



MSA Innovation, LLC
G1 SCBA Power Module Type 5
FCC 15.225
13.56 MHz Radio

Report: F3EN0262.2 Rev. 03, Issue Date: August 19, 2026



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CERTIFICATE OF TEST

Last Date of Test: June 12, 2026
MSA Innovation, LLC
EUT: G1 SCBA Power Module Type 5

Radio Equipment Testing

Standards

Specification	Method
FCC 15.225	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024

Guidance

KDB 174176

Results

Test Description	Result	Specification Section(s)	Method Section(s)	Comments
Powerline Conducted Emissions	N/A	15.207	6.2	Not required for a battery powered EUT.
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	N/A	15.225(e), 15.31(e), 15.215(c), 2.1055	6.8	Not required to show compliance of the limited module in the host.
Emissions Bandwidth	N/A	15.215(c)	6.9.2	Not required to show compliance of the limited module in the host.

Deviations From Test Standards

Minimum antenna height was scanned from 1 to 4 meters for measurements below 30 MHz

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 (yyyy-mm-dd)	Page Number
01	Removed standard year	2026-08-03	1, 3
	Updated testing objective	2026-08-03	10
	Updated operating modes	2026-08-03	14, 18, 22
	Update description on pre-scan pages	2026-08-03	21, 25
	Adjusted the y-axis on the plot to bring the limit line up and show the measured values better	2026-08-03	19
	Updated the version C63.10 listed	2026-08-03	3
02	Added 2.4 GHz Beacon to <i>Radios Included</i> sub-table	2026-08-06	10
03	Added deviation and adjusted test description/parameters related to varying antenna height from 1-4m	2026-08-18	15, 16, 18, 19, 20
	Added reference distance to specification limit.	2026-08-18	16, 20

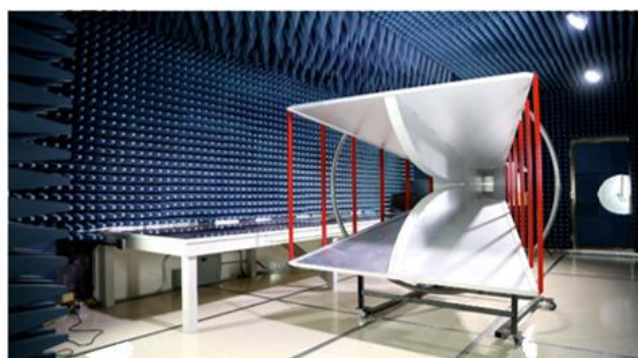
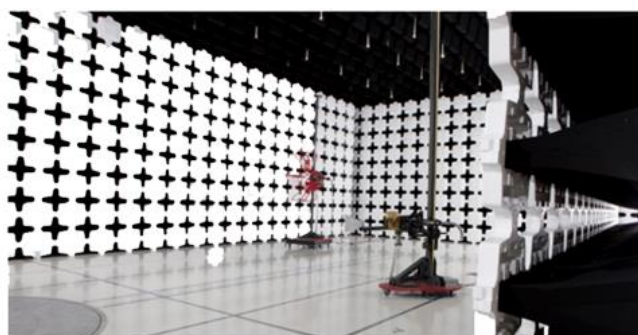
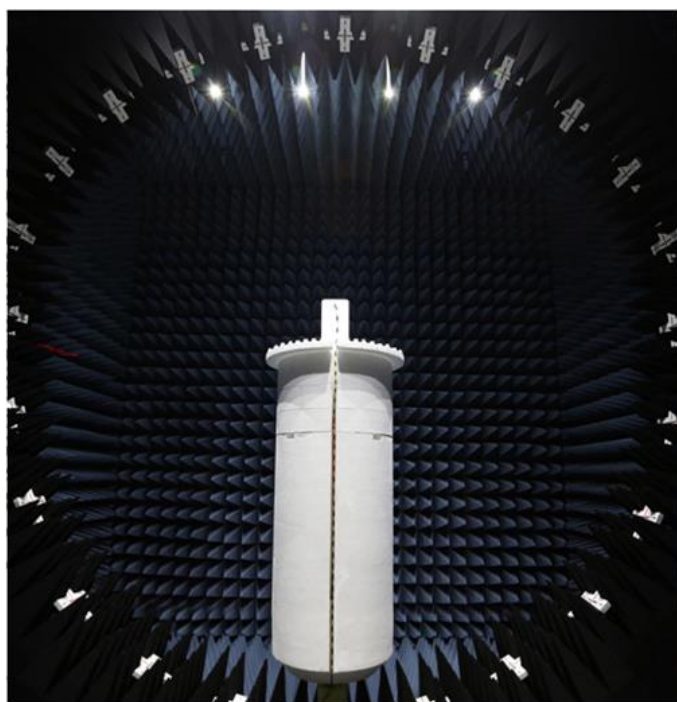
FACILITIES

Testing was performed at the following location(s)

	Location	Labs ⁽¹⁾	Address	A2LA ⁽²⁾	ISED ⁽³⁾	BSMI ⁽⁴⁾	VCCI ⁽⁵⁾	CAB	FDA ⁽⁶⁾
☐	California	OC01-17	41 Tesla Irvine, CA 92618 (949) 861-8918	3310.04	2834B	SL2-IN-E-1154R	A-0029	US0158	TL-55
☐	Minnesota	MN01-11	9349 W Broadway Ave. Brooklyn Park, MN 55445 (612) 638-5136	3310.05	2834E	SL2-IN-E-1152R	A-0109	US0175	TL-57
☒	Oregon	EV01-12	6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	3310.02	2834D	SL2-IN-E-1017	A-0108	US0017	TL-56
☐	Washington	NC01-05	19201 120th Ave NE Bothell, WA 98011 (425) 984-6600	3310.06	2834F	SL2-IN-E-1153R	A-0110	US0157	TL-67
☐	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) 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 (+/-)
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
Near-field Measurement of E-Field (dB)	1.89
Near-field Measurement of H-Field (dB)	2.65

Field Strength Measurements (dB)

Range	EV11 (+/-)	EV01 (+/-)
9kHz-30MHz	1.7	1.8
30MHz-1GHz 3m	4.8	4.6
30MHz-1GHz 10m	3.8	N/A
1GHz-6GHz	N/A	5.1
6GHz-40GHz	N/A	5.2
40GHz-220GHz	N/A	4.9

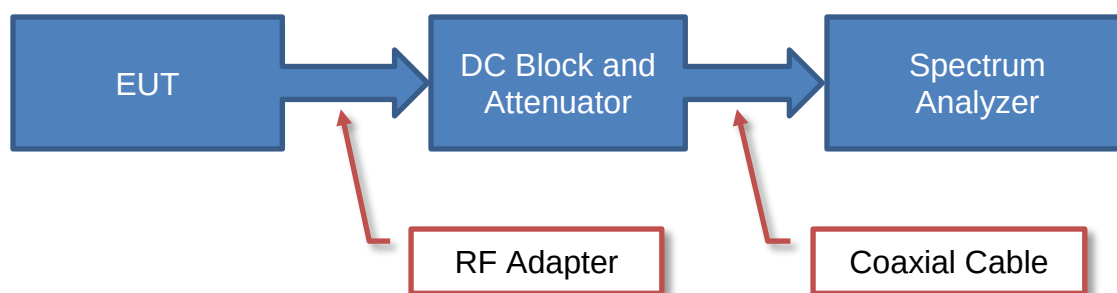
TEST SETUP BLOCK DIAGRAMS

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.

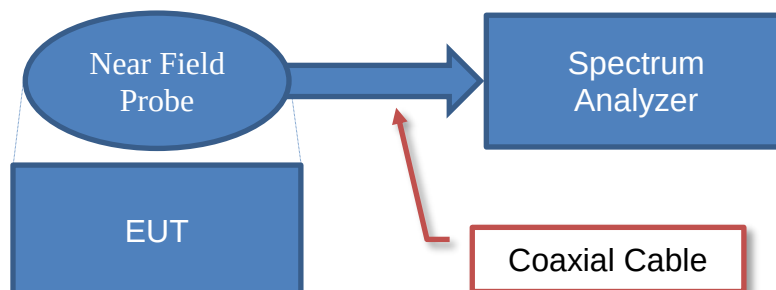
Antenna Port Conducted Measurements



Sample Calculation (logarithmic units)

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

Near Field Test Fixture Measurements

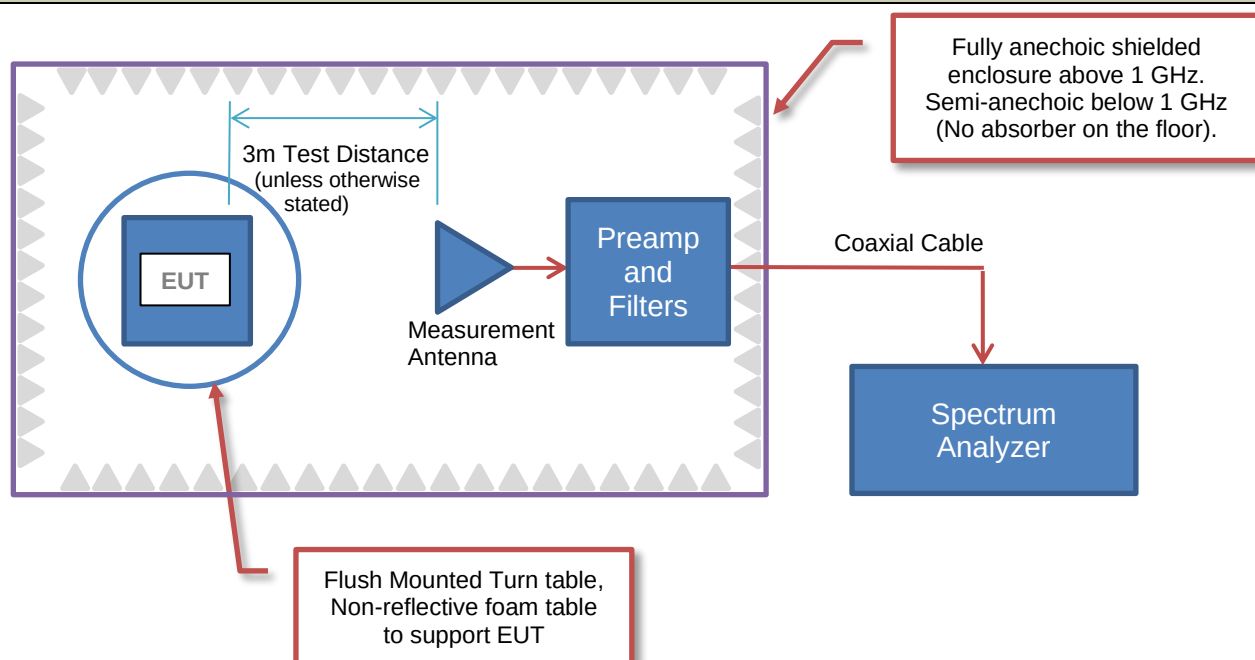


Sample Calculation (logarithmic units)

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

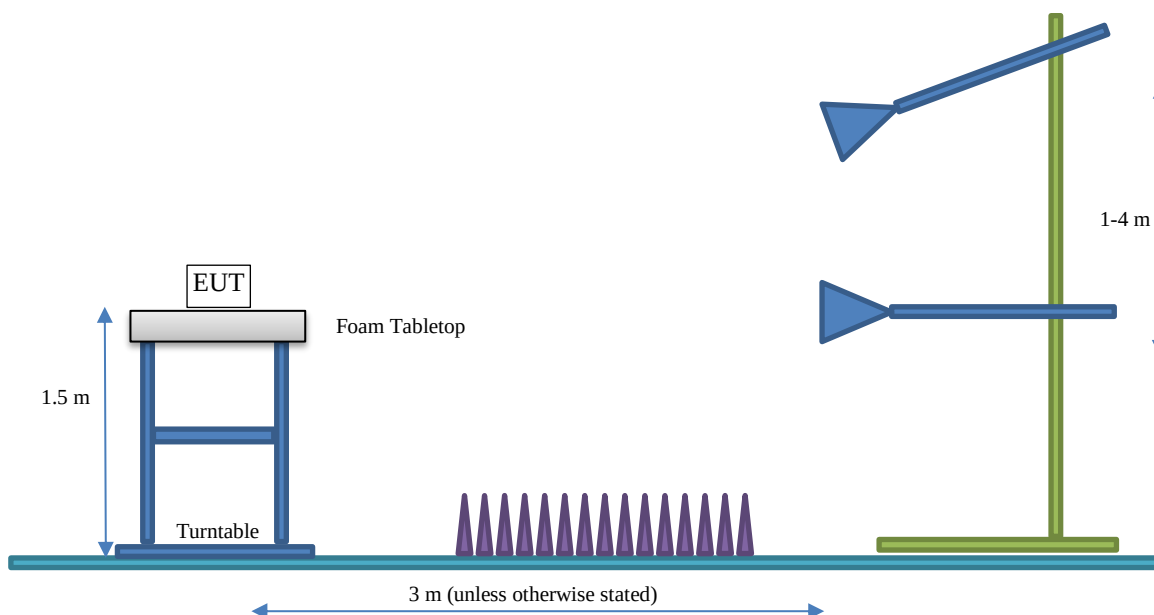
Radiated Power (ERP/EIRP) – Substitution Method:

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:	MSA Innovation, LLC
Address:	1000 Cranberry Woods Drive
City, State, Zip:	Cranberry Township, PA 16066
Test Requested By:	Clint Flemming
EUT:	G1 SCBA Power Module Type 5
First Date of Test:	June 9, 2026
Last Date of Test:	June 12, 2026
Receipt Date of Samples:	June 9, 2026
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
Self-contained breathing apparatus for firefighters
Testing Objective:
To demonstrate compliance of FCC ID: P9R-10154953 in two hosts per KDB 996369 for the 13.56 MHz radio to FCC 15.225 requirements. The limited module is unshielded.

Product Variants						
Description	Model/Part Number	Serial Number	Radios Included			
			BLE	2.4 GHz Beacon	13.56 MHz	915 MHz
Stand Alone Device - Beacon Type 5	G1 SCBA Power Module Type 5	Unit 2	Yes	Yes	Yes	No
Stand Alone Device - Telemetry and Beacon Type 5	G1 SCBA Power Module Type 5	Unit 3	Yes	Yes	Yes	Yes

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 (Coil Geometry)	Provided by:	Frequency Range (MHz)
PCB Trace: 41mm x 61mm 3 turn loop	MSA Innovation, LLC	13.56

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

- ☒ Test software settings Software / firmware used for testing: V5.06
☐ Rated power settings

SETTINGS FOR ALL TESTS IN THIS REPORT

Modulation Type	Protocol	Power Setting
13.56 MHz RFID, OOK	ISO 15693	23 dBm

CONFIGURATIONS



Configuration F3EN0262-3

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Stand Alone Device - Beacon Type 5	MSA Innovation, LLC	G1 SCBA Power Module Type 5	Unit 2

Configuration F3EN0262-5

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Stand Alone Device - Telemetry and Beacon Type 5	MSA Innovation, LLC	G1 SCBA Power Module Type 5	Unit 3

Configuration F3EN0262-6

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Stand Alone Device - Beacon Type 5	MSA Innovation LLC	G1 SCBA Power Module Type 5	Unit 2

Peripherals in Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
TAG ASSY, ELECTRONIC ID, M7/G1 SCBA	MSA Innovation, LLC	10083875	N/A

Configuration F3EN0262-7

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Stand Alone Device - Telemetry and Beacon Type 5	MSA Innovation, LLC	G1 SCBA Power Module Type 5	Unit 3

Peripherals in Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
TAG ASSY, ELECTRONIC ID, M7/G1 SCBA	MSA Innovation, LLC	10083875	N/A

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2026-06-09	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	2026-06-10	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.
3	2026-06-12	Field Strength of Spurious Emissions (Greater Than 30 MHz)	Tested as delivered to test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

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 if required, and polarization (per ANSI C63.10). The height of the antenna was also adjusted (deviation from ANSI C63.10). A calibrated 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

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	AOA	2024-10-23	2026-10-23
Cable	None	10m Test Distance Cable	EVL	2026-01-12	2027-01-12
Receiver	Rohde & Schwarz	ESCI	ARF	2025-11-03	2026-11-03

FREQUENCY RANGE INVESTIGATED

12.56 MHz TO 14.56 MHz

POWER INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

F3EN0262-3
F3EN0262-5
F3EN0262-6
F3EN0262-7

MODES INVESTIGATED

13.56 MHz Radio Transmitting at 100% duty cycle – Tag connected
13.56 MHz Radio Transmitting at 100% duty cycle – No tag connected

FIELD STRENGTH OF FUNDAMENTAL



EUT:	G1 SCBA Power Module Type 5	Work Order:	F3EN0262
Serial Number:	See Configurations	Date:	2026-06-09
Customer:	MSA Innovation, LLC	Temperature:	21.4°C
Attendees:	Dustin Morris	Relative Humidity:	45.9%
Customer Project:	None	Bar. Pressure (PMSL):	1015 mb
Tested By:	Christopher Pinkham	Job Site:	EV11
Power:	Battery	Configuration:	F3EN0262-3; F3EN0262-5; F3EN0262-6; F3EN0262-7;

TEST PARAMETERS

Run #:	6	Test Distance (m):	10	Ant. Height(s) (m):	1 to 4(m)
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COMMENTS

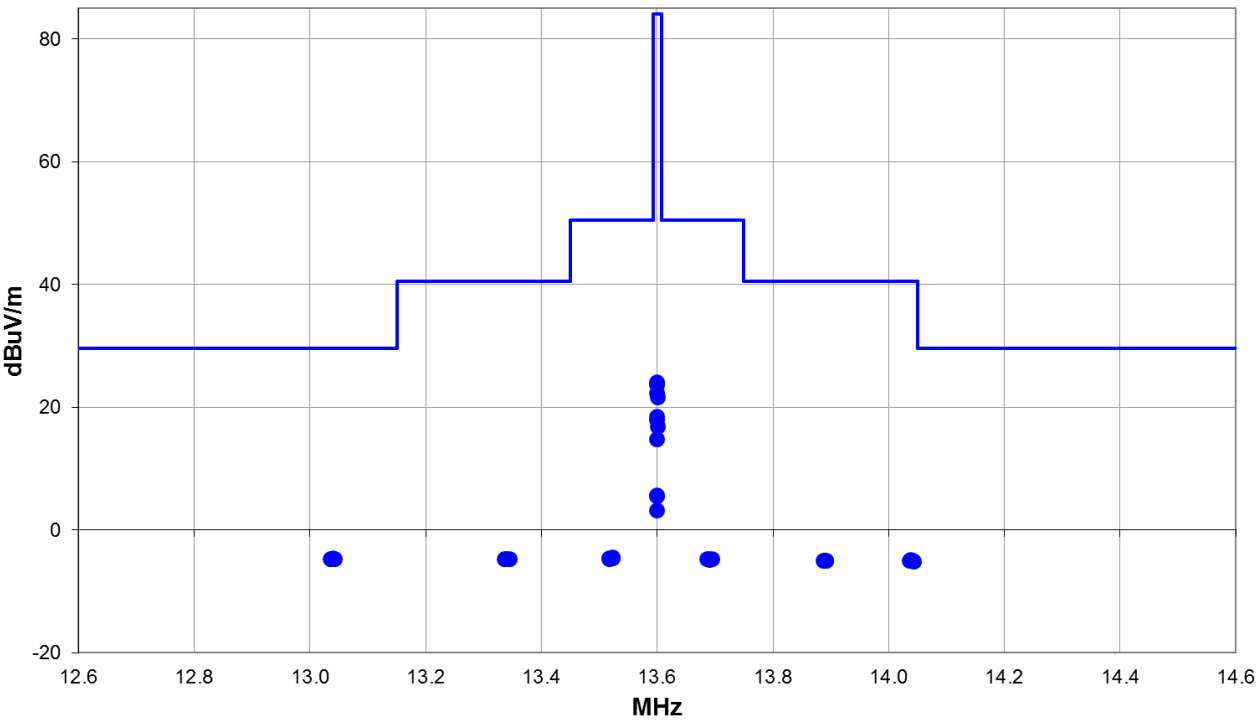
None

EUT OPERATING MODES

13.56 MHz Radio Transmitting at 100% duty cycle – Tag connected
13.56 MHz Radio Transmitting at 100% duty cycle – No tag connected

DEVIATIONS FROM TEST STANDARD

Minimum Antenna height was scanned from 1 to 4 meters.
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Run #: 6

PK AV QP

FIELD STRENGTH OF FUNDAMENTAL

RESULTS - Run #6

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 @ 30m)	Compared to Spec. (dB)	Comments
13.000	3.6	10.9	3.4	119.0	10.0	0.0	Perp EUT	QP	-19.1	-4.6	29.5	-34.1	Unit 2 - 900 MHz Removed; EUT Vertical; Tag in place
13.003	3.5	10.9	3.4	119.0	10.0	0.0	Perp EUT	QP	-19.1	-4.7	29.5	-34.2	Unit 2 - 900 MHz Installed; EUT Vertical; No Tag
12.995	3.4	10.9	3.4	114.0	10.0	0.0	Perp EUT	QP	-19.1	-4.8	29.5	-34.3	Unit 3 - 900 MHz Installed; EUT Vertical; No Tag
12.997	3.4	10.9	3.4	115.0	10.0	0.0	Perp EUT	QP	-19.1	-4.8	29.5	-34.3	Unit 3 - 900 MHz Installed; EUT Vertical; Tag in place
13.296	3.5	10.9	1.0	210.0	10.0	0.0	Perp EUT	QP	-19.1	-4.7	40.5	-45.2	Unit 3 - 900 MHz Installed; EUT Vertical; No Tag
13.298	3.4	10.9	1.0	215.0	10.0	0.0	Perp EUT	QP	-19.1	-4.8	40.5	-45.3	Unit 3 - 900 MHz Installed; EUT Vertical; Tag in place
13.305	3.4	10.9	1.0	215.0	10.0	0.0	Perp EUT	QP	-19.1	-4.8	40.5	-45.3	Unit 2 - 900 MHz Installed; EUT Vertical; No Tag
13.300	3.4	10.9	1.0	215.0	10.0	0.0	Perp EUT	QP	-19.1	-4.8	40.5	-45.3	Unit 2 - 900 MHz Removed; EUT Vertical; Tag in place
13.998	3.3	10.9	1.0	180.0	10.0	0.0	Perp EUT	QP	-19.1	-4.9	40.5	-45.4	Unit 2 - 900 MHz Installed; EUT Vertical; No Tag
13.852	3.2	10.9	1.0	82.0	10.0	0.0	Perp EUT	QP	-19.1	-5.0	40.5	-45.5	Unit 3 - 900 MHz Installed; EUT Vertical; No Tag
14.002	3.2	10.9	1.0	185.0	10.0	0.0	Perp EUT	QP	-19.1	-5.0	40.5	-45.5	Unit 3 - 900 MHz Installed; EUT Vertical; No Tag
13.996	3.2	10.9	1.0	190.0	10.0	0.0	Perp EUT	QP	-19.1	-5.0	40.5	-45.5	Unit 3 - 900 MHz Installed; EUT Vertical; Tag in place
13.848	3.2	10.9	1.0	77.0	10.0	0.0	Perp EUT	QP	-19.1	-5.0	40.5	-45.5	Unit 3 - 900 MHz Installed; EUT Vertical; Tag in place
13.849	3.2	10.9	1.0	77.0	10.0	0.0	Perp EUT	QP	-19.1	-5.0	40.5	-45.5	Unit 2 - 900 MHz Removed; EUT Vertical; No Tag
13.851	3.2	10.9	1.0	77.0	10.0	0.0	Perp EUT	QP	-19.1	-5.0	40.5	-45.5	Unit 2 - 900 MHz Removed; EUT Vertical; Tag in place
14.004	3.1	10.9	1.0	180.0	10.0	0.0	Perp EUT	QP	-19.1	-5.1	40.5	-45.6	Unit 2 - 900 MHz Removed; EUT Vertical; Tag in place
13.483	3.7	10.9	1.3	14.0	10.0	0.0	Perp EUT	QP	-19.1	-4.5	50.5	-55.0	Unit 3 - 900 MHz Installed; EUT Vertical; Tag in place
13.484	3.6	10.9	1.3	9.0	10.0	0.0	Perp EUT	QP	-19.1	-4.6	50.5	-55.1	Unit 3 - 900 MHz Installed; EUT Vertical; No Tag
13.477	3.6	10.9	1.3	14.0	10.0	0.0	Perp EUT	QP	-19.1	-4.6	50.5	-55.1	Unit 2 - 900 MHz Installed; EUT Vertical; No Tag
13.655	3.4	10.9	1.0	0.0	10.0	0.0	Perp EUT	QP	-19.1	-4.8	50.5	-55.3	Unit 3 - 900 MHz Installed; EUT Vertical; No Tag
13.650	3.4	10.9	1.0	0.0	10.0	0.0	Perp EUT	QP	-19.1	-4.8	50.5	-55.3	Unit 3 - 900 MHz Installed; EUT Vertical; Tag in place
13.477	3.4	10.9	1.3	4.0	10.0	0.0	Perp EUT	QP	-19.1	-4.8	50.5	-55.3	Unit 2 - 900 MHz Removed; EUT Vertical; Tag in place
13.647	3.4	10.9	1.0	-1.0	10.0	0.0	Perp EUT	QP	-19.1	-4.8	50.5	-55.3	Unit 2 - 900 MHz Removed; EUT Vertical; Tag in place
13.650	3.3	10.9	1.0	-5.0	10.0	0.0	Perp EUT	QP	-19.1	-4.9	50.5	-55.4	Unit 2 - 900 MHz Installed; EUT Vertical; No Tag
13.560	32.3	10.9	1.0	65.0	10.0	0.0	Perp EUT	QP	-19.1	24.1	84.0	-59.9	Unit 3 - 900 MHz Installed; EUT Vertical; No Tag
13.560	32.0	10.9	1.0	266.0	10.0	0.0	Perp EUT	QP	-19.1	23.8	84.0	-60.2	Unit 3 - 900 MHz Installed; EUT Horizontal; No Tag
13.560	31.9	10.9	1.1	254.0	10.0	0.0	Perp EUT	QP	-19.1	23.7	84.0	-60.3	Unit 2 - 900 MHz Removed; EUT Vertical; No Tag
13.559	30.5	10.9	1.0	255.0	10.0	0.0	Perp EUT	QP	-19.1	22.3	84.0	-61.7	Unit 2 - 900 MHz Removed; EUT Vertical; Tag in place;
13.561	29.8	10.9	1.0	63.0	10.0	0.0	Perp EUT	QP	-19.1	21.6	84.0	-62.4	Unit 3 - 900 MHz Installed; EUT Vertical; Tag in place;
13.559	26.6	10.9	4.0	247.0	10.0	0.0	Par GND	QP	-19.1	18.4	84.0	-65.6	Unit 3 - 900 MHz Installed; EUT Horizontal; No Tag
13.560	26.1	10.9	3.9	65.0	10.0	0.0	Par GND	QP	-19.1	17.9	84.0	-66.1	Unit 3 - 900 MHz Installed; EUT Vertical; No Tag
13.561	25.0	10.9	1.0	8.0	10.0	0.0	Par EUT	QP	-19.1	16.8	84.0	-67.2	Unit 3 - 900 MHz Installed; EUT Horizontal; No Tag
13.560	23.0	10.9	1.0	167.0	10.0	0.0	Par EUT	QP	-19.1	14.8	84.0	-69.2	Unit 3 - 900 MHz Installed; EUT Vertical; No Tag
13.560	13.9	10.9	1.0	83.0	10.0	0.0	Perp EUT	QP	-19.1	5.7	84.0	-78.3	Unit 3 - 900 MHz Installed; EUT On Side; No Tag
13.560	13.7	10.9	1.4	112.0	10.0	0.0	Par GND	QP	-19.1	5.5	84.0	-78.5	Unit 3 - 900 MHz Installed; EUT On Side; No Tag
13.560	11.4	10.9	1.0	203.0	10.0	0.0	Par EUT	QP	-19.1	3.2	84.0	-80.8	Unit 3 - 900 MHz Installed; EUT On Side; No Tag

FIELD STRENGTH OF FUNDAMENTAL

CONCLUSION

Pass



Tested By

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 polarization (per ANSI C63.10). The height of the antenna was also adjusted (deviation from 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 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.

The limits in CFR 47, Part 15C 15.209(a) are identical to those in RSS-Gen section 8.9 Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377 Ohms. For example, an E-Field measurement in dBuV/m can be converted to dBuA/m via the following formula: $\text{dBuV/m} - 51.5 \text{ dB} = \text{dBuA/m}$. E-Field measurements have the same margin in dB to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limits.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Receiver	Rohde & Schwarz	ESCI	ARF	2025-11-03	2026-11-03
Antenna - Loop	EMCO	6502	AOA	2024-10-23	2026-10-23
Cable	None	10m Test Distance Cable	EVL	2026-01-12	2027-01-12

FREQUENCY RANGE INVESTIGATED

9 kHz TO 30 MHz

POWER INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

F3EN0262-3
F3EN0262-5

MODES INVESTIGATED

13.56 MHz RFID Transmitting at 100% duty cycle

FIELD STRENGTH OF SPURIOUS EMISSIONS (LESS THAN 30 MHz)

EUT:	G1 SCBA Power Module Type 5	Work Order:	F3EN0262
Serial Number:	See Configurations	Date:	2026-06-10
Customer:	MSA Innovation, LLC	Temperature:	21.6°C
Attendees:	Dustin Morris	Relative Humidity:	41.4%
Customer Project:	None	Bar. Pressure (PMSL):	1021 mb
Tested By:	Christopher Pinkham	Job Site:	EV01
Power:	Battery	Configuration:	F3EN0262-3; F3EN0262-5

TEST PARAMETERS

Run #:	9	Test Distance (m):	10	Ant. Height(s) (m):	1 to 4(m)
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COMMENTS

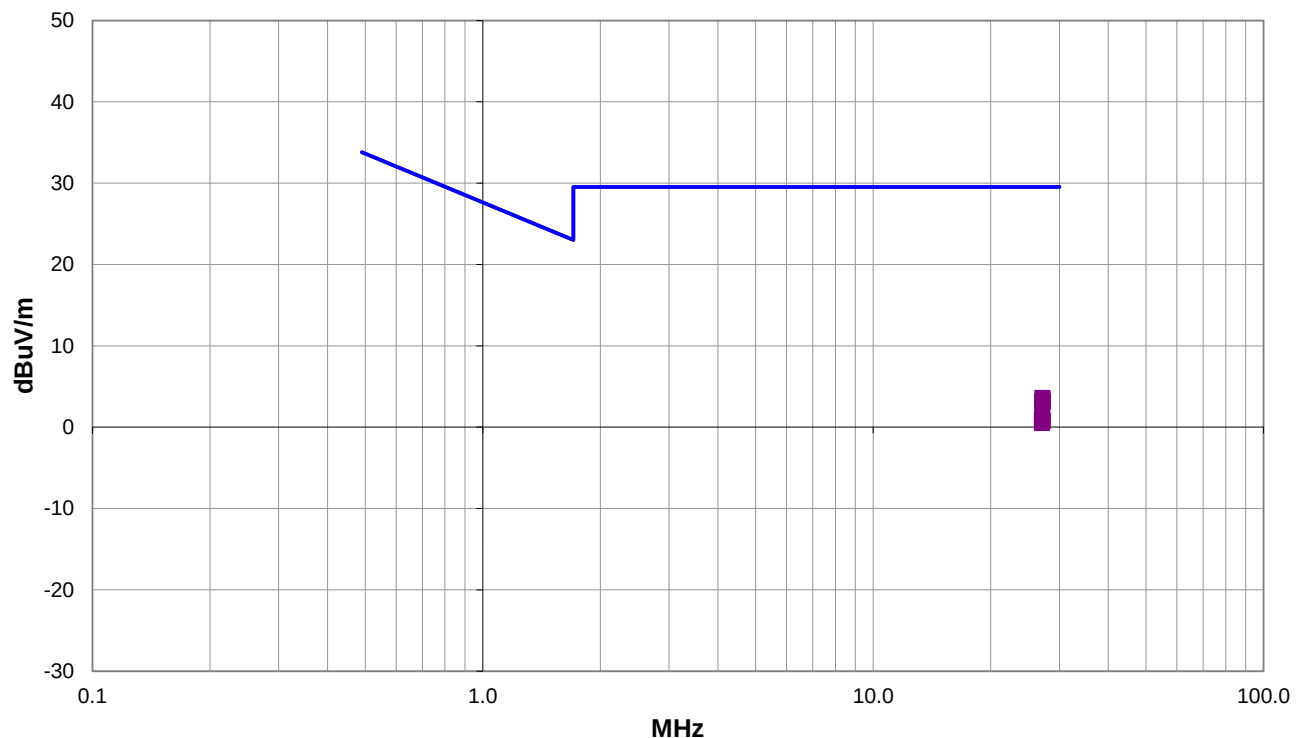
Peak data used (worst-case). No Emissions observed from EUT within 25 dB of the limit.

EUT OPERATING MODES

13.56 MHz RFID Transmitting at 100% duty cycle

DEVIATIONS FROM TEST STANDARD

Minimum Antenna height was scanned from 1 to 4 meters.



Run #: 9

■ PK ◆ AV ● QP

FIELD STRENGTH OF SPURIOUS EMISSIONS (LESS THAN 30 MHz)

RESULTS - Run #9

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 @ 30m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
27.119	13.9	8.8	3.65	11.0	10.0	0.0	Par EUT	PK	-19.1	3.6	29.5	-25.9	Unit 3; EUT Vertical
27.167	13.7	8.7	1.01	159.0	10.0	0.0	Par EUT	PK	-19.1	3.3	29.5	-26.2	Unit 2; EUT Vertical
27.110	13.5	8.8	1.3	263.0	10.0	0.0	Perp EUT	PK	-19.1	3.2	29.5	-26.3	Unit 3; EUT On Side
27.165	13.4	8.8	0.99	354.0	10.0	0.0	Par GND	PK	-19.1	3.1	29.5	-26.4	Unit 3; EUT On Side
27.105	11.7	8.8	0.99	190.0	10.0	0.0	Perp EUT	PK	-19.1	1.4	29.5	-28.1	Unit 3; EUT Horizontal
27.110	11.2	8.8	1.0	2.0	10.0	0.0	Perp EUT	PK	-19.1	0.9	29.5	-28.6	Unit 3; EUT Vertical
27.078	11.3	8.7	0.99	338.0	10.0	0.0	Par GND	PK	-19.1	0.9	29.5	-28.6	Unit 3; EUT Horizontal
27.155	11.1	8.8	1.96	292.0	10.0	0.0	Par EUT	PK	-19.1	0.8	29.5	-28.7	Unit 3; EUT Horizontal
27.107	11.0	8.8	0.99	193.0	10.0	0.0	Par EUT	PK	-19.1	0.7	29.5	-28.8	Unit 3; EUT On Side
27.081	10.9	8.7	1.65	58.0	10.0	0.0	Par GND	PK	-19.1	0.5	29.5	-29.0	Unit 3; EUT Vertical

CONCLUSION

Pass

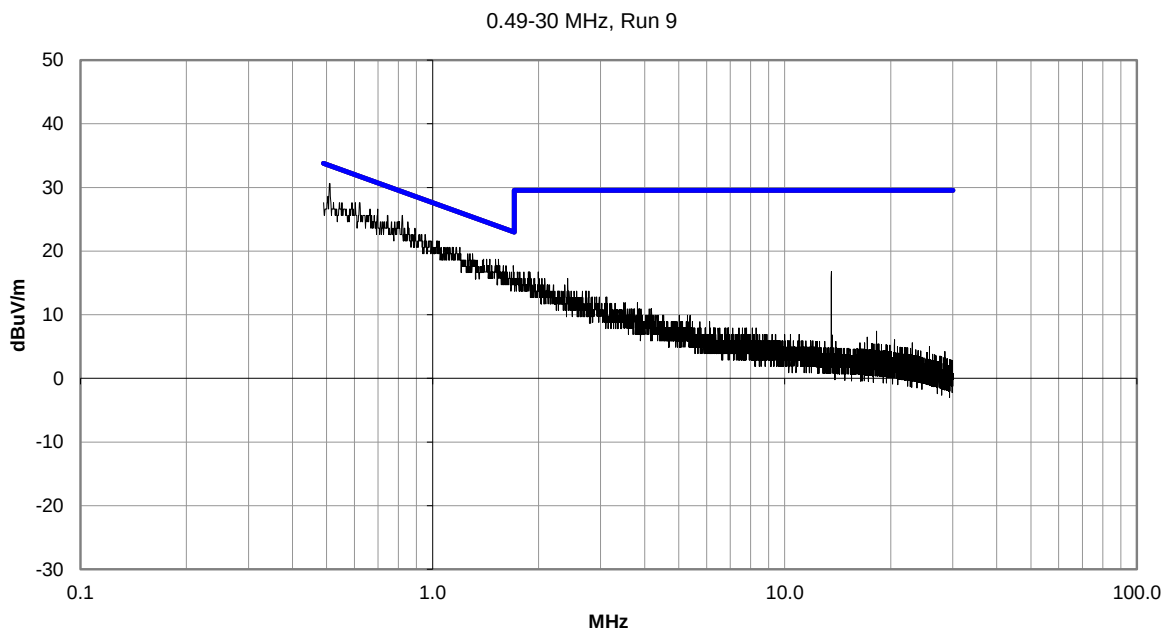
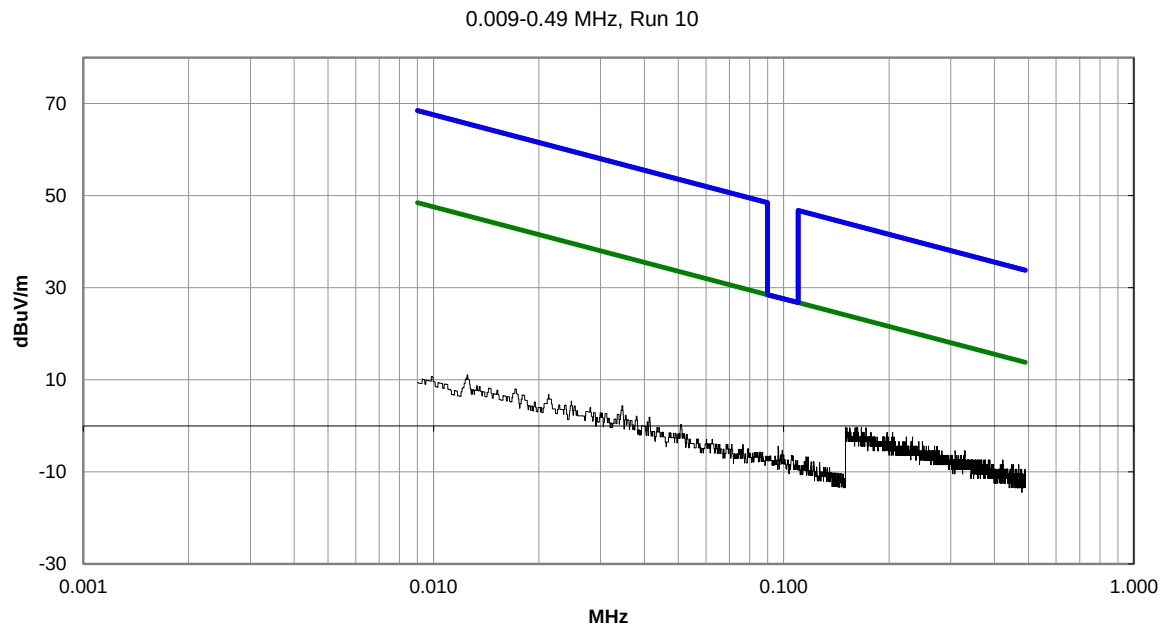


Tested By

FIELD STRENGTH OF SPURIOUS EMISSIONS (LESS THAN 30 MHz)

PRESCAN DATA

Radiated spurious emissions from the EUT are initially investigated with Pre-scans (Preview scans). Pre-scans are typically performed with the EUT transmitting on the lowest applicable data rate. The Pre-scan plots below are shown with a peak detector and RBW according to the "Measurement Bandwidths" table in the "Test Setup Block Diagram" section of this report. Above 1 GHz, a reduced video bandwidth is used during pre-scans to better approximate an average measurement. Final measurements using all appropriate settings according to the standard are further investigated by maximizing the emission with a narrow span and high number of points to ensure emissions are captured accurately. 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 - Biconilog	Teseq	CBL 6141B	AXR	2025-04-15	2027-04-15
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AOL	2025-12-09	2026-12-09
Cable	N/A	Bilog Cables	EVA	2025-10-24	2026-10-24
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	2026-02-26	2027-02-26

FREQUENCY RANGE INVESTIGATED

30 MHz TO 1000 MHz

POWER INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

F3EN0262-3; F3EN0262-5

MODES INVESTIGATED

13.56 MHz RFID Transmitting at 100% duty cycle

FIELD STRENGTH OF SPURIOUS EMISSIONS (GREATER THAN 30 MHz)

EUT:	G1 SCBA Power Module Type 5	Work Order:	F3EN0262
Serial Number:	See Configurations	Date:	2026-06-12
Customer:	MSA Innovation, LLC	Temperature:	22.4°C
Attendees:	Dustin Morris	Relative Humidity:	40%
Customer Project:	None	Bar. Pressure (PMSL):	1021 mb
Tested By:	Christopher Pinkham	Job Site:	EV01
Power:	Battery	Configuration:	F3EN0262-3 F3EN0262-5

TEST PARAMETERS

Run #:	154	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)
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COMMENTS

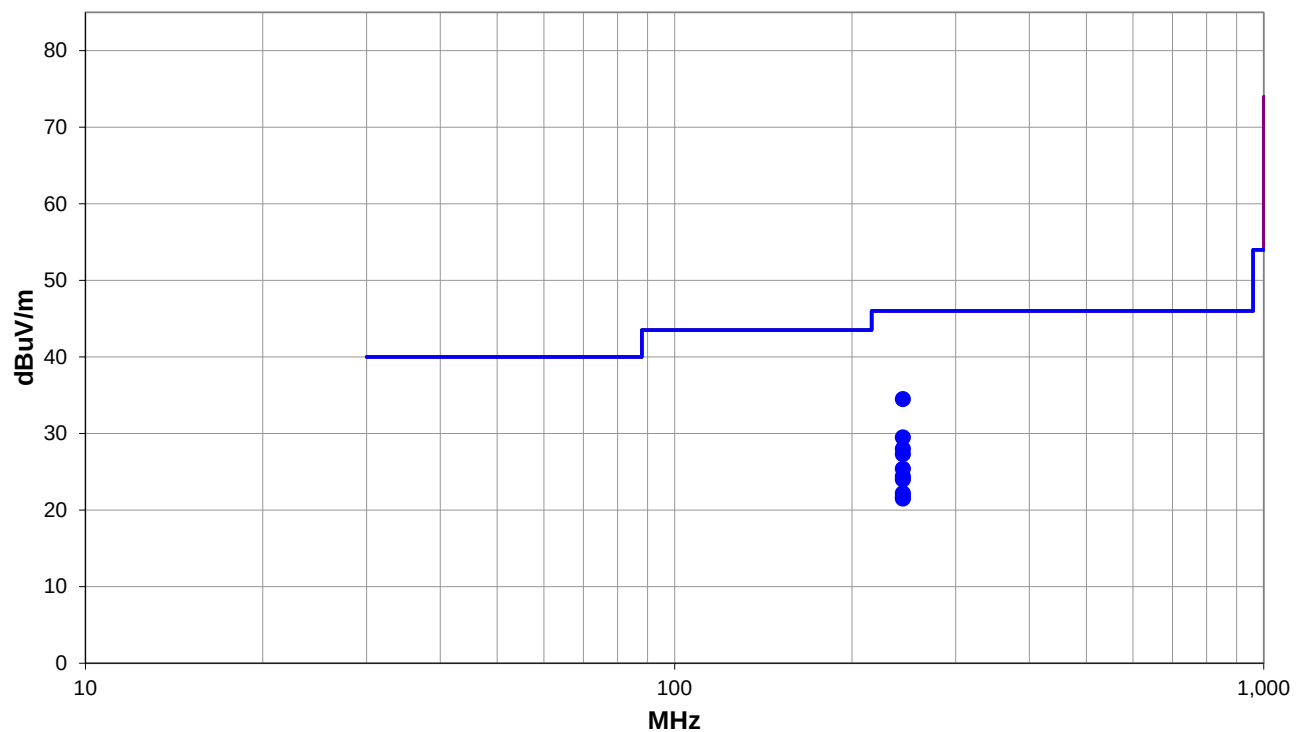
None

EUT OPERATING MODES

13.56 MHz RFID Transmitting at 100% duty cycle

DEVIATIONS FROM TEST STANDARD

None



Run #: 154

■ PK ◆ AV ● QP

FIELD STRENGTH OF SPURIOUS EMISSIONS (GREATER THAN 30 MHZ)

RESULTS - Run #154

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
244.082	37.4	-2.9	1.35	205.0	3.0	0.0	Horz	QP	0.0	34.5	46.0	-11.5	Unit 2; EUT On Side; Tag in place
244.082	32.4	-2.9	1.58	108.0	3.0	0.0	Horz	QP	0.0	29.5	46.0	-16.5	Unit 3; EUT On Side; Tag in place
244.081	30.9	-2.9	1.43	103.0	3.0	0.0	Horz	QP	0.0	28.0	46.0	-18.0	Unit 3; EUT On Side; No Tag
244.082	30.2	-2.9	1.27	26.0	3.0	0.0	Horz	QP	0.0	27.3	46.0	-18.7	Unit 3; EUT Vertical; No Tag
244.082	28.3	-2.9	2.17	17.0	3.0	0.0	Vert	QP	0.0	25.4	46.0	-20.6	Unit 3; EUT Horizontal; No Tag
244.081	27.3	-2.9	1.74	61.0	3.0	0.0	Horz	QP	0.0	24.4	46.0	-21.6	Unit 2; EUT On Side; No Tag
244.082	26.9	-2.9	1.39	167.0	3.0	0.0	Horz	QP	0.0	24.0	46.0	-22.0	Unit 3; EUT Horizontal; No Tag
244.082	25.1	-2.9	1.23	196.0	3.0	0.0	Vert	QP	0.0	22.2	46.0	-23.8	Unit 3; EUT On Side; No Tag
244.085	24.6	-2.9	1.35	205.0	3.0	0.0	Horz	QP	0.0	21.7	46.0	-24.3	Unit 2; EUT On Side; No Tag
244.082	24.4	-2.9	1.0	6.0	3.0	0.0	Vert	QP	0.0	21.5	46.0	-24.5	Unit 3; EUT Vertical; No Tag

CONCLUSION

Pass

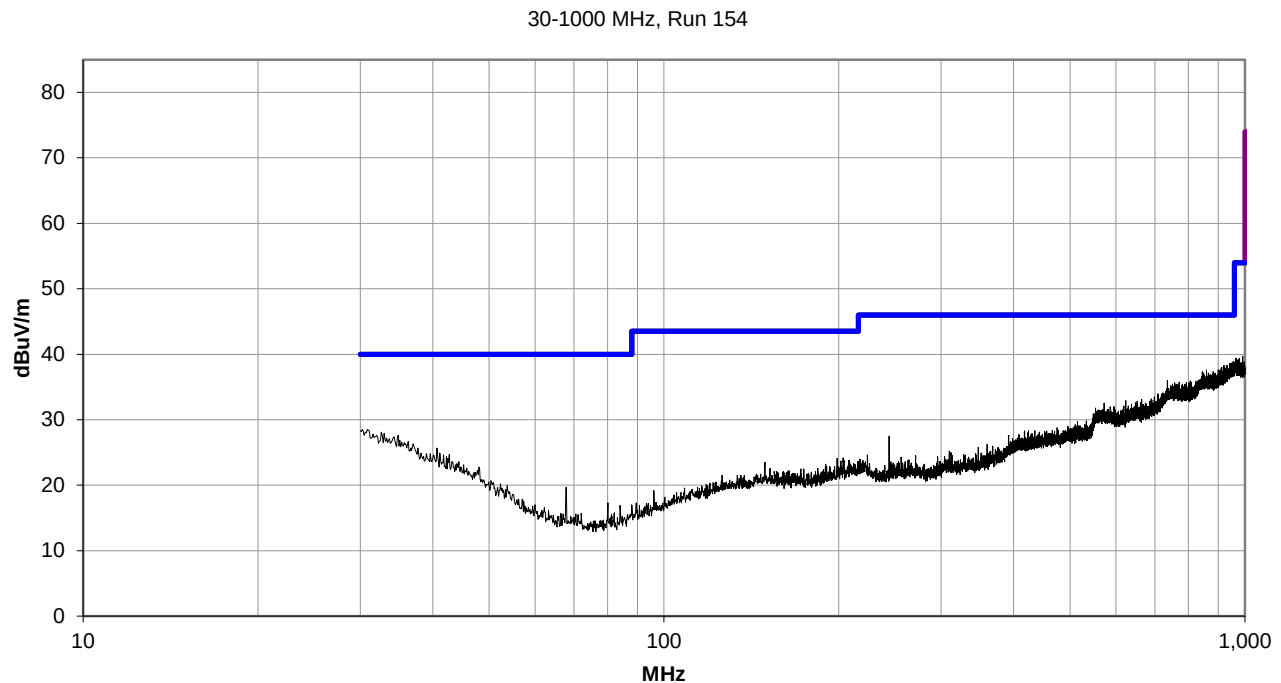


Tested By

FIELD STRENGTH OF SPURIOUS EMISSIONS (GREATER THAN 30 MHz)

PRESCAN DATA

Radiated spurious emissions from the EUT are initially investigated with Pre-scans (Preview scans). Pre-scans are typically performed with the EUT transmitting on the lowest applicable data rate. The Pre-scan plots below are shown with a peak detector and RBW according to the "Measurement Bandwidths" table in the "Test Setup Block Diagram" section of this report. Above 1 GHz, a reduced video bandwidth is used during pre-scans to better approximate an average measurement. Final measurements using all appropriate settings according to the standard are further investigated by maximizing the emission with a narrow span and high number of points to ensure emissions are captured accurately. In the case where unintentional emissions are observed, an ambient or idle pre-scan with the radio off will be shown for comparison.



End of Test Report