RHEIN TECH LABORATORIES, INC.

Engineering Solutions & Electromagnetic Compatibility Services

FCC Part 15.247 Certification Report

Test Lab:	Applicant:
Rhein Tech Laboratories, Inc. 360 Herndon Parkway Suite 1400 Herndon, VA 20170 E-Mail: atcbinfo@rheintech.com Tel: 703-689-0368 Fax: 703-689-2056 www.rheintech.com	Capacitec, Inc. 87 Fitchburg Road Ayer, MA 01432-0819 (USA) Tel: 978-772-6033

FCC ID	WQV-CAPTEURA150RF	**Test Report Date**	May 20, 2019
Platform	N/A	**RTL Work Order #**	2019046
Model	CAPTEURA150RF	**RTL Quote #**	QRTL19-046A
American National Standard Institute	ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices		
FCC Classification	DTS – Part 15 Digital Transmission System		
FCC Rule Part(s)/Guidance	FCC Rules Part 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz Direct Sequence System (10/01/2018)		
Digital Interface Information	Digital Interface was found to be compliant		

Frequency Range (MHz)	Output Power (W)*	Frequency Tolerance	Emission Designator
2405 – 2480	0.014	N/A	1M80FXD

** power is conducted*

I, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this test report. No modifications were made to the equipment during testing in order to achieve compliance with these standards. Furthermore, there was no deviation from, additions to, or exclusions from, the applicable parts of FCC Part 2, FCC Part 15, and ANSI C63.10.

Signature: _____ Date: May 20, 2019

Typed/Printed Name: Desmond A. Fraser Position: President

This report may not be reproduced, except in full, without the full written approval of Rhein Tech Laboratories, Inc. and Capacitec, Inc. Test results relate only to the item(s) tested.
This report replaces R0.0.

These test(s) are accredited under Rhein Tech Laboratories, Inc. ISO/IEC 17025 accreditation issued by ANAB. Refer to certificate and scope of accreditation AT-1445.

Table of Contents

Table Index

Plot Index

Appendix Index

Photograph Index

1 General Information

1.1 Scope

This is an original FCC certification application report.

Applicable Standard:

FCC Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz

1.2 Description of EUT

Equipment Under Test	CAPTEURA150RF
Power Supply	3.7 VDC LiPolymer Battery
Modulation Type	DSSS
Frequency Range	2405 – 2480 MHz
Antenna Connector Type	N/A
Antenna Type	Internal trace

1.3 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located at 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report and approved by the Federal Communications Commission to perform AC line conducted and radiated emissions testing.

1.4 Related Submittal(s)/Grant(s)

This report supports a certification application for Capacitec, Inc. Model CAPTEURA150RF, FCC ID: WQV-CAPTEURA150RF.

1.5 Modifications

No physical modifications were required for compliance.

2 Test Information

2.1 Description of Test Modes

In accordance with FCC 15.31(m), and because the EUT utilizes an operating band greater than 10 MHz, the following frequencies were tested.

Table 2-1: Channels Tested for DSSS

Channel	Frequency (MHz)
11	2405
18	2440
26	2480

2.2 Exercising the EUT

The EUT was tested in all three orthogonal planes in order to determine worst-case emissions. The EUT was provided with software to continuously transmit during testing. The carrier was also checked to verify that information was being transmitted. There were no deviations from the test standard(s) and/or methods. The test results reported relate only to the item tested.

2.3 Test Result Summary

Table 2-2: Test Result Summary – FCC Part 15, Subpart C (Section 15.247)

FCC Reference	C63.10 Procedure	Test	Pass/Fail or N/A
FCC 15.209	6.5, 6.6	Radiated Emissions	Pass
FCC 15.247(a)(2)	11.8	6 dB Bandwidth	Pass
FCC 15.247(b)	11.9	Maximum Peak Power Output	Pass
FCC 15.247(d)	11.12.2	Antenna Conducted Spurious Emissions	Pass
FCC 15.247(e)	11.10	Power Spectral Density	Pass
FCC 15.247(d)	11.13	Band Edge Measurement	Pass

2.4 Test System Details

The test samples were received on April 26, 2019. The FCC identifiers for all applicable equipment, plus descriptions of all cables used in the tested system, are identified in the following tables.

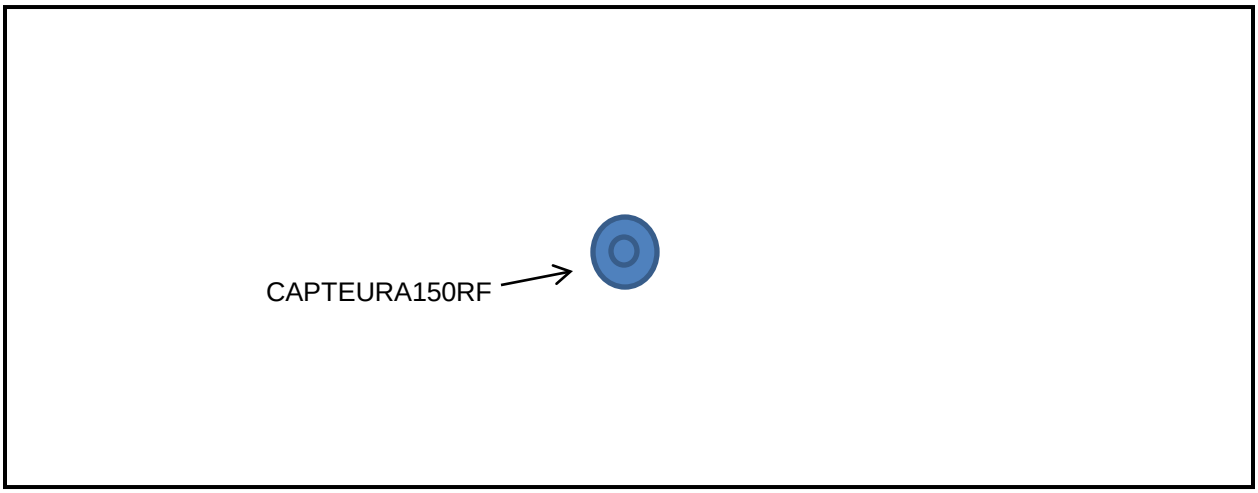
Table 2-3: Equipment Under Test

Part	Manufacturer	Model	Serial Number	FCC ID	Cable Description	RTL Bar Code
2.4 GHz Transceiver Puck	Capacitec, Inc.	CAPTEURA 150RF (0190-73493-20)	Sensor 2	WQV-CAPTEURA150RF	1m unshielded	23242
2.4 GHz Transceiver Puck	Capacitec, Inc.	CAPTEURA 150RF (0190-73493-20)	Sensor 3	WQV-CAPTEURA150RF	1m unshielded	23243

Table 2-4: Accessory Test Equipment

Part	Manufacturer	Model	Serial Number	FCC ID	Cable Description	RTL Bar Code
Laptop	Acer	ACONIATAB	LERK602047213015436500	N/A	N/A	N/A
AC Adapter	Leader Electronics, Inc.	IU40-11190-011S	AP04007002150015F3PP03	N/A	2.5m unshielded	N/A

2.5 Configuration of Tested System



3 Peak Output Power – FCC 15.247(b)(1)

3.1 Power Output Test Procedure

A conducted power measurement of the EUT was taken using a Rohde & Schwarz Spectrum Analyzer using the method in ANSI C63.10 section 11.9.1.2 Integrated band power, with the following settings:

a) Set the RBW = 1 MHz
b) Set the VBW ≥ [3 × RBW]
c) Set the span ≥ [1.5 × DTS bandwidth]
d) Detector = peak
e) Sweep time = auto couple
f) Trace mode = max hold
g) Allow trace to fully stabilize
h) Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges.

Table 3-1: Power Output Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901581	Rohde & Schwarz	FSU	Spectrum Analyzer	1166.1660.50	4/26/21

3.2 Power Output Test Data

Plot 3-1: Integrated Band Power - Channel 11 (2405 MHz) Peak

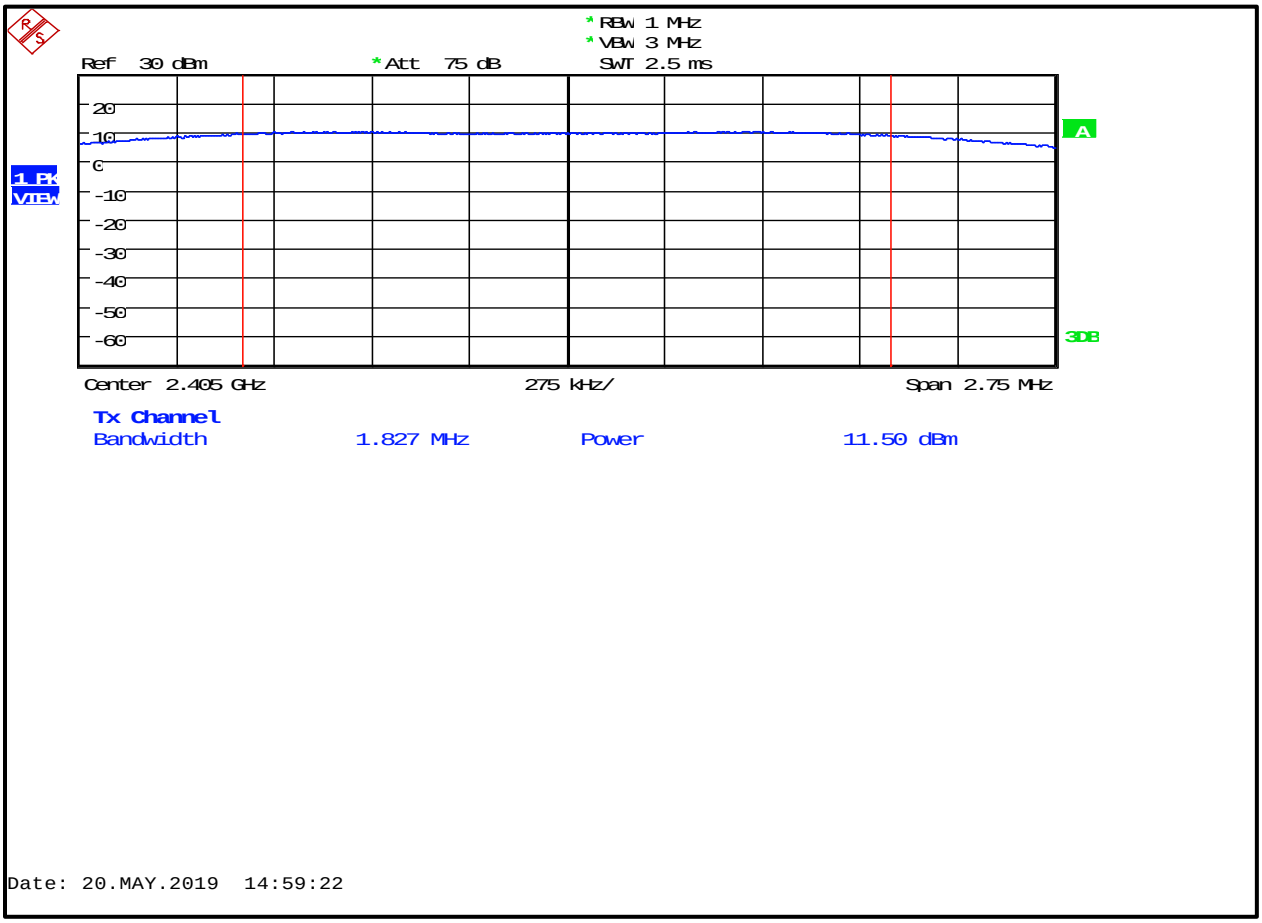


Table 3-2: Power Output Test Data

Channel	Frequency (MHz)	Peak Power (dBm)
11	2405	11.5
18	2440	11.3
26	2480	11.0

Measurement uncertainties shown for these tests are expanded uncertainties expressed at 95% confidence level using a coverage factor k = 2.

Conducted Power: ±0.8 dB

Result: PASS

Test Personnel:

Daniel W. Baltzell	Daniel W. Baltzell	April 29-May 20, 2019
EMC Test Engineer	Signature	Date of Test

4 Compliance with the Band Edge – FCC 15.247(d)

4.1 Band Edge Test Procedure

The transmitter output was connected to its appropriate antenna. Peak (1 MHz RBW/3 MHz VBW) and RMS (100 kHz RBW/2 MHz VBW) detector, corrected radiated measurements were taken within the restricted band to show compliance. Site correction with antenna factor and cable loss is used as an offset in the analyzer. Integration method ANSI C63.10 11.13.3.

Table 4-1: Band Edge Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
900878	Rhein Tech Laboratories, Inc.	AM3-1197-0005	3 meter antenna mast, polarizing	Outdoor Range 1	Not Required
901242	Rhein Tech Laboratories, Inc.	WRT-000-0003	Wood rotating table	N/A	Not Required
900772	EMCO	3161-02	Horn Antenna (2.0–4.0 GHz)	9804-1044	5/17/21
901581	Rohde & Schwarz	FSU	Spectrum Analyzer	1166.1660.50	4/26/21
901729	Insulated Wire Inc.	KPS-1503-3150-KPR	SMK RF Cables 20’	NA	8/21/19

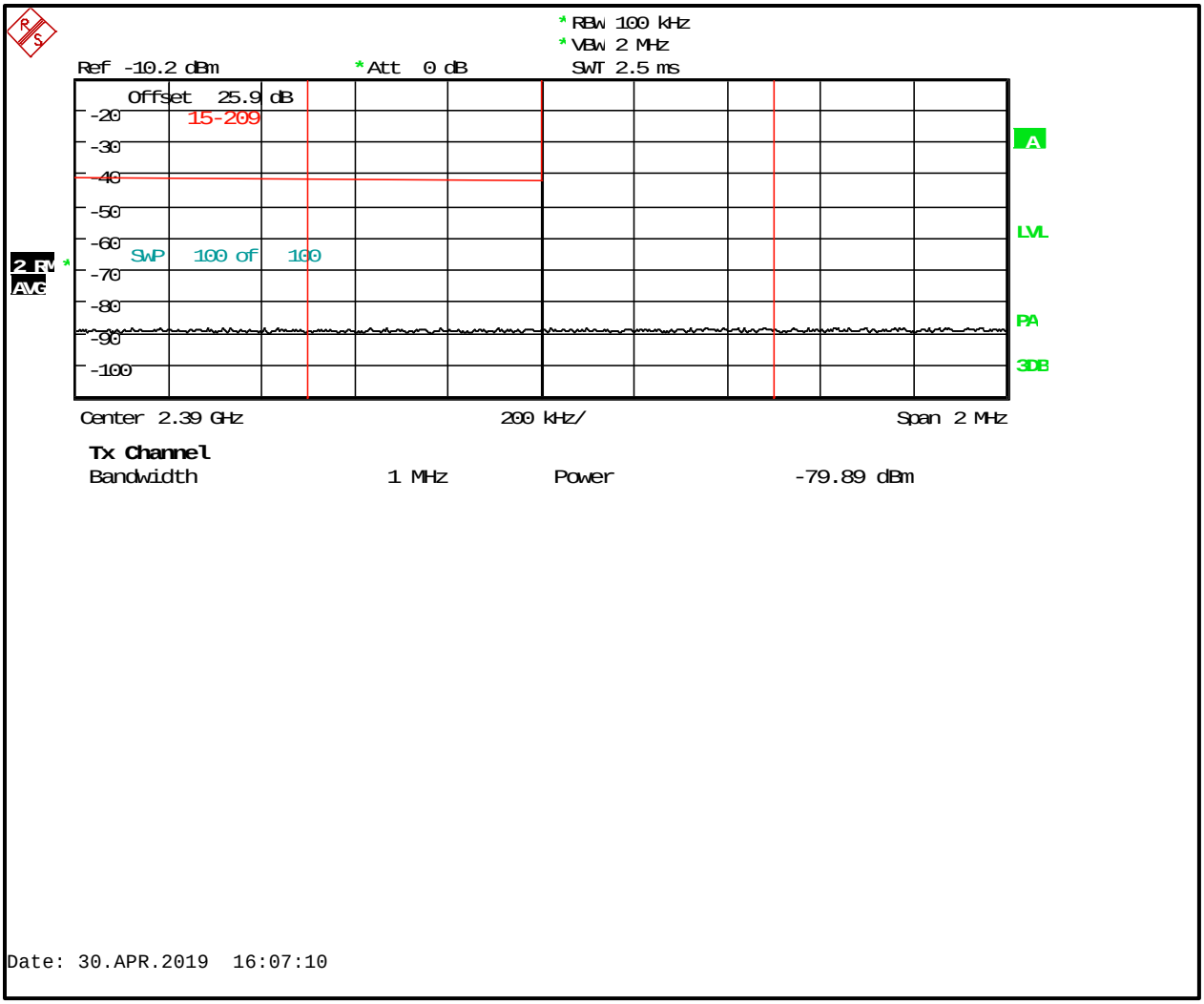
4.2 Band Edge Test Data

4.2.1 Lower Band Edge

54 dBuV/m Average Limit converted to dBm
54-104.77+20*LOG(3) = -41.2 dBm

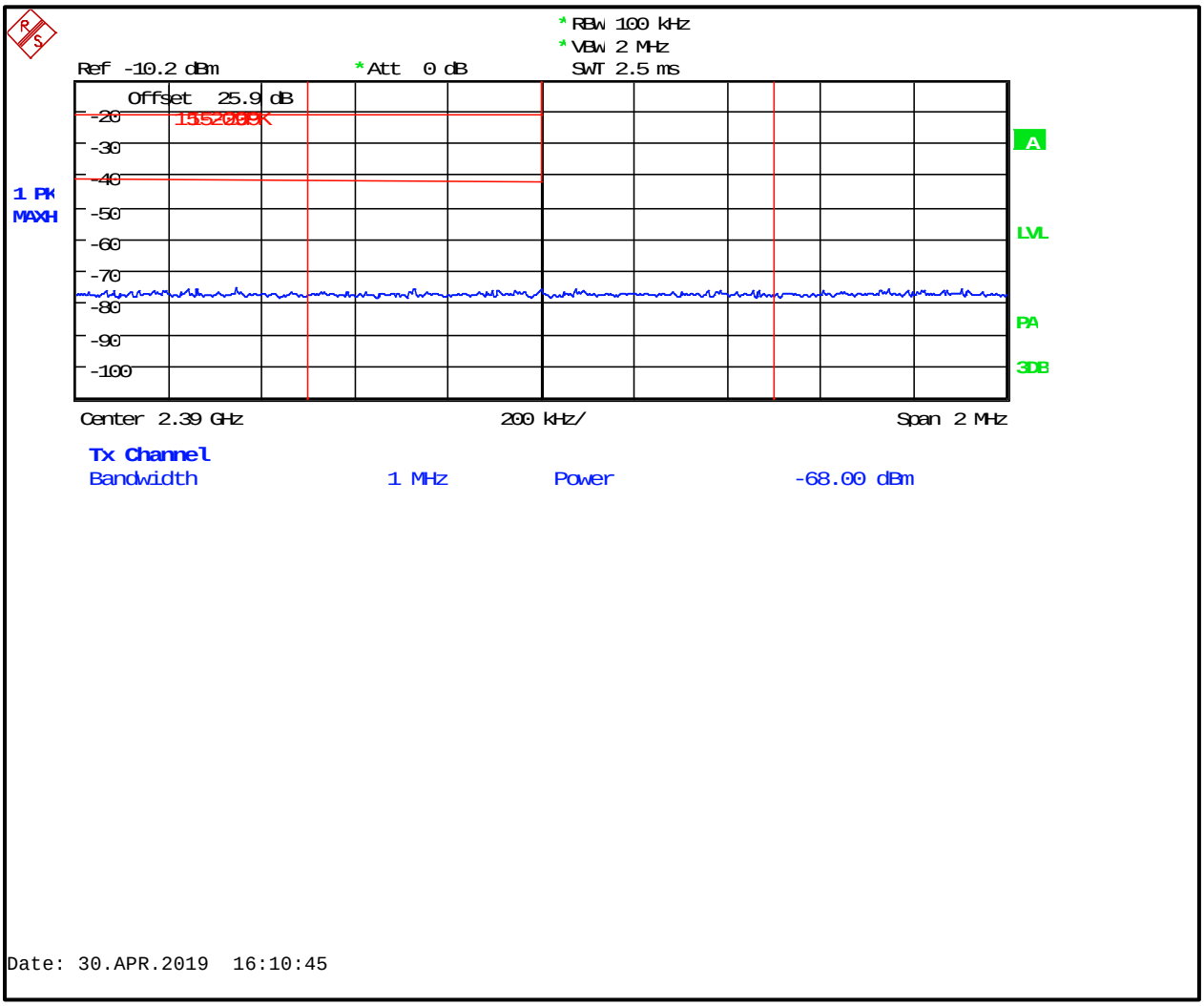
74 dBuV/m Average Limit converted to dBm
74-104.77+20*LOG(3) = -21.2 dBm

Plot 4-1: Integrated Lower Band Edge - Channel 11 (2405 MHz) RMS



Radiated average measurement = -79.9 dBm
Average limit = -41.2 dBm
Margin = -38.7 dB

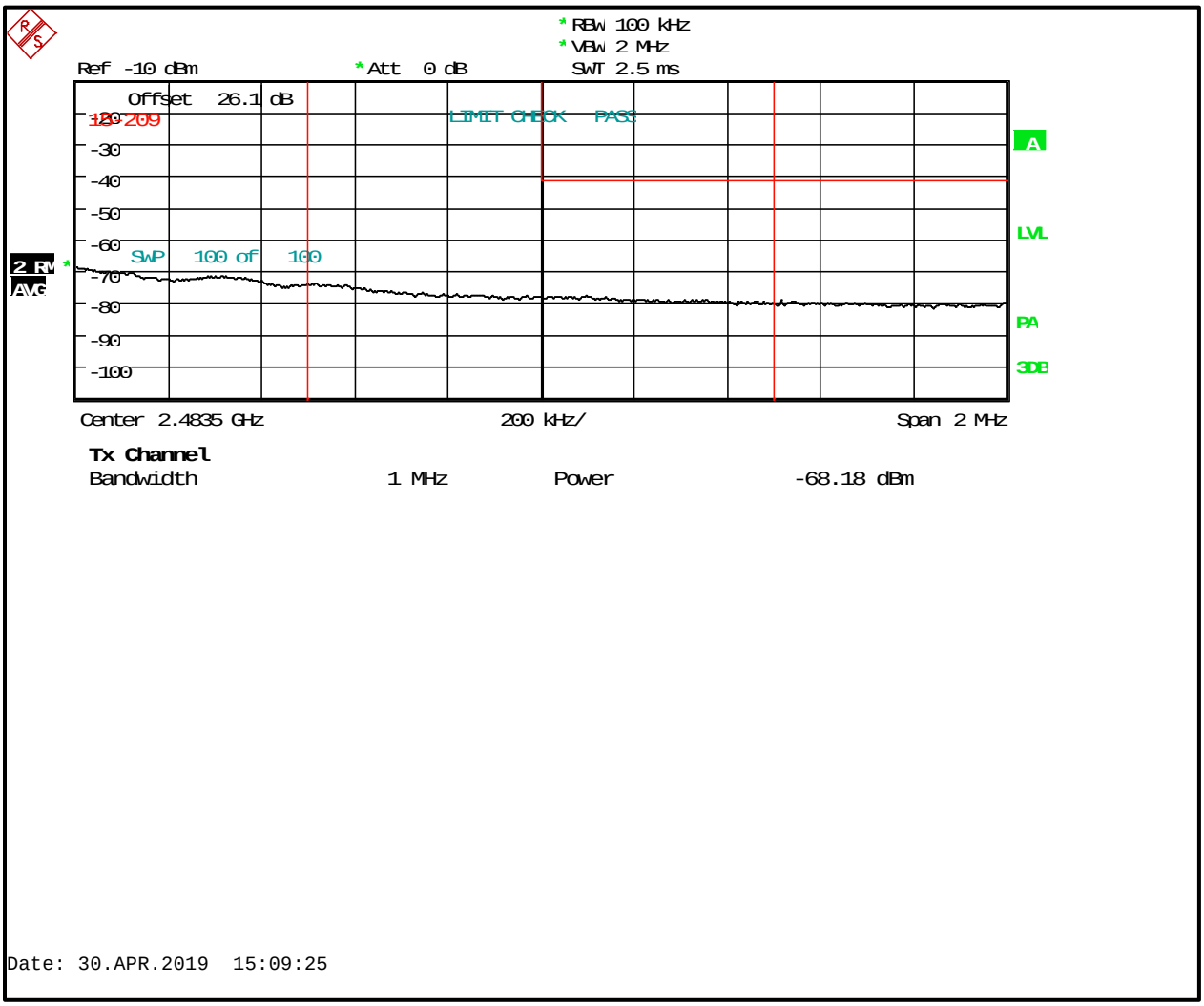
Plot 4-2: Integrated Lower Band Edge - Channel 11 (2405 MHz) Peak



Radiated peak measurement = -68 dBm
Peak limit = -21.2 dBm
Margin = -46.8 dB

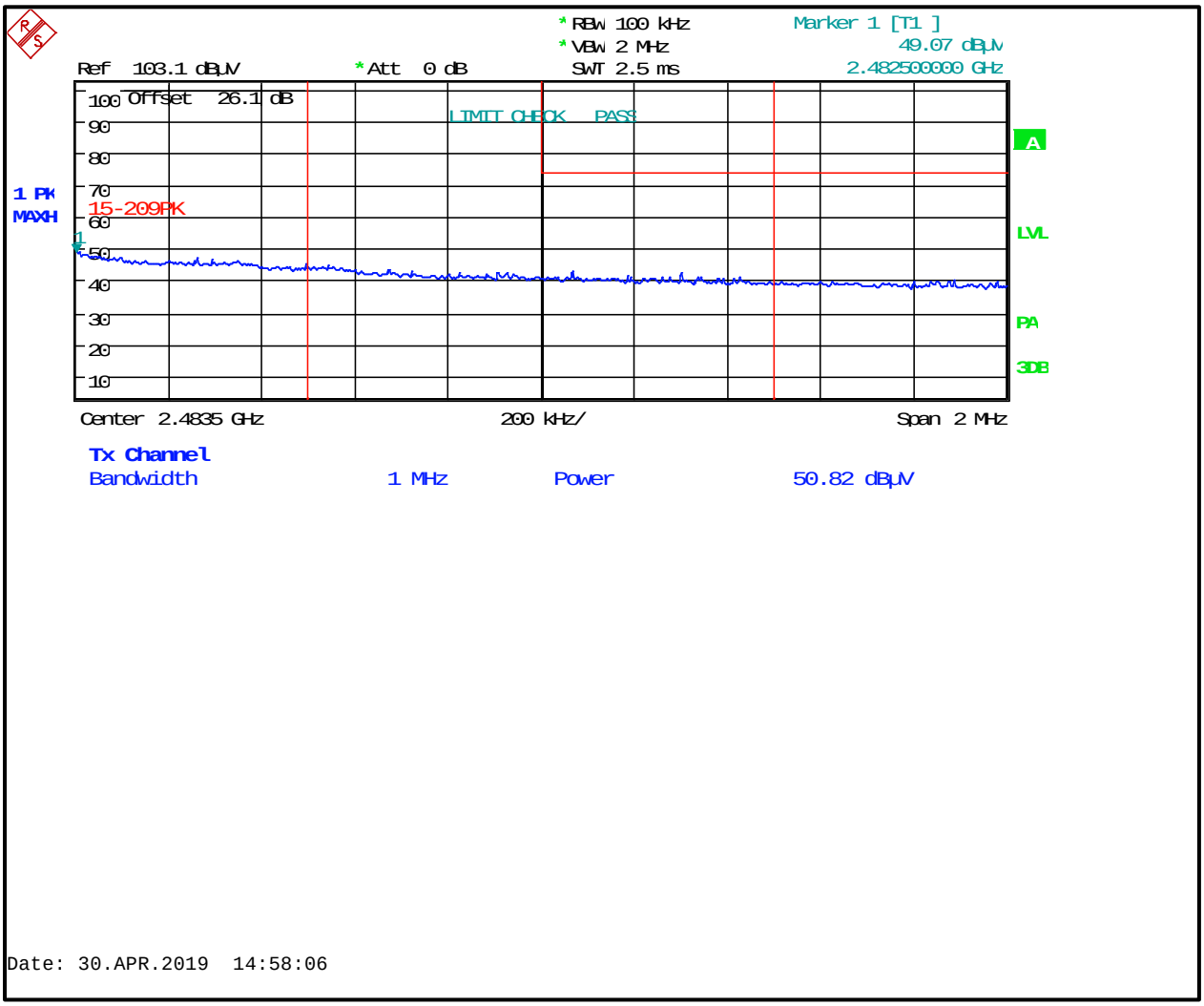
4.2.2 Upper Band Edge

Plot 4-3: Integrated Upper Band Edge - Channel 26 (2480 MHz) RMS



Radiated average measurement = -68.2 dBm
Average limit = -41.2 dBm
Margin = -27 dB

Plot 4-4: Integrated Upper Band Edge - Channel 26 (2480 MHz) Peak



Radiated peak measurement = 50.8 dBuV/m
Peak limit = 74 dBuV/m
Margin = -23.2 dB

Measurement uncertainty: ±4.6 dB. This measurement uncertainty is an expanded uncertainty for 95% confidence level received with a coverage factor k=2.

Result: PASS

Test Personnel:

Daniel W. Baltzell	Signature	April 30, 2019
EMC Test Engineer		Date of Test

5 Antenna Conducted Spurious Emissions – FCC 15.247(d)

5.1 Antenna Conducted Spurious Emissions Test Procedures

Antenna spurious emissions per FCC 15.247(d) were measured from the EUT antenna port using a 50-ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at 300 kHz. The modulated carrier was identified at the following frequencies: 2405 MHz, 2440 MHz and 2480 MHz.

5.2 Antenna Conducted Spurious Emissions Test Results

No harmonics or spurs were found within 20 dB (note that we are reporting power as peak) of the limit from the carrier to the 10th harmonic of the carrier frequency. Per FCC 15.31(o), no data is being reported.

Table 5-1: Antenna Conducted Spurious Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901581	Rohde & Schwarz	FSU	Spectrum Analyzer	1166.1660.50	4/26/21

Measurement uncertainties shown for these tests are expanded uncertainties expressed at 95% confidence level using a coverage factor k = 2.

Conducted Emissions: ±0.8 dB

Results: PASS

Test Personnel:

Daniel W. Baltzell		April 29, 2019
EMC Test Engineer	Signature	Date of Test

6 Bandwidth – FCC 15.247(a)(2)

6.1 6 dB Bandwidth Test Procedure

The minimum 6 dB bandwidths per FCC 15.247(a)(2) were measured using a 50-ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at ≥ 3xRBW. The device was modulated. The minimum 6 dB bandwidths are presented below.

Table 6-1: 6 dB Bandwidth Test Equipment

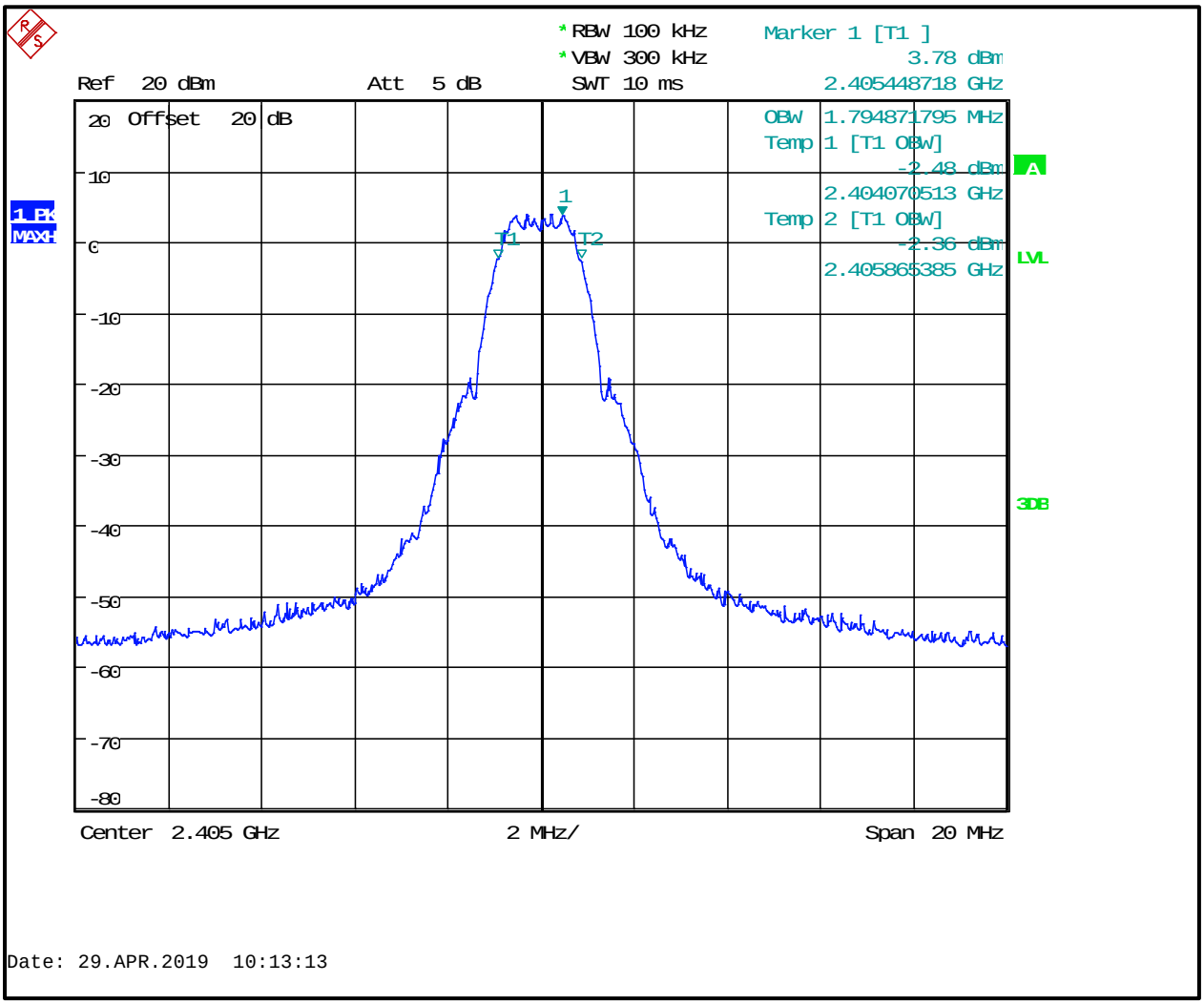
RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901581	Rohde & Schwarz	FSU	Spectrum Analyzer	1166.1660.50	4/26/21

6.2 6 dB Bandwidth Test Results

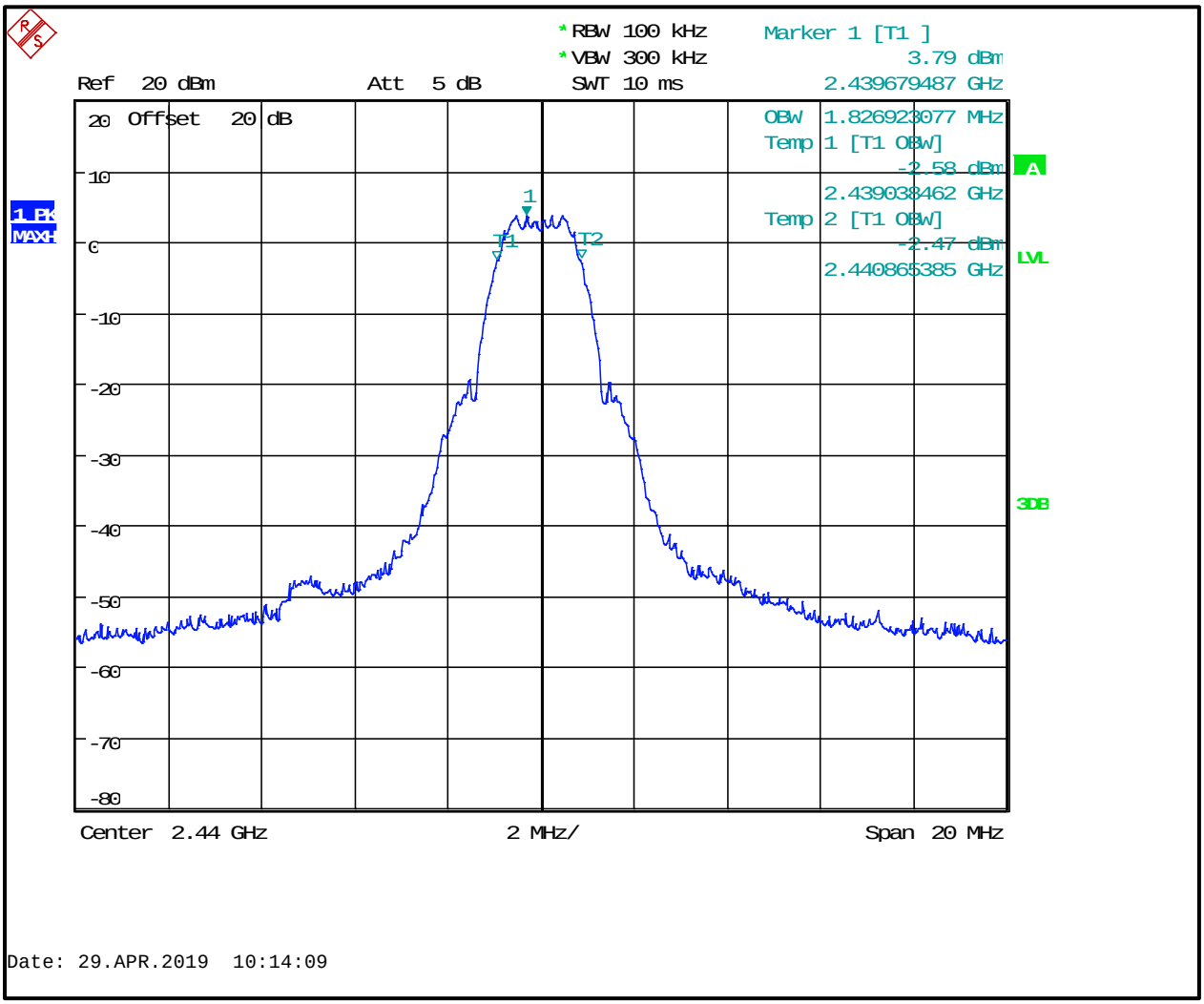
Table 6-2: 6 dB Bandwidth Test Data

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass/Fail
11	2405	1.8	0.5	Pass
18	2440	1.8	0.5	Pass
26	2480	1.8	0.5	Pass

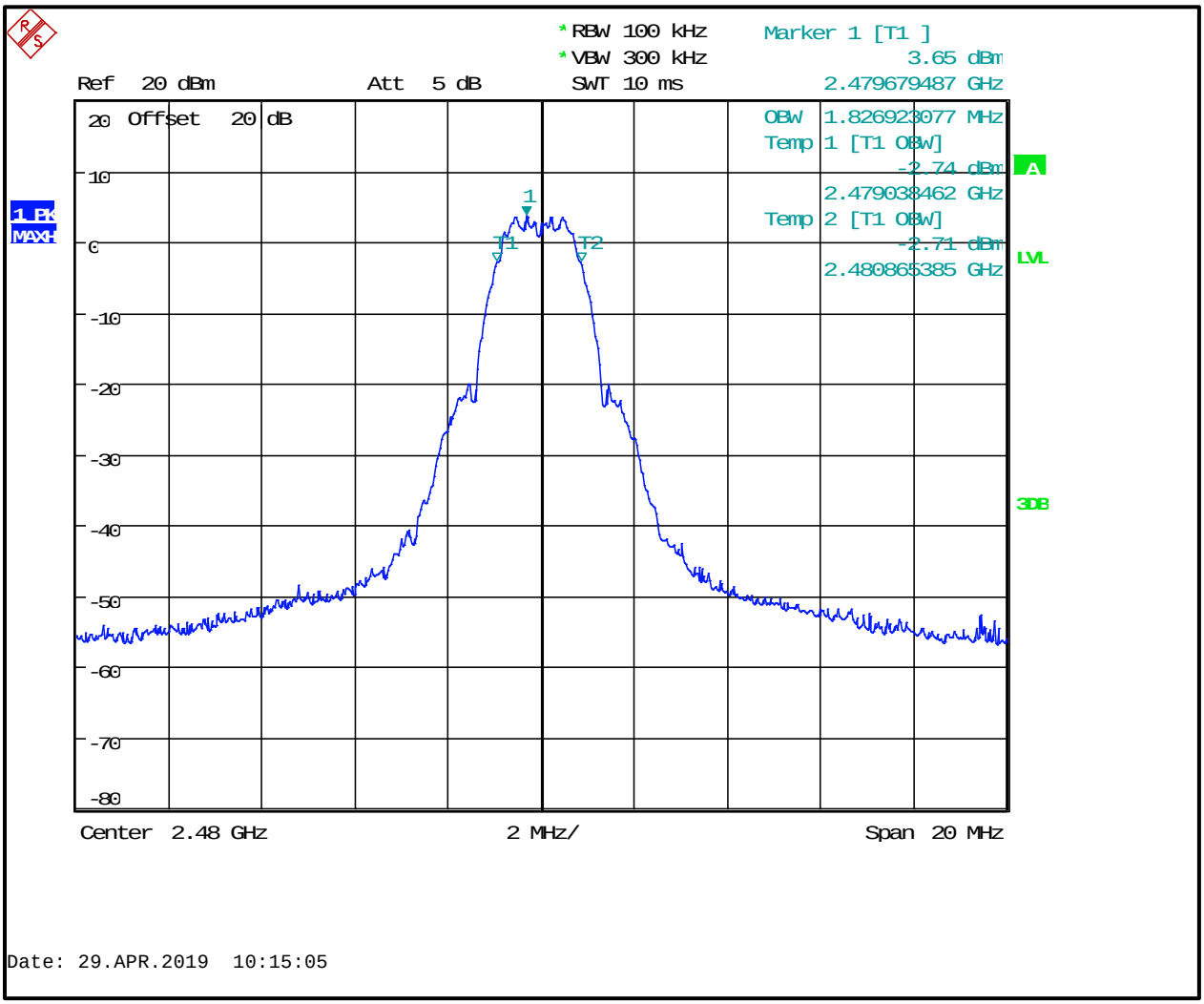
Plot 6-1: 6 dB Bandwidth Channel 11 (TX Frequency 2405 MHz)



Plot 6-2: 6 dB Bandwidth Channel 18 (TX Frequency 2440 MHz)



Plot 6-3: 6 dB Bandwidth Channel 26 (TX Frequency 2480 MHz)



Frequency uncertainty: ±1 x 10^{-6}. This measurement uncertainty is an expanded uncertainty for 95% confidence level received with a coverage factor k=2.

Result: PASS

Test Personnel:

Daniel W. Baltzell	Daniel W. Baltzell	April 29, 2019
EMC Test Engineer	Signature	Date of Test

7 Power Spectral Density – FCC 15.247(e)

7.1 Power Spectral Density Test Procedure

The power spectral density per FCC 15.247(e) was measured using a 50-ohm spectrum analyzer with the resolution bandwidth set at 3 kHz, the video bandwidth set at 10 kHz, and the auto sweep time. The spectral lines were resolved for the modulated carriers at 2405 MHz, 2440 MHz, and 2480 MHz. These levels are below the +8 dBm limit. See the power spectral density table and plots.

Table 7-1: Power Spectral Density Test Equipment

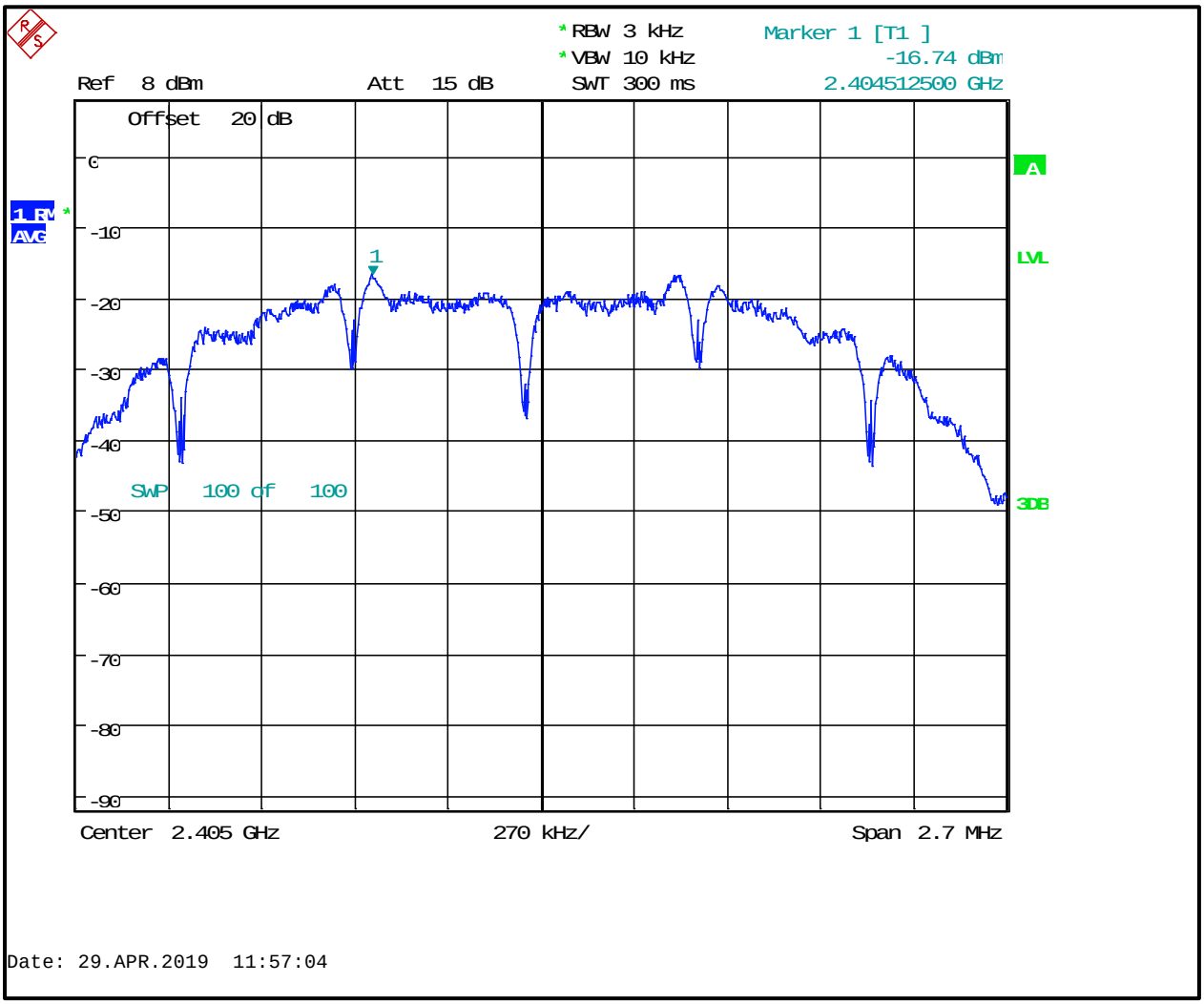
RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901581	Rohde & Schwarz	FSU	Spectrum Analyzer	1166.1660.50	4/26/21

7.2 Power Spectral Density Test Data – DSSS WLAN

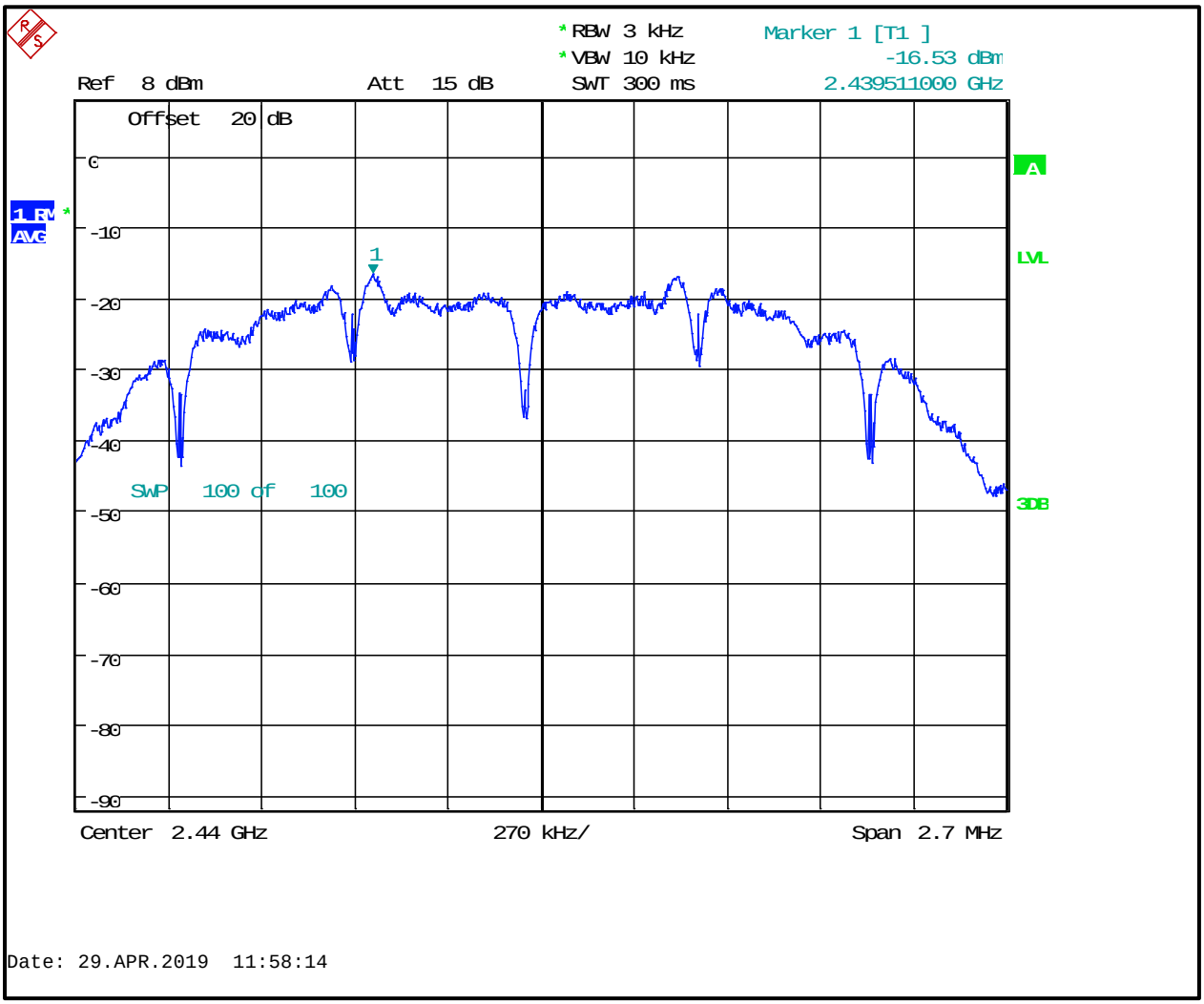
Table 7-2: Power Spectral Density Test Data

Channel	Frequency (MHz)	RF Power Level (dBm)	Maximum Limit +8dBm	Pass/Fail
11	2405	-16.7	8	Pass
18	2440	-16.5	8	Pass
26	2480	-16.7	8	Pass

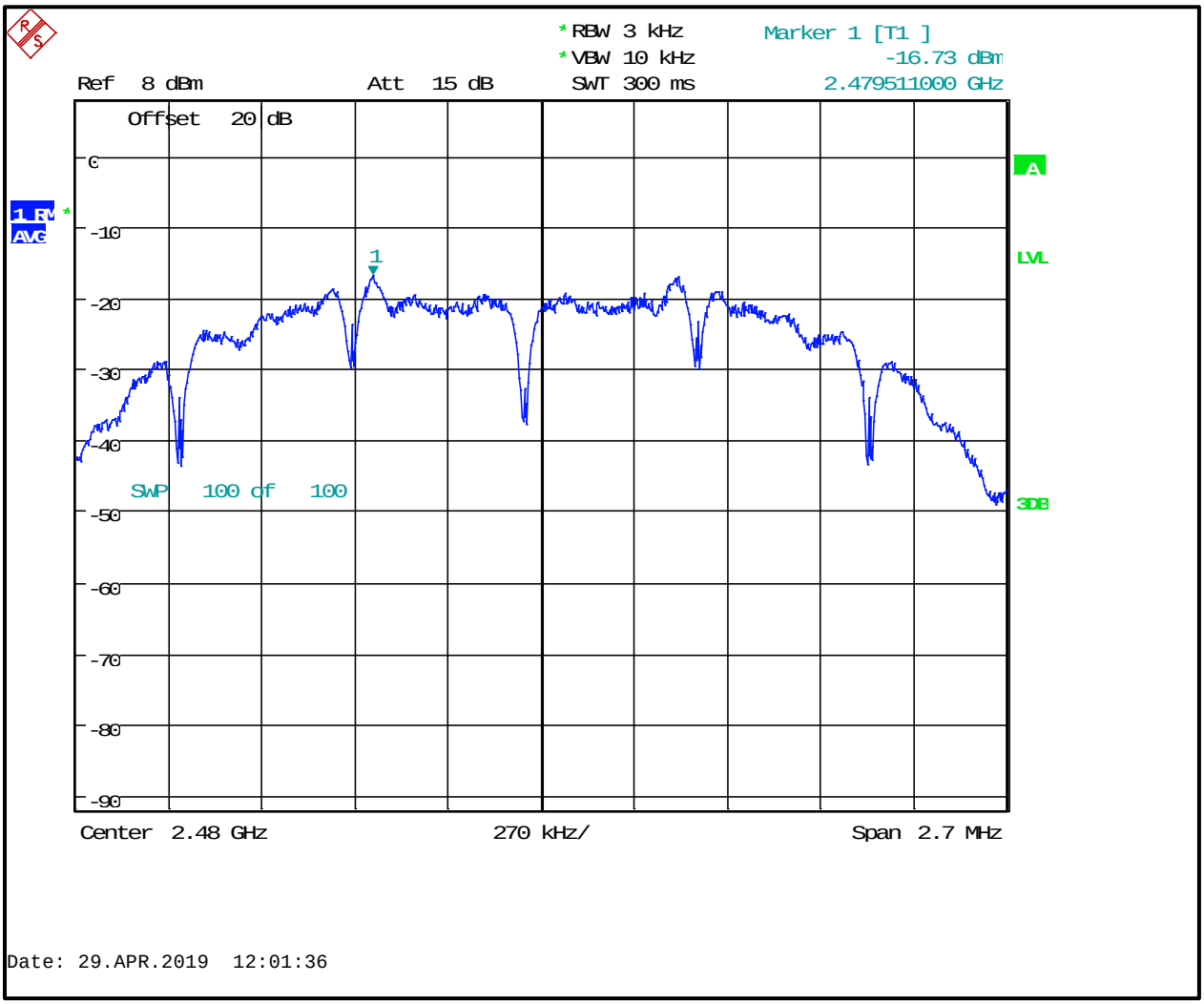
Plot 7-1: Power Spectral Density: Channel 11 (2405 MHz)



Plot 7-2: Power Spectral Density: Channel 18 (2440 MHz)



Plot 7-3: Power Spectral Density: Channel 26 (2480 MHz)



Measurement uncertainties shown for these tests are expanded uncertainties expressed at 95% confidence level using a coverage factor k = 2.

Conducted Emissions: ±0.8 dB

Results: PASS

Test Personnel:

Daniel W. Baltzell	Daniel W. Baltzell	April 29, 2019
EMC Test Engineer	Signature	Date of Test

8 Radiated Emissions – FCC 15.209

8.1 Limits of Radiated Emissions Measurement

Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009-0.490	2400/f (kHz)	300
0.490-1.705	2400/f (kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

As shown in 15.35(b), for frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any circumstances of modulation.

8.2 Radiated Emissions Measurement Test Procedure

Procedure: C63.10-2013 6.5, 6.6

Before final measurements of radiated emissions were made on the open-field three/ten meter range, the EUT was scanned indoors at one and three meter distances. This was done in order to determine its emissions spectrum signature. The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. This process was repeated during final radiated emissions measurements on the open-field range, at each frequency, in order to ensure that maximum emission amplitudes were attained.

Final radiated emissions measurements were made on the three/ten-meter, open-field test site. The EUT was placed on a nonconductive turntable 0.8 meters above the ground plane. The spectrum was examined from 9 kHz to the 10^{th} harmonic of the highest fundamental transmitter frequency.

At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations. For frequencies between 30 and 1000 MHz, the spectrum analyzer's 6 dB bandwidth was set to 120 kHz, and the analyzer was operated in the CISPR quasi-peak detection mode. For emissions above 1,000 MHz, emissions are measured using the average detector function with a minimum resolution bandwidth of 1 MHz. No video filter less than 10 times the resolution bandwidth was used. The highest emission amplitudes relative to the appropriate limit were measured and recorded in this report.

Table 8-1: Radiated Emissions Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
900772	EMCO	3161-02	Horn Antenna (2.0–4.0 GHz)	9804-1044	5/17/21
900321	EMCO	3161-03	Horn Antennas (4.0–8.2 GHz)	9508-1020	5/17/21
900323	EMCO	3160-7	Horn Antennas (8.2–12.4 GHz)	9605-1054	5/17/21
900356	EMCO	3160-08	Horn Antenna (12.4–18.0 GHz)	9607-1044	5/17/21
901218	EMCO	3160-09	Horn Antenna (18.0–26.5 GHz)	960281-003	5/5/21
900791	Chase	CBL6111B	Bilog Antenna (30–2000 MHz)	N/A	10/4/20
901581	Rohde & Schwarz	FSU	Spectrum Analyzer	1166.1660.50	4/26/21
901729	Insulated Wire Inc.	KPS-1503-3150-KPR	SMK RF Cables 20’	NA	8/21/19

8.3 Radiated Emissions Test Results

8.3.1 Digital/Receiver Radiated Emissions

Table 8-2: Digital/Receiver Radiated Emissions

Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Turntable Azimuth (°)	Antenna Height (m)	Analyzer Reading (dBµV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBµV/m)	Margin (dB)	Pass/ Fail
32.069	QP	V	180	1.0	19.1	7.7	26.8	40.0	-13.2	Pass
40.708	QP	V	180	1.0	24.6	-5.2	19.4	40.0	-20.6	Pass
47.438	QP	V	180	1.0	22.2	-15.0	7.2	40.0	-32.8	Pass
74.431	QP	V	180	1.0	19.3	-21.1	-1.8	40.0	-41.8	Pass
87.997	QP	H	180	1.0	38.1	-18.2	19.9	40.0	-20.1	Pass
125.25	QP	V	180	1.0	22.3	-14.3	8.0	43.5	-35.5	Pass
149.289	QP	H	180	1.0	21.5	-15.4	6.1	43.5	-37.4	Pass
155.378	QP	H	180	1.0	19.2	-15.7	3.5	43.5	-40.0	Pass
169.641	QP	H	180	1.0	21.1	-16.0	5.1	43.5	-38.4	Pass
176.051	QP	H	180	1.0	30.2	-16.4	13.8	43.5	-29.7	Pass
197.902	QP	H	180	1.0	13.3	-16.3	-3.0	43.5	-46.5	Pass

8.3.2 Radiated Emissions Harmonics/Spurious

Table 8-3: 2405 MHz - Average Mode

Frequency (MHz)	Spectrum Analyzer Average Level (1 MHz RBW/10 Hz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Average Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4810.0	8.8	33.5	42.3	54.0	-11.7
12025.0	-7.3	44.1	36.8	54.0	-17.2
19240.0	-6.0	53.3	47.3	54.0	-6.7

Table 8-4: 2440 MHz - Average Mode

Frequency (MHz)	Spectrum Analyzer Average Level (1 MHz RBW/10 Hz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Average Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4880.0	5.6	33.5	39.1	54.0	-14.9
7320.0	2.4	35.8	38.2	54.0	-15.8
12200.0	-7.3	44.1	36.8	54.0	-17.2
19520.0	-5.4	53.6	48.2	54.0	-5.8

Table 8-5: 2480 MHz - Average Mode

Frequency (MHz)	Spectrum Analyzer Average Level (1 MHz RBW/10 Hz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Average Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4960.0	6.7	33.7	40.4	54.0	-13.6
7440.0	1.6	35.9	37.5	54.0	-16.5
12400.0	-7.1	47.2	40.1	54.0	-13.9
19840.0	-5.2	53.7	48.5	54.0	-5.5
22320.0	-4.8	55.8	51.0	54.0	-3.0

Table 8-6: 2405 MHz - Peak Mode

Frequency (MHz)	Spectrum Analyzer Peak Level (1 MHz RBW/3 MHz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4810.0	17.5	33.5	51.0	74.0	-23.0
12025.0	4.5	44.1	48.6	74.0	-25.4
19240.0	5.3	53.3	58.6	74.0	-15.4

Table 8-7: 2440 MHz - Peak Mode

Frequency (MHz)	Spectrum Analyzer Peak Level (1 MHz RBW/3 MHz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4880.0	15.0	33.5	48.5	74.0	-25.5
7320.0	14.1	35.8	49.9	74.0	-24.1
12200.0	4.3	44.1	48.4	74.0	-25.6
19520.0	5.8	53.6	59.4	74.0	-14.6

Table 8-8: 2480 MHz - Peak Mode

Frequency (MHz)	Spectrum Analyzer Peak Level (1 MHz RBW/3 MHz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4960.0	16.1	33.7	49.8	74.0	-24.2
7440.0	13.4	35.9	49.3	74.0	-24.7
12400.0	4.3	47.2	51.5	74.0	-22.5
19840.0	6.3	53.7	60.0	74.0	-14.0
22320.0	6.5	55.8	62.3	74.0	-11.7

Measurement uncertainty: ±4.6 dB. This measurement uncertainty is an expanded uncertainty for 95% confidence level received with a coverage factor k=2.

Result: PASS

Test Personnel:

Daniel W. Baltzell		April 30-May 1, 2019
EMC Test Engineer	Signature	Dates of Test

9 AC Conducted Emissions - FCC 15.207

Device is powered with an internal 3.7 VDC rechargeable LiPolymer battery. AC line conducted emissions measurements were accomplished using the AC adapter from a software controlling laptop, the laptop provided a 5V power connection.

9.1 Limits of Conducted Emissions Measurement

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

9.2 Conducted Emissions Measurement Test Procedure

Procedure: C63.10-2009 6.2

The power line conducted emission measurements were performed in a Series 81 type shielded enclosure manufactured by Rayproof. The EUT was assembled on a wooden table 80 centimeters high. Power was fed to the EUT through a 50-ohm / 50 micro Henry Line Impedance Stabilization Network (EUT LISN). The EUT LISN was fed power through an A.C. filter box on the outside of the shielded enclosure. The filter box and EUT LISN housing are bonded to the ground plane of the shielded enclosure. A second LISN, the peripheral LISN, provides isolation for the EUT test peripherals. This peripheral LISN was also fed A.C. power. A metal power outlet box, which is bonded to the ground plane and electrically connected to the peripheral LISN, powers the EUT host peripherals.

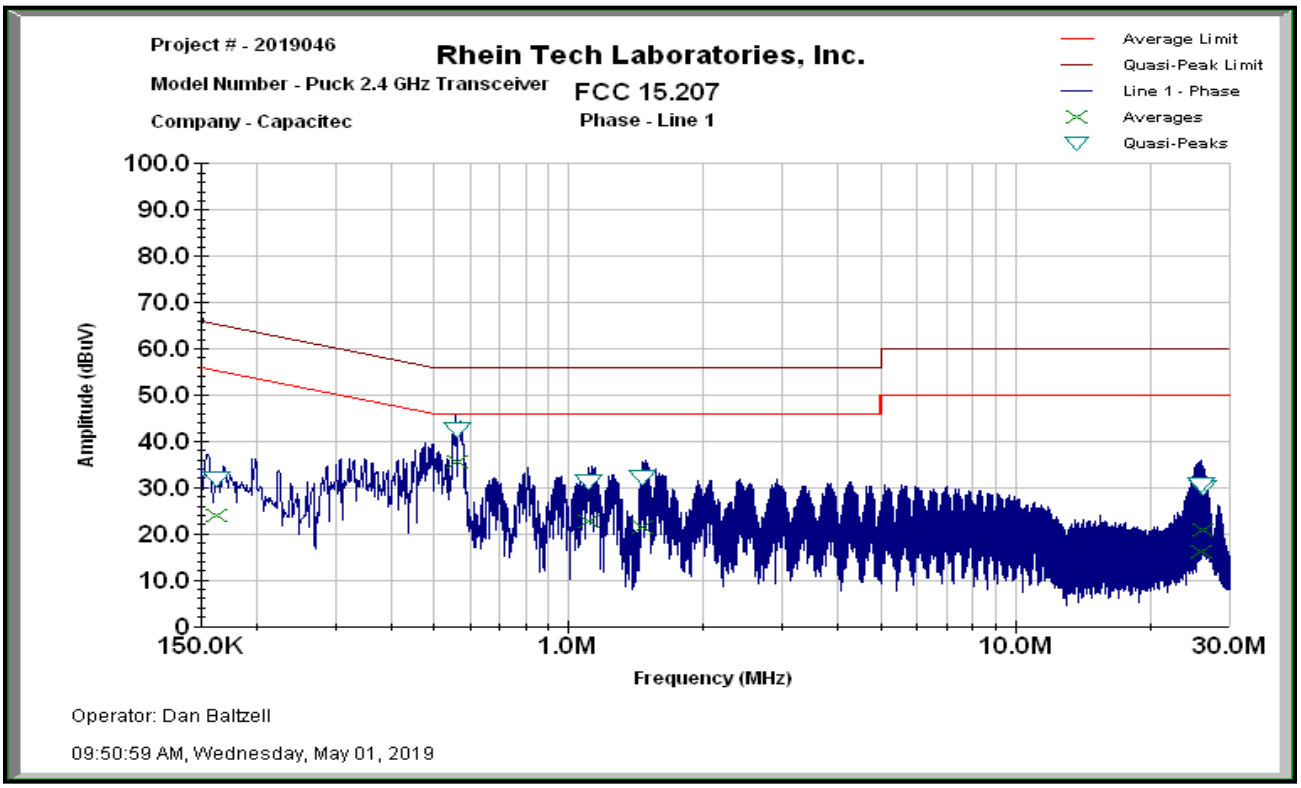
The spectrum analyzer was connected to the A.C. line through an isolation transformer. The 50-ohm output of the EUT LISN was connected to the spectrum analyzer input. Conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak mode (or peak mode if applicable). The analyzer's 6 dB bandwidth was set to 9 kHz. No video filter less than 10 times the resolution bandwidth was used. Average measurements are performed in linear mode using a 10 kHz resolution bandwidth, a 1 Hz video bandwidth, and by increasing the sweep time in order to obtain a calibrated measurement. The emission spectrum was scanned from 150 kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in this report.

Table 9-1: Conducted Emissions Test Equipment

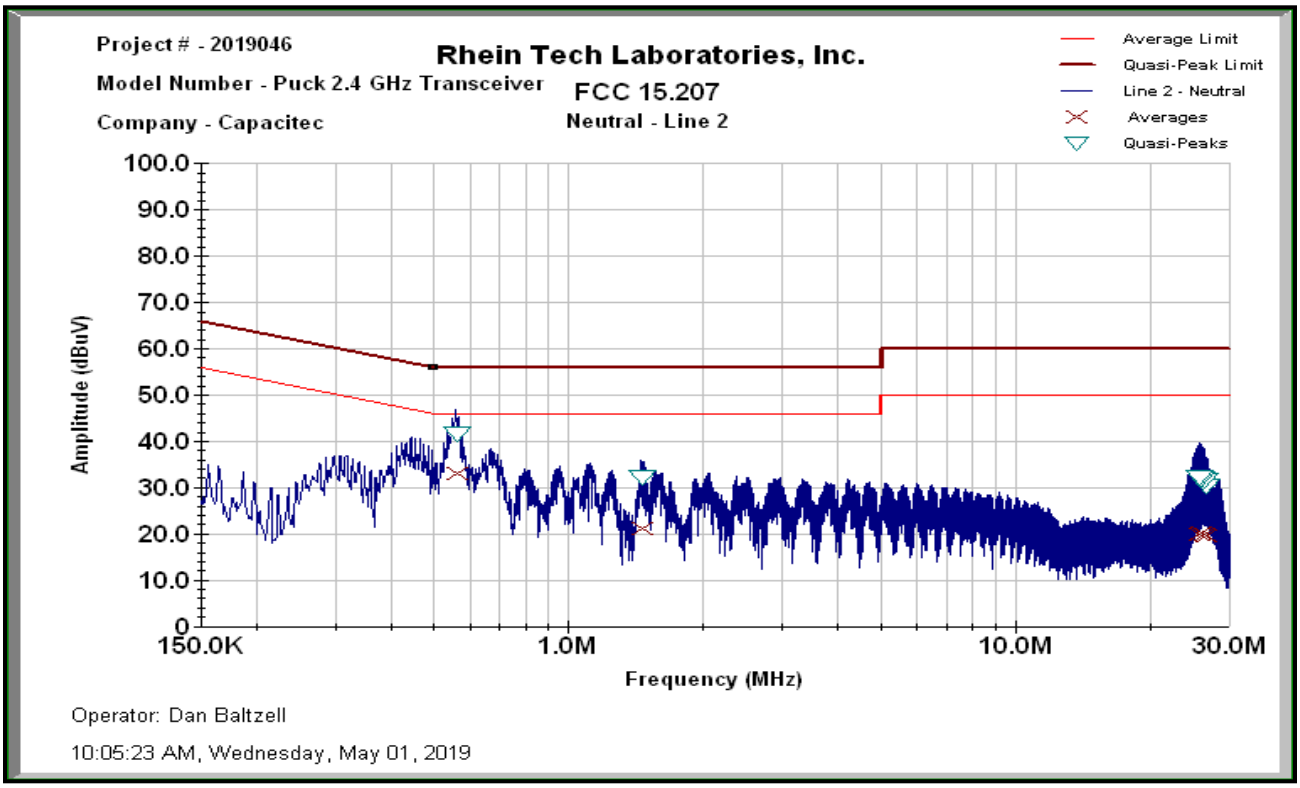
RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901581	Rohde & Schwarz	FSU	Spectrum Analyzer	1166.1660.50	4/26/21
900728	Solar	8130	Filter	947305	4/24/20
901083	AFJ International	LS16	16A LISN (110 V)	16010020080	2/13/21
901598	RF Depot	N/A	Cable Inside Screening Room	N/A	4/8/20
901599	RF Depot	N/A	Cable Outside Screening Room	N/A	4/8/20

9.3 Conducted Line Emissions Test Data

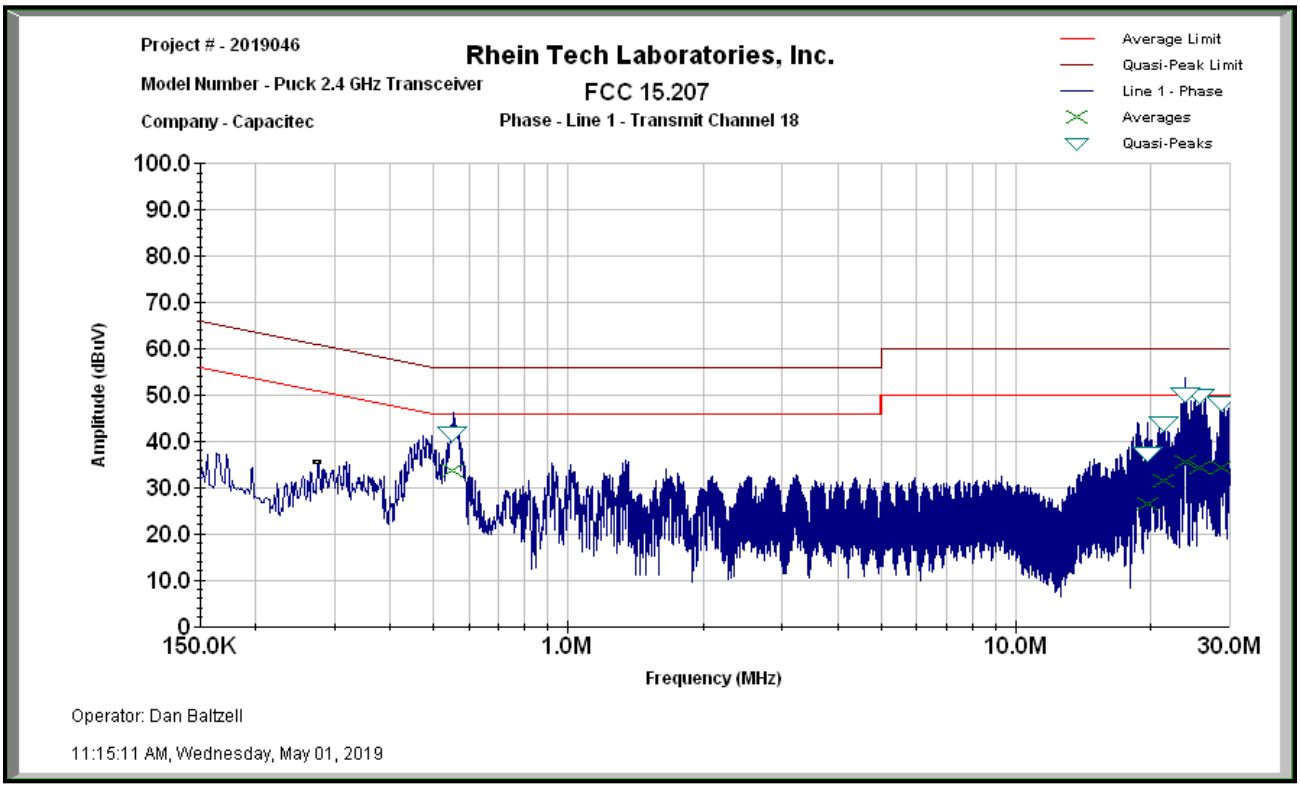
Plot 9-1: Conducted Line Emissions – Phase – Unintentional Mode



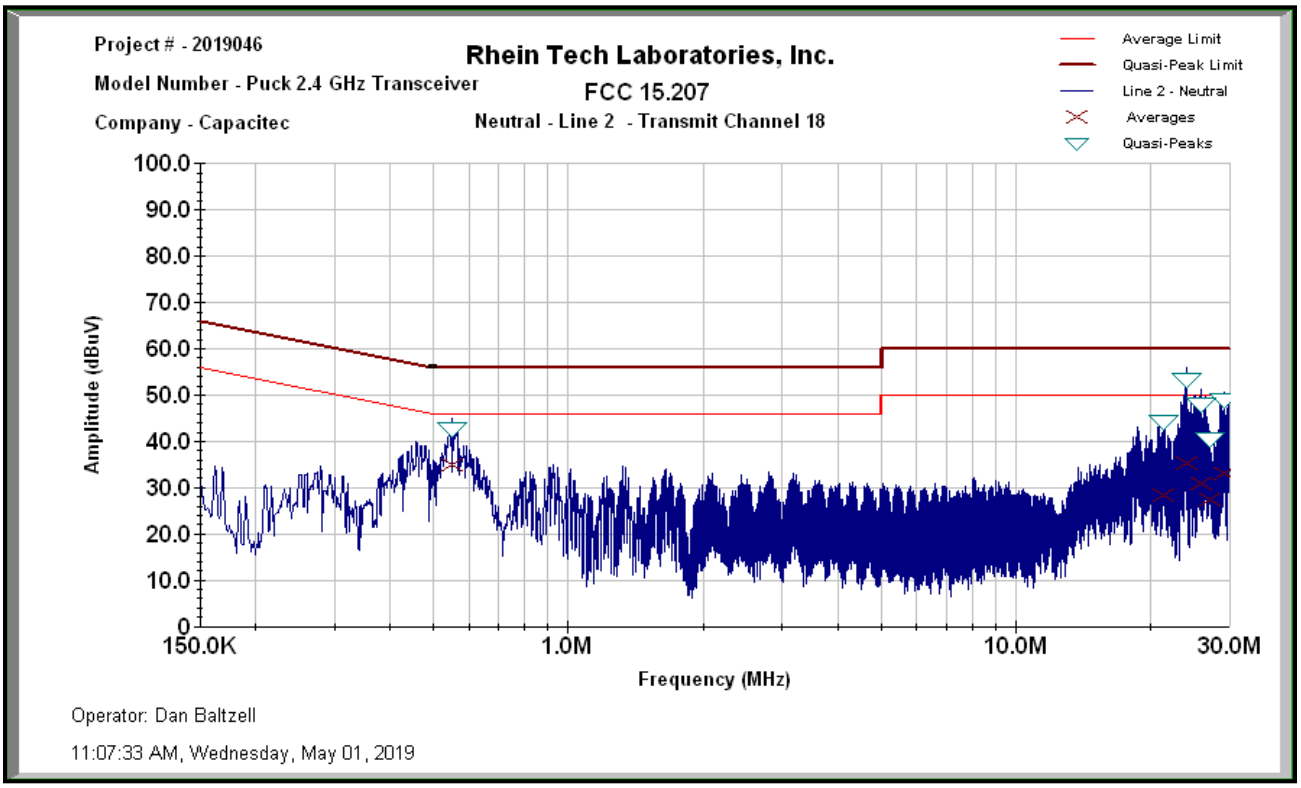
Plot 9-2: Conducted Line Emissions – Neutral – Unintentional Mode



Plot 9-3: Conducted Line Emissions – Phase – Transmit Mode



Plot 9-4: Conducted Line Emissions – Neutral – Transmit Mode



Measurement uncertainty: Measurement uncertainties shown for these tests are expanded uncertainties expressed at 95% confidence level using a coverage factor k = 2. ±3.6 dB

Results: Pass

Test Personnel:

Daniel W. Baltzell		May 1, 2019
EMC Test Engineer	Signature	Date of Test

10 Conclusion

The data in this measurement report shows that the Capacitec, Inc. Model CAPTEURA150RF, FCC ID: WQV-CAPTEURA150RF, complies with the applicable requirements of FCC Parts 2 and 15.247.

.