

# NORTHWEST EMC

**Walt Disney Parks and Resorts US., Inc.**

**MagicBand 1.2**

**FCC 15.247:2015**

**Report # SYNA0173.1**



NVLAP Lab Code: 200629-0

*This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America. This Report may only be duplicated in its entirety*

# CERTIFICATE OF TEST

**Last Date of Test: December 10, 2015**  
**Walt Disney Parks and Resorts US., Inc.**  
**Model: MagicBand 1.2**

## Radio Equipment Testing

### Standards

Specification	Method
FCC 15.247:2015	ANSI C63.10:2013

### Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	No	N/A	Not required for a battery powered EUT.
6.5, 6.6, 11.12.1, 11.13.2	Spurious Radiated Emissions	Yes	Pass	
6.10.4	Band Edge Compliance	Yes	Pass	
11.6	Duty Cycle	Yes	N/A	
11.8.2	Occupied Bandwidth	Yes	Pass	
11.9	Output Power	Yes	Pass	
11.10	Power Spectral Density	Yes	Pass	
11.11	Spurious Conducted Emissions	Yes	Pass	

### Deviations From Test Standards

None

### Approved By:



Rod Munro, Operations Manager

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

# REVISION HISTORY

Revision Number		Description	Date	Page Number
00		None		

# ACCREDITATIONS AND AUTHORIZATIONS

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## United States

**FCC** - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

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

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

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## Canada

**IC** - Recognized by Industry Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with IC.

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## European Union

**European Commission** – Validated by the European Commission as a Conformity Assessment Body (CAB) under the EMC directive and as a Notified Body under the R&TTE Directive.

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## Australia/New Zealand

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

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## Korea

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

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## Japan

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

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## 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.

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## Singapore

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

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## Israel

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

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## Hong Kong

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

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## Vietnam

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

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## SCOPE

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

<http://www.nwemc.com/accreditations/>  
<http://gsi.nist.gov/global/docs/cabs/designations.html>

# MEASUREMENT UNCERTAINTY

## Measurement Uncertainty

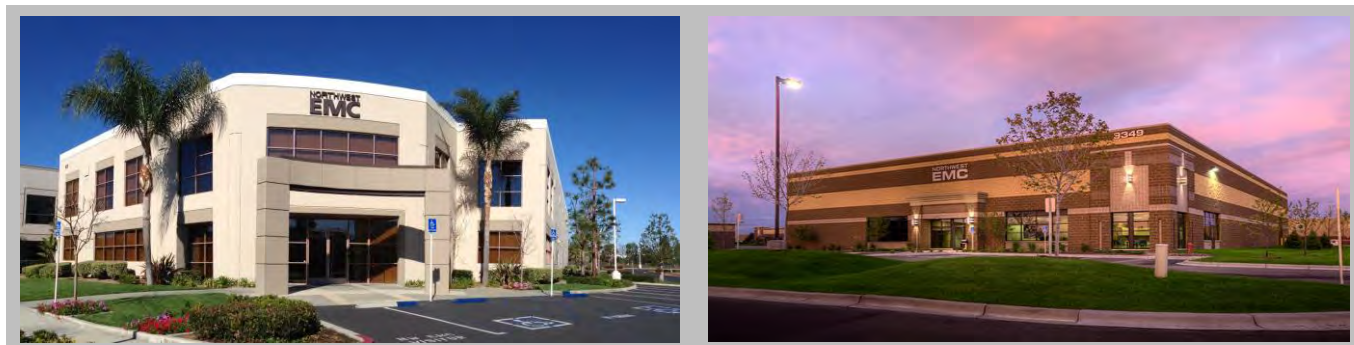
When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement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

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

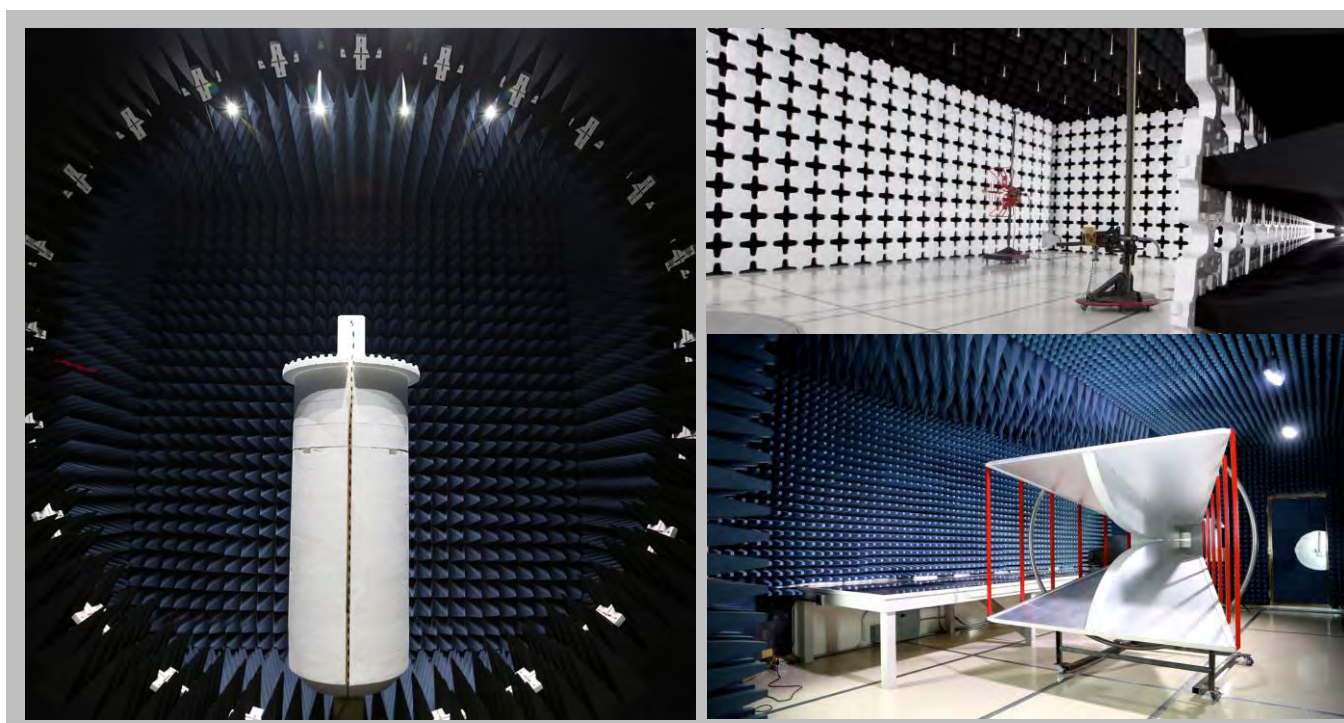
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

<b>Test</b>	<b>+ MU</b>	<b>- MU</b>
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	0	0
AC Powerline Conducted Emissions (dB)	0	0

# FACILITIES



<b>California</b> Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	<b>Minnesota</b> Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	<b>New York</b> Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	<b>Oregon</b> Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	<b>Texas</b> Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	<b>Washington</b> Labs NC01-05 19201 120 <sup>th</sup> Ave NE Bothell, WA 9801 (425)984-6600
<b>NVLAP</b>					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
<b>Industry Canada</b>					
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1
<b>BSMI</b>					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
<b>VCCI</b>					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
<b>Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRR, MIC, MOC, NCC, OFCA</b>					
US0158	US0175	N/A	US0017	US0191	US0157





# PRODUCT DESCRIPTION

## Client and Equipment Under Test (EUT) Information

<b>Company Name:</b>	Walt Disney Parks and Resorts US., Inc.
<b>Address:</b>	PO Box 10000
<b>City, State, Zip:</b>	Lake Buena Vista, FL, 32830
<b>Test Requested By:</b>	Brian Piquette with Synapse Product Development LLC
<b>Model:</b>	MagicBand 1.2
<b>First Date of Test:</b>	October 05, 2015
<b>Last Date of Test:</b>	December 10, 2015
<b>Receipt Date of Samples:</b>	October 05, 2015
<b>Equipment Design Stage:</b>	Production
<b>Equipment Condition:</b>	No Damage

## Information Provided by the Party Requesting the Test

<b>Functional Description of the EUT:</b>
A previously certified wrist band (FCC ID: Q3E-MB-R1G1) that contains a proprietary DTS radio. This product model is a slight modification from the previously tested model. The flexible printed circuit has a minor modification and the plastic outer shell has been modified to improve wearability. No electrical functional changes have been made from the previously tested model.
<b>Testing Objective:</b>
To demonstrate compliance of the 2.4 GHz ISM radio to FCC 15.247 requirements.

# CONFIGURATIONS

## Configuration SYNA0173- 1 and SYNA0183- 1

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Identity Band	Walt Disney Parks and Resorts US., Inc.	MagicBand 1.2	00059CE8B4

## Configuration SYNA0173- 2

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Identity Band	Walt Disney Parks and Resorts US., Inc.	MagicBand 1.2	00059CEB6B

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
External Battery Pack	Walt Disney Parks and Resorts US., Inc.	None	None



# MODIFICATIONS

## Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	10/5/2015	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	10/5/2015	Duty Cycle	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	10/6/2015	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	10/6/2015	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT was taken home by the client before the next scheduled test.
5	12/10/2015	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	12/10/2015	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
7	12/10/2015	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

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

## MODES OF OPERATION

Low Channel, 2401 MHz, GFSK Modulation  
Mid Channel, 2450 MHz, GFSK Modulation  
High Channel, 2476 MHz, GFSK Modulation

## POWER SETTINGS INVESTIGATED

Battery

## CONFIGURATIONS INVESTIGATED

SYNA0173 - 2

## FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26000 MHz
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## SAMPLE CALCULATIONS


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

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Cable	Northwest EMC	N/A	NC8	6/6/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AOD	6/6/2015	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AIY	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AOJ	9/21/2015	12 mo
Antenna - Standard Gain	EMCO	3160-08	AHO	NCR	0 mo
Cable	Northwest EMC	Standard Gain Horn Cable	NC3	6/17/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOK	9/21/2015	12 mo
Antenna - Standard Gain	EMCO	3160-07	AHP	NCR	0 mo
Filter - High Pass	Micro-Tronics	HPM50111	HHI	12/9/2014	12 mo
Attenuator	Fairview Microwave	SA18E-20	AQV	9/28/2015	12 mo
Cable	Northwest EMC	3115 Horn Cable	NC2	6/17/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVZ	7/31/2015	12 mo
Antenna - Double Ridge	EMCO	3115	AHM	6/3/2014	24 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	PAB	7/31/2015	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AYL	7/30/2015	24 mo
Cable	Northwest EMC	Bilog Cables	NC1	8/27/2015	12 mo
Filter - Low Pass	Micro-Tronics	LPM50004	LFF	3/6/2015	12 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	6/23/2015	12 mo

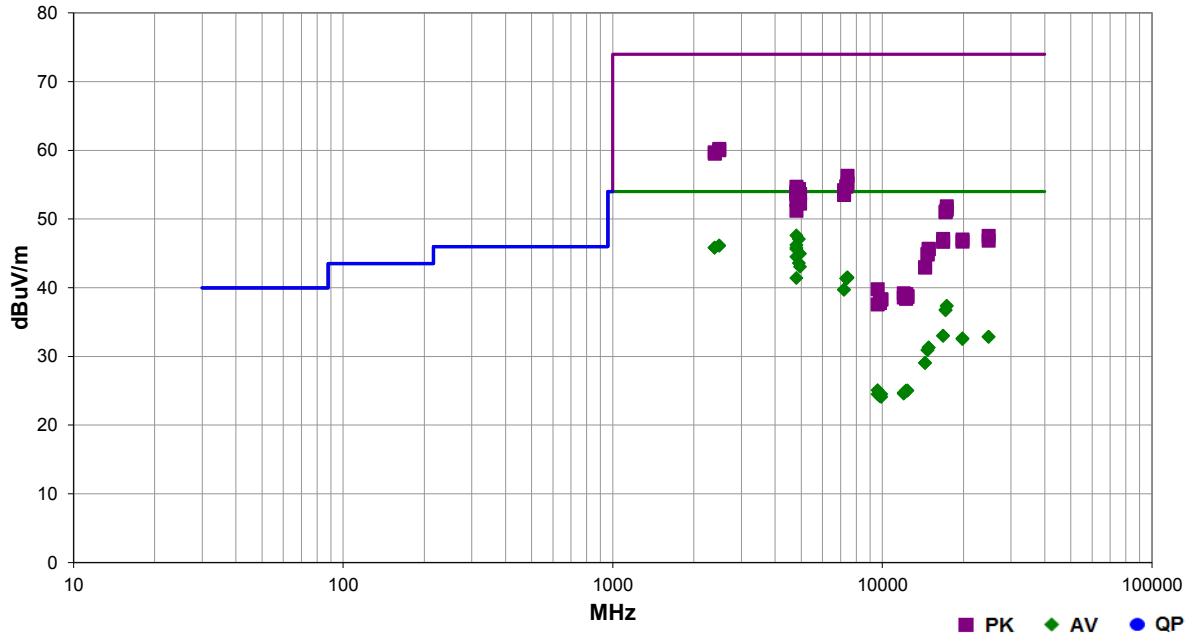
## TEST DESCRIPTION

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization. A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

Work Order:	SYNA0173	Date:	10/06/15	
Project:	None	Temperature:	22 °C	
Job Site:	NC01	Humidity:	43.7% RH	
Serial Number:	00059CEB6B	Barometric Pres.:	1015 mbar	
EUT:		MagicBand 1.2		
Configuration:		2		
Customer:		Walt Disney Parks and Resorts US., Inc.		
Attendees:		Brian Piquette		
EUT Power:		Battery		
Operating Mode:		See comments next to data points for transmit channel information, all run on GFSK modulation		
Deviations:		None		
Comments:		External Battery Attached		

Test Specifications	Test Method
FCC 15.247:2015	ANSI C63.10:2013

Run #	9	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4802.100	37.8	9.8	2.7	140.0	3.0	0.0	Horz	AV	0.0	47.6	54.0	-6.4	Low Ch, EUT end
4900.115	36.7	10.4	2.9	149.0	3.0	0.0	Horz	AV	0.0	47.1	54.0	-6.9	Mid Ch, EUT end
4802.100	36.4	9.8	3.6	3.0	3.0	0.0	Vert	AV	0.0	46.2	54.0	-7.8	Low Ch, EUT side
2484.697	26.9	-0.8	3.1	100.0	3.0	20.0	Vert	AV	0.0	46.1	54.0	-7.9	Hi Ch, EUT Flat
2484.540	26.9	-0.8	2.9	81.0	3.0	20.0	Horz	AV	0.0	46.1	54.0	-7.9	Hi Ch, EUT Flat
4802.085	36.0	9.8	3.3	4.0	3.0	0.0	Vert	AV	0.0	45.8	54.0	-8.2	Low Ch, EUT flat
2388.620	26.8	-1.0	2.1	193.0	3.0	20.0	Horz	AV	0.0	45.8	54.0	-8.2	Low Ch, EUT Flat
2388.360	26.8	-1.0	1.0	26.0	3.0	20.0	Vert	AV	0.0	45.8	54.0	-8.2	Low Ch, EUT Flat
4802.040	35.8	9.8	3.2	29.0	3.0	0.0	Vert	AV	0.0	45.6	54.0	-8.4	Low Ch, EUT end
4952.130	34.6	10.3	4.0	50.0	3.0	0.0	Vert	AV	0.0	44.9	54.0	-9.1	Hi Ch, EUT end
4802.130	34.7	9.8	3.6	192.0	3.0	0.0	Horz	AV	0.0	44.5	54.0	-9.5	Low Ch, EUT side
4900.065	33.2	10.4	1.1	91.0	3.0	0.0	Vert	AV	0.0	43.6	54.0	-10.4	Mid Ch, EUT end
4952.115	32.7	10.3	1.0	356.0	3.0	0.0	Horz	AV	0.0	43.0	54.0	-11.0	Hi Ch, EUT end
7427.975	25.1	16.4	1.0	285.0	3.0	0.0	Vert	AV	0.0	41.5	54.0	-12.5	Hi Ch, EUT end
4802.135	31.6	9.8	1.0	61.0	3.0	0.0	Horz	AV	0.0	41.4	54.0	-12.6	Low Ch, EUT flat
7428.165	25.0	16.4	1.0	42.0	3.0	0.0	Horz	AV	0.0	41.4	54.0	-12.6	Hi Ch, EUT end
7350.295	25.5	15.9	1.0	360.0	3.0	0.0	Vert	AV	0.0	41.4	54.0	-12.6	Mid Ch, EUT end
7349.895	25.5	15.9	1.0	249.0	3.0	0.0	Horz	AV	0.0	41.4	54.0	-12.6	Mid Ch, EUT end
2484.643	41.0	-0.8	3.1	100.0	3.0	20.0	Vert	PK	0.0	60.2	74.0	-13.8	Hi Ch, EUT Flat
2484.537	40.8	-0.8	2.9	81.0	3.0	20.0	Horz	PK	0.0	60.0	74.0	-14.0	Hi Ch, EUT Flat
2388.540	40.7	-1.0	2.1	193.0	3.0	20.0	Horz	PK	0.0	59.7	74.0	-14.3	Low Ch, EUT Flat
7203.510	25.4	14.3	3.6	127.0	3.0	0.0	Horz	AV	0.0	39.7	54.0	-14.3	Low Ch, EUT end

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7202.680	25.4	14.3	1.4	359.0	3.0	0.0	Vert	AV	0.0	39.7	54.0	-14.3	Low Ch, EUT end
2389.910	40.5	-1.0	1.0	26.0	3.0	20.0	Vert	PK	0.0	59.5	74.0	-14.5	Low Ch, EUT Flat
17332.050	23.6	13.8	1.0	232.0	3.0	0.0	Vert	AV	0.0	37.4	54.0	-16.6	Hi Ch, EUT end
17330.500	23.6	13.8	1.0	144.0	3.0	0.0	Horz	AV	0.0	37.4	54.0	-16.6	Hi Ch, EUT end
17149.690	23.5	13.3	1.0	219.0	3.0	0.0	Vert	AV	0.0	36.8	54.0	-17.2	Mid Ch, EUT end
17149.910	23.4	13.3	1.0	354.0	3.0	0.0	Horz	AV	0.0	36.7	54.0	-17.3	Mid Ch, EUT end
7428.855	39.9	16.4	1.0	285.0	3.0	0.0	Vert	PK	0.0	56.3	74.0	-17.7	Hi Ch, EUT end
7426.970	38.8	16.4	1.0	42.0	3.0	0.0	Horz	PK	0.0	55.2	74.0	-18.8	Hi Ch, EUT end
7350.690	38.9	15.9	1.0	360.0	3.0	0.0	Vert	PK	0.0	54.8	74.0	-19.2	Mid Ch, EUT end
7348.680	38.9	15.8	1.0	249.0	3.0	0.0	Horz	PK	0.0	54.7	74.0	-19.3	Mid Ch, EUT end
4801.865	44.9	9.8	2.7	140.0	3.0	0.0	Horz	PK	0.0	54.7	74.0	-19.3	Low Ch, EUT end
4900.150	44.0	10.4	2.9	149.0	3.0	0.0	Horz	PK	0.0	54.4	74.0	-19.6	Mid Ch, EUT end
7202.500	39.9	14.3	1.4	359.0	3.0	0.0	Vert	PK	0.0	54.2	74.0	-19.8	Low Ch, EUT end
4802.320	44.2	9.8	3.6	3.0	3.0	0.0	Vert	PK	0.0	54.0	74.0	-20.0	Low Ch, EUT side
4801.910	43.9	9.8	3.2	29.0	3.0	0.0	Vert	PK	0.0	53.7	74.0	-20.3	Low Ch, EUT end
4951.810	43.3	10.3	4.0	50.0	3.0	0.0	Vert	PK	0.0	53.6	74.0	-20.4	Hi Ch, EUT end
4801.585	43.8	9.8	3.3	4.0	3.0	0.0	Vert	PK	0.0	53.6	74.0	-20.4	Low Ch, EUT flat
7203.750	39.2	14.3	3.6	127.0	3.0	0.0	Horz	PK	0.0	53.5	74.0	-20.5	Low Ch, EUT end
16808.240	21.8	11.2	1.0	137.0	3.0	0.0	Vert	AV	0.0	33.0	54.0	-21.0	Low Ch, EUT end
16806.750	21.8	11.2	1.0	32.0	3.0	0.0	Horz	AV	0.0	33.0	54.0	-21.0	Low Ch, EUT end
24757.570	36.2	-3.4	1.5	255.0	3.0	0.0	Vert	AV	0.0	32.8	54.0	-21.2	Hi Ch, EUT end
24757.560	36.2	-3.4	1.5	199.0	3.0	0.0	Horz	AV	0.0	32.8	54.0	-21.2	Hi Ch, EUT end
4802.295	42.9	9.8	3.6	192.0	3.0	0.0	Horz	PK	0.0	52.7	74.0	-21.3	Low Ch, EUT side
19807.360	32.8	-0.2	1.5	40.0	3.0	0.0	Horz	AV	0.0	32.6	54.0	-21.4	Hi Ch, EUT end
19808.590	32.7	-0.2	1.5	32.0	3.0	0.0	Vert	AV	0.0	32.5	54.0	-21.5	Hi Ch, EUT end
4899.640	42.1	10.4	1.1	91.0	3.0	0.0	Vert	PK	0.0	52.5	74.0	-21.5	Mid Ch, EUT end
4952.145	41.9	10.3	1.0	356.0	3.0	0.0	Horz	PK	0.0	52.2	74.0	-21.8	Hi Ch, EUT end
17332.090	38.1	13.8	1.0	144.0	3.0	0.0	Horz	PK	0.0	51.9	74.0	-22.1	Hi Ch, EUT end
17331.130	37.6	13.8	1.0	232.0	3.0	0.0	Vert	PK	0.0	51.4	74.0	-22.6	Hi Ch, EUT end
14855.260	26.0	5.3	1.0	168.0	3.0	0.0	Horz	AV	0.0	31.3	54.0	-22.7	Hi Ch, EUT end
14854.850	26.0	5.3	1.0	33.0	3.0	0.0	Vert	AV	0.0	31.3	54.0	-22.7	Hi Ch, EUT end
4801.830	41.4	9.8	1.0	61.0	3.0	0.0	Horz	PK	0.0	51.2	74.0	-22.8	Low Ch, EUT flat
17149.960	37.8	13.3	1.0	354.0	3.0	0.0	Horz	PK	0.0	51.1	74.0	-22.9	Mid Ch, EUT end
17149.040	37.7	13.3	1.0	219.0	3.0	0.0	Vert	PK	0.0	51.0	74.0	-23.0	Mid Ch, EUT end
14699.180	26.1	4.8	1.0	126.0	3.0	0.0	Horz	AV	0.0	30.9	54.0	-23.1	Mid Ch, EUT end
14700.820	26.1	4.8	1.0	78.0	3.0	0.0	Vert	AV	0.0	30.9	54.0	-23.1	Mid Ch, EUT end
14404.750	24.5	4.6	1.0	205.0	3.0	0.0	Horz	AV	0.0	29.1	54.0	-24.9	Low Ch, EUT end
14405.460	24.5	4.6	1.0	228.0	3.0	0.0	Vert	AV	0.0	29.1	54.0	-24.9	Low Ch, EUT end
24758.690	50.9	-3.4	1.5	255.0	3.0	0.0	Vert	PK	0.0	47.5	74.0	-26.5	Hi Ch, EUT end
16808.440	35.9	11.2	1.0	32.0	3.0	0.0	Horz	PK	0.0	47.1	74.0	-26.9	Low Ch, EUT end
19809.440	47.2	-0.2	1.5	32.0	3.0	0.0	Vert	PK	0.0	47.0	74.0	-27.0	Hi Ch, EUT end
24762.480	50.2	-3.4	1.5	199.0	3.0	0.0	Horz	PK	0.0	46.8	74.0	-27.2	Hi Ch, EUT end
19808.570	46.9	-0.2	1.5	40.0	3.0	0.0	Horz	PK	0.0	46.7	74.0	-27.3	Hi Ch, EUT end
16806.160	35.5	11.2	1.0	137.0	3.0	0.0	Vert	PK	0.0	46.7	74.0	-27.3	Low Ch, EUT end
14854.800	40.4	5.3	1.0	33.0	3.0	0.0	Vert	PK	0.0	45.7	74.0	-28.3	Hi Ch, EUT end
14854.670	40.3	5.3	1.0	168.0	3.0	0.0	Horz	PK	0.0	45.6	74.0	-28.4	Hi Ch, EUT end
9604.685	28.9	-3.8	1.0	15.0	3.0	0.0	Horz	AV	0.0	25.1	54.0	-28.9	Low Ch, EUT end
12378.810	27.3	-2.3	1.0	24.0	3.0	0.0	Horz	AV	0.0	25.0	54.0	-29.0	Hi Ch, EUT end
12379.120	27.3	-2.3	1.0	269.0	3.0	0.0	Vert	AV	0.0	25.0	54.0	-29.0	Hi Ch, EUT end
12249.230	27.6	-2.6	1.0	55.0	3.0	0.0	Horz	AV	0.0	25.0	54.0	-29.0	Mid Ch, EUT end
12248.820	27.6	-2.6	1.0	160.0	3.0	0.0	Vert	AV	0.0	25.0	54.0	-29.0	Mid Ch, EUT end
14700.220	40.1	4.8	1.0	126.0	3.0	0.0	Horz	PK	0.0	44.9	74.0	-29.1	Mid Ch, EUT end
14699.530	40.0	4.8	1.0	78.0	3.0	0.0	Vert	PK	0.0	44.8	74.0	-29.2	Mid Ch, EUT end
12005.580	27.7	-3.0	1.0	184.0	3.0	0.0	Vert	AV	0.0	24.7	54.0	-29.3	Low Ch, EUT end
12004.600	27.6	-3.0	1.0	132.0	3.0	0.0	Horz	AV	0.0	24.6	54.0	-29.4	Low Ch, EUT end
9800.710	28.1	-3.5	1.0	106.0	3.0	0.0	Vert	AV	0.0	24.6	54.0	-29.4	Mid Ch, EUT end
9904.565	27.9	-3.4	1.6	181.0	3.0	0.0	Horz	AV	0.0	24.5	54.0	-29.5	Hi Ch, EUT end
9604.635	28.3	-3.8	1.0	65.0	3.0	0.0	Vert	AV	0.0	24.5	54.0	-29.5	Low Ch, EUT end
9799.785	27.7	-3.5	1.0	9.0	3.0	0.0	Horz	AV	0.0	24.2	54.0	-29.8	Mid Ch, EUT end
9902.690	27.5	-3.4	1.0	2.0	3.0	0.0	Vert	AV	0.0	24.1	54.0	-29.9	Hi Ch, EUT end
14405.130	38.4	4.6	1.0	228.0	3.0	0.0	Vert	PK	0.0	43.0	74.0	-31.0	Low Ch, EUT end
14405.600	38.4	4.6	1.0	205.0	3.0	0.0	Horz	PK	0.0	43.0	74.0	-31.0	Low Ch, EUT end
9604.230	43.6	-3.8	1.0	15.0	3.0	0.0	Horz	PK	0.0	39.8	74.0	-34.2	Low Ch, EUT end
12004.150	42.2	-3.0	1.0	184.0	3.0	0.0	Vert	PK	0.0	39.2	74.0	-34.8	Low Ch, EUT end
12248.670	41.7	-2.6	1.0	160.0	3.0	0.0	Vert	PK	0.0	39.1	74.0	-34.9	Mid Ch, EUT end
12379.360	41.1	-2.3	1.0	269.0	3.0	0.0	Vert	PK	0.0	38.8	74.0	-35.2	Hi Ch, EUT end
12378.540	40.9	-2.3	1.0	24.0	3.0	0.0	Horz	PK	0.0	38.6	74.0	-35.4	Hi Ch, EUT end
12006.220	41.6	-3.0	1.0	132.0	3.0	0.0	Horz	PK	0.0	38.6	74.0	-35.4	Low Ch, EUT end
12250.210	41.0	-2.6	1.0	55.0	3.0	0.0	Horz	PK	0.0	38.4	74.0	-35.6	Mid Ch, EUT end
9904.195	41.7	-3.4	1.0	2.0	3.0	0.0	Vert	PK	0.0	38.3	74.0	-35.7	Hi Ch, EUT end
9902.580	41.7	-3.4	1.6	181.0	3.0	0.0	Horz	PK	0.0	38.3	74.0	-35.7	Hi Ch, EUT end
9800.155	41.5	-3.5	1.0	106.0	3.0	0.0	Vert	PK	0.0	38.0	74.0	-36.0	Mid Ch, EUT end
9801.340	41.3	-3.5	1.0	9.0	3.0	0.0	Horz	PK	0.0	37.8	74.0	-36.2	Mid Ch, EUT end
9603.260	41.4	-3.8	1.0	65.0	3.0	0.0	Vert	PK	0.0	37.6	74.0	-36.4	Low Ch, EUT end

# 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.	Interval (mo)
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAT	9/29/2015	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKE	1/16/2015	12
Generator - Signal	Keysight	N5182B	TFY	4/16/2015	36

## TEST DESCRIPTION

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 measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

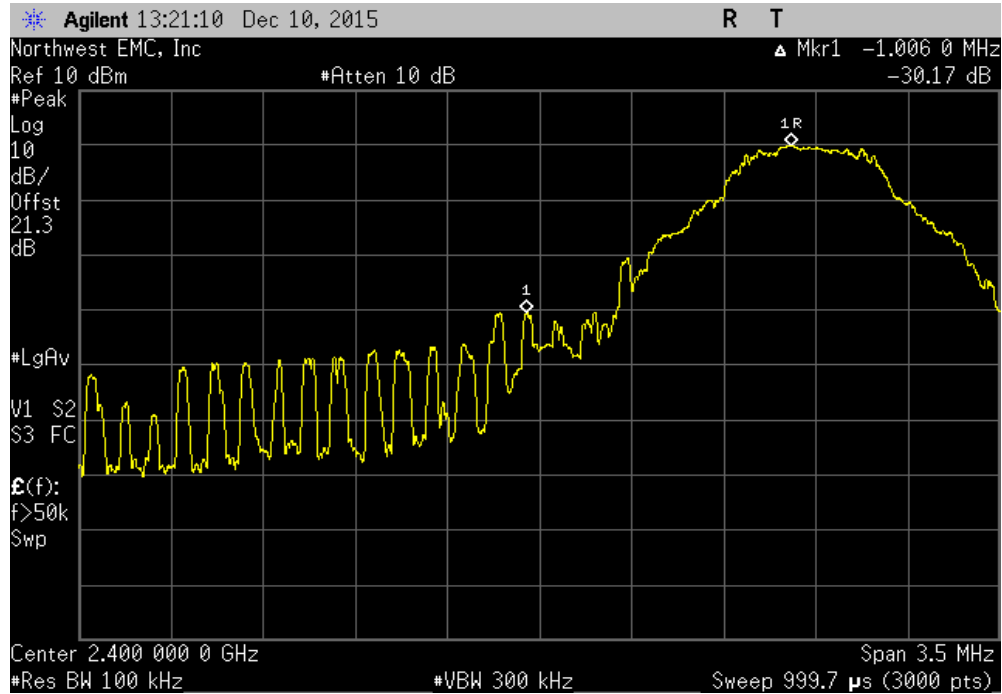
The spectrum was scanned below the lower band edge and above the higher band edge.

# BAND EDGE COMPLIANCE

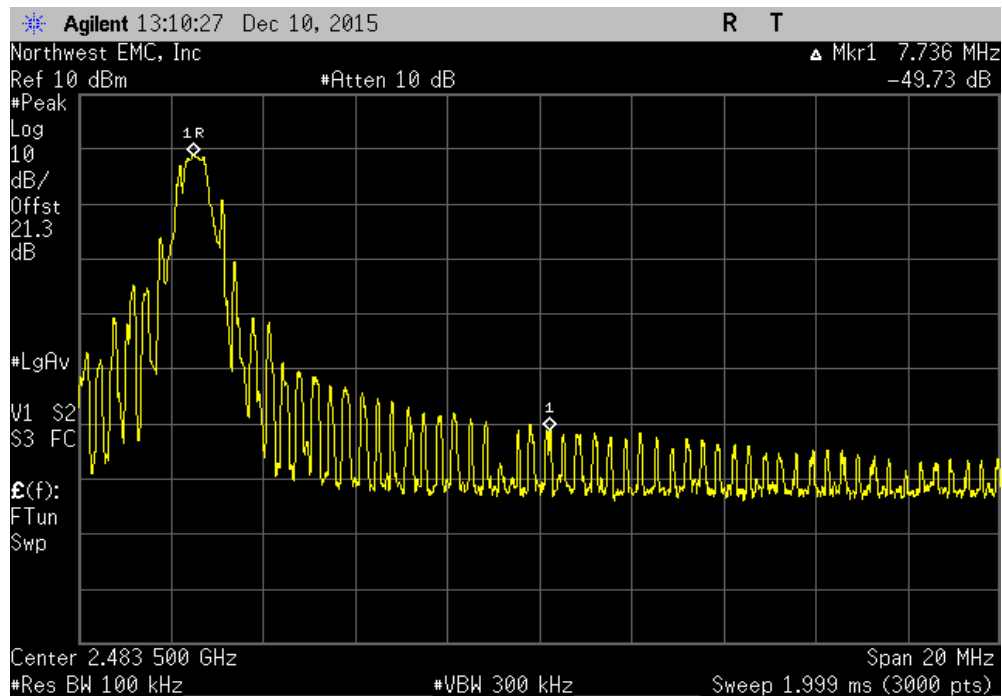
EUT: MagicBand 1.2		Work Order: SYNA0183	
Serial Number: 00060954B0		Date: 12/10/15	
Customer: Walt Disney Parks and Resorts US., Inc.		Temperature: 23°C	
Attendees: Brian Piquette		Humidity: 41%	
Project: None		Barometric Pres.: 989mbar	
Tested by: Richard Mellroth	Power: Battery	Job Site: NC05	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2015		ANSI C63.10:2013	
COMMENTS			
Post In-Park test, RF re-tune.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value (dBc)	Limit ≤ (dBc) Result
GFSK Modulation			
Low Channel, 2401 MHz		-30.17	-20 Pass
High Channel, 2476 MHz		-49.73	-20 Pass

# BAND EDGE COMPLIANCE

GFSK Modulation, Low Channel, 2401 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-30.17	-20	Pass



GFSK Modulation, High Channel, 2476 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-49.73	-20	Pass





# DUTY CYCLE

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.	Interval (mo)
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	6/23/2015	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKE	1/16/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Generator - Signal	Keysight	N5182B	TFY	4/16/2015	36

## TEST DESCRIPTION

The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.


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

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used.

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

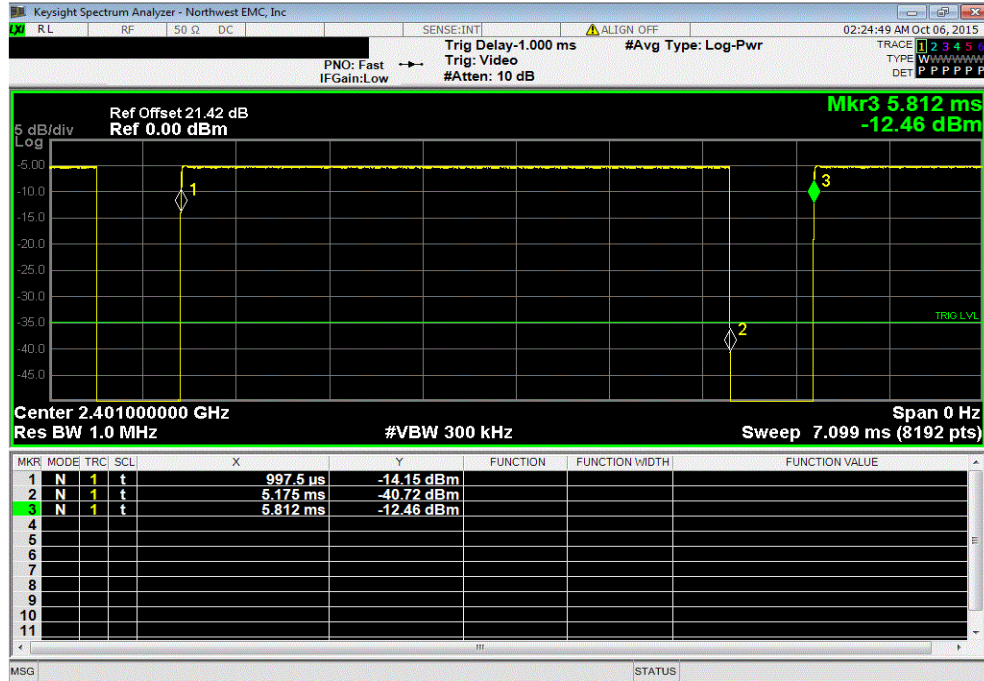
If the transmit duty cycle < 98 percent, burst gating may have been used during some of the other tests in this report to only take the measurement during the burst duration.

# DUTY CYCLE

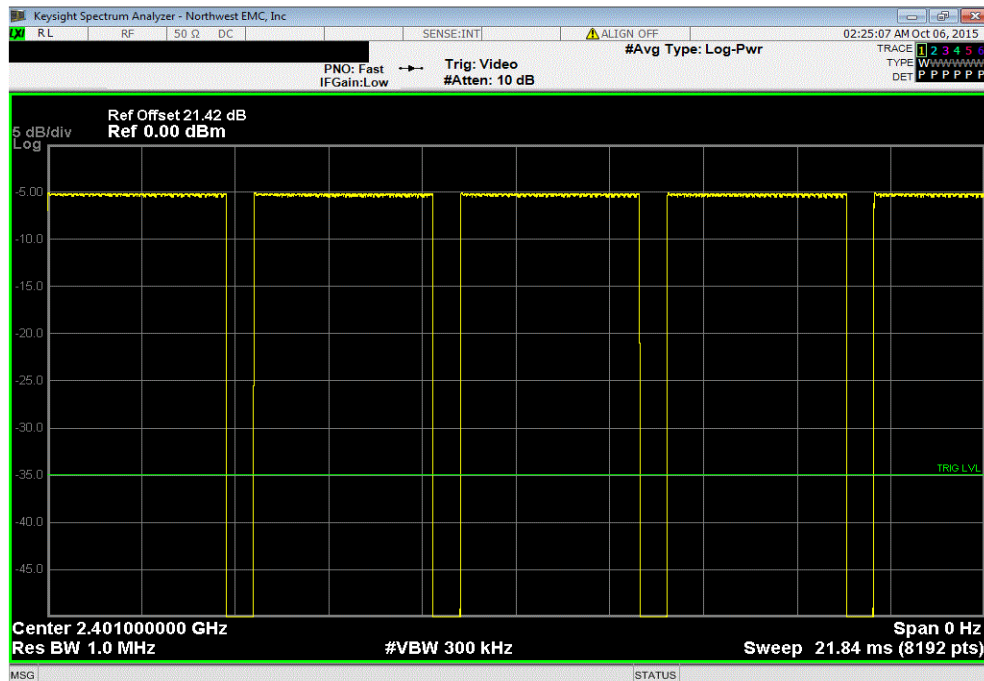
EUT: MagicBand 1.2		Work Order: SYNA0173				
Serial Number: 00059CE8B4		Date: 10/05/15				
Customer: Walt Disney Parks and Resorts US., Inc.		Temperature: 23°C				
Attendees: Brian Piquette		Humidity: 46%				
Project: None		Barometric Pres.: 1017mbar				
Tested by: Richard Mellroth	Power: Battery	Job Site: NC01				
TEST SPECIFICATIONS		Test Method				
FCC 15.247:2015		ANSI C63.10:2013				
COMMENTS						
None						
DEVIATIONS FROM TEST STANDARD						
None						
Configuration #	1	Signature 				
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
GFSK Modulation						
Low Channel, 2401 MHz	4.177 ms	4.814 ms	1	86.8	N/A	N/A
Low Channel, 2401 MHz	N/A	N/A	5	N/A	N/A	N/A
Mid Channel, 2450 MHz	4.175 ms	4.814 ms	1	86.7	N/A	N/A
Mid Channel, 2450 MHz	N/A	N/A	5	N/A	N/A	N/A
High Channel, 2476 MHz	4.177 ms	4.814 ms	1	86.8	N/A	N/A
High Channel, 2476 MHz	N/A	N/A	5	N/A	N/A	N/A

# DUTY CYCLE

GFSK Modulation, Low Channel, 2401 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	4.177 ms	4.814 ms	1	86.8	N/A	N/A

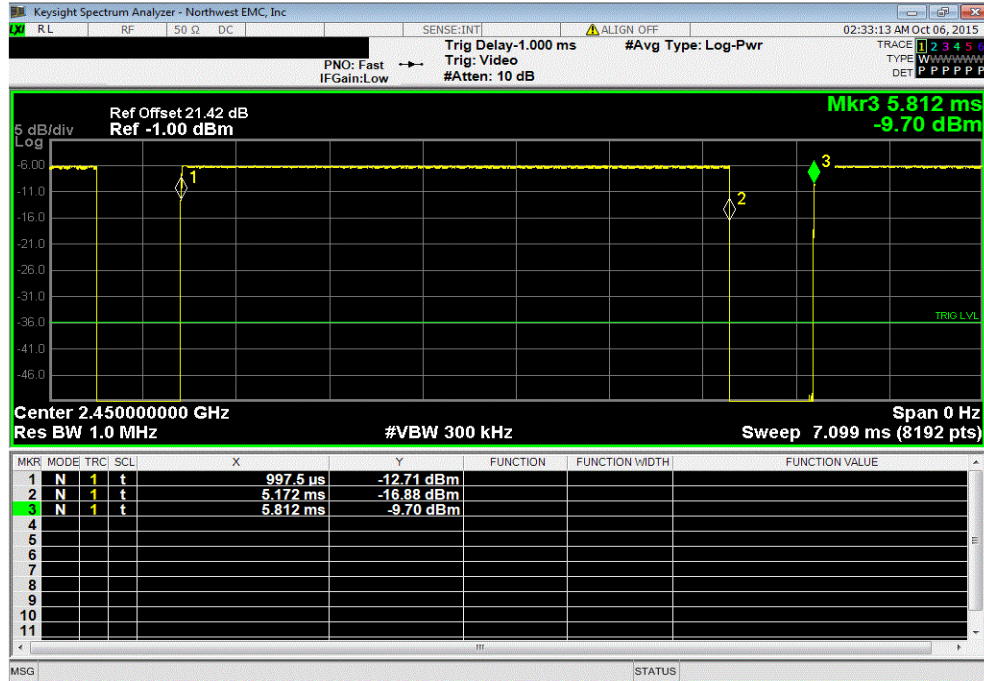


GFSK Modulation, Low Channel, 2401 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

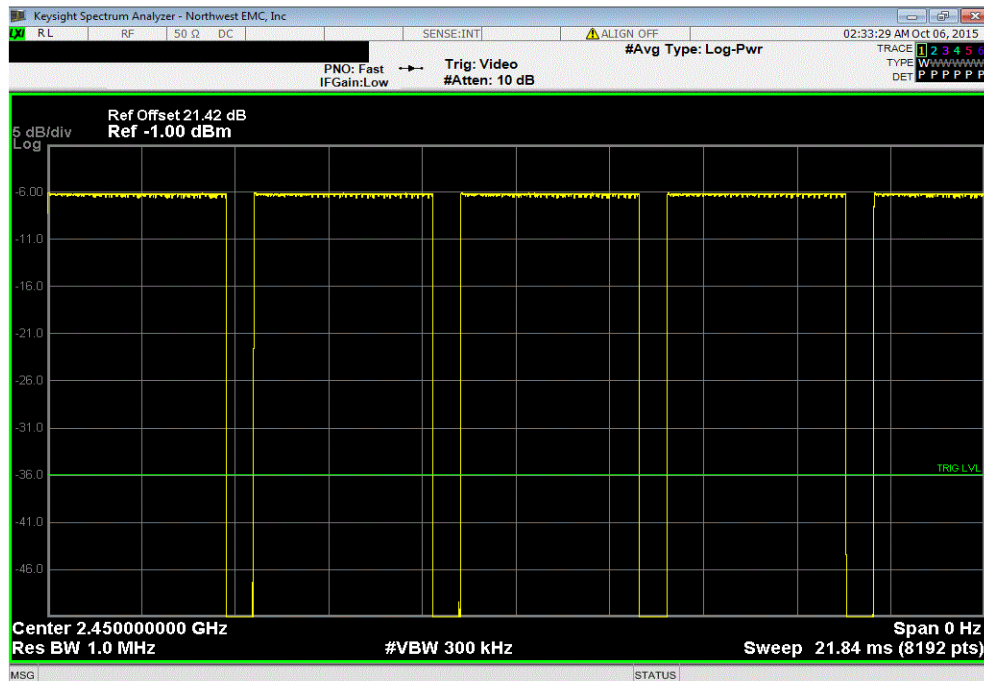


# DUTY CYCLE

GFSK Modulation, Mid Channel, 2450 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
4.175 ms	4.814 ms	1	86.7	N/A	N/A	

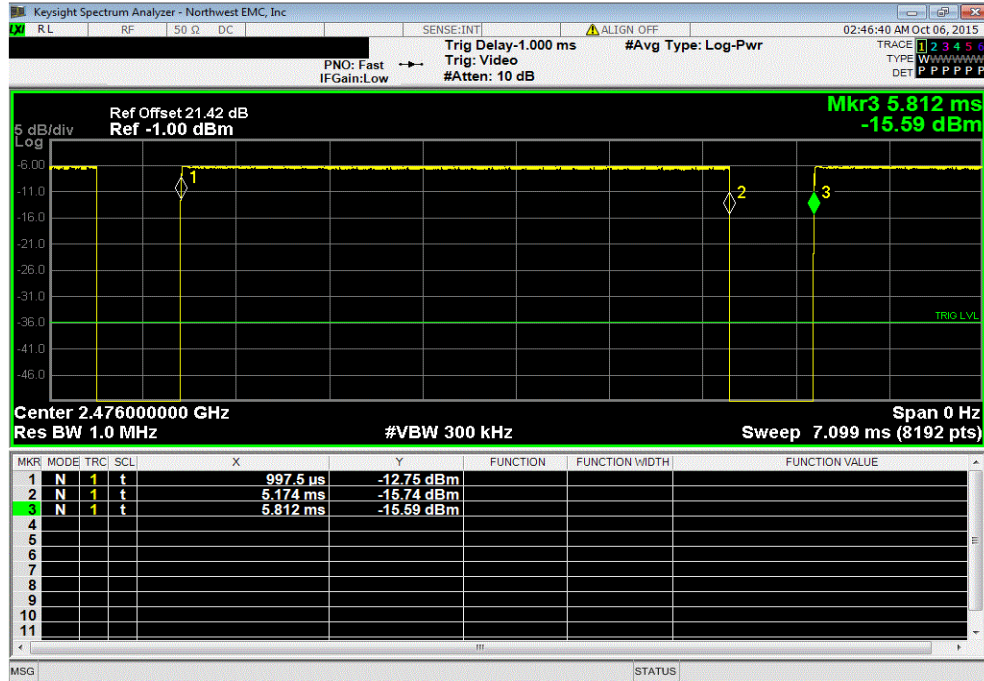


GFSK Modulation, Mid Channel, 2450 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

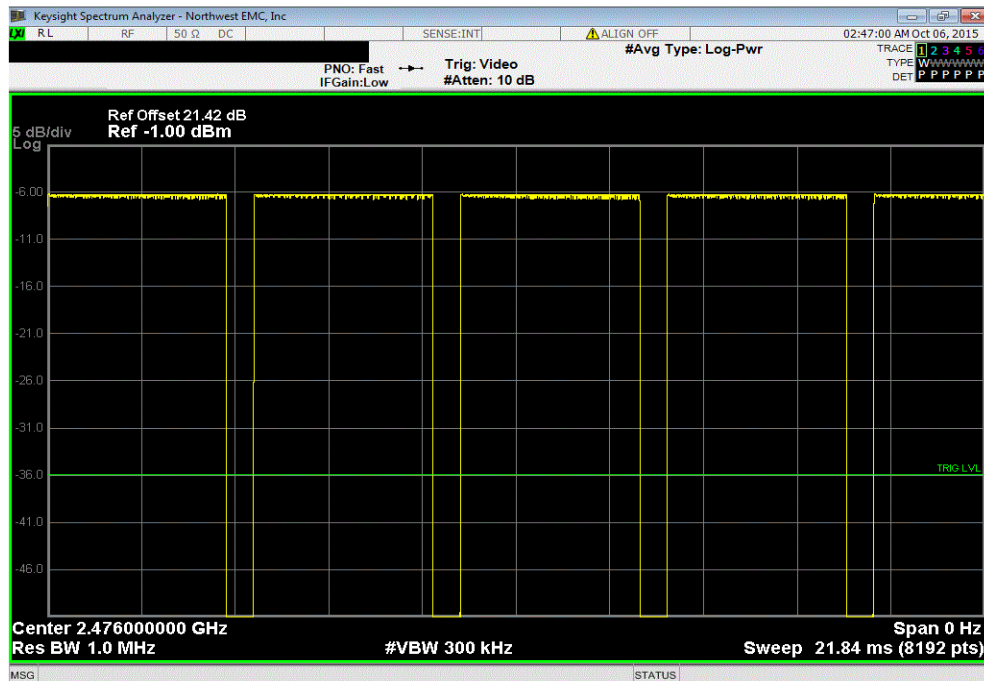


# DUTY CYCLE

GFSK Modulation, High Channel, 2476 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
4.177 ms	4.814 ms	1	86.8	N/A	N/A	



GFSK Modulation, High Channel, 2476 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



# OCCUPIED BANDWIDTH

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.	Interval (mo)
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	6/23/2015	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKE	1/16/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Generator - Signal	Keysight	N5182B	TFY	4/16/2015	36

## TEST DESCRIPTION

The 6dB occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.00% (approximate 26 dB) emission bandwidth (EBW) was also measured at the same time.

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

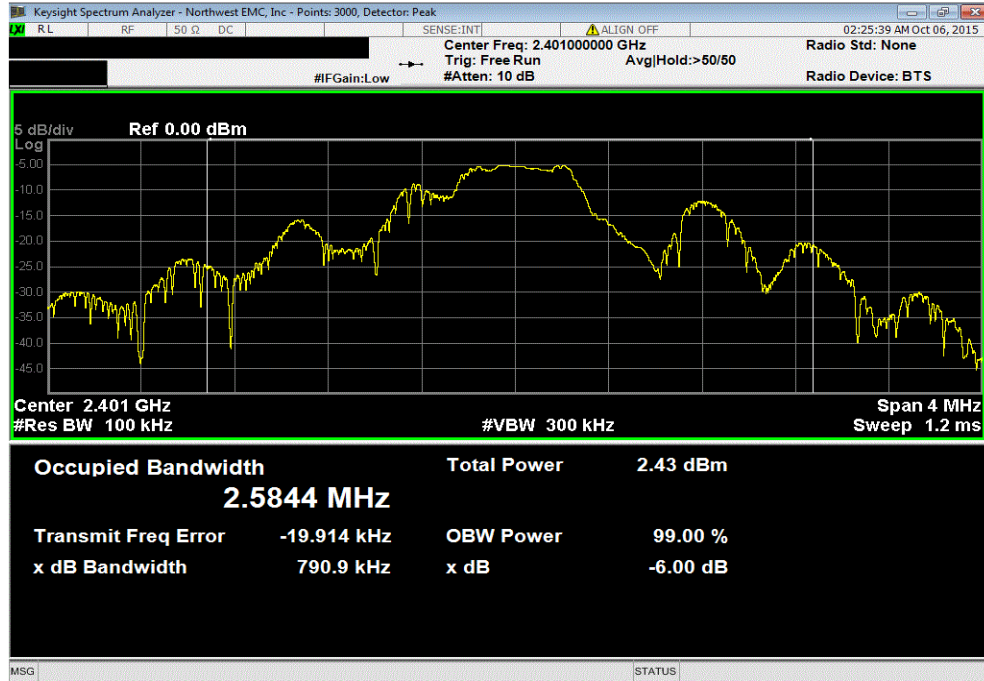
# OCCUPIED BANDWIDTH

EUT: MagicBand 1.2		Work Order: SYNA0173	
Serial Number: 00059CE8B4		Date: 10/06/15	
Customer: Walt Disney Parks and Resorts US., Inc.		Temperature: 23°C	
Attendees: Brian Piquette		Humidity: 46%	
Project: None		Barometric Pres.: 1017mbar	
Tested by: Richard Mellroth	Power: Battery	Job Site: NC01	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2015		ANSI C63.10:2013	
COMMENTS			
None			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value	Limit (>)
GFSK Modulation			Result
Low Channel, 2401 MHz		790.894 kHz	500 kHz Pass
Mid Channel, 2450 MHz		876.597 kHz	500 kHz Pass
High Channel, 2476 MHz		789.311 kHz	500 kHz Pass

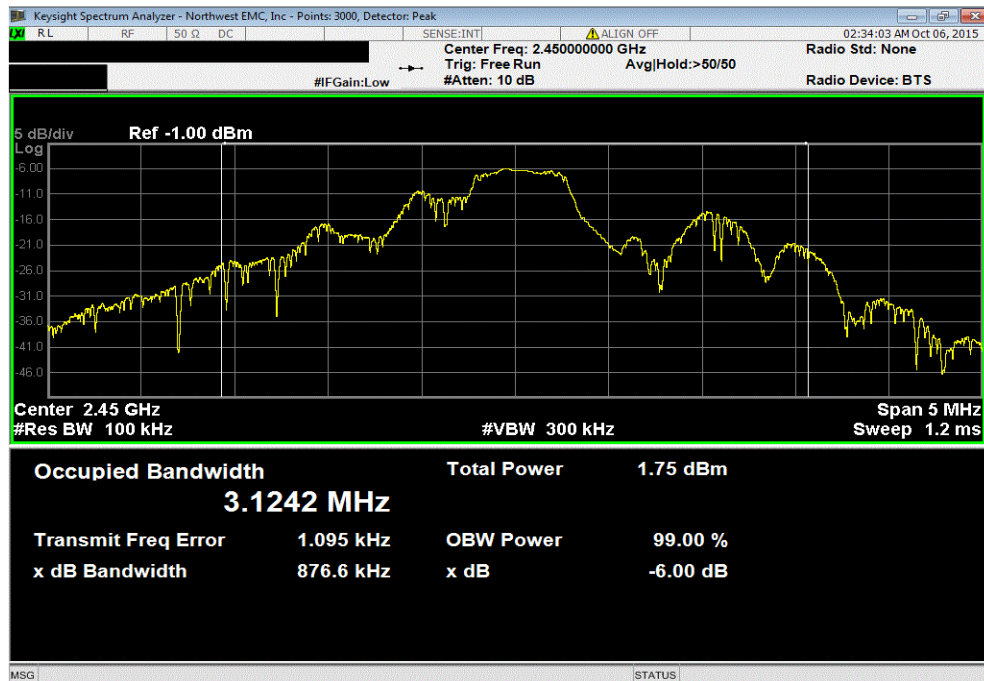


# OCCUPIED BANDWIDTH

GFSK Modulation, Low Channel, 2401 MHz						
				Value	Limit (>)	Result
				790.894 kHz	500 kHz	Pass

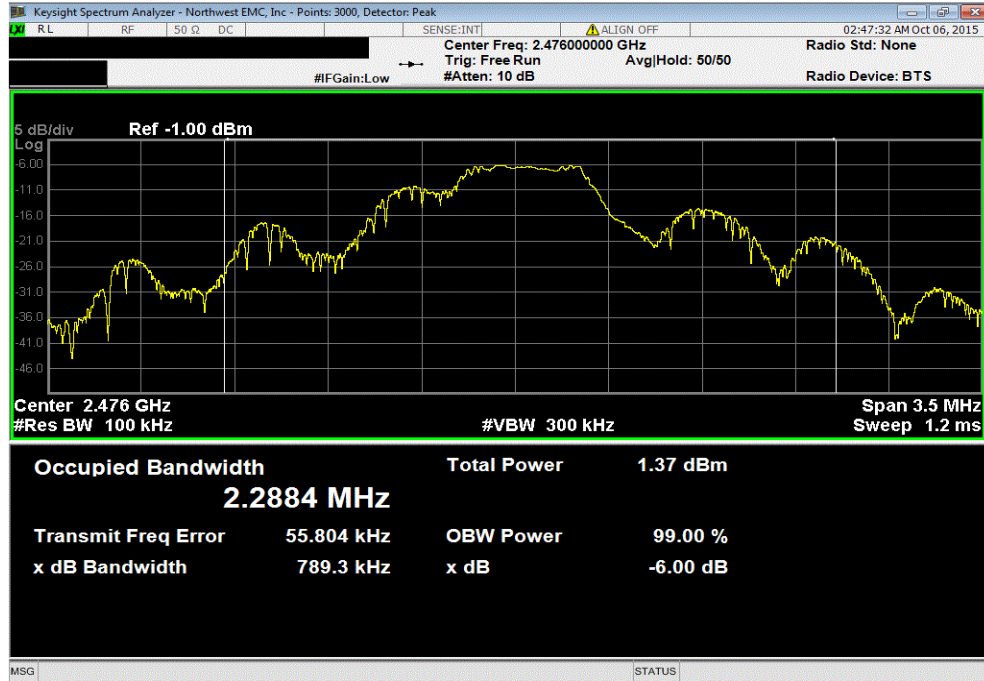


GFSK Modulation, Mid Channel, 2450 MHz						
				Value	Limit (>)	Result
				876.597 kHz	500 kHz	Pass



# OCCUPIED BANDWIDTH

GFSK Modulation, High Channel, 2476 MHz						
				Value	Limit (>)	Result
				789.311 kHz	500 kHz	Pass



# OUTPUT POWER

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.	Interval (mo)
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAT	9/29/2015	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKE	1/16/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Generator - Signal	Keysight	N5182B	TFY	4/16/2015	36

## TEST DESCRIPTION


The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

Prior to measuring peak transmit power the DTS bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method found in ANSI C63.10:2013 Section 11.10.2 was used because the RBW on the analyzer was greater than the DTS Bandwidth of the radio..

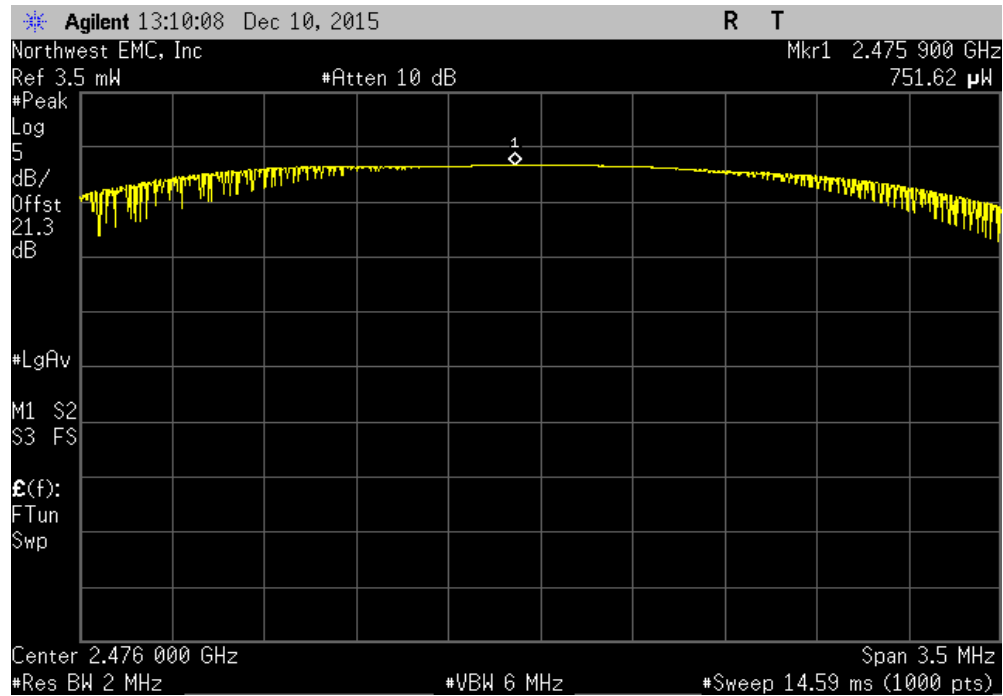
**De Facto EIRP Limit:** Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

# OUTPUT POWER

EUT: MagicBand 1.2		Work Order: SYNA0183	
Serial Number: 00060954B0		Date: 12/10/15	
Customer: Walt Disney Parks and Resorts US., Inc.		Temperature: 23°C	
Attendees: Brian Piquette		Humidity: 41%	
Project: None		Barometric Pres.: 989mbar	
Tested by: Richard Mellroth	Power: Battery	Job Site: NC05	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2015		ANSI C63.10:2013	
COMMENTS			
Post In-Park test, RF re-tune.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value	Limit (<) Result
GFSK Modulation			
Low Channel, 2401 MHz		963.163 uW	1 W Pass
Mid Channel, 2450 MHz		840.814 uW	1 W Pass
High Channel, 2476 MHz		751.623 uW	1 W Pass

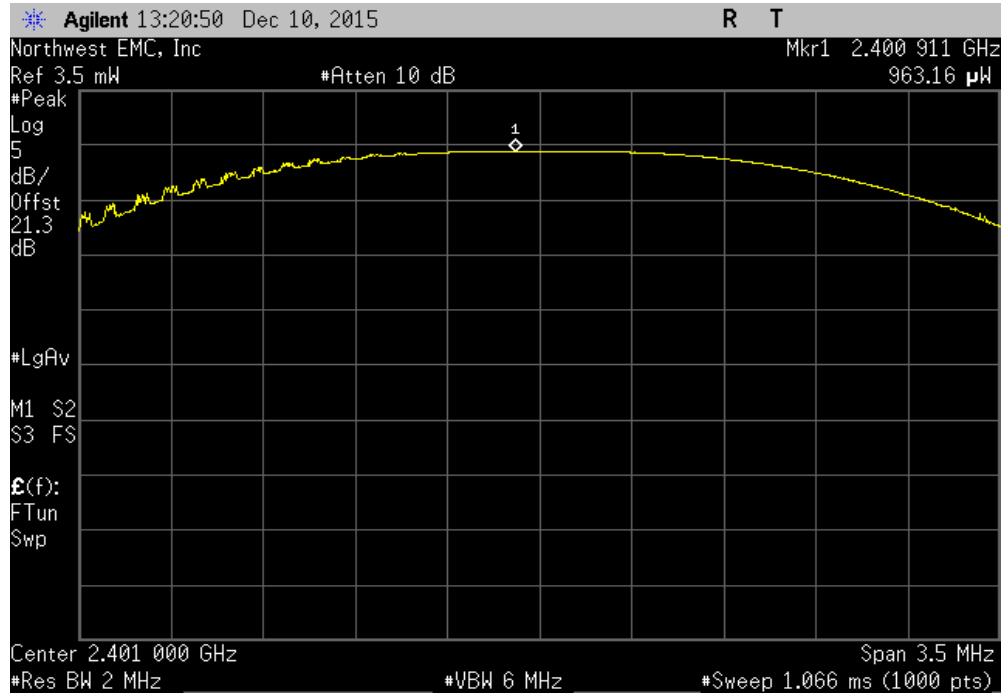
# OUTPUT POWER

GFSK Modulation, High Channel, 2476 MHz						
				Value	Limit (<)	Result
				751.623 uW	1 W	Pass

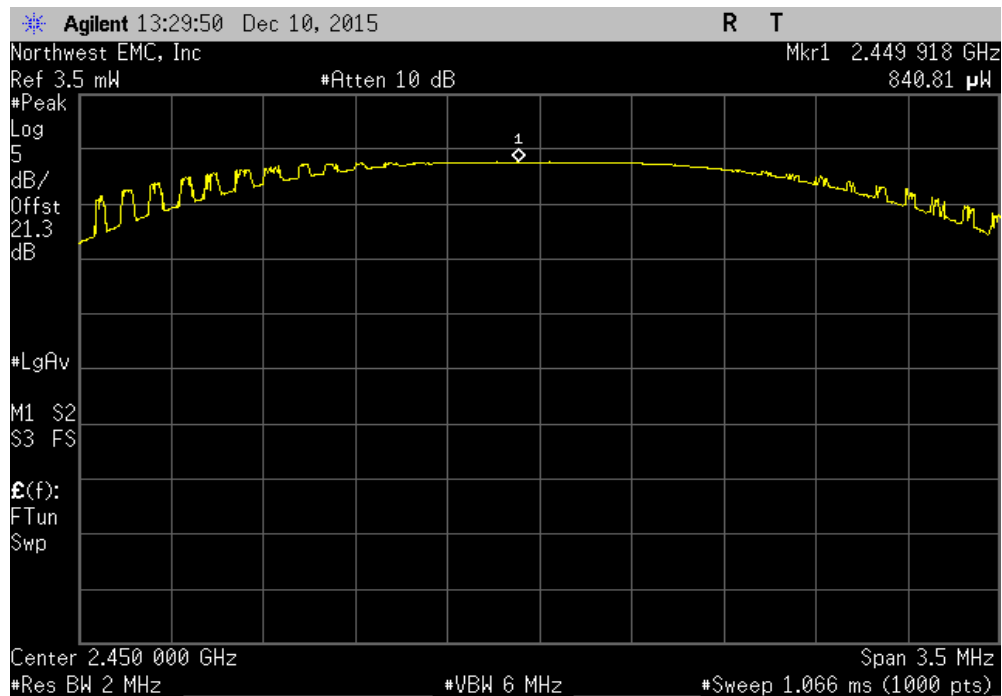


# OUTPUT POWER

GFSK Modulation, Low Channel, 2401 MHz						
				Value	Limit (<)	Result
				963.163 uW	1 W	Pass



GFSK Modulation, Mid Channel, 2450 MHz						
				Value	Limit (<)	Result
				840.814 uW	1 W	Pass



# POWER SPECTRAL DENSITY

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.	Interval (mo)
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAT	9/29/2015	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKE	1/16/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Generator - Signal	Keysight	N5182B	TFY	4/16/2015	36

## TEST DESCRIPTION

The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. External attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

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



# POWER SPECTRAL DENSITY

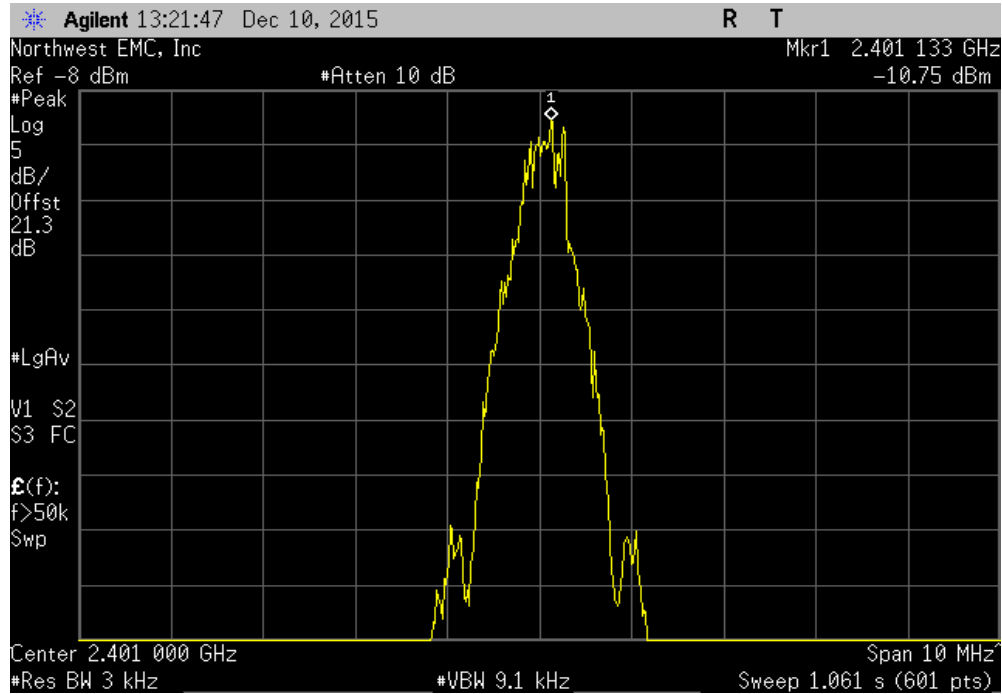


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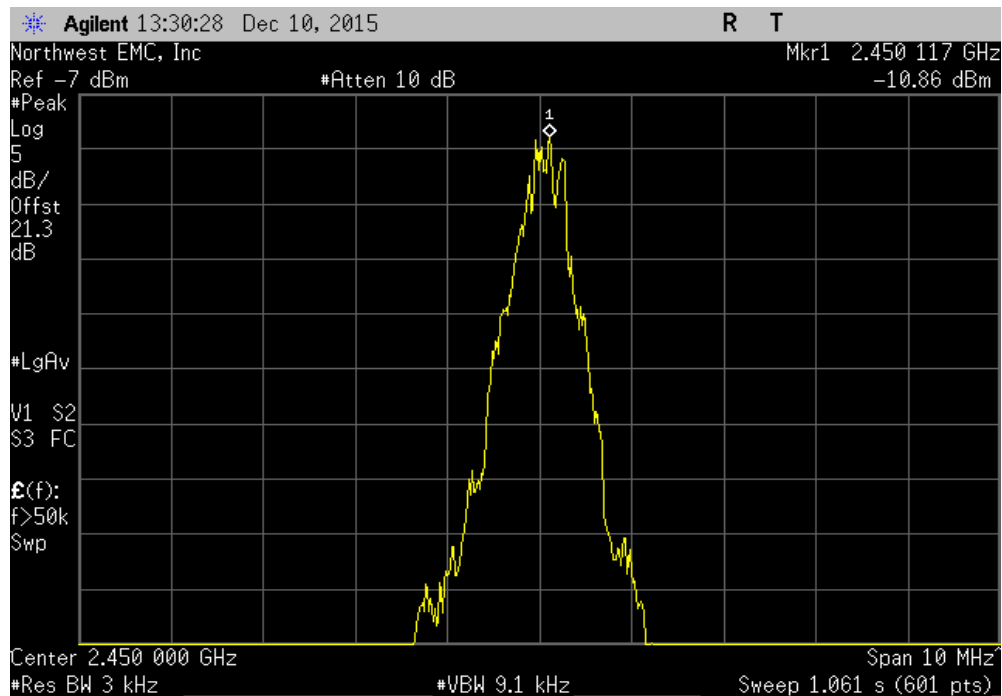
EUT: MagicBand 1.2		Work Order: SYNA0183	
Serial Number: 00060954B0		Date: 12/10/15	
Customer: Walt Disney Parks and Resorts US., Inc.		Temperature: 23°C	
Attendees: Brian Piquette		Humidity: 41%	
Project: None		Barometric Pres.: 989mbar	
Tested by: Richard Mellroth	Power: Battery	Job Site: NC05	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2015		ANSI C63.10:2013	
COMMENTS			
Post In-Park test, RF re-tune.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature	
		Value dBm/3kHz	Limit < dBm/3kHz
GFSK Modulation			Results
Low Channel, 2401 MHz		-10.754	8 Pass
Mid Channel, 2450 MHz		-10.861	8 Pass
High Channel, 2476 MHz		-10.405	8 Pass

# POWER SPECTRAL DENSITY

GFSK Modulation, Low Channel, 2401 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-10.754	8	Pass



GFSK Modulation, Mid Channel, 2450 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-10.861	8	Pass



# POWER SPECTRAL DENSITY

GFSK Modulation, High Channel, 2476 MHz						
				Value	Limit	Results
				dBm/3kHz	< dBm/3kHz	
				-10.405	8	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.	Interval (mo)
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	6/23/2015	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKE	1/16/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Generator - Signal	Keysight	N5182B	TFY	4/16/2015	36

## TEST DESCRIPTION

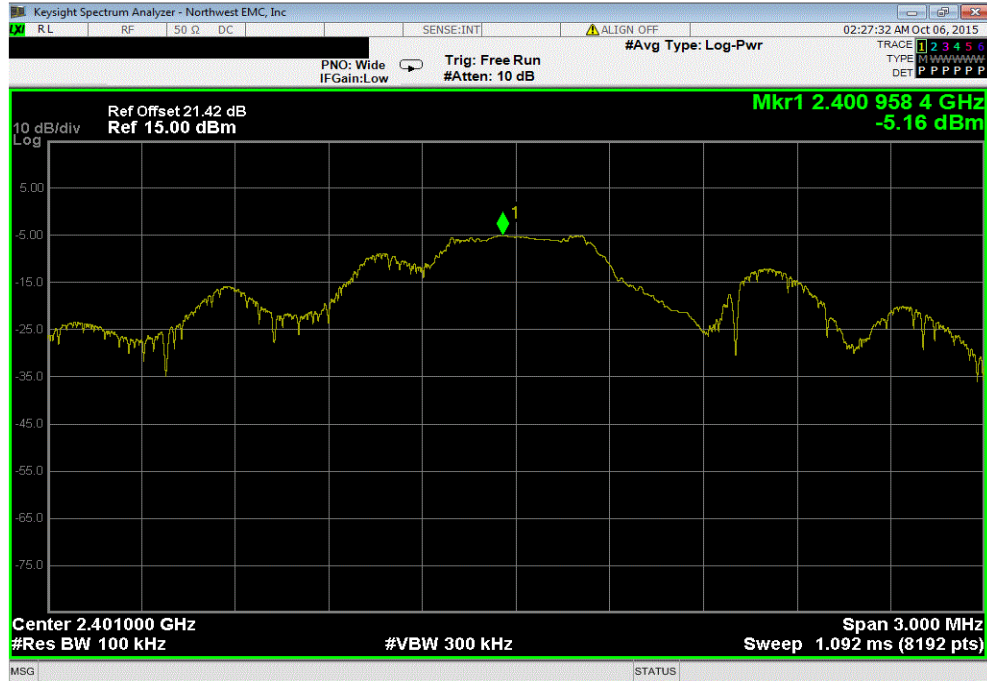
The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet. For each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

# SPURIOUS CONDUCTED EMISSIONS

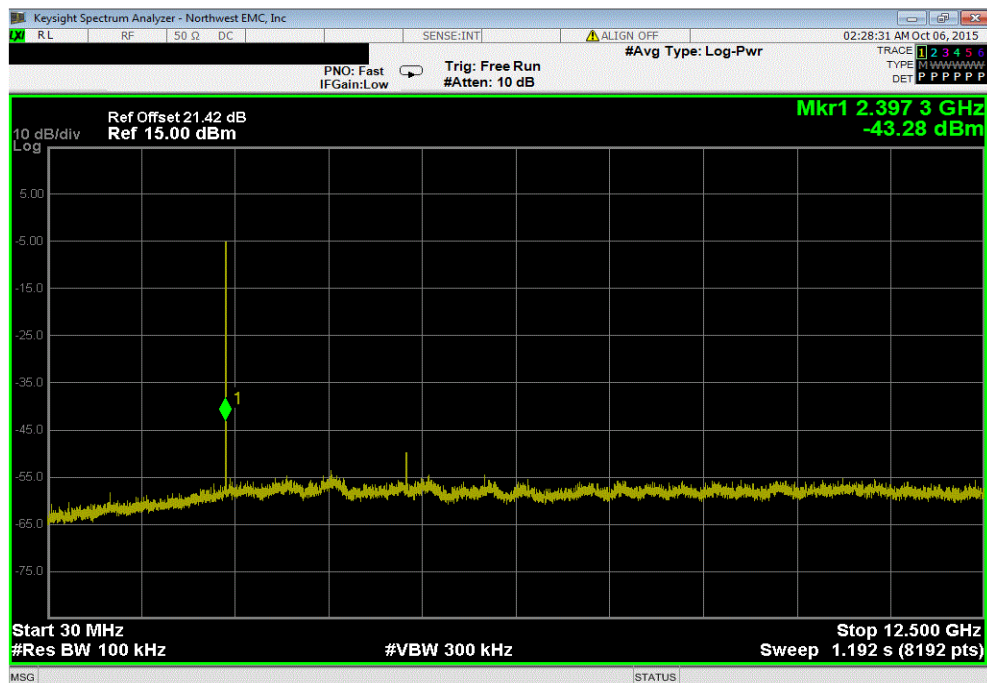
EUT: MagicBand 1.2		Work Order: SYNA0173	
Serial Number: 00059CE8B4		Date: 10/05/15	
Customer: Walt Disney Parks and Resorts US., Inc.		Temperature: 23°C	
Attendees: Brian Piquette		Humidity: 46%	
Project: None		Barometric Pres.: 1017mbar	
Tested by: Richard Mellroth	Power: Battery	Job Site: NC01	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2015		ANSI C63.10:2013	
COMMENTS			
None			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Frequency Range	Max Value (dBc) Limit ≤ (dBc) Result
GFSK Modulation			
Low Channel, 2401 MHz		Fundamental	N/A N/A N/A
Low Channel, 2401 MHz		30 MHz - 12.5 GHz	-38.12 -20 Pass
Low Channel, 2401 MHz		12.5 GHz - 25 GHz	-45.96 -20 Pass
Mid Channel, 2450 MHz		Fundamental	N/A N/A N/A
Mid Channel, 2450 MHz		30 MHz - 12.5 GHz	-48.17 -20 Pass
Mid Channel, 2450 MHz		12.5 GHz - 25 GHz	-45.51 -20 Pass
High Channel, 2476 MHz		Fundamental	N/A N/A N/A
High Channel, 2476 MHz		30 MHz - 12.5 GHz	-45.83 -20 Pass
High Channel, 2476 MHz		12.5 GHz - 25 GHz	-44.8 -20 Pass

# SPURIOUS CONDUCTED EMISSIONS

GFSK Modulation, Low Channel, 2401 MHz						
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result		
Fundamental		N/A	N/A	N/A		

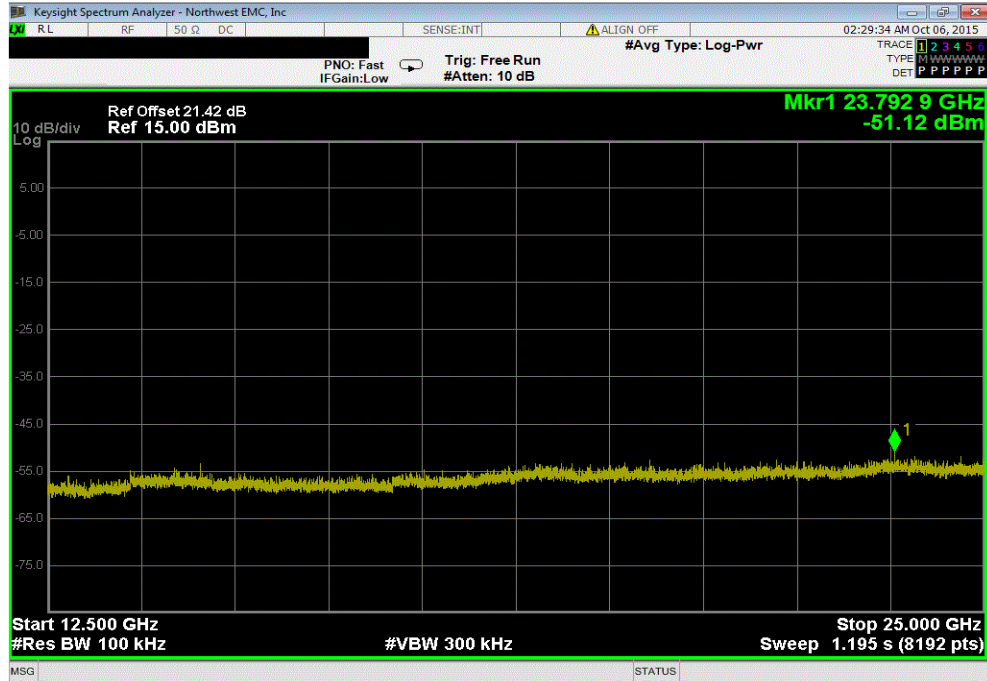


GFSK Modulation, Low Channel, 2401 MHz						
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result		
30 MHz - 12.5 GHz		-38.12	-20	Pass		

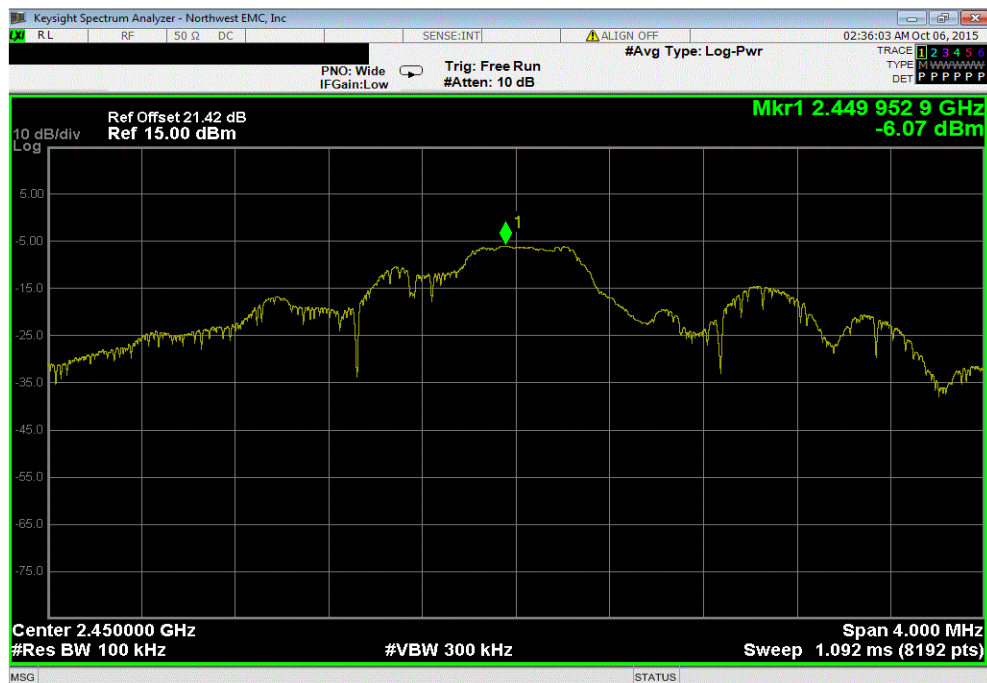


# SPURIOUS CONDUCTED EMISSIONS

GFSK Modulation, Low Channel, 2401 MHz					
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result		
12.5 GHz - 25 GHz	-45.96	-20	Pass		



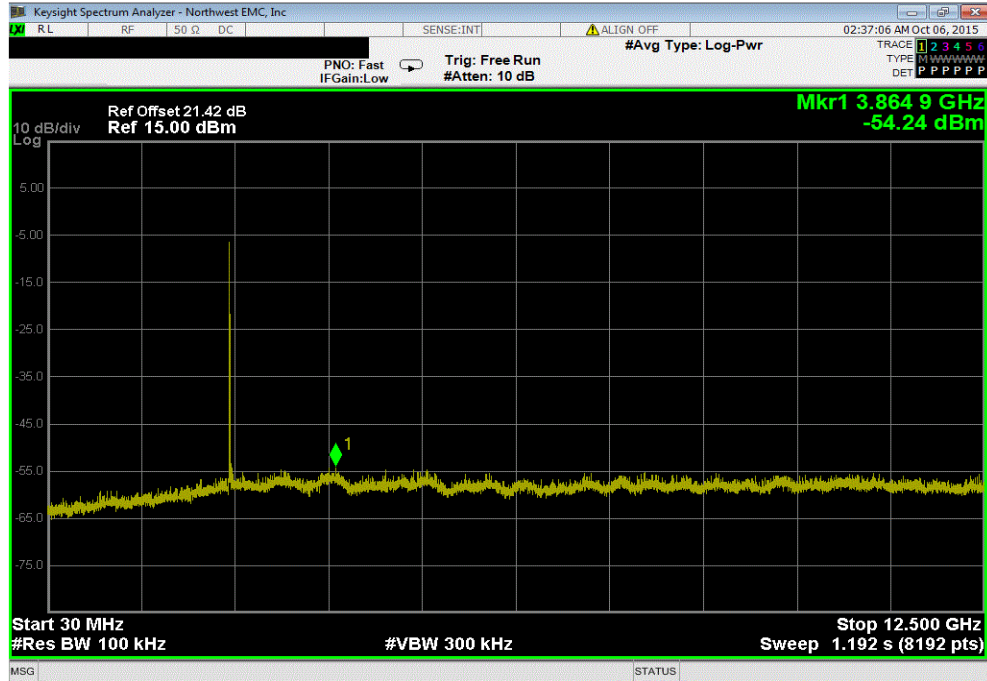
GFSK Modulation, Mid Channel, 2450 MHz					
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result		
Fundamental	N/A	N/A	N/A		



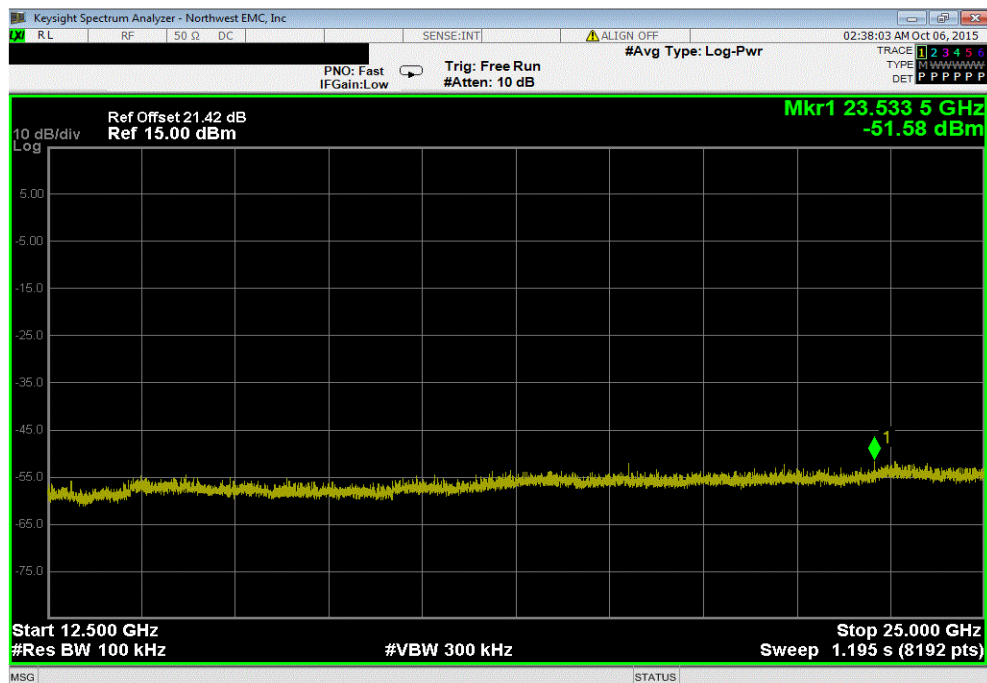


# SPURIOUS CONDUCTED EMISSIONS

GFSK Modulation, Mid Channel, 2450 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-48.17	-20	Pass	

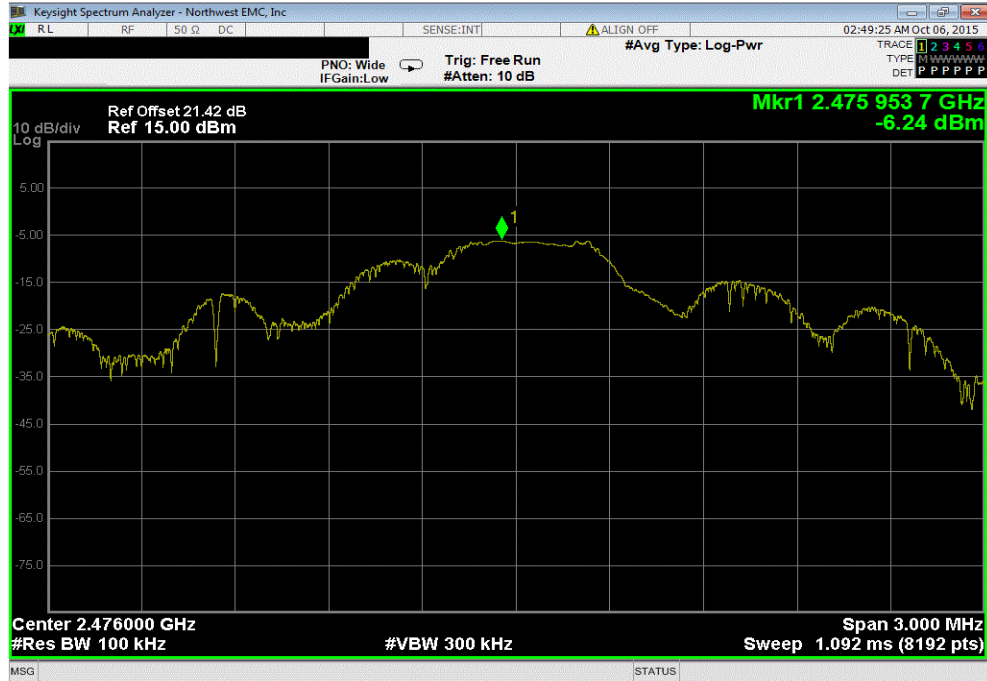


GFSK Modulation, Mid Channel, 2450 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-45.51	-20	Pass	

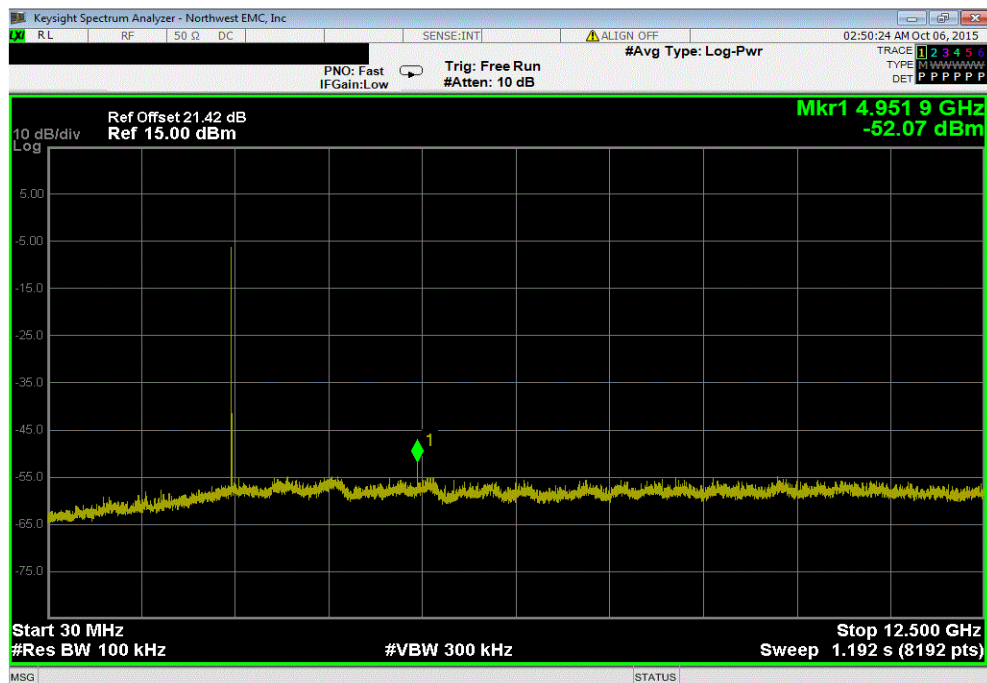


# SPURIOUS CONDUCTED EMISSIONS

GFSK Modulation, High Channel, 2476 MHz						
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result		
Fundamental		N/A	N/A	N/A		



GFSK Modulation, High Channel, 2476 MHz						
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result		
30 MHz - 12.5 GHz		-45.83	-20	Pass		



SPURIOUS CONDUCTED EMISSIONS

GFSK Modulation, High Channel, 2476 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-44.8	-20	Pass	

