



element

WatchGuard Video

V300

FCC 15.247:2019

802.11bgn SISO Radio

Report # WTVD0027.1



NVLAP LAB CODE: 201049-0

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CERTIFICATE OF TEST

Last Date of Test: November 15, 2019

WatchGuard Video

EUT: V300

Radio Equipment Testing

Standards

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

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	No	N/A	Not required for a battery powered EUT.
6.5, 6.6, 11.12.1, 11.13.2	Spurious Radiated Emissions	Yes	Pass	
11.6	Duty Cycle	Yes	Pass	
11.8.2	Occupied Bandwidth	Yes	Pass	
11.9.2.2.4	Output Power	Yes	Pass	
11.9.2.2.4	Equivalent Isotropic Radiated 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:



Jeremiah Darden, 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. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.

REVISION HISTORY



Revision Number	Description	Date (yyyy-mm-dd)	Page Number
00	None		

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) and as a CAB for the acceptance of test data.

European Union

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

Australia/New Zealand

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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:

<https://www.nwemc.com/emc-testing-accreditations>

FACILITIES



California 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	Oregon Labs EV01-12 6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	Texas Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Washington Labs NC01-05 19201 120 th Ave NE Bothell, WA 98011 (425)984-6600
NVLAP				
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	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	2834D-1	2834G-1	2834F-1
BSMI				
SL2-IN-E-1154R	SL2-IN-E-1152R	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI				
A-0029	A-0109	A-0108	A-0201	A-0110
Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRR, MIC, MOC, NCC, OFCA				
US0158	US0175	US0017	US0191	US0157



MEASUREMENT UNCERTAINTY



Measurement Uncertainty

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

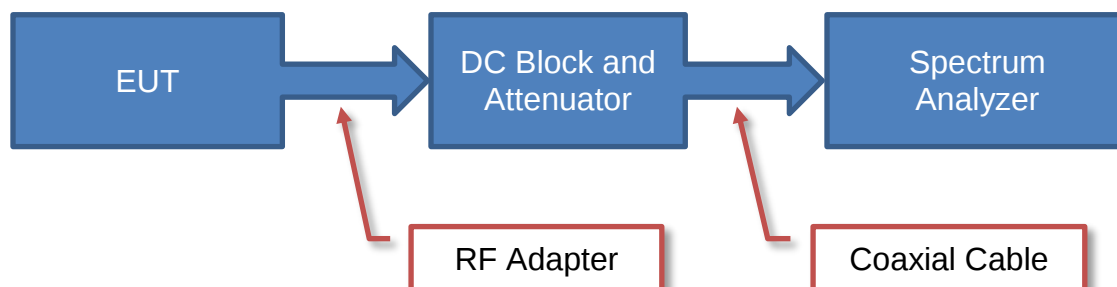
A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable 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	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	1.2 dB	-1.2 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	2.4 dB	-2.4 dB

Test Setup Block Diagrams

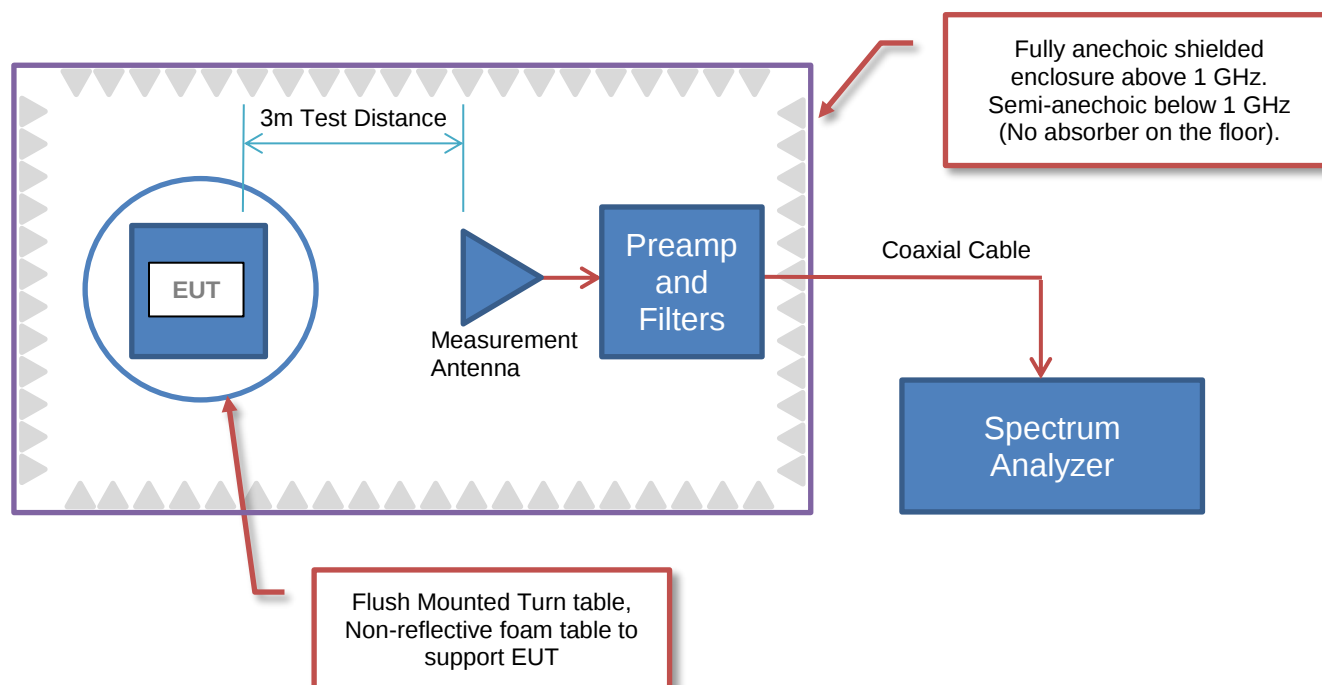
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



Spurious Radiated Emissions



PRODUCT DESCRIPTION



Client and Equipment Under Test (EUT) Information

Company Name:	WatchGuard Video
Address:	415 East Exchange Pkwy
City, State, Zip:	Allen, TX 75002
Test Requested By:	Navaid Karimi
EUT:	V300
First Date of Test:	November 4, 2019
Last Date of Test:	November 15, 2019
Receipt Date of Samples:	November 4, 2019
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
Body Worn Camera
Testing Objective:
To demonstrate compliance of the 802.11 radio under FCC 15.247 for operation in the 2.4 GHz band.

CONFIGURATIONS



Configuration WTVD0027- 1

Software/Firmware Running during test	
Description	Version
WiFi Test Firmware	20190829161925

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Body Camera (Radiated Unit)	WatchGuard Video	V300	55

Configuration WTVD0027- 3

Software/Firmware Running during test	
Description	Version
WiFi Test Firmware	20190829161925

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Body Camera (Direct Connect)	WatchGuard Video	V300	63

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Charging Base	WatchGuard Video	V300 USB Base	None

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter (Base)	GlobeTek, Inc.	GT-21089-1512-W3	931657108-11
Laptop Computer	Dell	Latitude E5570	3VX20G2
AC/DC Power Adapter (Laptop)	Dell	DA130PE1-00	CN-0JU012-48661-136-JIMY-A04

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power (Base)	No	1m	No	AC Adapter (Base)	Charging Base
AC Power (Laptop)	No	.6m	No	AC Mains	AC/DC Power Adapter (Laptop)
DC Power (Laptop)	No	1m	Yes	AC/DC Power Adapter (Laptop)	Laptop Computer
USB	Yes	1m	Yes	Laptop Computer	Charging Base

MODIFICATIONS



Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2019-11-04	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	2019-11-08	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	2019-11-08	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.
4	2019-11-08	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.
5	2019-11-08	Equivalent Isotropic Radiated Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
6	2019-11-08	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
7	2019-11-08	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
8	2019-11-15	Band Edge Compliance	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	20	1	Low Channel	2412	31.75 dB (Max)
11 Mbps	20	1	Low Channel	2412	31.75 dB (Max)
6 Mbps	20	1	Low Channel	2412	31.75 dB (Max)
36 Mbps	20	1	Low Channel	2412	31.75 dB (Max)
54 Mbps	20	1	Low Channel	2412	31.75 dB (Max)
MCS0	20	1	Low Channel	2412	31.75 dB (Max)
MCS7	20	1	Low Channel	2412	31.75 dB (Max)
1 Mbps	20	6	Mid Channel	2437	31.75 dB (Max)
11 Mbps	20	6	Mid Channel	2437	31.75 dB (Max)
6 Mbps	20	6	Mid Channel	2437	31.75 dB (Max)
36 Mbps	20	6	Mid Channel	2437	31.75 dB (Max)
54 Mbps	20	6	Mid Channel	2437	31.75 dB (Max)
MCS0	20	6	Mid Channel	2437	31.75 dB (Max)
MCS7	20	6	Mid Channel	2437	31.75 dB (Max)
1 Mbps	20	11	High Channel	2462	31.75 dB (Max)
11 Mbps	20	11	High Channel	2462	31.75 dB (Max)
6 Mbps	20	11	High Channel	2462	31.75 dB (Max)
36 Mbps	20	11	High Channel	2462	31.75 dB (Max)
54 Mbps	20	11	High Channel	2462	31.75 dB (Max)
MCS0	20	11	High Channel	2462	31.75 dB (Max)
MCS7	20	11	High Channel	2462	31.75 dB (Max)

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

Transmitting at Low Channel 1 (2412 MHz), High Channel 11 (2462 MHz)

Transmitting at Low Channel 1 (2412 MHz), Mid Channel 6 (2437 MHz), High Channel 11 (2462 MHz)

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

WTVD0027 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz

Stop Frequency 26500 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
Attenuator	Weinschel Corp	4H-20	AWB	17-Mar-2019	12 mo
Filter - High Pass	Micro-Tronics	HPM50111	HGC	17-Mar-2019	12 mo
Filter - Low Pass	Micro-Tronics	LPM50004	HHV	1-Aug-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	JSDWK42-18004000-60-5P	PAM	20-Sep-2019	12 mo
Antenna - Double Ridge	A.H. Systems, Inc.	SAS-574	AXW	21-Aug-2018	24 mo
Cable	Northwest EMC	18-40GHz	TXE	20-Sep-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	PAL	18-Sep-2019	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AJG	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	PAK	18-Sep-2019	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AJF	NCR	0 mo
Cable	Northwest EMC	8-18GHz	TXD	14-May-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAJ	17-Mar-2019	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AJL	11-Oct-2018	24 mo
Cable	Northwest EMC	1-8.2 GHz	TXC	14-May-2019	12 mo
Amplifier - Pre-Amplifier	Fairview Microwave	FMAM63001	PAS	24-Jan-2019	12 mo
Antenna - Biconilog	ETS Lindgren	3143B	AYF	10-May-2018	24 mo
Cable	Northwest EMC	RE 9kHz - 1GHz	TXB	1-Aug-2019	12 mo
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFL	1-Nov-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 $10 \cdot \text{LOG}(\text{dc})$.

SPURIOUS RADIATED EMISSIONS



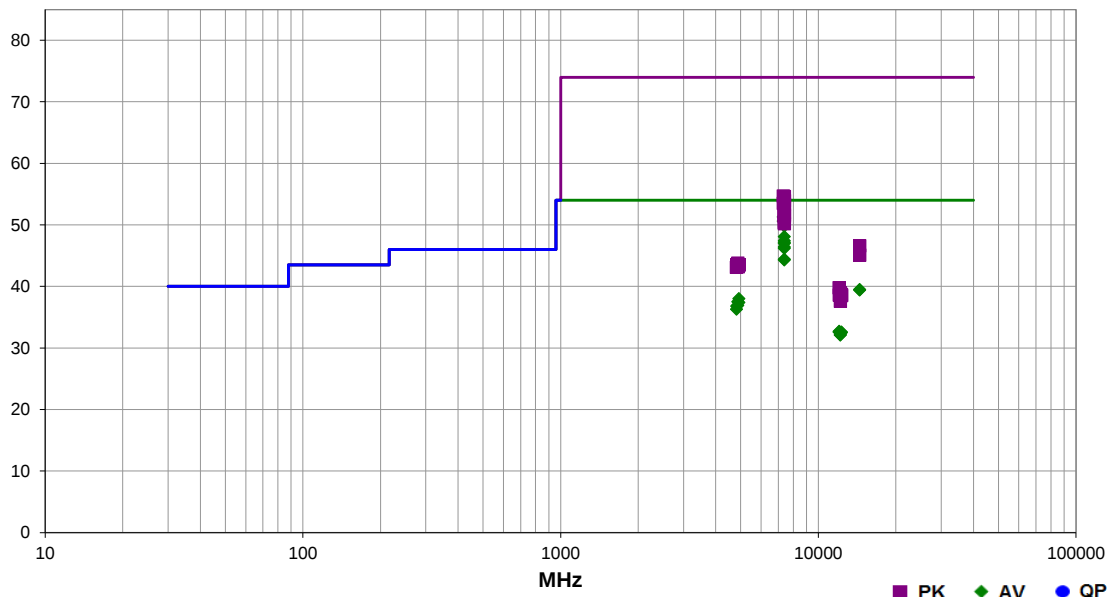
EmiRS 2019.08.15.1

PSA-ESCI 2019.05.10

Work Order:	WTVD0027	Date:	4-Nov-2019	
Project:	None	Temperature:	22.4 °C	
Job Site:	TX02	Humidity:	33.9% RH	
Serial Number:	55	Barometric Pres.:	1019 mbar	
EUT:		V300		
Configuration:		1		
Customer:	WatchGuard Video			
Attendees:	Navaid Karimi			
EUT Power:	Battery			
Operating Mode:	Transmitting at Low Channel 1 (2412 MHz), Mid Channel 6 (2437 MHz), High Channel 11 (2462 MHz)			
Deviations:	None			
Comments:	See table comments for EUT orientation, channel, and data rate information. Since EUT duty cycle < 98%, an upward correction factor of 10*log(1/DC) was added to the average measurements. This correction factor is only applicable to emissions that are above the measurement noise floor. A worst-case correction factor of 10*log (1/0.396) = 4.0 dB was added to applicable average measurements.			

Test Specifications	Test Method
FCC 15.247:2019	ANSI C63.10:2013

Run #	16	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7386.667	35.7	11.7	3.1	124.9	4.0	0.0	Horz	AV	0.0	51.4	54.0	-2.6	EUT Horz, High Ch 11, 1 Mbps
7311.875	35.6	11.7	3.1	122.0	4.0	0.0	Horz	AV	0.0	51.3	54.0	-2.7	EUT Horz, Mid Ch 6, 1 Mbps
7309.958	34.9	11.7	1.6	93.9	4.0	0.0	Vert	AV	0.0	50.6	54.0	-3.4	EUT Vert, Mid Ch 6, 1 Mbps
7386.292	34.4	11.7	1.4	114.0	4.0	0.0	Horz	AV	0.0	50.1	54.0	-3.9	EUT On Side, High Ch 11, 1 Mbps
7386.875	34.3	11.7	1.5	93.9	4.0	0.0	Vert	AV	0.0	50.0	54.0	-4.0	EUT Vert, High Ch 11, 1 Mbps
7386.625	34.1	11.7	3.3	66.0	4.0	0.0	Horz	AV	0.0	49.8	54.0	-4.2	EUT Vert, High Ch 11, 1 Mbps
7385.958	32.4	11.7	3.3	129.0	4.0	0.0	Horz	AV	0.0	48.1	54.0	-5.9	EUT Horz, High Ch 11, 11 Mbps
7386.750	31.7	11.7	2.0	33.9	4.0	0.0	Vert	AV	0.0	47.4	54.0	-6.6	EUT On Side, High Ch 11, 1 Mbps
7386.000	31.4	11.7	3.9	260.0	4.0	0.0	Vert	AV	0.0	47.1	54.0	-6.9	EUT Horz, High Ch 11, 1 Mbps
7385.958	31.3	11.7	2.8	123.9	4.0	0.0	Horz	AV	0.0	47.0	54.0	-7.0	EUT Horz, High Ch 11, 6 Mbps
7386.042	30.7	11.7	1.5	122.0	4.0	0.0	Horz	AV	0.0	46.4	54.0	-7.6	EUT Horz, High Ch 11, MCS7
7386.083	30.5	11.7	1.5	127.0	4.0	0.0	Horz	AV	0.0	46.2	54.0	-7.8	EUT Horz, High Ch 11, 54 Mbps
7385.958	28.7	11.7	1.5	69.0	4.0	0.0	Horz	AV	0.0	44.4	54.0	-9.6	EUT Horz, High Ch 11, MCS0
7385.875	28.6	11.7	1.5	348.0	4.0	0.0	Horz	AV	0.0	44.3	54.0	-9.7	EUT Horz, High Ch 11, 36 Mbps
14477.170	27.2	8.3	1.5	356.0	4.0	0.0	Vert	AV	0.0	39.5	54.0	-14.5	EUT Vert, Low Ch 1, 1 Mbps
14480.000	27.1	8.3	1.5	308.0	4.0	0.0	Horz	AV	0.0	39.4	54.0	-14.6	EUT Horz, Low Ch 1, 1 Mbps
4923.958	29.6	4.4	1.5	331.0	4.0	0.0	Horz	AV	0.0	38.0	54.0	-16.0	EUT Horz, High Ch 11, 1 Mbps
4874.083	29.2	4.3	1.5	75.0	4.0	0.0	Horz	AV	0.0	37.5	54.0	-16.5	EUT Horz, Mid Ch 6, 1 Mbps
4923.875	29.0	4.4	1.5	42.0	4.0	0.0	Vert	AV	0.0	37.4	54.0	-16.6	EUT Vert, High Ch 11, 1 Mbps
4873.667	28.6	4.3	1.5	38.0	4.0	0.0	Vert	AV	0.0	36.9	54.0	-17.1	EUT Vert, Mid Ch 6, 1 Mbps
4824.125	28.7	4.1	1.5	45.9	4.0	0.0	Horz	AV	0.0	36.8	54.0	-17.2	EUT Horz, Low Ch 1, 1 Mbps
4815.375	28.2	4.1	1.5	211.0	4.0	0.0	Vert	AV	0.0	36.3	54.0	-17.7	EUT Vert, Low Ch 1, 1 Mbps

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7311.167	43.0	11.7	3.1	122.0	0.0	0.0	Horz	PK	0.0	54.7	74.0	-19.3	EUT Horz, Mid Ch 6, 1 Mbps
7386.917	42.9	11.7	3.1	124.9	0.0	0.0	Horz	PK	0.0	54.6	74.0	-19.4	EUT Horz, High Ch 11, 1 Mbps
7386.042	42.3	11.7	3.3	66.0	0.0	0.0	Horz	PK	0.0	54.0	74.0	-20.0	EUT Vert, High Ch 11, 1 Mbps
7386.750	42.2	11.7	1.4	114.0	0.0	0.0	Horz	PK	0.0	53.9	74.0	-20.1	EUT On Side, High Ch 11, 1 Mbps
7310.875	41.8	11.7	1.6	93.9	0.0	0.0	Vert	PK	0.0	53.5	74.0	-20.5	EUT Vert, Mid Ch 6, 1 Mbps
7386.208	41.7	11.7	1.5	93.9	0.0	0.0	Vert	PK	0.0	53.4	74.0	-20.6	EUT Vert, High Ch 11, 1 Mbps
7386.542	41.6	11.7	3.3	129.0	0.0	0.0	Horz	PK	0.0	53.3	74.0	-20.7	EUT Horz, High Ch 11, 11 Mbps
12061.790	32.1	-3.4	1.4	224.0	4.0	0.0	Vert	AV	0.0	32.7	54.0	-21.3	EUT Vert, Low Ch 1, 1 Mbps
12301.920	31.5	-2.9	1.5	296.0	4.0	0.0	Vert	AV	0.0	32.6	54.0	-21.4	EUT Vert, High Ch 11, 1 Mbps
12048.790	32.1	-3.5	1.5	111.0	4.0	0.0	Horz	AV	0.0	32.6	54.0	-21.4	EUT Horz, Low Ch 1, 1 Mbps
12306.710	31.4	-2.9	1.5	358.9	4.0	0.0	Horz	AV	0.0	32.5	54.0	-21.5	EUT Horz, High Ch 11, 1 Mbps
12190.750	31.2	-3.1	1.5	225.0	4.0	0.0	Vert	AV	0.0	32.1	54.0	-21.9	EUT Vert, Mid Ch 6, 1 Mbps
12178.630	31.2	-3.1	1.5	225.9	4.0	0.0	Horz	AV	0.0	32.1	54.0	-21.9	EUT Horz, Mid Ch 6, 1 Mbps
7386.417	40.3	11.7	2.8	123.9	0.0	0.0	Horz	PK	0.0	52.0	74.0	-22.0	EUT Horz, High Ch 11, 6 Mbps
7386.875	40.0	11.7	2.0	33.9	0.0	0.0	Vert	PK	0.0	51.7	74.0	-22.3	EUT On Side, High Ch 11, 1 Mbps
7374.958	39.8	11.7	3.9	260.0	0.0	0.0	Vert	PK	0.0	51.5	74.0	-22.5	EUT Horz, High Ch 11, 1 Mbps
7386.208	39.8	11.7	1.5	127.0	0.0	0.0	Horz	PK	0.0	51.5	74.0	-22.5	EUT Horz, High Ch 11, 54 Mbps
7383.083	39.6	11.7	1.5	122.0	0.0	0.0	Horz	PK	0.0	51.3	74.0	-22.7	EUT Horz, High Ch 11, MCS7
7378.833	38.7	11.7	1.5	69.0	0.0	0.0	Horz	PK	0.0	50.4	74.0	-23.6	EUT Horz, High Ch 11, MCS0
7383.292	38.5	11.7	1.5	348.0	0.0	0.0	Horz	PK	0.0	50.2	74.0	-23.8	EUT Horz, High Ch 11, 36 Mbps
14472.750	38.3	8.3	1.5	356.0	0.0	0.0	Vert	PK	0.0	46.6	74.0	-27.4	EUT Vert, Low Ch 1, 1 Mbps
14476.420	36.8	8.3	1.5	308.0	0.0	0.0	Horz	PK	0.0	45.1	74.0	-28.9	EUT Horz, Low Ch 1, 1 Mbps
4877.125	39.5	4.3	1.5	75.0	0.0	0.0	Horz	PK	0.0	43.8	74.0	-30.2	EUT Horz, Mid Ch 6, 1 Mbps
4933.167	39.1	4.4	1.5	42.0	0.0	0.0	Vert	PK	0.0	43.5	74.0	-30.5	EUT Vert, High Ch 11, 1 Mbps
4918.583	39.1	4.4	1.5	331.0	0.0	0.0	Horz	PK	0.0	43.5	74.0	-30.5	EUT Horz, High Ch 11, 1 Mbps
4833.208	39.3	4.2	1.5	211.0	0.0	0.0	Vert	PK	0.0	43.5	74.0	-30.5	EUT Vert, Low Ch 1, 1 Mbps
4886.375	38.9	4.3	1.5	38.0	0.0	0.0	Vert	PK	0.0	43.2	74.0	-30.8	EUT Vert, Mid Ch 6, 1 Mbps
4813.167	39.0	4.1	1.5	45.9	0.0	0.0	Horz	PK	0.0	43.1	74.0	-30.9	EUT Horz, Low Ch 1, 1 Mbps
12047.830	43.3	-3.5	1.5	111.0	0.0	0.0	Horz	PK	0.0	39.8	74.0	-34.2	EUT Horz, Low Ch 1, 1 Mbps
12181.540	42.2	-3.2	1.5	225.0	0.0	0.0	Vert	PK	0.0	39.0	74.0	-35.0	EUT Vert, Mid Ch 6, 1 Mbps
12303.080	41.6	-2.9	1.5	358.9	0.0	0.0	Horz	PK	0.0	38.7	74.0	-35.3	EUT Horz, High Ch 11, 1 Mbps
12070.920	42.0	-3.4	1.4	224.0	0.0	0.0	Vert	PK	0.0	38.6	74.0	-35.4	EUT Vert, Low Ch 1, 1 Mbps
12311.040	41.3	-2.8	1.5	296.0	0.0	0.0	Vert	PK	0.0	38.5	74.0	-35.5	EUT Vert, High Ch 11, 1 Mbps
12183.750	40.8	-3.2	1.5	225.9	0.0	0.0	Horz	PK	0.0	37.6	74.0	-36.4	EUT Horz, Mid Ch 6, 1 Mbps

SPURIOUS RADIATED EMISSIONS

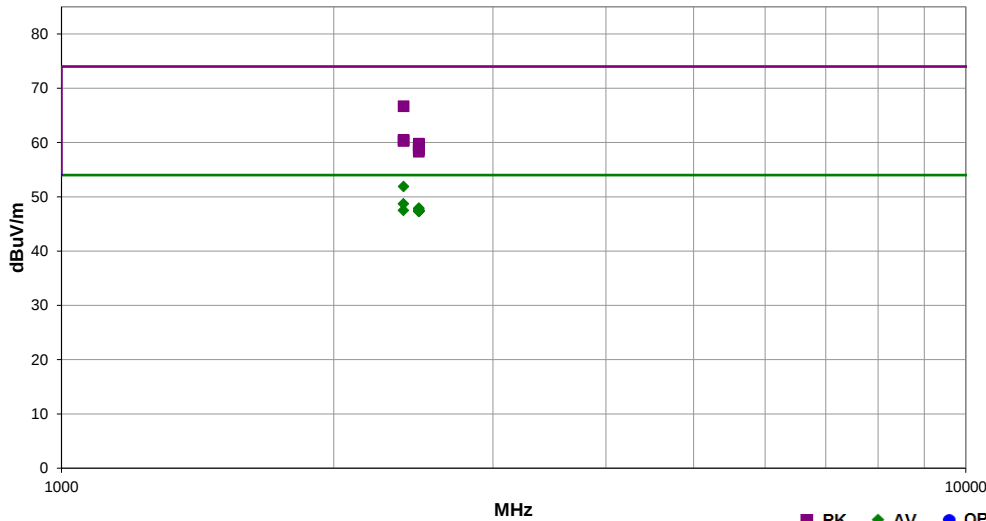


EmiRS 2019.06.15.1 PSA-ESCI 2019.05.10

Work Order:	WTVDD0027	Date:	4-Nov-2019	 Tested by: Jonathan Kiefer, Willie Love
Project:	None	Temperature:	22.4 °C	
Job Site:	TX02	Humidity:	33.9% RH	
Serial Number:	55	Barometric Pres.:	1019 mbar	
EUT:	V300			
Configuration:	1			
Customer:	WatchGuard Video			
Attendees:	Navaid Karimi			
EUT Power:	Battery			
Operating Mode:	Transmitting at Low Channel 1 (2412 MHz), High Channel 11 (2462 MHz)			
Deviations:	None			
Comments:	Transmit Band Edge. See table comments for EUT orientation, channel, and data rate information.			

Test Specifications	Test Method
FCC 15.247:2019	ANSI C63.10:2013

Run #	22	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2389.997	37.3	-5.4	3.12	171.0	3.0	20.0	Horz	AV	0.0	51.9	54.0	-2.1	EUT Horz, Low Ch 1, 6 Mbps
2389.000	34.1	-5.4	3.97	27.9	3.0	20.0	Horz	AV	0.0	48.7	54.0	-5.3	EUT Horz, Low Ch 1, 11 Mbps (Integration Method measurement)
2484.497	32.9	-5.0	3.4	93.0	3.0	20.0	Horz	AV	0.0	47.9	54.0	-6.1	EUT Horz, High Ch 11, 11 Mbps
2483.670	32.8	-5.0	1.5	241.0	3.0	20.0	Horz	AV	0.0	47.8	54.0	-6.2	EUT Horz, High Ch 11, 1 Mbps
2484.553	32.5	-5.0	1.5	153.9	3.0	20.0	Horz	AV	0.0	47.5	54.0	-6.5	EUT Horz, High Ch 11, 6 Mbps
2485.273	32.5	-5.0	3.98	57.0	3.0	20.0	Horz	AV	0.0	47.5	54.0	-6.5	EUT Horz, High Ch 11, MCS7
2389.000	32.9	-5.4	3.86	52.9	3.0	20.0	Horz	AV	0.0	47.5	54.0	-6.5	EUT Horz, Low Ch 1, 1 Mbps (Integration Method measurement)
2483.523	32.4	-5.0	1.5	187.0	3.0	20.0	Vert	AV	0.0	47.4	54.0	-6.6	EUT Horz, High Ch 11, 6 Mbps
2483.540	32.4	-5.0	3.45	279.9	3.0	20.0	Vert	AV	0.0	47.4	54.0	-6.6	EUT Vert, High Ch 11, 6 Mbps
2483.630	32.4	-5.0	1.5	169.0	3.0	20.0	Horz	AV	0.0	47.4	54.0	-6.6	EUT On Side, High Ch 11, 6 Mbps
2485.050	32.4	-5.0	1.5	16.9	3.0	20.0	Horz	AV	0.0	47.4	54.0	-6.6	EUT Horz, High Ch 11, 36 Mbps
2484.033	32.4	-5.0	1.5	352.9	3.0	20.0	Horz	AV	0.0	47.4	54.0	-6.6	EUT Horz, High Ch 11, 54 Mbps
2483.583	32.4	-5.0	3.99	12.0	3.0	20.0	Horz	AV	0.0	47.4	54.0	-6.6	EUT Horz, High Ch 11, MCS0
2484.853	32.3	-5.0	1.5	69.9	3.0	20.0	Horz	AV	0.0	47.3	54.0	-6.7	EUT Vert, High Ch 11, 6 Mbps
2484.417	32.3	-5.0	1.5	26.0	3.0	20.0	Vert	AV	0.0	47.3	54.0	-6.7	EUT On Side, High Ch 11, 6 Mbps
2389.340	52.1	-5.4	3.12	171.0	3.0	20.0	Horz	PK	0.0	66.7	74.0	-7.3	EUT Horz, Low Ch 1, 6 Mbps
2389.670	45.9	-5.4	3.86	52.9	3.0	20.0	Horz	PK	0.0	60.5	74.0	-13.5	EUT Horz, Low Ch 1, 1 Mbps
2389.833	45.7	-5.4	3.97	27.9	3.0	20.0	Horz	PK	0.0	60.3	74.0	-13.7	EUT Horz, Low Ch 1, 11 Mbps
2484.643	44.8	-5.0	1.5	241.0	3.0	20.0	Horz	PK	0.0	59.8	74.0	-14.2	EUT Horz, High Ch 11, 1 Mbps
2484.797	44.6	-5.0	1.5	153.9	3.0	20.0	Horz	PK	0.0	59.6	74.0	-14.4	EUT Horz, High Ch 11, 6 Mbps
2485.097	44.6	-5.0	3.4	93.0	3.0	20.0	Horz	PK	0.0	59.6	74.0	-14.4	EUT Horz, High Ch 11, 11 Mbps
2484.080	44.6	-5.0	3.99	12.0	3.0	20.0	Horz	PK	0.0	59.6	74.0	-14.4	EUT Horz, High Ch 11, MCS0
2483.690	44.3	-5.0	1.5	187.0	3.0	20.0	Vert	PK	0.0	59.3	74.0	-14.7	EUT Horz, High Ch 11, 6 Mbps
2485.327	44.2	-5.0	1.5	352.9	3.0	20.0	Horz	PK	0.0	59.2	74.0	-14.8	EUT Horz, High Ch 11, 54 Mbps
2484.633	44.1	-5.0	1.5	169.0	3.0	20.0	Horz	PK	0.0	59.1	74.0	-14.9	EUT On Side, High Ch 11, 6 Mbps
2484.693	44.1	-5.0	3.98	57.0	3.0	20.0	Horz	PK	0.0	59.1	74.0	-14.9	EUT Horz, High Ch 11, MCS7
2484.017	43.8	-5.0	1.5	69.9	3.0	20.0	Horz	PK	0.0	58.8	74.0	-15.2	EUT Vert, High Ch 11, 6 Mbps
2484.103	43.8	-5.0	1.5	16.9	3.0	20.0	Horz	PK	0.0	58.8	74.0	-15.2	EUT Horz, High Ch 11, 36 Mbps
2484.437	43.7	-5.0	1.5	26.0	3.0	20.0	Vert	PK	0.0	58.7	74.0	-15.3	EUT On Side, High Ch 11, 6 Mbps
2483.917	43.3	-5.0	3.45	279.9	3.0	20.0	Vert	PK	0.0	58.3	74.0	-15.7	EUT Vert, High Ch 11, 6 Mbps

DUTY CYCLE



XMIT 2019.09.05

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	5-May-19	5-May-20

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



TMTx 2019.08.30.0 XMI 2019.09.05

EUT: V300

Serial Number: 63

Customer: WatchGuard Video

Attendees: Navaid Karimi

Project: None

Tested by: Jonathan Kiefer

Power: Battery

Test Method

ANSI C63.10:2013

Work Order: WTV0027

Date: 8-Nov-19

Temperature: 23.2 °C

Humidity: 26.2% RH

Barometric Pres.: 1035 mbar

Job Site: TX09

TEST SPECIFICATIONS

FCC 15.247:2019

ANSI C63.10:2013

COMMENTS

Reference Offset 21.22 dB (20dB attenuator+dc block+cable).

DEVIATIONS FROM TEST STANDARD

None

Configuration #

3

Signature

Jonathan Kiefer

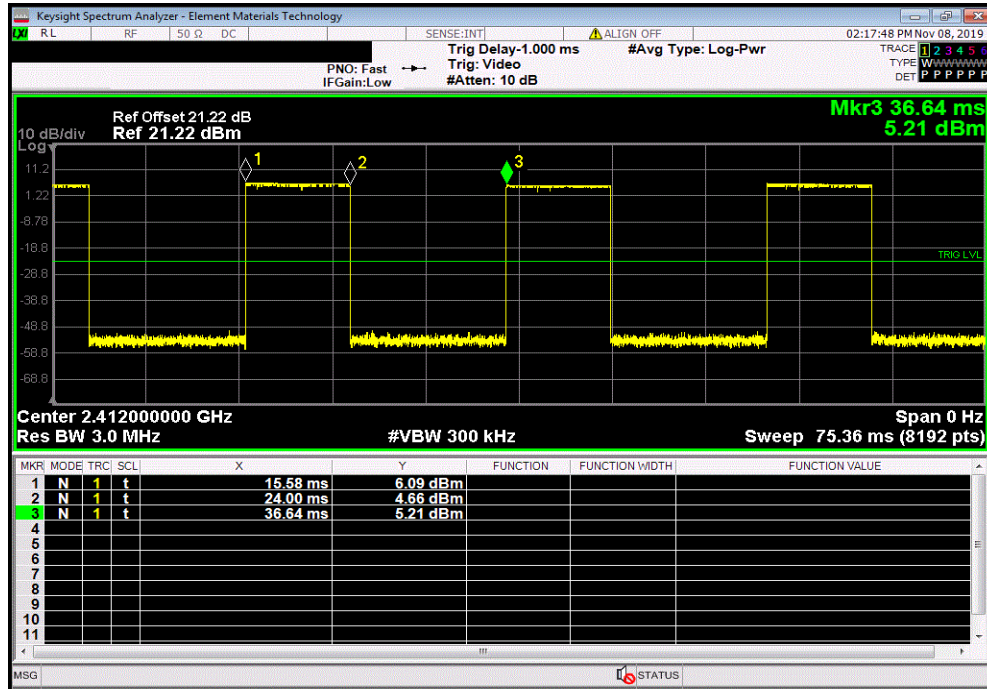
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
2400 MHz - 2483.5 MHz Band						
802.11(b) 1 Mbps						
Low Channel 1, 2412 MHz	8.418 ms	21.059 ms	1	40	N/A	N/A
Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	8.381 ms	21.05 ms	1	39.8	N/A	N/A
Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
High Channel 11, 2462 MHz	8.332 ms	21.039 ms	1	39.6	N/A	N/A
High Channel 11, 2462 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(b) 11 Mbps						
Low Channel 1, 2412 MHz	844.2 us	2.131 ms	1	39.6	N/A	N/A
Low Channel 1, 2412 MHz	N/A	N/A	12	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	840.54 us	2.13 ms	1	39.5	N/A	N/A
Mid Channel 6, 2437 MHz	N/A	N/A	12	N/A	N/A	N/A
High Channel 11, 2462 MHz	830.67 us	2.121 ms	1	39.2	N/A	N/A
High Channel 11, 2462 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(g) 6 Mbps						
Low Channel 1, 2412 MHz	1.396 ms	1.436 ms	1	97.2	N/A	N/A
Low Channel 1, 2412 MHz	N/A	N/A	6	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	1.396 ms	1.436 ms	1	97.2	N/A	N/A
Mid Channel 6, 2437 MHz	N/A	N/A	6	N/A	N/A	N/A
High Channel 11, 2462 MHz	1.396 ms	1.436 ms	1	97.2	N/A	N/A
High Channel 11, 2462 MHz	N/A	N/A	6	N/A	N/A	N/A
802.11(g) 36 Mbps						
Low Channel 1, 2412 MHz	251.6 us	293.6 us	1	85.7	N/A	N/A
Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	251.7 us	293.6 us	1	85.7	N/A	N/A
Mid Channel 6, 2437 MHz	N/A	N/A	6	N/A	N/A	N/A
High Channel 11, 2462 MHz	251.7 us	293.6 us	1	85.7	N/A	N/A
High Channel 11, 2462 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(g) 54 Mbps						
Low Channel 1, 2412 MHz	175.6 us	217.7 us	1	80.7	N/A	N/A
Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	175.7 us	216.1 us	1	81.3	N/A	N/A
Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
High Channel 11, 2462 MHz	175.7 us	217.9 us	1	80.6	N/A	N/A
High Channel 11, 2462 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS0						
Low Channel 1, 2412 MHz	1.308 ms	1.35 ms	1	96.9	N/A	N/A
Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	1.305 ms	1.352 ms	1	96.5	N/A	N/A
Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
High Channel 11, 2462 MHz	1.301 ms	1.349 ms	1	96.4	N/A	N/A
High Channel 11, 2462 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS7						
Low Channel 1, 2412 MHz	163.7 us	205.4 us	1	79.7	N/A	N/A
Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	163.8 us	205.5 us	1	79.7	N/A	N/A
Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
High Channel 11, 2462 MHz	163.7 us	205.3 us	1	79.7	N/A	N/A
High Channel 11, 2462 MHz	N/A	N/A	5	N/A	N/A	N/A

DUTY CYCLE

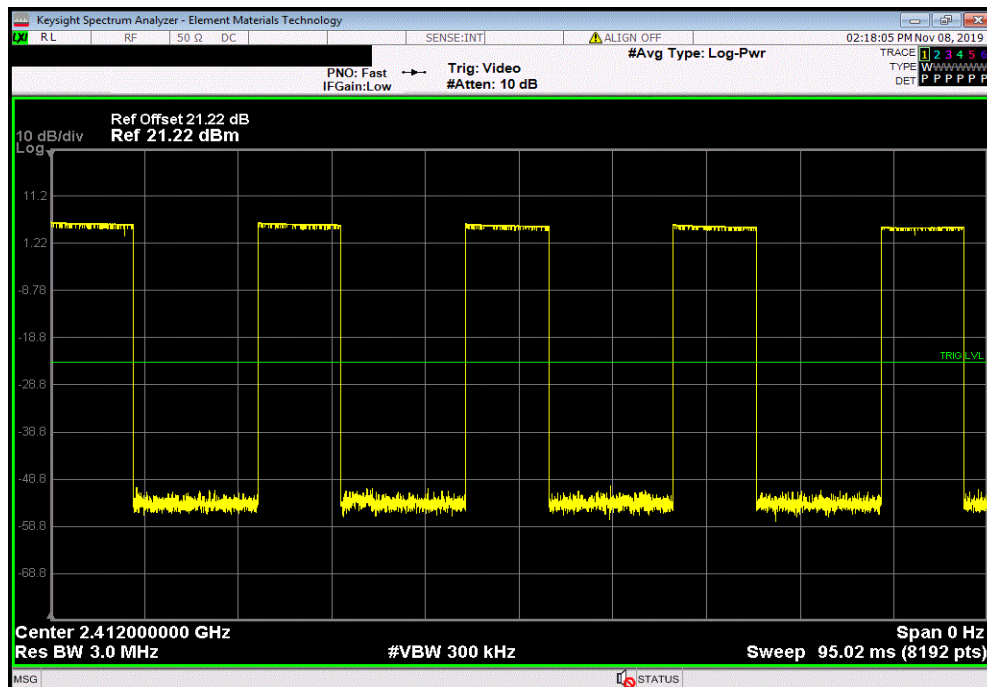


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
8.418 ms	21.059 ms	1	40	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

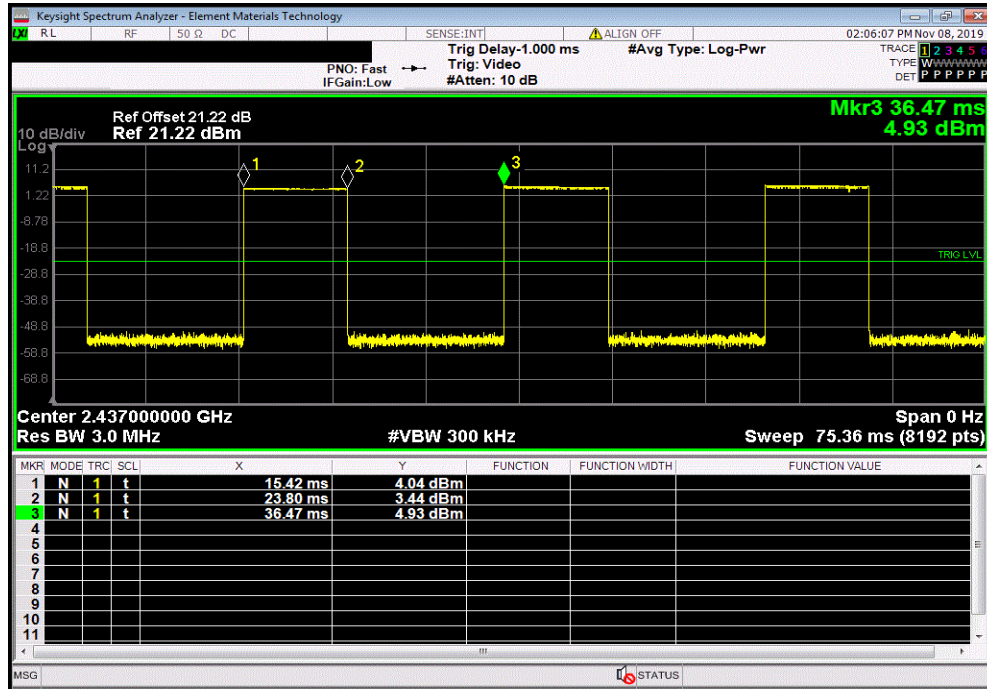


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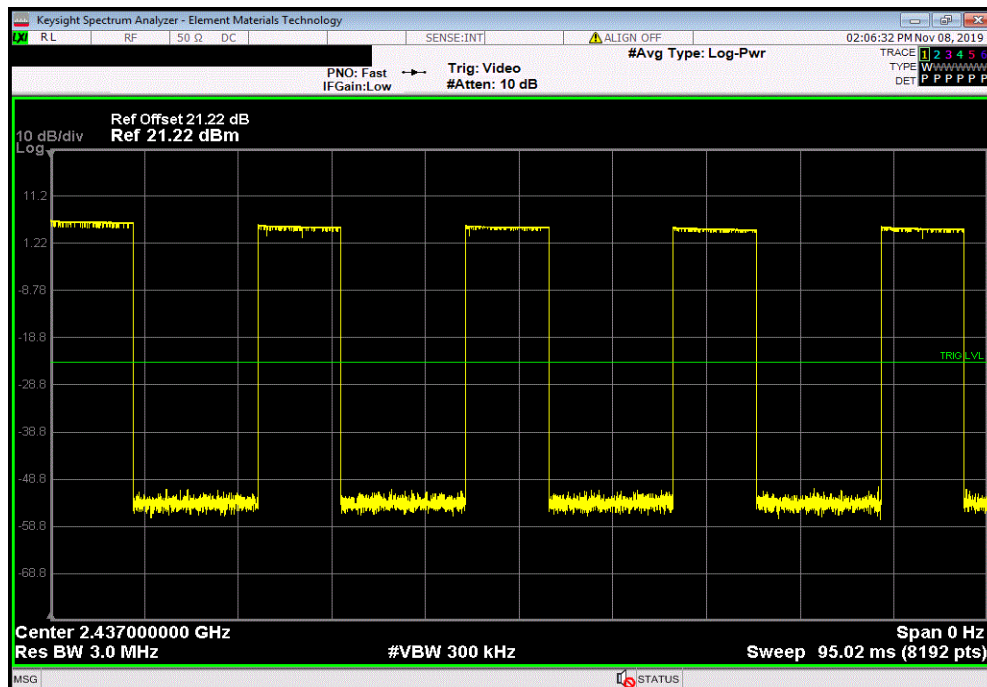


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
8.381 ms	21.05 ms	1	39.8	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

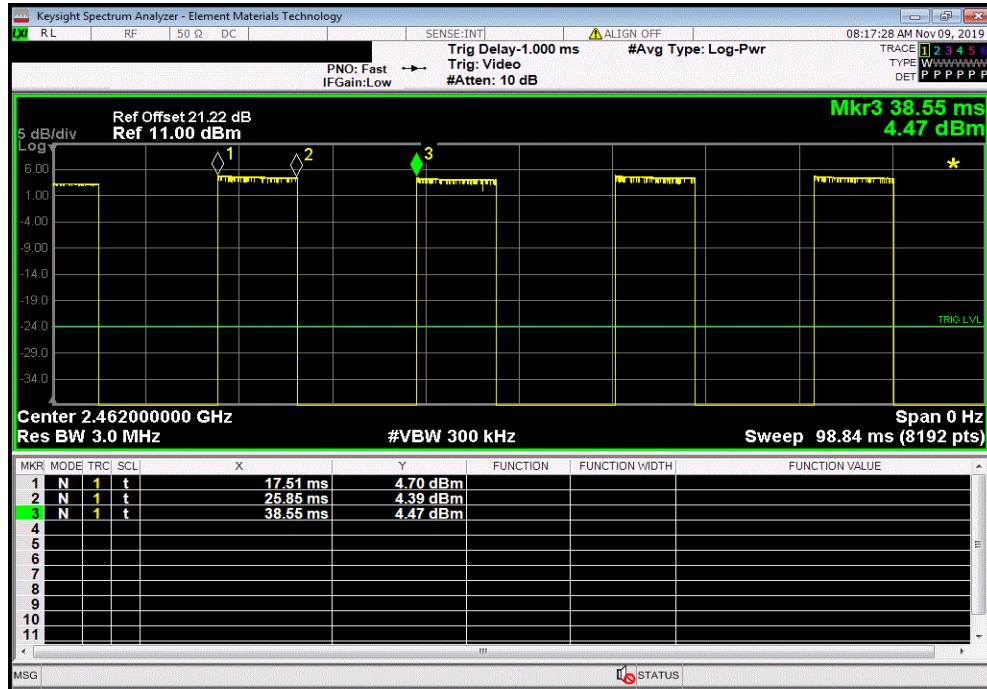


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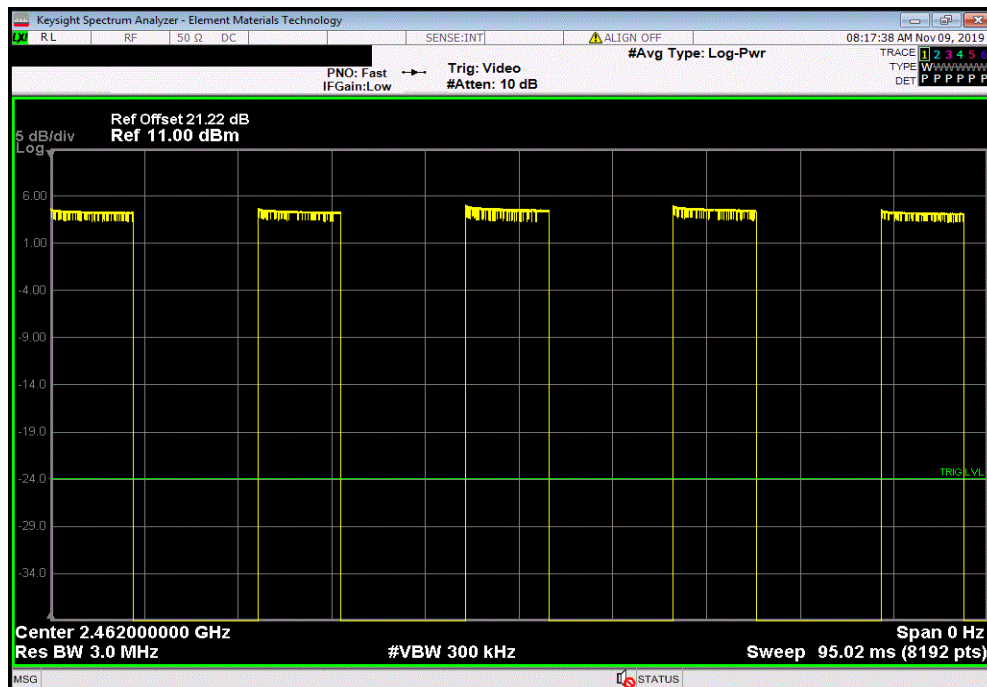


TMTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
8.332 ms	21.039 ms	1	39.6	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

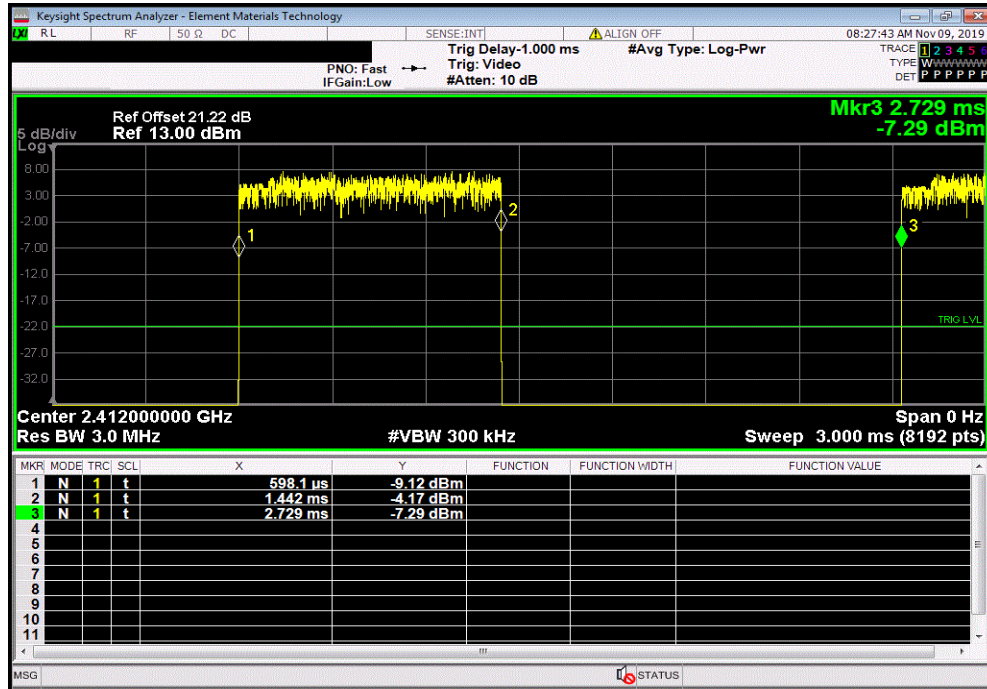


DUTY CYCLE

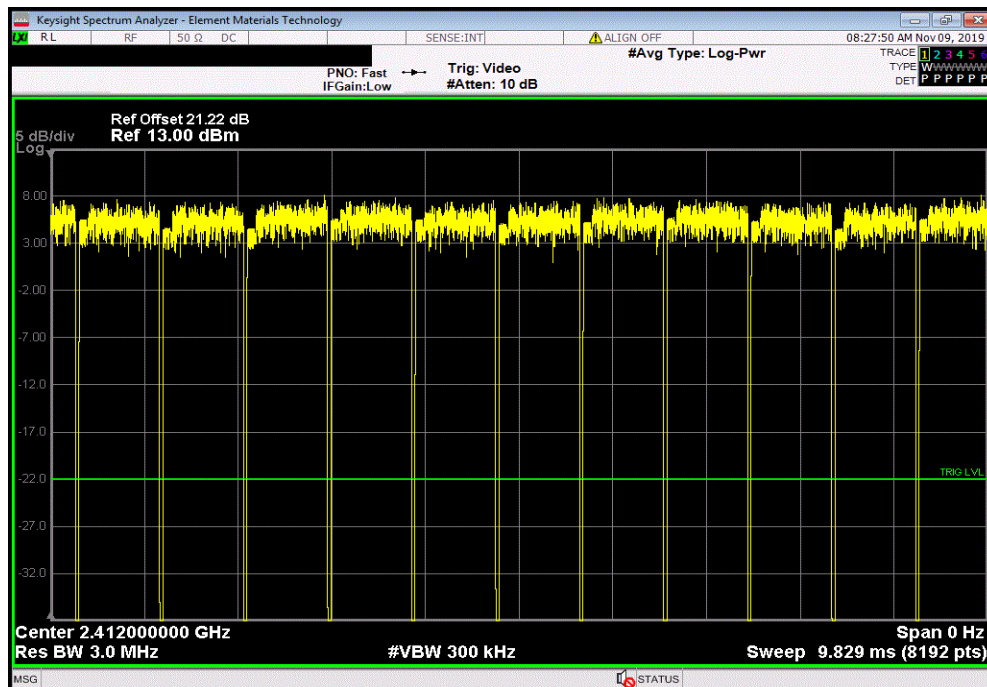


TbTx 2019.08.30.0 XbTx 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
844.2 us	2.131 ms	1	39.6	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	12	N/A	N/A	N/A	

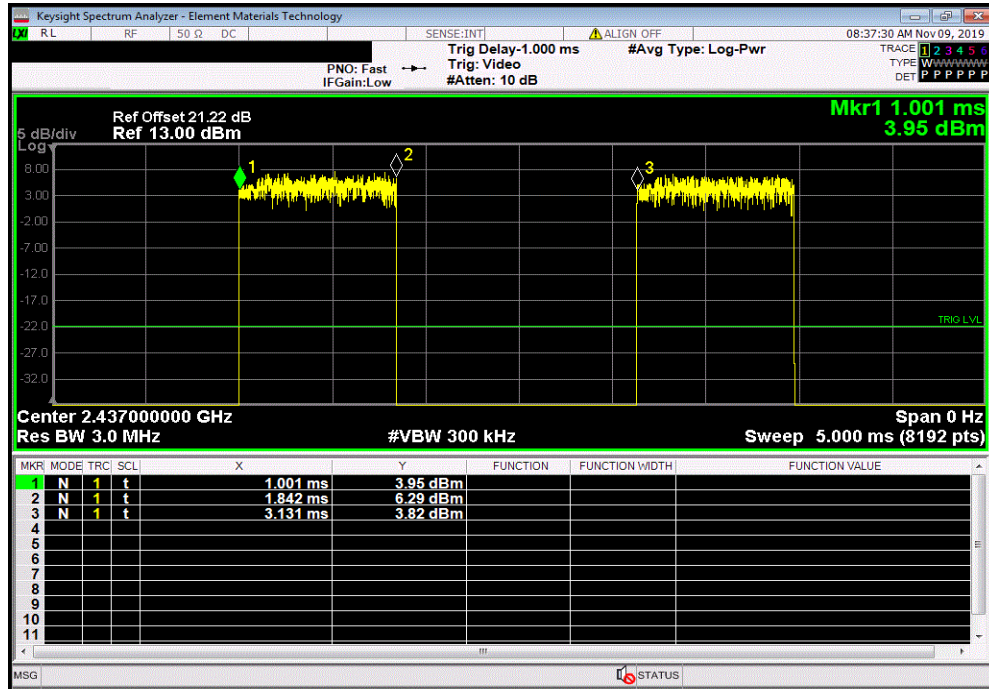


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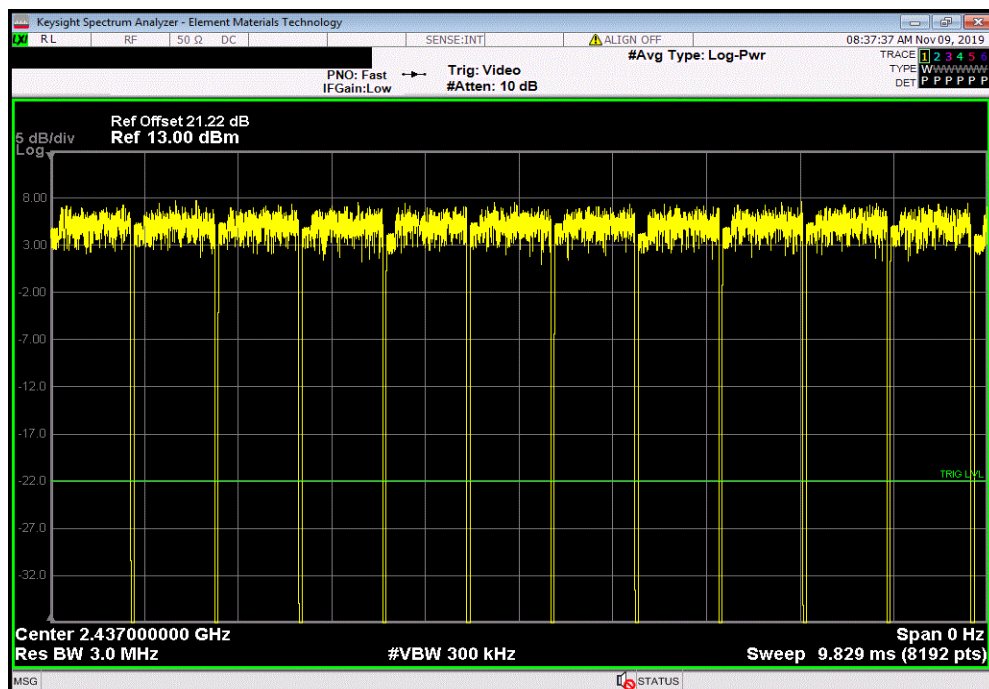


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
840.54 us	2.13 ms	1	39.5	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	12	N/A	N/A	N/A	

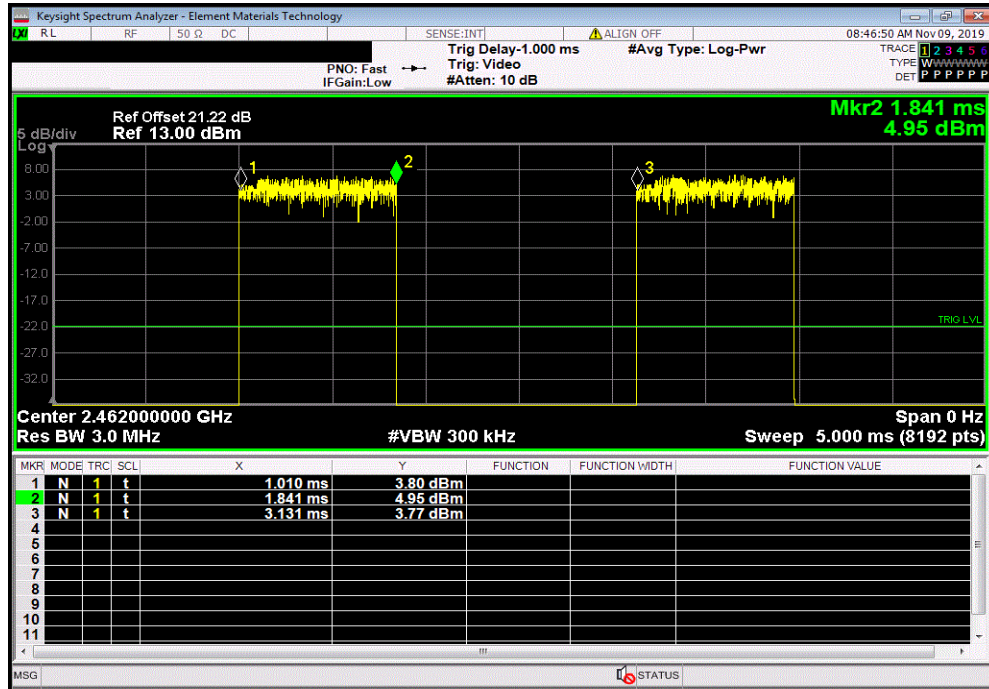


DUTY CYCLE

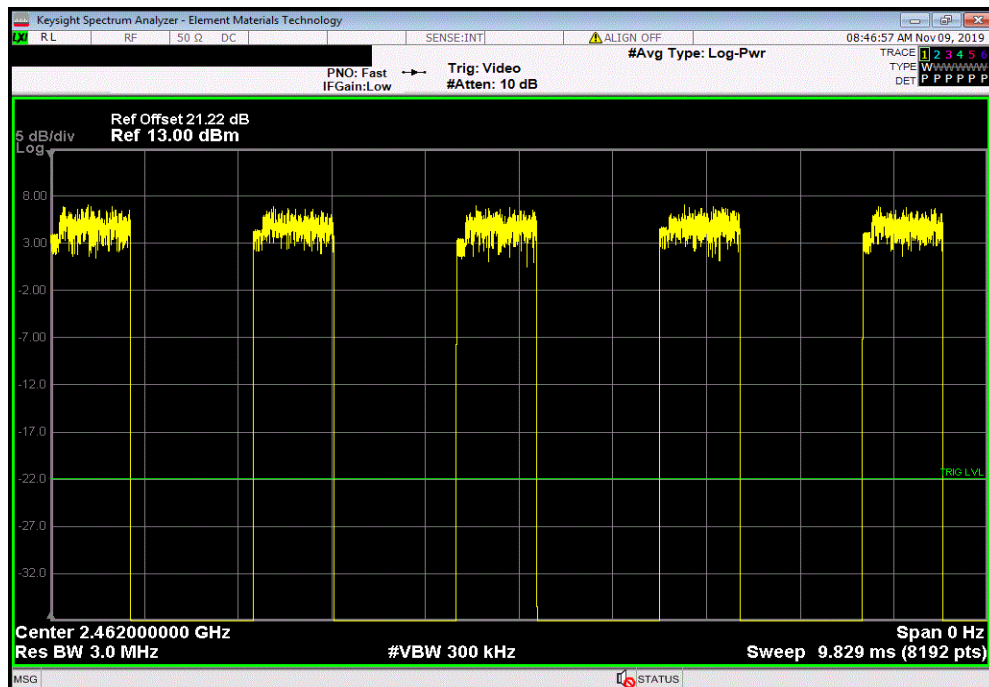


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
830.67 us	2.121 ms	1	39.2	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

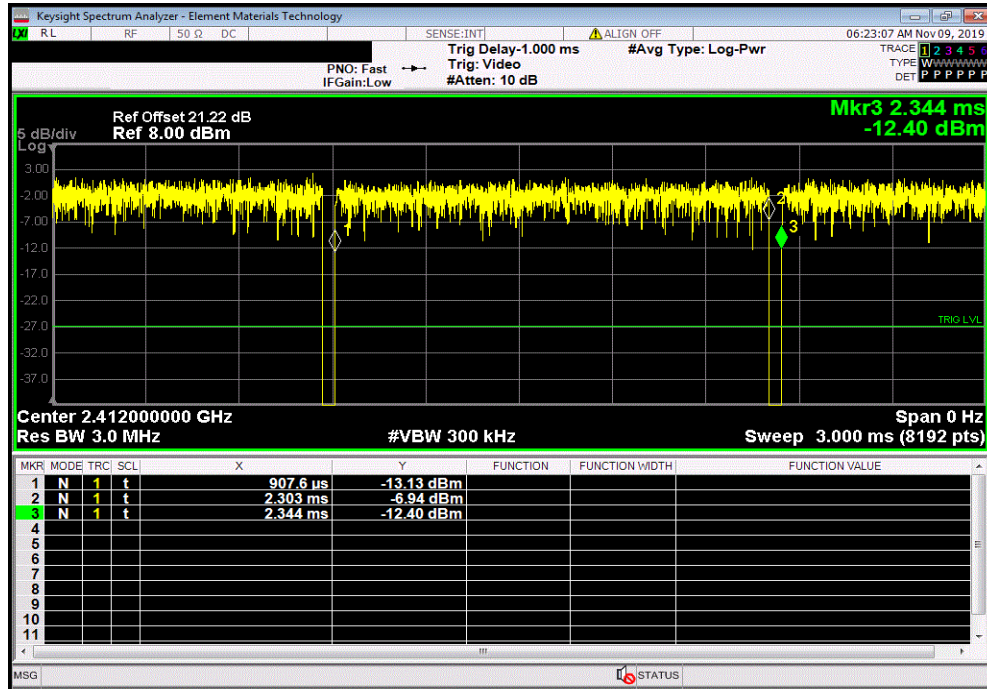


DUTY CYCLE

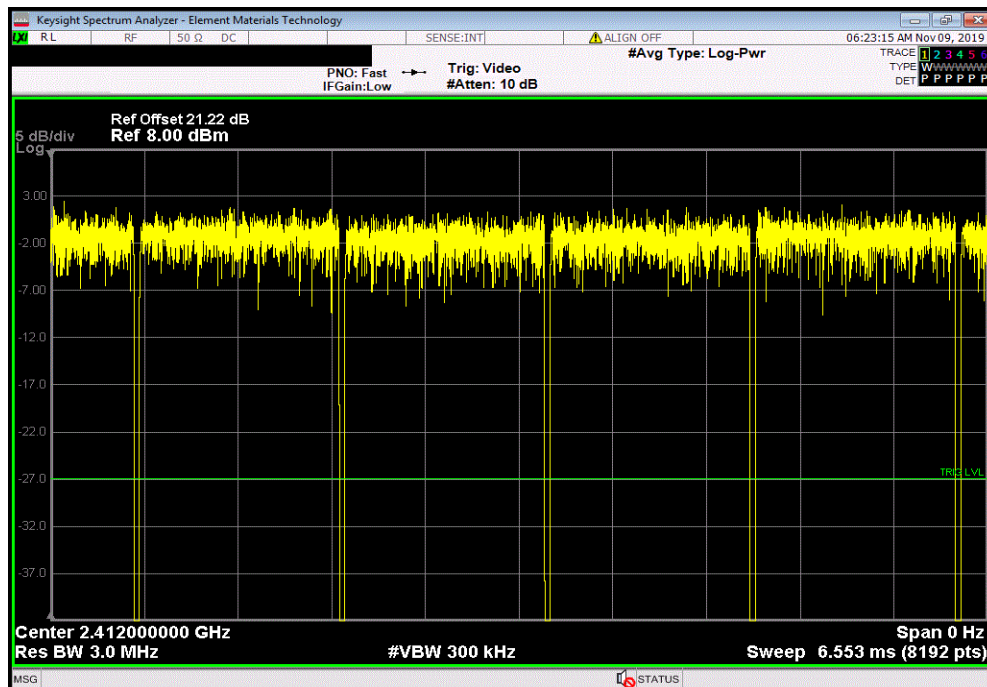


TbTtX 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.396 ms	1.436 ms	1	97.2	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

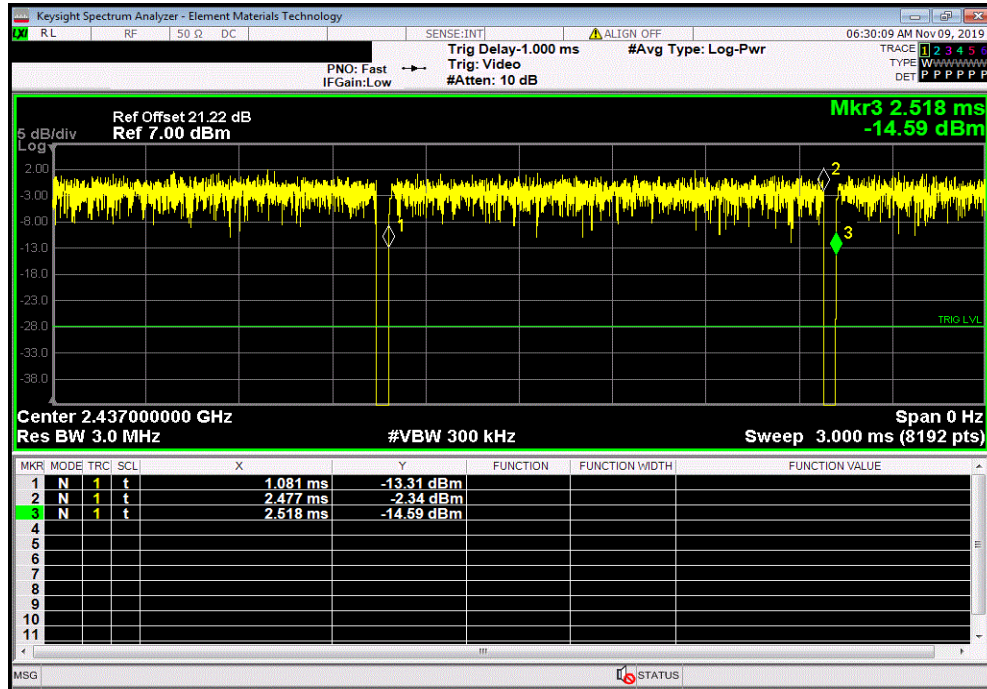


DUTY CYCLE

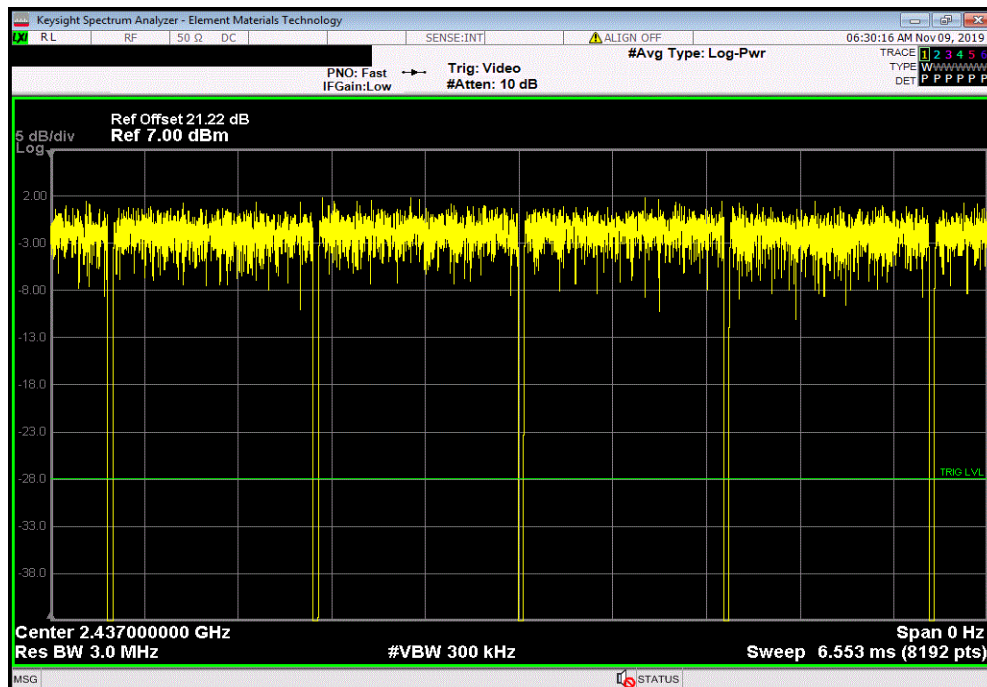


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.396 ms	1.436 ms	1	97.2	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

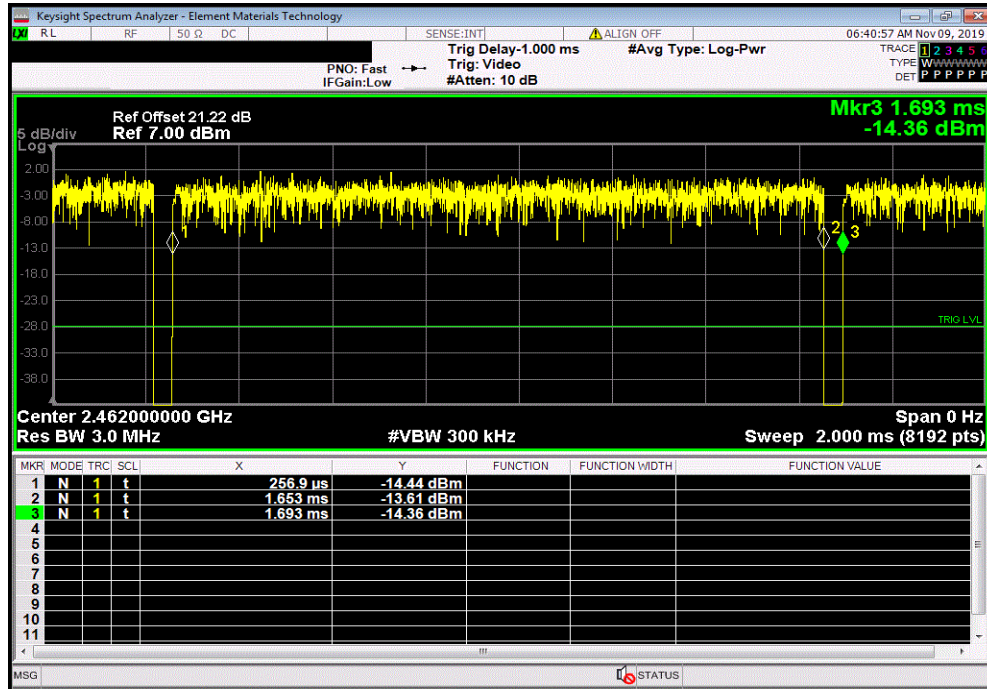


DUTY CYCLE

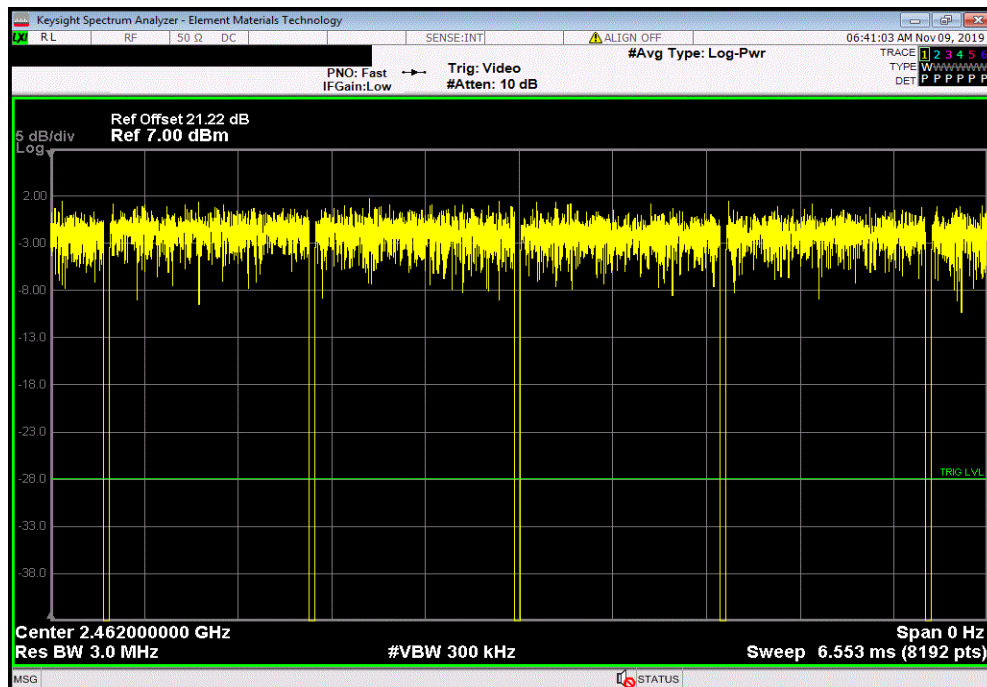


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.396 ms	1.436 ms	1	97.2	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

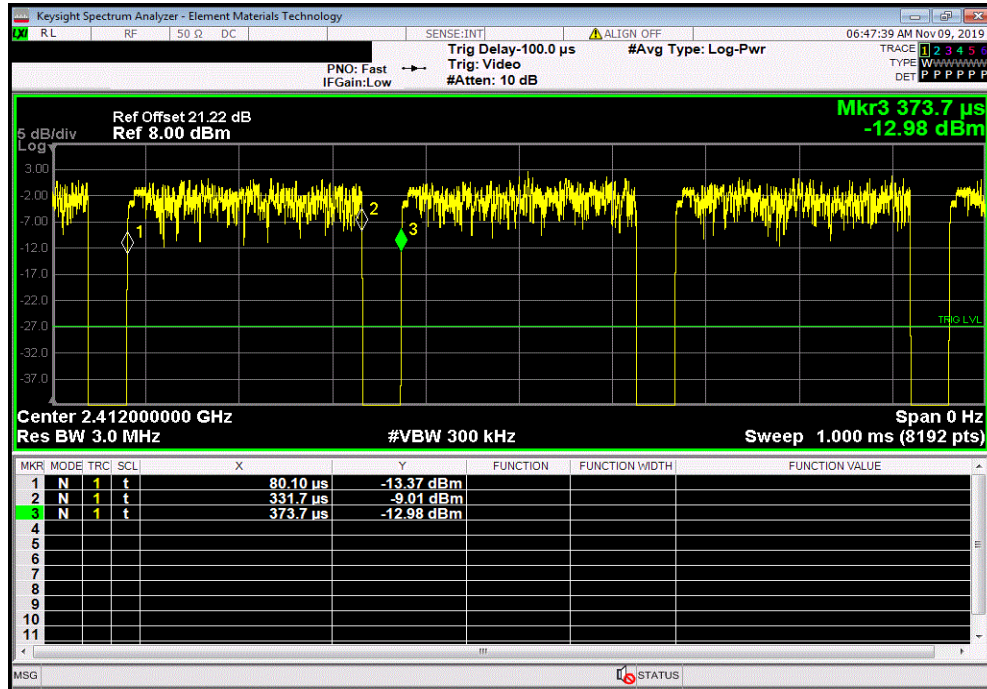


DUTY CYCLE

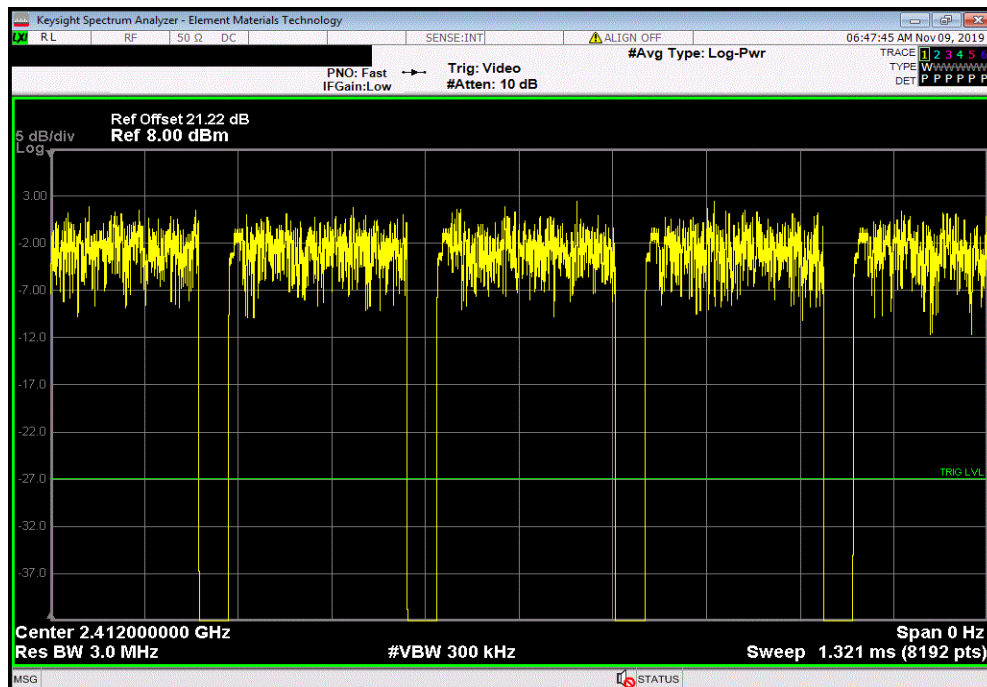


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
251.6 μ s	293.6 μ s	1	85.7	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

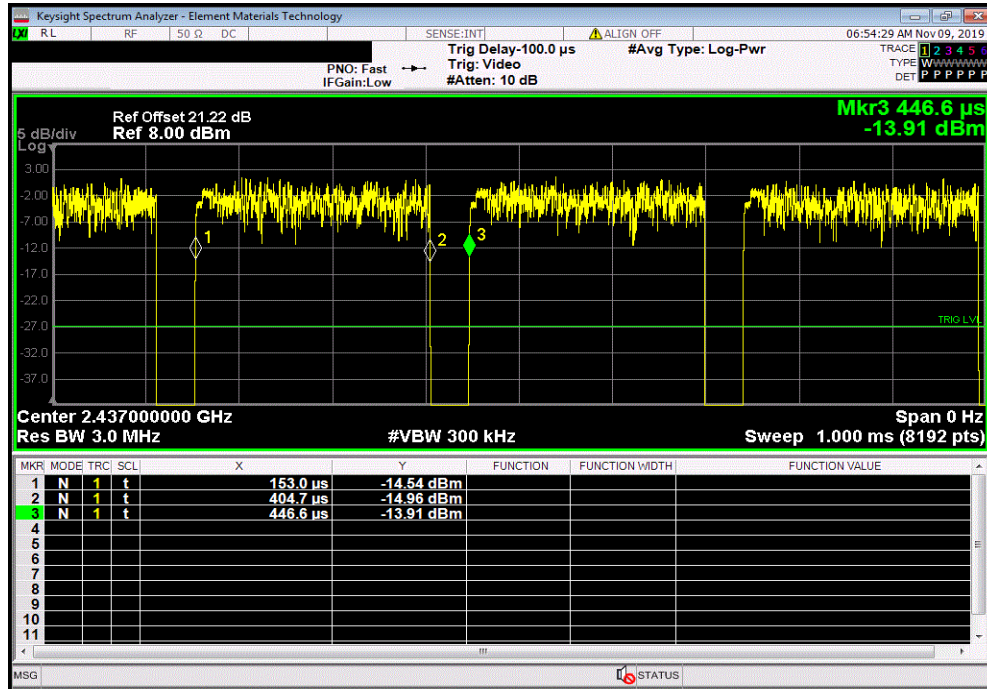


DUTY CYCLE

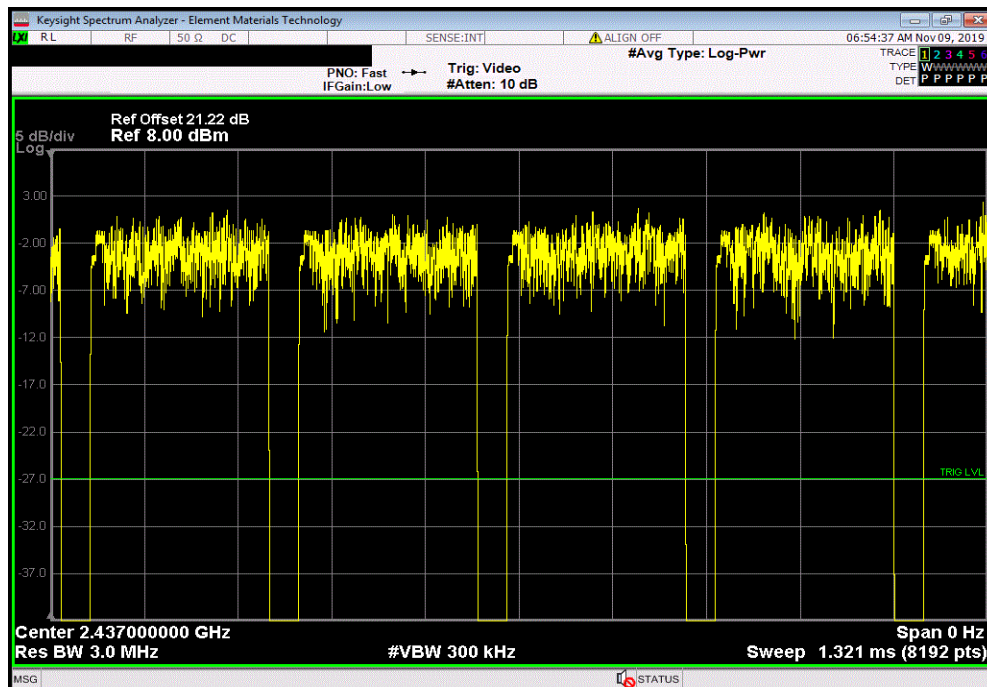


TbTtx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
251.7 us	293.6 us	1	85.7	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	

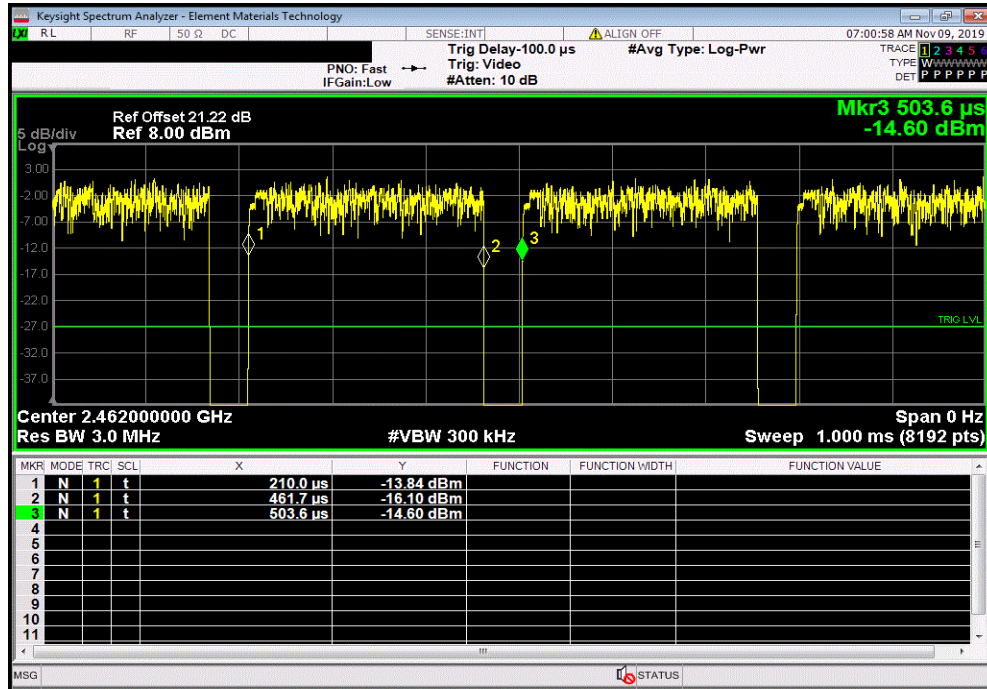


DUTY CYCLE

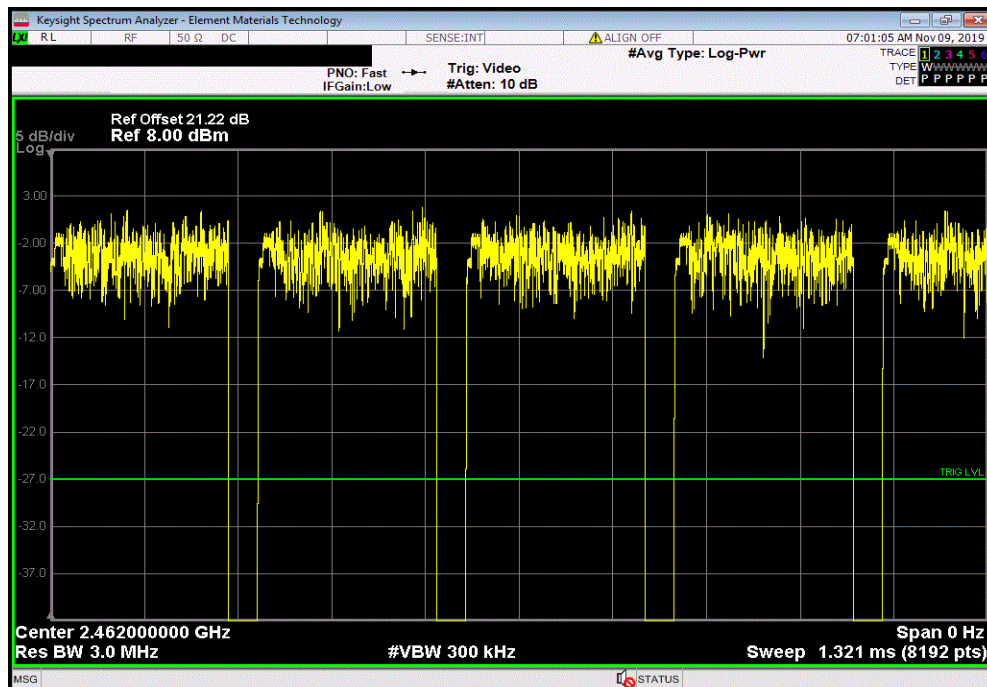


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
251.7 μ s	293.6 μ s	1	85.7	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

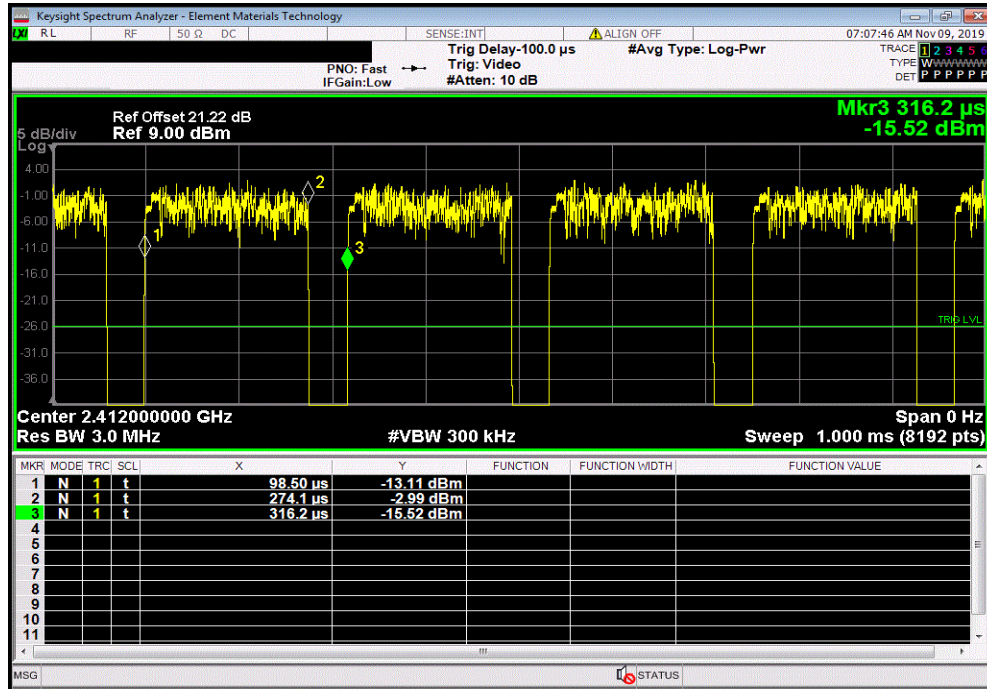


DUTY CYCLE

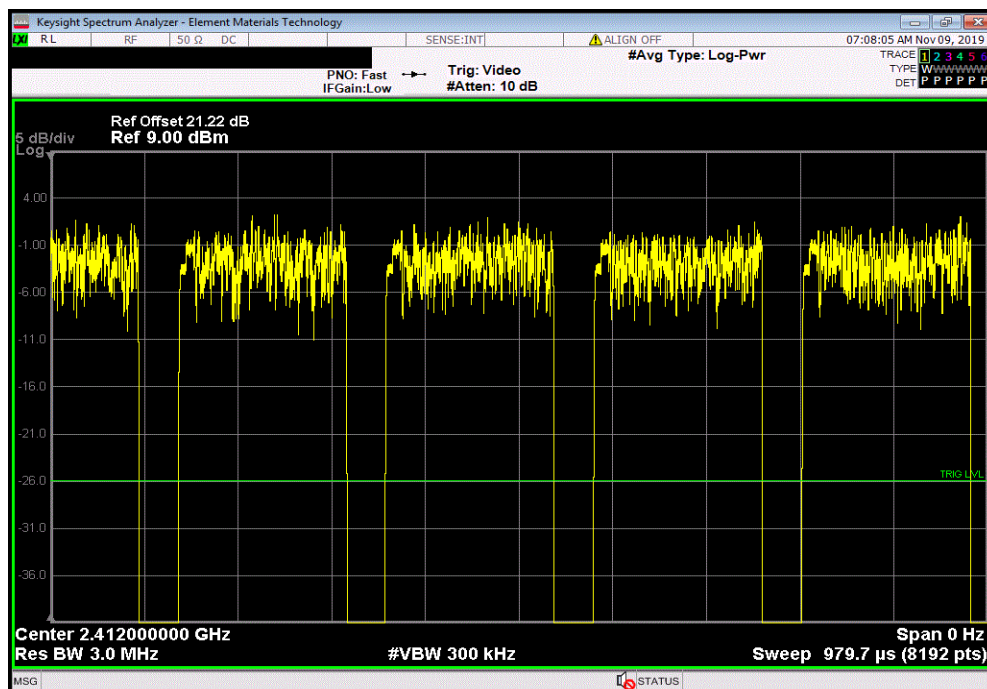


TbTtx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
175.6 μ s	217.7 μ s	1	80.7	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

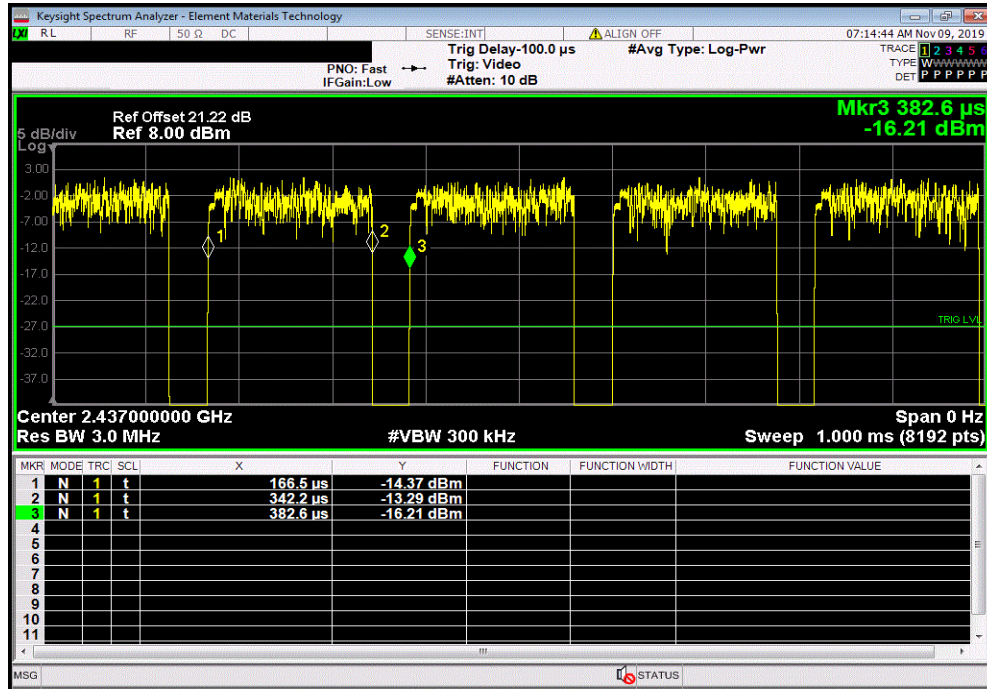


DUTY CYCLE

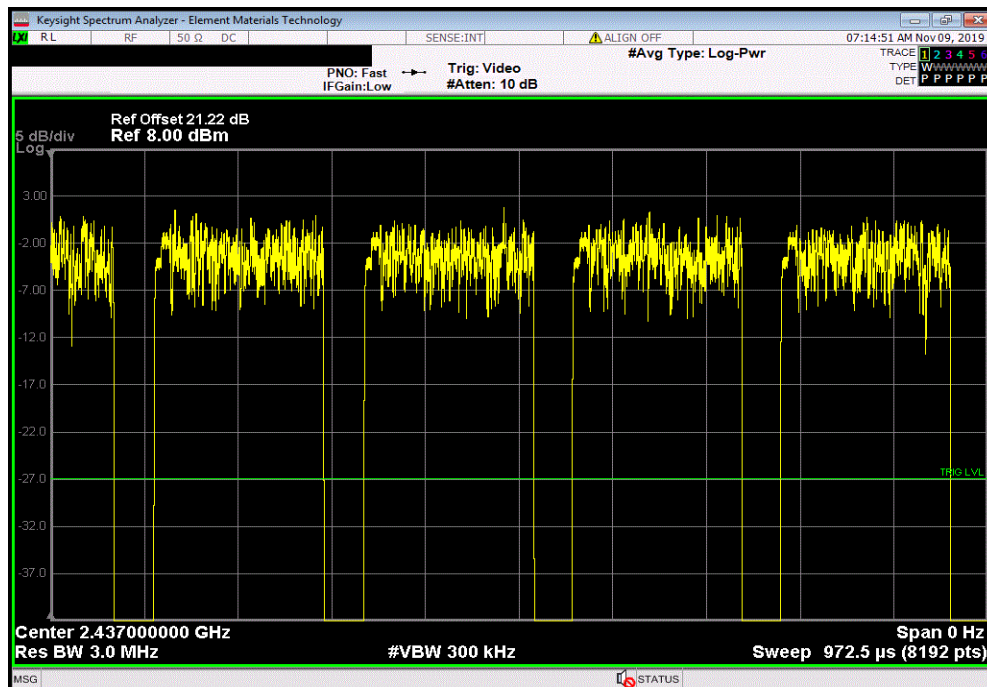


TbTtX 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
175.7 μ s	216.1 μ s	1	81.3	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

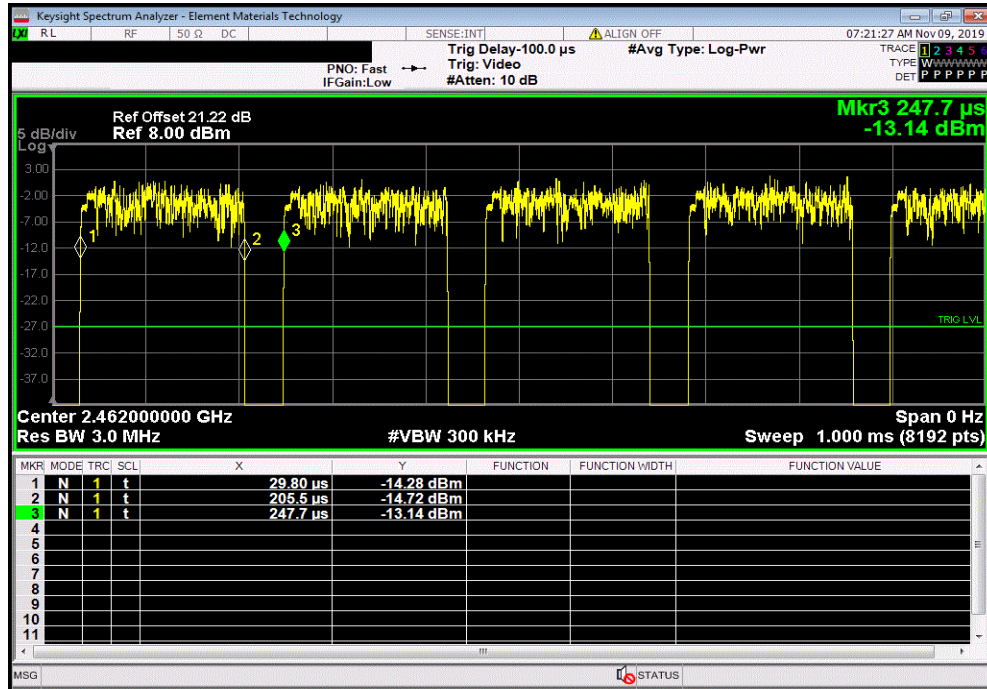


DUTY CYCLE

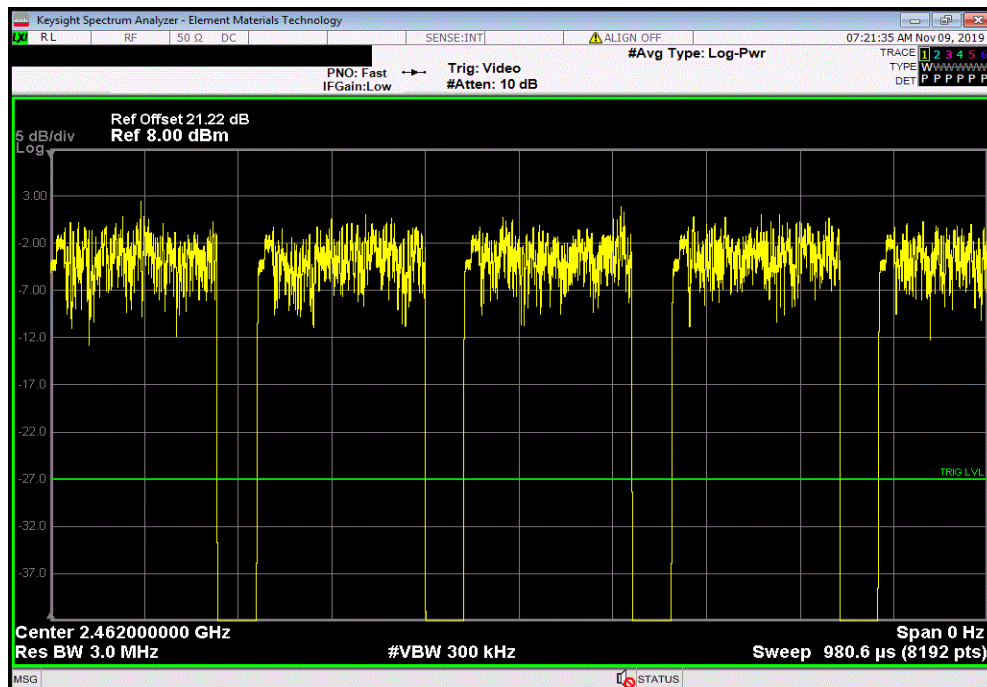


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
175.7 μ s	217.9 μ s	1	80.6	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

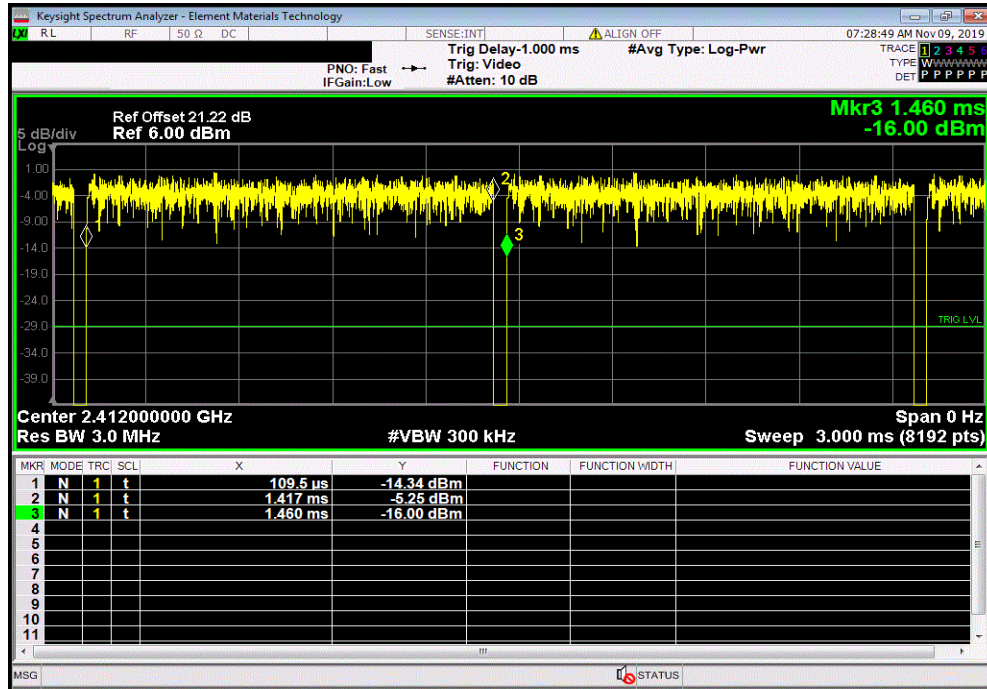


DUTY CYCLE

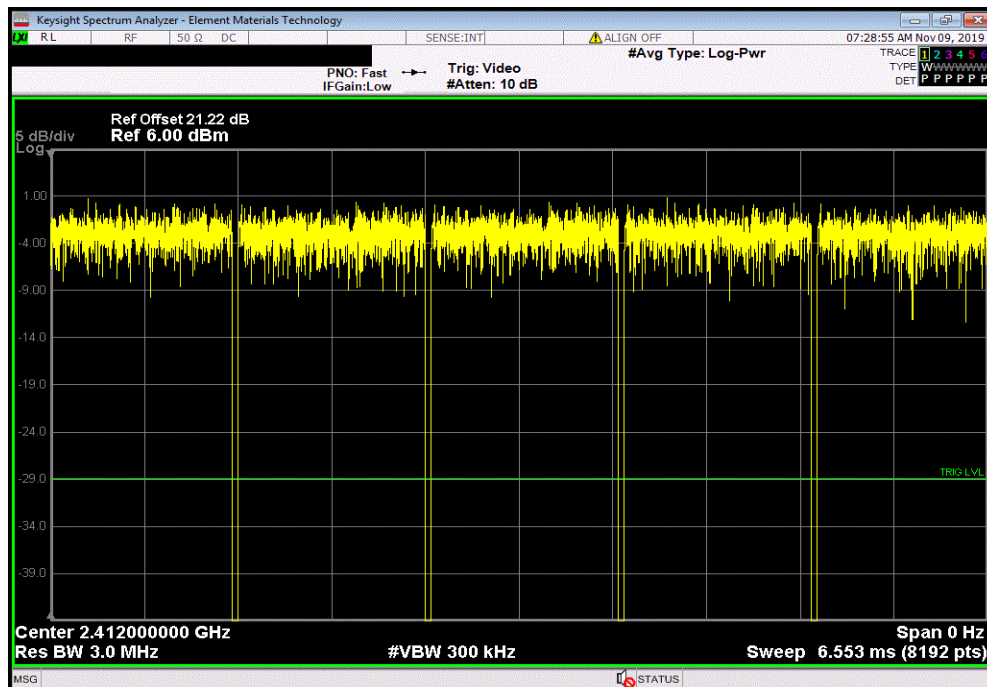


TbTtx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.308 ms	1.35 ms	1	96.9	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

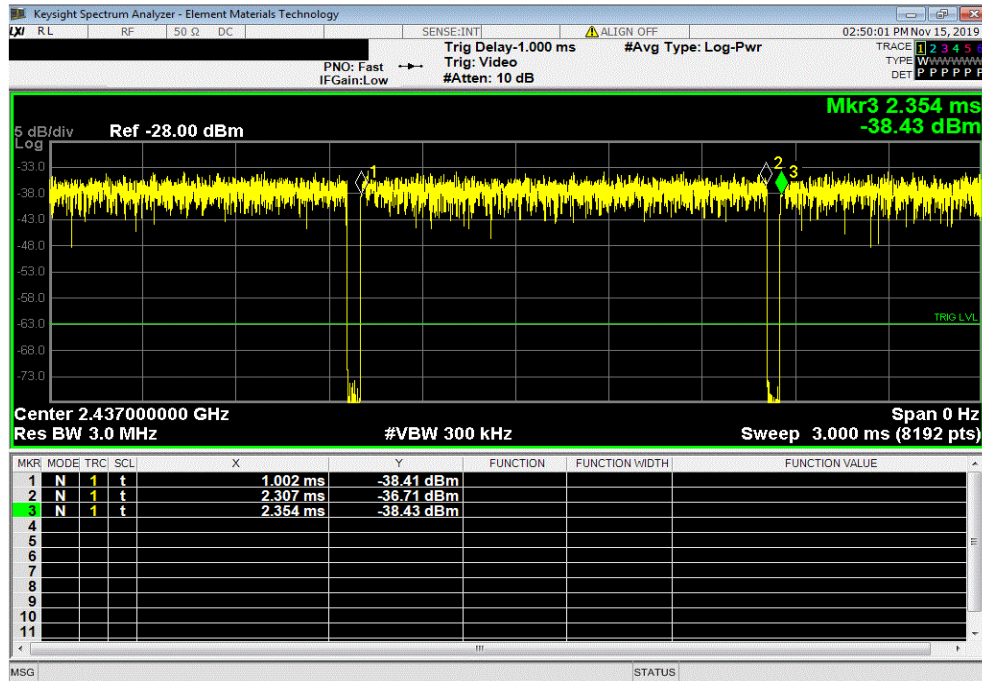


DUTY CYCLE

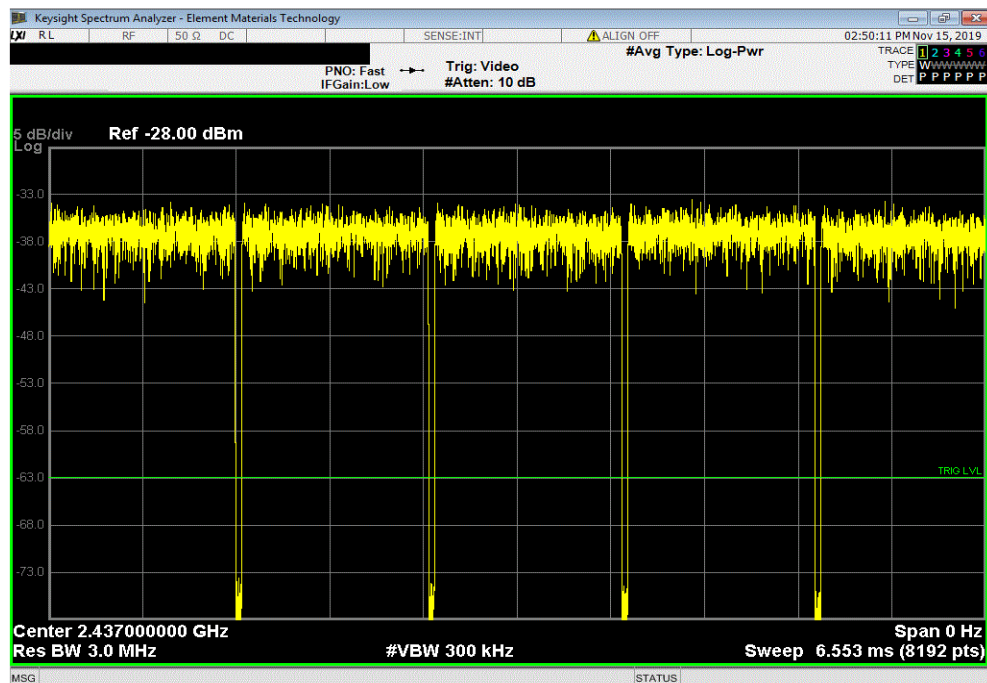


TMTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.305 ms	1.352 ms	1	96.5	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

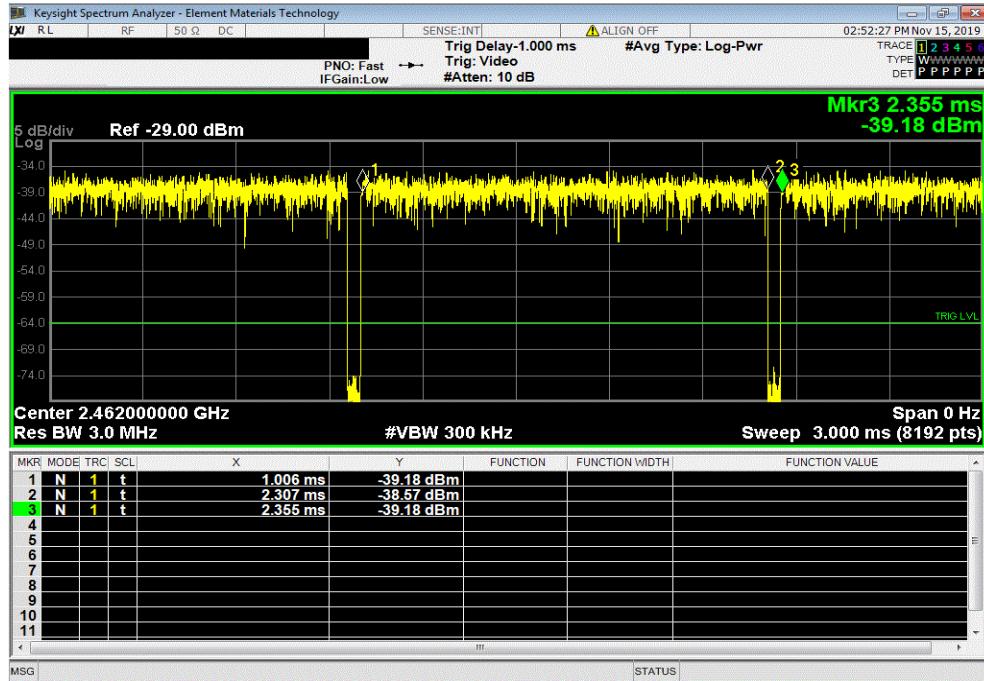


DUTY CYCLE

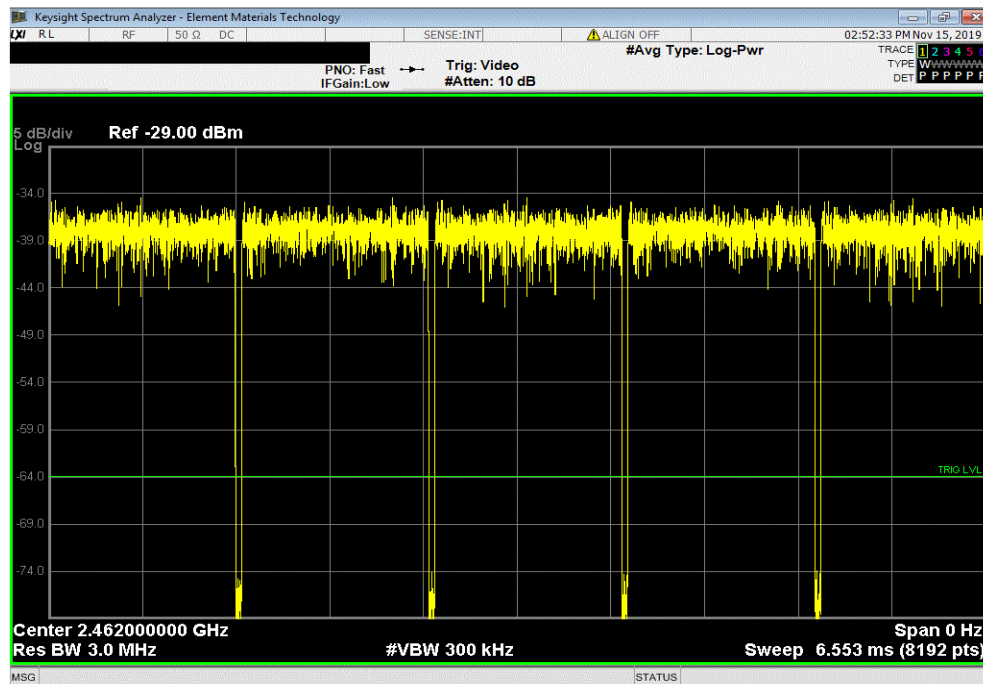


TMTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.301 ms	1.349 ms	1	96.4	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

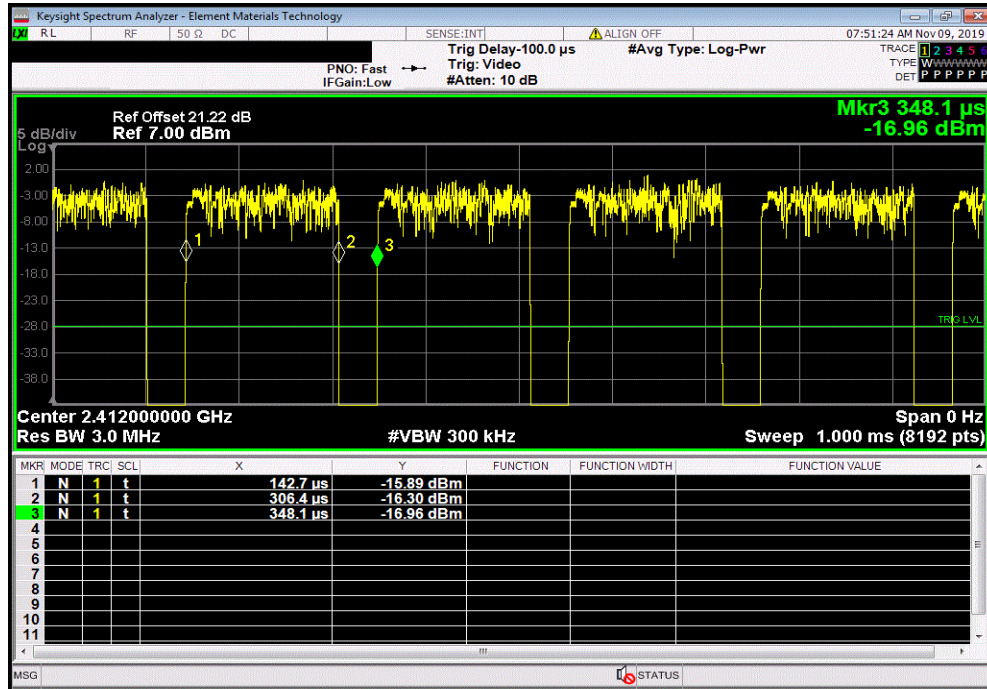


DUTY CYCLE

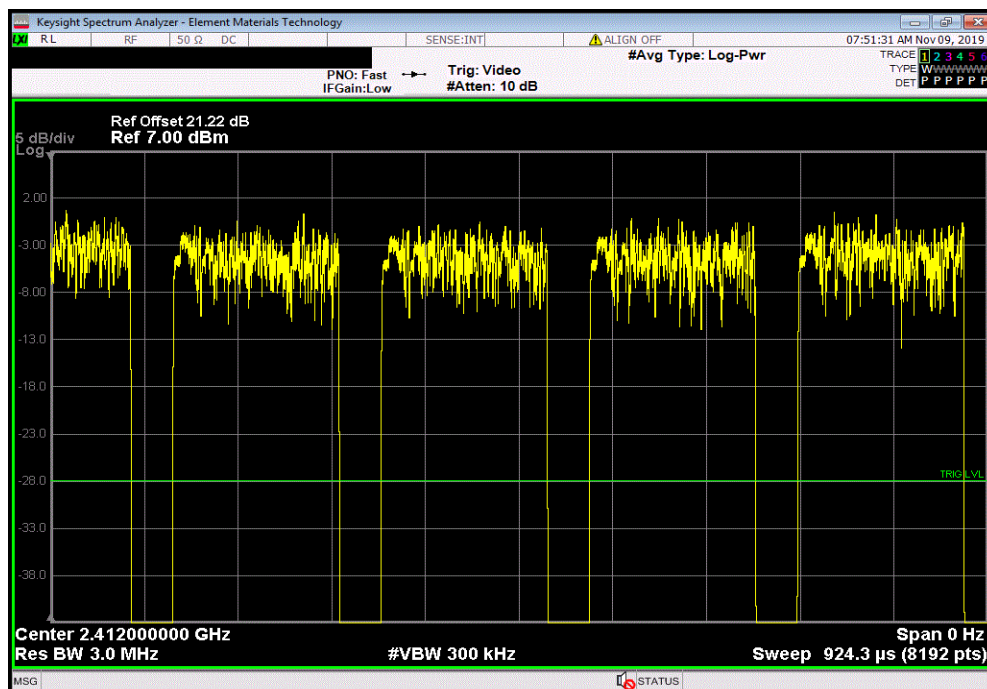


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
163.7 μ s	205.4 μ s	1	79.7	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

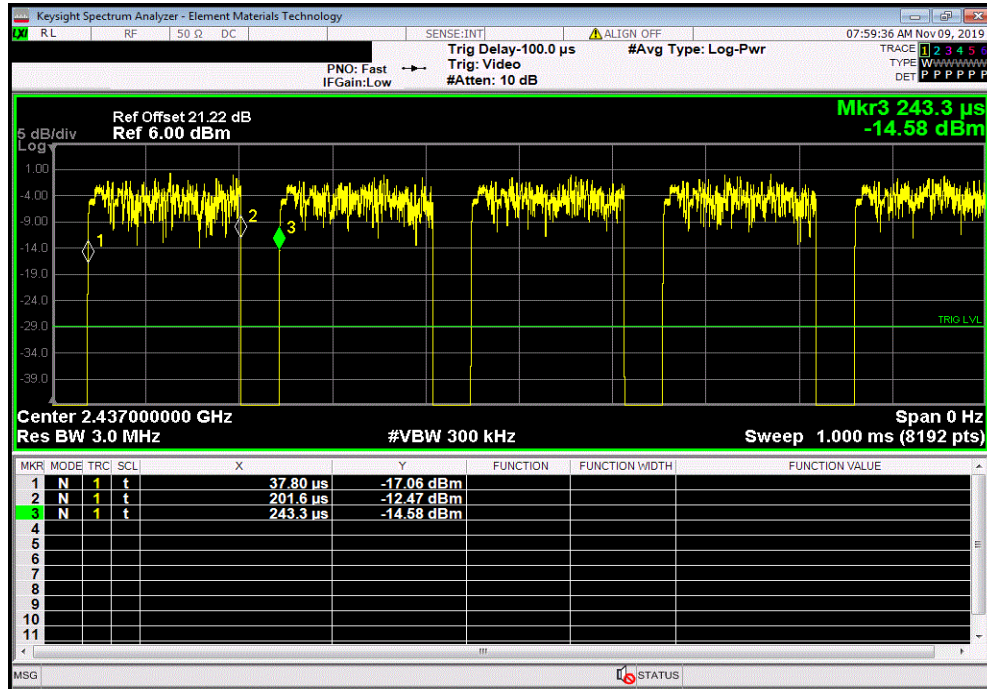


DUTY CYCLE

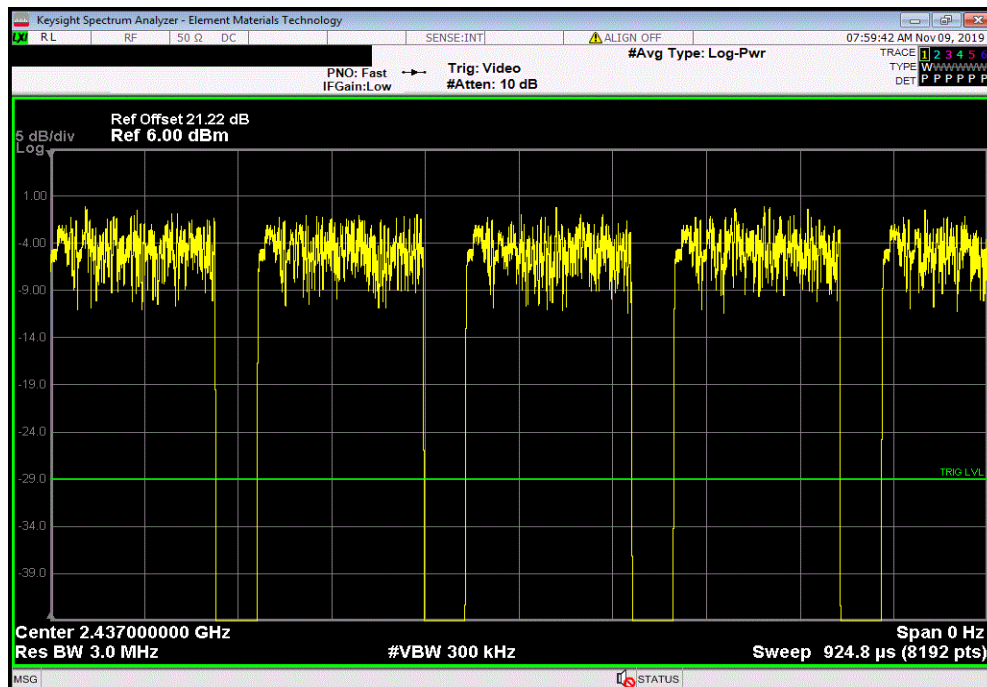


TbTtx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
163.8 μ s	205.5 μ s	1	79.7	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

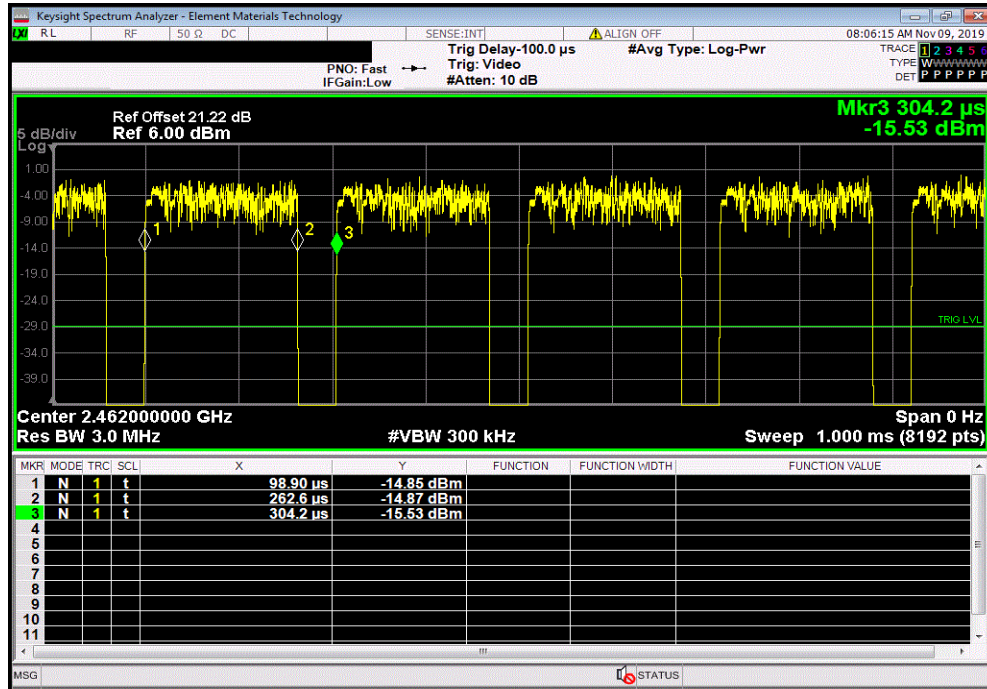


DUTY CYCLE



TbTtx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
163.7 μ s	205.3 μ s	1	79.7	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

