

Radiated Spurious Emissions data(9 kHz ~ 40 GHz) : MIMO(SDM) & 802.11ax(HE40)

Band	Tested Channel	Tone	RU	Freq. (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
U-NII 3	151 (5755 MHz)	26	0	5713.16	H	Z	PK	49.34	3.17	N/A	52.51	68.20	15.69
		26	0	5724.69	H	Z	PK	55.14	2.97	N/A	58.11	78.20	20.09
		484	65	5712.90	H	Z	PK	49.74	3.17	N/A	52.91	68.20	15.29
		484	65	5723.54	H	Z	PK	51.19	2.97	N/A	54.16	78.20	24.04
		SU	NA	5714.55	H	Z	PK	49.71	3.17	N/A	52.88	68.20	15.32
		SU	NA	5722.77	H	Z	PK	53.54	2.97	N/A	56.51	78.20	21.69
		26	0	11475.85	V	X	PK	43.60	11.27	N/A	54.87	74.00	19.13
		26	0	11476.17	V	X	AV	31.96	11.27	N/A	43.23	54.00	10.77
		SU	NA	11511.14	V	X	PK	43.32	11.40	N/A	54.72	74.00	19.28
		SU	NA	11511.49	V	X	AV	32.30	11.40	N/A	43.70	54.00	10.30
	159 (5795 MHz)	26	17	5852.80	H	Z	PK	48.49	3.62	N/A	52.11	78.20	26.09
		26	17	5860.28	H	Z	PK	48.83	3.69	N/A	52.52	68.20	15.68
		484	65	5850.24	H	Z	PK	47.75	3.62	N/A	51.37	78.20	26.83
		484	65	5875.00	H	Z	PK	48.82	3.69	N/A	52.51	68.20	15.69
		SU	NA	5851.20	H	Z	PK	48.75	3.62	N/A	52.37	78.20	25.83
		SU	NA	5861.68	H	Z	PK	47.31	3.69	N/A	51.00	68.20	17.20
		26	0	11552.29	V	X	PK	43.37	11.60	N/A	54.97	74.00	19.03
		26	0	11552.21	V	X	AV	32.22	11.60	N/A	43.82	54.00	10.18
		SU	NA	11588.62	V	X	PK	44.15	11.75	N/A	55.90	74.00	18.10
SU	NA	11588.66	V	X	AV	32.93	11.75	N/A	44.68	54.00	9.32		

Note.

- The radiated emissions were investigated up to the 10th harmonic of the fundamental frequency. And no other spurious and harmonic emissions were found greater than listed emissions on above table.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$
 Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
 DCF = Distance Correction Factor
- Information of Distance Factor
 For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
 - Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
 When distance factor is "N/A", the distance is 3 m and distance factor is not applied.
- The limit is converted to field strength.

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 \text{ dB} = -27 \text{ dBm} + 95.2 = 68.2 \text{ dBuV/m}$$

Radiated Spurious Emissions data(9 kHz ~ 40 GHz) : MIMO(SDM) & 802.11ax(HE80)

Band	Tested Channel	Tone	RU	Freq. (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
U-NII 1	42 (5210 MHz)	26	0	5149.37	H	Z	PK	59.29	1.84	N/A	61.13	74.00	12.87
		26	0	5149.92	H	Z	AV	39.62	1.84	N/A	41.46	54.00	12.54
		996	67	5149.93	H	Z	PK	59.60	1.84	N/A	61.44	74.00	12.56
		996	67	5149.93	H	Z	AV	42.37	1.84	N/A	44.21	54.00	9.79
		SU	NA	5149.43	H	Z	PK	52.64	1.84	N/A	54.48	74.00	19.52
		SU	NA	5149.87	H	Z	AV	41.78	1.84	N/A	43.62	54.00	10.38
		26	0	10344.88	V	X	PK	48.62	10.67	N/A	59.29	68.20	8.91
		SU	NA	10419.55	V	X	PK	43.30	10.63	N/A	53.93	68.20	14.27
U-NII 2A	58 (5290 MHz)	26	36	5361.45	H	Z	PK	57.63	2.98	N/A	60.61	74.00	13.39
		26	36	5361.44	H	Z	AV	39.42	2.98	N/A	42.40	54.00	11.60
		996	67	5367.75	H	Z	PK	58.28	2.98	N/A	61.26	74.00	12.74
		996	67	5350.67	H	Z	AV	41.76	2.98	N/A	44.74	54.00	9.26
		SU	NA	5351.44	H	Z	PK	51.89	2.98	N/A	54.87	74.00	19.13
		SU	NA	5350.07	H	Z	AV	40.90	2.98	N/A	43.88	54.00	10.12
		26	36	10656.05	V	X	PK	44.49	10.86	N/A	55.35	74.00	18.65
		26	36	10655.74	V	X	AV	33.15	10.86	N/A	44.01	54.00	9.99
U-NII 2C	106 (5530 MHz)	26	0	5459.22	H	Z	PK	51.32	3.15	N/A	54.47	74.00	19.53
		26	0	5459.76	H	Z	AV	37.87	3.15	N/A	41.02	54.00	12.98
		26	0	5468.78	H	Z	PK	55.12	3.17	N/A	58.29	68.20	9.91
		996	67	5459.90	H	Z	PK	49.48	3.15	N/A	52.63	74.00	21.37
		996	67	5459.68	H	Z	AV	37.71	3.15	N/A	40.86	54.00	13.14
		996	67	5469.58	H	Z	PK	56.03	3.17	N/A	59.20	68.20	9.00
		SU	NA	5458.70	H	Z	PK	50.05	3.15	N/A	53.20	74.00	20.80
		SU	NA	5458.23	H	Z	AV	39.22	3.15	N/A	42.37	54.00	11.63
		SU	NA	5469.38	H	Z	PK	49.86	3.17	N/A	53.03	68.20	15.17
		26	0	10984.03	V	X	PK	44.20	10.96	N/A	55.16	74.00	18.84
		26	0	10983.97	V	X	AV	32.71	10.96	N/A	43.67	54.00	10.33
		SU	NA	11059.45	V	X	PK	43.70	10.93	N/A	54.63	74.00	19.37
	SU	NA	11059.01	V	X	AV	32.72	10.93	N/A	43.65	54.00	10.35	
	122 (5610 MHz)	26	0	11142.75	V	X	PK	43.84	10.90	N/A	54.74	74.00	19.26
		26	0	11141.99	V	X	AV	32.11	10.90	N/A	43.01	54.00	10.99
		SU	NA	11218.60	V	X	PK	43.76	10.85	N/A	54.61	74.00	19.39
SU		NA	11218.02	V	X	AV	32.75	10.85	N/A	43.60	54.00	10.40	
138 (5690 MHz)		26	0	10301.60	V	X	PK	43.51	10.74	N/A	54.25	74.00	19.75
		26	0	11301.86	V	X	AV	31.99	10.74	N/A	42.73	54.00	11.27
		SU	NA	11379.85	V	X	PK	43.39	10.95	N/A	54.34	74.00	19.66
		SU	NA	11380.06	V	X	AV	32.43	10.95	N/A	43.38	54.00	10.62
U-NII 3	155 (5775 MHz)	26	0	5714.00	Z	H	PK	53.05	3.17	N/A	56.22	68.20	11.98
		26	0	5724.92	Z	H	PK	62.81	2.97	N/A	65.78	78.20	12.42
		996	67	5714.83	Z	H	PK	52.40	3.17	N/A	55.57	68.20	12.63
		996	67	5724.64	Z	H	PK	55.45	2.97	N/A	58.42	78.20	19.78
		SU	NA	5714.61	Z	H	PK	48.49	3.17	N/A	51.66	68.20	16.54
		SU	NA	5723.40	Z	H	PK	50.96	2.97	N/A	53.93	78.20	24.27
		26	36	5851.50	Z	H	PK	55.10	3.62	N/A	58.72	78.20	19.48
		26	36	5864.04	Z	H	PK	51.15	3.69	N/A	54.84	68.20	13.36
		996	67	5858.16	Z	H	PK	52.97	3.62	N/A	56.59	78.20	21.61
		996	67	5860.48	Z	H	PK	53.86	3.69	N/A	57.55	68.20	10.65
		SU	NA	5850.88	Z	H	PK	49.53	3.62	N/A	53.15	78.20	25.05
		SU	NA	5860.22	Z	H	PK	47.01	3.69	N/A	50.70	68.20	17.50
		26	0	11474.00	Z	H	PK	43.77	11.27	N/A	55.04	74.00	18.96
		26	0	11473.54	Z	H	AV	31.97	11.27	N/A	43.24	54.00	10.76
		SU	NA	11550.35	Z	H	PK	44.26	11.57	N/A	55.83	74.00	18.17
		SU	NA	11549.26	Z	H	AV	32.50	11.57	N/A	44.07	54.00	9.93

Note.

1. The radiated emissions were investigated up to the 10th harmonic of the fundamental frequency. And no other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Sample Calculation.
Margin = Limit – Result / Result = Reading + T.F+ DCF / T.F = AF + CL – AG
Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
DCF = Distance Correction Factor
3. Information of Distance Factor
For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
- Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
When distance factor is "N/A", the distance is 3 m and distance factor is not applied.
4. The limit is converted to field strength.
 $E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 \text{ dB} = -27 \text{ dBm} + 95.2 = 68.2 \text{ dBuV/m}$

Radiated Spurious Emissions data(9 kHz ~ 40 GHz) : MIMO(SDM) & 802.11ax(HE80) & With Wireless charging pad

Band	Tested Channel	Tone	RU	Freq. (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
U-NII 2A	58 (5290 MHz)	SU	NA	5351.51	V	X	PK	52.33	2.98	N/A	55.31	74.00	18.69
		SU	NA	5350.52	V	X	AV	42.00	2.98	N/A	44.98	54.00	9.02
		26	36	10656.50	V	X	PK	43.44	10.86	N/A	54.30	74.00	19.71
		26	36	10655.45	V	X	AV	32.70	10.86	N/A	43.56	54.00	10.44
U-NII 2C	106 (5530 MHz)	SU	NA	5459.05	V	X	PK	51.63	3.15	N/A	54.78	74.00	19.22
		SU	NA	5458.67	V	X	AV	41.03	3.15	N/A	44.18	54.00	9.83
		SU	NA	5464.12	V	X	PK	51.96	3.17	N/A	55.13	68.20	13.07
		SU	NA	11059.64	V	X	PK	44.21	10.93	N/A	55.14	74.00	18.86
		SU	NA	11059.10	V	X	AV	33.14	10.93	N/A	44.07	54.00	9.94

Note.

- The radiated emissions were investigated up to the 10th harmonic of the fundamental frequency. And no other spurious and harmonic emissions were found greater than listed emissions on above table.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$
 Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
 DCF = Distance Correction Factor
- Information of Distance Factor
 For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
 - Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
 When distance factor is "N/A", the distance is 3 m and distance factor is not applied.
- The limit is converted to field strength.

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 \text{ dB} = -27 \text{ dBm} + 95.2 = 68.2 \text{ dBuV/m}$$

Radiated Spurious Emissions data(9 kHz ~ 40 GHz) : MIMO(CDD) & 802.11ax(HE40) With Dual Display

Band	Tested Channel	Tone	RU	Freq. (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
U-NII 1	38 (5190 MHz)	484	65	5149.85	H	Z	PK	63.40	1.84	N/A	65.24	74.00	8.76
		484	65	5149.89	H	Z	AV	45.93	1.84	N/A	47.77	54.00	6.23
		484	65	10379.02	H	Z	PK	43.81	10.64	N/A	54.45	68.20	13.75
		484	65	15569.88	H	Z	PK	43.81	12.94	N/A	56.75	74.00	17.25
		484	65	15569.53	H	Z	AV	32.31	12.94	N/A	45.25	54.00	8.75

Note.

- The radiated emissions were investigated up to the 10th harmonic of the fundamental frequency. And no other spurious and harmonic emissions were found greater than listed emissions on above table.
- Sample Calculation.
 $\text{Margin} = \text{Limit} - \text{Result}$ / $\text{Result} = \text{Reading} + \text{T.F} + \text{DCF}$ / $\text{T.F} = \text{AF} + \text{CL} - \text{AG}$
 Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
 DCF = Distance Correction Factor
- Information of Distance Factor
 For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
 - Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
 When distance factor is "N/A", the distance is 3 m and distance factor is not applied.
- The limit is converted to field strength.
 $E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 \text{ dB} = -27 \text{ dBm} + 95.2 = 68.2 \text{ dBuV/m}$

Radiated Spurious Emissions data(9 kHz ~ 40 GHz) : MIMO(CDD) & 802.11ax(HE40) With Dual Display

Band	Tested Channel	Tone	RU	Freq. (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
U-NII 2A	62 (5310 MHz)	484	65	5351.55	H	Z	PK	58.16	2.98	N/A	61.14	74.00	12.86
		484	65	5350.59	H	Z	AV	42.44	2.98	N/A	45.42	54.00	8.58
		484	65	10618.24	H	Z	PK	43.05	10.78	N/A	53.83	74.00	20.17
		484	65	10618.52	H	Z	AV	32.04	10.78	N/A	42.82	54.00	11.18
		484	65	15929.19	H	Z	PK	41.88	14.37	N/A	56.25	74.00	17.75
		484	65	15929.33	H	Z	AV	31.00	14.37	N/A	45.37	54.00	8.63

Note.

- The radiated emissions were investigated up to the 10th harmonic of the fundamental frequency. And no other spurious and harmonic emissions were found greater than listed emissions on above table.
- Sample Calculation.
 $\text{Margin} = \text{Limit} - \text{Result}$ / $\text{Result} = \text{Reading} + \text{T.F} + \text{DCF}$ / $\text{T.F} = \text{AF} + \text{CL} - \text{AG}$
 Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
 DCF = Distance Correction Factor
- Information of Distance Factor
 For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
 - Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
 When distance factor is "N/A", the distance is 3 m and distance factor is not applied.
- The limit is converted to field strength.
 $E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 \text{ dB} = -27 \text{ dBm} + 95.2 = 68.2 \text{ dBuV/m}$

Radiated Spurious Emissions data(9 kHz ~ 40 GHz) : MIMO(SDM) & 802.11ax(HE80) With Dual Display

Band	Tested Channel	Tone	RU	Freq. (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
U-NII 2C	106 (5530 MHz)	996	67	5459.44	H	Z	PK	49.13	3.15	N/A	52.28	74.00	21.72
		996	67	5459.78	H	Z	AV	38.15	3.15	N/A	41.30	54.00	12.70
		996	67	11058.41	H	Z	PK	44.11	10.93	N/A	55.04	74.00	18.96
		996	67	11058.92	H	Z	AV	33.08	10.93	N/A	44.01	54.00	9.99
		996	67	16589.76	H	Z	PK	42.28	17.30	N/A	59.58	68.20	8.62

Note.

- The radiated emissions were investigated up to the 10th harmonic of the fundamental frequency. And no other spurious and harmonic emissions were found greater than listed emissions on above table.
- Sample Calculation.
 $Margin = Limit - Result$ / $Result = Reading + T.F + DCF$ / $T.F = AF + CL - AG$
 Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
 DCF = Distance Correction Factor
- Information of Distance Factor
 For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
 - Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
 When distance factor is "N/A", the distance is 3 m and distance factor is not applied.
- The limit is converted to field strength.
 $E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 \text{ dB} = -27 \text{ dBm} + 95.2 = 68.2 \text{ dBuV/m}$

Radiated Spurious Emissions data(9 kHz ~ 40 GHz) : MIMO(CDD) & 802.11ax(HE20) With Dual Display

Band	Tested Channel	Tone	RU	Freq. (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
U-NII 3	165 (5825 MHz)	SU	NA	5850.36	H	Z	PK	51.91	3.62	N/A	55.53	78.20	22.67
		SU	NA	5875.09	H	Z	PK	49.78	3.45	N/A	53.23	68.20	14.97
		SU	NA	11648.23	H	Z	PK	45.14	11.80	N/A	56.94	74.00	17.06
		SU	NA	11648.73	H	Z	AV	32.77	11.80	N/A	44.57	54.00	9.43
		SU	NA	17475.68	H	Z	PK	40.76	23.69	N/A	64.45	68.20	3.75

Note.

- The radiated emissions were investigated up to the 10th harmonic of the fundamental frequency. And no other spurious and harmonic emissions were found greater than listed emissions on above table.
- Sample Calculation.
 $Margin = Limit - Result$ / $Result = Reading + T.F + DCF$ / $T.F = AF + CL - AG$
 Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
 DCF = Distance Correction Factor
- Information of Distance Factor
 For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
 - Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
 When distance factor is "N/A", the distance is 3 m and distance factor is not applied.
- The limit is converted to field strength.
 $E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 \text{ dB} = -27 \text{ dBm} + 95.2 = 68.2 \text{ dBuV/m}$

Radiated Spurious Emissions data(9 kHz ~ 40 GHz) : MIMO(CDD) & 802.11ax(HE40) With Dual Display+ WPC

Band	Tested Channel	Tone	RU	Freq. (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
U-NII 1	38 (5190 MHz)	484	65	5149.06	V	X	PK	58.08	1.84	N/A	59.92	74.00	14.08
		484	65	5149.65	V	X	AV	44.03	1.84	N/A	45.87	54.00	8.13
		484	65	10380.99	V	X	PK	44.34	10.64	N/A	54.98	68.20	13.22
		484	65	15570.69	V	X	PK	43.72	12.94	N/A	56.66	74.00	17.34
		484	65	15571.13	V	X	AV	32.12	12.94	N/A	45.06	54.00	8.94

Note.

- The radiated emissions were investigated up to the 10th harmonic of the fundamental frequency. And no other spurious and harmonic emissions were found greater than listed emissions on above table.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$
 Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
 DCF = Distance Correction Factor
- Information of Distance Factor
 For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
 - Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
 When distance factor is "N/A", the distance is 3 m and distance factor is not applied.
- The limit is converted to field strength.

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 \text{ dB} = -27 \text{ dBm} + 95.2 = 68.2 \text{ dBuV/m}$$

8.7 AC Conducted Emissions

■ Test Requirements and limit, §15.207

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

■ Test Configuration

See test photographs for the actual connections between EUT and support equipment.

■ Test Procedure

Conducted emissions from the EUT were measured according to the ANSI C63.10-2013.

1. The test procedure is performed in a 6.5 m \times 3.5 m \times 3.5 m (L \times W \times H) shielded room. The EUT along with its peripherals were placed on a 1.0 m (W) \times 1.5 m (L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.
2. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.
3. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.
4. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

■ Test Results: **Comply**

Note 1: See next pages for actual measured spectrum plots and data for worst case result.

AC Line Conducted Emissions (Graph)

Test Mode: U-NII 1 & 802.11ax HE20 & MIMO(CDD) & 5240 MHz

Results of Conducted Emission

DTNC

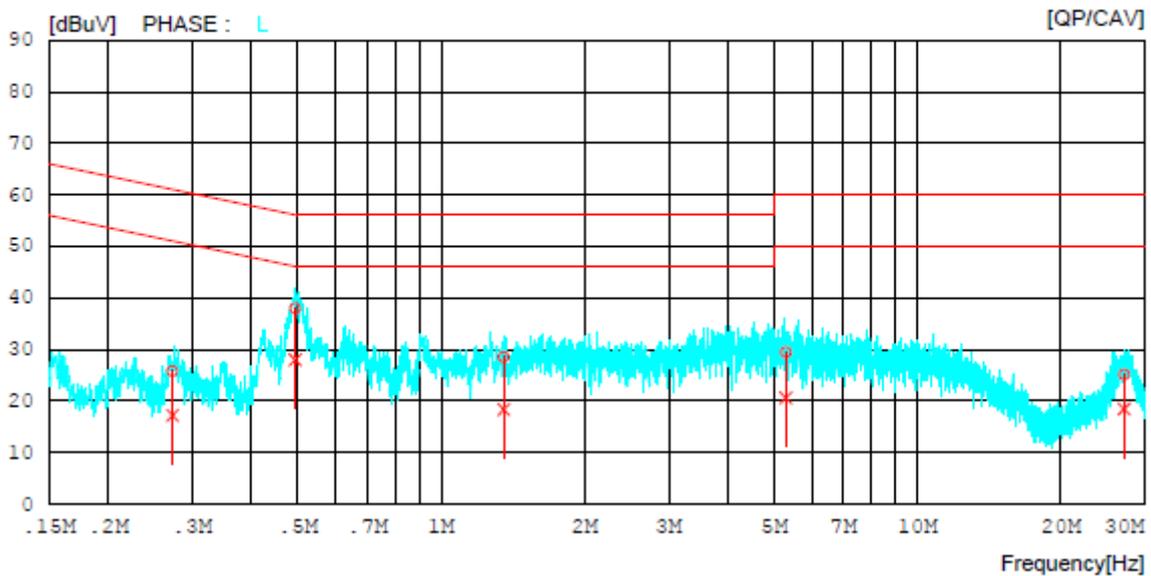
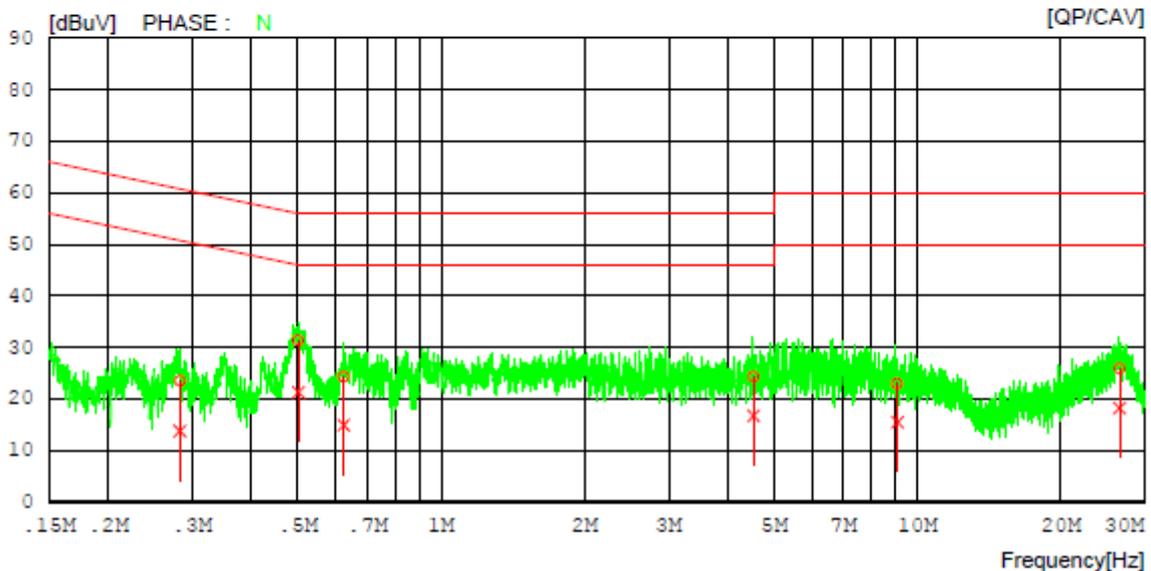
Date 2019-12-27

Order No.
Model No. OA2001
Serial No.
Test Condition ax_5.1G

Reference No.
Power Supply 120 V, 60 Hz
Temp/Humi. 23 °C / 35 %
Operator Kim Jung woo

Memo

LIMIT : FCC P15.207 QP
FCC P15.207 AV



AC Line Conducted Emissions (Data List)

Test Mode: U-NII 1 & 802.11ax HE20 & MIMO(CDD) & 5240 MHz

Results of Conducted Emission

DTNC

Date 2019-12-27

Order No.		Reference No.	
Model No.	OA2001	Power Supply	120 V, 60 Hz
Serial No.		Temp/Humi.	23 'C / 35 %
Test Condition	ax_5.1G	Operator	Kim Jung woo

Memo

 LIMIT : FCC P15.207 QP
 FCC P15.207 AV

NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	CAV [dBuV]		QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]			
1	0.28258	13.52	3.84	9.94	23.46	13.78	60.74	50.74	37.28	36.96	N
2	0.50103	21.41	11.39	9.95	31.36	21.34	56.00	46.00	24.64	24.66	N
3	0.62377	14.31	4.95	9.96	24.27	14.91	56.00	46.00	31.73	31.09	N
4	4.52815	14.21	6.57	10.15	24.36	16.72	56.00	46.00	31.64	29.28	N
5	9.07945	12.60	5.22	10.30	22.90	15.52	60.00	50.00	37.10	34.48	N
6	26.59114	15.25	7.57	10.69	25.94	18.26	60.00	50.00	34.06	31.74	N
7	0.27250	15.86	7.22	9.94	25.80	17.16	61.04	51.04	35.24	33.88	L
8	0.49333	27.96	18.01	9.95	37.91	27.96	56.11	46.11	18.20	18.15	L
9	1.35286	18.50	8.29	9.99	28.49	18.28	56.00	46.00	27.51	27.72	L
10	5.29168	19.20	10.45	10.16	29.36	20.61	60.00	50.00	30.64	29.39	L
11	27.21745	14.40	7.74	10.67	25.07	18.41	60.00	50.00	34.93	31.59	L

AC Line Conducted Emissions (Graph)

Test Mode: U-NII 2A & 802.11ax HE20 & MIMO(CDD) & 5320 MHz

Results of Conducted Emission

DTNC

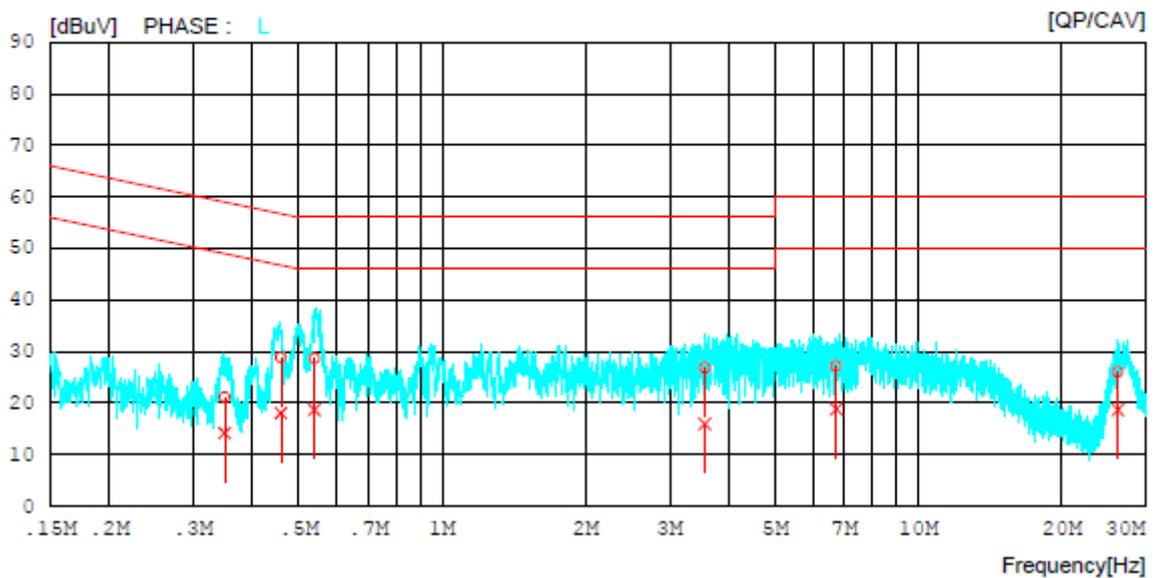
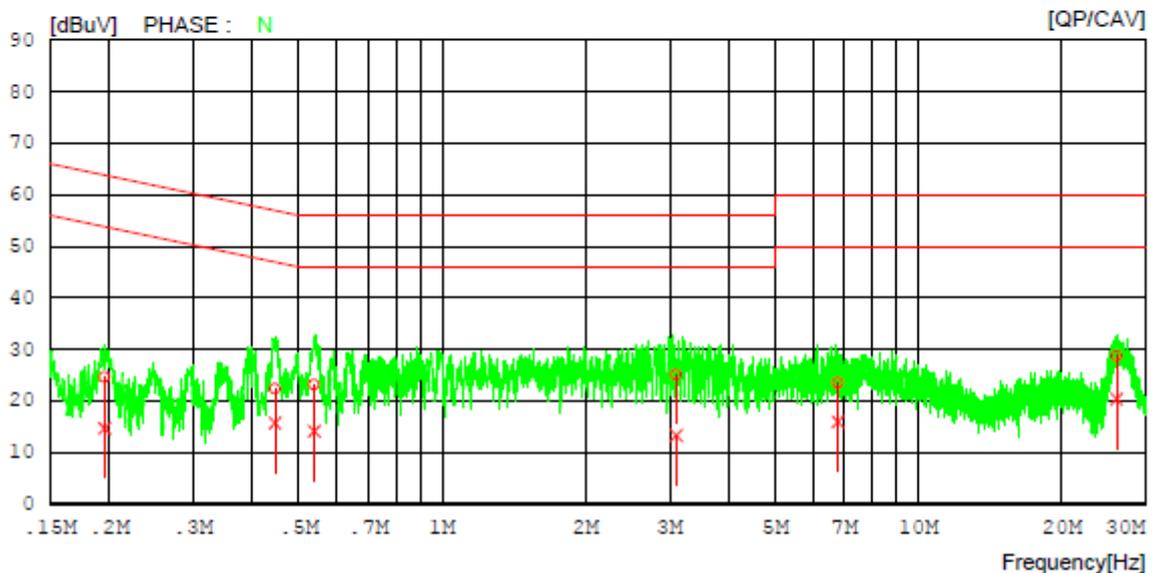
Date 2019-12-27

Order No.
Model No. OA2001
Serial No.
Test Condition ax_5.3G

Reference No.
Power Supply 120 V, 60 Hz
Temp/Humi. 23 °C / 35 %
Operator Kim Jung woo

Memo

LIMIT : FCC P15.207 QP
FCC P15.207 AV



AC Line Conducted Emissions (Data List)

Test Mode: U-NII 2A & 802.11ax HE20 & MIMO(CDD) & 5320 MHz

Results of Conducted Emission

DTNC

Date 2019-12-27

Order No.		Reference No.	
Model No.	OA2001	Power Supply	120 V, 60 Hz
Serial No.		Temp/Humi.	23 'C / 35 %
Test Condition	ax_5.3G	Operator	Kim Jung woo

Memo

 LIMIT : FCC P15.207 QP
 FCC P15.207 AV

NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	CAV [dBuV]		QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]			
1	0.19514	14.66	4.81	9.94	24.60	14.75	63.82	53.82	39.22	39.07	N
2	0.44550	12.40	5.75	9.95	22.35	15.70	56.96	46.96	34.61	31.26	N
3	0.53806	13.26	4.19	9.95	23.21	14.14	56.00	46.00	32.79	31.86	N
4	3.10096	15.00	3.23	10.07	25.07	13.30	56.00	46.00	30.93	32.70	N
5	6.77337	13.34	5.79	10.22	23.56	16.01	60.00	50.00	36.44	33.99	N
6	26.08897	18.10	9.74	10.68	28.78	20.42	60.00	50.00	31.22	29.58	N
7	0.34899	11.20	4.22	9.94	21.14	14.16	58.99	48.99	37.85	34.83	L
8	0.45844	18.88	8.08	9.95	28.83	18.03	56.72	46.72	27.89	28.69	L
9	0.53873	18.58	8.66	9.95	28.53	18.61	56.00	46.00	27.47	27.39	L
10	3.55918	16.73	5.82	10.09	26.82	15.91	56.00	46.00	29.18	30.09	L
11	6.72324	16.89	8.53	10.22	27.11	18.75	60.00	50.00	32.89	31.25	L
12	26.22049	15.28	7.98	10.65	25.93	18.63	60.00	50.00	34.07	31.37	L

AC Line Conducted Emissions (Graph)

Test Mode: U-NII 2C & 802.11ax HE20 & MIMO(CDD) & 5500 MHz

Results of Conducted Emission

DTNC

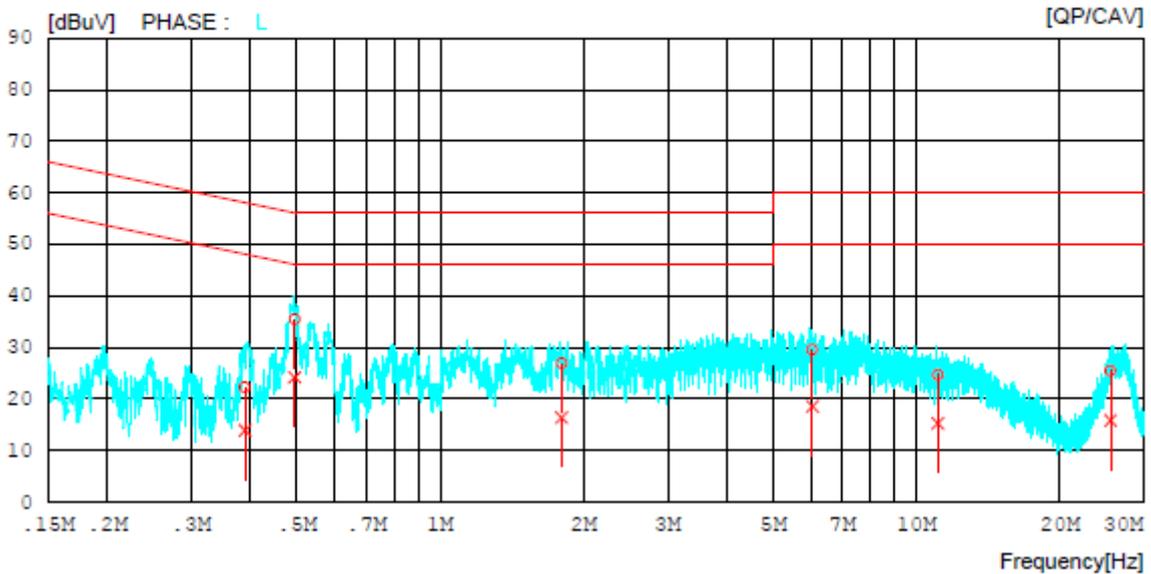
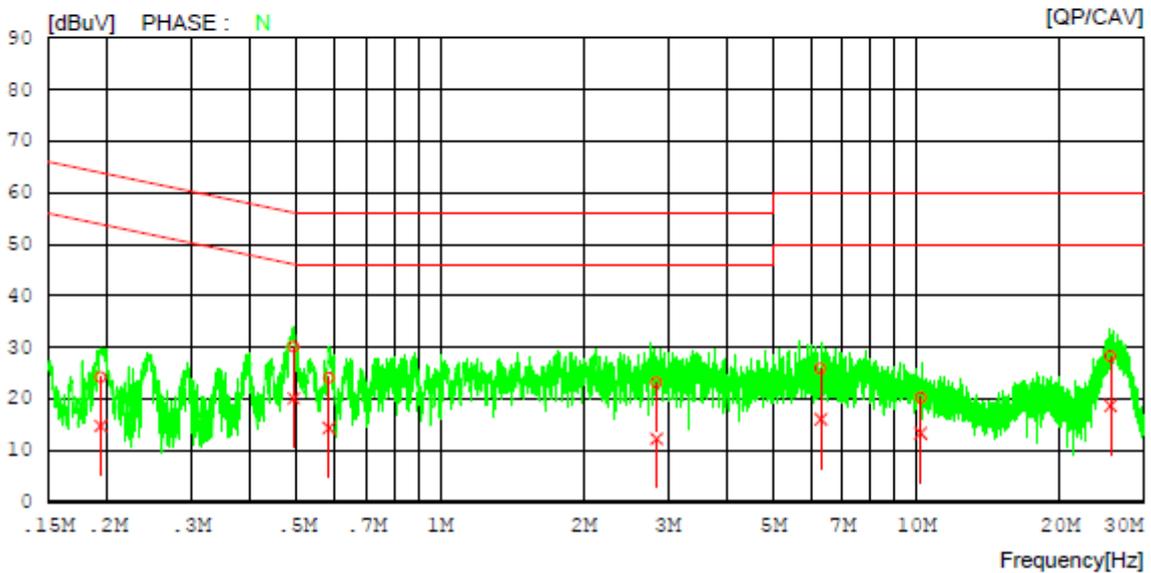
Date 2019-12-27

Order No.
Model No. OA2001
Serial No.
Test Condition ax_5.5G

Reference No.
Power Supply 120 V, 60 Hz
Temp/Humi. 23 °C / 35 %
Operator Kim Jung woo

Memo

LIMIT : FCC P15.207 QP
FCC P15.207 AV



AC Line Conducted Emissions (Data List)

Test Mode: U-NII 2C & 802.11ax HE20 & MIMO(CDD) & 5500 MHz

Results of Conducted Emission

DTNC

Date 2019-12-27

Order No.		Reference No.	
Model No.	OA2001	Power Supply	120 V, 60 Hz
Serial No.		Temp/Humi.	23 °C / 35 %
Test Condition	ax_5.5G	Operator	Kim Jung woo

Memo

 LIMIT : FCC P15.207 QP
 FCC P15.207 AV

NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	CAV [dBuV]		QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]	
1	0.19342	14.28	4.83	9.94	24.22	14.77	63.89	53.89	39.67	39.12	N
2	0.49222	20.20	10.17	9.95	30.15	20.12	56.13	46.13	25.98	26.01	N
3	0.58399	14.14	4.42	9.95	24.09	14.37	56.00	46.00	31.91	31.63	N
4	2.84430	13.06	2.20	10.07	23.13	12.27	56.00	46.00	32.87	33.73	N
5	6.29004	15.74	5.91	10.20	25.94	16.11	60.00	50.00	34.06	33.89	N
6	10.21354	9.88	3.04	10.34	20.22	13.38	60.00	50.00	39.78	36.62	N
7	25.56860	17.68	8.02	10.67	28.35	18.69	60.00	50.00	31.65	31.31	N
8	0.38854	12.27	3.90	9.95	22.22	13.85	58.09	48.09	35.87	34.24	L
9	0.49422	25.44	14.20	9.95	35.39	24.15	56.10	46.10	20.71	21.95	L
10	1.79919	16.92	6.35	10.02	26.94	16.37	56.00	46.00	29.06	29.63	L
11	6.04387	19.35	8.31	10.20	29.55	18.51	60.00	50.00	30.45	31.49	L
12	11.09353	14.19	4.83	10.37	24.56	15.20	60.00	50.00	35.44	34.80	L
13	25.56028	14.74	5.17	10.64	25.38	15.81	60.00	50.00	34.62	34.19	L

AC Line Conducted Emissions (Graph)

Test Mode: U-NII 2C & 802.11ax HE20 & MIMO(CDD) & 5785 MHz

Results of Conducted Emission

DTNC

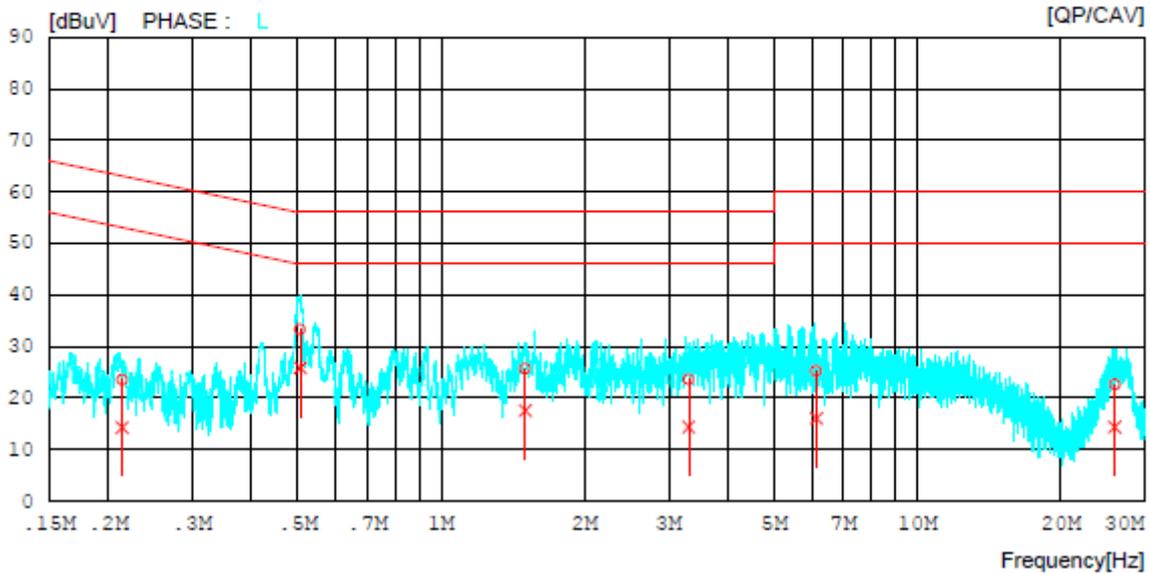
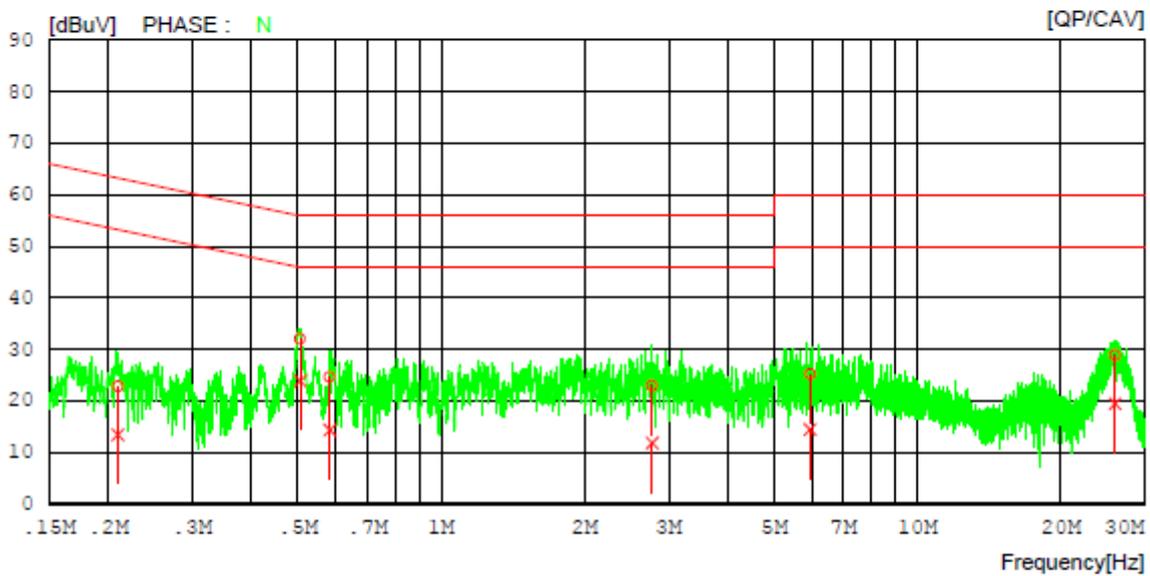
Date 2019-12-27

Order No.
Model No. OA2001
Serial No.
Test Condition ax_5.7G

Reference No.
Power Supply 120 V, 60 Hz
Temp/Humi. 23 °C / 35 %
Operator Kim Jung woo

Memo

LIMIT : FCC P15.207 QP
FCC P15.207 AV



AC Line Conducted Emissions (Data List)

Test Mode: U-NII 2C & 802.11a & MIMO(CDD) & 5785 MHz

Results of Conducted Emission

DTNC

Date 2019-12-27

Order No.		Reference No.	
Model No.	OA2001	Power Supply	120 V, 60 Hz
Serial No.		Temp/Humi.	23 °C / 35 %
Test Condition	ax_5.7G	Operator	Kim Jung woo

Memo

 LIMIT : FCC P15.207 QP
 FCC P15.207 AV

NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	CAV [dBuV]		QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]	
1	0.20932	12.89	3.57	9.94	22.83	13.51	63.23	53.23	40.40	39.72	N
2	0.50544	22.10	14.02	9.95	32.05	23.97	56.00	46.00	23.95	22.03	N
3	0.58272	14.66	4.37	9.95	24.61	14.32	56.00	46.00	31.39	31.68	N
4	2.77441	12.87	1.77	10.07	22.94	11.84	56.00	46.00	33.06	34.16	N
5	5.94962	16.06	4.30	10.18	25.24	14.48	60.00	50.00	34.76	35.52	N
6	26.00337	18.22	8.84	10.68	28.90	19.52	60.00	50.00	31.10	30.48	N
7	0.21344	13.51	4.32	9.94	23.45	14.26	63.07	53.07	39.62	38.81	L
8	0.50535	23.36	15.84	9.95	33.31	25.79	56.00	46.00	22.69	20.21	L
9	1.50130	15.63	7.46	10.01	25.64	17.47	56.00	46.00	30.36	28.53	L
10	3.30641	13.45	4.22	10.08	23.53	14.30	56.00	46.00	32.47	31.70	L
11	6.13108	14.94	5.82	10.20	25.14	16.02	60.00	50.00	34.86	33.98	L
12	25.98213	11.88	3.69	10.65	22.53	14.34	60.00	50.00	37.47	35.66	L

9. LIST OF TEST EQUIPMENT

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	18/12/19	19/12/19	MY49060056
			19/12/16	20/12/16	
Spectrum Analyzer	Agilent Technologies	N9020A	18/12/19	19/12/19	MY48011700
			19/12/16	20/12/16	
Spectrum Analyzer	Agilent Technologies	N9020A	19/06/26 19/12/19	20/06/26 20/12/19	MY46471251
Spectrum Analyzer	Agilent Technologies	N9030A	19/03/15	20/03/15	MY53310140
DC Power Supply	Agilent Technologies	66332A	18/12/16	19/12/16	US37476998
			19/12/19	20/12/19	
Multimeter	FLUKE	17B	18/12/18	19/12/18	26030065WS
			19/12/16	20/12/16	
Signal Generator	Rohde Schwarz	SMBV100A	18/12/19	19/12/19	255571
			19/12/16	20/12/16	
Signal Generator	ANRITSU	MG3695C	18/12/20	19/12/20	173501
			19/12/16	20/12/16	
Thermohygrometer	BODYCOM	BJ5478	18/12/27	19/12/27	120612-1
			19/12/18	20/12/18	
Thermohygrometer	BODYCOM	BJ5478	18/12/27	19/12/27	120612-2
			19/12/18	20/12/18	
Thermohygrometer	BODYCOM	BJ5478	19/07/03	20/07/03	N/A
Loop Antenna	ETS-Lindgren	6502	19/09/18	20/09/18	00226186
BILOG ANTENNA	Schwarzbeck	VULB 9160	19/04/23	21/04/23	9160-3362
Horn Antenna	ETS-Lindgren	3115	18/01/30	20/01/30	6419
Horn Antenna	A.H.Systems Inc.	SAS-574	19/07/03	21/07/03	155
PreAmplifier	tsj	MLA-0118-B01-40	18/12/18	19/12/18	1852267
			19/12/16	20/12/16	
PreAmplifier	tsj	MLA-1840-J02-45	19/06/27	20/06/27	16966-10728
PreAmplifier	H.P	8447D	18/12/18	19/12/18	2944A07774
			19/12/16	20/12/16	
High Pass Filter	Wainwright Instruments	WHKX12-935-1000-15000-40SS	19/06/26	20/06/26	8
High Pass Filter	Wainwright Instruments	WHKX10-2838-3300-18000-60SS	19/06/26	20/06/26	1
High Pass Filter	Wainwright Instruments	WHNX8.0/26.5-6SS	19/06/27	20/06/27	3
Attenuator	Hefei Shunze	SS5T.92-10-40	19/06/27	20/06/27	16012202
Attenuator	SRTechnology	F01-B0606-01	19/06/27	20/06/27	13092403
Attenuator	Aeroflex/Weinschel	20515	19/06/27	20/06/27	Y2370
Attenuator	SMAJK	SMAJK-2-3	19/06/27	20/06/27	2
Attenuator	SMAJK	SMAJK-50-10	19/06/25	20/06/25	15081903
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2496A ML2495A	19/06/24	20/06/24	1338004
			19/12/16	20/12/16	1306007
EMI Receiver	ROHDE&SCHWARZ	ESW44	19/07/30	20/07/30	101645
Cable	Junkosha	MWX241	19/01/14	20/01/14	G-04
Cable	Junkosha	MWX241	19/01/14	20/01/14	G-07
Cable	DT&C	Cable	19/01/14	20/01/14	G-13
Cable	DT&C	Cable	19/01/14	20/01/14	G-14

Note 1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017

Note 2: The cable is not a regular calibration item, so it has been calibrated by DT & C itself.

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
Cable	HUBER+SUHNER	SUCOFLEX 104	19/01/14	20/01/14	G-15
Cable	Radiall	TESTPRO3	19/01/16	20/01/16	M-01
Cable	Junkosha	MWX315	19/01/16	20/01/16	M-05
Cable	Junkosha	MWX221	19/01/16	20/01/16	M-06
Thermohygrometer	TESTO	608-H1	19/01/31	20/01/31	34862883
EMI Test Receiver	Rohde Schwarz	ESCI7	19/01/30	20/01/30	100910
PULSE LIMITER	Rohde Schwarz	ESH3-Z2	19/09/17	20/09/17	101333
LISN	SCHWARZBECK	NNLK 8121	19/05/23	20/05/23	6183
Cable	DT&C	Cable	19/01/16	20/01/16	RF-82

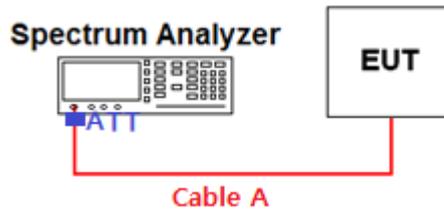
Note 1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017

Note 2: The cable is not a regular calibration item, so it has been calibrated by DT & C itself.

APPENDIX I

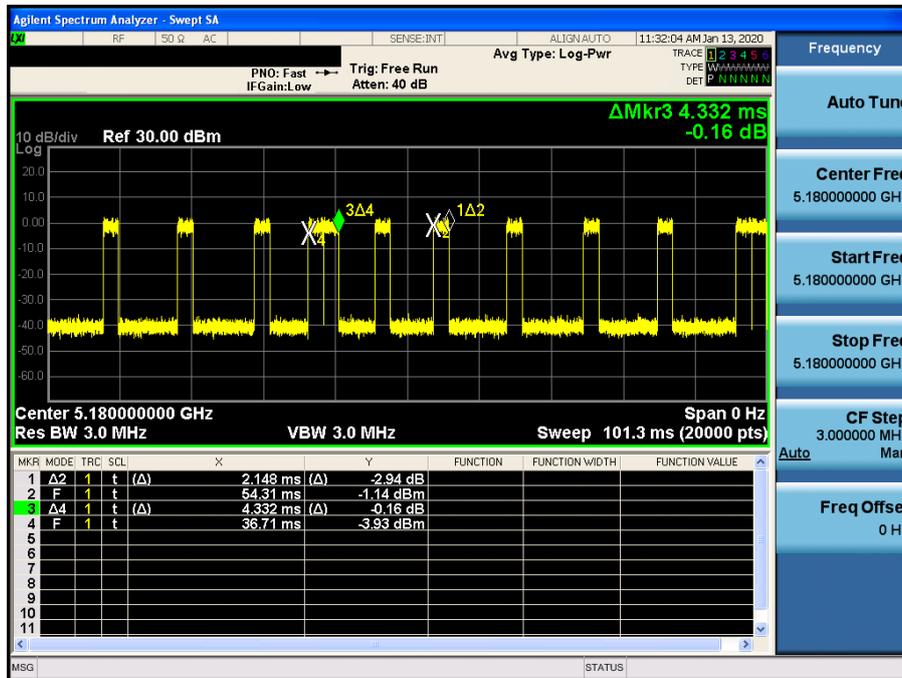
Conducted Test set up Diagram

Conducted Measurement



T (On time)

Worst Duty



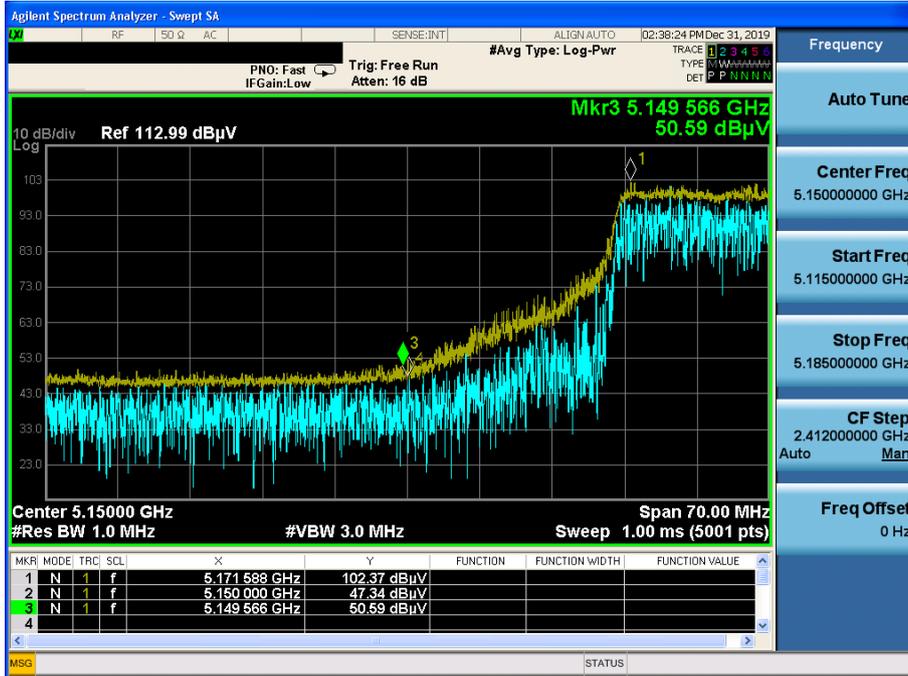
T _{on} (ms)	1/T [kHz]	VBW
2.148	0.466	1 kHz

APPENDIX II

Unwanted Emissions (Radiated) Test Plot: MIMO(CDD)

802.11ax HE20 & U-NII 1 & Ch.36 & Z axis & Hor & 242T & 61RU

Detector Mode : PK

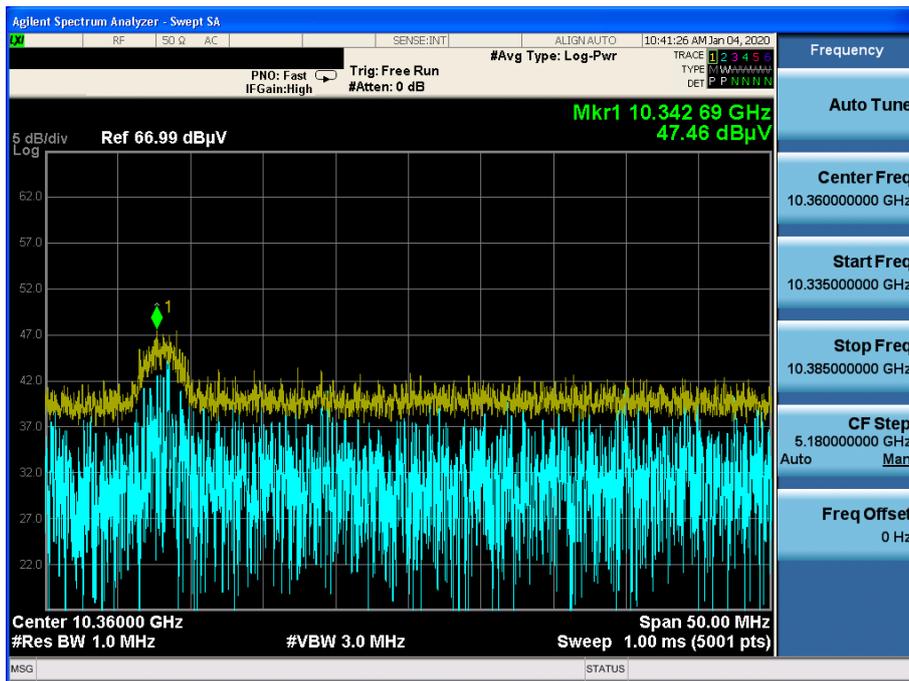


802.11ax HE20 & U-NII 1 & Ch.36 & Z axis & Hor & SU

Detector Mode : AV

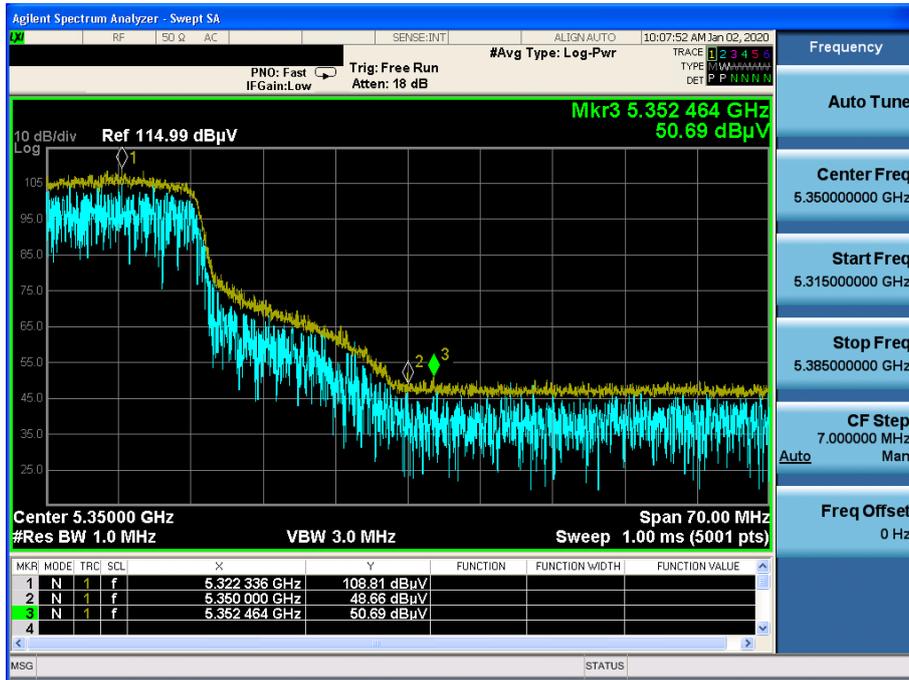


802.11ax HE20 & U-NII 1 & Ch.36 & X axis & Ver & 26T & 0RU Detector Mode : PK



802.11ax HE20 & U-NII 2A & Ch.64 & Z axis & Hor & SU

Detector Mode : PK

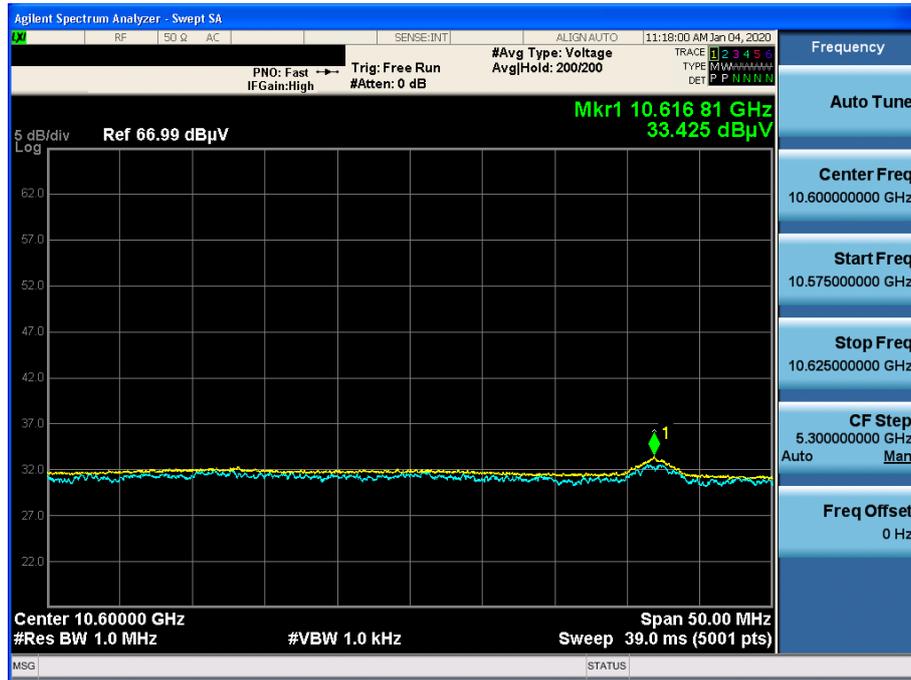


802.11ax HE20 & U-NII 2A & Ch.64 & Z axis & Hor & SU

Detector Mode : AV

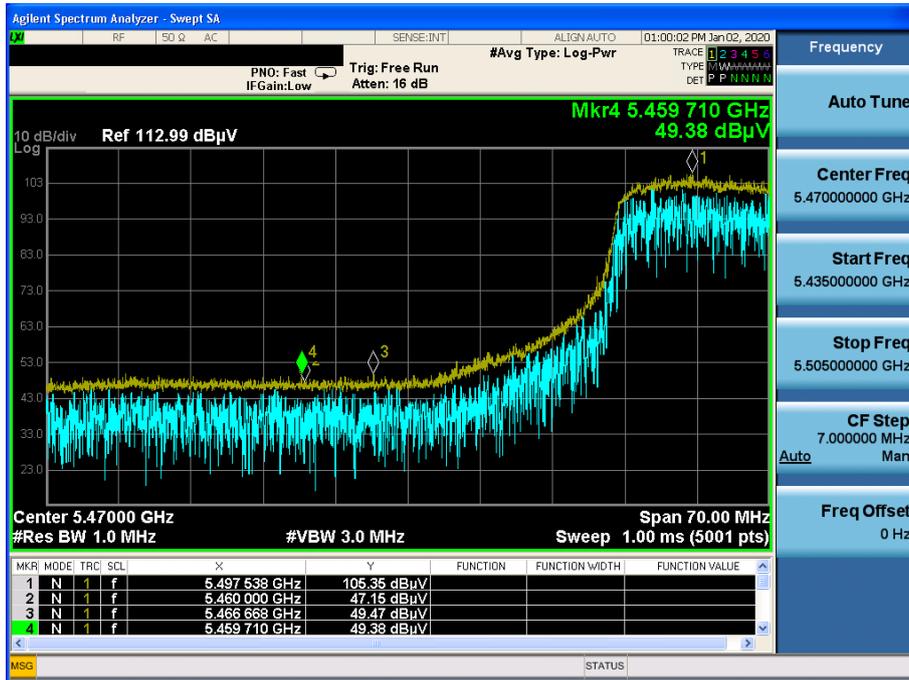


802.11ax HE20 & U-NII 2A & Ch.60 & X axis & Ver & 26T & 8RU Detector Mode : AV



802.11ax HE20 & U-NII 2C & Ch.100 & Z axis & Hor & SU

Detector Mode : PK

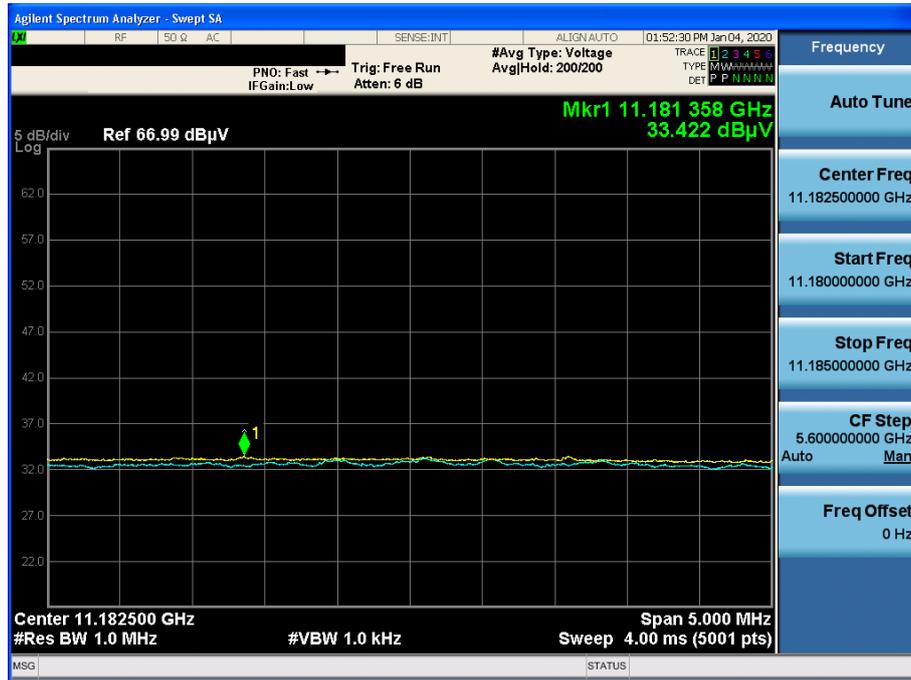


802.11ax HE20 & U-NII 2C & Ch.100 & Z axis & Hor & SU

Detector Mode : AV

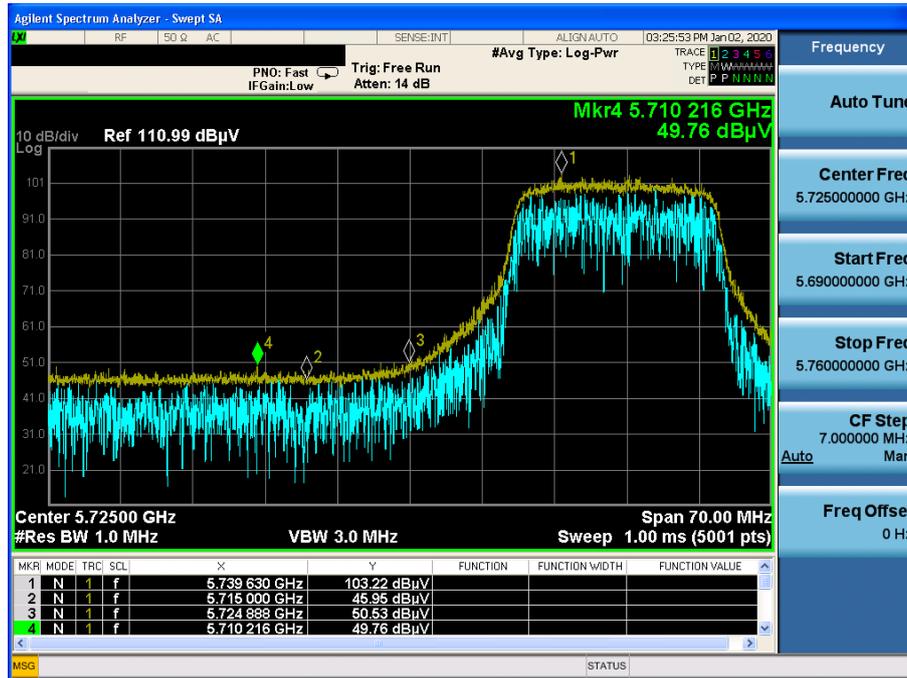


802.11ax HE20 & U-NII 2C & Ch.120 & X axis & Ver & 26T & 0RU Detector Mode : AV



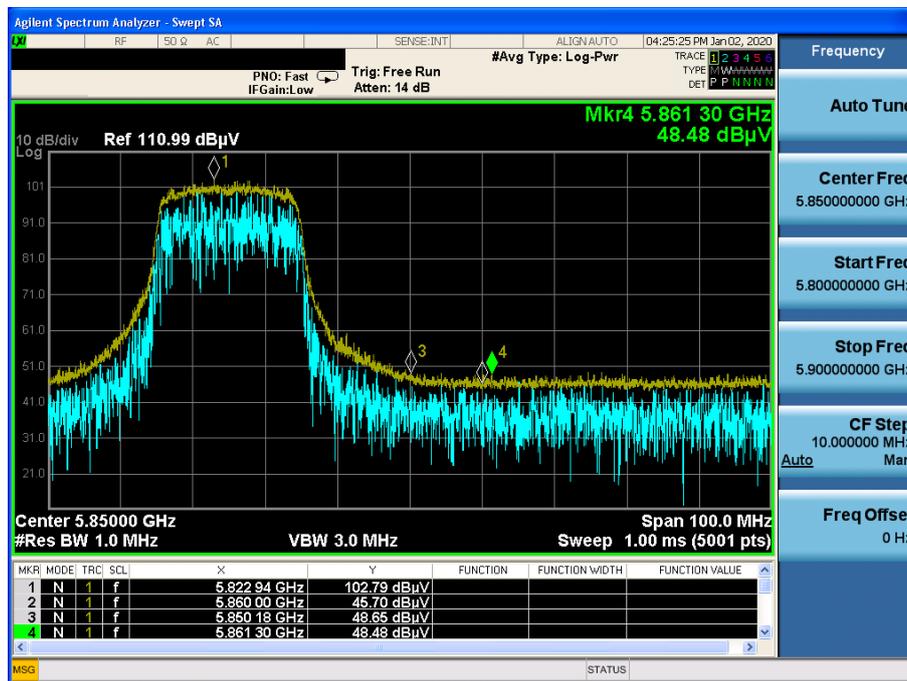
802.11ax HE20 & U-NII 3 & Ch.149 & Z axis & Hor & SU

Detector Mode : PK



802.11ax HE20 & U-NII 3 & Ch.165 & Z axis & Hor & SU

Detector Mode : PK



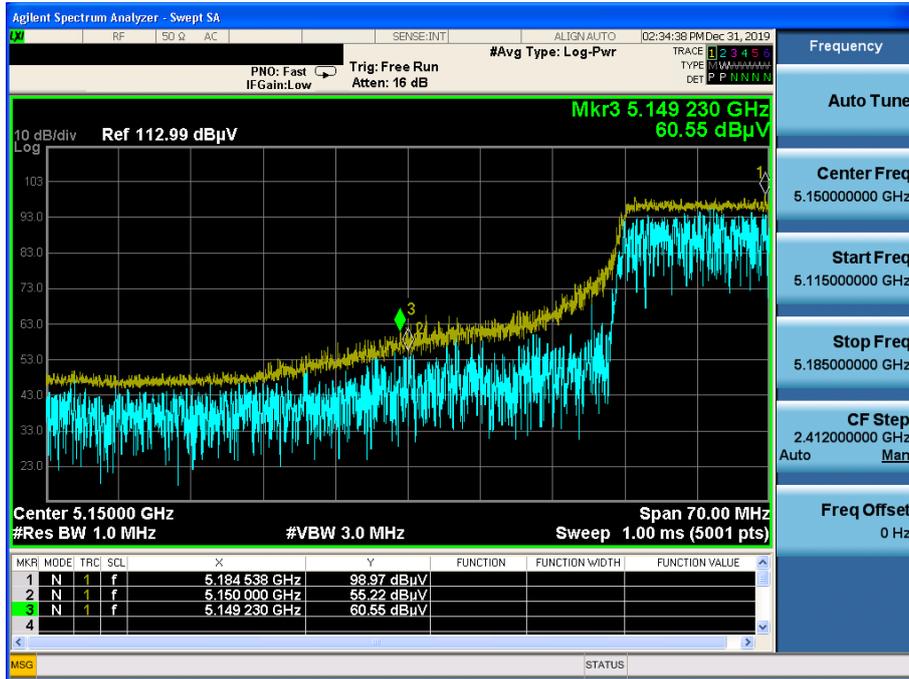
802.11ax HE20 & U-NII 3 & Ch.165 & X axis & Ver & SU

Detector Mode : AV



802.11ax(HE40) & U-NII 1 & Ch.38 & Z axis & Hor & 484T & 65RU

Detector Mode : PK

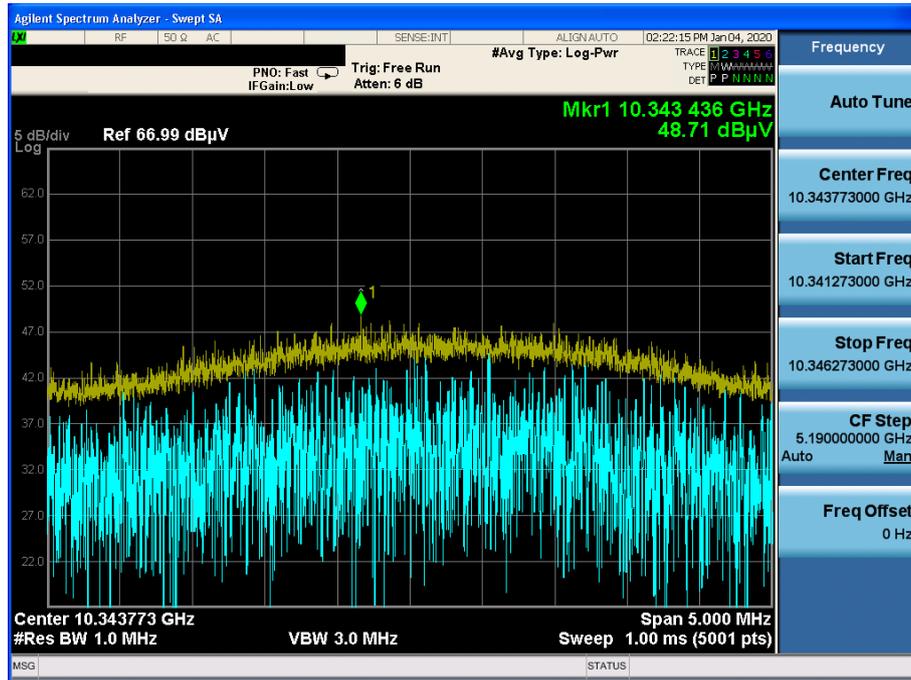


802.11ax(HE40) & U-NII 1 & Ch.38 & Z axis & Hor & 484T & 65RU

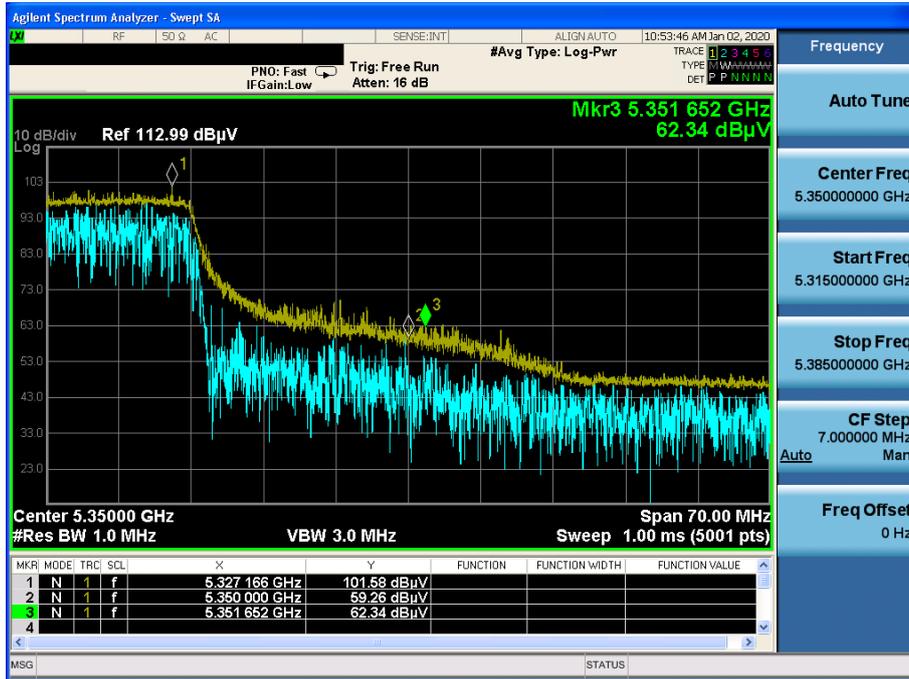
Detector Mode : AV



802.11ax(HE40) & U-NII 1 & Ch.38 & X axis & Ver & 26T & 0RU Detector Mode : PK



802.11ax(HE40) & U-NII 2A & Ch.62 & Z axis & Hor & 484T & 65RU Detector Mode : PK



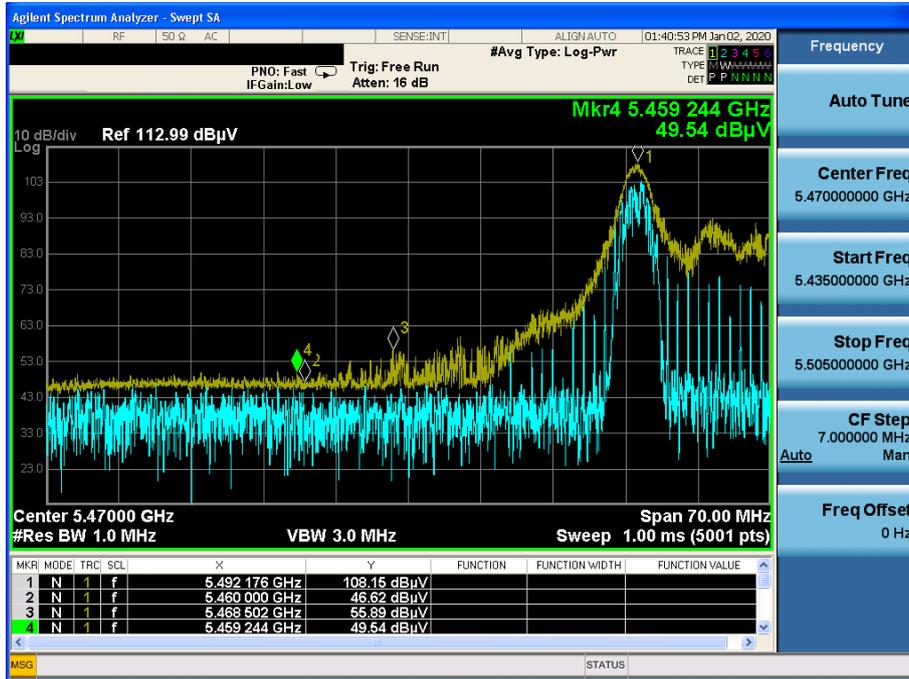
802.11ax(HE40) & U-NII 2A & Ch.62 & Z axis & Hor & 484T & 65RU Detector Mode : AV



802.11ax(HE40) & U-NII 2A & Ch.62 & X axis & Ver & 26T & 17RU Detector Mode : AV



802.11ax(HE40) & U-NII 2C & Ch.102 & Z axis & Hor & 26T & 0RU Detector Mode : PK

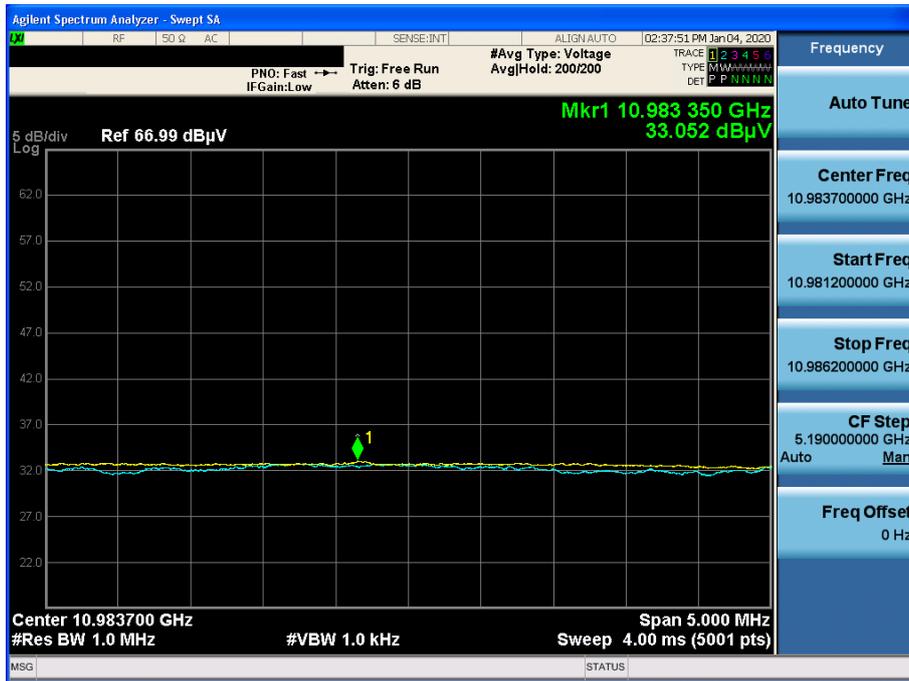


802.11ax(HE40) & U-NII 2C & Ch.102 & Z axis & Hor & 26T & 0RU Detector Mode : AV

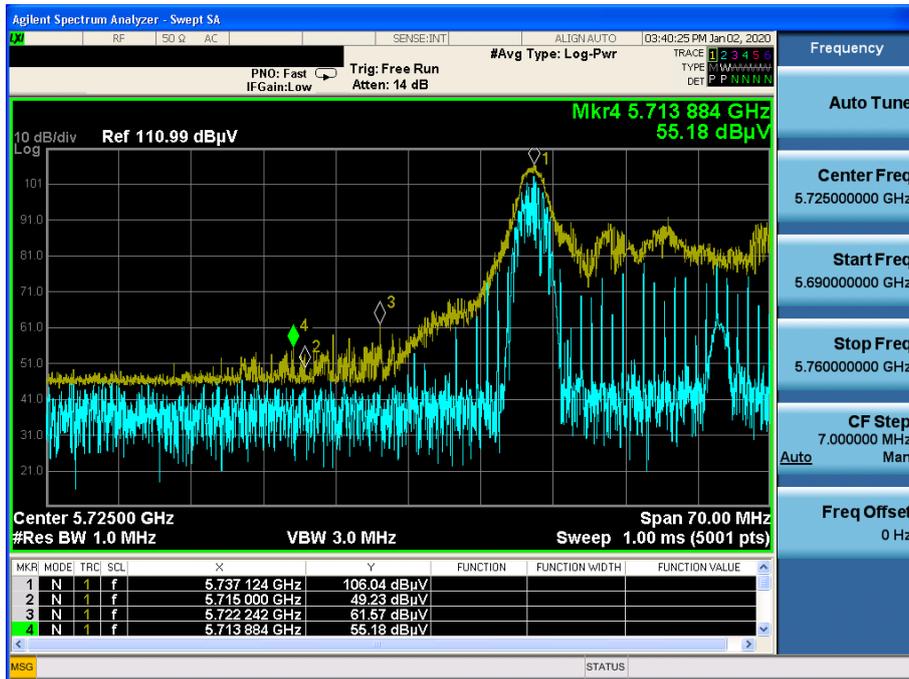


802.11ax(HE40) & U-NII 2C & Ch.102 & X axis & Ver & 26T & 0RU

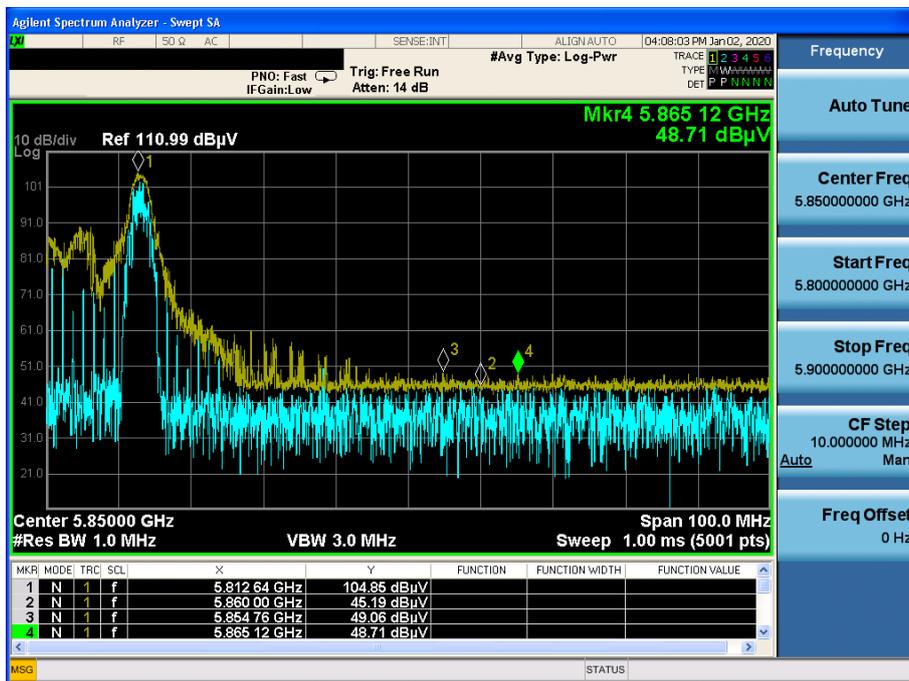
Detector Mode :
AV



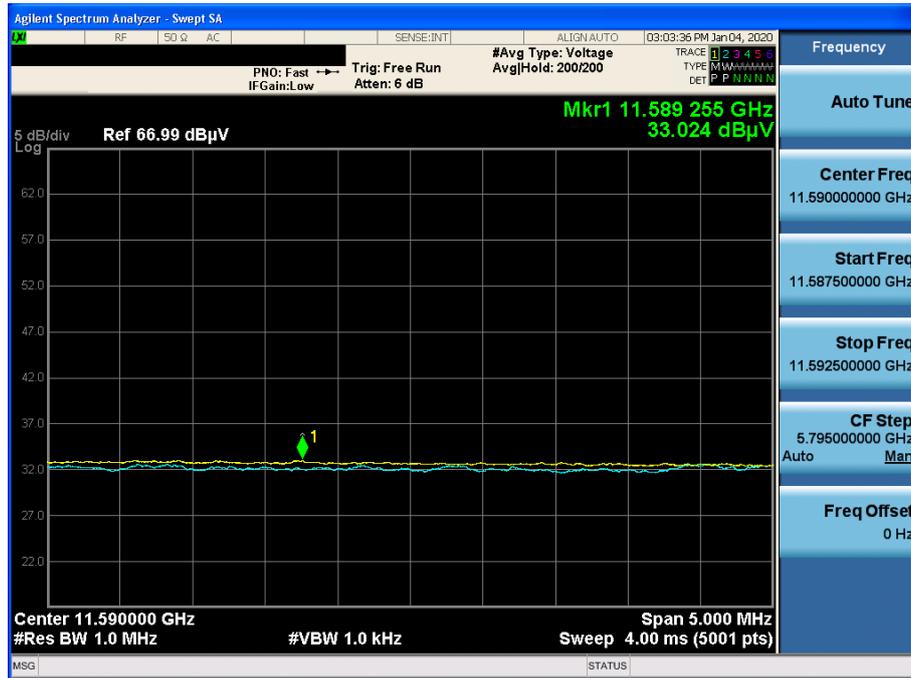
802.11ax(HE40) & U-NII 3 & Ch.151 & Z axis & Hor & 26T & Detector Mode : PK
0RU



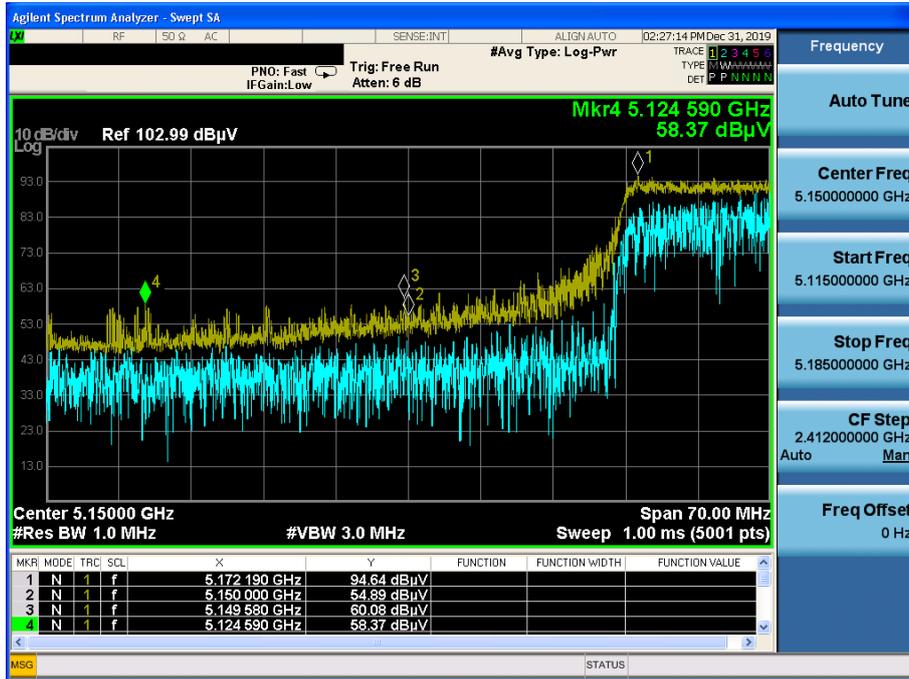
802.11ax(HE40) & U-NII 3 & Ch.159 & Z axis & Hor & 26T & Detector Mode : PK
17RU



802.11ax(HE40) & U-NII 3 & Ch.159 & X axis & Ver & SU Detector Mode : AV



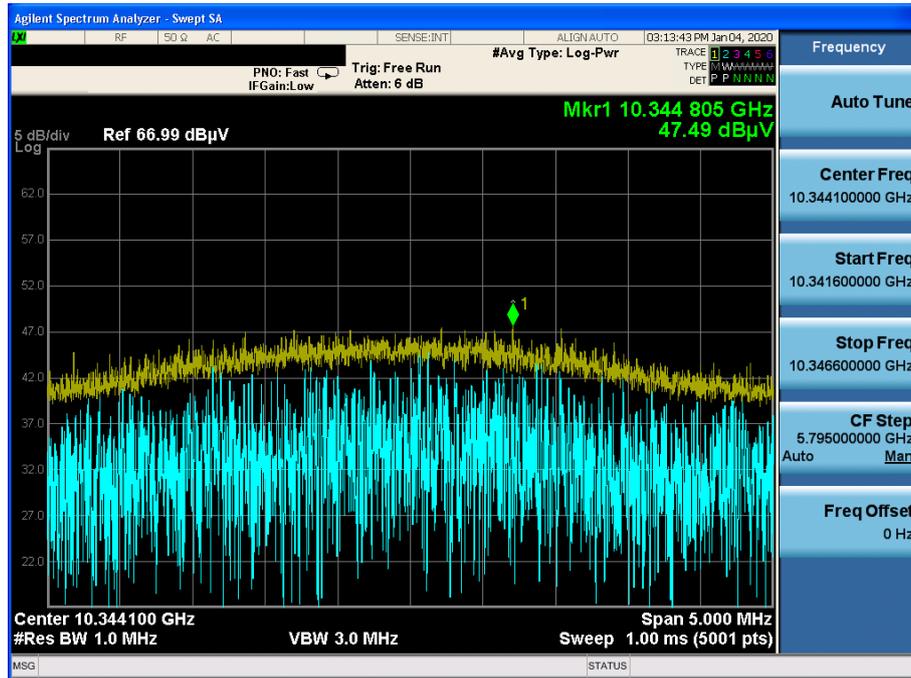
802.11ax(HE80) & U-NII 1 & Ch.42 & Z axis & Hor & 996T & 67RU Detector Mode : PK



802.11ax(HE80) & U-NII 1 & Ch.42 & Z axis & Hor & 996T & 67RU Detector Mode : AV

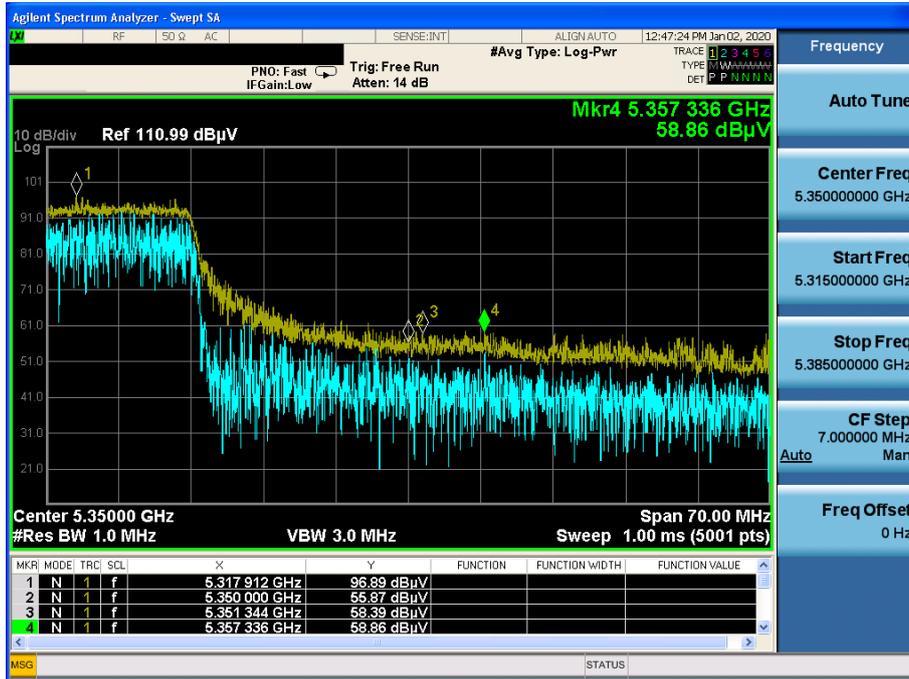


802.11ax(HE80) & U-NII 1 & Ch.42 & X axis & Ver & 26T & 0RU Detector Mode : PK



802.11ax(HE80) & U-NII 2A & Ch.58 & Z axis & Hor & 996T & 67RU

Detector Mode : PK

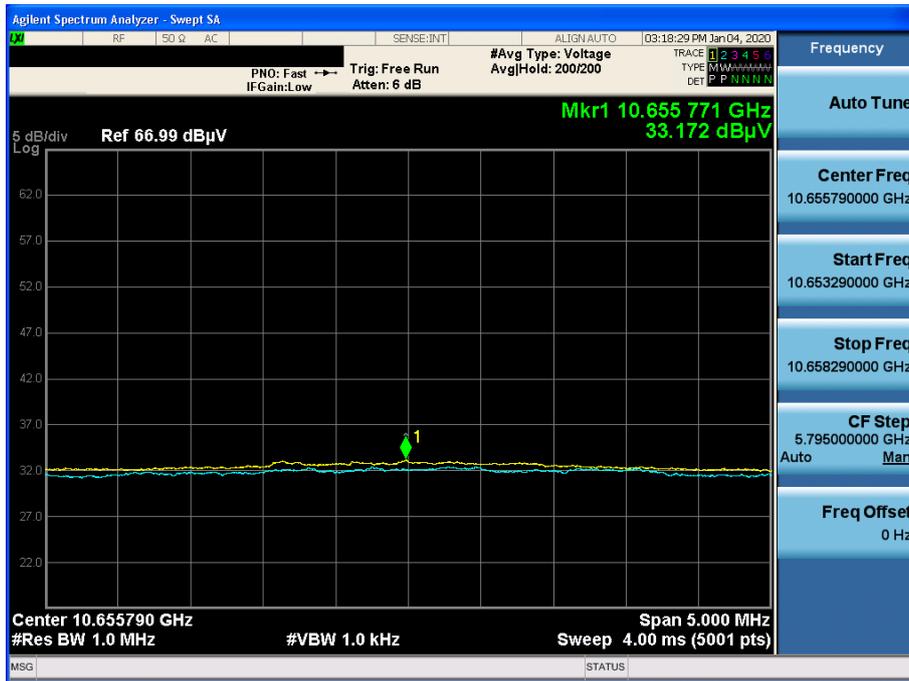


802.11ax(HE80) & U-NII 2A & Ch.58 & Z axis & Hor & 996T & 67RU

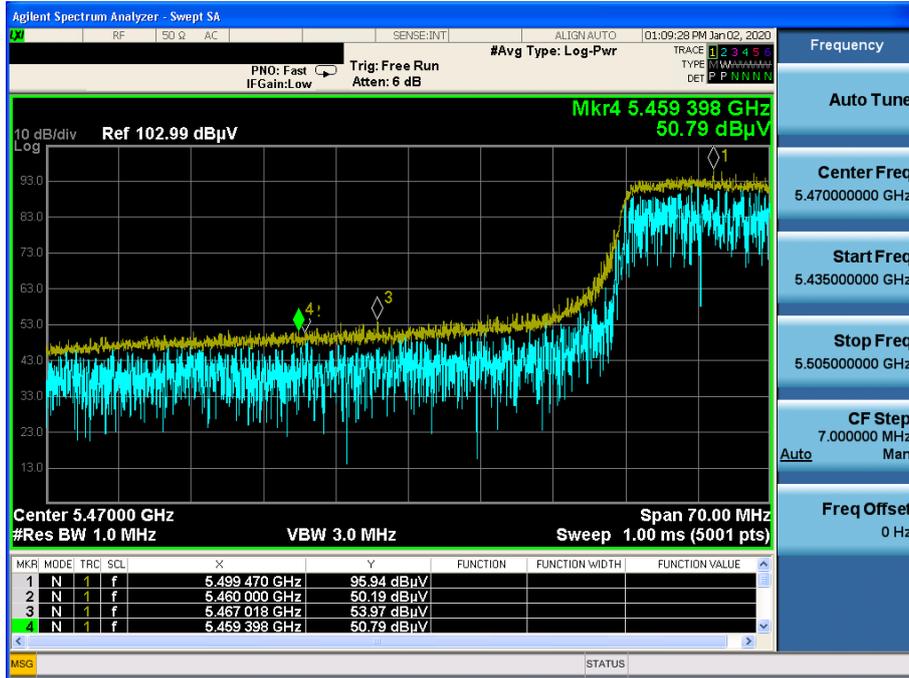
Detector Mode : AV



802.11ax(HE80) & U-NII 2A & Ch.58 & X axis & Ver & 26T & 36RU Detector Mode : PK



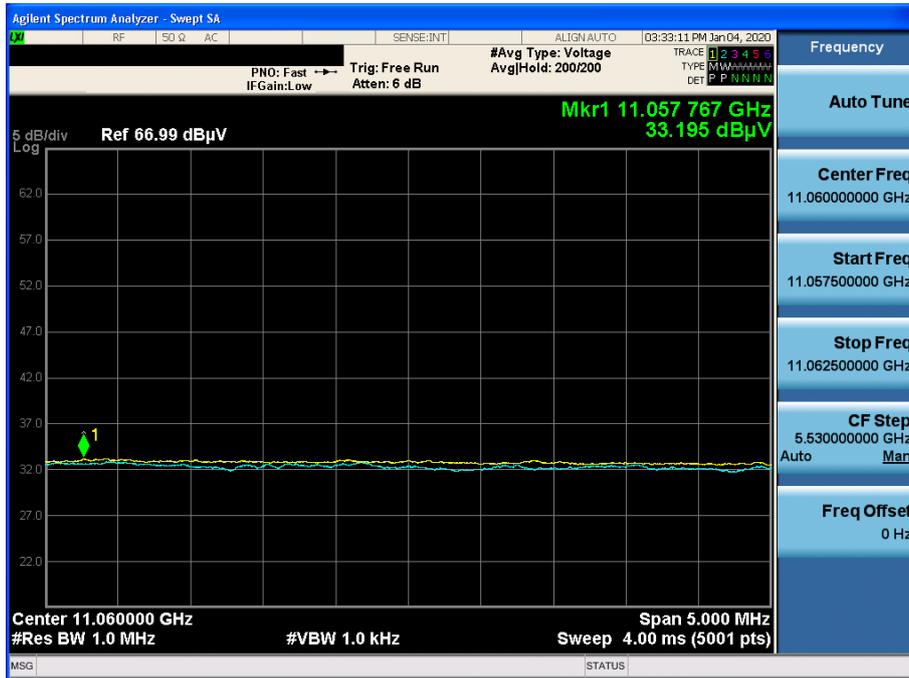
802.11ax(HE80) & U-NII 2C & Ch.106 & Z axis & Hor & SU Detector Mode : PK



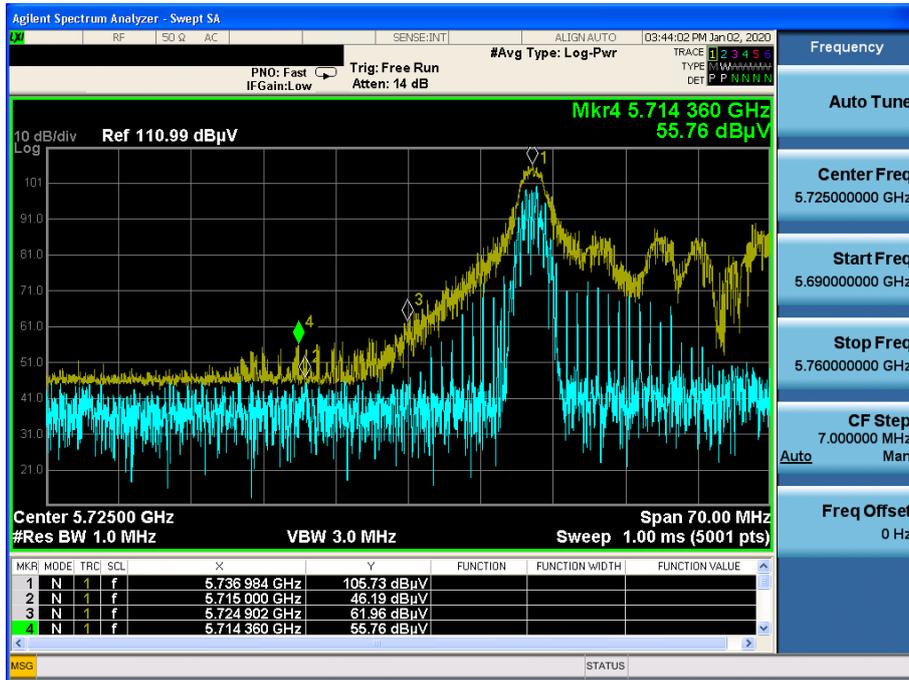
802.11ax(HE80) & U-NII 2C & Ch.106 & Z axis & Hor & SU Detector Mode : AV



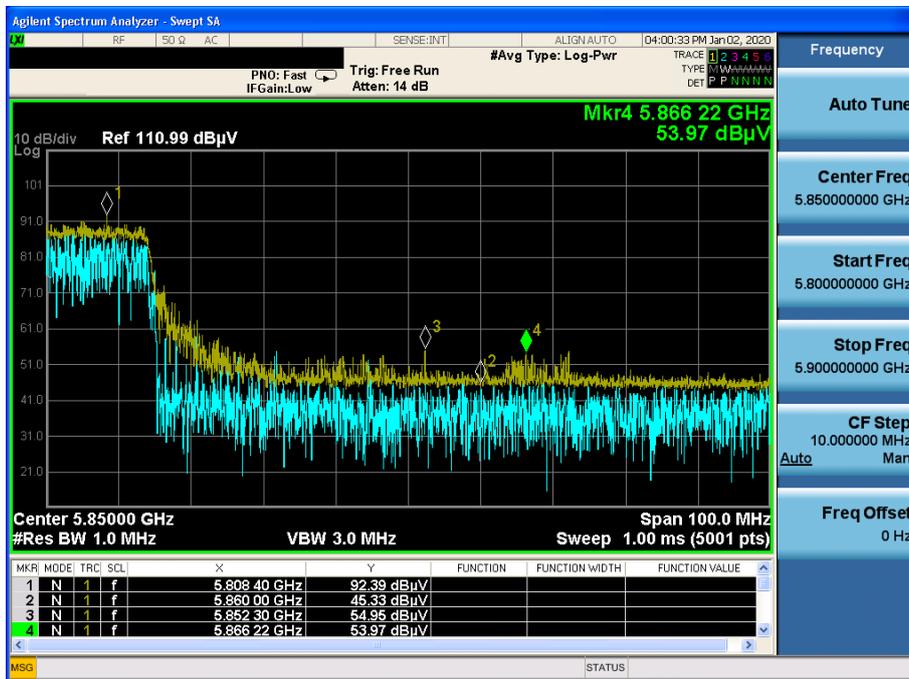
802.11ax(HE80) & U-NII 2C & Ch.106 & X axis & Ver & SU Detector Mode : AV



802.11ax(HE80) & U-NII 3 & Ch.155 & Z axis & Hor & 26T & 0RU Detector Mode : PK

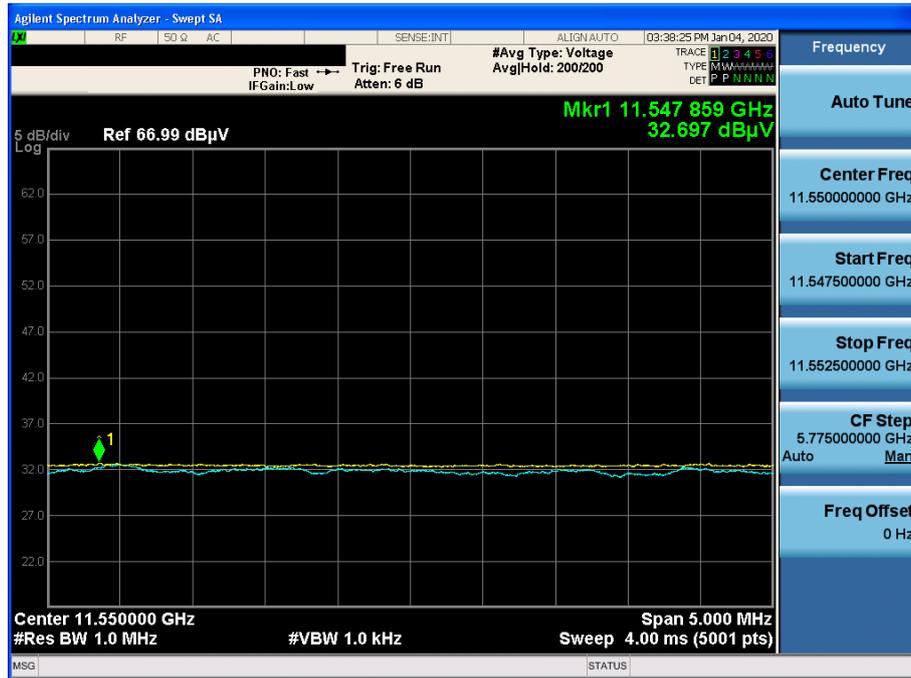


802.11ax(HE80) & U-NII 3 & Ch.155 & Z axis & Hor & 996T & 67RU Detector Mode : PK



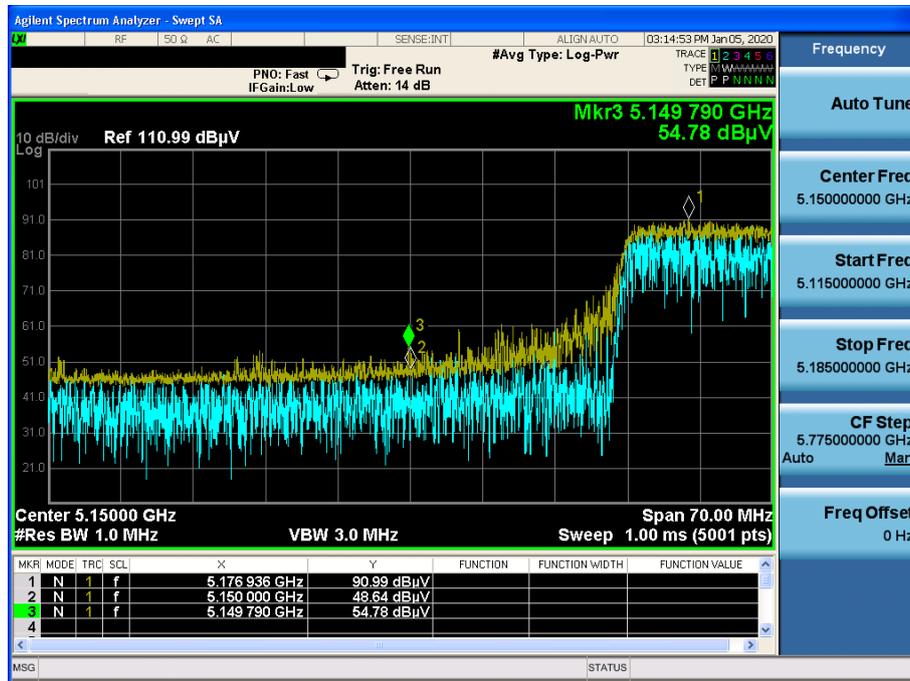
802.11ax(HE80) & U-NII 3 & Ch.155 & X axis & Ver & SU

Detector Mode : AV

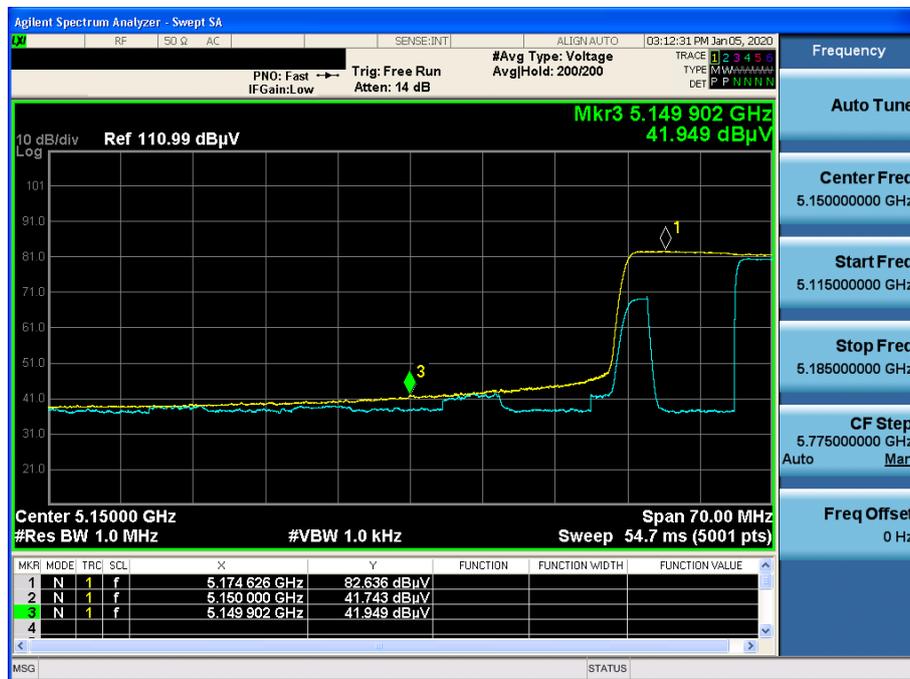


Unwanted Emissions (Radiated) Test Plot: MIMO(CDD)_ Wireless Charging

U-NII 1 & 802.11ax(HE80) & Ch.42 & X axis & Ver & 996T & 67RU
 Detector Mode : PK



U-NII 1 & 802.11ax(HE80) & Ch.42 & X axis & Ver & 996T & 67RU
 Detector Mode : AV



U-NII 1 & 802.11ax(HE80) & Ch.42 & X axis & Ver & 26T & 0RU Detector Mode : PK

