



**Fluid Management Technology Pty Ltd**

**SmartFill Gen 3 FMS**

**FCC 15.225:2025**

**13.56 MHz Radio**

**Report: FDMT0001.1 Rev. 1, Issue Date: April 7, 2025**



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# CERTIFICATE OF TEST

**Last Date of Test: March 12, 2025**  
**Fluid Management Technology Pty Ltd**  
**EUT: SmartFill Gen 3 FMS**

## Radio Equipment Testing

### Standards

| Specification   | Method           |
|-----------------|------------------|
| FCC 15.225:2025 | ANSI C63.10:2013 |

### Guidance

|                   |
|-------------------|
| KDB 174176 v01r01 |
|-------------------|

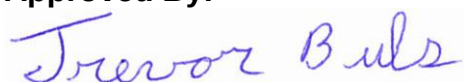
### Results

| Test Description                                           | Result | Specification Section(s)               | Method Section(s) | Comments |
|------------------------------------------------------------|--------|----------------------------------------|-------------------|----------|
| Powerline Conducted Emissions                              | Pass   | 15.207                                 | 6.2               |          |
| Emissions Bandwidth (20 dB)                                | Pass   | 15.215(c)                              | 6.9.2             |          |
| Field Strength of Fundamental                              | Pass   | 15.225(a)-(c)                          | 6.4               |          |
| Field Strength of Spurious Emissions (Less Than 30 MHz)    | Pass   | 15.225(d), 15.209                      | 6.4               |          |
| Field Strength of Spurious Emissions (Greater Than 30 MHz) | Pass   | 15.225(d), 15.209                      | 6.5               |          |
| Frequency Stability                                        | Pass   | 15.225(e), 15.31(e), 15.215(c), 2.1055 | 6.8               |          |

### Deviations From Test Standards

None

### Approved By:



Trevor Buls, Principal EMC Test Engineer  
 Signed for and on behalf of Element

*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              | Confirmed signal is modulated and retested to correct settings. | 2025-04-07           | 58          |
|                 | Changed cal dates to previous cal dates, (2-14-2024).           | 2025-04-07           | 47, 52      |

# 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.

**FDA** - Recognized by the FDA as an Accreditation Scheme for Conformity Assessment (ASCA)-accredited testing laboratory for basic safety and essential performance.

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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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## SCOPE

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

[California](#)

[Minnesota](#)

[Oregon](#)

[Washington](#)

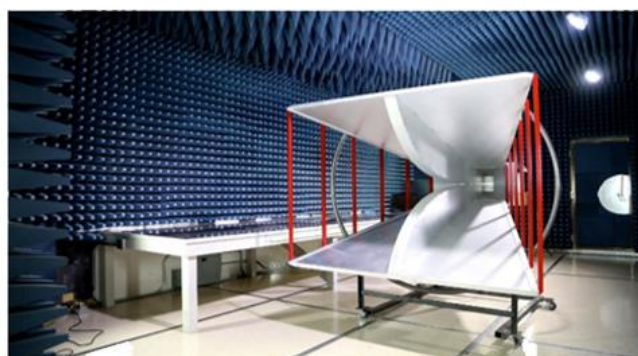
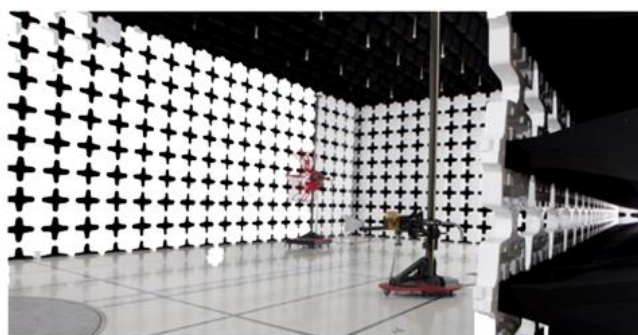
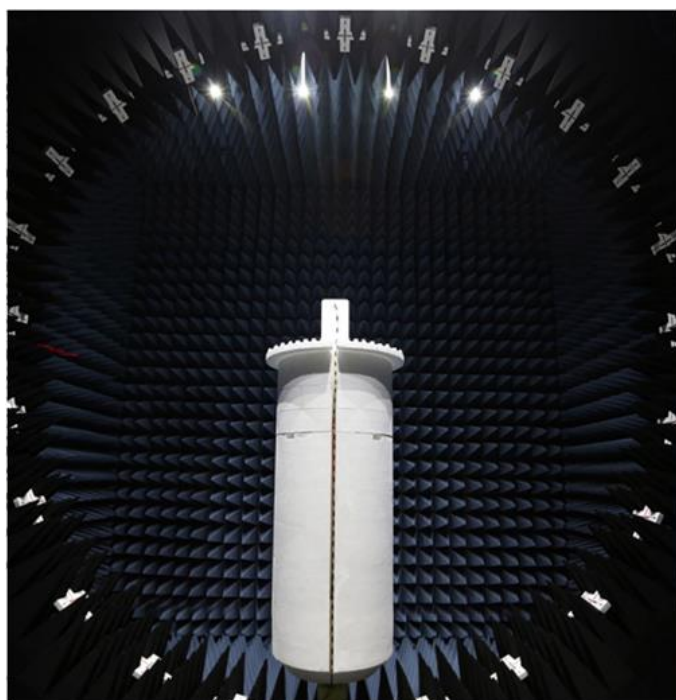
# FACILITIES

Testing was performed at the following location(s)

|                                     | Location   | Labs <sup>(1)</sup> | Address                                                              | A2LA <sup>(2)</sup> | ISED <sup>(3)</sup> | BSMI <sup>(4)</sup> | VCCI <sup>(5)</sup> | CAB <sup>(6)</sup> | FDA <sup>(7)</sup> |
|-------------------------------------|------------|---------------------|----------------------------------------------------------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|
| <input checked="" type="checkbox"/> | California | OC01-17             | 41 Tesla<br>Irvine, CA 92618<br>(949) 861-8918                       | 3310.04             | 2834B               | SL2-IN-E-1154R      | A-0029              | US0158             | TL-55              |
| <input type="checkbox"/>            | Minnesota  | MN01-11             | 9349 W Broadway Ave.<br>Brooklyn Park, MN 55445<br>(612) 638-5136    | 3310.05             | 2834E               | SL2-IN-E-1152R      | A-0109              | US0175             | TL-57              |
| <input type="checkbox"/>            | Oregon     | EV01-12             | 6775 NE Evergreen Pkwy #400<br>Hillsboro, OR 97124<br>(503) 844-4066 | 3310.02             | 2834D               | SL2-IN-E-1017       | A-0108              | US0017             | TL-56              |
| <input type="checkbox"/>            | Washington | NC01-05             | 19201 120th Ave NE<br>Bothell, WA 98011<br>(425) 984-6600            | 3310.06             | 2834F               | SL2-IN-E-1153R      | A-0110              | US0157             | TL-67              |
| <input type="checkbox"/>            | Offsite    | N/A                 | See Product Description                                              | N/A                 | N/A                 | N/A                 | N/A                 | N/A                | N/A                |

See data sheets for specific labs

- (1) The lab designations denote individual rooms within each location. (OC01, OC02, OC03, etc.)
- (2) A2LA Certificate No.
- (3) ISED Company No.
- (4) BSMI No.
- (5) VCCI Site Filing No.
- (6) CAB Identifier. Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRA, MOC, NCC, OFCA
- (7) FDA ASCA No.



# 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 reported is based on statistical analysis that was performed by the laboratory. 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.

### Various Measurements

| Test                                 | All Labs<br>(+/-) |
|--------------------------------------|-------------------|
| Frequency Accuracy (%)               | 0.0007            |
| Amplitude Accuracy (dB)              | 1.2               |
| Conducted Power (dB)                 | 1.2               |
| Radiated Power via Substitution (dB) | 0.7               |
| Temperature (degrees C)              | 0.7               |
| Humidity (% RH)                      | 2.5               |
| Voltage (AC) (%)                     | 1                 |
| Voltage (DC) (%)                     | 0.7               |

### Field Strength Measurements (dB)

| Range          | OC08<br>(+/-) | OC10<br>(+/-) |
|----------------|---------------|---------------|
| 10kHz-30MHz    | 1.8           | 1.8           |
| 30MHz-1GHz 3m  | N/A           | 4.6           |
| 30MHz-1GHz 10m | 3.4           | N/A           |
| 1GHz-6GHz      | N/A           | 5             |
| 6GHz-40GHz     | N/A           | 5.1           |

### AC Powerline Conducted Emissions Measurements (dB)

| Range                    | OC06<br>(+/-) |
|--------------------------|---------------|
| 9kHz-150kHz LISN         | 3.6           |
| 150kHz-30MHz LISN        | 3.2           |
| 150kHz-30MHz CVP         | 3             |
| 150kHz-30MHz Telecom-ISN | 4.4           |

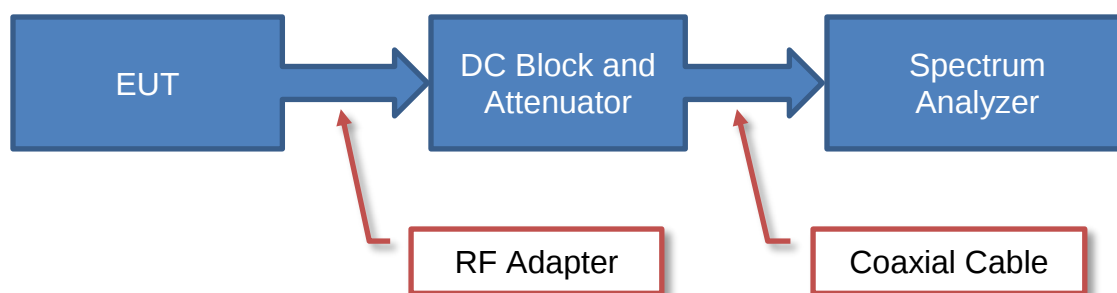
# TEST SETUP BLOCK DIAGRAMS

## 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.

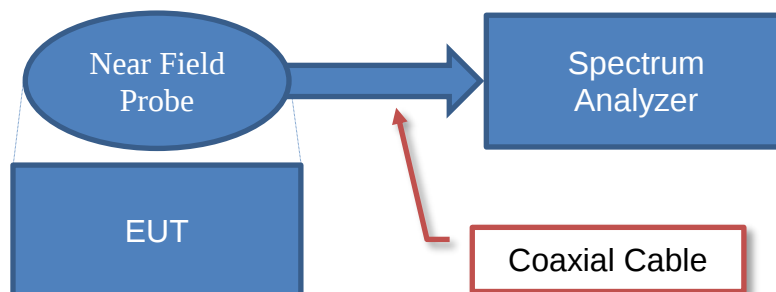
## Antenna Port Conducted Measurements



### Sample Calculation (logarithmic units)

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

## Near Field Test Fixture Measurements

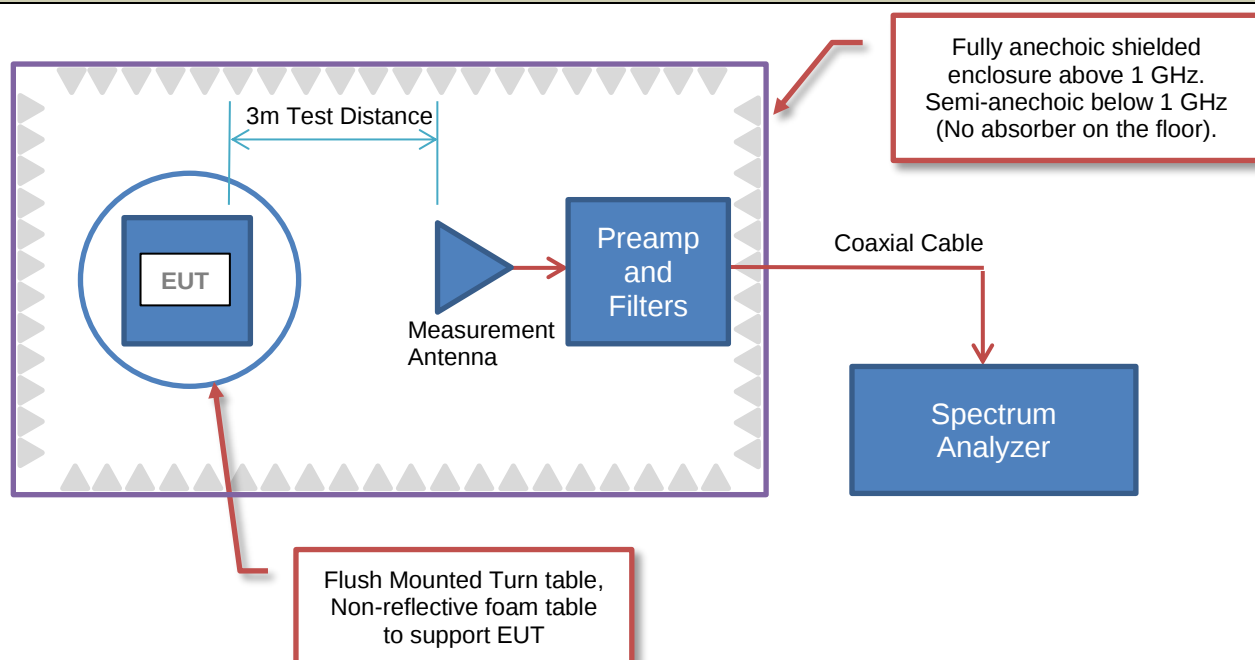


### Sample Calculation (logarithmic units)

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

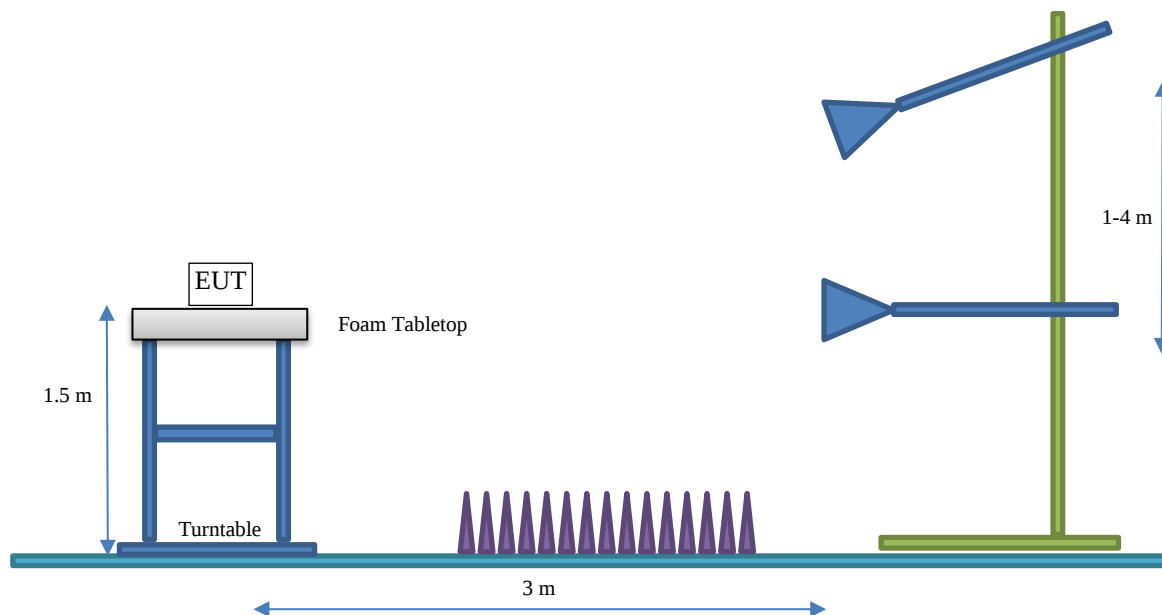
### Radiated Power (ERP/EIRP) – Substitution Method:

| Measured Level into Substitution Antenna (Amplitude dBm) | Substitution Antenna Factor (dBi) | EIRP to ERP (if applicable) | Measured power (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

|                          |                                     |
|--------------------------|-------------------------------------|
| Company Name:            | Fluid Management Technology Pty Ltd |
| Address:                 | 147 William St                      |
| City, State, Zip:        | Beverley SA 5009Australia           |
| Test Requested By:       | Bob Thomas                          |
| EUT:                     | SmartFill Gen 3 FMS                 |
| First Date of Test:      | January 14, 2025                    |
| Last Date of Test:       | March 12, 2025                      |
| Receipt Date of Samples: | January 14, 2025                    |
| Equipment Design Stage:  | Prototype                           |
| Equipment Condition:     | No Damage                           |
| Purchase Authorization:  | Verified                            |

## Information Provided by the Party Requesting the Test

### Functional Description of the EUT:

System with NFC, Cellular (Model No: LE910C1-WW XD) and WiFi radio (FCC ID: RI7WE310G4). The system will always have NFC but the Wi-Fi and Cellular radios will be either/or, not both.

### Testing Objective:

To demonstrate compliance of the 13.56 MHz radio to FCC 15.225 requirements.

# 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. The power settings below reflect the maximum power that the EUT is allowed to transmit at during normal operation.

## ANTENNA INFORMATION

| Type             | Provided by:                              | Frequency Range (MHz) | Gain (dBi) | Dimensions    | RFID Protocol        |
|------------------|-------------------------------------------|-----------------------|------------|---------------|----------------------|
| PCB loop antenna | Customer<br>(Fluid Management Technology) | 13.56Mhz              | N/A        | 58 mm x 46 mm | ISO/IEC 14443 Type A |

The EUT was tested using the power settings provided by the manufacturer which were based upon:

- ☐ Test software settings      Software / firmware used for testing: See configurations  
☒ Rated power settings

## SETTINGS FOR ALL TESTS IN THIS REPORT

| Modulation Types              | Power Setting |
|-------------------------------|---------------|
| Single Data Rate / Modulation | 20 dBm        |

# CONFIGURATIONS



## Configuration FDMT0001-2

| Software/Firmware Running During Test |         |
|---------------------------------------|---------|
| Description                           | Version |
| Gen 3 Firmware                        | 3.1.7.2 |

| EUT                 |                                     |                   |               |
|---------------------|-------------------------------------|-------------------|---------------|
| Description         | Manufacturer                        | Model/Part Number | Serial Number |
| SmartFill Gen 3 FMS | Fluid Management Technology Pty Ltd | SF3-AC            | 12374         |

| Peripherals in Test Setup Boundary |                                  |                   |               |
|------------------------------------|----------------------------------|-------------------|---------------|
| Description                        | Manufacturer                     | Model/Part Number | Serial Number |
| 3x Antennas                        | Signal Plus Technology Co., Ltd. | BII12NJXX085      | None          |

| Cables            |        |            |         |                     |              |
|-------------------|--------|------------|---------|---------------------|--------------|
| Cable Type        | Shield | Length (m) | Ferrite | Connection 1        | Connection 2 |
| 3x Antenna Cables | Yes    | 5 m        | No      | SmartFill Gen 3 FMS | 3x Antennas  |

## Configuration FDMT0001-3

| Software/Firmware Running During Test |         |
|---------------------------------------|---------|
| Description                           | Version |
| Gen 3 Firmware                        | 3.1.7.3 |

| EUT                 |                                     |                   |               |
|---------------------|-------------------------------------|-------------------|---------------|
| Description         | Manufacturer                        | Model/Part Number | Serial Number |
| SmartFill Gen 3 FMS | Fluid Management Technology Pty Ltd | SF3-AC            | 12374         |

| Peripherals in Test Setup Boundary |                                  |                   |               |
|------------------------------------|----------------------------------|-------------------|---------------|
| Description                        | Manufacturer                     | Model/Part Number | Serial Number |
| 1x Antennas                        | Signal Plus Technology Co., Ltd. | BII12NJXX085      | None          |

| Cables            |        |            |         |                     |              |
|-------------------|--------|------------|---------|---------------------|--------------|
| Cable Type        | Shield | Length (m) | Ferrite | Connection 1        | Connection 2 |
| 1x Antenna Cables | Yes    | 5 m        | No      | SmartFill Gen 3 FMS | 1x Antennas  |

# MODIFICATIONS



## Equipment Modifications

| Item | Date       | Test                                                      | Modification                         | Note                                                                | Disposition of EUT                          |
|------|------------|-----------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------|---------------------------------------------|
| 1    | 2025-01-14 | Field Strength of Fundamental                             | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Element following the test. |
| 2    | 2025-01-16 | Frequency Stability                                       | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Element following the test. |
| 3    | 2025-01-23 | Field Strength of Spurious Emissions (Greater than 30MHz) | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Element following the test. |
| 4    | 2025-01-27 | Powerline Conducted Emissions                             | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Element following the test. |
| 5    | 2025-03-10 | Field Strength of Spurious Emissions (Less than 30 MHz)   | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Element following the test. |
| 6    | 2025-03-12 | Emissions Bandwidth (20dB)                                | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled testing was completed.            |

# POWERLINE CONDUCTED EMISSIONS

## 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. For each mode, 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.

## TEST EQUIPMENT

| Description                      | Manufacturer      | Model          | ID  | Last Cal.  | Cal. Due   |
|----------------------------------|-------------------|----------------|-----|------------|------------|
| Receiver                         | Gauss Instruments | TDEMI 30M      | ARO | 2024-05-07 | 2025-05-07 |
| LISN                             | Solar Electronics | 9252-50-24-BNC | LIA | 2024-09-12 | 2025-09-12 |
| Cable - Conducted Cable Assembly | Northwest EMC     | None           | OCP | NCR        | NCR        |

## CONFIGURATIONS INVESTIGATED

FDMT0001-3  
FDMT0001-2

## MODES INVESTIGATED

Transmitting RFID 13.56 MHz, with Wi-Fi Module and NFC Board Rev 2.1  
Transmitting RFID 13.56 MHz, with LTE Module and 50 Ohm Terminated NFC Board Rev 2.1  
Transmitting RFID 13.56 MHz, with LTE Module and NFC Board Rev 2.1

# POWERLINE CONDUCTED EMISSIONS

|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-01-24 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 20.8°C     |
| Attendees:        | None                                | Relative Humidity:    | 23.8%      |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1016 mb    |
| Tested By:        | Matthew Ng                          | Job Site:             | OC06       |
| Power:            | 120VAC/60Hz                         | Configuration:        | FDMT0001-3 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.225:2025 | ANSI C63.10:2013 |

## TEST PARAMETERS

|        |    |       |           |                             |   |
|--------|----|-------|-----------|-----------------------------|---|
| Run #: | 16 | Line: | High Line | Add. Ext. Attenuation (dB): | 0 |
|--------|----|-------|-----------|-----------------------------|---|

## COMMENTS

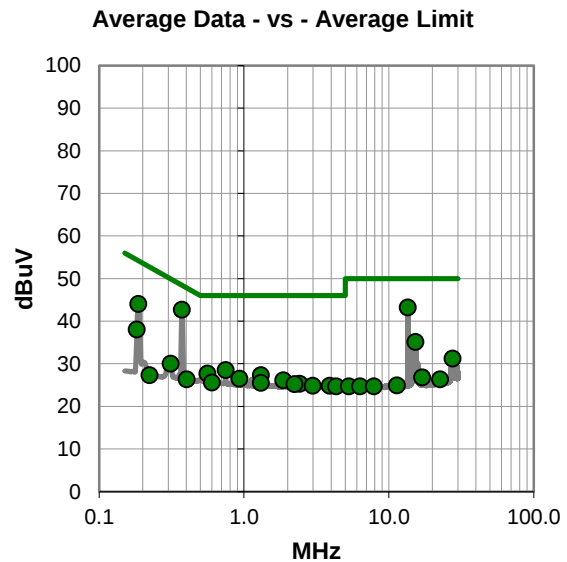
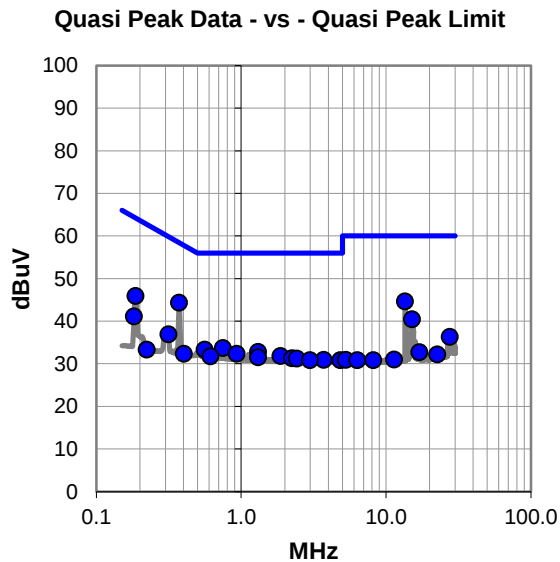
NFC Board Rev 2.1, Wi-Fi Module with 1x antennas

## EUT OPERATING MODES

Transmitting RFID 13.56 MHz, with Wi-Fi Module and NFC Board Rev 2.1

## DEVIATIONS FROM TEST STANDARD

None



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #16

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 0.373      | 24.3        | 20.0        | 44.3            | 58.4               | -14.1       |
| 13.560     | 23.5        | 21.1        | 44.6            | 60.0               | -15.4       |
| 0.187      | 25.8        | 20.1        | 45.9            | 64.2               | -18.3       |
| 15.118     | 19.1        | 21.3        | 40.4            | 60.0               | -19.6       |
| 0.747      | 13.6        | 20.1        | 33.7            | 56.0               | -22.3       |
| 0.560      | 13.3        | 20.0        | 33.3            | 56.0               | -22.7       |
| 0.315      | 16.8        | 20.1        | 36.9            | 59.8               | -22.9       |
| 1.307      | 12.6        | 20.2        | 32.8            | 56.0               | -23.2       |
| 0.182      | 21.0        | 20.1        | 41.1            | 64.4               | -23.3       |
| 0.933      | 12.2        | 20.1        | 32.3            | 56.0               | -23.7       |
| 27.622     | 13.8        | 22.5        | 36.3            | 60.0               | -23.7       |
| 1.867      | 11.5        | 20.3        | 31.8            | 56.0               | -24.2       |
| 0.614      | 11.6        | 20.1        | 31.7            | 56.0               | -24.3       |
| 1.311      | 11.3        | 20.2        | 31.5            | 56.0               | -24.5       |
| 2.240      | 11.0        | 20.3        | 31.3            | 56.0               | -24.7       |
| 2.425      | 10.8        | 20.4        | 31.2            | 56.0               | -24.8       |
| 3.713      | 10.4        | 20.5        | 30.9            | 56.0               | -25.1       |
| 2.986      | 10.4        | 20.4        | 30.8            | 56.0               | -25.2       |
| 4.854      | 10.2        | 20.6        | 30.8            | 56.0               | -25.2       |
| 0.402      | 12.3        | 20.0        | 32.3            | 57.8               | -25.5       |
| 16.984     | 11.3        | 21.4        | 32.7            | 60.0               | -27.3       |
| 22.582     | 10.3        | 21.9        | 32.2            | 60.0               | -27.8       |
| 11.377     | 9.9         | 21.1        | 31.0            | 60.0               | -29.0       |
| 5.275      | 10.3        | 20.6        | 30.9            | 60.0               | -29.1       |
| 6.336      | 10.1        | 20.7        | 30.8            | 60.0               | -29.2       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 0.373      | 22.7        | 20.0        | 42.7            | 48.4               | -5.7        |
| 13.560     | 22.1        | 21.1        | 43.2            | 50.0               | -6.8        |
| 0.187      | 23.9        | 20.1        | 44.0            | 54.2               | -10.2       |
| 15.304     | 13.8        | 21.3        | 35.1            | 50.0               | -14.9       |
| 0.182      | 17.9        | 20.1        | 38.0            | 54.4               | -16.4       |
| 0.747      | 8.4         | 20.1        | 28.5            | 46.0               | -17.5       |
| 0.559      | 7.7         | 20.0        | 27.7            | 46.0               | -18.3       |
| 1.307      | 7.1         | 20.2        | 27.3            | 46.0               | -18.7       |
| 27.622     | 8.7         | 22.5        | 31.2            | 50.0               | -18.8       |
| 0.933      | 6.4         | 20.1        | 26.5            | 46.0               | -19.5       |
| 0.312      | 9.9         | 20.1        | 30.0            | 49.9               | -19.9       |
| 1.867      | 5.8         | 20.3        | 26.1            | 46.0               | -19.9       |
| 0.600      | 5.6         | 20.0        | 25.6            | 46.0               | -20.4       |
| 1.311      | 5.3         | 20.2        | 25.5            | 46.0               | -20.5       |
| 2.425      | 4.9         | 20.4        | 25.3            | 46.0               | -20.7       |
| 2.239      | 4.9         | 20.3        | 25.2            | 46.0               | -20.8       |
| 2.985      | 4.4         | 20.4        | 24.8            | 46.0               | -21.2       |
| 3.919      | 4.3         | 20.5        | 24.8            | 46.0               | -21.2       |
| 4.334      | 4.2         | 20.5        | 24.7            | 46.0               | -21.3       |
| 0.402      | 6.3         | 20.0        | 26.3            | 47.8               | -21.5       |
| 16.978     | 5.4         | 21.4        | 26.8            | 50.0               | -23.2       |
| 22.581     | 4.4         | 21.9        | 26.3            | 50.0               | -23.7       |
| 11.375     | 3.8         | 21.1        | 24.9            | 50.0               | -25.1       |
| 5.301      | 4.1         | 20.6        | 24.7            | 50.0               | -25.3       |
| 6.336      | 4.0         | 20.7        | 24.7            | 50.0               | -25.3       |

## CONCLUSION

Pass



Tested By

# POWERLINE CONDUCTED EMISSIONS

|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-01-24 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 20.8°C     |
| Attendees:        | None                                | Relative Humidity:    | 23.8%      |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1016 mb    |
| Tested By:        | Matthew Ng                          | Job Site:             | OC06       |
| Power:            | 120VAC/60Hz                         | Configuration:        | FDMT0001-3 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.225:2025 | ANSI C63.10:2013 |

## TEST PARAMETERS

|        |    |       |         |                             |   |
|--------|----|-------|---------|-----------------------------|---|
| Run #: | 17 | Line: | Neutral | Add. Ext. Attenuation (dB): | 0 |
|--------|----|-------|---------|-----------------------------|---|

## COMMENTS

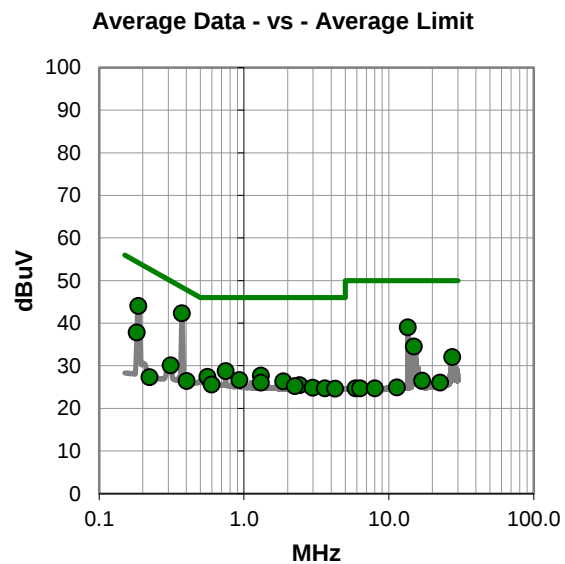
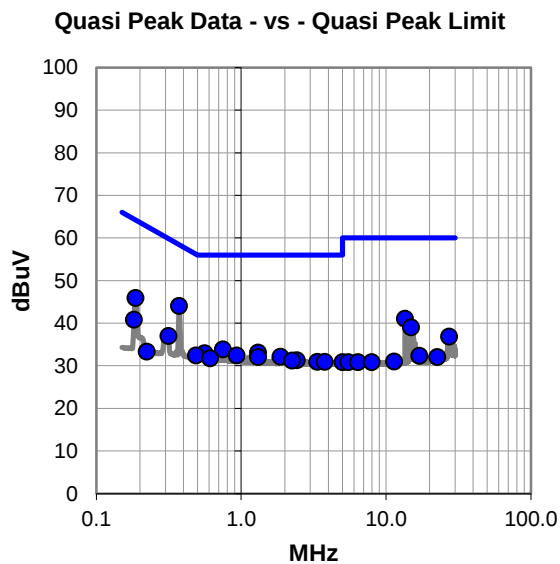
NFC Board Rev 2.1, Wi-Fi Module with 1x antennas

## EUT OPERATING MODES

Transmitting RFID 13.56 MHz, with Wi-Fi Module and NFC Board Rev 2.1

## DEVIATIONS FROM TEST STANDARD

None



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #17

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 0.373      | 24.0        | 20.0        | 44.0            | 58.4               | -14.4       |
| 0.187      | 25.8        | 20.1        | 45.9            | 64.2               | -18.3       |
| 13.560     | 19.9        | 21.1        | 41.0            | 60.0               | -19.0       |
| 14.938     | 17.7        | 21.3        | 39.0            | 60.0               | -21.0       |
| 0.747      | 13.7        | 20.1        | 33.8            | 56.0               | -22.2       |
| 0.315      | 16.9        | 20.1        | 37.0            | 59.8               | -22.8       |
| 1.307      | 12.9        | 20.2        | 33.1            | 56.0               | -22.9       |
| 0.559      | 12.9        | 20.0        | 32.9            | 56.0               | -23.1       |
| 27.259     | 14.3        | 22.5        | 36.8            | 60.0               | -23.2       |
| 0.182      | 20.7        | 20.1        | 40.8            | 64.4               | -23.6       |
| 0.933      | 12.3        | 20.1        | 32.4            | 56.0               | -23.6       |
| 0.489      | 12.4        | 20.0        | 32.4            | 56.2               | -23.8       |
| 1.867      | 11.8        | 20.3        | 32.1            | 56.0               | -23.9       |
| 1.311      | 11.8        | 20.2        | 32.0            | 56.0               | -24.0       |
| 0.609      | 11.7        | 20.0        | 31.7            | 56.0               | -24.3       |
| 2.427      | 10.9        | 20.4        | 31.3            | 56.0               | -24.7       |
| 2.242      | 10.9        | 20.3        | 31.2            | 56.0               | -24.8       |
| 3.363      | 10.5        | 20.4        | 30.9            | 56.0               | -25.1       |
| 3.765      | 10.4        | 20.5        | 30.9            | 56.0               | -25.1       |
| 16.992     | 10.9        | 21.4        | 32.3            | 60.0               | -27.7       |
| 22.598     | 10.1        | 21.9        | 32.0            | 60.0               | -28.0       |
| 11.391     | 9.9         | 21.1        | 31.0            | 60.0               | -29.0       |
| 5.020      | 10.2        | 20.6        | 30.8            | 60.0               | -29.2       |
| 5.503      | 10.2        | 20.6        | 30.8            | 60.0               | -29.2       |
| 6.409      | 10.1        | 20.7        | 30.8            | 60.0               | -29.2       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 0.373      | 22.3        | 20.0        | 42.3            | 48.4               | -6.1        |
| 0.187      | 23.9        | 20.1        | 44.0            | 54.2               | -10.2       |
| 13.560     | 17.9        | 21.1        | 39.0            | 50.0               | -11.0       |
| 14.938     | 13.2        | 21.3        | 34.5            | 50.0               | -15.5       |
| 0.182      | 17.7        | 20.1        | 37.8            | 54.4               | -16.6       |
| 0.747      | 8.6         | 20.1        | 28.7            | 46.0               | -17.3       |
| 27.447     | 9.5         | 22.5        | 32.0            | 50.0               | -18.0       |
| 1.307      | 7.5         | 20.2        | 27.7            | 46.0               | -18.3       |
| 0.560      | 7.4         | 20.0        | 27.4            | 46.0               | -18.6       |
| 0.933      | 6.5         | 20.1        | 26.6            | 46.0               | -19.4       |
| 1.867      | 6.0         | 20.3        | 26.3            | 46.0               | -19.7       |
| 0.312      | 10.0        | 20.1        | 30.1            | 49.9               | -19.8       |
| 1.311      | 5.8         | 20.2        | 26.0            | 46.0               | -20.0       |
| 0.599      | 5.6         | 20.0        | 25.6            | 46.0               | -20.4       |
| 2.427      | 5.0         | 20.4        | 25.4            | 46.0               | -20.6       |
| 2.240      | 4.9         | 20.3        | 25.2            | 46.0               | -20.8       |
| 2.986      | 4.4         | 20.4        | 24.8            | 46.0               | -21.2       |
| 3.627      | 4.2         | 20.5        | 24.7            | 46.0               | -21.3       |
| 0.402      | 6.4         | 20.0        | 26.4            | 47.8               | -21.4       |
| 4.273      | 4.1         | 20.5        | 24.6            | 46.0               | -21.4       |
| 16.992     | 5.1         | 21.4        | 26.5            | 50.0               | -23.5       |
| 22.590     | 4.1         | 21.9        | 26.0            | 50.0               | -24.0       |
| 11.377     | 3.8         | 21.1        | 24.9            | 50.0               | -25.1       |
| 5.904      | 4.0         | 20.7        | 24.7            | 50.0               | -25.3       |
| 6.336      | 4.0         | 20.7        | 24.7            | 50.0               | -25.3       |

## CONCLUSION

Pass



Tested By

# POWERLINE CONDUCTED EMISSIONS

|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-01-24 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 20.8°C     |
| Attendees:        | None                                | Relative Humidity:    | 23.8%      |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1016 mb    |
| Tested By:        | Matthew Ng                          | Job Site:             | OC06       |
| Power:            | 120VAC/60Hz                         | Configuration:        | FDMT0001-2 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.225:2025 | ANSI C63.10:2013 |

## TEST PARAMETERS

|        |    |       |           |                             |   |
|--------|----|-------|-----------|-----------------------------|---|
| Run #: | 14 | Line: | High Line | Add. Ext. Attenuation (dB): | 0 |
|--------|----|-------|-----------|-----------------------------|---|

## COMMENTS

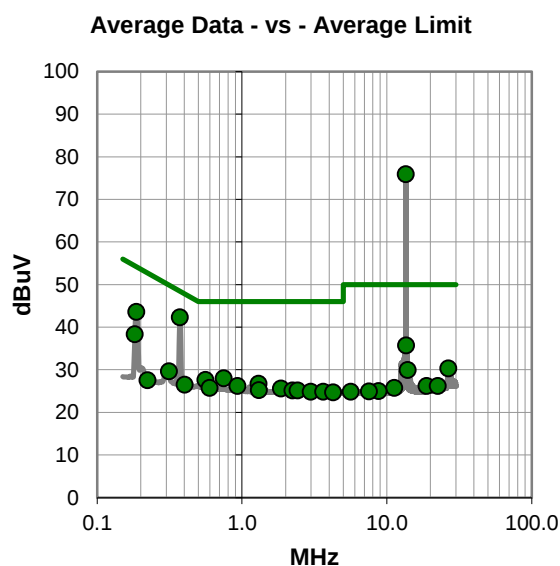
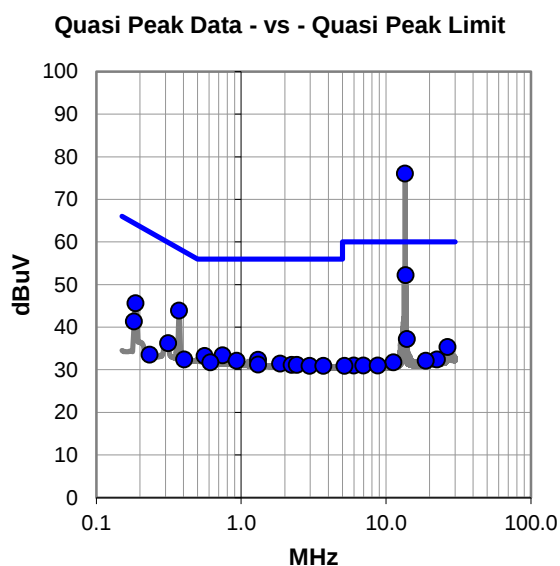
NFC Board Rev 2.1, LTE Module with 3x antennas

## EUT OPERATING MODES

Transmitting RFID 13.56 MHz, with LTE Module and NFC Board Rev 2.1

## DEVIATIONS FROM TEST STANDARD

None



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #14

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 13.560     | 54.9        | 21.1        | 76.0            | 60.0               | 16.0        |
| 13.638     | 31.1        | 21.1        | 52.2            | 60.0               | -7.8        |
| 0.373      | 23.9        | 20.0        | 43.9            | 58.4               | -14.5       |
| 0.187      | 25.5        | 20.1        | 45.6            | 64.2               | -18.6       |
| 0.745      | 13.3        | 20.1        | 33.4            | 56.0               | -22.6       |
| 13.984     | 16.0        | 21.2        | 37.2            | 60.0               | -22.8       |
| 0.559      | 13.2        | 20.0        | 33.2            | 56.0               | -22.8       |
| 0.182      | 21.2        | 20.1        | 41.3            | 64.4               | -23.1       |
| 0.313      | 16.1        | 20.1        | 36.2            | 59.9               | -23.7       |
| 1.307      | 12.1        | 20.2        | 32.3            | 56.0               | -23.7       |
| 0.933      | 12.0        | 20.1        | 32.1            | 56.0               | -23.9       |
| 0.614      | 11.6        | 20.1        | 31.7            | 56.0               | -24.3       |
| 1.863      | 11.2        | 20.2        | 31.4            | 56.0               | -24.6       |
| 26.665     | 13.0        | 22.3        | 35.3            | 60.0               | -24.7       |
| 1.311      | 11.0        | 20.2        | 31.2            | 56.0               | -24.8       |
| 2.236      | 10.8        | 20.3        | 31.1            | 56.0               | -24.9       |
| 2.423      | 10.7        | 20.4        | 31.1            | 56.0               | -24.9       |
| 2.965      | 10.5        | 20.4        | 30.9            | 56.0               | -25.1       |
| 3.701      | 10.4        | 20.5        | 30.9            | 56.0               | -25.1       |
| 0.403      | 12.4        | 20.0        | 32.4            | 57.8               | -25.4       |
| 22.564     | 10.5        | 21.9        | 32.4            | 60.0               | -27.6       |
| 18.833     | 10.6        | 21.5        | 32.1            | 60.0               | -27.9       |
| 11.296     | 10.7        | 21.0        | 31.7            | 60.0               | -28.3       |
| 0.234      | 13.5        | 20.0        | 33.5            | 62.3               | -28.8       |
| 6.001      | 10.3        | 20.7        | 31.0            | 60.0               | -29.0       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 13.560     | 54.8        | 21.1        | 75.9            | 50.0               | 25.9        |
| 0.373      | 22.3        | 20.0        | 42.3            | 48.4               | -6.1        |
| 0.187      | 23.5        | 20.1        | 43.6            | 54.2               | -10.6       |
| 13.600     | 14.6        | 21.1        | 35.7            | 50.0               | -14.3       |
| 0.182      | 18.2        | 20.1        | 38.3            | 54.4               | -16.1       |
| 0.747      | 7.9         | 20.1        | 28.0            | 46.0               | -18.0       |
| 0.559      | 7.6         | 20.0        | 27.6            | 46.0               | -18.4       |
| 1.305      | 6.5         | 20.2        | 26.7            | 46.0               | -19.3       |
| 26.665     | 8.0         | 22.3        | 30.3            | 50.0               | -19.7       |
| 0.933      | 6.1         | 20.1        | 26.2            | 46.0               | -19.8       |
| 13.984     | 8.7         | 21.2        | 29.9            | 50.0               | -20.1       |
| 0.313      | 9.5         | 20.1        | 29.6            | 49.9               | -20.3       |
| 0.599      | 5.7         | 20.0        | 25.7            | 46.0               | -20.3       |
| 1.865      | 5.4         | 20.2        | 25.6            | 46.0               | -20.4       |
| 1.311      | 5.0         | 20.2        | 25.2            | 46.0               | -20.8       |
| 2.236      | 4.8         | 20.3        | 25.1            | 46.0               | -20.9       |
| 2.423      | 4.7         | 20.4        | 25.1            | 46.0               | -20.9       |
| 2.983      | 4.4         | 20.4        | 24.8            | 46.0               | -21.2       |
| 3.650      | 4.3         | 20.5        | 24.8            | 46.0               | -21.2       |
| 0.402      | 6.5         | 20.0        | 26.5            | 47.8               | -21.3       |
| 4.273      | 4.2         | 20.5        | 24.7            | 46.0               | -21.3       |
| 18.833     | 4.7         | 21.5        | 26.2            | 50.0               | -23.8       |
| 22.563     | 4.3         | 21.9        | 26.2            | 50.0               | -23.8       |
| 11.296     | 4.7         | 21.0        | 25.7            | 50.0               | -24.3       |
| 8.785      | 4.2         | 20.8        | 25.0            | 50.0               | -25.0       |

## CONCLUSION

Evaluation



Tested By

# POWERLINE CONDUCTED EMISSIONS

|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-01-24 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 20.8°C     |
| Attendees:        | None                                | Relative Humidity:    | 23.8%      |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1016 mb    |
| Tested By:        | Matthew Ng                          | Job Site:             | OC06       |
| Power:            | 120VAC/60Hz                         | Configuration:        | FDMT0001-2 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.225:2025 | ANSI C63.10:2013 |

## TEST PARAMETERS

|        |    |       |         |                             |   |
|--------|----|-------|---------|-----------------------------|---|
| Run #: | 15 | Line: | Neutral | Add. Ext. Attenuation (dB): | 0 |
|--------|----|-------|---------|-----------------------------|---|

## COMMENTS

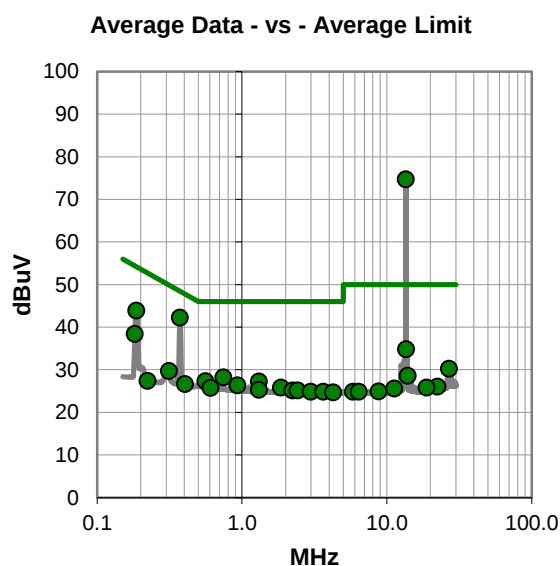
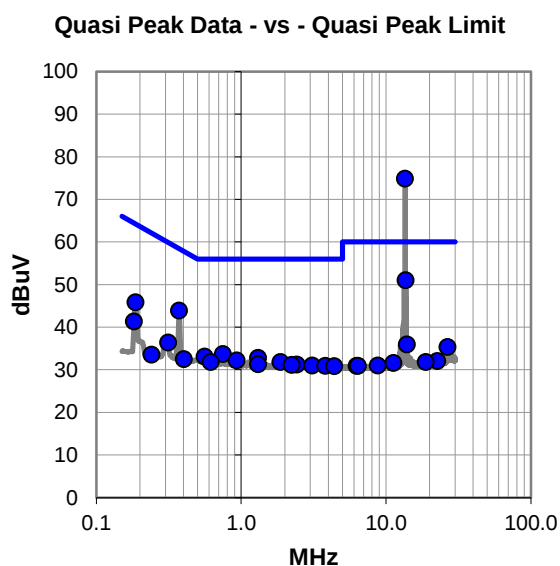
|                                                |
|------------------------------------------------|
| NFC Board Rev 2.1, LTE Module with 3x antennas |
|------------------------------------------------|

## EUT OPERATING MODES

|                                                                    |
|--------------------------------------------------------------------|
| Transmitting RFID 13.56 MHz, with LTE Module and NFC Board Rev 2.1 |
|--------------------------------------------------------------------|

## DEVIATIONS FROM TEST STANDARD

|      |
|------|
| None |
|------|



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #15

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 13.560     | 53.7        | 21.1        | 74.8            | 60.0               | 14.8        |
| 13.638     | 29.9        | 21.1        | 51.0            | 60.0               | -9.0        |
| 0.373      | 23.9        | 20.0        | 43.9            | 58.4               | -14.5       |
| 0.187      | 25.7        | 20.1        | 45.8            | 64.2               | -18.4       |
| 0.747      | 13.6        | 20.1        | 33.7            | 56.0               | -22.3       |
| 0.559      | 13.1        | 20.0        | 33.1            | 56.0               | -22.9       |
| 0.182      | 21.2        | 20.1        | 41.3            | 64.4               | -23.1       |
| 1.307      | 12.6        | 20.2        | 32.8            | 56.0               | -23.2       |
| 0.313      | 16.3        | 20.1        | 36.4            | 59.9               | -23.5       |
| 0.931      | 12.1        | 20.1        | 32.2            | 56.0               | -23.8       |
| 13.984     | 14.7        | 21.2        | 35.9            | 60.0               | -24.1       |
| 0.615      | 11.7        | 20.1        | 31.8            | 56.0               | -24.2       |
| 1.867      | 11.5        | 20.3        | 31.8            | 56.0               | -24.2       |
| 1.311      | 11.1        | 20.2        | 31.3            | 56.0               | -24.7       |
| 26.672     | 13.0        | 22.3        | 35.3            | 60.0               | -24.7       |
| 2.423      | 10.8        | 20.4        | 31.2            | 56.0               | -24.8       |
| 2.237      | 10.8        | 20.3        | 31.1            | 56.0               | -24.9       |
| 3.089      | 10.6        | 20.4        | 31.0            | 56.0               | -25.0       |
| 3.807      | 10.4        | 20.5        | 30.9            | 56.0               | -25.1       |
| 4.401      | 10.3        | 20.5        | 30.8            | 56.0               | -25.2       |
| 0.402      | 12.5        | 20.0        | 32.5            | 57.8               | -25.3       |
| 22.569     | 10.1        | 21.9        | 32.0            | 60.0               | -28.0       |
| 18.837     | 10.3        | 21.5        | 31.8            | 60.0               | -28.2       |
| 11.296     | 10.6        | 21.0        | 31.6            | 60.0               | -28.4       |
| 0.240      | 13.5        | 20.0        | 33.5            | 62.1               | -28.6       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 13.560     | 53.6        | 21.1        | 74.7            | 50.0               | 24.7        |
| 0.373      | 22.2        | 20.0        | 42.2            | 48.4               | -6.2        |
| 0.187      | 23.8        | 20.1        | 43.9            | 54.2               | -10.3       |
| 13.600     | 13.7        | 21.1        | 34.8            | 50.0               | -15.2       |
| 0.182      | 18.3        | 20.1        | 38.4            | 54.4               | -16.0       |
| 0.745      | 8.1         | 20.1        | 28.2            | 46.0               | -17.8       |
| 0.559      | 7.3         | 20.0        | 27.3            | 46.0               | -18.7       |
| 1.307      | 7.0         | 20.2        | 27.2            | 46.0               | -18.8       |
| 0.931      | 6.2         | 20.1        | 26.3            | 46.0               | -19.7       |
| 26.858     | 7.8         | 22.4        | 30.2            | 50.0               | -19.8       |
| 0.313      | 9.6         | 20.1        | 29.7            | 49.9               | -20.2       |
| 1.865      | 5.6         | 20.2        | 25.8            | 46.0               | -20.2       |
| 0.606      | 5.7         | 20.0        | 25.7            | 46.0               | -20.3       |
| 1.311      | 5.1         | 20.2        | 25.3            | 46.0               | -20.7       |
| 2.239      | 4.8         | 20.3        | 25.1            | 46.0               | -20.9       |
| 2.423      | 4.7         | 20.4        | 25.1            | 46.0               | -20.9       |
| 0.403      | 6.6         | 20.0        | 26.6            | 47.8               | -21.2       |
| 2.983      | 4.4         | 20.4        | 24.8            | 46.0               | -21.2       |
| 3.647      | 4.3         | 20.5        | 24.8            | 46.0               | -21.2       |
| 4.273      | 4.2         | 20.5        | 24.7            | 46.0               | -21.3       |
| 13.984     | 7.4         | 21.2        | 28.6            | 50.0               | -21.4       |
| 22.381     | 4.2         | 21.8        | 26.0            | 50.0               | -24.0       |
| 18.835     | 4.3         | 21.5        | 25.8            | 50.0               | -24.2       |
| 11.296     | 4.6         | 21.0        | 25.6            | 50.0               | -24.4       |
| 8.786      | 4.1         | 20.8        | 24.9            | 50.0               | -25.1       |

## CONCLUSION

Evaluation



Tested By

# POWERLINE CONDUCTED EMISSIONS

|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-01-27 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 20.5°C     |
| Attendees:        | None                                | Relative Humidity:    | 42%        |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1018 mb    |
| Tested By:        | Matthew Ng                          | Job Site:             | OC06       |
| Power:            | 120VAC/60Hz                         | Configuration:        | FDMT0001-2 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.225:2025 | ANSI C63.10:2013 |

## TEST PARAMETERS

|        |    |       |           |                             |   |
|--------|----|-------|-----------|-----------------------------|---|
| Run #: | 20 | Line: | High Line | Add. Ext. Attenuation (dB): | 0 |
|--------|----|-------|-----------|-----------------------------|---|

## COMMENTS

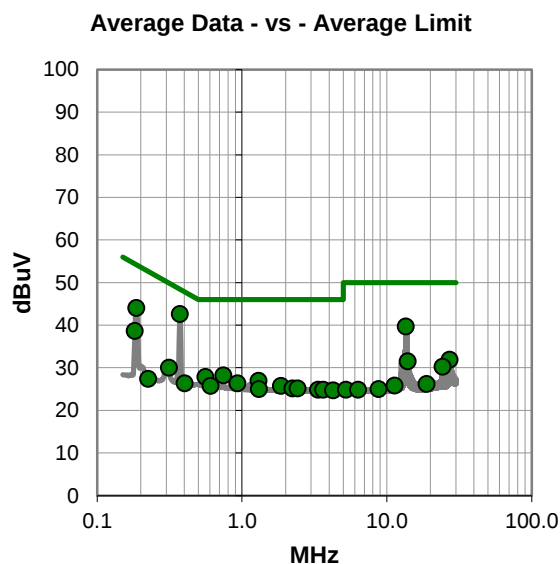
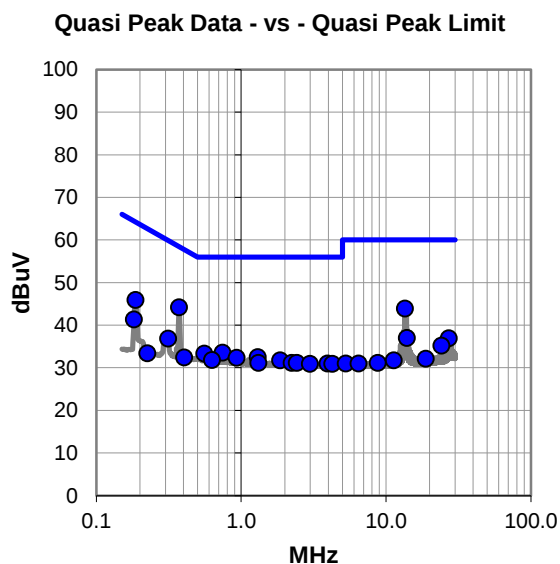
|                                                |
|------------------------------------------------|
| NFC Board Rev 2.1, LTE module with 3x antennas |
|------------------------------------------------|

## EUT OPERATING MODES

|                                                                                      |
|--------------------------------------------------------------------------------------|
| Transmitting RFID 13.56 MHz, with LTE Module and 50 Ohm Terminated NFC Board Rev 2.1 |
|--------------------------------------------------------------------------------------|

## DEVIATIONS FROM TEST STANDARD

|      |
|------|
| None |
|------|



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #20

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 0.373      | 24.2        | 20.0        | 44.2            | 58.4               | -14.2       |
| 13.559     | 22.8        | 21.1        | 43.9            | 60.0               | -16.1       |
| 0.187      | 25.8        | 20.1        | 45.9            | 64.2               | -18.3       |
| 0.745      | 13.4        | 20.1        | 33.5            | 56.0               | -22.5       |
| 0.557      | 13.3        | 20.0        | 33.3            | 56.0               | -22.7       |
| 13.981     | 15.8        | 21.2        | 37.0            | 60.0               | -23.0       |
| 27.199     | 14.4        | 22.5        | 36.9            | 60.0               | -23.1       |
| 0.182      | 21.2        | 20.1        | 41.3            | 64.4               | -23.1       |
| 0.313      | 16.7        | 20.1        | 36.8            | 59.9               | -23.1       |
| 1.305      | 12.3        | 20.2        | 32.5            | 56.0               | -23.5       |
| 0.933      | 12.2        | 20.1        | 32.3            | 56.0               | -23.7       |
| 0.629      | 11.7        | 20.1        | 31.8            | 56.0               | -24.2       |
| 1.863      | 11.5        | 20.2        | 31.7            | 56.0               | -24.3       |
| 24.224     | 13.2        | 22.0        | 35.2            | 60.0               | -24.8       |
| 1.319      | 10.9        | 20.2        | 31.1            | 56.0               | -24.9       |
| 2.236      | 10.8        | 20.3        | 31.1            | 56.0               | -24.9       |
| 2.425      | 10.7        | 20.4        | 31.1            | 56.0               | -24.9       |
| 3.951      | 10.5        | 20.5        | 31.0            | 56.0               | -25.0       |
| 2.991      | 10.5        | 20.4        | 30.9            | 56.0               | -25.1       |
| 4.273      | 10.4        | 20.5        | 30.9            | 56.0               | -25.1       |
| 0.403      | 12.4        | 20.0        | 32.4            | 57.8               | -25.4       |
| 18.835     | 10.6        | 21.5        | 32.1            | 60.0               | -27.9       |
| 11.310     | 10.7        | 21.0        | 31.7            | 60.0               | -28.3       |
| 8.798      | 10.3        | 20.8        | 31.1            | 60.0               | -28.9       |
| 5.283      | 10.4        | 20.6        | 31.0            | 60.0               | -29.0       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 0.373      | 22.6        | 20.0        | 42.6            | 48.4               | -5.8        |
| 0.187      | 23.9        | 20.1        | 44.0            | 54.2               | -10.2       |
| 13.560     | 18.6        | 21.1        | 39.7            | 50.0               | -10.3       |
| 0.182      | 18.5        | 20.1        | 38.6            | 54.4               | -15.8       |
| 0.745      | 8.1         | 20.1        | 28.2            | 46.0               | -17.8       |
| 27.199     | 9.4         | 22.5        | 31.9            | 50.0               | -18.1       |
| 0.559      | 7.8         | 20.0        | 27.8            | 46.0               | -18.2       |
| 13.981     | 10.3        | 21.2        | 31.5            | 50.0               | -18.5       |
| 1.305      | 6.7         | 20.2        | 26.9            | 46.0               | -19.1       |
| 0.931      | 6.2         | 20.1        | 26.3            | 46.0               | -19.7       |
| 24.236     | 8.2         | 22.0        | 30.2            | 50.0               | -19.8       |
| 0.313      | 9.9         | 20.1        | 30.0            | 49.9               | -19.9       |
| 0.606      | 5.7         | 20.0        | 25.7            | 46.0               | -20.3       |
| 1.863      | 5.5         | 20.2        | 25.7            | 46.0               | -20.3       |
| 2.237      | 4.8         | 20.3        | 25.1            | 46.0               | -20.9       |
| 2.423      | 4.7         | 20.4        | 25.1            | 46.0               | -20.9       |
| 1.311      | 4.8         | 20.2        | 25.0            | 46.0               | -21.0       |
| 3.359      | 4.4         | 20.4        | 24.8            | 46.0               | -21.2       |
| 3.649      | 4.3         | 20.5        | 24.8            | 46.0               | -21.2       |
| 4.273      | 4.2         | 20.5        | 24.7            | 46.0               | -21.3       |
| 0.402      | 6.3         | 20.0        | 26.3            | 47.8               | -21.5       |
| 18.835     | 4.7         | 21.5        | 26.2            | 50.0               | -23.8       |
| 11.311     | 4.8         | 21.0        | 25.8            | 50.0               | -24.2       |
| 8.797      | 4.2         | 20.8        | 25.0            | 50.0               | -25.0       |
| 0.225      | 7.4         | 20.0        | 27.4            | 52.6               | -25.2       |

## CONCLUSION

Pass



Tested By

# POWERLINE CONDUCTED EMISSIONS

|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-01-27 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 20.5°C     |
| Attendees:        | None                                | Relative Humidity:    | 42%        |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1018 mb    |
| Tested By:        | Matthew Ng                          | Job Site:             | OC06       |
| Power:            | 120VAC/60Hz                         | Configuration:        | FDMT0001-2 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.225:2025 | ANSI C63.10:2013 |

## TEST PARAMETERS

|        |    |       |         |                             |   |
|--------|----|-------|---------|-----------------------------|---|
| Run #: | 21 | Line: | Neutral | Add. Ext. Attenuation (dB): | 0 |
|--------|----|-------|---------|-----------------------------|---|

## COMMENTS

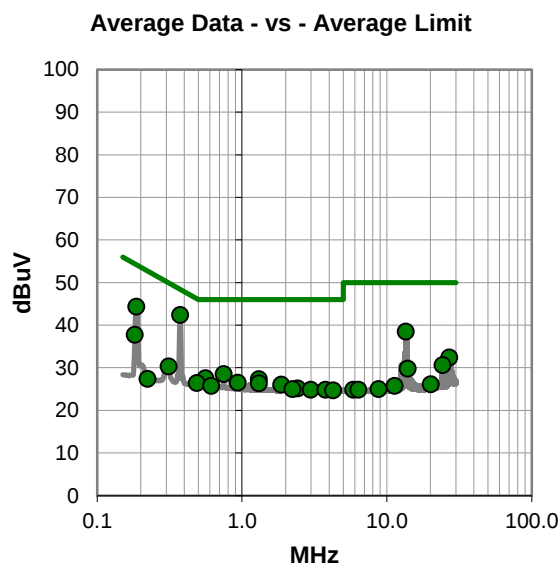
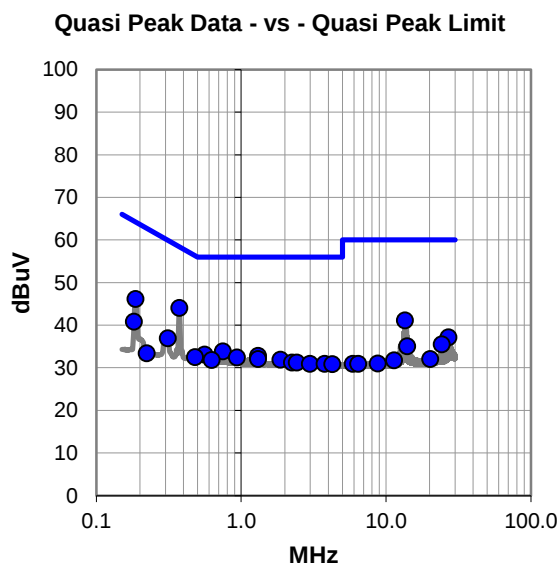
|                                                |
|------------------------------------------------|
| NFC Board Rev 2.1, LTE module with 3x antennas |
|------------------------------------------------|

## EUT OPERATING MODES

|                                                                                      |
|--------------------------------------------------------------------------------------|
| Transmitting RFID 13.56 MHz, with LTE Module and 50 Ohm Terminated NFC Board Rev 2.1 |
|--------------------------------------------------------------------------------------|

## DEVIATIONS FROM TEST STANDARD

|      |
|------|
| None |
|------|



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #21

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 0.374      | 24.0        | 20.0        | 44.0            | 58.4               | -14.4       |
| 0.187      | 26.0        | 20.1        | 46.1            | 64.2               | -18.1       |
| 13.560     | 20.0        | 21.1        | 41.1            | 60.0               | -18.9       |
| 0.747      | 13.7        | 20.1        | 33.8            | 56.0               | -22.2       |
| 27.102     | 14.6        | 22.5        | 37.1            | 60.0               | -22.9       |
| 0.560      | 13.1        | 20.0        | 33.1            | 56.0               | -22.9       |
| 0.312      | 16.8        | 20.1        | 36.9            | 59.9               | -23.0       |
| 1.308      | 12.6        | 20.2        | 32.8            | 56.0               | -23.2       |
| 0.182      | 20.7        | 20.1        | 40.8            | 64.4               | -23.6       |
| 0.934      | 12.3        | 20.1        | 32.4            | 56.0               | -23.6       |
| 0.481      | 12.5        | 20.0        | 32.5            | 56.3               | -23.8       |
| 1.311      | 11.8        | 20.2        | 32.0            | 56.0               | -24.0       |
| 1.868      | 11.6        | 20.3        | 31.9            | 56.0               | -24.1       |
| 0.628      | 11.7        | 20.1        | 31.8            | 56.0               | -24.2       |
| 24.290     | 13.5        | 22.0        | 35.5            | 60.0               | -24.5       |
| 2.240      | 10.9        | 20.3        | 31.2            | 56.0               | -24.8       |
| 2.428      | 10.8        | 20.4        | 31.2            | 56.0               | -24.8       |
| 14.013     | 13.8        | 21.2        | 35.0            | 60.0               | -25.0       |
| 2.993      | 10.5        | 20.4        | 30.9            | 56.0               | -25.1       |
| 3.775      | 10.4        | 20.5        | 30.9            | 56.0               | -25.1       |
| 4.274      | 10.3        | 20.5        | 30.8            | 56.0               | -25.2       |
| 20.185     | 10.4        | 21.6        | 32.0            | 60.0               | -28.0       |
| 11.375     | 10.6        | 21.1        | 31.7            | 60.0               | -28.3       |
| 8.800      | 10.2        | 20.8        | 31.0            | 60.0               | -29.0       |
| 5.895      | 10.2        | 20.7        | 30.9            | 60.0               | -29.1       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 0.374      | 22.4        | 20.0        | 42.4            | 48.4               | -6.0        |
| 0.187      | 24.2        | 20.1        | 44.3            | 54.2               | -9.9        |
| 13.560     | 17.4        | 21.1        | 38.5            | 50.0               | -11.5       |
| 0.182      | 17.6        | 20.1        | 37.7            | 54.4               | -16.7       |
| 0.747      | 8.4         | 20.1        | 28.5            | 46.0               | -17.5       |
| 27.102     | 9.9         | 22.5        | 32.4            | 50.0               | -17.6       |
| 0.560      | 7.5         | 20.0        | 27.5            | 46.0               | -18.5       |
| 1.308      | 7.1         | 20.2        | 27.3            | 46.0               | -18.7       |
| 24.279     | 8.6         | 22.0        | 30.6            | 50.0               | -19.4       |
| 0.934      | 6.4         | 20.1        | 26.5            | 46.0               | -19.5       |
| 0.312      | 10.2        | 20.1        | 30.3            | 49.9               | -19.6       |
| 1.311      | 6.1         | 20.2        | 26.3            | 46.0               | -19.7       |
| 0.489      | 6.4         | 20.0        | 26.4            | 46.2               | -19.8       |
| 1.868      | 5.7         | 20.3        | 26.0            | 46.0               | -20.0       |
| 13.936     | 8.6         | 21.2        | 29.8            | 50.0               | -20.2       |
| 0.614      | 5.6         | 20.1        | 25.7            | 46.0               | -20.3       |
| 2.428      | 4.7         | 20.4        | 25.1            | 46.0               | -20.9       |
| 2.239      | 4.7         | 20.3        | 25.0            | 46.0               | -21.0       |
| 2.990      | 4.4         | 20.4        | 24.8            | 46.0               | -21.2       |
| 3.771      | 4.3         | 20.5        | 24.8            | 46.0               | -21.2       |
| 4.273      | 4.2         | 20.5        | 24.7            | 46.0               | -21.3       |
| 20.173     | 4.5         | 21.6        | 26.1            | 50.0               | -23.9       |
| 11.311     | 4.7         | 21.0        | 25.7            | 50.0               | -24.3       |
| 8.798      | 4.2         | 20.8        | 25.0            | 50.0               | -25.0       |
| 5.872      | 4.1         | 20.7        | 24.8            | 50.0               | -25.2       |

## CONCLUSION

Pass



Tested By

# EMISSIONS BANDWIDTH (20 DB)

## TEST DESCRIPTION

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.

A near-field probe was placed near the transmitter. A low-loss coaxial cable was used to connect the near-field probe to the spectrum analyzer.

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 is operated.

The 20 dB bandwidth must be contained within the band 13.110-14.010 MHz. 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 emissions bandwidth (EBW) and video bandwidth (VBW) bandwidth was set to at least 3 times the resolution bandwidth. The analyzer sweep time was set to auto and a peak detector was used.

Per ANSI C63.10a:2024, Clause 6.9.2 b) The nominal IF filter bandwidth shall be within 1-5% of the OBW without going below the values in Clause 6.9.1. In this frequency range (9 kHz – 30 MHz) the minimum RBW is 0.1 kHz.

The spectrum analyzer bandwidth measurement function was used to measure the 20 dB bandwidth.

## TEST EQUIPMENT

| Description                  | Manufacturer       | Model                 | ID  | Last Cal.  | Cal. Due   |
|------------------------------|--------------------|-----------------------|-----|------------|------------|
| Analyzer - Spectrum Analyzer | Agilent            | E4443A                | AAR | 2024-11-07 | 2025-11-07 |
| Cable                        | Micro-Coax         | UFD150A-1-0720-200200 | OCA | 2024-10-02 | 2025-10-02 |
| Block - DC                   | Fairview Microwave | SD3379                | ANG | 2024-10-03 | 2025-10-03 |
| Attenuator                   | Fairview Microwave | SA18H-20              | UAX | 2024-07-11 | 2025-07-11 |
| Probe - Near Field Set       | EMCO               | 7405                  | IPI | NCR        | NCR        |

# EMISSIONS BANDWIDTH (20 DB)



|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-03-12 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 20.4°C     |
| Attendees:        | None                                | Relative Humidity:    | 41.8%      |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1016 mbar  |
| Tested By:        | Matthew Ng                          | Job Site:             | OC13       |
| Power:            | 120VAC/60Hz                         | Configuration:        | FDMT0001-2 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.225:2025 | ANSI C63.10:2013 |

## COMMENTS

|                                                |
|------------------------------------------------|
| NFC Board Rev 2.1, LTE module with 3x antennas |
|------------------------------------------------|

## DEVIATIONS FROM TEST STANDARD

|      |
|------|
| None |
|------|

## CONCLUSION

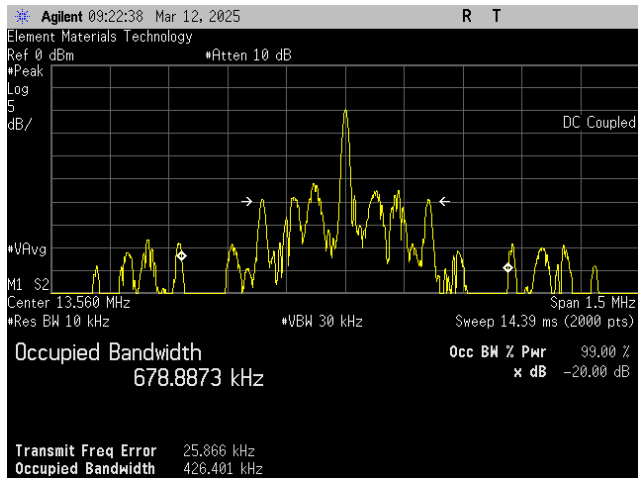
|      |
|------|
| Pass |
|------|

Tested By

## TEST RESULTS

| 13.56 MHz RFID, ISO/IEC 14443 Type A | Limit       |                     | Result |
|--------------------------------------|-------------|---------------------|--------|
|                                      | Value       | 13.110 ≤ f ≤ 14.010 |        |
| Normal Conditions                    | 426.401 kHz | Within              | Pass   |

# EMISSIONS BANDWIDTH (20 DB)



13.56 MHz RFID, ISO/IEC 14443 Type A  
Normal Conditions

# FIELD STRENGTH OF FUNDAMENTAL

## 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, adjusting the position of the EUT and EUT antenna in three orthogonal axis, 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.

## TEST EQUIPMENT

| Description    | Manufacturer    | Model                 | ID  | Last Cal.  | Cal. Due   |
|----------------|-----------------|-----------------------|-----|------------|------------|
| Antenna - Loop | EMCO            | 6502                  | AZB | 2023-09-06 | 2025-09-06 |
| Cable          | Northwest EMC   | 3kHz - 1GHz RE Cables | OCB | 2024-05-15 | 2025-05-15 |
| Receiver       | Rohde & Schwarz | ESCI                  | ARG | 2024-09-19 | 2025-09-19 |

## FREQUENCY RANGE INVESTIGATED

12.56 MHz TO 14.56 MHz

## POWER INVESTIGATED

110VAC/60Hz

## CONFIGURATIONS INVESTIGATED

FDMT0001-2

## MODES INVESTIGATED

Transmitting RFID 13.56 MHz

# FIELD STRENGTH OF FUNDAMENTAL

|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-01-14 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 21.8°C     |
| Attendees:        | None                                | Relative Humidity:    | 23.6%      |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1022 mb    |
| Tested By:        | Nolan De Ramos                      | Job Site:             | OC08       |
| Power:            | 110VAC/60Hz                         | Configuration:        | FDMT0001-2 |

## TEST PARAMETERS

|        |    |                    |    |                     |      |
|--------|----|--------------------|----|---------------------|------|
| Run #: | 12 | Test Distance (m): | 10 | Ant. Height(s) (m): | 1(m) |
|--------|----|--------------------|----|---------------------|------|

## COMMENTS

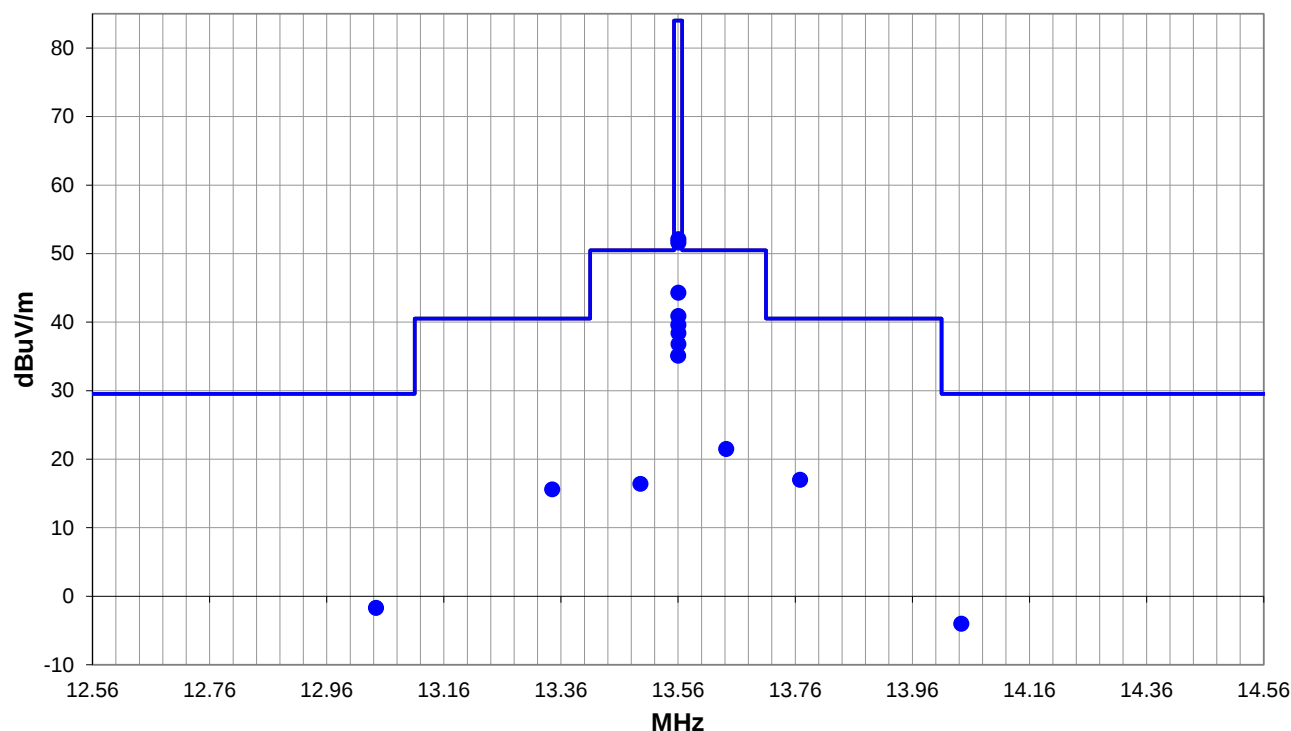
NFC Board Rev 2.1, LTE Module with 3x antennas

## EUT OPERATING MODES

Transmitting RFID 13.56 MHz

## DEVIATIONS FROM TEST STANDARD

None



Run #: 12

PK AV QP

# FIELD STRENGTH OF FUNDAMENTAL

## RESULTS - Run #12

| 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                  |
|------------|------------------|---------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|---------------------------|
| 13.768     | 24.4             | 11.7          | 1.0                     | 97.0              | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 17.0              | 40.5                 | -23.5                  | Tx 13.56 MHz, EUT Vert    |
| 13.345     | 23.0             | 11.7          | 1.0                     | 68.0              | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 15.6              | 40.5                 | -24.9                  | Tx 13.56 MHz, EUT Vert    |
| 13.642     | 28.9             | 11.7          | 1.0                     | 220.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 21.5              | 50.5                 | -29.0                  | Tx 13.56 MHz, EUT Vert    |
| 13.044     | 5.7              | 11.7          | 1.0                     | 333.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -1.7              | 29.5                 | -31.2                  | Tx 13.56 MHz, EUT Vert    |
| 13.561     | 59.5             | 11.7          | 1.0                     | 231.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 52.1              | 84.0                 | -31.9                  | Tx 13.56 MHz, EUT Vert    |
| 13.561     | 59.0             | 11.7          | 1.0                     | 187.0             | 10.0                   | 0.0                       | Par to GND                | QP       | -19.1                    | 51.6              | 84.0                 | -32.4                  | Tx 13.56 MHz, EUT Vert    |
| 14.044     | 3.4              | 11.7          | 1.0                     | 203.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -4.0              | 29.5                 | -33.5                  | Tx 13.56 MHz, EUT Vert    |
| 13.496     | 23.8             | 11.7          | 1.0                     | 272.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 16.4              | 50.5                 | -34.1                  | Tx 13.56 MHz, EUT Vert    |
| 13.560     | 51.7             | 11.7          | 1.0                     | 139.0             | 10.0                   | 0.0                       | Par to GND                | QP       | -19.1                    | 44.3              | 84.0                 | -39.7                  | Tx 13.56 MHz, EUT Horz    |
| 13.560     | 48.3             | 11.7          | 1.0                     | 125.0             | 10.0                   | 0.0                       | Par to GND                | QP       | -19.1                    | 40.9              | 84.0                 | -43.1                  | Tx 13.56 MHz, EUT on Side |
| 13.560     | 47.0             | 11.7          | 1.0                     | 123.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 39.6              | 84.0                 | -44.4                  | Tx 13.56 MHz, EUT Horz    |
| 13.561     | 45.8             | 11.7          | 1.0                     | 154.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | 38.4              | 84.0                 | -45.6                  | Tx 13.56 MHz, EUT Horz    |
| 13.561     | 44.2             | 11.7          | 1.0                     | 133.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 36.8              | 84.0                 | -47.2                  | Tx 13.56 MHz, EUT on Side |
| 13.560     | 42.5             | 11.7          | 1.0                     | 147.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | 35.1              | 84.0                 | -48.9                  | Tx 13.56 MHz, EUT on Side |

## CONCLUSION

Pass

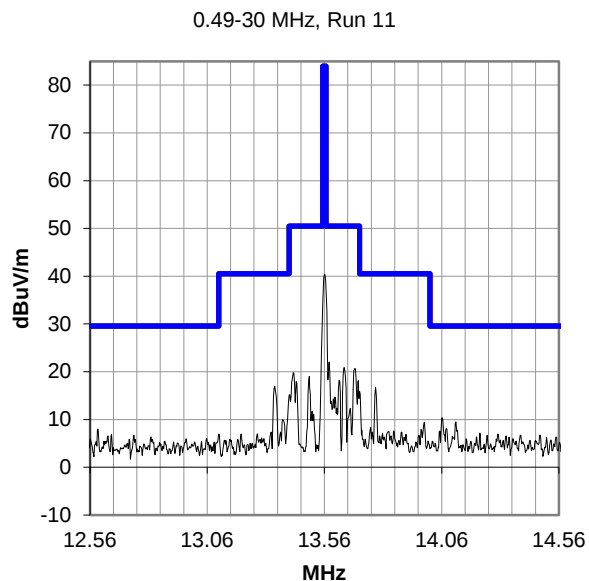


Tested By

# FIELD STRENGTH OF FUNDAMENTAL

## PRESCAN DATA

Radiated spurious emissions from the EUT are initially reviewed with Pre-scans (Preview scans). Pre-scans are performed, with the EUT transmitting on the lowest applicable data rate, for both vertical and horizontal polarizations. The Pre-scan plots below are shown with a peak detector and RBW for the following frequency ranges: 9 kHz RBW (< 30 MHz); 120 kHz RBW (30 - 1000 MHz); 1 MHz RBW (> 1 GHz). In the case where unintentional emissions are observed, an ambient or idle pre-scan with the radio off, will be shown for comparison.



# FIELD STRENGTH OF FUNDAMENTAL

## TEST DESCRIPTION

The fundamental carrier of the EUT was maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, 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.

## TEST EQUIPMENT

| Description    | Manufacturer    | Model                 | ID  | Last Cal.  | Cal. Due   |
|----------------|-----------------|-----------------------|-----|------------|------------|
| Antenna - Loop | EMCO            | 6502                  | AZB | 2023-09-06 | 2025-09-06 |
| Cable          | Northwest EMC   | 3kHz - 1GHz RE Cables | OCB | 2024-05-15 | 2025-05-15 |
| Receiver       | Rohde & Schwarz | ESCI                  | ARG | 2024-09-19 | 2025-09-19 |

## FREQUENCY RANGE INVESTIGATED

12.56 MHz TO 14.56 MHz

## POWER INVESTIGATED

110VAC/60Hz

## CONFIGURATIONS INVESTIGATED

FDMT0001-3

## MODES INVESTIGATED

Transmitting RFID 13.56 MHz

# FIELD STRENGTH OF FUNDAMENTAL

|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-01-23 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 24°C       |
| Attendees:        | None                                | Relative Humidity:    | 19.9%      |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1025 mb    |
| Tested By:        | Matthew Ng                          | Job Site:             | OC08       |
| Power:            | 110VAC/60Hz                         | Configuration:        | FDMT0001-3 |

## TEST PARAMETERS

|        |    |                    |    |                     |      |
|--------|----|--------------------|----|---------------------|------|
| Run #: | 19 | Test Distance (m): | 10 | Ant. Height(s) (m): | 1(m) |
|--------|----|--------------------|----|---------------------|------|

## COMMENTS

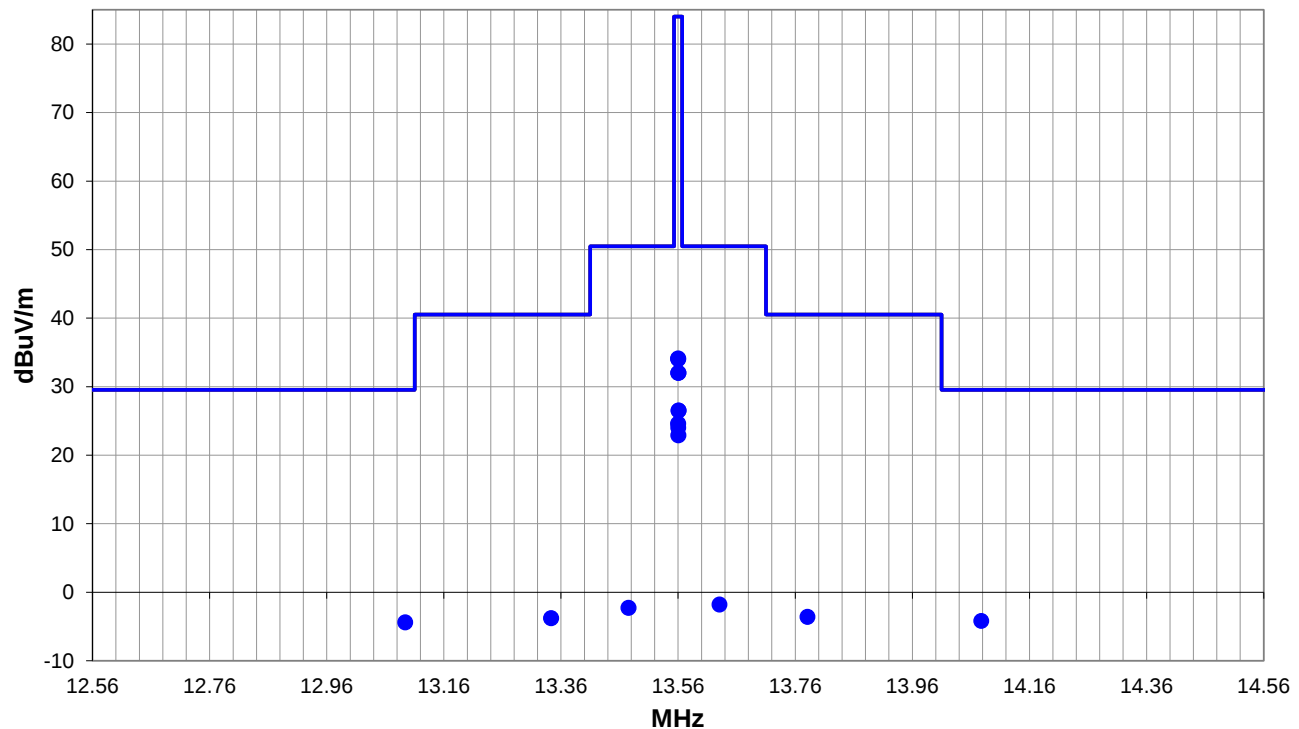
NFC Board Rev 2.1, Wi-Fi Module with 1x antennas

## EUT OPERATING MODES

Transmitting RFID 13.56 MHz

## DEVIATIONS FROM TEST STANDARD

None



Run #: 19

PK AV QP

# FIELD STRENGTH OF FUNDAMENTAL

## RESULTS - Run #19

| 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                  |
|------------|------------------|---------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|---------------------------|
| 14.078     | 3.2              | 11.7          | 1.0                     | 258.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | -4.2              | 29.5                 | -33.7                  | Tx 13.56 MHz, EUT Horz    |
| 13.094     | 3.0              | 11.7          | 1.0                     | 256.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | -4.4              | 29.5                 | -33.9                  | Tx 13.56 MHz, EUT Horz    |
| 13.781     | 3.8              | 11.7          | 1.0                     | 271.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | -3.6              | 40.5                 | -44.1                  | Tx 13.56 MHz, EUT Horz    |
| 13.343     | 3.6              | 11.7          | 1.0                     | 130.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | -3.8              | 40.5                 | -44.3                  | Tx 13.56 MHz, EUT Horz    |
| 13.560     | 41.5             | 11.7          | 1.0                     | 243.0             | 10.0                   | 0.0                       | Par to GND                | QP       | -19.1                    | 34.1              | 84.0                 | -49.9                  | Tx 13.56 MHz, EUT Vert    |
| 13.560     | 41.4             | 11.7          | 1.0                     | 217.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 34.0              | 84.0                 | -50.0                  | Tx 13.56 MHz, EUT Vert    |
| 13.560     | 39.4             | 11.7          | 1.0                     | 206.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 32.0              | 84.0                 | -52.0                  | Tx 13.56 MHz, EUT on Side |
| 13.560     | 39.4             | 11.7          | 1.0                     | 268.0             | 10.0                   | 0.0                       | Par to GND                | QP       | -19.1                    | 32.0              | 84.0                 | -52.0                  | Tx 13.56 MHz, EUT on Side |
| 13.631     | 5.6              | 11.7          | 1.0                     | 120.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | -1.8              | 50.5                 | -52.3                  | Tx 13.56 MHz, EUT Horz    |
| 13.475     | 5.1              | 11.7          | 1.0                     | 351.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | -2.3              | 50.5                 | -52.8                  | Tx 13.56 MHz, EUT Horz    |
| 13.561     | 33.9             | 11.7          | 1.0                     | 141.0             | 10.0                   | 0.0                       | Perp To EUT               | QP       | -19.1                    | 26.5              | 84.0                 | -57.5                  | Tx 13.56 MHz, EUT Horz    |
| 13.561     | 33.9             | 11.7          | 1.0                     | 132.0             | 10.0                   | 0.0                       | Par to GND                | QP       | -19.1                    | 26.5              | 84.0                 | -57.5                  | Tx 13.56 MHz, EUT Horz    |
| 13.560     | 32.0             | 11.7          | 1.0                     | 327.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | 24.6              | 84.0                 | -59.4                  | Tx 13.56 MHz, EUT Vert    |
| 13.560     | 31.4             | 11.7          | 1.0                     | 145.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | 24.0              | 84.0                 | -60.0                  | Tx 13.56 MHz, EUT Horz    |
| 13.560     | 30.3             | 11.7          | 1.0                     | 1.0               | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | 22.9              | 84.0                 | -61.1                  | Tx 13.56 MHz, EUT on Side |

## CONCLUSION

Pass

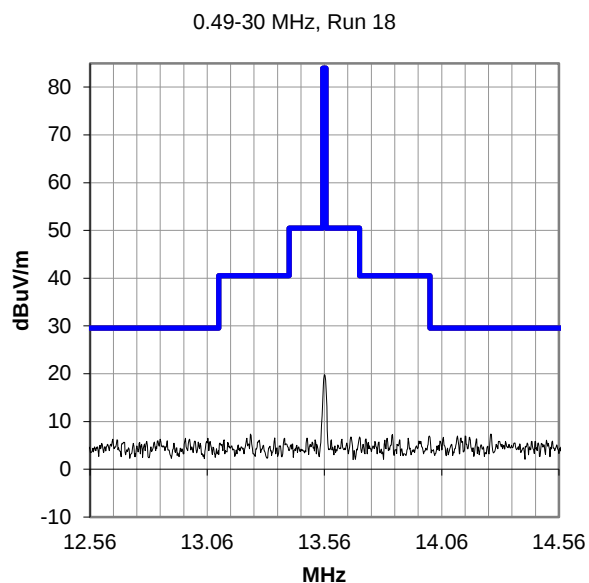


Tested By

# FIELD STRENGTH OF FUNDAMENTAL

## PRESCAN DATA

Radiated spurious emissions from the EUT are initially reviewed with Pre-scans (Preview scans). Pre-scans are performed, with the EUT transmitting on the lowest applicable data rate, for both vertical and horizontal polarizations. The Pre-scan plots below are shown with a peak detector and RBW for the following frequency ranges: 9 kHz RBW (< 30 MHz); 120 kHz RBW (30 - 1000 MHz); 1 MHz RBW (> 1 GHz). In the case where unintentional emissions are observed, an ambient or idle pre-scan with the radio off, will be shown for comparison.



# FIELD STRENGTH OF SPURIOUS EMISSIONS (LESS THAN 30 MHz)



## 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. A reference preview scan (pre-scan) is 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.

## TEST EQUIPMENT

| Description    | Manufacturer    | Model                 | ID  | Last Cal.  | Cal. Due   |
|----------------|-----------------|-----------------------|-----|------------|------------|
| Receiver       | Rohde & Schwarz | ESCI                  | ARG | 2024-09-19 | 2025-09-19 |
| Antenna - Loop | EMCO            | 6502                  | AZB | 2023-09-06 | 2025-09-06 |
| Cable          | Northwest EMC   | 3kHz - 1GHz RE Cables | OCB | 2024-05-15 | 2025-05-15 |

## FREQUENCY RANGE INVESTIGATED

9 kHz TO 30 MHz

## POWER INVESTIGATED

110VAC/60Hz

## CONFIGURATIONS INVESTIGATED

FDMT0001-2

## MODES INVESTIGATED

Transmitting NFC 13.56 MHz, with Cellular Module, with NFC Board Rev 2.1

# FIELD STRENGTH OF SPURIOUS EMISSIONS (LESS THAN 30 MHz)



|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-01-16 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 21.7°C     |
| Attendees:        | None                                | Relative Humidity:    | 30.4%      |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1019 mb    |
| Tested By:        | Nolan De Ramos                      | Job Site:             | OC08       |
| Power:            | 110VAC/60Hz                         | Configuration:        | FDMT0001-2 |

## TEST PARAMETERS

|        |    |                    |    |                     |      |
|--------|----|--------------------|----|---------------------|------|
| Run #: | 14 | Test Distance (m): | 10 | Ant. Height(s) (m): | 1(m) |
|--------|----|--------------------|----|---------------------|------|

## COMMENTS

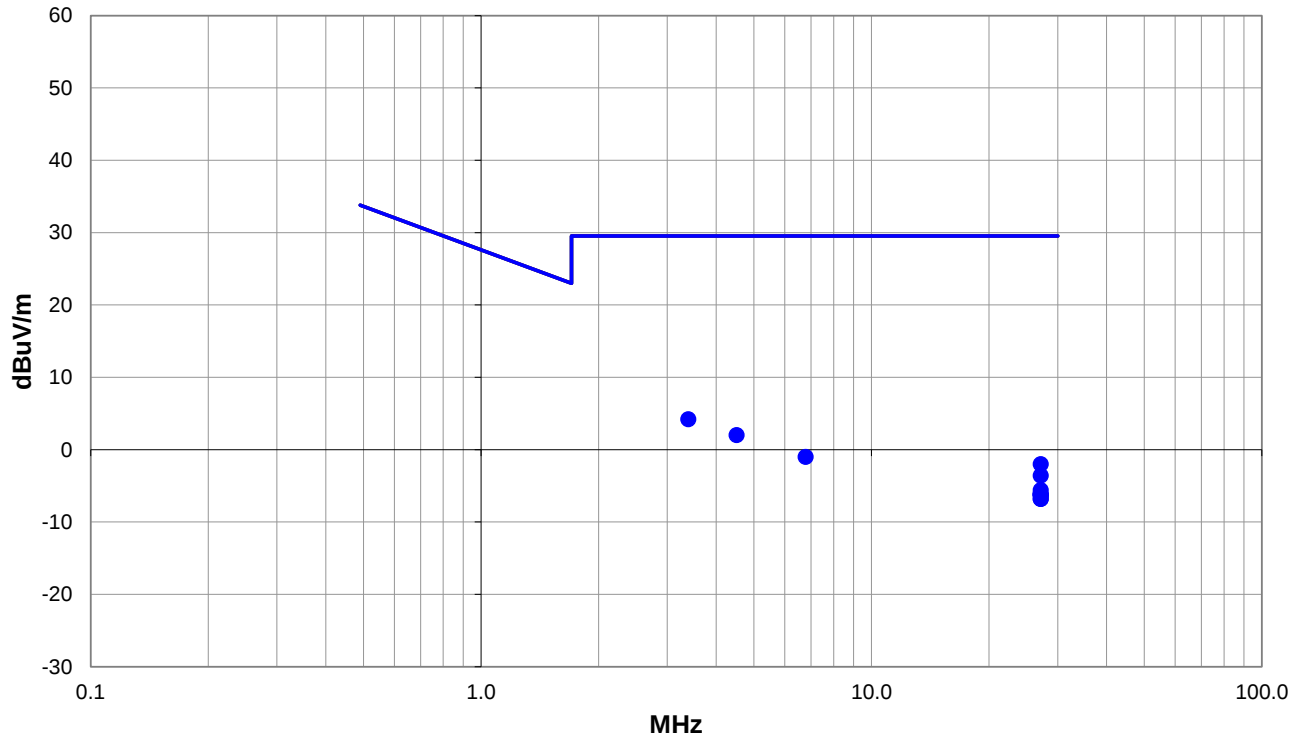
NFC Board Rev 2.1, LTE Module with 3x antennas

## EUT OPERATING MODES

Transmitting RFID 13.56 MHz

## DEVIATIONS FROM TEST STANDARD

None



Run #: 14

PK AV QP

# FIELD STRENGTH OF SPURIOUS EMISSIONS (LESS THAN 30 MHz)

## RESULTS - Run #14

| 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                  |
|------------|------------------|---------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|---------------------------|
| 3.394      | 12.4             | 10.9          | 1.0                     | 90.0              | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 4.2               | 29.5                 | -25.3                  | Tx 13.56 MHz, EUT Vert    |
| 4.516      | 10.0             | 11.1          | 1.0                     | 259.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | 2.0               | 29.5                 | -27.5                  | Tx 13.56 MHz, EUT Vert    |
| 6.784      | 7.0              | 11.1          | 1.0                     | 165.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -1.0              | 29.5                 | -30.5                  | Tx 13.56 MHz, EUT Vert    |
| 27.123     | 7.3              | 9.8           | 1.0                     | 183.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -2.0              | 29.5                 | -31.5                  | Tx 13.56 MHz, EUT Vert    |
| 27.123     | 5.7              | 9.8           | 1.0                     | 331.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -3.6              | 29.5                 | -33.1                  | Tx 13.56 MHz, EUT on Side |
| 27.123     | 3.7              | 9.8           | 1.0                     | 169.0             | 10.0                   | 0.0                       | Par to GND                | QP       | -19.1                    | -5.6              | 29.5                 | -35.1                  | Tx 13.56 MHz, EUT Vert    |
| 27.117     | 3.2              | 9.8           | 1.0                     | 299.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -6.1              | 29.5                 | -35.6                  | Tx 13.56 MHz, EUT Horz    |
| 27.122     | 3.1              | 9.8           | 1.0                     | 5.0               | 10.0                   | 0.0                       | Par to GND                | QP       | -19.1                    | -6.2              | 29.5                 | -35.7                  | Tx 13.56 MHz, EUT on Side |
| 27.122     | 3.0              | 9.8           | 1.0                     | 335.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | -6.3              | 29.5                 | -35.8                  | Tx 13.56 MHz, EUT Horz    |
| 27.121     | 3.0              | 9.8           | 1.0                     | 142.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | -6.3              | 29.5                 | -35.8                  | Tx 13.56 MHz, EUT on Side |
| 27.121     | 2.5              | 9.8           | 1.0                     | 221.0             | 10.0                   | 0.0                       | Par to GND                | QP       | -19.1                    | -6.8              | 29.5                 | -36.3                  | Tx 13.56 MHz, EUT Horz    |
| 27.122     | 2.5              | 9.8           | 1.0                     | 361.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | -6.8              | 29.5                 | -36.3                  | Tx 13.56 MHz, EUT Vert    |

## CONCLUSION

Pass

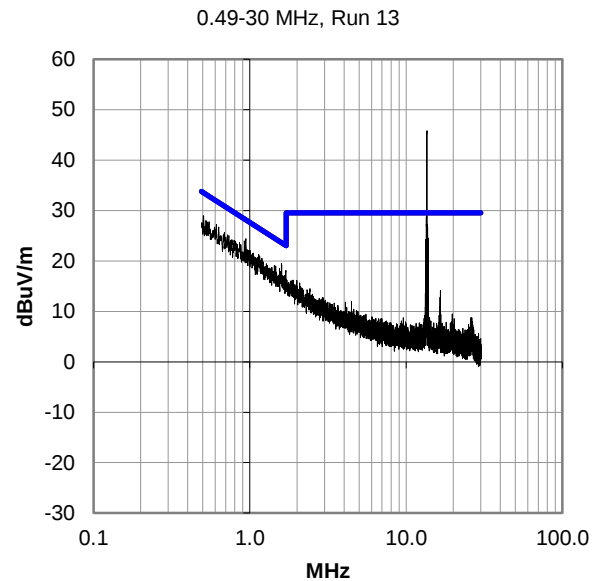
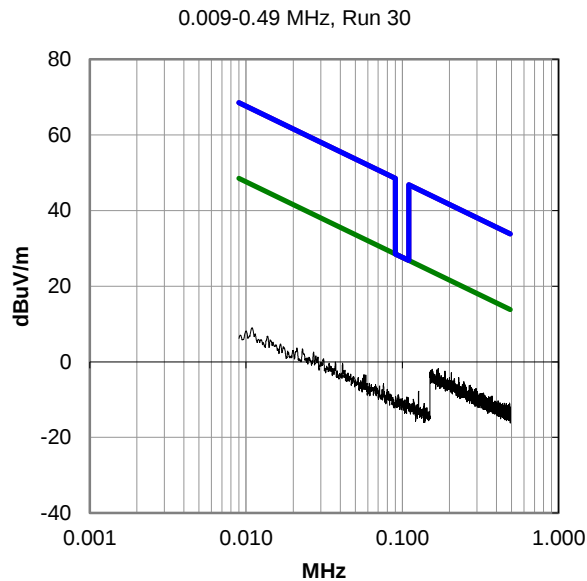


Tested By

# FIELD STRENGTH OF SPURIOUS EMISSIONS (LESS THAN 30 MHz)

## PRESCAN DATA

Radiated spurious emissions from the EUT are initially reviewed with Pre-scans (Preview scans). Pre-scans are performed, with the EUT transmitting on the lowest applicable data rate, for both vertical and horizontal polarizations. The Pre-scan plots below are shown with a peak detector and RBW for the following frequency ranges: 9 kHz RBW (< 30 MHz); 120 kHz RBW (30 - 1000 MHz); 1 MHz RBW (> 1 GHz). In the case where unintentional emissions are observed, an ambient or idle pre-scan with the radio off, will be shown for comparison.



# FIELD STRENGTH OF SPURIOUS EMISSIONS (LESS THAN 30 MHz)



## 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. A reference preview scan (pre-scan) is 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.

## TEST EQUIPMENT

| Description    | Manufacturer    | Model                 | ID  | Last Cal.  | Cal. Due   |
|----------------|-----------------|-----------------------|-----|------------|------------|
| Receiver       | Rohde & Schwarz | ESCI                  | ARG | 2024-09-19 | 2025-09-19 |
| Antenna - Loop | EMCO            | 6502                  | AZB | 2023-09-06 | 2025-09-06 |
| Cable          | Northwest EMC   | 3kHz - 1GHz RE Cables | OCB | 2024-05-15 | 2025-05-15 |

## FREQUENCY RANGE INVESTIGATED

9 kHz TO 30 MHz

## POWER INVESTIGATED

110VAC/60Hz

## CONFIGURATIONS INVESTIGATED

FDMT0001-3

## MODES INVESTIGATED

Transmitting RFID 13.56 MHz

# FIELD STRENGTH OF SPURIOUS EMISSIONS (LESS THAN 30 MHz)



|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-01-24 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 21.5°C     |
| Attendees:        | None                                | Relative Humidity:    | 21.6%      |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1019 mb    |
| Tested By:        | Matthew Ng                          | Job Site:             | OC08       |
| Power:            | 110VAC/60Hz                         | Configuration:        | FDMT0001-3 |

## TEST PARAMETERS

|        |    |                    |    |                     |      |
|--------|----|--------------------|----|---------------------|------|
| Run #: | 22 | Test Distance (m): | 10 | Ant. Height(s) (m): | 1(m) |
|--------|----|--------------------|----|---------------------|------|

## COMMENTS

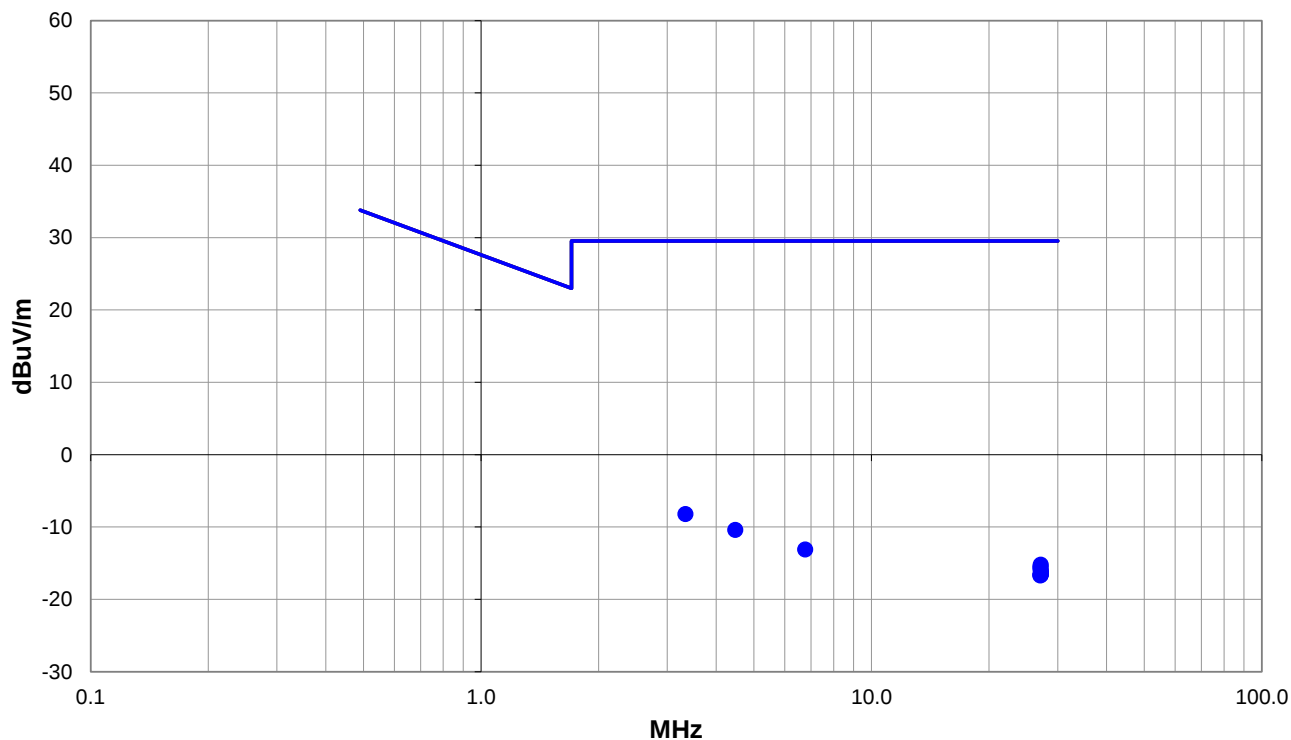
NFC Board Rev 2.1, Wi-Fi Module with 1x antennas

## EUT OPERATING MODES

Transmitting RFID 13.56 MHz

## DEVIATIONS FROM TEST STANDARD

None



Run #: 22

PK AV QP

# FIELD STRENGTH OF SPURIOUS EMISSIONS (LESS THAN 30 MHz)

## RESULTS - Run #22

| 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                  |
|------------|------------------|---------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|---------------------------|
| 3.339      | 10.9             | 0.0           | 1.0                     | 198.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -8.2              | 29.5                 | -37.7                  | Tx 13.56 MHz, EUT Horz    |
| 4.481      | 8.7              | 0.0           | 1.0                     | 339.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -10.4             | 29.5                 | -39.9                  | Tx 13.56 MHz, EUT Horz    |
| 6.764      | 6.0              | 0.0           | 1.0                     | 135.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -13.1             | 29.5                 | -42.6                  | Tx 13.56 MHz, EUT Horz    |
| 27.147     | 3.9              | 0.0           | 1.0                     | 275.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -15.2             | 29.5                 | -44.7                  | Tx 13.56 MHz, EUT Horz    |
| 27.114     | 3.6              | 0.0           | 1.0                     | 349.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -15.5             | 29.5                 | -45.0                  | Tx 13.56 MHz, EUT Vert    |
| 27.118     | 3.4              | 0.0           | 1.0                     | 301.0             | 10.0                   | 0.0                       | Perp to EUT               | QP       | -19.1                    | -15.7             | 29.5                 | -45.2                  | Tx 13.56 MHz, EUT on Side |
| 27.123     | 3.1              | 0.0           | 1.0                     | 343.0             | 10.0                   | 0.0                       | Par to GND                | QP       | -19.1                    | -16.0             | 29.5                 | -45.5                  | Tx 13.56 MHz, EUT Horz    |
| 27.171     | 2.9              | 0.0           | 1.0                     | 208.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | -16.2             | 29.5                 | -45.7                  | Tx 13.56 MHz, EUT Horz    |
| 27.126     | 2.6              | 0.0           | 1.0                     | 0.0               | 10.0                   | 0.0                       | Par to GND                | QP       | -19.1                    | -16.5             | 29.5                 | -46.0                  | Tx 13.56 MHz, EUT Vert    |
| 27.133     | 2.5              | 0.0           | 1.0                     | 319.0             | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | -16.6             | 29.5                 | -46.1                  | Tx 13.56 MHz, EUT on Side |
| 27.134     | 2.5              | 0.0           | 1.0                     | 89.0              | 10.0                   | 0.0                       | Par to EUT                | QP       | -19.1                    | -16.6             | 29.5                 | -46.1                  | Tx 13.56 MHz, EUT Vert    |
| 27.081     | 2.4              | 0.0           | 1.0                     | 67.0              | 10.0                   | 0.0                       | Par to GND                | QP       | -19.1                    | -16.7             | 29.5                 | -46.2                  | Tx 13.56 MHz, EUT on Side |

## CONCLUSION

Pass

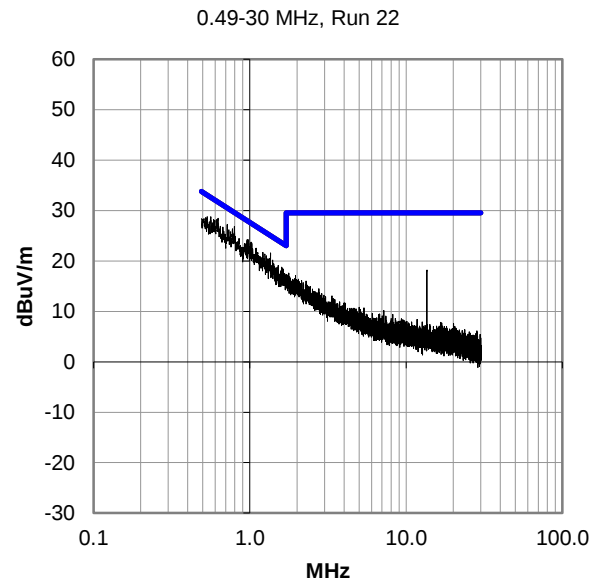
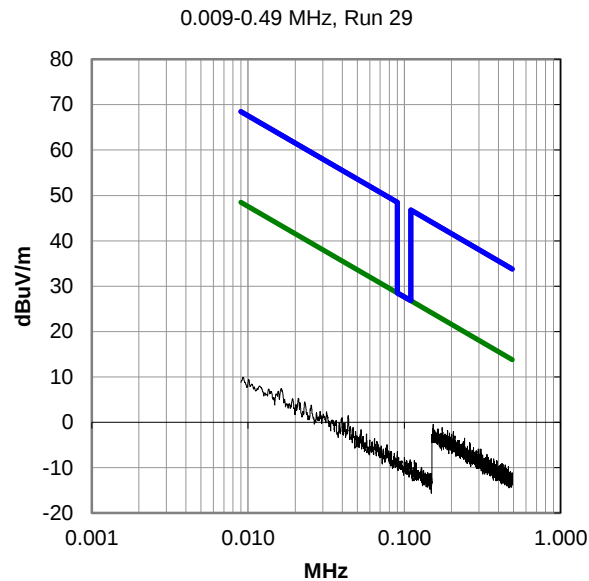


Tested By

# FIELD STRENGTH OF SPURIOUS EMISSIONS (LESS THAN 30 MHz)

## PRESCAN DATA

Radiated spurious emissions from the EUT are initially reviewed with Pre-scans (Preview scans). Pre-scans are performed, with the EUT transmitting on the lowest applicable data rate, for both vertical and horizontal polarizations. The Pre-scan plots below are shown with a peak detector and RBW for the following frequency ranges: 9 kHz RBW (< 30 MHz); 120 kHz RBW (30 - 1000 MHz); 1 MHz RBW (> 1 GHz). In the case where unintentional emissions are observed, an ambient or idle pre-scan with the radio off, will be shown for comparison.



# FIELD STRENGTH OF SPURIOUS EMISSIONS (GREATER THAN 30 MHZ)

## 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, adjusting the position of the EUT and EUT antenna in three orthogonal axis, 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.

## TEST EQUIPMENT

| Description                  | Manufacturer       | Model                  | ID  | Last Cal.  | Cal. Due   |
|------------------------------|--------------------|------------------------|-----|------------|------------|
| Antenna - Standard Gain      | ETS Lindgren       | 3160-07                | AHR | 2024-12-03 | 2025-12-03 |
| Cable                        | Northwest EMC      | 8-18GHz RE Cables      | OCO | 2024-03-19 | 2025-03-19 |
| Amplifier - Pre-Amplifier    | Miteq              | AMF-6F-08001200-30-10P | AOE | 2024-03-19 | 2025-03-19 |
| Analyzer - Spectrum Analyzer | Agilent            | N9010A                 | AFJ | 2024-02-14 | 2025-02-14 |
| Antenna - Standard Gain      | ETS Lindgren       | 3160-08                | AHT | 2024-12-03 | 2025-12-03 |
| Amplifier - Pre-Amplifier    | Miteq              | AMF-6F-12001800-30-10P | AOF | 2024-03-19 | 2025-03-19 |
| Antenna - Double Ridge       | ETS Lindgren       | 3115                   | AIR | 2024-07-23 | 2026-07-23 |
| Cable                        | Northwest EMC      | 1-8GHz RE Cables       | OCJ | 2024-05-08 | 2025-05-08 |
| Amplifier - Pre-Amplifier    | Cernex             | CBL01084020-xx         | PAX | 2024-05-08 | 2025-05-08 |
| Antenna - Biconilog          | Teseq              | CBL 6141A              | AYE | 2023-08-08 | 2025-08-08 |
| Cable                        | Northwest EMC      | 10kHz-1GHz RE Cables   | OCH | 2024-05-09 | 2025-05-09 |
| Amplifier - Pre-Amplifier    | Miteq              | AM-1402                | AOZ | 2024-05-14 | 2025-05-14 |
| Attenuator                   | Fairview Microwave | SA18H-20               | TKQ | 2024-05-08 | 2025-05-08 |

# FIELD STRENGTH OF SPURIOUS EMISSIONS (GREATER THAN 30 MHZ)



## FREQUENCY RANGE INVESTIGATED

30 MHz TO 18 GHz

## POWER INVESTIGATED

110VAC/60Hz

## CONFIGURATIONS INVESTIGATED

FDMT0001-2

## MODES INVESTIGATED

Transmitting RFID 13.56 MHz

# FIELD STRENGTH OF SPURIOUS EMISSIONS (GREATER THAN 30 MHz)



|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-01-21 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 21.6°C     |
| Attendees:        | None                                | Relative Humidity:    | 27.5%      |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1025 mb    |
| Tested By:        | Nolan De Ramos                      | Job Site:             | OC10       |
| Power:            | 110VAC/60Hz                         | Configuration:        | FDMT0001-2 |

## TEST PARAMETERS

|        |     |                    |   |                     |           |
|--------|-----|--------------------|---|---------------------|-----------|
| Run #: | 200 | Test Distance (m): | 3 | Ant. Height(s) (m): | 1 to 4(m) |
|--------|-----|--------------------|---|---------------------|-----------|

## COMMENTS

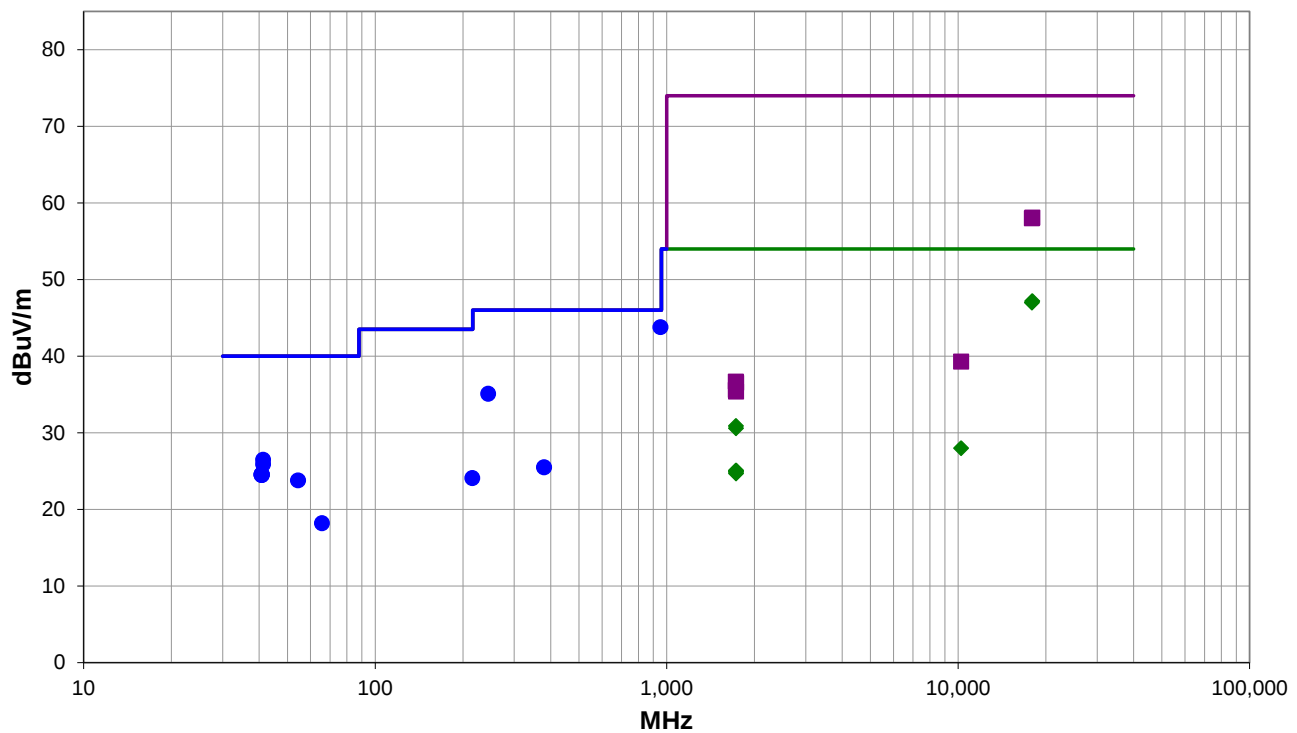
NFC Board Rev 2.1, LTE Module with 3x antennas

## EUT OPERATING MODES

Transmitting RFID 13.56 MHz

## DEVIATIONS FROM TEST STANDARD

None



Run #: 200

PK AV QP

# FIELD STRENGTH OF SPURIOUS EMISSIONS (GREATER THAN 30 MHZ)

## RESULTS - Run #200

| 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                  |
|------------|------------------|---------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|---------------------------|
| 951.988    | 23.8             | 20.0          | 1.5                     | 127.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 43.8              | 46.0                 | -2.2                   | Tx 13.56 MHz, EUT On Side |
| 17953.620  | 26.9             | 20.3          | 1.5                     | 164.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 47.2              | 54.0                 | -6.8                   | Tx 13.56 MHz, EUT On Side |
| 17903.530  | 27.0             | 20.0          | 1.5                     | 223.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 47.0              | 54.0                 | -7.0                   | Tx 13.56 MHz, EUT On Side |
| 244.093    | 31.9             | 3.2           | 2.4                     | 278.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 35.1              | 46.0                 | -10.9                  | Tx 13.56 MHz, EUT On Side |
| 41.239     | 18.9             | 7.6           | 1.0                     | 271.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 26.5              | 40.0                 | -13.5                  | Tx 13.56 MHz, EUT Vert    |
| 41.247     | 18.3             | 7.6           | 1.0                     | 270.0             | 3.0                    | 0.0                       | Vert                      | QP       | 0.0                      | 25.9              | 40.0                 | -14.1                  | Tx 13.56 MHz, EUT Vert    |
| 40.794     | 16.8             | 7.8           | 1.0                     | 20.0              | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 24.6              | 40.0                 | -15.4                  | Tx 13.56 MHz, EUT on Side |
| 40.781     | 16.8             | 7.8           | 1.0                     | 145.0             | 3.0                    | 0.0                       | Vert                      | QP       | 0.0                      | 24.6              | 40.0                 | -15.4                  | Tx 13.56 MHz, EUT on Side |
| 40.766     | 16.7             | 7.8           | 1.0                     | 256.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 24.5              | 40.0                 | -15.5                  | Tx 13.56 MHz, EUT Horz    |
| 40.781     | 16.7             | 7.8           | 1.0                     | 71.0              | 3.0                    | 0.0                       | Vert                      | QP       | 0.0                      | 24.5              | 40.0                 | -15.5                  | Tx 13.56 MHz, EUT Horz    |
| 17956.680  | 37.9             | 20.2          | 1.5                     | 164.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 58.1              | 74.0                 | -15.9                  | Tx 13.56 MHz, EUT On Side |
| 17905.240  | 37.9             | 20.1          | 1.5                     | 223.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 58.0              | 74.0                 | -16.0                  | Tx 13.56 MHz, EUT On Side |
| 54.381     | 22.1             | 1.7           | 1.0                     | 57.0              | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 23.8              | 40.0                 | -16.2                  | Tx 13.56 MHz, EUT Vert    |
| 215.348    | 21.4             | 2.7           | 1.1                     | 355.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 24.1              | 43.5                 | -19.4                  | Tx 13.56 MHz, EUT On Side |
| 379.693    | 18.9             | 6.6           | 1.5                     | 356.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 25.5              | 46.0                 | -20.5                  | Tx 13.56 MHz, EUT On Side |
| 65.645     | 19.9             | -1.7          | 2.4                     | 204.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 18.2              | 40.0                 | -21.8                  | Tx 13.56 MHz, EUT Vert    |
| 1728.133   | 46.5             | -15.6         | 1.5                     | 360.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 30.9              | 54.0                 | -23.1                  | Tx 13.56 MHz, EUT On Side |
| 1728.542   | 46.2             | -15.6         | 1.5                     | 140.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 30.6              | 54.0                 | -23.4                  | Tx 13.56 MHz, EUT Horz    |
| 10232.790  | 32.8             | -4.8          | 1.5                     | 358.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 28.0              | 54.0                 | -26.0                  | Tx 13.56 MHz, EUT On Side |
| 1729.408   | 40.7             | -15.6         | 1.5                     | 133.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 25.1              | 54.0                 | -28.9                  | Tx 13.56 MHz, EUT Horz    |
| 1728.833   | 40.6             | -15.6         | 1.5                     | 71.0              | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 25.0              | 54.0                 | -29.0                  | Tx 13.56 MHz, EUT Vert    |
| 1728.708   | 40.5             | -15.6         | 1.5                     | 304.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 24.9              | 54.0                 | -29.1                  | Tx 13.56 MHz, EUT On Side |
| 1729.342   | 40.3             | -15.6         | 1.5                     | 338.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 24.7              | 54.0                 | -29.3                  | Tx 13.56 MHz, EUT Vert    |
| 10235.960  | 44.1             | -4.8          | 1.5                     | 358.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 39.3              | 74.0                 | -34.7                  | Tx 13.56 MHz, EUT On Side |
| 1726.892   | 52.4             | -15.7         | 1.5                     | 360.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 36.7              | 74.0                 | -37.3                  | Tx 13.56 MHz, EUT On Side |
| 1730.367   | 52.2             | -15.6         | 1.5                     | 140.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 36.6              | 74.0                 | -37.4                  | Tx 13.56 MHz, EUT Horz    |
| 1729.867   | 52.1             | -15.6         | 1.5                     | 71.0              | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 36.5              | 74.0                 | -37.5                  | Tx 13.56 MHz, EUT Vert    |
| 1728.342   | 51.3             | -15.6         | 1.5                     | 304.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 35.7              | 74.0                 | -38.3                  | Tx 13.56 MHz, EUT On Side |
| 1726.867   | 51.3             | -15.7         | 1.5                     | 133.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 35.6              | 74.0                 | -38.4                  | Tx 13.56 MHz, EUT Horz    |
| 1729.908   | 51.0             | -15.6         | 1.5                     | 338.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 35.4              | 74.0                 | -38.6                  | Tx 13.56 MHz, EUT Vert    |

## CONCLUSION

Pass



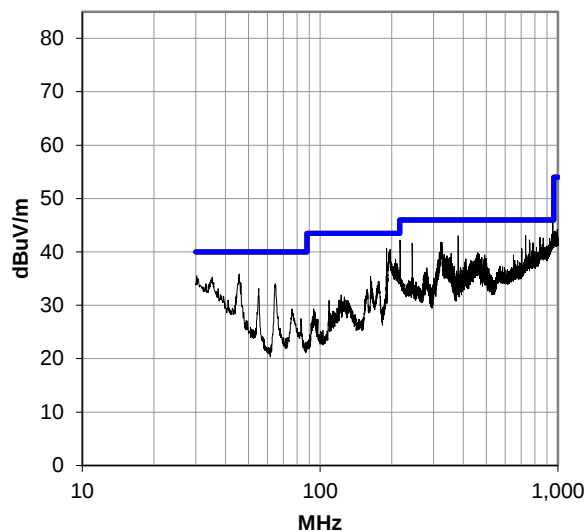
Tested By

# FIELD STRENGTH OF SPURIOUS EMISSIONS (GREATER THAN 30 MHz)

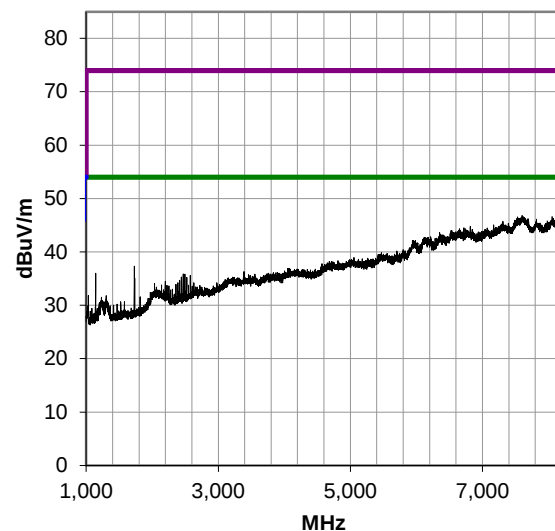
## PRESCAN DATA

Radiated spurious emissions from the EUT are initially reviewed with Pre-scans (Preview scans). Pre-scans are performed, with the EUT transmitting on the lowest applicable data rate, for both vertical and horizontal polarizations. The Pre-scan plots below are shown with a peak detector and RBW for the following frequency ranges: 9 kHz RBW (< 30 MHz); 120 kHz RBW (30 - 1000 MHz); 1 MHz RBW (> 1 GHz). In the case where unintentional emissions are observed, an ambient or idle pre-scan with the radio off, will be shown for comparison.

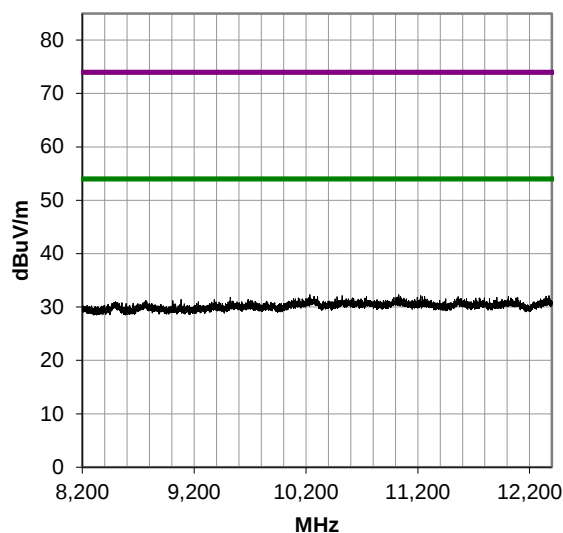
30-1000 MHz, Run 200



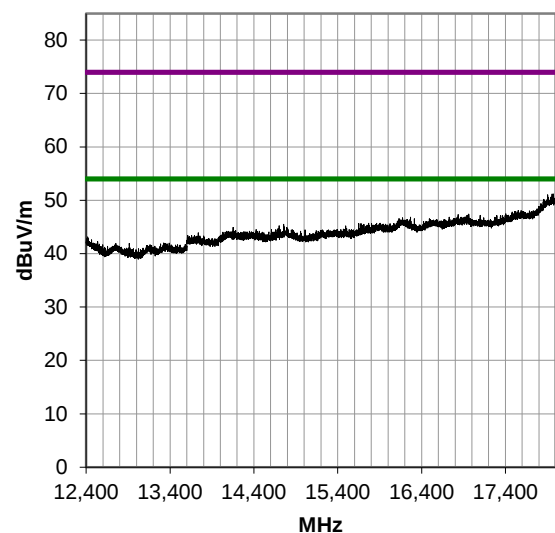
1000-8200 MHz, Run 209



8200-12400 MHz, Run 210



12400-18000 MHz, Run 211



# FIELD STRENGTH OF SPURIOUS EMISSIONS (GREATER THAN 30 MHZ)

## 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, adjusting the position of the EUT and EUT antenna in three orthogonal axis, 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.

## TEST EQUIPMENT

| Description                  | Manufacturer       | Model                  | ID  | Last Cal.  | Cal. Due   |
|------------------------------|--------------------|------------------------|-----|------------|------------|
| Antenna - Standard Gain      | ETS Lindgren       | 3160-07                | AHR | 2024-12-03 | 2025-12-03 |
| Cable                        | Northwest EMC      | 8-18GHz RE Cables      | OCO | 2024-03-19 | 2025-03-19 |
| Amplifier - Pre-Amplifier    | Miteq              | AMF-6F-08001200-30-10P | AOE | 2024-03-19 | 2025-03-19 |
| Analyzer - Spectrum Analyzer | Agilent            | N9010A                 | AFJ | 2024-02-14 | 2025-02-14 |
| Antenna - Standard Gain      | ETS Lindgren       | 3160-08                | AHT | 2024-12-03 | 2025-12-03 |
| Amplifier - Pre-Amplifier    | Miteq              | AMF-6F-12001800-30-10P | AOF | 2024-03-19 | 2025-03-19 |
| Antenna - Double Ridge       | ETS Lindgren       | 3115                   | AIR | 2024-07-23 | 2026-07-23 |
| Cable                        | Northwest EMC      | 1-8GHz RE Cables       | OCJ | 2024-05-08 | 2025-05-08 |
| Amplifier - Pre-Amplifier    | Cernex             | CBL01084020-xx         | PAX | 2024-05-08 | 2025-05-08 |
| Antenna - Biconilog          | Teseq              | CBL 6141A              | AYE | 2023-08-08 | 2025-08-08 |
| Cable                        | Northwest EMC      | 10kHz-1GHz RE Cables   | OCH | 2024-05-09 | 2025-05-09 |
| Amplifier - Pre-Amplifier    | Miteq              | AM-1402                | AOZ | 2024-05-14 | 2025-05-14 |
| Attenuator                   | Fairview Microwave | SA18H-20               | TKQ | 2024-05-08 | 2025-05-08 |

# FIELD STRENGTH OF SPURIOUS EMISSIONS (GREATER THAN 30 MHZ)



## FREQUENCY RANGE INVESTIGATED

30 MHz TO 18 GHz

## POWER INVESTIGATED

110VAC/60Hz

## CONFIGURATIONS INVESTIGATED

FDMT0001-3

## MODES INVESTIGATED

Transmitting RFID 13.56 MHz

# FIELD STRENGTH OF SPURIOUS EMISSIONS (GREATER THAN 30 MHz)



|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-01-23 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 24.8°C     |
| Attendees:        | None                                | Relative Humidity:    | 21.8%      |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1023 mb    |
| Tested By:        | Nolan De Ramos                      | Job Site:             | OC10       |
| Power:            | 110VAC/60Hz                         | Configuration:        | FDMT0001-3 |

## TEST PARAMETERS

|        |     |                    |   |                     |           |
|--------|-----|--------------------|---|---------------------|-----------|
| Run #: | 203 | Test Distance (m): | 3 | Ant. Height(s) (m): | 1 to 4(m) |
|--------|-----|--------------------|---|---------------------|-----------|

## COMMENTS

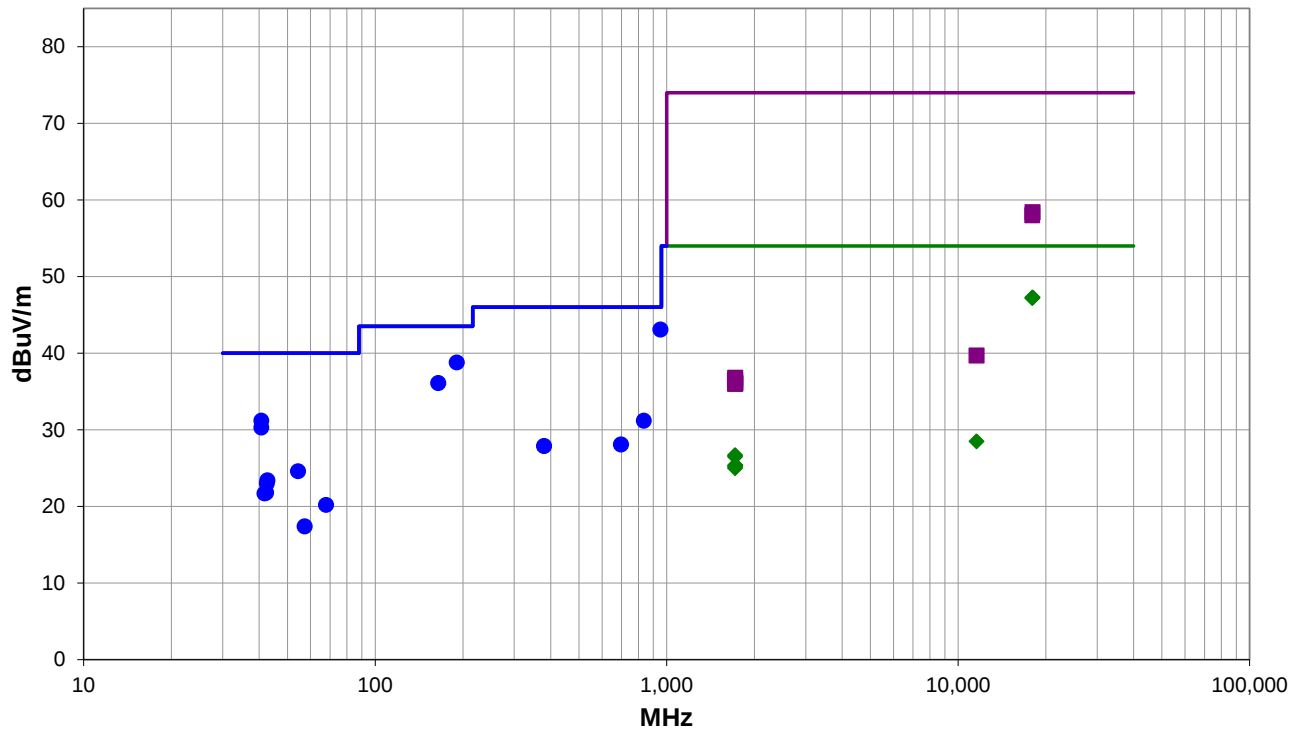
NFC Board Rev 2.1, Wi-Fi Module with 1x antennas

## EUT OPERATING MODES

Transmitting RFID 13.56 MHz

## DEVIATIONS FROM TEST STANDARD

None



Run #: 203

PK AV QP

# FIELD STRENGTH OF SPURIOUS EMISSIONS (GREATER THAN 30 MHZ)

## RESULTS - Run #203

| 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                  |
|------------|------------------|---------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|---------------------------|
| 951.996    | 23.1             | 20.0          | 2.7                     | 144.0             | 3.0                    | 0.0                       | Vert                      | QP       | 0.0                      | 43.1              | 46.0                 | -2.9                   | Tx 13.56 MHz, EUT Vert    |
| 190.400    | 37.7             | 1.1           | 1.0                     | 128.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 38.8              | 43.5                 | -4.7                   | Tx 13.56 MHz, EUT Vert    |
| 17997.830  | 26.9             | 20.4          | 1.5                     | 172.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 47.3              | 54.0                 | -6.7                   | Tx 13.56 MHz, EUT Vert    |
| 17950.140  | 26.9             | 20.3          | 1.5                     | 93.0              | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 47.2              | 54.0                 | -6.8                   | Tx 13.56 MHz, EUT Vert    |
| 164.575    | 34.3             | 1.8           | 1.0                     | 360.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 36.1              | 43.5                 | -7.4                   | Tx 13.56 MHz, EUT Vert    |
| 40.682     | 23.3             | 7.9           | 1.0                     | 96.0              | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 31.2              | 40.0                 | -8.8                   | Tx 13.56 MHz, EUT Vert    |
| 40.683     | 22.4             | 7.9           | 1.0                     | 63.0              | 3.0                    | 0.0                       | Vert                      | QP       | 0.0                      | 30.3              | 40.0                 | -9.7                   | Tx 13.56 MHz, EUT Vert    |
| 834.603    | 14.4             | 16.8          | 1.2                     | 247.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 31.2              | 46.0                 | -14.8                  | Tx 13.56 MHz, EUT Vert    |
| 54.380     | 22.9             | 1.7           | 1.0                     | 21.0              | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 24.6              | 40.0                 | -15.4                  | Tx 13.56 MHz, EUT Vert    |
| 17997.830  | 38.0             | 20.4          | 1.5                     | 172.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 58.4              | 74.0                 | -15.6                  | Tx 13.56 MHz, EUT Vert    |
| 17948.960  | 37.7             | 20.3          | 1.5                     | 93.0              | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 58.0              | 74.0                 | -16.0                  | Tx 13.56 MHz, EUT Vert    |
| 42.644     | 16.4             | 7.0           | 1.0                     | 51.0              | 3.0                    | 0.0                       | Vert                      | QP       | 0.0                      | 23.4              | 40.0                 | -16.6                  | Tx 13.56 MHz, EUT Horz    |
| 42.489     | 15.9             | 7.1           | 1.0                     | 347.0             | 3.0                    | 0.0                       | Vert                      | QP       | 0.0                      | 23.0              | 40.0                 | -17.0                  | Tx 13.56 MHz, EUT on Side |
| 696.692    | 14.2             | 13.9          | 2.0                     | 331.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 28.1              | 46.0                 | -17.9                  | Tx 13.56 MHz, EUT Vert    |
| 379.706    | 21.3             | 6.6           | 3.7                     | 72.0              | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 27.9              | 46.0                 | -18.1                  | Tx 13.56 MHz, EUT Vert    |
| 42.271     | 14.6             | 7.2           | 1.0                     | 18.0              | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 21.8              | 40.0                 | -18.2                  | Tx 13.56 MHz, EUT Horz    |
| 41.717     | 14.3             | 7.4           | 1.0                     | 144.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 21.7              | 40.0                 | -18.3                  | Tx 13.56 MHz, EUT on Side |
| 67.808     | 22.2             | -2.0          | 3.3                     | 31.0              | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 20.2              | 40.0                 | -19.8                  | Tx 13.56 MHz, EUT Vert    |
| 57.273     | 16.8             | 0.6           | 2.3                     | 246.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 17.4              | 40.0                 | -22.6                  | Tx 13.56 MHz, EUT Vert    |
| 11559.910  | 33.0             | -4.5          | 1.5                     | 14.0              | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 28.5              | 54.0                 | -25.5                  | Tx 13.56 MHz, EUT Vert    |
| 1716.117   | 42.4             | -15.7         | 1.5                     | 158.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 26.7              | 54.0                 | -27.3                  | Tx 13.56 MHz, EUT Vert    |
| 1716.158   | 42.2             | -15.7         | 2.6                     | 280.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 26.5              | 54.0                 | -27.5                  | Tx 13.56 MHz, EUT Horz    |
| 1719.458   | 41.1             | -15.7         | 1.5                     | 207.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 25.4              | 54.0                 | -28.6                  | Tx 13.56 MHz, EUT On Side |
| 1718.192   | 41.0             | -15.7         | 1.5                     | 231.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 25.3              | 54.0                 | -28.7                  | Tx 13.56 MHz, EUT On Side |
| 1717.575   | 40.9             | -15.7         | 2.3                     | 90.0              | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 25.2              | 54.0                 | -28.8                  | Tx 13.56 MHz, EUT Horz    |
| 1716.458   | 40.7             | -15.7         | 2.5                     | 48.0              | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 25.0              | 54.0                 | -29.0                  | Tx 13.56 MHz, EUT Vert    |
| 11561.930  | 44.2             | -4.5          | 1.5                     | 14.0              | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 39.7              | 74.0                 | -34.3                  | Tx 13.56 MHz, EUT Vert    |
| 1718.558   | 52.5             | -15.7         | 1.5                     | 158.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 36.8              | 74.0                 | -37.2                  | Tx 13.56 MHz, EUT Vert    |
| 1719.175   | 52.2             | -15.7         | 2.6                     | 280.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 36.5              | 74.0                 | -37.5                  | Tx 13.56 MHz, EUT Horz    |
| 1714.783   | 52.2             | -15.7         | 1.5                     | 207.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 36.5              | 74.0                 | -37.5                  | Tx 13.56 MHz, EUT On Side |
| 1717.550   | 51.8             | -15.7         | 2.3                     | 90.0              | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 36.1              | 74.0                 | -37.9                  | Tx 13.56 MHz, EUT Horz    |
| 1719.300   | 51.8             | -15.7         | 1.5                     | 231.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 36.1              | 74.0                 | -37.9                  | Tx 13.56 MHz, EUT On Side |
| 1717.017   | 51.7             | -15.7         | 2.5                     | 48.0              | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 36.0              | 74.0                 | -38.0                  | Tx 13.56 MHz, EUT Vert    |

## CONCLUSION

Pass



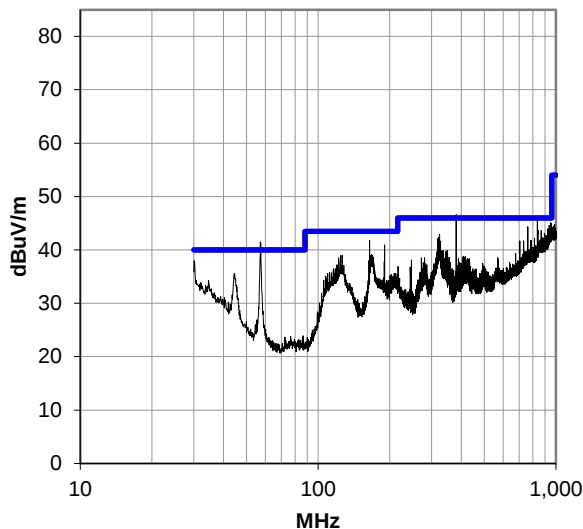
Tested By

# FIELD STRENGTH OF SPURIOUS EMISSIONS (GREATER THAN 30 MHz)

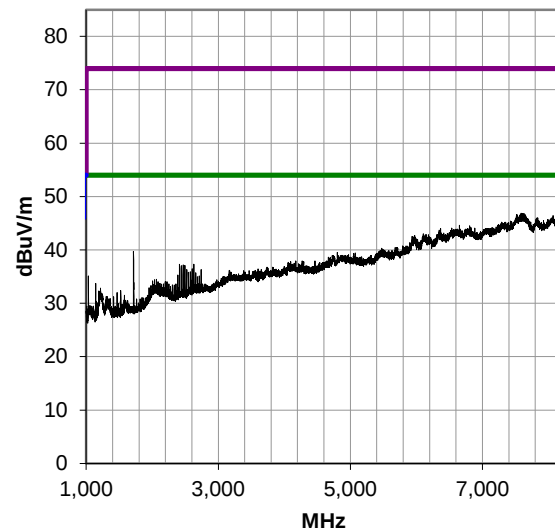
## PRESCAN DATA

Radiated spurious emissions from the EUT are initially reviewed with Pre-scans (Preview scans). Pre-scans are performed, with the EUT transmitting on the lowest applicable data rate, for both vertical and horizontal polarizations. The Pre-scan plots below are shown with a peak detector and RBW for the following frequency ranges: 9 kHz RBW (< 30 MHz); 120 kHz RBW (30 - 1000 MHz); 1 MHz RBW (> 1 GHz). In the case where unintentional emissions are observed, an ambient or idle pre-scan with the radio off, will be shown for comparison.

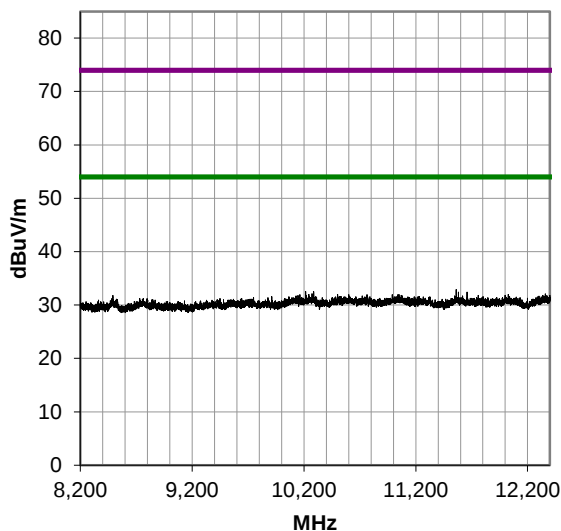
30-1000 MHz, Run 203



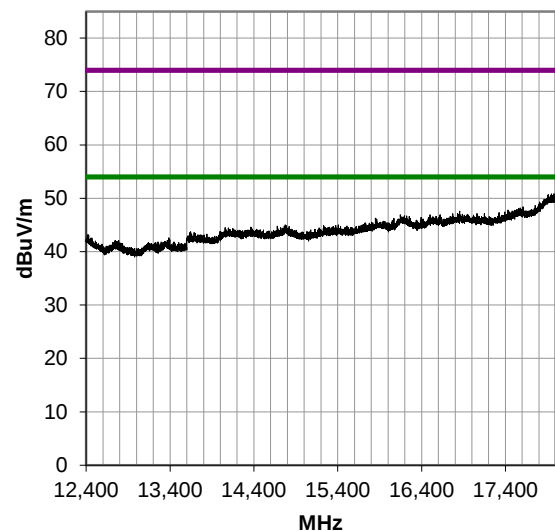
1000-8200 MHz, Run 204



8200-12400 MHz, Run 205



12400-18000 MHz, Run 206



# FREQUENCY STABILITY

## TEST DESCRIPTION

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.

A near-field probe was placed near the transmitter. A low-loss coaxial cable was used to connect the near-field probe to the spectrum analyzer.

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:

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

## TEST EQUIPMENT

| Description                    | Manufacturer              | Model              | ID       | Last Cal.  | Cal. Due   |
|--------------------------------|---------------------------|--------------------|----------|------------|------------|
| Analyzer - Spectrum Analyzer   | Agilent                   | N9010A             | AFJ      | 2025-03-03 | 2026-03-03 |
| Generator - Signal             | Agilent                   | E8257D             | TGU      | 2023-11-08 | 2026-11-08 |
| Cable                          | Element                   | None               | OC5      | 2024-10-02 | 2025-10-02 |
| Probe - Near Field Set         | EMCO                      | 7405               | IPI      | NCR        | NCR        |
| Thermometer                    | Omega Engineering, Inc.   | iTHx-SD-5          | DVF      | 2024-11-11 | 2025-11-11 |
| Probe - Temperature/Humidity   | Omega Engineering, Inc.   | iTHP-5-DB9         | DVF<br>A | 2024-11-11 | 2025-11-11 |
| Chamber - Temperature/Humidity | Cincinnati Sub Zero (CSZ) | ZPHS-32-3.5-SCT/AC | TBE      | NCR        | NCR        |

# FREQUENCY STABILITY

|                   |                                     |                       |            |
|-------------------|-------------------------------------|-----------------------|------------|
| EUT:              | SmartFill Gen 3 FMS                 | Work Order:           | FDMT0001   |
| Serial Number:    | 12374                               | Date:                 | 2025-04-03 |
| Customer:         | Fluid Management Technology Pty Ltd | Temperature:          | 21.2°C     |
| Attendees:        | None                                | Relative Humidity:    | 45.3%      |
| Customer Project: | None                                | Bar. Pressure (PMSL): | 1013 mbar  |
| Tested By:        | Matthew Ng                          | Job Site:             | OC13       |
| Power:            | 110VAC/60Hz                         | Configuration:        | FDMT0001-2 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.225:2025 | ANSI C63.10:2013 |

## COMMENTS

|                                                |
|------------------------------------------------|
| NFC Board Rev 2.1, LTE module with 3x antennas |
|------------------------------------------------|

## DEVIATIONS FROM TEST STANDARD

|      |
|------|
| None |
|------|

## CONCLUSION

Pass

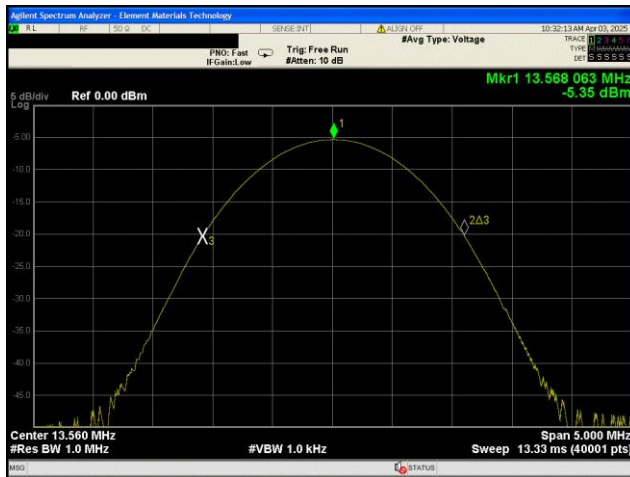


Tested By

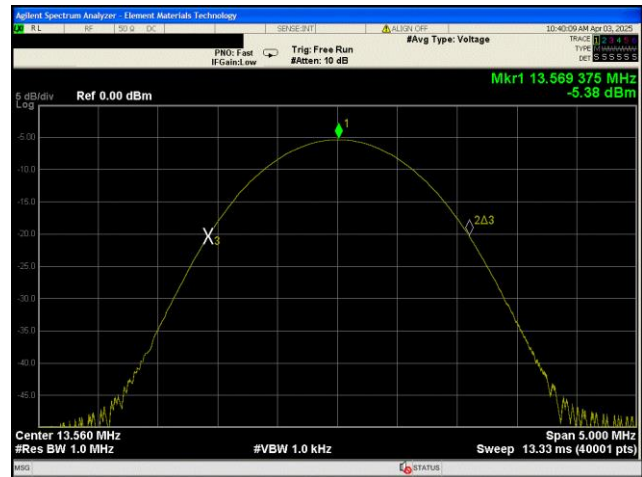
## TEST RESULTS

|                                      | Measured Value (MHz) | Nominal Value (MHz) | Error (ppm) | Limit (ppm) | Results |
|--------------------------------------|----------------------|---------------------|-------------|-------------|---------|
| 13.56 MHz RFID, ISO/IEC 14443 Type A |                      |                     |             |             |         |
| Normal Conditions (110VAC/60Hz)      | 13.5680625           | 13.5680625          | 0           | 100         | Pass    |
| Extreme Voltage 115% (126.5VAC/60Hz) | 13.569375            | 13.5680625          | 96.73       | 100         | Pass    |
| Extreme Voltage 85% (93.5VAC/60Hz)   | 13.56925             | 13.5680625          | 87.52       | 100         | Pass    |
| Extreme Temperature +50°C            | 13.569375            | 13.5680625          | 96.73       | 100         | Pass    |
| Extreme Temperature +40°C            | 13.5693125           | 13.5680625          | 92.13       | 100         | Pass    |
| Extreme Temperature +30°C            | 13.5693125           | 13.5680625          | 92.13       | 100         | Pass    |
| Extreme Temperature +20°C            | 13.568625            | 13.5680625          | 41.46       | 100         | Pass    |
| Extreme Temperature +10°C            | 13.569125            | 13.5680625          | 78.31       | 100         | Pass    |
| Extreme Temperature +0°C             | 13.5684375           | 13.5680625          | 27.64       | 100         | Pass    |
| Extreme Temperature -10°C            | 13.5685625           | 13.5680625          | 36.85       | 100         | Pass    |
| Extreme Temperature -20°C            | 13.5688125           | 13.5680625          | 55.28       | 100         | Pass    |

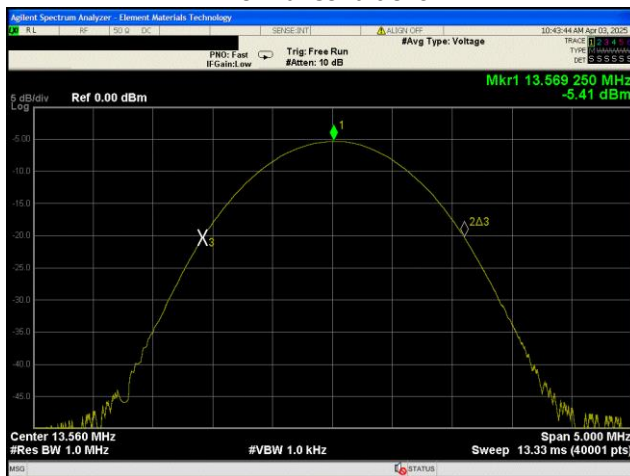
# FREQUENCY STABILITY



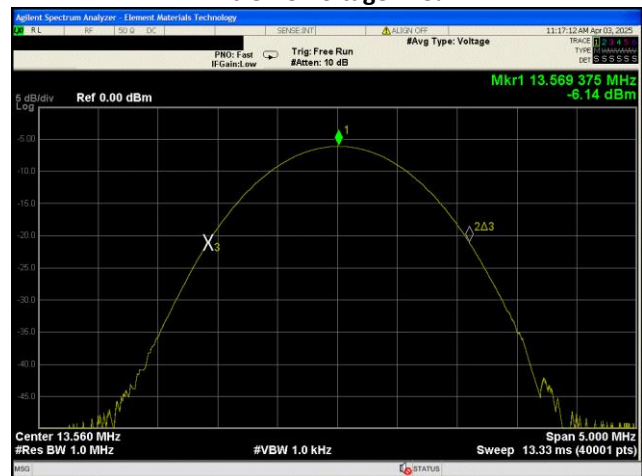
13.56 MHz RFID, ISO/IEC 14443 Type A  
Normal Conditions



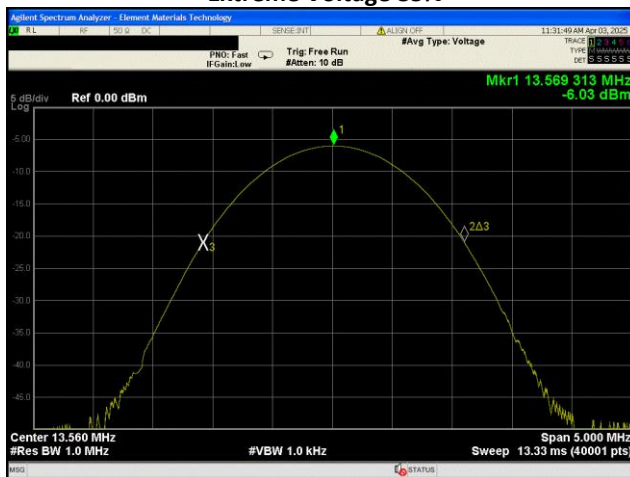
13.56 MHz RFID, ISO/IEC 14443 Type A  
Extreme Voltage 115%



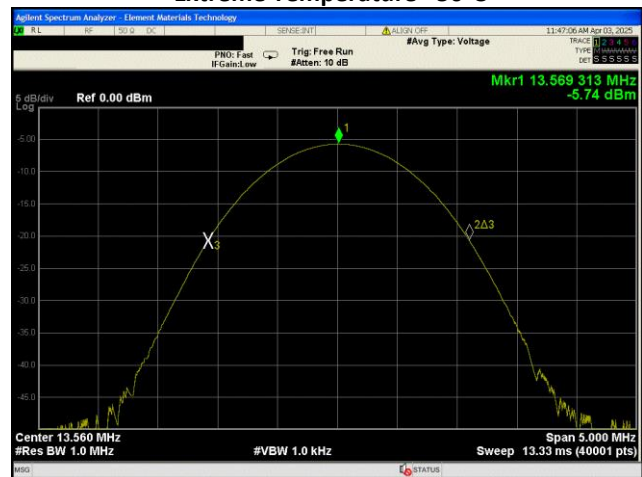
13.56 MHz RFID, ISO/IEC 14443 Type A  
Extreme Voltage 85%



13.56 MHz RFID, ISO/IEC 14443 Type A  
Extreme Temperature +50°C

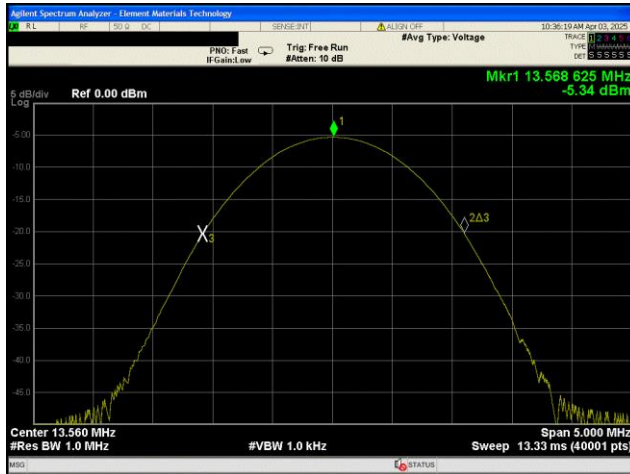


13.56 MHz RFID, ISO/IEC 14443 Type A  
Extreme Temperature +40°C

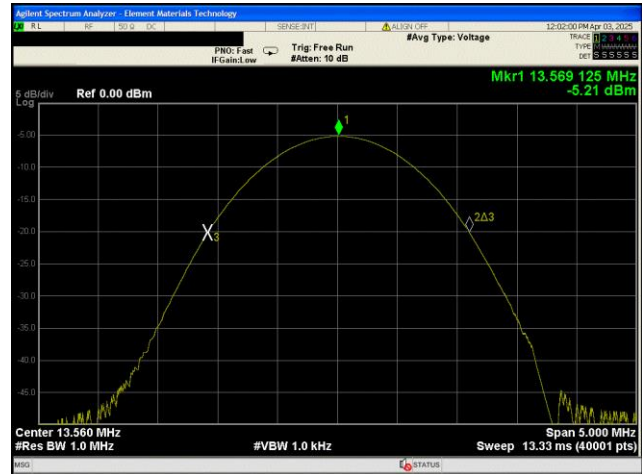


13.56 MHz RFID, ISO/IEC 14443 Type A  
Extreme Temperature +30°C

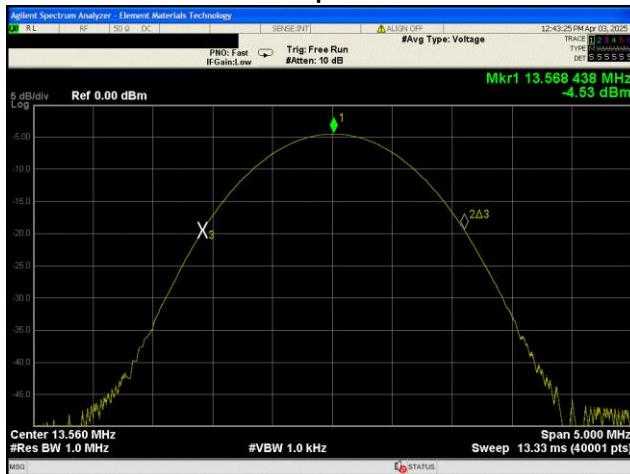
# FREQUENCY STABILITY



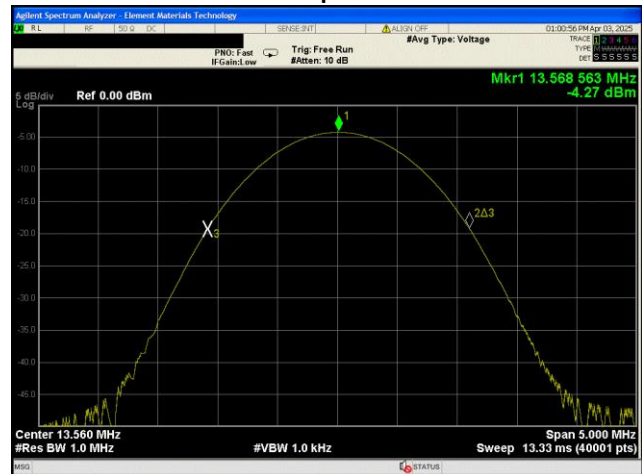
13.56 MHz RFID, ISO/IEC 14443 Type A  
Extreme Temperature +20°C



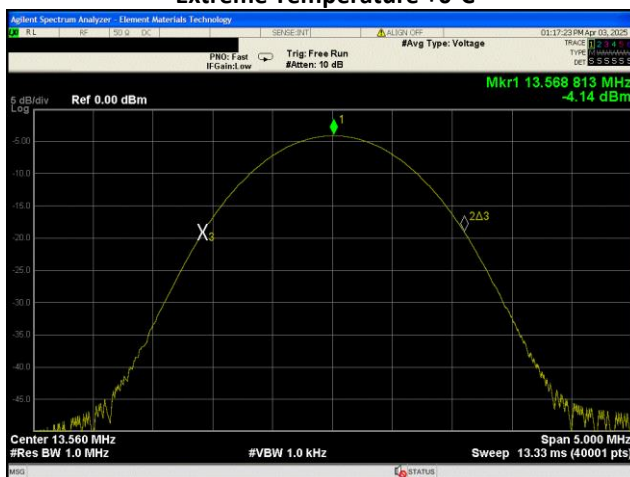
13.56 MHz RFID, ISO/IEC 14443 Type A  
Extreme Temperature +10°C



13.56 MHz RFID, ISO/IEC 14443 Type A  
Extreme Temperature +0°C



13.56 MHz RFID, ISO/IEC 14443 Type A  
Extreme Temperature -10°C



13.56 MHz RFID, ISO/IEC 14443 Type A  
Extreme Temperature -20°C

End of Test Report