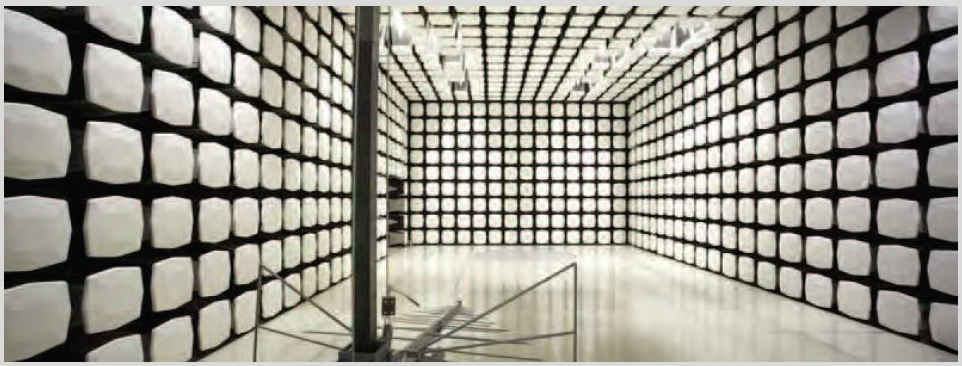
IntriCon

Companion Microphone, CM-1

FCC 15.247:2017

2400 – 2483.5 MHz DTS Transceiver

Report # INCN0009



NVLAP Lab Code: 200881-0

CERTIFICATE OF TEST

Last Date of Test: September 15, 2017
IntriCon
Model: Companion Microphone, CM-1

Radio Equipment Testing

Standards

Specification	Method
FCC 15.207:2017	ANSI C63.10:2013
FCC 15.247:2017	KDB 558074

Results

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

Deviations From Test Standards

None

Approved By:

Matt Nuernberg, Operations Manager

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

REVISION HISTORY

Revision Number	Description	Date	Page Number
00	None		

ACCREDITATIONS AND AUTHORIZATIONS

2017.6.12

United States

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

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

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

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

European Union

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

Australia/New Zealand

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

Korea

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

Japan

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

Taiwan

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

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

Singapore

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

Israel

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

Hong Kong

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

Vietnam

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

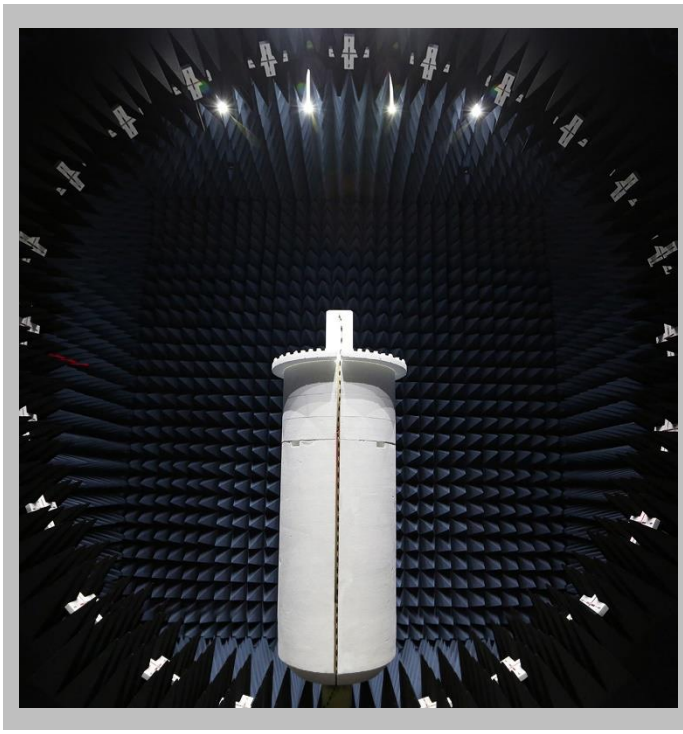
SCOPE

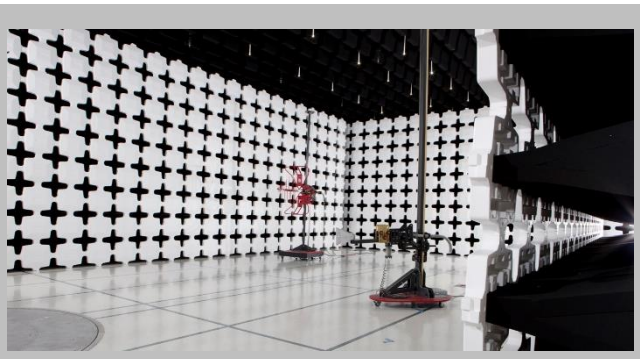
For details on the Scopes of our Accreditations, please visit:
http://portlandcustomer.element.com/ts/scope/scope.htm
http://gsi.nist.gov/global/docs/cabs/designations.html

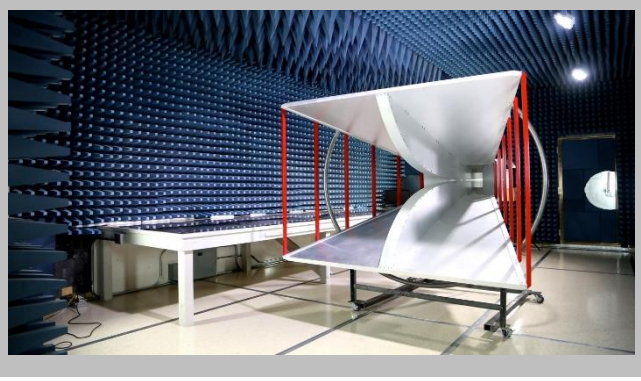
FACILITIES

2017.9.15

California	Minnesota	New York	Oregon	Texas	Washington
Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Labs NC01-05 19201 120th Ave NE Bothell, WA 98011 (425)984-6600
NVLAP					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
Innovation, Science and Economic Development Canada					
2834B-1, 2834B-3	2834E-1, 2834E-3	N/A	2834D-1, 2834D-*2*	2834G-1	2834F-1
BSMI					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA					
US0158	US0175	N/A	US0017	US0191	US0157







MEASUREMENT UNCERTAINTY

TMU.2015.07.10

Measurement Uncertainty

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

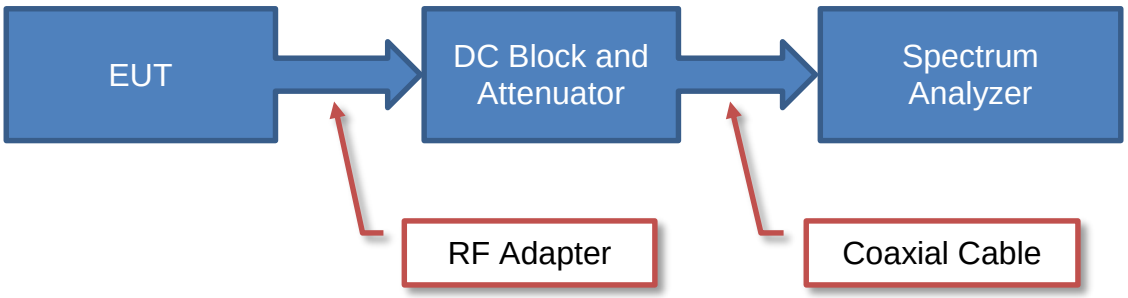
A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable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

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

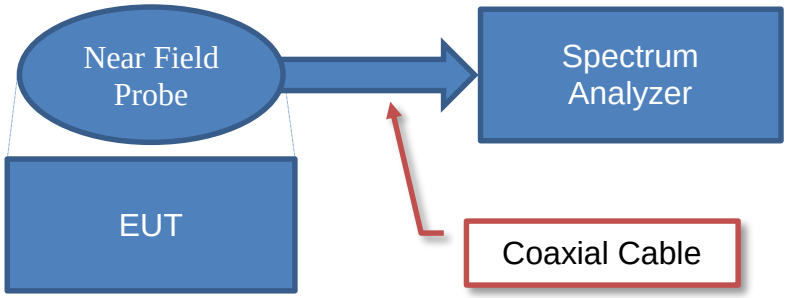
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%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

Test Setup Block Diagrams

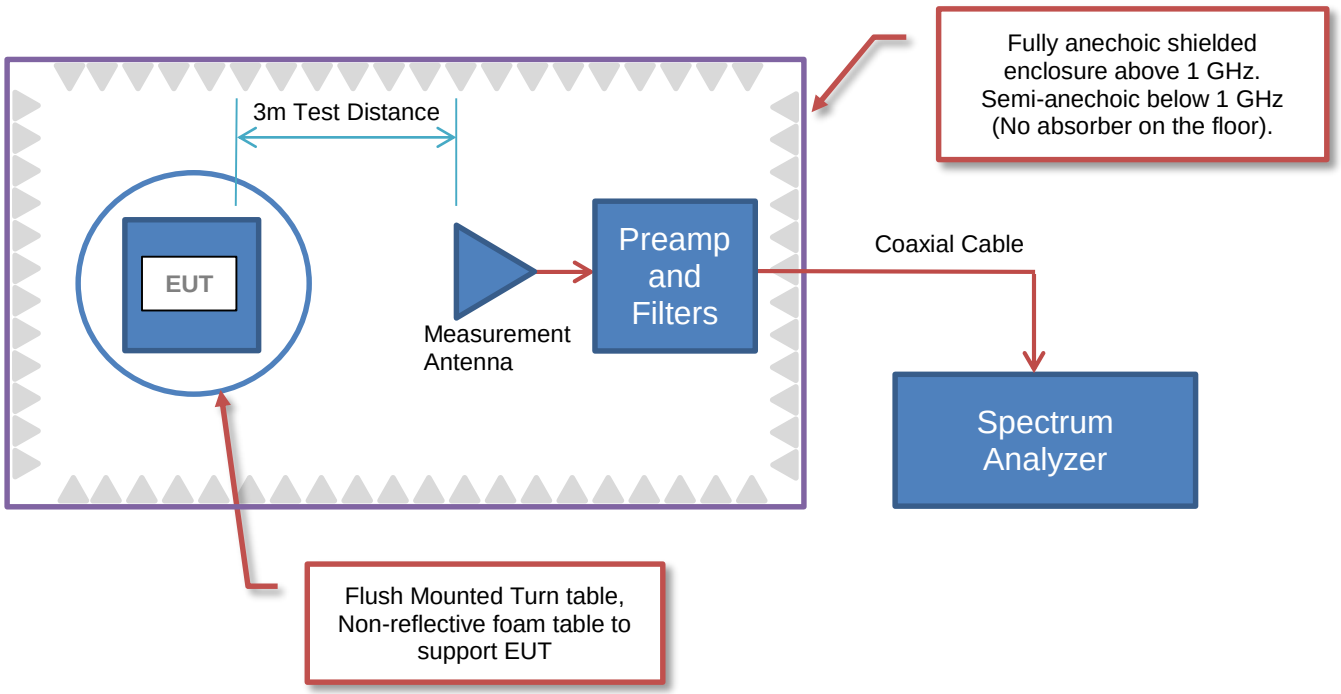
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



Spurious Radiated Emissions



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	IntriCon
Address:	1260 Red Fox Road
City, State, Zip:	Arden Hills, MN 55112
Test Requested By:	Vijay Sundermurthy
Model:	Companion Microphone, CM-1
First Date of Test:	September 1, 2017
Last Date of Test:	September 15, 2017
Receipt Date of Samples:	September 1, 2017
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 device is a wireless companion microphone for a hearing aid intended for use by the hearing impaired. The device operates using IntriCon's proprietary "PL3" protocol (PAS) and is used to stream audio from the companion microphone (placed remotely from the hearing aid) to the hearing aid, improving the signal-to-noise ratio of the user wearing the hearing aids. The Companion Microphone is a rechargeable Lithium-Polymer accessory with a micro-USB charging mechanism.

Testing Objective:
Seeking to demonstrate compliance under FCC 15.247:2017 for operation in the 2400 - 2483.5 MHz Band.

CONFIGURATIONS

Configuration INCN0009- 2

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Companion Microphone	IntriCon	CM-1	CT18
Wall AC Adapter	PHIHONG	PSA03F-050Q1	PF 49008831A1

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
USB Cable	No	1m	No	Companion Microphone	Wall AC Adapter

Configuration INCN0009- 6

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Companion Microphone	IntriCon	CM-1	CT17

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Wall AC Adapter	PHIHONG	PSA03F-050Q1	PF 49008831A1

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
USB Cable	No	1m	No	Companion Microphone	Wall AC Adapter

MODIFICATIONS

2017-1-25

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	9/1/2017	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
2	9/6/2017	Duty Cycle	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
3	9/6/2017	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
4	9/6/2017	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
5	9/6/2017	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
6	9/6/2017	Spurious Conducted 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.
7	9/6/2017	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
8	9/15/2017	AC – Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

AC - POWERLINE CONDUCTED EMISSIONS

WTD.2017.03.21

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	Rohde & Schwarz	ESR7	ARI	6/4/2017	6/4/2018
Cable - Conducted Cable Assembly	Element Materials Technology	MNC, HGN, TYK	MNCA	1/27/2017	1/27/2018
LISN	Solar Electronics	9252-50-R-24-BNC	LIY	3/20/2017	3/20/2018

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	2.4 dB	-2.4 dB

CONFIGURATIONS INVESTIGATED

INCN0009-2

MODES INVESTIGATED

Transmitting PAS at mid channel (2442 MHz)

AC - POWERLINE CONDUCTED EMISSIONS

EUT:	Companion Microphone, CM-1	Work Order:	INCN0009
Serial Number:	CT18	Date:	09/15/2017
Customer:	IntriCon	Temperature:	22.6°C
Attendees:	Andrew Albing	Relative Humidity:	55.1%
Customer Project:	None	Bar. Pressure:	1012 mb
Tested By:	Dustin Sparks	Job Site:	MN03
Power:	Battery	Configuration:	INCN0009-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2017	ANSI C63.10:2013

TEST PARAMETERS

Run #:	7	Line:	High Line	Add. Ext. Attenuation (dB):	0

COMMENTS

None

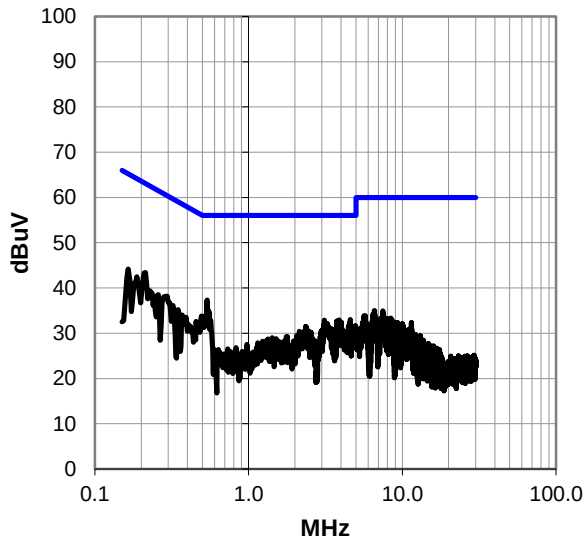
EUT OPERATING MODES

Transmitting PAS at mid channel (2442 MHz)

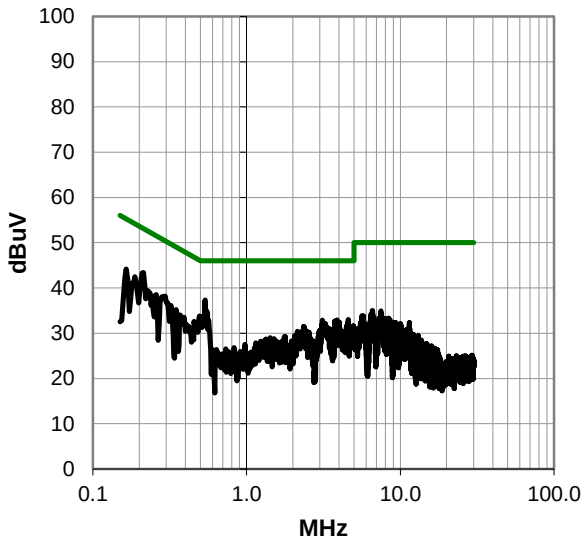
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC - POWERLINE CONDUCTED EMISSIONS

WTD.2017.03.21

RESULTS - Run #7

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.538	17.0	20.3	37.3	56.0	-18.7
0.213	23.1	20.3	43.4	63.1	-19.7
0.165	23.7	20.5	44.2	65.2	-21.0
0.187	22.0	20.5	42.5	64.2	-21.7
0.292	18.0	20.2	38.2	60.5	-22.3
0.258	18.2	20.3	38.5	61.5	-23.0
4.597	12.6	20.4	33.0	56.0	-23.0
3.116	12.5	20.4	32.9	56.0	-23.1
3.873	12.5	20.4	32.9	56.0	-23.1
3.746	12.3	20.4	32.7	56.0	-23.3
3.836	12.0	20.4	32.4	56.0	-23.6
4.011	12.0	20.4	32.4	56.0	-23.6
0.318	15.9	20.2	36.1	59.8	-23.7
0.348	15.0	20.2	35.2	59.0	-23.8
3.896	11.8	20.4	32.2	56.0	-23.8
3.955	11.8	20.4	32.2	56.0	-23.8
4.537	11.8	20.4	32.2	56.0	-23.8
4.470	11.3	20.4	31.7	56.0	-24.3
3.788	11.2	20.4	31.6	56.0	-24.4
4.948	11.1	20.5	31.6	56.0	-24.4
0.370	13.8	20.2	34.0	58.5	-24.5
2.355	11.1	20.4	31.5	56.0	-24.5
6.586	14.5	20.5	35.0	60.0	-25.0
3.478	10.5	20.4	30.9	56.0	-25.1
7.462	14.3	20.6	34.9	60.0	-25.1
3.034	10.4	20.4	30.8	56.0	-25.2

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.538	17.0	20.3	37.3	46.0	-8.7
0.213	23.1	20.3	43.4	53.1	-9.7
0.165	23.7	20.5	44.2	55.2	-11.0
0.187	22.0	20.5	42.5	54.2	-11.7
0.292	18.0	20.2	38.2	50.5	-12.3
0.258	18.2	20.3	38.5	51.5	-13.0
4.597	12.6	20.4	33.0	46.0	-13.0
3.116	12.5	20.4	32.9	46.0	-13.1
3.873	12.5	20.4	32.9	46.0	-13.1
3.746	12.3	20.4	32.7	46.0	-13.3
3.836	12.0	20.4	32.4	46.0	-13.6
4.011	12.0	20.4	32.4	46.0	-13.6
0.318	15.9	20.2	36.1	49.8	-13.7
0.348	15.0	20.2	35.2	49.0	-13.8
3.896	11.8	20.4	32.2	46.0	-13.8
3.955	11.8	20.4	32.2	46.0	-13.8
4.537	11.8	20.4	32.2	46.0	-13.8
4.470	11.3	20.4	31.7	46.0	-14.3
3.788	11.2	20.4	31.6	46.0	-14.4
4.948	11.1	20.5	31.6	46.0	-14.4
0.370	13.8	20.2	34.0	48.5	-14.5
2.355	11.1	20.4	31.5	46.0	-14.5
6.586	14.5	20.5	35.0	50.0	-15.0
3.478	10.5	20.4	30.9	46.0	-15.1
7.462	14.3	20.6	34.9	50.0	-15.1
3.034	10.4	20.4	30.8	46.0	-15.2

CONCLUSION

Pass

Tested By

AC - POWERLINE CONDUCTED EMISSIONS

WTD.2017.03.21

EUT:	Companion Microphone, CM-1	Work Order:	INCN0009
Serial Number:	CT18	Date:	09/15/2017
Customer:	IntriCon	Temperature:	22.6°C
Attendees:	Andrew Albing	Relative Humidity:	55.1%
Customer Project:	None	Bar. Pressure:	1012 mb
Tested By:	Dustin Sparks	Job Site:	MN03
Power:	Battery	Configuration:	INCN0009-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2017	ANSI C63.10:2013

TEST PARAMETERS

Run #:	8	Line:	Neutral	Add. Ext. Attenuation (dB):	0

COMMENTS

None

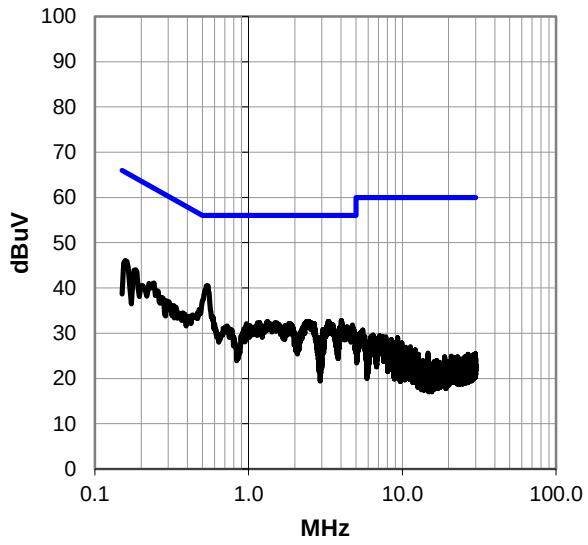
EUT OPERATING MODES

Transmitting PAS at mid channel (2442 MHz)

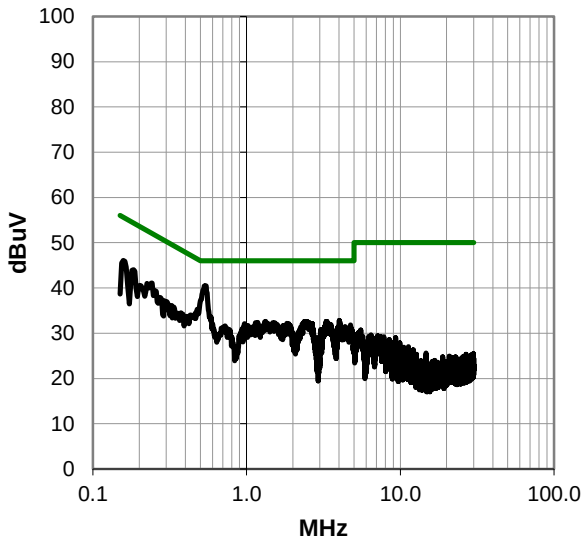
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC - POWERLINE CONDUCTED EMISSIONS

WTD.2017.03.21

RESULTS - Run #8

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.542	20.2	20.3	40.5	56.0	-15.5
0.157	25.6	20.5	46.1	65.6	-19.5
0.184	23.5	20.5	44.0	64.3	-20.3
4.011	12.4	20.4	32.8	56.0	-23.2
0.292	17.0	20.2	37.2	60.5	-23.3
1.333	12.3	20.3	32.6	56.0	-23.4
2.392	12.2	20.4	32.6	56.0	-23.4
3.299	12.2	20.4	32.6	56.0	-23.4
1.183	12.1	20.3	32.4	56.0	-23.6
4.060	11.9	20.4	32.3	56.0	-23.7
1.825	11.9	20.3	32.2	56.0	-23.8
4.735	11.4	20.4	31.8	56.0	-24.2
0.725	11.3	20.3	31.6	56.0	-24.4
3.041	10.4	20.4	30.8	56.0	-25.2
3.082	10.3	20.4	30.7	56.0	-25.3
3.881	9.7	20.4	30.1	56.0	-25.9
3.817	9.1	20.4	29.5	56.0	-26.5
2.959	8.8	20.4	29.2	56.0	-26.8
2.881	7.3	20.4	27.7	56.0	-28.3
5.522	10.2	20.5	30.7	60.0	-29.3
5.183	9.1	20.5	29.6	60.0	-30.4
6.459	9.1	20.5	29.6	60.0	-30.4
7.141	8.9	20.5	29.4	60.0	-30.6
7.470	8.6	20.6	29.2	60.0	-30.8
7.820	8.5	20.7	29.2	60.0	-30.8
7.044	8.6	20.5	29.1	60.0	-30.9

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.542	20.2	20.3	40.5	46.0	-5.5
0.157	25.6	20.5	46.1	55.6	-9.5
0.184	23.5	20.5	44.0	54.3	-10.3
4.011	12.4	20.4	32.8	46.0	-13.2
0.292	17.0	20.2	37.2	50.5	-13.3
1.333	12.3	20.3	32.6	46.0	-13.4
2.392	12.2	20.4	32.6	46.0	-13.4
3.299	12.2	20.4	32.6	46.0	-13.4
1.183	12.1	20.3	32.4	46.0	-13.6
4.060	11.9	20.4	32.3	46.0	-13.7
1.825	11.9	20.3	32.2	46.0	-13.8
4.735	11.4	20.4	31.8	46.0	-14.2
0.725	11.3	20.3	31.6	46.0	-14.4
3.041	10.4	20.4	30.8	46.0	-15.2
3.082	10.3	20.4	30.7	46.0	-15.3
3.881	9.7	20.4	30.1	46.0	-15.9
3.817	9.1	20.4	29.5	46.0	-16.5
2.959	8.8	20.4	29.2	46.0	-16.8
2.881	7.3	20.4	27.7	46.0	-18.3
5.522	10.2	20.5	30.7	50.0	-19.3
5.183	9.1	20.5	29.6	50.0	-20.4
6.459	9.1	20.5	29.6	50.0	-20.4
7.141	8.9	20.5	29.4	50.0	-20.6
7.470	8.6	20.6	29.2	50.0	-20.8
7.820	8.5	20.7	29.2	50.0	-20.8
7.044	8.6	20.5	29.1	50.0	-20.9

CONCLUSION

Pass

Tested By

SPURIOUS RADIATED EMISSIONS

PSA-ESCI 2017.06.01

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

MODES OF OPERATION

Transmitting at 2402, 2442, 2480 MHz (Low/Mid/High Ch) 2mb Nordic mod
Transmitting at 2402 MHz (Low Ch.)
Transmitting at 2442 MHz (Mid Ch.)
Transmitting at 2480 MHz (High Ch.)

POWER SETTINGS INVESTIGATED

Battery
110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INCN0009 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26000 MHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	1/6/2017	12 mo
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/15/2016	12 mo
Amplifier - Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	9/12/2017	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AHG	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	2/14/2017	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AIQ	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	2/14/2017	12 mo
Cable	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	7/12/2017	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AXP	NCR	0 mo
Filter - High Pass	Micro-Tronics	HPM50111	LFN	9/23/2016	12 mo
Attenuator	Fairview Microwave	SA18E-20	TWZ	9/23/2016	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVT	2/14/2017	12 mo
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	12/1/2016	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AJA	6/23/2016	24 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AVO	12/1/2016	12 mo
Cable	ESM Cable Corp.	Bilog Cables	MNH	12/1/2016	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AYD	1/6/2016	24 mo

MEASUREMENT BANDWIDTHS

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

TEST DESCRIPTION

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

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

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

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

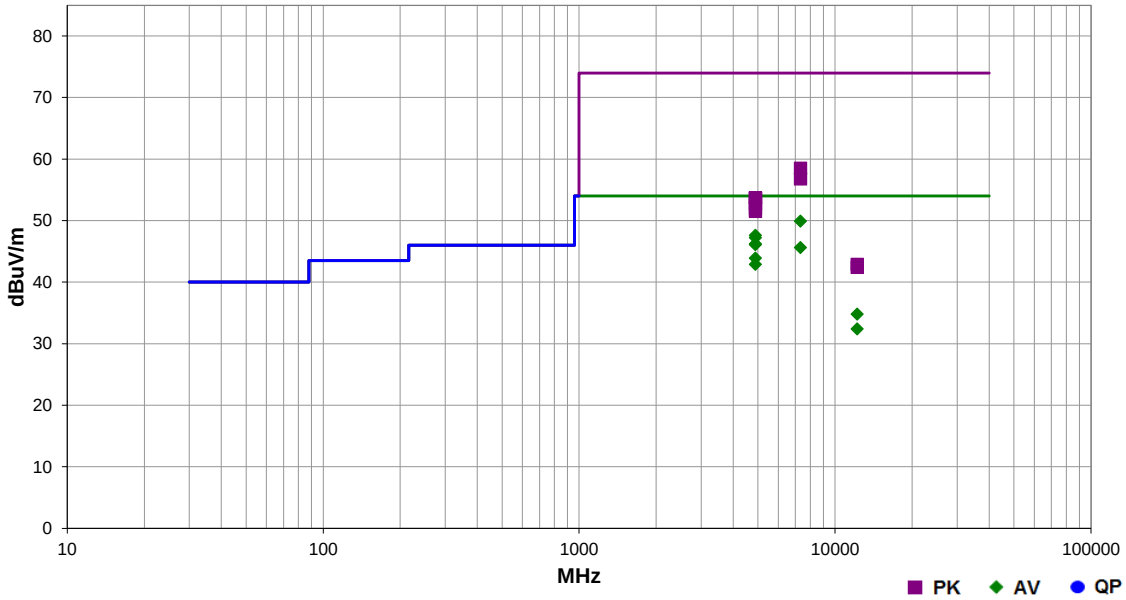
SPURIOUS RADIATED EMISSIONS

EmiR5 2017.07.11 PSA-ESCI 2017.06.01

Work Order:	INCN0009	**Date:**	09/01/17		
Project:	None	**Temperature:**	22.7 °C		
Job Site:	MN05	**Humidity:**	49.1% RH		
Serial Number:	CT18	**Barometric Pres.:**	1025 mbar	**Tested by:**	Chris Patterson
EUT:	Companion Microphone, CM-1				
Configuration:	2				
Customer:	IntriCon				
Attendees:	Andrew Albing				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting at 2442 MHz (Mid Ch.)				
Deviations:	None				
Comments:	None				

Test Specifications	**Test Method**
FCC 15.247:2017	ANSI C63.10:2013

Run #	7	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



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
7326.217	34.9	15.0	1.0	174.1	3.0	0.0	Vert	AV	0.0	49.9	54.0	-4.1	EUT Vert
4884.142	40.9	6.7	1.0	88.1	3.0	0.0	Horz	AV	0.0	47.6	54.0	-6.4	EUT Horz
4884.150	40.5	6.7	1.0	67.0	3.0	0.0	Vert	AV	0.0	47.2	54.0	-6.8	EUT Vert
4884.100	39.5	6.7	3.7	15.1	3.0	0.0	Horz	AV	0.0	46.2	54.0	-7.8	EUT On Side
4884.142	39.4	6.7	3.3	301.9	3.0	0.0	Vert	AV	0.0	46.1	54.0	-7.9	EUT On Side
7325.375	30.6	15.0	1.0	333.9	3.0	0.0	Horz	AV	0.0	45.6	54.0	-8.4	EUT Horz
4884.117	37.2	6.7	2.5	216.0	3.0	0.0	Vert	AV	0.0	43.9	54.0	-10.1	EUT Horz
4884.183	36.2	6.7	2.8	78.0	3.0	0.0	Horz	AV	0.0	42.9	54.0	-11.1	EUT Vert
7326.450	43.5	15.0	1.0	174.1	3.0	0.0	Vert	PK	0.0	58.5	74.0	-15.5	EUT Vert
7325.592	41.8	15.0	1.0	333.9	3.0	0.0	Horz	PK	0.0	56.8	74.0	-17.2	EUT Horz
12210.330	35.2	-0.4	2.2	232.0	3.0	0.0	Vert	AV	0.0	34.8	54.0	-19.2	EUT Vert
4884.167	47.0	6.7	1.0	88.1	3.0	0.0	Horz	PK	0.0	53.7	74.0	-20.3	EUT Horz
4883.933	47.0	6.7	3.7	15.1	3.0	0.0	Horz	PK	0.0	53.7	74.0	-20.3	EUT On Side
4884.117	46.9	6.7	1.0	67.0	3.0	0.0	Vert	PK	0.0	53.6	74.0	-20.4	EUT Vert
4884.350	46.0	6.7	3.3	301.9	3.0	0.0	Vert	PK	0.0	52.7	74.0	-21.3	EUT On Side
12210.280	32.8	-0.4	1.0	303.0	3.0	0.0	Horz	AV	0.0	32.4	54.0	-21.6	EUT Horz
4884.225	45.3	6.7	2.5	216.0	3.0	0.0	Vert	PK	0.0	52.0	74.0	-22.0	EUT Horz
4884.592	44.8	6.7	2.8	78.0	3.0	0.0	Horz	PK	0.0	51.5	74.0	-22.5	EUT Vert
12210.470	43.3	-0.4	2.2	232.0	3.0	0.0	Vert	PK	0.0	42.9	74.0	-31.1	EUT Vert
12210.130	42.8	-0.4	1.0	303.0	3.0	0.0	Horz	PK	0.0	42.4	74.0	-31.6	EUT Horz

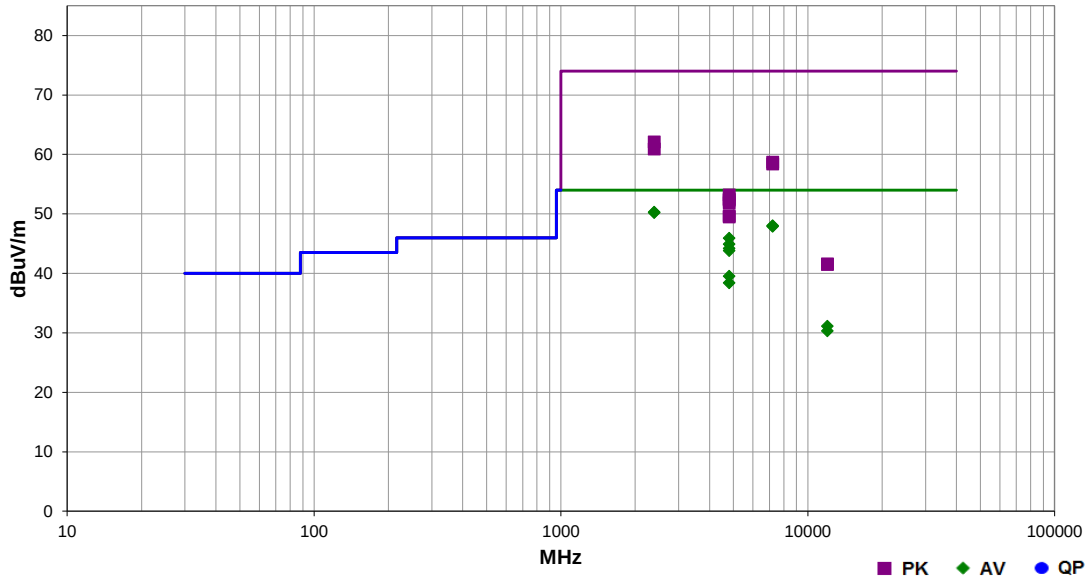
SPURIOUS RADIATED EMISSIONS

EmiR5 2017.07.11 PSA-ESCI 2017.06.01

Work Order:	INCN0009	**Date:**	09/01/17		
Project:	None	**Temperature:**	22.7 °C		
Job Site:	MN05	**Humidity:**	49.1% RH		
Serial Number:	CT18	**Barometric Pres.:**	1025 mbar	**Tested by:**	Chris Patterson
EUT:	Companion Microphone, CM-1				
Configuration:	2				
Customer:	IntriCon				
Attendees:	Andrew Albing				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting at 2402 MHz (Low Ch.)				
Deviations:	None				
Comments:	None				

Test Specifications	**Test Method**
FCC 15.247:2017	ANSI C63.10:2013

Run #	12	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



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
2388.165	32.6	-2.3	2.6	6.0	3.0	20.0	Vert	AV	0.0	50.3	54.0	-3.7	EUT Vert
2387.240	32.5	-2.3	1.0	350.0	3.0	20.0	Horz	AV	0.0	50.2	54.0	-3.8	EUT On Side
7206.933	32.5	15.5	1.8	156.1	3.0	0.0	Horz	AV	0.0	48.0	54.0	-6.0	EUT On Side
7206.667	32.4	15.5	1.0	222.0	3.0	0.0	Vert	AV	0.0	47.9	54.0	-6.1	EUT Vert
4803.983	39.3	6.6	1.0	2.0	3.0	0.0	Vert	AV	0.0	45.9	54.0	-8.1	EUT Vert
4804.192	38.3	6.6	1.3	8.1	3.0	0.0	Horz	AV	0.0	44.9	54.0	-9.1	EUT On Side
4804.258	37.6	6.6	2.2	211.0	3.0	0.0	Horz	AV	0.0	44.2	54.0	-9.8	EUT Horz
4804.033	37.2	6.6	1.0	288.0	3.0	0.0	Vert	AV	0.0	43.8	54.0	-10.2	EUT Horz
2388.125	44.4	-2.3	2.6	6.0	3.0	20.0	Vert	PK	0.0	62.1	74.0	-11.9	EUT Vert
2388.385	43.2	-2.3	1.0	350.0	3.0	20.0	Horz	PK	0.0	60.9	74.0	-13.1	EUT On Side
4803.908	32.9	6.6	1.0	204.0	3.0	0.0	Vert	AV	0.0	39.5	54.0	-14.5	EUT On Side
7205.142	43.2	15.5	1.8	156.1	3.0	0.0	Horz	PK	0.0	58.7	74.0	-15.3	EUT On Side
4803.775	31.8	6.6	1.0	0.0	3.0	0.0	Horz	AV	0.0	38.4	54.0	-15.6	EUT Vert
7206.550	42.9	15.5	1.0	222.0	3.0	0.0	Vert	PK	0.0	58.4	74.0	-15.6	EUT Vert
4803.667	46.6	6.6	1.0	2.0	3.0	0.0	Vert	PK	0.0	53.2	74.0	-20.8	EUT Vert
4803.608	45.9	6.6	1.3	8.1	3.0	0.0	Horz	PK	0.0	52.5	74.0	-21.5	EUT On Side
4804.208	45.7	6.6	1.0	288.0	3.0	0.0	Vert	PK	0.0	52.3	74.0	-21.7	EUT Horz
4803.692	45.3	6.6	2.2	211.0	3.0	0.0	Horz	PK	0.0	51.9	74.0	-22.1	EUT Horz
12009.210	32.2	-1.1	2.2	229.0	3.0	0.0	Vert	AV	0.0	31.1	54.0	-22.9	EUT Vert
12009.150	31.4	-1.1	1.6	54.0	3.0	0.0	Horz	AV	0.0	30.3	54.0	-23.7	EUT On Side
4803.308	43.1	6.6	1.0	0.0	3.0	0.0	Horz	PK	0.0	49.7	74.0	-24.3	EUT Vert
4803.908	42.9	6.6	1.0	204.0	3.0	0.0	Vert	PK	0.0	49.5	74.0	-24.5	EUT On Side
12008.880	42.7	-1.1	2.2	229.0	3.0	0.0	Vert	PK	0.0	41.6	74.0	-32.4	EUT Vert
12008.990	42.6	-1.1	1.6	54.0	3.0	0.0	Horz	PK	0.0	41.5	74.0	-32.5	EUT On Side

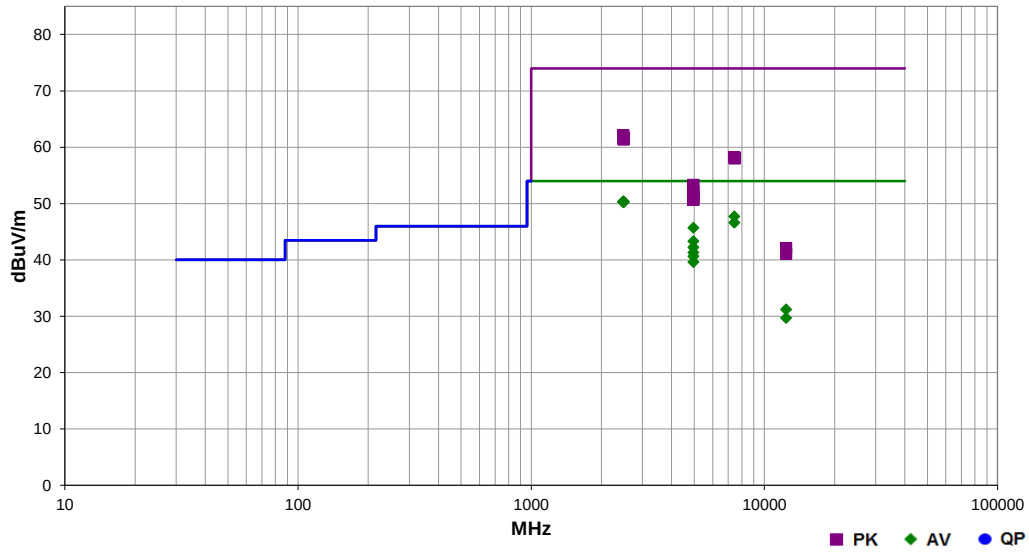
SPURIOUS RADIATED EMISSIONS

EmiRS 2017.07.11 PSA-ESCI 2017.06.01

Work Order:	INCN0009	**Date:**	09/01/17		
Project:	None	**Temperature:**	22.7 °C		
Job Site:	MN05	**Humidity:**	49.1% RH		
Serial Number:	CT18	**Barometric Pres.:**	1025 mbar	**Tested by:**	Chris Patterson
EUT:	Companion Microphone, CM-1				
Configuration:	2				
Customer:	IntriCon				
Attendees:	Andrew Albing				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting at 2480 MHz (High Ch.)				
Deviations:	None				
Comments:	None				

Test Specifications	**Test Method**
FCC 15.247:2017	ANSI C63.10:2013

Run #	18	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



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
2486.215	32.9	-2.5	1.0	283.9	3.0	20.0	Horz	AV	0.0	50.4	54.0	-3.6	EUT Horz
2486.375	32.8	-2.5	1.0	88.1	3.0	20.0	Vert	AV	0.0	50.3	54.0	-3.7	EUT Horz
2486.215	32.8	-2.5	2.5	249.0	3.0	20.0	Horz	AV	0.0	50.3	54.0	-3.7	EUT On Side
2486.395	32.8	-2.5	1.0	247.9	3.0	20.0	Horz	AV	0.0	50.3	54.0	-3.7	EUT Vert
2486.750	32.8	-2.5	1.0	103.0	3.0	20.0	Vert	AV	0.0	50.3	54.0	-3.7	EUT Vert
2487.790	32.7	-2.5	1.0	234.0	3.0	20.0	Vert	AV	0.0	50.2	54.0	-3.8	EUT On Side
7439.592	32.7	15.0	1.0	201.0	3.0	0.0	Vert	AV	0.0	47.7	54.0	-6.3	EUT Vert
7439.533	31.6	15.0	3.1	72.0	3.0	0.0	Horz	AV	0.0	46.6	54.0	-7.4	EUT Horz
4960.167	38.9	6.8	2.1	88.1	3.0	0.0	Vert	AV	0.0	45.7	54.0	-8.3	EUT Vert
4960.183	36.5	6.8	1.0	235.9	3.0	0.0	Horz	AV	0.0	43.3	54.0	-10.7	EUT Horz
4960.208	35.4	6.8	1.0	89.0	3.0	0.0	Vert	AV	0.0	42.2	54.0	-11.8	EUT Horz
2485.155	44.6	-2.5	1.0	247.9	3.0	20.0	Horz	PK	0.0	62.1	74.0	-11.9	EUT Vert
2487.615	44.1	-2.5	1.0	283.9	3.0	20.0	Horz	PK	0.0	61.6	74.0	-12.4	EUT Horz
2486.420	44.1	-2.5	1.0	88.1	3.0	20.0	Vert	PK	0.0	61.6	74.0	-12.4	EUT Horz
2486.890	44.1	-2.5	2.5	249.0	3.0	20.0	Horz	PK	0.0	61.6	74.0	-12.4	EUT On Side
2486.780	43.9	-2.5	1.0	234.0	3.0	20.0	Vert	PK	0.0	61.4	74.0	-12.6	EUT On Side
2486.630	43.9	-2.5	1.0	103.0	3.0	20.0	Vert	PK	0.0	61.4	74.0	-12.6	EUT Vert
4960.250	34.5	6.8	1.0	279.0	3.0	0.0	Vert	AV	0.0	41.3	54.0	-12.7	EUT On Side
4960.133	33.8	6.8	2.3	101.1	3.0	0.0	Horz	AV	0.0	40.6	54.0	-13.4	EUT Vert
4959.933	32.8	6.8	1.0	134.1	3.0	0.0	Horz	AV	0.0	39.6	54.0	-14.4	EUT On Side
7439.683	43.2	15.0	1.0	201.0	3.0	0.0	Vert	PK	0.0	58.2	74.0	-15.8	EUT Vert
7440.217	43.0	15.0	3.1	72.0	3.0	0.0	Horz	PK	0.0	58.0	74.0	-16.0	EUT Horz
4959.583	46.5	6.8	2.1	88.1	3.0	0.0	Vert	PK	0.0	53.3	74.0	-20.7	EUT Vert
4960.450	45.3	6.8	1.0	235.9	3.0	0.0	Horz	PK	0.0	52.1	74.0	-21.9	EUT Horz
4960.217	44.6	6.8	1.0	89.0	3.0	0.0	Vert	PK	0.0	51.4	74.0	-22.6	EUT Horz
4960.467	44.4	6.8	1.0	134.1	3.0	0.0	Horz	PK	0.0	51.2	74.0	-22.8	EUT On Side
12399.180	31.0	0.2	1.0	189.0	3.0	0.0	Vert	AV	0.0	31.2	54.0	-22.8	EUT Vert
4960.642	43.9	6.8	2.3	101.1	3.0	0.0	Horz	PK	0.0	50.7	74.0	-23.3	EUT Vert
4960.542	43.9	6.8	1.0	279.0	3.0	0.0	Vert	PK	0.0	50.7	74.0	-23.3	EUT On Side
12398.890	29.5	0.2	1.0	104.0	3.0	0.0	Horz	AV	0.0	29.7	54.0	-24.3	EUT Horz
12399.270	41.9	0.2	1.0	189.0	3.0	0.0	Vert	PK	0.0	42.1	74.0	-31.9	EUT Vert
12399.180	40.9	0.2	1.0	104.0	3.0	0.0	Horz	PK	0.0	41.1	74.0	-32.9	EUT Horz

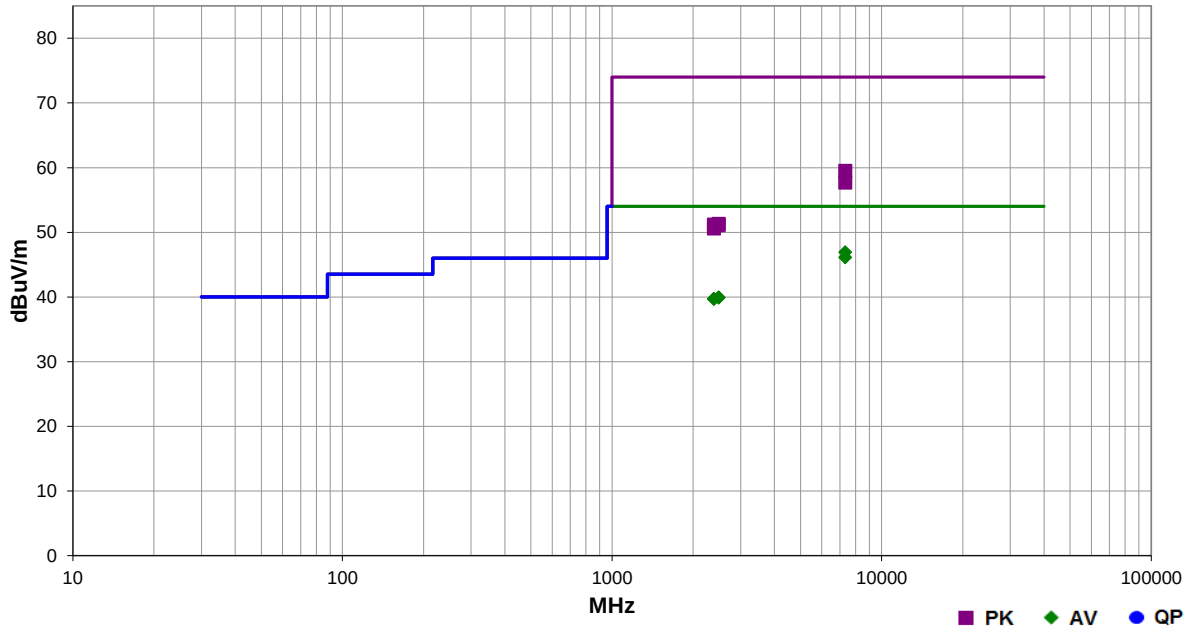
SPURIOUS RADIATED EMISSIONS

EmiR5 2017.07.11 PSA-ESCI 2017.06.01

Work Order:	INCN0009	**Date:**	09/01/17		
Project:	None	**Temperature:**	22.7 °C		
Job Site:	MN05	**Humidity:**	49.1% RH		
Serial Number:	CT18	**Barometric Pres.:**	1025 mbar	**Tested by:**	Chris Patterson
EUT:	Companion Microphone, CM-1				
Configuration:	2				
Customer:	IntriCon				
Attendees:	Andrew Albing				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting at 2402, 2442, 2480 MHz (Low/Mid/High Ch) 2mb Nordic mod				
Deviations:	None				
Comments:	None				

Test Specifications	**Test Method**
FCC 15.247:2017	ANSI C63.10:2013

Run #	22	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



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
7325.692	31.9	15.0	1.0	52.1	3.0	0.0	Vert	AV	0.0	46.9	54.0	-7.1	EUT Vert Mid Ch
7325.225	31.1	15.0	1.0	19.1	3.0	0.0	Horz	AV	0.0	46.1	54.0	-7.9	EUT Horz Mid Ch
2488.275	22.4	-2.5	1.0	159.1	3.0	20.0	Vert	AV	0.0	39.9	54.0	-14.1	EUT Vert High Ch
2487.508	22.4	-2.5	1.0	168.0	3.0	20.0	Horz	AV	0.0	39.9	54.0	-14.1	EUT Horz High Ch
2388.205	22.0	-2.3	1.0	304.9	3.0	20.0	Horz	AV	0.0	39.7	54.0	-14.3	EUT Horz Low Ch
2385.545	22.0	-2.3	1.0	66.1	3.0	20.0	Vert	AV	0.0	39.7	54.0	-14.3	EUT Vert Low Ch
7325.142	44.5	15.0	1.0	52.1	3.0	0.0	Vert	PK	0.0	59.5	74.0	-14.5	EUT Vert Mid Ch
7325.400	42.7	15.0	1.0	19.1	3.0	0.0	Horz	PK	0.0	57.7	74.0	-16.3	EUT Horz Mid Ch
2484.933	33.8	-2.5	1.0	159.1	3.0	20.0	Vert	PK	0.0	51.3	74.0	-22.7	EUT Vert High Ch
2386.935	33.5	-2.3	1.0	66.1	3.0	20.0	Vert	PK	0.0	51.2	74.0	-22.8	EUT Vert Low Ch
2484.308	33.6	-2.5	1.0	168.0	3.0	20.0	Horz	PK	0.0	51.1	74.0	-22.9	EUT Horz High Ch
2388.350	32.9	-2.3	1.0	304.9	3.0	20.0	Horz	PK	0.0	50.6	74.0	-23.4	EUT Horz Low Ch

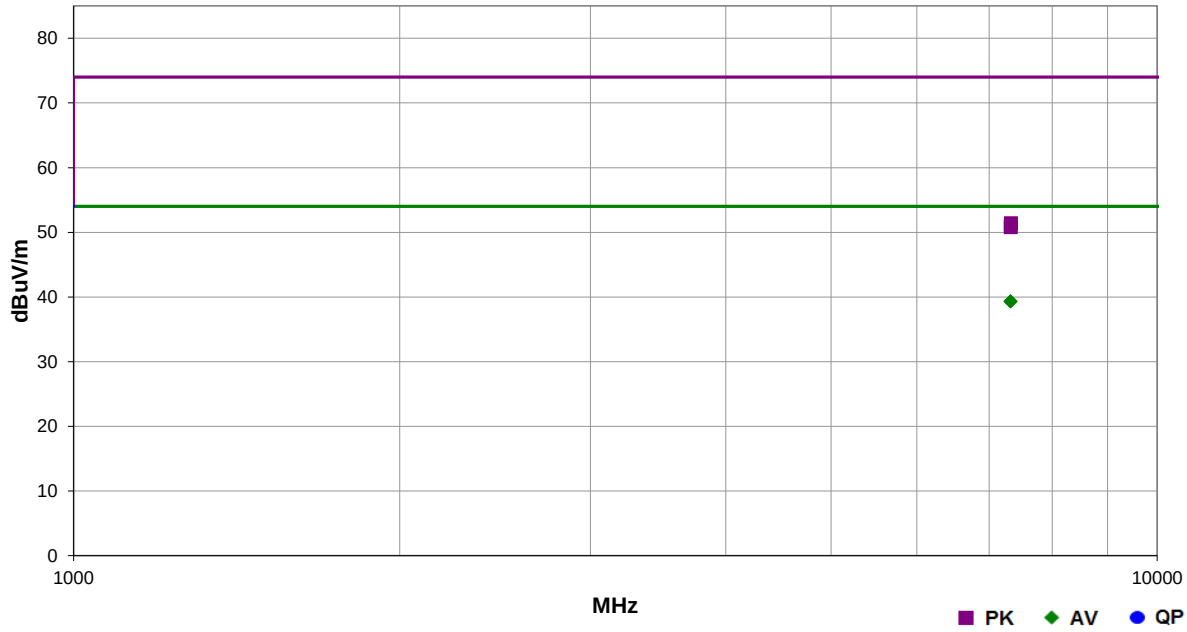
SPURIOUS RADIATED EMISSIONS

EmiR5 2017.07.11 PSA-ESCI 2017.06.01

Work Order:	INCN0009	**Date:**	09/01/17		
Project:	None	**Temperature:**	22.7 °C		
Job Site:	MN05	**Humidity:**	49.1% RH		
Serial Number:	CT18	**Barometric Pres.:**	1025 mbar	**Tested by:**	Chris Patterson
EUT:	Companion Microphone, CM-1				
Configuration:	2				
Customer:	IntriCon				
Attendees:	Andrew Albing				
EUT Power:	Battery				
Operating Mode:	Transmitting at 2442MHz (Mid Ch)				
Deviations:	None				
Comments:	None				

Test Specifications	**Test Method**
FCC 15.247:2017	ANSI C63.10:2013

Run #	31	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



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
7326.150	24.3	15.0	1.0	351.0	3.0	0.0	Horz	AV	0.0	39.3	54.0	-14.7	EUT Horz
7324.550	24.3	15.0	1.0	260.0	3.0	0.0	Vert	AV	0.0	39.3	54.0	-14.7	EUT Vert
7328.242	36.4	15.0	1.0	351.0	3.0	0.0	Horz	PK	0.0	51.4	74.0	-22.6	EUT Horz
7325.133	35.8	15.0	1.0	260.0	3.0	0.0	Vert	PK	0.0	50.8	74.0	-23.2	EUT Vert

DUTY CYCLE

XMit 2017.02.08

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Cable	ESM Cable Corp	TTBJ141 KMKM-72	MNP	NCR	NCR
Attenuator	S.M. Electronics	SA26B-20	RFW	2/14/2017	2/14/2018
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/16/2017	3/16/2018

TEST DESCRIPTION

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

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

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

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

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

DUTY CYCLE

TbtTx 2017.07.11 XMit 2017.02.08

EUT:	**Companion Microphone, CM-1**			**Work Order:**	**INCN0009**
Serial Number:	**CT17**			**Date:**	**09/06/17**
Customer:	**IntriCon**			**Temperature:**	**22.8 °C**
Attendees:	**Andrew Albing**			**Humidity:**	**44.1% RH**
Project:	**None**			**Barometric Pres.:**	**1022 mbar**
Tested by:	**Dustin Sparks**	**Power:**	**110VAC/60Hz**	**Job Site:**	**MN08**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2017	ANSI C63.10:2013

COMMENTS

EUT transmitting with 2 megabit modulation.

DEVIATIONS FROM TEST STANDARD

None

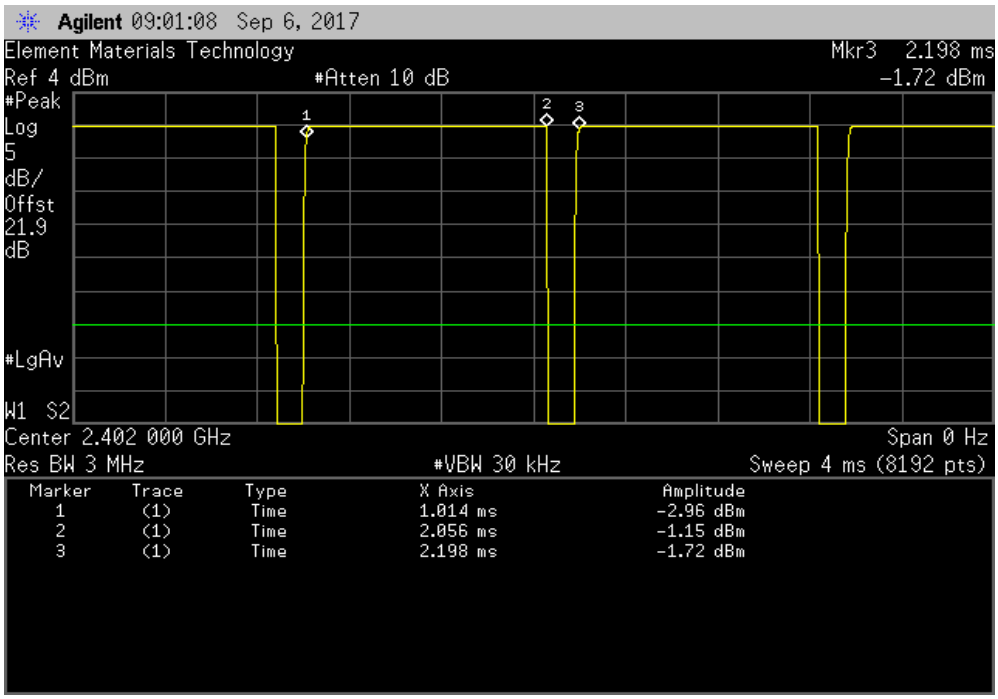
Configuration #	**6**	*Signature* Dustin Sparks

	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
Low Channel, 2402 MHz	1.042 ms	1.184 ms	1	88	N/A	N/A
Low Channel, 2402 MHz	N/A	N/A	5	N/A	N/A	N/A
Mid Channel, 2442 MHz	1.049 ms	1.181 ms	1	88.8	N/A	N/A
Mid Channel, 2442 MHz	N/A	N/A	5	N/A	N/A	N/A
High Channel, 2480 MHz	1.043 ms	1.183 ms	1	88.2	N/A	N/A
High Channel, 2480 MHz	N/A	N/A	5	N/A	N/A	N/A

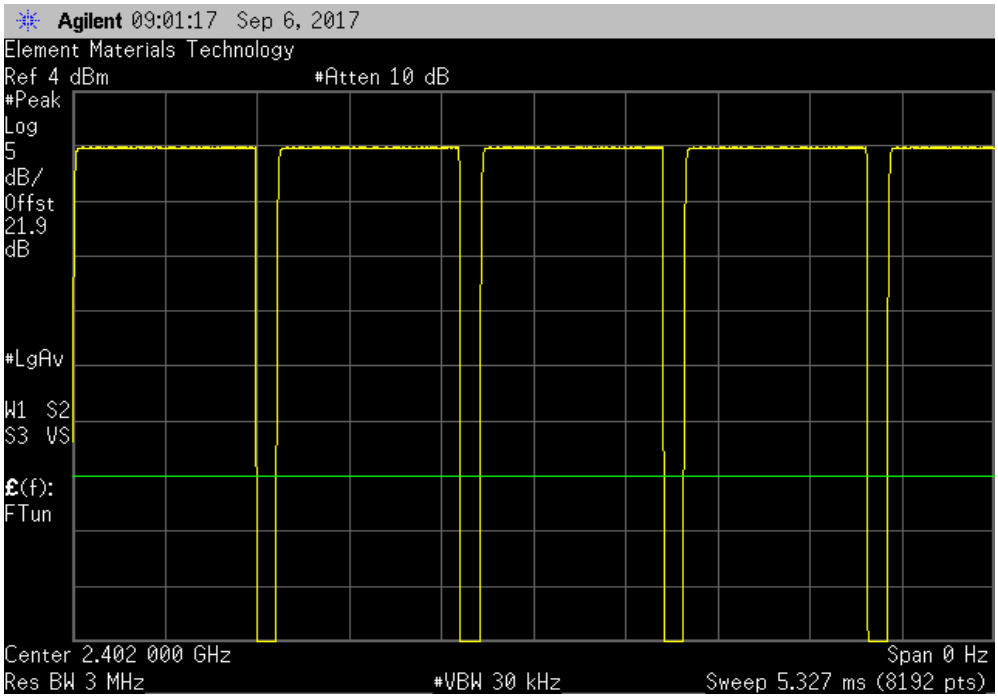
DUTY CYCLE

TbtTx 2017.07.11 XMit 2017.02.08

Low Channel, 2402 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.042 ms	1.184 ms	1	88	N/A	N/A



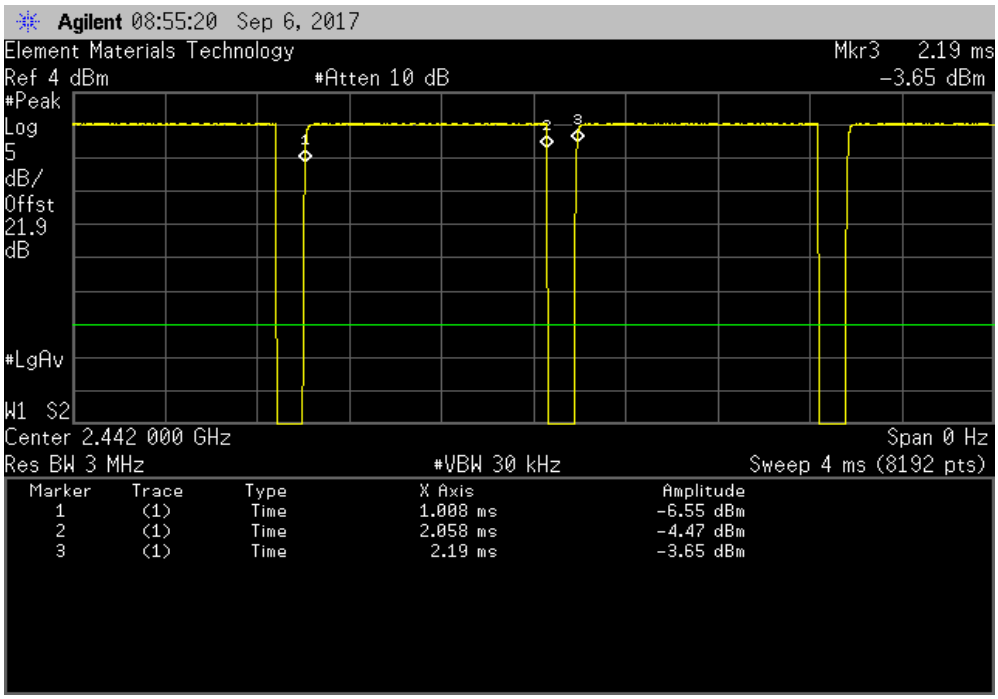
Low Channel, 2402 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



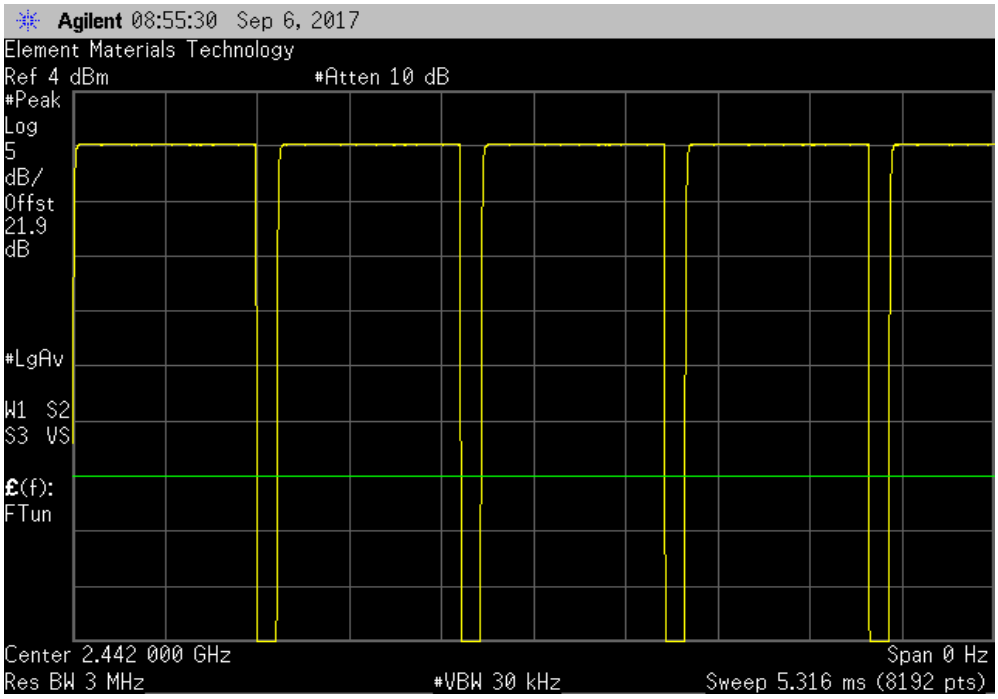
DUTY CYCLE

TbtTx 2017.07.11 XMit 2017.02.08

Mid Channel, 2442 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.049 ms	1.181 ms	1	88.8	N/A	N/A



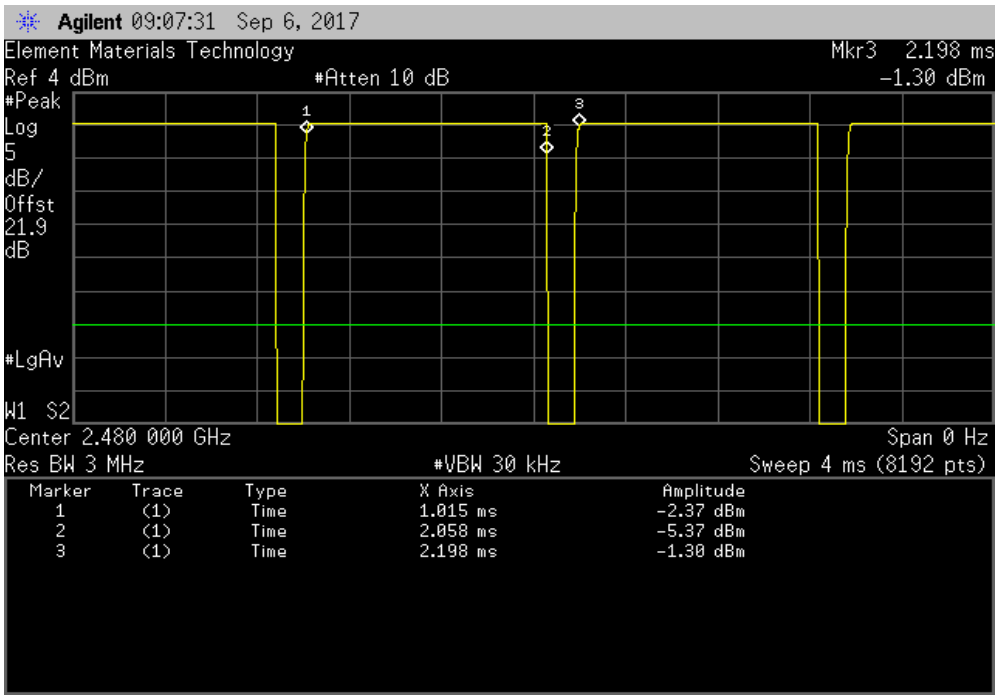
Mid Channel, 2442 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



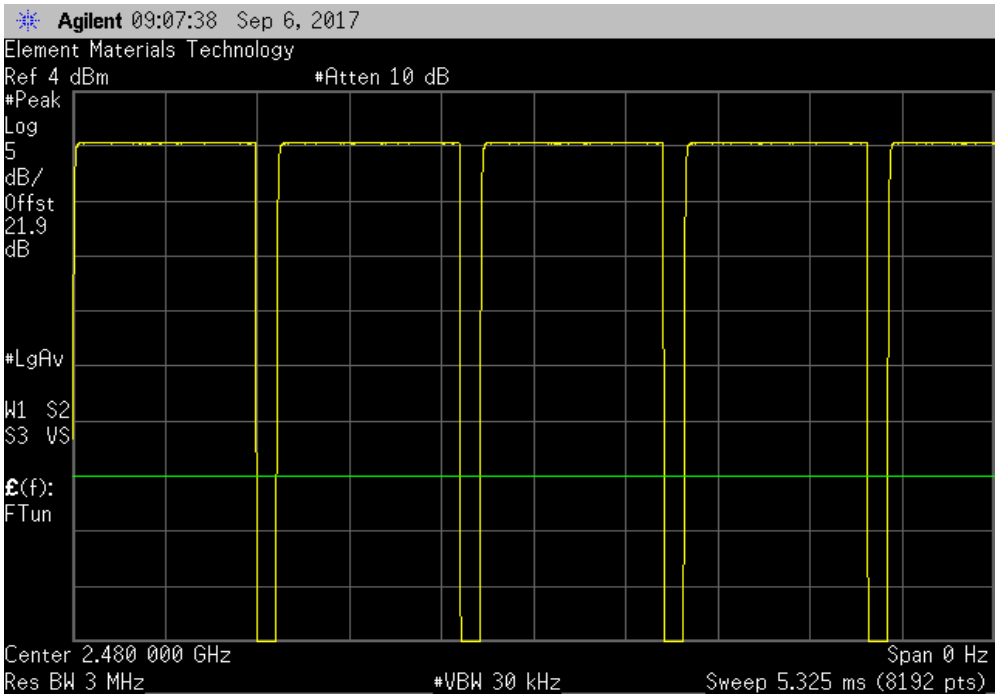
DUTY CYCLE

TbtTx 2017.07.11 XMit 2017.02.08

High Channel, 2480 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.043 ms	1.183 ms	1	88.2	N/A	N/A



High Channel, 2480 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



OCCUPIED BANDWIDTH

XMit 2017.02.08

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Cable	ESM Cable Corp	TTBJ141 KMKM-72	MNP	NCR	NCR
Attenuator	S.M. Electronics	SA26B-20	RFW	2/14/2017	2/14/2018
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/16/2017	3/16/2018

TEST DESCRIPTION

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

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

OCCUPIED BANDWIDTH

TbtTx 2017.07.11 XMit 2017.02.08

EUT:	**Companion Microphone, CM-1**			**Work Order:**	**INCN0009**
Serial Number:	**CT17**			**Date:**	**09/06/17**
Customer:	**IntriCon**			**Temperature:**	**22.4 °C**
Attendees:	**Andrew Albing**			**Humidity:**	**44% RH**
Project:	**None**			**Barometric Pres.:**	**1022 mbar**
Tested by:	**Dustin Sparks**	**Power:**	**110VAC/60Hz**	**Job Site:**	**MN08**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2017	ANSI C63.10:2013

COMMENTS

EUT transmitting with 2 megabit modulation.

DEVIATIONS FROM TEST STANDARD

None

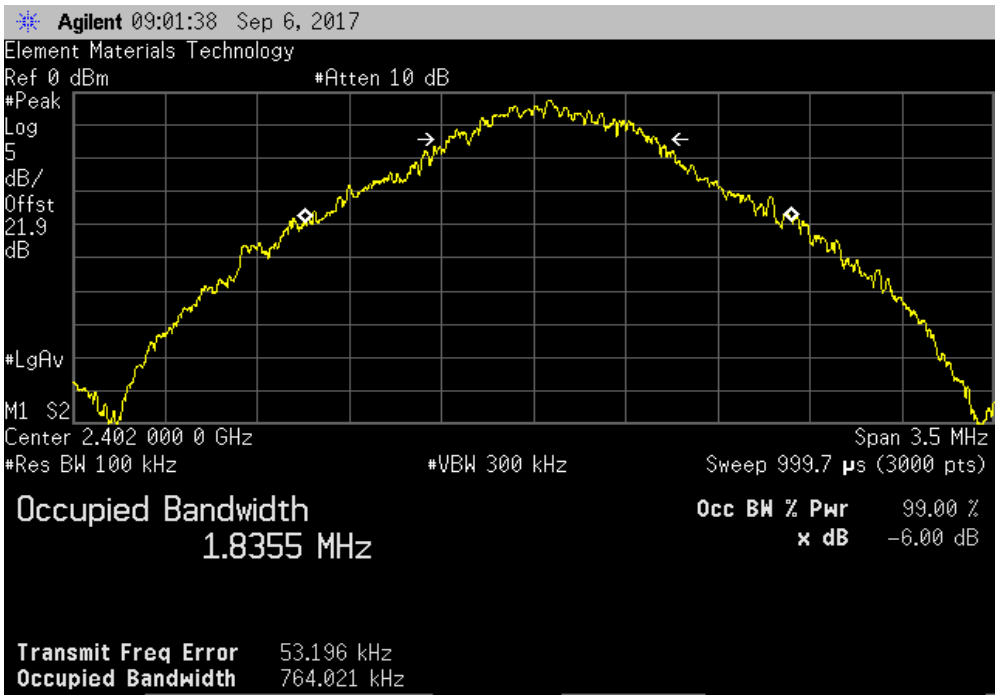
Configuration #	**6**	*Signature*

	Value	**Limit (>)**	**Result**
Low Channel, 2402 MHz	764.021 kHz	500 kHz	Pass
Mid Channel, 2442 MHz	824.341 kHz	500 kHz	Pass
High Channel, 2480 MHz	693.93 kHz	500 kHz	Pass

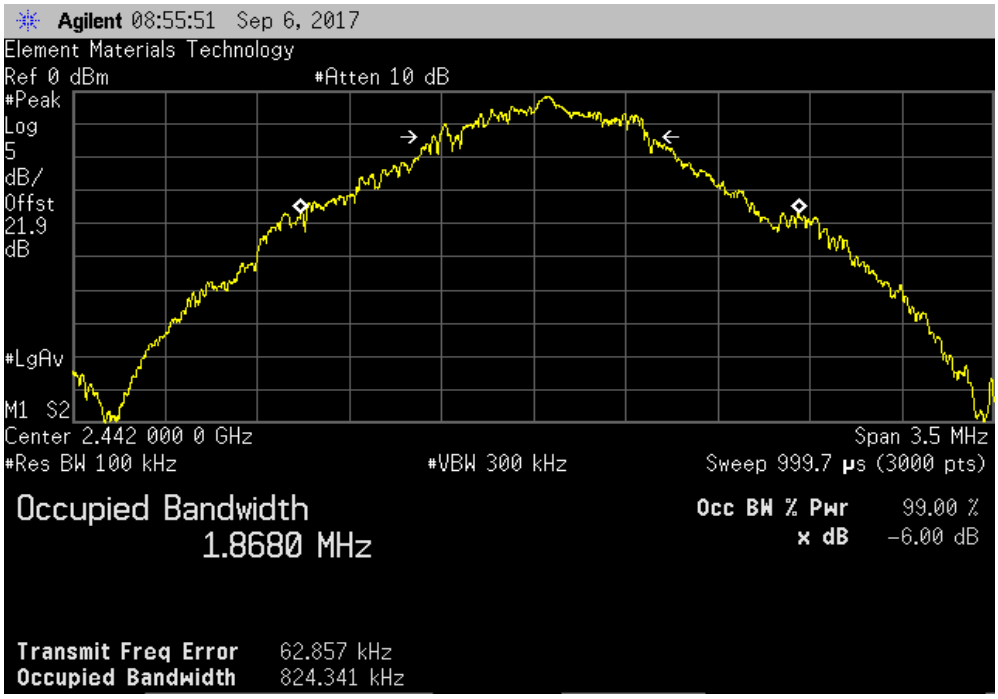
OCCUPIED BANDWIDTH

TbtTx 2017.07.11 XMit 2017.02.08

Low Channel, 2402 MHz						
				Value	Limit (>)	Result
				764.021 kHz	500 kHz	Pass



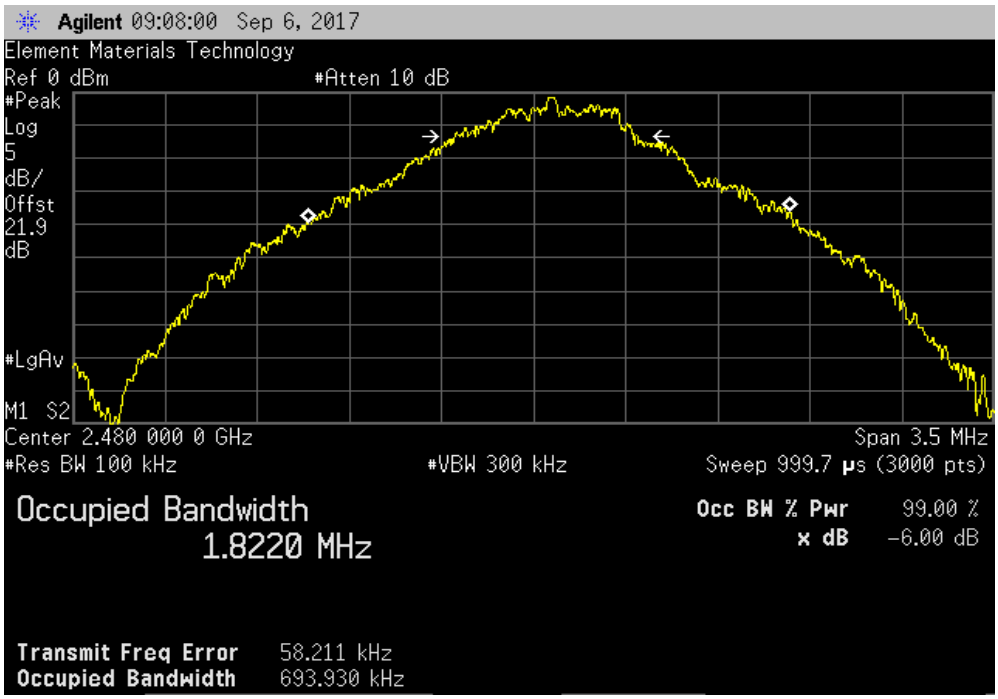
Mid Channel, 2442 MHz						
				Value	Limit (>)	Result
				824.341 kHz	500 kHz	Pass



OCCUPIED BANDWIDTH

TbtTx 2017.07.11 XMit 2017.02.08

High Channel, 2480 MHz						
				Value	Limit (>)	Result
				693.93 kHz	500 kHz	Pass



OUTPUT POWER

XMit 2017.02.08

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Cable	ESM Cable Corp	TTBJ141 KMKM-72	MNP	NCR	NCR
Attenuator	S.M. Electronics	SA26B-20	RFW	2/14/2017	2/14/2018
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/16/2017	3/16/2018

TEST DESCRIPTION

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

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

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

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

OUTPUT POWER

TbtTx 2017.07.11 XMit 2017.02.08

EUT:	**Companion Microphone, CM-1**			**Work Order:**	**INCN0009**
Serial Number:	**CT17**			**Date:**	**09/06/17**
Customer:	**IntriCon**			**Temperature:**	**22.4 °C**
Attendees:	**Andrew Albing**			**Humidity:**	**44.1% RH**
Project:	**None**			**Barometric Pres.:**	**1022 mbar**
Tested by:	**Dustin Sparks**	**Power:**	**110VAC/60Hz**	**Job Site:**	**MN08**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2017	ANSI C63.10:2013

COMMENTS

EUT transmitting with 2 megabit modulation.

DEVIATIONS FROM TEST STANDARD

None

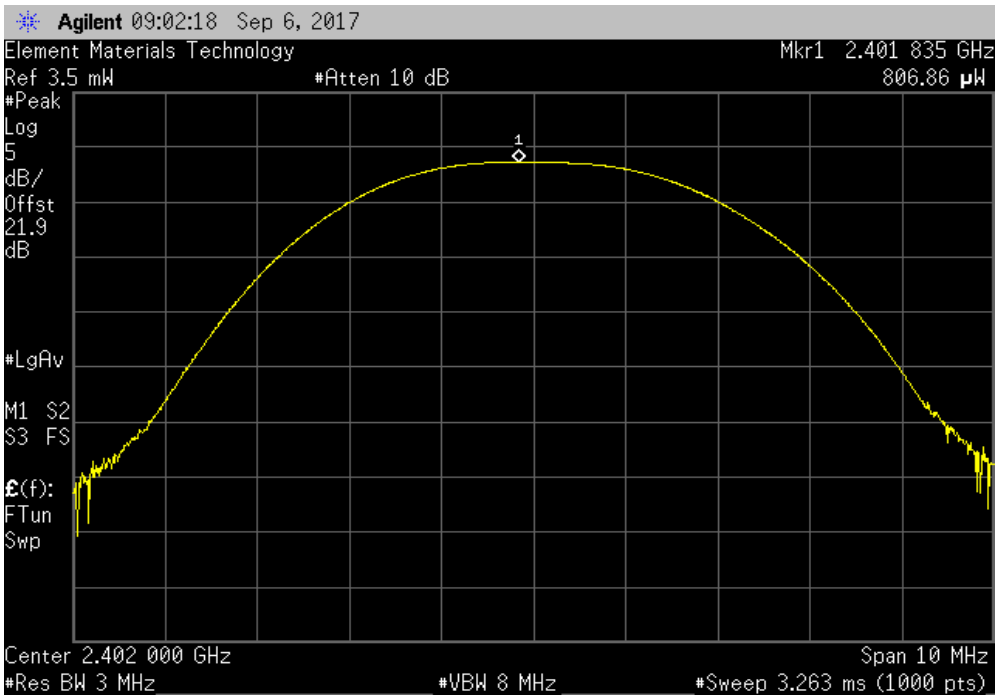
Configuration #	**6**	*Signature* Dustin Sparks

	Value	**Limit (<)**	**Result**
Low Channel, 2402 MHz	806.863 uW	1 W	Pass
Mid Channel, 2442 MHz	861.39 uW	1 W	Pass
High Channel, 2480 MHz	888.382 uW	1 W	Pass

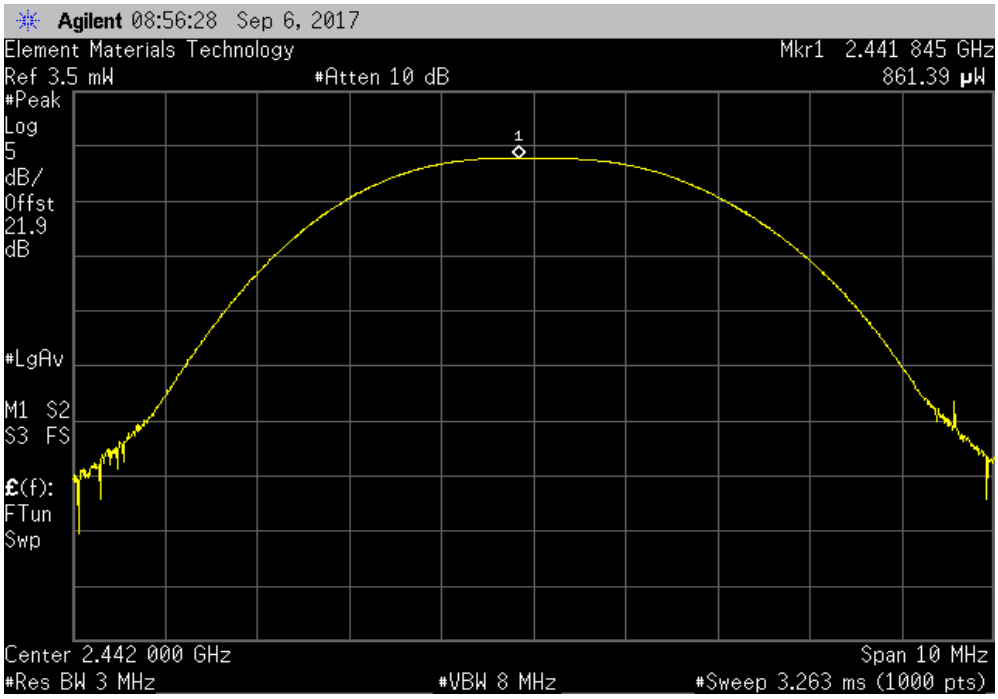
OUTPUT POWER

TbtTx 2017.07.11 XMit 2017.02.08

Low Channel, 2402 MHz						
				Value	Limit (<)	Result
				806.863 uW	1 W	Pass

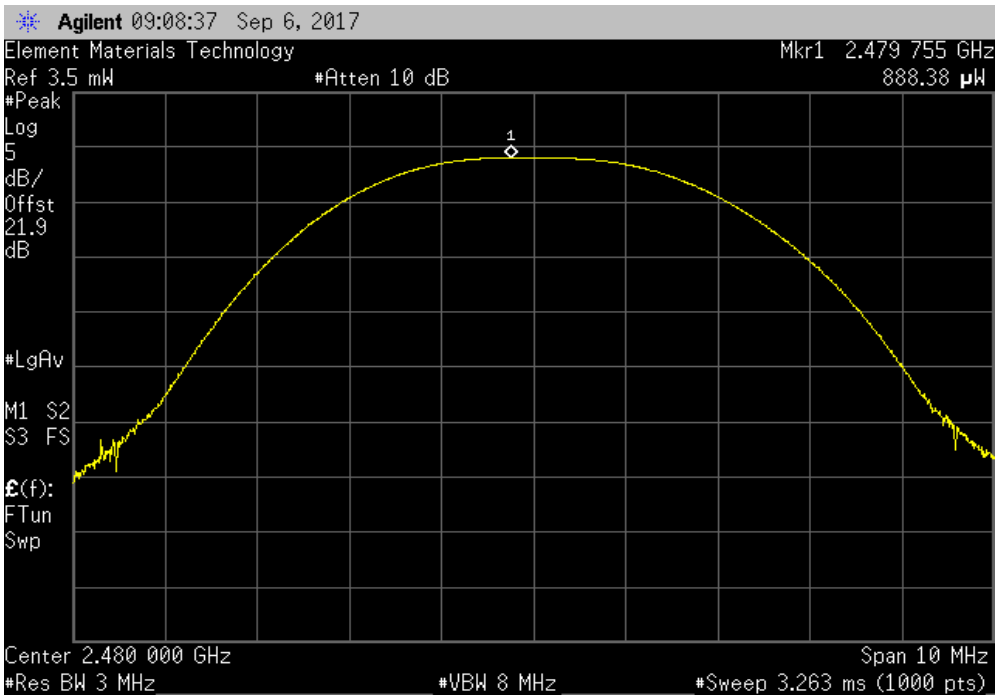


Mid Channel, 2442 MHz						
				Value	Limit (<)	Result
				861.39 uW	1 W	Pass



OUTPUT POWER

High Channel, 2480 MHz						
				Value	Limit (<)	Result
				888.382 uW	1 W	Pass



POWER SPECTRAL DENSITY

XMit 2017.02.08

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Cable	ESM Cable Corp	TTBJ141 KMKM-72	MNP	NCR	NCR
Attenuator	S.M. Electronics	SA26B-20	RFW	2/14/2017	2/14/2018
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/16/2017	3/16/2018

TEST DESCRIPTION

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

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

POWER SPECTRAL DENSITY

TbtTx 2017.07.11 XMit 2017.02.08

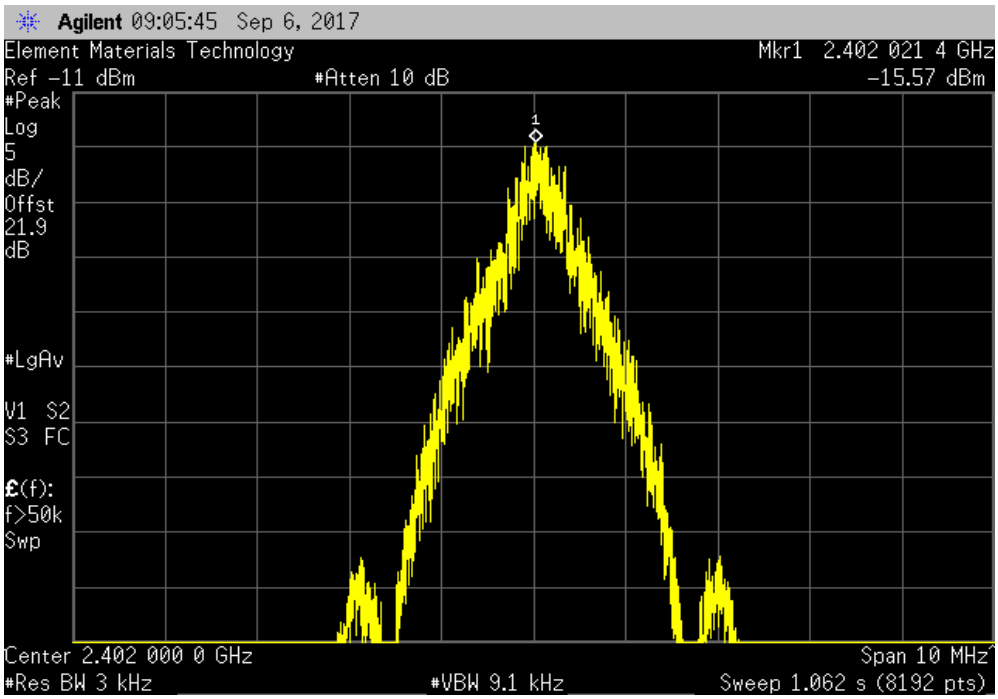
EUT:	**Companion Microphone, CM-1**			**Work Order:**	**INCN0009**
Serial Number:	**CT17**			**Date:**	**09/06/17**
Customer:	**IntriCon**			**Temperature:**	**22.6 °C**
Attendees:	**Andrew Albing**			**Humidity:**	**44% RH**
Project:	**None**			**Barometric Pres.:**	**1022 mbar**
Tested by:	**Dustin Sparks**	**Power:**	**110VAC/60Hz**	**Job Site:**	**MN08**
TEST SPECIFICATIONS			**Test Method**		
FCC 15.247:2017			ANSI C63.10:2013		
COMMENTS					
EUT transmitting with 2 megabit modulation.					
DEVIATIONS FROM TEST STANDARD					
None					
Configuration #	**6**	*Signature*	Dustin Sparks		

	Value dBm/3kHz	Limit < dBm/3kHz	Results
Low Channel, 2402 MHz	-15.57	8	Pass
Mid Channel, 2442 MHz	-14.312	8	Pass
High Channel, 2480 MHz	-14.35	8	Pass

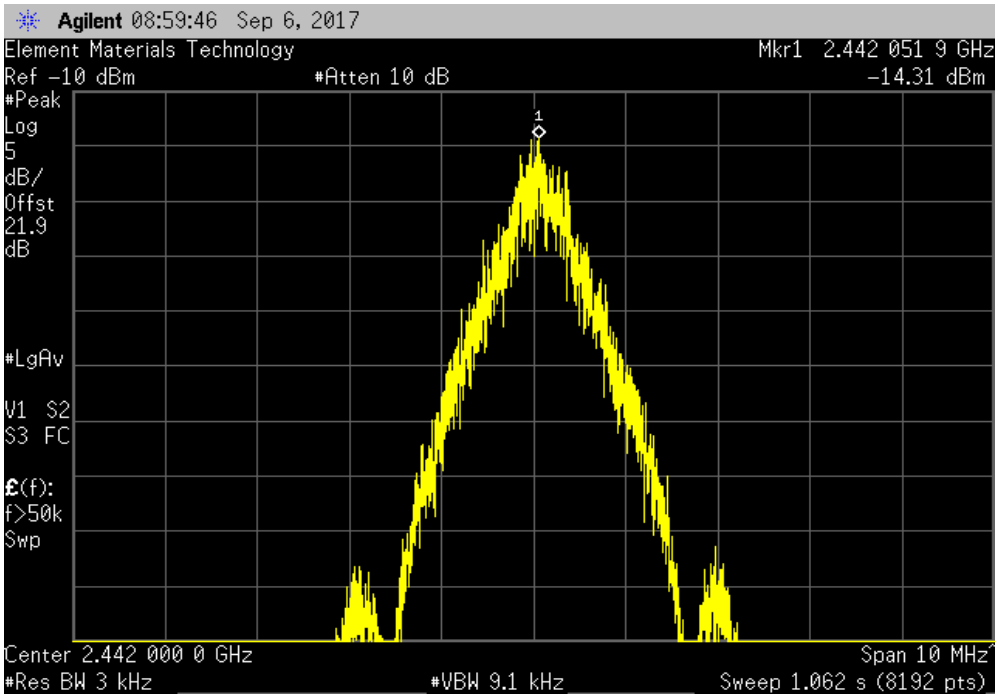
POWER SPECTRAL DENSITY

TbtTx 2017.07.11 XMit 2017.02.08

Low Channel, 2402 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-15.57	8	Pass

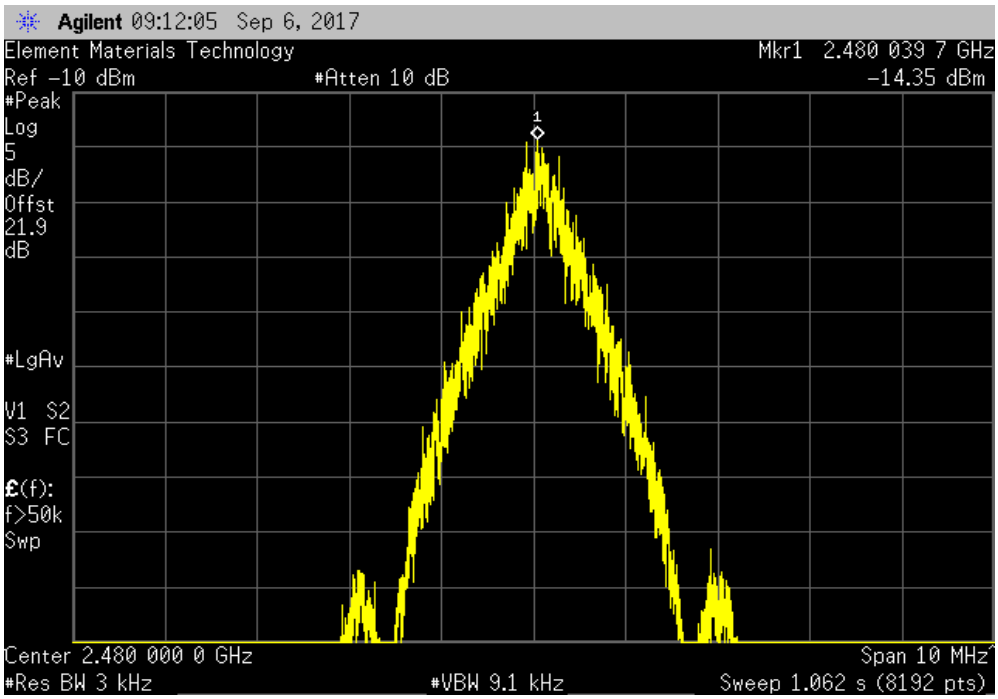


Mid Channel, 2442 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-14.312	8	Pass



POWER SPECTRAL DENSITY

High Channel, 2480 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-14.35	8	Pass



BAND EDGE COMPLIANCE

XMit 2017.02.08

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Cable	ESM Cable Corp	TTBJ141 KMKM-72	MNP	NCR	NCR
Attenuator	S.M. Electronics	SA26B-20	RFW	2/14/2017	2/14/2018
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/16/2017	3/16/2018

TEST DESCRIPTION

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

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

BAND EDGE COMPLIANCE

TbtTx 2017.07.11 XMit 2017.02.08

EUT:	**Companion Microphone, CM-1**			**Work Order:**	**INCN0009**
Serial Number:	**CT17**			**Date:**	**09/06/17**
Customer:	**IntriCon**			**Temperature:**	**22.3 °C**
Attendees:	**Andrew Albing**			**Humidity:**	**43.7% RH**
Project:	**None**			**Barometric Pres.:**	**1022 mbar**
Tested by:	**Dustin Sparks**	**Power:**	**110VAC/60Hz**	**Job Site:**	**MN08**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2017	ANSI C63.10:2013

COMMENTS

EUT transmitting with 2 megabit modulation.

DEVIATIONS FROM TEST STANDARD

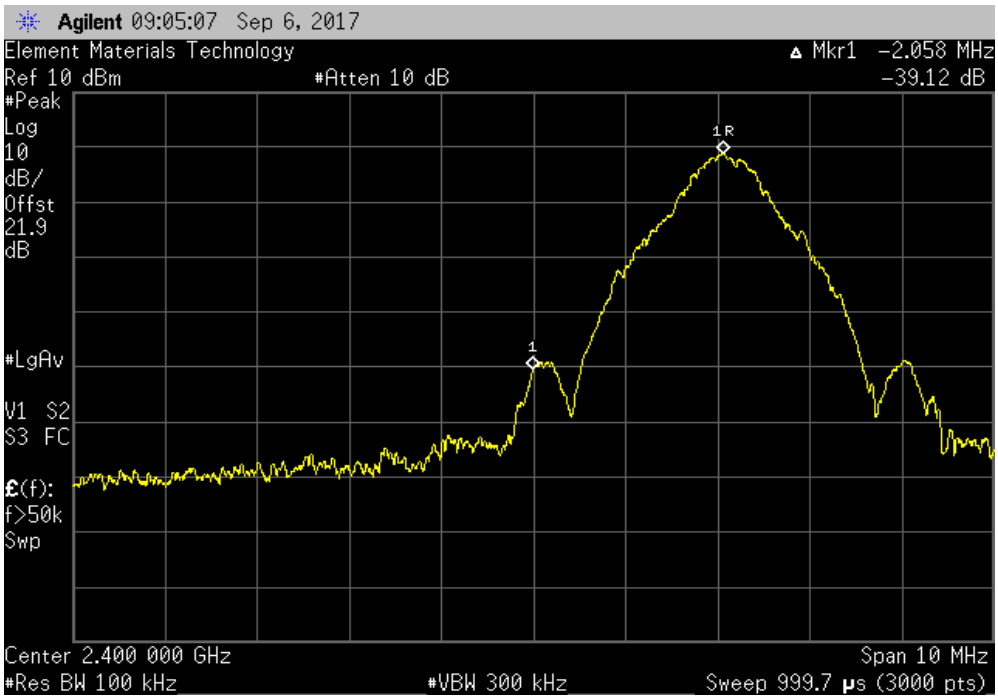
None

Configuration #	**6**	*Signature*

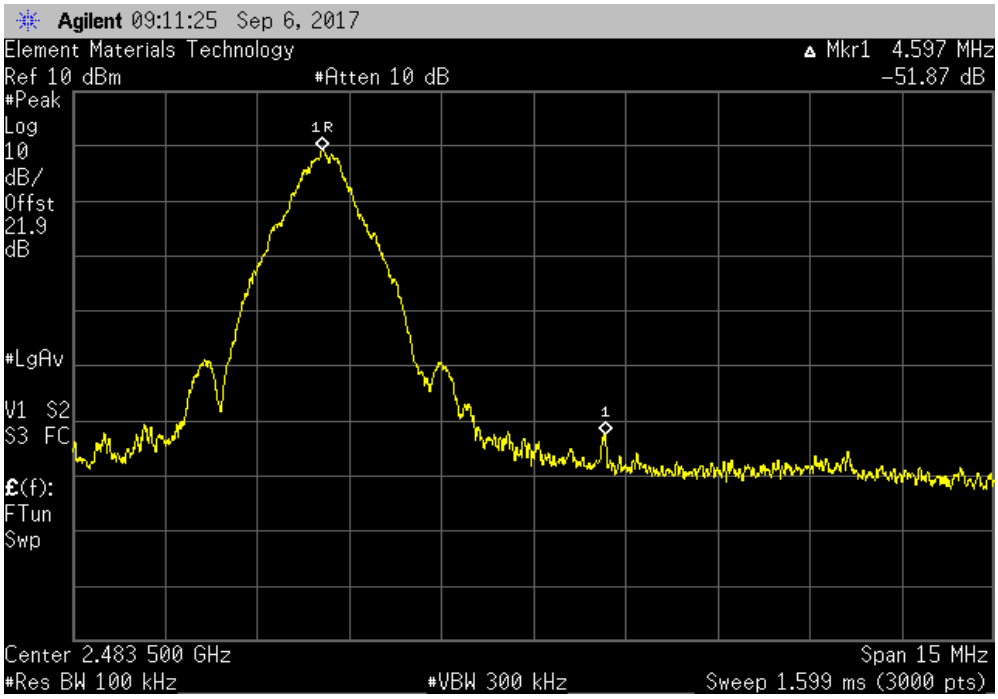
	Value (dBc)	**Limit ≤ (dBc)**	**Result**
Low Channel, 2402 MHz	-39.12	-20	Pass
High Channel, 2480 MHz	-51.87	-20	Pass

BAND EDGE COMPLIANCE

Low Channel, 2402 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-39.12	-20	Pass



High Channel, 2480 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-51.87	-20	Pass



SPURIOUS CONDUCTED EMISSIONS

XMit 2017.02.08

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	3/17/2018
Cable	ESM Cable Corp	TTBJ141 KMKM-72	MNP	NCR	NCR
Attenuator	S.M. Electronics	SA26B-20	RFW	2/14/2017	2/14/2018
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/16/2017	3/16/2018

TEST DESCRIPTION

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

SPURIOUS CONDUCTED EMISSIONS

TbtTx 2017.07.11 XMit 2017.02.08

EUT:	**Companion Microphone, CM-1**			**Work Order:**	**INCN0009**
Serial Number:	**CT17**			**Date:**	**09/06/17**
Customer:	**IntriCon**			**Temperature:**	**22.7 °C**
Attendees:	**Andrew Albing**			**Humidity:**	**44.2% RH**
Project:	**None**			**Barometric Pres.:**	**1022 mbar**
Tested by:	**Dustin Sparks**	**Power:**	**110VAC/60Hz**	**Job Site:**	**MN08**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2017	ANSI C63.10:2013

COMMENTS

EUT transmitting with 2 megabit modulation.

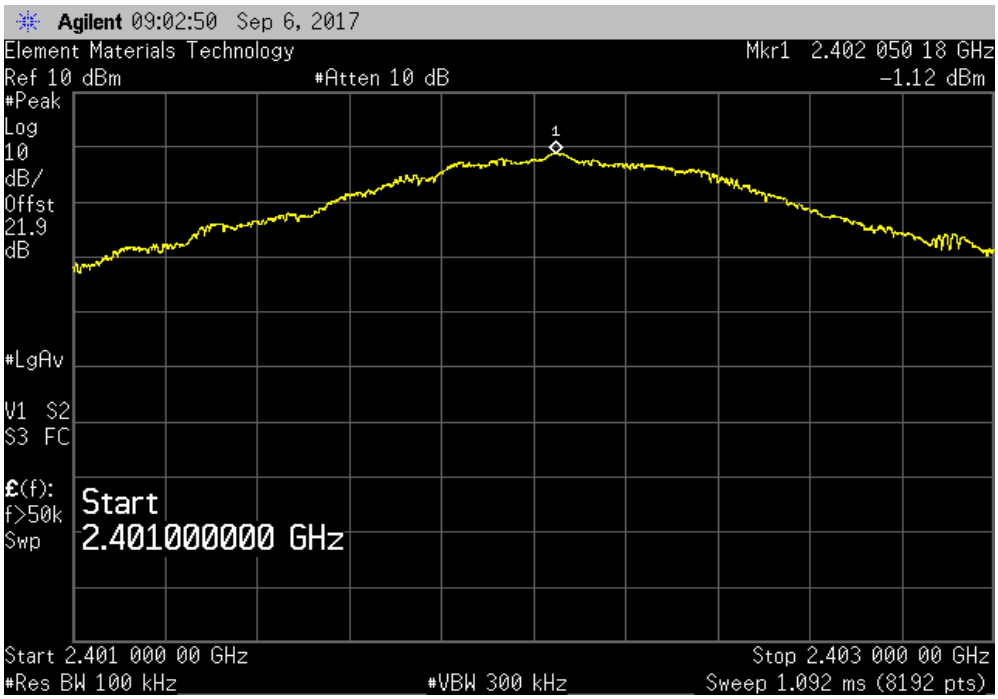
DEVIATIONS FROM TEST STANDARD

None

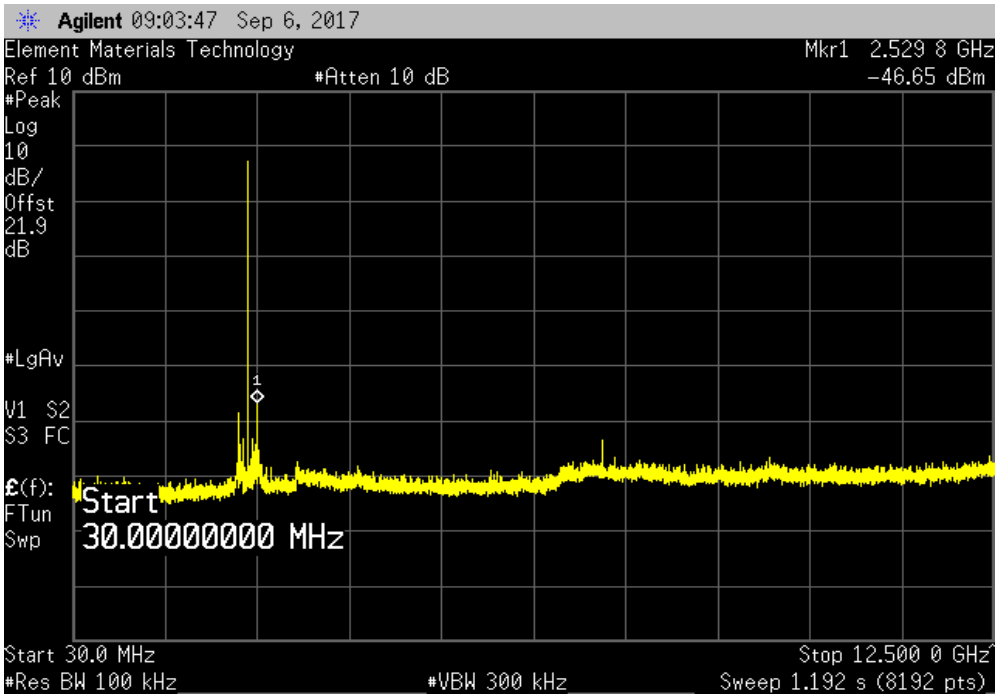
Configuration #	**6**	*Signature* Dustin Sparks

	Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result
Low Channel, 2402 MHz	Fundamental	N/A	N/A	N/A
Low Channel, 2402 MHz	30 MHz - 12.5 GHz	-45.53	-20	Pass
Low Channel, 2402 MHz	12.5 GHz - 25 GHz	-51.55	-20	Pass
Mid Channel, 2442 MHz	Fundamental	N/A	N/A	N/A
Mid Channel, 2442 MHz	30 MHz - 12.5 GHz	-44.96	-20	Pass
Mid Channel, 2442 MHz	12.5 GHz - 25 GHz	-50.53	-20	Pass
High Channel, 2480 MHz	Fundamental	N/A	N/A	N/A
High Channel, 2480 MHz	30 MHz - 12.5 GHz	-46.13	-20	Pass
High Channel, 2480 MHz	12.5 GHz - 25 GHz	-51.48	-20	Pass

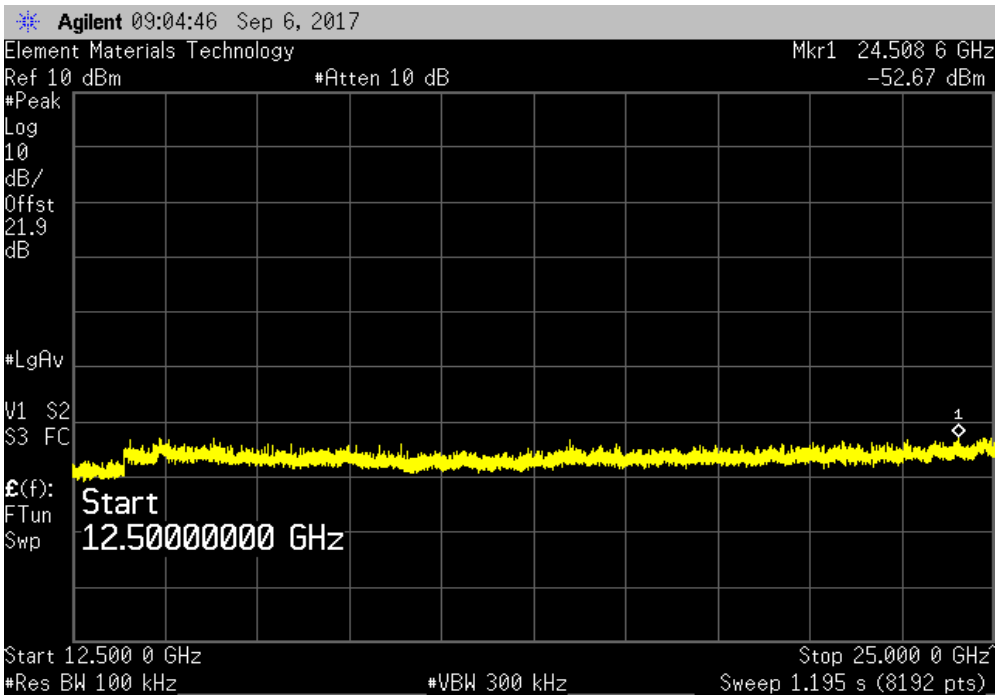
Low Channel, 2402 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



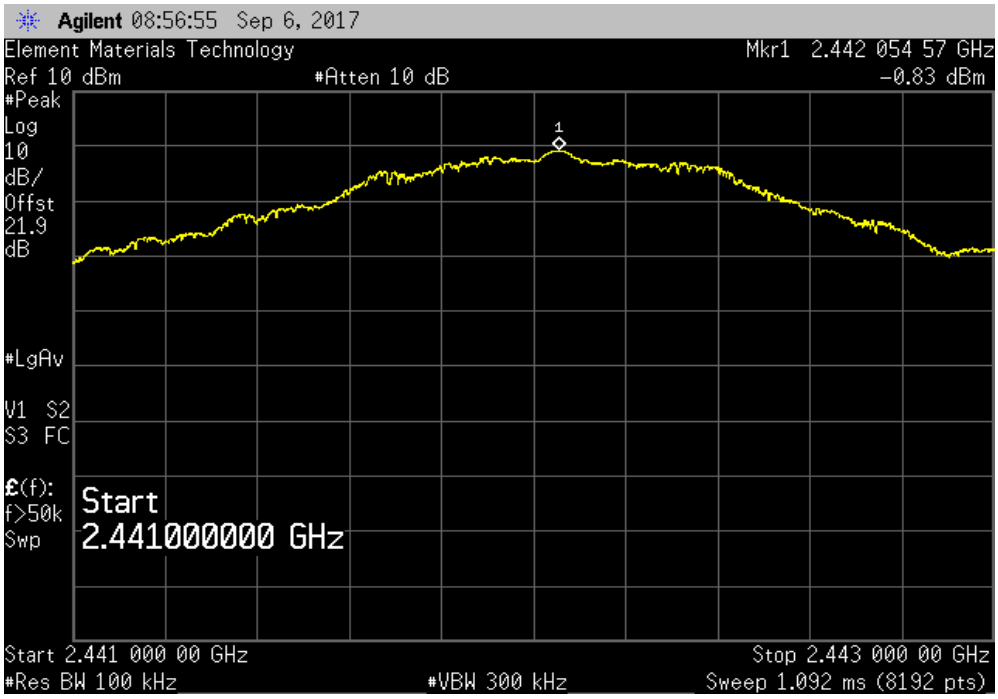
Low Channel, 2402 MHz					
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz		-45.53	-20	Pass	



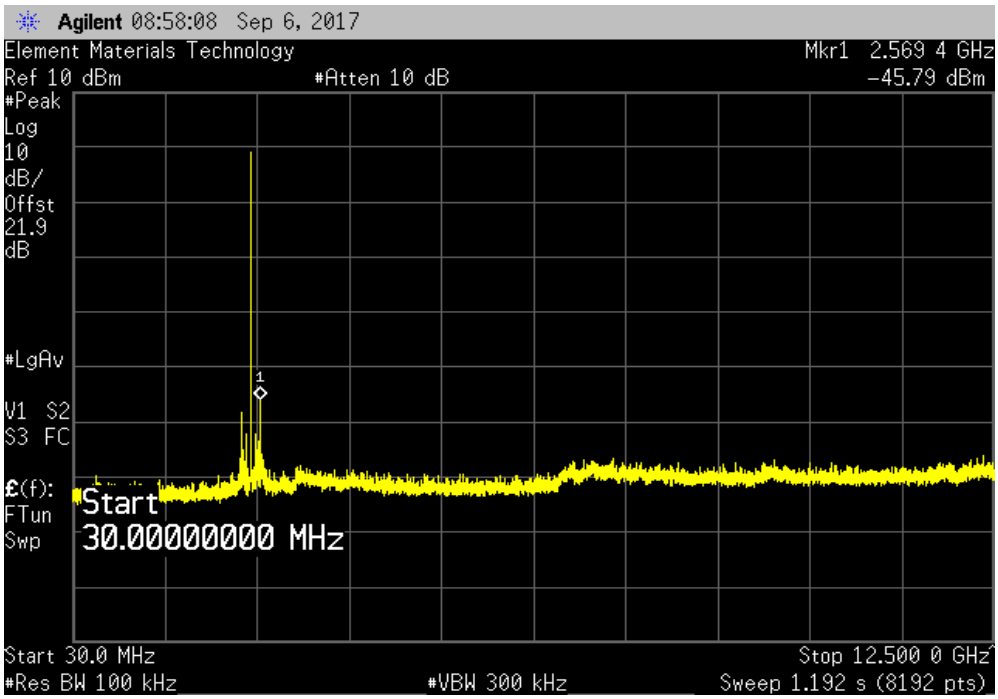
Low Channel, 2402 MHz				
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-51.55	-20	Pass



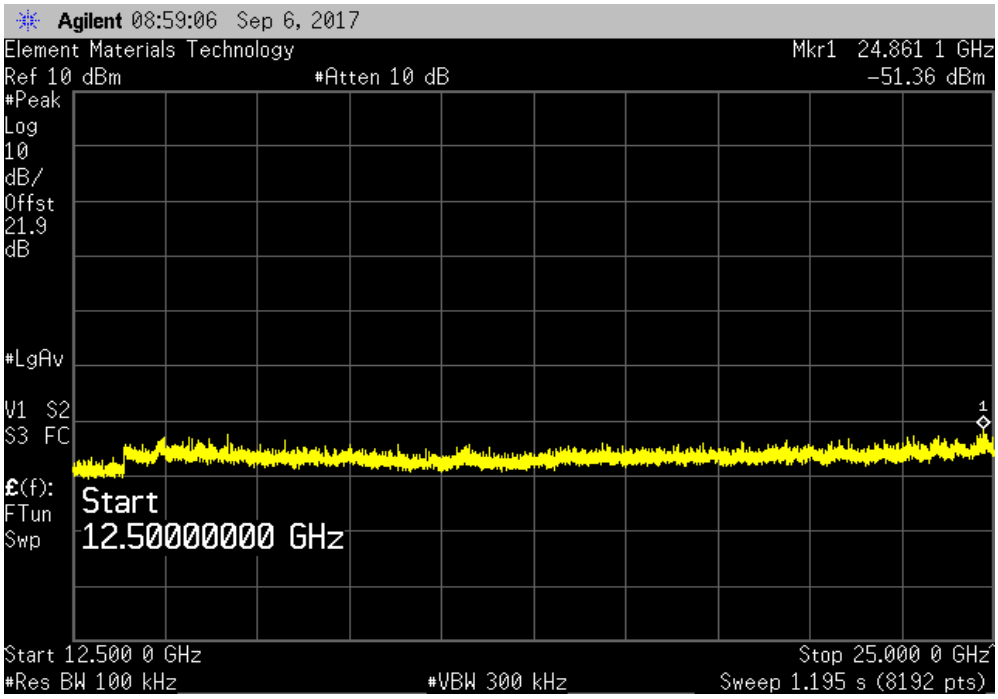
Mid Channel, 2442 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



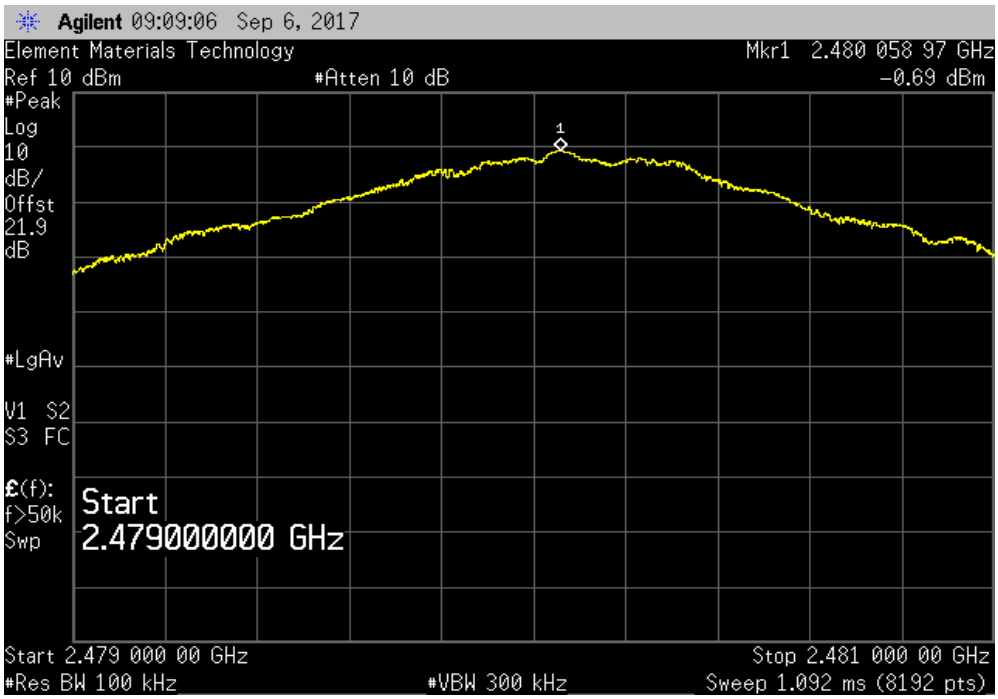
Mid Channel, 2442 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-44.96	-20	Pass



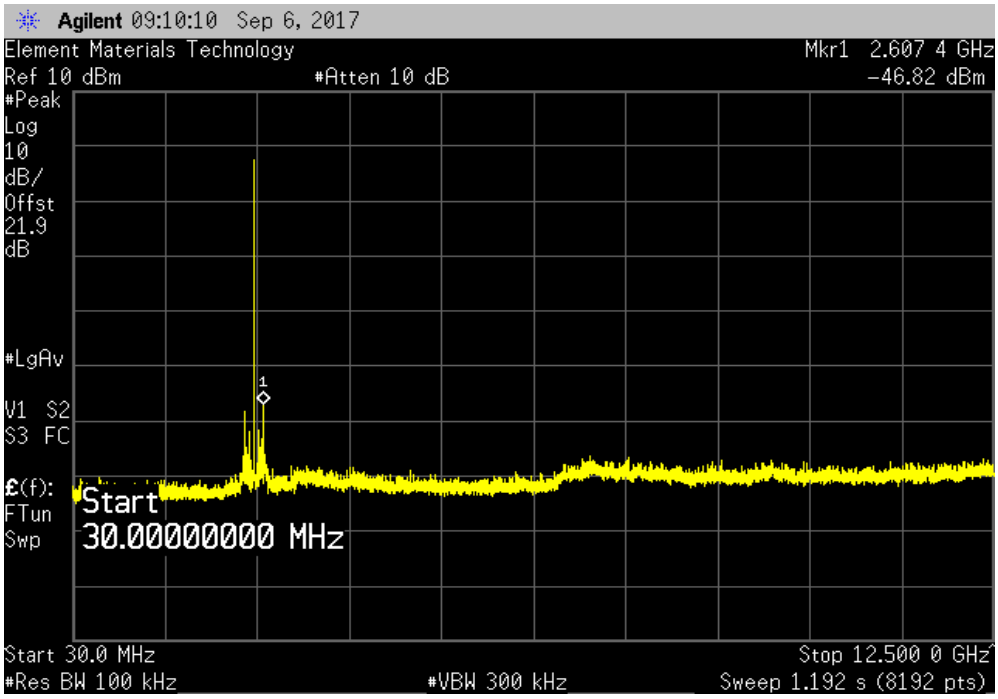
Mid Channel, 2442 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-50.53	-20	Pass



High Channel, 2480 MHz						
	Frequency Range			**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



High Channel, 2480 MHz					
Frequency Range			**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz			-46.13	-20	Pass



SPURIOUS CONDUCTED EMISSIONS

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High Channel, 2480 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-51.48	-20	Pass