



element

Logic PD, Inc.

SOMA3703-32-1780AKIR-A / 1027255 Rev B

FCC 15.247:2021

802.11abgn SISO Radio

Report: LGPD0256.1 Rev. 1, Issue Date: July 13, 2021



NVLAP LAB CODE: 200881-0



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CERTIFICATE OF TEST

Last Date of Test: June 25, 2021
Logic PD, Inc.
EUT: SOMA3703-32-1780AKIR-A / 1027255 Rev B

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2021	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 C2PC related to part substitution of an oscillator
6.5, 6.6, 11.12.1, 11.13.2	Spurious Radiated Emissions	Yes	Pass	
11.6	Duty Cycle	No	N/A	
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	No	N/A	Not required for a C2PC related to part substitution of an oscillator
11.11	Band Edge Compliance	No	N/A	
11.11	Spurious Conducted Emissions	No	N/A	

Deviations From Test Standards

None

Approved By:

Eric Brandon, Department 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
01	Added note to define the relationship between a power setting of 20 and the power setting shown on the power settings page (1E, 1F). It must be at or above these settings.	2021-07-09	15, 19
	Verified and corrected typo for low channel frequency in operating mode, listed as (2421 MHz) instead of (2412 MHz).	2021-07-09	15, 17, 19
	Added note to define the relationship between a power setting of 50 and the power setting shown in the power settings page (1F and 1E).	2021-07-09	21, 25
	Updated test description	2021-07-09	40, 53
	Removed artifact at the bottom of the page	2021-07-09	65
	Updated Output Power and Equivalent Isotropic Radiated Power	2021-07-09	40-66

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 – Recognized as an EU Notified Body validated for the EMCD and RED Directives.

United Kingdom

BEIS – Recognized by the UK as an Approved Body under the UK Radio Equipment and UK EMC Regulations.

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.

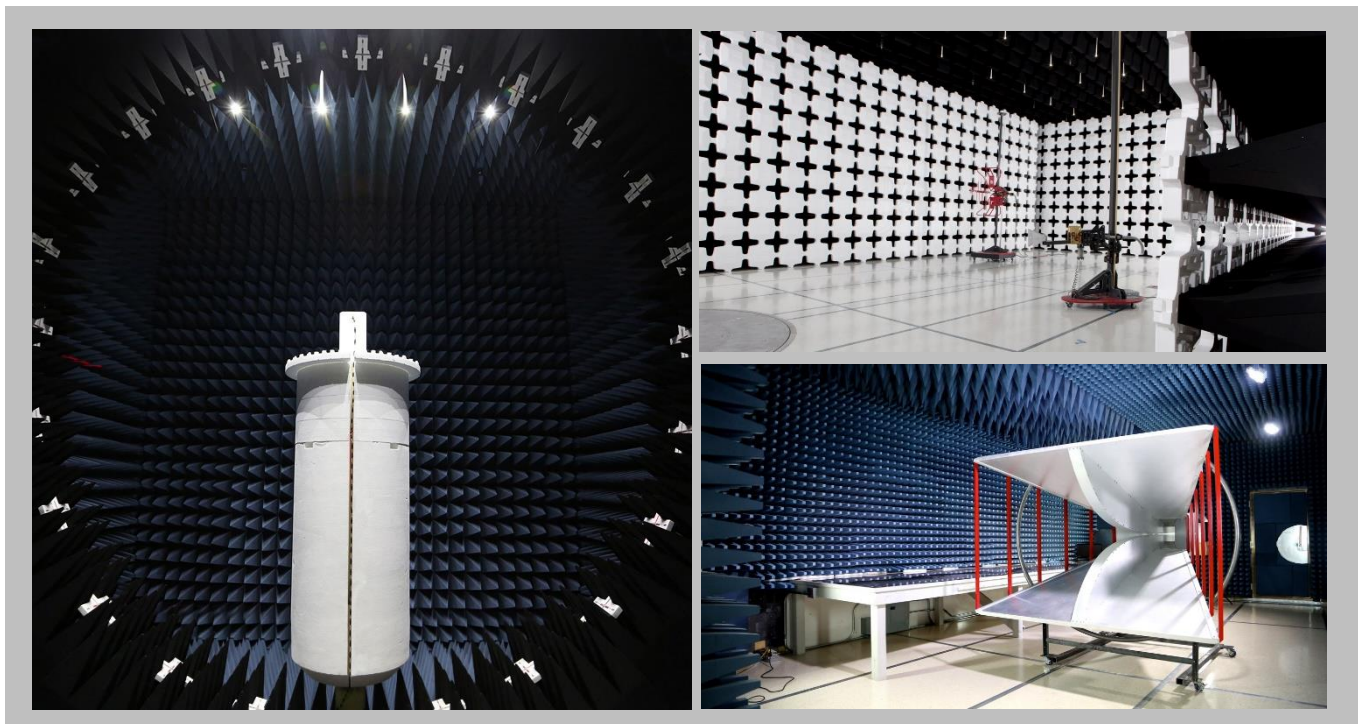
SCOPE

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 MN01-11 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/RRA, 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.

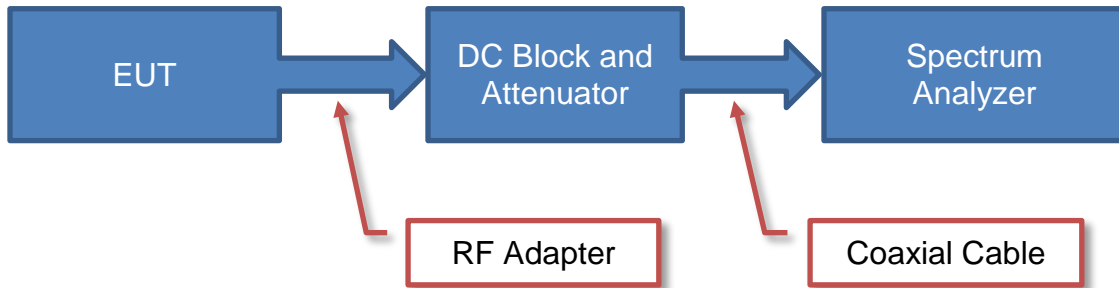
A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found in the table below. A lab specific value may also be found in the applicable test description section. 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.

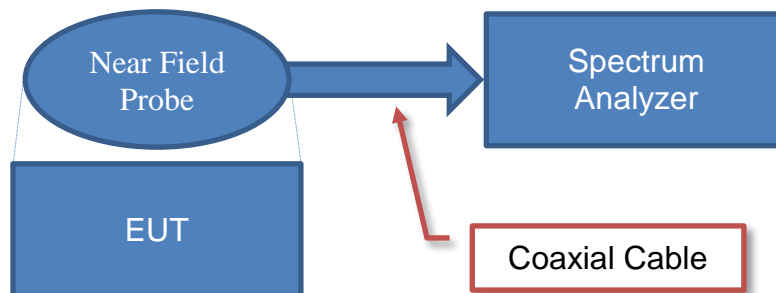
Test	+ MU	- MU
Frequency Accuracy	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	1.2 dB	-1.2 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	2.6 dB	-2.6 dB

Test Setup Block Diagrams

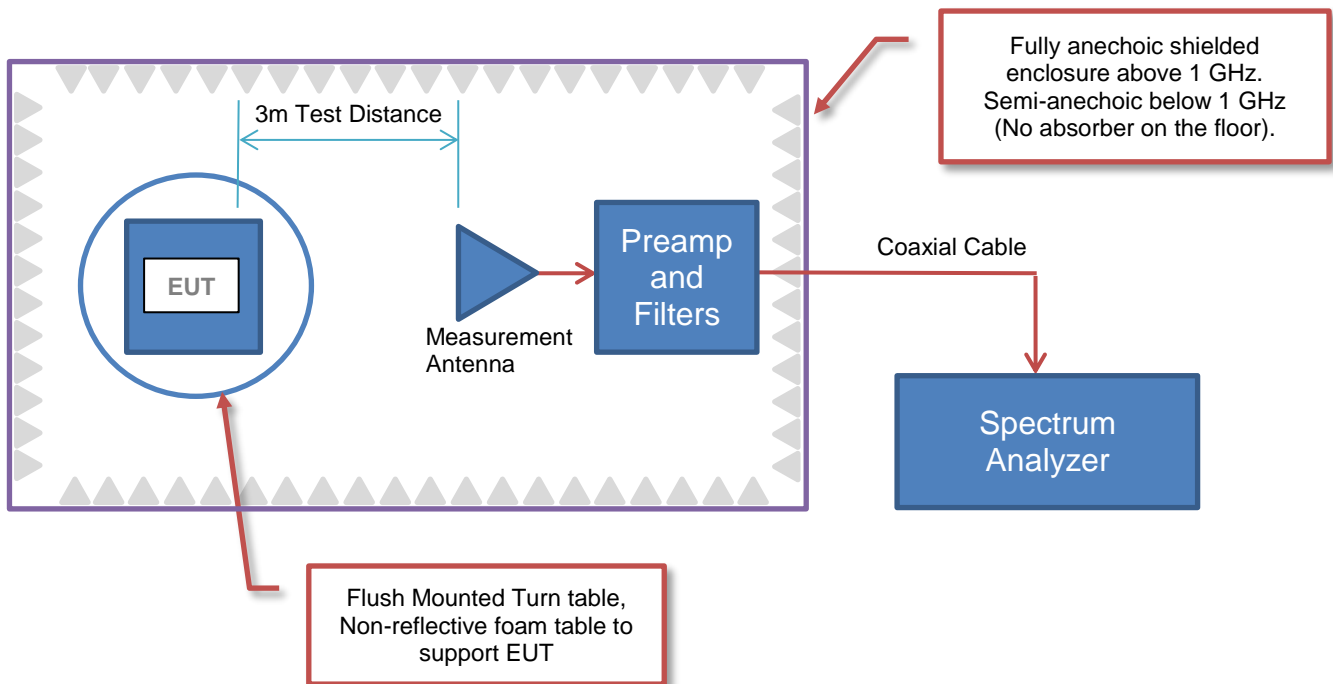
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



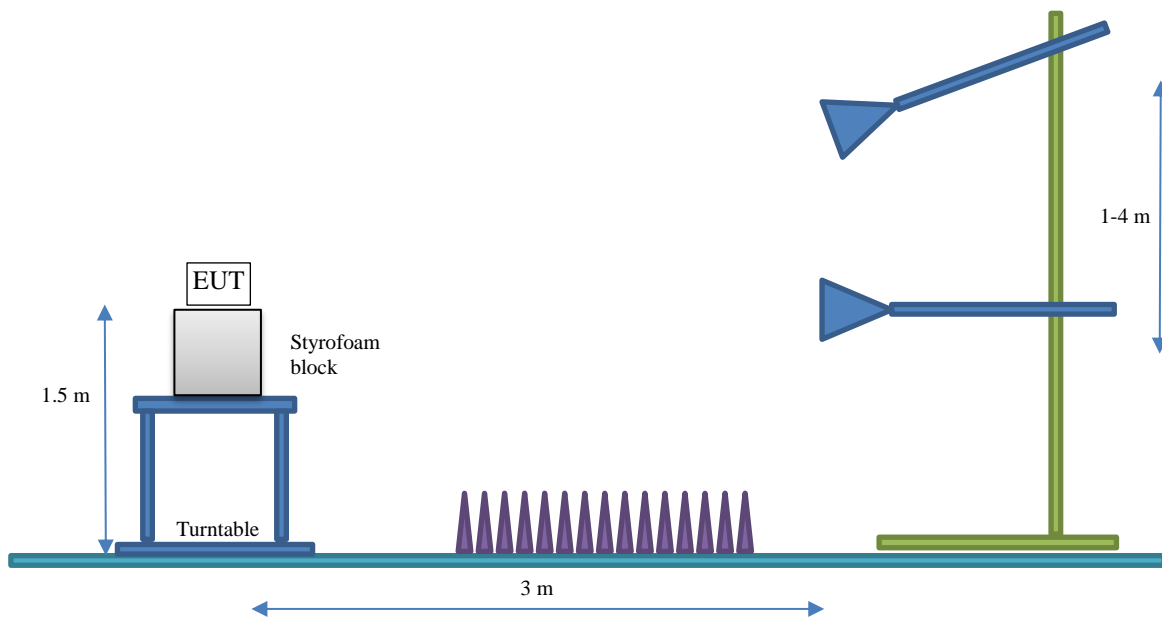
Spurious Radiated Emissions



Test Setup Block Diagrams

Bore Sighting (>1GHz)

The diameter of the illumination area is the dimension of the line tangent to the EUT formed by 3 dB beamwidth of the measurement antenna at the measurement distance. At a 3 meter test distance, the diameter of the illumination area was 3.8 meters at 1 GHz and greater than 2.1 meters up to 6 GHz. Above 1 GHz, when required by the measurement standard, the antenna is pointed for both azimuth and elevation to maintain the receive antenna within the cone of radiation from the EUT. The specified measurement detectors were used for comparison of the emissions to the peak and average specification limits.



PRODUCT DESCRIPTION



Client and Equipment Under Test (EUT) Information

Company Name:	Logic PD, Inc.
Address:	5602 105th Ave N
City, State, Zip:	Brooklyn Park, MN 55443
Test Requested By:	Nathan Kro
EUT:	SOMA3703-32-1780AKIR-A / 1027255 Rev B
First Date of Test:	March 29, 2021
Last Date of Test:	June 25, 2021
Receipt Date of Samples:	March 10, 2021
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
Torpedo+WIFI SOM (System on Module) - C2PC due to EOL oscillator change
Testing Objective:
To demonstrate compliance of the 802.11 radio under FCC 15.247 for operation in the 2.4 GHz band.

CONFIGURATIONS



Configuration LGPD0256- 1

Software/Firmware Running during test	
Description	Version
Linux OS	3.0.101-BSP-dm37x-2.4-4
Wifi Radio Firmware	PLT 7.3.10.0.137
Bluetooth Radio Firmware	Logic_TlInit_tw32_10.6.15.bts

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
BT/2.4 GHz Wifi Antenna	Ethertronics	1000418	None
5 GHz Wifi Antenna	Ethertronics	1000418	None
Torpedo + Wireless SOM	Beason Embedded Works / Logic PD	SOMA3703-32-1780AKIR-A / 1027255 REV B	2420M00120

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
ITE Power Supply	Globtek, Inc	GT-46200-2005-T3	None

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Laptop	Acer	NAV50	LUSAL0B137011586B91601
Laptop Power Supply	Delta Electronics	N17908	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
RF Cable (Ethertronics 5G Wifi Antenna)	No	0.11 m	No	5 GHz Wifi Antenna	Torpedo + Wireless SOM
RF Cable (Ethertronics BT Antenna)	No	0.05 m	No	Bluetooth Antenna	Torpedo + Wireless SOM
DC Cable (ITE power supply)	No	0.9 m	Yes	ITE Power Supply	Torpedo + Wireless SOM
AC Cable (ITE power supply)	No	1.9 m	No	ITE Power Supply	AC Mains
Serial Cable	No	>3 m	No	Torpedo + Wireless SOM	Laptop
DC Cable (Laptop power supply)	No	2.2 m	Yes	Laptop Power Supply	Laptop

CONFIGURATIONS



Configuration LGPD0256- 3

Software/Firmware Running during test	
Description	Version
Linux OS	3.0.101-BSP-dm37x-2.4-4
Wifi Radio Firmware	PLT 7.3.10.0.137
Bluetooth Radio Firmware	Logic_TlInit_tw32_10.6.15.bts

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Torpedo + Wireless SOM	Beason Embedded Works / Logic PD	SOMA3703-32-1780AKIR-A / 1027255 REV B	2420M00120

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
ITE Power Supply	Globtek, Inc	GT-46200-2005-T3	None

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Laptop	Acer	NAV50	LUSAL0B137011586B91601
Laptop Power Supply	Delta Electronics	N17908	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
RF Cable (Ethertronics 5G Wifi Antenna)	No	0.11 m	No	5 GHz Wifi Antenna	Torpedo + Wireless SOM
RF Cable (Ethertronics BT Antenna)	No	0.05 m	No	Bluetooth Antenna	Torpedo + Wireless SOM
DC Cable (ITE power supply)	No	0.9 m	Yes	ITE Power Supply	Torpedo + Wireless SOM
AC Cable (ITE power supply)	No	1.9 m	No	ITE Power Supply	AC Mains
AC Cable	No		No	aptop Power Supply	AC Mains
DC Cable (Laptop power supply)	No	2.2 m	Yes	Laptop Power Supply	Laptop
Serial Cable	No	1.8 m	No	Torpedo + Wireless SOM	Laptop

CONFIGURATIONS



Configuration LGPD0256- 4

Software/Firmware Running during test	
Description	Version
Linux OS	3.0.101-BSP-dm37x-2.4-4
Wifi Radio Firmware	PLT 7.3.10.0.137
Bluetooth Radio Firmware	Logic_TlInit_tw32_10.6.15.bts

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Torpedo + Wireless SOM	Beason Embedded Works / Logic PD	SOMA3703-32-1780AKIR-A / 1027255 REV B	2420M00120
BT/2.4 GHz Wifi Antenna	Pulse Electronics	W3006	None
5GHz Wifi Antenna	Pulse Electronics	W3006	None

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
ITE Power Supply	Globtek, Inc	GT-46200-2005-T3	None

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
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Laptop Power Supply	Delta Electronics	N17908	None

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Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Cable (ITE power supply)	No	0.9 m	Yes	ITE Power Supply	Torpedo + Wireless SOM
AC Cable (ITE power supply)	No	1.9 m	No	ITE Power Supply	AC Mains
Serial Cable	No	>3 m	No	Torpedo + Wireless SOM	Laptop
DC Cable (Laptop power supply)	No	2.2 m	Yes	Laptop Power Supply	Laptop
RF Cable (Pulse 5GHz Wifi Antenna)	No	.05 m	No	5 GHz Wifi Antenna	Torpedo + Wireless SOM
RF Cable (Pulse BT/2.4 GHz Antenna)	No	.05 m	No	Bluetooth Antenna	Torpedo + Wireless SOM

MODIFICATIONS



Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2021-03-29	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	2021-04-06	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.
3	2021-06-25	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
4	2021-06-25	Equivalent Isotropic Radiated Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

POWER SETTINGS AND ANTENNAS



The power settings, antenna gain value(s) and cable loss (if applicable) used for the testing contained in this report were provided by the customer and will affect the validity of the results. Element assumes no responsibility for the accuracy of this information.

ANTENNA GAIN (dBi) AND CABLE LOSS (dB)

Type	Provided by:	Frequency Range (MHz)	Gain (dBi)	Cable Loss (dB)
WiFi Dual Band Stamp Metal Embedded Antenna, PN 1000418	Ethertronics	2400-2485	4.0	0.5
		5150-5825	4.2	0.8
WLAN Dualband Ceramic PN W3006	Pulse Electronics	2400-2485	3.2 (peak)	0.2
		5150-5825	4.2 (peak)	0.3

POWER SETTINGS

Radio	Modulation	Channel	Power Setting (hex)
802.11(bgn)	1Mbps, 11 Mbps, 6 Mbps, 36 Mbps, 54 Mbps, MCS0, MCS7	1 (2412 MHz)	1E (Ethertronics Antenna) 1E (Pulse Electronics Antenna)
802.11(bgn)	1Mbps, 11 Mbps, 6 Mbps, 36 Mbps, 54 Mbps, MCS0, MCS7	6 (2437 MHz)	24 (Ethertronics Antenna) 24 (Pulse Electronics Antenna)
802.11(bgn)	1Mbps, 11 Mbps, 6 Mbps, 36 Mbps, 54 Mbps, MCS0, MCS7	11 (2462 MHz)	1F (Ethertronics Antenna) 1E (Pulse Electronics Antenna)

SPURIOUS RADIATED EMISSIONS



PSA-ESCI 2021.01.22.0

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 2.4GHz WiFi High Ch 11 (2462 MHz), Low Ch 1 (2412 MHz). Power 20 unless noted in comments.
 Transmitting 2.4GHz WiFi High Ch 11 (2462 MHz)

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

LGPD0256 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26500 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.	Cal. Due
Attenuator	Fairview Microwave	SA18E-20	TWZ	2020-09-14	2021-09-14
Cable	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	2021-03-07	2022-03-07
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	2021-01-15	2022-01-15
Cable	ESM Cable Corp.	Bilog Cables	MNH	2020-10-06	2021-10-06
Filter - High Pass	Micro-Tronics	HPM50111	LFN	2020-09-14	2021-09-14
Filter - Low Pass	Micro-Tronics	LPM50004	LFK	2020-09-24	2021-09-24
Antenna - Standard Gain	ETS Lindgren	3160-07	AXP	NCR	NCR
Antenna - Biconilog	ETS Lindgren	3142D	AXO	2019-09-03	2021-09-03
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	2021-01-15	2022-01-15
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	2021-01-15	2022-01-15
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVT	2021-01-15	2022-01-15
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AVO	2020-10-06	2021-10-06
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNP	2020-09-11	2021-09-11
Amplifier - Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	2020-09-11	2021-09-11
Antenna - Standard Gain	ETS Lindgren	3160-09	AHG	NCR	NCR
Antenna - Double Ridge	ETS-Lindgren	3115	AJQ	2021-01-25	2023-01-25
Antenna - Standard Gain	ETS Lindgren	3160-08	AIQ	NCR	NCR
Analyzer - Spectrum Analyzer	Keysight	N9010A (EXA)	AFQ	2020-12-27	2021-12-27

MEASUREMENT BANDWIDTHS

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

TEST DESCRIPTION

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

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

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

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

QP = Quasi-Peak Detector

PK = Peak Detector

AV = RMS Detector

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

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

Measurements within 2 MHz of the allowable band may have been taken using the integration method from ANSI C63.10 clause 11.13.3. This procedure uses the channel power feature of the spectrum analyzer to integrate the power of the emission within a 1 MHz bandwidth.

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 $10 \cdot \log(1/dc)$.

SPURIOUS RADIATED EMISSIONS

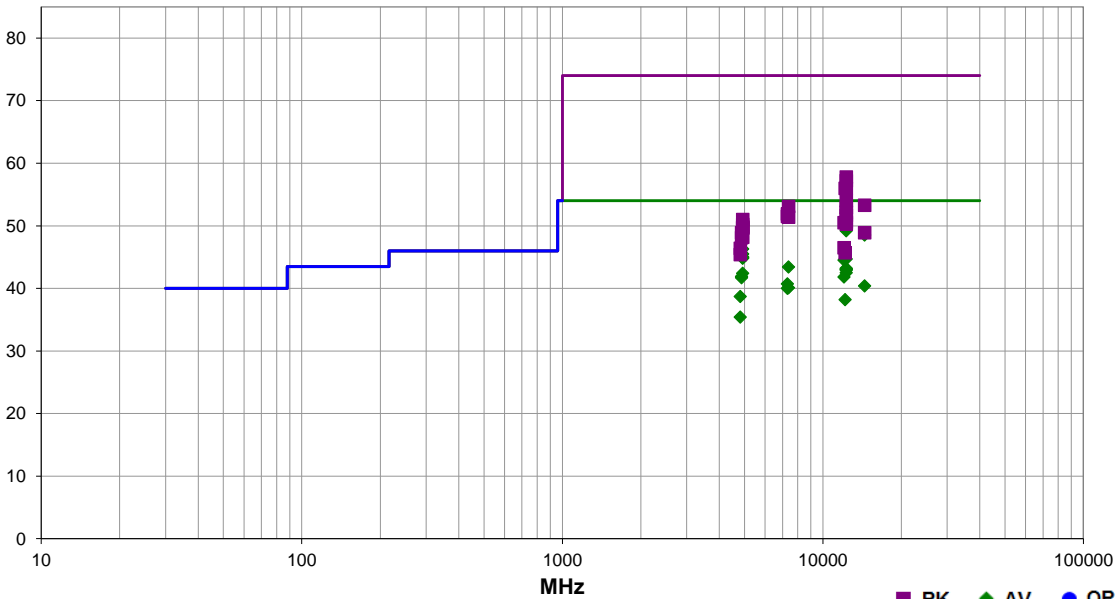


EmiRS 2021.01.08.0 PSA-ESCI 2021.01.22.0

Work Order:	LGPD0256	Date:	2021-03-17	
Project:	None	Temperature:	22.7 °C	
Job Site:	MN05	Humidity:	27.7% RH	
Serial Number:	2420M00120	Barometric Pres.:	1020 mbar	
EUT:	SOMA3703-32-1780AKIR-A / 1027255 Rev B			
Configuration:	1			
Customer:	Logic PD, Inc.			
Attendees:	Eric Fritz			
EUT Power:	120VAC/60Hz			
Operating Mode:	Transmitting 2.4GHz WiFi High Ch 11 (2462 MHz), Mid Ch 6 (2437 MHz), Low Ch 1 (2412 MHz).			
Deviations:	None			
Comments:	Antenna located off the board. DCCF correction based off of 10*log(1/duty cycle), 6 Mbps operates at 96.5% DC (0.1dB DCCF), 36 Mbps at 90.8% DC (0.4dB DCCF), 54 Mbps at 87.4% DC (0.6dB DCCF), MCS0 at 97% DC (0.1dB DCCF), MCS7 at 79% DC (1.0dB DCCF).			

Test Specifications	Test Method
FCC 15.247:2021	ANSI C63.10:2013

Run #	67	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
12311.060	51.4	0.6	2.0	228.0	0.0	0.0	Horz	AV	0.0	52.0	54.0	-2.0	EUT Vert, High Ch, 1 Mbps
12311.030	50.5	0.6	2.3	232.9	0.0	0.0	Horz	AV	0.0	51.1	54.0	-2.9	EUT Vert, High Ch, 1 Mbps
12186.020	49.8	0.1	3.9	234.0	0.0	0.0	Horz	AV	0.0	49.9	54.0	-4.1	EUT Vert, Mid Ch, 1 Mbps
12310.040	48.6	0.6	2.3	232.9	0.0	0.0	Horz	AV	0.0	49.2	54.0	-4.8	EUT On Side, High Ch, 11 Mbps
14471.980	40.3	8.2	2.2	200.9	0.0	0.0	Horz	AV	0.0	48.5	54.0	-5.5	EUT Vert, Low Ch, 1 Mbps
4923.983	43.9	2.4	2.6	16.0	0.0	0.0	Vert	AV	0.0	46.3	54.0	-7.7	EUT Horz, High Ch, 1 Mbps
4923.975	43.1	2.4	2.9	268.9	0.0	0.0	Horz	AV	0.0	45.5	54.0	-8.5	EUT Vert, High Ch, 1 Mbps
4924.033	42.6	2.4	2.2	301.9	0.0	0.0	Horz	AV	0.0	45.0	54.0	-9.0	EUT On side, High Ch, 1 Mbps
4924.025	42.5	2.4	2.3	184.0	0.0	0.0	Vert	AV	0.0	44.9	54.0	-9.1	EUT On side, High Ch, 1 Mbps
4924.017	42.4	2.4	2.7	348.9	0.0	0.0	Horz	AV	0.0	44.8	54.0	-9.2	EUT Horz, High Ch, 1 Mbps
12311.030	44.1	0.6	1.8	139.9	0.0	0.0	Vert	AV	0.0	44.7	54.0	-9.3	EUT Horz, High Ch, 1 Mbps
12059.940	44.4	0.1	1.9	220.0	0.0	0.0	Horz	AV	0.0	44.5	54.0	-9.5	EUT Vert, Low Ch, 1 Mbps
7386.025	34.1	9.3	2.6	196.0	0.0	0.0	Vert	AV	0.0	43.4	54.0	-10.6	EUT Horz, High Ch, 1 Mbps
12310.010	42.0	0.6	2.3	232.9	0.6	0.0	Horz	AV	0.0	43.2	54.0	-10.8	EUT On Side, High Ch, 54 Mbps
12309.960	41.5	0.6	2.3	232.9	1.0	0.0	Horz	AV	0.0	43.1	54.0	-10.9	EUT On Side, High Ch, MCS7
12310.020	42.3	0.6	2.3	232.9	0.1	0.0	Horz	AV	0.0	43.0	54.0	-11.0	EUT On Side, High Ch, 6 Mbps
12310.000	41.9	0.6	2.3	232.9	0.4	0.0	Horz	AV	0.0	42.9	54.0	-11.1	EUT On Side, High Ch, 36 Mbps
12309.980	41.8	0.6	2.3	232.9	0.1	0.0	Horz	AV	0.0	42.5	54.0	-11.5	EUT On Side, High Ch, MCS0
4924.033	40.0	2.4	2.3	185.0	0.0	0.0	Vert	AV	0.0	42.4	54.0	-11.6	EUT Vert, High Ch, 1 Mbps
4874.058	39.5	2.4	1.1	166.0	0.0	0.0	Vert	AV	0.0	41.9	54.0	-12.1	EUT Horz, Mid Ch, 1 Mbps
12060.000	41.7	0.1	2.7	70.9	0.0	0.0	Vert	AV	0.0	41.8	54.0	-12.2	EUT Horz, Low Ch, 1 Mbps
4874.000	39.3	2.4	3.4	257.0	0.0	0.0	Horz	AV	0.0	41.7	54.0	-12.3	EUT Vert, Mid ch, 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
7310.833	31.5	9.2	1.5	120.9	0.0	0.0	Horz	AV	0.0	40.7	54.0	-13.3	EUT Vert, Mid ch, 1 Mbps
14471.990	32.2	8.2	1.5	282.0	0.0	0.0	Vert	AV	0.0	40.4	54.0	-13.6	EUT Horz, Low Ch, 1 Mbps
7388.475	30.8	9.3	1.5	121.9	0.0	0.0	Horz	AV	0.0	40.1	54.0	-13.9	EUT Vert, High Ch, 1 Mbps
7310.525	30.8	9.2	1.5	37.9	0.0	0.0	Vert	AV	0.0	40.0	54.0	-14.0	EUT Horz, Mid Ch, 1 Mbps
4824.025	36.3	2.4	2.9	358.9	0.0	0.0	Vert	AV	0.0	38.7	54.0	-15.3	EUT Horz, Low Ch, 1 Mbps
12186.140	38.1	0.1	1.5	47.0	0.0	0.0	Vert	AV	0.0	38.2	54.0	-15.8	EUT Horz, Mid Ch, 1 Mbps
12310.130	57.2	0.6	2.3	232.9	0.0	0.0	Horz	PK	0.0	57.8	74.0	-16.2	EUT On Side, High Ch, 11 Mbps
12309.840	56.6	0.6	2.0	228.0	0.0	0.0	Horz	PK	0.0	57.2	74.0	-16.8	EUT Vert, High Ch, 1 Mbps
12185.020	55.9	0.1	3.9	234.0	0.0	0.0	Horz	PK	0.0	56.0	74.0	-18.0	EUT Vert, High Ch, 1 Mbps
12310.130	55.4	0.6	2.3	232.9	0.0	0.0	Horz	PK	0.0	56.0	74.0	-18.0	EUT Vert, High Ch, 1 Mbps
4823.933	33.0	2.4	3.7	198.0	0.0	0.0	Horz	AV	0.0	35.4	54.0	-18.6	EUT Vert, Low ch, 1 Mbps
12309.880	53.4	0.6	2.3	232.9	0.0	0.0	Horz	PK	0.0	54.0	74.0	-20.0	EUT On Side, High Ch, 6 Mbps
14472.050	45.1	8.2	2.2	200.9	0.0	0.0	Horz	PK	0.0	53.3	74.0	-20.7	EUT Vert, Low Ch, 1 Mbps
7385.733	43.8	9.3	2.6	196.0	0.0	0.0	Vert	PK	0.0	53.1	74.0	-20.9	EUT Horz, High Ch, 1 Mbps
12309.900	52.3	0.6	2.3	232.9	0.0	0.0	Horz	PK	0.0	52.9	74.0	-21.1	EUT On Side, High Ch, MCS0
12310.230	51.6	0.6	2.3	232.9	0.0	0.0	Horz	PK	0.0	52.2	74.0	-21.8	EUT On Side, High Ch, 36 Mbps
7310.333	42.7	9.2	1.5	120.9	0.0	0.0	Horz	PK	0.0	51.9	74.0	-22.1	EUT Vert, Mid ch, 1 Mbps
12310.060	51.1	0.6	2.3	232.9	0.0	0.0	Horz	PK	0.0	51.7	74.0	-22.3	EUT On Side, High Ch, 54 Mbps
7309.258	42.3	9.2	1.5	37.9	0.0	0.0	Vert	PK	0.0	51.5	74.0	-22.5	EUT Horz, Mid Ch, 1 Mbps
7385.975	42.1	9.3	1.5	121.9	0.0	0.0	Horz	PK	0.0	51.4	74.0	-22.6	EUT Vert, High Ch, 1 Mbps
4924.050	48.6	2.4	2.6	16.0	0.0	0.0	Vert	PK	0.0	51.0	74.0	-23.0	EUT Horz, High Ch, 1 Mbps
12309.780	50.0	0.6	1.8	139.9	0.0	0.0	Vert	PK	0.0	50.6	74.0	-23.4	EUT Horz, High Ch, 1 Mbps
12060.060	50.4	0.1	1.9	220.0	0.0	0.0	Horz	PK	0.0	50.5	74.0	-23.5	EUT Vert, Low Ch, 1 Mbps
12310.270	49.7	0.6	2.3	232.9	0.0	0.0	Horz	PK	0.0	50.3	74.0	-23.7	EUT On Side, High Ch, MCS7
4923.900	47.8	2.4	2.9	268.9	0.0	0.0	Horz	PK	0.0	50.2	74.0	-23.8	EUT Vert, High Ch, 1 Mbps
4924.092	47.4	2.4	2.7	348.9	0.0	0.0	Horz	PK	0.0	49.8	74.0	-24.2	EUT Horz, High Ch, 1 Mbps
4924.125	47.4	2.4	2.3	184.0	0.0	0.0	Vert	PK	0.0	49.8	74.0	-24.2	EUT On side, High Ch, 1 Mbps
4923.775	47.2	2.4	2.2	301.9	0.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4	EUT On side, High Ch, 1 Mbps
14472.280	40.7	8.2	1.5	282.0	0.0	0.0	Vert	PK	0.0	48.9	74.0	-25.1	EUT Horz, Low Ch, 1 Mbps
4873.817	46.5	2.4	1.1	166.0	0.0	0.0	Vert	PK	0.0	48.9	74.0	-25.1	EUT Horz, Mid Ch, 1 Mbps
4924.017	45.8	2.4	2.3	185.0	0.0	0.0	Vert	PK	0.0	48.2	74.0	-25.8	EUT Vert, High Ch, 1 Mbps
4874.108	45.7	2.4	3.4	257.0	0.0	0.0	Horz	PK	0.0	48.1	74.0	-25.9	EUT Vert, Mid ch, 1 Mbps
12059.880	46.4	0.1	2.7	70.9	0.0	0.0	Vert	PK	0.0	46.5	74.0	-27.5	EUT Horz, Low Ch, 1 Mbps
4824.083	44.0	2.4	2.9	358.9	0.0	0.0	Vert	PK	0.0	46.4	74.0	-27.6	EUT Horz, Low Ch, 1 Mbps
12185.510	45.6	0.1	1.5	47.0	0.0	0.0	Vert	PK	0.0	45.7	74.0	-28.3	EUT Horz, Mid Ch, 1 Mbps
4824.150	43.0	2.4	3.7	198.0	0.0	0.0	Horz	PK	0.0	45.4	74.0	-28.6	EUT Vert, Low ch, 1 Mbps

SPURIOUS RADIATED EMISSIONS

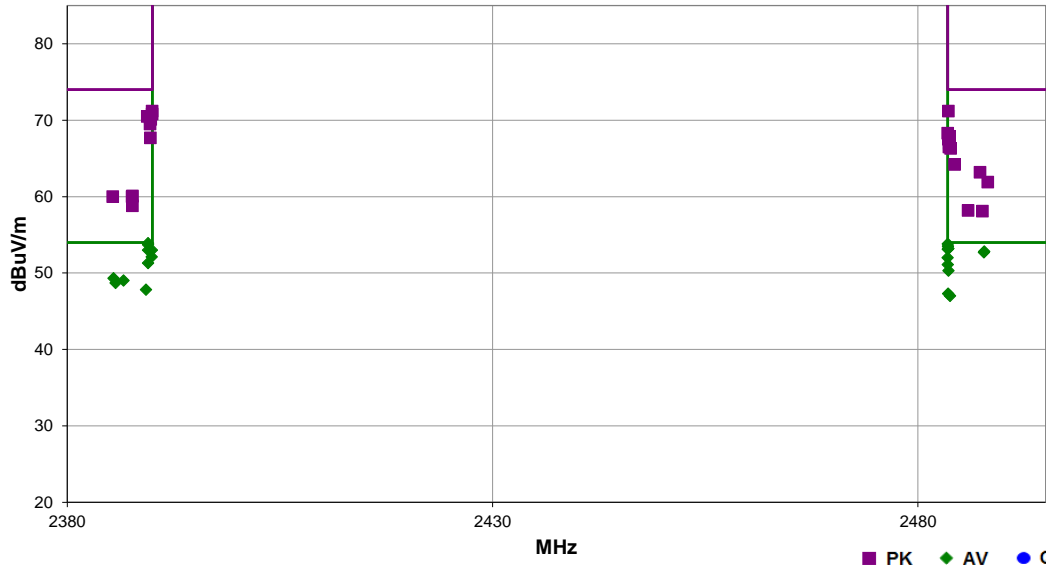


EmiRS 2021.01.08.0 PSA-ESCI 2021.01.22.0

Work Order:	LGPD0256	Date:	2021-03-17	
Project:	None	Temperature:	23.3 °C	
Job Site:	MNO5	Humidity:	27.2% RH	
Serial Number:	2420M00120	Barometric Pres.:	1021 mbar	
EUT:	SOMA3703-32-1780AKIR-A / 1027255 Rev B			
Configuration:	1			
Customer:	Logic PD, Inc.			
Attendees:	Eric Fritz			
EUT Power:	120VAC/60Hz			
Operating Mode:	Transmitting 2.4GHz WiFi High Ch 11 (2462 MHz), Low Ch 1 (2412 MHz). Power 20 unless noted in comments.			
Deviations:	None			
Comments:	Antenna located off the board. DCCF correction based off of 10*log(1/duty cycle), 6 Mbps operates at 96.5% DC (0.1dB DCCF), 36 Mbps at 90.8% DC (0.4dB DCCF), 54 Mbps at 87.4% DC (0.6dB DCCF), MCS0 at 97% DC (0.1dB DCCF), MCS7 at 79% DC (1.0dB DCCF). All power settings used for testing are at or above the level specified for use in the field.			

Test Specifications	Test Method
FCC 15.247:2021	ANSI C63.10:2013

Run #	75	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
2389.500	38.4	-4.6	2.8	167.0	0.1	20.0	Horz	AV	0.0	53.9	54.0	-0.1	EUT On Side, Low Ch, MCS0, Integration
2483.525	38.2	-4.8	2.1	201.9	0.4	20.0	Horz	AV	0.0	53.8	54.0	-0.2	EUT On Side, High Ch, 36 Mbps
2389.500	37.9	-4.6	2.8	167.0	0.4	20.0	Horz	AV	0.0	53.7	54.0	-0.3	EUT On Side, Low Ch, 36 Mbps
2483.542	37.7	-4.8	2.1	201.9	0.6	20.0	Horz	AV	0.0	53.5	54.0	-0.5	EUT On Side, High Ch, 54 Mbps
2483.567	37.9	-4.8	3.0	227.0	0.1	20.0	Horz	AV	0.0	53.2	54.0	-0.8	EUT On Side, High Ch, 6 Mbps
2483.558	37.9	-4.8	2.1	201.9	0.1	20.0	Horz	AV	0.0	53.2	54.0	-0.8	EUT On Side, High Ch, MCS0
2483.525	36.9	-4.8	2.1	201.9	1.0	20.0	Horz	AV	0.0	53.1	54.0	-0.9	EUT On Side, High Ch, MCS7
2389.500	37.5	-4.6	2.8	167.0	0.1	20.0	Horz	AV	0.0	53.0	54.0	-1.0	EUT On Side, Low Ch, MCS0, pwr 1F, MCS0
2389.950	37.0	-4.6	2.8	167.0	0.6	20.0	Horz	AV	0.0	53.0	54.0	-1.0	EUT On Side, Low Ch, 54 Mbps
2487.808	37.6	-4.8	2.1	201.9	0.0	20.0	Horz	AV	0.0	52.8	54.0	-1.2	EUT On Side, High Ch, 11 Mbps
2487.767	37.5	-4.8	2.1	202.0	0.0	20.0	Horz	AV	0.0	52.7	54.0	-1.3	EUT On Side, High ch 1 Mbps
2389.933	36.6	-4.6	2.8	167.0	0.1	20.0	Horz	AV	0.0	52.1	54.0	-1.9	EUT On Side, Low Ch, 6 Mbps
2483.500	36.7	-4.8	3.2	5.0	0.1	20.0	Horz	AV	0.0	52.0	54.0	-2.0	EUT Horz, High Ch, 6 Mbps
2389.500	35.8	-4.6	2.8	167.0	0.1	20.0	Horz	AV	0.0	51.3	54.0	-2.7	EUT On Side, Low Ch, 6 Mbps, Integration
2483.567	56.0	-4.8	2.1	201.9	0.0	20.0	Horz	PK	0.0	71.2	74.0	-2.8	EUT On Side, High Ch, 36 Mbps
2389.983	55.8	-4.6	2.8	167.0	0.0	20.0	Horz	PK	0.0	71.2	74.0	-2.8	EUT On Side, Low Ch, MCS0
2483.508	35.8	-4.8	1.5	166.0	0.1	20.0	Vert	AV	0.0	51.1	54.0	-2.9	EUT Vert, High Ch, 6 Mbps
2389.983	55.4	-4.6	2.8	167.0	0.0	20.0	Horz	PK	0.0	70.8	74.0	-3.2	EUT On Side, Low Ch, 6 Mbps
2389.408	55.1	-4.6	2.8	167.0	0.0	20.0	Horz	PK	0.0	70.5	74.0	-3.5	EUT On Side, Low Ch, MCS0, pwr 1F, MCS0
2483.600	35.0	-4.8	3.7	303.0	0.1	20.0	Vert	AV	0.0	50.3	54.0	-3.7	EUT Horz, High Ch, 6 Mbps
2389.758	54.9	-4.6	2.8	167.0	0.0	20.0	Horz	PK	0.0	70.3	74.0	-3.7	EUT On Side, Low Ch, 36 Mbps
2389.817	54.7	-4.6	2.8	167.0	0.0	20.0	Horz	PK	0.0	70.1	74.0	-3.9	EUT On Side, Low Ch, 6 Mbps
2389.725	54.1	-4.6	2.8	167.0	0.0	20.0	Horz	PK	0.0	69.5	74.0	-4.5	EUT On Side, Low Ch, 6 Mbps
2385.442	33.9	-4.6	2.8	167.0	0.0	20.0	Horz	AV	0.0	49.3	54.0	-4.7	EUT On Side, Low Ch, 1 Mbps
2386.625	33.6	-4.6	2.8	167.0	0.0	20.0	Horz	AV	0.0	49.0	54.0	-5.0	EUT on side, Low Ch, 11 Mbps
2385.700	33.3	-4.6	2.8	167.0	0.0	20.0	Horz	AV	0.0	48.7	54.0	-5.3	EUT On Side, Low Ch, 11 Mbps
2483.500	53.1	-4.8	3.0	227.0	0.0	20.0	Horz	PK	0.0	68.3	74.0	-5.7	EUT On Side, High Ch, 6 Mbps
2483.725	52.7	-4.8	2.1	201.9	0.0	20.0	Horz	PK	0.0	67.9	74.0	-6.1	EUT On Side, High Ch, MCS0

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
2389.267	31.4	-4.6	2.8	167.0	1.0	20.0	Horz	AV	0.0	47.8	54.0	-6.2	EUT On Side, Low Ch, MCS7
2389.783	52.3	-4.6	2.8	167.0		20.0	Horz	PK	0.0	67.7	74.0	-6.3	EUT On Side, Low Ch, 54 Mbps
2483.567	52.3	-4.8	2.1	201.9		20.0	Horz	PK	0.0	67.5	74.0	-6.5	EUT On Side, High Ch, 54 Mbps
2483.558	32.0	-4.8	2.2	293.0	0.1	20.0	Horz	AV	0.0	47.3	54.0	-6.7	EUT Vert, High Ch, 6 Mbps
2483.683	51.8	-4.8	2.1	201.9		20.0	Horz	PK	0.0	67.0	74.0	-7.0	EUT On Side, High Ch, MCS7
2483.783	31.7	-4.8	1.5	348.9	0.1	20.0	Vert	AV	0.0	47.0	54.0	-7.0	EUT On Side, High Ch, 6 Mbps
2483.642	51.3	-4.8	3.2	5.0		20.0	Horz	PK	0.0	66.5	74.0	-7.5	EUT Horz, High Ch, 6 Mbps
2483.833	51.1	-4.8	1.5	166.0		20.0	Vert	PK	0.0	66.3	74.0	-7.7	EUT Vert, High Ch, 6 Mbps
2484.300	49.0	-4.8	3.7	303.0		20.0	Vert	PK	0.0	64.2	74.0	-9.8	EUT Horz, High Ch, 6 Mbps
2487.292	48.0	-4.8	2.1	201.9		20.0	Horz	PK	0.0	63.2	74.0	-10.8	EUT On Side, High Ch, 11 Mbps
2488.217	46.8	-4.9	2.1	202.0		20.0	Horz	PK	0.0	61.9	74.0	-12.1	EUT On Side, High ch 1 Mbps
2387.667	44.7	-4.6	2.8	167.0		20.0	Horz	PK	0.0	60.1	74.0	-13.9	EUT On side, Low Ch, 11 Mbps
2387.617	44.6	-4.6	2.8	167.0		20.0	Horz	PK	0.0	60.0	74.0	-14.0	EUT On Side, Low Ch, 1 Mbps
2385.350	44.6	-4.6	2.8	167.0		20.0	Horz	PK	0.0	60.0	74.0	-14.0	EUT On Side, Low Ch, 11 Mbps
2387.658	43.4	-4.6	2.8	167.0		20.0	Horz	PK	0.0	58.8	74.0	-15.2	EUT On Side, Low Ch, MCS7
2485.900	43.0	-4.8	2.2	293.0		20.0	Horz	PK	0.0	58.2	74.0	-15.8	EUT Vert, High Ch, 6 Mbps
2487.583	42.9	-4.8	1.5	348.9		20.0	Vert	PK	0.0	58.1	74.0	-15.9	EUT On Side, High Ch, 6 Mbps

SPURIOUS RADIATED EMISSIONS



PSA-ESCI 2021.03.17.0

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 WiFi Low Ch 1 (2412 MHz), High Ch (2462 MHz) @ 1, 11, 6, 36, 54 Mbps, MCS0, MCS7. High Channel power level 50 unless otherwise noted in comments.

Transmitting WiFi Low Ch 1 (2412 MHz), Mid Ch 6 (2437 MHz), High Ch 11 (2462 MHz) @ 1, 11, 6, 36, and 54 Mbps, MCS0, MCS7. High Channel power level 50 unless otherwise noted in comments.

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

LGPD0256 - 4

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26500 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.	Cal. Due
Attenuator	Fairview Microwave	SA18E-20	TWZ	2020-09-14	2021-09-14
Cable	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	2021-03-07	2022-03-07
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	2021-01-15	2022-01-15
Cable	ESM Cable Corp.	Bilog Cables	MNH	2020-10-06	2021-10-06
Filter - High Pass	Micro-Tronics	HPM50111	LFN	2020-09-14	2021-09-14
Filter - Low Pass	Micro-Tronics	LPM50004	LFK	2020-09-24	2021-09-24
Antenna - Standard Gain	ETS Lindgren	3160-07	AXP	NCR	NCR
Antenna - Biconilog	ETS Lindgren	3142D	AXO	2019-09-03	2021-09-03
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	2021-01-15	2022-01-15
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	2021-01-15	2022-01-15
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVT	2021-01-15	2022-01-15
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AVO	2020-10-06	2021-10-06
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNP	2020-09-11	2021-09-11
Amplifier - Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	2020-09-11	2021-09-11
Antenna - Standard Gain	ETS Lindgren	3160-09	AHG	NCR	NCR
Antenna - Double Ridge	ETS-Lindgren	3115	AJQ	2021-01-25	2023-01-25
Antenna - Standard Gain	ETS Lindgren	3160-08	AIQ	NCR	NCR
Analyzer - Spectrum Analyzer	Keysight	N9010A (EXA)	AFQ	2020-12-27	2021-12-27

MEASUREMENT BANDWIDTHS

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

TEST DESCRIPTION

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

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

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

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

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

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

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

Measurements within 2 MHz of the allowable band may have been taken using the integration method from ANSI C63.10 clause 11.13.3. This procedure uses the channel power feature of the spectrum analyzer to integrate the power of the emission within a 1 MHz bandwidth.

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 $10 \cdot \log(1/dc)$.



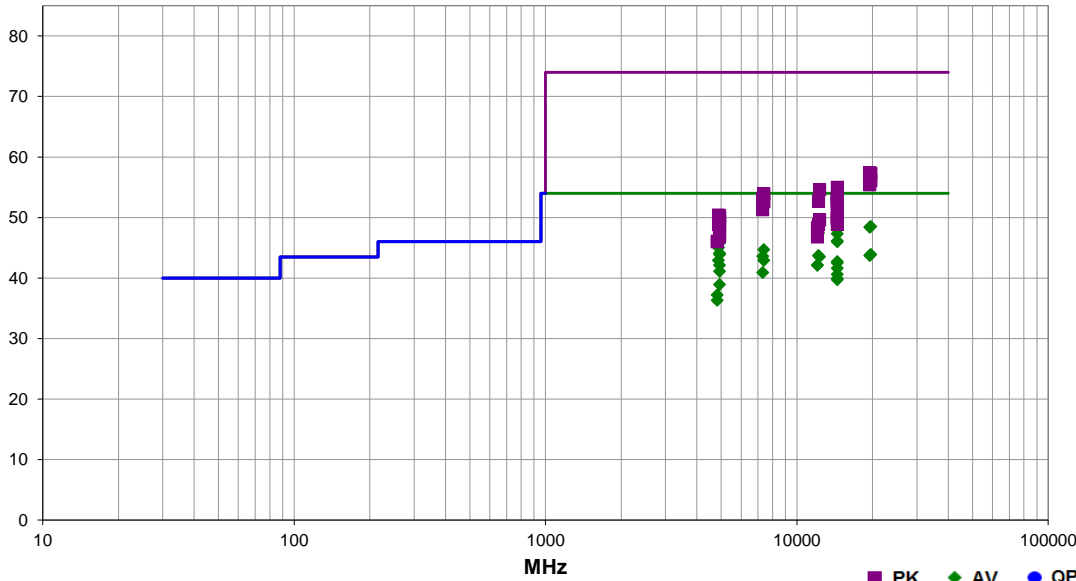
SPURIOUS RADIATED EMISSIONS

EmR5 2021.01.08.0 PSA-ESCI 2021.03.17.0

Work Order:	LGPD0256	Date:	2021-03-29	
Project:	None	Temperature:	21 °C	
Job Site:	MN05	Humidity:	28.5% RH	
Serial Number:	2420M00120	Barometric Pres.:	997 mbar	
EUT:	SOMA3703-32-1780AKIR-A / 1027255 Rev B			
Configuration:	4			
Customer:	Logic PD, Inc.			
Attendees:	Eric Fritz			
EUT Power:	120VAC/60Hz			
Operating Mode:	Transmitting WiFi Low Ch 1 (2412 MHz), Mid Ch 6 (2437 MHz), High Ch 11 (2462 MHz) @ 1, 11, 6, 36, and 54 Mbps, MCS0, MCS7. High Channel power level 50 unless otherwise noted in comments.			
Deviations:	None			
Comments:	Antenna located off the board. DCCF correction based off of 10*log(1/duty cycle), 6 Mbps operates at 96.5% DC (0.1dB DCCF), 36 Mbps at 90.8% DC (0.4dB DCCF), 54 Mbps at 87.4% DC (0.6dB DCCF), MCS0 at 97% DC (0.1dB DCCF), MCS7 at 79% DC (1.0dB DCCF). All power settings used for testing are at or above the level specified for use in the field.			

Test Specifications	Test Method
FCC 15.247:2021	ANSI C63.10:2013

Run #	172	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	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
14472.020	42.5	8.2	1.7	224.0	0.6	0.0	Vert	AV	0.0	51.3	54.0	-2.7	EUT Vert, Low Ch, 54 Mbps
14471.990	41.1	8.2	1.8	174.0	0.0	0.0	Vert	AV	0.0	49.3	54.0	-4.7	EUT Vert, Low Ch, 1 Mbps
12311.010	48.4	0.6	2.0	209.0	0.0	0.0	Horz	AV	0.0	49.0	54.0	-5.0	EUT Vert, High Ch, 1 Mbps
14471.980	39.6	8.2	1.5	242.0	1.0	0.0	Vert	AV	0.0	48.8	54.0	-5.2	EUT Vert, Low Ch, MCS7
14471.940	40.3	8.2	2.2	192.0	0.0	0.0	Horz	AV	0.0	48.5	54.0	-5.5	EUT Vert, Low Ch, 1 Mbps
19695.980	32.3	16.2	1.5	128.9	0.0	0.0	Horz	AV	0.0	48.5	54.0	-5.5	PWR 1E, EUT Vert, High Ch, 1 Mbps
19496.000	32.6	15.8	1.5	124.9	0.0	0.0	Horz	AV	0.0	48.4	54.0	-5.6	EUT Vert, Mid Ch, 1 Mbps
14472.010	39.7	8.2	1.5	240.9	0.1	0.0	Vert	AV	0.0	48.0	54.0	-6.0	EUT Vert, Low Ch, MCS0
12185.880	47.3	0.1	1.9	214.9	0.0	0.0	Horz	AV	0.0	47.4	54.0	-6.6	EUT Vert, Mid Ch, 1 Mbps
14471.990	38.7	8.2	1.5	240.9	0.4	0.0	Vert	AV	0.0	47.3	54.0	-6.7	EUT Vert, Low Ch, 36 Mbps
14472.090	37.8	8.2	1.5	242.0	0.1	0.0	Vert	AV	0.0	46.1	54.0	-7.9	EUT Vert, Low Ch, 6 Mbps
14472.070	37.8	8.2	2.4	238.0	0.0	0.0	Vert	AV	0.0	46.0	54.0	-8.0	EUT Vert, Low Ch, 11 Mbps
4923.975	43.4	2.4	1.4	225.0	0.0	0.0	Vert	AV	0.0	45.8	54.0	-8.2	EUT Vert, High Ch, 1 Mbps
4874.033	42.6	2.4	2.1	249.0	0.0	0.0	Horz	AV	0.0	45.0	54.0	-9.0	EUT Vert, Mid Ch, 1 Mbps
7386.017	35.4	9.3	1.5	175.9	0.0	0.0	Horz	AV	0.0	44.7	54.0	-9.3	EUT Vert, High Ch, 1 Mbps
4923.975	41.7	2.4	2.2	181.0	0.0	0.0	Horz	AV	0.0	44.1	54.0	-9.9	EUT Vert, High Ch, 1 Mbps
4924.008	41.5	2.4	2.2	228.0	0.0	0.0	Horz	AV	0.0	43.9	54.0	-10.1	EUT Horz, High Ch, 1 Mbps
19694.930	27.7	16.2	1.5	55.9	0.0	0.0	Vert	AV	0.0	43.9	54.0	-10.1	PWR 1E, EUT Vert, High Ch, 1 Mbps
12185.020	43.6	0.1	2.0	160.0	0.0	0.0	Vert	AV	0.0	43.7	54.0	-10.3	EUT Vert, Mid Ch, 1 Mbps
19496.090	27.9	15.8	1.5	153.9	0.0	0.0	Vert	AV	0.0	43.7	54.0	-10.3	EUT Vert, Mid Ch, 1 Mbps
7311.000	34.4	9.2	1.1	157.9	0.0	0.0	Horz	AV	0.0	43.6	54.0	-10.4	EUT Vert, Mid Ch, 1 Mbps
12311.050	42.9	0.6	1.6	170.0	0.0	0.0	Vert	AV	0.0	43.5	54.0	-10.5	EUT Vert, High Ch, 1 Mbps
7385.933	33.6	9.3	1.5	175.9	0.0	0.0	Vert	AV	0.0	42.9	54.0	-11.1	EUT Vert, High Ch, 1 Mbps
4874.025	40.5	2.4	1.4	227.0	0.0	0.0	Vert	AV	0.0	42.9	54.0	-11.1	EUT Vert, Mid Ch, 1 Mbps

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	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
14472.030	34.4	8.2	4.0	167.9	0.1	0.0	Horz	AV	0.0	42.7	54.0	-11.3	EUT Vert, Low Ch, MCS0
14471.980	33.3	8.2	3.7	139.9	1.0	0.0	Horz	AV	0.0	42.5	54.0	-11.5	EUT Vert, Low Ch, MCS7
4924.025	39.7	2.4	2.2	217.0	0.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9	EUT Horz, High Ch, 1 Mbps
12059.960	42.0	0.1	2.9	225.0	0.0	0.0	Horz	AV	0.0	42.1	54.0	-11.9	EUT Vert, Low Ch, 1 Mbps
12060.020	42.0	0.1	2.0	163.9	0.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9	EUT Vert, Low Ch, 1 Mbps
14471.970	32.8	8.2	3.8	134.0	0.6	0.0	Horz	AV	0.0	41.6	54.0	-12.4	EUT Vert, Low Ch, 54 Mbps
4924.017	38.7	2.4	2.3	145.9	0.0	0.0	Vert	AV	0.0	41.1	54.0	-12.9	EUT On Side, High Ch, 1 Mbps
7311.033	31.7	9.2	1.5	225.9	0.0	0.0	Vert	AV	0.0	40.9	54.0	-13.1	EUT Vert, Mid Ch, 1 Mbps
14471.960	32.4	8.2	1.2	121.9	0.0	0.0	Horz	AV	0.0	40.6	54.0	-13.4	EUT Vert, Low Ch, 11 Mbps
14471.980	31.3	8.2	1.5	117.9	0.4	0.0	Horz	AV	0.0	39.9	54.0	-14.1	EUT Vert, Low Ch, 36 Mbps
14471.960	31.4	8.2	1.2	120.9	0.1	0.0	Horz	AV	0.0	39.7	54.0	-14.3	EUT Vert, Low Ch, 6 Mbps
4923.983	36.5	2.4	1.2	276.9	0.0	0.0	Horz	AV	0.0	38.9	54.0	-15.1	EUT On Side, High Ch, 1 Mbps
19496.080	41.6	15.8	1.5	124.9	0.0	0.0	Horz	PK	0.0	57.4	74.0	-16.6	EUT Vert, Mid Ch, 1 Mbps
19696.000	41.1	16.2	1.5	128.9	0.0	0.0	Horz	PK	0.0	57.3	74.0	-16.7	PWR 1E, EUT Vert, High Ch, 1 Mbps
4824.017	34.8	2.4	1.4	235.0	0.0	0.0	Horz	AV	0.0	37.2	54.0	-16.8	EUT Vert, Low Ch, 1 Mbps
4824.058	33.9	2.4	1.5	220.0	0.0	0.0	Vert	AV	0.0	36.3	54.0	-17.7	EUT Vert, Low Ch, 1 Mbps
19697.930	39.9	16.2	1.5	55.9	0.0	0.0	Vert	PK	0.0	56.1	74.0	-17.9	PWR 1E, EUT Vert, High Ch, 1 Mbps
19497.170	39.5	15.9	1.5	153.9	0.0	0.0	Vert	PK	0.0	55.4	74.0	-18.6	EUT Vert, Mid Ch, 1 Mbps
14472.000	46.8	8.2	1.7	224.0	0.0	0.0	Vert	PK	0.0	55.0	74.0	-19.0	EUT Vert, Low Ch, 54 Mbps
12309.990	54.0	0.6	2.0	209.0	0.0	0.0	Horz	PK	0.0	54.6	74.0	-19.4	EUT Vert, High Ch, 1 Mbps
7386.508	44.6	9.3	1.5	175.9	0.0	0.0	Horz	PK	0.0	53.9	74.0	-20.1	EUT Vert, High Ch, 1 Mbps
14472.140	45.1	8.2	1.8	174.0	0.0	0.0	Vert	PK	0.0	53.3	74.0	-20.7	EUT Vert, Low Ch, 1 Mbps
7310.983	44.0	9.2	1.1	157.9	0.0	0.0	Horz	PK	0.0	53.2	74.0	-20.8	EUT Vert, Mid Ch, 1 Mbps
14471.910	45.0	8.2	2.4	238.0	0.0	0.0	Vert	PK	0.0	53.2	74.0	-20.8	EUT Vert, Low Ch, 11 Mbps
14471.930	44.9	8.2	2.2	192.0	0.0	0.0	Horz	PK	0.0	53.1	74.0	-20.9	EUT Vert, Low Ch, 1 Mbps
12185.770	52.6	0.1	1.9	214.9	0.0	0.0	Horz	PK	0.0	52.7	74.0	-21.3	EUT Vert, Mid Ch, 1 Mbps
14471.990	44.5	8.2	1.5	240.9	0.0	0.0	Vert	PK	0.0	52.7	74.0	-21.3	EUT Vert, Low Ch, MCS0
7385.758	43.3	9.3	1.5	175.9	0.0	0.0	Vert	PK	0.0	52.6	74.0	-21.4	EUT Vert, High Ch, 1 Mbps
14472.180	44.4	8.2	1.5	242.0	0.0	0.0	Vert	PK	0.0	52.6	74.0	-21.4	EUT Vert, Low Ch, MCS7
14472.130	44.3	8.2	1.5	240.9	0.0	0.0	Vert	PK	0.0	52.5	74.0	-21.5	EUT Vert, Low Ch, 36 Mbps
14472.310	44.0	8.2	1.5	242.0	0.0	0.0	Vert	PK	0.0	52.2	74.0	-21.8	EUT Vert, Low Ch, 6 Mbps
7309.608	42.1	9.2	1.5	225.9	0.0	0.0	Vert	PK	0.0	51.3	74.0	-22.7	EUT Vert, Mid Ch, 1 Mbps
14472.070	42.7	8.2	1.2	121.9	0.0	0.0	Horz	PK	0.0	50.9	74.0	-23.1	EUT Vert, Low Ch, 11 Mbps
4874.092	48.0	2.4	2.1	249.0	0.0	0.0	Horz	PK	0.0	50.4	74.0	-23.6	EUT Vert, Mid Ch, 1 Mbps
4924.033	47.9	2.4	1.4	225.0	0.0	0.0	Vert	PK	0.0	50.3	74.0	-23.7	EUT Vert, High Ch, 1 Mbps
14471.870	42.1	8.2	1.2	120.9	0.0	0.0	Horz	PK	0.0	50.3	74.0	-23.7	EUT Vert, Low Ch, 6 Mbps
14471.910	41.8	8.2	4.0	167.9	0.0	0.0	Horz	PK	0.0	50.0	74.0	-24.0	EUT Vert, Low Ch, MCS0
4924.025	47.5	2.4	2.2	228.0	0.0	0.0	Horz	PK	0.0	49.9	74.0	-24.1	EUT Horz, High Ch, 1 Mbps
14472.410	41.7	8.2	3.8	134.0	0.0	0.0	Horz	PK	0.0	49.9	74.0	-24.1	EUT Vert, Low Ch, 54 Mbps
14472.180	41.5	8.2	3.7	139.9	0.0	0.0	Horz	PK	0.0	49.7	74.0	-24.3	EUT Vert, Low Ch, MCS7
12311.240	49.0	0.6	1.6	170.0	0.0	0.0	Vert	PK	0.0	49.6	74.0	-24.4	EUT Vert, High Ch, 1 Mbps
4923.892	46.9	2.4	2.2	181.0	0.0	0.0	Horz	PK	0.0	49.3	74.0	-24.7	EUT Vert, High Ch, 1 Mbps
14472.020	40.7	8.2	1.5	117.9	0.0	0.0	Horz	PK	0.0	48.9	74.0	-25.1	EUT Vert, Low Ch, 36 Mbps
4873.908	46.4	2.4	1.4	227.0	0.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	EUT Vert, Mid Ch, 1 Mbps
12185.080	48.7	0.1	2.0	160.0	0.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	EUT Vert, Mid Ch, 1 Mbps
4923.933	46.2	2.4	2.2	217.0	0.0	0.0	Vert	PK	0.0	48.6	74.0	-25.4	EUT Horz, High Ch, 1 Mbps
12059.790	48.2	0.1	2.9	225.0	0.0	0.0	Horz	PK	0.0	48.3	74.0	-25.7	EUT Vert, Low Ch, 1 Mbps
4924.150	45.0	2.4	2.3	145.9	0.0	0.0	Vert	PK	0.0	47.4	74.0	-26.6	EUT On Side, High Ch, 1 Mbps
4924.083	44.4	2.4	1.2	276.9	0.0	0.0	Horz	PK	0.0	46.8	74.0	-27.2	EUT On Side, High Ch, 1 Mbps
12059.980	46.7	0.1	2.0	163.9	0.0	0.0	Vert	PK	0.0	46.8	74.0	-27.2	EUT Vert, Low Ch, 1 Mbps
4823.725	43.7	2.4	1.5	220.0	0.0	0.0	Vert	PK	0.0	46.1	74.0	-27.9	EUT Vert, Low Ch, 1 Mbps
4823.858	43.6	2.4	1.4	235.0	0.0	0.0	Horz	PK	0.0	46.0	74.0	-28.0	EUT Vert, Low Ch, 1 Mbps

SPURIOUS RADIATED EMISSIONS

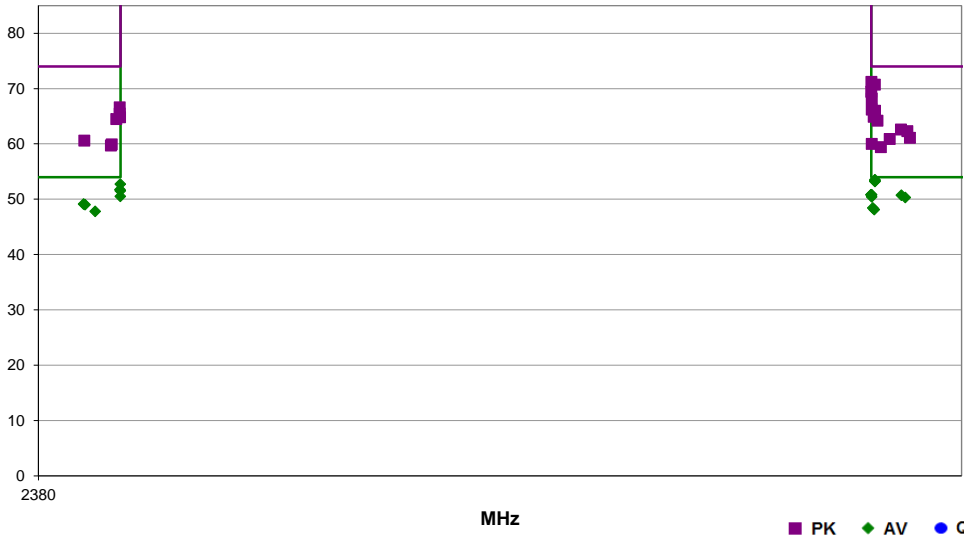


EmiRS 2021.01.08.0 PSA-ESCI 2021.03.17.0

Work Order:	LGPD0256	Date:	2021-03-29	
Project:	None	Temperature:	21 °C	
Job Site:	MN05	Humidity:	28.5% RH	
Serial Number:	2420M00120	Barometric Pres.:	997 mbar	
EUT:	SOMA3703-32-1780AKIR-A / 1027255 Rev B			
Configuration:	4			
Customer:	Logic PD, Inc.			
Attendees:	Eric Fritz			
EUT Power:	120VAC/60Hz			
Operating Mode:	Transmitting WiFi Low Ch 1 (2412 MHz), High Ch (2462 MHz) @ 1, 11, 6, 36, 54 Mbps, MCS0, MCS7. High Channel power level 50 unless otherwise noted in comments.			
Deviations:	None			
Comments:	Antenna located off the board. DCCF correction based off of 10*log(1/duty cycle), 6 Mbps operates at 96.5% DC (0.1dB DCCF), 36 Mbps at 90.8% DC (0.4dB DCCF), 54 Mbps at 87.4% DC (0.6dB DCCF), MCS0 at 97% DC (0.1dB DCCF), MCS7 at 79% DC (1.0dB DCCF). All power settings used for testing are at or above the level specified for use in the field.			

Test Specifications	Test Method
FCC 15.247:2021	ANSI C63.10:2013

Run #	181	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	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
2484.000	37.3	-4.8	3.6	192.0	1.0	20.0	Horz	AV	0.0	53.5	54.0	-0.5	PWR 1E, EUT Horz, High Ch, MCS7, Integration Method
2484.000	38.0	-4.8	3.6	192.0	0.1	20.0	Horz	AV	0.0	53.3	54.0	-0.7	PWR 1E, EUT Horz, High Ch, MCS0, Integration Method
2484.000	37.5	-4.8	3.6	192.0	0.6	20.0	Horz	AV	0.0	53.3	54.0	-0.7	PWR 1E, EUT Horz, High Ch, 54 Mbps, Integration Method
2484.000	37.6	-4.8	3.6	192.0	0.4	20.0	Horz	AV	0.0	53.2	54.0	-0.8	PWR 1E, EUT Horz, High Ch, 36 Mbps, Integration Method
2389.992	36.9	-4.6	1.6	191.0	0.4	20.0	Horz	AV	0.0	52.7	54.0	-1.3	EUT Horz, Low Ch, 36 Mbps
2389.950	35.3	-4.6	1.5	200.1	1.0	20.0	Horz	AV	0.0	51.7	54.0	-2.3	EUT Horz, Low Ch, MCS7
2389.983	35.5	-4.6	1.6	191.0	0.6	20.0	Horz	AV	0.0	51.5	54.0	-2.5	EUT Horz, Low Ch, 54 Mbps
2483.533	56.0	-4.8	3.6	192.0	0.0	20.0	Horz	PK	0.0	71.2	74.0	-2.8	PWR 1E, EUT Horz, High Ch, 36 Mbps
2483.500	35.5	-4.8	1.5	279.0	0.1	20.0	Vert	AV	0.0	50.8	54.0	-3.2	EUT Vert, High Ch, 6 Mbps
2483.508	35.5	-4.8	2.9	152.0	0.1	20.0	Horz	AV	0.0	50.8	54.0	-3.2	EUT Horz, High Ch, 6 Mbps
2483.575	35.5	-4.8	2.6	90.0	0.1	20.0	Vert	AV	0.0	50.8	54.0	-3.2	EUT Horz, High Ch, 6 Mbps
2487.350	35.5	-4.8	3.6	192.0	0.0	20.0	Horz	AV	0.0	50.7	54.0	-3.3	PWR 1F, EUT Horz, High Ch, 1 Mbps
2483.967	55.5	-4.8	3.6	192.0	0.0	20.0	Horz	PK	0.0	70.7	74.0	-3.3	PWR 1E, EUT Horz, High Ch, MCS0
2390.000	35.0	-4.6	1.6	191.0	0.1	20.0	Horz	AV	0.0	50.5	54.0	-3.5	EUT Horz, Low Ch, 6 Mbps
2483.583	35.1	-4.8	2.9	185.9	0.1	20.0	Horz	AV	0.0	50.4	54.0	-3.6	EUT On Side, High Ch, 6 Mbps
2487.842	35.1	-4.8	3.6	192.0	0.0	20.0	Horz	AV	0.0	50.3	54.0	-3.7	PWR 1F, EUT Horz, High Ch, 11 Mbps
2483.508	54.2	-4.8	3.6	192.0	0.0	20.0	Horz	PK	0.0	69.4	74.0	-4.6	PWR 1E, EUT Horz, High Ch, MCS7
2385.500	33.7	-4.6	1.6	191.0	0.0	20.0	Horz	AV	0.0	49.1	54.0	-4.9	EUT Horz, Low Ch, 1 Mbps
2385.692	33.6	-4.6	1.6	191.0	0.0	20.0	Horz	AV	0.0	49.0	54.0	-5.0	EUT Horz, Low Ch, 11 Mbps
2483.717	33.1	-4.8	1.5	80.0	0.1	20.0	Horz	AV	0.0	48.4	54.0	-5.6	EUT Vert, High Ch, 6 Mbps
2483.567	53.0	-4.8	3.6	192.0	0.0	20.0	Horz	PK	0.0	68.2	74.0	-5.8	PWR 1E, EUT Horz, High Ch, 54 Mbps
2483.917	32.8	-4.8	1.1	207.0	0.1	20.0	Vert	AV	0.0	48.1	54.0	-5.9	EUT On Side, High Ch, 6 Mbps
2386.925	32.3	-4.6	1.6	191.0	0.1	20.0	Horz	AV	0.0	47.8	54.0	-6.2	EUT Horz, Low Ch, MCS0
2389.917	51.2	-4.6	1.6	191.0	0.0	20.0	Horz	PK	0.0	66.6	74.0	-7.4	EUT Horz, Low Ch, 36 Mbps
2483.567	51.0	-4.8	2.9	152.0	0.0	20.0	Horz	PK	0.0	66.2	74.0	-7.8	EUT Horz, High Ch, 6 Mbps
2483.992	50.8	-4.8	2.9	185.9	0.0	20.0	Horz	PK	0.0	66.0	74.0	-8.0	EUT On Side, High Ch, 6 Mbps
2389.908	50.1	-4.6	1.6	191.0	0.0	20.0	Horz	PK	0.0	65.5	74.0	-8.5	EUT Horz, Low Ch, 54 Mbps
2483.817	49.7	-4.8	1.5	279.0	0.0	20.0	Vert	PK	0.0	64.9	74.0	-9.1	EUT Vert, High Ch, 6 Mbps
2389.942	49.4	-4.6	1.6	191.0	0.0	20.0	Horz	PK	0.0	64.8	74.0	-9.2	EUT Horz, Low Ch, 6 Mbps
2389.483	49.1	-4.6	1.5	200.1	0.0	20.0	Horz	PK	0.0	64.5	74.0	-9.5	EUT Horz, Low Ch, MCS7
2484.300	49.0	-4.8	2.6	90.0	0.0	20.0	Vert	PK	0.0	64.2	74.0	-9.8	EUT Horz, High Ch, 6 Mbps
2487.283	47.4	-4.8	3.6	185.0	0.0	20.0	Horz	PK	0.0	62.6	74.0	-11.4	PWR 50, EUT Horz, High Ch, 1 Mbps
2488.100	47.2	-4.9	3.6	184.0	0.0	20.0	Horz	PK	0.0	62.3	74.0	-11.7	PWR 50, EUT Horz, High Ch, 1 Mbps
2488.425	46.0	-4.9	3.6	192.0	0.0	20.0	Horz	PK	0.0	61.1	74.0	-12.9	PWR 1F, EUT Horz, High Ch, 11 Mbps

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	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
2485.858	45.7	-4.8	3.6	192.0		20.0	Horz	PK	0.0	60.9	74.0	-13.1	PWR 1F, EUT Horz, High Ch, 1 Mbps
2385.583	45.2	-4.6	1.6	191.0		20.0	Horz	PK	0.0	60.6	74.0	-13.4	EUT Horz, Low Ch, 11 Mbps
2483.583	44.8	-4.8	1.5	80.0		20.0	Horz	PK	0.0	60.0	74.0	-14.0	EUT Vert, High Ch, 6 Mbps
2388.925	44.5	-4.6	1.6	191.0		20.0	Horz	PK	0.0	59.9	74.0	-14.1	EUT Horz, Low Ch, 1 Mbps
2388.842	44.3	-4.6	1.6	191.0		20.0	Horz	PK	0.0	59.7	74.0	-14.3	EUT Horz, Low Ch, MCS0
2484.742	44.2	-4.8	1.1	207.0		20.0	Vert	PK	0.0	59.4	74.0	-14.6	EUT On Side, High Ch, 6 Mbps

OCCUPIED BANDWIDTH



element

XMI 2020.12.30.0

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5171B (EXG)	TEY	2019-12-31	2022-12-31
Block - DC	Fairview Microwave	SD3379	AMZ	2020-11-04	2021-11-04
Attenuator	Fairview Microwave	18B5W-26	RFY	2020-06-03	2021-06-03
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2020-09-14	2021-09-14
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAQ	2020-05-07	2021-05-07

TEST DESCRIPTION

The EUT was set to the channels and modes listed in the datasheet.

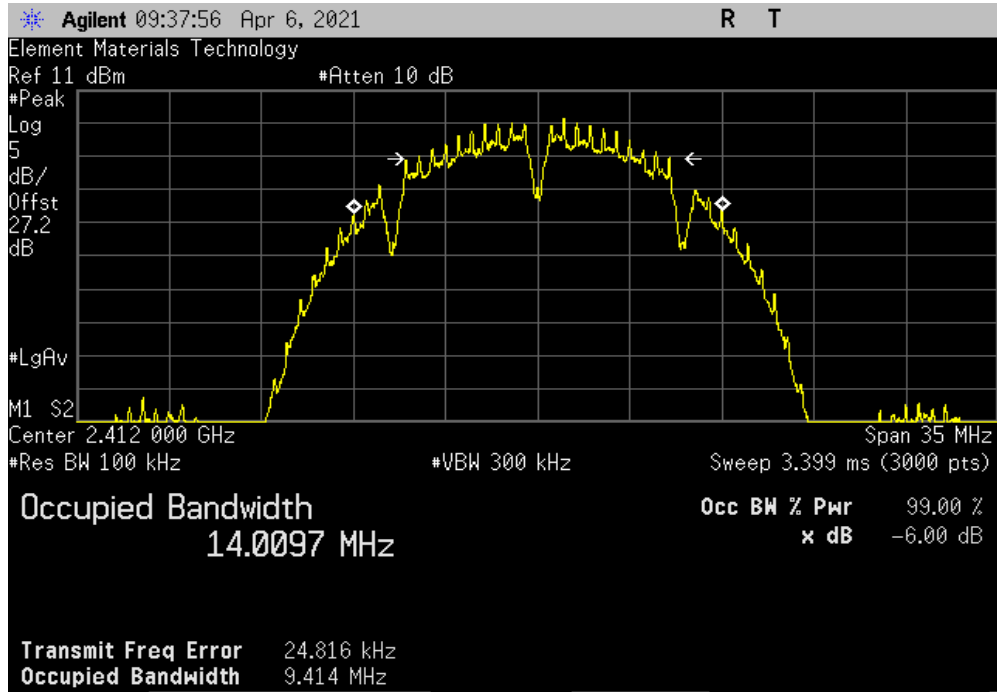
The 6dB occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.0% occupied bandwidth was also measured at the same time which can be needed during Output Power depending on the applicable method.

OCCUPIED BANDWIDTH

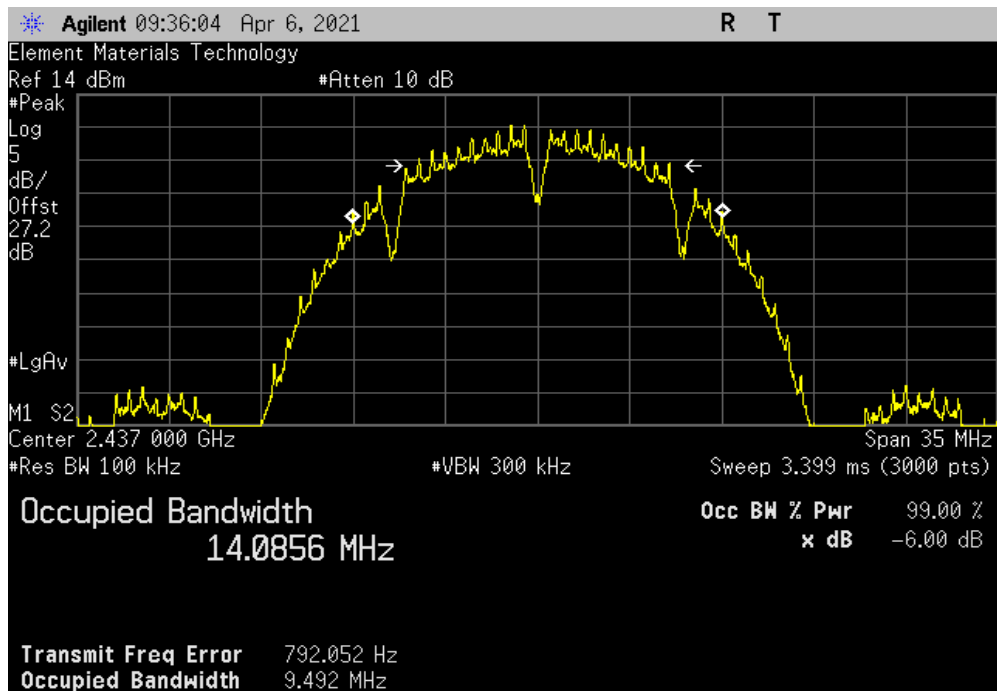


TuTx 2019.08.30.0 XMI 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit	Result
					(>)	
				9.414 MHz	500 kHz	Pass



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

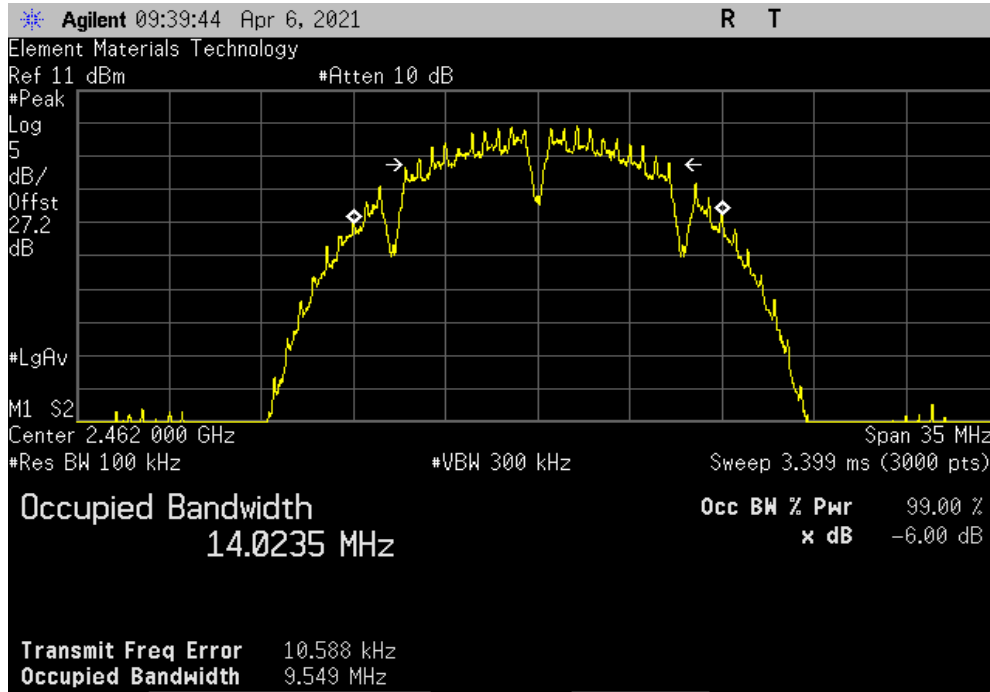


OCCUPIED BANDWIDTH

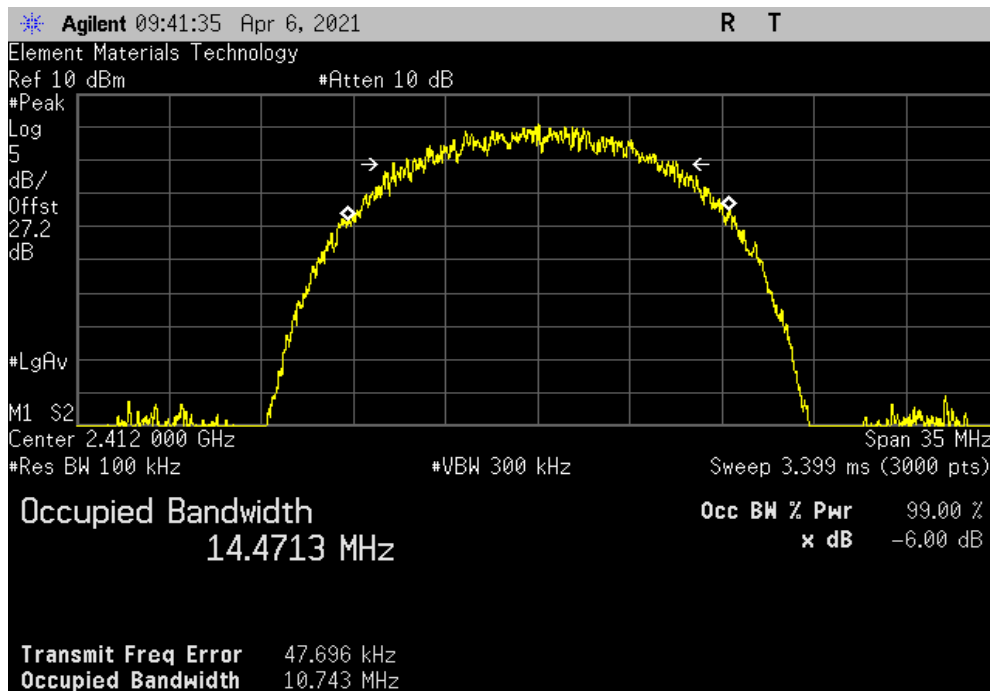


TuTx 2019.08.30.0 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz			
	Value	Limit	Result
	9.549 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz			
	Value	Limit	Result
	10.743 MHz	500 kHz	Pass

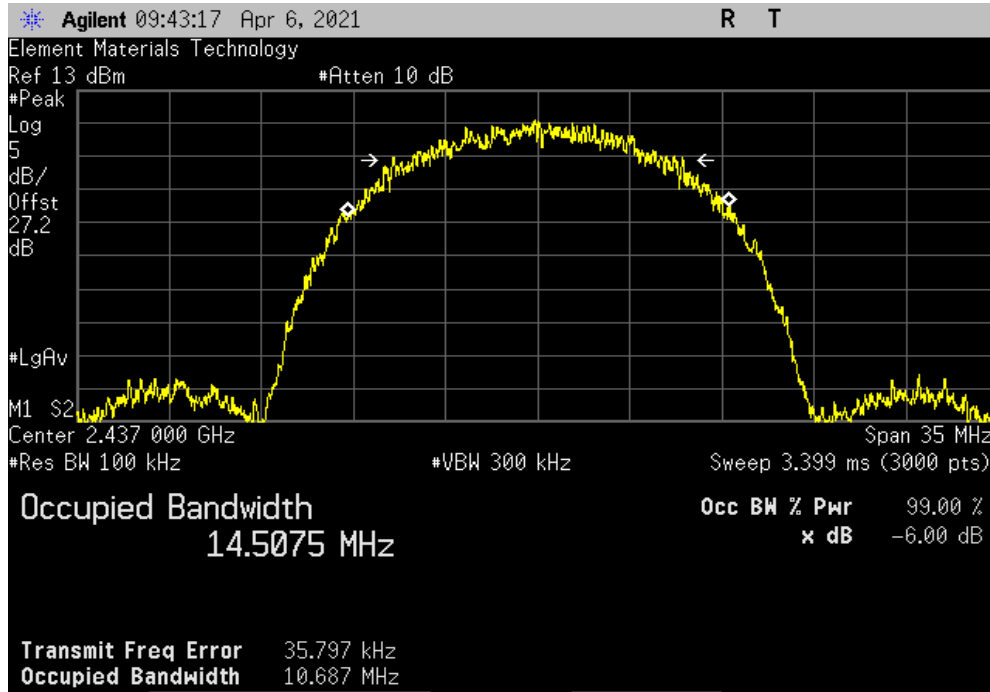


OCCUPIED BANDWIDTH

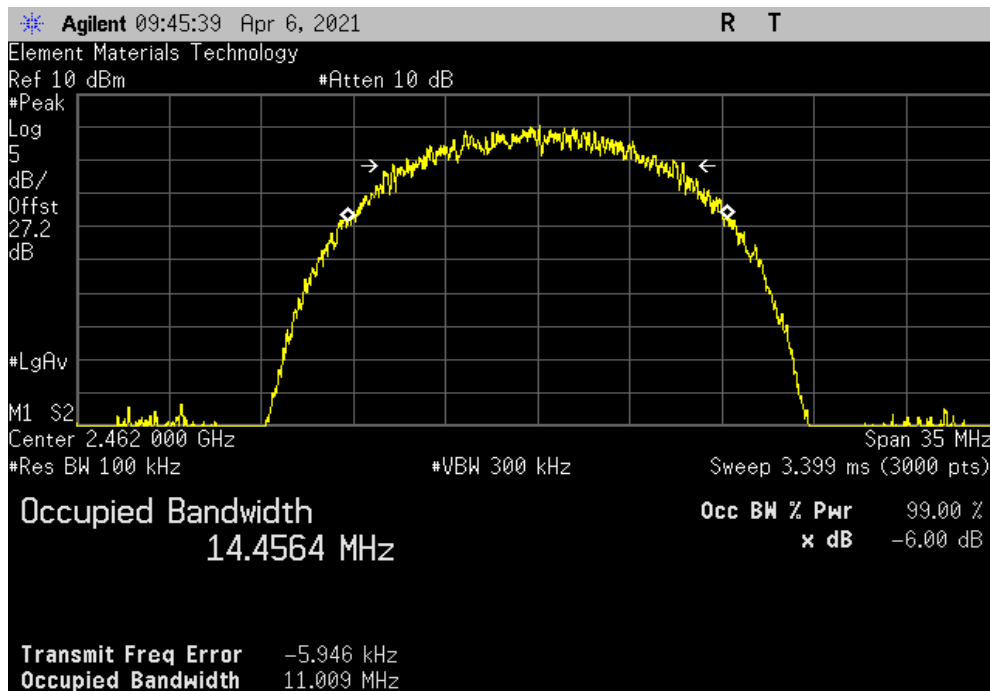


TuTx 2019.08.30.0 XMt 2020.12.30.0

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



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value	Limit	Result
					(>)	
				11.009 MHz	500 kHz	Pass

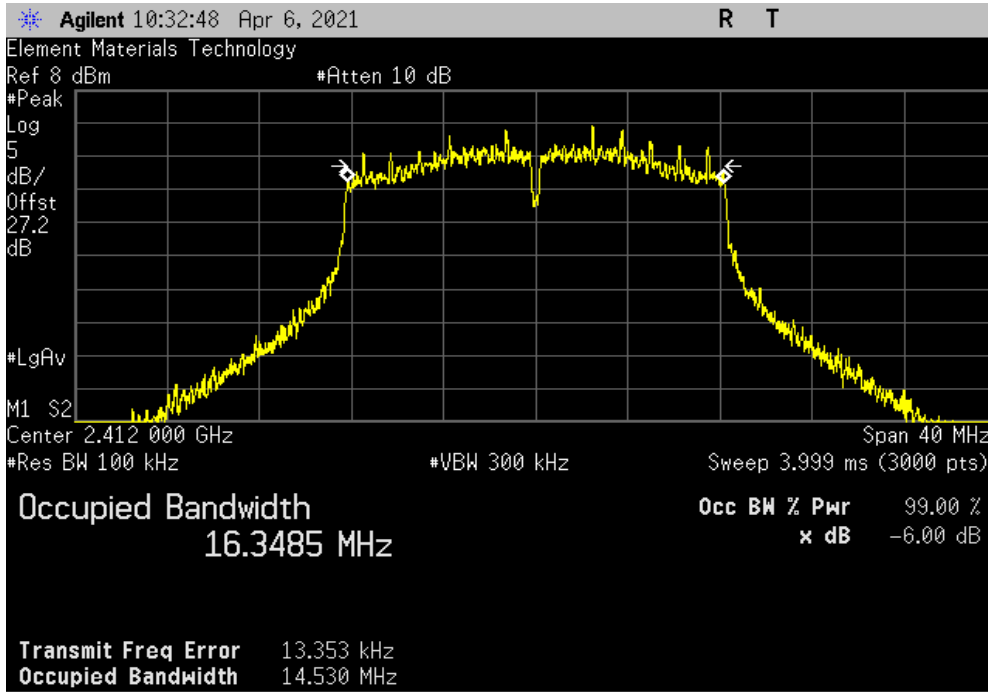


OCCUPIED BANDWIDTH

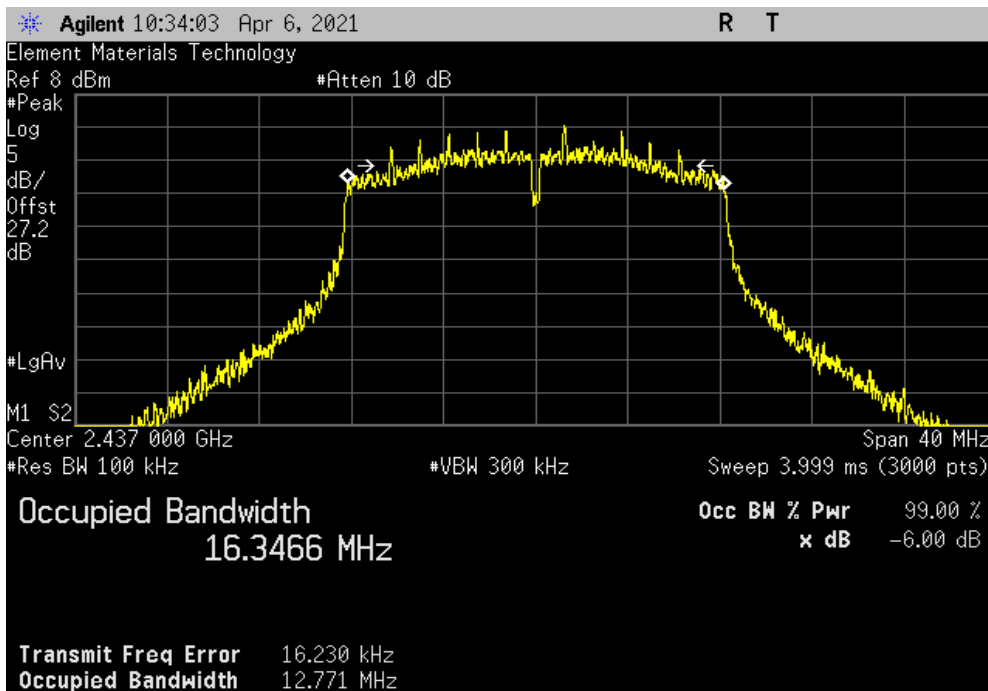


TuTx 2019.08.30.0 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit	Result
					(>)	
				14.53 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
					(>)	
				12.771 MHz	500 kHz	Pass

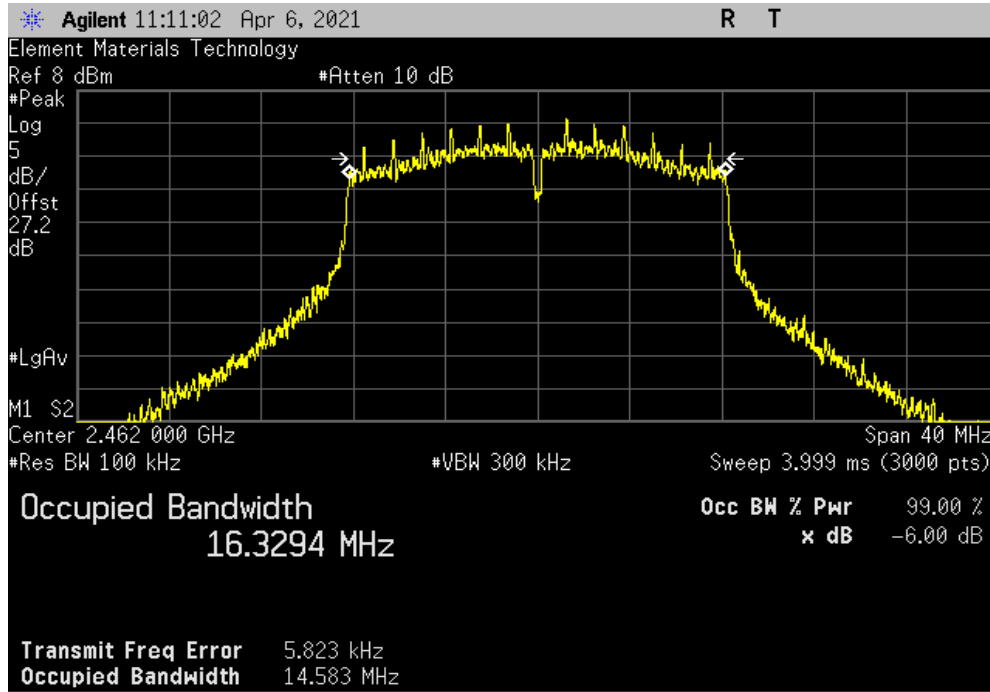


OCCUPIED BANDWIDTH

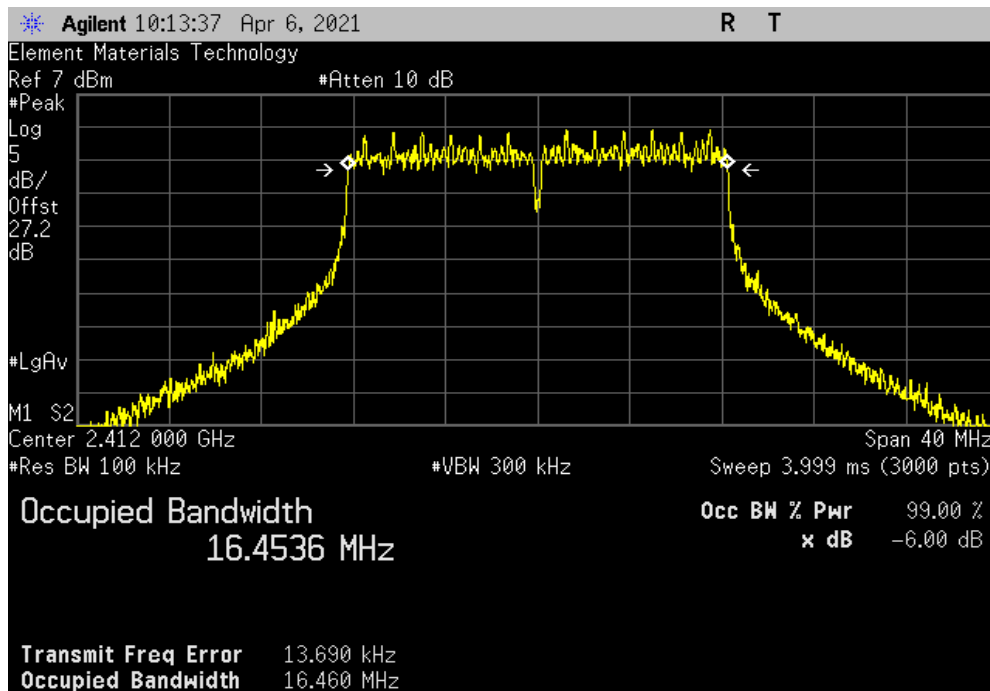


TuTx 2019.08.30.0 XMi 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz			
	Value	Limit	Result
	14.583 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz			
	Value	Limit	Result
	16.46 MHz	500 kHz	Pass

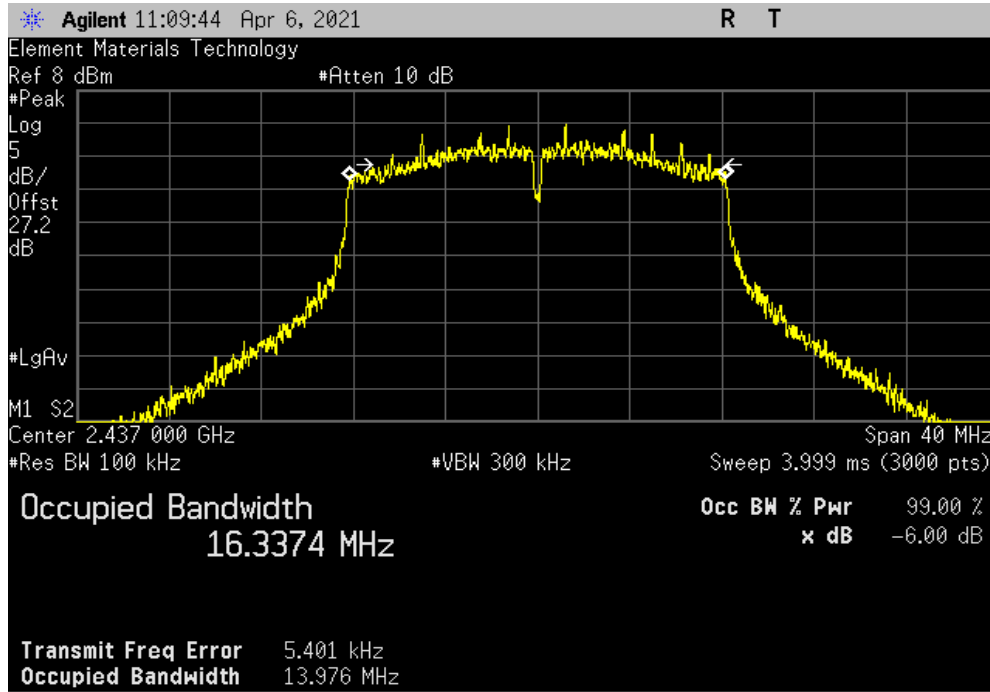


OCCUPIED BANDWIDTH

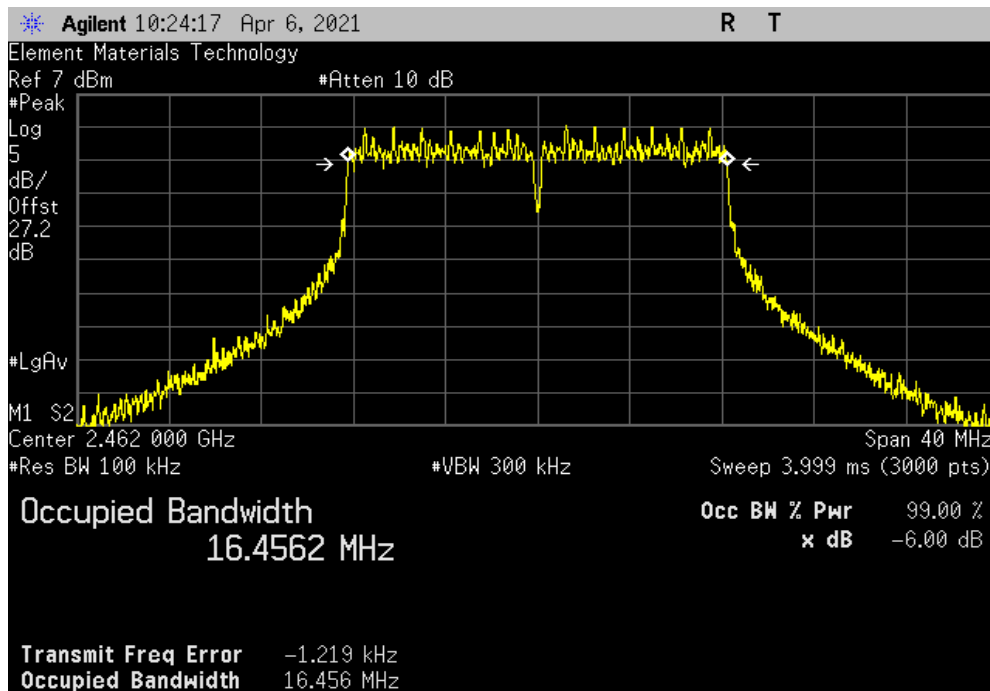


TuTx 2019.08.30.0 XMi 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz			
	Value	Limit (>)	Result
	13.976 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz			
	Value	Limit (>)	Result
	16.456 MHz	500 kHz	Pass

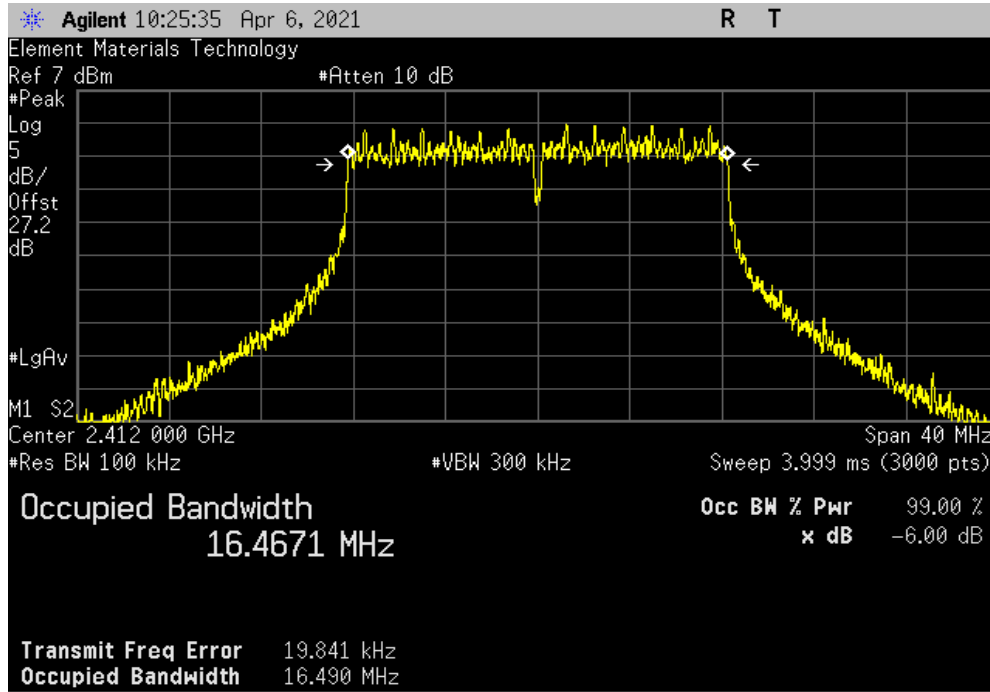


OCCUPIED BANDWIDTH

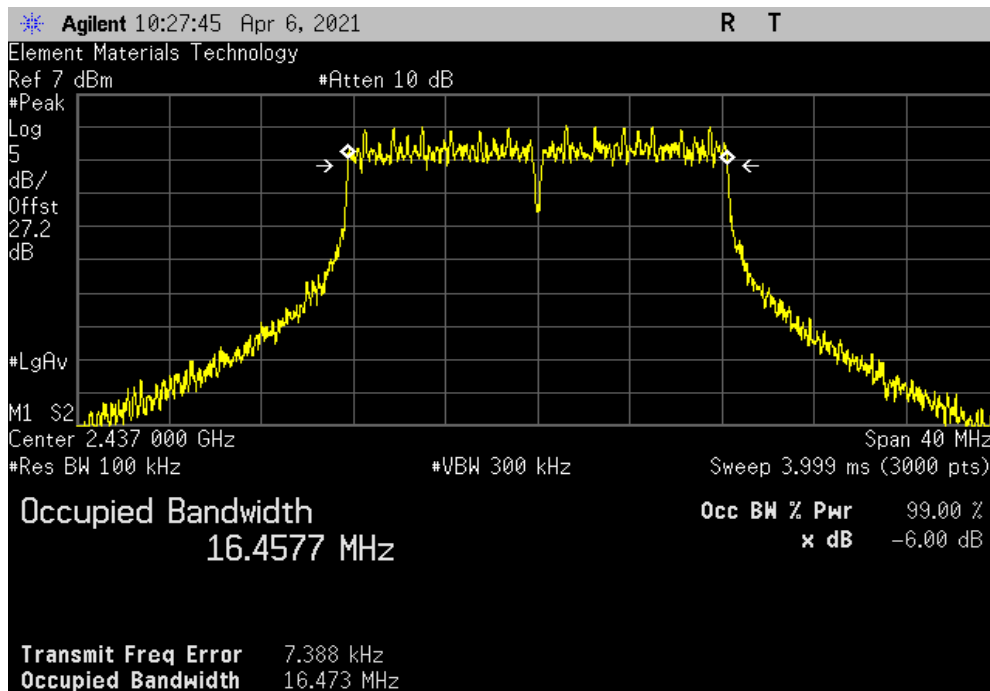


TuTx 2019.08.30.0 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz			
	Value	Limit	Result
	16.49 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz			
	Value	Limit	Result
	16.473 MHz	500 kHz	Pass

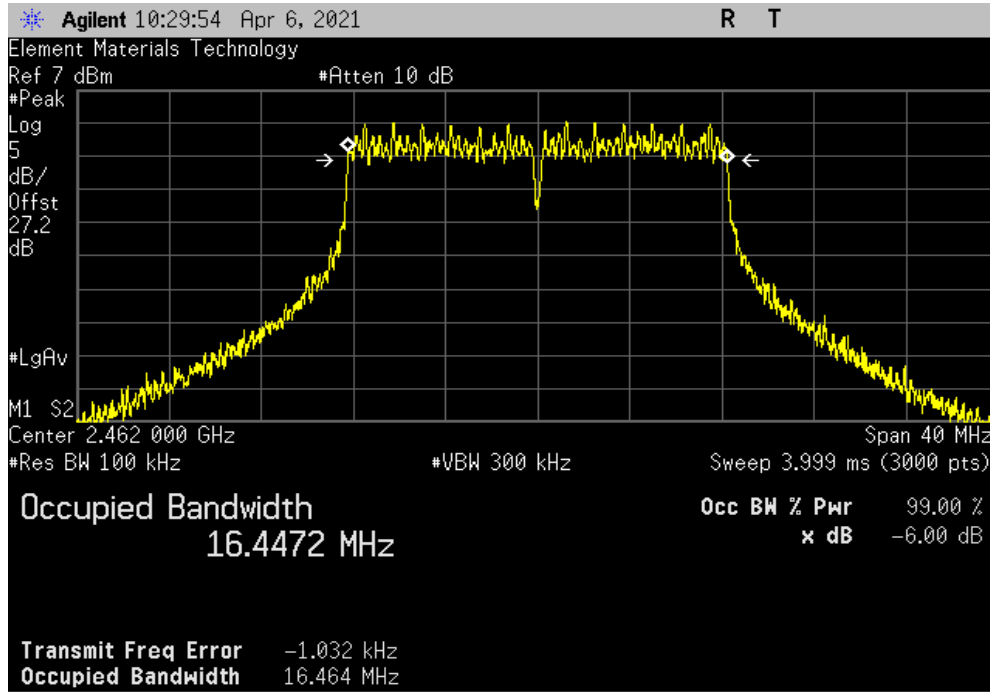


OCCUPIED BANDWIDTH

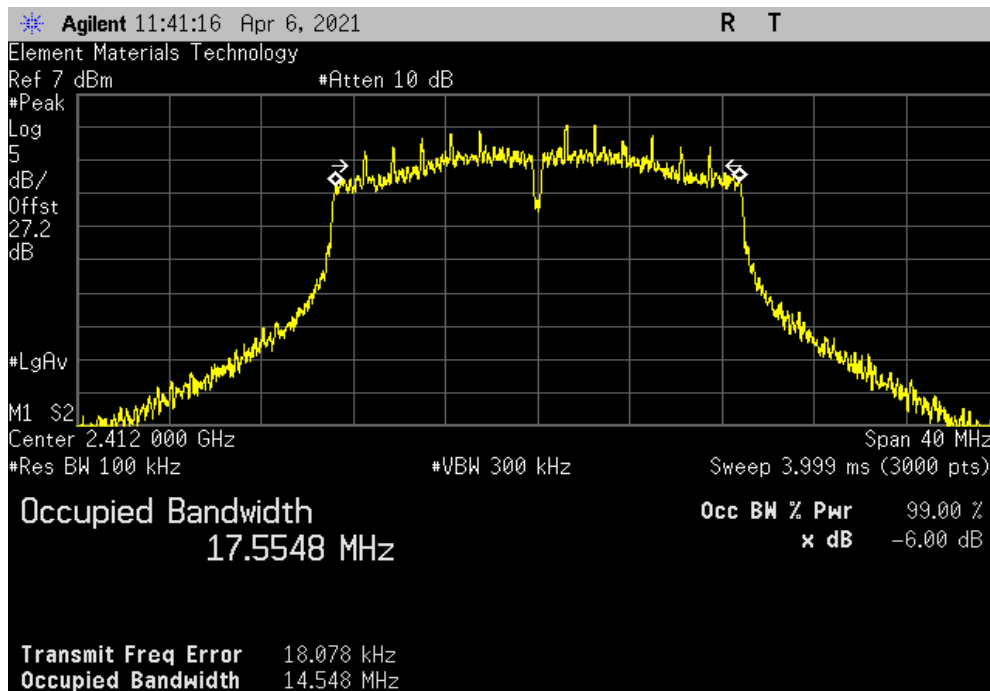


TuTx 2019.08.30.0 XMI 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz			
	Value	Limit	Result
	16.464 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz			
	Value	Limit	Result
	14.548 MHz	500 kHz	Pass

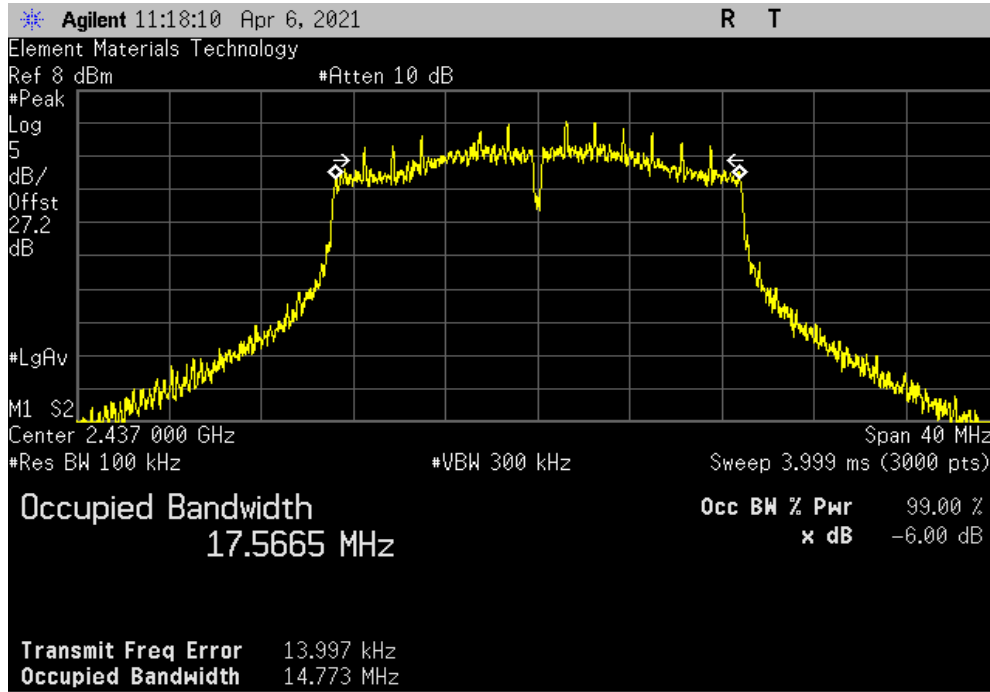


OCCUPIED BANDWIDTH

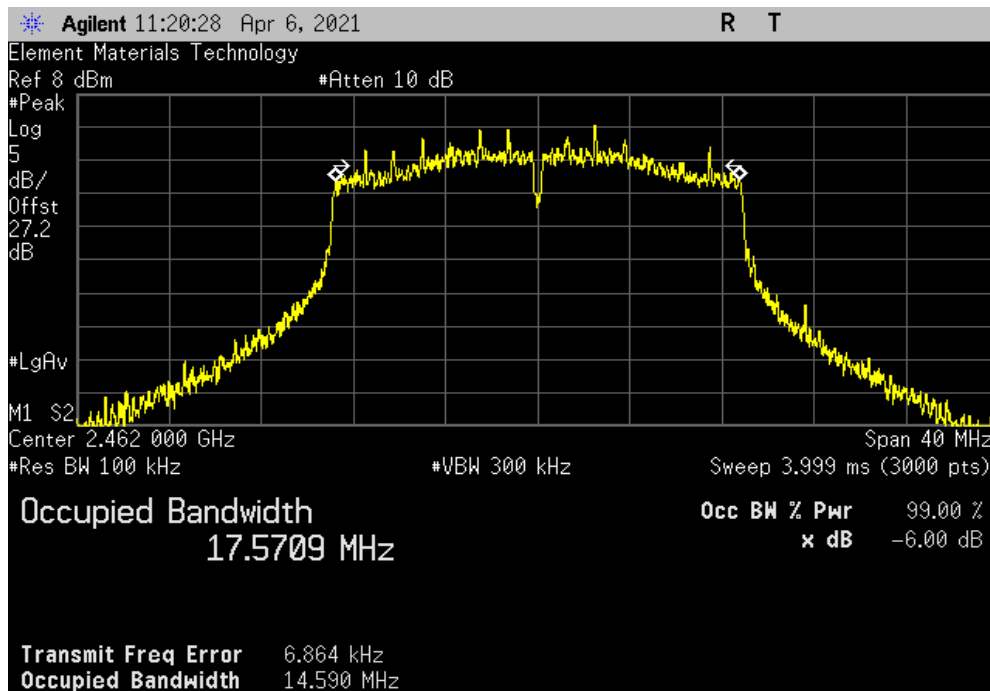


TuTx 2019.08.30.0 XMi 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz			
	Value	Limit	Result
	14.773 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz			
	Value	Limit	Result
	14.59 MHz	500 kHz	Pass

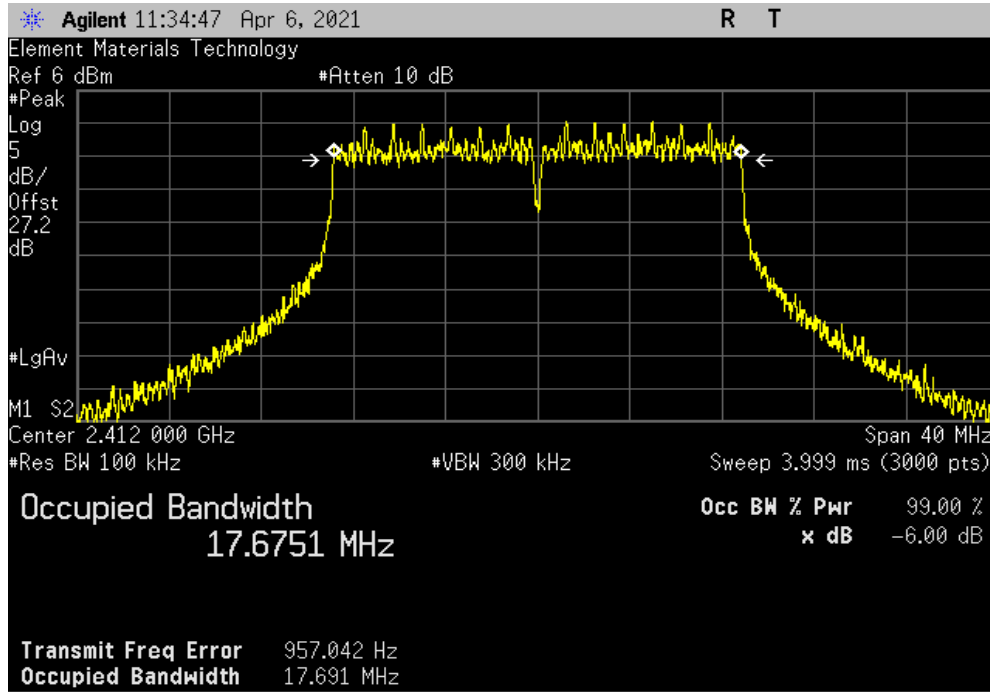


OCCUPIED BANDWIDTH

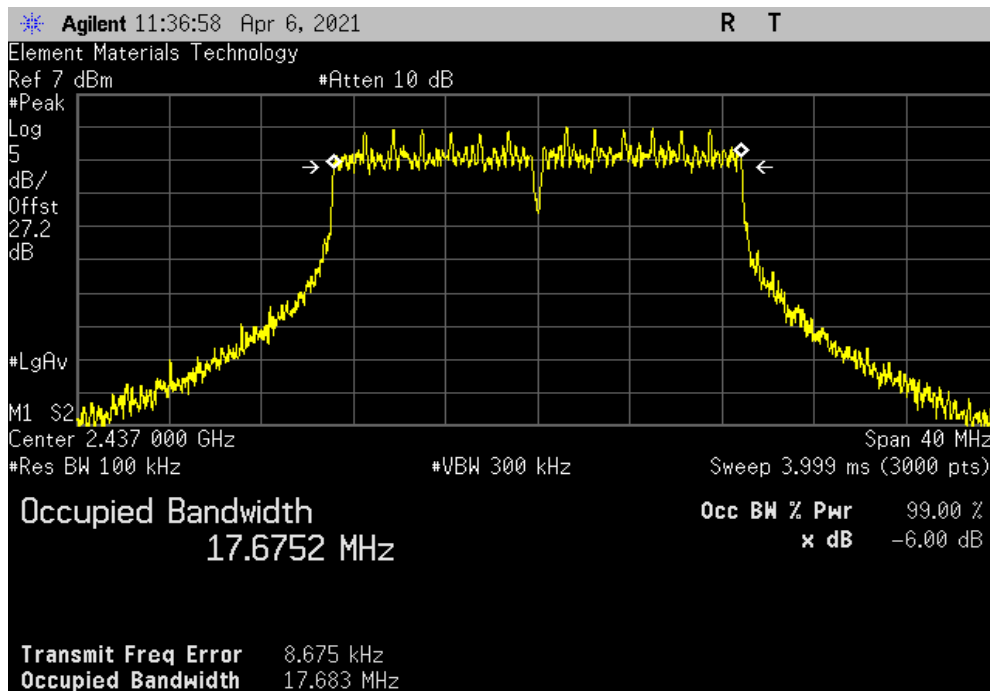


TuTx 2019.08.30.0 XMI 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
				Value	Limit	Result
					(>)	
				17.691 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
					(>)	
				17.683 MHz	500 kHz	Pass

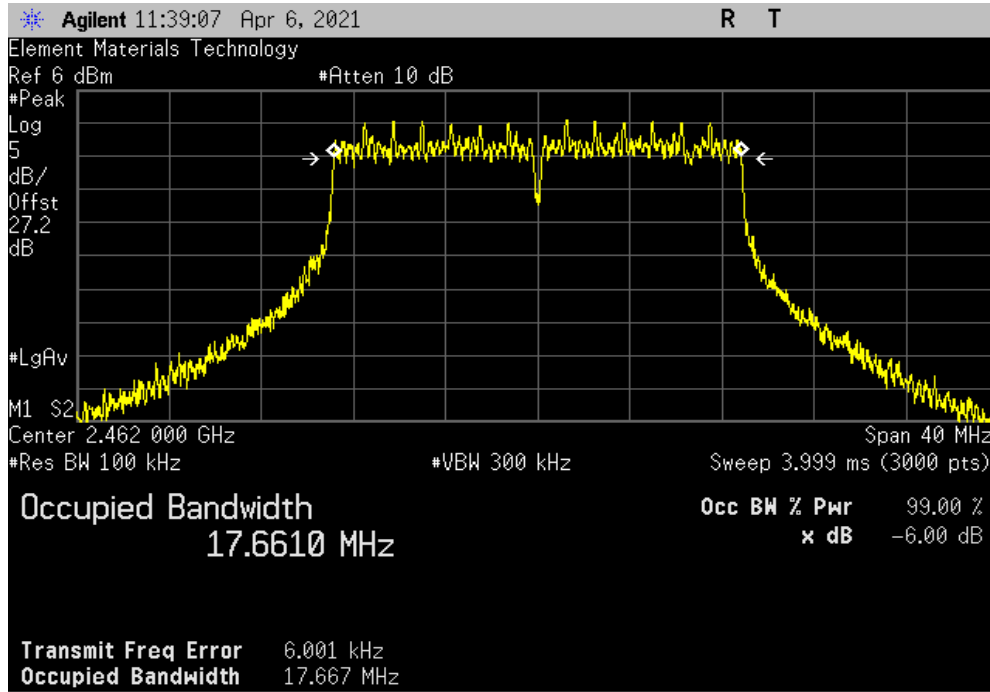


OCCUPIED BANDWIDTH



TbTx 2019.08.30.0 XMI 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz		
Value	Limit	Result
17.667 MHz	(>) 500 kHz	Pass



OUTPUT POWER



XMit 2020.12.30.0

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5183A	TIK	2019-04-30	2022-04-30
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2020-09-14	2021-09-14
Attenuator	S.M. Electronics	SA26B-20	TZP	2020-11-04	2021-11-04
Block - DC	Fairview Microwave	SD3379	AMI	2020-08-05	2021-08-05
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFG	2021-05-18	2022-05-18

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



TelTx 2021.03.19.1 XMI 2020.12.30.0

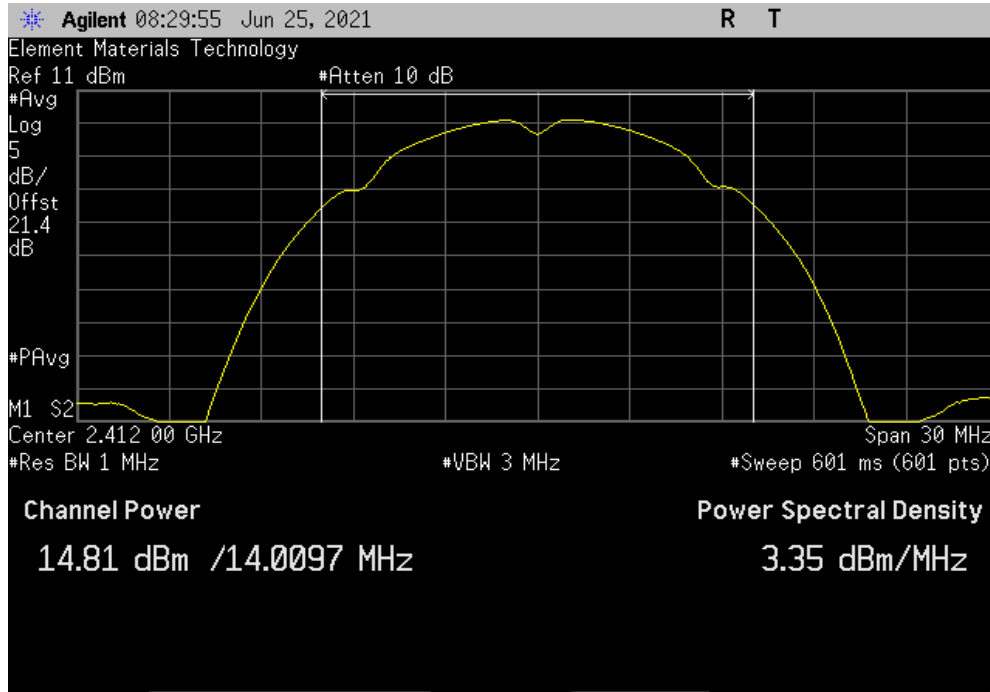
EUT: SOMA3703-32-1780AKIR-A / 1027255 Rev B		Work Order: LGPD0256				
Serial Number: 2420M00120		Date: 25-Jun-21				
Customer: Logic PD, Inc.		Temperature: 22 °C				
Attendees: Eric Fritz		Humidity: 50% RH				
Project: None		Barometric Pres.: 1014 mbar				
Tested by: Dan Haas		Power: 5VDC				
Job Site: MN08						
TEST SPECIFICATIONS		Test Method				
FCC 15.247:2021		ANSI C63.10:2013				
COMMENTS						
Reference level includes measurement cable, attenuator, and DC block.						
DEVIATIONS FROM TEST STANDARD						
None						
Configuration #	6	Signature				
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
2400 MHz - 2483.5 MHz Band						
802.11(b) 1 Mbps						
	Low Channel 1, 2412 MHz	14.813	0	14.8	30	Pass
	Mid Channel 6, 2437 MHz	17.42	0	17.4	30	Pass
	High Channel 11, 2462 MHz	14.911	0	14.9	30	Pass
802.11(b) 11 Mbps						
	Low Channel 1, 2412 MHz	14.826	0.1	14.9	30	Pass
	Mid Channel 6, 2437 MHz	17.436	0.1	17.6	30	Pass
	High Channel 11, 2462 MHz	14.878	0.1	15	30	Pass
802.11(g) 6 Mbps						
	Low Channel 1, 2412 MHz	12.393	0.1	12.5	30	Pass
	Mid Channel 6, 2437 MHz	13.297	0.1	13.4	30	Pass
	High Channel 11, 2462 MHz	13.63	0.1	13.7	30	Pass
802.11(g) 36 Mbps						
	Low Channel 1, 2412 MHz	11.85	0.5	12.3	30	Pass
	Mid Channel 6, 2437 MHz	12.831	0.5	13.3	30	Pass
	High Channel 11, 2462 MHz	13.146	0.5	13.6	30	Pass
802.11(g) 54 Mbps						
	Low Channel 1, 2412 MHz	11.663	0.7	12.3	30	Pass
	Mid Channel 6, 2437 MHz	12.659	0.7	13.3	30	Pass
	High Channel 11, 2462 MHz	12.982	0.7	13.7	30	Pass
802.11(n) MCS0						
	Low Channel 1, 2412 MHz	12.118	0.1	12.2	30	Pass
	Mid Channel 6, 2437 MHz	13.05	0.1	13.2	30	Pass
	High Channel 11, 2462 MHz	13.5	0.1	13.6	30	Pass
802.11(n) MCS7						
	Low Channel 1, 2412 MHz	11.801	0.7	12.5	30	Pass
	Mid Channel 6, 2437 MHz	12.254	0.7	13	30	Pass
	High Channel 11, 2462 MHz	12.02	0.7	12.7	30	Pass

OUTPUT POWER

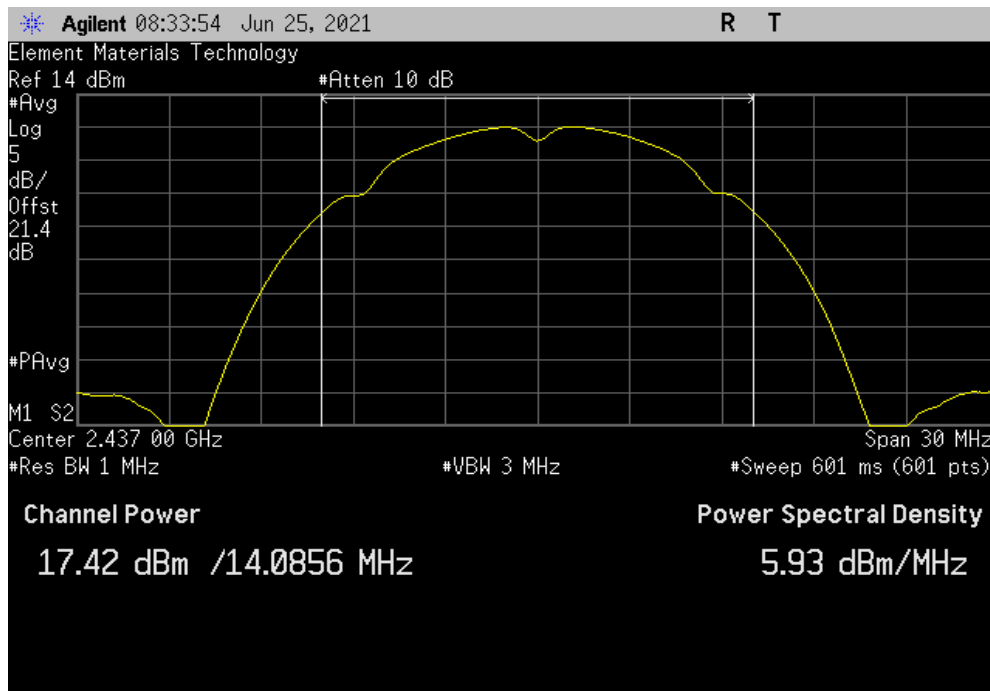


TuTx 2021.03.19.1 XMI 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	14.813	0	14.8	30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	17.42	0	17.4	30	Pass	

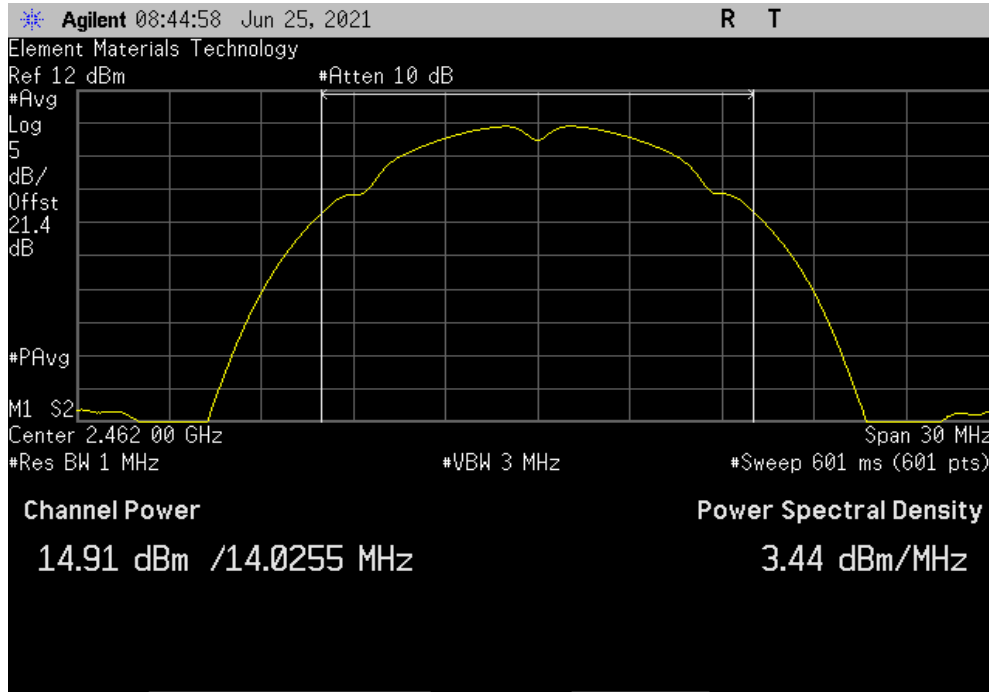


OUTPUT POWER

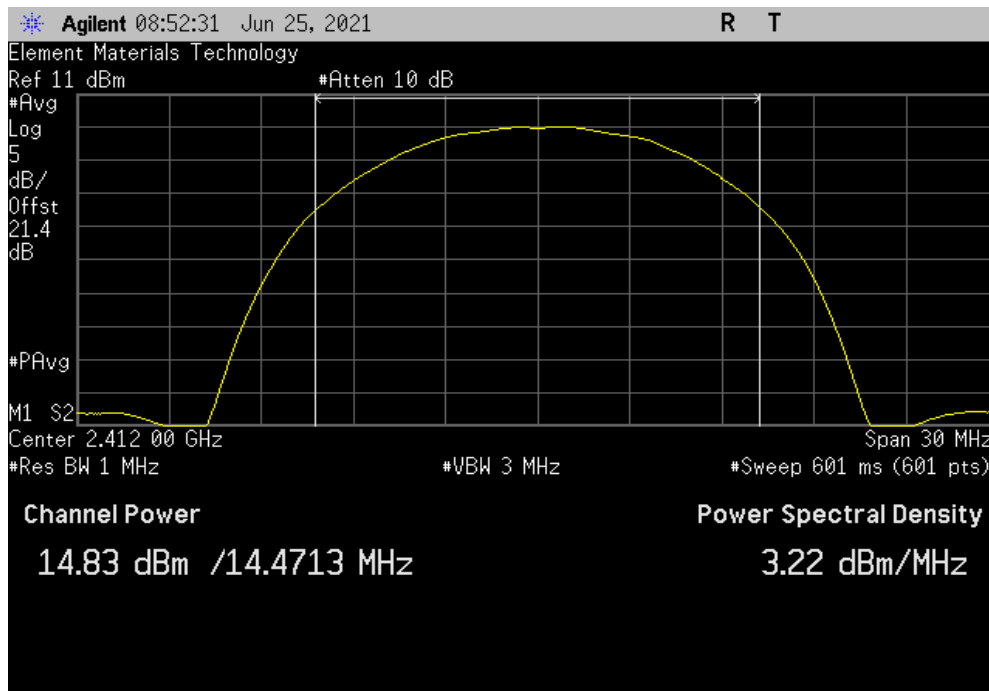


TuTx 2021.03.19.1 XMI 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	14.911	0	14.9	30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	14.826	0.1	14.9	30	Pass	

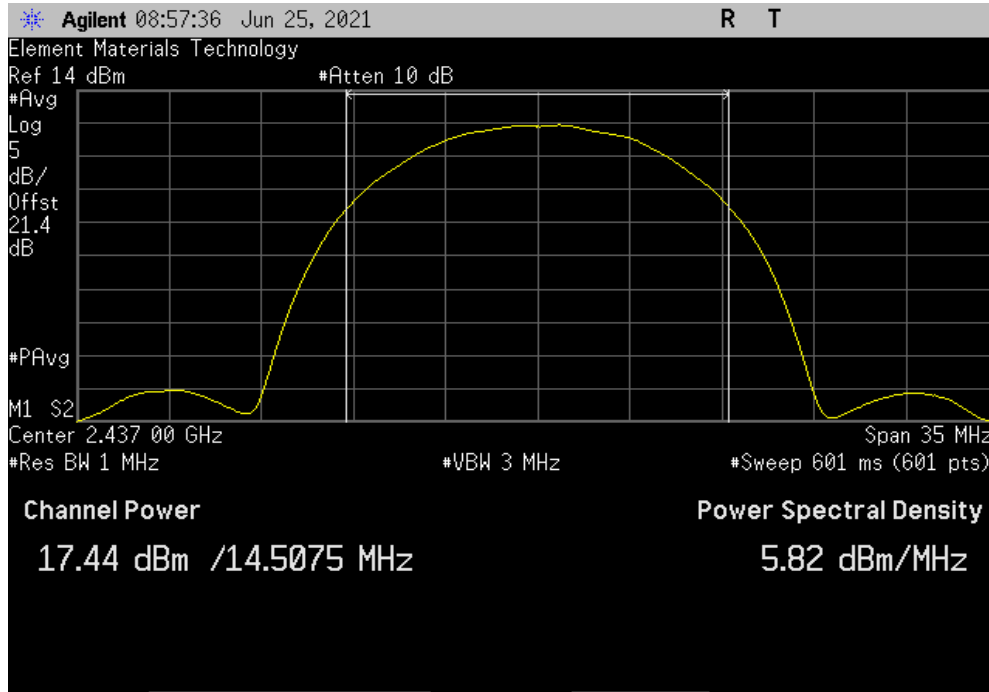


OUTPUT POWER

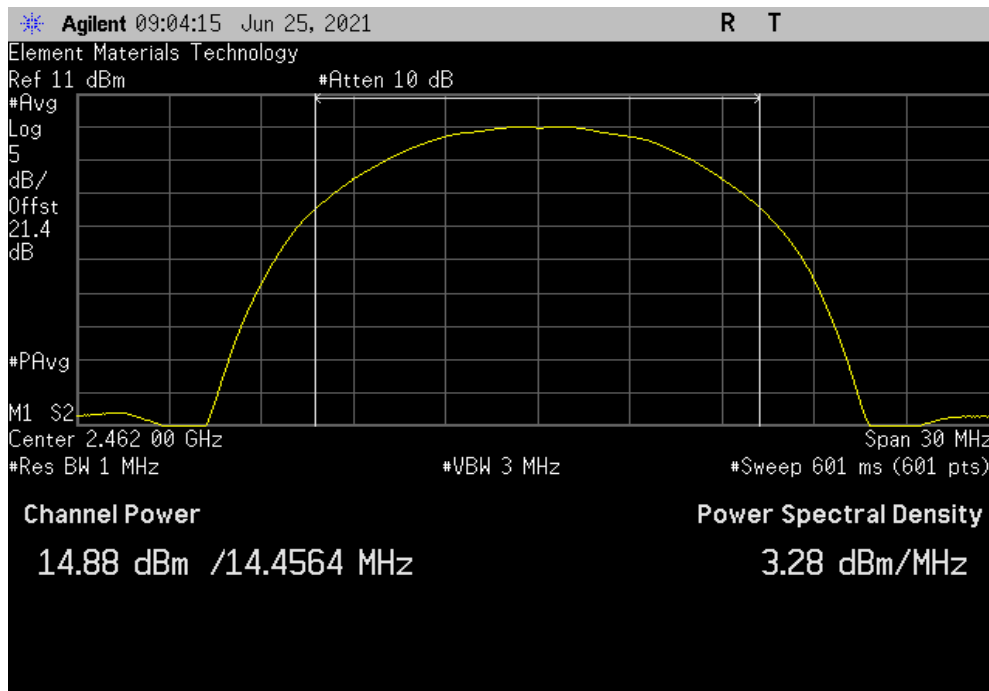


TuTx 2021.03.19.1 XMI 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	17.436	0.1	17.6	30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	14.878	0.1	15	30	Pass	

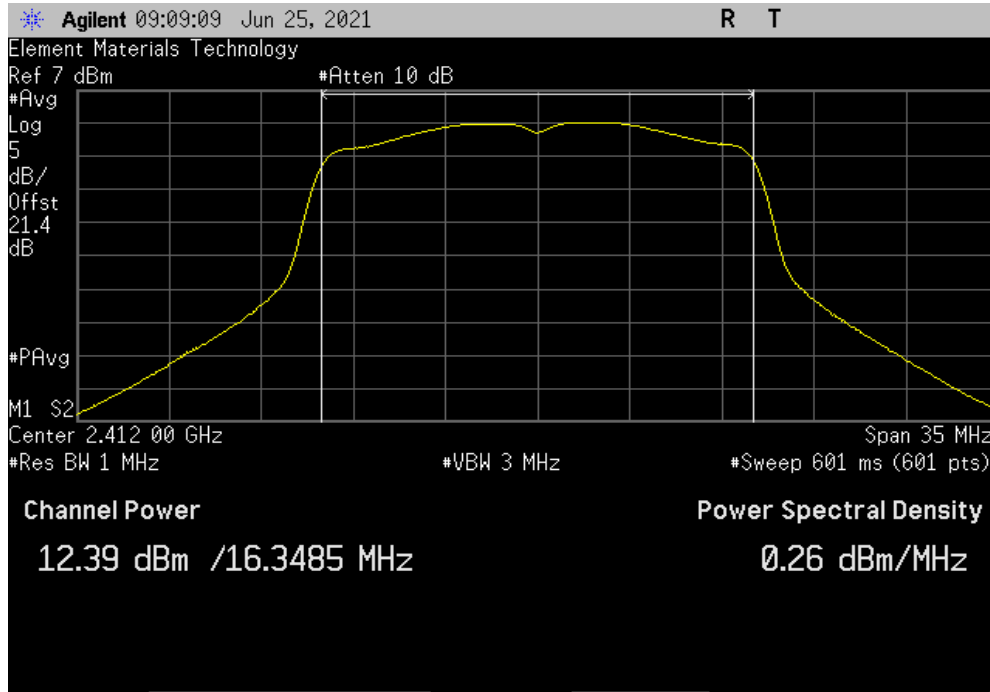


OUTPUT POWER

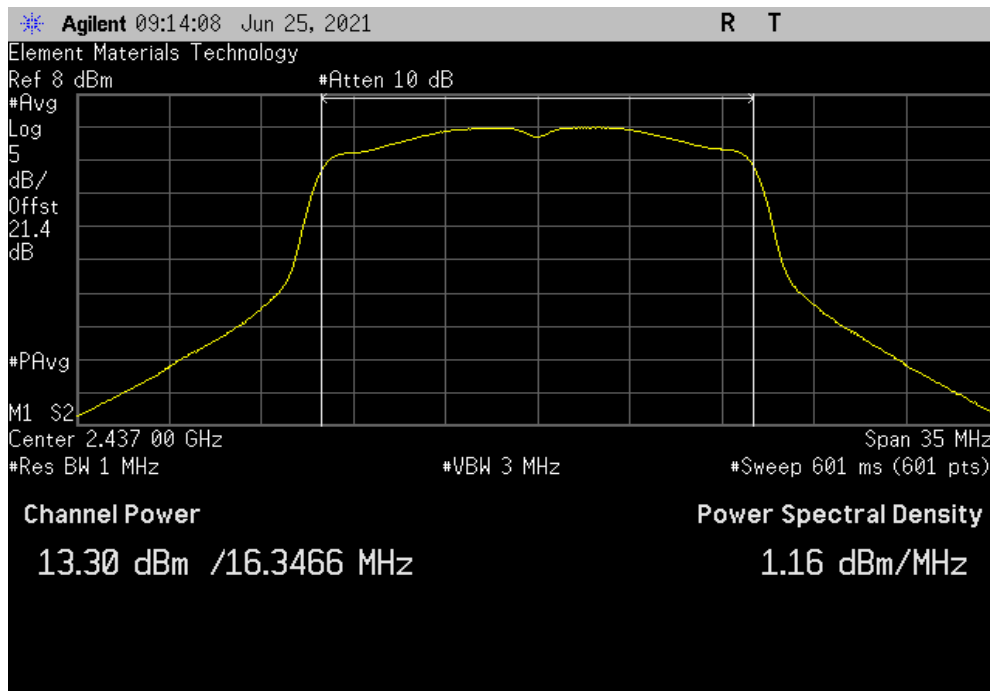


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	12.393	0.1	12.5	30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	13.297	0.1	13.4	30	Pass	

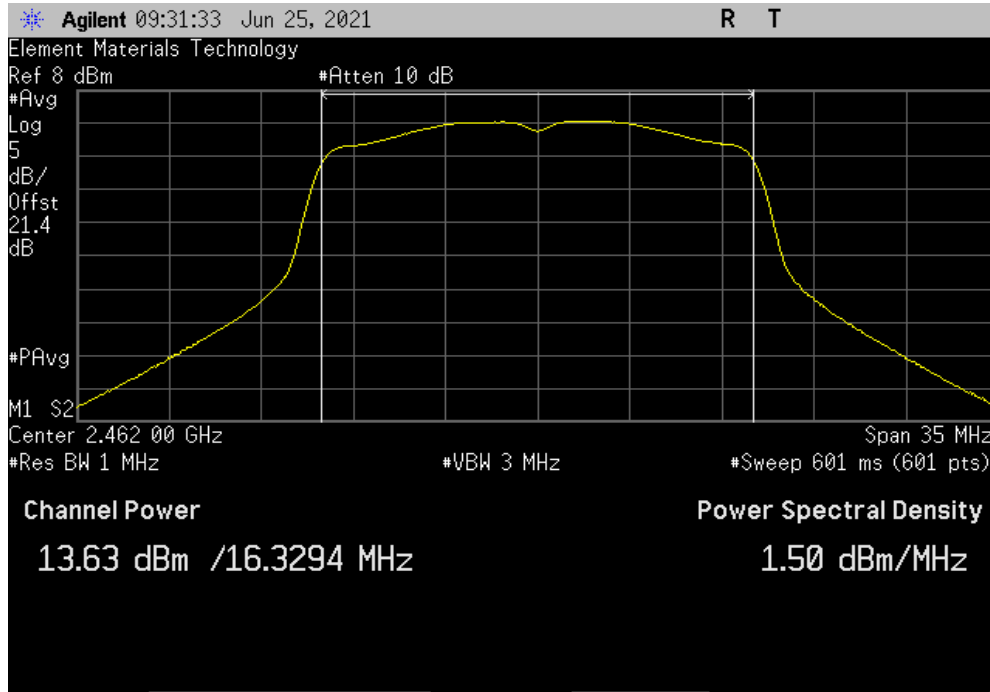


OUTPUT POWER

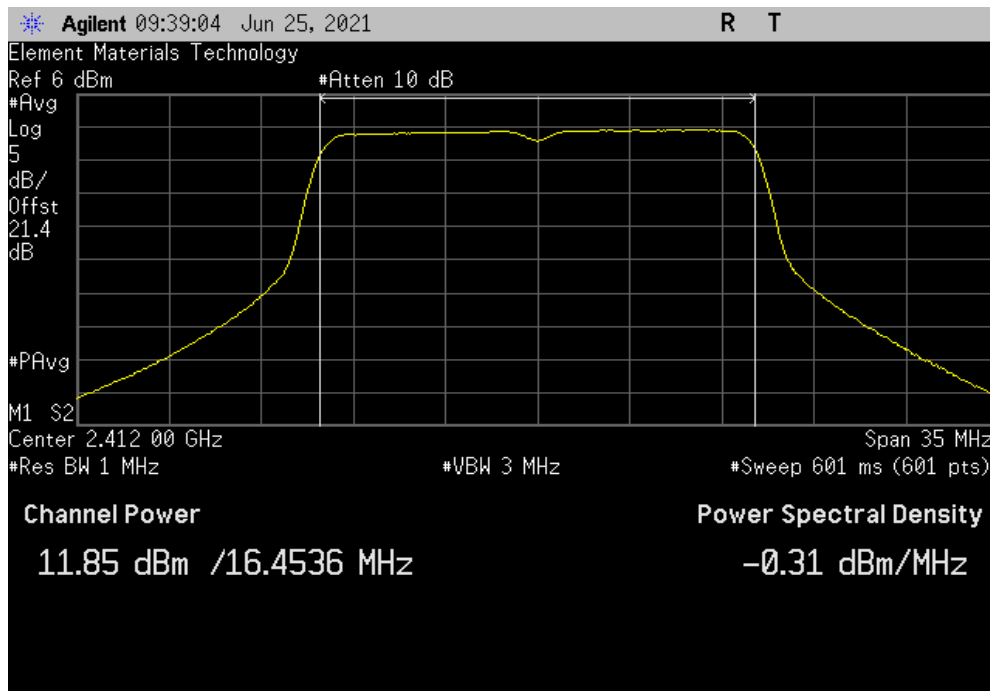


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	13.63	0.1	13.7	30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.85	0.5	12.3	30	Pass	

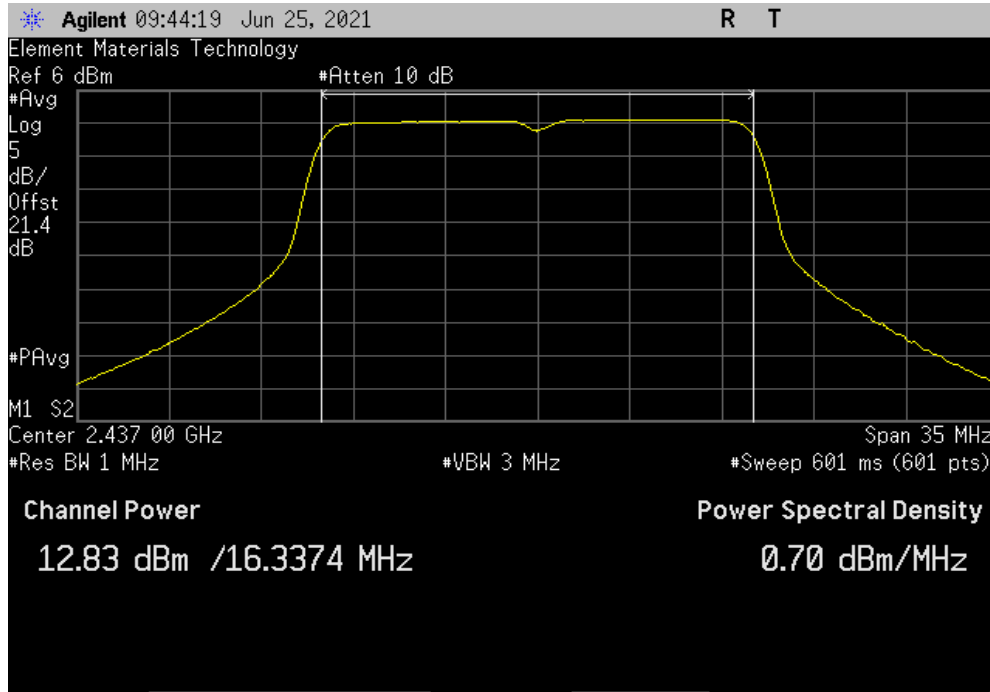


OUTPUT POWER

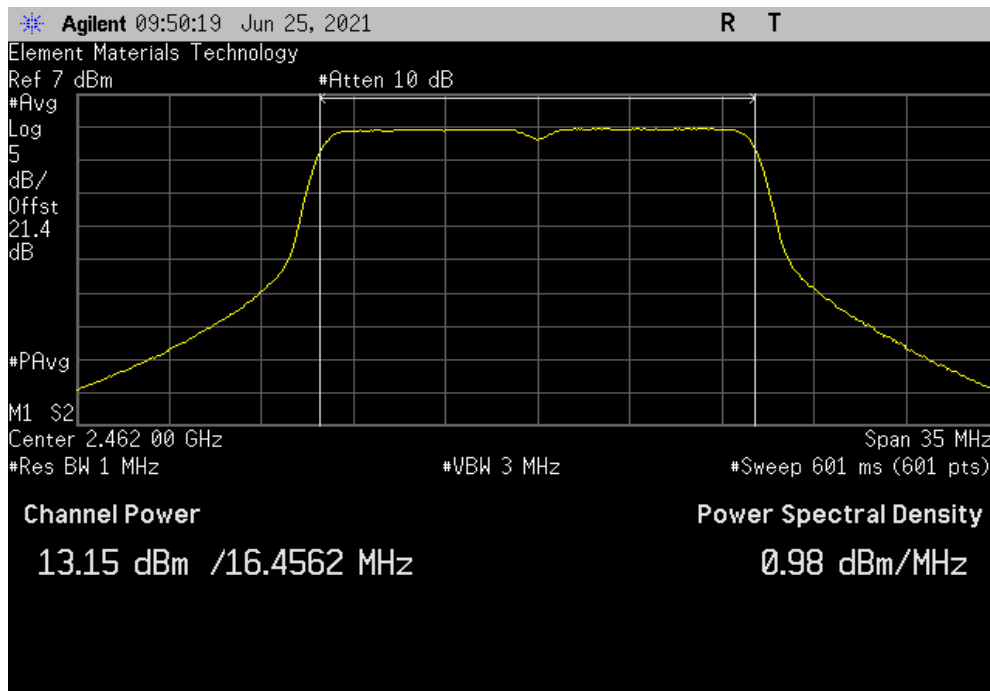


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	12.831	0.5	13.3	30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	13.146	0.5	13.6	30	Pass	

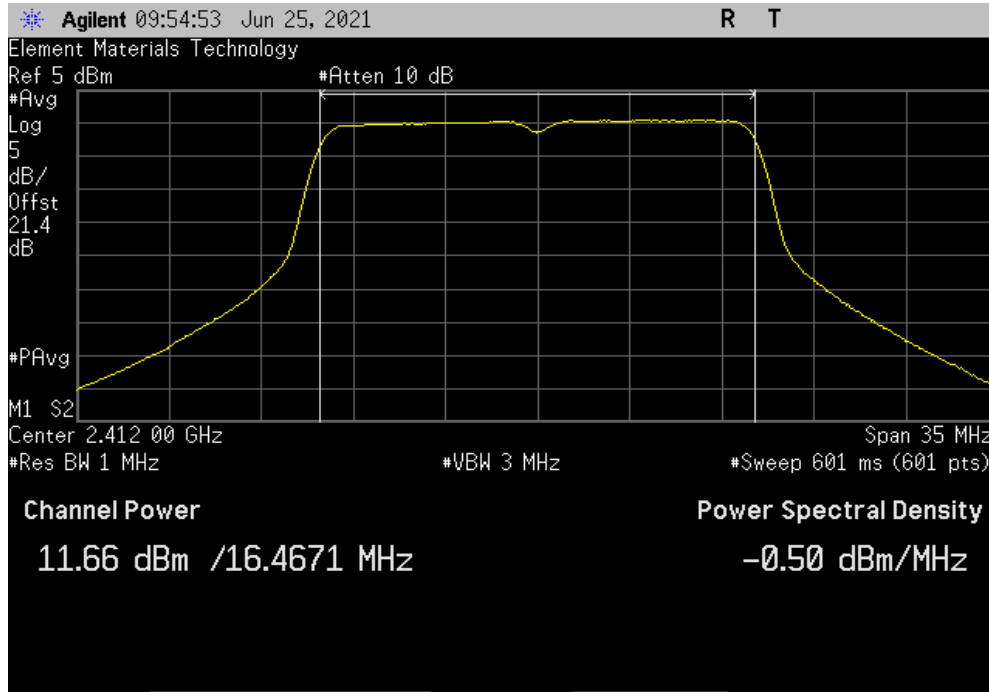


OUTPUT POWER

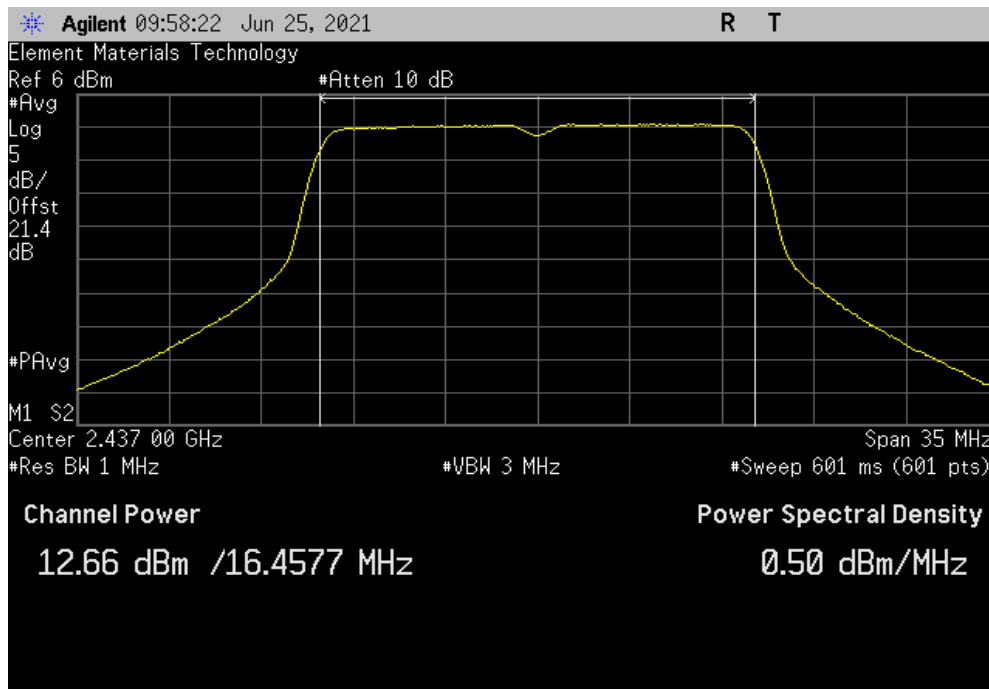


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.663	0.7	12.3	30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	12.659	0.7	13.3	30	Pass	

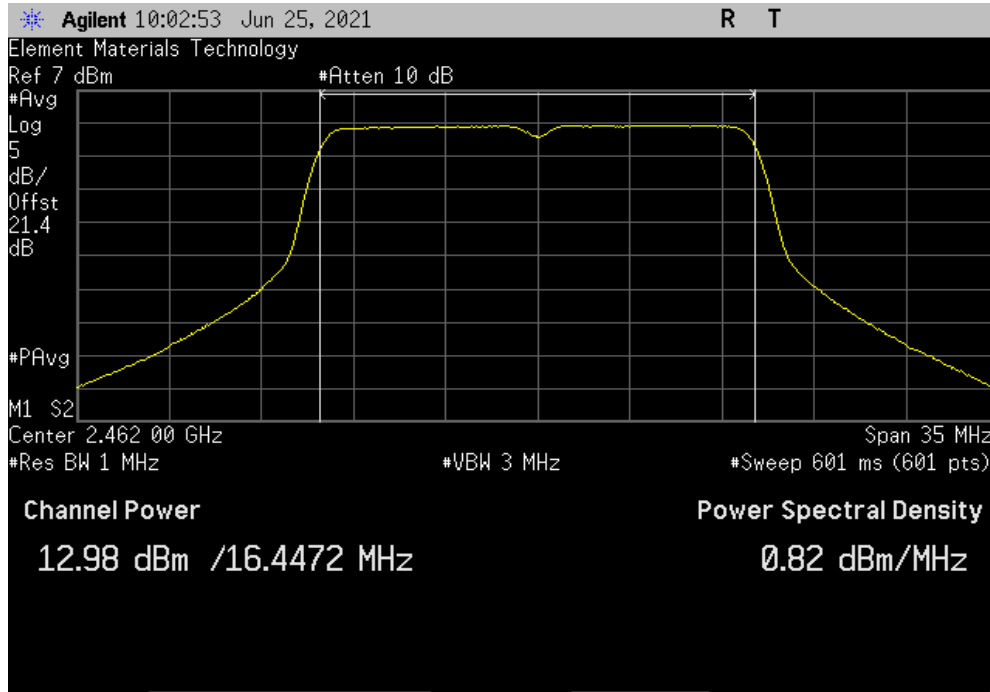


OUTPUT POWER

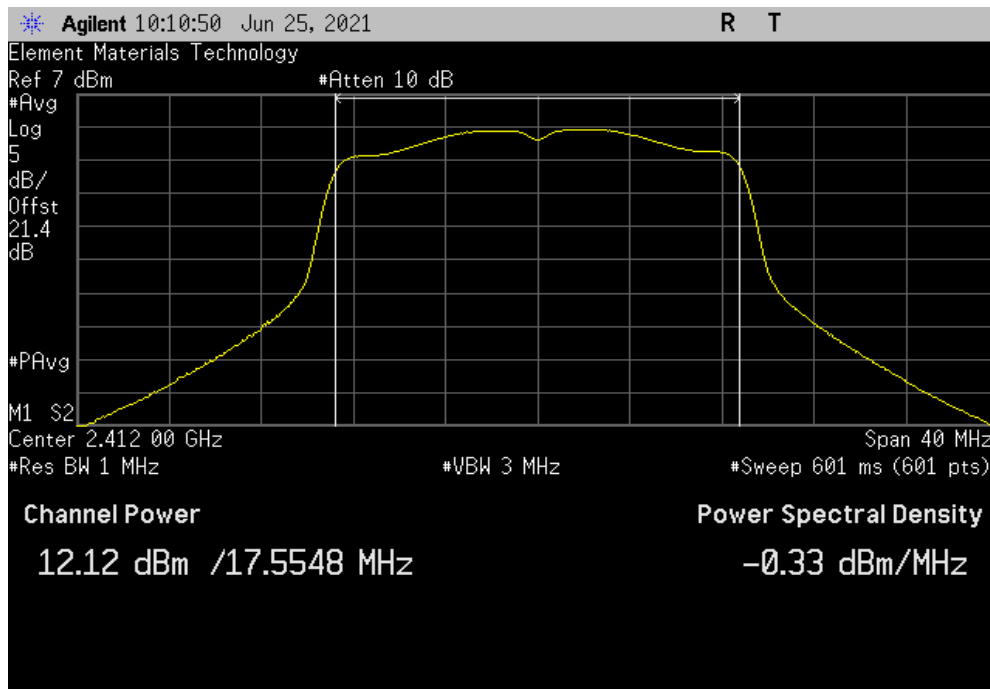


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	12.982	0.7	13.7	30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	12.118	0.1	12.2	30	Pass	

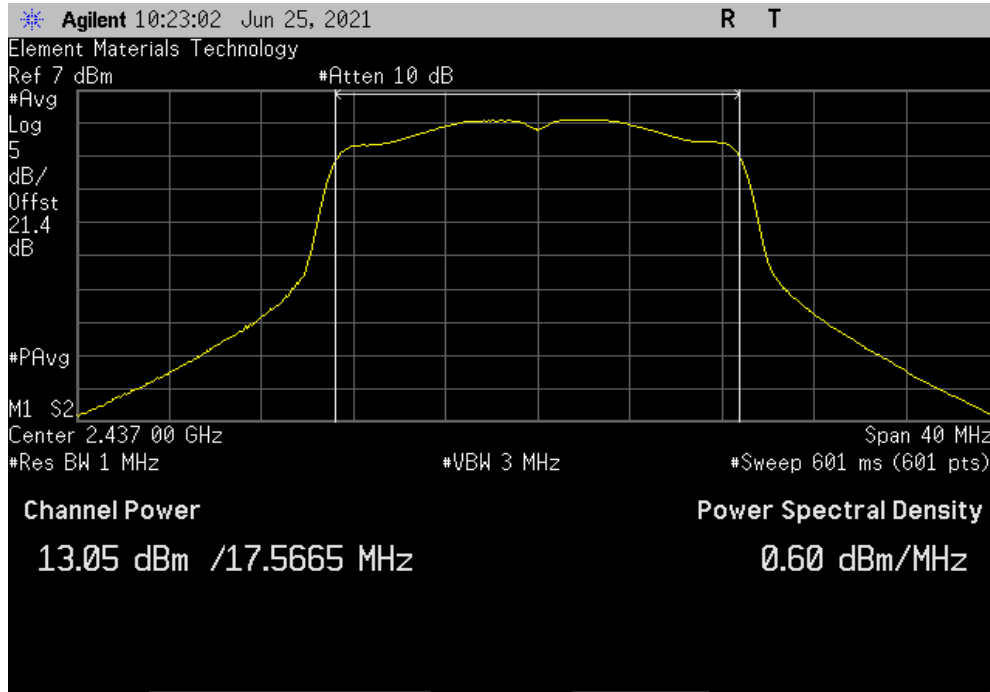


OUTPUT POWER

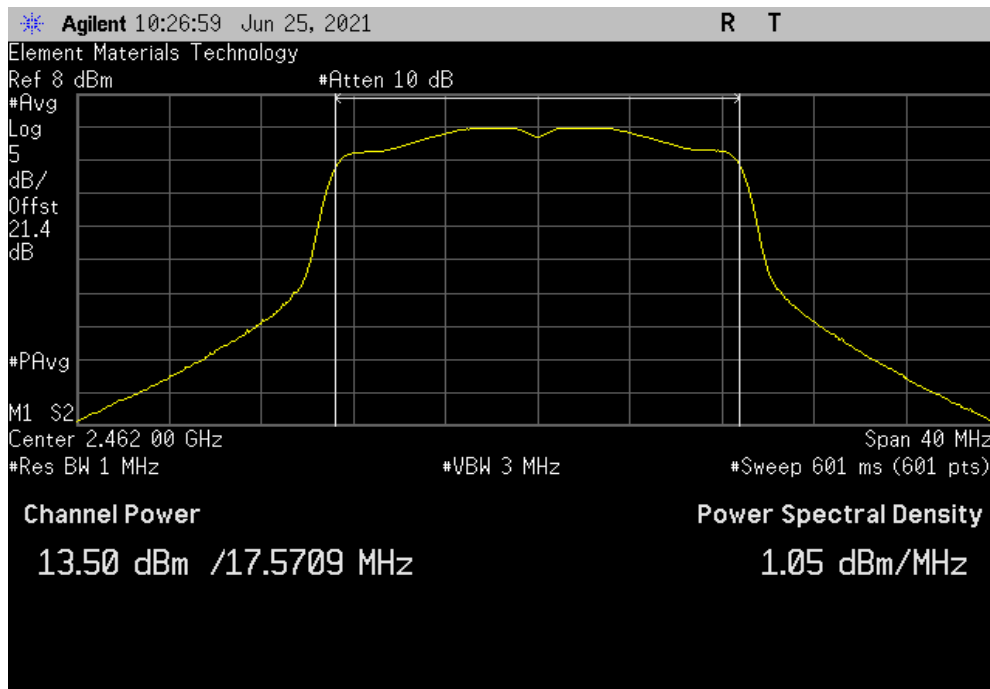


TuTx 2021.03.19.1 XMI 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	13.05	0.1	13.2	30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	13.5	0.1	13.6	30	Pass	

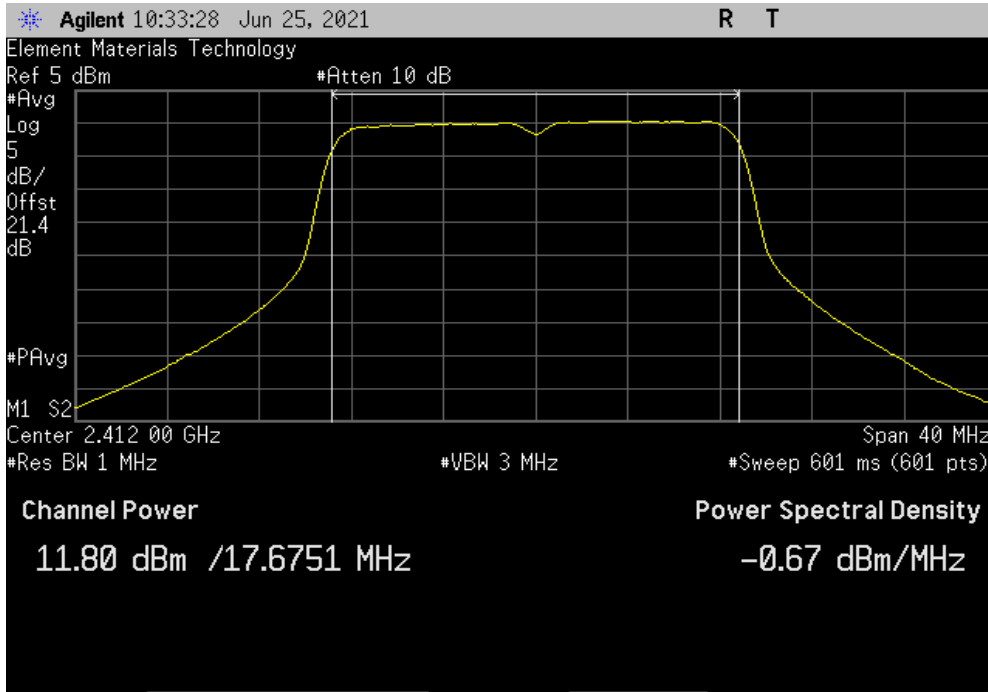


OUTPUT POWER

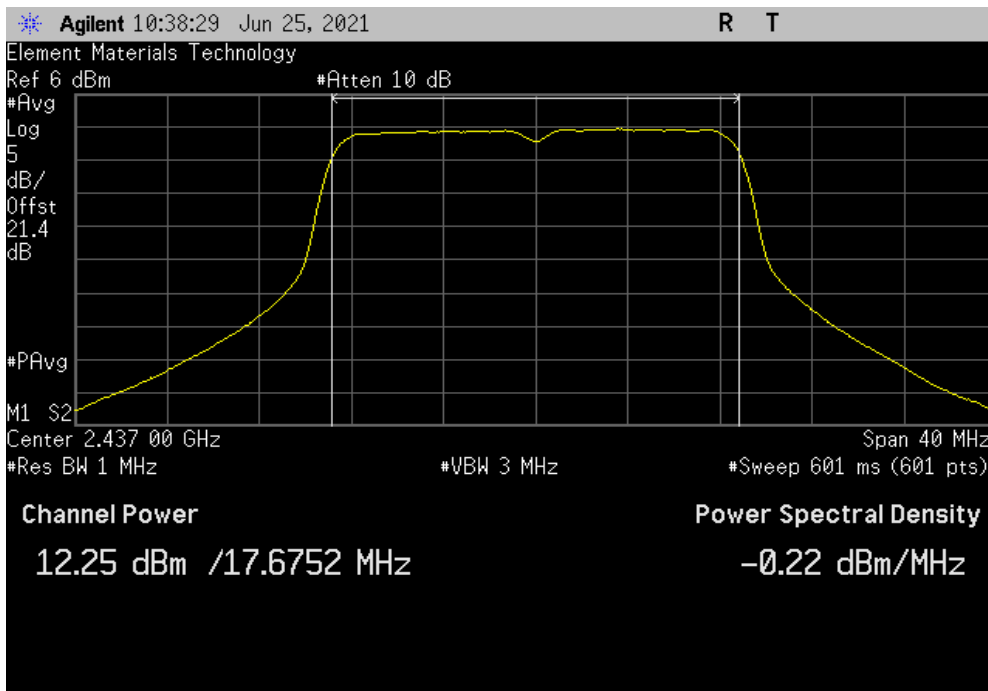


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	11.801	0.7	12.5	30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	12.254	0.7	13	30	Pass	

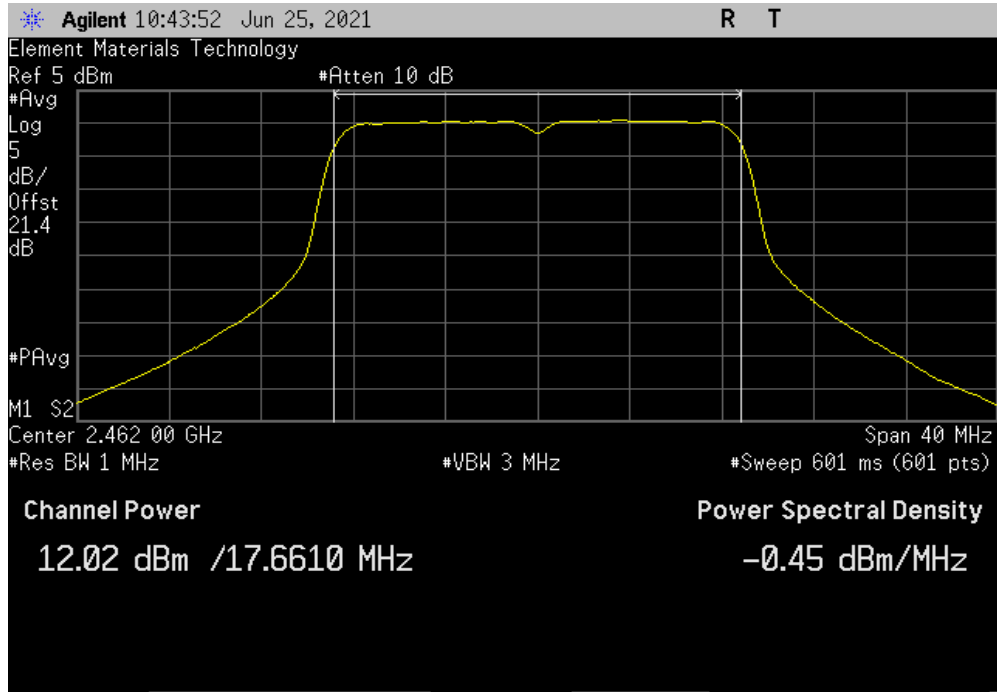


OUTPUT POWER



TbTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result	
	12.02	0.7	12.7	30	Pass	



EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



XMI 2020.12.30.0

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5183A	TIK	2019-04-30	2022-04-30
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2020-09-14	2021-09-14
Attenuator	S.M. Electronics	SA26B-20	TZP	2020-11-04	2021-11-04
Block - DC	Fairview Microwave	SD3379	AMI	2020-08-05	2021-08-05
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFG	2021-05-18	2022-05-18

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.

Equivalent Isotropic Radiated Power (EIRP) = Max Measured Power + Antenna gain (dBi)

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



Tel: 2021.03.19.1 XMI: 2020.12.30.0

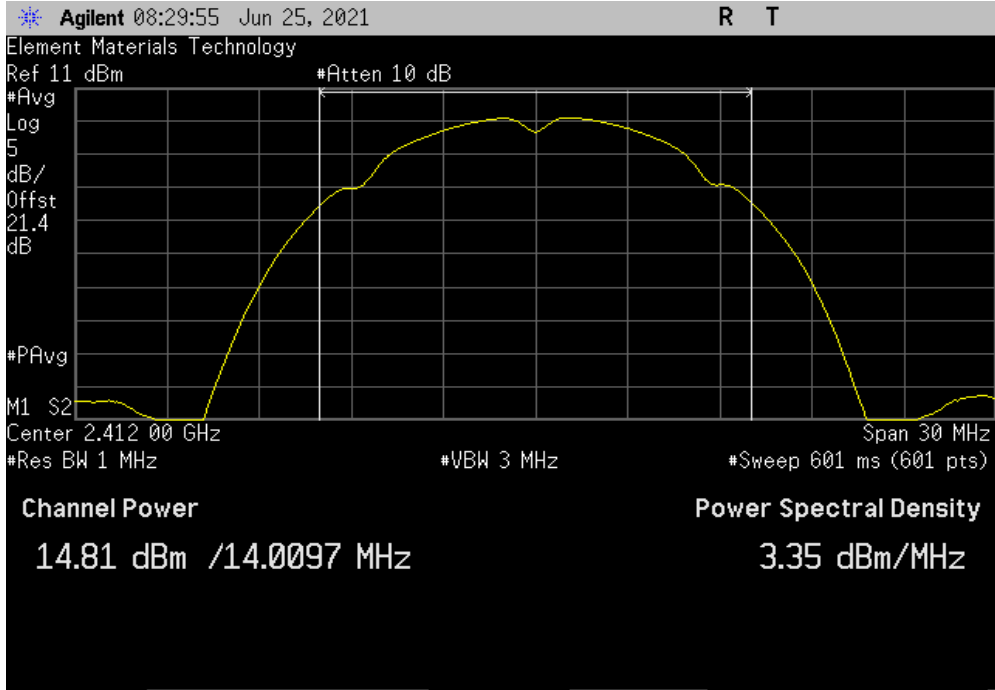
EUT: SOMA3703-32-1780AKIR-A / 1027255 Rev B		Work Order: LGPD0256						
Serial Number: 2420M00120		Date: 25-Jun-21						
Customer: Logic PD, Inc.		Temperature: 22.1 °C						
Attendees: Eric Fritz		Humidity: 49% RH						
Project: None		Barometric Pres.: 1014 mbar						
Tested by: Dan Haas		Power: 5VDC						
Job Site: MN08								
TEST SPECIFICATIONS								
FCC 15.247:2021		Test Method: ANSI C63.10:2013						
COMMENTS								
Reference level includes measurement cable, attenuator, and DC block.								
DEVIATIONS FROM TEST STANDARD								
None								
Configuration #	6	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								
	Low Channel 1, 2412 MHz	14.813	0	14.8	4	18.8	36	Pass
	Mid Channel 6, 2437 MHz	17.42	0	17.4	4	21.4	36	Pass
	High Channel 11, 2462 MHz	14.911	0	14.9	4	18.9	36	Pass
802.11(b) 11 Mbps								
	Low Channel 1, 2412 MHz	14.826	0.1	14.9	4	18.9	36	Pass
	Mid Channel 6, 2437 MHz	17.436	0.1	17.6	4	21.6	36	Pass
	High Channel 11, 2462 MHz	14.878	0.1	15	4	19	36	Pass
802.11(g) 6 Mbps								
	Low Channel 1, 2412 MHz	12.393	0.1	12.5	4	16.5	36	Pass
	Mid Channel 6, 2437 MHz	13.297	0.1	13.4	4	17.4	36	Pass
	High Channel 11, 2462 MHz	13.63	0.1	13.7	4	17.7	36	Pass
802.11(g) 36 Mbps								
	Low Channel 1, 2412 MHz	11.85	0.5	12.3	4	16.3	36	Pass
	Mid Channel 6, 2437 MHz	12.831	0.5	13.3	4	17.3	36	Pass
	High Channel 11, 2462 MHz	13.146	0.5	13.6	4	17.6	36	Pass
802.11(g) 54 Mbps								
	Low Channel 1, 2412 MHz	11.663	0.7	12.3	4	16.3	36	Pass
	Mid Channel 6, 2437 MHz	12.659	0.7	13.3	4	17.3	36	Pass
	High Channel 11, 2462 MHz	12.982	0.7	13.7	4	17.7	36	Pass
802.11(n) MCS0								
	Low Channel 1, 2412 MHz	12.118	0.1	12.2	4	16.2	36	Pass
	Mid Channel 6, 2437 MHz	13.05	0.1	13.2	4	17.2	36	Pass
	High Channel 11, 2462 MHz	13.5	0.1	13.6	4	17.6	36	Pass
802.11(n) MCS7								
	Low Channel 1, 2412 MHz	11.801	0.7	12.5	4	16.5	36	Pass
	Mid Channel 6, 2437 MHz	12.254	0.7	13	4	17	36	Pass
	High Channel 11, 2462 MHz	12.02	0.7	12.7	4	16.7	36	Pass

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

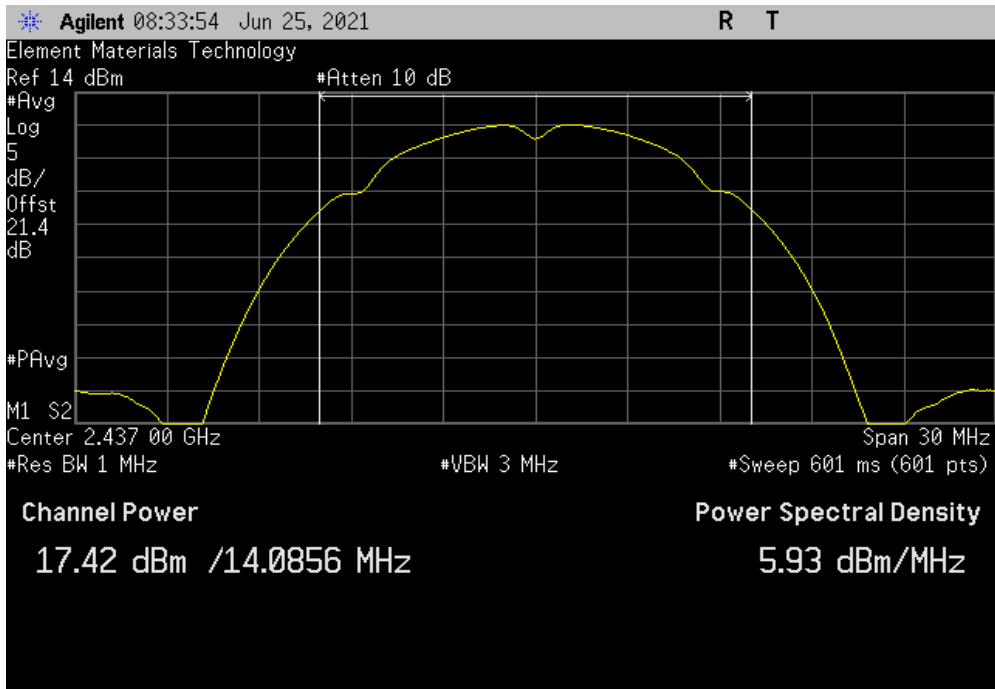


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
14.813	0	14.8	4	18.8	36	Pass



2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
17.42	0	17.4	4	21.4	36	Pass

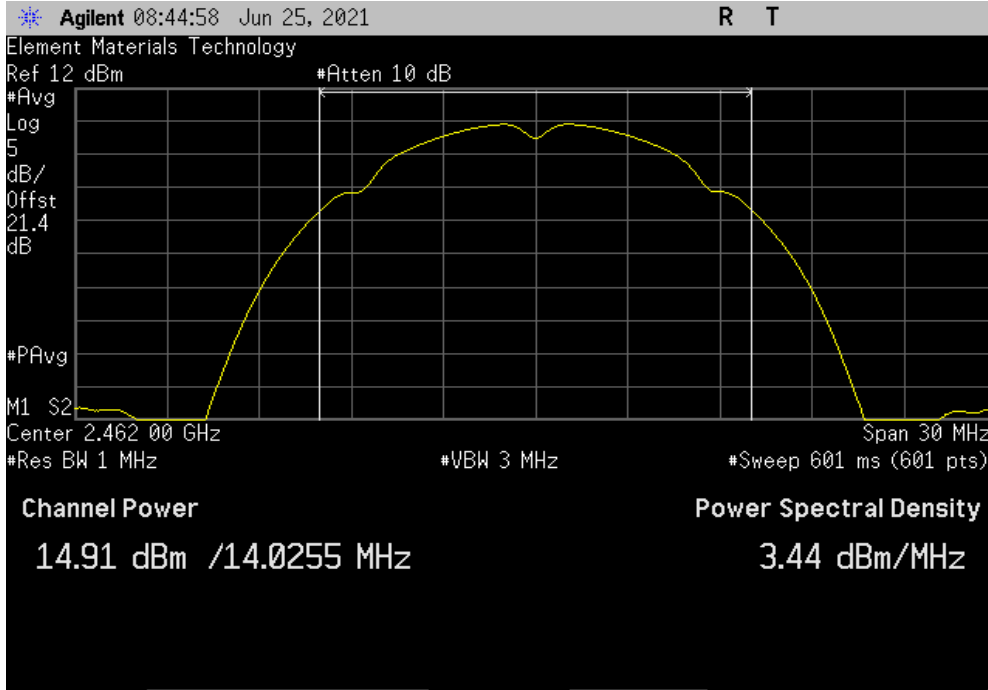


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

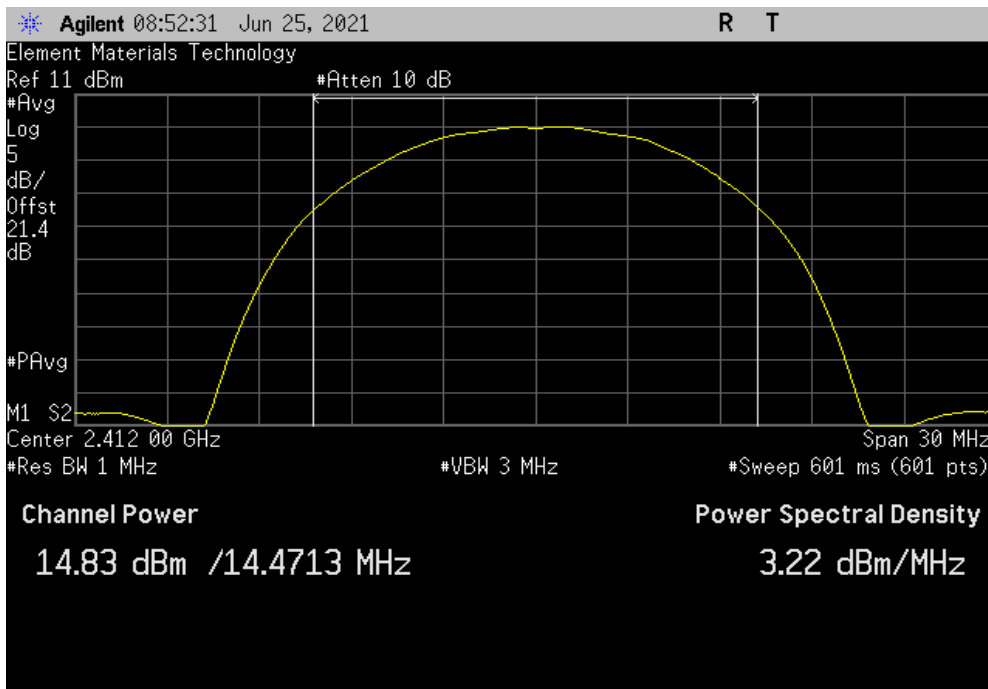


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
14.911	0	14.9	4	18.9	36	Pass



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
14.826	0.1	14.9	4	18.9	36	Pass

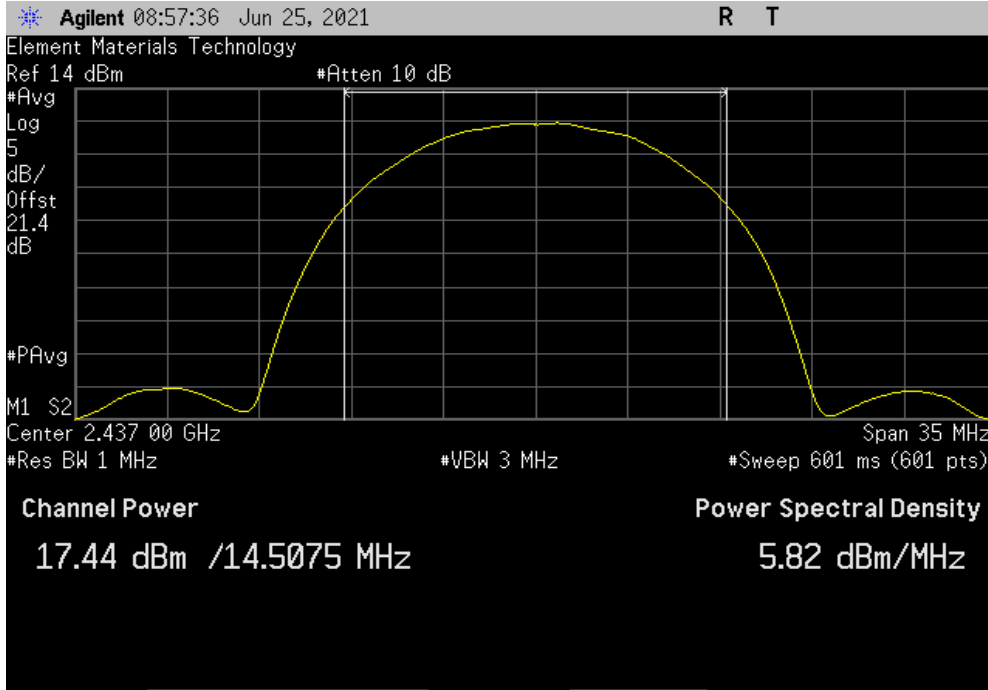


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

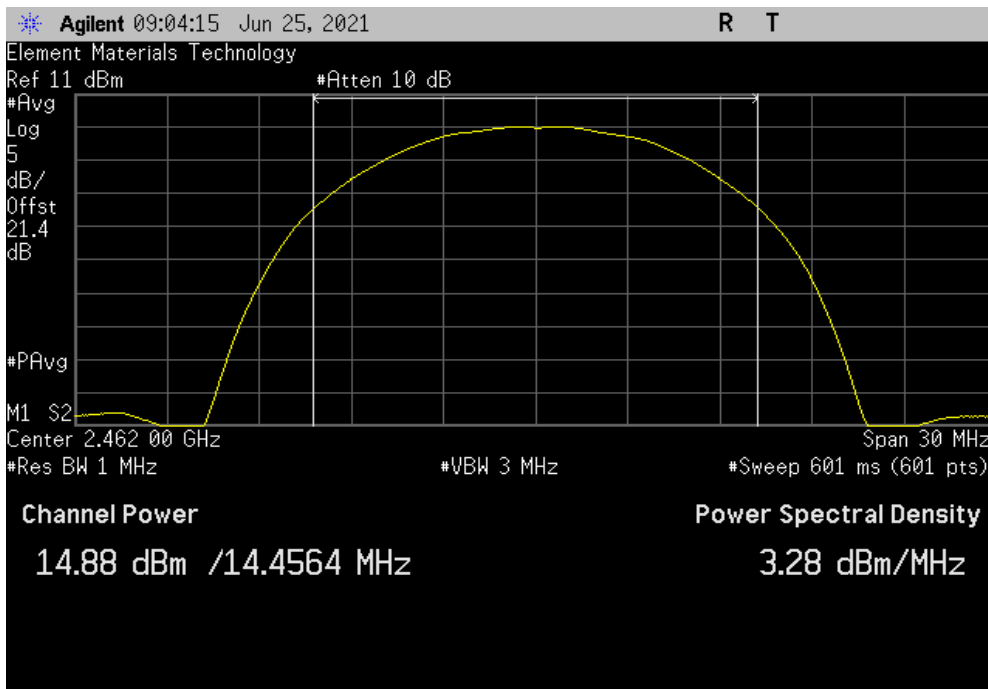


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
17.436	0.1	17.6	4	21.6	36	Pass



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
14.878	0.1	15	4	19	36	Pass

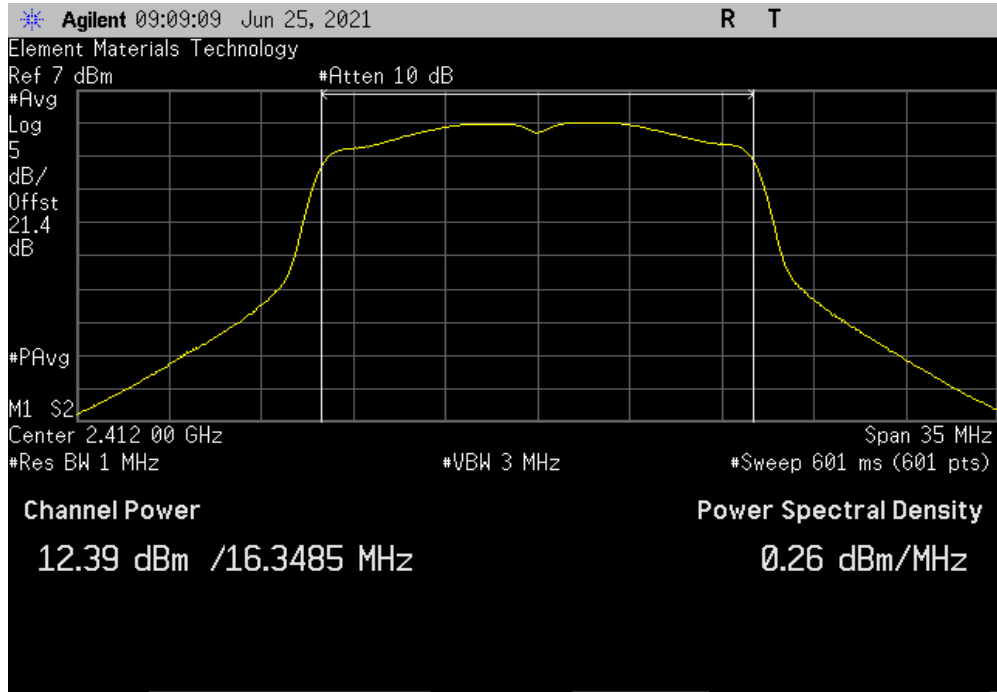


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

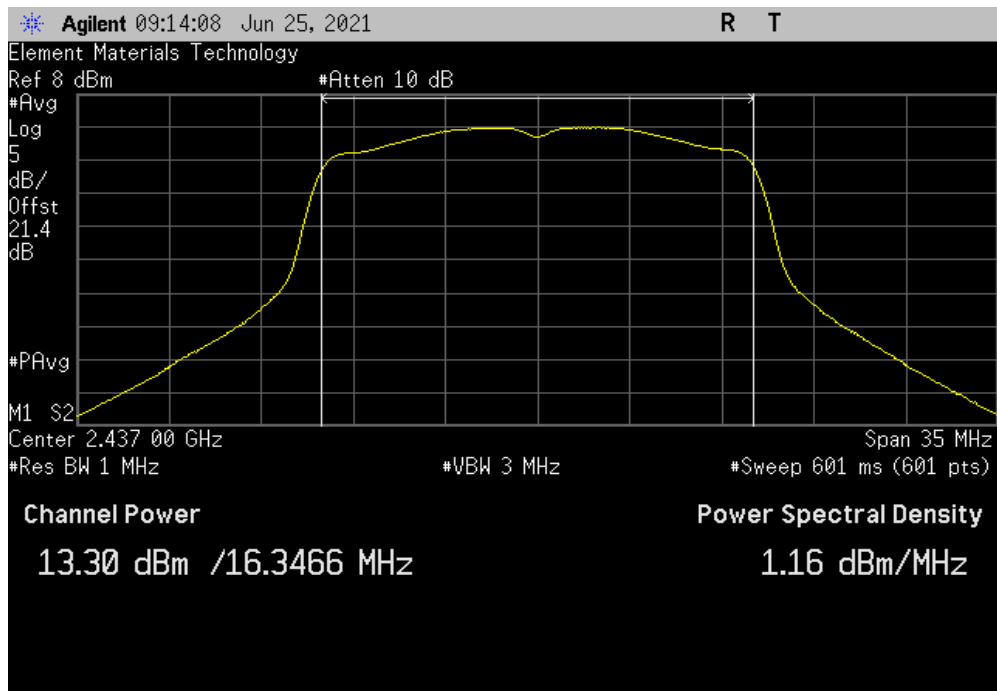


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
12.393	0.1	12.5	4	16.5	36	Pass



2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
13.297	0.1	13.4	4	17.4	36	Pass

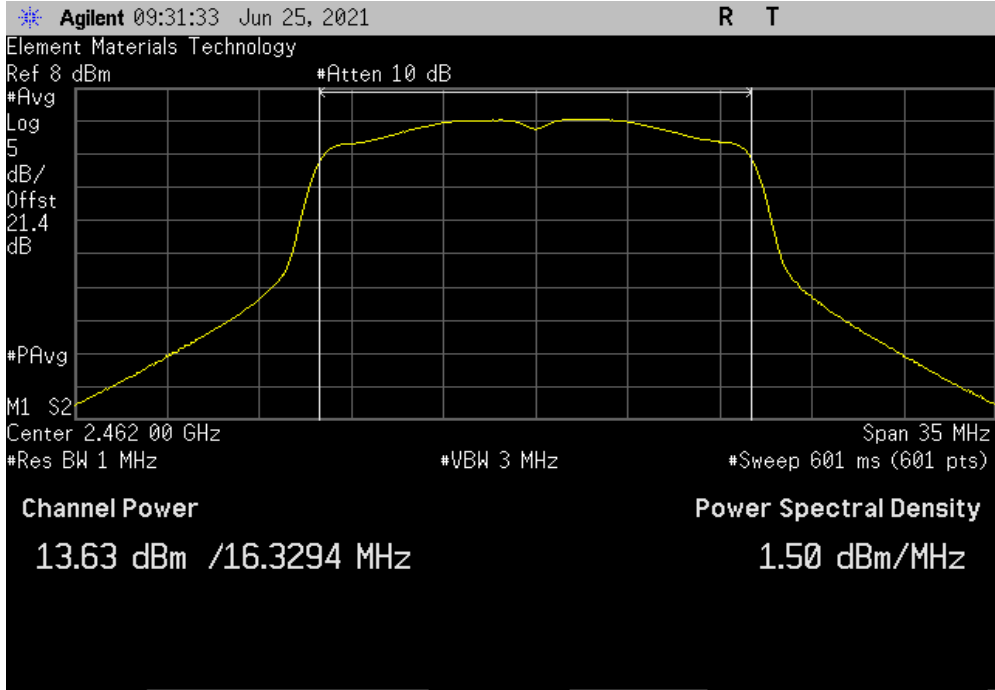


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

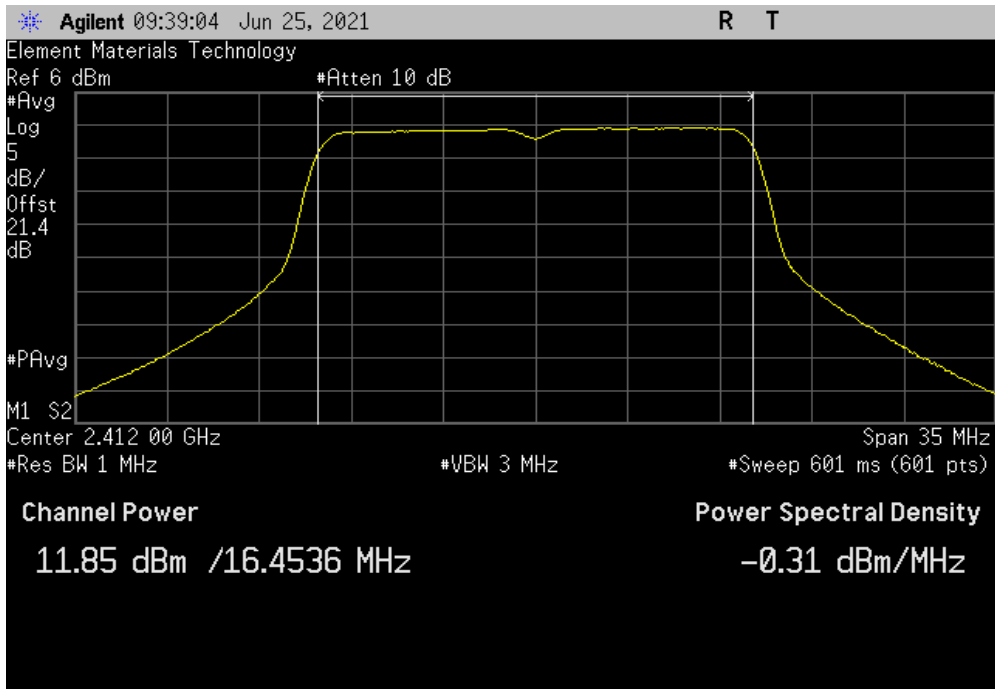


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
13.63	0.1	13.7	4	17.7	36	Pass



2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
11.85	0.5	12.3	4	16.3	36	Pass

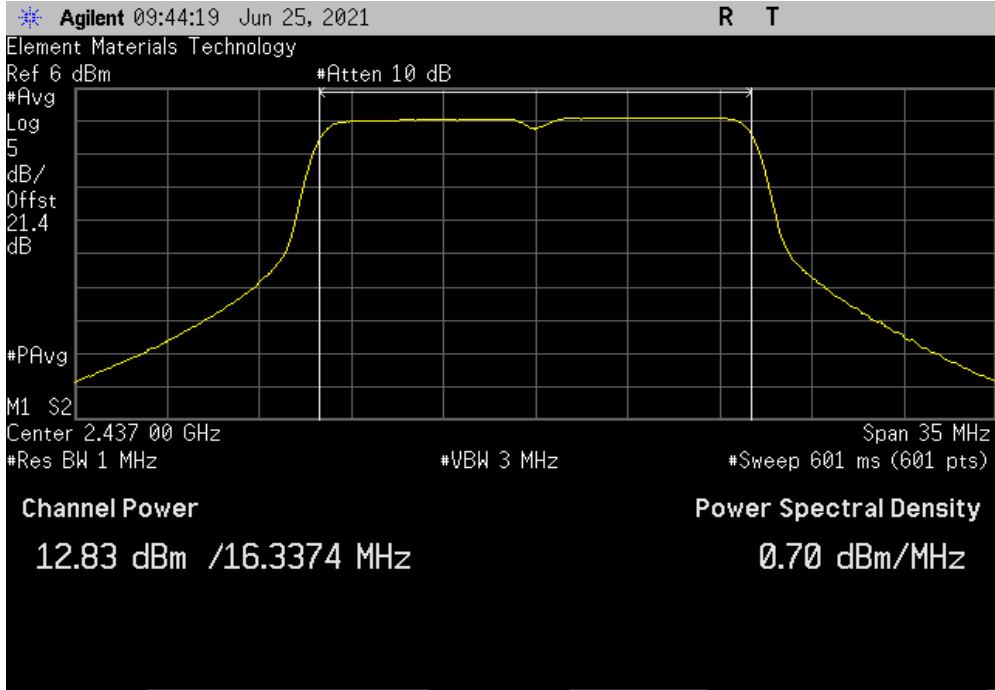


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

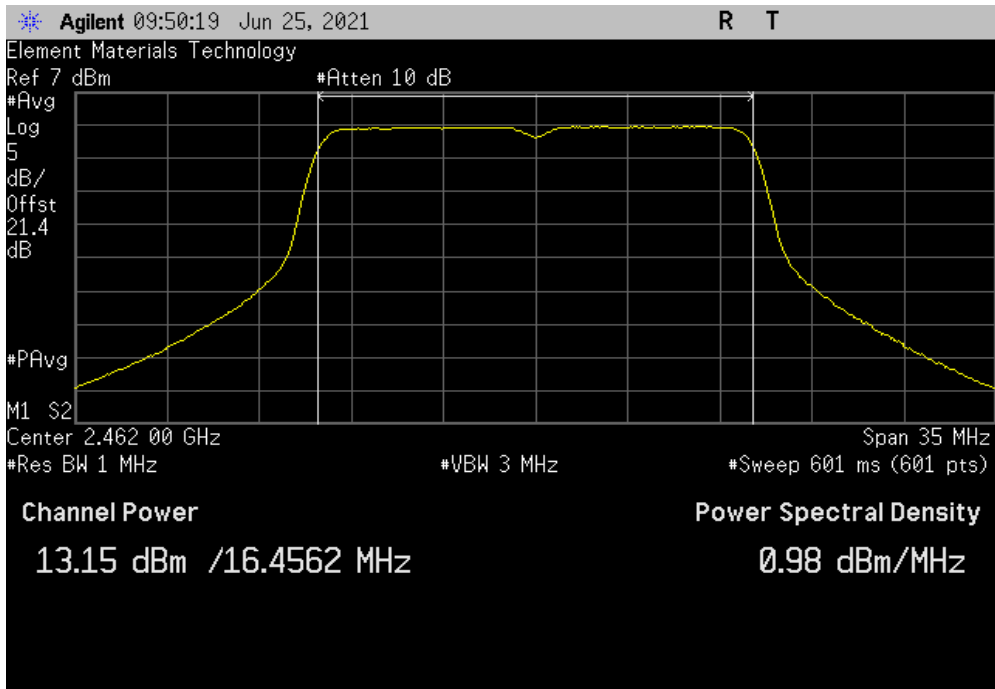


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
12.831	0.5	13.3	4	17.3	36	Pass



2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
13.146	0.5	13.6	4	17.6	36	Pass

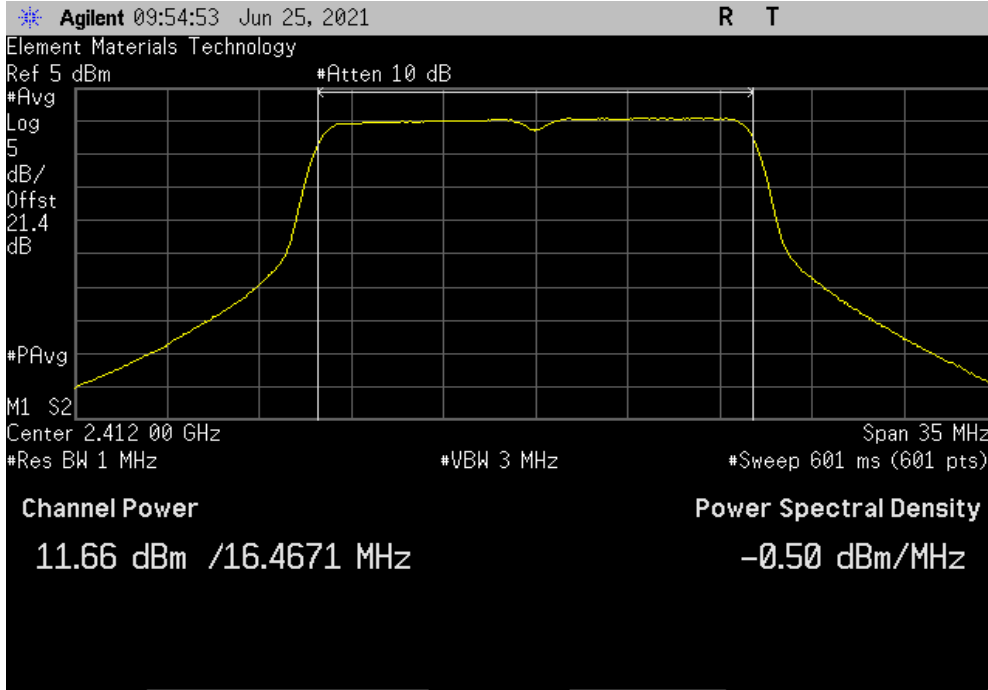


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

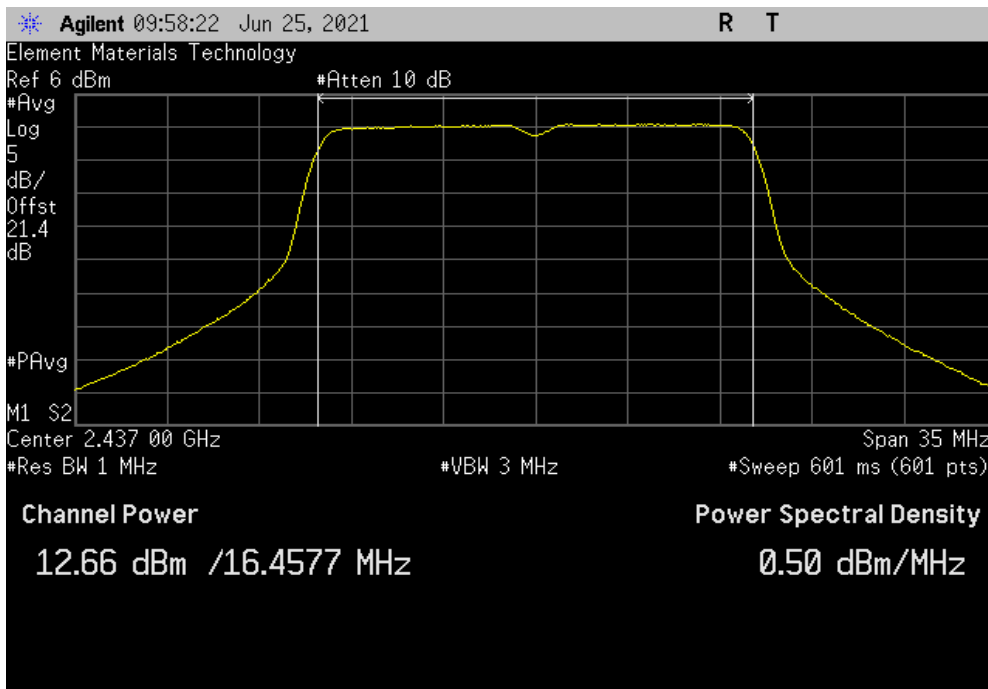


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
11.663	0.7	12.3	4	16.3	36	Pass



2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
12.659	0.7	13.3	4	17.3	36	Pass

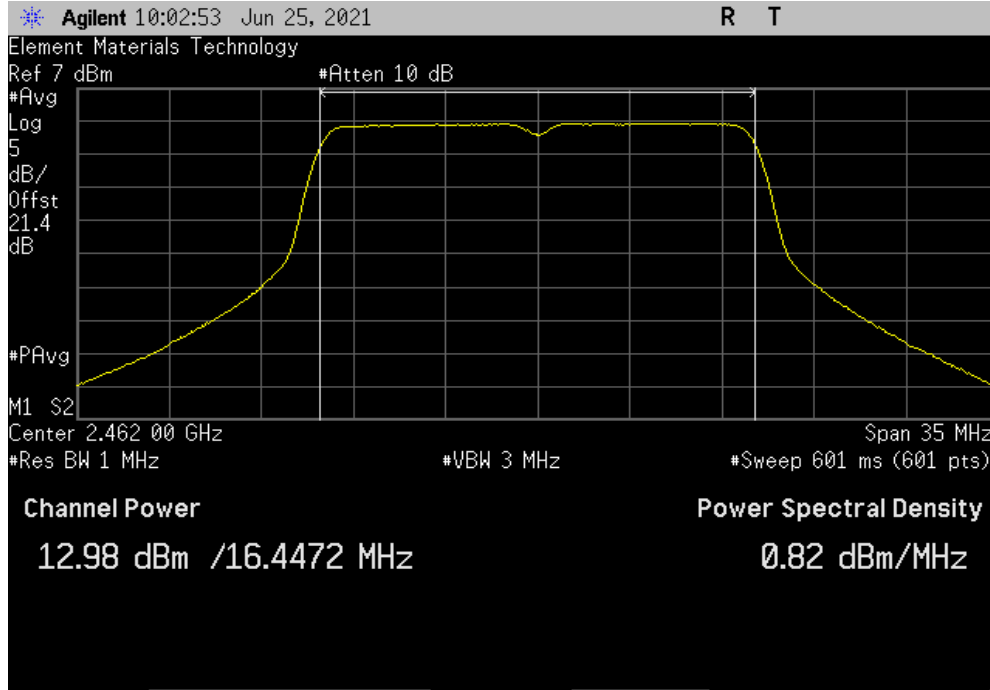


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

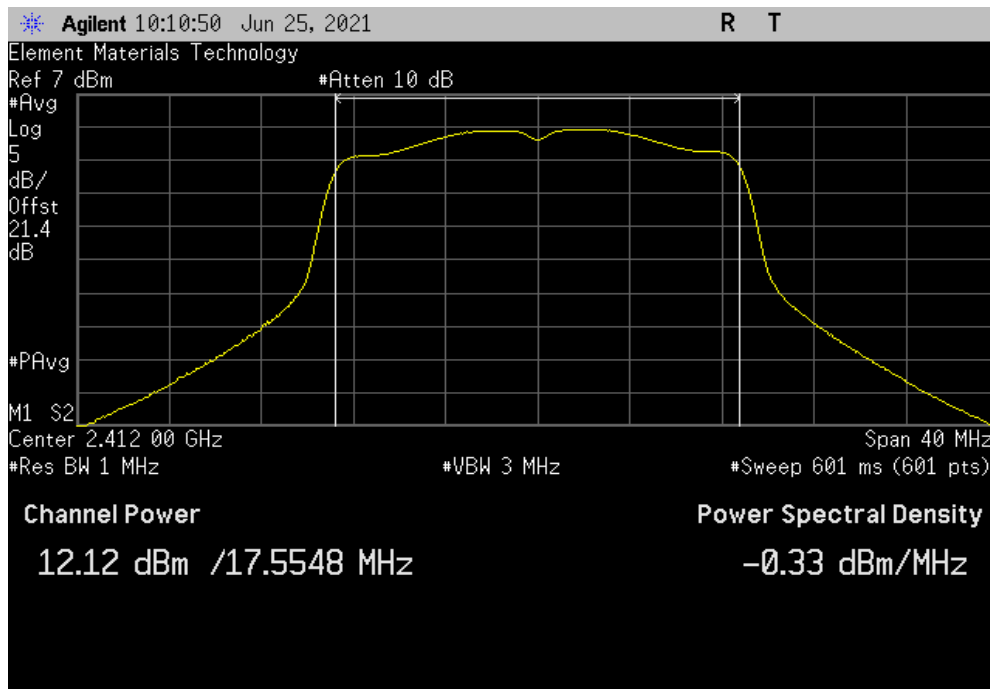


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
12.982	0.7	13.7	4	17.7	36	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
12.118	0.1	12.2	4	16.2	36	Pass

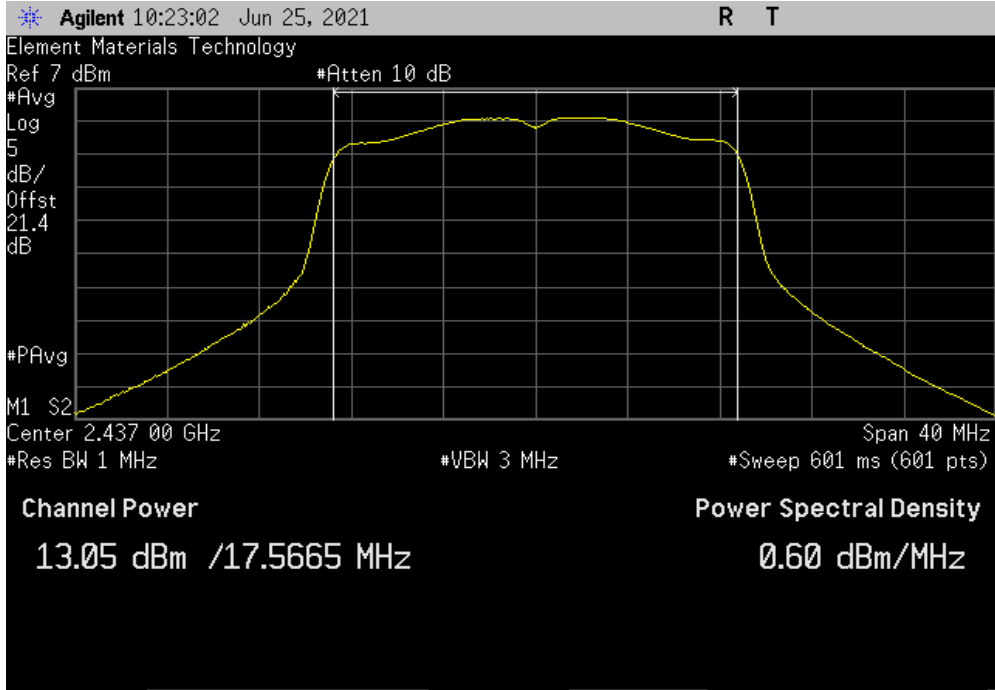


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

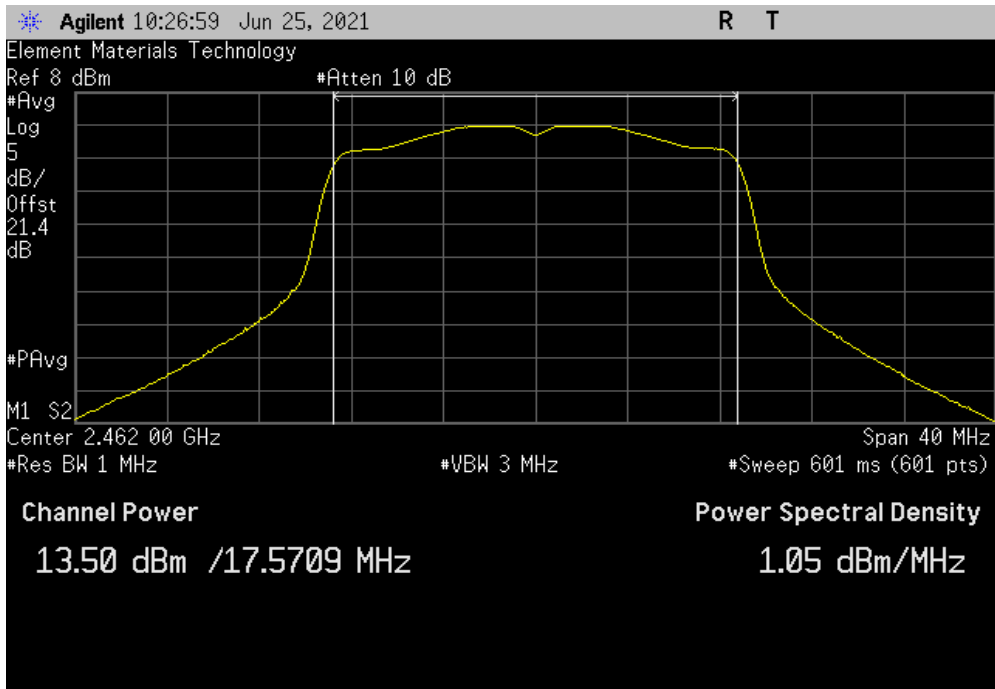


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
13.05	0.1	13.2	4	17.2	36	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
13.5	0.1	13.6	4	17.6	36	Pass

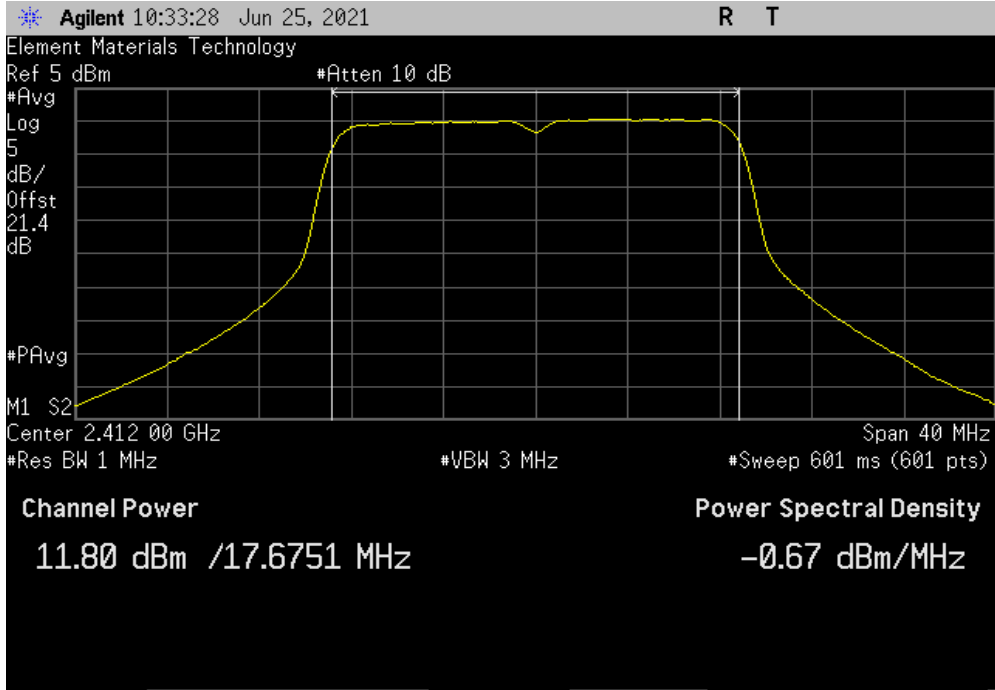


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

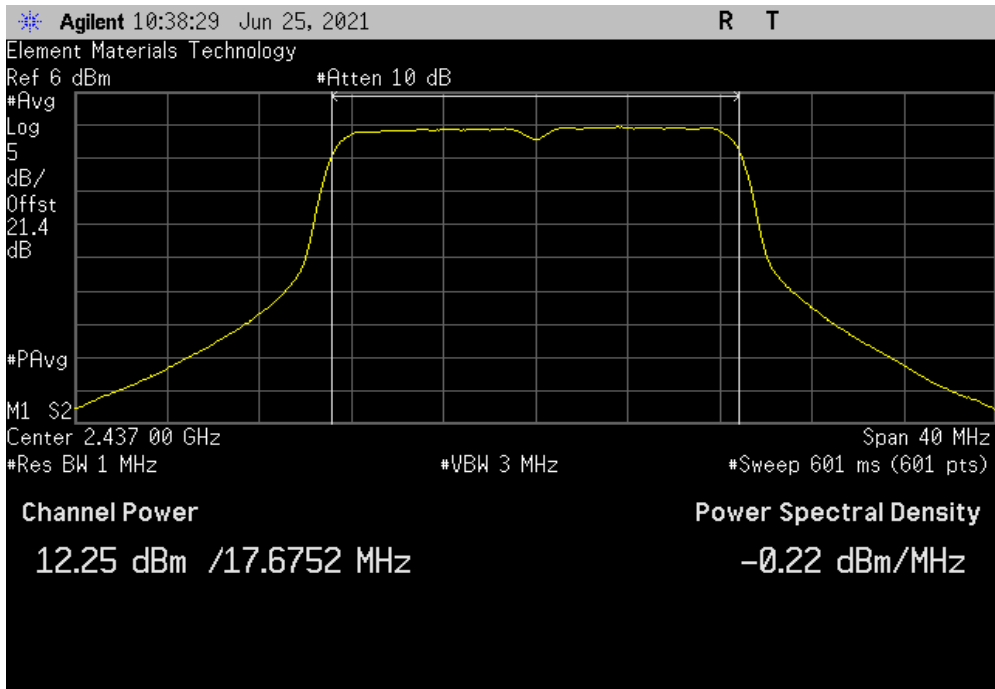


TuTx 2021.03.19.1 XMt 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
11.801	0.7	12.5	4	16.5	36	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
12.254	0.7	13	4	17	36	Pass

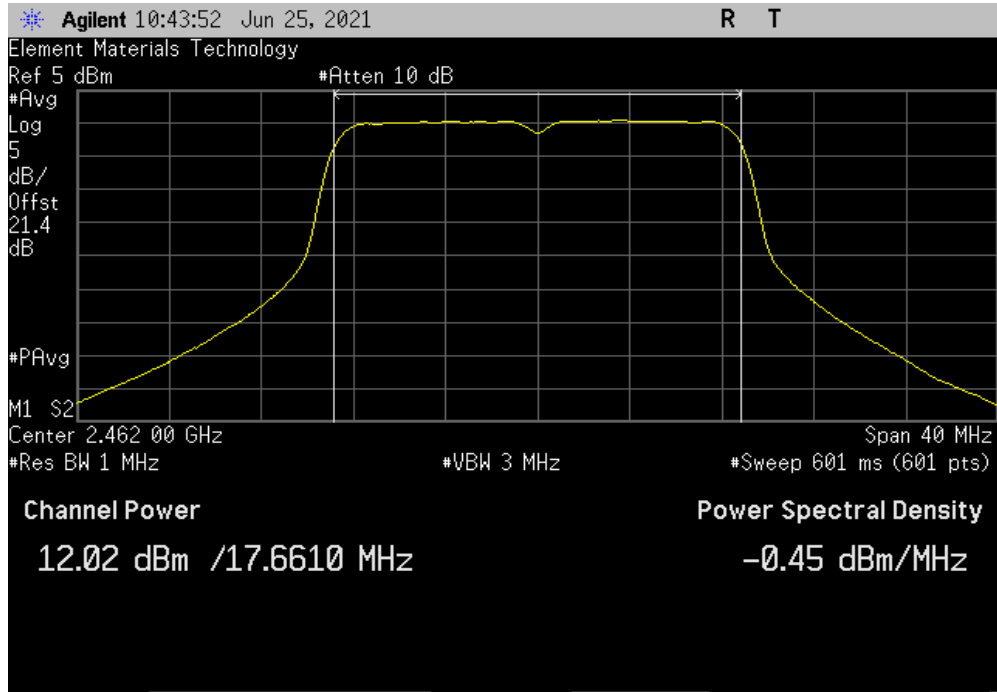


EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)



TbTx 2021.03.19.1 XMI 2020.12.30.0

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
12.02	0.7	12.7	4	16.7	36	Pass



End of Test Report