



element

Emerson/Rosemount

Emerson Wireless 775 THUM Adapter, Model: 775

FCC 15.247:2024
RSS-247 Issue 3:2023

2400 - 2483.5 MHz DTS under Technology Category Other

Report: EMPM0151.0 Rev. 1, Issue Date: April 24, 2024



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CERTIFICATE OF TEST

Last Date of Test: September 6, 2023
Emerson/Rosemount
EUT: Wireless 775 THUM Adapter, Model: 775

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2024	ANSI C63.10:2013
FCC 15.207:2024	
RSS-247 Issue 3:2023	
RSS-Gen Issue 5:2018+A1:2019+A2:2021	

Note: FCC 15.247:2024 and FCC 15.207:2024 have been updated to reflect the current year, superseding the specifications noted within the body of this report. The specifications are unchanged and do not affect the results of the prior testing.

Note: RSS-247 Issue 3 has been updated superseding prior editions and amendments noted within the body of this report. The changes between the specifications do not affect the results of the prior testing. The manufacturer attests that no changes have been made to the product. See gap analysis in the appendix along with the manufacturer's attestation.

Guidance

FCC KDB 558074 v05r02:2019

Results

Test Description	Result	FCC Section(s)	RSS Section(s)	ANSI C63.10 Section(s)	Comments
Powerline Conducted Emissions (Transmitter)	Pass	15.207	RSS-Gen 8.8	6.2	
Spurious Radiated Emissions	Pass	15.247(d), KDB 558074 -8.6, 8.7	RSS-247 5.5	6.5, 6.6, 11.12.1, 11.13.2	
Occupied Bandwidth (99%)	Evaluated	KDB 558074 -2.1	RSS-Gen 6.7	6.9.3	No limit specified.
Carrier Frequency Separation	N/A	15.247(a)(1)	RSS-247 5.1(b)	7.8.2	Not required for DTS devices.
Number of Hopping Frequencies	N/A	15.247(a)(1)	RSS-247 5.1(d)	7.8.3	Not required for DTS devices.
Dwell Time	N/A	15.247(a)(1)	RSS-247 5.1(d)	7.8.4	Not required for DTS devices.
Band Edge Compliance - Hopping Mode	N/A	15.247(d)	RSS-247 5.5	7.8.6	Not required for DTS devices.
Duty Cycle	N/A	15.247, KDB 558074 -6.0	RSS-Gen 3.2	11.6	Test mode duty cycle is 100% in test mode. Operations duty cycle is <20.706%.
DTS Bandwidth (6 dB)	Pass	15.247(a), KDB 558074 -8.2	RSS-247 5.2(a)	11.8.2	
Output Power	Pass	15.247(b), KDB 558074 -8.3	RSS-247 5.4(d)	11.9.1.1	

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.

CERTIFICATE OF TEST

Equivalent Isotropic Radiated Power (EIRP)	Pass	15.247(b), KDB 558074 -8.3	RSS-247 5.4(d)	11.9.1.1	
Power Spectral Density	Pass	15.247(e), KDB 558074 -8.4	RSS-247 5.2(b)	11.10.2	
Band Edge Compliance	Pass	15.247(d), KDB 558074 -8.5	RSS-247 5.5	11.11	
Spurious Conducted Emissions	Pass	15.247(d), KDB 558074 -8.5	RSS-247 5.5	11.11	
Powerline Conducted Emissions (Receiver)	N/A	15.101, 15.107	RSS-Gen 5.2	ANSI C63.4 - 12.2.4	Not included per FCC 15.101 as this will be covered under SDoC rules for the FCC. RSS-Gen section 7 stated receiver requirements only apply to standalone receivers operating in the 30-960 MHz band and this is not a standalone receiver.
Radiated Emissions for Receiver	N/A	15.101, 15.109	RSS-Gen 5.2	ANSI C63.4 - 12.2.5	Not included per FCC 15.101 as this will be covered under SDoC rules for the FCC. RSS-Gen section 7 stated receiver requirements only apply to standalone receivers operating in the 30-960 MHz band and this is not a standalone receiver.

Deviations From Test Standards

Spurious Conducted Emissions: Reference level offset includes measurement cable, attenuator DC patch, and 0.75dB loss on the customer's soldered patch cable, as declared by the customer.

Approved By:



Jeff Alcock, Senior EMC Test Engineer

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

REVISION HISTORY



Revision Number	Description	Date (yyyy-mm-dd)	Page Number
01	Updated FCC and RSS specification in the Testing Objective	2024-04-24	12
	Added the data rate to the Power Settings and Antenna Information section.	2024-04-24	13

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

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

United Kingdom

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

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:

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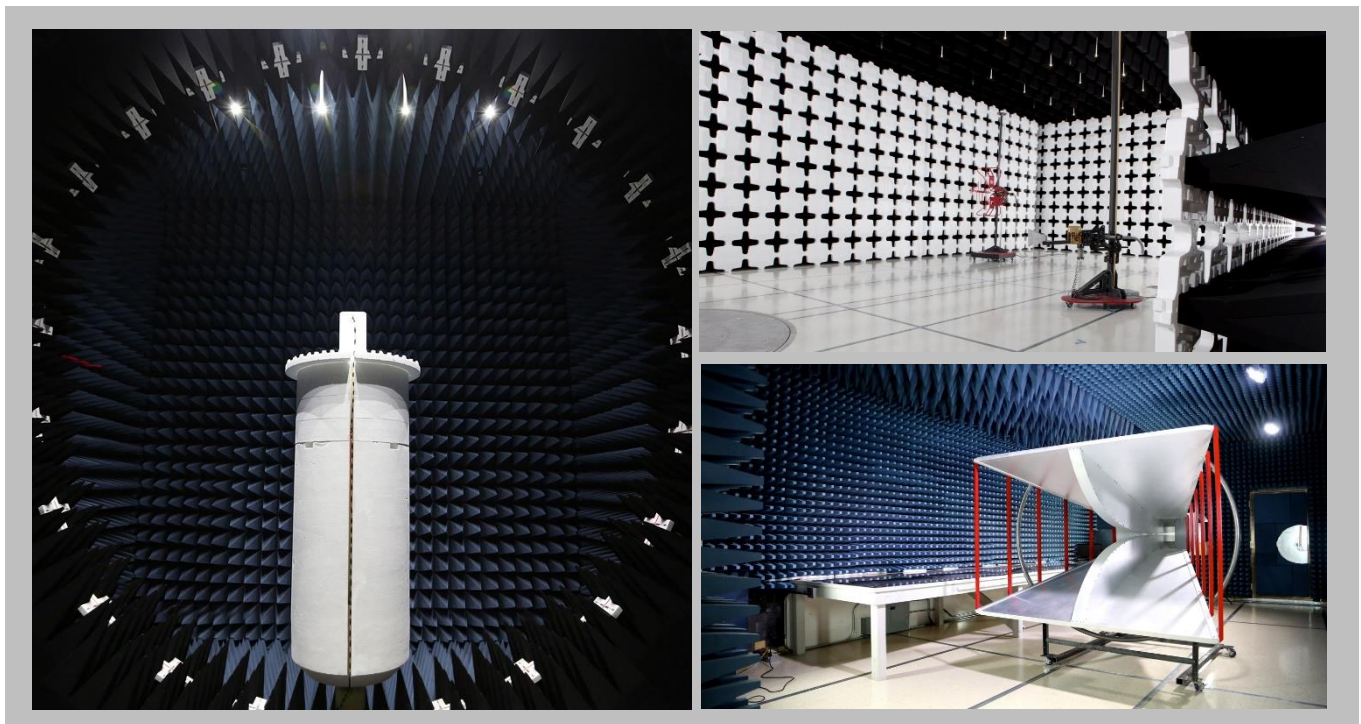
[Texas](#)

[Washington](#)

FACILITIES



California Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-11 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	Texas Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Washington Labs NC01-05 19201 120 th Ave NE Bothell, WA 98011 (425) 984-6600
A2LA				
Lab Code: 3310.04	Lab Code: 3310.05	Lab Code: 3310.02	Lab Code: 3310.03	Lab Code: 3310.06
Innovation, Science and Economic Development 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



MEASUREMENT UNCERTAINTY



Measurement Uncertainty

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

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

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

Test Location: Minneapolis

Test	+ MU	- MU
Frequency Accuracy	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	1.2 dB	-1.2 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	3.2 dB	-3.2 dB

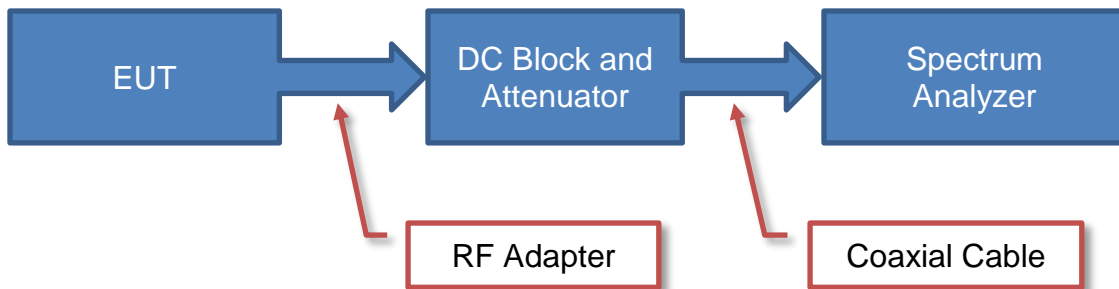
TEST SETUP BLOCK DIAGRAMS

Measurement Bandwidths

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

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

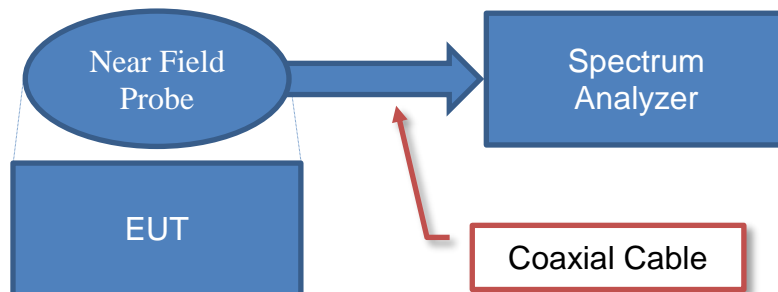
Antenna Port Conducted Measurements



Sample Calculation (logarithmic units)

$$\begin{array}{r}
 \text{Measured Value} \\
 71.2
 \end{array}
 =
 \begin{array}{r}
 \text{Measured Level} \\
 42.6
 \end{array}
 +
 \begin{array}{r}
 \text{Reference Level Offset} \\
 28.6
 \end{array}$$

Near Field Test Fixture Measurements

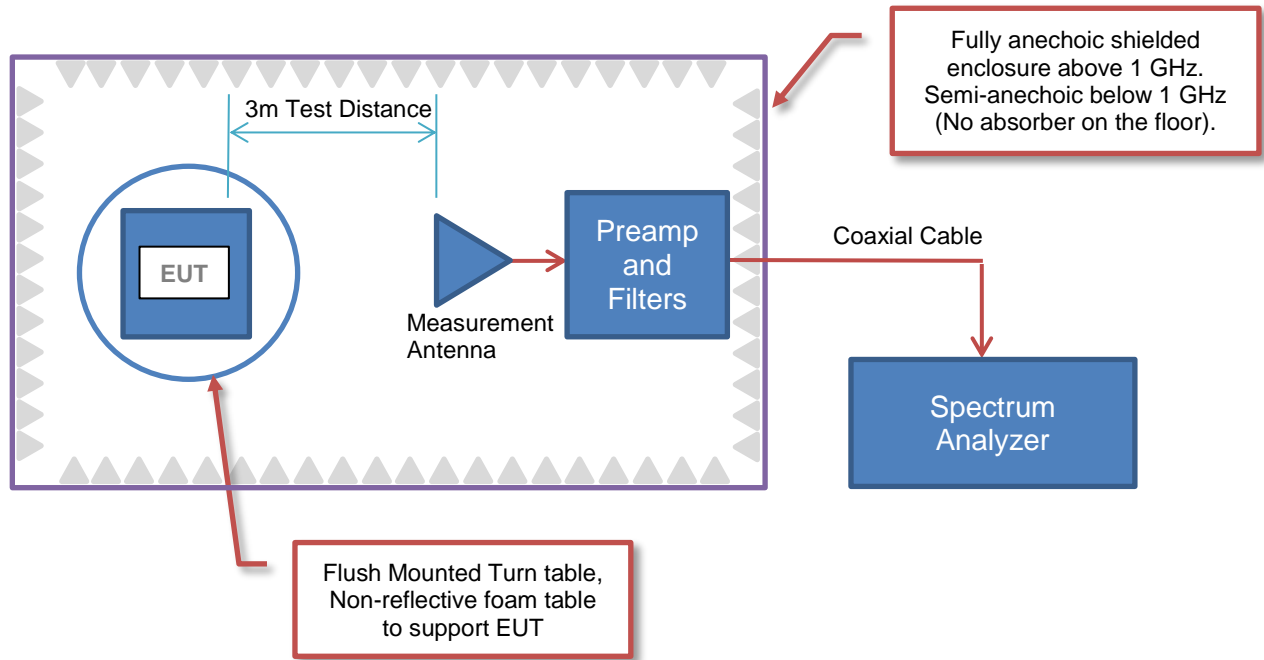


Sample Calculation (logarithmic units)

$$\begin{array}{r}
 \text{Measured Value} \\
 71.2
 \end{array}
 =
 \begin{array}{r}
 \text{Measured Level} \\
 42.6
 \end{array}
 +
 \begin{array}{r}
 \text{Reference Level Offset} \\
 28.6
 \end{array}$$

TEST SETUP BLOCK DIAGRAMS

Emissions Measurements



Sample Calculation (logarithmic units)

Radiated Emissions:

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

42.6 + 28.6 + 3.1 - 40.8 + 0.0 + 0.0 = 33.5

Conducted Emissions:

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

26.7 + 0.3 + 0.1 + 20.0 = 47.1

Radiated Power (ERP/EIRP) – Substitution Method:

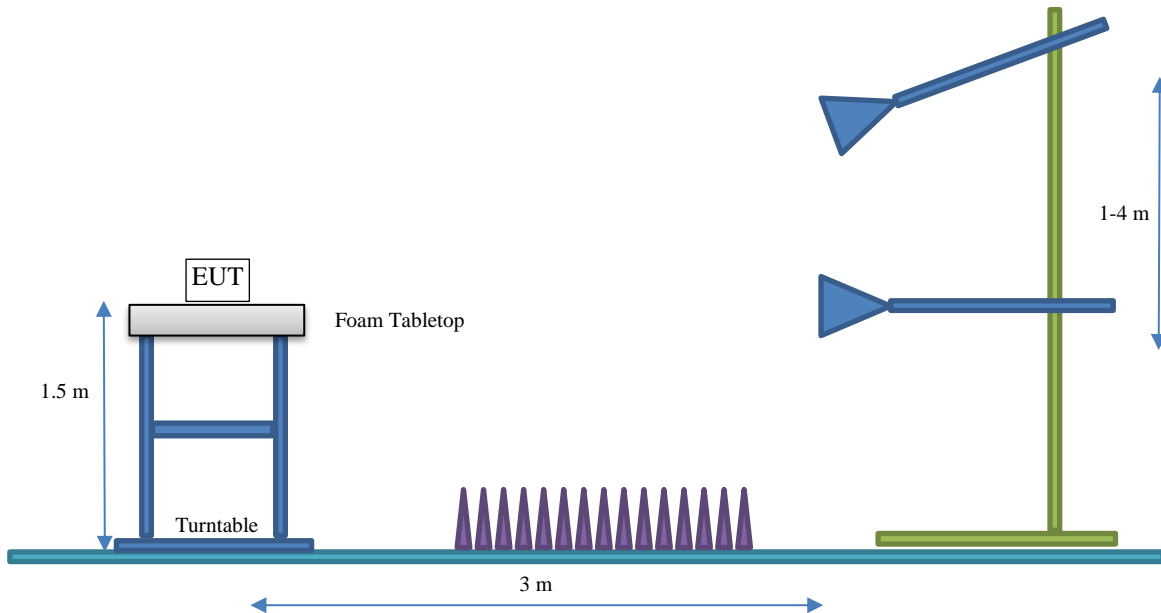
Measured Level into Substitution Antenna (Amplitude dBm)	Substitution Antenna Factor (dBi)	EIRP to ERP (if applicable)	Measured power (dBm ERP/EIRP)
10.0	6.0	2.15	13.9/16.0

10.0 + 6.0 - 2.15 = 13.9/16.0

TEST SETUP BLOCK DIAGRAMS

Bore Sighting (>1GHz)

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





PRODUCT DESCRIPTION

Client and Equipment under Test (EUT) Information

Company Name:	Emerson/Rosemount
Address:	6021 Innovation Boulevard
City, State, Zip:	Shakopee, MN 55379
Test Requested By:	Elizabeth Reiersen
EUT:	Wireless 775 THUM Adapter, Model: 775
First Date of Test:	July 26, 2023
Last Date of Test:	September 6, 2023
Receipt Date of Samples:	July 26, 2023
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:

The Emerson/Rosemount Wireless 775 THUM Adapter is a product which connects to and is powered by a wired HART device, and wirelessly transmits HART measurement and diagnostic information from itself and the wired device to a wireless gateway for analysis. The Emerson 775 uses an on-board radio to communicate wirelessly in a network utilizing a 2.4GHz WirelessHART protocol.

Testing Objective:

Seeking to demonstrate compliance in the 2400 - 2483.5 MHz band for operation under FCC 15.247:2024 and RSS-247 Issue 3:2023, RSS-Gen Issue 5:2018+A1:2019+A2:2021 specifications under technology category Other.

POWER SETTINGS AND ANTENNAS



The power settings, antenna gain value(s) and cable loss (if applicable) used for the testing contained in this report were provided by the customer and will affect the validity of the results. Element assumes no responsibility for the accuracy of this information. The power settings below reflect the maximum power that the EUT is allowed to transmit at during normal operation.

ANTENNA GAIN (dBi)

Type	Provided by:	Frequency Range (MHz)	Gain (dBi)
Dipole Antenna	Emerson/Rosemount	2400-2483.5	2

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

- Test software settings Test software/firmware installed on EUT: None
 Rated power settings

SETTINGS FOR ALL TESTS IN THIS REPORT

Modulation Types	Data Rate (kbps)	Position (if multiple channels)	Tolerance* (dB)	Power Setting (dBm)
QPSK	250	Low Channel, 2405 MHz	+0.5	8
		Mid Channel, 2440 MHz	+0.5	8
		High Channel, 2475 MHz	+0.5	8

*stated manufacturing tolerance

CONFIGURATIONS



Configuration EMPM0151-3

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
775	Emerson/Rosemount	775	003

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Laptop	Dell	Lattitude 7490	1FVF6S2
12V DC Supply (775)	None	CJ-1205	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Cable(775)	No	1.2 m	No	775	DC Adapter (775)
Ground Cable	No	2.3 m	No	775	GND
Programming Cable	No	2.4 m	No	Laptop	DC Supply leads

Configuration EMPM0151-4

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
775	Emerson/Rosemount	775	1234

Peripherals in Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
12V DC Supply (775)	None	CJ-1205	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Cable(775)	No	1.2 m	No	775	DC Adapter (775)
Ground Cable	No	2.3 m	No	775	GND

CONFIGURATIONS



Configuration EMPM0151-5

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
775	Emerson/Rosemount	775	1234

Peripherals in Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Power Supply	Agilent	E3649A	MY53376005

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Ground Cable	No	2.3 m	No	775	GND
AC Power	No	1.8 m	No	Power Supply	AC Mains
DC Power	No	1.2 m	No	Power Supply	775

MODIFICATIONS



Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2023-07-26	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.
2	2023-07-26	DTS Bandwidth (6 dB)	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	2023-07-26	Equivalent Isotropic Radiated Power (EIRP)	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	2023-07-26	Occupied Bandwidth (99%)	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	2023-07-26	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.
6	2023-07-26	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.
7	2023-07-26	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.
8	2023-07-31	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.
9	2023-09-06	Powerline Conducted Emissions (Receiver)	Tested as delivered to test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

POWERLINE CONDUCTED EMISSIONS



TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Per the standard, an insulating material was also added to ground plane between the EUT's power and remote I/O cables. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Receiver	Gauss Instruments	TDEMI 30M	ARS	2023-04-26	2024-04-26
Cable - Conducted Cable Assembly	Northwest EMC	MNC, HGN, TYK, VAE	MNCA	2023-03-09	2024-03-09
LISN	Solar Electronics	9252-50-R-24-BNC	LIY	2023-04-02	2024-04-02

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	3.2 dB	-3.2 dB

CONFIGURATIONS INVESTIGATED

EMPM0151-5

MODES INVESTIGATED

Continuous modulated, transmitting Mid Channel (2440 MHz)

POWERLINE CONDUCTED EMISSIONS



EUT:	Wireless 775 THUM Adapter, Model: 775	Work Order:	EMPM0151
Serial Number:	1234	Date:	2023-09-06
Customer:	Emerson/Rosemount	Temperature:	21.9°C
Attendees:	Bryan Robertson, Elizabeth Reiersen	Relative Humidity:	53.7%
Customer Project:	None	Bar. Pressure (PMSL):	1010 mb
Tested By:	Ko Vorasarn, James Morris	Job Site:	MN03
Power:	12VDC (See Comments)	Configuration:	EMPM0151-5

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2023	ANSI C63.10:2013
RSS-Gen Issue 5:2018+A1:2019+A2:2021	ANSI C63.10:2013

TEST PARAMETERS

Run #:	10	Line:	High Line	Add. Ext. Attenuation (dB):	0
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COMMENTS

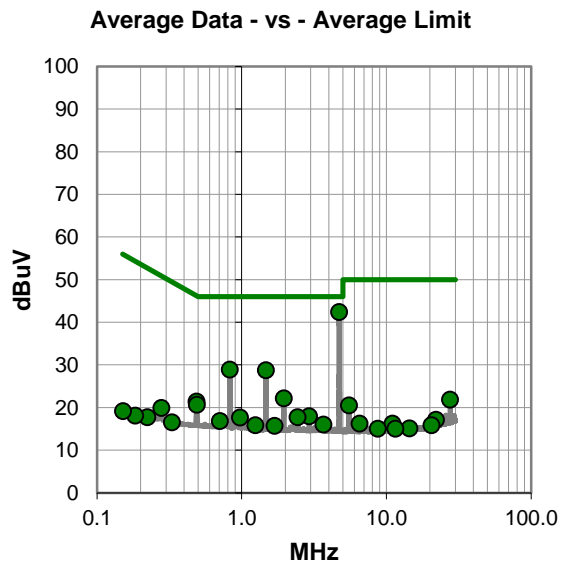
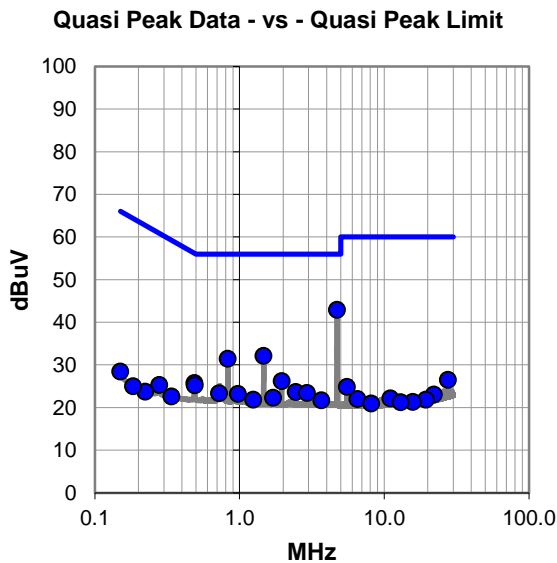
Tested AC mains input of linear DC power supply powered at 110VAC/60Hz

EUT OPERATING MODES

Continuous modulated, transmitting Mid Channel (2440 MHz)

DEVIATIONS FROM TEST STANDARD

None



POWERLINE CONDUCTED EMISSIONS



RESULTS - Run #10

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
4.720	22.7	20.2	42.9	56.0	-13.1
1.468	12.2	19.9	32.1	56.0	-23.9
0.829	11.6	19.8	31.4	56.0	-24.6
1.954	6.3	19.9	26.2	56.0	-29.8
0.489	6.0	19.7	25.7	56.2	-30.5
0.490	5.5	19.7	25.2	56.2	-31.0
2.445	3.5	20.1	23.6	56.0	-32.4
2.930	3.3	20.1	23.4	56.0	-32.6
0.722	3.5	19.8	23.3	56.0	-32.7
0.975	3.4	19.8	23.2	56.0	-32.8
27.605	3.7	22.8	26.5	60.0	-33.5
1.706	2.4	19.9	22.3	56.0	-33.7
1.244	2.0	19.8	21.8	56.0	-34.2
3.681	1.5	20.2	21.7	56.0	-34.3
5.521	4.6	20.2	24.8	60.0	-35.2
0.278	5.4	19.9	25.3	60.9	-35.6
0.338	2.9	19.7	22.6	59.3	-36.7
22.085	1.1	21.9	23.0	60.0	-37.0
0.150	8.1	20.3	28.4	66.0	-37.6
11.043	1.5	20.6	22.1	60.0	-37.9
6.526	1.8	20.2	22.0	60.0	-38.0
19.439	0.2	21.6	21.8	60.0	-38.2
15.803	0.2	21.1	21.3	60.0	-38.7
12.974	0.5	20.7	21.2	60.0	-38.8
0.223	3.7	20.0	23.7	62.7	-39.0

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
4.720	22.2	20.2	42.4	46.0	-3.6
0.831	9.1	19.8	28.9	46.0	-17.1
1.471	8.8	19.9	28.7	46.0	-17.3
1.954	2.2	19.9	22.1	46.0	-23.9
0.489	1.7	19.7	21.4	46.2	-24.8
0.490	0.9	19.7	20.6	46.2	-25.6
2.930	-2.2	20.1	17.9	46.0	-28.1
27.605	-1.0	22.8	21.8	50.0	-28.2
2.442	-2.4	20.1	17.7	46.0	-28.3
0.975	-2.2	19.8	17.6	46.0	-28.4
0.708	-3.0	19.8	16.8	46.0	-29.2
5.521	0.3	20.2	20.5	50.0	-29.5
3.681	-4.2	20.2	16.0	46.0	-30.0
1.246	-4.0	19.8	15.8	46.0	-30.2
1.685	-4.2	19.9	15.7	46.0	-30.3
0.278	0.0	19.9	19.9	50.9	-31.0
22.085	-4.8	21.9	17.1	50.0	-32.9
0.330	-3.2	19.7	16.5	49.5	-33.0
6.525	-4.0	20.2	16.2	50.0	-33.8
11.043	-4.4	20.6	16.2	50.0	-33.8
20.579	-5.9	21.7	15.8	50.0	-34.2
14.496	-5.9	21.0	15.1	50.0	-34.9
0.223	-2.3	20.0	17.7	52.7	-35.0
8.734	-5.5	20.5	15.0	50.0	-35.0
11.543	-5.7	20.7	15.0	50.0	-35.0

CONCLUSION

Pass

Tested By

POWERLINE CONDUCTED EMISSIONS



EUT:	Wireless 775 THUM Adapter, Model: 775	Work Order:	EMPM0151
Serial Number:	1234	Date:	2023-09-06
Customer:	Emerson/Rosemount	Temperature:	21.9°C
Attendees:	Bryan Robertson, Elizabeth Reiersen	Relative Humidity:	53.7%
Customer Project:	None	Bar. Pressure (PMSL):	1010 mb
Tested By:	Ko Vorasarn, James Morris	Job Site:	MN03
Power:	12VDC (See Comments)	Configuration:	EMPM0151-5

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2023	ANSI C63.10:2013
RSS-Gen Issue 5:2018+A1:2019+A2:2021	ANSI C63.10:2013

TEST PARAMETERS

Run #:	11	Line:	Neutral	Add. Ext. Attenuation (dB):	0
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COMMENTS

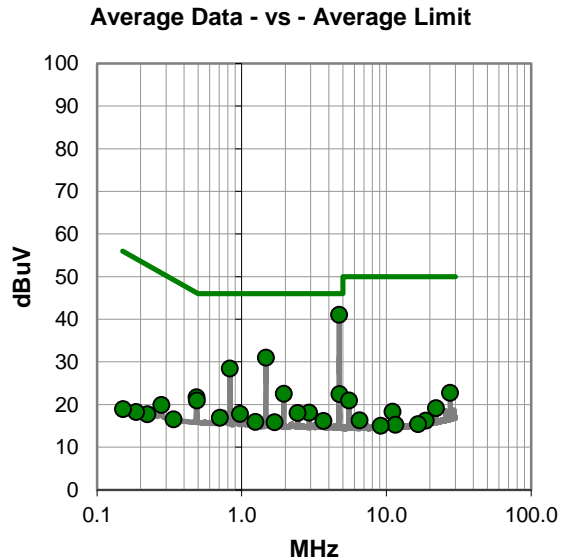
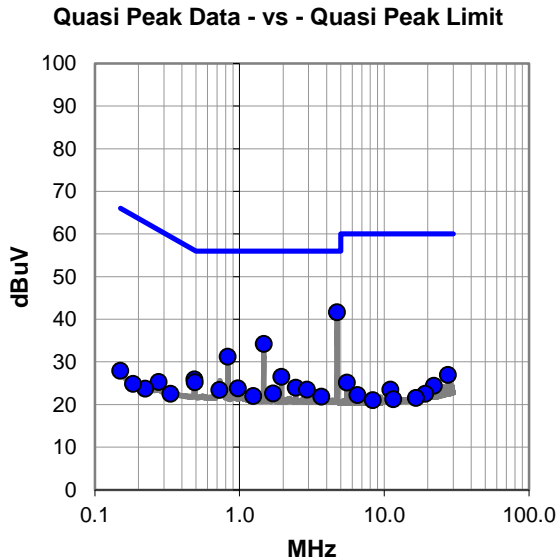
Tested AC mains input of linear DC power supply powered at 110VAC/60Hz

EUT OPERATING MODES

Continuous modulated, transmitting Mid Channel (2440 MHz)

DEVIATIONS FROM TEST STANDARD

None



POWERLINE CONDUCTED EMISSIONS



RESULTS - Run #11

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
4.717	21.4	20.2	41.6	56.0	-14.4
1.470	14.3	19.9	34.2	56.0	-21.8
0.829	11.4	19.8	31.2	56.0	-24.8
1.952	6.6	19.9	26.5	56.0	-29.5
0.487	6.2	19.7	25.9	56.2	-30.3
0.490	5.5	19.7	25.2	56.2	-31.0
2.443	3.8	20.1	23.9	56.0	-32.1
0.975	4.0	19.8	23.8	56.0	-32.2
2.928	3.4	20.1	23.5	56.0	-32.5
0.725	3.6	19.8	23.4	56.0	-32.6
27.605	4.1	22.8	26.9	60.0	-33.1
1.708	2.7	19.9	22.6	56.0	-33.4
1.247	2.2	19.8	22.0	56.0	-34.0
3.679	1.6	20.2	21.8	56.0	-34.2
5.521	4.9	20.2	25.1	60.0	-34.9
0.277	5.4	19.9	25.3	60.9	-35.6
22.083	2.5	21.9	24.4	60.0	-35.6
11.043	2.9	20.6	23.5	60.0	-36.5
0.333	2.8	19.7	22.5	59.4	-36.9
19.274	0.9	21.6	22.5	60.0	-37.5
6.525	2.0	20.2	22.2	60.0	-37.8
0.150	7.6	20.3	27.9	66.0	-38.1
16.566	0.3	21.2	21.5	60.0	-38.5
11.543	0.5	20.7	21.2	60.0	-38.8
0.223	3.7	20.0	23.7	62.7	-39.0

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
4.717	20.8	20.2	41.0	46.0	-5.0
1.470	11.1	19.9	31.0	46.0	-15.0
0.831	8.6	19.8	28.4	46.0	-17.6
1.954	2.6	19.9	22.5	46.0	-23.5
4.741	2.2	20.2	22.4	46.0	-23.6
0.489	2.0	19.7	21.7	46.2	-24.5
0.490	1.2	19.7	20.9	46.2	-25.3
27.605	-0.1	22.8	22.7	50.0	-27.3
2.930	-2.0	20.1	18.1	46.0	-27.9
2.442	-2.1	20.1	18.0	46.0	-28.0
0.977	-2.0	19.8	17.8	46.0	-28.2
5.521	0.7	20.2	20.9	50.0	-29.1
0.708	-2.9	19.8	16.9	46.0	-29.1
3.681	-4.1	20.2	16.1	46.0	-29.9
1.247	-3.9	19.8	15.9	46.0	-30.1
1.685	-4.1	19.9	15.8	46.0	-30.2
22.083	-2.8	21.9	19.1	50.0	-30.9
0.278	0.0	19.9	19.9	50.9	-31.0
11.043	-2.3	20.6	18.3	50.0	-31.7
0.338	-3.2	19.7	16.5	49.3	-32.8
6.525	-3.9	20.2	16.3	50.0	-33.7
18.772	-5.2	21.4	16.2	50.0	-33.8
16.563	-5.8	21.2	15.4	50.0	-34.6
11.545	-5.5	20.7	15.2	50.0	-34.8
0.223	-2.3	20.0	17.7	52.7	-35.0

CONCLUSION

Pass

Tested By

SPURIOUS RADIATED EMISSIONS

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 within 2 MHz of the allowable band may have been taken using the integration method from ANSI C63.10 clause 11.13.3. This procedure uses the channel power feature of the spectrum analyzer to integrate the power of the emission within a 1 MHz bandwidth.

Where the radio test software does not provide for a duty cycle at continuous transmit conditions (> 98%) and the RMS (power average) measurements were made across the on and off times of the EUT transmissions, a duty cycle correction is added to the measurements using the formula of $10 \cdot \log(1/dc)$.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Antenna - Double Ridge	ETS Lindgren	3115	AIP	2022-07-20	2024-07-20
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	2023-01-14	2024-01-14
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVT	2023-01-14	2024-01-14
Attenuator	Fairview Microwave	SA18E-20	TWZ	2022-08-27	2023-08-27
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAQ	2023-02-06	2024-02-06
Filter - High Pass	Micro-Tronics	HPM50111	LFN	2022-08-27	2023-08-27
Antenna - Standard Gain	ETS Lindgren	3160-07	AXP	NCR	NCR
Cable	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	2023-01-14	2024-01-14
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	2023-01-14	2024-01-14
Antenna - Standard Gain	ETS Lindgren	3160-08	AIQ	NCR	NCR
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	2023-01-14	2024-01-14
Antenna - Standard Gain	ETS Lindgren	3160-09	AHG	NCR	NCR
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNP	2022-09-10	2023-09-10
Amplifier - Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	2022-09-10	2023-09-10
Antenna - Biconilog	ETS Lindgren	3142D	AXO	2021-09-14	2023-09-14
Cable	ESM Cable Corp.	Bilog Cables	MNH	2022-10-08	2023-10-08
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AVO	2022-10-08	2023-10-08
Filter - Low Pass	Micro-Tronics	LPM50004	LFK	2022-08-27	2023-08-27

SPURIOUS RADIATED EMISSIONS

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	5.2 dB	-5.2 dB

FREQUENCY RANGE INVESTIGATED

30 MHz TO 26000 MHz

POWER INVESTIGATED

12VDC

CONFIGURATIONS INVESTIGATED

EMPM0151-4

MODES INVESTIGATED

Transmitting continuously, modulated, on low channel 2405MHz and high channel 2475MHz (channels tested independently)
Transmitting continuously, modulated, on low channel 2405MHz, mid channel 2440MHz, and high channel 2475MHz (channels tested independently)

SPURIOUS RADIATED EMISSIONS



EUT:	Wireless 775 THUM Adapter, Model: 775	Work Order:	EMPM0151
Serial Number:	1234	Date:	2023-07-31
Customer:	Emerson/Rosemount	Temperature:	23.3°C
Attendees:	Bryan Robertson	Relative Humidity:	52.6%
Customer Project:	None	Bar. Pressure (PMSL):	1021 mb
Tested By:	Marcelo Aguayo	Job Site:	MN05
Power:	12VDC	Configuration:	EMPM0151-4

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.247:2023	ANSI C63.10:2013
RSS-247 Issue 2:2017	ANSI C63.10:2013

TEST PARAMETERS

Run #:	12	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)
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COMMENTS

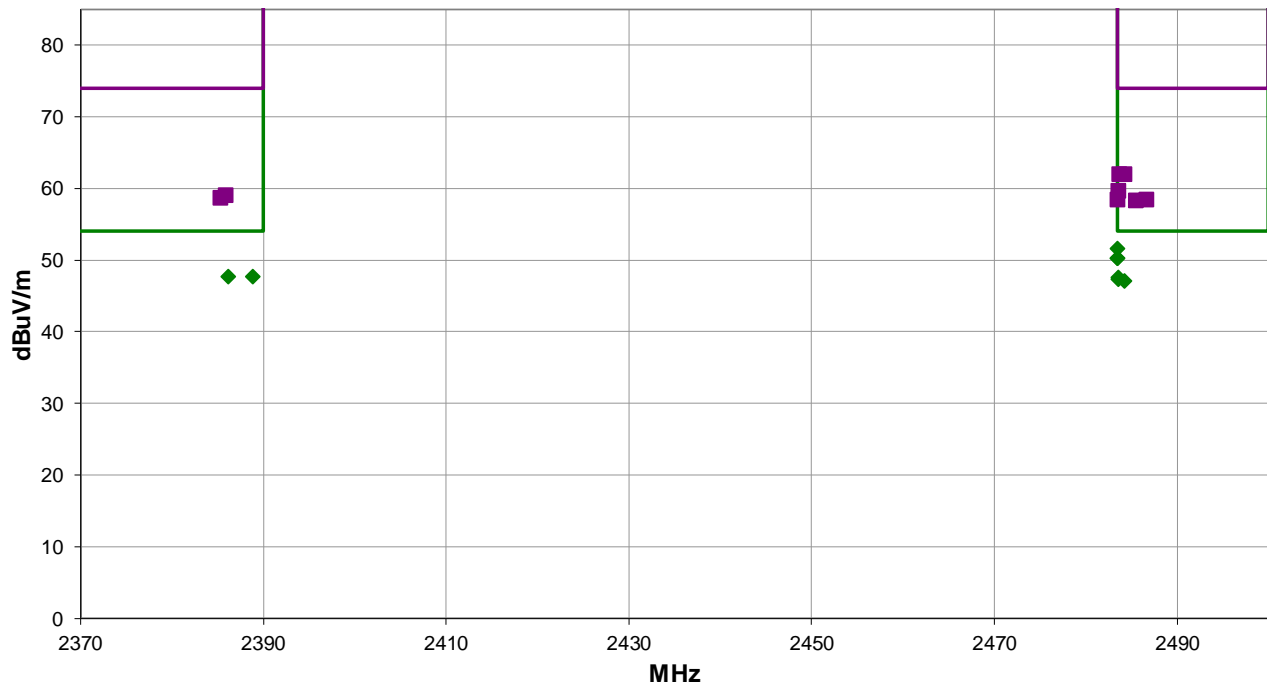
100% Duty Cycle

EUT OPERATING MODES

Transmitting continuously, modulated, on low channel 2405MHz and high channel 2475MHz (channels tested independently)

DEVIATIONS FROM TEST STANDARD

None



Run #: 12

■ PK ◆ AV ● QP

SPURIOUS RADIATED EMISSIONS

RESULTS - Run #12

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2483.533	35.8	-4.2	1.1	206.0	3.0	20.0	Horz	AV	0.0	51.6	54.0	-2.4	EUT Horz, High Ch
2483.500	34.4	-4.2	1.4	245.0	3.0	20.0	Horz	AV	0.0	50.2	54.0	-3.8	EUT On Side, High Ch
2483.500	34.4	-4.2	1.5	209.0	3.0	20.0	Vert	AV	0.0	50.2	54.0	-3.8	EUT Vert, High Ch
2386.150	31.9	-4.3	1.7	185.9	3.0	20.0	Horz	AV	0.0	47.6	54.0	-6.4	EUT Vert, Low Ch
2388.867	31.9	-4.3	1.5	318.0	3.0	20.0	Vert	AV	0.0	47.6	54.0	-6.4	EUT Vert, Low Ch
2483.650	31.7	-4.2	1.5	80.0	3.0	20.0	Vert	AV	0.0	47.5	54.0	-6.5	EUT On Side, High Ch
2483.567	31.5	-4.2	2.2	207.0	3.0	20.0	Vert	AV	0.0	47.3	54.0	-6.7	EUT Horz, High Ch
2484.308	31.2	-4.2	1.5	296.0	3.0	20.0	Horz	AV	0.0	47.0	54.0	-7.0	EUT Vert, High Ch
2484.283	46.2	-4.2	1.1	206.0	3.0	20.0	Horz	PK	0.0	62.0	74.0	-12.0	EUT Horz, High Ch
2483.667	46.2	-4.2	1.0	207.0	3.0	20.0	Horz	PK	0.0	62.0	74.0	-12.0	EUT On Side, High Ch
2483.658	43.8	-4.2	1.5	209.0	3.0	20.0	Vert	PK	0.0	59.6	74.0	-14.4	EUT Vert, High Ch
2385.867	43.3	-4.3	1.5	318.0	3.0	20.0	Vert	PK	0.0	59.0	74.0	-15.0	EUT Vert, Low Ch
2385.333	42.9	-4.3	1.7	185.9	3.0	20.0	Horz	PK	0.0	58.6	74.0	-15.4	EUT Vert, Low Ch
2483.508	42.6	-4.2	2.2	207.0	3.0	20.0	Vert	PK	0.0	58.4	74.0	-15.6	EUT Horz, High Ch
2486.642	42.6	-4.2	1.5	296.0	3.0	20.0	Horz	PK	0.0	58.4	74.0	-15.6	EUT Vert, High Ch
2485.508	42.5	-4.2	1.5	80.0	3.0	20.0	Vert	PK	0.0	58.3	74.0	-15.7	EUT On Side, High Ch

CONCLUSION

Pass



Tested By

SPURIOUS RADIATED EMISSIONS



EUT:	Wireless 775 THUM Adapter, Model: 775	Work Order:	EMPM0151
Serial Number:	1234	Date:	2023-07-31
Customer:	Emerson/Rosemount	Temperature:	23.3°C
Attendees:	Bryan Robertson	Relative Humidity:	52.6%
Customer Project:	None	Bar. Pressure (PMSL):	1021 mb
Tested By:	Marcelo Aguayo	Job Site:	MN05
Power:	12VDC	Configuration:	EMPM0151-4

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.247:2023	ANSI C63.10:2013
RSS-247 Issue 2:2017	ANSI C63.10:2013

TEST PARAMETERS

Run #:	13	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)
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COMMENTS

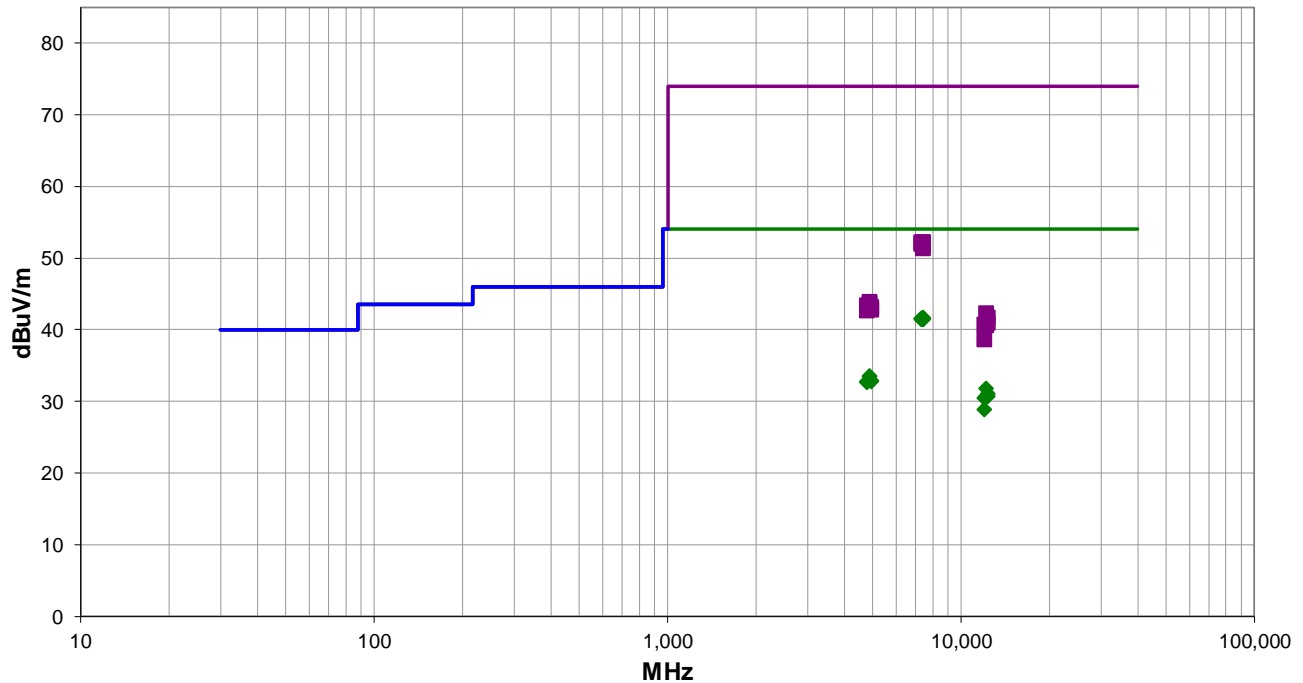
100% Duty Cycle

EUT OPERATING MODES

Transmitting continuously, modulated, on low channel 2405MHz, mid channel 2440MHz, and high channel 2475MHz (channels tested independently)

DEVIATIONS FROM TEST STANDARD

None



Run #: 13

■ PK ◆ AV ● QP

SPURIOUS RADIATED EMISSIONS

RESULTS - Run #13

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7423.492	29.7	11.9	1.5	16.0	3.0	0.0	Vert	AV	0.0	41.6	54.0	-12.4	EUT Vert, High Ch
7426.467	29.6	11.9	1.5	19.9	3.0	0.0	Vert	AV	0.0	41.5	54.0	-12.5	EUT On Side, High Ch
7426.942	29.6	11.9	1.8	19.0	3.0	0.0	Vert	AV	0.0	41.5	54.0	-12.5	EUT Vert, High Ch
7319.000	29.8	11.7	1.5	311.0	3.0	0.0	Vert	AV	0.0	41.5	54.0	-12.5	EUT Vert, Mid Ch
7424.883	29.5	11.9	2.7	34.0	3.0	0.0	Horz	AV	0.0	41.4	54.0	-12.6	EUT Vert, High Ch
7426.150	29.5	11.9	1.5	95.9	3.0	0.0	Horz	AV	0.0	41.4	54.0	-12.6	EUT On Side, High Ch
7424.667	29.5	11.9	2.7	145.9	3.0	0.0	Horz	AV	0.0	41.4	54.0	-12.6	EUT Vert, High Ch
7319.250	29.7	11.7	1.7	48.9	3.0	0.0	Horz	AV	0.0	41.4	54.0	-12.6	EUT Vert, Mid Ch
4880.667	30.0	3.4	1.5	199.0	3.0	0.0	Horz	AV	0.0	33.4	54.0	-20.6	EUT Vert, Mid Ch
4881.183	30.0	3.4	1.5	55.0	3.0	0.0	Vert	AV	0.0	33.4	54.0	-20.6	EUT Vert, Mid Ch
4948.050	29.3	3.5	3.6	63.0	3.0	0.0	Horz	AV	0.0	32.8	54.0	-21.2	EUT Vert, High Ch
4948.308	29.2	3.5	1.5	117.9	3.0	0.0	Vert	AV	0.0	32.7	54.0	-21.3	EUT Vert, High Ch
4808.492	29.4	3.3	3.3	181.9	3.0	0.0	Horz	AV	0.0	32.7	54.0	-21.3	EUT Vert, Low Ch
4809.058	29.3	3.3	1.5	1.0	3.0	0.0	Vert	AV	0.0	32.6	54.0	-21.4	EUT Vert, Low Ch
7426.467	40.3	11.9	2.7	145.9	3.0	0.0	Horz	PK	0.0	52.2	74.0	-21.8	EUT Vert, High Ch
7425.950	40.2	11.9	1.5	19.9	3.0	0.0	Vert	PK	0.0	52.1	74.0	-21.9	EUT On Side, High Ch
7321.508	40.4	11.7	1.7	48.9	3.0	0.0	Horz	PK	0.0	52.1	74.0	-21.9	EUT Vert, Mid Ch
7422.642	40.0	11.9	2.7	34.0	3.0	0.0	Horz	PK	0.0	51.9	74.0	-22.1	EUT Vert, High Ch
7424.042	40.0	11.9	1.5	16.0	3.0	0.0	Vert	PK	0.0	51.9	74.0	-22.1	EUT Vert, High Ch
7318.750	40.2	11.7	1.5	311.0	3.0	0.0	Vert	PK	0.0	51.9	74.0	-22.1	EUT Vert, Mid Ch
12197.660	30.0	1.8	1.4	243.0	3.0	0.0	Vert	AV	0.0	31.8	54.0	-22.2	EUT Vert, Mid Ch
7427.150	40.0	11.8	1.5	95.9	3.0	0.0	Horz	PK	0.0	51.8	74.0	-22.2	EUT On Side, High Ch
7426.475	39.4	11.9	1.8	19.0	3.0	0.0	Vert	PK	0.0	51.3	74.0	-22.7	EUT Vert, High Ch
12373.880	29.2	1.8	1.4	164.9	3.0	0.0	Vert	AV	0.0	31.0	54.0	-23.0	EUT Vert, High Ch
12372.530	28.9	1.8	1.5	225.0	3.0	0.0	Horz	AV	0.0	30.7	54.0	-23.3	EUT Vert, High Ch
12198.570	28.8	1.8	1.7	360.0	3.0	0.0	Horz	AV	0.0	30.6	54.0	-23.4	EUT Vert, Mid Ch
12022.670	30.0	0.4	1.5	110.9	3.0	0.0	Vert	AV	0.0	30.4	54.0	-23.6	EUT Vert, Low Ch
12027.280	28.4	0.4	2.3	261.0	3.0	0.0	Horz	AV	0.0	28.8	54.0	-25.2	EUT Vert, Low Ch
4878.717	40.5	3.4	1.5	55.0	3.0	0.0	Vert	PK	0.0	43.9	74.0	-30.1	EUT Vert, Mid Ch
4877.808	40.2	3.4	1.5	199.0	3.0	0.0	Horz	PK	0.0	43.6	74.0	-30.4	EUT Vert, Mid Ch
4809.442	40.1	3.3	3.3	181.9	3.0	0.0	Horz	PK	0.0	43.4	74.0	-30.6	EUT Vert, Low Ch
4948.400	39.6	3.5	3.6	63.0	3.0	0.0	Horz	PK	0.0	43.1	74.0	-30.9	EUT Vert, High Ch
4950.542	39.3	3.5	1.5	117.9	3.0	0.0	Vert	PK	0.0	42.8	74.0	-31.2	EUT Vert, High Ch
4809.083	39.3	3.3	1.5	1.0	3.0	0.0	Vert	PK	0.0	42.6	74.0	-31.4	EUT Vert, Low Ch
12199.530	40.4	1.8	1.4	243.0	3.0	0.0	Vert	PK	0.0	42.2	74.0	-31.8	EUT Vert, Mid Ch
12376.420	39.8	1.8	1.4	164.9	3.0	0.0	Vert	PK	0.0	41.6	74.0	-32.4	EUT Vert, High Ch
12376.260	39.1	1.8	1.5	225.0	3.0	0.0	Horz	PK	0.0	40.9	74.0	-33.1	EUT Vert, High Ch
12026.440	40.3	0.4	1.5	110.9	3.0	0.0	Vert	PK	0.0	40.7	74.0	-33.3	EUT Vert, Low Ch
12198.980	38.7	1.8	1.7	360.0	3.0	0.0	Horz	PK	0.0	40.5	74.0	-33.5	EUT Vert, Mid Ch
12025.640	38.2	0.4	2.3	261.0	3.0	0.0	Horz	PK	0.0	38.6	74.0	-35.4	EUT Vert, Low Ch

SPURIOUS RADIATED EMISSIONS



CONCLUSION
Pass

A handwritten signature in blue ink is positioned above a horizontal line. The signature is cursive and appears to be 'M. J. Jones'.

Tested By

OCCUPIED BANDWIDTH (99%)



element

XMit 2023.02.14.0

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	Fairview Microwave	SA4014-20	AQI	2022-09-10	2023-09-10
Block - DC	Fairview Microwave	SD3379	AMZ	2022-11-06	2023-11-06
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2022-09-10	2023-09-10
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2023-05-01	2024-05-01
Generator - Signal	Keysight	N5182B	TET	2021-08-27	2024-08-27

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The 99% occupied bandwidth was measured with the EUT configured for continuous modulated operation.

Per ANSI C63.10:2013, 6.9.3, the spectrum analyzer was configured as follows:

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

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

The spectrum analyzer occupied bandwidth measurement function was used to sum the power of the transmission in linear terms to obtain the 99% bandwidth.

OCCUPIED BANDWIDTH (99%)



TelTx 2022.06.03.0 XMI 2023.02.14.0

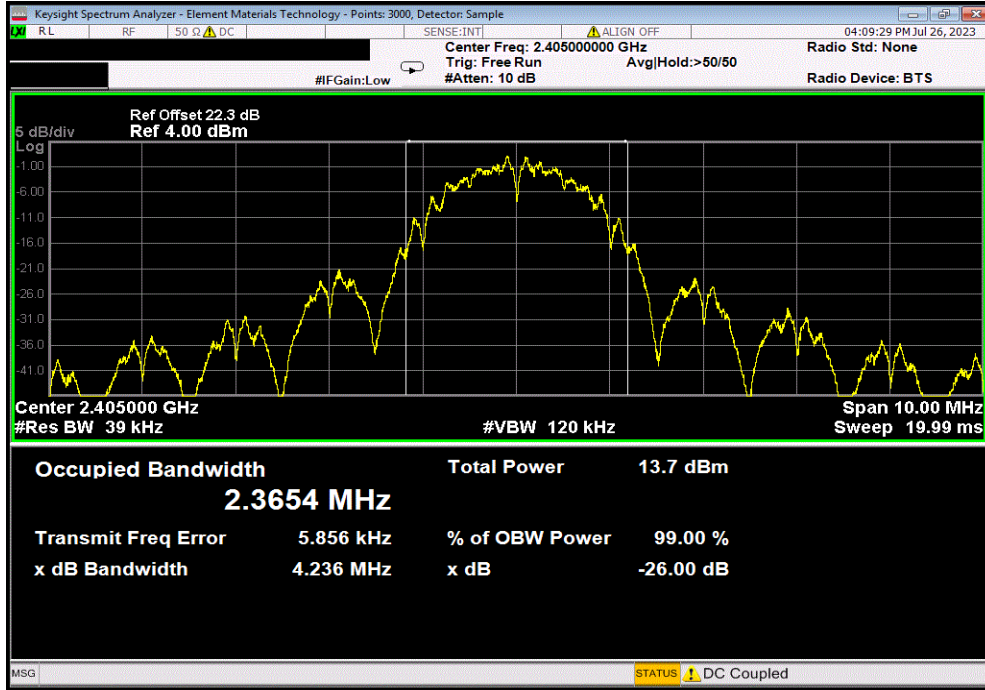
EUT: Wireless 775 THUM Adapter, Model: 775		Work Order: EMPM0151	
Serial Number: 003		Date: 07/26/2023	
Customer: Emerson/Rosemount		Temperature: 23.2°C	
Attendees: Bryan Robertson		Humidity: 57.6%	
Project: None		Barometric Pres.: 1008 mbar	
Tested by: Christopher Heintzelman	Power: 12VDC	Job Site: MN11	
TEST SPECIFICATIONS			
FCC 15.247:2023		Test Method	
RSS-Gen Issue 5:2018+A1:2019+A2:2021		ANSI C63.10:2013	
		ANSI C63.10:2013	
COMMENTS			
Reference level offset includes measurement cable, attenuator, DC block, and 0.75 dB loss on the customer's soldered patch cable, as declared by the customer.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	EMPM0151-3	Signature <i>Christopher Heintzelman</i>	
		Value	Limit
Single Channel Modulated			
	Low Channel, 2405 MHz	2.365 MHz	N/A
	Mid Channel, 2440 MHz	2.397 MHz	N/A
	High Channel, 2475 MHz	2.437 MHz	N/A
			Result
			N/A
			N/A
			N/A

OCCUPIED BANDWIDTH (99%)

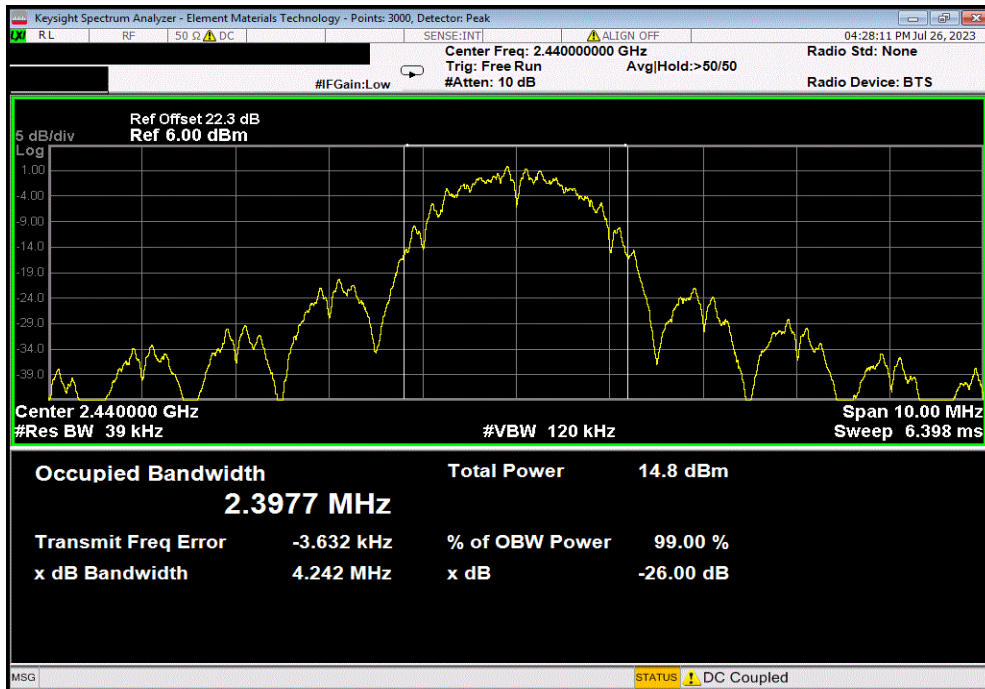


TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, Low Channel, 2405 MHz						
			Value	Limit	Result	
			2.365 MHz	N/A	N/A	



Single Channel Modulated, Mid Channel, 2440 MHz						
			Value	Limit	Result	
			2.397 MHz	N/A	N/A	

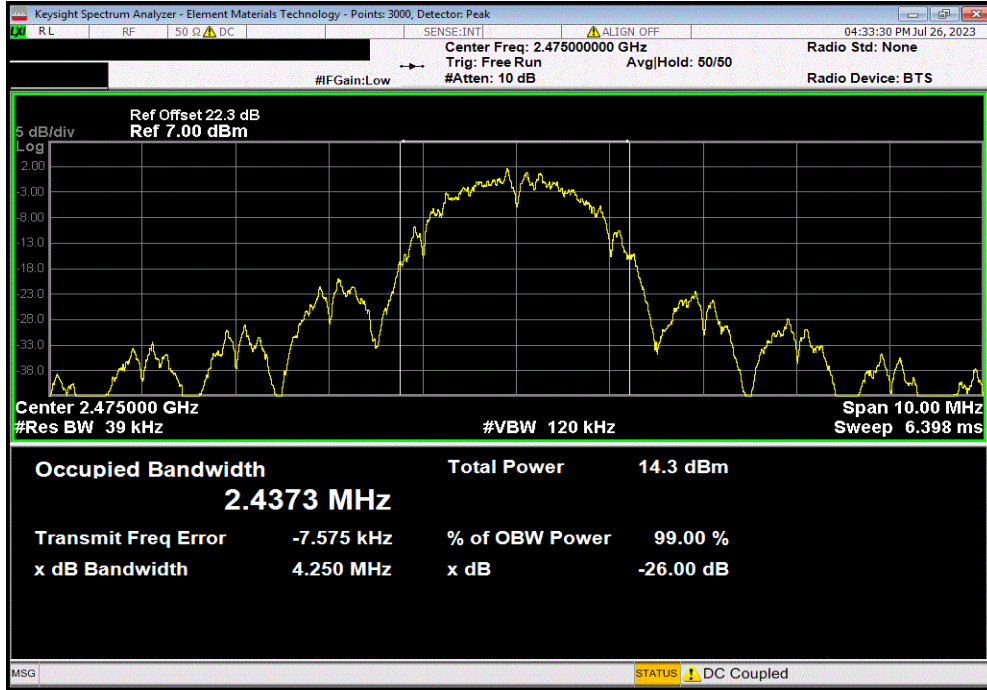


OCCUPIED BANDWIDTH (99%)



TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, High Channel, 2475 MHz			
	Value	Limit	Result
	2.437 MHz	N/A	N/A



DUTY CYCLE



TEST DESCRIPTION

The Duty Cycle (x) were measured for each of the EUT operating modes. 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.

The EUT operates at 100% Duty Cycle in test mode. Operational Duty Cycle will not exceed 20.706% in 100ms and 19.09% in 1s.

DTS BANDWIDTH (6 dB)



XMit 2023.02.14.0

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	Fairview Microwave	SA4014-20	AQI	2022-09-10	2023-09-10
Block - DC	Fairview Microwave	SD3379	AMZ	2022-11-06	2023-11-06
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2022-09-10	2023-09-10
Generator - Signal	Keysight	N5182B	TET	2021-08-27	2024-08-27
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2023-05-01	2024-05-01

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 DTS bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

DTS BANDWIDTH (6 dB)



TelTx 2022.06.03.0 XMI 2023.02.14.0

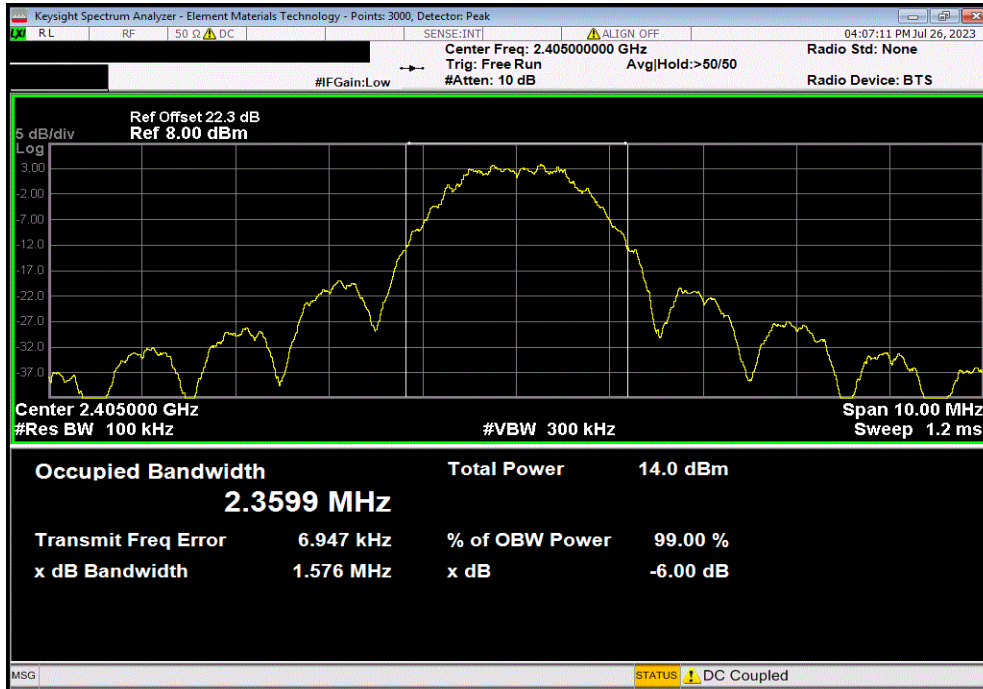
EUT: Wireless 775 THUM Adapter, Model: 775		Work Order: EMPM0151	
Serial Number: 003		Date: 07/26/2023	
Customer: Emerson/Rosemount		Temperature: 23.3°C	
Attendees: Bryan Robertson		Humidity: 57.8%	
Project: None		Barometric Pres.: 1008 mbar	
Tested by: Christopher Heintzelman	Power: 12VDC	Job Site: MN11	
TEST SPECIFICATIONS			
FCC 15.247:2023		Test Method	
RSS-247 Issue 2:2017		ANSI C63.10:2013	
		ANSI C63.10:2013	
COMMENTS			
Reference level offset includes measurement cable, attenuator, DC block, and 0.75 dB loss on the customer's soldered patch cable, as declared by the customer.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	EMPM0151-3	Signature <i>Christopher Heintzelman</i>	
		Value	Limit (>)
Single Channel Modulated			
	Low Channel, 2405 MHz	1.576 MHz	500 kHz
	Mid Channel, 2440 MHz	1.563 MHz	500 kHz
	High Channel, 2475 MHz	1.585 MHz	500 kHz
			Pass
			Pass
			Pass

DTS BANDWIDTH (6 dB)

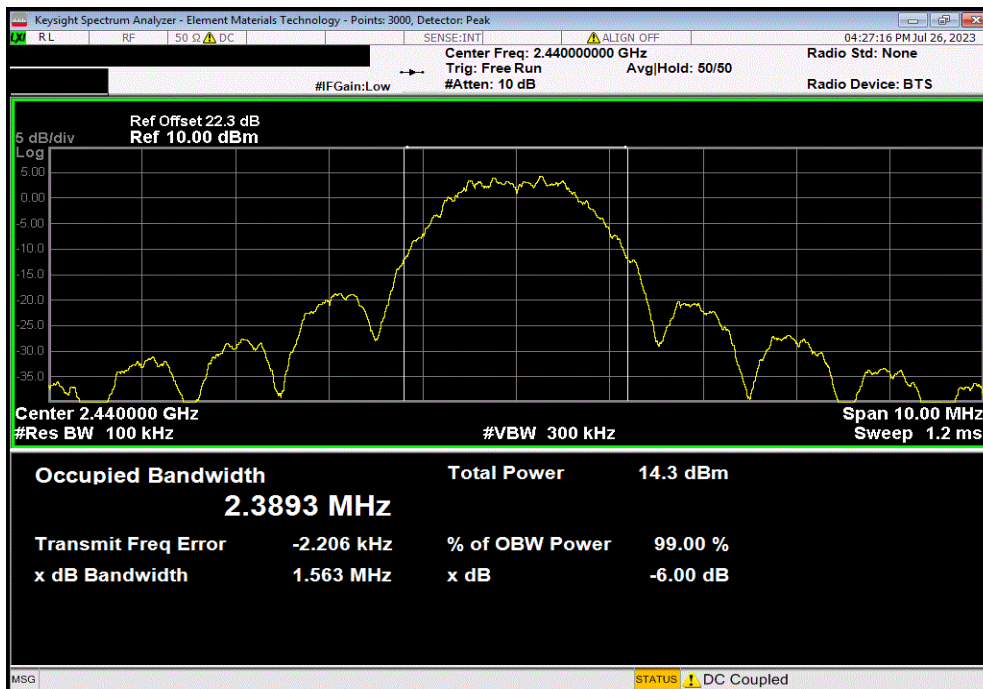


TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, Low Channel, 2405 MHz						
				Value	Limit	Result
					(>)	
				1.576 MHz	500 kHz	Pass



Single Channel Modulated, Mid Channel, 2440 MHz						
				Value	Limit	Result
					(>)	
				1.563 MHz	500 kHz	Pass

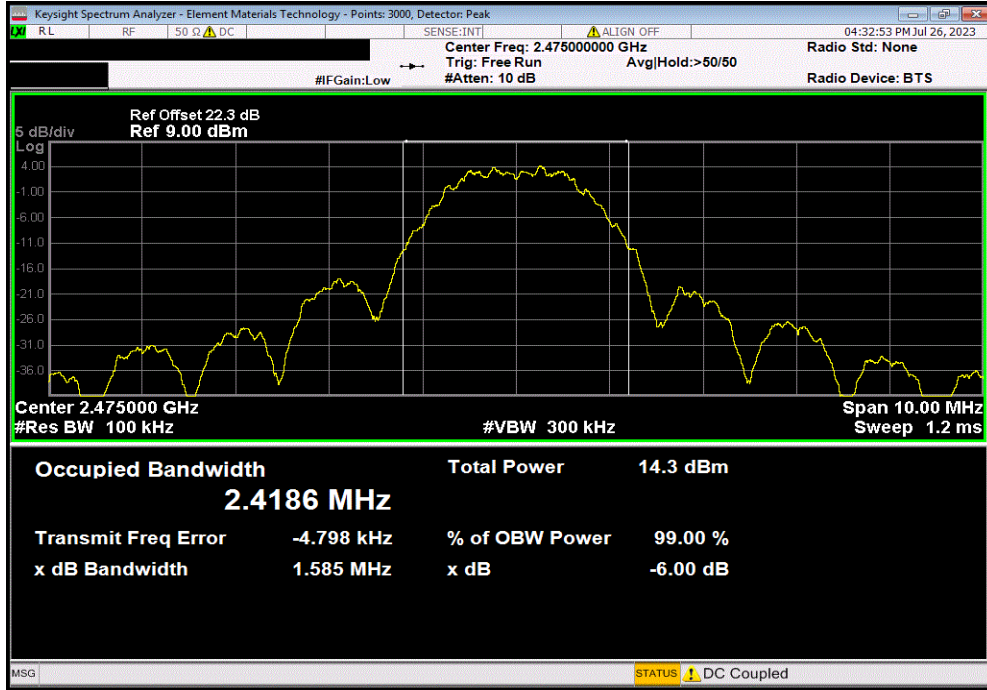


DTS BANDWIDTH (6 dB)



TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, High Channel, 2475 MHz		
Value	Limit	Result
1.585 MHz	(>) 500 kHz	Pass



OUTPUT POWER



XMIT 2023.02.14.0

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	Fairview Microwave	SA4014-20	AQI	2022-09-10	2023-09-10
Block - DC	Fairview Microwave	SD3379	AMZ	2022-11-06	2023-11-06
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2022-09-10	2023-09-10
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2023-05-01	2024-05-01
Generator - Signal	Keysight	N5182B	TET	2021-08-27	2024-08-27

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.

OUTPUT POWER



TstTx 2022.06.03.0 XMI 2023.02.14.0

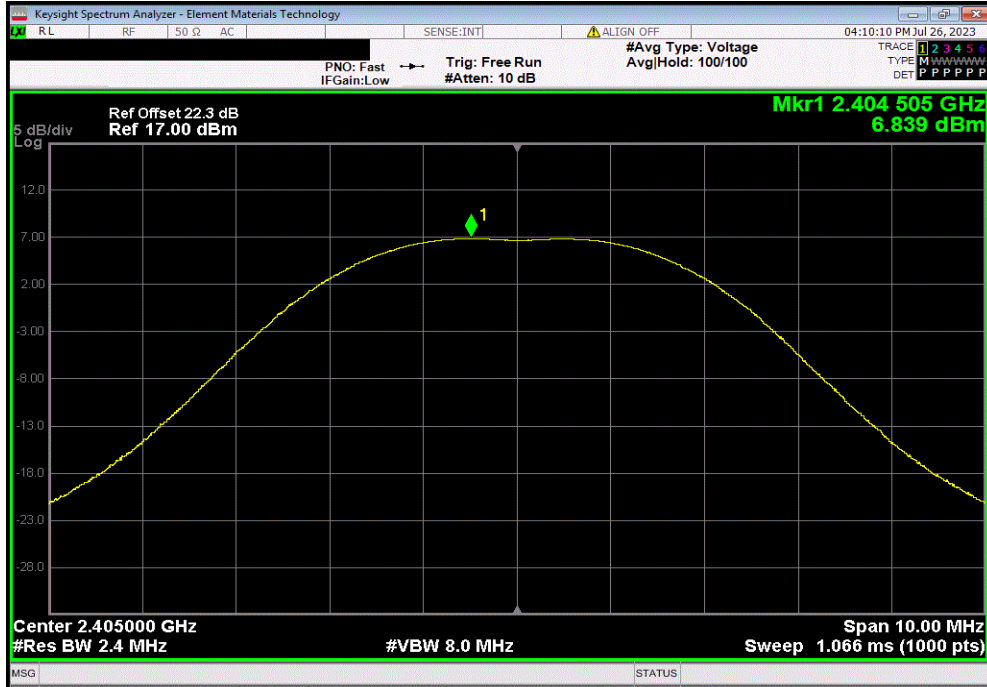
EUT: Wireless 775 THUM Adapter, Model: 775		Work Order: EMPM0151	
Serial Number: 003		Date: 07/26/2023	
Customer: Emerson/Rosemount		Temperature: 23.3°C	
Attendees: Bryan Robertson		Humidity: 57.5%	
Project: None		Barometric Pres.: 1008 mbar	
Tested by: Christopher Heintzelman	Power: 12VDC	Job Site: MN11	
TEST SPECIFICATIONS			
FCC 15.247:2023		Test Method	
RSS-247 Issue 2:2017		ANSI C63.10:2013	
		ANSI C63.10:2013	
COMMENTS			
Reference level offset includes measurement cable, attenuator, DC block, and 0.75 dB loss on the customer's soldered patch cable, as declared by the customer.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	EMPM0151-3	Signature <i>Christopher Heintzelman</i>	
		Out Pwr (dBm)	Limit (dBm) Result
Single Channel Modulated			
	Low Channel, 2405 MHz	6.839	30 Pass
	Mid Channel, 2440 MHz	7.228	30 Pass
	High Channel, 2475 MHz	7.02	30 Pass

OUTPUT POWER

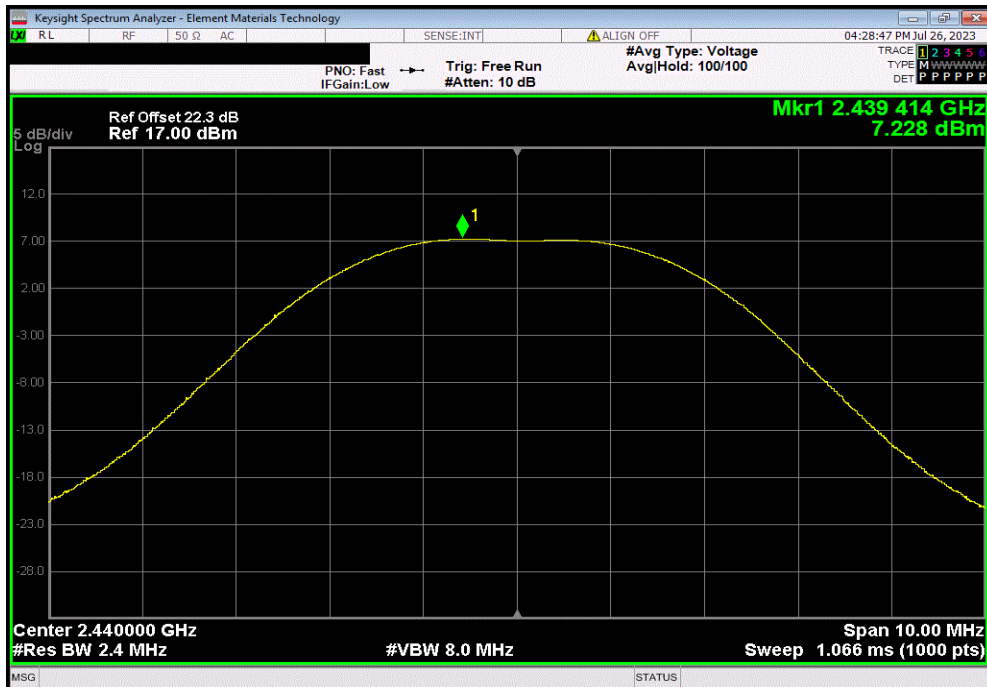


TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, Low Channel, 2405 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				6.839	30	Pass



Single Channel Modulated, Mid Channel, 2440 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				7.228	30	Pass

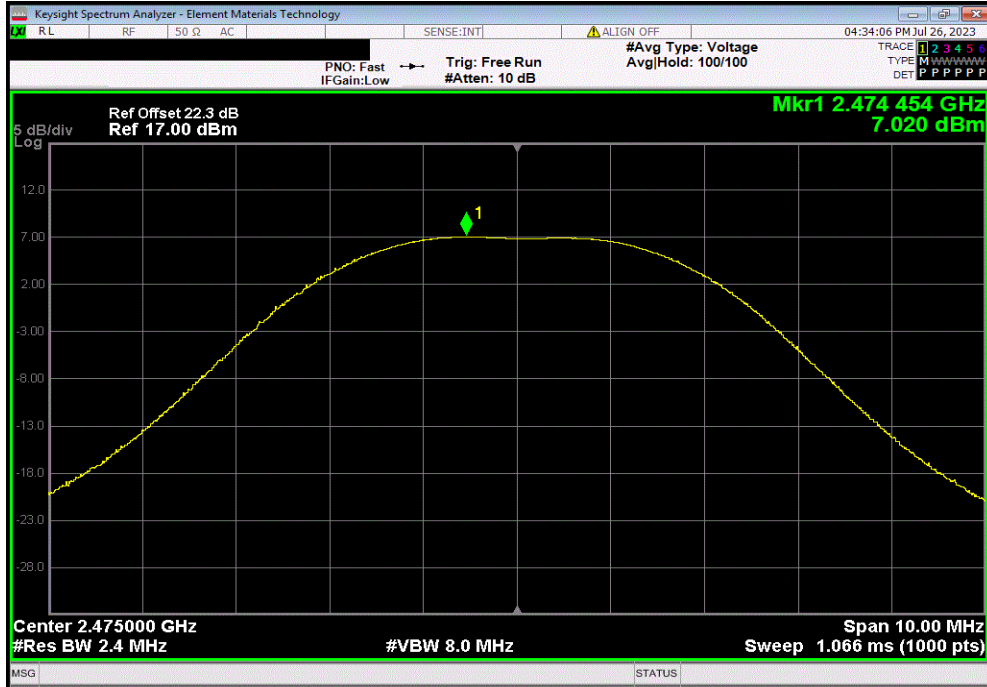


OUTPUT POWER



TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, High Channel, 2475 MHz						
				Out Pwr (dBm)	Limit (dBm)	Result
				7.02	30	Pass



EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



XMIT 2023.02.14.0

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	Fairview Microwave	SA4014-20	AQI	2022-09-10	2023-09-10
Block - DC	Fairview Microwave	SD3379	AMZ	2022-11-06	2023-11-06
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2022-09-10	2023-09-10
Generator - Signal	Keysight	N5182B	TET	2021-08-27	2024-08-27
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2023-05-01	2024-05-01

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.

Equivalent Isotropic Radiated Power (EIRP) = Max Measured Power + Antenna gain (dBi)

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



TstTx 2022.06.03.0 XMI 2023.02.14.0

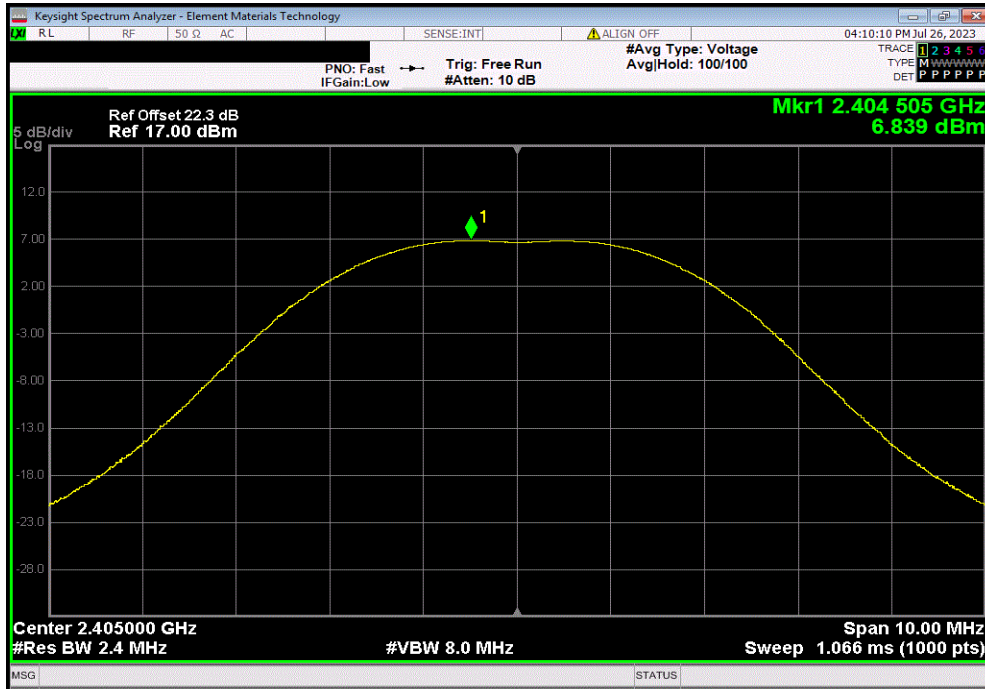
EUT: Wireless 775 THUM Adapter, Model: 775		Work Order: EMPM0151				
Serial Number: 003		Date: 07/26/2023				
Customer: Emerson/Rosemount		Temperature: 23.3°C				
Attendees: Bryan Robertson		Humidity: 57.7%				
Project: None		Barometric Pres.: 1008 mbar				
Tested by: Christopher Heintzelman	Power: 12VDC	Job Site: MN11				
TEST SPECIFICATIONS						
		Test Method				
FCC 15.247:2023	ANSI C63.10:2013					
RSS-247 Issue 2:2017	ANSI C63.10:2013					
COMMENTS						
Reference level offset includes measurement cable, attenuator, DC block, and 0.75 dB loss on the customer's soldered patch cable, as declared by the customer.						
DEVIATIONS FROM TEST STANDARD						
None						
Configuration #	EMPM0151-3	Signature <i>Christopher Heintzelman</i>				
		Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
Single Channel Modulated						
	Low Channel, 2405 MHz	6.839	2	8.839	36	Pass
	Mid Channel, 2440 MHz	7.228	2	9.228	36	Pass
	High Channel, 2475 MHz	7.02	2	9.02	36	Pass

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

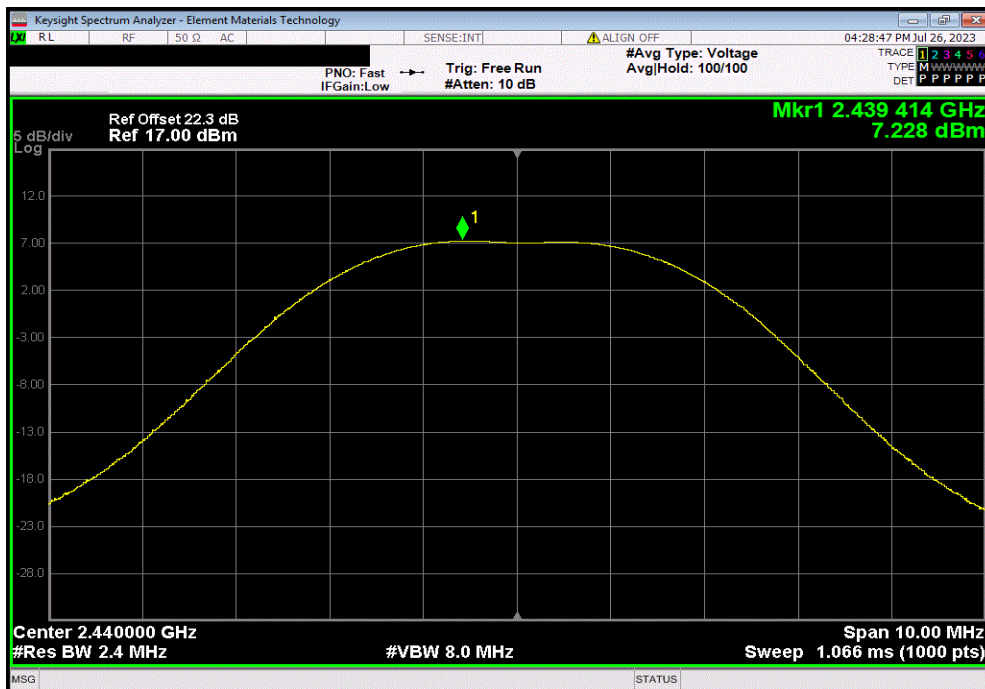


TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, Low Channel, 2405 MHz						
	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
	6.839	2	8.839	36	Pass	



Single Channel Modulated, Mid Channel, 2440 MHz						
	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
	7.228	2	9.228	36	Pass	

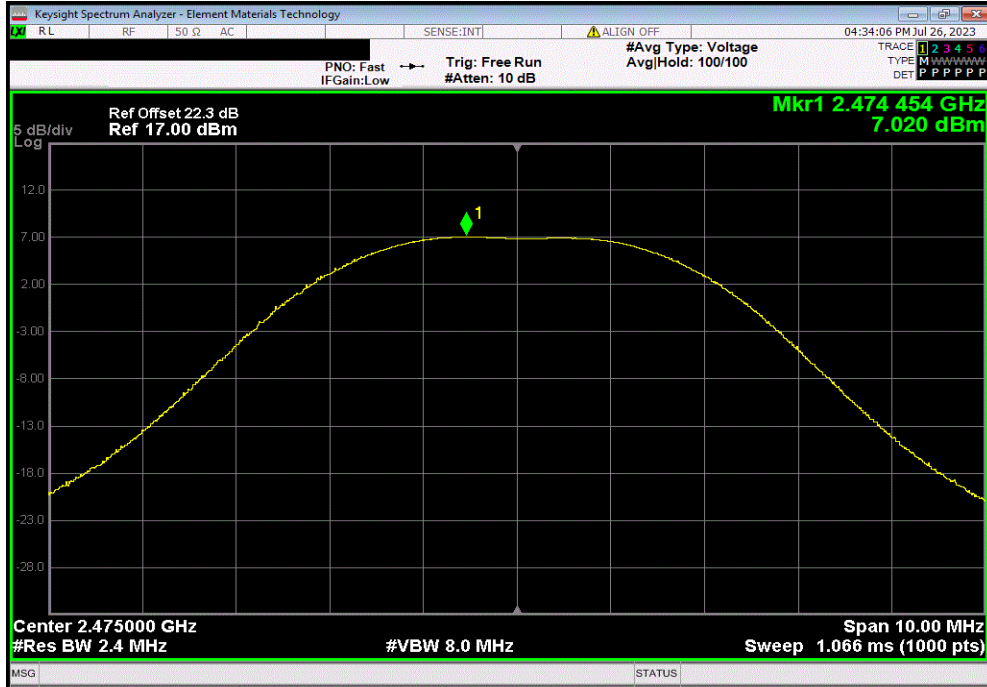


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, High Channel, 2475 MHz					
Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result	
7.02	2	9.02	36	Pass	



POWER SPECTRAL DENSITY



XMit 2023.02.14.0

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	Fairview Microwave	SA4014-20	AQI	2022-09-10	2023-09-10
Block - DC	Fairview Microwave	SD3379	AMZ	2022-11-06	2023-11-06
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2022-09-10	2023-09-10
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2023-05-01	2024-05-01
Generator - Signal	Keysight	N5182B	TET	2021-08-27	2024-08-27

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



TstTx 2022.06.03.0 XMI 2023.02.14.0

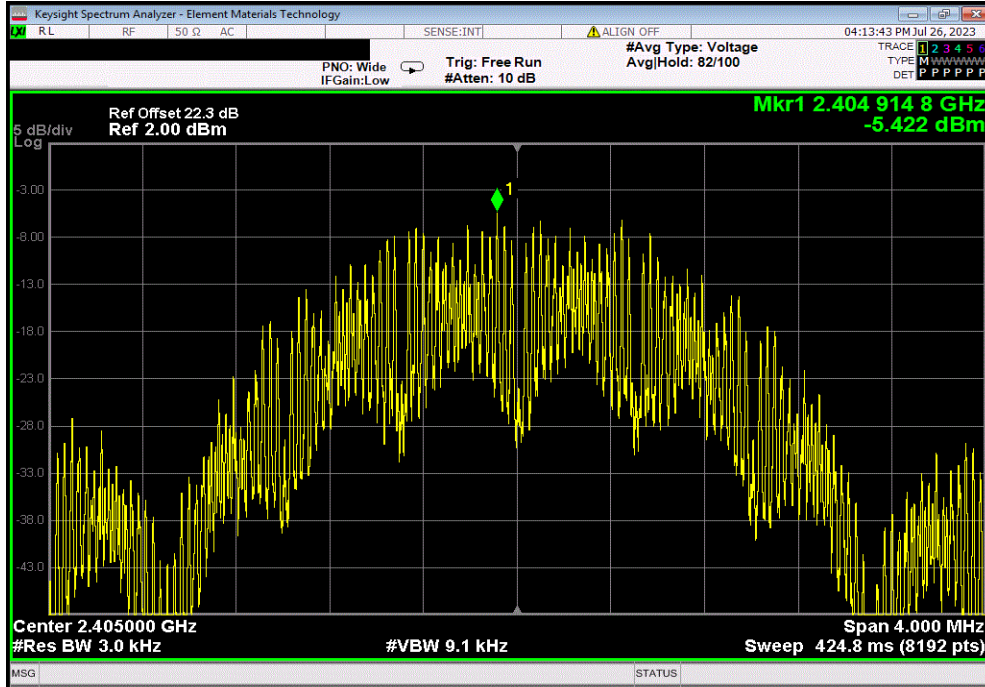
EUT: Wireless 775 THUM Adapter, Model: 775		Work Order: EMPM0151		
Serial Number: 003		Date: 07/26/2023		
Customer: Emerson/Rosemount		Temperature: 23.3°C		
Attendees: Bryan Robertson		Humidity: 57.6%		
Project: None		Barometric Pres.: 1008 mbar		
Tested by: Christopher Heintzelman	Power: 12VDC	Job Site: MN11		
TEST SPECIFICATIONS				
FCC 15.247:2023		Test Method		
RSS-247 Issue 2:2017		ANSI C63.10:2013		
		ANSI C63.10:2013		
COMMENTS				
Reference level offset includes measurement cable, attenuator, DC block, and 0.75 dB loss on the customer's soldered patch cable, as declared by the customer.				
DEVIATIONS FROM TEST STANDARD				
None				
Configuration #	EMPM0151-3	Signature <i>Christopher Heintzelman</i>		
		Value	Limit	
		dBm/3kHz	< dBm/3kHz	
Single Channel Modulated			Results	
	Low Channel, 2405 MHz	-5.422	8	Pass
	Mid Channel, 2440 MHz	-5.825	8	Pass
	High Channel, 2475 MHz	-5.307	8	Pass

POWER SPECTRAL DENSITY

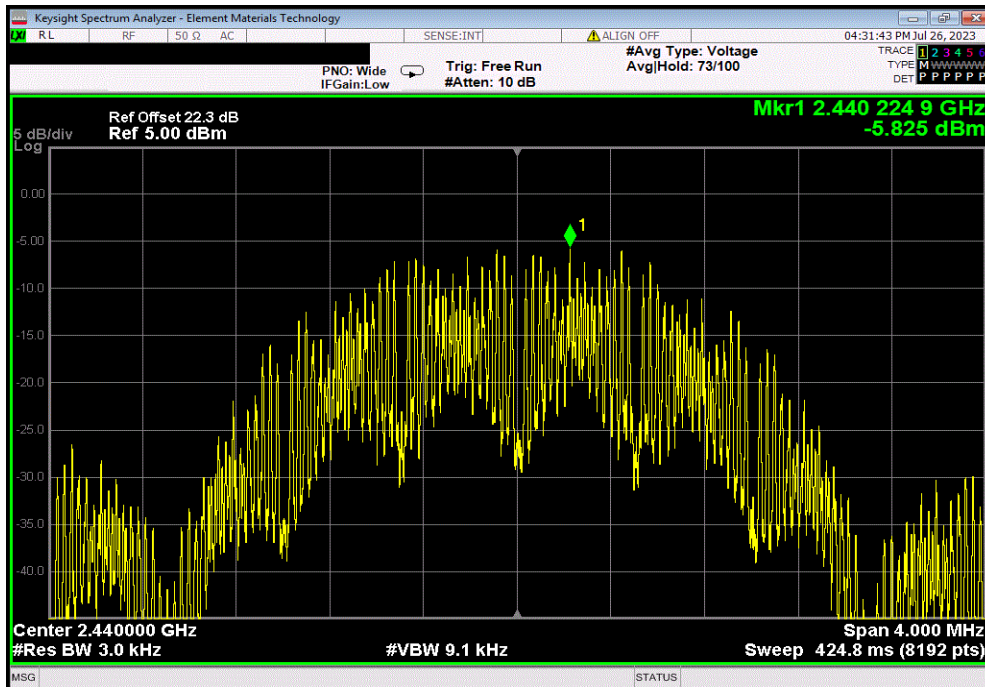


TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, Low Channel, 2405 MHz			
Value	Limit	Results	
dBm/3kHz	< dBm/3kHz		
-5.422	8	Pass	



Single Channel Modulated, Mid Channel, 2440 MHz			
Value	Limit	Results	
dBm/3kHz	< dBm/3kHz		
-5.825	8	Pass	

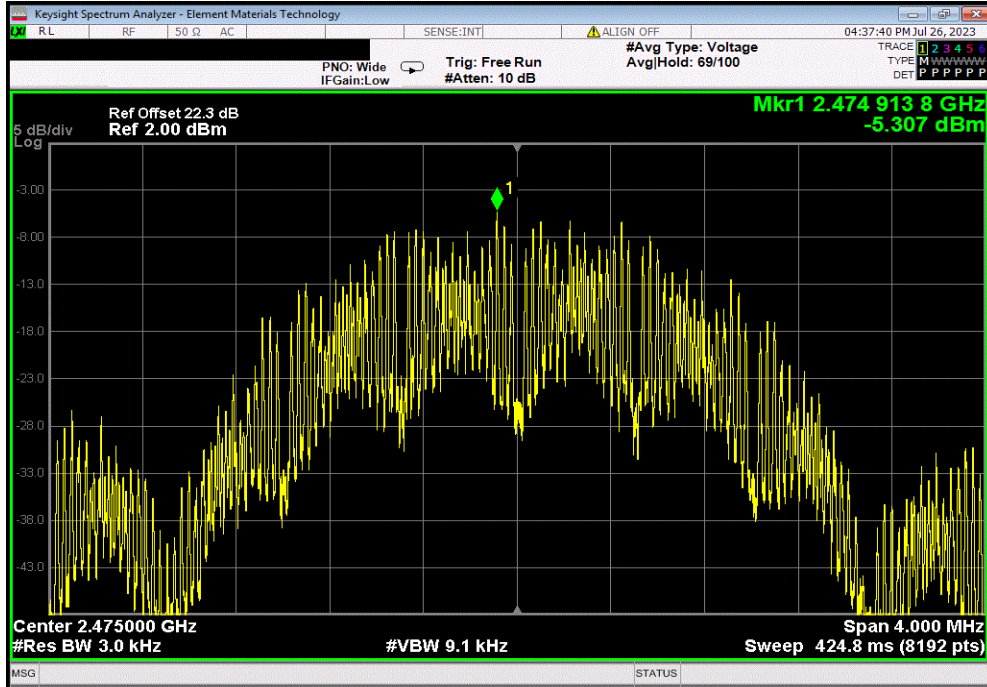


POWER SPECTRAL DENSITY



TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, High Channel, 2475 MHz						
		Value	Limit	Results		
		dBm/3kHz	< dBm/3kHz			
		-5.307	8	Pass		





XMIT 2023.02.14.0

BAND EDGE COMPLIANCE

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
Block - DC	Fairview Microwave	SD3379	AMZ	2022-11-06	2023-11-06
Attenuator	Fairview Microwave	SA4014-20	AQI	2022-09-10	2023-09-10
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2022-09-10	2023-09-10
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2023-05-01	2024-05-01
Generator - Signal	Keysight	N5182B	TET	2021-08-27	2024-08-27

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



TstTx 2022.06.03.0 XMI 2023.02.14.0

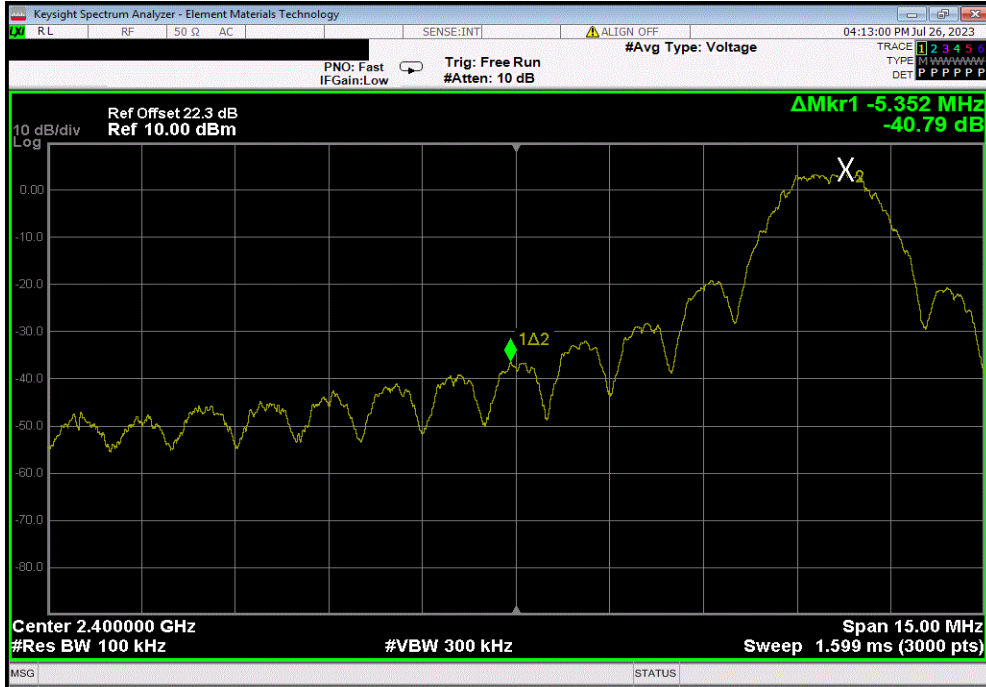
EUT: Wireless 775 THUM Adapter, Model: 775		Work Order: EMPM0151	
Serial Number: 003		Date: 07/26/2023	
Customer: Emerson/Rosemount		Temperature: 23.2°C	
Attendees: Bryan Robertson		Humidity: 57.5%	
Project: None		Barometric Pres.: 1008 mbar	
Tested by: Christopher Heintzelman	Power: 12VDC	Job Site: MN11	
TEST SPECIFICATIONS			
FCC 15.247:2023		Test Method	
RSS-247 Issue 2:2017		ANSI C63.10:2013	
		ANSI C63.10:2013	
COMMENTS			
Reference level offset includes measurement cable, attenuator, DC block, and 0.75 dB loss on the customer's soldered patch cable, as declared by the customer.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	EMPM0151-3	Signature <i>Christopher Heintzelman</i>	
		Value (dBc)	Limit ≤ (dBc) Result
Single Channel Modulated			
	Low Channel, 2405 MHz	-40.79	-20 Pass
	High Channel, 2475 MHz	-48.6	-20 Pass

BAND EDGE COMPLIANCE

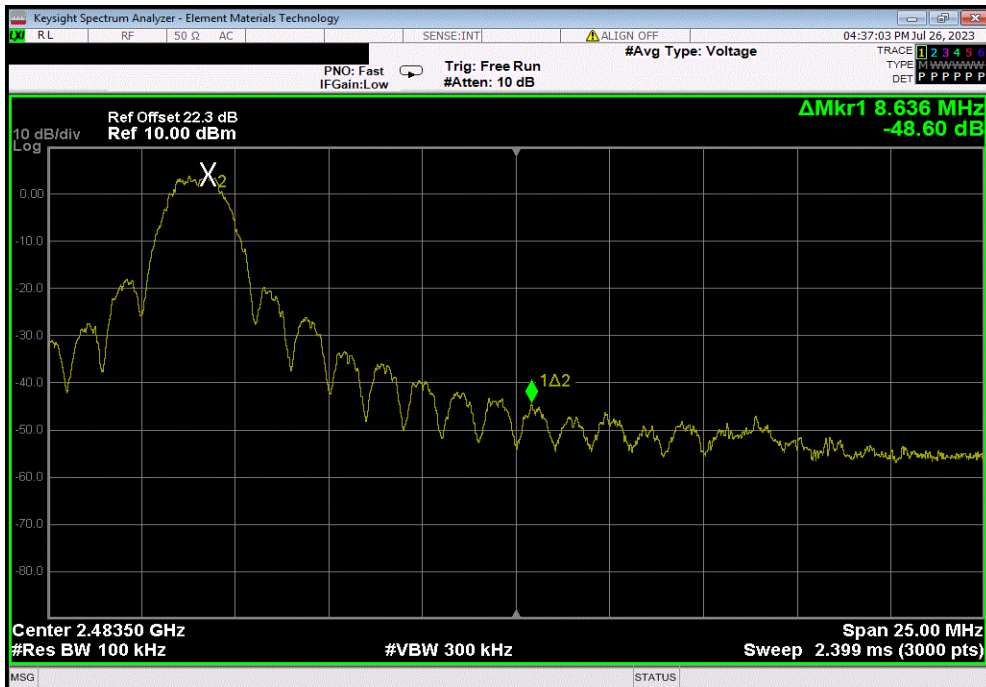


TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, Low Channel, 2405 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-40.79	-20	Pass



Single Channel Modulated, High Channel, 2475 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-48.6	-20	Pass





SPURIOUS CONDUCTED EMISSIONS

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
Attenuator	Fairview Microwave	SA4014-20	AQJ	2022-09-10	2023-09-10
Block - DC	Fairview Microwave	SD3379	AMZ	2022-11-06	2023-11-06
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2022-09-10	2023-09-10
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2023-05-01	2024-05-01
Generator - Signal	Keysight	N5182B	TET	2021-08-27	2024-08-27

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 fundamental was measured with a 100 kHz resolution bandwidth and the highest value was recorded. The rest of the spectrum was then measured with a 100 kHz resolution bandwidth and the highest value was found. The difference between the value found on the fundamental and the rest of the spectrum was compared against the limit to determine compliance.

The reference level offset for the fundamental screen capture was based on a measured value of the loss between the spectrum analyzer and the EUT which was verified at the time of test. The remaining screen capture(s) use an internal transducer factor on the analyzer to correct the displayed trace based on the cable loss over frequency. The reference level offset for the additional screen capture(s) is then based on the expected attenuator value and any other losses.

Fundamental Offset = Ref Lvl Offset showing measured composite factor of all losses

Remaining Screen capture(s) Offset = "Internal" cable loss factor not shown on screen capture + Ref Lvl Offset showing expected attenuator value and any other losses

SPURIOUS CONDUCTED EMISSIONS



TstTx 2022.06.03.0 XMI 2023.02.14.0

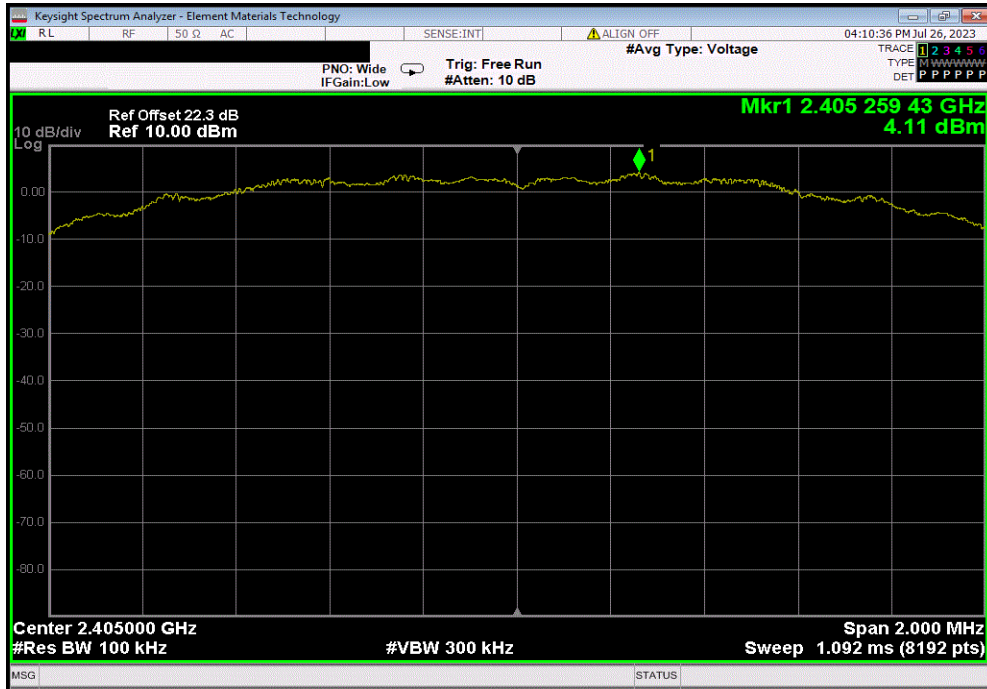
EUT: Wireless 775 THUM Adapter, Model: 775		Work Order: EMPM0151				
Serial Number: 003		Date: 07/26/2023				
Customer: Emerson/Rosemount		Temperature: 23.3°C				
Attendees: Bryan Robertson		Humidity: 58%				
Project: None		Barometric Pres.: 1008 mbar				
Tested by: Christopher Heintzelman		Power: 12VDC				
		Job Site: MN11				
TEST SPECIFICATIONS						
FCC 15.247:2023		Test Method				
RSS-247 Issue 2:2017		ANSI C63.10:2013				
		ANSI C63.10:2013				
COMMENTS						
Reference level offset includes measurement cable, attenuator, DC block, and 0.75 dB loss on the customer's soldered patch cable, as declared by the customer.						
DEVIATIONS FROM TEST STANDARD						
Reference level offset includes measurement cable, attenuator DC patch, and 0.75dB loss on the customer's soldered patch cable, as declared by the customer.						
Configuration #	EMPM0151-3	Signature <i>Christopher Heintzelman</i>				
		Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Single Channel Modulated						
	Low Channel, 2405 MHz	Fundamental	2405.26	N/A	N/A	N/A
	Low Channel, 2405 MHz	30 MHz - 12.5 GHz	2394.29	-52.54	-20	Pass
	Low Channel, 2405 MHz	12.5 GHz - 25 GHz	24455.19	-40.95	-20	Pass
	Mid Channel, 2440 MHz	Fundamental	2440.26	N/A	N/A	N/A
	Mid Channel, 2440 MHz	30 MHz - 12.5 GHz	2697.25	-53.29	-20	Pass
	Mid Channel, 2440 MHz	12.5 GHz - 25 GHz	24778.72	-40.68	-20	Pass
	High Channel, 2475 MHz	Fundamental	2475.26	N/A	N/A	N/A
	High Channel, 2475 MHz	30 MHz - 12.5 GHz	11779.9	-53.42	-20	Pass
	High Channel, 2475 MHz	12.5 GHz - 25 GHz	24830.61	-40.68	-20	Pass

SPURIOUS CONDUCTED EMISSIONS

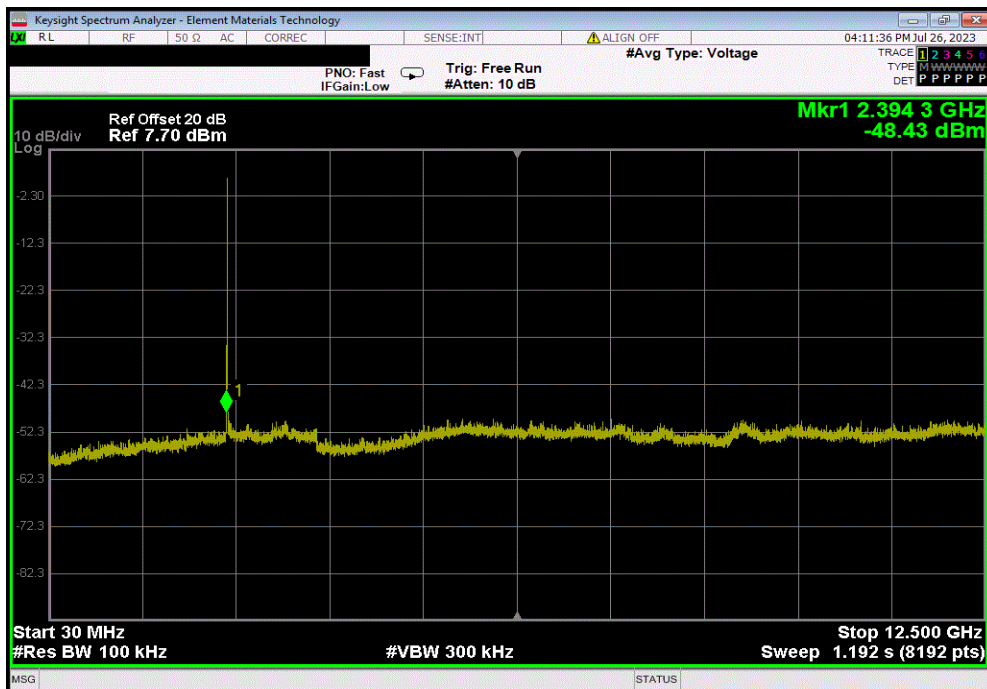


TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, Low Channel, 2405 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2405.26	N/A	N/A	N/A	



Single Channel Modulated, Low Channel, 2405 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	2394.29	-52.54	-20	Pass	

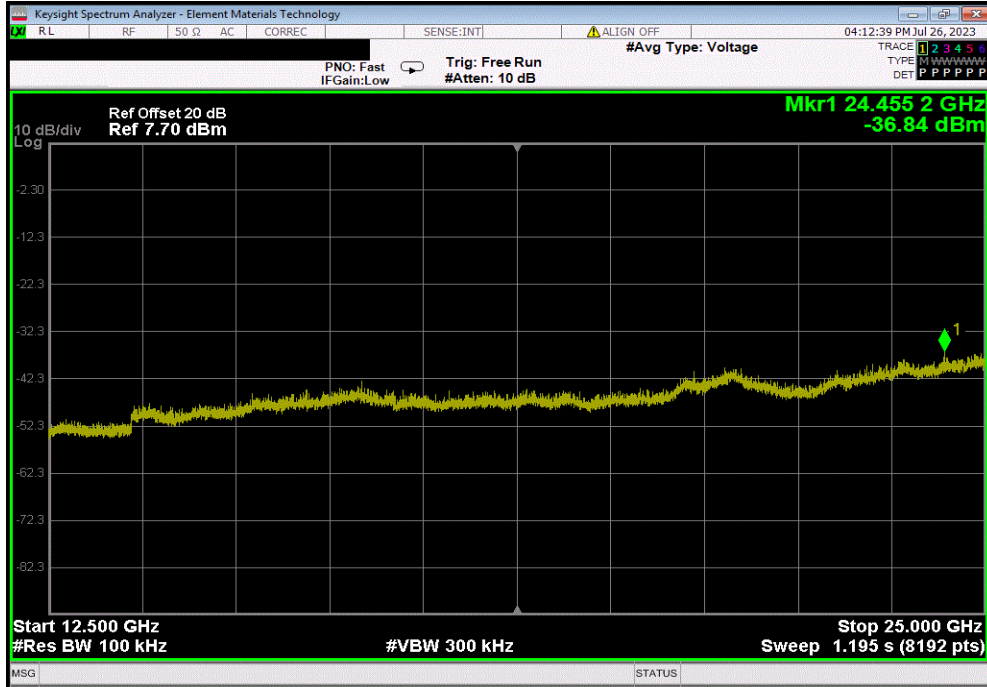


SPURIOUS CONDUCTED EMISSIONS

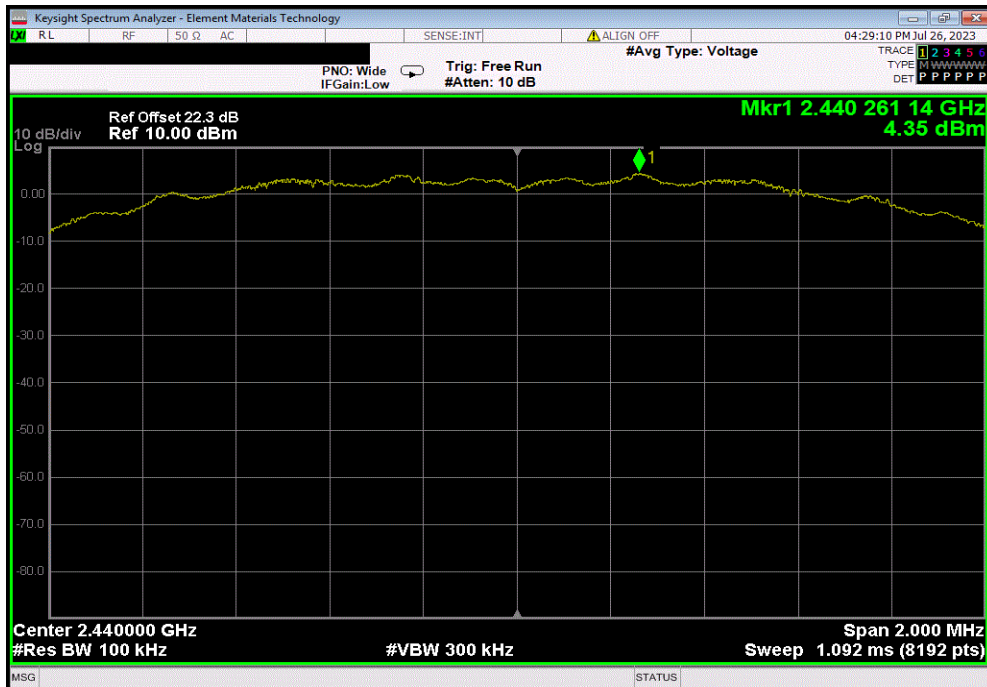


TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, Low Channel, 2405 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24455.19	-40.95	-20	Pass	



Single Channel Modulated, Mid Channel, 2440 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2440.26	N/A	N/A	N/A	

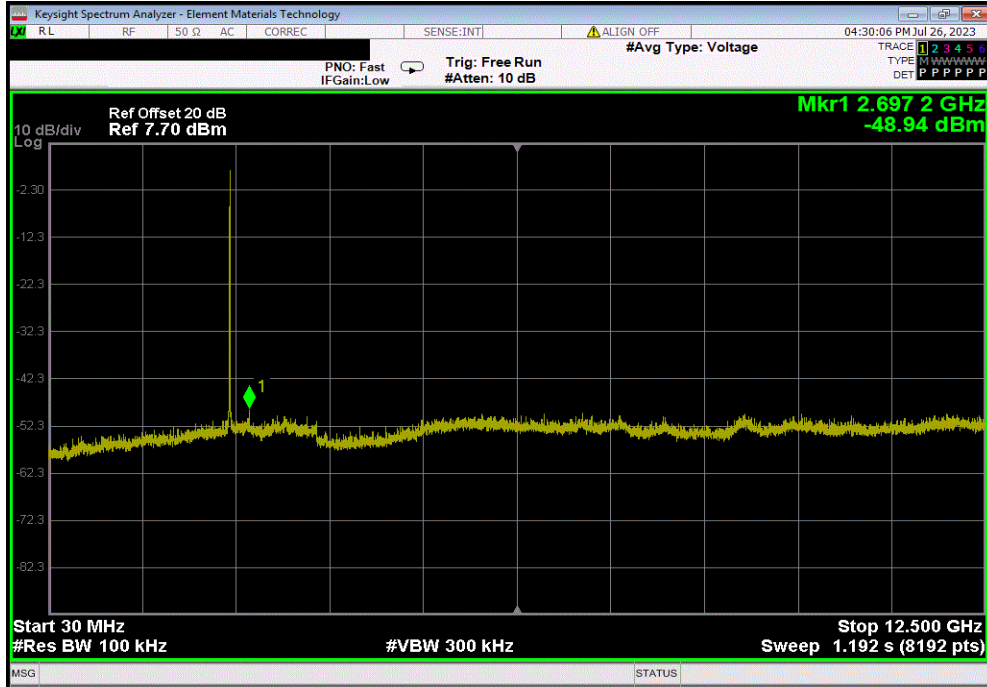


SPURIOUS CONDUCTED EMISSIONS

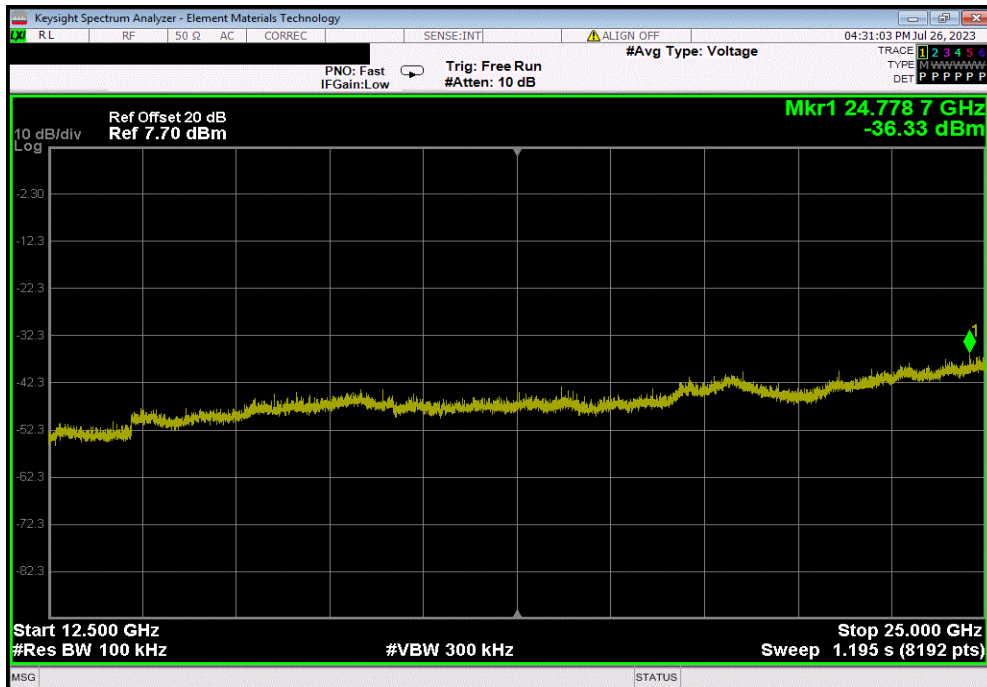


TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, Mid Channel, 2440 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2697.25	-53.29	-20	Pass



Single Channel Modulated, Mid Channel, 2440 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24778.72	-40.68	-20	Pass

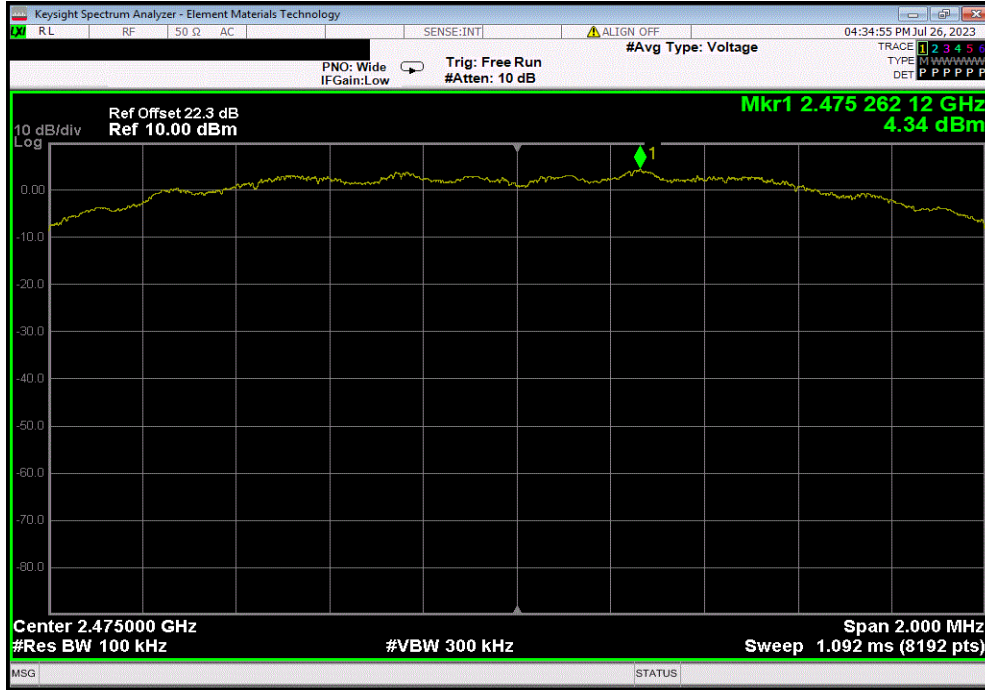


SPURIOUS CONDUCTED EMISSIONS

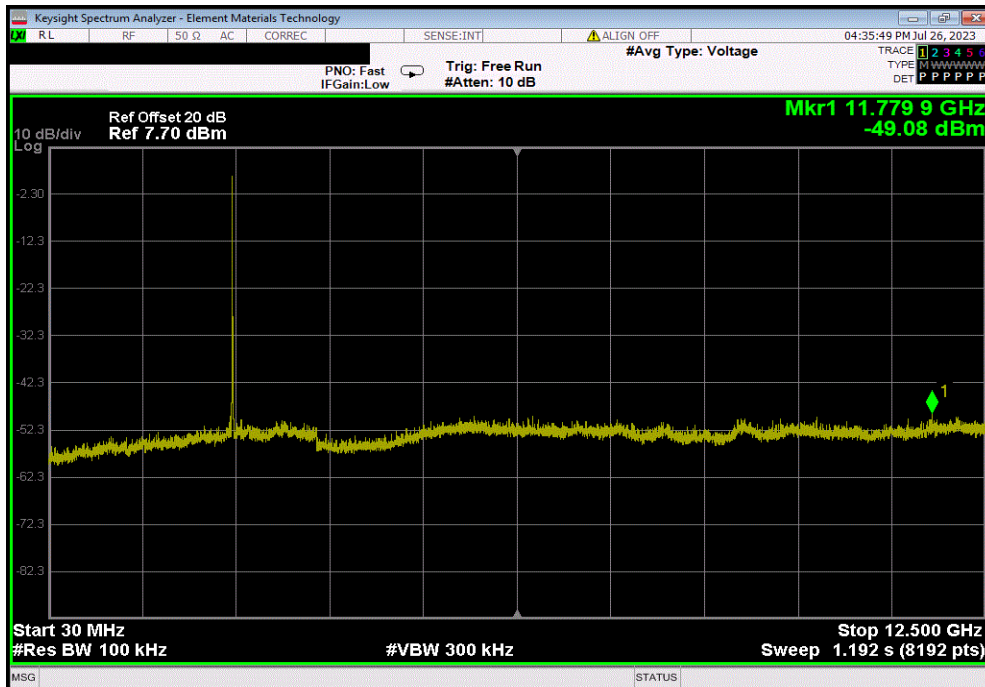


TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, High Channel, 2475 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2475.26	N/A	N/A	N/A	



Single Channel Modulated, High Channel, 2475 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	11779.9	-53.42	-20	Pass	

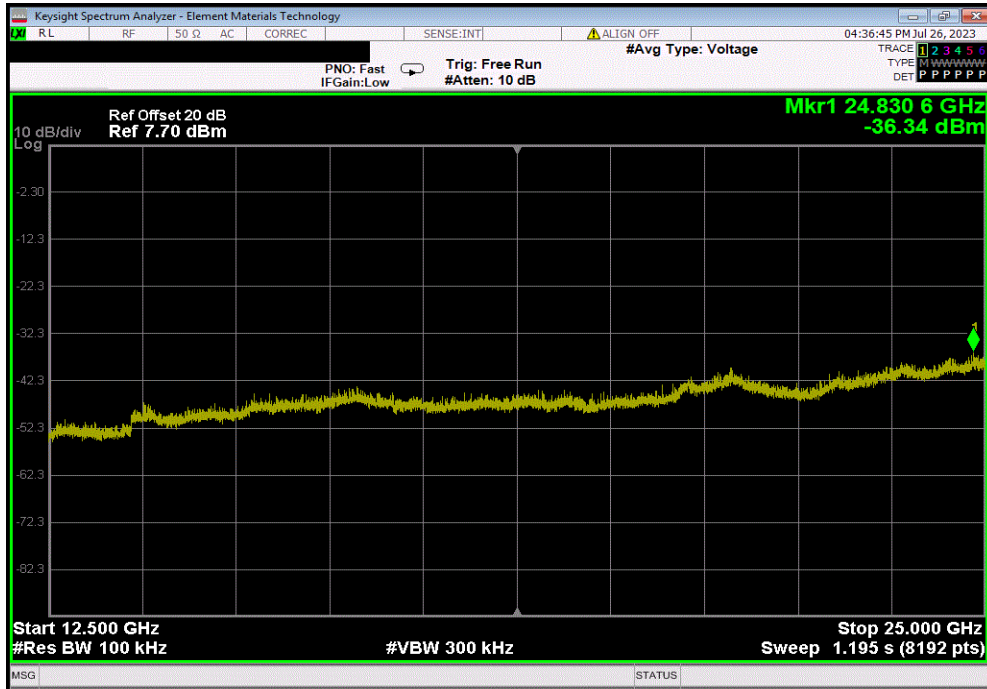


SPURIOUS CONDUCTED EMISSIONS



TbTx 2022.06.03.0 XMI 2023.02.14.0

Single Channel Modulated, High Channel, 2475 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24830.61	-40.68	-20	Pass



APPENDIX

Gap Analysis and Manufacturer Attestation

GAP ANALYSIS



Gap analysis comparing RSS-247 Issue 2:2017 to RSS-247 Issue 3:2023

RSS-247 Issue 2:2017 has been superseded by RSS-247 Issue 3:2023.

The standard has had technical changes requiring evaluation of the compliance information of relevant products. The following changes have been made to this report

- The manufacturer's attestation to the status of the product is included in this report.
- A Gap Analysis (GA) has been performed of the current issue of the standard and was compared to the standard and method used during testing of the device documented in this report. The GA is located in the appendix of this report.

The data was verified that it continues to comply with the requirements of RSS-247 Issue 3:2023.

Conclusion:

No retesting of the device described in this report is required due to the changes made to the standard.

The following changes were made in RSS-247 Issue 3:2023

1. Modified section 6.2 to clarify that different measurement methods can apply depending on the operating frequency range of the device.
2. Added section 6.2.5 to introduce the requirements for devices operating from 5850 5895 MHz and channels that span across 5850 MHz.
3. Added section 6.2.5.1 to provide general information and definitions.
4. Added section 6.2.5.2 to identify the power limits associated with devices operating in the 5850-5895 MHz band.
5. Added section 6.2.5.3 to identify the unwanted emission limits associated with devices operating in the 5850-5895 MHz band.
6. Made editorial changes and clarifications, as appropriate.



Emerson, Rosemount Inc.
6021 Innovation Blvd
Shakopee, MN 55379
USA

Re: Emerson 775 and FCC/ISED Testing

18 April 2024

To Whom It May Concern:

The updated radio version of the Emerson Wireless 775 THUM Adapter was tested to FCC 15.247 and RSS-247 at Element from dates 26-Jul-23 to 6-Sept-23, under Element project EMPM0151. I certify the design and function of this updated version of the product has not changed since these tests were performed.

Sincerely,

A handwritten signature in cursive script that reads "Elizabeth Reiersen".

Elizabeth Reiersen
Principal Engineer
Global Operations and Quality
Emerson Pervasive Sensing

End of Test Report