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REGISTRATION
NUMBER 4621A-4

Test report No:
NIE: 59573RRF.002

Partial Test Report

USA FCC Part 15.247, 15.209

CANADA RSS-210, RSS-Gen

Radio Frequency Devices. Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz.

Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.

General Requirements and Information for the Certification of Radio Apparatus.

Identification of item tested	Wi-Fi bgn wireless radio module with embedded full stack.
Trademark	Silicon Labs
Model and /or type reference	WGM160P22A (ordering code WGM160PX22KGA2)
Other identification of the product	FCC ID: QOQWGM160P IC: 5123A-WGM160P
Features	802.11bgn @ 2.4GHz, single spatial stream.
Applicant	SILICON LABORATORIES FINLAND OY Alberga Business Park, Bertel Jungin aukio 3, 02600 Espoo, Finland
Test method requested, standard	USA FCC Part 15.247 10-1-17 Edition: Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz. -Emission limitations radiated (Transmitter). USA FCC Part 15.209 10-1-17 Edition: Radiated emission limits; general requirements. CANADA RSS-247 Issue 2 (February 2017). -Emission limitations radiated (Transmitter). CANADA RSS-Gen Issue 5 (April 2018). Guidance for Performing Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid Systems Devices Operating Under Section 15.247 of the FCC Rules. 558074 D01 Meas Guidance v05 dated August 24, 2018. ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.

Approved by (name / position & signature)	A. Llamas RF Lab. Manager		Firmado digitalmente por ALEJANDRO LLAMAS RODRIGUEZ Fecha: 2019.03.12 15:41:24 +01'00'
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Competences and guarantees

DEKRA Testing and Certification S.A.U. is a testing laboratory accredited by the National Accreditation Body (ENAC -Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

DEKRA Testing and Certification is a FCC-recognized accredited testing laboratory with appropriate scope of accreditation that include testing performed in this test report.

DEKRA Testing and Certification S.A.U. is a laboratory with a measurement site in compliance with the requirements of RSS 212, Issue 1 (Provisional) and has been added to the list of filed sites of the Canadian Certification and Engineering Bureau. Reference File Number: ISED 4621A-4.

In order to assure the traceability to other national and international laboratories, DEKRA Testing and Certification S.A.U. has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification S.A.U. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification S.A.U. at the time of performance of the test.

DEKRA Testing and Certification S.A.U. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
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Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA Testing and Certification S.A.U. internal document PODT000.

Data provided by the client

The sample consists of a Wi-Fi bgn wireless radio module with embedded full stack.

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples undergoing test have been selected by: The client.

- Sample S/01 is composed of the following elements:

Control N°	Description	Model	Serial N°	Reception
59573/005	Wi-Fi bgn wireless radio module with embedded full stack	WGM160P22A (ordering code WGM160PX22KGA2)	--	2018/12/27
59573/011	External Antenna	--	--	2018/12/27

Sample S/01 has undergone the following test(s): All RADIATED tests indicated in Appendix A.

Test sample description

Ports..... :	Port name and description	Cable					
		Specified max length [m]	Attached during test	Shielded	Coupled to patient ⁽³⁾		
	Module has UART host interface (@115200 with no flow control), which is routed to USB-UART converter of certification board.		Yes, to launch the test modes - Can be detached during testing when module is supplied by lab power supply	☐	☐		
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	☒	DC: Nominal 3.3V, min 3.0V, max 3.6V					
Rated Power	~0.7W						
Clock frequencies	38.4MHz (RF XTAL), 72MHz (internal processor), 32.768KHz (low freq XTAL) — None of the clocks is exposed to a module's pin.						
Other parameters..... :							
Software version							
Hardware version..... :							
Dimensions in cm (W x H x D)..... :	23.8mm x 14.2mm x 2.3mm						

Mounting position.....:	☒	Other: This is an embedded module, meant to be surface-mounted in the PCB of an end-product by OEMs, etc.	
Modules/parts	Module/parts of test item	Type	Manufacturer
Accessories (not part of the test item)	Description	Type	Manufacturer
	1 x External dipole antenna		
	2 x 50-Ohm Termination		
	SMA to U.FL terminated coax cables		
	WSTK evaluation board to be used as flash programmer if needed		
Documents as provided by the applicant.....:	Description	File name	Issue date
	Descriptions of test items and accessories and tools, plus instructions for testing.		

⁽³⁾ Only for Medical Equipment

Identification of the client

SILICON LABORATORIES FINLAND OY
Alberga Business Park, Bertel Jungin aukio 3, 02600 Espoo, Finland.

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2019-01-15
Date (finish)	2019-01-16

Document history

Report number	Date	Description
59573RRF.002	2019-03-12	First release

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 75 %
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth	< 1 Ω

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth	< 1 Ω
Normal site attenuation (NSA)	< ±4 dB at 10 m distance between item under test and receiver antenna, (30 MHz to 1000 MHz)
Field homogeneity	More than 75% of illuminated surface is between 0 and 6 dB (26 MHz to 1000 MHz).

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 35 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth	< 1 Ω

Remarks and comments

-The tests have been performed by the technical personnel: Ignacio Cabra, Miguel Ángel Torres.

-Used instrumentation:

Radiated Measurements:

		Last Calibration	Due Calibration
1.	Semianechoic Absorber Lined Chamber ETS LINDGREN FACT 3 200 STP	N.A.	N.A.
2.	EMI Test Receiver 7 GHz ROHDE AND SCHWARZ ESR7	2017/08	2019/08
3.	RF Pre-amplifier, 38 dB, 30 MHz-6 GHz BONN ELEKTRONIK BLNA 0360-01N	2018/07	2019/07
4.	Biconical/Log Antenna 30 MHz - 6 GHz ETS LINDGREN 3142E	2018/07	2021/07
5.	Signal and Spectrum Analyzer ROHDE AND SCHWARZ FSV 40	2018/02	2020/02
6.	Pre-amplifier G>30dB, 1-18GHz BONN ELEKTRONIK BLMA 0118-3A	2018/03	2019/03
7.	RF Pre-amplifier, G>48dB, 18-40GHz NARDA JS44-18004000-33-8P	2018/02	2020/02
8.	Broadband Horn antenna 1-18GHz SCHWARZBECK MESS-ELEKTRONIK BBHA 9120 D	2018/01	2021/01
9.	Broadband Horn antenna 18 - 40 GHz SCHWARZBECK MESS-ELEKTRONIK BBHA 9170	2018/07	2021/07

-Manufacturer's statement:



Description of WGM160P Variants and of Low Freq Crystal Oscillator Functionality

In the WGM160P family of Wi-Fi modules, four variants exist, and the manufacturing differences are described in the following table:

- Integral chip antenna assembled and connected to primary RF port - 32kHz crystal assembled - Orderable part number: WGM160PX22KGA2 - Known as "A" variant with generic model name: WGM160P22A	- Integral chip antenna not assembled: external antenna(s) required for normal operations - 32kHz crystal assembled - Orderable part number: WGM160PX22KGN2 - Known as "N" variant with generic model name: WGM160P22N
- Integral chip antenna assembled and connected to primary RF port - 32kHz crystal not assembled - Orderable part number: WGM160P022KGA2 - Known as "A" variant with generic model name: WGM160P22A	- Integral chip antenna not assembled: external antenna(s) required for normal operations - 32kHz crystal not assembled - Orderable part number: WGM160P022KGN2 - Known as "N" variant with generic model name: WGM160P22N

A 32.768kHz crystal is connected to the microcontroller inside the module, which contains a low-frequency crystal oscillator being used as the sleep clock for the power saving modes of the module. The microcontroller feeds the buffered 32kHz clock signal to the radio chip which uses it to schedule its sleep periods between RF operation periods.

A variant with the 32.768kHz crystal not assembled in production is provided to reduce the module cost, for customers for whom the power consumption is not as important as the cost. In the variants where the crystal has not been assembled, the software will detect its absence and will configure the microcontroller first, and consequently the radio chipset, to use internal RC clocks for sleep timing. The radio listen periods will be widened too, due to the lower timing precision, with the only side effect of increasing the average current consumption.

All RF operation is correlated to a separate, high precision, thermally compensated, crystal which is connected to the radio chipset, and which is used among others for all precision timings required by the radio communication. Nothing that affects radio operation depends on the low frequency crystal.

The printed circuit board with all the variants is identical, as is the software and all settings.

Testing verdicts

Not applicable:	N/A
Pass:	P
Fail:	F
Not measured:	N/M

Summary

WiFi 2.4 GHz (802.11b/g/n).

FCC PART 15 PARAGRAPH / RSS-247			
Requirement – Test case		Verdict	Remark
Section 15.247 Subclause (a) (2) / RSS-247 5.2. (a)	6 dB Bandwidth	N/M	See (1)
Section 15.247 Subclause (b) / RSS-247 5.4. (d)	Maximum output power and antenna gain	N/M	See (1)
Section 15.247 Subclause (d) / RSS-247 5.5	Emission limitations conducted (Transmitter)	N/M	See (1)
Section 15.247 Subclause (d) / RSS-247 5.5.	Band-edge emissions compliance (Transmitter)	P	
Section 15.247 Subclause (e) / RSS-247 5.2. (b)	Power spectral density	N/M	See (1)
Section 15.247 Subclause (d) / RSS-247 5.5.	Emission limitations radiated (Transmitter)	P	
Supplementary information and remarks:			
(1) Test not requested. Only radiated emissions test was requested when operating with the on-board dielectric chip antenna. The radiated emission test results for port RF2 and the conducted test results for ports RF1 and RF2 are included in a separated test report 59573RRF.001 for model WGM160P22N (ordering code WGM160PX22KGN2), whose antenna ports RF1 and RF2 are identical to those of model WGM160P22A (ordering code WGM160PX22KGA2). The only difference is that port RF1 in model WGM160P22A is connected to a on-board dielectric chip antenna.			

Appendix A: Test results.

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TEST CONDITIONS

POWER SUPPLY (V):

V nominal:	3.3 Vdc
Type of power supply:	DC voltage.
Type of Antenna:	On-board dielectric chip.
Declared Antenna Gain:	1.86 dBi

TEST FREQUENCIES:

Low Channel:	2412 MHz
Middle Channel:	2437 MHz
High Channel:	2462 MHz

RADIATED MEASUREMENTS

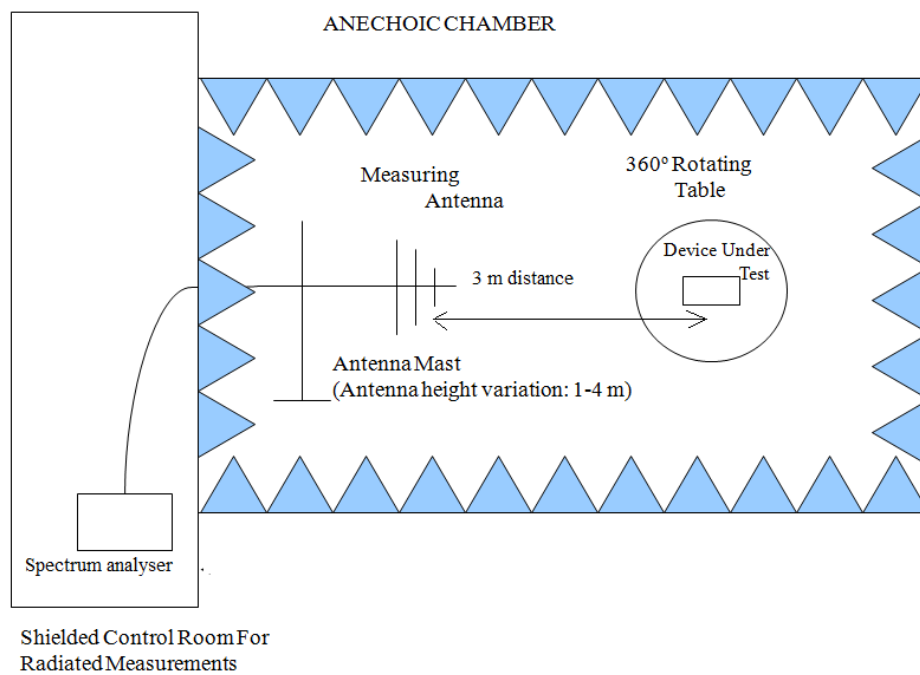
All radiated tests were performed in a semi-anechoic chamber. The measurement antenna (Bilog antenna for the range between 30 MHz to 1000 MHz) is situated at a distance of 3 m and at a distance of 1m for the frequency range 1 GHz-26 GHz (1 GHz-18 GHz Double ridge horn antenna and 18 GHz-40 GHz horn antenna).

For radiated emissions in the range 1 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

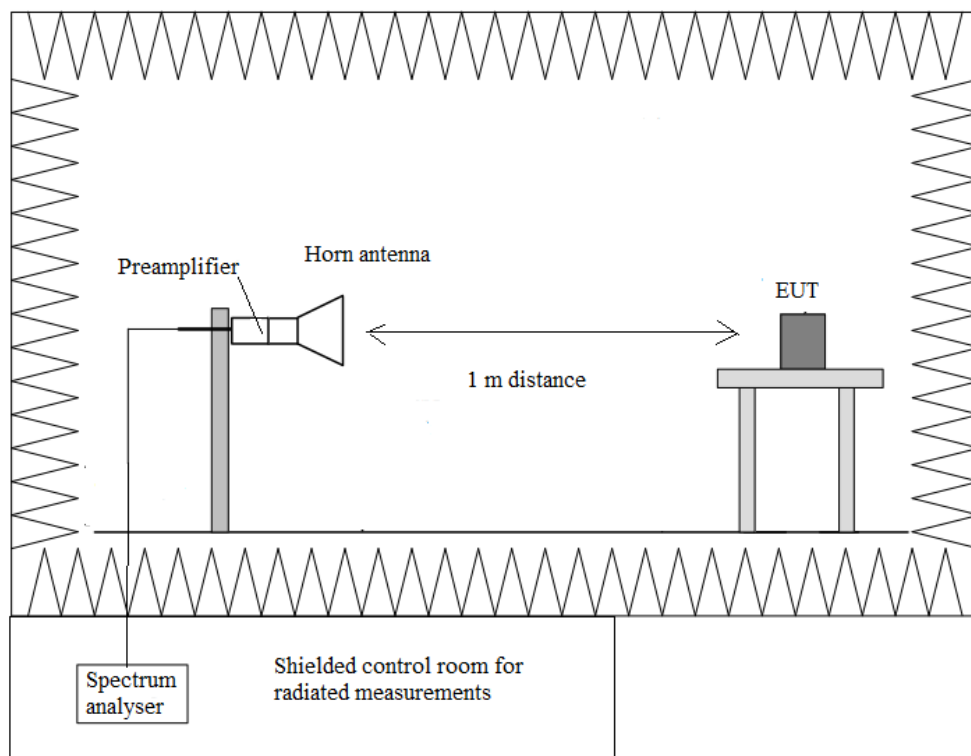
The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height (Bilog antenna and Double ridge horn antenna) was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements setup $f > 1$ GHz:



FCC Section 15.247 Subclause (d) / RSS-247 Clause 5.5. Emission limitations radiated (Transmitter)

SPECIFICATION:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)/RSS-Gen):

Frequency Range (MHz)	Field strength ($\mu\text{V/m}$)	Field strength ($\text{dB}\mu\text{V/m}$)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 10000	500	54	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

RSS-247: Attenuation below the general field strength limits specified in RSS-Gen is not required.

RESULTS:

The situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

All tests were performed in a semi-anechoic chamber at a distance of 3 m for the frequency range 30 MHz-1000 MHz and at distance of 1m for the frequency range 1 GHz-26 GHz.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

The field strength at the restricted bands and band edges was evaluated for each mode on the lowest and highest channels at the rated power for the channel under test. Where the power at the edge channels was lower than the power at the center channels additional measurements were made at the adjacent channels.

• **Mode 802.11 b**

Frequency range 30 MHz - 1 GHz:

The spurious frequencies do not depend on the operating channel.

No spurious frequencies were found at less than 20 dB below the limit.

Frequency range 1 - 26 GHz:

The results in the next tables show the maximum measured levels in the 1-26 GHz range including the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz.

Spurious signals with peak levels above the average limit (54 dB μ V/m at 3 m) are measured with average detector for checking compliance with the average limit.

- LOW CHANNEL. Spurious frequencies closest to the limit:

Spurious frequency (GHz)	Detector	Emission Level (dB μ V/m)	Polarization	Measurement Uncertainty (dB)
9.64790	Peak	46.80	H	< $\pm$ 3.70

- MIDDLE CHANNEL. Spurious frequencies closest to the limit:

Spurious frequency (GHz)	Detector	Emission Level (dB μ V/m)	Polarization	Measurement Uncertainty (dB)
9.74835	Peak	46.61	V	< $\pm$ 3.70

- HIGH CHANNEL. Spurious frequencies closest to the limit:

Spurious frequency (MHz)	Detector	Emission Level (dB μ V/m)	Polarization	Measurement Uncertainty (dB)
9.84790	Peak	46.88	H	< $\pm$ 3.70

- RESTRICTED BAND 1 (2.31 - 2.39 GHz). Spurious frequencies closest to the limit:

Channel	Spurious frequency (GHz)	Detector	Emission Level (dB μ V/m)	Polarization	Measurement Uncertainty (dB)
CH 1	2.38985	Peak	58.96	H	< $\pm$ 3.70
		Average	51.78		< $\pm$ 3.70
CH 2	2.38811	Peak	58.45	H	< $\pm$ 3.70
		Average	51.84		< $\pm$ 3.70
CH 3	2.38550	Peak	57.55	H	< $\pm$ 3.70
		Average	51.66		< $\pm$ 3.70
CH 4	2.38991	Peak	56.57	H	< $\pm$ 3.70
		Average	49.74		< $\pm$ 3.70

- RESTRICTED BAND 2 (2.4835 - 2.5 GHz). Spurious frequencies closest to the limit:

Channel	Spurious frequency (GHz)	Detector	Emission Level (dBμV/m)	Polarization	Measurement Uncertainty (dB)
CH 8	2.48728	Peak	54.66	H	<±3.70
		Average	46.26		<±3.70
CH 9	2.48929	Peak	54.72	H	<±3.70
		Average	46.27		<±3.70
CH 10	2.48570	Peak	55.35	H	<±3.70
		Average	46.62		<±3.70
CH 11	2.48379	Peak	56.80	H	<±3.70
		Average	50.26		<±3.70

Verdict: PASS

OFDM modes:

For spurious emissions in the range 30 MHz - 26 GHz (except field strength at the band edges that was performed for all modes) a preliminary scan was performed to determine the worst case mode. Herein the results for the worst case mode: 802.11g.

Spurious emissions in the Restricted Band 1 and Restricted Band 2 are measured for all modes.

- **Mode 802.11 g (OFDM worst case for spurious emissions)**

Frequency range 30 MHz - 1 GHz:

The spurious frequencies do not depend on the operating channel.

No spurious frequencies at less than 20 dB below the limit.

Frequency range 1 - 26 GHz:

The results in the next tables show the maximum measured levels in the 1-25 GHz range including the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz.

Spurious signals with peak levels above the average limit (54 dBµV/m at 3 m) are measured with average detector for checking compliance with the average limit.

- LOW CHANNEL. Spurious frequencies closest to the limit:

Spurious frequency (GHz)	Detector	Emission Level (dBµV/m)	Polarization	Measurement Uncertainty (dB)
9.64779	Peak	47.22	H	<± 3.70

- MIDDLE CHANNEL. Spurious frequencies closest to the limit:

Spurious frequency (GHz)	Detector	Emission Level (dBµV/m)	Polarization	Measurement Uncertainty (dB)
9.74761	Peak	46.69	H	<± 3.70

- HIGH CHANNEL. Spurious frequencies closest to the limit:

Spurious frequency (GHz)	Detector	Emission Level (dBµV/m)	Polarization	Measurement Uncertainty (dB)
9.84804	Peak	46.96	H	<± 3.70

- RESTRICTED BAND 1 (2.31 - 2.39 GHz). Spurious frequencies closest to the limit:

Channel	Spurious frequency (GHz)	Detector	Emission Level (dBμV/m)	Polarization	Measurement Uncertainty (dB)
CH 1	2.38996	Peak	68.54	H	<±3.70
		Average	51.98		<±3.70
CH 2	2.38819	Peak	72.31	H	<±3.70
		Average	50.96		<±3.70
CH 3	2.38100	Peak	73.8	H	<±3.70
		Average	51.24		<±3.70
CH 4	2.38950	Peak	71.99	H	<±3.70
		Average	51.20		<±3.70

- RESTRICTED BAND 2 (2.4835 - 2.5 GHz). Spurious frequencies closest to the limit:

Channel	Spurious frequency (GHz)	Detector	Emission Level (dBμV/m)	Polarization	Measurement Uncertainty (dB)
CH 8	2.48393	Peak	69.14	H	<±3.70
		Average	50.20		<±3.70
CH 9	2.48469	Peak	73.96	H	<±3.70
		Average	52.35		<±3.70
CH 10	2.48399	Peak	71.21	H	<±3.70
		Average	50.62		<±3.70
CH 11	2.48362953	Peak	70.62	H	<±3.70
		Average	53.07		<±3.70

Verdict: PASS

• **Mode 802.11 n20**

The results in the next tables show the maximum measured levels in the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz.

Spurious signals with peak levels above the average limit (54 dB μ V/m at 3 m) are measured with average detector for checking compliance with the average limit.

- RESTRICTED BAND 1 (2.31 - 2.39 GHz). Spurious frequencies closest to the limit:

Channel	Spurious frequency (GHz)	Detector	Emission Level (dB μ V/m)	Polarization	Measurement Uncertainty (dB)
CH 1	2.38991	Peak	69.92	H	< $\pm$ 3.70
		Average	50.94		< $\pm$ 3.70
CH 2	2.38993	Peak	73.77	H	< $\pm$ 3.70
		Average	52.08		< $\pm$ 3.70
CH 3	2.38824	Peak	73.09	H	< $\pm$ 3.70
		Average	52.02		< $\pm$ 3.70
CH 4	2.38880	Peak	72.05	H	< $\pm$ 3.70
		Average	50.05		< $\pm$ 3.70

- RESTRICTED BAND 2 (2.4835 - 2.5 GHz). Spurious frequencies closest to the limit:

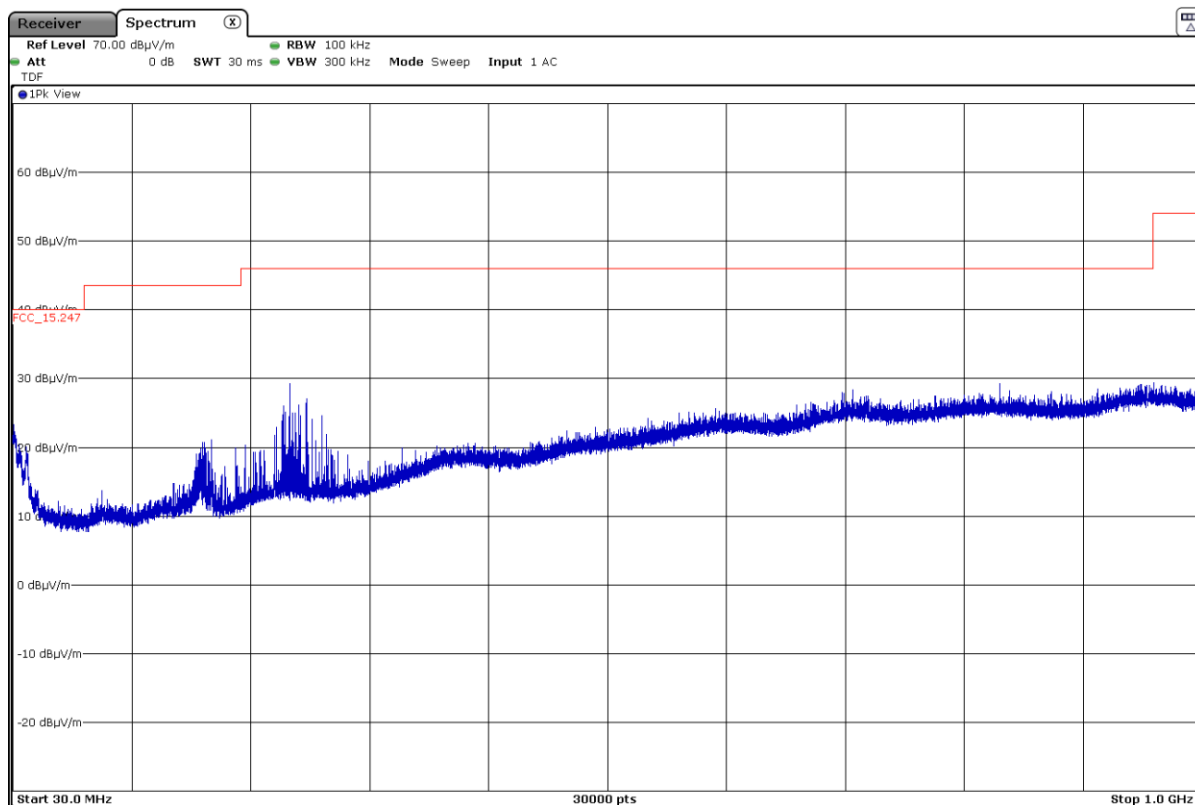
Channel	Spurious frequency (GHz)	Detector	Emission Level (dB μ V/m)	Polarization	Measurement Uncertainty (dB)
CH 8	2.48528	Peak	68.80	H	< $\pm$ 3.70
		Average	48.81		< $\pm$ 3.70
CH 9	2.48528	Peak	72.92	H	< $\pm$ 3.70
		Average	52.05		< $\pm$ 3.70
CH 10	2.48385	Peak	72.95	H	< $\pm$ 3.70
		Average	53.46		< $\pm$ 3.70
CH 11	2.48364	Peak	69.95	H	< $\pm$ 3.70
		Average	53.02		< $\pm$ 3.70

Verdict: PASS

- **Mode 802.11 b.**

FREQUENCY RANGE 30 MHz - 1 GHz:

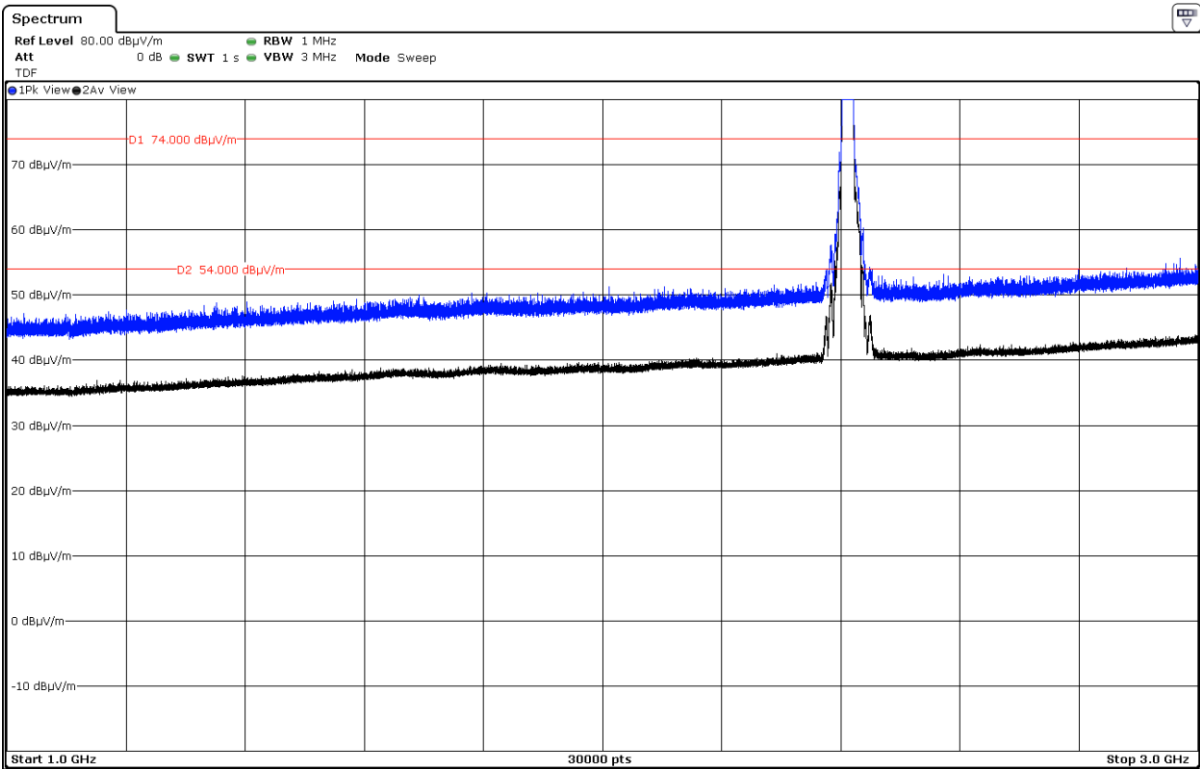
The spurious signals detected do not depend on the operating channel.



Note: This plot is valid for all three channels.

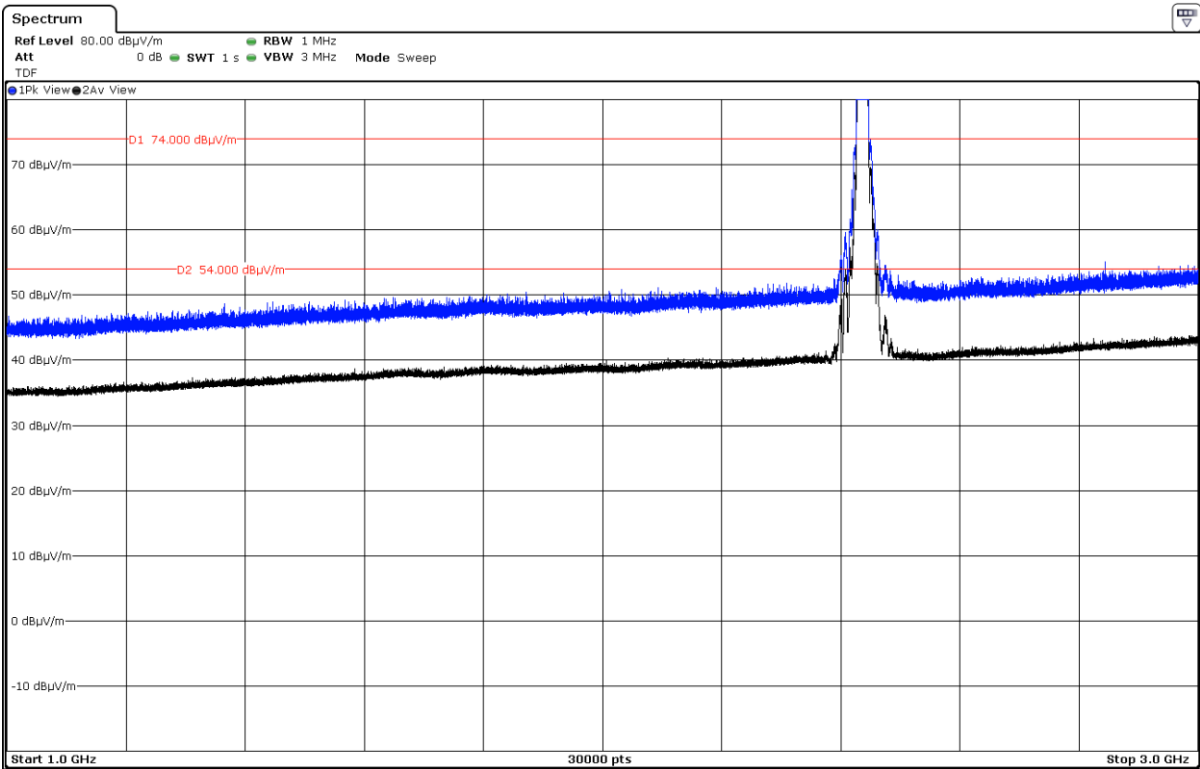
FREQUENCY RANGE 1 - 3 GHz:

- Low Channel:



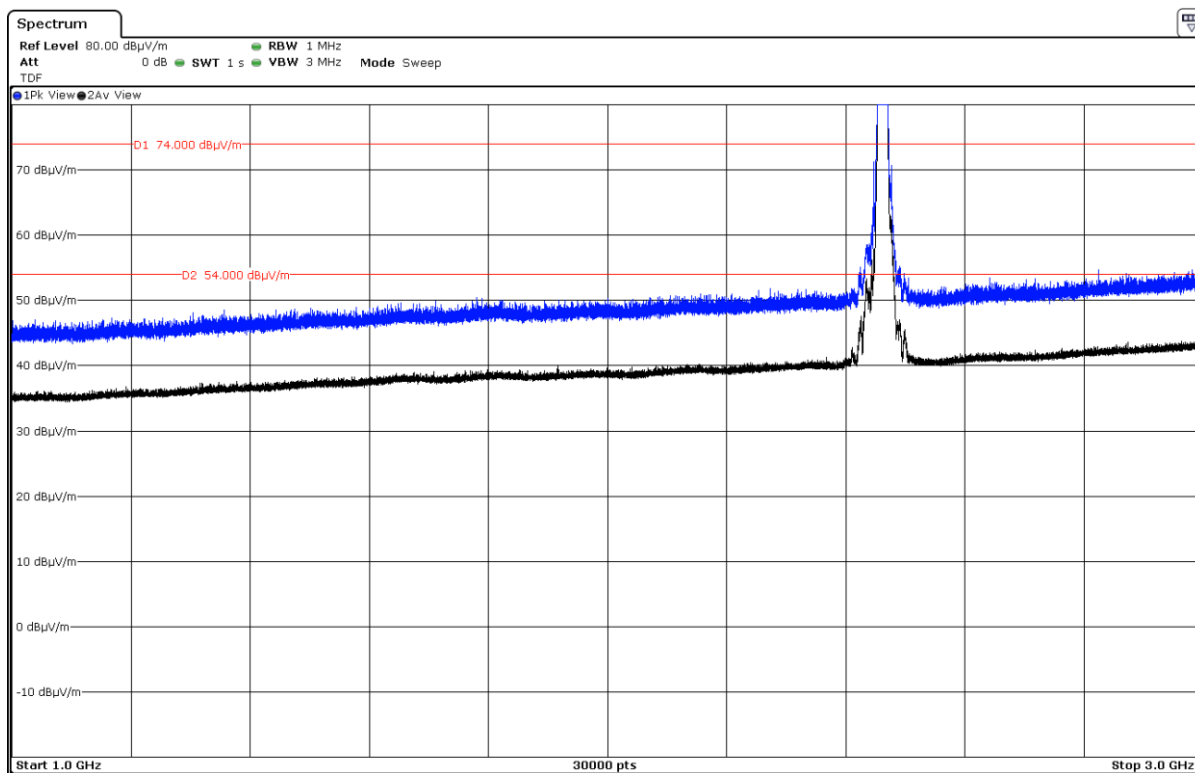
The peak above the limit is the carrier frequency.

- Middle Channel:



The peak above the limit is the carrier frequency.

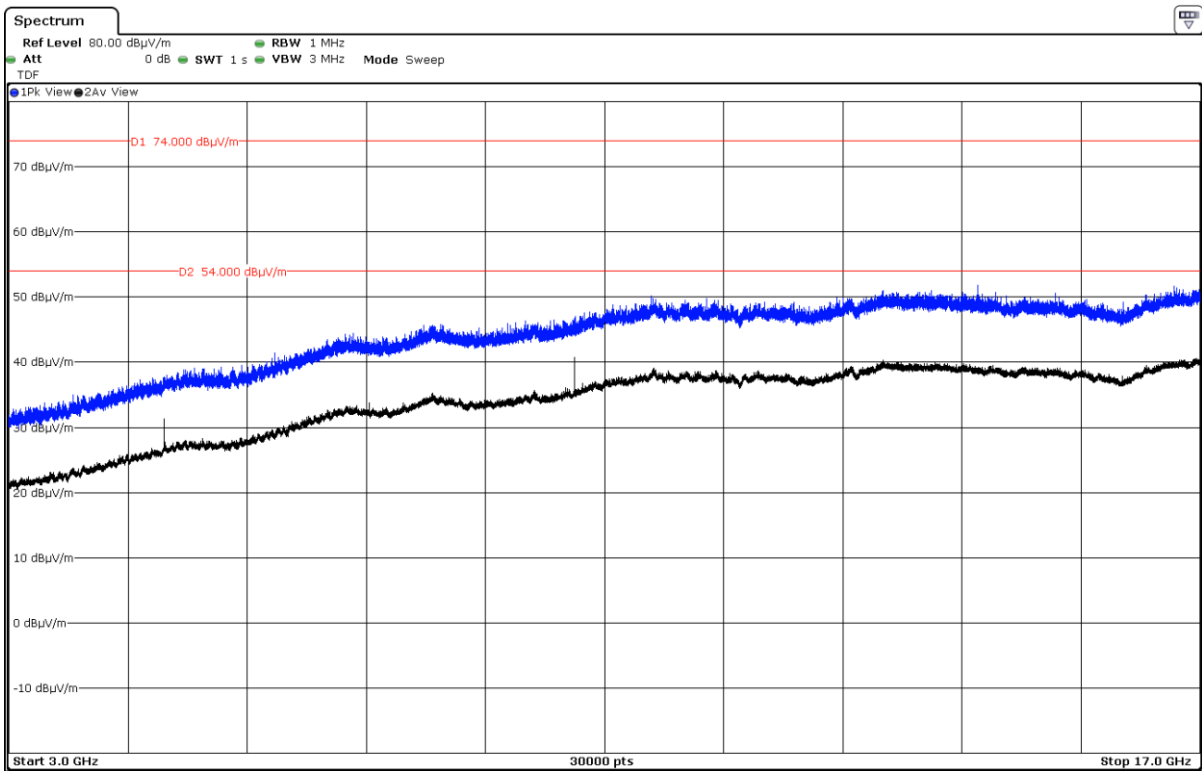
- High Channel:



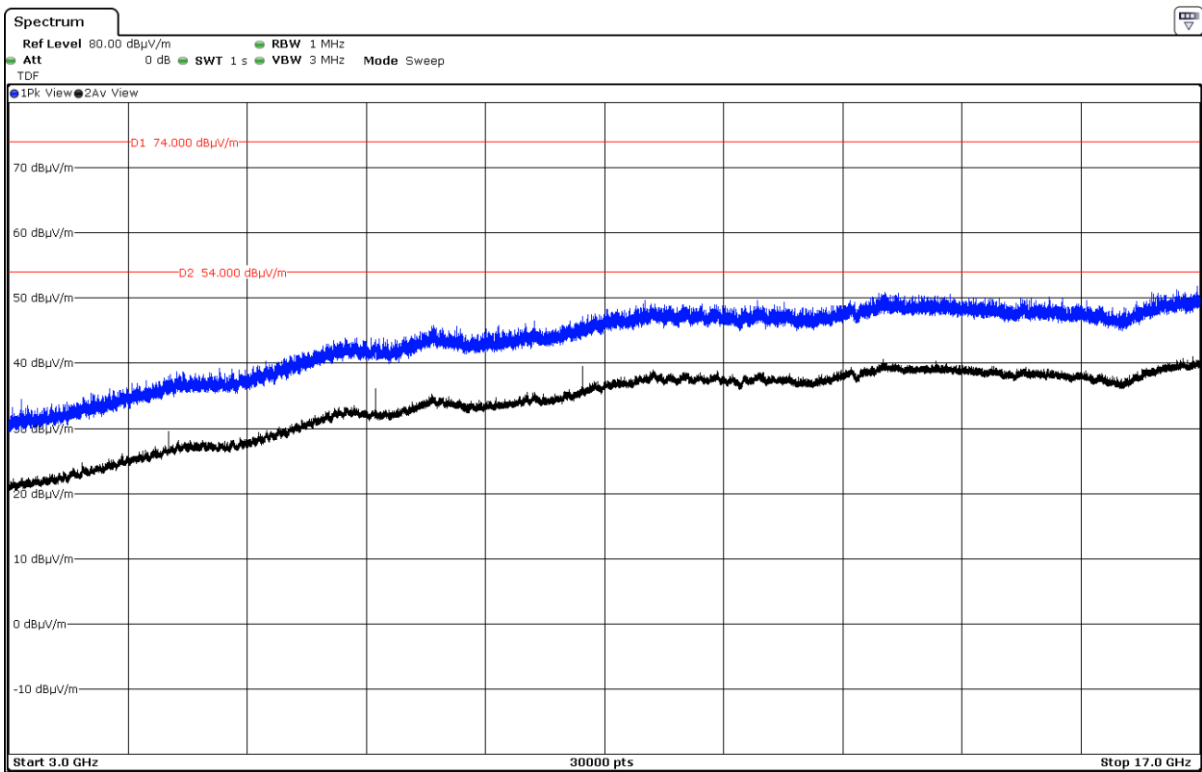
The peak above the limit is the carrier frequency.

FREQUENCY RANGE 3 - 17 GHz:

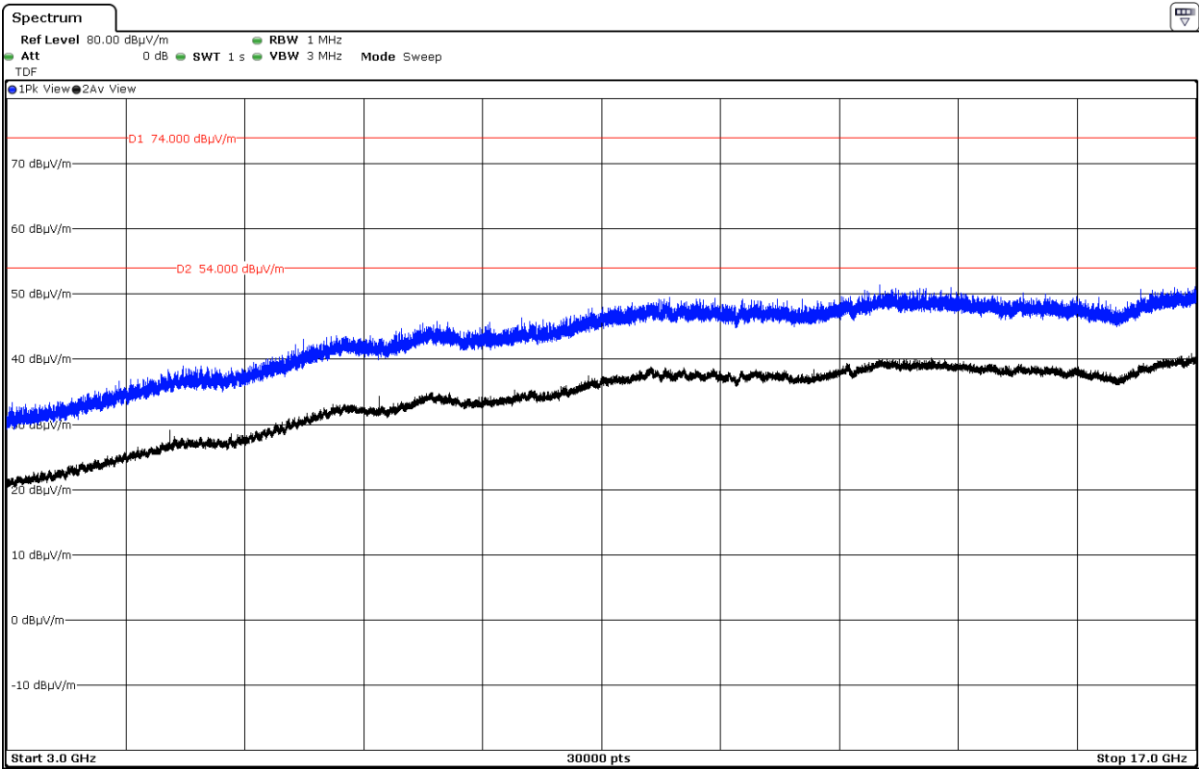
- Low Channel:



- Middle Channel:

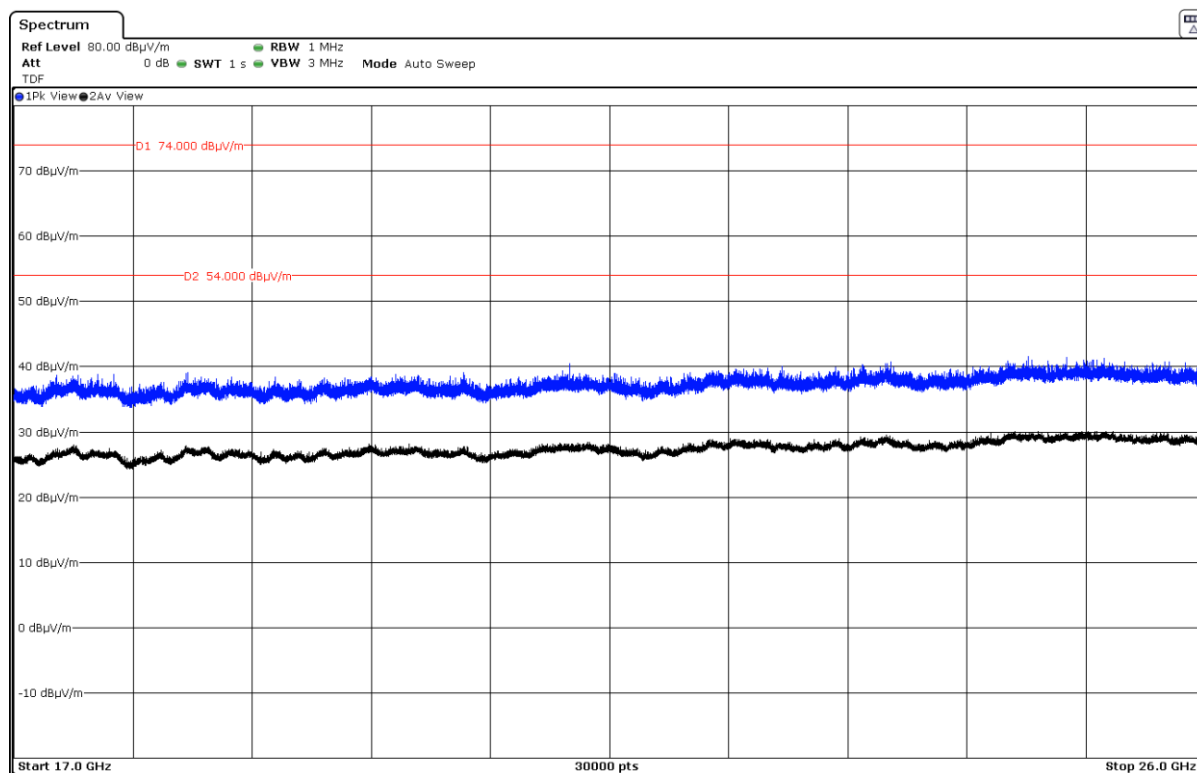


- High Channel:



FREQUENCY RANGE 17 - 26 GHz:

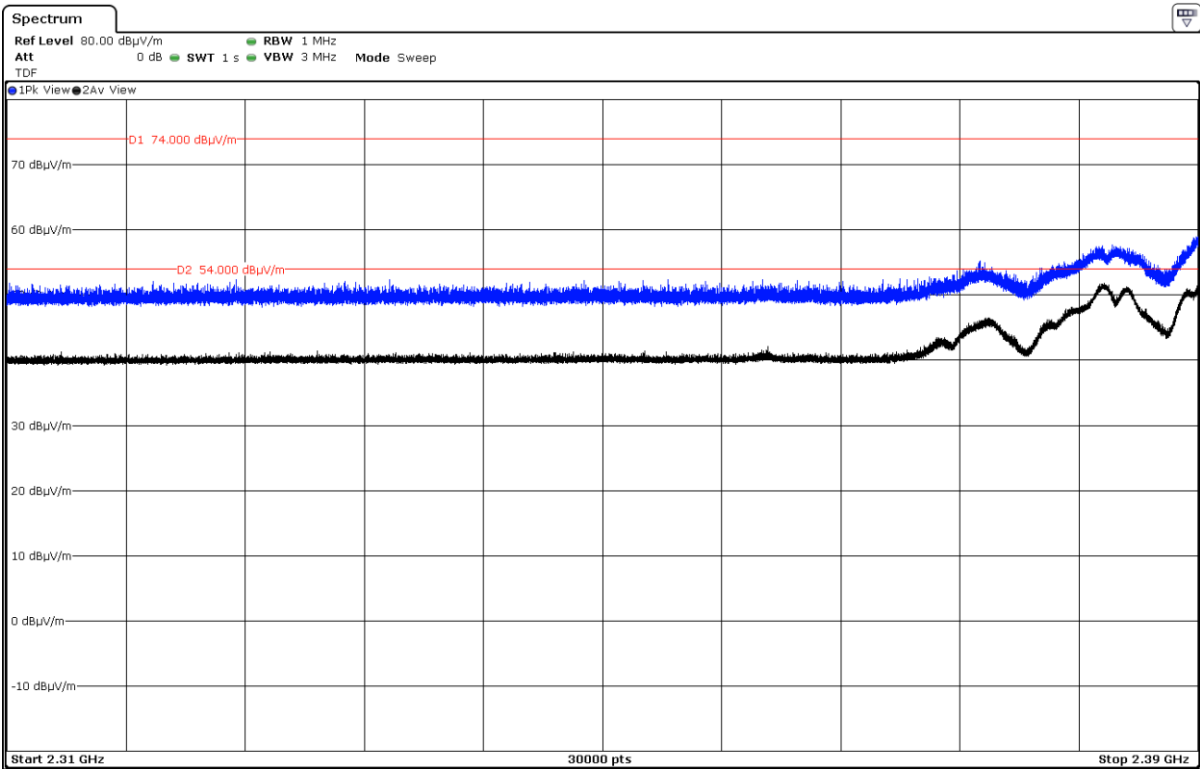
The spurious signals detected do not depend on the operating channel.



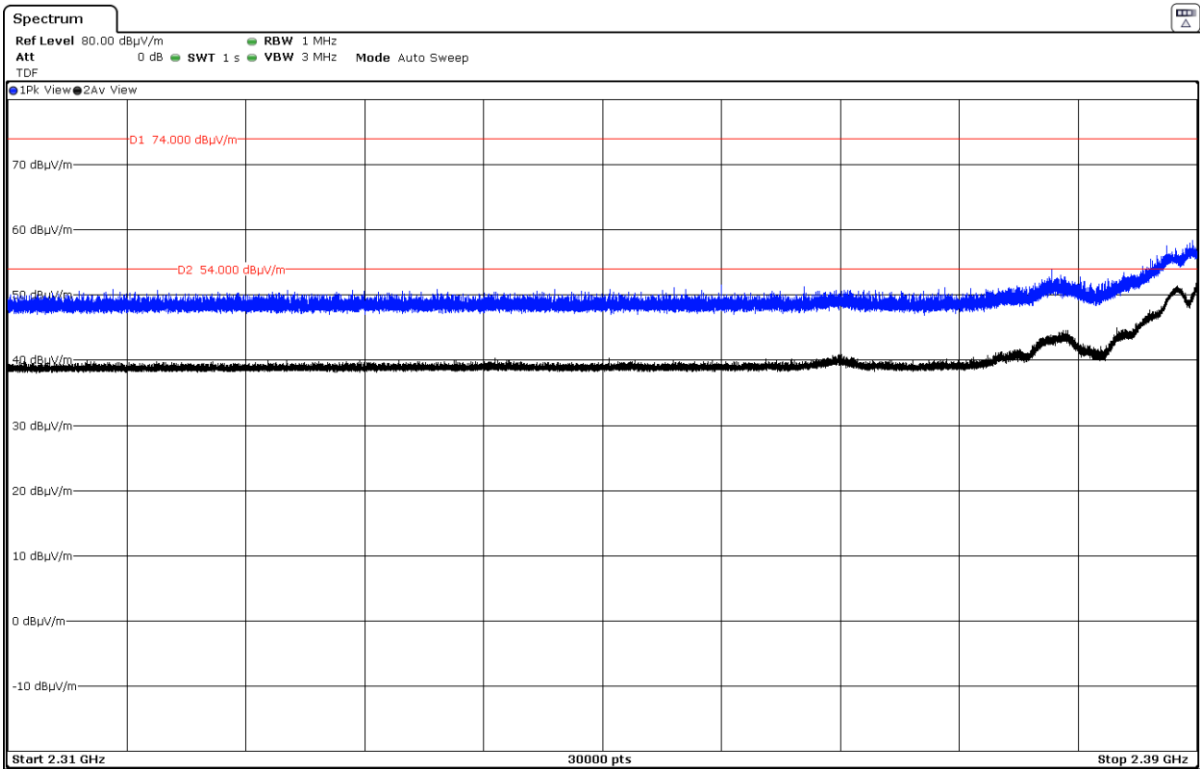
Note: This plot is valid for all three channels.

FREQUENCY RANGE 2.31-2.39 GHz (Restricted Band 1):

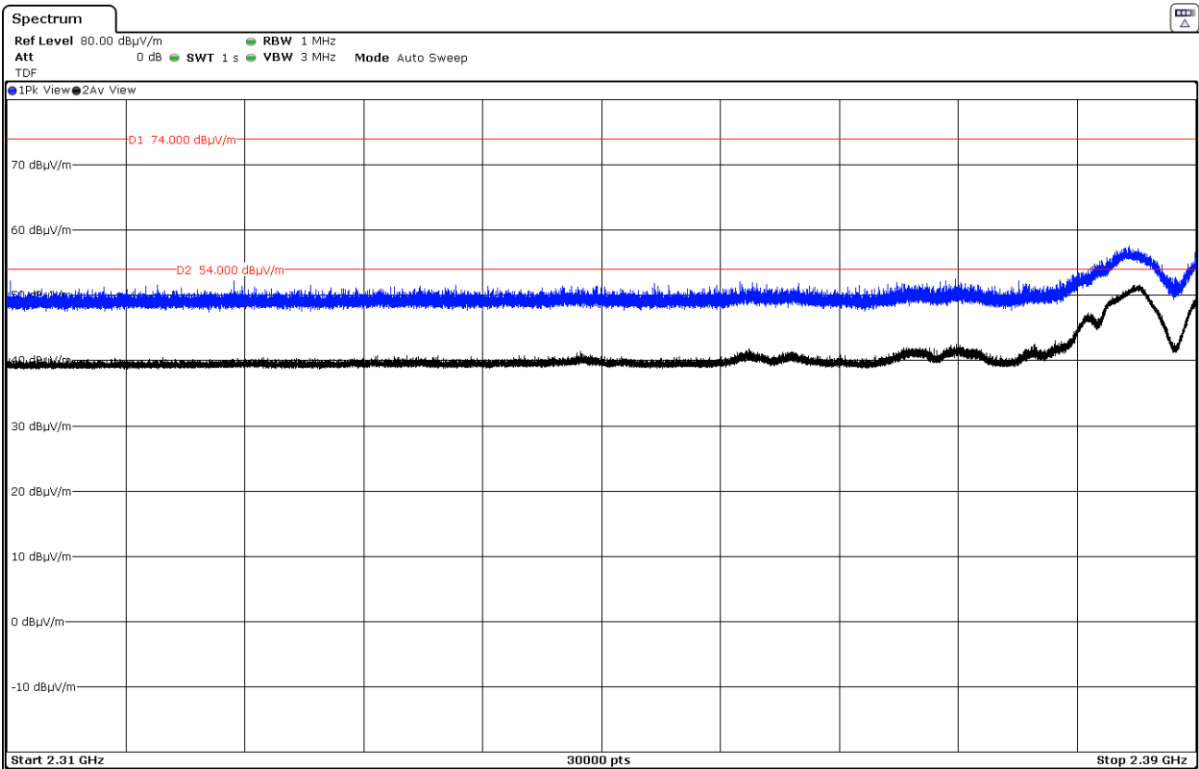
- Low Channel. CH 1:



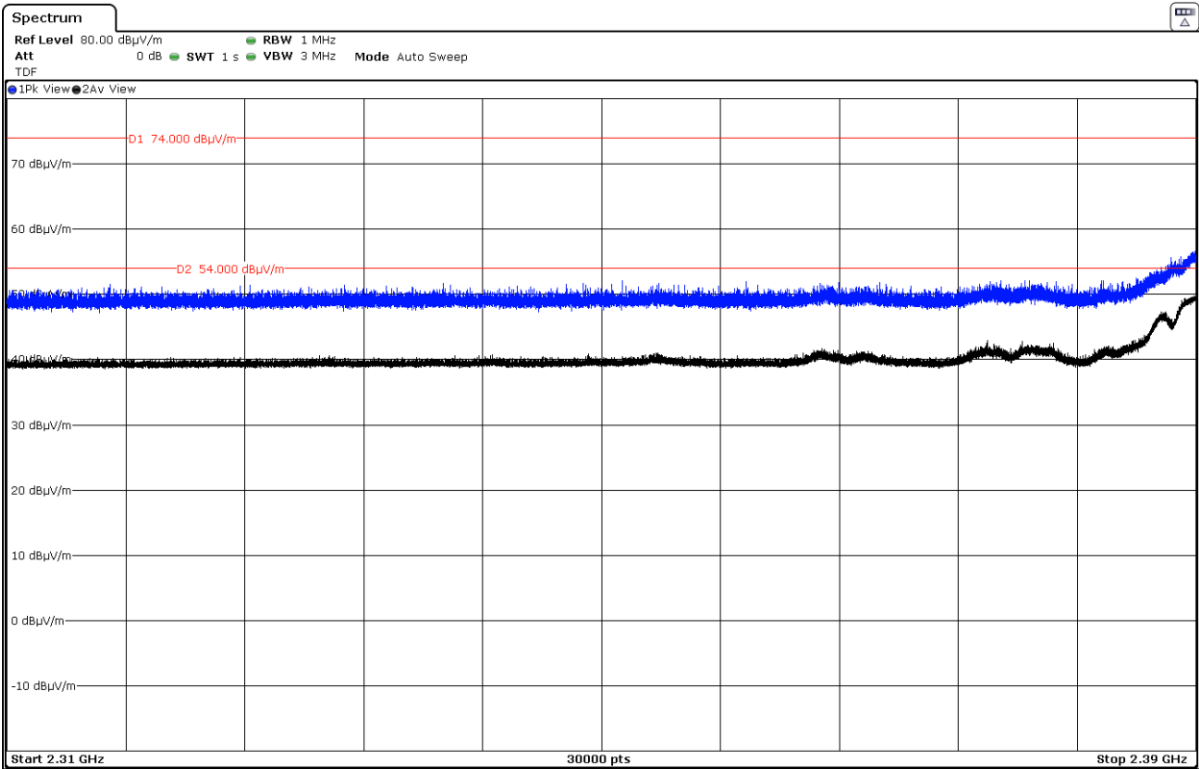
- CH 2:



- CH 3:

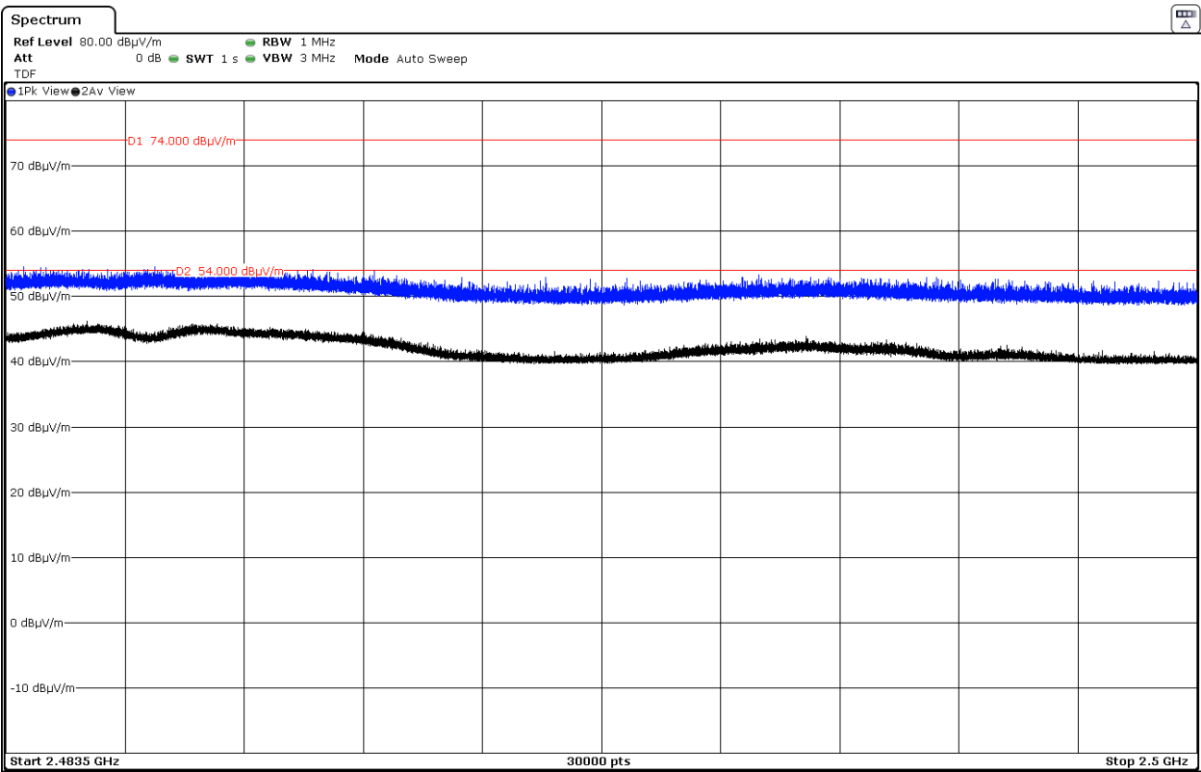


- CH 4:

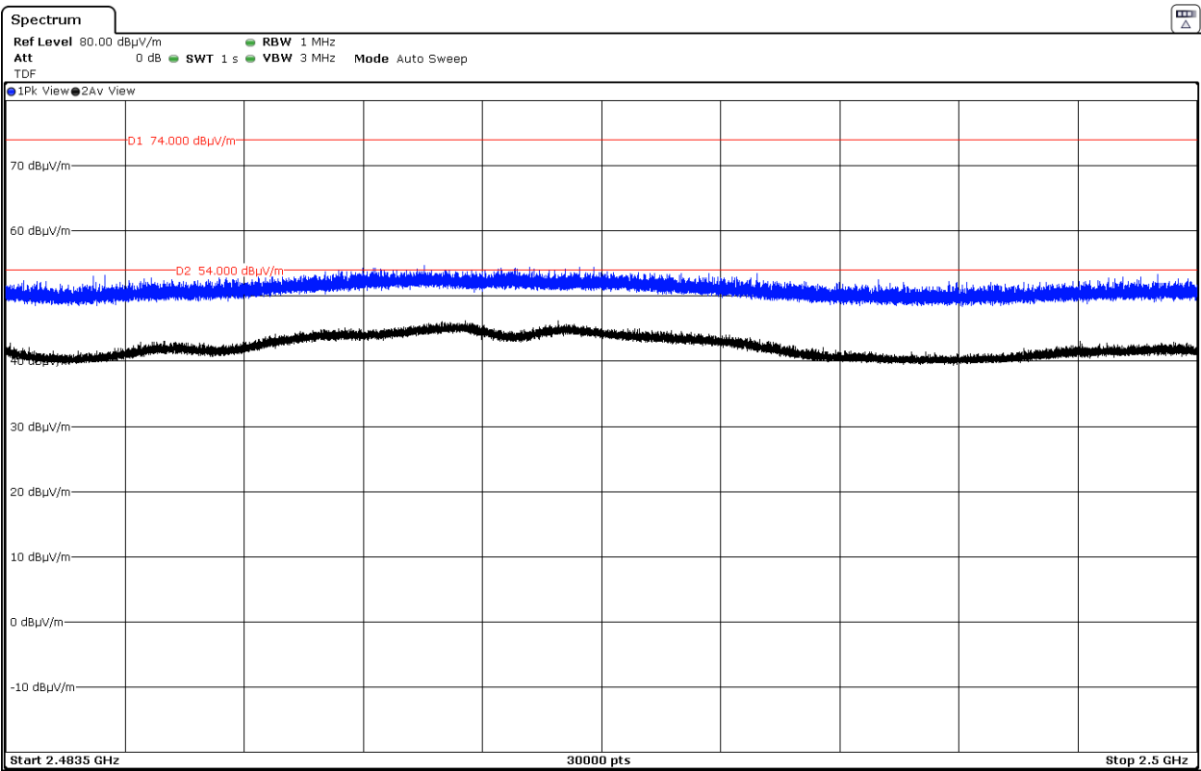


FREQUENCY RANGE 2.4835-2.5 GHz (Restricted Band 2):

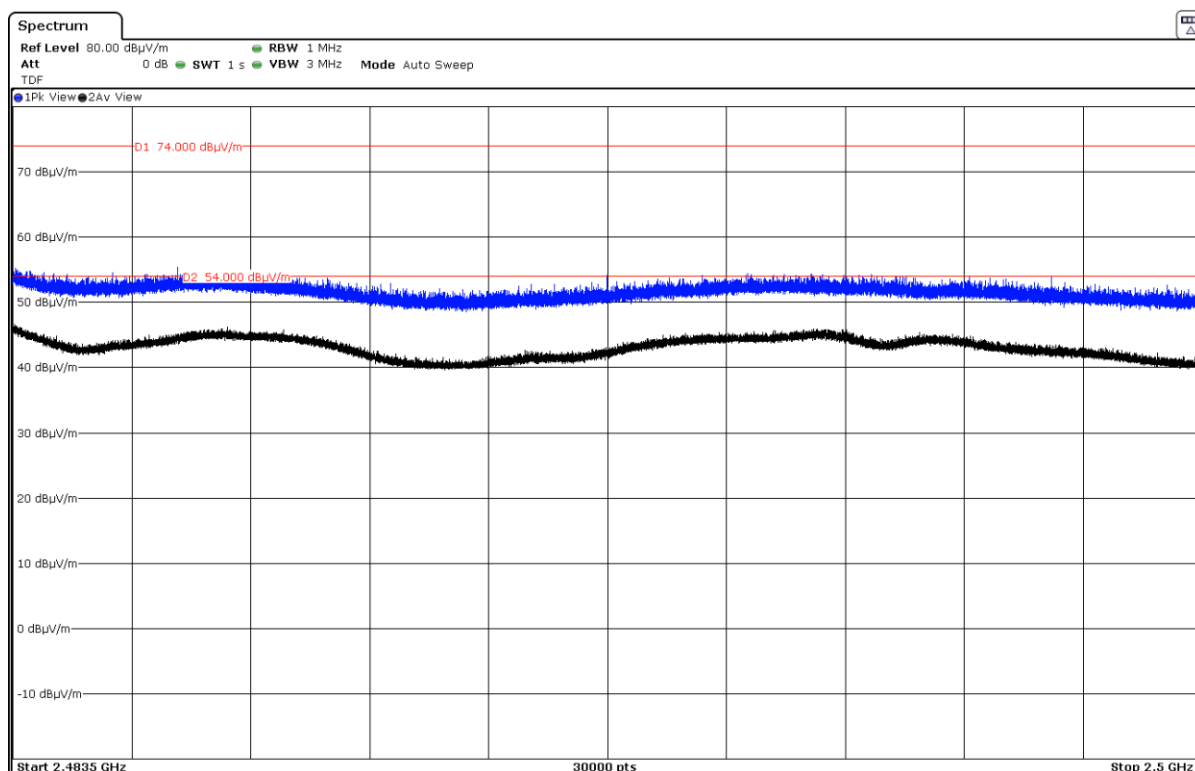
- CH 8:



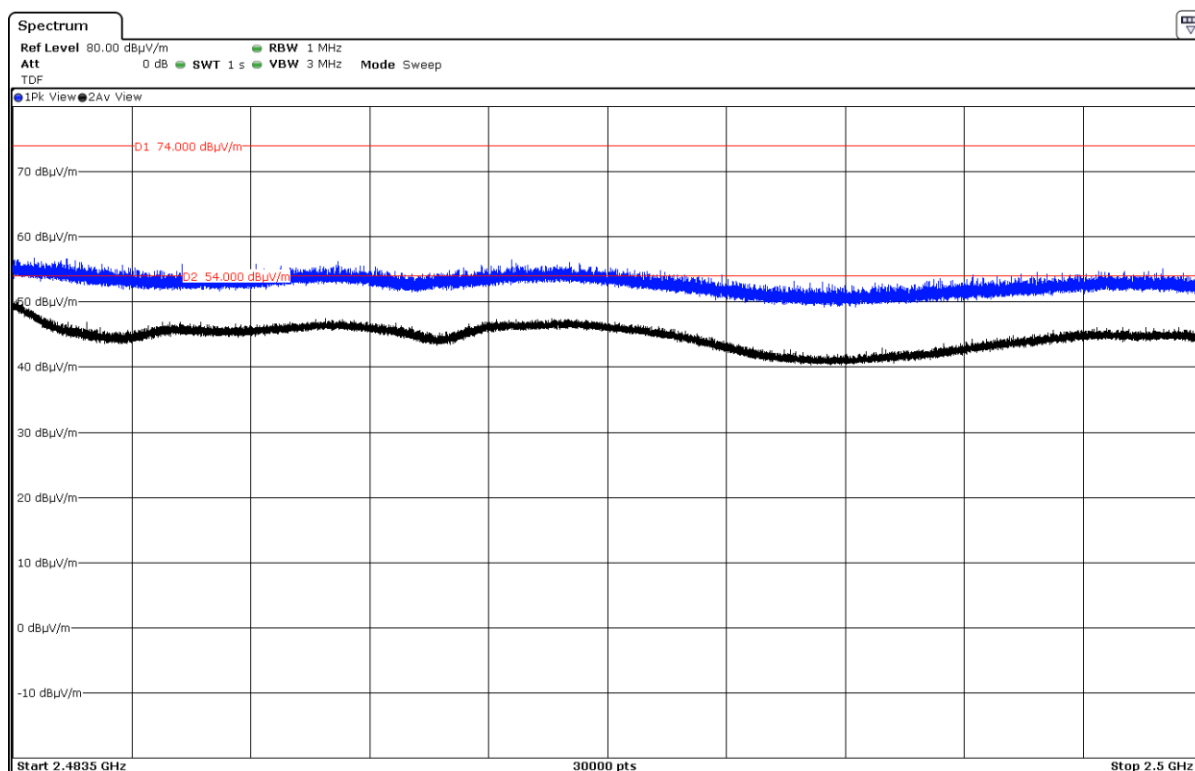
- CH 9:



- CH 10:



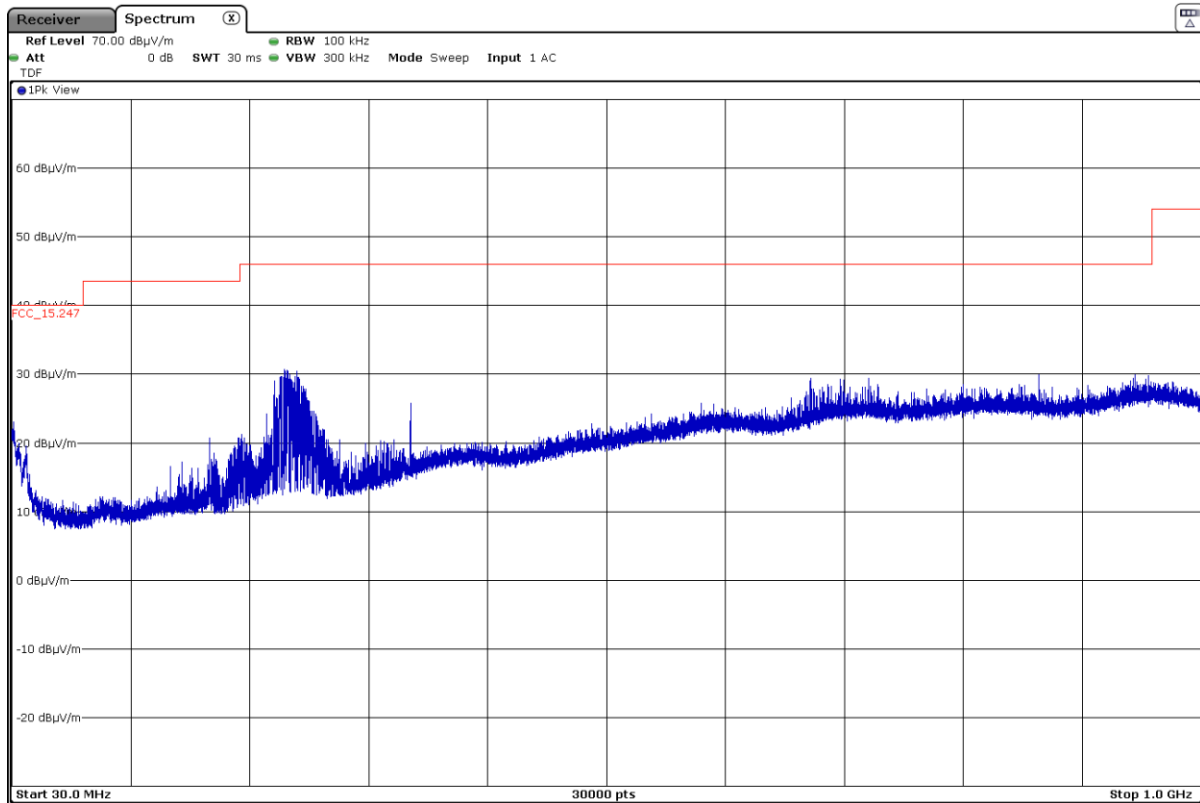
- High Channel. CH 11:



- **Mode 802.11 g (OFDMworst case for spurious emissions).**

FREQUENCY RANGE 30 MHz - 1 GHz:

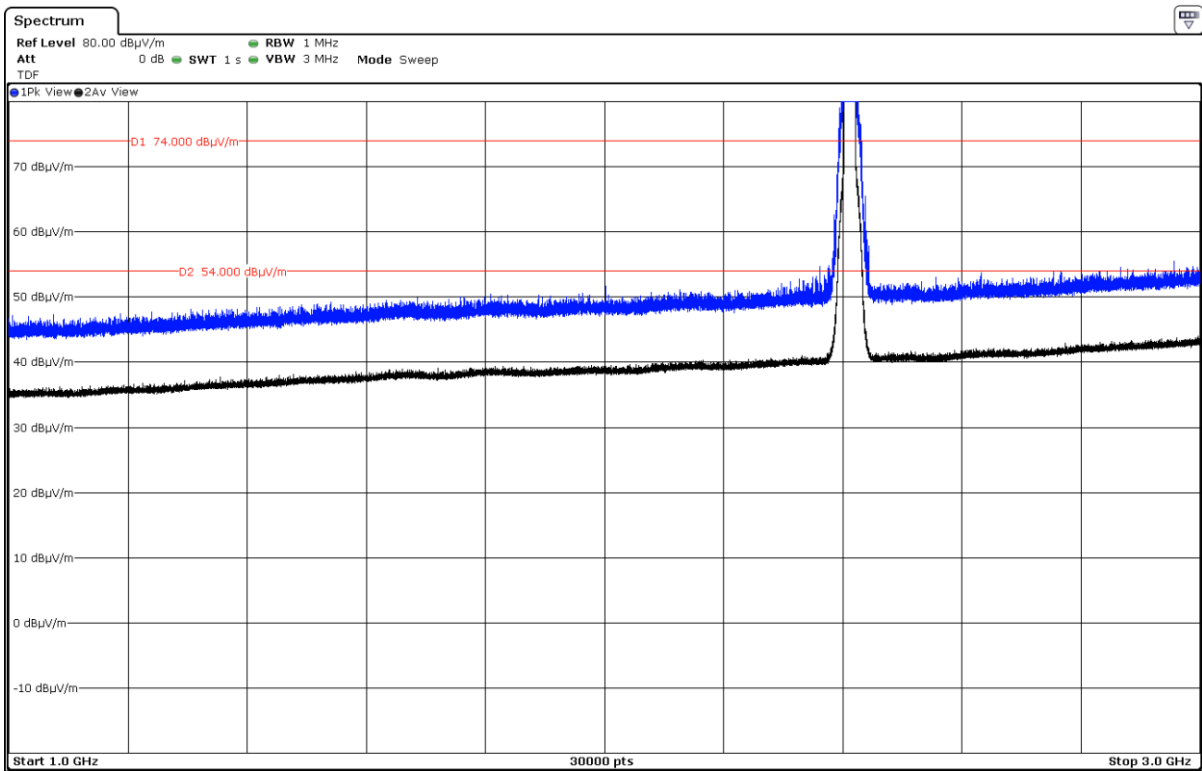
The spurious signals detected do not depend on the operating channel.



Note: This plot is valid for all three channels.

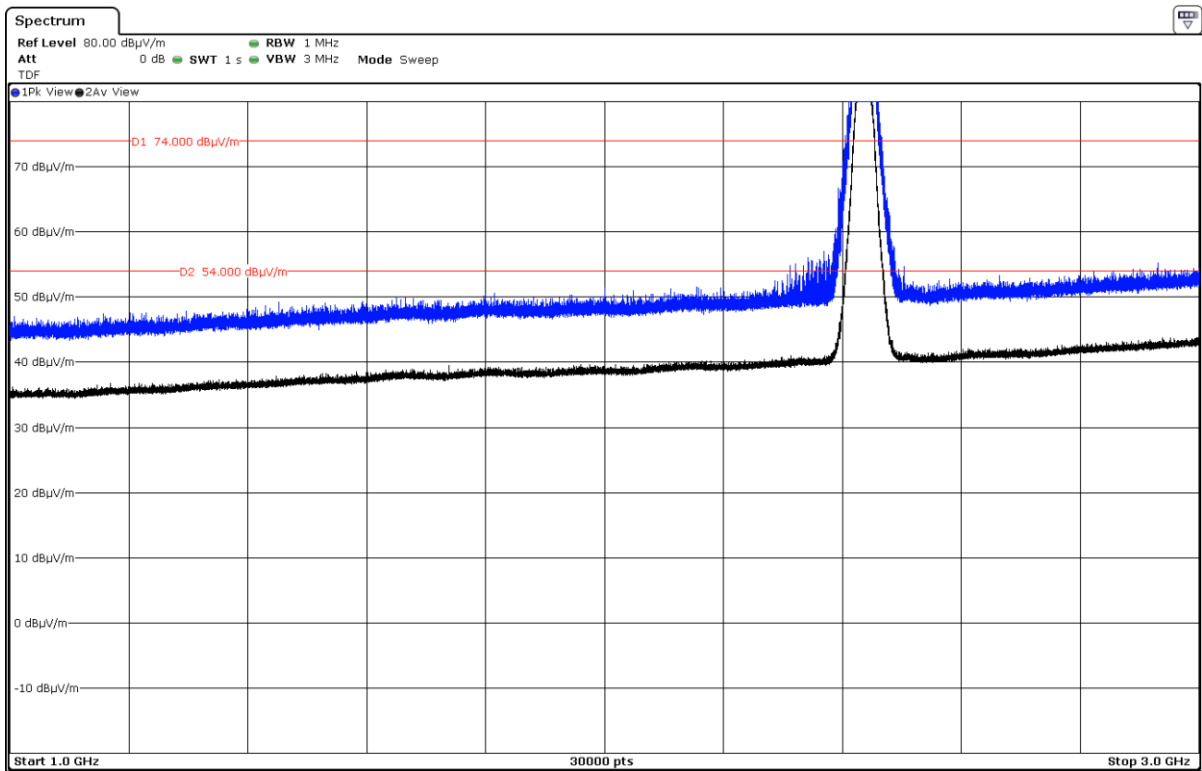
FREQUENCY RANGE 1 - 3 GHz:

- Low Channel:



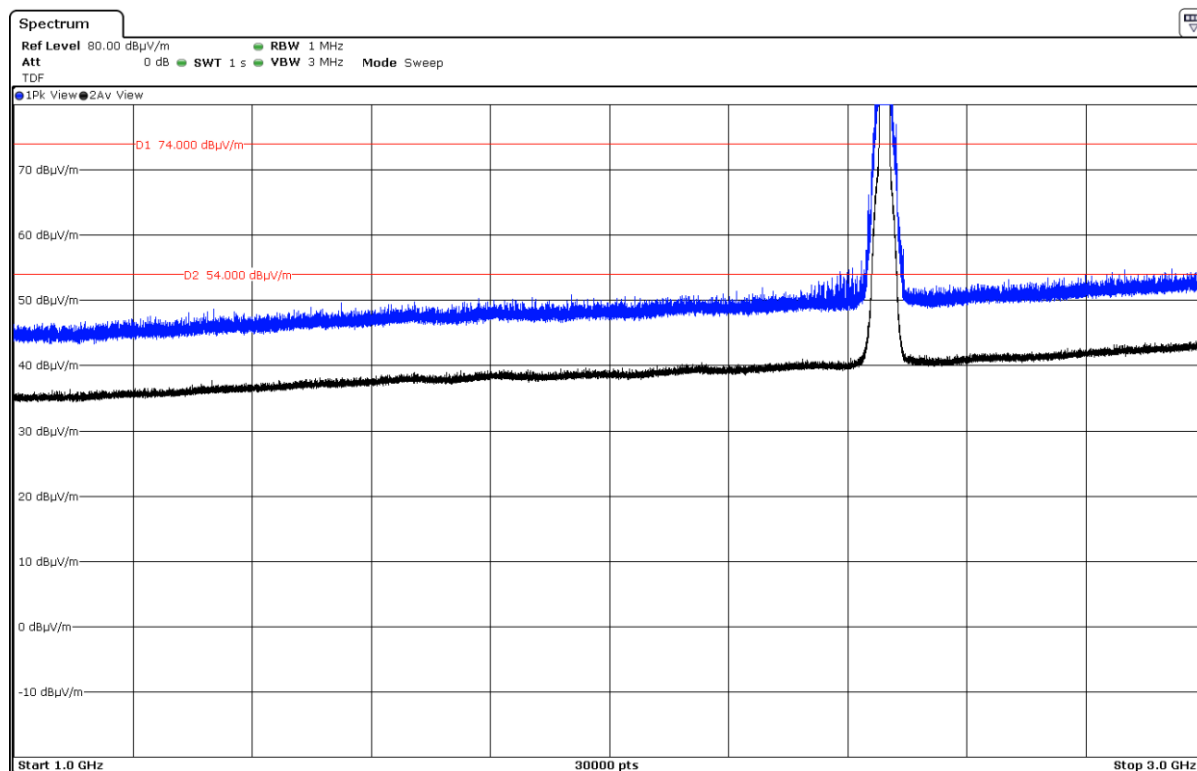
The peak above the limit is the carrier frequency.

- Middle Channel:



The peak above the limit is the carrier frequency.

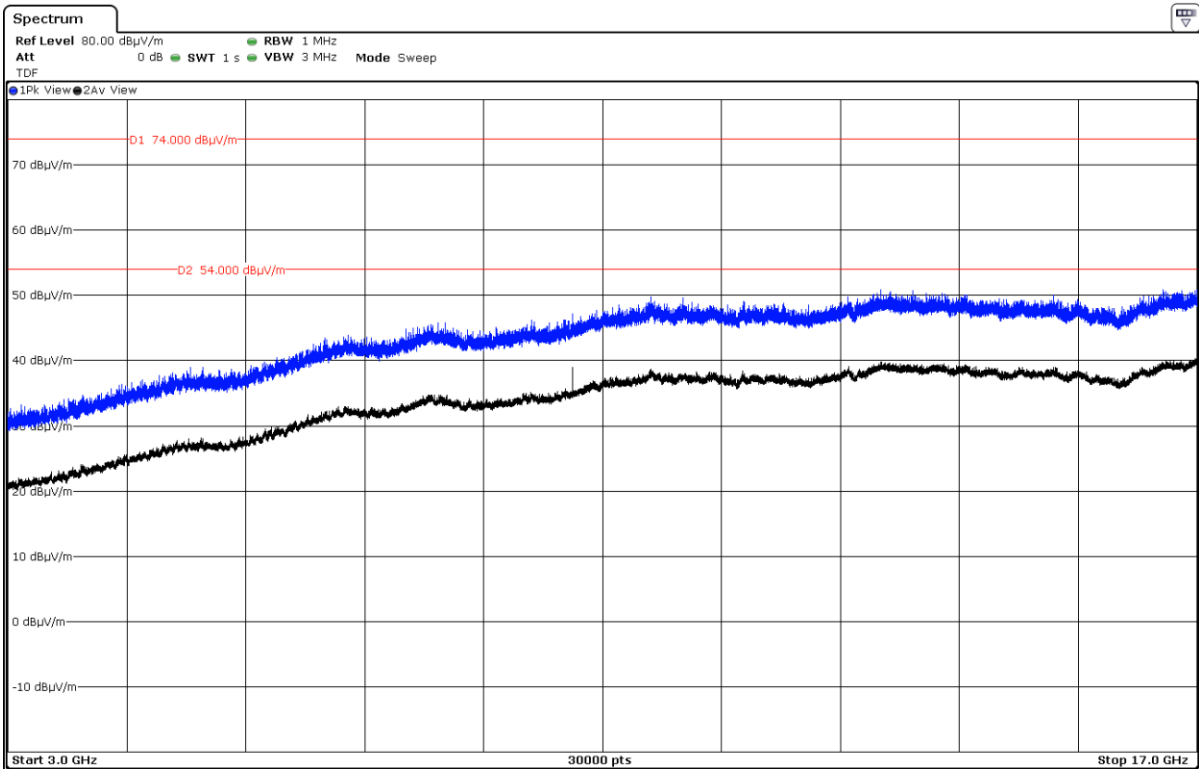
- High Channel:



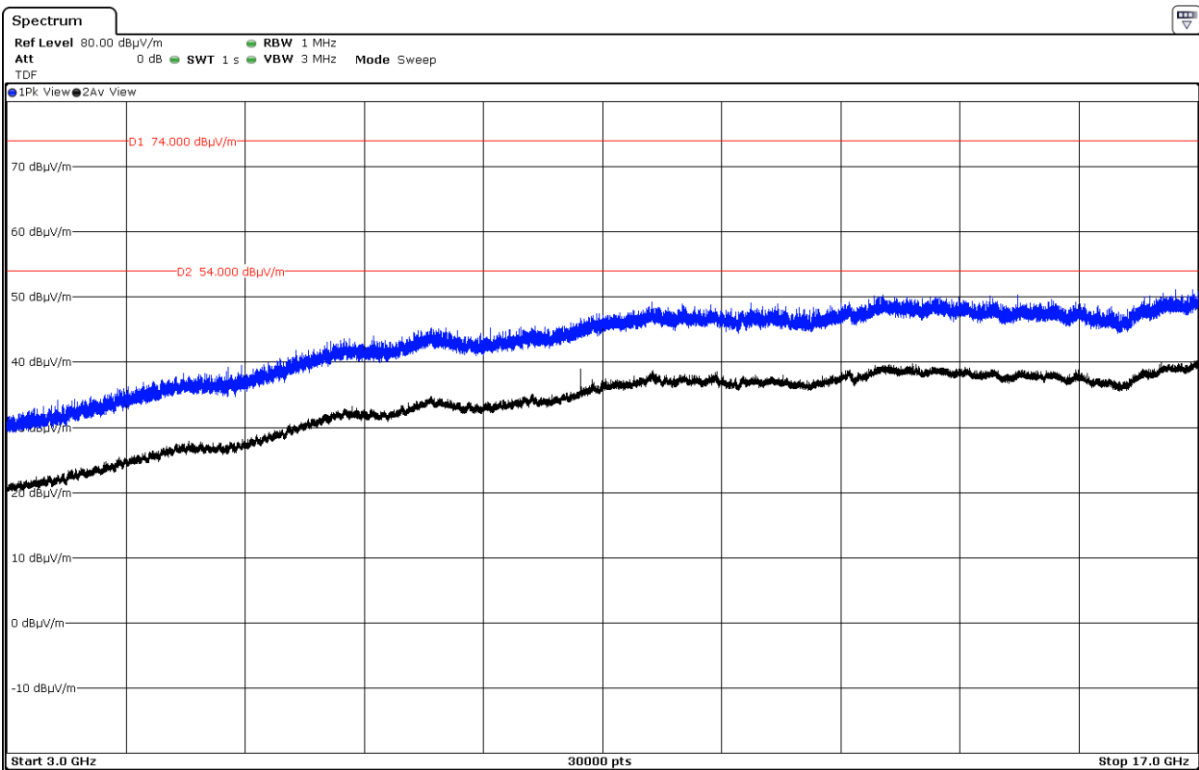
The peak above the limit is the carrier frequency.

FREQUENCY RANGE 3 - 17 GHz:

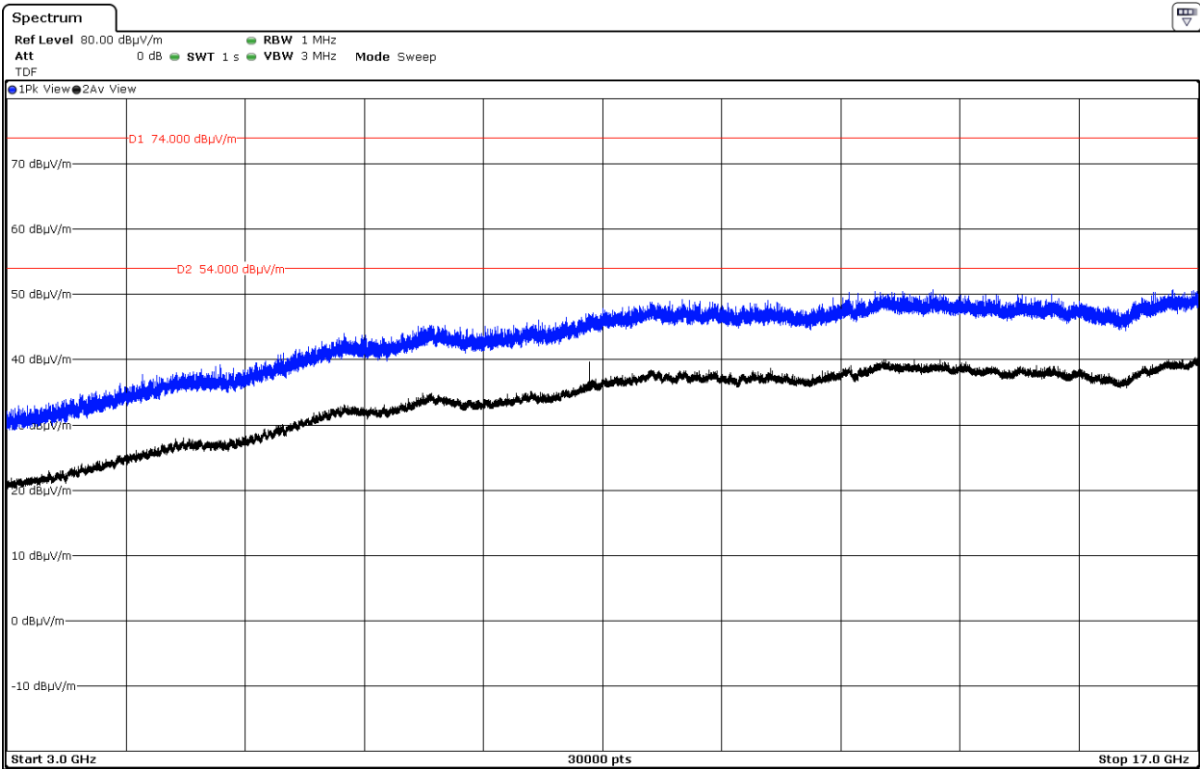
- Low Channel:



- Middle Channel:

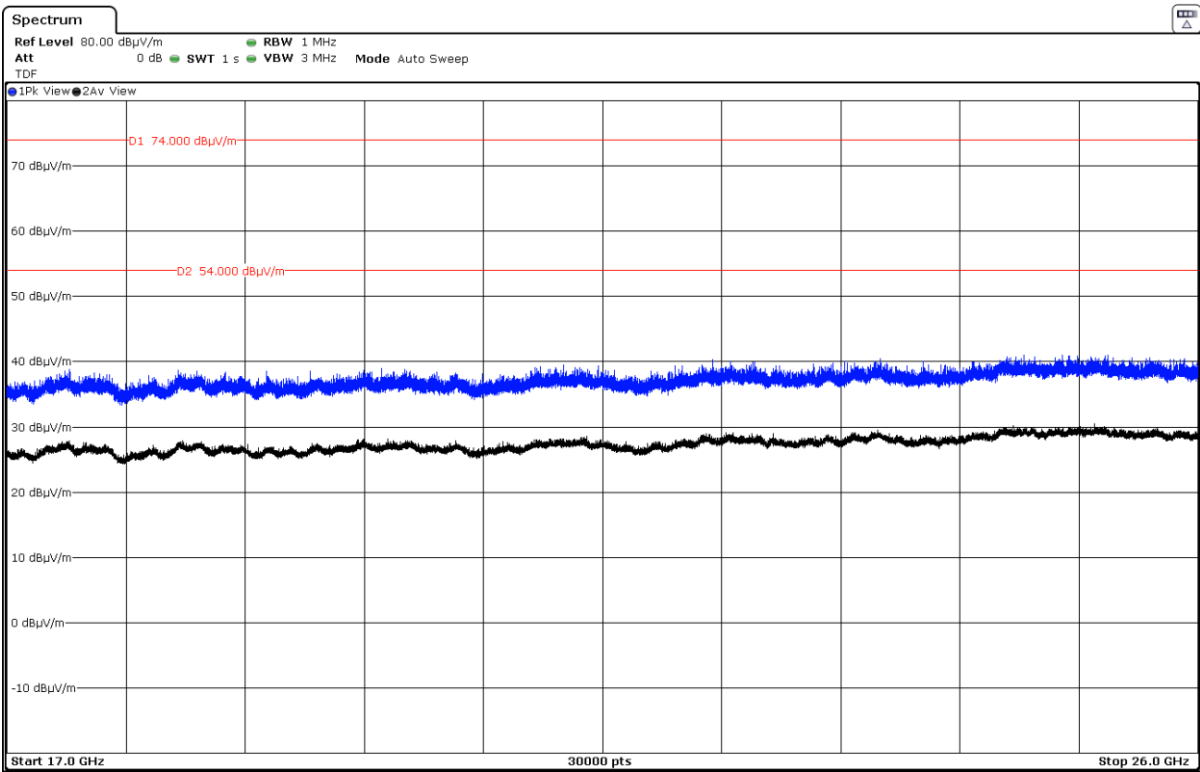


- High Channel:



FREQUENCY RANGE 17 - 26 GHz:

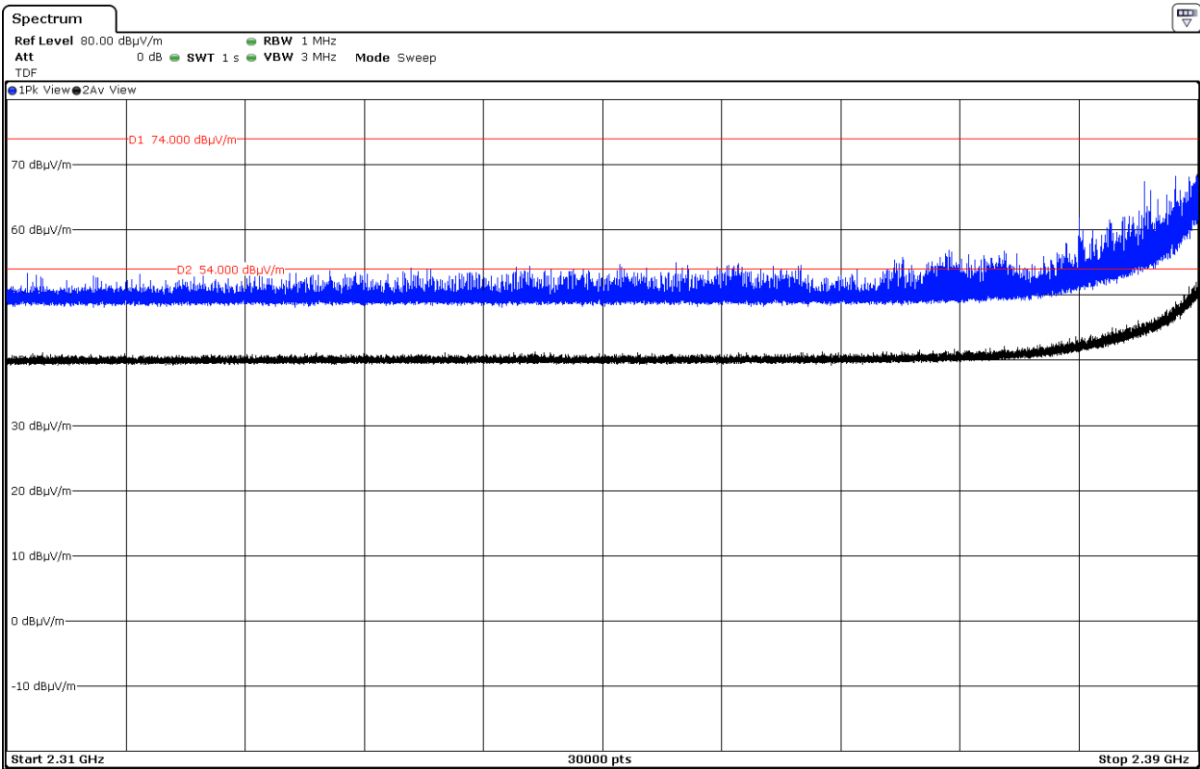
The spurious signals detected do not depend on the operating channel.



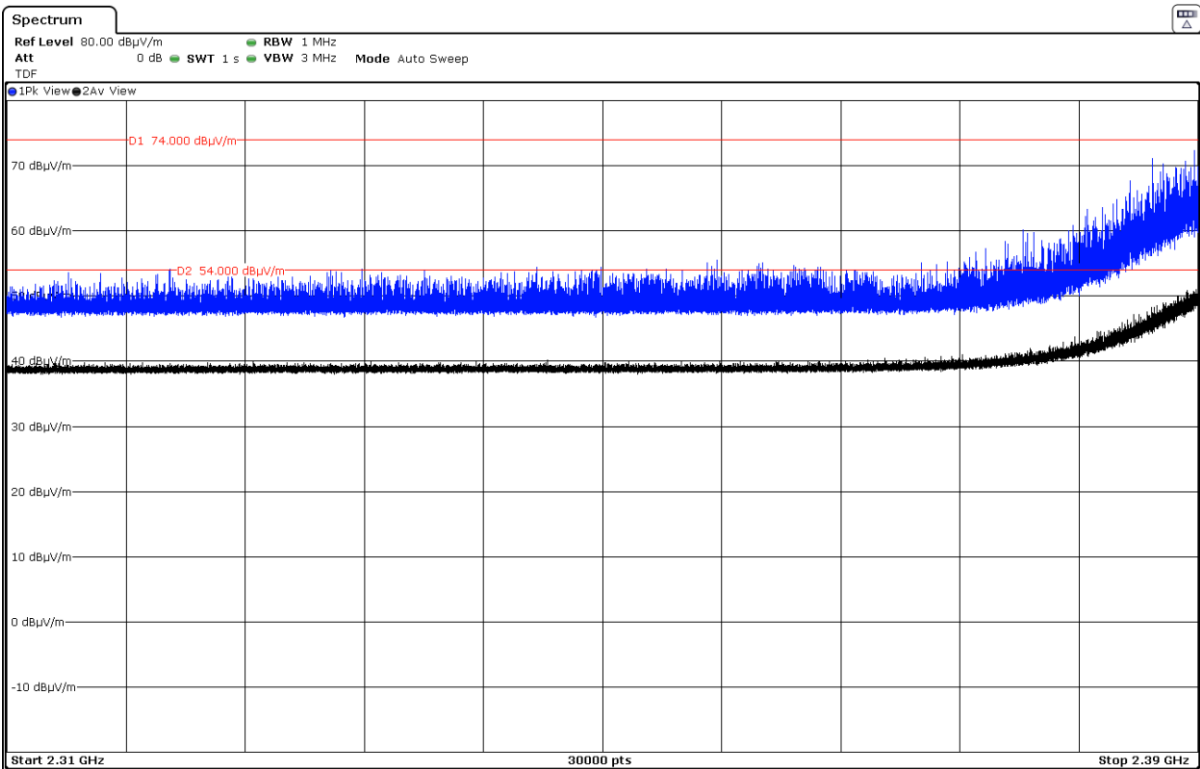
Note: This plot is valid for all three channels.

FREQUENCY RANGE 2.31-2.39 GHz (Restricted Band 1):

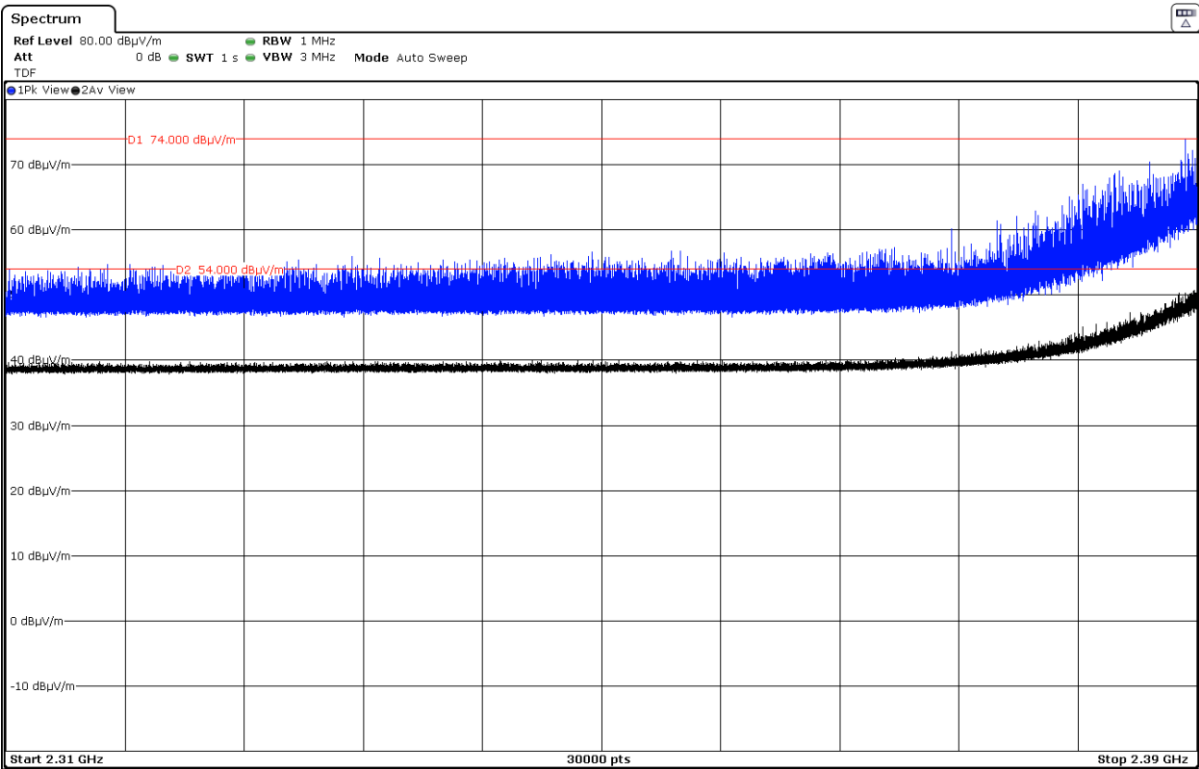
- Low Channel. CH 1:



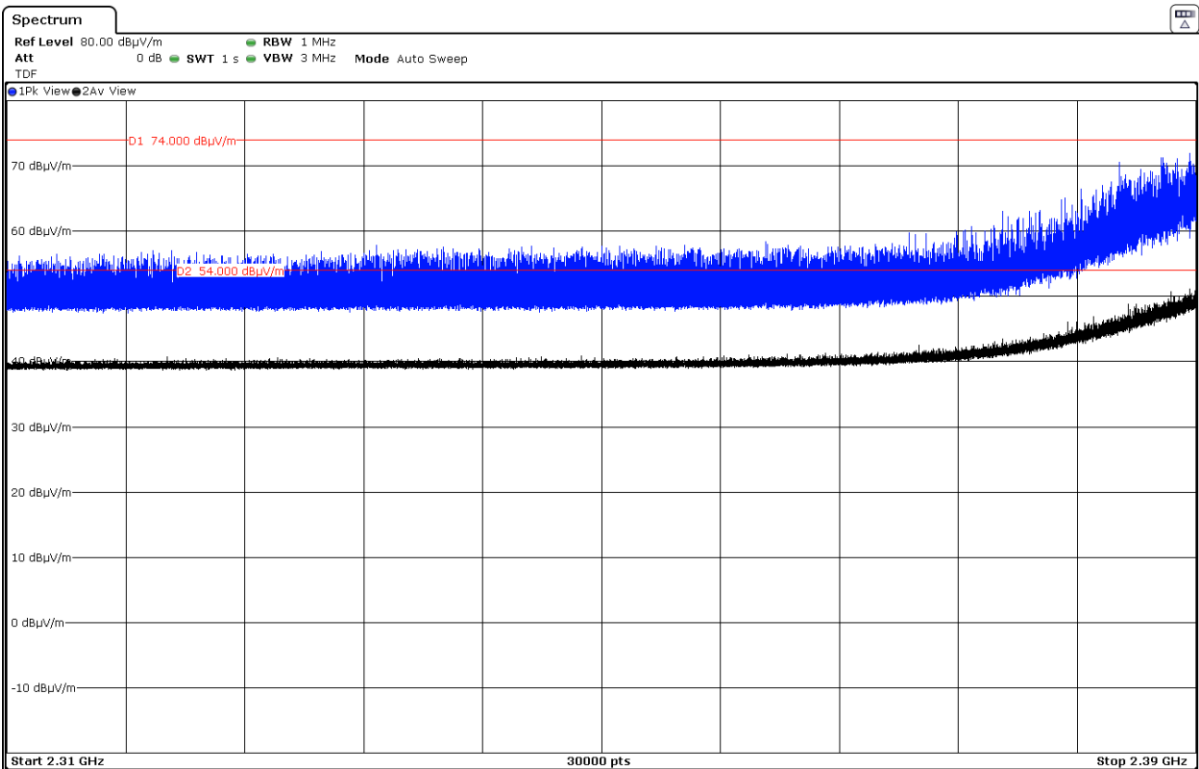
- CH 2:



- CH 3:

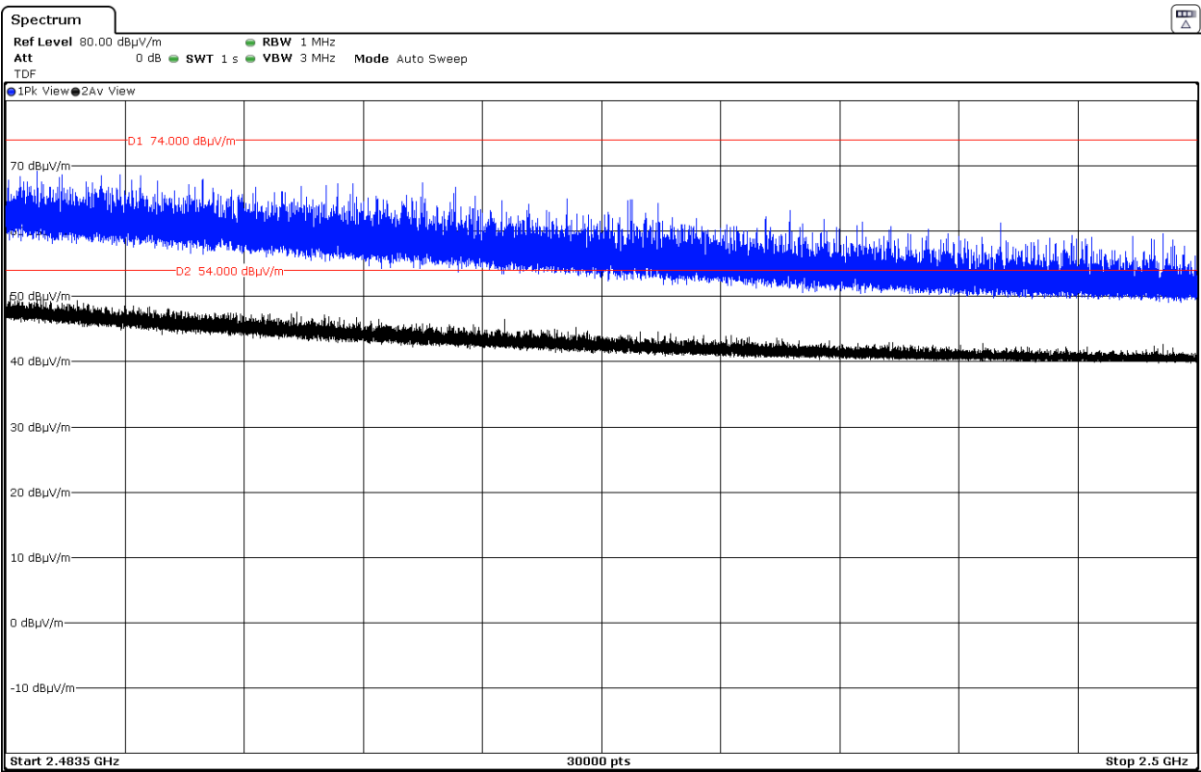


- CH 4:

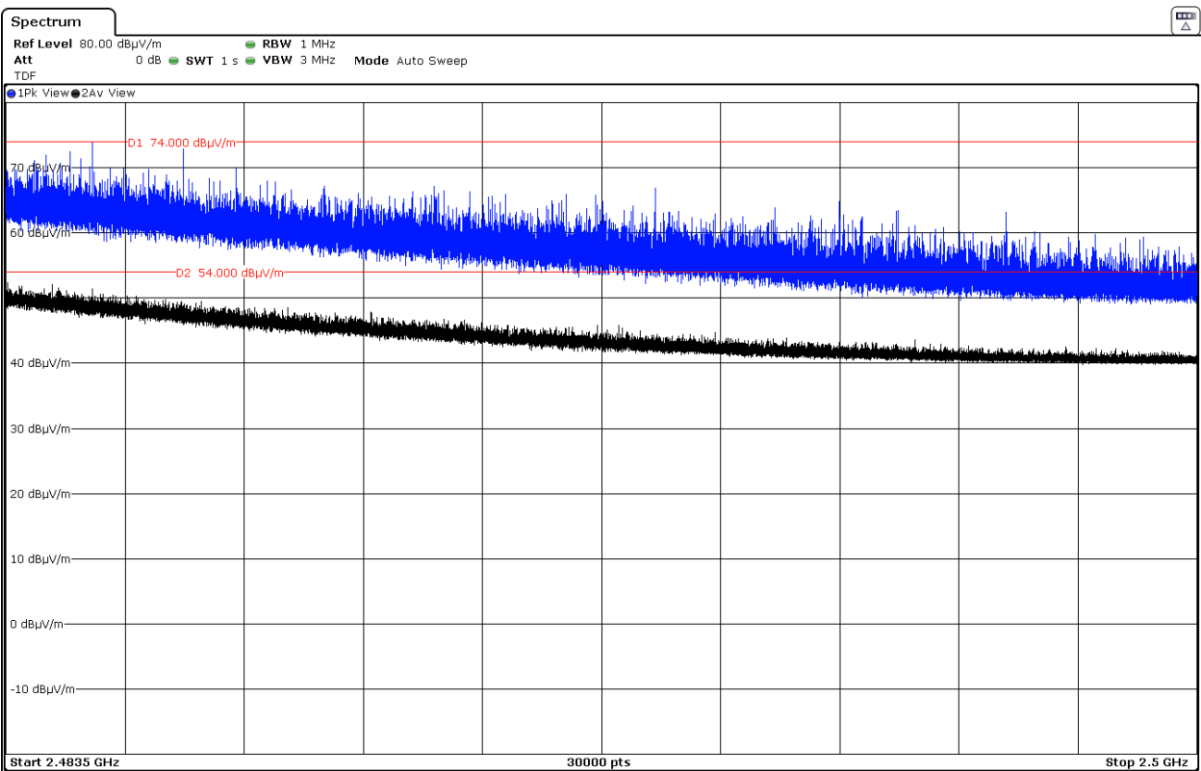


FREQUENCY RANGE 2.4835-2.5 GHz (Restricted Band 2):

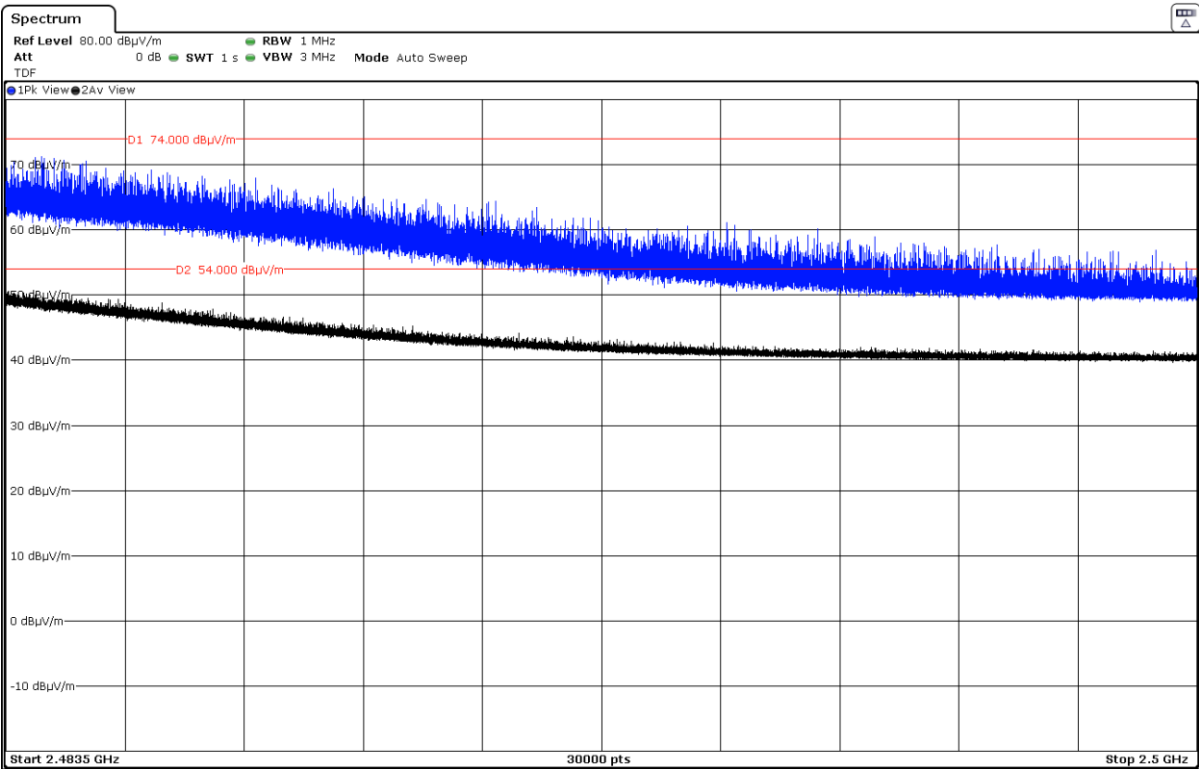
- CH 8:



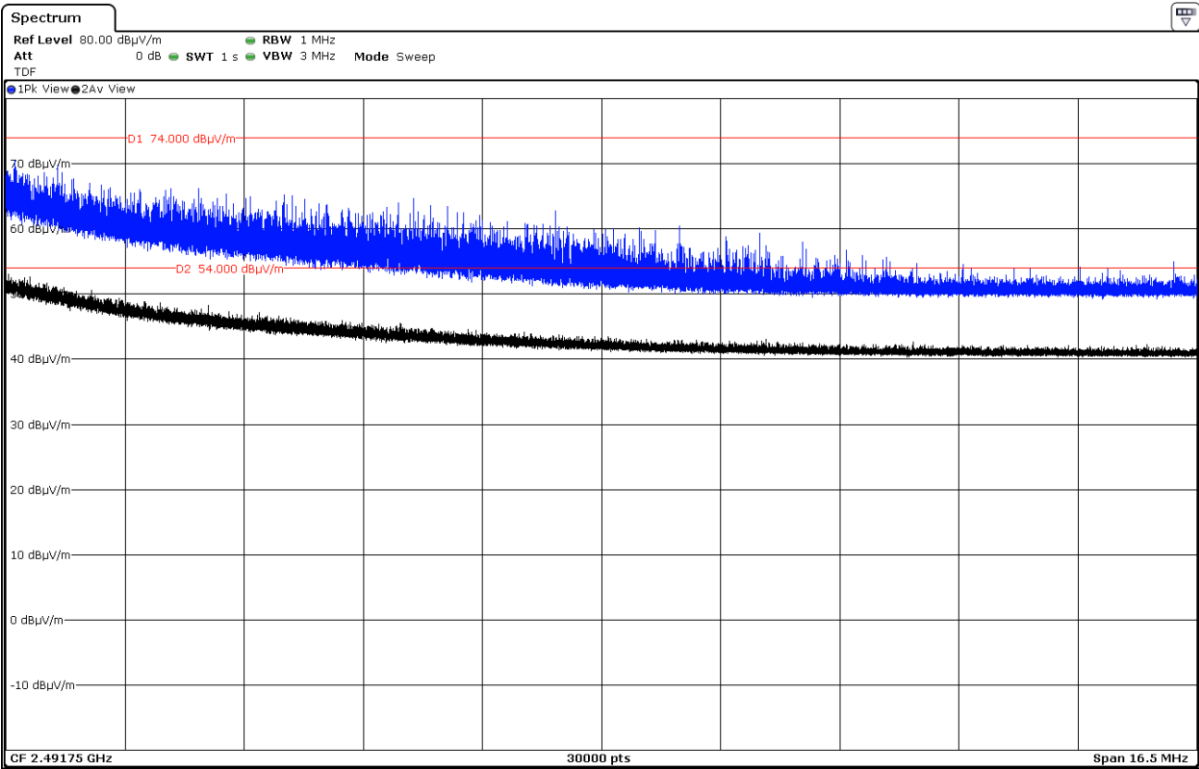
- CH 9:



- CH 10:



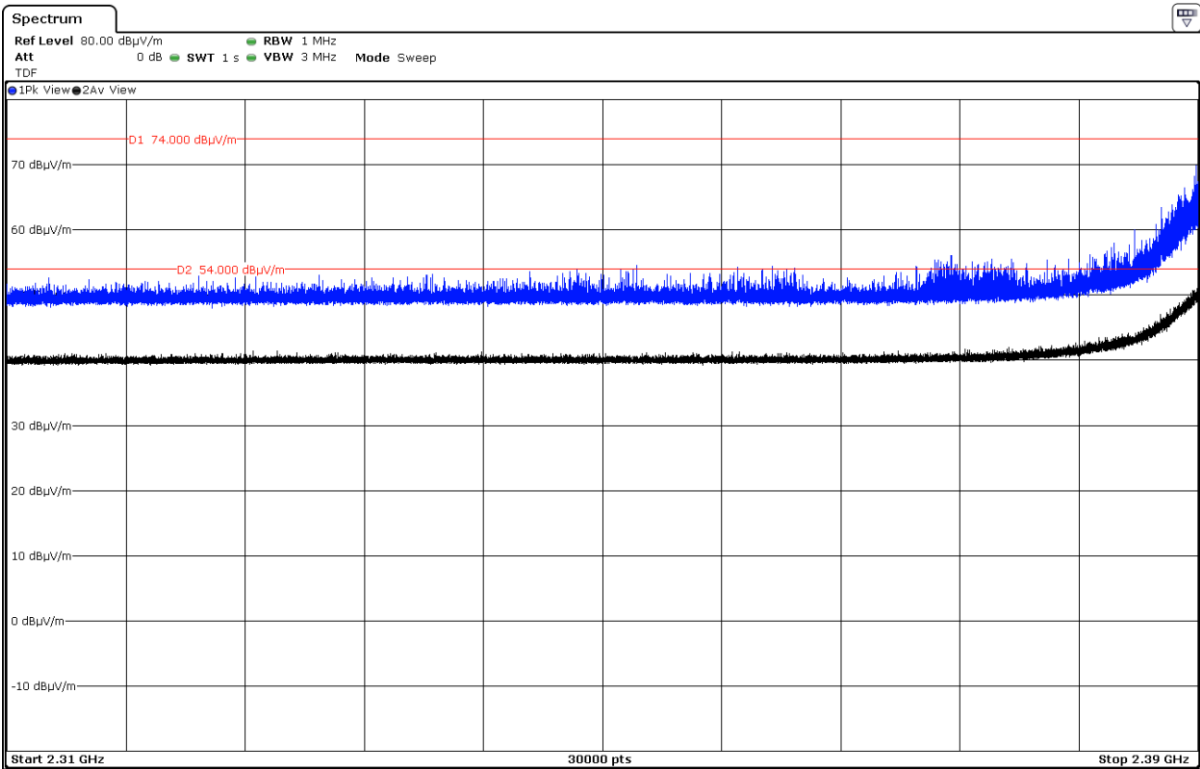
- High Channel. CH 11:



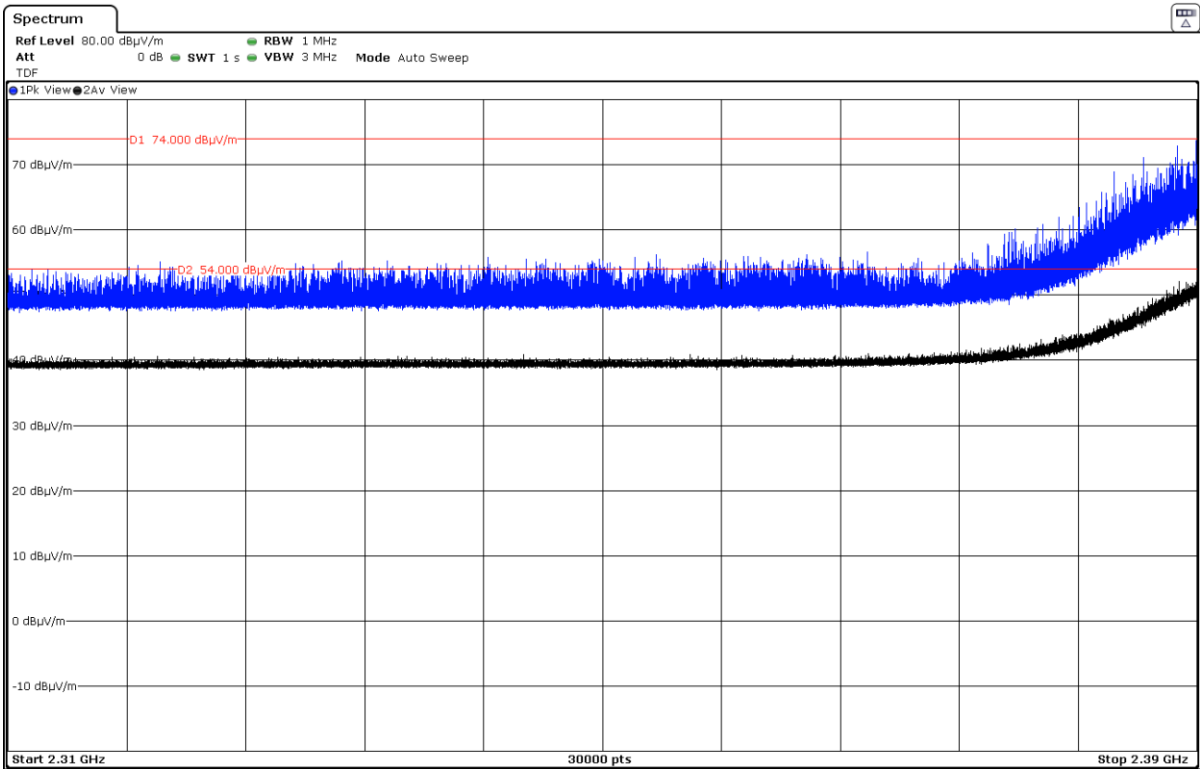
• 802.11 n20

FREQUENCY RANGE 2.31-2.39 GHz (Restricted Band 1):

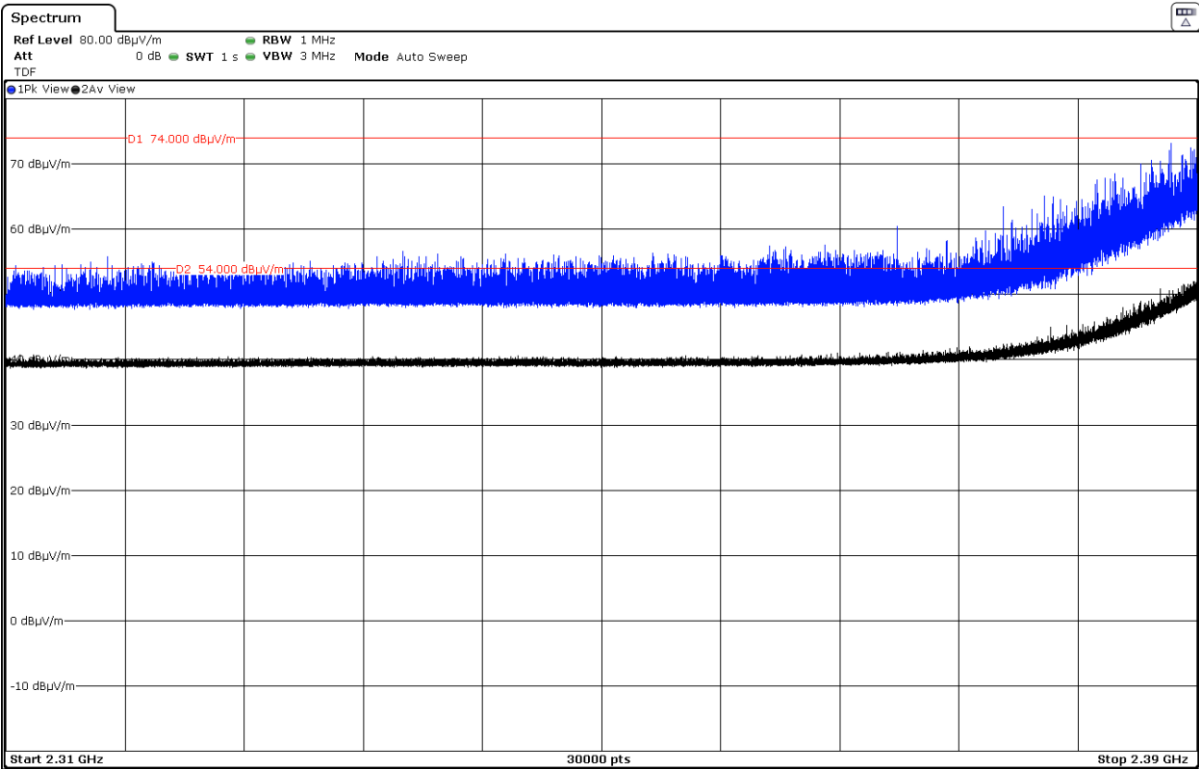
- Low Channel. CH 1:



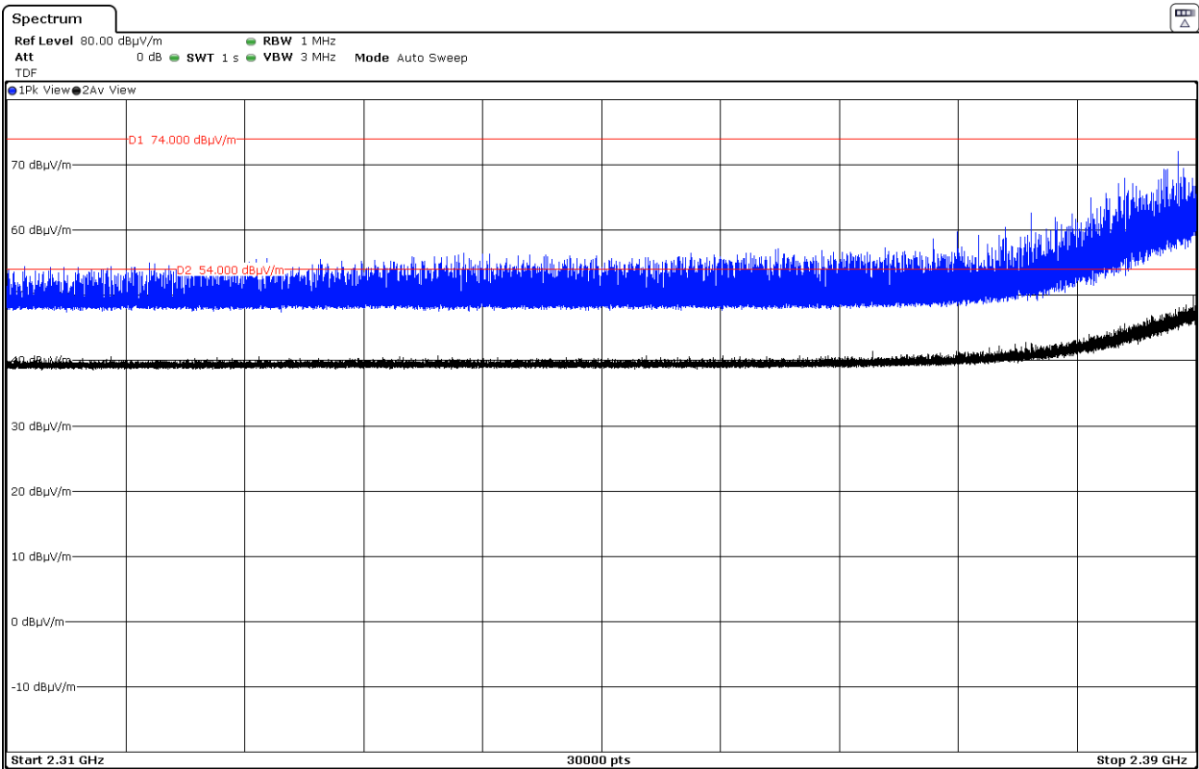
- CH 2:



- CH 3:

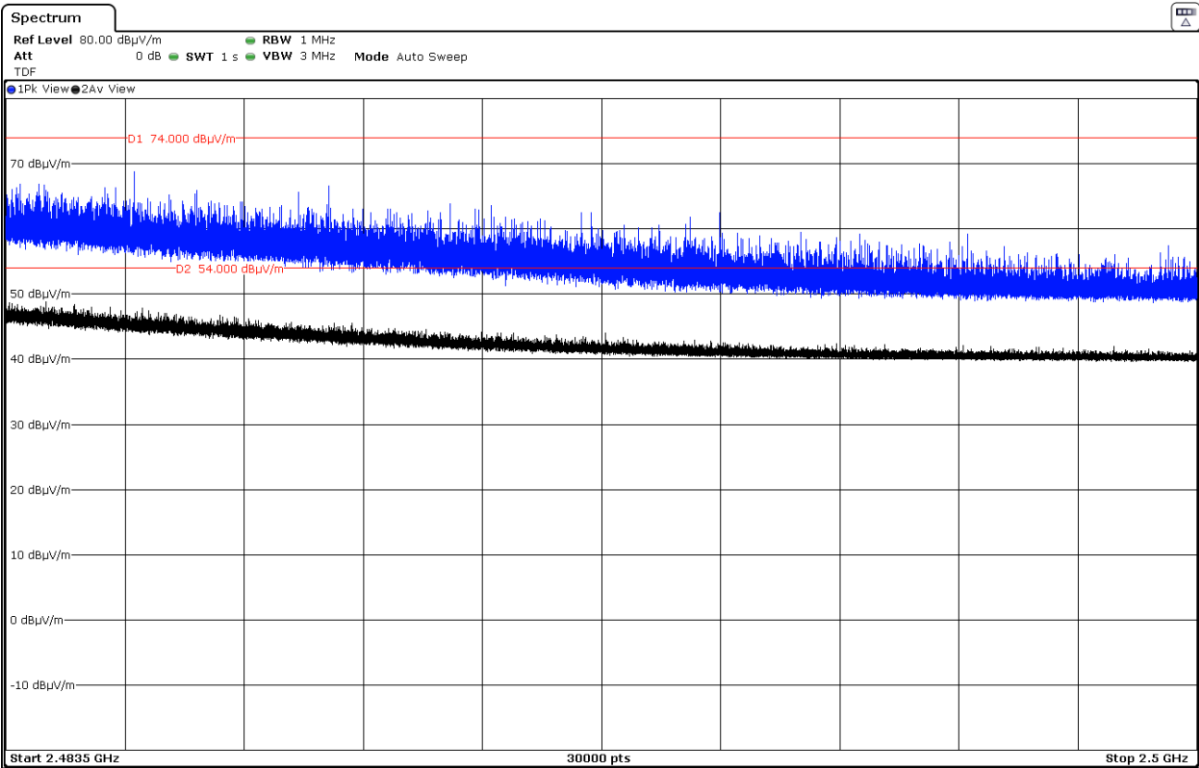


- CH 4:

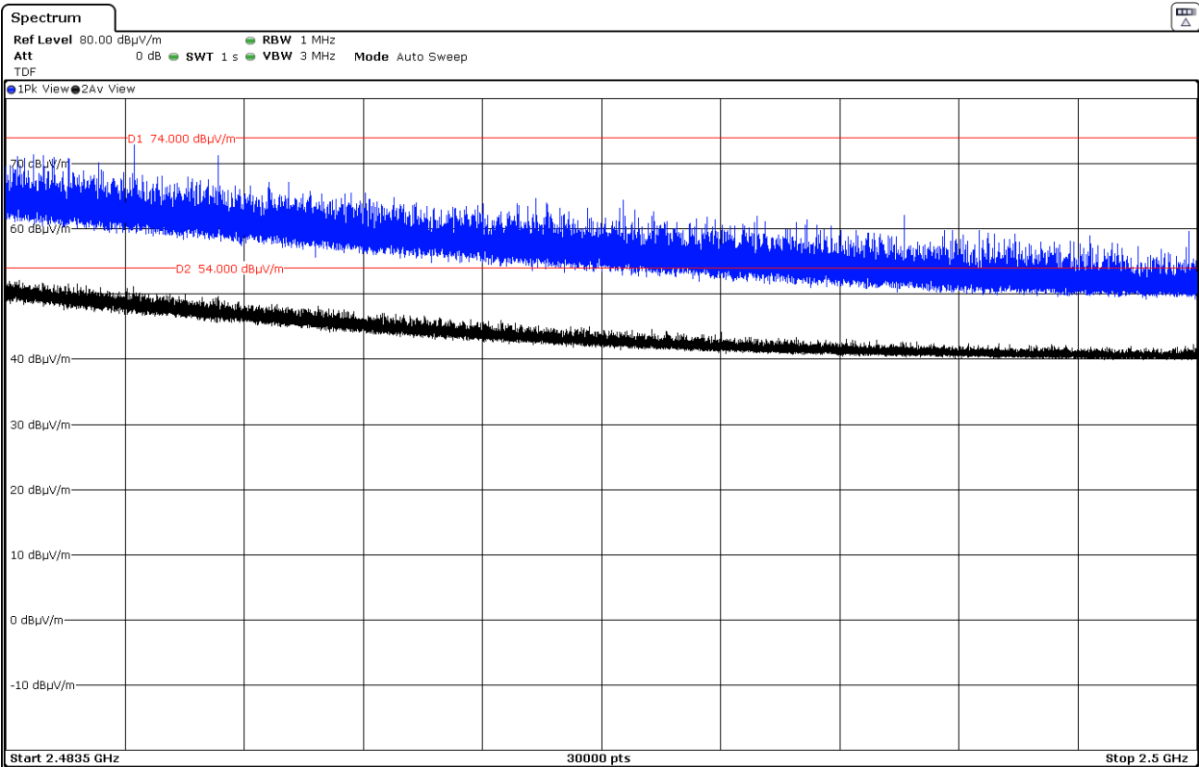


FREQUENCY RANGE 2.4835-2.5 GHz (Restricted Band 2):

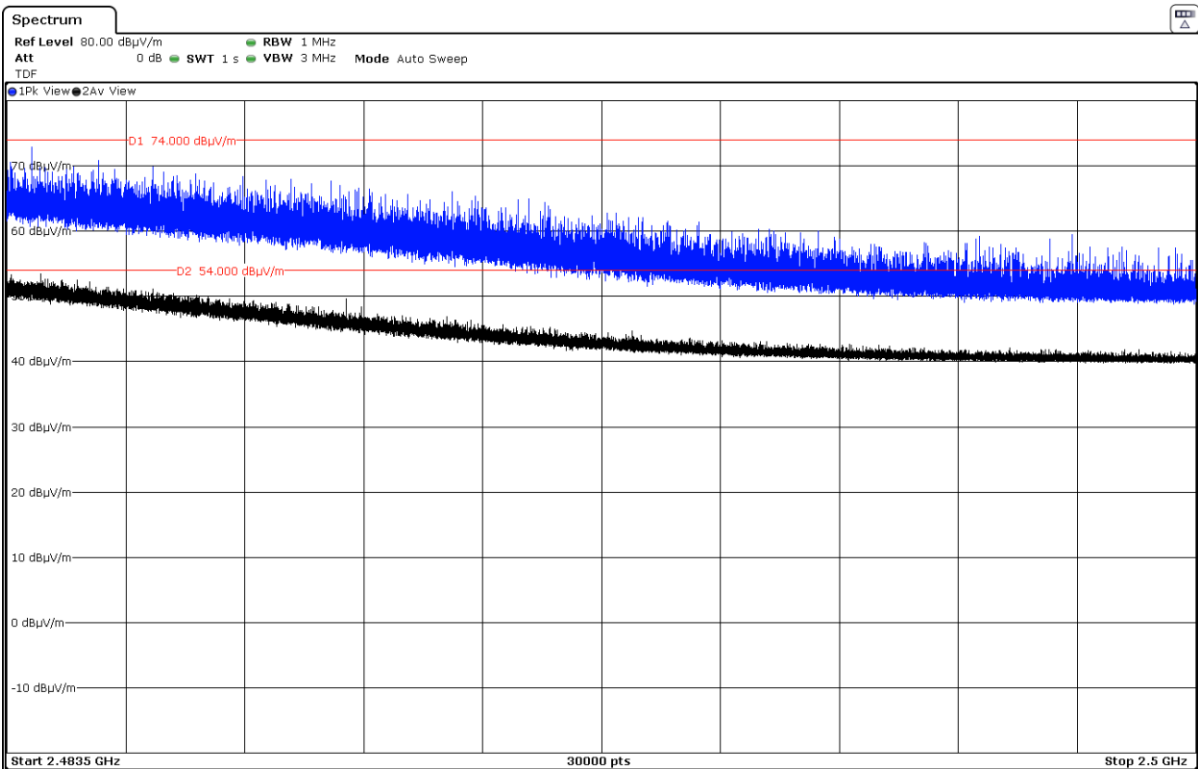
- CH 8:



- CH 9:



- CH 10:



- High Channel. CH 11:

