

Prüfbericht - Nr.:

Test Report No.:

ULR-TC568820300000042F

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Modulation: 802.11ac VHT 20

Data rate: MCS7

Frequency Band	Channel No. or Frequency (MHz)	Polarization	Frequency (MHz)	Emission level (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5150-5250 (UNII-1)	36(5180)	vertical	5150(Pk)	51.22	74*	-22.78
			5150(Av)	38.76	54*	-15.24
			5180(Pk)	92.27	-	-
			5180(Av)	83.11	-	-
			10360(Pk)	51.62	68.20	-16.58
			10360(Av)	39.80	54.00	-14.20
		Horizontal	5150(Pk)	60.39	74*	-13.61
			5150(Av)	48.16	54*	-5.84
			5180(Pk)	99.69	-	-
			5180(Av)	91.01	-	-
			10360(Pk)	51.04	68.20	-17.16
			10360(Av)	39.82	54.00	-14.18
	40(5200)	vertical	5200(Pk)	92.80	-	-
			5200(Av)	82.71	-	-
			10400(Pk)	51.55	68.20	-16.65
			10400(Av)	40.16	54.00	-13.84
		Horizontal	5200(Pk)	100.01	-	-
			5200(Av)	89.60	-	-
			10400(Pk)	51.45	68.20	-16.75
			10400(Av)	39.86	54.00	-14.14
	48(5240)	vertical	5240(Pk)	92.98	-	-
			5240(Av)	83.26	-	-
			5350(Pk)	42.52	74*	-31.48
			5350(Av)	30.44	54*	-23.56
			10480(Pk)	52.16	68.20	-16.04
			10480(Av)	40.00	54.00	-14.00
		Horizontal	5240(Pk)	99.03	-	-
			5240(Av)	89.76	-	-
			5350(Pk)	47.63	74*	-26.37
			5350(Av)	34.71	54*	-19.29
			10480(Pk)	52.72	68.20	-15.48
			10480(Av)	40.95	54.00	-13.05

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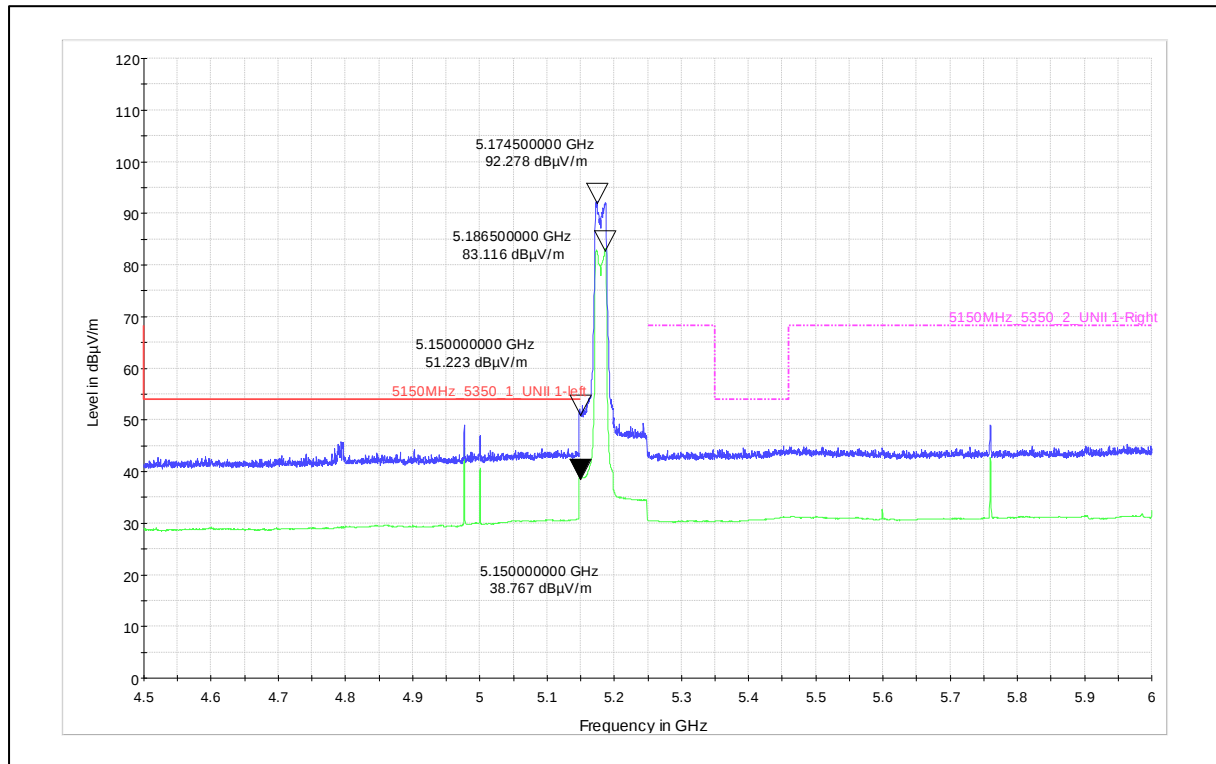
5725-5850 (UNII-3)	149(5745)	vertical	5715(Pk)	52.79	78.2	-25.41
			5725(Pk)	66.60	78.2	-11.60
			5745(Pk)	93.11	-	-
			5745(Av)	82.83	-	-
			11490(Pk)	55.14	74.00*	-18.86
			11490(Av)	42.85	54.00*	-11.15
		Horizontal	5715(Pk)	50.18	78.2	-28.02
			5725(Pk)	62.62	78.2	-15.58
			5745(Pk)	105.01	-	-
			5745(Av)	95.09	-	-
			11490(Pk)	54.88	74.00*	-19.12
			11490(Av)	42.87	54.00*	-11.13
	157(5785)	vertical	5785(Pk)	92.74	-	-
			5785(Av)	83.05	-	-
			11570(Pk)	55.21	74.00*	-18.79
			11570(Av)	43.19	54.00*	-10.81
		Horizontal	5785(Pk)	105.34	-	-
			5785(Av)	95.25	-	-
			11570(Pk)	56.36	74.00*	-17.64
			11570(Av)	43.72	54.00*	-10.28
	165(5825)	vertical	5825(Pk)	92.99	-	-
			5825(Av)	83.30	-	-
			5850(Pk)	63.41	78.2	-14.79
			5860(Pk)	56.58	78.2	-21.62
			11650(Pk)	54.44	74.00*	-19.56
			11650(Av)	42.91	54.00*	-11.09
		Horizontal	5825(Pk)	106.04	-	-
			5825(Av)	59.75	-	-
			5850(Pk)	52.64	78.2	-25.56
			5860(Pk)	56.50	78.2	-21.70
			11650(Pk)	55.17	74.00*	-18.83
			11650(Av)	43.93	54.00*	-10.07

Note:

* :- Indicate restricted band frequency in 15.205

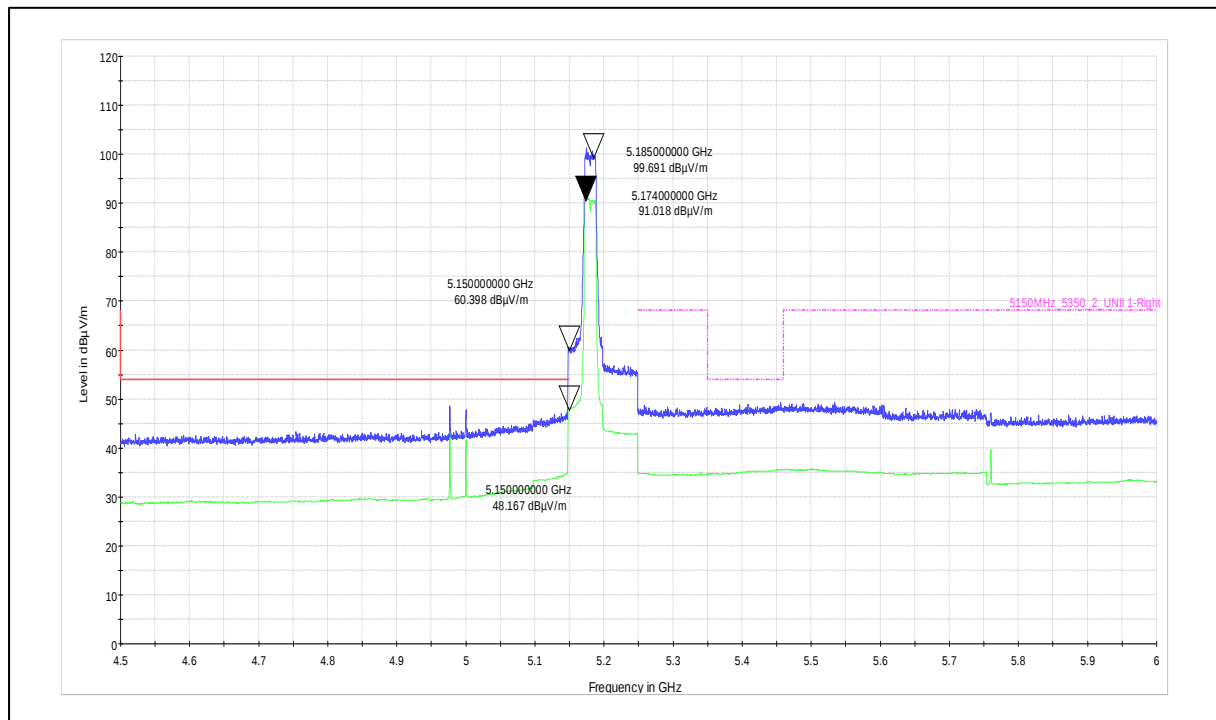
Pk: Peak Detector; Av: Average Detector

Worst case emissions for restricted band of operation



Channel Frequency: 5180MHz

Polarization: Vertical



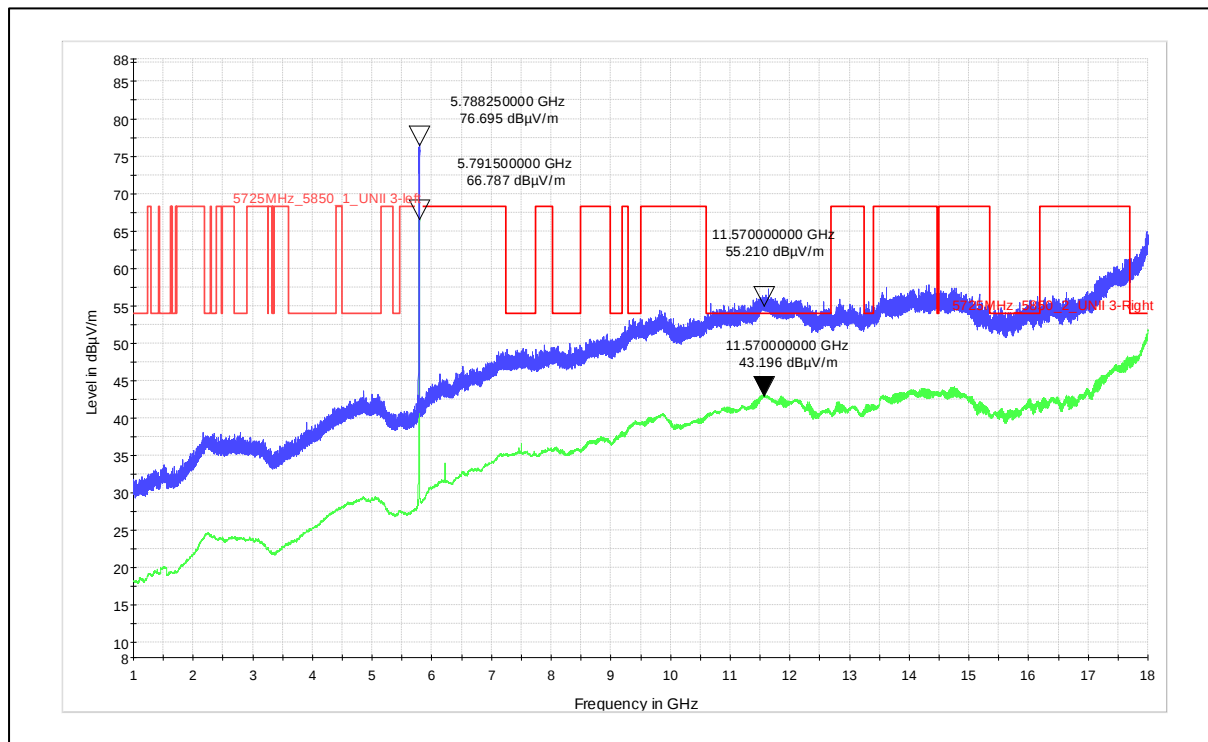
Channel Frequency: 5180MHz

Polarization: Horizontal

Worst case emissions for Spurious radiated emissions above 1GHz

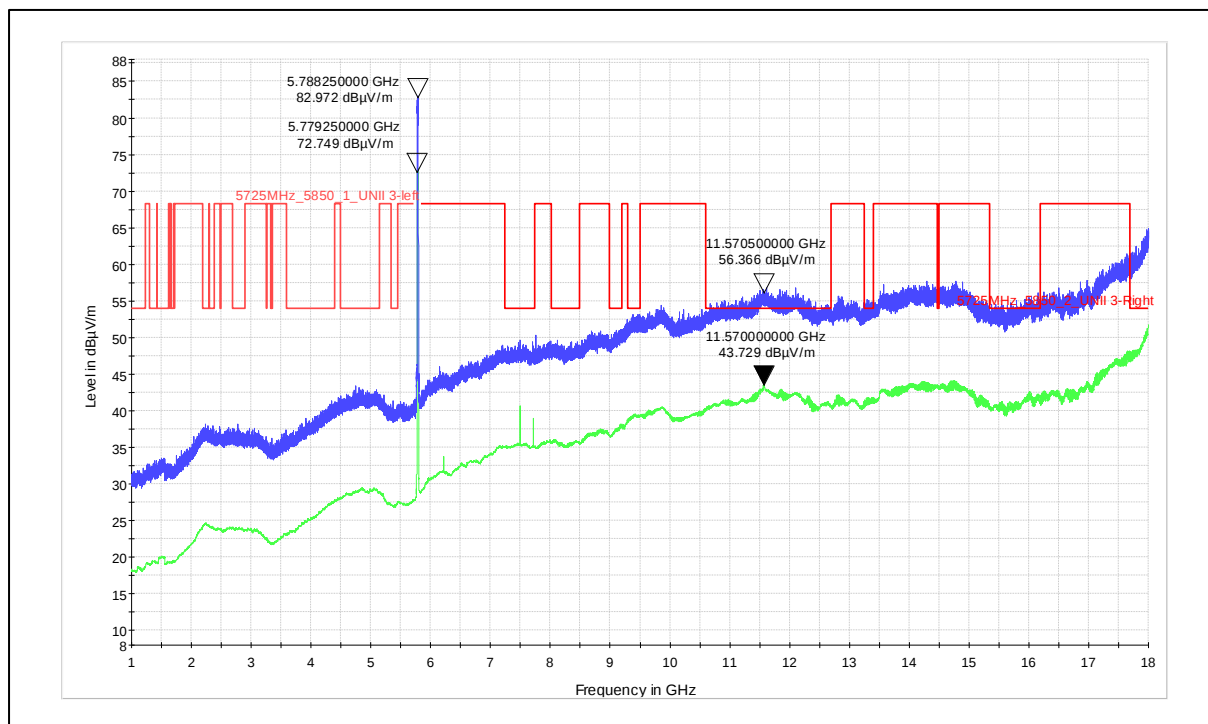
Data rate: MCS7

Channel Frequency: 5785MHz



Frequency Range: 1-18GHz

Polarization: Vertical



Frequency Range: 1-18GHz

Polarization: Horizontal

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Modulation: 802.11ac VHT 40

Data rate: MCS7

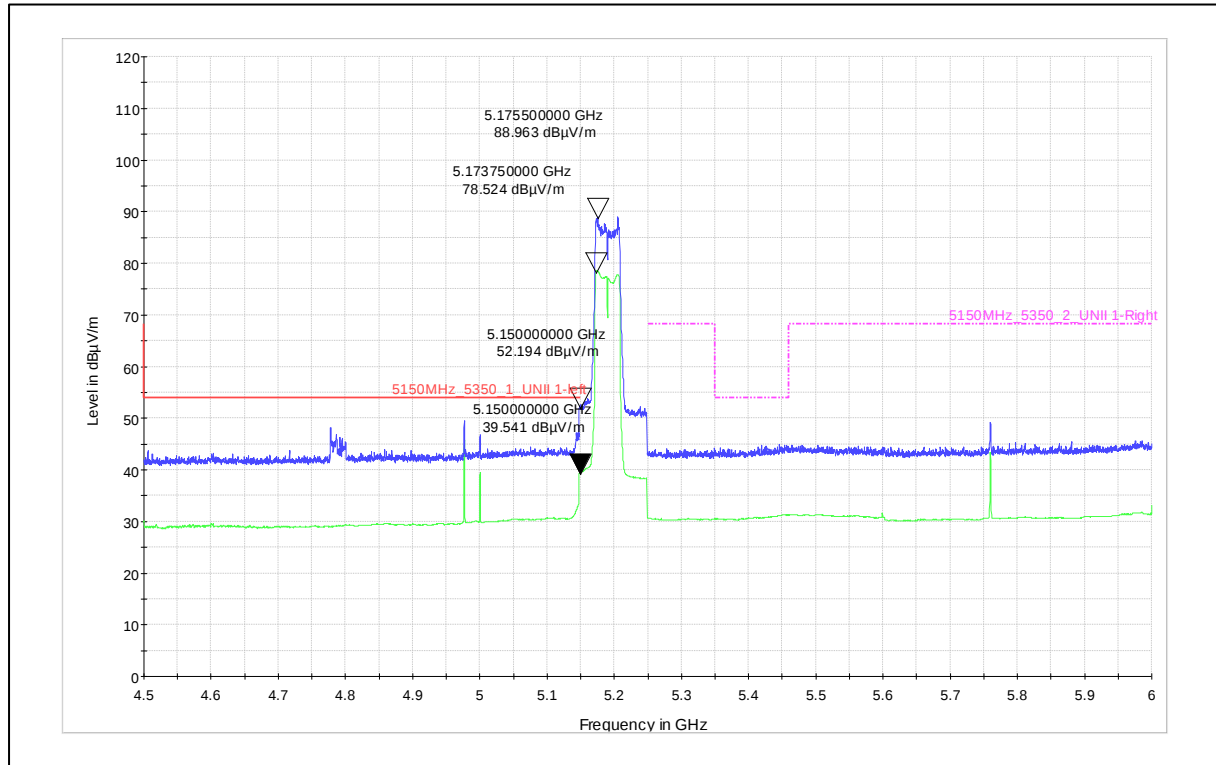
Frequency Band	Channel No. or Frequency (MHz)	Polarization	Frequency (MHz)	Emission level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5150-5250 (UNII-1)	38(5190)	vertical	5150(Pk)	51.19	74*	-22.81
			5150(Av)	39.54	54*	-14.46
			5190(Pk)	88.96	-	-
			5190(Av)	78.52	-	-
			10380(Pk)	52.71	68.20	-15.49
			10380(Av)	39.98	54.00	-14.02
		Horizontal	5150(Pk)	61.41	74*	-12.59
			5150(Av)	49.43	54*	-4.57
			5190(Pk)	99.95	-	-
			5190(Av)	89.11	-	-
	46(5230)	vertical	10380(Pk)	51.35	68.20	-16.85
			10380(Av)	39.87	54.00	-14.13
			5230(Pk)	90.96	-	-
			5230(Av)	79.78	-	-
			5350(Pk)	43.64	74*	-30.77
			5350(Av)	30.61	54*	-23.31
		Horizontal	10460(Pk)	52.14	68.20	-16.06
			10460(Av)	40.05	54.00	-13.95
			5230(Pk)	99.72	-	-
			5230(Av)	88.88	-	-
5725-5795 (UNII-3)	151(5755)	Vertical	5350(Pk)	47.18	74*	-27.25
			5350(Av)	34.94	54*	-19.02
			10460(Pk)	52.01	68.20	-16.19
			10460(Av)	40.04	54.00	-13.96
		Horizontal	5755(Pk)	89.13	-	-
			5755(Av)	78.76	-	-
			11510(Pk)	55.17	74.00*	-18.83
			11510(Av)	43.14	54.00*	-10.86
	159(5795)	vertical	5755(Pk)	104.50	-	-
			5755(Av)	93.94	-	-
			11510(Pk)	55.60	74.00*	-18.40
			11510(Av)	43.28	54.00*	-10.72
		Horizontal	5795(Pk)	91.97	-	-
			5795(Av)	81.55	-	-
			11590(Pk)	55.18	74.00*	-18.82
			11590(Av)	42.92	54.00*	-11.08
		vertical	5795(Pk)	106.11	-	-
			5795(Av)	94.98	-	-
		Horizontal	11590(Pk)	57.37	74.00*	-16.63
			11590(Av)	44.66	54.00*	-9.34

Note:

* :- Indicate restricted band frequency in 15.205

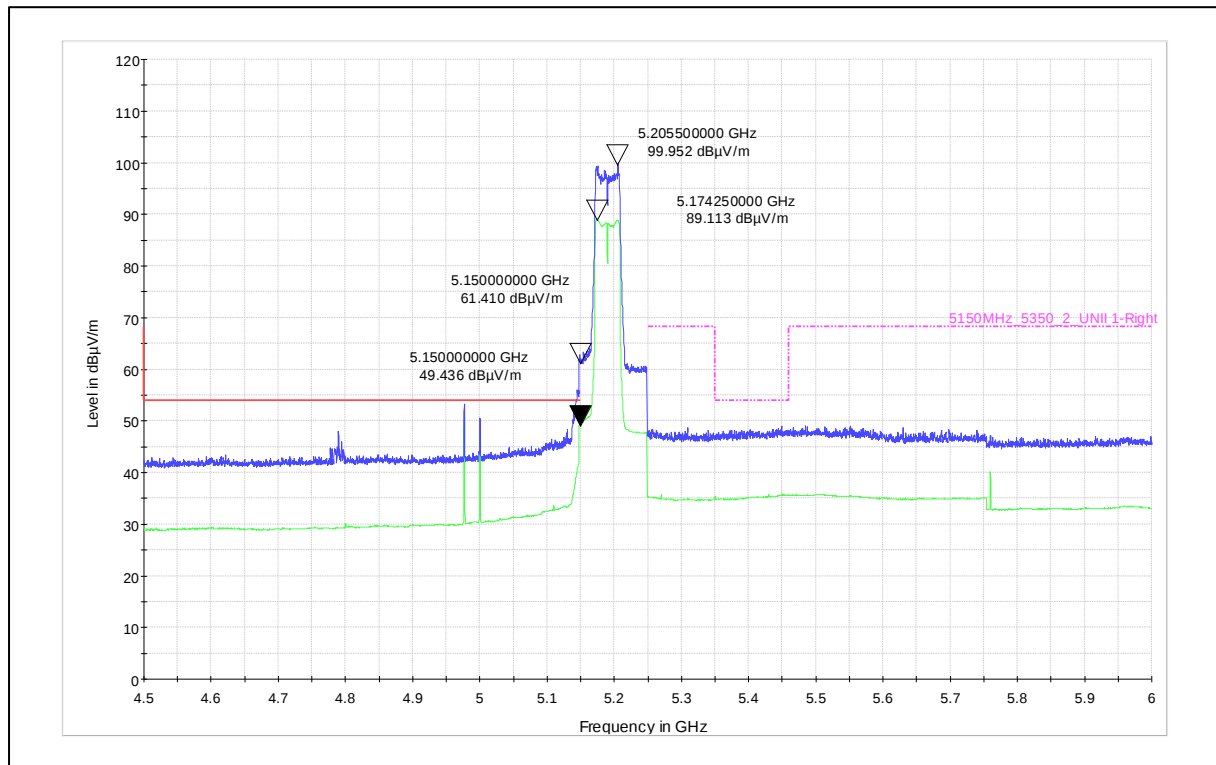
Pk: Peak Detector; Av: Average Detector

Worst case emissions for restricted band of operation



Channel Frequency: 5190MHz

Polarization: Vertical



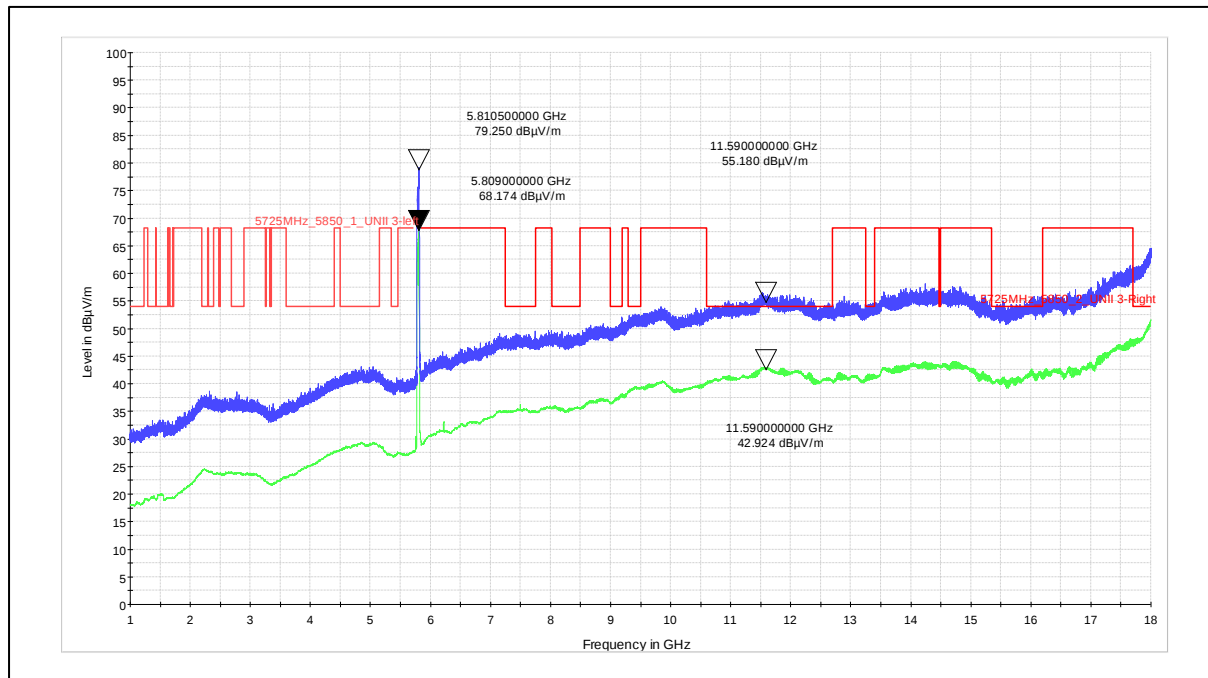
Channel Frequency: 5190MHz

Polarization: Horizontal

Worst case emissions for Spurious radiated emissions above 1GHz

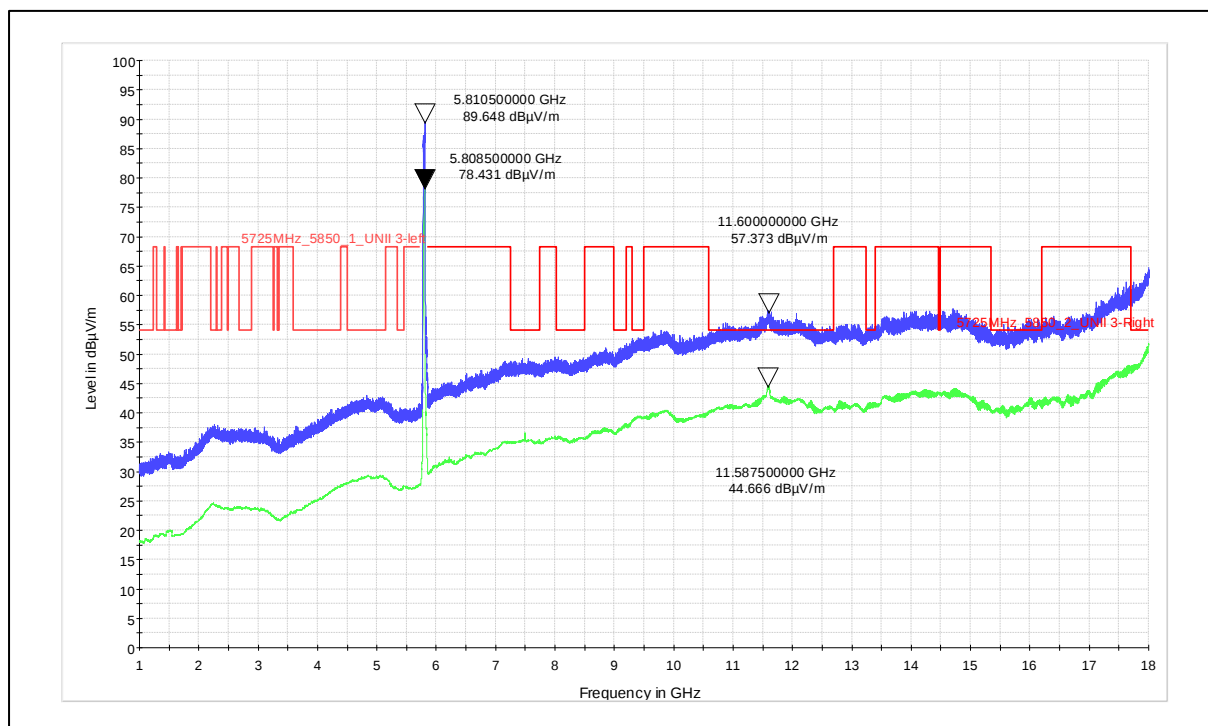
Data rate: MCS7

Channel Frequency: 5795MHz



Frequency Range: 1-18GHz

Polarization: Vertical



Frequency Range: 1-18GHz

Polarization: Horizontal

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Modulation: 802.11ac VHT 80

Data rate: MCS7

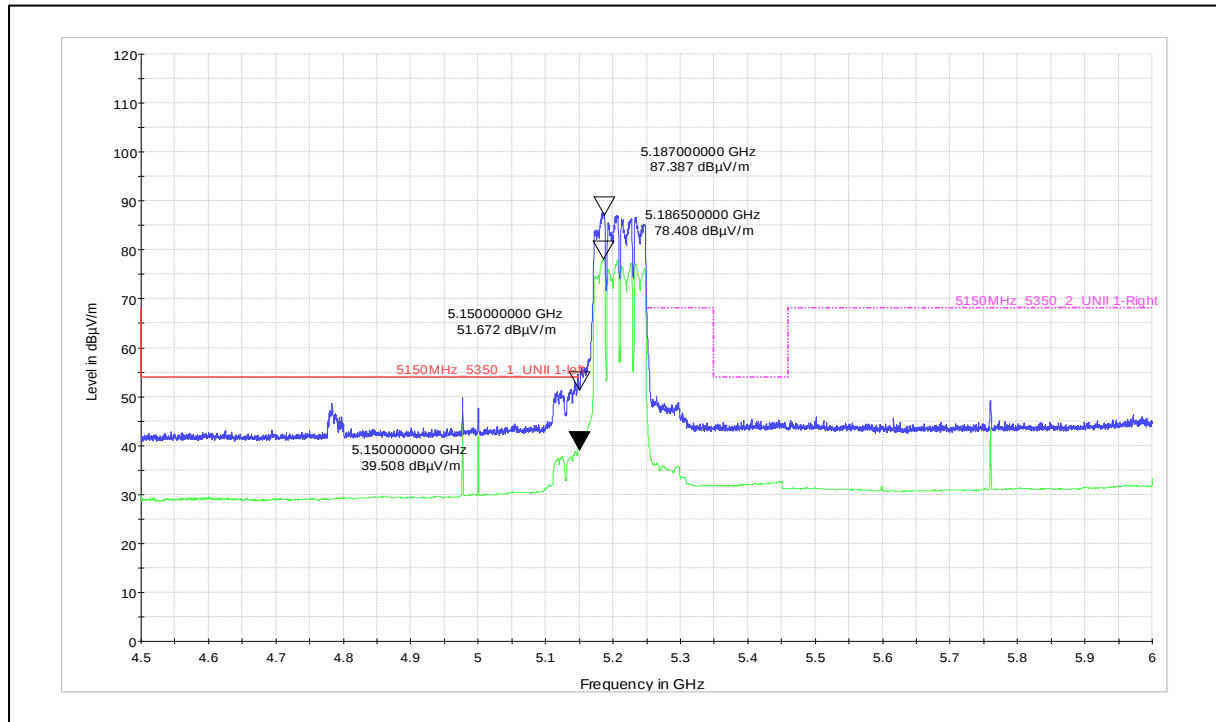
Channel No. or Frequency (MHz)	Polarization	Frequency (MHz)	Emission level (dBμV/m)	Limit (dBμV/m)	Margin (dB)
42(5210)	vertical	5150(PK)	51.67	74*	-22.33
		5150(Av)	39.50	54*	-14.50
		5210(PK)	87.38	-	-
		5210(Av)	78.40	-	-
		10240(PK)	51.52	68.20	-16.68
		10240(Av)	40.01	54.00	-13.99
	Horizontal	5150(Pk)	60.87	74*	-13.13
		5150(Av)	48.93	54*	-5.07
		5120(Pk)	95.57	-	-
		5120(Av)	85.56	-	-
		10240(PK)	51.57	68.20	-16.63
		10240(Av)	40.64	54.00	-13.36

Note:

* :- Indicate restricted band frequency in 15.205

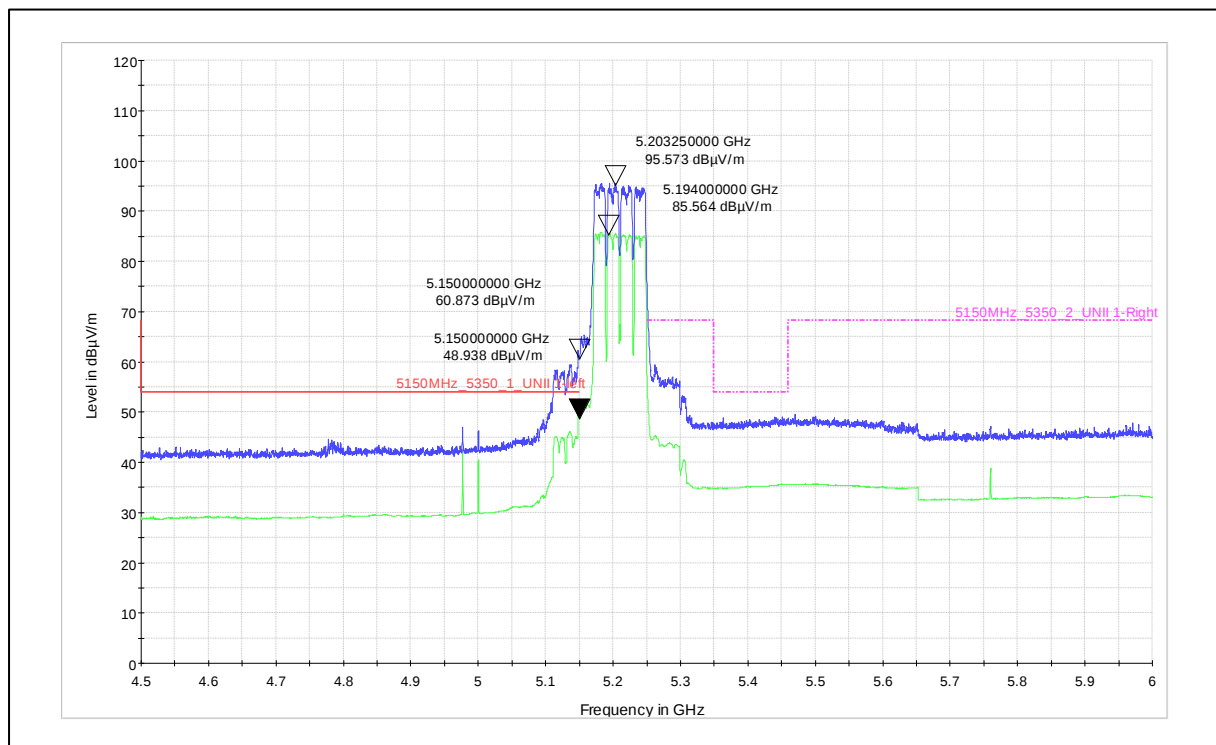
Pk: Peak Detector; Av: Average Detector

Worst case emissions for restricted band of operation



Channel Frequency: 5190MHz

Polarization: Vertical



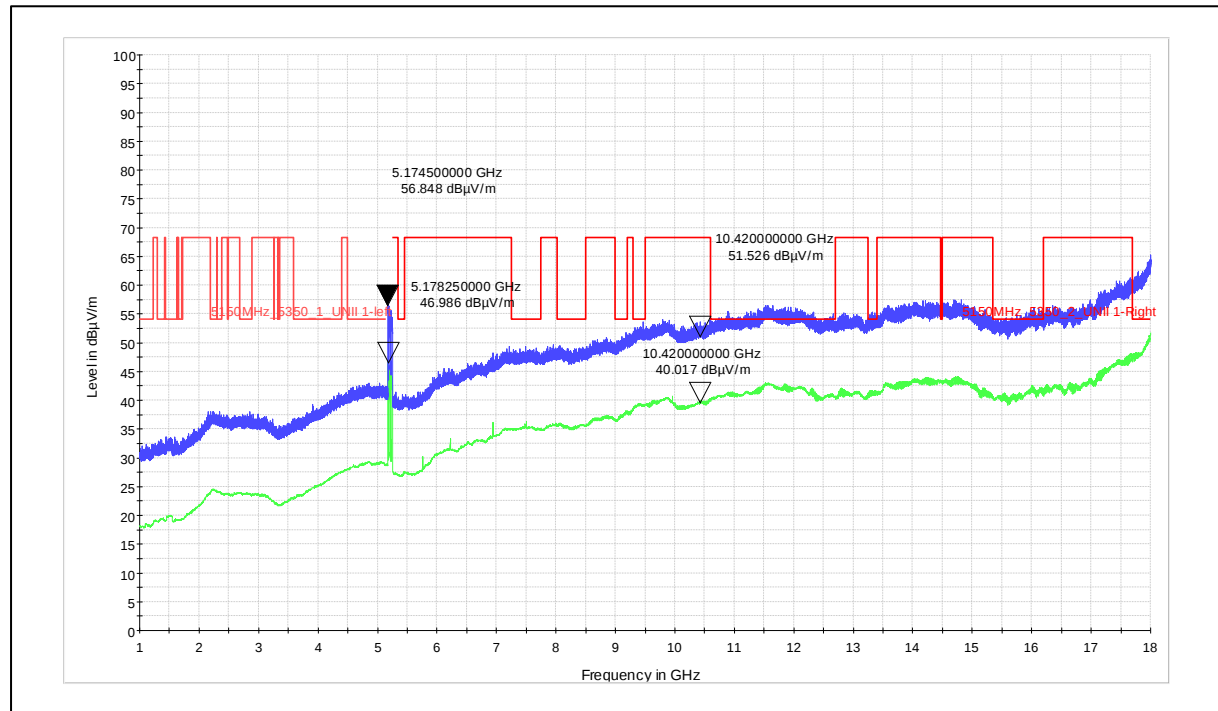
Channel Frequency: 5190MHz

Polarization: Horizontal

Worst case emissions for Spurious radiated emissions above 1GHz

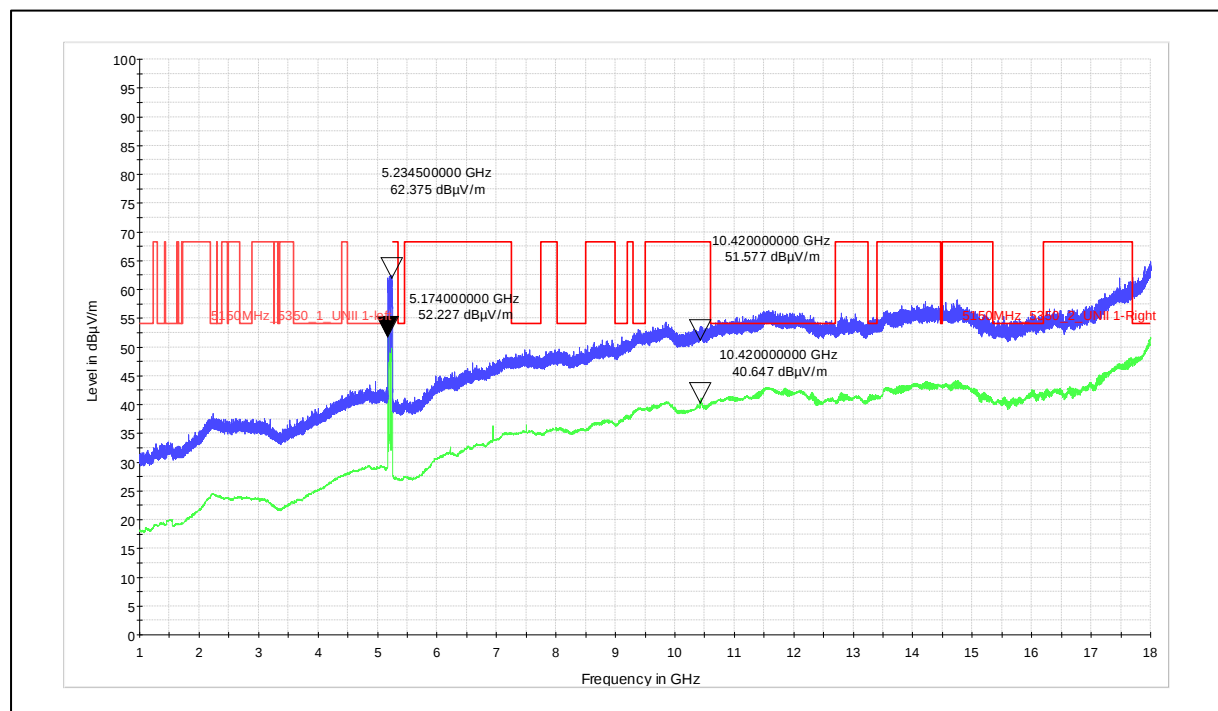
Data rate: MCS7

Channel Frequency: 5210MHz



Frequency Range: 1-18GHz

Polarization: Vertical



Frequency Range: 1-18GHz

Polarization: Horizontal

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Modulation: 802.11n HT 20
Data rate: MCS7

Frequency Band	Channel No. or Frequency (MHz)	Polarization	Frequency (MHz)	Emission level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5150-5250 (UNII-1)	36(5180)	vertical	5150(Pk)	51.93	74*	-22.07
			5150(Av)	38.90	54*	-15.10
			5180(Pk)	94.88	-	-
			5180(Av)	85.00	-	-
			10360(Pk)	53.87	68.20	-14.33
			10360(Av)	41.05	54.00	-12.95
		Horizontal	5150(Pk)	60.33	74*	-13.67
			5150(Av)	48.23	54*	-5.77
			5180(Pk)	102.33	-	-
			5180(Av)	93.10	-	-
			10360(Pk)	51.32	68.20	-16.88
			10360(Av)	39.40	54.00	-14.60
	40(5200)	vertical	5200(Pk)	94.16	74	20.16
			5200(Av)	84.74	54	30.74
			10400(Pk)	52.41	68.20	-15.79
			10400(Av)	40.92	54.00	-13.08
		Horizontal	5200(Pk)	102.07	74	28.07
			5200(Av)	92.14	54	38.14
			10400(Pk)	52.97	68.20	-15.23
			10400(Av)	40.45	54.00	-13.55
	48(5240)	vertical	5240(Pk)	93.66	-	-
			5240(Av)	84.43	-	-
			5350(Pk)	42.54	74*	-31.46
			5350(Av)	30.67	54*	-23.33
			10480(Pk)	53.49	68.20	-14.71
			10480(Av)	41.68	54.00	-12.32
		Horizontal	5240(Pk)	101.95	-	-
			5240(Av)	91.97	-	-
			5350(Pk)	46.85	74*	-27.15
			5350(Av)	34.98	54*	-19.02
			10480(Pk)	52.96	68.20	-15.24
			10480(Av)	41.71	54.00	-12.29

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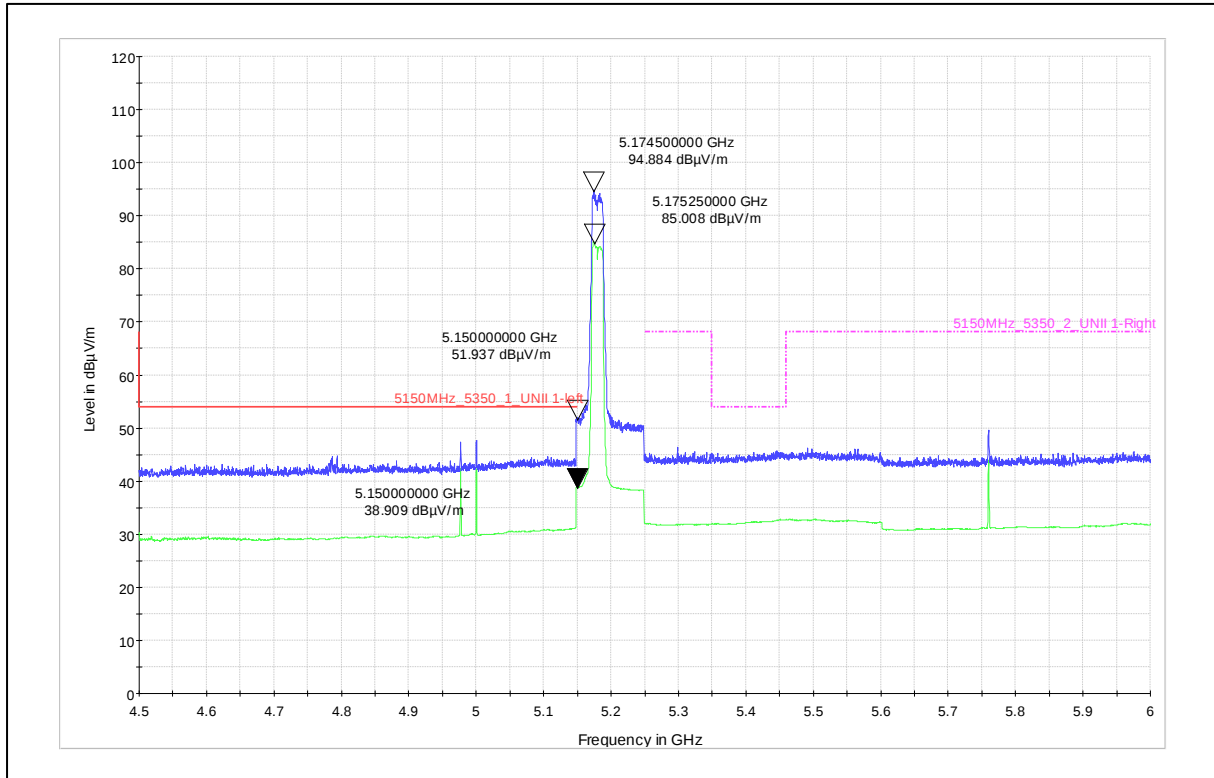
5725-5850 (UNII-3)	149(5745)	vertical	5715(Pk)	52.69	78.2	-25.51
			5725(Pk)	65.60	78.2	-12.60
			5745(Pk)	96.43	-	-
			5745(Av)	86.44	-	-
			11490(Pk)	56.71	74*	-17.29
			11490(Av)	43.64	54*	-10.36
		Horizontal	5715(Pk)	50.62	78.2	-27.58
			5725(Pk)	62.10	78.2	-16.10
			5745(Pk)	108.97	-	-
			5745(Av)	99.09	-	-
			11490(Pk)	56.62	74*	-17.38
			11490(Av)	43.53	54*	-10.47
	157(5785)	vertical	5785(Pk)	95.48	-	-
			5785(Av)	85.76	-	-
			11570(Pk)	55.14	74*	-18.86
			11570(Av)	43.19	54*	-10.81
		Horizontal	5785(Pk)	108.78	-	-
			5785(Av)	99.03	-	-
			11570(Pk)	57.65	74*	-16.35
			11570(Av)	45.28	54*	-8.72
	165(5825)	vertical	5825(Pk)	94.74	-	-
			5825(Av)	84.79	-	-
			5850(Pk)	64.55	78.2	-14.65
			5860(Pk)	58.28	78.2	-18.52
			11650(Pk)	57.24	74*	-16.76
			11650(Av)	43.50	54*	-10.50
		Horizontal	5825(Pk)	108.10	-	-
			5825(Av)	99.48	-	-
			5850(Pk)	57.64	78.2	-20.56
			5860(Pk)	50.75	78.2	-27.45
			11650(Pk)	60.96	74*	-13.04
			11650(Av)	48.02	54*	-5.98

Note:

* :- Indicate restricted band frequency in 15.205

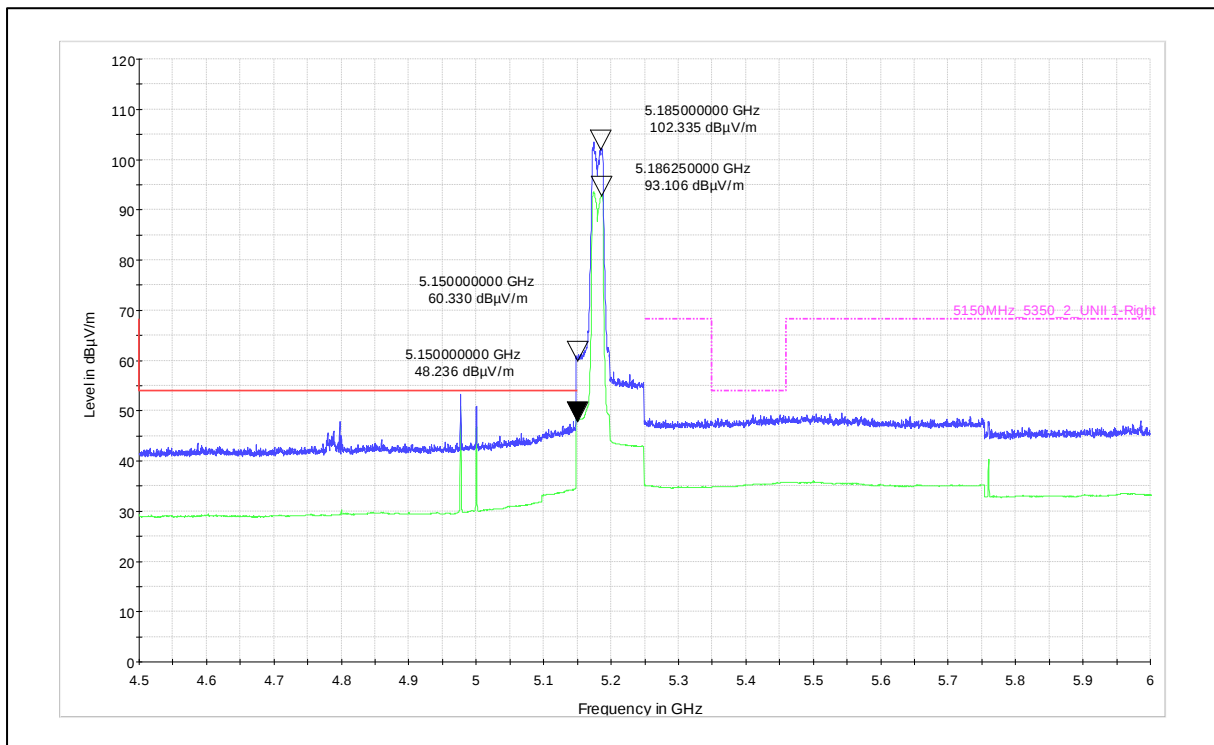
Pk: Peak Detector; Av: Average Detector

Worst case emissions for restricted band of operation



Channel Frequency: 5180MHz

Polarization: Vertical



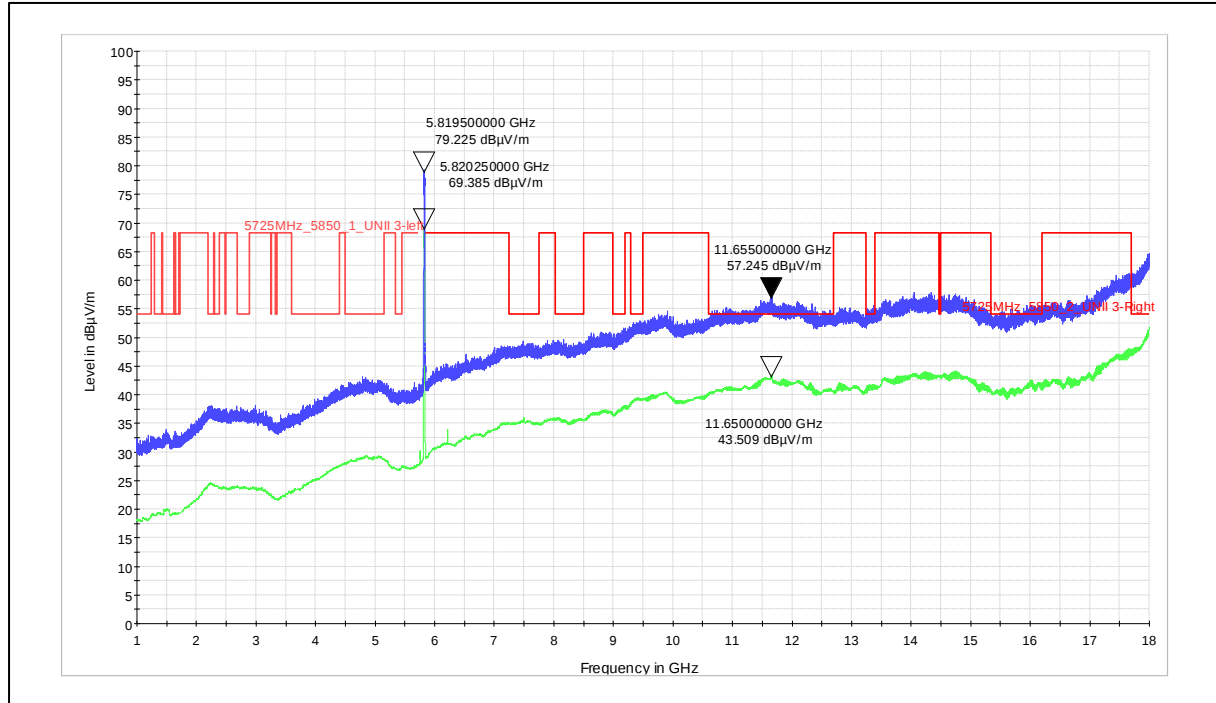
Channel Frequency: 5180MHz

Polarization: Horizontal

Worst case emissions for Spurious radiated emissions above 1GHz

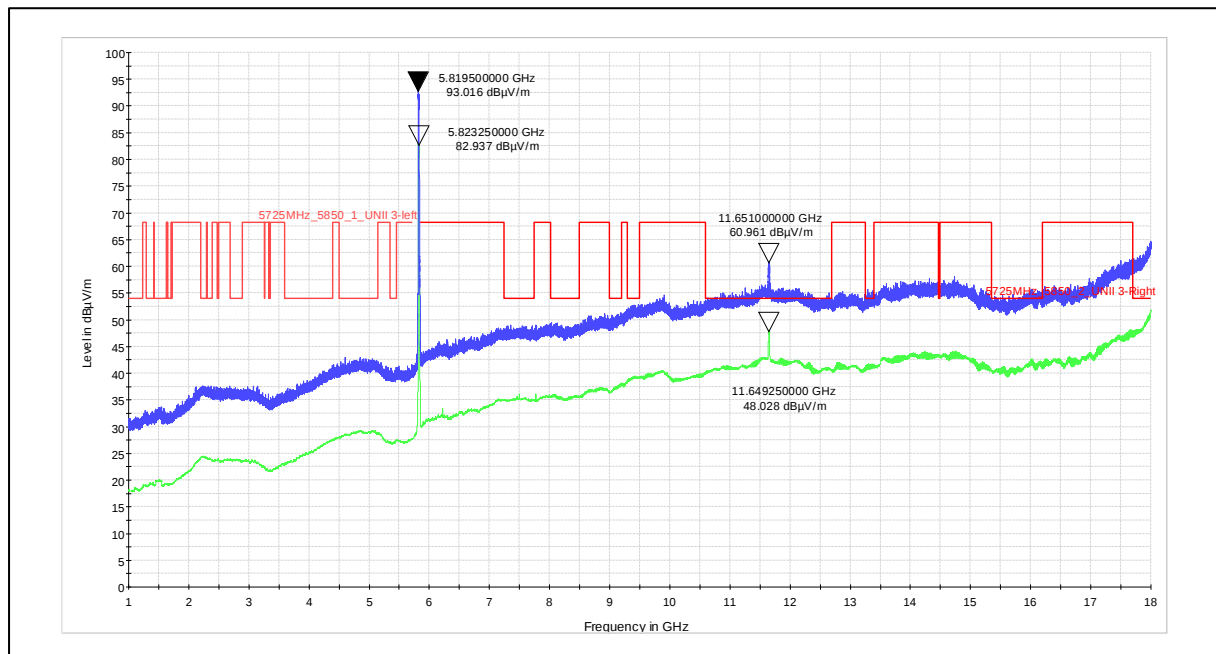
Data rate: MCS7

Channel Frequency: 5825MHz



Frequency Range: 1-18GHz

Polarization: Vertical



Frequency Range: 1-18GHz

Polarization: Horizontal

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Modulation: 802.11n HT 20

Data rate: MCS7

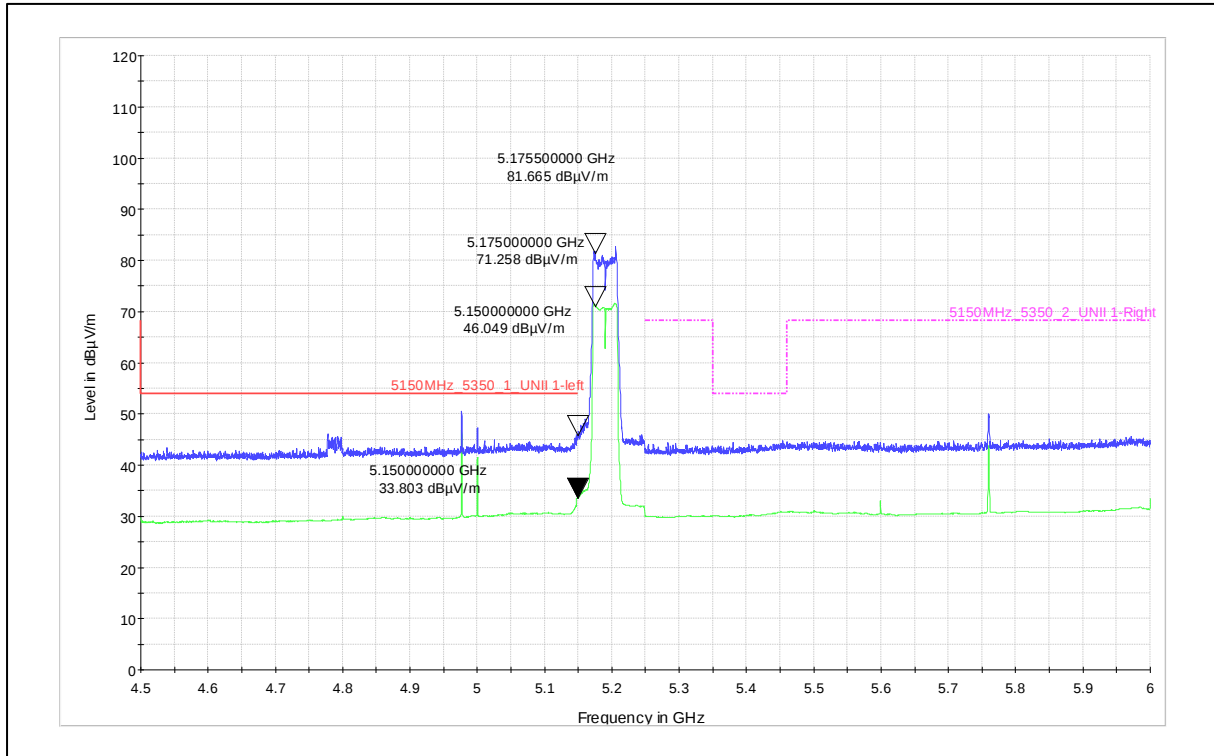
Frequency Band	Channel No. or Frequency (MHz)	Polarization	Frequency (MHz)	Emission level (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5150-5250 (UNII-1)	38(5190)	vertical	5150(Pk)	52.74	74*	-21.26
			5150(Av)	39.73	54*	-14.27
			5190(Pk)	91.12	-	-
			5190(Av)	80.05	-	-
			10380(Pk)	51.55	68.20	-36.65
			10380(Av)	39.60	54.00	-14.40
		Horizontal	5150(Pk)	62.16	74*	-11.84
			5150(Av)	49.77	54*	-4.23
			5190(Pk)	101.02	-	-
			5190(Av)	89.96	-	-
	46(5230)	vertical	10380(Pk)	51.63	68.20	-36.57
			10380(Av)	39.77	54.00	-14.23
			5230(Pk)	90.67	-	-
			5230(Av)	79.43	-	-
			5350(Pk)	43.23	74*	-31.46
			5350(Av)	30.69	54*	-23.33
		Horizontal	10460(Pk)	53.08	68.20	-35.12
			10460(Av)	41.45	54.00	-12.55
			5230(Pk)	100.22	-	-
			5230(Av)	89.09	-	-
5725-5795 (UNII-3)	151(5755)	Vertical	5350(Pk)	46.75	74*	-27.15
			5350(Av)	34.98	54*	-19.02
			10460(Pk)	52.12	68.20	-36.08
			10460(Av)	41.02	54.00	-12.98
		Horizontal	5755(Pk)	88.95	-	-
			5755(Av)	78.62	-	-
			11510(Pk)	56.04	74*	-32.16
			11510(Av)	42.99	54*	-25.21
	159(5795)	vertical	5755(Pk)	104.09	-	-
			5755(Av)	92.90	-	-
			11510(Pk)	55.31	74*	-32.89
			11510(Av)	43.03	54*	-25.17
		Horizontal	5795(Pk)	87.62	-	-
			5795(Av)	76.41	-	-
			11590(Pk)	54.79	74*	-33.41
			11590(Av)	42.96	54*	-25.24
		Horizontal	5795(Pk)	103.32	-	-
			5795(Av)	92.01	-	-
			11590(Pk)	55.38	74*	-32.82
			11590(Av)	43.54	54*	-24.66

Note:

* :- Indicate restricted band frequency in 15.205

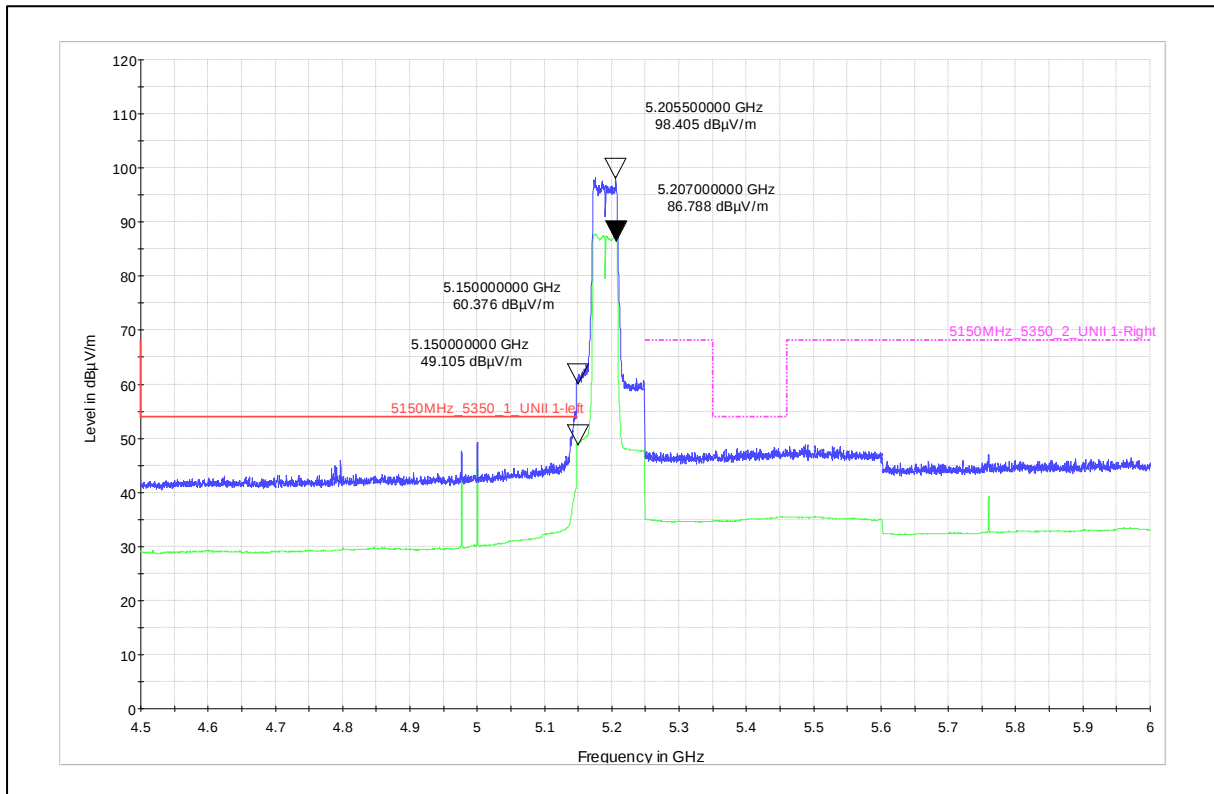
Pk: Peak Detector; Av: Average Detector

Worst case emissions for restricted band of operation



Channel Frequency: 5190MHz

Polarization: Vertical



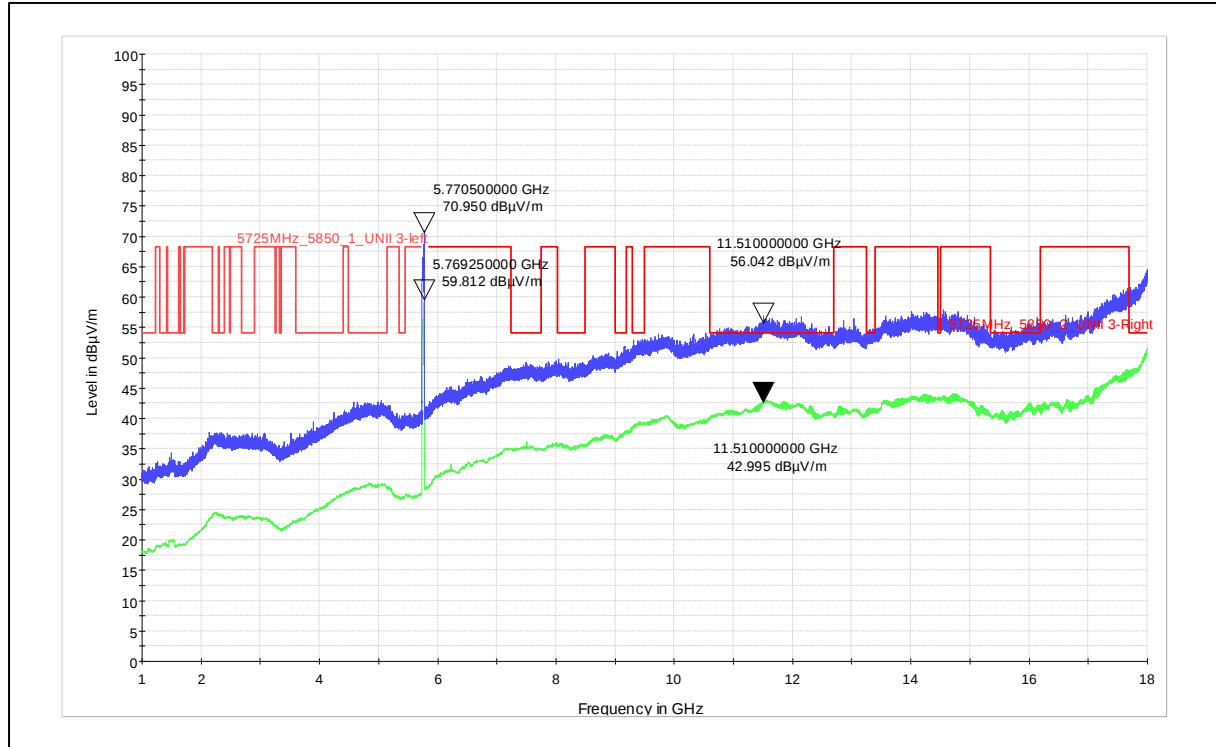
Channel Frequency: 5190MHz

Polarization: Horizontal

Worst case emissions for Spurious radiated emissions above 1GHz

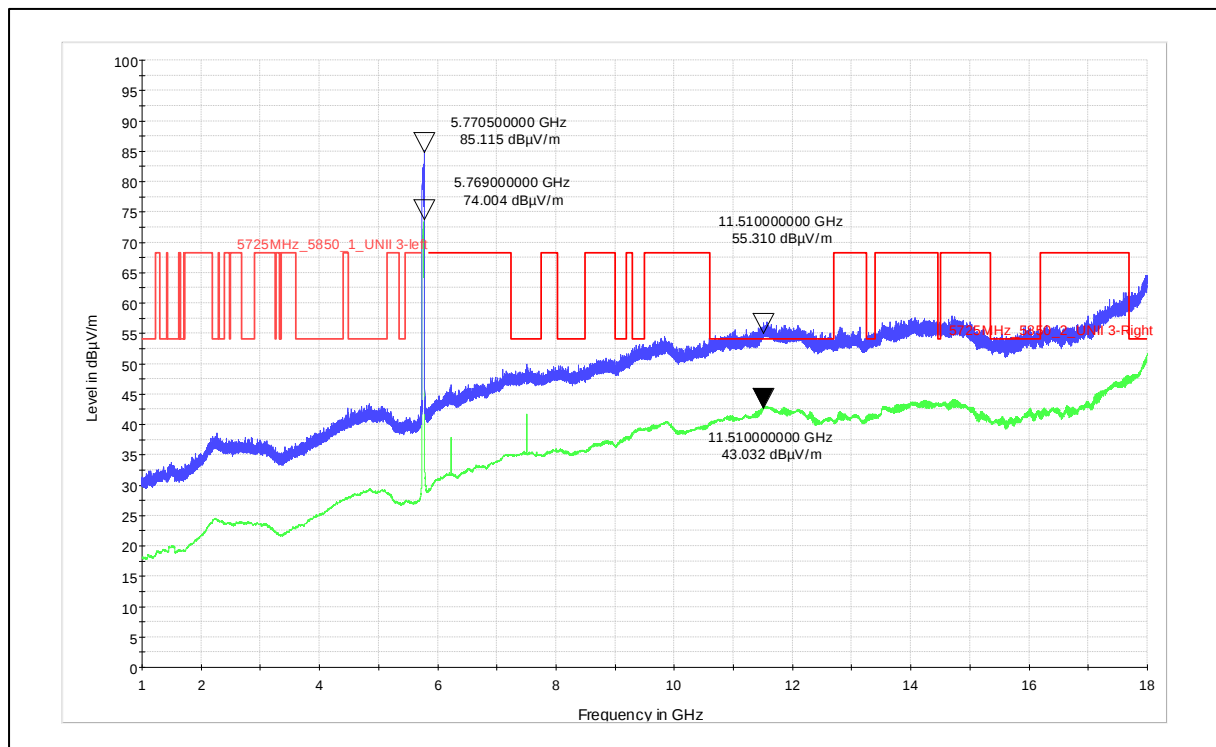
Data rate: MCS7

Channel Frequency: 5755MHz



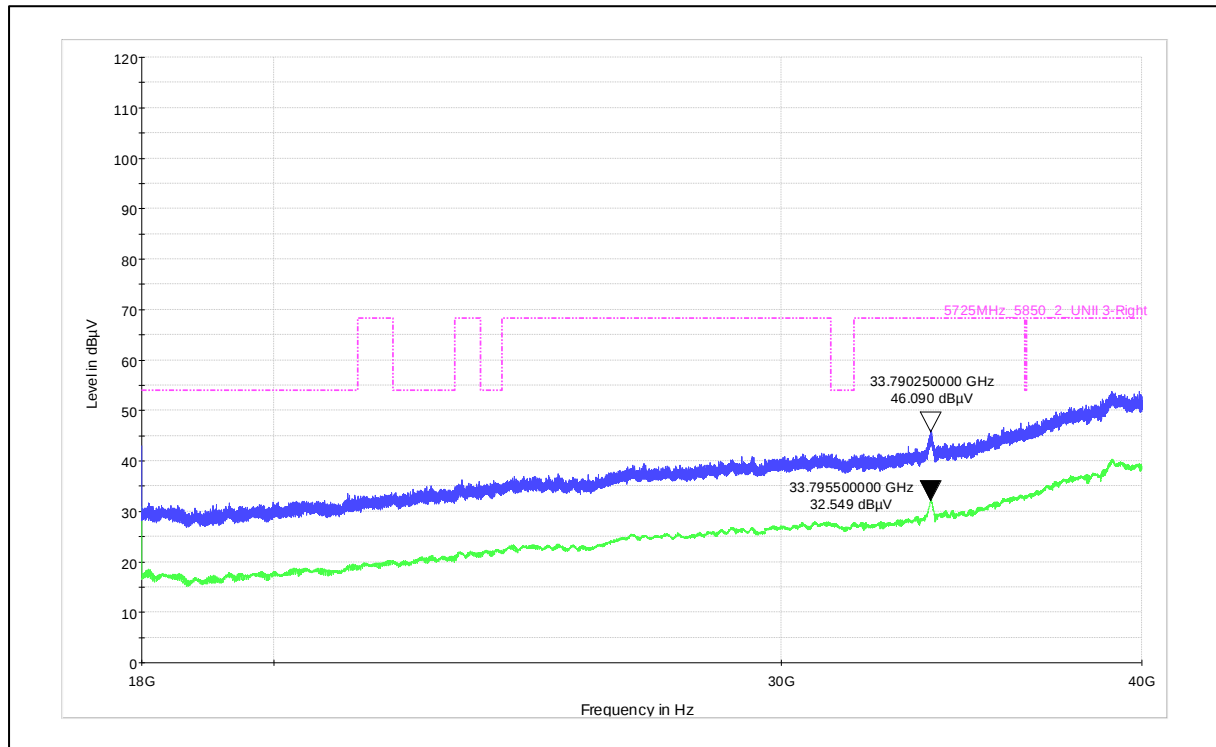
Frequency Range: 1-18GHz

Polarization: Vertical



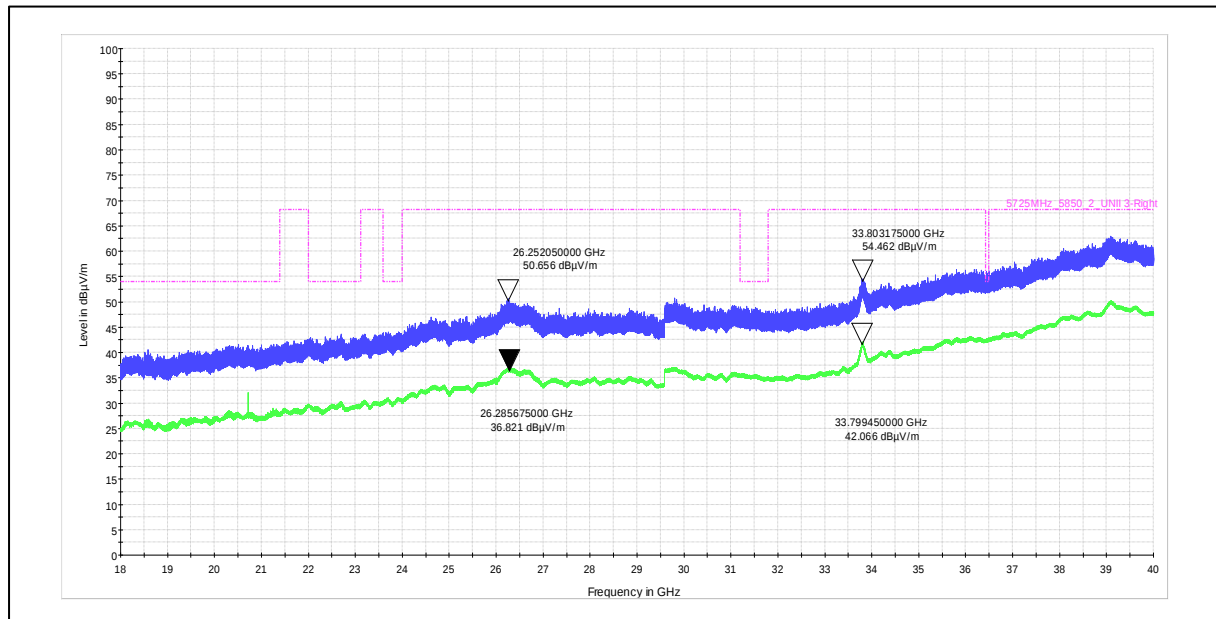
Frequency Range: 1-18GHz

Polarization: Horizontal



Frequency Range: 18-40GHz

Polarization: Vertical

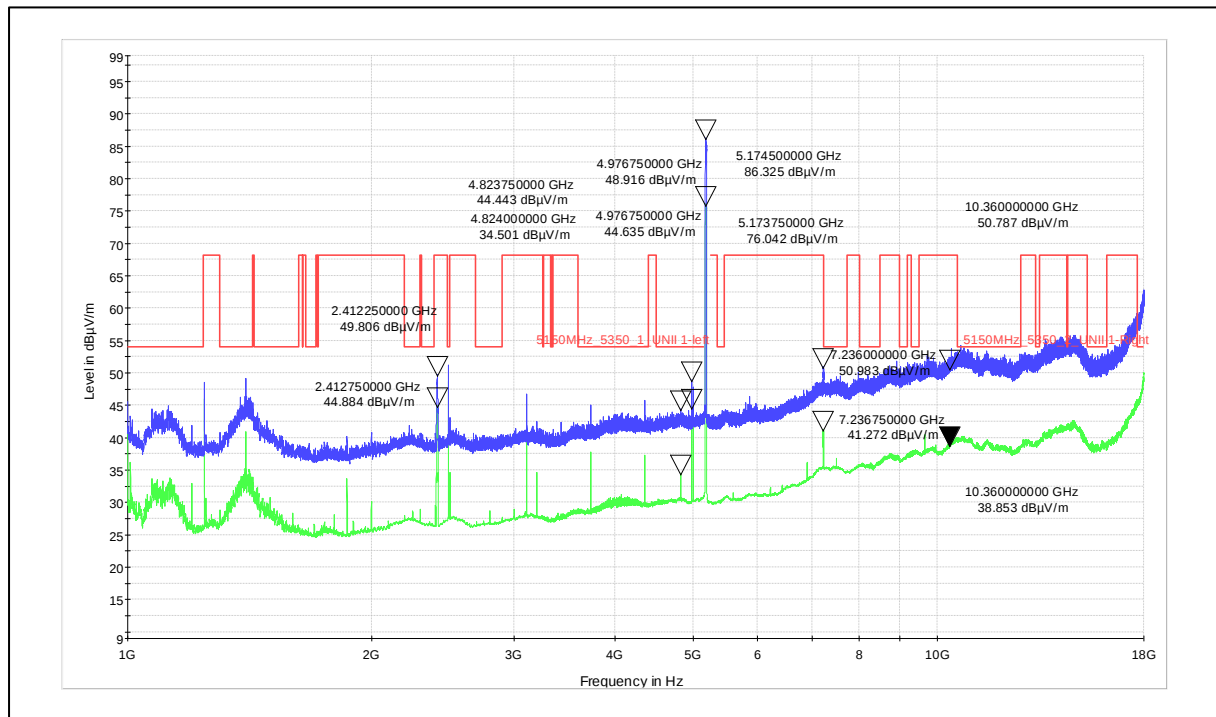


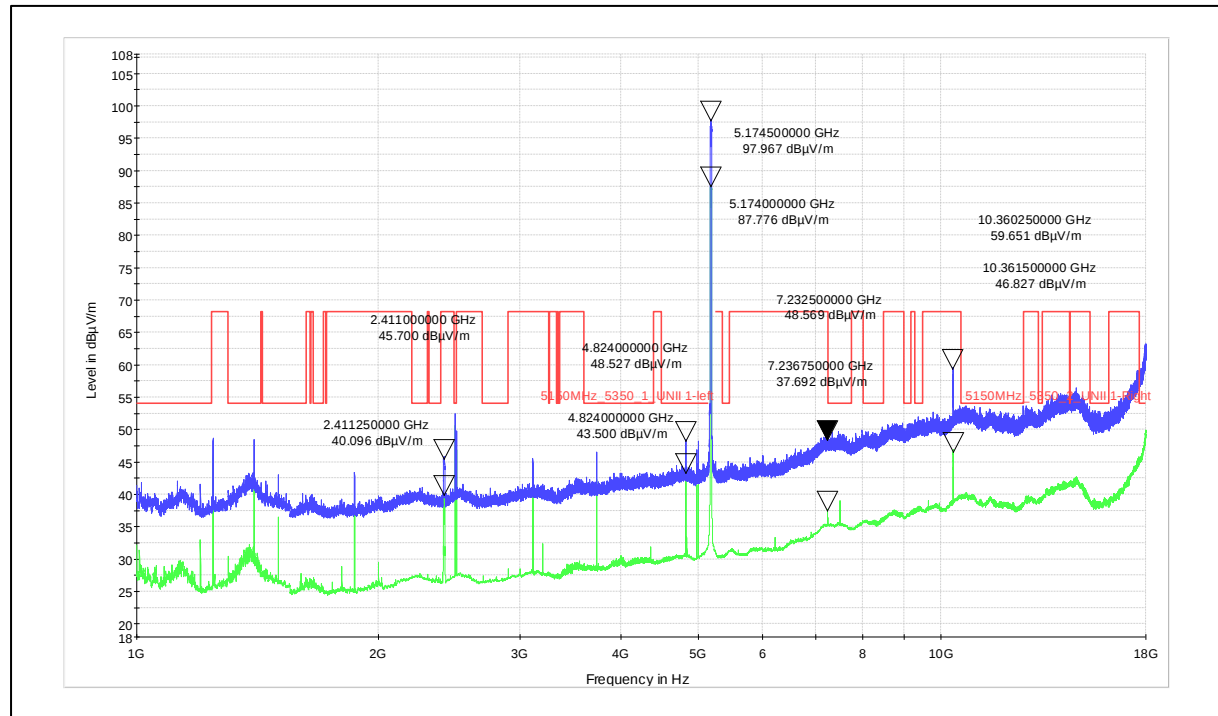
Frequency Range: 18-40GHz

Polarization: Horizontal

8.2 Simultaneous Mode of Operation

Simultaneous transmission frequencies (MHz)	Polarization	Frequency (MHz)	Emission level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2412 MHz & 5180 MHz	Vertical	4824(Pk)	44.44	68.2	-23.76
		4824(Av)	34.50	54	-19.50
		7236(Pk)	50.98	68.2	-17.22
		7236(Av)	41.27	54	-12.73
		10360(Pk)	50.78	68.2	-19.68
		10360(Av)	38.85	54	-10.50
	Horizontal	4824(Pk)	48.52	68.2	-19.64
		4824(Av)	43.50	54	-16.31
		7236(Pk)	48.56	68.2	-17.42
		7236(Av)	37.69	54	-15.15
		10360(Pk)	59.65	68.2	-8.55
		10360(Av)	46.82	54	-7.18





Frequency Range: 1-18GHz

Polarization: Horizontal

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9 Conducted Spurious Emission test on AC Power Line

Result

Pass

Test Specification : FCC Part 15 Section 15.207
Test Method : ANSI C 63.10-2013
Testing Location : Screened room
Measurement Bandwidth : 9kHz
Frequency Range : 150kHz – 30MHz
Supply Voltage : 110VAC,60Hz
Test Method : Refer TEST METHODOLOGY

***Note: The product has tested with AC to DC adapter**

Limits of section 15.207

Frequency of emission (MHz)	QP Limit (dBµV)	AV Limit (dBµV/m)
0.15 – 0.5	66 – 56*	56 – 46*
0.5 – 5	56	46
5 – 30	60	50

* Decreases with the logarithm of the frequency

Test Conditions:

Normal Temperature = +24°C Voltage (V norm) = 110V AC (Through AC to DC Adapter)
RH = 64 %

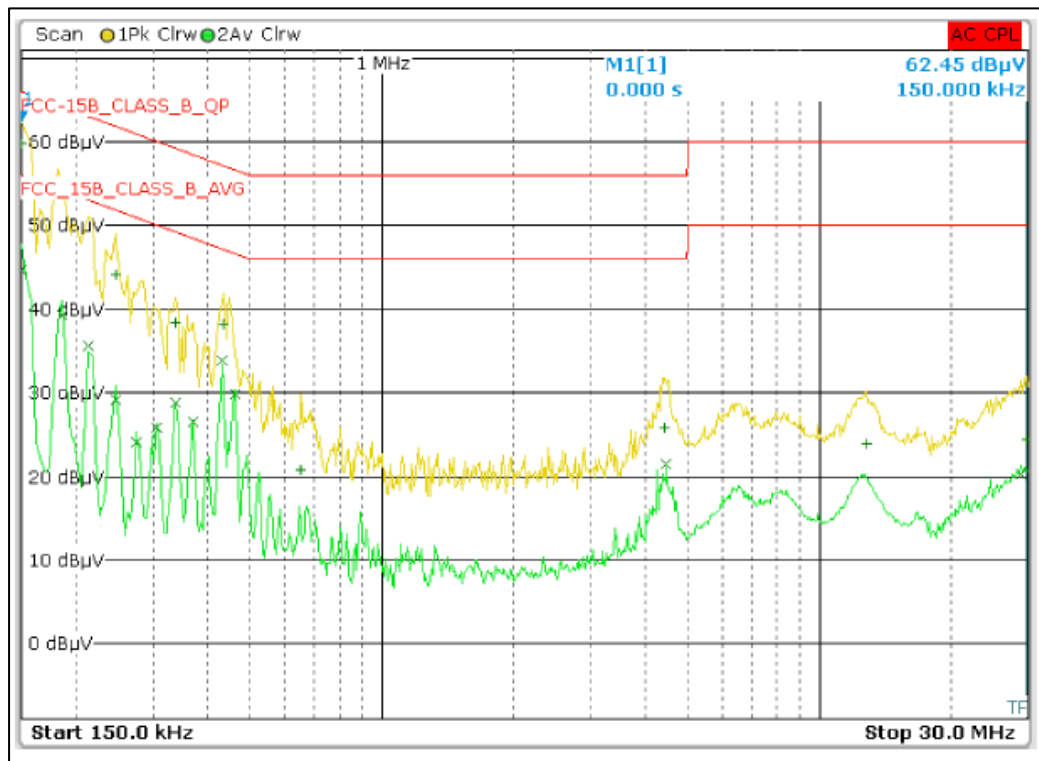
Prüfbericht - Nr.:
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Test result:

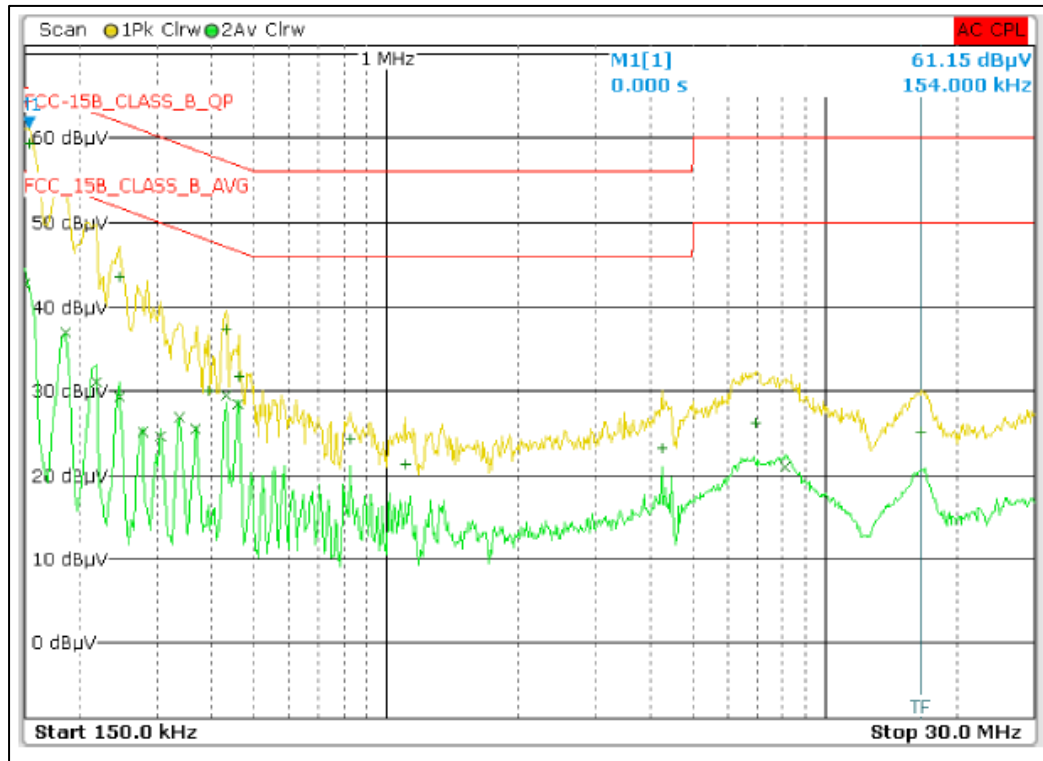
Power: 110V 60Hz_LINE



Graph: Line

Trace	Frequency	Level (dBµV)	Phase	Detector	Delta Limit/dB
1	150.000000000 kHz	59.82		Quasi Peak	-6.18
1	150.000000000 kHz	59.77		Quasi Peak	-6.23
1	182.000000000 kHz	53.89		Quasi Peak	-10.50
1	182.000000000 kHz	53.81		Quasi Peak	-10.58
2	150.000000000 kHz	44.62		Average	-11.38
2	430.000000000 kHz	33.82		Average	-13.43
2	186.000000000 kHz	39.26		Average	-14.95
2	462.000000000 kHz	29.81		Average	-16.85
2	214.000000000 kHz	35.56		Average	-17.49
1	246.000000000 kHz	44.15		Quasi Peak	-17.74
1	434.000000000 kHz	38.17		Quasi Peak	-19.01
2	338.000000000 kHz	28.85		Average	-20.40
1	338.000000000 kHz	38.48		Quasi Peak	-20.77
2	370.000000000 kHz	26.54		Average	-21.96
2	246.000000000 kHz	29.16		Average	-22.73
2	306.000000000 kHz	25.86		Average	-24.22
2	4.474000000 MHz	21.45		Average	-24.55
2	274.000000000 kHz	24.03		Average	-26.97
2	28.782000000 MHz	20.20		Average	-29.80
1	4.434000000 MHz	25.91		Quasi Peak	-30.09
1	654.000000000 kHz	20.75		Quasi Peak	-35.25
1	29.746000000 MHz	24.54		Quasi Peak	-35.46
1	12.814000000 MHz	23.94		Quasi Peak	-36.06

Power: 110V60Hz_NEUTRAL



Graph: Neutral

Trace	Frequency	Level (dBµV)	Phase	Detector	Delta Limit/dB
1	154.000000000 kHz	59.29		Quasi Peak	-6.49
2	150.000000000 kHz	42.83		Average	-13.17
2	186.000000000 kHz	37.03		Average	-17.18
2	430.000000000 kHz	29.46		Average	-17.79
2	458.000000000 kHz	28.47		Average	-18.26
1	246.000000000 kHz	43.63		Quasi Peak	-18.26
1	430.000000000 kHz	37.34		Quasi Peak	-19.91
2	218.000000000 kHz	31.09		Average	-21.80
2	338.000000000 kHz	26.88		Average	-22.37
2	246.000000000 kHz	29.35		Average	-22.54
2	366.000000000 kHz	25.56		Average	-23.03
1	462.000000000 kHz	31.81		Quasi Peak	-24.85
2	306.000000000 kHz	24.59		Average	-25.49
2	278.000000000 kHz	25.22		Average	-25.66
1	394.000000000 kHz	30.10		Quasi Peak	-27.88
2	8.122000000 MHz	20.95		Average	-29.05
1	826.000000000 kHz	24.30		Quasi Peak	-31.70
1	4.246000000 MHz	23.31		Quasi Peak	-32.69
1	6.974000000 MHz	26.19		Quasi Peak	-33.81
1	1.106000000 MHz	21.30		Quasi Peak	-34.70
1	16.558000000 MHz	25.12		Quasi Peak	-34.88

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*****END OF TEST REPORT*****