

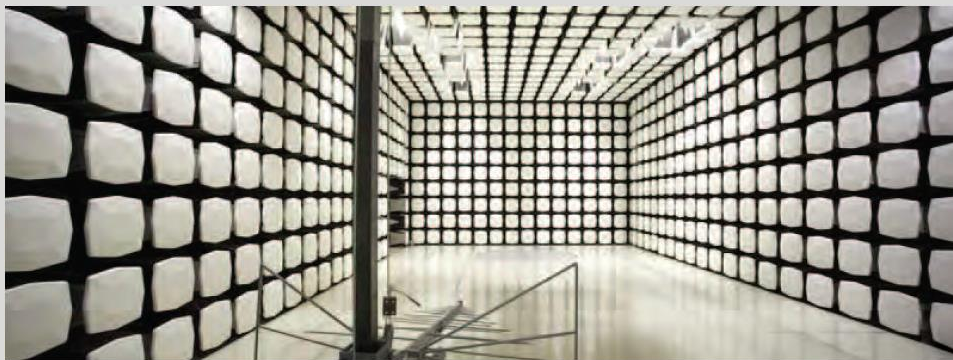


# element

**Abbott Laboratories**  
**GLP12220 Input/Output Module**

**FCC 15.225:2021**  
**13.56MHz Radio**

**Report: ABBO0076 Rev. 3, Issue Date: September 7, 2022**



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# CERTIFICATE OF TEST



Last Date of Test: August 4, 2021  
Abbott Laboratories  
EUT: GLP12220 Input/Output Module

## Radio Equipment Testing

### Standards

| Specification   | Method           |
|-----------------|------------------|
| FCC 15.207:2021 | ANSI C63.10:2013 |
| FCC 15.225:2021 |                  |

### Results

| Method Clause | Test Description   | Applied | Results | Comments |
|---------------|--|---------|---------|----------|
| 6.9           | Occupied Bandwidth   | Yes     | Pass    |          |
| 6.8           | Frequency Stability  | Yes     | Pass    |          |
| 6.4           | Field Strength of Fundamental                              | Yes     | Pass    |          |
| 6.4           | Field Strength of Spurious Emissions (Less Than 30 MHz)    | Yes     | Pass    |          |
| 6.5           | Field Strength of Spurious Emissions (Greater Than 30 MHz) | Yes     | Pass    |          |
| 6.2           | Powerline Conducted Emissions                              | Yes     | Pass    |          |

### Deviations From Test Standards

None

### Approved By:

Adam Bruno, Operations Manager

*Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.*

# REVISION HISTORY

| Revision Number | Description   | Date<br>(yyyy-mm-dd) | Page Number                       |
|-----------------|---|----------------------|-----------------------------------|
| 01              | Removed track radio data from Field Strength of Fundamental   | 2021-09-02           | 33-38                             |
|                 | Changed Powerline CE spec from Class A to FCC 15.207  | 2021-09-02           | 17, 19, 21, 23, 25, 27, 29 and 31 |
| 02              | Added information on the RFID radios that are associated with the drawer to the functional description page. Instead of listing a test strategy here I've made comments on the individual data modules for clarity. The power settings indicate all radios are identical. | 2022-08-29           | 10                                |
|                 | Added comment that all radios do not simultaneously transmit on the test description page. Comments about similar testing without VCP are currently in deviations.  | 2022-08-29           | 17                                |
|                 | Explained in the comments that the measurement of all radios together is a test mode only.  | 2022-08-29           | 35, 41                            |
|                 | Removed mention of the GLP41252 within the test data as this was the RFID tag. Client stated that each drawer radio is identical. Emailed client with respect to attestation of this.   | 2022-08-29           | 45, 53                            |
|                 | Test block diagram updated.   | 2022-08-29           | 7                                 |
|                 | Power Settings and Antenna Info module updated  | 2022-08-29           | 11                                |
|                 | Changed limit out to 18GHz manually.  | 2022-08-29           | All                               |
| 03              | Revision number 01, row 2, should say FCC 15.207. 15.209 is for RE limits.  | 2022-09-07           | 3                                 |
|                 | Corrected bandwidths  | 2022-09-07           | 7                                 |
|                 | Corrected dates   | 2022-09-07           | 10                                |
|                 | Changed voltage to 220V/60Hz  | 2022-09-07           | 18-33                             |

# ACCREDITATIONS AND AUTHORIZATIONS



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## United States

**FCC** - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

**A2LA** - Each laboratory is accredited by A2LA to ISO / IEC 17025, and as a product certifier to ISO / IEC 17065 which allows Element to certify transmitters to FCC and IC specifications.

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## Canada

**ISED** - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB) and as a CAB for the acceptance of test data.

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## European Union

**European Commission** – Recognized as an EU Notified Body validated for the EMCD and RED Directives.

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## United Kingdom

**BEIS** – Recognized by the UK as an Approved Body under the UK Radio Equipment and UK EMC Regulations.

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## Australia/New Zealand

**ACMA** - Recognized by ACMA as a CAB for the acceptance of test data.

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## Korea

**MSIT / RRA** - Recognized by KCC's RRA as a CAB for the acceptance of test data.

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## Japan

**VCCI** - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

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## Taiwan

**BSMI** – Recognized by BSMI as a CAB for the acceptance of test data.

**NCC** - Recognized by NCC as a CAB for the acceptance of test data.

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## Singapore

**IDA** – Recognized by IDA as a CAB for the acceptance of test data.

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## Israel

**MOC** – Recognized by MOC as a CAB for the acceptance of test data.

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## Hong Kong

**OFCA** – Recognized by OFCA as a CAB for the acceptance of test data.

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## Vietnam

**MIC** – Recognized by MIC as a CAB for the acceptance of test data.

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## SCOPE

For details on the Scopes of our Accreditations, please visit:

<https://www.nwemc.com/emc-testing-accreditations>

# FACILITIES



|   |   |   |  |   |
|---|---|---|--|---|
| <b>California</b><br>Labs OC01-17<br>41 Tesla<br>Irvine, CA 92618<br>(949) 861-8918   | <b>Minnesota</b><br>Labs MN01-11<br>9349 W Broadway Ave.<br>Brooklyn Park, MN 55445<br>(612)-638-5136 | <b>Oregon</b><br>Labs EV01-12<br>6775 NE Evergreen Pkwy #400<br>Hillsboro, OR 97124<br>(503) 844-4066 | <b>Texas</b><br>Labs TX01-09<br>3801 E Plano Pkwy<br>Plano, TX 75074<br>(469) 304-5255 | <b>Washington</b><br>Labs NC01-05<br>19201 120 <sup>th</sup> Ave NE<br>Bothell, WA 98011<br>(425)984-6600 |
| <b>A2LA</b>   |   |   |  |   |
| Lab Code: 3310.04   | Lab Code: 3310.05   | Lab Code: 3310.02   | Lab Code: 3310.03  | Lab Code: 3310.06   |
| <b>Innovation, Science and Economic Development Canada</b>                            |   |   |  |   |
| 2834B-1, 2834B-3  | 2834E-1, 2834E-3  | 2834D-1   | 2834G-1  | 2834F-1   |
| <b>BSMI</b>   |   |   |  |   |
| SL2-IN-E-1154R  | SL2-IN-E-1152R  | SL2-IN-E-1017   | SL2-IN-E-1158R   | SL2-IN-E-1153R  |
| <b>VCCI</b>   |   |   |  |   |
| A-0029  | A-0109  | A-0108  | A-0201   | A-0110  |
| <b>Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRR, MIC, MOC, NCC, OFCA</b> |   |   |  |   |
| US0158  | US0175  | US0017  | US0191   | US0157  |





# MEASUREMENT UNCERTAINTY

## Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found in the table below. A lab specific value may also be found in the applicable test description section. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

| Test                                  | + MU    | - MU     |
|---------------------------------------|---------|----------|
| Frequency Accuracy                    | 0.0007% | -0.0007% |
| Amplitude Accuracy (dB)               | 1.2 dB  | -1.2 dB  |
| Conducted Power (dB)                  | 1.2 dB  | -1.2 dB  |
| Radiated Power via Substitution (dB)  | 0.7 dB  | -0.7 dB  |
| Temperature (degrees C)               | 0.7°C   | -0.7°C   |
| Humidity (% RH)                       | 2.5% RH | -2.5% RH |
| Voltage (AC)                          | 1.0%    | -1.0%    |
| Voltage (DC)                          | 0.7%    | -0.7%    |
| Field Strength (dB)                   | 5.2 dB  | -5.2 dB  |
| AC Powerline Conducted Emissions (dB) | 2.6 dB  | -2.6 dB  |

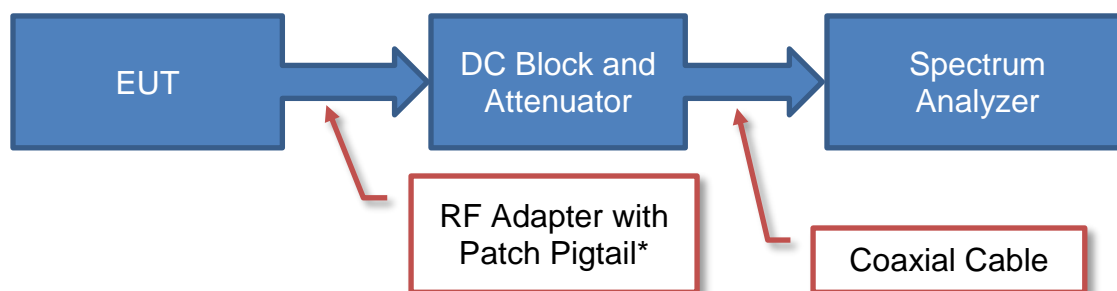
# TEST SETUP BLOCK DIAGRAMS

## Measurement Bandwidths

| Frequency Range (MHz) | Peak Data (kHz) | Quasi-Peak Data (kHz) | Average Data (kHz) |
|-----------------------|-----------------|-----------------------|--------------------|
| 0.01 - 0.15           | 1.0             | 0.2                   | 0.2                |
| 0.15 - 30.0           | 10.0            | 9.0                   | 9.0                |
| 30.0 - 1000           | 100.0           | 120.0                 | 120.0              |
| Above 1000            | 1000.0          | N/A                   | 1000.0             |

Unless otherwise stated, measurements were made using the bandwidths and detectors specified. No video filter was used.

## Antenna Port Conducted Measurements

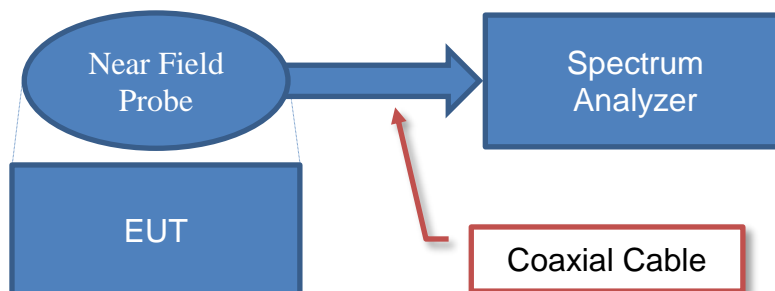


### Sample Calculation (logarithmic units)

|                |   |                |   |                        |
|----------------|---|----------------|---|------------------------|
| Measured Value |   | Measured Level |   | Reference Level Offset |
| 71.2           | = | 42.6           | + | 28.6                   |

\*Patch pigtail connector used during measurements and accounted for in reference level offset.

## Near Field Test Fixture Measurements

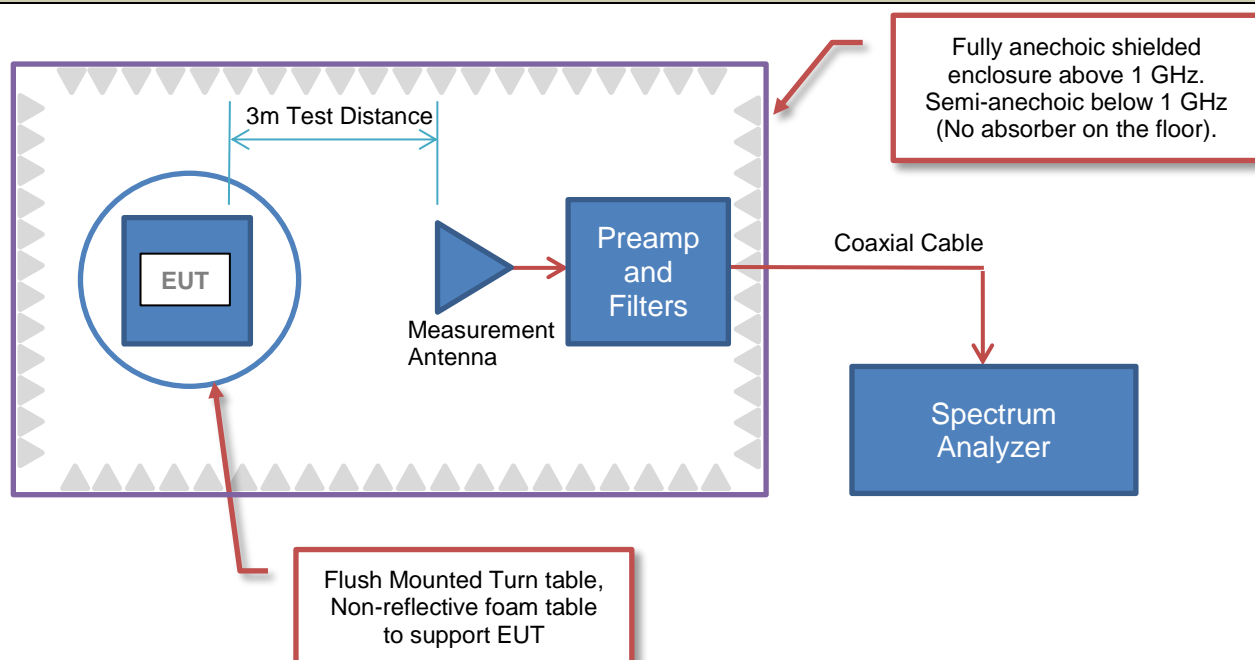


### Sample Calculation (logarithmic units)

|                |   |                |   |                        |
|----------------|---|----------------|---|------------------------|
| Measured Value |   | Measured Level |   | Reference Level Offset |
| 71.2           | = | 42.6           | + | 28.6                   |

# TEST SETUP BLOCK DIAGRAMS

## Emissions Measurements



## Sample Calculation (logarithmic units)

### Radiated Emissions:

| Measured Level<br>(Amplitude) | Factor         |              |                | Distance Adjustment Factor | External Attenuation | Field Strength |
|-------------------------------|----------------|--------------|----------------|----------------------------|----------------------|----------------|
|                               | Antenna Factor | Cable Factor | Amplifier Gain |                            |                      |                |
| 42.6                          | 28.6           | 3.1          | 40.8           | 0.0                        | 0.0                  | 33.5           |

### Conducted Emissions:

| Measured Level<br>(Amplitude) | Factor            |              | External Attenuation | Adjusted Level |
|-------------------------------|-------------------|--------------|----------------------|----------------|
|                               | Transducer Factor | Cable Factor |                      |                |
| 26.7                          | 0.3               | 0.1          | 20.0                 | 47.1           |

### Radiated Power (ERP/EIRP) – Substitution Method:

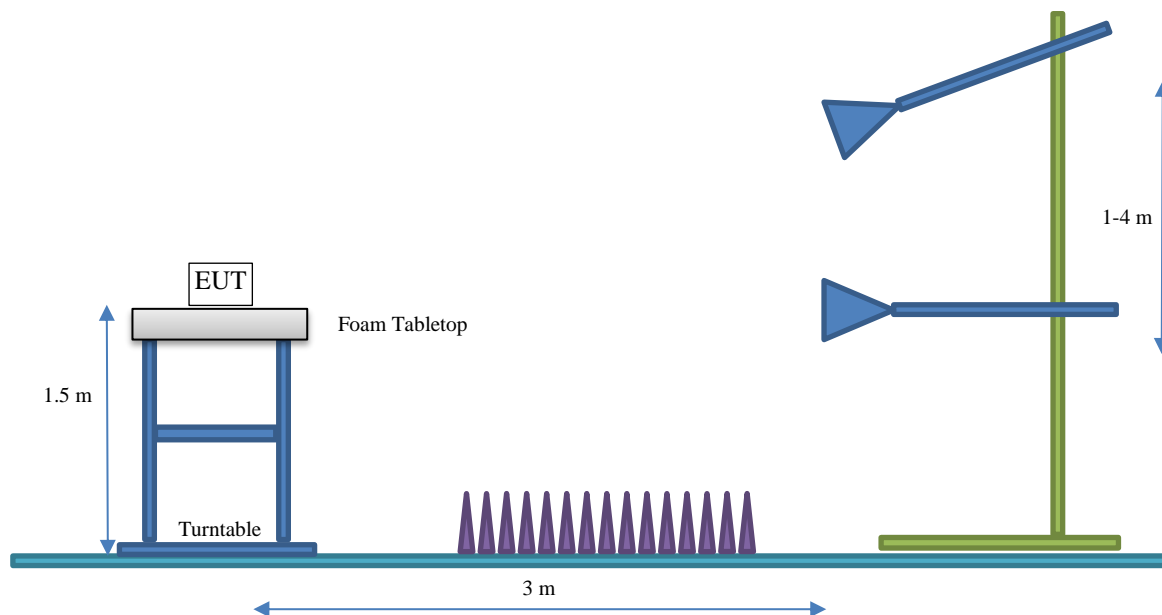
| Measured Level into Substitution Antenna<br>(Amplitude dBm) | Substitution Antenna Factor<br>(dBi) | EIRP to ERP<br>(if applicable) | Measured power<br>(dBm ERP/EIRP) |
|---|--------------------------------------|--------------------------------|----------------------------------|
| 10.0  | 6.0                                  | 2.15                           | 13.9/16.0                        |



# TEST SETUP BLOCK DIAGRAMS

## Bore Sighting (>1GHz)

The diameter of the illumination area is the dimension of the line tangent to the EUT formed by 3 dB beamwidth of the measurement antenna at the measurement distance. At a 3 meter test distance, the diameter of the illumination area was 3.8 meters at 1 GHz and greater than 2.1 meters up to 6 GHz. Above 1 GHz, when required by the measurement standard, the antenna is pointed for both azimuth and elevation to maintain the receive antenna within the cone of radiation from the EUT. The specified measurement detectors were used for comparison of the emissions to the peak and average specification limits.



# PRODUCT DESCRIPTION

## Client and Equipment Under Test (EUT) Information

|                                 |                              |
|---------------------------------|------------------------------|
| <b>Company Name:</b>            | Abbott Laboratories          |
| <b>Address:</b>                 | 1921 Hurd Drive              |
| <b>City, State, Zip:</b>        | Irving, TX 75038             |
| <b>Test Requested By:</b>       | Don Mendell                  |
| <b>EUT:</b>                     | GLP12220 Input/Output Module |
| <b>First Date of Test:</b>      | June 14, 2021                |
| <b>Last Date of Test:</b>       | August 4, 2021               |
| <b>Receipt Date of Samples:</b> | June 16, 2021                |
| <b>Equipment Design Stage:</b>  | Production Unit              |
| <b>Equipment Condition:</b>     | No Damage                    |
| <b>Purchase Authorization:</b>  | Verified                     |

## Information Provided by the Party Requesting the Test

### Functional Description of the EUT:

Input/Output Module (IOM) – The IOM is the central module for the input and output of sample tubes. This module contains 4 drawers, which can be configured as an archive or for loading and unloading device specific racks. Each of the 4 drawers contain an identical RFID radio that reads an internal RFID tag whenever the drawers are opened and closed. Drawers can be individually configured for input, output or input/output. Each RackPort holds 5 FlexRacks (for 25 tubes each) which can be taken out individually or all together. In addition to standard RackPorts, customized RackPorts can be used for analyzer specific rack types. Each drawer RackPort type has a specific RFID tag, which is read by a drawer reader when the drawer is inserted.

### Testing Objective:

To demonstrate compliance to FCC Part 15.225 specifications.

# POWER SETTINGS AND ANTENNAS



The power settings, antenna gain value(s) and cable loss (if applicable) used for the testing contained in this report were provided by the customer and will affect the validity of the results. Element assumes no responsibility for the accuracy of this information.

## ANTENNA INFORMATION

| Type                    | Provided by: | Dimensions  |
|-------------------------|--------------|-------------|
| Embedded Inductive Loop | GLP Systems  | 51mm x 38mm |

## POWER SETTING

| Radio | Modulation | Protocol  | Data Rate  | Frequency | Power Setting (mW) |
|-------|------------|-----------|------------|-----------|--------------------|
| RFID  | OOK        | ISO 13693 | 26.48 kbps | 13.56 MHz | 200                |

\*Power is set internally through product firmware at the default maximum.

\*Antenna information/power setting is identical for each 13.56 MHz radio.

# CONFIGURATIONS

## Configuration ABBO0076- 2

| Software/Firmware Running during test |  |
|---------------------------------------|--|
| Description                           | Version                                      |
| Firmware                              | TrackEmvTest_ap_wp_Version_0.0_46817.bin     |
| Firmware                              | TrackEmvTest_atr_Version_0.0_47120.bin       |
| Firmware                              | TrackEmvTest_cp_pp_tac_Version_0.0_46817.bin |
| Firmware                              | TrackEmvTest_scc_Version_0.0_46817.bin       |
| Firmware                              | TrackEmvTest_scd_Version_0.0_46817.bin       |
| Firmware                              | TrackEmvTest_scx_scr_Version_0.0_46817.bin   |

| EUT                 |              |   |               |
|---------------------|--------------|---|---------------|
| Description         | Manufacturer | Model/Part Number                       | Serial Number |
| Drawer Reader Radio | GLP Systems  | 20001805 Rev C (PCB:<br>20001791 Rev B) | ENG05-DR      |

| Peripherals in test setup boundary |              |                   |               |
|------------------------------------|--------------|-------------------|---------------|
| Description                        | Manufacturer | Model/Part Number | Serial Number |
| Laptop                             | Dell         | Optiplex XE3      | 71HQQ72       |
| Power Strip                        | GLP Systems  | GLP12015          | None          |
| CAN Bus                            | GLP Systems  | None              | None          |
| 24V Power Supply                   | GLP Systems  | GLP12010          | C06A001511    |
| Power Board                        | GLP Systems  | GLP12014          | None          |
| Cross Switch Track Radio           | GLP Systems  | GLP12152          | ENG05-CS      |
| PassPoint Track Radio              | GLP Systems  | GLP12191          | ENG02-PP      |
| ChargeLane M Track Radio           | GLP Systems  | GLP12553          | ENG02-CL M    |
| AccessPoint Track Radio            | GLP Systems  | GLP12195          | ENG02-AP      |
| AC Line Filter                     | GLP Systems  | GLP12013          | 0001002       |
| Switch 90 Convergent Track Radio   | GLP Systems  | GLP12154          | ENG01-CN      |
| Switch 90 Divergent Track Radio    | GLP Systems  | GLP12153          | ENG01-DV      |

# CONFIGURATIONS

| Cables              |        |            |         |                      |                      |
|---------------------|--------|------------|---------|----------------------|----------------------|
| Cable Type          | Shield | Length (m) | Ferrite | Connection 1         | Connection 2         |
| AC Power Cable      | Yes    | 1.1m       | No      | AC Mains             | AC Line Filter       |
| Auxiliary Bus Line  | Yes    | 1.0m       | No      | AC Line Filter       | 24V Power Supply     |
| Ethernet Cable      | Yes    | 5.0m       | No      | Laptop               | CAN Bus              |
| Ethernet Cable      | Yes    | 1.0m       | No      | CAN Bus              | Switch 90 Divergent  |
| Ethernet Cable      | Yes    | 0.5m       | Yes     | Switch 90 Divergent  | Switch 90 Convergent |
| Ethernet Cable      | Yes    | 0.5m       | Yes     | Switch 90 Convergent | ChargeLane           |
| Ethernet Cable      | Yes    | 0.5m       | Yes     | ChargeLane           | CrossSwitch          |
| Ethernet Cable      | Yes    | 0.5m       | Yes     | CrossSwitch          | PassPoint            |
| Ethernet Cable      | Yes    | 0.5m       | Yes     | PassPoint            | AccessPoint          |
| Ethernet Terminator | No     | 0.6m       | No      | AccessPoint          | Terminated           |
| DC Power Cable      | No     | 0.6m       | Yes     | Power Board          | Switch 90 Divergent  |
| DC Power Cable      | No     | 0.6m       | Yes     | Power Board          | Switch 90 Convergent |
| DC Power Cable      | No     | 0.6m       | Yes     | Power Board          | ChargeLane           |
| DC Power Cable      | No     | 0.6m       | Yes     | Power Board          | Cross Switch         |
| DC Power Cable      | No     | 0.6m       | Yes     | Power Board          | PassPoint            |
| DC Power Cable      | No     | 0.6m       | Yes     | Power Board          | AccessPoint          |
| DC Power Cable      | No     | 0.6m       | Yes     | Power Board          | Drawer Reader        |

# CONFIGURATIONS

## Configuration ABBO0076- 6

| Software/Firmware Running during test |  |
|---------------------------------------|--|
| Description                           | Version                                      |
| Firmware                              | TrackEmvTest_ap_wp_Version_0.0_46817.bin     |
| Firmware                              | TrackEmvTest_atr_Version_0.0_47120.bin       |
| Firmware                              | TrackEmvTest_cp_pp_tac_Version_0.0_46817.bin |
| Firmware                              | InputOutput_Version_9.1_41972.bin            |
| Firmware                              | TrackEmvTest_scx_scr_Version_0.0_46817.bin   |

| EUT                   |              |                                      |               |
|-----------------------|--------------|--------------------------------------|---------------|
| Description           | Manufacturer | Model/Part Number                    | Serial Number |
| Input/Output Module   | GLP Systems  | GLP12220                             | IOM000116     |
| Drawer Reader Radio 1 | GLP Systems  | 20001805 Rev C (PCB: 20001791 Rev B) | ENG01-DR      |
| Drawer Reader Radio 2 | GLP Systems  | 20001805 Rev C (PCB: 20001791 Rev B) | ENG02-DR      |
| Drawer Reader Radio 3 | GLP Systems  | 20001805 Rev C (PCB: 20001791 Rev B) | ENG03-DR      |
| Drawer Reader Radio 4 | GLP Systems  | 20001805 Rev C (PCB: 20001791 Rev B) | ENG04-DR      |

| Peripherals in test setup boundary |              |                   |               |
|------------------------------------|--------------|-------------------|---------------|
| Description                        | Manufacturer | Model/Part Number | Serial Number |
| Module Power Supply                | GLP Systems  | 20027692          | 0001297       |
| Segment Power Supply               | GLP Systems  | GLP12100          | 0001222       |
| 5V Power Supply                    | GLP Systems  | GLP12011          | 0001055       |
| 24V Power Supply                   | GLP Systems  | GLP12010          | 0001098       |
| CrossSwitch Track Radio 1          | GLP Systems  | GLP12152          | ENG01-CS      |
| CrossSwitch Track Radio 2          | GLP Systems  | GLP12152          | ENG02-CS      |
| CrossSwitch Track Radio 3          | GLP Systems  | GLP12152          | ENG03-CS      |
| CrossSwitch Track Radio 4          | GLP Systems  | GLP12152          | ENG04-CS      |
| AccessPoint Track Radio            | GLP Systems  | GLP12193          | ENG01-AP      |
| ChargeLane M Track Radio           | GLP Systems  | GLP12553          | ENG01-CL M    |
| ChargeLane S Track Radio           | GLP Systems  | GLP12554          | ENG01-CL S    |
| PassPoint Track Radio              | GLP Systems  | GLP12191          | ENG01-PP      |
| Car 1                              | GLP Systems  | GLP12677          | 004 9823      |
| Car 2                              | GLP Systems  | GLP12677          | 004 9119      |
| Car 3                              | GLP Systems  | GLP12677          | 004 9774      |
| Car 4                              | GLP Systems  | GLP12677          | 004 8858      |
| AC Line Filter                     | GLP Systems  | 06Q88-01          | C32A001014    |
| Display                            | GLP Systems  | 20000140 Rev B    | None          |



# CONFIGURATIONS



| Remote Equipment Outside of Test Setup Boundary |              |                   |               |
|---|--------------|-------------------|---------------|
| Description                                     | Manufacturer | Model/Part Number | Serial Number |
| Laptop  | Dell         | Optiplex XE3      | 71HQQ72       |

| Cables         |        |            |         |              |                |
|----------------|--------|------------|---------|--------------|----------------|
| Cable Type     | Shield | Length (m) | Ferrite | Connection 1 | Connection 2   |
| AC Power Cable | Yes    | 1.8m       | No      | AC Main      | AC Line Filter |

# MODIFICATIONS

## Equipment Modifications

| Item | Date       | Test   | Modification                         | Note | Disposition of EUT                          |
|------|------------|--|--------------------------------------|------|---|
| 1    | 2021-06-14 | Powerline Conducted Emissions                              | Tested as delivered to Test Station. | None | EUT remained at Element following the test. |
| 2    | 2021-07-07 | Field Strength of Fundamental                              | Tested as delivered to Test Station. | None | EUT remained at Element following the test. |
| 3    | 2021-07-07 | Field Strength of Spurious Emissions (Less than 30 MHz)    | Tested as delivered to Test Station. | None | EUT remained at Element following the test. |
| 4    | 2021-07-07 | Field Strength of Spurious Emissions (Greater than 30 MHz) | Tested as delivered to Test Station. | None | EUT remained at Element following the test. |
| 5    | 2021-07-24 | Frequency Stability  | Tested as delivered to Test Station. | None | EUT remained at Element following the test. |
| 6    | 2021-08-04 | Occupied Bandwidth   | Tested as delivered to Test Station. | None | Scheduled testing was completed.            |

# POWERLINE CONDUCTED EMISSIONS



PSA-ESCI 2021.03.17.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## MODES OF OPERATION

Transmitting RFID 13.56 MHz

## POWER SETTINGS INVESTIGATED

220VAC/60Hz

## CONFIGURATIONS INVESTIGATED

ABBO0076 - 6

## SAMPLE CALCULATIONS

Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

## TEST EQUIPMENT

| Description                      | Manufacturer       | Model            | ID   | Last Cal.  | Cal. Due   |
|----------------------------------|--------------------|------------------|------|------------|------------|
| Receiver                         | Gauss              | TDEMI 30M        | ARL  | 2021-03-23 | 2022-03-23 |
| Terminator                       | Fairview Microwave | ST3B-C           | RGX  | 2021-06-04 | 2022-06-04 |
| Cable - Conducted Cable Assembly | Northwest EMC      | TXA, HFC, TQU    | TXAA | 2021-01-26 | 2022-01-26 |
| LISN                             | Solar Electronics  | 9252-50-R-24-BNC | LJL  | 2020-08-25 | 2021-08-25 |
| LISN                             | Solar Electronics  | 9252-50-R-24-BNC | LJK  | 2020-08-25 | 2021-08-25 |
| Power Source/Analyzer            | Hewlett Packard    | 6841A            | THC  | NCR        | NCR        |

## MEASUREMENT BANDWIDTHS

| Frequency Range<br>(MHz) | BW<br>(kHz) |
|--------------------------|-------------|
| 0.15 - 30.0              | 1.0         |
| 30.0 - 400.0             | 10.0        |
| 400.0 - 1000.0           | 100.0       |
| 1000.0 - 6000.0          | 1000.0      |

## MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

## TEST DESCRIPTION

The EUT will be powered either directly or indirectly from the AC power line. Therefore, conducted emissions measurements were made on the AC input of the EUT, or on the AC input of the device used to power the EUT.

The EUT was transmitting at its maximum data rate. Measurement with all radios ON not tested as radios do not simultaneously transmit. For each radio, the spectrum was scanned from 150 kHz to 30 MHz. The test setup and procedures were in accordance with ANSI C63.10.

In the event that the operating frequency of 13.56 MHz is causing the product to fail the FCC 15.207 limits, the following guidance can be used:

FCC KDB 174176 D01 AC Conducted FAQ v01r01, June 3, 2015 Section Q5:

For a device with a permanent or detachable antenna operating at or below 30 MHz, the FCC will accept measurements performed with a suitable dummy load in lieu of the antenna under the following conditions:

- (1) perform the AC power-line conducted tests with the antenna connected to determine compliance with Section 15.207 limits outside the transmitter's fundamental emission band;
- (2) retest with a dummy load in lieu of the antenna to determine compliance with Section 15.207 limits within the transmitter's fundamental emission band. For a detachable antenna, remove the antenna and connect a suitable dummy load to the antenna connector. For a permanent antenna, remove the antenna and terminate the RF output with a dummy load or network which simulates the antenna in the fundamental frequency band.

All measurements must be performed as specified in clause 6.2 of ANSI C63.10-2013.

# POWERLINE CONDUCTED EMISSIONS



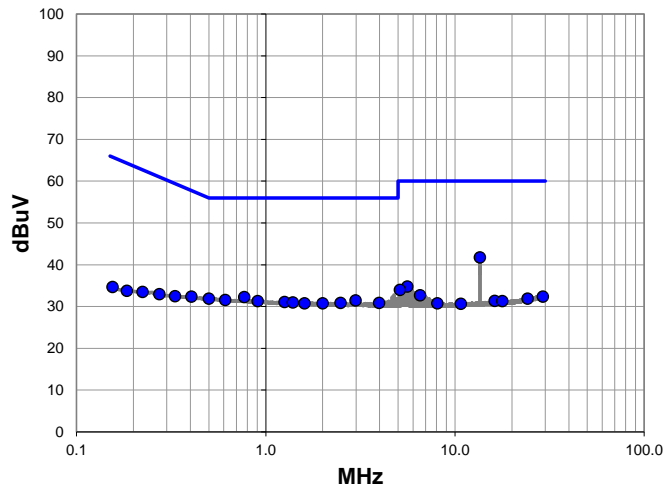
EmiR5 2021.05.14.0 PSA-ESCI 2021.03.17.0

|                        |  |                          |            |                                  |
|------------------------|--|--------------------------|------------|----------------------------------|
| <b>Work Order:</b>     | ABBO0076   | <b>Date:</b>             | 2021-06-14 |                                  |
| <b>Project:</b>        | None   | <b>Temperature:</b>      | 21.1 °C    |                                  |
| <b>Job Site:</b>       | TX03   | <b>Humidity:</b>         | 58% RH     |                                  |
| <b>Serial Number:</b>  | ENG01-DR   | <b>Barometric Pres.:</b> | 1011 mbar  |                                  |
| <b>EUT:</b>            | GLP12220 Input/Output Module   |                          |            | <b>Tested by:</b> Travis Glasser |
| <b>Configuration:</b>  | 6  |                          |            |                                  |
| <b>Customer:</b>       | Abbott Laboratories  |                          |            |                                  |
| <b>Attendees:</b>      | Don Mendell  |                          |            |                                  |
| <b>EUT Power:</b>      | 220VAC/60Hz  |                          |            |                                  |
| <b>Operating Mode:</b> | Transmitting 13.56 MHz RFID  |                          |            |                                  |
| <b>Deviations:</b>     | Performed testing with floor standing EUT 40cm away from VCP. Testing was also performed without a VCP with similar results. |                          |            |                                  |
| <b>Comments:</b>       | Drawer Reader Radio 1. Antenna connected.  |                          |            |                                  |

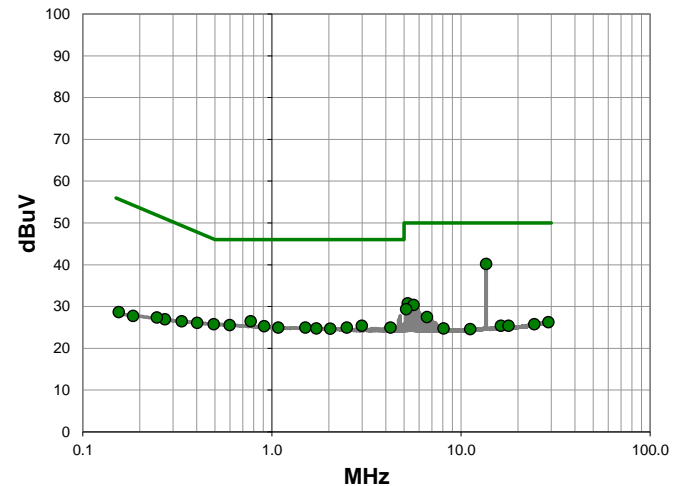
|                            |  |                    |  |
|----------------------------|--|--------------------|--|
| <b>Test Specifications</b> |  | <b>Test Method</b> |  |
| FCC 15.207:2021            |  | ANSI C63.10:2013   |  |

|              |    |              |           |                          |   |                |      |
|--------------|----|--------------|-----------|--------------------------|---|----------------|------|
| <b>Run #</b> | 43 | <b>Line:</b> | High Line | <b>Ext. Attenuation:</b> | 0 | <b>Results</b> | Pass |
|--------------|----|--------------|-----------|--------------------------|---|----------------|------|

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 20.7             | 21.1        | 41.8            | 60.0               | -18.2                  |
| 0.770      | 12.1             | 20.2        | 32.3            | 56.0               | -23.7                  |
| 0.500      | 11.7             | 20.2        | 31.9            | 56.0               | -24.1                  |
| 0.610      | 11.4             | 20.2        | 31.6            | 56.0               | -24.4                  |
| 2.983      | 11.2             | 20.3        | 31.5            | 56.0               | -24.5                  |

Average Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 19.1             | 21.1        | 40.2            | 50.0               | -9.8                   |
| 5.219      | 10.5             | 20.3        | 30.8            | 50.0               | -19.2                  |
| 0.770      | 6.3              | 20.2        | 26.5            | 46.0               | -19.5                  |
| 5.604      | 10.0             | 20.4        | 30.4            | 50.0               | -19.6                  |
| 0.596      | 5.4              | 20.2        | 25.6            | 46.0               | -20.4                  |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 0.905         | 11.0                | 20.3           | 31.3               | 56.0                  | -24.7                        |
| 1.255         | 10.8                | 20.3           | 31.1               | 56.0                  | -24.9                        |
| 1.390         | 10.7                | 20.3           | 31.0               | 56.0                  | -25.0                        |
| 2.484         | 10.6                | 20.3           | 30.9               | 56.0                  | -25.1                        |
| 3.977         | 10.6                | 20.3           | 30.9               | 56.0                  | -25.1                        |
| 1.601         | 10.5                | 20.3           | 30.8               | 56.0                  | -25.2                        |
| 1.999         | 10.5                | 20.3           | 30.8               | 56.0                  | -25.2                        |
| 5.604         | 14.4                | 20.4           | 34.8               | 60.0                  | -25.2                        |
| 0.404         | 12.2                | 20.2           | 32.4               | 57.8                  | -25.4                        |
| 5.116         | 13.7                | 20.3           | 34.0               | 60.0                  | -26.0                        |
| 0.331         | 12.3                | 20.2           | 32.5               | 59.4                  | -26.9                        |
| 6.542         | 12.3                | 20.4           | 32.7               | 60.0                  | -27.3                        |
| 29.127        | 9.7                 | 22.7           | 32.4               | 60.0                  | -27.6                        |
| 0.274         | 12.6                | 20.4           | 33.0               | 61.0                  | -28.0                        |
| 24.220        | 9.7                 | 22.2           | 31.9               | 60.0                  | -28.1                        |
| 16.228        | 10.0                | 21.4           | 31.4               | 60.0                  | -28.6                        |
| 17.789        | 9.9                 | 21.4           | 31.3               | 60.0                  | -28.7                        |
| 8.060         | 10.2                | 20.6           | 30.8               | 60.0                  | -29.2                        |
| 0.223         | 13.1                | 20.4           | 33.5               | 62.7                  | -29.2                        |
| 10.740        | 9.9                 | 20.8           | 30.7               | 60.0                  | -29.3                        |
| 0.184         | 13.4                | 20.4           | 33.8               | 64.3                  | -30.5                        |
| 0.155         | 14.3                | 20.4           | 34.7               | 65.8                  | -31.1                        |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 0.491         | 5.6                 | 20.2           | 25.8               | 46.2                  | -20.4                        |
| 2.983         | 5.1                 | 20.3           | 25.4               | 46.0                  | -20.6                        |
| 5.116         | 9.1                 | 20.3           | 29.4               | 50.0                  | -20.6                        |
| 0.908         | 5.0                 | 20.3           | 25.3               | 46.0                  | -20.7                        |
| 1.079         | 4.8                 | 20.2           | 25.0               | 46.0                  | -21.0                        |
| 1.500         | 4.7                 | 20.3           | 25.0               | 46.0                  | -21.0                        |
| 2.487         | 4.7                 | 20.3           | 25.0               | 46.0                  | -21.0                        |
| 4.226         | 4.7                 | 20.3           | 25.0               | 46.0                  | -21.0                        |
| 1.713         | 4.5                 | 20.3           | 24.8               | 46.0                  | -21.2                        |
| 2.031         | 4.4                 | 20.3           | 24.7               | 46.0                  | -21.3                        |
| 0.402         | 5.9                 | 20.2           | 26.1               | 47.8                  | -21.7                        |
| 6.600         | 7.1                 | 20.4           | 27.5               | 50.0                  | -22.5                        |
| 0.333         | 6.3                 | 20.2           | 26.5               | 49.4                  | -22.9                        |
| 28.924        | 3.6                 | 22.7           | 26.3               | 50.0                  | -23.7                        |
| 0.271         | 6.6                 | 20.4           | 27.0               | 51.1                  | -24.1                        |
| 24.319        | 3.6                 | 22.2           | 25.8               | 50.0                  | -24.2                        |
| 0.246         | 7.0                 | 20.4           | 27.4               | 51.9                  | -24.5                        |
| 16.228        | 4.0                 | 21.4           | 25.4               | 50.0                  | -24.6                        |
| 17.789        | 4.0                 | 21.4           | 25.4               | 50.0                  | -24.6                        |
| 8.060         | 4.2                 | 20.6           | 24.8               | 50.0                  | -25.2                        |
| 11.159        | 3.7                 | 20.9           | 24.6               | 50.0                  | -25.4                        |
| 0.184         | 7.4                 | 20.4           | 27.8               | 54.3                  | -26.5                        |
| 0.155         | 8.3                 | 20.4           | 28.7               | 55.8                  | -27.1                        |

# POWERLINE CONDUCTED EMISSIONS



EmiR5 2021.05.14.0

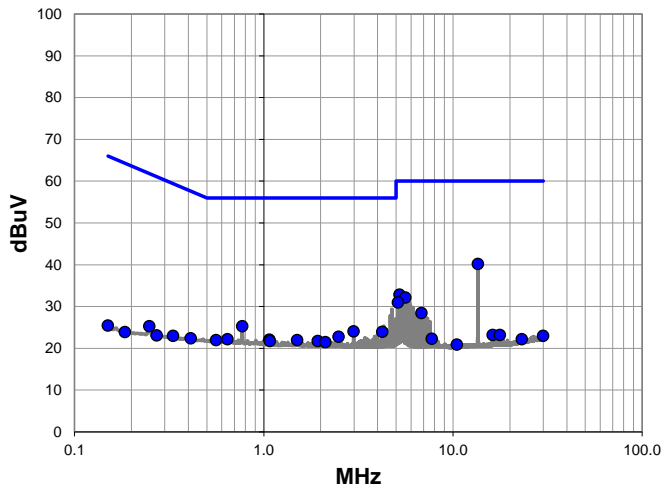
PSA-ESCI 2021.03.17.0

|                        |  |                          |            |                                  |
|------------------------|--|--------------------------|------------|----------------------------------|
| <b>Work Order:</b>     | ABBO0076   | <b>Date:</b>             | 2021-06-14 |                                  |
| <b>Project:</b>        | None   | <b>Temperature:</b>      | 21.1 °C    |                                  |
| <b>Job Site:</b>       | TX03   | <b>Humidity:</b>         | 58% RH     |                                  |
| <b>Serial Number:</b>  | ENG01-DR   | <b>Barometric Pres.:</b> | 1011 mbar  |                                  |
| <b>EUT:</b>            | GLP12220 Input/Output Module   |                          |            | <b>Tested by:</b> Travis Glasser |
| <b>Configuration:</b>  | 6  |                          |            |                                  |
| <b>Customer:</b>       | Abbott Laboratories  |                          |            |                                  |
| <b>Attendees:</b>      | Don Mendell  |                          |            |                                  |
| <b>EUT Power:</b>      | 220VAC/60Hz  |                          |            |                                  |
| <b>Operating Mode:</b> | Transmitting 13.56 MHz RFID  |                          |            |                                  |
| <b>Deviations:</b>     | Performed testing with floor standing EUT 40cm away from VCP. Testing was also performed without a VCP with similar results. |                          |            |                                  |
| <b>Comments:</b>       | Drawer Reader Radio 1. Antenna connected.  |                          |            |                                  |

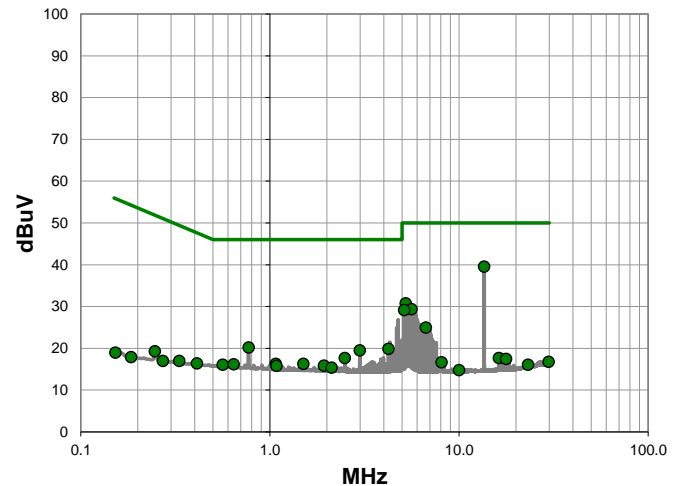
| Test Specifications |  | Test Method      |  |
|---------------------|--|------------------|--|
| FCC 15.207:2021     |  | ANSI C63.10:2013 |  |

| Run # | 44 | Line: | Neutral | Ext. Attenuation: | 0 | Results | Pass |
|-------|----|-------|---------|-------------------|---|---------|------|
|-------|----|-------|---------|-------------------|---|---------|------|

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 19.1             | 21.1        | 40.2            | 60.0               | -19.8                  |
| 5.219      | 12.6             | 20.3        | 32.9            | 60.0               | -27.1                  |
| 5.604      | 11.8             | 20.4        | 32.2            | 60.0               | -27.8                  |
| 5.116      | 10.7             | 20.3        | 31.0            | 60.0               | -29.0                  |
| 0.770      | 5.1              | 20.2        | 25.3            | 56.0               | -30.7                  |

Average Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 18.5             | 21.1        | 39.6            | 50.0               | -10.4                  |
| 5.219      | 10.5             | 20.3        | 30.8            | 50.0               | -19.2                  |
| 5.604      | 9.0              | 20.4        | 29.4            | 50.0               | -20.6                  |
| 5.116      | 8.9              | 20.3        | 29.2            | 50.0               | -20.8                  |
| 6.659      | 4.6              | 20.4        | 25.0            | 50.0               | -25.0                  |



| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 6.808         | 8.1                 | 20.4           | 28.5               | 60.0                  | -31.5                        |
| 2.983         | 3.8                 | 20.3           | 24.1               | 56.0                  | -31.9                        |
| 4.226         | 3.7                 | 20.3           | 24.0               | 56.0                  | -32.0                        |
| 2.487         | 2.5                 | 20.3           | 22.8               | 56.0                  | -33.2                        |
| 0.642         | 2.0                 | 20.2           | 22.2               | 56.0                  | -33.8                        |
| 1.070         | 1.9                 | 20.2           | 22.1               | 56.0                  | -33.9                        |
| 0.560         | 1.8                 | 20.2           | 22.0               | 56.0                  | -34.0                        |
| 1.500         | 1.7                 | 20.3           | 22.0               | 56.0                  | -34.0                        |
| 1.077         | 1.6                 | 20.2           | 21.8               | 56.0                  | -34.2                        |
| 1.928         | 1.5                 | 20.3           | 21.8               | 56.0                  | -34.2                        |
| 2.118         | 1.2                 | 20.3           | 21.5               | 56.0                  | -34.5                        |
| 0.411         | 2.2                 | 20.2           | 22.4               | 57.6                  | -35.2                        |
| 0.331         | 2.8                 | 20.2           | 23.0               | 59.4                  | -36.4                        |
| 0.248         | 4.9                 | 20.4           | 25.3               | 61.8                  | -36.5                        |
| 16.228        | 1.8                 | 21.4           | 23.2               | 60.0                  | -36.8                        |
| 17.693        | 1.8                 | 21.4           | 23.2               | 60.0                  | -36.8                        |
| 29.938        | 0.4                 | 22.6           | 23.0               | 60.0                  | -37.0                        |
| 7.716         | 1.8                 | 20.5           | 22.3               | 60.0                  | -37.7                        |
| 23.129        | 0.3                 | 21.9           | 22.2               | 60.0                  | -37.8                        |
| 0.271         | 2.7                 | 20.4           | 23.1               | 61.1                  | -38.0                        |
| 10.474        | 0.2                 | 20.7           | 20.9               | 60.0                  | -39.1                        |
| 0.184         | 3.5                 | 20.4           | 23.9               | 64.3                  | -40.4                        |
| 0.150         | 5.1                 | 20.4           | 25.5               | 66.0                  | -40.5                        |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 0.770         | 0.0                 | 20.2           | 20.2               | 46.0                  | -25.8                        |
| 4.226         | -0.4                | 20.3           | 19.9               | 46.0                  | -26.1                        |
| 2.983         | -0.8                | 20.3           | 19.5               | 46.0                  | -26.5                        |
| 2.487         | -2.6                | 20.3           | 17.7               | 46.0                  | -28.3                        |
| 1.072         | -3.9                | 20.2           | 16.3               | 46.0                  | -29.7                        |
| 1.500         | -4.0                | 20.3           | 16.3               | 46.0                  | -29.7                        |
| 0.642         | -4.0                | 20.2           | 16.2               | 46.0                  | -29.8                        |
| 0.562         | -4.1                | 20.2           | 16.1               | 46.0                  | -29.9                        |
| 1.928         | -4.4                | 20.3           | 15.9               | 46.0                  | -30.1                        |
| 1.082         | -4.4                | 20.2           | 15.8               | 46.0                  | -30.2                        |
| 2.116         | -4.9                | 20.3           | 15.4               | 46.0                  | -30.6                        |
| 0.411         | -3.8                | 20.2           | 16.4               | 47.6                  | -31.2                        |
| 16.228        | -3.7                | 21.4           | 17.7               | 50.0                  | -32.3                        |
| 0.331         | -3.2                | 20.2           | 17.0               | 49.4                  | -32.4                        |
| 17.693        | -3.9                | 21.4           | 17.5               | 50.0                  | -32.5                        |
| 0.246         | -1.1                | 20.4           | 19.3               | 51.9                  | -32.6                        |
| 29.690        | -5.8                | 22.6           | 16.8               | 50.0                  | -33.2                        |
| 8.060         | -3.9                | 20.6           | 16.7               | 50.0                  | -33.3                        |
| 23.129        | -5.8                | 21.9           | 16.1               | 50.0                  | -33.9                        |
| 0.271         | -3.4                | 20.4           | 17.0               | 51.1                  | -34.1                        |
| 9.980         | -5.9                | 20.7           | 14.8               | 50.0                  | -35.2                        |
| 0.184         | -2.5                | 20.4           | 17.9               | 54.3                  | -36.4                        |
| 0.152         | -1.4                | 20.4           | 19.0               | 55.9                  | -36.9                        |

# POWERLINE CONDUCTED EMISSIONS



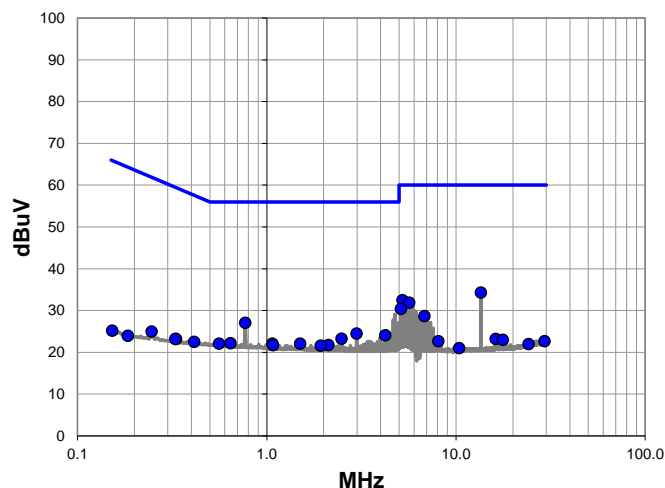
EmiR5 2021.05.14.0

PSA-ESCI 2021.03.17.0

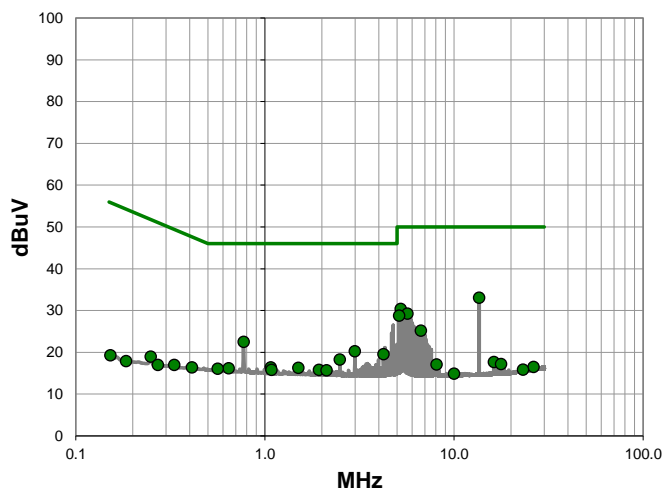
|                        |  |                          |            |                                  |
|------------------------|--|--------------------------|------------|----------------------------------|
| <b>Work Order:</b>     | ABBO0076   | <b>Date:</b>             | 2021-06-14 |                                  |
| <b>Project:</b>        | None   | <b>Temperature:</b>      | 21.1 °C    |                                  |
| <b>Job Site:</b>       | TX03   | <b>Humidity:</b>         | 58% RH     |                                  |
| <b>Serial Number:</b>  | ENG02-DR   | <b>Barometric Pres.:</b> | 1011 mbar  |                                  |
| <b>EUT:</b>            | GLP12220 Input/Output Module   |                          |            | <b>Tested by:</b> Travis Glasser |
| <b>Configuration:</b>  | 6  |                          |            |                                  |
| <b>Customer:</b>       | Abbott Laboratories  |                          |            |                                  |
| <b>Attendees:</b>      | Don Mendell  |                          |            |                                  |
| <b>EUT Power:</b>      | 220VAC/60Hz  |                          |            |                                  |
| <b>Operating Mode:</b> | Transmitting 13.56 MHz RFID  |                          |            |                                  |
| <b>Deviations:</b>     | Performed testing with floor standing EUT 40cm away from VCP. Testing was also performed without a VCP with similar results. |                          |            |                                  |
| <b>Comments:</b>       | Drawer Reader Radio 2. Antenna connected.  |                          |            |                                  |

| Test Specifications      |    | Test Method      |           |
|--------------------------|----|------------------|-----------|
| FCC 15.207:2021          |    | ANSI C63.10:2013 |           |
| <b>Run #</b>             | 45 | <b>Line:</b>     | High Line |
| <b>Ext. Attenuation:</b> | 0  | <b>Results</b>   | Pass      |

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 13.2             | 21.1        | 34.3            | 60.0               | -25.7                  |
| 5.219      | 12.2             | 20.3        | 32.5            | 60.0               | -27.5                  |
| 5.661      | 11.5             | 20.4        | 31.9            | 60.0               | -28.1                  |
| 0.770      | 6.9              | 20.2        | 27.1            | 56.0               | -28.9                  |
| 5.114      | 10.1             | 20.3        | 30.4            | 60.0               | -29.6                  |

Average Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 12.0             | 21.1        | 33.1            | 50.0               | -16.9                  |
| 5.219      | 10.1             | 20.3        | 30.4            | 50.0               | -19.6                  |
| 5.661      | 8.9              | 20.4        | 29.3            | 50.0               | -20.7                  |
| 5.116      | 8.5              | 20.3        | 28.8            | 50.0               | -21.2                  |
| 0.770      | 2.3              | 20.2        | 22.5            | 46.0               | -23.5                  |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 6.808         | 8.3                 | 20.4           | 28.7               | 60.0                  | -31.3                        |
| 2.986         | 4.2                 | 20.3           | 24.5               | 56.0                  | -31.5                        |
| 4.226         | 3.8                 | 20.3           | 24.1               | 56.0                  | -31.9                        |
| 2.487         | 3.0                 | 20.3           | 23.3               | 56.0                  | -32.7                        |
| 0.642         | 2.0                 | 20.2           | 22.2               | 56.0                  | -33.8                        |
| 0.560         | 1.9                 | 20.2           | 22.1               | 56.0                  | -33.9                        |
| 1.070         | 1.9                 | 20.2           | 22.1               | 56.0                  | -33.9                        |
| 1.500         | 1.8                 | 20.3           | 22.1               | 56.0                  | -33.9                        |
| 2.116         | 1.5                 | 20.3           | 21.8               | 56.0                  | -34.2                        |
| 1.079         | 1.5                 | 20.2           | 21.7               | 56.0                  | -34.3                        |
| 1.928         | 1.3                 | 20.3           | 21.6               | 56.0                  | -34.4                        |
| 0.413         | 2.3                 | 20.2           | 22.5               | 57.6                  | -35.1                        |
| 0.331         | 3.0                 | 20.2           | 23.2               | 59.4                  | -36.2                        |
| 0.329         | 3.0                 | 20.2           | 23.2               | 59.5                  | -36.3                        |
| 16.228        | 1.8                 | 21.4           | 23.2               | 60.0                  | -36.8                        |
| 0.246         | 4.6                 | 20.4           | 25.0               | 61.9                  | -36.9                        |
| 17.693        | 1.6                 | 21.4           | 23.0               | 60.0                  | -37.0                        |
| 8.060         | 2.1                 | 20.6           | 22.7               | 60.0                  | -37.3                        |
| 29.359        | 0.0                 | 22.7           | 22.7               | 60.0                  | -37.3                        |
| 24.243        | -0.2                | 22.2           | 22.0               | 60.0                  | -38.0                        |
| 10.392        | 0.3                 | 20.7           | 21.0               | 60.0                  | -39.0                        |
| 0.184         | 3.6                 | 20.4           | 24.0               | 64.3                  | -40.3                        |
| 0.152         | 4.8                 | 20.4           | 25.2               | 65.9                  | -40.7                        |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 6.659         | 4.8                 | 20.4           | 25.2               | 50.0                  | -24.8                        |
| 2.986         | 0.0                 | 20.3           | 20.3               | 46.0                  | -25.7                        |
| 4.226         | -0.7                | 20.3           | 19.6               | 46.0                  | -26.4                        |
| 2.487         | -2.0                | 20.3           | 18.3               | 46.0                  | -27.7                        |
| 1.072         | -3.8                | 20.2           | 16.4               | 46.0                  | -29.6                        |
| 1.500         | -4.0                | 20.3           | 16.3               | 46.0                  | -29.7                        |
| 0.642         | -4.0                | 20.2           | 16.2               | 46.0                  | -29.8                        |
| 0.562         | -4.1                | 20.2           | 16.1               | 46.0                  | -29.9                        |
| 1.082         | -4.4                | 20.2           | 15.8               | 46.0                  | -30.2                        |
| 1.928         | -4.5                | 20.3           | 15.8               | 46.0                  | -30.2                        |
| 2.116         | -4.6                | 20.3           | 15.7               | 46.0                  | -30.3                        |
| 0.411         | -3.8                | 20.2           | 16.4               | 47.6                  | -31.2                        |
| 16.228        | -3.7                | 21.4           | 17.7               | 50.0                  | -32.3                        |
| 0.331         | -3.2                | 20.2           | 17.0               | 49.4                  | -32.4                        |
| 0.248         | -1.4                | 20.4           | 19.0               | 51.8                  | -32.8                        |
| 17.693        | -4.2                | 21.4           | 17.2               | 50.0                  | -32.8                        |
| 8.060         | -3.5                | 20.6           | 17.1               | 50.0                  | -32.9                        |
| 26.253        | -5.9                | 22.4           | 16.5               | 50.0                  | -33.5                        |
| 0.271         | -3.4                | 20.4           | 17.0               | 51.1                  | -34.1                        |
| 23.129        | -6.0                | 21.9           | 15.9               | 50.0                  | -34.1                        |
| 9.980         | -5.8                | 20.7           | 14.9               | 50.0                  | -35.1                        |
| 0.184         | -2.5                | 20.4           | 17.9               | 54.3                  | -36.4                        |
| 0.152         | -1.1                | 20.4           | 19.3               | 55.9                  | -36.6                        |

# POWERLINE CONDUCTED EMISSIONS



EmiR5 2021.05.14.0

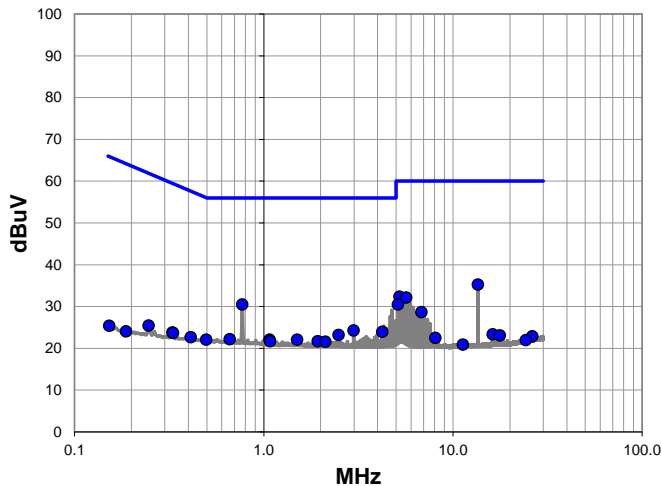
PSA-ESCI 2021.03.17.0

|                        |  |                          |            |                                  |
|------------------------|--|--------------------------|------------|----------------------------------|
| <b>Work Order:</b>     | ABBO0076   | <b>Date:</b>             | 2021-06-14 |                                  |
| <b>Project:</b>        | None   | <b>Temperature:</b>      | 21.1 °C    |                                  |
| <b>Job Site:</b>       | TX03   | <b>Humidity:</b>         | 58% RH     |                                  |
| <b>Serial Number:</b>  | ENG02-DR   | <b>Barometric Pres.:</b> | 1011 mbar  |                                  |
| <b>EUT:</b>            | GLP12220 Input/Output Module   |                          |            | <b>Tested by:</b> Travis Glasser |
| <b>Configuration:</b>  | 6  |                          |            |                                  |
| <b>Customer:</b>       | Abbott Laboratories  |                          |            |                                  |
| <b>Attendees:</b>      | Don Mendell  |                          |            |                                  |
| <b>EUT Power:</b>      | 220VAC/60Hz  |                          |            |                                  |
| <b>Operating Mode:</b> | Transmitting 13.56 MHz RFID  |                          |            |                                  |
| <b>Deviations:</b>     | Performed testing with floor standing EUT 40cm away from VCP. Testing was also performed without a VCP with similar results. |                          |            |                                  |
| <b>Comments:</b>       | Drawer Reader Radio 2. Antenna connected.  |                          |            |                                  |

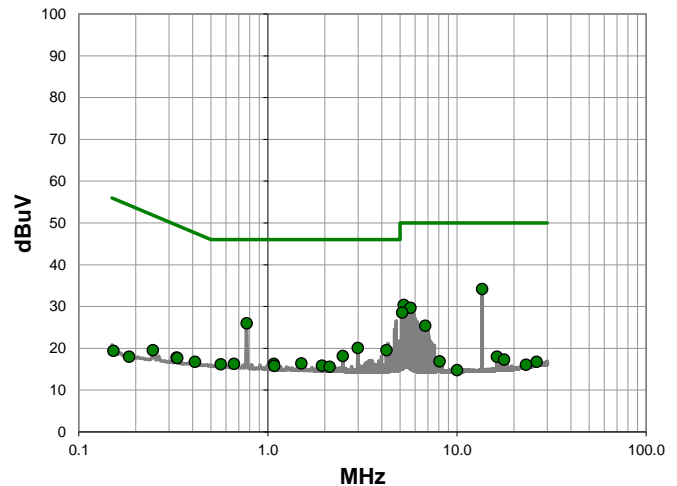
| Test Specifications |  | Test Method      |  |
|---------------------|--|------------------|--|
| FCC 15.207:2021     |  | ANSI C63.10:2013 |  |

| Run # | 46 | Line: | Neutral | Ext. Attenuation: | 0 | Results | Pass |
|-------|----|-------|---------|-------------------|---|---------|------|
|-------|----|-------|---------|-------------------|---|---------|------|

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 14.2             | 21.1        | 35.3            | 60.0               | -24.7                  |
| 0.770      | 10.3             | 20.2        | 30.5            | 56.0               | -25.5                  |
| 5.219      | 12.1             | 20.3        | 32.4            | 60.0               | -27.6                  |
| 5.661      | 11.8             | 20.4        | 32.2            | 60.0               | -27.8                  |
| 5.114      | 10.2             | 20.3        | 30.5            | 60.0               | -29.5                  |

Average Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 13.1             | 21.1        | 34.2            | 50.0               | -15.8                  |
| 5.219      | 10.1             | 20.3        | 30.4            | 50.0               | -19.6                  |
| 0.770      | 5.8              | 20.2        | 26.0            | 46.0               | -20.0                  |
| 5.661      | 9.3              | 20.4        | 29.7            | 50.0               | -20.3                  |
| 5.116      | 8.3              | 20.3        | 28.6            | 50.0               | -21.4                  |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 6.808         | 8.3                 | 20.4           | 28.7               | 60.0                  | -31.3                        |
| 2.983         | 4.0                 | 20.3           | 24.3               | 56.0                  | -31.7                        |
| 4.226         | 3.7                 | 20.3           | 24.0               | 56.0                  | -32.0                        |
| 2.487         | 2.9                 | 20.3           | 23.2               | 56.0                  | -32.8                        |
| 0.660         | 2.0                 | 20.2           | 22.2               | 56.0                  | -33.8                        |
| 1.072         | 1.9                 | 20.2           | 22.1               | 56.0                  | -33.9                        |
| 1.500         | 1.8                 | 20.3           | 22.1               | 56.0                  | -33.9                        |
| 0.496         | 1.9                 | 20.2           | 22.1               | 56.1                  | -34.0                        |
| 1.079         | 1.5                 | 20.2           | 21.7               | 56.0                  | -34.3                        |
| 1.928         | 1.4                 | 20.3           | 21.7               | 56.0                  | -34.3                        |
| 2.116         | 1.3                 | 20.3           | 21.6               | 56.0                  | -34.4                        |
| 0.411         | 2.5                 | 20.2           | 22.7               | 57.6                  | -34.9                        |
| 0.329         | 3.6                 | 20.2           | 23.8               | 59.5                  | -35.7                        |
| 0.331         | 3.5                 | 20.2           | 23.7               | 59.4                  | -35.7                        |
| 0.246         | 5.1                 | 20.4           | 25.5               | 61.9                  | -36.4                        |
| 16.228        | 2.0                 | 21.4           | 23.4               | 60.0                  | -36.6                        |
| 17.693        | 1.7                 | 21.4           | 23.1               | 60.0                  | -36.9                        |
| 26.248        | 0.5                 | 22.4           | 22.9               | 60.0                  | -37.1                        |
| 8.060         | 1.9                 | 20.6           | 22.5               | 60.0                  | -37.5                        |
| 24.255        | -0.2                | 22.2           | 22.0               | 60.0                  | -38.0                        |
| 11.298        | 0.0                 | 20.9           | 20.9               | 60.0                  | -39.1                        |
| 0.187         | 3.7                 | 20.4           | 24.1               | 64.2                  | -40.1                        |
| 0.152         | 5.0                 | 20.4           | 25.4               | 65.9                  | -40.5                        |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 6.776         | 5.0                 | 20.4           | 25.4               | 50.0                  | -24.6                        |
| 2.983         | -0.2                | 20.3           | 20.1               | 46.0                  | -25.9                        |
| 4.226         | -0.7                | 20.3           | 19.6               | 46.0                  | -26.4                        |
| 2.487         | -2.1                | 20.3           | 18.2               | 46.0                  | -27.8                        |
| 1.500         | -3.9                | 20.3           | 16.4               | 46.0                  | -29.6                        |
| 0.660         | -3.9                | 20.2           | 16.3               | 46.0                  | -29.7                        |
| 1.072         | -3.9                | 20.2           | 16.3               | 46.0                  | -29.7                        |
| 0.562         | -4.0                | 20.2           | 16.2               | 46.0                  | -29.8                        |
| 1.928         | -4.4                | 20.3           | 15.9               | 46.0                  | -30.1                        |
| 1.079         | -4.4                | 20.2           | 15.8               | 46.0                  | -30.2                        |
| 2.116         | -4.7                | 20.3           | 15.6               | 46.0                  | -30.4                        |
| 0.411         | -3.4                | 20.2           | 16.8               | 47.6                  | -30.8                        |
| 0.329         | -2.4                | 20.2           | 17.8               | 49.5                  | -31.7                        |
| 0.331         | -2.5                | 20.2           | 17.7               | 49.4                  | -31.7                        |
| 16.228        | -3.4                | 21.4           | 18.0               | 50.0                  | -32.0                        |
| 0.246         | -0.8                | 20.4           | 19.6               | 51.9                  | -32.3                        |
| 17.693        | -4.1                | 21.4           | 17.3               | 50.0                  | -32.7                        |
| 8.060         | -3.7                | 20.6           | 16.9               | 50.0                  | -33.1                        |
| 26.248        | -5.6                | 22.4           | 16.8               | 50.0                  | -33.2                        |
| 23.129        | -5.8                | 21.9           | 16.1               | 50.0                  | -33.9                        |
| 9.980         | -5.9                | 20.7           | 14.8               | 50.0                  | -35.2                        |
| 0.184         | -2.4                | 20.4           | 18.0               | 54.3                  | -36.3                        |
| 0.152         | -1.0                | 20.4           | 19.4               | 55.9                  | -36.5                        |

# POWERLINE CONDUCTED EMISSIONS



EmiR5 2021.05.14.0

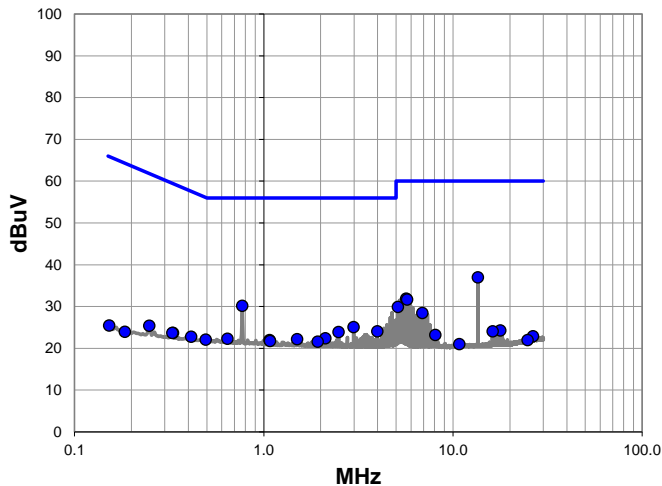
PSA-ESCI 2021.03.17.0

|                        |  |                          |            |                                  |
|------------------------|--|--------------------------|------------|----------------------------------|
| <b>Work Order:</b>     | ABBO0076   | <b>Date:</b>             | 2021-06-14 |                                  |
| <b>Project:</b>        | None   | <b>Temperature:</b>      | 21.1 °C    |                                  |
| <b>Job Site:</b>       | TX03   | <b>Humidity:</b>         | 58% RH     |                                  |
| <b>Serial Number:</b>  | ENG03-DR   | <b>Barometric Pres.:</b> | 1011 mbar  |                                  |
| <b>EUT:</b>            | GLP12220 Input/Output Module   |                          |            | <b>Tested by:</b> Travis Glasser |
| <b>Configuration:</b>  | 6  |                          |            |                                  |
| <b>Customer:</b>       | Abbott Laboratories  |                          |            |                                  |
| <b>Attendees:</b>      | Don Mendell  |                          |            |                                  |
| <b>EUT Power:</b>      | 220VAC/60Hz  |                          |            |                                  |
| <b>Operating Mode:</b> | Transmitting 13.56 MHz RFID  |                          |            |                                  |
| <b>Deviations:</b>     | Performed testing with floor standing EUT 40cm away from VCP. Testing was also performed without a VCP with similar results. |                          |            |                                  |
| <b>Comments:</b>       | Drawer Reader Radio 3. Antenna connected.  |                          |            |                                  |

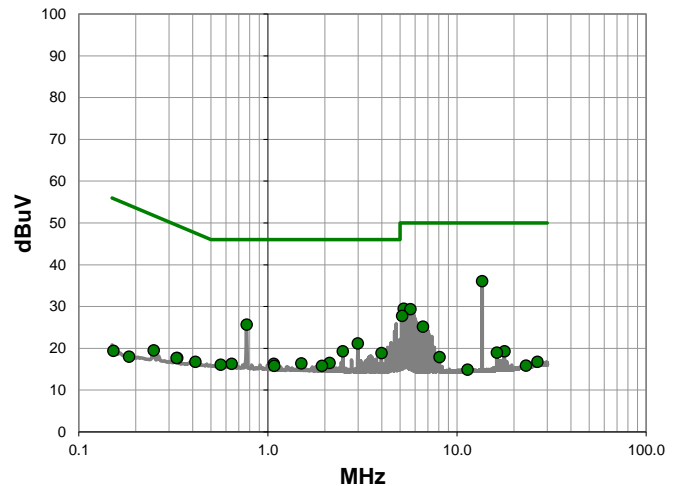
| Test Specifications |  | Test Method      |  |
|---------------------|--|------------------|--|
| FCC 15.207:2021     |  | ANSI C63.10:2013 |  |

| Run # | 47 | Line: | High Line | Ext. Attenuation: | 0 | Results | Pass |
|-------|----|-------|-----------|-------------------|---|---------|------|
|-------|----|-------|-----------|-------------------|---|---------|------|

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 15.9             | 21.1        | 37.0            | 60.0               | -23.0                  |
| 0.770      | 10.0             | 20.2        | 30.2            | 56.0               | -25.8                  |
| 5.661      | 11.5             | 20.4        | 31.9            | 60.0               | -28.1                  |
| 5.721      | 11.3             | 20.4        | 31.7            | 60.0               | -28.3                  |
| 5.116      | 9.6              | 20.3        | 29.9            | 60.0               | -30.1                  |

Average Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 15.0             | 21.1        | 36.1            | 50.0               | -13.9                  |
| 0.770      | 5.5              | 20.2        | 25.7            | 46.0               | -20.3                  |
| 5.219      | 9.2              | 20.3        | 29.5            | 50.0               | -20.5                  |
| 5.661      | 9.0              | 20.4        | 29.4            | 50.0               | -20.6                  |
| 5.116      | 7.5              | 20.3        | 27.8            | 50.0               | -22.2                  |



| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 2.983         | 4.8                 | 20.3           | 25.1               | 56.0                  | -30.9                        |
| 6.893         | 8.1                 | 20.4           | 28.5               | 60.0                  | -31.5                        |
| 3.979         | 3.8                 | 20.3           | 24.1               | 56.0                  | -31.9                        |
| 2.487         | 3.6                 | 20.3           | 23.9               | 56.0                  | -32.1                        |
| 2.116         | 2.1                 | 20.3           | 22.4               | 56.0                  | -33.6                        |
| 0.642         | 2.1                 | 20.2           | 22.3               | 56.0                  | -33.7                        |
| 1.500         | 1.9                 | 20.3           | 22.2               | 56.0                  | -33.8                        |
| 0.493         | 1.9                 | 20.2           | 22.1               | 56.1                  | -34.0                        |
| 1.072         | 1.8                 | 20.2           | 22.0               | 56.0                  | -34.0                        |
| 1.079         | 1.6                 | 20.2           | 21.8               | 56.0                  | -34.2                        |
| 1.928         | 1.3                 | 20.3           | 21.6               | 56.0                  | -34.4                        |
| 0.413         | 2.6                 | 20.2           | 22.8               | 57.6                  | -34.8                        |
| 0.331         | 3.5                 | 20.2           | 23.7               | 59.4                  | -35.7                        |
| 17.789        | 2.9                 | 21.4           | 24.3               | 60.0                  | -35.7                        |
| 0.329         | 3.5                 | 20.2           | 23.7               | 59.5                  | -35.8                        |
| 16.228        | 2.7                 | 21.4           | 24.1               | 60.0                  | -35.9                        |
| 0.248         | 5.0                 | 20.4           | 25.4               | 61.8                  | -36.4                        |
| 8.060         | 2.6                 | 20.6           | 23.2               | 60.0                  | -36.8                        |
| 26.532        | 0.5                 | 22.4           | 22.9               | 60.0                  | -37.1                        |
| 24.790        | -0.2                | 22.2           | 22.0               | 60.0                  | -38.0                        |
| 10.804        | 0.2                 | 20.8           | 21.0               | 60.0                  | -39.0                        |
| 0.184         | 3.6                 | 20.4           | 24.0               | 64.3                  | -40.3                        |
| 0.152         | 5.1                 | 20.4           | 25.5               | 65.9                  | -40.4                        |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 6.600         | 4.8                 | 20.4           | 25.2               | 50.0                  | -24.8                        |
| 2.983         | 0.9                 | 20.3           | 21.2               | 46.0                  | -24.8                        |
| 2.487         | -1.0                | 20.3           | 19.3               | 46.0                  | -26.7                        |
| 3.979         | -1.4                | 20.3           | 18.9               | 46.0                  | -27.1                        |
| 2.116         | -3.8                | 20.3           | 16.5               | 46.0                  | -29.5                        |
| 1.500         | -3.9                | 20.3           | 16.4               | 46.0                  | -29.6                        |
| 0.642         | -3.9                | 20.2           | 16.3               | 46.0                  | -29.7                        |
| 1.072         | -3.9                | 20.2           | 16.3               | 46.0                  | -29.7                        |
| 0.562         | -4.1                | 20.2           | 16.1               | 46.0                  | -29.9                        |
| 1.079         | -4.4                | 20.2           | 15.8               | 46.0                  | -30.2                        |
| 1.928         | -4.5                | 20.3           | 15.8               | 46.0                  | -30.2                        |
| 17.789        | -2.1                | 21.4           | 19.3               | 50.0                  | -30.7                        |
| 0.413         | -3.4                | 20.2           | 16.8               | 47.6                  | -30.8                        |
| 16.228        | -2.4                | 21.4           | 19.0               | 50.0                  | -31.0                        |
| 0.331         | -2.5                | 20.2           | 17.7               | 49.4                  | -31.7                        |
| 0.329         | -2.5                | 20.2           | 17.7               | 49.5                  | -31.8                        |
| 8.062         | -2.7                | 20.6           | 17.9               | 50.0                  | -32.1                        |
| 0.248         | -0.9                | 20.4           | 19.5               | 51.8                  | -32.3                        |
| 26.532        | -5.6                | 22.4           | 16.8               | 50.0                  | -33.2                        |
| 23.129        | -6.0                | 21.9           | 15.9               | 50.0                  | -34.1                        |
| 11.346        | -6.0                | 20.9           | 14.9               | 50.0                  | -35.1                        |
| 0.184         | -2.4                | 20.4           | 18.0               | 54.3                  | -36.3                        |
| 0.152         | -1.0                | 20.4           | 19.4               | 55.9                  | -36.5                        |

# POWERLINE CONDUCTED EMISSIONS



EmiR5 2021.05.14.0

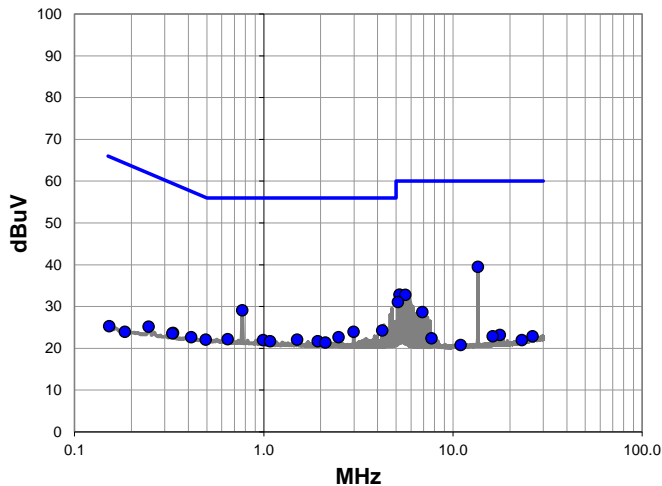
PSA-ESCI 2021.03.17.0

|                        |  |                          |            |                                  |
|------------------------|--|--------------------------|------------|----------------------------------|
| <b>Work Order:</b>     | ABBO0076   | <b>Date:</b>             | 2021-06-14 |                                  |
| <b>Project:</b>        | None   | <b>Temperature:</b>      | 21.1 °C    |                                  |
| <b>Job Site:</b>       | TX03   | <b>Humidity:</b>         | 58% RH     |                                  |
| <b>Serial Number:</b>  | ENG03-DR   | <b>Barometric Pres.:</b> | 1011 mbar  |                                  |
| <b>EUT:</b>            | GLP12220 Input/Output Module   |                          |            | <b>Tested by:</b> Travis Glasser |
| <b>Configuration:</b>  | 6  |                          |            |                                  |
| <b>Customer:</b>       | Abbott Laboratories  |                          |            |                                  |
| <b>Attendees:</b>      | Don Mendell  |                          |            |                                  |
| <b>EUT Power:</b>      | 220VAC/60Hz  |                          |            |                                  |
| <b>Operating Mode:</b> | Transmitting 13.56 MHz RFID  |                          |            |                                  |
| <b>Deviations:</b>     | Performed testing with floor standing EUT 40cm away from VCP. Testing was also performed without a VCP with similar results. |                          |            |                                  |
| <b>Comments:</b>       | Drawer Reader Radio 3. Antenna connected.  |                          |            |                                  |

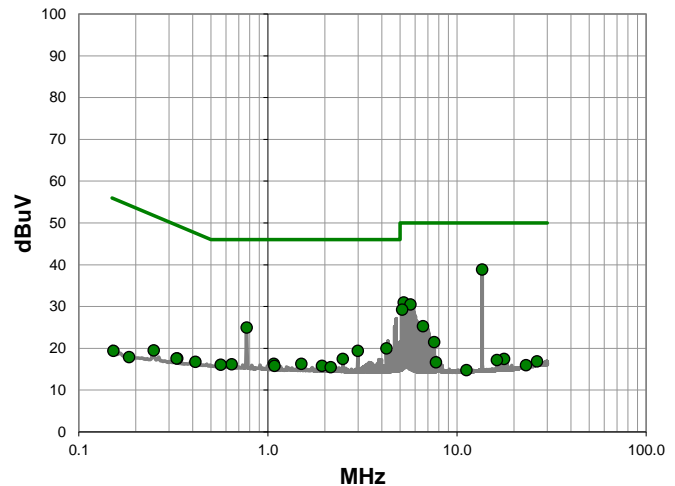
| Test Specifications |  | Test Method      |  |
|---------------------|--|------------------|--|
| FCC 15.207:2021     |  | ANSI C63.10:2013 |  |

| Run # | 48 | Line: | Neutral | Ext. Attenuation: | 0 | Results | Pass |
|-------|----|-------|---------|-------------------|---|---------|------|
|-------|----|-------|---------|-------------------|---|---------|------|

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 18.4             | 21.1        | 39.5            | 60.0               | -20.5                  |
| 0.770      | 8.9              | 20.2        | 29.1            | 56.0               | -26.9                  |
| 5.217      | 12.6             | 20.3        | 32.9            | 60.0               | -27.1                  |
| 5.604      | 12.4             | 20.4        | 32.8            | 60.0               | -27.2                  |
| 5.114      | 10.8             | 20.3        | 31.1            | 60.0               | -28.9                  |

Average Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 17.8             | 21.1        | 38.9            | 50.0               | -11.1                  |
| 5.217      | 10.7             | 20.3        | 31.0            | 50.0               | -19.0                  |
| 5.661      | 10.1             | 20.4        | 30.5            | 50.0               | -19.5                  |
| 5.114      | 9.0              | 20.3        | 29.3            | 50.0               | -20.7                  |
| 0.770      | 4.8              | 20.2        | 25.0            | 46.0               | -21.0                  |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 6.895         | 8.3                 | 20.4           | 28.7               | 60.0                  | -31.3                        |
| 4.226         | 4.0                 | 20.3           | 24.3               | 56.0                  | -31.7                        |
| 2.983         | 3.7                 | 20.3           | 24.0               | 56.0                  | -32.0                        |
| 2.487         | 2.4                 | 20.3           | 22.7               | 56.0                  | -33.3                        |
| 0.644         | 2.0                 | 20.2           | 22.2               | 56.0                  | -33.8                        |
| 1.500         | 1.8                 | 20.3           | 22.1               | 56.0                  | -33.9                        |
| 0.493         | 1.9                 | 20.2           | 22.1               | 56.1                  | -34.0                        |
| 0.992         | 1.8                 | 20.2           | 22.0               | 56.0                  | -34.0                        |
| 1.079         | 1.5                 | 20.2           | 21.7               | 56.0                  | -34.3                        |
| 1.928         | 1.4                 | 20.3           | 21.7               | 56.0                  | -34.3                        |
| 2.116         | 1.1                 | 20.3           | 21.4               | 56.0                  | -34.6                        |
| 0.413         | 2.5                 | 20.2           | 22.7               | 57.6                  | -34.9                        |
| 0.331         | 3.5                 | 20.2           | 23.7               | 59.4                  | -35.7                        |
| 0.329         | 3.4                 | 20.2           | 23.6               | 59.5                  | -35.9                        |
| 0.246         | 4.8                 | 20.4           | 25.2               | 61.9                  | -36.7                        |
| 17.693        | 1.8                 | 21.4           | 23.2               | 60.0                  | -36.8                        |
| 16.228        | 1.5                 | 21.4           | 22.9               | 60.0                  | -37.1                        |
| 26.383        | 0.5                 | 22.4           | 22.9               | 60.0                  | -37.1                        |
| 7.714         | 1.9                 | 20.5           | 22.4               | 60.0                  | -37.6                        |
| 23.129        | 0.1                 | 21.9           | 22.0               | 60.0                  | -38.0                        |
| 10.969        | 0.0                 | 20.8           | 20.8               | 60.0                  | -39.2                        |
| 0.184         | 3.6                 | 20.4           | 24.0               | 64.3                  | -40.3                        |
| 0.152         | 4.9                 | 20.4           | 25.3               | 65.9                  | -40.6                        |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 6.600         | 4.9                 | 20.4           | 25.3               | 50.0                  | -24.7                        |
| 4.226         | -0.3                | 20.3           | 20.0               | 46.0                  | -26.0                        |
| 2.983         | -0.9                | 20.3           | 19.4               | 46.0                  | -26.6                        |
| 7.565         | 1.0                 | 20.5           | 21.5               | 50.0                  | -28.5                        |
| 2.487         | -2.8                | 20.3           | 17.5               | 46.0                  | -28.5                        |
| 1.072         | -3.9                | 20.2           | 16.3               | 46.0                  | -29.7                        |
| 1.500         | -4.0                | 20.3           | 16.3               | 46.0                  | -29.7                        |
| 0.642         | -4.0                | 20.2           | 16.2               | 46.0                  | -29.8                        |
| 0.562         | -4.1                | 20.2           | 16.1               | 46.0                  | -29.9                        |
| 1.082         | -4.4                | 20.2           | 15.8               | 46.0                  | -30.2                        |
| 1.928         | -4.5                | 20.3           | 15.8               | 46.0                  | -30.2                        |
| 2.143         | -4.8                | 20.3           | 15.5               | 46.0                  | -30.5                        |
| 0.413         | -3.4                | 20.2           | 16.8               | 47.6                  | -30.8                        |
| 0.331         | -2.6                | 20.2           | 17.6               | 49.4                  | -31.8                        |
| 0.329         | -2.6                | 20.2           | 17.6               | 49.5                  | -31.9                        |
| 0.248         | -0.9                | 20.4           | 19.5               | 51.8                  | -32.3                        |
| 17.693        | -3.9                | 21.4           | 17.5               | 50.0                  | -32.5                        |
| 16.228        | -4.2                | 21.4           | 17.2               | 50.0                  | -32.8                        |
| 26.383        | -5.5                | 22.4           | 16.9               | 50.0                  | -33.1                        |
| 7.714         | -3.8                | 20.5           | 16.7               | 50.0                  | -33.3                        |
| 23.129        | -5.9                | 21.9           | 16.0               | 50.0                  | -34.0                        |
| 11.204        | -6.1                | 20.9           | 14.8               | 50.0                  | -35.2                        |
| 0.184         | -2.5                | 20.4           | 17.9               | 54.3                  | -36.4                        |
| 0.152         | -1.0                | 20.4           | 19.4               | 55.9                  | -36.5                        |

# POWERLINE CONDUCTED EMISSIONS



EmiR5 2021.05.14.0

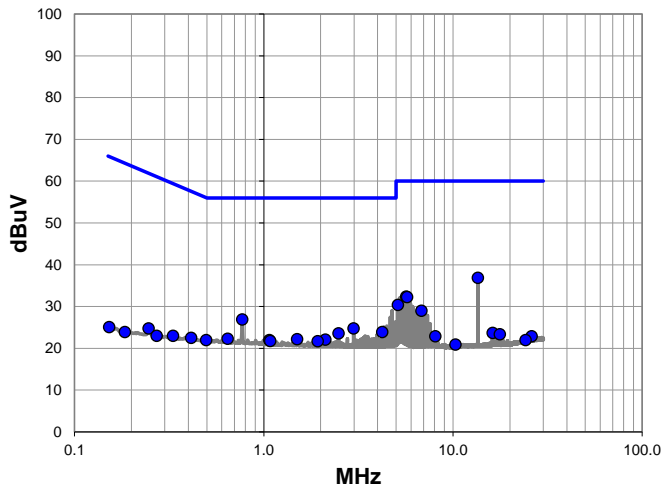
PSA-ESCI 2021.03.17.0

|                        |  |                          |            |                                  |
|------------------------|--|--------------------------|------------|----------------------------------|
| <b>Work Order:</b>     | ABBO0076   | <b>Date:</b>             | 2021-06-14 |                                  |
| <b>Project:</b>        | None   | <b>Temperature:</b>      | 21.1 °C    |                                  |
| <b>Job Site:</b>       | TX03   | <b>Humidity:</b>         | 58% RH     |                                  |
| <b>Serial Number:</b>  | ENG04-DR   | <b>Barometric Pres.:</b> | 1011 mbar  |                                  |
| <b>EUT:</b>            | GLP12220 Input/Output Module   |                          |            | <b>Tested by:</b> Travis Glasser |
| <b>Configuration:</b>  | 6  |                          |            |                                  |
| <b>Customer:</b>       | Abbott Laboratories  |                          |            |                                  |
| <b>Attendees:</b>      | Don Mendell  |                          |            |                                  |
| <b>EUT Power:</b>      | 220VAC/60Hz  |                          |            |                                  |
| <b>Operating Mode:</b> | Transmitting 13.56 MHz RFID  |                          |            |                                  |
| <b>Deviations:</b>     | Performed testing with floor standing EUT 40cm away from VCP. Testing was also performed without a VCP with similar results. |                          |            |                                  |
| <b>Comments:</b>       | Drawer Reader Radio 4. Antenna connected.  |                          |            |                                  |

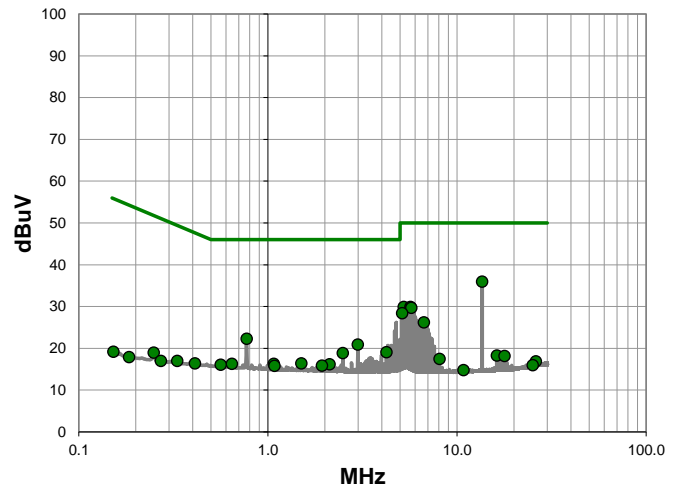
| Test Specifications |  | Test Method      |  |
|---------------------|--|------------------|--|
| FCC 15.207:2021     |  | ANSI C63.10:2013 |  |

| Run # | 49 | Line: | High Line | Ext. Attenuation: | 0 | Results | Pass |
|-------|----|-------|-----------|-------------------|---|---------|------|
|-------|----|-------|-----------|-------------------|---|---------|------|

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 15.8             | 21.1        | 36.9            | 60.0               | -23.1                  |
| 5.661      | 12.0             | 20.4        | 32.4            | 60.0               | -27.6                  |
| 5.721      | 11.9             | 20.4        | 32.3            | 60.0               | -27.7                  |
| 0.770      | 6.7              | 20.2        | 26.9            | 56.0               | -29.1                  |
| 5.116      | 10.1             | 20.3        | 30.4            | 60.0               | -29.6                  |

Average Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 14.9             | 21.1        | 36.0            | 50.0               | -14.0                  |
| 5.219      | 9.6              | 20.3        | 29.9            | 50.0               | -20.1                  |
| 5.661      | 9.5              | 20.4        | 29.9            | 50.0               | -20.1                  |
| 5.721      | 9.3              | 20.4        | 29.7            | 50.0               | -20.3                  |
| 5.116      | 8.1              | 20.3        | 28.4            | 50.0               | -21.6                  |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 6.808         | 8.6                 | 20.4           | 29.0               | 60.0                  | -31.0                        |
| 2.983         | 4.5                 | 20.3           | 24.8               | 56.0                  | -31.2                        |
| 4.226         | 3.6                 | 20.3           | 23.9               | 56.0                  | -32.1                        |
| 2.487         | 3.3                 | 20.3           | 23.6               | 56.0                  | -32.4                        |
| 0.644         | 2.1                 | 20.2           | 22.3               | 56.0                  | -33.7                        |
| 1.500         | 1.9                 | 20.3           | 22.2               | 56.0                  | -33.8                        |
| 2.116         | 1.8                 | 20.3           | 22.1               | 56.0                  | -33.9                        |
| 1.070         | 1.8                 | 20.2           | 22.0               | 56.0                  | -34.0                        |
| 0.496         | 1.8                 | 20.2           | 22.0               | 56.1                  | -34.1                        |
| 1.082         | 1.6                 | 20.2           | 21.8               | 56.0                  | -34.2                        |
| 1.928         | 1.4                 | 20.3           | 21.7               | 56.0                  | -34.3                        |
| 0.413         | 2.3                 | 20.2           | 22.5               | 57.6                  | -35.1                        |
| 16.228        | 2.3                 | 21.4           | 23.7               | 60.0                  | -36.3                        |
| 0.331         | 2.8                 | 20.2           | 23.0               | 59.4                  | -36.4                        |
| 17.693        | 2.0                 | 21.4           | 23.4               | 60.0                  | -36.6                        |
| 0.246         | 4.4                 | 20.4           | 24.8               | 61.9                  | -37.1                        |
| 8.060         | 2.3                 | 20.6           | 22.9               | 60.0                  | -37.1                        |
| 26.083        | 0.5                 | 22.4           | 22.9               | 60.0                  | -37.1                        |
| 24.246        | -0.2                | 22.2           | 22.0               | 60.0                  | -38.0                        |
| 0.271         | 2.6                 | 20.4           | 23.0               | 61.1                  | -38.1                        |
| 10.310        | 0.2                 | 20.7           | 20.9               | 60.0                  | -39.1                        |
| 0.184         | 3.5                 | 20.4           | 23.9               | 64.3                  | -40.4                        |
| 0.152         | 4.7                 | 20.4           | 25.1               | 65.9                  | -40.8                        |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 0.770         | 2.1                 | 20.2           | 22.3               | 46.0                  | -23.7                        |
| 6.659         | 5.8                 | 20.4           | 26.2               | 50.0                  | -23.8                        |
| 2.983         | 0.6                 | 20.3           | 20.9               | 46.0                  | -25.1                        |
| 4.226         | -1.2                | 20.3           | 19.1               | 46.0                  | -26.9                        |
| 2.487         | -1.4                | 20.3           | 18.9               | 46.0                  | -27.1                        |
| 1.500         | -3.9                | 20.3           | 16.4               | 46.0                  | -29.6                        |
| 0.644         | -3.9                | 20.2           | 16.3               | 46.0                  | -29.7                        |
| 1.072         | -3.9                | 20.2           | 16.3               | 46.0                  | -29.7                        |
| 2.116         | -4.1                | 20.3           | 16.2               | 46.0                  | -29.8                        |
| 0.562         | -4.1                | 20.2           | 16.1               | 46.0                  | -29.9                        |
| 1.928         | -4.4                | 20.3           | 15.9               | 46.0                  | -30.1                        |
| 1.082         | -4.4                | 20.2           | 15.8               | 46.0                  | -30.2                        |
| 0.411         | -3.8                | 20.2           | 16.4               | 47.6                  | -31.2                        |
| 16.228        | -3.1                | 21.4           | 18.3               | 50.0                  | -31.7                        |
| 17.789        | -3.2                | 21.4           | 18.2               | 50.0                  | -31.8                        |
| 0.331         | -3.2                | 20.2           | 17.0               | 49.4                  | -32.4                        |
| 8.060         | -3.1                | 20.6           | 17.5               | 50.0                  | -32.5                        |
| 0.248         | -1.4                | 20.4           | 19.0               | 51.8                  | -32.8                        |
| 26.083        | -5.5                | 22.4           | 16.9               | 50.0                  | -33.1                        |
| 25.074        | -6.2                | 22.2           | 16.0               | 50.0                  | -34.0                        |
| 0.271         | -3.4                | 20.4           | 17.0               | 51.1                  | -34.1                        |
| 10.804        | -6.0                | 20.8           | 14.8               | 50.0                  | -35.2                        |
| 0.184         | -2.5                | 20.4           | 17.9               | 54.3                  | -36.4                        |
| 0.152         | -1.2                | 20.4           | 19.2               | 55.9                  | -36.7                        |

# POWERLINE CONDUCTED EMISSIONS



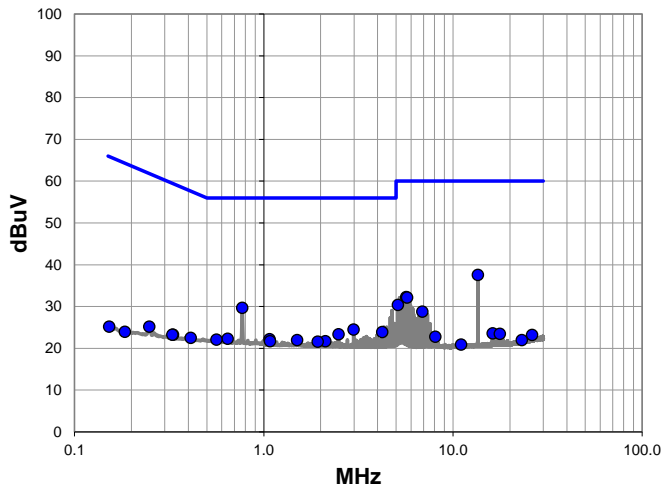
EmiR5 2021.05.14.0

PSA-ESCI 2021.03.17.0

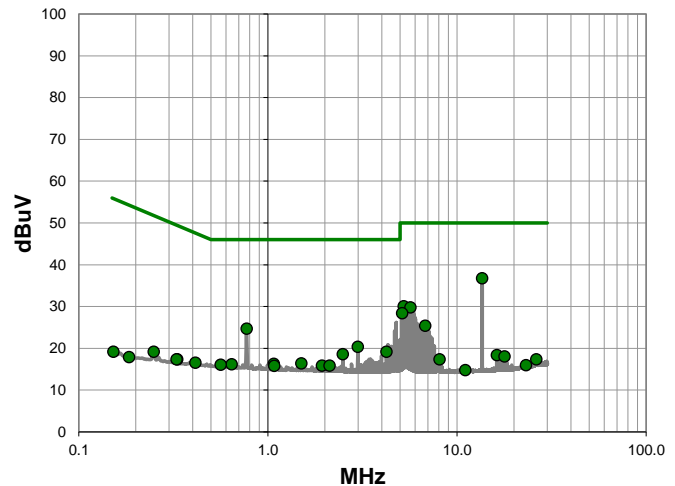
|                        |  |                          |            |                                  |
|------------------------|--|--------------------------|------------|----------------------------------|
| <b>Work Order:</b>     | ABBO0076   | <b>Date:</b>             | 2021-06-14 |                                  |
| <b>Project:</b>        | None   | <b>Temperature:</b>      | 21.1 °C    |                                  |
| <b>Job Site:</b>       | TX03   | <b>Humidity:</b>         | 58% RH     |                                  |
| <b>Serial Number:</b>  | ENG04-DR   | <b>Barometric Pres.:</b> | 1011 mbar  |                                  |
| <b>EUT:</b>            | GLP12220 Input/Output Module   |                          |            | <b>Tested by:</b> Travis Glasser |
| <b>Configuration:</b>  | 6  |                          |            |                                  |
| <b>Customer:</b>       | Abbott Laboratories  |                          |            |                                  |
| <b>Attendees:</b>      | Don Mendell  |                          |            |                                  |
| <b>EUT Power:</b>      | 220VAC/60Hz  |                          |            |                                  |
| <b>Operating Mode:</b> | Transmitting 13.56 MHz RFID  |                          |            |                                  |
| <b>Deviations:</b>     | Performed testing with floor standing EUT 40cm away from VCP. Testing was also performed without a VCP with similar results. |                          |            |                                  |
| <b>Comments:</b>       | Drawer Reader Radio 4. Antenna connected.  |                          |            |                                  |

| Test Specifications      |    | Test Method      |         |
|--------------------------|----|------------------|---------|
| FCC 15.207:2021          |    | ANSI C63.10:2013 |         |
| <b>Run #</b>             | 50 | <b>Line:</b>     | Neutral |
| <b>Ext. Attenuation:</b> | 0  | <b>Results</b>   | Pass    |

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 16.5             | 21.1        | 37.6            | 60.0               | -22.4                  |
| 0.770      | 9.5              | 20.2        | 29.7            | 56.0               | -26.3                  |
| 5.661      | 11.9             | 20.4        | 32.3            | 60.0               | -27.7                  |
| 5.721      | 11.8             | 20.4        | 32.2            | 60.0               | -27.8                  |
| 5.116      | 10.1             | 20.3        | 30.4            | 60.0               | -29.6                  |

Average Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 13.560     | 15.7             | 21.1        | 36.8            | 50.0               | -13.2                  |
| 5.219      | 9.8              | 20.3        | 30.1            | 50.0               | -19.9                  |
| 5.661      | 9.4              | 20.4        | 29.8            | 50.0               | -20.2                  |
| 0.770      | 4.5              | 20.2        | 24.7            | 46.0               | -21.3                  |
| 5.116      | 8.1              | 20.3        | 28.4            | 50.0               | -21.6                  |



| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 6.895         | 8.4                 | 20.4           | 28.8               | 60.0                  | -31.2                        |
| 2.983         | 4.2                 | 20.3           | 24.5               | 56.0                  | -31.5                        |
| 4.226         | 3.6                 | 20.3           | 23.9               | 56.0                  | -32.1                        |
| 2.487         | 3.1                 | 20.3           | 23.4               | 56.0                  | -32.6                        |
| 0.644         | 2.1                 | 20.2           | 22.3               | 56.0                  | -33.7                        |
| 1.072         | 2.0                 | 20.2           | 22.2               | 56.0                  | -33.8                        |
| 0.562         | 1.9                 | 20.2           | 22.1               | 56.0                  | -33.9                        |
| 1.500         | 1.7                 | 20.3           | 22.0               | 56.0                  | -34.0                        |
| 1.079         | 1.5                 | 20.2           | 21.7               | 56.0                  | -34.3                        |
| 2.116         | 1.4                 | 20.3           | 21.7               | 56.0                  | -34.3                        |
| 1.928         | 1.3                 | 20.3           | 21.6               | 56.0                  | -34.4                        |
| 0.411         | 2.3                 | 20.2           | 22.5               | 57.6                  | -35.1                        |
| 0.331         | 3.1                 | 20.2           | 23.3               | 59.4                  | -36.1                        |
| 0.329         | 3.1                 | 20.2           | 23.3               | 59.5                  | -36.2                        |
| 16.228        | 2.2                 | 21.4           | 23.6               | 60.0                  | -36.4                        |
| 17.693        | 2.1                 | 21.4           | 23.5               | 60.0                  | -36.5                        |
| 0.248         | 4.8                 | 20.4           | 25.2               | 61.8                  | -36.6                        |
| 26.223        | 0.8                 | 22.4           | 23.2               | 60.0                  | -36.8                        |
| 8.060         | 2.2                 | 20.6           | 22.8               | 60.0                  | -37.2                        |
| 23.129        | 0.1                 | 21.9           | 22.0               | 60.0                  | -38.0                        |
| 11.051        | 0.1                 | 20.8           | 20.9               | 60.0                  | -39.1                        |
| 0.184         | 3.6                 | 20.4           | 24.0               | 64.3                  | -40.3                        |
| 0.152         | 4.8                 | 20.4           | 25.2               | 65.9                  | -40.7                        |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec. Limit<br>(dBuV) | Compared to<br>Spec.<br>(dB) |
|---------------|---------------------|----------------|--------------------|-----------------------|------------------------------|
| 6.776         | 5.0                 | 20.4           | 25.4               | 50.0                  | -24.6                        |
| 2.983         | 0.1                 | 20.3           | 20.4               | 46.0                  | -25.6                        |
| 4.226         | -1.1                | 20.3           | 19.2               | 46.0                  | -26.8                        |
| 2.487         | -1.7                | 20.3           | 18.6               | 46.0                  | -27.4                        |
| 1.500         | -3.9                | 20.3           | 16.4               | 46.0                  | -29.6                        |
| 1.072         | -3.9                | 20.2           | 16.3               | 46.0                  | -29.7                        |
| 0.642         | -4.0                | 20.2           | 16.2               | 46.0                  | -29.8                        |
| 0.562         | -4.1                | 20.2           | 16.1               | 46.0                  | -29.9                        |
| 1.928         | -4.4                | 20.3           | 15.9               | 46.0                  | -30.1                        |
| 2.116         | -4.4                | 20.3           | 15.9               | 46.0                  | -30.1                        |
| 1.079         | -4.4                | 20.2           | 15.8               | 46.0                  | -30.2                        |
| 0.413         | -3.6                | 20.2           | 16.6               | 47.6                  | -31.0                        |
| 16.228        | -3.0                | 21.4           | 18.4               | 50.0                  | -31.6                        |
| 17.789        | -3.3                | 21.4           | 18.1               | 50.0                  | -31.9                        |
| 0.331         | -2.8                | 20.2           | 17.4               | 49.4                  | -32.0                        |
| 0.329         | -2.8                | 20.2           | 17.4               | 49.5                  | -32.1                        |
| 0.248         | -1.2                | 20.4           | 19.2               | 51.8                  | -32.6                        |
| 8.060         | -3.2                | 20.6           | 17.4               | 50.0                  | -32.6                        |
| 26.221        | -5.0                | 22.4           | 17.4               | 50.0                  | -32.6                        |
| 23.129        | -5.9                | 21.9           | 16.0               | 50.0                  | -34.0                        |
| 11.051        | -6.0                | 20.8           | 14.8               | 50.0                  | -35.2                        |
| 0.184         | -2.5                | 20.4           | 17.9               | 54.3                  | -36.4                        |
| 0.152         | -1.2                | 20.4           | 19.2               | 55.9                  | -36.7                        |

# FIELD STRENGTH OF FUNDAMENTAL

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

## MODES OF OPERATION

Transmitting RFID 13.56 MHz

## POWER SETTINGS INVESTIGATED

220VAC/60Hz

## CONFIGURATIONS INVESTIGATED

ABBO0076 - 1

## FREQUENCY RANGE INVESTIGATED

|                 |         |                |        |
|-----------------|---------|----------------|--------|
| Start Frequency | 490 kHz | Stop Frequency | 30 MHz |
|-----------------|---------|----------------|--------|

## SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

## TEST EQUIPMENT

| Description                  | Manufacturer  | Model          | ID  | Last Cal.  | Cal. Due   |
|------------------------------|---------------|----------------|-----|------------|------------|
| Analyzer - Spectrum Analyzer | Agilent       | E4440A         | AFD | 2020-07-30 | Out of Cal |
| Antenna - Loop               | ETS Lindgren  | 6502           | AZM | 2020-07-09 | 2022-07-09 |
| Cable                        | Northwest EMC | RE 9kHz - 1GHz | TXB | 2021-05-24 | 2022-05-24 |

## TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was continuously transmitting while set to the channel specified.

The fundamental carrier of the EUT was maximized by rotating the EUT on a turntable and adjusting the measurement antenna height and polarization (per ANSI C63.10). A calibrated active loop antenna was used for this test in order to provide sufficient measurement sensitivity. The reference point of the loop antenna was maintained at 1m above the ground plane during the testing.


Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector  
 PK = Peak Detector  
 AV = RMS Detector

As outlined in 15.209(e), 15.31(f)(2), and RSS-GEN, 6.5, measurements may be performed at a distance closer than what is specified with the limit. The limit at the specified distance is shown on the data sheet. Measurements are made at a closer distance and the data is adjusted using a distance correction factor of 40dB/decade for comparison to the limit.

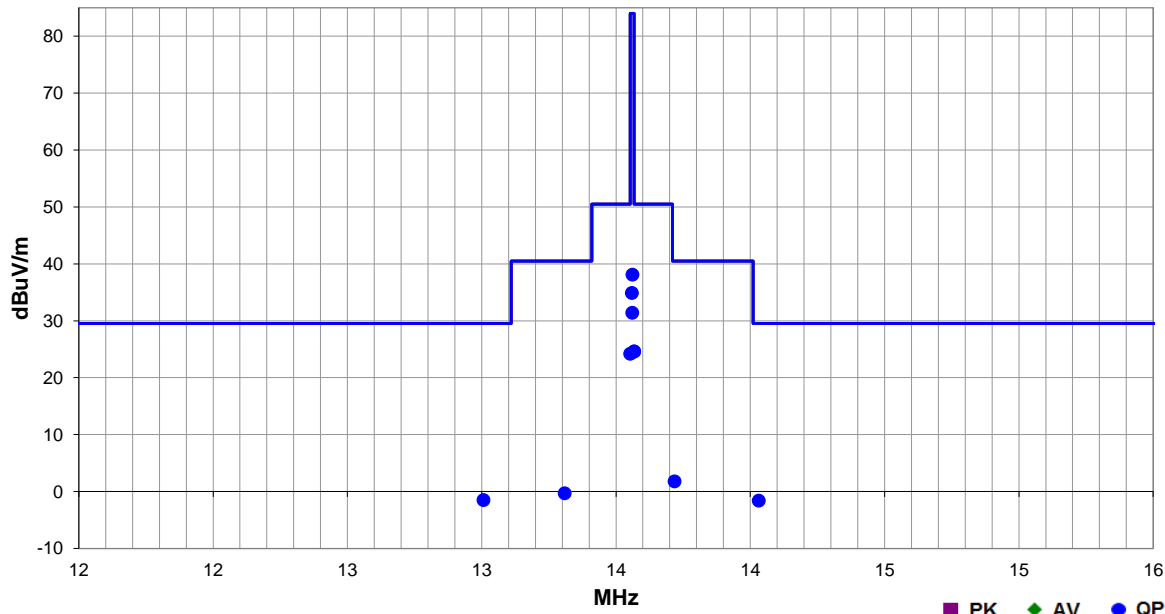
# FIELD STRENGTH OF FUNDAMENTAL



|                 |   |                   |            |  |
|-----------------|---|-------------------|------------|--|
| Work Order:     | ABBO0076  | Date:             | 2021-07-07 |  |
| Project:        | None  | Temperature:      | 20 °C      |  |
| Job Site:       | TX02  | Humidity:         | 57.5% RH   |  |
| Serial Number:  | See Configurations  | Barometric Pres.: | 1014 mbar  |  |
| EUT:            | GLP12220 Input/Output Module                                |                   |            |  |
| Configuration:  | 6   |                   |            |  |
| Customer:       | Abbott Laboratories   |                   |            |  |
| Attendees:      | None  |                   |            |  |
| EUT Power:      | 220VAC/60Hz   |                   |            |  |
| Operating Mode: | Transmitting RFID 13.56 MHz                                 |                   |            |  |
| Deviations:     | None  |                   |            |  |
| Comments:       | All Radios ON. Full transmit power enabled. Test mode only. |                   |            |  |

| Test Specifications | Test Method      |
|---------------------|------------------|
| FCC 15.225:2021     | ANSI C63.10:2013 |


| Run # | 34 | Test Distance (m) | 10 | Antenna Height(s) | 1 to 4(m) | Results | Pass |
|-------|----|-------------------|----|-------------------|-----------|---------|------|
|-------|----|-------------------|----|-------------------|-----------|---------|------|



| Freq (MHz) | Amplitude (dBuV) | Factor (dB/m) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments      |
|------------|------------------|---------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|---------------|
| 13.567     | 32.1             | 11.6          | 1.0                     | 96.0              | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 24.6              | 50.5                 | -25.9                  | All Radios ON |
| 13.553     | 31.7             | 11.6          | 1.0                     | 237.9             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 24.2              | 50.5                 | -26.3                  | All Radios ON |
| 13.007     | 6.0              | 11.6          | 1.0                     | 20.0              | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -1.5              | 29.5                 | -31.0                  | All Radios ON |
| 14.031     | 5.9              | 11.6          | 1.0                     | 357.9             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -1.6              | 29.5                 | -31.1                  | All Radios ON |
| 13.718     | 9.3              | 11.6          | 1.0                     | 201.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 1.8               | 40.5                 | -38.7                  | All Radios ON |
| 13.309     | 7.2              | 11.6          | 1.0                     | 186.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -0.3              | 40.5                 | -40.8                  | All Radios ON |
| 13.561     | 45.6             | 11.6          | 1.0                     | 146.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 38.1              | 84.0                 | -45.9                  | All Radios ON |
| 13.559     | 42.4             | 11.6          | 1.0                     | 273.0             | 10.0                   | 0.0                       | Para to EUT               | QP       | -19.1                    | 34.9              | 84.0                 | -49.1                  | All Radios ON |
| 13.561     | 38.9             | 11.6          | 1.0                     | 120.0             | 10.0                   | 0.0                       | Para to GND               | QP       | -19.1                    | 31.4              | 84.0                 | -52.6                  | All Radios ON |
| 13.567     | 32.1             | 11.6          | 1.0                     | 96.0              | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 24.6              | 50.5                 | -25.9                  | All Radios ON |

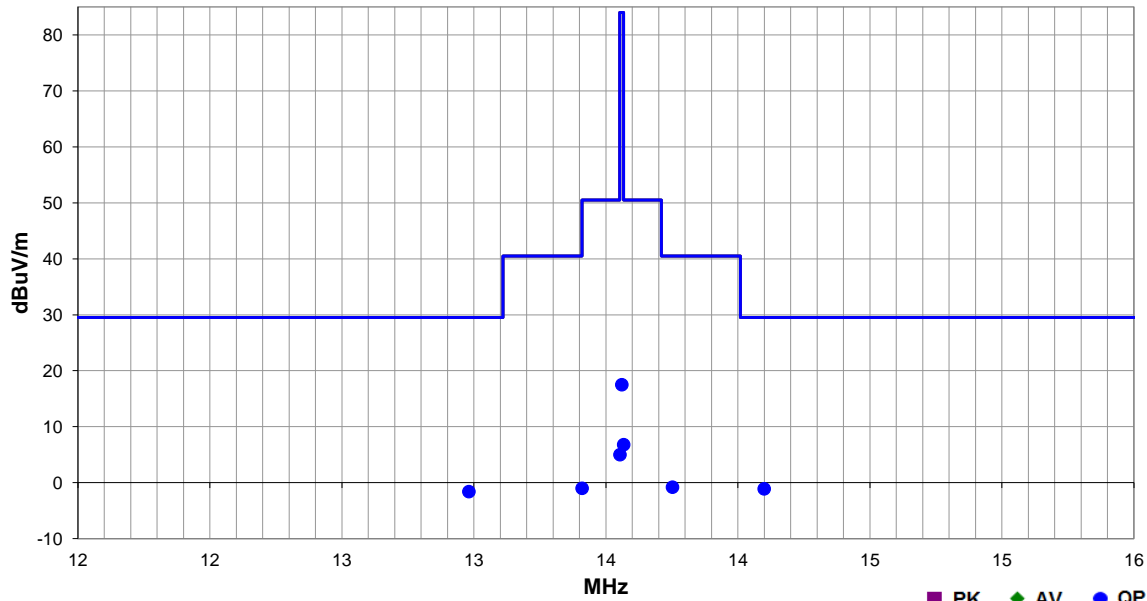
# FIELD STRENGTH OF FUNDAMENTAL



|                 |   |                   |            |  |
|-----------------|---|-------------------|------------|--|
| Work Order:     | ABBO0076  | Date:             | 2021-07-07 | <div>EmRS 2021.05.14.0</div> <div>PSA-ESCI 2021.03.17.0</div>  |
| Project:        | None  | Temperature:      | 20 °C      |  |
| Job Site:       | TX02  | Humidity:         | 57.5% RH   |  |
| Serial Number:  | See Configurations  | Barometric Pres.: | 1014 mbar  |  |
| EUT:            | GLP12220 Input/Output Module  |                   |            | Tested by: Mark Baytan   |
| Configuration:  | 6   |                   |            |  |
| Customer:       | Abbott Laboratories   |                   |            |  |
| Attendees:      | None  |                   |            |  |
| EUT Power:      | 220VAC/60Hz   |                   |            |  |
| Operating Mode: | Transmitting RFID 13.56 MHz   |                   |            |  |
| Deviations:     | None  |                   |            |  |
| Comments:       | Drawer Radio #1. Full transmit power enabled. All emissions were greater than 20 dB below the limit, therefore, measurements not needed at all 3 antenna orientations as stated in ANSI C63.10 Section 6.4.6. |                   |            |  |

|                     |                  |
|---------------------|------------------|
| Test Specifications | Test Method      |
| FCC 15.225:2021     | ANSI C63.10:2013 |

|       |    |                   |    |                   |           |         |      |
|-------|----|-------------------|----|-------------------|-----------|---------|------|
| Run # | 42 | Test Distance (m) | 10 | Antenna Height(s) | 1 to 4(m) | Results | Pass |
|-------|----|-------------------|----|-------------------|-----------|---------|------|



| Freq (MHz) | Amplitude (dBuV) | Factor (dB/m) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|------------|------------------|---------------|-------------------------|-------------------|------------------------|---------------------------|--------------------------|----------|--------------------------|-------------------|----------------------|------------------------|----------|
| 14.099     | 6.4              | 11.6          | 1.0                     | 238.9             | 10.0                   | 0.0                       | Perp to EUT              | QP       | -19.1                    | -1.1              | 29.5                 | -30.6                  | Drawer   |
| 12.981     | 5.9              | 11.6          | 1.0                     | 189.9             | 10.0                   | 0.0                       | Perp to EUT              | QP       | -19.1                    | -1.6              | 29.5                 | -31.1                  | Drawer   |
| 13.752     | 6.7              | 11.6          | 1.0                     | 320.0             | 10.0                   | 0.0                       | Perp to EUT              | QP       | -19.1                    | -0.8              | 40.5                 | -41.3                  | Drawer   |
| 13.410     | 6.5              | 11.6          | 1.0                     | 360.0             | 10.0                   | 0.0                       | Perp to EUT              | QP       | -19.1                    | -1.0              | 40.5                 | -41.5                  | Drawer   |
| 13.567     | 14.3             | 11.6          | 1.0                     | 357.9             | 10.0                   | 0.0                       | Perp to EUT              | QP       | -19.1                    | 6.8               | 50.5                 | -43.7                  | Drawer   |
| 13.553     | 12.5             | 11.6          | 1.0                     | 346.9             | 10.0                   | 0.0                       | Perp to EUT              | QP       | -19.1                    | 5.0               | 50.5                 | -45.5                  | Drawer   |
| 13.560     | 25.0             | 11.6          | 1.0                     | 360.0             | 10.0                   | 0.0                       | Perp to EUT              | QP       | -19.1                    | 17.5              | 84.0                 | -66.5                  | Drawer   |

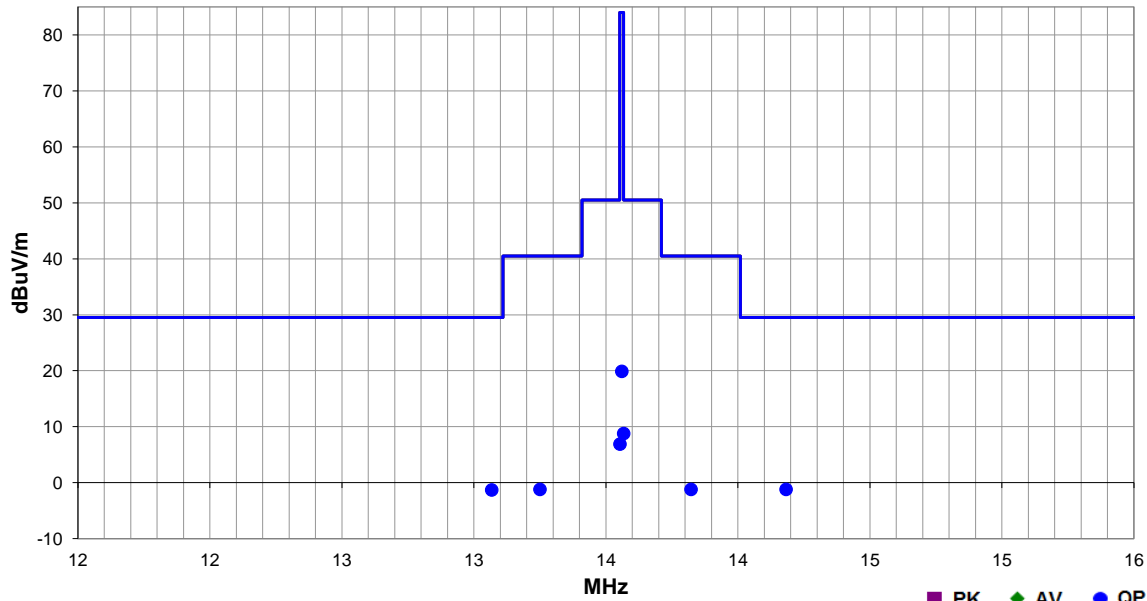
# FIELD STRENGTH OF FUNDAMENTAL



|                 |   |                   |            |   |
|-----------------|---|-------------------|------------|---|
| Work Order:     | ABBO0076  | Date:             | 2021-07-07 | <small>EmuRS 2021.05.14.0</small><br><small>PSA-ESCI 2021.03.17.0</small><br> |
| Project:        | None  | Temperature:      | 20 °C      |   |
| Job Site:       | TX02  | Humidity:         | 57.5% RH   |   |
| Serial Number:  | See Configurations  | Barometric Pres.: | 1014 mbar  |   |
| EUT:            | GLP12220 Input/Output Module  |                   |            | Tested by: Mark Baytan  |
| Configuration:  | 6   |                   |            |   |
| Customer:       | Abbott Laboratories   |                   |            |   |
| Attendees:      | None  |                   |            |   |
| EUT Power:      | 220VAC/60Hz   |                   |            |   |
| Operating Mode: | Transmitting RFID 13.56 MHz   |                   |            |   |
| Deviations:     | None  |                   |            |   |
| Comments:       | Drawer Radio #2. Full transmit power enabled. All emissions were greater than 20 dB below the limit, therefore, measurements not needed at all 3 antenna orientations as stated in ANSI C63.10 Section 6.4.6. |                   |            |   |

|                     |                  |
|---------------------|------------------|
| Test Specifications | Test Method      |
| FCC 15.225:2021     | ANSI C63.10:2013 |


|       |    |                   |    |                   |           |         |      |
|-------|----|-------------------|----|-------------------|-----------|---------|------|
| Run # | 43 | Test Distance (m) | 10 | Antenna Height(s) | 1 to 4(m) | Results | Pass |
|-------|----|-------------------|----|-------------------|-----------|---------|------|



| Freq (MHz) | Amplitude (dBuV) | Factor (dB/m) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|------------|------------------|---------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|----------|
| 14.182     | 6.3              | 11.6          | 1.0                     | 48.0              | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -1.2              | 29.5                 | -30.7                  | Drawer   |
| 13.067     | 6.2              | 11.6          | 1.0                     | 272.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -1.3              | 29.5                 | -30.8                  | Drawer   |
| 13.250     | 6.3              | 11.6          | 1.0                     | 291.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -1.2              | 40.5                 | -41.7                  | Drawer   |
| 13.823     | 6.3              | 11.6          | 1.0                     | 180.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -1.2              | 40.5                 | -41.7                  | Drawer   |
| 13.567     | 16.3             | 11.6          | 1.0                     | 184.9             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 8.8               | 50.5                 | -41.7                  | Drawer   |
| 13.553     | 14.4             | 11.6          | 1.0                     | 189.9             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 6.9               | 50.5                 | -43.6                  | Drawer   |
| 13.560     | 27.4             | 11.6          | 1.0                     | 186.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 19.9              | 84.0                 | -64.1                  | Drawer   |

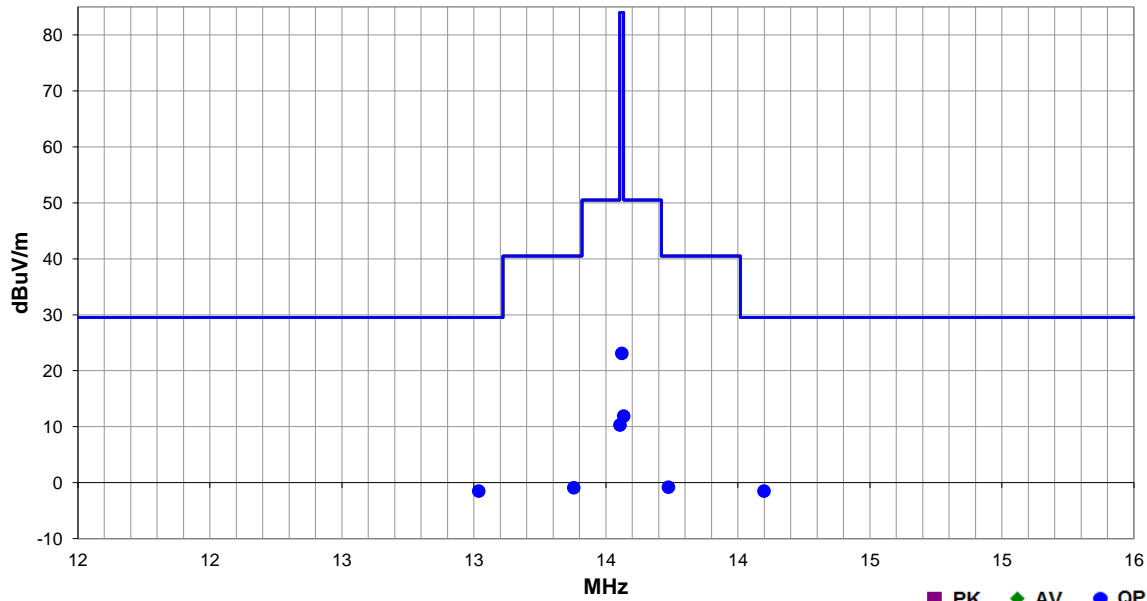
# FIELD STRENGTH OF FUNDAMENTAL



|                 |   |                   |            |  |
|-----------------|---|-------------------|------------|--|
| Work Order:     | ABBO0076  | Date:             | 2021-07-07 |  |
| Project:        | None  | Temperature:      | 20 °C      |  |
| Job Site:       | TX02  | Humidity:         | 57.5% RH   |  |
| Serial Number:  | See Configurations  | Barometric Pres.: | 1014 mbar  | Tested by: Mark Baytan   |
| EUT:            | GLP12220 Input/Output Module  |                   |            |  |
| Configuration:  | 6   |                   |            |  |
| Customer:       | Abbott Laboratories   |                   |            |  |
| Attendees:      | None  |                   |            |  |
| EUT Power:      | 220VAC/60Hz   |                   |            |  |
| Operating Mode: | Transmitting RFID 13.56 MHz   |                   |            |  |
| Deviations:     | None  |                   |            |  |
| Comments:       | Drawer Radio #3. Full transmit power enabled. All emissions were greater than 20 dB below the limit, therefore, measurements not needed at all 3 antenna orientations as stated in ANSI C63.10 Section 6.4.6. |                   |            |  |

|                     |                  |
|---------------------|------------------|
| Test Specifications | Test Method      |
| FCC 15.225:2021     | ANSI C63.10:2013 |


|       |    |                   |    |                   |           |         |      |
|-------|----|-------------------|----|-------------------|-----------|---------|------|
| Run # | 44 | Test Distance (m) | 10 | Antenna Height(s) | 1 to 4(m) | Results | Pass |
|-------|----|-------------------|----|-------------------|-----------|---------|------|



| Freq (MHz) | Amplitude (dBuV) | Factor (dB/m) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|------------|------------------|---------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|----------|
| 13.018     | 6.0              | 11.6          | 1.0                     | 148.9             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -1.5              | 29.5                 | -31.0                  | Drawer   |
| 14.099     | 6.0              | 11.6          | 1.0                     | 60.0              | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -1.5              | 29.5                 | -31.0                  | Drawer   |
| 13.567     | 19.4             | 11.6          | 1.0                     | 186.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 11.9              | 50.5                 | -38.6                  | Drawer   |
| 13.553     | 17.8             | 11.6          | 1.0                     | 196.9             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 10.3              | 50.5                 | -40.2                  | Drawer   |
| 13.737     | 6.7              | 11.6          | 1.0                     | 340.9             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -0.8              | 40.5                 | -41.3                  | Drawer   |
| 13.378     | 6.6              | 11.6          | 1.0                     | 283.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -0.9              | 40.5                 | -41.4                  | Drawer   |
| 13.560     | 30.6             | 11.6          | 1.0                     | 206.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 23.1              | 84.0                 | -60.9                  | Drawer   |

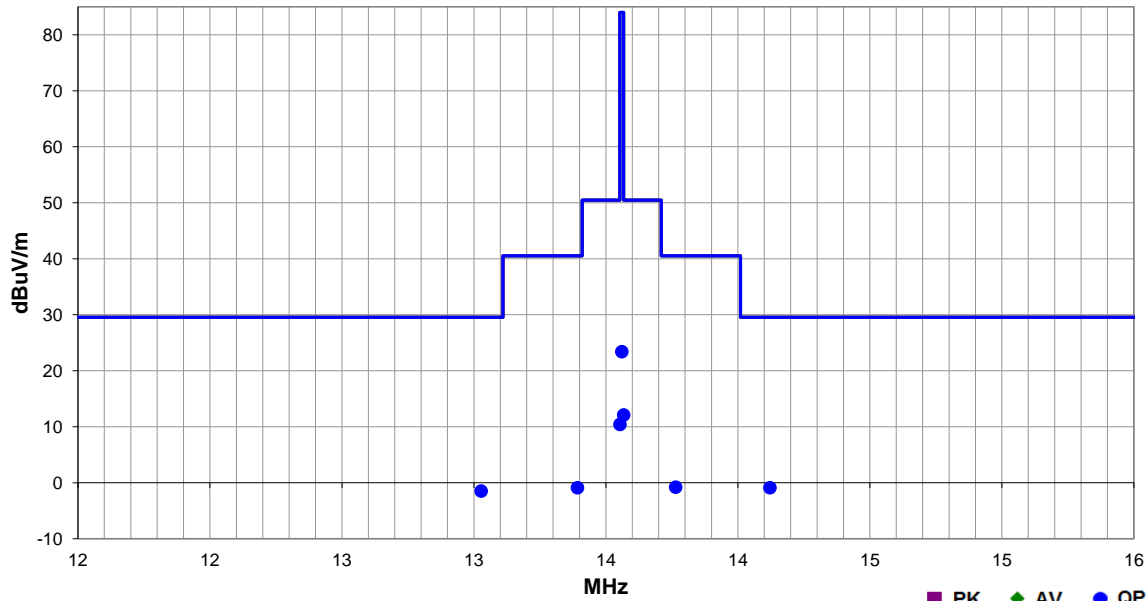
# FIELD STRENGTH OF FUNDAMENTAL



|                 |   |                   |            |   |
|-----------------|---|-------------------|------------|---|
| Work Order:     | ABBO0076  | Date:             | 2021-07-07 | <div>EmuRS 2021.05.14.0</div> <div>PSA-ESCI 2021.03.17.0</div>  |
| Project:        | None  | Temperature:      | 20 °C      |   |
| Job Site:       | TX02  | Humidity:         | 57.5% RH   |   |
| Serial Number:  | See Configurations  | Barometric Pres.: | 1014 mbar  |   |
| EUT:            | GLP12220 Input/Output Module  |                   |            | Tested by: Mark Baytan  |
| Configuration:  | 6   |                   |            |   |
| Customer:       | Abbott Laboratories   |                   |            |   |
| Attendees:      | None  |                   |            |   |
| EUT Power:      | 220VAC/60Hz   |                   |            |   |
| Operating Mode: | Transmitting RFID 13.56 MHz   |                   |            |   |
| Deviations:     | None  |                   |            |   |
| Comments:       | Drawer Radio #4. Full transmit power enabled. All emissions were greater than 20 dB below the limit, therefore, measurements not needed at all 3 antenna orientations as stated in ANSI C63.10 Section 6.4.6. |                   |            |   |

|                     |                  |
|---------------------|------------------|
| Test Specifications | Test Method      |
| FCC 15.225:2021     | ANSI C63.10:2013 |

|       |    |                   |    |                   |           |         |      |
|-------|----|-------------------|----|-------------------|-----------|---------|------|
| Run # | 45 | Test Distance (m) | 10 | Antenna Height(s) | 1 to 4(m) | Results | Pass |
|-------|----|-------------------|----|-------------------|-----------|---------|------|



| Freq (MHz) | Amplitude (dBuV) | Factor (dB/m) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|------------|------------------|---------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|----------|
| 14.122     | 6.6              | 11.6          | 1.0                     | 265.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -0.9              | 29.5                 | -30.4                  | Drawer   |
| 13.027     | 6.0              | 11.6          | 1.0                     | 88.9              | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -1.5              | 29.5                 | -31.0                  | Drawer   |
| 13.567     | 19.6             | 11.6          | 1.0                     | 40.9              | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 12.1              | 50.5                 | -38.4                  | Drawer   |
| 13.553     | 17.9             | 11.6          | 1.0                     | 46.9              | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 10.4              | 50.5                 | -40.1                  | Drawer   |
| 13.764     | 6.7              | 11.6          | 1.0                     | 124.9             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -0.8              | 40.5                 | -41.3                  | Drawer   |
| 13.392     | 6.6              | 11.6          | 1.0                     | 230.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -0.9              | 40.5                 | -41.4                  | Drawer   |
| 13.560     | 30.9             | 11.6          | 1.0                     | 51.0              | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 23.4              | 84.0                 | -60.6                  | Drawer   |

# FIELD STRENGTH OF SPURIOUS EMISSIONS (Less Than 30 MHz)



PSA-ESCI 2021.03.17.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

## MODES OF OPERATION

Transmitting RFID 13.56 MHz

## POWER SETTINGS INVESTIGATED

220VAC/60Hz

## CONFIGURATIONS INVESTIGATED

ABBO0076 - 6

## FREQUENCY RANGE INVESTIGATED

|                 |         |                |        |
|-----------------|---------|----------------|--------|
| Start Frequency | 490 kHz | Stop Frequency | 30 MHz |
|-----------------|---------|----------------|--------|

## SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

## TEST EQUIPMENT

| Description                  | Manufacturer  | Model          | ID  | Last Cal.  | Cal. Due   |
|------------------------------|---------------|----------------|-----|------------|------------|
| Analyzer - Spectrum Analyzer | Agilent       | E4440A         | AFD | 2020-07-30 | Out of Cal |
| Antenna - Loop               | ETS Lindgren  | 6502           | AZM | 2020-07-09 | 2022-07-09 |
| Cable                        | Northwest EMC | RE 9kHz - 1GHz | TXB | 2021-05-24 | 2022-05-24 |

## TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was continuously transmitting while set to the channel specified.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These "pre-scans" are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). An active loop antenna was used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector  
PK = Peak Detector  
AV = RMS Detector

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

As outlined in 15.209(e), 15.31(f)(2), and RSS-GEN, 6.5, measurements may be performed at a distance closer than what is specified with the limit. The limit at the specified distance is shown on the data sheet. Measurements are made at a closer distance and the data is adjusted using a distance correction factor of 40dB/decade for comparison to the limit.



# FIELD STRENGTH OF SPURIOUS EMISSIONS (Less Than 30 MHz)



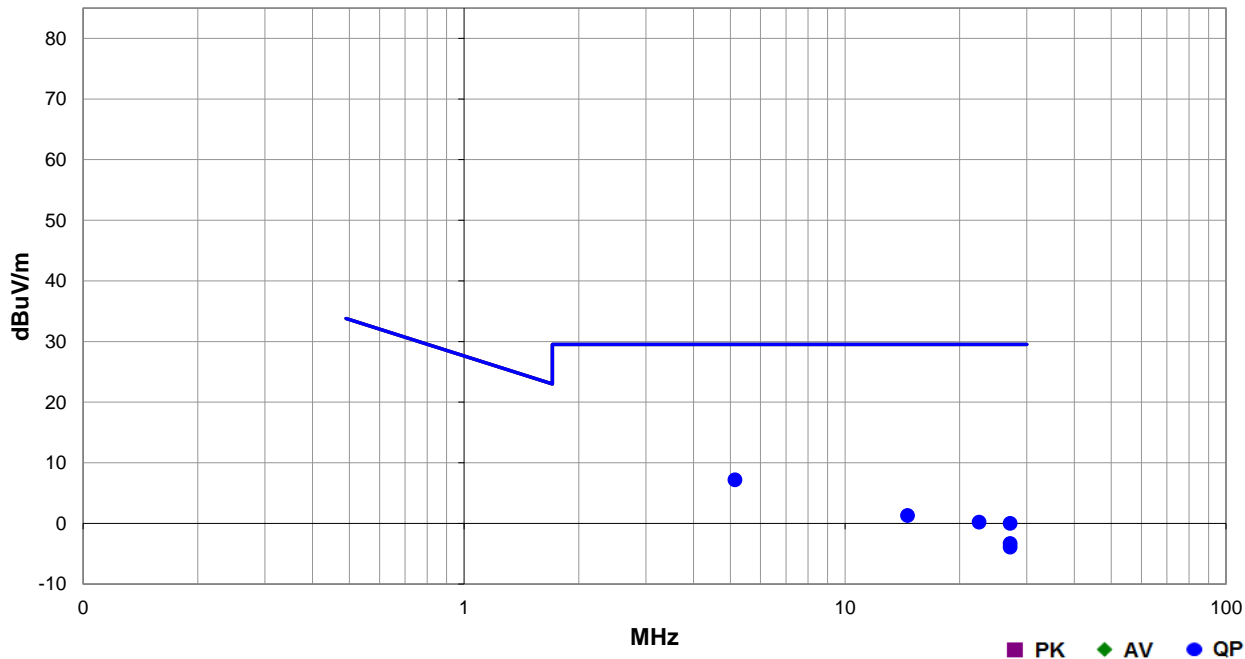
EmiR5 2021.05.14.0

PSA-ESCI 2021.03.17.0

|                 |   |                   |            |                        |
|-----------------|---|-------------------|------------|------------------------|
| Work Order:     | ABBO0076  | Date:             | 2021-07-07 |                        |
| Project:        | None  | Temperature:      | 20 °C      |                        |
| Job Site:       | TX02  | Humidity:         | 57.5% RH   |                        |
| Serial Number:  | See Configurations  | Barometric Pres.: | 1014 mbar  | Tested by: Mark Baytan |
| EUT:            | GLP12220 Input/Output Module                                |                   |            |                        |
| Configuration:  | 6   |                   |            |                        |
| Customer:       | Abbott Laboratories   |                   |            |                        |
| Attendees:      | None  |                   |            |                        |
| EUT Power:      | 220VAC/60Hz   |                   |            |                        |
| Operating Mode: | Transmitting RFID 13.56 MHz                                 |                   |            |                        |
| Deviations:     | None  |                   |            |                        |
| Comments:       | All Radios ON. Test mode only. Full transmit power enabled. |                   |            |                        |

|                     |                  |
|---------------------|------------------|
| Test Specifications | Test Method      |
| FCC 15.225:2021     | ANSI C63.10:2013 |

|       |    |                   |    |                   |      |         |      |
|-------|----|-------------------|----|-------------------|------|---------|------|
| Run # | 33 | Test Distance (m) | 10 | Antenna Height(s) | 1(m) | Results | Pass |
|-------|----|-------------------|----|-------------------|------|---------|------|



| Freq (MHz) | Amplitude (dBuV) | Factor (dB/m) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments      |
|------------|------------------|---------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|---------------|
| 5.140      | 14.6             | 11.7          | 1.0                     | 237.9             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 7.2               | 29.5                 | -22.3                  | All Radios ON |
| 14.596     | 8.9              | 11.5          | 1.0                     | 237.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 1.3               | 29.5                 | -28.2                  | All Radios ON |
| 22.496     | 8.4              | 10.9          | 1.0                     | 150.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 0.2               | 29.5                 | -29.3                  | All Radios ON |
| 27.120     | 9.1              | 10.0          | 1.0                     | 296.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 0.0               | 29.5                 | -29.5                  | All Radios ON |
| 27.122     | 5.8              | 10.0          | 1.0                     | 79.0              | 10.0                   | 0.0                       | Para to EUT               | QP       | -19.1                    | -3.3              | 29.5                 | -32.8                  | All Radios ON |
| 27.119     | 5.2              | 10.0          | 1.0                     | 133.0             | 10.0                   | 0.0                       | Para to GND               | QP       | -19.1                    | -3.9              | 29.5                 | -33.4                  | All Radios ON |

# FIELD STRENGTH OF SPURIOUS EMISSIONS (Greater than 30 MHz)



PSA-ESCI 2021.03.17.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

## MODES OF OPERATION

Transmitting RFID 13.56 MHz

## POWER SETTINGS INVESTIGATED

220VAC/60Hz

## CONFIGURATIONS INVESTIGATED

ABBO0076 - 6

## FREQUENCY RANGE INVESTIGATED

|                 |        |                |           |
|-----------------|--------|----------------|-----------|
| Start Frequency | 30 MHz | Stop Frequency | 18000 MHz |
|-----------------|--------|----------------|-----------|

## SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

## TEST EQUIPMENT

| Description                  | Manufacturer       | Model                  | ID  | Last Cal.  | Cal. Due   |
|------------------------------|--------------------|------------------------|-----|------------|------------|
| Cable                        | Northwest EMC      | RE 9kHz - 1GHz         | TXB | 2021-05-24 | 2022-05-24 |
| Cable                        | Northwest EMC      | 1-8.2 GHz              | TXC | 2021-05-24 | 2022-05-24 |
| Cable                        | Northwest EMC      | 8-18 GHz               | TXD | 2021-04-30 | 2022-04-30 |
| Amplifier - Pre-Amplifier    | Fairview Microwave | FMAM63001              | PAS | 2021-05-24 | 2022-05-24 |
| Amplifier - Pre-Amplifier    | Miteq              | AMF-3D-00100800-32-13P | PAJ | 2021-05-24 | 2022-05-24 |
| Amplifier - Pre-Amplifier    | Miteq              | AMF-6F-12001800-30-10P | PAL | 2020-09-17 | 2021-09-17 |
| Amplifier - Pre-Amplifier    | Cernex             | FMAM63001              | PAX | 2021-02-23 | 2022-02-23 |
| Filter - Low Pass            | Micro-Tronics      | LPM50004               | HHV | 2021-07-27 | 2022-07-27 |
| Antenna - Biconilog          | ETS Lindgren       | 3143B                  | AYF | 2020-06-25 | 2022-06-25 |
| Antenna - Standard Gain      | ETS Lindgren       | 3160-07                | AJF | NCR        | NCR        |
| Antenna - Standard Gain      | ETS Lindgren       | 3160-08                | AJG | NCR        | NCR        |
| Antenna - Double Ridge       | ETS Lindgren       | 3115                   | AJL | 2020-10-20 | 2021-10-20 |
| Analyzer - Spectrum Analyzer | Agilent            | E4440A                 | AFD | 2020-07-30 | 2021-07-30 |

## TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was transmitting while set at the operating channel.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These "pre-scans" are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

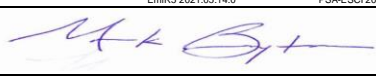
QP = Quasi-Peak Detector  
PK = Peak Detector  
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

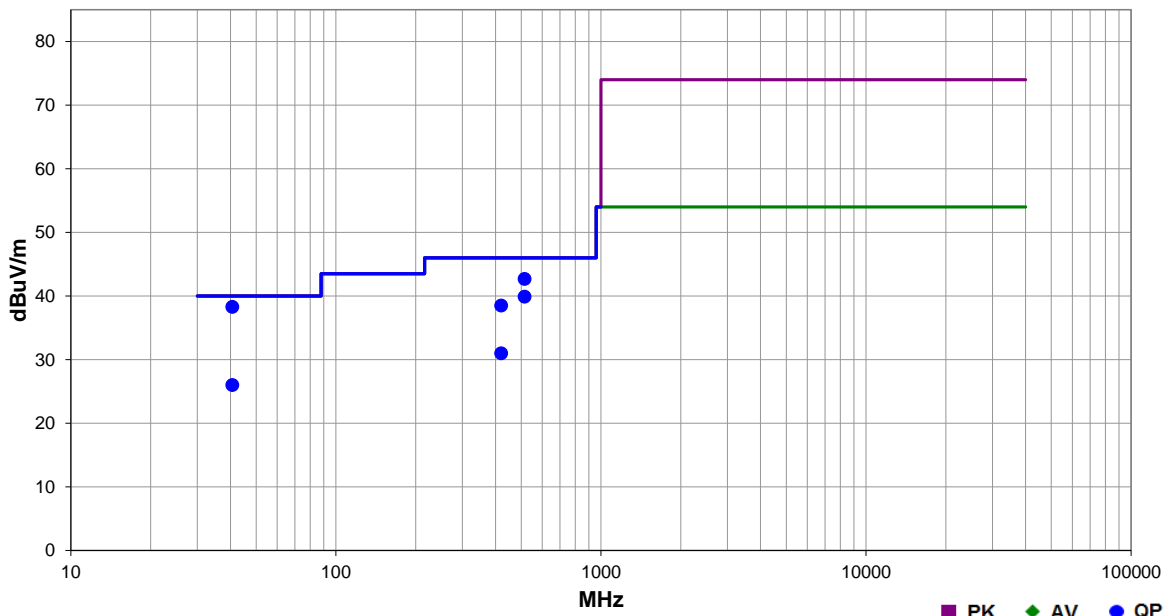
# FIELD STRENGTH OF SPURIOUS EMISSIONS (Greater than 30 MHz)



|                 |   |                   |            |  |
|-----------------|---|-------------------|------------|--|
| Work Order:     | ABBO0076  | Date:             | 2021-07-07 |  |
| Project:        | None  | Temperature:      | 20 °C      |  |
| Job Site:       | TX02  | Humidity:         | 57.5% RH   |  |
| Serial Number:  | See Configurations  | Barometric Pres.: | 1014 mbar  | Tested by: Mark Baytan   |
| EUT:            | GLP12220 Input/Output Module                                |                   |            |  |
| Configuration:  | 6   |                   |            |  |
| Customer:       | Abbott Laboratories   |                   |            |  |
| Attendees:      | None  |                   |            |  |
| EUT Power:      | 220VAC/60Hz   |                   |            |  |
| Operating Mode: | Transmitting RFID 13.56 MHz                                 |                   |            |  |
| Deviations:     | None  |                   |            |  |
| Comments:       | All Radios ON. Test mode only. Full transmit power enabled. |                   |            |  |

|                     |                  |
|---------------------|------------------|
| Test Specifications | Test Method      |
| FCC 15.225:2022     | ANSI C63.10:2013 |

|       |    |                   |   |                   |           |         |      |
|-------|----|-------------------|---|-------------------|-----------|---------|------|
| Run # | 32 | Test Distance (m) | 3 | Antenna Height(s) | 1 to 4(m) | Results | Pass |
|-------|----|-------------------|---|-------------------|-----------|---------|------|



| Freq (MHz) | Amplitude (dBuV) | Factor (dB/m) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) |
|------------|------------------|---------------|-------------------------|-------------------|------------------------|---------------------------|--------------------------|----------|--------------------------|-------------------|----------------------|------------------------|
| 40.680     | 61.5             | -23.2         | 1.0                     | 132.0             | 3.0                    | 0.0                       | Vert                     | QP       | 0.0                      | 38.3              | 40.0                 | -1.7                   |
| 515.285    | 52.4             | -9.7          | 1.0                     | 201.9             | 3.0                    | 0.0                       | Vert                     | QP       | 0.0                      | 42.7              | 46.0                 | -3.3                   |
| 515.283    | 49.6             | -9.7          | 2.36                    | 266.0             | 3.0                    | 0.0                       | Horz                     | QP       | 0.0                      | 39.9              | 46.0                 | -6.1                   |
| 420.367    | 51.4             | -12.9         | 1.03                    | 128.0             | 3.0                    | 0.0                       | Vert                     | QP       | 0.0                      | 38.5              | 46.0                 | -7.5                   |
| 40.685     | 49.2             | -23.2         | 2.65                    | 153.9             | 3.0                    | 0.0                       | Horz                     | QP       | 0.0                      | 26.0              | 40.0                 | -14.0                  |
| 420.107    | 43.9             | -12.9         | 1.0                     | 307.0             | 3.0                    | 0.0                       | Horz                     | QP       | 0.0                      | 31.0              | 46.0                 | -15.0                  |

# FREQUENCY STABILITY



XMI 2020.12.30.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## TEST EQUIPMENT

| Description                    | Manufacturer              | Model                  | ID  | Last Cal.  | Cal. Due   |
|--------------------------------|---------------------------|------------------------|-----|------------|------------|
| Meter - Multimeter             | Fluke                     | 77-IV                  | MLT | 2020-10-15 | 2023-10-15 |
| Chamber - Temperature/Humidity | Cincinnati Sub Zero (CSZ) | ZPH-8-2-SCT/AC         | TBH | NCR        | NCR        |
| Transformer                    | Staco Energy Products Co. | 3PN2520B               | XFZ | NCR        | NCR        |
| Thermometer                    | Omega Engineering, Inc.   | HH311                  | DUI | 2021-02-02 | 2024-02-02 |
| Probe - Near Field Set         | ETS Lindgren              | 7405                   | IPS | NCR        | NCR        |
| Cable                          | UtiFlex Micro-Coax        | UFD1150A-1-0720-200200 | TXJ | 2020-09-22 | 2021-09-22 |
| Analyzer - Spectrum Analyzer   | Keysight                  | N9010A                 | AFN | 2021-01-06 | 2022-01-06 |

## TEST DESCRIPTION

The spectrum analyzer is equipped with a precision frequency reference that exceeds the stability requirement of the EUT.

Measurements were made on the single transmit frequency as called out on the data sheets. Testing was done while the EUT was continuously polling.

The primary supply voltage was varied from 85 % to 115% of the nominal voltage while at ambient temperature. Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range of -20 ° to +50° C and at 10°C intervals.


The requirement of a frequency tolerance of  $\pm 0.01\%$  is equivalent to 100 ppm  
The formula to check for compliance is:

$$\text{ppm} = (\text{Measured Frequency} / \text{Measured Nominal Frequency} - 1) * 1,000,000$$

# FREQUENCY STABILITY



TstTx 2021.03.19.1 XMR 2020.12.30.0

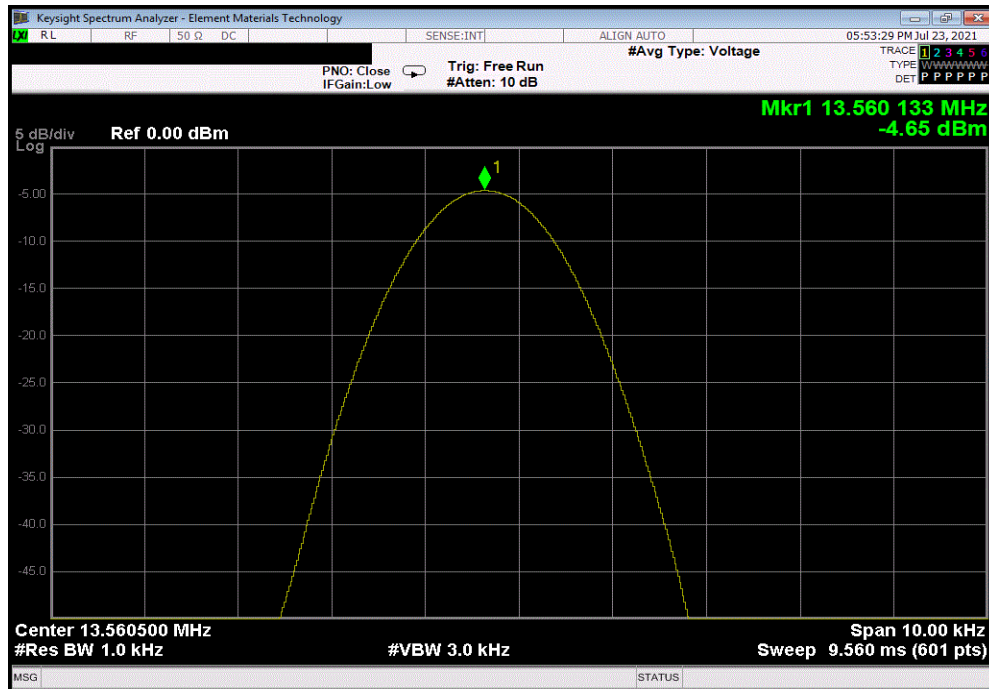
|                                   |                           |   |                     |
|-----------------------------------|---------------------------|---|---------------------|
| EUT: GLP12220 Input/Output Module |                           | Work Order: ABBO0076  |                     |
| Serial Number: ENG05-DR           |                           | Date: 24-Jul-21   |                     |
| Customer: Abbott Laboratories     |                           | Temperature: 25.1 °C  |                     |
| Attendees: Don Mendell            |                           | Humidity: 48.4% RH  |                     |
| Project: None                     |                           | Barometric Pres.: 1019 mbar   |                     |
| Tested by: Mark Baytan            |                           | Power: 220VAC/60Hz  |                     |
|                                   |                           | Job Site: TX05  |                     |
| TEST SPECIFICATIONS               |                           | Test Method   |                     |
| FCC 15.225:2021                   |                           | ANSI C63.10:2013  |                     |
| COMMENTS                          |                           |   |                     |
| Drawer Reader Radio.              |                           |   |                     |
| DEVIATIONS FROM TEST STANDARD     |                           |   |                     |
| None                              |                           |   |                     |
| Configuration #                   | 2                         | Signature  |                     |
|                                   |                           | Measured Value (MHz)  | Nominal Value (MHz) |
|                                   |                           | Error (ppm)   | Limit (ppm)         |
|                                   |                           |   | Results             |
| Normal Voltage                    |                           |   |                     |
|                                   | Mid Channel, 13.56 MHz    | 13.56013333   | 13.56013333         |
|                                   | Extreme Voltage +15%      |   |                     |
|                                   | Mid Channel, 13.56 MHz    | 13.56011633   | 13.56013333         |
|                                   | Extreme Voltage -15%      |   |                     |
|                                   | Mid Channel, 13.56 MHz    | 13.56011633   | 13.56013333         |
|                                   | Extreme Temperature +50°C |   |                     |
|                                   | Mid Channel, 13.56 MHz    | 13.559983   | 13.56013333         |
|                                   | Extreme Temperature +40°C |   |                     |
|                                   | Mid Channel, 13.56 MHz    | 13.560033   | 13.56013333         |
|                                   | Extreme Temperature +30°C |   |                     |
|                                   | Mid Channel, 13.56 MHz    | 13.56006633   | 13.56013333         |
|                                   | Extreme Temperature +20°C |   |                     |
|                                   | Mid Channel, 13.56 MHz    | 13.560133   | 13.56013333         |
|                                   | Extreme Temperature +10°C |   |                     |
|                                   | Mid Channel, 13.56 MHz    | 13.56015  | 13.56013333         |
|                                   | Extreme Temperature 0°C   |   |                     |
|                                   | Mid Channel, 13.56 MHz    | 13.56016667   | 13.56013333         |
|                                   | Extreme Temperature -10°C |   |                     |
|                                   | Mid Channel, 13.56 MHz    | 13.560183   | 13.56013333         |
|                                   | Extreme Temperature -20°C |   |                     |
|                                   | Mid Channel, 13.56 MHz    | 13.560083   | 13.56013333         |

# FREQUENCY STABILITY

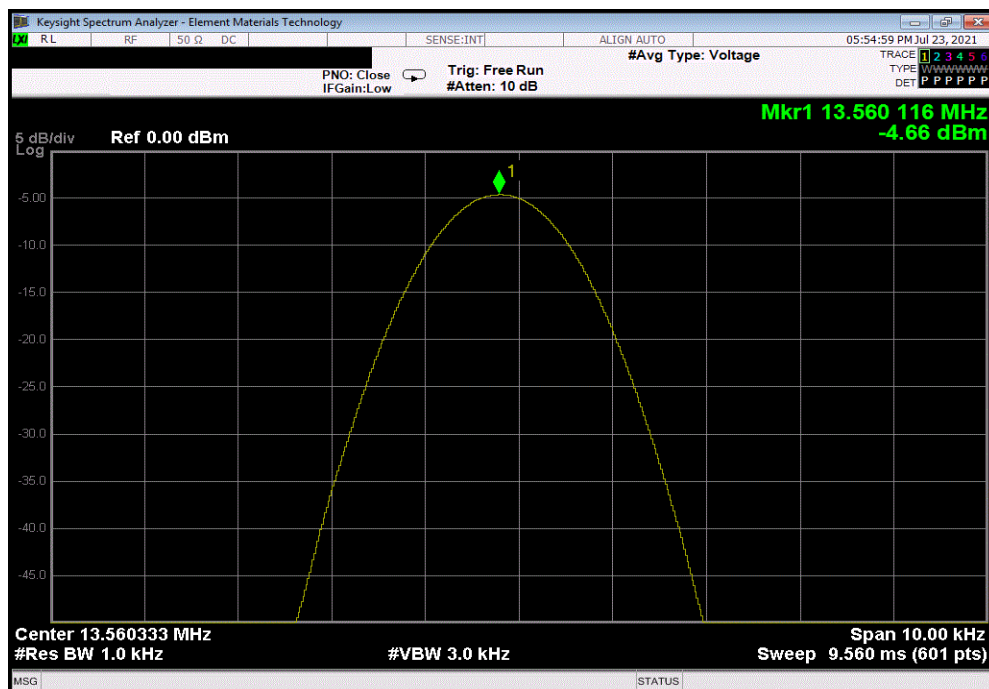


TbTx 2021.03.19.1 XMt 2020.12.30.0

| Normal Voltage, Mid Channel, 13.56 MHz |                      |                     |             |             |         |
|--|----------------------|---------------------|-------------|-------------|---------|
|  | Measured Value (MHz) | Nominal Value (MHz) | Error (ppm) | Limit (ppm) | Results |
|  | 13.56013333          | 13.56013333         | 0.000221237 | 100         | Pass    |



| Extreme Voltage +15%, Mid Channel, 13.56 MHz |                      |                     |              |             |         |
|--|----------------------|---------------------|--------------|-------------|---------|
|  | Measured Value (MHz) | Nominal Value (MHz) | Error (ppm)  | Limit (ppm) | Results |
|  | 13.56011633          | 13.56013333         | -1.253453752 | 100         | Pass    |

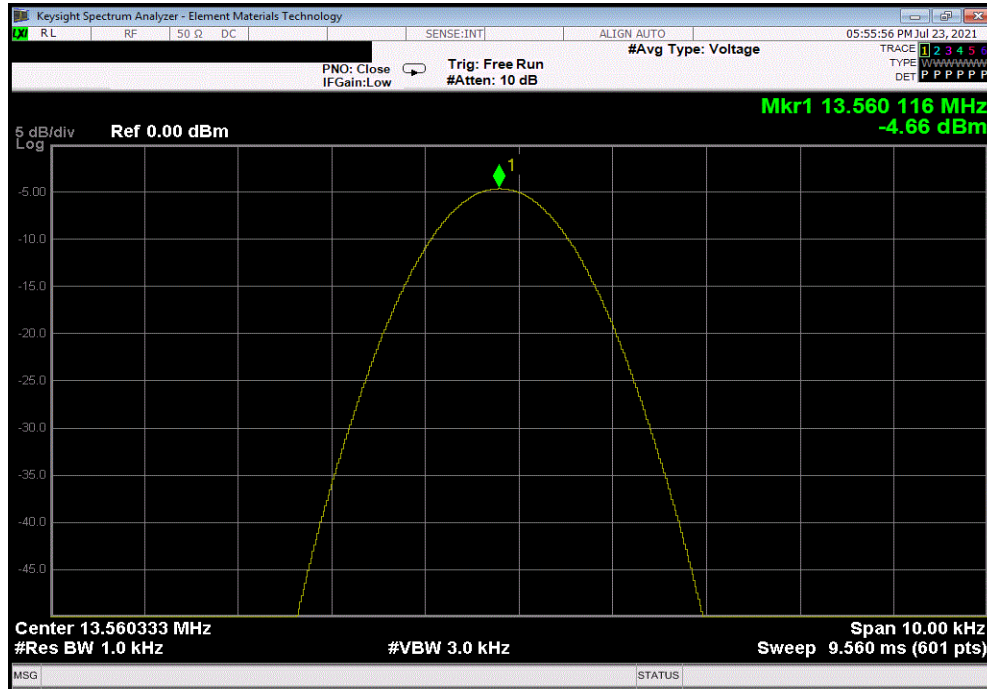


# FREQUENCY STABILITY

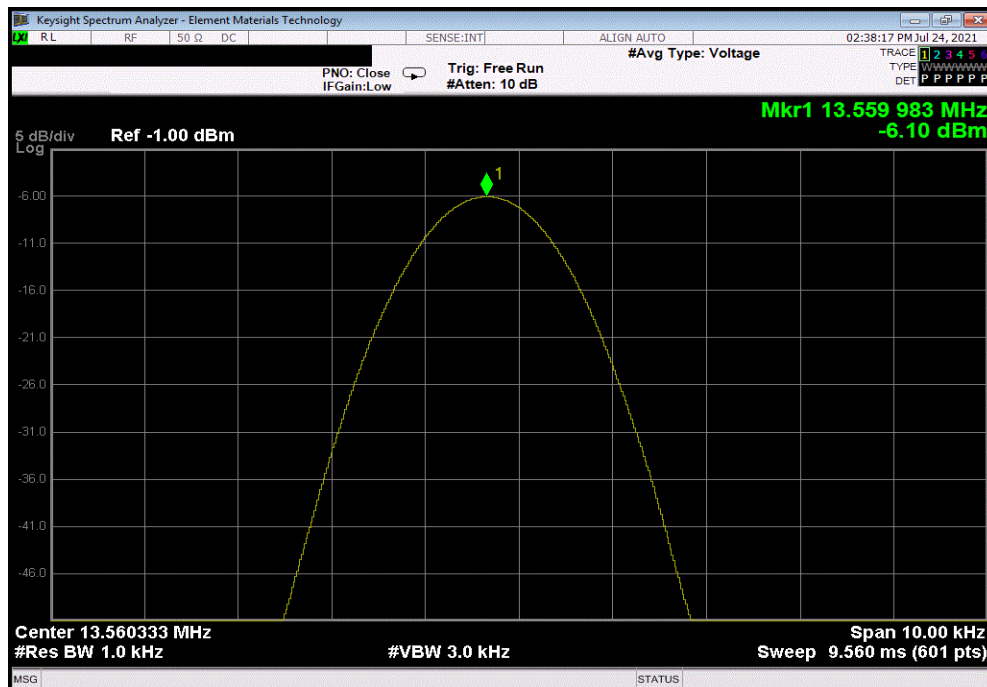


TbTtX 2021.03.19.1 XMt 2020.12.30.0

| Extreme Voltage -15%, Mid Channel, 13.56 MHz |                      |                     |              |             |         |
|--|----------------------|---------------------|--------------|-------------|---------|
|  | Measured Value (MHz) | Nominal Value (MHz) | Error (ppm)  | Limit (ppm) | Results |
|  | 13.56011633          | 13.56013333         | -1.253453752 | 100         | Pass    |



| Extreme Temperature +50°C, Mid Channel, 13.56 MHz |                      |                     |              |             |         |
|---|----------------------|---------------------|--------------|-------------|---------|
|   | Measured Value (MHz) | Nominal Value (MHz) | Error (ppm)  | Limit (ppm) | Results |
|   | 13.559983            | 13.56013333         | -11.08617418 | 100         | Pass    |

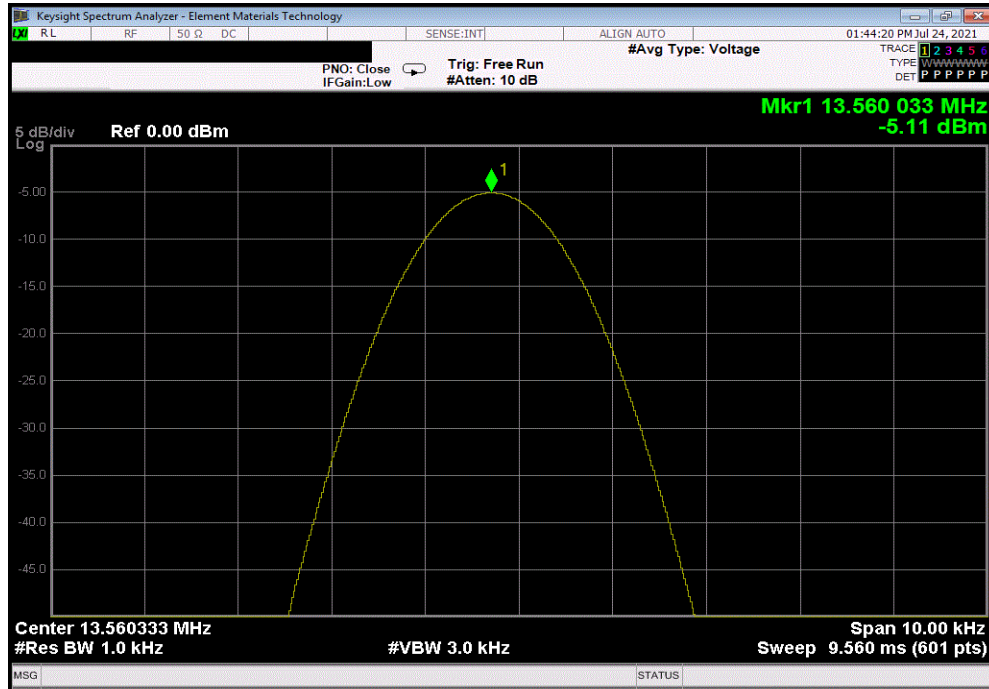


# FREQUENCY STABILITY

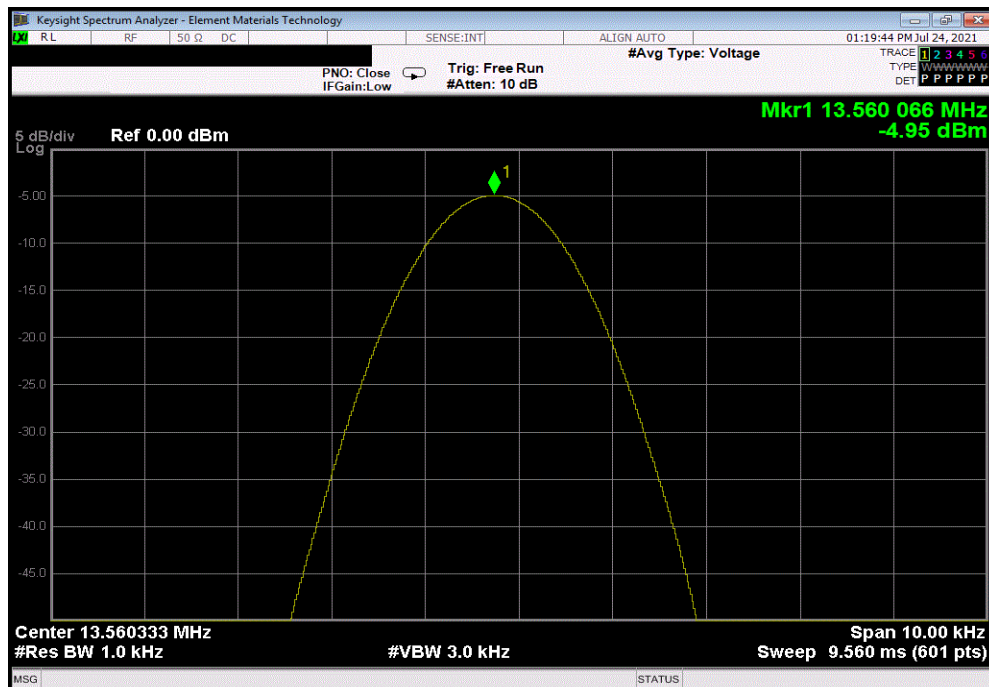


TbTx 2021.03.19.1 XMt 2020.12.30.0

| Extreme Temperature +40°C, Mid Channel, 13.56 MHz |                      |                     |              |             |         |
|---|----------------------|---------------------|--------------|-------------|---------|
|   | Measured Value (MHz) | Nominal Value (MHz) | Error (ppm)  | Limit (ppm) | Results |
|   | 13.560033            | 13.56013333         | -7.398894801 | 100         | Pass    |



| Extreme Temperature +30°C, Mid Channel, 13.56 MHz |                      |                     |              |             |         |
|---|----------------------|---------------------|--------------|-------------|---------|
|   | Measured Value (MHz) | Nominal Value (MHz) | Error (ppm)  | Limit (ppm) | Results |
|   | 13.56006633          | 13.56013333         | -4.940733131 | 100         | Pass    |



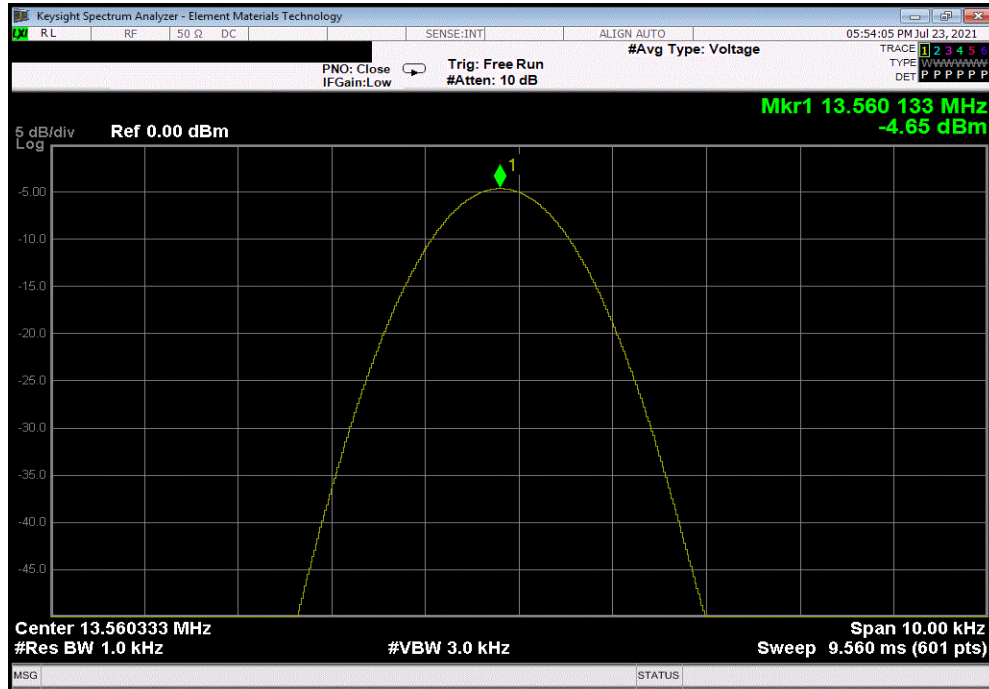


# FREQUENCY STABILITY

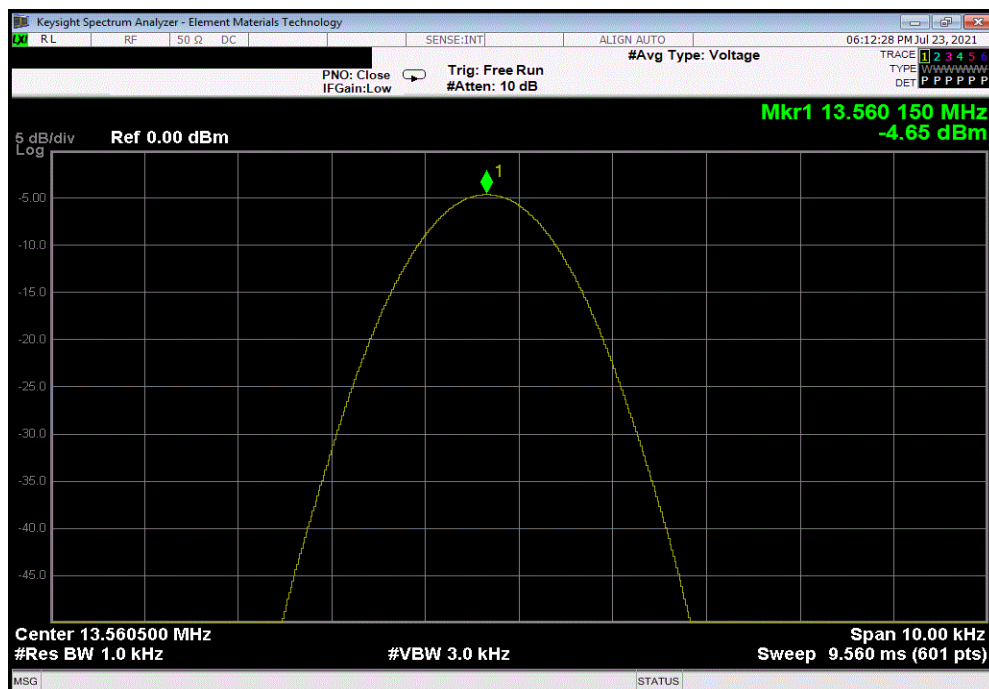


TbTx 2021.03.19.1 XMt 2020.12.30.0

| Extreme Temperature +20°C, Mid Channel, 13.56 MHz |                      |                     |              |             |         |
|---|----------------------|---------------------|--------------|-------------|---------|
|   | Measured Value (MHz) | Nominal Value (MHz) | Error (ppm)  | Limit (ppm) | Results |
|   | 13.560133            | 13.56013333         | -0.024336044 | 100         | Pass    |



| Extreme Temperature +10°C, Mid Channel, 13.56 MHz |                      |                     |             |             |         |
|---|----------------------|---------------------|-------------|-------------|---------|
|   | Measured Value (MHz) | Nominal Value (MHz) | Error (ppm) | Limit (ppm) | Results |
|   | 13.56015             | 13.56013333         | 1.229338945 | 100         | Pass    |

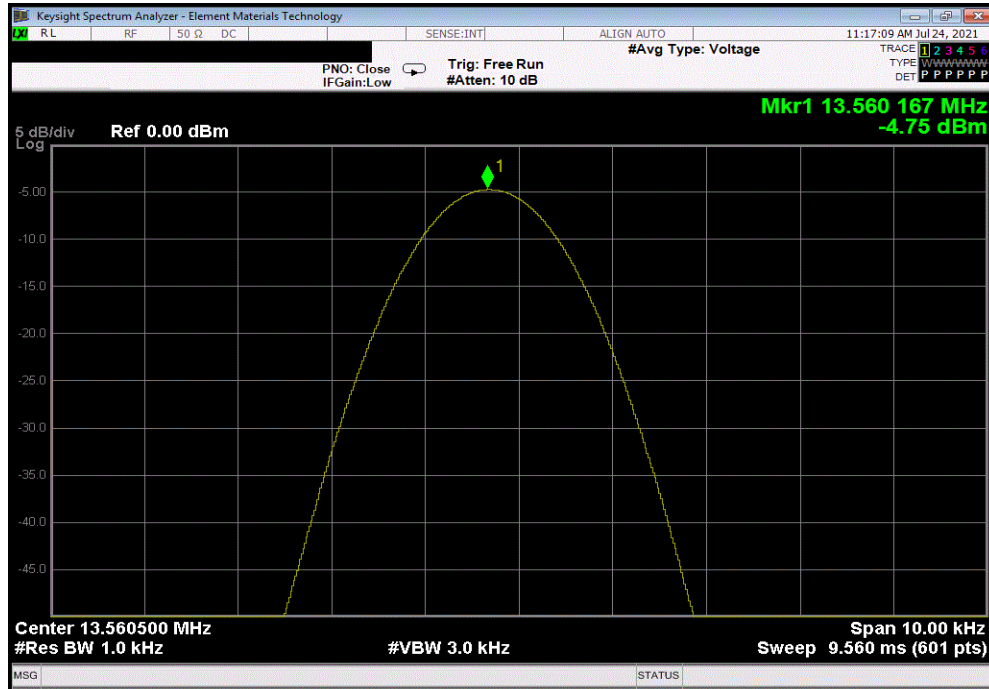


# FREQUENCY STABILITY

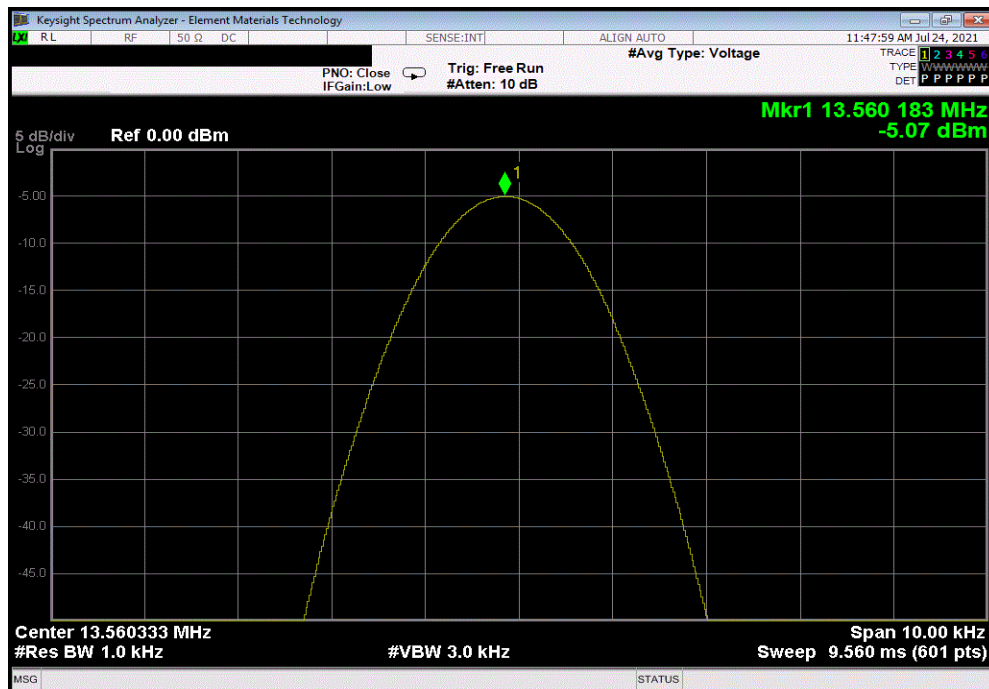


TbTx 2021.03.19.1 XMt 2020.12.30.0

| Extreme Temperature 0°C, Mid Channel, 13.56 MHz |                      |                     |             |             |         |
|---|----------------------|---------------------|-------------|-------------|---------|
|   | Measured Value (MHz) | Nominal Value (MHz) | Error (ppm) | Limit (ppm) | Results |
|   | 13.56016667          | 13.56013333         | 2.458456653 | 100         | Pass    |



| Extreme Temperature -10°C, Mid Channel, 13.56 MHz |                      |                     |             |             |         |
|---|----------------------|---------------------|-------------|-------------|---------|
|   | Measured Value (MHz) | Nominal Value (MHz) | Error (ppm) | Limit (ppm) | Results |
|   | 13.560183            | 13.56013333         | 3.662943335 | 100         | Pass    |

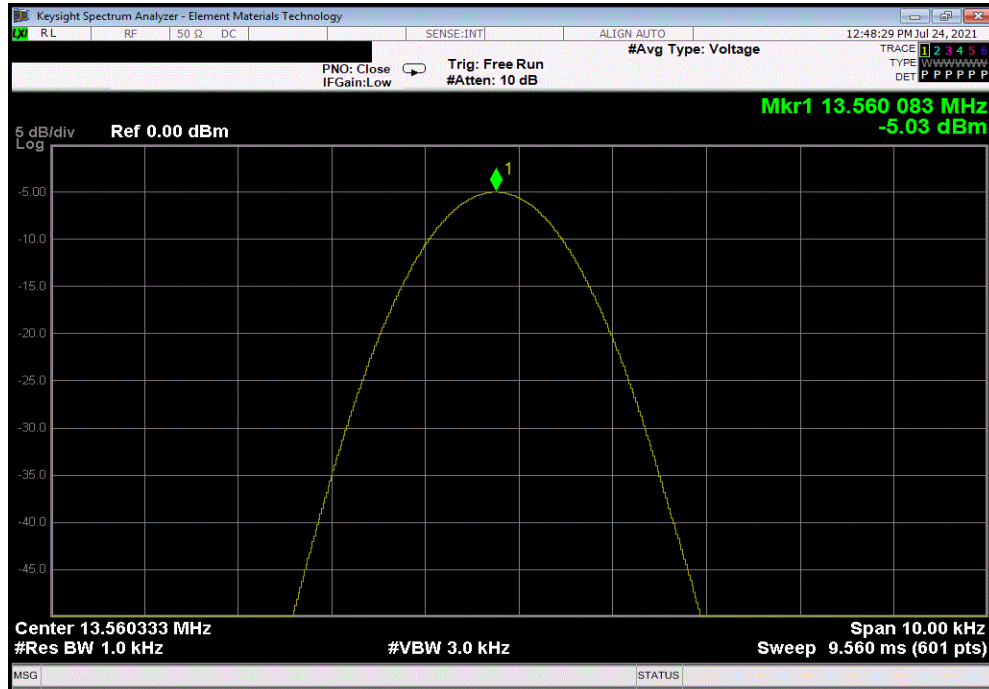


# FREQUENCY STABILITY



TbTx 2021.03.19.1 XMt 2020.12.30.0

| Extreme Temperature -20°C, Mid Channel, 13.56 MHz |                      |                     |              |             |         |
|---|----------------------|---------------------|--------------|-------------|---------|
|   | Measured Value (MHz) | Nominal Value (MHz) | Error (ppm)  | Limit (ppm) | Results |
|   | 13.560083            | 13.56013333         | -3.711615422 | 100         | Pass    |



# OCCUPIED BANDWIDTH



XMIT 2020.12.30.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## TEST EQUIPMENT

| Description                  | Manufacturer       | Model                  | ID  | Last Cal.  | Cal. Due   |
|------------------------------|--------------------|------------------------|-----|------------|------------|
| Probe - Near Field Set       | ETS Lindgren       | 7405                   | IPS | NCR        | NCR        |
| Cable                        | UtiFlex Micro-Coax | UFD1150A-1-0720-200200 | TXJ | 2020-09-22 | 2021-09-22 |
| Analyzer - Spectrum Analyzer | Keysight           | N9010A                 | AFN | 2021-01-06 | 2022-01-06 |

## TEST DESCRIPTION

As defined in FCC 15.215 Part (c), intentional radiators must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designed in the rule section under which the equipment.

The 20 dB bandwidth must be contained within the band 13.110-14.010 MHz.

The emissions bandwidth was measured with the EUT configured for continuous modulated operation.

The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.


The resolution bandwidth (RBW) of the spectrum analyzer was set to the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) bandwidth was set to at least 3 times the resolution bandwidth. The analyzer sweep time was set to auto to prevent video filtering or averaging. A sample detector was used unless the device was not able to be operated in a continuous transmit mode, in which case a peak detector was used.

The spectrum analyzer occupied bandwidth measurement function was used to find the emissions bandwidth.

# OCCUPIED BANDWIDTH



TbTx 2021.03.19.1 XMM 2020.12.30.0

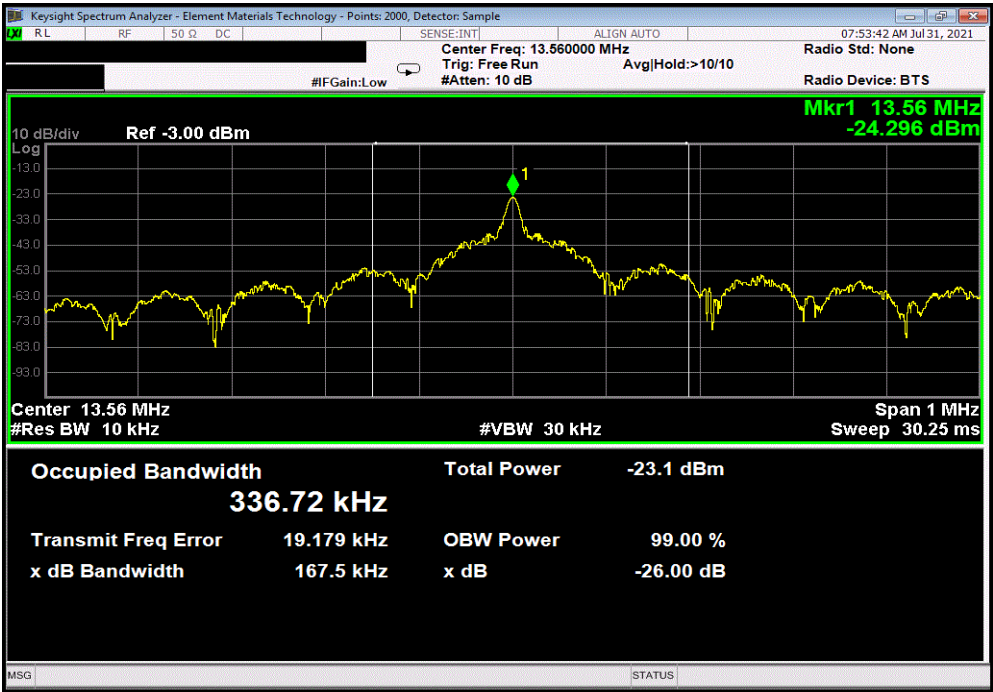
|  |   |   |             |
|--|---|---|-------------|
| EUT: GLP12220 Input/Output Module  |   | Work Order: ABBO0076  |             |
| Serial Number: ENG05-DR  |   | Date: 4-Aug-21  |             |
| Customer: Abbott Laboratories  |   | Temperature: 21.4 °C  |             |
| Attendees: Don Mendell   |   | Humidity: 54.9% RH  |             |
| Project: None  |   | Barometric Pres.: 1019 mbar   |             |
| Tested by: Mark Baytan   |   | Job Site: TX05  |             |
| Power: 220VAC/60Hz   |   |   |             |
| TEST SPECIFICATIONS  |   | Test Method   |             |
| FCC 15.225:2021  |   | ANSI C63.10:2013  |             |
| COMMENTS   |   |   |             |
| Drawer Reader Radio. Emissions bandwidth taken with a 26 dB bandwidth. This is worst case as compared with the 20 dB bandwidth called out in FCC 15.215. |   |   |             |
| DEVIATIONS FROM TEST STANDARD  |   |   |             |
| None   |   |   |             |
| Configuration #  | 2 | Signature  |             |
|  |   | Value   | Limit       |
| Normal Voltage   |   | 13.110 MHz ≤ BW ≤ 14.010 MHz  | Result      |
| Mid Channel, 13.56 MHz   |   | 167.5 kHz   | Within Pass |

OCCUPIED BANDWIDTH



TbTx 2021.03.19.1 XMII 2020.12.30.0

| Normal Voltage, Mid Channel, 13.56 MHz |  |  |  |                              |        |  |
|--|--|--|--|------------------------------|--------|--|
|  |  |  |  | Limit                        |        |  |
| Value                                  |  |  |  | 13.110 MHz ≤ BW ≤ 14.010 MHz | Result |  |
| 167.5 kHz                              |  |  |  | Within                       | Pass   |  |



End of Test Report