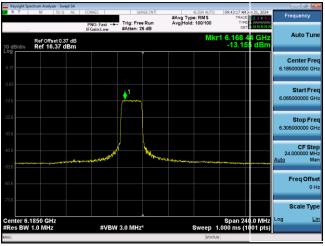
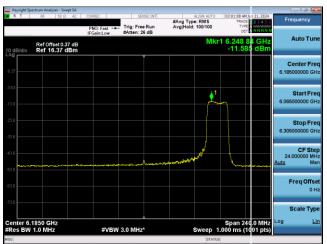


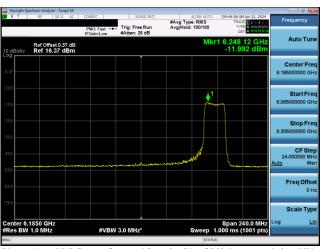
Plot 7-1063. VLP Power Spectral Density Plot SDM Antenna 5T (160MHz 802.11ax RU242 (UNII Band 5) – Ch. 47)



Plot 7-1064. VLP Power Spectral Density Plot SDM Antenna 3b (160MHz 802.11ax RU242 (UNII Band 5) – Ch. 47)



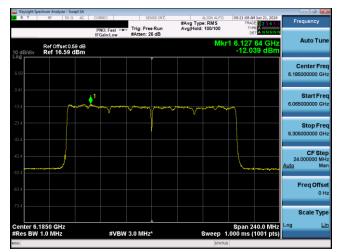
Plot 7-1065. VLP Power Spectral Density Plot SDM Antenna 5T (160MHz 802.11ax RU242 (UNII Band 5) – Ch. 47)



Plot 7-1066. VLP Power Spectral Density Plot SDM Antenna 3b (160MHz 802.11ax RU242 (UNII Band 5) – Ch. 47)



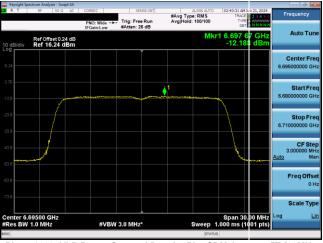
Plot 7-1067. VLP Power Spectral Density Plot SDM Antenna 5T (160MHz 802.11ax RU996x2 (UNII Band 5) - Ch. 47)



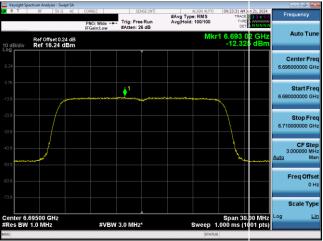
Plot 7-1068. VLP Power Spectral Density Plot SDM Antenna 3b (160MHz 802.11ax RU996x2 (UNII Band 5) - Ch. 47)

FCC ID: BCGA2995	element element	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 222 of 602
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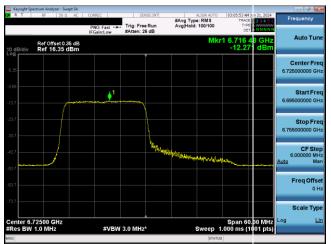




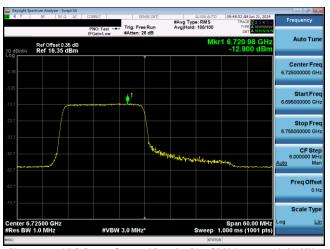
Plot 7-1069. VLP Power Spectral Density Plot SDM Antenna 5T (20MHz 802.11ax RU242 (UNII Band 7) – Ch. 149)



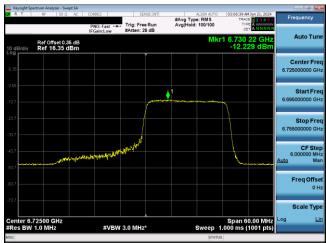
Plot 7-1070. VLP Power Spectral Density Plot SDM Antenna 3b (20MHz 802.11ax RU242 (UNII Band 7) – Ch. 149)



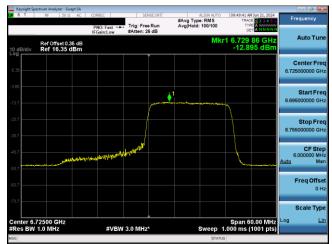
Plot 7-1071. VLP Power Spectral Density Plot SDM Antenna 5T (40MHz 802.11ax RU242 (UNII Band 7) – Ch. 155)



Plot 7-1072. VLP Power Spectral Density Plot SDM Antenna 3b (40MHz 802.11ax RU242 (UNII Band 7) – Ch. 155)



Plot 7-1073. VLP Power Spectral Density Plot SDM Antenna 5T (40MHz 802.11ax RU242 (UNII Band 7) – Ch. 155)



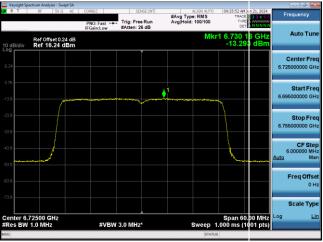
Plot 7-1074. VLP Power Spectral Density Plot SDM Antenna 3b (40MHz 802.11ax RU242 (UNII Band 7) – Ch. 155)

FCC ID: BCGA2995	element)	Approved by: Technical Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dogg 224 of 602	
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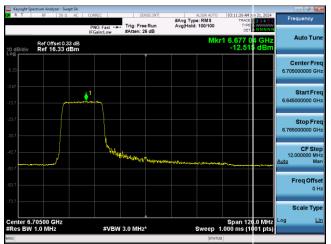




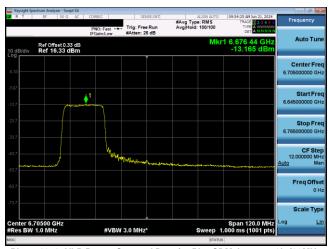
Plot 7-1075. VLP Power Spectral Density Plot SDM Antenna 5T (40MHz 802.11ax RU484 (UNII Band 7) – Ch. 155)



Plot 7-1076. VLP Power Spectral Density Plot SDM Antenna 3b (40MHz 802.11ax RU484 (UNII Band 7) – Ch. 155)



Plot 7-1077. VLP Power Spectral Density Plot SDM Antenna 5T (80MHz 802.11ax RU242 (UNII Band 7) – Ch. 151)



Plot 7-1078. VLP Power Spectral Density Plot SDM Antenna 3b (80MHz 802.11ax RU242 (UNII Band 7) – Ch. 151)



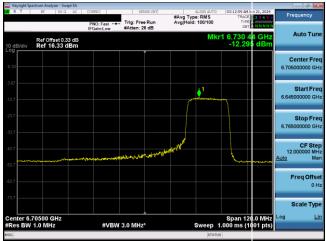
Plot 7-1079. VLP Power Spectral Density Plot SDM Antenna 5T (80MHz 802.11ax RU242 (UNII Band 7) – Ch. 151)



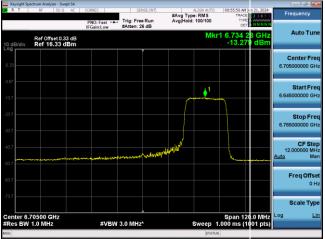
Plot 7-1080. VLP Power Spectral Density Plot SDM Antenna 3b (80MHz 802.11ax RU242 (UNII Band 7) – Ch. 151)

FCC ID: BCGA2995	element)	Approved by: Technical Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dogo 225 of 602	
1C2405200018-25-R1.BCG	5/20/2024 - 10/1/2024	Tablet Device	Page 325 of 693	





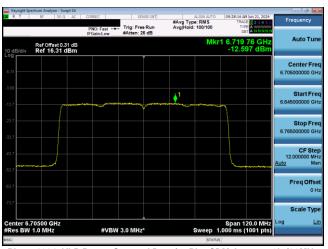
Plot 7-1081. VLP Power Spectral Density Plot SDM Antenna 5T (80MHz 802.11ax RU242 (UNII Band 7) – Ch. 151)



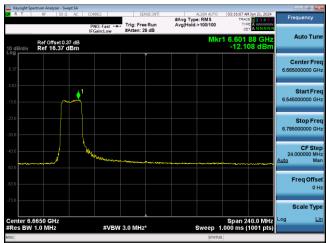
Plot 7-1082. VLP Power Spectral Density Plot SDM Antenna 3b (80MHz 802.11ax RU242 (UNII Band 7) – Ch. 151)



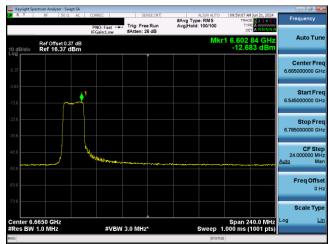
Plot 7-1083. VLP Power Spectral Density Plot SDM Antenna 5T (80MHz 802.11ax RU996 (UNII Band 7) – Ch. 151)



Plot 7-1084. VLP Power Spectral Density Plot SDM Antenna 3b (80MHz 802.11ax RU996 (UNII Band 7) – Ch. 151)



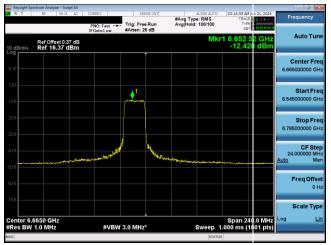
Plot 7-1085. VLP Power Spectral Density Plot SDM Antenna 5T (160MHz 802.11ax RU242 (UNII Band 7) – Ch. 143)



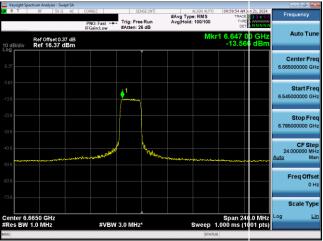
Plot 7-1086. VLP Power Spectral Density Plot SDM Antenna 3b (160MHz 802.11ax RU242 (UNII Band 7) – Ch. 143)

FCC ID: BCGA2995	element)	element MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dogg 226 of 602		
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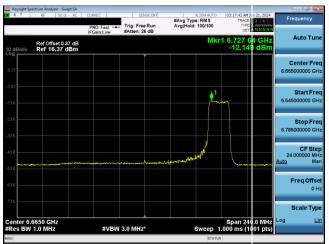




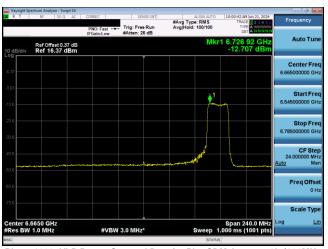
Plot 7-1087. VLP Power Spectral Density Plot SDM Antenna 5T (160MHz 802.11ax RU242 (UNII Band 7) – Ch. 143)



Plot 7-1088. VLP Power Spectral Density Plot SDM Antenna 3b (160MHz 802.11ax RU242 (UNII Band 7) – Ch. 143)



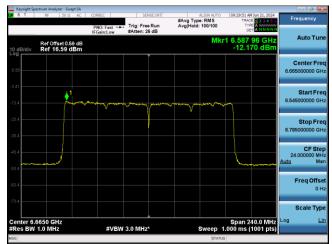
Plot 7-1089. VLP Power Spectral Density Plot SDM Antenna 5T (160MHz 802.11ax RU242 (UNII Band 7) – Ch. 143)



Plot 7-1090. VLP Power Spectral Density Plot SDM Antenna 3b (160MHz 802.11ax RU242 (UNII Band 7) – Ch. 143)



Plot 7-1091. VLP Power Spectral Density Plot SDM Antenna 5T (160MHz 802.11ax RU996x2 (UNII Band 7) – Ch. 143)



Plot 7-1092. VLP Power Spectral Density Plot SDM Antenna 3b (160MHz 802.11ax RU996x2 (UNII Band 7) – Ch. 143)

FCC ID: BCGA2995	element)	element MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dogg 227 of 602		
1C2405200018-25-R1.BCG	5/20/2024 - 10/1/2024	Tablet Device	Page 327 of 693		



# 7.4.15 SDM Diversity VLP Power Spectral Density Measurements

	Frequency [MHz]	Channel	802.11 MODE	RU Size	RU Index	Mode	Data Rate [Mbps]	Antenna 5T Power Density [dBm/MHz]	Antenna 1b Power Density [dBm/MHz]	Summed SDM Power Density [dBm/MHz]	Directional Gain [dBi]	e.i.r.p Density [dBm/MHz]	Max EIRP Density [dBm/MHz]	Margin [dB]
	6125	35	ax (40MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.11	-12.57	-9.32	2.49	-6.84	-5	-1.84
	6125	35	ax (40MHz)	242	62	SDM	243.8/286.8 (MCS11)	-12.86	-12.81	-9.82	2.49	-7.34	-5	-2.34
	6245	59	ax (40MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.52	-13.46	-9.95	2.49	-7.46	-5	-2.46
	6245	59	ax (40MHz)	242	62	SDM	243.8/286.8 (MCS11)	-12.59	-13.91	-10.19	2.49	-7.70	-5	-2.70
	6405	91	ax (40MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.93	-13.25	-10.08	2.49	-7.59	-5	-2.59
	6405	91	ax (40MHz)	242	62	SDM	243.8/286.8 (MCS11)	-12.40	-13.17	-9.76	2.49	-7.27	-5	-2.27
	6145	39	ax (80MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.90	-13.34	-10.10	2.49	-7.62	-5	-2.62
	6145	39	ax (80MHz)	242	62	SDM	243.8/286.8 (MCS11)	-13.20	-14.01	-10.57	2.49	-8.09	-5	-3.09
	6145	39	ax (80MHz)	242	64	SDM	243.8/286.8 (MCS11)	-12.80	-13.02	-9.90	2.49	-7.41	-5	-2.41
LC .	6225	55	ax (80MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.27	-13.02	-9.62	2.49	-7.13	-5	-2.13
Band	6225	55	ax (80MHz)	242	62	SDM	243.8/286.8 (MCS11)	-12.66	-13.64	-10.11	2.49	-7.62	-5	-2.62
Ba	6225	55	ax (80MHz)	242	64	SDM	243.8/286.8 (MCS11)	-11.89	-13.16	-9.47	2.49	-6.98	-5	-1.98
	6385	87	ax (80MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.51	-13.69	-10.05	2.49	-7.56	-5	-2.56
	6385	87	ax (80MHz)	242	62	SDM	243.8/286.8 (MCS11)	-12.52	-13.38	-9.92	2.49	-7.43	-5	-2.43
	6385	87	ax (80MHz)	242	64	SDM	243.8/286.8 (MCS11)	-12.54	-13.96	-10.18	2.49	-7.69	-5	-2.69
	6185		ax (160MHz)	242	61	SDM	243.8/286.8 (MCS11)	-11.40	-12.99	-9.11	2.49	-6.62	-5	-1.62
	6185	47 (L)	ax (160MHz)	242	64	SDM	243.8/286.8 (MCS11)	-12.16	-12.92	-9.51	2.49	-7.02	-5	-2.02
	6185	47 (U)	ax (160MHz)	242	64	SDM	243.8/286.8 (MCS11)	-11.59	-12.45	-8.99	2.49	-6.50	-5	-1.50
	6345		ax (160MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.53	-13.24	-9.86	2.49	-7.37	-5	-2.37
	6345	79 (L)	ax (160MHz)	242	64	SDM	243.8/286.8 (MCS11)	-12.76	-13.48	-10.09	2.49	-7.61	-5	-2.61
	6345	79 (U)	ax (160MHz)	242	64	SDM	243.8/286.8 (MCS11)	-11.65	-12.71	-9.14	2.49	-6.65	-5	-1.65
	6565	123	ax (40MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.74	-13.52	-10.10	2.25	-7.85	-5	-2.85
	6565	123	ax (40MHz)	242	62	SDM	243.8/286.8 (MCS11)	-13.03	-13.32	-10.16	2.25	-7.91	-5	-2.91
	6725	155	ax (40MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.27	-12.12	-9.18	2.25	-6.93	-5	-1.93
	6725	155	ax (40MHz)	242	62	SDM	243.8/286.8 (MCS11)	-12.23	-12.74	-9.47	2.25	-7.21	-5	-2.21
	6845	179	ax (40MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.06	-13.13	-9.55	2.25	-7.30	-5	-2.30
	6845	179	ax (40MHz)	242	62	SDM	243.8/286.8 (MCS11)	-12.02	-13.70	-9.77	2.25	-7.51	-5	-2.51
	6625	135	ax (80MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.10	-13.52	-9.74	2.25	-7.49	-5	-2.49
	6625	135	ax (80MHz)	242	62	SDM	243.8/286.8 (MCS11)	-12.73	-14.18	-10.39	2.25	-8.13	-5	-3.13
d 7	6625	135	ax (80MHz)	242	64	SDM	243.8/286.8 (MCS11)	-12.23	-13.65	-9.87	2.25	-7.61	-5	-2.61
Band 7	6705	151	ax (80MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.52	-13.48	-9.96	2.25	-7.70	-5	-2.70
_	6705	151	ax (80MHz)	242	62	SDM	243.8/286.8 (MCS11)	-12.61	-13.64	-10.08	2.25	-7.83	-5	-2.83
	6705	151	ax (80MHz)	242	64	SDM	243.8/286.8 (MCS11)	-12.30	-12.50	-9.39	2.25	-7.13	-5	-2.13
	6785	167	ax (80MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.66	-13.34	-9.98	2.25	-7.72	-5	-2.72
	6785	167	ax (80MHz)	242	62	SDM	243.8/286.8 (MCS11)	-12.67	-13.64	-10.12	2.25	-7.86	-5	-2.86
	6785	167	ax (80MHz)	242	64	SDM	243.8/286.8 (MCS11)	-13.19	-13.31	-10.24	2.25	-7.98	-5	-2.98
	6665		ax (160MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.11	-12.59	-9.33	2.25	-7.08	-5	-2.08
	6665	143 (L)	ax (160MHz)	242	64	SDM	243.8/286.8 (MCS11)	-12.42	-13.10	-9.74	2.25	-7.48	-5	-2.48
	6665	143 (U)	ax (160MHz)	242	64	SDM	243.8/286.8 (MCS11)	-12.15	-12.86	-9.48	2.25	-7.22	-5	-2.22

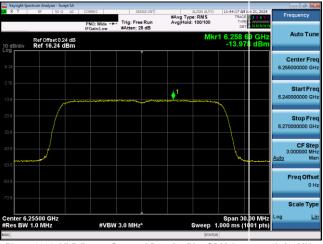
Table 7-227. VLP Power Spectral Density Measurements SDM Diversity (RU242)

	Frequency [MHz]	Channel	802.11 MODE	RU Size	RU Index	Mode	Data Rate [Mbps]	Antenna 5T Power Density [dBm/MHz]	Antenna 1b Power Density [dBm/MHz]	Summed SDM Power Density [dBm/MHz]	Directional Gain [dBi]	e.i.r.p Density [dBm/MHz]	Max EIRP Density [dBm/MHz]	Margin [dB]
	6115	33	ax (20MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.14	-12.94	-9.51	2.49	-7.02	-5	-2.02
	6255	61	ax (20MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.58	-13.98	-10.21	2.49	-7.72	-5	-2.72
	6415	93	ax (20MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.84	-13.98	-10.36	2.49	-7.87	-5	-2.87
	6125	35	ax (40MHz)	484	65	SDM	487.5/573.5 (MCS11)	-11.92	-12.39	-9.14	2.49	-6.65	-5	-1.65
ī	6245	59	ax (40MHz)	484	65	SDM	487.5/573.5 (MCS11)	-12.18	-12.92	-9.52	2.49	-7.03	-5	-2.03
Band	6405	91	ax (40MHz)	484	65	SDM	487.5/573.5 (MCS11)	-12.58	-12.86	-9.71	2.49	-7.22	-5	-2.22
ĕ	6145	39	ax (80MHz)	996	67	SDM	1020.8/1201 (MCS11)	-11.82	-12.18	-8.99	2.49	-6.50	-5	-1.50
	6225	55	ax (80MHz)	996	67	SDM	1020.8/1201 (MCS11)	-11.83	-12.03	-8.92	2.49	-6.43	-5	-1.43
	6385	87	ax (80MHz)	996	67	SDM	1020.8/1201 (MCS11)	-11.67	-12.28	-8.95	2.49	-6.46	-5	-1.46
	6185	47	ax (160MHz)	996x2	68	SDM	2041.6/2402 (MCS11)	-11.89	-11.69	-8.78	2.49	-6.29	-5	-1.29
	6345	79	ax (160MHz)	996x2	68	SDM	2041.6/2402 (MCS11)	-12.01	-12.41	-9.19	2.49	-6.70	-5	-1.70
	6535	117	ax (20MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.57	-13.43	-9.97	2.25	-7.71	-5	-2.71
	6695	149	ax (20MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.19	-12.86	-9.50	2.25	-7.24	-5	-2.24
	6855	181	ax (20MHz)	242	61	SDM	243.8/286.8 (MCS11)	-12.55	-13.00	-9.76	2.25	-7.50	-5	-2.50
_	6565	123	ax (40MHz)	484	65	SDM	487.5/573.5 (MCS11)	-13.12	-13.07	-10.08	2.25	-7.83	-5	-2.83
7 p	6725	155	ax (40MHz)	484	65	SDM	487.5/573.5 (MCS11)	-12.27	-12.72	-9.48	2.25	-7.22	-5	-2.22
Band	6845	179	ax (40MHz)	484	65	SDM	487.5/573.5 (MCS11)	-11.98	-12.58	-9.26	2.25	-7.00	-5	-2.00
	6625	135	ax (80MHz)	996	67	SDM	1020.8/1201 (MCS11)	-11.69	-12.40	-9.02	2.25	-6.77	-5	-1.77
	6705	151	ax (80MHz)	996	67	SDM	1020.8/1201 (MCS11)	-11.93	-12.26	-9.08	2.25	-6.83	-5	-1.83
	6785	167	ax (80MHz)	996	67	SDM	1020.8/1201 (MCS11)	-11.76	-11.82	-8.78	2.25	-6.52	-5	-1.52
	6665	143	ax (160MHz)	996x2	68	SDM	2041.6/2402 (MCS11)	-11.73	-11.91	-8.81	2.25	-6.55	-5	-1.55

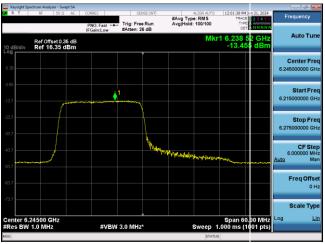
Table 7-228. VLP Power Spectral Density Measurements SDM Diversity (Fully-loaded RU)

FCC ID: BCGA2995	element	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 229 of 602
1C2405200018-25-R1.BCG	5/20/2024 - 10/1/2024	Tablet Device	Page 328 of 693





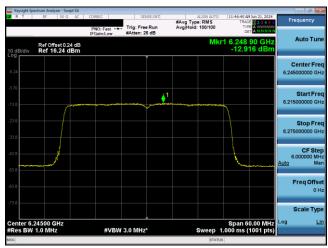
Plot 7-1093. VLP Power Spectral Density Plot SDM Antenna 1b (20MHz 802.11ax RU242 (UNII Band 5) - Ch. 61)



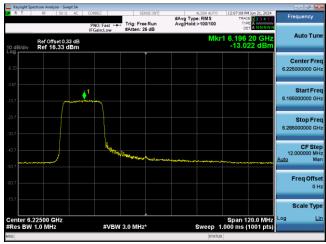
Plot 7-1094. VLP Power Spectral Density Plot SDM Antenna 1b (40MHz 802.11ax RU242 (UNII Band 5) – Ch. 59)



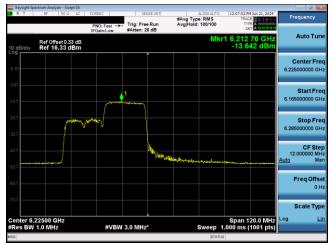
Plot 7-1095. VLP Power Spectral Density Plot SDM Antenna 1b (40MHz 802.11ax RU242 (UNII Band 5) – Ch. 59)



Plot 7-1096. VLP Power Spectral Density Plot SDM Antenna 1b (40MHz 802.11ax RU484 (UNII Band 5) – Ch. 59)



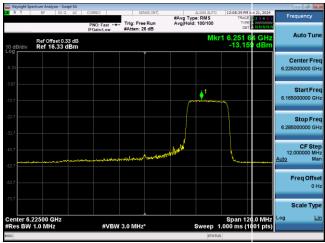
Plot 7-1097. VLP Power Spectral Density Plot SDM Antenna 1b (80MHz 802.11ax RU242 (UNII Band 5) – Ch. 55)



Plot 7-1098. VLP Power Spectral Density Plot SDM Antenna 1b (80MHz 802.11ax RU242 (UNII Band 5) – Ch. 55)

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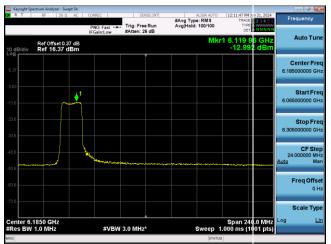




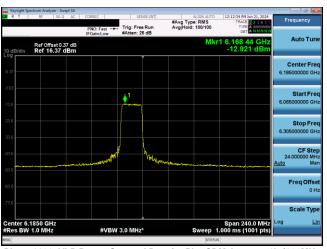
Plot 7-1099. VLP Power Spectral Density Plot SDM Antenna 1b (80MHz 802.11ax RU242 (UNII Band 5) – Ch. 55)



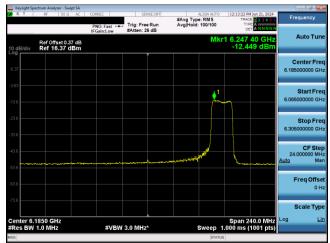
Plot 7-1100. VLP Power Spectral Density Plot SDM Antenna 1b (80MHz 802.11ax RU996 (UNII Band 5) – Ch. 55)



Plot 7-1101. VLP Power Spectral Density Plot SDM Antenna 1b (160MHz 802.11ax RU242 (UNII Band 5) – Ch. 47)



Plot 7-1102. VLP Power Spectral Density Plot SDM Antenna 1b (160MHz 802.11ax RU242 (UNII Band 5) – Ch. 47)



Plot 7-1103. VLP Power Spectral Density Plot SDM Antenna 1b (160MHz 802.11ax RU242 (UNII Band 5) – Ch. 47)



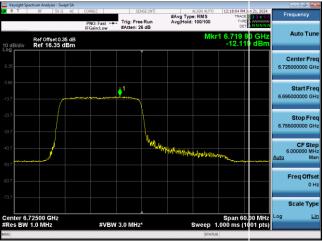
Plot 7-1104. VLP Power Spectral Density Plot SDM Antenna 1b (160MHz 802.11ax RU996x2 (UNII Band 5) - Ch. 47)

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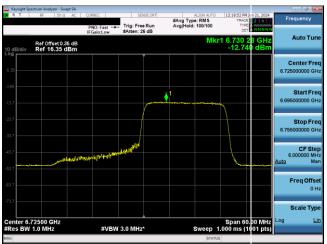




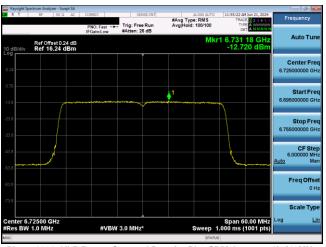
Plot 7-1105. VLP Power Spectral Density Plot SDM Antenna 1b (20MHz 802.11ax RU242 (UNII Band 7) – Ch. 149)



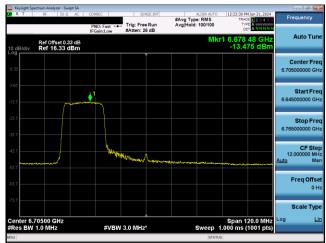
Plot 7-1106. VLP Power Spectral Density Plot SDM Antenna 1b (40MHz 802.11ax RU242 (UNII Band 7) – Ch. 155)



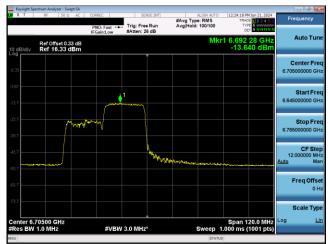
Plot 7-1107. VLP Power Spectral Density Plot SDM Antenna 1b (40MHz 802.11ax RU242 (UNII Band 7) – Ch. 155)



Plot 7-1108. VLP Power Spectral Density Plot SDM Antenna 1b (40MHz 802.11ax RU484 (UNII Band 7) – Ch. 155)



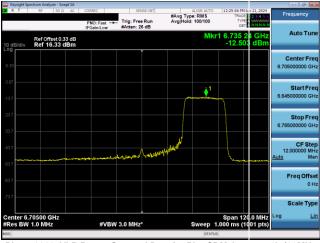
Plot 7-1109. VLP Power Spectral Density Plot SDM Antenna 1b (80MHz 802.11ax RU242 (UNII Band 7) – Ch. 151)



Plot 7-1110. VLP Power Spectral Density Plot SDM Antenna 1b (80MHz 802.11ax RU242 (UNII Band 7) – Ch. 151)

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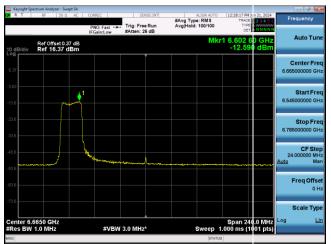




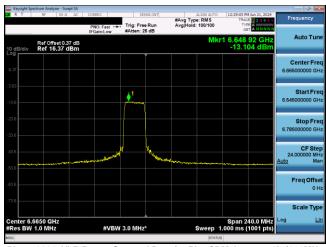
Plot 7-1111. VLP Power Spectral Density Plot SDM Antenna 1b (80MHz 802.11ax RU242 (UNII Band 7) – Ch. 151)



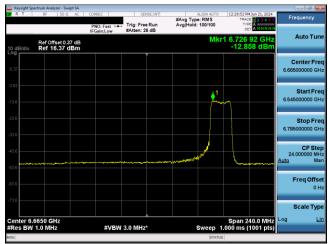
Plot 7-1112. VLP Power Spectral Density Plot SDM Antenna 1b (80MHz 802.11ax RU996 (UNII Band 7) – Ch. 151)



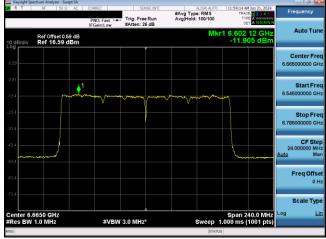
Plot 7-1113. VLP Power Spectral Density Plot SDM Antenna 1b (160MHz 802.11ax RU242 (UNII Band 7) – Ch. 143)



Plot 7-1114. VLP Power Spectral Density Plot SDM Antenna 1b (160MHz 802.11ax RU242 (UNII Band 7) – Ch. 143)



Plot 7-1115. VLP Power Spectral Density Plot SDM Antenna 1b (160MHz 802.11ax RU242 (UNII Band 7) – Ch. 143)



Plot 7-1116. VLP Power Spectral Density Plot SDM Antenna 1b (160MHz 802.11ax RU996x2 (UNII Band 7) – Ch. 143)

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#### Note:

Per ANSI C63.10-2020 Section 14.5.2.2 and KDB 662911 v02r01 Section E)2), the power spectral density at Antenna 5T and Antenna 3b were first measured separately as shown in the section above. The measured values were then summed in linear power units then converted back to dBm.

#### **Sample Directional Gain Calculation:**

For correlated signals, assuming the antenna gain is 3.70 dBi for Antenna 5T and 0.60 dBi for Antenna 3b.

Directional gain = 
$$10 \log[(10^{G_1/20} + 10^{G_2/20} + ... + 10^{G_N/20})^2 / N_{ANT}] dBi$$
  
=  $10 \log[(10^{3.7/20} + 10^{0.4/20})^2 / 2] dBi$   
=  $5.30 dBi$ 

For uncorrelated signals, assuming the antenna gain is 3.70 dBi for Antenna 5T and 0.60 dBi for Antenna 3b.

Directional gain = 
$$10 \log[(10^{G_1/10} + 10^{G_2/10} + ... + 10^{G_N/10}) / N_{ANT}] dBi$$
  
=  $10 \log[(10^{3.7/10} + 10^{0.6/10} / 2] dBi$   
=  $2.42 dBi$ 

#### Sample CDD/SDM Calculation:

At 5955MHz in 802.11ax (20MHz BW) mode, the average conducted power spectral density was measured to be 6.47 dBm for Antenna 5T and 6.70 dBm for Antenna 3b.

Antenna 5T + Antenna 3b = CDD/SDM 
$$(6.47 \text{ dBm} + 6.70 \text{ dBm}) = (4.436 \text{ mW} + 4.677 \text{ mW}) = 9.113 \text{ mW} = 9.60 \text{ dBm}$$

#### Sample e.i.r.p Power Spectral Density Calculation:

At 5955MHz in 802.11ax (20MHz BW) mode, the average CDD power density was calculated to be 9.60 dBm with directional gain of 5.30 dBi.

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# 7.5 In-Band Emissions §15.407(b)(7)

### **Test Overview and Limit**

The spectrum analyzer was connected to the antenna terminal while the EUT was operating at its maximum duty cycle, at its maximum power control level, as defined in ANSI C63.10-2020 and KDB 789033 D02 v02r01, and at the appropriate frequencies.

For transmitters operating solely in the 5.925-7.125 GHz bands: For transmitters operating within the 5.925-7.125 GHz bands: Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.

#### **Test Procedure Used**

ANSI C63.10-2020 – Section 12.4.2.2 KDB 987594 D02 v02r01 – Section J

#### **Test Settings**

- 1. Connect output of the antenna port to a spectrum analyzer or EMI receiver, with appropriate attenuation, as to not damage the instrumentation.
- Set the reference level of the measuring equipment in accordance with procedure 4.1.6.2 of ANSI C63.10-2020.
- Measure the 26 dB EBW using the test procedure 12.5.2 of ANSI C63.10-2020. (This will be used to determine the channel edge.)
- 4. Measure the power spectral density (which will be used for emissions mask reference) using the following procedure:
  - a) Set the span to encompass the entire 26 dB EBW of the signal.b) Set RBW = same RBW used for 26 dB EBW measurement.
  - b) Set RBW = same RBc) Set VBW ≥ 3 X RBW
  - d) Number of points in sweep ≥ [2 X span / RBW].
  - e) Sweep time = auto.
  - f) Detector = RMS (i.e., power averaging)
  - Trace average at least 100 traces in power averaging (rms) mode.
  - h) Use the peak search function on the instrument to find the peak of the spectrum.
- 5. For the purposes of developing the emission mask, the channel bandwidth is defined as the 26 dB EBW.
- 6. Using the measuring equipment limit line function, develop the emissions mask based on the following requirements. The emissions power spectral density must be reduced below the peak power spectral density (in dB) as follows:
  - i) Suppressed by 20 dB at 1 MHz outside of the channel edge. (The channel edge is defined as the 26-dB point on either side of the carrier center frequency.)
  - Suppressed by 28 dB at one channel bandwidth from the channel center.
  - k) Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.
- 7. Adjust the span to encompass the entire mask as necessary.
- 8. Clear trace.
- 9. Trace average at least 100 traces in power averaging (rms) mode.
- 10. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask.

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# **Test Setup**

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-4. Test Instrument & Measurement Setup

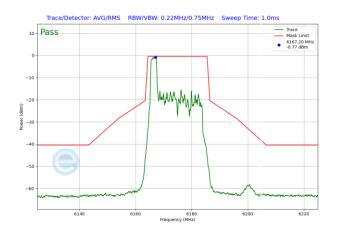
# **Test Notes**

1. All RUs were investigated and only worst case partially loaded and fully loaded RUs are reported.

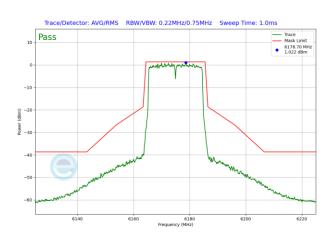
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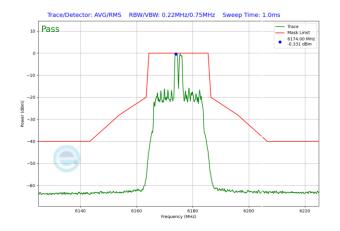
# 7.5.1 Antenna 5T SP In-Band Emission Measurements



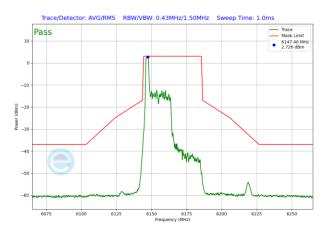
Plot 7-1117. SP In-Band Emission Plot Antenna 5T (20MHz 802.11ax RU26 (UNII Band 5) – Ch. 45)



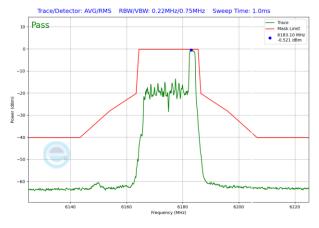
Plot 7-1120. SP In-Band Emission Plot Antenna 5T (20MHz 802.11ax RU242 (UNII Band 5) – Ch. 45)

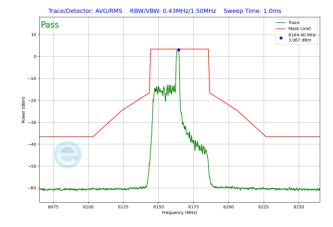


Plot 7-1118. SP In-Band Emission Plot Antenna 5T (20MHz 802.11ax RU26 (UNII Band 5) – Ch. 45)



Plot 7-1121. SP In-Band Emission Plot Antenna 5T (40MHz 802.11ax RU26 (UNII Band 5) – Ch. 43)



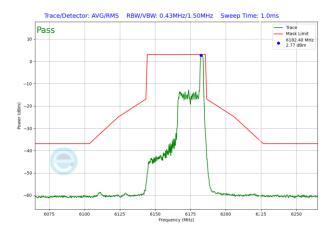


Plot 7-1119. SP In-Band Emission Plot Antenna 5T (20MHz 802.11ax RU26 (UNII Band 5) – Ch. 45)

Plot 7-1122. SP In-Band Emission Plot Antenna 5T (40MHz 802.11ax RU26 (UNII Band 5) – Ch. 43)

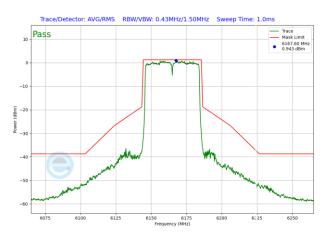
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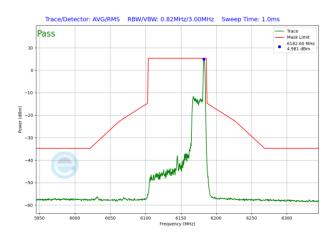




Plot 7-1123. SP In-Band Emission Plot Antenna 5T (40MHz 802.11ax RU26 (UNII Band 5) – Ch. 43)

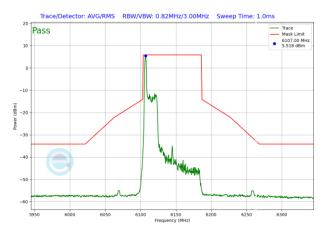
Plot 7-1126. SP In-Band Emission Plot Antenna 5T (80MHz 802.11ax RU26 (UNII Band 5) – Ch. 39)

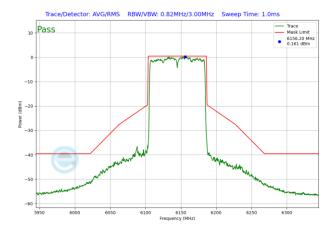




Plot 7-1124. SP In-Band Emission Plot Antenna 5T (40MHz 802.11ax RU484 (UNII Band 5) – Ch. 43)

Plot 7-1127. SP In-Band Emission Plot Antenna 5T (80MHz 802.11ax RU26 (UNII Band 5) – Ch. 39)





Plot 7-1125. SP In-Band Emission Plot Antenna 5T (80MHz 802.11ax RU26 (UNII Band 5) – Ch. 39)

Plot 7-1128. SP In-Band Emission Plot Antenna 5T (80MHz 802.11ax RU996 (UNII Band 5) – Ch. 39)

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