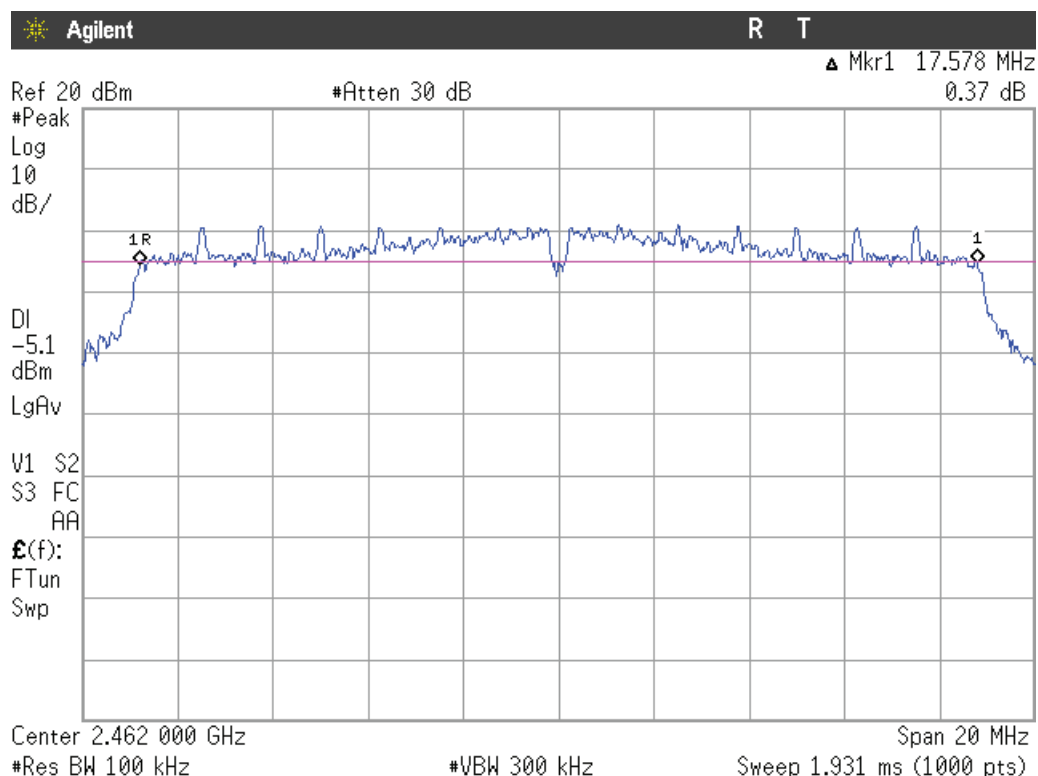
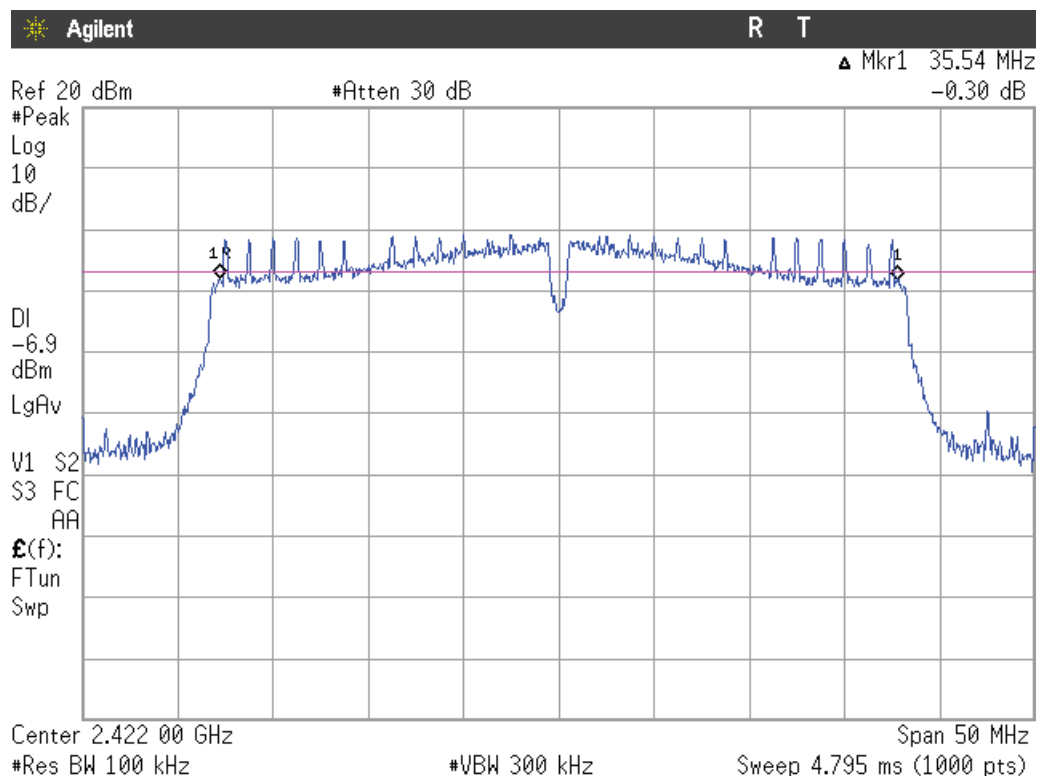


Highest channel

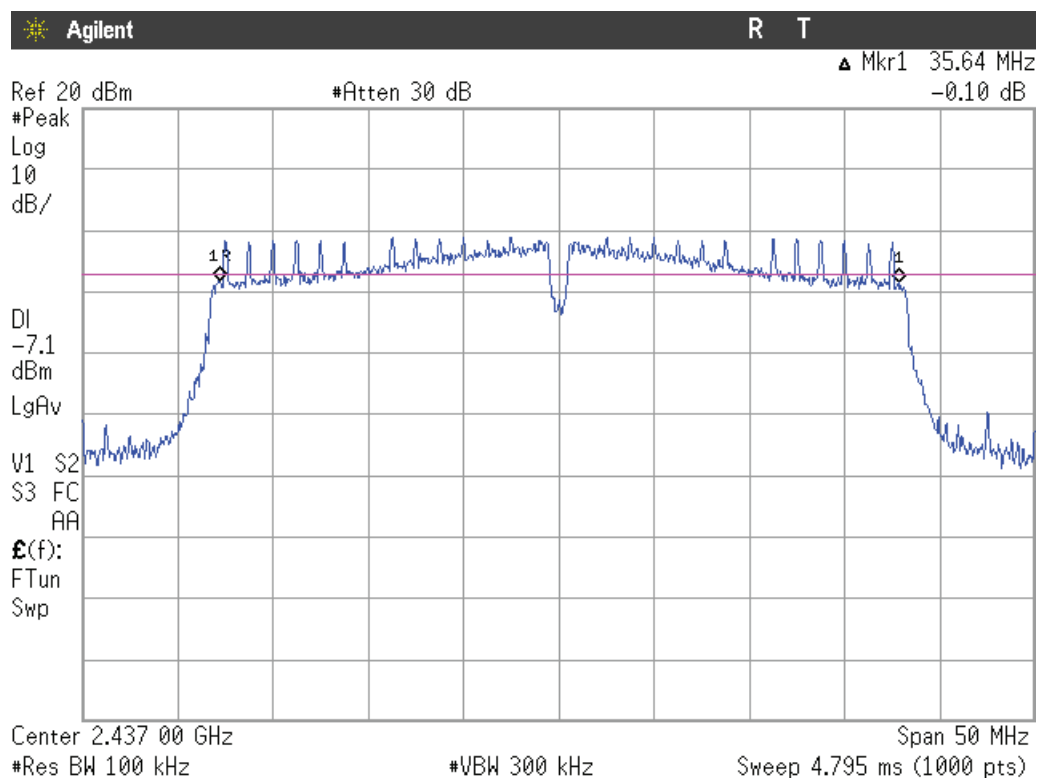


Mode N40

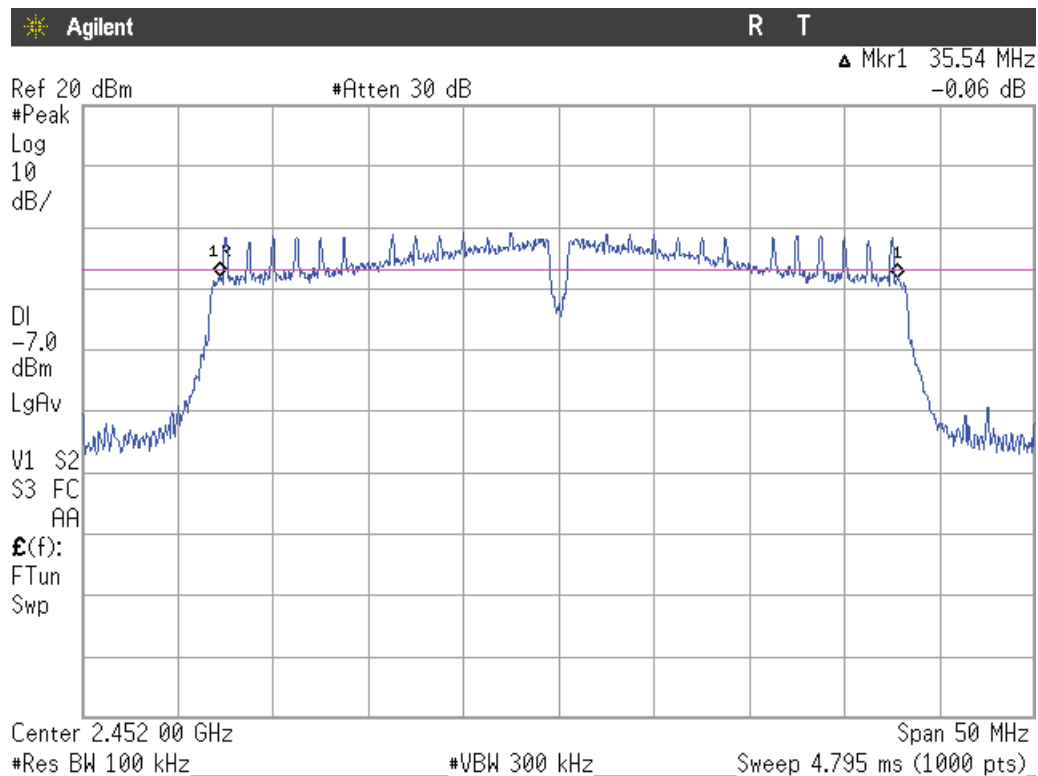
Lowest Channel



Middle Channel



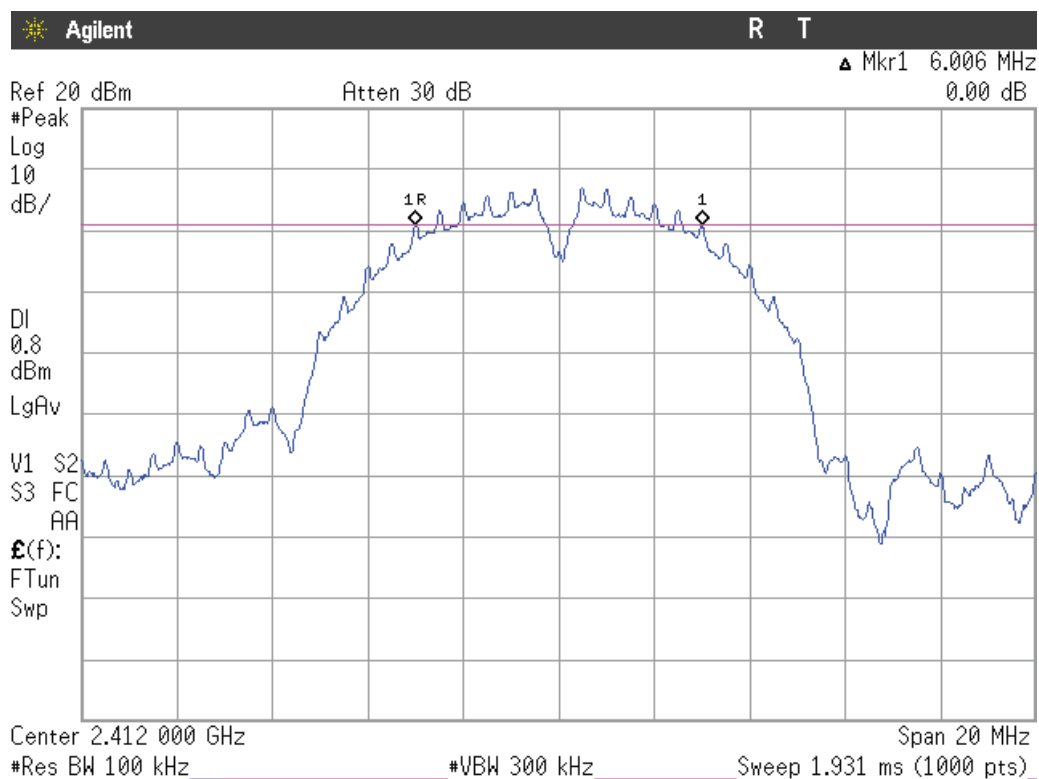
Highest channel



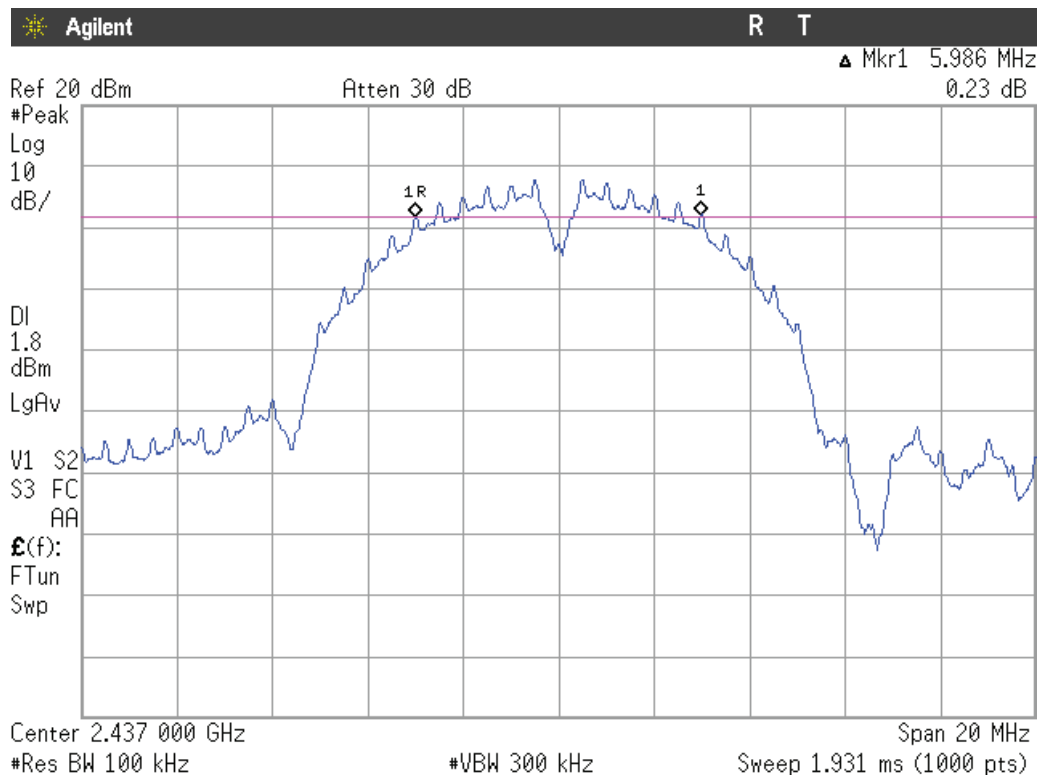
CORE 1 – Antenna RF port 4:

Mode B

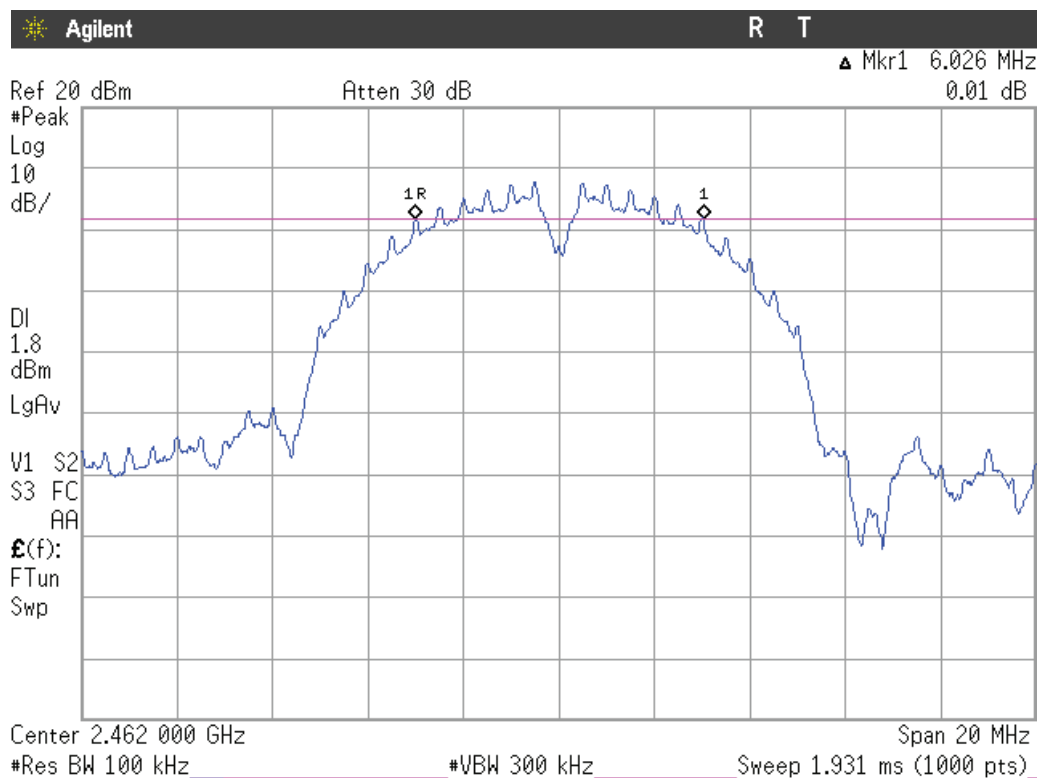
Lowest Channel



Middle Channel

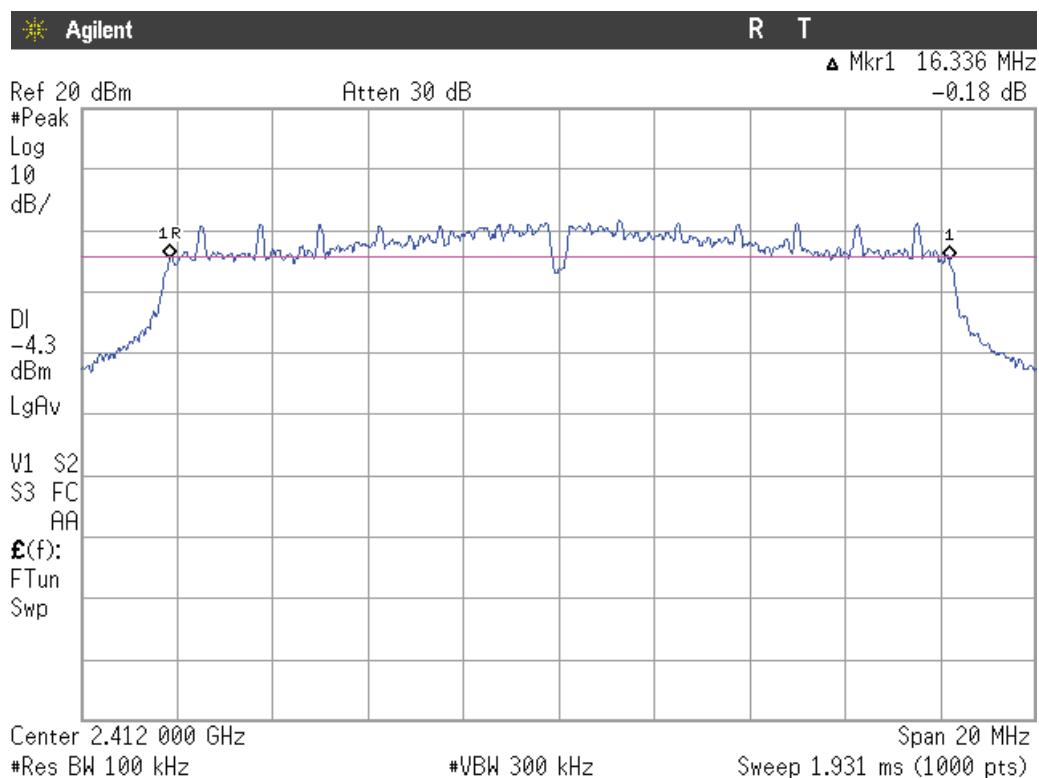


Highest channel

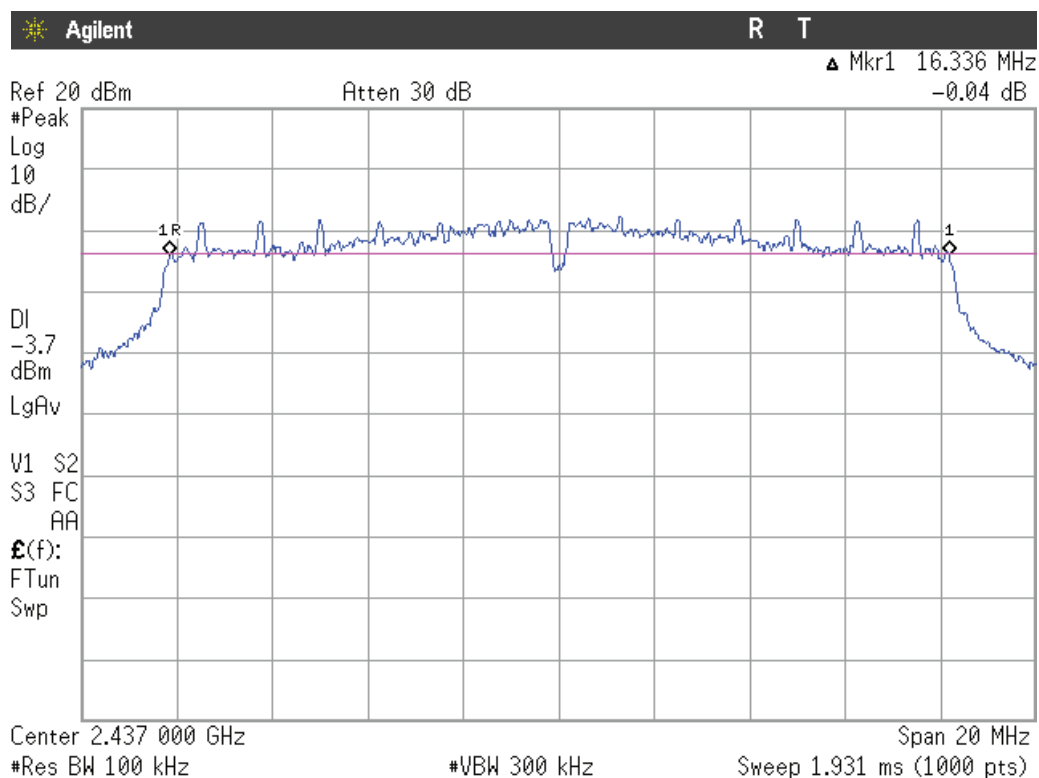


Mode G

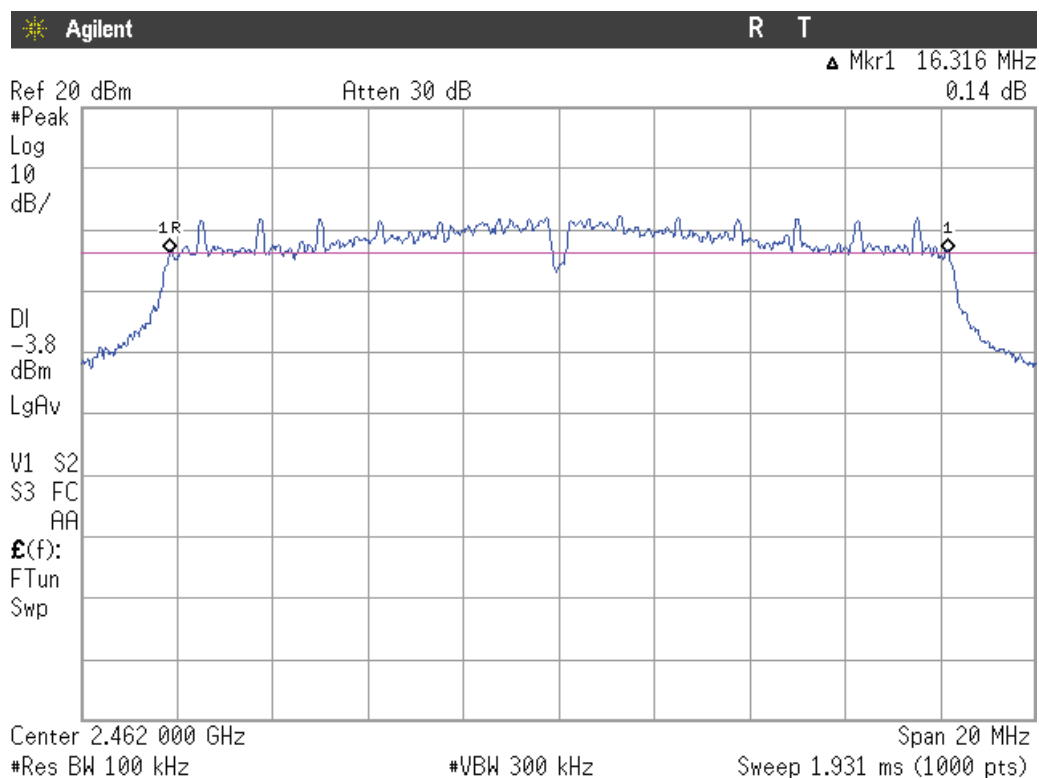
Lowest Channel



Middle Channel

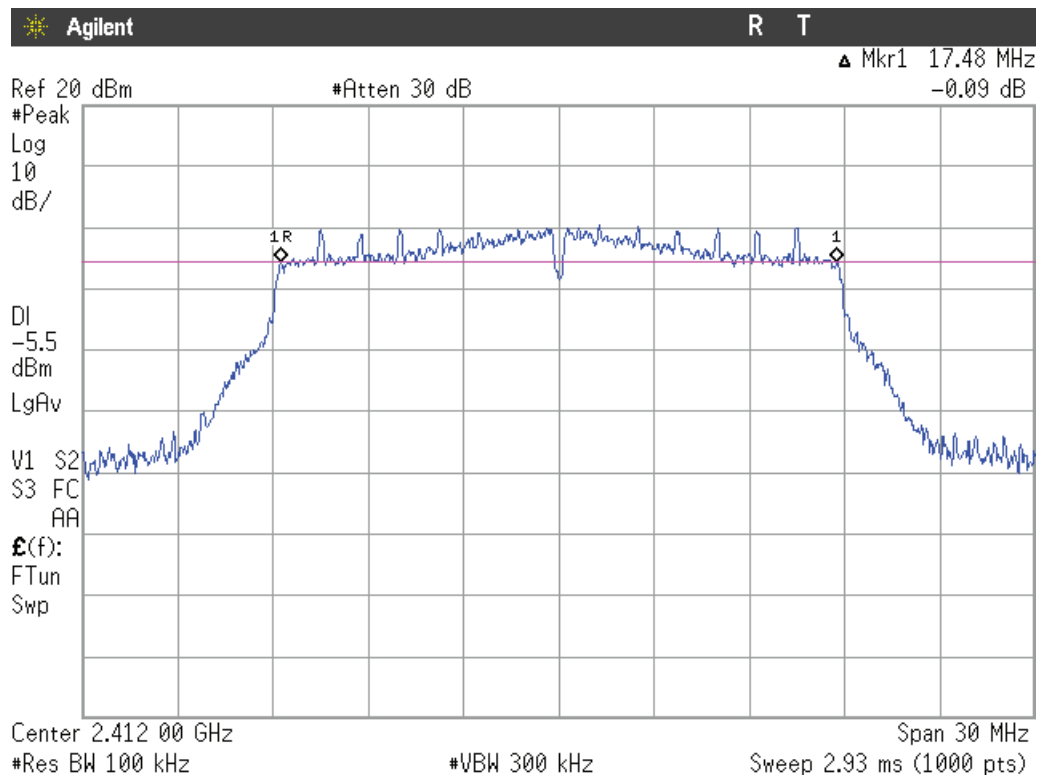


Highest channel

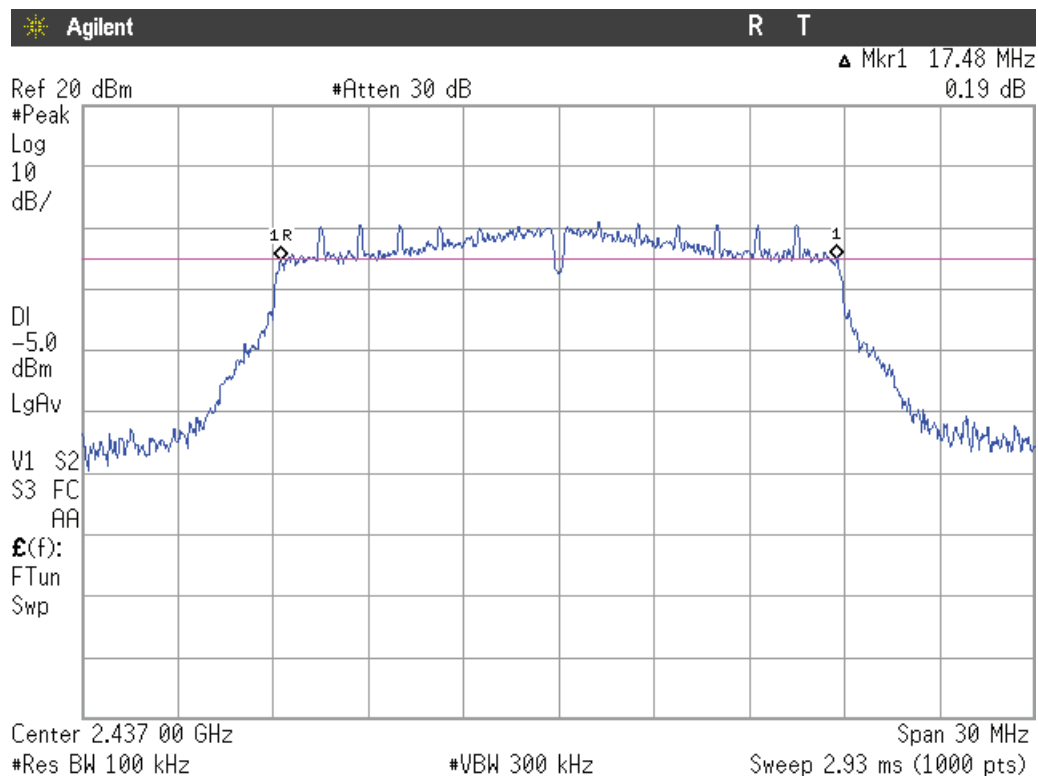


Mode N20

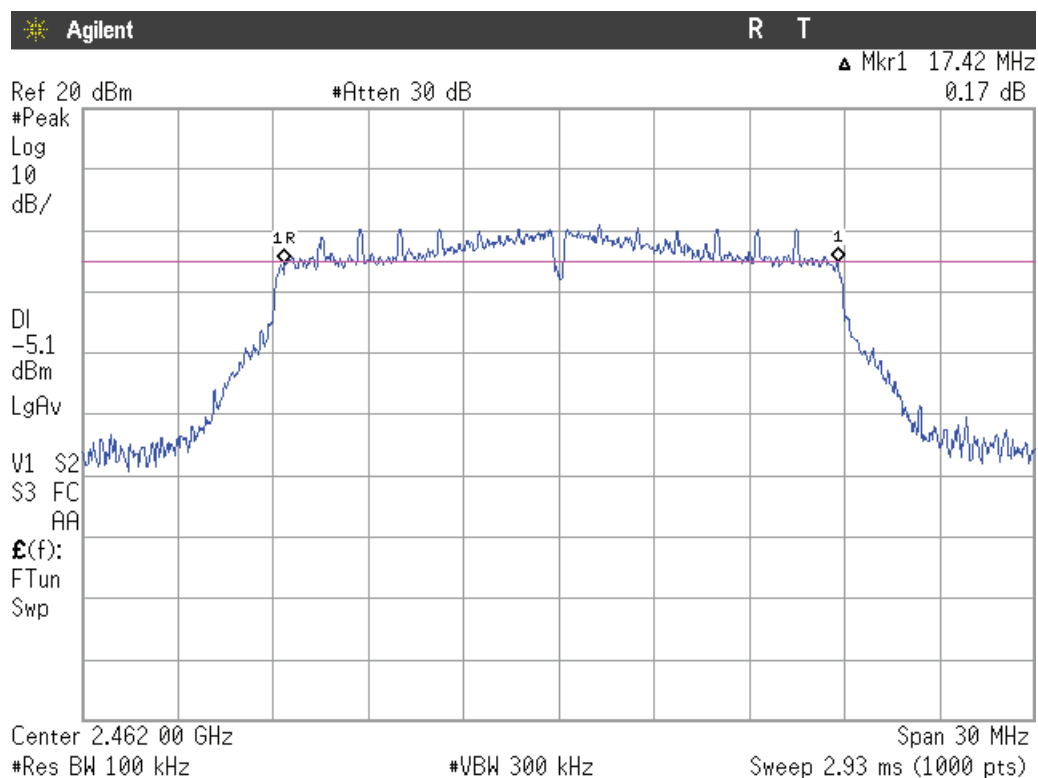
Lowest Channel



Middle Channel

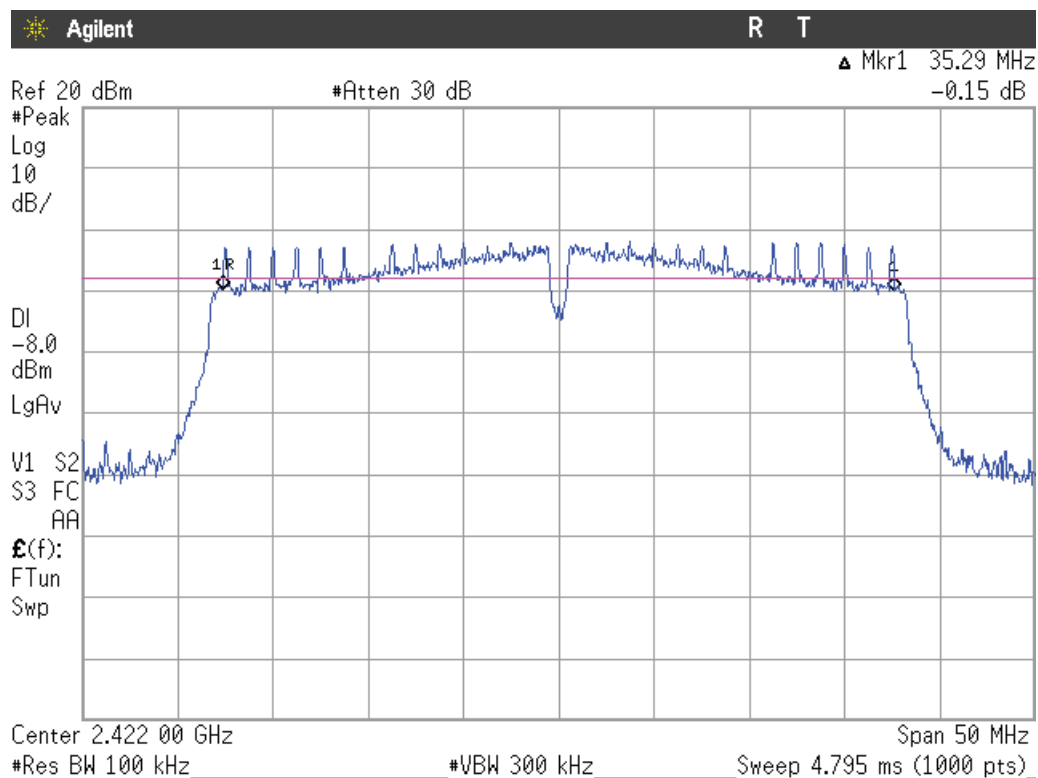


Highest channel

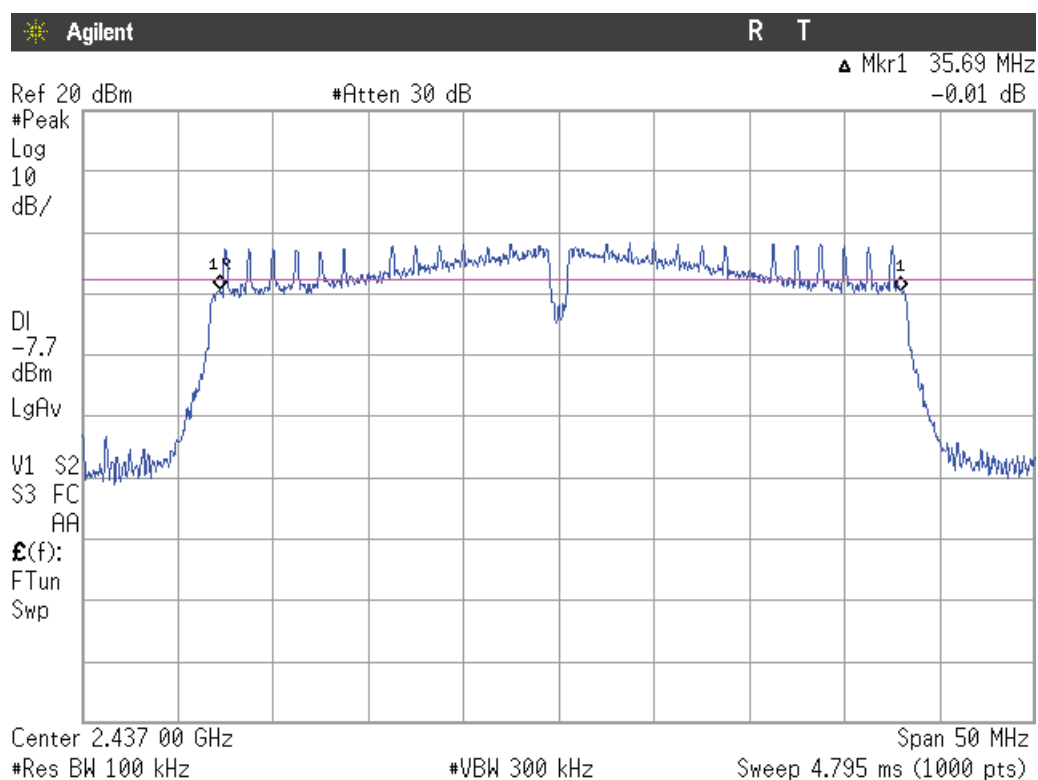


Mode N40

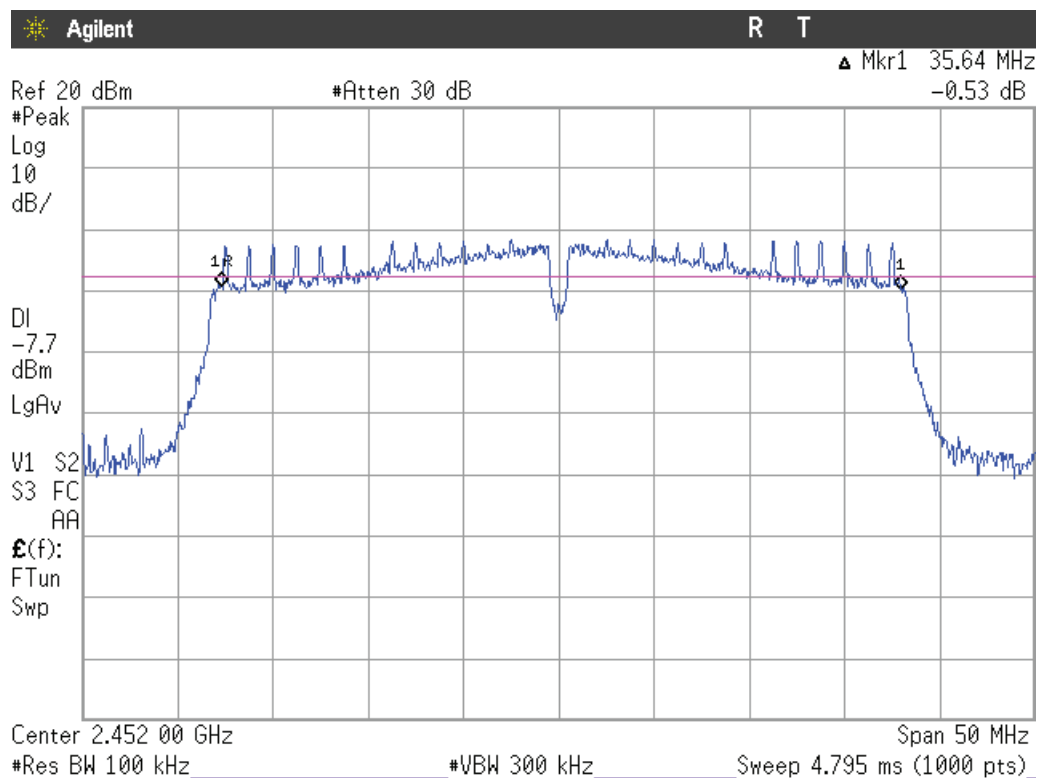
Lowest Channel



Middle Channel



Highest channel



Section 15.247 Subclause (b) / RSS-247 5.4. (4). Maximum output power and antenna gain

SPECIFICATION

For systems using digital modulation in the 2400-2483.5 MHz band: 1 watt (30 dBm).
The e.i.r.p. shall not exceed 4 W (36 dBm) (Canada).

RESULTS

For all modes, the maximum conducted (average) output power was measured using the method according to point 9.2.2.2 of Guidance for Performing Compliance Measurements on Transmission Systems (DTS) Operating Under §15.247 558074 D01 DTS Meas Guidance v04 dated 05/04/2017.

The EIRP power (dBm) is calculated by adding the declared maximum antenna gain to the measured conducted power.

MAXIMUM OUTPUT POWER. See next plots.

Declared Gain for antenna External RF port 2 (maximum): +2.2 dBi. (Antenna gain plus antenna cable loss).

Declared Gain for antenna RF port 4 (maximum): +1.6 dBi. (Antenna gain plus antenna cable loss).

CORE 0 – Antenna External RF port 2:

Mode B: Average Conducted Output Power:

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Maximum conducted power (dBm)	14.23	14.68	14.68
Maximum EIRP power (dBm)	16.43	16.88	16.88
Measurement uncertainty (dB)	<±0.79		

Mode G: Average Conducted Output Power:

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Maximum conducted power (dBm)	13.55	13.50	13.57
Maximum EIRP power (dBm)	15.75	15.70	15.77
Measurement uncertainty (dB)	<±0.79		

Mode N20: Average Conducted Output Power:

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Maximum conducted power (dBm)	11.94	12.34	11.94
Maximum EIRP power (dBm)	14.14	14.54	14.14
Measurement uncertainty (dB)	<±0.79		

Mode N40: Average Conducted Output Power:

	Lowest frequency 2422 MHz	Middle frequency 2437 MHz	Highest frequency 2452 MHz
Maximum conducted power (dBm)	11.81	11.43	11.60
Maximum EIRP power (dBm)	14.01	13.63	13.80
Measurement uncertainty (dB)	<±0.79		

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

CORE 1 – Antenna RF port 4:

Mode B: Average Conducted Output Power:

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Maximum conducted power (dBm)	17.77	20.27	18.42
Maximum EIRP power (dBm)	19.37	21.87	20.02
Measurement uncertainty (dB)	<±0.79		

Mode G: Average Conducted Output Power:

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Maximum conducted power (dBm)	18.01	17.87	18.06
Maximum EIRP power (dBm)	19.61	19.47	19.66
Measurement uncertainty (dB)	<±0.79		

Mode N20: Average Conducted Output Power:

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Maximum conducted power (dBm)	11.15	11.62	11.98
Maximum EIRP power (dBm)	12.65	13.22	13.58
Measurement uncertainty (dB)	<±0.79		

Mode N40: Average Conducted Output Power:

	Lowest frequency 2422 MHz	Middle frequency 2437 MHz	Highest frequency 2452 MHz
Maximum conducted power (dBm)	13.64	16.45	16.45
Maximum EIRP power (dBm)	15.24	18.05	18.05
Measurement uncertainty (dB)	<±0.79		

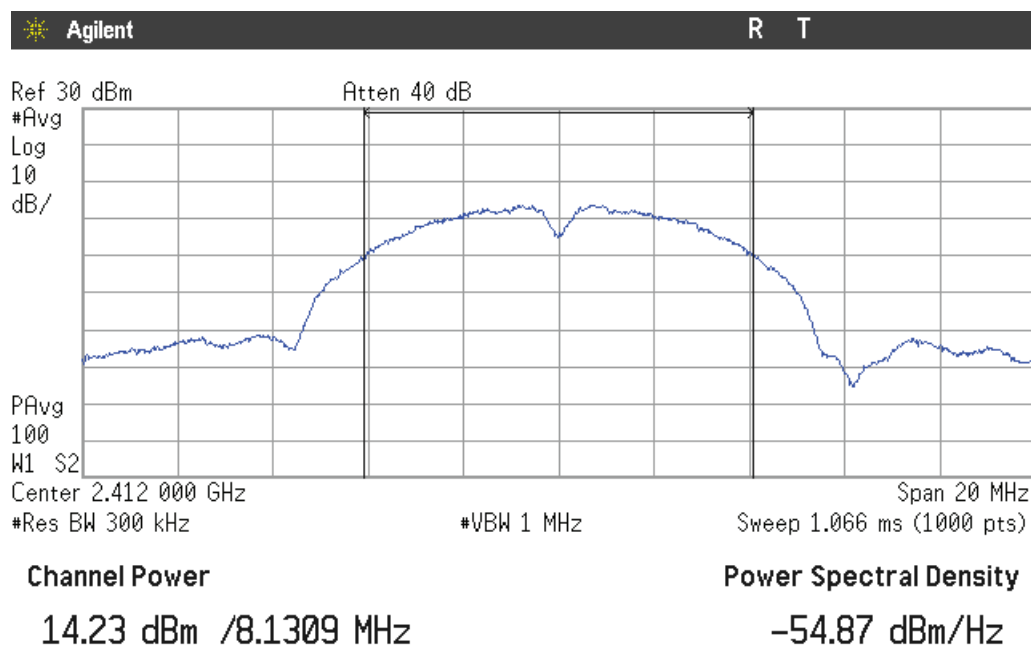
The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Verdict: PASS

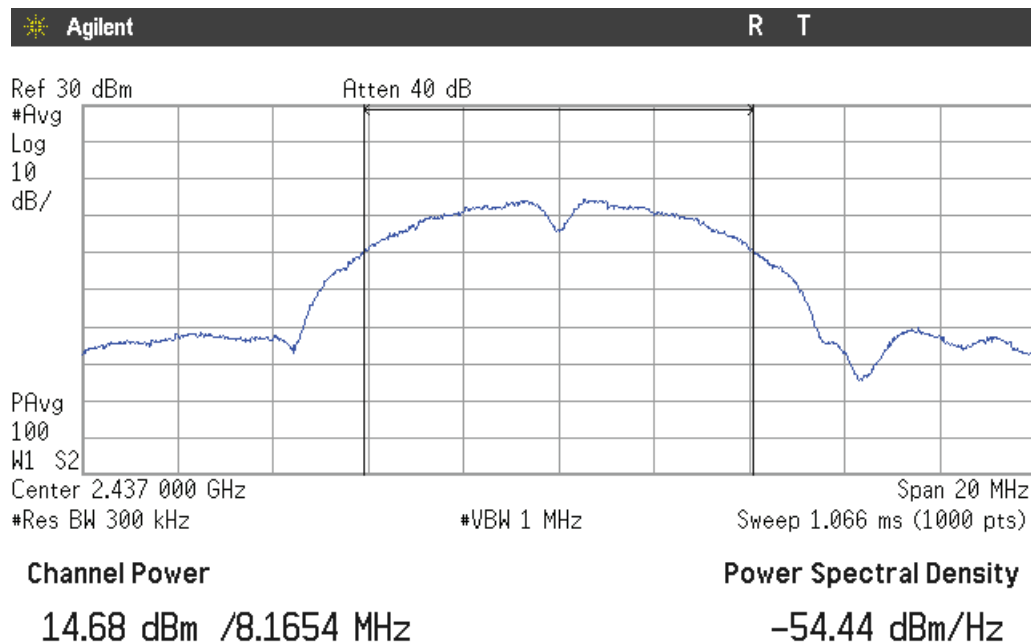
CORE 0 – Antenna RF External port 2:

Mode B

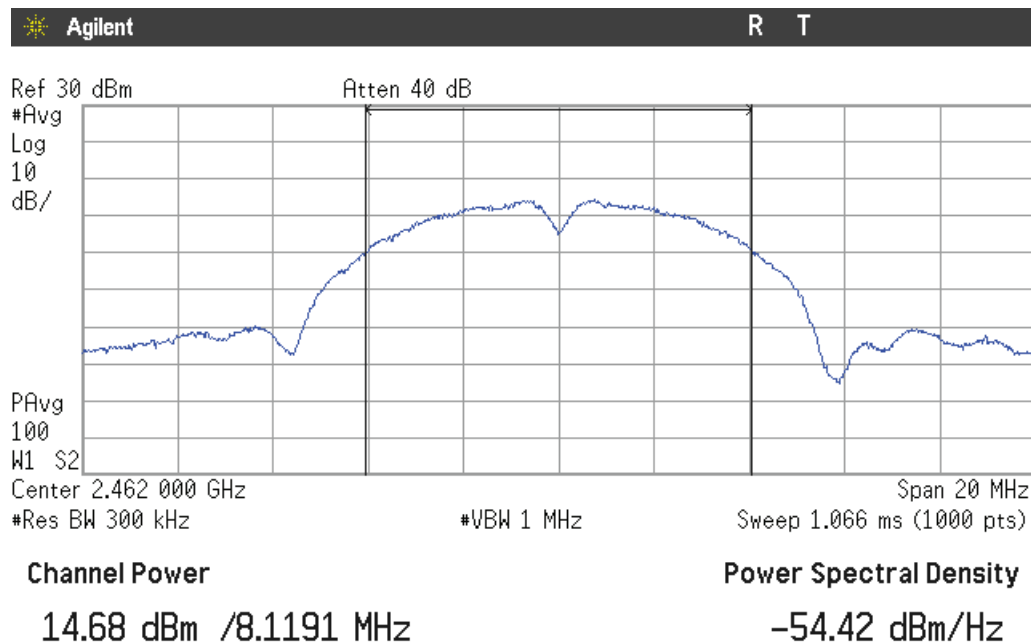
Lowest Channel



Middle Channel

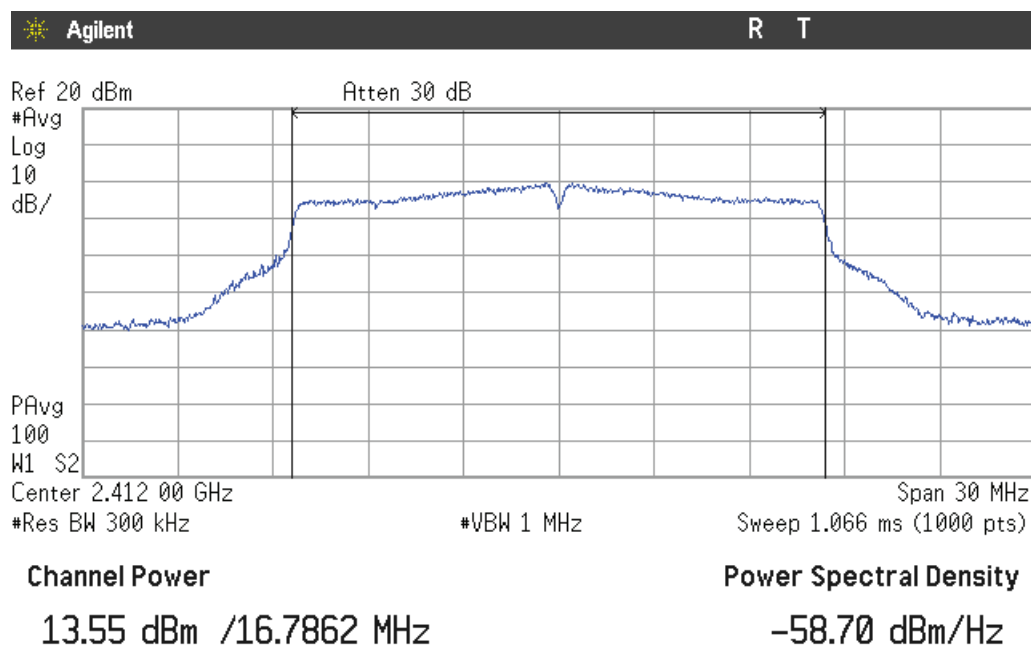


Highest Channel

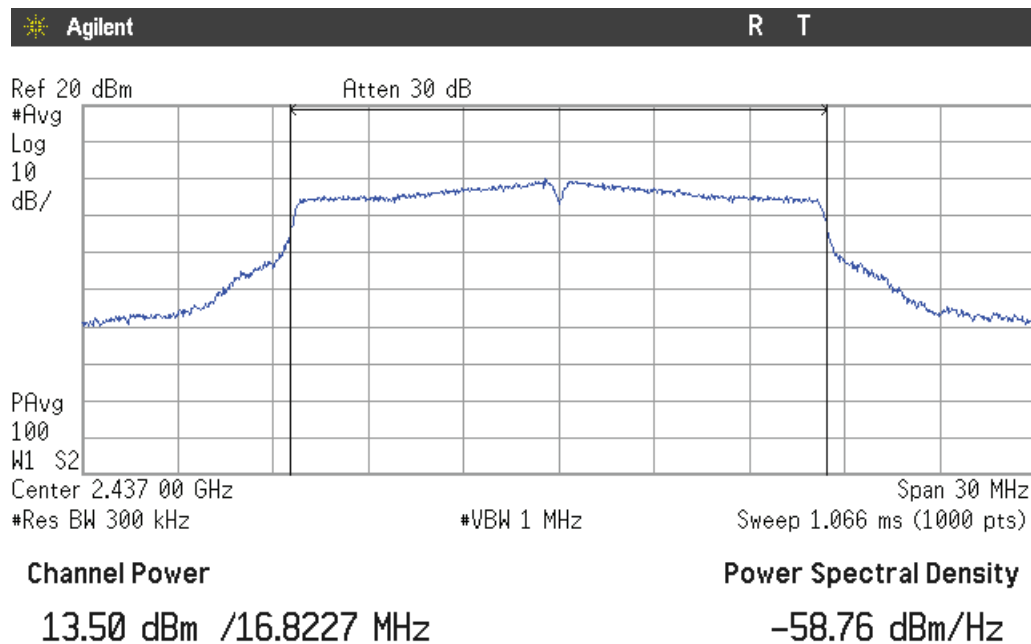


Mode G

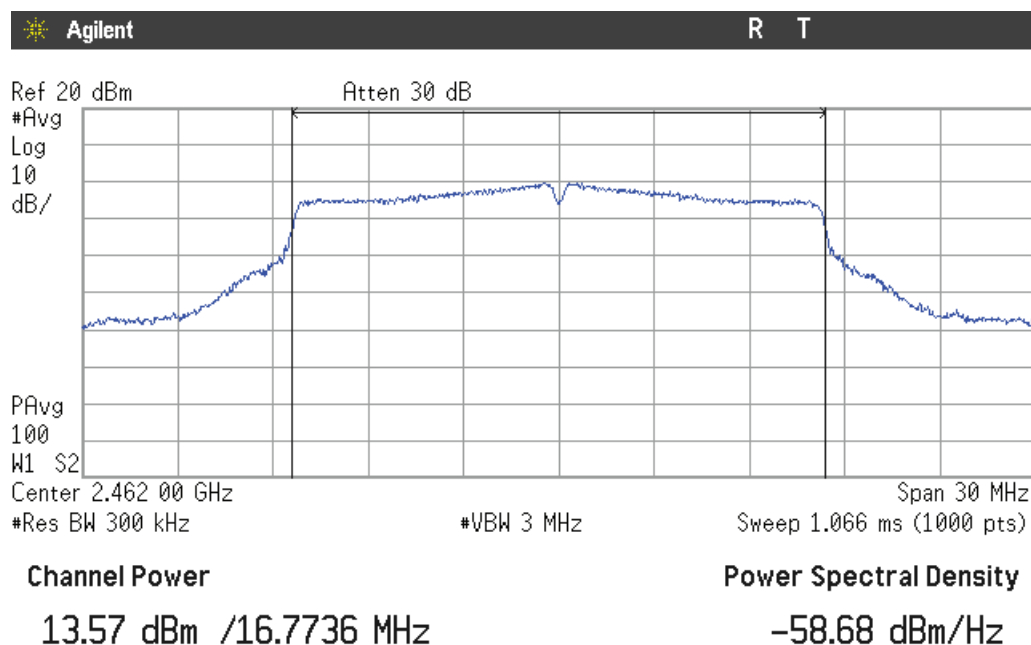
Lowest Channel



Middle Channel

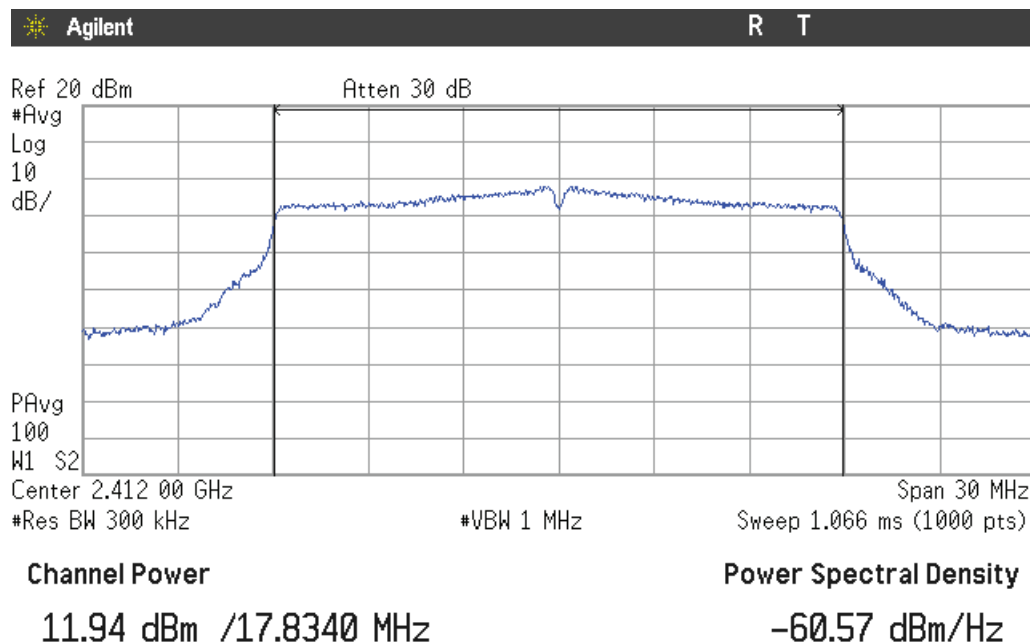


Highest Channel

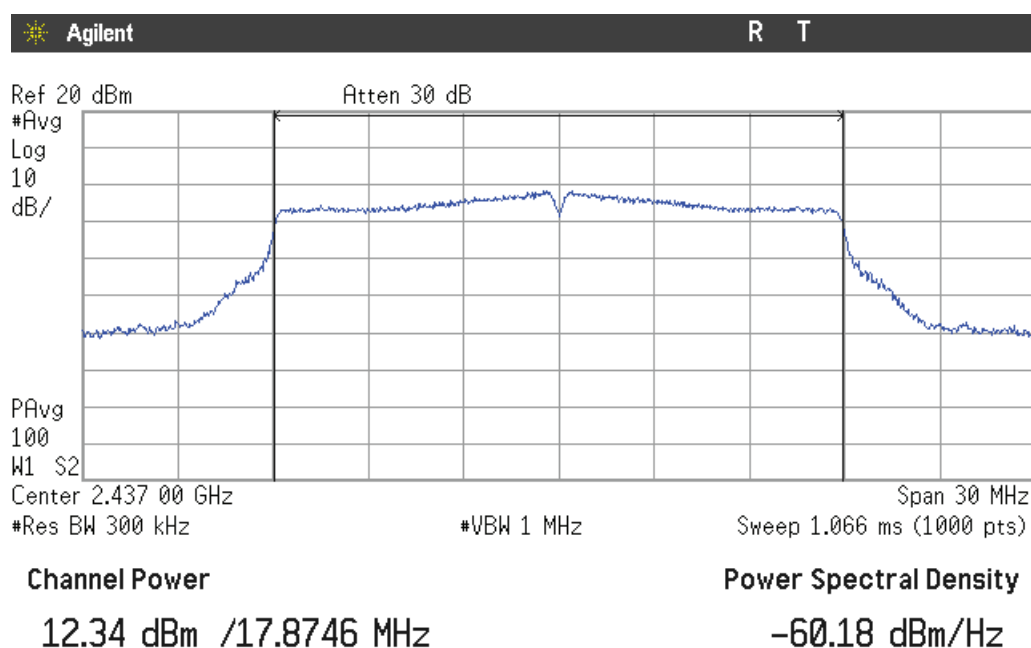


Mode N20

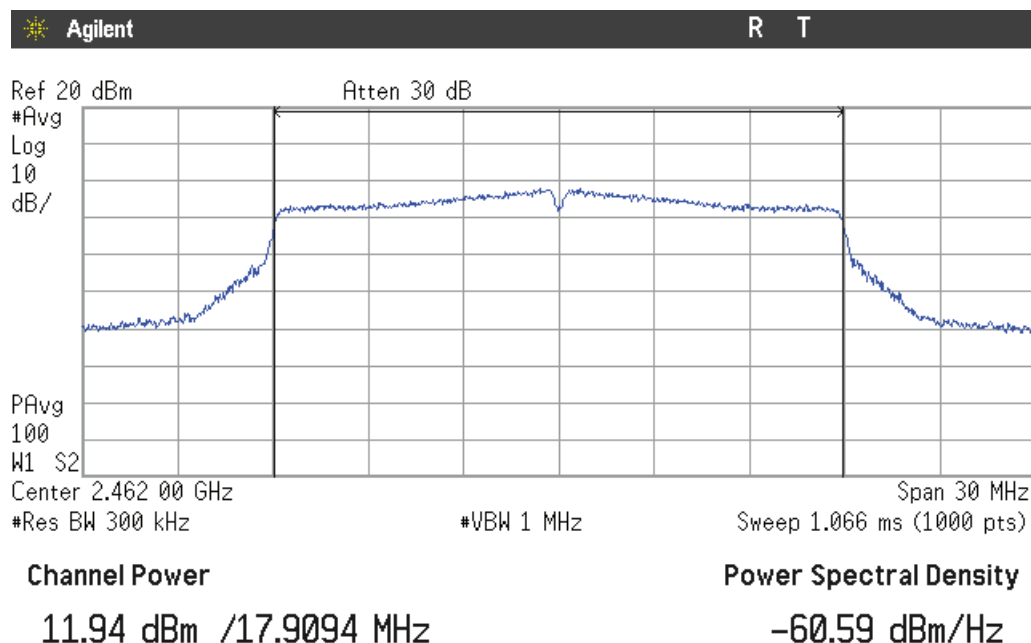
Lowest Channel



Middle Channel

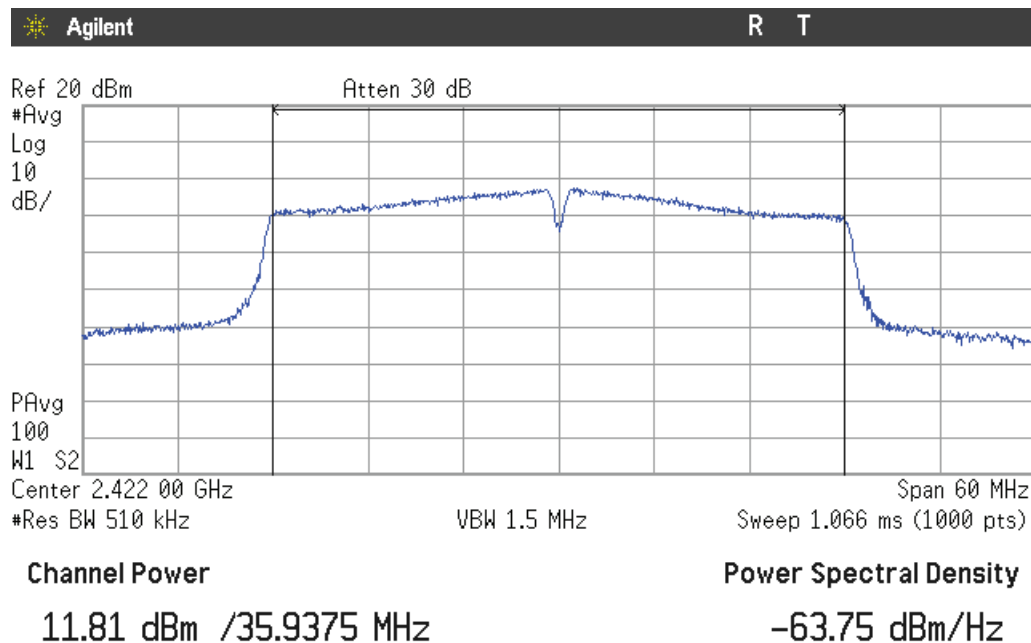


Highest Channel

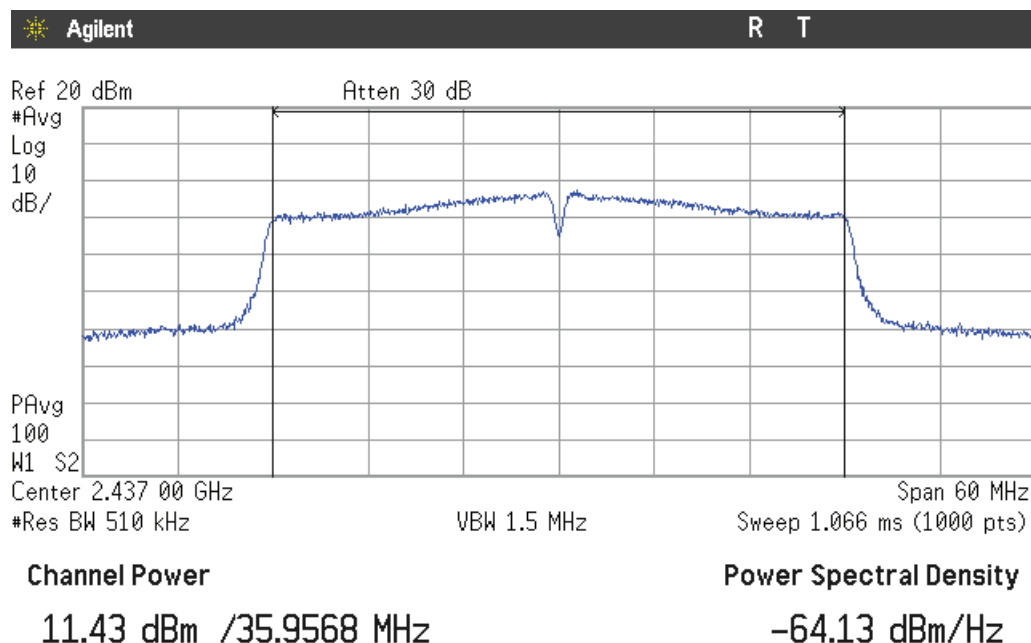


Mode N40

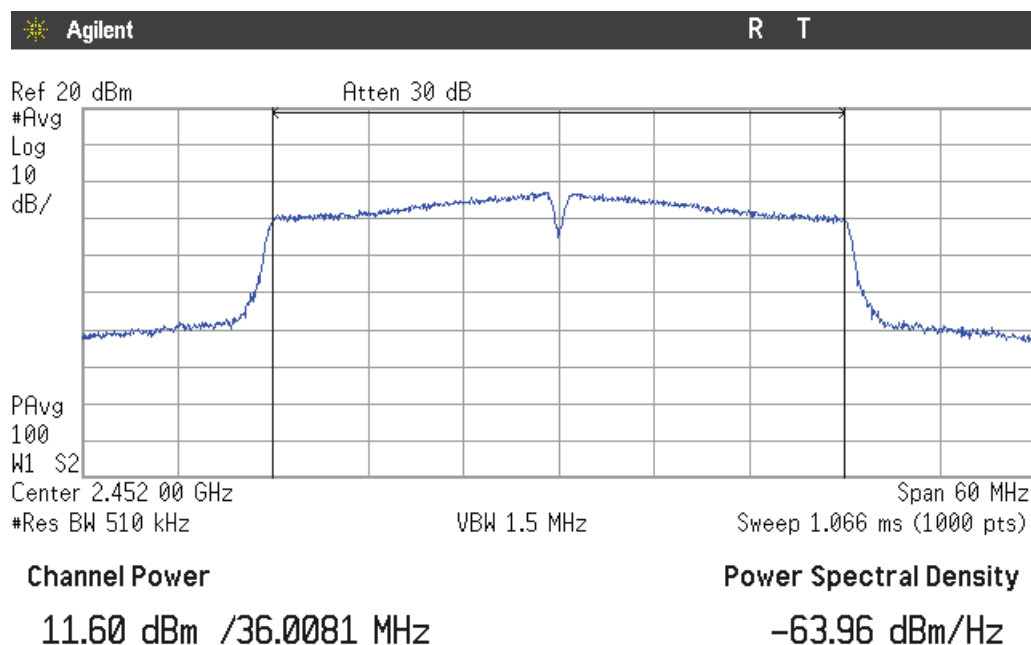
Lowest Channel



Middle Channel



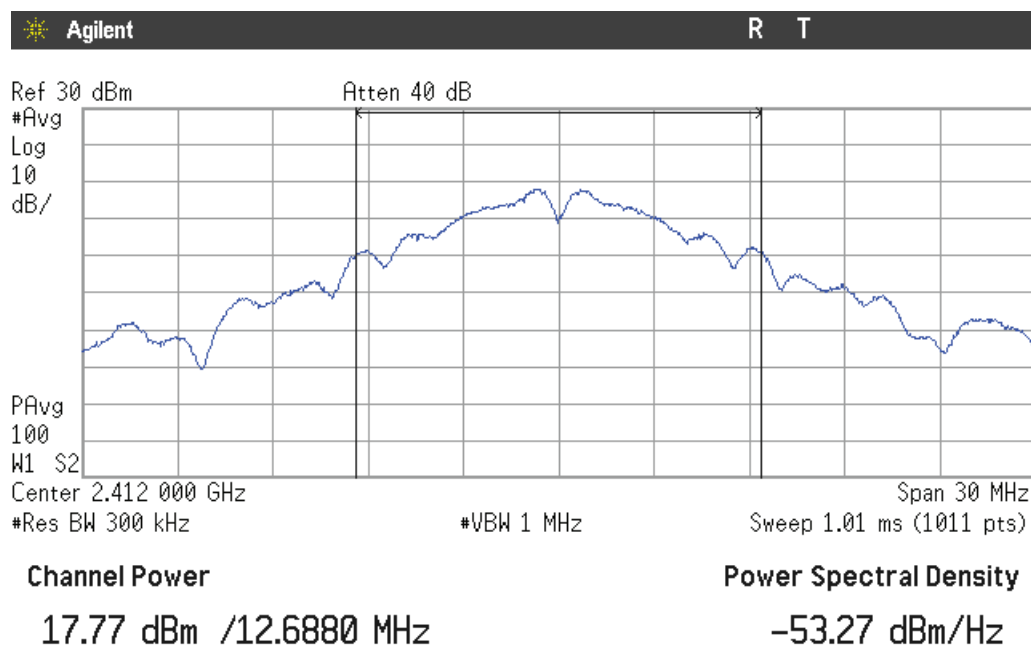
Highest Channel



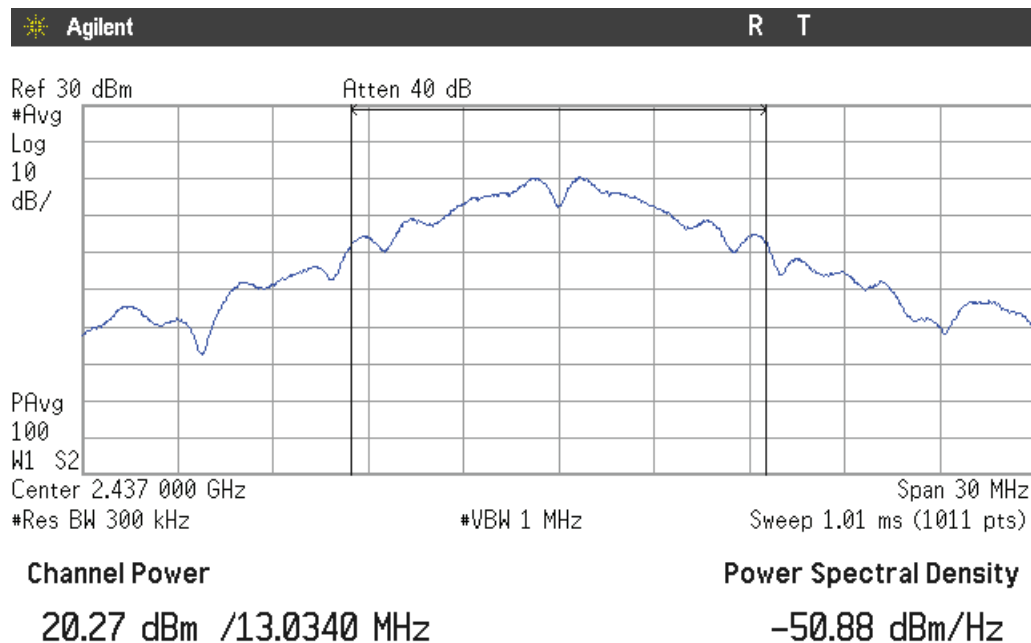
CORE 1 – Antenna RF port 4:

Mode B

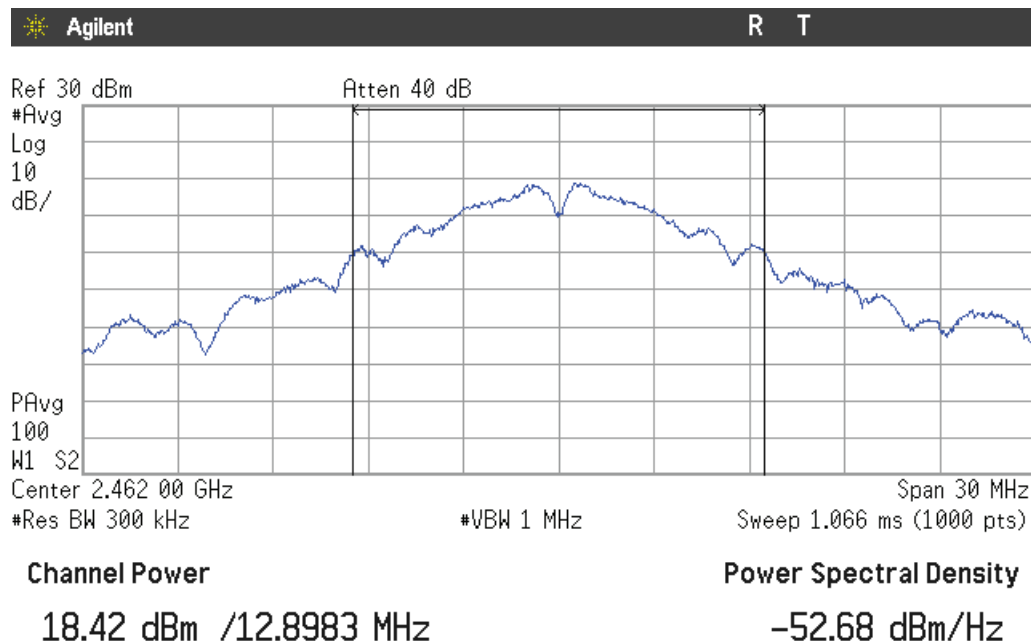
Lowest Channel



Middle Channel

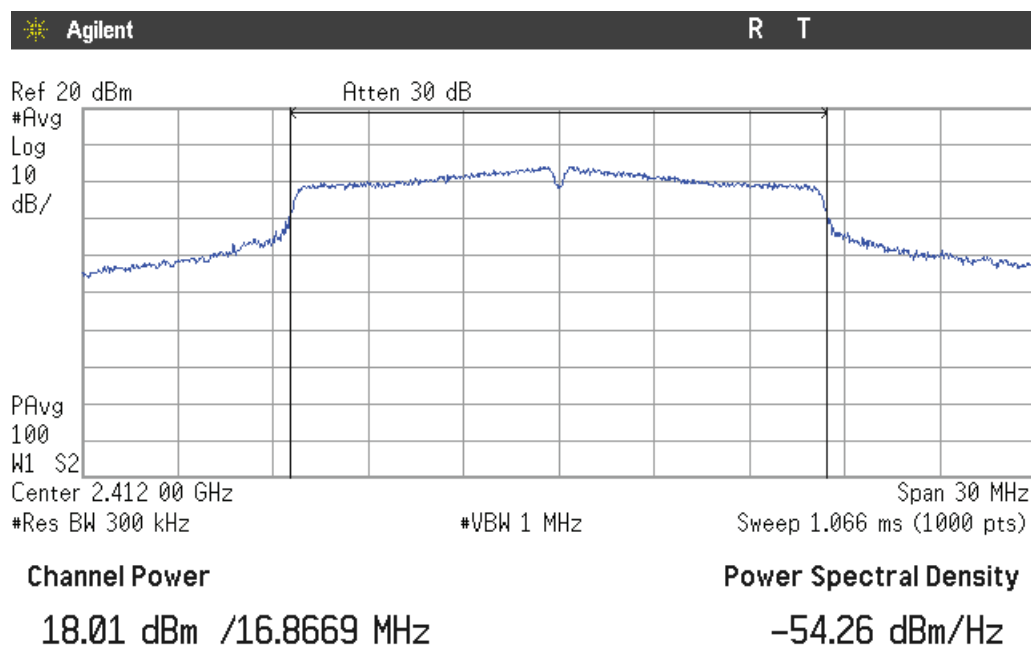


Highest Channel

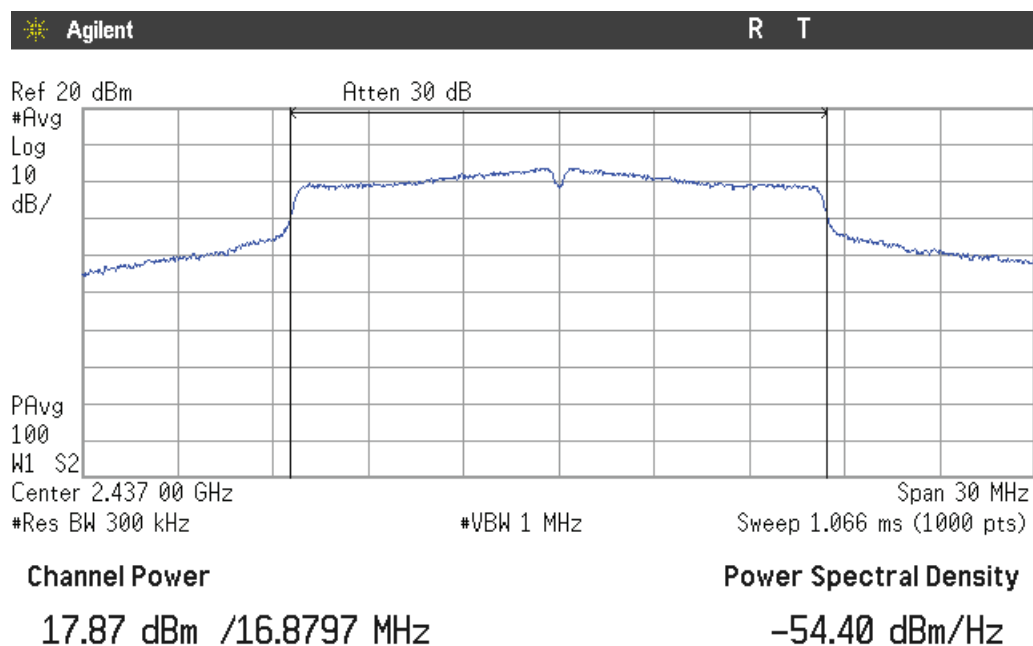


Mode G

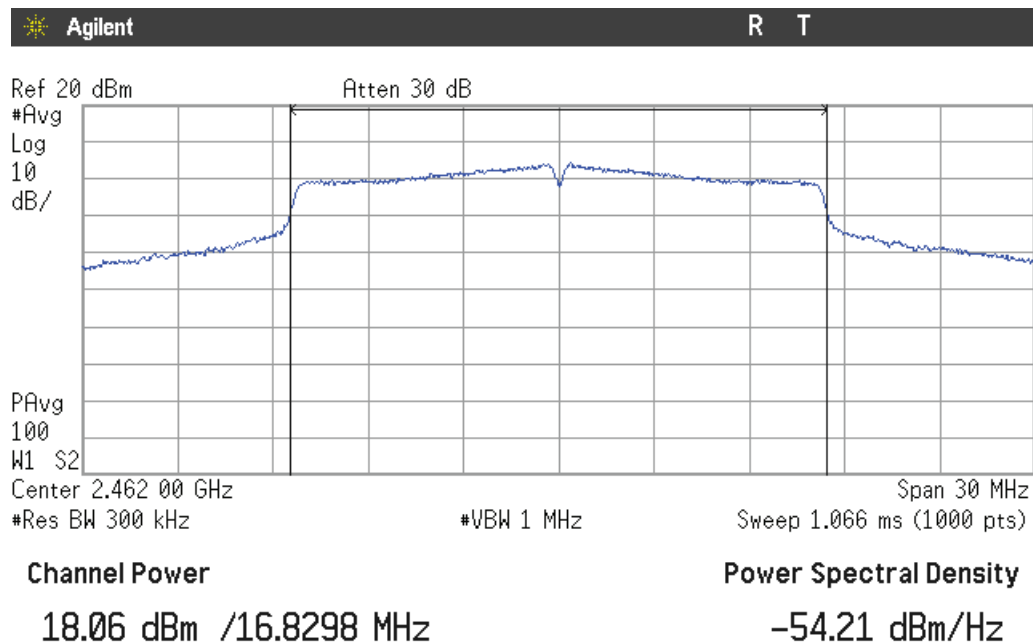
Lowest Channel



Middle Channel

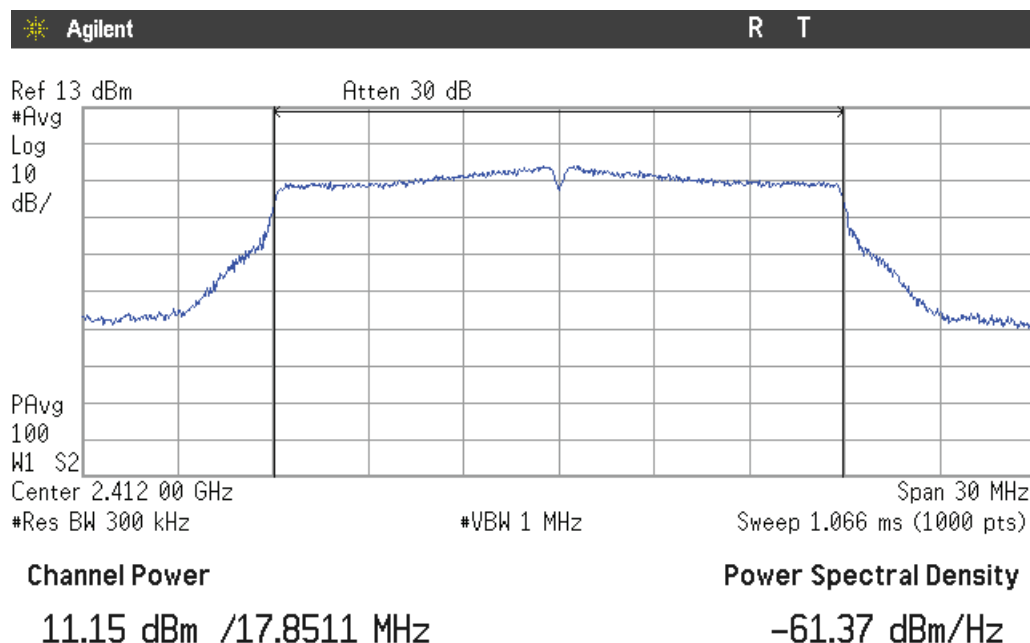


Highest Channel

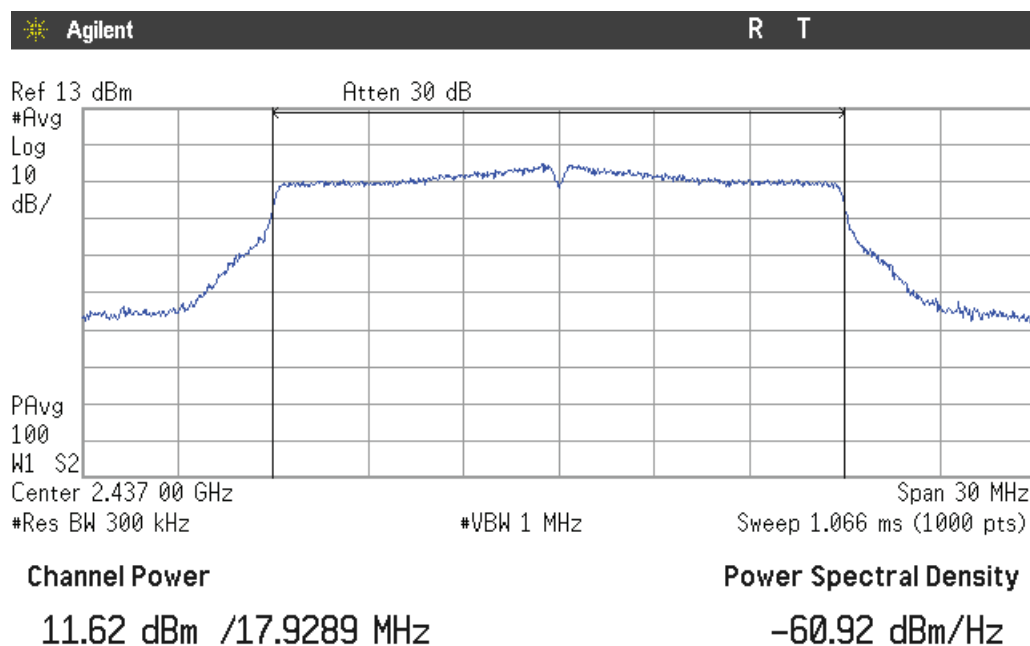


Mode N20

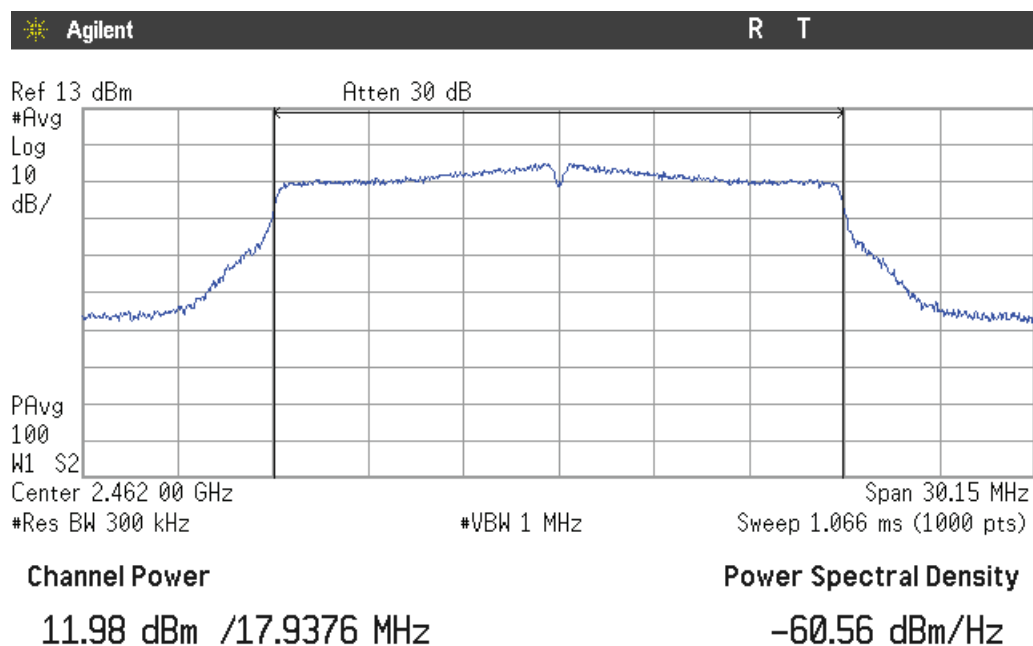
Lowest Channel



Middle Channel

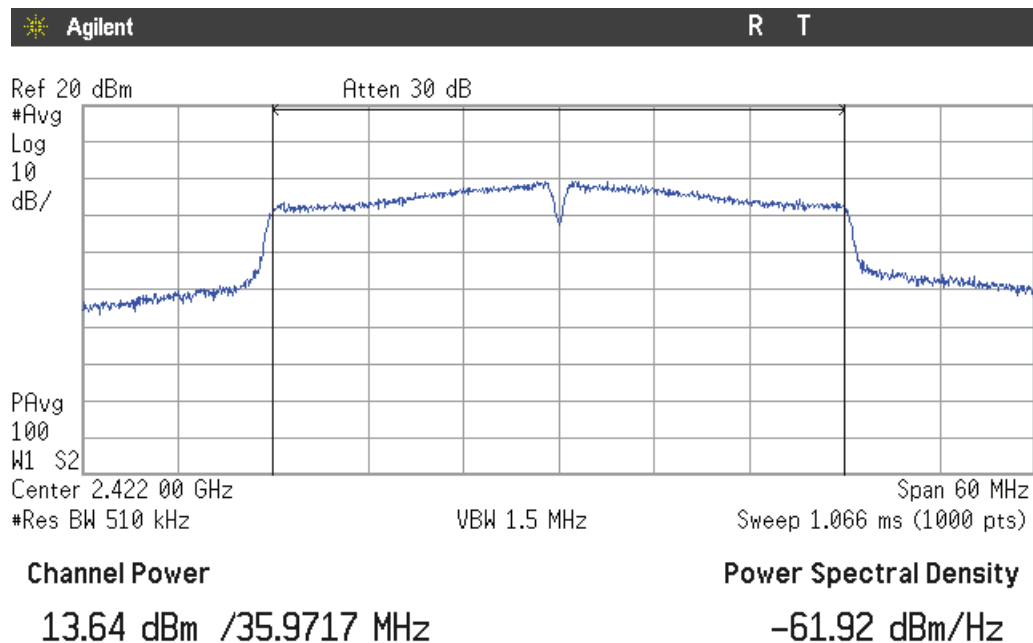


Highest Channel

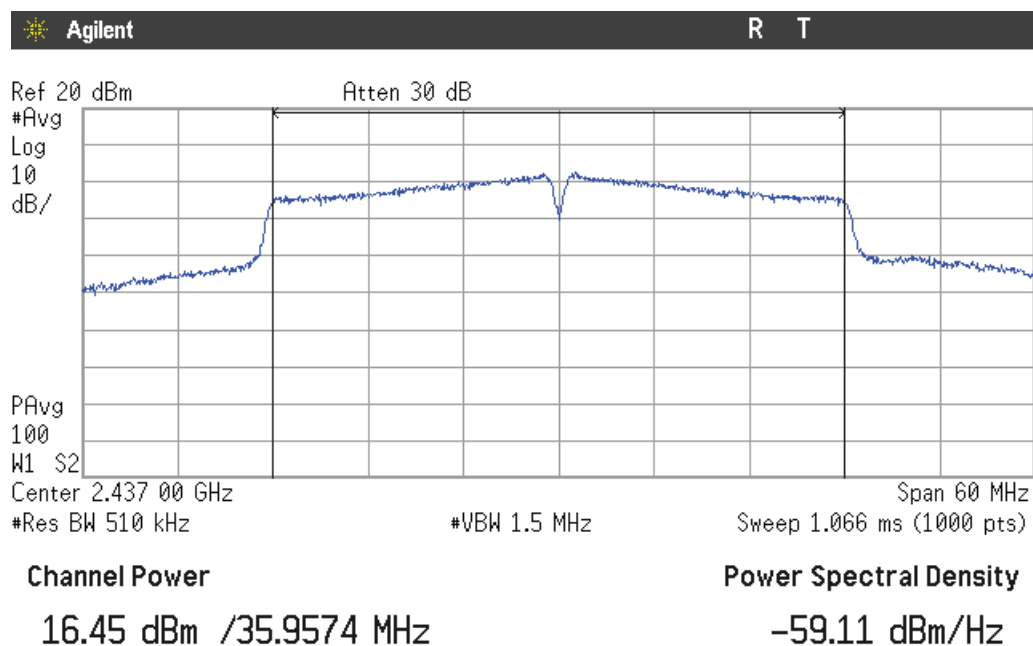


Mode N40

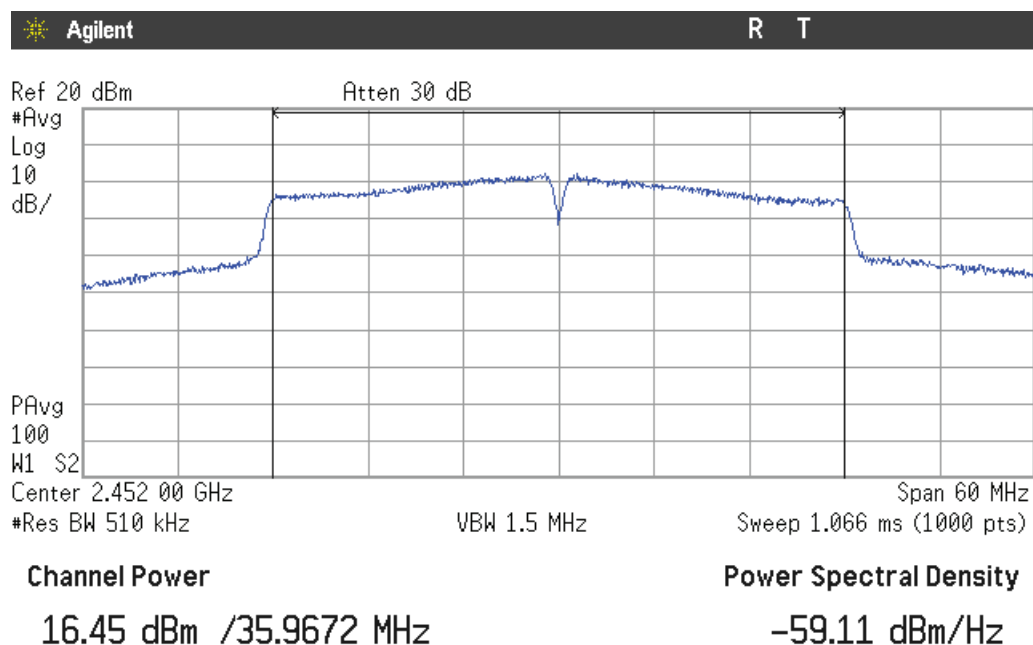
Lowest Channel



Middle Channel



Highest Channel



Section 15.247 Subclause (d) / RSS-247 5.5. Emission limitations conducted (Transmitter)

SPECIFICATION

In any 100 kHz bandwidth outside the frequency band in which the 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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB instead of 20 dB.

RESULTS:

Reference Level Measurement

CORE 0 – Antenna RF External port 2:

Mode B

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Reference Level Measurement (dBm)	8.62	8.53	8.45
Measurement uncertainty (dB)	<±0.78		

Mode G

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Reference Level Measurement (dBm)	2.67	2.71	2.66
Measurement uncertainty (dB)	<±0.78		

Mode N20

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Reference Level Measurement (dBm)	1.10	1.42	1.10
Measurement uncertainty (dB)	<±0.78		

Mode N40

	Lowest frequency 2422 MHz	Middle frequency 2437 MHz	Highest frequency 2452 MHz
Reference Level Measurement (dBm)	-1.00	-0.74	-1.01
Measurement uncertainty (dB)	<±0.78		

CORE 1 – Antenna RF port 4:

Mode B

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Reference Level Measurement (dBm)	14.79	14.54	13.76
Measurement uncertainty (dB)	<±0.78		

Mode G

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Reference Level Measurement (dBm)	0.92	1.30	1.64
Measurement uncertainty (dB)	<±0.78		

Mode N20

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Reference Level Measurement (dBm)	0.55	1.01	0.99
Measurement uncertainty (dB)	<±0.78		

Mode N40

	Lowest frequency 2422 MHz	Middle frequency 2437 MHz	Highest frequency 2452 MHz
Reference Level Measurement (dBm)	-1.93	-1.70	-1.60
Measurement uncertainty (dB)	<±0.78		

CORE 0 – Antenna RF External port 2:

Mode B

Lowest frequency 2412 MHz

Lowest frequency 2412 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-21.38

Middle frequency 2437 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-21.47

Highest frequency 2462 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-21.55

Mode G

Lowest frequency 2412 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-27.33

Middle frequency 2437 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-27.29

Highest frequency 2462 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-27.34

Mode N20

Lowest frequency 2412 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-28.90

Middle frequency 2437 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-28.58

Highest frequency 2462 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-28.90

Mode N40

Lowest frequency 2422 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-31.00

Middle frequency 2437 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-30.74

Highest frequency 2452 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-31.01

Verdict: PASS

CORE 1 – Antenna RF port 4:

Mode B

Lowest frequency 2412 MHz

Lowest frequency 2412 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-15.21

Middle frequency 2437 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-15.46

Highest frequency 2462 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-16.24

Mode G

Lowest frequency 2412 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-29.08

Middle frequency 2437 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-28.70

Highest frequency 2462 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-28.36

Mode N20

Lowest frequency 2412 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-29.45

Middle frequency 2437 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-28.99

Highest frequency 2462 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-29.01

Mode N40

Lowest frequency 2422 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-31.93

Middle frequency 2437 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-31.70

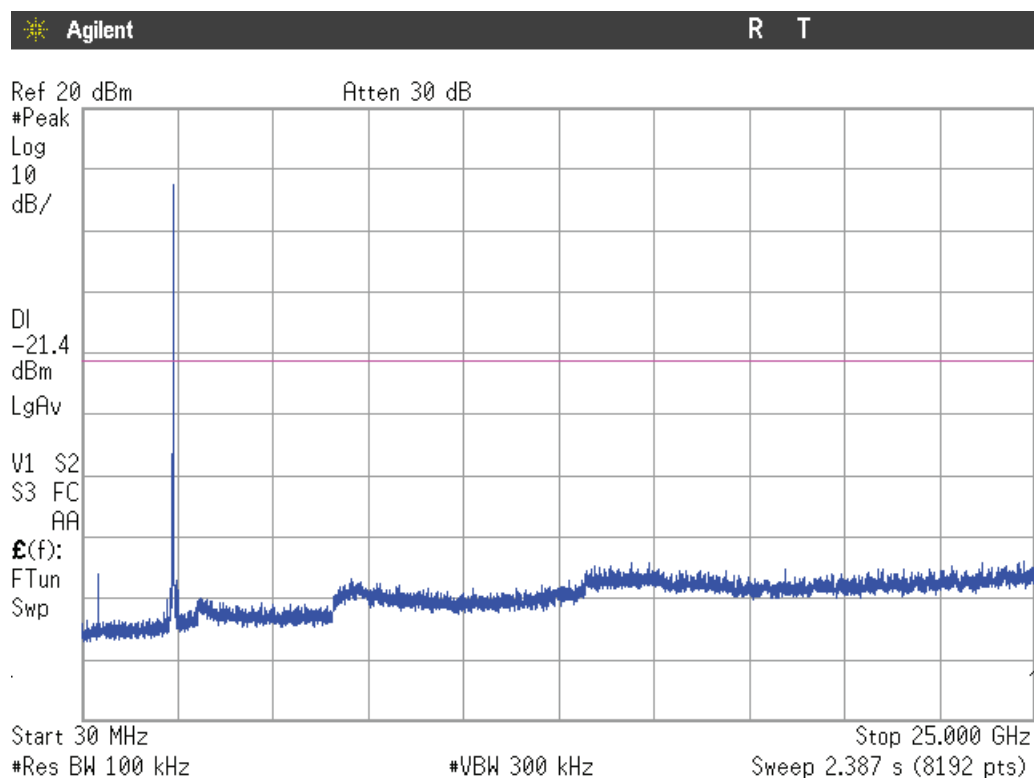
Highest frequency 2452 MHz	Limit (dBm)
All peaks are more than 20 dB below the limit.	-31.60

Verdict: PASS

CORE 0 – Antenna RF External port 2:

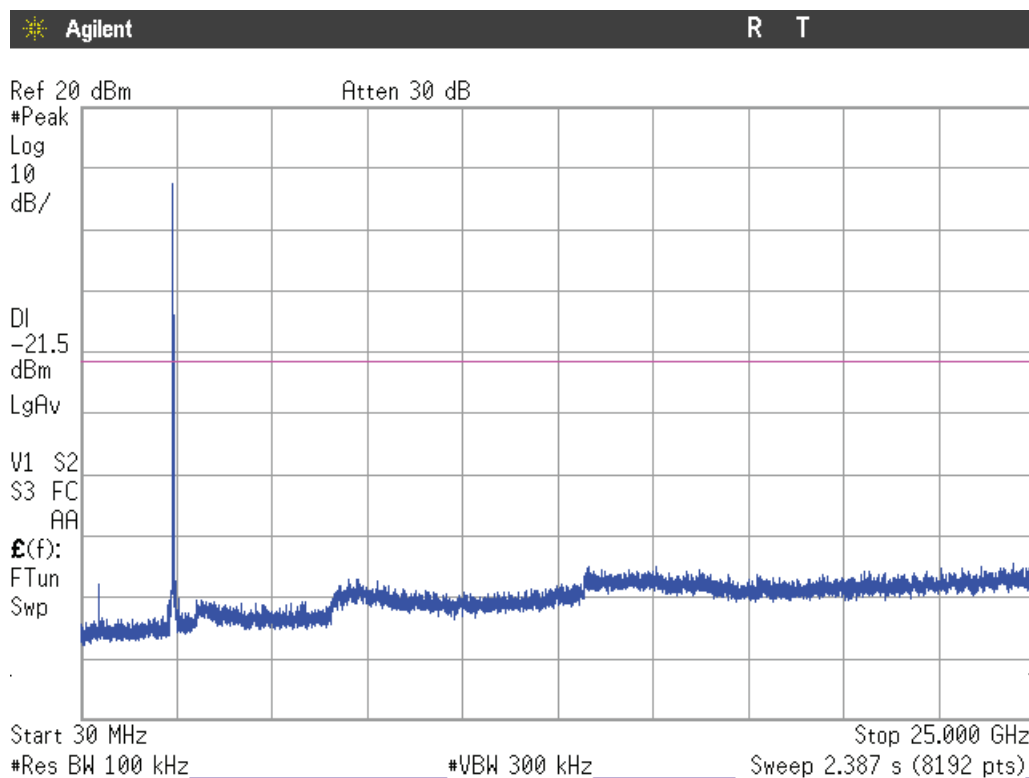
Mode B

Lowest Channel



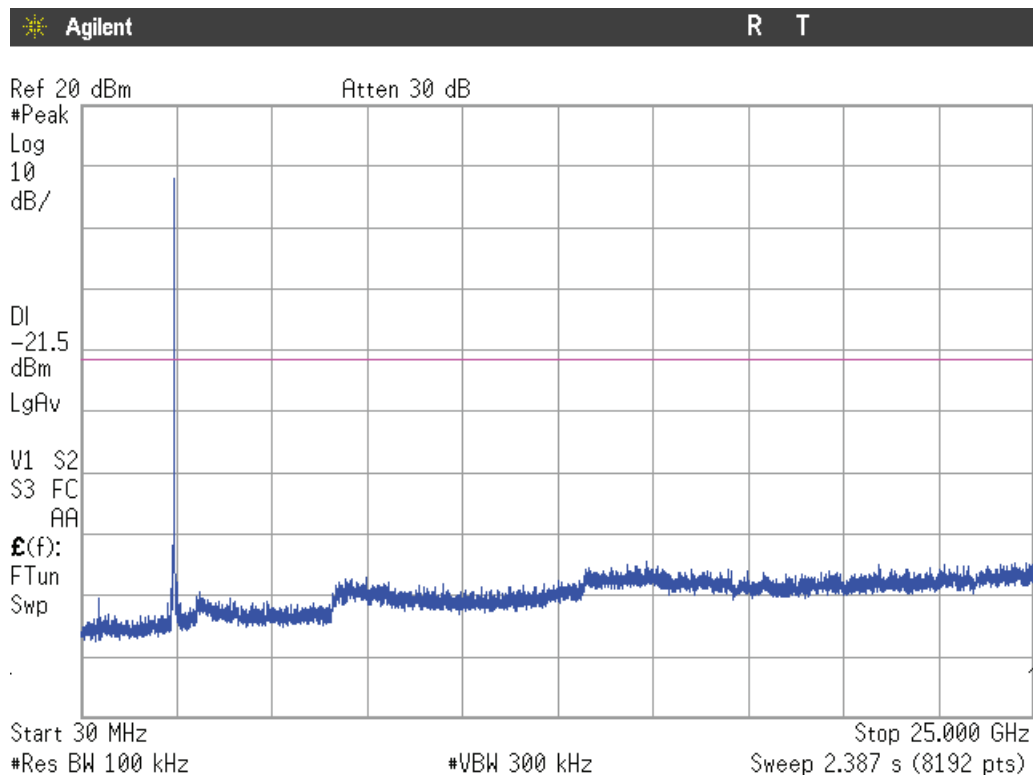
Note: The peak shown in the plot above the limit is the carrier frequency.

Middle Channel



Note: The peak shown in the plot above the limit is the carrier frequency.

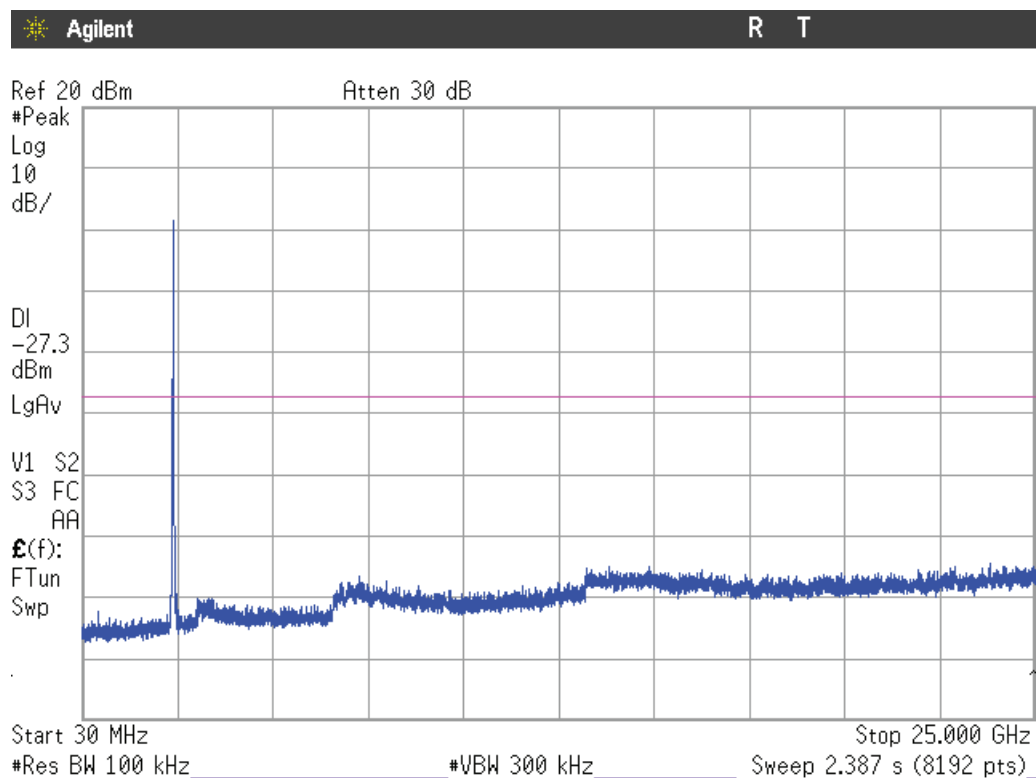
Highest channel



Note: The peak shown in the plot above the limit is the carrier frequency.

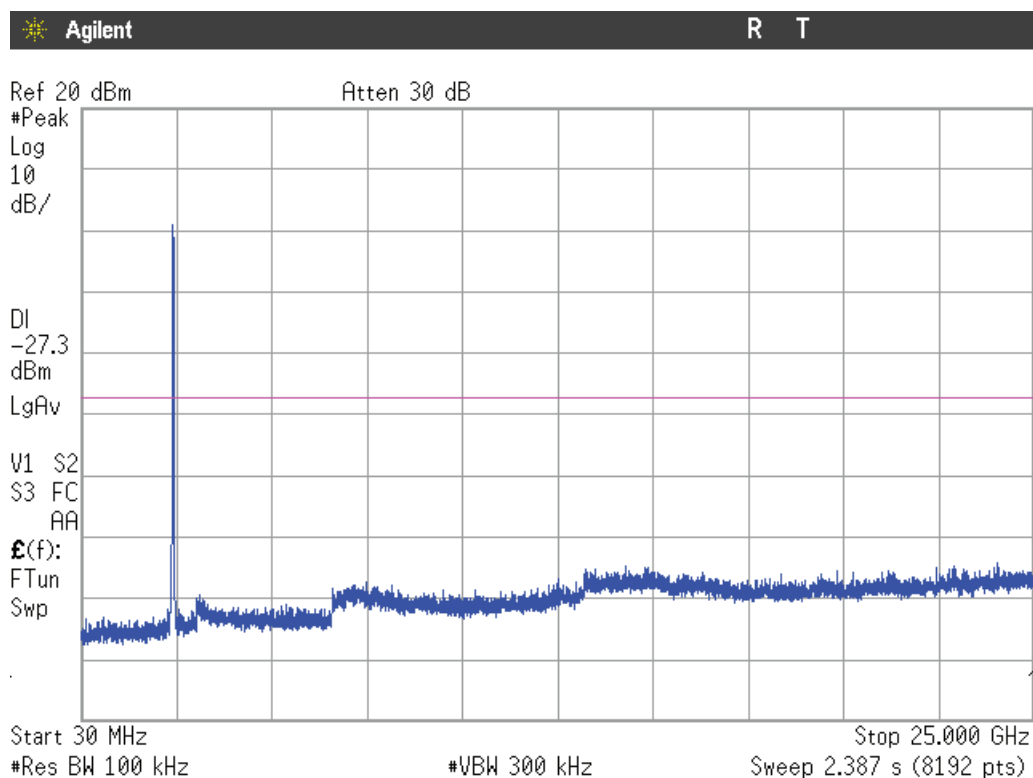
Mode G

Lowest Channel



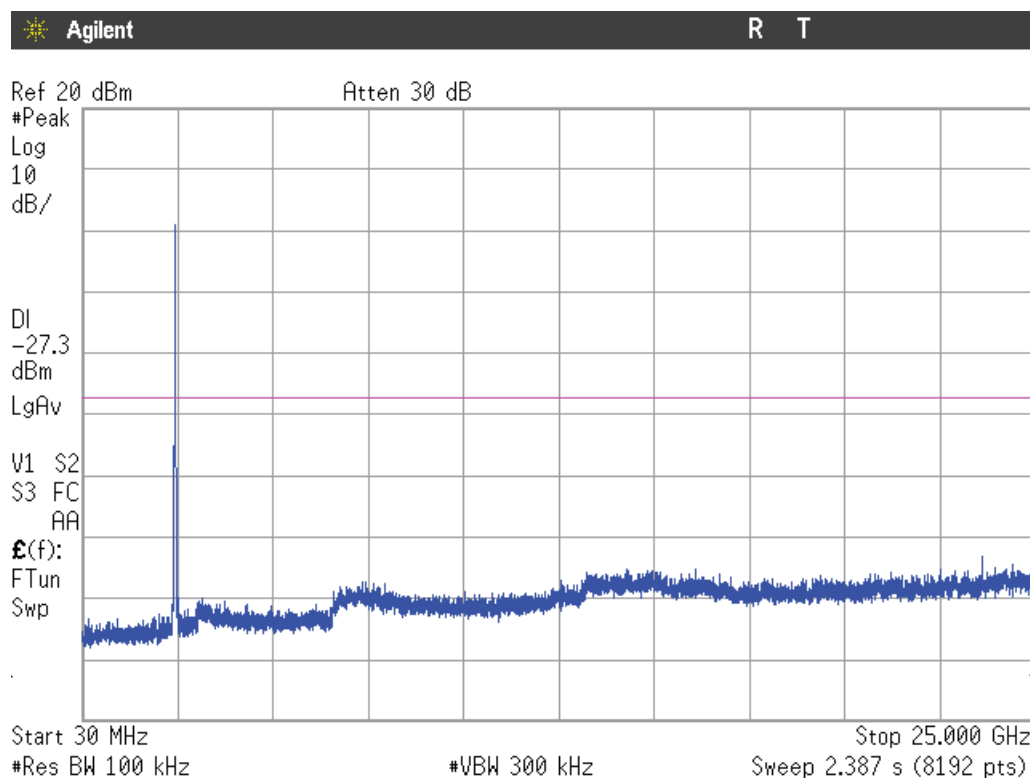
Note: The peak shown in the plot above the limit is the carrier frequency.

Middle Channel



Note: The peak shown in the plot above the limit is the carrier frequency.

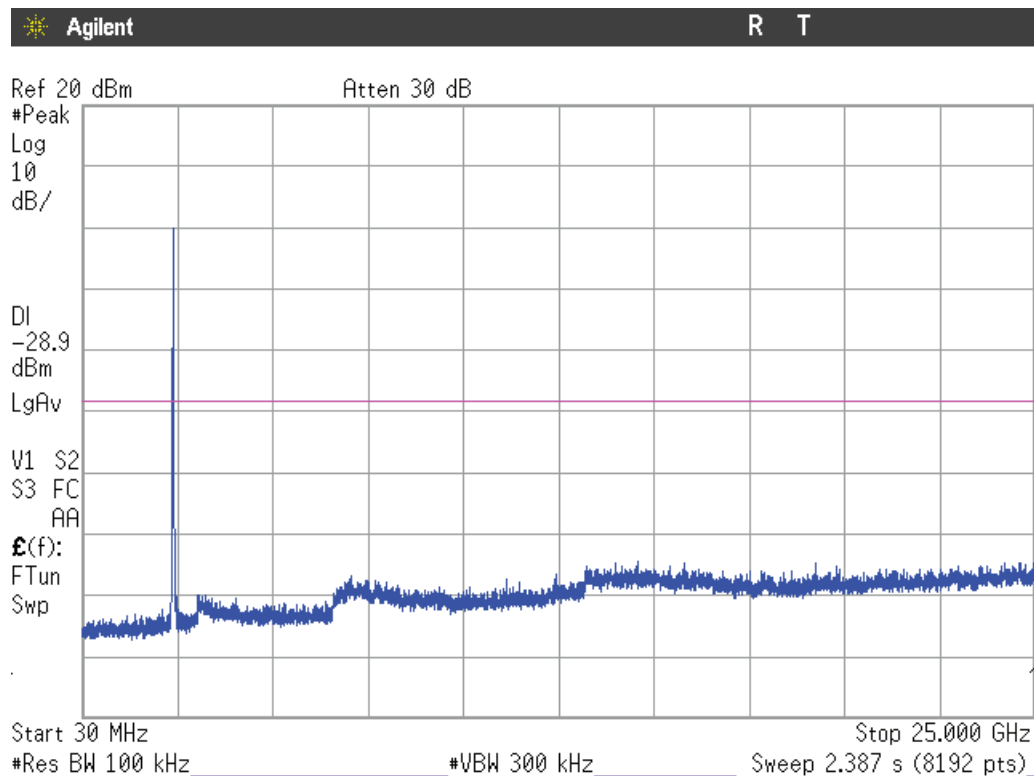
Highest channel



Note: The peak shown in the plot above the limit is the carrier frequency.

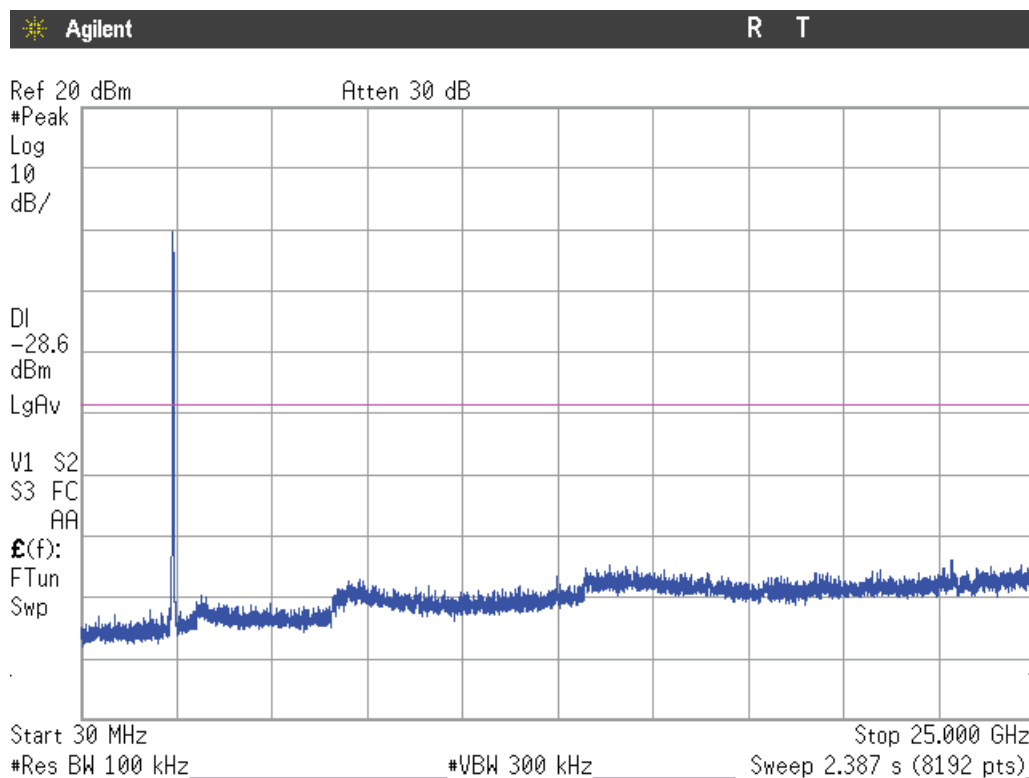
Mode N20

Lowest Channel



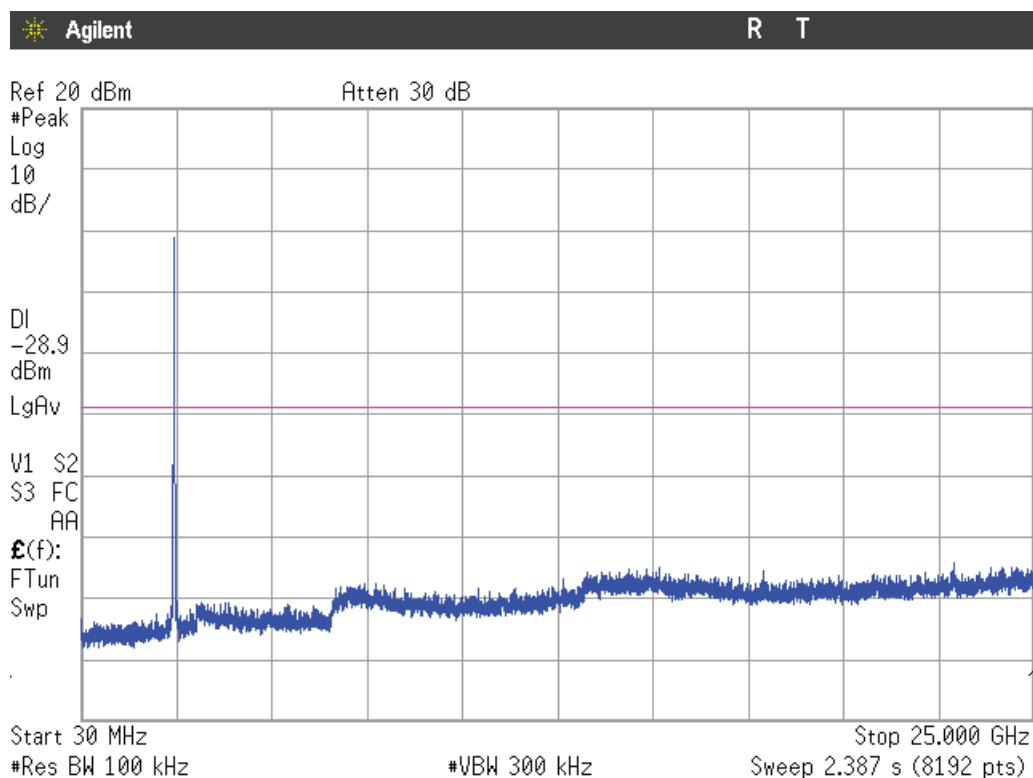
Note: The peak shown in the plot above the limit is the carrier frequency.

Middle Channel



Note: The peak shown in the plot above the limit is the carrier frequency.

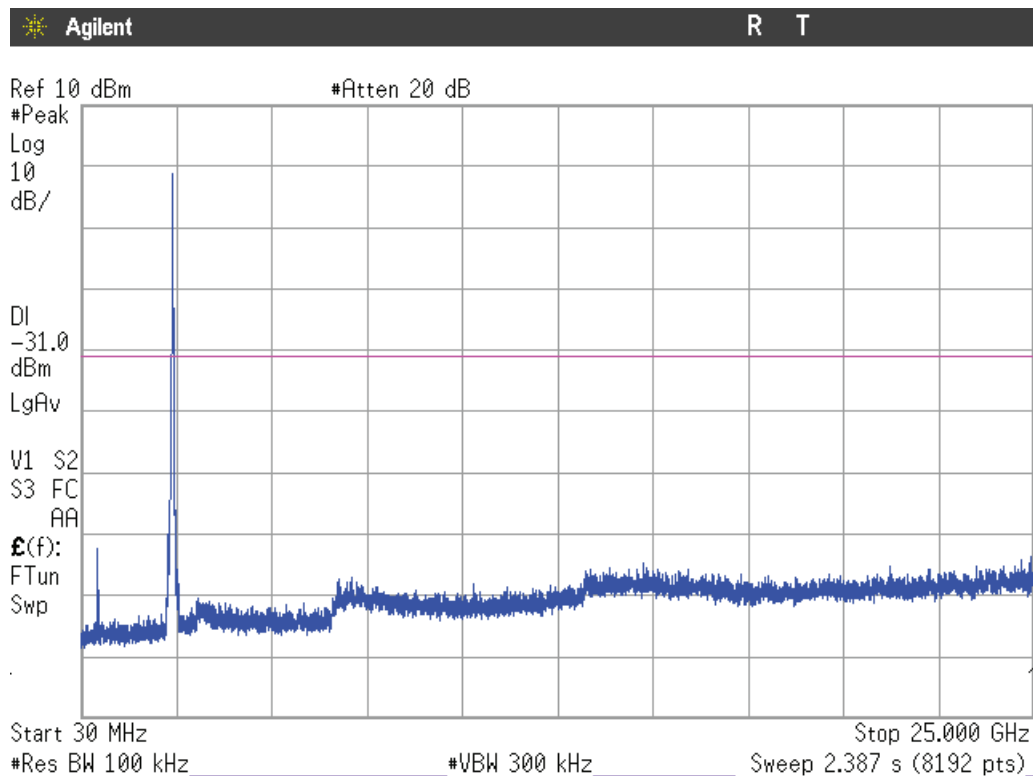
Highest channel



Note: The peak shown in the plot above the limit is the carrier frequency.

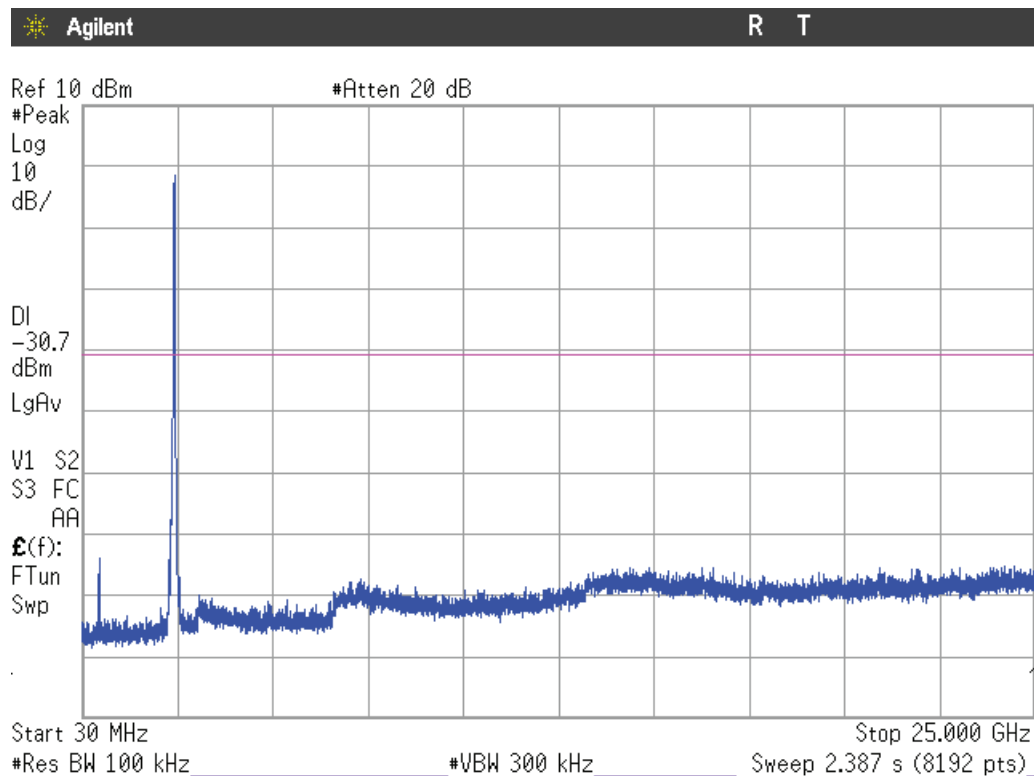
Mode N40

Lowest Channel



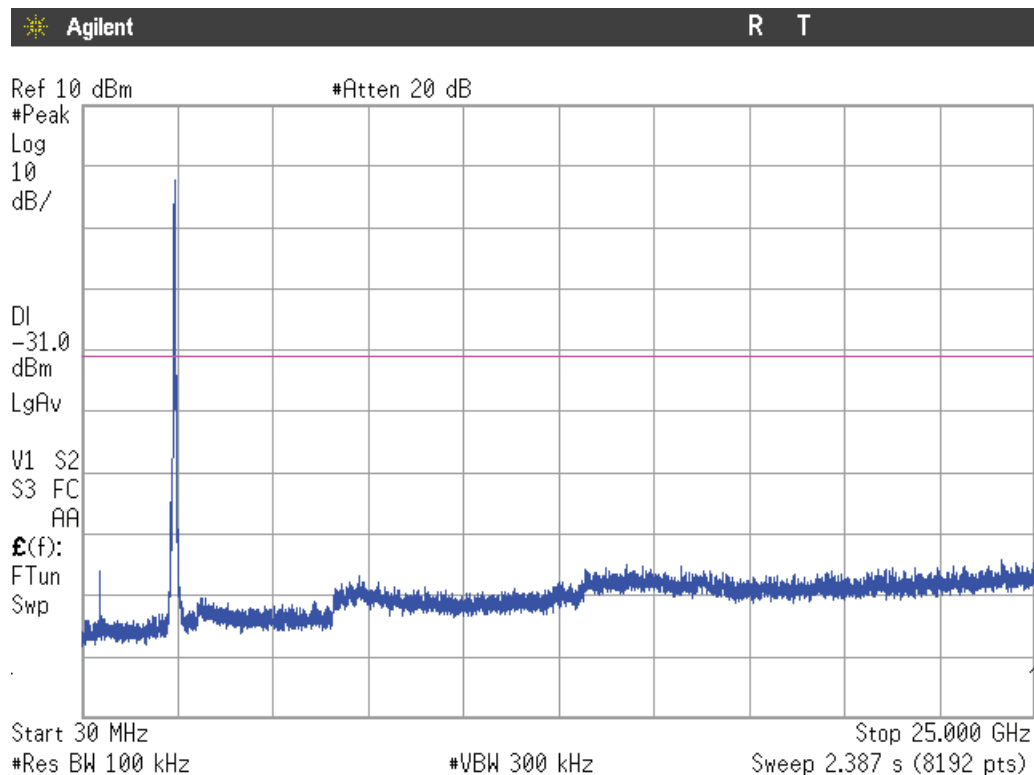
Note: The peak shown in the plot above the limit is the carrier frequency.

Middle Channel



Note: The peak shown in the plot above the limit is the carrier frequency.

Highest Channel

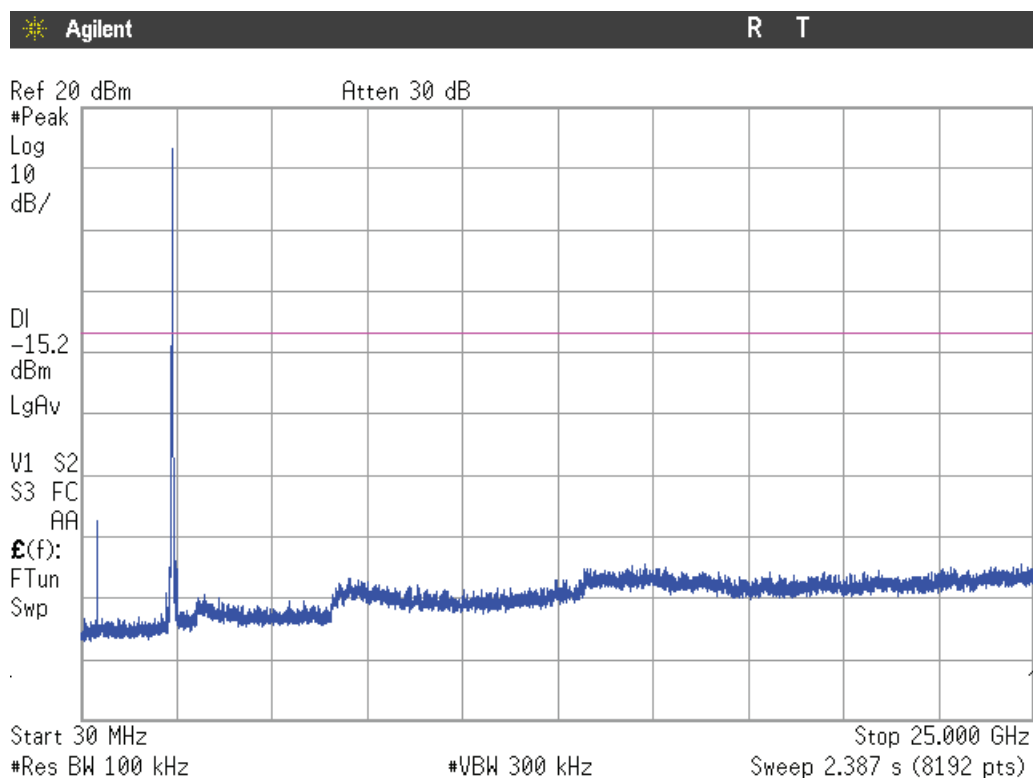


Note: The peak shown in the plot above the limit is the carrier frequency.

CORE 1 – Antenna port 4:

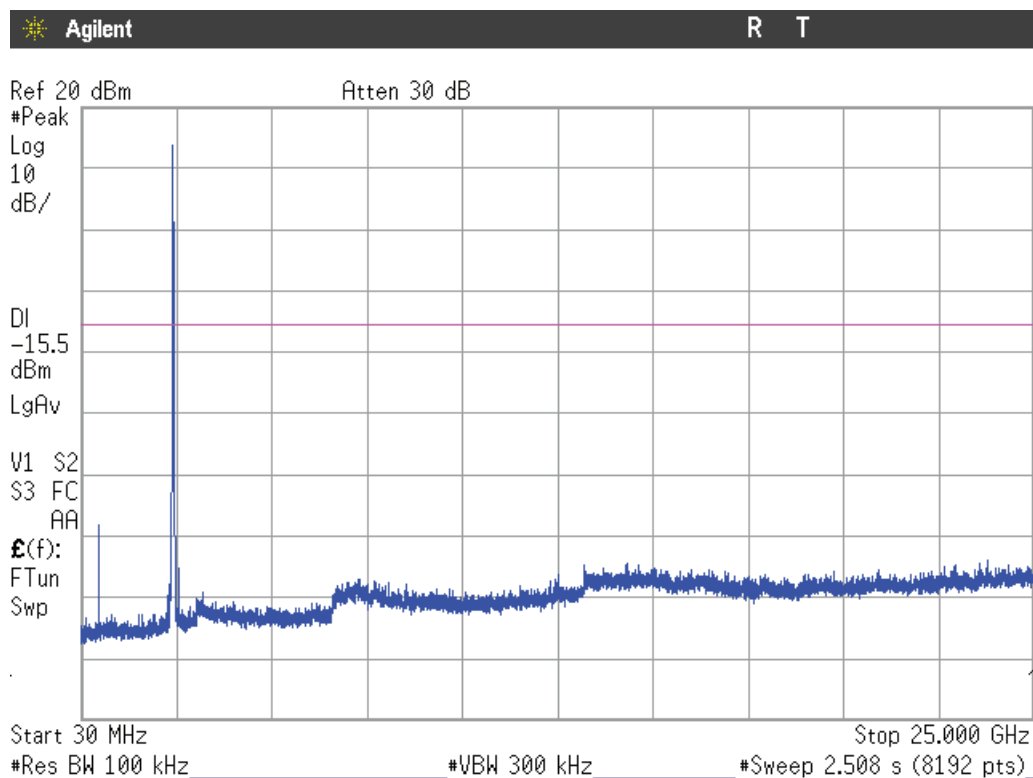
Mode B

Lowest Channel



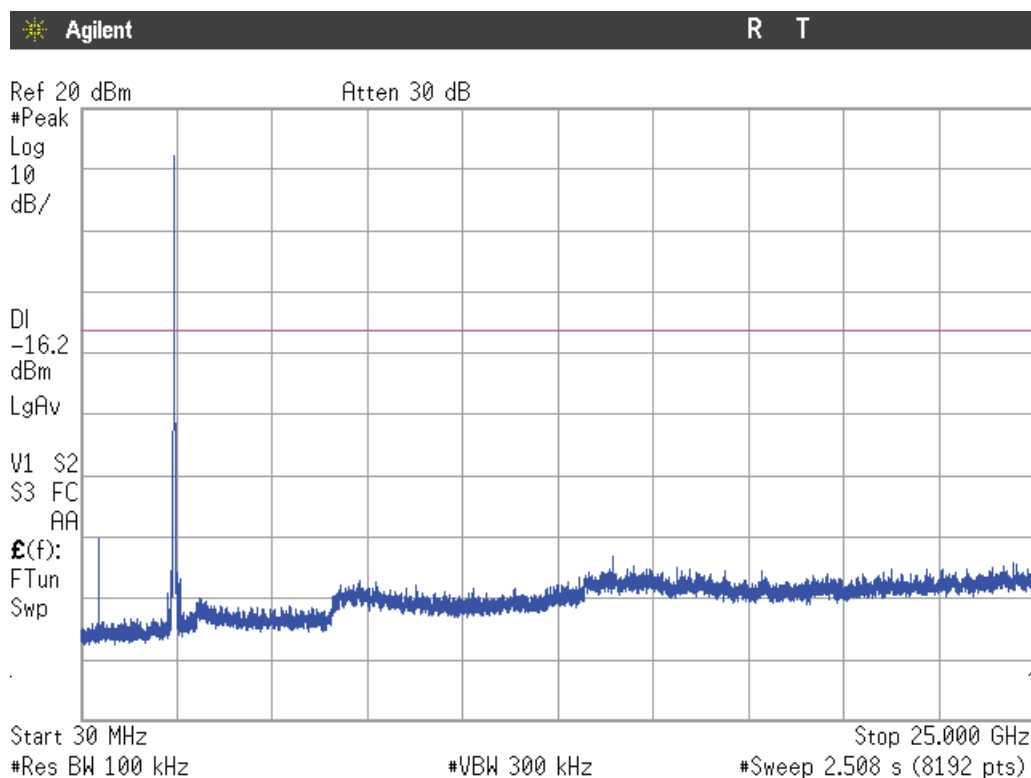
Note: The peak shown in the plot above the limit is the carrier frequency.

Middle Channel



Note: The peak shown in the plot above the limit is the carrier frequency.

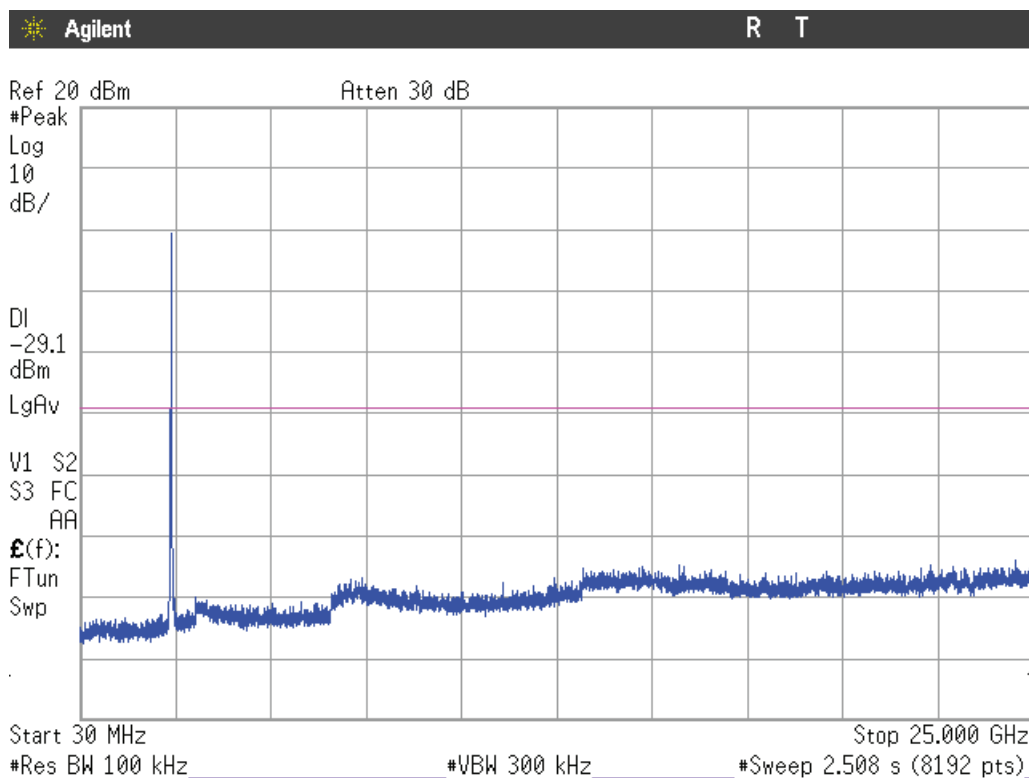
Highest channel



Note: The peak shown in the plot above the limit is the carrier frequency.

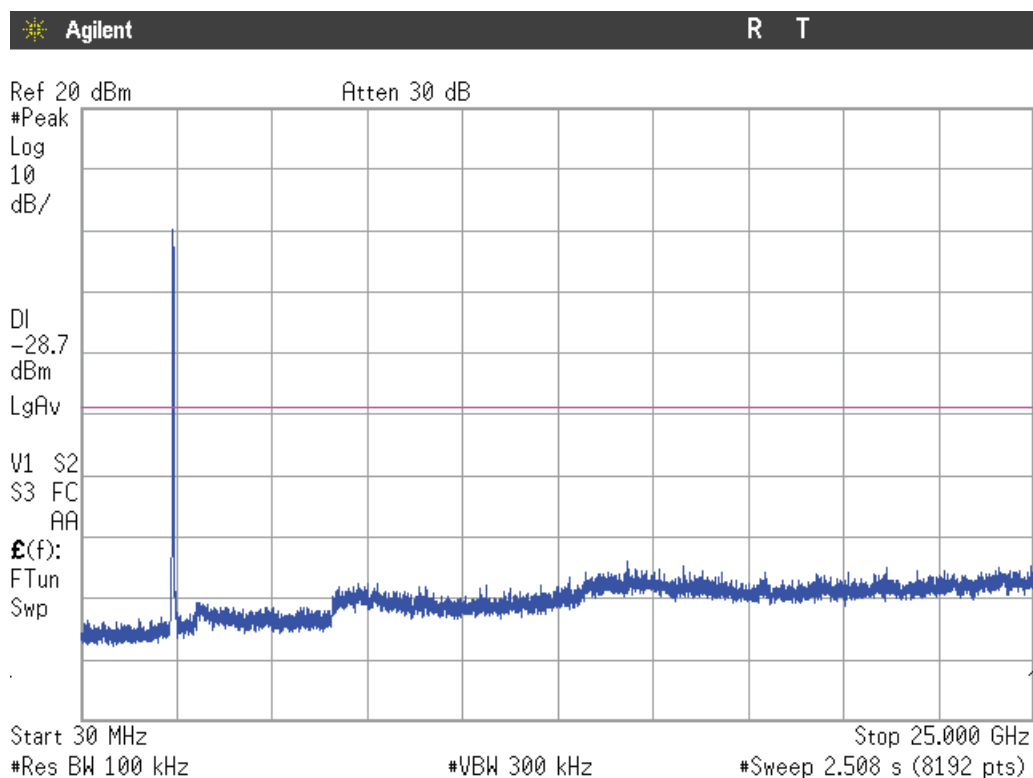
Mode G

Lowest Channel



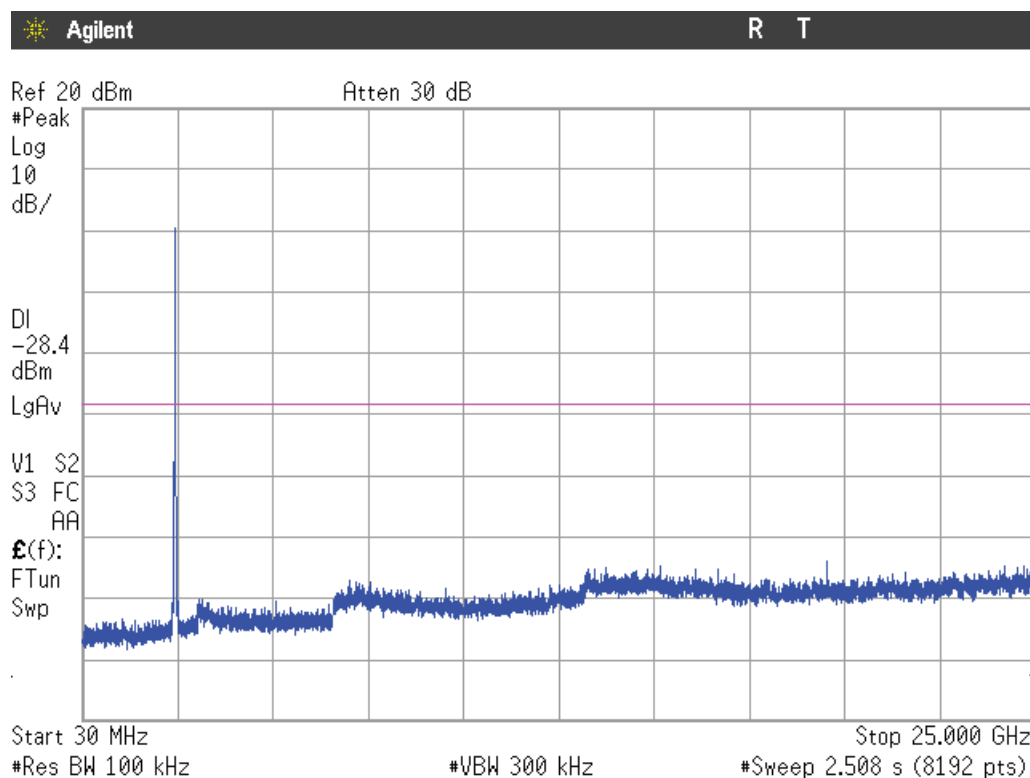
Note: The peak shown in the plot above the limit is the carrier frequency.

Middle Channel



Note: The peak shown in the plot above the limit is the carrier frequency.

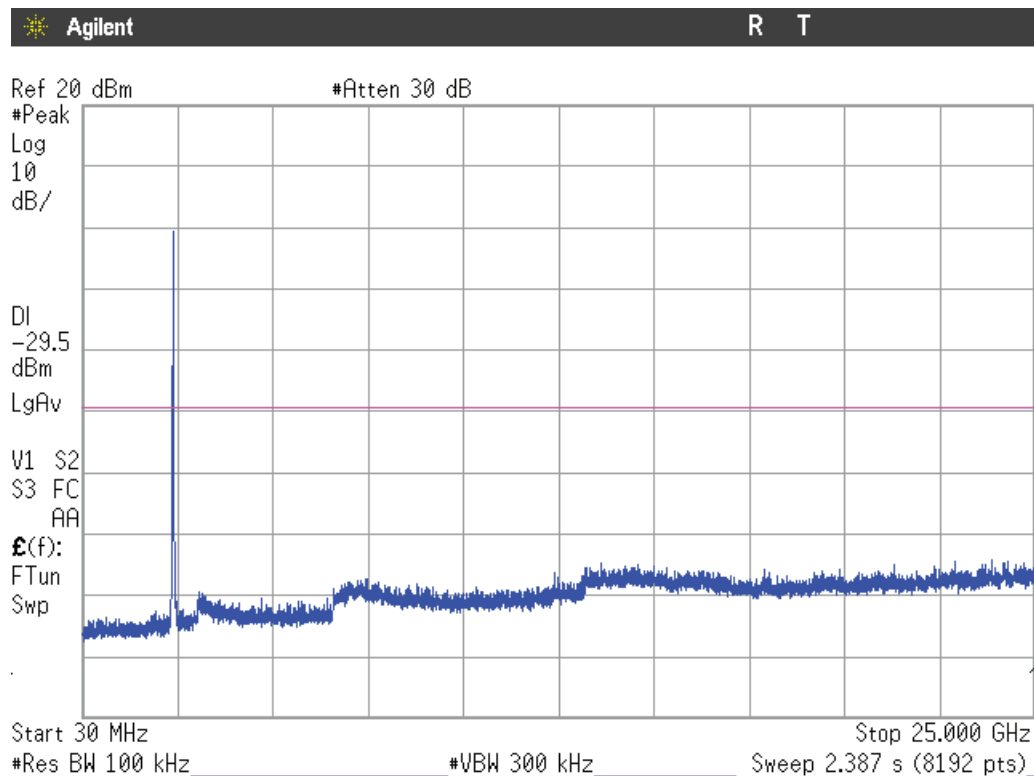
Highest channel



Note: The peak shown in the plot above the limit is the carrier frequency.

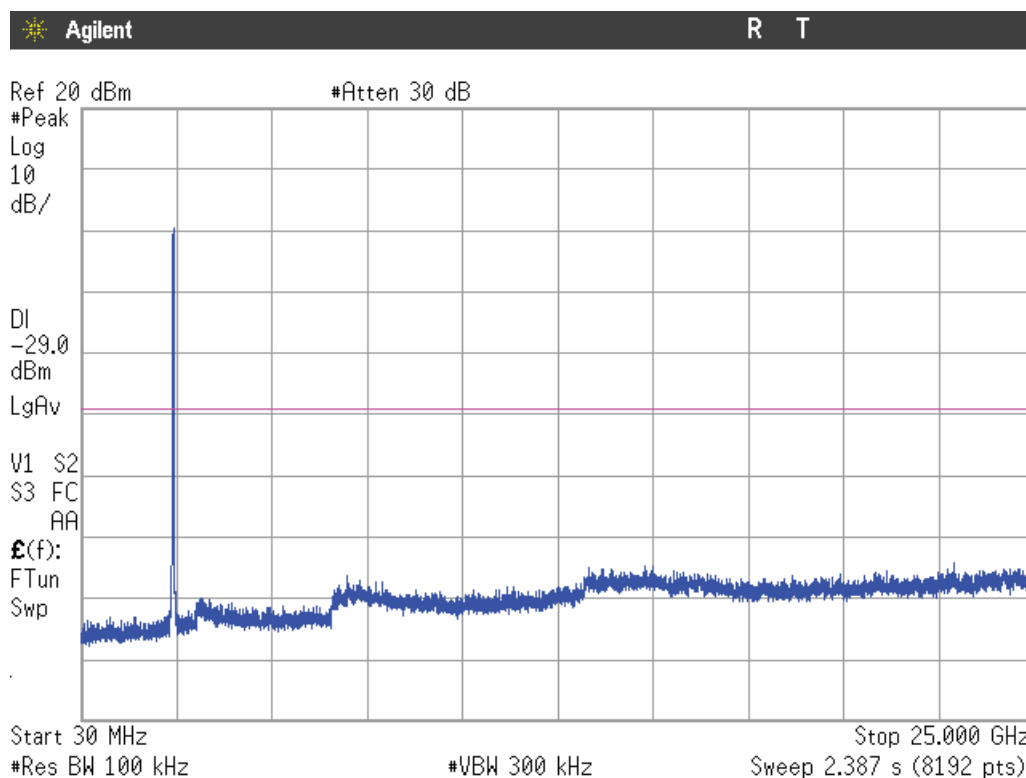
Mode N20

Lowest Channel



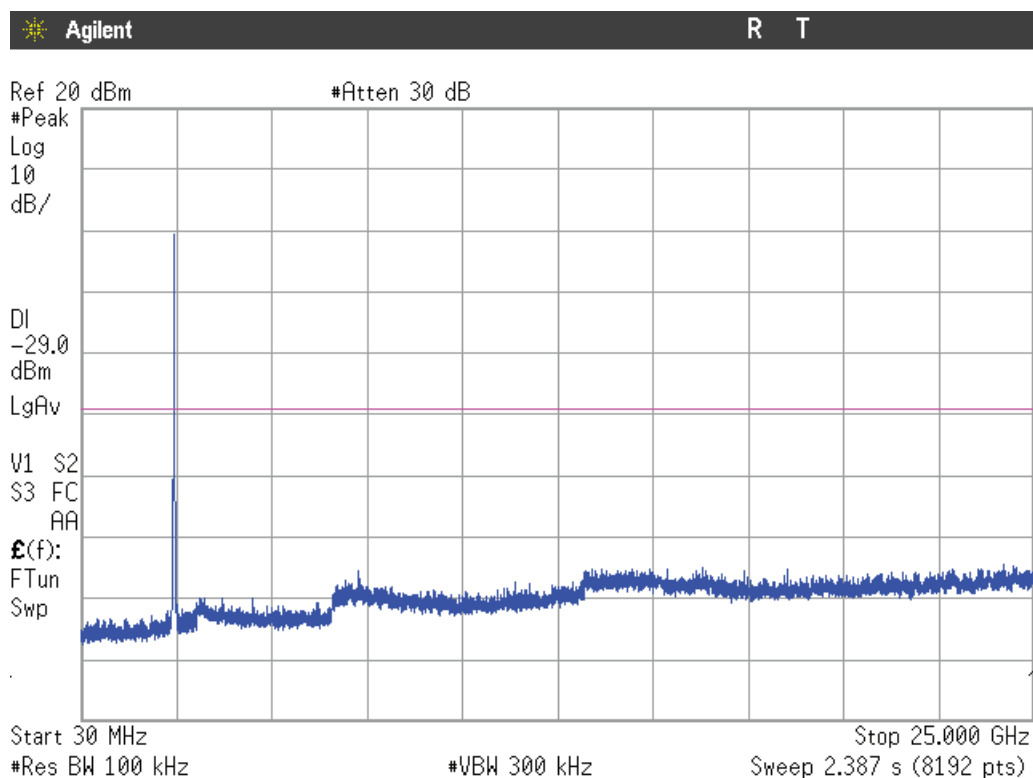
Note: The peak shown in the plot above the limit is the carrier frequency.

Middle Channel



Note: The peak shown in the plot above the limit is the carrier frequency.

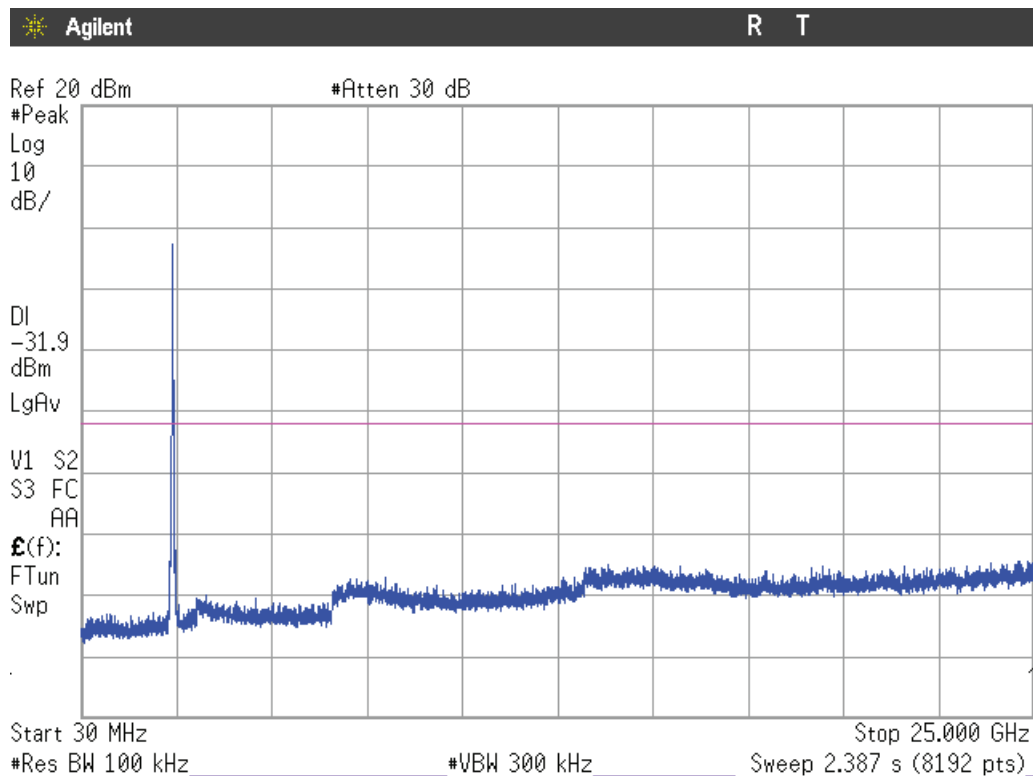
Highest channel



Note: The peak shown in the plot above the limit is the carrier frequency.

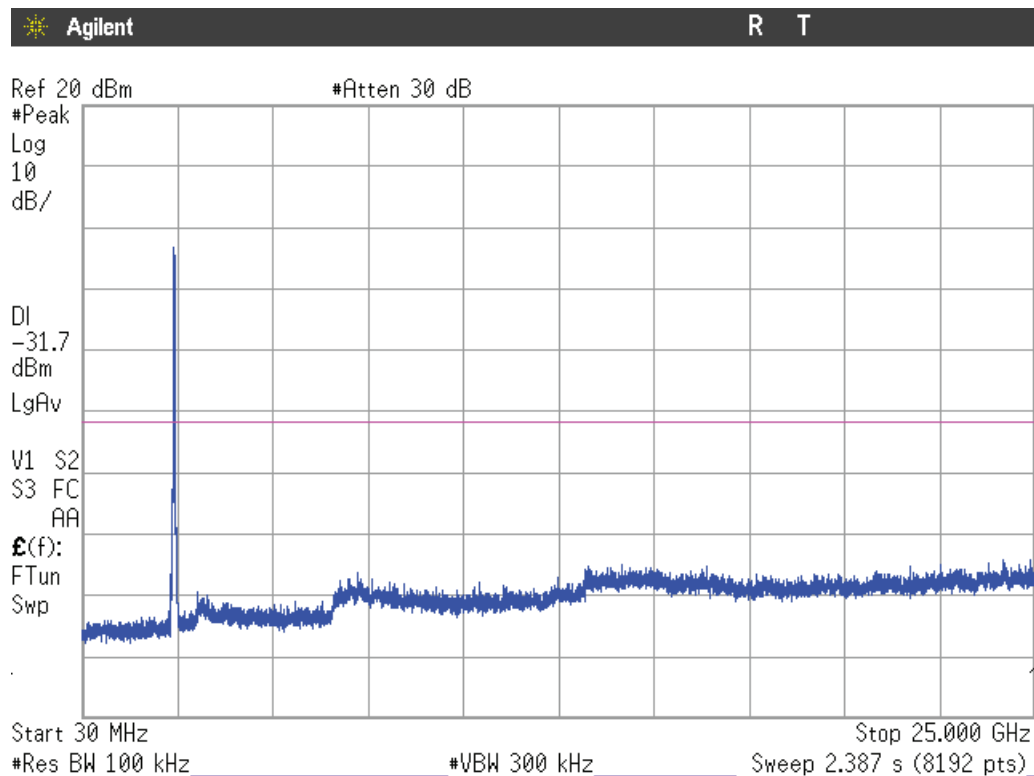
Mode N40

Lowest Channel



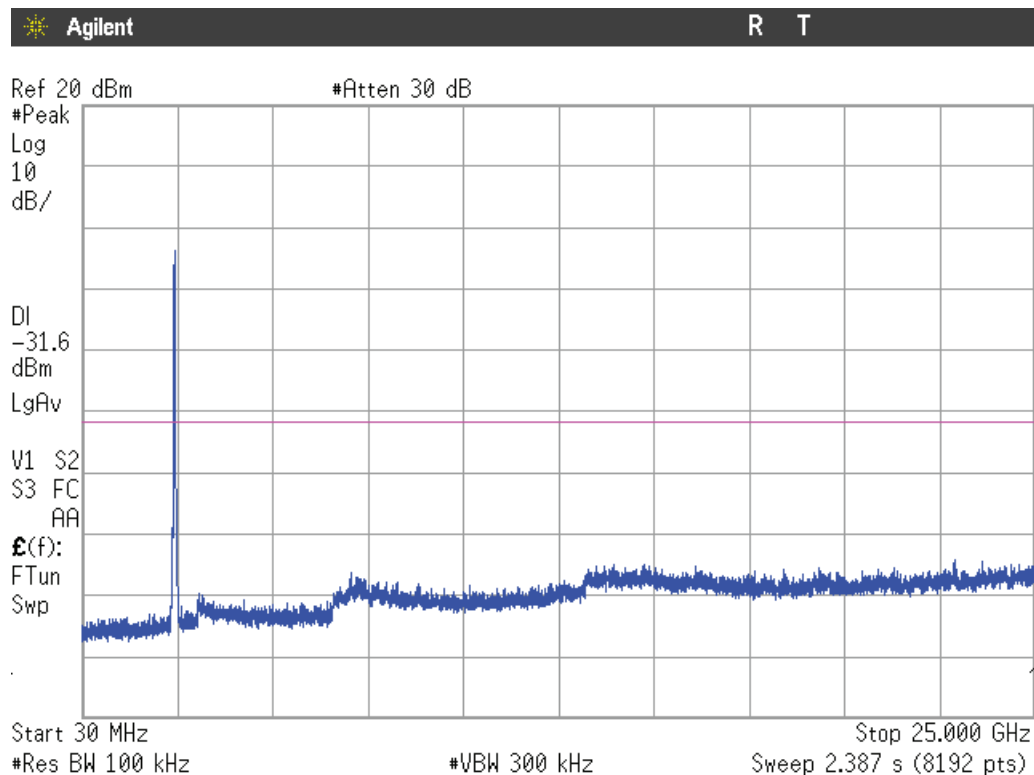
Note: The peak shown in the plot above the limit is the carrier frequency.

Middle Channel



Note: The peak shown in the plot above the limit is the carrier frequency.

Highest Channel



Note: The peak shown in the plot above the limit is the carrier frequency.

Section 15.247 Subclause (d) / RSS-247 5.5. Band-edge emissions compliance (Transmitter)

SPECIFICATION

In any 100 kHz bandwidth outside the frequency band in which the 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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB instead of 20 dB.

RESULTS:

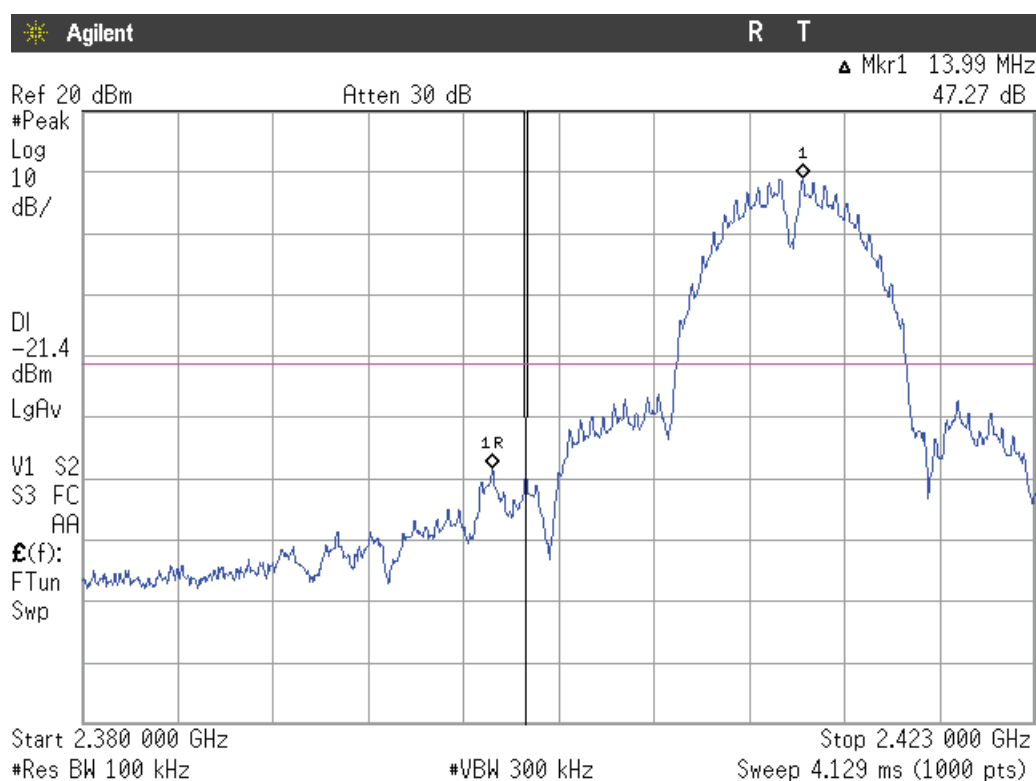
Note: Radiated measurements were used to show compliance with the limits in the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz.

LOW FREQUENCY SECTION 2412 MHz (b/g/n20) and LOW FREQUENCY SECTION 2422 MHz (n40) CONDUCTED.

CORE 0 – Antenna RF External port 2:

Mode B

See next plot.



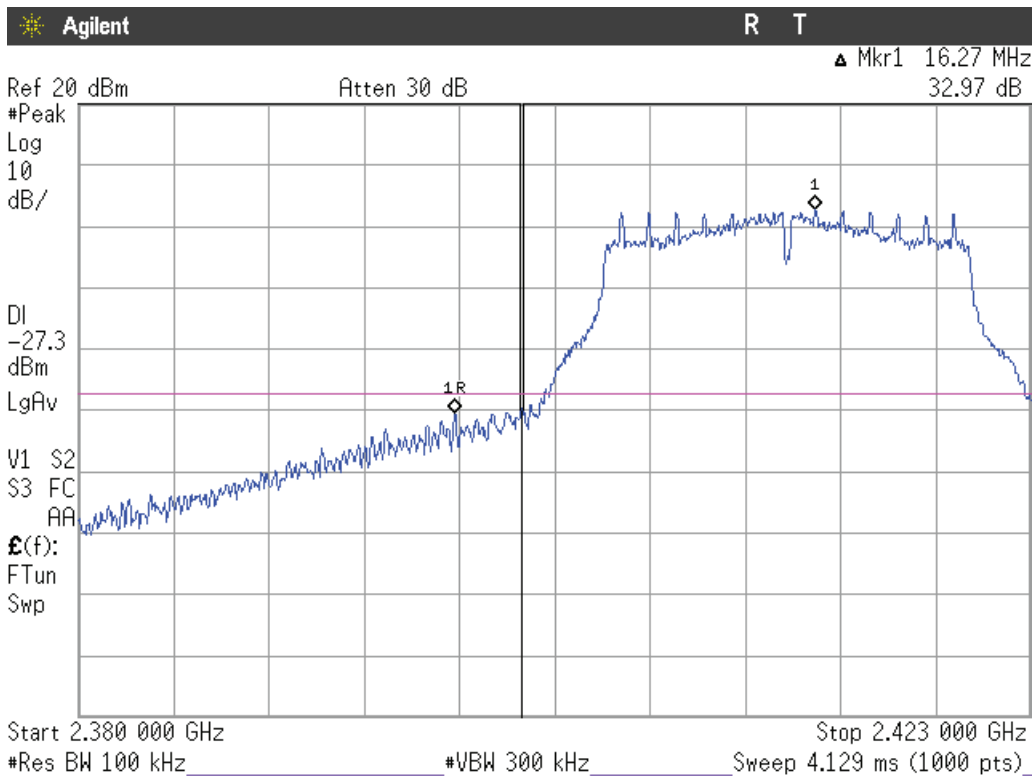
Measurement uncertainty (dB)

< ±2.03

Verdict: PASS

Mode G

See next plot.

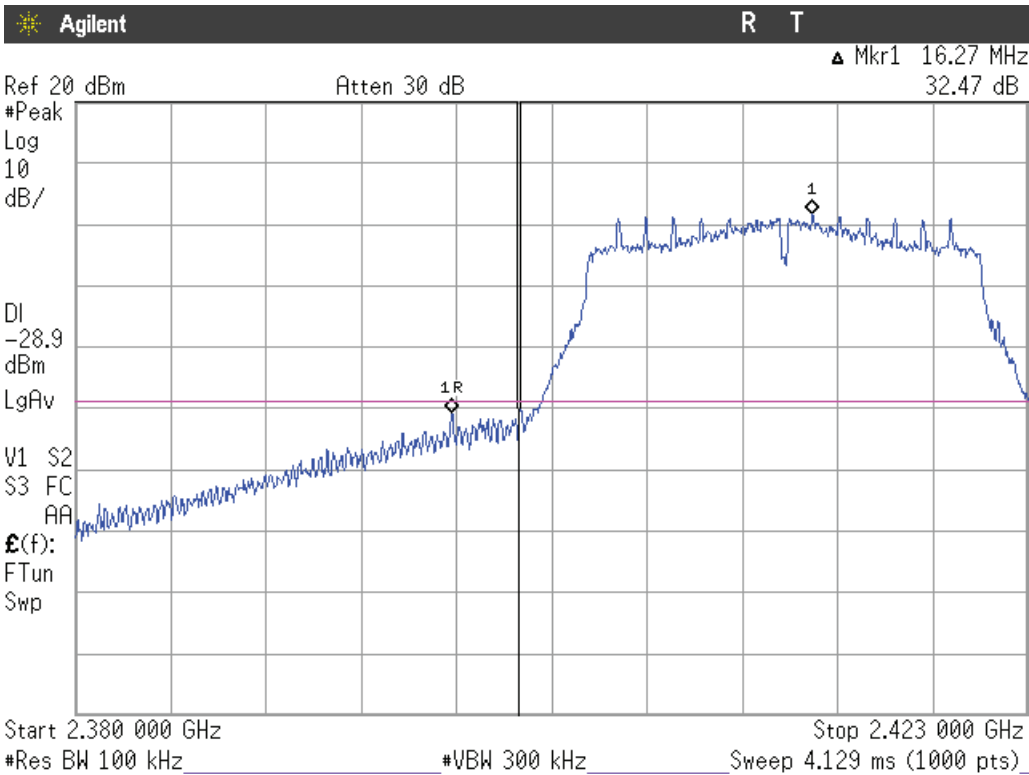


Measurement uncertainty (dB)	< ±2.03
------------------------------	---------

Verdict: PASS

Mode N20

See next plot.

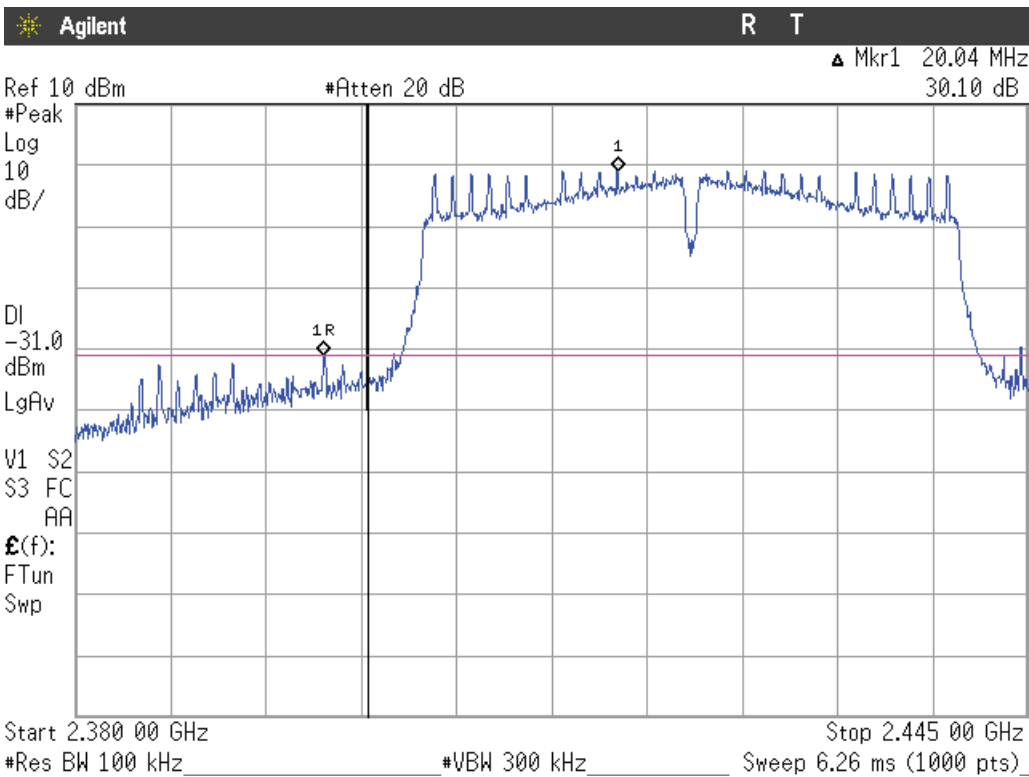


Measurement uncertainty (dB)	< ±2.03
------------------------------	---------

Verdict: PASS

Mode N40

See next plot.

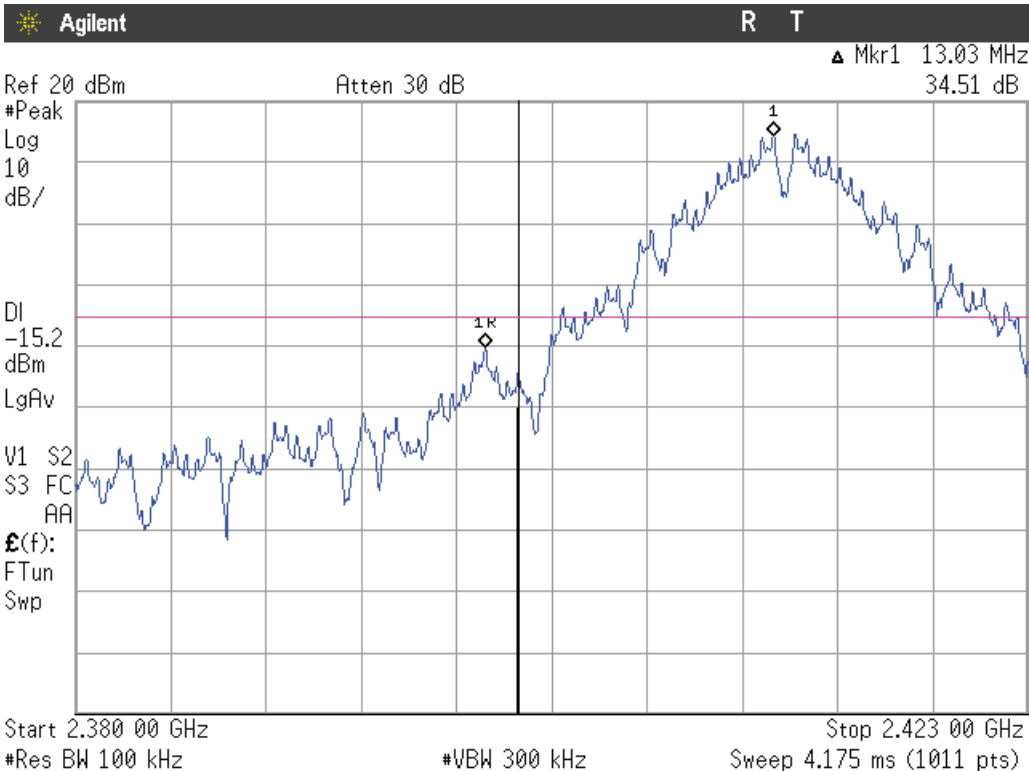


Measurement uncertainty (dB)	< ±2.03
------------------------------	---------

Verdict: PASS

CORE 1 – Antenna port 4:
Mode B

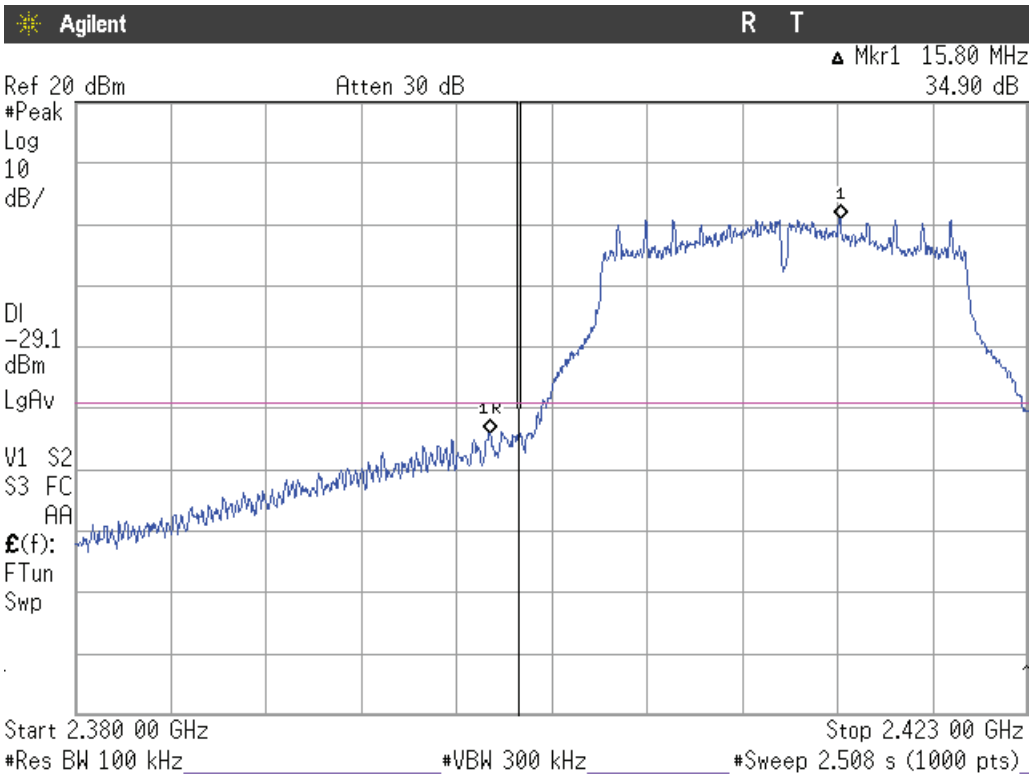
See next plot.



Verdict: PASS

Mode G

See next plot.

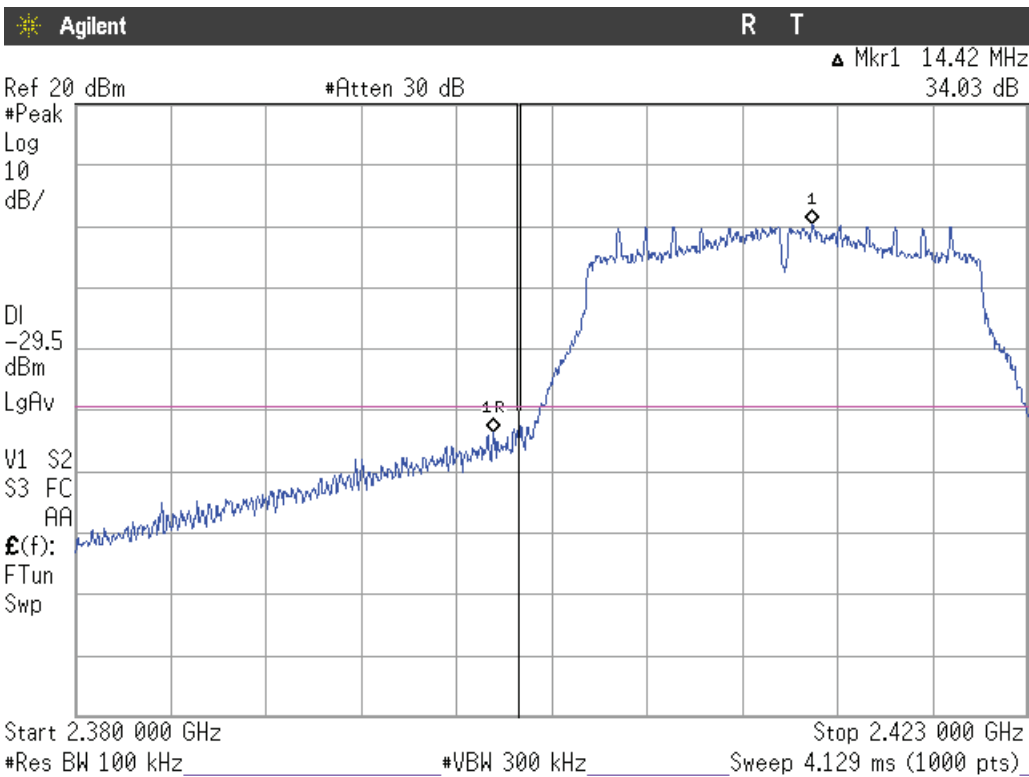


Measurement uncertainty (dB)	< ±2.03
------------------------------	---------

Verdict: PASS

Mode N20

See next plot.



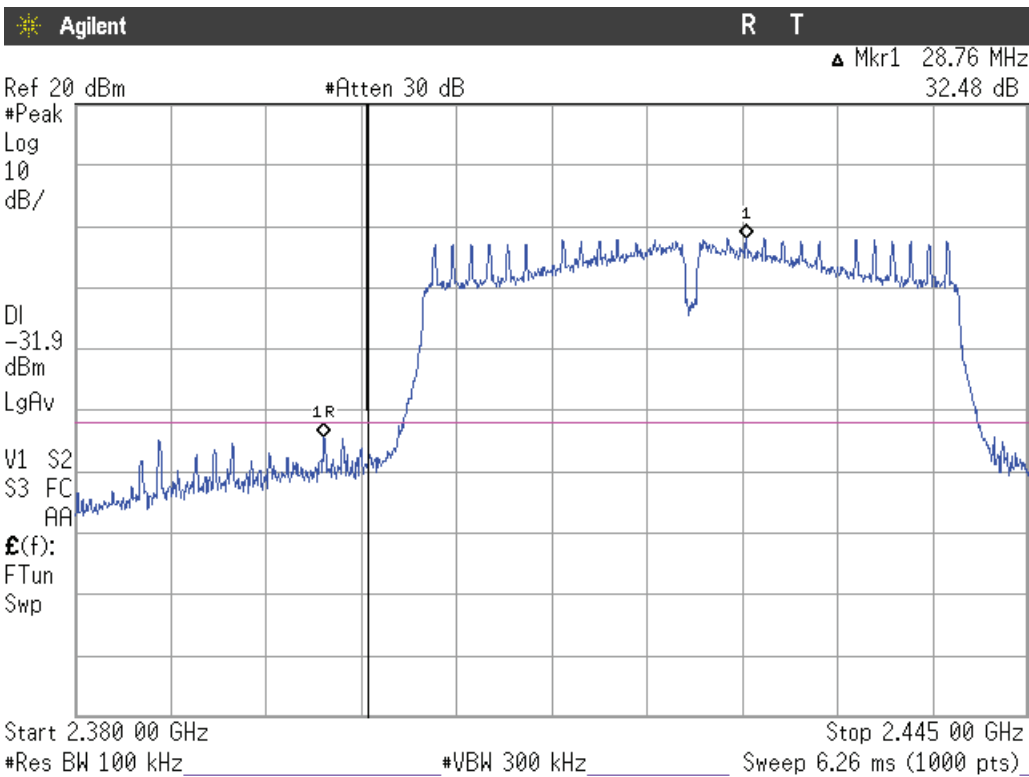
Measurement uncertainty (dB)

< ±2.03

Verdict: PASS

Mode N40

See next plot.



Measurement uncertainty (dB)	< ±2.03
------------------------------	---------

Verdict: PASS

Section 15.247 Subclause (e) / RSS-247 5.2. (2) Power spectral density

SPECIFICATION

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

The maximum power spectral density level in the fundamental emission was measured using the method AVGPST-1 (AVG PSD) according to point 10.3. of Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 558074 D01 DTS Meas Guidance v04 dated 05/04/2017.

Power spectral density (see next plots).

CORE 0 – Antenna RF External port 2:

Mode B

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Power spectral density (dBm)	1.030	1.141	0.383
Measurement uncertainty (dB)	<±0.78		

Mode G

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Power spectral density (dBm)	-4.003	-3.938	-4.144
Measurement uncertainty (dB)	<±0.78		

Mode N20

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Power spectral density (dBm)	-5.570	-5.166	-5.878
Measurement uncertainty (dB)	<±0.78		

Mode N40

	Lowest frequency 2422 MHz	Middle frequency 2437 MHz	Highest frequency 2452 MHz
Power spectral density (dBm)	-9.054	-8.700	-9.131
Measurement uncertainty (dB)	<±0.78		

Verdict: PASS

CORE 1 – Antenna port 4:

Mode B

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Power spectral density (dBm)	4.163	5.578	5.508
Measurement uncertainty (dB)	<±0.78		

Mode G

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Power spectral density (dBm)	-5.472	-5.188	-4.888
Measurement uncertainty (dB)	<±0.78		

Mode N20

	Lowest frequency 2412 MHz	Middle frequency 2437 MHz	Highest frequency 2462 MHz
Power spectral density (dBm)	-6.593	-5.770	-5.849
Measurement uncertainty (dB)	<±0.78		

Mode N40

	Lowest frequency 2422 MHz	Middle frequency 2437 MHz	Highest frequency 2452 MHz
Power spectral density (dBm)	-9.617	-9.980	-10.258
Measurement uncertainty (dB)	<±0.78		

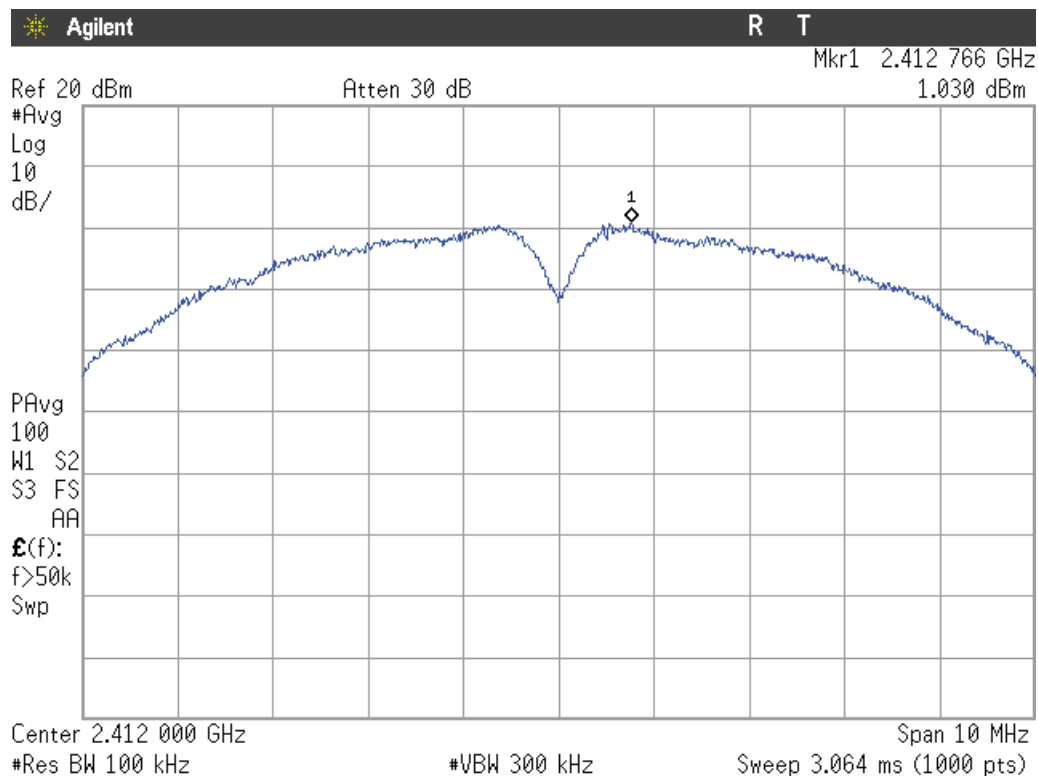
Verdict: PASS

CORE 0 – Antenna RF External port 2:

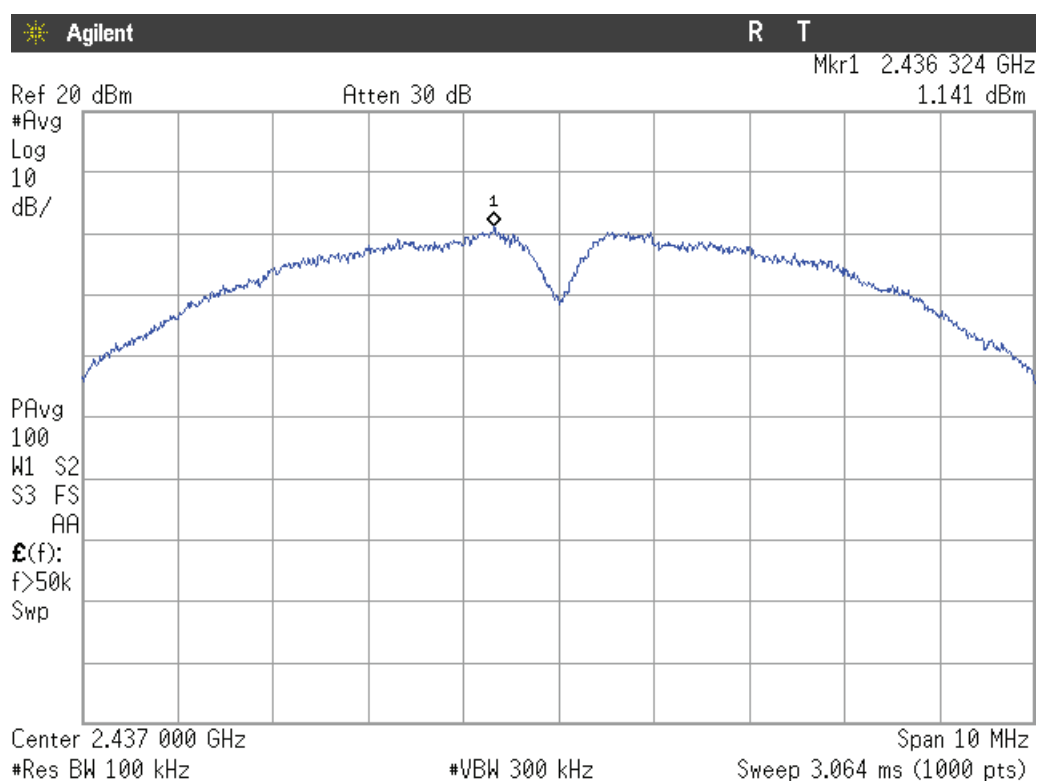
Power spectral density.

Mode B

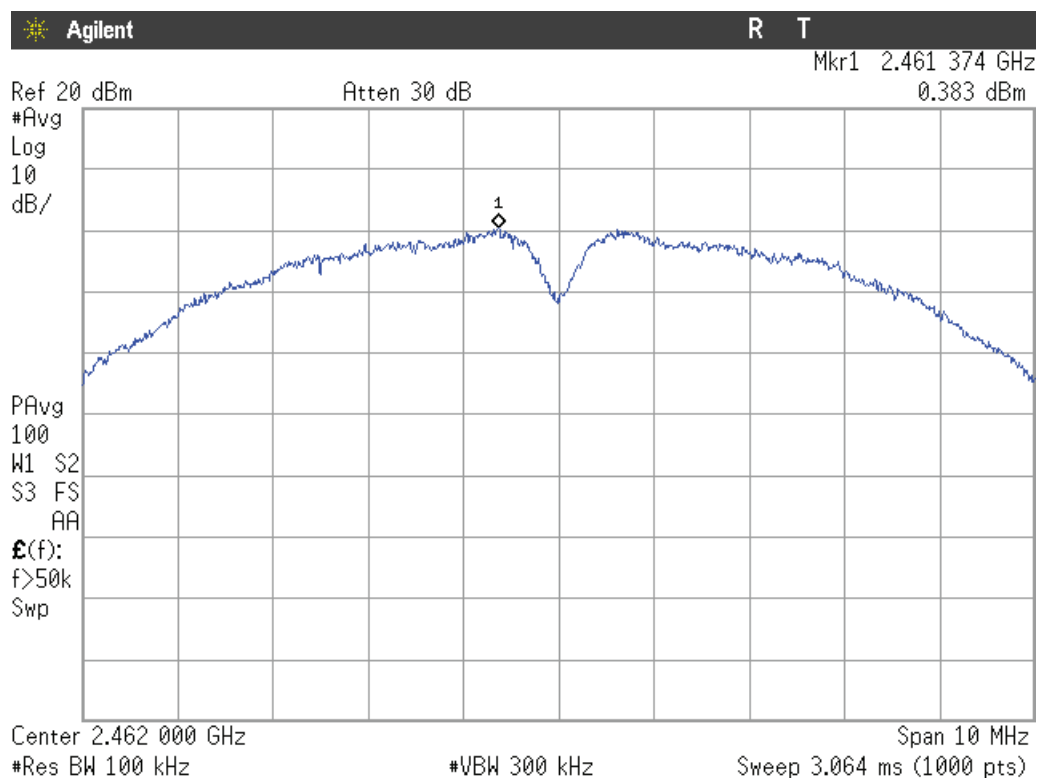
Lowest Channel



Middle Channel

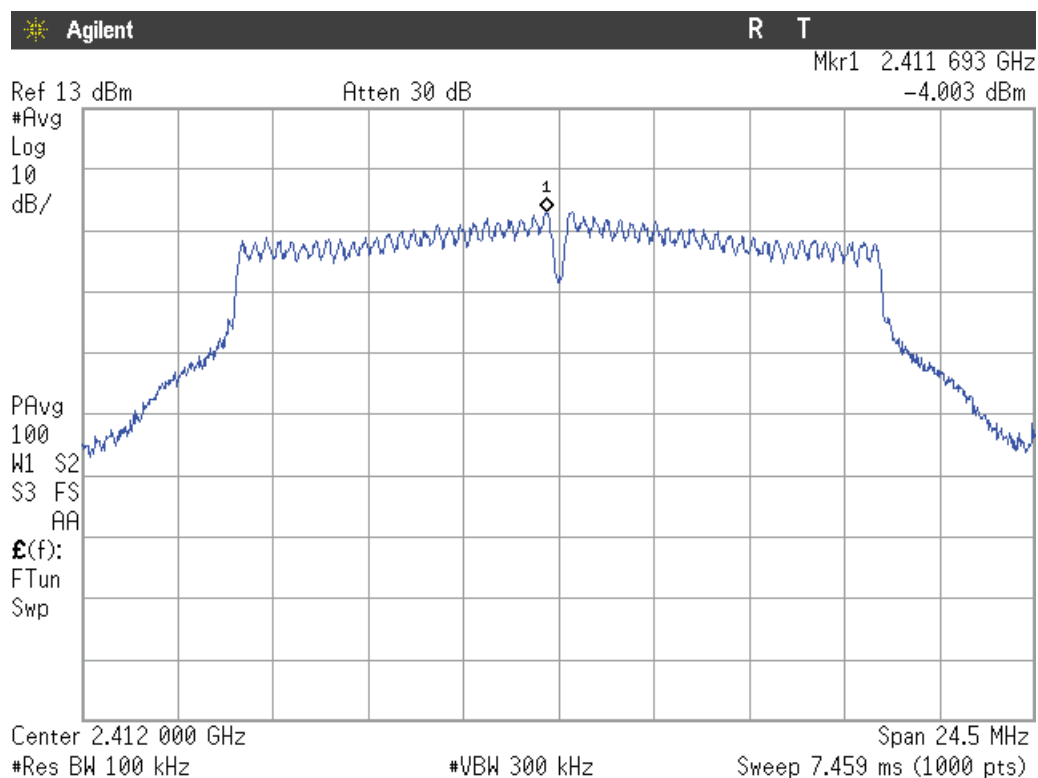


Highest channel

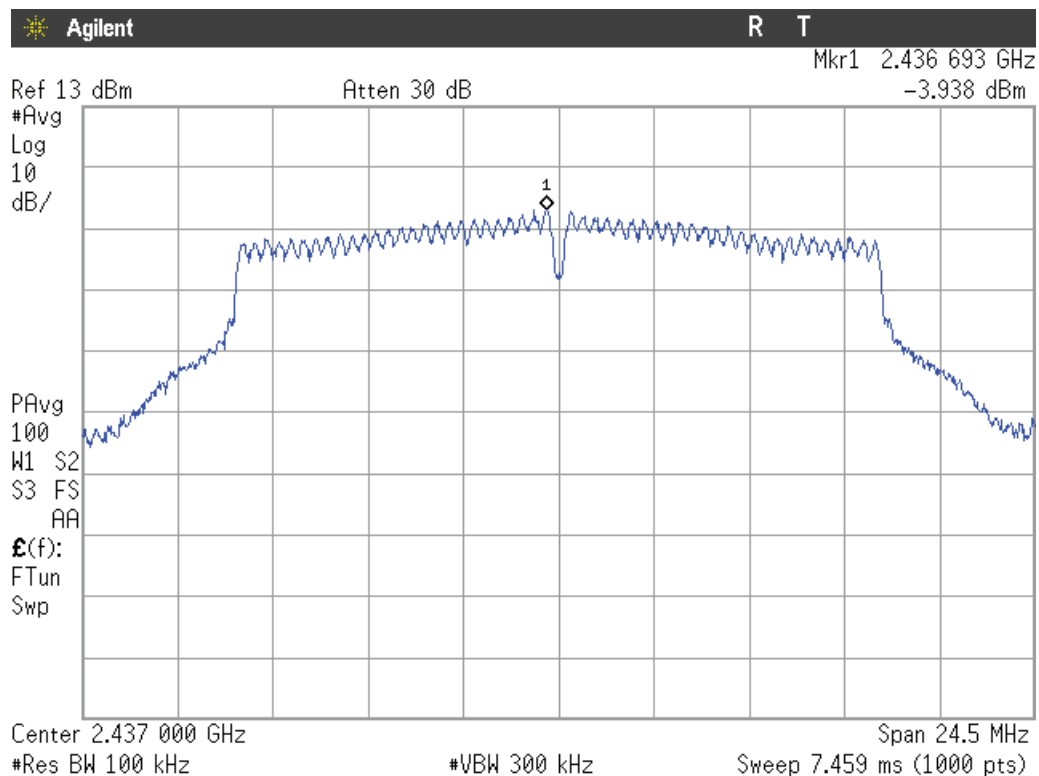


Mode G

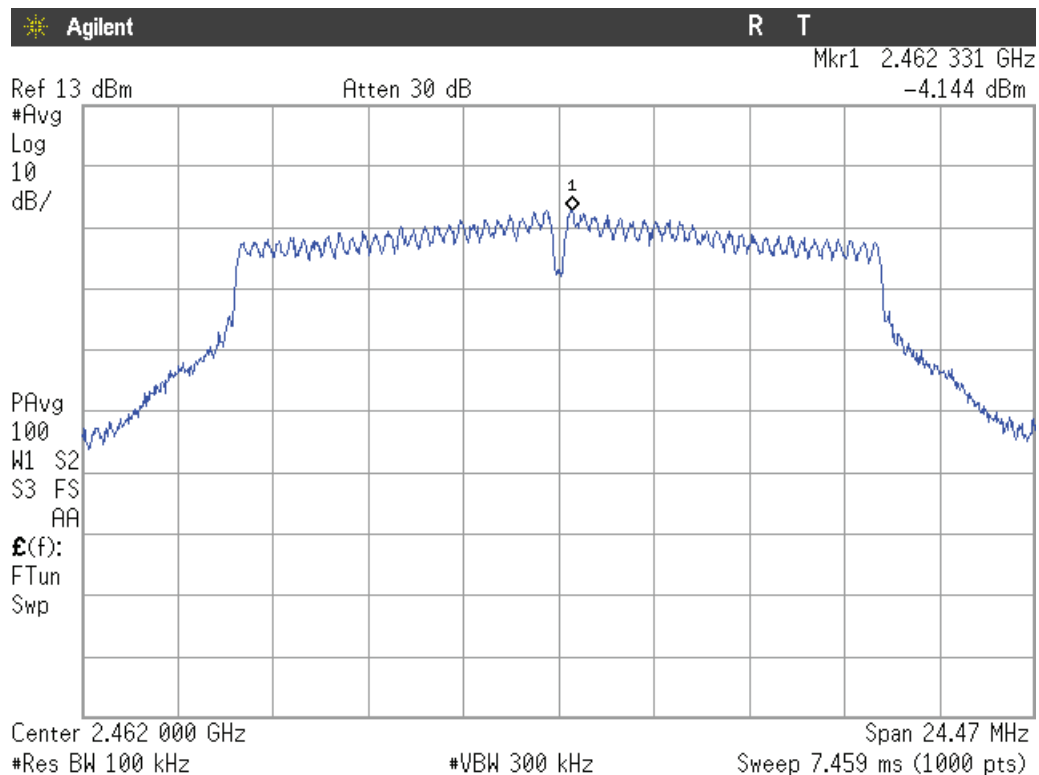
Lowest Channel



Middle Channel

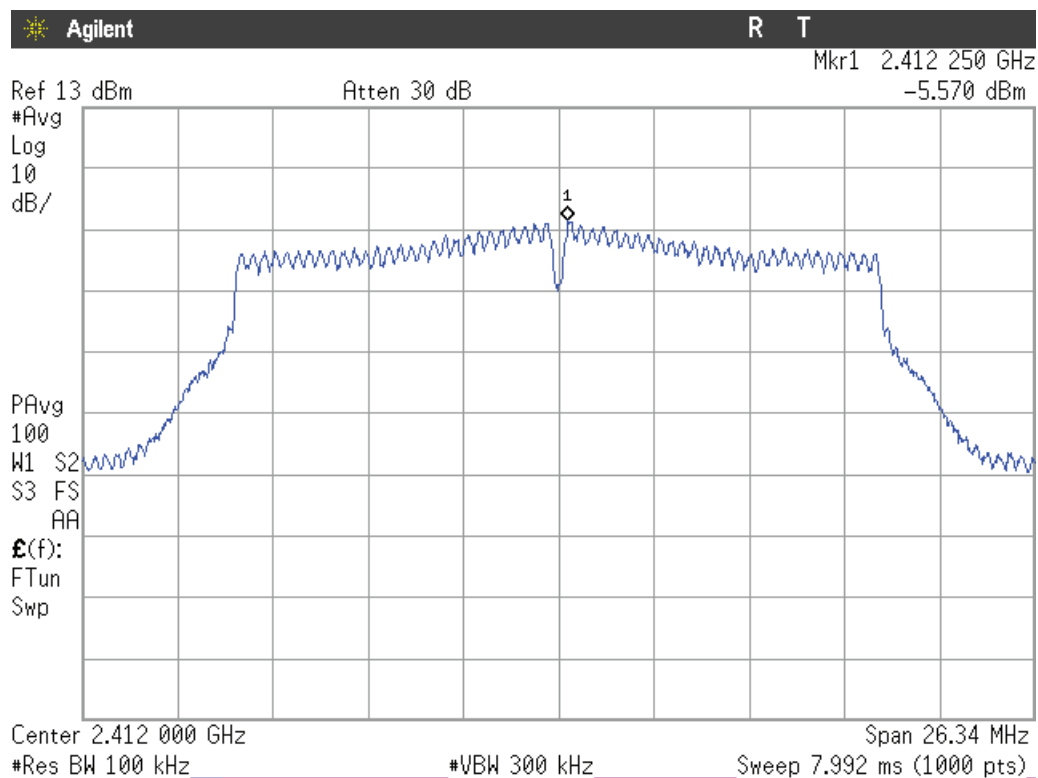


Highest channel

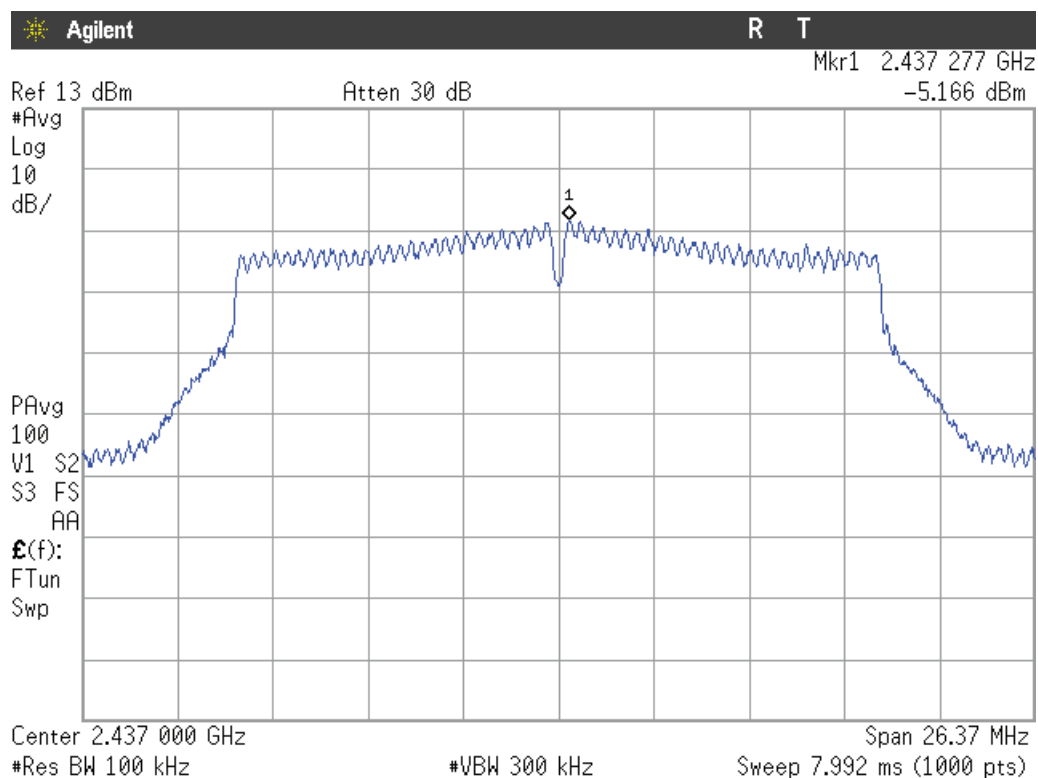


Mode N20

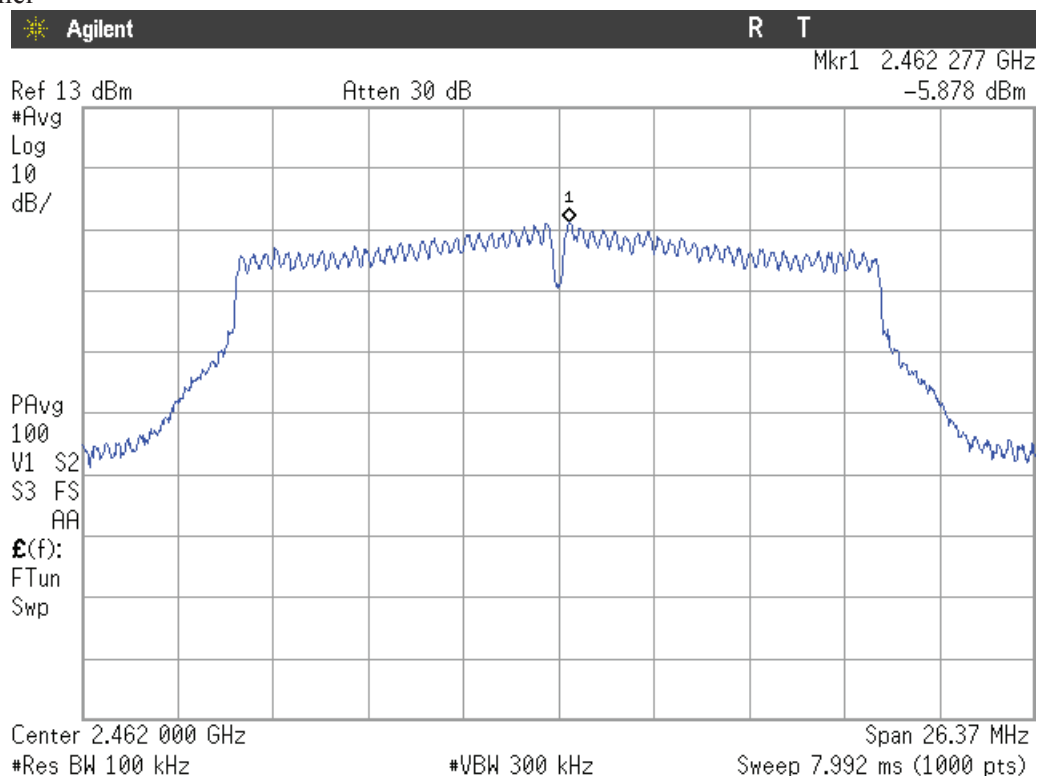
Lowest Channel



Middle Channel

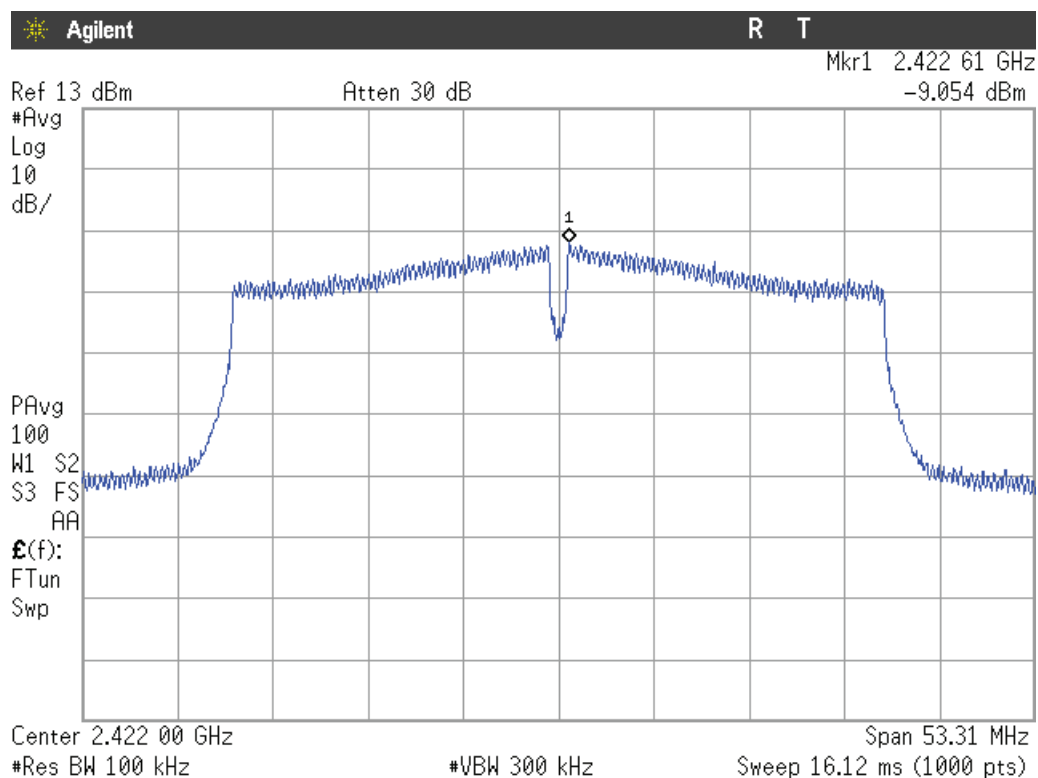


Highest channel

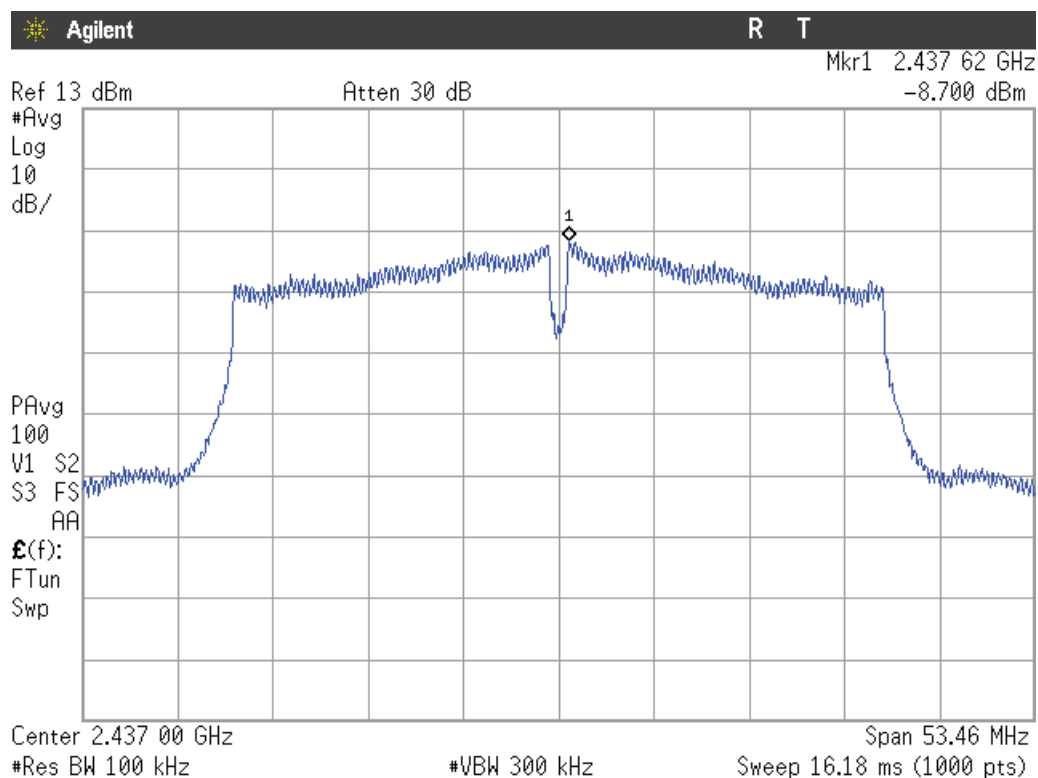


Mode N40

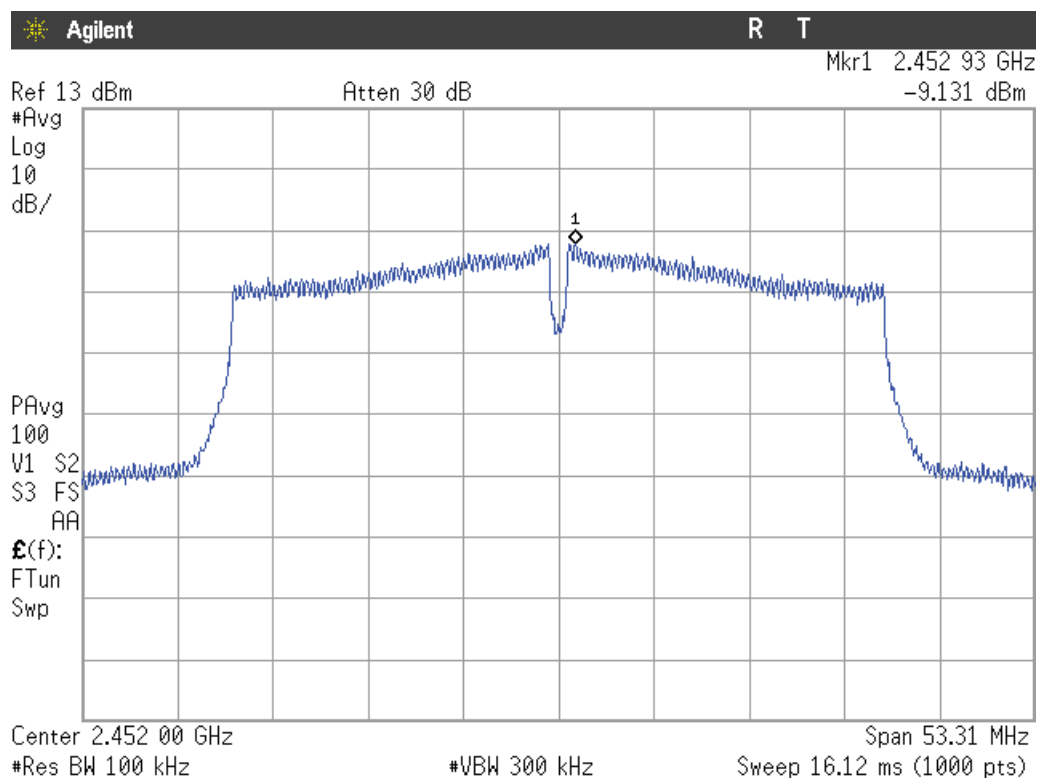
Lowest Channel



Middle Channel



Highest channel

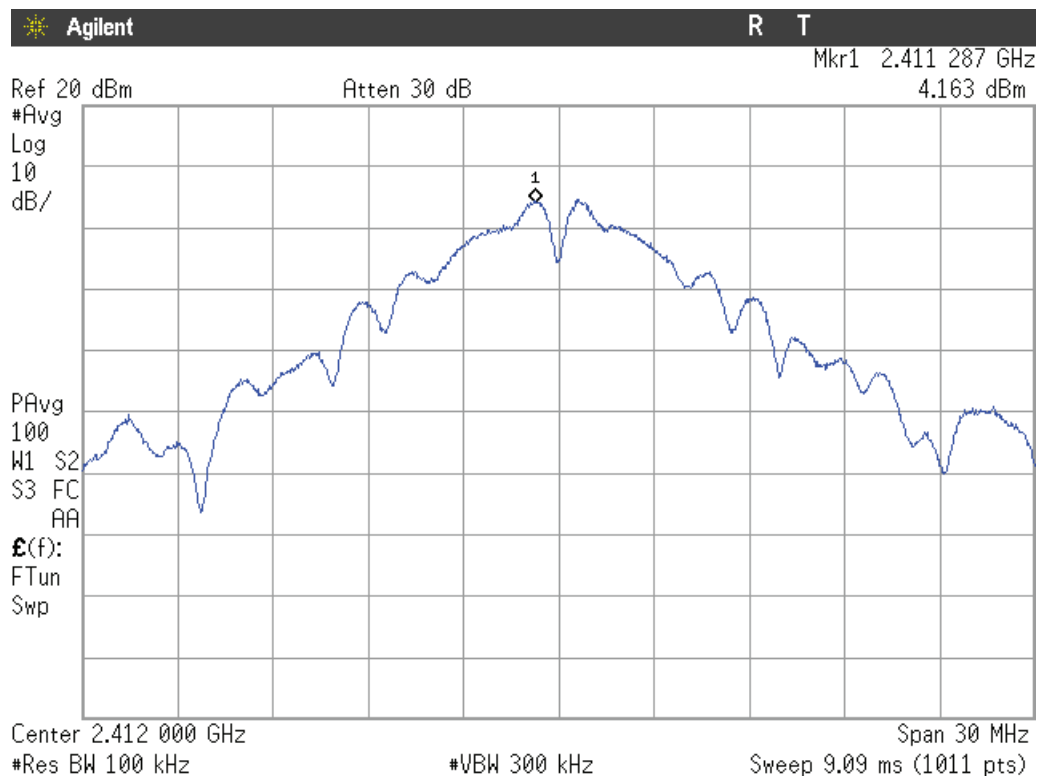


CORE 1 – Antenna RF port 4:

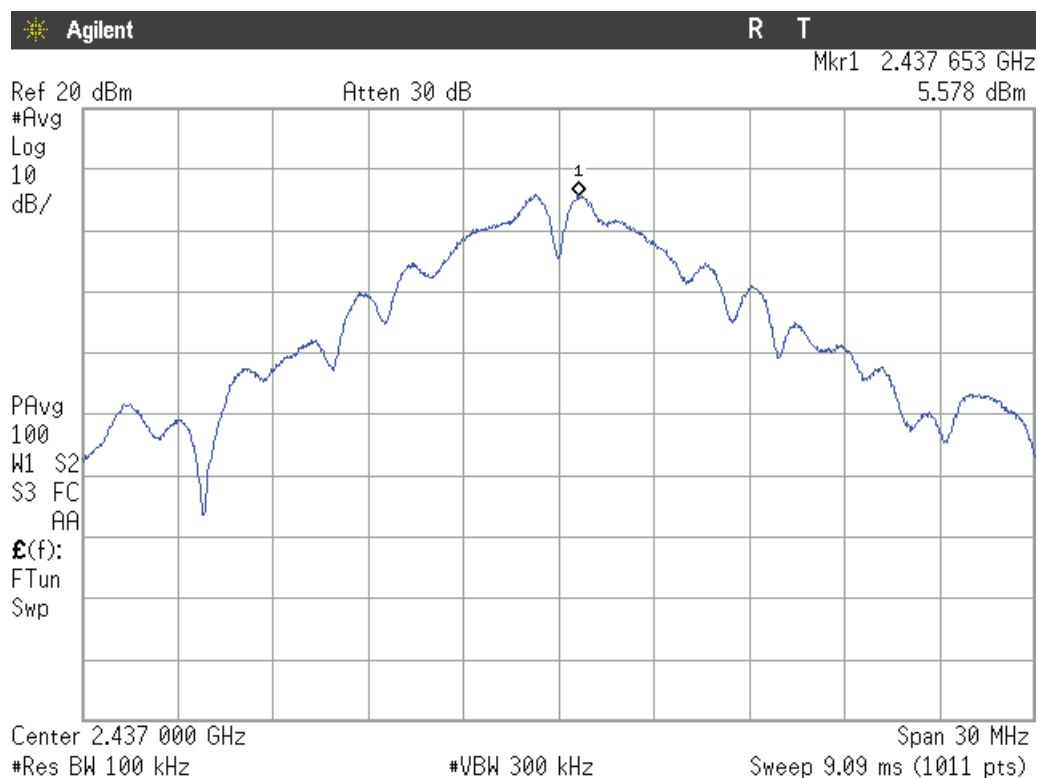
Power spectral density.

Mode B

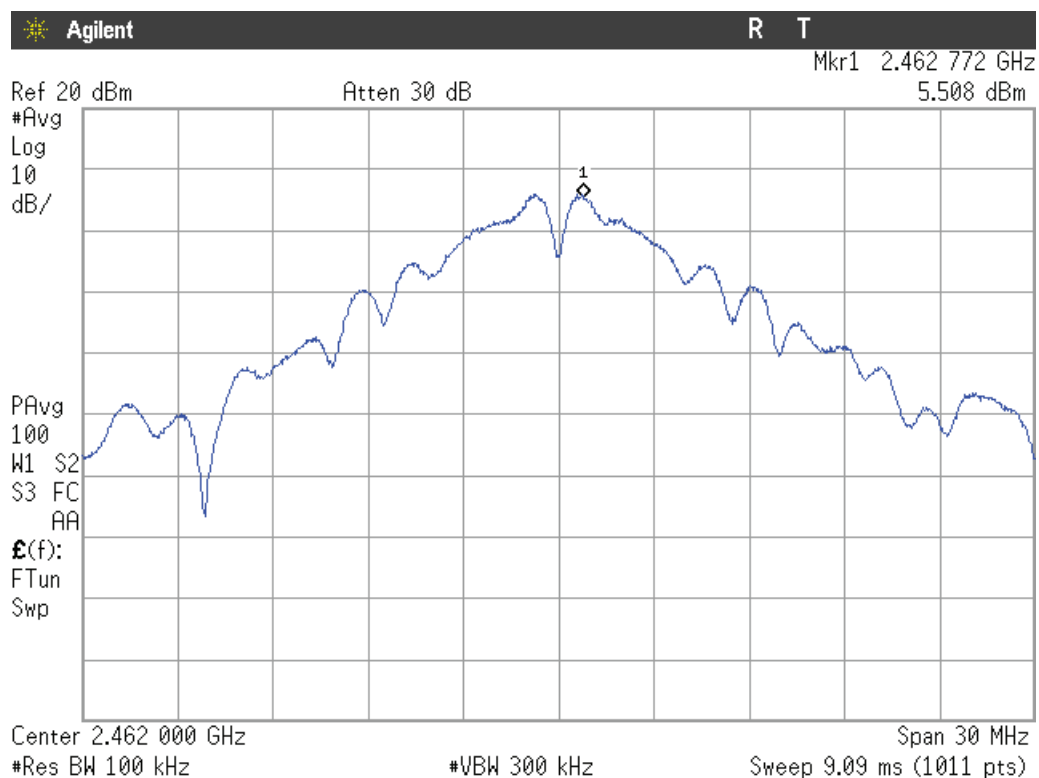
Lowest Channel



Middle Channel

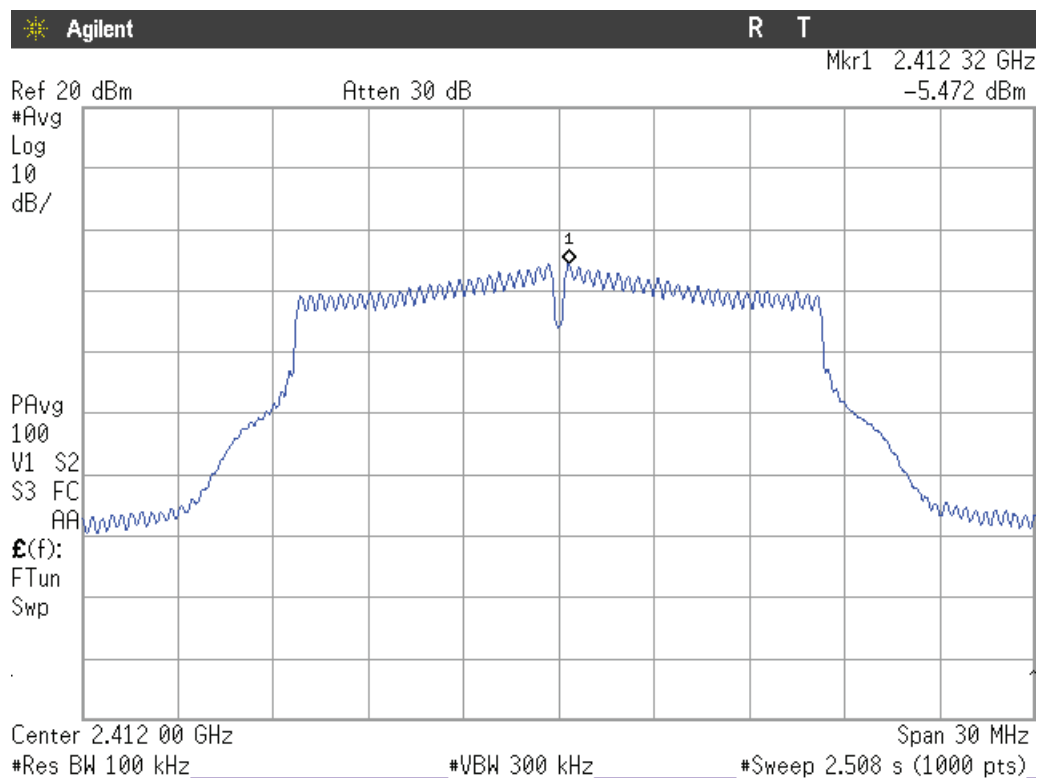


Highest channel

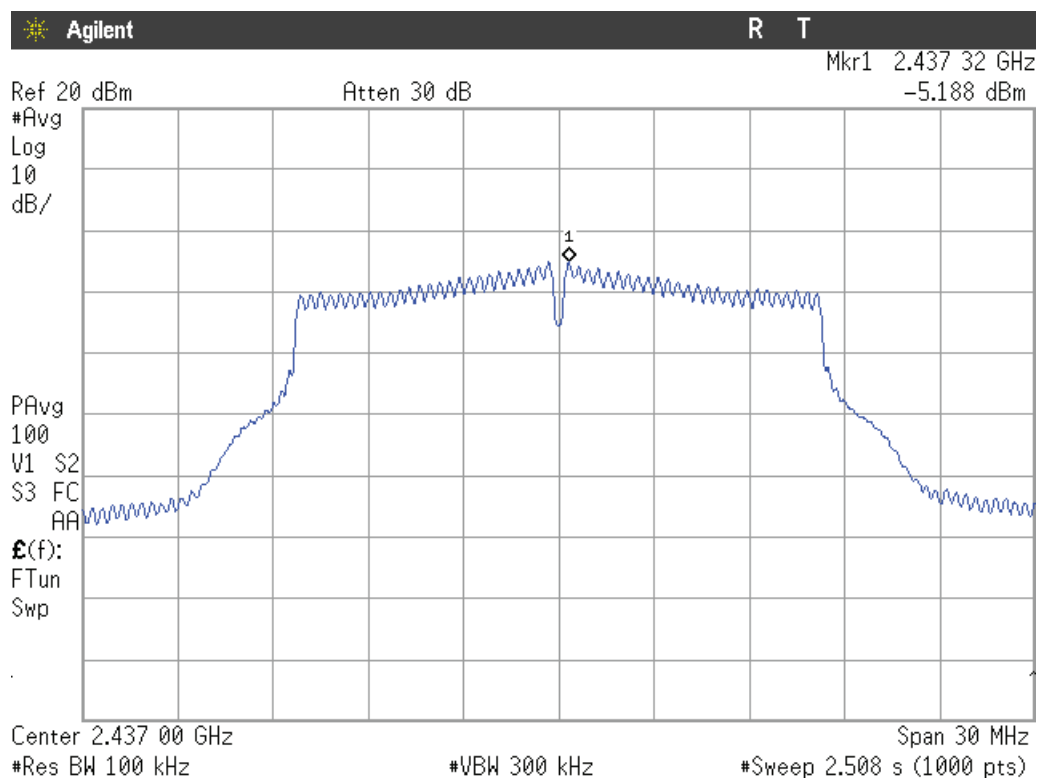


Mode G

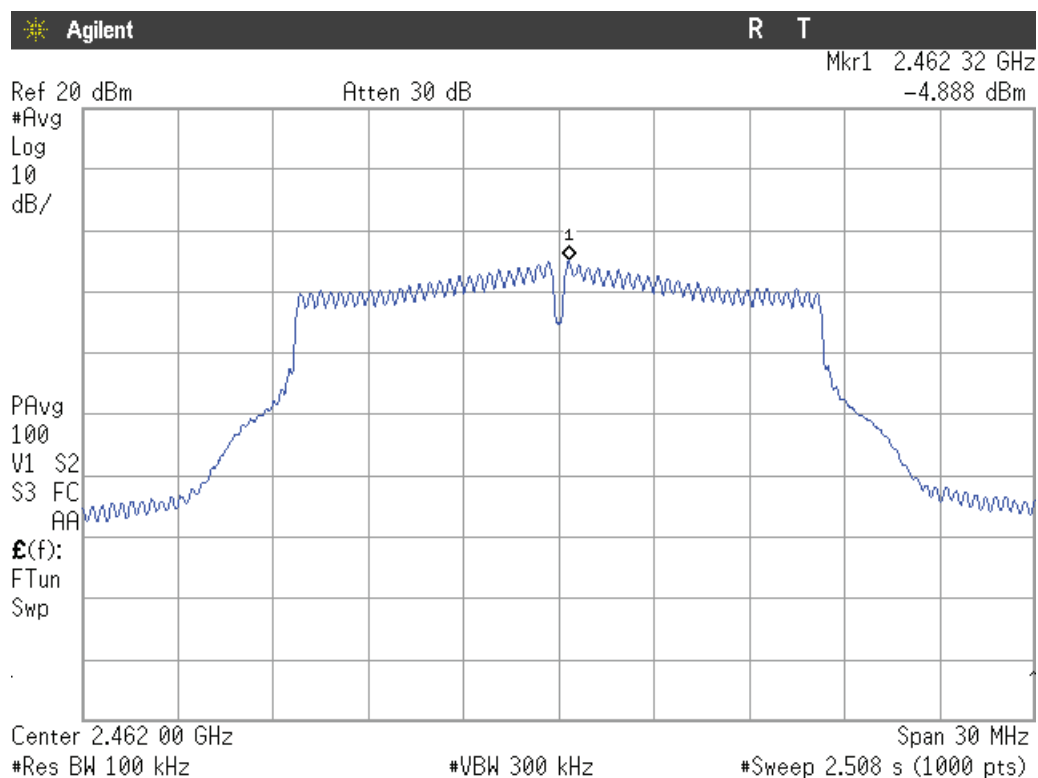
Lowest Channel



Middle Channel

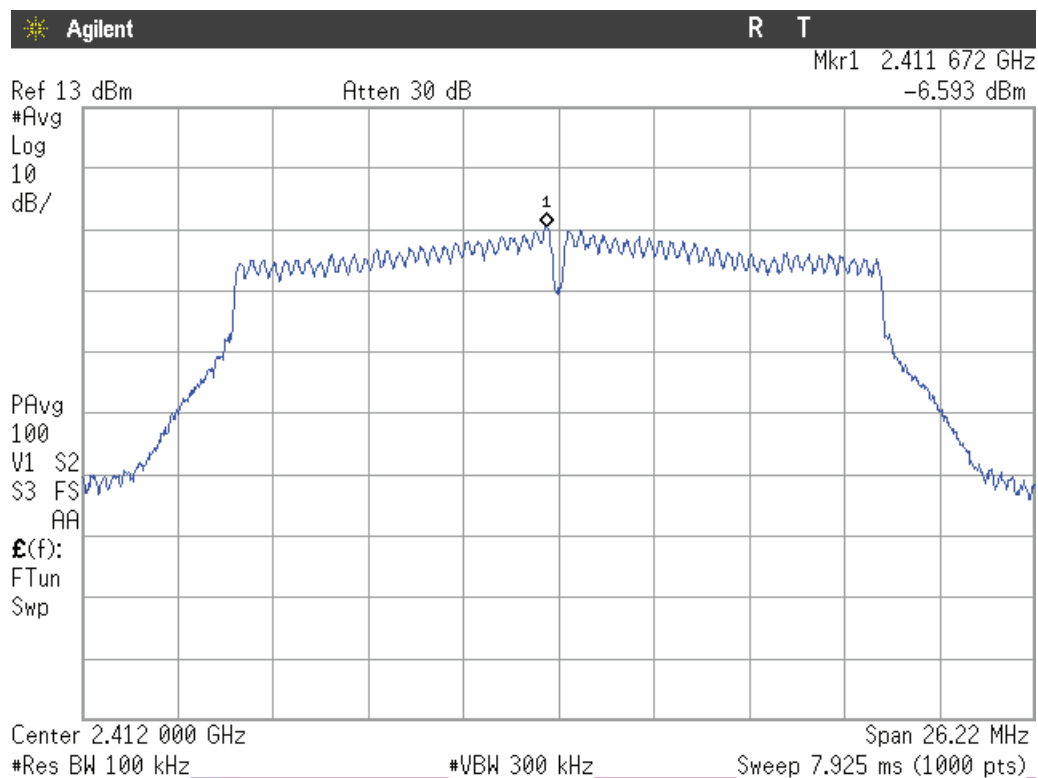


Highest channel

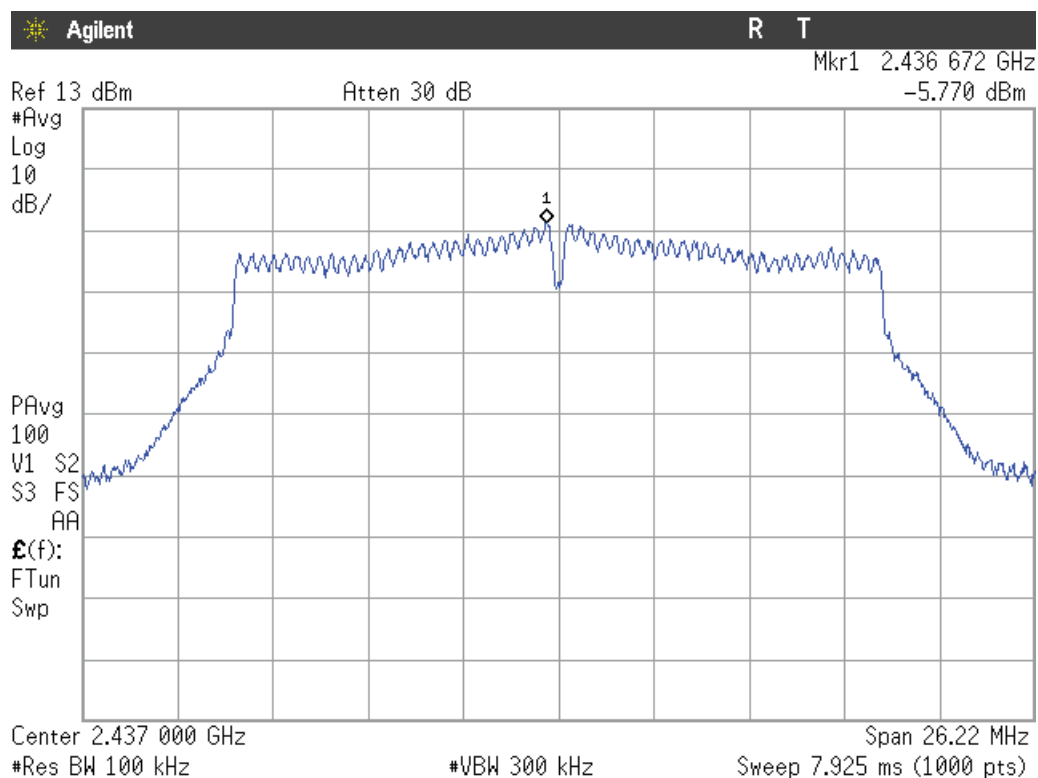


Mode N20

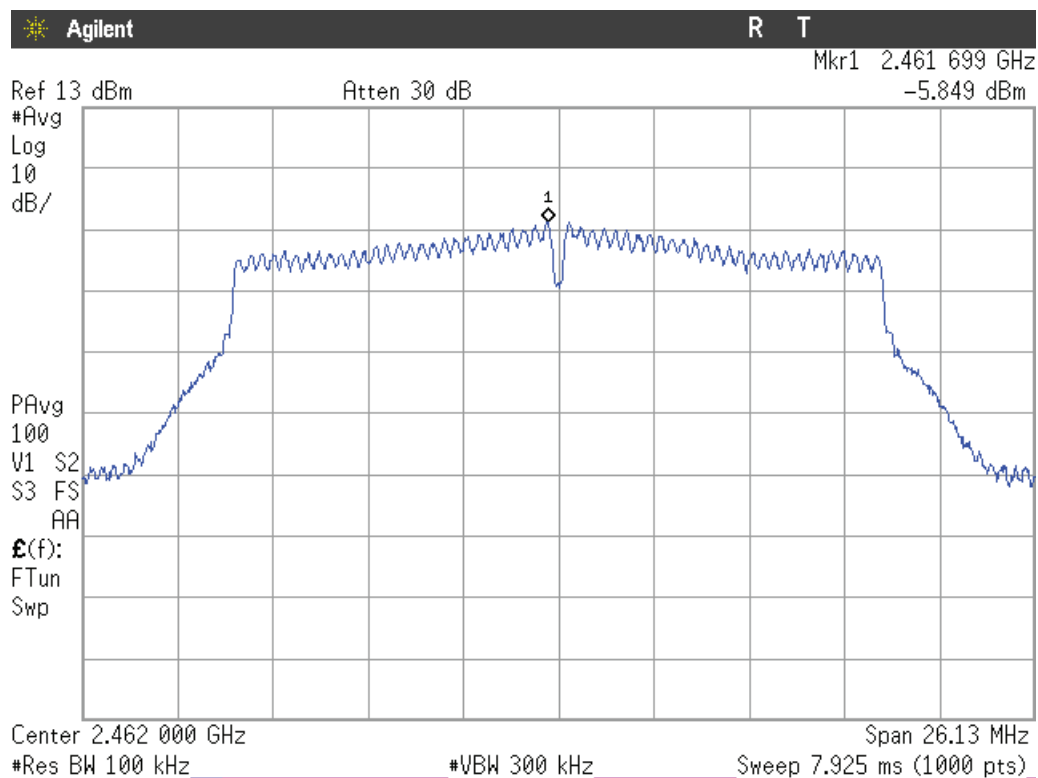
Lowest Channel



Middle Channel

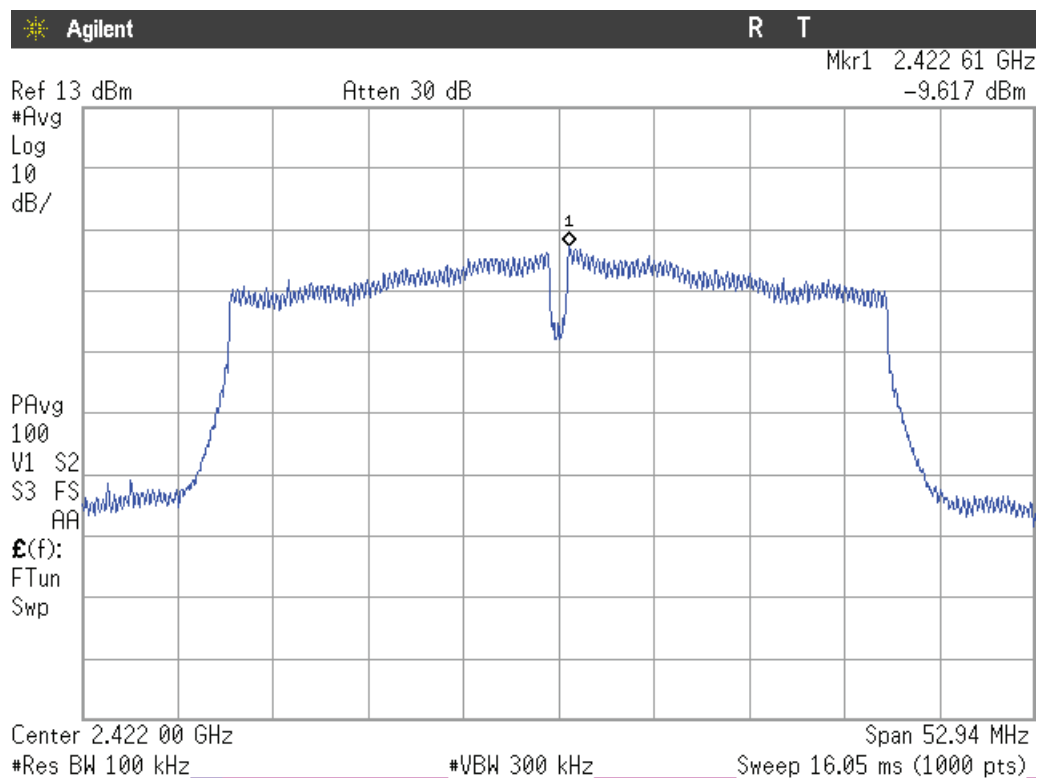


Highest channel

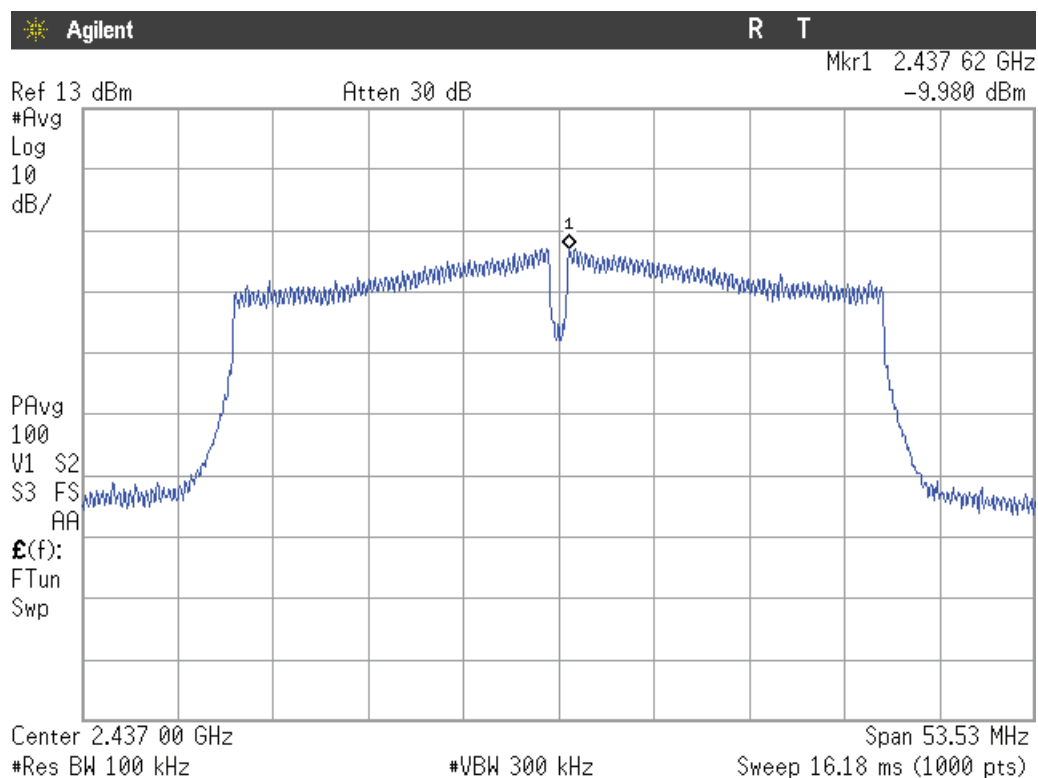


Mode N40

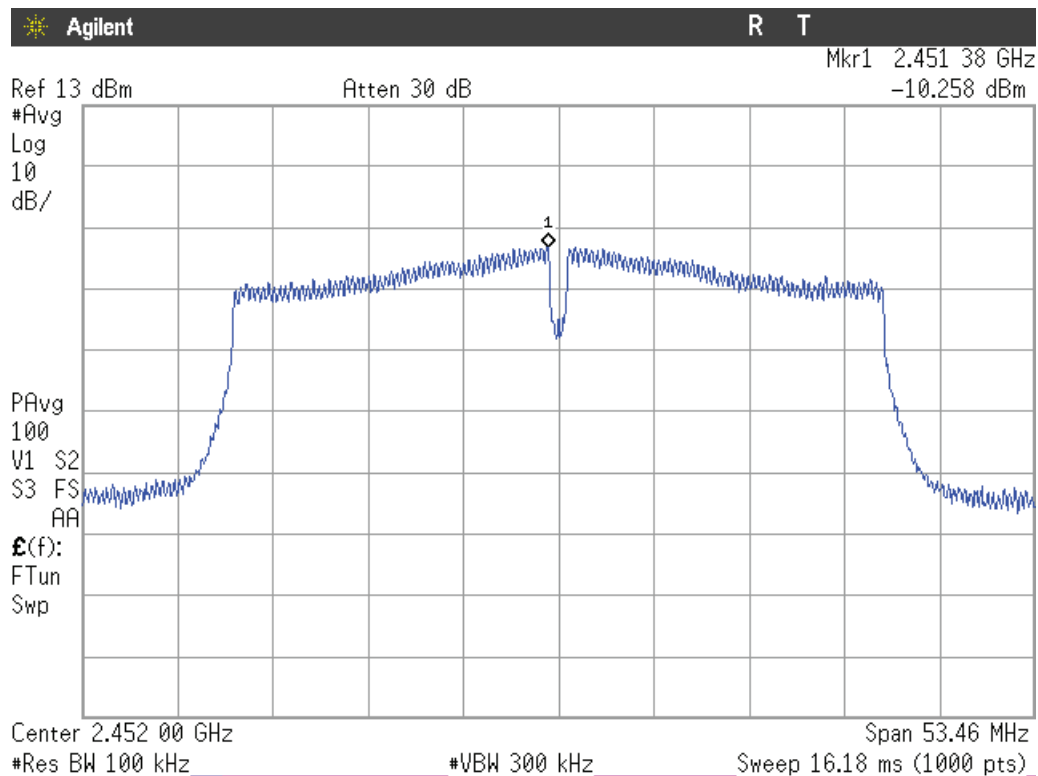
Lowest Channel



Middle Channel



Highest channel



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

SPECIFICATION

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) / 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 - 25000	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.

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-25 GHz.

These are the chips that can be working at the same time (BT +WLAN1.MAC1 (2.4) + WLAN1.MAC0 (5G) + WLAN0. MAC1&0).

The test was performed with the equipment transmitting first with only the WiFi 2.4GHz radio with the multiple configurations and repeated with the 2.4GHz BT-EDR GFSK (WLAN1), SiSo WiFi 5 GHz (WLAN1 CORE0) and MiMo WiFi 5 GHz (WLAN0 CORE0+CORE1) radios transmitting simultaneously to check the impact of the co-location of the other radio interfaces. The results and plots below show the worst results obtained.

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.

Frequency range 30 MHz-1000 MHz.

The spurious signals detected do not depend on either the operating channel or the modulation mode.

CORE 0 – Antenna RF port 1:

Spurious frequency (MHz)	Polarization	Detector	Emission Level (dB μ V/m)	Measurement Uncertainty (dB)
42.998	PV	Quasi-peak	23.54	± 3.88
97.803	PV	Quasi-peak	34.03	± 3.88
786.4545	PV	Quasi-peak	29.94	± 3.88
884.761	PV	Quasi-peak	35.16	± 3.88

CORE 0 – Antenna RF External port 2:

Spurious frequency (MHz)	Polarization	Detector	Emission Level (dB μ V/m)	Measurement Uncertainty (dB)
48.9635	PV	Quasi-peak	23.43	± 3.88
97.7545	PV	Quasi-peak	33.25	± 3.88
786.4545	PV	Quasi-peak	29.98	± 3.88
884.764	PH	Quasi-peak	31.15	± 3.88

CORE 1 – Antenna port 4 port:

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dB μ V/m)	Measurement Uncertainty (dB)
30.3395	PV	Quasi-peak	21.41	± 3.88
97.7545	PV	Quasi-peak	34.25	± 3.88
786.4545	PV	Quasi-peak	31.30	± 3.88
884.7640	PV	Quasi-peak	31.94	± 3.88

Frequency range 1 GHz-25 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 (see next plots).

The field strength at the band edges was evaluated for each mode for the channel under test.

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

For spurious emissions (except field strength at the band edges that was performed for all possibilities of different bandwidth) for OFDM modes 802.11g, 802.11n20 and 802.11n40 a preliminary scan (highest output power and highest output power spectral density) was performed to determine the worst case. The next tables and plots show the results for the worst case to DSSS modulation (802.11b) and OFDM modulation (802.11g).

CORE 0 – Antenna RF port 1:

1. WiFi 2.4GHz 802.11 b mode.

1.1. CHANNEL 1: LOWEST (2412 MHz). Out-of-band spurious emissions in the 1-25 GHz range and inside restricted band 2.31-2.39 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dB μ V/m)	Measurement Uncertainty (dB)
2.38893	PV	Peak	49.82	± 4.87
2.49690	PH	Peak	49.72	± 4.87
5.37425	PV	Peak	43.42	± 4.87

1.2. CHANNEL 6: MIDDLE (2437 MHz). Out-of-band spurious emissions in the 1-25 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dB μ V/m)	Measurement Uncertainty (dB)
2.4909	PH	Peak	49.58	± 4.87
5.37425	PV	Peak	43.41	± 4.87

1.3. CHANNEL 11: HIGHEST (2462 MHz). Out-of-band spurious emissions in the 1-25 GHz range and inside restricted band 2.4835-2.5 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dB μ V/m)	Measurement Uncertainty (dB)
2.48413	PV	Peak	50.83	± 4.87
2.49857	PH	Peak	50.57	± 4.87
5.37425	PV	Peak	43.87	± 4.87

Verdict: PASS

2. WiFi 2.4GHz 802.11 g mode (worst case OFDM)

2.1. CHANNEL 1: LOWEST (2412 MHz). Out-of-band spurious emissions in the 1-25 GHz range and inside restricted band 2.31-2.39 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
1.59783	PH	Peak	45.53	± 4.87
2.38994	PV	Peak	67.11	± 4.87
		Average	51.38	± 4.87
2.49330	PV	Peak	47.96	± 4.87
5.37475	PV	Peak	43.37	± 4.87

2.2. CHANNEL 6: MIDDLE (2437 MHz). Out-of-band spurious emissions in the 1-25 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
2.49303	PH	Peak	49.38	± 4.87
5.37425	PV	Peak	42.58	± 4.87

2.3. CHANNEL 11: HIGHEST (2462 MHz). Out-of-band spurious emissions in the 1-25 GHz range and inside restricted band 2.4835-2.5 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
2.48359	PV	Peak	63.97	± 4.87
		Average	50.61	± 4.87
5.37525	PV	Peak	42.57	± 4.87

Verdict: PASS

3. WiFi 2.4GHz 802.11 n40 mode

3.1. CHANNEL 3: LOWEST (2422 MHz). Spurious emissions in restricted band 2.31-2.39 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
2.38955	PV	Peak	64.37	± 4.87
		Average	52.94	± 4.87

3.2. CHANNEL 9: HIGHEST (2452 MHz). Spurious emissions in restricted band 2.31-2.39 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
2.48371	PV	Peak	68.19	± 4.87
		Average	51.28	± 4.87

Verdict: PASS

CORE 0 – Antenna RF External port 2:

1. WiFi 2.4GHz 802.11 b mode.

1.1. CHANNEL 1: LOWEST (2412 MHz). Out-of-band spurious emissions in the 1-25 GHz range and inside restricted band 2.31-2.39 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
2.38492	PH	Peak	48.99	± 4.87
5.37525	PV	Peak	43.38	± 4.87

1.2. CHANNEL 6: MIDDLE (2437 MHz). Out-of-band spurious emissions in the 1-25 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.37475	PV	Peak	42.98	± 4.87

1.3. CHANNEL 11: HIGHEST (2462 MHz). Out-of-band spurious emissions in the 1-25 GHz range and inside restricted band 2.4835-2.5 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
2.48976	PV	Peak	52.27	± 4.87
5.37475	PV	Peak	42.97	± 4.87

Verdict: PASS

2. WiFi 2.4GHz 802.11 g mode (worst case OFDM)

2.1. CHANNEL 1: LOWEST (2412 MHz). Out-of-band spurious emissions in the 1-25 GHz range and inside restricted band 2.31-2.39 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
2.38999	PV	Peak	67.01	± 4.87
		Average	50.91	± 4.87
5.37475	PV	Peak	42.41	± 4.87

2.2. CHANNEL 6: MIDDLE (2437 MHz). Out-of-band spurious emissions in the 1-25 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
5.37525	PV	Peak	42.94	± 4.87

2.3. CHANNEL 11: HIGHEST (2462 MHz). Out-of-band spurious emissions in the 1-25 GHz range and inside restricted band 2.4835-2.5 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
2.48351	PV	Peak	64.38	± 4.87
		Average	51.09	± 4.87
5.37525	PV	Peak	43.10	± 4.87

Verdict: PASS

3. WiFi 2.4GHz 802.11 n40 mode

3.1. CHANNEL 3: LOWEST (2422 MHz). Spurious emissions in restricted band 2.31-2.39 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
2.36572	PV	Peak	55.54	± 4.87
		Average	46.60	± 4.87
2.38906	PV	Peak	63.86	± 4.87
		Average	52.87	± 4.87

3.2. CHANNEL 9: HIGHEST (2452 MHz). Spurious emissions in restricted band 2.31-2.39 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
2.48390	PV	Peak	69.15	± 4.87
		Average	51.63	± 4.87

Verdict: PASS

CORE 1 – Antenna RF port 4:

1. WiFi 2.4GHz 802.11 b mode.

1.1. CHANNEL 1: LOWEST (2412 MHz). Out-of-band spurious emissions in the 1-25 GHz range and inside restricted band 2.31-2.39 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dB μ V/m)	Measurement Uncertainty (dB)
1.3001	PV	Peak	42.09	± 4.87
2.38943	PV	Peak	49.31	± 4.87
2.49497	PV	Peak	47.02	± 4.87
5.37475	PV	Peak	43.16	± 4.87

1.2. CHANNEL 6: MIDDLE (2437 MHz). Out-of-band spurious emissions in the 1-25 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dB μ V/m)	Measurement Uncertainty (dB)
2.49430	PV	Peak	51.03	± 4.87
5.37525	PV	Peak	43.53	± 4.87

1.3. CHANNEL 11: HIGHEST (2462 MHz). Out-of-band spurious emissions in the 1-25 GHz range and inside restricted band 2.4835-2.5 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dB μ V/m)	Measurement Uncertainty (dB)
2.48440	PV	Peak	51.83	± 4.87
2.49577	PV	Peak	50.24	± 4.87
5.37525	PV	Peak	42.66	± 4.87

Verdict: PASS

2. WiFi 2.4GHz 802.11 g mode (worst case OFDM)

2.1. CHANNEL 1: LOWEST (2412 MHz). Out-of-band spurious emissions in the 1-25 GHz range and inside restricted band 2.31-2.39 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
1.30017	PV	Peak	43.25	± 4.87
2.38999	PV	Peak	66.71	± 4.87
		Average	50.92	± 4.87
2.48957	PH	Peak	50.53	± 4.87
2.49650	PV	Peak	50.73	± 4.87
5.37475	PV	Peak	43.00	± 4.87

2.2. CHANNEL 6: MIDDLE (2437 MHz). Out-of-band spurious emissions in the 1-25 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
1.30003	PV	Peak	43.03	± 4.87
2.49103	PH	Peak	51.30	± 4.87
5.37475	PV	Peak	42.44	± 4.87

2.3. CHANNEL 11: HIGHEST (2462 MHz). Out-of-band spurious emissions in the 1-25 GHz range and inside restricted band 2.4835-2.5 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dBμV/m)	Measurement Uncertainty (dB)
1.30000	PV	Peak	43.30	± 4.87
1.59770	PH	Peak	46.73	± 4.87
2.48352	PV	Peak	64.35	± 4.87
		Average	50.95	± 4.87
5.3740	PH	Peak	40.12	± 4.87

Verdict: PASS

3. WiFi 2.4GHz 802.11 n40 mode

3.1. CHANNEL 1: LOWEST (2422 MHz). Spurious emissions in restricted band 2.31-2.39 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dB μ V/m)	Measurement Uncertainty (dB)
2.38951	PV	Peak	64.80	± 4.87
		Average	52.74	± 4.87

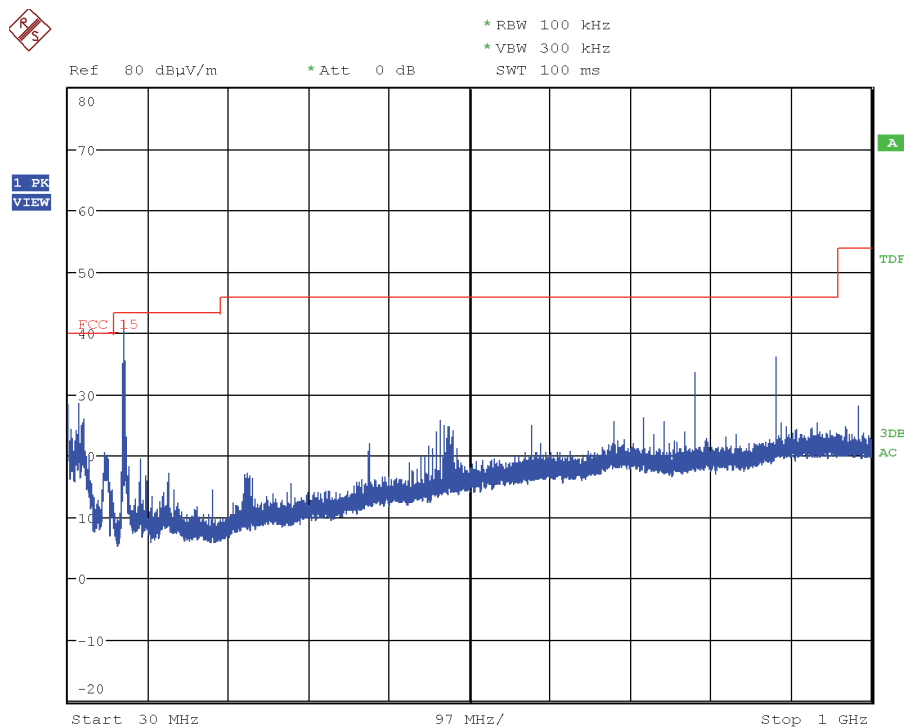
3.2. CHANNEL 9: HIGHEST (2452 MHz). Spurious emissions in restricted band 2.31-2.39 GHz.

Spurious frequency (GHz)	Polarization	Detector	Emission Level (dB μ V/m)	Measurement Uncertainty (dB)
2.48405	PV	Peak	69.16	± 4.87
		Average	51.69	± 4.87

Verdict: PASS

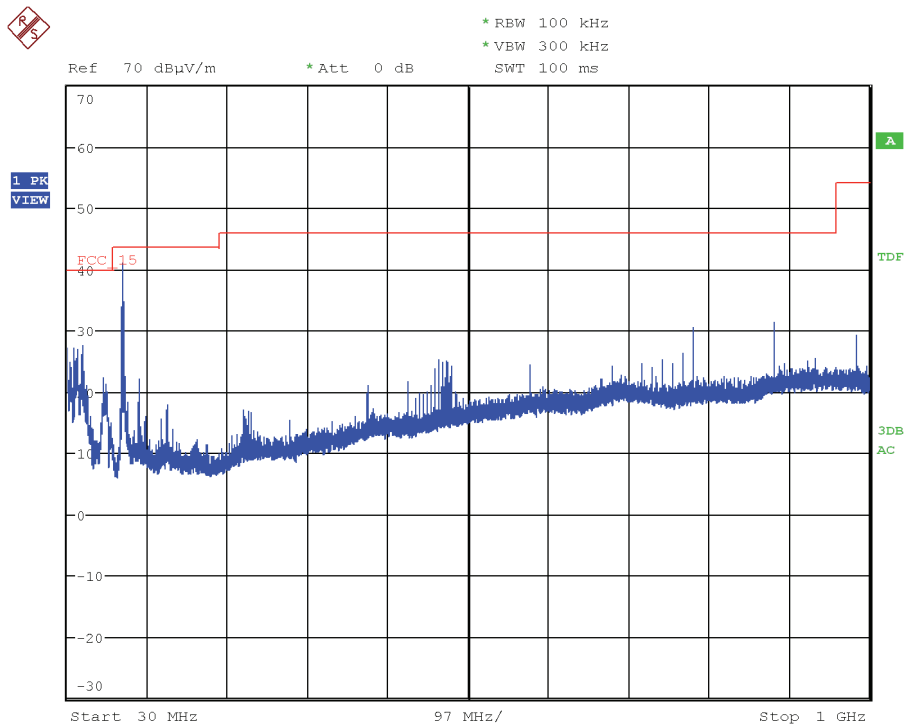
FREQUENCY RANGE 30 MHz-1000 MHz.

CORE 0 – Antenna RF port 1:



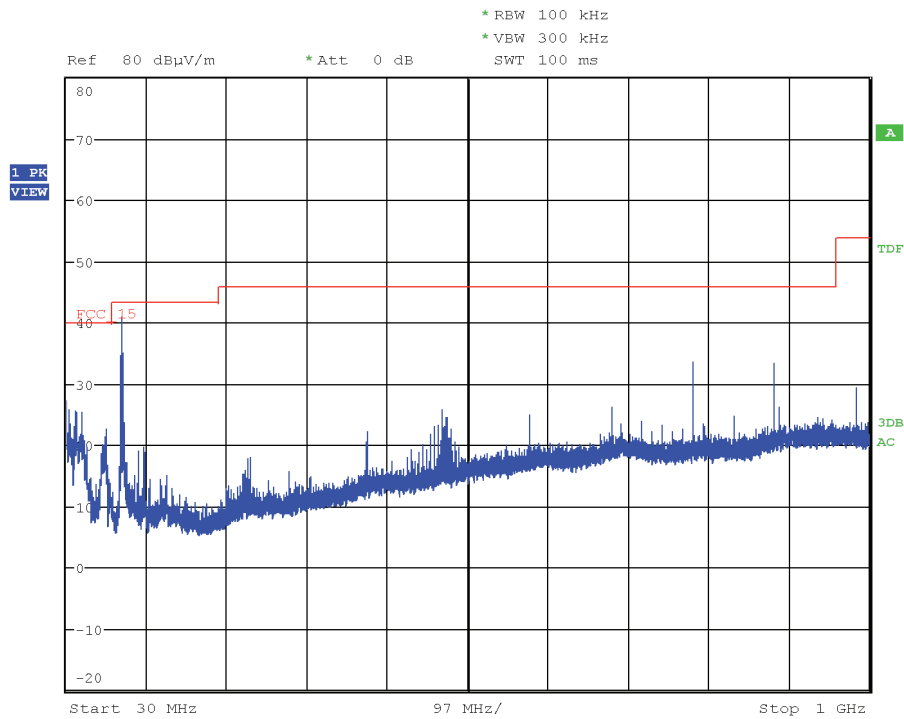
(This plot is valid for all three channels and modulation modes).

CORE 0 – Antenna RF External port 2:



(This plot is valid for all three channels and modulation modes).

CORE 1 – Antenna RF port 4:



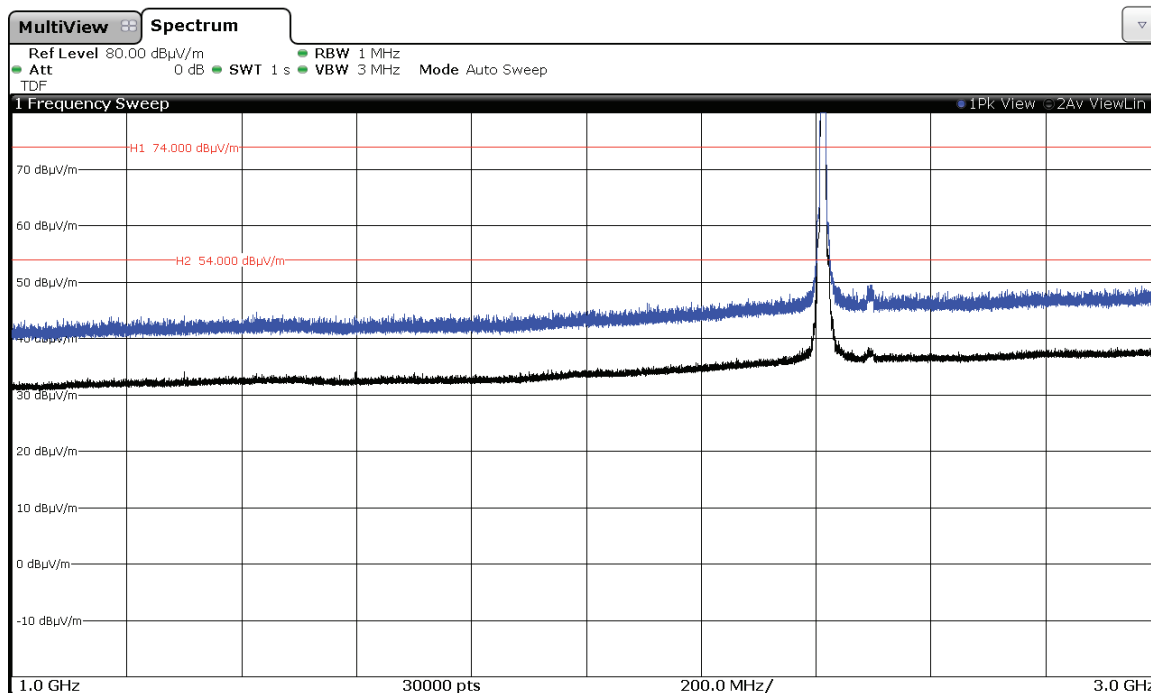
(This plot is valid for all three channels and modulation modes).

FREQUENCY RANGE 1 GHz to 3 GHz.

CORE 0 – Antenna RF port 1:

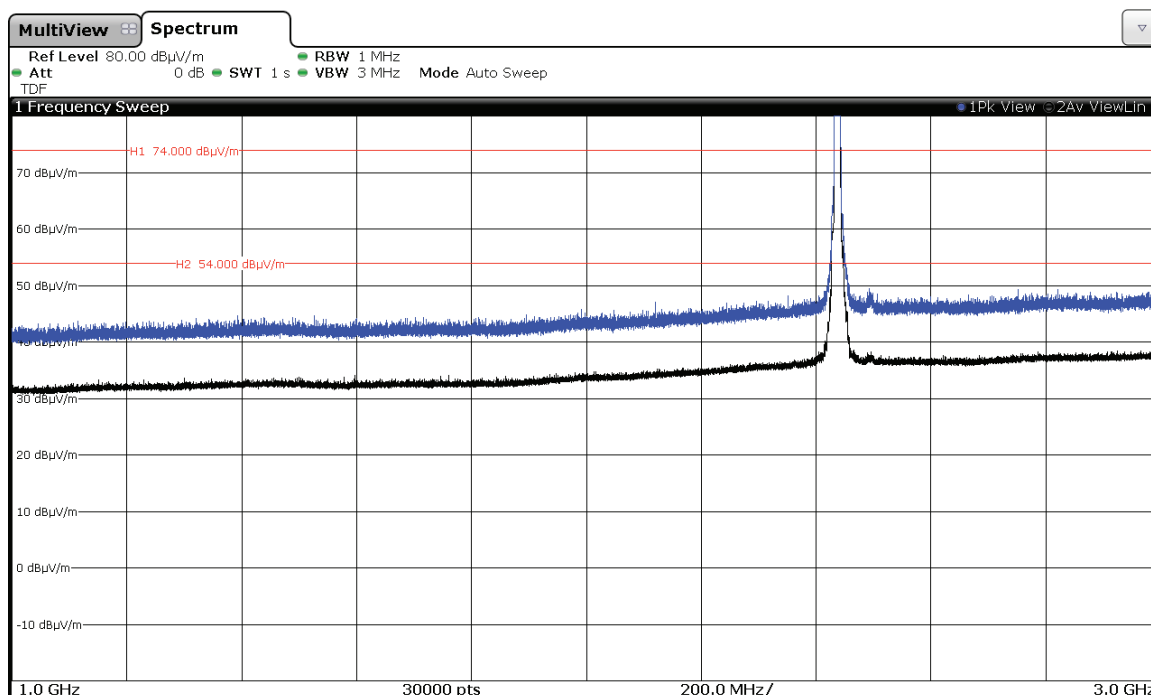
1. WiFi 2.4GHz 802.11 b mode

CHANNEL 1 (2412 MHz).



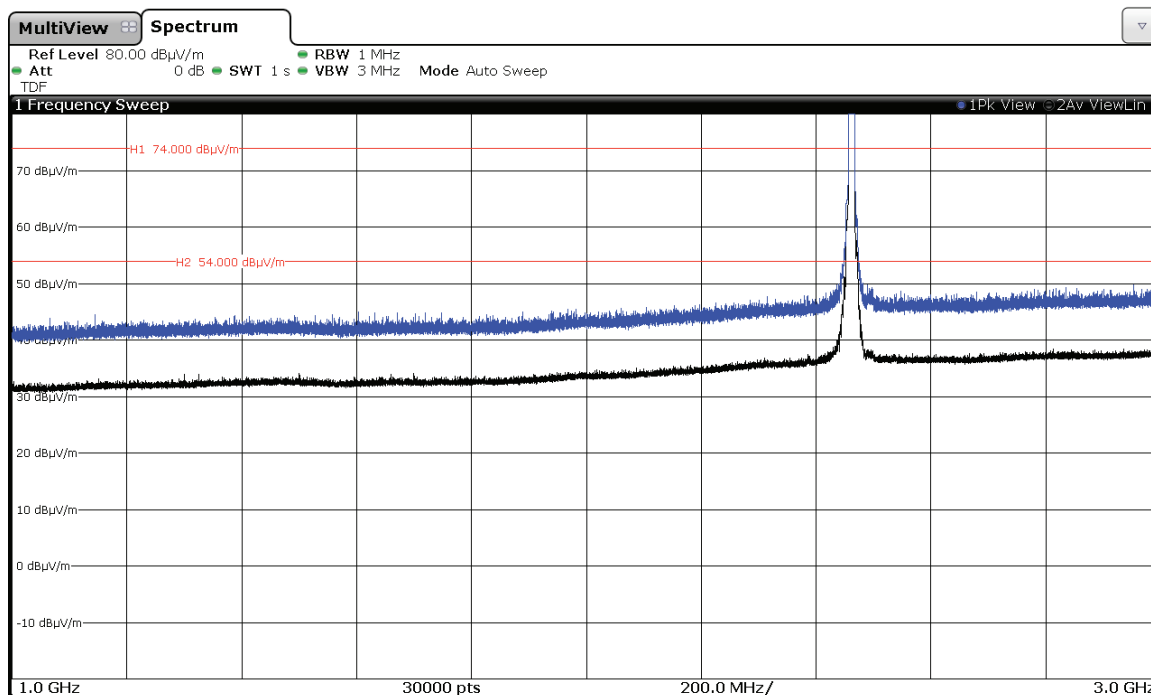
Note: The peak above the limit is the carrier frequency.

CHANNEL 6 (2437 MHz).



Note: The peak above the limit is the carrier frequency.

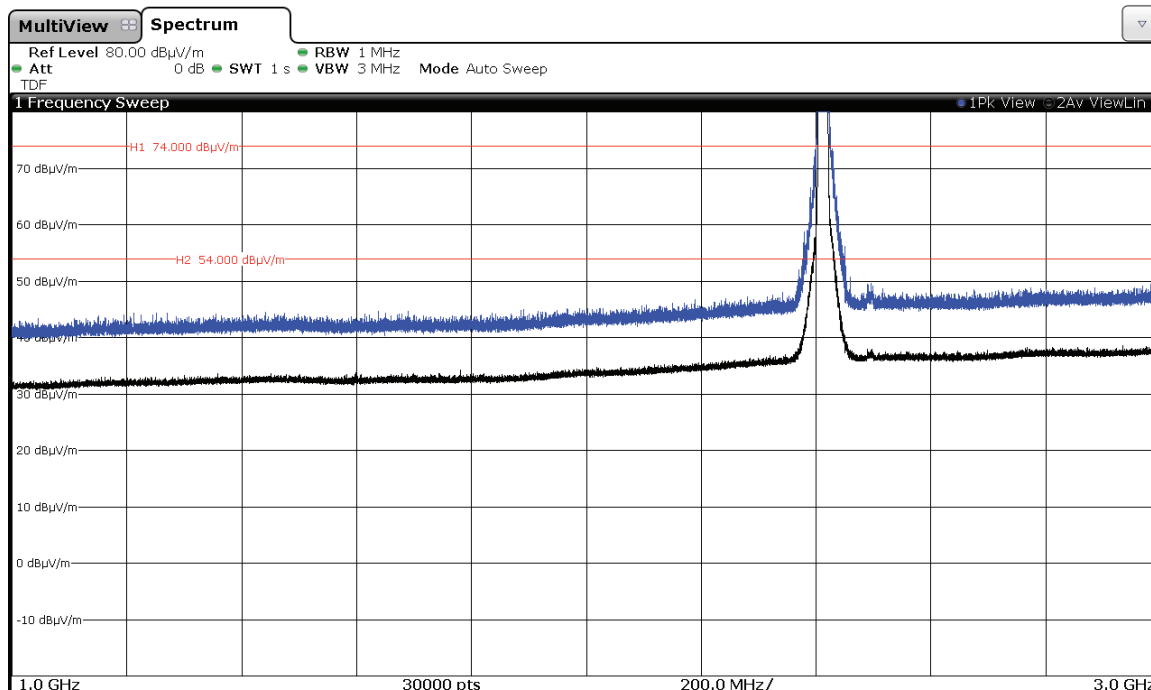
CHANNEL 11 (2462 MHz).



Note: The peak above the limit is the carrier frequency.

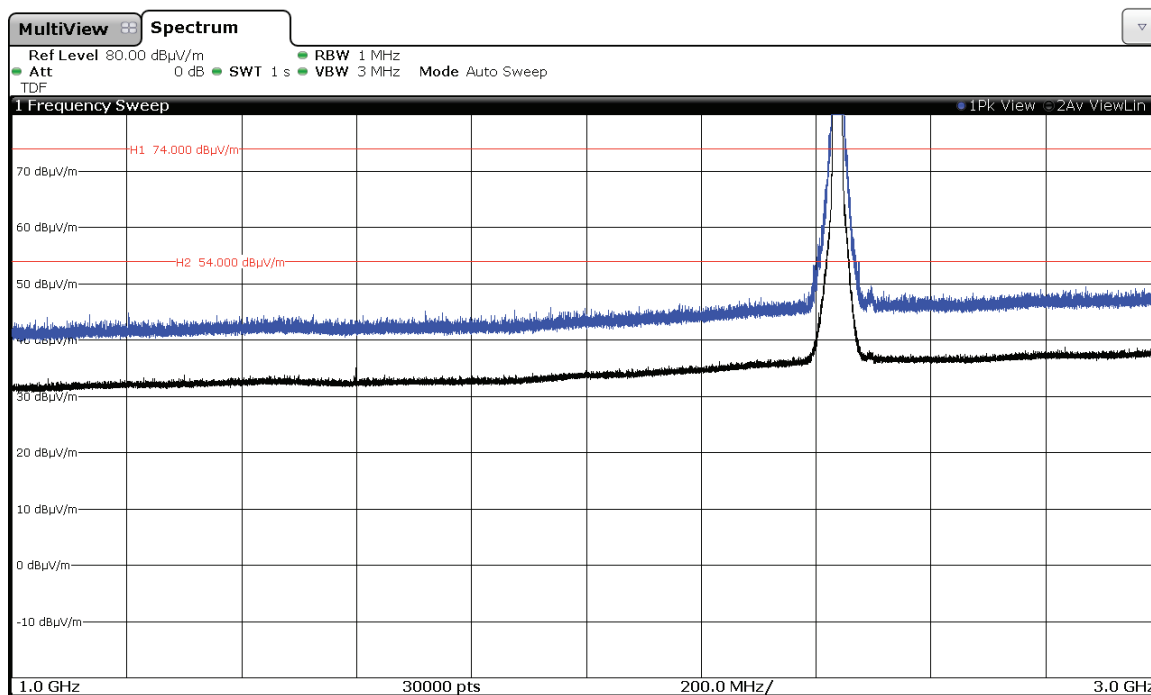
2. WiFi 2.4GHz 802.11 g mode (Worst case OFDM)

CHANNEL 1 (2412 MHz).



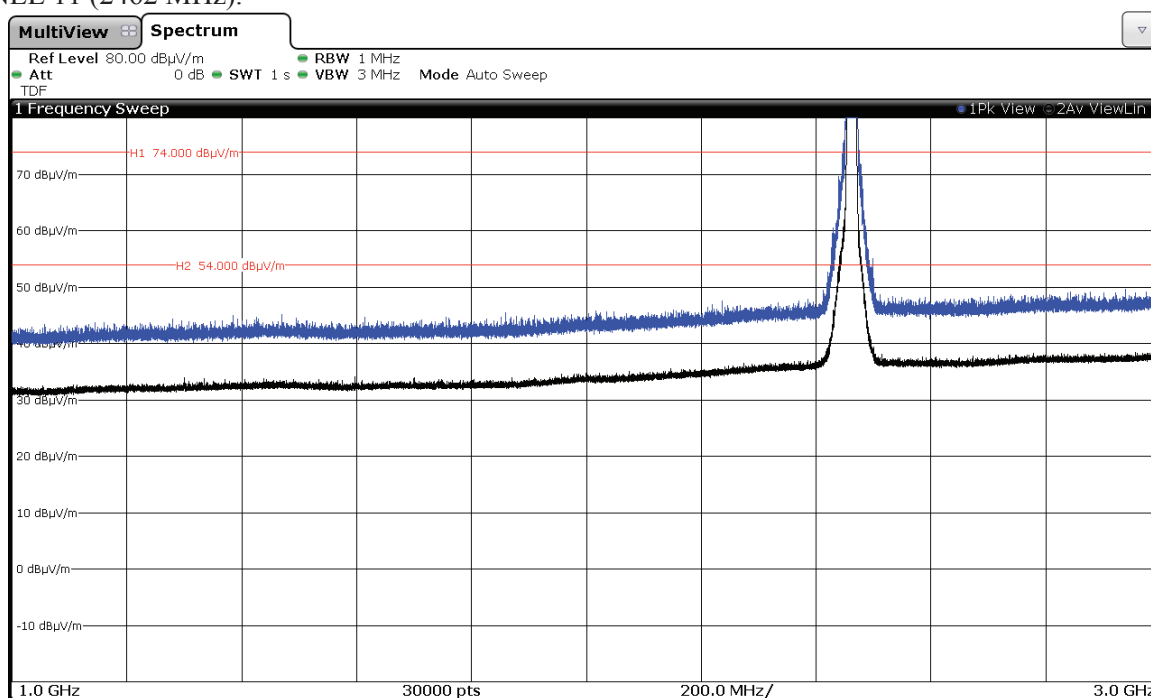
Note: The peak above the limit is the carrier frequency.

CHANNEL 6 (2437 MHz).



Note: The peak above the limit is the carrier frequency.

CHANNEL 11 (2462 MHz).

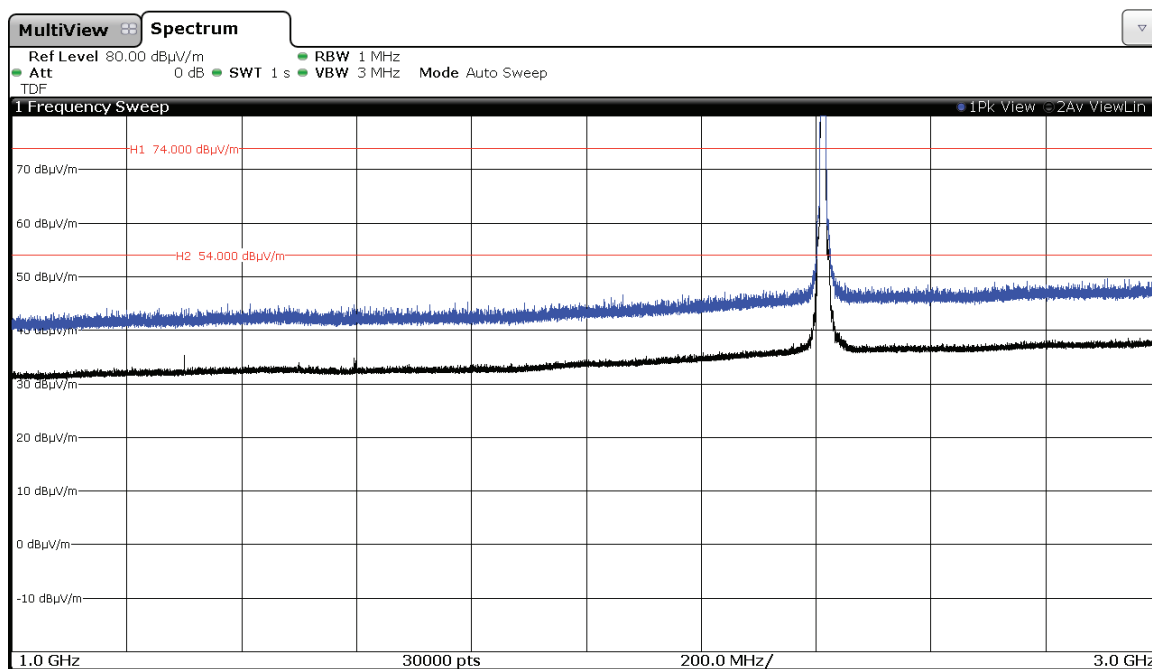


Note: The peak above the limit is the carrier frequency.

CORE 0 – Antenna RF External port 2:

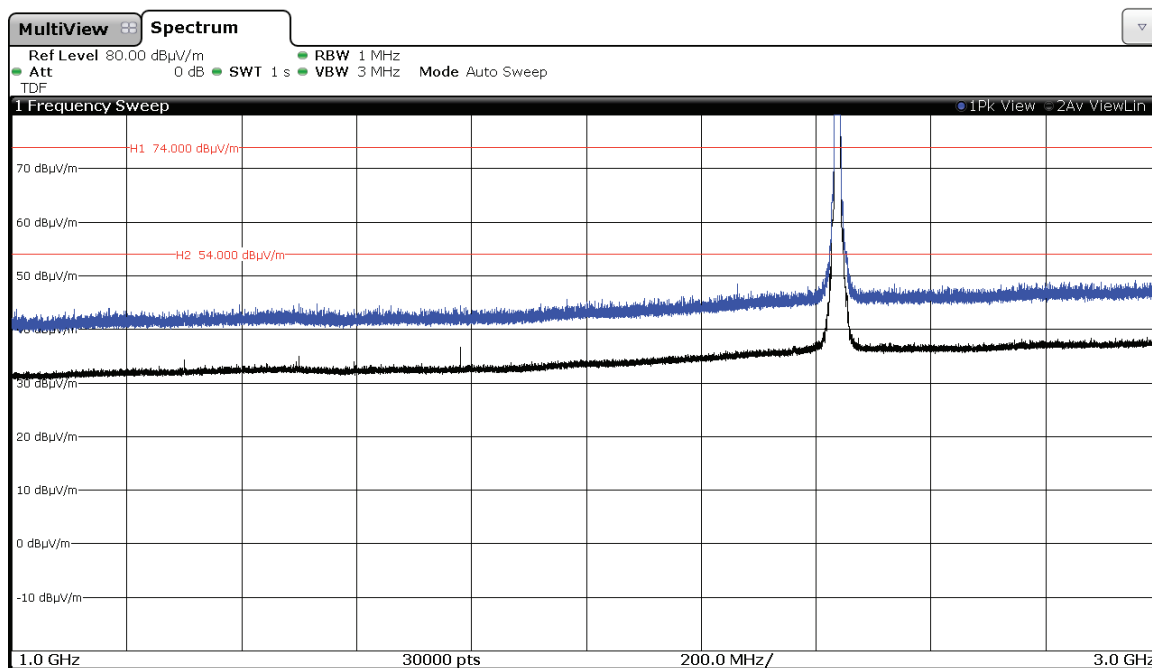
1. WiFi 2.4GHz 802.11 b mode

CHANNEL 1 (2412 MHz).



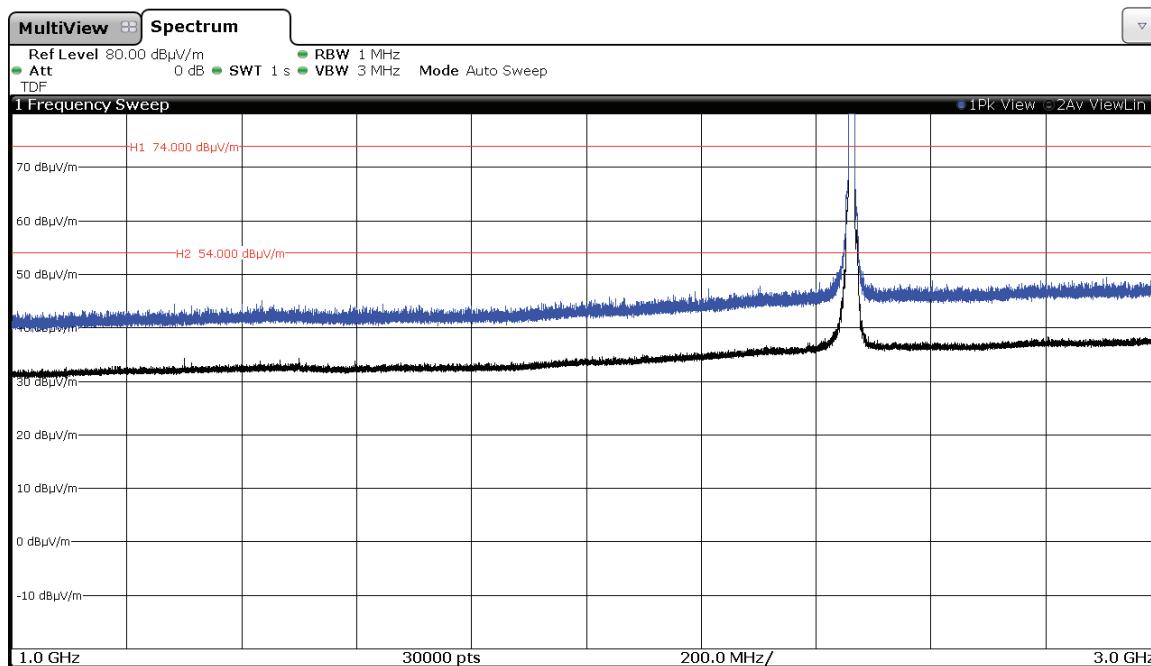
Note: The peak above the limit is the carrier frequency.

CHANNEL 6 (2437 MHz).



Note: The peak above the limit is the carrier frequency.

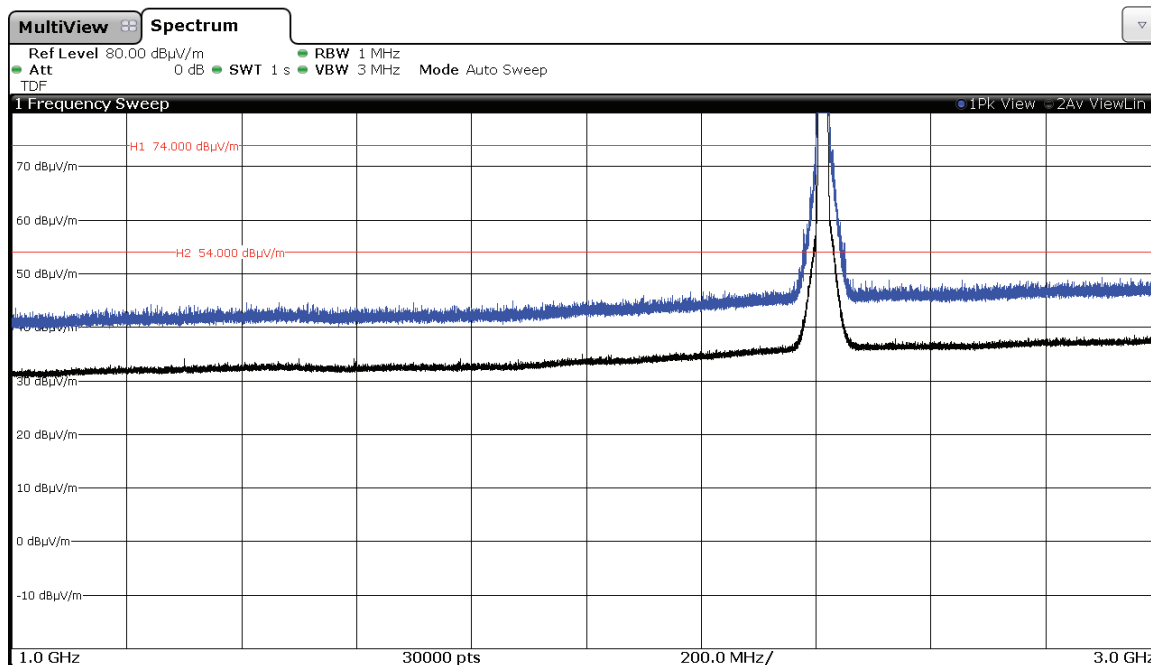
CHANNEL 11 (2462 MHz).



Note: The peak above the limit is the carrier frequency.

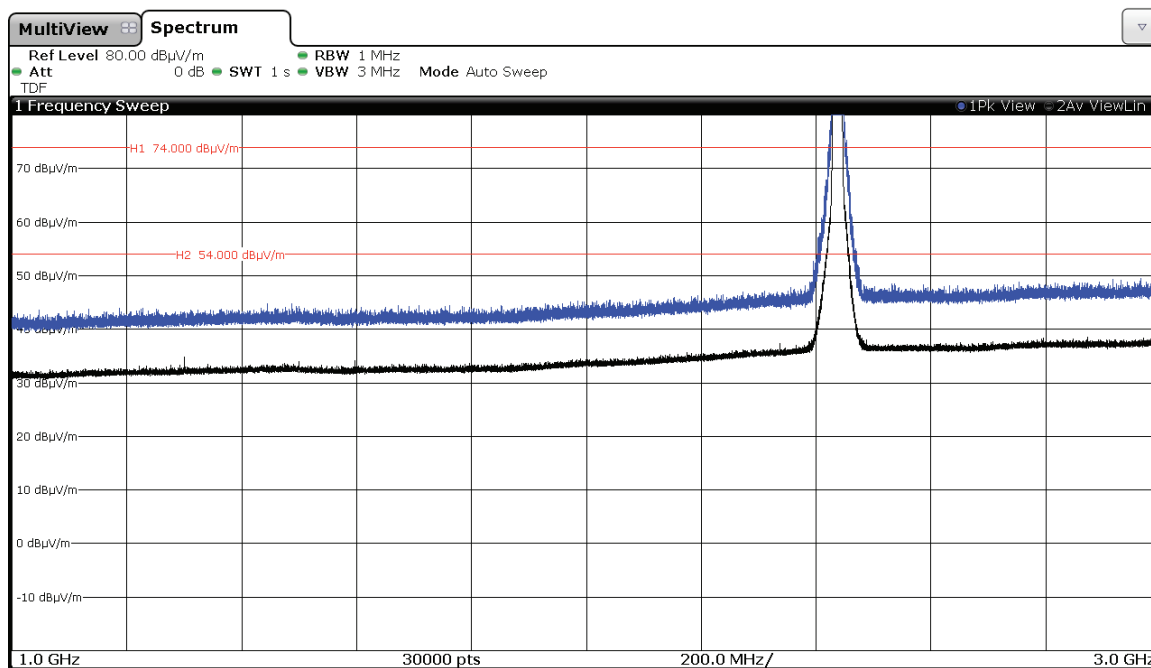
2. WiFi 2.4GHz 802.11 g mode (Worst case OFDM)

CHANNEL 1 (2412 MHz).



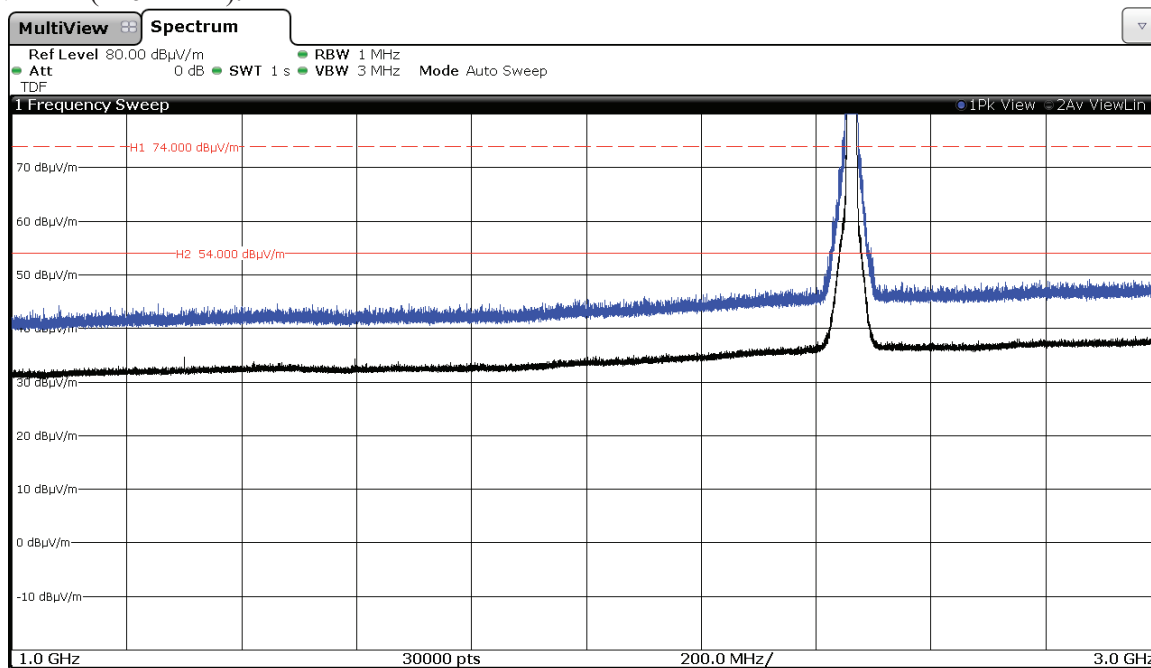
Note: The peak above the limit is the carrier frequency.

CHANNEL 6 (2437 MHz).



Note: The peak above the limit is the carrier frequency.

CHANNEL 11 (2462 MHz).

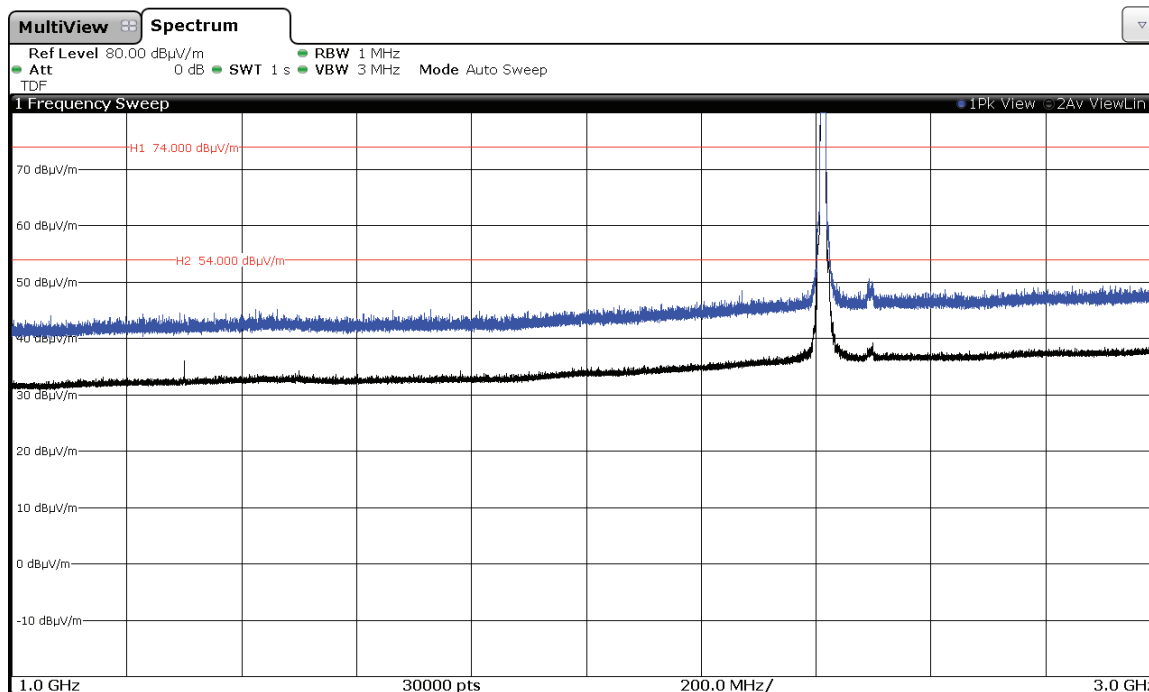


Note: The peak above the limit is the carrier frequency.

CORE 1 – Antenna RF port 4:

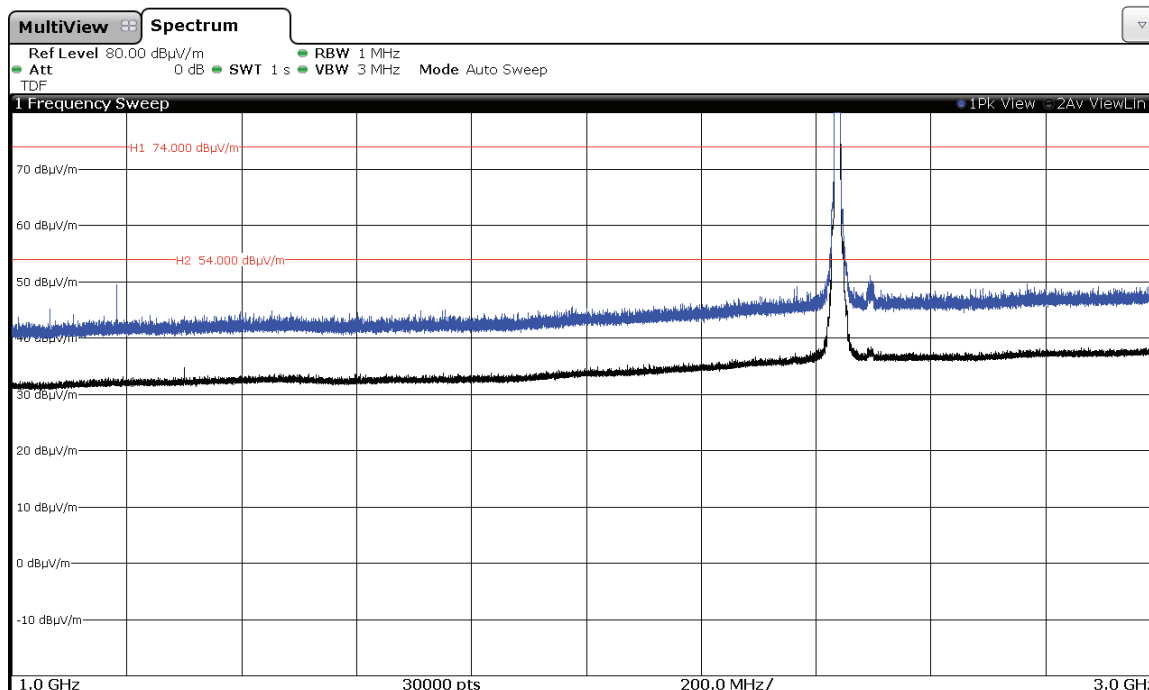
1. WiFi 2.4GHz 802.11 b mode

CHANNEL 1 (2412 MHz).



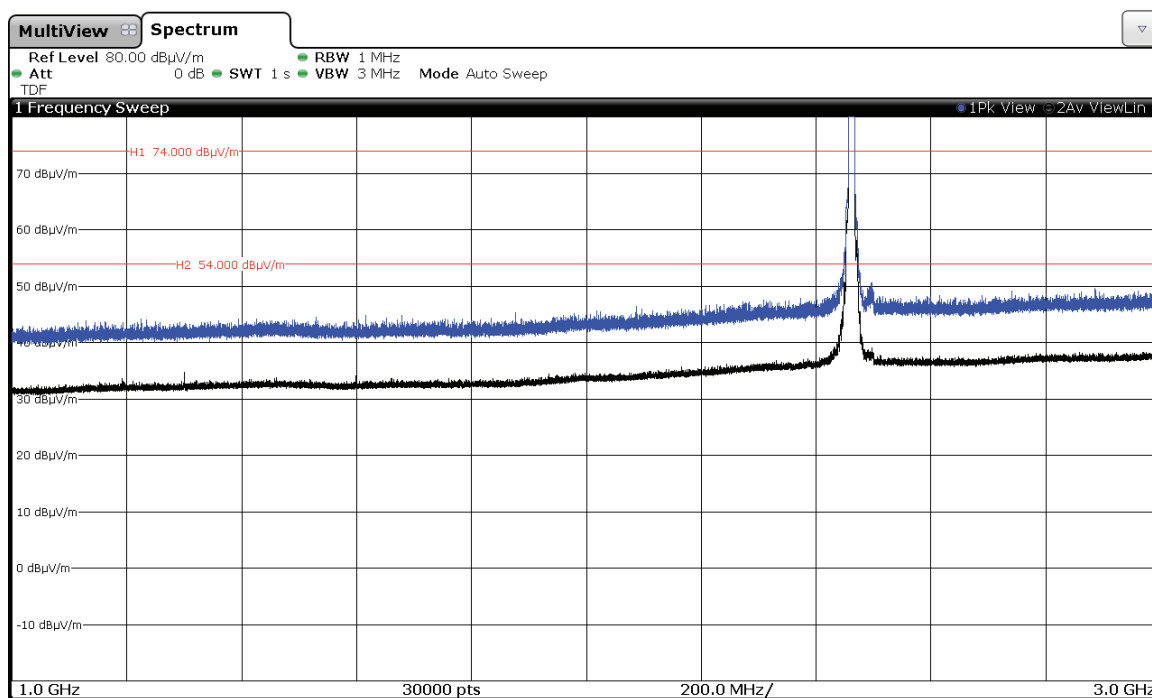
Note: The peak above the limit is the carrier frequency.

CHANNEL 6 (2437 MHz).



Note: The peak above the limit is the carrier frequency.

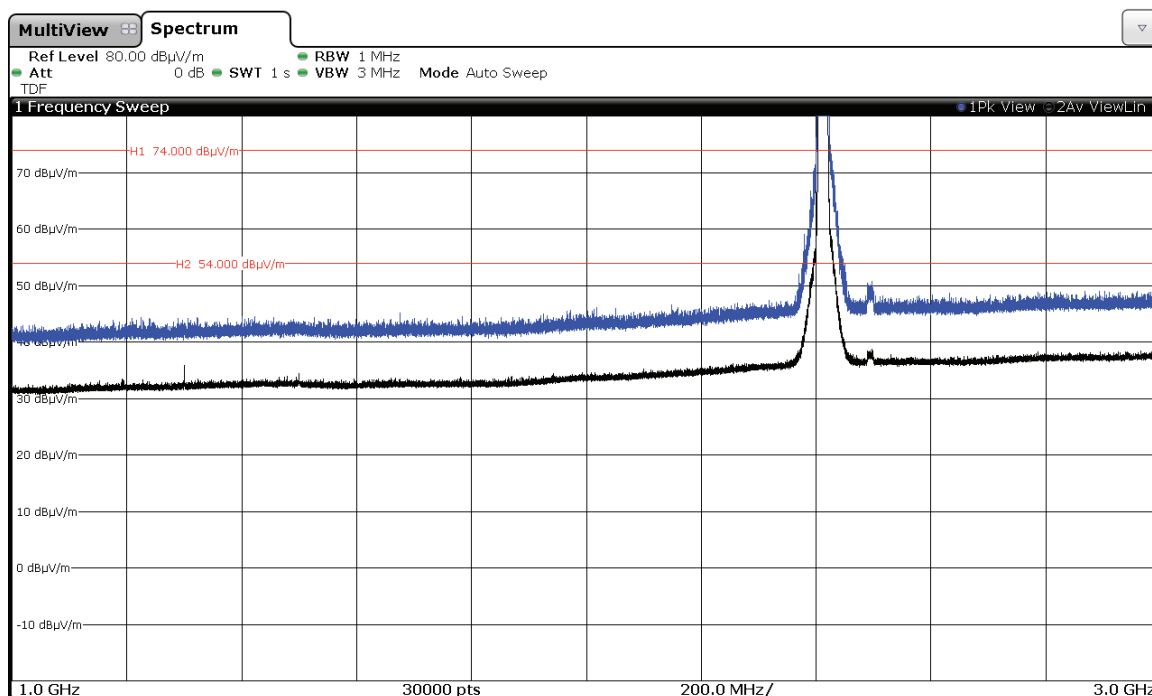
CHANNEL 11 (2462 MHz).



Note: The peak above the limit is the carrier frequency.

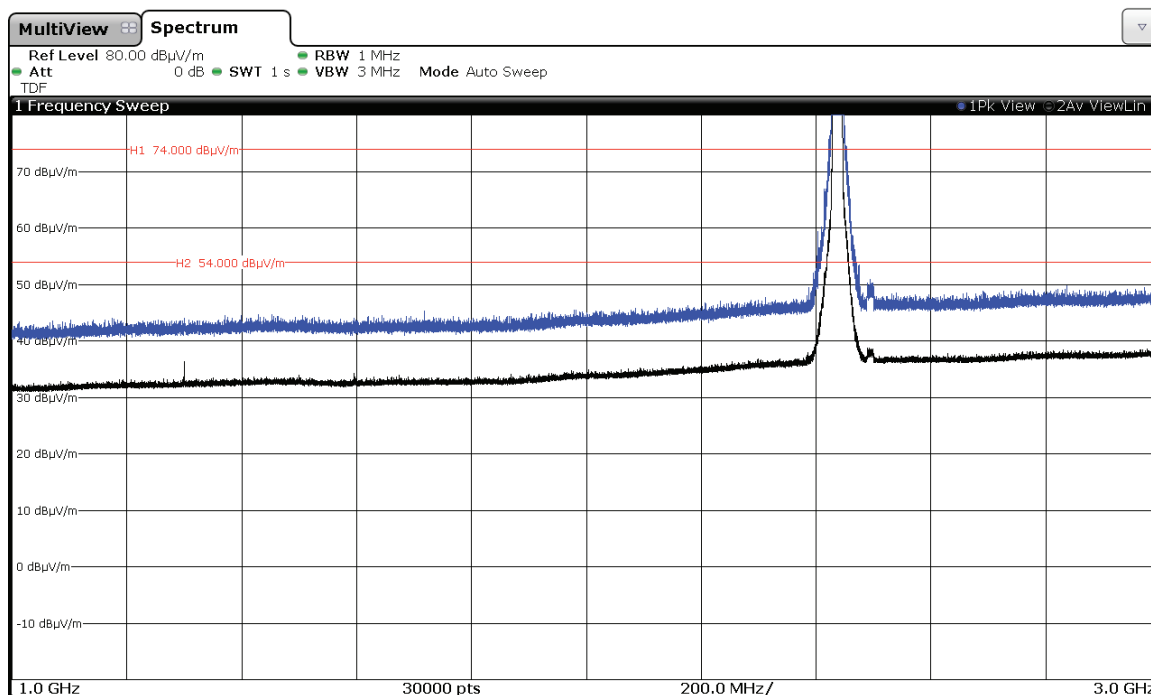
2. WiFi 2.4GHz 802.11 g mode (Worst case OFDM)

CHANNEL 1 (2412 MHz).



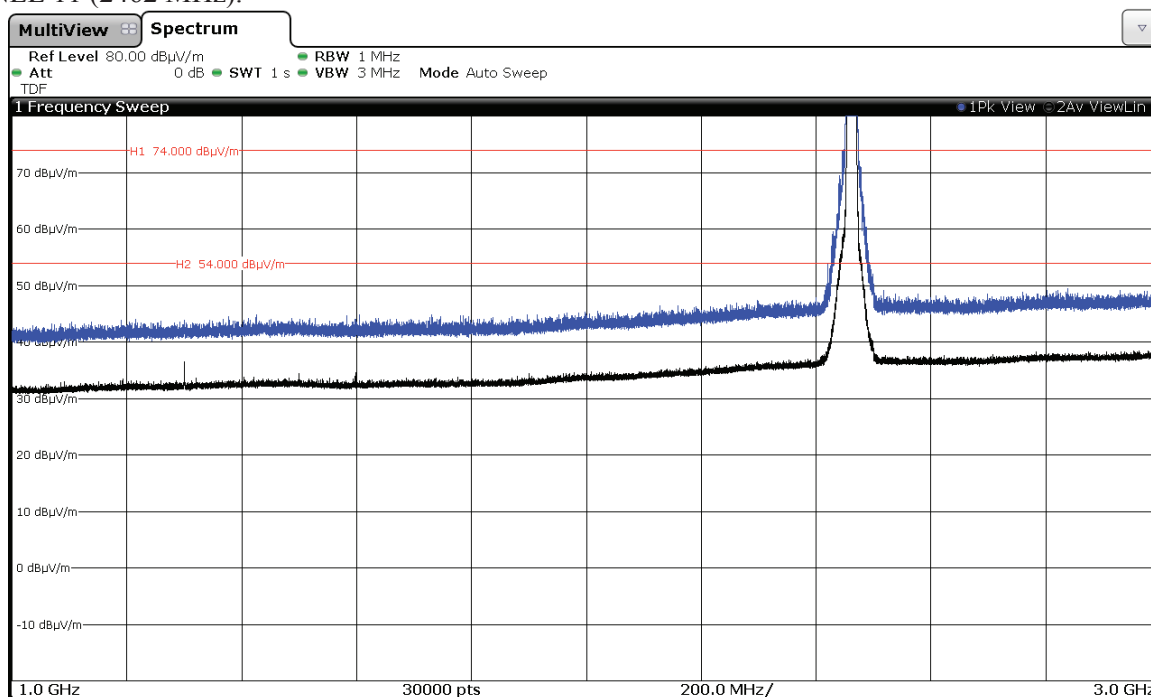
Note: The peak above the limit is the carrier frequency.

CHANNEL 6 (2437 MHz).



Note: The peak above the limit is the carrier frequency.

CHANNEL 11 (2462 MHz).



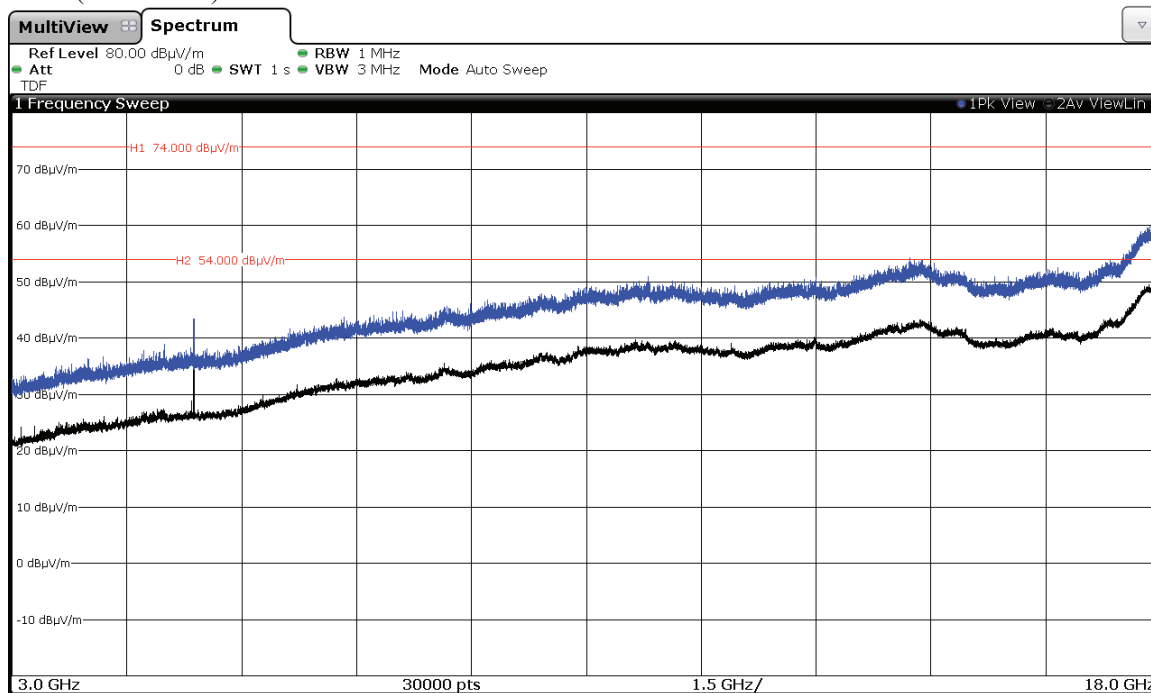
Note: The peak above the limit is the carrier frequency.

FREQUENCY RANGE 3 GHz to 18 GHz.

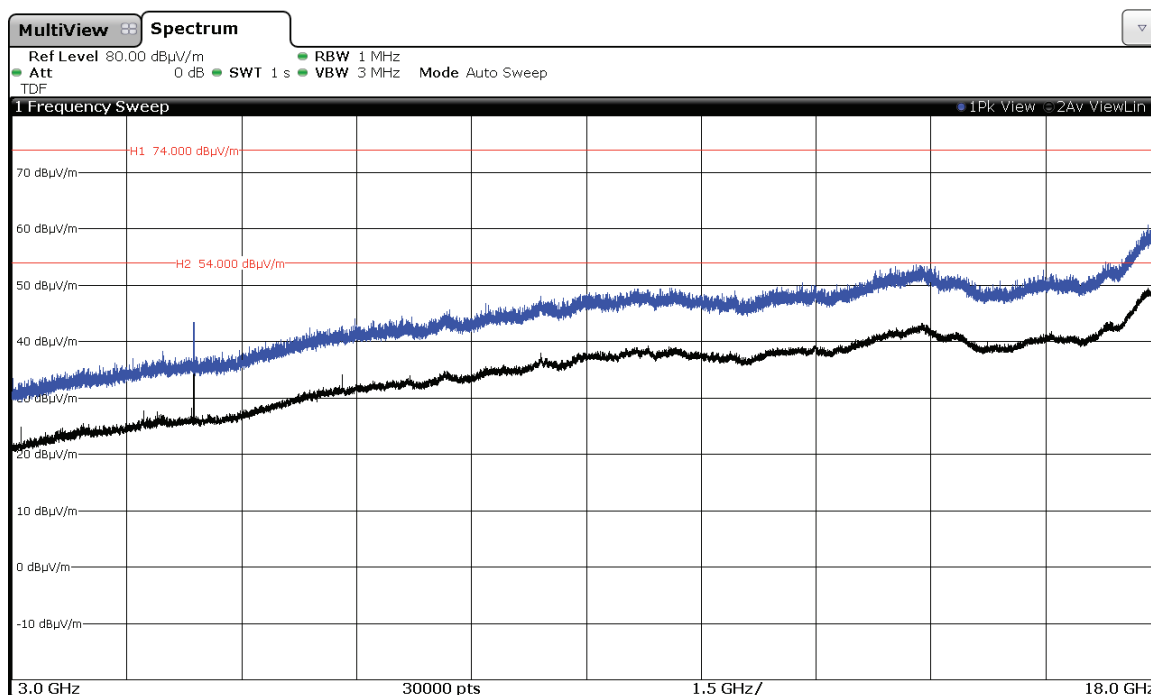
CORE 0 – Antenna RF port 1:

1. WiFi 2.4GHz 802.11 b mode

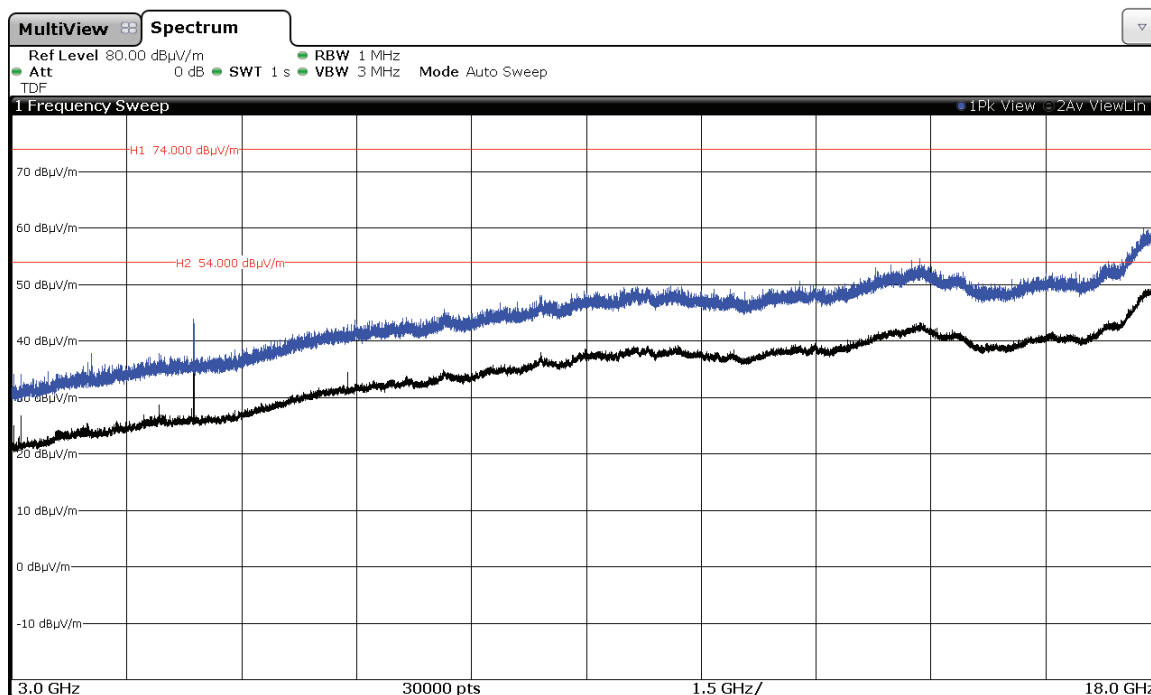
CHANNEL 1 (2412 MHz).



CHANNEL 6 (2437 MHz).

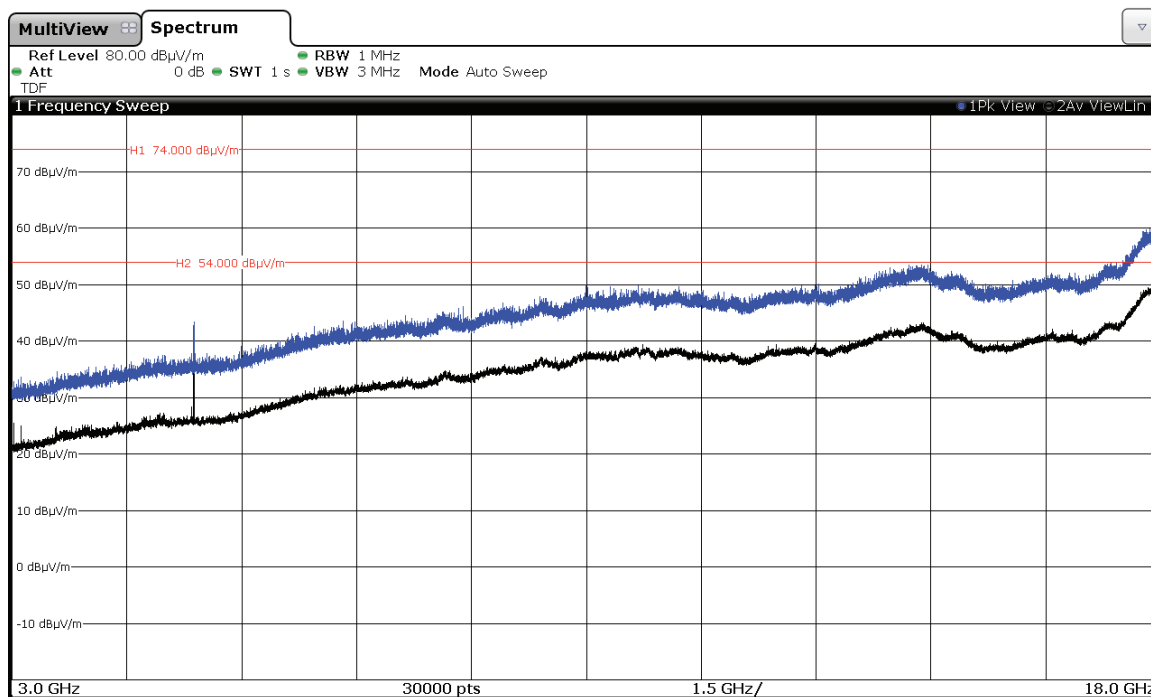


CHANNEL 11 (2462 MHz).

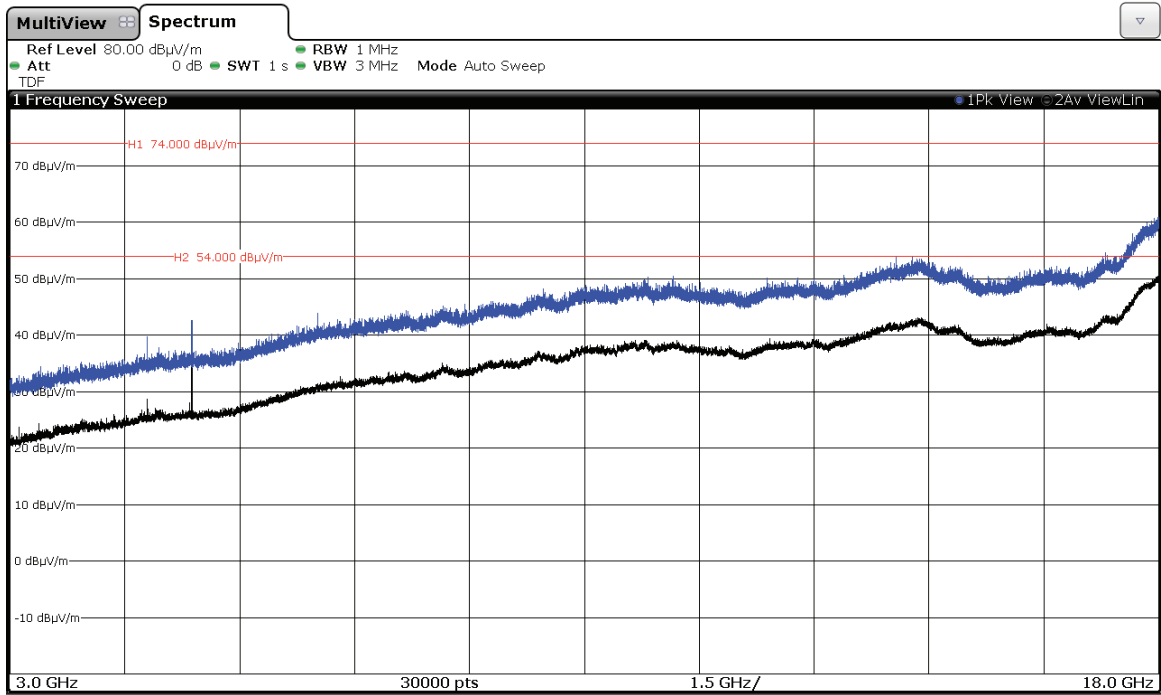


2. WiFi 2.4GHz 802.11 g mode (Worst case OFDM)

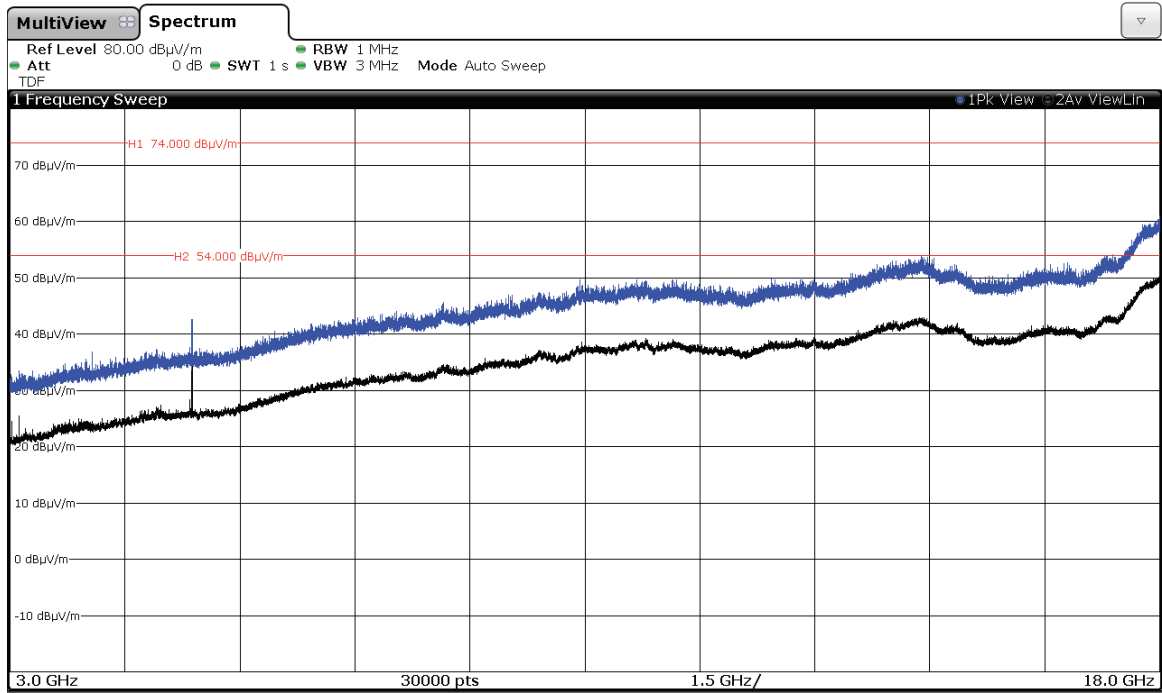
CHANNEL 1 (2412 MHz).



CHANNEL 6 (2437 MHz).



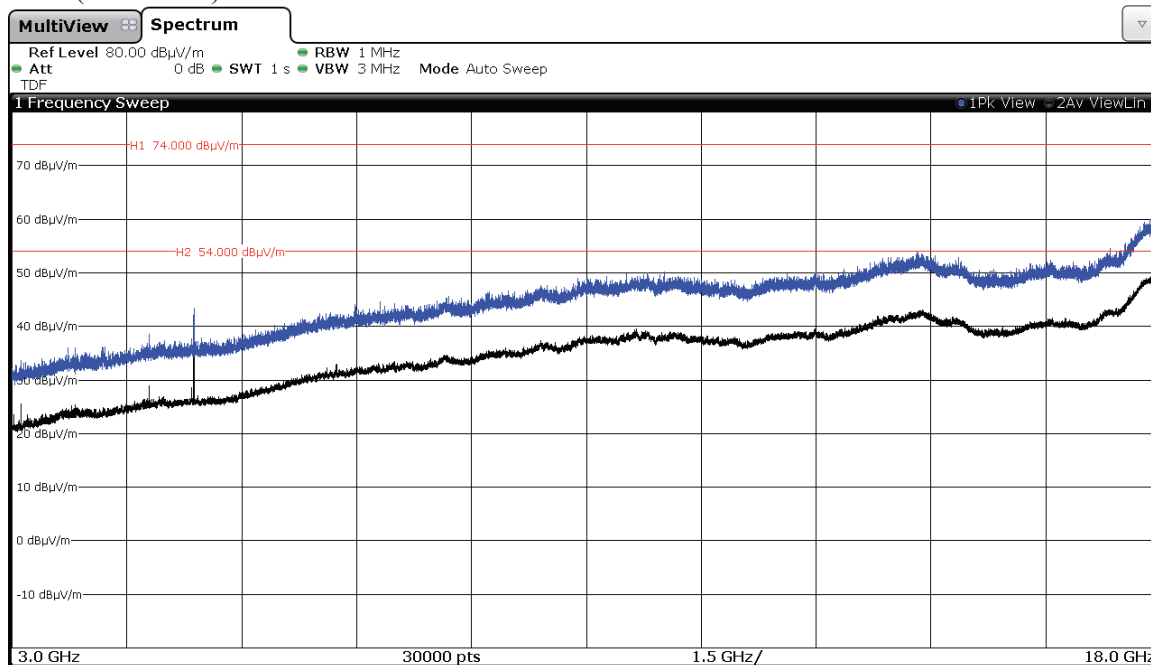
CHANNEL 11 (2462 MHz).



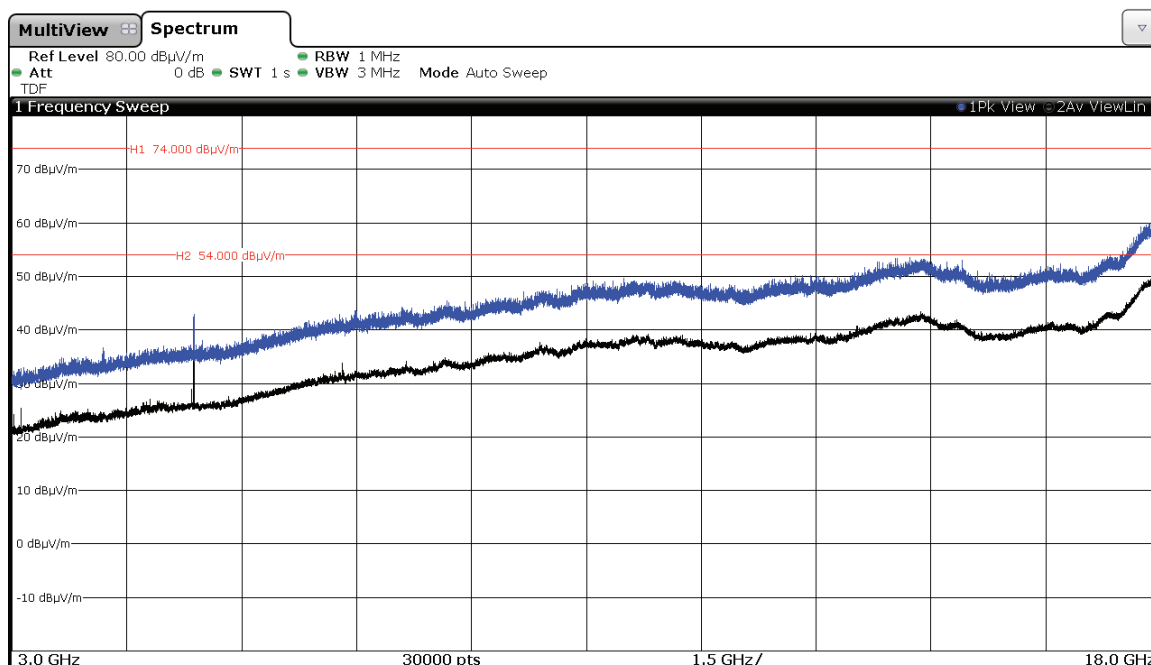
CORE 0 – Antenna RF External port 2:

1. WiFi 2.4GHz 802.11 b mode

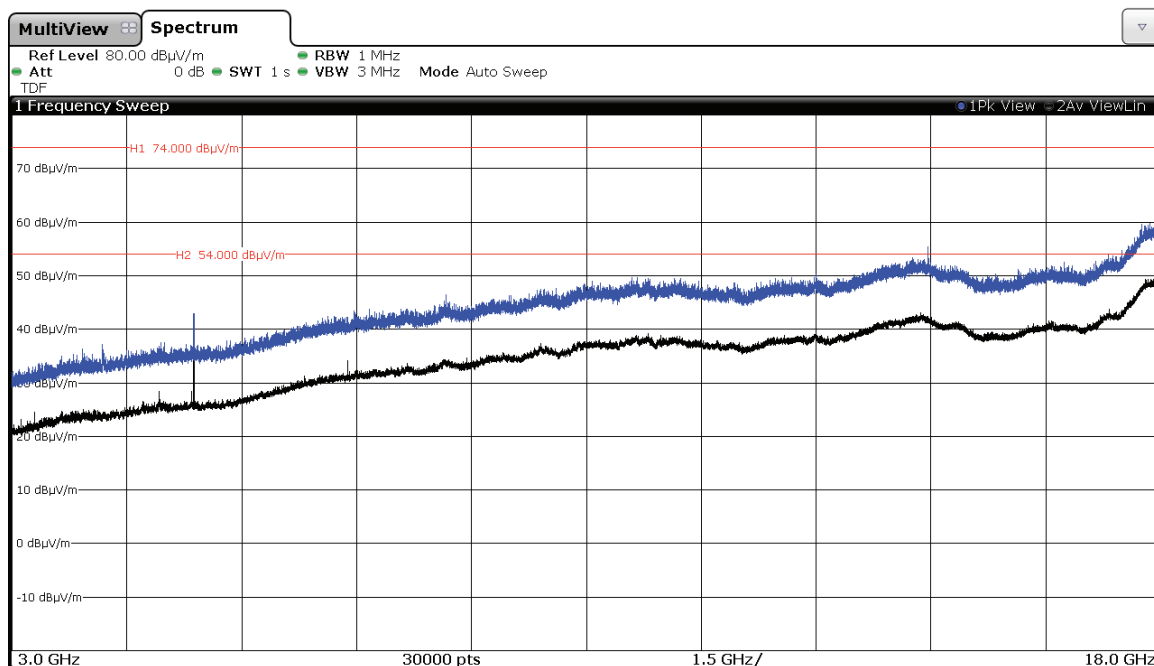
CHANNEL 1 (2412 MHz).



CHANNEL 6 (2437 MHz).

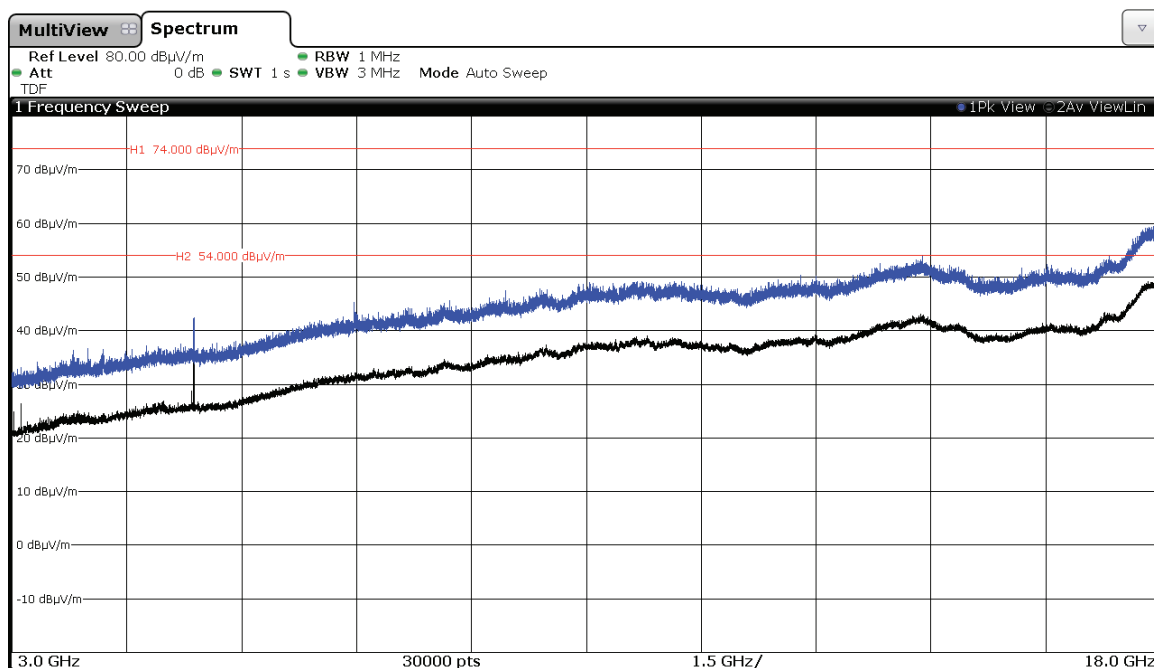


CHANNEL 11 (2462 MHz).

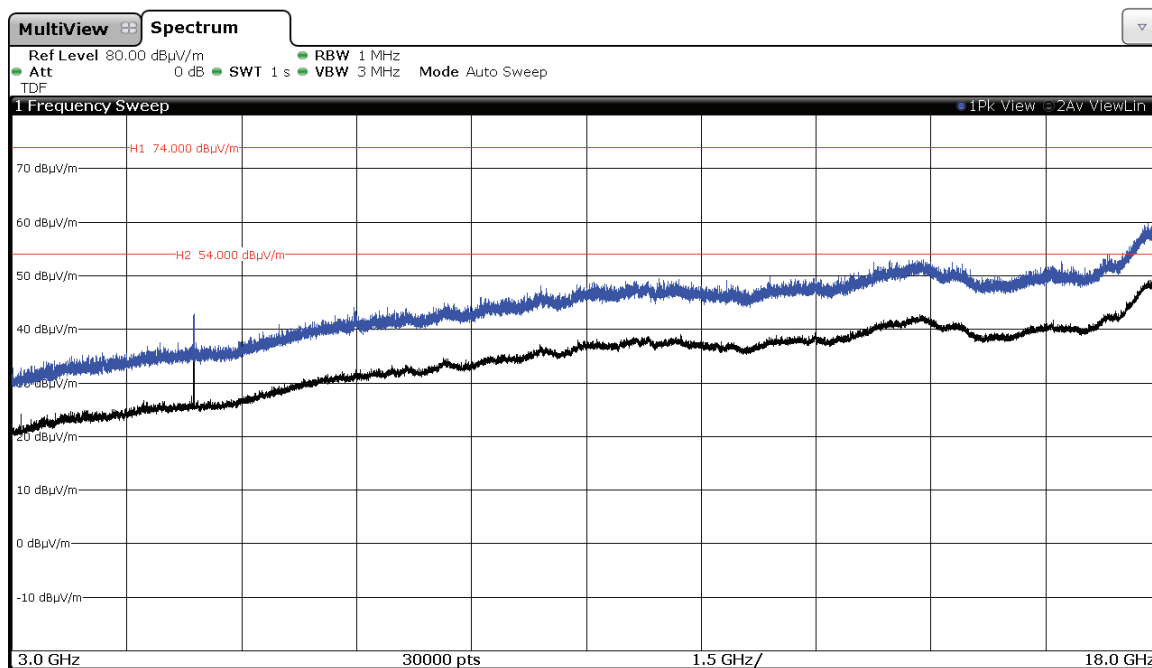


2. WiFi 2.4GHz 802.11 g mode (Worst case OFDM)

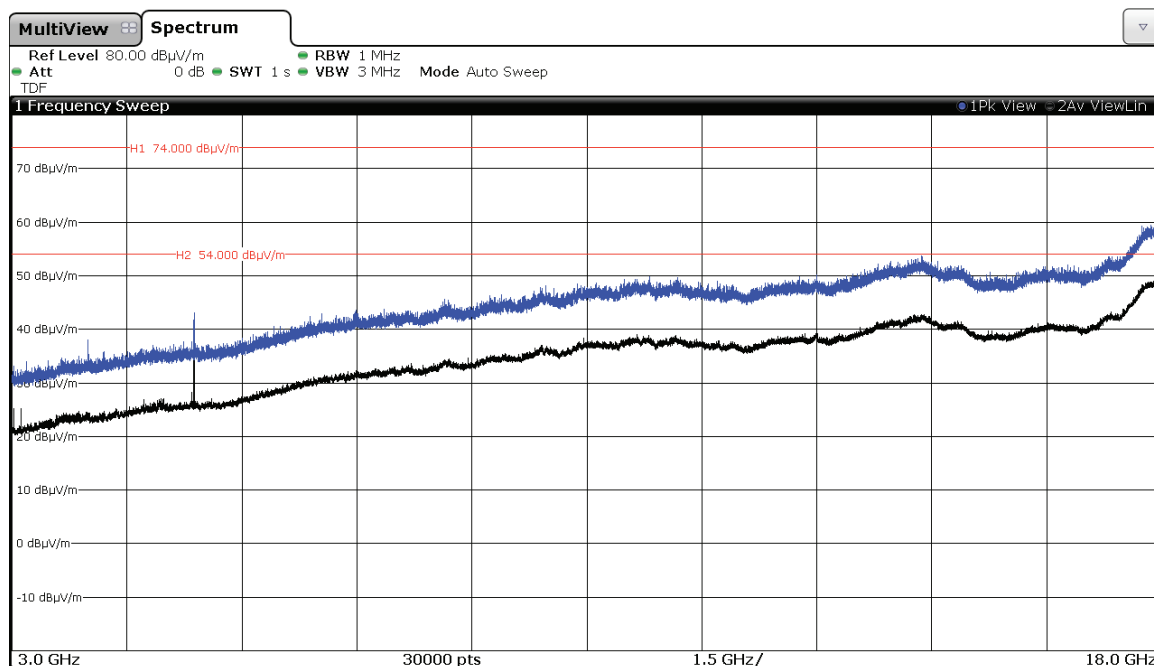
CHANNEL 1 (2412 MHz).



CHANNEL 6 (2437 MHz).



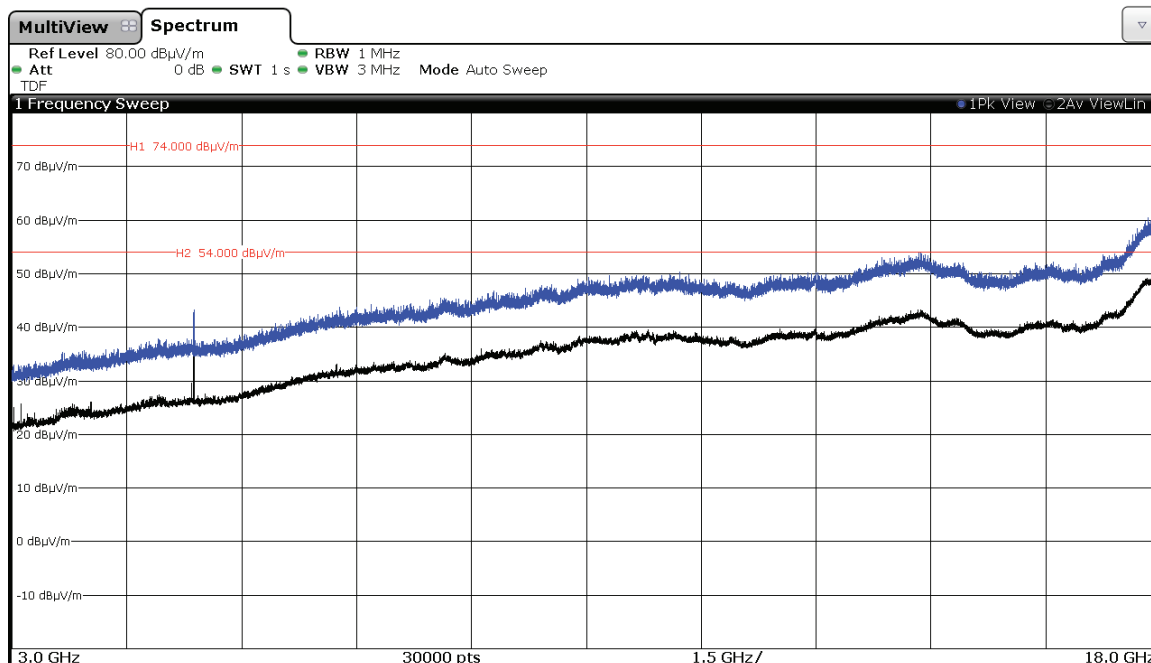
CHANNEL 11 (2462 MHz).



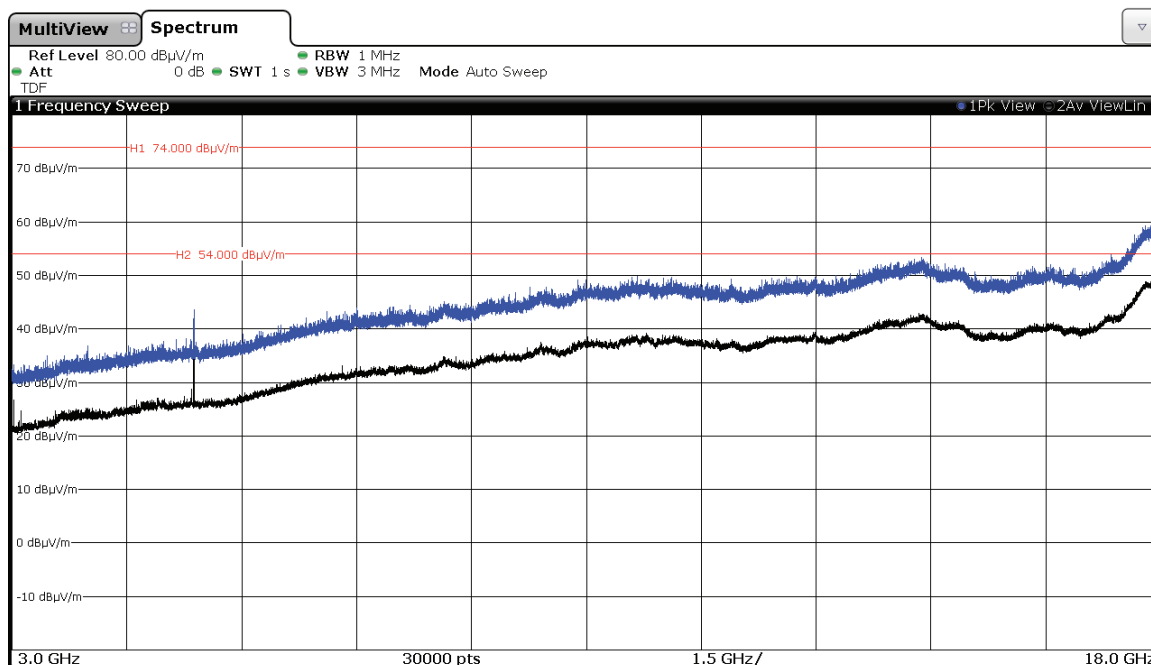
CORE 1 – Antenna RF port 4:

1. WiFi 2.4GHz 802.11 b mode

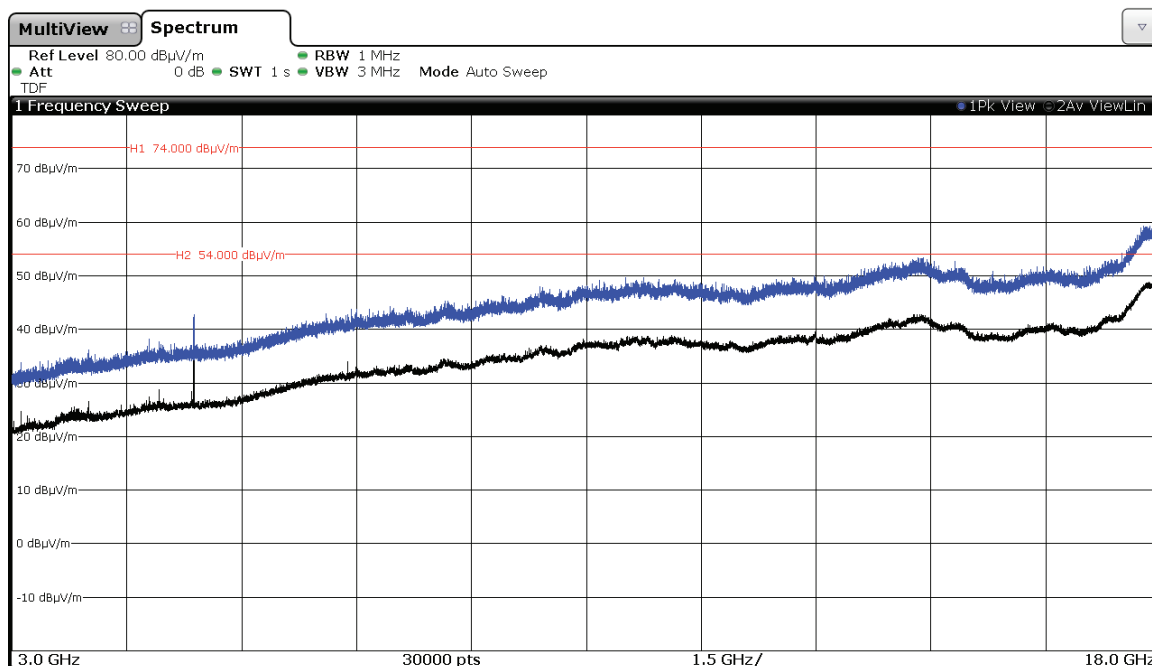
CHANNEL 1 (2412 MHz).



CHANNEL 6 (2437 MHz).

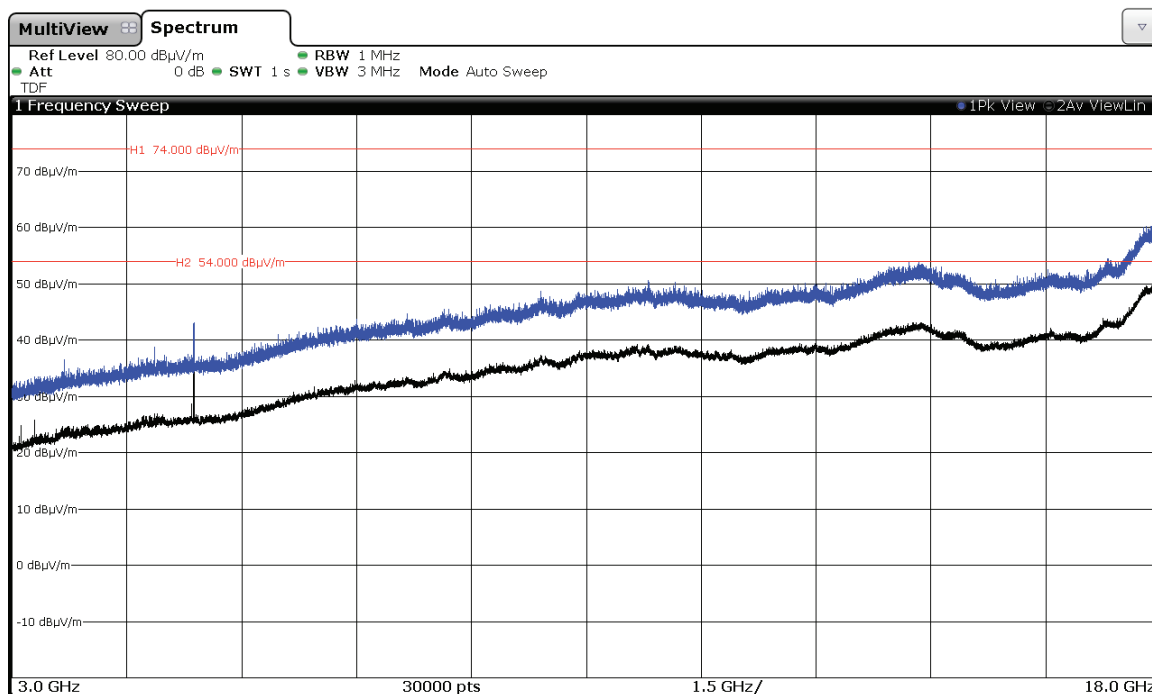


CHANNEL 11 (2462 MHz).

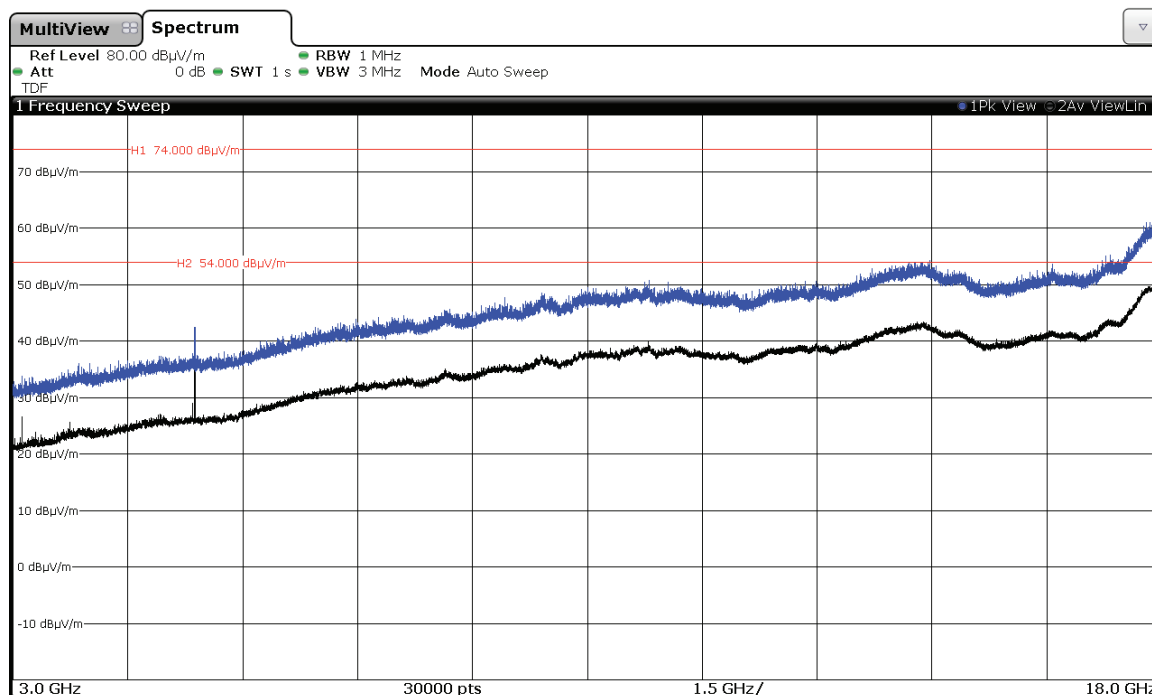


2. WiFi 2.4GHz 802.11 g mode (Worst case OFDM)

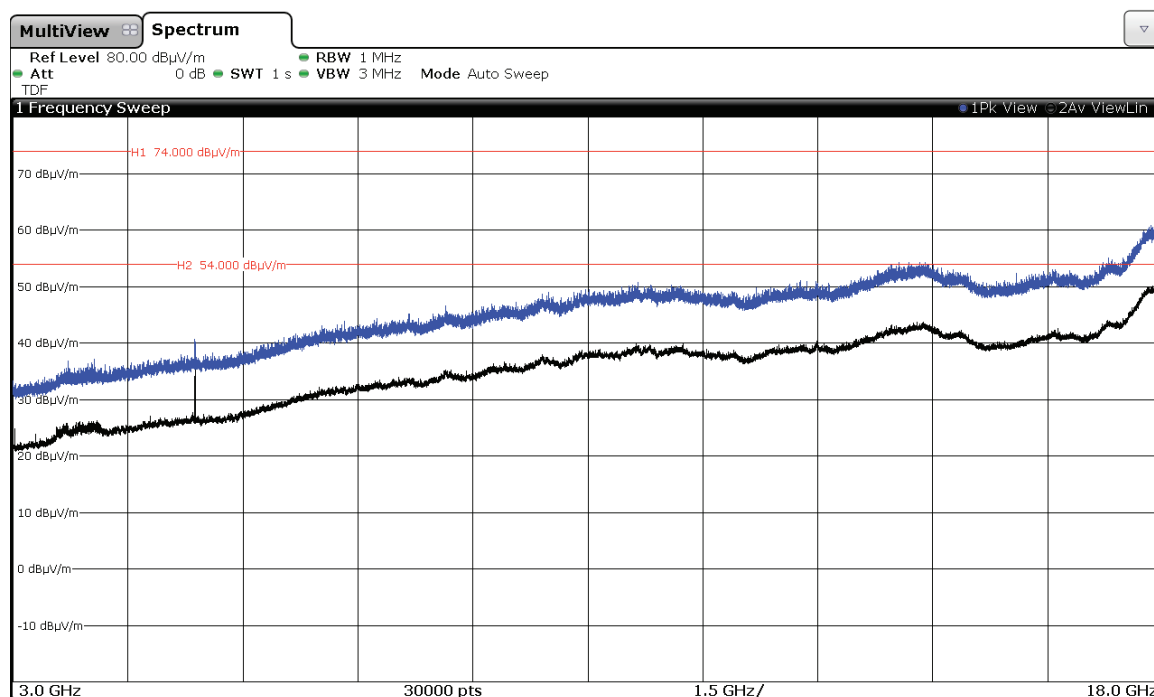
CHANNEL 1 (2412 MHz).



CHANNEL 6 (2437 MHz).



CHANNEL 11 (2462 MHz).

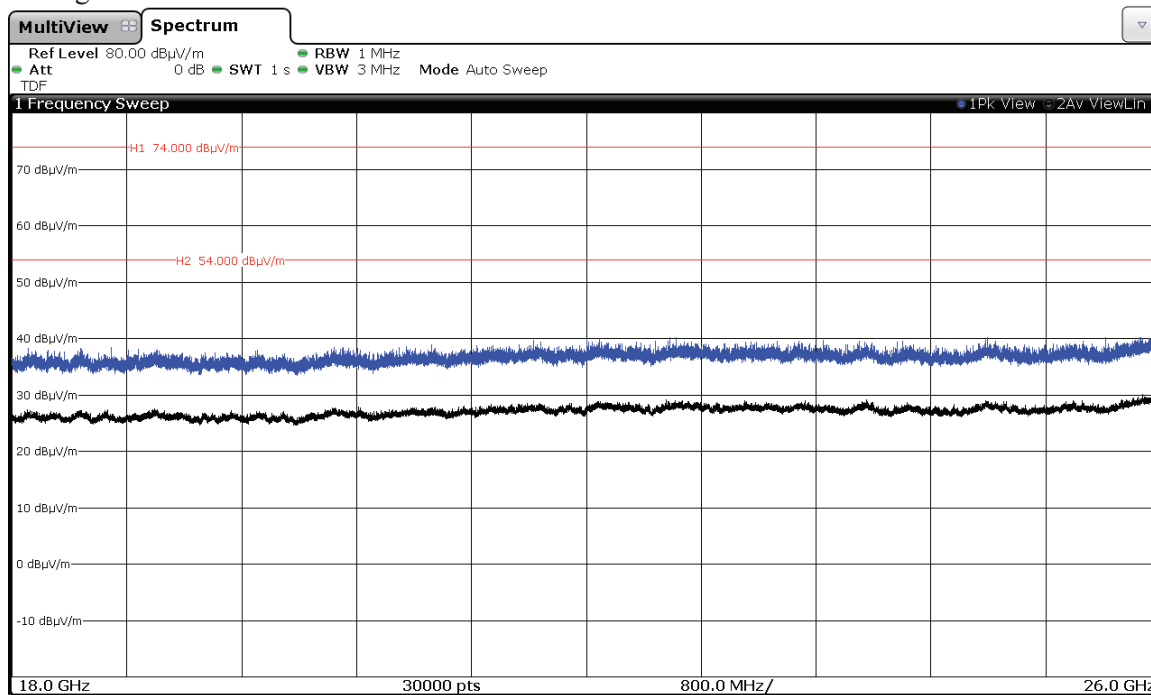


FREQUENCY RANGE 18 GHz to 26 GHz.

CORE 0 – Antenna RF port 1:

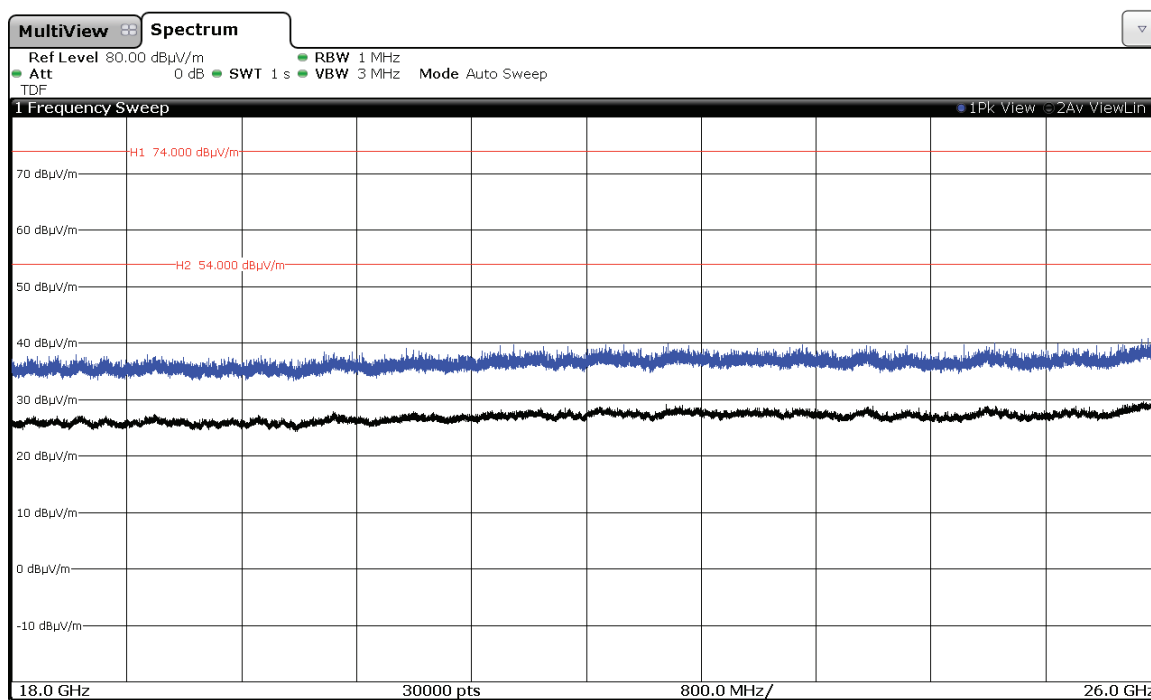
1. WiFi 2.4GHz 802.11 b mode

No spurious signals were found in all channels tested.



2. WiFi 2.4GHz 802.11 g mode (Worst case)

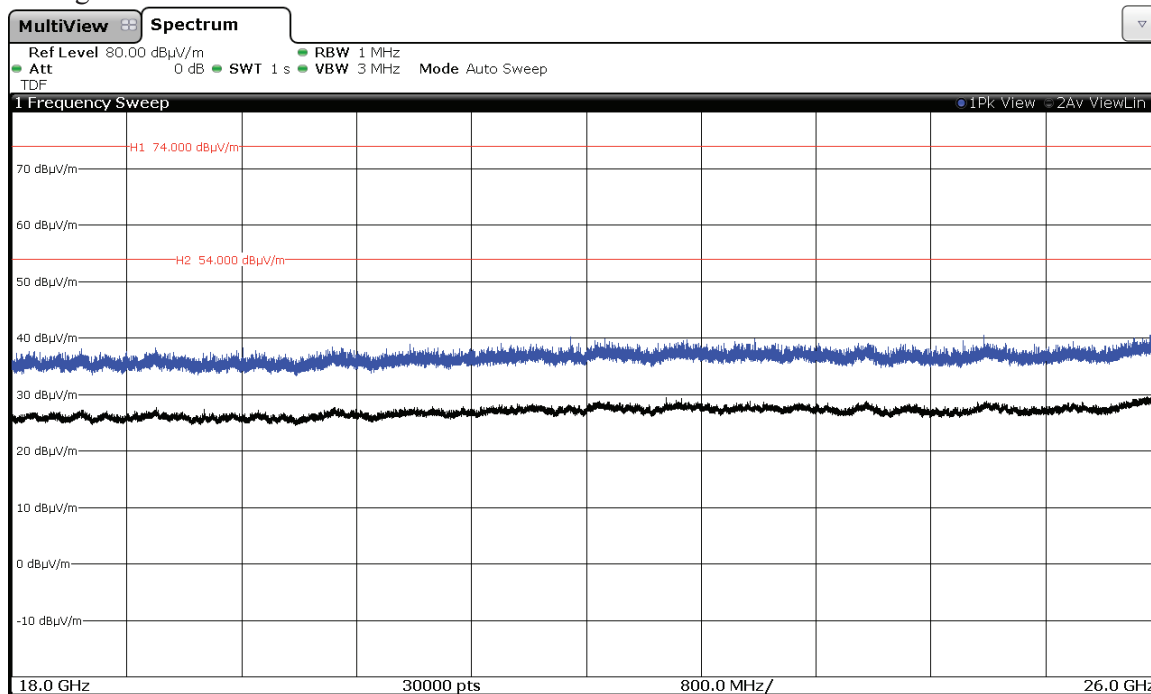
No spurious signals were found in all channels tested.



CORE 0 – Antenna RF External port 2:

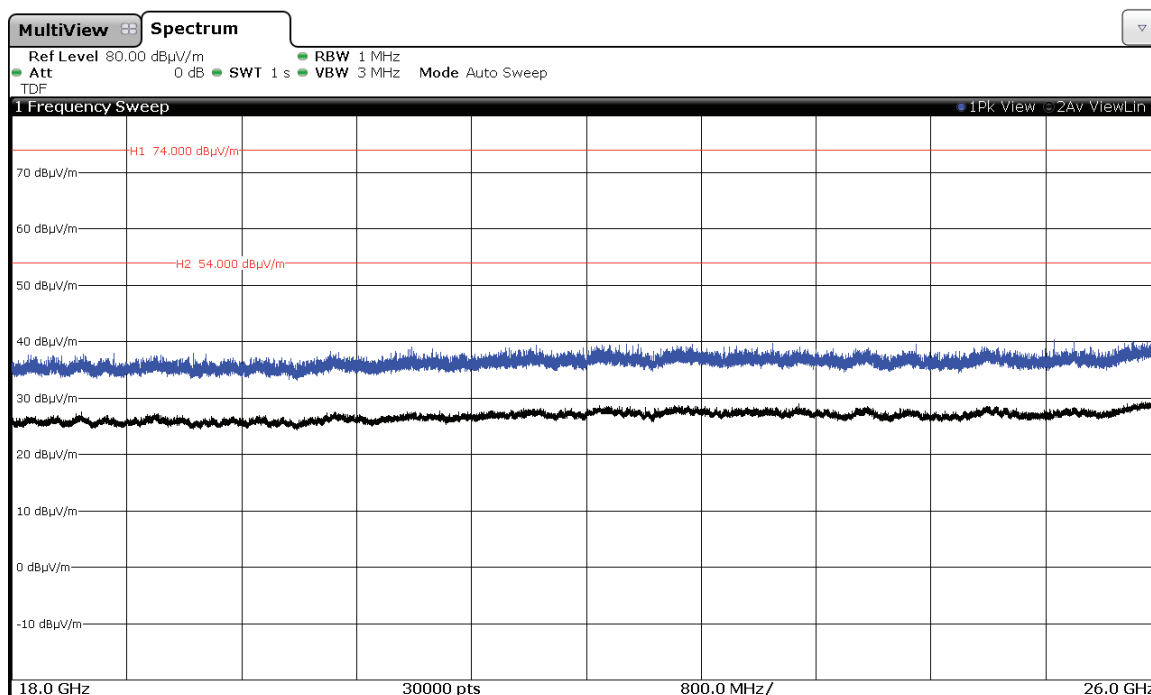
1. WiFi 2.4GHz 802.11 b mode

No spurious signals were found in all channels tested.



2. WiFi 2.4GHz 802.11 g mode (Worst case)

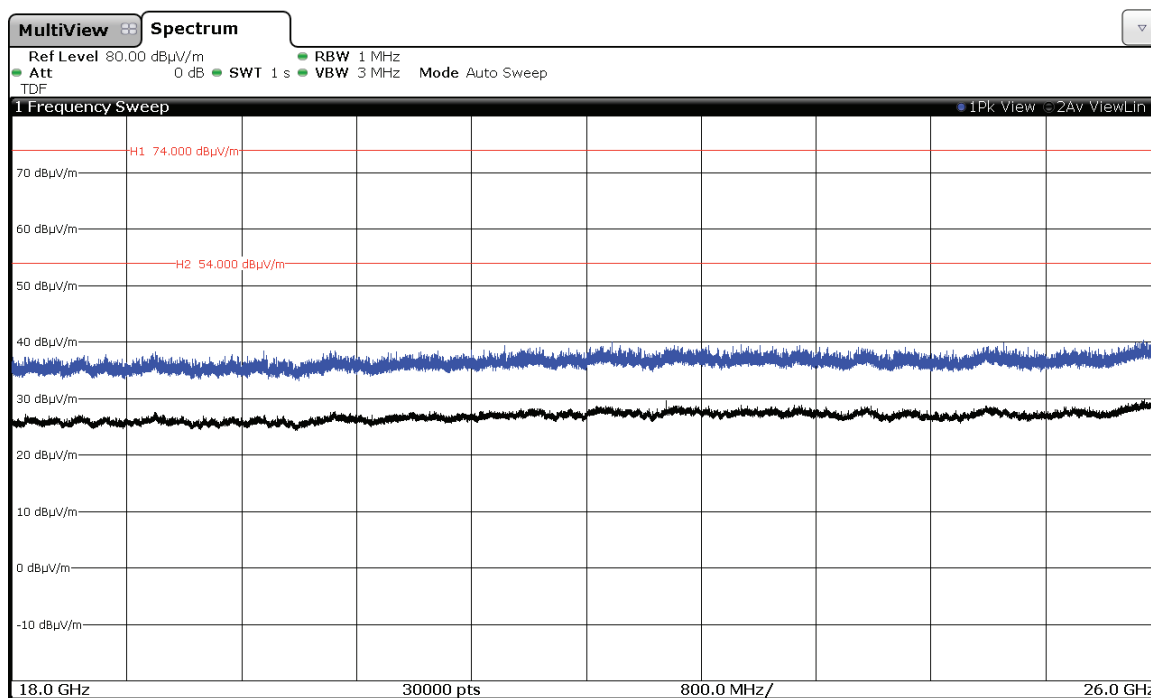
No spurious signals were found in all channels tested.



CORE 1 – Antenna RF port 4:

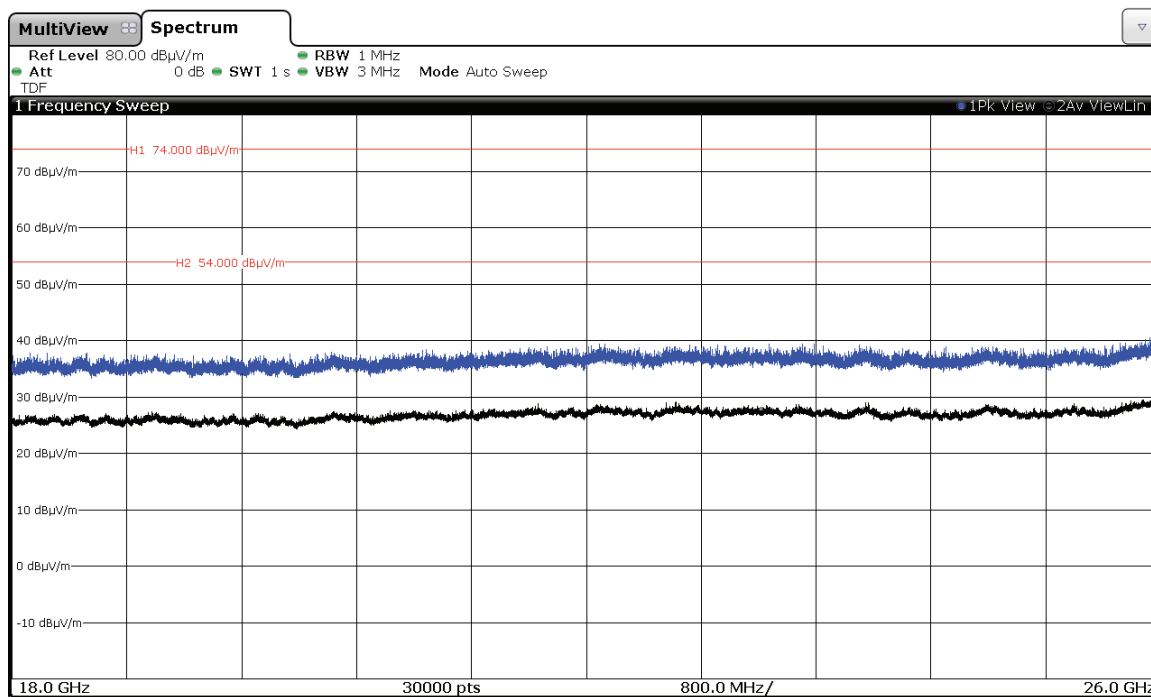
1. WiFi 2.4GHz 802.11 b mode

No spurious signals were found in all channels tested.



2. WiFi 2.4GHz 802.11 g mode (Worst case)

No spurious signals were found in all channels tested.

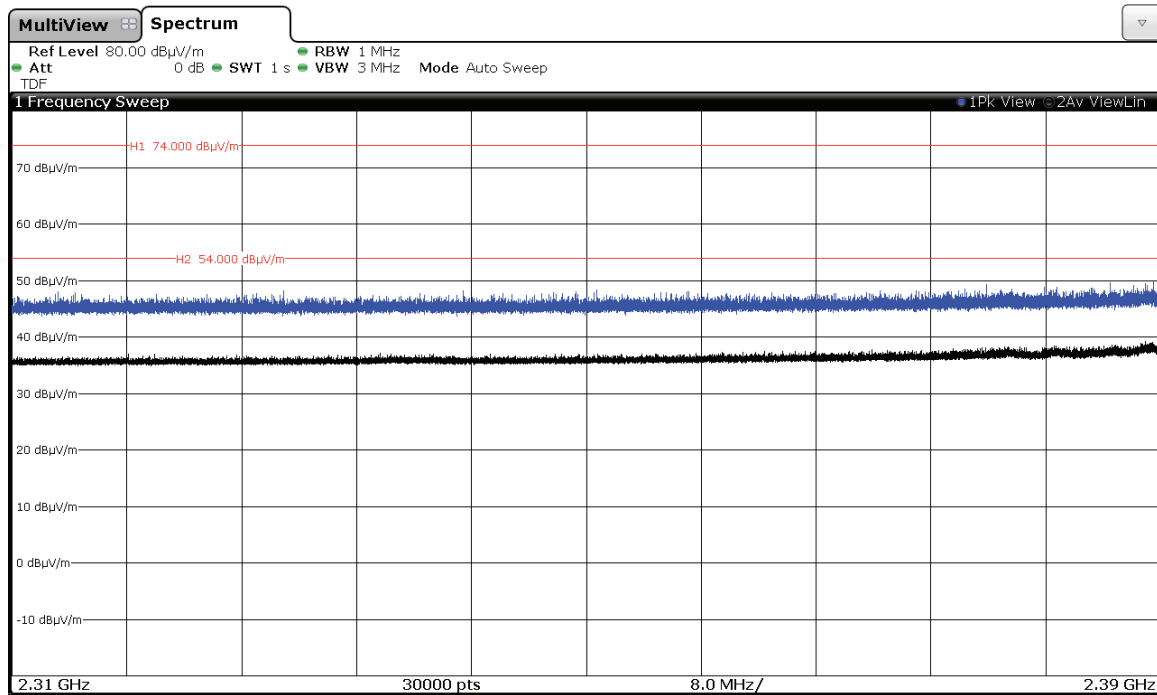


FREQUENCY RANGE 2.31 GHz to 2.39 GHz. (RESTRICTED BAND)

CORE 0 – Antenna RF port 1:

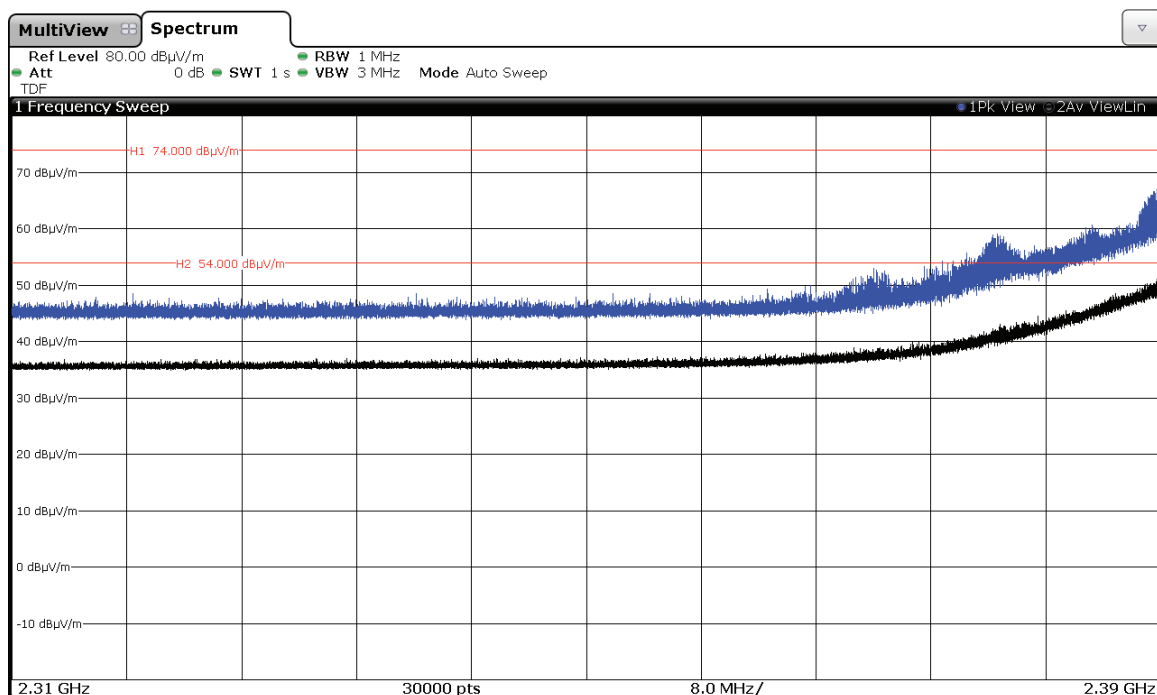
1. WiFi 2.4GHz 802.11 b mode

CHANNEL 1 (2412 MHz).



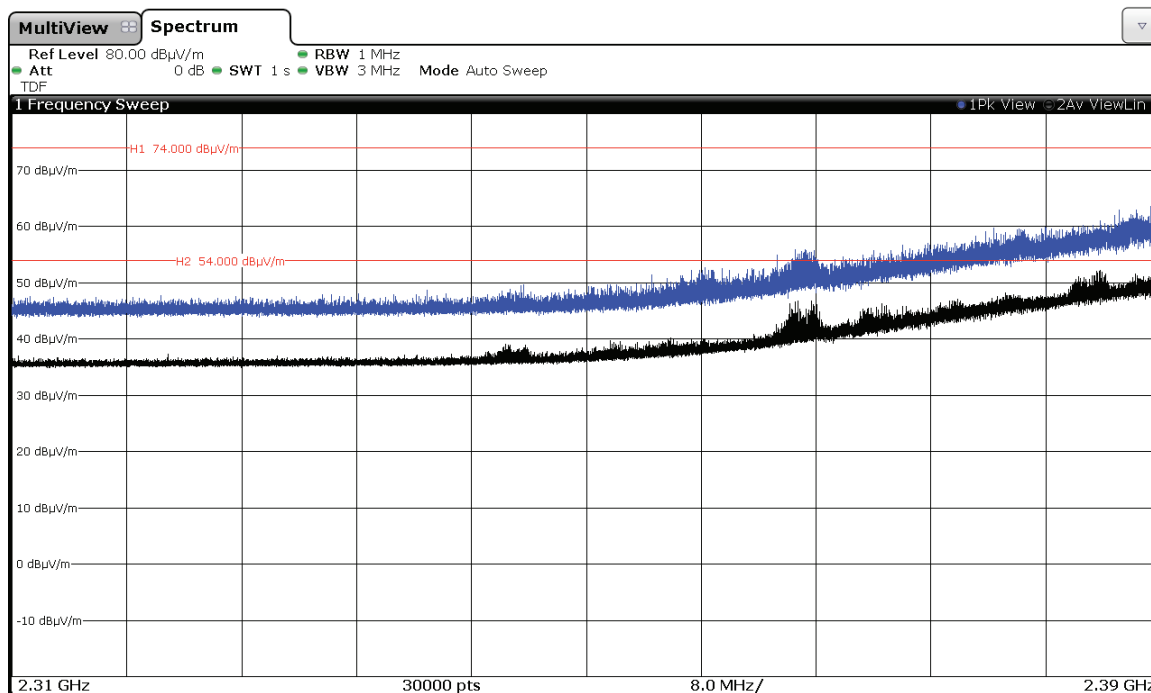
2. WiFi 2.4GHz 802.11 g mode

CHANNEL 1 (2412 MHz).



3. WiFi 2.4GHz 802.11 n40 mode

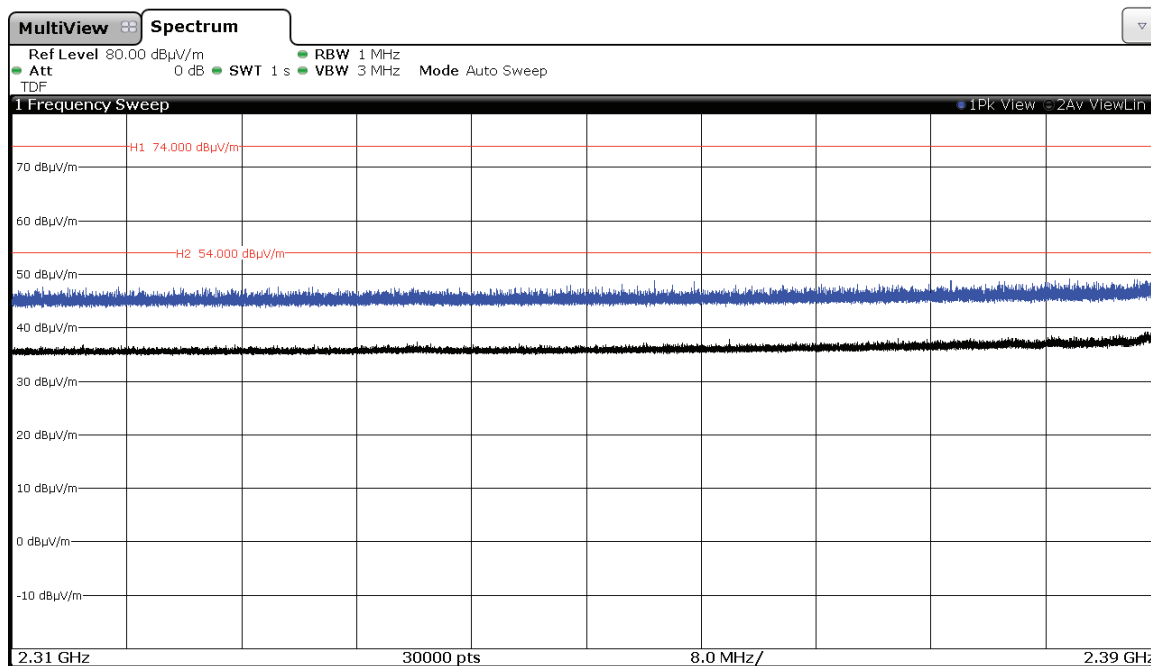
CHANNEL 3 (2422 MHz).



CORE 0 – Antenna RF External port 2:

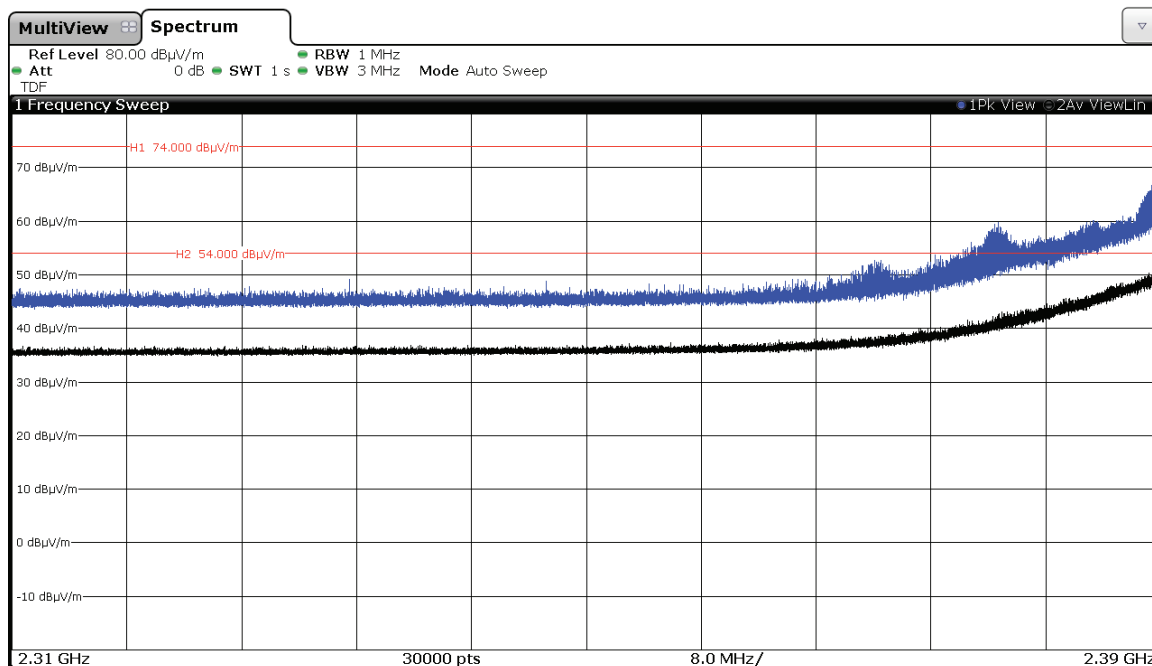
1. WiFi 2.4GHz 802.11 b mode

CHANNEL 1 (2412 MHz).



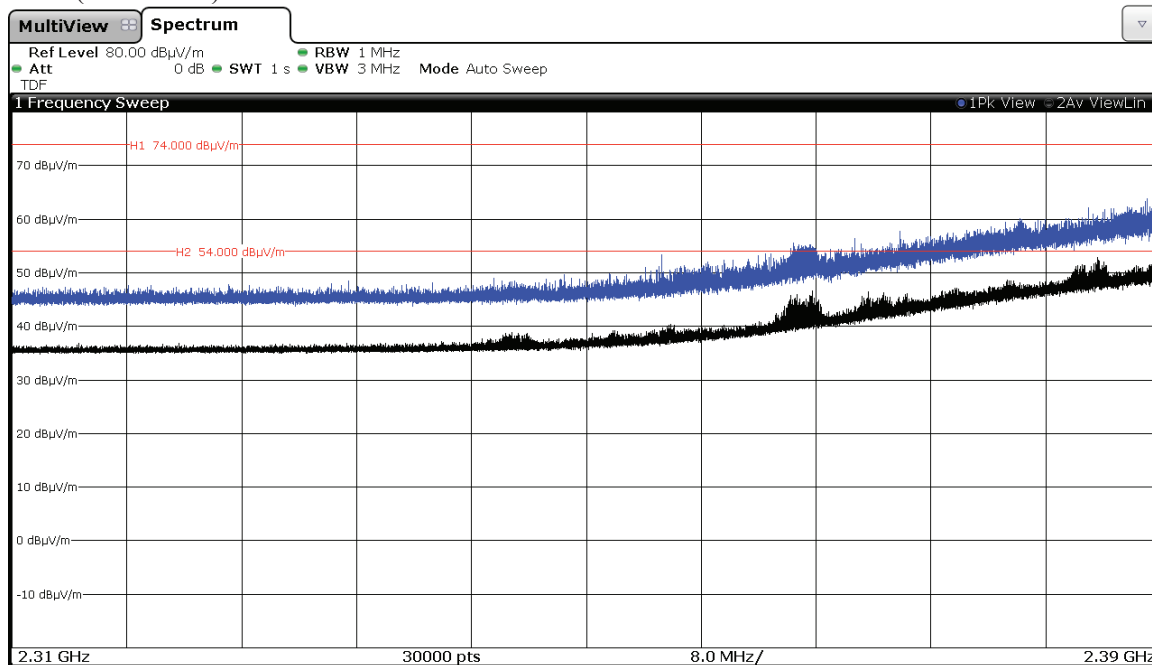
2. WiFi 2.4GHz 802.11 g mode

CHANNEL 1 (2412 MHz).



3. WiFi 2.4GHz 802.11 n40 mode

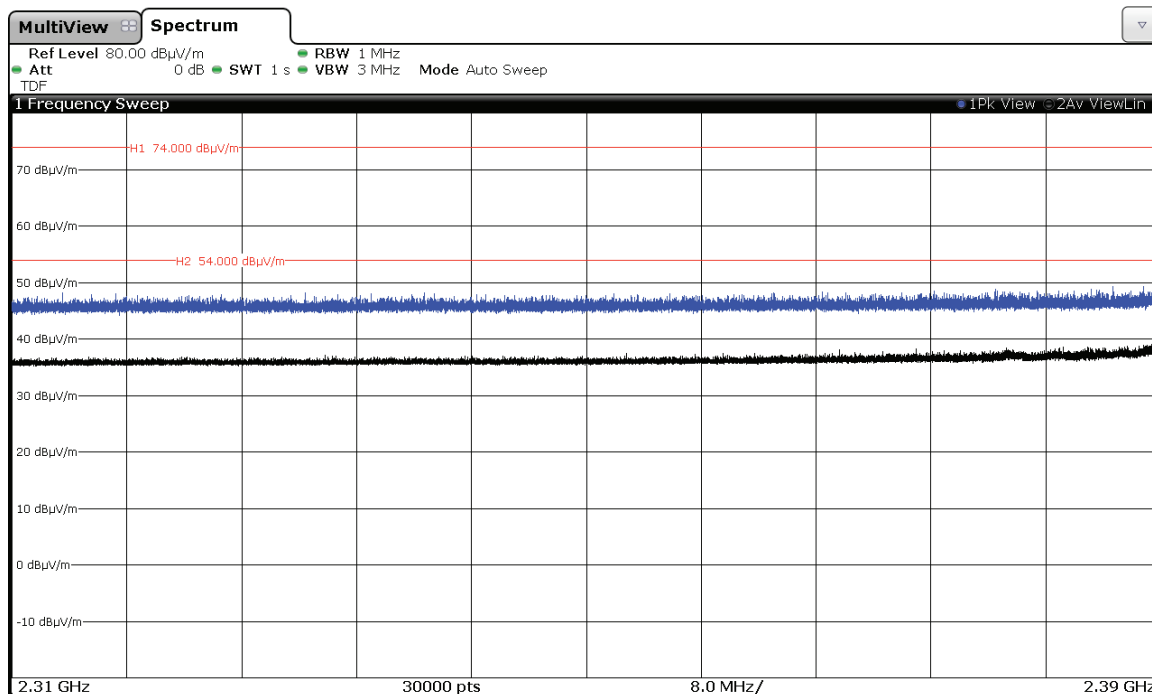
CHANNEL 3 (2422 MHz).



CORE 1 – Antenna RF port 4:

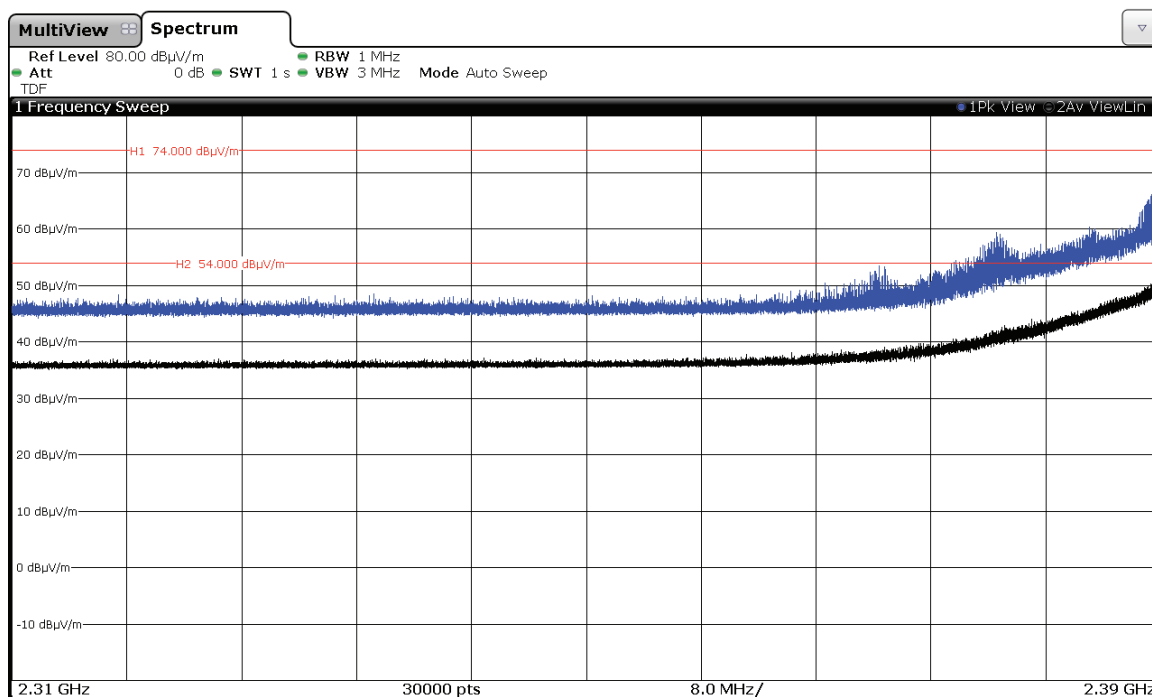
1. WiFi 2.4GHz 802.11 b mode

CHANNEL 1 (2412 MHz).

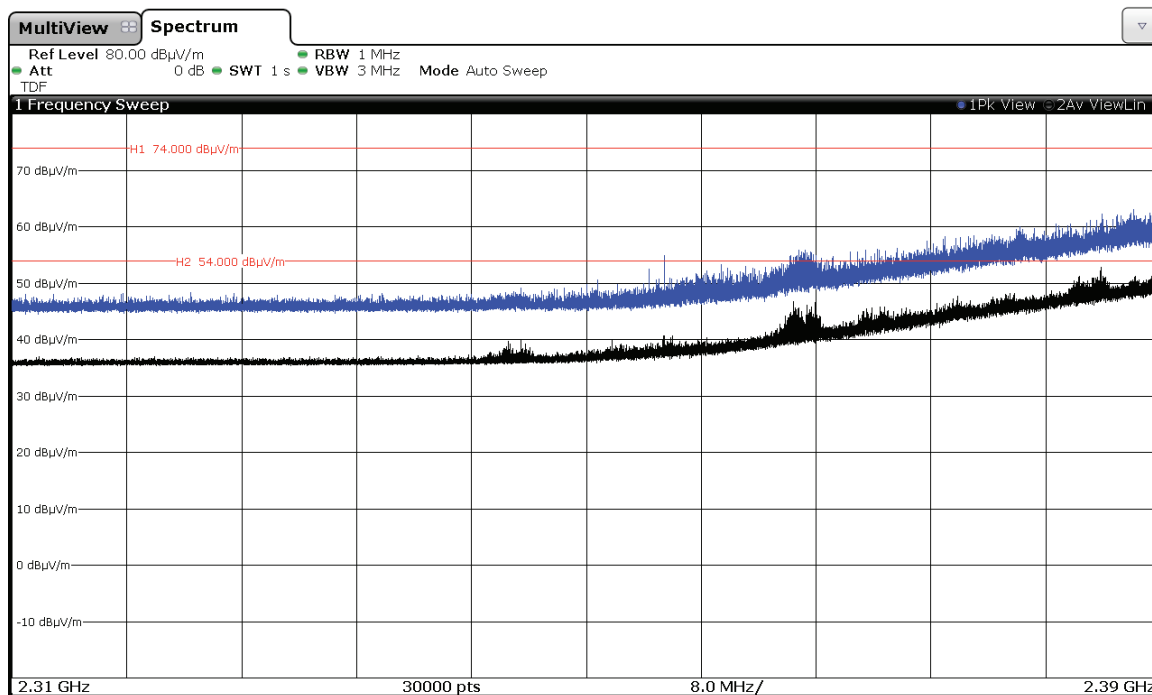


2. WiFi 2.4GHz 802.11 g mode

CHANNEL 1 (2412 MHz).



3. WiFi 2.4GHz 802.11 n40 mode CHANNEL 3 (2422 MHz).

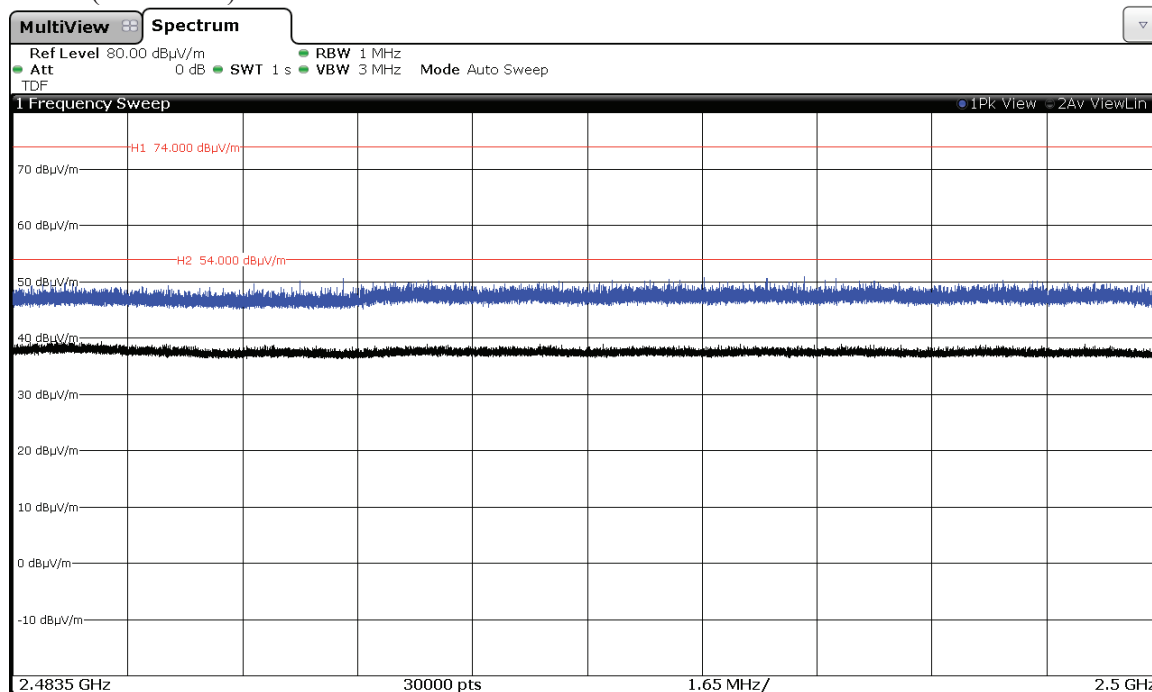


FREQUENCY RANGE 2.4835 GHz to 2.5 GHz. (RESTRICTED BAND)

CORE 0 – Antenna RF port 1:

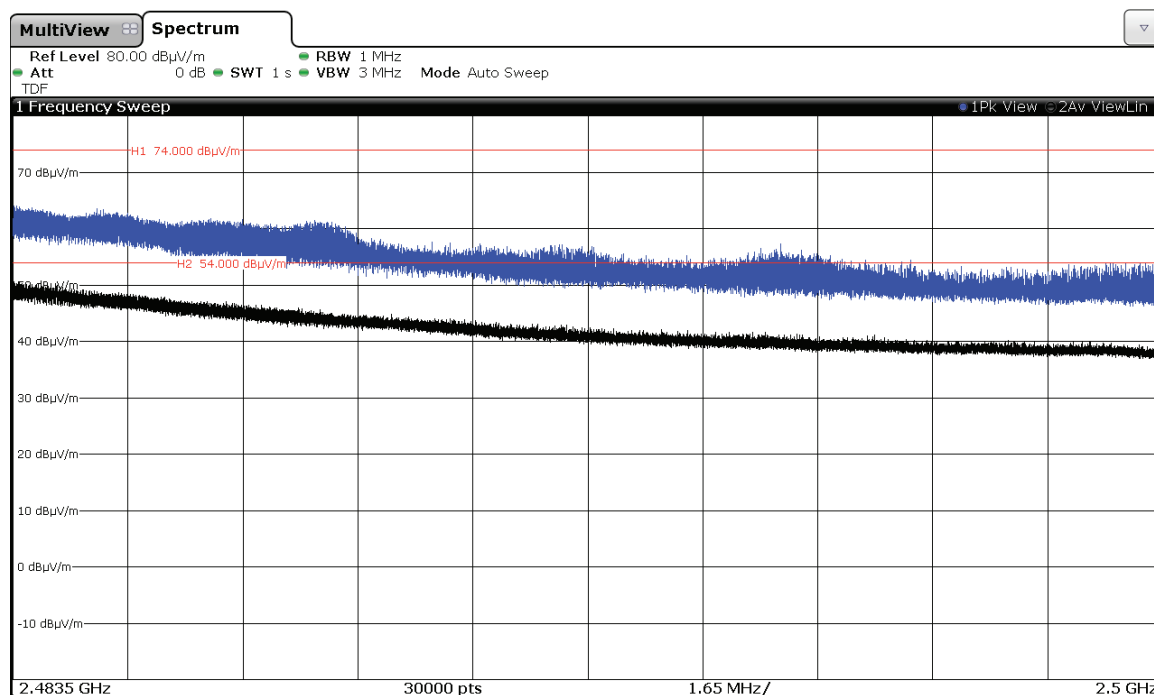
1. WiFi 2.4GHz 802.11 b mode

CHANNEL 11 (2462 MHz).



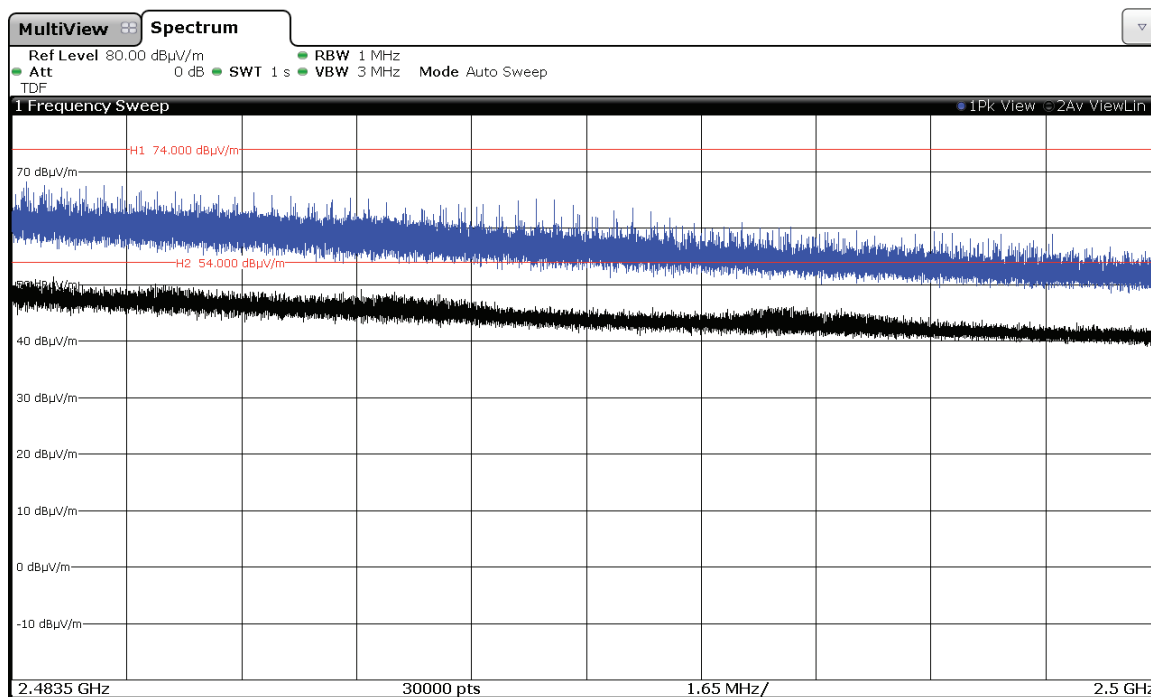
2. WiFi 2.4GHz 802.11 g mode

CHANNEL 11 (2462 MHz).



3. WiFi 2.4GHz 802.11 n40 mode

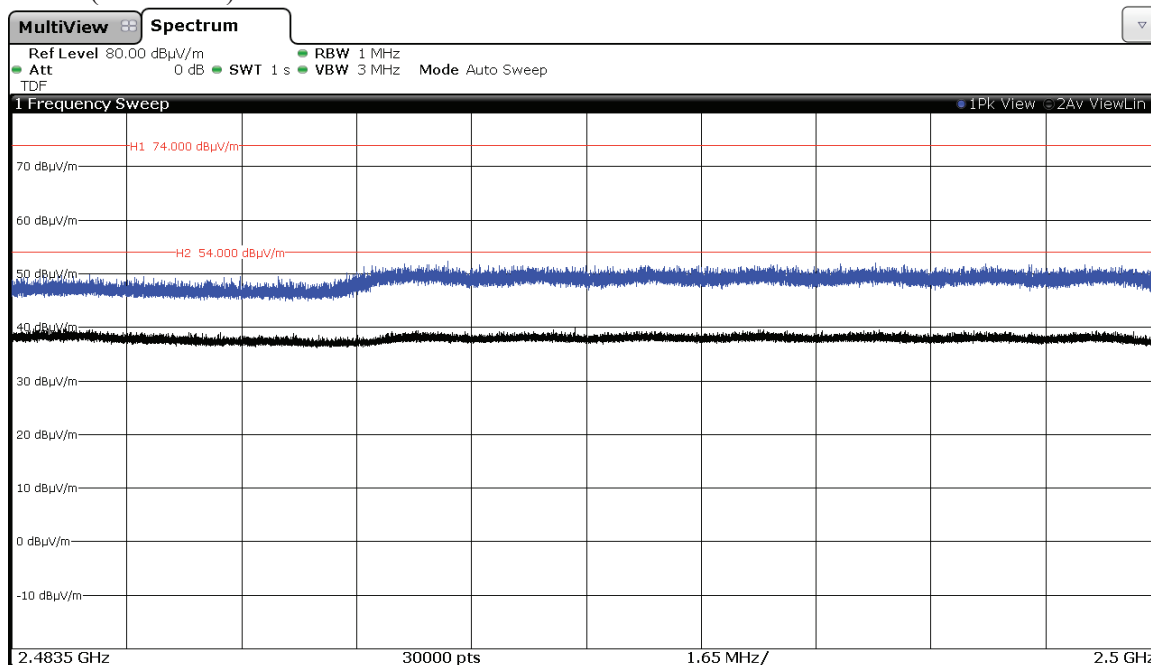
CHANNEL 9 (2452 MHz).



CORE 0 – Antenna RF External port 2:

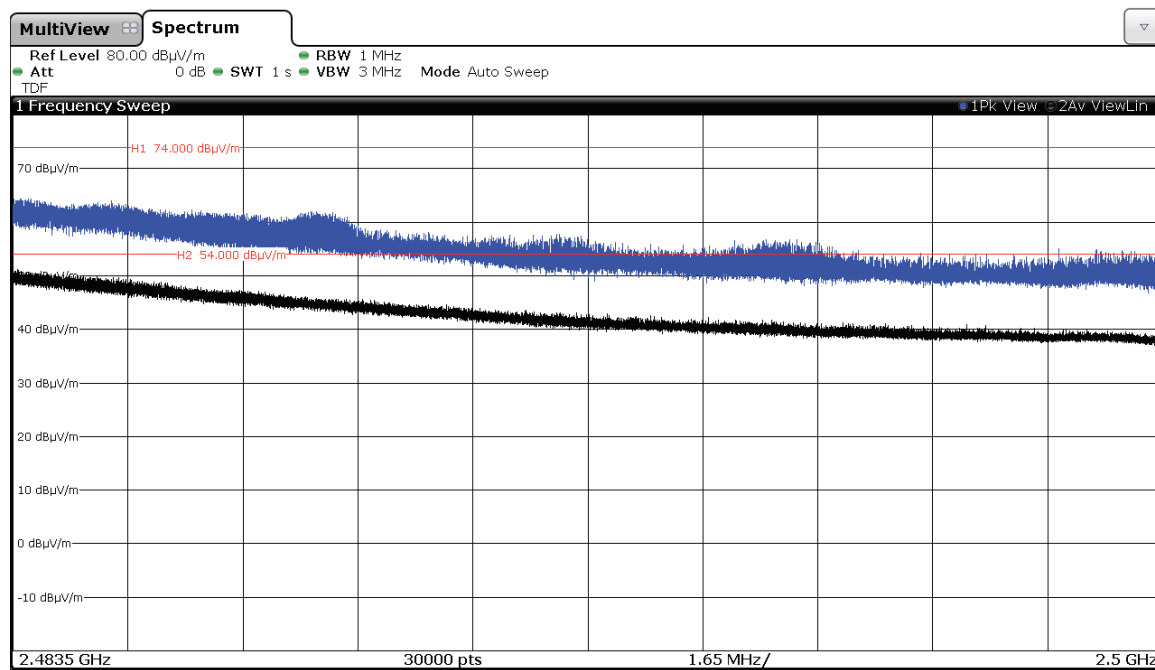
1. WiFi 2.4GHz 802.11 b mode

CHANNEL 11 (2462 MHz).



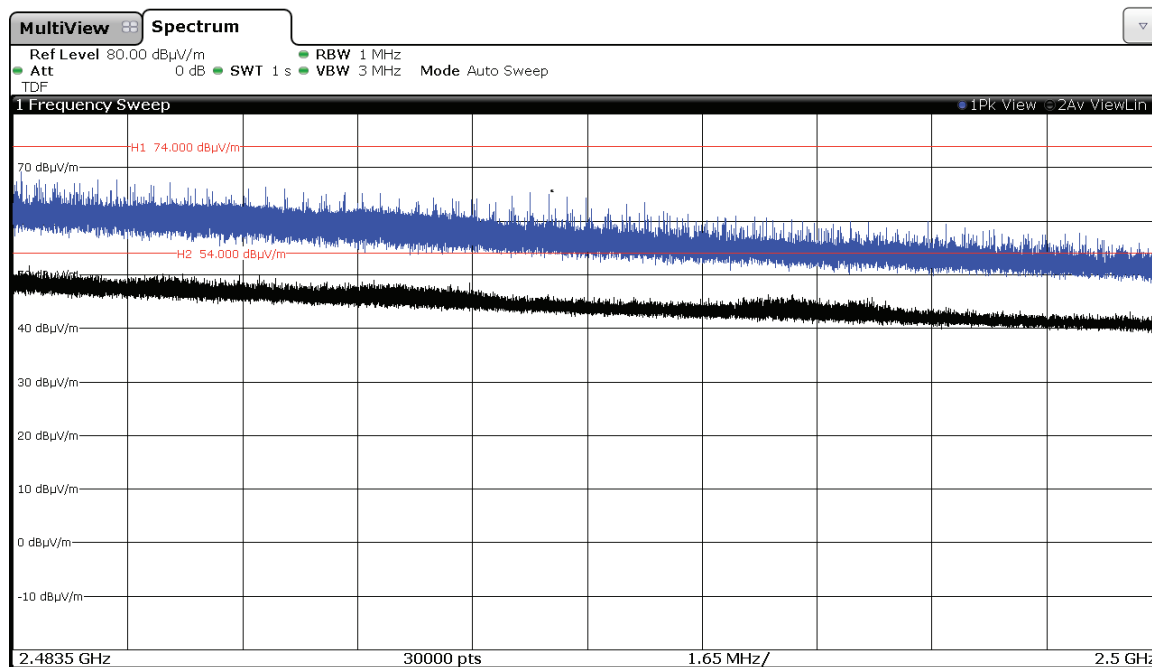
2. WiFi 2.4GHz 802.11 g mode

CHANNEL 11 (2462 MHz).



3. WiFi 2.4GHz 802.11 n40 mode

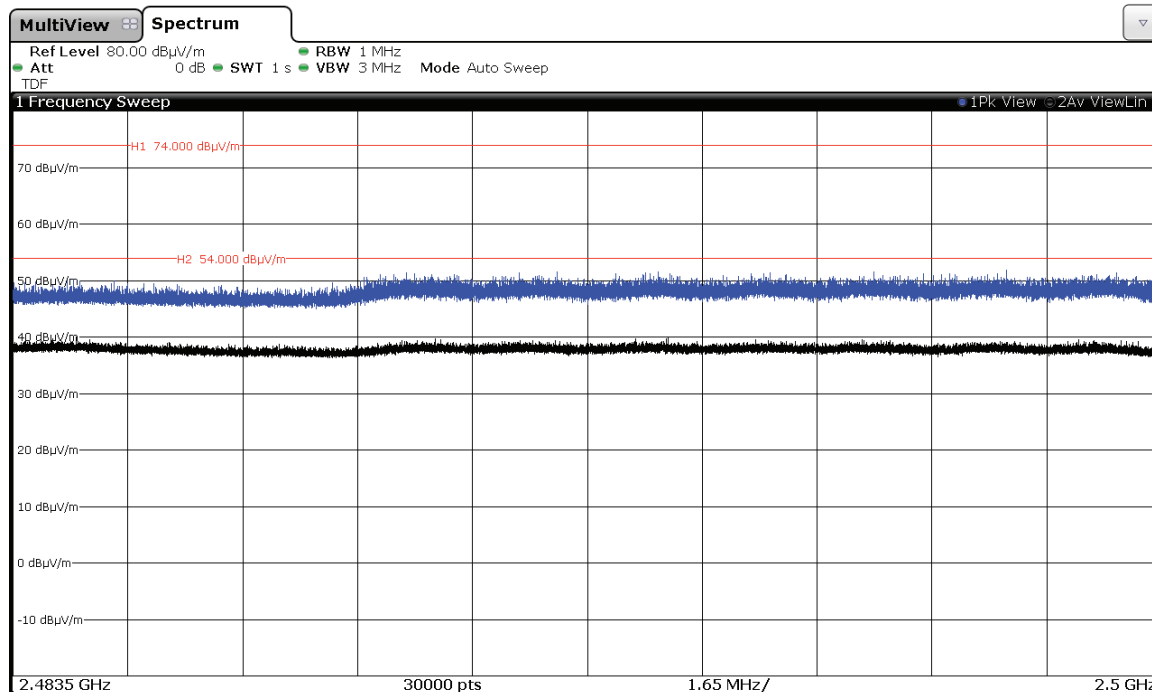
CHANNEL 9 (2452 MHz).



CORE 1 – Antenna RF port 4:

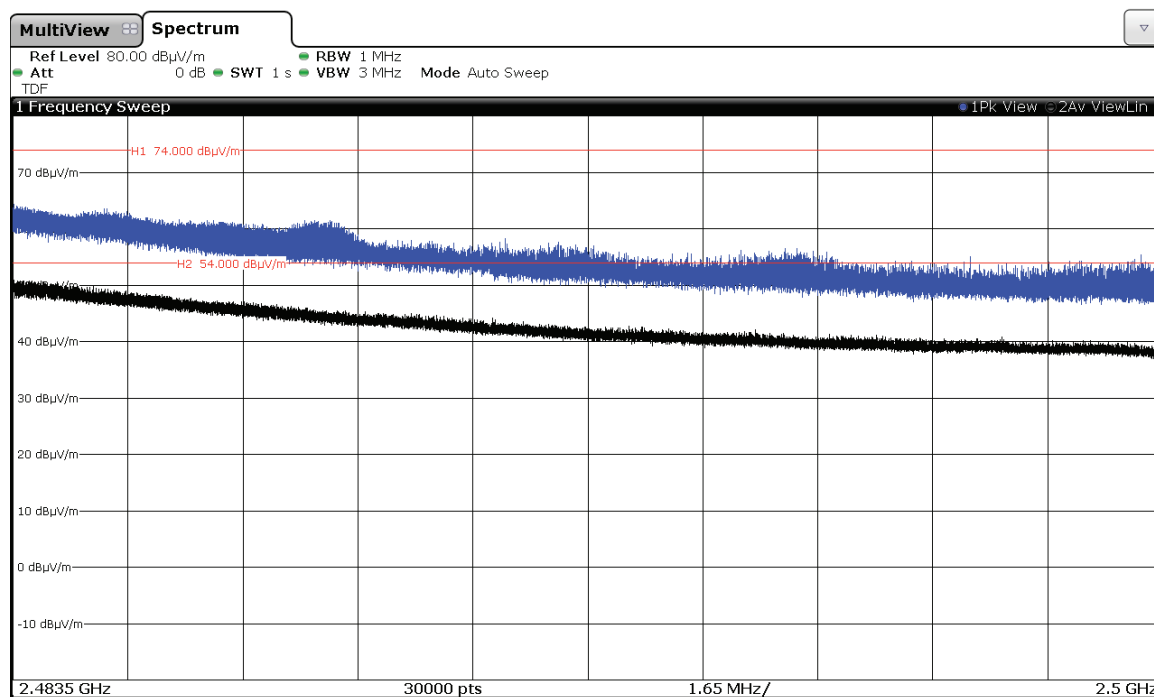
1. WiFi 2.4GHz 802.11 b mode

CHANNEL 11 (2462 MHz).



2. WiFi 2.4GHz 802.11 g mode

CHANNEL 11 (2462 MHz).



3. WiFi 2.4GHz 802.11 n40 mode

CHANNEL 9 (2452 MHz).

