



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

EMI TEST REPORT

FCC Part 15 Subpart C (§15.247)
Operation within the bands 902-928 MHz, 2400-2483.5 MHz,
and 5725-5850 MHz.

RSS-247 Issue 1
Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and
License-Exempt Local Area Network (LE-LAN) Devices

Prepared For:

Universal Electronics, Inc.
201 East Sandpointe Ave, 8th Floor
Santa Ana, CA 92707

Product Name :
BLE and Infrared remote control

Model Name :
9700BC0-001-R

FCC ID : MG3-9700
IC: 2575A-9700

Application Purpose :
Original

Prepared by:

EMCE Engineering, Inc.
44366 S. Grimmer Blvd.,
Fremont, CA 94538 US

This report only responds to the tested sample and may not be reproduced, except in full, without written approval
of the EMCE Engineering, Inc.



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

Revision History

Rev.	Issue Date	Description
1	02/20/2016	Initial Issue



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

TABLE OF CONTENTS

1. GENERAL INFORMATION	4
2. EUT DESCRIPTION	5
3. SUMMARY OF TEST RESULTS	6
4. MODIFICATIONS	7
5. TEST RESULTS	8
6. TEST EQUIPMENT	26



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

1.0 GENERAL INFORMATION

Test Laboratory:	EMCE Engineering 44366 S. Grimmer Blvd. Fremont, CA 94538 USA Tel : 510-490-4307, Fax : 510-490-3441 bob@universalcompliance.com
	FCC registration number : 743299
	Test Site : FCC : US5291, IC : 3324A
Applicant Name :	Universal Electronics, Inc. 201 East Sandpointe Ave, 8th Floor Santa Ana, CA 92707
	Contact Person: Jesse Mendez
Application Purpose :	Original
EUT Description	BLE and Infrared remote control - Bluetooth Low Energy
Product Name	BLE and Infrared remote control
Model Name :	9700BC0-001-R
Applied Standards :	FCC 47 CFR §15.209, §15.247 IC RSS 247 Issue 1
FCC ID :	MG3-9700
IC :	IC:3375B-RC1
RF Operating Frequency (ies)	2402 – 2480 MHz
Modulation	GFSK
Emission Designator	2M47F1D
Receipt of EUT :	01/25/2016
Date of Testing :	01/26/2016 – 02/14/2016
Date of Report :	02/20/2016

The tests listed in this report have been completed to demonstrated compliance to the CFR 47 Section 15.247, and RSS 247 Issue 1.

Contents approved:


Name: Bob Cole Title: President



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

2.0 EUT AND ACCESSORY INFORMATION

EUT				
FCC ID	MG3-9700			
Product Name	BLE and Infrared remote control			
Model name	9700BC0-001-R			
Frequency Range	TX : 2402 – 2480 MHz RX : 2402 – 2480 MHz			
Max. RF Output Power	Peak : -1.43 dBm (0.719 mW)			
Operating Mode	Bluetooth Low Energy (BLE)			
Modulation Type	GFSK			
Number of Channels	40 Channels			
Manufacturer	Universal Electronics, Inc.			
Power Source	Battery			
Antenna Specification	Broadcom Lifted Strip Antenna: Gain = -1.2 dB @ 2441 MHz			
Support Equipment				
Description	Model Number	Serial Number	Manufacturer	Power Cable Description
NONE				
Cable Description				
From	To	Length (Meters)	Shielded (Y/N)	Ferrite Loaded (Y/N)
NONE				



3.0 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

Test Standard		Description	Result (Pass / Fail)
FCC 47 CFR Part 15	RSS 247 Issue 1, RSS-Gen, Issue 4		
15.205, 15.209 15.247	5.5	Radiated Spurious Emissions, Radiated Restricted Bandedge	Pass
15.247(a)(2)	5.2	6dB Bandwidth	Pass
15.247(6)(3)	5.4 (4)	Conducted Maximum Peak Output Power	Pass
15.247(e)	5.2	Power Spectral Density	Pass
15.247(d)	5.5	Conducted Bandedge (Out of Band Emissions)	Pass
15.207	N/A	AC Power line Conducted Emissions	N/A
N/A	RSS-GEN 4.6.1	99% Bandwidth	PASS
ANSI C63.4: 2014 / FCC KDB 558074 D01 DTS Meas Guidance v03r03 dated June 09, 2015			
PS: All measurement uncertainties are not taken into consideration for all presented test result.			

PASS The EUT passed that particular test.
FAIL The EUT failed that particular test.
N/A Not Applicable – No IC Application



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

4.0 MODIFICATIONS

There were no modifications.



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

5.0 TEST RESULTS

5.1 CONDUCTED SPURIOUS EMISSIONS

15.247(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement

TEST RESULTS – 2402 MHz Xmit Frequency

Test Location: EMCE Engineering • 44366 S. Grimmer Blvd • Fremont, CA 94538 •

Customer: **UEI**
Specification: **EN 300 328 30-26000 Spurious**
Work Order #: **4190**
Test Type: **Conducted Emissions**
Equipment: **Remote Control**
Manufacturer: Universal Electronics, Inc.
Model: 9700BC0-001-R
S/N: N/A

Date: 1/30/2016
Time: 1:14:12 PM
Sequence#: 4
Tested By: Bob Cole
Battery

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
FSV40-B160 Signal Analyzer	101468	03/28/2015	03/28/2017	755
EMITest Measurement Software	v4.01 Build 195	05/01/2014	05/01/2017	610

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Remote Control*	Universal Electronics, Inc.	9700BC0-001-R	N/A

Support Devices:

Function	Manufacturer	Model #	S/N
----------	--------------	---------	-----

Test Conditions / Notes:

Arris remote

Transducer Legend:

T1=dBuV - dBm conversion

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: Antenna

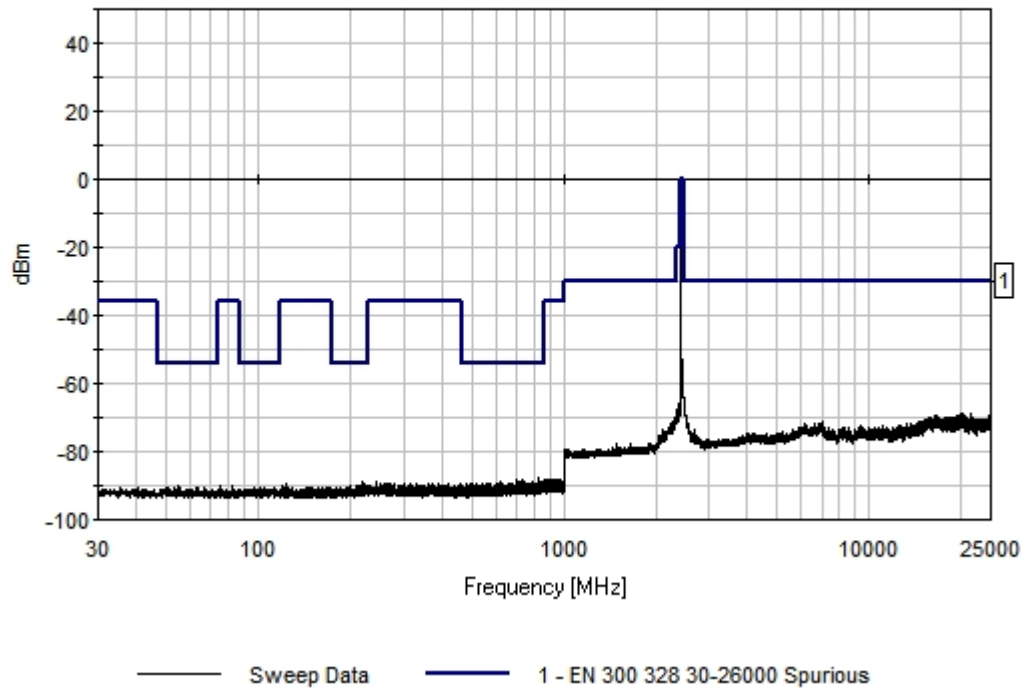
#	Freq MHz	Rdng dB μ V	T1 dB				Dist Table	Corr dBm	Spec dBm	Margin dB	Polar Ant
1	2402.011M	105.8	-107.0				+0.0	-1.2	0.0	-1.2	Anten



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

EMCE Engineering Date: 1/30/2016 Time: 1:14:12 PM UEI WO#: 4190
EN 300 328 30-26000 Spurious Test Lead: Antenna Battery Sequence#: 4 Ext ATTN: 0 dB





FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

TEST RESULTS – 2442 MHz Xmit Frequency

Test Location: EMCE Engineering • 44366 S. Grimmer Blvd • Fremont, CA 94538 •

Customer: **UEI**
Specification: **EN 300 328 30-26000 Spurious**
Work Order #: **4190**
Test Type: **Conducted Emissions**
Equipment: **Remote Control**
Manufacturer: Universal Electronics, Inc.
Model: 9700BC0-001-R
S/N: N/A

Date: 1/30/2016
Time: 3:44:08 PM
Sequence#: 3
Tested By: Bob Cole
Battery

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
FSV40-B160 Signal Analyzer	101468	03/28/2015	03/28/2017	755
EMITest Measurement Software	v4.01 Build 195	05/01/2014	05/01/2017	610

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Remote Control*	Universal Electronics, Inc.	9700BC0-001-R	N/A

Support Devices:

Function	Manufacturer	Model #	S/N
----------	--------------	---------	-----

Test Conditions / Notes:

Transducer Legend:

T1=dBuV - dBm conversion

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: Antenna

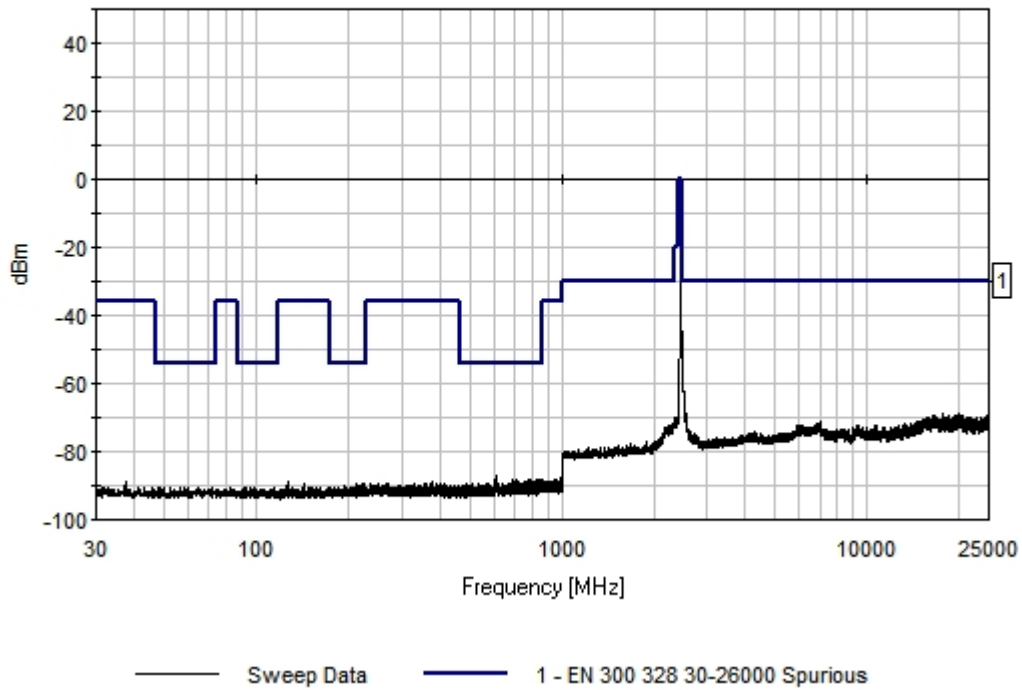
#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dBm	Spec dBm	Margin dB	Polar Ant
1	2441.209M	104.1	-107.0				+0.0	-2.9	0.0	-2.9	Anten
2	2501.148M	49.9	-107.0				+0.0	-57.1	-29.4	-27.7	Anten
3	2347.337M	41.6	-107.0				+0.0	-65.4	-30.0	-35.4	Anten



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

EMCE Engineering Date: 1/30/2016 Time: 3:44:08 PM UEI WO#: 4190
EN 300 328 30-26000 Spurious Test Lead: Antenna Battery Sequence#: 3 Ext ATTN: 0 dB





FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

TEST RESULTS – 2480 MHz Xmit Frequency

Test Location: EMCE Engineering • 44366 S. Grimmer Blvd • Fremont, CA 94538 •

Customer: **UEI**
Specification: **EN 300 328 30-26000 Spurious**
Work Order #: **4190**
Test Type: **Conducted Emissions**
Equipment: **Remote Control**
Manufacturer: **Universal Electronics, Inc.**
Model: **9700BC0-001-R**
S/N: **N/A**

Date: 1/30/2016
Time: 6:02:35 PM
Sequence#: 2
Tested By: Bob Cole
Battery

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
FSV40-B160 Signal Analyzer	101468	03/28/2015	03/28/2017	755
EMITest Measurement Software	v4.01 Build 195	05/01/2014	05/01/2017	610

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Remote Control*	Universal Electronics, Inc.	9700BC0-001-R	N/A

Support Devices:

Function	Manufacturer	Model #	S/N
----------	--------------	---------	-----

Test Conditions / Notes:

Arris BLE Remote

Transducer Legend:

T1=dBuV - dBm conversion

Ext Attn: 0 dB

Measurement Data:

Reading listed by margin.

Test Lead: Antenna

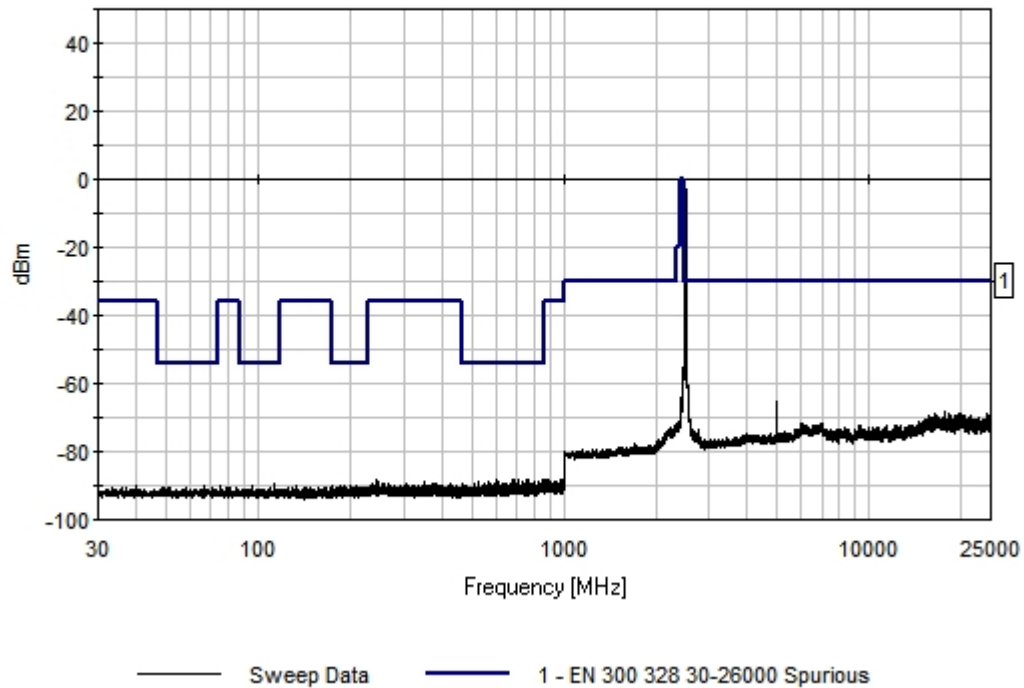
#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBm	Spec dBm	Margin dB	Polar Ant
1	2480.151M	102.3	-107.0				+0.0	-4.7	0.0	-4.7	Anten
2	4980.301M	38.2	-107.0				+0.0	-68.8	-30.0	-38.8	Anten



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

EMCE Engineering Date: 1/30/2016 Time: 6:02:35 PM UEI WO#: 4190
EN 300 328 30-26000 Spurious Test Lead: Antenna Battery Sequence#: 2 Ext ATTN: 0 dB





FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

5.2 6 dB BANDWIDTH

LIMIT

§15.247(2)

Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

TEST PROCEDURE

- The transmitter output is connected to the spectrum analyzer
- The RBW is set to 100KHz. The VBW is set to 100KHz. The sweep time is coupled.
- Signal Peak is detected
- Bandwidth is determined at the points 6 dB down from the peak value of the modulated carrier.

RESULTS

NO non-compliance noted.

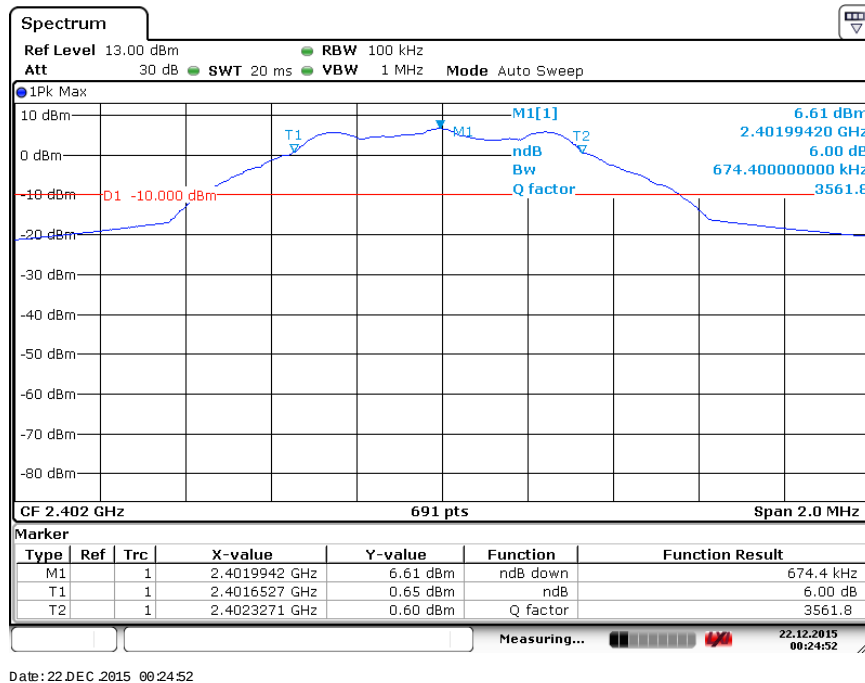
Operating Frequency (MHz)	6dB Bandwidth (KHz)	Limit (KHz)	Result
2402	674	>500	PASS
2442	680	>500	PASS
2480	680	>500	PASS



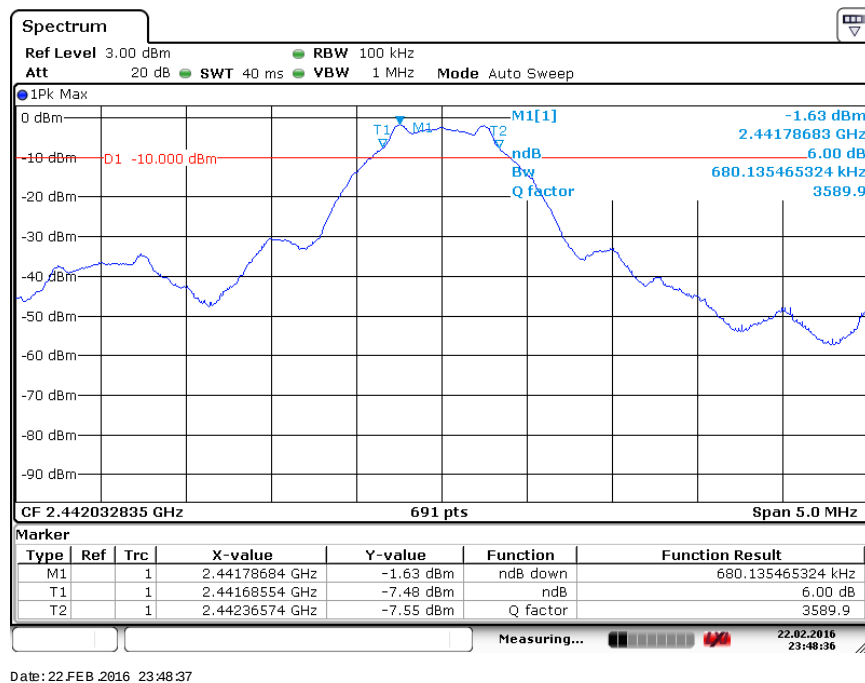
FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

2402 MHz



2442 MHz

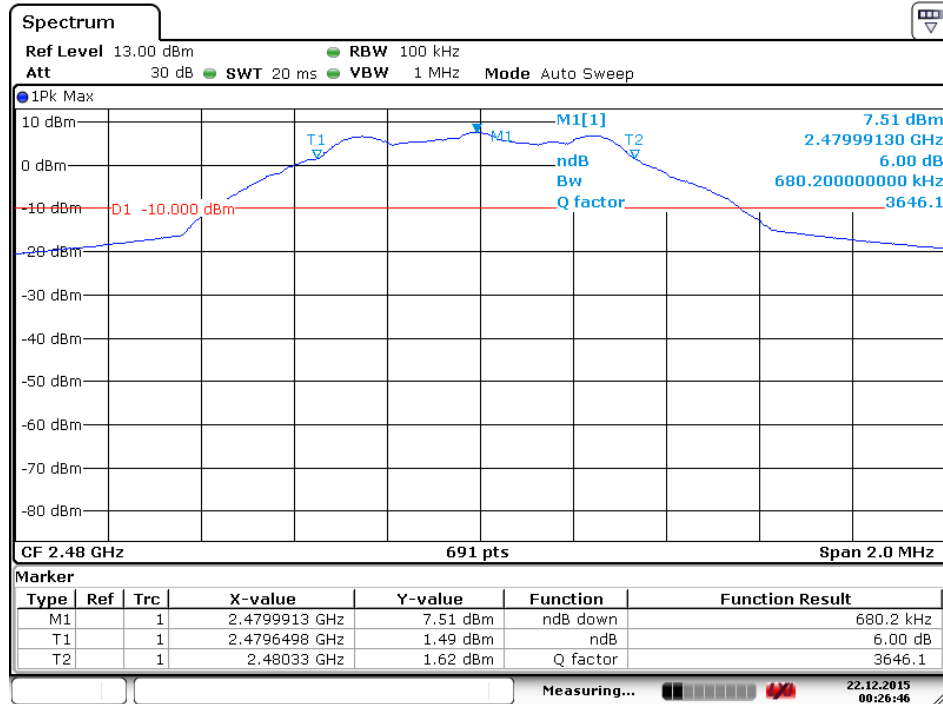




FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

2480 MHz



Date: 22 DEC 2015 00:26:46



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

5.3 CONDUCTED MAXIMUM PEAK OUTPUT POWER

LIMIT

§15.247(d)

1 Watt / 30dBm / 137 dBuV (50 Ohms conversion)

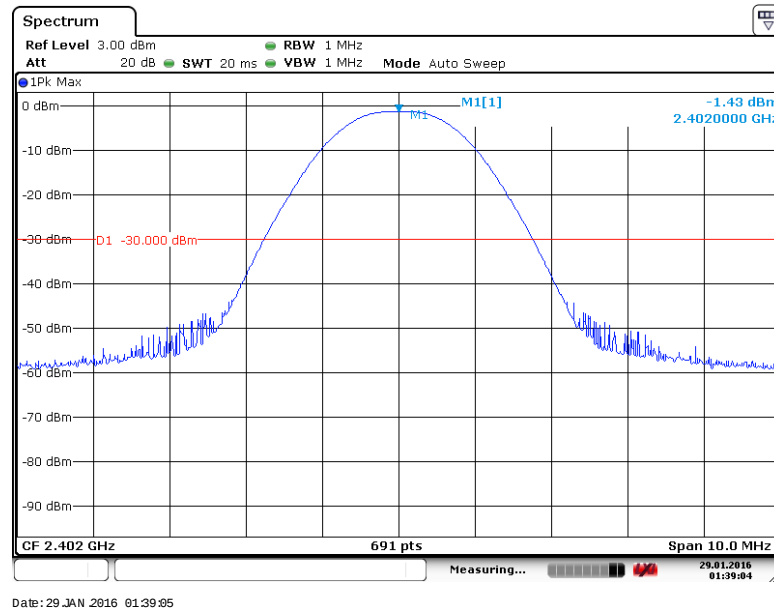
TEST PROCEDURE

The transmitter output to the antenna is connected to a spectrum analyzer. The RBW / VBW is set to 1. The sweep time is coupled and the span is set to 5 MHz.

Peak Output Power

Frequency (MHz)	Peak Output Power(dBm)	Limit (dBm)	Results
2402	-1.43	20	PASS
2442	-2.06	20	PASS
2480	-1.60	20	PASS

2402 MHz

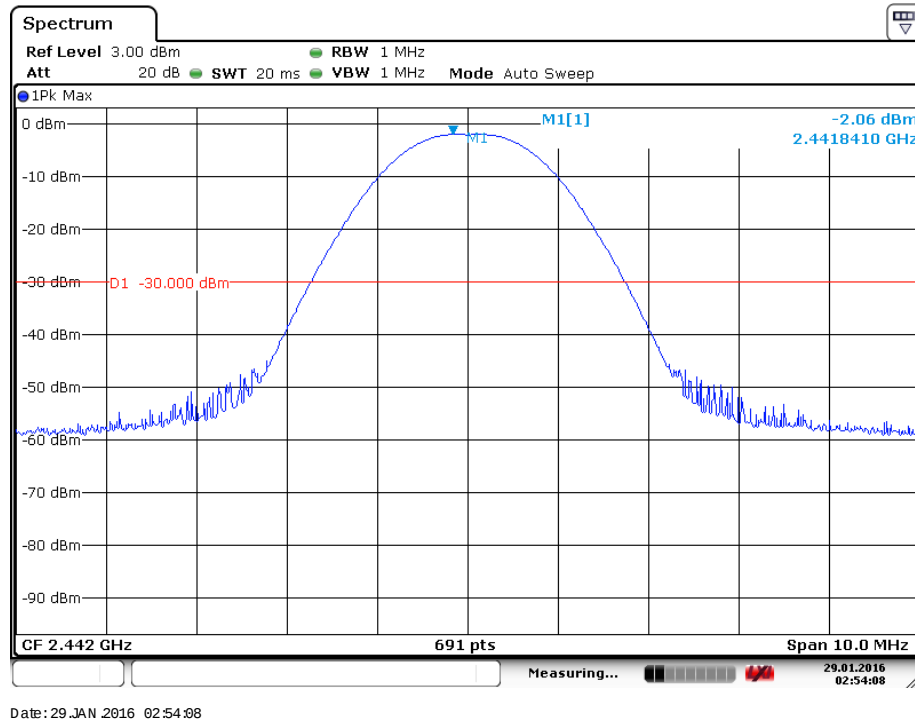




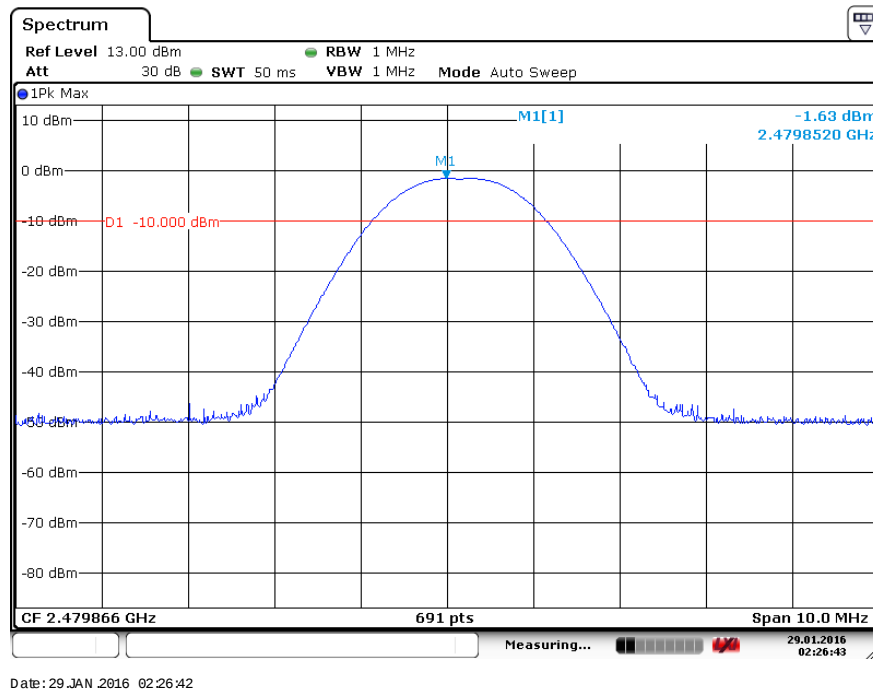
FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

2442 MHz



2480 MHz





FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

5.4 POWER SPECTRAL DENSITY

LIMIT

§15.247 (e)

8 dBm

TEST PROCEDURE

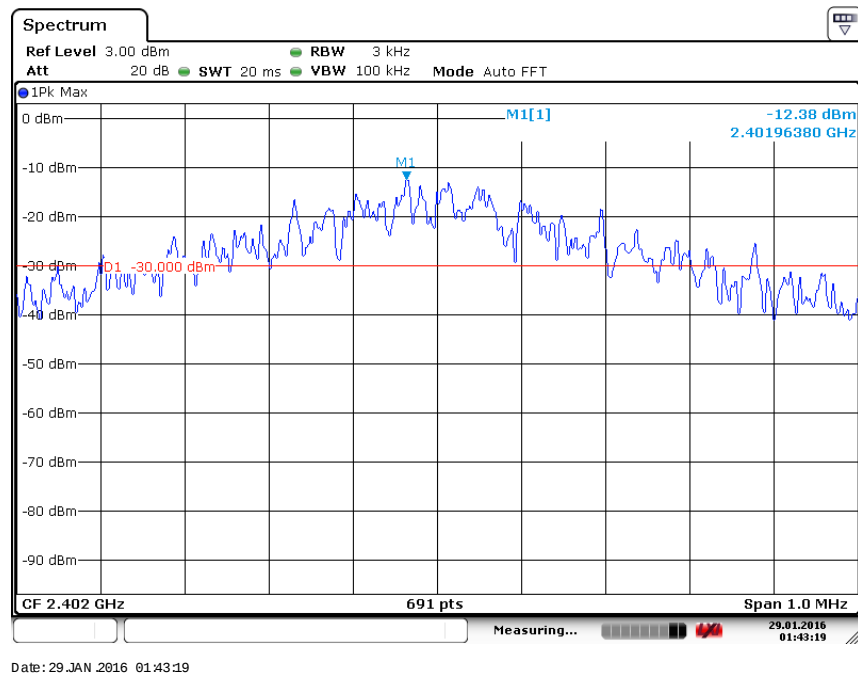
The transmitter antenna output is connected to a spectrum analyzer. The RBW is set to 3 KHz and the VBW is set to 10 KHz .

RESULTS

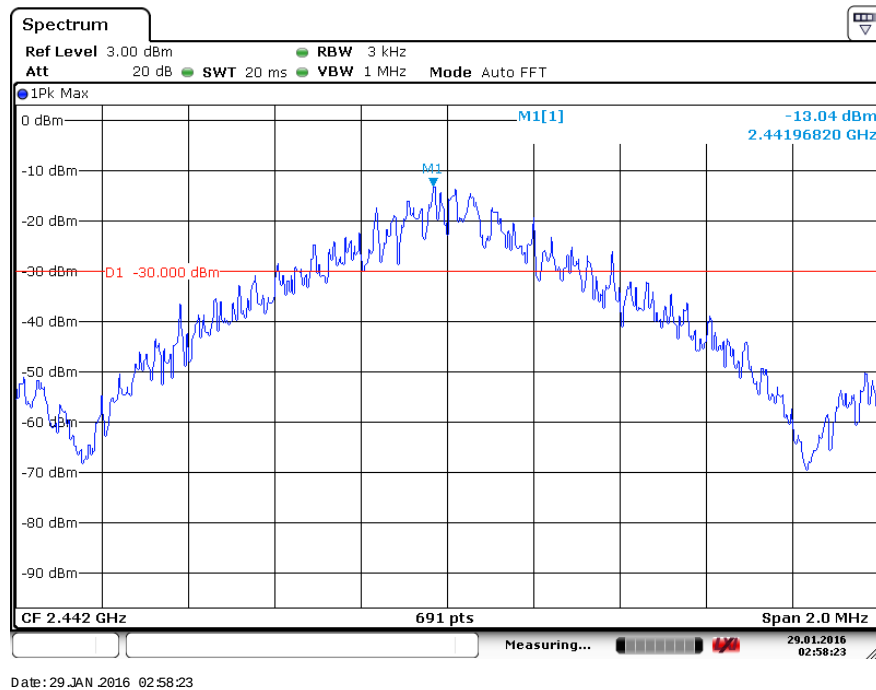
NO non-compliance noted.

Frequency (MHz)	PSD (dBm)	Limit (dBm)	Result
2402	-12.38	8.0	PASS
2442	-13.04	8.0	PASS
2480	-12.62	8.0	PASS

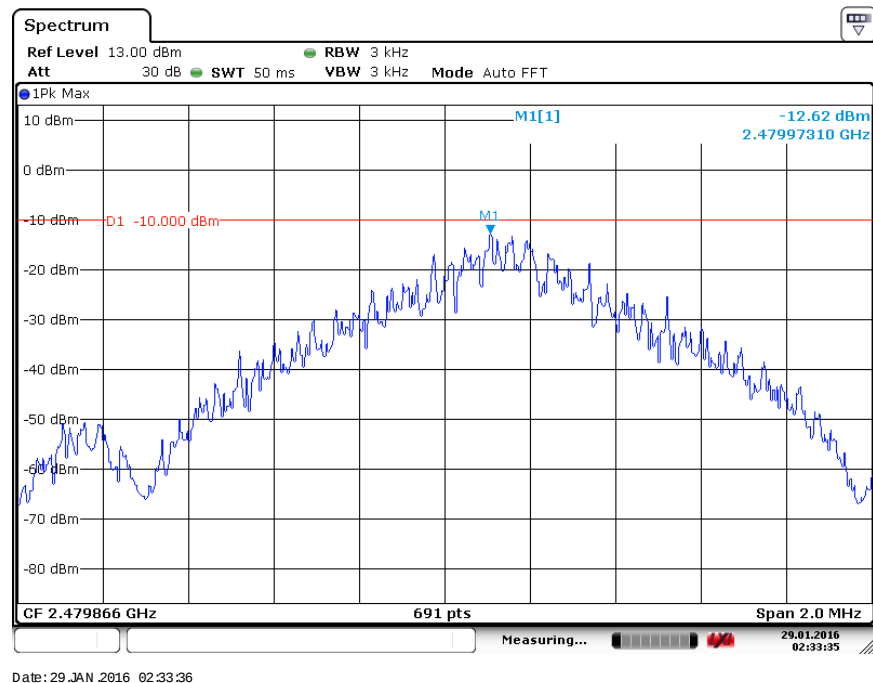
2402 MHz



2442 MHz



2480 MHz





FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

5.5 CONDUCTED BANDEGE

Conducted Bandedge

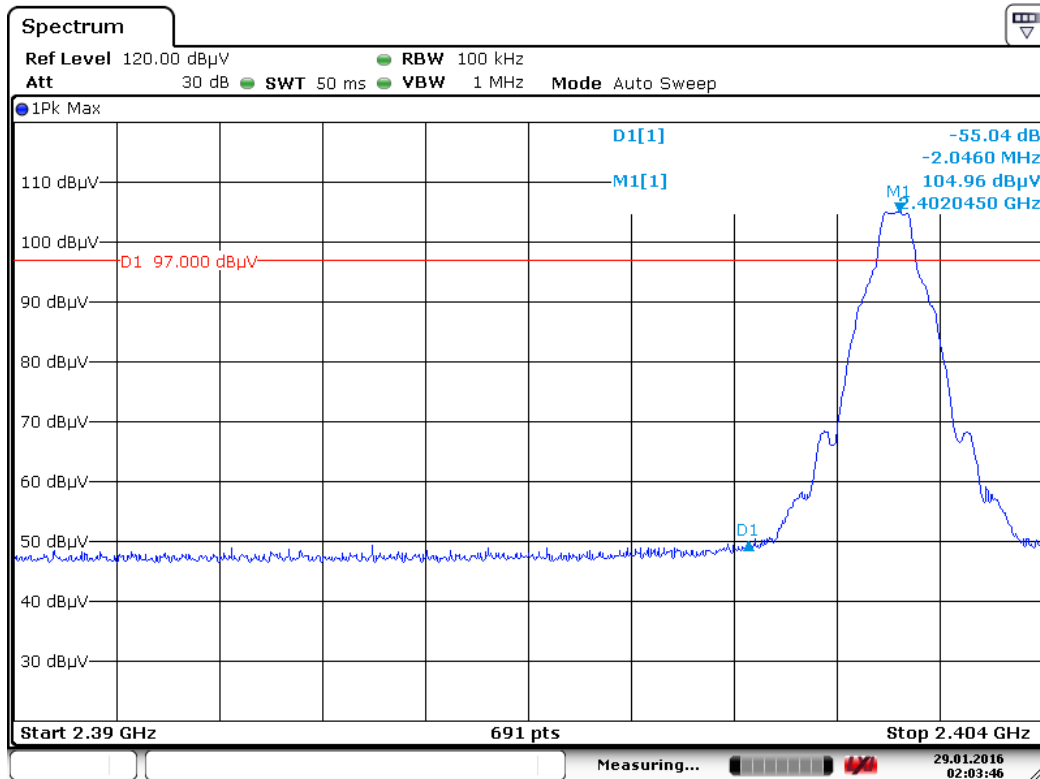
LIMIT

15.247(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

Transmitter antenna output connected to spectrum analyzer. Analyzer span is set to show Peak in band, as well as out of band peaks.

2400 MHz Bandedge

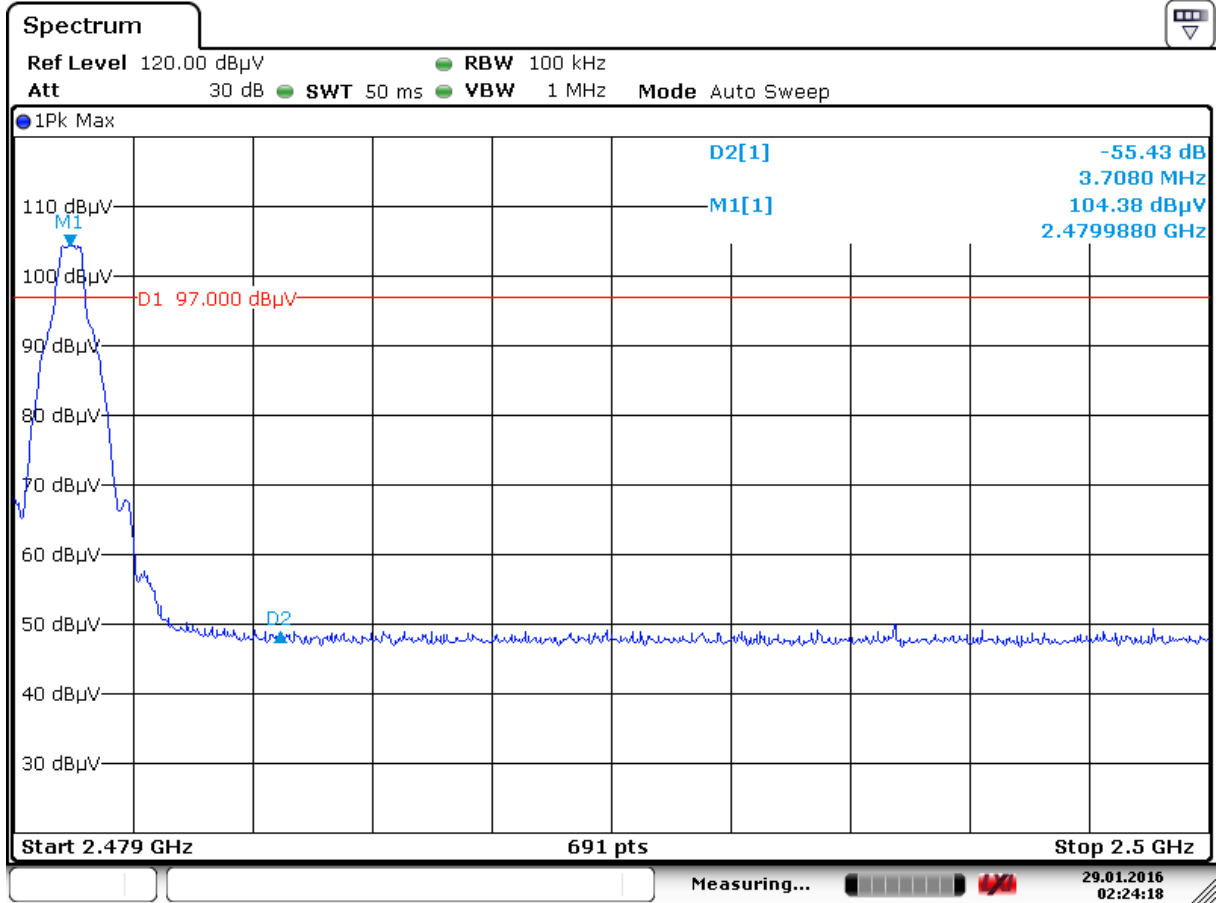




FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

2483.5 MHz Bandedge



Date: 29 JAN 2016 02:24:18



5.6 RADIATED SPURIOUS EMISSIONS – BANDEDGE

15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. **In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).**

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

RESULTS

Bandedge Frequency(MHz)	Measured(dBc)	Limit (dBc)	Result
2402	52.16	>20	PASS
2480	50.87	>20	PASS



5.7 TRANSMITTER RADIATED SPURIOUS EMISSIONS

LIMITS

§15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

§15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

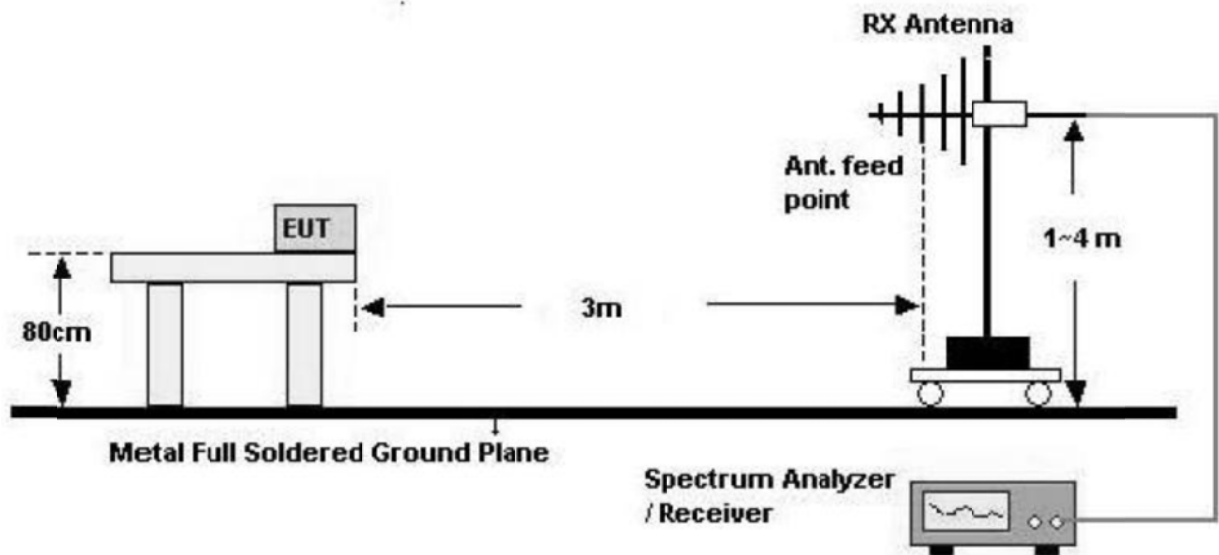
§15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table ;

Frequency (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

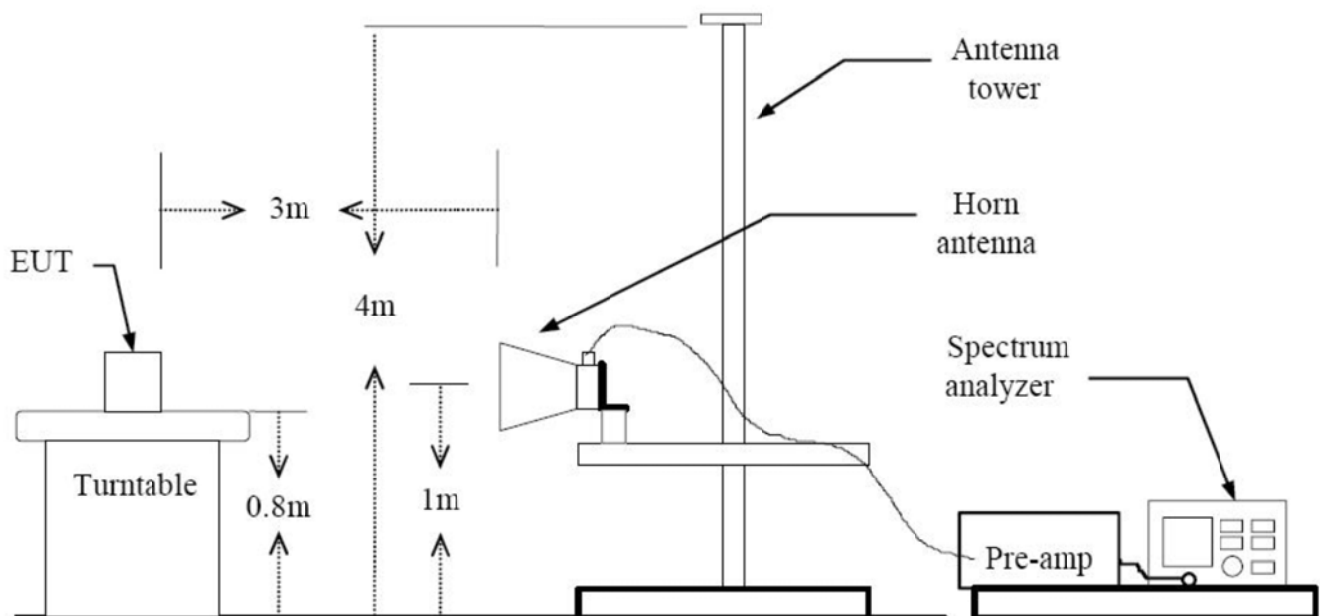
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., Sections 15.231 and 15.241.

TEST CONFIGURATION

[30 MHz - 1 GHz]



[Above 1 GHz]





TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4 The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 KHz for peak detection measurements or 120 KHz or quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and VBW of 10 Hz for average measurements.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

RESULTS:

NO non-compliance noted.

Note

1. The antenna is manipulated through typical positions, polarity and length during the testing
2. The frequency range was scanned from 30 MHz to 1 GHz and the worst-case emissions are reported.
3. There is detected level above reference noise floor spectrum analyzer.

FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor.
The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF$$

where FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

Assume a receiver reading of 21.5 dBuV is obtained. The Antenna Factor of 7.4 dB/m and a Cable Factor of 1.1 dB is added. The 30 dBuV/m value is mathematically converted to its corresponding level in uV/m.

$$FS = 21.5 + 7.4 + 1.1 = 30 \text{ dBuV/m}$$



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

MEASUREMENT UNCERTAINTY

Measurement Uncertainty Budget Radiated Emissions @ 10 Meters Per CISRP 16-4-2

Input Quantity	Uncertainty of x_i		U(x) dB	C_i	$C_i u(x_i)$ dB
	dB	Probability Distribution Function			
Receiver Reading	+/- 0.1	K = 1	0.1	1	0.1
Attenuation, Antenna - receiver	+/- 0.1	K = 2	0.05	1	0.05
Antenna Factor	+/- 2.0	K = 2	1.0	1	1.0
Receiver Corrections					
Sine Wave Voltage	+/- 1.0	K = 1	0.5	1	0.5
Pulse Amplitude Response	+/- 1.5	Rectangular	0.87	1	0.87
Pulse Rep Rate Response	+/- 1.5	Rectangular	0.87	1	0.87
Noise Floor Proximity	+/- 0.5	K = 2	0.25	1	0.25
Mismatch Antenna – Receiver	+/- 0.9	U shaped	0.67	1	0.67
Antenna Corrections					
AF Freq Interpolation	+/- 0.3	Rectangular	0.17	1	0.17
AF Height Deviations	+/- 0.5	Rectangular	0.29	1	0.29
Balance	+/- 0.3	Rectangular	0.17	1	0.17
Site Corrections					
Site Imperfections	+/- 3.0	Rectangular	1.22	1	0.82
Separation distance	+/- 0.1	Rectangular	0.06	1	0.06
Table Height	+/- 0.1	K = 2	0.05	1	0.05
Total Measurement Uncertainty - Radiated Emissions @ 10 Meters $2U_c(E) = 4.89$					4.89

Test Location: EMCE Engineering • 44366 S. Grimmer Blvd • Fremont, CA 94538 •



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

Transmit Frequencies 2402 / 2442 / 2480 MHz were examined and maximized. Worst case data is presented:

Test Location: EMCE Engineering • 44366 S. Grimmer Blvd • Fremont, CA 94538 •

Customer: **UEI**
Specification: **FCC 15.209 30 - 25000 Limits**
Work Order #: **4186**
Test Type: **Radiated Scan**
Equipment: **Remote Control**
Manufacturer: Universal Electronics, Inc.
Model: T30
S/N: N/A

Date: 1/31/2016
Time: 12.39.36 PM
Sequence#: 1
Tested By: Bob Cole

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
FSV40-B160 Signal Analyzer	101468	03/28/2015	03/28/2017	755
EMCO 3115 Horn	9065-5057	05/20/2015	05/20/2016	608
HP 8449B Preamp	3008A02190	05/15/2015	05/15/2016	749
EMITest Measurement Software	v4.01 Build 195	05/01/2014	05/01/2017	610

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Remote Control*	Universal Electronics, Inc.	T30	N/A

Support Devices:

Function	Manufacturer	Model #	S/N
----------	--------------	---------	-----

Test Conditions / Notes:

--

Transducer Legend:

T1=8447 Pre-Amp Asset 377	T2=25' LMR #001
T3=8449B Preamp	T4=Sunol 1GHz JB6 S/N A42610
T5=A.H. SAS-200/571 Horn	

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	4884.820M	33.9	+0.0	+2.6	+30.2	+0.0	+0.0	41.2	54.0	-12.8	Vert
	Ave		+34.9				62		2442 Xmit		212
2	1078.920M	40.5	+0.0	+0.9	+29.4	+0.0	+0.0	39.6	54.0	-14.4	Vert
	Ave		+27.6				27		2442 Xmit		151
3	4804.780M	31.0	+0.0	+2.6	+30.3	+0.0	+0.0	38.0	54.0	-16.0	Vert
	Ave		+34.7				92		2402 Xmit		197
4	1511.040M	38.2	+0.0	+1.2	+29.7	+0.0	+0.0	38.0	54.0	-16.0	Vert
	Ave		+28.3				99		2480 Xmit		208

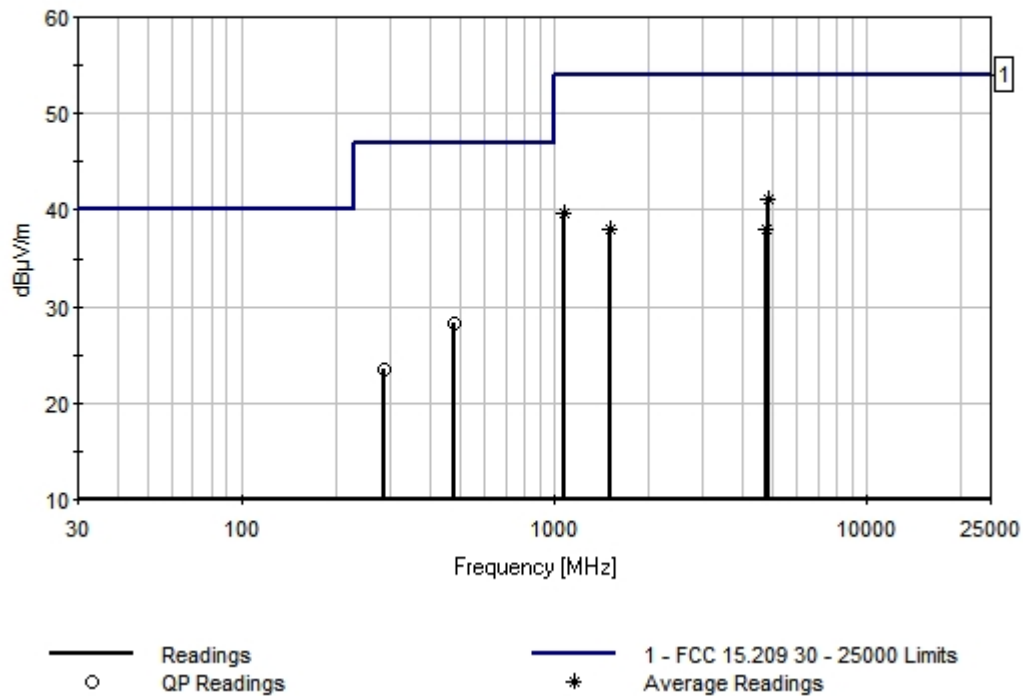


FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

5	480.110M	34.2	+27.1	+0.7	+0.0	+20.5	+0.0	28.3	47.0	-18.7	Vert
	QP		+0.0				92		2480 Xmit		180
6	288.140M	33.3	+26.9	+0.3	+0.0	+16.7	+0.0	23.4	54.0	-30.6	Vert
	QP		+0.0				181		2402 Xmit		142

EMCE Engineering Date: 1/31/2016 Time: 12:39:36 PM UEI WO#: 4186
FCC 15.209 30 - 25000 Limits Test Distance: 3 Meters Sequence#: 1 Ext ATTN: 0 dB





FCC ID: MG3-9700
IC:2575A-9700

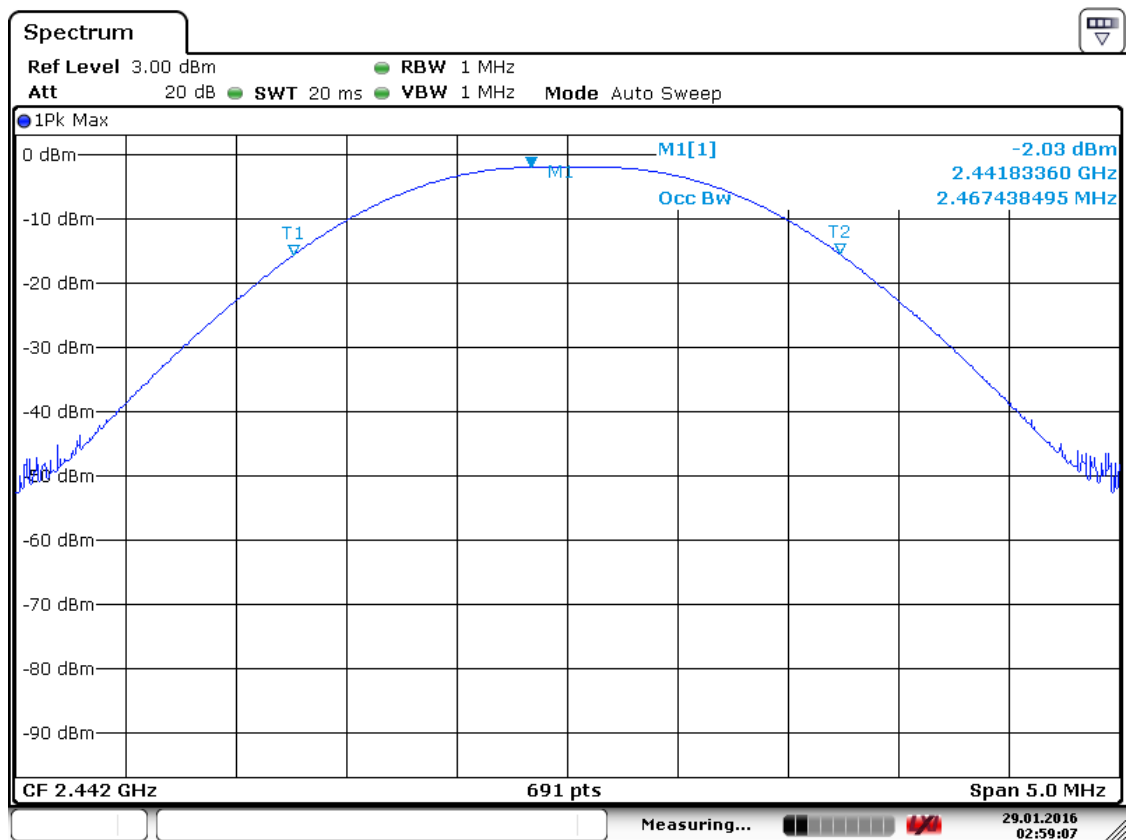
Test Report #: 4190-1
02/20/2016

5.7 99% BANDWIDTH

LIMITS

None – For information purposes only

Frequency (MHz)	99% BW (MHz)	Limit (MHz)	Result
2442	2.467	N/A	PASS



Date: 29 JAN 2016 02:59:07



FCC ID: MG3-9700
IC:2575A-9700

Test Report #: 4190-1
02/20/2016

6.0 TEST EQUIPMENT

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DATE	CAL. DUE DATE
Signal Analyzer Rohde-Schwarz	FSV40	1321.3008K40-101424-TU	3/28/15	3/28/17
Pre-Amplifier(100KHz-1.3GHz) Hewlett-Packard	8447D	2443A03587	5/1/15	5/1/17
BiConiLog Antenna Sunol Sciences	JB6	1090	2/12/15	2/12/17
RF Signal Cable EMCE	25' LMR	N/A	8/10 /15	8/10 /17
RF Signal Cable EMCE	100' LMR	N/A	8/1 /15	8/1 /17