



# element<sup>®</sup>

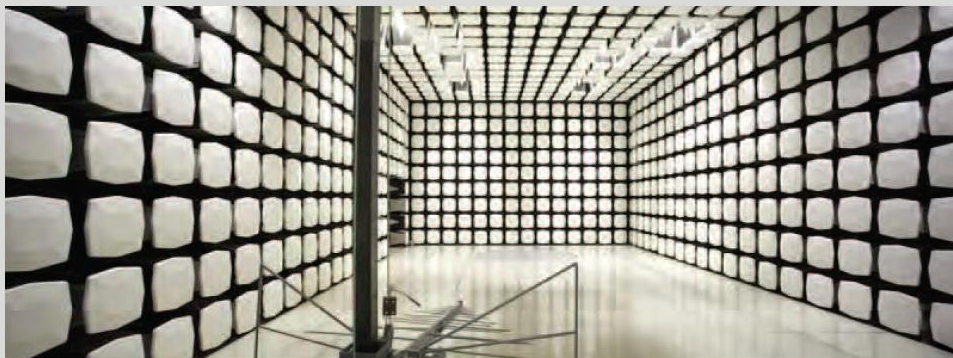
**Rosemount, Inc.**

**3308A**

**FCC 15.247:2017**

**2400 – 2483.5 MHz DTS Transceiver**

**Report # EMPM0024**



NVLAP Lab Code: 200881-0

*This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America. This Report shall not be reproduced, except in full without written approval of the laboratory.*



# CERTIFICATE OF TEST

Last Date of Test: April 27, 2017  
Rosemount, Inc.  
Model: 3308A

## Radio Equipment Testing

### Standards

Specification	Method
FCC 15.247:2017	ANSI C63.10:2013 KDB 558074

### Results

Method Clause	Test Description	Applied	Results	Comments
6.2	AC - Powerline Conducted Emissions	No	N/A	Not required for a battery powered EUT.
6.5, 6.6, 11.12.1, 11.13.2	Spurious Radiated Emissions	Yes	Pass	
7.8.2	Carrier Frequency Separation	No	N/A	Not required for DTS devices.
7.8.3	Number of Hopping Frequencies	No	N/A	Not required for DTS devices.
7.8.4	Dwell Time	No	N/A	Not required for DTS devices.
7.8.6	Band Edge Compliance - Hopping Mode	No	N/A	Not required for DTS devices.
11.6	Duty Cycle	Yes	Pass	
11.8.2	Occupied Bandwidth	Yes	Pass	
11.9.1.1	Output Power	Yes	Pass	
11.10.2	Power Spectral Density	Yes	Pass	
11.11	Band Edge Compliance	Yes	Pass	
11.11	Spurious Conducted Emissions	Yes	Pass	

### Deviations From Test Standards

None

### Approved By:

Matt Nuernberg, Operations Manager

*Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information.*

# REVISION HISTORY



Revision Number	Description	Date	Page Number
00	None		

# ACCREDITATIONS AND AUTHORIZATIONS



---

## 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** - Accredited by A2LA to ISO / IEC 17065 as a product certifier. This allows Element to certify transmitters to FCC and IC specifications.

**NVLAP** - Each laboratory is accredited by NVLAP to ISO 17025

---

## Canada

---

**ISED** - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with ISED.

---

## European Union

---

**European Commission** – Validated by the European Commission as a Notified Body under the R&TTE Directive.

---

## Australia/New Zealand

---

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

---

## Korea

---

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

---

## Japan

---

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

---

## 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.

---

## Singapore

---

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

---

## Israel

---

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

---

## Hong Kong

---

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

---

## Vietnam

---

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

---

## SCOPE

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

<http://portlandcustomer.element.com/ts/scope/scope.htm>

<http://gsi.nist.gov/global/docs/cabs/designations.html>

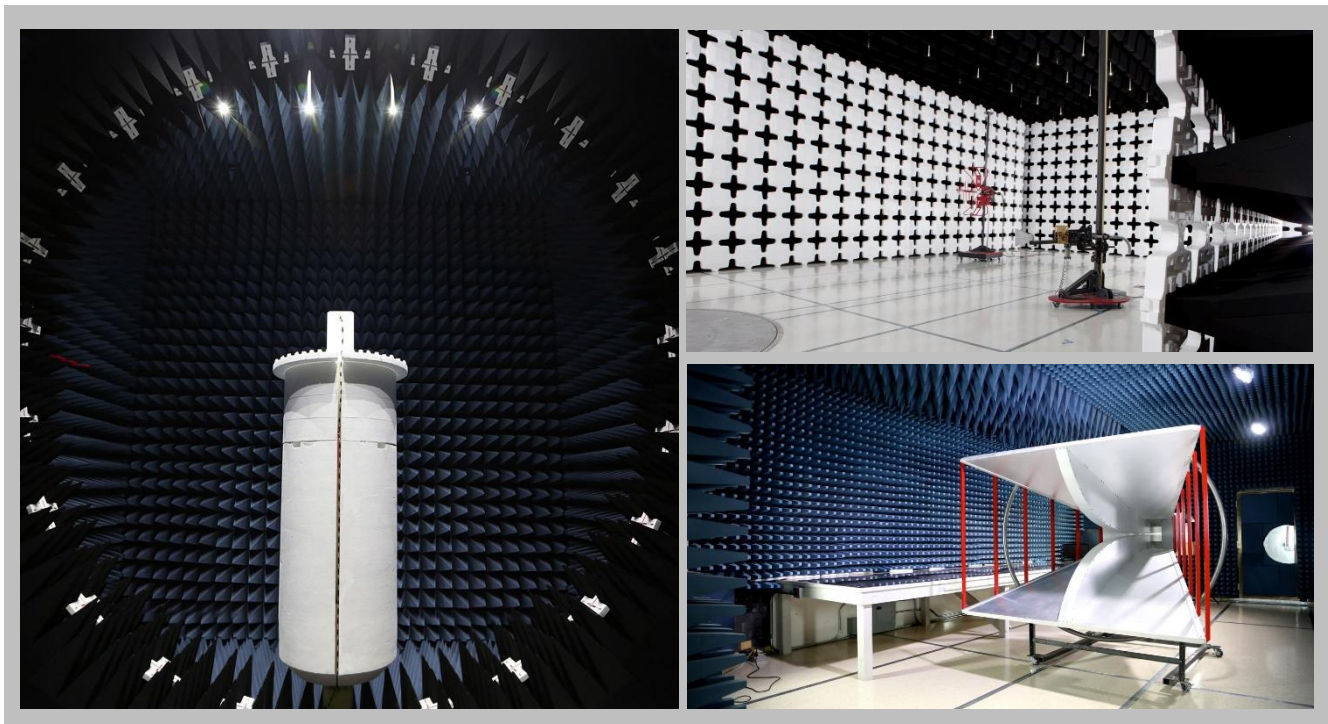
# FACILITIES



2017.3.2



California	Minnesota	New York	Oregon	Texas	Washington
Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Labs NC01-05 19201 120 <sup>th</sup> Ave NE Bothell, WA 98011 (425)984-6600
NVLAP					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
Innovation, Science and Economic Development Canada					
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1
BSMI					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA					
US0158	US0175	N/A	US0017	US0191	US0157



# MEASUREMENT UNCERTAINTY



## Measurement Uncertainty

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

A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable test description page. 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.

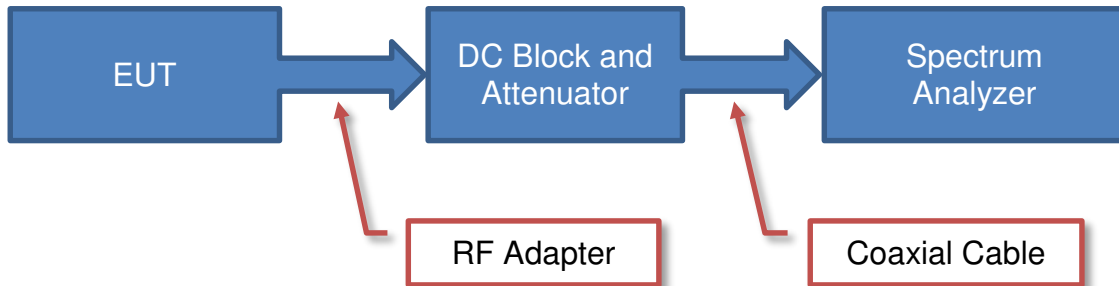
<b>Test</b>	<b>+ MU</b>	<b>- MU</b>
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	2.4 dB	-2.4 dB

# Test Setup Block Diagrams

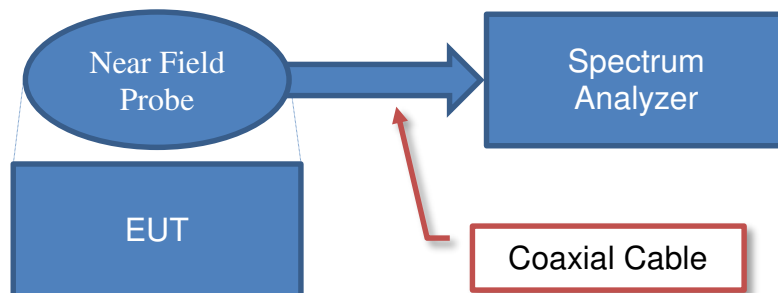


2017.1.25

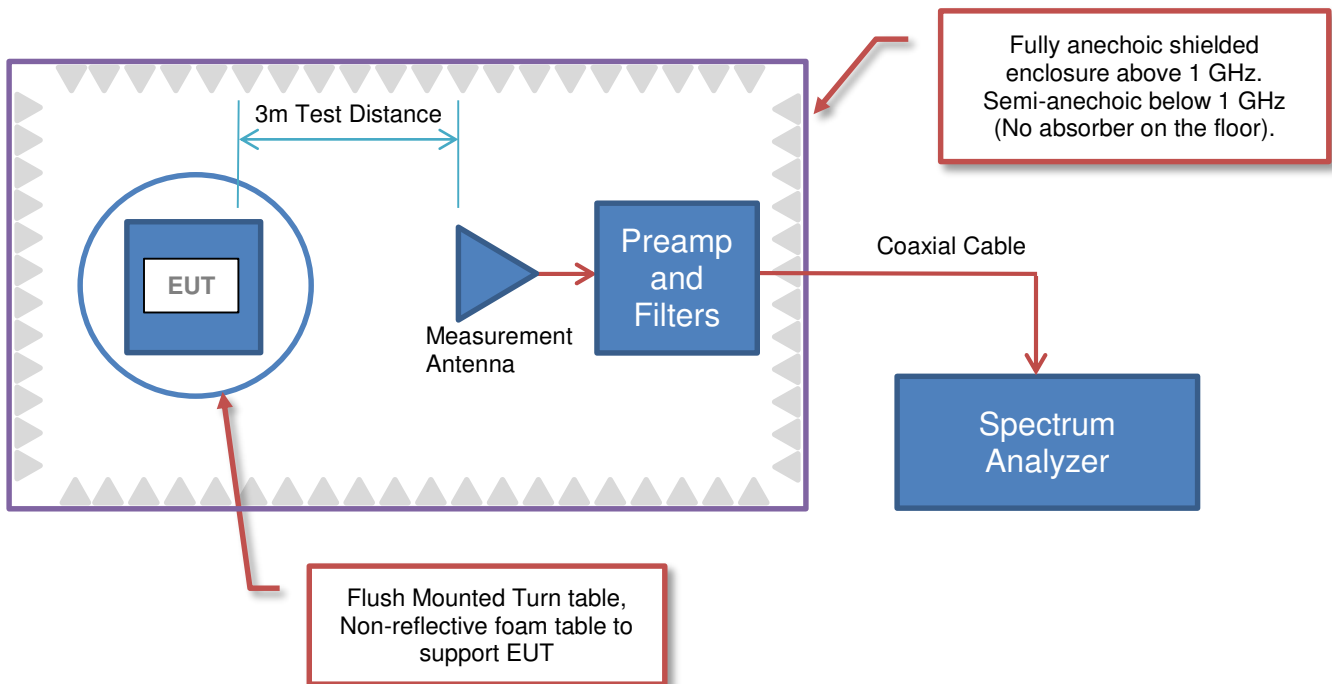
## Antenna Port Conducted Measurements



## Near Field Test Fixture Measurements



## Spurious Radiated Emissions





# PRODUCT DESCRIPTION

## Client and Equipment Under Test (EUT) Information

<b>Company Name:</b>	Rosemout, Inc.
<b>Address:</b>	8200 Market Blvd. MS SC3L
<b>City, State, Zip:</b>	Chanhassen, MN 55317
<b>Test Requested By:</b>	Merritt Pulkrabek
<b>Model:</b>	3308A
<b>First Date of Test:</b>	April 11, 2017
<b>Last Date of Test:</b>	April 27, 2017
<b>Receipt Date of Samples:</b>	April 11, 2017
<b>Equipment Design Stage:</b>	Preproduction
<b>Equipment Condition:</b>	No Damage
<b>Purchase Authorization:</b>	Verified

## Information Provided by the Party Requesting the Test

### Functional Description of the EUT:

Wireless Hart 2.4 GHz DTS band level probe.

### Testing Objective:

Seeking to demonstrate compliance of the DTS radio under FCC 15.247:2017 for operation in the 2400 - 2483.5 MHz band.



# CONFIGURATIONS



## Configuration EMPM0024- 1

Software/Firmware Running during test					
Description				Version	
Purple Heart Transmitter Interaction Tool				6.6.5	

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wireless Level Transmitter	Rosemount Inc.	3308A	SAMPLE1

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Fiberglass Omni Antenna	PCTEL	MFB24008DC	None

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter (Laptop)	Lenovo	92P1156	11S92P1156Z1ZDXN8A81AZ
HART Communication Modem	MACTek	Viator	346802
Laptop	Lenovo	X201	R9-B306D 11/01

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Alligator Cables (x2)	No	1m	No	3308A	Battery 9V

## Configuration EMPM0024- 2

Software/Firmware Running during test					
Description				Version	
Purple Heart Transmitter Interaction Tool				6.6.5	

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wireless Level Transmitter	Rosemount Inc.	3308A	SAMPLE1

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Yagi Antenna	L-com	HG2412SY-NF	None

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter (Laptop)	Lenovo	92P1156	11S92P1156Z1ZDXN8A81AZ
HART Communication Modem	MACTek	Viator	346802
Laptop	Lenovo	X201	R9-B306D 11/01

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Alligator Cables (x2)	No	1m	No	3308A	Battery 9V

# CONFIGURATIONS



## Configuration EMPM0024- 3

Software/Firmware Running during test					
Description				Version	
Purple Heart Transmitter Interaction Tool				6.6.5	

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wireless Level Transmitter	Rosemount Inc.	3308A	SAMPLE1

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Parabolic Antenna	L-com	HG2424EG	None

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter (Laptop)	Lenovo	92P1156	11S92P1156Z1ZDXN8A81AZ
HART Communication Modem	MACTek	Viator	346802
Laptop	Lenovo	X201	R9-B306D 11/01

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Alligator Cables (x2)	No	1m	No	3308A	Battery 9V

# CONFIGURATIONS



## Configuration EMPM0024- 4

Software/Firmware Running during test	
Description	Version
Purple Heart Transmitter Interaction Tool	6.6.5

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wireless Level Transmitter	Rosemount Inc.	3308A	SAMPLE1

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Sector Antenna	L-com	HG2417P-120	None

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter (Laptop)	Lenovo	92P1156	11S92P1156Z1ZDXN8A81AZ
HART Communication Modem	MACTek	Viator	346802
Laptop	Lenovo	X201	R9-B306D 11/01

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Alligator Cables (x2)	No	1m	No	3308A	Battery 9V

# CONFIGURATIONS



2017-1-25

## Configuration EMPM0024- 8

Software/Firmware Running during test	
Description	Version
Gateway Version	4.5.32

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wireless Level Transmitter	Rosemount Inc.	3308A	SAMPLE2

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter (Laptop)	Lenovo	92P1156	11S92P1156Z1ZDXN8A81AZ
HART Communication Modem	MACTek	Viator	346802
Laptop	Lenovo	X201	R9-B306D 11/01
9VDC Battery	Energizer	None	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Alligator Cables (x2)	No	1m	No	3308A	Battery 9V
Communication Leads	No	1.6m	No	HART Communication Modem	3308 System
USB Cable	Yes	0.3m	No	Laptop	HART Communication Modem
AC Cable (Laptop)	No	1.8m	No	AC Mains	AC/DC Adapter (Laptop)
DC Cable (Laptop)	No	1.8m	Yes	AC/DC Adapter (Laptop)	Laptop

# MODIFICATIONS



## Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	4/11/2017	Spurious Radiated 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.
2	4/17/2017	Duty Cycle	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	4/17/2017	Output Power	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	4/17/2017	Band Edge Compliance	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	4/17/2017	Occupied Bandwidth	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	4/17/2017	Spurious 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.
7	4/17/2017	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
8	4/27/2017	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

# SPURIOUS RADIATED EMISSIONS



PSA-ESCI 2017.01.26

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

## MODES OF OPERATION

Transmitting low channel (2405 MHz) modulated  
 Transmitting mid channel (2440 MHz) modulated  
 Transmitting high channel (2475 MHz) modulated

## POWER SETTINGS INVESTIGATED

Battery

## CONFIGURATIONS INVESTIGATED

EMPM0024 - 1  
 EMPM0024 - 2  
 EMPM0024 - 3  
 EMPM0024 - 4

## FREQUENCY RANGE INVESTIGATED

Start Frequency | 30 MHz | Stop Frequency | 26500 MHz

## SAMPLE CALCULATIONS

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

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator	Fairview Microwave	SA18E-20	TWZ	9/23/2016	12 mo
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	12/1/2016	12 mo
Cable	ESM Cable Corp.	Bilog Cables	MNH	12/1/2016	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AYD	1/6/2016	24 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AXP	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVT	2/14/2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AVO	12/1/2016	12 mo
Amplifier - Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	9/15/2016	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	2/14/2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	2/14/2017	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AJA	6/23/2016	24 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AIQ	NCR	0 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AHG	NCR	0 mo
18-26GHz Standard Gain Horn Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/15/2016	12 mo

## 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

## TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.

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

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). 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.

Measurements at the edges of the allowable band may be presented in an alternative method as provided for in the ANSI C63.10 Marker-Delta method. This method involves performing an in-band fundamental measurement followed by a screen capture of the fundamental and out-of-band emission using reduced measurement instrumentation bandwidths. The amplitude delta measured on this screen capture is applied to the fundamental emission value to show the out-of-band emission level as applied to the limit.

# SPURIOUS RADIATED EMISSIONS

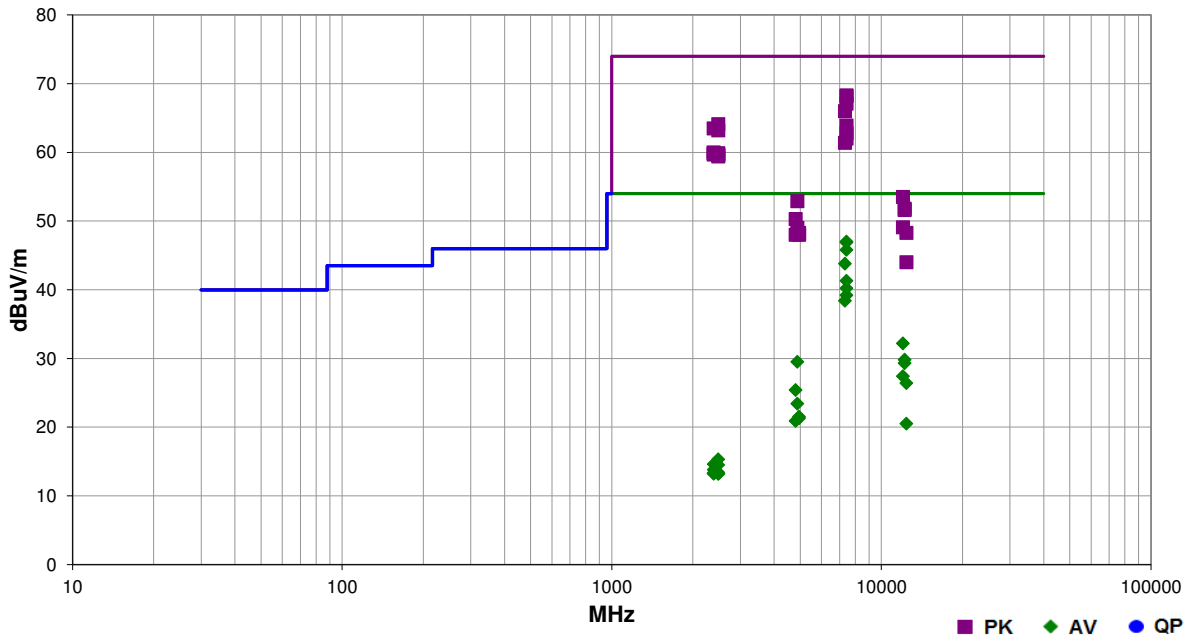


EmiRS 2017.01.25 PSA-ESCI 2017.01.26

<b>Work Order:</b>	EMPM0024	<b>Date:</b>	04/27/17	
<b>Project:</b>	None	<b>Temperature:</b>	21.7 °C	
<b>Job Site:</b>	MN05	<b>Humidity:</b>	29% RH	
<b>Serial Number:</b>	None	<b>Barometric Pres.:</b>	1002 mbar	
<b>EUT:</b>	3308A			
<b>Configuration:</b>	1			
<b>Customer:</b>	Rosemount, Inc.			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	Battery			
<b>Operating Mode:</b>	Continuous transmit, modulated, see data comment for channel.			
<b>Deviations:</b>	None			
<b>Comments:</b>	See data comments for EUT orientation, 8dBi Omni antenna used.			

<b>Test Specifications</b>	<b>Test Method</b>
FCC 15.247:2017	ANSI C63.10:2013

<b>Run #</b>	207	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1 to 4(m)	<b>Results</b>	Pass
--------------	-----	--------------------------	---	--------------------------	-----------	----------------	------



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Duty Cycle Correction (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7426.608	53.4	14.9	1.0	270.0	3.0	0.0	Vert	PK	0.0	68.3	74.0	-5.7	High ch, EUT Horz
7426.642	53.3	14.9	1.0	325.0	3.0	0.0	Horz	PK	0.0	68.2	74.0	-5.8	High ch, EUT On Side
7426.650	52.2	14.9	2.7	272.9	3.0	0.0	Vert	PK	0.0	67.1	74.0	-6.9	High ch, EUT On Side
7426.450	47.5	14.9	1.0	325.0	3.0	0.0	Horz	AV	-15.4	47.0	54.0	-7.0	High ch, EUT On Side
7426.525	47.4	14.9	1.0	270.0	3.0	0.0	Vert	AV	-15.4	46.9	54.0	-7.1	High ch, EUT Horz
7321.575	51.0	15.0	1.8	282.9	3.0	0.0	Vert	PK	0.0	66.0	74.0	-8.0	Mid ch, EUT Horz
7426.475	46.3	14.9	2.7	272.9	3.0	0.0	Vert	AV	-15.4	45.8	54.0	-8.2	High ch, EUT On Side
2483.500	46.6	-2.5	1.5	203.1	3.0	20.0	Vert	PK	0.0	64.1	74.0	-9.9	High ch, EUT Vert
7426.725	49.0	14.9	1.0	57.0	3.0	0.0	Horz	PK	0.0	63.9	74.0	-10.1	High ch, EUT Vert
7321.492	44.2	15.0	1.8	282.9	3.0	0.0	Vert	AV	-15.4	43.8	54.0	-10.2	Mid ch, EUT Horz
2388.525	45.8	-2.3	1.3	197.0	3.0	20.0	Vert	PK	0.0	63.5	74.0	-10.5	low ch, EUT Vert
2484.343	45.7	-2.5	1.0	204.0	3.0	20.0	Horz	PK	0.0	63.2	74.0	-10.8	High ch, EUT On Side
7426.408	47.9	14.9	1.4	177.1	3.0	0.0	Vert	PK	0.0	62.8	74.0	-11.2	High ch, EUT Vert
7426.392	47.1	14.9	1.0	293.0	3.0	0.0	Horz	PK	0.0	62.0	74.0	-12.0	High ch, EUT Horz
7321.617	46.4	15.0	1.1	264.0	3.0	0.0	Horz	PK	0.0	61.4	74.0	-12.6	Mid ch, EUT On Side
7426.475	41.8	14.9	1.0	57.0	3.0	0.0	Horz	AV	-15.4	41.3	54.0	-12.7	High ch, EUT Vert
7426.483	40.7	14.9	1.4	177.1	3.0	0.0	Vert	AV	-15.4	40.2	54.0	-13.8	High ch, EUT Vert
2388.740	42.3	-2.3	1.3	197.0	3.0	20.0	Vert	PK	0.0	60.0	74.0	-14.0	low ch, EUT Vert




Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Duty Cycle Correction (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2484.153	42.4	-2.5	1.0	109.1	3.0	20.0	Vert	PK	0.0	59.9	74.0	-14.1	High ch, EUT On Side
2388.730	42.2	-2.3	1.0	128.0	3.0	20.0	Horz	PK	0.0	59.9	74.0	-14.1	low ch, EUT On Side
2484.417	42.2	-2.5	1.0	339.0	3.0	20.0	Horz	PK	0.0	59.7	74.0	-14.3	High ch, EUT Vert
2387.350	42.0	-2.3	1.0	128.0	3.0	20.0	Horz	PK	0.0	59.7	74.0	-14.3	low ch, EUT On Side
2484.377	42.1	-2.5	1.0	152.1	3.0	20.0	Horz	PK	0.0	59.6	74.0	-14.4	High ch, EUT Horz
2484.483	41.9	-2.5	1.5	9.0	3.0	20.0	Vert	PK	0.0	59.4	74.0	-14.6	High ch, EUT Horz
7426.533	39.7	14.9	1.0	293.0	3.0	0.0	Horz	AV	-15.4	39.2	54.0	-14.8	High ch, EUT Horz
7321.458	38.8	15.0	1.1	264.0	3.0	0.0	Horz	AV	-15.4	38.4	54.0	-15.6	Mid ch, EUT On Side
12027.570	54.3	-0.8	1.8	301.9	3.0	0.0	Horz	PK	0.0	53.5	74.0	-20.5	Low ch, EUT On Side
4878.900	46.2	6.7	1.8	321.0	3.0	0.0	Horz	PK	0.0	52.9	74.0	-21.1	Mid ch, EUT On Side
12027.540	48.4	-0.8	1.8	301.9	3.0	0.0	Horz	AV	-15.4	32.2	54.0	-21.8	Low ch, EUT On Side
12197.450	51.8	0.0	1.8	261.9	3.0	0.0	Horz	PK	0.0	51.8	74.0	-22.2	Mid ch, EUT On Side
12197.190	51.6	0.0	2.4	283.9	3.0	0.0	Vert	PK	0.0	51.6	74.0	-22.4	Mid ch, EUT Horz
4808.975	43.7	6.6	1.6	239.0	3.0	0.0	Horz	PK	0.0	50.3	74.0	-23.7	Low ch, EUT On Side
12202.510	45.2	0.0	1.8	261.9	3.0	0.0	Horz	AV	-15.4	29.8	54.0	-24.2	Mid ch, EUT On Side
4880.967	38.2	6.7	1.8	321.0	3.0	0.0	Horz	AV	-15.4	29.5	54.0	-24.5	Mid ch, EUT On Side
12202.500	44.7	0.0	2.4	283.9	3.0	0.0	Vert	AV	-15.4	29.3	54.0	-24.7	Mid ch, EUT Horz
12022.030	49.9	-0.8	2.6	290.9	3.0	0.0	Vert	PK	0.0	49.1	74.0	-24.9	Low ch, EUT Horz
4880.942	42.3	6.7	2.6	322.0	3.0	0.0	Vert	PK	0.0	49.0	74.0	-25.0	Mid ch, EUT Horz
4951.400	41.5	6.8	1.7	330.9	3.0	0.0	Horz	PK	0.0	48.3	74.0	-25.7	High ch, EUT On Side
12372.390	47.6	0.7	1.7	294.9	3.0	0.0	Horz	PK	0.0	48.3	74.0	-25.7	High ch, EUT On Side
4950.900	41.2	6.8	1.0	51.1	3.0	0.0	Vert	PK	0.0	48.0	74.0	-26.0	High ch, EUT Horz
4809.250	41.4	6.6	1.0	228.1	3.0	0.0	Vert	PK	0.0	48.0	74.0	-26.0	Low ch, EUT Horz
12027.510	43.6	-0.8	2.6	290.9	3.0	0.0	Vert	AV	-15.4	27.4	54.0	-26.6	Low ch, EUT Horz
12377.560	41.1	0.7	1.7	294.9	3.0	0.0	Horz	AV	-15.4	26.4	54.0	-27.6	High ch, EUT On Side
4809.050	34.2	6.6	1.6	239.0	3.0	0.0	Horz	AV	-15.4	25.4	54.0	-28.6	Low ch, EUT On Side
12372.540	43.3	0.7	2.2	299.0	3.0	0.0	Vert	PK	0.0	44.0	74.0	-30.0	High ch, EUT Horz
4881.025	32.1	6.7	2.6	322.0	3.0	0.0	Vert	AV	-15.4	23.4	54.0	-30.6	Mid ch, EUT Horz
4949.642	30.0	6.9	1.0	51.1	3.0	0.0	Vert	AV	-15.4	21.5	54.0	-32.5	High ch, EUT Horz
4950.492	29.9	6.8	1.7	330.9	3.0	0.0	Horz	AV	-15.4	21.3	54.0	-32.7	High ch, EUT On Side
4809.192	29.7	6.6	1.0	228.1	3.0	0.0	Vert	AV	-15.4	20.9	54.0	-33.1	Low ch, EUT Horz
12377.540	35.2	0.7	2.2	299.0	3.0	0.0	Vert	AV	-15.4	20.5	54.0	-33.5	High ch, EUT Horz
2483.813	33.2	-2.5	1.5	203.1	3.0	20.0	Vert	AV	-15.4	15.3	54.0	-38.7	High ch, EUT Vert
2390.975	32.3	-2.3	1.3	197.0	3.0	20.0	Vert	AV	-15.4	14.6	54.0	-39.4	low ch, EUT Vert
2483.520	32.4	-2.5	1.0	204.0	3.0	20.0	Horz	AV	-15.4	14.5	54.0	-39.5	High ch, EUT On Side
2389.867	31.5	-2.3	1.3	197.0	3.0	20.0	Vert	AV	-15.4	13.8	54.0	-40.2	low ch, EUT Vert
2483.707	31.3	-2.5	1.0	152.1	3.0	20.0	Horz	AV	-15.4	13.4	54.0	-40.6	High ch, EUT Horz
2388.573	31.0	-2.3	1.0	128.0	3.0	20.0	Horz	AV	-15.4	13.3	54.0	-40.7	low ch, EUT On Side
2483.760	31.2	-2.5	1.0	109.1	3.0	20.0	Vert	AV	-15.4	13.3	54.0	-40.7	High ch, EUT On Side
2484.487	31.1	-2.5	1.5	9.0	3.0	20.0	Vert	AV	-15.4	13.2	54.0	-40.8	High ch, EUT Horz
2485.490	31.1	-2.5	1.0	339.0	3.0	20.0	Horz	AV	-15.4	13.2	54.0	-40.8	High ch, EUT Vert
2391.492	30.9	-2.3	1.0	128.0	3.0	20.0	Horz	AV	-15.4	13.2	54.0	-40.8	low ch, EUT On Side

# SPURIOUS RADIATED EMISSIONS

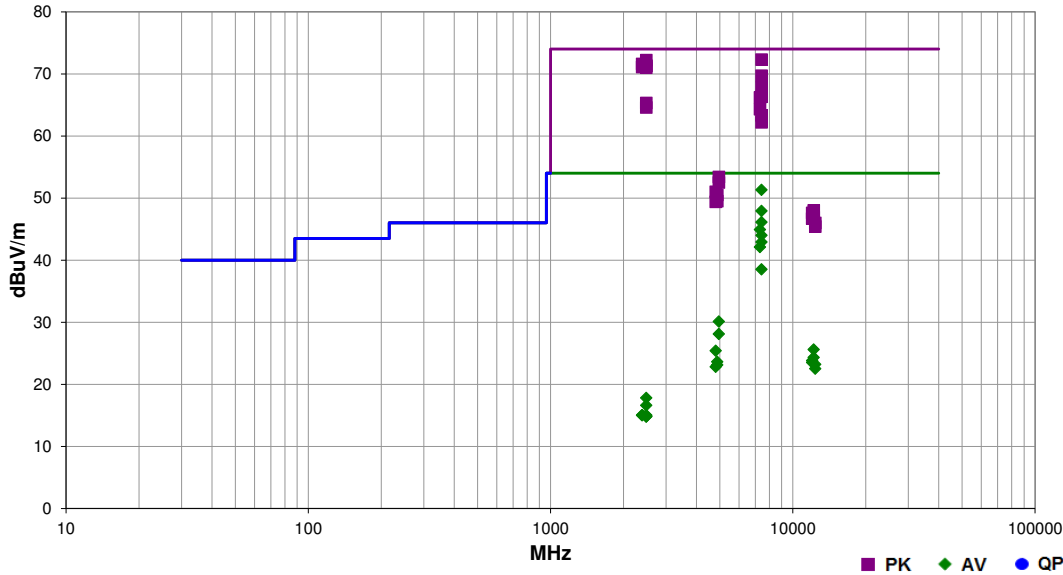


EmiRS 2017.01.25 PSA-ESCI 2017.01.26

<b>Work Order:</b>	EMPM0024	<b>Date:</b>	04/24/17	
<b>Project:</b>	None	<b>Temperature:</b>	23.3 °C	
<b>Job Site:</b>	MN05	<b>Humidity:</b>	30.8% RH	
<b>Serial Number:</b>	None	<b>Barometric Pres.:</b>	1008 mbar	
<b>EUT:</b>	3308A			
<b>Configuration:</b>	2			
<b>Customer:</b>	Rosemount, Inc.			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	Battery			
<b>Operating Mode:</b>	Continuous transmit, modulated, see data comment for channel.			
<b>Deviations:</b>	None			
<b>Comments:</b>	See data comments for EUT orientation, 12dBi Yagi antenna used, 40 deg beam angle			

<b>Test Specifications</b>	<b>Test Method</b>
FCC 15.247:2017	ANSI C63.10:2013

<b>Run #</b>	174	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1 to 4(m)	<b>Results</b>	Pass
--------------	-----	--------------------------	---	--------------------------	-----------	----------------	------



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Duty Cycle Correction (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7423.467	57.4	14.9	1.2	138.1	3.0	0.0	Horz	PK	0.0	72.3	74.0	-1.7	EUT Vert, high channel 2475 MHz
2484.287	44.7	-2.5	3.5	140.0	3.0	30.0	Horz	PK	0.0	72.2	74.0	-1.8	EUT Vert, high channel
2389.900	43.9	-2.3	1.0	322.0	3.0	30.0	Vert	PK	0.0	71.6	74.0	-2.4	EUT On Side, low channel
2484.200	43.8	-2.5	1.0	304.0	3.0	30.0	Vert	PK	0.0	71.3	74.0	-2.7	EUT Horz, high channel
2484.750	43.8	-2.5	1.0	300.9	3.0	30.0	Vert	PK	0.0	71.3	74.0	-2.7	EUT Vert, high channel
7423.533	51.8	14.9	1.2	138.1	3.0	0.0	Horz	AV	-15.4	51.3	54.0	-2.7	EUT Vert, high channel 2475 MHz
2389.310	43.4	-2.3	1.0	27.0	3.0	30.0	Horz	PK	0.0	71.1	74.0	-2.9	EUT Horz, low channel
2484.410	43.5	-2.5	1.0	2.0	3.0	30.0	Horz	PK	0.0	71.0	74.0	-3.0	EUT On Side, high channel
7423.367	54.8	14.9	1.1	218.0	3.0	0.0	Horz	PK	0.0	69.7	74.0	-4.3	EUT Horz, high channel 2475 MHz
7423.533	48.4	14.9	1.1	218.0	3.0	0.0	Horz	AV	-15.4	47.9	54.0	-6.1	EUT Horz, high channel 2475 MHz
7423.500	52.9	14.9	2.6	5.1	3.0	0.0	Vert	PK	0.0	67.8	74.0	-6.2	EUT Vert, high channel 2475 MHz
7423.492	51.4	14.9	3.3	22.1	3.0	0.0	Vert	PK	0.0	66.3	74.0	-7.7	EUT Horz, high channel 2475 MHz
7318.600	51.1	15.1	1.0	143.0	3.0	0.0	Horz	PK	0.0	66.2	74.0	-7.8	EUT Vert, mid channel 2440 MHz
7423.500	46.6	14.9	2.6	5.1	3.0	0.0	Vert	AV	-15.4	46.1	54.0	-7.9	EUT Vert, high channel 2475 MHz
2484.095	27.8	37.5	1.0	275.9	3.0	0.0	Horz	PK	0.0	65.3	74.0	-8.7	EUT Horz, Yagi, High Channel: Fund 77.5dBuV + -49.7dBc = 27.8dBuV (calc. amp.)
7321.483	45.3	15.0	1.0	143.0	3.0	0.0	Horz	AV	-15.4	44.9	54.0	-9.1	EUT Vert, mid channel 2440 MHz
2485.950	27.1	37.5	1.0	268.9	3.0	0.0	Vert	PK	0.0	64.6	74.0	-9.4	EUT On Side, Yagi, High Channel : Fund 74.5dBuV + -47.4dBc = 27.1dBuV (calc. amp.)
7318.425	49.2	15.1	3.7	185.1	3.0	0.0	Vert	PK	0.0	64.3	74.0	-9.7	EUT Vert, mid channel 2440 MHz
7423.550	44.5	14.9	3.3	22.1	3.0	0.0	Vert	AV	-15.4	44.0	54.0	-10.0	EUT Horz, high channel 2475 MHz
7423.367	48.4	14.9	2.1	218.0	3.0	0.0	Vert	PK	0.0	63.3	74.0	-10.7	EUT On Side, high channel 2475 MHz
7423.725	43.4	14.9	2.1	218.0	3.0	0.0	Vert	AV	-15.4	42.9	54.0	-11.1	EUT On Side, high channel 2475 MHz
7423.500	47.3	14.9	3.2	242.0	3.0	0.0	Horz	PK	0.0	62.2	74.0	-11.8	EUT On Side, high channel 2475 MHz
7321.492	42.5	15.0	3.7	185.1	3.0	0.0	Vert	AV	-15.4	42.1	54.0	-11.9	EUT Vert, mid channel 2440 MHz
7423.483	39.0	14.9	3.2	242.0	3.0	0.0	Horz	AV	-15.4	38.5	54.0	-15.5	EUT On Side, high channel 2475 MHz
4949.075	46.5	6.9	1.0	124.1	3.0	0.0	Horz	PK	0.0	53.4	74.0	-20.6	EUT Vert, high channel 2475 MHz
4949.142	45.6	6.9	3.9	202.1	3.0	0.0	Vert	PK	0.0	52.5	74.0	-21.5	EUT Vert, high channel 2475 MHz
4809.700	44.4	6.6	1.6	139.0	3.0	0.0	Horz	PK	0.0	51.0	74.0	-23.0	EUT Vert, low channel 2405 MHz

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Duty Cycle Correction (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4880.992	43.8	6.7	1.0	107.0	3.0	0.0	Horz	PK	0.0	50.5	74.0	-23.5	EUT Vert, mid channel 2440 MHz
4950.908	38.7	6.8	1.0	124.1	3.0	0.0	Horz	AV	-15.4	30.1	54.0	-23.9	EUT Vert, high channel 2475 MHz
4880.733	42.8	6.7	1.0	110.0	3.0	0.0	Vert	PK	0.0	49.5	74.0	-24.5	EUT Vert, mid channel 2440 MHz
4810.533	42.8	6.6	1.0	110.0	3.0	0.0	Vert	PK	0.0	49.4	74.0	-24.6	EUT Vert, low channel 2405 MHz
4950.967	36.7	6.8	3.9	202.1	3.0	0.0	Vert	AV	-15.4	28.1	54.0	-25.9	EUT Vert, high channel 2475 MHz
12197.290	48.0	0.0	1.4	276.9	3.0	0.0	Horz	PK	0.0	48.0	74.0	-26.0	EUT Vert, mid channel 2440 MHz
12022.830	48.4	-0.8	1.0	275.9	3.0	0.0	Horz	PK	0.0	47.6	74.0	-26.4	EUT Vert, low channel 2405 MHz
12197.180	46.9	0.0	1.6	25.0	3.0	0.0	Vert	PK	0.0	46.9	74.0	-27.1	EUT Vert, mid channel 2440 MHz
12022.930	47.5	-0.8	1.3	27.0	3.0	0.0	Vert	PK	0.0	46.7	74.0	-27.3	EUT Vert, low channel 2405 MHz
12377.170	45.3	0.7	1.6	27.0	3.0	0.0	Vert	PK	0.0	46.0	74.0	-28.0	EUT Vert, high channel 2475 MHz
12202.470	41.0	0.0	1.4	276.9	3.0	0.0	Horz	AV	-15.4	25.6	54.0	-28.4	EUT Vert, mid channel 2440 MHz
4808.983	34.2	6.6	1.6	139.0	3.0	0.0	Horz	AV	-15.4	25.4	54.0	-28.6	EUT Vert, low channel 2405 MHz
12372.220	44.7	0.7	1.6	279.0	3.0	0.0	Horz	PK	0.0	45.4	74.0	-28.6	EUT Vert, high channel 2475 MHz
12202.490	39.7	0.0	1.6	25.0	3.0	0.0	Vert	AV	-15.4	24.3	54.0	-29.7	EUT Vert, mid channel 2440 MHz
12027.480	40.0	-0.8	1.0	275.9	3.0	0.0	Horz	AV	-15.4	23.8	54.0	-30.2	EUT Vert, low channel 2405 MHz
4880.992	32.3	6.7	1.0	107.0	3.0	0.0	Horz	AV	-15.4	23.6	54.0	-30.4	EUT Vert, mid channel 2440 MHz
12027.440	39.7	-0.8	1.3	27.0	3.0	0.0	Vert	AV	-15.4	23.5	54.0	-30.5	EUT Vert, low channel 2405 MHz
12377.460	37.9	0.7	1.6	27.0	3.0	0.0	Vert	AV	-15.4	23.2	54.0	-30.8	EUT Vert, high channel 2475 MHz
4882.475	31.8	6.7	1.0	110.0	3.0	0.0	Vert	AV	-15.4	23.1	54.0	-30.9	EUT Vert, mid channel 2440 MHz
4809.142	31.6	6.6	1.0	110.0	3.0	0.0	Vert	AV	-15.4	22.8	54.0	-31.2	EUT Vert, low channel 2405 MHz
12377.540	37.2	0.7	1.6	279.0	3.0	0.0	Horz	AV	-15.4	22.5	54.0	-31.5	EUT Vert, high channel 2475 MHz
2483.500	35.7	-2.5	1.0	275.9	3.0	30.0	Horz	AV	-15.4	17.8	54.0	-36.2	EUT Horz, high channel
2483.507	34.5	-2.5	1.0	268.9	3.0	30.0	Vert	AV	-15.4	16.6	54.0	-37.4	EUT On Side, high channel
2389.387	32.7	-2.3	1.0	27.0	3.0	30.0	Horz	AV	-15.4	15.0	54.0	-39.0	EUT Horz, low channel
2389.857	32.7	-2.3	1.0	322.0	3.0	30.0	Vert	AV	-15.4	15.0	54.0	-39.0	EUT On Side, low channel
2483.670	32.9	-2.5	3.5	140.0	3.0	30.0	Horz	AV	-15.4	15.0	54.0	-39.0	EUT Vert, high channel
2484.227	32.8	-2.5	1.0	300.9	3.0	30.0	Vert	AV	-15.4	14.9	54.0	-39.1	EUT Vert, high channel
2483.647	32.7	-2.5	1.0	304.0	3.0	30.0	Vert	AV	-15.4	14.8	54.0	-39.2	EUT Horz, high channel
2485.177	32.7	-2.5	1.0	2.0	3.0	30.0	Horz	AV	-15.4	14.8	54.0	-39.2	EUT On Side, high channel

# SPURIOUS RADIATED EMISSIONS

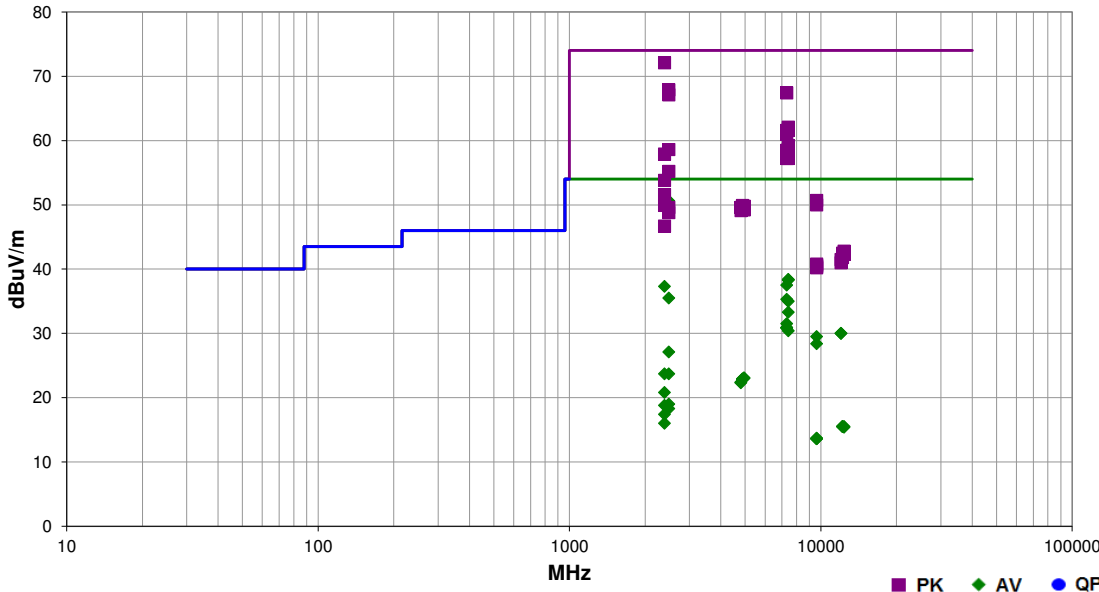


EmIRS 2017.01.25 PSA-ESCI 2017.01.26

<b>Work Order:</b>	EMPM0024	<b>Date:</b>	04/11/17	
<b>Project:</b>	None	<b>Temperature:</b>	22 °C	
<b>Job Site:</b>	MN05	<b>Humidity:</b>	27.3% RH	
<b>Serial Number:</b>	None	<b>Barometric Pres.:</b>	1027 mbar	
<b>EUT:</b>	3308A			
<b>Configuration:</b>	3			
<b>Customer:</b>	Rosemount, Inc.			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	Battery			
<b>Operating Mode:</b>	Continuous transmit, modulated, see data comment for channel.			
<b>Deviations:</b>	None			
<b>Comments:</b>	See data comments for EUT orientation, Parabolic antenna			

<b>Test Specifications</b>	<b>Test Method</b>
FCC 15.247:2017	ANSI C63.10:2013

<b>Run #</b>	96	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1 to 4(m)	<b>Results</b>	Pass
--------------	----	--------------------------	---	--------------------------	-----------	----------------	------



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Duty Cycle Correction (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2389.970	74.4	-2.3	1.8	56.0	3.0	0.0	Vert	PK	0.0	72.1	74.0	-1.9	EUT Horz, Low Ch
2483.885	28.5	37.5	3.0	55.1	3.0	0.0	Horz	AV	-15.4	50.6	54.0	-3.4	EUT on Side, High Ch: Fund 77.9dBuV + -49.4dBc = 28.5dBuV (calc. amp.)
2483.507	67.8	-2.5	3.0	55.1	3.0	0.0	Horz	AV	-15.4	49.9	54.0	-4.1	EUT on Side, High Ch
2483.885	30.4	37.5	3.0	55.1	3.0	0.0	Horz	PK	0.0	67.9	74.0	-6.1	EUT on Side, High Ch: Fund 79.8dBuV + -49.4dBc = 30.4dBuV (calc. amp.)
7321.183	52.3	15.1	1.9	162.0	3.0	0.0	Vert	PK	0.0	67.4	74.0	-6.6	EUT on Side, Mid Ch
2483.530	69.6	-2.5	1.5	48.1	3.0	0.0	Vert	PK	0.0	67.1	74.0	-6.9	EUT Horz, High Ch
7423.467	47.2	14.9	1.8	243.0	3.0	0.0	Horz	PK	0.0	62.1	74.0	-11.9	EUT Vert, High Ch
7423.583	47.1	14.9	1.0	307.9	3.0	0.0	Vert	PK	0.0	62.0	74.0	-12.0	EUT Horz, High Ch
7321.592	46.6	15.0	1.4	22.1	3.0	0.0	Vert	PK	0.0	61.6	74.0	-12.4	EUT Horz, Mid Ch
7426.517	46.7	14.9	2.1	247.9	3.0	0.0	Horz	PK	0.0	61.6	74.0	-12.4	EUT Horz, High Ch
7320.800	45.9	15.1	1.6	73.1	3.0	0.0	Horz	PK	0.0	61.0	74.0	-13.0	EUT Horz, Mid Ch
7426.758	44.3	14.9	1.1	145.1	3.0	0.0	Vert	PK	0.0	59.2	74.0	-14.8	EUT Vert, High Ch
7426.683	43.7	14.9	1.5	278.0	3.0	0.0	Horz	PK	0.0	58.6	74.0	-15.4	EUT on Side, High Ch
2483.557	61.1	-2.5	1.0	215.0	3.0	0.0	Vert	PK	0.0	58.6	74.0	-15.4	EUT Vert, High Ch
7319.017	43.4	15.1	1.0	178.1	3.0	0.0	Horz	PK	0.0	58.5	74.0	-15.5	EUT on Side, Mid Ch
7426.400	38.9	14.9	1.0	307.9	3.0	0.0	Vert	AV	-15.4	38.4	54.0	-15.6	EUT Horz, High Ch
7426.408	38.8	14.9	2.1	247.9	3.0	0.0	Horz	AV	-15.4	38.3	54.0	-15.7	EUT Horz, High Ch
7426.458	38.8	14.9	1.8	243.0	3.0	0.0	Horz	AV	-15.4	38.3	54.0	-15.7	EUT Vert, High Ch
2389.973	60.2	-2.3	1.0	165.0	3.0	0.0	Horz	PK	0.0	57.9	74.0	-16.1	EUT on Side, Low Ch
7321.592	42.7	15.0	2.5	232.9	3.0	0.0	Horz	PK	0.0	57.7	74.0	-16.3	EUT Vert, Mid Ch
7321.417	37.8	15.1	1.4	22.1	3.0	0.0	Vert	AV	-15.4	37.5	54.0	-16.5	EUT Horz, Mid Ch
7318.117	42.3	15.1	1.0	231.0	3.0	0.0	Vert	PK	0.0	57.4	74.0	-16.6	EUT Vert, Mid Ch
2389.840	55.0	-2.3	1.8	56.0	3.0	0.0	Vert	AV	-15.4	37.3	54.0	-16.7	EUT Horz, Low Ch

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Duty Cycle Correction (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7317.908	42.1	15.1	1.0	76.1	3.0	0.0	Vert	PK	0.0	57.2	74.0	-16.8	EUT on Side, Mid Ch
7424.408	42.3	14.9	1.0	96.0	3.0	0.0	Vert	PK	0.0	57.2	74.0	-16.8	EUT on Side, High Ch
2483.520	53.4	-2.5	1.5	48.1	3.0	0.0	Vert	AV	-15.4	35.5	54.0	-18.5	EUT Horz, High Ch
7321.375	35.6	15.1	1.6	73.1	3.0	0.0	Horz	AV	-15.4	35.3	54.0	-18.7	EUT Horz, Mid Ch
2483.533	57.7	-2.5	1.0	217.1	3.0	0.0	Horz	PK	0.0	55.2	74.0	-18.8	EUT Vert, High Ch
7426.433	35.5	14.9	1.1	145.1	3.0	0.0	Vert	AV	-15.4	35.0	54.0	-19.0	EUT Vert, High Ch
2389.893	56.1	-2.3	1.0	212.0	3.0	0.0	Vert	PK	0.0	53.8	74.0	-20.2	EUT Vert, Low Ch
7426.375	33.8	14.9	1.5	278.0	3.0	0.0	Horz	AV	-15.4	33.3	54.0	-20.7	EUT on Side, High Ch
2389.960	53.9	-2.3	1.0	123.1	3.0	0.0	Horz	PK	0.0	51.6	74.0	-22.4	EUT Vert, Low Ch
7321.308	31.8	15.1	1.0	178.1	3.0	0.0	Horz	AV	-15.4	31.5	54.0	-22.5	EUT on Side, Mid Ch
7318.333	31.2	15.1	1.0	76.1	3.0	0.0	Vert	AV	-15.4	30.9	54.0	-23.1	EUT on Side, Mid Ch
7317.625	31.2	15.1	2.5	232.9	3.0	0.0	Horz	AV	-15.4	30.9	54.0	-23.1	EUT Vert, Mid Ch
7318.225	31.1	15.1	1.0	231.0	3.0	0.0	Vert	AV	-15.4	30.8	54.0	-23.2	EUT Vert, Mid Ch
9622.292	54.3	-3.6	1.0	292.0	3.0	0.0	Horz	PK	0.0	50.7	74.0	-23.3	EUT Horz, Low Ch
7427.217	30.9	14.9	1.0	96.0	3.0	0.0	Vert	AV	-15.4	30.4	54.0	-23.6	EUT on Side, High Ch
12025.700	30.8	-0.8	1.9	40.1	3.0	0.0	Horz	AV	-15.4	30.0	54.0	-24.0	EUT Horz, Low Ch
12023.150	30.8	-0.8	1.0	288.0	3.0	0.0	Vert	AV	-15.4	30.0	54.0	-24.0	EUT Horz, Low Ch
9618.008	53.6	-3.6	1.0	261.0	3.0	0.0	Vert	PK	0.0	50.0	74.0	-24.0	EUT Horz, Low Ch
4881.392	43.2	6.7	1.0	288.0	3.0	0.0	Vert	PK	0.0	49.9	74.0	-24.1	EUT Horz, Mid Ch
2389.947	52.2	-2.3	4.0	16.1	3.0	0.0	Horz	PK	0.0	49.9	74.0	-24.1	EUT Horz, Low Ch
4877.825	43.1	6.7	1.0	213.1	3.0	0.0	Horz	PK	0.0	49.8	74.0	-24.2	EUT Horz, Mid Ch
4948.467	42.9	6.9	3.5	330.9	3.0	0.0	Horz	PK	0.0	49.8	74.0	-24.2	EUT Horz, High Ch
4807.817	43.0	6.6	1.0	136.0	3.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4	EUT Horz, Low Ch
2483.600	52.1	-2.5	1.0	40.1	3.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4	EUT Horz, High Ch
9621.983	48.5	-3.6	1.0	292.0	3.0	0.0	Horz	AV	-15.4	29.5	54.0	-24.5	EUT Horz, Low Ch
4952.483	42.4	6.8	3.5	227.1	3.0	0.0	Vert	PK	0.0	49.2	74.0	-24.8	EUT Horz, High Ch
4811.383	42.5	6.6	1.0	347.9	3.0	0.0	Vert	PK	0.0	49.1	74.0	-24.9	EUT Horz, Low Ch
2483.633	51.3	-2.5	1.0	276.9	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	EUT on Side, High Ch
9622.017	47.4	-3.6	1.0	261.0	3.0	0.0	Vert	AV	-15.4	28.4	54.0	-25.6	EUT Horz, Low Ch
2483.513	45.0	-2.5	1.0	215.0	3.0	0.0	Vert	AV	-15.4	27.1	54.0	-26.9	EUT Vert, High Ch
2389.923	49.0	-2.3	3.3	116.1	3.0	0.0	Vert	PK	0.0	46.7	74.0	-27.3	EUT on Side, Low Ch
2483.557	41.6	-2.5	1.0	217.1	3.0	0.0	Horz	AV	-15.4	23.7	54.0	-30.3	EUT Vert, High Ch
2389.940	41.4	-2.3	1.0	165.0	3.0	0.0	Horz	AV	-15.4	23.7	54.0	-30.3	EUT on Side, Low Ch
4951.808	31.7	6.8	3.5	330.9	3.0	0.0	Horz	AV	-15.4	23.1	54.0	-30.9	EUT Horz, High Ch
4951.467	31.6	6.8	3.5	227.1	3.0	0.0	Vert	AV	-15.4	23.0	54.0	-31.0	EUT Horz, High Ch
4880.142	31.6	6.7	1.0	213.1	3.0	0.0	Horz	AV	-15.4	22.9	54.0	-31.1	EUT Horz, Mid Ch
4879.167	31.6	6.7	1.0	288.0	3.0	0.0	Vert	AV	-15.4	22.9	54.0	-31.1	EUT Horz, Mid Ch
12374.560	42.1	0.7	1.2	173.1	3.0	0.0	Horz	PK	0.0	42.8	74.0	-31.2	EUT Horz, High Ch
12199.120	42.5	0.0	1.0	311.0	3.0	0.0	Vert	PK	0.0	42.5	74.0	-31.5	EUT Horz, Mid Ch
4807.733	31.2	6.6	1.0	347.9	3.0	0.0	Vert	AV	-15.4	22.4	54.0	-31.6	EUT Horz, Low Ch
4807.817	31.1	6.6	1.0	136.0	3.0	0.0	Horz	AV	-15.4	22.3	54.0	-31.7	EUT Horz, Low Ch
12372.890	41.6	0.7	1.0	101.1	3.0	0.0	Vert	PK	0.0	42.3	74.0	-31.7	EUT Horz, High Ch
12198.390	41.8	0.0	1.0	6.0	3.0	0.0	Horz	PK	0.0	41.8	74.0	-32.2	EUT Horz, Mid Ch
12025.380	42.3	-0.8	1.9	40.1	3.0	0.0	Horz	PK	0.0	41.5	74.0	-32.5	EUT Horz, Low Ch
12025.600	41.8	-0.8	1.0	288.0	3.0	0.0	Vert	PK	0.0	41.0	74.0	-33.0	EUT Horz, Low Ch
2389.860	38.5	-2.3	1.0	212.0	3.0	0.0	Vert	AV	-15.4	20.8	54.0	-33.2	EUT Vert, Low Ch
9620.342	44.4	-3.6	1.0	79.0	3.0	0.0	Vert	PK	0.0	40.8	74.0	-33.2	EUT Vert, Low Ch
9619.100	44.2	-3.6	1.0	47.1	3.0	0.0	Horz	PK	0.0	40.6	74.0	-33.4	EUT Vert, Low Ch
9619.733	44.0	-3.6	1.0	214.1	3.0	0.0	Horz	PK	0.0	40.4	74.0	-33.6	EUT on Side, Low Ch
9619.467	43.8	-3.6	1.0	322.9	3.0	0.0	Vert	PK	0.0	40.2	74.0	-33.8	EUT on Side, Low Ch
2483.533	36.9	-2.5	1.0	40.1	3.0	0.0	Horz	AV	-15.4	19.0	54.0	-35.0	EUT Horz, High Ch
2389.997	36.5	-2.3	1.0	123.1	3.0	0.0	Horz	AV	-15.4	18.8	54.0	-35.2	EUT Vert, Low Ch
2483.530	36.2	-2.5	1.0	276.9	3.0	0.0	Vert	AV	-15.4	18.3	54.0	-35.7	EUT on Side, High Ch
2389.997	35.1	-2.3	4.0	16.1	3.0	0.0	Horz	AV	-15.4	17.4	54.0	-36.6	EUT Horz, Low Ch
2389.937	33.7	-2.3	3.3	116.1	3.0	0.0	Vert	AV	-15.4	16.0	54.0	-38.0	EUT on Side, Low Ch
12197.960	30.9	0.0	1.0	6.0	3.0	0.0	Horz	AV	-15.4	15.5	54.0	-38.5	EUT Horz, Mid Ch
12197.760	30.9	0.0	1.0	311.0	3.0	0.0	Vert	AV	-15.4	15.5	54.0	-38.5	EUT Horz, Mid Ch
12373.050	30.2	0.7	1.2	173.1	3.0	0.0	Horz	AV	-15.4	15.5	54.0	-38.5	EUT Horz, High Ch
12372.630	30.1	0.7	1.0	101.1	3.0	0.0	Vert	AV	-15.4	15.4	54.0	-38.6	EUT Horz, High Ch
9619.983	32.7	-3.6	1.0	47.1	3.0	0.0	Horz	AV	-15.4	13.7	54.0	-40.3	EUT Vert, Low Ch
9620.450	32.6	-3.6	1.0	79.0	3.0	0.0	Vert	AV	-15.4	13.6	54.0	-40.4	EUT Vert, Low Ch
9618.508	32.6	-3.6	1.0	214.1	3.0	0.0	Horz	AV	-15.4	13.6	54.0	-40.4	EUT on Side, Low Ch
9621.400	32.6	-3.6	1.0	322.9	3.0	0.0	Vert	AV	-15.4	13.6	54.0	-40.4	EUT on Side, Low Ch

# SPURIOUS RADIATED EMISSIONS

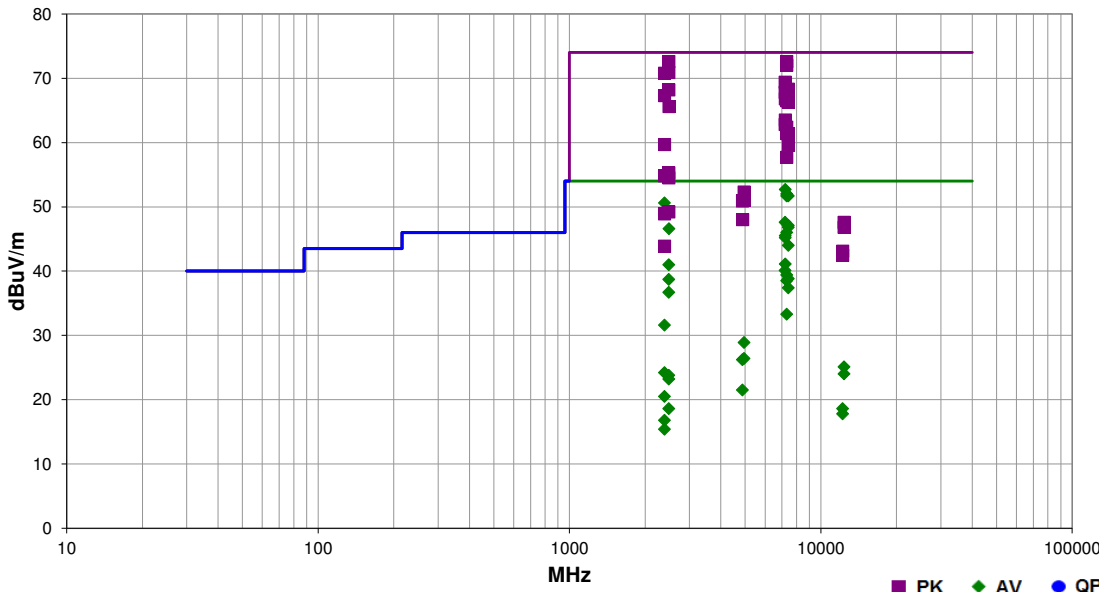


EmIRS 2017.01.25 PSA-ESCI 2017.01.26

<b>Work Order:</b>	EMPM0024	<b>Date:</b>	04/13/17	
<b>Project:</b>	None	<b>Temperature:</b>	21.8 °C	
<b>Job Site:</b>	MN05	<b>Humidity:</b>	35.8% RH	
<b>Serial Number:</b>	None	<b>Barometric Pres.:</b>	1029 mbar	
<b>EUT:</b>	3308A			
<b>Configuration:</b>	4			
<b>Customer:</b>	Rosemount, Inc.			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	Battery			
<b>Operating Mode:</b>	Continuous transmit, modulated, see data comment for channel.			
<b>Deviations:</b>	None			
<b>Comments:</b>	See data comments for EUT orientation, Sector antenna			

<b>Test Specifications</b>	<b>Test Method</b>
FCC 15.247:2017	ANSI C63.10:2013

<b>Run #</b>	128	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1 to 4(m)	<b>Results</b>	Pass
--------------	-----	--------------------------	---	--------------------------	-----------	----------------	------



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Duty Cycle Correction (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7216.400	52.7	15.4	1.7	126.0	3.0	0.0	Horz	AV	-15.4	52.7	54.0	-1.3	EUT on Side, Low Ch
7321.633	57.6	15.0	1.6	138.1	3.0	0.0	Horz	PK	0.0	72.6	74.0	-1.4	EUT on Side, Mid Ch
2483.530	75.1	-2.5	1.5	39.0	3.0	0.0	Horz	PK	0.0	72.6	74.0	-1.4	EUT on Side, High Ch
7321.417	52.3	15.1	1.6	138.1	3.0	0.0	Horz	AV	-15.4	52.0	54.0	-2.0	EUT on Side, Mid Ch
7321.508	57.0	15.0	2.1	138.1	3.0	0.0	Vert	PK	0.0	72.0	74.0	-2.0	EUT on Side, Mid Ch
7426.458	36.8	14.9	1.1	36.0	3.0	0.0	Vert	AV	-15.4	51.7	54.0	-2.3	EUT on Side, High Ch
7321.425	52.0	15.1	2.1	138.1	3.0	0.0	Vert	AV	-15.4	51.7	54.0	-2.3	EUT on Side, Mid Ch
2483.533	73.4	-2.5	2.0	106.1	3.0	0.0	Vert	PK	0.0	70.9	74.0	-3.1	EUT Vert, High Ch
2389.963	73.1	-2.3	1.5	56.0	3.0	0.0	Horz	PK	0.0	70.8	74.0	-3.2	EUT on Side, Low Ch
2389.990	52.9	-2.3	1.5	56.0	3.0	0.0	Horz	AV	-15.4	50.6	54.0	-3.4	EUT on Side, Low Ch
7213.383	54.0	15.4	1.2	112.1	3.0	0.0	Vert	PK	0.0	69.4	74.0	-4.6	EUT Horz, Low Ch
7426.550	53.4	14.9	1.2	151.0	3.0	0.0	Vert	PK	0.0	68.3	74.0	-5.7	EUT Horz, High Ch
2483.547	70.7	-2.5	3.1	79.0	3.0	0.0	Horz	PK	0.0	68.2	74.0	-5.8	EUT Horz, Low Ch
7426.508	53.2	14.9	2.2	119.1	3.0	0.0	Horz	PK	0.0	68.1	74.0	-5.9	EUT on Side, High Ch
7213.608	52.4	15.4	2.2	124.1	3.0	0.0	Vert	PK	0.0	67.8	74.0	-6.2	EUT on Side, Low Ch
7213.558	47.6	15.4	1.2	112.1	3.0	0.0	Vert	AV	-15.4	47.6	54.0	-6.4	EUT Horz, Low Ch
2389.977	69.6	-2.3	2.2	169.0	3.0	0.0	Vert	PK	0.0	67.3	74.0	-6.7	EUT Vert, Low Ch
7426.458	47.6	14.9	1.2	151.0	3.0	0.0	Vert	AV	-15.4	47.1	54.0	-6.9	EUT Horz, High Ch
7426.375	47.3	14.9	2.2	119.1	3.0	0.0	Horz	AV	-15.4	46.8	54.0	-7.2	EUT on Side, High Ch
7216.433	51.4	15.4	2.4	100.0	3.0	0.0	Vert	PK	0.0	66.8	74.0	-7.2	EUT Vert, Low Ch
2487.840	24.5	37.5	3.0	79.1	3.0	0.0	Horz	AV	-15.4	46.6	54.0	-7.4	EUT on Side, High Ch: Fund 42.8dBuV + -18.3dBc = 24.5dBuV (calc. amp.)
7321.658	51.5	15.0	1.0	85.0	3.0	0.0	Vert	PK	0.0	66.5	74.0	-7.5	Eut Horz, Mid Ch
7423.467	51.4	14.9	2.0	132.0	3.0	0.0	Vert	PK	0.0	66.3	74.0	-7.7	EUT Vert, High Ch
7321.450	46.4	15.0	1.0	85.0	3.0	0.0	Vert	AV	-15.4	46.0	54.0	-8.0	Eut Horz, Mid Ch

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Duty Cycle Correction (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2487.840	28.1	37.5	3.0	79.1	3.0	0.0	Horz	PK	0.0	65.6	74.0	-8.4	EUT on Side, High Ch: Fund 46.4dBuV + -18.3dBc = 28.1dBuV (calc. amp.)
7216.433	45.5	15.4	2.4	100.0	3.0	0.0	Vert	AV	-15.4	45.5	54.0	-8.5	EUT Vert, Low Ch.
7216.442	45.2	15.4	2.2	124.1	3.0	0.0	Vert	AV	-15.4	45.2	54.0	-8.8	EUT on Side, Low Ch
7426.433	44.5	14.9	2.0	132.0	3.0	0.0	Vert	AV	-15.4	44.0	54.0	-10.0	EUT Vert, High Ch
7216.508	48.1	15.4	2.0	347.0	3.0	0.0	Horz	PK	0.0	63.5	74.0	-10.5	EUT Vert, Low Ch.
7213.333	47.4	15.4	1.2	264.0	3.0	0.0	Horz	PK	0.0	62.8	74.0	-11.2	EUT Horz, Low Ch
7321.525	47.4	15.0	1.0	228.1	3.0	0.0	Horz	PK	0.0	62.4	74.0	-11.6	Eut Horz, Mid Ch
4880.983	34.9	6.7	1.7	107.0	3.0	0.0	Horz	AV	-15.4	26.2	54.0	-12.4	EUT on Side, Mid Ch
7426.825	46.5	14.9	1.0	144.0	3.0	0.0	Horz	PK	0.0	61.4	74.0	-12.6	EUT Horz, High Ch
7321.442	46.4	15.0	2.1	139.0	3.0	0.0	Vert	PK	0.0	61.4	74.0	-12.6	EUT Vert, Mid Ch
7426.533	46.4	14.9	1.0	16.1	3.0	0.0	Horz	PK	0.0	61.3	74.0	-12.7	EUT Vert, High Ch
7216.417	41.1	15.4	2.0	347.0	3.0	0.0	Horz	AV	-15.4	41.1	54.0	-12.9	EUT Vert, Low Ch.
2483.510	58.9	-2.5	1.5	39.0	3.0	0.0	Horz	AV	-15.4	41.0	54.0	-13.0	EUT on Side, High Ch
7213.467	40.1	15.4	1.2	264.0	3.0	0.0	Horz	AV	-15.4	40.1	54.0	-13.9	EUT Horz, Low Ch
2389.850	62.0	-2.3	1.0	47.1	3.0	0.0	Horz	PK	0.0	59.7	74.0	-14.3	EUT Horz, Low Ch
7423.417	44.7	14.9	1.1	36.0	3.0	0.0	Vert	PK	0.0	59.6	74.0	-14.4	EUT on Side, High Ch
7321.358	39.7	15.1	1.0	228.1	3.0	0.0	Horz	AV	-15.4	39.4	54.0	-14.6	Eut Horz, Mid Ch
7426.425	39.3	14.9	1.0	16.1	3.0	0.0	Horz	AV	-15.4	38.8	54.0	-15.2	EUT Vert, High Ch
2483.553	56.6	-2.5	2.0	106.1	3.0	0.0	Vert	AV	-15.4	38.7	54.0	-15.3	EUT Vert, High Ch
7321.433	38.9	15.0	2.1	139.0	3.0	0.0	Vert	AV	-15.4	38.5	54.0	-15.5	EUT Vert, Mid Ch
7321.758	42.7	15.0	1.0	243.0	3.0	0.0	Horz	PK	0.0	57.7	74.0	-16.3	EUT Vert, Mid Ch
7426.400	37.9	14.9	1.0	144.0	3.0	0.0	Horz	AV	-15.4	37.4	54.0	-16.6	EUT Vert, Mid Ch
2483.520	54.6	-2.5	3.1	79.0	3.0	0.0	Horz	AV	-15.4	36.7	54.0	-17.3	EUT Horz, High Ch
2483.537	57.8	-2.5	1.0	310.0	3.0	0.0	Vert	PK	0.0	55.3	74.0	-18.7	EUT on Side, High Ch
2389.963	57.1	-2.3	1.0	146.0	3.0	0.0	Vert	PK	0.0	54.8	74.0	-19.2	EUT Horz, Low Ch
2483.547	57.0	-2.5	1.2	152.1	3.0	0.0	Vert	PK	0.0	54.5	74.0	-19.5	EUT Vert, High Ch
7321.408	33.6	15.1	1.0	243.0	3.0	0.0	Horz	AV	-15.4	33.3	54.0	-20.7	EUT Vert, Mid Ch
4949.033	45.4	6.9	1.7	130.1	3.0	0.0	Horz	PK	0.0	52.3	74.0	-21.7	EUT on Side, High Ch
2389.997	49.3	-2.3	2.2	169.0	3.0	0.0	Vert	AV	-15.4	31.6	54.0	-22.4	EUT Vert, Low Ch
4949.075	44.1	6.9	1.2	151.0	3.0	0.0	Vert	PK	0.0	51.0	74.0	-23.0	EUT Horz, High Ch
4878.917	44.2	6.7	1.7	107.0	3.0	0.0	Horz	PK	0.0	50.9	74.0	-23.1	EUT on Side, Mid Ch
2483.597	51.7	-2.5	2.1	209.1	3.0	0.0	Horz	PK	0.0	49.2	74.0	-24.8	EUT Vert, High Ch
4950.983	37.5	6.8	1.7	130.1	3.0	0.0	Horz	AV	-15.4	28.9	54.0	-25.1	EUT on Side, High Ch
2389.970	51.2	-2.3	1.7	128.0	3.0	0.0	Horz	PK	0.0	48.9	74.0	-25.1	EUT Vert, Low Ch
4881.733	41.3	6.7	1.0	91.1	3.0	0.0	Vert	PK	0.0	48.0	74.0	-26.0	EUT on Side, Mid Ch
12377.430	46.9	0.7	1.0	158.0	3.0	0.0	Vert	PK	0.0	47.6	74.0	-26.4	EUT Horz, High Ch
12377.400	46.1	0.7	1.9	39.0	3.0	0.0	Horz	PK	0.0	46.8	74.0	-27.2	EUT on Side, High Ch
4950.983	35.0	6.8	1.2	151.0	3.0	0.0	Vert	AV	-15.4	26.4	54.0	-27.6	EUT Horz, High Ch
12377.440	39.8	0.7	1.0	158.0	3.0	0.0	Vert	AV	-15.4	25.1	54.0	-28.9	EUT Horz, High Ch
2389.920	41.9	-2.3	1.0	47.1	3.0	0.0	Horz	AV	-15.4	24.2	54.0	-29.8	EUT Horz, Low Ch
12377.430	38.7	0.7	1.9	39.0	3.0	0.0	Horz	AV	-15.4	24.0	54.0	-30.0	EUT on Side, High Ch
2389.963	46.2	-2.3	1.0	74.0	3.0	0.0	Vert	PK	0.0	43.9	74.0	-30.1	EUT on Side, Low Ch
2483.503	41.7	-2.5	1.0	310.0	3.0	0.0	Vert	AV	-15.4	23.8	54.0	-30.2	EUT on Side, High Ch
2483.517	41.1	-2.5	1.2	152.1	3.0	0.0	Vert	AV	-15.4	23.2	54.0	-30.8	EUT Horz, High Ch
12202.130	43.1	0.0	1.4	229.0	3.0	0.0	Vert	PK	0.0	43.1	74.0	-30.9	EUT on Side, Mid Ch
12202.500	42.5	0.0	1.0	54.0	3.0	0.0	Horz	PK	0.0	42.5	74.0	-31.5	EUT on Side, Mid Ch
4880.775	30.2	6.7	1.0	91.1	3.0	0.0	Vert	AV	-15.4	21.5	54.0	-32.5	EUT on Side, Mid Ch
2389.983	38.2	-2.3	1.0	146.0	3.0	0.0	Vert	AV	-15.4	20.5	54.0	-33.5	EUT Horz, Low Ch
12202.360	34.0	0.0	1.4	229.0	3.0	0.0	Vert	AV	-15.4	18.6	54.0	-35.4	EUT on Side, Mid Ch
2483.500	36.5	-2.5	2.1	209.1	3.0	0.0	Horz	AV	-15.4	18.6	54.0	-35.4	EUT Vert, High Ch
12202.470	33.2	0.0	1.0	54.0	3.0	0.0	Horz	AV	-15.4	17.8	54.0	-36.2	EUT on Side, Mid Ch
2389.893	34.5	-2.3	1.7	128.0	3.0	0.0	Horz	AV	-15.4	16.8	54.0	-37.2	EUT Vert, Low Ch
2389.773	33.1	-2.3	1.0	74.0	3.0	0.0	Vert	AV	-15.4	15.4	54.0	-38.6	EUT on Side, Low Ch

# DUTY CYCLE



XMI 2017.02.08

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

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Attenuator	S.M. Electronics	SA26B-20	RFW	2/14/2017	2/14/2018
Block - DC	Fairview Microwave	SD3379	AMI	9/15/2016	9/15/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/16/2017	3/16/2018

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

There is no compliance requirement to be met by this test, so therefore no Pass / Fail criteria.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum.

The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, burst gating may have been used during some of the other tests in this report to only take the measurement during the burst duration.



# DUTY CYCLE



TstTx 2017.01.27 XMi 2017.02.08

EUT: 3308A		Work Order: EMPM0024
Serial Number: SAMPLE2		Date: 04/17/17
Customer: Rosemount, Inc.		Temperature: 22 °C
Attendees: None		Humidity: 30.9% RH
Project: None		Barometric Pres.: 1026 mbar
Tested by: Dustin Sparks	Power: Battery	Job Site: MN08
TEST SPECIFICATIONS		
FCC 15.247:2017		Test Method
		ANSI C63.10:2013
COMMENTS		
None		
DEVIATIONS FROM TEST STANDARD		
None		
Configuration #	8	Signature <i>Dustin Sparks</i>

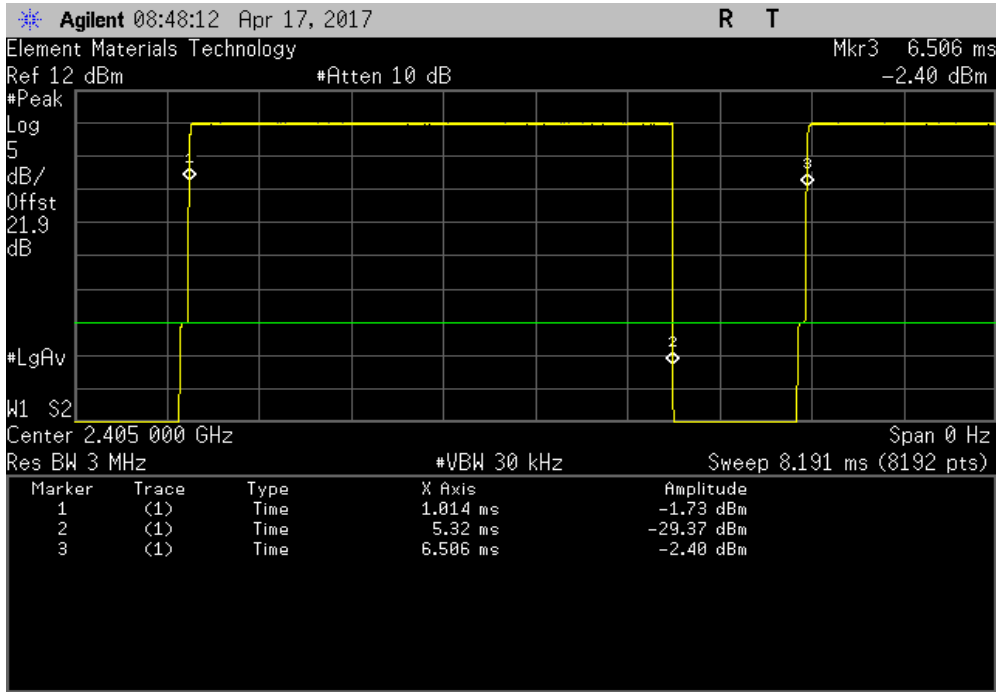
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
Low Channel, 2405 MHz	4.306 ms	5.492 ms	1	78.4	N/A	N/A
Low Channel, 2405 MHz	N/A	N/A	5	N/A	N/A	N/A
Mid Channel, 2440 MHz	4.305 ms	5.495 ms	1	78.3	N/A	N/A
Mid Channel, 2440 MHz	N/A	N/A	5	N/A	N/A	N/A
High Channel, 2475 MHz	4.308 ms	5.494 ms	1	78.4	N/A	N/A
High Channel, 2475 MHz	N/A	N/A	5	N/A	N/A	N/A

# DUTY CYCLE

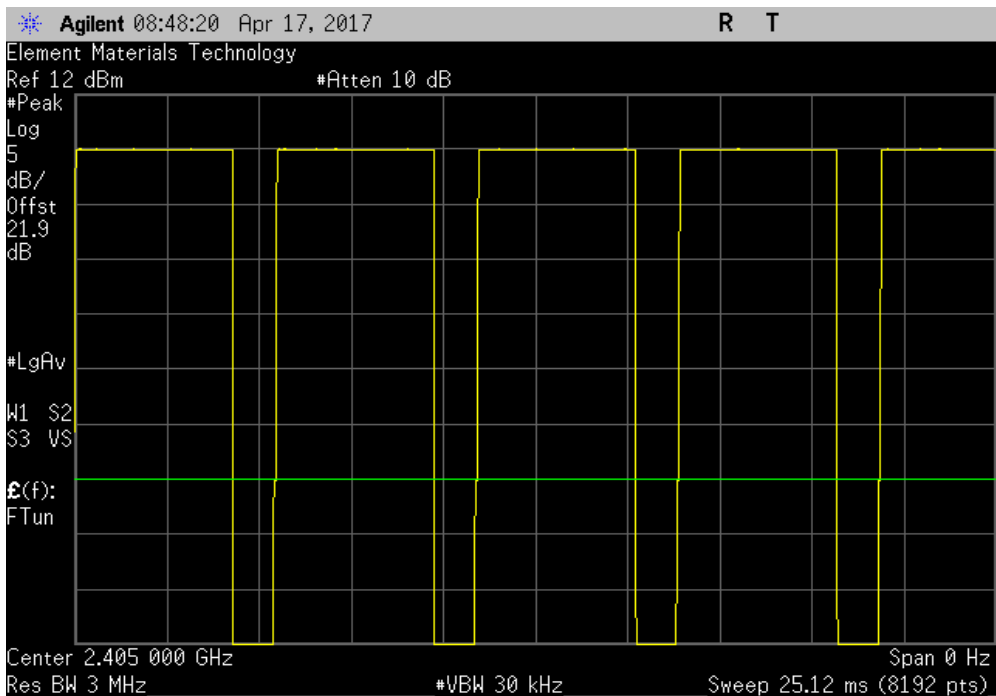


TMTx 2017.01.27 XMI 2017.02.08

Low Channel, 2405 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
4.306 ms	5.492 ms	1	78.4	N/A	N/A	



Low Channel, 2405 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

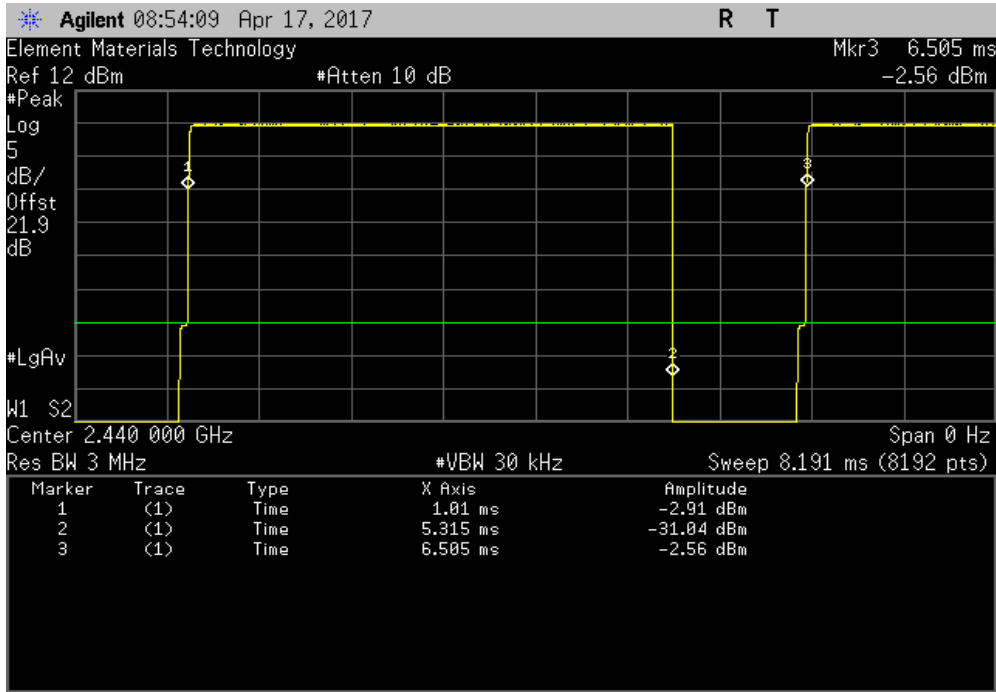


# DUTY CYCLE

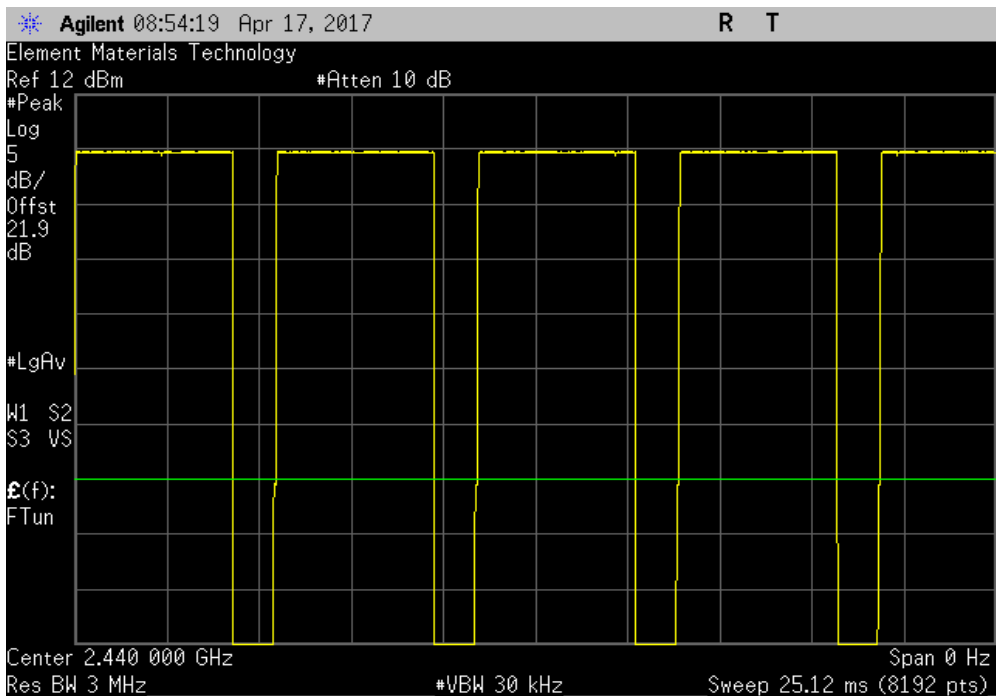


TMTx 2017.01.27 XMI 2017.02.08

Mid Channel, 2440 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
4.305 ms	5.495 ms	1	78.3	N/A	N/A	



Mid Channel, 2440 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

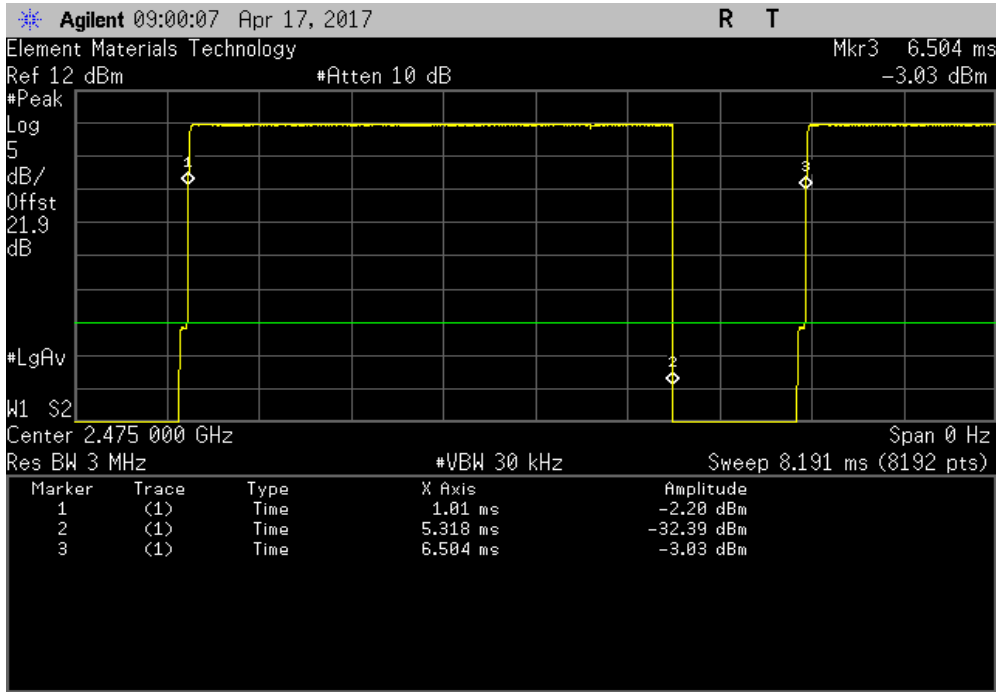


# DUTY CYCLE

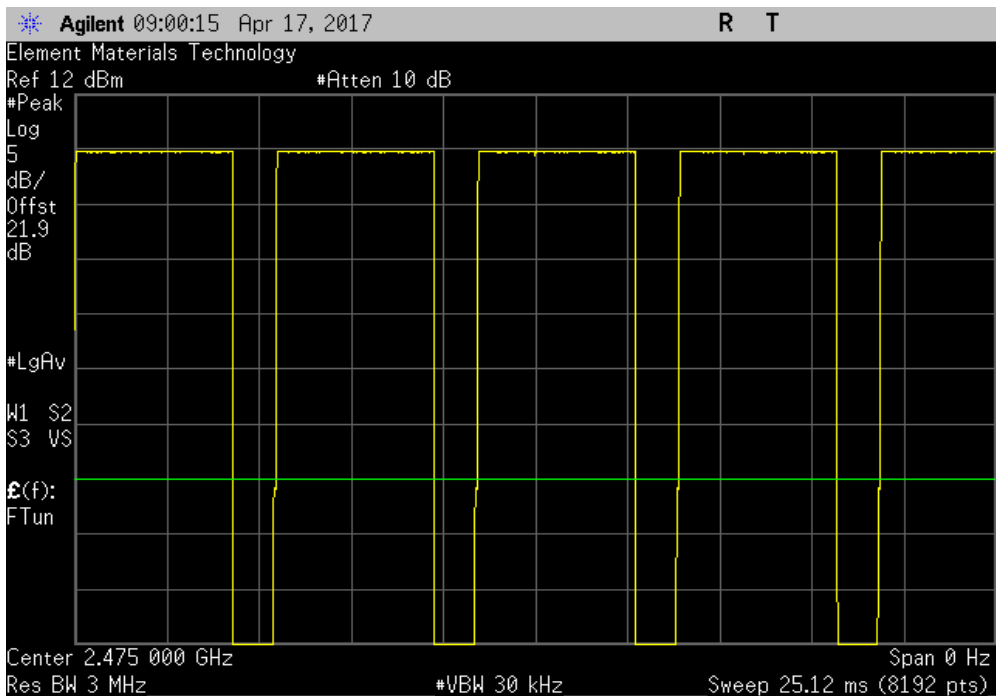


TMTx 2017.01.27 XMI 2017.02.08

High Channel, 2475 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	4.308 ms	5.494 ms	1	78.4	N/A	N/A



High Channel, 2475 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



# OCCUPIED BANDWIDTH



XMIT 2017.02.08

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

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Attenuator	S.M. Electronics	SA26B-20	RFW	2/14/2017	2/14/2018
Block - DC	Fairview Microwave	SD3379	AMI	9/15/2016	9/15/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/16/2017	3/16/2018

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was set to the channels and modes listed in the datasheet.

The 6dB occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.0% occupied bandwidth was also measured at the same time which can be needed during Output Power depending on the applicable method.

# OCCUPIED BANDWIDTH



TbTx 2017.01.27 XMi 2017.02.08

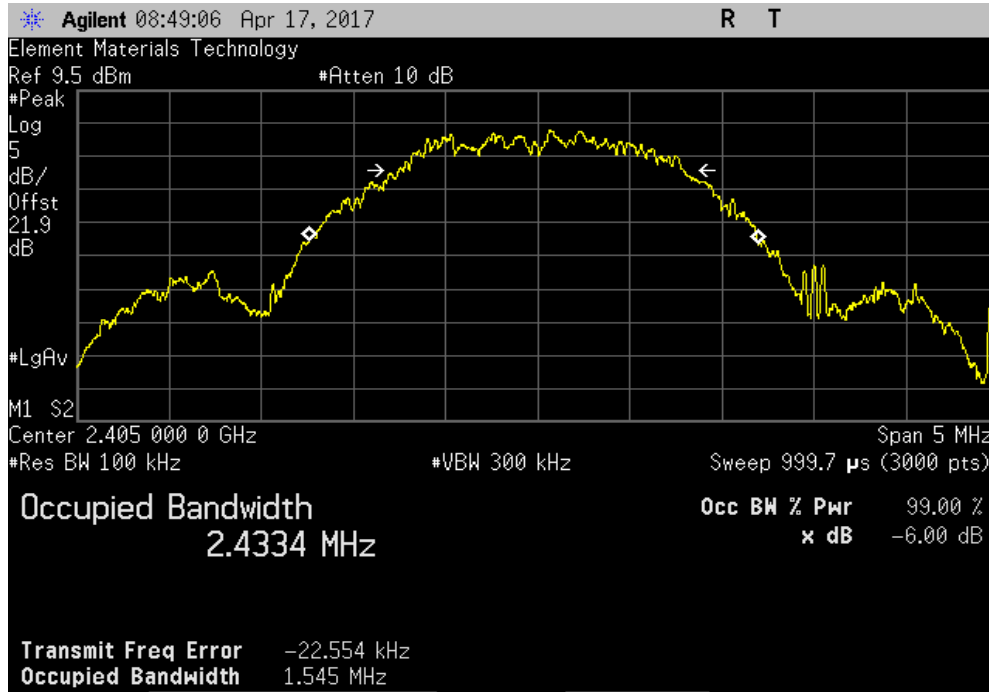
EUT: 3308A		Work Order: EMPM0024	
Serial Number: SAMPLE2		Date: 04/17/17	
Customer: Rosemount, Inc.		Temperature: 22.1 °C	
Attendees: None		Humidity: 30.6% RH	
Project: None		Barometric Pres.: 1026 mbar	
Tested by: Dustin Sparks		Power: Battery	
		Job Site: MN08	
TEST SPECIFICATIONS			
FCC 15.247:2017		Test Method	
		ANSI C63.10:2013	
COMMENTS			
None			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	8	Signature <i>Dustin Sparks</i>	
		Value	Limit (>)
Low Channel, 2405 MHz		1.545 MHz	500 kHz
Mid Channel, 2440 MHz		1.542 MHz	500 kHz
High Channel, 2475 MHz		1.525 MHz	500 kHz
			Result
			Pass
			Pass
			Pass

# OCCUPIED BANDWIDTH

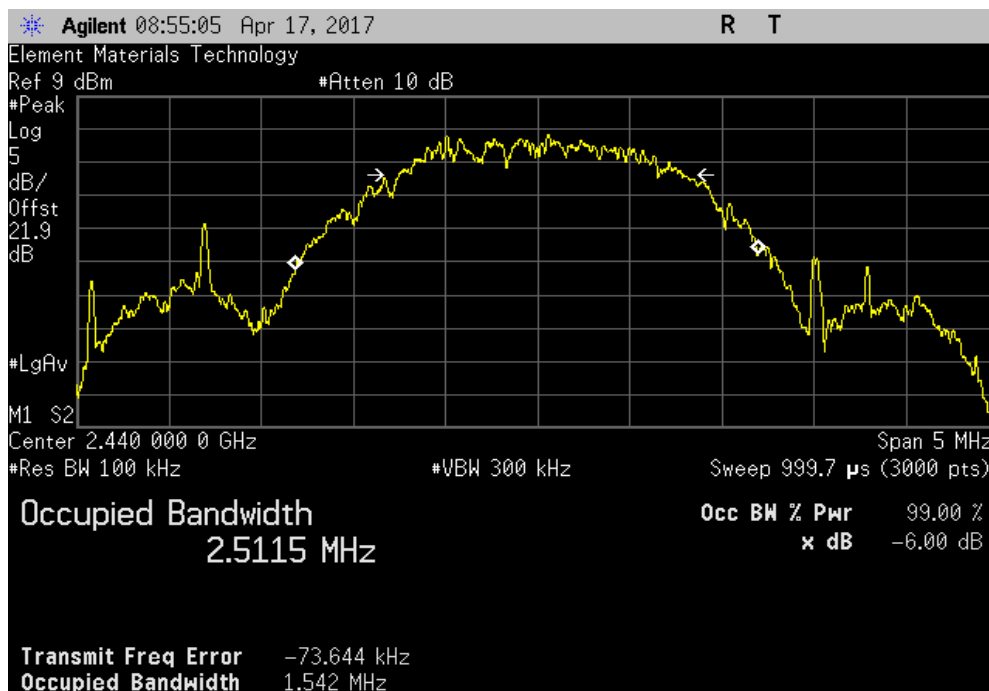


TMTX 2017.01.27 XMI 2017.02.08

Low Channel, 2405 MHz			
	Value	Limit (>)	Result
	1.545 MHz	500 kHz	Pass



Mid Channel, 2440 MHz			
	Value	Limit (>)	Result
	1.542 MHz	500 kHz	Pass

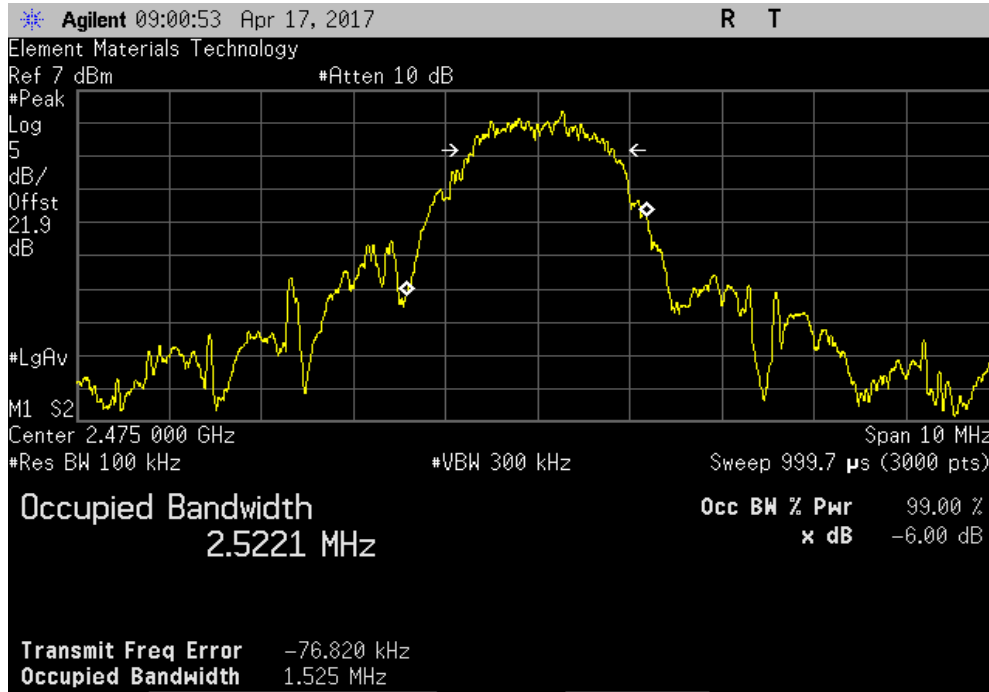


# OCCUPIED BANDWIDTH



TMTx 2017.01.27 XMI 2017.02.08

High Channel, 2475 MHz			Value	Limit	Result
			(>)		
			1.525 MHz	500 kHz	Pass





# OUTPUT POWER



XMIT 2017.02.08

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

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Attenuator	S.M. Electronics	SA26B-20	RFW	2/14/2017	2/14/2018
Block - DC	Fairview Microwave	SD3379	AMI	9/15/2016	9/15/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/16/2017	3/16/2018

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum.

Prior to measuring peak transmit power the DTS bandwidth (B) was measured.

The method found in ANSI C63.10:2013 Section 11.9.1.1 was used because the RBW on the analyzer was greater than the DTS Bandwidth of the radio.

**De Facto EIRP Limit:** The EUT meets the de facto EIRP limit of +36 dBm.

# OUTPUT POWER



TbTx 2017.01.27 XMI 2017.02.08

EUT: 3308A		Work Order: EMPM0024	
Serial Number: SAMPLE2		Date: 04/17/17	
Customer: Rosemount, Inc.		Temperature: 22.1 °C	
Attendees: None		Humidity: 30.6% RH	
Project: None		Barometric Pres.: 1026 mbar	
Tested by: Dustin Sparks		Power: Battery	
		Job Site: MN08	
<b>TEST SPECIFICATIONS</b>			
FCC 15.247:2017		Test Method	
		ANSI C63.10:2013	
<b>COMMENTS</b>			
None			
<b>DEVIATIONS FROM TEST STANDARD</b>			
None			
Configuration #	8	Signature <i>Dustin Sparks</i>	

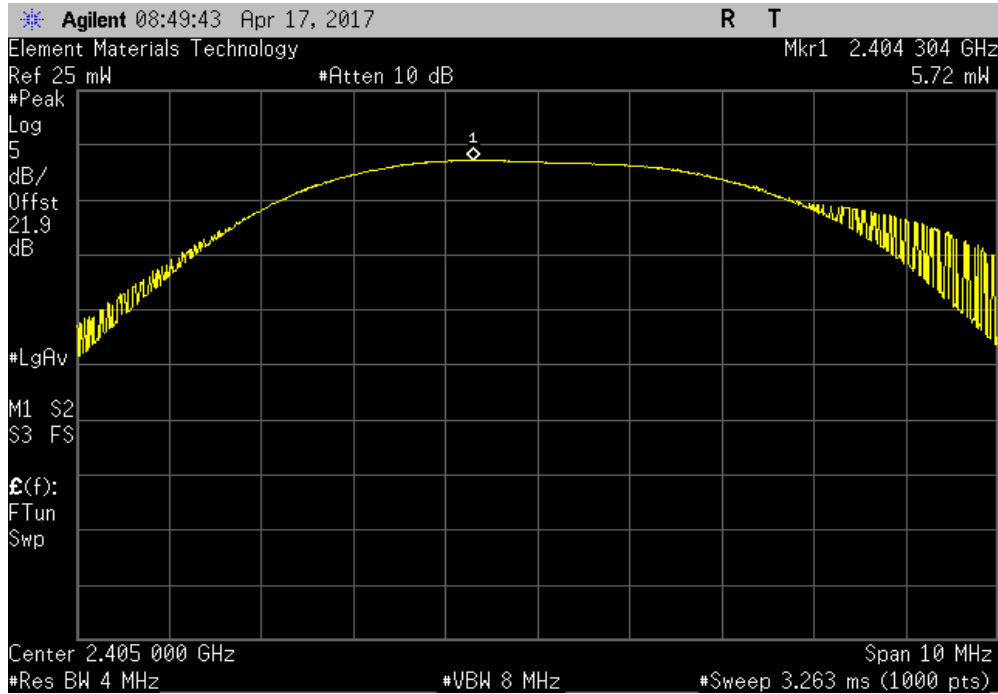
	Value	Limit (<)	Result
Low Channel, 2405 MHz	5.717 mW	1 W	Pass
Mid Channel, 2440 MHz	5.634 mW	1 W	Pass
High Channel, 2475 MHz	5.695 mW	1 W	Pass

# OUTPUT POWER

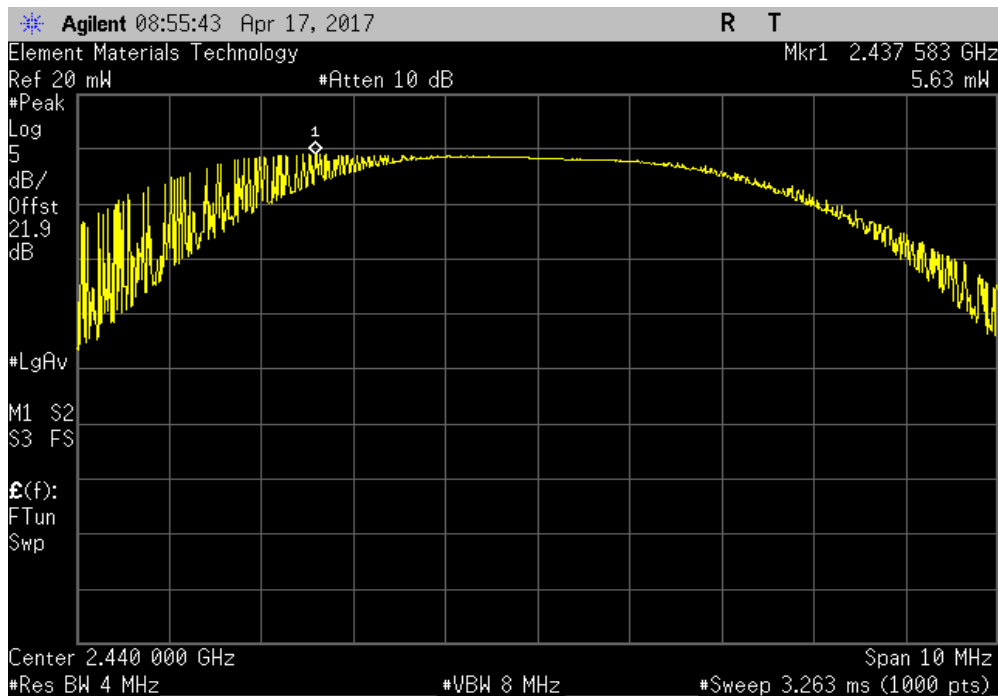


TMTX 2017.01.27 XMI 2017.02.08

Low Channel, 2405 MHz						
				Value	Limit (<)	Result
				5.717 mW	1 W	Pass



Mid Channel, 2440 MHz						
				Value	Limit (<)	Result
				5.634 mW	1 W	Pass

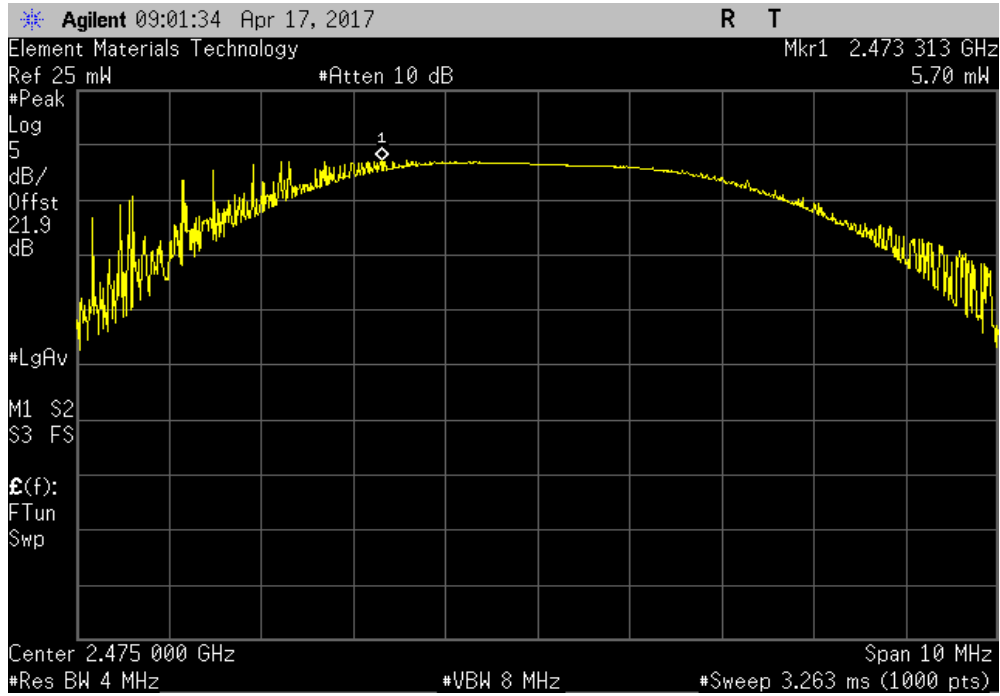


# OUTPUT POWER



TMTx 2017.01.27 XMI 2017.02.08

High Channel, 2475 MHz			
	Value	Limit (<)	Result
	5.695 mW	1 W	Pass



# POWER SPECTRAL DENSITY



XMI 2017.02.08

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

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Attenuator	S.M. Electronics	SA26B-20	RFW	2/14/2017	2/14/2018
Block - DC	Fairview Microwave	SD3379	AMI	9/15/2016	9/15/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/16/2017	3/16/2018

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

Per the procedure outlined in ANSI C63.10 the peak power spectral density was measured in a 3 kHz RBW.

# POWER SPECTRAL DENSITY



TbTx 2017.01.27 XMi 2017.02.08

EUT: 3308A		Work Order: EMPM0024	
Serial Number: SAMPLE2		Date: 04/17/17	
Customer: Rosemount, Inc.		Temperature: 22.1 °C	
Attendees: None		Humidity: 30.5% RH	
Project: None		Barometric Pres.: 1026 mbar	
Tested by: Dustin Sparks		Power: Battery	
		Job Site: MN08	
TEST SPECIFICATIONS			
FCC 15.247:2017		Test Method	
		ANSI C63.10:2013	
COMMENTS			
None			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	8	Signature <i>Dustin Sparks</i>	

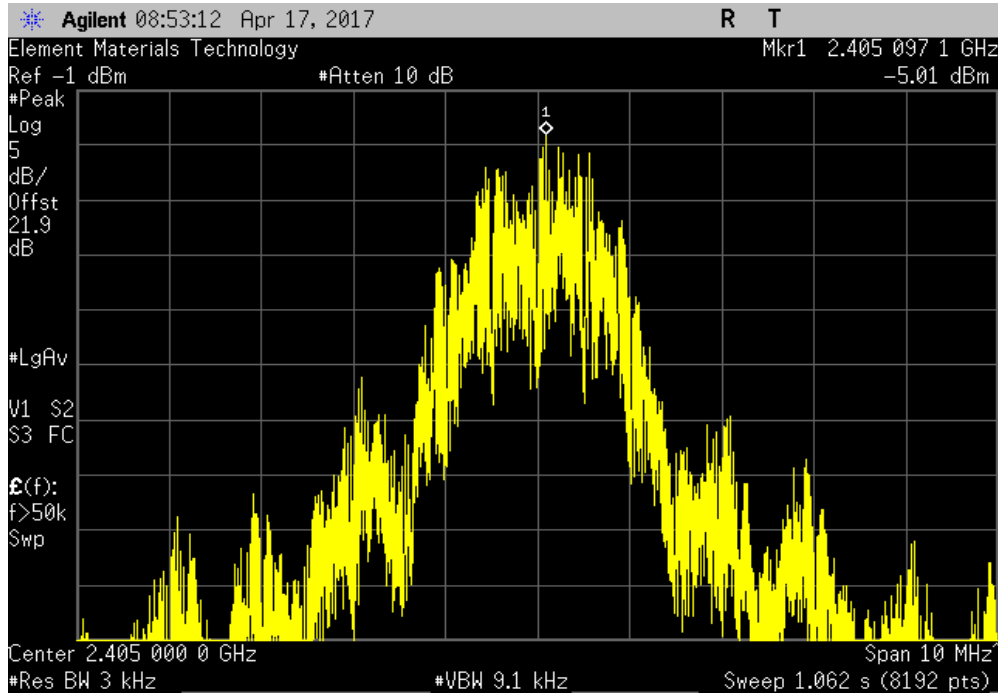
	Value dBm/3kHz	Limit < dBm/3kHz	Results
Low Channel, 2405 MHz	-5.015	8	Pass
Mid Channel, 2440 MHz	-5.907	8	Pass
High Channel, 2475 MHz	-5.445	8	Pass

# POWER SPECTRAL DENSITY

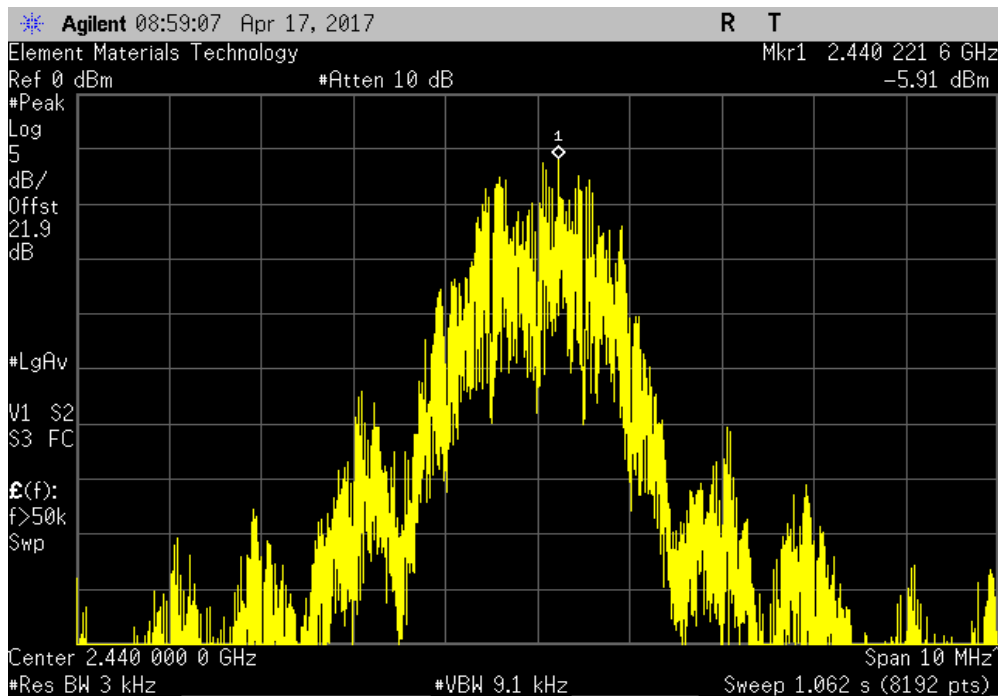


TMTX 2017.01.27 XMI 2017.02.08

Low Channel, 2405 MHz				Value	Limit	Results
				dBm/3kHz	< dBm/3kHz	
				-5.015	8	Pass



Mid Channel, 2440 MHz				Value	Limit	Results
				dBm/3kHz	< dBm/3kHz	
				-5.907	8	Pass

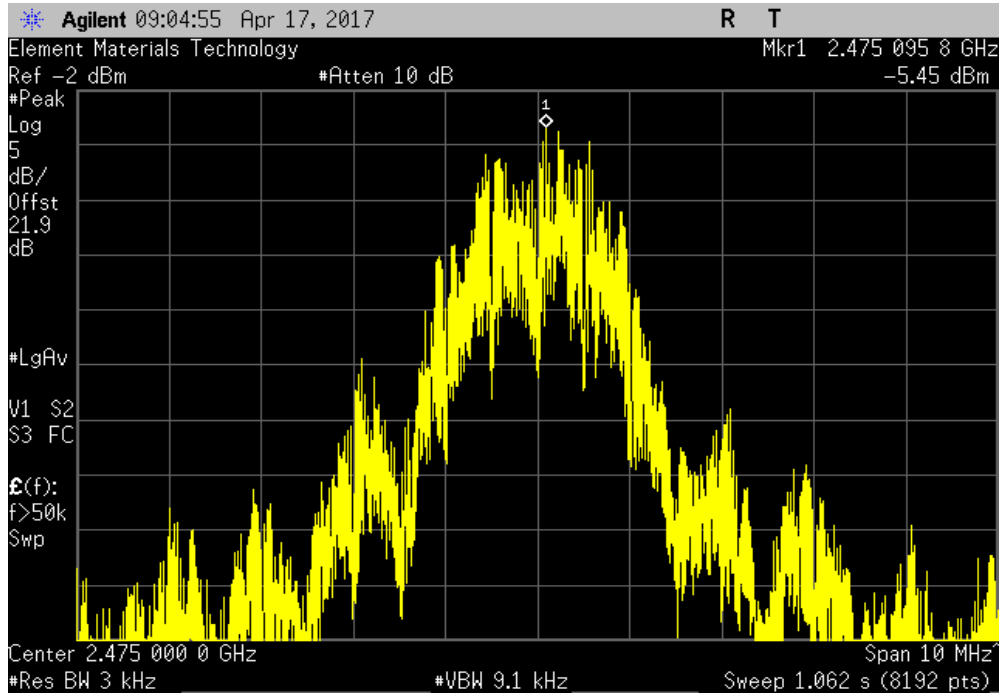


# POWER SPECTRAL DENSITY



TMTx 2017.01.27 XMI 2017.02.08

High Channel, 2475 MHz				Value	Limit	Results
				dBm/3kHz	< dBm/3kHz	
				-5.445	8	Pass





# BAND EDGE COMPLIANCE



XMI 2017.02.08

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

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Attenuator	S.M. Electronics	SA26B-20	RFW	2/14/2017	2/14/2018
Block - DC	Fairview Microwave	SD3379	AMI	9/15/2016	9/15/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/16/2017	3/16/2018

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

# BAND EDGE COMPLIANCE



TbTx 2017.01.27 XMI 2017.02.08

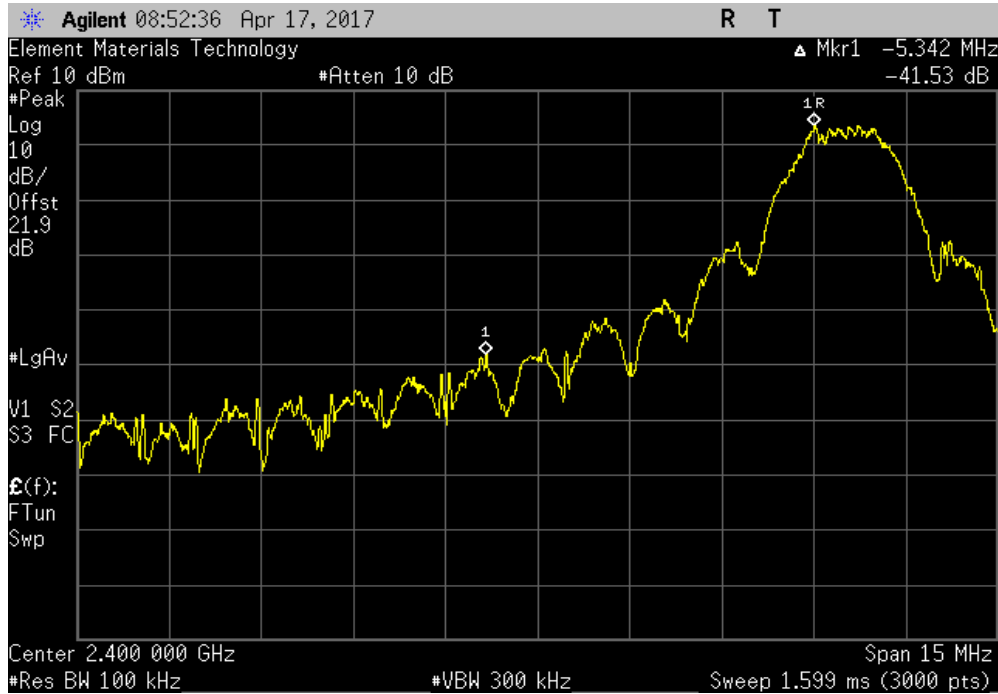
EUT: 3308A		Work Order: EMPM0024	
Serial Number: SAMPLE2		Date: 04/17/17	
Customer: Rosemount, Inc.		Temperature: 22.1 °C	
Attendees: None		Humidity: 30.6% RH	
Project: None		Barometric Pres.: 1026 mbar	
Tested by: Dustin Sparks		Power: Battery	
		Job Site: MN08	
<b>TEST SPECIFICATIONS</b>			
FCC 15.247:2017		Test Method	
		ANSI C63.10:2013	
<b>COMMENTS</b>			
None			
<b>DEVIATIONS FROM TEST STANDARD</b>			
None			
Configuration #	8	Signature <i>Dustin Sparks</i>	
		Value (dBc)	Limit ≤ (dBc) Result
Low Channel, 2405 MHz		-41.53	-20 Pass
High Channel, 2475 MHz		-47.17	-20 Pass

# BAND EDGE COMPLIANCE

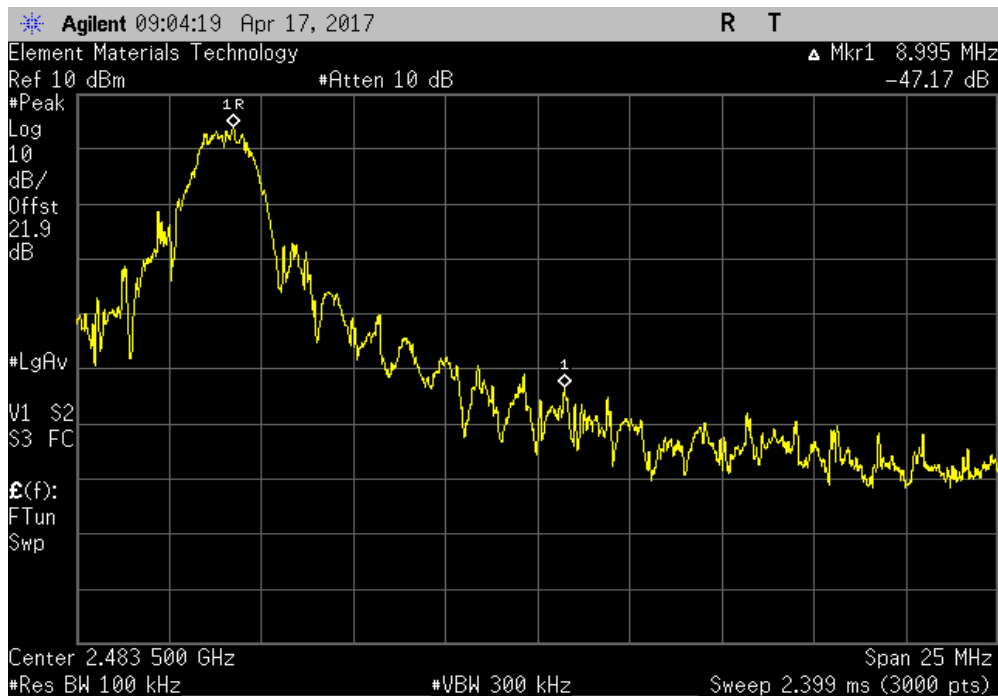


TMTX 2017.01.27 XMI 2017.02.08

Low Channel, 2405 MHz				Value (dBc)	Limit ≤ (dBc)	Result
				-41.53	-20	Pass



High Channel, 2475 MHz				Value (dBc)	Limit ≤ (dBc)	Result
				-47.17	-20	Pass



# SPURIOUS CONDUCTED EMISSIONS



XMIT 2017.02.08

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

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Attenuator	S.M. Electronics	SA26B-20	RFW	2/14/2017	2/14/2018
Block - DC	Fairview Microwave	SD3379	AMI	9/15/2016	9/15/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/16/2017	3/16/2018

## TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

# SPURIOUS CONDUCTED EMISSIONS



TstTx 2017.01.27 XMI 2017.02.08

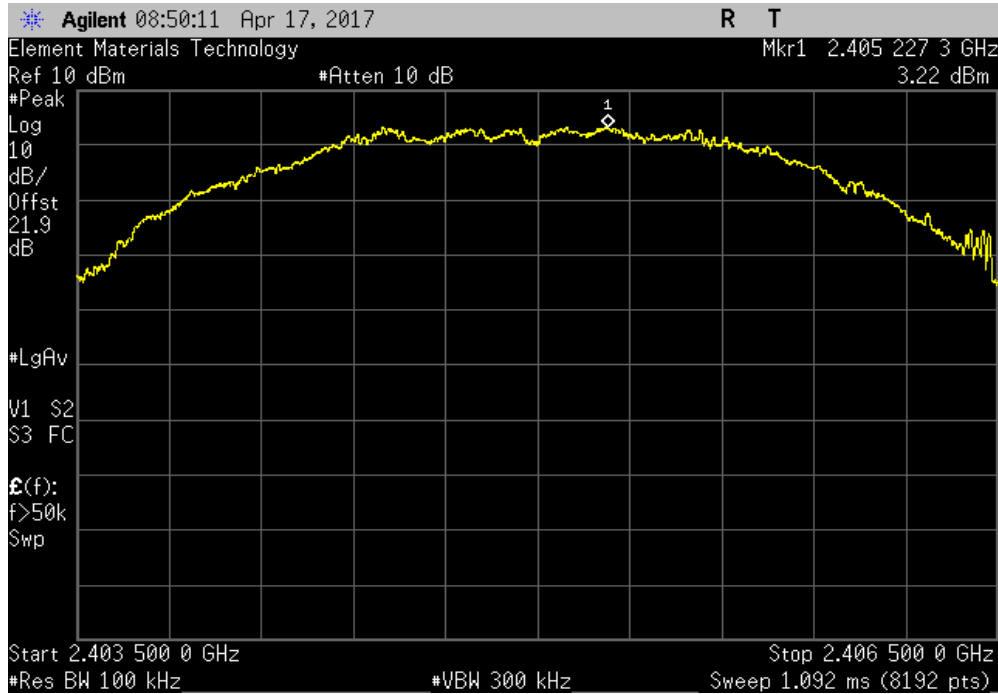
EUT: 3308A		Work Order: EMPM0024			
Serial Number: SAMPLE2		Date: 04/17/17			
Customer: Rosemount, Inc.		Temperature: 21.9 °C			
Attendees: None		Humidity: 30.8% RH			
Project: None		Barometric Pres.: 1026 mbar			
Tested by: Dustin Sparks		Power: Battery			
		Job Site: MN08			
TEST SPECIFICATIONS					
FCC 15.247:2017		Test Method			
		ANSI C63.10:2013			
COMMENTS					
None					
DEVIATIONS FROM TEST STANDARD					
None					
Configuration #	8	Signature <i>Dustin Sparks</i>			
		Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result
Low Channel, 2405 MHz		Fundamental	N/A	N/A	N/A
Low Channel, 2405 MHz		30 MHz - 12.5 GHz	-44.33	-20	Pass
Low Channel, 2405 MHz		12.5 GHz - 25 GHz	-55.24	-20	Pass
Mid Channel, 2440 MHz		Fundamental	N/A	N/A	N/A
Mid Channel, 2440 MHz		30 MHz - 12.5 GHz	-45.77	-20	Pass
Mid Channel, 2440 MHz		12.5 GHz - 25 GHz	-56.42	-20	Pass
High Channel, 2475 MHz		Fundamental	N/A	N/A	N/A
High Channel, 2475 MHz		30 MHz - 12.5 GHz	-43.46	-20	Pass
High Channel, 2475 MHz		12.5 GHz - 25 GHz	-55.92	-20	Pass

# SPURIOUS CONDUCTED EMISSIONS

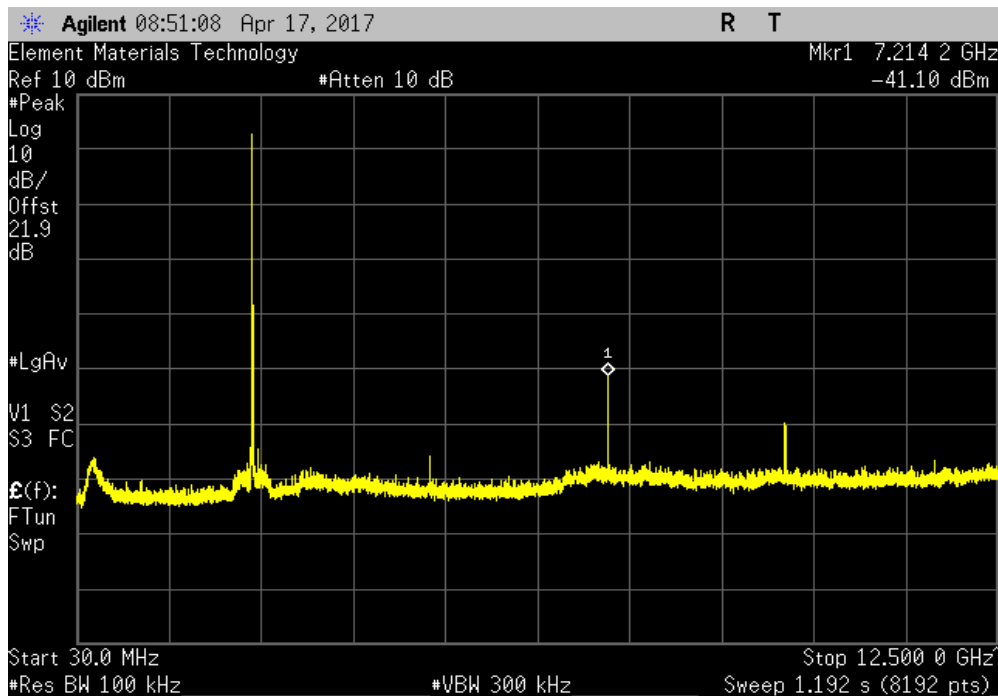


TMTx 2017.01.27 XMI 2017.02.08

Low Channel, 2405 MHz					
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental		N/A	N/A	N/A	



Low Channel, 2405 MHz					
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz		-44.33	-20	Pass	

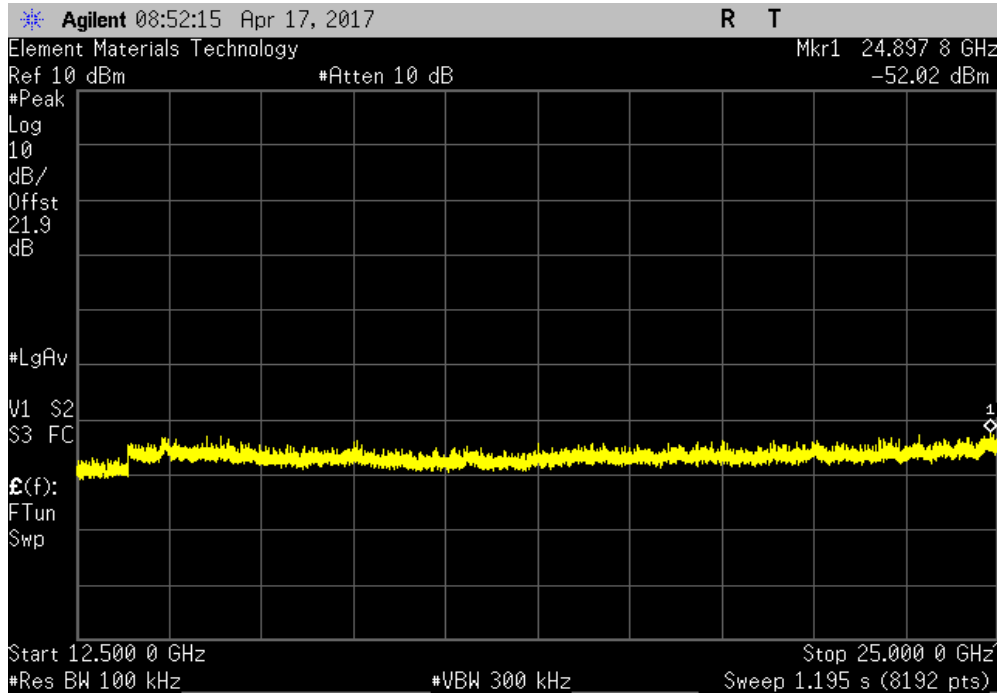


# SPURIOUS CONDUCTED EMISSIONS

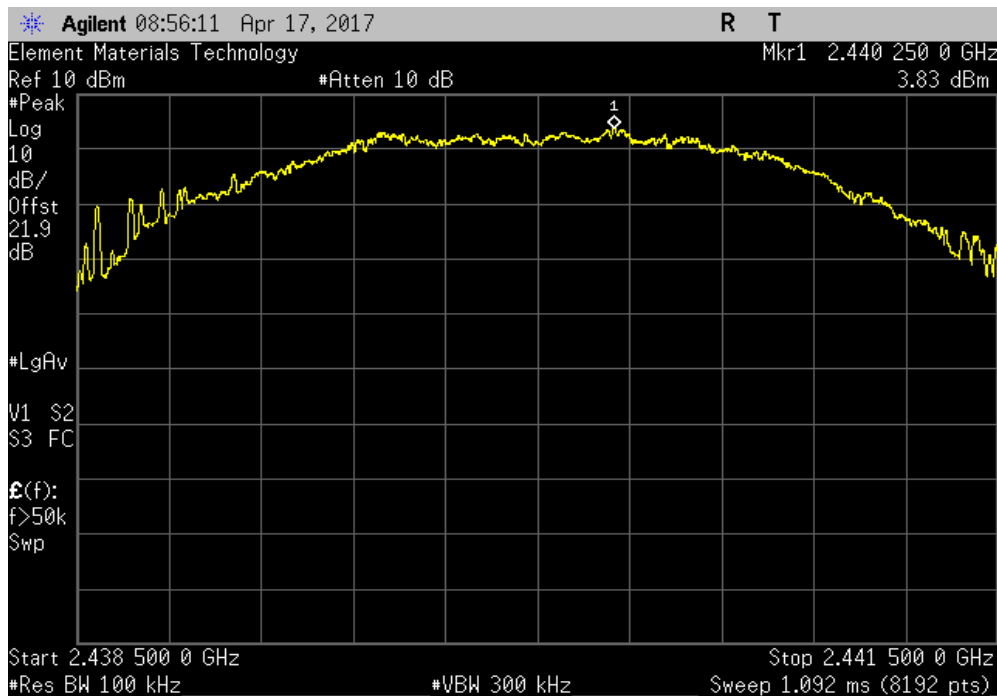


TMTx 2017.01.27 XMI 2017.02.08

Low Channel, 2405 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-55.24	-20	Pass	



Mid Channel, 2440 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	

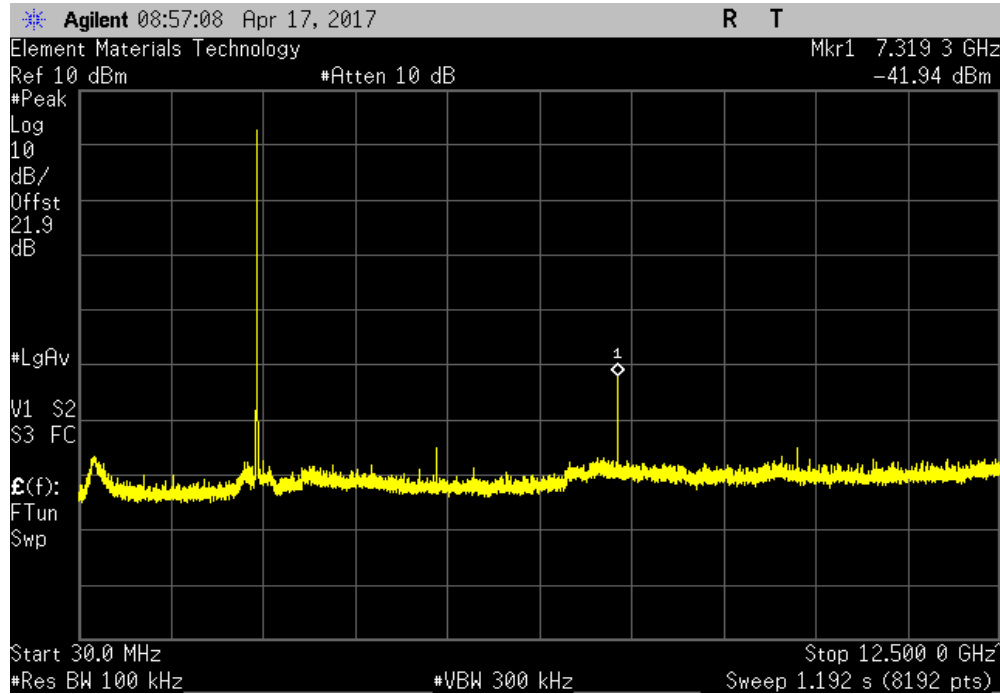


# SPURIOUS CONDUCTED EMISSIONS

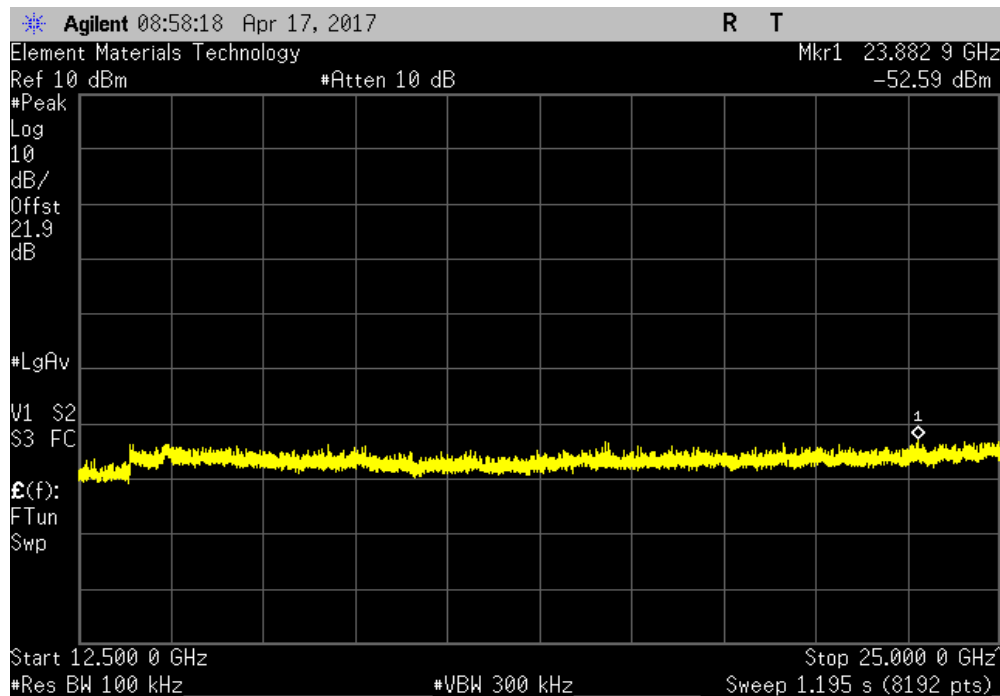


TMTx 2017.01.27 XMI 2017.02.08

Mid Channel, 2440 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-45.77	-20	Pass	



Mid Channel, 2440 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-56.42	-20	Pass	



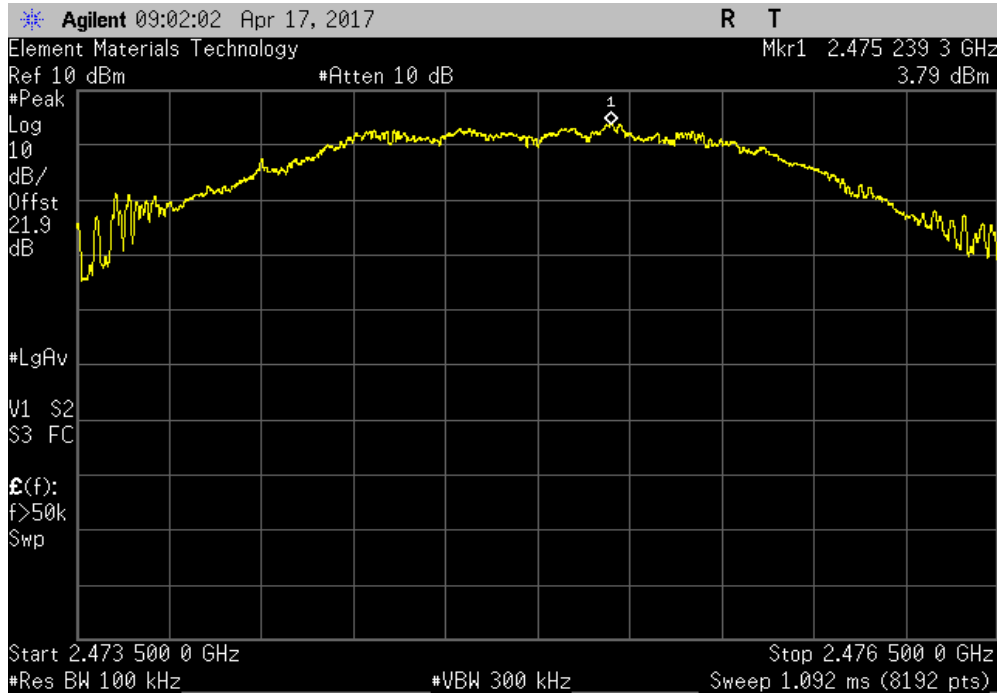


# SPURIOUS CONDUCTED EMISSIONS

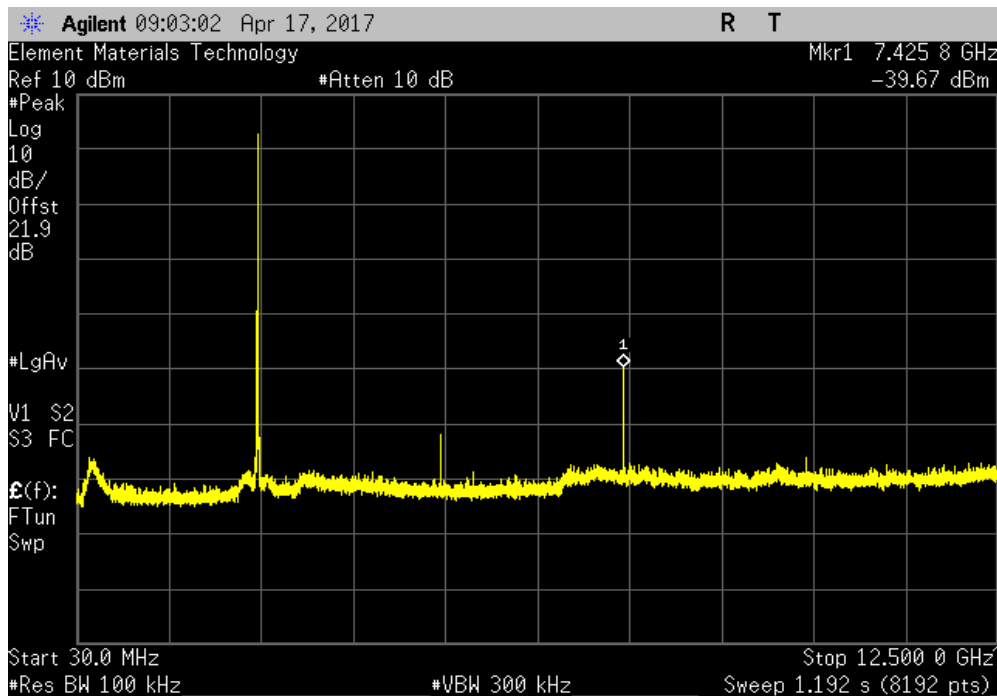


TMTx 2017.01.27 XMI 2017.02.08

High Channel, 2475 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



High Channel, 2475 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-43.46	-20	Pass	



# SPURIOUS CONDUCTED EMISSIONS



TMTx 2017.01.27 XMI 2017.02.08

High Channel, 2475 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-55.92	-20	Pass	

