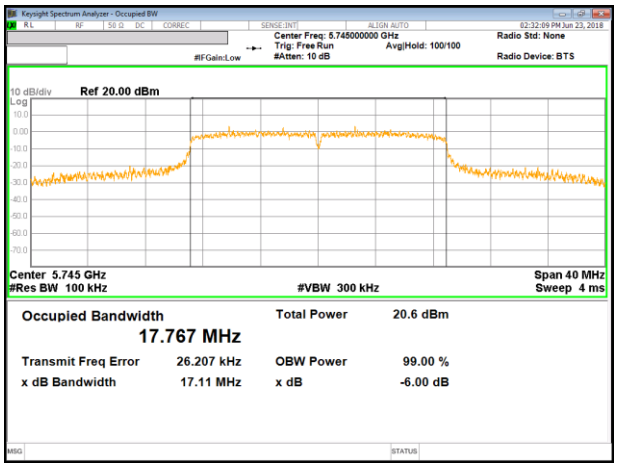
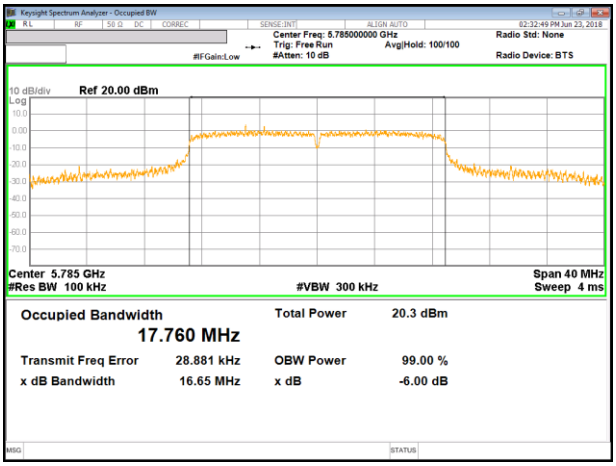
UNII 5.8 GHz IEEE 802.11n HT20 mode

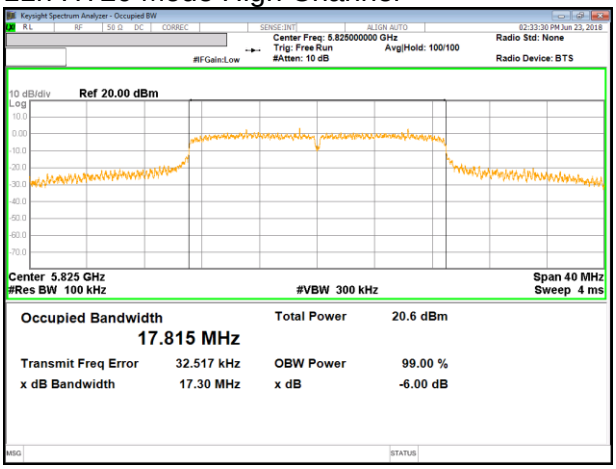
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel

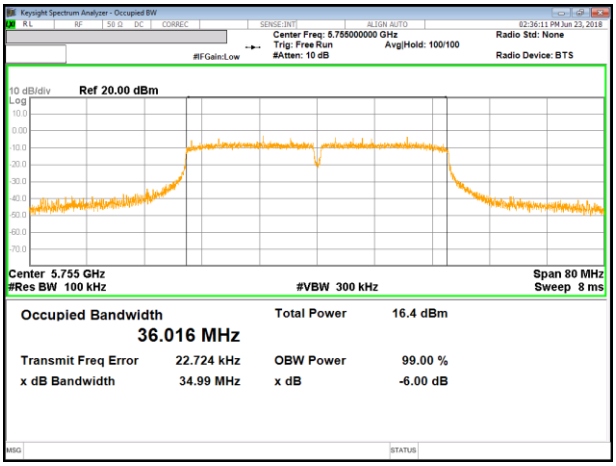


11n HT20 Mode High Channel

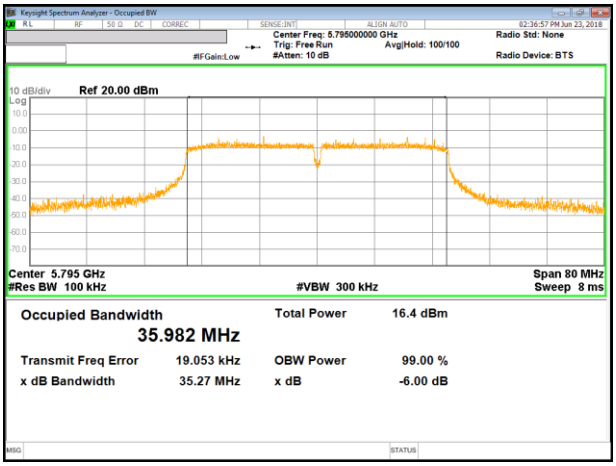


UNII 5.8 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel



11n HT40 Mode Middle Channel



10.2. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1) (2) (3)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

TEST PROCEDURE

KDB 789033 Method SA-1 and SA-2 are used for PPSD. RBW set to1MHz(500kHz for the band 5.725-5.85 GHz, the VBW >= 3 x RBW, RMS detector and trace averaging). Peak marker value of the spectrum is used for PSD. Add duty cycle correction factor for HT40 and VHT80.

KDB 789033 Method PM is used for output power.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

5 GHz

Frequency Band [MHz]	Antenna Gain [dBi]
5150 - 5250	-2.70
5250 - 5350	-2.10
5470 - 5725	-1.90
5725 - 5850	-4.90

RESULTS

10.2.1. 802.11a MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
Low	5180	35.30	16.54	-2.70	-2.70
Mid	5200	36.27	16.57	-2.70	-2.70
High	5240	35.74	16.52	-2.70	-2.70

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5180	24.00	22.18	24.88	22.18	11.00	12.70	11.00
Mid	5200	24.00	22.19	24.89	22.19	11.00	12.70	11.00
High	5240	24.00	22.18	24.88	22.18	11.00	12.70	11.00

Duty Cycle CF [dB]	0.00	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5180	16.25	16.25	22.18	-5.93
Mid	5200	16.66	16.66	22.19	-5.53
High	5240	16.15	16.15	22.18	-6.03

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5180	5.25	5.25	11.00	-5.75
Mid	5200	5.54	5.54	11.00	-5.47
High	5240	5.45	5.45	11.00	-5.55

10.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
Low	5180	33.47	17.65	-2.70	-2.70
Mid	5200	33.27	17.63	-2.70	-2.70
High	5240	31.91	17.62	-2.70	-2.70

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5180	24.00	22.47	25.17	22.47	11.00	12.70	11.00
Mid	5200	24.00	22.46	25.16	22.46	11.00	12.70	11.00
High	5240	24.00	22.46	25.16	22.46	11.00	12.70	11.00

Duty Cycle CF [dB]	0.00	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5180	15.29	15.29	22.47	-7.18
Mid	5200	15.64	15.64	22.46	-6.82
High	5240	15.13	15.13	22.46	-7.33

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5180	4.13	4.13	11.00	-6.87
Mid	5200	4.62	4.62	11.00	-6.38
High	5240	3.90	3.90	11.00	-7.10

10.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
Low	5190	42.31	36.07	-2.70	-2.70
High	5230	43.84	36.12	-2.70	-2.70

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5190	24.00	23.00	25.70	23.00	11.00	12.70	11.00
High	5230	24.00	23.00	25.70	23.00	11.00	12.70	11.00

Duty Cycle CF [dB]	0.17	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5190	11.40	11.57	23.00	-11.60
High	5230	11.16	11.33	23.00	-11.84

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5190	-2.53	-2.35	11.00	-13.53
High	5230	-2.96	-2.79	11.00	-13.96

10.2.4. 802.11a MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
Low	5260	34.05	16.53	-2.10	-2.10
Mid	5300	32.91	16.52	-2.10	-2.10
High	5320	34.70	16.54	-2.10	-2.10

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5260	24.00	23.18	29.18	23.18	11.00	11.00	11.00
Mid	5300	24.00	23.18	29.18	23.18	11.00	11.00	11.00
High	5320	24.00	23.18	29.18	23.18	11.00	11.00	11.00

Duty Cycle CF [dB]	0.00	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5260	15.75	15.75	23.18	-7.43
Mid	5300	16.09	16.09	23.18	-7.09
High	5320	16.12	16.12	23.18	-7.06

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5260	4.94	4.94	11.00	-6.06
Mid	5300	5.32	5.32	11.00	-5.68
High	5320	5.55	5.55	11.00	-5.45

10.2.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
Low	5260	29.92	17.64	-2.10	-2.10
Mid	5300	31.30	17.65	-2.10	-2.10
High	5320	30.84	17.64	-2.10	-2.10

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5260	24.00	22.46	29.46	22.46	11.00	11.00	11.00
Mid	5300	24.00	22.47	29.47	22.47	11.00	11.00	11.00
High	5320	24.00	22.47	29.47	22.47	11.00	11.00	11.00

Duty Cycle CF [dB]	0.00	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5260	14.90	14.90	22.46	-7.56
Mid	5300	15.03	15.03	22.47	-7.44
High	5320	15.11	15.11	22.47	-7.36

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5260	3.48	3.48	11.00	-7.52
Mid	5300	4.18	4.18	11.00	-6.82
High	5320	4.16	4.16	11.00	-6.84

10.2.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
Low	5270	42.79	36.02	-2.10	-2.10
High	5310	44.01	36.06	-2.10	-2.10

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5270	24.00	23.00	30.00	23.00	11.00	11.00	11.00
High	5310	24.00	23.00	30.00	23.00	11.00	11.00	11.00

Duty Cycle CF [dB]	0.17	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5270	11.29	11.46	23.00	-11.71
High	5310	11.34	11.51	23.00	-11.66

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5270	-2.83	-2.65	11.00	-13.83
High	5310	-2.91	-2.73	11.00	-13.91

10.2.7. 802.11a MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
Low	5500	22.35	16.46	-1.90	-1.90
Mid	5580	21.99	16.45	-1.90	-1.90
High	5700	25.16	16.50	-1.90	-1.90

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5500	24.00	22.16	29.16	22.16	11.00	11.00	11.00
Mid	5580	24.00	22.16	29.16	22.16	11.00	11.00	11.00
High	5700	24.00	22.18	29.18	22.18	11.00	11.00	11.00

Duty Cycle CF [dB]	0.00	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5500	13.63	13.63	22.16	-8.53
Mid	5580	13.47	13.47	22.16	-8.69
High	5700	14.03	14.03	22.18	-8.15

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5500	3.30	3.30	11.00	-7.70
Mid	5580	2.81	2.81	11.00	-8.19
High	5700	3.40	3.40	11.00	-7.60

10.2.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
Low	5500	22.34	17.63	-1.90	-1.90
Mid	5580	26.50	17.61	-1.90	-1.90
High	5700	27.12	17.63	-1.90	-1.90

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5500	24.00	22.46	29.46	22.46	11.00	11.00	11.00
Mid	5580	24.00	22.46	29.46	22.46	11.00	11.00	11.00
High	5700	24.00	22.46	29.46	22.46	11.00	11.00	11.00

Duty Cycle CF [dB]	0.00	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5500	14.06	14.06	22.46	-8.40
Mid	5580	13.93	13.93	22.46	-8.53
High	5700	14.17	14.17	22.46	-8.29

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5500	2.75	2.75	11.00	-8.25
Mid	5580	2.67	2.67	11.00	-8.33
High	5700	3.54	3.54	11.00	-7.46

10.2.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
Low	5510	43.84	36.04	-1.90	-1.90
Mid	5590	42.14	36.13	-1.90	-1.90
High	5670	43.25	36.01	-1.90	-1.90

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5510	24.00	23.00	30.00	23.00	11.00	11.00	11.00
Mid	5590	24.00	23.00	30.00	23.00	11.00	11.00	11.00
High	5670	24.00	23.00	30.00	23.00	11.00	11.00	11.00

Duty Cycle CF [dB]	0.17	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5510	10.16	10.33	23.00	-12.84
Mid	5590	10.08	10.25	23.00	-12.92
High	5670	9.86	10.03	23.00	-13.14

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5510	-3.50	-3.32	11.00	-14.50
Mid	5590	-3.13	-2.96	11.00	-14.13
High	5670	-3.40	-3.22	11.00	-14.40

10.2.10. 802.11a MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
Low	5745	36.16	16.55	-4.90	-4.90
Mid	5785	37.24	16.59	-4.90	-4.90
High	5825	38.87	16.61	-4.90	-4.90

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5745	30.00	30.00	34.90	30.00	30.00	30.00	30.00
Mid	5785	30.00	30.00	34.90	30.00	30.00	30.00	30.00
High	5825	30.00	30.00	34.90	30.00	30.00	30.00	30.00

Duty Cycle CF [dB]	0.00	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5745	16.46	16.46	30.00	-13.54
Mid	5785	16.44	16.44	30.00	-13.56
High	5825	16.64	16.64	30.00	-13.36

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5745	2.84	2.84	30.00	-27.16
Mid	5785	2.94	2.94	30.00	-27.06
High	5825	2.91	2.91	30.00	-27.09

10.2.11. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
Low	5745	35.79	17.66	-4.90	-4.90
Mid	5785	37.47	17.68	-4.90	-4.90
High	5825	36.01	17.69	-4.90	-4.90

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5745	30.00	30.00	34.90	30.00	30.00	30.00	30.00
Mid	5785	30.00	30.00	34.90	30.00	30.00	30.00	30.00
High	5825	30.00	30.00	34.90	30.00	30.00	30.00	30.00

Duty Cycle CF [dB]	0.00	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5745	15.54	15.54	30.00	-14.46
Mid	5785	15.55	15.55	30.00	-14.45
High	5825	15.67	15.67	30.00	-14.33

PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5745	1.89	1.89	30.00	-28.11
Mid	5785	1.75	1.75	30.00	-28.26
High	5825	1.98	1.98	30.00	-28.02

10.2.12. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency [MHz]	Min 26 dB BW [MHz]	Min 99% BW [MHz]	Directional Gain for Power [dBi]	Directional Gain for PPSD [dBi]
Low	5755	36.10	36.06	-4.90	-4.90
High	5795	36.12	36.03	-4.90	-4.90

Limits

Channel	Frequency [MHz]	FCC Power Limit [dBm]	IC EIRP Limit [dBm]	Max IC Power Limit [dBm]	Power Limit [dBm]	FCC PPSD Limit [dBm]	IC eirp PSD Limit [dBm]	PPSD Limit [dBm]
Low	5755	30.00	30.00	34.90	30.00	30.00	30.00	30.00
High	5795	30.00	30.00	34.90	30.00	30.00	30.00	30.00

Duty Cycle CF [dB]	0.17	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Corr'd Power [dBm]	Power Limit [dBm]	Power Margin [dB]
Low	5755	10.95	11.12	30.00	-19.05
High	5795	11.26	11.43	30.00	-18.74

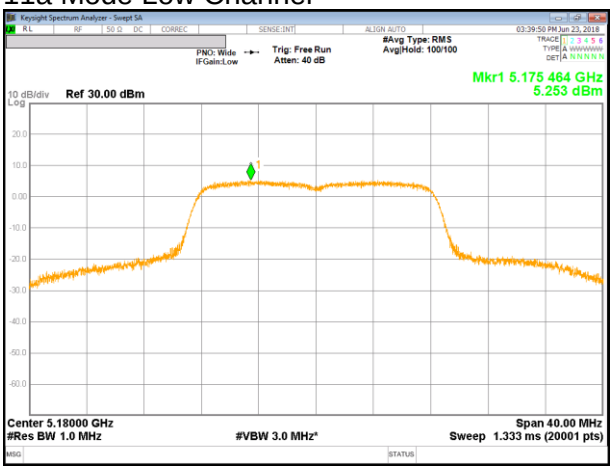
PPSD Results

Channel	Frequency [MHz]	Meas PPSD [dBm]	Total Corr'd PPSD [dBm]	PPSD Limit [dBm]	PPSD Margin [dB]
Low	5755	-5.28	-5.10	30.00	-35.28
High	5795	-5.21	-5.03	30.00	-35.21

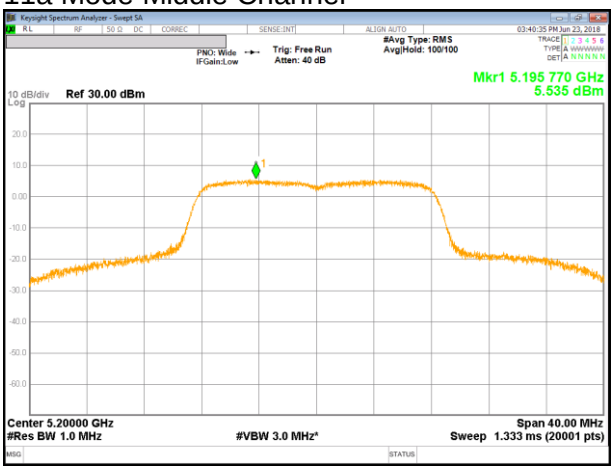
10.2.13. PPSD PLOTS

UNII 5.2 GHz IEEE 802.11a mode

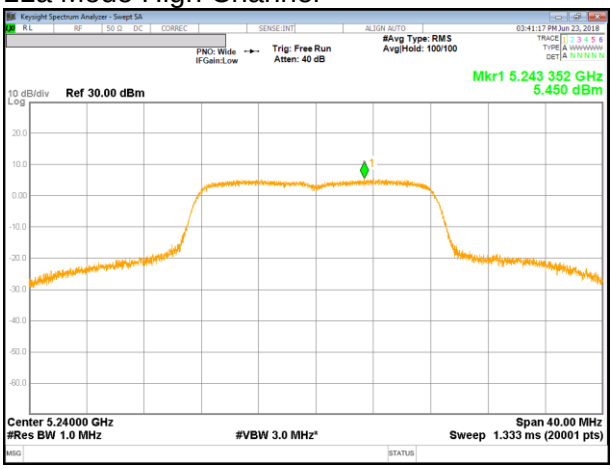
11a Mode Low Channel



11a Mode Middle Channel

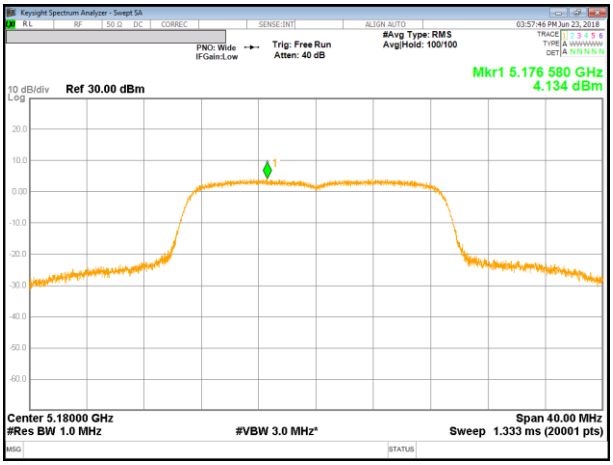


11a Mode High Channel

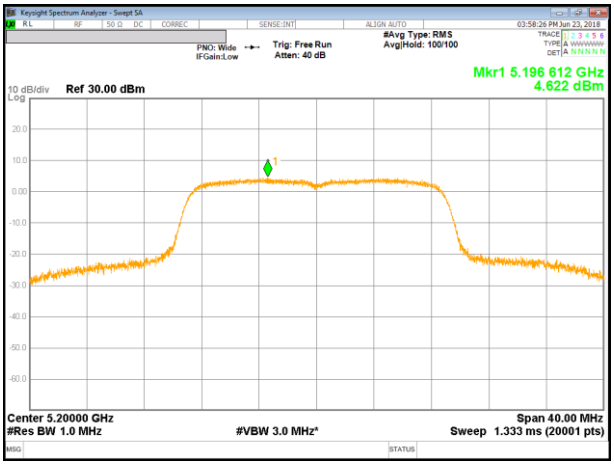


UNII 5.2 GHz IEEE 802.11n HT20 mode

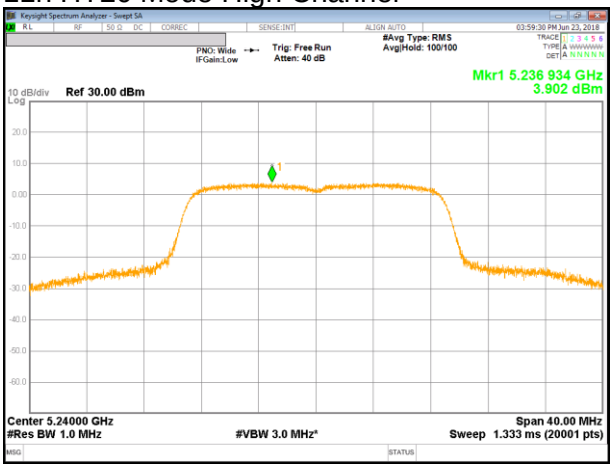
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel

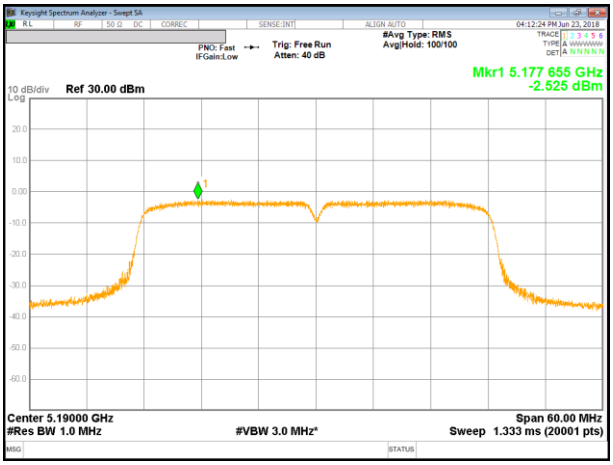


11n HT20 Mode High Channel

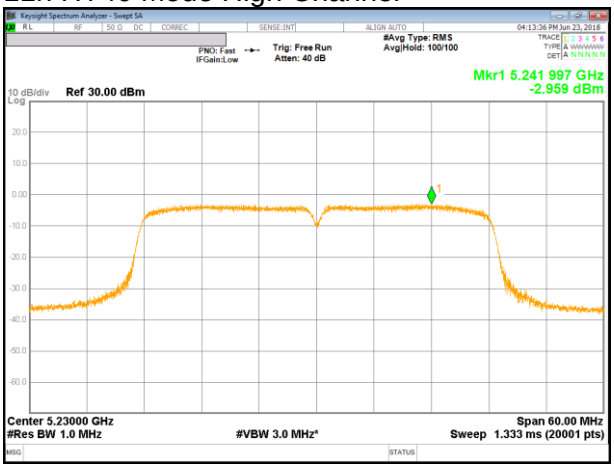


UNII 5.2 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel

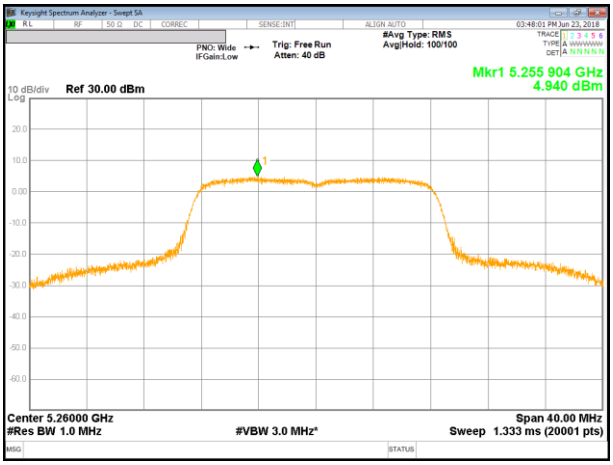


11n HT40 Mode High Channel

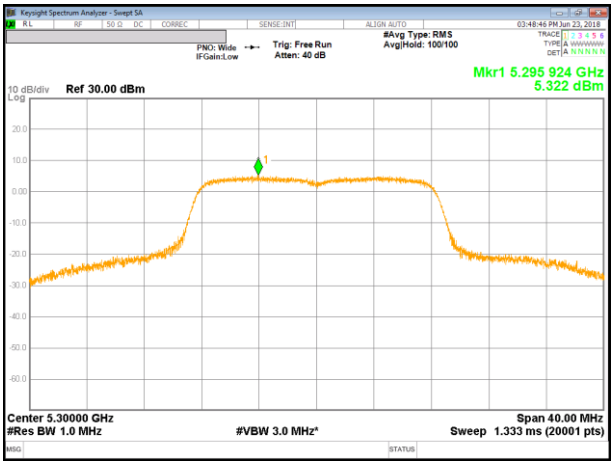


UNII 5.3 GHz IEEE 802.11a mode

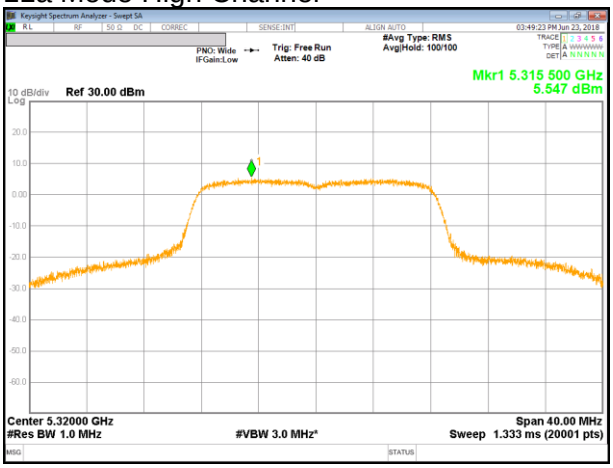
11a Mode Low Channel



11a Mode Middle Channel

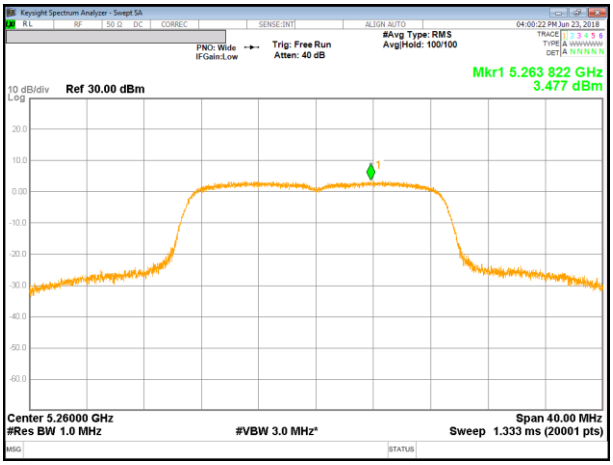


11a Mode High Channel

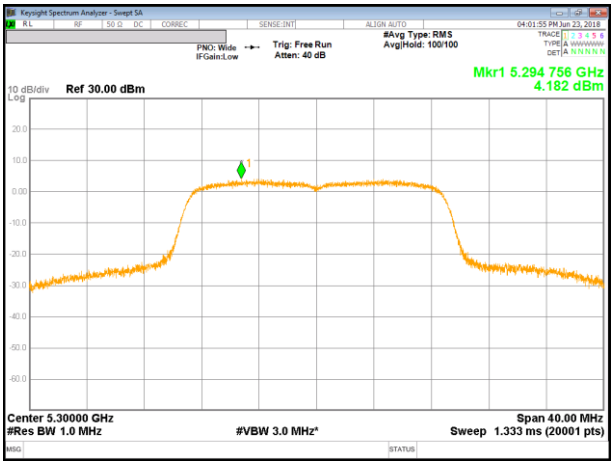


UNII 5.3 GHz IEEE 802.11n HT20 mode

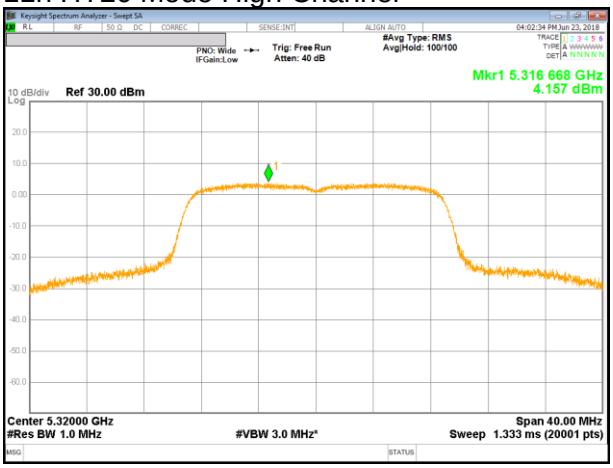
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel

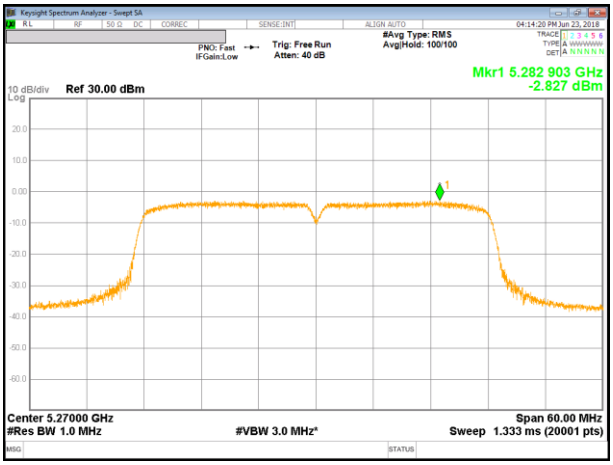


11n HT20 Mode High Channel

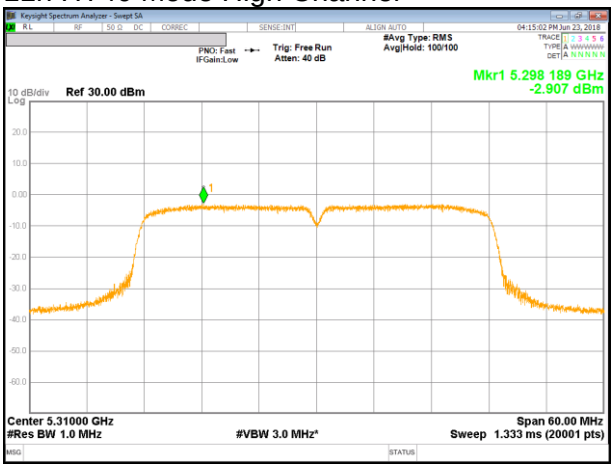


UNII 5.3 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel

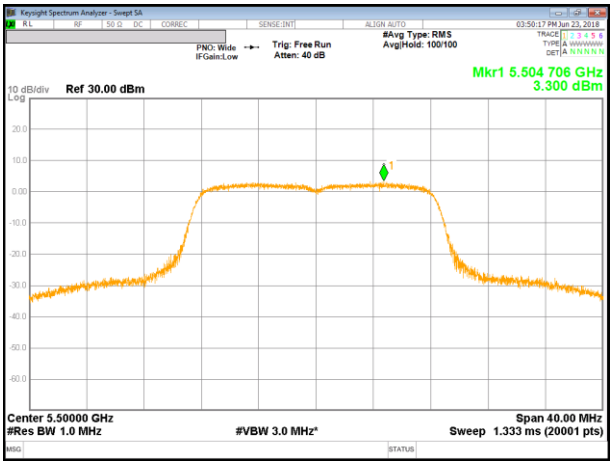


11n HT40 Mode High Channel

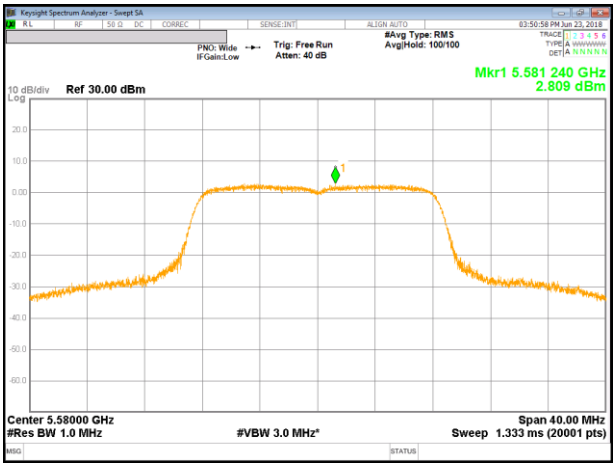


UNII 5.5 GHz IEEE 802.11a mode

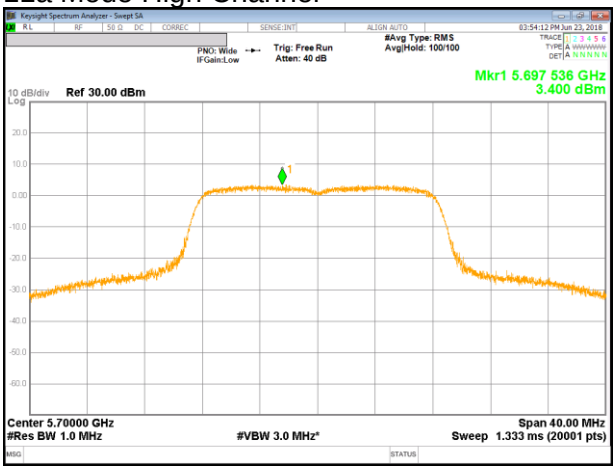
11a Mode Low Channel



11a Mode Middle Channel

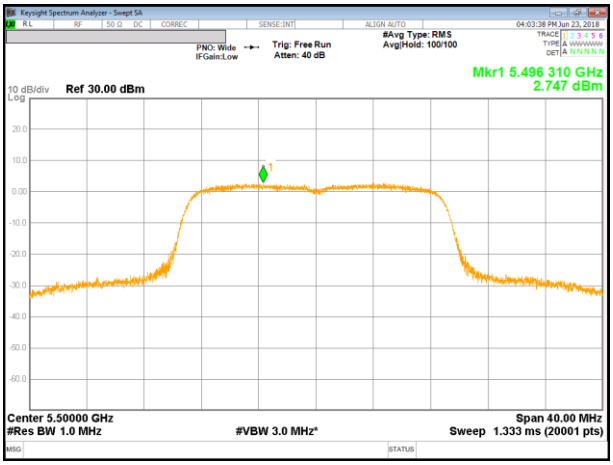


11a Mode High Channel

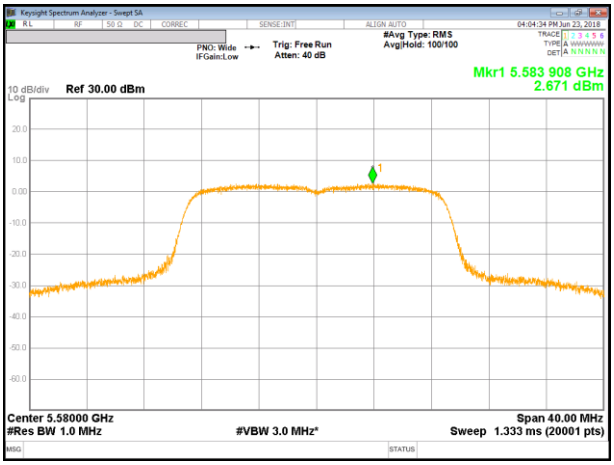


UNII 5.5 GHz IEEE 802.11n HT20 mode

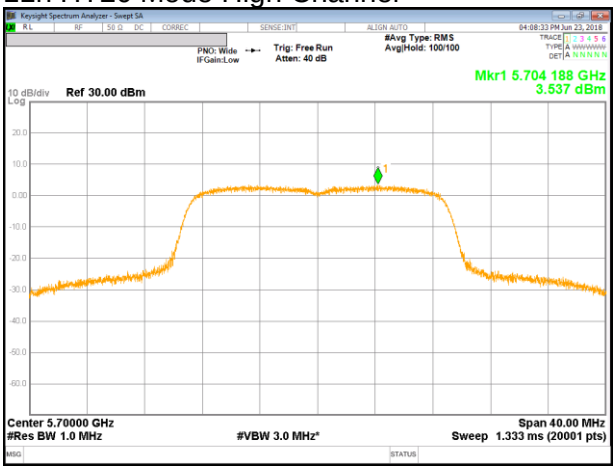
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel

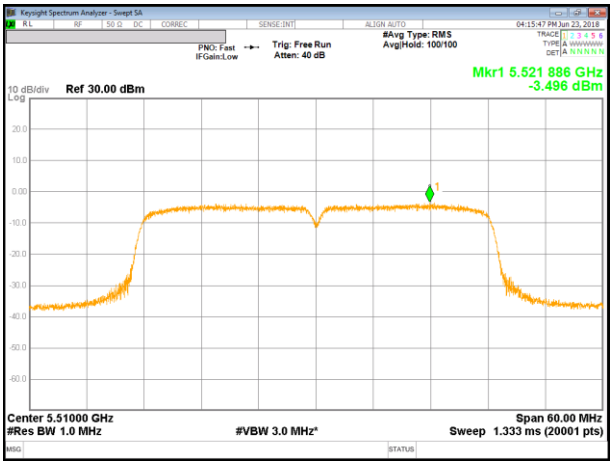


11n HT20 Mode High Channel

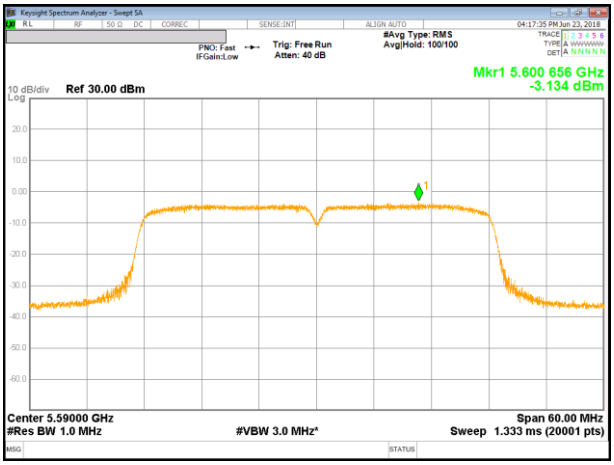


UNII 5.5 GHz IEEE 802.11n HT40 mode

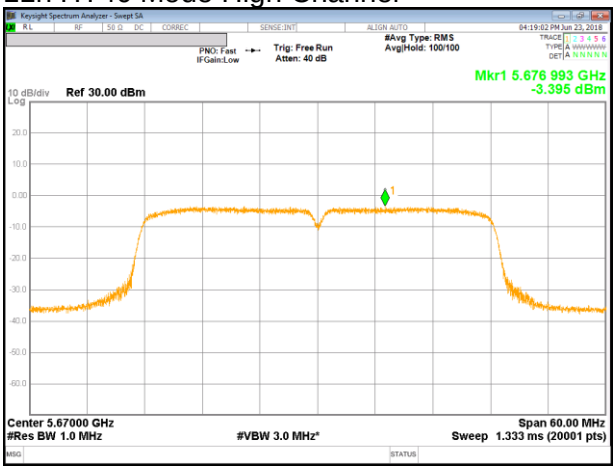
11n HT40 Mode Low Channel



11n HT40 Mode Middle Channel

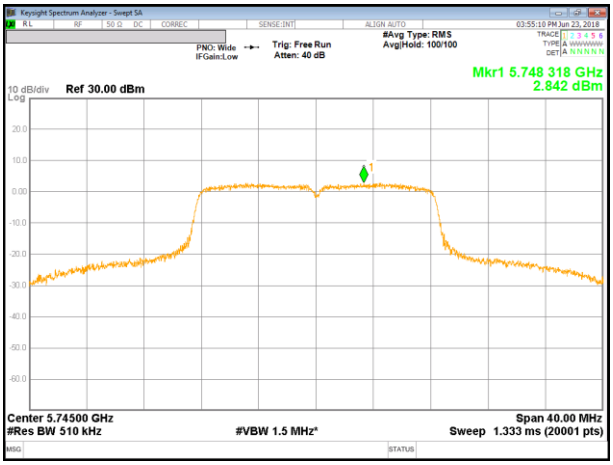


11n HT40 Mode High Channel

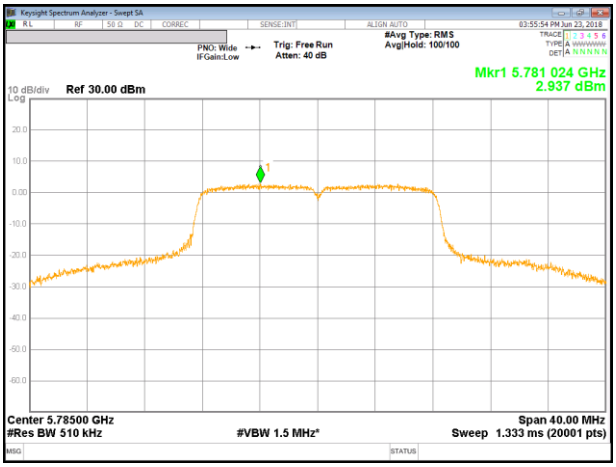


UNII 5.8 GHz IEEE 802.11a mode

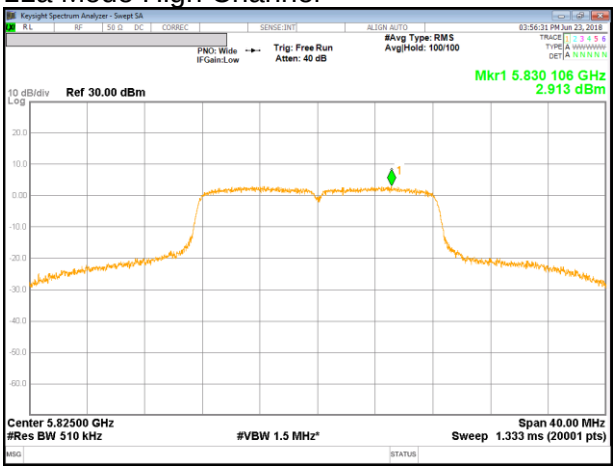
11a Mode Low Channel



11a Mode Middle Channel

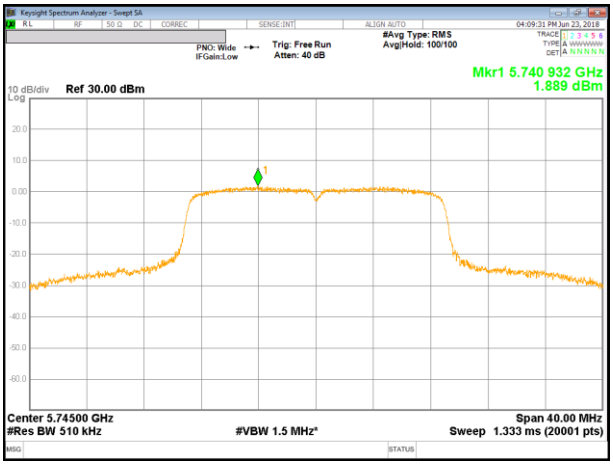


11a Mode High Channel

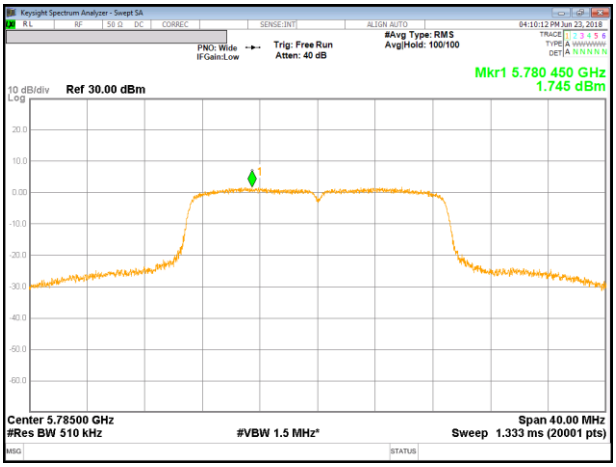


UNII 5.8 GHz IEEE 802.11n HT20 mode

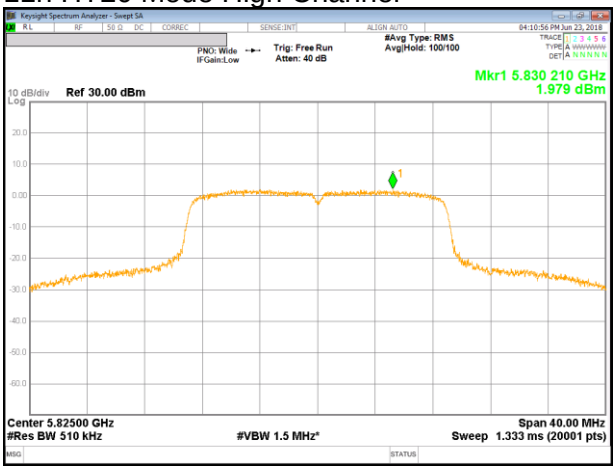
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel

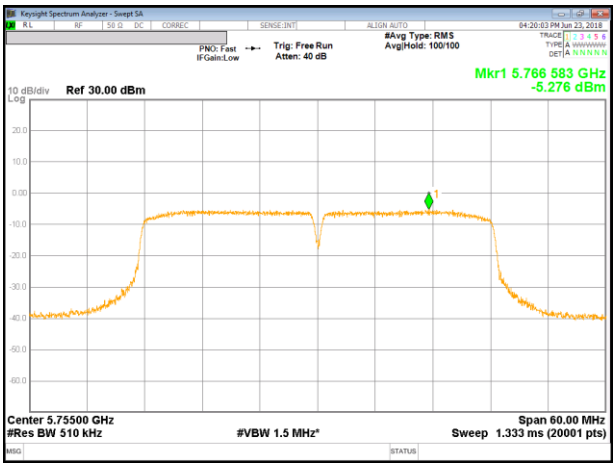


11n HT20 Mode High Channel

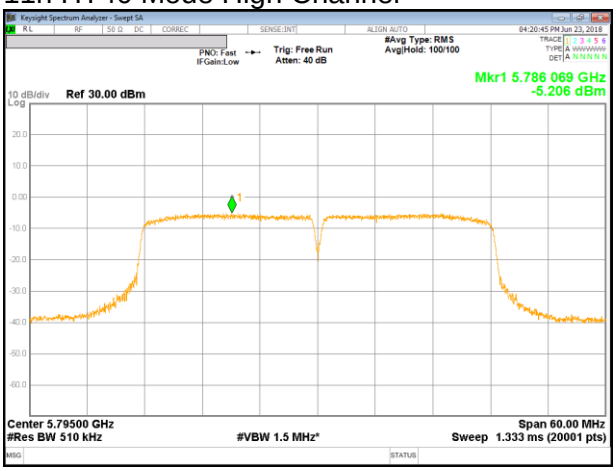


UNII 5.8 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel



11n HT40 Mode High Channel



11. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209
RSS-247 §6.2.1.1, §6.2.2.1, §6.2.3.1, §6.2.4.1

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

FCC §15.407 (b)

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.
(7) The provisions of §15.205 apply to intentional radiators operating under this section.
(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

Note

- Limit translation to field strength level (FCC §15.407)

E[dBuV/m] = EIRP[dBm] + 95.2 = -27dBm + 95.2 = 68.2dBuV/m
E[dBuV/m] = EIRP[dBm] + 95.2 = -17dBm + 95.2 = 78.2dBuV/m

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150 cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

Reference to KDB 789033 D02 v02r01 UNII part G) 6) c) Method AD:
For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor to the reading offset for average measurements.
Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

The spectrum from 1 GHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.
(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

Note : Emission was pre-scanned from 9KHz to 30MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor).
Per FCC part 15.31(o), test results were not reported.

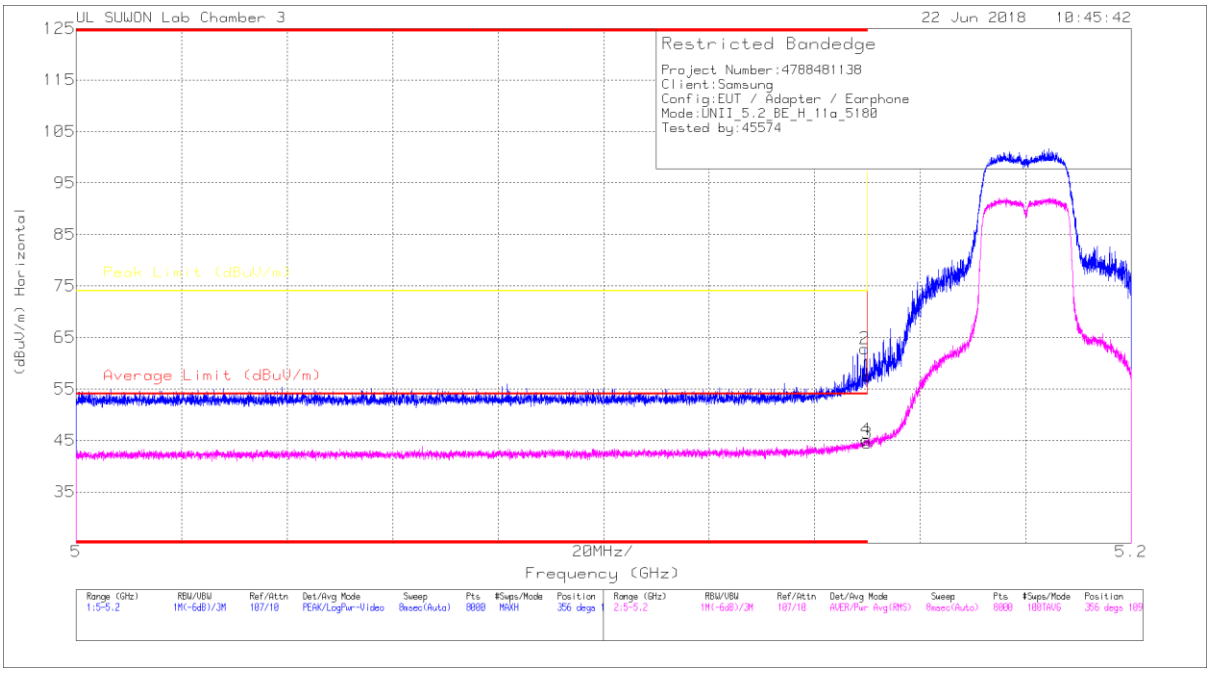
Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

11.1. 5.2 GHz

11.1.1. TX Above 1GHz 802.11a MODE IN THE 5.2GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



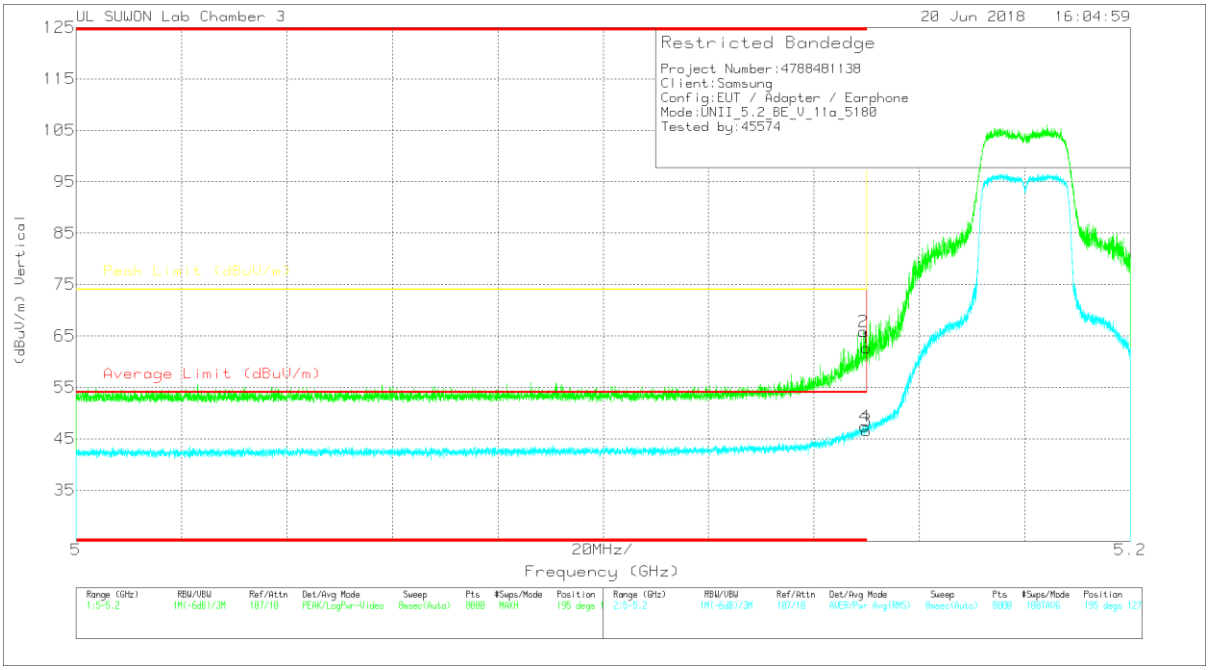
HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	42.1	Pk	34.3	-18.8	0	57.6	-	-	74	-16.4	356	109	H
2	* 5.149	47.32	Pk	34.3	-18.8	0	62.82	-	-	74	-11.18	356	109	H
3	* 5.15	29.47	RMS	34.3	-19.3	0	44.47	54	-9.53	-	-	356	109	H
4	* 5.15	30.12	RMS	34.3	-19.3	0	45.12	54	-8.88	-	-	356	109	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

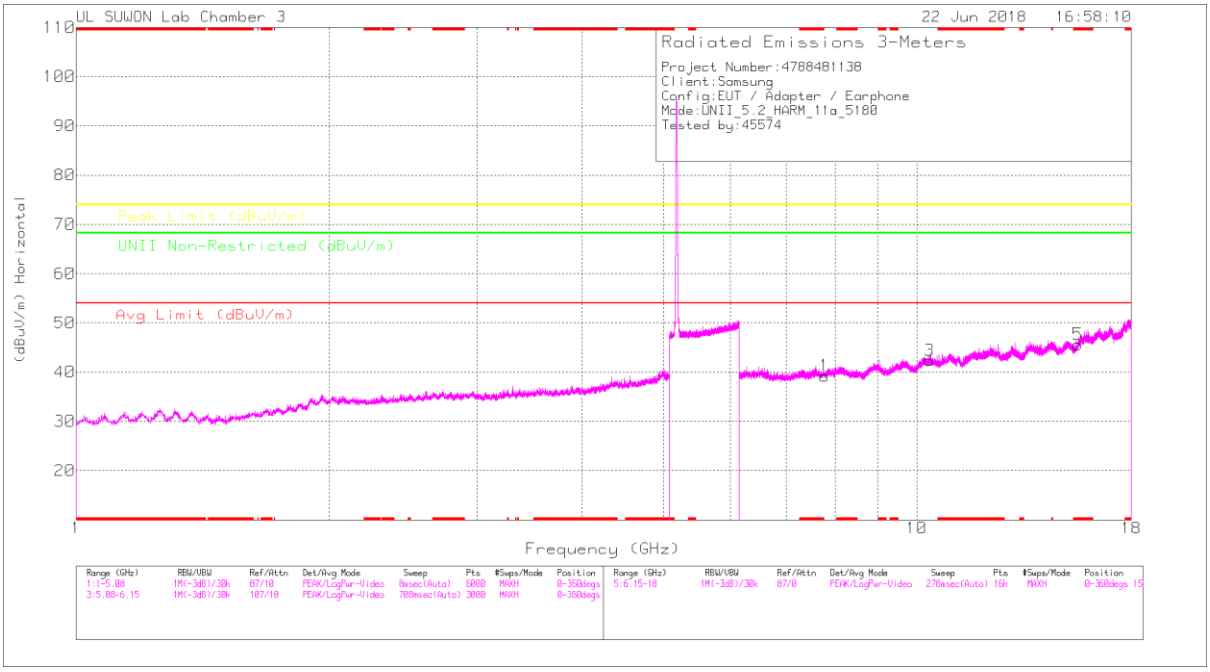
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	47.16	Pk	34.3	-18.8	0	62.66	-	-	74	-11.34	195	127	V
2	* 5.149	50.31	Pk	34.3	-18.8	0	65.81	-	-	74	-8.19	195	127	V
3	* 5.15	31.57	RMS	34.3	-19.3	0	46.57	54	-7.43	-	-	195	127	V
4	* 5.15	32.4	RMS	34.3	-19.3	0	47.4	54	-6.6	-	-	195	127	V

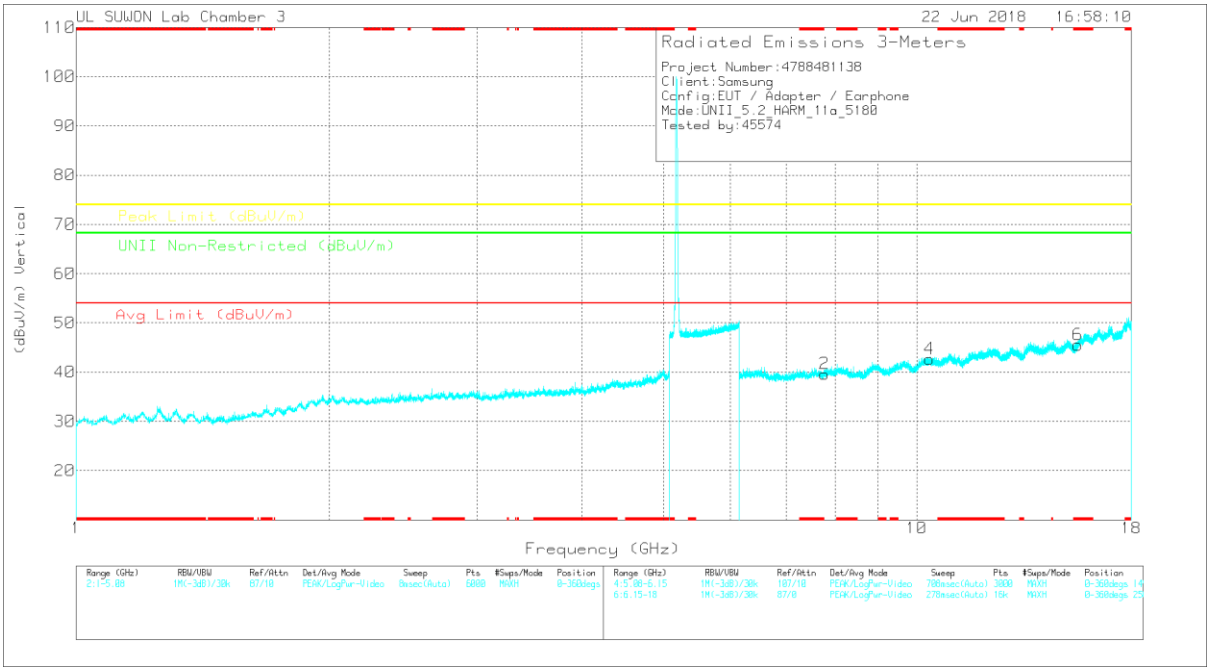
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

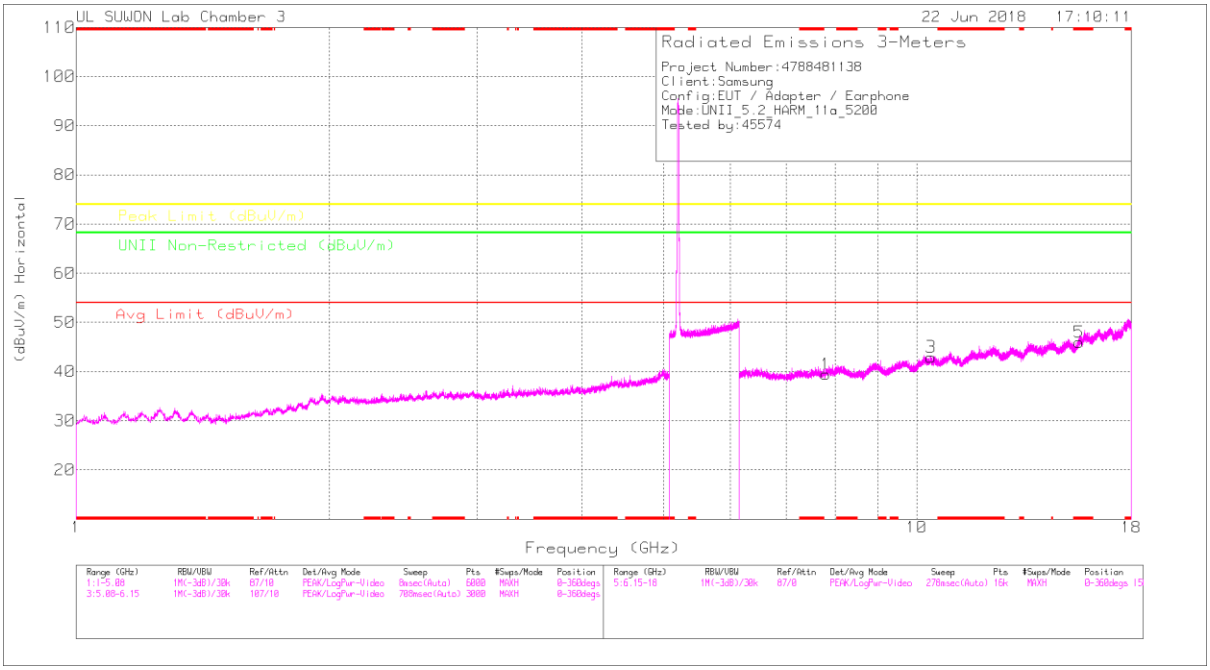
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[0020599]	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.771	26.66	PK	35.6	-23	0	39.26	-	-	-	-	68.2	-28.94	0-360	250	H
3	10.361	24.08	PK	37.5	-19.2	0	42.38	-	-	-	-	68.2	-25.82	0-360	150	H
5	* 15.54	25.41	PK	40	-19.8	0	45.61	-	-	74	-28.39	-	-	0-360	150	H
2	7.771	27.04	PK	35.6	-23	0	39.64	-	-	-	-	68.2	-28.56	0-360	149	V
4	10.361	24.37	PK	37.5	-19.2	0	42.67	-	-	-	-	68.2	-25.53	0-360	149	V
6	* 15.54	25.33	PK	40	-19.8	0	45.53	-	-	74	-28.47	-	-	0-360	250	V

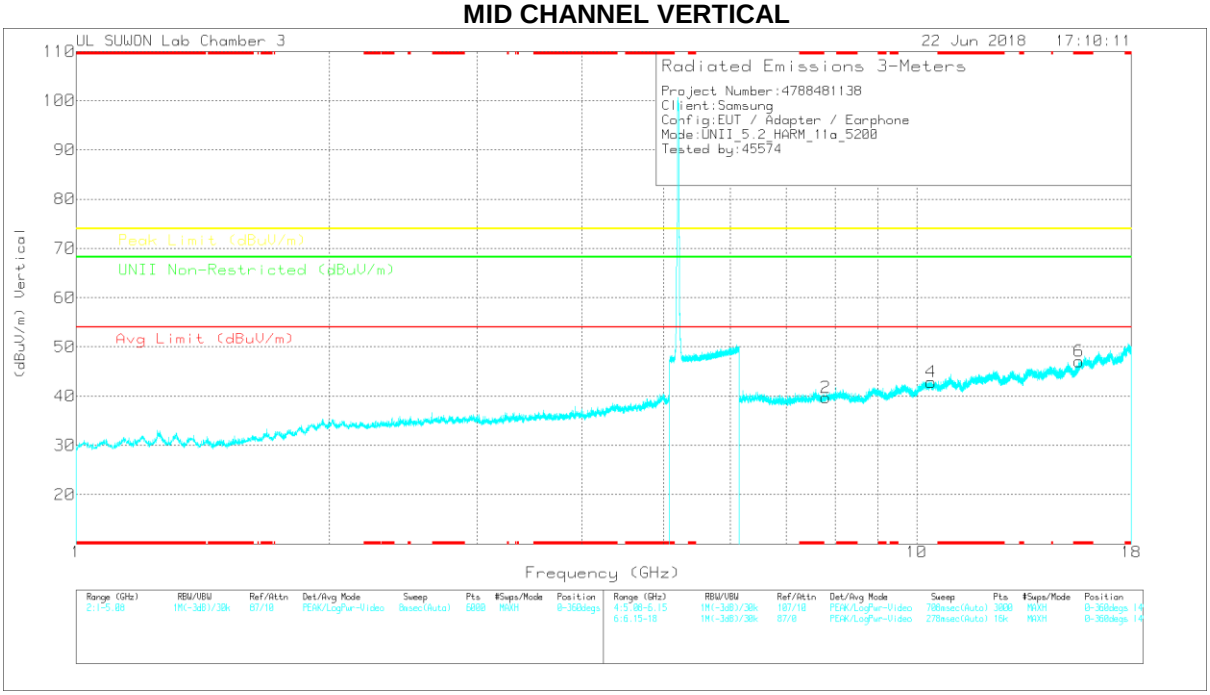
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

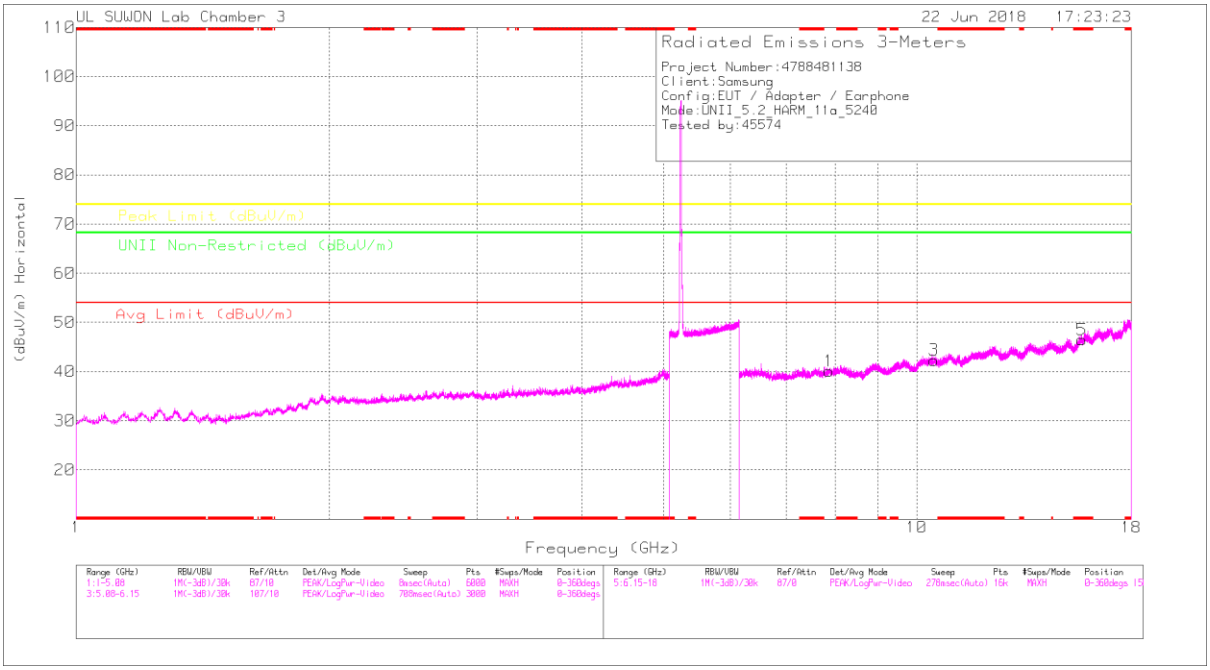
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.8	26.66	PK	35.6	-22.8	0	39.46	-	-	-	-	68.2	-28.74	0-360	250	H
3	10.4	24.72	PK	37.5	-19.3	0	42.92	-	-	-	-	68.2	-25.28	0-360	250	H
5	* 15.6	25.14	PK	40.2	-19.4	0	45.94	-	-	74	-28.06	-	-	0-360	150	H
2	7.8	26.89	PK	35.6	-22.8	0	39.69	-	-	-	-	68.2	-28.51	0-360	250	V
4	10.401	24.64	PK	37.5	-19.3	0	42.84	-	-	-	-	68.2	-25.36	0-360	250	V
6	* 15.6	26.27	PK	40.2	-19.4	0	47.07	-	-	74	-26.93	-	-	0-360	149	V

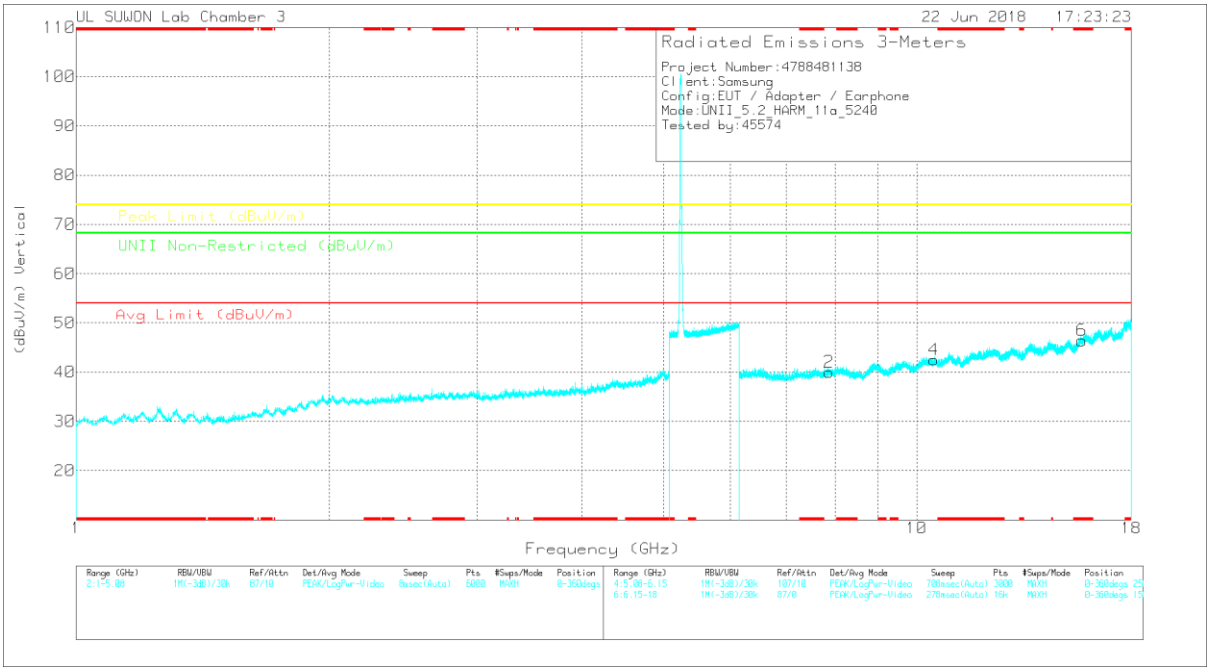
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Trace Markers

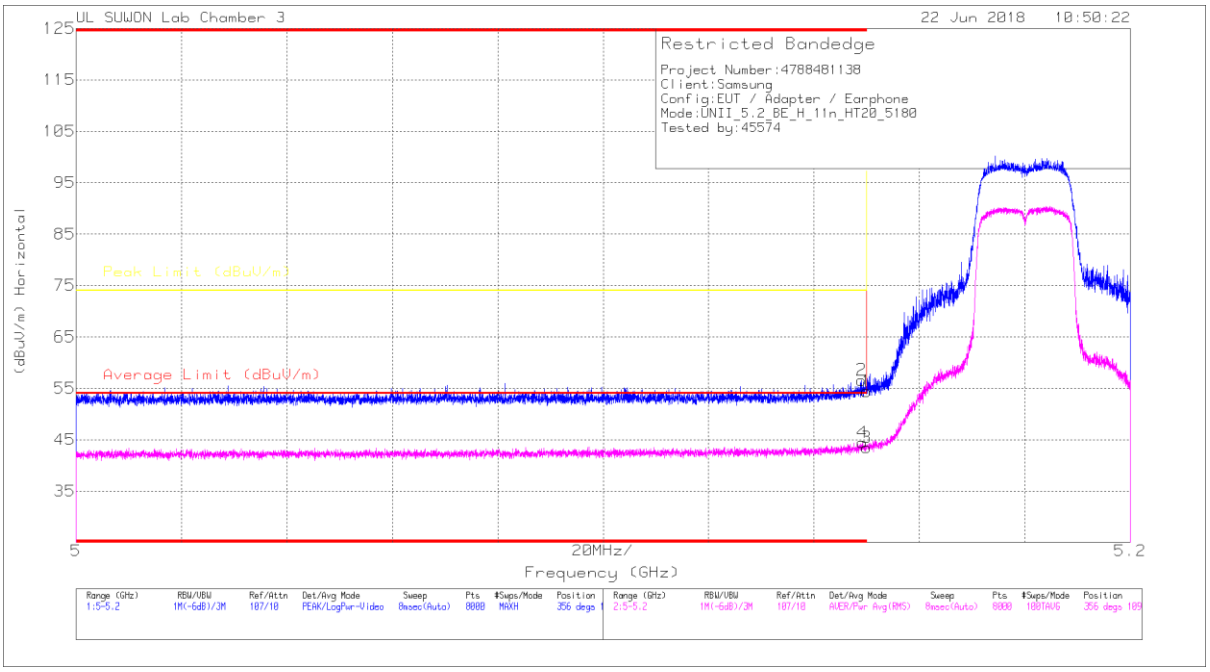
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.861	26.76	PK	35.6	-22.3	0	40.06	-	-	-	-	68.2	-28.14	0-360	150	H
3	10.481	23.91	PK	37.7	-19.3	0	42.31	-	-	-	-	68.2	-25.89	0-360	150	H
5	* 15.72	25.17	PK	40.5	-19.2	0	46.47	-	-	74	-27.53	-	-	0-360	250	H
2	7.861	26.68	PK	35.6	-22.3	0	39.98	-	-	-	-	68.2	-28.22	0-360	150	V
4	10.48	24.09	PK	37.7	-19.3	0	42.49	-	-	-	-	68.2	-25.71	0-360	250	V
6	* 15.72	25.13	PK	40.5	-19.2	0	46.43	-	-	74	-27.57	-	-	0-360	250	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

11.1.2.TX Above 1GHz 802.11n HT20 MODE IN THE 5.2GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



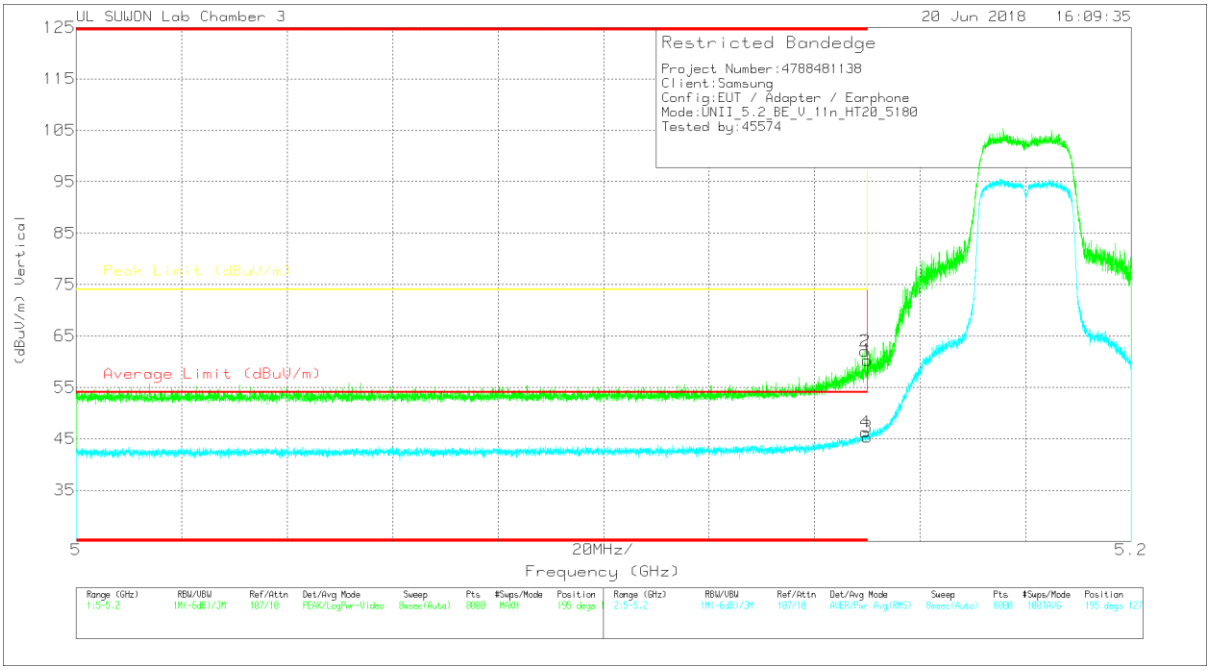
HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	38.94	Pk	34.3	-18.8	0	54.44	-	-	74	-19.56	356	109	H
2	* 5.149	41.18	Pk	34.3	-18.9	0	56.58	-	-	74	-17.42	356	109	H
3	* 5.15	28.47	RMS	34.3	-19.3	0	43.47	54	-10.53	-	-	356	109	H
4	* 5.149	29.47	RMS	34.3	-19.3	0	44.47	54	-9.53	-	-	356	109	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

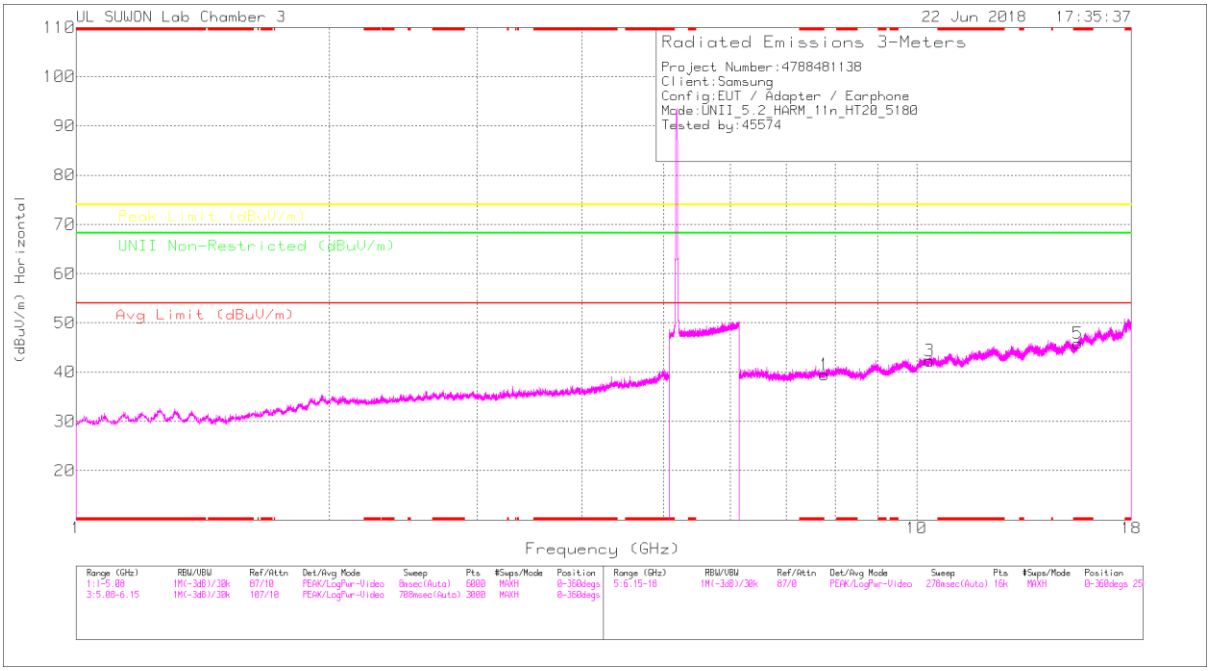
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	44.78	Pk	34.3	-18.8	0	60.28	-	-	74	-13.72	195	127	V
2	* 5.15	46.53	Pk	34.3	-18.8	0	62.03	-	-	74	-11.97	195	127	V
3	* 5.15	30.34	RMS	34.3	-19.3	0	45.34	54	-8.66	-	-	195	127	V
4	* 5.15	31.28	RMS	34.3	-19.3	0	46.28	54	-7.72	-	-	195	127	V

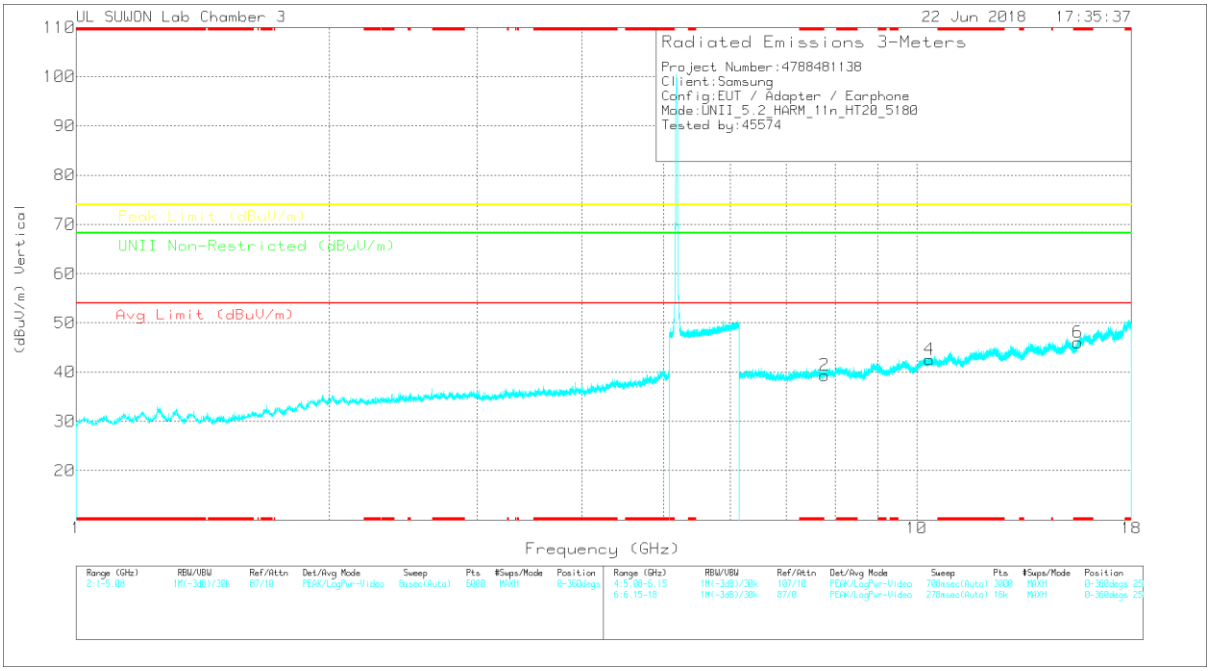
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

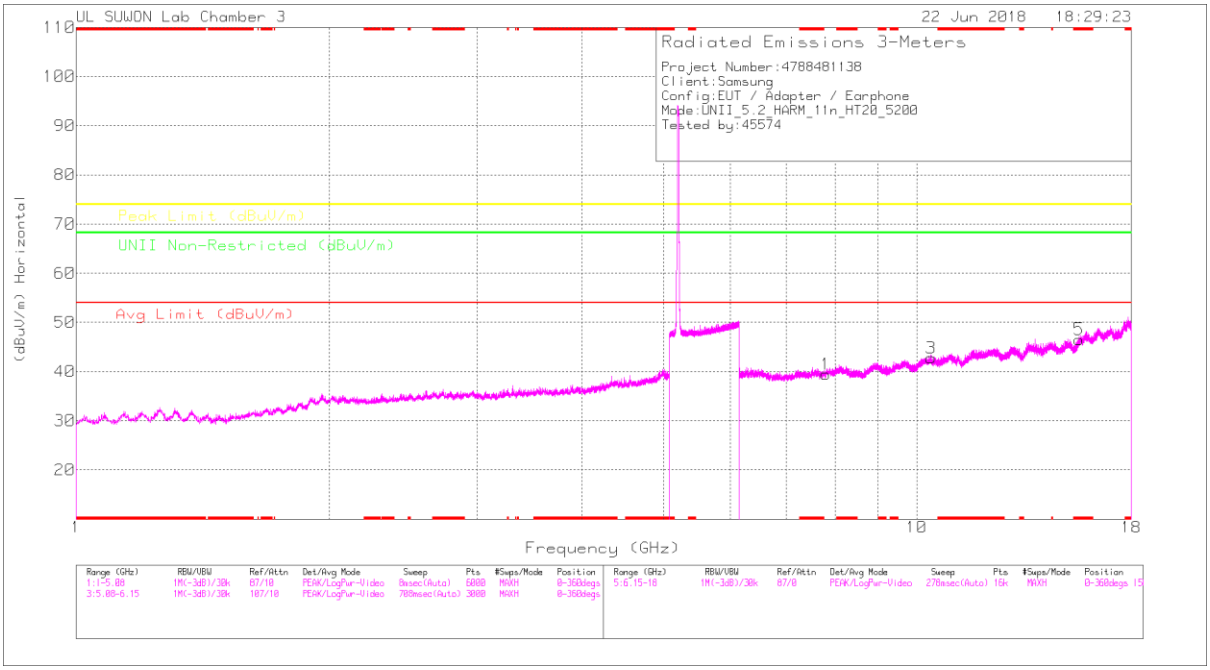
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.771	26.87	PK	35.6	-23	0	39.47	-	-	-	-	68.2	-28.73	0-360	250	H
3	10.361	24	PK	37.5	-19.2	0	42.3	-	-	-	-	68.2	-25.9	0-360	250	H
5	* 15.541	25.54	PK	40	-19.7	0	45.84	-	-	74	-28.16	-	-	0-360	250	H
2	7.771	26.76	PK	35.6	-23	0	39.36	-	-	-	-	68.2	-28.84	0-360	250	V
4	10.36	24.36	PK	37.5	-19.3	0	42.56	-	-	-	-	68.2	-25.64	0-360	250	V
6	* 15.542	25.74	PK	40	-19.7	0	46.04	-	-	74	-27.96	-	-	0-360	250	V

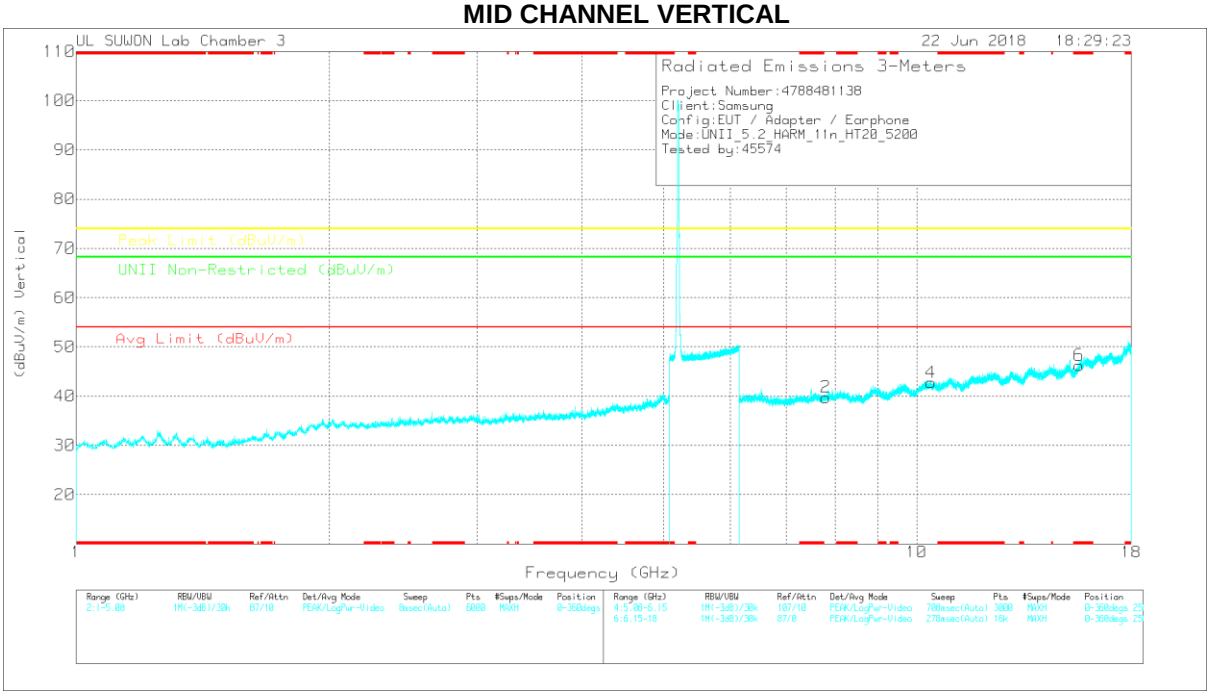
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

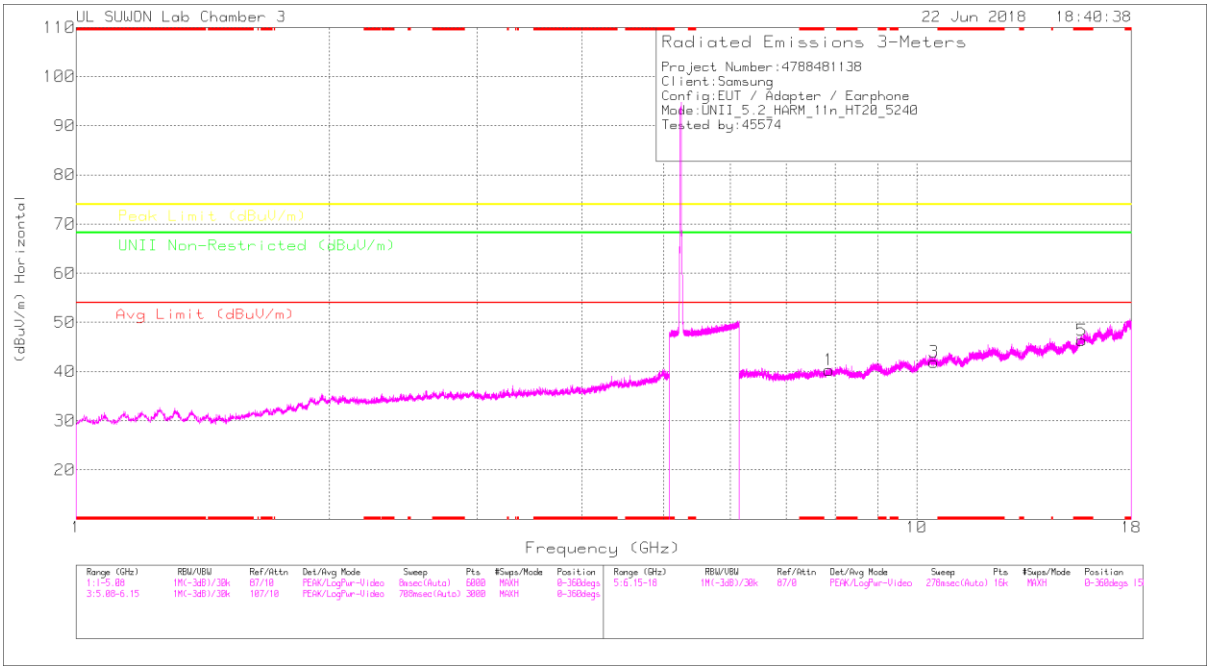
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.801	26.53	PK	35.6	-22.7	0	39.43	-	-	-	-	68.2	-28.77	0-360	150	H
3	10.4	24.55	PK	37.5	-19.3	0	42.75	-	-	-	-	68.2	-25.45	0-360	150	H
5	* 15.6	25.71	PK	40.2	-19.4	0	46.51	-	-	74	-27.49	-	-	0-360	250	H
2	7.801	26.87	PK	35.6	-22.7	0	39.77	-	-	-	-	68.2	-28.43	0-360	250	V
4	10.4	24.56	PK	37.5	-19.3	0	42.76	-	-	-	-	68.2	-25.44	0-360	149	V
6	* 15.601	25.36	PK	40.2	-19.3	0	46.26	-	-	74	-27.74	-	-	0-360	250	V

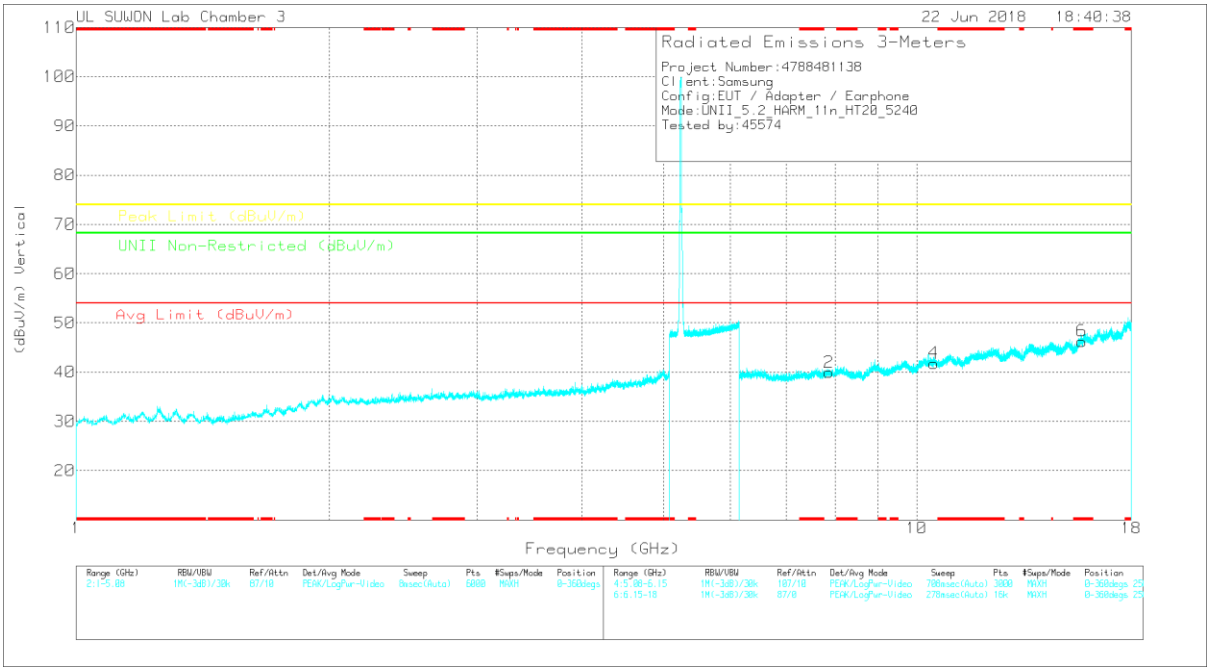
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Trace Markers

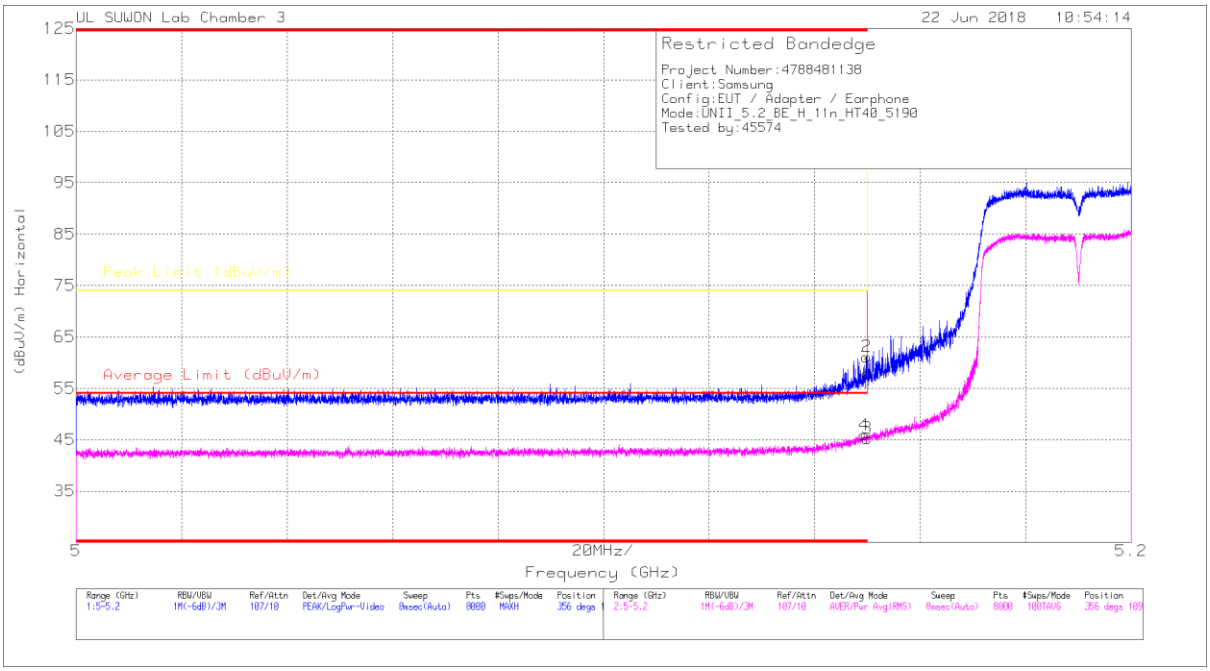
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.859	26.99	PK	35.6	-22.3	0	40.29	-	-	-	-	68.2	-27.91	0-360	250	H
3	10.481	23.53	PK	37.7	-19.3	0	41.93	-	-	-	-	68.2	-26.27	0-360	250	H
5	* 15.719	25.02	PK	40.5	-19.2	0	46.32	-	-	74	-27.68	-	-	0-360	150	H
2	7.86	26.66	PK	35.6	-22.3	0	39.96	-	-	-	-	68.2	-28.24	0-360	250	V
4	10.481	23.39	PK	37.7	-19.3	0	41.79	-	-	-	-	68.2	-26.41	0-360	150	V
6	* 15.72	24.98	PK	40.5	-19.2	0	46.28	-	-	74	-27.72	-	-	0-360	250	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

11.1.3.TX Above 1GHz 802.11n HT40 MODE IN THE 5.2GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



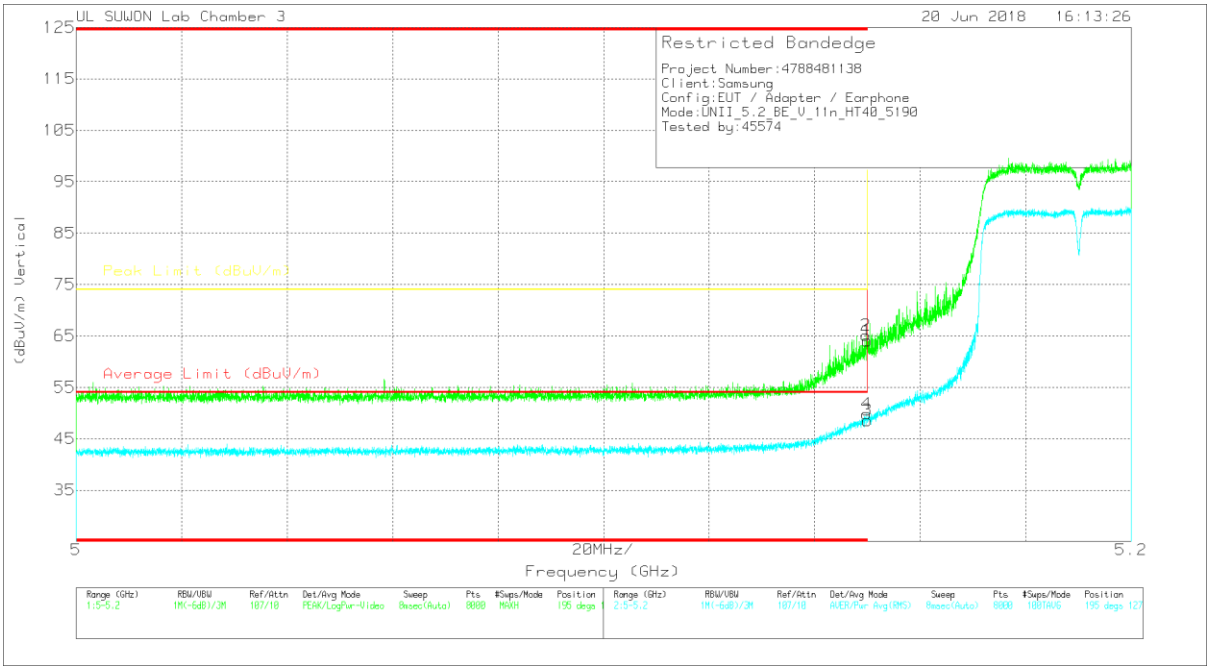
HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	42.4	Pk	34.3	-18.8	0	57.9	-	-	74	-16.1	356	109	H
2	* 5.15	45.64	Pk	34.3	-18.8	0	61.14	-	-	74	-12.86	356	109	H
3	* 5.15	30.09	RMS	34.3	-19.3	.17	45.26	54	-8.74	-	-	356	109	H
4	* 5.149	30.76	RMS	34.3	-19.3	.17	45.93	54	-8.07	-	-	356	109	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

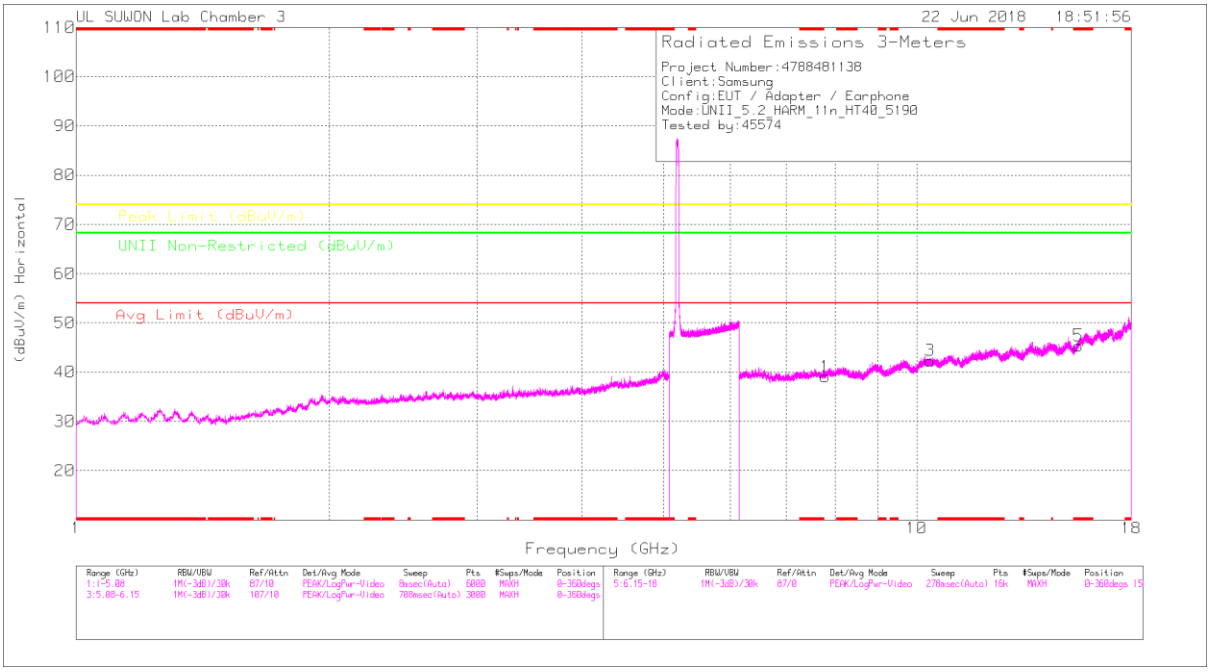
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	48.59	Pk	34.3	-18.8	0	64.09	-	-	74	-9.91	195	127	V
2	* 5.15	49.6	Pk	34.3	-18.8	0	65.1	-	-	74	-8.9	195	127	V
3	* 5.15	33.4	RMS	34.3	-19.3	.17	48.57	54	-5.43	-	-	195	127	V
4	* 5.15	34.67	RMS	34.3	-19.3	.17	49.84	54	-4.16	-	-	195	127	V

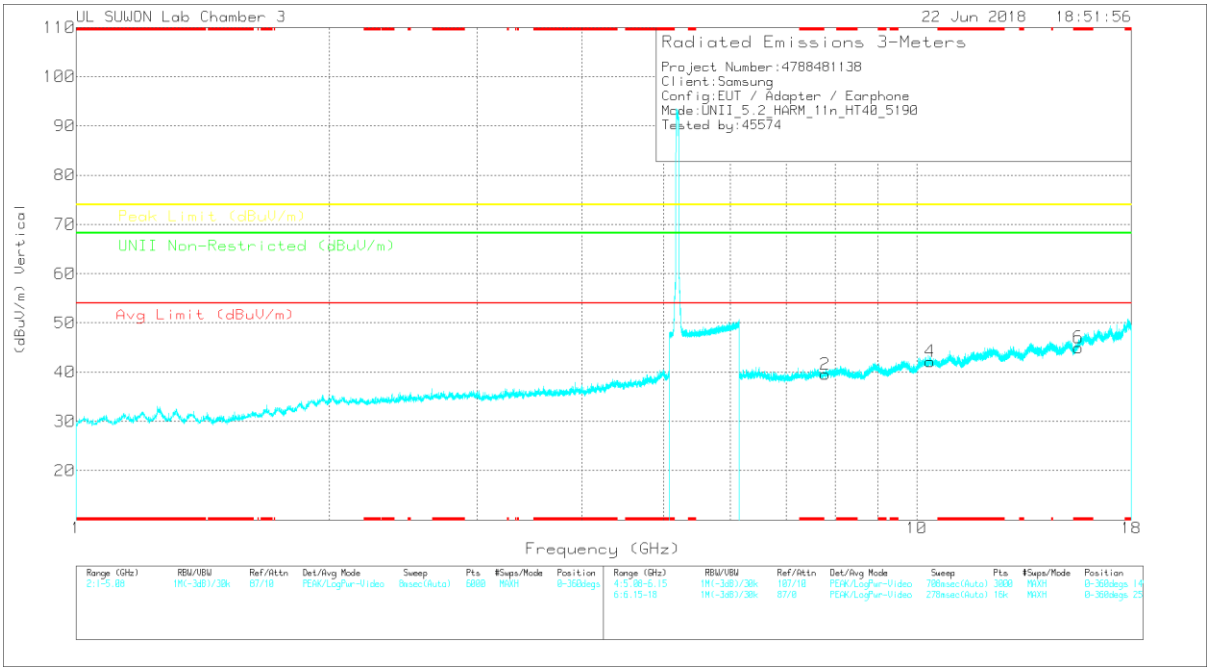
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

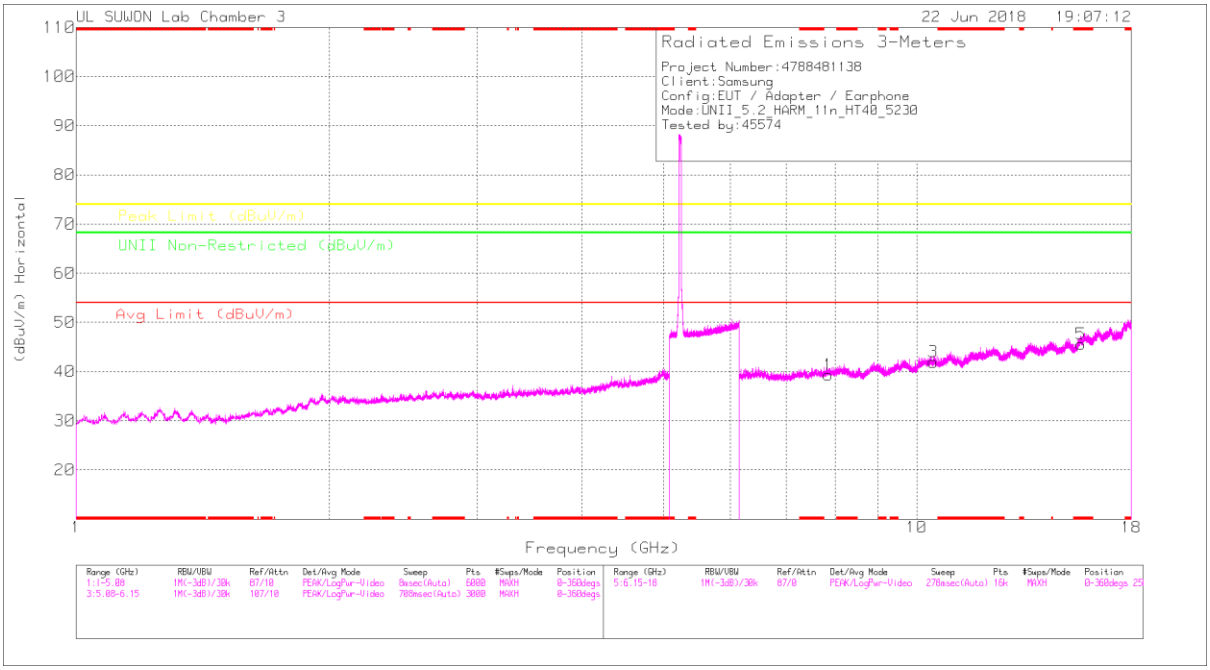
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.785	26.36	PK	35.6	-22.9	0	39.06	-	-	-	-	68.2	-29.14	0-360	150	H
3	10.38	24.02	PK	37.5	-19.2	0	42.32	-	-	-	-	68.2	-25.88	0-360	251	H
5	* 15.571	24.84	PK	40.1	-19.6	0	45.34	-	-	74	-28.66	-	-	0-360	150	H
2	7.785	26.86	PK	35.6	-22.9	0	39.56	-	-	-	-	68.2	-28.64	0-360	251	V
4	10.38	23.86	PK	37.5	-19.2	0	42.16	-	-	-	-	68.2	-26.04	0-360	149	V
6	* 15.571	24.49	PK	40.1	-19.6	0	44.99	-	-	74	-29.01	-	-	0-360	149	V

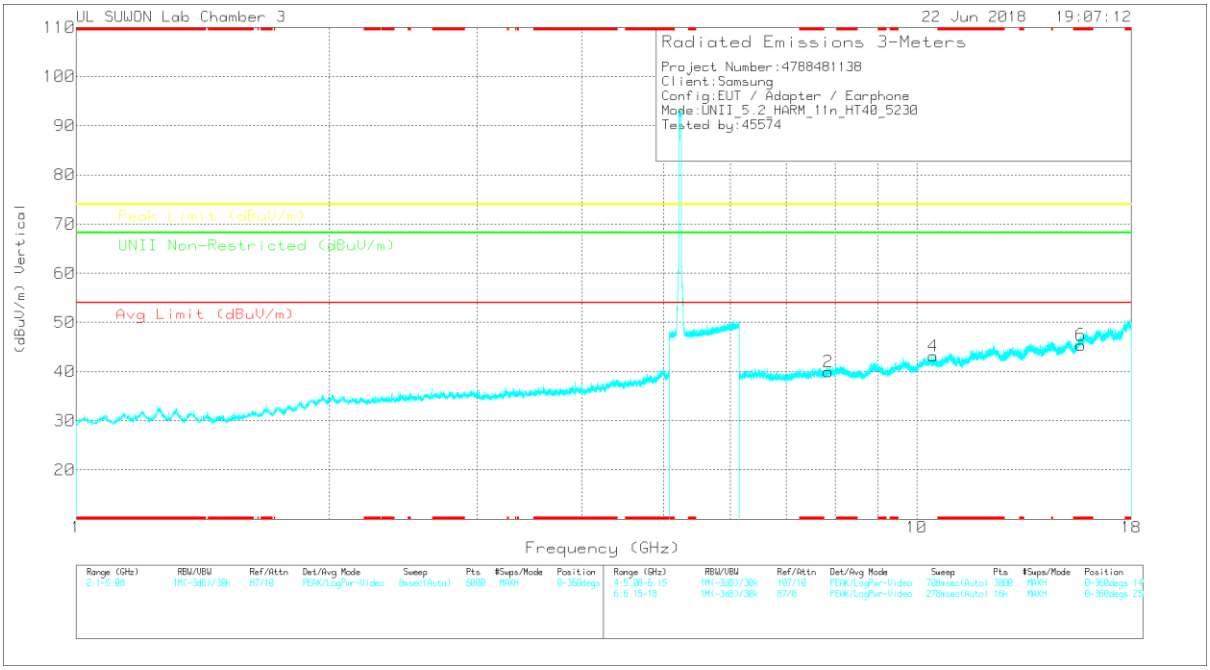
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limt (54dBuV/m).

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.846	26.13	PK	35.6	-22.4	0	39.33	-	-	-	-	68.2	-28.87	0-360	150	H
3	10.46	23.76	PK	37.6	-19.4	0	41.96	-	-	-	-	68.2	-26.24	0-360	250	H
5	* 15.691	24.46	PK	40.4	-19.3	0	45.56	-	-	74	-28.44	-	-	0-360	150	H
2	7.845	26.87	PK	35.6	-22.5	0	39.97	-	-	-	-	68.2	-28.23	0-360	250	V
4	10.46	24.95	PK	37.6	-19.4	0	43.15	-	-	-	-	68.2	-25.05	0-360	149	V
6	* 15.691	24.28	PK	40.4	-19.3	0	45.38	-	-	74	-28.62	-	-	0-360	250	V

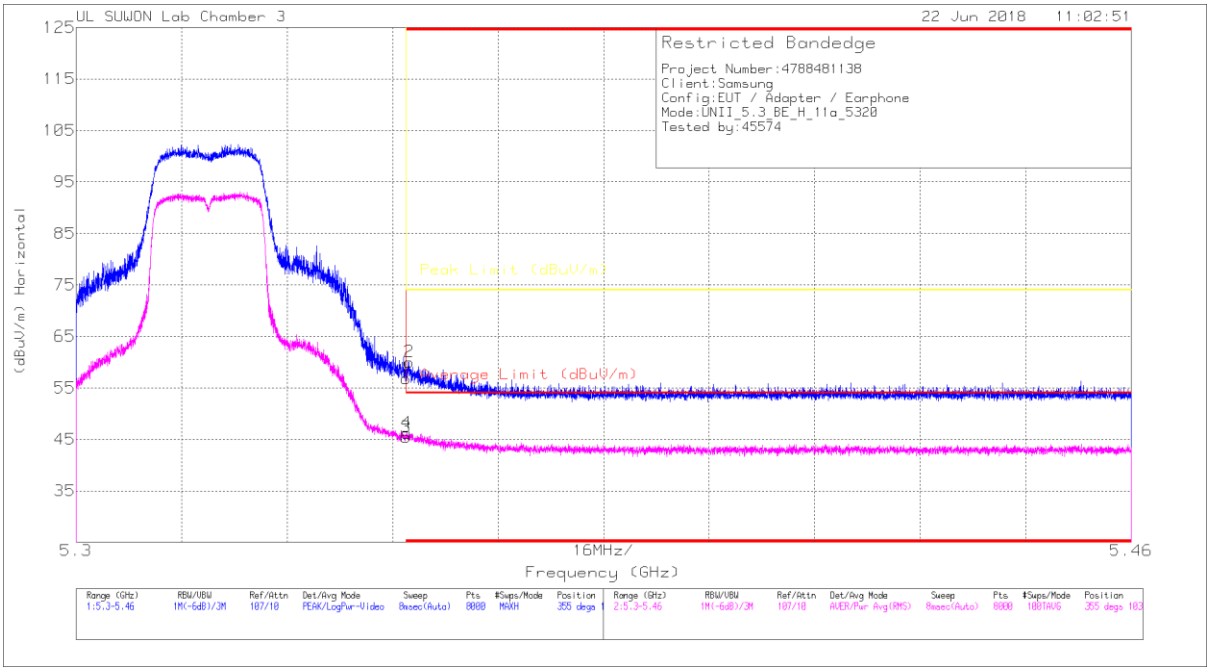
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limt (54dBuV/m).

11.2. 5.3 GHz

11.2.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



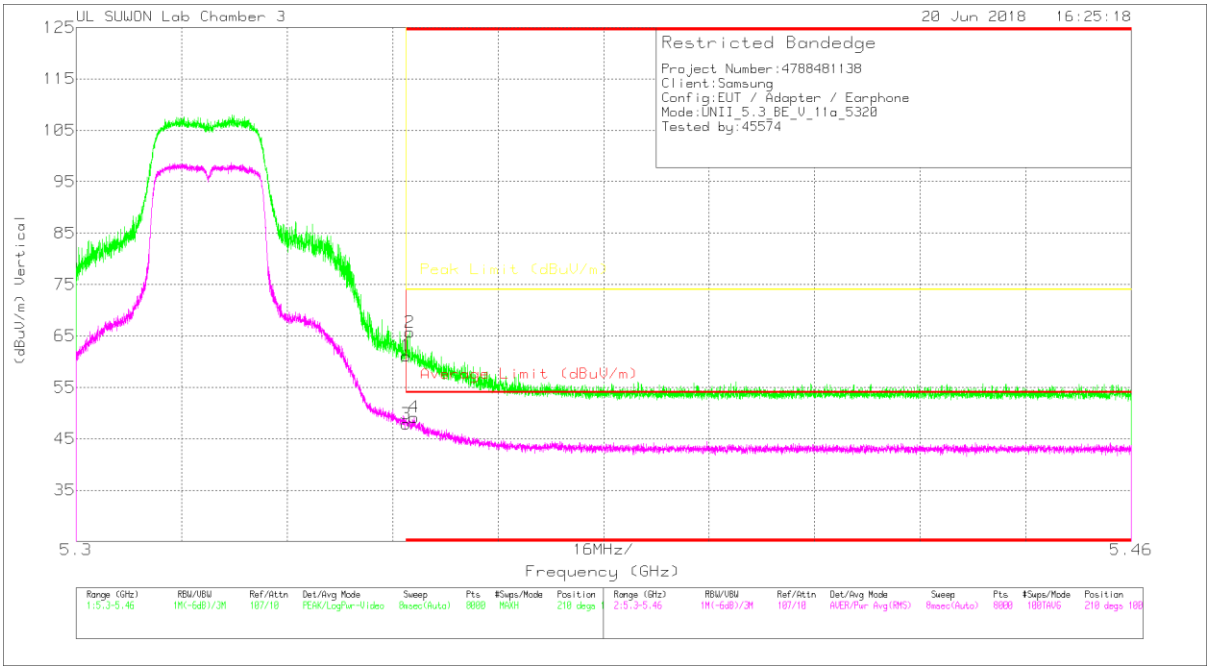
HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	41.15	Pk	34.4	-18.7	0	56.85	-	-	74	-17.15	355	103	H
2	* 5.35	44.34	Pk	34.4	-18.7	0	60.04	-	-	74	-13.96	355	103	H
3	* 5.35	30.02	RMS	34.4	-19	0	45.42	54	-8.58	-	-	355	103	H
4	* 5.35	30.85	RMS	34.4	-19	0	46.25	54	-7.75	-	-	355	103	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

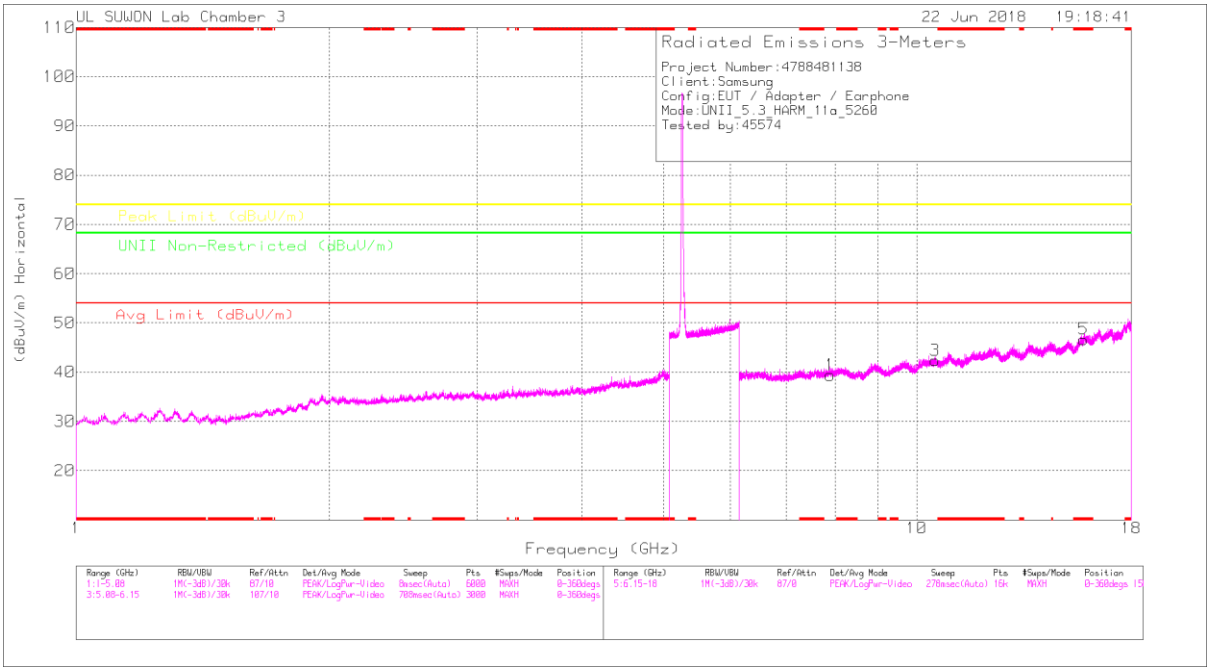
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	45.4	Pk	34.4	-18.7	0	61.1	-	-	74	-12.9	210	100	V
2	* 5.351	49.93	Pk	34.4	-18.6	0	65.73	-	-	74	-8.27	210	100	V
3	* 5.35	32.45	RMS	34.4	-19	0	47.85	54	-6.15	-	-	210	100	V
4	* 5.351	33.76	RMS	34.4	-19	0	49.16	54	-4.84	-	-	210	100	V

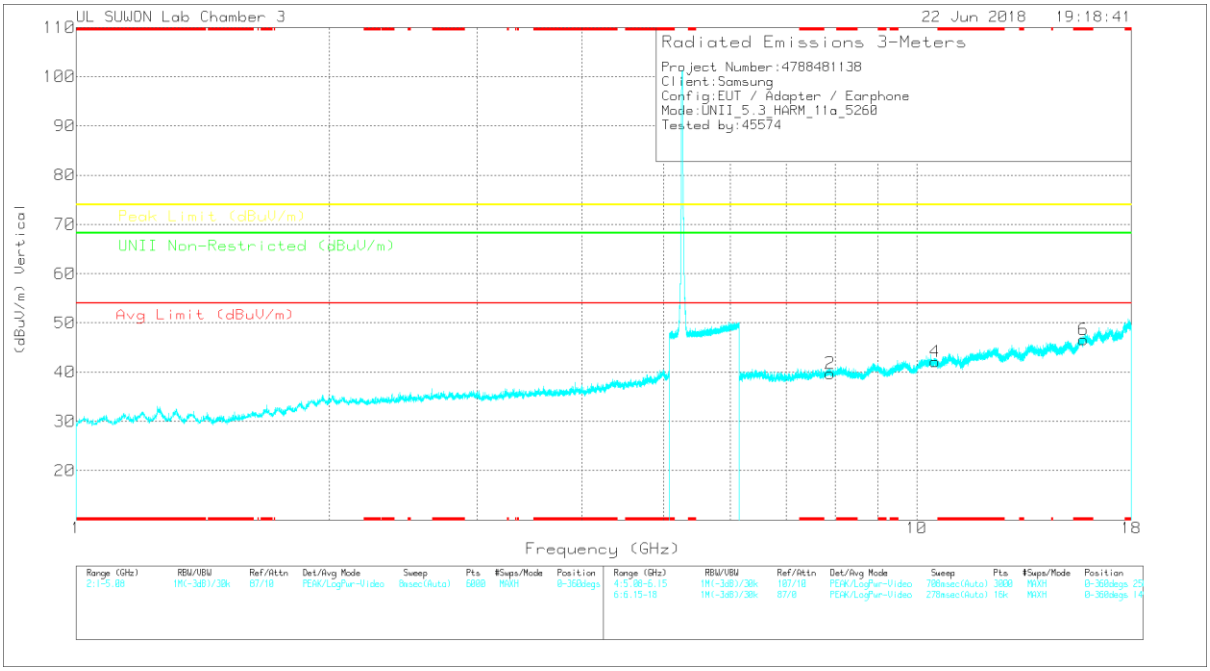
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

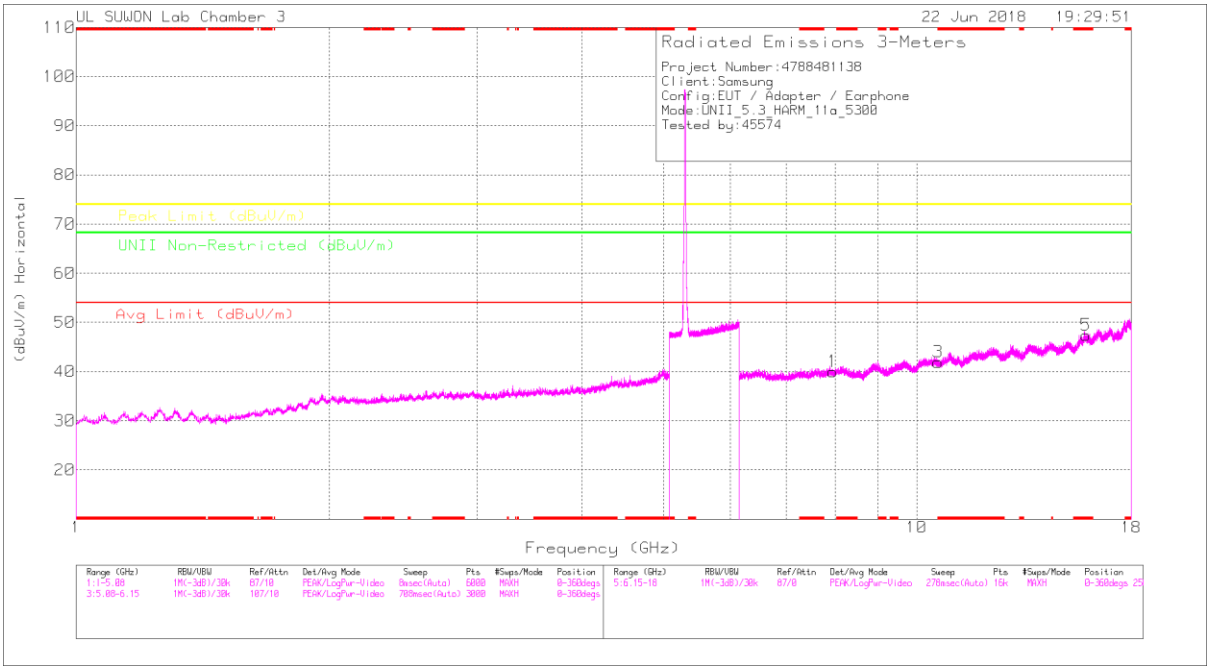
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.891	26.1	PK	35.7	-22.4	0	39.4	-	-	-	-	68.2	-28.8	0-360	250	H
3	10.521	23.9	PK	37.7	-19.2	0	42.4	-	-	-	-	68.2	-25.8	0-360	250	H
5	* 15.782	24.97	PK	40.7	-19	0	46.67	-	-	74	-27.33	-	-	0-360	250	H
2	7.891	26.43	PK	35.7	-22.4	0	39.73	-	-	-	-	68.2	-28.47	0-360	149	V
4	10.521	23.6	PK	37.7	-19.2	0	42.1	-	-	-	-	68.2	-26.1	0-360	251	V
6	* 15.781	24.8	PK	40.7	-18.9	0	46.6	-	-	74	-27.4	-	-	0-360	251	V

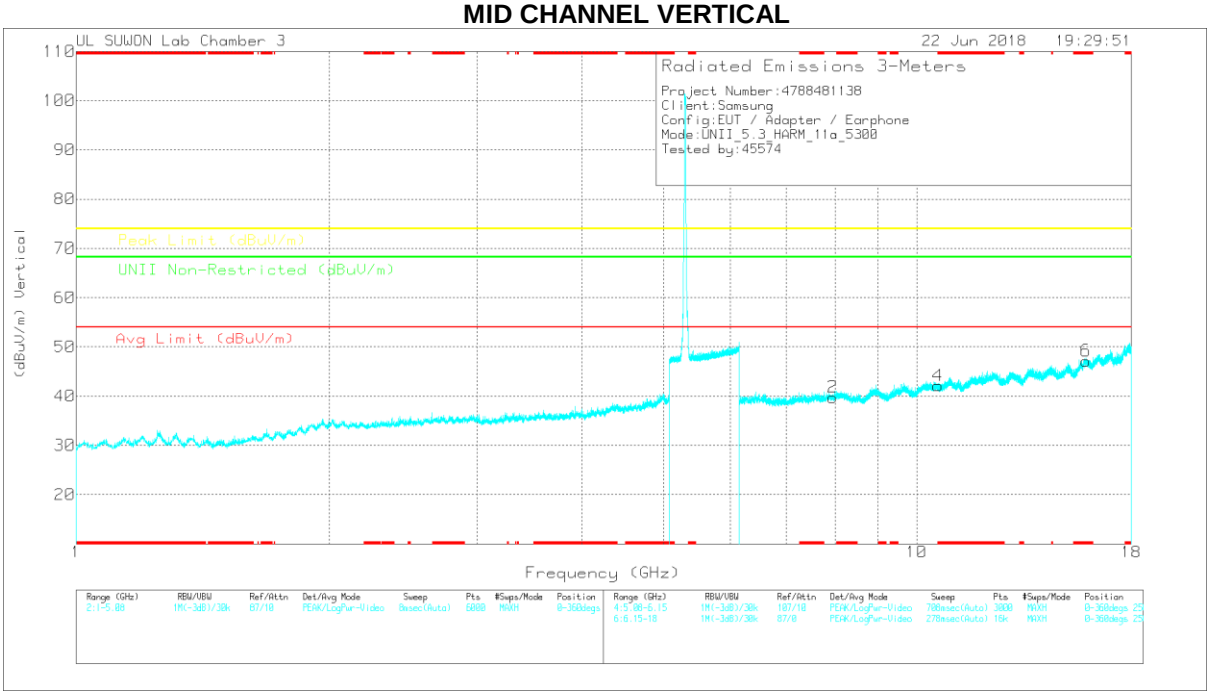
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

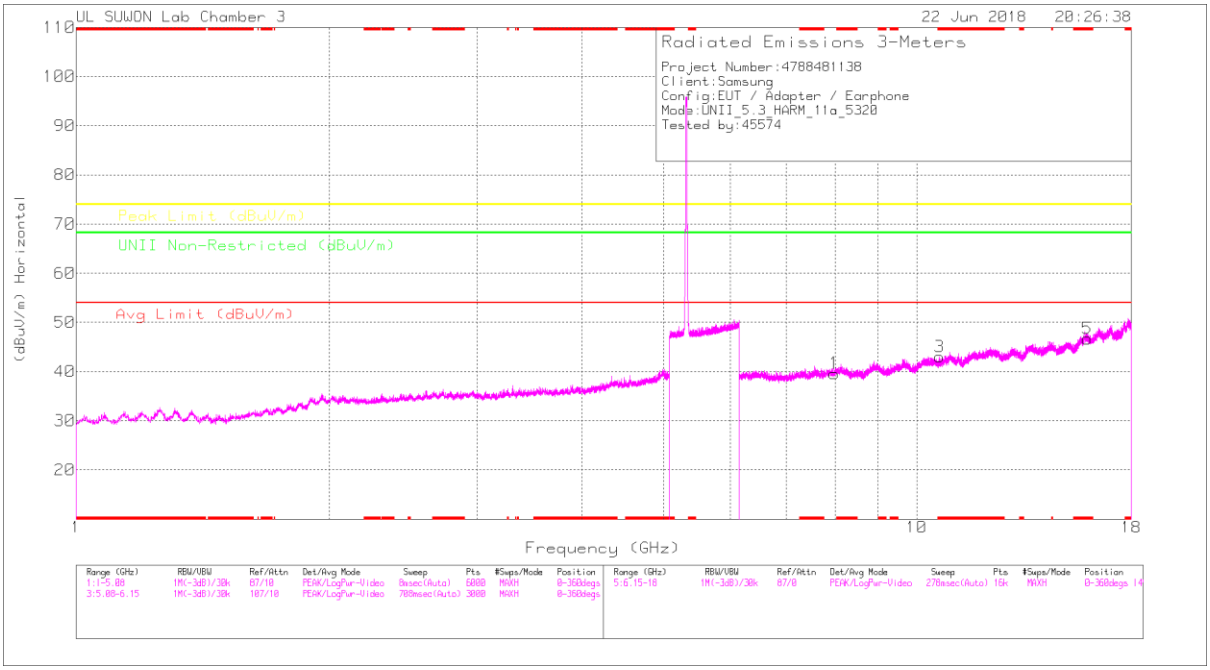
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.951	26.91	PK	35.7	-22.6	0	40.01	-	-	-	-	68.2	-28.19	0-360	250	H
3	* 10.601	23.64	PK	37.7	-19.4	0	41.94	-	-	74	-32.06	-	-	0-360	250	H
5	* 15.899	24.8	PK	41	-18.4	0	47.4	-	-	74	-26.6	-	-	0-360	250	H
2	7.951	26.66	PK	35.7	-22.6	0	39.76	-	-	-	-	68.2	-28.44	0-360	149	V
4	* 10.601	23.82	PK	37.7	-19.4	0	42.12	-	-	74	-31.88	-	-	0-360	250	V
6	* 15.899	24.56	PK	41	-18.4	0	47.16	-	-	74	-26.84	-	-	0-360	250	V

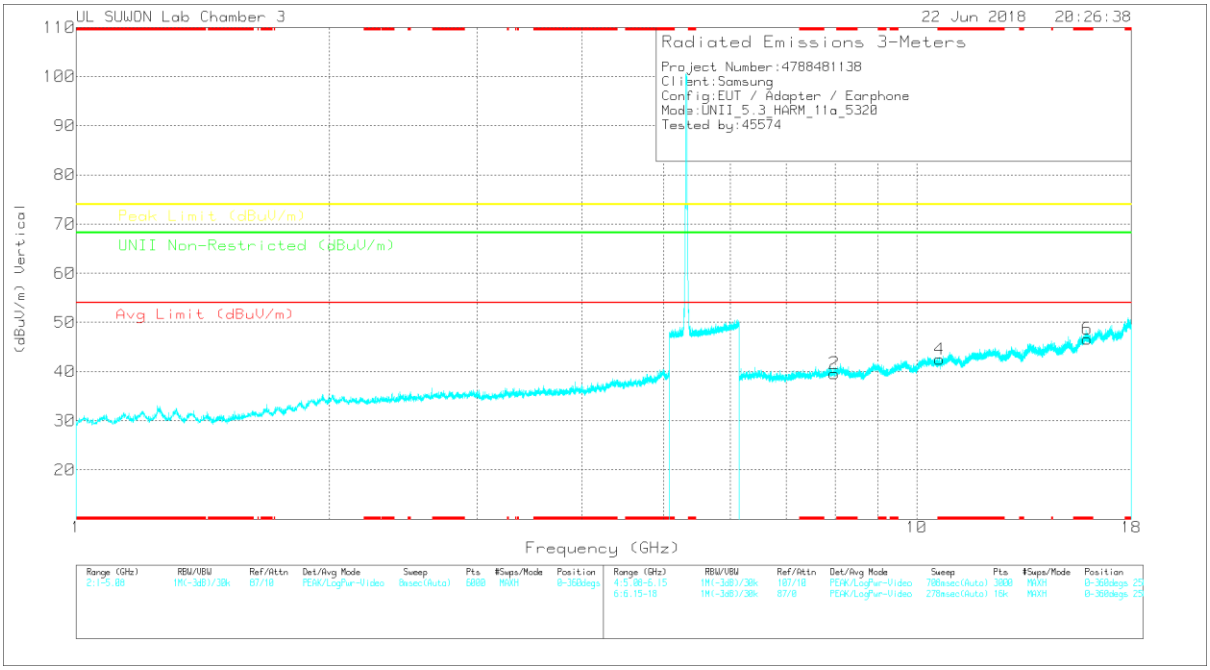
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.98	26.62	PK	35.7	-22.7	0	39.62	-	-	-	-	68.2	-28.58	0-360	250	H
3	* 10.641	24.71	PK	37.6	-19.3	0	43.01	-	-	74	-30.99	-	-	0-360	149	H
5	* 15.961	24.08	PK	41.1	-18.5	0	46.68	-	-	74	-27.32	-	-	0-360	149	H
2	7.981	26.61	PK	35.7	-22.7	0	39.61	-	-	-	-	68.2	-28.59	0-360	150	V
4	* 10.641	24.21	PK	37.6	-19.3	0	42.51	-	-	74	-31.49	-	-	0-360	250	V
6	* 15.961	24.05	PK	41.1	-18.5	0	46.65	-	-	74	-27.35	-	-	0-360	250	V

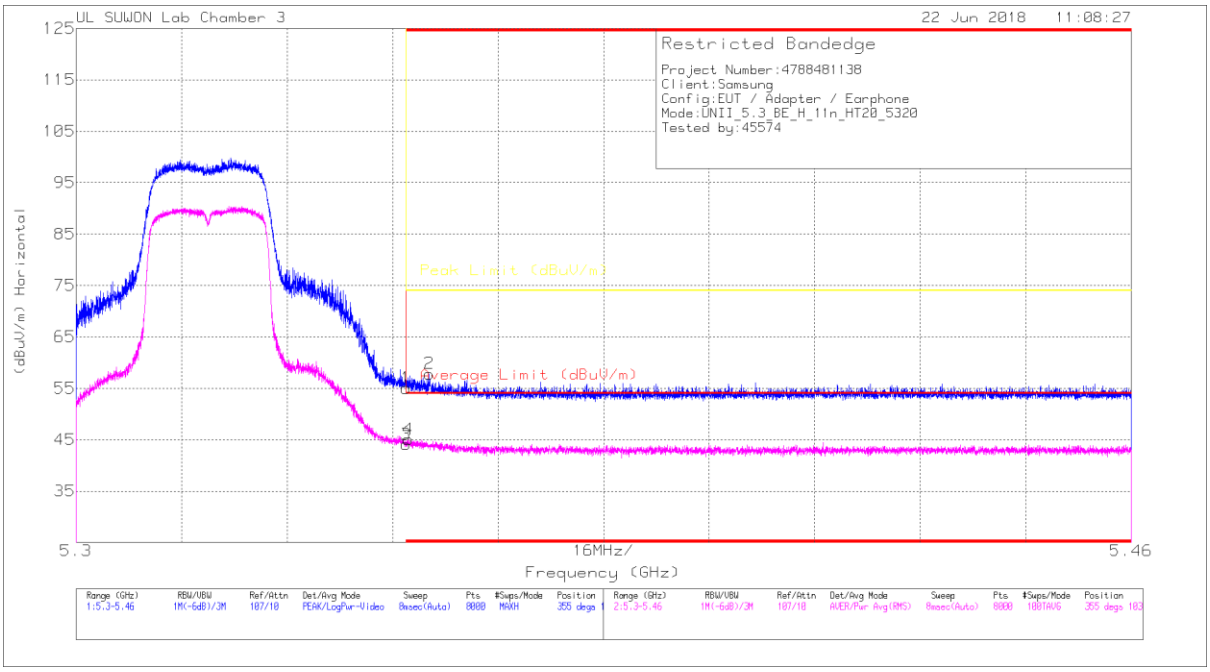
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

11.2.2.TX ABOVE 1GHz 802.11n HT20 MODE IN THE 5.3GHz BAND

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



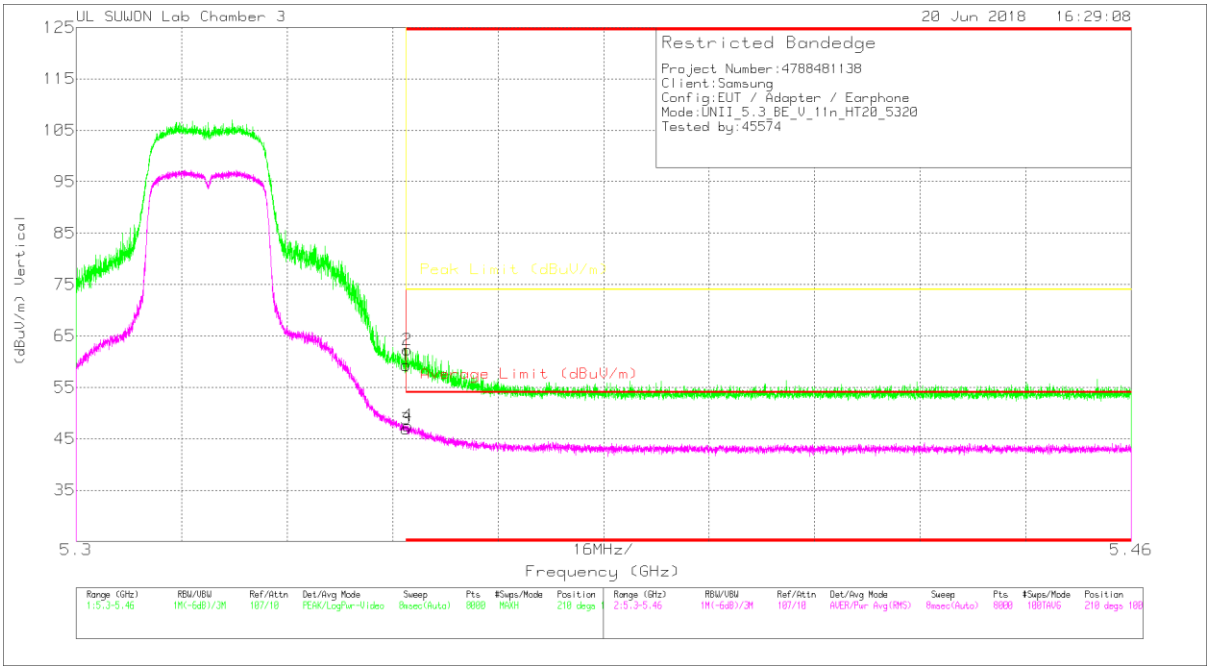
HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	39.35	Pk	34.4	-18.7	0	55.05	-	-	74	-18.95	355	103	H
2	* 5.354	42.04	Pk	34.4	-18.6	0	57.84	-	-	74	-16.16	355	103	H
3	* 5.35	28.7	RMS	34.4	-19	0	44.1	54	-9.9	-	-	355	103	H
4	* 5.35	29.65	RMS	34.4	-19	0	45.05	54	-8.95	-	-	355	103	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

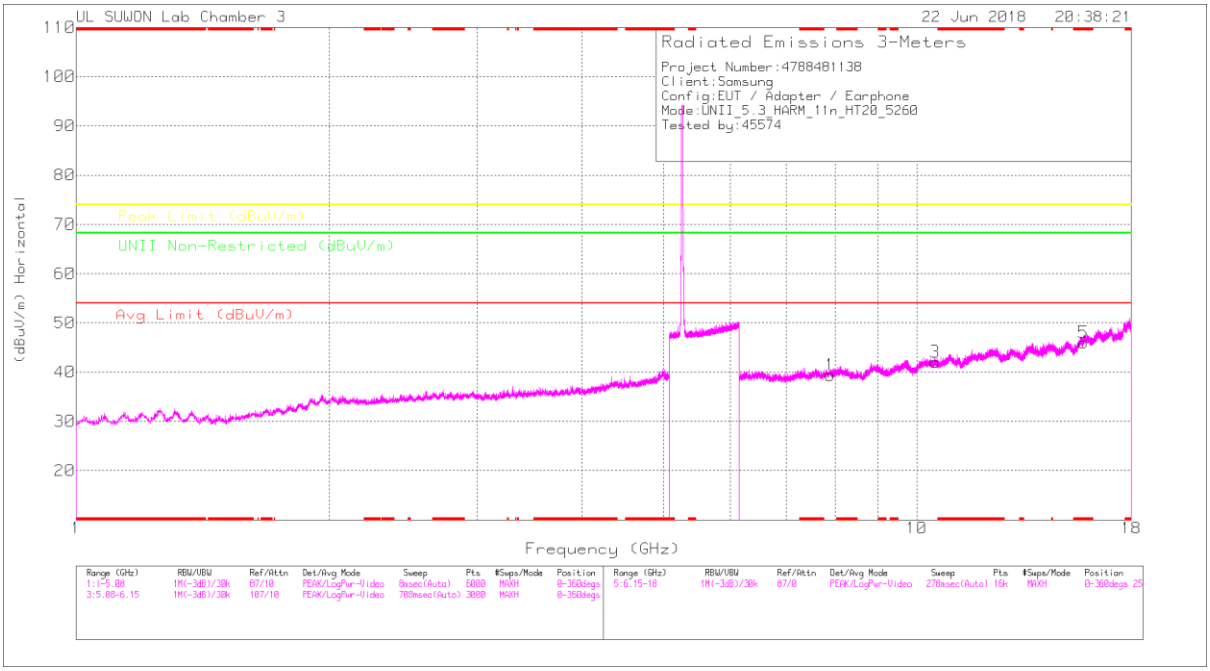
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	43.62	Pk	34.4	-18.7	0	59.32	-	-	74	-14.68	210	100	V
2	* 5.35	46.59	Pk	34.4	-18.7	0	62.29	-	-	74	-11.71	210	100	V
3	* 5.35	31.48	RMS	34.4	-19	0	46.88	54	-7.12	-	-	210	100	V
4	* 5.35	32.13	RMS	34.4	-19	0	47.53	54	-6.47	-	-	210	100	V

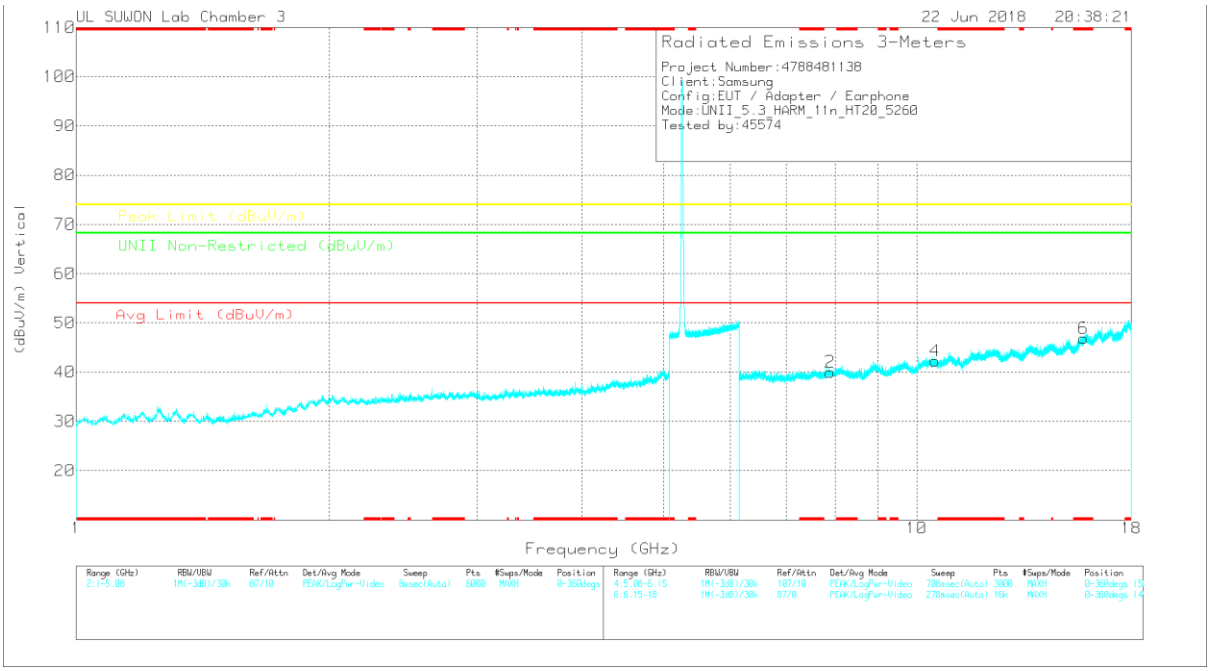
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	6GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.891	26.11	PK	35.7	-22.4	0	39.41	-	-	-	-	68.2	-28.79	0-360	251	H
3	10.52	23.52	PK	37.7	-19.2	0	42.02	-	-	-	-	68.2	-26.18	0-360	150	H
5	* 15.78	24.28	PK	40.7	-19	0	45.98	-	-	74	-28.02	-	-	0-360	150	H
2	7.891	26.68	PK	35.7	-22.4	0	39.98	-	-	-	-	68.2	-28.22	0-360	149	V
4	10.521	23.77	PK	37.7	-19.2	0	42.27	-	-	-	-	68.2	-25.93	0-360	149	V
6	* 15.781	25.04	PK	40.7	-18.9	0	46.84	-	-	74	-27.16	-	-	0-360	149	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).