



element

WatchGuard Video

WFB2

FCC 15:247:2020
802.11bgn

Report # WTVD0028.1



NVLAP LAB CODE: 201049-0



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CERTIFICATE OF TEST



Last Date of Test: January 24, 2020
WatchGuard Video
EUT: WFB2

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2020	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.
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	No	N/A	Not required for a single channel radio.
11.11	Spurious Conducted Emissions	Yes	Pass	
11.12.1, 11.13.2, 6.5, 6.6	Spurious Radiated 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

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:

<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



EMISSIONS MEASUREMENTS



2017.1.25

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.

Measurement Bandwidths

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

Measurements were made using the bandwidths and detectors specified. No video filter was used.

Sample Calculations

Radiated Emissions:

Field Strength	Measured Level	Antenna Factor	Cable Factor	Amplifier Gain	Distance Adjustment Factor	External Attenuation
33.5	42.6	28.6	3.1	40.8	0.0	0.0

Conducted Emissions:

Adjusted Level	Measured Level	Transducer Factor	Cable Factor	External Attenuation
47.1	26.7	0.3	0.1	20.0

Test Setup Block Diagrams

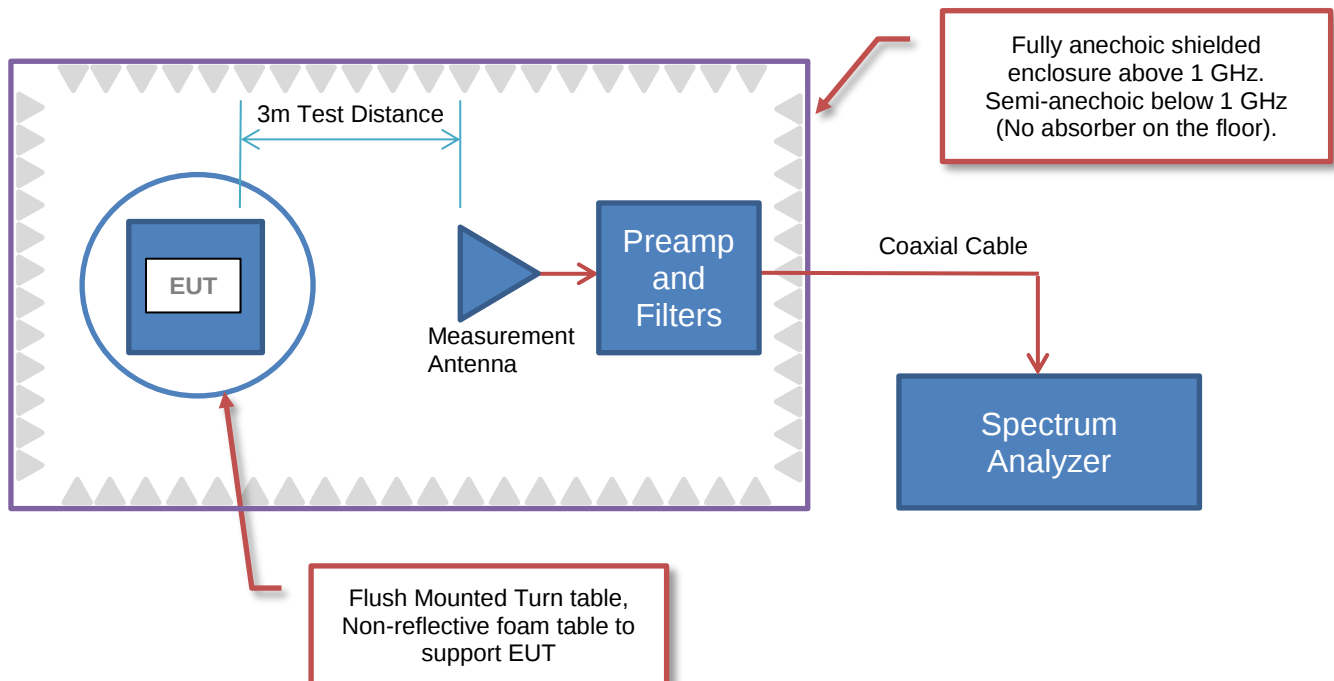
Antenna Port Conducted Measurements



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:	WFB2
First Date of Test:	January 22, 2020
Last Date of Test:	January 24, 2020
Receipt Date of Samples:	January 22, 2020
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

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

CONFIGURATIONS



Configuration WTVD0028- 1

Software/Firmware Running during test	
Description	Version
Test Software for WiFi Intentional Radiator	WiFi_Cal_Utils_20180713

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wifi Base V300 Body Camera	WatchGuard Video	WFB2	WFB2-00005
Wifi Base V300 Body Camera Antenna	PCTEL	WGP02541	None

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Laptop	Dell	Latitude 7418	CTHRLH2
Laptop Power Supply	Dell	DA130PE1-OO	136-JIMY-804
Smart POE GigE Switch	WatchGuard	WGA00574	None
AC Adapter External Input	None	None	M120100A0

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Cable	No	1.5m	No	AC Mains	Laptop Power Supply
DC Cable	No	1.7m	Yes	Laptop Power Supply	Laptop
Ethernet Cable	No	1m	No	Laptop	Smart Power Switch
RJ-50 Cable	No	10m	No	Wifi Base V300 Body Camera	Smart Power Switch

CONFIGURATIONS



Configuration WTVD0028- 2

Software/Firmware Running during test	
Description	Version
Test Software for WiFi Intentional Radiator	WiFi_Cal_Utils_20180713

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wifi Base V300 Body Camera	WatchGuard Video	WFB2	WFB2-00005

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Laptop	Dell	Latitude 7418	CTHRLH2
Laptop Power Supply	Dell	DA130PE1-OO	136-JIMY-804
Smart POE GigE Switch	WatchGuard	WGA00574	None
AC Adapter External Input	None	None	M120100A0

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Cable	No	1.5m	No	AC Mains	Laptop Power Supply
DC Cable	No	1.7m	Yes	Laptop Power Supply	Laptop
Ethernet Cable	No	1m	No	Laptop	Smart Power Switch
RJ-50 Cable	No	10m	No	Wifi Base V300 Body Camera	Smart Power Switch

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2020-01-22	Spurious Radiated Emission	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	2020-01-24	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	2020-01-24	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	2020-01-24	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	2020-01-24	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	2020-01-24	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	2020-01-24	Spurious Conducted 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
802.11(b) 1 Mbps	20	6	Single Channel	2437	20000 (Max)
802.11(b) 11 Mbps	20	6	Single Channel	2437	20000 (Max)
802.11(g) 6 Mbps	20	6	Single Channel	2437	20000 (Max)
802.11(n) MCS0	20	6	Single Channel	2437	20000 (Max)

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
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	19-Mar-19	19-Mar-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 XMM 2019.09.05

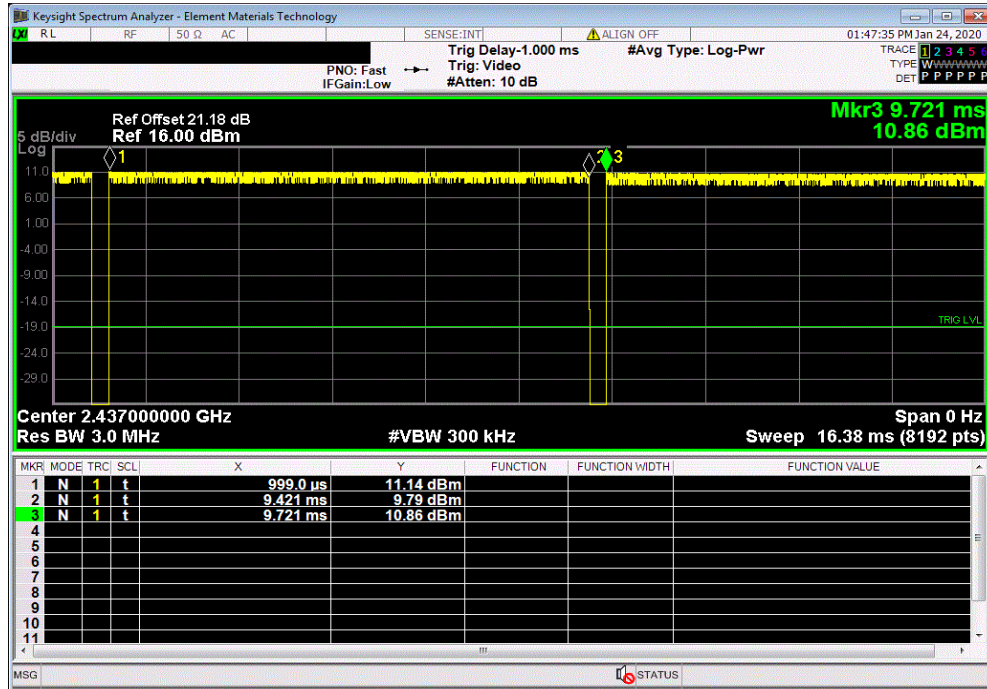
EUT: WFB2		Work Order: WTV0028	
Serial Number: WFB2-00005		Date: 24-Jan-20	
Customer: WatchGuard Video		Temperature: 22.4 °C	
Attendees: Navaid Karimi		Humidity: 32.4% RH	
Project: None		Barometric Pres.: 1025 mbar	
Tested by: Marty Martin, Jeremiah Darden		Power: Battery	
Job Site: TX09			
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2020		ANSI C63.10:2013	
COMMENTS			
Reference Level Offset = DC Block + 20 dB Attenuator + Rf cable = 21.18 dB Offset			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature	
		Pulse Width	Period
		Number of Pulses	Value (%)
		Limit (%)	Results
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
	Single Channel 6, 2437 MHz	8.422 ms	8.722 ms
	Single Channel 6, 2437 MHz	N/A	N/A
	Single Channel 6, 2437 MHz	1	96.6
	Single Channel 6, 2437 MHz	5	N/A
	Single Channel 6, 2437 MHz	N/A	N/A
802.11(b) 11 Mbps			
	Single Channel 6, 2437 MHz	935.677 us	1.233 ms
	Single Channel 6, 2437 MHz	N/A	N/A
	Single Channel 6, 2437 MHz	1	75.9
	Single Channel 6, 2437 MHz	6	N/A
	Single Channel 6, 2437 MHz	N/A	N/A

DUTY CYCLE

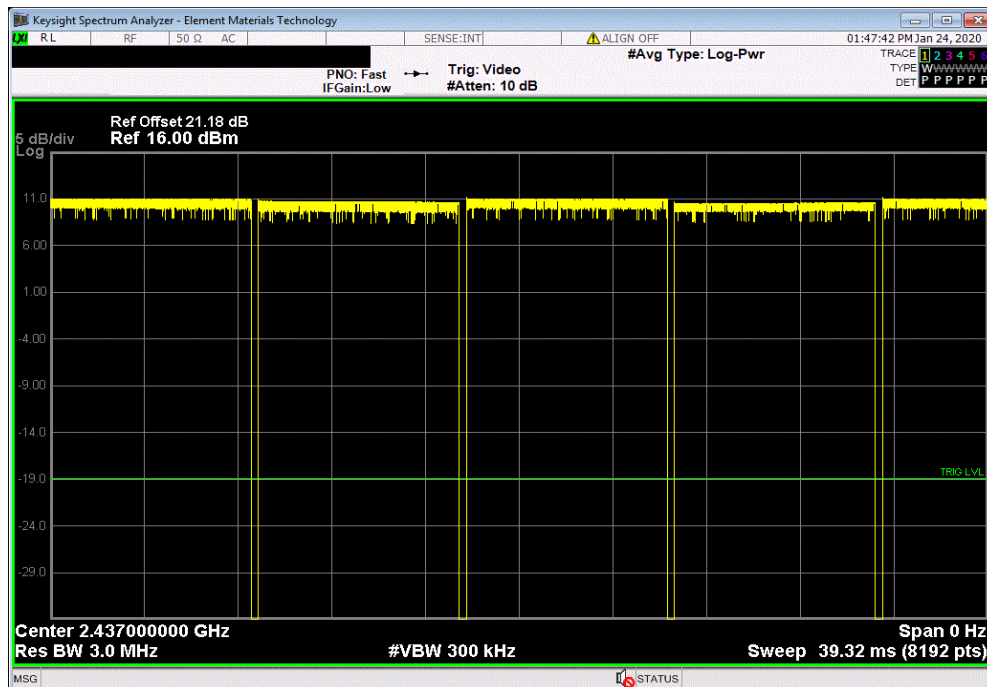


TMTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Single Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
8.422 ms	8.722 ms	1	96.6	N/A	N/A	



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

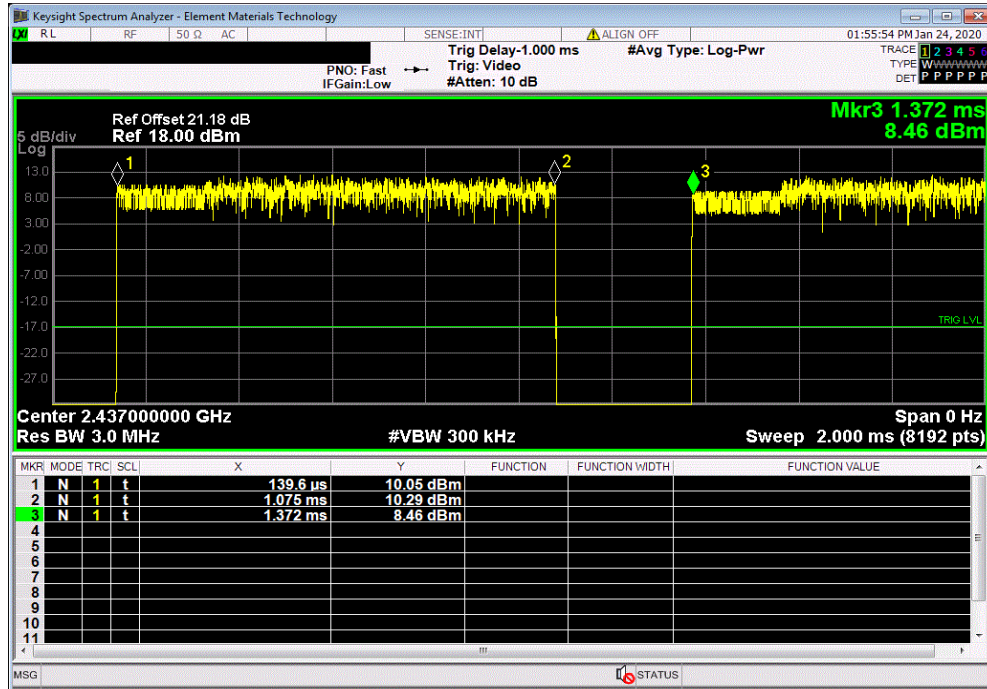


DUTY CYCLE

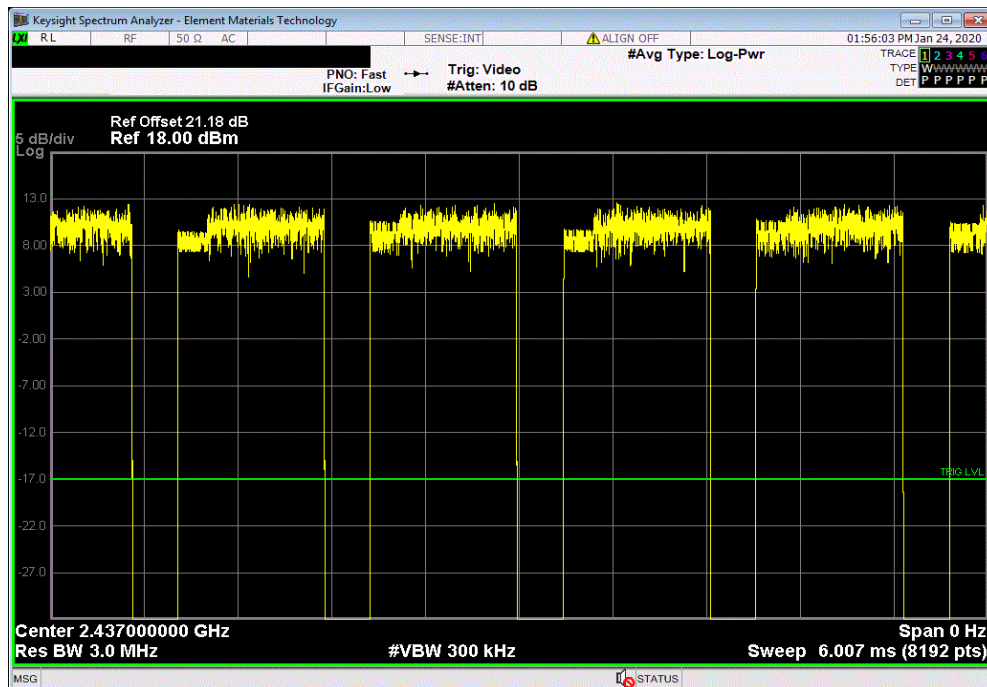


ThruTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Single Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
935.677 us	1.233 ms	1	75.9	N/A	N/A	



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



OCCUPIED CHANNEL BANDWIDTH



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
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	19-Mar-19	19-Mar-20

TEST DESCRIPTION

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

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

OCCUPIED CHANNEL BANDWIDTH



TMTx 2019.08.30.0 XMI 2019.09.05

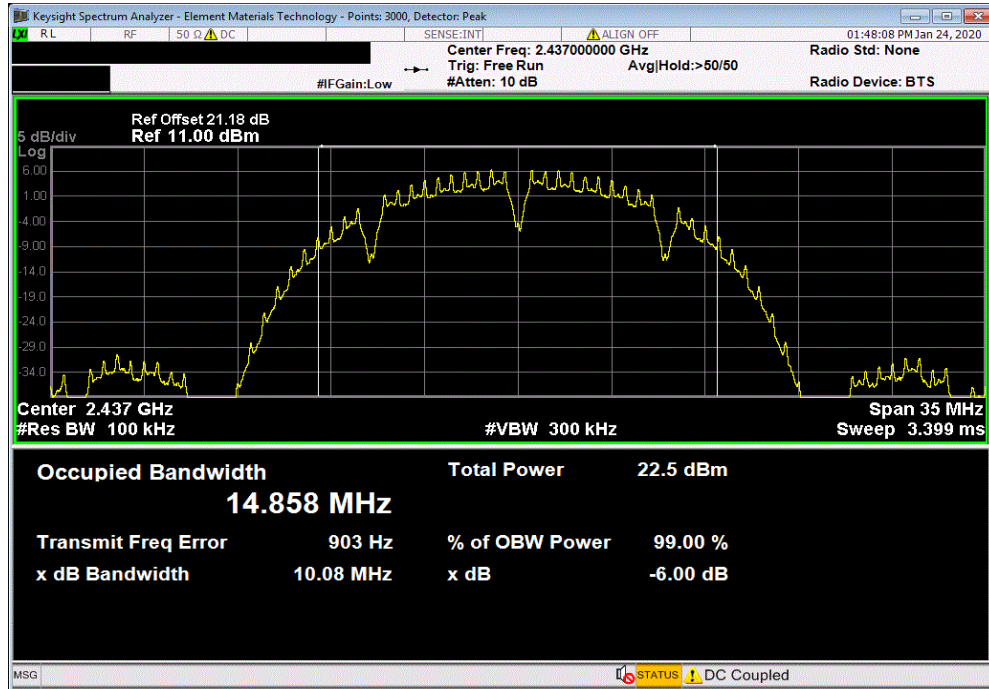
EUT: WFB2		Work Order: WTV0028	
Serial Number: WFB2-00005		Date: 24-Jan-20	
Customer: WatchGuard Video		Temperature: 22.4 °C	
Attendees: Navaid Karimi		Humidity: 32.4% RH	
Project: None		Barometric Pres.: 1025 mbar	
Tested by: Marty Martin, Jeremiah Darden		Power: Battery	
		Job Site: TX09	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2020		ANSI C63.10:2013	
COMMENTS			
Reference Level Offset = DC Block + 20 dB Attenuator + Rf cable = 21.18 dB Offset			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature 	
		Value	Limit (>)
2400 MHz - 2483.5 MHz Band			Result
802.11(b) 1 Mbps			
Single Channel 6, 2437 MHz		10.083 MHz	500 kHz
			Pass
802.11(b) 11 Mbps			
Single Channel 6, 2437 MHz		9.865 MHz	500 kHz
			Pass

OCCUPIED CHANNEL BANDWIDTH

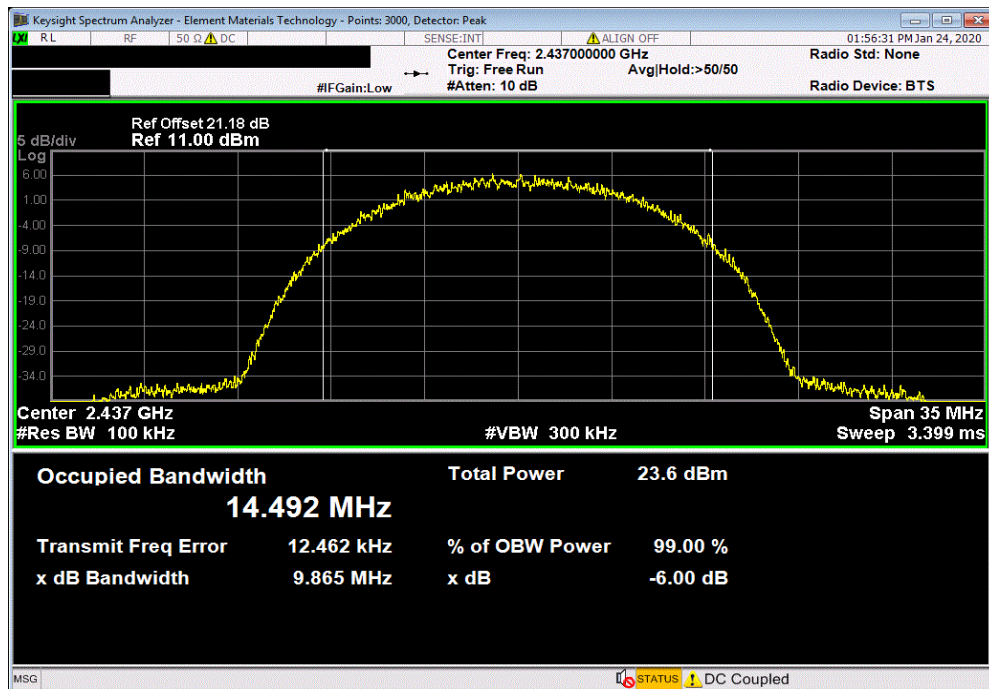


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Single Channel 6, 2437 MHz						
				Value	Limit	Result
					(>)	
				10.083 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Single Channel 6, 2437 MHz						
				Value	Limit	Result
					(>)	
				9.865 MHz	500 kHz	Pass



OUTPUT POWER



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
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
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	19-Mar-19	19-Mar-20

TEST DESCRIPTION

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.

OUTPUT POWER



TMTx 2019.08.30.0 XMM 2019.09.05

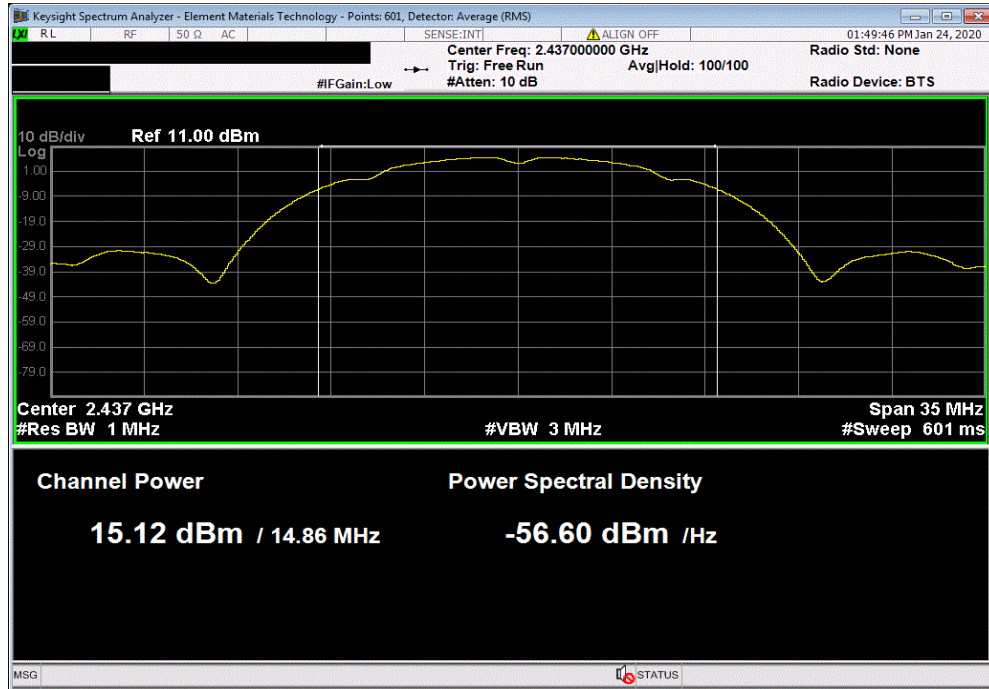
EUT: WFB2		Work Order: WTV0028	
Serial Number: WFB2-00005		Date: 24-Jan-20	
Customer: WatchGuard Video		Temperature: 22.4 °C	
Attendees: Navaid Karimi		Humidity: 32.4% RH	
Project: None		Barometric Pres.: 1025 mbar	
Tested by: Marty Martin, Jeremiah Darden		Power: Battery	
Job Site: TX09			
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2020		ANSI C63.10:2013	
COMMENTS			
Reference Level Offset = DC Block + 20 dB Attenuator + Rf cable = 21.18 dB Offset			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature	
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)
2400 MHz - 2483.5 MHz Band		Out Pwr (dBm)	Limit (dBm)
802.11(b) 1 Mbps			Result
Single Channel 6, 2437 MHz		15.117	0.2
		15.3	30
802.11(b) 11 Mbps			Pass
Single Channel 6, 2437 MHz		13.696	1.2
		14.9	30
			Pass

OUTPUT POWER

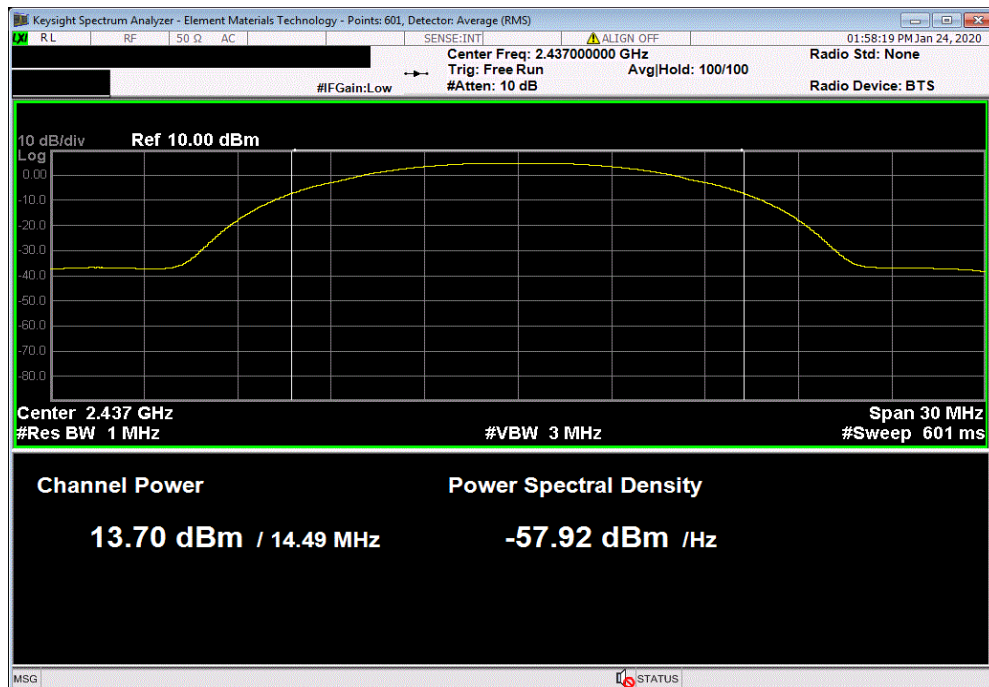


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Single Channel 6, 2437 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	15.117	0.2	15.3	30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Single Channel 6, 2437 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	13.696	1.2	14.9	30	Pass	



EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



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
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Attenuator	Fairview Microwave	SA4018-20	TYE	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	AFM	19-Mar-19	19-Mar-20

TEST DESCRIPTION

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

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

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

The gain of the antenna was added to the output power measurement. This value must not exceed 4 Watts, which is the same as 36 dBm.

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



TMTx 2019.08.30.0 XMM 2019.09.05

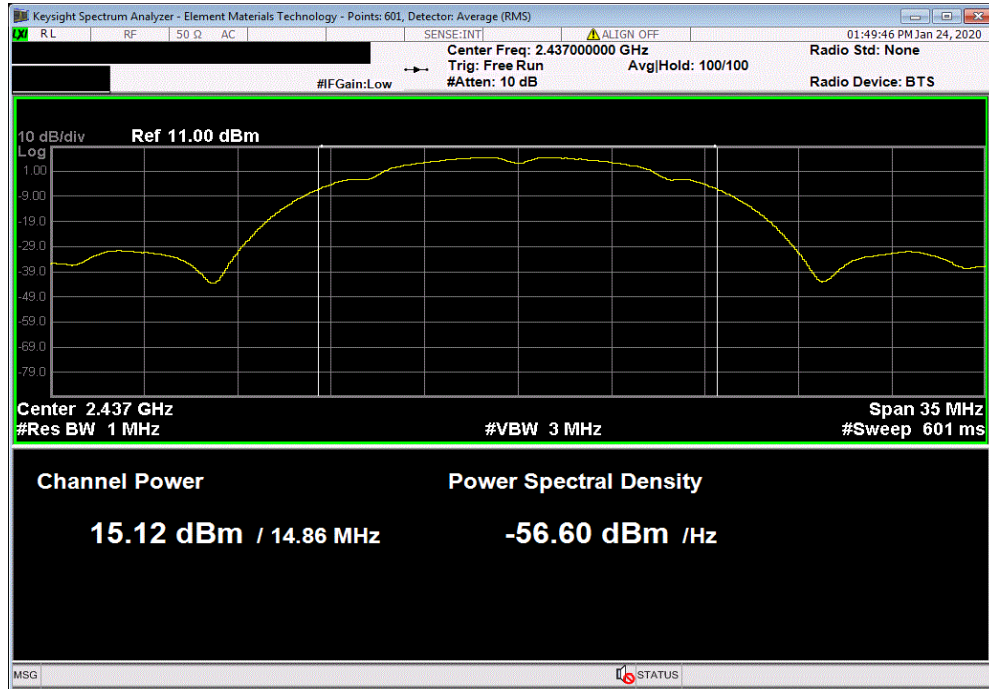
EUT: WFB2		Work Order: WTV0028	
Serial Number: WFB2-00005		Date: 24-Jan-20	
Customer: WatchGuard Video		Temperature: 22.4 °C	
Attendees: Navaid Karimi		Humidity: 32.4% RH	
Project: None		Barometric Pres.: 1025 mbar	
Tested by: Marty Martin, Jeremiah Darden		Power: Battery	
Job Site: TX09			
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2020		ANSI C63.10:2013	
COMMENTS			
Reference Level Offset = DC Block + 20 dB Attenuator + Rf cable = 21.18 dB Offset. Antenna gain = 4.6 dBi per client.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature	
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)
		Out Pwr (dBm)	Antenna Gain (dBi)
		EIRP (dBm)	EIRP Limit (dBm)
			Result
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
	Single Channel 6, 2437 MHz	15.117	0.2
		15.3	4.6
		19.9	36
			Pass
802.11(b) 11 Mbps			
	Single Channel 6, 2437 MHz	13.696	1.2
		14.9	4.6
		19.5	36
			Pass

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

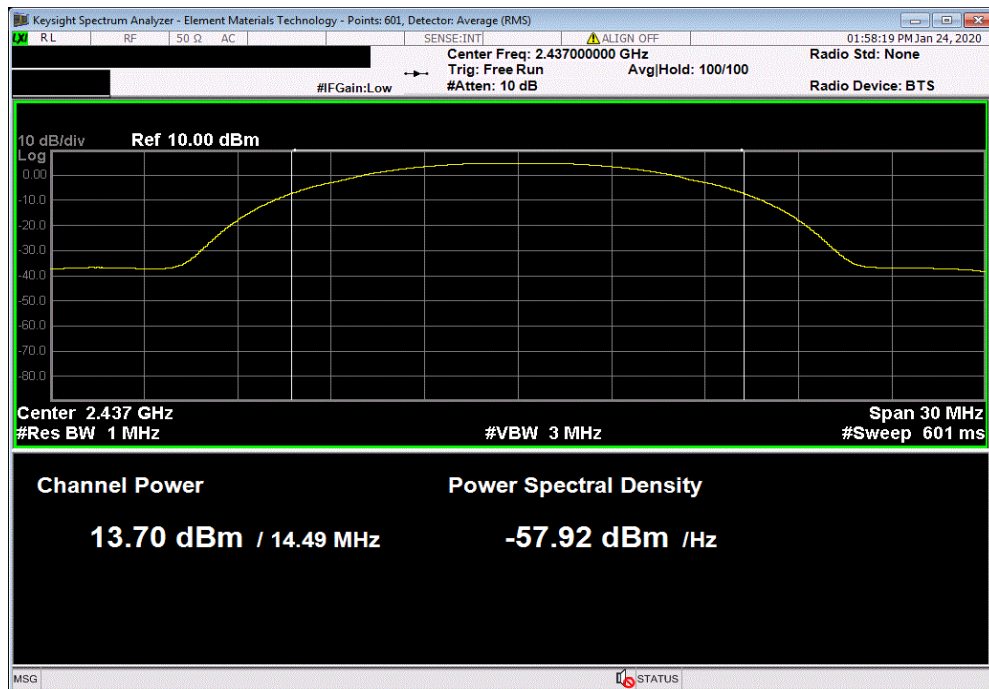


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Single Channel 6, 2437 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
15.117	0.2	15.3	4.6	19.9	36	Pass



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, single Channel 6, 2437 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
13.696	1.2	14.9	4.6	19.5	36	Pass



POWER SPECTRAL DENSITY



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
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	19-Mar-19	19-Mar-20

TEST DESCRIPTION

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

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

POWER SPECTRAL DENSITY



TMTx 2019.08.30.0 XMI 2019.09.05

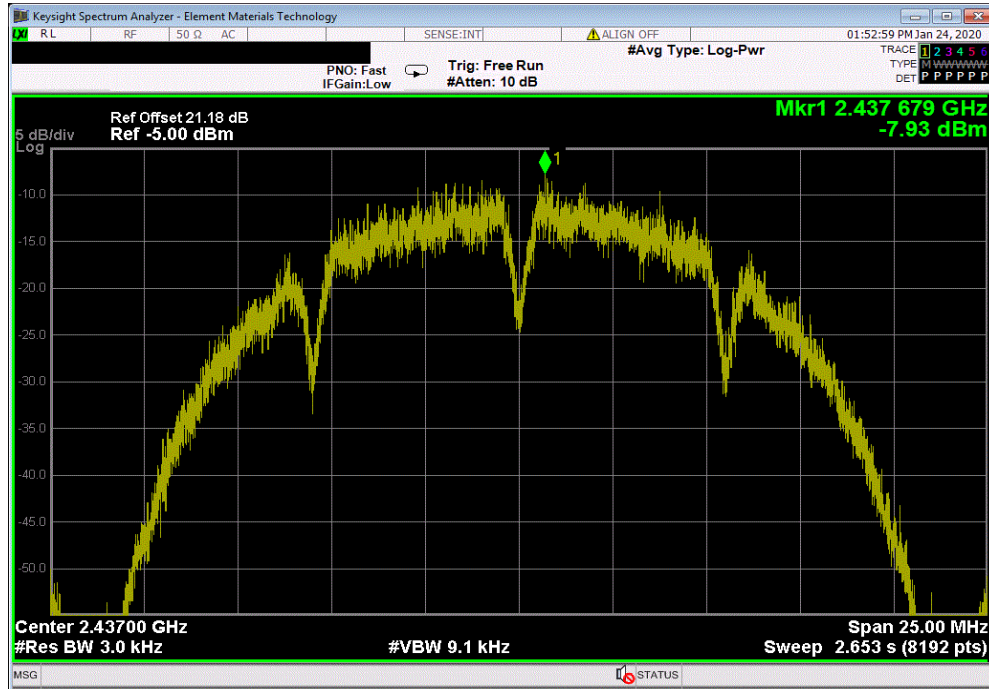
EUT: WFB2		Work Order: WTV0028	
Serial Number: WFB2-00005		Date: 24-Jan-20	
Customer: WatchGuard Video		Temperature: 22.4 °C	
Attendees: Navaid Karimi		Humidity: 32.4% RH	
Project: None		Barometric Pres.: 1025 mbar	
Tested by: Marty Martin, Jeremiah Darden		Power: Battery	
TEST SPECIFICATIONS		Job Site: TX09	
FCC 15.247:2020		Test Method	
		ANSI C63.10:2013	
COMMENTS			
Reference Level Offset = DC Block + 20 dB Attenuator + Rf cable = 21.18 dB Offset			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature 	
		Value dBm/3kHz	Limit < dBm/3kHz
Results			
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Single Channel 6, 2437 MHz		-7.928	8
			Pass
802.11(b) 11 Mbps			
Single Channel 6, 2437 MHz		-8.879	8
			Pass

POWER SPECTRAL DENSITY

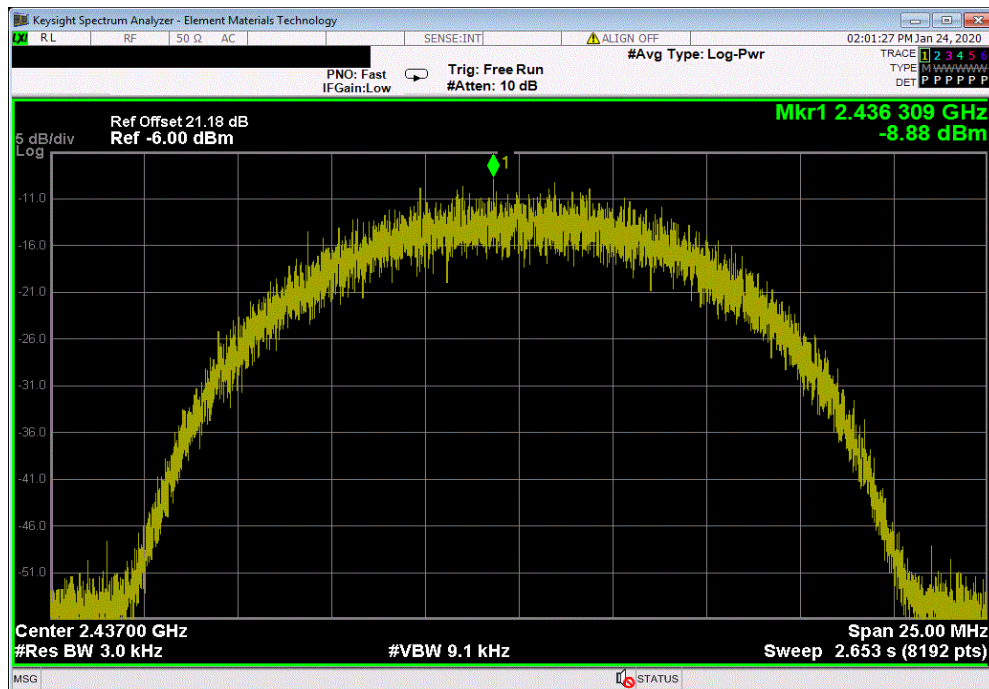


TMTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Single Channel 6, 2437 MHz						
	Value	Limit				
	dBm/3kHz	< dBm/3kHz	Results			
	-7.928	8	Pass			



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Single Channel 6, 2437 MHz						
	Value	Limit				
	dBm/3kHz	< dBm/3kHz	Results			
	-8.879	8	Pass			



SPURIOUS CONDUCTED EMISSIONS



XMI: 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
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	19-Mar-19	19-Mar-20

TEST DESCRIPTION

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

SPURIOUS CONDUCTED EMISSIONS



TMTx 2019.08.30.0 XMI 2019.09.05

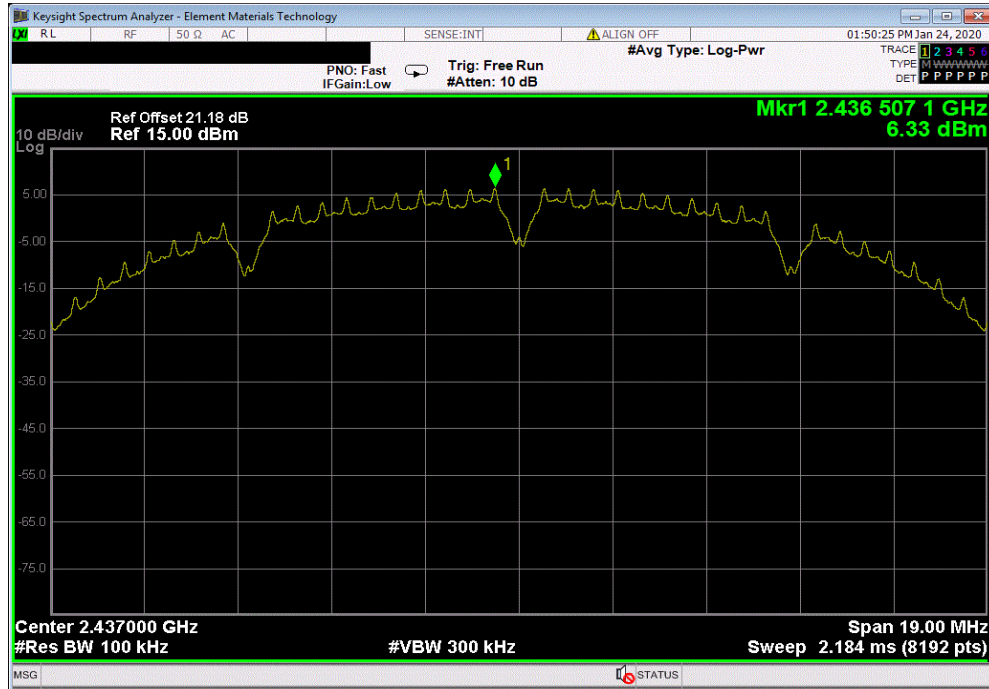
EUT: WFB2		Work Order: WTV0028	
Serial Number: WFB2-00005		Date: 24-Jan-20	
Customer: WatchGuard Video		Temperature: 22.4 °C	
Attendees: Navaid Karimi		Humidity: 32.4% RH	
Project: None		Barometric Pres.: 1025 mbar	
Tested by: Marty Martin, Jeremiah Darden		Power: Battery	
Job Site: TX09			
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2020		ANSI C63.10:2013	
COMMENTS			
Reference Level Offset = DC Block + 20 dB Attenuator + Rf cable = 21.18 dB Offset			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature	
		Frequency Range	Measured Freq (MHz)
		Max Value (dBc)	Limit ≤ (dBc)
			Result
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
	Single Channel 6, 2437 MHz	Fundamental	2436.51
	Single Channel 6, 2437 MHz	30 MHz - 12.5 GHz	4874.29
	Single Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24855.02
			N/A
			-53.66
			-45.28
			-30
			-30
			N/A
			-55.84
			-46.22
			-30
			N/A
			Pass
			Pass
802.11(b) 11 Mbps			
	Single Channel 6, 2437 MHz	Fundamental	2436.46
	Single Channel 6, 2437 MHz	30 MHz - 12.5 GHz	5961.28
	Single Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24760.41
			N/A
			-55.84
			-46.22
			-30
			-30
			N/A
			Pass
			Pass

SPURIOUS CONDUCTED EMISSIONS

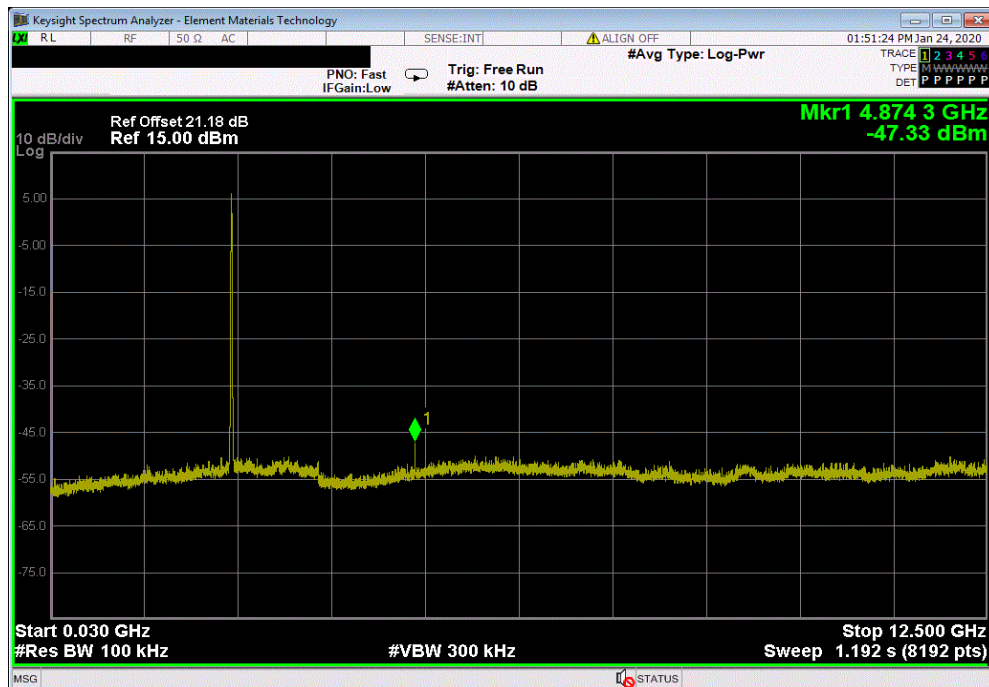


TbTtx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Single Channel 6, 2437 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
Fundamental	2436.51	N/A	N/A	N/A		



2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Single Channel 6, 2437 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
30 MHz - 12.5 GHz	4874.29	-53.66	-30	Pass		

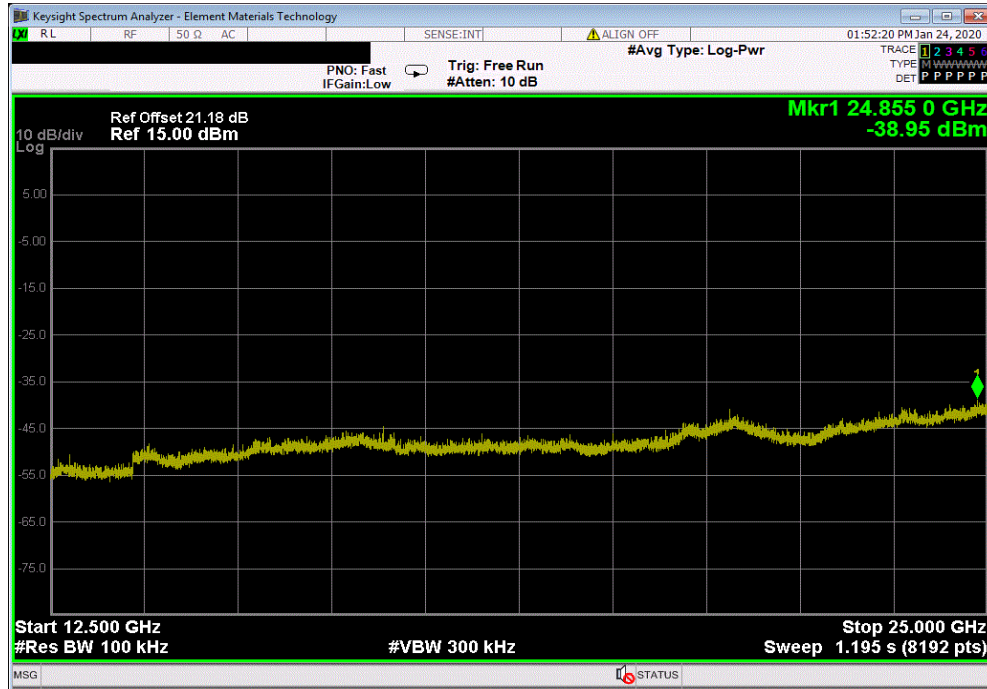


SPURIOUS CONDUCTED EMISSIONS

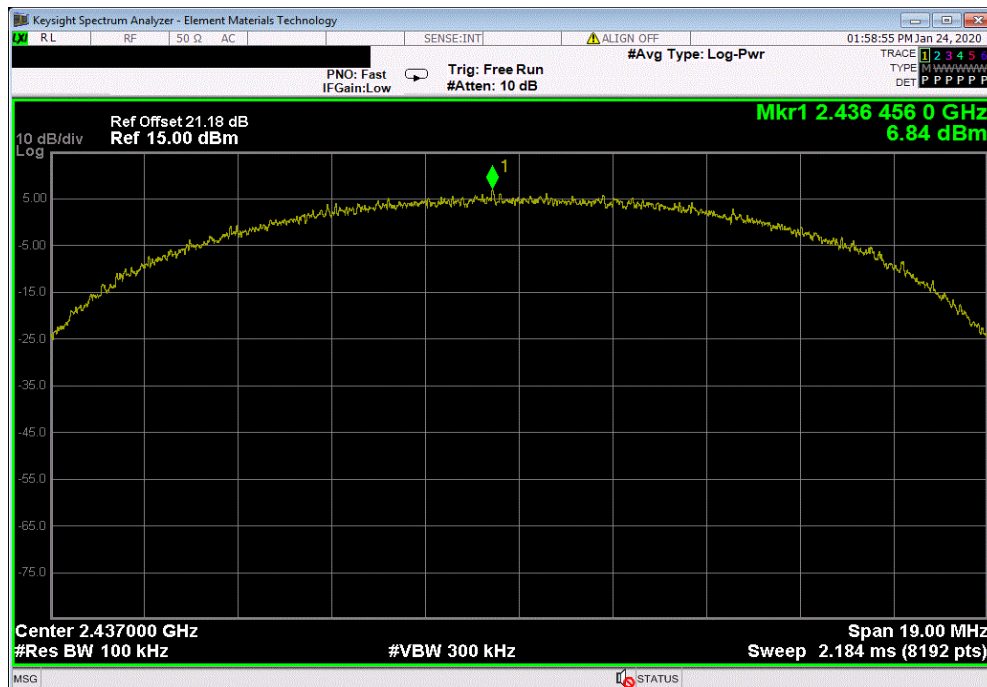


TMTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24855.02	-45.28	-30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2436.46	N/A	N/A	N/A	

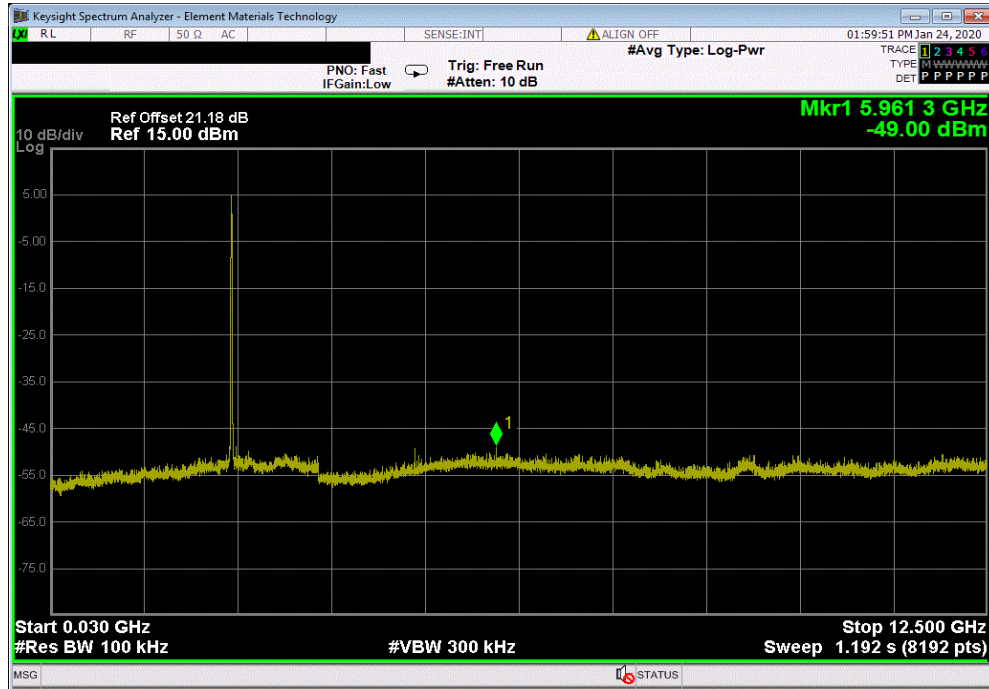


SPURIOUS CONDUCTED EMISSIONS

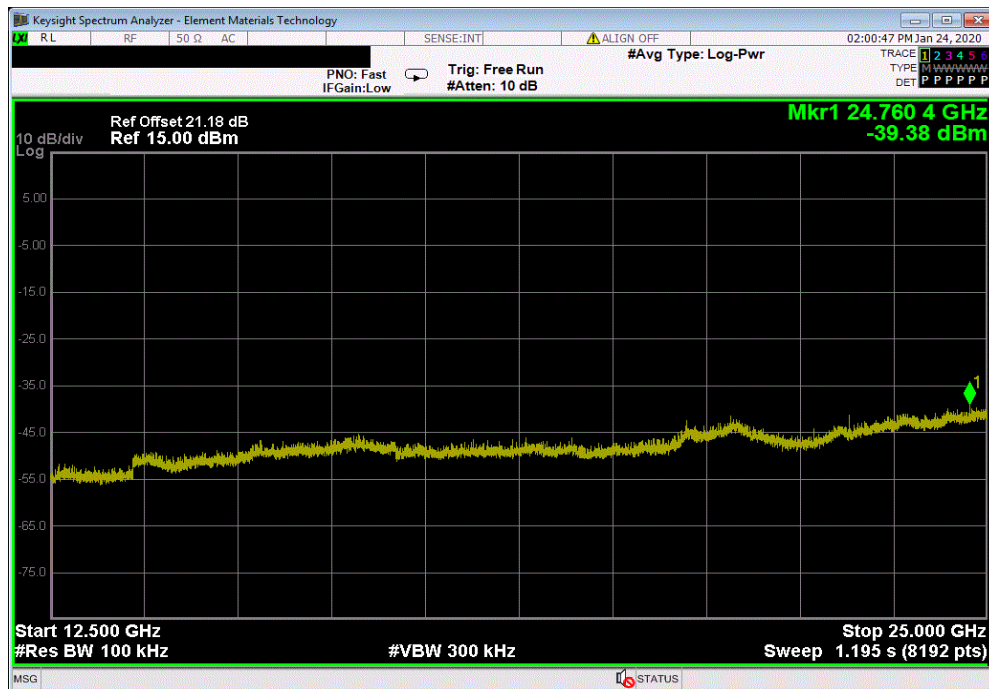


TbTx 2019.08.30.0 XMI 2019.09.05

2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	5961.28	-55.84	-30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24760.41	-46.22	-30	Pass	



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

Continuously Transmitting at Single Channel 6 1 Mbps (2437 MHz)

Continuously Transmitting at Single Channel 6 6 Mbps (2437 MHz)

Continuously Transmitting at Single Channel 6 MCSO (2437 MHz)

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

WTVD0028 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	40000 MHz
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SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Antenna - Double Ridge	A.H. Systems, Inc.	SAS-574	AXW	21-Aug-2018	24 mo
Amplifier - Pre-Amplifier	Miteq	JSDWK42-18004000-60-5P	PAM	20-Sep-2019	12 mo
Cable	Northwest EMC	18-40GHz	TXE	20-Sep-2019	12 mo
Cable	Northwest EMC	8-18GHz	TXD	14-May-2019	12 mo
Cable	Northwest EMC	1-8.2 GHz	TXC	14-May-2019	12 mo
Cable	Northwest EMC	RE 9kHz - 1GHz	TXB	1-Aug-2019	12 mo
Amplifier - Pre-Amplifier	Fairview Microwave	FMAM63001	PAS	24-Jan-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	PAL	18-Sep-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	PAK	18-Sep-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAJ	17-Mar-2019	12 mo
Filter - Low Pass	Micro-Tronics	LPM50004	HHV	1-Aug-2019	12 mo
Antenna - Biconilog	ETS Lindgren	3143B	AYF	10-May-2018	24 mo
Antenna - Double Ridge	ETS Lindgren	3115	AJL	11-Oct-2018	24 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AJG	NCR	0 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AJF	NCR	0 mo
Attenuator, 20db, 'SMA'	Weinschel Corp	4H-20	AWB	17-Mar-2019	12 mo
Filter - High Pass	Micro-Tronics	HPM50108	HGD	18-Sep-2019	12 mo
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFL	1-Nov-2019	12 mo

SPURIOUS RADIATED EMISSIONS



PSA-ESCI 2019.05.10

TEST DESCRIPTION

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

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

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

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

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

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

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

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

SPURIOUS RADIATED EMISSIONS

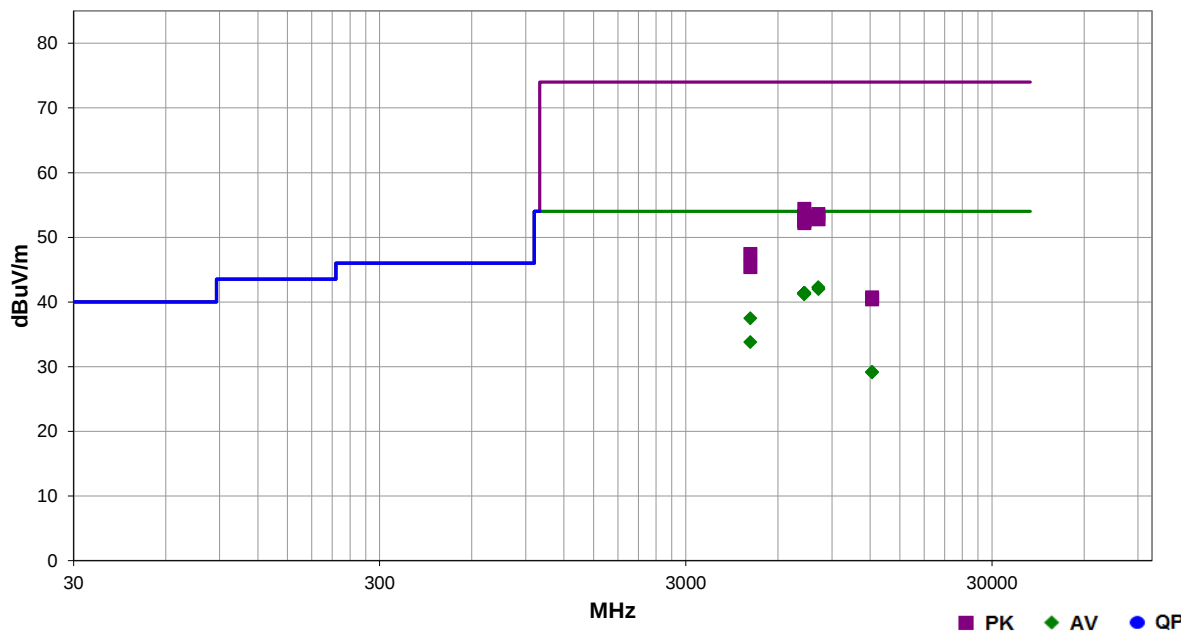


EmiR5 2019.08.15.1 PSA-ESCI 2019.05.10

Work Order:	WTVD0028	Date:	22-Jan-2020		
Project:	None	Temperature:	23.1 °C		
Job Site:	TX02	Humidity:	31.8% RH		
Serial Number:	WFB2-00005	Barometric Pres.:	1019 mbar	Tested by:	Marty Martin, Jeremiah Darden
EUT:	WFB2				
Configuration:	1				
Customer:	WatchGuard Video				
Attendees:	Navaid Karimi				
EUT Power:	Battery				
Operating Mode:	Continuously Transmitting at Single Channel 6 1 Mbps (2437 MHz)				
Deviations:	None				
Comments:	See table comments for details. Performed spot check of original testing under FCC ID: YJV-VST300 on 802.11gn, (6 Mbps and MCS0). Duty Cycle = 96%. DCCF = 10*LOG(1/0.96) = 0.177.				

Test Specifications	Test Method
FCC 15.247:2020	ANSI C63.10:2013

Run #	28	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
8128.367	29.9	12.2	1.2	267.9	0.2	0.0	Vert	AV	0.0	42.3	54.0	-11.7	EUT Horz, 1 Mbps
8142.043	29.6	12.2	1.2	226.9	0.2	0.0	Horz	AV	0.0	42.0	54.0	-12.0	EUT Horz, 1 Mbps
7311.412	29.5	11.7	2.0	140.0	0.2	0.0	Horz	AV	0.0	41.4	54.0	-12.6	EUT Horz, 1 Mbps
7310.635	29.5	11.7	3.6	128.0	0.2	0.0	Vert	AV	0.0	41.4	54.0	-12.6	EUT Horz, 1 Mbps
7311.138	29.5	11.7	1.5	180.0	0.2	0.0	Horz	AV	0.0	41.4	54.0	-12.6	EUT on Side, 1 Mbps
7311.277	29.5	11.7	1.5	308.0	0.2	0.0	Horz	AV	0.0	41.4	54.0	-12.6	EUT Vert, 1 Mbps
7311.477	29.5	11.7	1.5	147.0	0.2	0.0	Vert	AV	0.0	41.4	54.0	-12.6	EUT Vert, 1 Mbps
7310.703	29.4	11.7	1.4	58.9	0.2	0.0	Vert	AV	0.0	41.3	54.0	-12.7	EUT on Side, 1 Mbps
7311.252	29.4	11.7	2.0	140.0	0.2	0.0	Horz	AV	0.0	41.3	54.0	-12.7	EUT Horz, 6 Mbps
7311.490	29.4	11.7	2.0	140.0	0.2	0.0	Horz	AV	0.0	41.3	54.0	-12.7	EUT Horz, MCS0
7311.350	29.3	11.7	2.0	140.0	0.2	0.0	Horz	AV	0.0	41.2	54.0	-12.8	EUT Horz, 1 Mbps
4873.985	33.0	4.3	2.0	81.9	0.2	0.0	Horz	AV	0.0	37.5	54.0	-16.5	EUT Horz, 1 Mbps
7311.133	42.7	11.7	2.0	140.0	0.0	0.0	Horz	PK	0.0	54.4	74.0	-19.6	EUT Horz, 11 Mbps
4873.580	29.3	4.3	1.5	309.0	0.2	0.0	Vert	AV	0.0	33.8	54.0	-20.2	EUT Horz, 1 Mbps
8128.292	41.4	12.2	1.2	267.9	0.0	0.0	Vert	PK	0.0	53.6	74.0	-20.4	EUT Horz, 1 Mbps
7311.395	41.6	11.7	2.0	140.0	0.0	0.0	Horz	PK	0.0	53.3	74.0	-20.7	EUT Horz, 1 Mbps
7310.933	41.6	11.7	3.6	128.0	0.0	0.0	Vert	PK	0.0	53.3	74.0	-20.7	EUT Horz, 1 Mbps
7310.703	41.6	11.7	1.5	180.0	0.0	0.0	Horz	PK	0.0	53.3	74.0	-20.7	EUT on Side, 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
7311.022	41.2	11.7	1.4	58.9	0.0	0.0	Vert	PK	0.0	52.9	74.0	-21.1	EUT on Side, 1 Mbps
8142.410	40.6	12.2	1.2	226.9	0.0	0.0	Horz	PK	0.0	52.8	74.0	-21.2	EUT Horz, 1 Mbps
7310.687	41.0	11.7	2.0	140.0	0.0	0.0	Horz	PK	0.0	52.7	74.0	-21.3	EUT Horz, MCS0
7311.133	40.9	11.7	1.5	147.0	0.0	0.0	Vert	PK	0.0	52.6	74.0	-21.4	EUT Vert, 1 Mbps
7311.135	40.8	11.7	2.0	140.0	0.0	0.0	Horz	PK	0.0	52.5	74.0	-21.5	EUT Horz, 6 Mbps
7310.673	40.5	11.7	1.5	308.0	0.0	0.0	Horz	PK	0.0	52.2	74.0	-21.8	EUT Vert, 1 Mbps
12184.550	32.2	-3.2	1.5	346.9	0.2	0.0	Horz	AV	0.0	29.2	54.0	-24.8	EUT Horz, 1 Mbps
12185.080	32.1	-3.2	1.5	295.0	0.2	0.0	Vert	AV	0.0	29.1	54.0	-24.9	EUT Horz, 1 Mbps
4873.897	43.1	4.3	2.0	81.9	0.0	0.0	Horz	PK	0.0	47.4	74.0	-26.6	EUT Horz, 1 Mbps
4874.263	41.1	4.3	1.5	309.0	0.0	0.0	Vert	PK	0.0	45.4	74.0	-28.6	EUT Horz, 1 Mbps
12184.570	43.9	-3.2	1.5	346.9	0.0	0.0	Horz	PK	0.0	40.7	74.0	-33.3	EUT Horz, 1 Mbps
12185.150	43.6	-3.2	1.5	295.0	0.0	0.0	Vert	PK	0.0	40.4	74.0	-33.6	EUT Horz, 1 Mbps

SPURIOUS RADIATED EMISSIONS

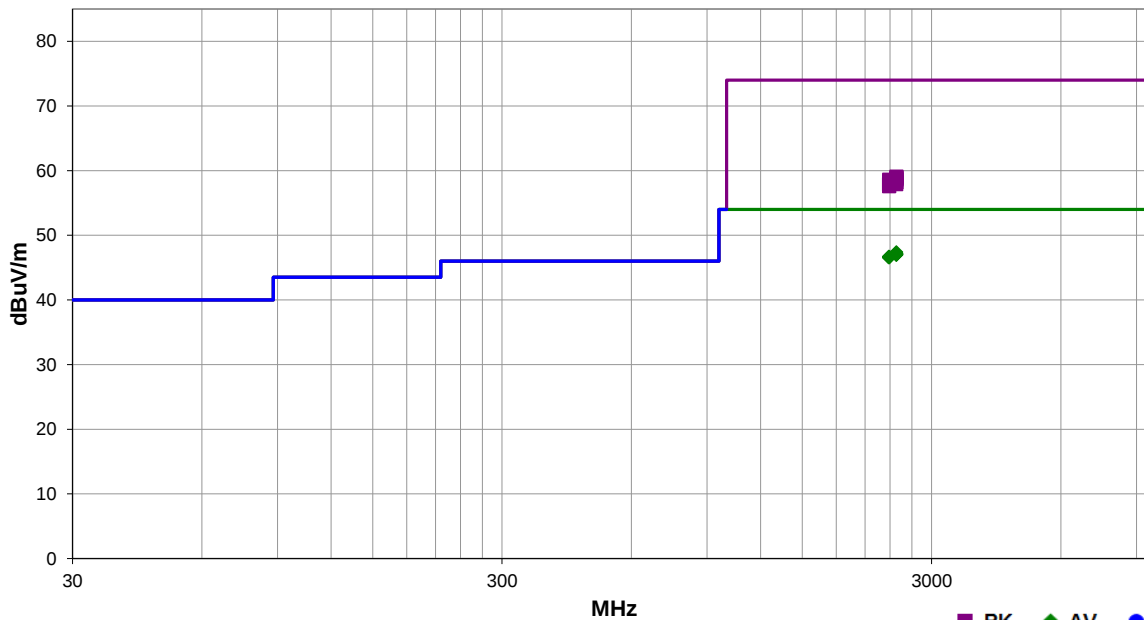


EmiR5 2019.08.15.1 PSA-ESCI 2019.05.10

Work Order:	WTVD0028	Date:	22-Jan-2020		
Project:	None	Temperature:	22 °C		
Job Site:	TX02	Humidity:	34.5% RH		
Serial Number:	WFB2-00005	Barometric Pres.:	1017 mbar	Tested by:	Marty Martin, Jeremiah Darden
EUT:	WFB2				
Configuration:	1				
Customer:	WatchGuard Video				
Attendees:	Navaid Karimi				
EUT Power:	Battery				
Operating Mode:	Continuously Transmitting at Single Channel 6 1 Mbps (2437 MHz)				
Deviations:	None				
Comments:	See table comments for details. Performed spot check of original testing under FCC ID: YJV-VST300 on 802.11gn, (6 Mbps and MCS0). Duty Cycle = 96%. DCCF = 10*LOG(1/0.96) = 0.177.				

Test Specifications	Test Method
FCC 15.247:2020	ANSI C63.10:2013

Run #	32	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
2484.120	32.2	-5.0	1.5	200.0	0.2	20.0	Horz	AV	0.0	47.4	54.0	-6.6	EUT Horz, 6 Mbps
2484.230	32.0	-5.0	1.5	200.0	0.2	20.0	Horz	AV	0.0	47.2	54.0	-6.8	EUT Horz, MCS0
2483.727	31.9	-5.0	1.5	200.0	0.2	20.0	Horz	AV	0.0	47.1	54.0	-6.9	EUT Horz, 1 Mbps
2484.207	31.9	-5.0	1.5	111.9	0.2	20.0	Horz	AV	0.0	47.1	54.0	-6.9	EUT Vert, 1 Mbps
2483.900	31.9	-5.0	2.5	237.9	0.2	20.0	Vert	AV	0.0	47.1	54.0	-6.9	EUT on Side, 1 Mbps
2484.793	31.9	-5.0	1.5	200.0	0.2	20.0	Horz	AV	0.0	47.1	54.0	-6.9	EUT Horz, 11 Mbps
2485.107	31.8	-5.0	1.5	198.0	0.2	20.0	Vert	AV	0.0	47.0	54.0	-7.0	EUT Horz, 1 Mbps
2484.210	31.8	-5.0	1.5	106.9	0.2	20.0	Vert	AV	0.0	47.0	54.0	-7.0	EUT Vert, 1 Mbps
2485.263	31.8	-5.0	1.5	39.0	0.2	20.0	Horz	AV	0.0	47.0	54.0	-7.0	EUT on Side, 1 Mbps
2389.087	31.9	-5.4	1.5	38.0	0.2	20.0	Vert	AV	0.0	46.7	54.0	-7.3	EUT on Side, 1 Mbps
2389.953	31.9	-5.4	1.5	200.0	0.2	20.0	Horz	AV	0.0	46.7	54.0	-7.3	EUT Horz, 6 Mbps
2388.183	31.9	-5.4	1.5	200.0	0.2	20.0	Horz	AV	0.0	46.7	54.0	-7.3	EUT Horz, MCS0
2388.973	31.8	-5.4	1.5	348.0	0.2	20.0	Horz	AV	0.0	46.6	54.0	-7.4	EUT Horz, 1 Mbps
2388.063	31.8	-5.4	3.2	242.0	0.2	20.0	Vert	AV	0.0	46.6	54.0	-7.4	EUT Horz, 1 Mbps
2388.517	31.8	-5.4	1.5	249.9	0.2	20.0	Horz	AV	0.0	46.6	54.0	-7.4	EUT Vert, 1 Mbps
2388.973	31.8	-5.4	1.5	291.0	0.2	20.0	Vert	AV	0.0	46.6	54.0	-7.4	EUT Vert, 1 Mbps
2389.143	31.8	-5.4	1.5	27.9	0.2	20.0	Horz	AV	0.0	46.6	54.0	-7.4	EUT on Side, 1 Mbps
2388.923	31.8	-5.4	1.5	200.0	0.2	20.0	Horz	AV	0.0	46.6	54.0	-7.4	EUT Horz, 11 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
2485.443	44.1	-5.0	1.5	200.0	0.0	20.0	Horz	PK	0.0	59.1	74.0	-14.9	EUT Horz, MCS0
2485.423	44.0	-5.0	1.5	39.0	0.0	20.0	Horz	PK	0.0	59.0	74.0	-15.0	EUT on Side, 1 Mbps
2484.040	43.9	-5.0	1.5	198.0	0.0	20.0	Vert	PK	0.0	58.9	74.0	-15.1	EUT Horz, 1 Mbps
2484.137	43.8	-5.0	1.5	200.0	0.0	20.0	Horz	PK	0.0	58.8	74.0	-15.2	EUT Horz, 6 Mbps
2388.883	44.0	-5.4	1.5	249.9	0.0	20.0	Horz	PK	0.0	58.6	74.0	-15.4	EUT Vert, 1 Mbps
2484.237	43.6	-5.0	2.5	237.9	0.0	20.0	Vert	PK	0.0	58.6	74.0	-15.4	EUT on Side, 1 Mbps
2483.600	43.6	-5.0	1.5	200.0	0.0	20.0	Horz	PK	0.0	58.6	74.0	-15.4	EUT Horz, 11 Mbps
2388.900	43.8	-5.4	1.5	38.0	0.0	20.0	Vert	PK	0.0	58.4	74.0	-15.6	EUT on Side, 1 Mbps
2388.860	43.7	-5.4	3.2	242.0	0.0	20.0	Vert	PK	0.0	58.3	74.0	-15.7	EUT Horz, 1 Mbps
2484.190	43.2	-5.0	1.5	111.9	0.0	20.0	Horz	PK	0.0	58.2	74.0	-15.8	EUT Vert, 1 Mbps
2483.587	43.2	-5.0	1.5	106.9	0.0	20.0	Vert	PK	0.0	58.2	74.0	-15.8	EUT Vert, 1 Mbps
2389.913	43.5	-5.4	1.5	348.0	0.0	20.0	Horz	PK	0.0	58.1	74.0	-15.9	EUT Horz, 1 Mbps
2389.773	43.5	-5.4	1.5	200.0	0.0	20.0	Horz	PK	0.0	58.1	74.0	-15.9	EUT Horz, MCS0
2389.650	43.4	-5.4	1.5	200.0	0.0	20.0	Horz	PK	0.0	58.0	74.0	-16.0	EUT Horz, 6 Mbps
2483.847	42.9	-5.0	1.5	200.0	0.0	20.0	Horz	PK	0.0	57.9	74.0	-16.1	EUT Horz, 1 Mbps
2388.073	43.3	-5.4	1.5	291.0	0.0	20.0	Vert	PK	0.0	57.9	74.0	-16.1	EUT Vert, 1 Mbps
2389.640	43.0	-5.4	1.5	27.9	0.0	20.0	Horz	PK	0.0	57.6	74.0	-16.4	EUT on Side, 1 Mbps
2389.830	43.0	-5.4	1.5	200.0	0.0	20.0	Horz	PK	0.0	57.6	74.0	-16.4	EUT Horz, 11 Mbps