FCC / ISED Test Report

For:
Aversan Inc.

Model #:
1205

Product Description:
Cell and Wi-Fi carrier with integrated RF switching.

FCC ID: 2AWBR002250
IC ID: 26073002250

Applied Rules and Standards:
47 CFR Part 15.247 (DTS)
RSS-247 Issue 2 (DTSs) & RSS-Gen Issue 5

REPORT #: EMC_AVERS_006_20001_FCC_15.247_ISED_Wi-Fi_DTS

DATE: 6/26/2020

A2LA Accredited

IC recognized #
3462B-1
3462B-2

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1 Assessment

The following device was evaluated against the applicable criteria specified in FCC rules Parts 15.247 of Title 47 of the Code of Federal Regulations and the relevant ISED Canada standard RSS-247.

No deviations were ascertained.

According to section 5 of this report, the overall result is Pass.

Company	Description	Model #
Aversan Inc.	Cell and Wi-Fi carrier with integrated RF switching.	1205

Responsible for Testing Laboratory:

Date	Section	Name	Signature
6/26/2020	Compliance	Li, Cindy (EMC Lab Manager)	Cindy Li Digitally signed by cindy.li@cetecom.com DN: CN=cindy.li@cetecom.com Reason: I am approving this document Location: Date: 2020-06-26 18:48:27

Responsible for the Report:

Date	Section	Name	Signature
6/26/2020	Compliance	Ghanma, Issa (EMC Engineer)	Digitally signed by: Issa W Ghanma DN: CN = Issa W Ghanma email = Issaghanma@cetecom.com C = US O = CETECOM Inc. OU = EMC Date: 2020.06.26 16:36:22 -07'00'

The test results of this test report relate exclusively to the test item specified in Section3.
CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM Inc. USA.

2 Administrative Data

2.1 Identification of the Testing Laboratory Issuing the EMC Test Report

Company Name:	CETECOM Inc.
Department:	Compliance
Street Address:	411 Dixon Landing Road
City/Zip Code	Milpitas, CA 95035
Country	USA
Telephone:	+1 (408) 586 6200
Fax:	+1 (408) 586 6299
EMC Lab Manager:	Li, Cindy
Responsible Project Leader:	Saman, Rami

2.2 Identification of the Client

Applicant's Name:	Aversan Inc.
Street Address:	30 Eglinton Avenue West, Suite 500
City/Zip Code	Mississauga, ON L5R 3E7
Country	Canada

2.3 Identification of the Manufacturer

Manufacturer's Name:	Same as Client /----------
Manufacturers Address:	----------
City/Zip Code	----------
Country	----------

3 Equipment Under Test (EUT)

3.1 EUT Specifications

Model No:	1205
FCC-ID :	2AWBR002250
IC-ID:	26073002250
HW Version :	05
SW Version :	• Cell: SWI9X50C_01.07.02.00 • Internal Wi-Fi: 5.4.24.1 • External Wi-Fi: 5.6.23.4
HVIN:	1205
PMN:	RF Board
Product Description:	Cell and Wi-Fi carrier with integrated RF switching.
Frequency Range / number of channels:	Nominal band: 2400 MHz – 2483.5 MHz; Center to center: 2412 MHz (ch 1) – 2462 MHz (ch 11), 11 channels
Radio Information:	❖ WLAN (Wi-Fi) Module: • FCC / IC ID: SQG-60SIPT / 3147A-602230C • Name / Number: 60-2230C / 60-2230C-PU • Wi-Fi 2.4 and 5 GHz: 802.11 a/b/g/n/h/ac
Antenna Information as declared:	Max Gain: 4.78 dBi
Max. Conducted Output Power from modular report:	0.872 Watts / 29.41 dBm
Power Supply/ Rated Operating Voltage Range:	Low 18 VDC, Nominal 28 VDC, High 33 VDC
Operating Temperature Range:	Low -15 C, Nominal 25º C, High 55º C

Other Radios included in the device:	❖ Cellular Module: • Name / Number: AirPrime / EM7565 • FCC / IC ID: N7NEM75 / 2417C-EM75 ▪ 4G LTE (CAT 12): LTE FDD Bands 2, 4, 5, 7, 12, 13, 26, 41, 66 ▪ 3G WCDMA (HSPA+): UMTS FDD Bands II, IV, V ❖ Bluetooth , BLE Module: • FCC / IC ID: SQG-60SIPT / 3147A-602230C • Name / Number: 60-2230C / 60-2230C-PU ▪ Bluetooth 4.2
Sample Revision	☐ Prototype Unit; ☐ Production Unit; ■ Pre-Production

3.2 EUT Sample details

EUT #	Serial Number	HW Version	SW Version	Notes/Comments
1	ADG-RL3-0029	05	• Cell: SWI9X50C_01.07.02.00 • Internal Wi-Fi: 5.4.24.1 • External Wi-Fi: 5.6.23.4	Radiated

3.3 Accessory Equipment (AE) details

AE #	Type	Model	Manufacturer	Serial Number
N/A	-	-	-	-

3.4 Test Sample Configuration

EUT Set-up #	Combination of AE used for test set up	Comments
1	EUT#1	-

3.5 Mode of Operation details

Mode of Operation	Description of Operating modes	Additional Information
Op. 1	WLAN(Wi-Fi 2.4)	❖ LRU/LMU tools provided by module supplier through client, used to configure Wi-Fi radio to: ▪ Mode: **g** ▪ BW: **20 MHz** ▪ Data rate: **6 Mb/s** ▪ Power: **18 dBm** ▪ Transmit mode: Continuous **TX** ▪ Hopping: **No** ▪ Channel(s): Low (1), Mid (6 or 7) and High (11)
OP. 2	WLAN(Wi-Fi 2.4) & Cellular Co-TX	❖ LRU/LMU tools provided by module supplier through client, used to configure Wi-Fi radio to: • Mode: **g** • BW: **20 MHz** • Data rate: **6 Mb/s** • Power: **18 dBm** • Transmit mode: Continuous **TX** • Hopping: **No** • Channel(s): Low (1), Mid (6 or 7) and High (11) ❖ Cellular was configured using AT commands, through TeraTerm terminal. • **LTE Band 66** was connected.

3.6 Justification for Worst Case Mode of Operation

During the testing process, the EUT was tested with transmitter sets on low, mid and high channels, and highest possible duty cycle and output power.

For radiated measurements;

- All data in this report show the worst case of Wi-F radio in simultaneous transmission mode with Cellular, transmitting at the highest output power band (FCC/IC ID: N7NEM75/2417C-EM75).
- All data in this report show the worst case between horizontal and vertical antenna polarizations and for all orientations of the EUT.

4 Subject of Investigation

The objective of the measurements done by CETECOM Inc. was to assess the performance of the EUT according to the relevant requirements specified in FCC rules Part 15.247 of Title 47 of the Code of Federal Regulations and Radio Standard Specification RSS-247 of ISED Canada.

The host device contains two identical Wi-Fi modules:

1. Name/Number: 60-2230C / 60-2230C-PU; Tested, as it represents worst case, by transmitting using the higher antennae gains
    a. supports BT and BLE
2. Name/Number: 60-2230C / 60-2230C-U
    a. BT and BLE not used

This test report is to support a request for new equipment authorization under the FCC ID: 2AWBR002250 IC ID: 26073002250

Testing procedures are based on 558074 D01 15.247 Meas Guidance v05r02 – "GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES" - April 2, 2019, by the Federal Communications Commission, Office of Engineering and Technology, Laboratory Division.

5 Measurement Results Summary

Test Specification	Test Case	Temperature and Voltage Conditions	Mode	Pass	NA	NP	Result
§15.247(a)(1) RSS-247 5.2(a)	Emission Bandwidth	Nominal	-	☐	☐	■	See note1 See note 2
§15.247(e) RSS-247 5.2(b)	Power Spectral Density	Nominal	-	☐	☐	■	See note1 See note 2
§15.247(b)(1) RSS-247 5.4(d)	Maximum Conducted Output Power and EIRP	Nominal	-	☐	☐	■	See note1 See note 2
§15.247(d) RSS-247 5.5	Band edge compliance Unrestricted Band Edges	Nominal	-	☐	☐	■	See note1 See note 2
§15.247; 15.209; 15.205 RSS-Gen 8.9; 8.10	Band edge compliance Restricted Band Edges	Nominal	-	☐	☐	■	See note1 See note 2
§15.247(d); §15.209 RSS-Gen 6.13	TX Spurious emissions-Radiated	Nominal	802.11 g	■	☐	☐	Complies
§15.207(a) RSS Gen 8.8	AC Conducted Emissions	Nominal	N/A	☐	■	☐	See note1 See note 2

Note1: NA= Not Applicable; NP= Not Performed.
Note2: Leveraged from module certification report, FCC / IC ID: SQG-60SIPT / 3147A-602230C
Note3: This device is powered by 28 V DC; hence this test is not applicable.

6 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus, with 95% confidence interval (in dB delta to result), based on a coverage factor k=1.

Radiated measurement

9 kHz to 30 MHz	±2.5 dB (Magnetic Loop Antenna)
30 MHz to 1000 MHz	±2.0 dB (Biconilog Antenna)
1 GHz to 40 GHz	±2.3 dB (Horn Antenna)

Conducted measurement

150 kHz to 30 MHz	±0.7 dB (LISN)

RF conducted measurement	±0.5 dB

According to TR 102 273 a multiplicative propagation of error is assumed for RF measurement systems. For this reason the RMS method is applied to dB values and not to linear values as appropriate for additive propagation of error. Also used: http://physics.nist.gov/cuu/Uncertainty/typeb.html. The above calculated uncertainties apply to direct application of the Substitution method. The Substitution method is always used when the EUT comes closer than 3 dB to the limit.

6.1 Environmental Conditions During Testing:

The following environmental conditions were maintained during the course of testing:

- Ambient Temperature: 20-25° C
- Relative humidity: 40-60%

6.2 Dates of Testing:

4/17/2020 – 5/28/2020

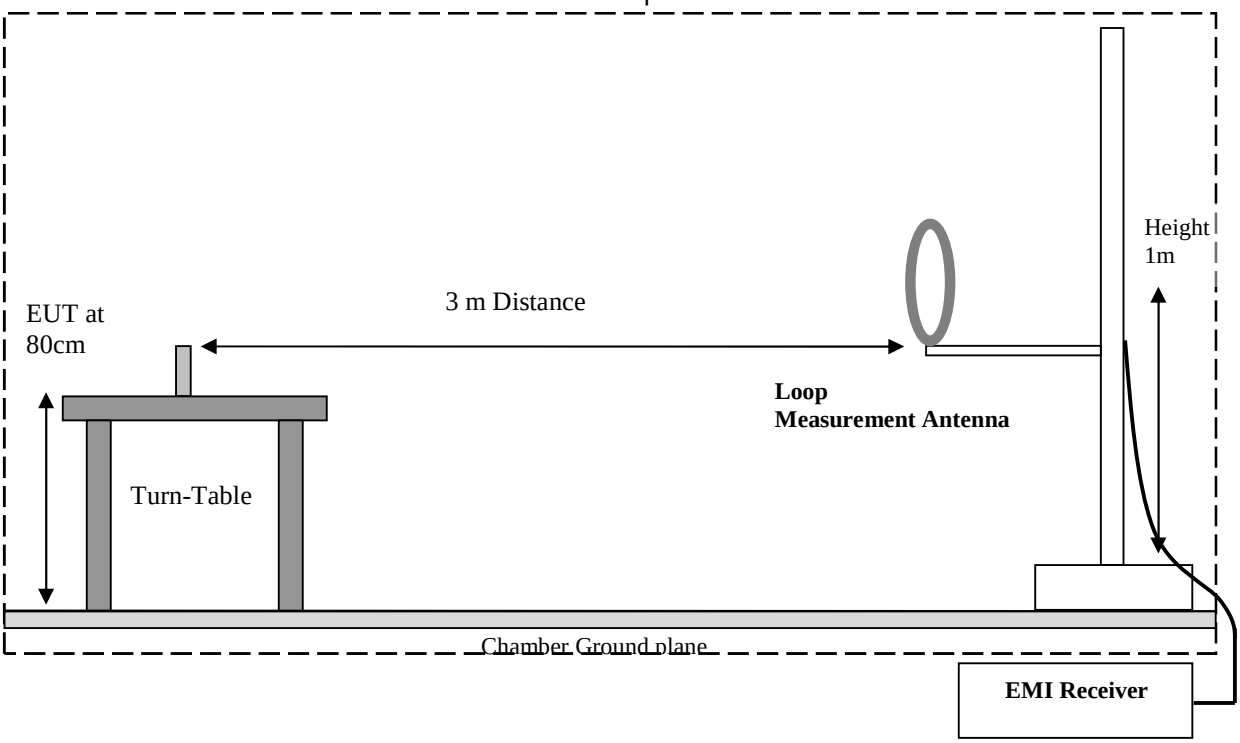
7 Measurement Procedures

7.1 Radiated Measurement

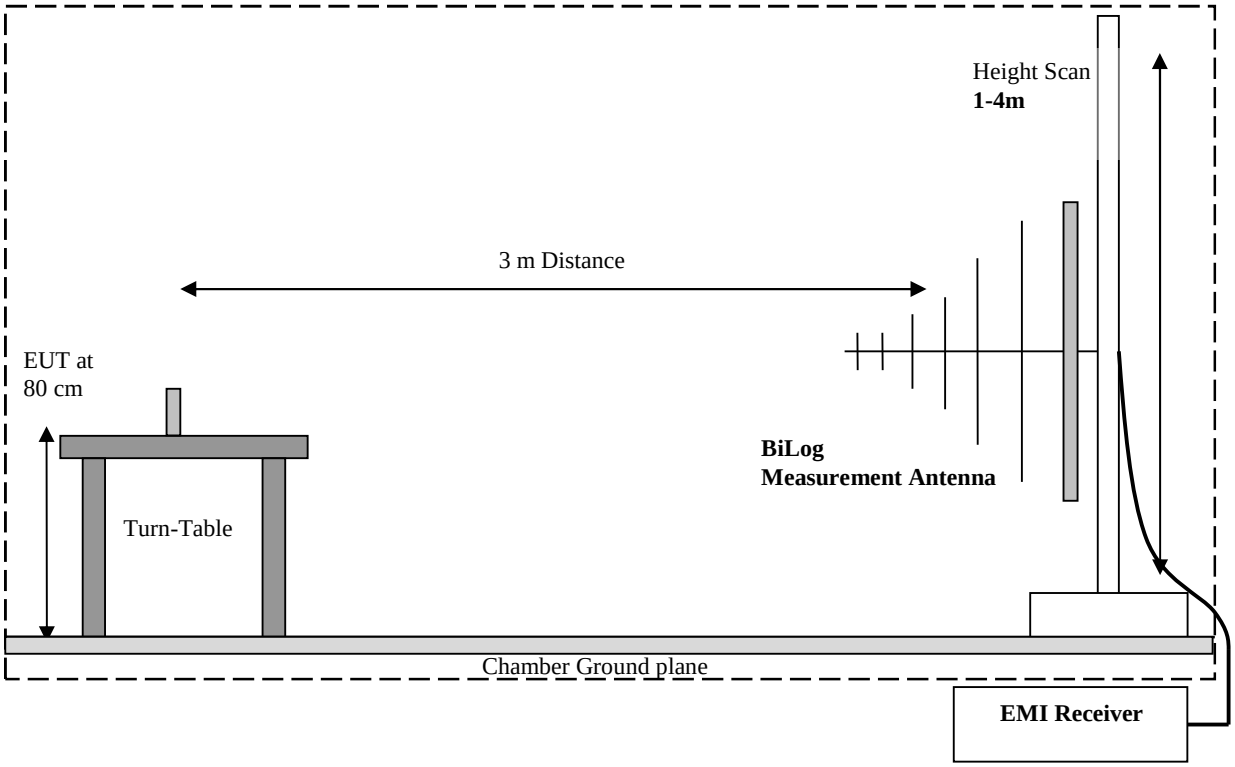
The radiated measurement is performed according to ANSI C63.10 (2013)

- The exploratory measurement is accomplished by running a matrix of 16 sweeps over the required frequency range with R&S Test-SW EMC32 for 360º continuous measurement of the turntable, two orthogonal positions of the EUT and both antenna polarizations. This procedure exceeds the requirement of the above standards to cover the 3 orthogonal axis of the EUT. A max peak detector is utilized during the exploratory measurement. The Test-SW creates an overall maximum trace for all 12 sweeps and saves the settings for each point of this trace. The maximum trace is part of the test report.
- The 10 highest emissions are selected with an automatic algorithm of EMC32 searching for peaks in the noise floor and ensuring that broadband signals are not selected multiple times.
- The maxima are then put through the final measurement and again maximized in a 90deg range of the turntable, fine search in frequency domain and height scan between 1m and 4m.
- The above procedure is repeated for all possible ways of power supply to EUT and for all supported modulations.
- In case there are no emissions above noise floor level only the maximum trace is reported as described above.
- The results are split up into up to 4 frequency ranges due to antenna bandwidth restrictions. A magnetic loop is used from 9 kHz to 30 MHz, a Biconilog antenna is used from 30 MHz to 1 GHz, and two different horn antennas are used to cover frequencies up to 40 GHz.

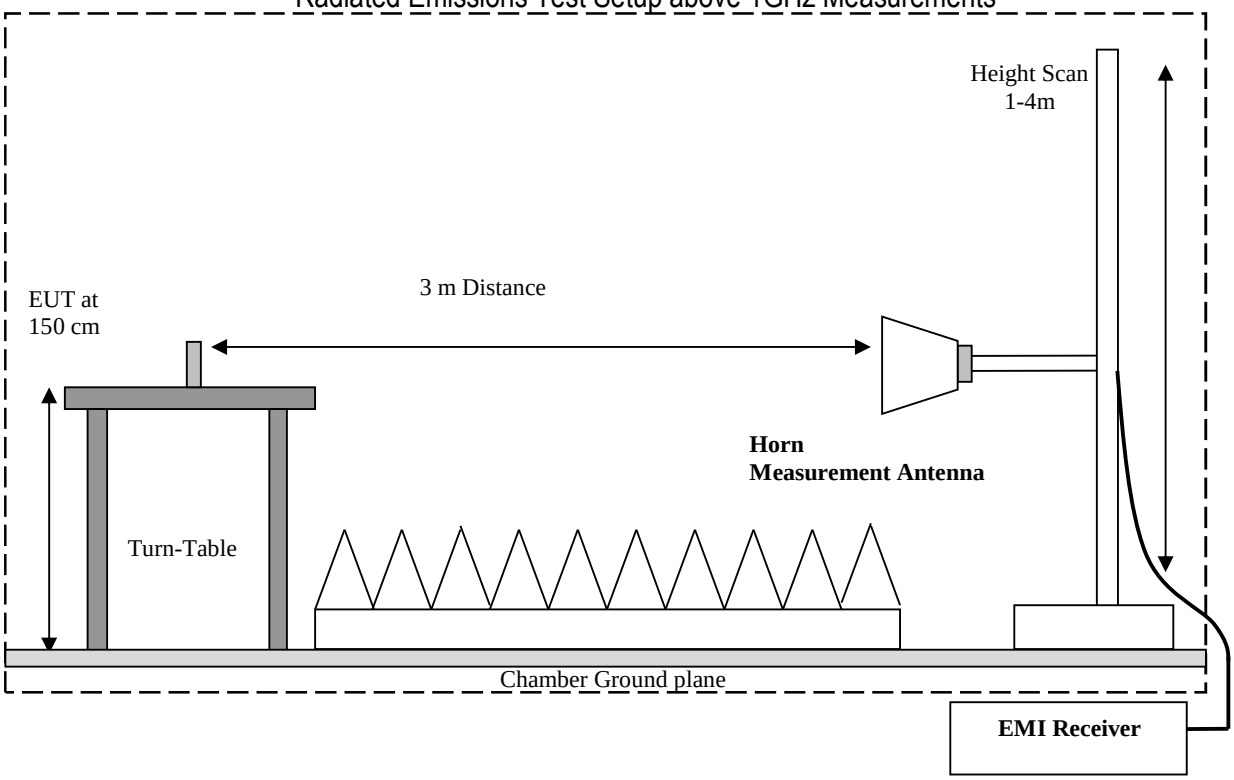
Radiated Emissions Test Setup below 30MHz Measurements



Radiated Emissions Test Setup 30MHz-1GHz Measurements



Radiated Emissions Test Setup above 1GHz Measurements



7.1.1 Sample Calculations for Field Strength Measurements

Field Strength is calculated from the Spectrum Analyzer/ Receiver readings, taking into account the following parameters:

1. Measured reading in dBµV
2. Cable Loss between the receiving antenna and SA in dB and
3. Antenna Factor in dB/m

All radiated measurement plots in this report are taken from a test SW that calculates the Field Strength based on the following equation:

FS (dBµV/m) = Measured Value on SA (dBµV) + Cable Loss (dB) + Antenna Factor (dB/m)

Example:

Frequency (MHz)	Measured SA (dBµV)	Cable Loss (dB)	Antenna Factor Correction (dB)	Field Strength Result (dBµV/m)
1000	80.5	3.5	14	98.0

7.2 Power Line Conducted Measurement Procedure

AC Power Line conducted emissions measurements performed according to: ANSI C63.4 (2014)

8 Test Result Data

8.1 Radiated Transmitter Spurious Emissions and Restricted Bands

8.1.1 Measurement according to ANSI C63.10 (2013)

Spectrum Analyzer Settings:

- Frequency = 9 KHz – 30 MHz
- RBW = 9 KHz
- Detector: Peak

- Frequency = 30 MHz – 1 GHz
- Detector = Peak / Quasi-Peak
- RBW= 120 KHz (<1GHz)

- Frequency > 1 GHz
- Detector = Peak / Average
- RBW = 1 MHz

- Radiated spurious emissions shall be measured for the transmit frequencies, transmit power, and data rate for the lowest, middle and highest channel in each frequency band of operation and for the highest gain antenna for each antenna type, and using the appropriate parameters and test requirements.
- The highest (or worst-case) data rate shall be recorded for each measurement.
- For testing at distance other than the specified in the standard, the limit conversion is calculated by using 40 dB/decade extrapolation factor as follow: Conversion factor (CF) = 40 log (D/d) = 40 log (300m / 3m) = 80dB

8.1.2 Limits:

FCC §15.247

- 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) (see §15.205(c)).

FCC §15.209 & RSS-Gen 8.9

- Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency of emission (MHz)	Field strength (µV/m)	Measurement Distance (m)	Field strength @ 3m (dBµV/m)
0.009–0.490	2400/F(kHz) / ---------	300	-
0.490–1.705	24000/F(kHz) / --------	30	-
1.705–30.0	30 / (29.5)	30	-
30–88	100	3	40 dBµV/m
88–216	150	3	43.5 dBµV/m
216–960	200	3	46 dBµV/m
Above 960	500	3	54 dBµV/m

FCC §15.205 & RSS-Gen 8.10

- Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

- 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) (see §15.205(c)).
  *PEAK LIMIT= 74 dBµV/m
  *AVG. LIMIT= 54 dBµV/m

8.1.3 Test conditions and setup:

Ambient Temperature	EUT Set-Up #	Power Input
23.8°C	1	28 VDC

8.1.4 Measurement result:

Plot #	Channel #	Scan Frequency	Limit	Result
1 – 3	Low	30 MHz – 18 GHz	See section 8.1.2	Pass
4 – 8	Mid	9 kHz – 26 GHz	See section 8.1.2	Pass
9 – 11	High	30 MHz – 18 GHz	See section 8.1.2	Pass

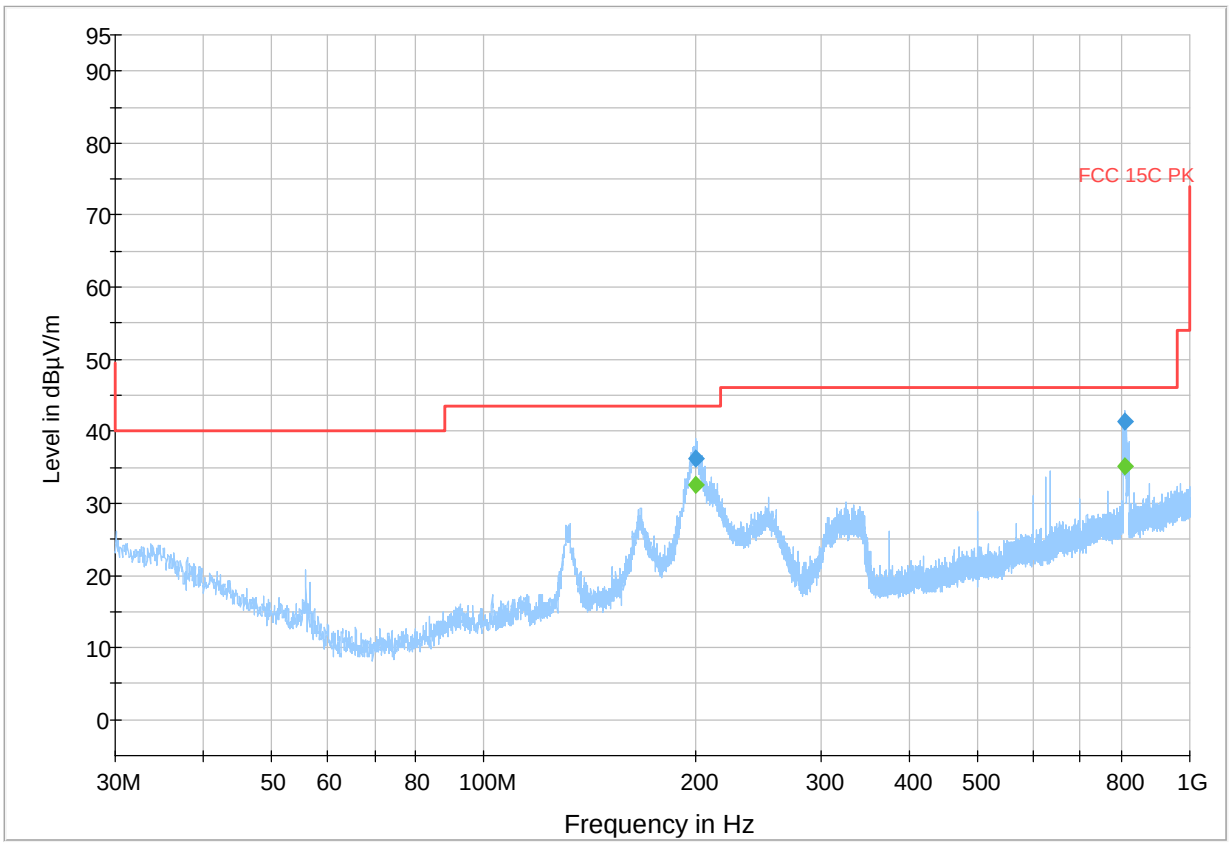
8.1.5 Measurement Plots:

Plot # 1 Radiated Emissions: 30 MHz – 1 GHz

Tx Frequency: 2412 MHz	Op.2	Mode: 802.11g

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth	Corr. (dB/
199.680216	36.30	---	43.50	7.20	500.0	120.000	100.0	V	183.0	-20.5
199.680216	---	32.61	---	---	500.0	120.000	100.0	V	183.0	-20.5
807.341497	41.45	---	46.00	4.55	500.0	120.000	215.0	H	269.0	-6.8
807.341497	---	35.21	---	---	500.0	120.000	215.0	H	269.0	-6.8



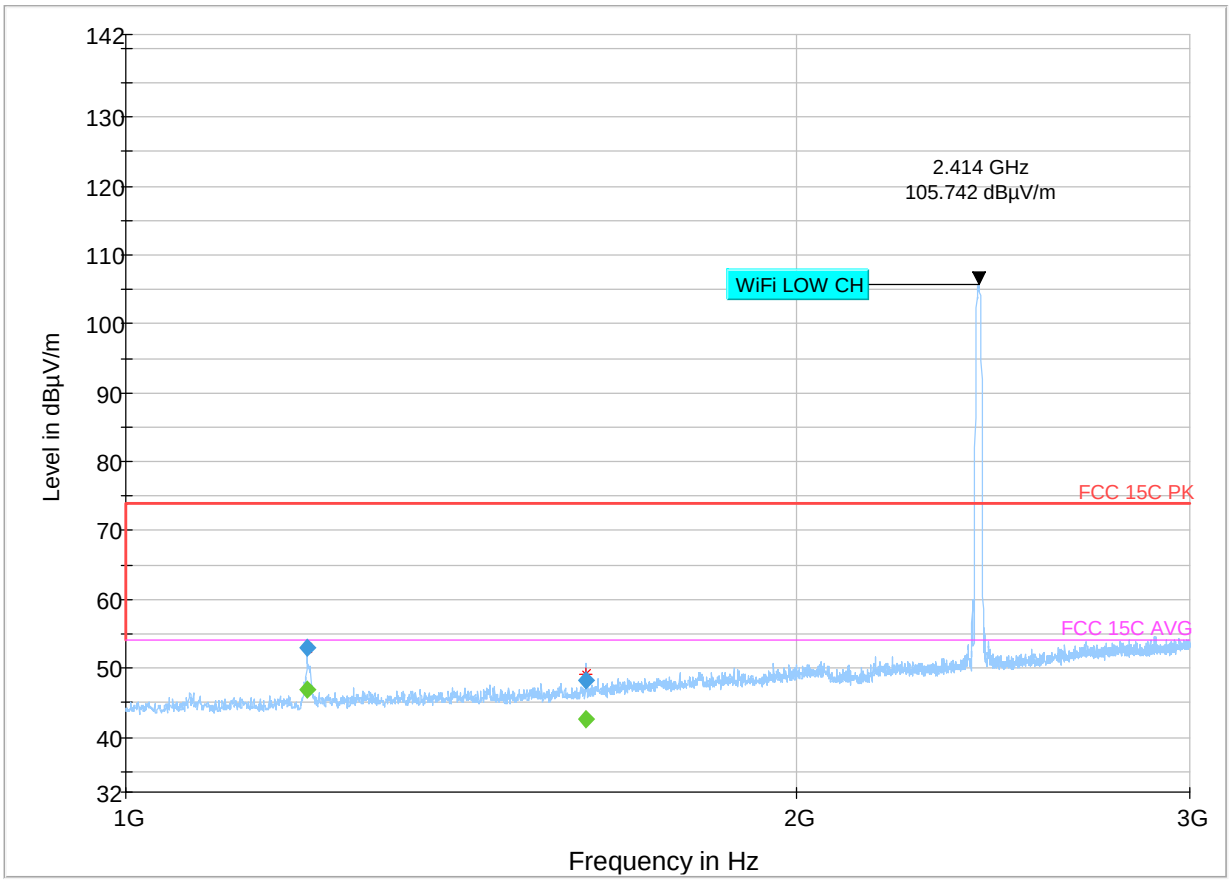
Preview Result 1-PK+ FCC 15C PK Final_Result QPK Final_Result RMS

Plot # 2 Radiated Emissions: 1 – 3 GHz

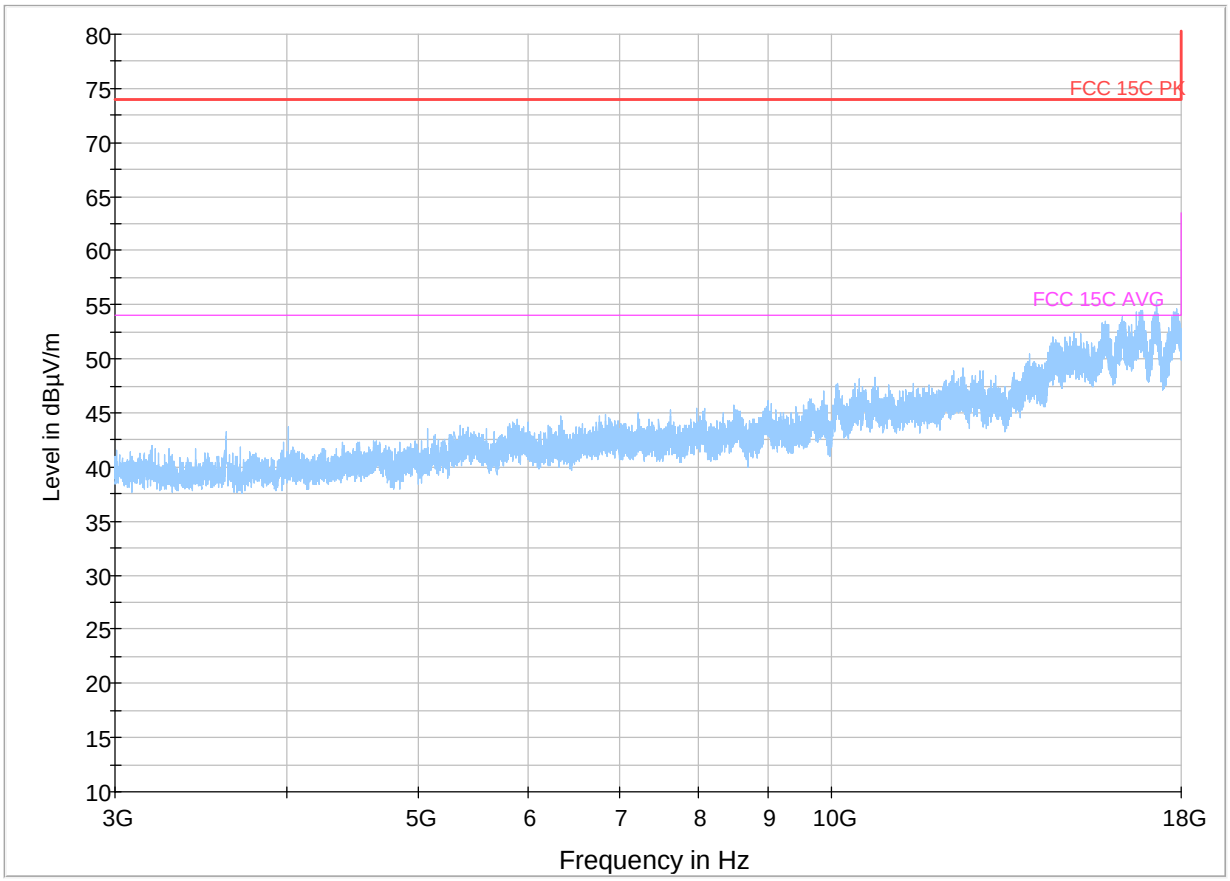
Tx Frequency: 2412 MHz	Op.1	Mode: 802.11g

Final_Result

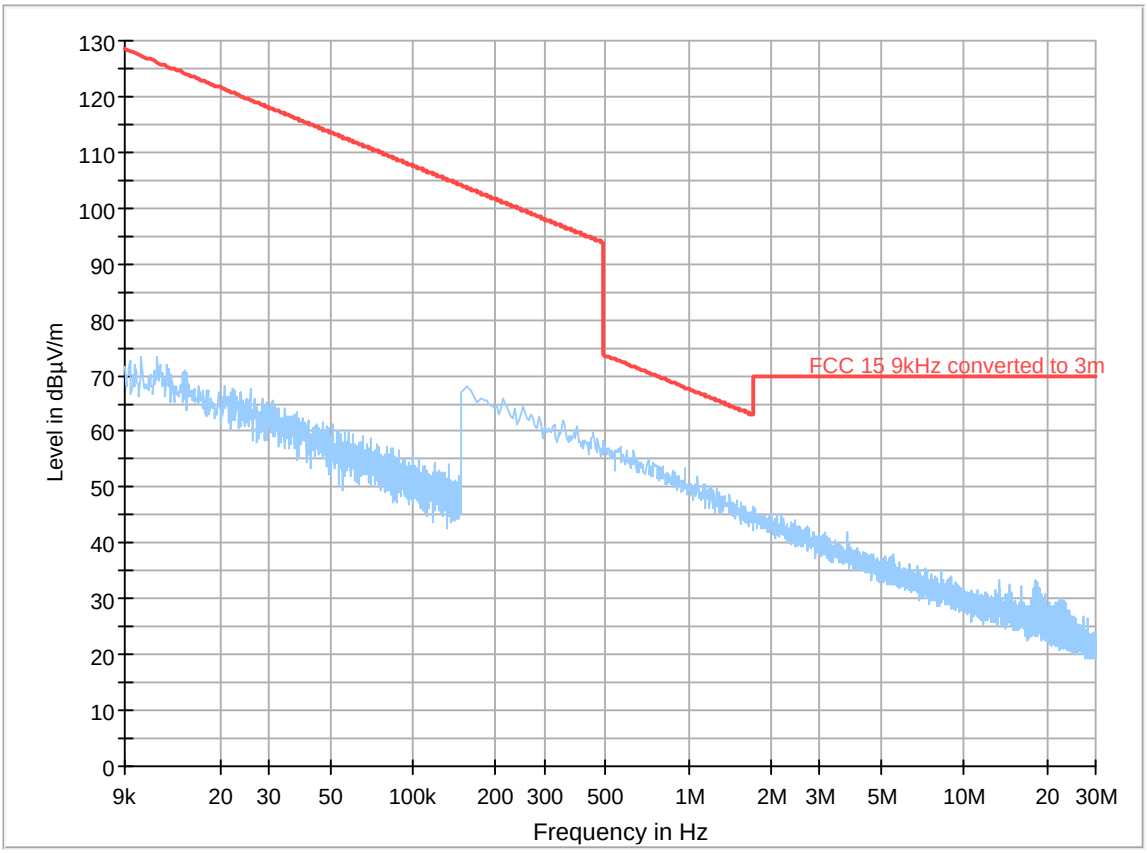
Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
1206.190	---	46.89	53.98	7.09	300.0	1000.000	156.0	H	42.0	1.6	10:44:47 AM - 4/17/2020
1206.190	53.04	---	74.00	20.96	300.0	1000.000	156.0	H	42.0	1.6	10:44:47 AM - 4/17/2020
1607.675	---	42.54	53.98	11.44	300.0	1000.000	135.0	H	69.0	2.9	10:41:53 AM - 4/17/2020
1607.675	48.32	---	74.00	25.68	300.0	1000.000	135.0	H	69.0	2.9	10:41:53 AM - 4/17/2020



Plot # 3 Radiated Emissions: 3 – 18 GHz		
Tx Frequency: 2412 MHz	**Op.2**	**Mode: 802.11g**



Plot # 4 Radiated Emissions: 9 KHz – 30 MHz		
Tx Frequency: 2437 MHz	**Op.2**	**Mode: 802.11g**



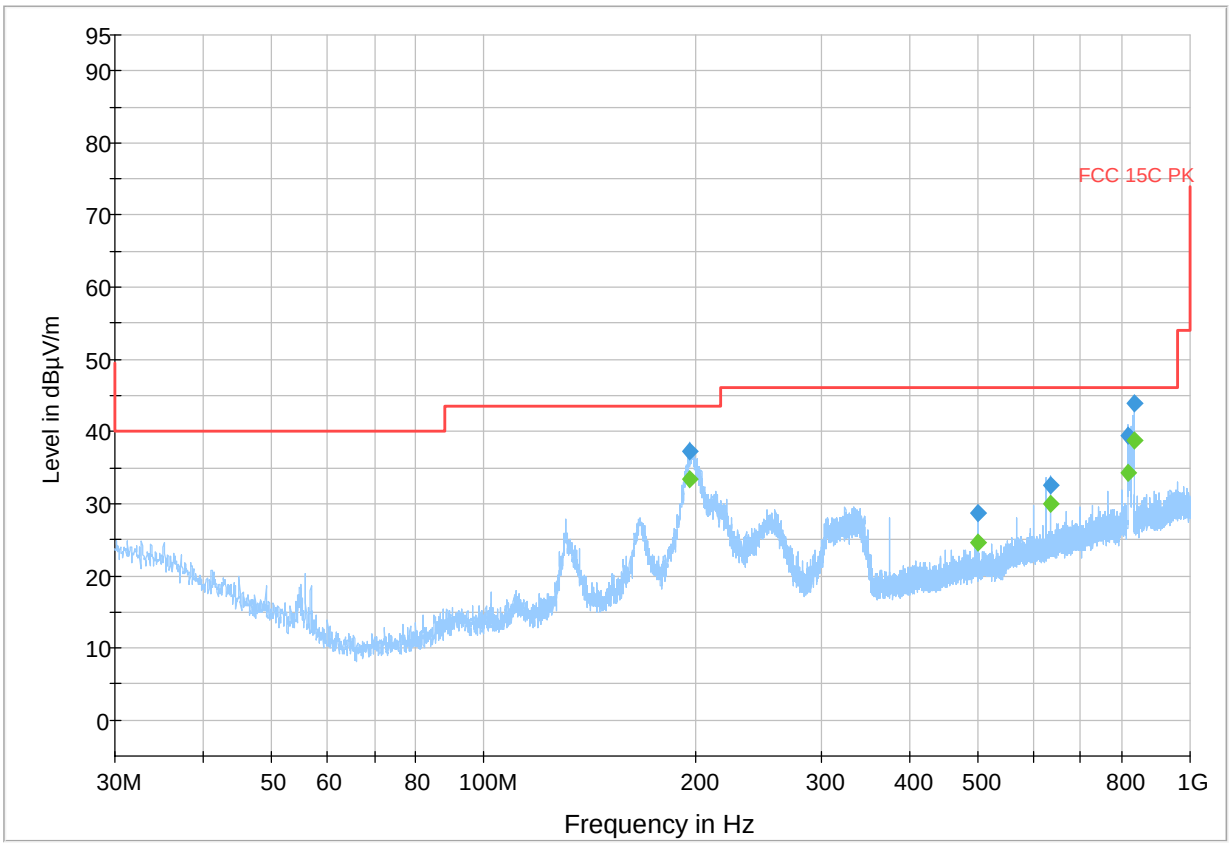
Preview Result 2-RMS
FCC 15 9kHz converted to 3m
Preview Result 1-PK+
Final_Result QPK

Plot # 5 Radiated Emissions: 30 MHz – 1 GHz

Tx Frequency: 2437 MHz	Op.2	Mode: 802.11g

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
195.997	---	33.43	---	---	500.0	120.000	192.0	H	236.0	-19.8
195.997	37.18	---	43.50	6.32	500.0	120.000	192.0	H	236.0	-19.8
499.995	---	24.65	---	---	500.0	120.000	119.0	V	181.0	-12.8
499.995	28.78	---	46.00	17.22	500.0	120.000	119.0	V	181.0	-12.8
633.330	---	29.92	---	---	500.0	120.000	114.0	V	54.0	-9.6
633.330	32.61	---	46.00	13.39	500.0	120.000	114.0	V	54.0	-9.6
817.727	39.38	---	46.00	6.62	500.0	120.000	212.0	H	269.0	-7.0
817.727	---	34.36	---	---	500.0	120.000	212.0	H	269.0	-7.0
832.134	43.85	---	46.00	2.15	500.0	120.000	209.0	H	264.0	-7.1
832.134	---	38.68	---	---	500.0	120.000	209.0	H	264.0	-7.1



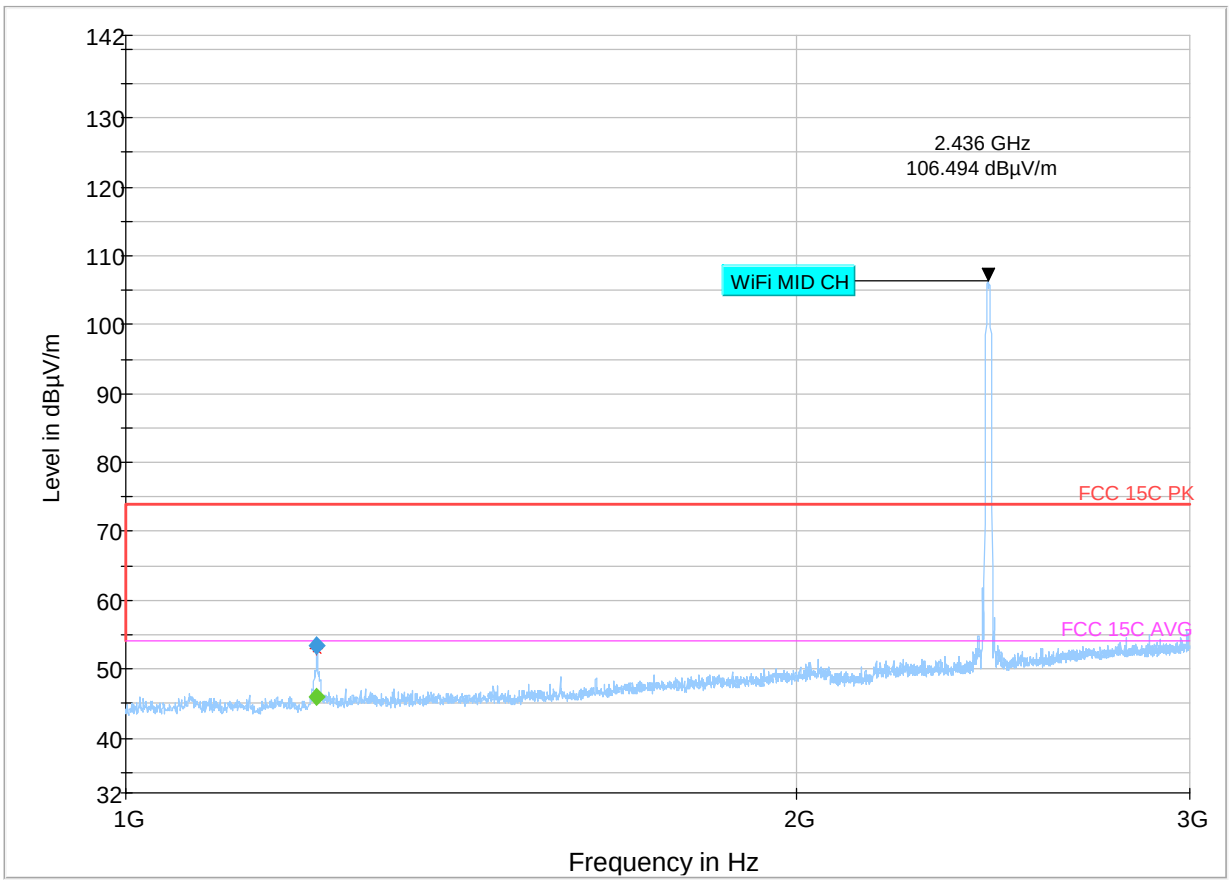
Preview Result 1-PK+ FCC 15C PK Final_Result QPK Final_Result RMS

Plot # 6 Radiated Emissions: 1 – 3 GHz

Tx Frequency: 2437 MHz	Op.1	Mode: 802.11g

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
1218.050	53.33	---	74.00	20.67	300.0	1000.000	128.0	H	46.0	2.1	10:29:15 AM - 4/17/2020
1218.050	---	45.93	53.98	8.05	300.0	1000.000	128.0	H	46.0	2.1	10:29:15 AM - 4/17/2020

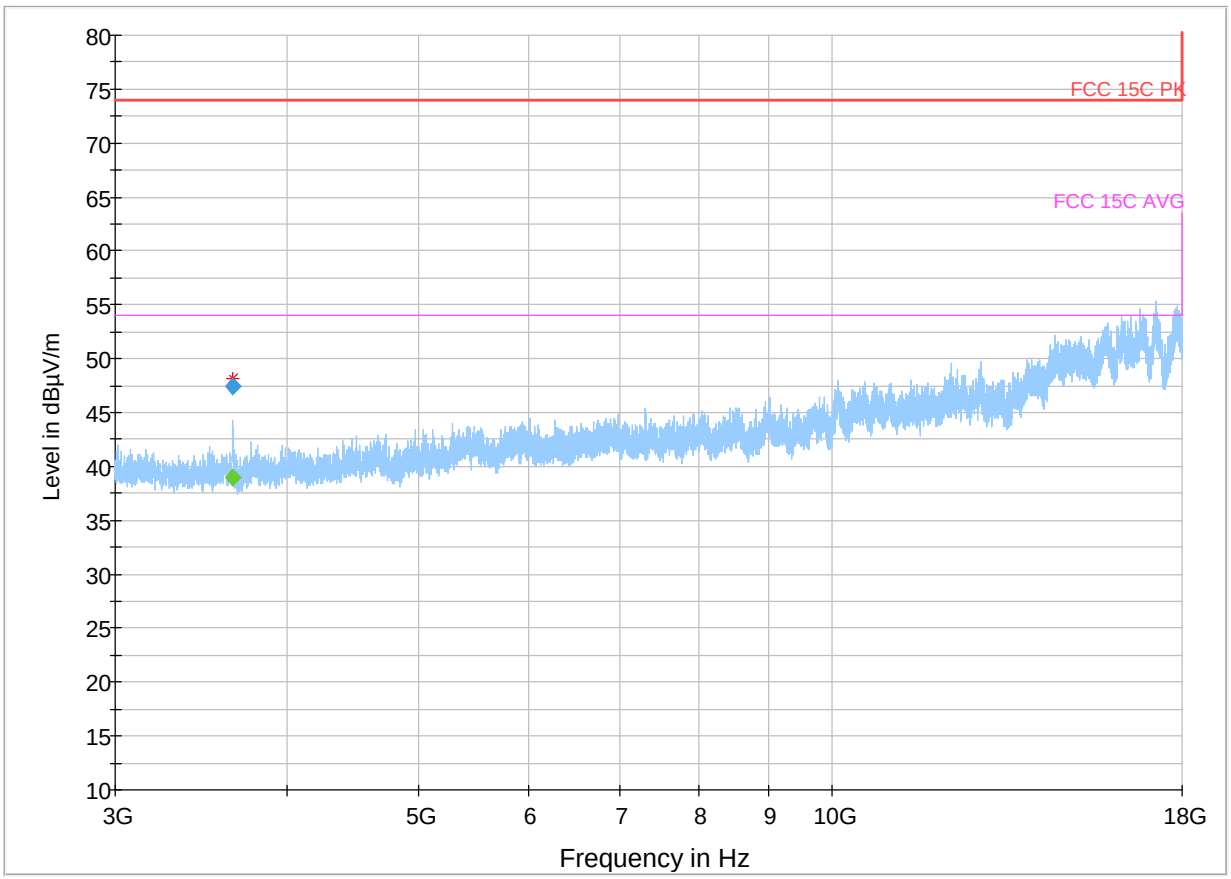


Plot # 7 Radiated Emissions: 3 – 18 GHz

Tx Frequency: 2437 MHz	Op.2	Mode: 802.11g

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
3653.43170	---	38.98	53.98	15.00	500.0	1000.000	282.0	H	302.0	-7.6	4:33:50 PM - 4/17/2020
3653.43170	47.38	---	73.99	26.61	500.0	1000.000	282.0	H	302.0	-7.6	4:33:50 PM - 4/17/2020

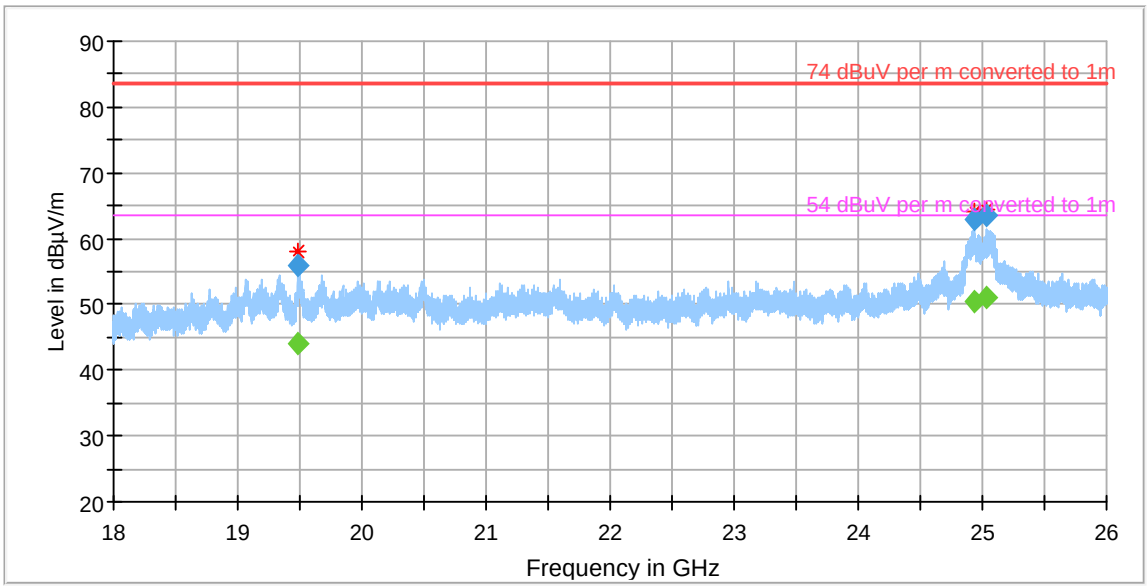


Plot # 8 Radiated Emissions: 18 – 26 GHz

Tx Frequency: 2437 MHz	Op.2	Mode: 802.11g

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
19489.055	---	44.05	63.50	19.45	100.0	1000.000	150.0	V	-26.0	22.1	11:40:59 AM - 4/21/2020
19489.055	56.00	---	83.50	27.50	100.0	1000.000	150.0	V	-26.0	22.1	11:40:59 AM - 4/21/2020
24936.345	---	50.52	63.50	12.98	100.0	1000.000	150.0	V	305.0	30.0	11:42:54 AM - 4/21/2020
24936.345	62.78	---	83.50	20.72	100.0	1000.000	150.0	V	305.0	30.0	11:42:54 AM - 4/21/2020
25026.367	---	51.03	63.50	12.47	100.0	1000.000	150.0	V	77.0	30.4	11:44:47 AM - 4/21/2020
25026.367	63.65	---	83.50	19.85	100.0	1000.000	150.0	V	77.0	30.4	11:44:46 AM - 4/21/2020



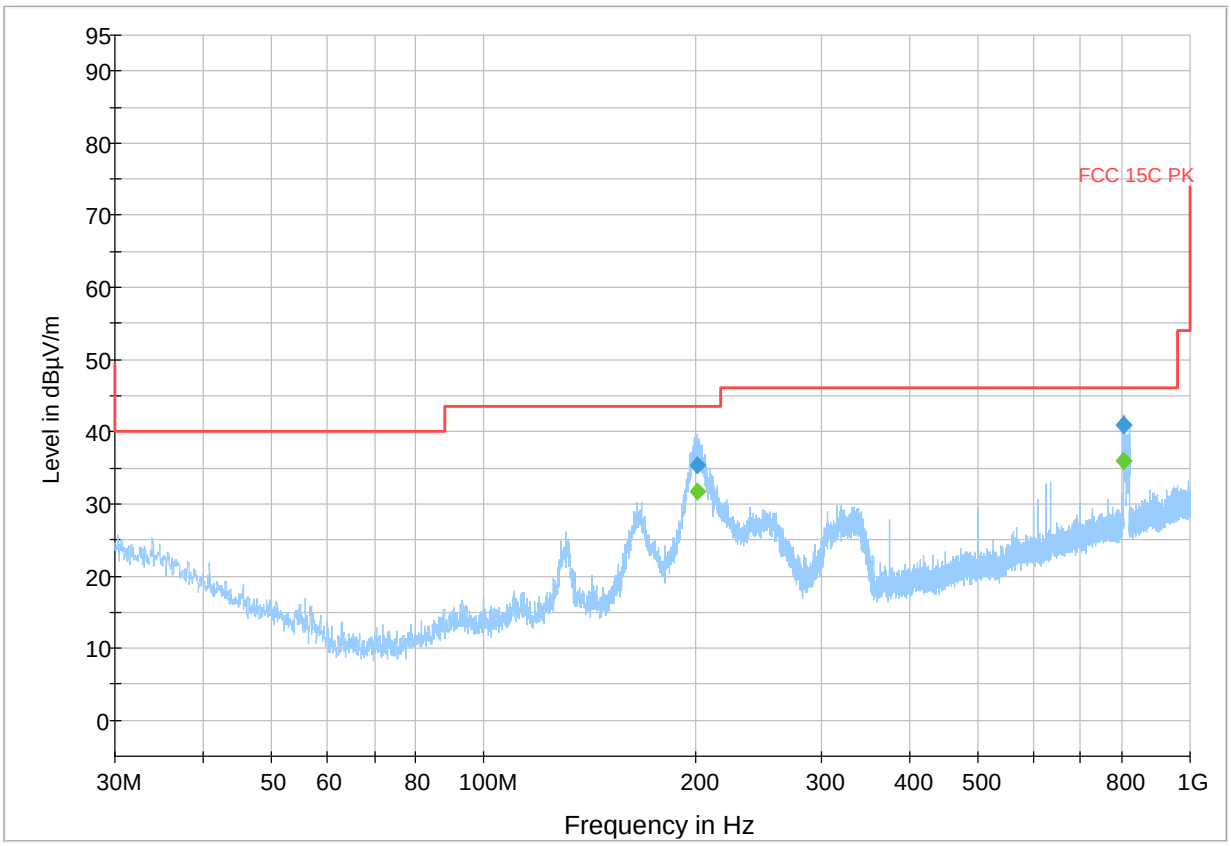
Preview Result 1-PK+
74 dBuV per m converted to 1m
Final_Result PK+
Critical_Freqs PK+
54 dBuV per m converted to 1m
Final_Result AVG

Plot # 9 Radiated Emissions: 30 MHz – 1 GHz

Tx Frequency: 2462 MHz	Op.2	Mode: 802.11g

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Pol	Corr. (dB/m)
200.941986	35.43	---	43.50	8.08	500.0	120.000	100.0	V	184.0	-20.4
200.941986	---	31.71	---	---	500.0	120.000	100.0	V	184.0	-20.4
805.493283	40.90	---	46.00	5.10	500.0	120.000	214.0	H	274.0	-6.7
805.493283	---	35.96	---	---	500.0	120.000	214.0	H	274.0	-6.7



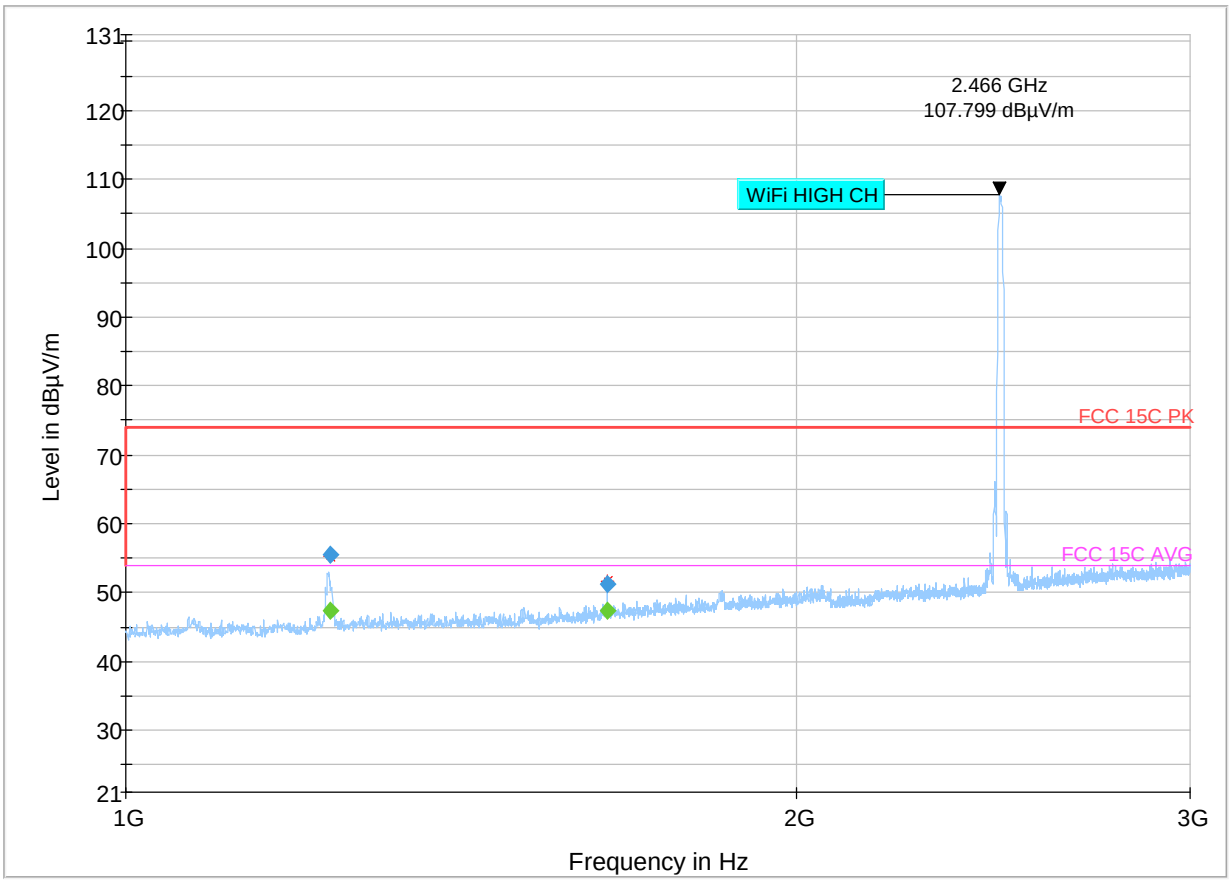
Preview Result 1-PK+ FCC 15C PK Final_Result QPK Final_Result RMS

Plot # 10 Radiated Emissions: 1 – 3 GHz

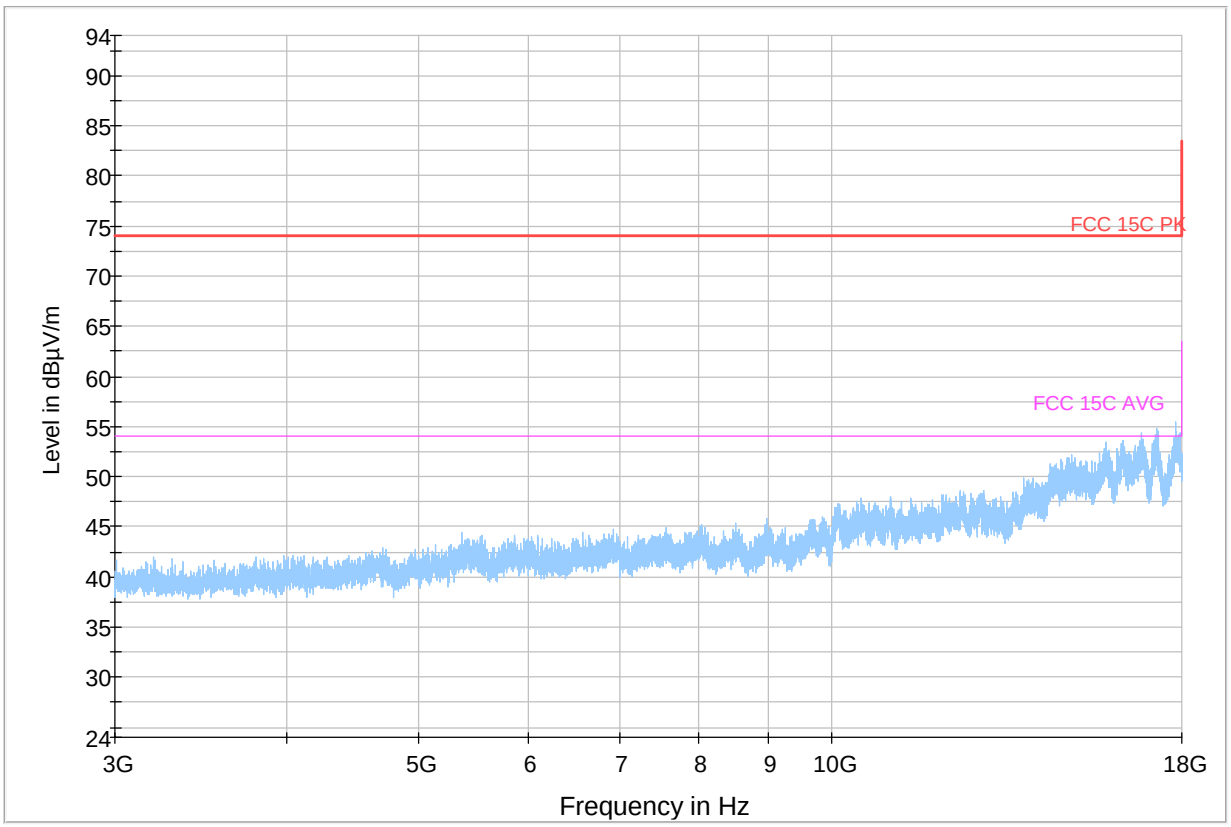
Tx Frequency: 2462 MHz	Op.1	Mode: 802.11g

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
1234.280	55.58	---	74.00	18.42	300.0	1000.000	122.0	H	48.0	2.2	10:58:32 AM - 4/17/2020
1234.280	---	47.29	53.98	6.69	300.0	1000.000	122.0	H	48.0	2.2	10:58:32 AM - 4/17/2020
1645.060	51.25	---	74.00	22.75	300.0	1000.000	122.0	H	140.0	2.9	11:01:37 AM - 4/17/2020
1645.060	---	47.27	53.98	6.71	300.0	1000.000	122.0	H	140.0	2.9	11:01:37 AM - 4/17/2020



Plot # 11 Radiated Emissions: 3 – 18 GHz		
Tx Frequency: 2462 MHz	Op.2	Mode: 802.11g



Preview Result 1-PK+ | Critical_Freqs PK+ | FCC 15C PK
FCC 15C AVG | Final_Result PK+ | Final_Result RMS

9 Test setup photos

Setup photos are included in supporting file name: "EMC_AVERS_006_20001_Setup_Photos.pdf"

10 Test Equipment And Ancillaries Used For Testing

Equipment Type	Manufacturer	Model	Serial #	Calibration Cycle	Last Calibration Date
ACTIVE LOOP ANTENNA	ETS LINDGREN	6507	00161344	3 YEARS	10/26/2017
BILOG ANTENNA	TESEO	CBL 6141B	41106	3 YEARS	11/01/2017
HORN ANTENNA	EMCO	3115	00035111	3 YEARS	04/17/2019
HORN ANTENNA	ETS LINDGREN	3117	00169547	3 YEARS	08/08/2017
HORN ANTENNA	ETS LINDGREN	3116C	00169535	3 YEARS	09/24/2017
SIGNAL ANALYZER	R&S	FSV 40	101022	3 YEARS	07/16/2019
Spectrum Analyzer	R&S	FSU26	200065	3 YEARS	07/16/2019
THERMOMETER HUMIDITY MONITOR	CONTROL COMPANY	36934-164	181230565	2 YEARS	01/10/2019

Note: Equipment used meets the measurement uncertainty requirements as required per applicable standards for 95% confidence levels. Calibration due dates, unless defined specifically, falls on the last day of the month. Items indicated "N/A" for cal status either do not specifically require calibration or is internally characterized before use.

11 History

Date	Report Name	Changes to report	Report prepared by
6/26/2020	EMC_AVERS_006_20001_FCC_15.247_ISED_Wi-Fi_DTS	Initial Version	Issa Ghanma

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