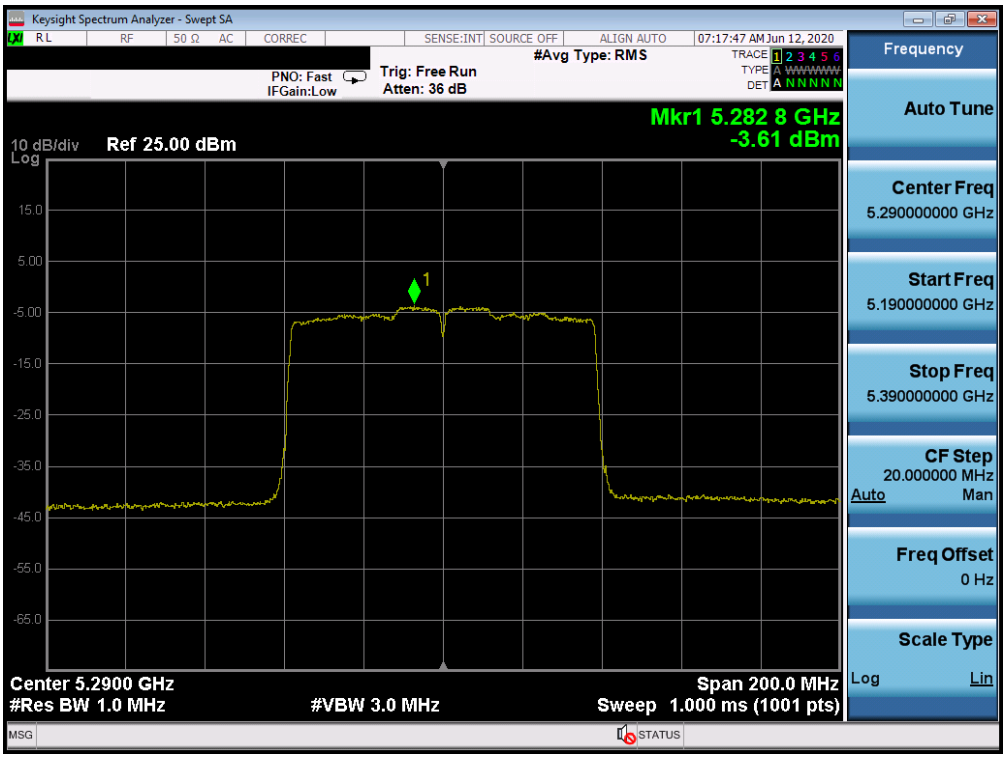
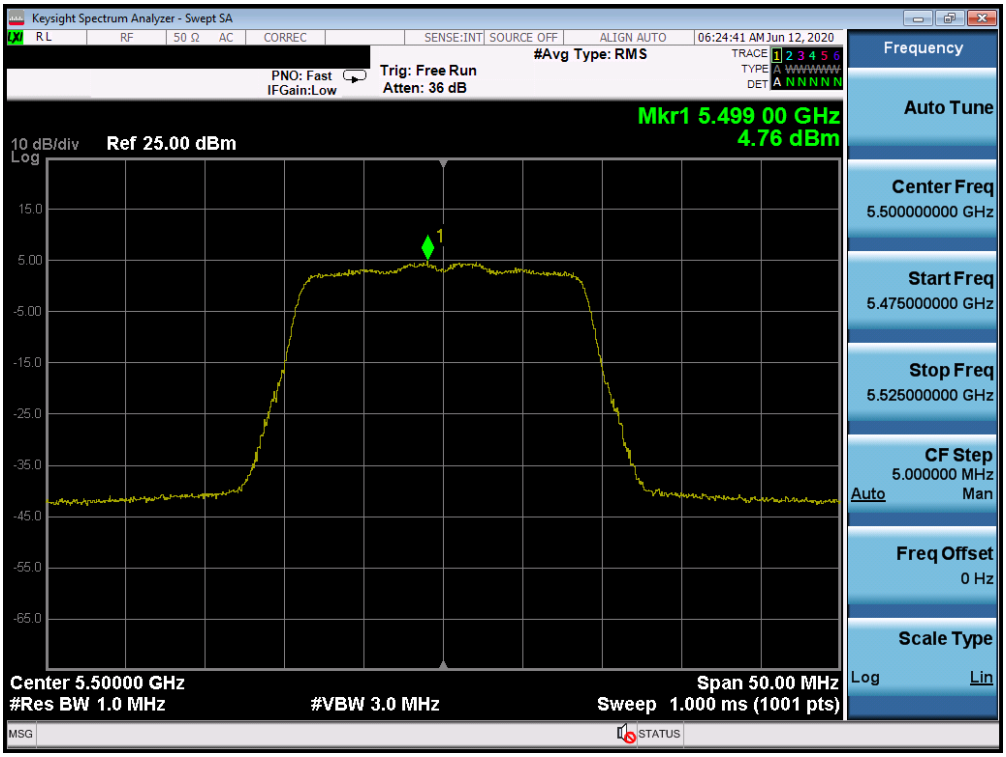
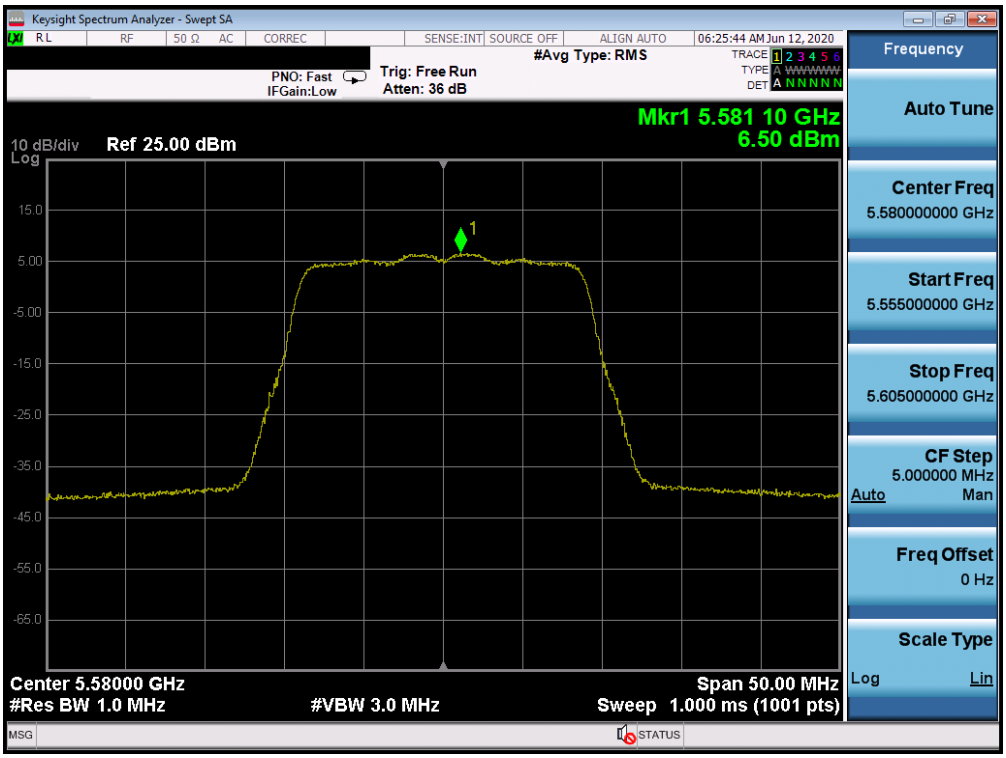


Plot 7-96. Power Spectral Density Plot SISO CORE 1 (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

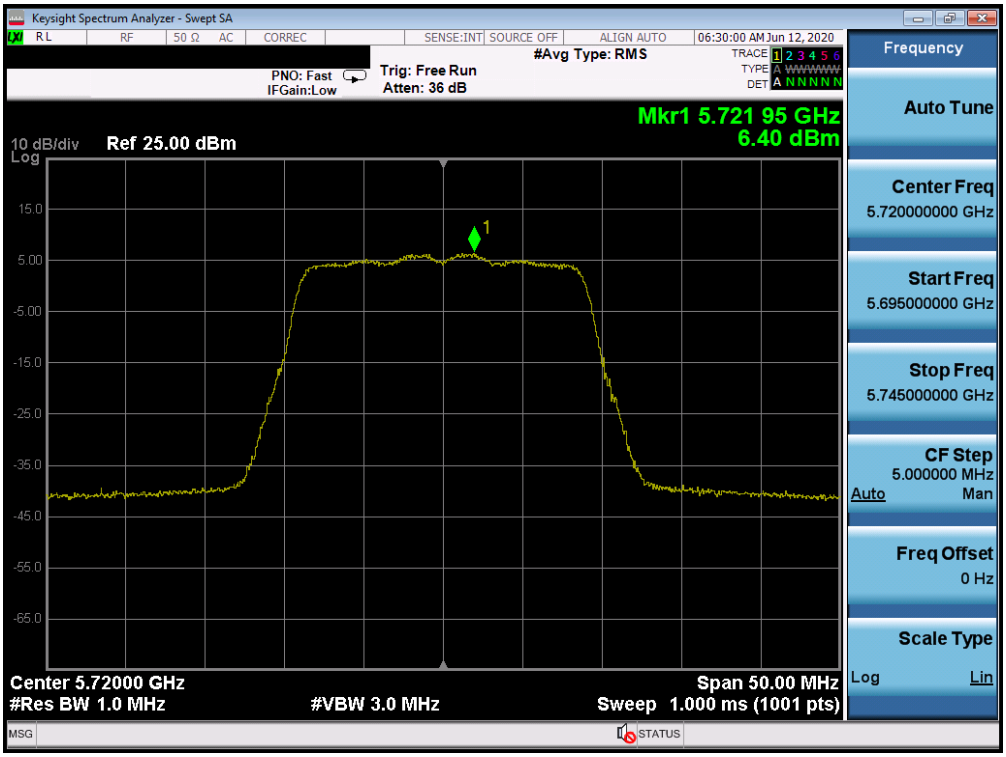


Plot 7-97. Power Spectral Density Plot SISO CORE 1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

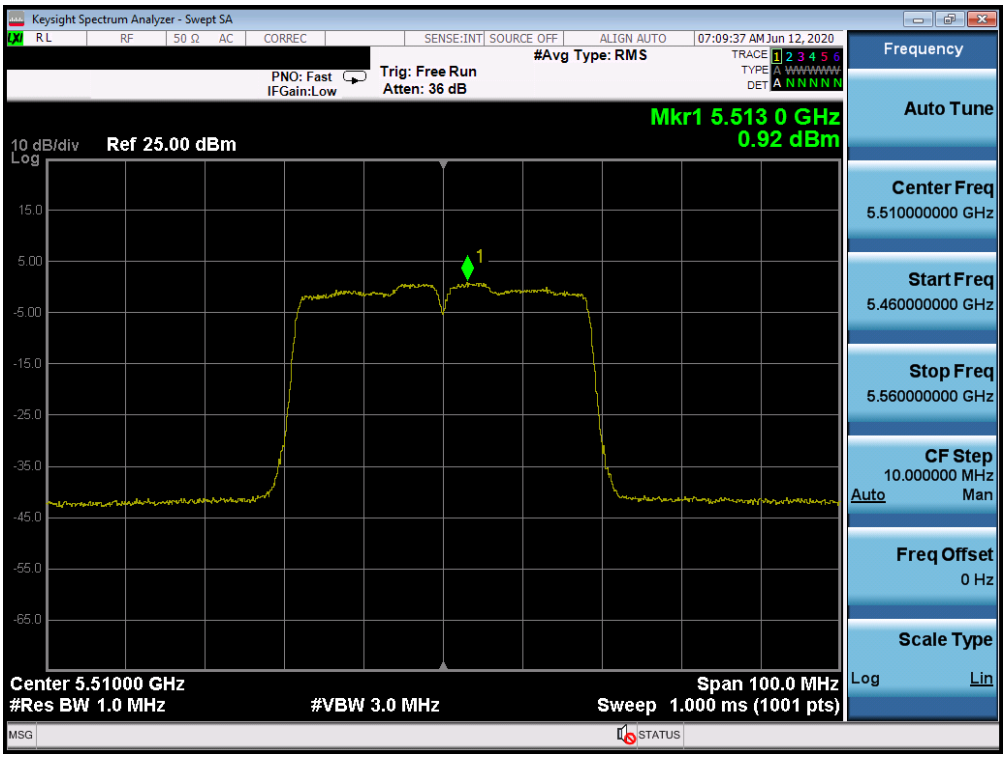


Plot 7-98. Power Spectral Density Plot SISO CORE 1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 116

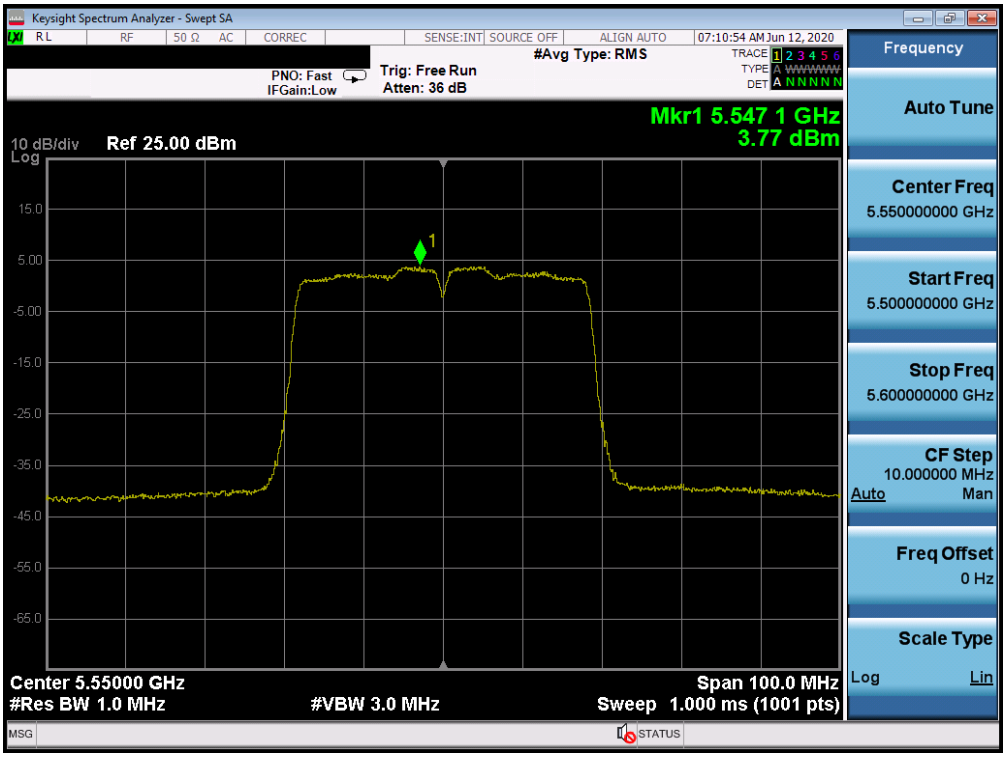


Plot 7-99. Power Spectral Density Plot SISO CORE 1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 44)

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

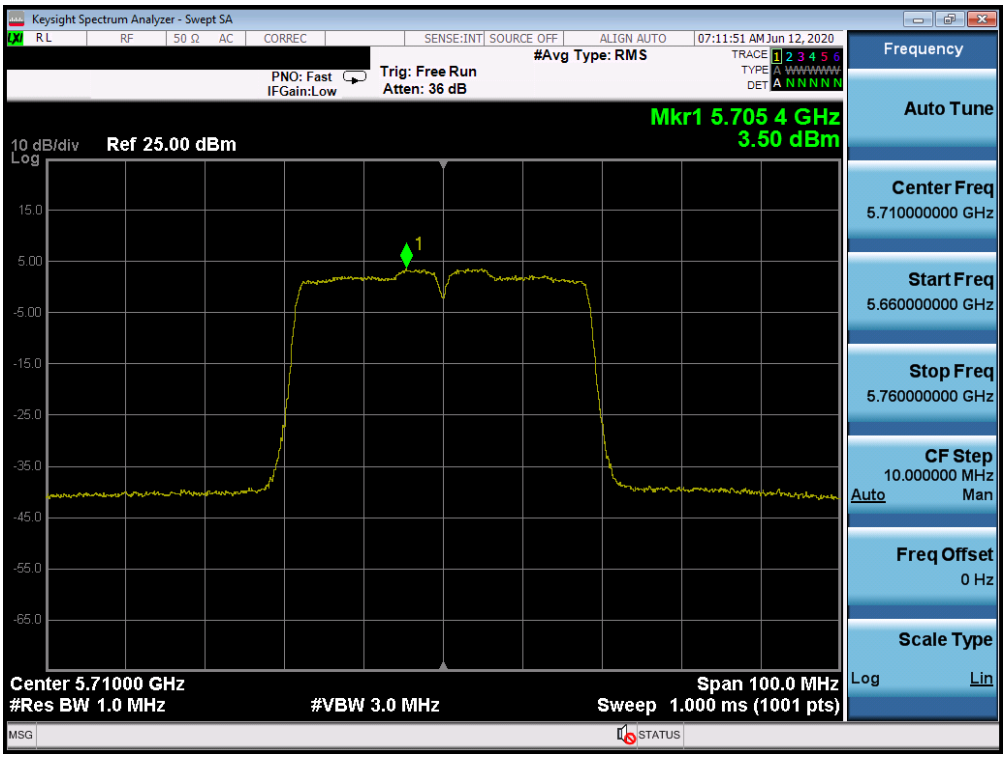


Plot 7-100. Power Spectral Density Plot SISO CORE 1 (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

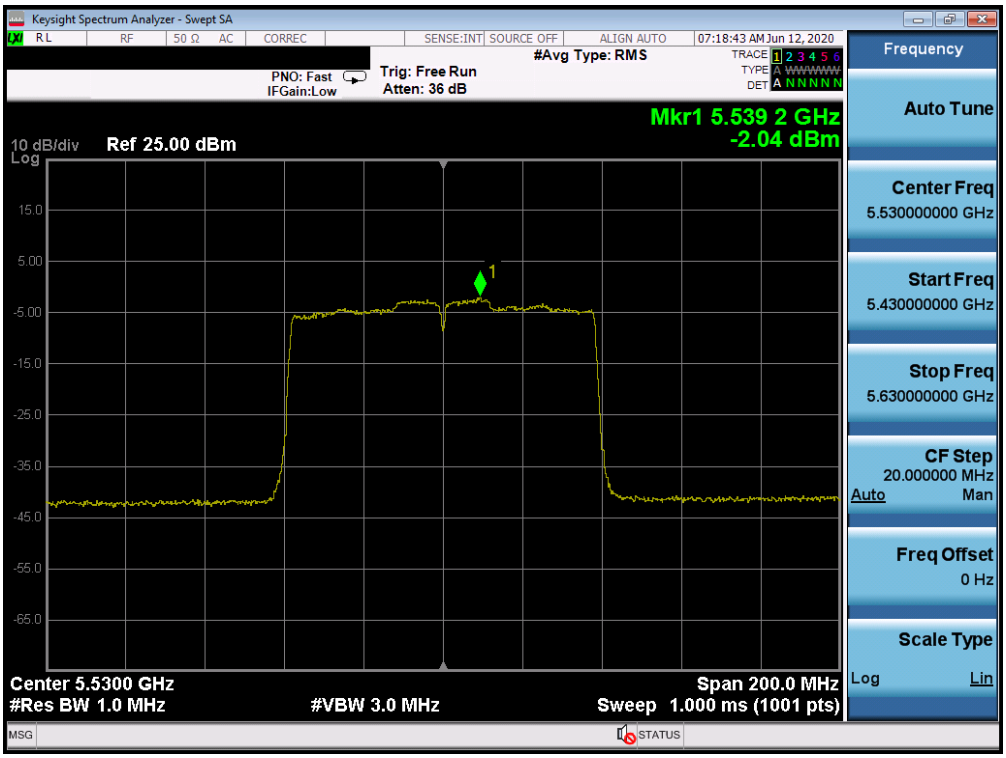


Plot 7-101. Power Spectral Density Plot SISO CORE 1 (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

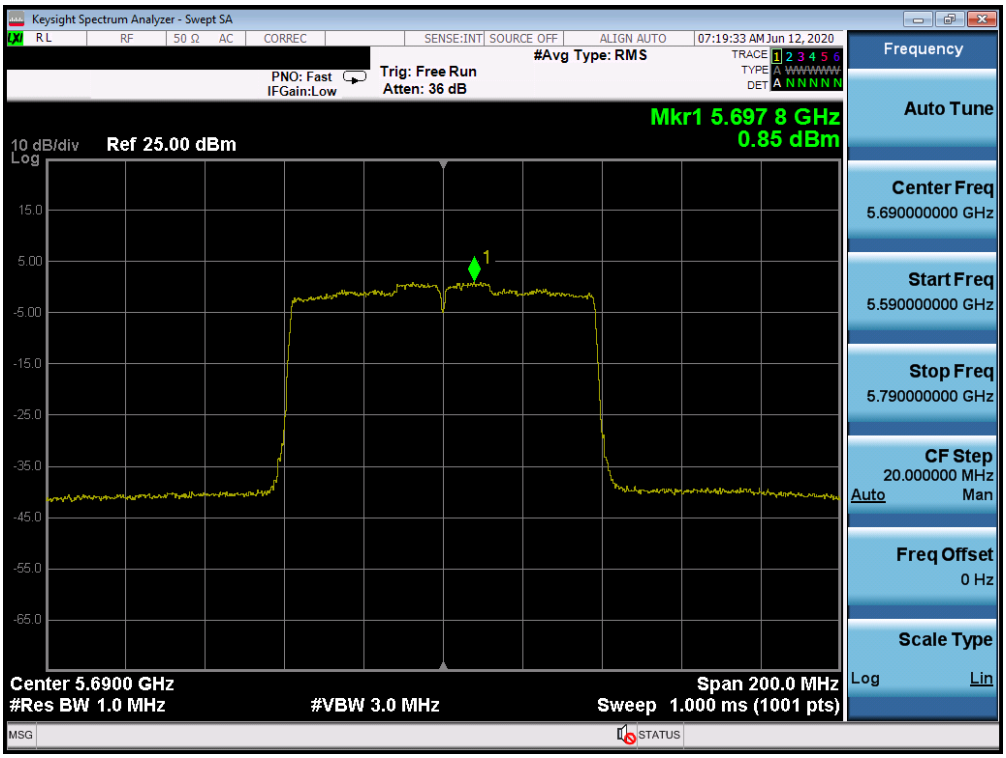


Plot 7-102. Power Spectral Density Plot SISO CORE 1 (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)



Plot 7-103. Power Spectral Density Plot SISO CORE 1 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

© 2020 PCTEST
V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

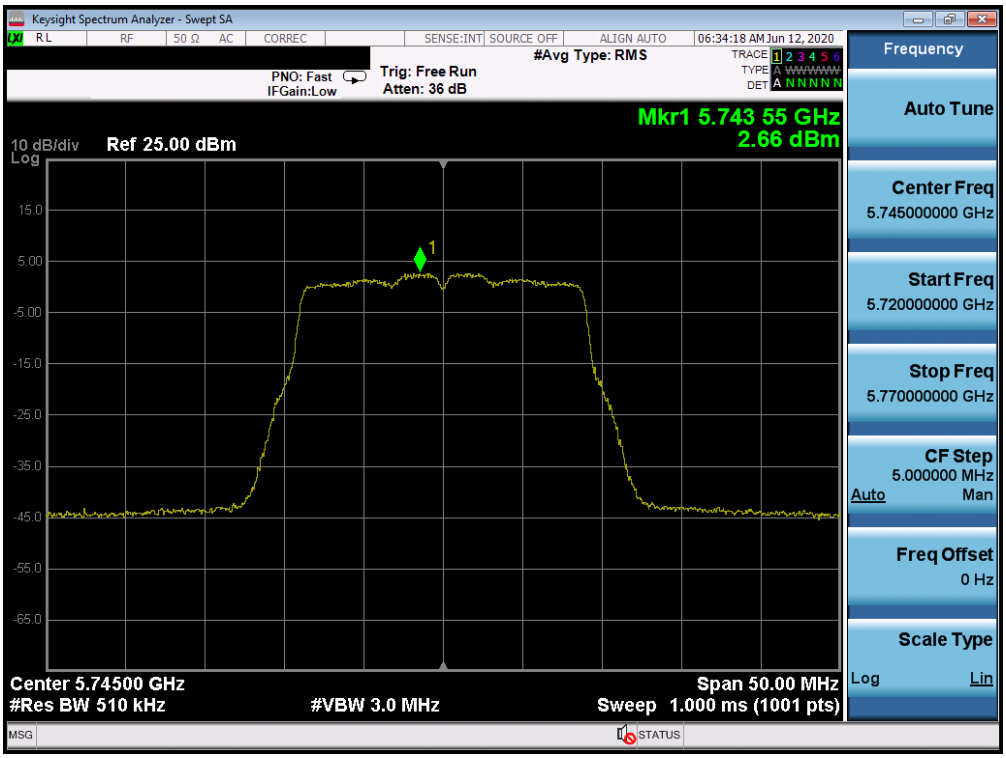


Plot 7-104. Power Spectral Density Plot SISO CORE 1 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

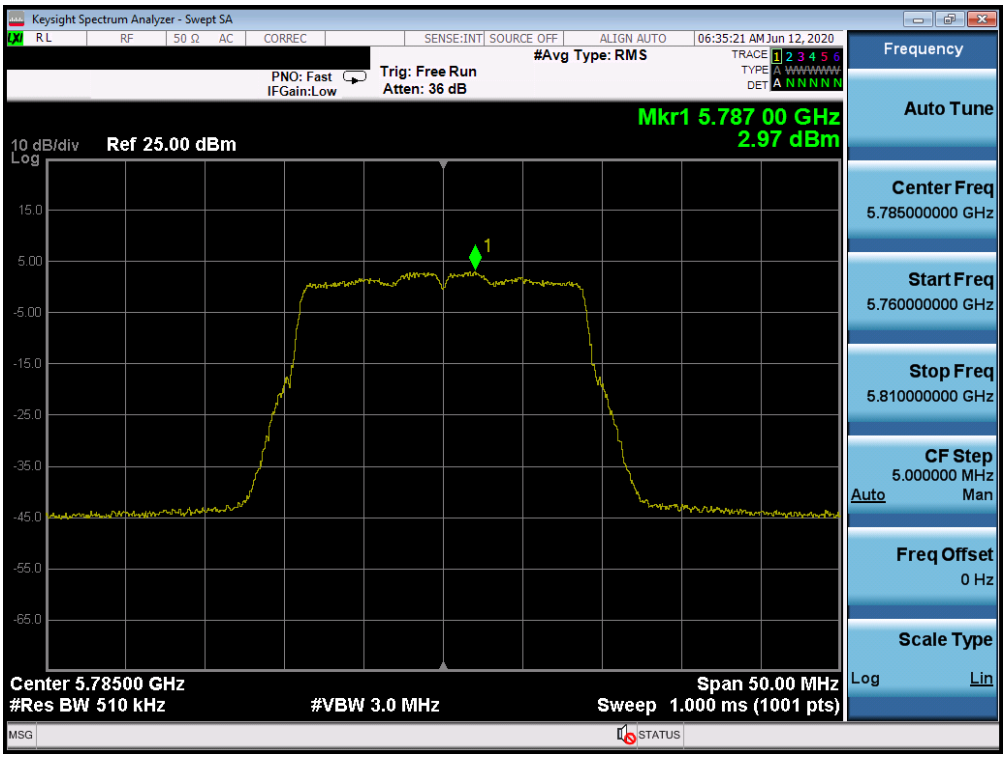
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm/500kHz]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
Band 3	5745	149	n (20MHz)	6.5/7.2 (MCS0)	2.66	30.0	-27.34
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	2.97	30.0	-27.03
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	3.52	30.0	-26.48
	5755	151	n (40MHz)	13.5/15 (MCS0)	0.27	30.0	-29.73
	5795	159	n (40MHz)	13.5/15 (MCS0)	0.19	30.0	-29.81
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-3.07	30.0	-33.07

Table 7-31. Band 3 Conducted Power Spectral Density Measurements SISO CORE 1

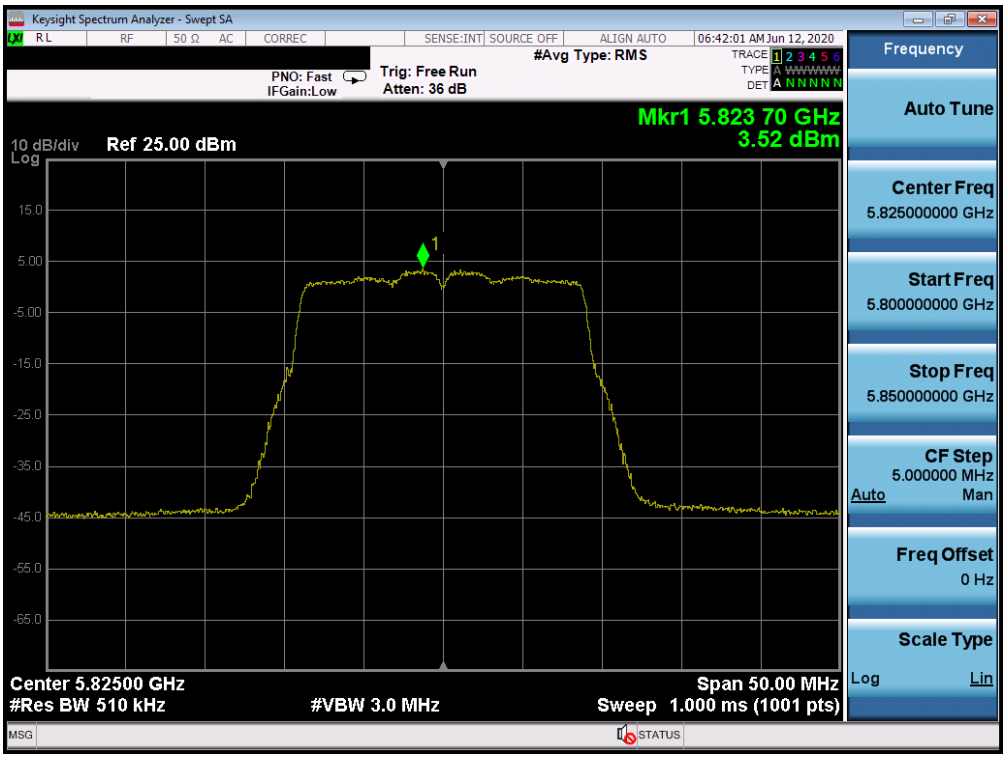


Plot 7-105. Power Spectral Density Plot SISO CORE 1 (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

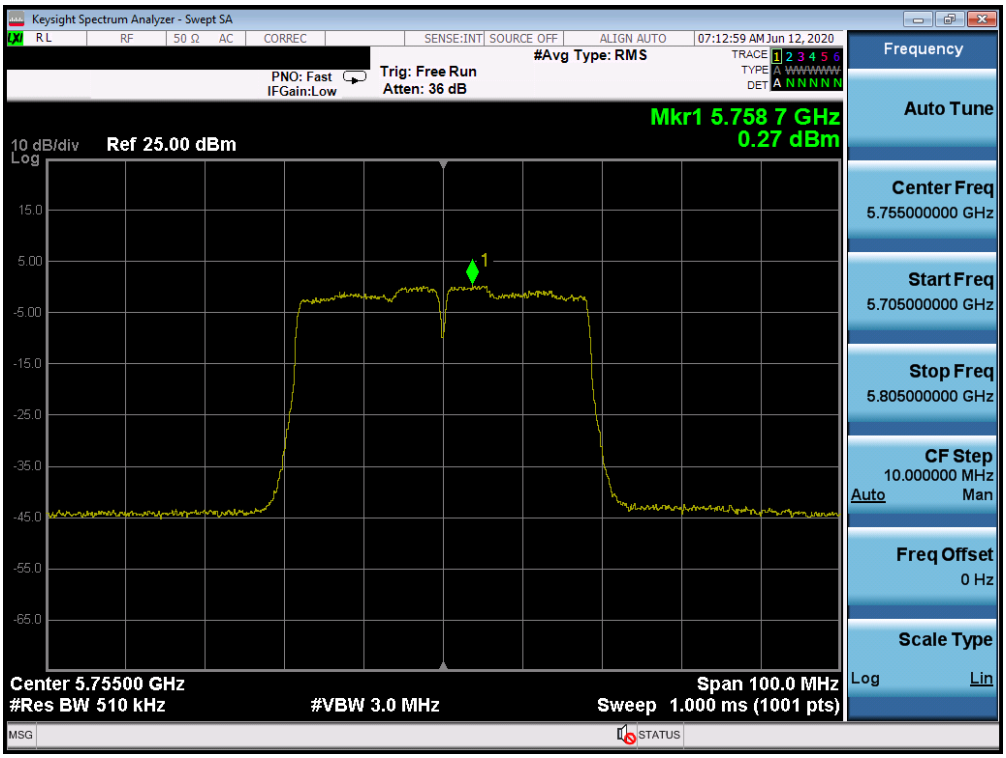


Plot 7-106. Power Spectral Density Plot SISO CORE 1 (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

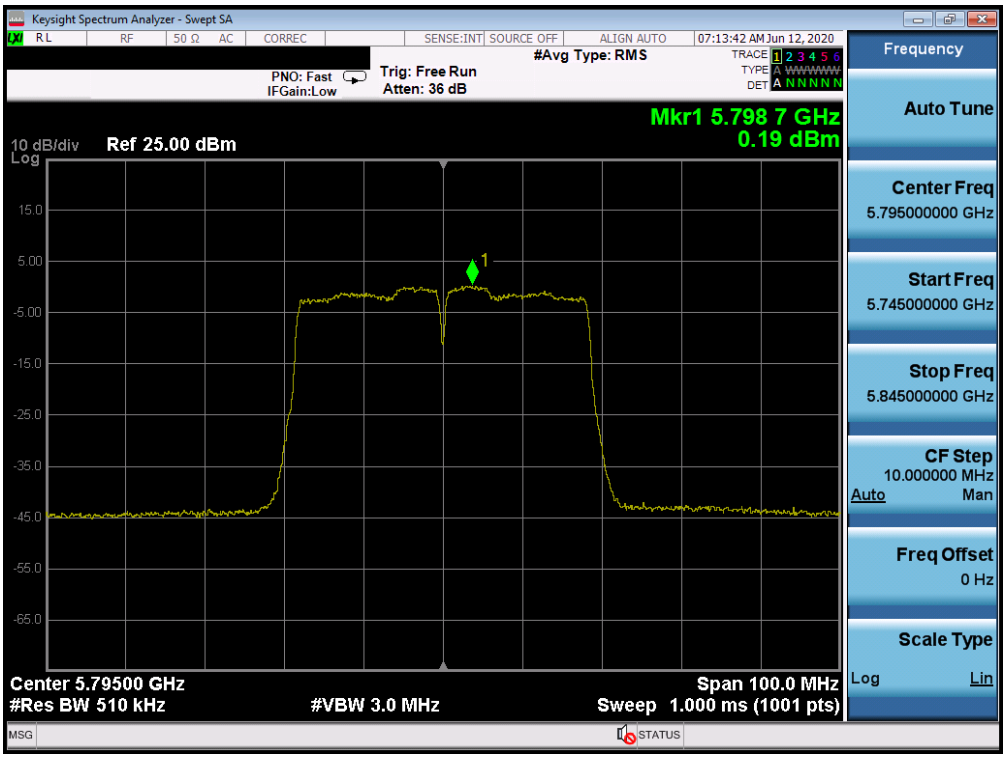


Plot 7-107. Power Spectral Density Plot SISO CORE 1 (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

© 2020 PCTEST
V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

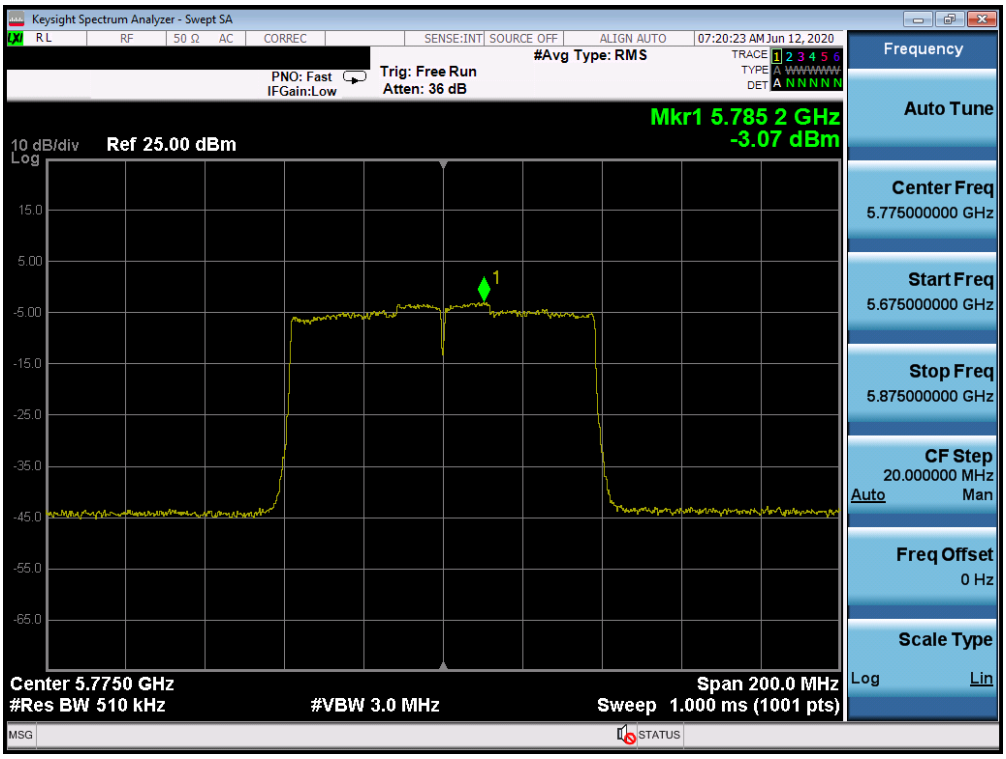


Plot 7-108. Power Spectral Density Plot SISO CORE 1 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)



Plot 7-109. Power Spectral Density Plot SISO CORE 1 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)

© 2020 PCTEST
V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-110. Power Spectral Density Plot SISO CORE 1 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Summed CDD/SDM Power Spectral Density Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Core 0 Power Density [dBm/MHz]	Core 1 Power Density [dBm/MHz]	Summed Power Density [dBm/MHz]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	n (20MHz)	6.5/7.2 (MCS0)	4.49	4.17	7.34	11.0	-3.66
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.20	5.74	8.98	11.0	-2.02
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	6.75	6.49	9.63	11.0	-1.37
	5190	38	n (40MHz)	13.5/15 (MCS0)	-0.86	-0.75	2.21	11.0	-8.79
	5230	46	n (40MHz)	13.5/15 (MCS0)	3.42	3.54	6.49	11.0	-4.51
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-4.95	-5.05	-1.99	11.0	-12.99
Band 2A	5260	52	n (20MHz)	6.5/7.2 (MCS8)	7.28	6.94	10.12	11.0	-0.88
	5280	56	n (20MHz)	6.5/7.2 (MCS8)	7.35	7.07	10.22	11.0	-0.78
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	4.56	7.21	9.09	11.0	-1.91
	5270	54	n (40MHz)	13.5/15 (MCS0)	4.40	4.25	7.33	11.0	-3.67
	5310	62	n (40MHz)	13.5/15 (MCS0)	0.92	0.63	3.79	11.0	-7.21
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-4.46	-4.37	-1.40	11.0	-12.40
Band 2C	5500	100	n (20MHz)	6.5/7.2 (MCS0)	4.31	4.21	7.27	11.0	-3.73
	5580	116	n (20MHz)	6.5/7.2 (MCS8)	7.46	7.11	10.30	11.0	-0.70
	5720	144	n (20MHz)	6.5/7.2 (MCS8)	7.48	6.74	10.14	11.0	-0.86
	5510	102	n (40MHz)	13.5/15 (MCS0)	0.35	-0.01	3.18	11.0	-7.82
	5550	110	n (40MHz)	13.5/15 (MCS0)	5.19	5.00	8.10	11.0	-2.90
	5710	142	n (40MHz)	13.5/15 (MCS0)	4.99	4.56	7.79	11.0	-3.21
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-3.42	-3.07	-0.23	11.0	-11.23
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	1.84	1.61	4.74	11.0	-6.26

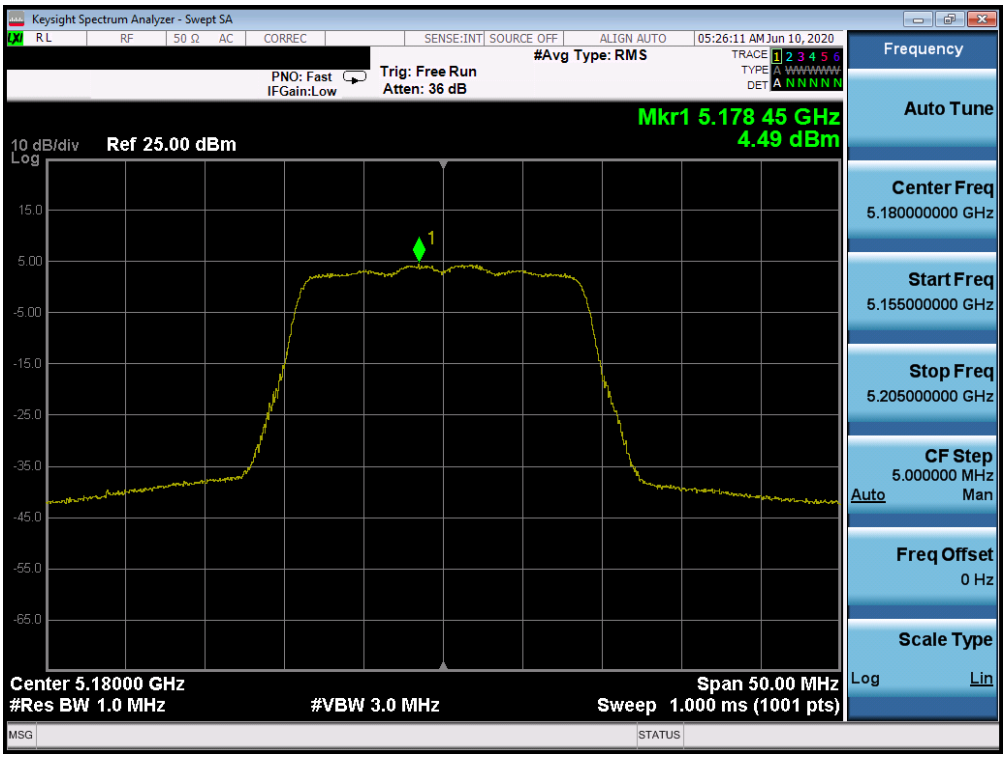
Table 7-32. Bands 1, 2A, 2C CDD/SDM Conducted Power Spectral Density Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Core 0 Power Density [dBm/MHz]	Core 1 Power Density [dBm/MHz]	Summed Power Density [dBm/MHz]	Directional Antenna Gain [dBi]	e.i.r.p. Power Density [dBm/MHz]	ISED Max e.i.r.p. Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	n (20MHz)	6.5/7.2 (MCS0)	0.70	1.06	3.89	4.99	8.89	10.0	-1.11
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	1.18	1.47	4.34	4.99	9.33	10.0	-0.67
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	0.68	1.01	3.86	4.99	8.85	10.0	-1.15

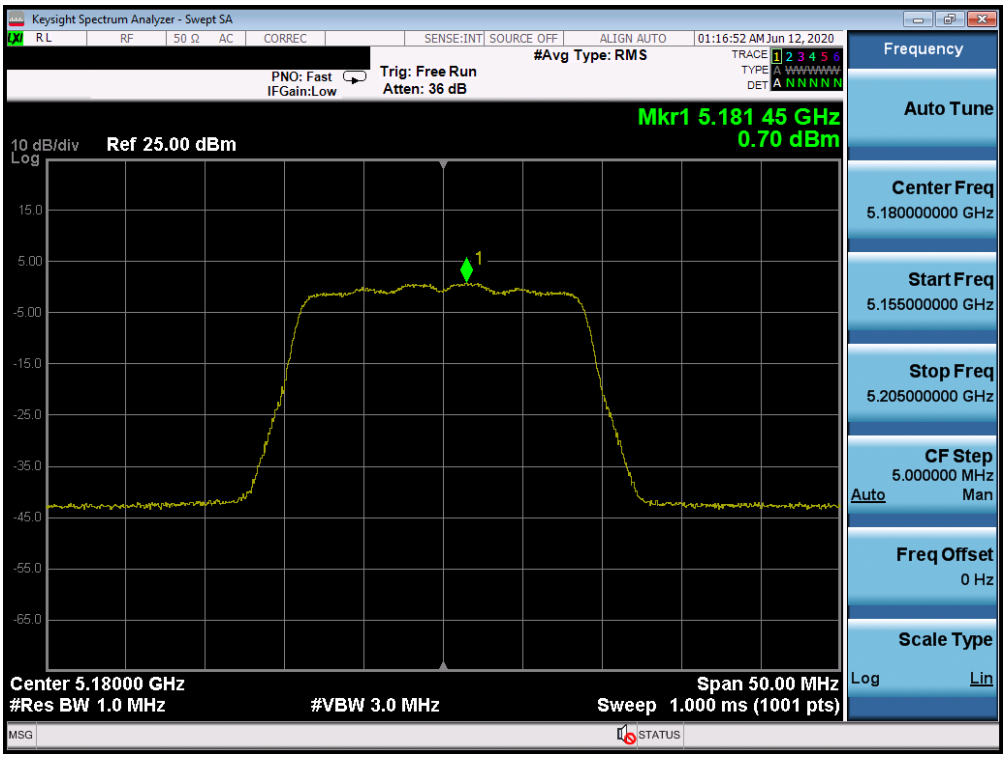
Table 7-33. Band 1 CDD e.i.r.p. Conducted Power Spectral Density Measurements (ISED)

© 2020 PCTEST V 10.1 02/01/2020

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

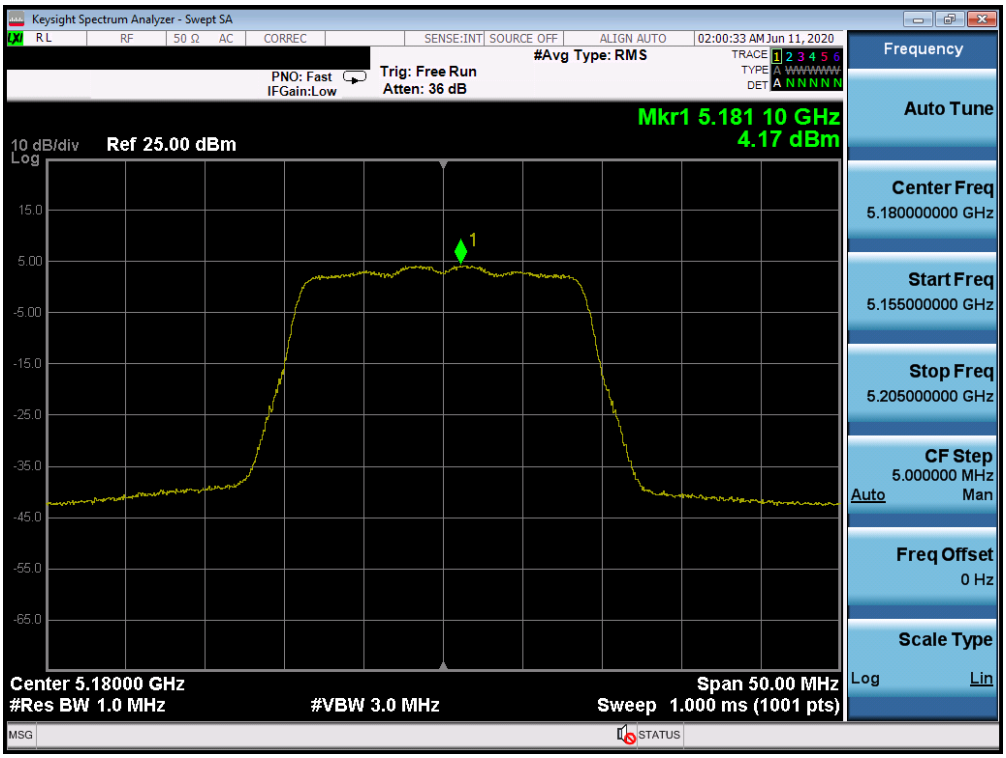


Plot 7-111. Power Spectral Density Plot CDD CORE 0 (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

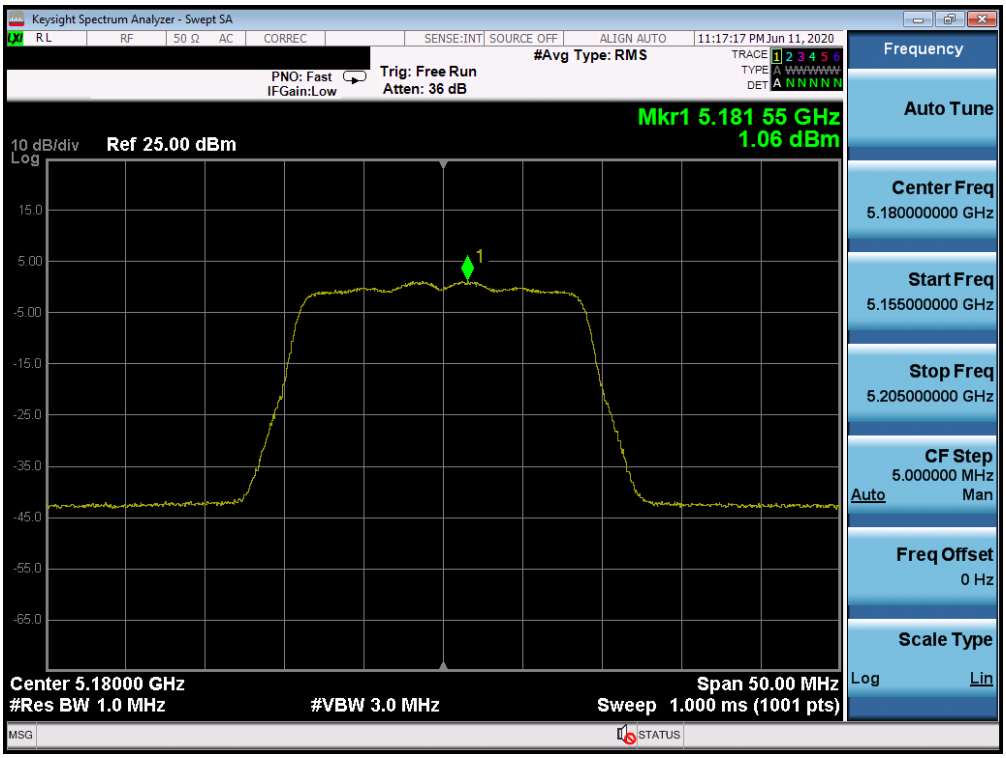


Plot 7-112. Power Spectral Density Plot ISED CDD CORE 0 (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

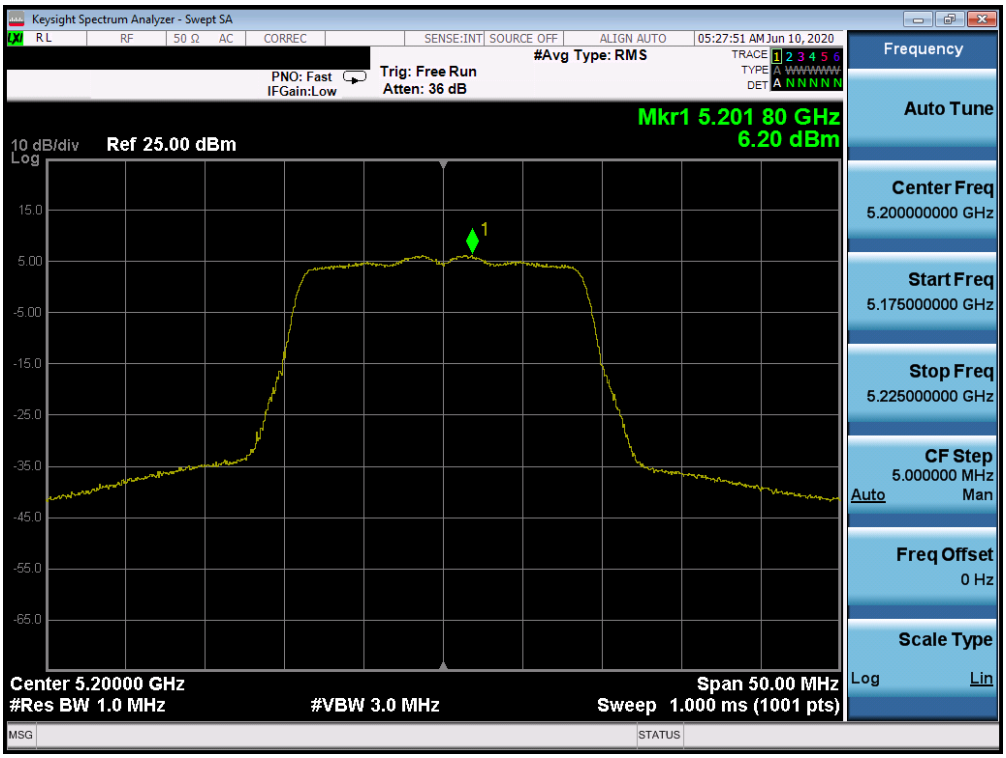


Plot 7-113. Power Spectral Density Plot CDD CORE 1 (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

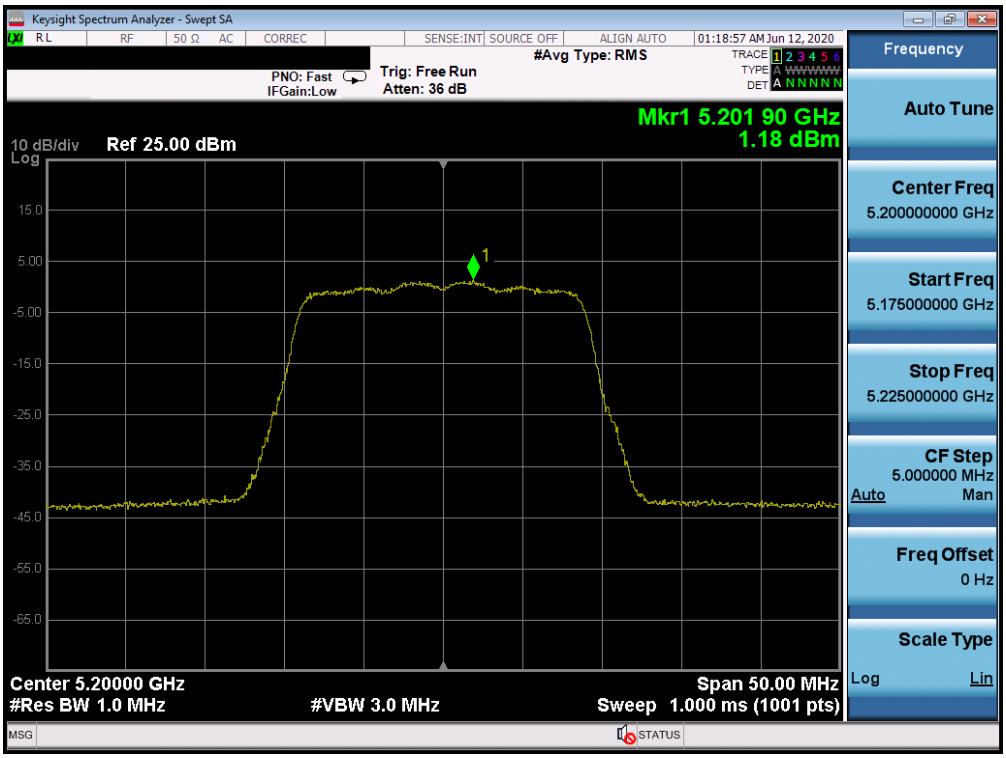


Plot 7-114. Power Spectral Density Plot ISED CDD CORE 1 (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

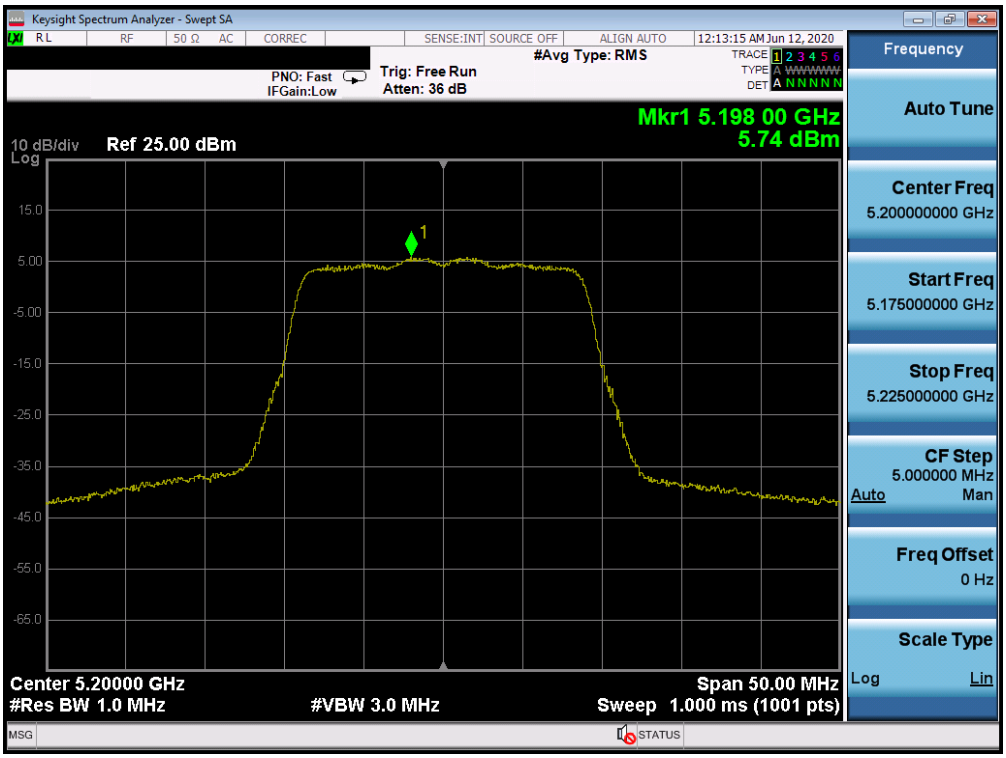


Plot 7-115. Power Spectral Density Plot CDD CORE 0 (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

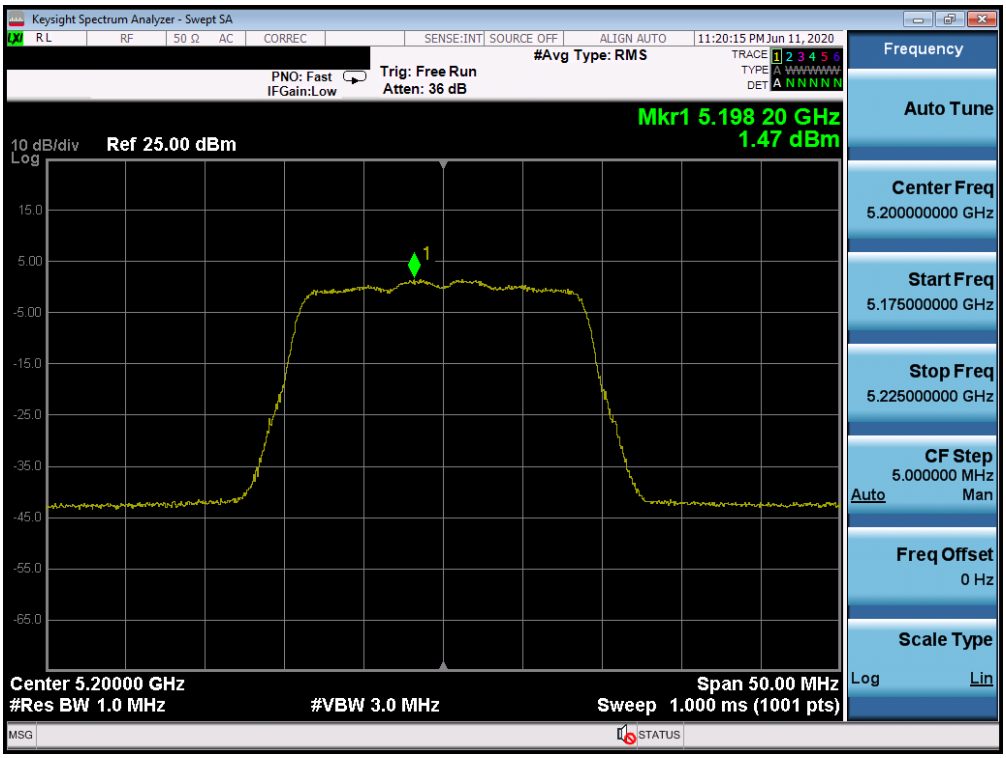


Plot 7-116. Power Spectral Density Plot CDD CORE 0 (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

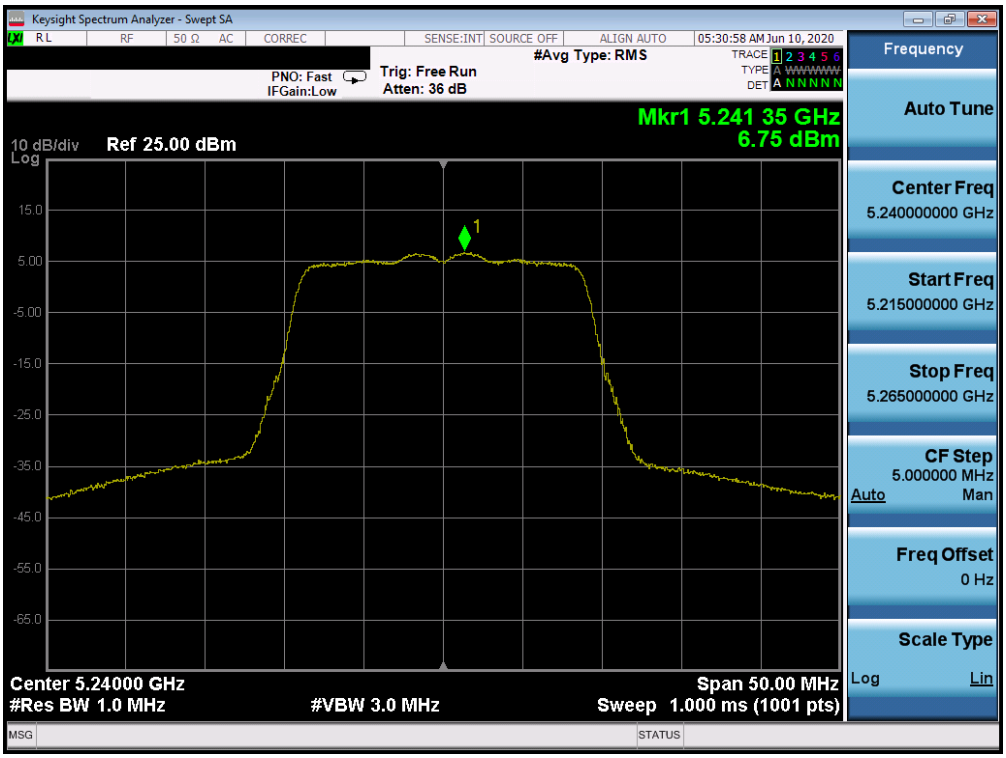


Plot 7-117. Power Spectral Density Plot CDD CORE 1 (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

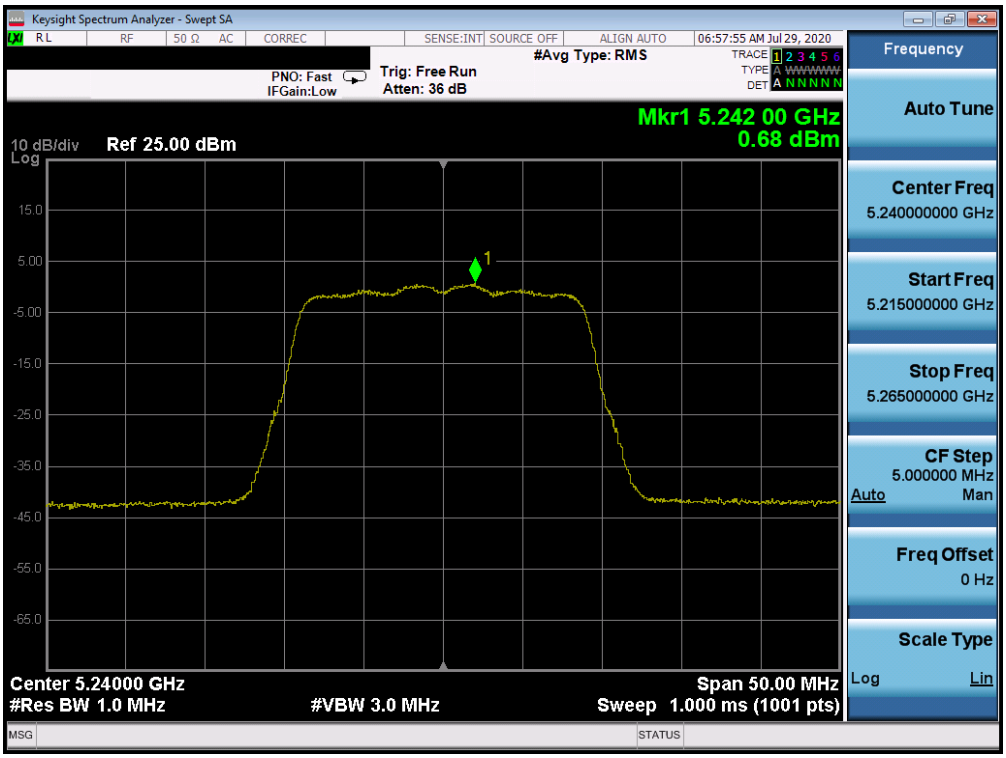


Plot 7-118. Power Spectral Density Plot ISED CDD CORE 1 (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

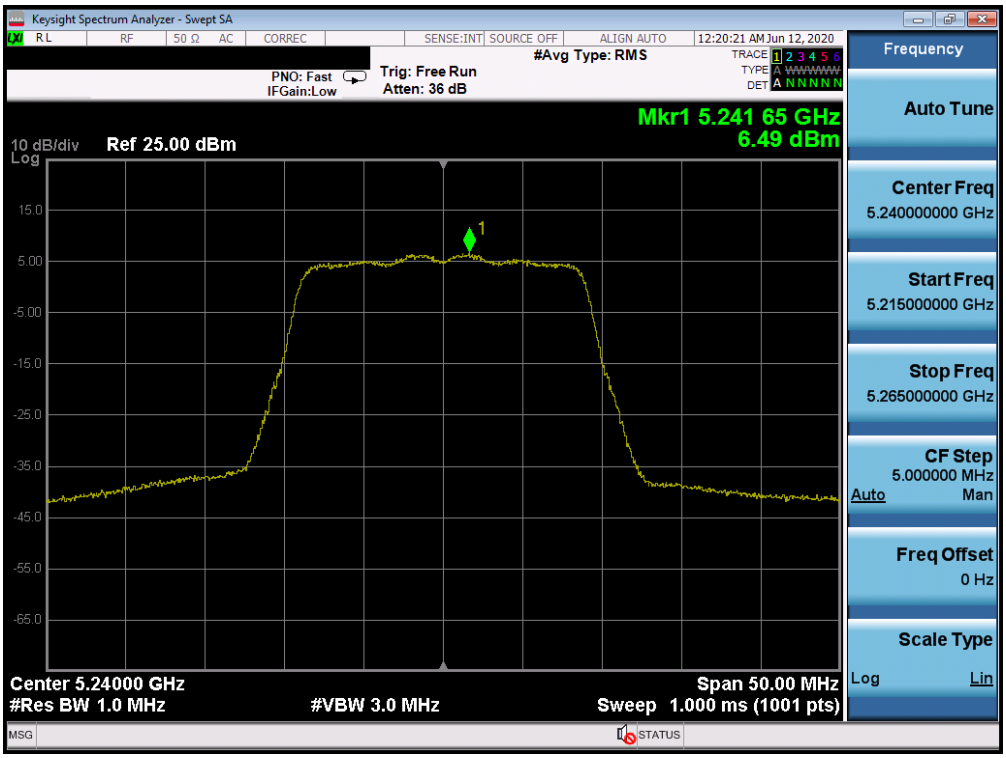


Plot 7-119. Power Spectral Density Plot CDD CORE 0 (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

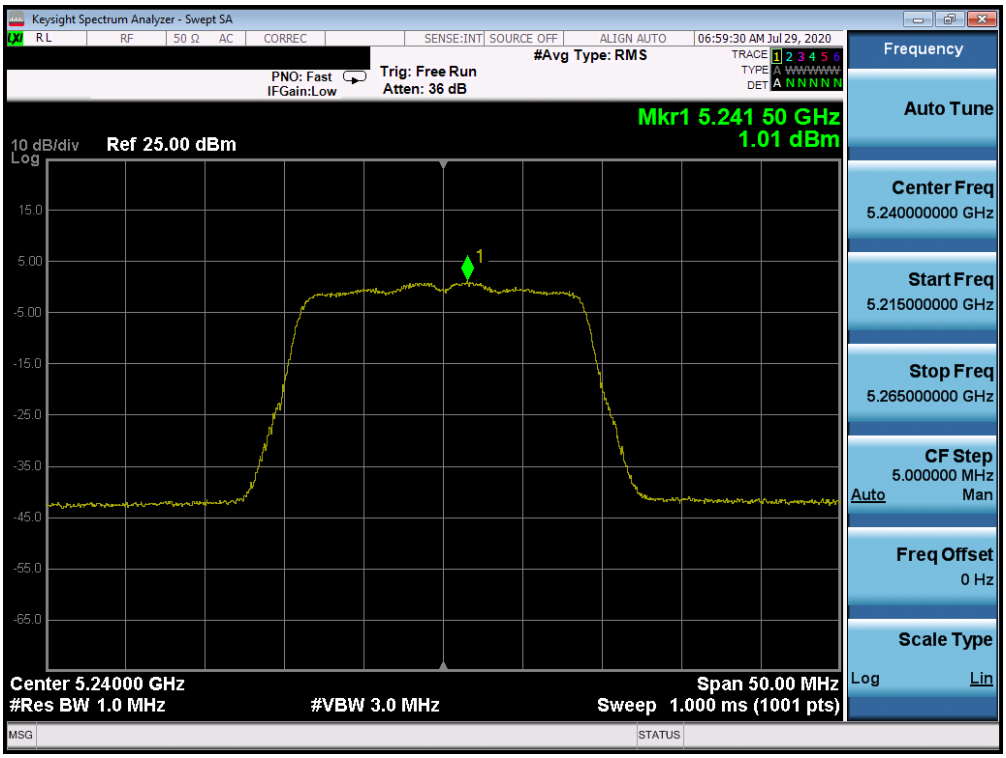


Plot 7-120. Power Spectral Density Plot ISED CDD CORE 0 (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

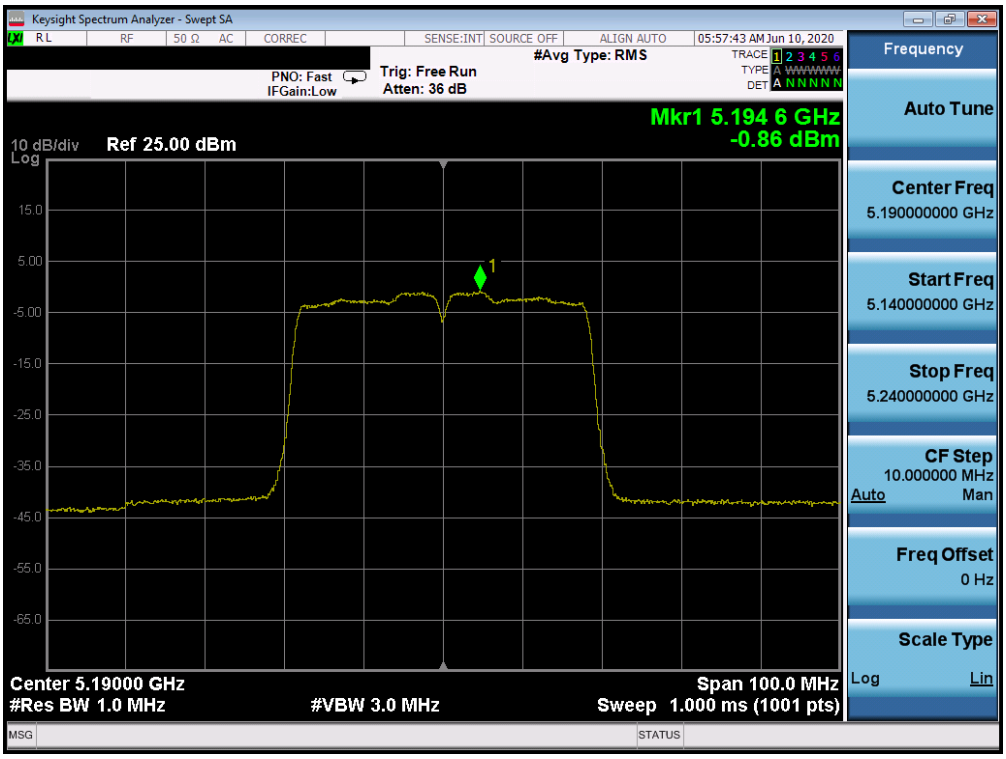


Plot 7-121. Power Spectral Density Plot CDD CORE 1 (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

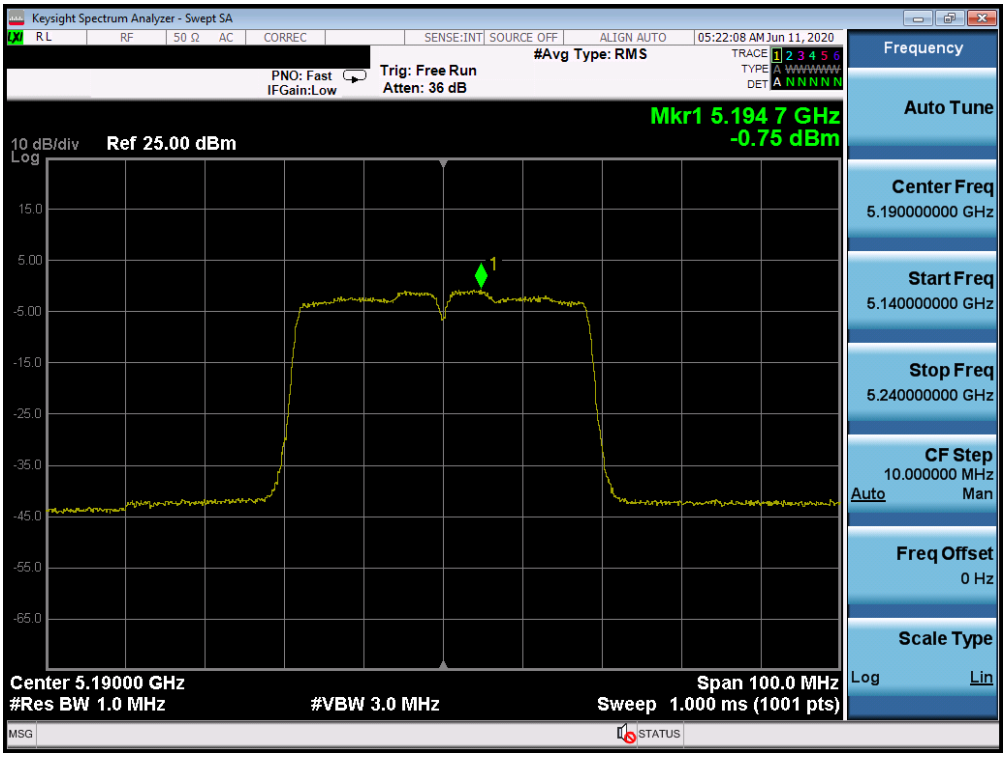


Plot 7-122. Power Spectral Density Plot ISED CDD CORE 1 (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

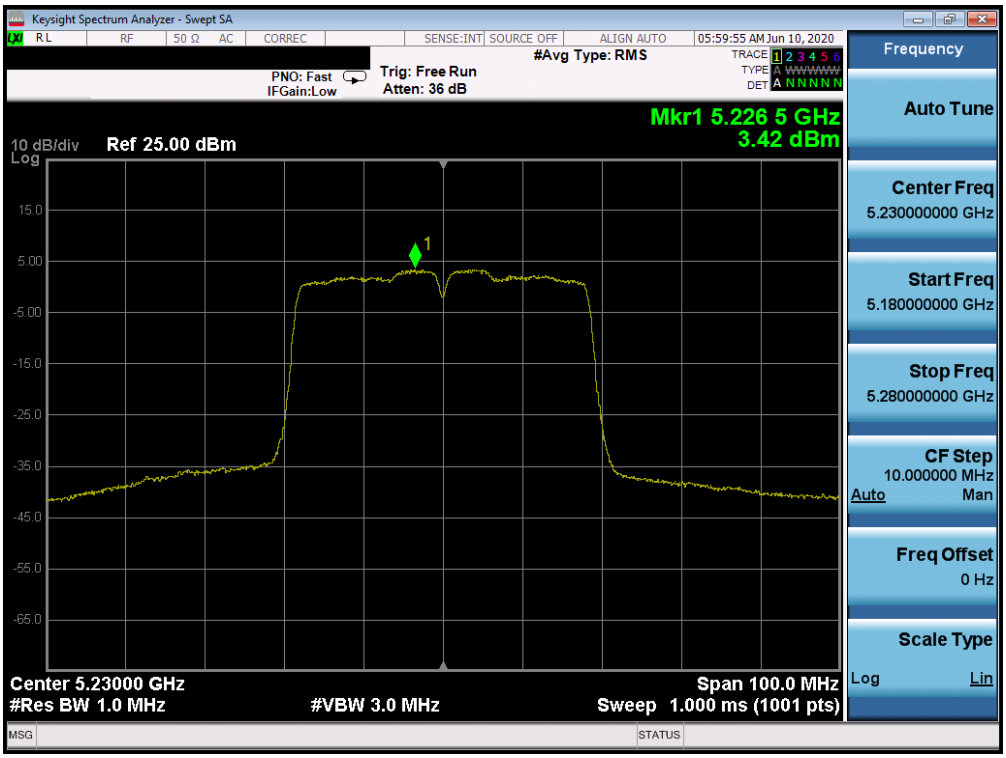


Plot 7-123. Power Spectral Density Plot CDD CORE 0 (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

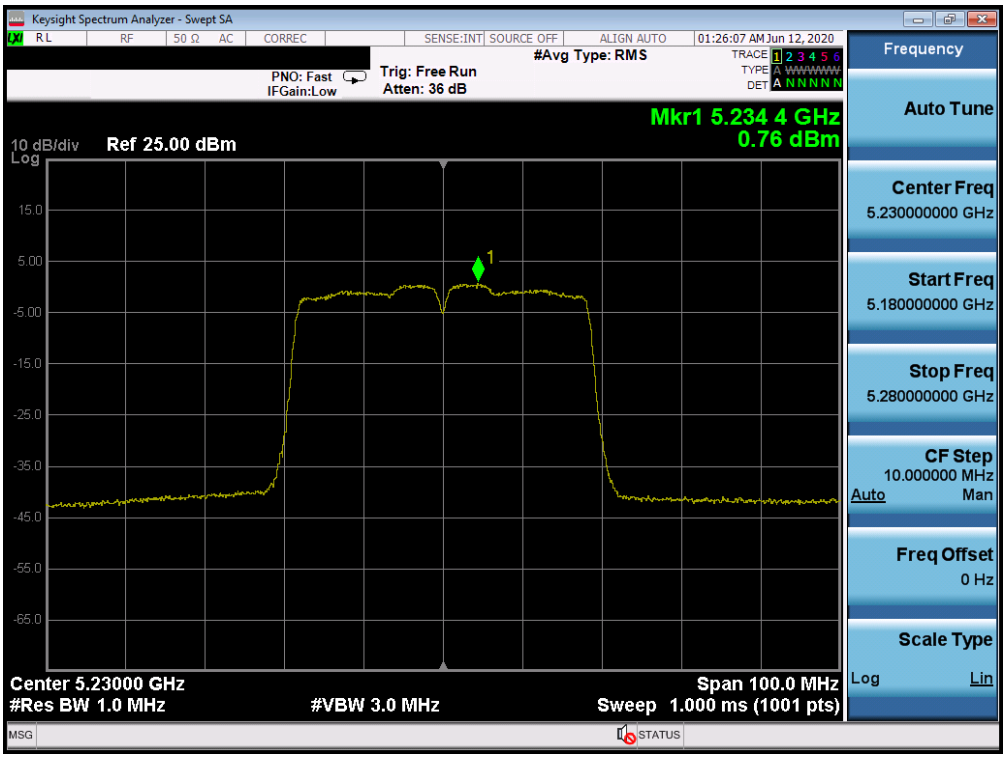


Plot 7-124. Power Spectral Density Plot CDD CORE 1 (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

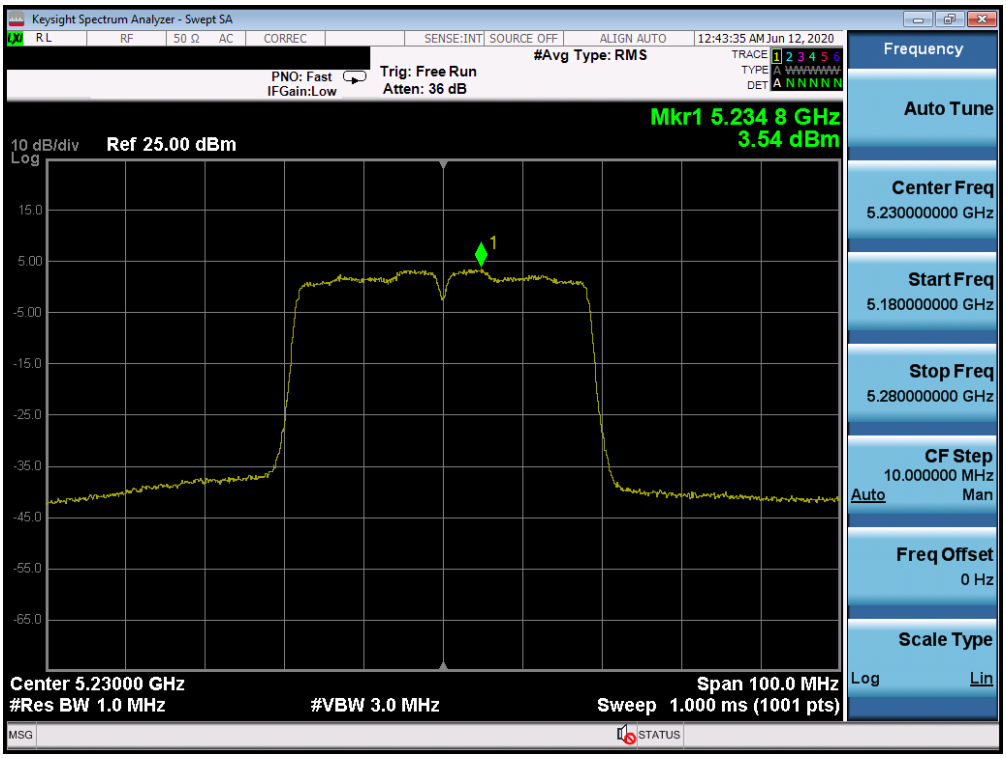


Plot 7-125. Power Spectral Density Plot CDD CORE 0 (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

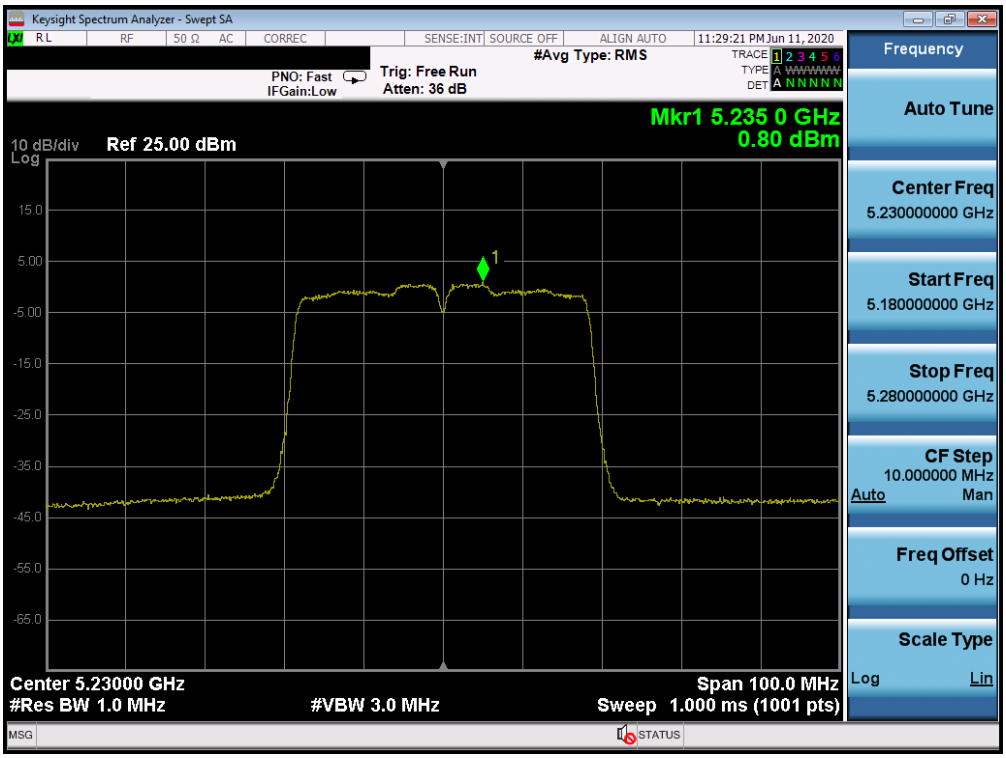


Plot 7-126. Power Spectral Density Plot ISED CDD CORE 0 (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

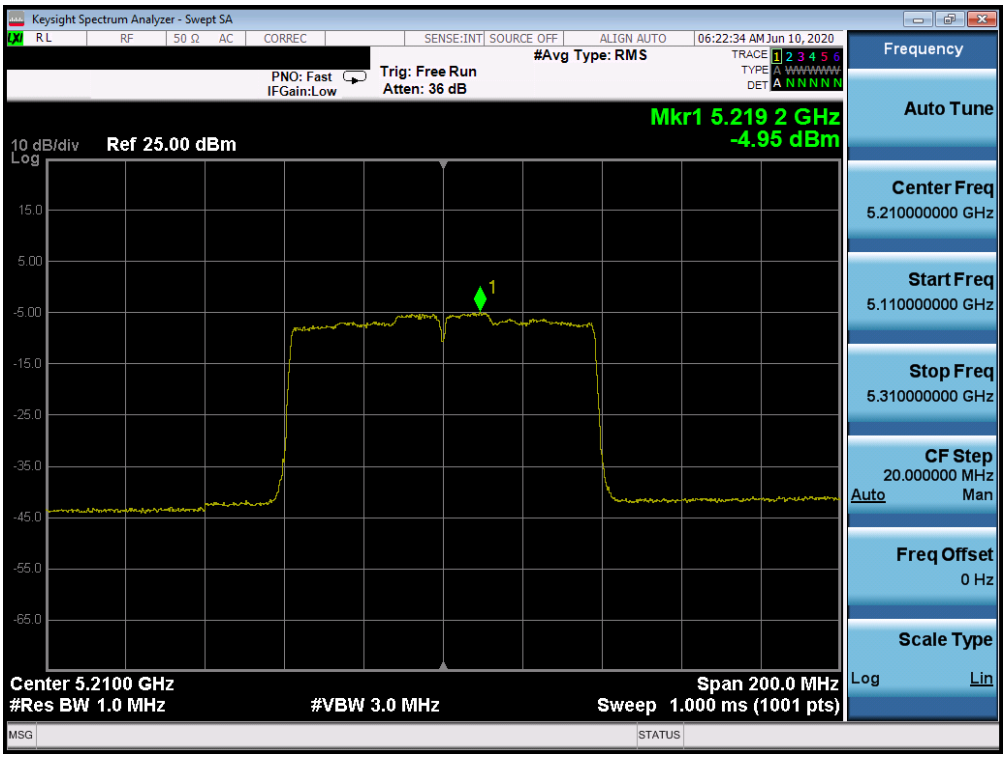


Plot 7-127. Power Spectral Density Plot CDD CORE 1 (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

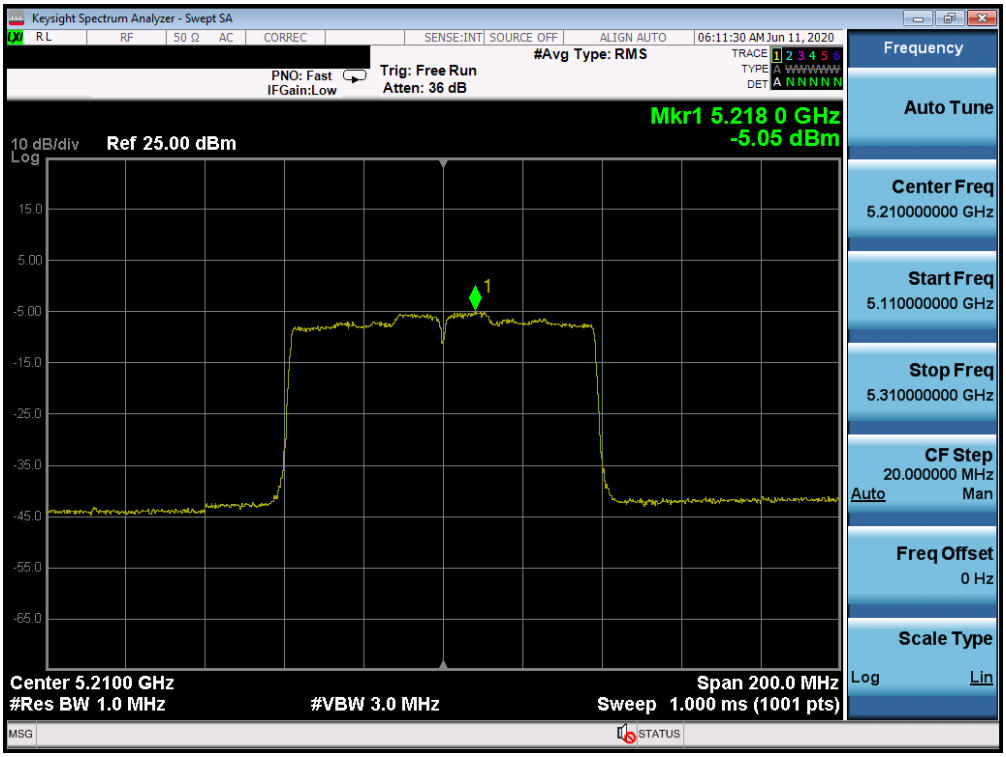


Plot 7-128. Power Spectral Density Plot ISED CDD CORE 1 (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

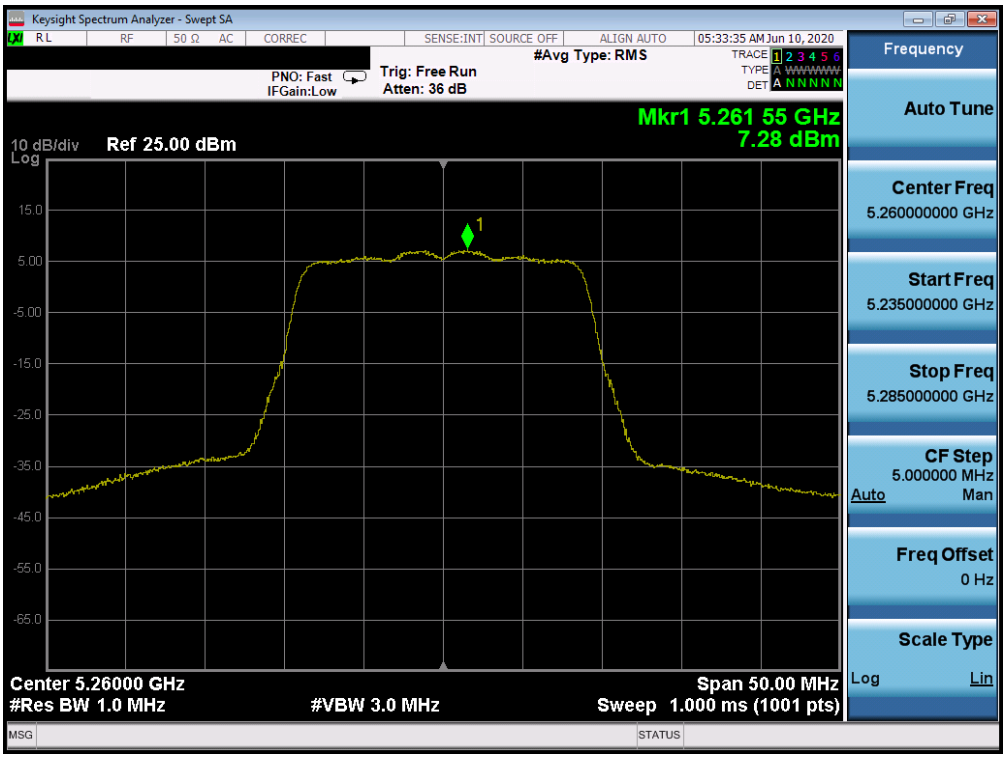


Plot 7-129. Power Spectral Density Plot CDD CORE 0 (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

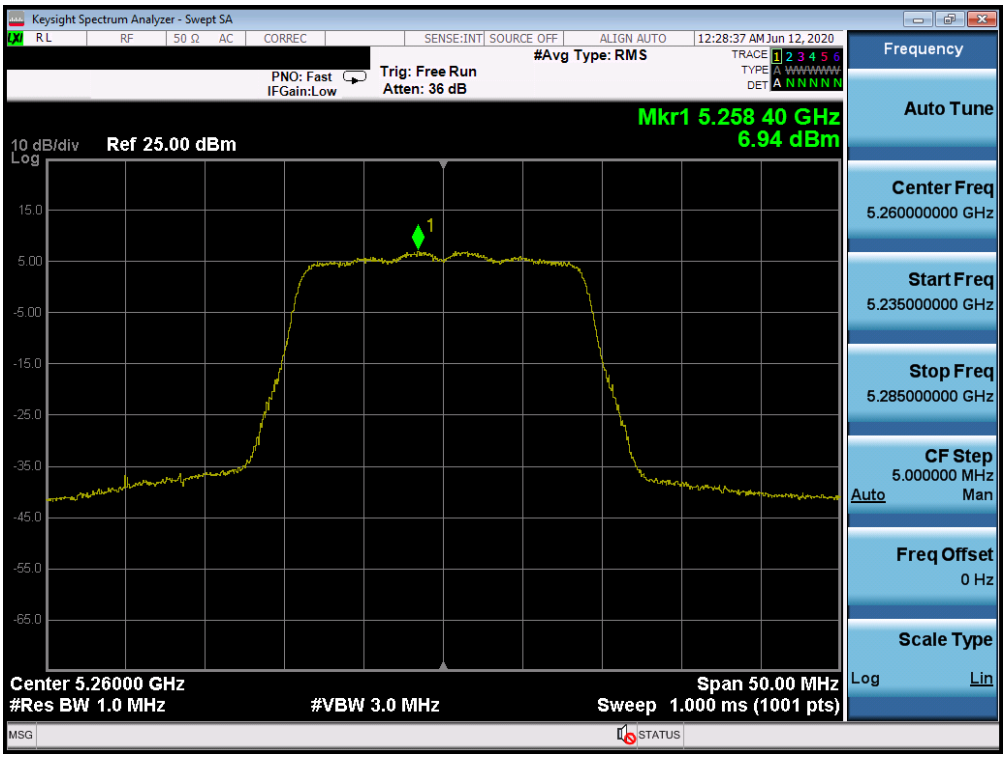


Plot 7-130. Power Spectral Density Plot CDD CORE 1 (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

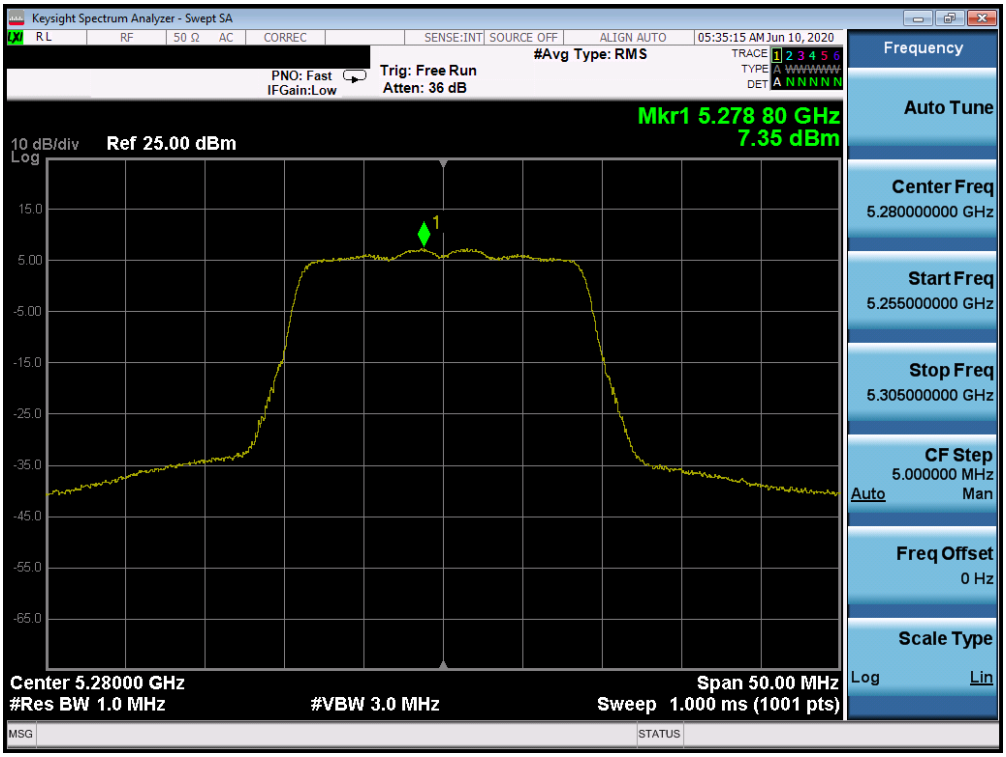


Plot 7-131. Power Spectral Density Plot SDM CORE 0 (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

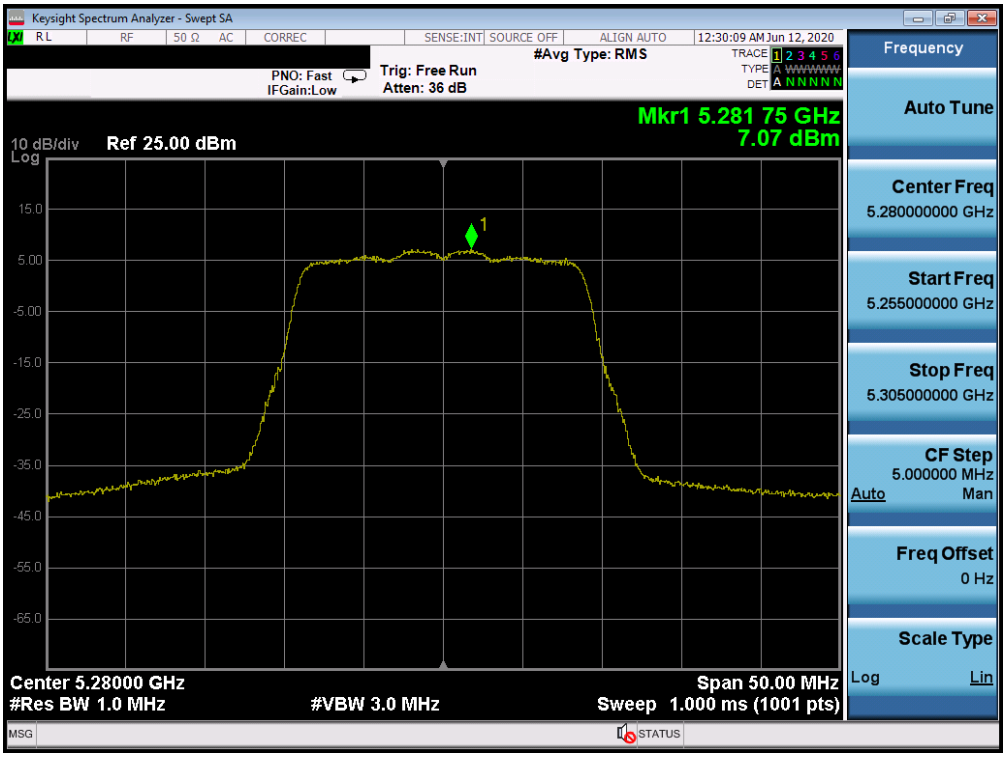


Plot 7-132. Power Spectral Density Plot SDM CORE 1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

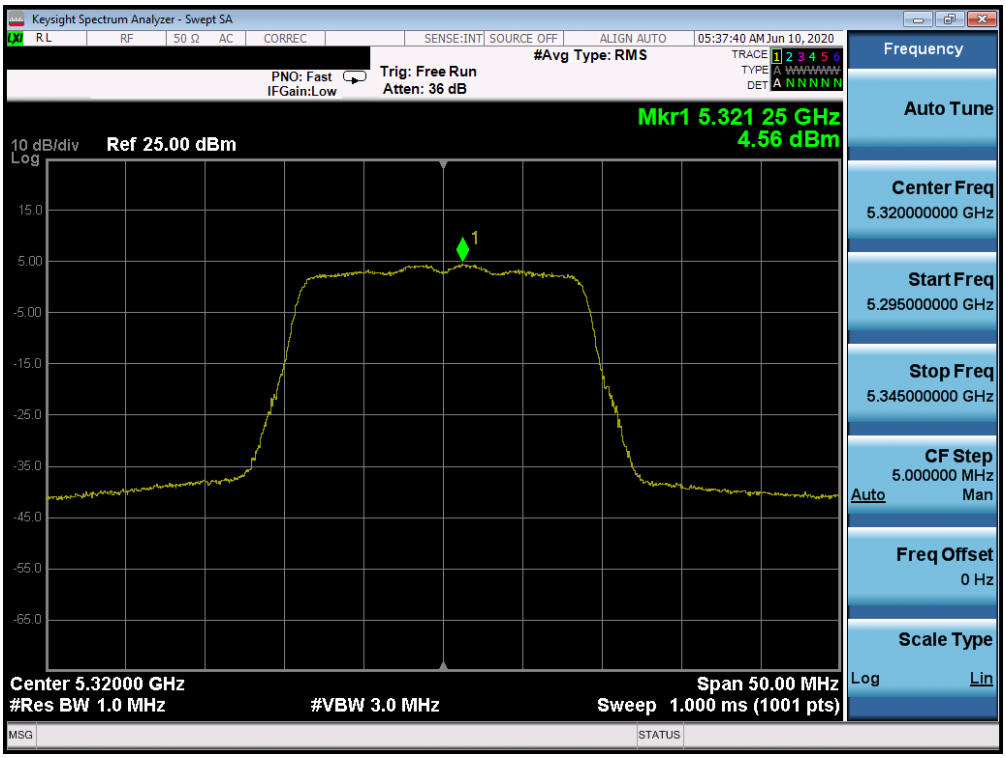


Plot 7-133. Power Spectral Density Plot SDM CORE 0 (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

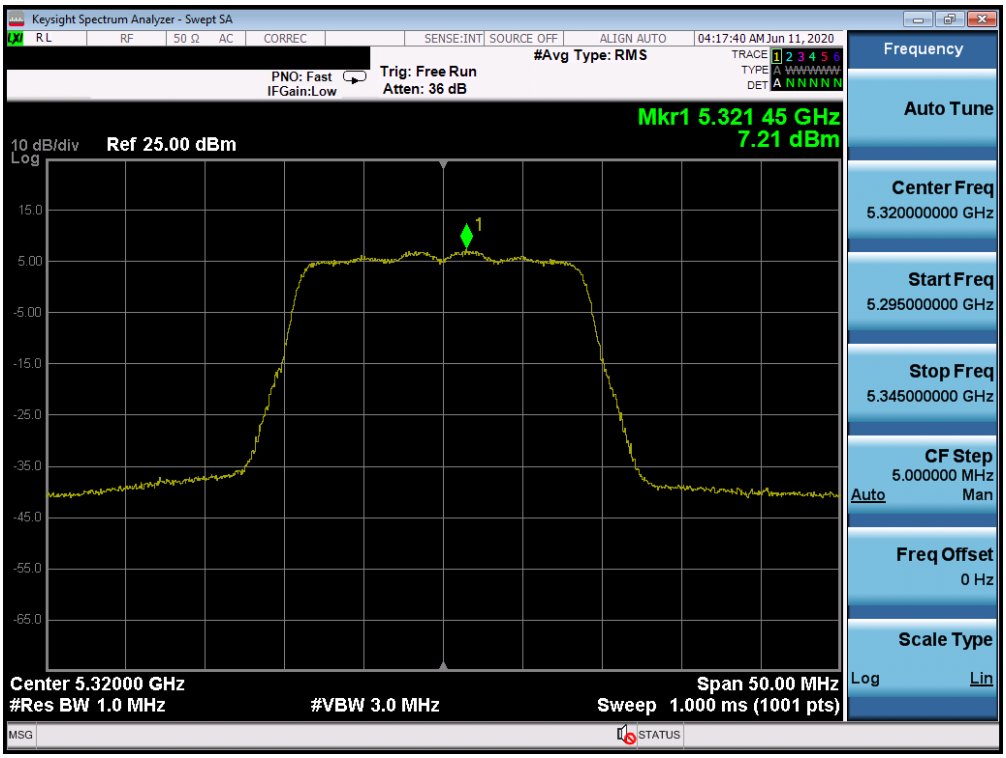


Plot 7-134. Power Spectral Density Plot SDM CORE 1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

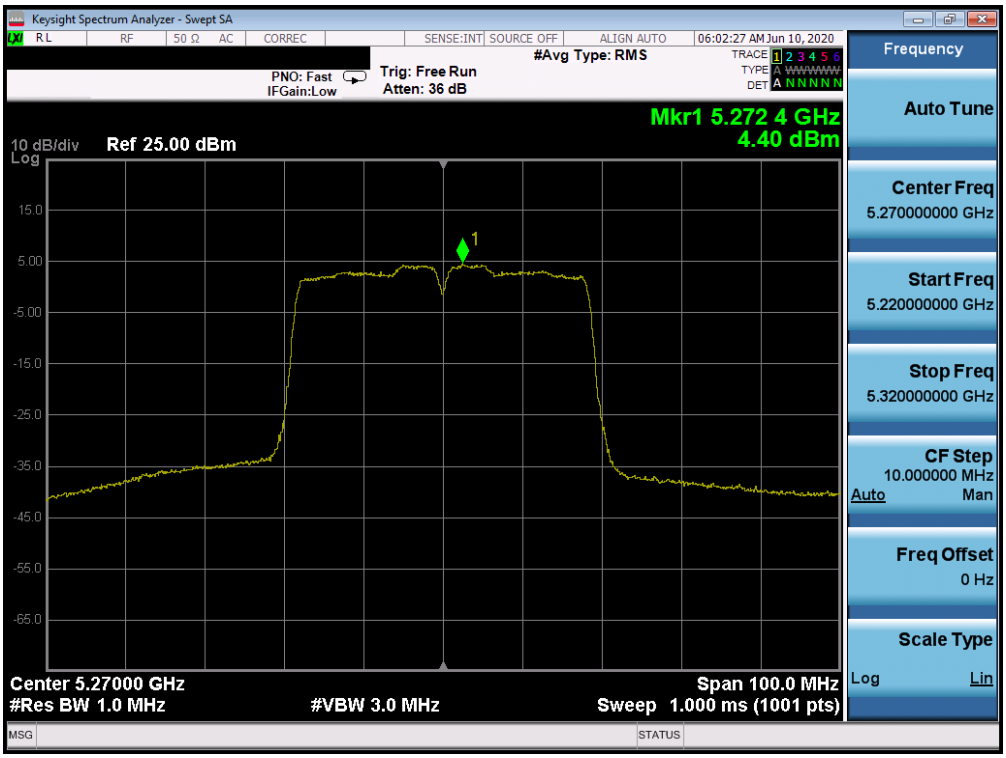


Plot 7-135. Power Spectral Density Plot CDD CORE 0 (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

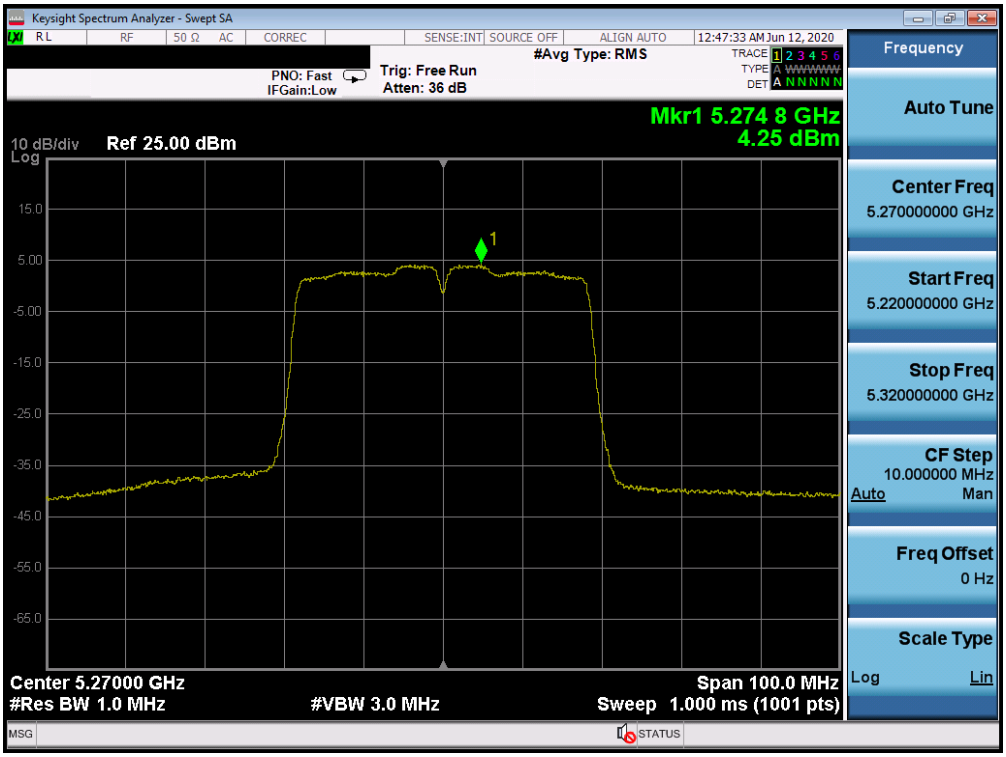


Plot 7-136. Power Spectral Density Plot CDD CORE 1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

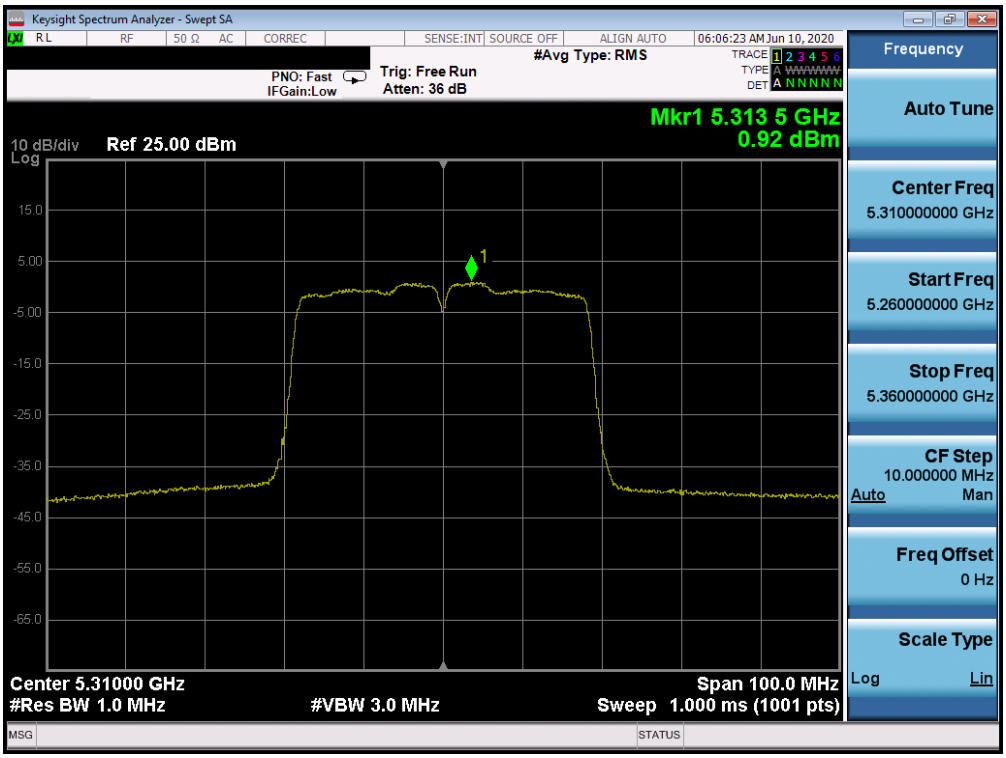


Plot 7-137. Power Spectral Density Plot CDD CORE 0 (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

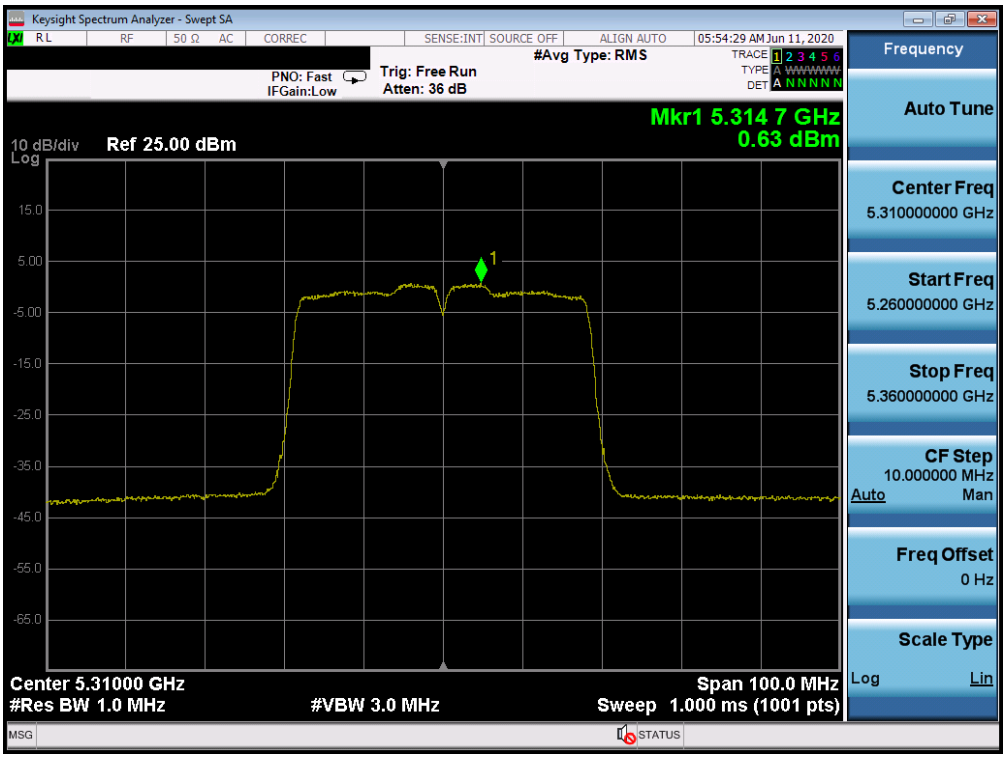


Plot 7-138. Power Spectral Density Plot CDD CORE 1 (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

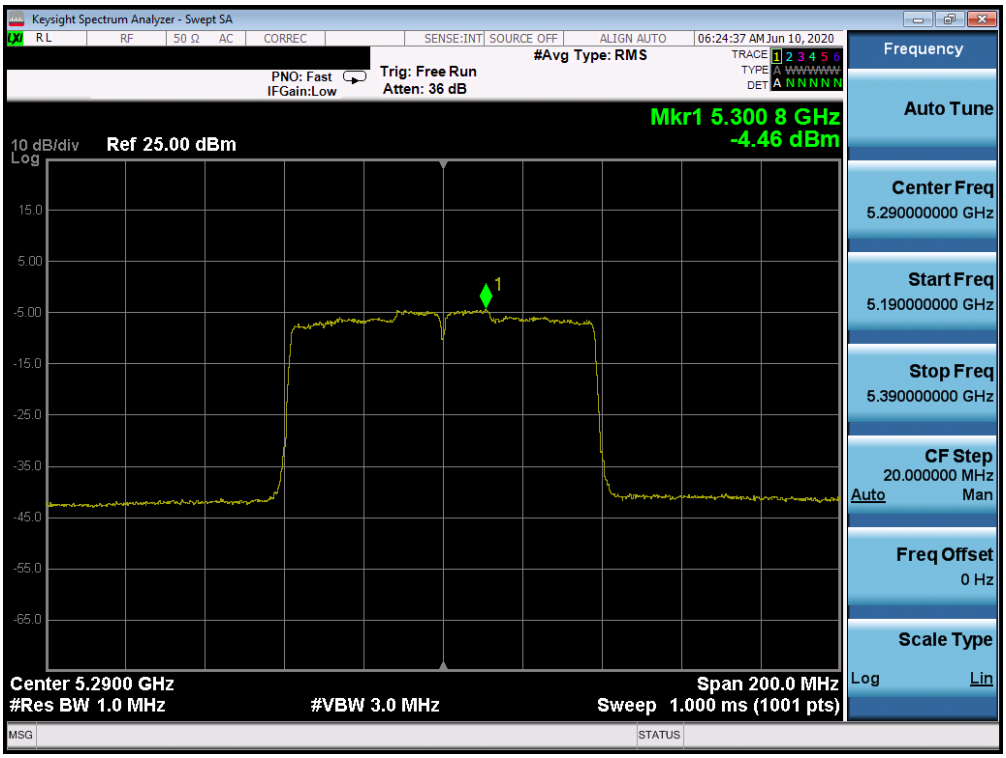


Plot 7-139. Power Spectral Density Plot CDD CORE 0 (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

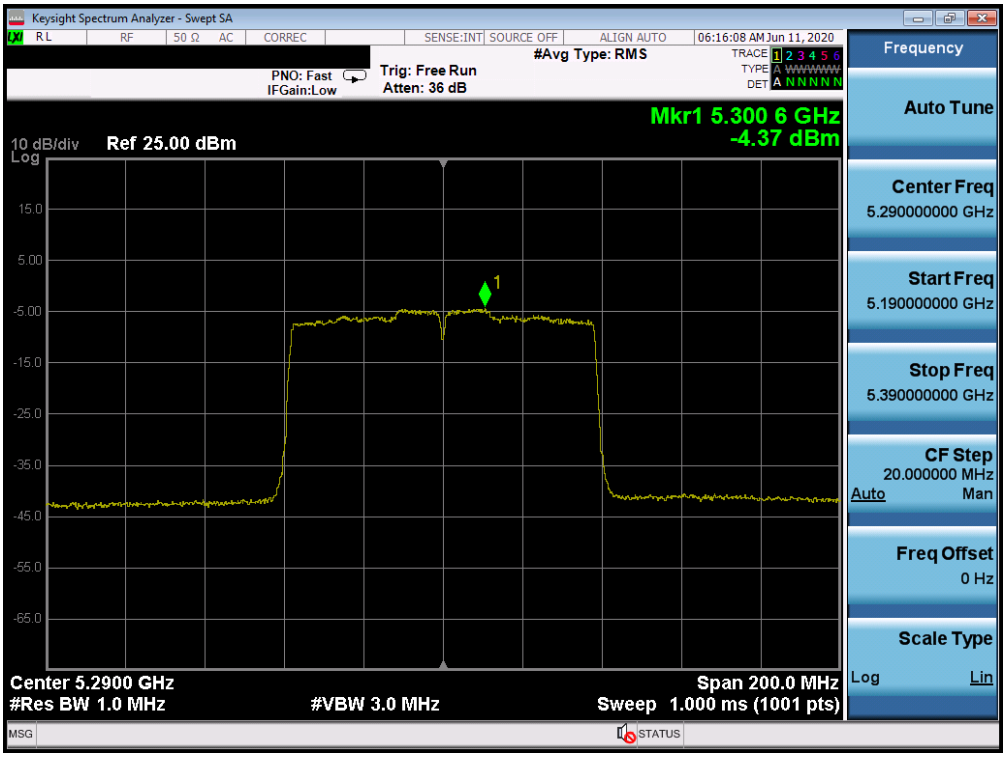


Plot 7-140. Power Spectral Density Plot CDD CORE 1 (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

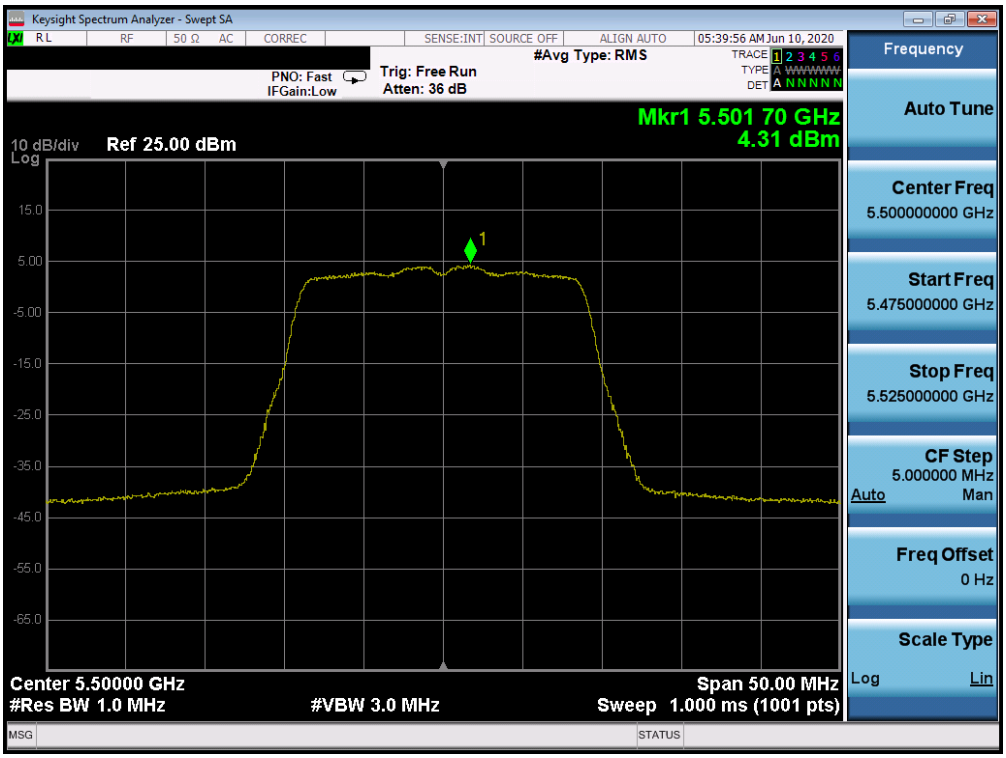


Plot 7-141. Power Spectral Density Plot CDD CORE 0 (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

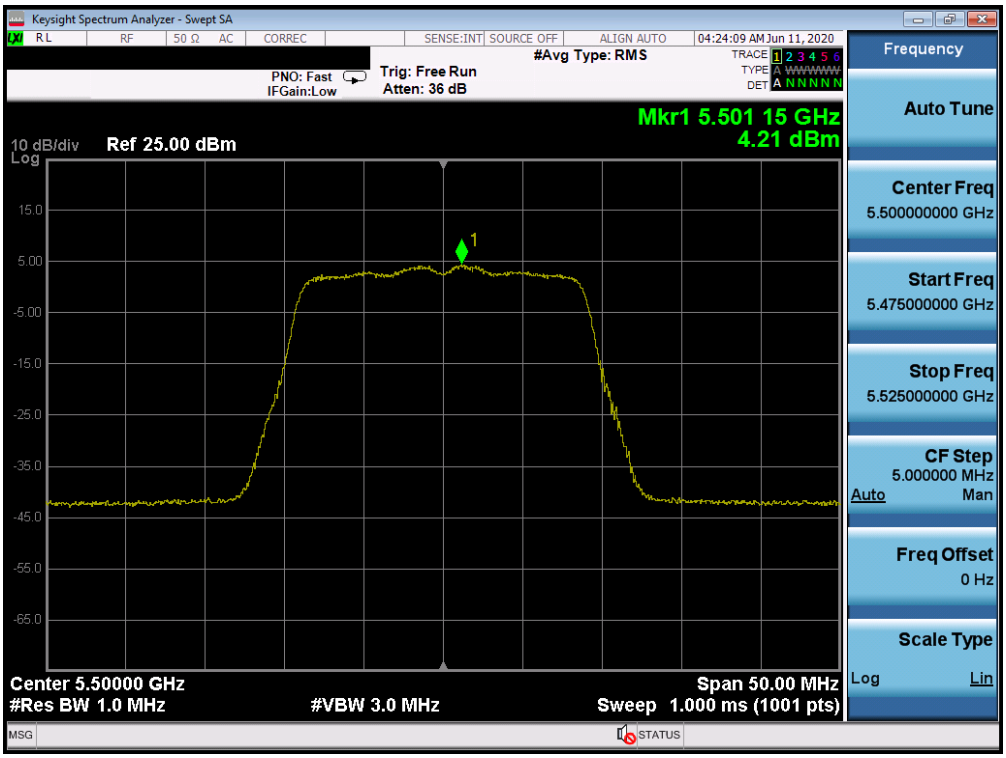


Plot 7-142. Power Spectral Density Plot CDD CORE 1 (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

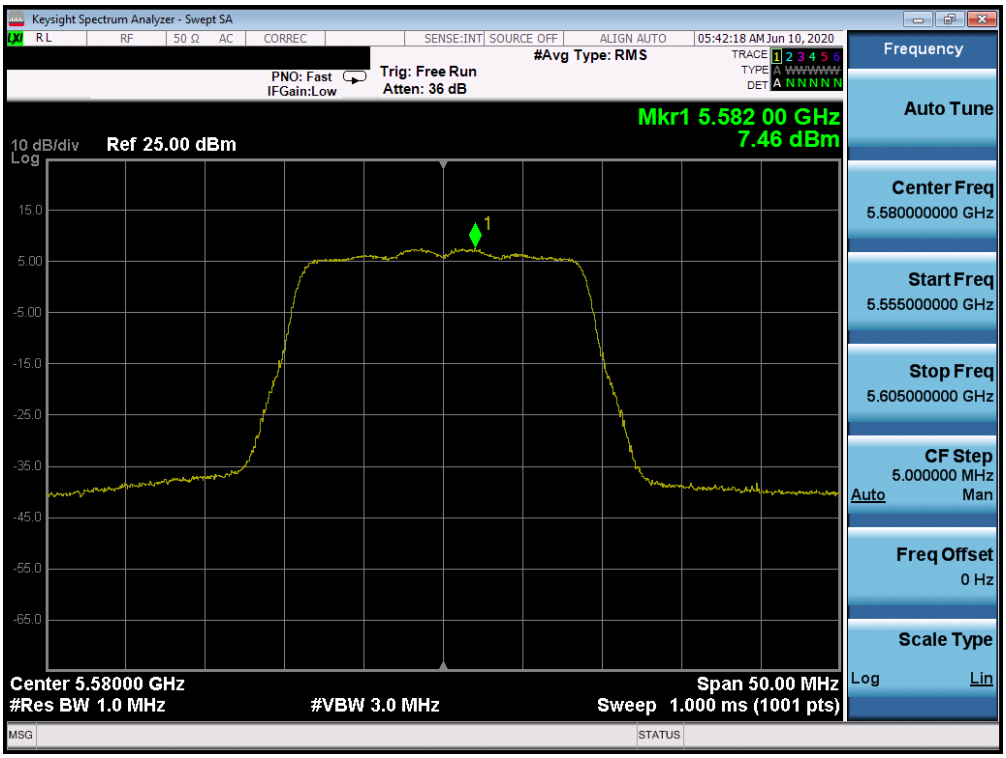


Plot 7-143. Power Spectral Density Plot CDD CORE 0 (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

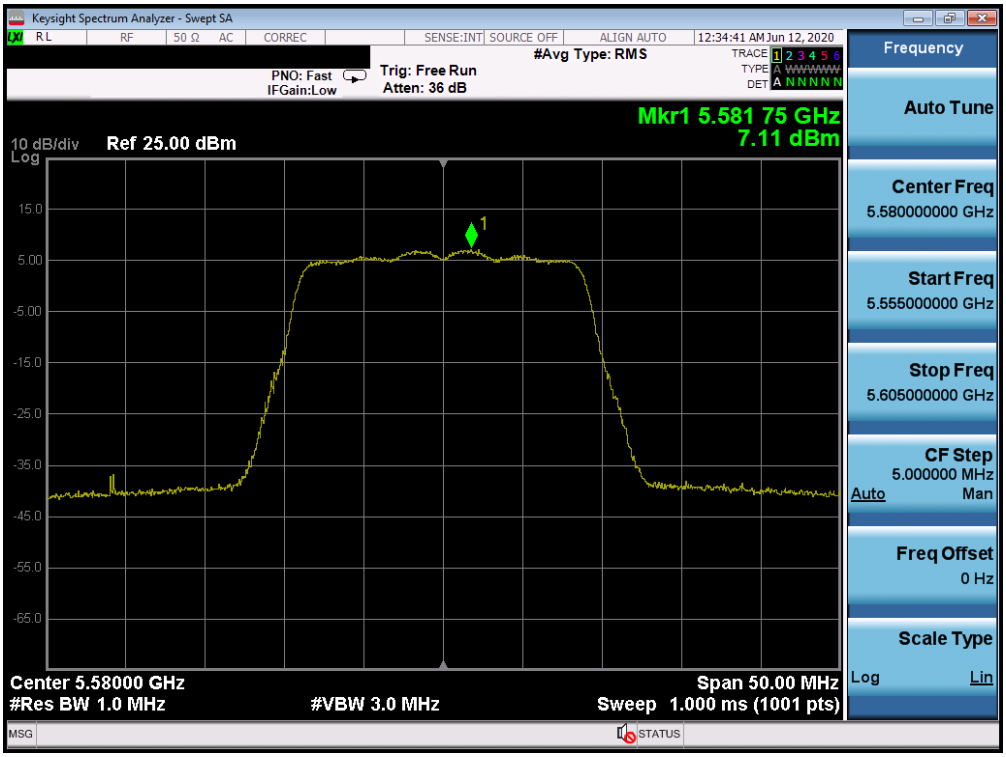


Plot 7-144. Power Spectral Density Plot CDD CORE 1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

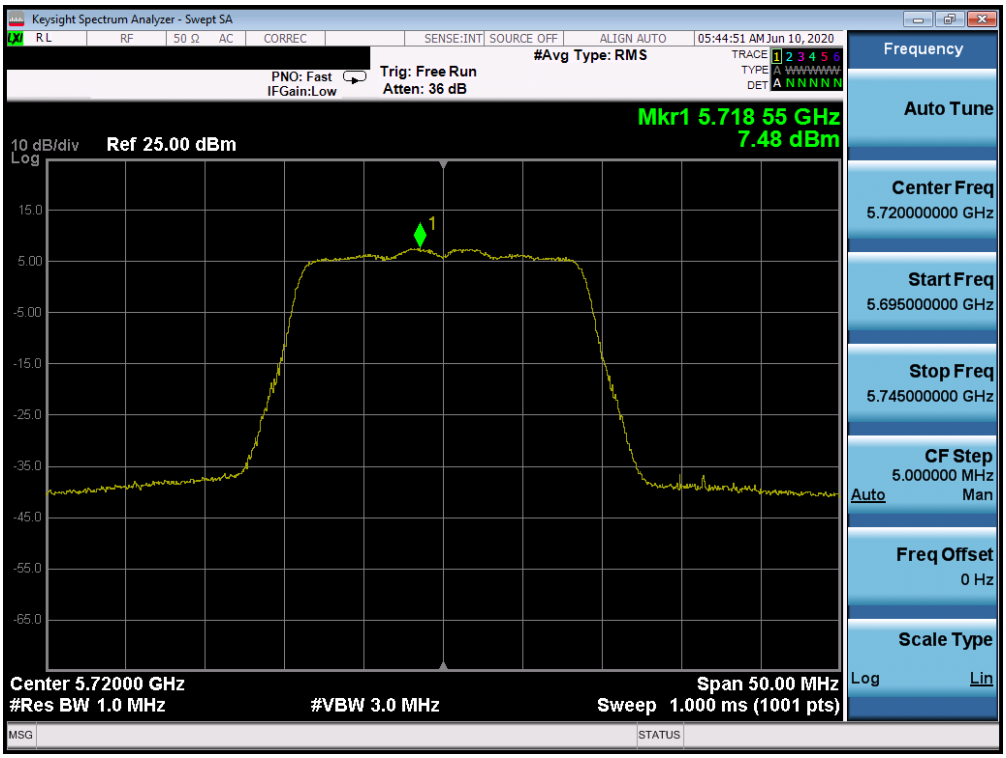


Plot 7-145. Power Spectral Density Plot SDM CORE 0 (20MHz BW 802.11n (UNII Band 2C) – Ch. 116

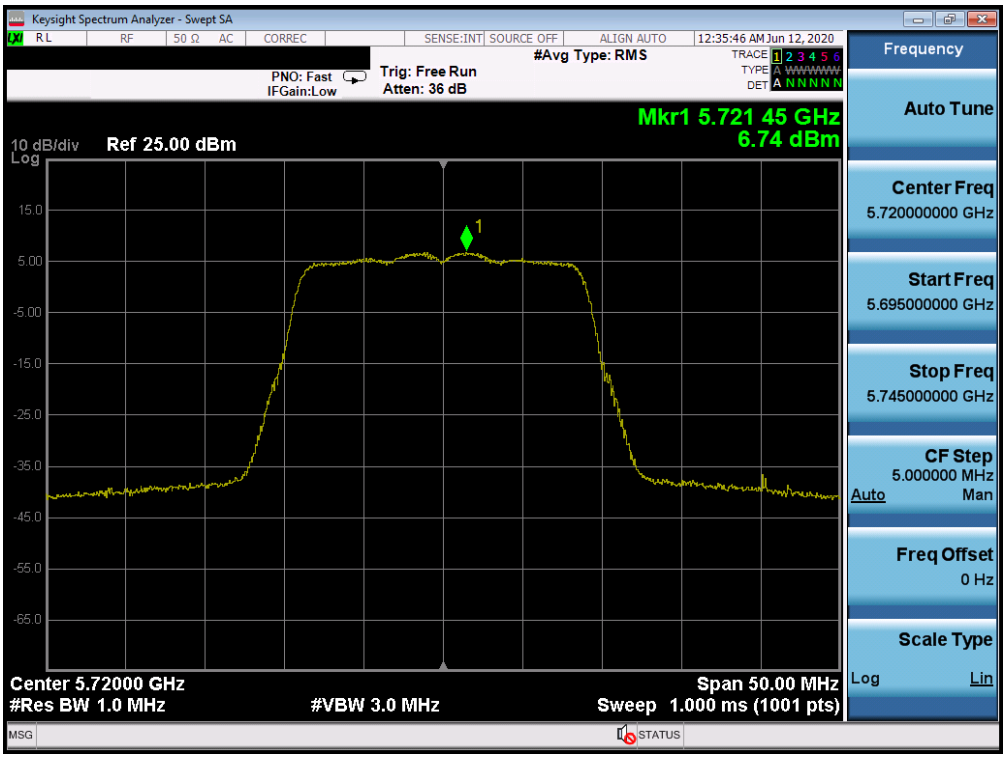


Plot 7-146. Power Spectral Density Plot SDM CORE 1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 116)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

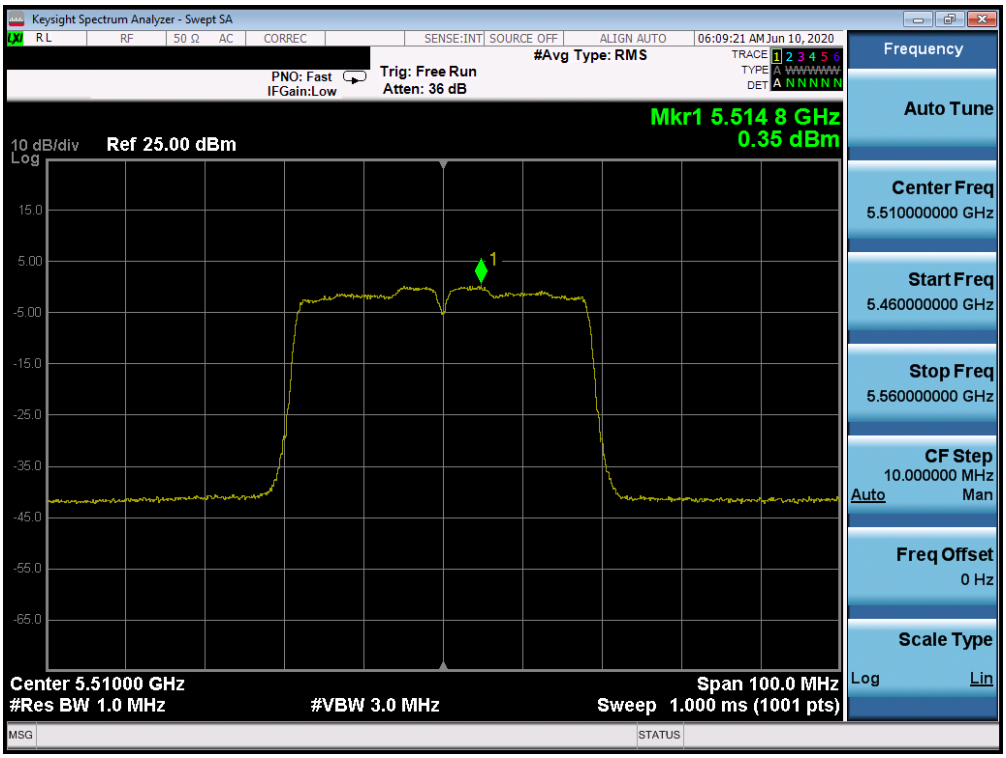


Plot 7-147. Power Spectral Density Plot SDM CORE 0 (20MHz BW 802.11n (UNII Band 2C) – Ch. 144

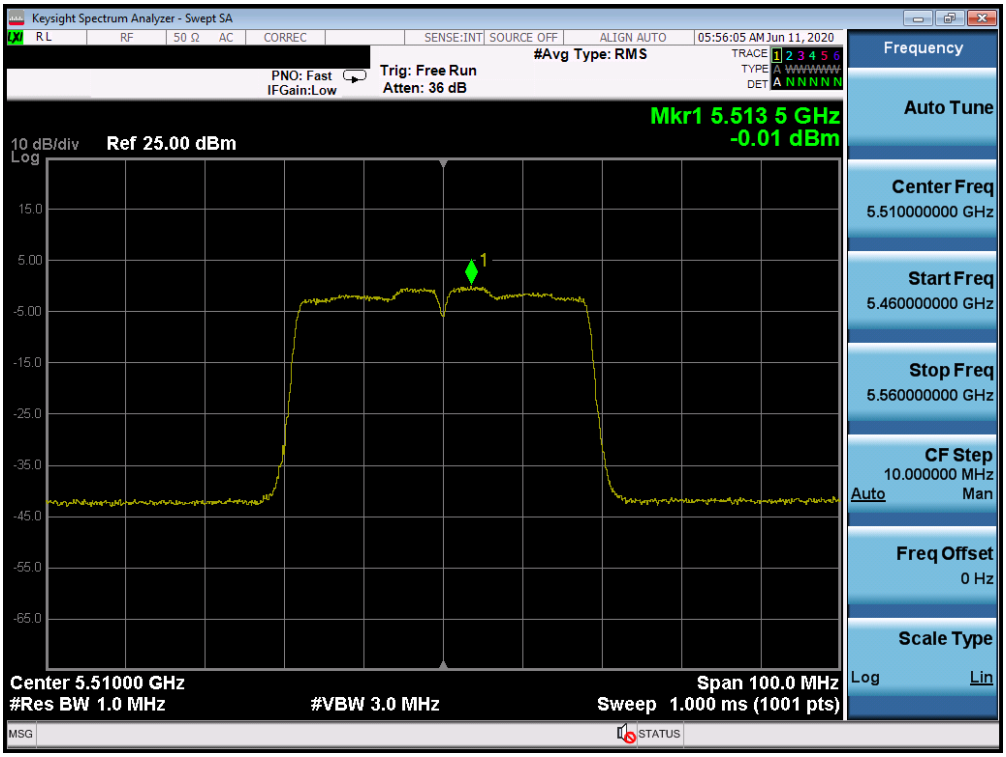


Plot 7-148. Power Spectral Density Plot SDM CORE 1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 144)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

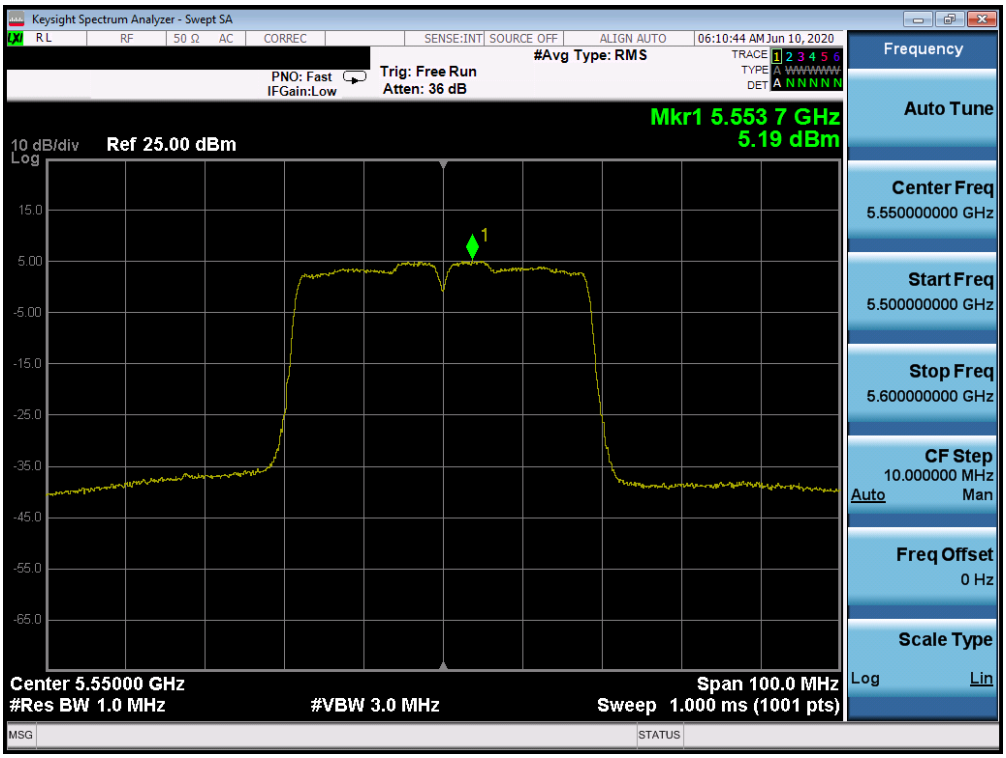


Plot 7-149. Power Spectral Density Plot CDD CORE 0 (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

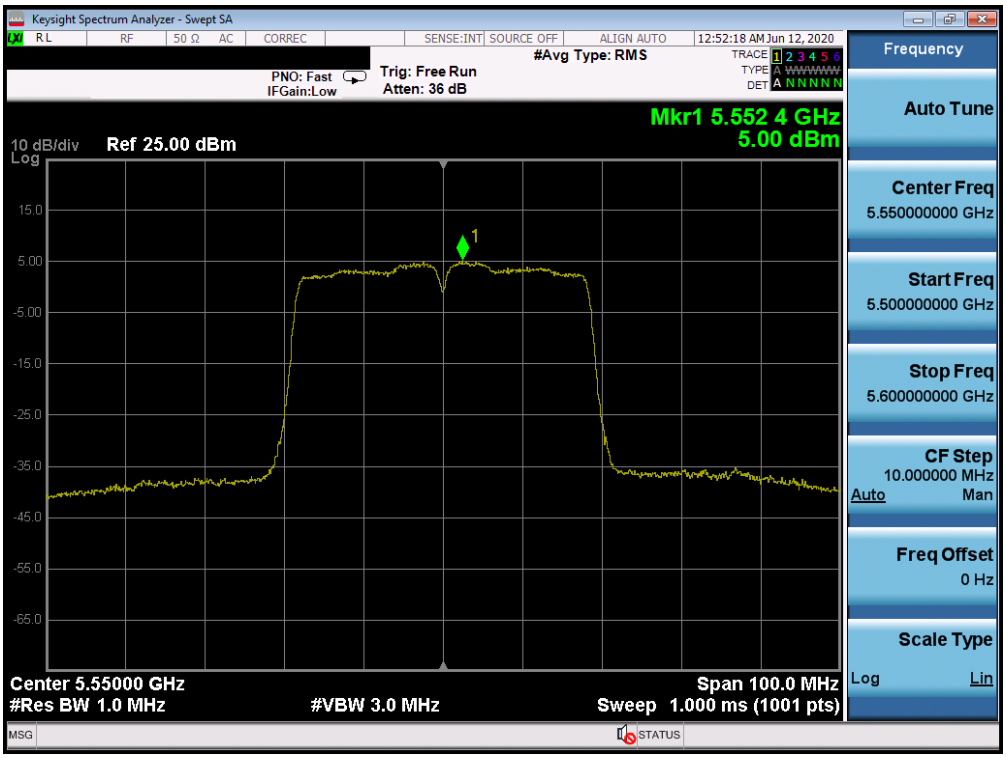


Plot 7-150. Power Spectral Density Plot CDD CORE 1 (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

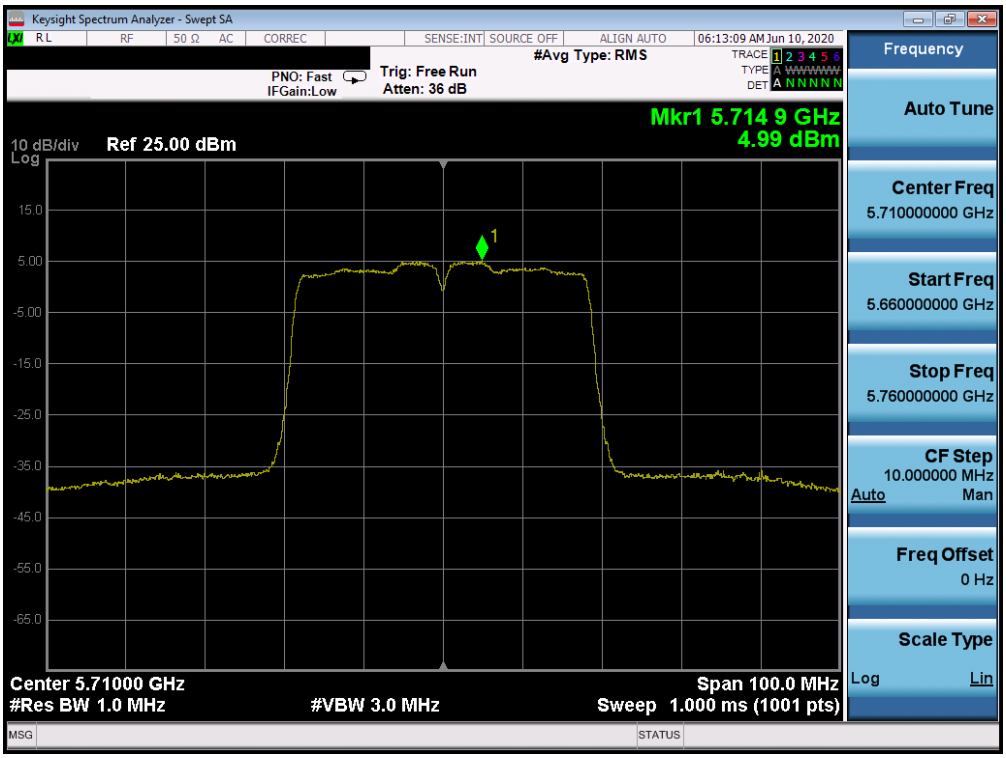


Plot 7-151. Power Spectral Density Plot CDD CORE 0 (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)

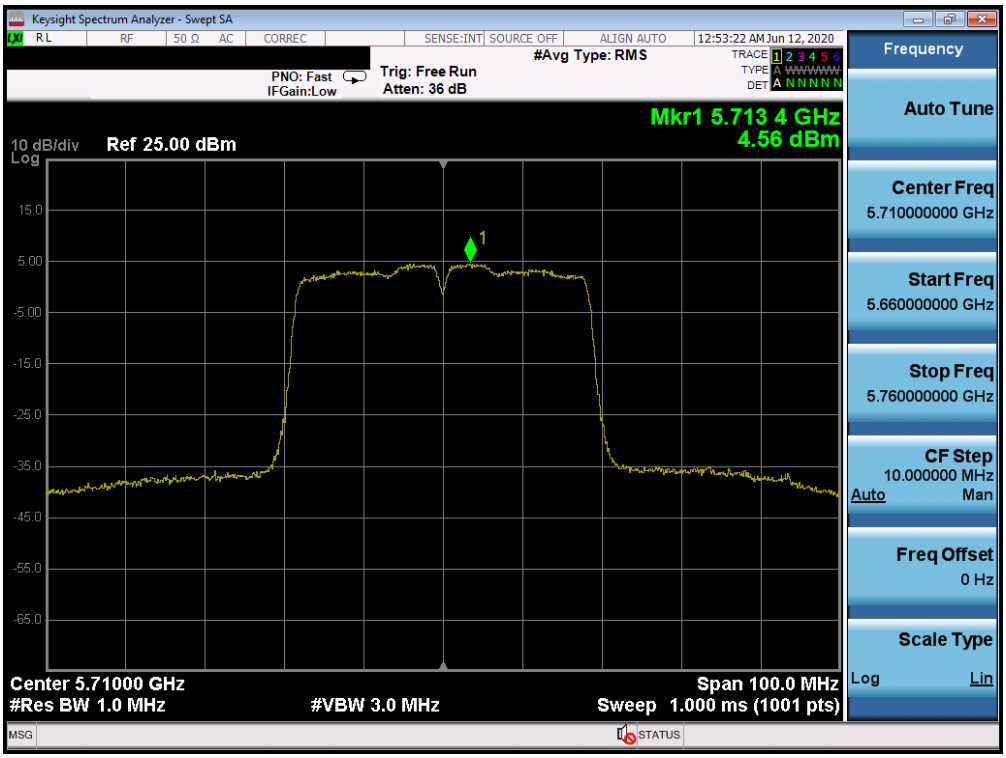


Plot 7-152. Power Spectral Density Plot CDD CORE 1 (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)

© 2020 PCTEST
V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

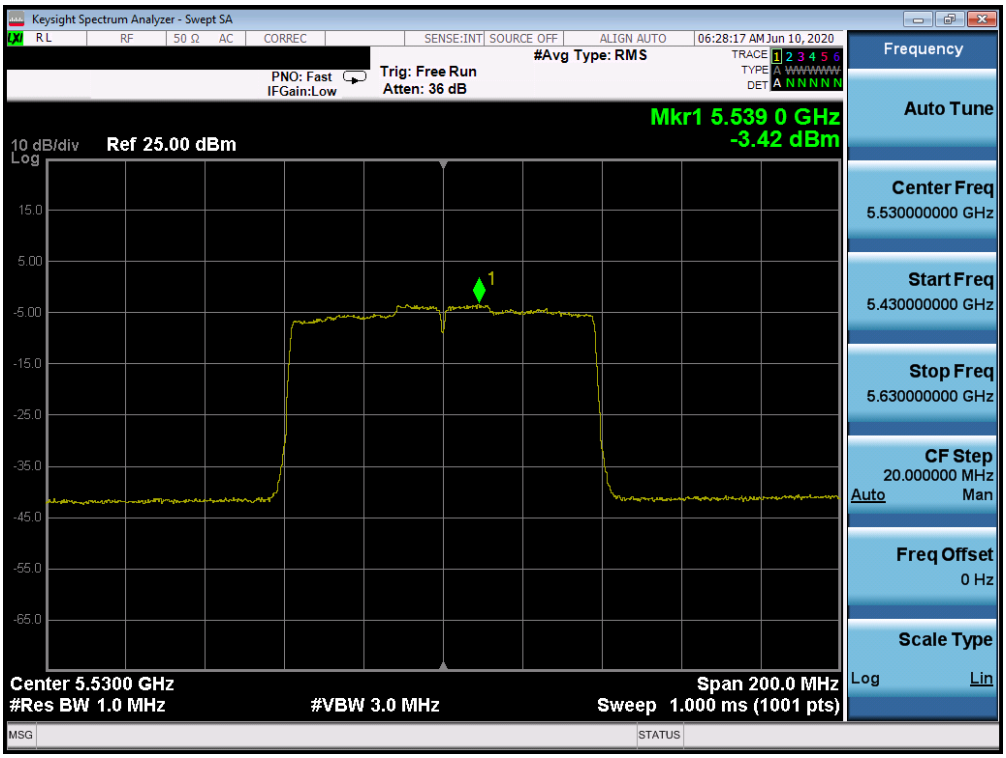


Plot 7-153. Power Spectral Density Plot CDD CORE 0 (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)

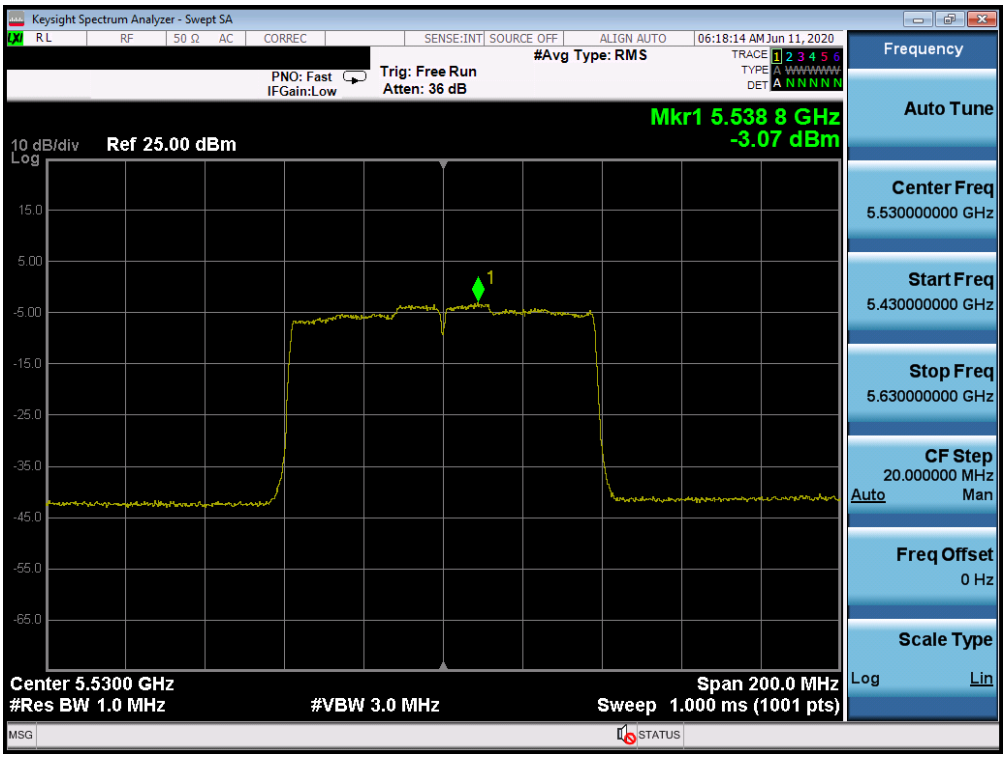


Plot 7-154. Power Spectral Density Plot CDD CORE 1 (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

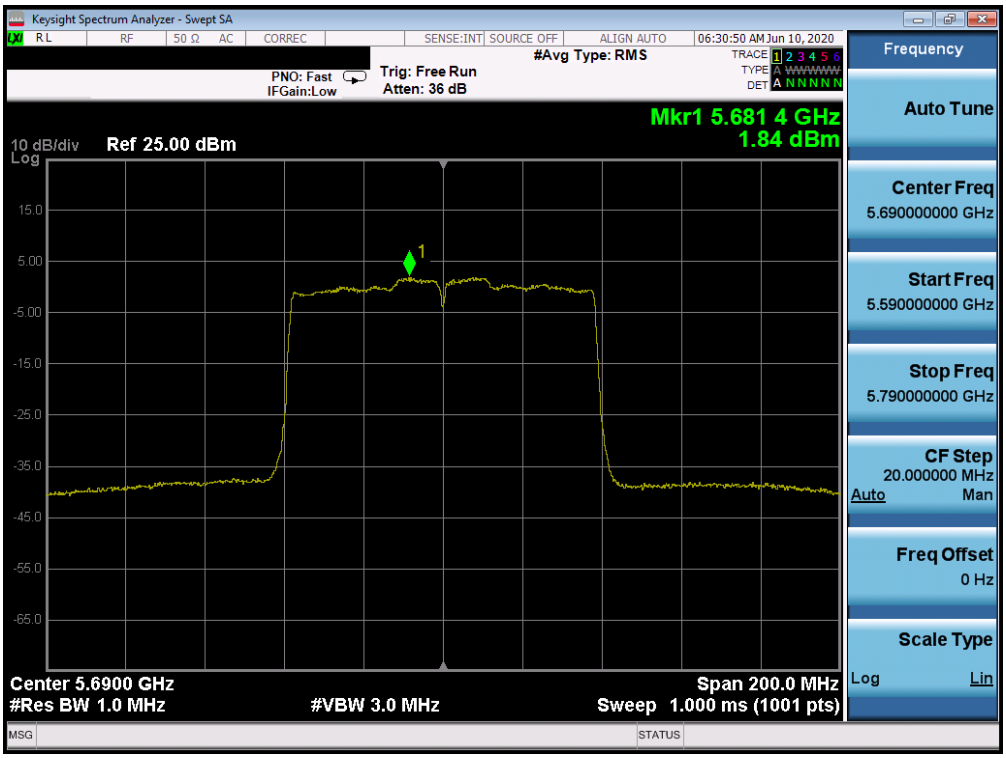


Plot 7-155. Power Spectral Density Plot CDD CORE 0 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

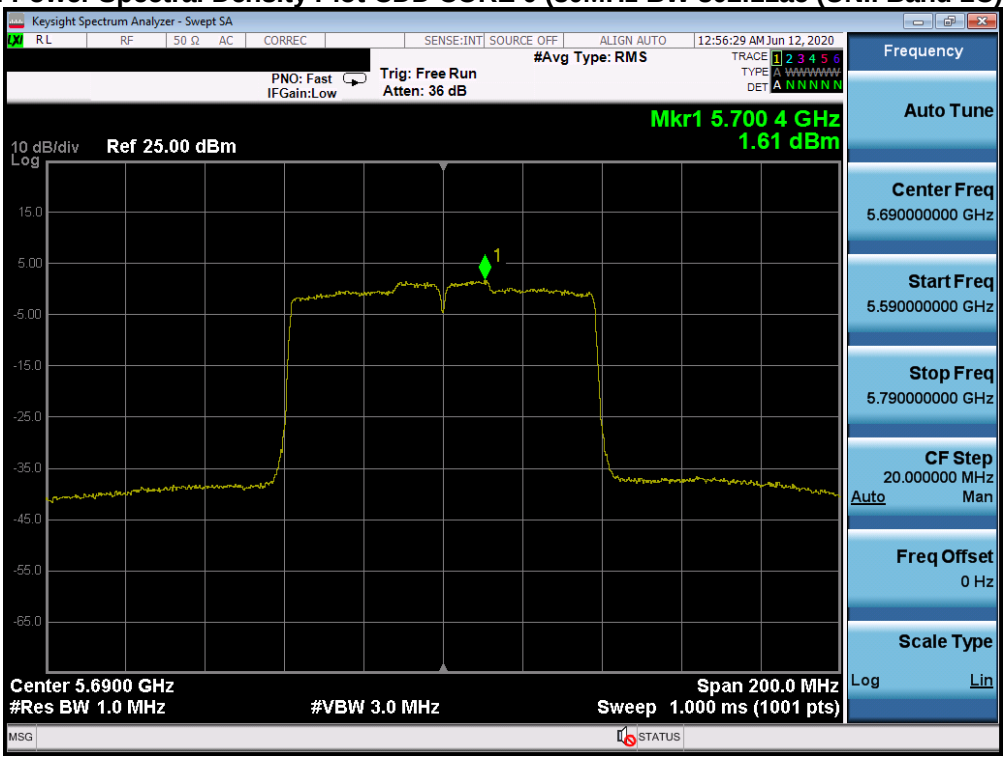


Plot 7-156. Power Spectral Density Plot CDD CORE 1 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-157. Power Spectral Density Plot CDD CORE 0 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)



Plot 7-158. Power Spectral Density Plot CDD CORE 1 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)

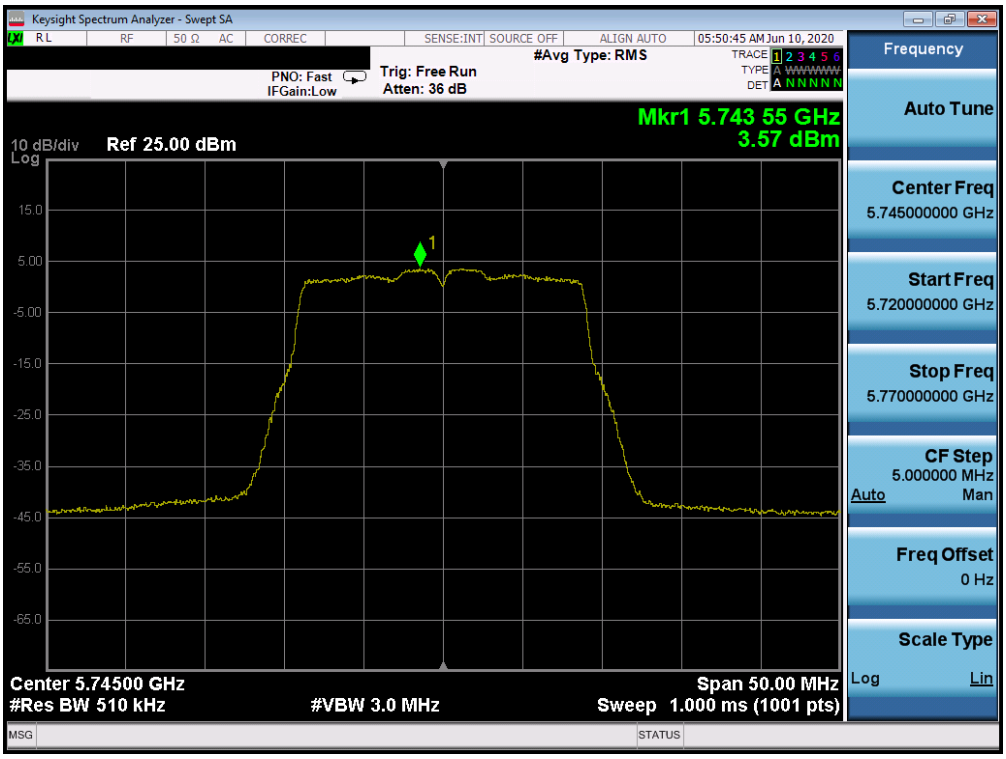
© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Core 0 Power Density [dBm/500kHz]	Core 1 Power Density [dBm/500kHz]	Summed Power Density [dBm/500kHz]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
Band 3	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.57	3.38	6.49	30.0	-23.51
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	3.96	3.41	6.70	30.0	-23.30
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	3.54	3.73	6.65	30.0	-23.35
	5755	151	n (40MHz)	13.5/15 (MCS0)	0.96	1.24	4.11	30.0	-25.89
	5795	159	n (40MHz)	13.5/15 (MCS0)	0.77	1.30	4.05	30.0	-25.95
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-2.19	-2.52	0.66	30.0	-29.34

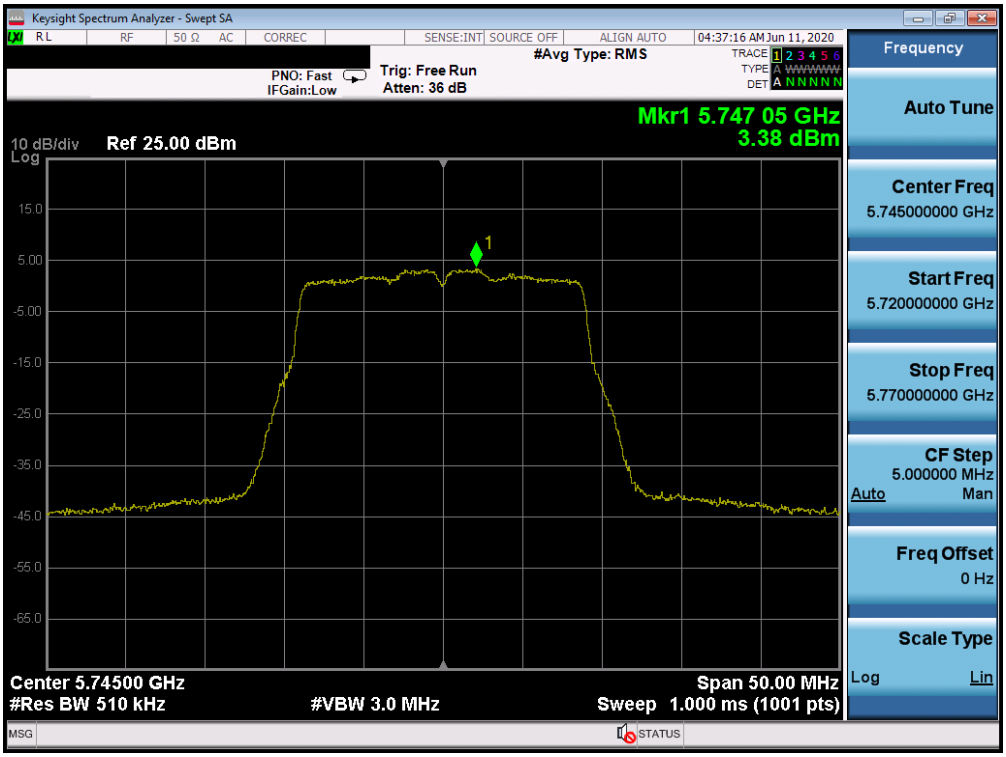
Table 7-34. Band 3 CDD Conducted Power Spectral Density Measurements

© 2020 PCTEST V 10.1 02/01/2020

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

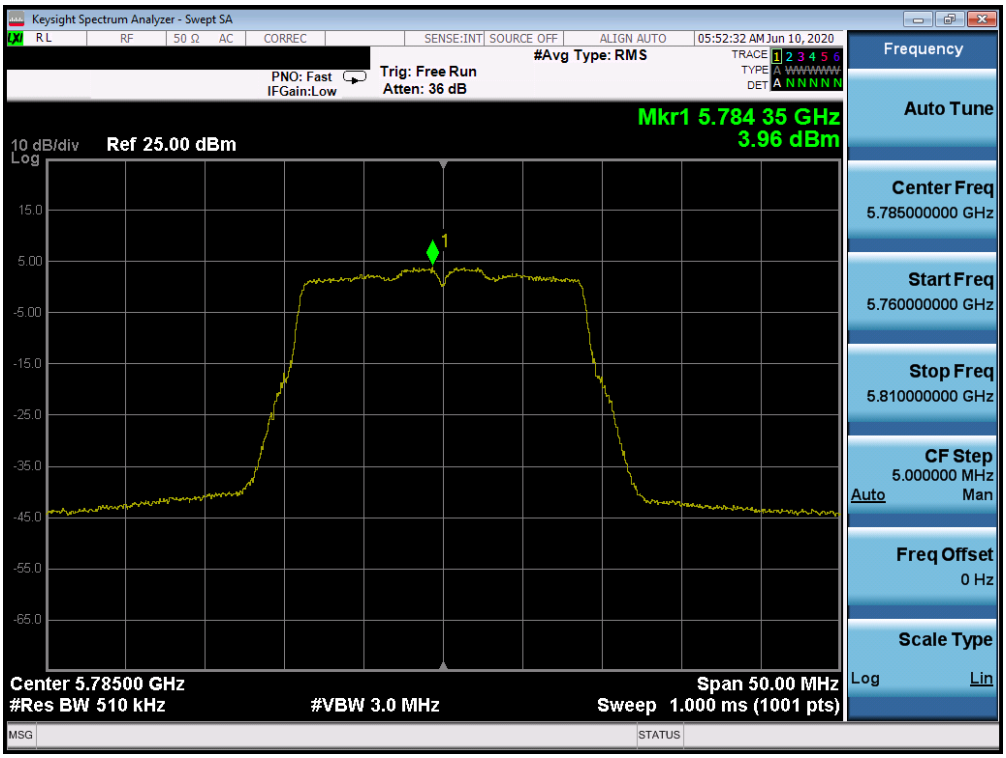


Plot 7-159. Power Spectral Density Plot CDD CORE 0 (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

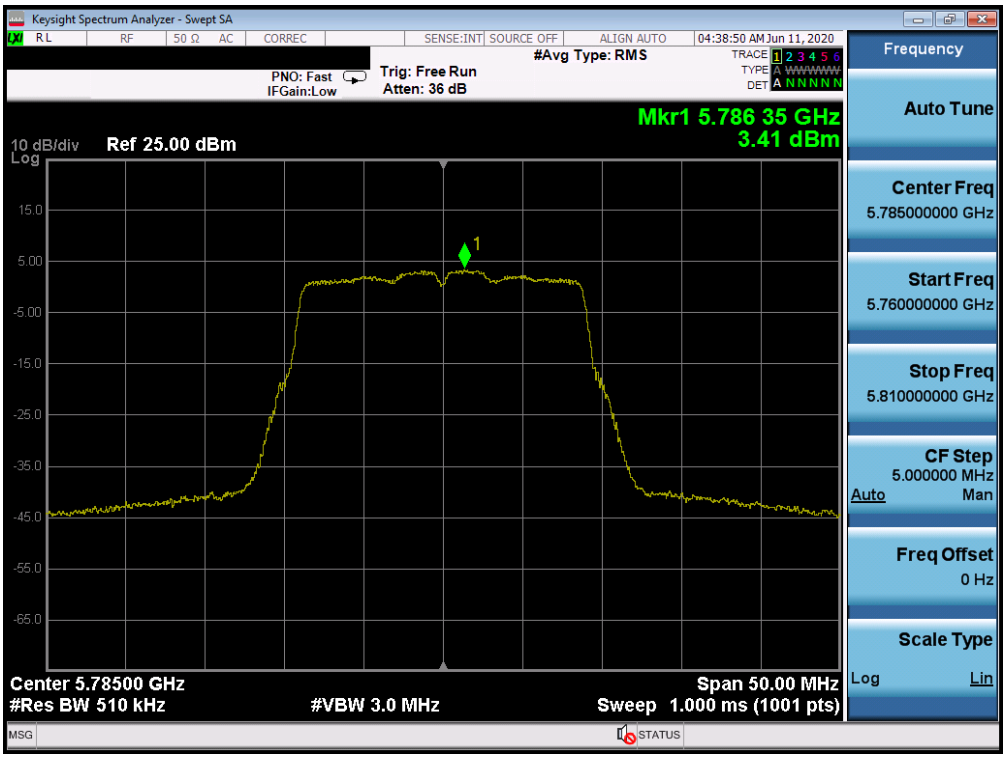


Plot 7-160. Power Spectral Density Plot CDD CORE 1 (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

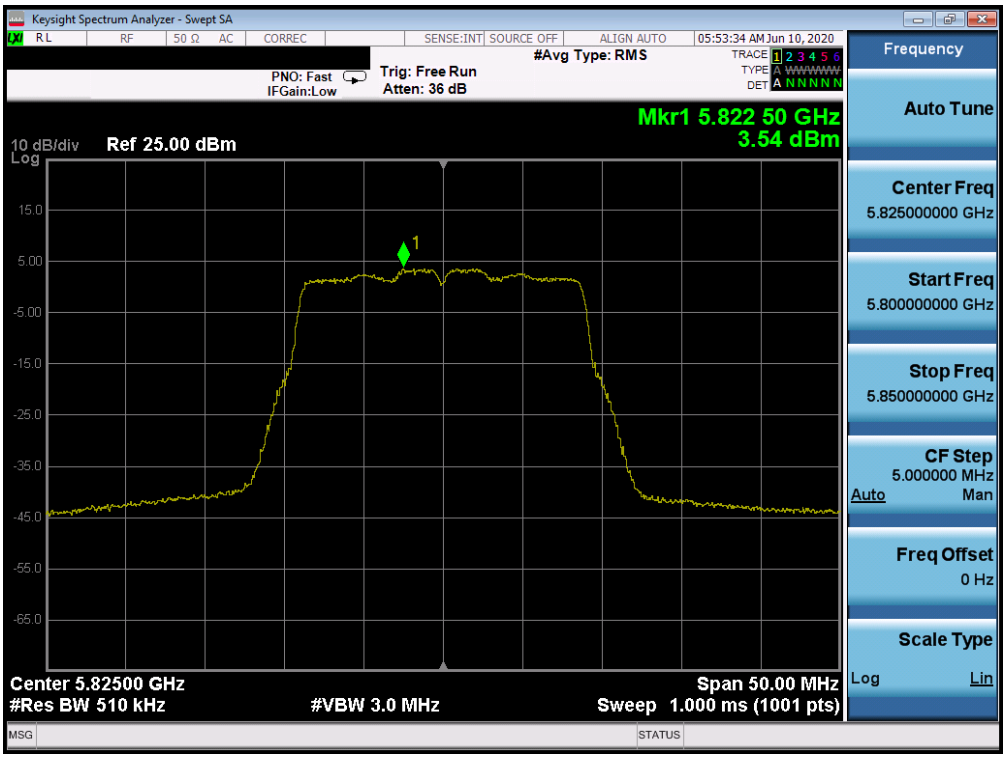


Plot 7-161. Power Spectral Density Plot CDD CORE 0 (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

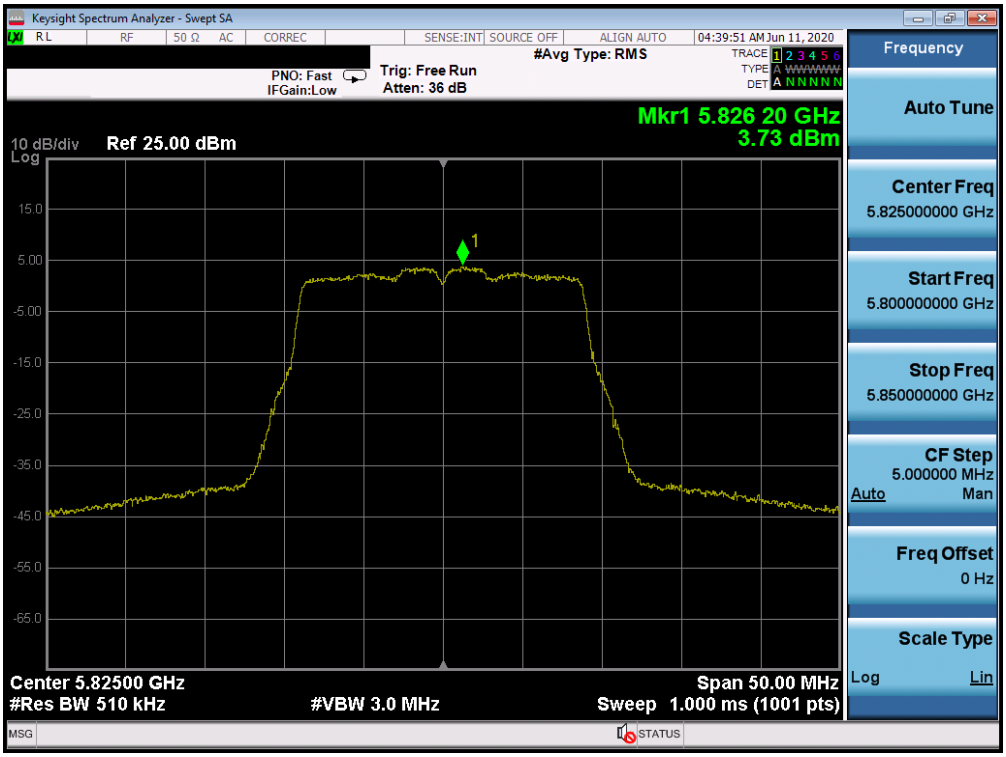


Plot 7-162. Power Spectral Density Plot CDD CORE 1 (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

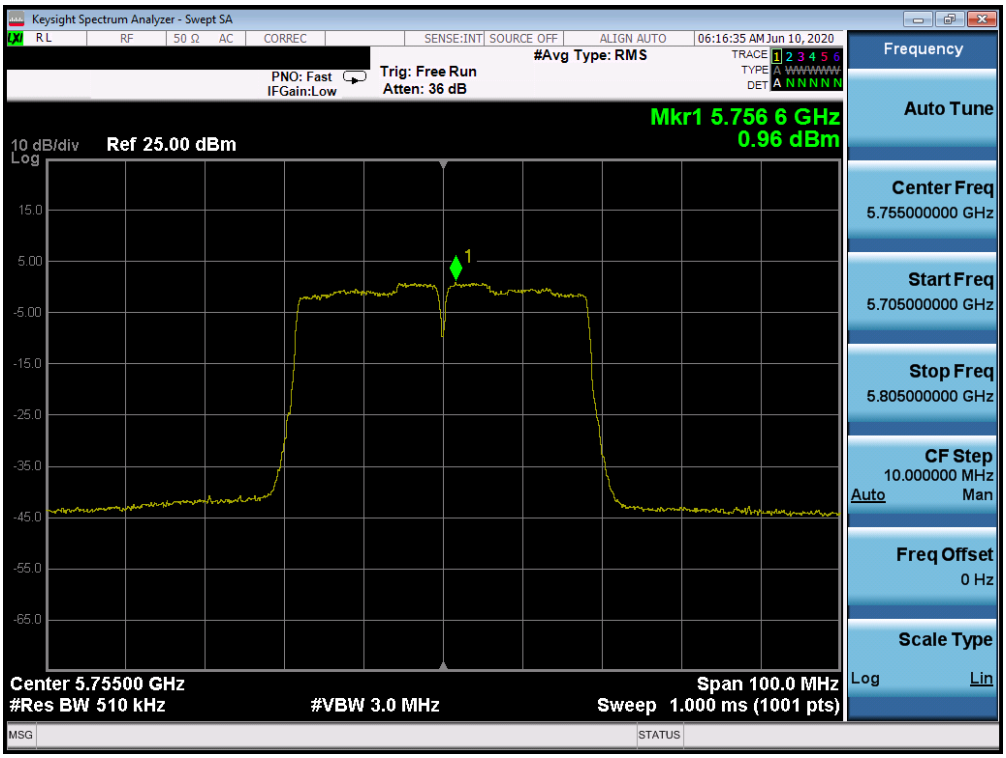


Plot 7-163. Power Spectral Density Plot CDD CORE 0 (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

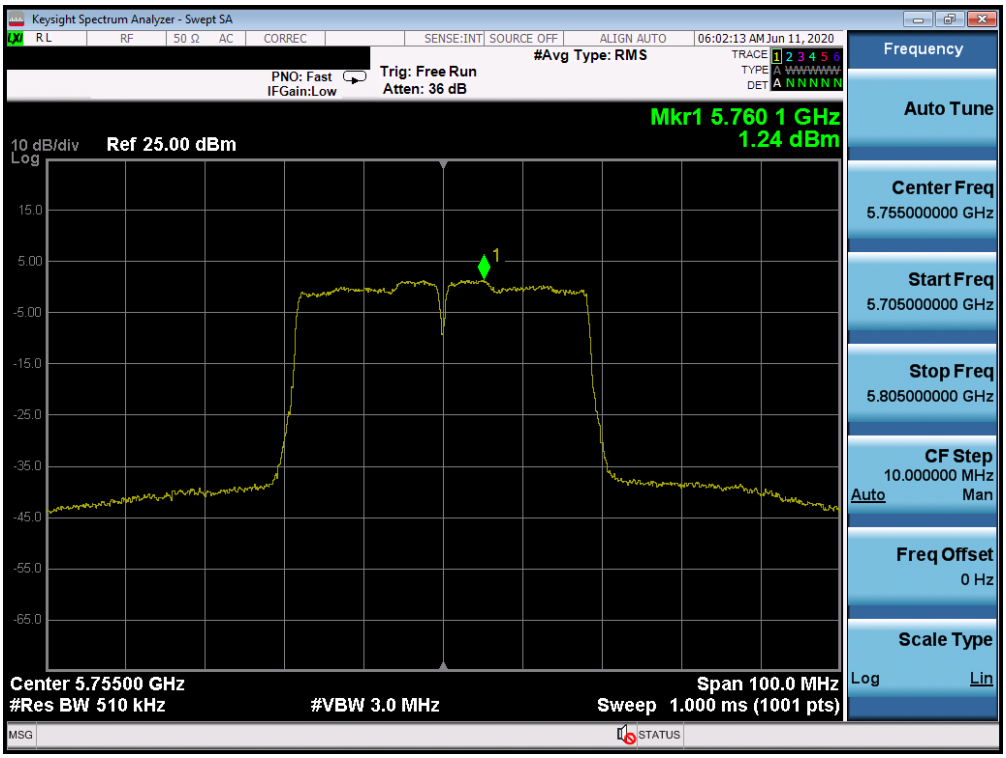


Plot 7-164. Power Spectral Density Plot CDD CORE 1 (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

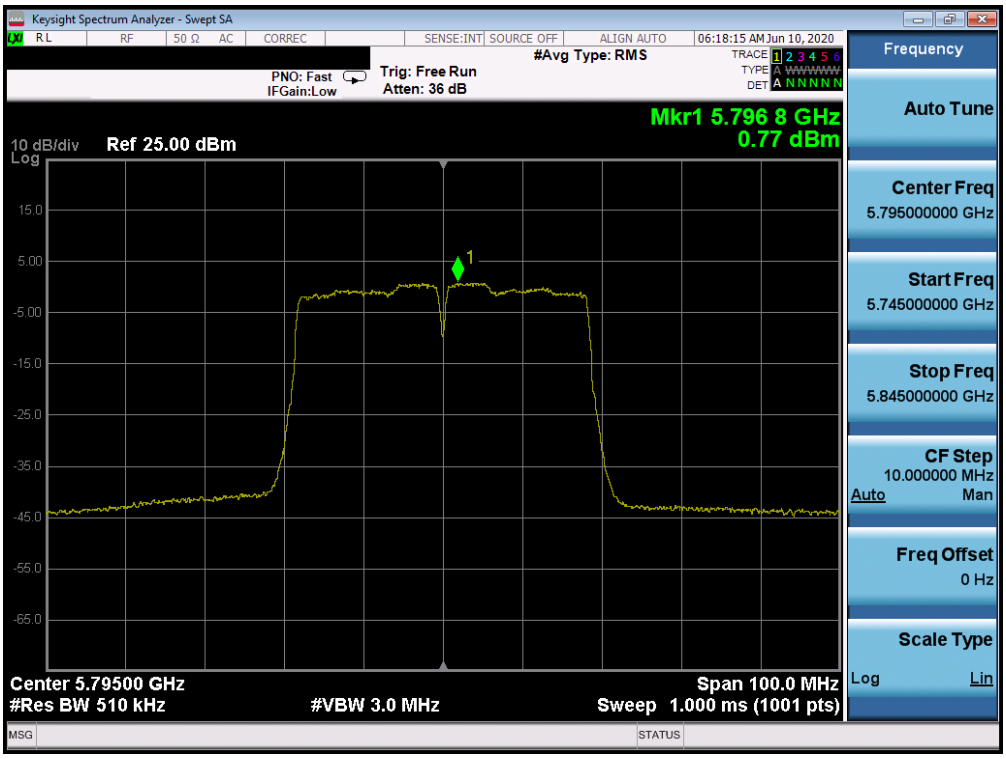


Plot 7-165. Power Spectral Density Plot CDD CORE 0 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

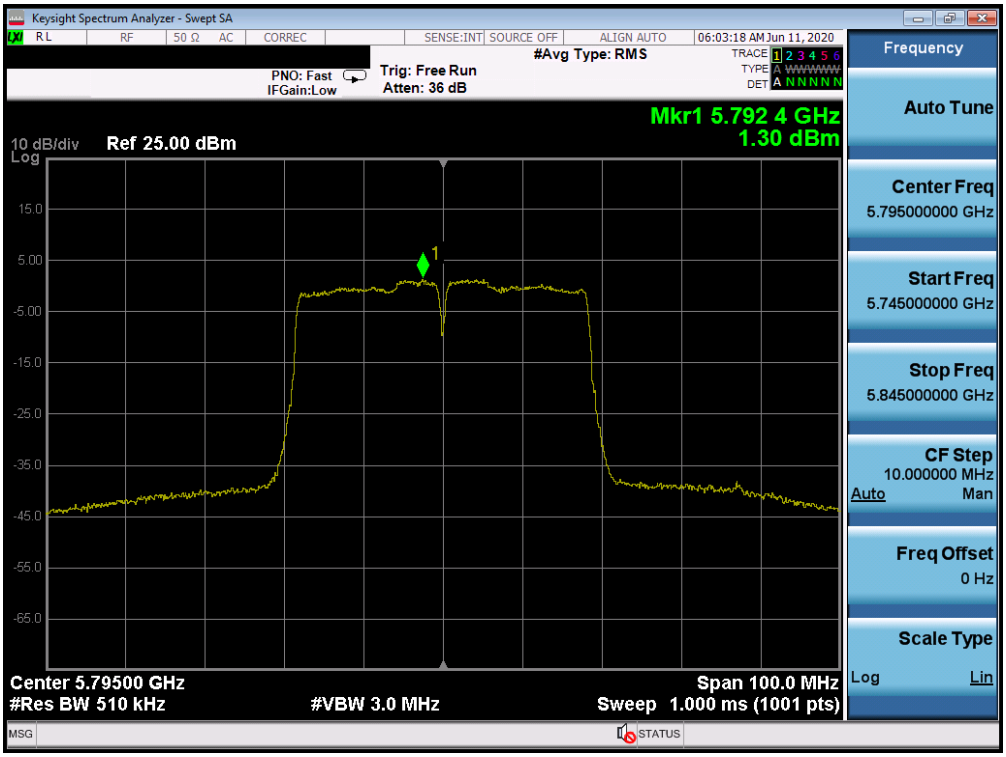


Plot 7-166. Power Spectral Density Plot CDD CORE 1 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

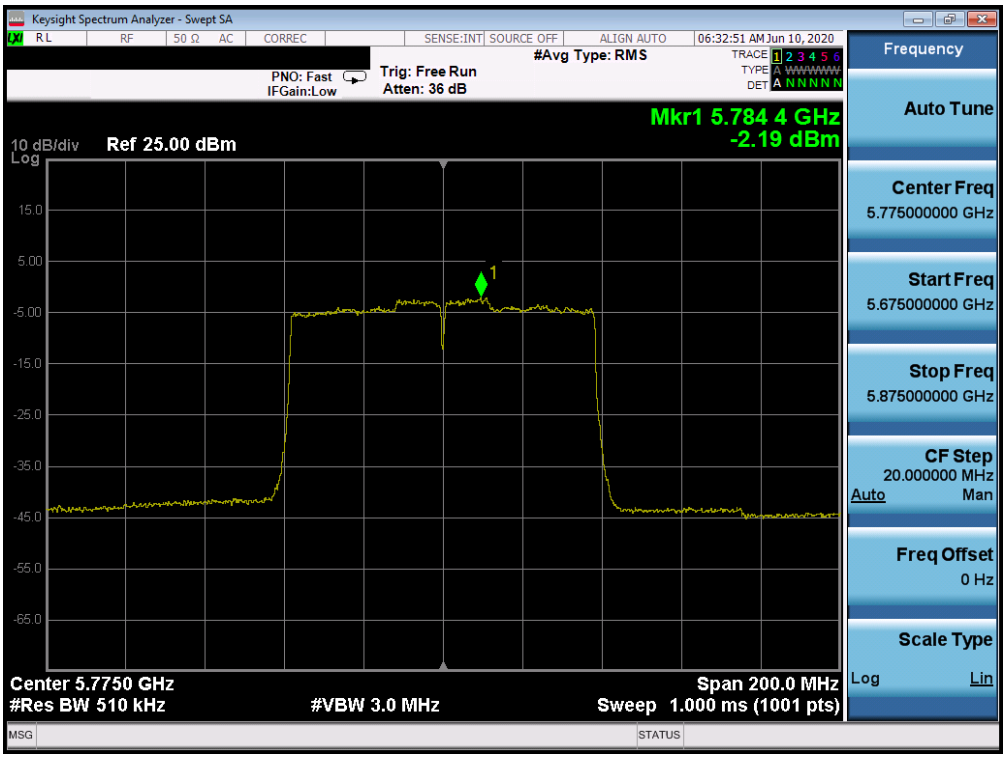


Plot 7-167. Power Spectral Density Plot CDD CORE 0 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)

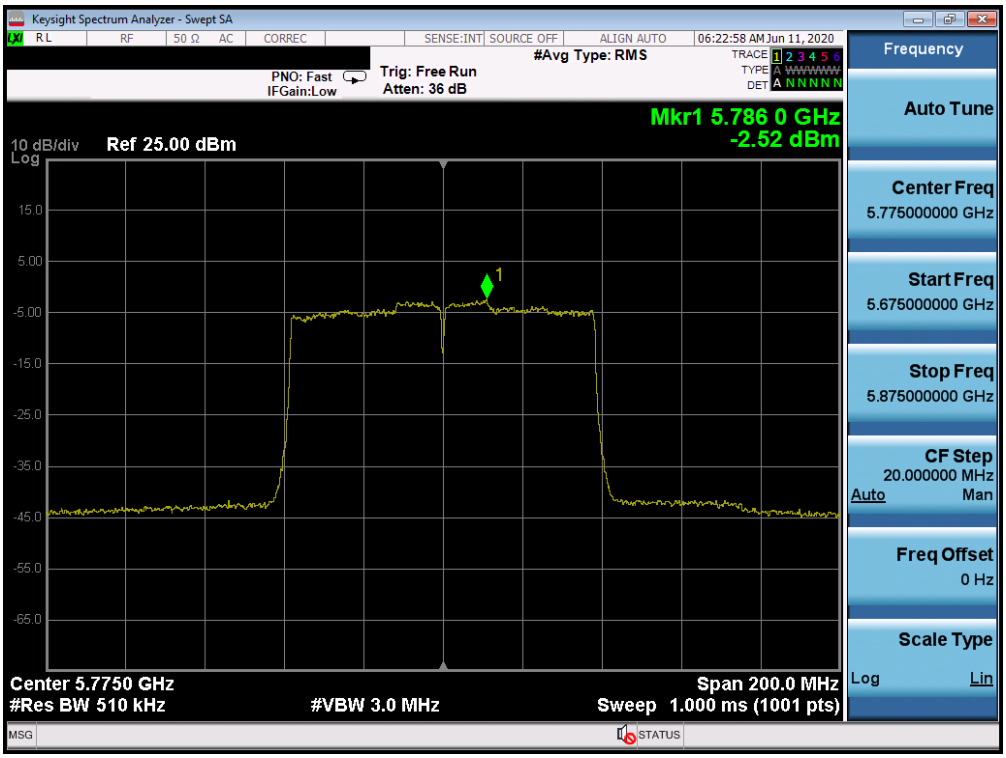


Plot 7-168. Power Spectral Density Plot CDD CORE 1 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-169. Power Spectral Density Plot CDD CORE 0 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)



Plot 7-170. Power Spectral Density Plot CDD CORE 1 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Note:

Per ANSI C63.10-2013 Section 14.3.2.2 and KDB 662911 v02r01 Section E)2), the power spectral density at Antenna 1 and Antenna 2 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 CDD/SDM Calculation:

At 5180MHz in 802.11n (20MHz BW) mode, the average conducted power spectral density was measured to be 4.49 dBm for Core-0 and 4.17 dBm for Core-1.

Antenna 1 + Antenna 2 = CDD/SDM

(4.49 dBm + 4.17 dBm) = (2.81 mW + 2.61 mW) = 5.43 mW = 7.34 dBm

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

At 5180MHz in 802.11n (20MHz BW) mode, the average MIMO power density was calculated to be 7.34 dBm with directional gain of 4.99 dBi.

e.i.r.p. Power Spectral Density(dBm) = Power Spectral Density (dBm) + Ant gain (dBi)

7.34 dBm + 4.99 dBi = 8.89 dBm

© 2020 PCTEST V 10.1 02/01/2020

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

7.6 Radiated Spurious Emissions – Above 1GHz

§15.407(b) §15.205 §15.209; RSS-Gen [8.9]

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in ANSI C63.10-2013 and KDB 789033 D02 v02r01, and at the appropriate frequencies. All channels, modes (e.g. 802.11a, 802.11n (20MHz BW), 802.11n (40MHz BW), and 802.11ac (80MHz)), and modulations/data rates were investigated among all UNII bands. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

For transmitters operating in the 5.15-5.25 GHz and 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of −27 dBm/MHz.

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 EIRP of −27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: 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.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 7 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-35 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [µV/m]	Measured Distance [Meters]
Above 960.0 MHz	500	3

Table 7-35. Radiated Limits

Test Procedures Used

ANSI C63.10-2013 – Sections 12.7.7.2, 12.7.6, 12.7.5
KDB 789033 D02 v02r01 – Section G

Test Settings

Average Measurements above 1GHz (Method AD)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = power average (RMS)
5. Number of measurement points = 1001 (Number of points must be ≥ 2 x span/RBW)
6. Averaging type = power (RMS)
7. Sweep time = auto couple
8. Trace was averaged over 100 sweeps

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Test Setup

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

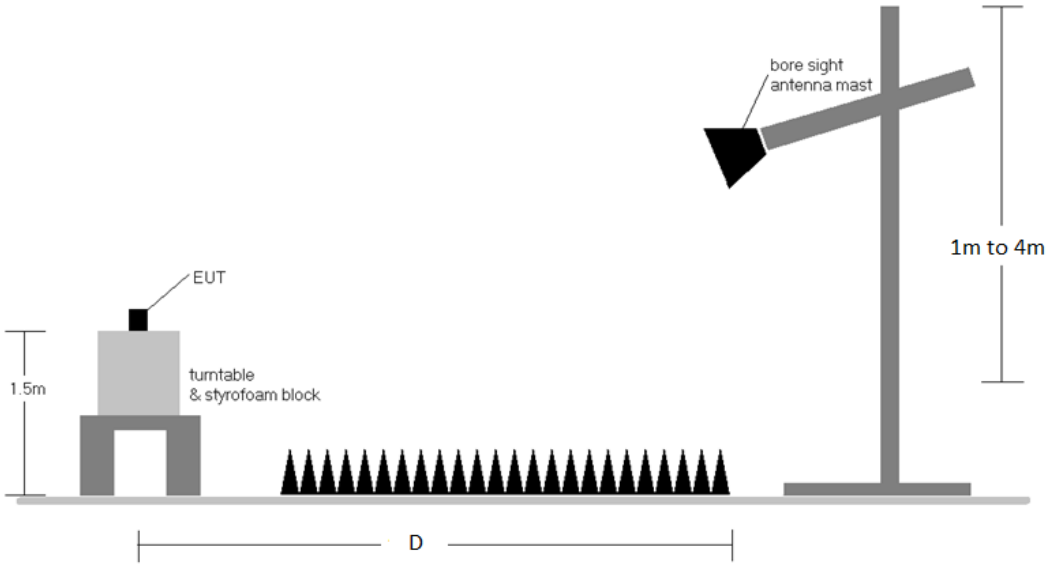


Figure 7-5. Test Instrument & Measurement Setup

© 2020 PCTEST
V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Test Notes

1. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-35.
2. All spurious emissions lying in restricted bands specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-35. All spurious emissions that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dBμV/m.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. This unit was tested with its standard battery.
5. The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average and peak measurements were taken using linearly polarized horn antennas. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
6. D is the measurement test distance and emissions 1-18GHz were measured at a 3 meters test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
7. Radiated spurious emissions were investigated while operating in MIMO mode, however, it was determined that single antenna operation produced the worst case emissions. Since the emissions produced from MIMO operation were found to be more than 20dB below the limit, the MIMO emissions are not reported.
8. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. Any emissions found to be within 20dB of the limit are fully investigated and the results are shown in this section.
9. The "-" shown in the following RSE tables are used to denote a noise floor measurement.

Sample Calculations

Determining Spurious Emissions Levels

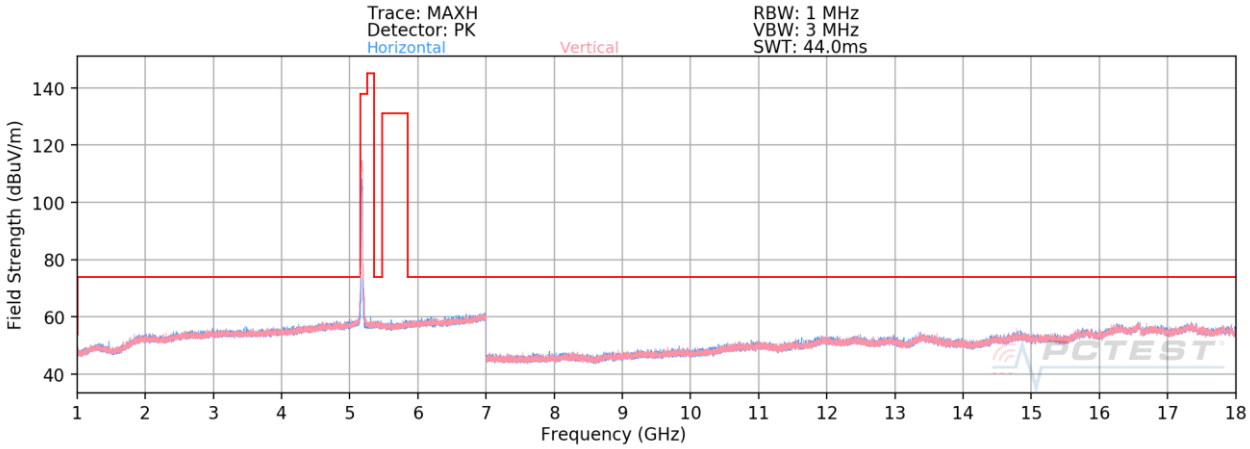
- Field Strength Level $_{[dB\mu V/m]}$ = Analyzer Level $_{[dBm]}$ + 107 + AFCL $_{[dB/m]}$
- AFCL $_{[dB/m]}$ = Antenna Factor $_{[dB/m]}$ + Cable Loss $_{[dB]}$ – Preamplifier Gain $_{[dB]}$
- Margin $_{[dB]}$ = Field Strength Level $_{[dB\mu V/m]}$ – Limit $_{[dB\mu V/m]}$

Radiated Band Edge Measurement Offset

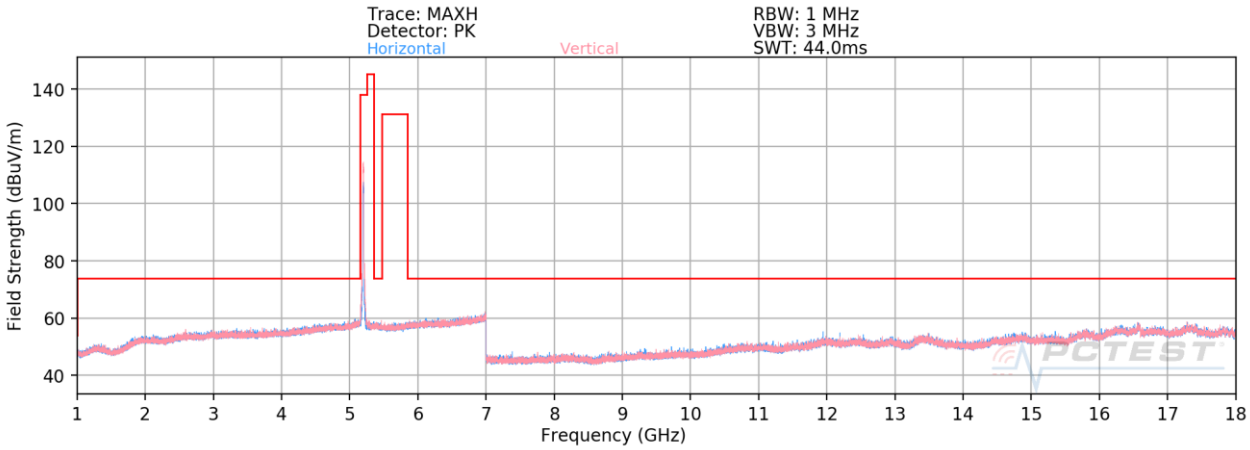
- The amplitude offset shown in the radiated restricted band edge plots in Section 7.6 was calculated using the formula:
- Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

© 2020 PCTEST
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

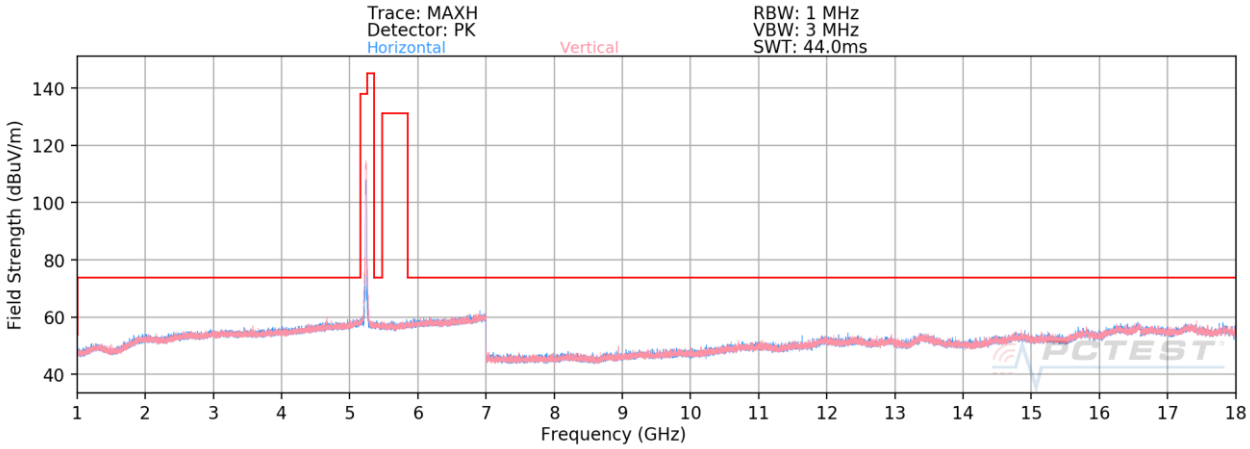
7.6.1 SISO Core-0 Radiated Spurious Emission Measurements



Plot 7-171. Radiated Spurious Emissions above 1GHz SISO CORE 0 (802.11n – U1 Ch. 36)

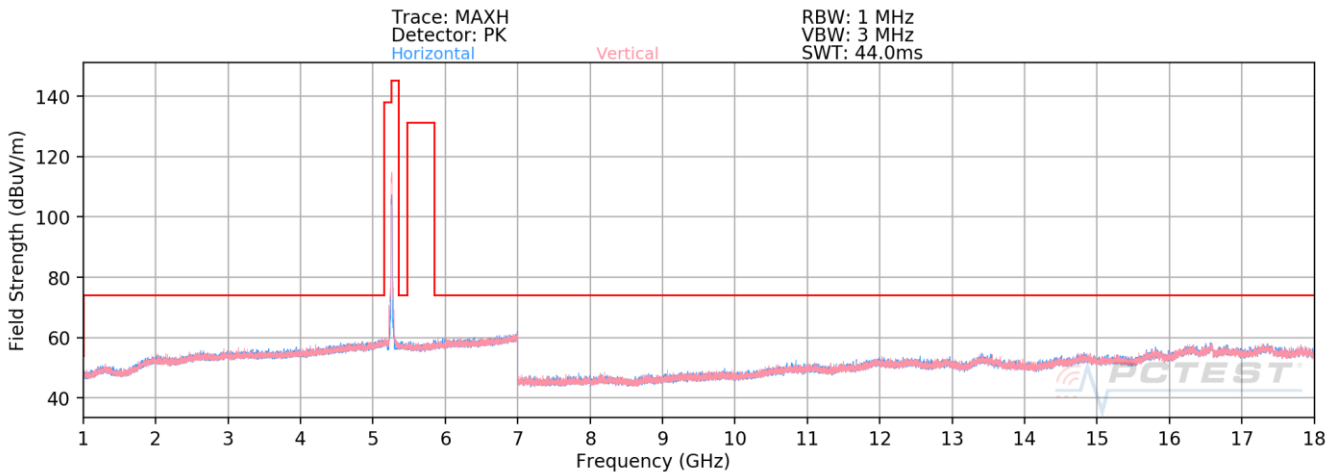


Plot 7-172. Radiated Spurious Emissions above 1GHz SISO CORE 0 (802.11n – U1 Ch. 40)

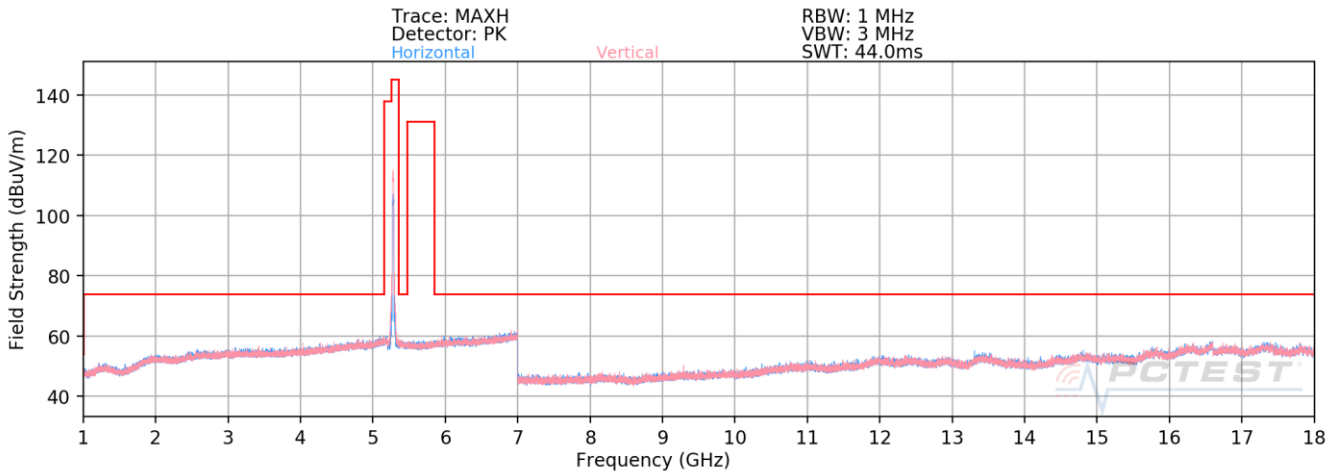


Plot 7-173. Radiated Spurious Emissions above 1GHz SISO CORE 0 (802.11n – U1 Ch. 48)

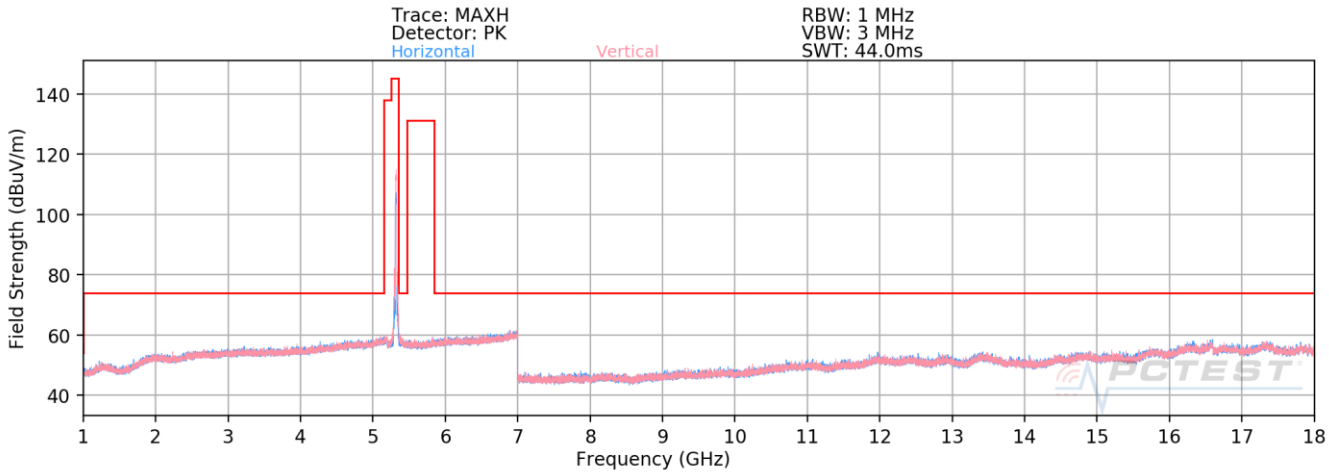
© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-174. Radiated Spurious Emissions above 1GHz SISO CORE 0 (802.11n – U2A Ch. 52)

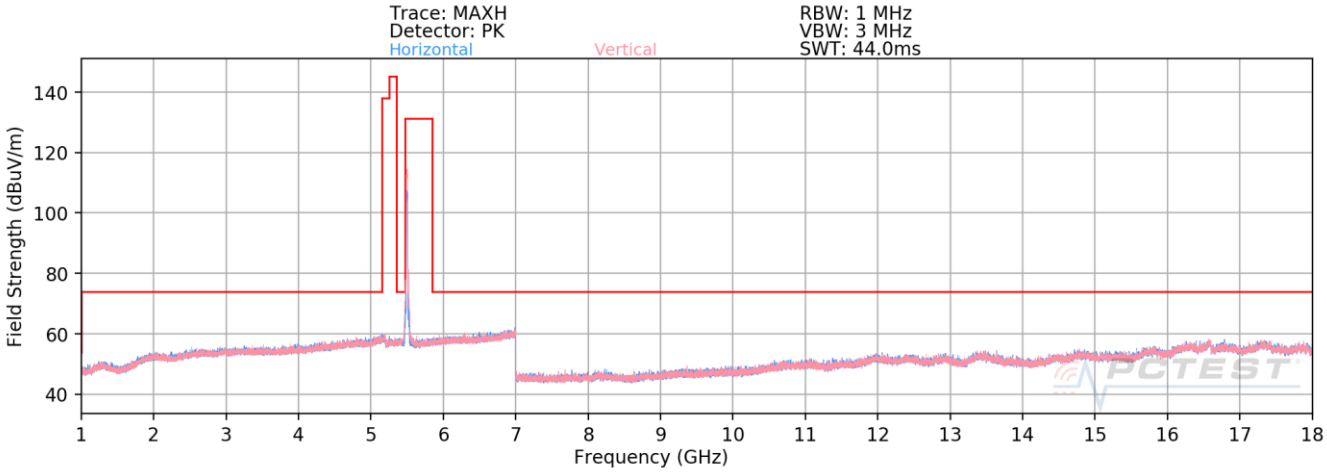


Plot 7-175. Radiated Spurious Emissions above 1GHz SISO CORE 0 (802.11n – U2A Ch. 56)

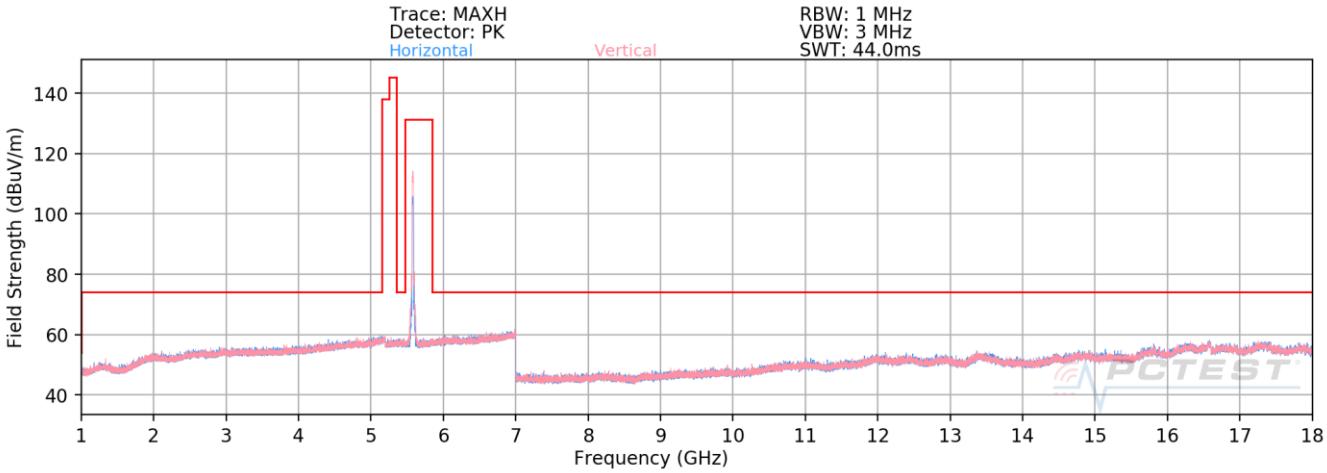


Plot 7-176. Radiated Spurious Emissions above 1GHz SISO CORE 0 (802.11n – U2A Ch. 64)

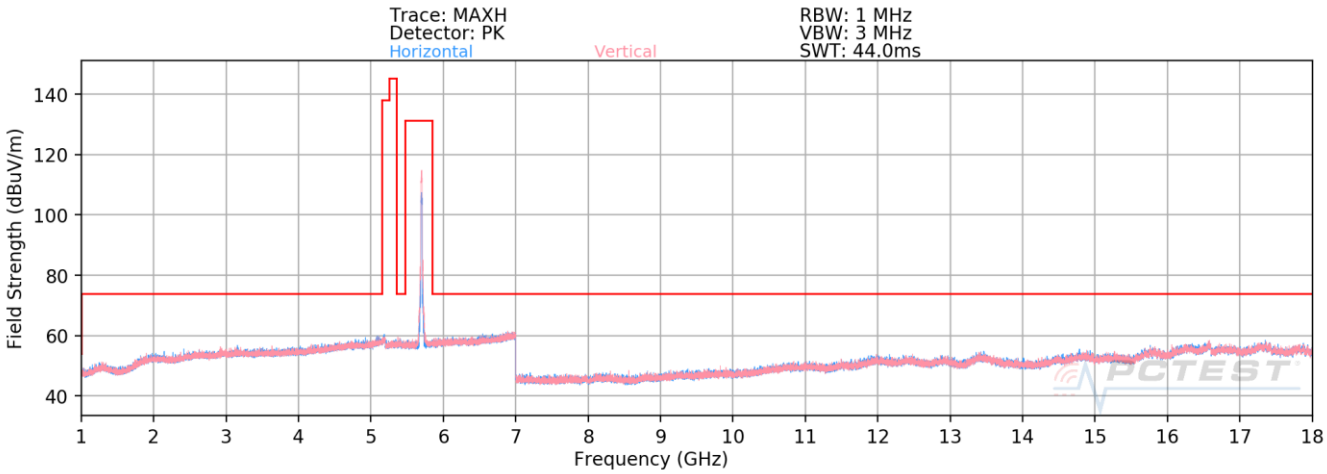
© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-177. Radiated Spurious Emissions above 1GHz SISO CORE 0 (802.11n – U2C Ch. 100)

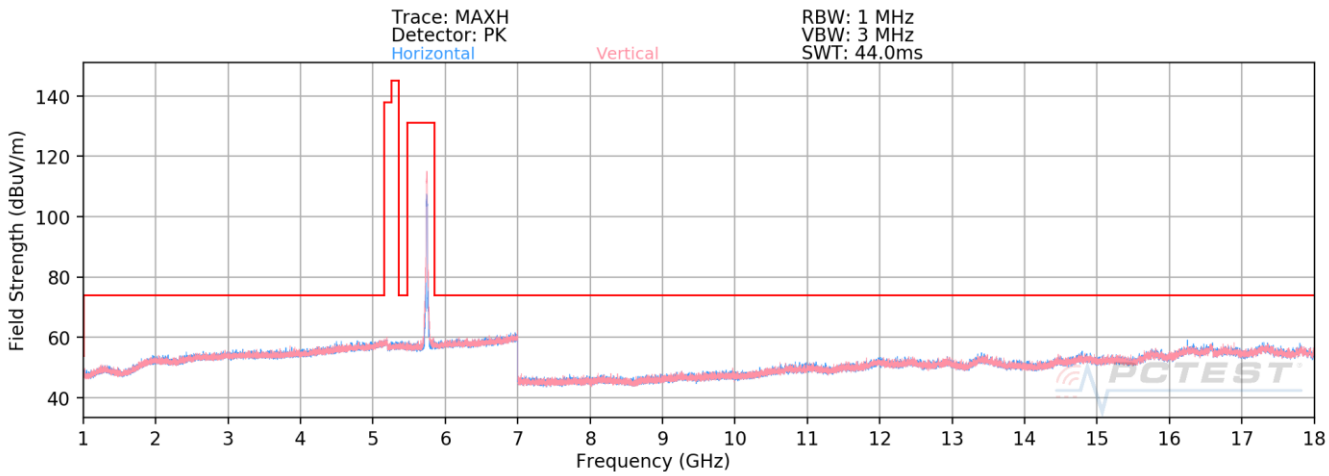


Plot 7-178. Radiated Spurious Emissions above 1GHz SISO CORE 0 (802.11n – U2C Ch. 116)

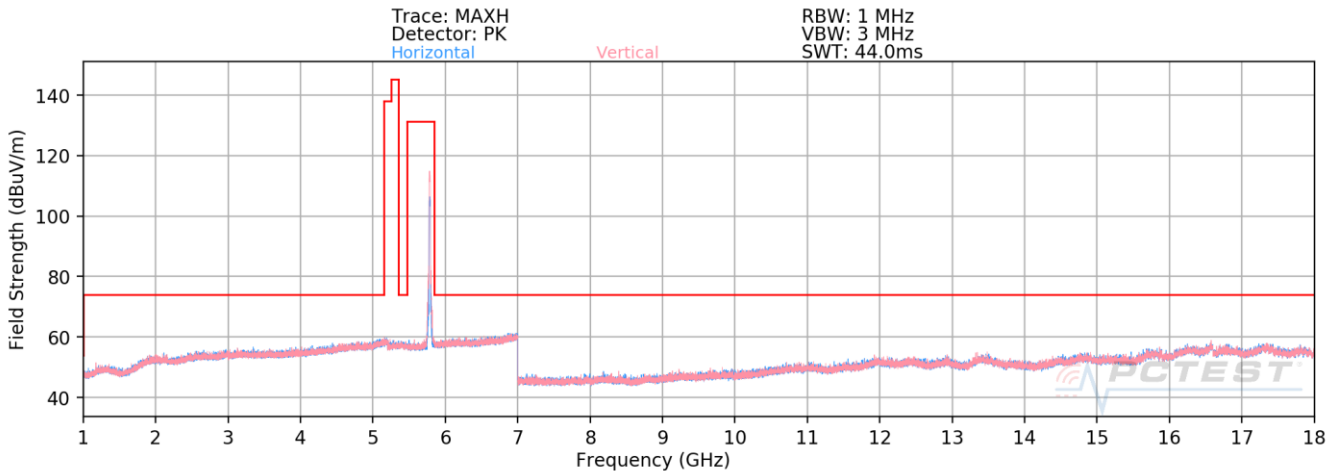


Plot 7-179. Radiated Spurious Emissions above 1GHz SISO CORE 0 (802.11n – U2C Ch. 144)

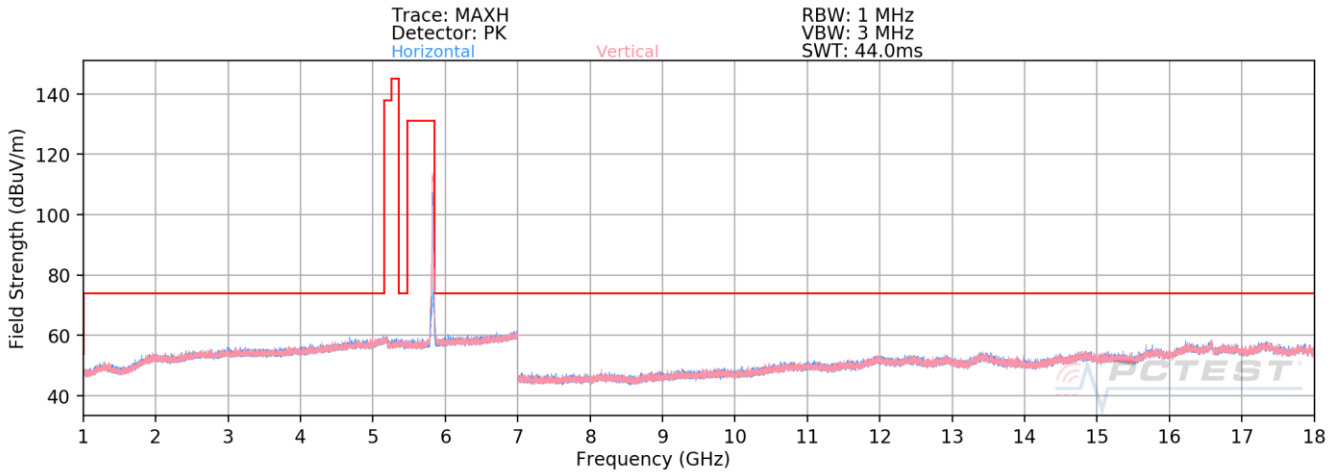
© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-180. Radiated Spurious Emissions above 1GHz SISO CORE 0 (802.11n – U3 Ch. 149)



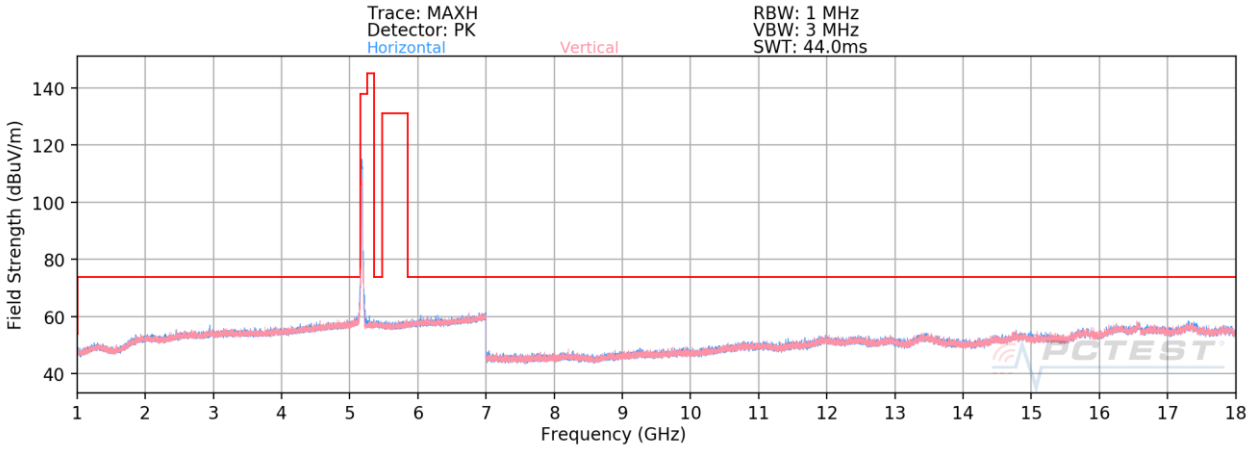
Plot 7-181. Radiated Spurious Emissions above 1GHz SISO CORE 0 (802.11n – U3 Ch. 157)



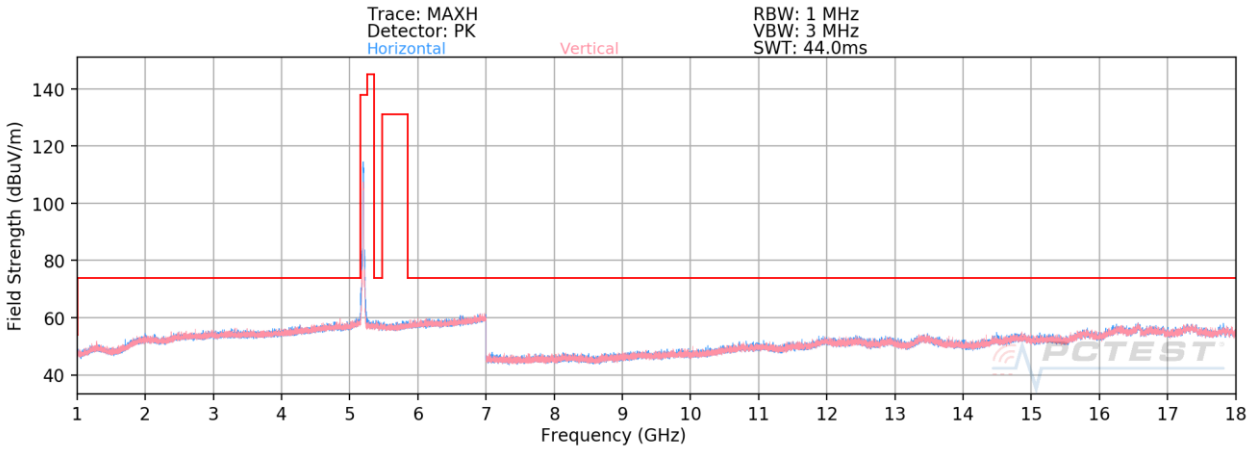
Plot 7-182. Radiated Spurious Emissions above 1GHz SISO CORE 0 (802.11n – U3 Ch. 165)

© 2020 PCTEST
V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

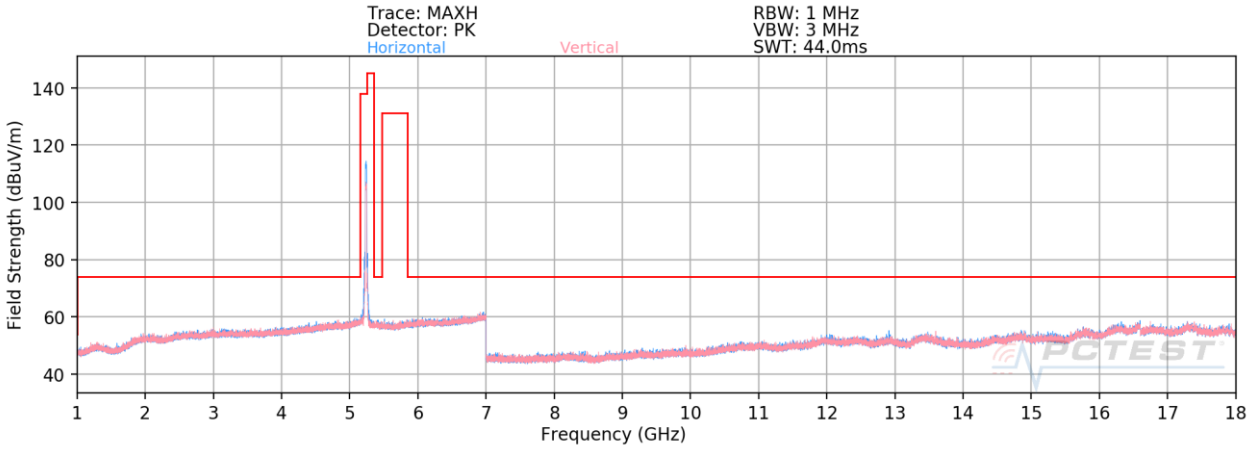
7.6.2 SISO Core-1 Radiated Spurious Emission Measurements



Plot 7-183. Radiated Spurious Emissions above 1GHz SISO CORE 1 (802.11n – U1 Ch. 36)

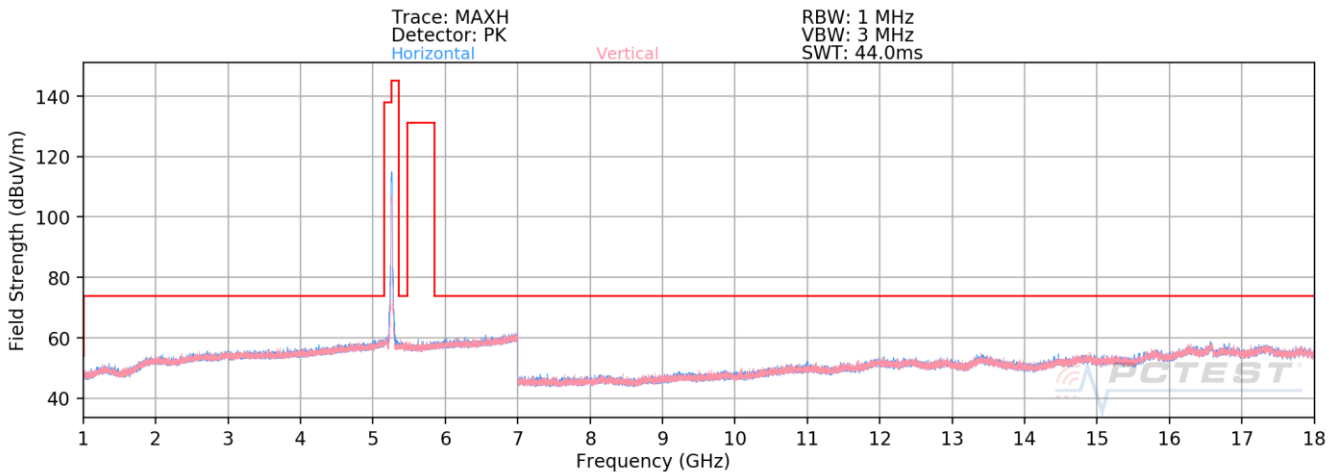


Plot 7-184. Radiated Spurious Emissions above 1GHz SISO CORE 1 (802.11n – U1 Ch. 40)

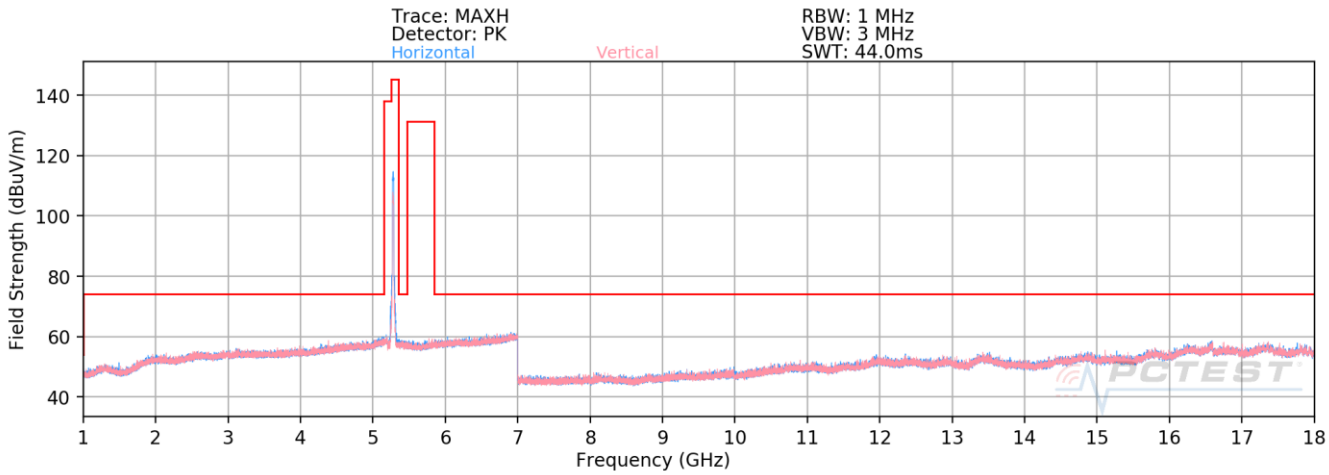


Plot 7-185. Radiated Spurious Emissions above 1GHz SISO CORE 1 (802.11n – U1 Ch. 48)

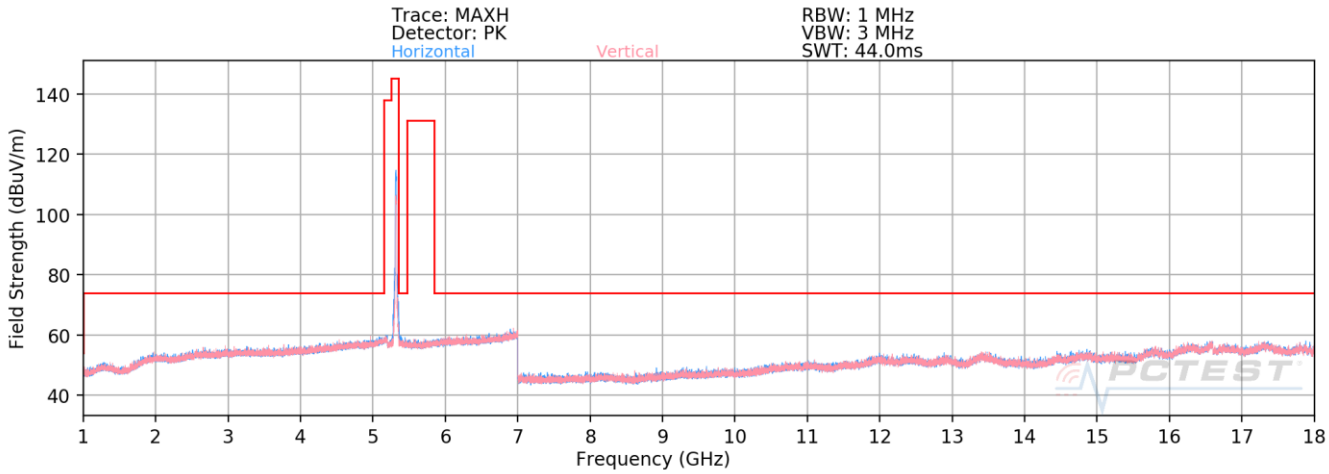
© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



Plot 7-186. Radiated Spurious Emissions above 1GHz SISO CORE 1 (802.11n – U2A Ch. 52)



Plot 7-187. Radiated Spurious Emissions above 1GHz SISO CORE 1 (802.11n – U2A Ch. 56)



Plot 7-188. Radiated Spurious Emissions above 1GHz SISO CORE 1 (802.11n – U2A Ch. 64)

© 2020 PCTEST V 10.1 02/01/2020
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.