Report on the FCC and IC Testing of the Modulight, Inc.
Medical ophthalmic laser device. Model: ML6710i
In accordance with FCC 47 CFR Part 15C and ISED Canada RSS-247 and ISED Canada RSS-GEN

Product Service

Choose certainty.
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Prepared for: Modulight, Inc.
Hermiankatu 22
33720 Tampere
Finland

FCC ID: 2ATGS-ML6710I
IC: 25072-ML6710I

COMMERCIAL-IN-CONFIDENCE

Date: 2020-06-24
Document Number: TR-04779-52697-04 | Issue: 03

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Project Management	Martin Steindl	2020-06-24	Steindl Martin SIGN-ID 371914
Authorised Signatory	Matthias Stumpe	2020-06-24	Stump SIGN-ID 372124

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Product Service document control rules.

ENGINEERING STATEMENT
The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 15C and ISED Canada RSS-247 and ISED Canada RSS-GEN. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Martin Steindl	2020-06-24	Steindl Martin SIGN-ID 371915

Laboratory Accreditation
DAkkS Reg. No. D-PL-11321-11-02
DAkkS Reg. No. D-PL-11321-11-03

Laboratory recognition
Registration No. BNetzA-CAB-16/21-15

ISED Canada test site registration
3050A-2

EXECUTIVE SUMMARY
A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15C, ISED Canada RSS-247 and ISED Canada RSS-GEN:2016 and Issue 2 (2017-02) and Issue 5 (2019-03).

Trade Register Munich
HRB 85742
VAT ID No. DE129484267
Information pursuant to Section 2(1)
DL-InfoV (Germany) at
www.tuev-sued.com/imprint

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Germany

Product Service

Contents

Product Service

1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	2019-06-05
2	Corrected “Date of receipt of EUT” from date of registration in system to actual date of reception. Added reference for BT test method on page 33. Deleted redundant subsection for test results on page 52.	2019-08-14
3	Updated to RSS-GEN Issue 5 Excluded photos in to annex	2020-06-24

Table 1

Product Service

1.2 Introduction

Applicant	Modulight, Inc.
Manufacturer	Modulight, Inc.
Model Number(s)	ML6710i
Serial Number(s)	795099, 793745 and 795098
Hardware Version(s)	Prototype
Software Version(s)	Software: v1.0 (build 14) (iPad / GUI) Firmware: Master controller: 2019-04-08 Commit hash 7c7e95c5970cfc5a37469f87b60f4f32aa19dc6e Laser controllers: 2019-04-04 Commit hash 7ab6fdd65db0a8792dddaa166a2f40ff57f801fb
Number of Samples Tested	3
Test Specification/Issue/Date	FCC 47 CFR Part 15C, ISED Canada RSS-247 and ISED Canada RSS-GEN:2016 and Issue 2 (2017-02) and Issue 5 (2019-03)
Test Plan/Issue/Date	2019-04-12
Order Number Date	200619
Date of Receipt of EUT	2019-04-15
Start of Test	2019-04-15
Finish of Test	2019-05-03
Name of Engineer(s)	Martin Steindl
Related Document(s)	ANSI C63.10 (2013) KDB 662911 D01 v02r02

Product Service

1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15C and ISED Canada RSS-247 and ISED Canada RSS-GEN is shown below.

Section	Specification Clause	Test Description	Result	Comments/Base Standard
Configuration and Mode: Radio Test Setup - Conducted Transmitting continuously				
2.1	15.247 (b), 5.4 and 6.12	Maximum Conducted Output Power	Pass	ANSI C63.10 (2013) KDB 662911 D01 v02r02
2.2	15.247 (e), 5.2 and 6.12	Power Spectral Density	Pass	ANSI C63.10 (2013) KDB 662911 D01 v02r02
2.3	15.247 (a)(2), 5.2 and 6.6	Emission Bandwidth	Pass	ANSI C63.10 (2013)
2.4	15.247 (d), 5.5 and N/A	Authorised Band Edges	Pass	ANSI C63.10 (2013)
2.5	15.205 N/A and 8.10	Restricted Band Edges	Pass	ANSI C63.10 (2013)
2.6	15.247 (d) and 5.5	Spurious Conducted Emissions	Pass	ANSI C63.10 (2013)
Configuration and Mode: Radio Test Setup - Radiated Transmitting continuously				
2.7	15.247 (d), 15.205, 5.5 and 6.13	Spurious Radiated Emissions	Pass	ANSI C63.10 (2013)
2.8	15.207, N/A and 8.8	AC Power Line Conducted Emissions	Pass	ANSI C63.10 (2013)

Table 2

Product Service

1.4 Product Information

1.4.1 Technical Description

ML6710i is a medical laser device. With ML-SLA accessory it can be used in ophthalmic applications.
ML6710i has two different laser sources, which can operate on the same or different wavelength. The lasers are combined into the single light output of ML6710i. ML-SLA shapes the laser output into a single, uniform and adjustable beam. The laser emission is controlled with a foot switch. The operating (treatment) parameters are set using a separate mobile device (iPad Mini provided with the EUT) via wireless connection to ML6710i.

1.5 EUT Modification Record

The table below details modifications made to the EUT during the test programme.
The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
0	As supplied by the customer	Not Applicable	Not Applicable

Table 3

1.6 Test Location

TÜV SÜD Product Service conducted the following tests at our Straubing Test Laboratory.

Test Name	Name of Engineer(s)
Configuration and Mode: Radio Test Setup - Conducted Transmitting continuously	
Maximum Conducted Output Power	Martin Steindl
Power Spectral Density	Martin Steindl
Emission Bandwidth	Martin Steindl, Michael Ingerl
Authorised Band Edges	Martin Steindl
Restricted Band Edges	Martin Steindl
Spurious Conducted Emissions	Martin Steindl
Configuration and Mode: Radio Test Setup - Radiated Transmitting continuously	
Spurious Radiated Emissions	Martin Steindl
AC Power Line Conducted Emissions	Martin Steindl

Table 4

Office Address:

Äußere Frühlingstraße 45
94315 Straubing
Germany

Product Service

2 Test Details

2.1 Maximum Conducted Output Power

2.1.1 Specification Reference

FCC 47 CFR Part 15C, ISED Canada RSS-247 and
ISED Canada RSS-GEN, Clause 15.247 (b), 5.4 and 6.12

2.1.2 Equipment Under Test and Modification State

ML6710i, S/N: 795099 - Modification State 0

2.1.3 Date of Test

2019-04-26

2.1.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.9.1.1.

2.1.5 Environmental Conditions

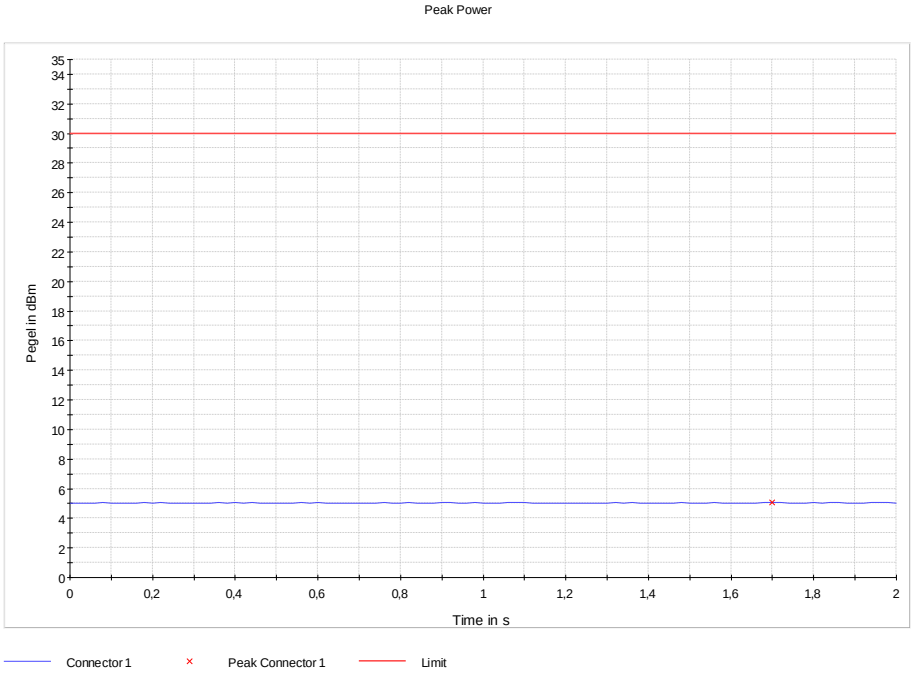
Ambient Temperature	25.0 °C
Relative Humidity	32.0 %

Product Service

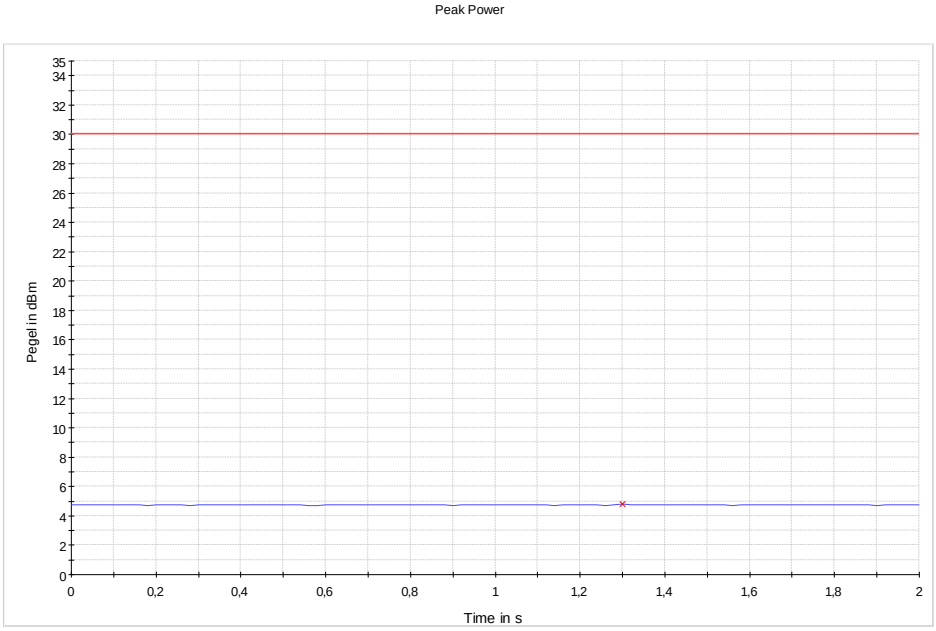
2.1.6 Test Results

Frequency Channel (MHz)	Peak Power (dBm)	Limit (dBm)
2402	5.1	≤ 30.0
2440	4.8	≤ 30.0
2480	4.6	≤ 30.0

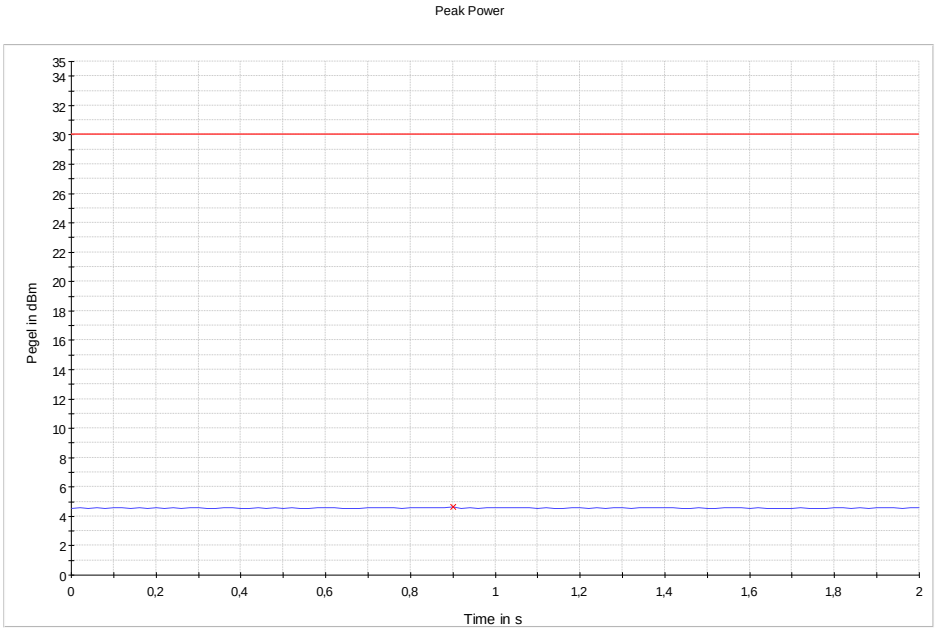
Table 5



Peak Output Power (ZeroSpan), 2402 MHz



Peak Output Power (ZeroSpan), 2440 MHz



Peak Output Power (ZeroSpan), 2480 MHz

Product Service

2.1.7 Test Location and Test Equipment Used

This test was carried out in Non shielded room.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Switching device	Rohde & Schwarz	OSP120 for TS8997	20248	24	2020-01
Switching device	Rohde & Schwarz	OSP120 for TS8997	38807	24	2020-09
Test system 2.4 & 5 GHz	Rohde & Schwarz	TS8997	20248	24	2020-01
Signal and Spectrum Analysator	Rohde & Schwarz	FSV40 for TS8997	20219	12	2020-01
EMC measurement software	Rohde & Schwarz	EMC32 V10.20.00	23229	N/A	

Table 6

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment
N/A - Not Applicable

Product Service

2.2 Power Spectral Density

2.2.1 Specification Reference

FCC 47 CFR Part 15C, ISED Canada RSS-247 and
ISED Canada RSS-GEN, Clause 15.247 (e), 5.2 and 6.12

2.2.2 Equipment Under Test and Modification State

ML6710i, S/N: 795099 - Modification State 0

2.2.3 Date of Test

2019-04-26

2.2.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.10.2.

2.2.5 Environmental Conditions

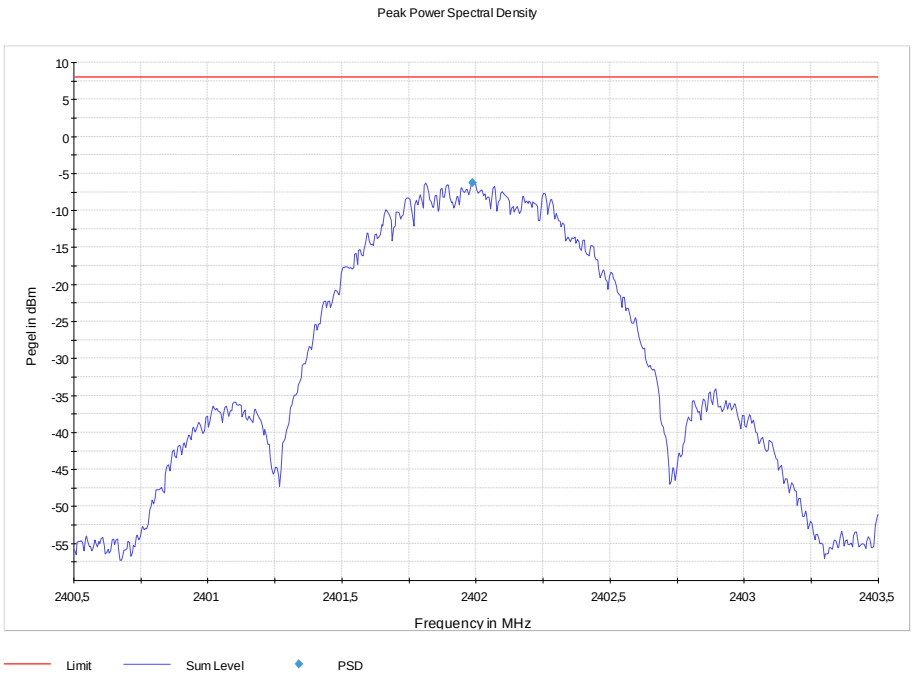
Ambient Temperature	25.0 °C
Relative Humidity	32.0 %

Product Service

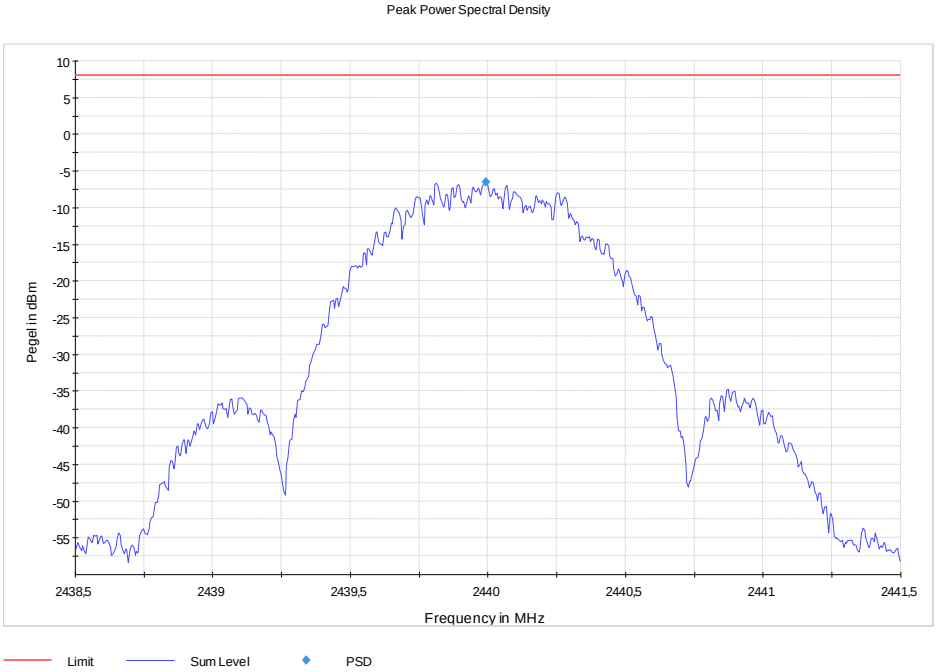
2.2.6 Test Results

Frequency Channel (MHz)	Peak Power Spectral Density (dBm)	Limit (dBm)
2402	-6.25	≤ 8.0
2440	-6.57	≤ 8.0
2480	-6.77	≤ 8.0

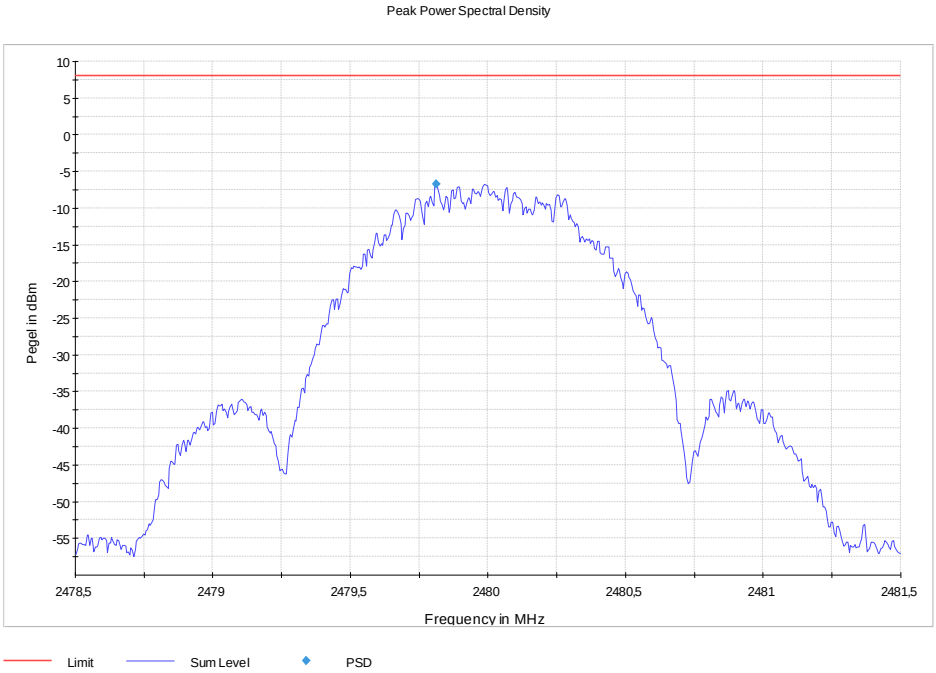
Table 7



Peak Power Spectral Density, 2402 MHz



Peak Power Spectral Density, 2440 MHz



Peak Power Spectral Density, 2480 MHz

Product Service

2.2.7 Test Location and Test Equipment Used

This test was carried out in Non shielded room.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Switching device	Rohde & Schwarz	OSP120 for TS8997	20248	24	2020-01
Switching device	Rohde & Schwarz	OSP120 for TS8997	38807	24	2020-09
Test system 2.4 & 5 GHz	Rohde & Schwarz	TS8997	20248	24	2020-01
Signal and Spectrum Analysator	Rohde & Schwarz	FSV40 for TS8997	20219	12	2020-01
EMC measurement software	Rohde & Schwarz	EMC32 V10.20.00	23229	N/A	

Table 8

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment
N/A - Not Applicable

Product Service

2.3 Emission Bandwidth

2.3.1 Specification Reference

FCC 47 CFR Part 15C, ISED Canada RSS-247 and
ISED Canada RSS-GEN, Clause 15.247 (a)(2), 5.2, 6.6 and 6.11

2.3.2 Equipment Under Test and Modification State

ML6710i, S/N: 795099 - Modification State 0

2.3.3 Date of Test

2019-04-26

2.3.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.8.2.

2.3.5 Environmental Conditions

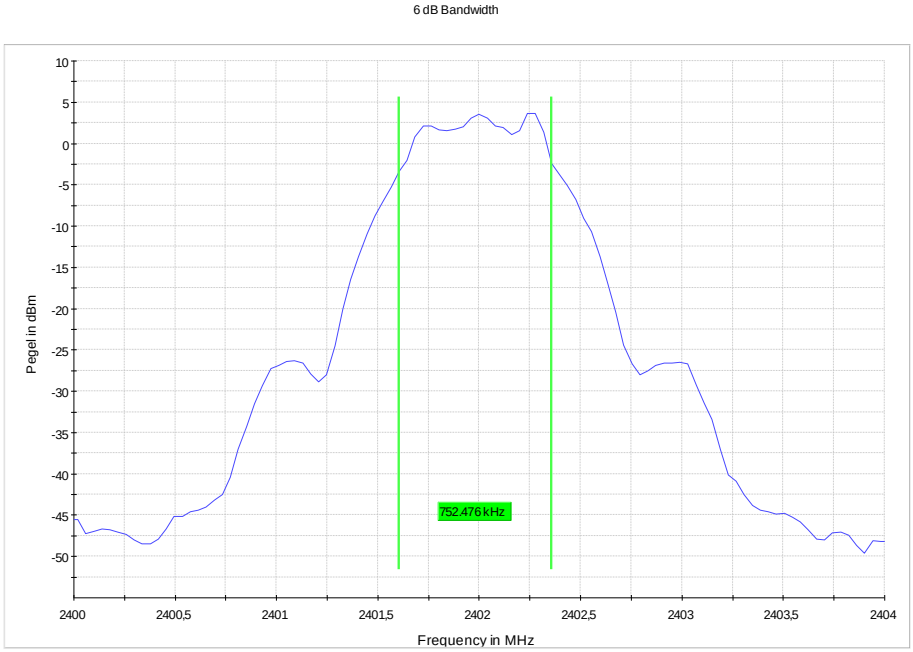
Ambient Temperature	25.0 °C
Relative Humidity	32.0 %

2.3.6 Test Results

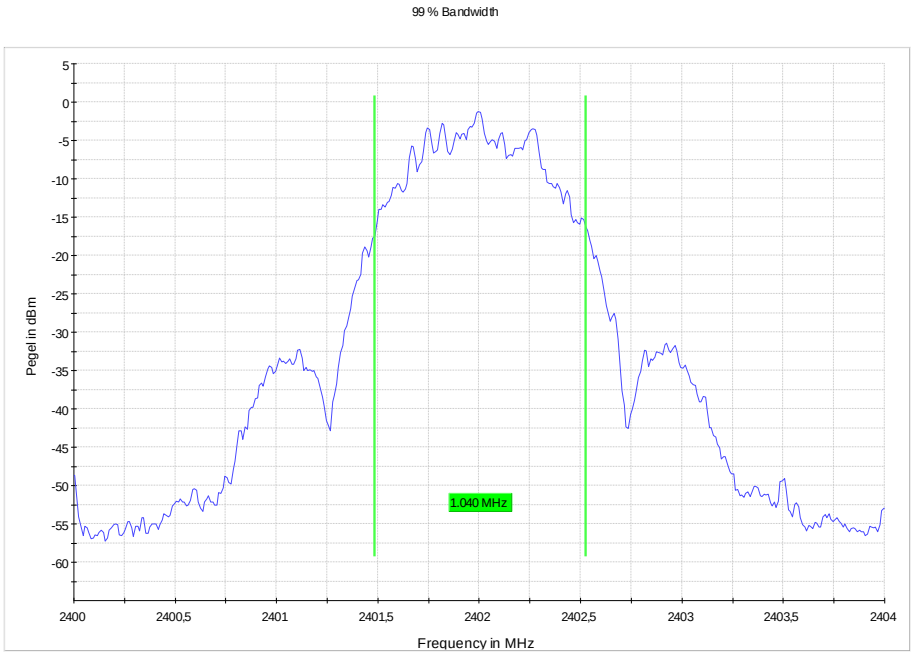
2.3.6.1 Nominal Test Conditions

Frequency Channel (MHz)	6 dB (MHz)	99 % (MHz)	Limit (MHz)
2402	0.7525	1.040	≥ 0.500
2440	0.7921	1.040	≥ 0.500
2480	0.7921	1.040	≥ 0.500

Table 9

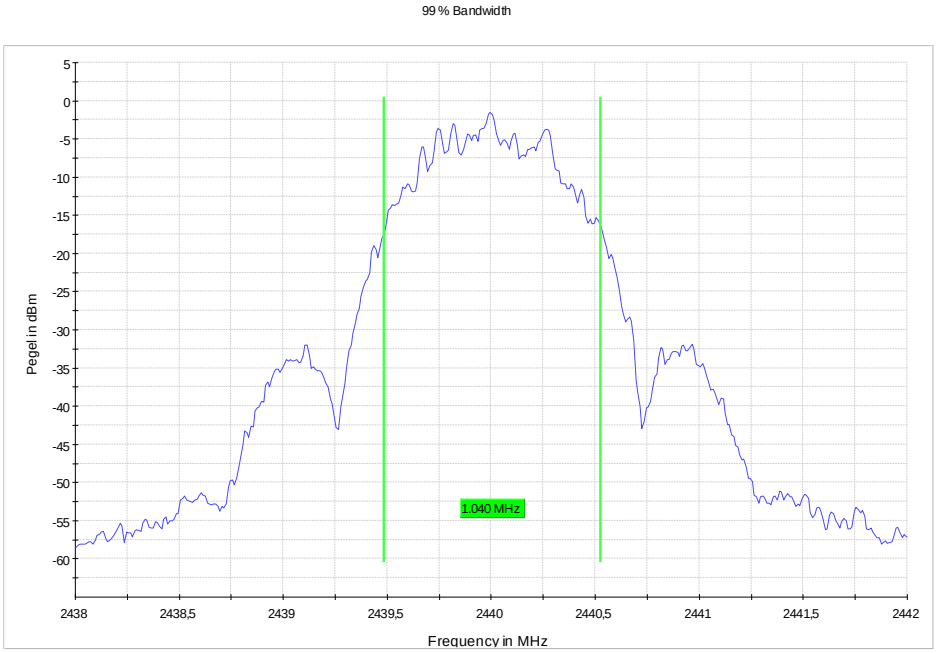


6 dB Bandwidth, 2402 MHz

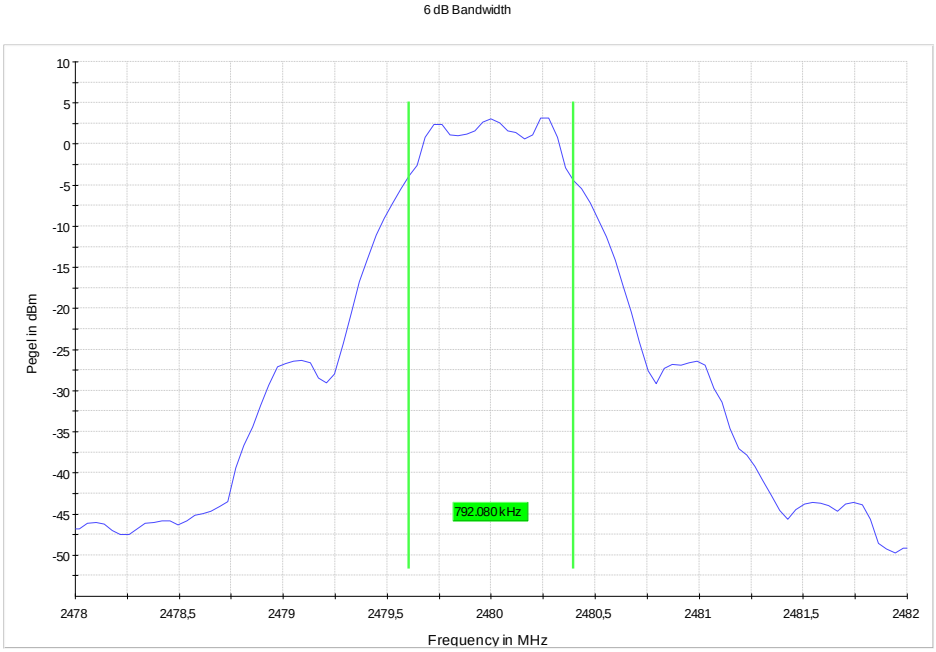


99 % Bandwidth, 2402 MHz

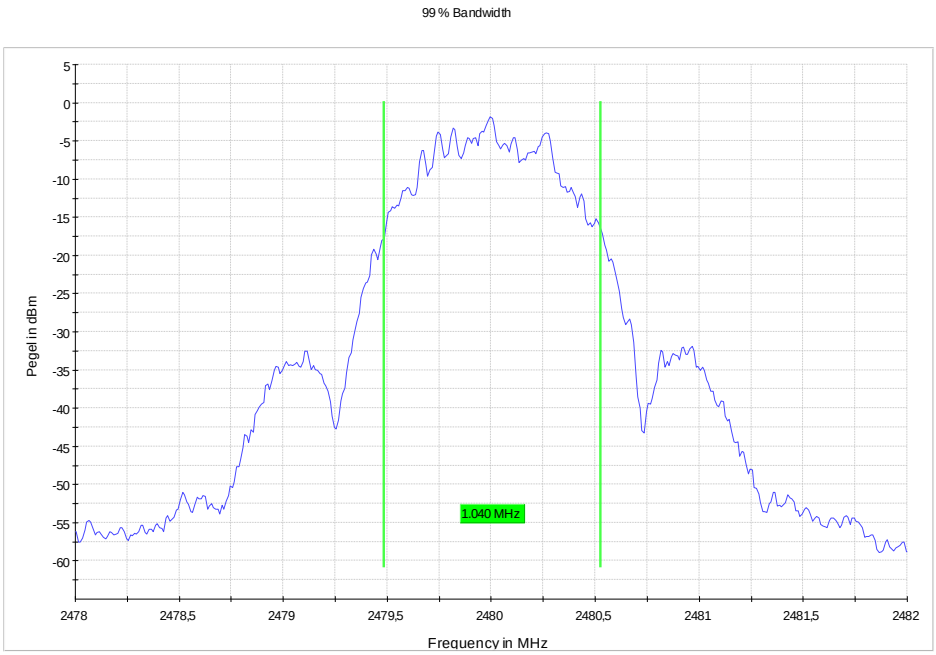
6 dB Bandwidth, 2440 MHz



99 % Bandwidth, 2440 MHz



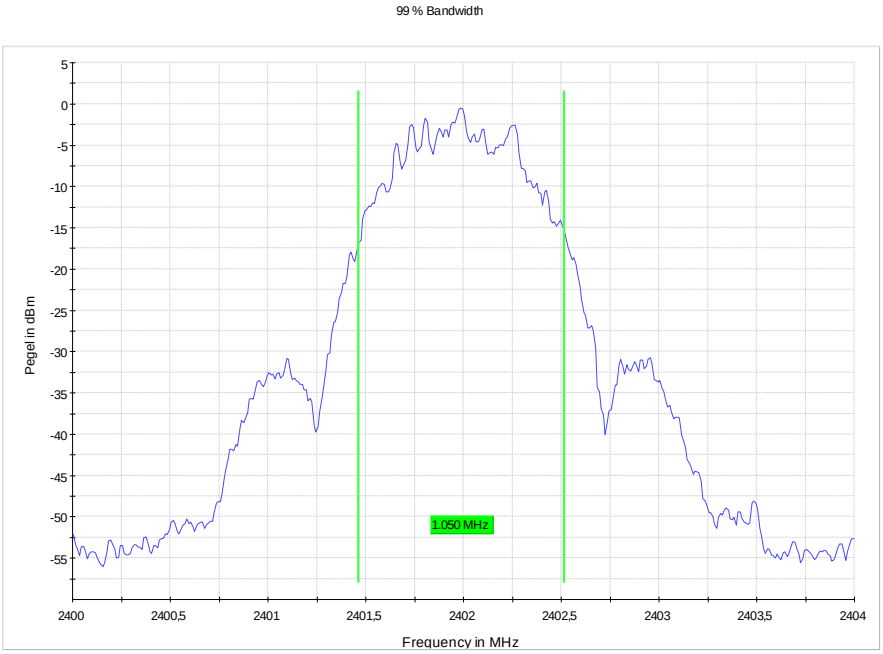
6 dB Bandwidth, 2480 MHz



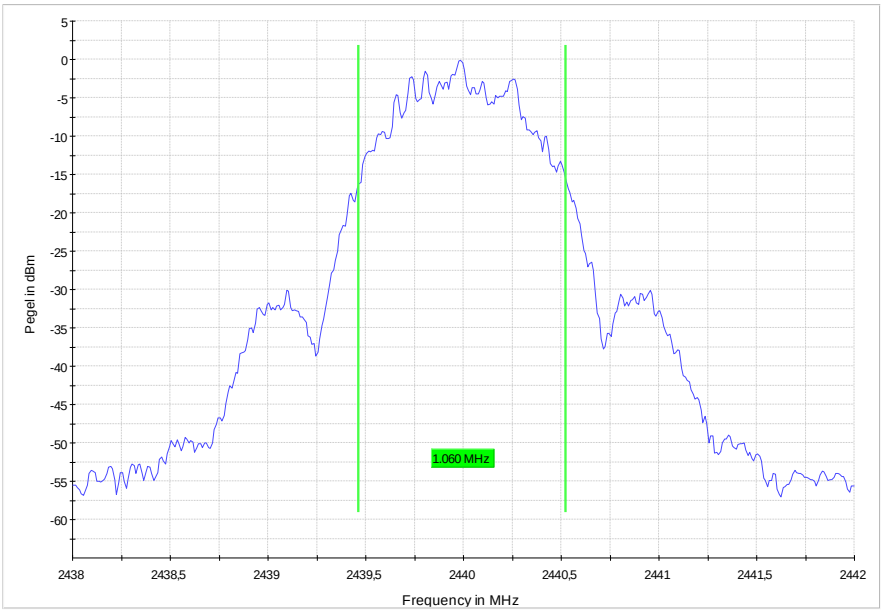
99 % Bandwidth, 2480 MHz

Product Service

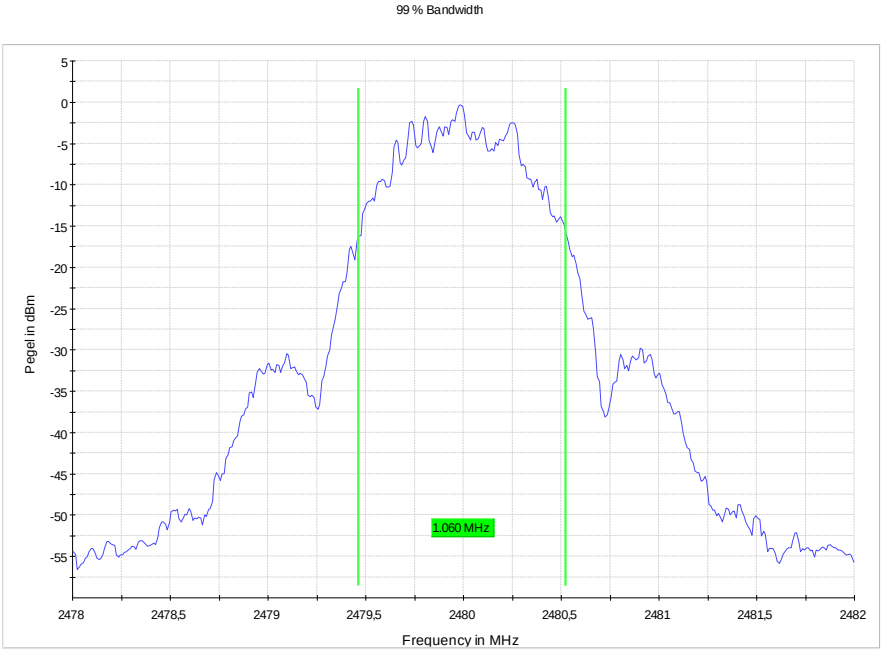
2.3.6.2 Extreme Test Conditions



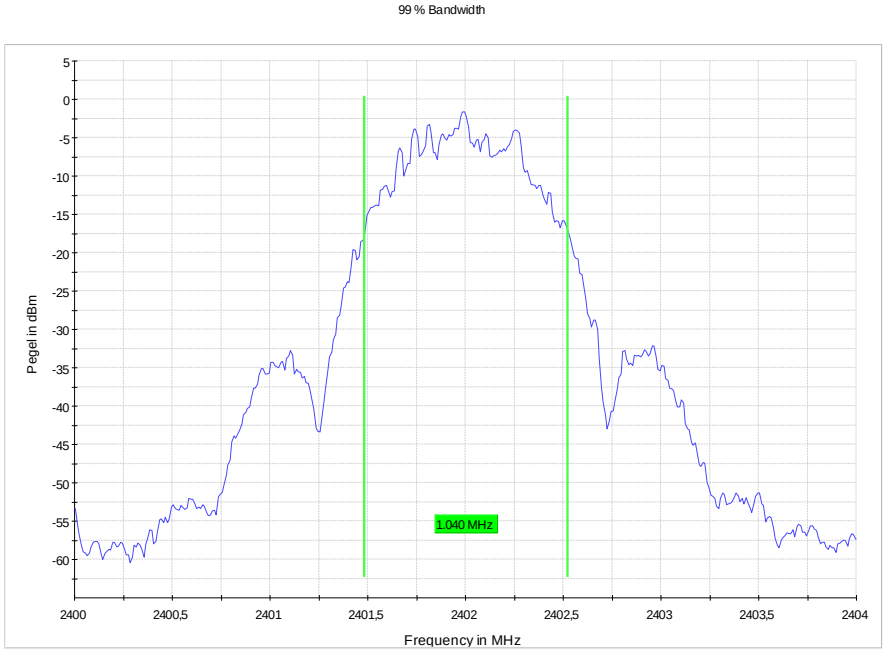
99 % Bandwidth,2402 MHz, -30 °C, 15 V



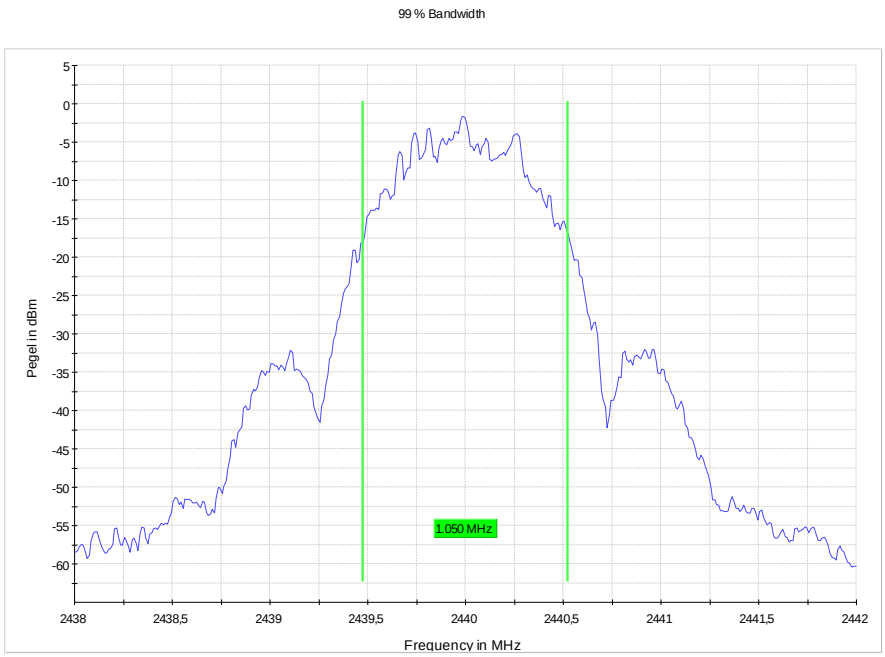
99 % Bandwidth, 2440 MHz, -30 °C, 15 V



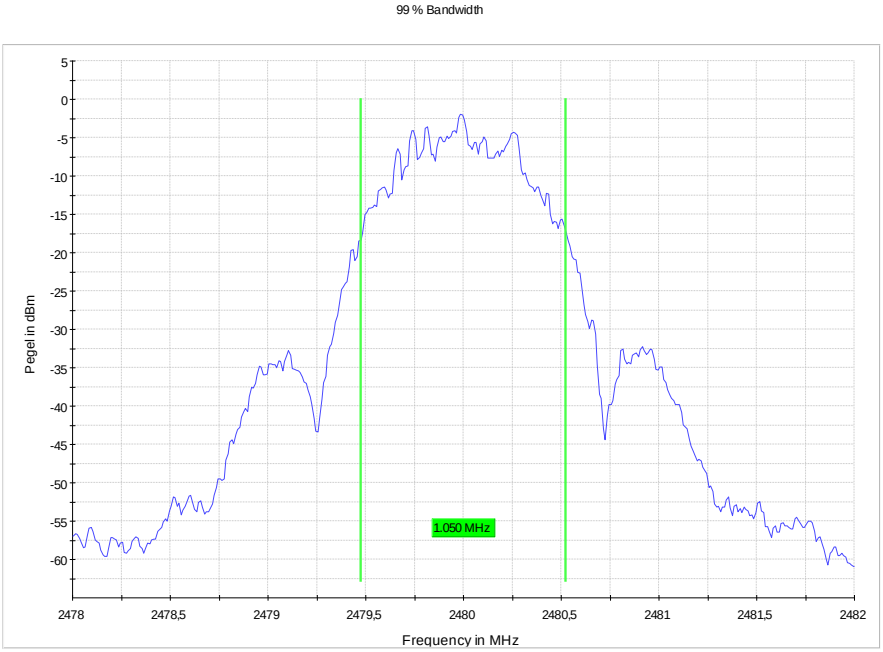
99 % Bandwidth, 2480 MHz, -30 °C, 15 V



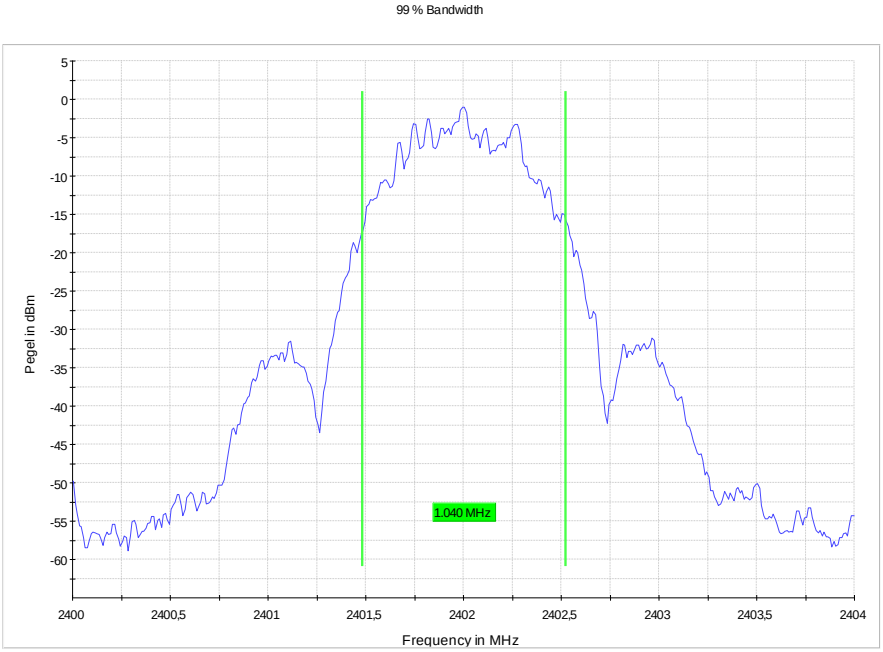
99 % Bandwidth,2402 MHz, 50 °C, 15 V



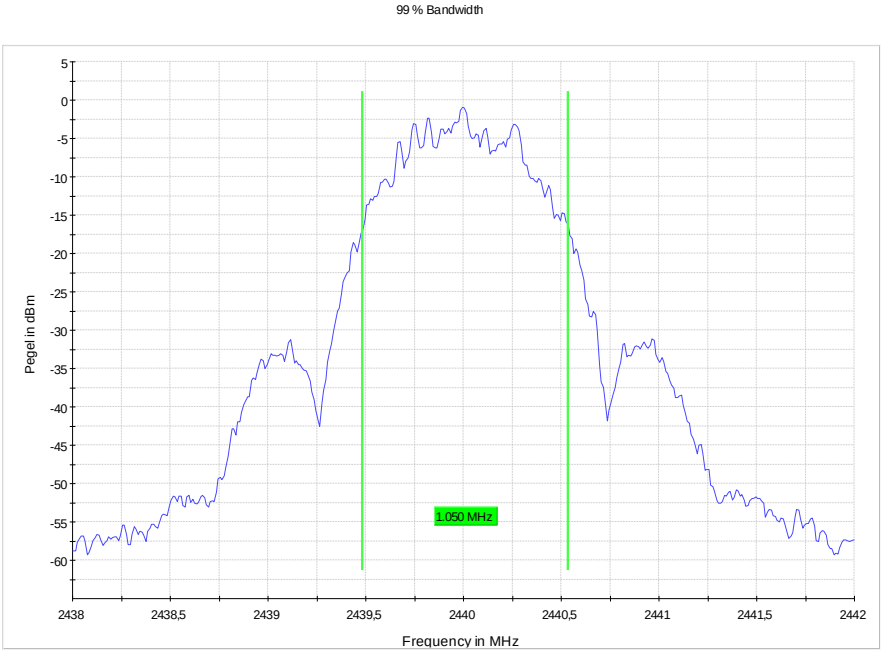
99 % Bandwidth, 2440 MHz, 50 °C, 15 V



99 % Bandwidth, 2480 MHz, 50 °C, 15 V

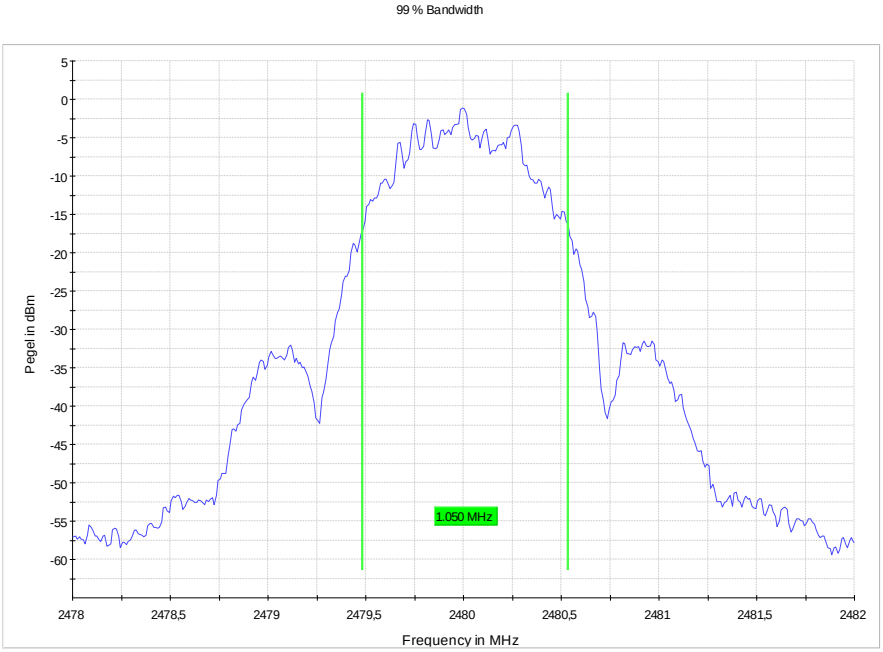


99 % Bandwidth,2402 MHz, 20 °C, 12.75 V



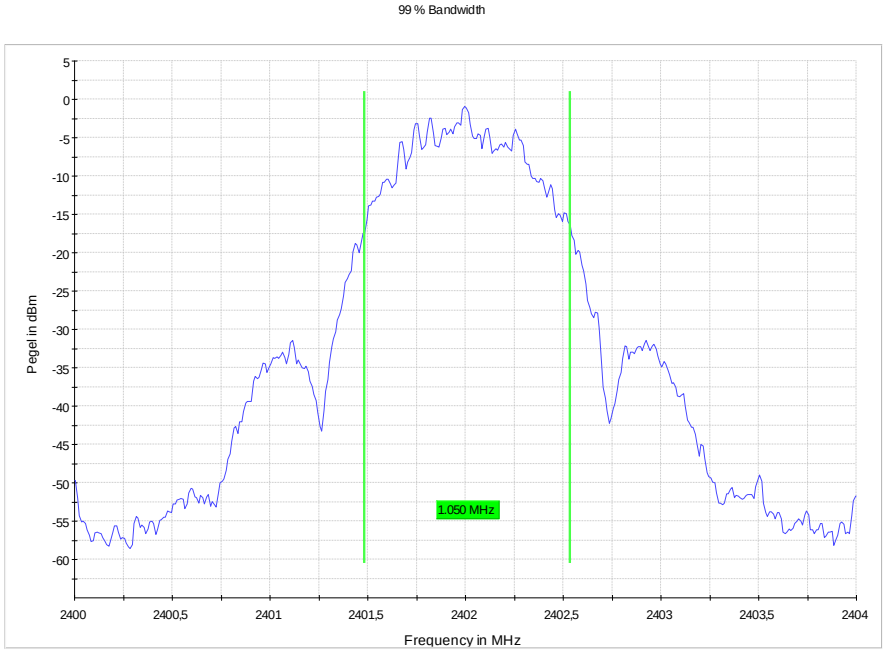
99 % Bandwidth, 2440 MHz, 20 °C, 12.75 V

Product Service



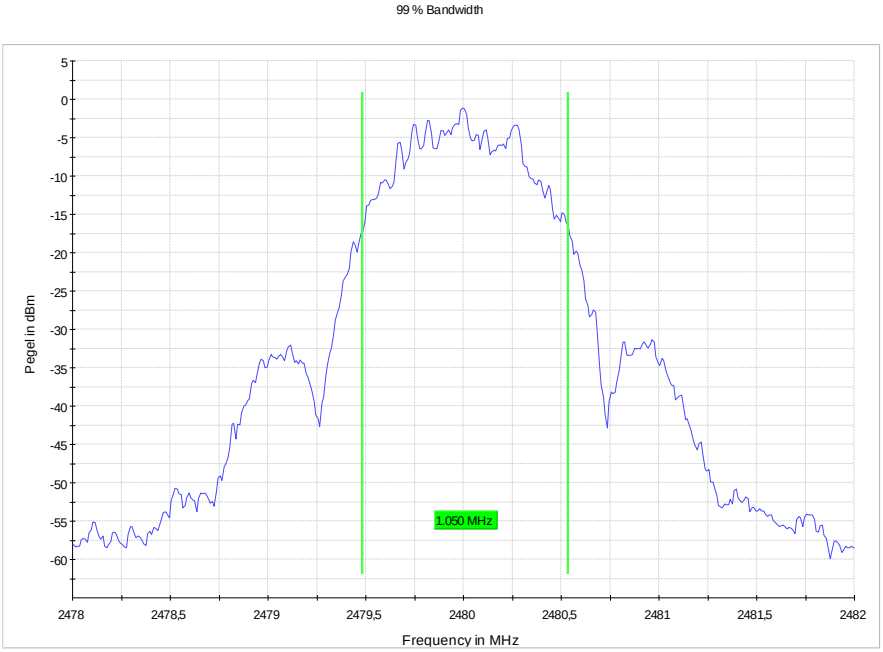
99 % Bandwidth, 2480 MHz, 20 °C, 12.75 V

Product Service



99 % Bandwidth,2402 MHz, 20 °C, 17.25 V

99 % Bandwidth, 2440 MHz, 20 °C, 17.25 V



99 % Bandwidth, 2480 MHz, 20 °C, 17.25 V

Product Service

2.3.7 Test Location and Test Equipment Used

This test was carried out in Fully anechoic room - cabin no. 2.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Switching device	Rohde & Schwarz	OSP120 for TS8997	20248	24	2020-01
Switching device	Rohde & Schwarz	OSP120 for TS8997	38807	24	2020-09
Test system 2.4 & 5 GHz	Rohde & Schwarz	TS8997	20248	24	2020-01
Signal and Spectrum Analysator	Rohde & Schwarz	FSV40 for TS8997	20219	12	2020-01
EMC measurement software	Rohde & Schwarz	EMC32 V10.20.00	23229	N/A	

Table 10

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment
N/A - Not Applicable

Product Service

2.4 Authorised Band Edges

2.4.1 Specification Reference

FCC 47 CFR Part 15C, ISED Canada RSS-247 and
ISED Canada RSS-GEN, Clause 15.247 (d), 5.5 and N/A

2.4.2 Equipment Under Test and Modification State

ML6710i, S/N: 795099 - Modification State 0

2.4.3 Date of Test

2019-04-26

2.4.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.10.4.

2.4.5 Environmental Conditions

Ambient Temperature	25.0 °C
Relative Humidity	32.0 %

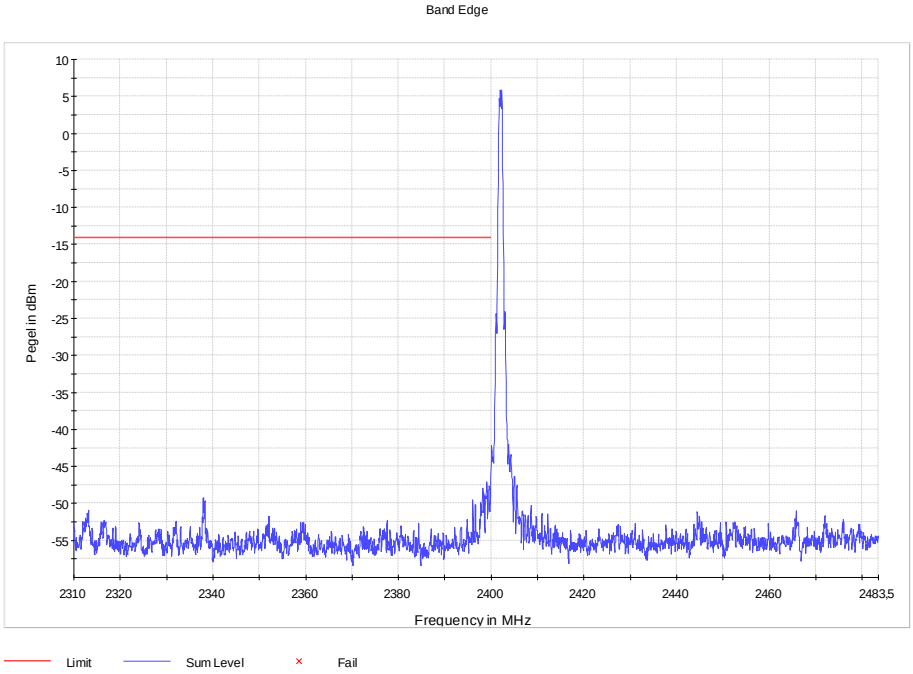
Product Service

2.4.6 Test Results

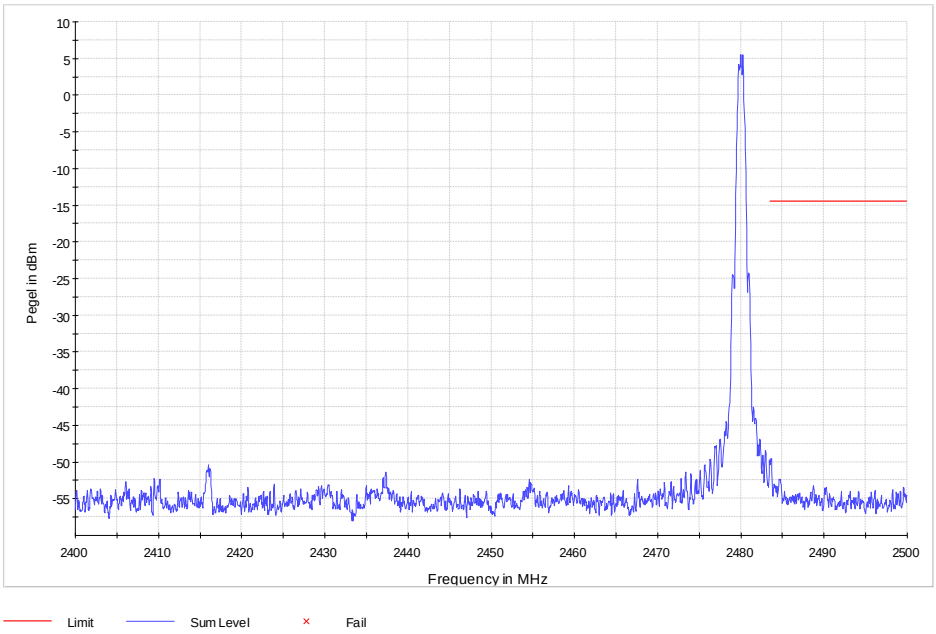
Frequency Channel (MHz)	Carrier Level (dBm)	Frequency (MHz)	Level (dBm)	Margin (dBc)
2402	5.9	2399.975	-44.4	30.3
2480	5.5	2483.625	-49.6	35.1

Table 11

Product Service



Band edge requirement on lowest channel



Band edge requirement on highest channel

Product Service

2.4.7 Test Location and Test Equipment Used

This test was carried out in Non shielded room.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Switching device	Rohde & Schwarz	OSP120 for TS8997	20248	24	2020-01
Switching device	Rohde & Schwarz	OSP120 for TS8997	38807	24	2020-09
Test system 2.4 & 5 GHz	Rohde & Schwarz	TS8997	20248	24	2020-01
Signal and Spectrum Analysator	Rohde & Schwarz	FSV40 for TS8997	20219	12	2020-01
EMC measurement software	Rohde & Schwarz	EMC32 V10.20.00	23229	N/A	

Table 12

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment
N/A - Not Applicable

Product Service

2.5 Restricted Band Edges

2.5.1 Specification Reference

FCC 47 CFR Part 15C, ISED Canada RSS-247 and
ISED Canada RSS-GEN, Clause 15.205 N/A and 8.10

2.5.2 Equipment Under Test and Modification State

ML6710i, S/N: 795099 - Modification State 0

2.5.3 Date of Test

2019-04-26

2.5.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 6.10.5.

Plots for average measurements were taken in accordance with ANSI C63.10 clause 4.1.4.2.3. These are shown for information purposes and were used to determine the worst case measurement point. Final average measurements were then taken in accordance with ANSI C63.10 clause 4.1.4.2.2. to obtain the measurement result recorded in the test results tables.

The following conversion can be applied to convert from dBµV/m to µV/m:
10^(Field Strength in dBµV/m/20).

2.5.5 Environmental Conditions

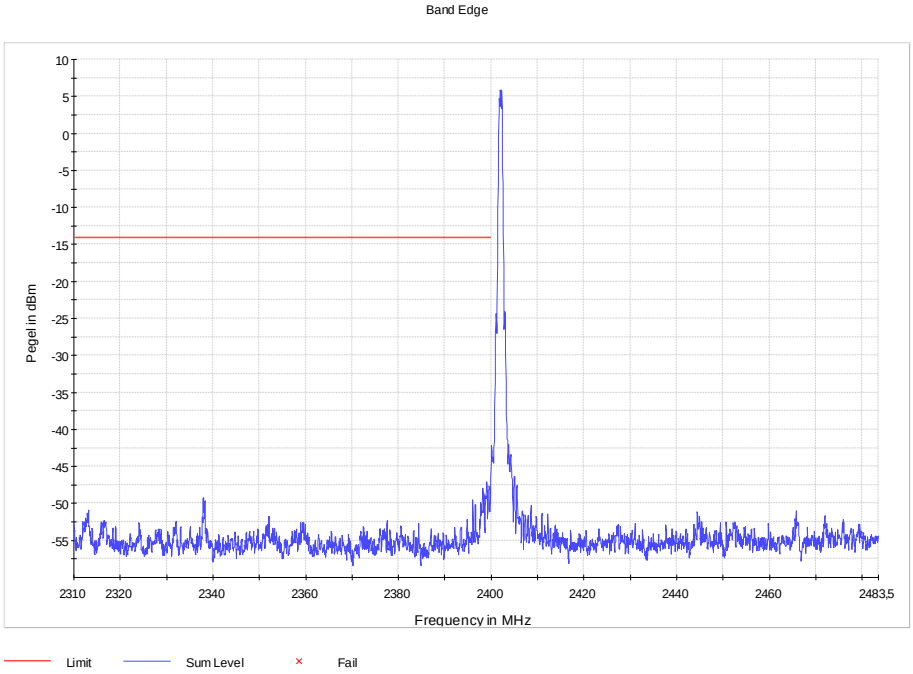
Ambient Temperature	25.0 °C
Relative Humidity	32.0 %

2.5.6 Test Results

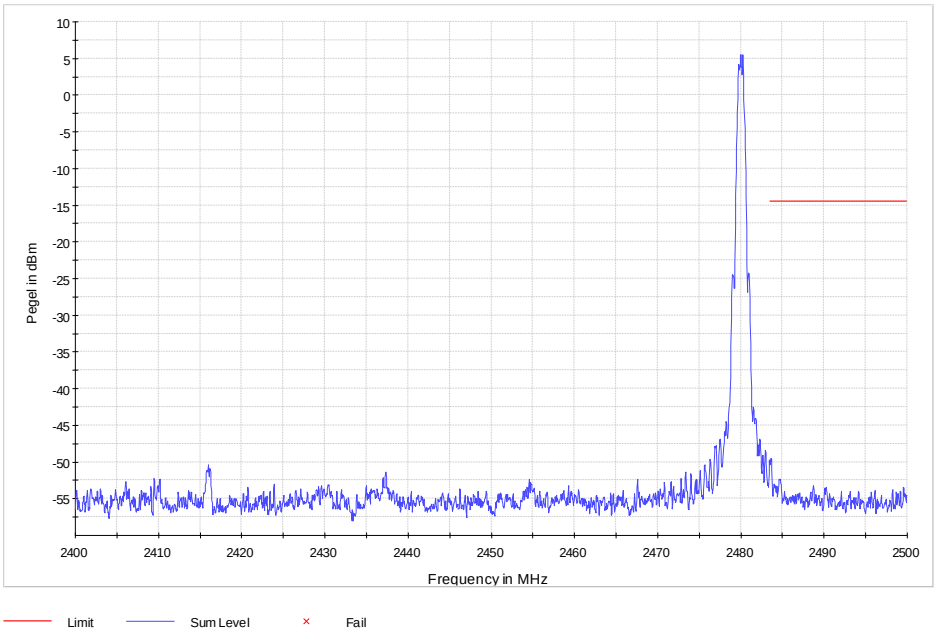
Frequency Channel (MHz)	Carrier Level (dBm)	Frequency (MHz)	Level (dBm)	Limit (dBm)
2402	5.9	2399.975	-44.4	-14.5
2480	5.5	2483.625	-49.6	-14.5

Table 13

Product Service



Band edge requirement on lowest channel



Band edge requirement on highest channel

Product Service

2.5.7 Test Location and Test Equipment Used

This test was carried out in Non shielded room.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Switching device	Rohde & Schwarz	OSP120 for TS8997	20248	24	2020-01
Switching device	Rohde & Schwarz	OSP120 for TS8997	38807	24	2020-09
Test system 2.4 & 5 GHz	Rohde & Schwarz	TS8997	20248	24	2020-01
Signal and Spectrum Analysator	Rohde & Schwarz	FSV40 for TS8997	20219	12	2020-01
EMC measurement software	Rohde & Schwarz	EMC32 V10.20.00	23229	N/A	

Table 14

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment
N/A - Not Applicable

Product Service

2.6 Spurious Conducted Emissions

2.6.1 Specification Reference

FCC 47 CFR Part 15C, ISED Canada RSS-247 and
ISED Canada RSS-GEN, Clause 15.247 (d) and 5.5

2.6.2 Equipment Under Test and Modification State

ML6710i, S/N: 795099 - Modification State 0

2.6.3 Date of Test

2019-04-26

2.6.4 Test Method

WLAN and other
The test was performed in accordance with KDB 558074 D01 v03r02, clause 11.0.

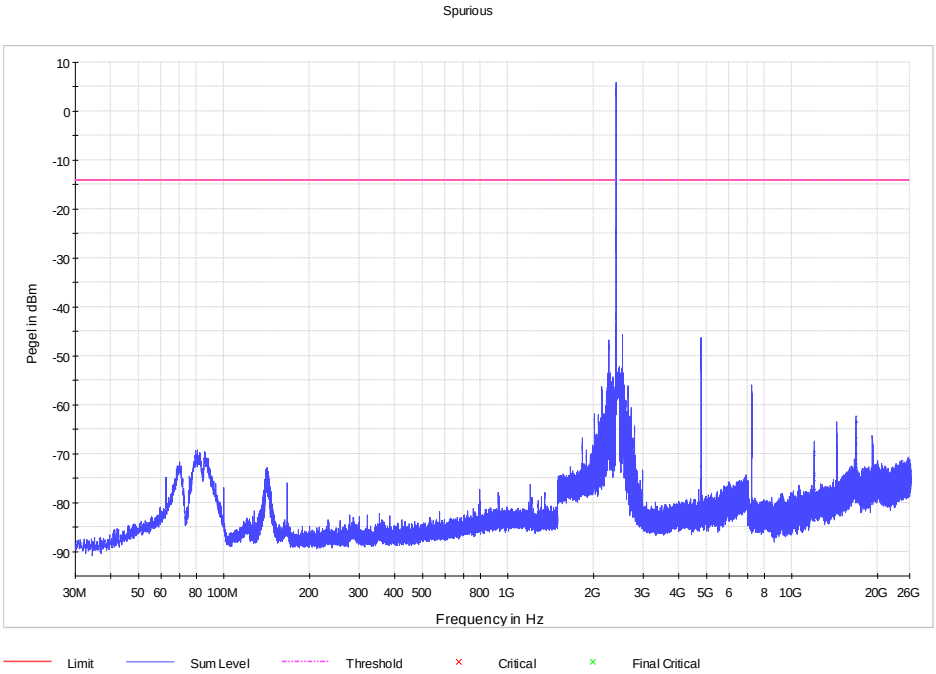
Bluetooth
The test was performed in accordance ANSI C63.10, section 6.7

2.6.5 Environmental Conditions

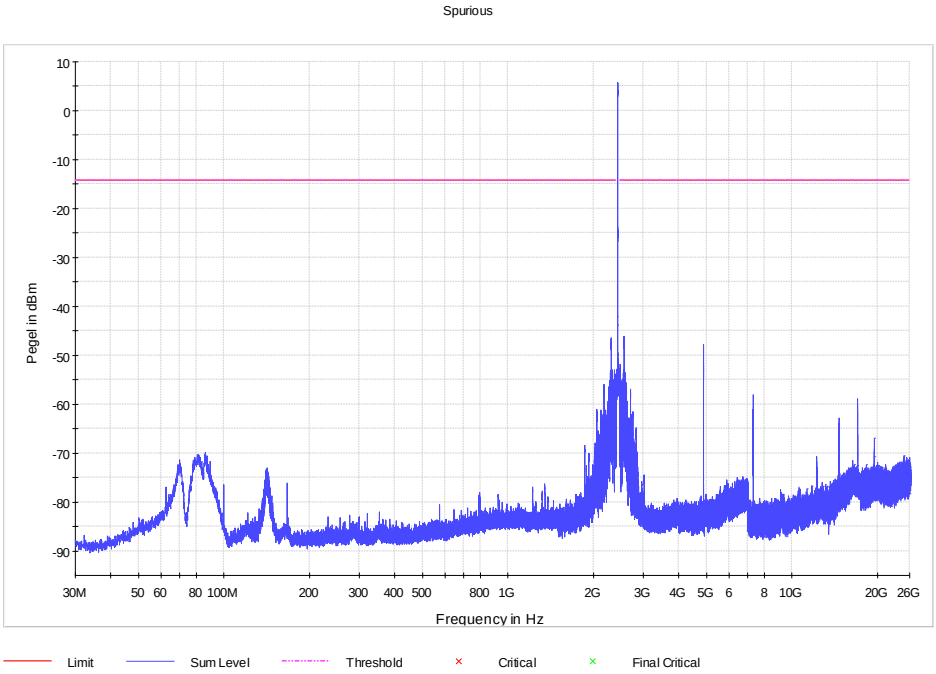
Ambient Temperature	25.0 °C
Relative Humidity	32.0 %

Product Service

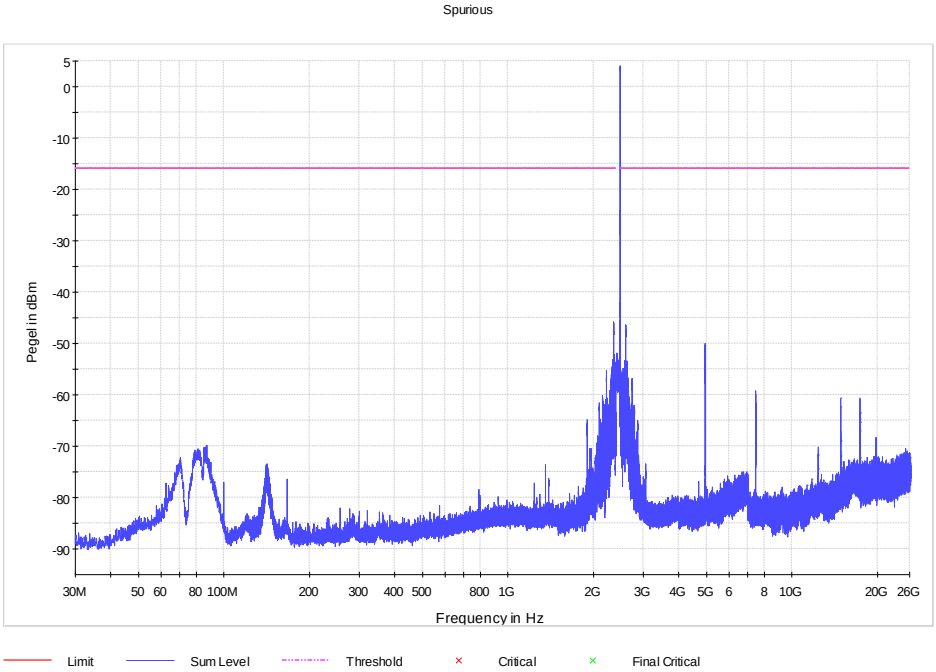
2.6.6 Test Results



Spurious Conducted Emissions, 2402 MHz



Spurious Conducted Emissions, 2440 MHz



Spurious Conducted Emissions, 2480 MHz

Product Service

2.6.7 Test Location and Test Equipment Used

This test was carried out in Non shielded room.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Switching device	Rohde & Schwarz	OSP120 for TS8997	20248	24	2020-01
Switching device	Rohde & Schwarz	OSP120 for TS8997	38807	24	2020-09
Test system 2.4 & 5 GHz	Rohde & Schwarz	TS8997	20248	24	2020-01
Signal and Spectrum Analysator	Rohde & Schwarz	FSV40 for TS8997	20219	12	2020-01
EMC measurement software	Rohde & Schwarz	EMC32 V10.20.00	23229	N/A	

Table 15

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment
N/A - Not Applicable

Product Service

2.7 Spurious Radiated Emissions

2.7.1 Specification Reference

FCC 47 CFR Part 15C, ISED Canada RSS-247 and
ISED Canada RSS-GEN, Clause 15.247 (d), 15.205, 5.5 and 6.13

2.7.2 Equipment Under Test and Modification State

ML6710i, S/N: 793745 - Modification State 0

2.7.3 Date of Test

2019-04-25 to 2019-05-03

2.7.4 Test Method

Testing was performed in accordance with ANSI C63.10-2013 clause 6.3, 6.5 and 6.6.

Plots for average measurements were taken in accordance with ANSI C63.10-2013 clause 4.1.4.2.3 to characterize the EUT. Where emissions were detected, final average measurements were taken in accordance with ANSI C63.10-2013 clause 4.1.4.2.2.

The plots shown are the characterization of the EUT. The limits on the plots represent the most stringent case for restricted bands, (54/74 dBuV/m) when compared to 20 dBc outside restricted bands. The limits shown have been used as a threshold to determine where further measurements are necessary. Where results are within 10 dB of the limits shown on the plots, further investigation was carried out and reported in results tables.

The following conversion can be applied to convert from dBµV/m to µV/m:
10^(Field Strength in dBµV/m/20).

2.7.5 Environmental Conditions

Ambient Temperature	25.0 °C
Relative Humidity	32.0 %

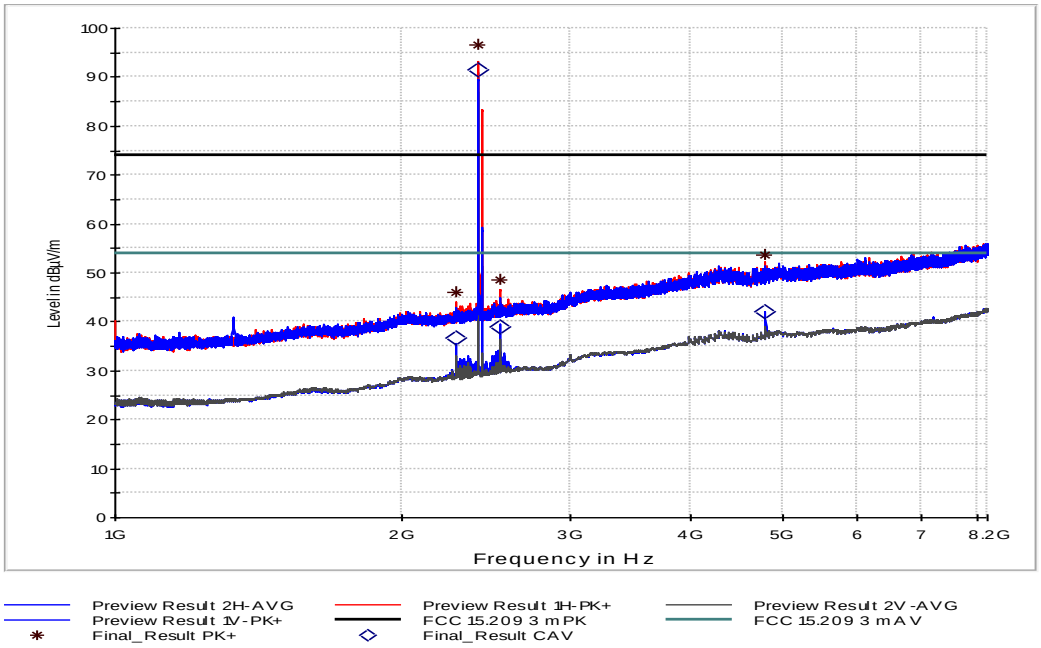
Product Service

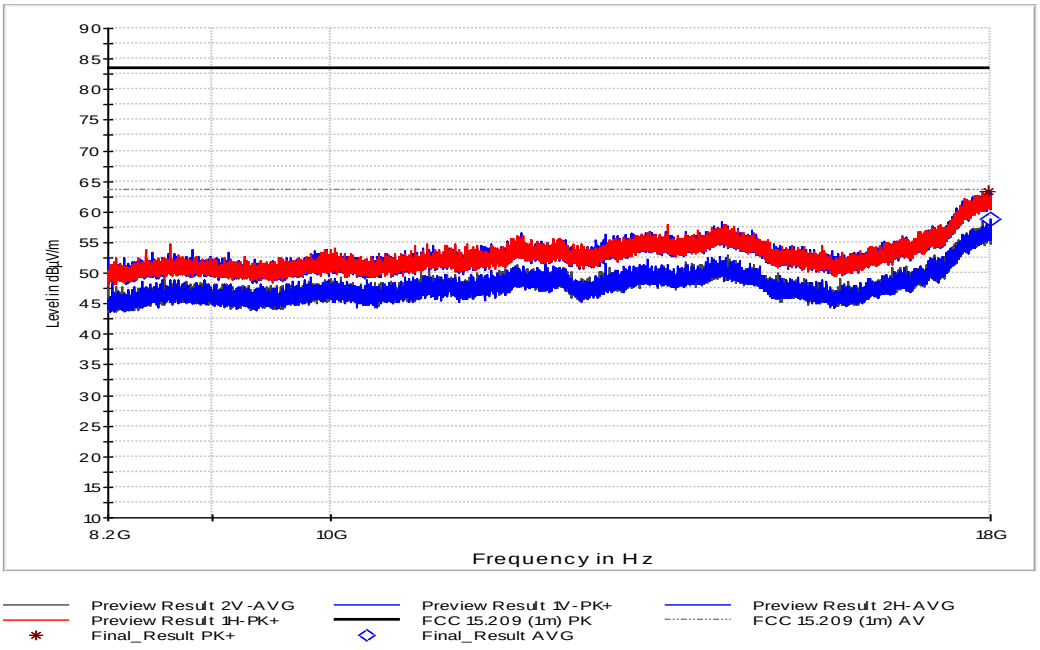
2.7.6 Test Results

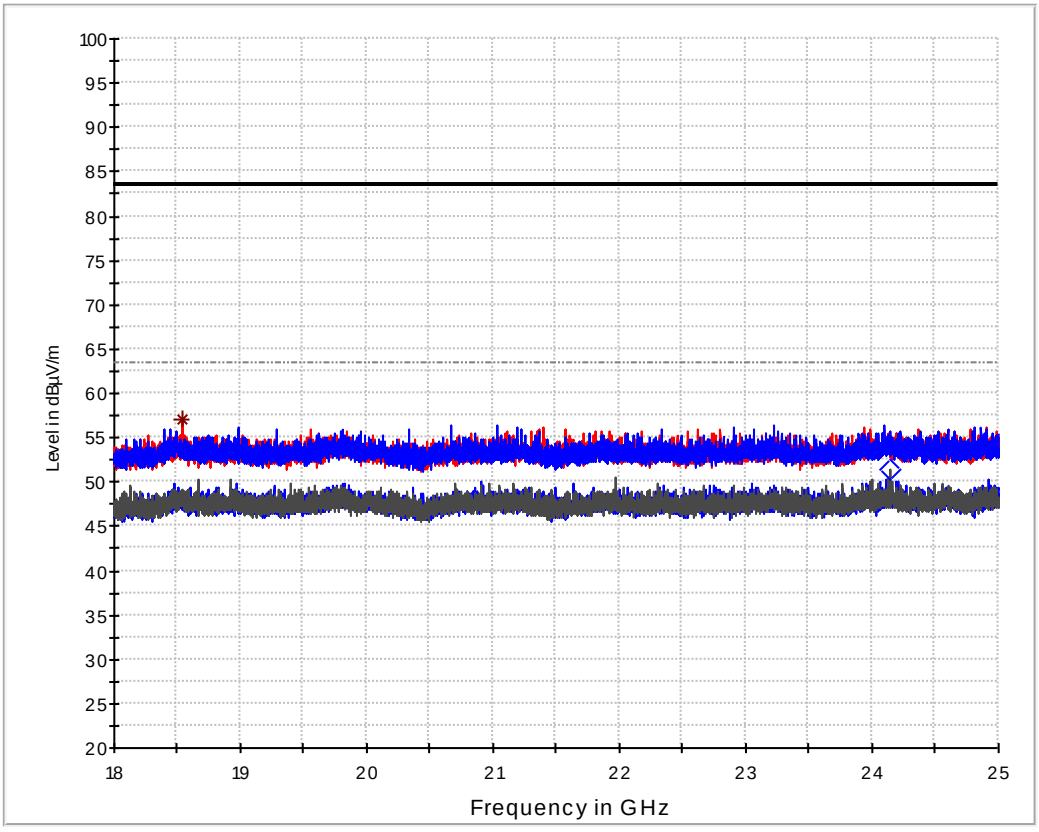
Radio Test Setup - Radiated Transmitting continuously

2402 MHz

Frequency (MHz)	Antenna Polarization	Detector	Receiver Reading (dBµV)	Correction Factor (dB/m)	Pulse Train Correction (dB)	Final Value (dBµV/m)	Limit (dBµV/m)	Margin (dB)
56.560	vertical	Quasi-Peak	7.7	14.2		21.9	76.6	54.7
80.045	horizontal	Quasi-Peak	14.8	7.8		22.6	76.6	54.0
96.760	horizontal	Quasi-Peak	5.4	12.2		17.6	76.6	59.0
215.720	horizontal	Quasi-Peak	-5.2	12.9		7.7	76.6	68.9
240.485	horizontal	Quasi-Peak	-4.9	14.0		9.1	46.0	36.9
293.175	horizontal	Quasi-Peak	1.4	15.2		16.6	76.6	60.0
2274.000	horizontal	Average	3.7	32.9		36.6	54.0	17.4
2274.000	horizontal	Peak	13.1	32.9		46.0	74.0	28.0
2402.000	horizontal	Peak	63.3	33.3		96.6		
2402.000	horizontal	Average	58.4	33.3		91.7		
2529.750	horizontal	Peak	14.4	34.1		48.5	76.6	28.1
2529.750	horizontal	Average	5.0	34.1		39.1	76.6	37.6
4803.750	horizontal	Average	1.3	40.8		42.1	54.0	11.9
4803.750	horizontal	Peak	12.9	40.8		53.7	74.0	20.3
17969.900	horizontal	Peak	15.4	48.0		63.4	83.5	20.1
17986.700	horizontal	Average	10.8	48.0		58.8	63.5	**4.7**
18537.250	horizontal	Peak	17.0	40.0		57.0	83.5	26.5
24136.375	vertical	Average	11.5	40.0		51.5	76.6	25.1




Level in dBµV/m
Frequency in Hz
8.2G
10G
18G
Preview Result 2V-AVG
Preview Result 1H-PK+
Final_Result PK+
Preview Result 1V-PK+
FCC 15.209 (1m) PK
Final_Result AVG
Preview Result 2H-AVG
FCC 15.209 (1m) AV

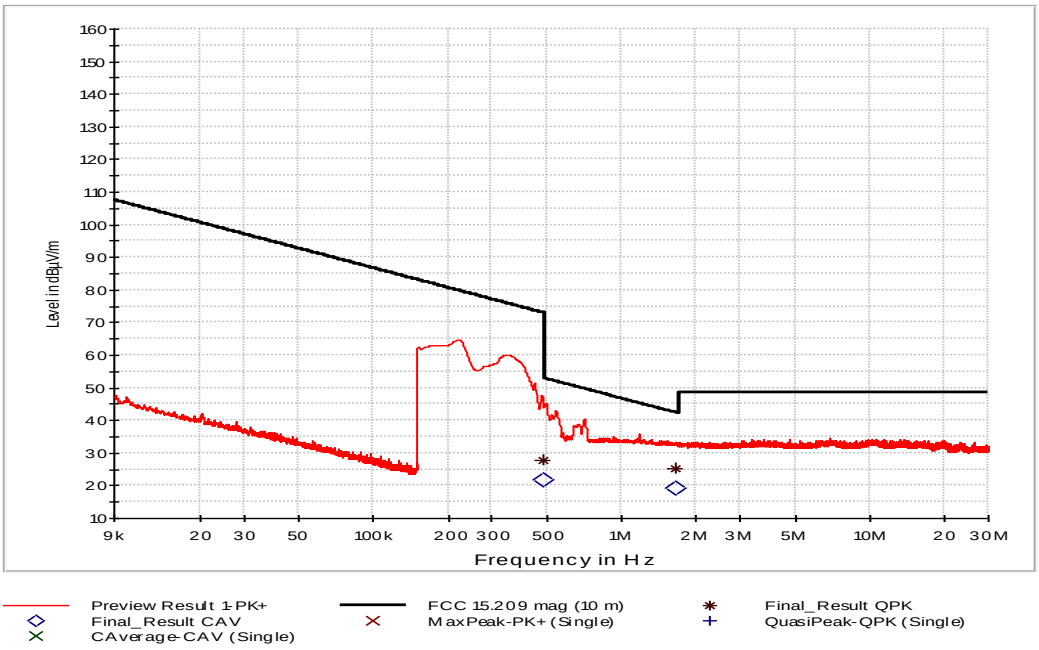

Level in dBµV/m
Frequency in GHz
Preview Result 2H-AVG
Preview Result 1V-PK+
Final_Result PK+
Preview Result 1H-PK+
FCC 15.209 (1m) PK
Final_Result AVG
Preview Result 2V-AVG
FCC 15.209 (1m) AV

Product Service

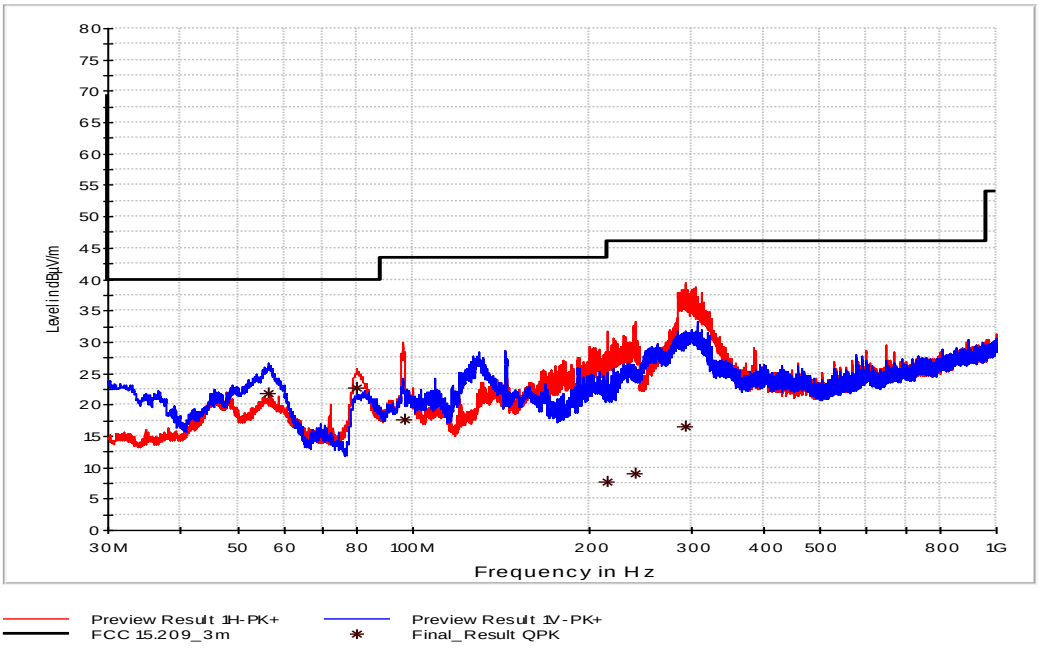
2440 MHz

Frequency (MHz)	Antenna Polarization	Detector	Receiver Reading (dBµV)	Correction Factor (dB/m)	Pulse Train Correction (dB)	Final Value (dBµV/m)	Limit (dBµV/m)	Margin (dB)
56.560	vertical	Quasi-Peak	7.7	14.2		21.9	75.5	53.6
80.045	horizontal	Quasi-Peak	14.8	7.8		22.6	75.5	52.9
96.760	horizontal	Quasi-Peak	5.4	12.2		17.6	75.5	57.9
215.720	horizontal	Quasi-Peak	-5.2	12.9		7.7	75.5	67.8
240.485	horizontal	Quasi-Peak	-4.9	14.0		9.1	46.0	36.9
293.175	horizontal	Quasi-Peak	1.4	15.2		16.6	75.5	58.9
2311.750	horizontal	Peak	16.5	32.9		49.4	74.0	24.5
2311.750	horizontal	Average	7.5	32.9		40.4	54.0	13.5
2440.000	horizontal	Peak	62.0	33.5		95.5		
2440.000	horizontal	Average	59.5	33.5		93.0		
2568.000	horizontal	Peak	14.9	34.3		49.2	75.5	26.3
2568.000	horizontal	Average	7.1	34.3		41.4	75.5	34.1
4880.000	horizontal	Average	7.5	41.2		48.7	54.0	5.3
4880.500	horizontal	Peak	16.5	41.2		57.7	74.0	16.3
11871.325	vertical	Peak	15.7	40.0		55.7	83.5	27.8
12250.375	vertical	Average	12.0	39.5		51.5	63.5	12.0
17969.200	horizontal	Average	10.1	48.3		58.4	63.5	**5.1**
17999.300	horizontal	Peak	15.2	48.5		63.7	83.5	19.8
19758.750	vertical	Quasi-Peak	16.2	40.3		56.5	83.5	27.0
19813.875	vertical	Quasi-Peak	10.3	40.3		50.6	63.5	12.9

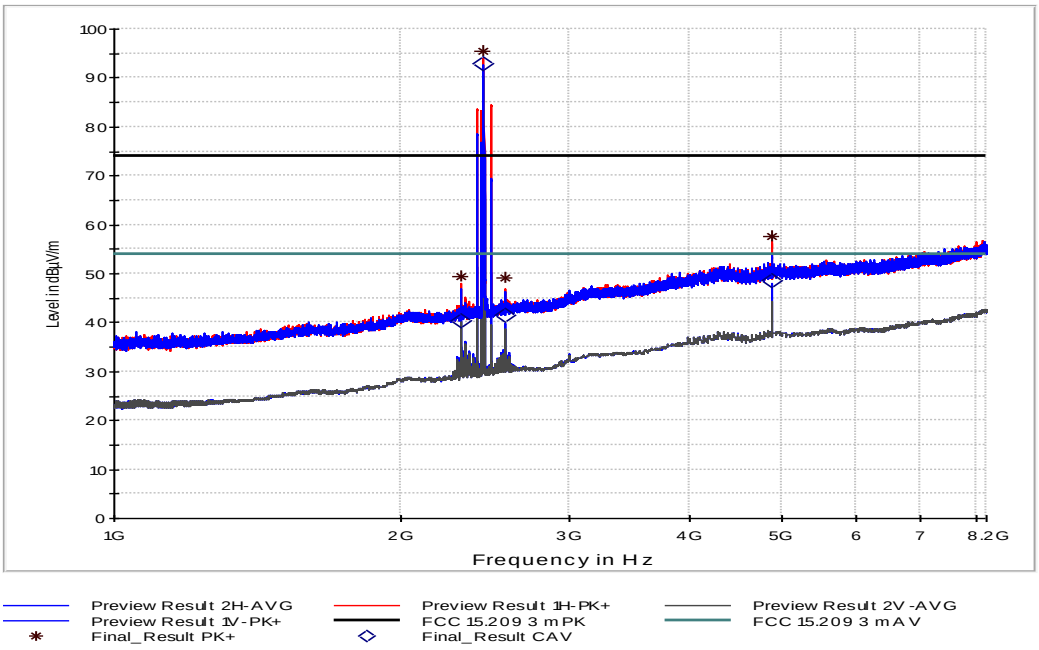
Product Service

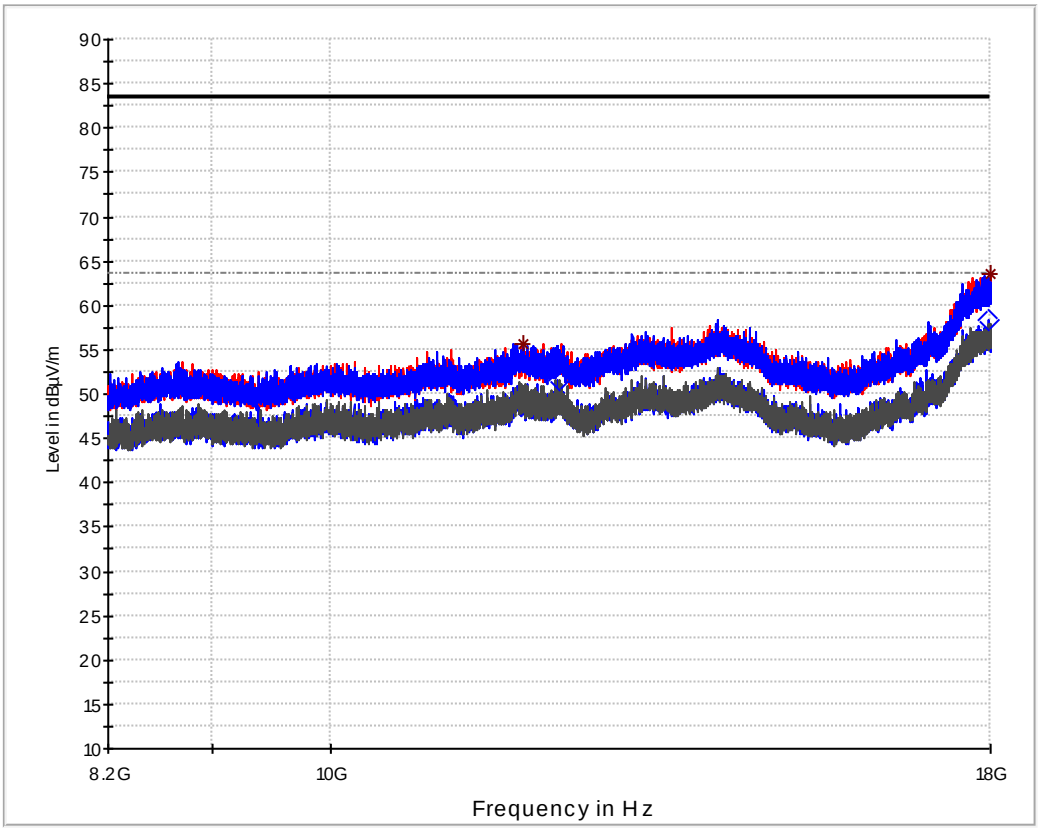


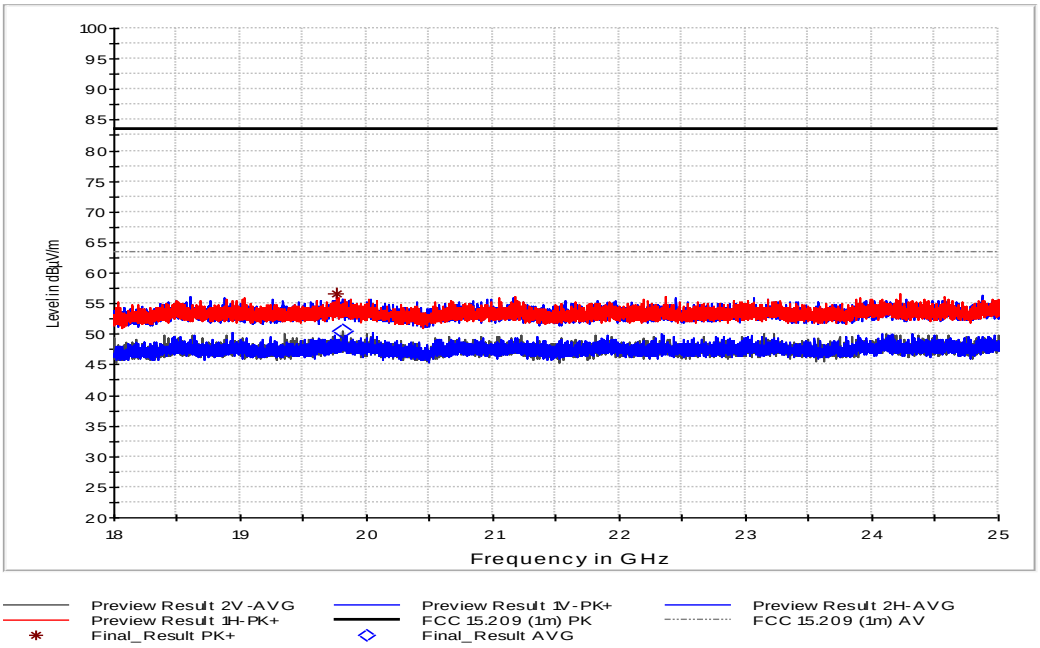
Frequency *MHz*	*QuasiPeak* *dBµV/m*	*Limit* *dBµV/m*	*Margin* *dB*	*Meas. Time* *ms*	*Bandwidth* *kHz*	*Azimuth* *deg*	*Corr.* *dB*
0.483000	27.64	73.0	45.4	1000	9	23.0	20.0
1.644000	25.27	42.4	17.2	1000	9	-41.0	20.0



Product Service






100
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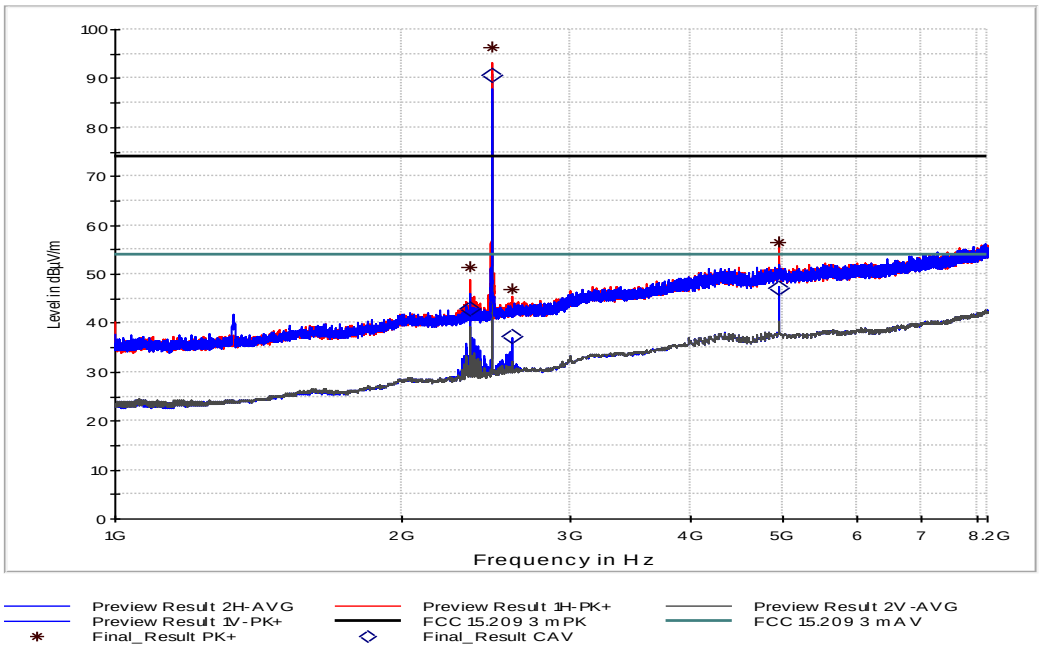
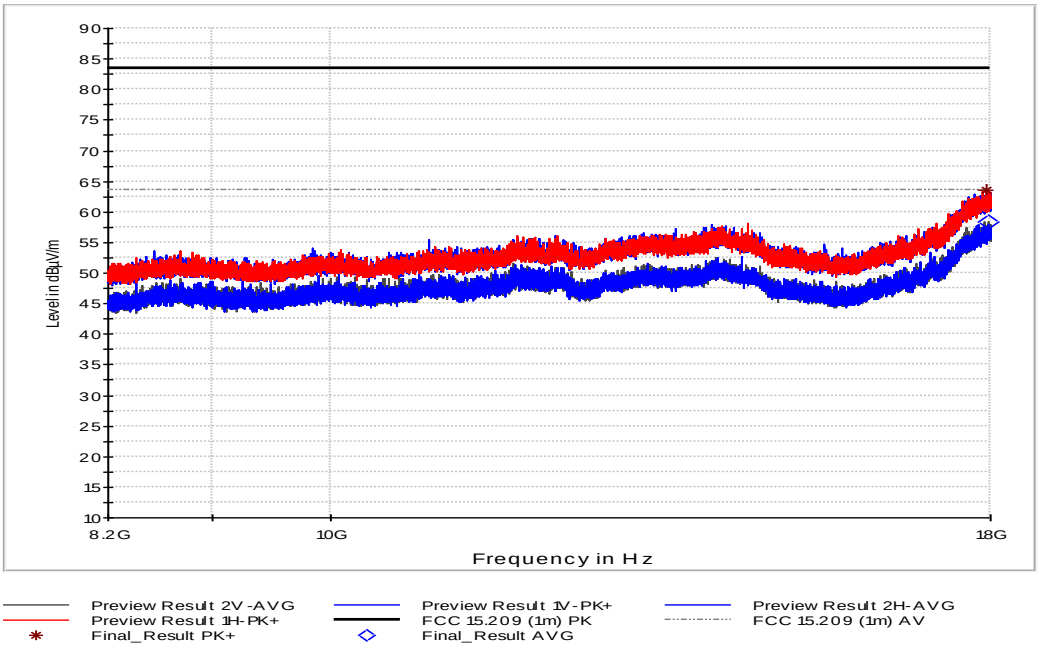
Level in dBµV/m
18
19
20
21
22
23
24
25
Frequency in GHz
Preview Result 2V-AVG
Preview Result 1H-PK+
Final_Result PK+
Preview Result 1V-PK+
FCC 15.209 (1m) PK
Final_Result AVG
Preview Result 2H-AVG
FCC 15.209 (1m) AV

Product Service

2480 MHz

Frequency (MHz)	Antenna Polarization	Detector	Receiver Reading (dBµV)	Correction Factor (dB/m)	Pulse Train Correction (dB)	Final Value (dBµV/m)	Limit (dBµV/m)	Margin (dB)
56.560	vertical	Quasi-Peak	7.7	14.2		21.9	76.3	54.4
80.045	horizontal	Quasi-Peak	14.8	7.8		22.6	76.3	53.6
96.760	horizontal	Quasi-Peak	5.4	12.2		17.6	76.3	58.7
215.720	horizontal	Quasi-Peak	-5.2	12.9		7.7	76.3	68.5
240.485	horizontal	Quasi-Peak	-4.9	14.0		9.1	46.0	36.9
293.175	horizontal	Quasi-Peak	1.4	15.2		16.6	76.3	59.7
2351.750	horizontal	Average	9.9	33.1		43.0	54.0	11.0
2351.750	horizontal	Peak	18.3	33.1		51.4	74.0	22.6
2480.000	horizontal	Average	56.9	33.8		90.7		
2480.000	horizontal	Peak	62.5	33.8		96.3		
2608.000	horizontal	Average	2.8	34.5		37.3	76.3	38.9
2608.000	horizontal	Peak	12.3	34.5		46.8	76.3	29.5
4960.000	horizontal	Average	5.7	41.4		47.1	54.0	6.9
4960.000	horizontal	Peak	15.0	41.4		56.4	74.0	17.6
17945.400	horizontal	Peak	16.4	48.2		64.6	83.5	19.0
17962.200	vertical	Average	10.0	48.3		58.3	63.5	**5.2**
20316.125	vertical	Average	10.3	40.3		50.6	63.5	12.9
22163.250	vertical	Peak	16.2	40.3		56.5	83.5	27.0




90
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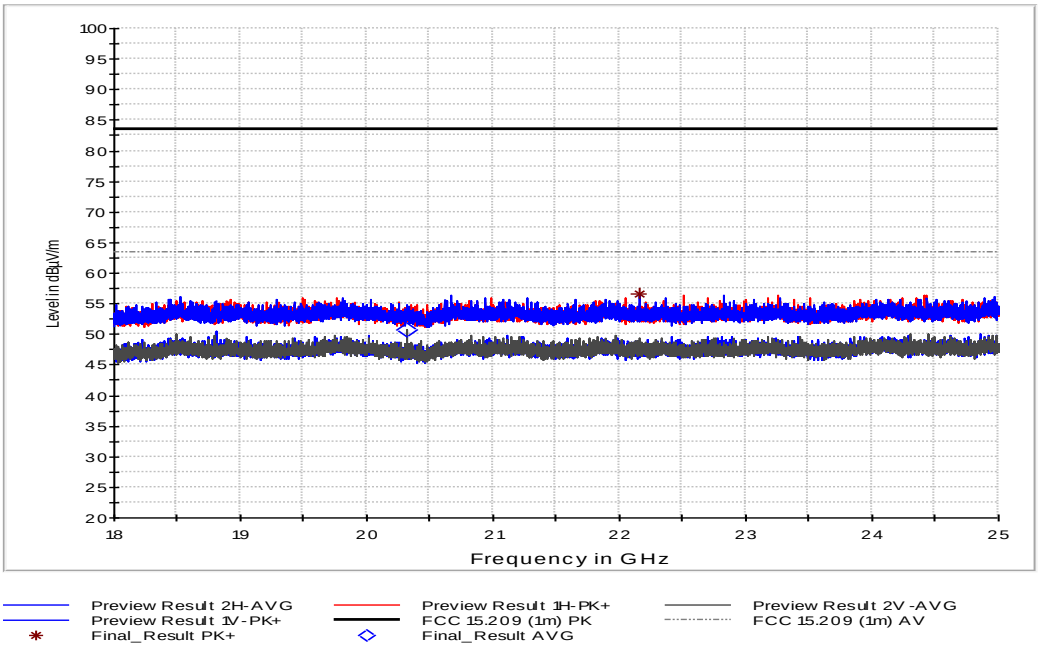
35
30
25
20
15
10
Level in dBµV/m
8.2G
10G
18G
Frequency in Hz
Preview Result 2V-AVG
Preview Result 1H-PK+
Final_Result PK+
Preview Result 1V-PK+
FCC 15.209 (1m) PK
Final_Result AVG
Preview Result 2H-AVG
FCC 15.209 (1m) AV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Level in dBµV/m
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24
25
Frequency in GHz
Preview Result 2H-AVG
Preview Result 1V-PK+
Final_Result PK+
Preview Result 1H-PK+
FCC 15.209 (1m) PK
Final_Result AVG
Preview Result 2V-AVG
FCC 15.209 (1m) AV

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in 15.209(a)

ISED Canada RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

2.7.7 Test Location and Test Equipment Used

This test was carried out in Semi anechoic room - cabin no. 8.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
EMI test receiver	Rohde & Schwarz	ESW26	28268	12	2019-05
EMI test receiver	Rohde & Schwarz	ESW44	39897	12	2020-02
TRILOG Broadband Antenna	Schwarzbeck	VULB 9162	20116	36	2022-01
Double Ridged Horn Antenna	Rohde & Schwarz	HF907	19933	24	2019-06
Horn antenna	EMCO	3160-09	19125	O/P	
Semi anechoic room	Albatross Projects	Cabin No. 8	19917	N/A	
EMC measurement software	Rohde & Schwarz	EMC32 V10.20.00	19719	N/A	

Table 16

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment
N/A - Not Applicable

Product Service

2.8 AC Power Line Conducted Emissions

2.8.1 Specification Reference

FCC 47 CFR Part 15C, ISED Canada RSS-247 and ISED Canada RSS-GEN, Clause 15.207, N/A and 8.8

2.8.2 Equipment Under Test and Modification State

ML6710i, S/N: 795098 - Modification State 0

2.8.3 Date of Test

2019-04-15

2.8.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.2.

2.8.5 Environmental Conditions

Ambient Temperature	24.0 °C
Relative Humidity	29.0 %

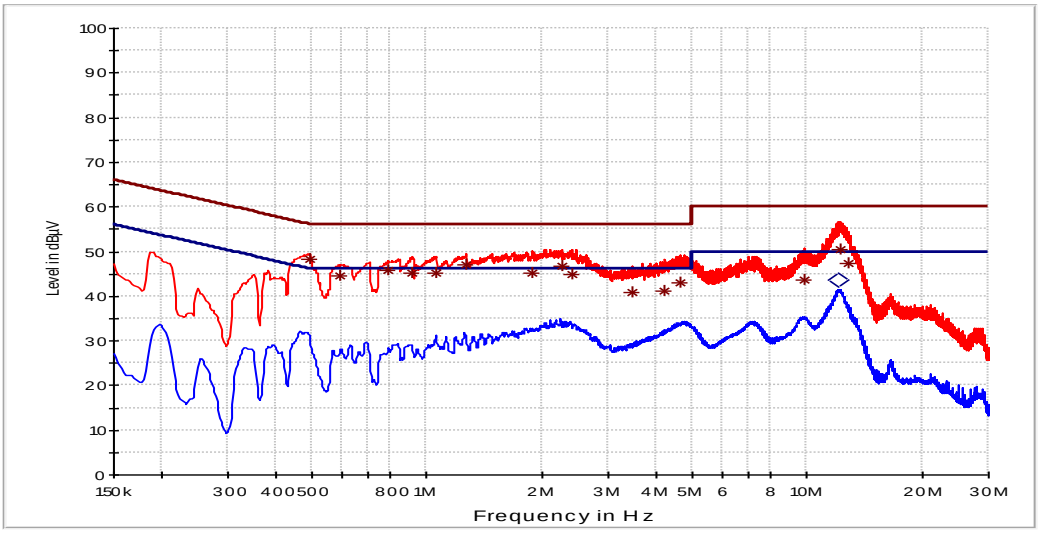
Product Service

2.8.6 Test Results

Radio Test Setup - Radiated Transmitting continuously

Applied supply Voltage: 120 V
Applied supply frequency: 60 Hz

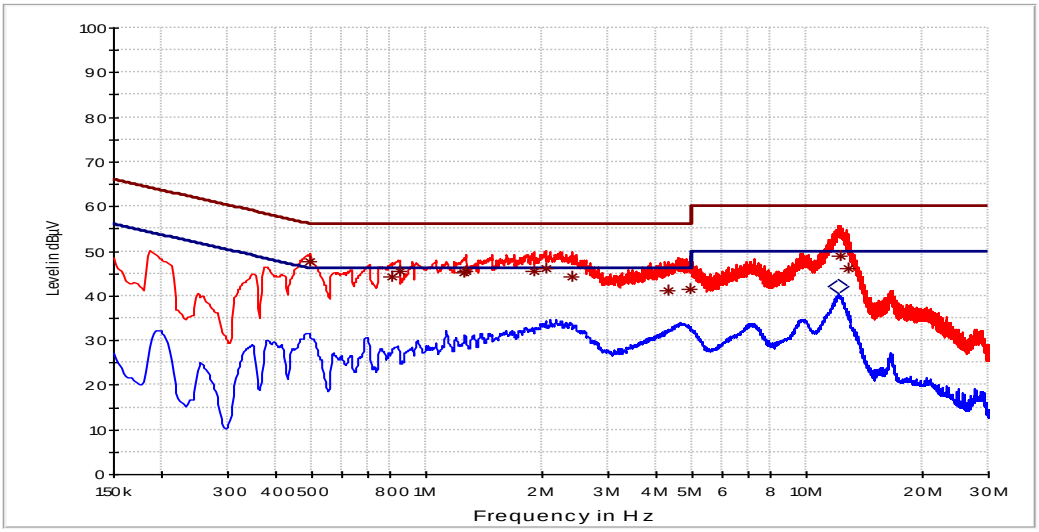
- Live Line Emissions Results



Frequency MHz	*QuasiPeak dBµV*	*CAverage dBµV*	*Limit dBµV*	*Margin dB*	*Meas. Time ms*	*Bandwidth kHz*	*Corr. dB*
0.492000	48.2		56.1	7.9	1000	9	0.0
0.593250	44.5		56.0	11.5	1000	9	0.0
0.791250	45.8		56.0	10.2	1000	9	0.0
0.917250	45.3		56.0	10.7	1000	9	0.0
1.059000	45.1		56.0	10.9	1000	9	0.0
1.268250	47.0		56.0	9.0	1000	9	0.0
1.898250	45.1		56.0	10.9	1000	9	0.1
2.256000	46.7		56.0	9.3	1000	9	0.1
2.400000	44.9		56.0	11.1	1000	9	0.2
3.455250	41.0		56.0	15.0	1000	9	0.3
4.233750	41.2		56.0	14.9	1000	9	0.3
4.652250	43.0		56.0	13.0	1000	9	0.3
9.872250	43.6		60.0	16.4	1000	9	0.0
12.131250		43.6	50.0	6.4	1000	9	0.1
12.203250	50.4		60.0	9.6	1000	9	0.1
12.876000	47.4		60.0	12.6	1000	9	0.2

Product Service

- Neutral Line Emissions Results



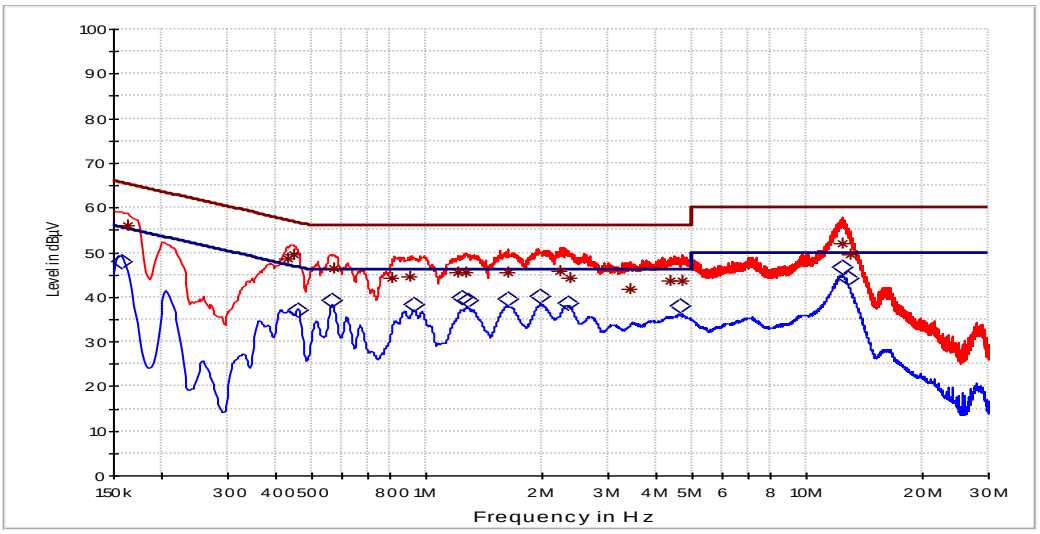
Preview Result 2-CAV
Preview Result 1-PK+
EN 55011 Group 1 Class B Disturbance voltage at mains terminals QP
EN 55011 Group 1 Class B Disturbance voltage at mains terminals AV
Final_Result QPK
Final_Result CAV

Frequency MHz	*QuasiPeak dBµV*	*CAverage dBµV*	*Limit dBµV*	*Margin dB*	*Meas. Time ms*	*Bandwidth kHz*	*Corr. dB*
0.494250	47.6		56.1	8.5	1000	9	0.0
0.809250	44.4		56.0	11.6	1000	9	0.0
0.845250	45.6		56.0	10.4	1000	9	0.0
1.245750	45.2		56.0	10.8	1000	9	0.0
1.270500	45.6		56.0	10.4	1000	9	0.0
1.905000	45.5		56.0	10.5	1000	9	0.1
2.046750	46.0		56.0	10.0	1000	9	0.1
2.400000	44.3		56.0	11.7	1000	9	0.2
4.305750	41.1		56.0	14.9	1000	9	0.3
4.938000	41.5		56.0	14.5	1000	9	0.3
12.097500		42.2	50.0	7.8	1000	9	0.1
12.300000	48.8		60.0	11.2	1000	9	0.1
12.862500	46.1		60.0	13.9	1000	9	0.2

Product Service

Applied supply Voltage: 240 V
Applied supply frequency: 60 Hz

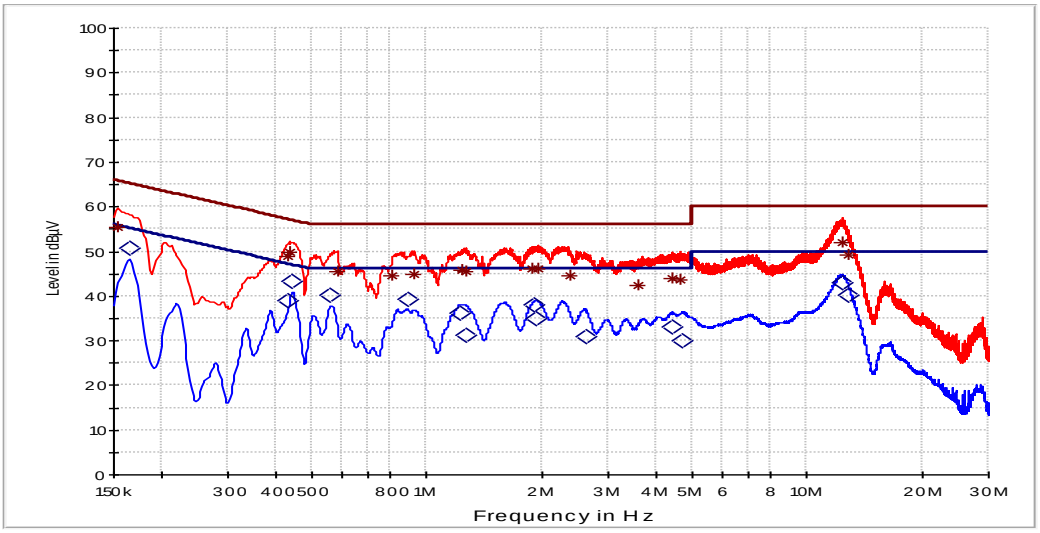
- Live Line Emissions Results



Frequency MHz	*QuasiPeak dBµV*	*CAverage dBµV*	*Limit dBµV*	*Margin dB*	*Meas. Time ms*	*Bandwidth kHz*	*Corr. dB*
0.156750		48.1	55.6	7.5	1000	9	0.0
0.163500	55.9		65.3	9.4	1000	9	0.0
0.429000	48.5		57.3	8.7	1000	9	0.0
0.447000	49.5		56.9	7.5	1000	9	0.0
0.458250		37.3	46.7	9.4	1000	9	0.0
0.564000		39.2	46.0	6.8	1000	9	0.0
0.566250	46.4		56.0	9.6	1000	9	0.0
0.813750	44.4		56.0	11.7	1000	9	0.0
0.906000	44.7		56.0	11.3	1000	9	0.0
0.921750		38.2	46.0	7.8	1000	9	0.0
1.209750	45.5		56.0	10.5	1000	9	0.0
1.230000		39.8	46.0	6.2	1000	9	0.0
1.270500	45.5		56.0	10.5	1000	9	0.0
1.277250		39.4	46.0	6.6	1000	9	0.0
1.630500	45.5		56.0	10.5	1000	9	0.1
1.632750		39.7	46.0	6.3	1000	9	0.1
1.990500		40.2	46.0	5.8	1000	9	0.1
2.244750	45.9		56.0	10.1	1000	9	0.1
2.359500		38.8	46.0	7.2	1000	9	0.1
2.388750	44.4		56.0	11.6	1000	9	0.2
3.444000	41.8		56.0	14.2	1000	9	0.3
4.371000	43.6		56.0	12.4	1000	9	0.3
4.638750		38.0	46.0	8.0	1000	9	0.3
4.710750	43.7		56.0	12.3	1000	9	0.3
12.365250		46.8	50.0	3.2	1000	9	0.1
12.421500	52.1		60.0	7.9	1000	9	0.2
12.860250		44.4	50.0	5.6	1000	9	0.2
12.921000	49.6		60.0	10.5	1000	9	0.2

Product Service

- Neutral Line Emissions Results



Preview Result 2-CAV
Preview Result 1-PK+
EN 55011 Group 1 Class B Disturbance voltage at mains terminals QP
EN 55011 Group 1 Class B Disturbance voltage at mains terminals AV
Final_Result QPK
Final_Result CAV

Frequency MHz	QuasiPeak dBµV	CAverage dBµV	Limit dBµV	Margin dB	Meas. Time ms	Bandwidth kHz	Line	PE	Corr. dB
0.154500	55.4		65.8	10.3	1000	9	L1	GND	0.0
0.165750		50.8	55.2	4.4	1000	9	L1	GND	0.0
0.429000	48.9		57.3	8.4	1000	9	L1	GND	0.0
0.431250		39.1	47.2	8.1	1000	9	L1	GND	0.0
0.433500	49.9		57.2	7.3	1000	9	L1	GND	0.0
0.442500		43.3	47.0	3.7	1000	9	L1	GND	0.0
0.557250		40.1	46.0	5.9	1000	9	L1	GND	0.0
0.579750	45.5		56.0	10.5	1000	9	L1	GND	0.0
0.813750	44.5		56.0	11.6	1000	9	L1	GND	0.0
0.888000		39.3	46.0	6.7	1000	9	L1	GND	0.0
0.928500	44.9		56.0	11.1	1000	9	L1	GND	0.0
1.216500		36.2	46.0	9.8	1000	9	L1	GND	0.0
1.230000	46.0		56.0	10.0	1000	9	L1	GND	0.0
1.263750		31.4	46.0	14.6	1000	9	L1	GND	0.0
1.270500	45.5		56.0	10.5	1000	9	L1	GND	0.0
1.896000	46.2		56.0	9.8	1000	9	L1	GND	0.1
1.907250		38.2	46.0	7.8	1000	9	L1	GND	0.1
1.934250		34.9	46.0	11.1	1000	9	L1	GND	0.1
1.959000	46.3		56.0	9.7	1000	9	L1	GND	0.1
2.368500	44.5		56.0	11.5	1000	9	L1	GND	0.2
2.607000		31.0	46.0	15.0	1000	9	L1	GND	0.2
3.583500	42.3		56.0	13.7	1000	9	L1	GND	0.3
4.398000		33.3	46.0	12.7	1000	9	L1	GND	0.3
4.431750	44.0		56.0	12.0	1000	9	L1	GND	0.3
4.627500	43.8		56.0	12.2	1000	9	L1	GND	0.3
4.677000		30.1	46.0	15.9	1000	9	L1	GND	0.3
12.320250	52.1		60.0	7.9	1000	9	L1	GND	0.1
12.360750		43.0	50.0	7.0	1000	9	L1	GND	0.1
12.853500		40.2	50.0	9.8	1000	9	L1	GND	0.2
12.862500	49.2		60.0	10.83	1000	9	L1	GND	0.2

Product Service

2.9 Exposure of Humans to RF Fields

2.9.1 Specification Reference

IC RSS-GEN, Issue 5, section 3.4,
IC RSS-102, Issue 5, section 2.5,
KDB 447498 D01 General RF Exposure Guidance v06, chapter 4.3.1

2.9.2 Equipment Under Test and Modification State

ML6710i, S/N: 793745 - Modification State 0

2.9.3 Date of Test

2019-04-25 to 2019-05-03

2.9.4 Test Method

Tests were performed with test software Rohde & Schwarz EMC 32, Version V10.40.00

Product Service

2.9.5 Test Results

2.9.5.1 Test Results according to KDB 447498 D01

Maximum radiated power (E.I.R.P.), P_{max}:	5.1 dBm + 3.0 dBi = 8.1 dBm = 6.4 mW (acc. chapter 2.1 of this test report)
Compliance Boundary, d:	20 mm
Frequency, f:	2402 MHz = 2.402 GHz
Numeric Threshold $(P_{max} / d)(f)^{0.5}$:	0.5
Numeric Threshold Limit (10 g extremity SAR):	7.5

Product Service

2.9.5.2 Test Results according to IC RSS-GEN, IC RSS-102

Exposure of Humans to RF Fields	Applicable	Declared by applicant	Measured	Exemption
The antenna is				
☐ detachable				
The conducted output power (CP in watts) is measured at the antenna connector: CP = ... W			☐	
The effective isotropic radiated power (EIRP in watts) is calculated using				
☐ the numerical antenna gain: G = ...		☐		
$EIRP = G \cdot CP \Rightarrow EIRP$ = ... W				
☐ the field strength[1] in V/m: FS = ... V/m			☐	
$EIRP = \frac{(FS \cdot D)^2}{30} \Rightarrow EIRP$ = ... W				
with:				
Distance between the antennas in m: D = ... m			☐	
☒ not detachable				
A field strength measurement is used to determine the effective isotropic radiated power (EIRP in watts) given by:				
$EIRP = \frac{(FS \cdot D)^2}{30} \Rightarrow EIRP$ = 1.37 mW				
with:				
Field strength in V/m: FS = 96.6 dBµV/m (acc. to chapter 2.7 of this report) = 67.6 mV/m			☒	
Distance between the two antennas in m: D = 3 m			☒	
Selection of output power				
The output power TP is the higher of the conducted or effective isotropic radiated power (e.i.r.p.): TP = 1.37 mW				

[1] The conversion formula is valid only for properly matched antennas. In other cases the transmitter output power may have to be measured by a terminated measurement when applying the exemption clauses.
If an open area test site is used for field strength measurement, the effect due to the metal ground reflecting plane should be subtracted from the maximum field strength value in order to reference it to free space, before calculating TP.

Product Service

Exposure of Humans to RF Fields (continued)		Applicable	Declared by applicant	Measured	Exemption
Separation distance between the user and the transmitting device is					
☒ less than or equal to 20 cm	☐ greater than 20 cm		☒		
Transmitting device is					
☐ in the vicinity of the human head	☐ body-worn		☒		

Product Service

SAR evaluation				
SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in the table. For controlled use devices where the 8 W/kg for 1 gram of tissue applies, the exemption limits for routine evaluation in the table are multiplied by a factor of 5. For limb-worn devices where the 10 gram value applies, the exemption limits for routine evaluation in the table are multiplied by a factor of 2.5. If the operating frequency of the device is between two frequencies located in the table, linear interpolation shall be applied for the applicable separation distance. For test separation distance less than 5 mm, the exemption limits for a separation distance of 5 mm can be applied to determine if a routine evaluation is required. For medical implants devices, the exemption limit for routine evaluation is set at 1 mW. The output power of a medical implants device is defined as the higher of the conducted or e.i.r.p to determine whether the device is exempt from the SAR evaluation.				
Carrier frequency: f = 2402 MHz Distance: d = 20 mm Transmitter output power: TP = 1.37 mW Limit: TP_{limit} = 30 mW		☒		☒
☐ SAR evaluation is documented in test report no.				

Frequency (MHz)	Exemption limits (mW)[2] at separation distance of									
	≤5 mm	10 mm	15 mm	20 mm	25 mm	30 mm	35 mm	40 mm	45 mm	≥50 mm
≤300 [3]	71	101	132	162	193	223	254	284	315	345
450	52	70	88	106	123	141	159	177	195	213
835	17	30	42	55	67	80	92	105	117	130
1900	7	10	18	34	60	99	153	225	316	431
2450	4	7	15	30	52	83	123	173	235	309
3500	2	6	16	32	55	86	124	170	225	290
5800	1	6	15	27	41	56	71	85	97	106

[2] The exemption limit in the table are based on measurements and simulations on half-wave dipole antennas at separaton distances of 5 mm to 25 mm from a flat phantom, providing a SAR value of approximately 0.4 W/kg for 1 g of tissue. For low frequencies (300 MHz to 835 MHz), the exemption limits are derived from a linear fit. For high frequencies (1900 MHz and above), the exemption limits are derived from a third order polynomial fit.

[3] Transmitters operating between 3 kHz and 10 MHz, meeting the exemption from routine SAR evaluation, shall demonstrate compliance to the instantaneous limits in IC RSS-102, issue 5, section 4.

Product Service

Exposure of Humans to RF Fields (continued)	Applicable	Declared by applicant	Measured	Exemption
RF exposure evaluation				
RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows: ☐ below 20 MHz[4] and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance). ☐ between 3 kHz and 10 MHz exposure limits apply as following: ☐ In a uncontrolled environment the basic restriction for the instantaneous internal electric field strength is equal to or less than 2.7 · 10-4 *f* V/m_{rms} at any part of the body where *f* is in Hz. The instantaneous RF field strength is equal or less than 83 V/m_{rms} and equal or less than 90 A/m_{rms}. ☐ In a controlled environment the basic restriction for the instantaneous internal electric field strength is equal to or less than 1.35 · 10-4 *f* V/m_{rms} at any part of the body where *f* is in Hz. The instantaneous RF field strength is equal or less than 170 V/m_{rms} and equal or less than 180 A/m_{rms}. ☐ at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 4,49/$f^{0.5}$ W (adjusted for tune-up tolerance, where *f* is in MHz. ☐ at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance). ☐ at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1.31 · $10^{-2}f^{0.6834}$ W (adjusted for tune-up tolerance), where *f* is in MHz. ☐ at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance). In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.				
Carrier frequency: f = **..... MHz** Transmitter output power: TP = **..... mW** Limit: TP_{limit} = **..... mW**				☐
☐ RF exposure evaluation is documented in test report no.				

[4] Transmitters operating between 3 kHz and 10 MHz, meeting the exemption from routine RF Exposure evaluation, shall demostrate compilance to the instanteneous limits in IC RSS-102, issue 5, section 4.

Product Service

3 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Radio Testing			
Test Name	kp	Expanded Uncertainty	Note
Occupied Bandwidth	2.0	±1.14 %	2
RF-Frequency error	1.96	±1 · 10-7	7
RF-Power, conducted carrier	2	±0.079 dB	2
RF-Power uncertainty for given BER	1.96	+0.94 dB / -1.05	7
RF power, conducted, spurious emissions	1.96	+1.4 dB / -1.6 dB	7
RF power, radiated			
25 MHz – 4 GHz	1.96	+3.6 dB / -5.2 dB	8
1 GHz – 18 GHz	1.96	+3.8 dB / -5.6 dB	8
18 GHz – 26.5 GHz	1.96	+3.4 dB / -4.5 dB	8
40 GHz – 170 GHz	1.96	+4.2 dB / -7.1 dB	8
Spectral Power Density, conducted	2.0	±0.53 dB	2
Maximum frequency deviation			
300 Hz – 6 kHz	2	±2,89 %	2
6 kHz – 25 kHz	2	±0.2 dB	2
Maximum frequency deviation for FM	2	±2,89 %	2
Adjacent channel power 25 MHz – 1 GHz	2	±2.31 %	2
Temperature	2	±0.39 K	4
(Relative) Humidity	2	±2.28 %	2
DC- and low frequency AC voltage			
DC voltage	2	±0.01 %	2
AC voltage up to 1 kHz	2	±1.2 %	2
Time	2	±0.6 %	2

Table 17

Radio Interference Emission Testing			
Test Name	kp	Expanded Uncertainty	Note
Conducted Voltage Emission			
9 kHz to 150 kHz (50Ω/50µH AMN)	2	± 3.8 dB	1
150 kHz to 30 MHz (50Ω/50µH AMN)	2	± 3.4 dB	1
100 kHz to 200 MHz (50Ω/5µH AMN)	2	± 3.6 dB	1
Discontinuous Conducted Emission			
9 kHz to 150 kHz (50Ω/50µH AMN)	2	± 3.8 dB	1
150 kHz to 30 MHz (50Ω/50µH AMN)	2	± 3.4 dB	1
Conducted Current Emission			
9 kHz to 200 MHz	2	± 3.5 dB	1
Magnetic Fieldstrength			
9 kHz to 30 MHz (with loop antenna)	2	± 3.9 dB	1
9 kHz to 30 MHz (large-loop antenna 2 m)	2	± 3.5 dB	1
Radiated Emission			
Test distance 1 m (ALSE)			
9 kHz to 150 kHz	2	± 4.6 dB	1
150 kHz to 30 MHz	2	± 4.1 dB	1
30 MHz to 200 MHz	2	± 5.2 dB	1
200 MHz to 2 GHz	2	± 4.4 dB	1
2 GHz to 3 GHz	2	± 4.6 dB	1
Test distance 3 m			
30 MHz to 300 MHz	2	± 4.9 dB	1
300 MHz to 1 GHz	2	± 5.0 dB	1
1 GHz to 6 GHz	2	± 4.6 dB	1
Test distance 10 m			
30 MHz to 300 MHz	2	± 4.9 dB	1
300 MHz to 1 GHz	2	± 4.9 dB	1
Radio Interference Power			
30 MHz to 300 MHz	2	± 3.5 dB	1
Harmonic Current Emissions			4
Voltage Changes, Voltage Fluctuations and Flicker			4

Table 18

	Immunity Testing			
	Test Name	kp	Expanded Uncertainty	Note
	Electrostatic Discharges			4
	Radiated RF-Field			
	Pre-calibrated field level	2	+32.2 / -24.3 %	5
	Dynamic feedback field level	2.05	+21.2 / -17.5 %	3
	Electrical Fast Transients (EFT) / Bursts			4
	Surges			4
	Conducted Disturbances, induced by RF-Fields			
	via CDN	2	+15.1 / -13.1 %	6
	via EM clamp	2	+42.6 / -29.9 %	6
	via current clamp	2	+43.9 / -30.5 %	6
	Power Frequency Magnetic Field	2	+20.7 / -17.1 %	2
	Pulse Magnetic Field			4
	Voltage Dips, Short Interruptions and Voltage Variations			4
	Oscillatory Waves			4
	Conducted Low Frequency Disturbances			
	Voltage setting	2	± 0.9 %	2
	Frequency setting	2	± 0.1 %	2
	Electrical Transient Transmission in Road Vehicles			4

Table 19

Note 1:
The expanded uncertainty reported according to CISPR 16-4-2:2003-11 is based on a standard uncertainty multiplied by a coverage factor of kp = 2, providing a level of confidence of p = 95.45%
Note 2:
The expanded uncertainty reported according to UKAS Lab 34 (Edition 1, 2002-08) is based on a standard uncertainty multiplied by a coverage factor of kp = 2, providing a level of confidence of p = 95.45%
Note 3:
The expanded uncertainty reported according to UKAS Lab 34 (Edition 1, 2002-08) is based on a standard uncertainty multiplied by a coverage factor of kp = 2.05, providing a level of confidence of p = 95.45%
Note 4:
It has been demonstrated that the used test equipment meets the specified requirements in the standard with at least a 95%confidence.
Note 5:
The expanded uncertainty reported according to IEC 61000-4-3 is based on a standard uncertainty multiplied by a coverage factor of kp = 2, providing a level of confidence of p = 95.45%
Note 6:
The expanded uncertainty reported according to IEC 61000-4-6 is based on a standard uncertainty multiplied by a coverage factor of kp = 2, providing a level of confidence of p = 95.45%
Note 7:
The expanded uncertainty reported according ETSI TR 100 028 V1.4.1 (all parts) to is based on a standard uncertainty multiplied by a coverage factor of kp = 1.96, providing a level of confidence of p = 95.45%

Note 8:
The expanded uncertainty reported according to ETSI TR 102 273 V1.2.1 (all parts) is based on a standard uncertainty multiplied by a coverage factor of kp = 1.96, providing a level of confidence of p = 95.45%