

# **Emerson Process Management**

**Rosemount Wireless Pressure Gauge** 

FCC 15.247:2019 DTS Radio

Report # EMPM0060







# **CERTIFICATE OF TEST**



Last Date of Test: March 14, 2019
Emerson Process Management
Model: Rosemount Wireless Pressure Gauge (WPG)

# **Radio Equipment Testing**

#### **Standards**

Specification	Method			
FCC 15.247:2019	ANSI C63.10:2013, KDB 558074			

#### Results

itocaito				
Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	No	N/A	Not required for a battery powered EUT.
11.6	Duty Cycle	Yes	Pass	
11.8.2	Occupied Bandwidth	Yes	Pass	
11.9.1.1	Output Power	Yes	Pass	
11.9.1.1	Equivalent Isotropic Radiated 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	
11.12.1, 11.13.2, 6.5, 6.6	Spurious Radiated 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. 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
00	None		

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# 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) and as a CAB for the acceptance of test data.

#### **European Union**

European Commission - Within Element, we have a EU Notified Body validated for the EMCD and RED Directives.

#### Australia/New Zealand

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

#### Korea

MSIT / 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: <a href="https://www.nwemc.com/emc-testing-accreditations">https://www.nwemc.com/emc-testing-accreditations</a>

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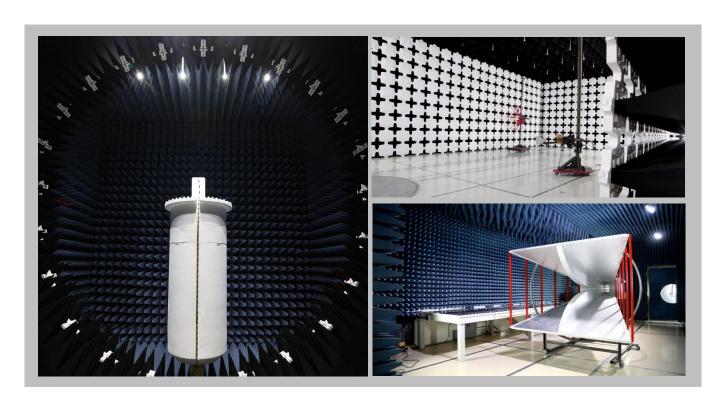
# **FACILITIES**







<b>California</b> Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	Oregon Labs EV01-12 6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	<b>Texas</b> Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	<b>Washington</b> 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: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0			
	Innovation, Sci	ence and Economic Develop	ment Canada				
2834B-1, 2834B-3	2834E-1, 2834E-3	2834D-1	2834G-1	2834F-1			
		BSMI					
SL2-IN-E-1154R	SL2-IN-E-1152R	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R			
		VCCI					
A-0029	A-0109	A-0108	A-0201	A-0110			
Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA							
US0158	US0175	US0017	US0191	US0157			



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# 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 WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is on each data sheet. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

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

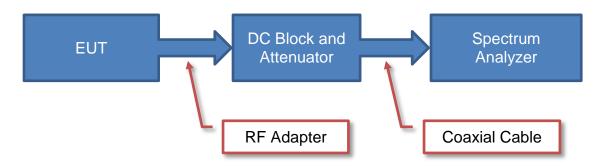
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%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

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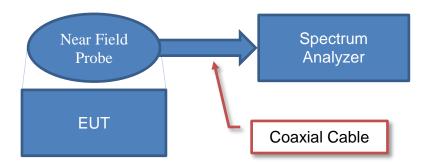
# **Test Setup Block Diagrams**



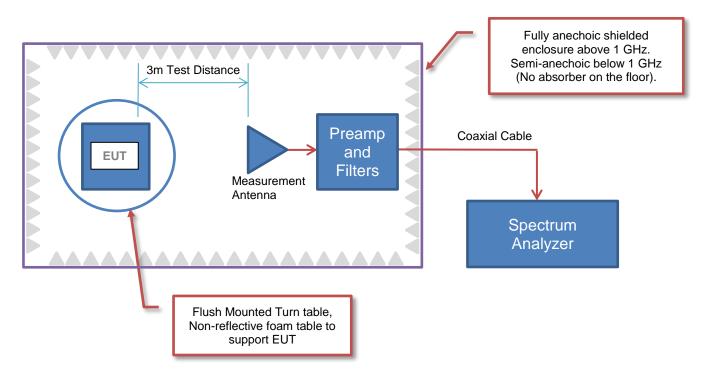
### **Antenna Port Conducted Measurements**



### **Near Field Test Fixture Measurements**



### **Spurious Radiated Emissions**



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# PRODUCT DESCRIPTION



## **Client and Equipment Under Test (EUT) Information**

Company Name:	Emerson Process Management, Rosemount Inc.
Address:	8200 Market Blvd
City, State, Zip:	Chanhassen, MN 55317
Test Requested By:	Elizabeth Reierson
Model:	Rosemount Wireless Pressure Gauge
First Date of Test:	March 12, 2019
Last Date of Test:	March 14, 2019
Receipt Date of Samples:	March 12, 2019
<b>Equipment Design Stage:</b>	Production
<b>Equipment Condition:</b>	No Damage
Purchase Authorization:	Verified

### **Information Provided by the Party Requesting the Test**

Functional Description of the EUT:	
Wireless Pressure Gauge Transmitter	

### Testing Objective:

To demonstrate compliance of the 2.4 GHz DTS radio to FCC 15.247 requirements.

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# **CONFIGURATIONS**



# Configuration EMPM0060-1

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wireless Pressure Gauge	Rosemount	WPG45XNAG11A004000	19CHIPM0008245

# Configuration EMPM0060- 2

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wireless Pressure Gauge	Rosemount	WPG45XNAG11A004000	19CHPM0008241

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# **MODIFICATIONS**



# **Equipment Modifications**

Item	Date	Test	Modification	Note	Disposition of EUT
1	2019-03-12	Spurious Radiated	Tested as delivered to	No EMI suppression devices were added or	EUT remained at Element following the
ı	2019-03-12	Emissions	Test Station.	modified during this test.	test.
2	2019-03-14	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.
3	2019-03-14	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.
4	2019-03-14	Equivalent Isotropic Radiated 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.
5	2019-03-14	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	2019-03-14	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.
7	2019-03-14	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	2019-03-14	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

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XMit 2019.02.26

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#### **TEST EQUIPMENT**

Description Manufacturer		Model	ID	Last Cal.	Cal. Due
Generator - Signal Agilent		N5173B	TIW	5-Jul-17	5-Jul-20
Cable ESM Cable Corp		TTBJ141 KMKM-72	MNU	15-Mar-18	15-Mar-19
Attenuator	S.M. Electronics	SA26B-20	RFW	13-Feb-19	13-Feb-20
Block - DC	Fairview Microwave	SD3379	AMI	7-Sep-18	7-Sep-19
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	26-Mar-18	26-Mar-19

#### **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.

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								TbtTx 2018.09.13	XMit 2019.02.26
EUT:	Wireless Pressure Gauge						Work Order:	EMPM0060	
Serial Number:	19CHPM0008241	9CHPM0008241					Date:	14-Mar-19	
Customer:	Emerson Process Manag	gement					Temperature:	22.5 °C	
Attendees:	Elizabeth Reierson							33.5% RH	
Project:	None						Barometric Pres.:	992 mbar	
Tested by:	Dustin Sparks		Power	r: Battery			Job Site:	MN08	
TEST SPECIFICAT	IONS			Test Method					
FCC 15.247:2019				ANSI C63.10:2013					
COMMENTS									
None									
<b>DEVIATIONS FROM</b>	M TEST STANDARD								
None									
			0 1	0					
Configuration #	2		Vistin	Spards					
		Signature		9/					
						Number of	Value	Limit	
				Pulse Width	Period	Pulses	(%)	(%)	Results
Low Channel (Chan	nel 0), 2405 MHz			4.302 ms	20.57 ms	1	20.9	N/A	N/A
Low Channel (Channel 0), 2405 MHz N/A N/A					6	N/A	N/A	N/A	
Mid Channel (Channel 7), 2440 MHz 4.29 ms 20.564 ms				1	20.9	N/A	N/A		
Mid Channel (Chann	/lid Channel (Channel 7), 2440 MHz N/A N/A					5	N/A	N/A	N/A
High Channel (Char	nnel 14), 2475 MHz			4.29 ms	20.571 ms	1	20.9	N/A	N/A
High Channel (Char	nnel 14), 2475 MHz			N/A	N/A	5	N/A	N/A	N/A

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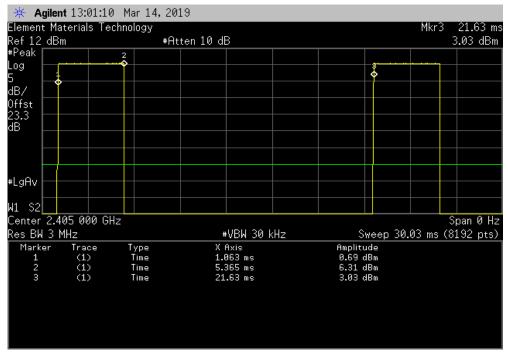


N/A

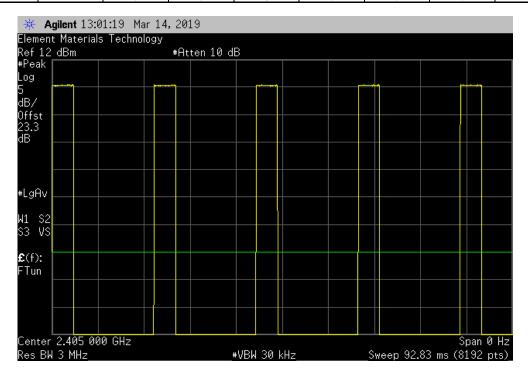
Low Channel (Channel 0), 2405 MHz Number of Value Limit **(%)** 20.9 **(%)** N/A **Pulse Width** Period Pulses Results

4.302 ms

20.57 ms

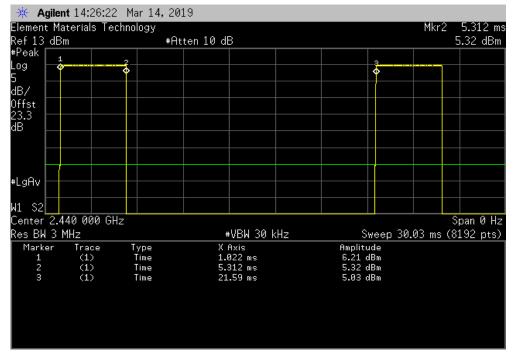


		Low Char	nel (Channel 0),	2405 MHz		
			Number of	Value	Limit	
	 Pulse Width	Period	Pulses	(%)	(%)	Results
i	N/A	N/A	6	N/A	N/A	N/A

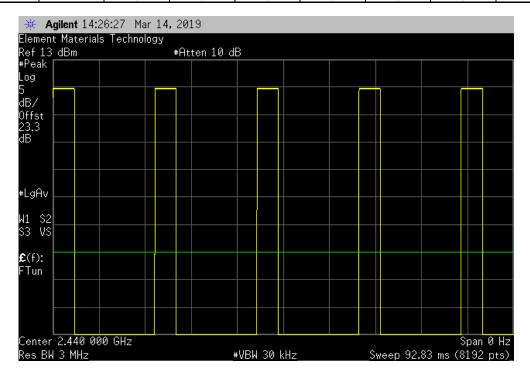


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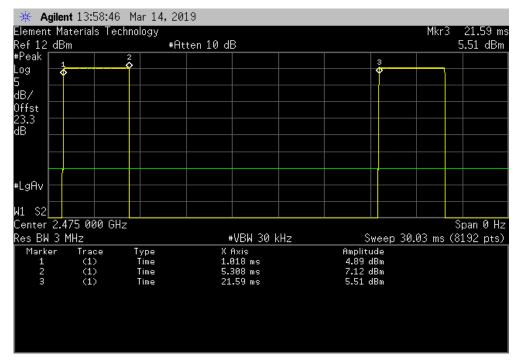
		Mid Chan	nel (Channel 7),	2440 MHz		
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



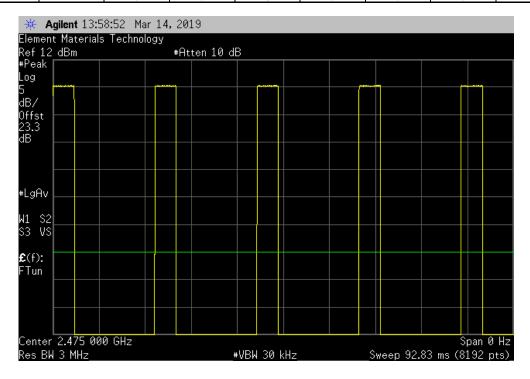
Report No. EMPM0060 14/45



		High Chan	nel (Channel 14),	2475 MHz			
			Number of	Value	Limit		
	Pulse Width	Period	Pulses	(%)	(%)	Results	
	4.29 ms	20.571 ms	1	20.9	N/A	N/A	



		High Chan	nel (Channel 14),	2475 MHz		
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



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XMit 2019.02.26

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.

#### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5173B	TIW	5-Jul-17	5-Jul-20
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	15-Mar-18	15-Mar-19
Attenuator	S.M. Electronics	SA26B-20	RFW	13-Feb-19	13-Feb-20
Block - DC	Fairview Microwave	SD3379	AMI	7-Sep-18	7-Sep-19
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	26-Mar-18	26-Mar-19

#### **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.

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						TbtTx 2018.09.13	XMit 2019.02.26
EUT:	Wireless Pressure Gauge				Work Order:	EMPM0060	
Serial Number:	19CHPM0008241				Date:	14-Mar-19	
Customer:	Emerson Process Manageme	nt			Temperature:	22.5 °C	
Attendees:	Elizabeth Reierson				Humidity:	33.4% RH	
Project:					Barometric Pres.:	992 mbar	
Tested by:	Dustin Sparks			Power: Battery	Job Site:	MN08	
TEST SPECIFICATI	IONS			Test Method			
FCC 15.247:2019				ANSI C63.10:2013			
COMMENTS							
None							
DEVIATIONS FROM	// TEST STANDARD						
None							
			1	3: 6			
Configuration #	2		X	Tustin Sparls			
J		Signature		no varies			
						Limit	
					Value	(>)	Result
Low Channel (Chan	nel 0), 2405 MHz				1.613 MHz	500 kHz	Pass
Mid Channel (Chann					1.542 MHz	500 kHz	Pass
High Channel (Chan					1.573 MHz	500 kHz	Pass
	,, =				1.01011112		

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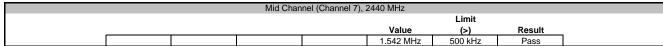
Low Channel (Channel 0), 2405 MHz

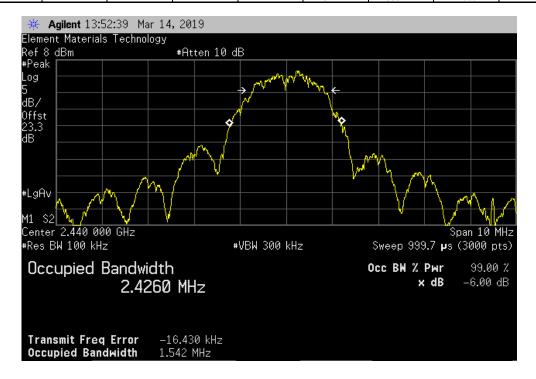
Limit

Value (>) Result

1.613 MHz 500 kHz Pass



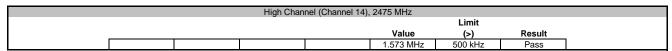




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TbtTx 2018.09.13 XMit 2019.02.26





Report No. EMPM0060 19/45



XMit 2019.02.26

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.

#### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5173B	TIW	5-Jul-17	5-Jul-20
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	15-Mar-18	15-Mar-19
Attenuator	S.M. Electronics	SA26B-20	RFW	13-Feb-19	13-Feb-20
Block - DC	Fairview Microwave	SD3379	AMI	7-Sep-18	7-Sep-19
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	26-Mar-18	26-Mar-19

#### **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.

Report No. EMPM0060



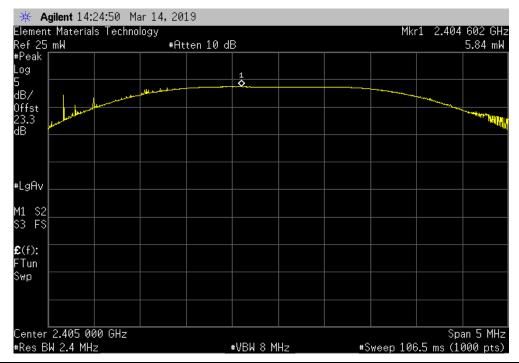
						TbtTx 2018.09.13	XMit 2019.02.26
EUT:	Wireless Pressure Gauge				Work Order	: EMPM0060	
Serial Number:	19CHPM0008241				Date	: 14-Mar-19	
Customer:	Emerson Process Manageme	ent			Temperature	: 22.5 °C	
Attendees:	Elizabeth Reierson				Humidity	: 33.4% RH	
Project:					Barometric Pres.	: 992 mbar	
Tested by:	Dustin Sparks			Power: Battery	Job Site	: MN08	
TEST SPECIFICATI	IONS			Test Method			
FCC 15.247:2019				ANSI C63.10:2013			
COMMENTS							
None							
<b>DEVIATIONS FROM</b>	// TEST STANDARD						
None							
			1				
Configuration #	2		~	Tustin Sparls			
-		Signature		300000			
						Limit	
					Value	(<)	Result
Low Channel (Chan	nel 0), 2405 MHz				5.838 mW	1 W	Pass
Mid Channel (Chann					6.574 mW	1 W	Pass
High Channel (Chan	inel 14), 2475 MHz				5.849 mW	1 W	Pass

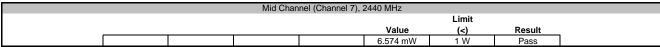
Report No. EMPM0060 21/45

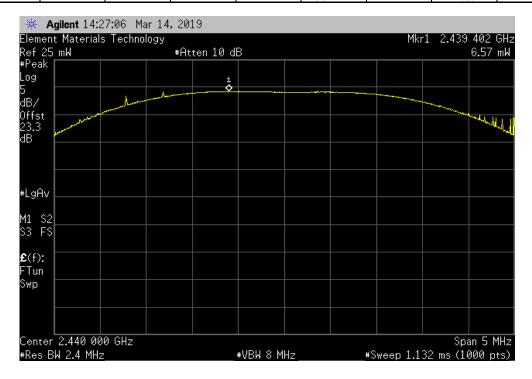


Low Channel (Channel 0), 2405 MHz

| Limit | Value (<) Result | 5.838 mW | 1 W | Pass |



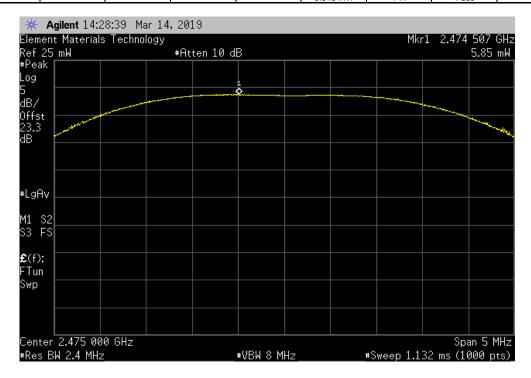




Report No. EMPM0060 22/45



| High Channel (Channel 14), 2475 MHz | Limit | Value | (<) | Result | | 5.849 mW | 1 W | Pass |



Report No. EMPM0060 23/45



XMit 2019.02.26

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.

#### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5173B	TIW	5-Jul-17	5-Jul-20
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	15-Mar-18	15-Mar-19
Attenuator	S.M. Electronics	SA26B-20	RFW	13-Feb-19	13-Feb-20
Block - DC	Fairview Microwave	SD3379	AMI	7-Sep-18	7-Sep-19
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	26-Mar-18	26-Mar-19

#### **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.

The measured results were converted into dBm and added to the EUT's antenna gain to obtain the EIRP.



								TbtTx 2018.09.13	XMit 2019.02.26
	ireless Pressure Gauge	9					Work Order:	EMPM0060	
Serial Number: 19	9CHPM0008241						Date	14-Mar-19	
Customer: E	merson Process Manag	jement					Temperature	22.5 °C	
Attendees: E	lizabeth Reierson						Humidity	33.4% RH	
Project: N	one						Barometric Pres.:	992 mbar	
Tested by: D	ustin Sparks		Powe	r: Battery			Job Site:	MN08	
TEST SPECIFICATION	NS			Test Method					
FCC 15.247:2019				ANSI C63.10:2013					
COMMENTS									
None									
<b>DEVIATIONS FROM T</b>	EST STANDARD								
None									
			h						
Configuration #	2		XT +	Spares					
J		Signature	- no con	Sparco					
		Oignatar o		Value	Value	Antenna	EIRP	Limit	
				(mW)	(dBm)	Gain (dBi)	(dBm)	(< dBm)	Result
Low Channel (Channel	0) 2405 MHz			5.838	7.66	2	9.66	36	Pass
Mid Channel (Channel				6.57	8.18	2	10.18	36	Pass
High Channel (Channe				5.849	7.67	2	9.67	36	Pass
nigh Channel (Channe	1 14), 24/3 1/11/2			5.649	7.07	2	9.07	30	F d 3 5

Report No. EMPM0060 25/45

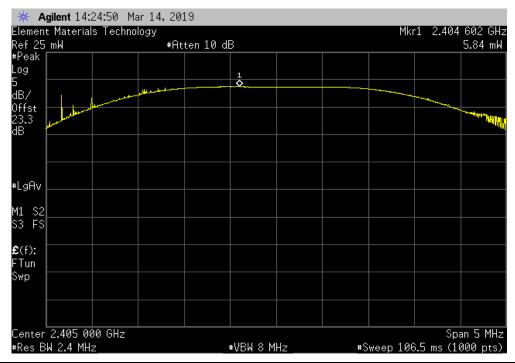


Low Channel (Channel 0), 2405 MHz

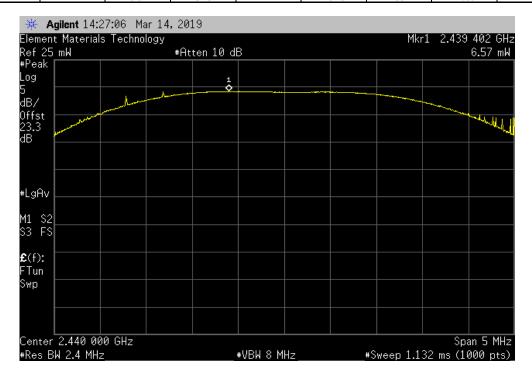
Value Value Antenna EIRP Limit

(mW) (dBm) Gain (dBi) (dBm) (< dBm) Result

5.838 7.66 2 9.66 36 Pass



		Mid Chan	nel (Channel 7),	2440 MHz		
	Value	Value	Antenna	EIRP	Limit	
	(mW)	(dBm)	Gain (dBi)	(dBm)	(< dBm)	Result
	6.57	8.18	2	10.18	36	Pass

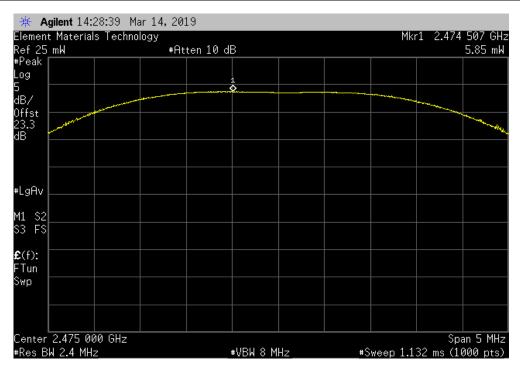


Report No. EMPM0060 26/45



TbtTx 2018.09.13 XMit 2019.02.26

		High Chan	nel (Channel 14),	2475 MHz		
	Value	Value	Antenna	EIRP	Limit	
	(mW)	(dBm)	Gain (dBi)	(dBm)	(< dBm)	Result
1	5.849	7.67	2	9.67	36	Pass



Report No. EMPM0060 27/45



XMit 2019.02.26

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.

#### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5173B	TIW	5-Jul-17	5-Jul-20
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	15-Mar-18	15-Mar-19
Attenuator	S.M. Electronics	SA26B-20	RFW	13-Feb-19	13-Feb-20
Block - DC	Fairview Microwave	SD3379	AMI	7-Sep-18	7-Sep-19
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	26-Mar-18	26-Mar-19

#### **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.

Report No. EMPM0060



COMMENTS None  DEVIATIONS FROM TEST STANDARD None						TbtTx 2018.09.13	XMit 2019.02.26
Customer:   Emerson Process Management   Temperature:   22.5 ° C	EUT:	Wireless Pressure Gauge			Work Order:	EMPM0060	
Attendees: Elizabeth Reierson	Serial Number:	19CHPM0008241					
Project:   None   Barometric Pres.   992 mbar	Customer:	Emerson Process Management			Temperature:	22.5 °C	
Tested by:   Dustin Sparks   Power:   Battery   Job Site:   MN08							
Test Method   Security   ANSI C63.10:2013   Security   Signature   Signature							
ANSI C63.10:2013					Job Site:	MN08	
COMMENTS   None	TEST SPECIFICATI	ONS		Test Method			
None   DEVIATIONS FROM TEST STANDARD	FCC 15.247:2019			ANSI C63.10:2013			
None   DEVIATIONS FROM TEST STANDARD		<u> </u>	<u> </u>		<u> </u>		
DEVIATIONS FROM TEST STANDARD	COMMENTS						
None     2     Signature     Value   Limit   Results	None						
None     2     Signature     Value   Limit   Results							
None     2     Signature     Value   Limit   Results							
Configuration #   2   Signature     Value   Limit   Results	<b>DEVIATIONS FROM</b>	I TEST STANDARD					
Signature   Value   Limit	None						
Signature   Value   Limit				2			
Signature   Value   Limit	Configuration #	2	$\sim$	Justin X sands			
dBm/3kHz         < dBm/3kHz         Results           Low Channel (Channel 0), 2405 MHz         -4.929         8         Pass           Mid Channel (Channel 7), 2440 MHz         -5.241         8         Pass			Signature	= 3/			
Low Channel (Channel 0), 2405 MHz -4.929 8 Pass Mid Channel (Channel 7), 2440 MHz -5.241 8 Pass					Value	Limit	
Mid Channel (Channel 7), 2440 MHz -5.241 8 Pass					dBm/3kHz	< dBm/3kHz	Results
	Low Channel (Chann	nel 0), 2405 MHz	<u> </u>	·	-4.929	8	Pass
High Channel (Channel 14), 2475 MHz -5.617 8 Pass	Mid Channel (Chann	el 7), 2440 MHz			-5.241	8	Pass
	High Channel (Chan	nel 14), 2475 MHz			-5.617	8	Pass

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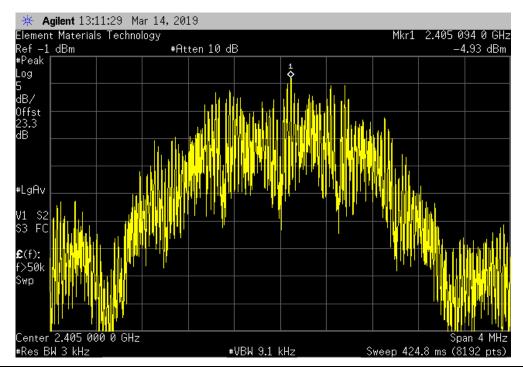


Low Channel (Channel 0), 2405 MHz

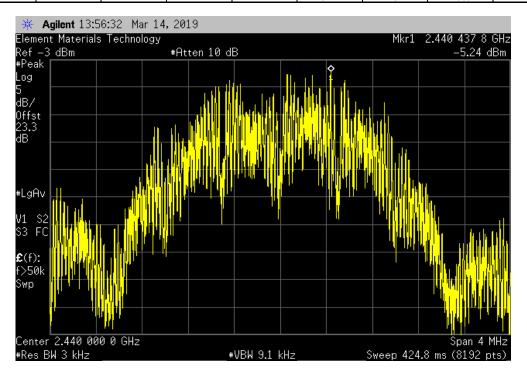
Value Limit

dBm/3kHz < dBm/3kHz Results

-4.929 8 Pass



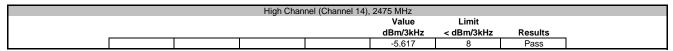
	Mid Chan	nel (Channel 7),	2440 MHz		
			Value	Limit	
			dBm/3kHz	< dBm/3kHz	Results
			-5.241	8	Pass

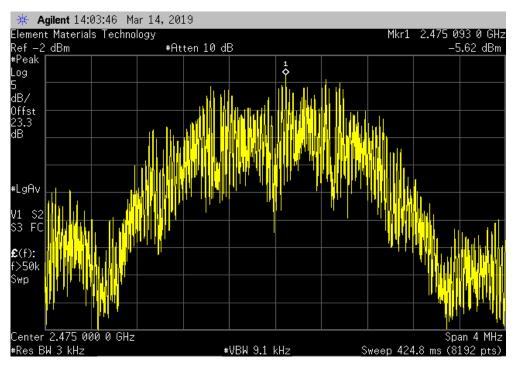


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TbtTx 2018.09.13 XMit 2019.02.26





Report No. EMPM0060 31/45

### **BAND EDGE COMPLIANCE**



XMit 2019.02.26

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.

#### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5173B	TIW	5-Jul-17	5-Jul-20
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	15-Mar-18	15-Mar-19
Attenuator	S.M. Electronics	SA26B-20	RFW	13-Feb-19	13-Feb-20
Block - DC	Fairview Microwave	SD3379	AMI	7-Sep-18	7-Sep-19
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	26-Mar-18	26-Mar-19

#### **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.

Report No. EMPM0060

# **BAND EDGE COMPLIANCE**



			TbtTx 2018.09.13	XMit 2019.02.26
EUT:	Wireless Pressure Gauge	Work Order:	EMPM0060	
Serial Number:	19CHPM0008241	Date	14-Mar-19	
Customer:	Emerson Process Management	Temperature:	22.5 °C	
Attendees:	Elizabeth Reierson	Humidity	33.7% RH	
Project:	None	Barometric Pres.:	992 mbar	
	Dustin Sparks Power: Battery	Job Site:	MN08	
TEST SPECIFICATION	DNS Test Meth	iod		
FCC 15.247:2019	ANSI C63.	.10:2013		
COMMENTS				
None				
DEVIATIONS FROM	TEST STANDARD			
None				
Configuration #	2 Signature	ls		
		Value	Limit	
		(dBc)	≤ (dBc)	Result
Low Channel (Chann	el 0), 2405 MHz	-41.37	-20	Pass
High Channel (Chann	el 14), 2475 MHz	-51	-20	Pass

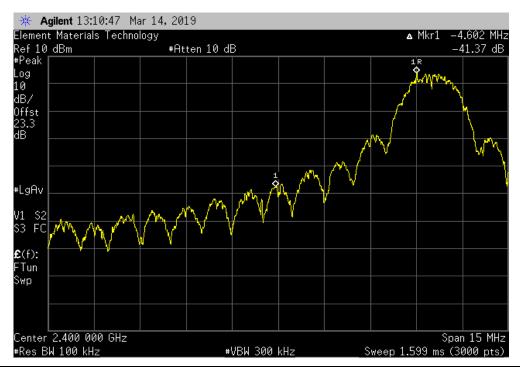
Report No. EMPM0060 33/45

### **BAND EDGE COMPLIANCE**

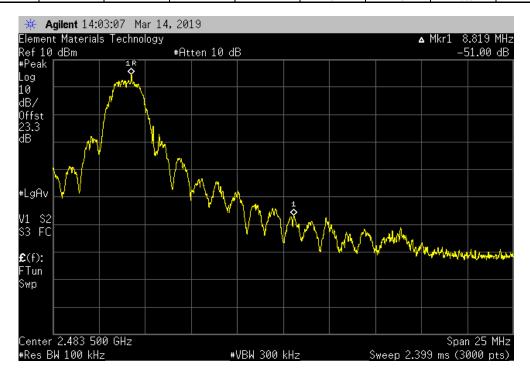


Low Channel (Channel 0), 2405 MHz

Value Limit
(dBc) ≤ (dBc) Result



	High Chan	nel (Channel 14),	2475 MHz		
			Value	Limit	
			(dBc)	≤ (dBc)	Result
			-51	-20	Pass



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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	N5173B	TIW	5-Jul-17	5-Jul-20
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	15-Mar-18	15-Mar-19
Attenuator	S.M. Electronics	SA26B-20	RFW	13-Feb-19	13-Feb-20
Block - DC	Fairview Microwave	SD3379	AMI	7-Sep-18	7-Sep-19
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	26-Mar-18	26-Mar-19

#### **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.

Report No. EMPM0060



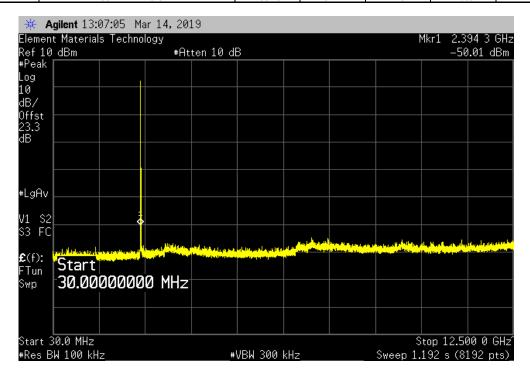
			TbtTx 2018.09.13	XMit 2019.02.26
EUT: Wireless Pressure Gauge		Work Order:		
Serial Number: 19CHPM0008241			14-Mar-19	
Customer: Emerson Process Management		Temperature:	22.5 °C	
Attendees: Elizabeth Reierson		Humidity:		
Project: None		Barometric Pres.:		
Tested by: Dustin Sparks Power: Battery		Job Site:	MN08	
TEST SPECIFICATIONS Test Method				
FCC 15.247:2019 ANSI C63.10:2013				
COMMENTS				
None				
DEVIATIONS FROM TEST STANDARD				
None				
2 21 0				
Configuration # 2				
Signature				
Frequency	Measured	Max Value	Limit	
Range	Freq (MHz)	(dBc)	≤ (dBc)	Result
Low Channel (Channel 0), 2405 MHz Fundamental	2405.23	N/A	N/A	N/A
Low Channel (Channel 0), 2405 MHz 30 MHz - 12.5 GHz	2394.3	-54.24	-20	Pass
Low Channel (Channel 0), 2405 MHz 12.5 GHz - 25 GHz	24879.4	-54.32	-20	Pass
Mid Channel (Channel 7), 2440 MHz Fundamental	2440.28	N/A	N/A	N/A
Mid Channel (Channel 7), 2440 MHz 30 MHz - 12.5 GHz	12282.3	-59.38	-20	Pass
Mid Channel (Channel 7), 2440 MHz 12.5 GHz - 25 GHz	13713.2	-55.23	-20	Pass
High Channel (Channel 14), 2475 MHz Fundamental	2475.28	N/A	N/A	N/A
High Channel (Channel 14), 2475 MHz 30 MHz - 12.5 GHz	6804.7	-58.23	-20	Pass
High Channel (Channel 14), 2475 MHz 12.5 GHz - 25 GHz	13693.4	-54.3	-20	Pass

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	Low Channel (Channel 0),	2405 MHz		
Frequency	Measured	Max Value	Limit	
Range	Freq (MHz)	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	2394.3	-54.24	-20	Pass



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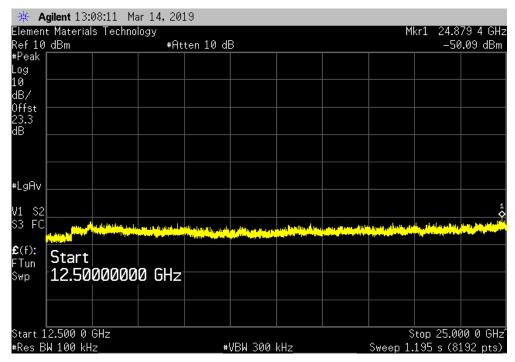


 Low Channel (Ohannel 0), 2405 MHz

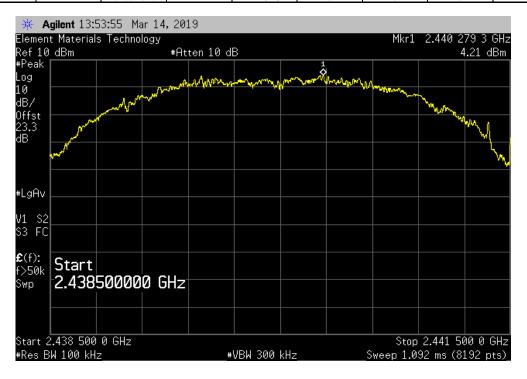
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBc)
 ≤ (dBc)
 Result

 12.5 GHz - 25 GHz
 24879.4
 -54.32
 -20
 Pass



	Mid	Channel (Channel 7),	2440 MHz		
	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBc)	≤ (dBc)	Result
i	Fundamental	2440.28	N/A	N/A	N/A



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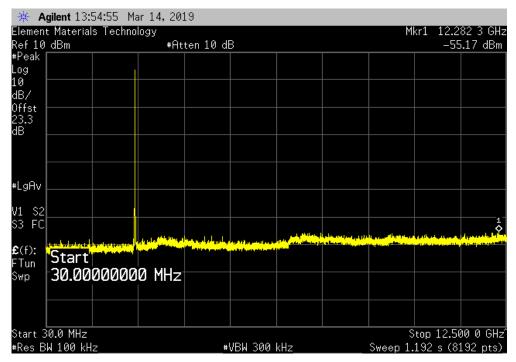


 Mid Channel (Channel 7), 2440 MHz

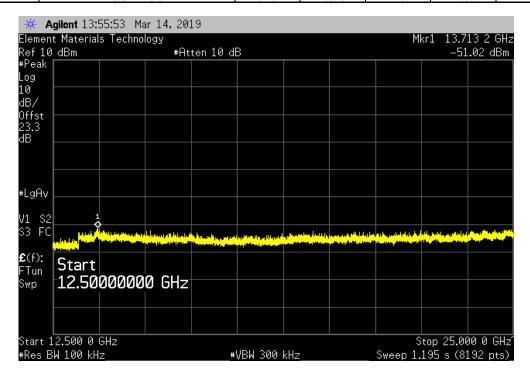
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBc)
 ≤ (dBc)
 Result

 30 MHz - 12.5 GHz
 12282.3
 -59.38
 -20
 Pass

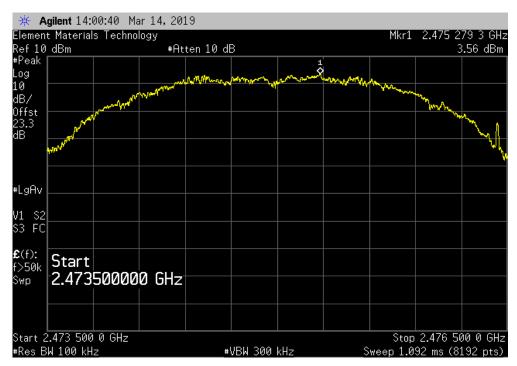


	Mid Channel (Channel 7), 2440 MHz				
	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBc)	≤ (dBc)	Result
,	12.5 GHz - 25 GHz	13713.2	-55.23	-20	Pass

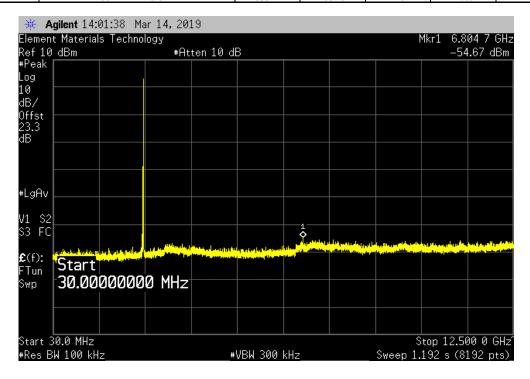


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High Channel (Channel 14), 2475 MHz					
Frequency	Measured	Max Value	Limit		
Range	Freq (MHz)	(dBc)	≤ (dBc)	Result	
30 MHz - 12.5 GHz	6804.7	-58.23	-20	Pass	

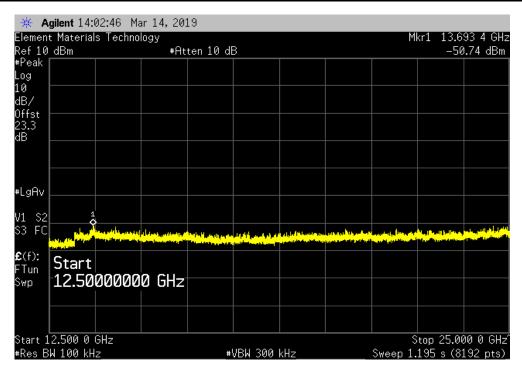


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TbtTx 2018.09.13 XMit 2019.02.26

High Channel (Channel 14), 2475 MHz										
	Frequency	Limit								
	Range	Freq (MHz)	(dBc)	≤ (dBc)	Result					
	12.5 GHz - 25 GHz	13693.4	-54.3	-20	Pass					



Report No. EMPM0060 41/45

# SPURIOUS RADIATED EMISSIONS



PSA-ESCI 2019.02.26

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**

Tx at Low Ch 2405 MHz, ch 0; Mid Ch, 2440 MHz, Ch 7; High Ch, 2475 MHz, Ch 14, Modulated

#### **POWER SETTINGS INVESTIGATED**

Battery

#### **CONFIGURATIONS INVESTIGATED**

EMPM0060 - 1

#### FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz Stop Frequency 26000 MHz

#### **SAMPLE CALCULATIONS**

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

#### **TEST EQUIPMENT**

Interval 12 mo
12 mo
12 1110
12 mo
12 mo
0 mo
12 mo
0 mo
12 mo
12 mo
0 mo
12 mo
12 mo
12 mo
12 mo
24 mo
12 mo
12 mo
24 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

Report No. EMPM0060 42/45

# SPURIOUS RADIATED EMISSIONS



PSA-ESCI 2019.02.26

#### **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.

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# SPURIOUS RADIATED EMISSIONS

ENIDMODED

Date

12 Mar 2010

Work Order

31.2

31.2 31.1

31.1 30.8

30.5

7318.592

7318.292 7318.683

7317.767

7317.800 7422.900

7423.708

7217.250

11.8 11.8

11.8

11.8 12.0

11.8

1.0

1.0 1.0

1.0

1.0 1.0

3.0 3.0

3.0

3.0 3.0

3.0

0.0

0.0

0.0

0.0

354.0

41.0

221.0

296.0 59.0

307.0



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EUT On Side, Mid Ch, Modulated EUT Vert, Mid Ch, Modulated EUT On Side, Mid Ch, Modulated

EUT Horz, High Ch, Modulated

EUT Horz, High Ch, Modulated

EUT Horz, Low Ch. Modulated

EUT Horz, Mid Ch, Modulated

EUT Vert. Mid Ch. Modulated

-11.0 -11.1

-11.1 -11.2

-11.7

Wo	ork Order:		M0060		Date:		r-2019	1	1	/	74		
	Project:		one	Ter	nperature:		4 C		L	_ /	M		
Caria	Job Site:		N05 M0008245	Davama	Humidity:	28.6	60%		Tastad bu	Chris Dott			l
Seria	EUT:		Pressure Ga		etric Pres.:				Tested by:	Chris Palle	erson		
Conf	figuration:			auge									•
		EMPM0060 - 1 Emerson Process Management											
		Elizabeth Reierson											
	UT Power:	Battery										•	
Operati	ing Mode:	Tx at Low Ch 2405 MHz, ch 0; Mid Ch, 2440 MHz, Ch 7; High Ch, 2475 MHz, Ch 14, Modulated											
Operati	ing mode.	None										_	
D	eviations:												
0		None :											
C	omments:												
T 10		1					T ( B.S. (1		1				I
FCC 15.24							ANSI C63.						•
FCC 15.24	17:2019						ANSI Cos.	10:2013					
Run #	28	Test Di	istance (m)	3	Antenna	Height(s)		1 to 4(m)		Results	Pa	ass	_
80													
°0 T													
											<del> </del>		
70 +													
60													
60 +													
											<del> </del>		
_ 50 +													
<b>w//\ngp</b>													
<b>3</b>													
<b>4</b> 0 +									•				
•													
30 🕂													
20 +													
10 +													
_													
0 <del> </del> 10	)		100			1000			10000			100000	
10	,		100						10000			100000	
						MHz				■ PK	AV	<ul><li>QP</li></ul>	
							Polarity/						
_						External	Transducer		Distance			Compared to	
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	Attenuation (dB)	Туре	Detector	Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Spec. (dB)	
(WIT12)	()	(/	()	(9)	()	(/			(/	(===:,,	(===:)	(/	Comments
2483.958	33.2	-3.7	1.0	81.9	3.0	20.0	Vert	AV	0.0	49.5	54.0	-4.5	EUT On Side, High Ch, Modulated
2483.958 2483.983	33.0 31.5	-3.7 -3.7	3.2 1.0	37.9 206.0	3.0 3.0	20.0 20.0	Horz Horz	AV AV	0.0 0.0	49.3 47.8	54.0 54.0	-4.7 -6.2	EUT Horz, High Ch, Modulated EUT On Side, High Ch, Modulated
2387.030	30.9	-3.7 -3.1	1.0	324.0	3.0	20.0	Horz	AV	0.0	47.8 47.8	54.0 54.0	-6.2 -6.2	EUT On Side, Low Ch, Modulated
2389.980	30.9	-3.1	1.0	210.9	3.0	20.0	Vert	AV	0.0	47.8	54.0	-6.2	EUT On Side, Low Ch, Modulated
2389.030	30.9	-3.1	1.0	77.0	3.0	20.0	Horz	AV	0.0	47.8	54.0	-6.2	EUT Vert, Low Ch, Modulated
2387.880 2389.990	30.9 30.9	-3.1 -3.1	2.3 1.0	252.0 335.0	3.0 3.0	20.0 20.0	Vert Horz	AV AV	0.0 0.0	47.8 47.8	54.0 54.0	-6.2 -6.2	EUT Vert, Low Ch, Modulated EUT Horz, Low Ch, Modulated
2384.980	30.9	-3.1	1.0	306.0	3.0	20.0	Vert	AV	0.0	47.8	54.0	-6.2	EUT Horz, Low Ch, Modulated
2483.975	31.2	-3.7	1.0	113.0	3.0	20.0	Horz	AV	0.0	47.5	54.0	-6.5	EUT Vert, High Ch, Modulated
2483.925	31.2	-3.7	1.0	239.0	3.0	20.0	Vert	AV	0.0	47.5	54.0	-6.5	EUT Vert, High Ch, Modulated
2483.683 7321.250	31.1 32.1	-3.7 11.8	1.0 1.9	141.1 142.0	3.0 3.0	20.0 0.0	Vert Horz	AV AV	0.0 0.0	47.4 43.9	54.0 54.0	-6.6 -10.1	EUT Horz, High Ch, Modulated EUT On Side, Mid Ch, Modulated
7321.230	31.4	11.8	1.9	91.0	3.0	0.0	Horz	AV	0.0	43.9	54.0		EUT Horz, Mid Ch, Modulated
7318.517	31.3	11.8	1.0	29.0	3.0	0.0	Horz	AV	0.0	43.1	54.0		EUT On Side, Mid Ch, Modulated

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AV AV AV AV AV AV

Horz Vert

Vert

Vert

Horz

Vert

Vert

0.0

0.0

0.0

0.0

0.0

43.0

43.0 42.9

42.9

42.9 42.8

42.3

54.0

54.0 54.0

54.0 54.0

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	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
7217.192	30.5	11.8	3.5	34.0	3.0	0.0	Horz	AV	0.0	42.3	54.0	-11.7	EUT Horz, Low Ch. Modulated
2484.242	45.9	-3.7	1.0	81.9	3.0	20.0	Vert	PK	0.0	62.2	74.0	-11.8	EUT On Side, High Ch, Modulated
2483.883	44.4	-3.7	3.2	37.9	3.0	20.0	Horz	PK	0.0	60.7	74.0	-13.3	EUT Horz, High Ch, Modulated
2484.908	43.5	-3.7	1.0	239.0	3.0	20.0	Vert	PK	0.0	59.8	74.0	-14.2	EUT Vert, High Ch, Modulated
2388.720	42.8	-3.1	1.0	306.0	3.0	20.0	Vert	PK	0.0	59.7	74.0	-14.3	EUT Horz, Low Ch, Modulated
2386.000	42.7	-3.1	1.0	210.9	3.0	20.0	Vert	PK	0.0	59.6	74.0	-14.4	EUT On Side, Low Ch, Modulated
2389.300	42.6	-3.1	1.0	324.0	3.0	20.0	Horz	PK	0.0	59.5	74.0	-14.5	EUT On Side, Low Ch, Modulated
2483.533	43.1	-3.7	1.0	206.0	3.0	20.0	Horz	PK	0.0	59.4	74.0	-14.6	EUT On Side, High Ch, Modulated
2484.083	42.8	-3.7	1.0	141.1	3.0	20.0	Vert	PK	0.0	59.1	74.0	-14.9	EUT Horz, High Ch, Modulated
2387.150	42.2	-3.1	2.3	252.0	3.0	20.0	Vert	PK	0.0	59.1	74.0	-14.9	EUT Vert, Low Ch, Modulated
2387.450	42.2	-3.1	1.0	335.0	3.0	20.0	Horz	PK	0.0	59.1	74.0	-14.9	EUT Horz, Low Ch, Modulated
2385.820	42.1	-3.1	1.0	77.0	3.0	20.0	Horz	PK	0.0	59.0	74.0	-15.0	EUT Vert, Low Ch, Modulated
2483.558	42.6	-3.7	1.0	113.0	3.0	20.0	Horz	PK	0.0	58.9	74.0	-15.1	EUT Vert, High Ch, Modulated
4811.092	33.2	4.4	1.0	88.0	3.0	0.0	Vert	AV	0.0	37.6	54.0	-16.4	EUT Horz, Low Ch. Modulated
4950.808	32.1	4.7	1.0	106.0	3.0	0.0	Vert	AV	0.0	36.8	54.0	-17.2	EUT Horz, High Ch, Modulated
4811.000	32.1	4.4	2.0	318.9	3.0	0.0	Horz	AV	0.0	36.5	54.0	-17.5	EUT Horz, Low Ch. Modulated
4950.983	31.7	4.7	1.0	275.0	3.0	0.0	Horz	AV	0.0	36.4	54.0	-17.6	EUT Horz, High Ch, Modulated
4878,708	31.7	4.5	1.0	239.0	3.0	0.0	Horz	AV	0.0	36.2	54.0	-17.8	EUT Horz, Mid Ch, Modulated
4877.850	31.6	4.5	3.6	225.9	3.0	0.0	Vert	AV	0.0	36.1	54.0	-17.9	EUT Horz, Mid Ch, Modulated
7320.858	44.3	11.8	1.9	142.0	3.0	0.0	Horz	PK	0.0	56.1	74.0	-17.9	EUT On Side, Mid Ch, Modulated
7321.892	43.8	11.8	1.0	145.0	3.0	0.0	Vert	PK	0.0	55.6	74.0	-18.4	EUT Vert, Mid Ch, Modulated
7320.808	43.5	11.8	1.0	296.0	3.0	0.0	Vert	PK	0.0	55.3	74.0	-18.7	EUT On Side, Mid Ch, Modulated
7422.542	43.3	12.0	1.0	59.0	3.0	0.0	Horz	PK	0.0	55.3	74.0	-18.7	EUT Horz, High Ch, Modulated
7319.617	43.3	11.8	1.0	91.0	3.0	0.0	Horz	PK	0.0	55.1	74.0	-18.9	EUT Horz, Mid Ch, Modulated
7318.617	43.3	11.8	1.0	29.0	3.0	0.0	Horz	PK	0.0	55.1	74.0	-18.9	EUT On Side, Mid Ch, Modulated
7321.317	43.1	11.8	1.0	41.0	3.0	0.0	Horz	PK	0.0	54.9	74.0	-19.1	EUT Vert, Mid Ch, Modulated
7320.192	43.0	11.8	1.0	354.0	3.0	0.0	Vert	PK	0.0	54.8	74.0	-19.2	EUT Horz, Mid Ch, Modulated
7318.208	42.9	11.8	1.0	221.0	3.0	0.0	Vert	PK	0.0	54.7	74.0	-19.3	EUT On Side, Mid Ch, Modulated
7424.850	42.6	12.0	1.0	250.9	3.0	0.0	Vert	PK	0.0	54.6	74.0	-19.4	EUT Horz, High Ch, Modulated
7214.108	42.7	11.8	3.6	307.0	3.0	0.0	Vert	PK	0.0	54.5	74.0	-19.5	EUT Horz, Low Ch. Modulated
7214.733	42.5	11.8	3.5	34.0	3.0	0.0	Horz	PK	0.0	54.3	74.0	-19.7	EUT Horz, Low Ch. Modulated
12377.370	31.5	-0.7	1.0	178.0	3.0	0.0	Vert	AV	0.0	30.8	54.0	-23.2	EUT Horz, High Ch, Modulated
4810.683	46.2	4.4	1.0	88.0	3.0	0.0	Vert	PK	0.0	50.6	74.0	-23.4	EUT Horz, Low Ch. Modulated
12197.560	31.9	-1.8	1.0	37.9	3.0	0.0	Horz	AV	0.0	30.1	54.0	-23.9	EUT Horz, Mid Ch, Modulated
12197.630	31.6	-1.8	3.6	95.9	3.0	0.0	Vert	AV	0.0	29.8	54.0	-24.2	EUT Horz, Mid Ch, Modulated
4951.442	44.0	4.7	1.0	275.0	3.0	0.0	Horz	PK	0.0	48.7	74.0	-25.3	EUT Horz, High Ch, Modulated
12372.540	29.3	-0.7	1.0	325.9	3.0	0.0	Horz	AV	0.0	28.6	54.0	-25.4	EUT Horz, High Ch, Modulated
4810.558	44.1	4.4	2.0	318.9	3.0	0.0	Horz	PK	0.0	48.5	74.0	-25.5	EUT Horz, Low Ch. Modulated
4949.283	43.7	4.7	1.0	106.0	3.0	0.0	Vert	PK	0.0	48.4	74.0	-25.6	EUT Horz, High Ch, Modulated
4879.758	43.9	4.5	1.0	239.0	3.0	0.0	Horz	PK	0.0	48.4	74.0	-25.6	EUT Horz, Mid Ch, Modulated
4881.092	43.5	4.5	3.6	225.9	3.0	0.0	Vert	PK	0.0	48.0	74.0	-26.0	EUT Horz, Mid Ch, Modulated
12197.650	45.1	-1.8	1.0	37.9	3.0	0.0	Horz	PK	0.0	43.3	74.0	-20.0	EUT Horz, Mid Ch, Modulated
12377.410	43.6	-0.7	1.0	178.0	3.0	0.0	Vert	PK	0.0	42.9	74.0	-30.7	EUT Horz, High Ch, Modulated
12377.410	43.6	-0.7	3.6	95.9	3.0	0.0	Vert	PK	0.0	41.9	74.0	-31.1	EUT Horz, Mid Ch. Modulated
12376.670	40.9	-0.7	1.0	325.9	3.0	0.0	Horz	PK	0.0	40.2	74.0	-32.1	EUT Horz, High Ch, Modulated
123/0.0/0	40.9	-0.7	1.0	323.9	3.0	0.0	HUIZ	FN	0.0	40.2	74.0	-33.0	LOT 11012, Flight Off, Modulated

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