

### Leviton Mfg Co, Inc

WiFi Module FCC 15.247:2019 802.11bgn SISO Radio

Report # LEVT0129 Rev. 1





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### **CERTIFICATE OF TEST**



#### Last Date of Test: September 30, 2019 Leviton Mfg Co, Inc Model: WiFi Module

### **Radio Equipment Testing**

 Standards

 Specification
 Method

 FCC 15.207:2019
 ANSI C63.10:2013

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

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	Yes	Pass	
6.5, 6.6, 11.12.1, 11.13.2	Spurious Radiated Emissions	Yes	Pass	
11.6	Duty Cycle	Yes	N/A	See value under Output Power
11.8.2	Occupied Bandwidth	No	N/A	Previously tested under FCC ID: VPYLB1GC
11.9.2.2.4	Output Power	Yes	Pass	
11.10.2	Power Spectral Density	No	N/A	Previously tested under FCC ID: VPYLB1GC
11.11	Band Edge Compliance	No	N/A	Previously tested under FCC ID: VPYLB1GC
11.11	Spurious Conducted Emissions	No	N/A	Previously tested under FCC ID: VPYLB1GC

#### **Deviations From Test Standards**

None

**Approved By:** 

Kyle Holgate, 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		
	Added Powerline Conducted Emissions data.	2019-10-01	15-21
	Added Powerline Conducted Emissions result and standard FCC 15.207:2019 to Certificate of Test.	2019-10-01	2
	Added new Spurious Radiated Emissions data.	2019-10-01	22-26
	Added Powerline Conducted Emissions to modifications page.	2019-10-01	13
01	Updated last date of test to September 30, 2019.	2019-10-01	2, 8, 13
	Added configuration LEVT0129-5.	2019-10-01	12
	Updated standard from FCC 15.247:2018 to FCC 15.247:2019.	2019-10-02	1, 2, 24, 26, 28
	Removed configurations LEVT0129-1 and LEVT0129-2.	2019-10-02	9, 10

# ACCREDITATIONS AND AUTHORIZATIONS



#### **United States**

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

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

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

#### Canada

**ISED** - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB). 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

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

#### Japan

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

#### Taiwan

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

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

#### Singapore

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

#### Israel

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

#### Hong Kong

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

#### Vietnam

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

### SCOPE

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

### FACILITIES





<b>California</b> Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	New York Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	Oregon Labs EV01-12 6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	Texas Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Washington Labs NC01-05 19201 120 <sup>th</sup> Ave NE Bothell, WA 98011 (425)984-6600	
		NV	LAP			
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	
		BS	МІ			
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R	
		VC	CI			
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**



#### **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**





# **PRODUCT DESCRIPTION**



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

Company Name:	Leviton Mfg Co, Inc
Address:	20497 SW Teton Avenue
City, State, Zip:	Tualatin, OR 97062
Test Requested By:	Mark Darula
Model:	WiFi Module
First Date of Test:	May 1, 2018
Last Date of Test:	September 30, 2018
Receipt Date of Samples:	April 30, 2018
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

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

#### Functional Description of the EUT:

802.11bgn WiFi Module originally granted under FCC ID: VPYLB1GC

#### Testing Objective:

To demonstrate compliance of the 802.11 radio under FCC 15.247 for operation in the 2.4 GHz band with a Class II Permissive Change due to the change to a new antenna.

# **CONFIGURATIONS**



#### Configuration LEVT0129-4

Software/Firmware Running during test			
Description	Version		
MFG Test	B3778		

EUT					
Description	Manufacturer	Model/Part Number	Serial Number		
WiFi Module	Leviton Mfg Co, Inc.	B3778 Rev 3	None		

Peripherals in test setup boundary				
Description	Manufacturer	Model/Part Number	Serial Number	
Carrier Board	Leviton Mfg Co, Inc.	B2183 Rev 3	None	

Remote Equipment Outside of Test Setup Boundary				
Description	Manufacturer	Model/Part Number	Serial Number	
Laptop	HP	ProBook	PLCNU1491FLZ	
AC Adaptor	CUI Inc.	SWM6-5-NH-MUB	172400529	

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB to FTDI	Yes	1.5 m	No	Laptop	Carrier Board
DC Power	No	3.2 m	No	AC Adaptor	Carrier Board

# **CONFIGURATIONS**



#### Configuration LEVT0129-5

Software/Firmware Running during test	
Description	Version
MFG Test	VR1

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
WiFi Module	Leviton Mfg Co, Inc.	B3773 Rev. 3	1R1

Peripherals in test setup boundary							
Description	Manufacturer	Model/Part Number	Serial Number				
Linear DC Power Supply	Topward	TPS-2000	0074				
Carrier Board	Leviton Mfg Co, Inc.	B2183 Rev 3	1R1				

Remote Equipment Outside of Test Setup Boundary						
Description	Manufacturer	Model/Part Number	Serial Number			
Laptop	Fujitsu	Lifebook AH572	R1331509			

Cables								
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2			
Programming Cable	No	0.1 m	No	Carrier Board	Unterminated			
DC Power	No	3.0 m	No	Carrier Board	Linear DC Power Supply			

# **MODIFICATIONS**



### **Equipment Modifications**

Item	Date	Test	Modification	Note	Disposition of EUT
1	5/1/2018	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.
2	9/30/2019	Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
3	9/30/2019	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

# **POWER SETTINGS**



The EUT was tested using the power settings provided by the manufacturer:

#### SETTINGS FOR ALL TESTS IN THIS REPORT

Modulation Types	Channel Bandwidths	Channel	Position	Frequency (MHz)	Power Setting
1 Mbps, 11 Mbps, 6		1	Low Channel	2412	14
Mbps, 36 Mbps, 54	20	6	Mid Channel	2437	17
Mbps, MCS0, MCS7		11	High Channel	2462	17



#### **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 500hm measuring port is terminated by a 500hm EMI meter or a 500hm resistive load. All 500hm measuring ports of the LISN are terminated by 500hm. 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	ESCI	ARH	2019-05-02	2020-05-02
Cable - Conducted Cable Assembly	Northwest EMC	EVG, HHD, RKT	EVGA	2019-01-07	2020-01-07
LISN	Solar Electronics	9252-50-R-24-BNC	LIR	2019-08-28	2020-08-28

#### **MEASUREMENT UNCERTAINTY**

Description		
Expanded k=2	2.4 dB	-2.4 dB

#### **CONFIGURATIONS INVESTIGATED**

LEVT0129-5

#### **MODES INVESTIGATED**

802.11 bgn continuous Tx, Mid Channel = 2437 MHz, 1 Mbps, Software Power Setting = 17



EUT:	WiFi Module		Work Order:	LEVT0129		
Serial Number:	1R1				Date:	2019-09-30
Customer:	Leviton Mfg	Co, Inc			Temperature:	22.1°C
Attendees:	Stephen Mill	er			Relative Humidity:	38.4%
Customer Project:	None				Bar. Pressure:	1021 mb
Tested By:	Jeff Alcoke				Job Site:	EV07
Power:	3.3 VDC via	110VAC/60	)Hz		Configuration:	LEVT0129-5
TEST SPECIFIC	CATIONS					
Specification:				Method:		
FCC 15.207:2019				ANSI C63.10	):2013	
TEST PARAME	TERS					
Run #: 2		Line:	Neutral	A	dd. Ext. Attenuation (dB	): 0
COMMENTS						
Measuring AC mains of Linear DC Power Supply.						
EUT OPERATING MODES						
802.11 bgn continuous Tx, Mid Channel = 2437 MHz, 1 Mbps, Software Power Setting = 17						
DEVIATIONS FROM TEST STANDARD						
None						



Peak Data - vs - Average Limit





#### **RESULTS - Run #2**

Peak Data - vs - Quasi Peak Limit							
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)		
0.150	24.5	20.1	44.6	66.0	-21.4		
0.575	14.6	19.9	34.5	56.0	-21.5		
0.210	20.3	20.0	40.3	63.2	-22.9		
3.243	12.3	20.1	32.4	56.0	-23.6		
0.497	12.0	19.8	31.8	56.1	-24.3		
0.542	11.8	19.9	31.7	56.0	-24.3		
1.956	11.5	20.0	31.5	56.0	-24.5		
0.191	19.4	20.0	39.4	64.0	-24.6		
0.460	12.2	19.8	32.0	56.7	-24.7		
3.086	11.0	20.1	31.1	56.0	-24.9		
4.914	10.9	20.2	31.1	56.0	-24.9		
1.086	11.1	19.9	31.0	56.0	-25.0		
3.482	10.8	20.1	30.9	56.0	-25.1		
2.217	10.8	20.0	30.8	56.0	-25.2		
2.739	10.8	20.0	30.8	56.0	-25.2		
2.168	10.7	20.0	30.7	56.0	-25.3		
1.008	10.7	19.9	30.6	56.0	-25.4		
1.243	10.7	19.9	30.6	56.0	-25.4		
3.213	10.3	20.1	30.4	56.0	-25.6		
4.586	10.2	20.2	30.4	56.0	-25.6		
4.735	10.2	20.2	30.4	56.0	-25.6		
1.068	10.4	19.9	30.3	56.0	-25.7		
1.221	10.4	19.9	30.3	56.0	-25.7		
1.486	10.3	19.9	30.2	56.0	-25.8		
2.952	10.1	20.0	30.1	56.0	-25.9		
3.821	9.9	20.2	30.1	56.0	-25.9		

Peak Data - vs - Average Limit							
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)		
0.150	24.5	20.1	44.6	56.0	-11.4		
0.575	14.6	19.9	34.5	46.0	-11.5		
0.210	20.3	20.0	40.3	53.2	-12.9		
3.243	12.3	20.1	32.4	46.0	-13.6		
0.497	12.0	19.8	31.8	46.1	-14.3		
0.542	11.8	19.9	31.7	46.0	-14.3		
1.956	11.5	20.0	31.5	46.0	-14.5		
0.191	19.4	20.0	39.4	54.0	-14.6		
0.460	12.2	19.8	32.0	46.7	-14.7		
3.086	11.0	20.1	31.1	46.0	-14.9		
4.914	10.9	20.2	31.1	46.0	-14.9		
1.086	11.1	19.9	31.0	46.0	-15.0		
3.482	10.8	20.1	30.9	46.0	-15.1		
2.217	10.8	20.0	30.8	46.0	-15.2		
2.739	10.8	20.0	30.8	46.0	-15.2		
2.168	10.7	20.0	30.7	46.0	-15.3		
1.008	10.7	19.9	30.6	46.0	-15.4		
1.243	10.7	19.9	30.6	46.0	-15.4		
3.213	10.3	20.1	30.4	46.0	-15.6		
4.586	10.2	20.2	30.4	46.0	-15.6		
4.735	10.2	20.2	30.4	46.0	-15.6		
1.068	10.4	19.9	30.3	46.0	-15.7		
1.221	10.4	19.9	30.3	46.0	-15.7		
1.486	10.3	19.9	30.2	46.0	-15.8		
2.952	10.1	20.0	30.1	46.0	-15.9		
3.821	9.9	20.2	30.1	46.0	-15.9		

#### CONCLUSION

Pass

Tested By



EUT:	WiFi Module			Work Order:	LEVT0129				
Serial Number:	1R1				Date:	2019-09-30			
Customer:	Leviton Mfg (	Co, Inc			Temperature:	22.1°C			
Attendees:	Stephen Mille	er			Relative Humidity:	38.4%			
Customer Project:	None				Bar. Pressure:	1021 mb			
Tested By:	Jeff Alcoke				Job Site:	EV07			
Power:	3.3 VDC via	110VAC/60	)Hz		Configuration:	LEVT0129-5			
TEST SPECIFIC	TEST SPECIFICATIONS								
Specification:				Method:					
FCC 15.207:2019				ANSI C63.10	):2013	2013			
TEST PARAMETERS									
TEST PARAME	TERS								
TEST PARAMERun #:3	TERS	Line:	High Line	Δ	dd. Ext. Attenuation (dB	): 0			
TEST PARAMERun #:3COMMENTS	TERS	Line:	High Line	Α	dd. Ext. Attenuation (dB	): 0			
TEST PARAMERun #:3COMMENTSMeasuring AC mair	TERS	Line: Power Su	High Line	A	dd. Ext. Attenuation (dB	): 0			
TEST PARAMERun #:3COMMENTSMeasuring AC mairEUT OPERATION	TERS	Line:	High Line	A	dd. Ext. Attenuation (dB	): 0			
TEST PARAME         Run #:       3         COMMENTS         Measuring AC mair         EUT OPERATII         802.11 bgn continu	TERS ns of Linear DC NG MODES ous Tx, Mid C	Line: Power Su hannel = 24	High Line pply. 437 MHz, 1 Mbps, Softv	A A A A A A A A A A A A A A A A A A A	.dd. Ext. Attenuation (dB	): 0			
TEST PARAME         Run #:       3         COMMENTS         Measuring AC mair         EUT OPERATII         802.11 bgn continu         DEVIATIONS F	TERS ns of Linear DC NG MODES ous Tx, Mid C ROM TEST	Line: Power Su hannel = 2 <sup>2</sup> STANDA	High Line pply. 437 MHz, 1 Mbps, Soft <b>ARD</b>	A ware Power S	.dd. Ext. Attenuation (dB etting = 17	): 0			



Peak Data - vs - Average Limit





#### **RESULTS - Run #3**

Peak Data - vs - Quasi Peak Limit							
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)		
0.534	12.4	19.9	32.3	56.0	-23.7		
0.508	12.3	19.8	32.1	56.0	-23.9		
2.474	12.1	20.0	32.1	56.0	-23.9		
2.150	11.8	20.0	31.8	56.0	-24.2		
0.960	11.8	19.9	31.7	56.0	-24.3		
0.739	11.4	19.9	31.3	56.0	-24.7		
4.784	11.1	20.2	31.3	56.0	-24.7		
2.459	11.1	20.0	31.1	56.0	-24.9		
4.646	10.8	20.2	31.0	56.0	-25.0		
4.914	10.5	20.2	30.7	56.0	-25.3		
1.620	10.5	20.0	30.5	56.0	-25.5		
2.336	10.5	20.0	30.5	56.0	-25.5		
4.056	10.3	20.2	30.5	56.0	-25.5		
3.989	10.2	20.2	30.4	56.0	-25.6		
4.347	10.2	20.2	30.4	56.0	-25.6		
1.057	10.4	19.9	30.3	56.0	-25.7		
1.489	10.4	19.9	30.3	56.0	-25.7		
2.060	10.3	20.0	30.3	56.0	-25.7		
2.646	10.3	20.0	30.3	56.0	-25.7		
4.213	10.1	20.2	30.3	56.0	-25.7		
0.467	11.1	19.8	30.9	56.6	-25.7		
0.922	10.3	19.9	30.2	56.0	-25.8		
2.799	10.2	20.0	30.2	56.0	-25.8		
0.769	10.2	19.9	30.1	56.0	-25.9		
3.164	10.0	20.1	30.1	56.0	-25.9		
1.579	10.0	20.0	30.0	56.0	-26.0		

				Spec.	
Freq	Amp.	Factor	Adjusted	Limit	Margin
(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)
0.534	12.4	19.9	32.3	46.0	-13.7
0.508	12.3	19.8	32.1	46.0	-13.9
2.474	12.1	20.0	32.1	46.0	-13.9
2.150	11.8	20.0	31.8	46.0	-14.2
0.960	11.8	19.9	31.7	46.0	-14.3
0.739	11.4	19.9	31.3	46.0	-14.7
4.784	11.1	20.2	31.3	46.0	-14.7
2.459	11.1	20.0	31.1	46.0	-14.9
4.646	10.8	20.2	31.0	46.0	-15.0
4.914	10.5	20.2	30.7	46.0	-15.3
1.620	10.5	20.0	30.5	46.0	-15.5
2.336	10.5	20.0	30.5	46.0	-15.5
4.056	10.3	20.2	30.5	46.0	-15.5
3.989	10.2	20.2	30.4	46.0	-15.6
4.347	10.2	20.2	30.4	46.0	-15.6
1.057	10.4	19.9	30.3	46.0	-15.7
1.489	10.4	19.9	30.3	46.0	-15.7
2.060	10.3	20.0	30.3	46.0	-15.7
2.646	10.3	20.0	30.3	46.0	-15.7
4.213	10.1	20.2	30.3	46.0	-15.7
0.467	11.1	19.8	30.9	46.6	-15.7
0.922	10.3	19.9	30.2	46.0	-15.8
2.799	10.2	20.0	30.2	46.0	-15.8
0.769	10.2	19.9	30.1	46.0	-15.9
3.164	10.0	20.1	30.1	46.0	-15.9
1.579	10.0	20.0	30.0	46.0	-16.0

Peak Data - vs - Average Limit

#### CONCLUSION

Pass

Tested By

# SPURIOUS RADIATED EMISSIONS



PSA-ESCI 2019.05.10

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

802.11 bgn continuous Tx, Low Channel = 2412 MHz, Mid Channel = 2437 MHz, High Channel = 2462 MHz.

#### POWER SETTINGS INVESTIGATED

3.3 VDC

#### CONFIGURATIONS INVESTIGATED

LEVT0129 - 5

#### FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz

Stop Frequency 26.5 GHz

#### 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
Filter - High Pass	Micro-Tronics	HPM50111	HFO	11-Dec-2018	12 mo
Filter - Low Pass	Micro-Tronics	LPM50004	LFD	15-Feb-2019	12 mo
Attenuator	Coaxicom	3910-20	AXZ	15-Feb-2019	12 mo
Cable	ESM Cable Corp.	TTBJ141-KMKM-72	EVY	31-Jul-2019	12 mo
Cable	None	Standard Gain Horns Cable	EVF	24-Nov-2018	12 mo
Cable	N/A	Double Ridge Horn Cables	EVB	24-Nov-2018	12 mo
Cable	N/A	Bilog Cables	EVA	24-Nov-2018	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	31-Jul-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	24-Nov-2018	12 mo
Amplifier - Pre-Amplifier	L-3 Narda-MITEQ	AMF-6F-08001200-30-10P	PAO	24-Nov-2018	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAG	24-Nov-2018	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AOL	24-Nov-2018	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AIV	NCR	0 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AHV	NCR	0 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AHU	NCR	0 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIZ	7-Feb-2018	24 mo
Antenna - Biconilog	Teseq	CBL 6141B	AXR	2-Oct-2018	24 mo
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAQ	24-Mar-2019	12 mo

#### **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.

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

### SPURIOUS RADIATED EMISSIONS



Wor	k Order:	LEVT	0129		Date:	30-Sep-201	9			14
	Project:	No	ne	Tem	perature:	20.6 °C		1/	2	///
J	Job Site:	EV	01		Humidity:	38.9% RH	$\sim$	CA)	14/1	1/2
Serial N	Number:	 1F	81	Barome	tric Pres.:	1020 mbar		Tested by:	Jeff Alcoke	
	EUT:	WiFi Modu	le							
Config	uration:	5								
Cu	ustomer:	Leviton Mfg	a Co. Inc							
Att	tendees:	Stephen M	iller							
EUT	Power:	3.3 VDC								
Operatin	ng Mode:	802.11 bgr	continuou	us Tx, Low C	hannel = 241	2 MHz, Mid Ch	annel = 2437 MH	lz, High Cha	nnel = 2462	MHz.
Dev	viations:	None								
Cor	mments:	See comm	ents below	v for Channe	I, Data Rate,	EUT orientation	n, and software p	ower setting		
t Specifi	ications					Tost	Method			
C 15 247	2019						C63 10 2013			
Run #	33	Test Dis	stance (m)	3	Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #	33	Test Dis	stance (m)	3	Antenna H	eight(s)	1 to 4(m)		Results	Pass
<b>Run #</b>	33	Test Dis	tance (m)	) 3	Antenna H	eight(s)	1 to 4(m)		Results	Pass
<b>Run #</b>	33	Test Dis	stance (m)	3	Antenna H	eight(s)	1 to 4(m)		Results	Pass
80	33	Test Dis	stance (m)	) 3	Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #	33	Test Dis	stance (m)	) 3	Antenna H	eight(s)	1 to 4(m)		Results	Pass
80	33	Test Dis	stance (m)	3	Antenna H	eight(s)	1 to 4(m)		Results	Pass
80	33	Test Dis	stance (m)	3	Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #           80           70           60	33	Test Dis	stance (m)	3	Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #           80           70           60	33	Test Dis	stance (m)	3	Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run # 80 70 60	33	Test Dis	stance (m)	3	Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #	33	Test Dis	stance (m)	) 3	Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #	33	Test Dis	stance (m)		Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #           80           70           60           50           40	33	Test Dis	itance (m)		Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #           80           70           60           50           50           40	33	Test Dis			Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #           80           70           60           50           50           40	33	Test Dis			Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #           80           70           60           50           50           40           30	33	Test Dis			Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #           80           70           60           50           30	33	Test Dis	tance (m)		Antenna H		1 to 4(m)		Results	Pass
Run #         80         70         60         50         40         30	33	Test Dis			Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #       80       70       60       50       40       30       20	33				Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #         80         70         60         50         40         30         20	33	Test Dis			Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #       80       70       60       50       30       20	33				Antenna H	eight(s)	1 to 4(m)		Results	Pass
Run #         80         70         60         50         50         30         20         10	33				Antenna H		1 to 4(m)		Results	Pass
Run #       80       70       60       50       40       30       20       10	33					eight(s)	1 to 4(m)		Results	Pass
Run #       80       70       60       50       30       20       10	33				Antenna H		1 to 4(m)		Results	Pass
Run #       80       70       60       50       30       20       10       0	33						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
7309.670	31.7	13.0	1.0	238.0	3.0	0.0	Horz	AV	0.0	44.7	54.0	-9.3	Mid Ch, 1 Mbps, EUT on Side, Power Setting = 17
7384.790	30.6	14.0	3.33	273.0	3.0	0.0	Horz	AV	0.0	44.6	54.0	-9.4	High Ch, 1 Mbps, EUT on Side, Power Setting = 17
7387.210	30.2	14.1	1.96	274.0	3.0	0.0	Vert	AV	0.0	44.3	54.0	-9.7	High Ch, 1 Mbps, EUT Vert, Power Setting = 17
7310.080	30.4	13.0	1.64	233.0	3.0	0.0	Horz	AV	0.0	43.4	54.0	-10.6	Mid Ch, 11 Mbps, EUT on Side, Power Setting = 17
14472.100	27.1	16.0	1.5	296.0	3.0	0.0	Vert	AV	0.0	43.1	54.0	-10.9	Low Ch, 1 Mbps, EUT Vert, Power Setting = 14
14472.360	26.9	16.0	2.98	340.0	3.0	0.0	Horz	AV	0.0	42.9	54.0	-11.1	Low Ch, 1 Mbps, EUT on Side, Power Setting = 14
7308.250	29.7	13.0	1.89	285.0	3.0	0.0	Horz	AV	0.0	42.7	54.0	-11.3	Mid Ch, 6 Mbps, EUT on Side, Power Setting = 17
7308.920	29.6	13.0	1.5	208.0	3.0	0.0	Vert	AV	0.0	42.6	54.0	-11.4	Mid Ch, 1 Mbps, EUT Vert, Power Setting = 17
7308.210	29.5	13.0	1.5	227.0	3.0	0.0	Horz	AV	0.0	42.5	54.0	-11.5	Mid Ch, MCS0, EUT on Side, Power Setting = 17
7307.540	29.0	13.0	3.54	271.0	3.0	0.0	Horz	AV	0.0	42.0	54.0	-12.0	Mid Ch, 54 Mbps, EUT on Side, Power Setting = 17
7306.750	28.9	13.0	1.5	222.0	3.0	0.0	Horz	AV	0.0	41.9	54.0	-12.1	Mid Ch, MCS7, EUT on Side, Power Setting = 17
7310.580	28.7	13.0	1.5	197.0	3.0	0.0	Horz	AV	0.0	41.7	54.0	-12.3	Mid Ch, 36 Mbps, EUT on Side, Power Setting = 17
4924.040	30.9	5.5	3.05	223.0	3.0	0.0	Horz	AV	0.0	36.4	54.0	-17.6	High Ch, 1 Mbps, EUT on Side, Power Setting = 17
4874.040	29.1	5.3	3.29	218.0	3.0	0.0	Vert	AV	0.0	34.4	54.0	-19.6	Mid Ch, 1 Mbps, EUT Vert, Power Setting = 17
4927.120	28.7	5.6	1.5	138.0	3.0	0.0	Vert	AV	0.0	34.3	54.0	-19.7	High Ch, 1 Mbps, EUT Vert, Power Setting = 17
4928.540	28.6	5.6	1.5	217.0	3.0	0.0	Horz	AV	0.0	34.2	54.0	-19.8	High Ch, 1 Mbps, EUT Hiorz, Power Setting = 17
7387.210	40.0	14.1	1.96	274.0	3.0	0.0	Vert	PK	0.0	54.1	74.0	-19.9	High Ch, 1 Mbps, EUT Vert, Power Setting = 17
4926.920	28.5	5.6	1.5	123.0	3.0	0.0	Vert	AV	0.0	34.1	54.0	-19.9	High Ch, 1 Mbps, EUT on Side, Power Setting = 17
7388.750	39.9	14.2	3.33	273.0	3.0	0.0	Horz	PK	0.0	54.1	74.0	-19.9	High Ch, 1 Mbps, EUT on Side, Power Setting = 17
4927.250	28.5	5.6	1.5	320.0	3.0	0.0	Vert	AV	0.0	34.1	54.0	-19.9	High Ch, 1 Mbps, EUT Horz, Power Setting = 17
4824.120	29.2	4.9	1.5	354.0	3.0	0.0	Horz	AV	0.0	34.1	54.0	-19.9	Low Ch, 1 Mbps, EUT on Side, Power Setting = 14
4874.040	28.8	5.3	1.39	250.0	3.0	0.0	Horz	AV	0.0	34.1	54.0	-19.9	Mid Ch, 1 Mbps, EUT on Side, Power Setting = 17
4924.420	28.5	5.5	1.5	240.0	3.0	0.0	Horz	AV	0.0	34.0	54.0	-20.0	High Ch, 1 Mbps, EUT Horz, Power Setting = 17
14473.000	38.0	16.0	2.98	340.0	3.0	0.0	Horz	PK	0.0	54.0	74.0	-20.0	Low Ch, 1 Mbps, EUT on Side, Power Setting = 14
14471.470	38.0	16.0	1.5	296.0	3.0	0.0	Vert	PK	0.0	54.0	74.0	-20.0	Low Ch, 1 Mbps, EUT Vert, Power Setting = 14
7309.920	41.0	13.0	1.0	238.0	3.0	0.0	Horz	PK	0.0	54.0	74.0	-20.0	Mid Ch, 1 Mbps, EUT on Side, Power Setting = 17
4818.960	29.1	4.8	1.8	78.0	3.0	0.0	Vert	AV	0.0	33.9	54.0	-20.1	Low Ch, 1 Mbps, EUT Vert, Power Setting = 14
7310.540	40.6	13.0	1.64	233.0	3.0	0.0	Horz	PK	0.0	53.6	74.0	-20.4	Mid Ch, 11 Mbps, EUT on Side, Power Setting = 17
7307.420	40.1	13.0	1.89	285.0	3.0	0.0	Horz	PK	0.0	53.1	74.0	-20.9	Mid Ch, 6 Mbps, EUT on Side, Power Setting = 17
7307.620	39.9	13.0	1.5	227.0	3.0	0.0	Horz	PK	0.0	52.9	74.0	-21.1	Mid Ch, MCS0, EUT on Side, Power Setting = 17
7308.250	39.9	13.0	1.5	222.0	3.0	0.0	Horz	PK	0.0	52.9	74.0	-21.1	Mid Ch, MCS7, EUT on Side, Power Setting = 17

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)	Commonte
7207 670	20.5	12.0	1.5	107.0	2.0	0.0	Horz	PK	0.0	F2 F	74.0	21.5	Mid Ch. 26 Mbps, EUT on Side, Power Setting - 17
7297.070	39.5	13.0	1.5	197.0	3.0	0.0	Horz	PK	0.0	52.5	74.0	-21.5	Mid Ch, 36 Mbps, EUT on Side, Power Setting = 17
7304.540	39.4	13.0	3.54	271.0	3.0	0.0	Vort	PK	0.0	52.4	74.0	-21.0	Mid Ch, 54 Mbps, EUT Vort Bower Setting – 17
12222 220	20.1	2.0	1.0	208.0	3.0	0.0	Horz		0.0	21.3	74.0 54.0	-21.7	High Ch. 1 Mbps, EUT on Side Power Setting = 17
12332.330	29.1	2.0	2.07	251.0	3.0	0.0	Horz	AV	0.0	31.1	54.0	-22.9	Mid Ch 1 Mbps, EUT on Side, Power Setting = 17
12104.920	29.4	1.7	3.07	331.0	3.0	0.0	Vort	AV	0.0	21.1	54.0	-22.9	Mid Ch, 1 Mbps, EUT Vort Bower Setting – 17
12109.290	29.0	1.0	1.0	122.0	3.0	0.0	Vert	AV	0.0	31.1	54.0	-22.9	High Ch. 1 Mbps, EUT Vert, Fower Setting = 17
12050 920	29.0	2.0	2.32	122.0	3.0	0.0	Ven	AV	0.0	31.0	54.0	-23.0	Low Ch. 1 Mbps, EUT on Side Bower Setting - 14
12059.650	29.2	1.1	3.01	224.0	3.0	0.0	Vort	AV	0.0	20.3	54.0	-23.7	Low Ch, 1 Mbps, EUT Virt Power Setting = 14
12003.420	29.0	5.5	1.5	241.0	3.0	0.0	Horz	AV	0.0	27.4	54.0	-23.9	High Ch 1 Mbps, EUT Vert, I ower Setting – 17
4912.020	21.9	5.5	1.5	217.0	3.0	0.0	Horz	RV	0.0	45.2	74.0	-20.0	High Ch, 1 Mbps, EUT Viert, Fower Setting = 17
4931.360	39.7 20.F	5.0	1.5	217.0	3.0	0.0	Nort		0.0	40.0	74.0	-20.7	High Ch. 1 Mbps, EUT Horz, Power Setting = 17
4926.750	39.5	5.6	1.5	320.0	3.0	0.0	Vert	PK	0.0	45.1	74.0	-20.9	High Ch. 1 Mbps, EUT Horz, Fower Setting 17
4926.060	39.3	5.6	1.5	136.0	3.0	0.0	Vert	PK	0.0	44.9	74.0	-29.1	High Ch, 1 Mbps, EUT on Side, Power Setting = 17
4924.500	39.4	5.5	3.05	223.0	3.0	0.0	Horz	PK	0.0	44.9	74.0	-29.1	High Ch, 1 Mbps, EUT on Side, Power Setting = 17
4925.250	39.3	5.6	1.5	123.0	3.0	0.0	Vert	PK	0.0	44.9	74.0	-29.1	High Ch, 1 Mbps, EUT on Side, Power Setting = 17
4623.620	40.0	4.9	1.0	78.0	3.0	0.0	Vert	PK	0.0	44.9	74.0	-29.1	Low Ch, I Mbps, EUT Vert, Power Setting = 14
4868.620	39.3	5.3	3.29	218.0	3.0	0.0	vert	PK	0.0	44.6	74.0	-29.4	Mid Ch, 1 Mbps, EUT vert, Power Setting = 17
4007.250	39.3	5.3	1.59	250.0	3.0	0.0	HOIZ	PK	0.0	44.0	74.0	-29.4	lich Ch. 1 Mbps, EUT Un Side, Power Setting = 17
4929.620	38.8	5.6	1.5	240.0	3.0	0.0	Horz	PK	0.0	44.4	74.0	-29.6	High Ch, T Mbps, EUT Horz, Power Setting = 17
4623.290	39.2	4.9	1.5	354.0	3.0	0.0	HOIZ	PK	0.0	44.1	74.0	-29.9	Low Ch, 1 Mbps, EUT on Side, Power Setting = 14
12173.790	40.2	1.6	3.07	351.0	3.0	0.0	Horz	PK	0.0	41.8	74.0	-32.2	Nid Ch, 1 Mbps, EUT on Side, Power Setting = 17
12311.420	39.6	2.0	2.32	122.0	3.0	0.0	Vert	PK	0.0	41.6	74.0	-32.4	High Ch, 1 Mbps, EUT vert, Power Setting = 17
12328.710	39.4	2.0	1.38	68.0	3.0	0.0	Horz	PK	0.0	41.4	74.0	-32.6	High Ch, 1 Mbps, EUT on Side, Power Setting = 17
12170.420	39.6	1.6	1.5	328.0	3.0	0.0	Vert	PK	0.0	41.2	74.0	-32.8	Mid Ch, 1 Mbps, EUT Vert, Power Setting = 17
12048.750	40.0	1.0	3.61	224.0	3.0	0.0	Horz	PK	0.0	41.0	74.0	-33.0	Low Un, 1 Mbps, EUT on Side, Power Setting = 14
12061.250	39.3	1.1	1.5	117.0	3.0	0.0	vert	PK	0.0	40.4	74.0	-33.6	Low Ch, 1 Mbps, EUT Vert, Power Setting = 14
4925.670	32.5	5.6	1.5	341.0	3.0	0.0	Horz	PK	0.0	38.1	74.0	-35.9	High Ch, 1 Mbps, EUT Vert, Power Setting = 17

### SPURIOUS RADIATED EMISSIONS



				_	-			Emirc5 2019.06.01	
Woi	rk Order:	LEVT0129		Date:	30-Sep-2019		1	//	Ma
	Project:	None	Tem	perature:	20.6 °C	$\langle \rangle$	A	- /	2
	Job Site:	EV01		Humidity:	38.9% RH		(1)	14/0	
Serial	Number:	1R1	Baromet	tric Pres.:	1020 mbar	1	Fested by:	Jeff Alcoke	
	EUT:	WiFi Module							
Config	guration:	5							
C	ustomer:	Leviton Mfg Co, Inc							
At	ttendees:	Stephen Miller							
EU.	T Power:	3.3 VDC							
Operatir	ng Mode:	802.11 bgn continuou	is Tx, Low C	hannel = 2412	MHz, Mid Cha	annel = 2437 MH	z, High Cha	annel = 2462 N	1Hz.
De	eviations:	None							
Co	omments:	See comments below	for Channel	, Data Rate, ar	nd EUT orienta	ation.			
st Specif	ications				Test	Method			
C 15.247	:2019				ANSI	C63.10:2013			
Run #	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run #	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
<b>Run #</b>	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
<b>Run #</b> 80	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
<b>Run #</b>	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run #	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run # 80 70	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run #	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run # 80 70 60	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run #           80           70           60	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run #           80           70           60           50	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
<b>Run #</b> 80 70 60 50	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run #	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run #	35	Test Distance (m)	3	Antenna Hei	ight(s)	1 to 4(m)		Results	Pass
Run #	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run # 80 70 60 50 W/Nn 90	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run # 80 70 60 50 50 30	35 	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run # 80 70 60 50 40 30	35	Test Distance (m)	3	Antenna Hei	ight(s)	1 to 4(m)		Results	Pass
Run # 80 70 60 50 50 40 30	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run #           80           70           60           50           50           30           20	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run #           80           70           60           50           50           30           20	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run # 80 70 60 50 40 30 20	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run #           80           70           60           50           50           30           20           10	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)			Pass
Run #           80           70           60           50           50           30           20           10	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run #       80       70       60       50       50       30       20       10       0	35	Test Distance (m)	3	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass
Run # 80 70 60 50 50 40 30 20 10 0 2380	35	Test Distance (m)	2420	Antenna Hei	ght(s)	1 to 4(m)		Results	Pass

Freq	Amplitude	Factor	Antenna Height	Azimuth	Test Distance	External Attenuation	Polarity/ Transducer Type	Detector	Distance Adjustment	Adjusted	Spec. Limit	Compared to Spec.	
(MHz)	(dBuV)	(dB)	(meters)	(degrees)	(meters)	(dB)			(dB)	(dBuV/m)	(dBuV/m)	(dB)	Comments
2484.347	58.1	-4.8	3.28	47.0	3.0	20.0	Horz	PK	0.0	73.3	74.0	-0.7	High Ch, MCS0, EUT Horz, Power Setting = 17
2483.520	38.2	-4.9	3.28	47.0	3.0	20.0	Horz	AV	0.0	53.3	54.0	-0.7	High Ch, MCS0, EUT Horz, Power Setting = 17
2483.500	36.4	-4.9	1.04	41.0	3.0	20.0	Horz	AV	0.0	51.5	54.0	-2.5	High Ch, 6 Mbps, EUT Horz, Power Setting = 17
2389.940	36.3	-5.1	1.0	34.0	3.0	20.0	Horz	AV	0.0	51.2	54.0	-2.8	Low Ch, 36 Mbps, EUT Horz, Power Setting = 14
2389.983	36.2	-5.1	2.5	37.0	3.0	20.0	Horz	AV	0.0	51.1	54.0	-2.9	Low Ch, 6 Mbps, EUT Horz, Power Setting = 14
2389.983	35.1	-5.1	1.5	296.0	3.0	20.0	Vert	AV	0.0	50.0	54.0	-4.0	Low Ch, 6 Mbps, EUT on Side, Power Setting = 14
2483.527	34.7	-4.9	2.21	204.0	3.0	20.0	Horz	AV	0.0	49.8	54.0	-4.2	High Ch, 36 Mbps, EUT Horz, Power Setting = 17
2483.553	34.7	-4.9	4.0	47.0	3.0	20.0	Horz	AV	0.0	49.8	54.0	-4.2	High Ch, MCS7, EUT Horz, Power Setting = 17
2389.990	34.6	-5.1	1.44	292.0	3.0	20.0	Vert	AV	0.0	49.5	54.0	-4.5	Low Ch, 36 Mbps, EUT on Side, Power Setting = 14
2483.553	34.3	-4.9	2.2	203.0	3.0	20.0	Horz	AV	0.0	49.4	54.0	-4.6	High Ch, 54 Mbps, EUT Horz, Power Setting = 17
2483.510	53.1	-4.9	1.04	41.0	3.0	20.0	Horz	PK	0.0	68.2	74.0	-5.8	High Ch, 6 Mbps, EUT Horz, Power Setting = 17
2483.513	32.5	-4.9	2.82	14.0	3.0	20.0	Horz	AV	0.0	47.6	54.0	-6.4	High Ch, 1 Mbps, EUT Horz, Powre Setting = 17
2483.520	31.8	-4.9	1.5	196.0	3.0	20.0	Vert	AV	0.0	46.9	54.0	-7.1	High Ch, 1 Mbps, EUT on Side, Power Setting = 17
2483.610	31.7	-4.9	1.82	99.0	3.0	20.0	Vert	AV	0.0	46.8	54.0	-7.2	High Ch, 1 Mbps, EUT Vert, Power Setting = 17
2483.550	31.6	-4.9	3.88	207.0	3.0	20.0	Horz	AV	0.0	46.7	54.0	-7.3	High Ch, 11 Mbps, EUT Horz, Power Setting = 17
2484.970	31.4	-4.8	2.09	7.0	3.0	20.0	Horz	AV	0.0	46.6	54.0	-7.4	High Ch, 1 Mbps, EUT Vert, Power Setting = 17
2389.700	31.7	-5.1	1.5	353.0	3.0	20.0	Vert	AV	0.0	46.6	54.0	-7.4	Low Ch, 1 Mbps, EUT on Side, Power Setting = 14
2389.423	31.6	-5.1	1.5	80.0	3.0	20.0	Horz	AV	0.0	46.5	54.0	-7.5	Low Ch, 1 Mbps, EUT Horz, Power Setting = 14
2483.653	31.2	-4.9	1.5	32.0	3.0	20.0	Horz	AV	0.0	46.3	54.0	-7.7	High Ch, 1 Mbps, EUT on Side, Power Setting = 17
2484.113	31.2	-4.9	3.1	201.0	3.0	20.0	Vert	AV	0.0	46.3	54.0	-7.7	High Ch, 1 Mbps, EUT Horz, Powre Setting = 17
2483.970	50.5	-4.9	4.0	47.0	3.0	20.0	Horz	PK	0.0	65.6	74.0	-8.4	High Ch, MCS7, EUT Horz, Power Setting = 17
2389.947	49.1	-5.1	1.0	34.0	3.0	20.0	Horz	PK	0.0	64.0	74.0	-10.0	Low Ch, 36 Mbps, EUT Horz, Power Setting = 14
2389.893	48.7	-5.1	2.5	37.0	3.0	20.0	Horz	PK	0.0	63.6	74.0	-10.4	Low Ch, 6 Mbps, EUT Horz, Power Setting = 14
2483.927	47.7	-4.9	2.21	204.0	3.0	20.0	Horz	PK	0.0	62.8	74.0	-11.2	High Ch, 36 Mbps, EUT Horz, Power Setting = 17
2389.843	47.4	-5.1	1.44	292.0	3.0	20.0	Vert	PK	0.0	62.3	74.0	-11.7	Low Ch, 36 Mbps, EUT on Side, Power Setting = 14
2388.890	47.2	-5.1	1.5	296.0	3.0	20.0	Vert	PK	0.0	62.1	74.0	-11.9	Low Ch, 6 Mbps, EUT on Side, Power Setting = 14
2483.640	45.5	-4.9	2.2	203.0	3.0	20.0	Horz	PK	0.0	60.6	74.0	-13.4	High Ch, 54 Mbps, EUT Horz, Power Setting = 17
2484.400	44.8	-4.8	2.82	14.0	3.0	20.0	Horz	PK	0.0	60.0	74.0	-14.0	High Ch, 1 Mbps, EUT Horz, Powre Setting = 17
2484.307	42.9	-4.8	1.5	196.0	3.0	20.0	Vert	PK	0.0	58.1	74.0	-15.9	High Ch, 1 Mbps, EUT on Side, Power Setting = 17
2388.517	43.2	-5.1	1.5	353.0	3.0	20.0	Vert	PK	0.0	58.1	74.0	-15.9	Low Ch, 1 Mbps, EUT on Side, Power Setting = 14
2484.413	42.9	-4.8	3.88	207.0	3.0	20.0	Horz	PK	0.0	58.1	74.0	-15.9	High Ch, 11 Mbps, EUT Horz, Power Setting = 17

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
2484.570	42.6	-4.8	2.09	7.0	3.0	20.0	Horz	PK	0.0	57.8	74.0	-16.2	High Ch, 1 Mbps, EUT Vert, Power Setting = 17
2485.280	42.6	-4.8	1.82	99.0	3.0	20.0	Vert	PK	0.0	57.8	74.0	-16.2	High Ch, 1 Mbps, EUT Vert, Power Setting = 17
2483.743	42.3	-4.9	1.5	32.0	3.0	20.0	Horz	PK	0.0	57.4	74.0	-16.6	High Ch, 1 Mbps, EUT on Side, Power Setting = 17
2388.910	42.5	-5.1	1.5	80.0	3.0	20.0	Horz	PK	0.0	57.4	74.0	-16.6	Low Ch, 1 Mbps, EUT Horz, Power Setting = 14
2484.710	42.1	-4.8	3.1	201.0	3.0	20.0	Vert	PK	0.0	57.3	74.0	-16.7	High Ch, 1 Mbps, EUT Horz, Powre Setting = 17



XMit 2017.12.13

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
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	12-Jan-18	12-Jan-19
Generator - Signal	Keysight	N5182B	TFU	27-Oct-15	27-Oct-18
Cable	Micro-Coax	UFD150A-1-0720-200200	EVH	23-Apr-18	23-Apr-19
Attenuator	Fairview Microwave	18B5W-26	RFZ	6-Sep-17	6-Sep-18
Block - DC	Fairview Microwave	SD3379	AMX	23-Apr-18	23-Apr-19

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

Prior to measuring output power; the emission 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 AVGSA-2 in section 11.9.2.2.4 of ANSI C63.10:2013 was used to make the measurement. This method uses trace averaging across ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

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



							TbtTx 2017.12	.14 XMit 2017.12.13
EUT	F: WiFi Module					Work Order:	LEVT0129	
Serial Number	r: B3778					Date:	1-May-18	
Customer	r: Leviton Mfg Co, Inc					Temperature:	21.9 °C	
Attendees	s: Vikas Asthana					Humidity:	40.6% RH	
Project	t: None					Barometric Pres.:	1022 mbar	
Tested by	/: Jeff Alcoke		Power:	5.0 VDC via 110VA	C/60Hz	Job Site:	EV06	
TEST SPECIFICA	TIONS			Test Method				
FCC 15.247:2019				ANSI C63.10:2013				
COMMENTS								
Reference level of	ffset includes the following	: attenuator, cable, and simi-rigid coa	cable.					
		<b>3</b>						
DEVIATIONS FRO	DM TEST STANDARD							
None								
			- /	- /h				
Configuration #	4	( )	1 all					
		Signature	Ca/ 13	1152-	ł			
				Avg Cond	Duty Cycle	Value	Limit	
				Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results
2400 MHz - 2483.5	5 MHz Band							
	802.11(b) 1 Mbps							
	Low Channel	1, 2412 MHz, Power Setting = 14		10.759	0	10.8	30	Pass
	Mid Channel	6, 2437 MHz, Power Setting = 17		13.395	0	13.4	30	Pass
	High Channe	I 11, 2462 MHz, Power Setting = 17		12.963	0	13	30	Pass
	802.11(g) 6 Mbps							
	Low Channel	1, 2412 MHz, Power Setting = 14		10.818	0.1	10.9	30	Pass
	Mid Channel	6, 2437 MHz, Power Setting = 17		12.093	0.1	12.2	30	Pass
	High Channel	I 11, 2462 MHz, Power Setting = 17		11.628	0.1	11.8	30	Pass
	802.11(n) MCS0							
	Low Channel	1, 2412 MHz, Power Setting = 14		10.87	0.1	11	30	Pass
	Mid Channel	C 2427 MUE Dower Cotting 47		12 022	0.1	12.2	30	Pass
	inite officiation	6, 2437 WHZ, Power Setting = 17		12.033	0.1	12.2	00	1 400
	High Channel	11, 2462 MHz, Power Setting = 17		11.346	0.1	11.5	30	Pass



Pwr (dBm)       Factor (dB)       (dBm)       (dBm)       Results         10.759       0       10.8       30       Pass         August Spectrum Analyzer       Element Materials Technology - Points: 601, Detector: Average (RMS)       Control (RMS)       Radio Std: None         Ref       50.2       DC       SEMEEINT       Control (RMS)       Radio Std: None         WIFGain:Low       WIFGain:Low       WIFGain:Low       Average (RMS)       Radio Std: None         0       dS/div       Ref 8.00 dBm       -       -       -         10.20       data       data       -       -       -         10.20       Ref 8.00 dBm       -       -       -       -       -         10.20       data       data       data       -       -       -       -         200       data       data       data       -       -       -       -       -         200       data       data       data       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       - <td< th=""><th></th><th>Avg Cond</th><th>Duty Cycle</th><th>0) 11.000, 200 2</th><th>Value</th><th>Limit</th><th></th></td<>		Avg Cond	Duty Cycle	0) 11.000, 200 2	Value	Limit	
Aglent Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) MI RL RE DOG DC SENSEINT CALLON OFF ID-51:00 AM May 01, 2018 Radio Std: None Radio Std: None Radio Device: BTS Center Freq: 2.41200000 GHz Radio Device: BTS Center Freq: 2.41200000 GHz Radio Device: BTS Radio Device: BTS Center 2.412 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 601 ms Channel Power 10.76 dBm / 11.6 MHz -59.89 dBm /Hz		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
Addred Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) Area and a set of the set		10.759	0		10.8	30	Pass
620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620     620 <th>Aglient Spectrum Analyzer 21 RL RF 10 dB/div Ref 2 20 -120 -220 -220 -220 -220 -220 -220 -220 -220 -220</th> <th>- Element Materials Tr E0 2 DC</th> <th><pre>chnology - Points: 60</pre></th> <th>1, Detector: Average (RMS ENSE:INT) Center Freq: 2.41200 Trig: Free Run #Atten: 10 dB</th> <th>ALIGN OFF J000 GHz Avg Hold:</th> <th>: 100/100 F</th> <th>10:51:00 AM May 01, 20 Radio Std: None Radio Device: BTS</th>	Aglient Spectrum Analyzer 21 RL RF 10 dB/div Ref 2 20 -120 -220 -220 -220 -220 -220 -220 -220 -220 -220	- Element Materials Tr E0 2 DC	<pre>chnology - Points: 60</pre>	1, Detector: Average (RMS ENSE:INT) Center Freq: 2.41200 Trig: Free Run #Atten: 10 dB	ALIGN OFF J000 GHz Avg Hold:	: 100/100 F	10:51:00 AM May 01, 20 Radio Std: None Radio Device: BTS
Channel Power Power Spectral Density 10.76 dBm / 11.6 MHz -59.89 dBm /Hz	-52.0 -62.0 -72.0 -82.0 Center 2.412 GHz #Res BW 1 MHz			#VBW 3 M	Hz		Span 25 MI #Sweep 601 r
	Channel Pov	ver		Power Spect	ral Densit	у /ц <del>.,</del>	
MSG STATUS	MSG				STATUS		

	Avg Cond	Duty Cycle	Value	Limit	
	Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results
	13.395	0	13.4	30	Pass







Avg Cond	Duty Cycle	Value	Limit	
Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results
10.818	0.1	10.9	30	Pass







	Avg Cond	Duty Cycle	Value	Limit	
	Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results
	11.628	0.1	11.8	30	Pass







 		 	,	
Avg Cond	Duty Cycle	Value	Limit	
Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results
12.033	0.1	12.2	30	Pass





Image: Network (db)       (db)       Results         11.346       0.1       11.5       30       Pass         glight Spectrum Analyzer - Element Materials Technology - Points: 601, Rector: Average (MKS)       Image: Network (Materials Technology - Points: 601, Rector: Average (MKS)       Radio Set: None         RL       RF       50.0       Center Freq: 2.4620000 GHz       Radio Set: None         0 dB/div       Ref 5.00 dBm       Center Freq: 2.4620000 GHz       Radio Device: BTS         0 dB/div       Ref 5.00 dBm       Center Freq: 2.462 GHz       Span 40 MHz         2 center 2.462 GHz       Span 40 MHz       #VBW 3 MHz       Span 40 MHz         Channel Power       Power Spectral Density       11.35 dBm / 17.71 MHz       -61.14 dBm /Hz	Aglent Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) VR RL RE 50 2 DC SERVE: INT Freq: 2.46200000 GHz Radio Std: None #IF Gain:Low #Atten: 10 dB Radio Device: BTS 10 dB/div Ref 5.00 dBm Center 2.462 GHz Span 40 #Res BW 1 MHz #VBW 3 MHz #Sweep 601 Channel Power Power Spectral Density	r - Element Materials Technolo	0.1	11.5	30	Pass
glent Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS)       10:27:55 AMMay(0), 2019         RL       RF       50:9       DC         September - Ferg: 2.462000       GHz       Radio Std: None         Rdio Device: BTS       0       GHz/div       Ref 5.00 dBm         0       GB/div       Ref 5.00 dBm       Radio Device: BTS         0       GB/div       Ref 5.00 dBm       Radio Device: BTS         0       GB/div       Ref 5.00 dBm       Radio Device: BTS         0       Center 2.462 GHz       Span 40 MHz       Span 40 MHz         FRes BW 1 MHz       #VBW 3 MHz       #Sweep 601 ms         Channel Power       Power Spectral Density       11.35 dBm / 17.71 MHz       -61.14 dBm /Hz	Aglient Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) Aglient Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) Center Freq: 2.462000000 GHz Trig: Freq: 2.462000000 GHz Radio Device: BTS 10 dB/div Ref 5.00 dBm Log 500 500 500 500 500 500 500 50	r - Element Materials Technolo	0.1	11.5	30	F d 55
glient Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) RL RF 500 DC Center Freq: 2.46200000 GHz Radio 5td: None Radio 5td: None Radio 5td: None Radio Device: BTS Center Freq: 2.46200000 GHz Radio Device: BTS 0 dB/div Ref 5.00 dBm Center 10 dB Std: None Radio Device: BTS 0 dB/div Ref 5.00 dBm Center 2.462 GHz Res BW 1 MHz Span 40 MHz #VBW 3 MHz #Sweep 601 ms Channel Power 11.35 dBm / 17.71 MHz -61.14 dBm /Hz	Aglent Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) ALIGN OFF 10:27:35 AMMay02 Center Freq: 2.462000000 GHz Trig: Free Run #IFGain:Low #IFGain:Low Center Freq: 2.46200000 GHz Trig: Free Run Avg Hold: 100/100 #Atten: 10 dB Center Spectrum Augentide to the second s	r - Element Materials Technolo				
glief Spectrum Analyzer - Element Materials Technology - Points 601, Detector: Average (MAS)         Center Freq: 4.242000000 GHz         Radio Set: None         Radio Set: None         Marking Colspan="2">Radio Set: None         Center Freq: 4.242000000 GHz         Marking Colspan="2">Radio Set: None         Radio Set: None         Marking Colspan="2">Radio Set: None         Center Freq: 4.24200000 GHz         Marking Colspan="2">Radio Set: None         Radio Set: None         Radio Set: None         Radio Device: BTS         O dE/div       Ref 5.00 dBm         O dE/div       Average (MA)         O dE/div       Ref 5.00 dBm         O dE/div       Average (MA)         Set to a set	Agilent Spectrum Analyzer - Element Materials Technology - Polints: 601, Detector: Average (WS) QR RL RF 50 Q DC CENTER Freq: 2.462000000 GHz Radio Std: None Radio Device: BTS Center Freq: 2.462000000 GHz Radio Device: BTS Center Freq: 2.46200000 GHz Radio Device: BTS 10 dB/div Ref 5.00 dBm Log Center Jack Std: None Radio Device: BTS 10 dB/div Ref 5.00 dBm Center Jack Std: None Radio Device: BTS 10 dB/div Ref 5.00 dBm Center Std: None Radio Device: BTS Std: Std: Std: None	r - Element Materials Technolo				
Rt     Rt     Image: State in the s	Redic Strike     Redic Strike     Radio Device: BTS       Image: Strike     Ref 5.00 dBm     Ref 5.00 dBm       Log     Image: Strike     Ref 5.00 dBm       Log     Image: Strike     Image: Strike       Strike     Ref 5.00 dBm       Log     Image: Strike       Strike     Strike       Stric     Strike       Strike<	0.00	ology - Points: 601, Detector: Av	erage (RMS)		10.07.05.0000.01.0000
Image: Wiregam: Low     Trig: Free Run #Atten: 10 dB     Avg Hold: 100/100     Radio Device: BTS       0 dB/div     Ref 5.00 dBm     Image: Comparison of the second of th	Image: Wiregament of the second se	150 V DC	Center Fred	a: 2.462000000 GHz	Ra	dio Std: None
Atten: 10 dB Ref 5.00 dBm Ref 5.00 dBm Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solu	WIFGain:Low     #Atten: 10 dB     Radio Device: BTS       10 dB/div     Ref 5.00 dBm		🛶 Trig: Free R	un Avg Hold: ′	100/100	
Channel Power Channel Power T1.35 dBm / 17.71 MHz Ref 5.00 dBm Ref 5	10 dB/div       Ref 5.00 dBm         0 dB/div       Ref 5.00 dBm         0 dB/div       Ref 5.00 dBm         0 dB/div       Ref 5.00 dBm         150       Image: state of the s	#IFG	-Gain:Low #Atten: 10 d	В	Ra	dio Device: BTS
Do dB/div Ref 5.00 dBm 	10 dB/div       Ref 5.00 dBm         Log					
Channel Power Channel Power 11.35 dBm / 17.71 MHz -61.14 dBm /Hz	Log     Image: Constraint of the second	5.00 dBm				
150       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       1	160     160       160     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160       250     160					
Channel Power 11.35 dBm / 17.71 MHz Channel Power Channel Power	250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250       250 </td <td></td> <td></td> <td></td> <td></td> <td></td>					
250 260 260 260 260 260 260 260 26	250       350       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450       450 </td <td></td> <td></td> <td></td> <td></td> <td></td>					
250 450 450 450 450 450 450 450 4	350     450       450     450       560     450       650     450       650     450       750     450       750     450       850     450       750     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450       850     450					
45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0       45.0	45.0     45.0       65.0     65.0       75.0     65.0       85.0     60.0       75.0     60.0       85.0     60.0       Center 2.462 GHz     \$\$pan 40.1       #Res BW 1 MHz     #VBW 3 MHz       Span 40.1     #Sweep 60.1       Channel Power     Power Spectral Density					
S50       Image: Sector of the s	550   550     650     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     750     7					
End     Image: Content 2.462 GHz     Span 40 MHz       Pres BW 1 MHz     #VBW 3 MHz     #Sweep 601 ms       Channel Power     Power Spectral Density       11.35 dBm / 17.71 MHz     -61.14 dBm /Hz	46.0     75.0     75.0       75.0     75.0       95.0     75.0       Center 2.462 GHz     #VBW 3 MHz       #Res BW 1 MHz     #VBW 3 MHz       Channel Power     Power Spectral Density					
Zenter 2.462 GHz     Span 40 MHz       Res BW 1 MHz     #VBW 3 MHz       Channel Power     Power Spectral Density       11.35 dBm / 17.71 MHz     -61.14 dBm /Hz	75.0					
Center 2.462 GHz Res BW 1 MHz Channel Power 11.35 dBm / 17.71 MHz Span 40 MHz #VBW 3 MHz #VBW 3 MHz Span 40 MHz #VBW 3 MHz #VBW 3 MHz #VBW 3 MHz #VBW 1	Center 2.462 GHz Span 40 #Res BW 1 MHz #VBW 3 MHz #Sweep 601 Channel Power Power Spectral Density					
Center 2.462 GHz Res BW 1 MHz #VBW 3 MHz Span 40 MHz #Sweep 601 ms Channel Power Power Spectral Density 11.35 dBm / 17.71 MHz -61.14 dBm /Hz	Center 2.462 GHz Span 40 #Res BW 1 MHz #VBW 3 MHz #Sweep 601 Channel Power Power Spectral Density					
Center 2.462 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 601 ms Channel Power Power Spectral Density 11.35 dBm / 17.71 MHz -61.14 dBm /Hz	Center 2.462 GHz     Span 40       #Res BW 1 MHz     #VBW 3 MHz     #Sweep 601       Channel Power     Power Spectral Density					
#Res BW 1 MHz #VBW 3 MHz #Sweep 601 ms Channel Power Power Spectral Density 11.35 dBm / 17.71 MHz -61.14 dBm /Hz	#Res BW 1 MHz     #VBW 3 MHz     #Sweep 601       Channel Power     Power Spectral Density	z				Span 40 MHz
Channel Power Mewer Spectral Density 11.35 dBm / 17.71 MHz -61.14 dBm /Hz	Channel Power Power Spectral Density		#VB	W/3 MHz		#Sweep 601 ms
Channel Power Spectral Density 11.35 dBm / 17.71 MHz -61.14 dBm /Hz	Channel Power Power Spectral Density					
11.35 dBm / 17.71 мнz -61.14 dBm /нz		wer	Power	Spectral Density	/	
	11 35 dBm / 17 71 MHz - 61 14 dBm /Hz	dBm (17.71.)	MH-	31 14 dBm //	17	
		- <b>GIDTTT</b> / 17.7 I N			12	