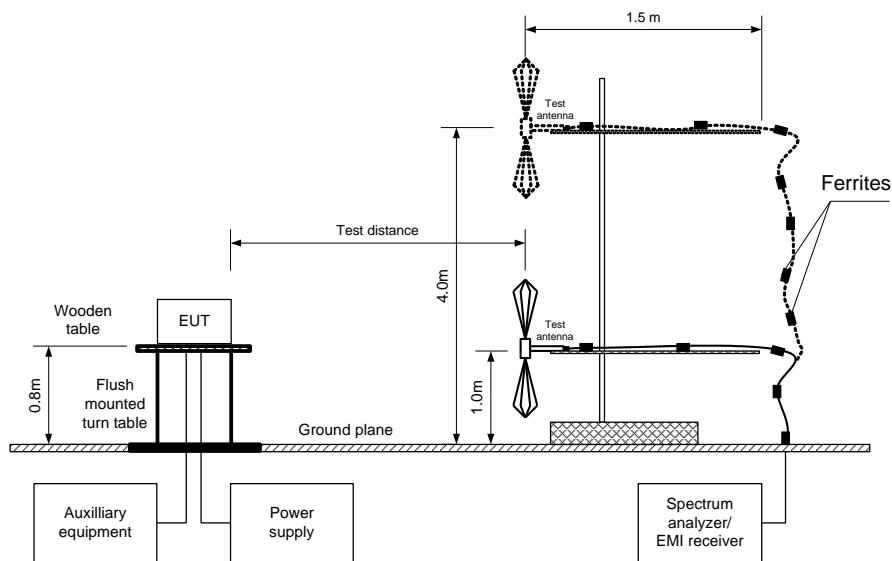
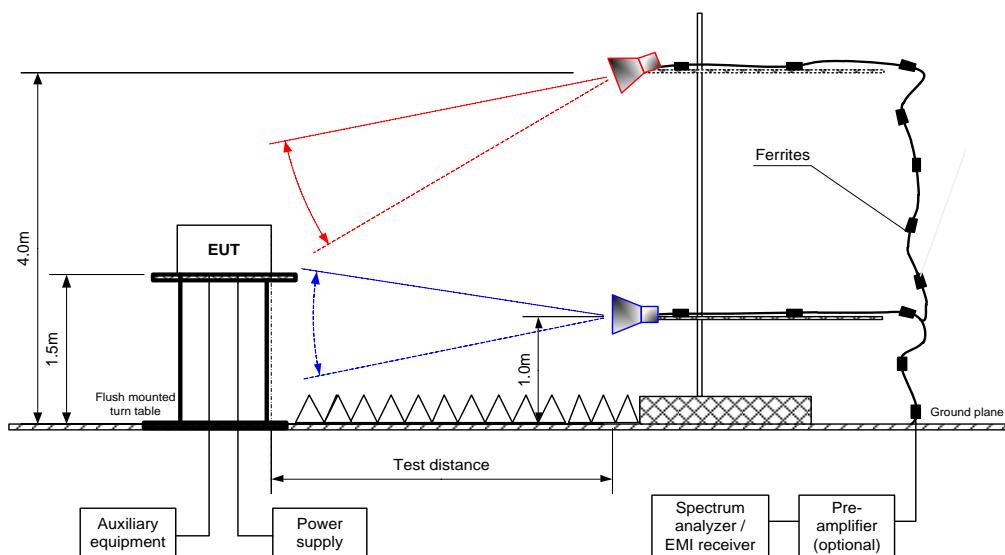


Figure 7.2.3 Setup for spurious emission field strength measurements above 1000 MHz





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| | |
|---|--------------------------------|
| Test specification: FCC Part 15, Section 231(b), Field strength of emissions | |
| Test procedure: | ANSI C63.10, Section 6.5 / 6.6 |
| Test mode: | Compliance |
| Date(s): | 02-Jul-20 |
| Temperature: 24 °C | Relative Humidity: 43 % |
| Air Pressure: 1008 hPa Power: 3 VDC | |
| Remarks: | |

Table 7.2.3 Field strength of fundamental emission, spurious emissions outside restricted bands below 1 GHz

| | |
|-------------------------------|--|
| TEST DISTANCE: | 3 m |
| EUT POSITION: | Typical (Vertical) |
| MODULATION: | ASK |
| BIT RATE: | 1 kbps |
| INVESTIGATED FREQUENCY RANGE: | 0.009 – 4500 MHz |
| DETECTOR USED: | Peak |
| RESOLUTION BANDWIDTH: | 0.2 kHz (9 kHz – 150 kHz) 9.0 kHz (150 kHz – 30 MHz) 120 kHz (30 MHz – 1000 MHz) 1.0 MHz (above 1000 MHz) ≥ Resolution bandwidth |
| VIDEO BANDWIDTH: | |
| TEST ANTENNA TYPE: | Active loop (9 kHz – 30 MHz) Biconilog (30 MHz – 1000 MHz) Double ridged guide (above 1000 MHz) |

| F, MHz | Antenna | | Azimuth, degrees* | Peak field strength | | | Average field strength | | | | Verdict |
|-----------------------------|---------|-----------|-------------------|---------------------|-----------------|--------------|------------------------|-------------------------|-----------------|--------------|---------|
| | Pol. | Height, m | | Measured, dB(µV/m) | Limit, dB(µV/m) | Margin, dB** | Measured, dB(µV/m) | Calculated, dB(µV/m)*** | Limit, dB(µV/m) | Margin, dB** | |
| Fundamental emission | | | | | | | | | | | |
| 433.896 | V | 1.04 | 350 | 55.98 | 100.8 | -44.82 | 55.98 | 51.55 | 80.8 | -29.25 | Pass |
| Spurious emissions | | | | | | | | | | | |
| 868.875 | V | 1.2 | 0 | 41.45 | 80.8 | -39.35 | 41.45 | 37.02 | 60.8 | -23.78 | Pass |

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

**- Margin, dB =Measured (calculated) value, dB(µV/m)-Limit, dB(µV/m)

***- Average field strength calculated = Peak field strength measured – Duty cycle factor

Table 7.2.4 Spurious emissions outside restricted bands and within restricted bands at frequencies above 1 GHz

| | |
|-------------------------------|--|
| TEST DISTANCE: | 3 m |
| EUT POSITION: | Typical |
| MODULATION: | ASK |
| BIT RATE: | 1 kbps |
| INVESTIGATED FREQUENCY RANGE: | 0.009 – 5000 MHz |
| DETECTOR USED: | Peak |
| RESOLUTION BANDWIDTH: | 0.2 kHz (9 kHz – 150 kHz) 9.0 kHz (150 kHz – 30 MHz) 120 kHz (30 MHz – 1000 MHz) 1.0 MHz (above 1000 MHz) ≥ Resolution bandwidth |
| VIDEO BANDWIDTH: | |
| TEST ANTENNA TYPE: | Active loop (9 kHz – 30 MHz) Biconilog (30 MHz – 1000 MHz) Double ridged guide (above 1000 MHz) |

| F, MHz | Antenna | | Azimuth, degrees* | Peak field strength | | | Average field strength | | | | Verdict |
|-------------------------|---------|-----------|-------------------|---------------------|-----------------|--------------|------------------------|-------------------------|-----------------|--------------|---------|
| | Pol. | Height, m | | Measured, dB(µV/m) | Limit, dB(µV/m) | Margin, dB** | Measured, dB(µV/m) | Calculated, dB(µV/m)*** | Limit, dB(µV/m) | Margin, dB** | |
| No emissions were found | | | | | | | | | | | Pass |

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

**- Margin, dB =Measured (calculated) value, dB(µV/m)-Limit, dB(µV/m)

***- Average field strength calculated = Peak field strength measured – Duty cycle factor



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| | | | | | |
|---|--------------------------------|--|-------------------------------|---------------------|------|
| Test specification: FCC Part 15, Section 231(b), Field strength of emissions | | | | | |
| Test procedure: ANSI C63.10, Section 6.5 / 6.6 | | | | | |
| Test mode: Compliance | | | Verdict: | | PASS |
| Date(s): 02-Jul-20 | | | | | |
| Temperature: 24 °C | Relative Humidity: 43 % | | Air Pressure: 1008 hPa | Power: 3 VDC | |
| Remarks: | | | | | |

Table 7.2.5 Average factor calculation

| Transmission pulse A during burst | | Transmission pulse B during burst | | Quantity bursts during 100 msec | Average factor, dB |
|-----------------------------------|----------|-----------------------------------|----------|---------------------------------|--------------------|
| Duration, ms | Quantity | Duration, ms | Quantity | | |
| 60 | 1 | NA | NA | 1 | -4.43 |

*- Average factor was calculated as follows

for pulse train shorter than 100 ms:

$$\text{Average factor} = 20 \times \log_{10} \left(\frac{\text{Pulse duration}}{\text{Pulse period}} \times \frac{\text{Burst duration}}{\text{Train duration}} \times \text{Number of bursts within pulse train} \right)$$

Table 7.2.6 Field strength of emissions below 1 GHz within restricted bands

| | |
|-------------------------------|--|
| TEST DISTANCE: | 3 m |
| EUT POSITION: | Typical |
| MODULATION: | ASK |
| BIT RATE: | 1 kbps |
| INVESTIGATED FREQUENCY RANGE: | 0.009 – 1000 MHz |
| DETECTOR USED: | Peak |
| RESOLUTION BANDWIDTH: | 0.2 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) |

| Frequency, MHz | Peak emission, dB(µV/m) | Quasi-peak | | | Antenna polarization | Antenna height, m | Turn-table position**, degrees | Verdict |
|--|-------------------------|-----------------------------|-----------------|-------------|----------------------|-------------------|--------------------------------|---------|
| | | Measured emission, dB(µV/m) | Limit, dB(µV/m) | Margin, dB* | | | | |
| All signals below limit at least 20 dB | | | | | | | | Pass |

*- Margin = Measured emission - specification limit.

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

Reference numbers of test equipment used

| | | | | | | | |
|---------|---------|---------|---------|---------|---------|--|--|
| HL 0446 | HL 3903 | HL 4360 | HL 4933 | HL 5288 | HL 5405 | | |
|---------|---------|---------|---------|---------|---------|--|--|

Full description is given in Appendix A.



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| Test specification: FCC Part 15, Section 231(b), Field strength of emissions | | | | | |
|---|--------------------------------|--|-------------------------------|---------------------|--|
| Test procedure: | ANSI C63.10, Section 6.5 / 6.6 | | | | |
| Test mode: | Compliance | | Verdict: | PASS | |
| Date(s): | 02-Jul-20 | | | | |
| Temperature: 24 °C | Relative Humidity: 43 % | | Air Pressure: 1008 hPa | Power: 3 VDC | |
| Remarks: | | | | | |

Table 7.2.7 Restricted bands according to FCC 15, Section 205

| MHz | MHz | MHz | MHz | MHz | GHz |
|-------------------|---------------------|-----------------------|-----------------|---------------|---------------|
| 0.09 - 0.11 | 8.37625 - 8.38675 | 73 - 74.6 | 399.9 - 410 | 2690 - 2900 | 10.6 - 12.7 |
| 0.495 - 0.505 | 8.41425 - 8.41475 | 74.8 - 75.2 | 608 - 614 | 3260 - 3267 | 13.25 - 13.4 |
| 2.1735 - 2.1905 | 12.290 - 12.293 | 108 - 121.94 | 960 - 1240 | 3332 - 3339 | 14.47 - 14.5 |
| 4.125 - 4.128 | 12.51975 - 12.52025 | 123 - 138 | 1300 - 1427 | 3345.8 - 3358 | 15.35 - 16.2 |
| 4.17725 - 4.17775 | 12.57675 - 12.57725 | 149.9 - 150.05 | 1435 - 1626.5 | 3600 - 4400 | 17.7 - 21.4 |
| 4.20725 - 4.20775 | 13.36 - 13.41 | 156.52475 - 156.52525 | 1645.5 - 1646.5 | 4500 - 5150 | 22.01 - 23.12 |
| 6.215 - 6.218 | 16.420 - 16.423 | 156.7 - 156.9 | 1660 - 1710 | 5350 - 5460 | 23.6 - 24 |
| 6.26775 - 6.26825 | 16.69475 - 16.69525 | 162.0125 - 167.17 | 1718.8 - 1722.2 | 7250 - 7750 | 31.2 - 31.8 |
| 6.31175 - 6.31225 | 16.80425 - 16.80475 | 167.72 - 173.2 | 2200 - 2300 | 8025 - 8500 | 36.43 - 36.5 |
| 8.291 - 8.294 | 25.5 - 25.67 | 240 - 285 | 2310 - 2390 | 9000 - 9200 | |
| 8.362 - 8.366 | 37.5 - 38.25 | 322 - 335.4 | 2483.5 - 2500 | 9300 - 9500 | Above 38.6 |



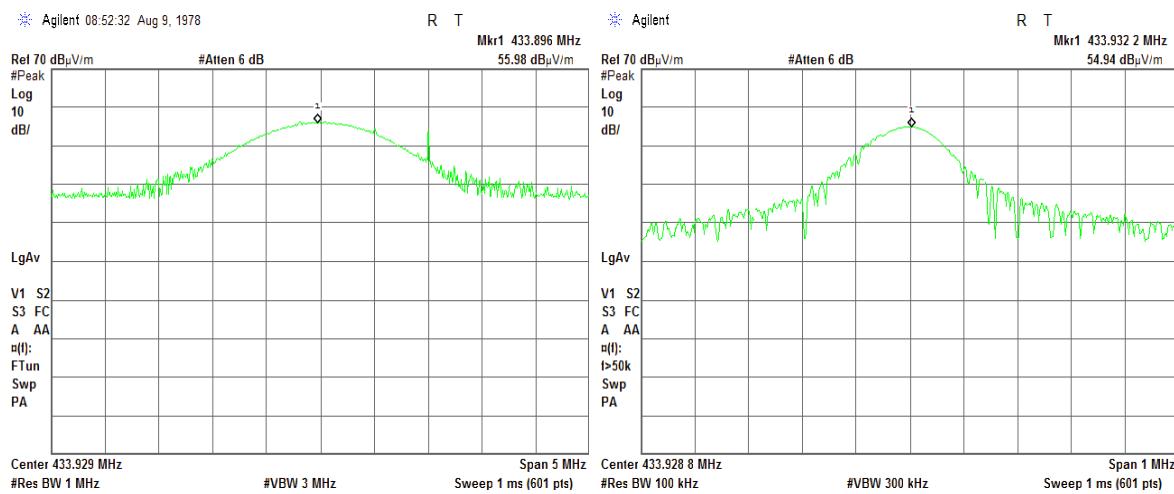
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| Test specification: FCC Part 15, Section 231(b), Field strength of emissions | | | |
|---|--------------------------------|-------------------------------|---------------------|
| Test procedure: | ANSI C63.10, Section 6.5 / 6.6 | | |
| Test mode: | Compliance | | |
| Date(s): | 02-Jul-20 | | |
| Temperature: 24 °C | Relative Humidity: 43 % | Air Pressure: 1008 hPa | Power: 3 VDC |
| Remarks: | | | |

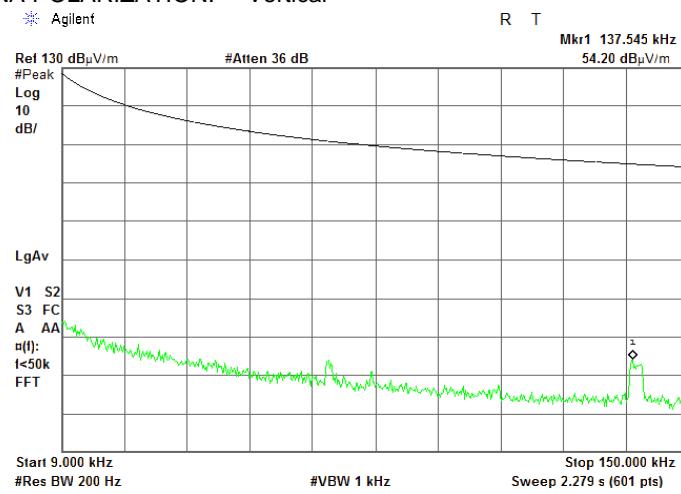
Plot 7.2.1 Radiated emission measurements at the low fundamental frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical
EUT POSITION: Typical (Vertical)



Plot 7.2.6 Radiated emission measurements from 9 kHz to 150 kHz

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





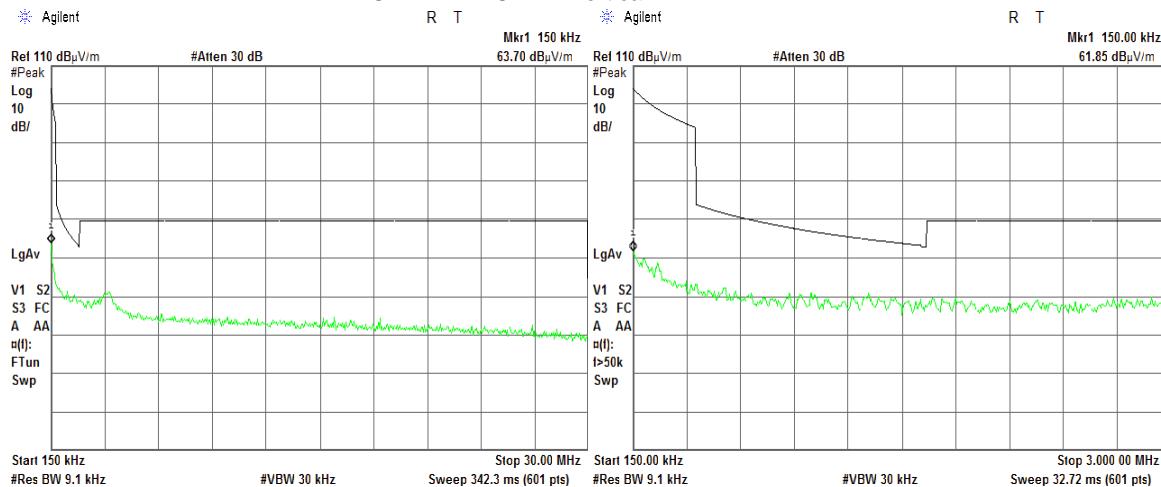
HERMON LABORATORIES

Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20

| Test specification: FCC Part 15, Section 231(b), Field strength of emissions | | | |
|---|--------------------------------|-------------------------------|----------------------|
| Test procedure: ANSI C63.10, Section 6.5 / 6.6 | | | |
| Test mode: Compliance | | | Verdict: PASS |
| Date(s): 02-Jul-20 | | | |
| Temperature: 24 °C | Relative Humidity: 43 % | Air Pressure: 1008 hPa | Power: 3 VDC |
| Remarks: | | | |

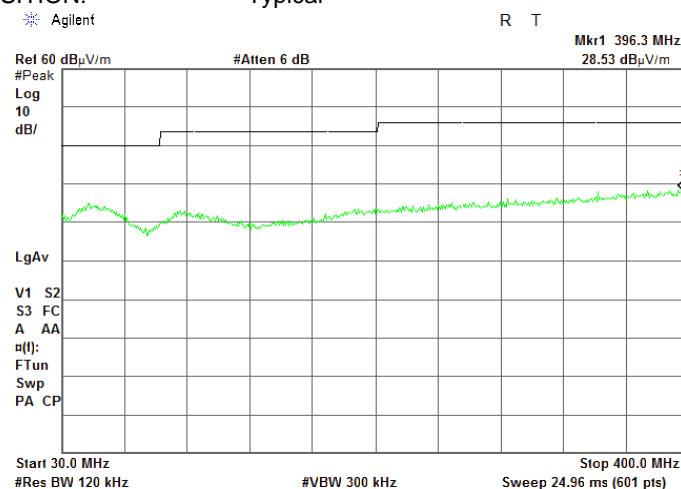
Plot 7.2.2 Radiated emission measurements from 150 kHz to 30 MHz

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



Plot 7.2.3 Radiated emission measurements from 30 to 400 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
EUT POSITION: Typical





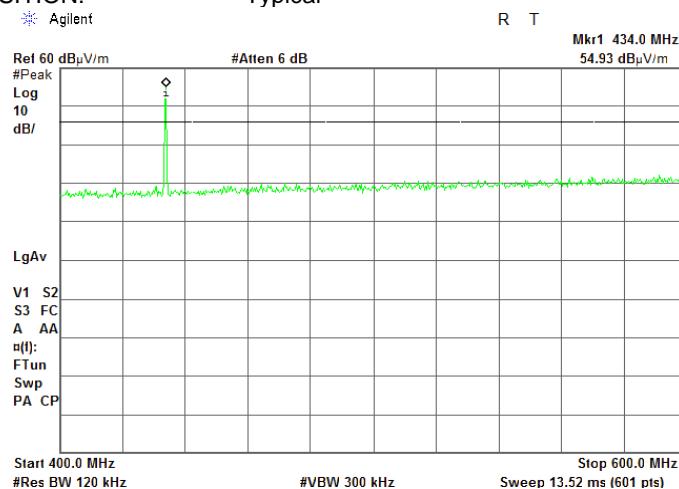
HERMON LABORATORIES

Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20

| | | | |
|---|--------------------------------|-------------------------------|----------------------|
| Test specification: FCC Part 15, Section 231(b), Field strength of emissions | | | |
| Test procedure: ANSI C63.10, Section 6.5 / 6.6 | | | |
| Test mode: Compliance | | | Verdict: PASS |
| Date(s): 02-Jul-20 | | | |
| Temperature: 24 °C | Relative Humidity: 43 % | Air Pressure: 1008 hPa | Power: 3 VDC |
| Remarks: | | | |

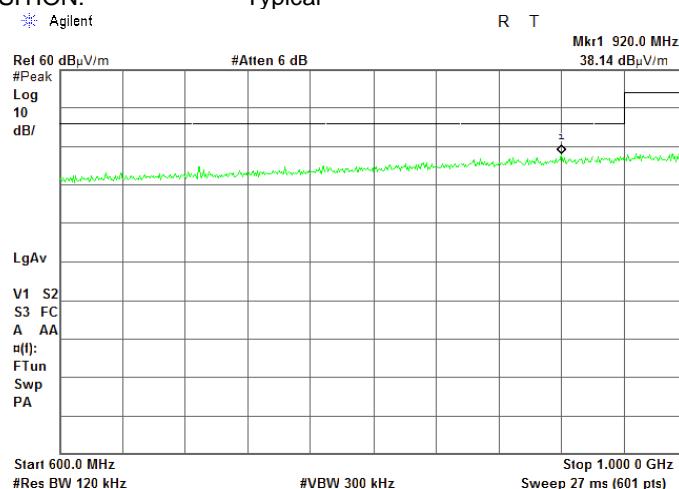
Plot 7.2.4 Radiated emission measurements from 400 to 600 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
EUT POSITION: Typical



Plot 7.2.5 Radiated emission measurements from 600 to 1000 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
EUT POSITION: Typical





HERMON LABORATORIES

Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20

| | | | |
|---|--------------------------------|-------------------------------|----------------------|
| Test specification: FCC Part 15, Section 231(b), Field strength of emissions | | | |
| Test procedure: ANSI C63.10, Section 6.5 / 6.6 | | | |
| Test mode: Compliance | | | Verdict: PASS |
| Date(s): 02-Jul-20 | | | |
| Temperature: 24 °C | Relative Humidity: 43 % | Air Pressure: 1008 hPa | Power: 3 VDC |
| Remarks: | | | |

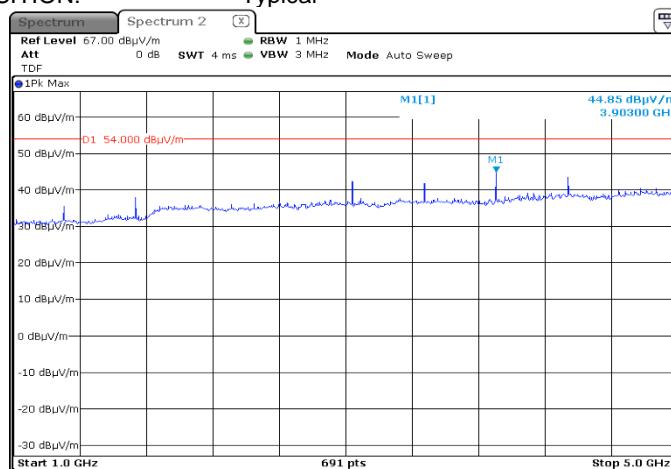
Plot 7.2.6 Radiated emission measurements from 1000 to 5000 MHz

TEST SITE: Semi anechoic chamber

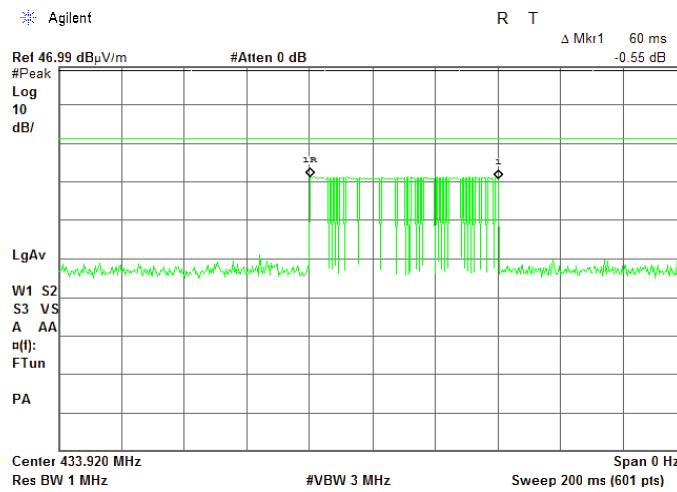
TEST DISTANCE: 3 m

ANTENNA POLARIZATION: Vertical and Horizontal

EUT POSITION: Typical



Plot 7.2.7 Transmitter pulse duration



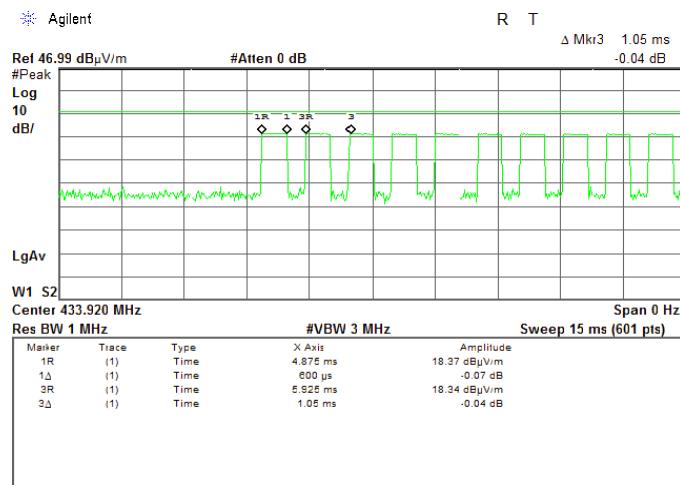


HERMON LABORATORIES

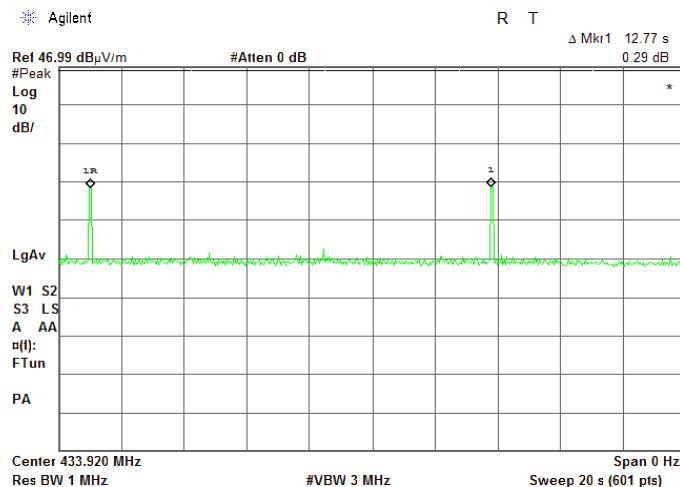
Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20

| | | | |
|---|--------------------------------|-------------------------------|----------------------|
| Test specification: FCC Part 15, Section 231(b), Field strength of emissions | | | |
| Test procedure: ANSI C63.10, Section 6.5 / 6.6 | | | |
| Test mode: Compliance | | | Verdict: PASS |
| Date(s): 02-Jul-20 | | | |
| Temperature: 24 °C | Relative Humidity: 43 % | Air Pressure: 1008 hPa | Power: 3 VDC |
| Remarks: | | | |

Plot 7.2.8 Transmission pulse duration (Tx ON)



Plot 7.2.9 Transmitter pulse period





HERMON LABORATORIES

Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20

| | | | |
|---|--------------------------------|-------------------------------|---------------------|
| Test specification: FCC Part 15, Section 231(c) , Section A1.3, Occupied bandwidth | | | |
| Test procedure: ANSI C63.10, Section 6.9.2 | | | |
| Test mode: Compliance | | Verdict: PASS | |
| Date(s): | 03-Jun-20 | | |
| Temperature: 24 °C | Relative Humidity: 43 % | Air Pressure: 1008 hPa | Power: 3 VDC |
| Remarks: | | | |

7.3 Occupied bandwidth test

7.3.1 General

This test was performed to measure transmitter occupied bandwidth. Specification test limits are given in Table 7.3.1.

Table 7.3.1 Occupied bandwidth limits

| Assigned frequency, MHz | Modulation envelope reference points*, dBc | Maximum allowed bandwidth, % of the carrier frequency |
|-------------------------|--|---|
| 70 - 900 | 20.0 | 0.25 |

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

7.3.2 Test procedure

- 7.3.2.1 The EUT was set up as shown in Figure 7.3.1, energized and its proper operation was checked.
- 7.3.2.2 The EUT was set to transmit modulated carrier.
- 7.3.2.3 The transmitter occupied bandwidth was measured with spectrum analyzer as frequency delta between reference points on modulation envelope and provided in Table 7.3.2 and associated plot.

Figure 7.3.1 Occupied bandwidth test setup





HERMON LABORATORIES

Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20

| | | | | | |
|---|--------------------------------|-------------------------------|--|---------------------|----------------------|
| Test specification: FCC Part 15, Section 231(c) , Section A1.3, Occupied bandwidth | | | | | |
| Test procedure: ANSI C63.10, Section 6.9.2 | | | | | |
| Test mode: Compliance | | | | | Verdict: PASS |
| Date(s): 03-Jun-20 | | | | | |
| Temperature: 24 °C | Relative Humidity: 43 % | Air Pressure: 1008 hPa | | Power: 3 VDC | |
| Remarks: | | | | | |

Table 7.3.2 Occupied bandwidth test results according to FCC 15.231

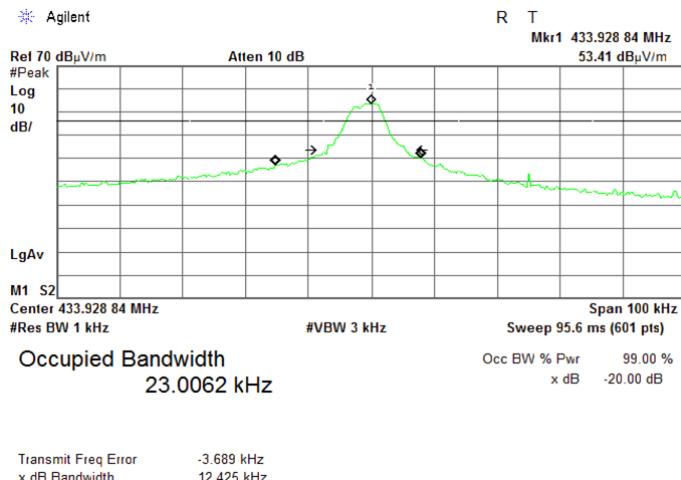
DETECTOR USED: Peak hold
 RESOLUTION BANDWIDTH: 1kHz
 VIDEO BANDWIDTH: 3kHz
 MODULATION ENVELOPE REFERENCE POINTS: 20 dBc
 MODULATION: ASK
 BIT RATE: 1 kbps

| Carrier frequency, MHz | Occupied bandwidth, kHz | Limit | | Margin, kHz | Verdict |
|------------------------|-------------------------|----------------------------|--------|-------------|---------|
| | | % of the carrier frequency | kHz | | |
| 433.92 | 12.45 | 0.25 | 1084.8 | 1072.35 | Pass |

Reference numbers of test equipment used

| | | | | | | | | |
|---------|---------|---------|---------|--|--|--|--|--|
| HL 3818 | HL 3903 | HL 5288 | HL 5405 | | | | | |
|---------|---------|---------|---------|--|--|--|--|--|

Full description is given in Appendix A.

Plot 7.3.1 Occupied bandwidth test result



HERMON LABORATORIES

Report ID: GIVRAD_FCC.3772437724
Date of Issue: 28-Oct-20

| Test specification: FCC Part 15, Section 203, Antenna requirements | | | |
|---|--|-------------------------------|---------------------|
| Test procedure: | Visual inspection / supplier declaration | | |
| Test mode: | Compliance | | |
| Date(s): | 07-Aug-19 | Verdict: | PASS |
| Temperature: 24 °C | Relative Humidity: 42 % | Air Pressure: 1007 hPa | Power: 3 VDC |
| Remarks: | | | |

7.4 Antenna requirements

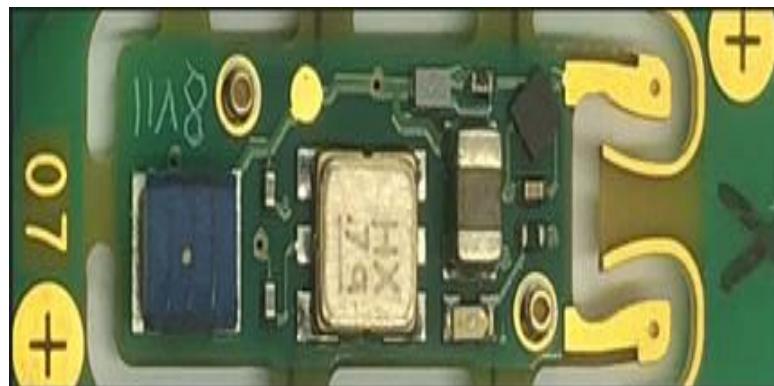
The EUT was verified for compliance with antenna requirements. A transmitter shall be designed to ensure that no antenna other than that furnished by the responsible party will be used with the device. It may be either permanently attached or employs a unique antenna connector for every antenna proposed 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 7.4.1.

Table 7.4.1 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 | |

Photograph 7.4.1 Antenna assembly





HERMON LABORATORIES

Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20

8 APPENDIX A Test equipment and ancillaries used for tests

| HL No | Description | Manufacturer | Model | Ser. No. | Last Cal./Check | Due Cal./Check |
|-------|--|-----------------------|----------------|-------------|-----------------|----------------|
| 0337 | Probe Set, Hand held, 5 probes | Electro-Metrics | EHFP-30 | 238 | 25-Jun-20 | 25-Jun-21 |
| 0446 | Antenna, Loop, Active, 10 (9) kHz - 30 MHz | EMCO | 6502 | 2857 | 24-Feb-20 | 24-Feb-21 |
| 3818 | PSA Series Spectrum Analyzer, 3 Hz- 44 GHz | Agilent Technologies | E4446A | MY482502 88 | 27-Apr-20 | 27-Apr-21 |
| 3901 | Microwave Cable Assembly, 40.0 GHz, 3.5 m, SMA/SMA | Huber-Suhner | SUCOFL EX 102A | 1225/2A | 06-Apr-20 | 06-Apr-21 |
| 3903 | Microwave Cable Assembly, 40.0 GHz, 1.5 m, SMA/SMA | Huber-Suhner | SUCOFL EX 102A | 1226/2A | 06-Apr-20 | 06-Apr-21 |
| 4933 | Active Horn Antenna, 1 GHz to 18 GHz | COM-POWER CORPORATION | AHA-118 | 701046 | 06-Jan-20 | 06-Jan-21 |
| 5288 | Trilog Antenna, 25 MHz - 8 GHz, 100W | Frankonia | ALX-8000E | 00809 | 08-Feb-19 | 08-Feb-22 |
| 5376 | EXA Signal Analyzer, 10 Hz - 32 GHz | Keysight Technologies | N9010B | MY574704 04 | 18-Mar-20 | 18-Mar-21 |
| 5405 | RF cable, 18 GHz, N-N, 6 m | Huber-Suhner | SF118/11 N(x2) | 500023/11 8 | 11-Aug-19 | 11-Aug-20 |



HERMON LABORATORIES

Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20

9 APPENDIX B Test equipment correction factors

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

| Frequency, | Measured antenna factor, dB _S /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, dB _S /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_μV to obtain field strength in dB_μA/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_μV to obtain field strength in dB_μV/m.



HERMON LABORATORIES

Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20HL 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.



HERMON LABORATORIES

Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20

HL 5405: RF Cable
Huber-Suhner, model: SF118/11N(x2), s/n: 500023/118
Calibration date: 01-Aug-2018

| Set / Applied, MHz | Measured, dB | Uncertainty, dB |
|-----------------------|-----------------|--------------------|
| 0.1 | 0.01 | ±0.07 |
| 50 | 0.23 | ±0.07 |
| 100 | 0.32 | ±0.07 |
| 200 | 0.45 | ±0.08 |
| 300 | 0.55 | ±0.08 |
| 400 | 0.64 | ±0.08 |
| 500 | 0.71 | ±0.08 |
| 600 | 0.78 | ±0.08 |
| 700 | 0.85 | ±0.08 |
| 800 | 0.91 | ±0.08 |
| 900 | 0.97 | ±0.08 |
| 1000 | 1.02 | ±0.08 |
| 1100 | 1.07 | ±0.08 |
| 1200 | 1.12 | ±0.08 |
| 1300 | 1.16 | ±0.08 |
| 1400 | 1.21 | ±0.08 |
| 1500 | 1.25 | ±0.08 |
| 1600 | 1.30 | ±0.08 |
| 1700 | 1.34 | ±0.08 |
| 1800 | 1.38 | ±0.08 |
| 1900 | 1.42 | ±0.08 |
| 2000 | 1.47 | ±0.08 |
| 2500 | 1.64 | ±0.10 |
| 3000 | 1.81 | ±0.10 |
| 3500 | 1.97 | ±0.10 |
| 4000 | 2.11 | ±0.10 |
| 4500 | 2.25 | ±0.10 |
| 5000 | 2.38 | ±0.10 |
| 5500 | 2.48 | ±0.10 |
| 6000 | 2.59 | ±0.10 |
| 6500 | 2.72 | ±0.10 |
| 7000 | 2.84 | ±0.13 |
| 7500 | 2.97 | ±0.13 |
| 8000 | 3.08 | ±0.13 |
| 8500 | 3.21 | ±0.13 |
| 9000 | 3.31 | ±0.13 |
| 9500 | 3.42 | ±0.13 |
| 10000 | 3.52 | ±0.13 |



HERMON LABORATORIES

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10 APPENDIX C Test laboratory 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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Fax: +972 4628 8277
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website: www.hermonlabs.com

Person for contact: Mr. Michael Nikishin, EMC&Radio group manager



HERMON LABORATORIES

Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20

11 APPENDIX D 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 | Biconilog antenna: ± 5.0 dB Biconical antenna: ± 5.0 dB Log periodic antenna: ± 5.1 dB Double ridged horn antenna: ± 5.3 dB |
| Vertical polarization | 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 | Biconilog antenna: ± 5.3 dB Biconical antenna: ± 5.0 dB Log periodic antenna: ± 5.3 dB Double ridged horn antenna: ± 5.3 dB |
| Vertical polarization | 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.



HERMON LABORATORIES

Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20

12 APPENDIX E

Specification references

47CFR part 15: 2019

Radio Frequency Devices.

ANSI C63.10: 2013

American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices



HERMON LABORATORIES

Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20

13 APPENDIX F Manufacturer's declaration

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

| | | | |
|---|---------------------------|----------------------|------------------------------|
| Confidential | | | |
| Document Title: Bravo Reflux capsule product numbers declaration for EMC + Radio tests | Document No. NA | Version NA | Page <u>1 of 1</u> |

1. Purpose

The purpose of this document is to justify inclusion of the product numbers FGS-0635 and FGS-0636 as EUT in EMC and Radio tests in Hermon Labs, project 37724.

2. Scope

Report IDs:

- GIVRAD_EN.37724
- GIVRAD_FCC.37724
- GIVEMC_37724
- GIVEMC_37724_Ed4

EUT:

| | |
|--|----------|
| • Bravo Reflux capsule delivery device, 1-pk | FGS-0636 |
| • Bravo Reflux capsule delivery device, 5-pk | FGS-0635 |

3. Declaration

Both stated product numbers are of the same exact Bravo capsule device with only packaging difference. Package of FGS-0636 include 1 unit of Bravo delivery and capsule device while package of FGS-0635 include 5 units same exact to the one in FGS-0636.

August 13, 2020

(date)

Nir Pnini

(signature)

Nir Pnini

(printed name)

Design Quality Engineer

(position)



HERMON LABORATORIES

Report ID: GIVRAD_FCC.37724
Date of Issue: 28-Oct-20

14 APPENDIX G Manufacturer's declaration

October 05, 2020

Telefication B.V.
Attn: Dept. FCC TCB
Edisonstraat 12A
6902 PK ZEVENAAR
The Netherlands

Subject: Application for Bravo Reflux Capsule Class II Permissive Change of the product with FCC ID:
PHZ-BRAVO100

Dear Gentlemen,

The following changes were implemented in approved Bravo Reflux Capsule FCC ID: PHZ-BRAVO100 :

1. Replacement of reed switch by a NVE magnetic sensor and electrical switch on capsule PCA.
2. Capsule RF transistor was declared EOL and replaced with a new one with the same parameters.
3. Capacitor Vdd filtering 100 pF was changed to 150 pF.
4. A LED was added on the PCA to indicate capsule's status during the assembly process with no layout change.

No impact in the RF performance of the device after above mentioned changes .

Tim Thomas
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HERMON LABORATORIES

15 APPENDIX H

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(μV) | decibel referred to one microvolt |
| dB(μV/m) | decibel referred to one microvolt per meter |
| dB(μA) | 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 |
| μs | 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 |

END OF DOCUMENT