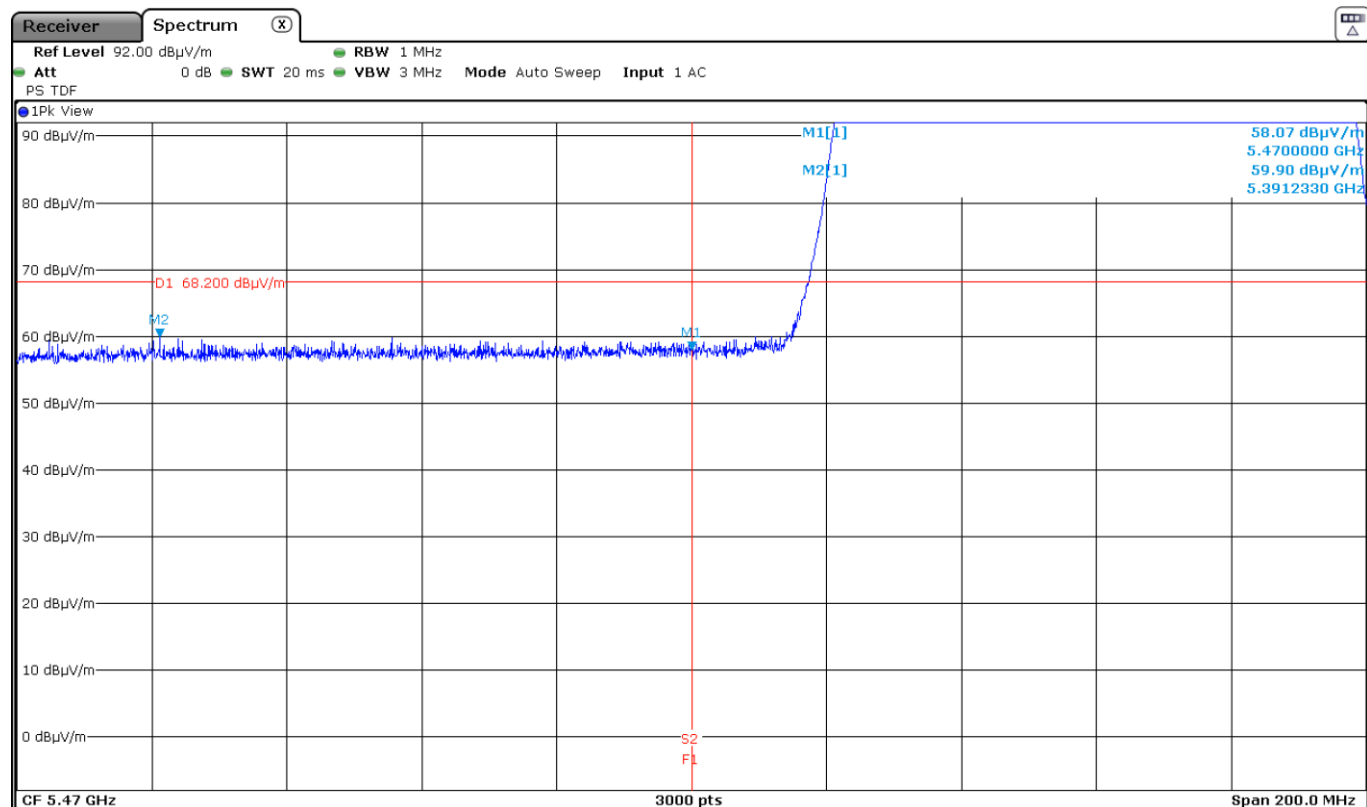
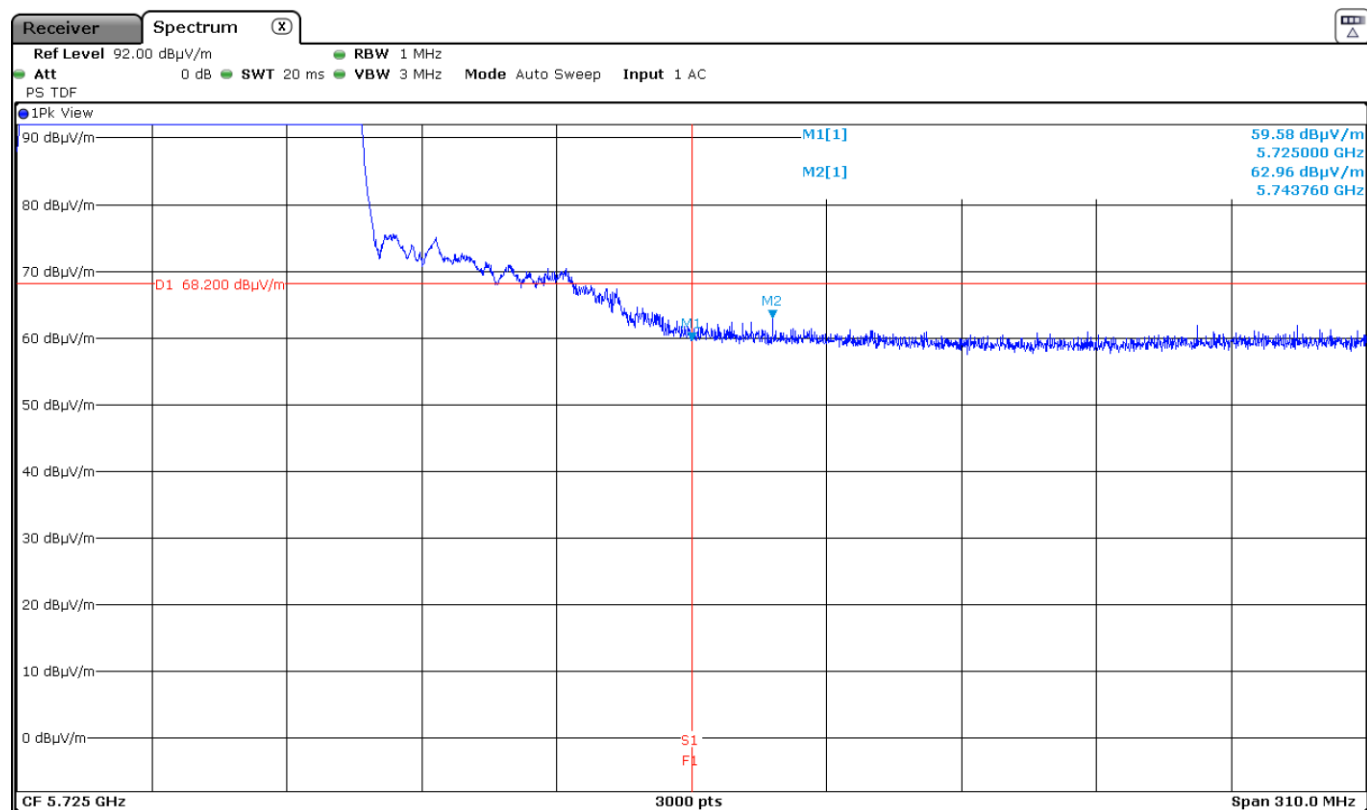


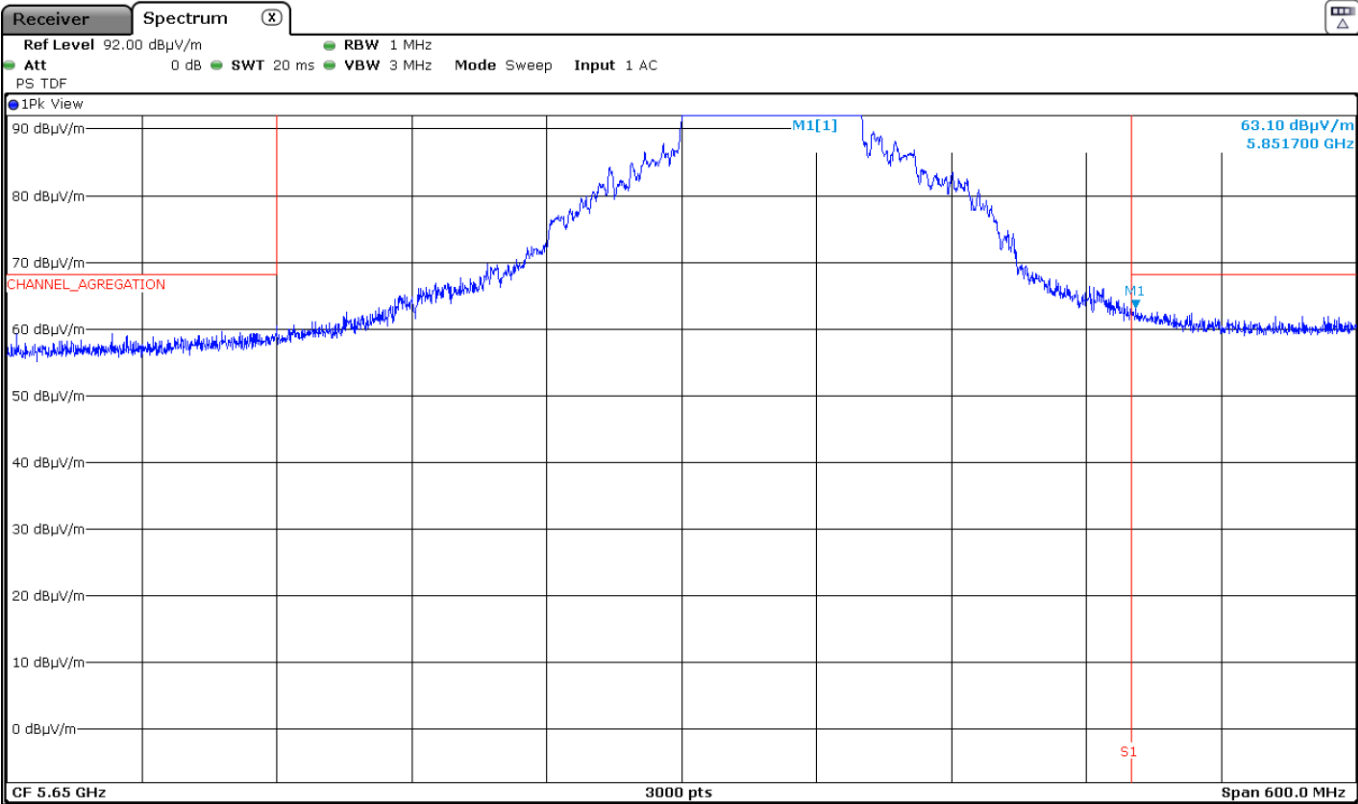
Lower Band Edge Channel 106



Upper Band Edge Channel 122



Lower Band Edge and Upper Band Edge Straddle Channel 138



Results for Mode: 802.11ac VHT80 – TxBF - 80 MHz – MIMO - Core 0+Core 1+Core 2

Results: Peak / Channel 106

Frequency (MHz)	Antenna Polarity	Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement uncertainty (dB)	Verdict
5470	Vertical	58.99	68.20	9.21	<± 3.05	PASS
5460.700	Vertical	59.89	68.20	8.31	<± 3.05	PASS

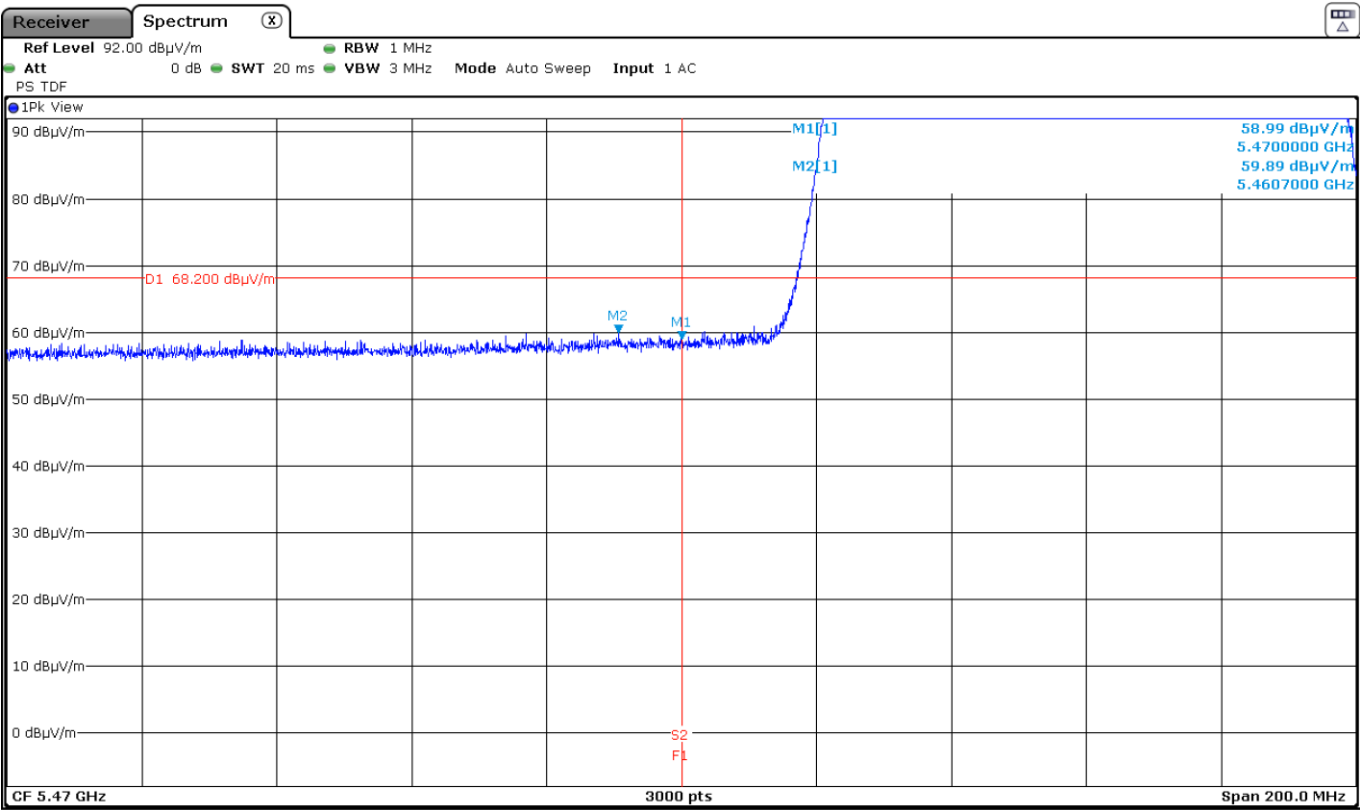
Results: Peak / Channel 122

Frequency (MHz)	Antenna Polarity	Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement uncertainty (dB)	Verdict
5725	Vertical	59.11	68.20	9.09	<± 3.05	PASS
5859.800	Vertical	62.02	68.20	6.18	<± 3.05	PASS

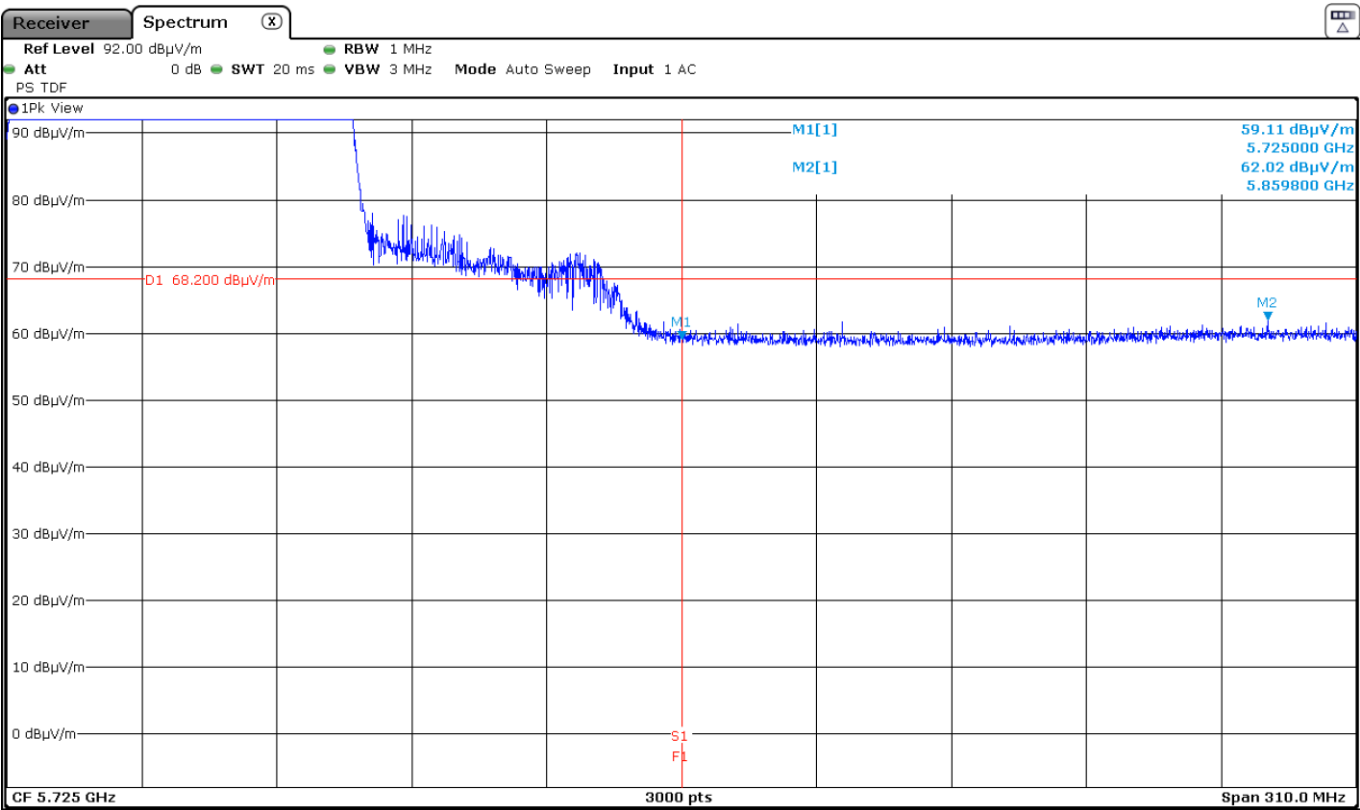
Results: Peak / Straddle Channel 138

Frequency (MHz)	Antenna Polarity	Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement uncertainty (dB)	Verdict
5851.100	Horizontal	63.13	68.20	5.07	<± 3.05	PASS

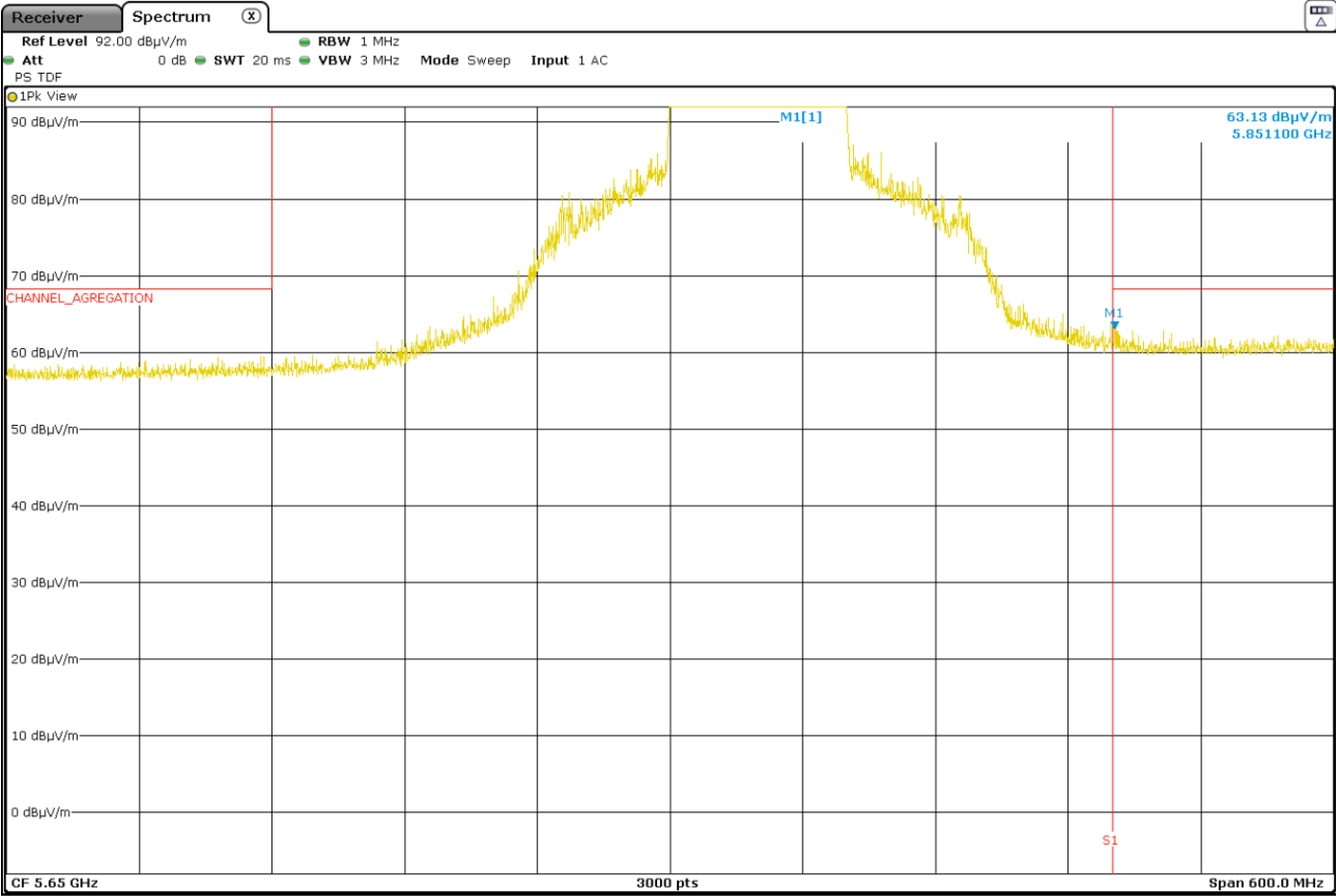
Lower Band Edge Channel 106



Upper Band Edge Channel 122



Lower Band Edge and Upper Band Edge Straddle Channel 138



FCC Section 15.407(h)(1) / RSS-247 6.2.3.1 Transmitter Power Control

SPECIFICATION

FCC 15.407/RSS247: Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW (27dBm).

RESULTS:

The maximum conducted output power was measured using the channel power integration method according to point E) 2) b) (Method SA-1) of 789033 D02 General UNII Test Procedures New Rules v02r01 when the duty cycle is >98% and the channel power integration method according to point E) 2) d) (Method SA-2) of 789033 D02 General UNII Test Procedures New Rules v02r01 when the duty cycle is <98%.

For data rates where the EUT was transmitting at <98% duty cycle, the duty calculated in Appendix A was added to the measured power in order to calculate the total average power during the actual transmission time.

In the measure-and-sum approach for MIMO mode, the conducted emission level (*e.g.*, transmit power or power in specified bandwidth) is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in linear power units (mW—not dBm).

The e.i.r.p. levels are calculated by adding the antenna gain (dBi).

Mode : 802.11n HT40 – TxBF – 40MHz – MIMO – CORE 0 & CORE 2 (TPC activate)

Directional Antenna Gain: 6.90 dBi

	channel 110 5550 MHz		channel 118 5590 MHz	
	CORE 0	CORE 2	CORE 0	CORE 2
Max. conducted power (dBm)	12.84	12.61	12.66	12.72
Duty Cycle Correction Factor (dB)	0.13	0.13	0.13	0.13
Max. conducted power corrected (dBm)	12.97	12.74	12.79	12.85
Combined Conducted Power (dBm)	15.86		15.83	
Maximum EIRP power (dBm)	22.76		22.73	
EIRP power Limit (dBm)	24			
Margin (dB)	1.24		1.27	
Measurement uncertainty (dB)	<±1.20			

Mode : 802.11n HT40 – TxBF – 40MHz – MIMO – CORE 0 & CORE 1 & CORE 2 (TPC activate)

Directional Antenna Gain: 8.04 dBi

	channel 110 5550 MHz			channel 118 5590 MHz		
	CORE 0	CORE 1	CORE 2	CORE 0	CORE 1	CORE 2
Max. conducted power (dBm)	10.05	10.05	10.02	9.94	9.90	10.09
Duty Cycle Correction Factor (dB)	0.13	0.13	0.13	0.13	0.13	0.13
Max. conducted power corrected (dBm)	10.18	10.18	10.15	10.07	10.03	10.21
Combined Conducted Power (dBm)	14.94			14.88		
Maximum EIRP power (dBm)	22.98			22.92		
EIRP power Limit (dBm)	24					
Margin (dB)	1.02			1.08		
Measurement uncertainty (dB)	<±1.20					

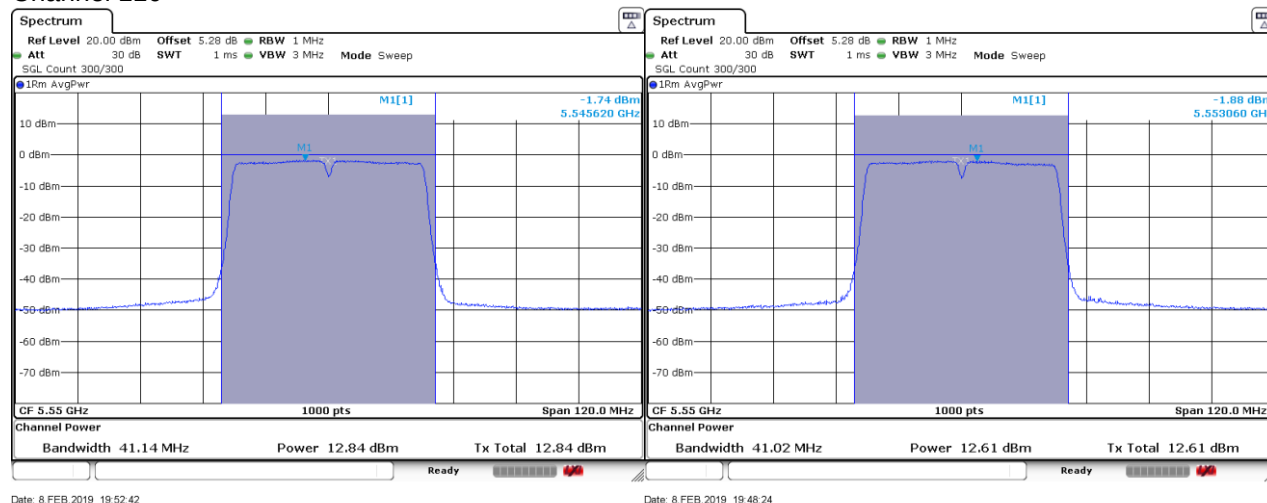
Mode : 802.11ac VHT80 – TxBF – 80MHz – MIMO – CORE 0 & CORE 1 & CORE 2 (TPC activate)

Directional Antenna Gain: 8.04 dBi

	channel 122 5550 MHz		
	CORE 0	CORE 1	CORE 2
Max. conducted power (dBm)	8.59	8.76	8.60
Duty Cycle Correction Factor (dB)	0.12	0.12	0.12
Max. conducted power corrected (dBm)	8.71	8.88	8.72
Combined Conducted Power (dBm)	13.54		
Maximum EIRP power (dBm)	21.59		
EIRP power Limit (dBm)	24		
Margin (dB)	2.41		
Measurement uncertainty (dB)	<±1.20		

Mode : 802.11n HT40 – TxBF – 40MHz – MIMO – CORE 0 & CORE 2 (TPC activate)

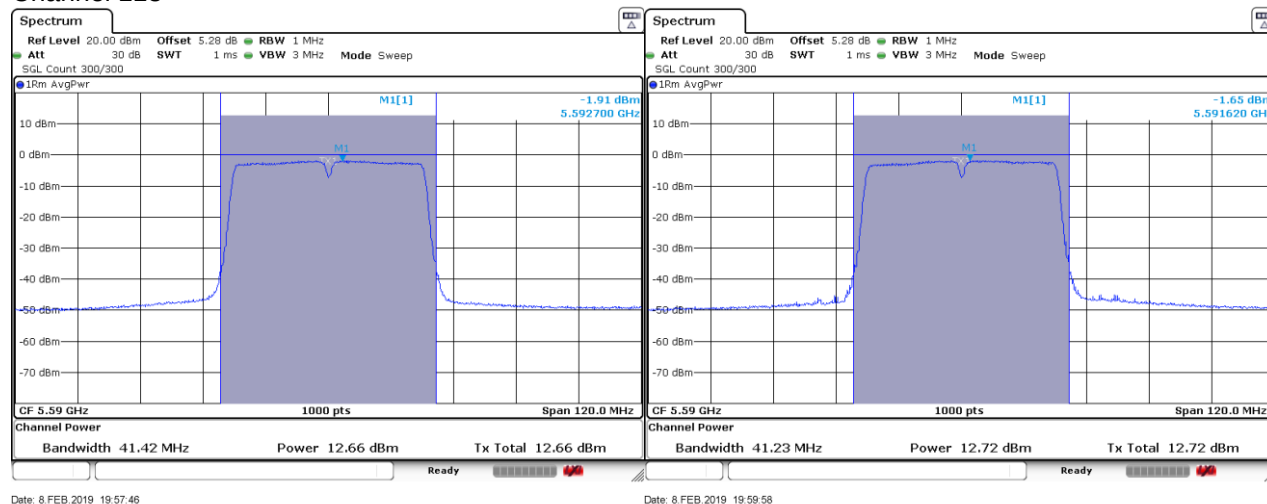
Channel 110



CORE 0

CORE 2

Channel 118

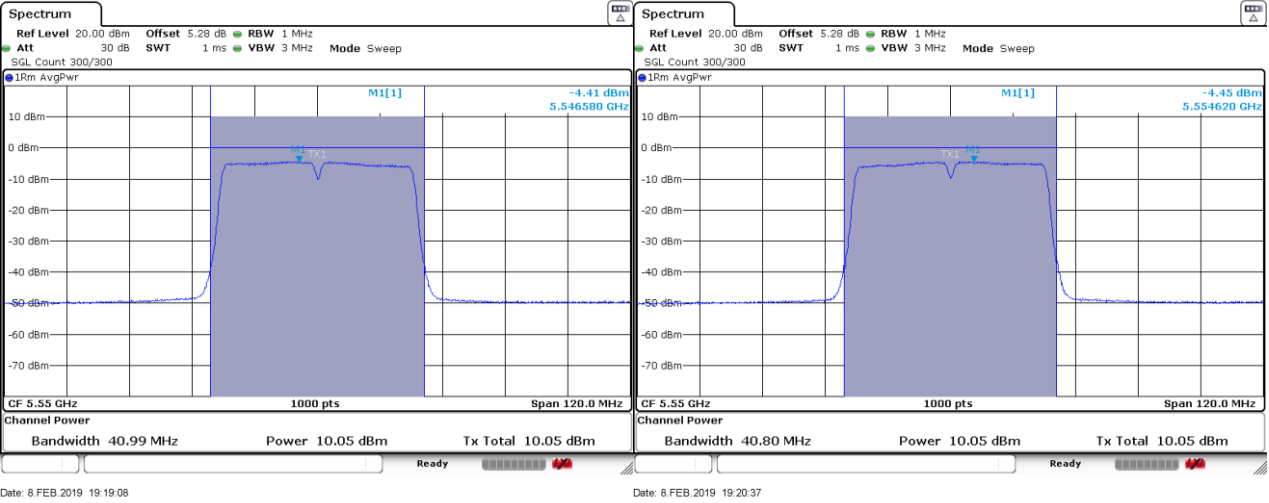


CORE 0

CORE 2

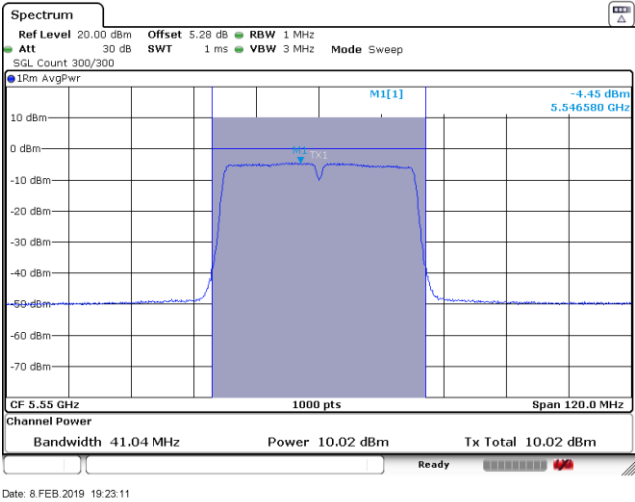
Mode : 802.11n HT40 – TxBF – 40MHz – MIMO – CORE 0 & CORE 1 & CORE 2 (TPC activate)

Channel 110



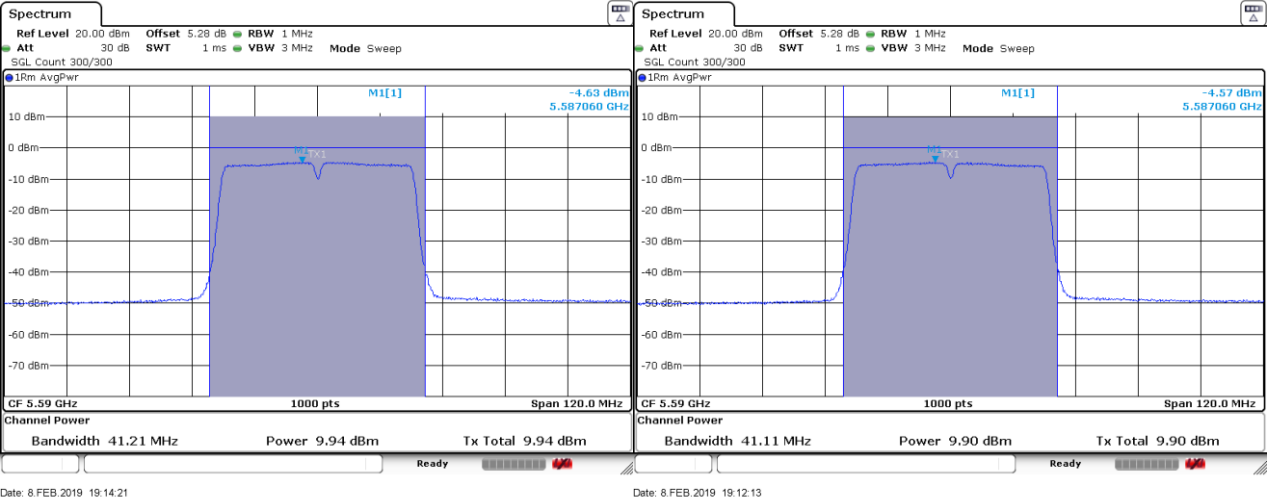
CORE 0

CORE 1



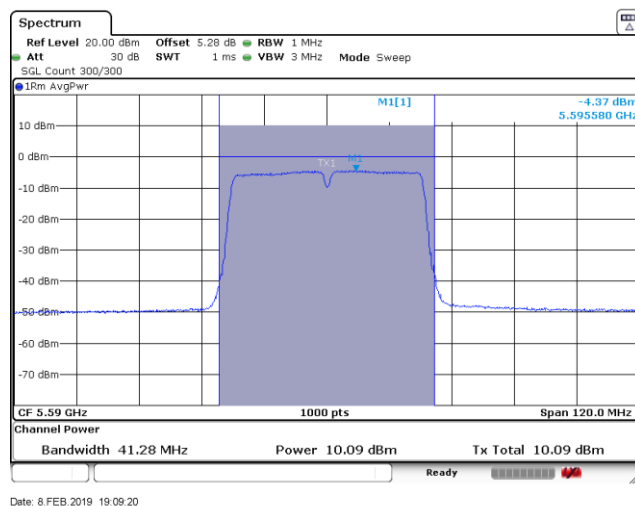
CORE 2

Channel 118



CORE 0

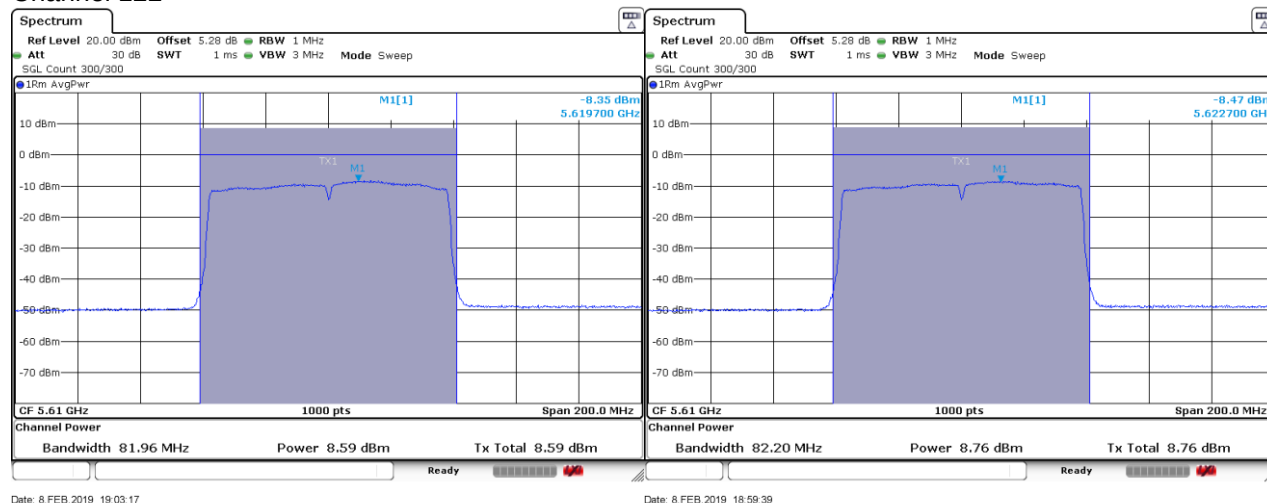
CORE 1



CORE 2

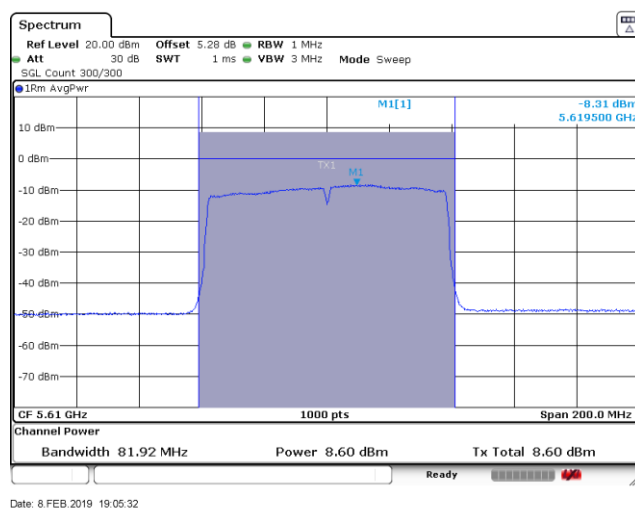
Mode : 802.11ac VHT80 – TxBF – 80MHz – MIMO – CORE 0 & CORE 1 & CORE 2 (TPC activate)

Channel 122



CORE 0

CORE 1



CORE 2

Appendix E: Test result for 5.725GHz – 5.850GHz.

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TEST CONDITIONS

Power supply (V):

Vnominal = 120 Vac

Type of power supply = AC voltage main supply.

Type of antenna = Internal antenna.

Declared Gain for antenna (maximum) at each port/core:

$$G_{CORE0} = 2.68 \text{ dBi}$$

$$G_{CORE1} = 0.42 \text{ dBi}$$

$$G_{CORE2} = 4.42 \text{ dBi}$$

Directional Antenna Gain Calculations for 2Tx CDD MIMO / Output Power Measurements:

- For 2Tx CDD MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)f)(ii), directional gain was calculated as:

$N_{ANT} = 2$, G_{ANT} was set equal to the gain of the antenna having the highest gain.

Directional gain = $G_{ANT} + \text{Array Gain} = 4.42 \text{ dBi} + 0 \text{ dB} = 4.42 \text{ dBi}$.

Directional Antenna Gain Calculations for 3Tx CDD MIMO / Output Power Measurements:

- For 3Tx CDD MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)f)(ii), directional gain was calculated as:

$N_{ANT} = 3$, G_{ANT} was set equal to the gain of the antenna having the highest gain.

Directional gain = $G_{ANT} + \text{Array Gain} = 4.42 \text{ dBi} + 0 \text{ dB} = 4.42 \text{ dBi}$.

Directional Antenna Gain Calculations for 2Tx CDD MIMO / PSD Measurements:

- For 2Tx CDD MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)f)(ii), directional gain was calculated as:

$N_{SS} = 1$, $N_{ANT} = 2$, $G_{CORE0} = 2.68 \text{ dBi}$, $G_{CORE2} = 4.42 \text{ dBi}$

$$\begin{aligned} \text{Directional Gain} &= 10 \log \left[\frac{\sum_{j=1}^{N_{SS}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right] = 10 \log \left[\frac{\sum_{j=1}^1 \left(\sum_{k=1}^2 g_{j,k} \right)^2}{2} \right] \\ &= 10 \log \left[\frac{(g_{1,1} + g_{1,2})^2}{2} \right] = 10 \log \left[\frac{\left(10^{\frac{2.68}{20}} + 10^{\frac{4.42}{20}} \right)^2}{2} \right] = 10 \log \left[\frac{\left(10^{\frac{2.68}{20}} + 10^{\frac{4.42}{20}} \right)^2}{2} \right] = 6.60 \text{ dBi} \end{aligned}$$

Directional Antenna Gain Calculations for 3Tx CDD MIMO / PSD Measurements:

- For 3Tx CDD MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)f)(ii), directional gain was calculated as:

NSS= 1, N_{ANT} = 3, G_{CORE0} = 2.68 dBi, G_{CORE1} = 0.42 dBi, G_{CORE2} = 4.42 dBi

$$\begin{aligned} \text{Directional Gain} &= 10 \log \left[\frac{\sum_{j=1}^{N_{SS}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right] = 10 \log \left[\frac{\sum_{j=1}^1 \left(\sum_{k=1}^3 g_{j,k} \right)^2}{3} \right] \\ &= 10 \log \left[\frac{(g_{1,1} + g_{1,2} + g_{1,3})^2}{3} \right] = 10 \log \left[\frac{\left(10^{\frac{2.68}{10}} + 10^{\frac{0.42}{10}} + 10^{\frac{4.42}{10}} \right)^2}{3} \right] = 10 \log \left[\frac{\left(10^{\frac{2.68}{10}} + 10^{\frac{0.42}{10}} + 10^{\frac{4.42}{10}} \right)^2}{3} \right] = 7.43 \text{ dBi} \end{aligned}$$

Directional Antenna Gain Calculations for 2Tx SDM MIMO Measurements:

- For 2Tx SDM MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)d)(ii), directional gain was calculated as:

NSS= 1, N_{ANT} = 2, G_{CORE0} = 2.68 dBi, G_{CORE2} = 4.42 dBi

$$\text{Directional Gain} = 10 \log \left[\frac{10^{\frac{G_1}{10}} + 10^{\frac{G_2}{10}} + \dots + 10^{\frac{G_N}{10}}}{N_{ANT}} \right] = 10 \log \left[\frac{10^{\frac{G_1}{10}} + 10^{\frac{G_2}{10}}}{N_{ANT}} \right] = 10 \log \left[\frac{10^{\frac{2.68}{10}} + 10^{\frac{4.42}{10}}}{2} \right] = 3.64 \text{ dBi}$$

Directional Antenna Gain Calculations for 3Tx SDM MIMO Measurements:

- For 3Tx SDM MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)d)(ii), directional gain was calculated as:

NSS= 1, N_{ANT} = 3, G_{CORE0} = 2.68 dBi, G_{CORE1} = 0.42 dBi, G_{CORE2} = 4.42 dBi

$$\begin{aligned} \text{Directional Gain} &= 10 \log \left[\frac{10^{\frac{G_1}{10}} + 10^{\frac{G_2}{10}} + \dots + 10^{\frac{G_N}{10}}}{N_{ANT}} \right] = 10 \log \left[\frac{10^{\frac{G_1}{10}} + 10^{\frac{G_2}{10}} + 10^{\frac{G_3}{10}}}{N_{ANT}} \right] \\ &= 10 \log \left[\frac{10^{\frac{2.68}{10}} + 10^{\frac{0.42}{10}} + 10^{\frac{4.42}{10}}}{3} \right] = 2.80 \text{ dBi} \end{aligned}$$

Directional Antenna Gain Calculations for TxBF MIMO Measurements:

- For 2Tx TxBF MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)d)(i), directional gain was calculated as:

$$N_{ANT} = 2, G_{CORE0} = 2.68 \text{ dBi}, G_{CORE2} = 4.42 \text{ dBi}$$

$$\begin{aligned} \text{Directional Gain} &= 10 \log \left[\frac{\sum_{j=1}^{N_{SS}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right] = 10 \log \left[\frac{\sum_{j=1}^1 \left(\sum_{k=1}^2 g_{j,k} \right)^2}{2} \right] \\ &= 10 \log \left[\frac{(g_{1,1} + g_{1,2})^2}{2} \right] = 10 \log \left[\frac{\left(10^{\frac{G_1}{10}} + 10^{\frac{G_2}{10}} \right)^2}{2} \right] = 10 \log \left[\frac{\left(10^{\frac{2.68}{10}} + 10^{\frac{4.42}{10}} \right)^2}{2} \right] = 6.60 \text{ dBi} \end{aligned}$$

For 3Tx TxBF MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)d)(i), directional gain was calculated as:

$$N_{ANT} = 3, G_{CORE0} = 2.68 \text{ dBi}, G_{CORE1} = 0.42 \text{ dBi}, G_{CORE2} = 4.42 \text{ dBi}$$

$$\begin{aligned} \text{Directional Gain} &= 10 \log \left[\frac{\sum_{j=1}^{N_{SS}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right] = 10 \log \left[\frac{\sum_{j=1}^1 \left(\sum_{k=1}^3 g_{j,k} \right)^2}{3} \right] \\ &= 10 \log \left[\frac{(g_{1,1} + g_{1,2} + g_{1,3})^2}{3} \right] = 10 \log \left[\frac{\left(10^{\frac{G_1}{10}} + 10^{\frac{G_2}{10}} + 10^{\frac{G_3}{10}} \right)^2}{3} \right] = 10 \log \left[\frac{\left(10^{\frac{2.68}{10}} + 10^{\frac{0.42}{10}} + 10^{\frac{4.42}{10}} \right)^2}{3} \right] = 7.43 \text{ dBi} \end{aligned}$$

Technology Tested:	WLAN (IEEE 802.11 a,n,ac) / U-NII	
Modes:	802.11a: 6, 9, 12, 18, 24, 36, 48 & 54 Mbps (SISO, or MIMO with CDD)	
	802.11n HT20: MCS0 to MCS23 (1,2 or 3 spatial stream with either SISO or 2/3 chain MIMO CDD/SDM)	
	802.11n HT40: MCS0 to MCS23 (1,2 or 3 spatial stream with either SISO or 2/3 chain MIMO CDD/SDM)	
	802.11ac VHT20: MCS0 to MCS9 (1,2 or 3 spatial stream) (SISO, or MIMO with CDD/SDM with or without TxBF)	
	802.11ac VHT40: MCS0 to MCS9 (1,2 or 3 spatial stream) (SISO, or MIMO with CDD/SDM with or without TxBF)	
	802.11ac VHT80: MCS0 to MCS9 (1,2 or 3 spatial stream) (SISO, or MIMO with CDD/SDM with or without TxBF)	
Setting of cores / ports:	0,1,2, 0+1, 0+2, 1+2, 0+1+2	
Beamforming:	Yes	
Frequency Range:	5725 MHz to 5850 MHz	
Channel Spacing:	20 MHz	
Transmit Channels	Channel	Channel Frequency (MHz)
	Lowest: 149	5745
	Middle: 157	5785
	Highest: 165	5825
Channels that straddle the UNII-2C and UNII-3 bands at 5725MHz.	Single:144	5720
Channel Spacing:	40 MHz	
Transmit Channels	Channel	Channel Frequency (MHz)
	Lowest: 151	5755
	Highest: 159	5795
Channels that straddle the UNII-2C and UNII-3 bands at 5725MHz.	Single:142	5710
Channel Spacing:	80 MHz	
Transmit Channels	Middle: 155	5775
Channels that straddle the UNII-2C and UNII-3 bands at 5725MHz.	Single:138	5690

The test set-up was made in accordance to the general provisions of FCC Unlicensed National Information Infrastructure (U-NII) Devices 789033 D02 General U-NII Test Procedures New Rules v02r01 dated Dec 14, 2017.

The EUT was tested in the following operating mode(s):

- Non-Tx BF modes: Continuously transmitting with a modulated carrier at maximum power in all required channels using the supported data rates/modulations types.
- Tx BF modes: Transmitting a modulated carrier with maximum possible duty cycle at maximum power in all required channels using the supported data rates/modulations types.

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

During transmitter test the EUT was being controlled by the SW tool to operate in a continuous transmit mode on the test channel as required and in each of the different modulation modes.

For non-Tx BF modes, the EUT was configured in test mode using a software application. The application was used to enable a continuous transmission and to select the test channels as required. The client supplied scripts to configure the EUT. The customer supplied a document containing the setup instructions.

For Tx BF modes, the EUT was communicating via a RF link (radiated or conducted) with an equivalent device. The EUT ran iPerf bandwidth testing application in client mode to produce maximum throughput. The client supplied scripts to configure the EUT. The customer supplied a document containing the setup instructions.

The following modes and data rates were selected based on preliminary testing that identified those corresponding to the worst cases:

- 802.11a: 6 Mbit/s / SISO on Core 2
- 802.11n HT20: MCS0 / SISO on Core 2
- 802.11n HT40: MCS0 / SISO on Core 2
- 802.11ac VHT80: MCS0x1 / SISO on Core 2
- 802.11n HT20: MCS0 / MIMO / 2Tx CDD on Core 0 & Core 2
- 802.11n HT40: MCS0 / MIMO / 2Tx CDD on Core 0 & Core 2
- 802.11ac VHT80: MCS0x1 / MIMO / 2Tx CDD on Core 0 & Core 2
- 802.11n HT20: MCS8 / MIMO / 2Tx SDM on Core 0 & Core 2
- 802.11n HT40: MCS8 / MIMO / 2Tx SDM on Core 0 & Core 2
- 802.11ac VHT80: MCS0x2 / MIMO / 2Tx SDM on Core 0 & Core 2
- 802.11ac VHT20: MCS0x1 / MIMO / 2Tx Tx BF on Core 0 & Core 2
- 802.11ac VHT40: MCS0x1 / MIMO / 2Tx Tx BF on Core 0 & Core 2
- 802.11ac VHT80: MCS0x1 / MIMO / 2Tx Tx BF on Core 0 & Core 2
- 802.11n HT20: MCS0 / MIMO / 3Tx CDD on Core 0 & Core 1 & Core 2
- 802.11n HT40: MCS0 / MIMO / 3Tx CDD on Core 0 & Core 1 & Core 2
- 802.11ac VHT80: MCS0x1 / MIMO / 3Tx CDD on Core 0 & Core 1 & Core 2
- 802.11n HT20: MCS16 / MIMO / 3Tx SDM on Core 0 & Core 1 & Core 2
- 802.11n HT40: MCS16 / MIMO / 3Tx SDM on Core 0 & Core 1 & Core 2
- 802.11ac VHT80: MCS0x3 / MIMO / 3Tx SDM on Core 0 & Core 1 & Core 2
- 802.11ac VHT20: MCS0x1 / MIMO / 3Tx Tx BF on Core 0 & Core 1 & Core 2
- 802.11ac VHT40: MCS0x1 / MIMO / 3Tx Tx BF on Core 0 & Core 1 & Core 2
- 802.11ac VHT80: MCS0x1 / MIMO / 3Tx Tx BF on Core 0 & Core 1 & Core 2

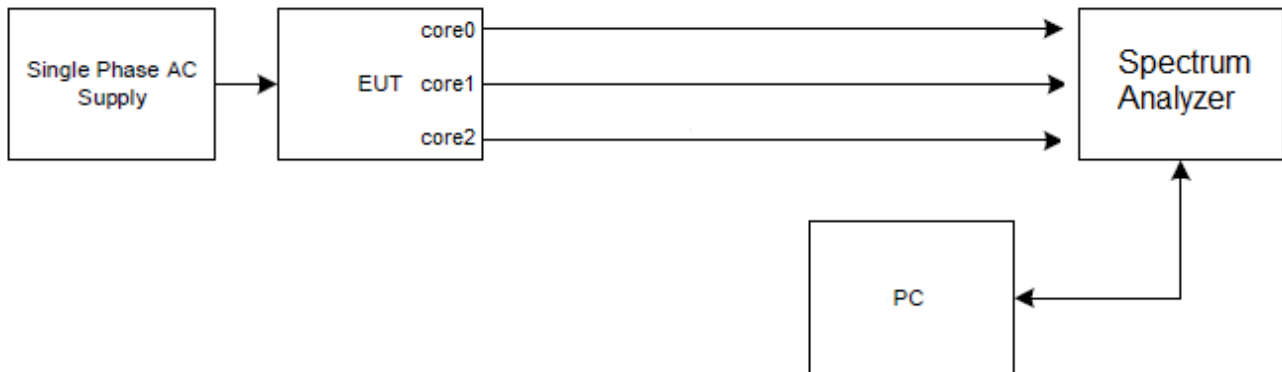
The EUT has three separate antennas which correspond to three separate antenna ports. Core 0 and Core 1 and Core 2 correspond to antenna 0, antenna 1 and antenna 2 respectively.

The client supplied U.FL RF cables with the EUT in order to perform conducted measurements. The measured additional path loss was included in any path loss calculations.

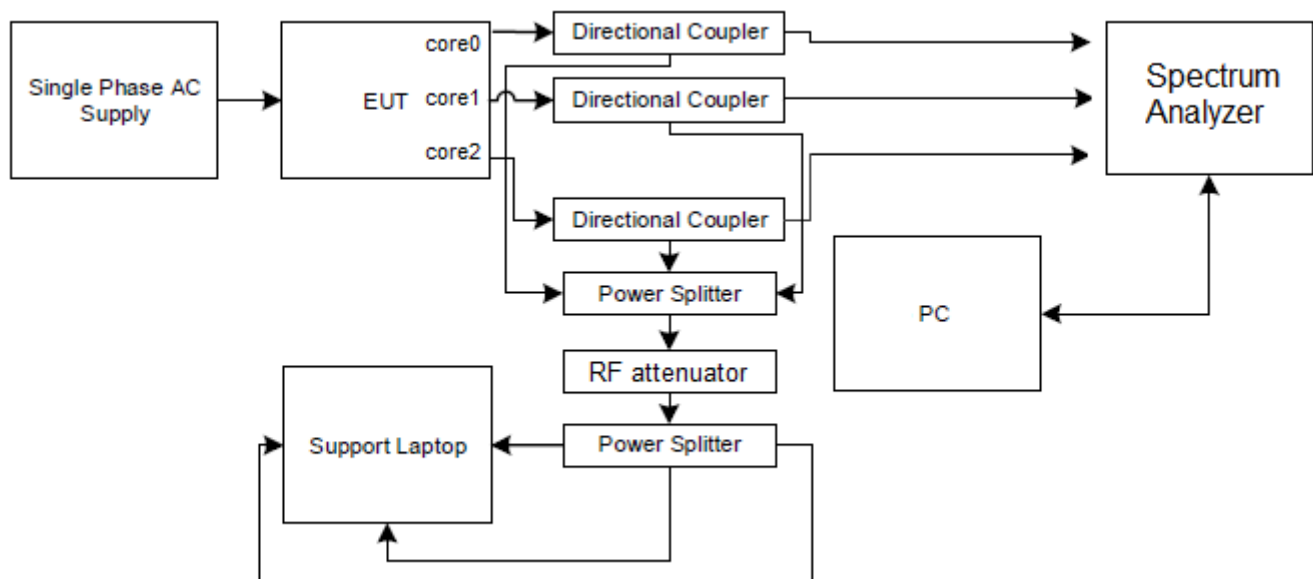
CONDUCTED MEASUREMENTS

The equipment under test was set up in a shielded room and connected to the spectrum analyzer using a low loss RF cable. The reading in the spectrum analyzer is corrected taking into account the internal and external RF cable loss.

For non-TxBF modes:



For TxBF modes:



The AC supply voltage is applied using an external power supply.

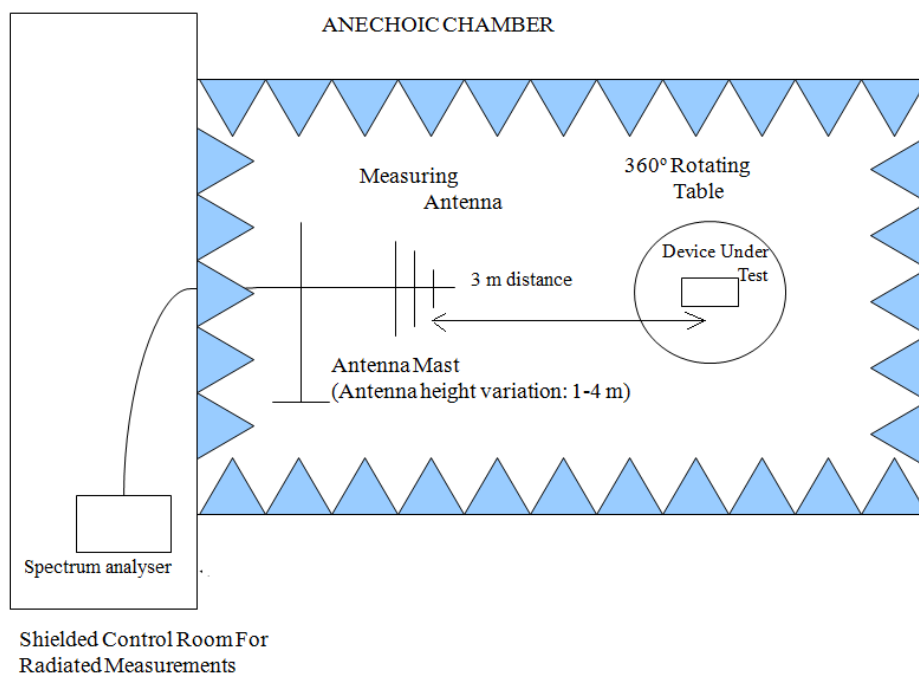
RADIATED MEASUREMENTS

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna is situated at a distance of 3 m. The EUT was placed at a height of 80 cm above the reference ground plane in the center of the chamber turntable to perform the measurements below 1GHz and The EUT was placed at a height of 1.5 meters above the test chamber floor in the center of the chamber turntable to perform the measurements above 1GHz. It was also rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

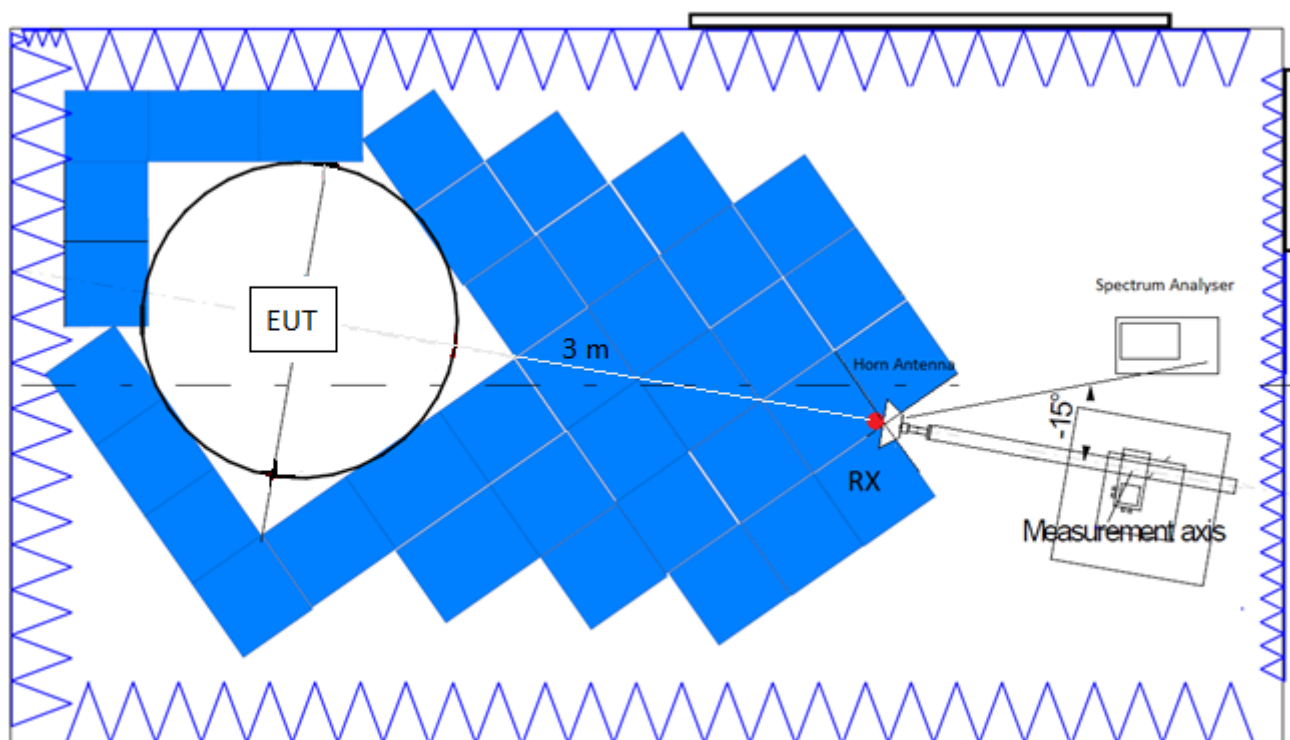
Measurements were made in both horizontal and vertical planes of polarization.

The final measured value, for the given emission, in the tables below incorporates the calibrated antenna factor and cable loss.

Radiated measurements setup $f < 1$ GHz



Radiated measurements setup $f > 1$ GHz



FCC Section 15.247 Subclause (e) / RSS-247 6.2.4.1. 6 dB Bandwidth

SPECIFICATION

The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS:

6 dB Bandwidth (see next plots).

The following modes and data rates were selected based on preliminary testing that identified those corresponding to the worst cases:

- 802.11a: 6 Mbit/s / SISO on Core 2
- 802.11n HT20: MCS0 / SISO on Core 2
- 802.11n HT40: MCS0 / SISO on Core 2
- 802.11ac VHT80: MCS0x1 / SISO on Core 2
- 802.11n HT20: MCS0 / MIMO / 2Tx CDD on Core 0 & Core 2
- 802.11n HT40: MCS0 / MIMO / 2Tx CDD on Core 0 & Core 2
- 802.11ac VHT80: MCS0x1 / MIMO / 2Tx CDD on Core 0 & Core 2
- 802.11n HT20: MCS8 / MIMO / 2Tx SDM on Core 0 & Core 2
- 802.11n HT40: MCS8 / MIMO / 2Tx SDM on Core 0 & Core 2
- 802.11ac VHT80: MCS0x2 / MIMO / 2Tx SDM on Core 0 & Core 2
- 802.11ac VHT20: MCS0x1 / MIMO / 2Tx TxBF on Core 0 & Core 2
- 802.11ac VHT40: MCS0x1 / MIMO / 2Tx TxBF on Core 0 & Core 2
- 802.11ac VHT80: MCS0x1 / MIMO / 2Tx TxBF on Core 0 & Core 2

- 802.11n HT20: MCS0 / MIMO / 3Tx CDD on Core 0 & Core 1 & Core 2
- 802.11n HT40: MCS0 / MIMO / 3Tx CDD on Core 0 & Core 1 & Core 2
- 802.11ac VHT80: MCS0x1 / MIMO / 3Tx CDD on Core 0 & Core 1 & Core 2

- 802.11n HT20: MCS16 / MIMO / 3Tx SDM on Core 0 & Core 1 & Core 2
- 802.11n HT40: MCS16 / MIMO / 3Tx SDM on Core 0 & Core 1 & Core 2
- 802.11ac VHT80: MCS0x3 / MIMO / 3Tx SDM on Core 0 & Core 1 & Core 2
- 802.11ac VHT20: MCS0x1 / MIMO / 3Tx TxBF on Core 0 & Core 1 & Core 2
- 802.11ac VHT40: MCS0x1 / MIMO / 3Tx TxBF on Core 0 & Core 1 & Core 2
- 802.11ac VHT80: MCS0x1 / MIMO / 3Tx TxBF on Core 0 & Core 1 & Core 2

Mode : 802.11a - 20MHz – SISO – CORE 2

(Straddle Channel)

	Channel 144 5720 MHz
6 dB bandwidth (MHz)	3.241
Measurement uncertainty (kHz)	<± 25.02

(5725-5850 Channels)

	Channel 149 5745 MHz	Channel 157 5785 MHz	Channel 165 5825 MHz
6 dB bandwidth (MHz)	16.341	16.331	16.311
Measurement uncertainty (kHz)	<± 25.02		

Mode : 802.11n HT20 - 20MHz – SISO – CORE 2

(Straddle Channel)

	Channel 144 5720 MHz
6 dB bandwidth (MHz)	3.838
Measurement uncertainty (kHz)	<± 25.02

(5725-5850 Channels)

	Channel 149 5745 MHz	Channel 157 5785 MHz	Channel 165 5825 MHz
6 dB bandwidth (MHz)	17.563	17.558	17.572
Measurement uncertainty (kHz)	<± 25.02		

Mode : 802.11n HT40 - 40MHz – SISO – CORE 2

(Straddle Channel)

	Channel 142 5710 MHz
6 dB bandwidth (MHz)	3.279
Measurement uncertainty (kHz)	<± 40.04

(5725-5850 Channels)

	Channel 151 5775 MHz	Channel 159 5795 MHz
6 dB bandwidth (MHz)	36.300	36.415
Measurement uncertainty (kHz)	<± 40.04	

Mode : 802.11ac VHT80 - 80MHz – SISO – CORE 2

(Straddle Channel)

	Channel 138 5690 MHz
6 dB bandwidth (MHz)	3.040
Measurement uncertainty (kHz)	<± 70.07

(5725-5850 Channels)

	Channel 155 5775 MHz
6 dB bandwidth (MHz)	75.57
Measurement uncertainty (kHz)	<± 70.07

Mode : 802.11n HT20 – CDD – 20MHz – MIMO – CORE 0 & CORE 2

(Straddle Channel)

	Channel 144 5720 MHz	
	CORE 0	CORE 2
6 dB bandwidth (MHz)	3.827	3.837
Measurement uncertainty (kHz)	<± 25.02	

(5725-5850 Channels)

	Channel 149 5745 MHz		Channel 157 5785 MHz		Channel 165 5825 MHz	
	CORE 0	CORE 2	CORE 0	CORE 2	CORE 0	CORE 2
6 dB bandwidth (MHz)	17.599	17.589	17.565	17.537	17.622	17.547
Measurement uncertainty (kHz)	<± 25.02					

Mode : 802.11n HT40 – CDD – 40MHz – MIMO – CORE 0 & CORE 2

(Straddle Channel)

	Channel 142 5710 MHz	
	CORE 0	CORE 2
6 dB bandwidth (MHz)	3.206	3.210
Measurement uncertainty (kHz)	<± 40.04	

(5725-5850 Channels)

	Channel 151 5775 MHz		Channel 159 5795 MHz	
	CORE 0	CORE 2	CORE 0	CORE 2
6 dB bandwidth (MHz)	36.29	36.295	36.311	36.269
Measurement uncertainty (kHz)	<± 40.04			

Mode : 802.11ac VHT80 – CDD – 80MHz – MIMO – CORE 0 & CORE 2

(Straddle Channel)

	Channel 138 5690 MHz	
	CORE 0	CORE 2
6 dB bandwidth (MHz)	2.615	2.612
Measurement uncertainty (kHz)	<± 70.07	

(5725-5850 Channel)

	Channel 155 5775 MHz	
	CORE 0	CORE 2
6 dB bandwidth (MHz)	75.483	76.130
Measurement uncertainty (kHz)	<± 70.07	

Mode : 802.11n HT20 – SDM – 20MHz – MIMO – CORE 0 & CORE 2

(Straddle Channel)

	Channel 144 5720 MHz	
	CORE 0	CORE 2
6 dB bandwidth (MHz)	3.832	3.823
Measurement uncertainty (kHz)	<± 25.02	

(5725-5850 Channels)

	Channel 149 5745 MHz		Channel 157 5785 MHz		Channel 165 5825 MHz	
	CORE 0	CORE 2	CORE 0	CORE 2	CORE 0	CORE 2
6 dB bandwidth (MHz)	17.624	17.592	17.550	17.610	17.605	17.592
Measurement uncertainty (kHz)	<± 25.02					

Mode : 802.11n HT40 – SDM – 40MHz – MIMO – CORE 0 & CORE 2

(Straddle Channel)

	Channel 142 5710 MHz	
	CORE 0	CORE 2
6 dB bandwidth (MHz)	3.199	3.225
Measurement uncertainty (kHz)	<± 40.04	

(5725-5850 Channels)

	Channel 151 5775 MHz		Channel 159 5795 MHz	
	CORE 0	CORE 2	CORE 0	CORE 2
6 dB bandwidth (MHz)	36.283	36.352	36.299	36.342
Measurement uncertainty (kHz)	<± 40.04			

Mode : 802.11ac VHT80 – SDM – 80MHz – MIMO – CORE 0 & CORE 2

(Straddle Channel)

	Channel 138 5690 MHz	
	CORE 0	CORE 2
6 dB bandwidth (MHz)	2.730	2.690
Measurement uncertainty (kHz)	<± 70.07	

(5725-5850 Channel)

	Channel 155 5775 MHz	
	CORE 0	CORE 2
6 dB bandwidth (MHz)	75.380	75.670
Measurement uncertainty (kHz)	<± 70.07	

Mode : 802.11n HT20 – TxBF – 20MHz – MIMO – CORE 0 & CORE 2

(Straddle Channel)

	Channel 144 5720 MHz	
	CORE 0	CORE 2
6 dB bandwidth (MHz)	2.562	3.781
Measurement uncertainty (kHz)	<± 25.02	

(5725-5850 Channels)

	Channel 149 5745 MHz		Channel 157 5785 MHz		Channel 165 5825 MHz	
	CORE 0	CORE 2	CORE 0	CORE 2	CORE 0	CORE 2
6 dB bandwidth (MHz)	15.108	15.090	15.102	15.102	15.102	15.102
Measurement uncertainty (kHz)	<± 25.02					

Mode : 802.11n HT40 – TxBF – 40MHz – MIMO – CORE 0 & CORE 2

(Straddle Channel)

	Channel 142 5710 MHz	
	CORE 0	CORE 2
6 dB bandwidth (MHz)	3.156	3.180
Measurement uncertainty (kHz)	<± 40.04	

(5725-5850 Channels)

	Channel 151 5775 MHz		Channel 159 5795 MHz	
	CORE 0	CORE 2	CORE 0	CORE 2
6 dB bandwidth (MHz)	36.312	36.324	36.312	36.336
Measurement uncertainty (kHz)	<± 40.04			

Mode : 802.11ac VHT80 – TxBF – 80MHz – MIMO – CORE 0 & CORE 2

(Straddle Channel)

	Channel 138 5690 MHz	
	CORE 0	CORE 2
6 dB bandwidth (MHz)	3.196	3.196
Measurement uncertainty (kHz)	<± 70.07	

(5725-5850 Channel)

	Channel 155 5775 MHz	
	CORE 0	CORE 2
6 dB bandwidth (MHz)	75.480	75.696
Measurement uncertainty (kHz)	<± 70.07	

Mode : 802.11n HT20 – CDD – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

(Straddle Channel)

	Channel 144 5720 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	3.827	3.845	3.845
Measurement uncertainty (kHz)	<± 25.02		

(5725-5850 Channels)

	Channel 149 5745 MHz			Channel 157 5785 MHz		
	CORE 0	CORE 1	CORE 2	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	17.585	17.617	17.630	17.602	17.629	17.533
Measurement uncertainty (kHz)	<± 25.02					

	Channel 165 5825 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	17.637	17.629	17.565
Measurement uncertainty (kHz)	<± 25.02		

Mode : 802.11n HT40 – CDD – 40MHz – MIMO – CORE 0 & CORE 1 & CORE 2

(Straddle Channel)

	Channel 142 5710 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	3.230	3.235	3.206
Measurement uncertainty (kHz)	<± 40.04		

(5725-5850 Channels)

	Channel 151 5775 MHz			Channel 159 5795 MHz		
	CORE 0	CORE 1	CORE 2	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	36.314	36.347	36.340	36.259	36.363	36.267
Measurement uncertainty (kHz)	<± 40.04					

Mode : 802.11ac VHT80 – CDD – 80MHz – MIMO – CORE 0 & CORE 1 & CORE 2

(Straddle Channel)

	Channel 138 5690 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	2.612	2.605	2.599
Measurement uncertainty (kHz)	<± 70.07		

(5725-5850 Channel)

	Channel 155 5775 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	75.165	75.750	75.137
Measurement uncertainty (kHz)	<± 70.07		

Mode : 802.11n HT20 – SDM – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

(Straddle Channel)

	Channel 144 5720 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	3.845	3.845	3.862
Measurement uncertainty (kHz)	<± 25.02		

(5725-5850 Channels)

	Channel 149 5745 MHz			Channel 157 5785 MHz		
	CORE 0	CORE 1	CORE 2	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	17.662	17.600	17.602	17.587	17.610	17.606
Measurement uncertainty (kHz)	<± 25.02					

	Channel 165 5825 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	17.567	17.608	17.632
Measurement uncertainty (kHz)	<± 25.02		

Mode : 802.11n HT40 – SDM – 40MHz – MIMO – CORE 0 & CORE 1 & CORE 2

(Straddle Channel)

	Channel 142 5710 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	3.128	3.205	3.210
Measurement uncertainty (kHz)	<± 40.04		

(5725-5850 Channels)

	Channel 151 5775 MHz			Channel 159 5795 MHz		
	CORE 0	CORE 1	CORE 2	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	36.314	36.358	36.352	36.305	36.341	36.335
Measurement uncertainty (kHz)	<± 40.04					

Mode : 802.11ac VHT80 – SDM – 80MHz – MIMO – CORE 0 & CORE 1 & CORE 2

(Straddle Channel)

	Channel 138 5690 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	2.707	3.340	2.730
Measurement uncertainty (kHz)	<± 70.07		

(5725-5850 Channel)

	Channel 155 5775 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	75.410	75.980	75.280
Measurement uncertainty (kHz)	<± 70.07		

Mode : 802.11n HT20 – TxBF – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

(Straddle Channel)

	Channel 144 5720 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	2.568	2.560	3.529
Measurement uncertainty (kHz)	<± 25.02		

(5725-5850 Channels)

	Channel 149 5745 MHz			Channel 157 5785 MHz		
	CORE 0	CORE 1	CORE 2	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	15.102	15.108	15.102	15.108	15.096	15.096
Measurement uncertainty (kHz)	<± 25.02					

	Channel 165 5825 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	15.102	15.108	15.102
Measurement uncertainty (kHz)	<± 25.02		

Mode : 802.11n HT40 – TxBF – 40MHz – MIMO – CORE 0 & CORE 1 & CORE 2

(Straddle Channel)

	Channel 142 5710 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	3.162	2.934	3.162
Measurement uncertainty (kHz)	<± 40.04		

(5725-5850 Channels)

	Channel 151 5775 MHz			Channel 159 5795 MHz		
	CORE 0	CORE 1	CORE 2	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	36.336	36.324	35.724	36.360	36.324	36.312
Measurement uncertainty (kHz)	<± 40.04					

Mode : 802.11ac VHT80 – TxBF – 80MHz – MIMO – CORE 0 & CORE 1 & CORE 2

(Straddle Channel)

	Channel 138 5690 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	3.196	3.196	3.196
Measurement uncertainty (kHz)	<± 70.07		

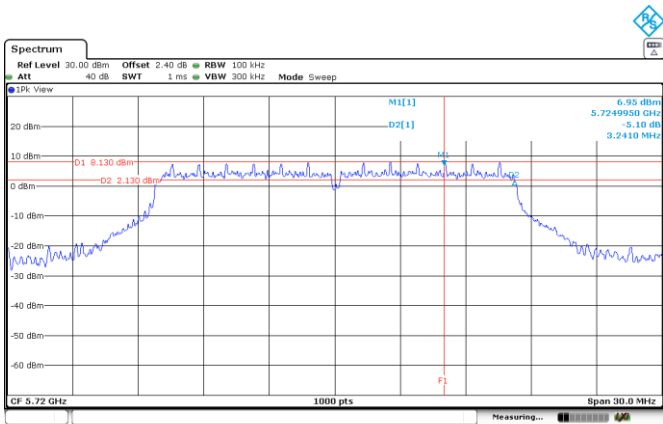
(5725-5850 Channel)

	Channel 155 5775 MHz		
	CORE 0	CORE 1	CORE 2
6 dB bandwidth (MHz)	75.288	75.456	75.168
Measurement uncertainty (kHz)	<± 70.07		

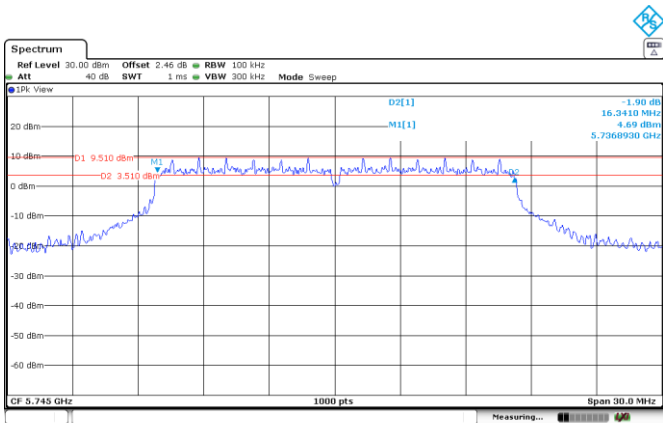
Verdict: PASS

Mode : 802.11a - 20MHz – SISO – CORE 2

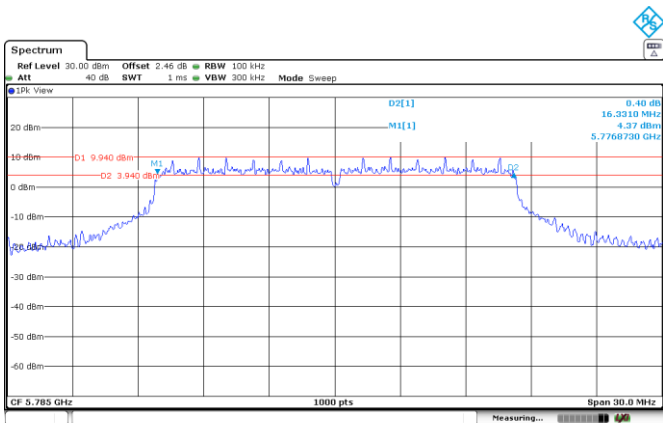
Channel 144

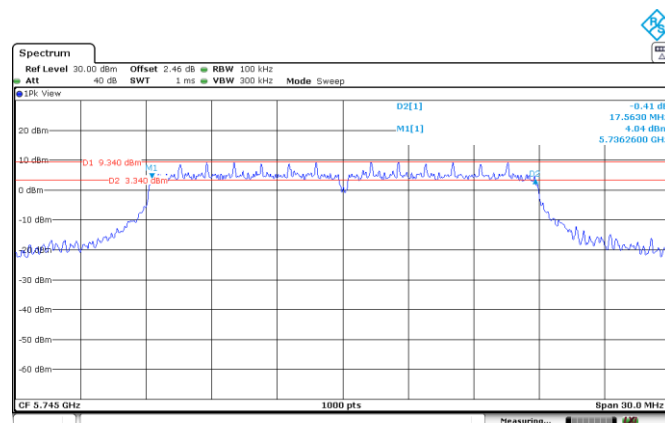
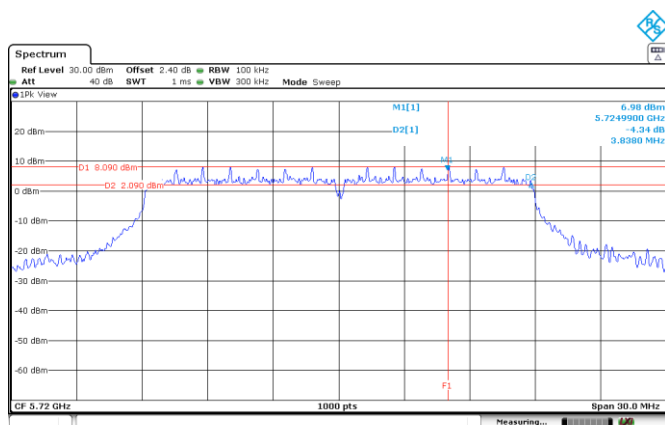
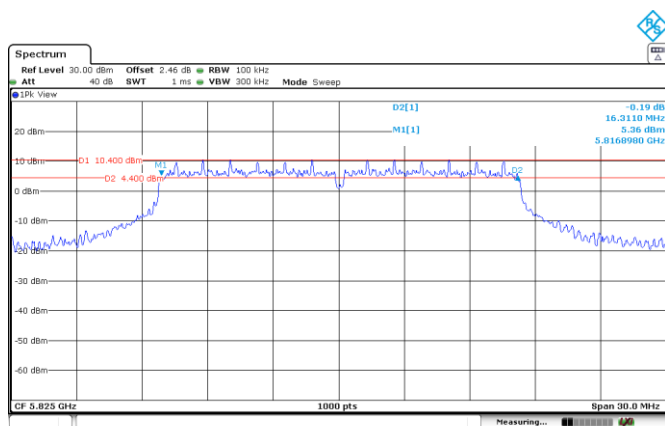


Channel 149

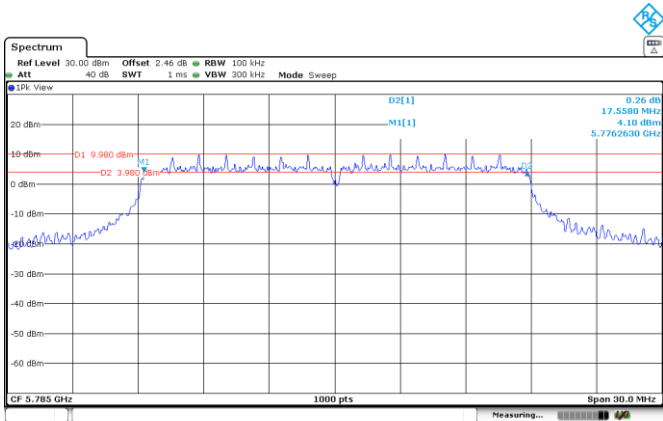


Channel 157

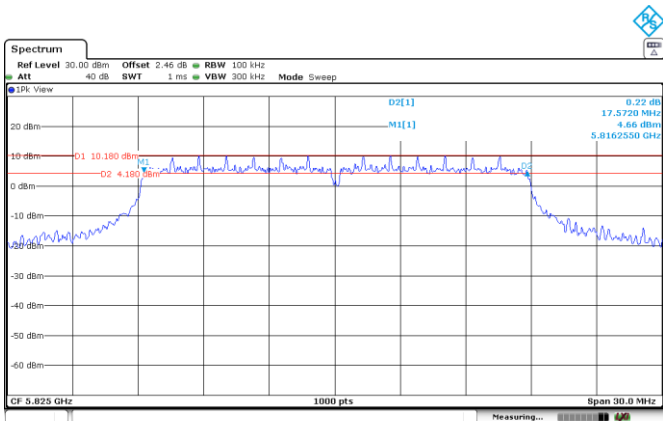




Channel 157

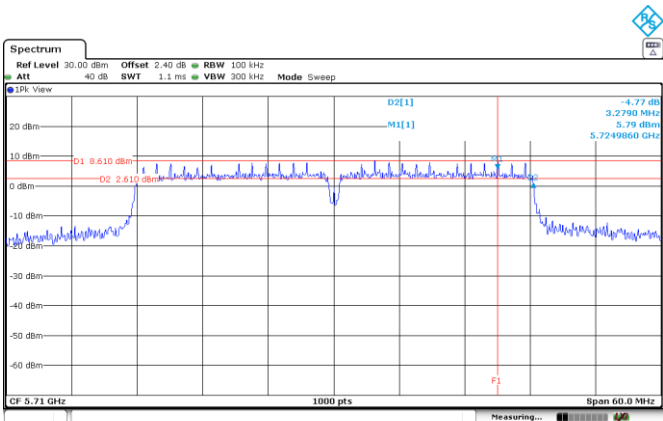


Channel 165

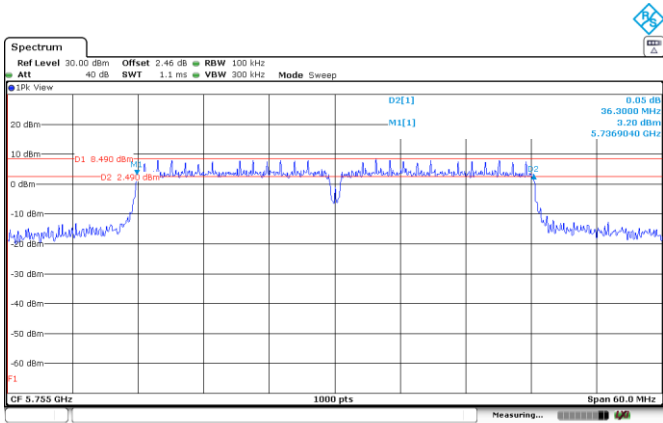


Mode : 802.11n HT40 - 40MHz – SISO – CORE 2

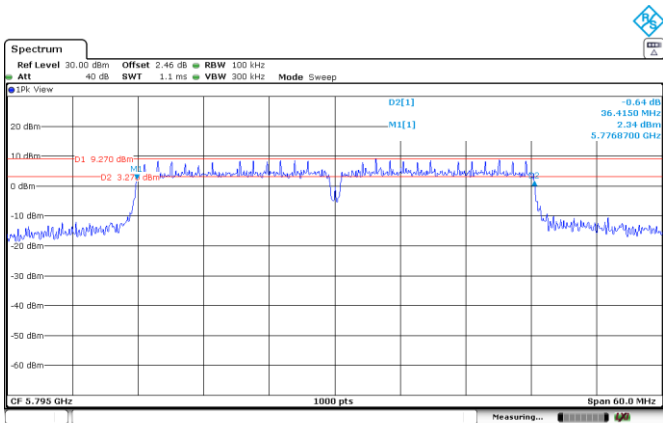
Channel 142



Channel 151

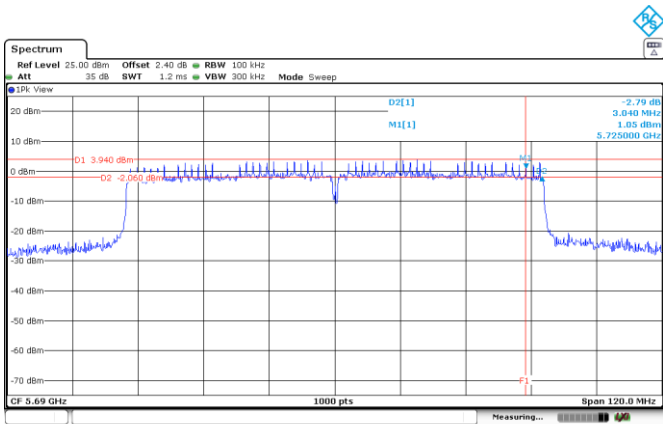


Channel 159

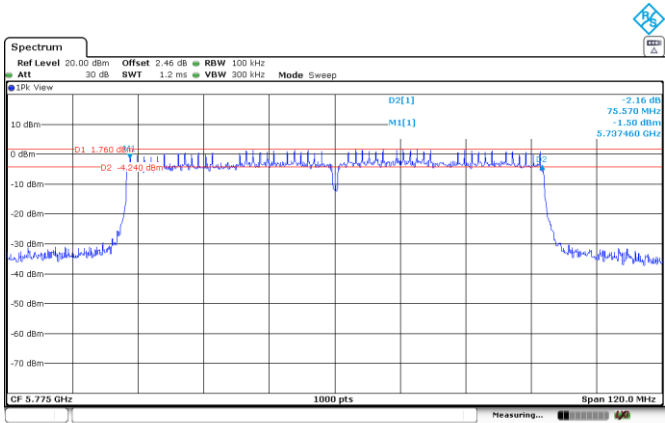


Mode : 802.11ac VHT80 - 80MHz – SISO – CORE 2

Channel 138

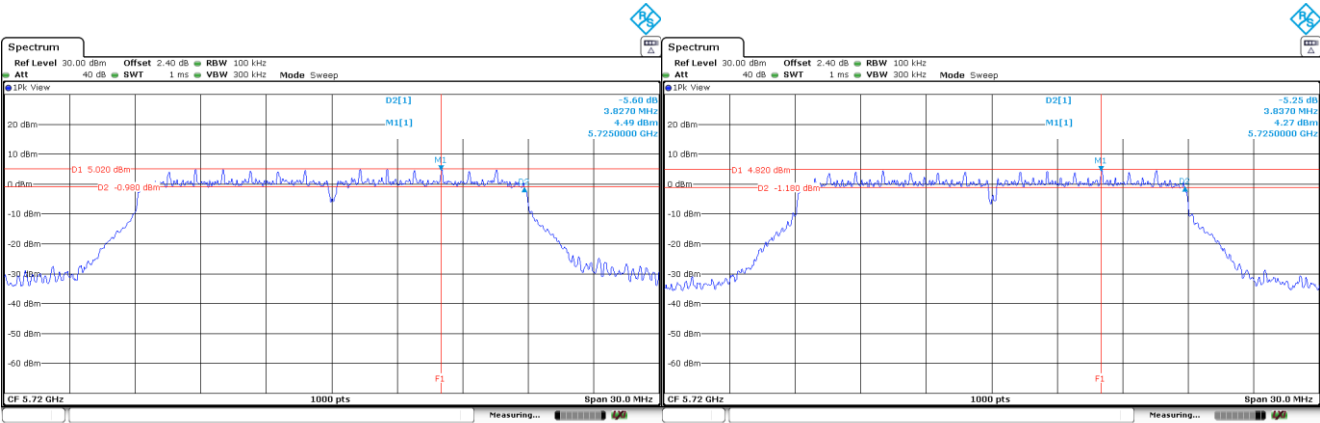


Channel 155



Mode : 802.11n HT20 – CDD – 20MHz – MIMO –CORE 0 & CORE 2

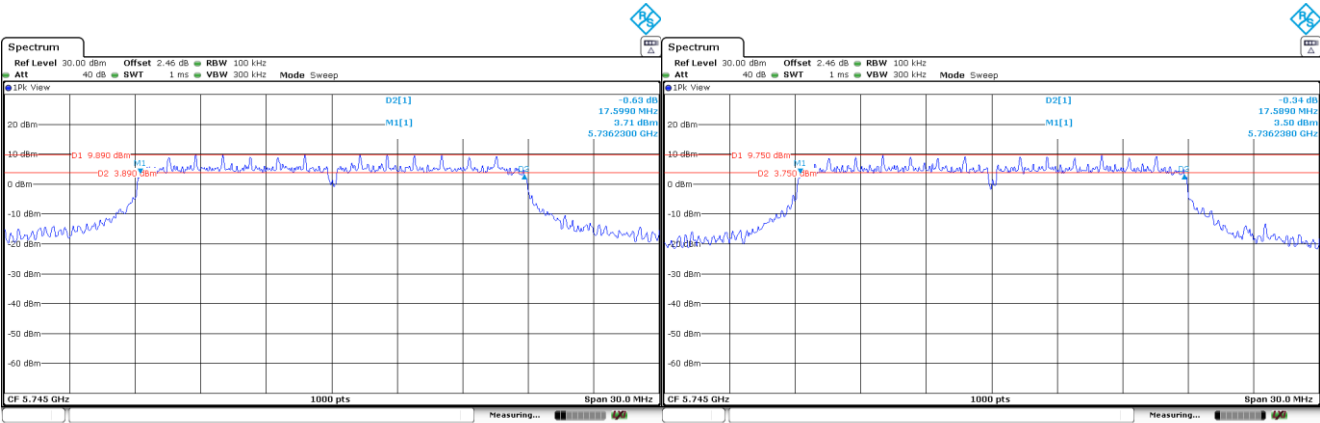
Channel 144



CORE 0

CORE 2

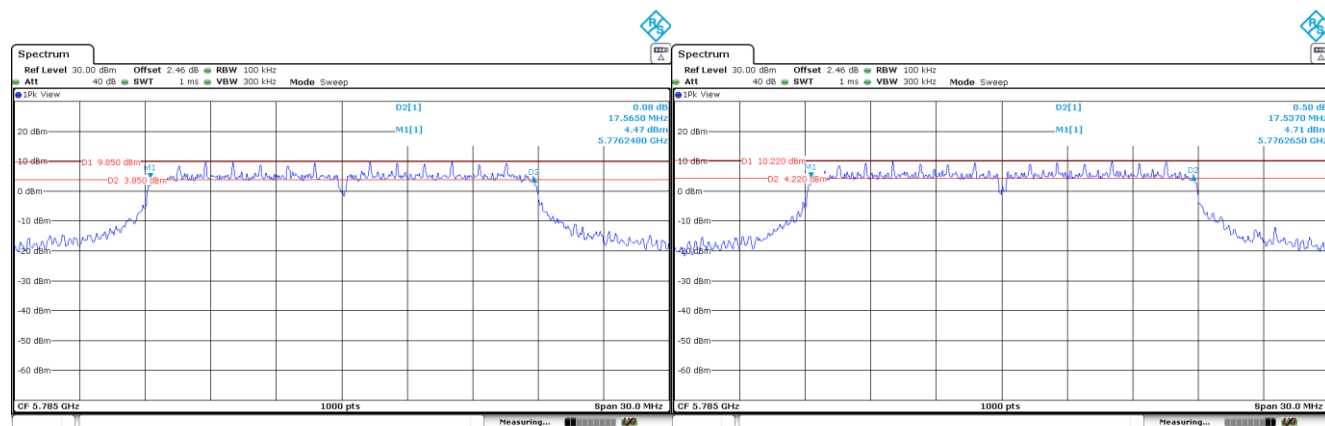
Channel 149



CORE 0

CORE 2

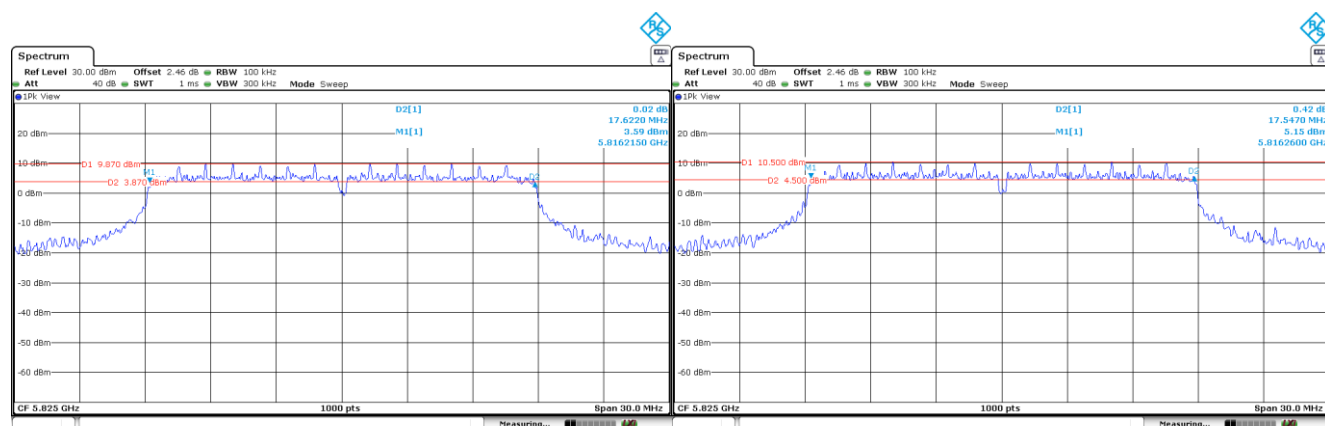
Channel 157



CORE 0

CORE 2

Channel 165

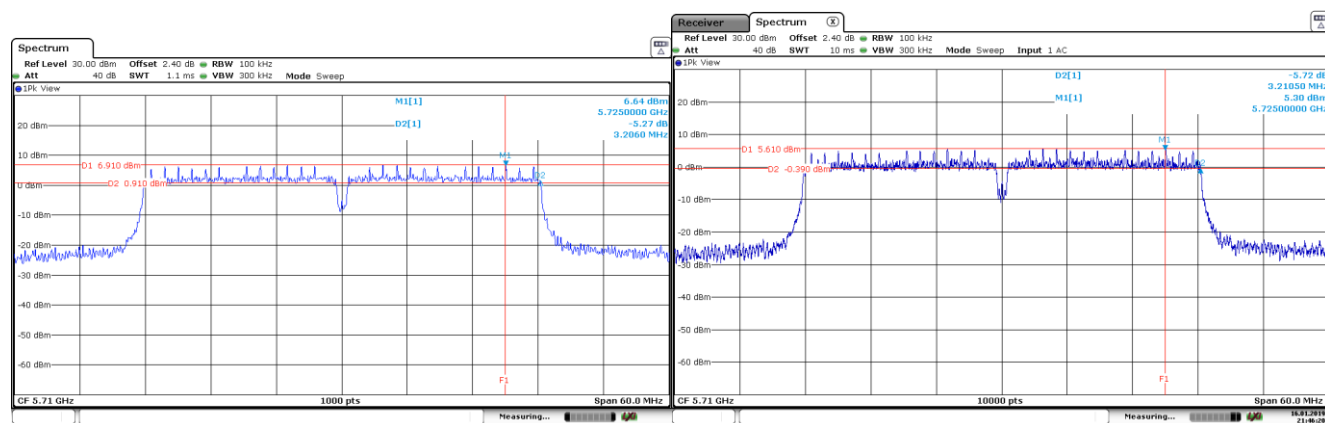


CORE 0

CORE 2

Mode : 802.11n HT40 – CDD – 40MHz – MIMO –CORE 0 & CORE 2

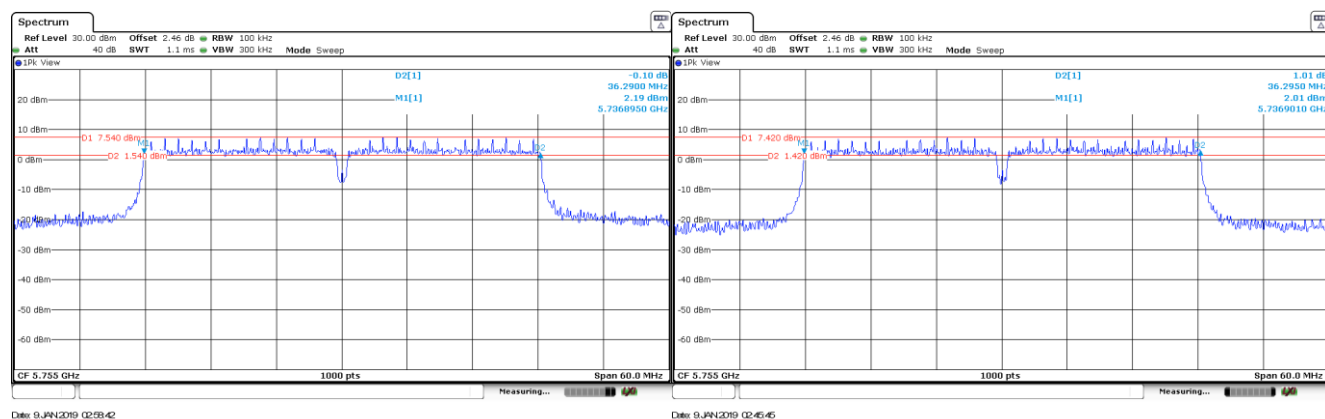
Channel 142



CORE 0

CORE 2

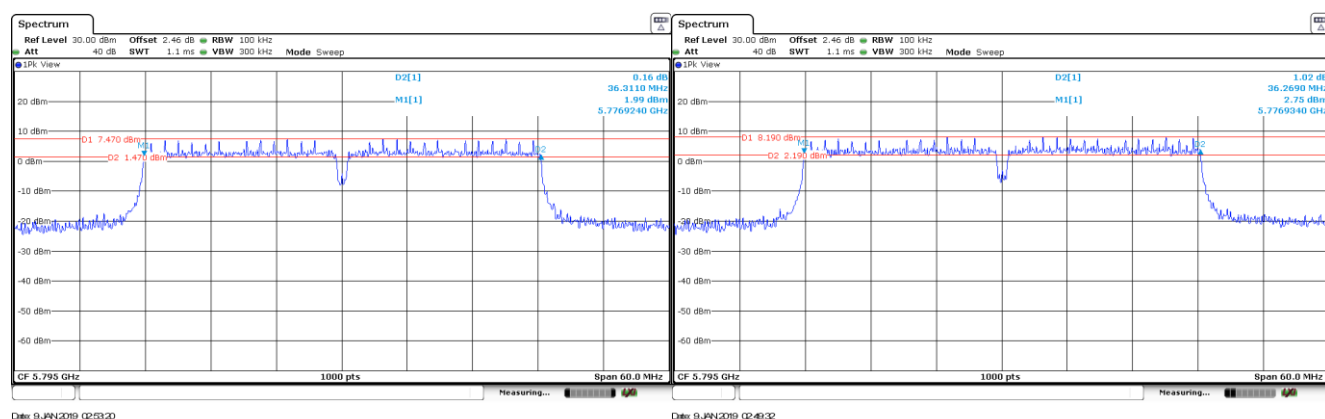
Channel 151



CORE 0

CORE 2

Channel 159

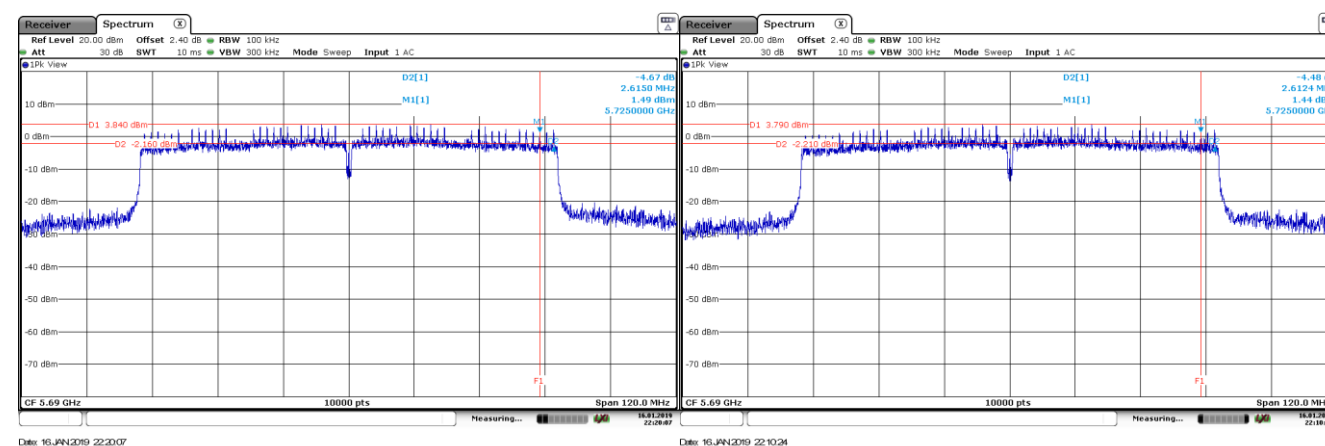


CORE 0

CORE 2

Mode : 802.11ac VHT80 – CDD – 80MHz – MIMO –CORE 0 & CORE 2

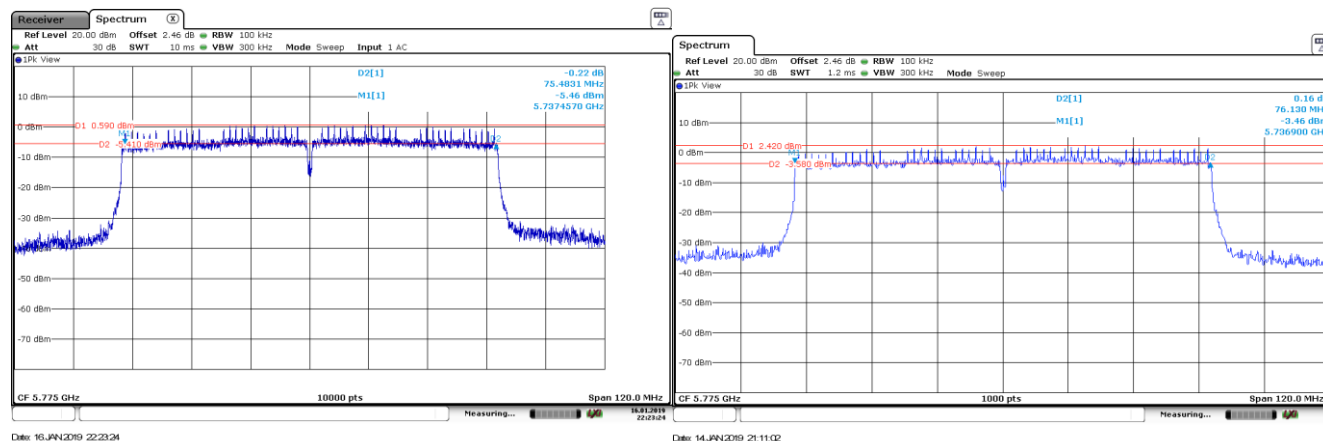
Channel 138



CORE 0

CORE 2

Channel 155

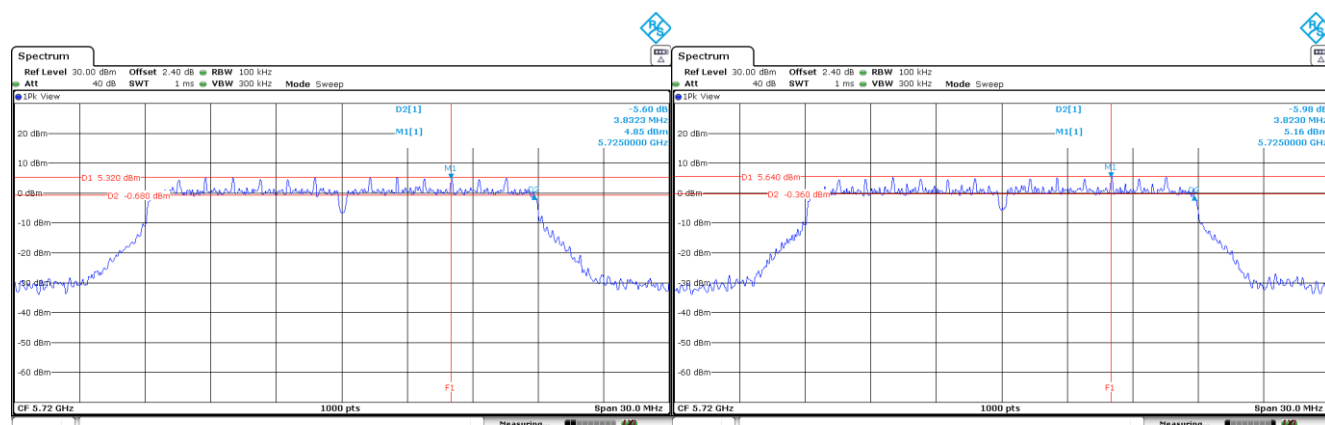


CORE 0

CORE 2

Mode : 802.11n HT20 – SDM – 20MHz – MIMO –CORE 0 & CORE 2

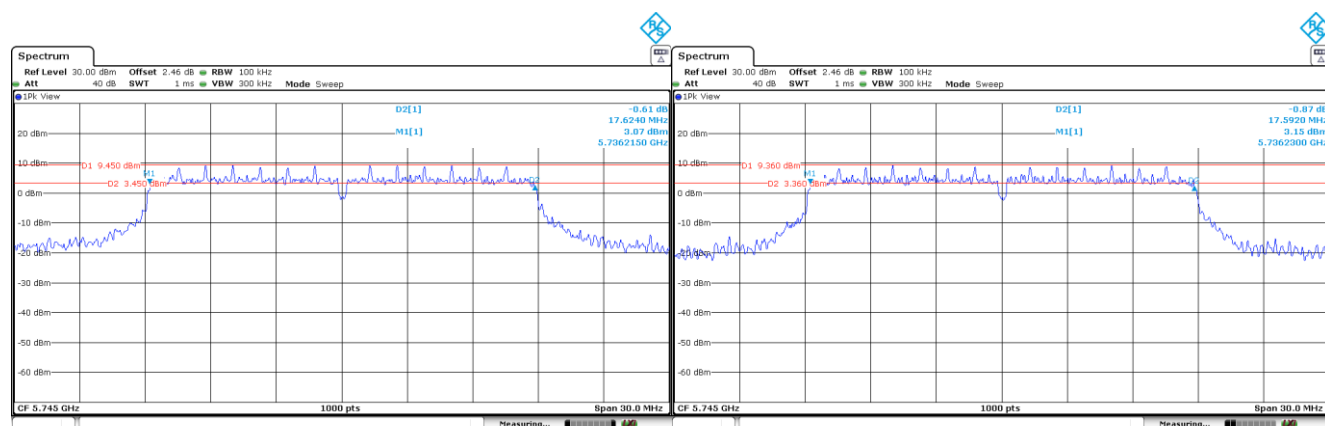
Channel 144



CORE 0

CORE 2

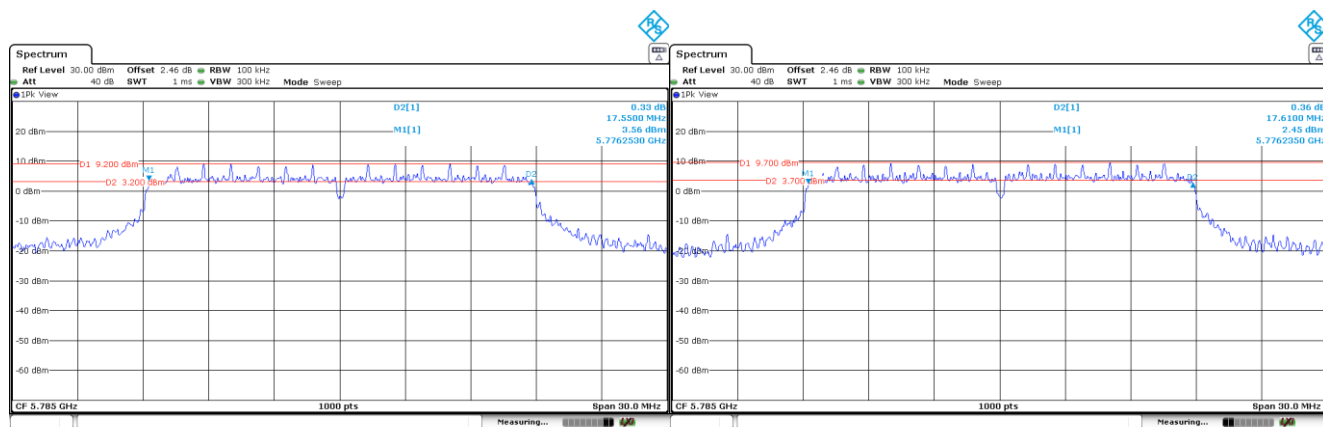
Channel 149



CORE 0

CORE 2

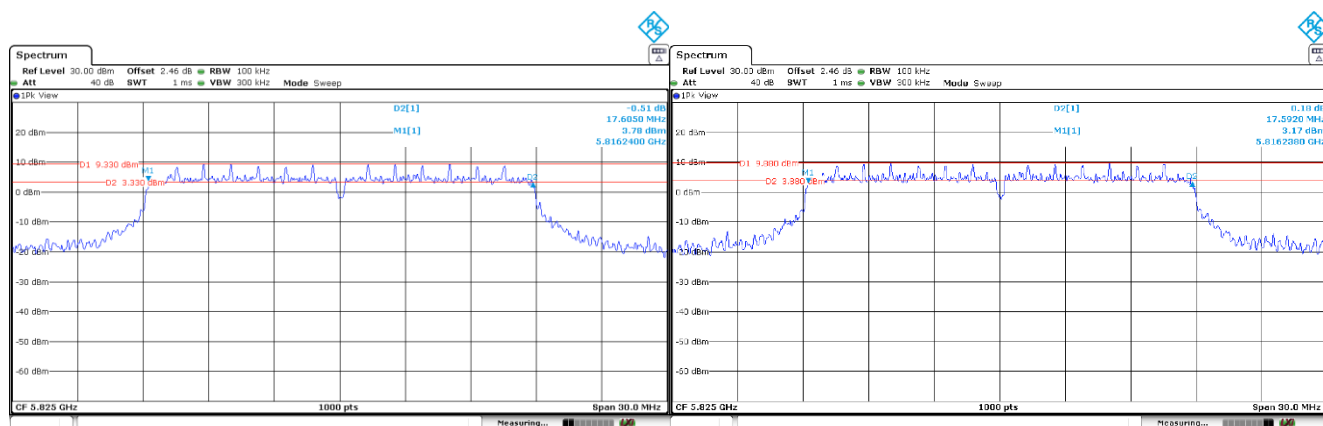
Channel 157



CORE 0

CORE 2

Channel 165

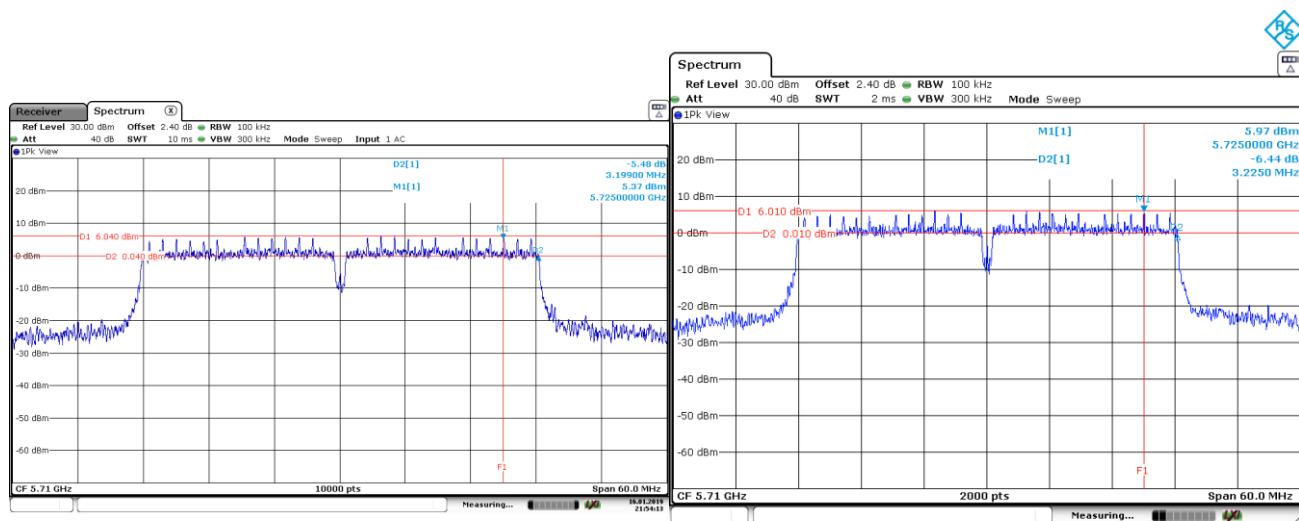


CORE 0

CORE 2

Mode : 802.11n HT40 – SDM – 40MHz – MIMO –CORE 0 & CORE 2

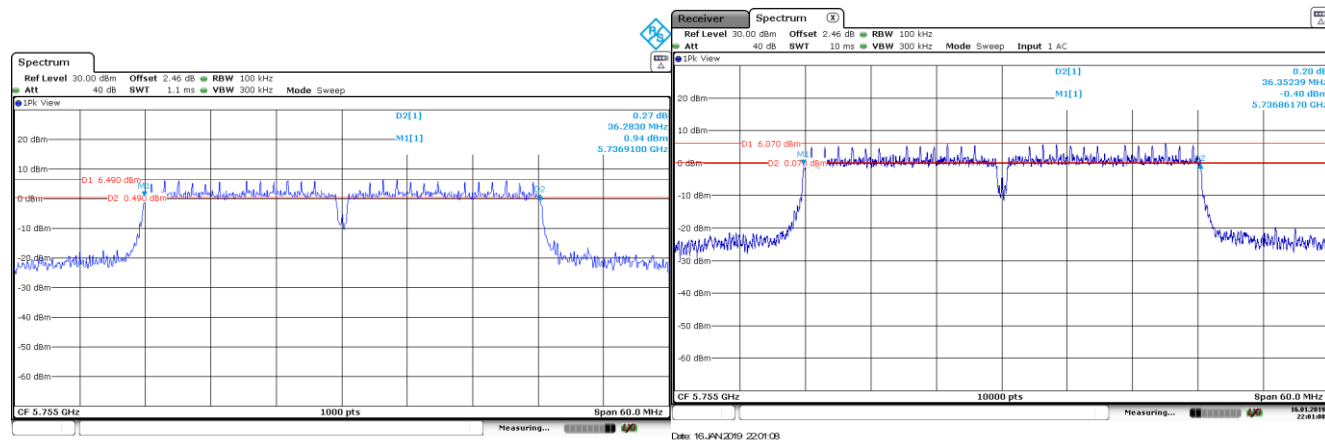
Channel 142



CORE 0

CORE 2

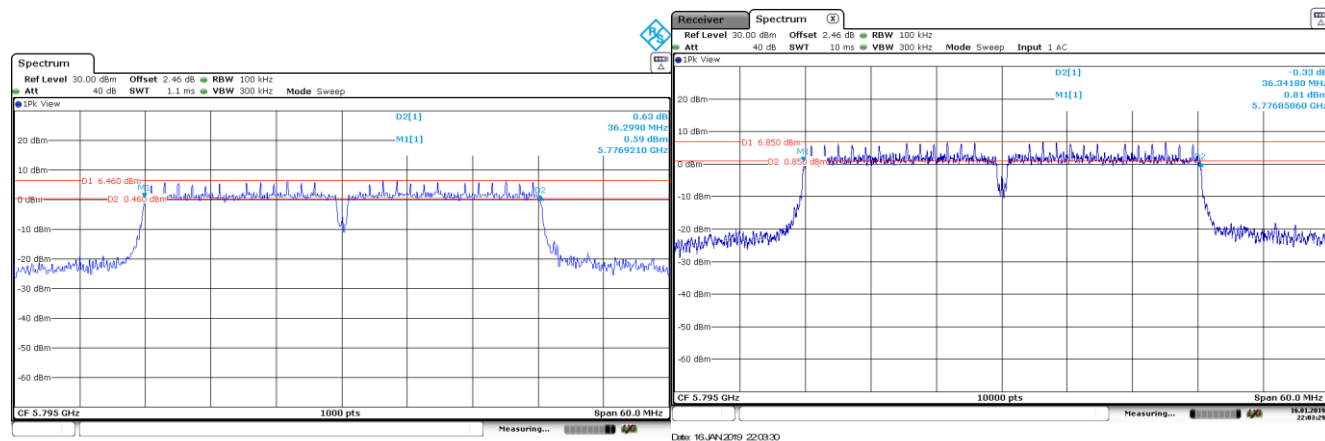
Channel 151



CORE 0

CORE 2

Channel 159

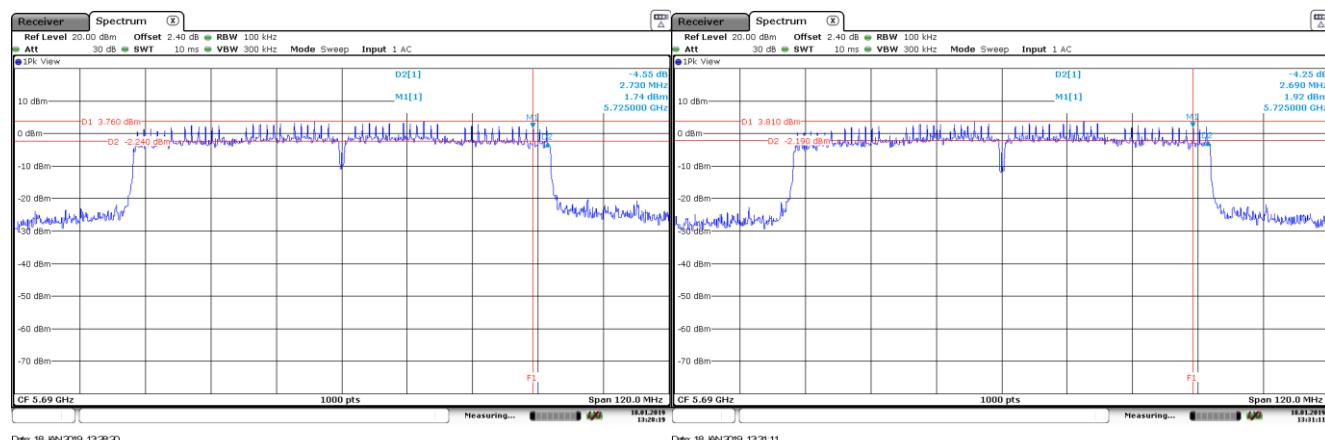


CORE 0

CORE 2

Mode : 802.11ac VHT80 – SDM – 80MHz – MIMO –CORE 0 & CORE 2

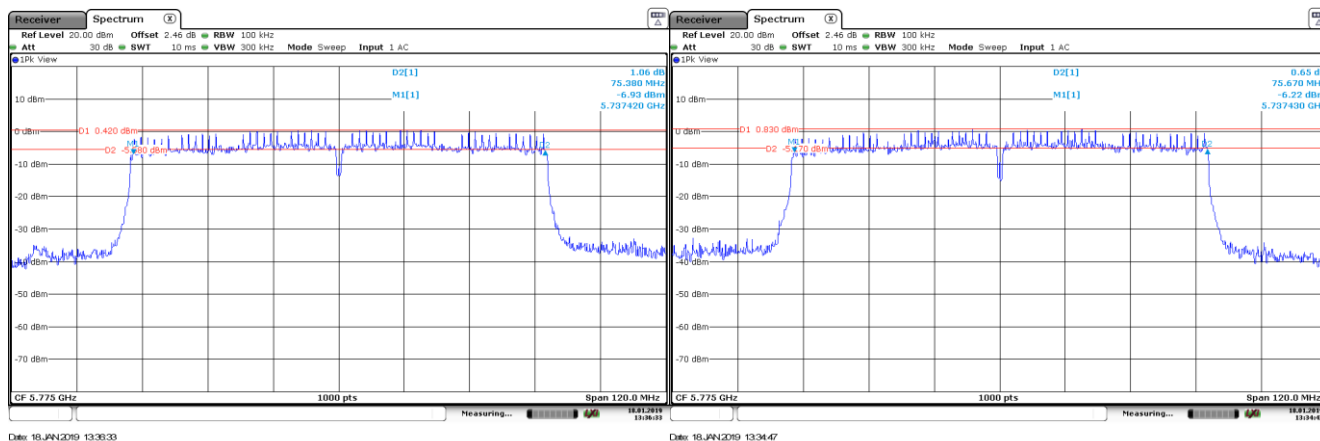
Channel 138



CORE 0

CORE 2

Channel 155

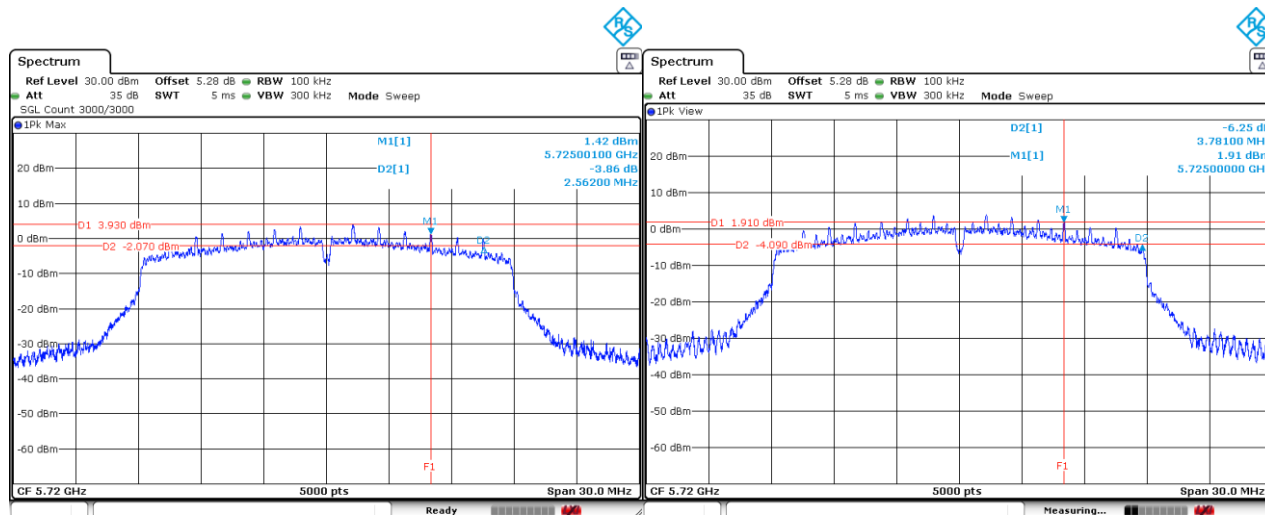


CORE 0

CORE 2

Mode : 802.11n HT20 – TxBF – 20MHz – MIMO –CORE 0 & CORE 2

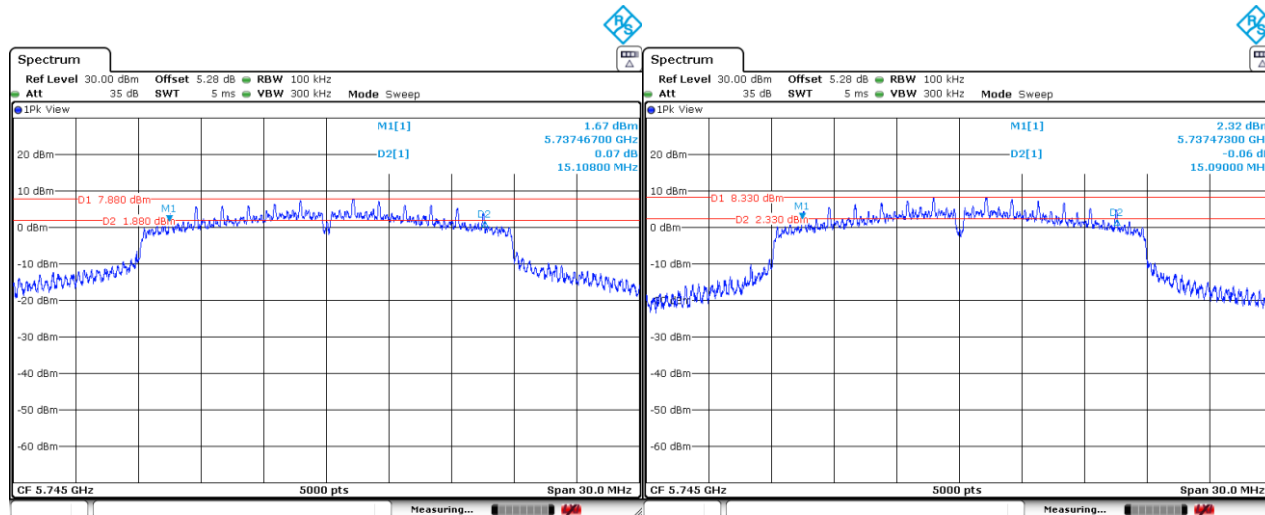
Channel 144



CORE 0

CORE 2

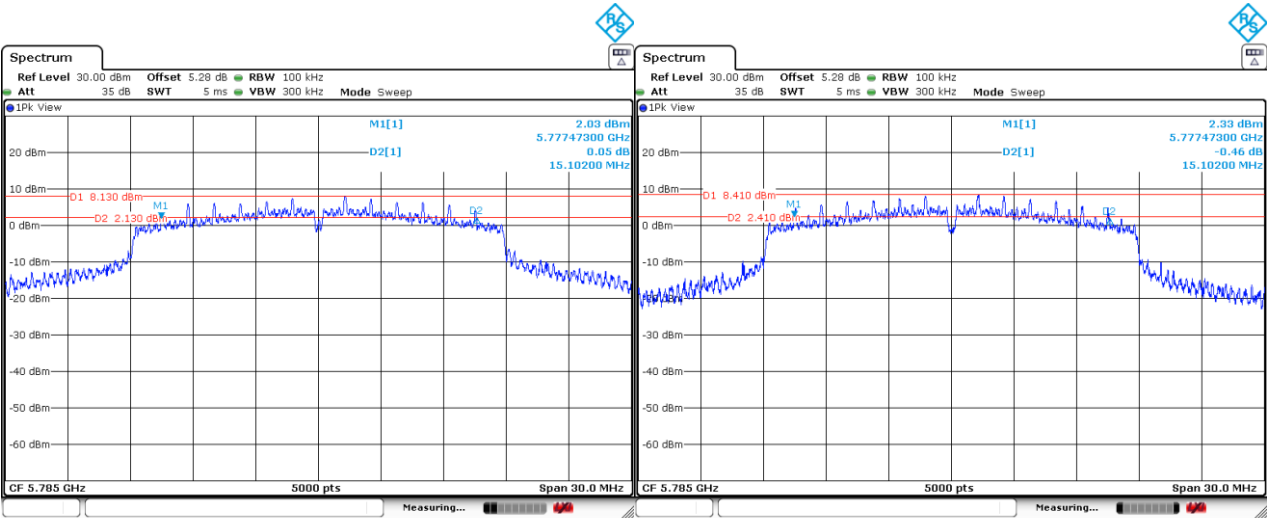
Channel 149



CORE 0

CORE 2

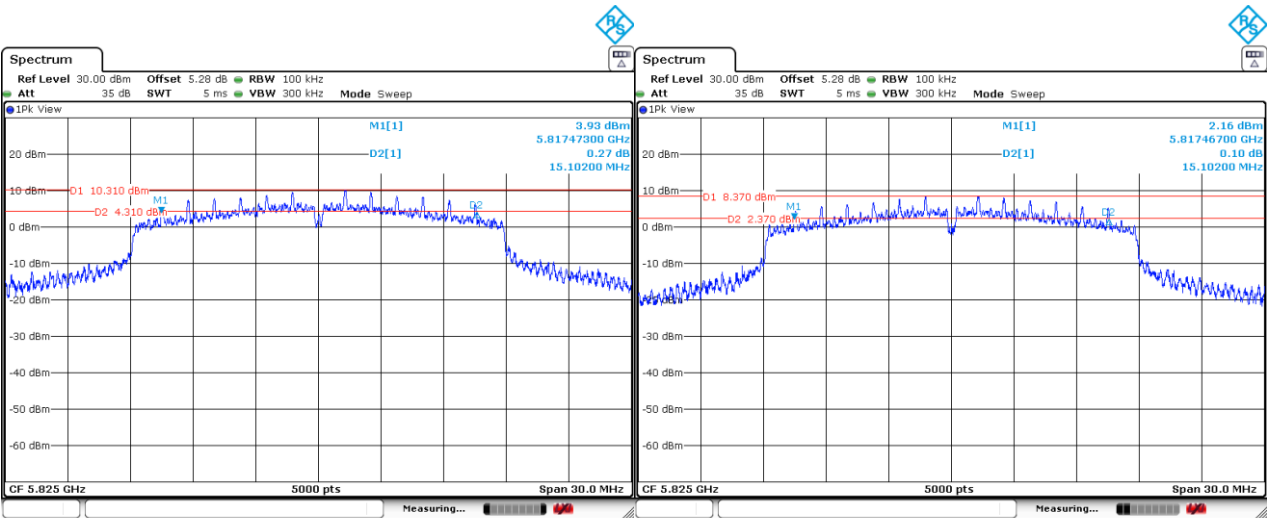
Channel 157



CORE 0

CORE 2

Channel 165

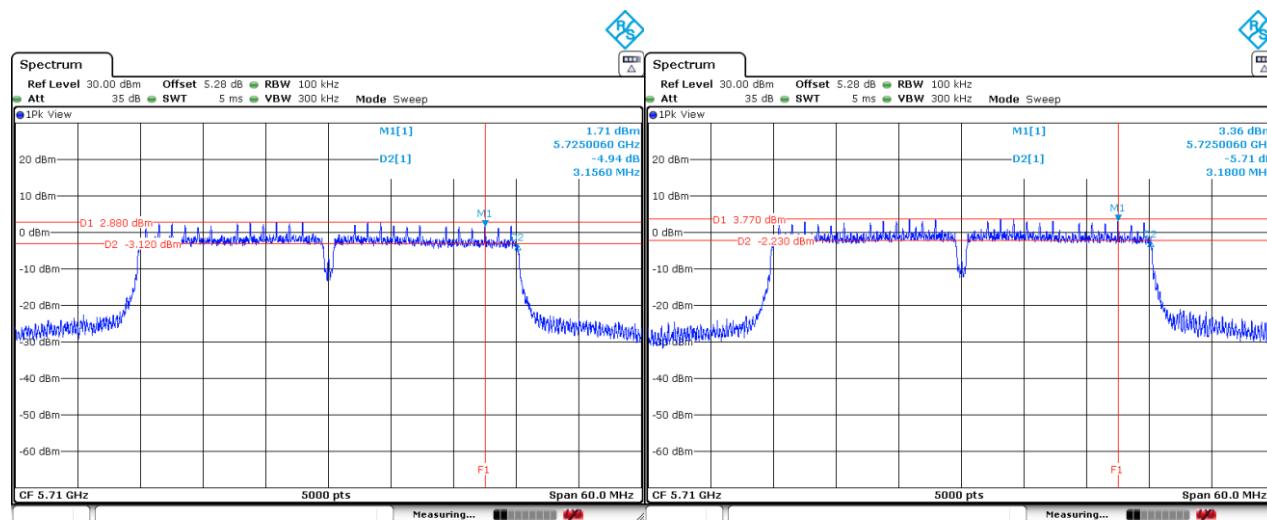


CORE 0

CORE 2

Mode : 802.11n HT40 – TxBF – 40MHz – MIMO –CORE 0 & CORE 2

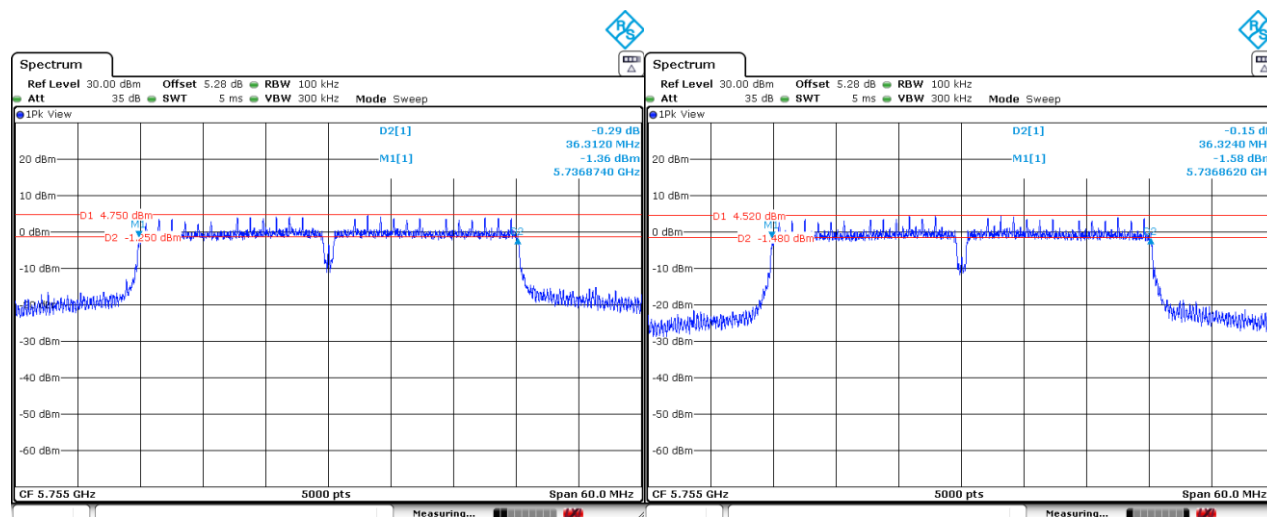
Channel 142



CORE 0

CORE 2

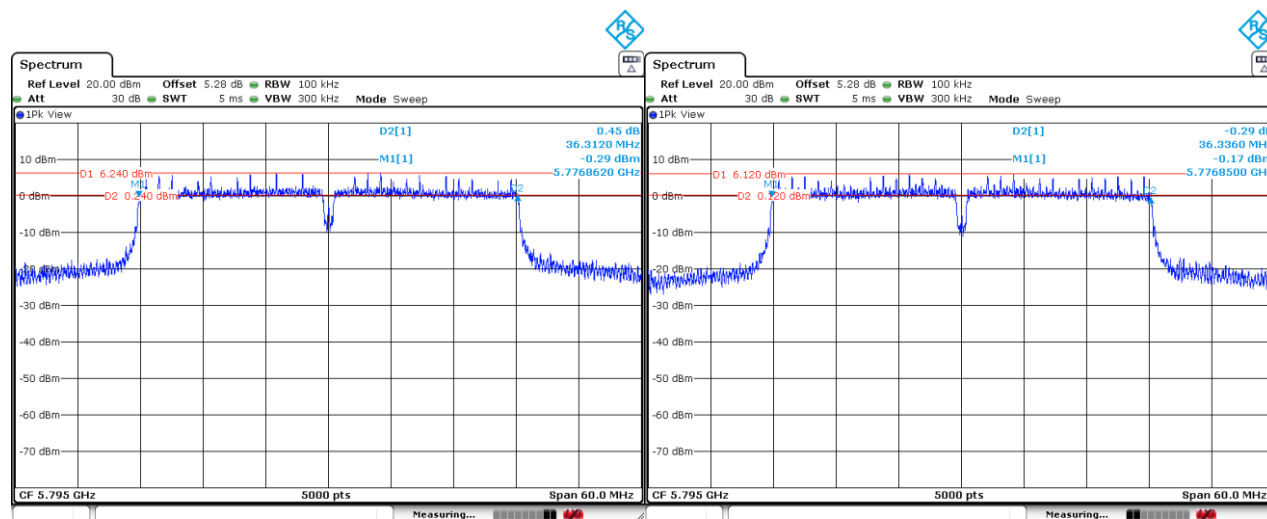
Channel 151



CORE 0

CORE 2

Channel 159

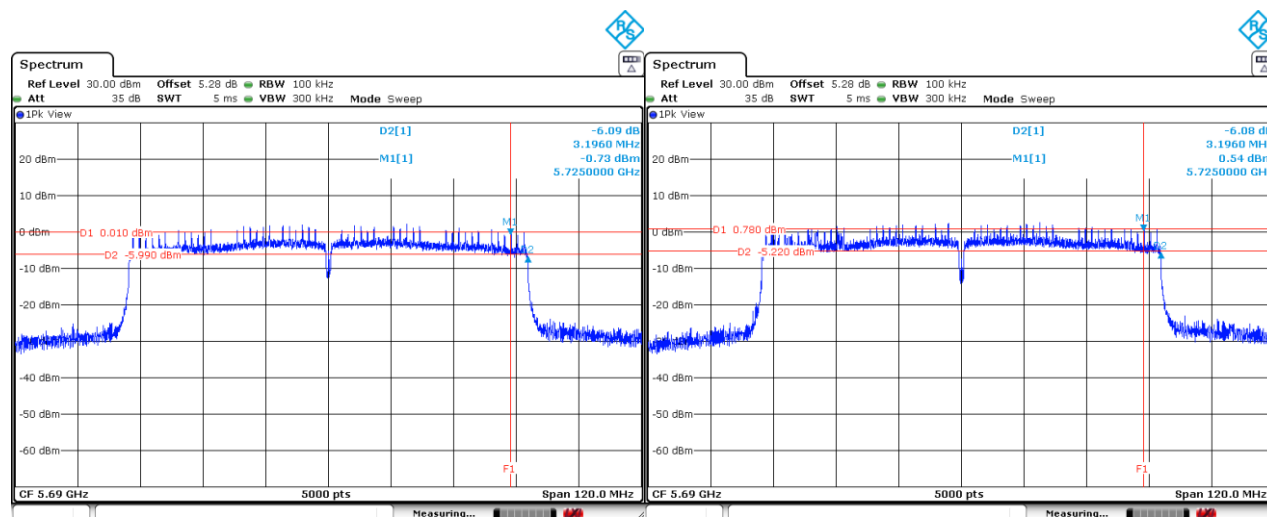


CORE 0

CORE 2

Mode : 802.11ac VHT80 – TxBF – 80MHz – MIMO – CORE 0 & CORE 2

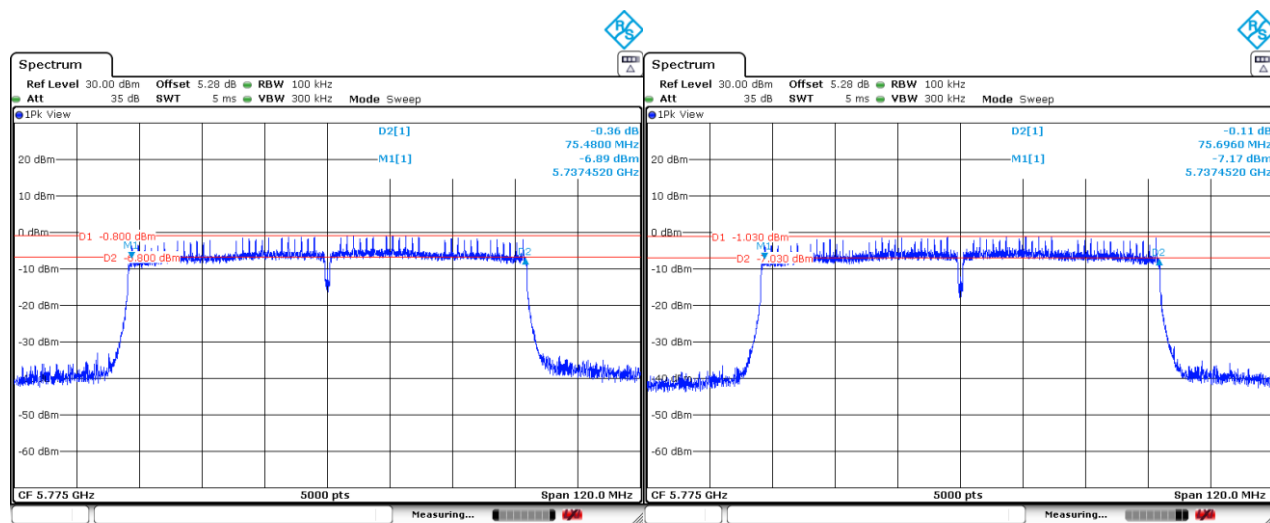
Channel 138



CORE 0

CORE 2

Channel 155

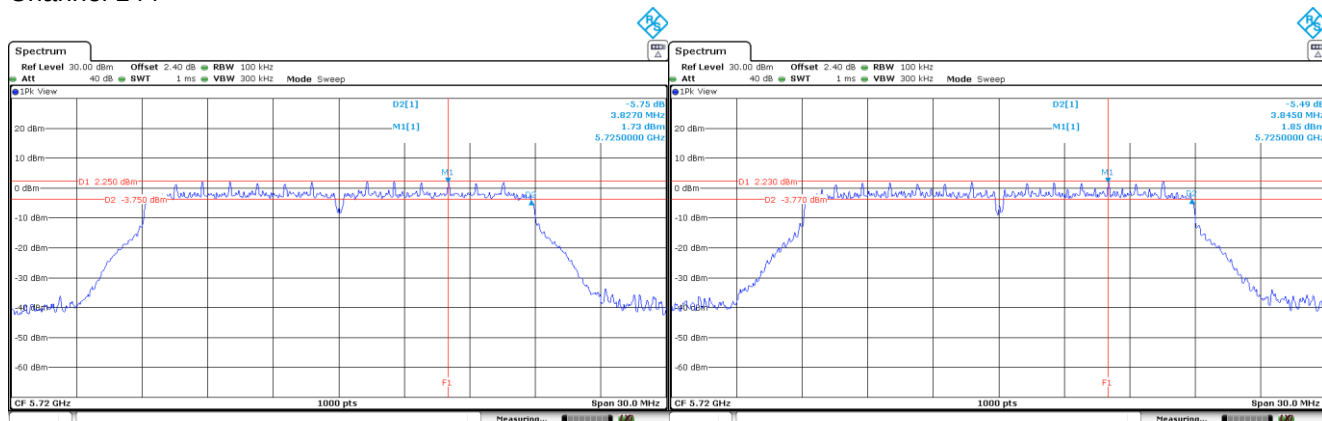


CORE 0

CORE 2

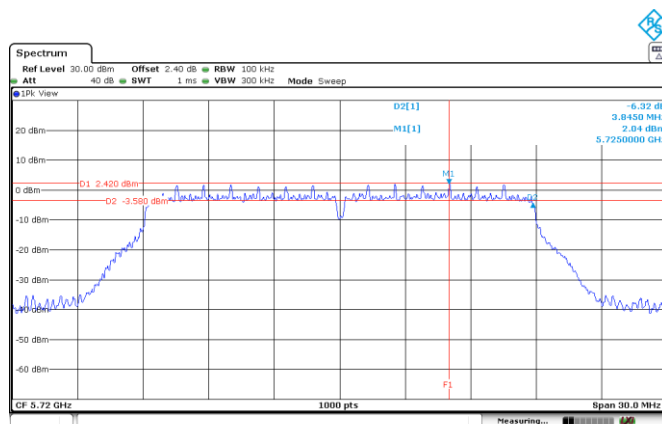
Mode : 802.11n HT20 – CDD – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

Channel 144



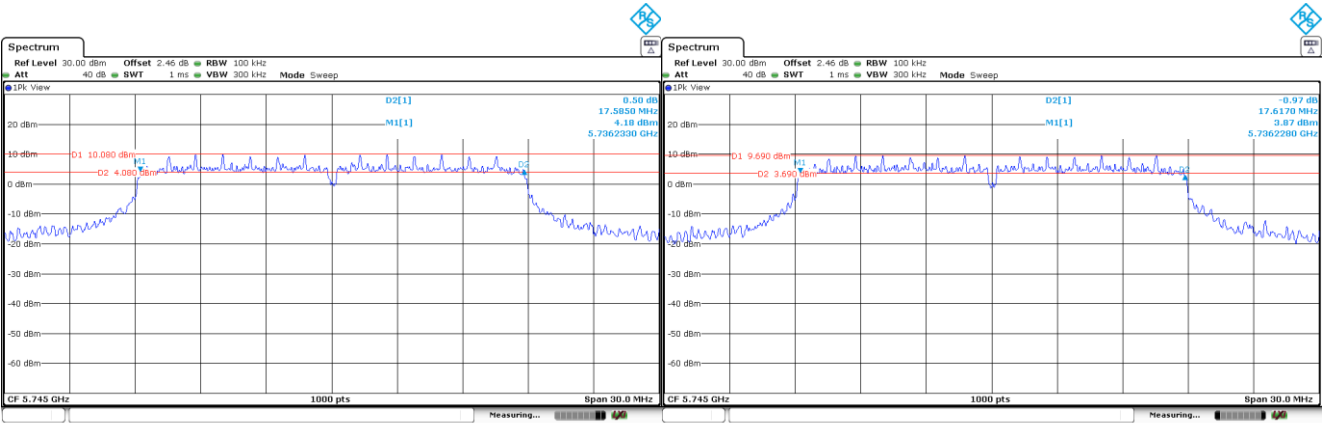
CORE 0

CORE 1



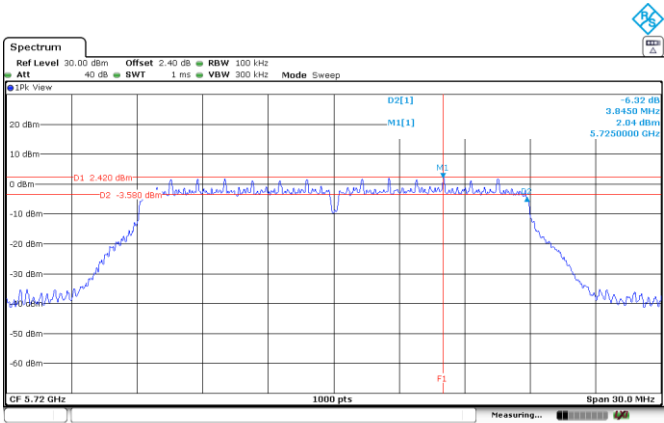
CORE 2

Channel 149



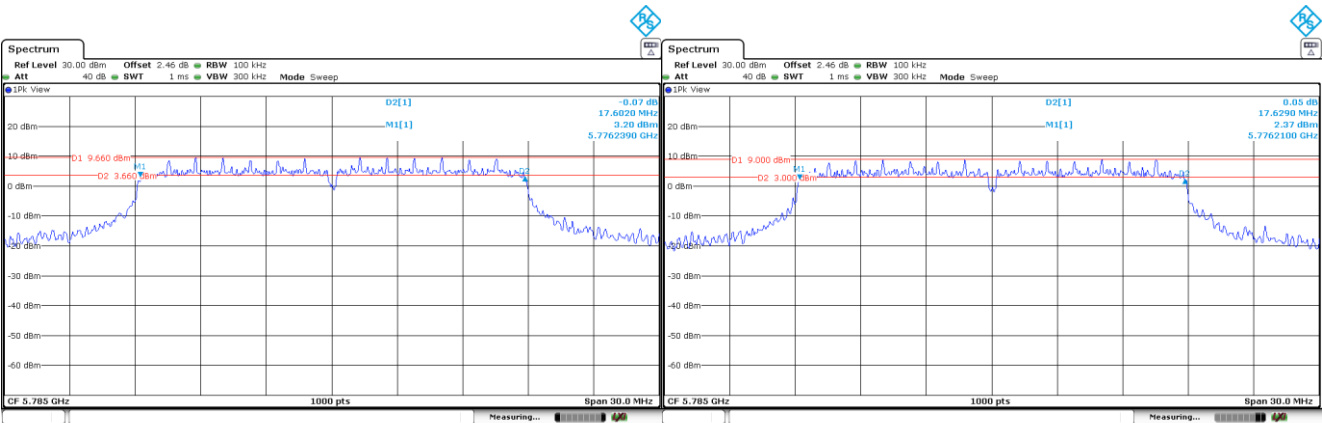
CORE 0

CORE 1



CORE 2

Channel 157



CORE 0

CORE 1