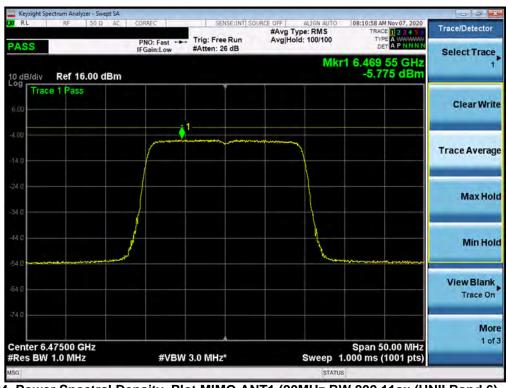


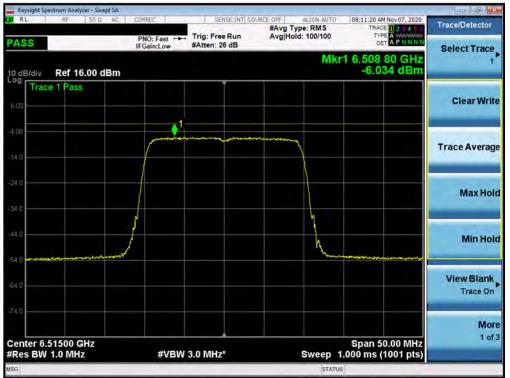
Plot 7-123. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 6) - Ch. 97)



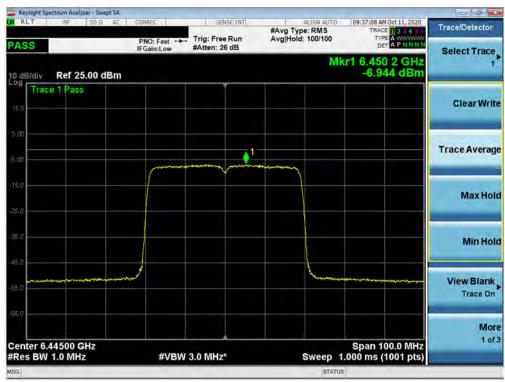
Plot 7-124. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 6) - Ch. 105)

FCC ID: A3LSMG998U	PECTEST Presad to be patir tel @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-125. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 6) - Ch. 113)



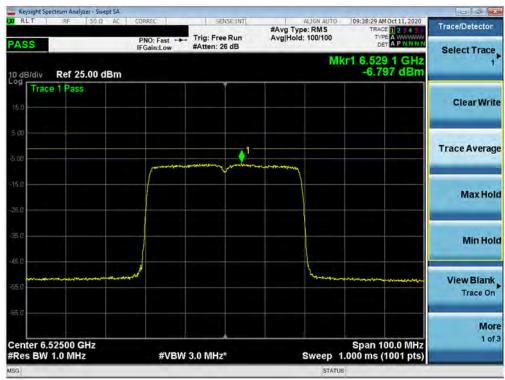
Plot 7-126. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 6) - Ch. 99)

FCC ID: A3LSMG998U	PETEST Presad To Law patt of @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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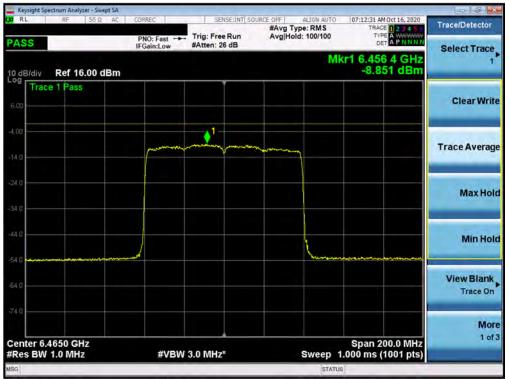
Plot 7-127. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 6) - Ch. 107)



Plot 7-128. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 6) - Ch. 115)

FCC ID: A3LSMG998U	PECTEST Presad to be patir tel @	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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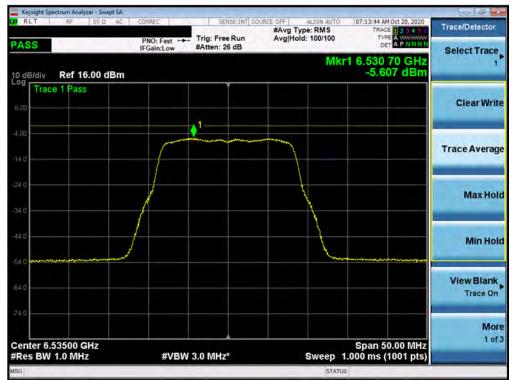
Plot 7-129. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 6) - Ch. 103)



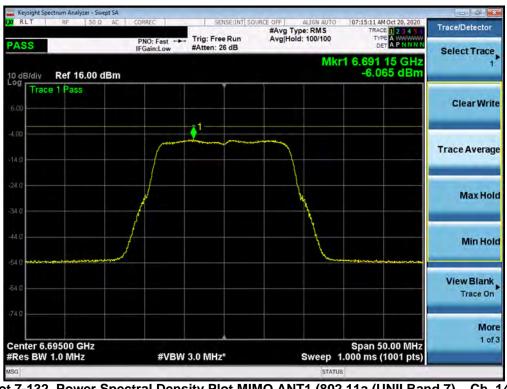
Plot 7-130. Power Spectral Density Plot MIMO ANT1 (160MHz BW 802.11ax (UNII Band 6) - Ch. 111)

FCC ID: A3LSMG998U	PETEST Presad To Law patt rel @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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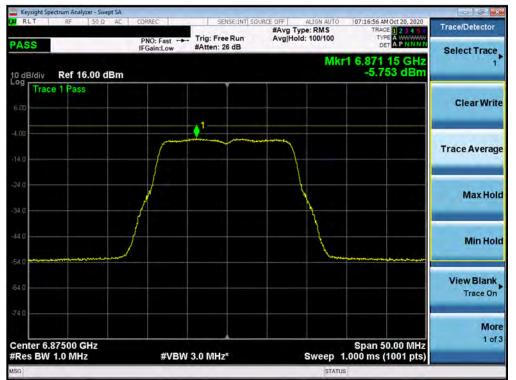
Plot 7-131. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 7) - Ch. 117)



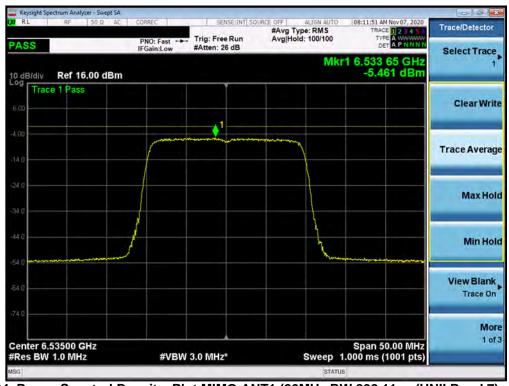
Plot 7-132. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 7) - Ch. 149)

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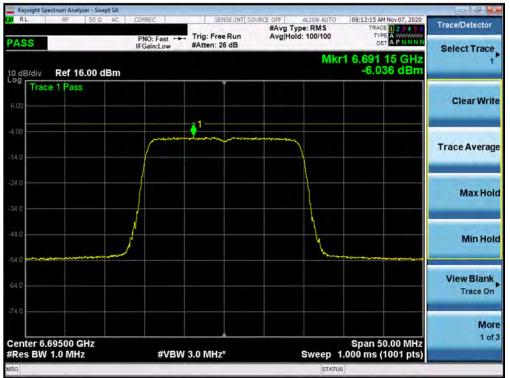
Plot 7-133. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 7) - Ch. 185)



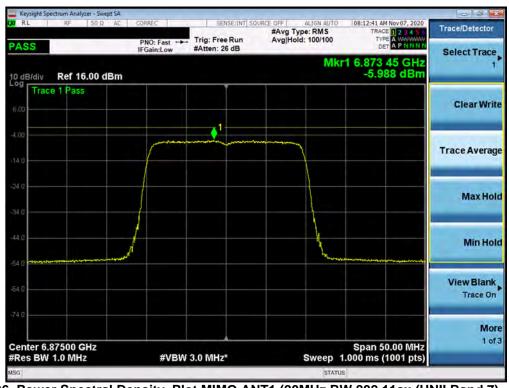
Plot 7-134. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 7) - Ch. 117)

FCC ID: A3LSMG998U		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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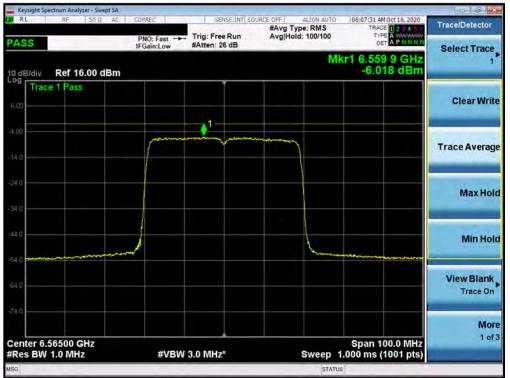
Plot 7-135. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 7) - Ch. 149)



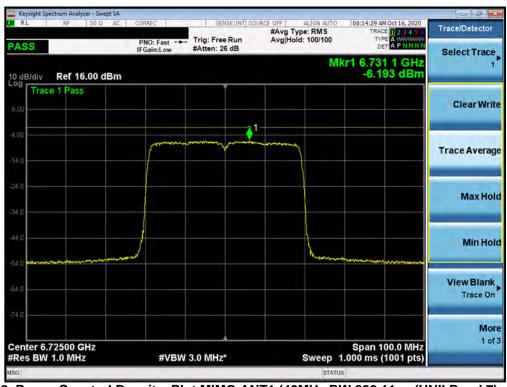
Plot 7-136. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 7) - Ch. 185)

FCC ID: A3LSMG998U	PCTEST Presad to be patit to @uniment	MEASUREMENT REPORT (CERTIFICATION)	2	Approved by: Quality Manager
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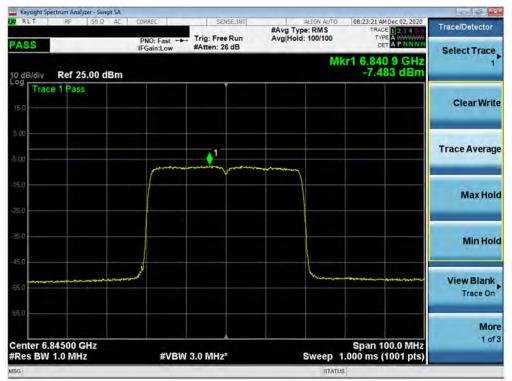
Plot 7-137. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 7) - Ch. 123)



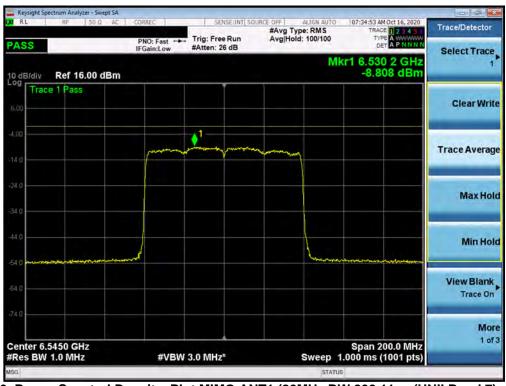
Plot 7-138. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 7) - Ch. 155)

FCC ID: A3LSMG998U	PECTEST Presad to be patir tel @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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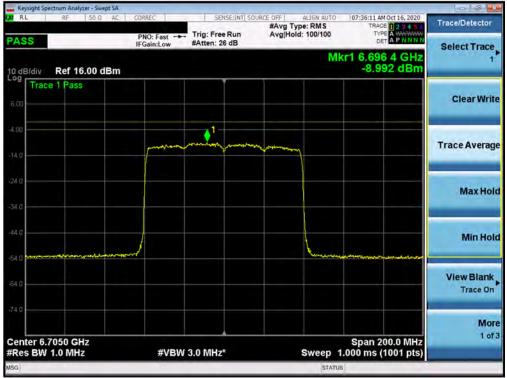
Plot 7-139. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 7) - Ch. 179)



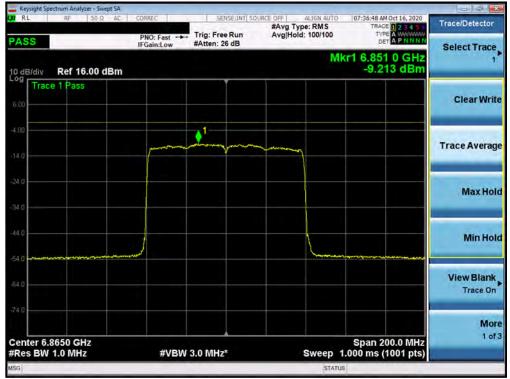
Plot 7-140. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 7) - Ch. 119)

FCC ID: A3LSMG998U	PCTEST Presad to be patter @ minored	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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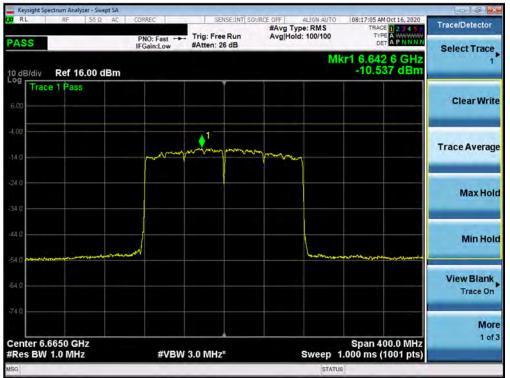
Plot 7-141. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 7) - Ch. 151)



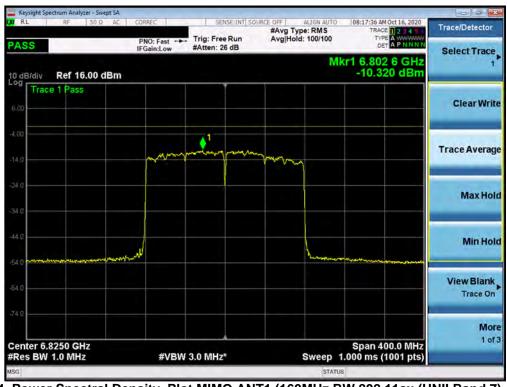
Plot 7-142. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 7) - Ch. 183)

FCC ID: A3LSMG998U	PCTEST Presad to be patt fol @ winnered	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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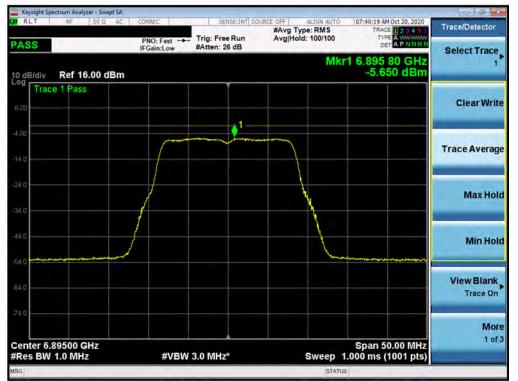
Plot 7-143. Power Spectral Density Plot MIMO ANT1 (160MHz BW 802.11ax (UNII Band 7) - Ch. 143)



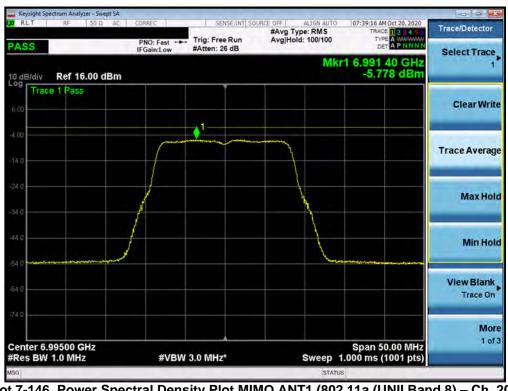
Plot 7-144. Power Spectral Density Plot MIMO ANT1 (160MHz BW 802.11ax (UNII Band 7) - Ch. 175)

FCC ID: A3LSMG998U	PCTEST Presad to be patt fol @ winnered	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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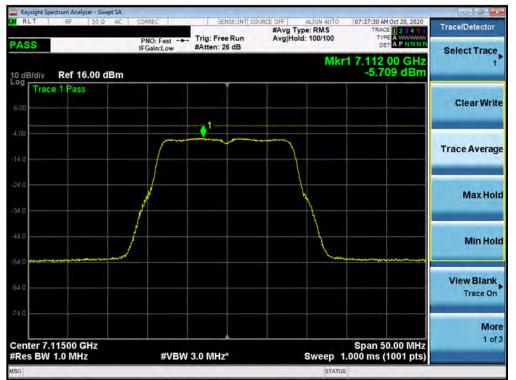
Plot 7-145. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 8) - Ch. 189)



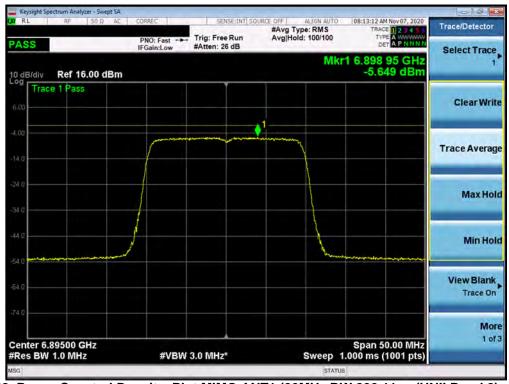
Plot 7-146. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 8) - Ch. 209)

FCC ID: A3LSMG998U	PCTEST Presad to be patit of @	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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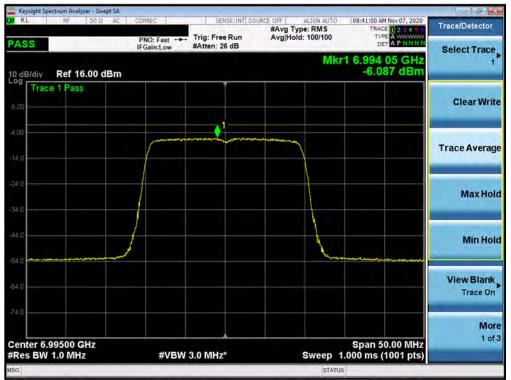
Plot 7-147. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 8) - Ch. 233)



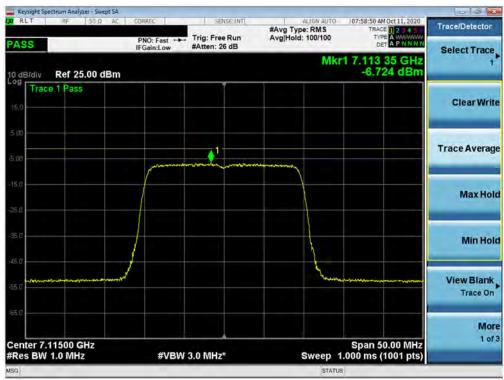
Plot 7-148. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 8) - Ch. 189)

FCC ID: A3LSMG998U		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Plot 7-149. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 8) - Ch. 209)



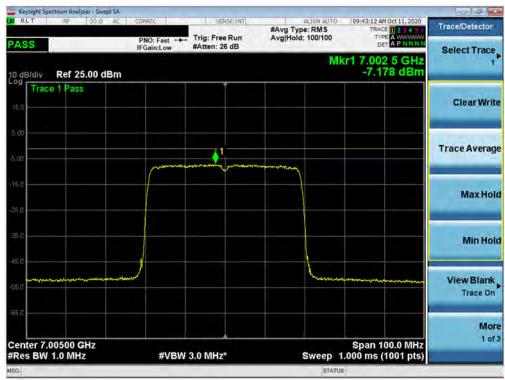
Plot 7-150. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 8) - Ch. 233)

FCC ID: A3LSMG998U		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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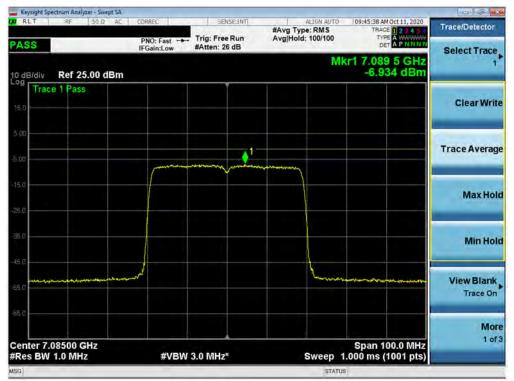
Plot 7-151. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 8) - Ch. 187)



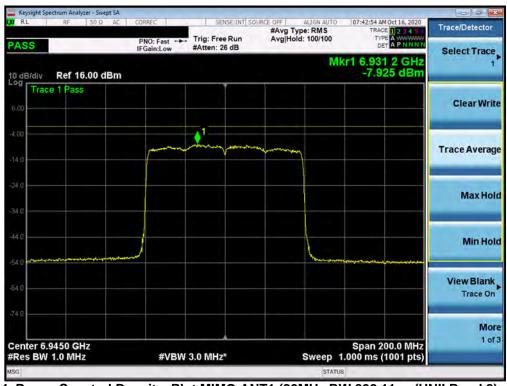
Plot 7-152. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 8) - Ch. 211)

FCC ID: A3LSMG998U	PECTEST Presad to be patir of @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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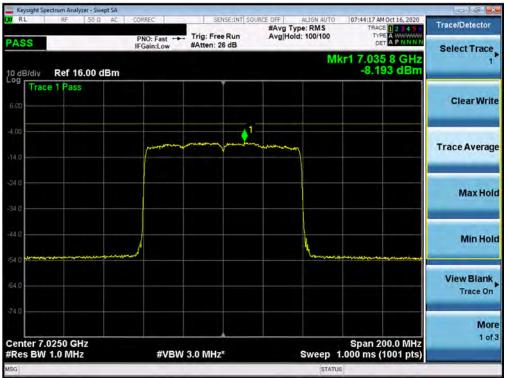
Plot 7-153. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 8) - Ch. 227)



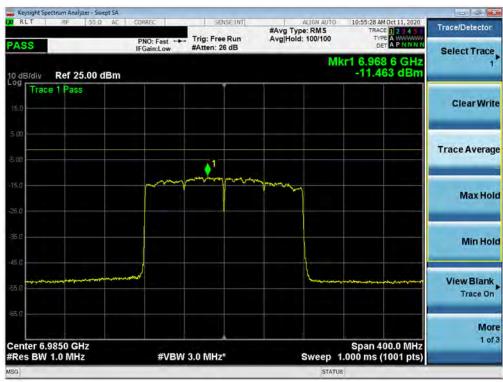
Plot 7-154. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 8) - Ch. 199)

FCC ID: A3LSMG998U	PETEST Presad To Law patt rel @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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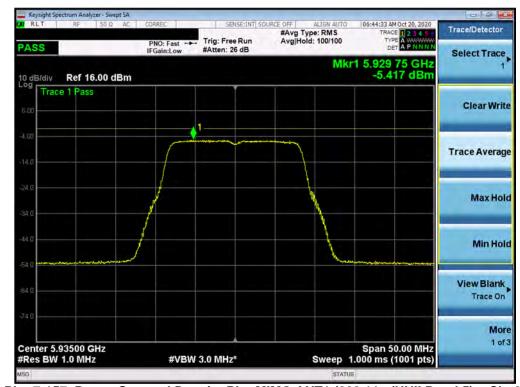
Plot 7-155. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 8) - Ch. 215)



Plot 7-156. Power Spectral Density Plot MIMO ANT1 (160MHz BW 802.11ax (UNII Band 8) - Ch. 207)

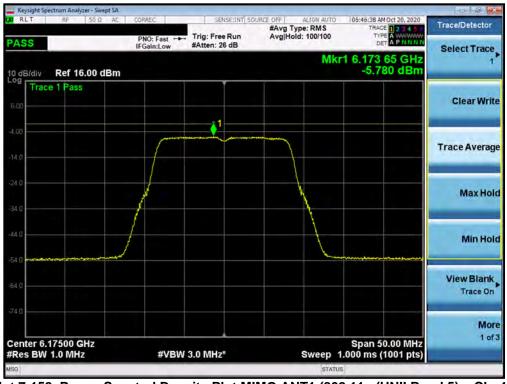
FCC ID: A3LSMG998U	PETEST Presad To Law patt rel @	MEASUREMENT REPORT (CERTIFICATION)	NG	Approved by: Quality Manager
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## **MIMO Antenna-2 Power Spectral Density Measurements**



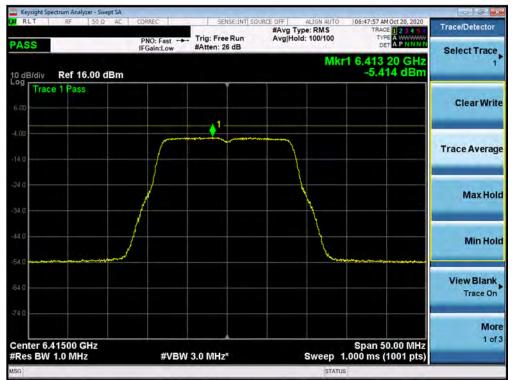


Plot 7-158. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 5) - Ch. 45)

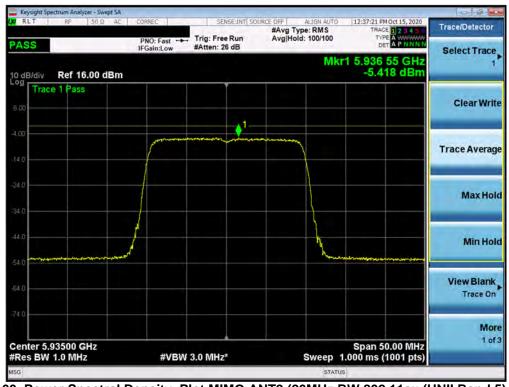
FCC ID: A3LSMG998U	PREAST TO BE PART OF COMPANY	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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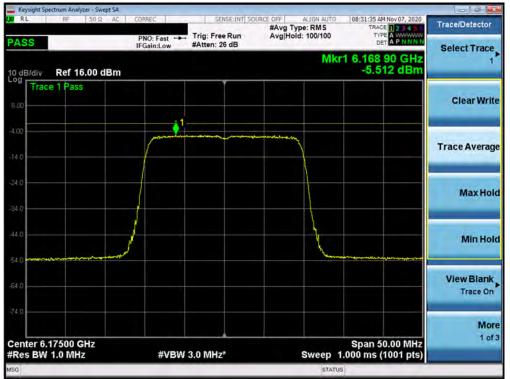
Plot 7-159. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 5) - Ch. 93)



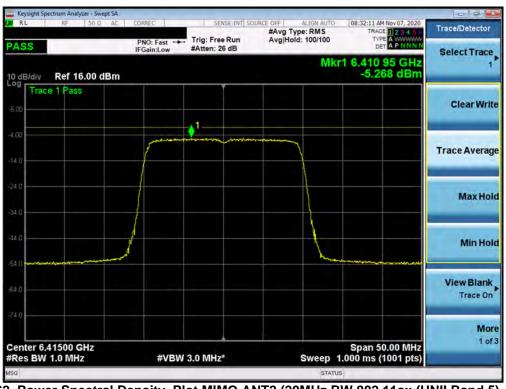
Plot 7-160. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 5) – Ch. 2)

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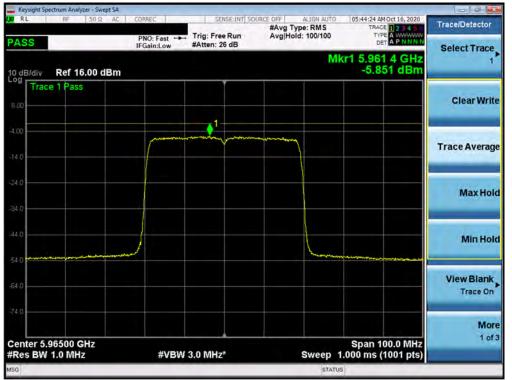
Plot 7-161. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 5) - Ch. 45)



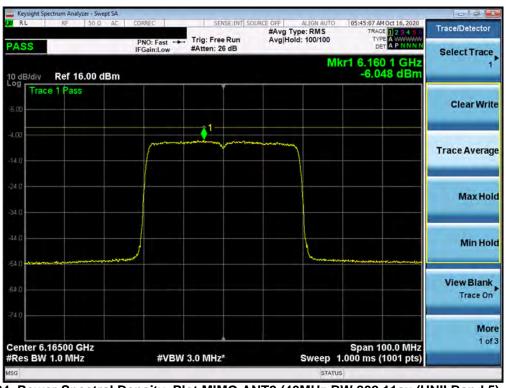
Plot 7-162. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 5) - Ch. 93)

FCC ID: A3LSMG998U	PREAST TO BE PART OF COMPANY	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-163. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 5) - Ch. 3)



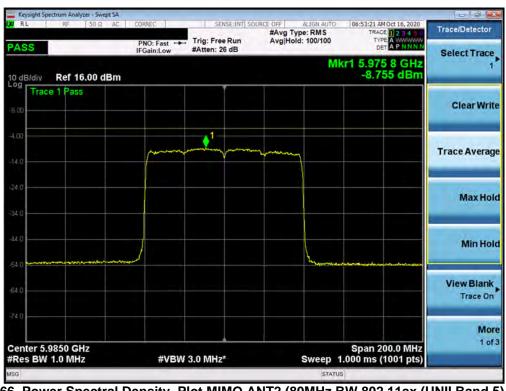
Plot 7-164. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 5) - Ch. 43)

FCC ID: A3LSMG998U	PECTEST Presad to be patir of @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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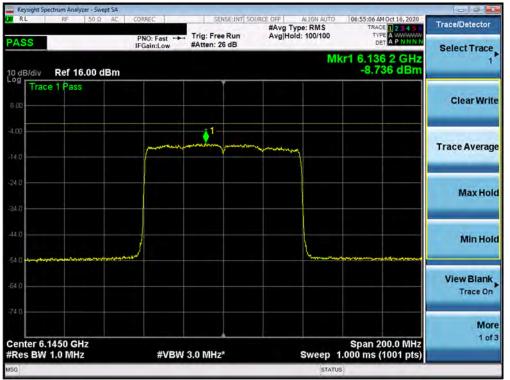
Plot 7-165. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 5) - Ch. 91)



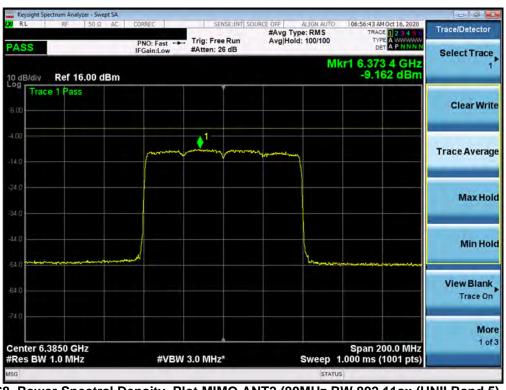
Plot 7-166. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (UNII Band 5) - Ch. 7)

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Plot 7-167. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (UNII Band 5) - Ch. 39)



Plot 7-168. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (UNII Band 5) - Ch. 87)

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Plot 7-169. Power Spectral Density Plot MIMO ANT2 (160MHz BW 802.11ax (UNII Band 5) - Ch. 15)



Plot 7-170. Power Spectral Density Plot MIMO ANT2 (160MHz BW 802.11ax (UNII Band 5) - Ch. 47)

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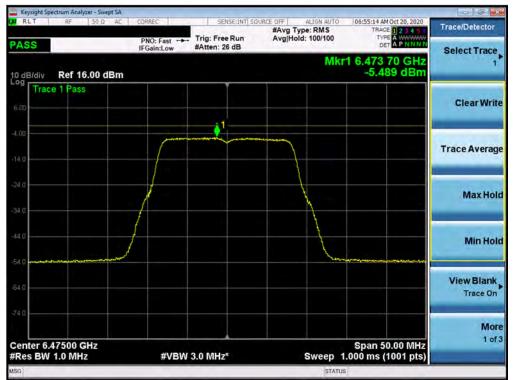
Plot 7-171. Power Spectral Density Plot MIMO ANT2 (160MHz BW 802.11ax (UNII Band 5) - Ch. 79)



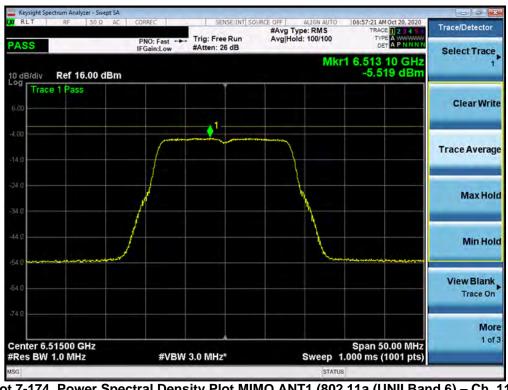
Plot 7-172. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 6) - Ch. 97)

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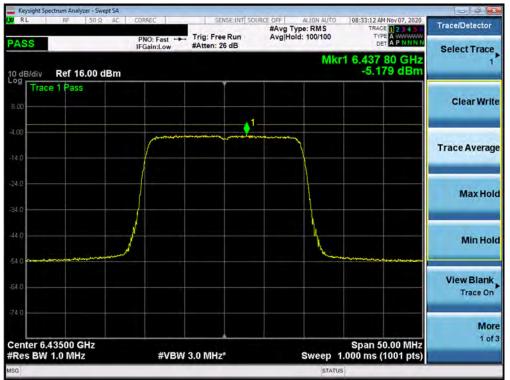
Plot 7-173. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 6) - Ch. 105)



Plot 7-174. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 6) - Ch. 113)

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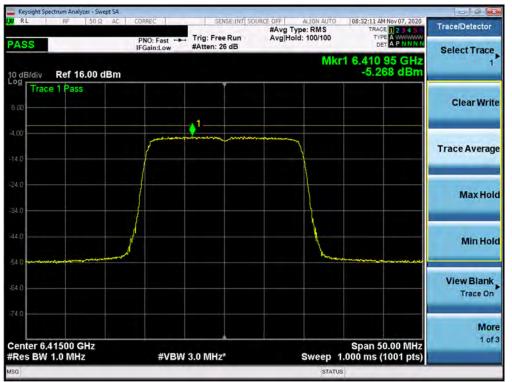
Plot 7-175. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 6) - Ch. 97)



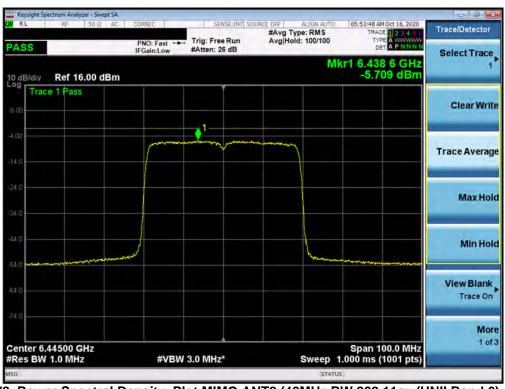
Plot 7-176. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 6) - Ch. 105)

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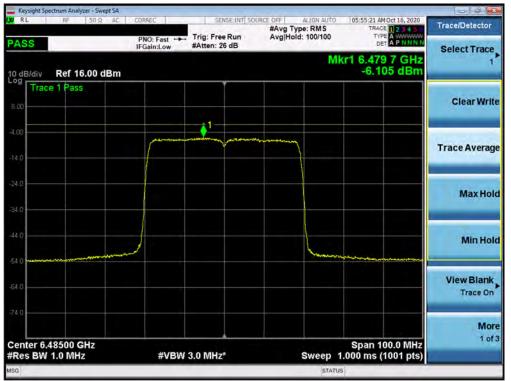
Plot 7-177. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 6) - Ch. 113)



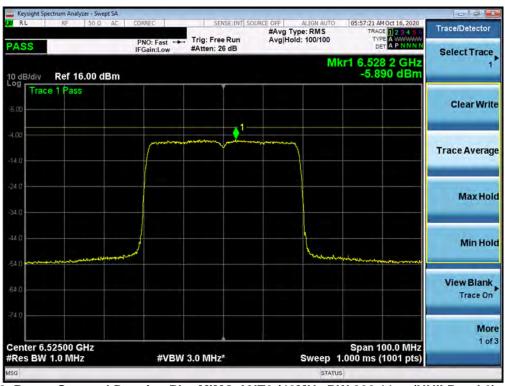
Plot 7-178. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 6) - Ch. 99)

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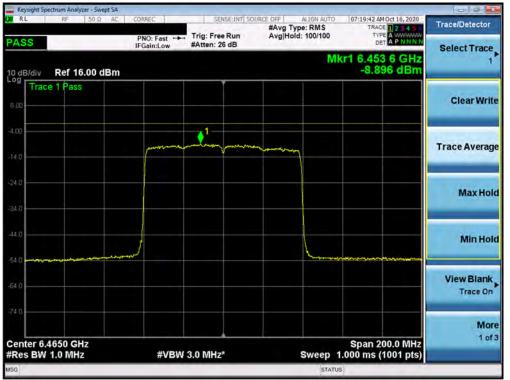
Plot 7-179. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 6) - Ch. 107)



Plot 7-180. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 6) - Ch. 115)

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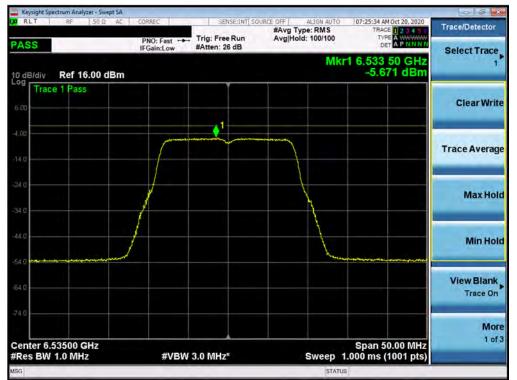
Plot 7-181. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (UNII Band 6) - Ch. 103)



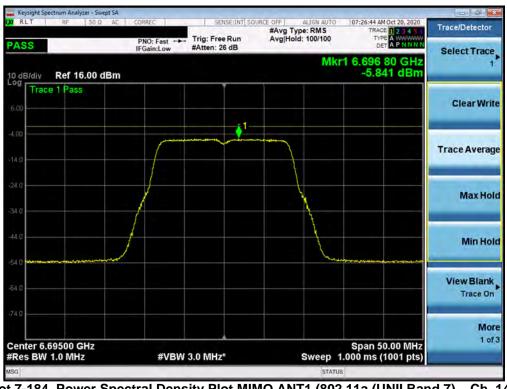
Plot 7-182. Power Spectral Density Plot MIMO ANT2 (160MHz BW 802.11ax (UNII Band 6) - Ch. 111)

FCC ID: A3LSMG998U	PCTEST Pread to be patt to @utercome	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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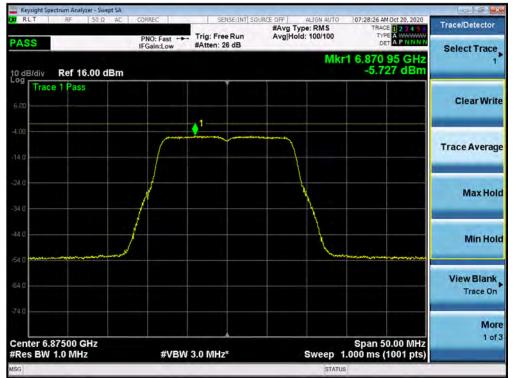
Plot 7-183. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 7) – Ch. 117)



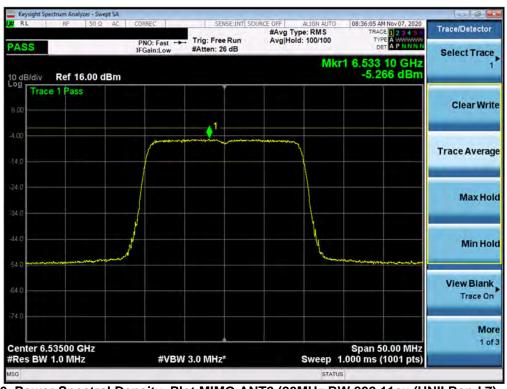
Plot 7-184. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 7) - Ch. 149)

FCC ID: A3LSMG998U	PREMA Tip be patt of @ minuted	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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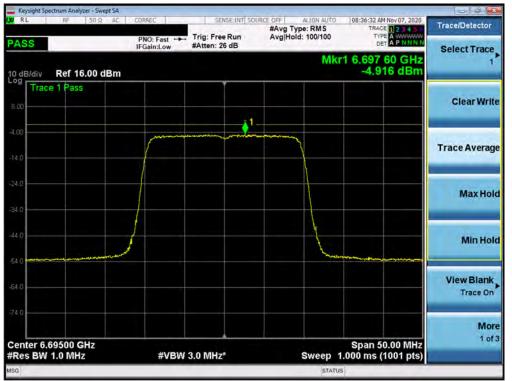
Plot 7-185. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 7) - Ch. 185)



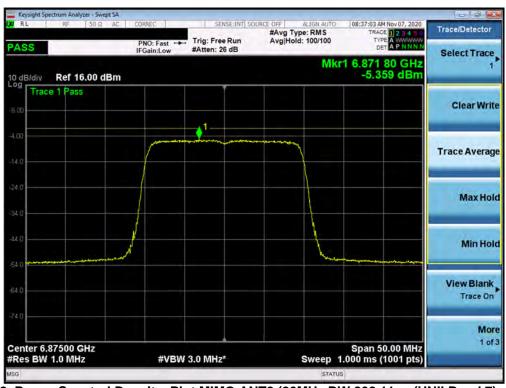
Plot 7-186. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 7) - Ch. 117)

FCC ID: A3LSMG998U	PECTEST Presad to be patir tel @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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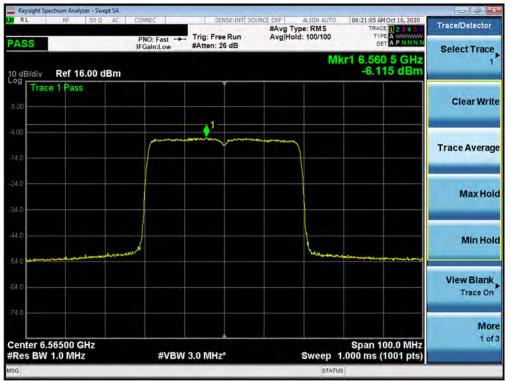
Plot 7-187. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 7) - Ch. 149)



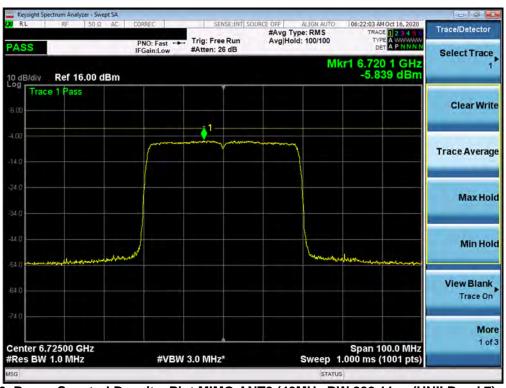
Plot 7-188. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 7) - Ch. 185)

FCC ID: A3LSMG998U	PREAST TO BE PART OF COMPANY	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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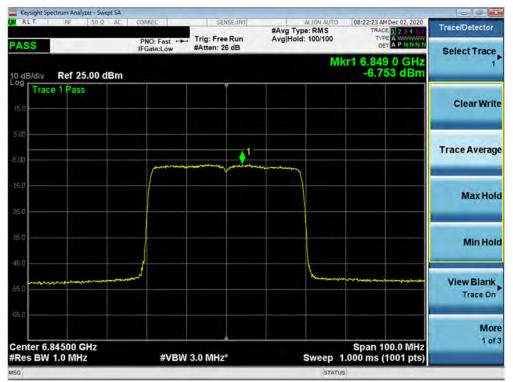
Plot 7-189. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 7) - Ch. 123)



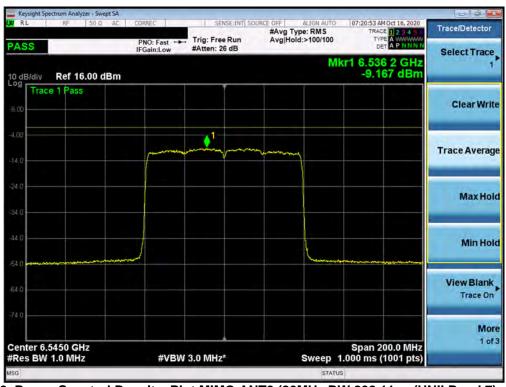
Plot 7-190. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 7) - Ch. 147)

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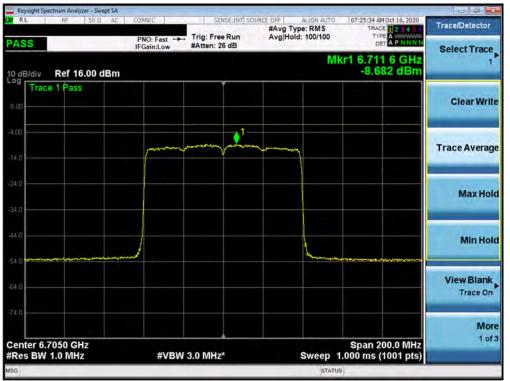
Plot 7-191. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 7) - Ch. 179)



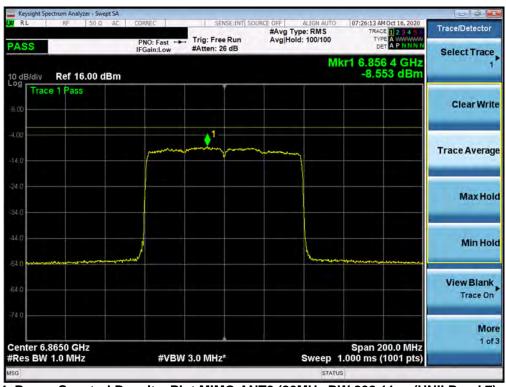
Plot 7-192. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (UNII Band 7) - Ch. 119)

FCC ID: A3LSMG998U	PETEST Presad To Law patt of @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-193. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (UNII Band 7) - Ch. 151)



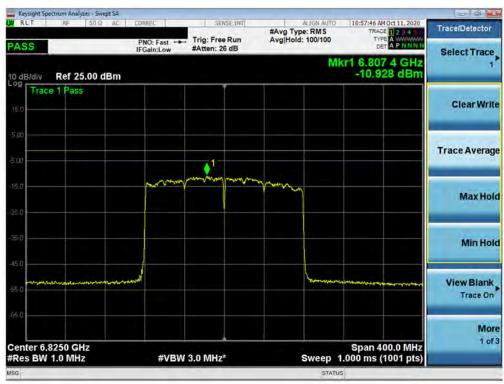
Plot 7-194. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (UNII Band 7) - Ch. 183)

FCC ID: A3LSMG998U	PECTEST Presad to be patir tel @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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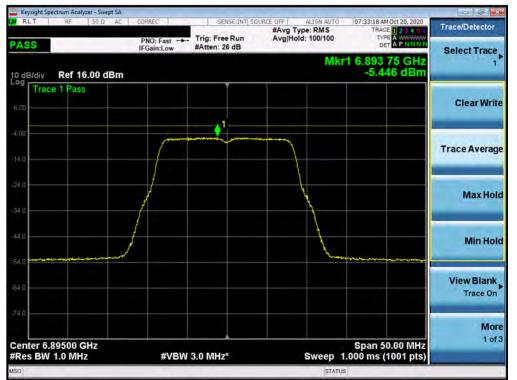
Plot 7-195. Power Spectral Density Plot MIMO ANT2 (160MHz BW 802.11ax (UNII Band 7) - Ch. 143)



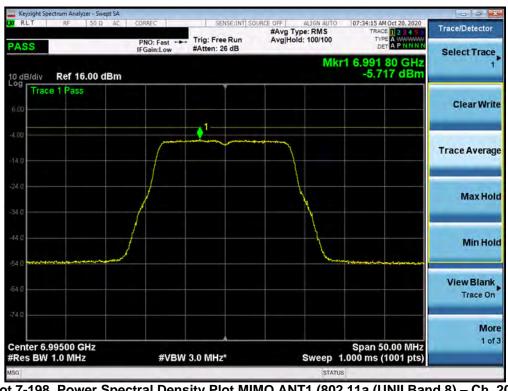
Plot 7-196. Power Spectral Density Plot MIMO ANT2 (160MHz BW 802.11ax (UNII Band 7) - Ch. 175)

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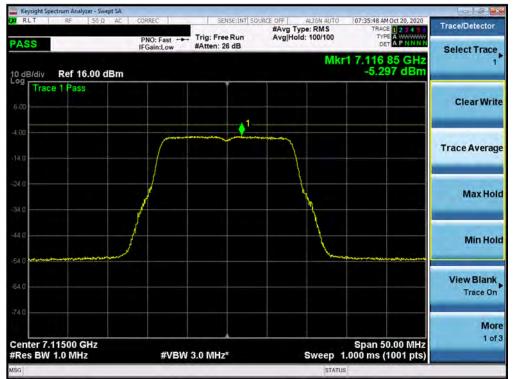
Plot 7-197. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 8) - Ch. 189)



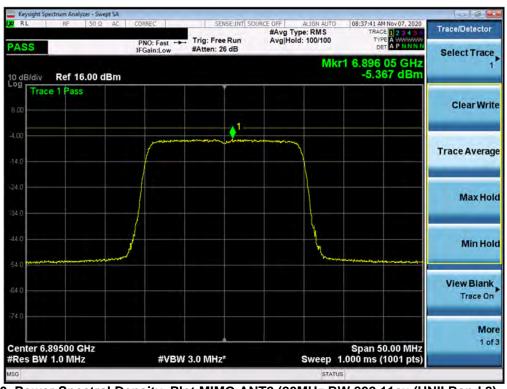
Plot 7-198. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 8) - Ch. 209)

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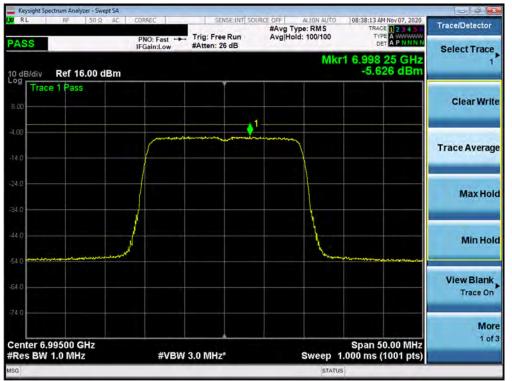
Plot 7-199. Power Spectral Density Plot MIMO ANT1 (802.11a (UNII Band 8) - Ch. 233)



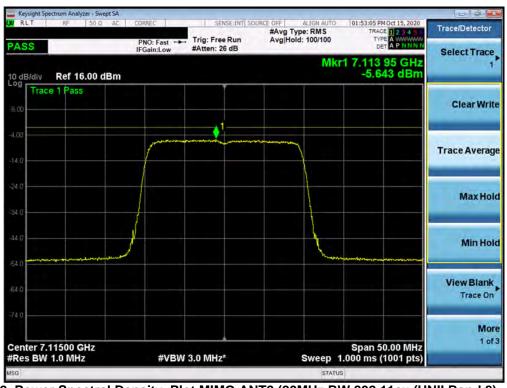
Plot 7-200. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 8) - Ch. 189)

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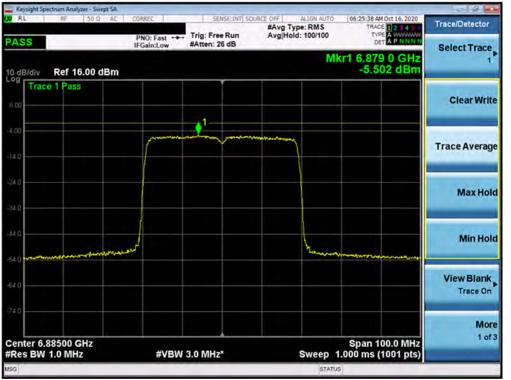
Plot 7-201. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 8) - Ch. 209)



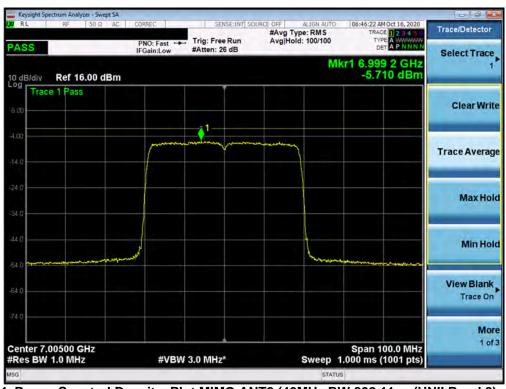
Plot 7-202. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 8) - Ch. 233)

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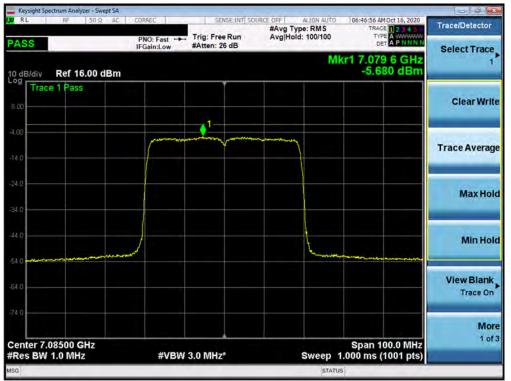
Plot 7-203. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 8) - Ch. 187)



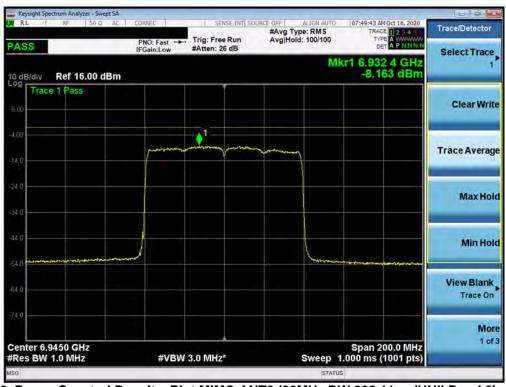
Plot 7-204. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 8) - Ch. 211)

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Plot 7-205. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 8) - Ch. 227)



Plot 7-206. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (UNII Band 8) - Ch. 199)

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Plot 7-207. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (UNII Band 8) - Ch. 215)



Plot 7-208. Power Spectral Density Plot MIMO ANT2 (160MHz BW 802.11ax (UNII Band 8) - Ch. 207)

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## 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.

Per ANSI C63.10-2013 Section 14.4.3, the directional gain is calculated using the following formula, where GN is the gain of the nth antenna and NANT, the total number of antennas used.

Directional gain = 10 log[(10G1/20 + 10G2/20 + ... + 10GN/20)2 / NANT] dBi

### Sample MIMO Calculation:

At 5935MHz in 802.11ax (20MHz BW) mode, the average conducted power spectral density was measured to be -5.94 dBm for Antenna-1 and -5.42 dBm for Antenna-2.

Antenna 1 + Antenna 2 = MIMO

(-5.94 dBm + -5.42 dBm) = (.255 mW + .287 mW) = .542 mW = -2.66 dBm

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

At 5935 MHz in 802.11ax (20MHz BW) mode, the average MIMO power density was calculated to be -2.66 dBm with directional gain of -2.79 dBi.

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

-2.66 dBm + -2.79 dBi = -5.45dBm

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## 7.5 In-Band Emissions – 802.11a/ax §15.407(b)(6)

### **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 C63.10-2013 and KDB 789033 D02 v02r01, and at the appropriate frequencies.

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- 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 C63.10-2013 – Section 12.3.2.2 KDB 987594 D02

#### **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.
- 2. Set the reference level of the measuring equipment in accordance with procedure 4.1.5.2 of ANSI C63.10-2013.
- 3. Measure the 26 dB EBW using the test procedure 12.4.1 of ANSI C63.10-2013. (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.
  - c) Set VBW ≥ 3 X RBW
  - d) Number of points in sweep  $\geq$  [2 X span / RBW].
  - e) Sweep time = auto.
  - f) Detector = RMS (i.e., power averaging)
  - g) 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:
  - a) 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.)
  - b) Suppressed by 28 dB at one channel bandwidth from the channel center.
  - c) 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.



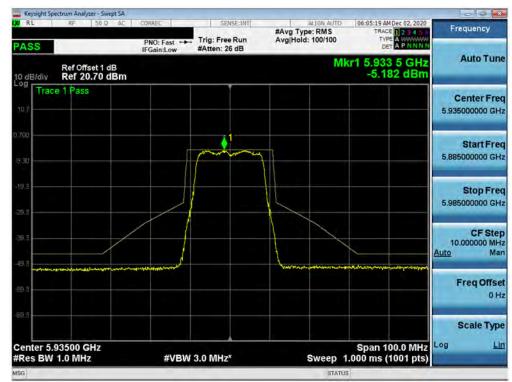
Figure 7-4. Test Instrument & Measurement Setup

## Test Notes

None

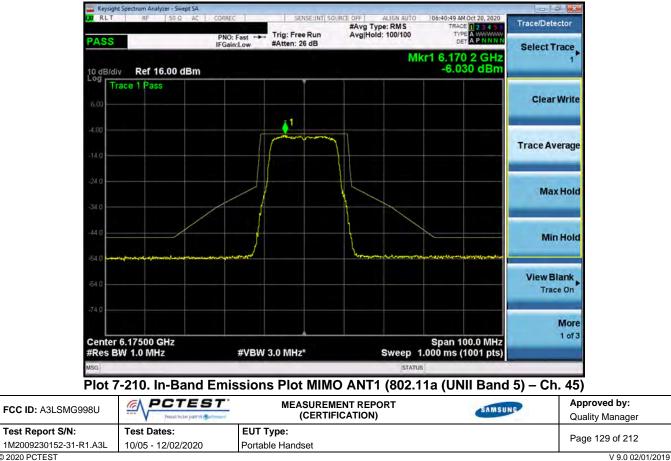
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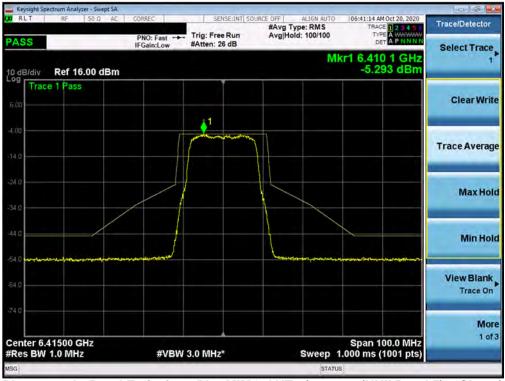
# MIMO Antenna-1 In-Band Emissions Measurements



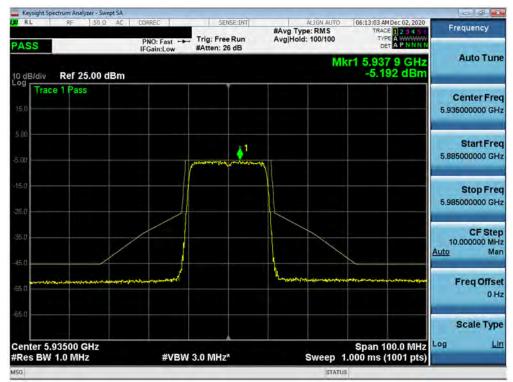


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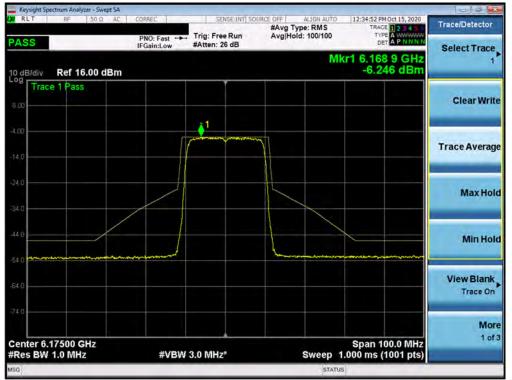




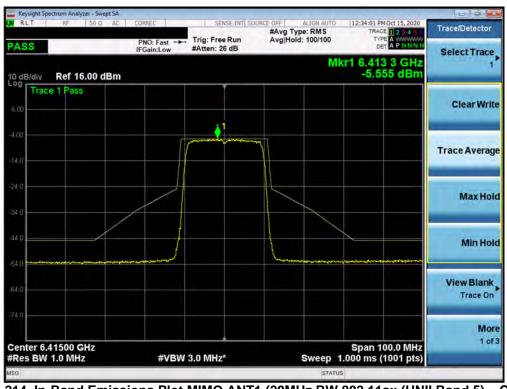
Plot 7-212. In-Band Emissions Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 5) – Ch. 2)

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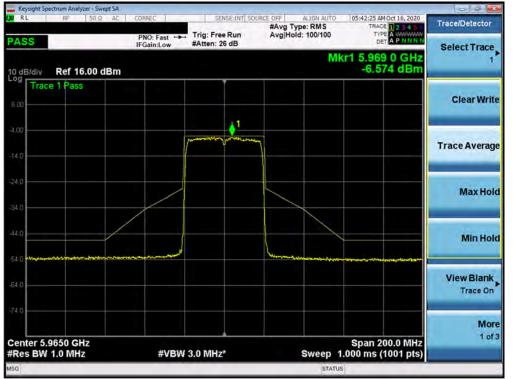
Plot 7-213. In-Band Emissions Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 5) - Ch. 45)



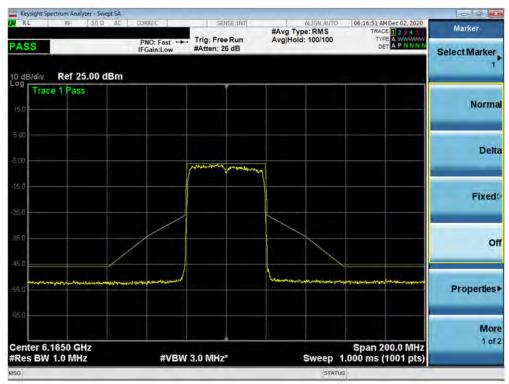
Plot 7-214. In-Band Emissions Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 5) - Ch. 93)

FCC ID: A3LSMG998U	PECTEST Presad to be patir tel @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 121 of 212
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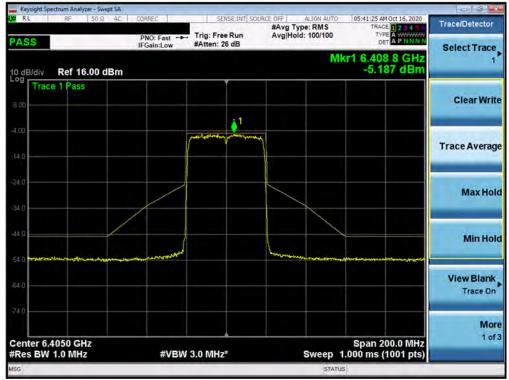
Plot 7-215. In-Band Emissions Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 5) - Ch. 3)



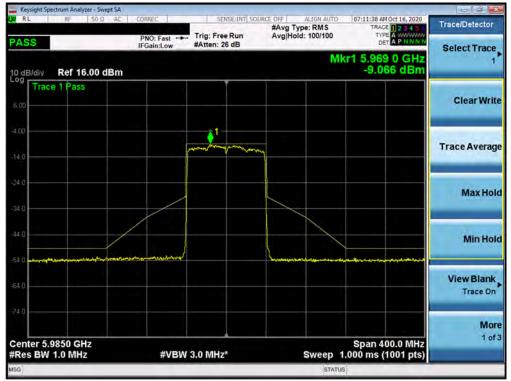
Plot 7-216. In-Band Emissions Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 5) - Ch. 43)

FCC ID: A3LSMG998U	PREME TO be patter &	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 122 of 212
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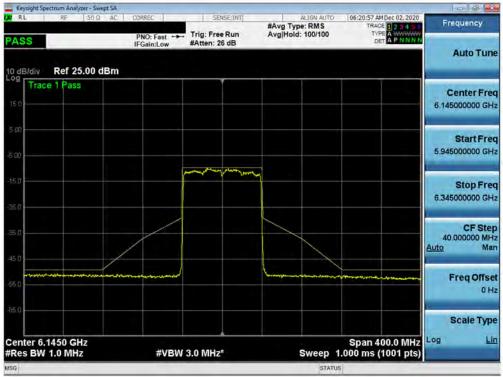
Plot 7-217. In-Band Emissions Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 5) - Ch. 91)



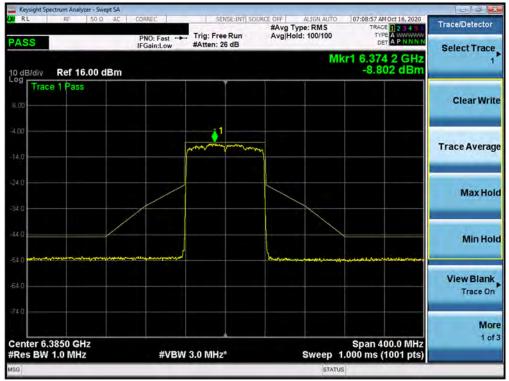
Plot 7-218. In-Band Emissions Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 5) - Ch. 7)

FCC ID: A3LSMG998U	PCTEST Presad to be patt fol @ winnered	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 122 of 212
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Plot 7-219. In-Band Emissions Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 5) - Ch. 39)



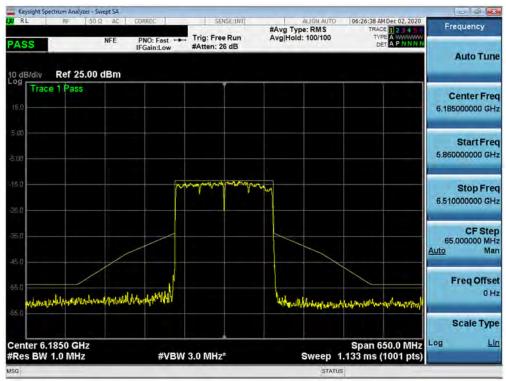
Plot 7-220. In-Band Emissions Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 5) - Ch. 87)

FCC ID: A3LSMG998U	PETEST Presad to be patt of @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 124 of 212
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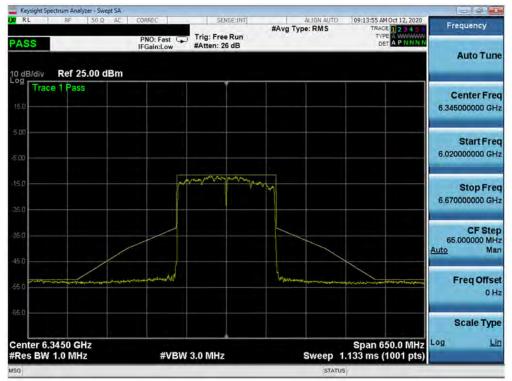
Plot 7-221. In-Band Emissions Plot MIMO ANT1 (160MHz BW 802.11ax (UNII Band 5) - Ch. 7)



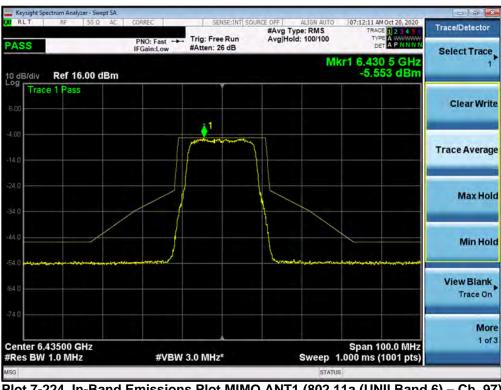
Plot 7-222. In-Band Emissions Plot MIMO ANT1 (160MHz BW 802.11ax (UNII Band 5) - Ch. 39)

FCC ID: A3LSMG998U	PCTEST Presad to be patit of @	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 125 of 212
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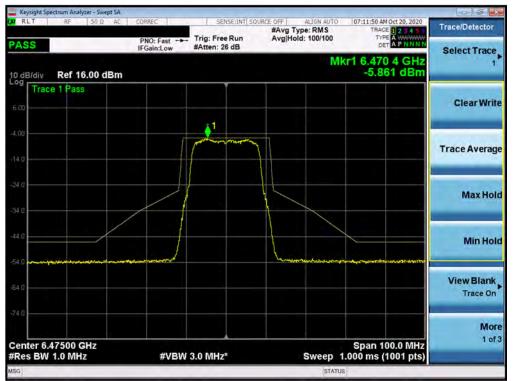
Plot 7-223. In-Band Emissions Plot MIMO ANT1 (160MHz BW 802.11ax (UNII Band 5) - Ch. 87)



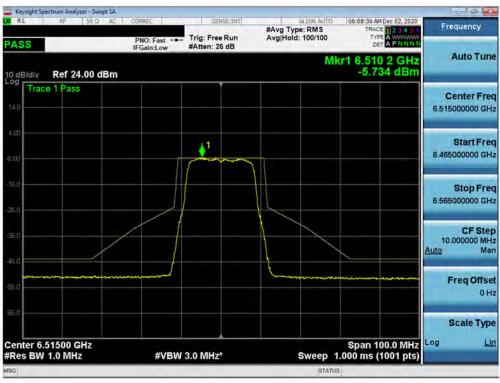
Plot 7-224. In-Band Emissions Plot MIMO ANT1 (802.11a (UNII Band 6) – Ch. 97)

FCC ID: A3LSMG998U	PCTEST Presad to be patt fol @ winnered	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 126 of 212
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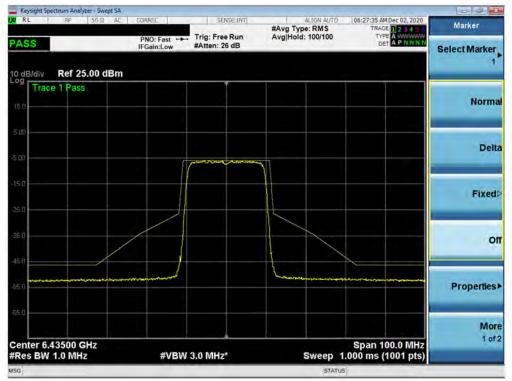




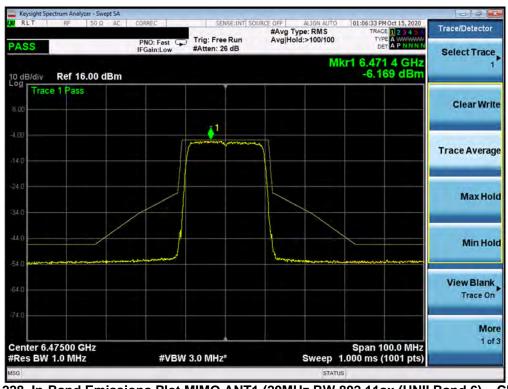
Plot 7-226. In-Band Emissions Plot MIMO ANT1 (802.11a (UNII Band 6) - Ch. 113)

FCC ID: A3LSMG998U	PCTEST Presal to be patt to @	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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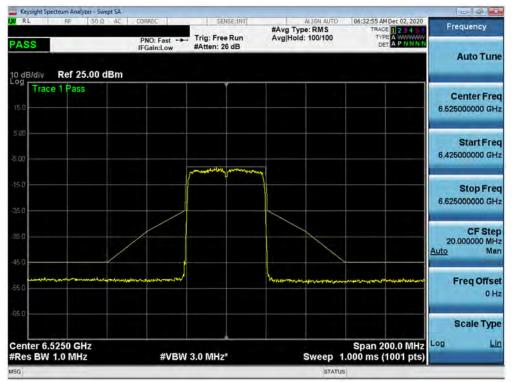
Plot 7-227. In-Band Emissions Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 6) - Ch. 97)



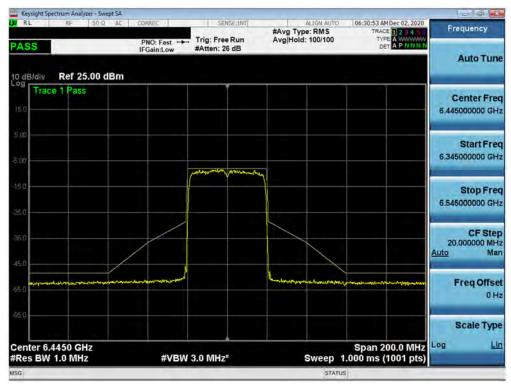
Plot 7-228. In-Band Emissions Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 6) - Ch. 105)

FCC ID: A3LSMG998U	PETEST Presad To Law patt rel @	MEASUREMENT REPORT (CERTIFICATION)	SUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 129 of 212
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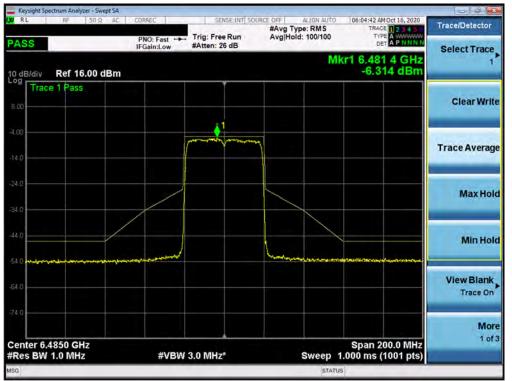
Plot 7-229. In-Band Emissions Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 6) - Ch. 113)



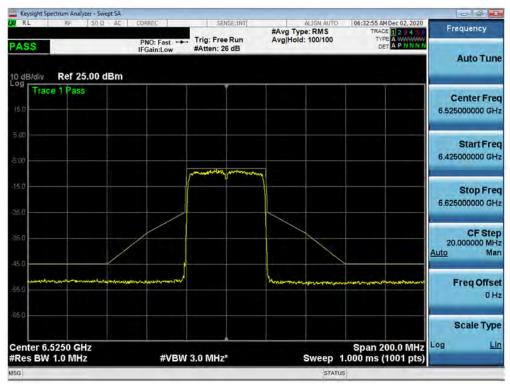
Plot 7-230. In-Band Emissions Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 6) - Ch. 99)

FCC ID: A3LSMG998U	PREMA The be patter & demonstration	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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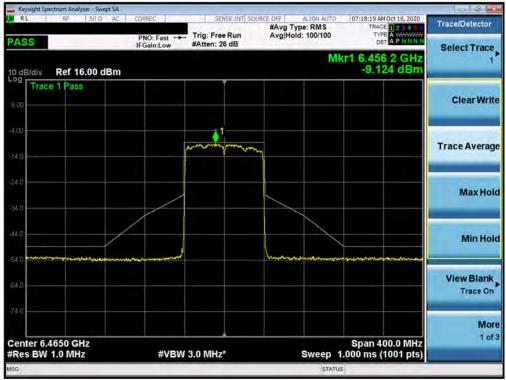
Plot 7-231. In-Band Emissions Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 6) - Ch. 107)



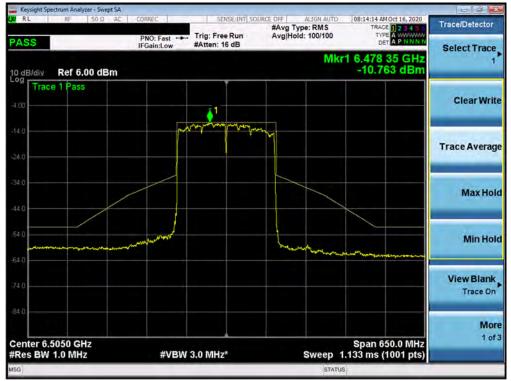
Plot 7-232. In-Band Emissions Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 6) - Ch. 115)

FCC ID: A3LSMG998U	PREME TO BE Patter	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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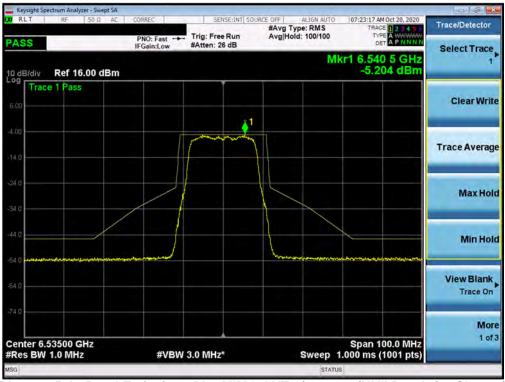
Plot 7-233. In-Band Emissions Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 6) - Ch. 103)



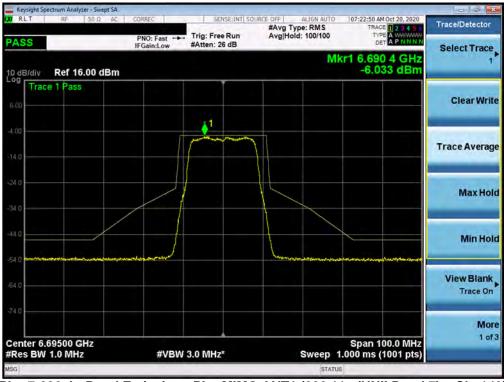
Plot 7-234. In-Band Emissions Plot MIMO ANT1 (160MHz BW 802.11ax (UNII Band 6) - Ch. 111)

FCC ID: A3LSMG998U	PCTEST Presal to be part of @ allocat	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-235. In-Band Emissions Plot MIMO ANT1	(802.11a (UNII Band 7)	- Ch. 117)
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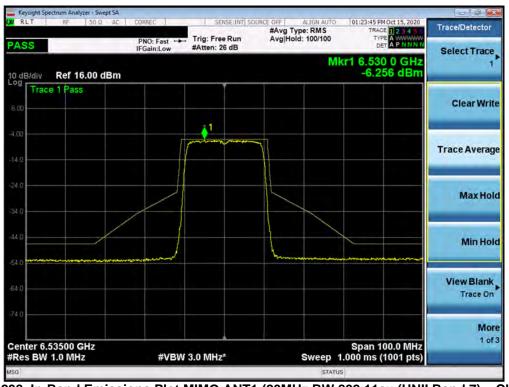
Plot 7-236. In-Band Emissions Plot MIMO ANT1 (802.11a (UNII Band 7) – Ch. 149)

FCC ID: A3LSMG998U	PECTEST Presad To Law justif of @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 140 of 010
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	SENSE:INT	#Avg Type: RMS Avg Hold: 100/100	06:10:46 AM Dec 02, 2020 TRACE 2 3 4 5 6	Frequency
IFGain:Low *			DET A P N N N	
	Allen. 20 db	M	cr1 6.876 9 GHz -6.166 dBm	Auto Tuno
				Center Fre 6.875000000 GH
				Start Fre 6.825000000 GH
$\square$				Stop Fre 6.925000000 GH
				CF Ste 10.000000 MH Auto Ma
				Freq Offs 0 F
				Scale Typ
	#VBW 3.	#VBW 3.0 MHz*	#VBW 3.0 MHz*	i i   i i

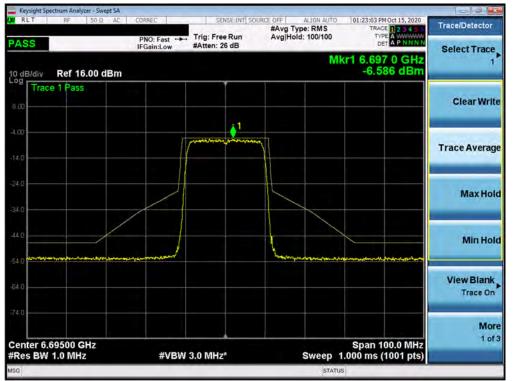
Plot 7-237. In-Band Emissions Plot MIMO ANT1 (802.11a (UNII Band 7) - Ch. 185)



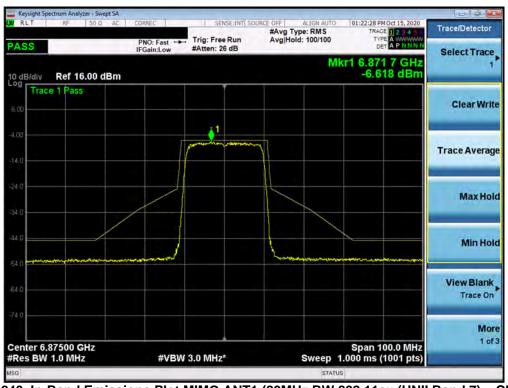
Plot 7-238. In-Band Emissions Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 7) - Ch. 117)

FCC ID: A3LSMG998U	PCTEST Pread to be patt to @utercome	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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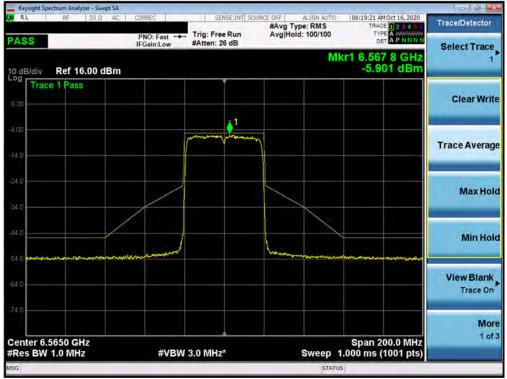
Plot 7-239. In-Band Emissions Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 7) - Ch. 149)



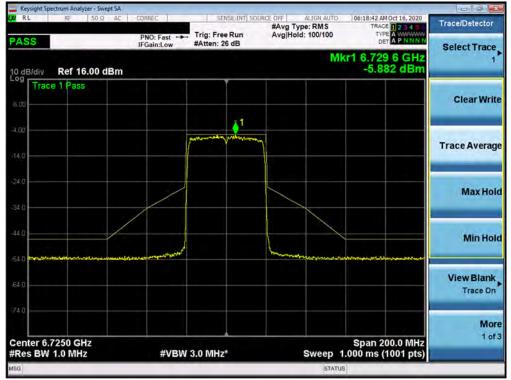
Plot 7-240. In-Band Emissions Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 7) - Ch. 185)

FCC ID: A3LSMG998U	PECTEST Presad to be patir tel @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 144 of 242
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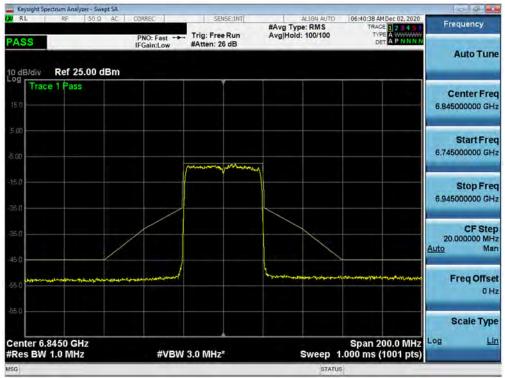
Plot 7-241. In-Band Emissions Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 7) - Ch. 123)



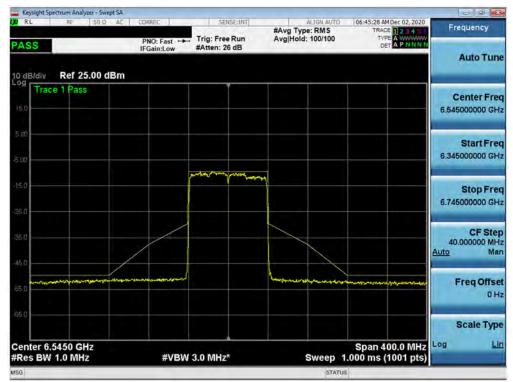
Plot 7-242. In-Band Emissions Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 7) - Ch. 147)

FCC ID: A3LSMG998U	PETEST Presad to be patt of @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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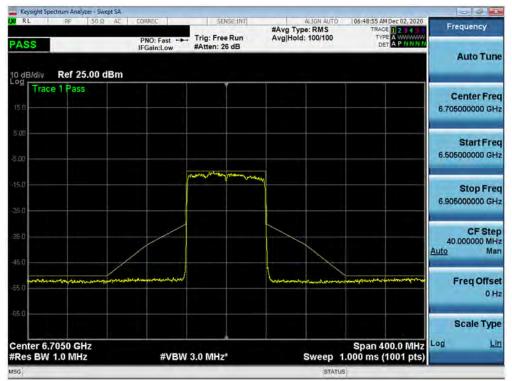
Plot 7-243. In-Band Emissions Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 7) - Ch. 179)



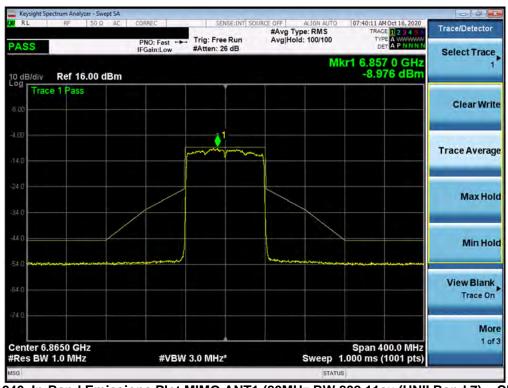
Plot 7-244. In-Band Emissions Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 7) - Ch. 119)

FCC ID: A3LSMG998U	PETEST Presad to be patt of @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-245. In-Band Emissions Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 7) - Ch. 151)



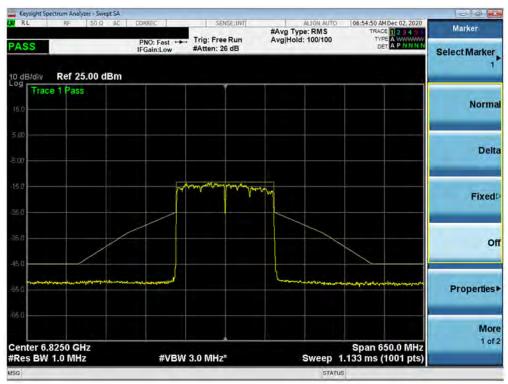
Plot 7-246. In-Band Emissions Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 7) - Ch. 183)

FCC ID: A3LSMG998U	PETEST Presad To Law patt rel @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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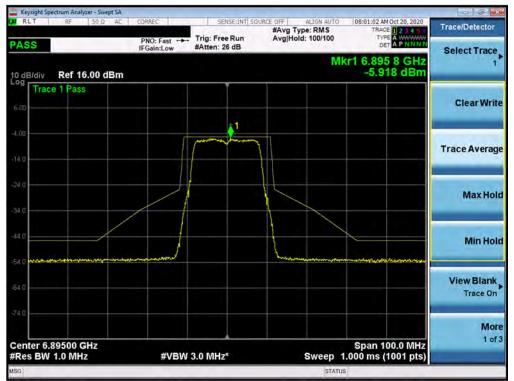
Plot 7-247. In-Band Emissions Plot MIMO ANT1 (160MHz BW 802.11ax (UNII Band 7) - Ch. 143)



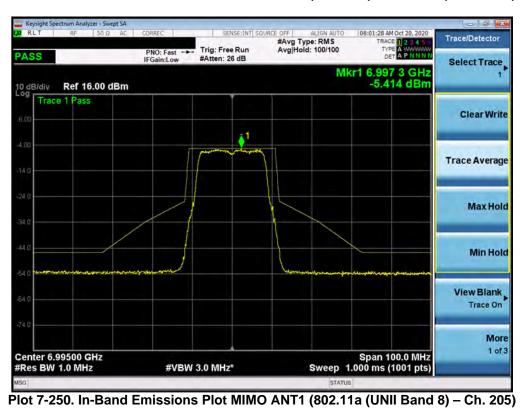
Plot 7-248. In-Band Emissions Plot MIMO ANT1 (160MHz BW 802.11ax (UNII Band 7) - Ch. 175)

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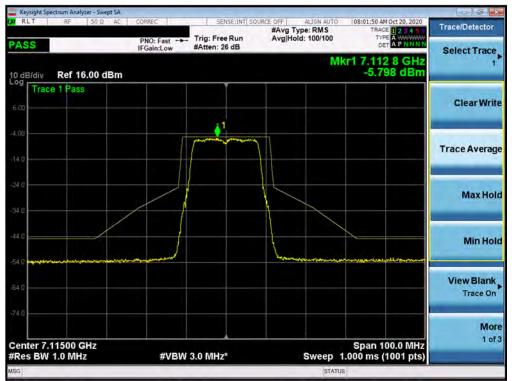


Plot 7-249. In-Band Emissions Plot MIMO ANT1 (802.11a (UNII Band 8) – Ch. 189)

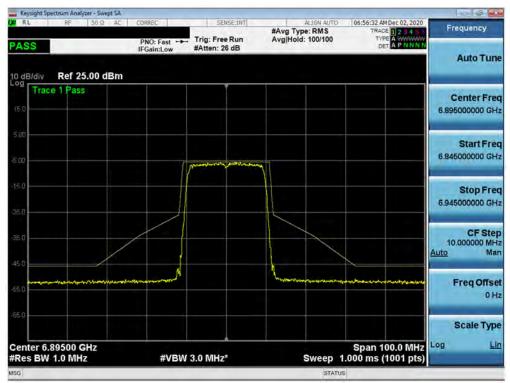


PCTEST Approved by: (ce MEASUREMENT REPORT SAMSUNG FCC ID: A3LSMG998U (CERTIFICATION) **Quality Manager** att of 😤 EUT Type: Test Report S/N: Test Dates: Page 149 of 212 1M2009230152-31-R1.A3L 10/05 - 12/02/2020 Portable Handset © 2020 PCTEST V 9.0 02/01/2019





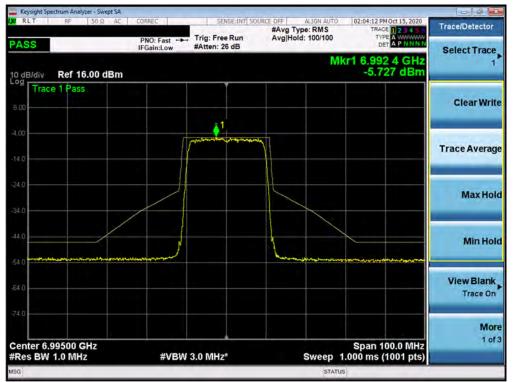




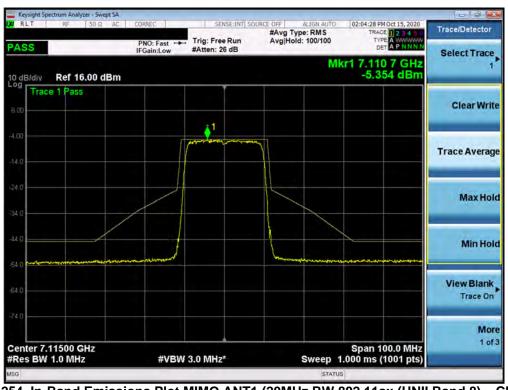
Plot 7-252. In-Band Emissions Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 8) - Ch. 189)

FCC ID: A3LSMG998U	PCTEST Presad to be patt fol @ winnered	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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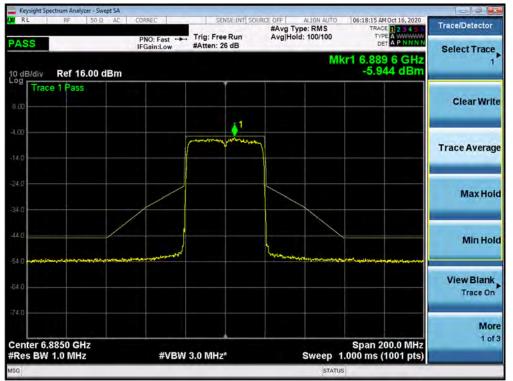
Plot 7-253. In-Band Emissions Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 8) - Ch. 205)



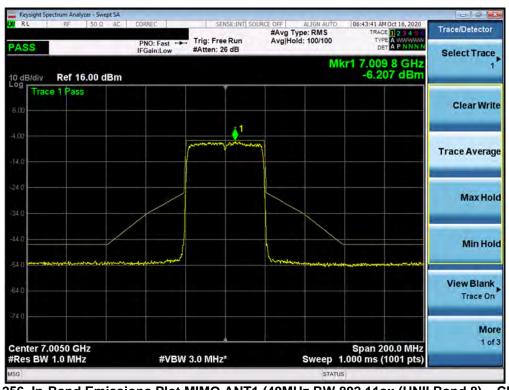
Plot 7-254. In-Band Emissions Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 8) - Ch. 233)

FCC ID: A3LSMG998U	PETEST Presad To Law patt of @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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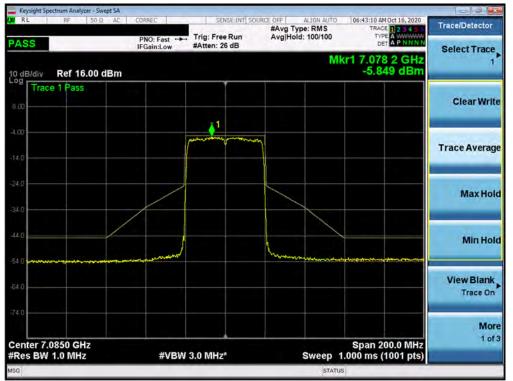
Plot 7-255. In-Band Emissions Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 8) - Ch. 187)



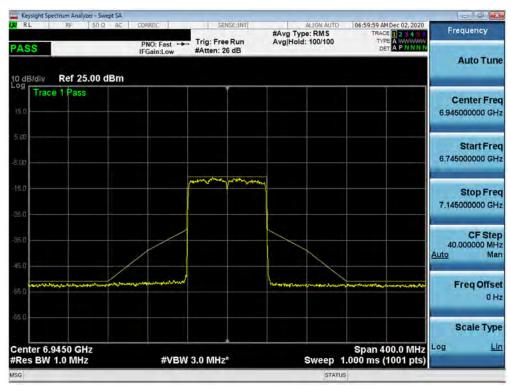
Plot 7-256. In-Band Emissions Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 8) - Ch. 203)

FCC ID: A3LSMG998U	PECTEST Presad to be patir tel @	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-257. In-Band Emissions Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 8) - Ch. 227)



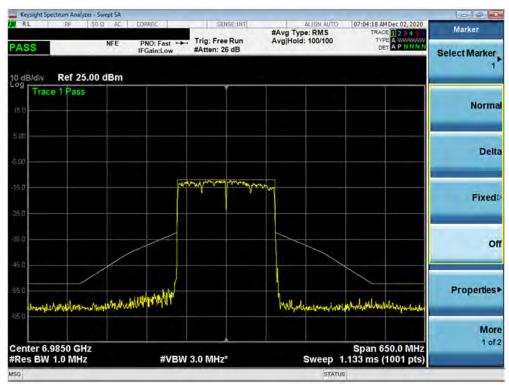
Plot 7-258. In-Band Emissions Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 8) - Ch. 199)

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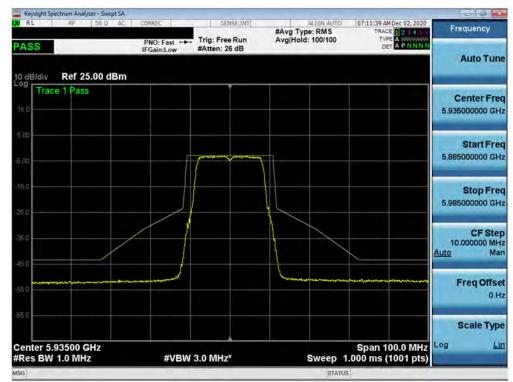
Plot 7-259. In-Band Emissions Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 8) - Ch. 215)



Plot 7-260. In-Band Emissions Plot MIMO ANT1 (160MHz BW 802.11ax (UNII Band 8) - Ch. 207)

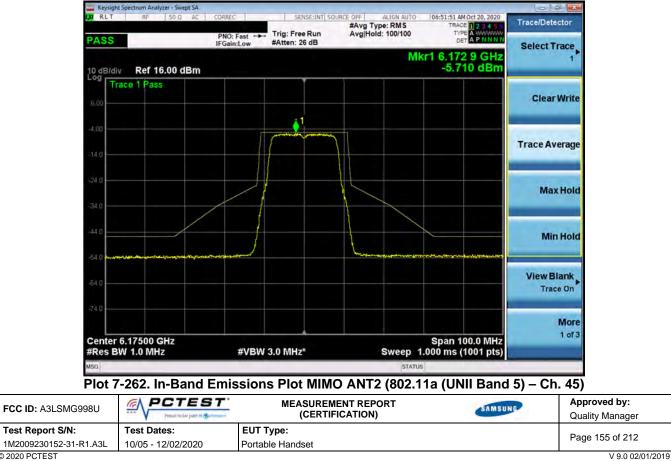
FCC ID: A3LSMG998U	PREME TO be patter &	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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# MIMO Antenna-2 In-Band Emissions Measurements





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