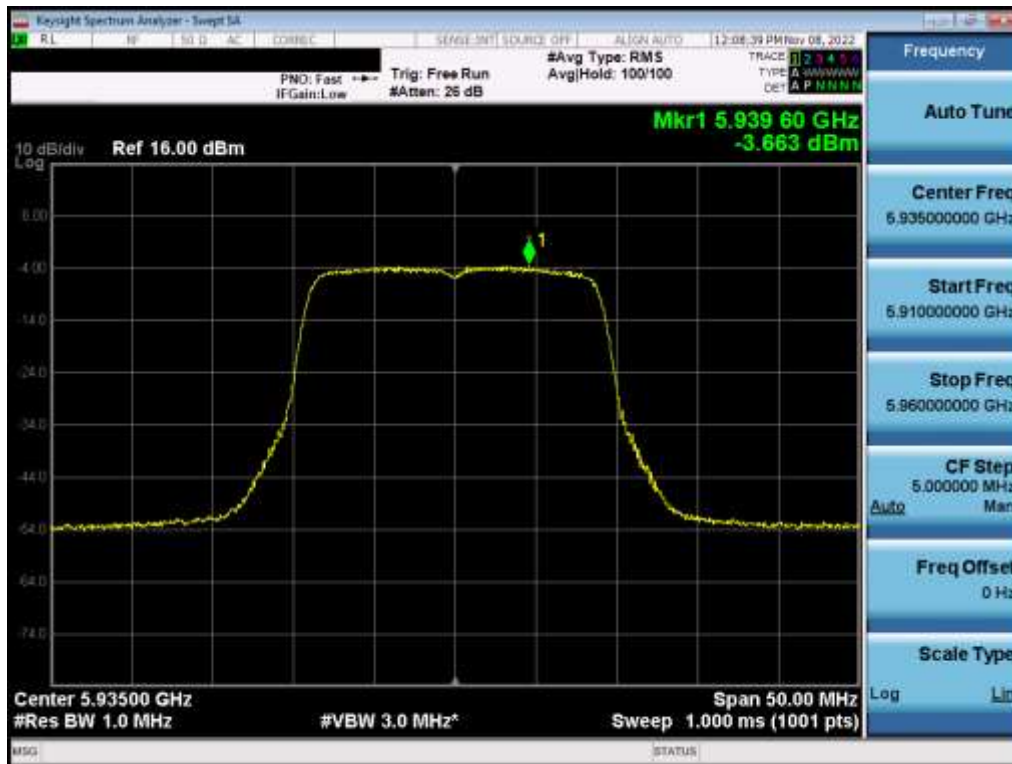
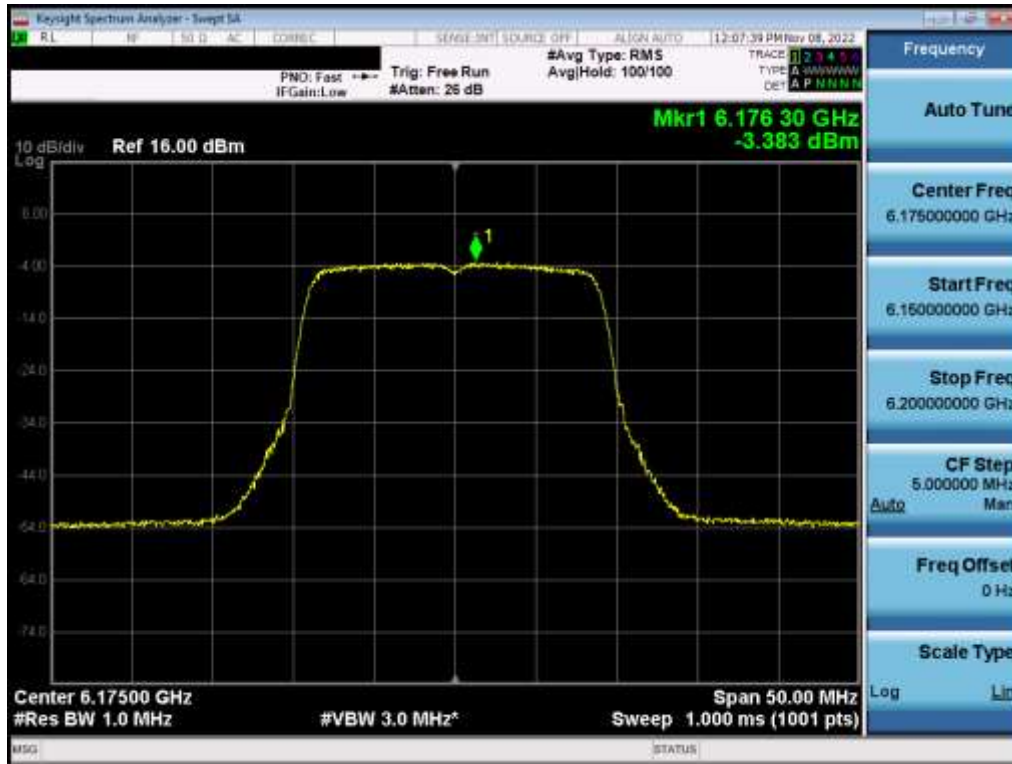


Plot 7-159. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 5) – Ch. 93)

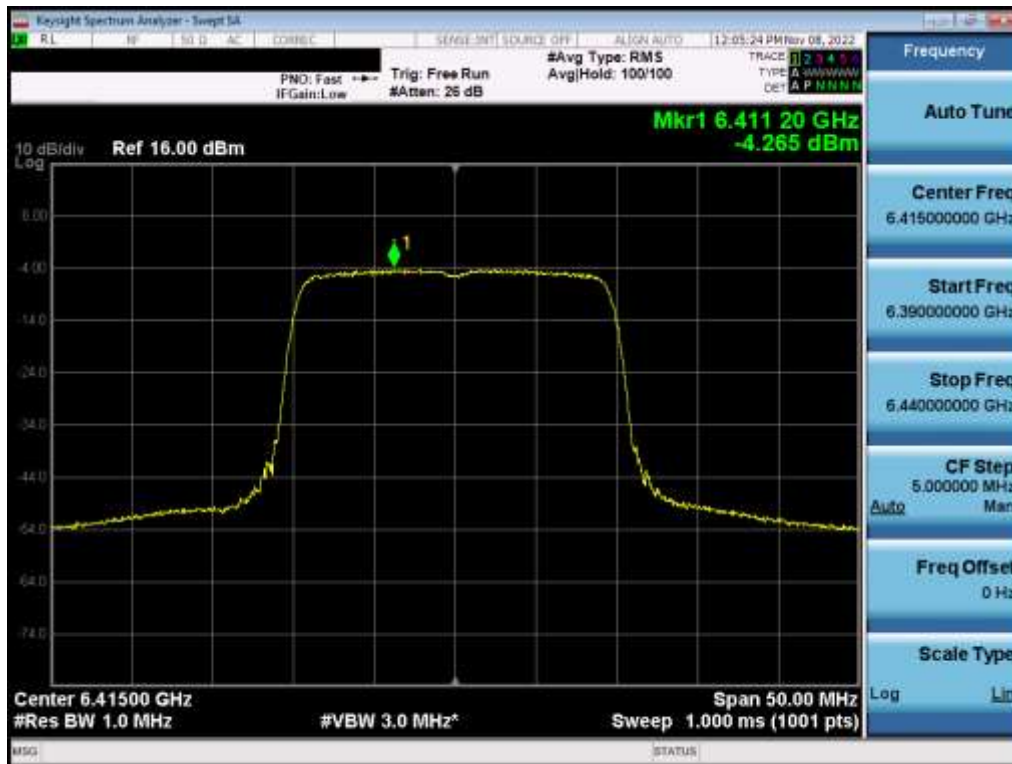


Plot 7-160. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 5) – Ch. 2)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 105 of 239

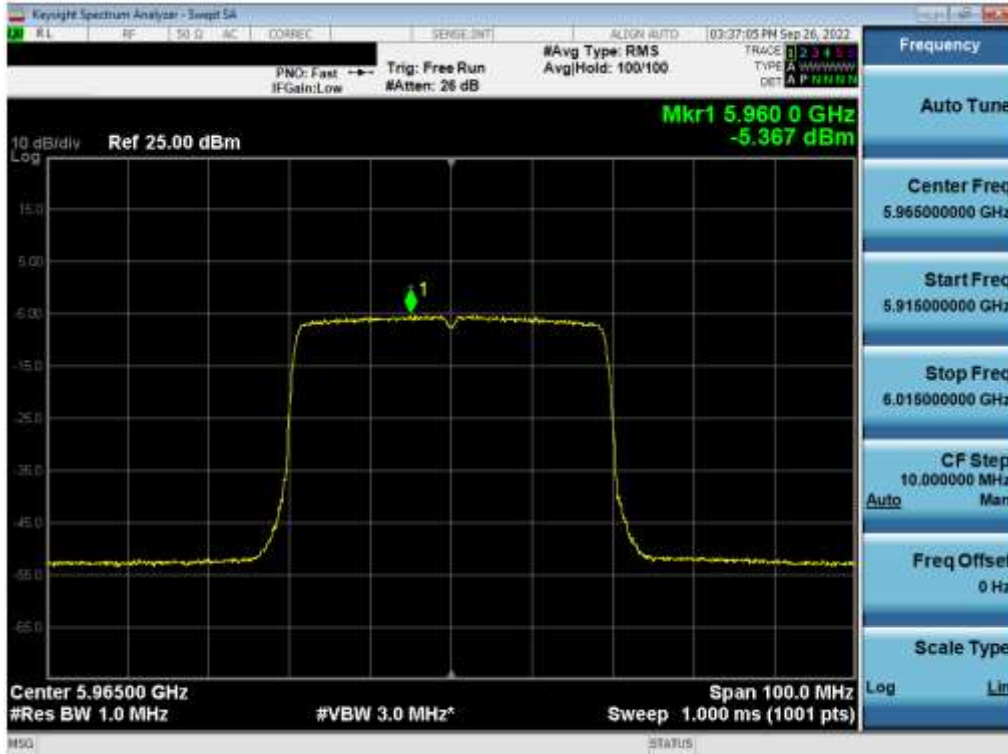


Plot 7-161. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 5) – Ch. 45)

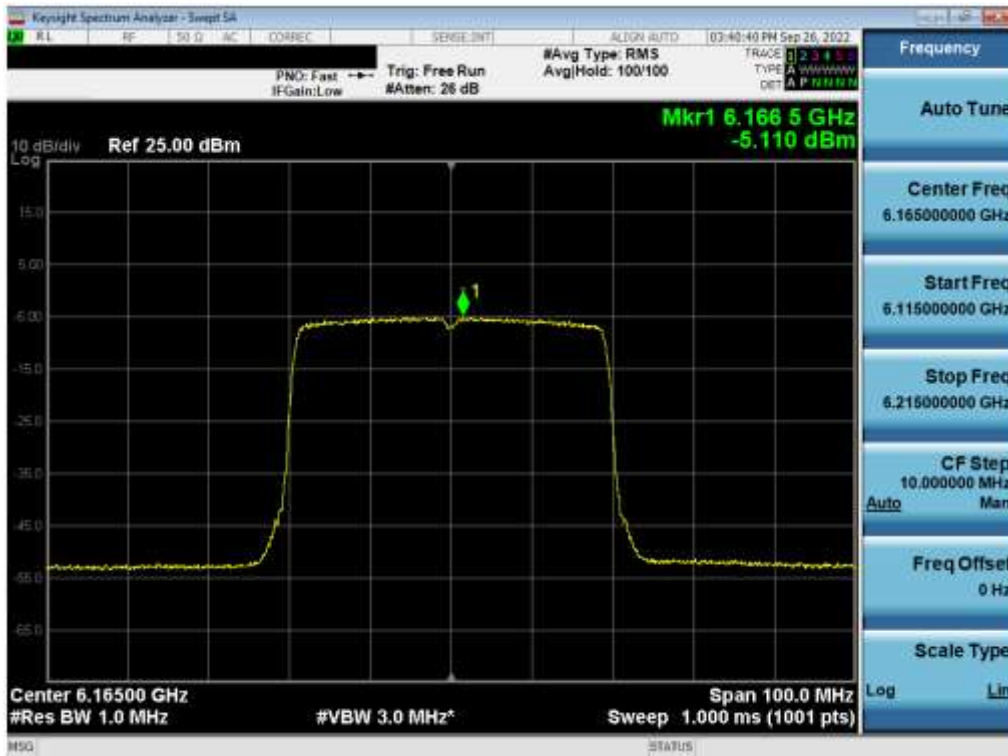


Plot 7-162. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 5) – Ch. 93)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 106 of 239

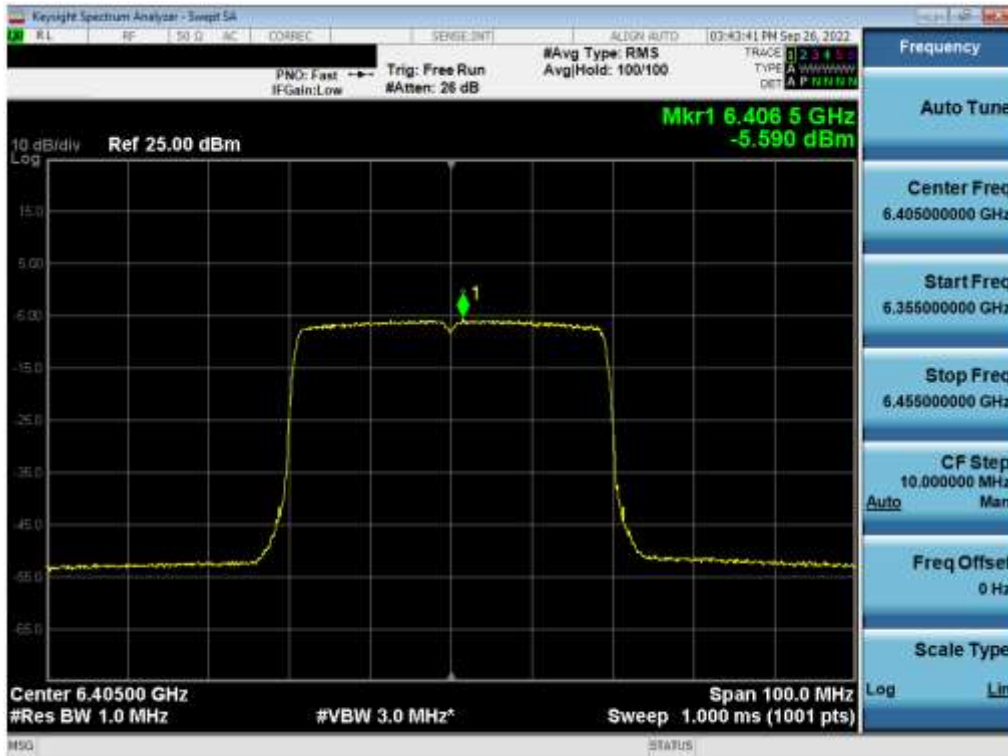


Plot 7-163. Power Spectral Density Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 5) – Ch. 3)

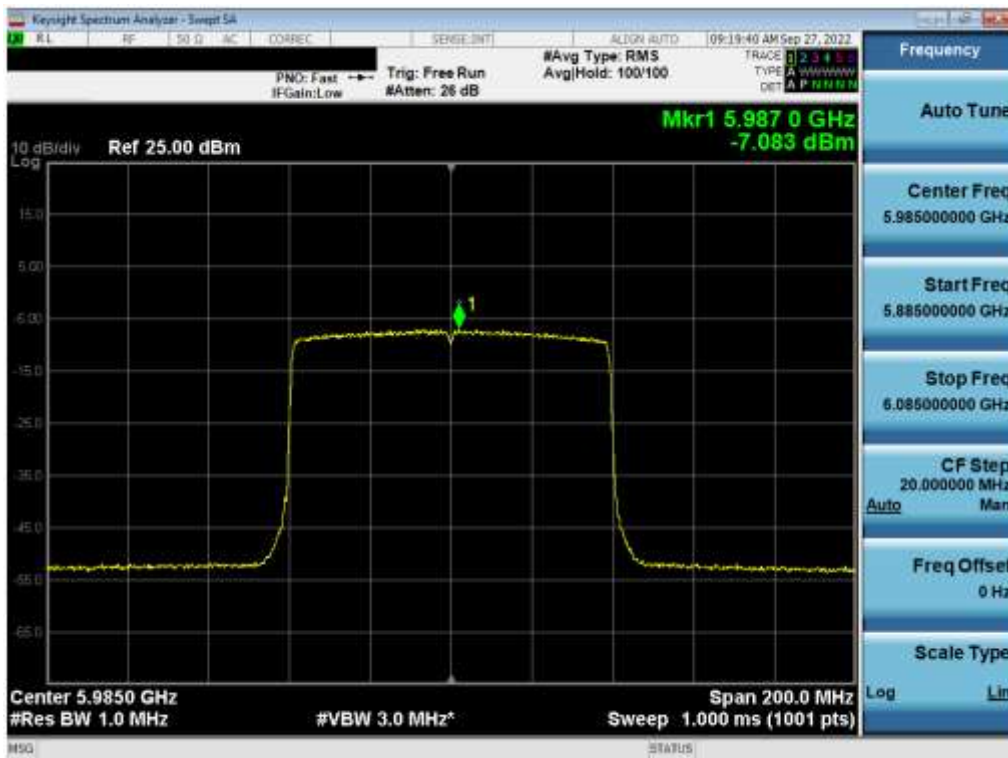


Plot 7-164. Power Spectral Density Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 5) – Ch. 43)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 107 of 239

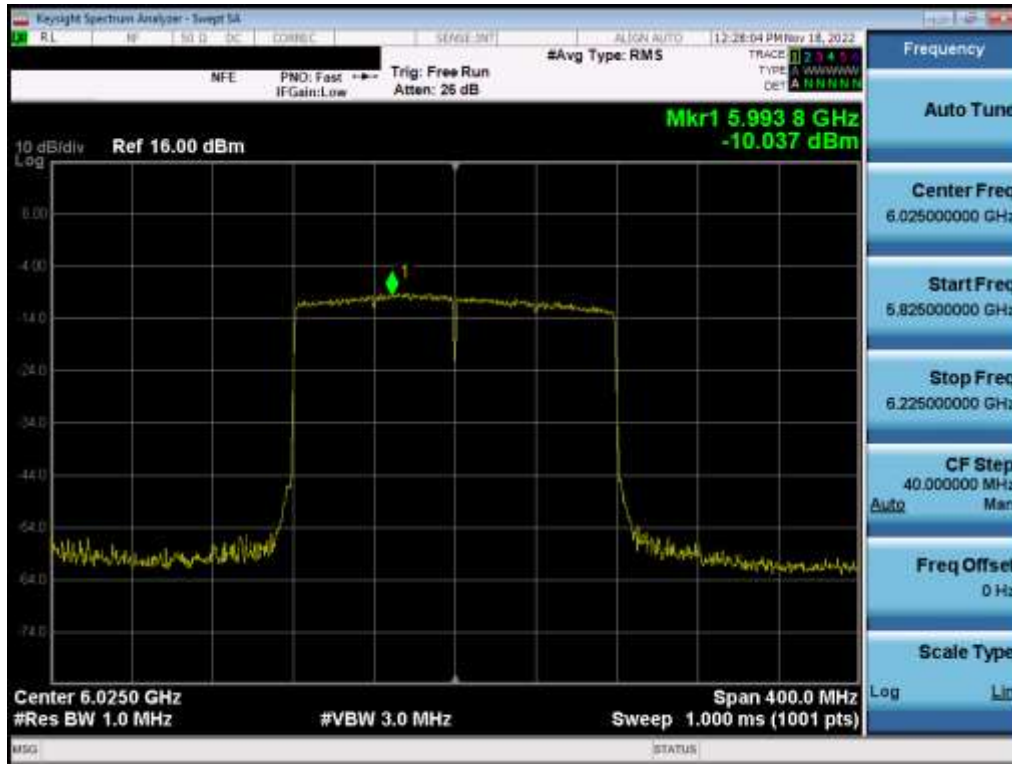


Plot 7-165. Power Spectral Density Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 5) – Ch. 91)

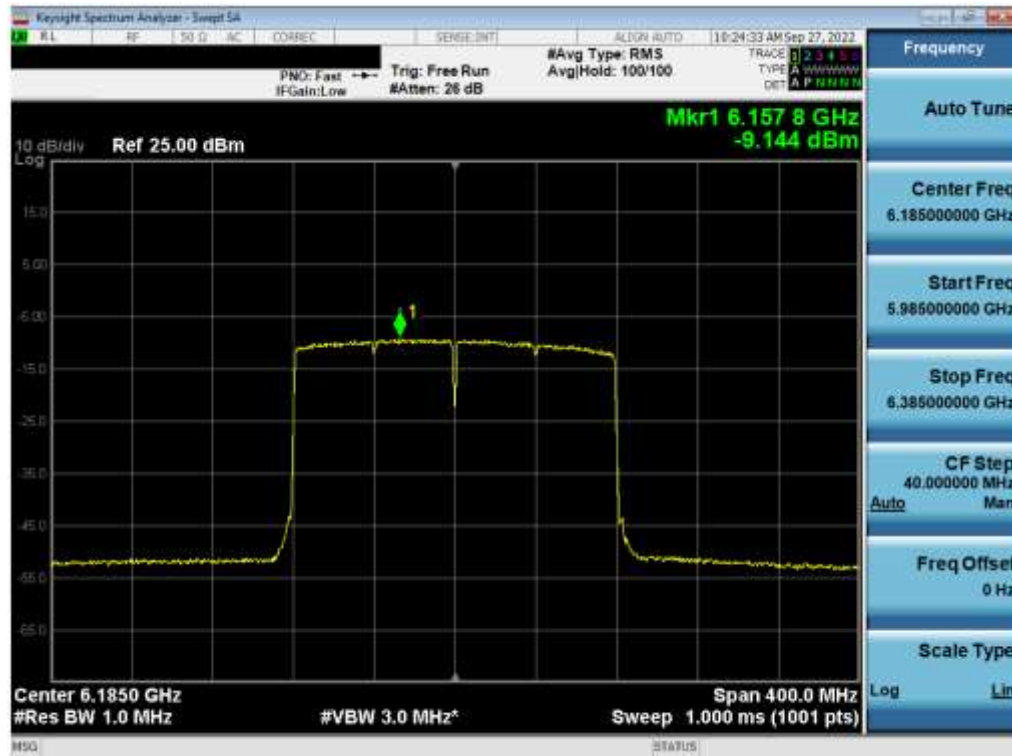


Plot 7-166. Power Spectral Density Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 5) – Ch. 7)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 108 of 239

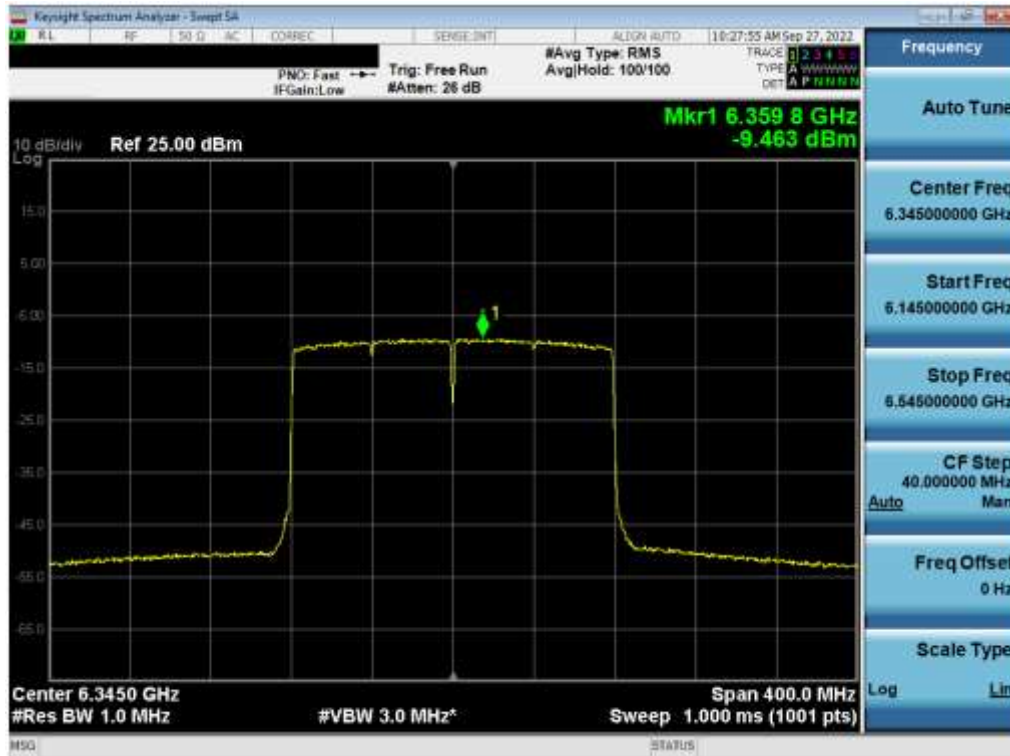


Plot 7-169. Power Spectral Density Measurement MIMO ANT2 (160MHz 802.11ax (UNII Band 5) – Ch. 15)



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

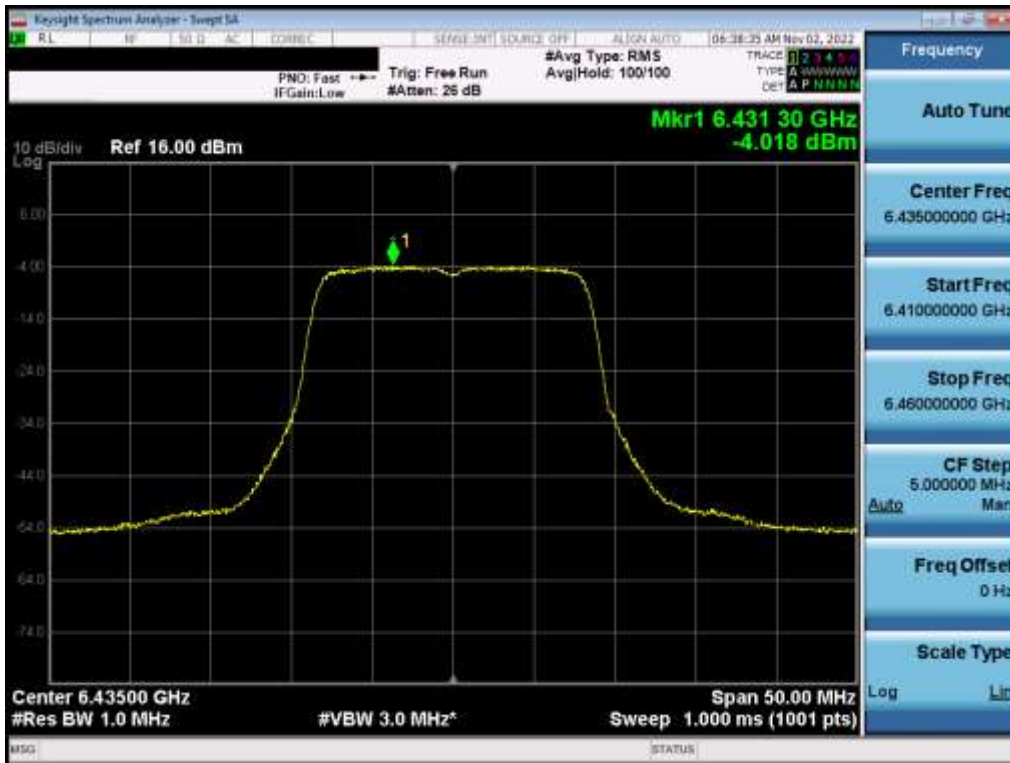
FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 110 of 239



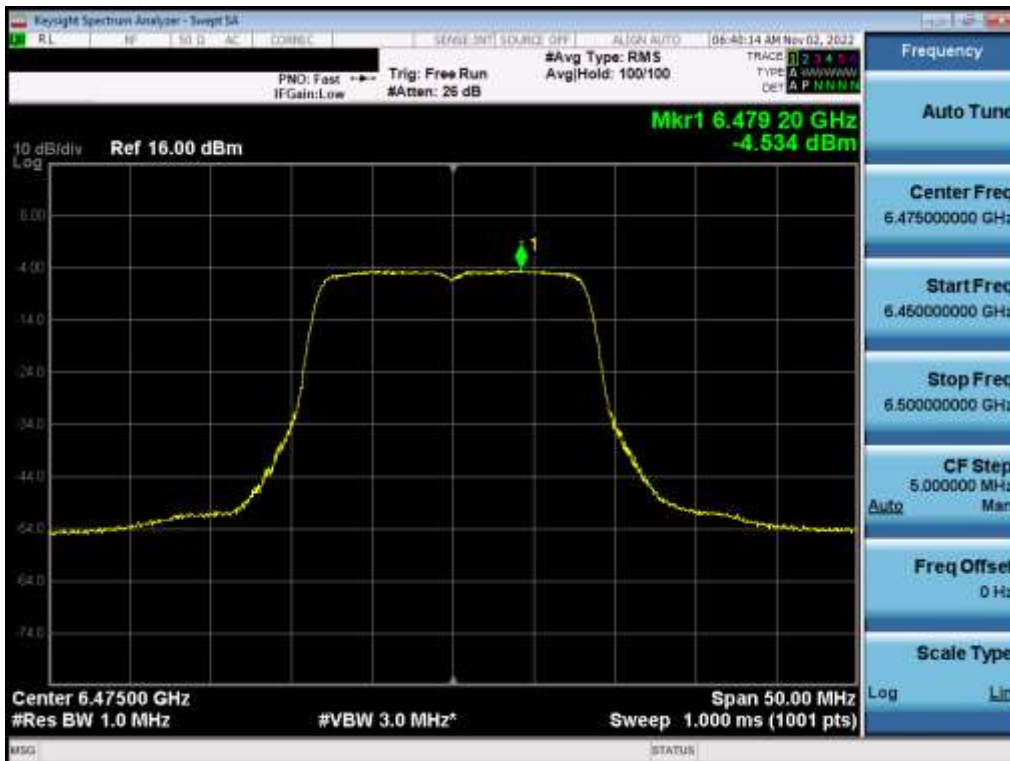
Plot 7-171. Power Spectral Density Measurement MIMO ANT2 (160MHz 802.11ax (UNII Band 5) – Ch. 79)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 111 of 239

MIMO Antenna-2 Power Spectral Density Measurement - (UNII Band 6)

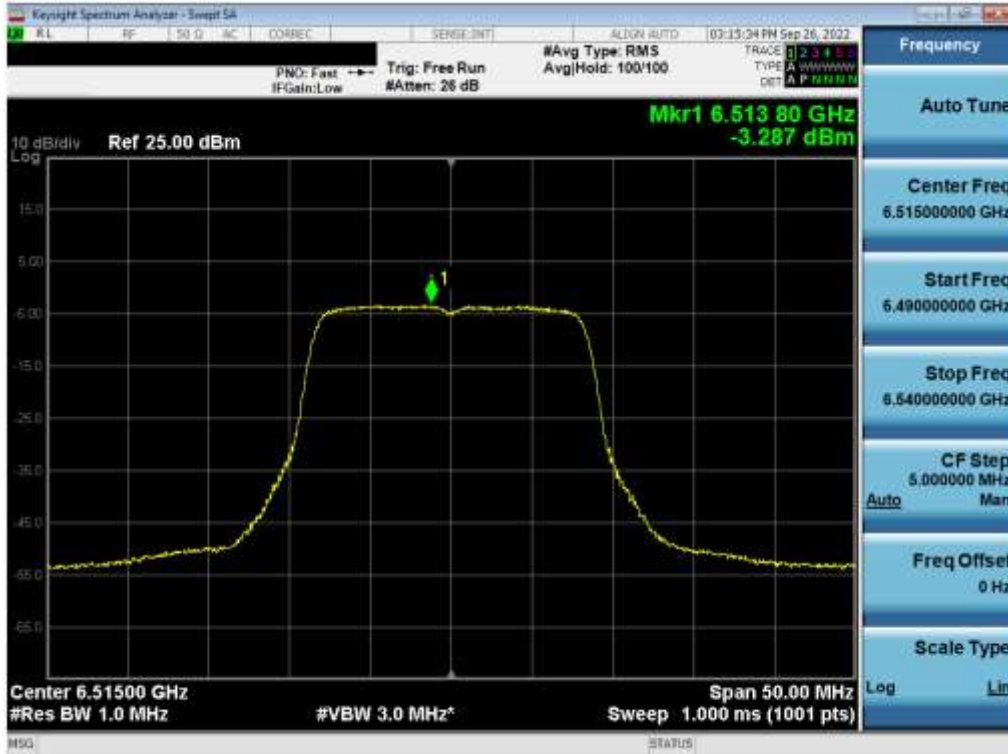


Plot 7-172. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 6) – Ch. 97)

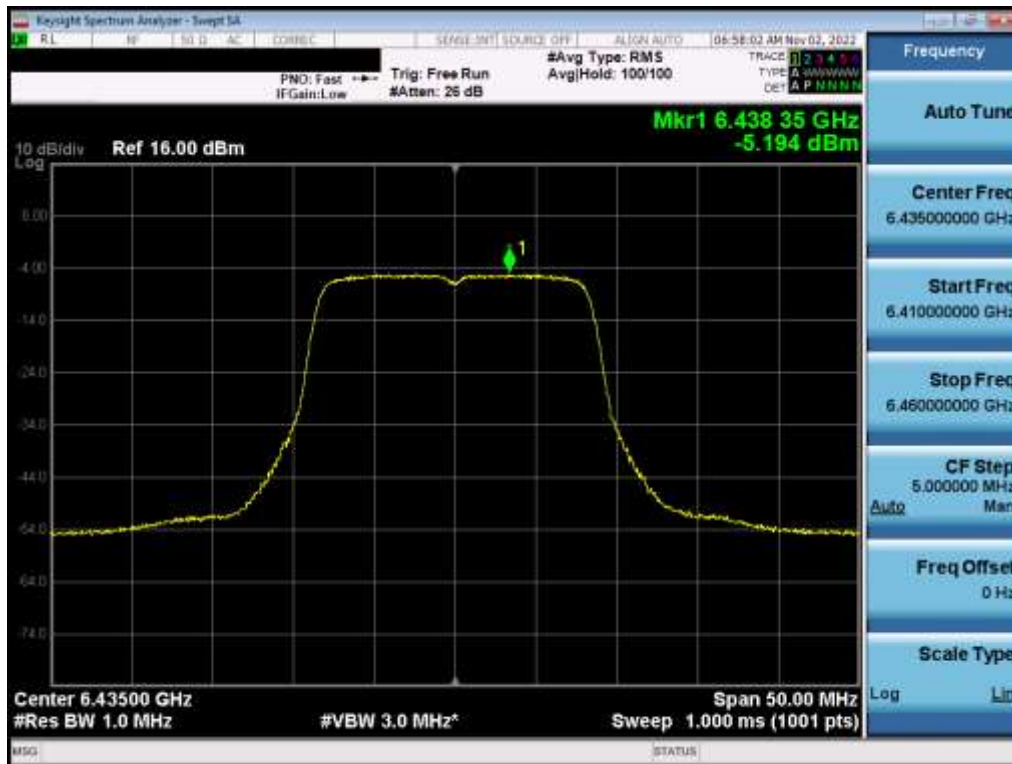


Plot 7-173. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 6) – Ch. 105)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 112 of 239

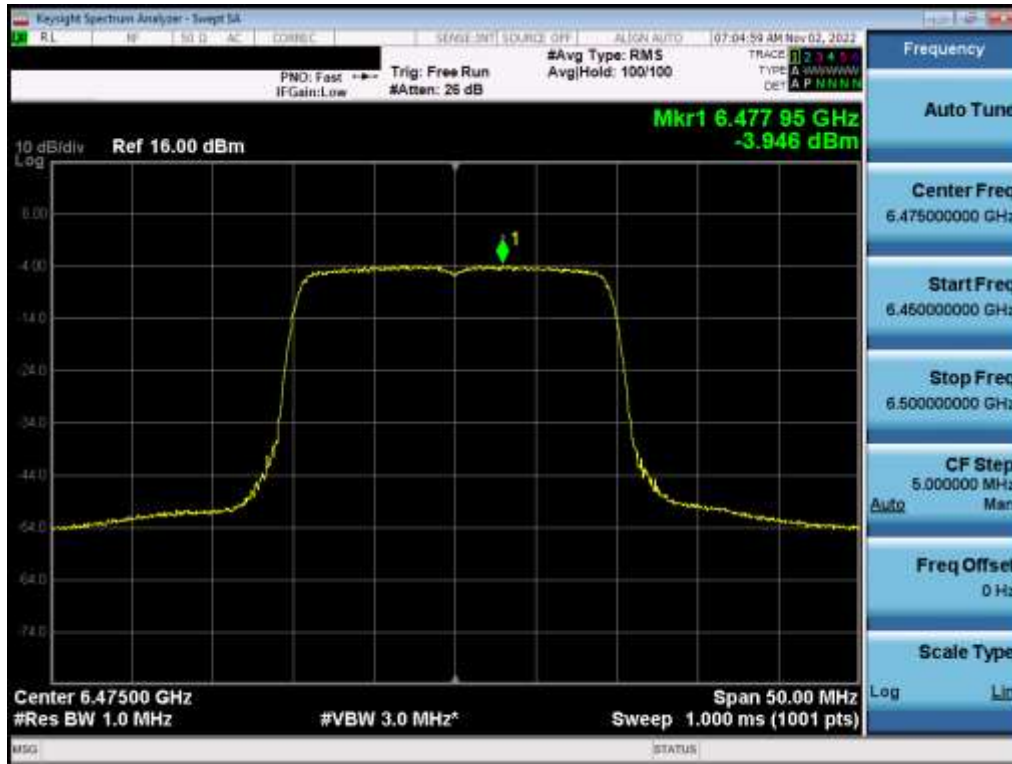


Plot 7-174. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 6) – Ch. 113)

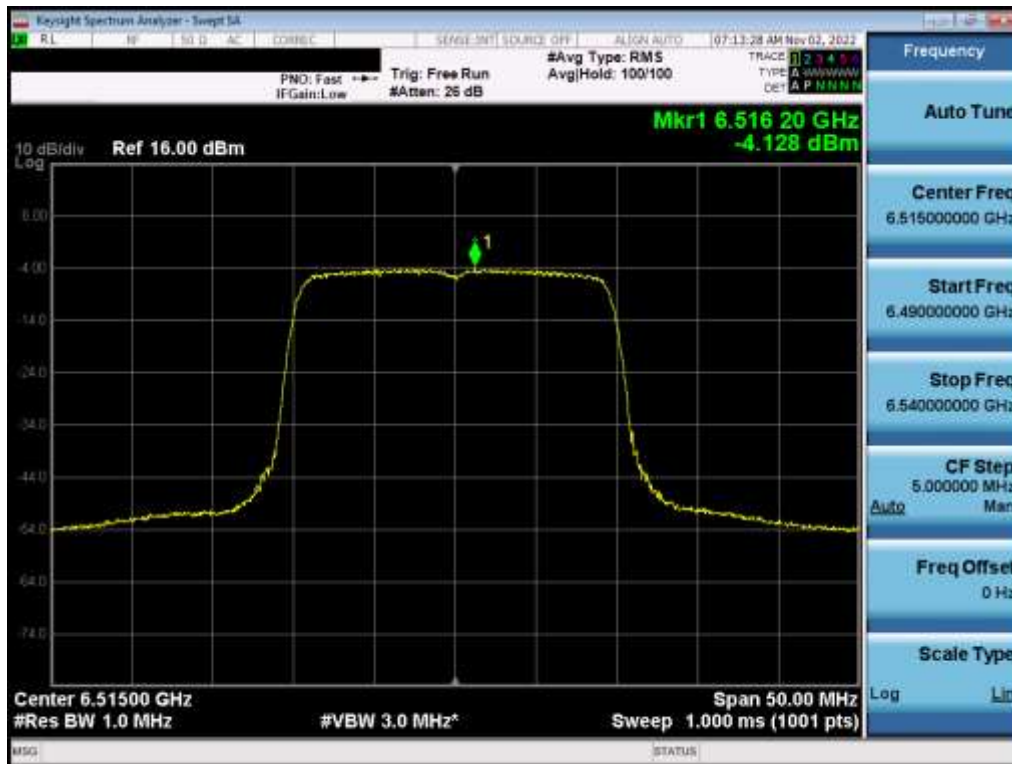


Plot 7-175. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 6) – Ch. 97)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 113 of 239

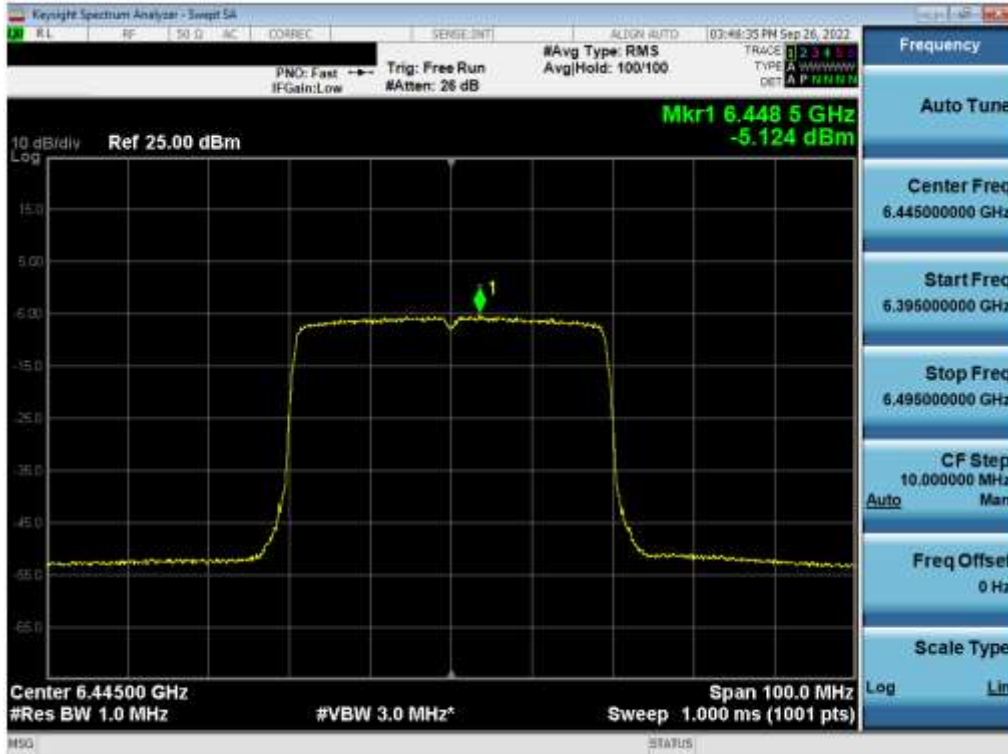


Plot 7-176. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 6) – Ch. 105)

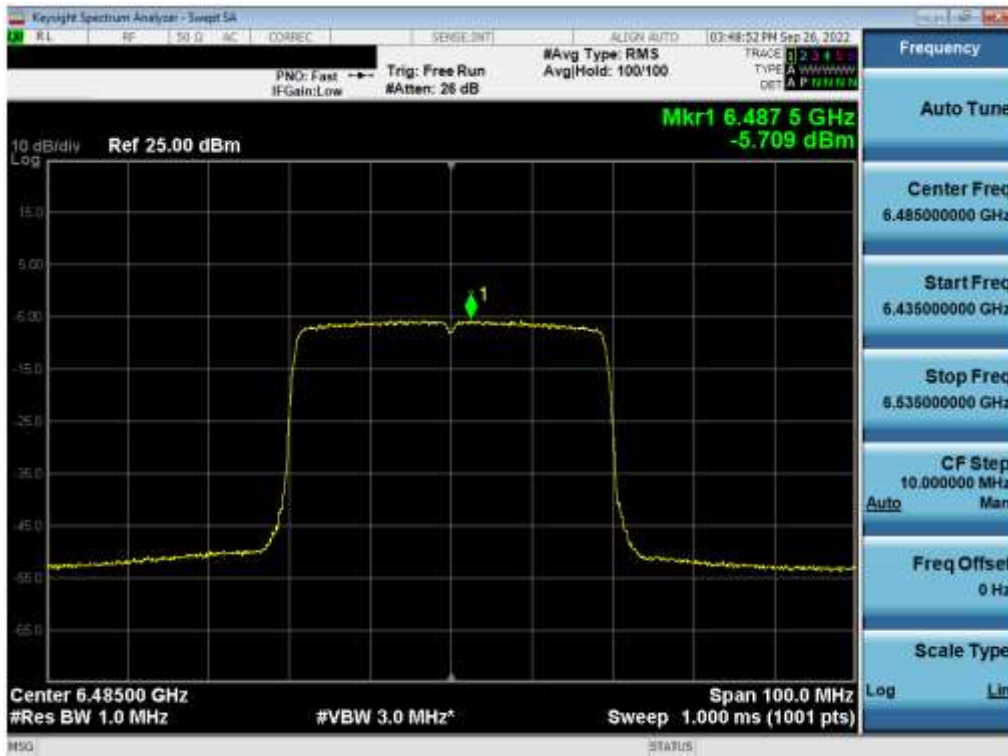


Plot 7-177. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 6) – Ch. 113)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 114 of 239

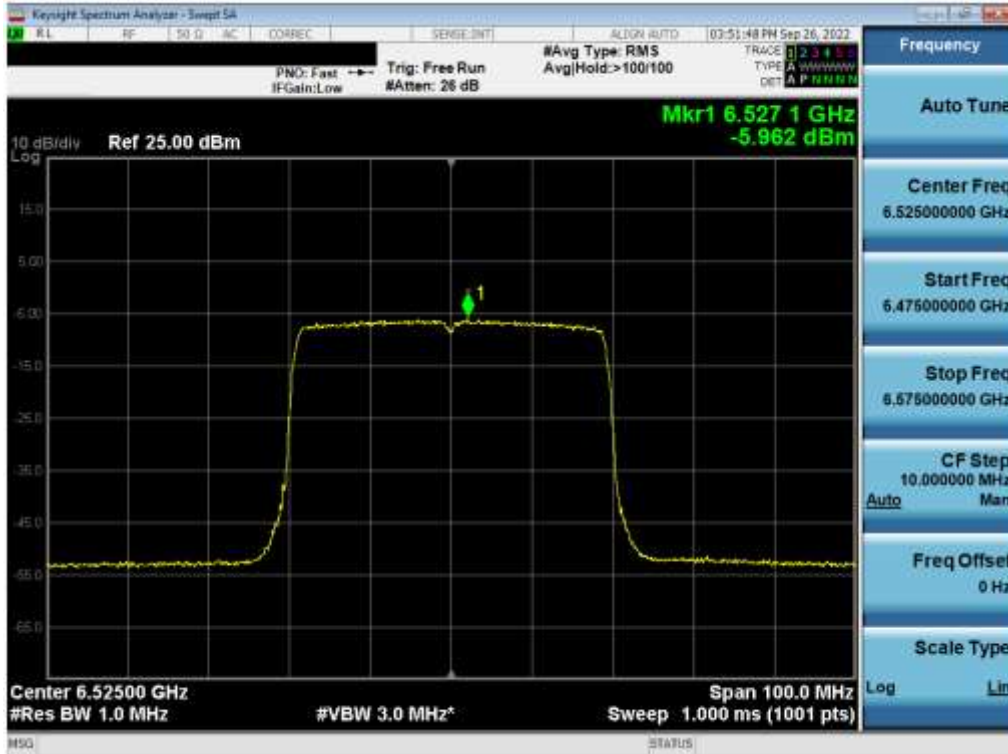


Plot 7-178. Power Spectral Density Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 6) – Ch. 99)

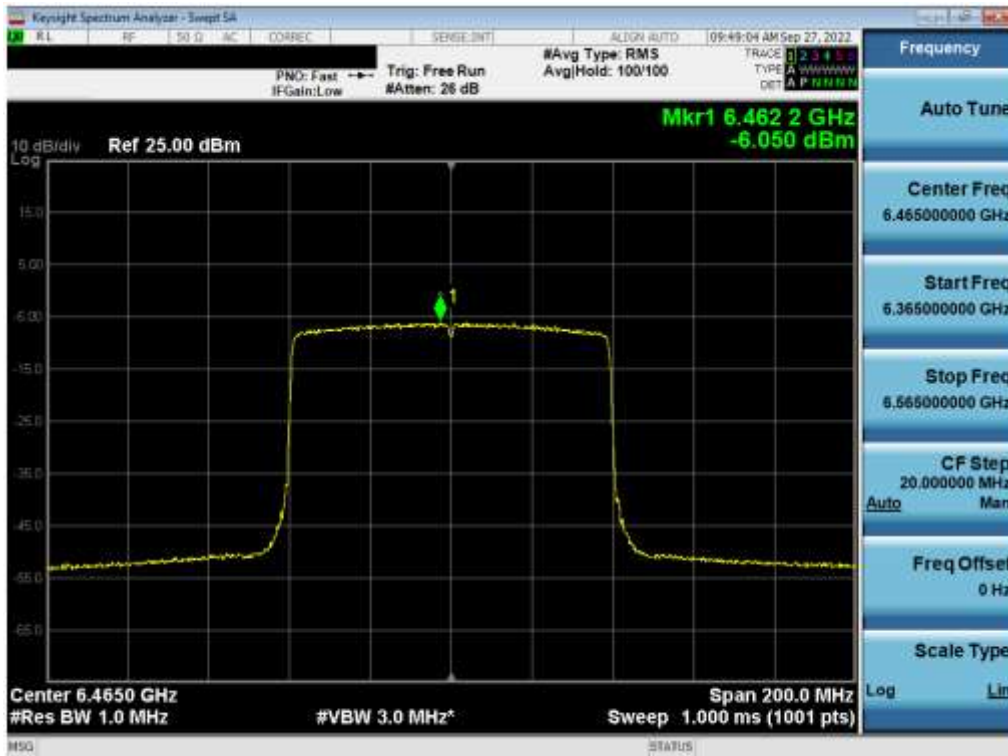


Plot 7-179. Power Spectral Density Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 6) – Ch. 107)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 115 of 239



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



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

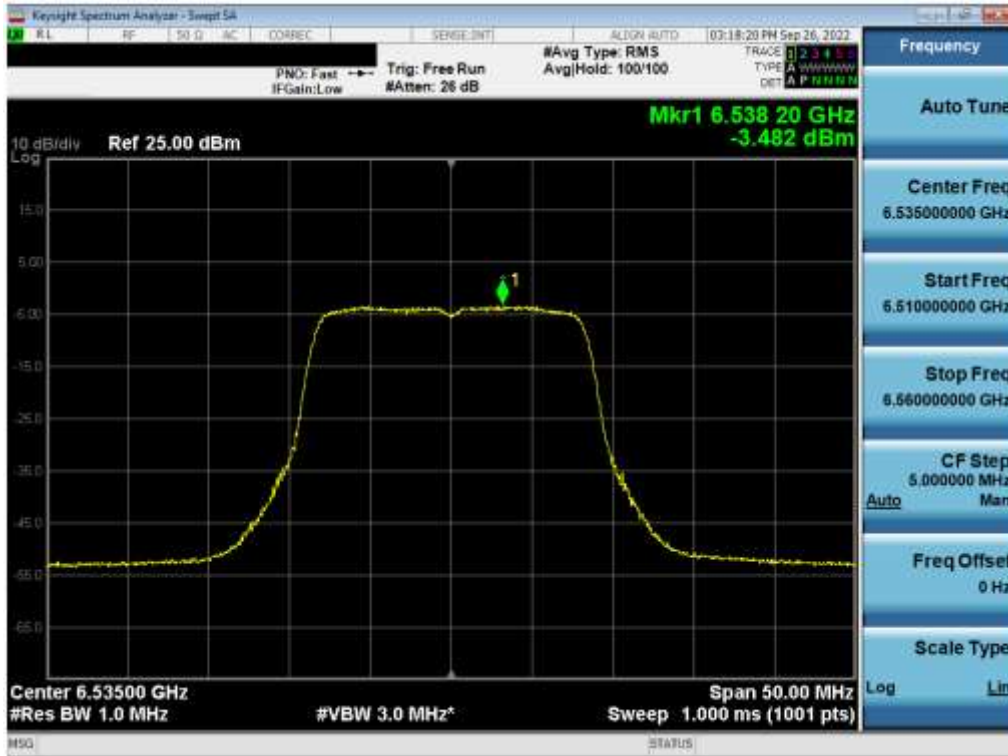
FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 116 of 239



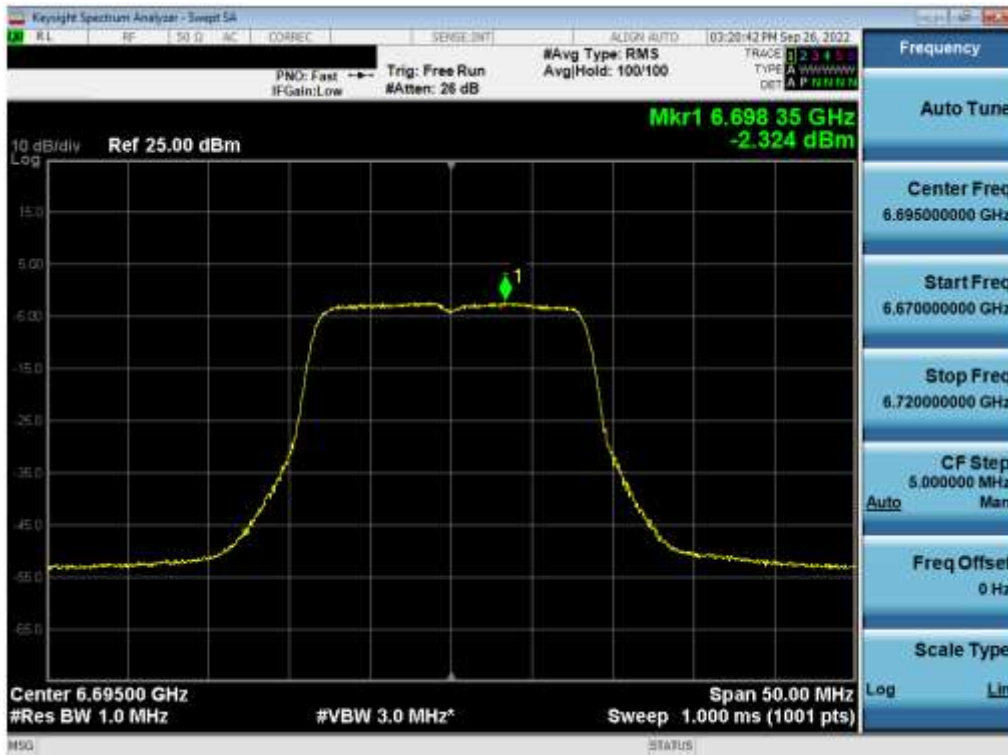
Plot 7-182. Power Spectral Density Measurement MIMO ANT2 (160MHz 802.11ax (UNII Band 6) – Ch. 111)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 117 of 239

MIMO Antenna-2 Power Spectral Density Measurement - (UNII Band 7)

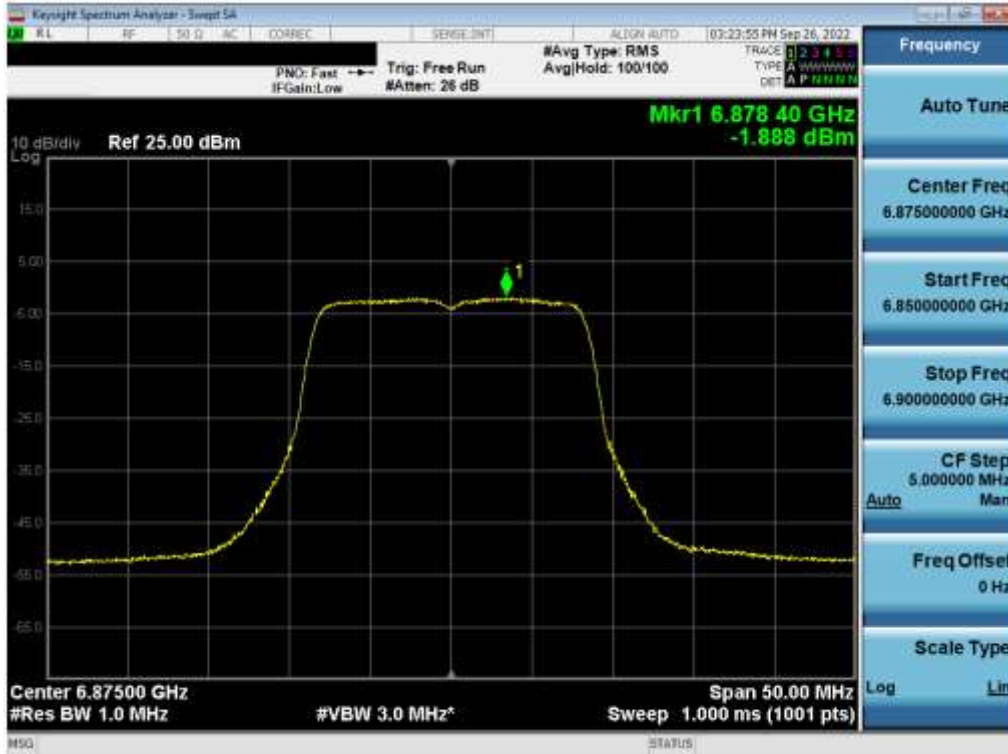


Plot 7-183. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 7) – Ch. 117)

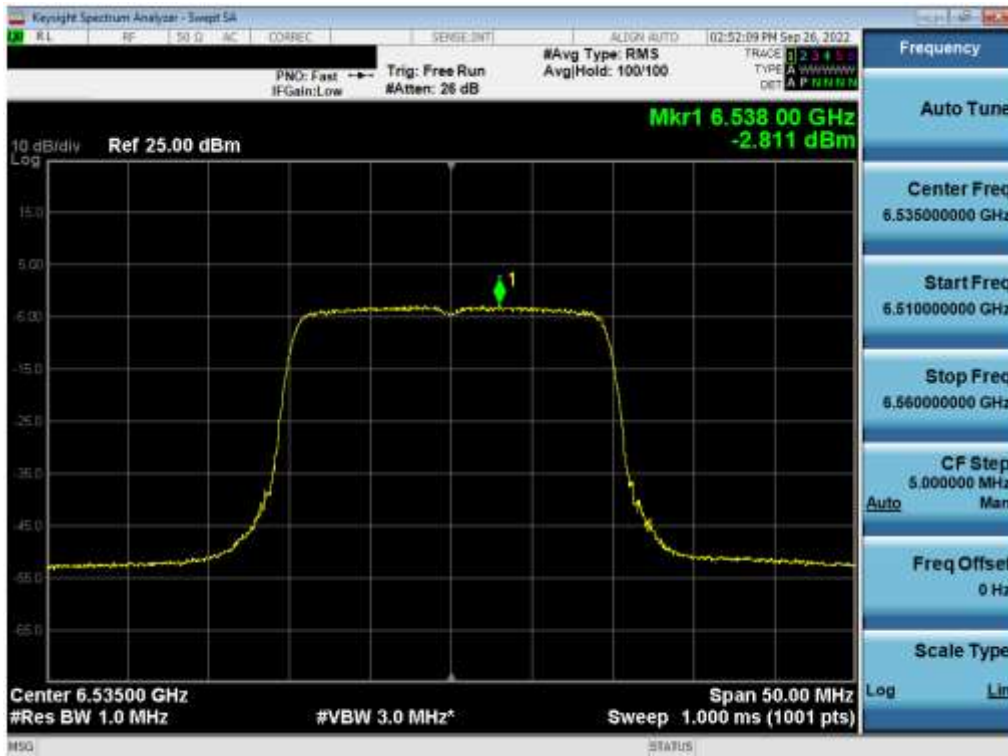


Plot 7-184. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 7) – Ch. 149)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 118 of 239

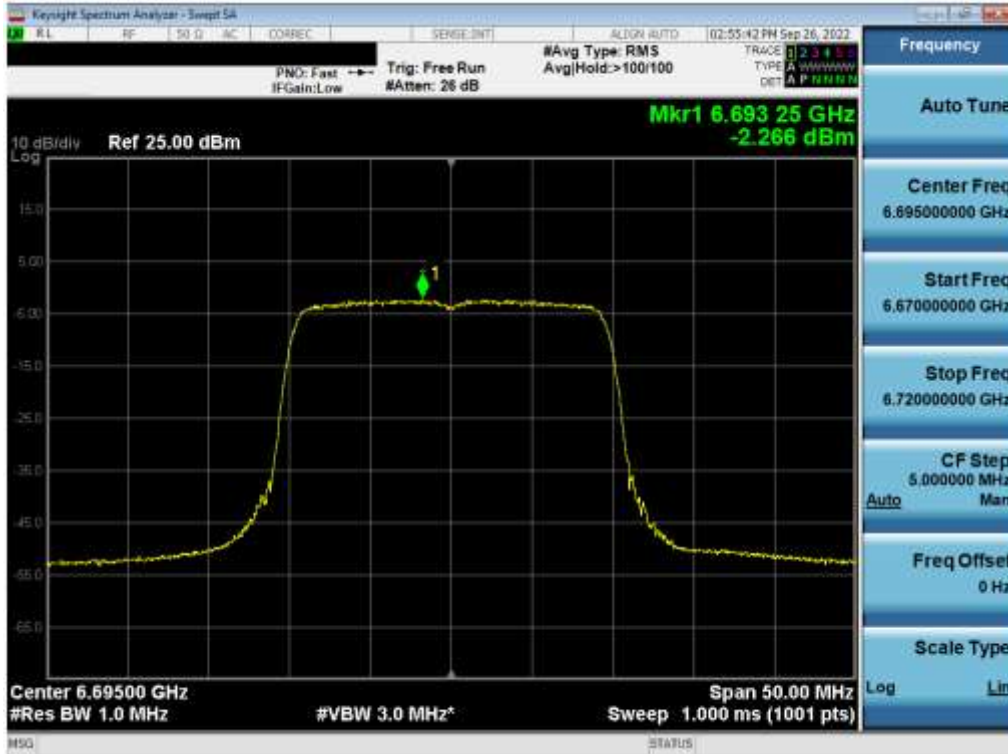


Plot 7-185. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 7) – Ch. 185)

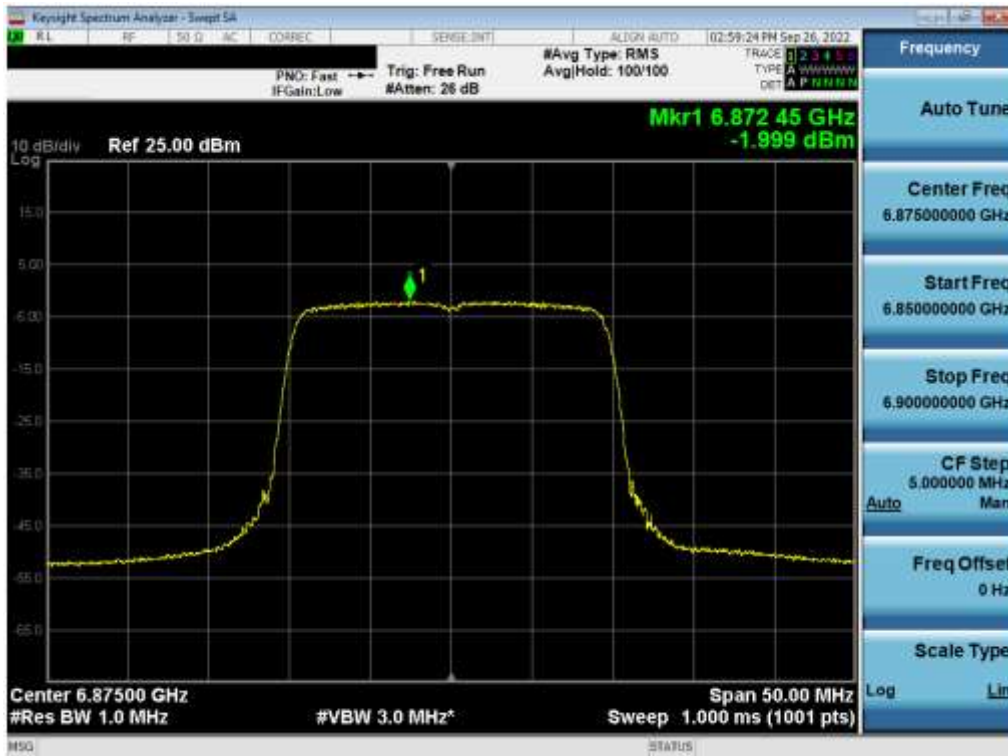


Plot 7-186. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 7) – Ch. 117)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 119 of 239

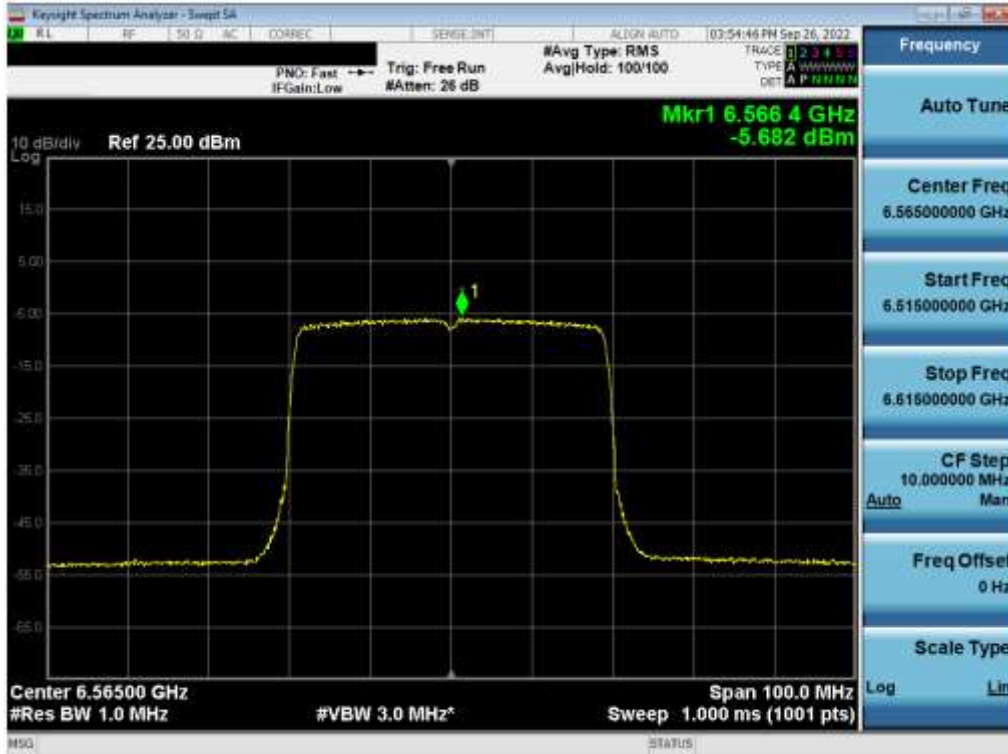


Plot 7-187. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 7) – Ch. 149)

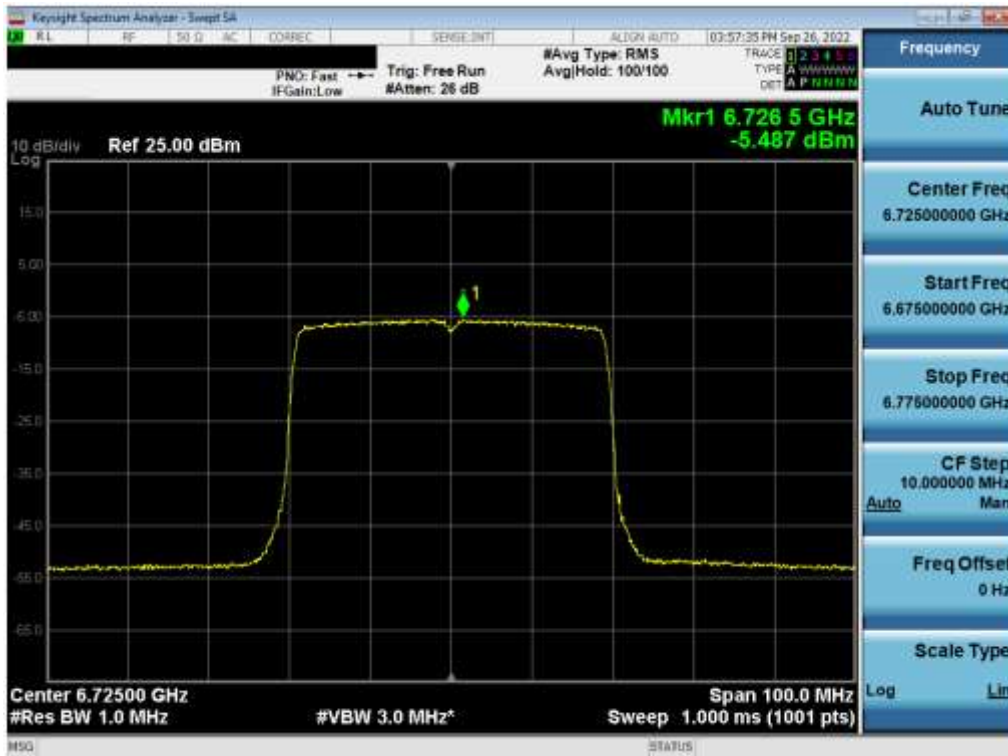


Plot 7-188. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 7) – Ch. 185)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 120 of 239

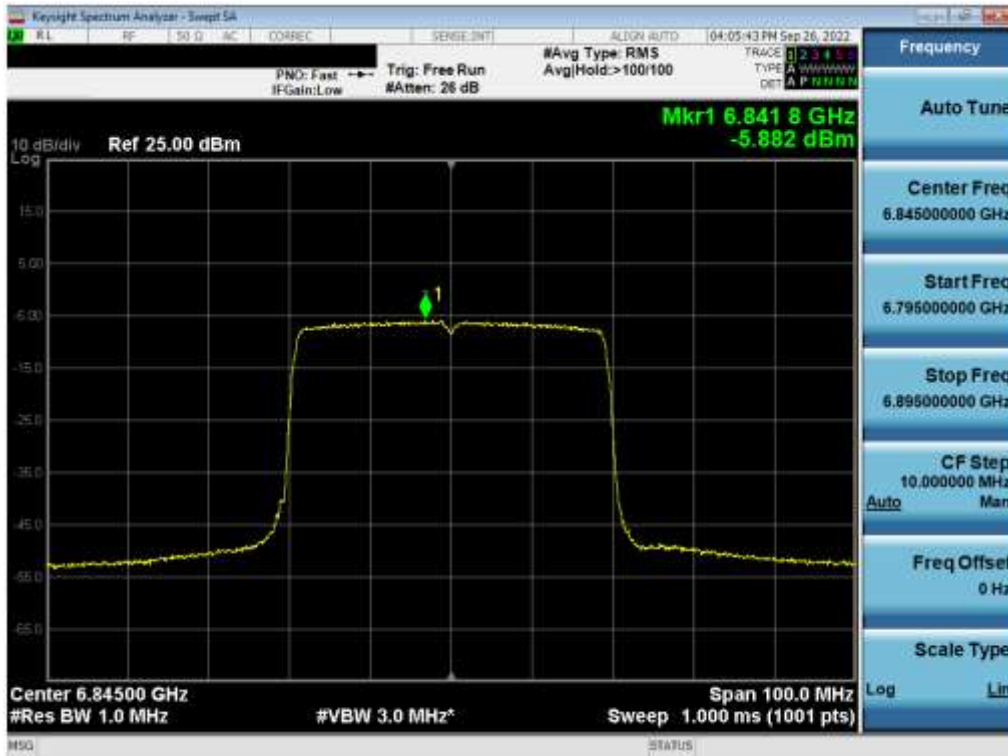


Plot 7-189. Power Spectral Density Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 7) – Ch. 123)

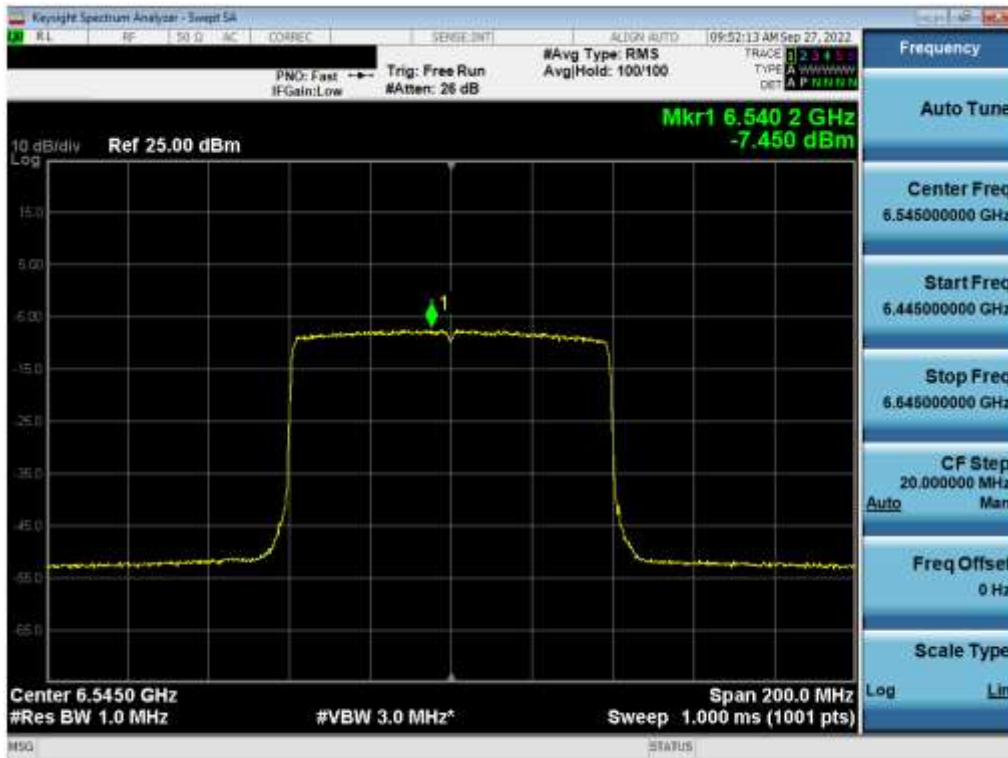


Plot 7-190. Power Spectral Density Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 7) – Ch. 155)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 121 of 239

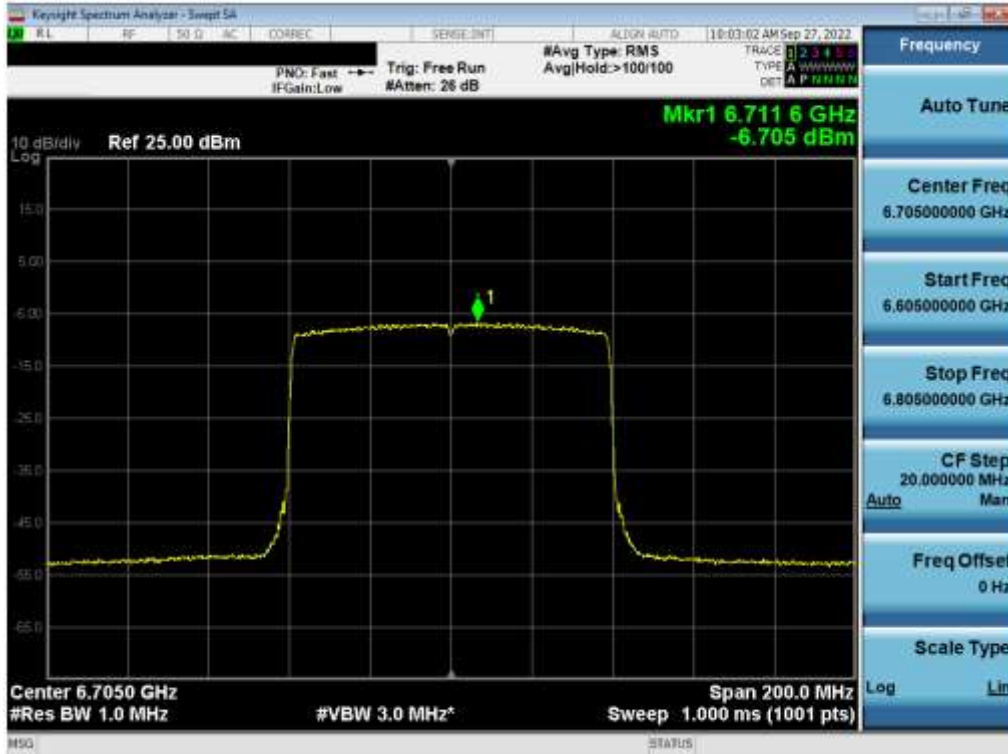


Plot 7-191. Power Spectral Density Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 7) – Ch. 179)

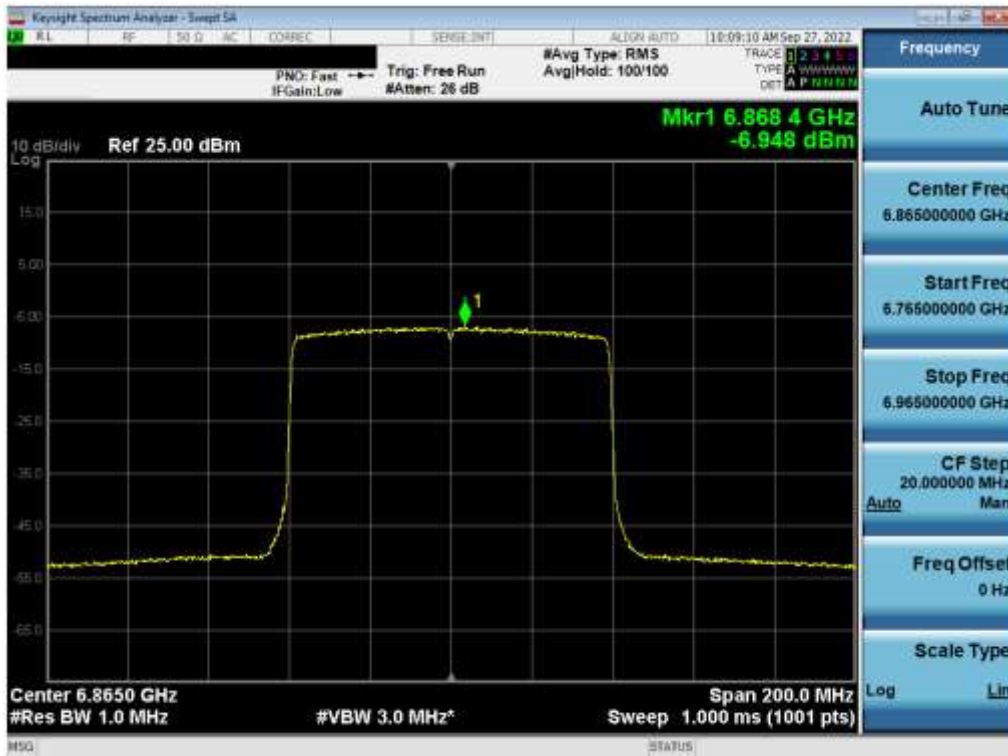


Plot 7-192. Power Spectral Density Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 7) – Ch. 119)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 122 of 239

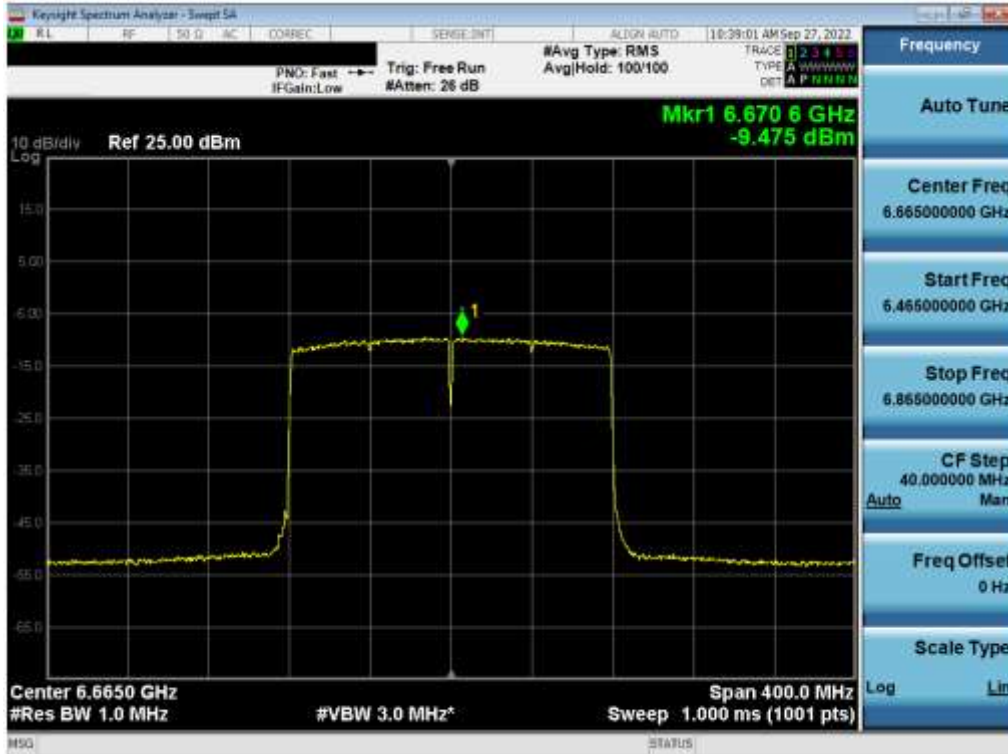


Plot 7-193. Power Spectral Density Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 7) – Ch. 151)

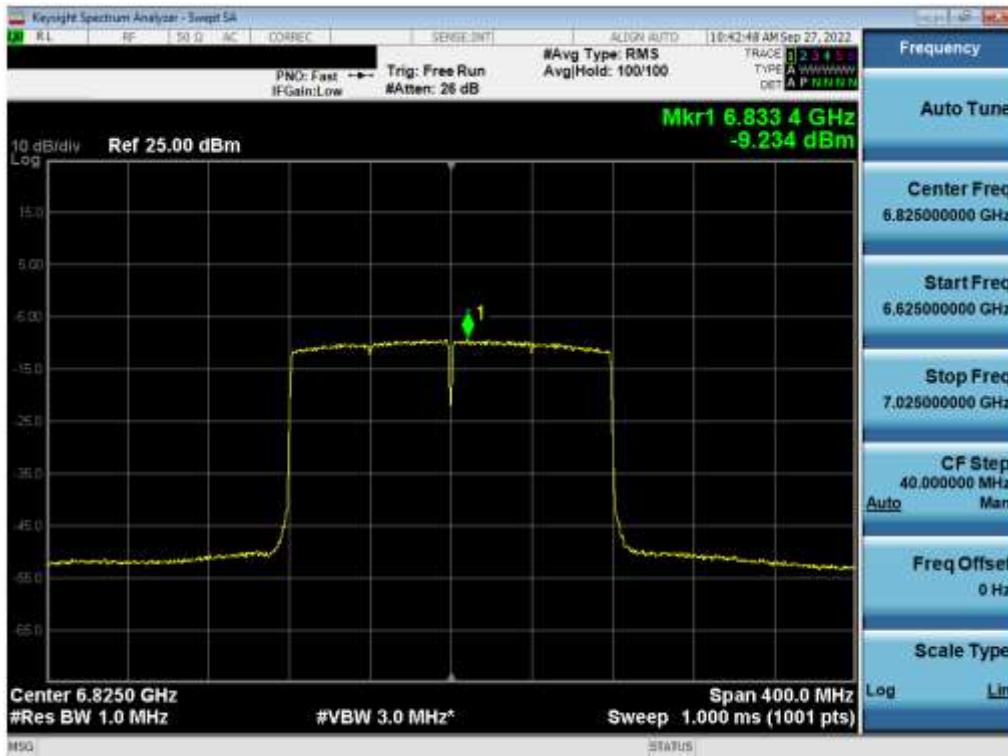


Plot 7-194. Power Spectral Density Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 7) – Ch. 183)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 123 of 239



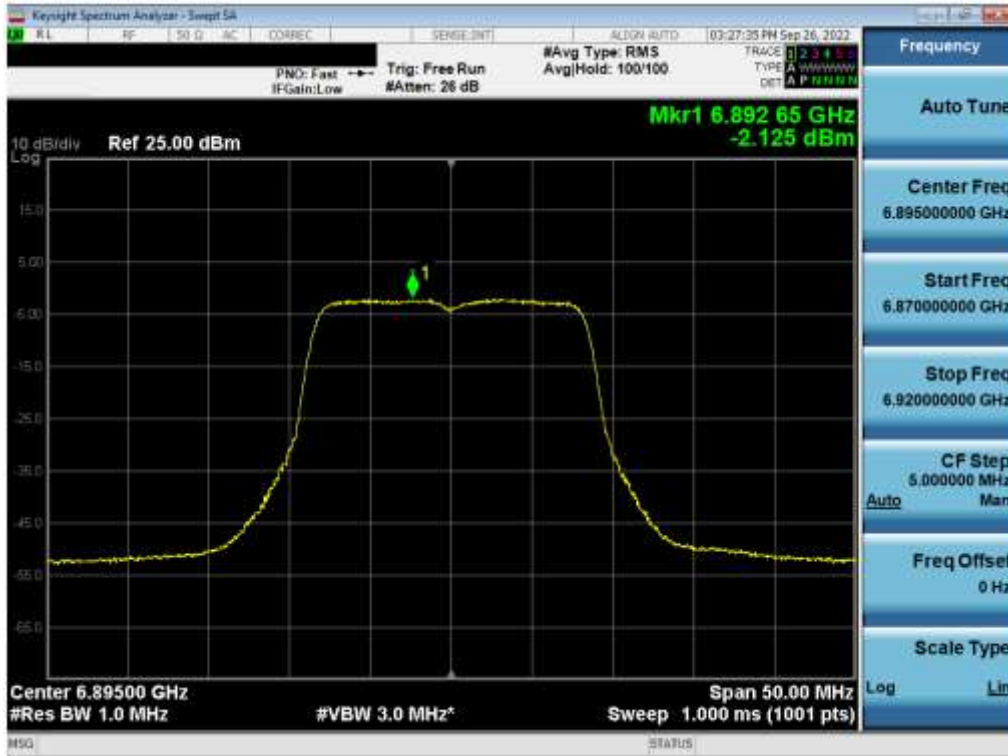
Plot 7-195. Power Spectral Density Measurement MIMO ANT2 (160MHz 802.11ax (UNII Band 7) – Ch. 143)



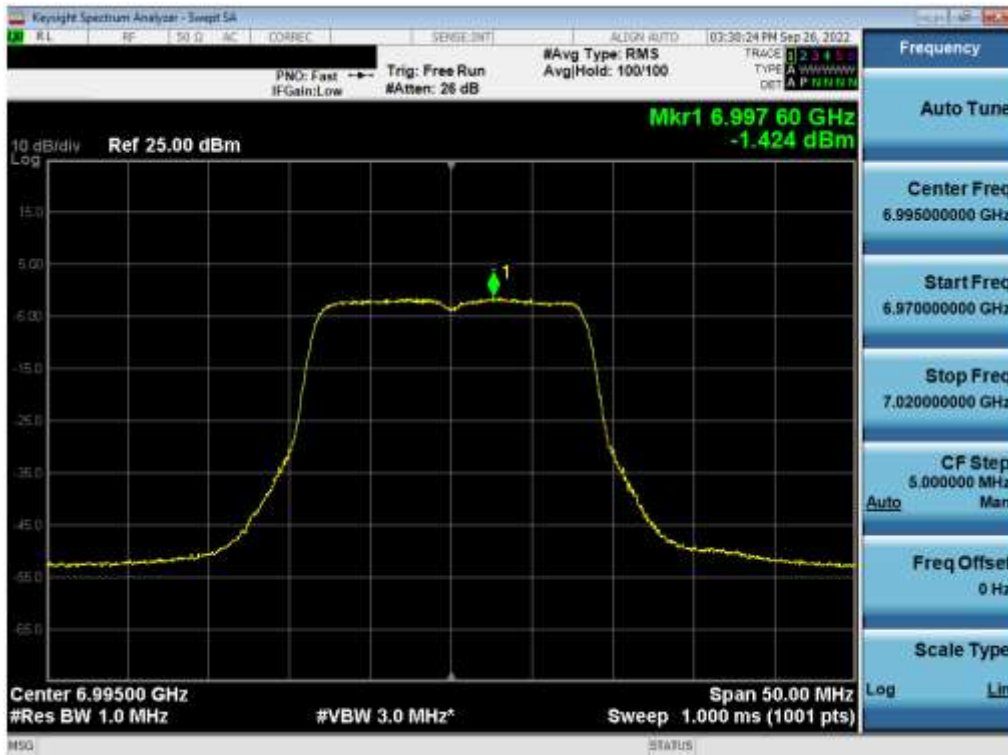
Plot 7-196. Power Spectral Density Measurement MIMO ANT2 (160MHz 802.11ax (UNII Band 7) – Ch. 175)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 124 of 239

MIMO Antenna-2 Power Spectral Density Measurement - (UNII Band 8)

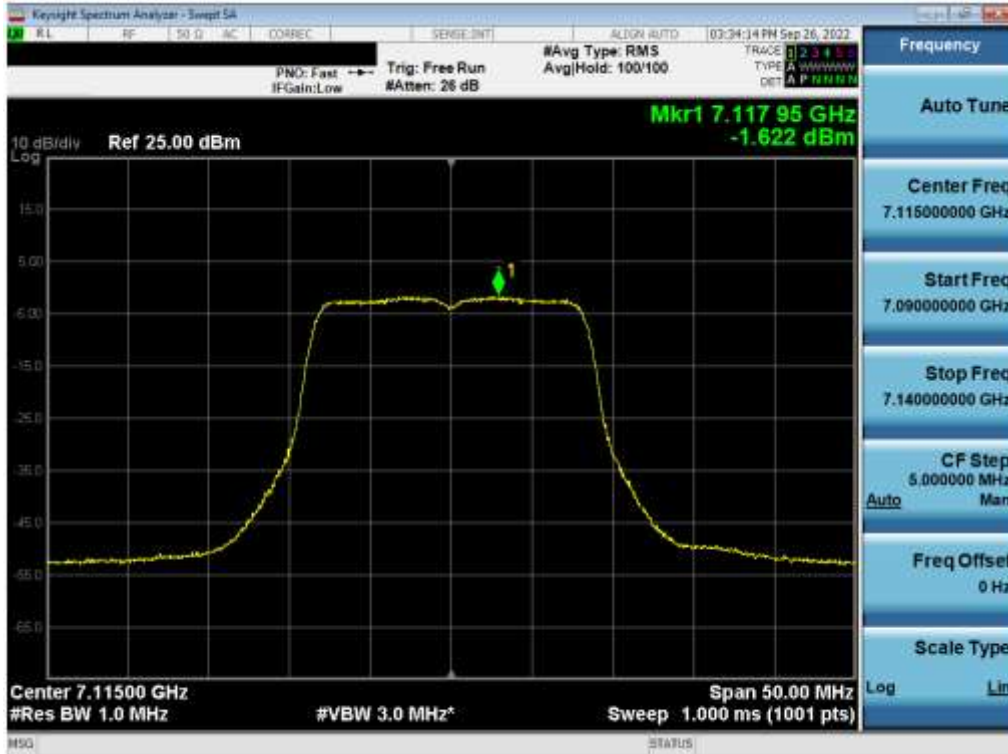


Plot 7-197. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 8) – Ch. 189)

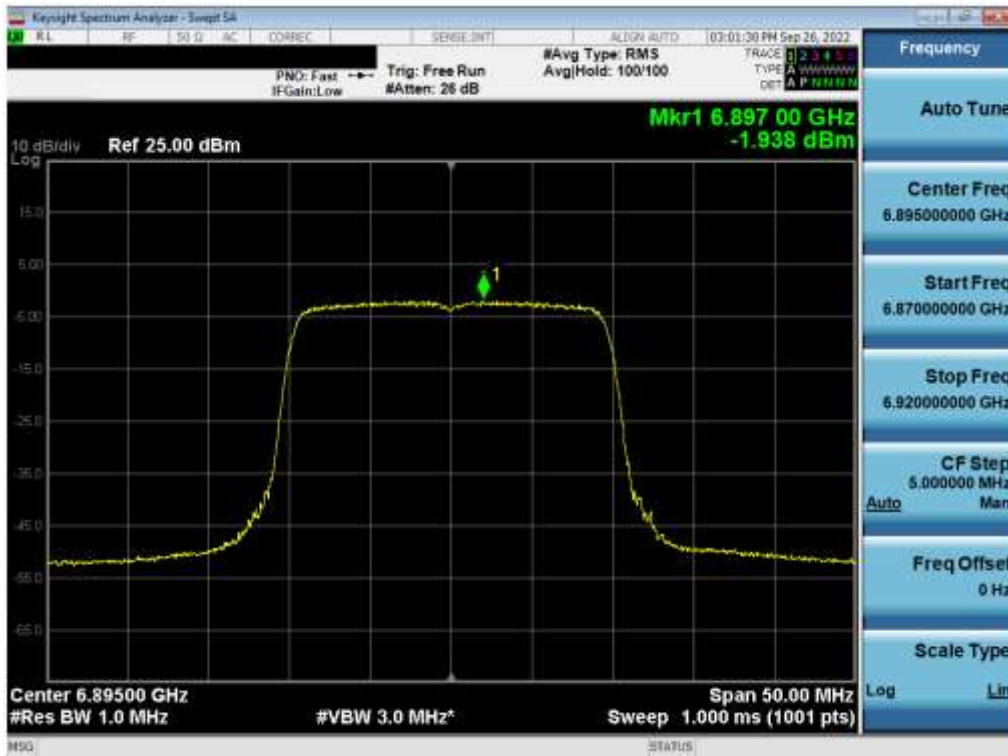


Plot 7-198. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 8) – Ch. 209)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 125 of 239

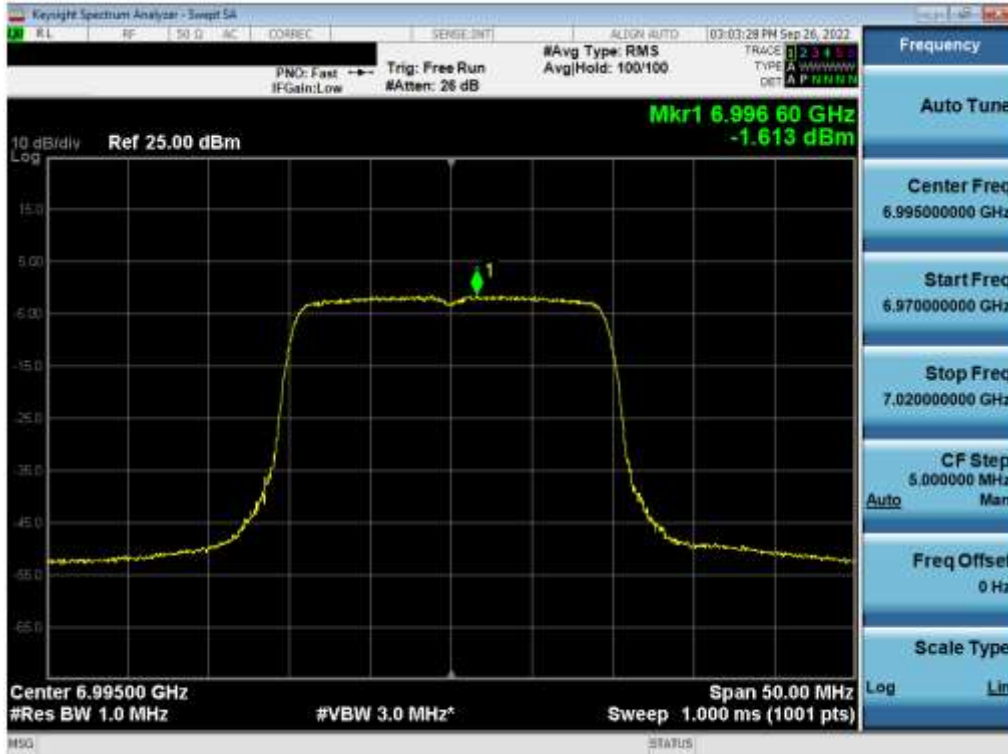


Plot 7-199. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 8) – Ch. 233)

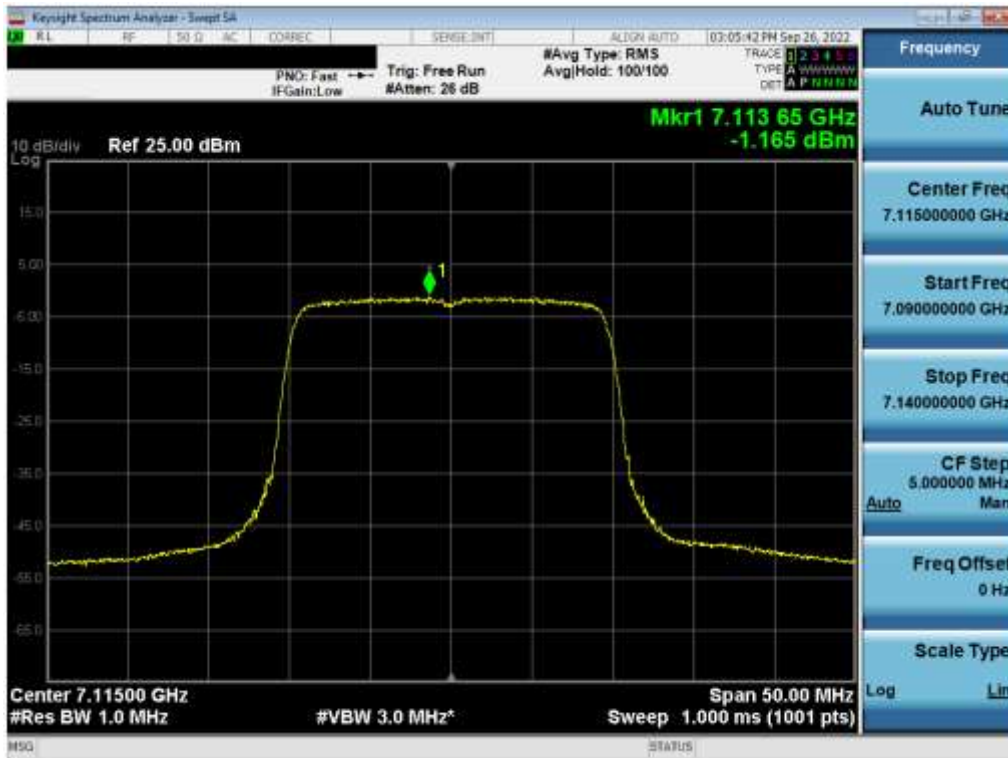


Plot 7-200. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 8) – Ch. 189)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 126 of 239

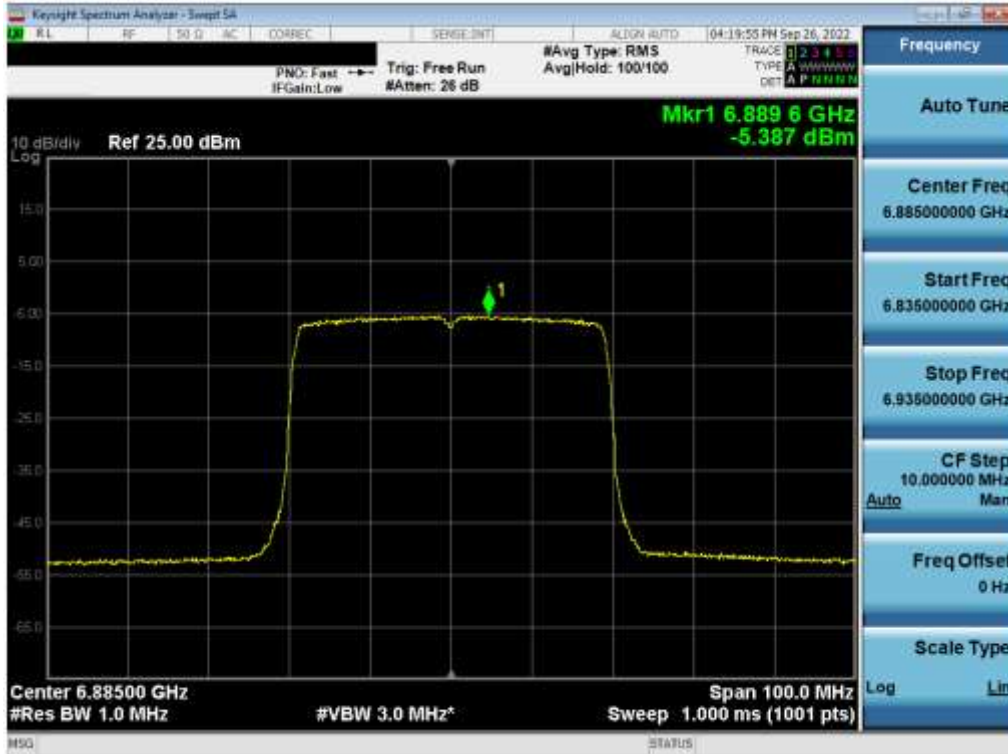


Plot 7-201. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 8) – Ch. 209)

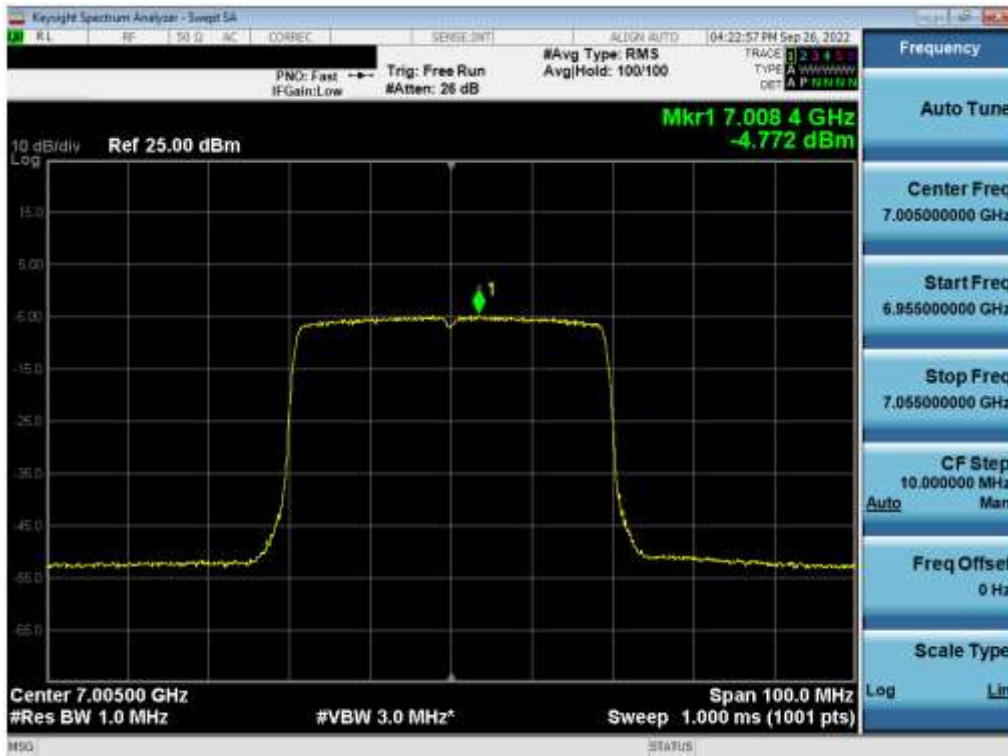


Plot 7-202. Power Spectral Density Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 8) – Ch. 233)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 127 of 239

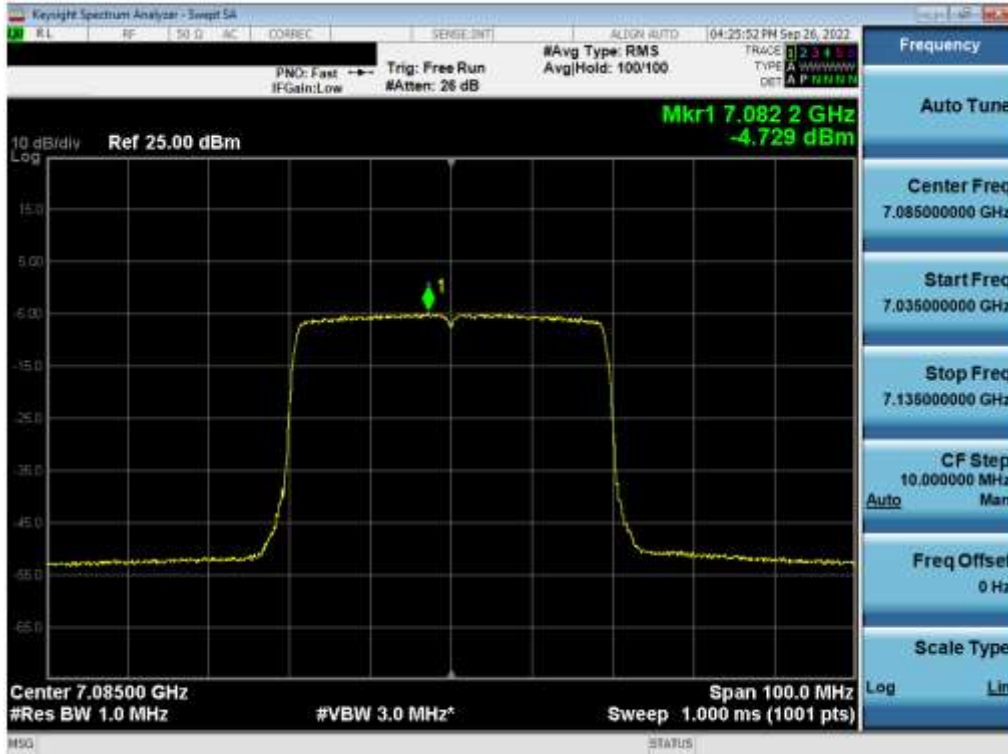


Plot 7-203. Power Spectral Density Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 8) – Ch. 187)

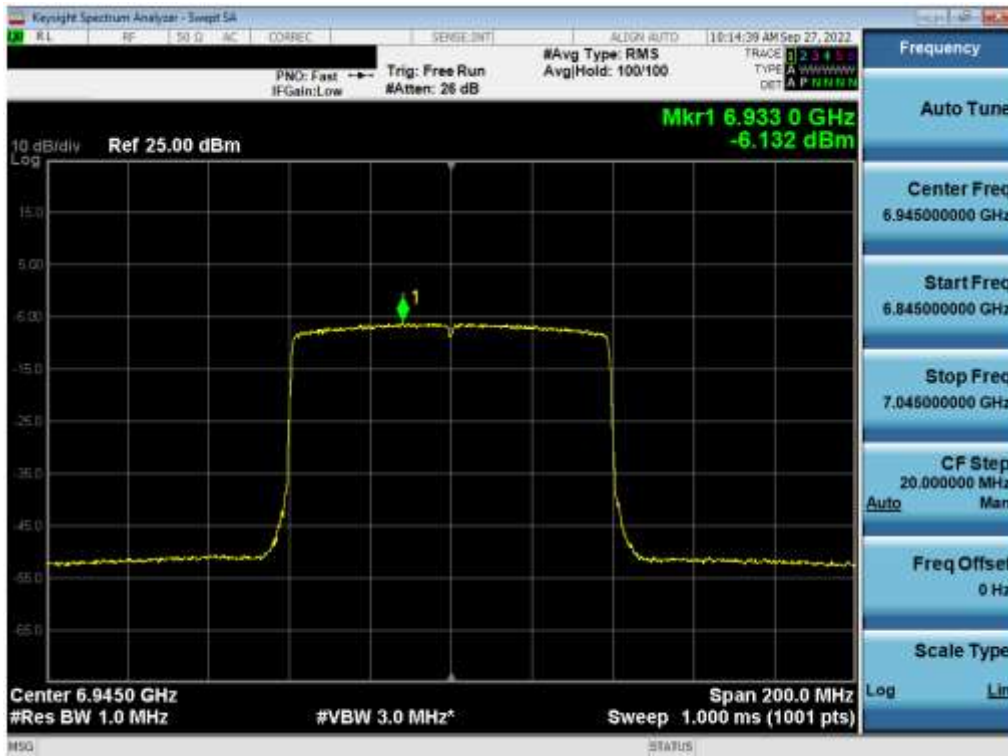


Plot 7-204. Power Spectral Density Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 8) – Ch. 211)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 128 of 239

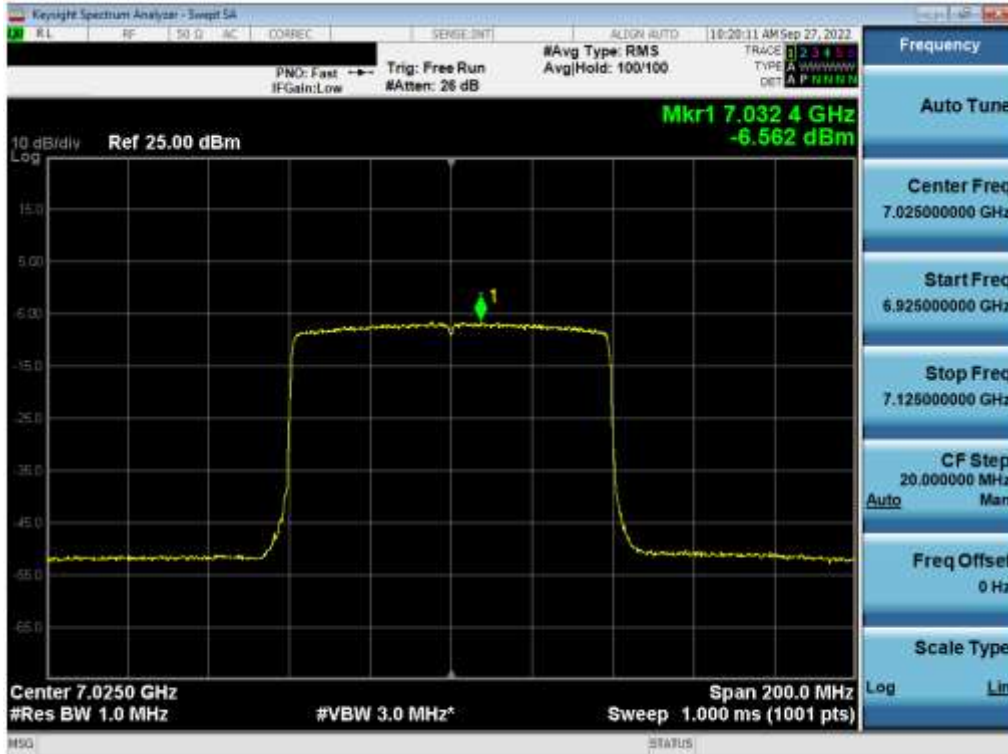


Plot 7-205. Power Spectral Density Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 8) – Ch. 227)

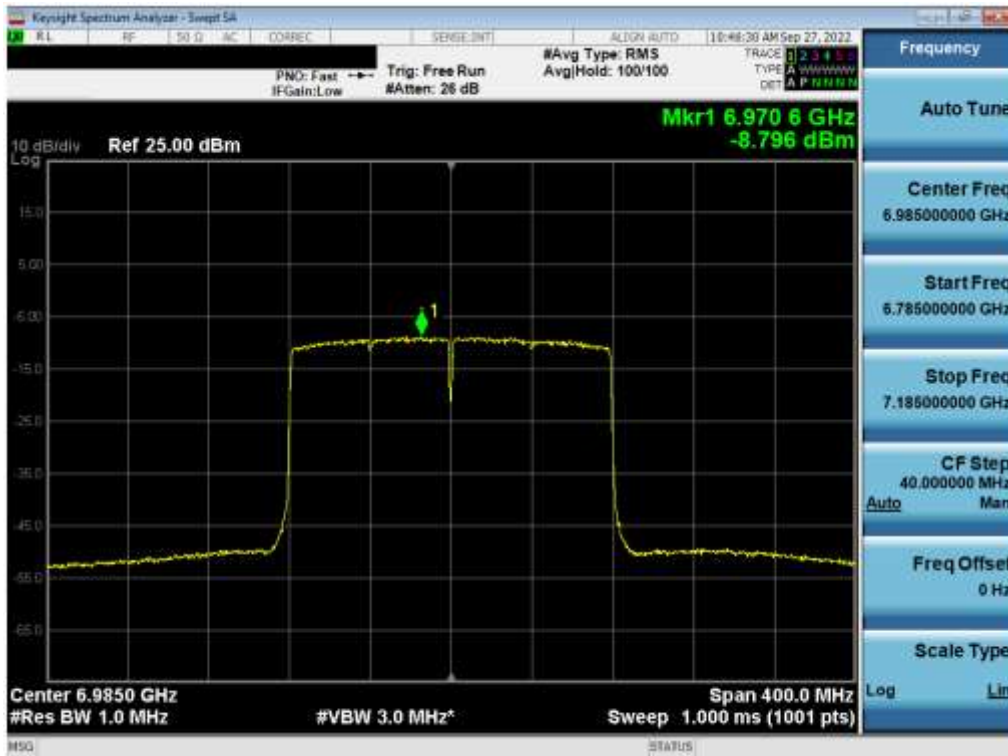


Plot 7-206. Power Spectral Density Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 8) – Ch. 199)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 129 of 239



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



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

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 130 of 239



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.

$$\text{Directional gain} = 10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] \text{ dBi}$$

Sample MIMO Calculation:

At 5935MHz in 802.11a (20MHz BW) mode, the average conducted power spectral density was measured to be -1.13 dBm for Antenna-1 and -1.30 dBm for Antenna-2.

Antenna 1 + Antenna 2 = MIMO

$$(-1.13 \text{ dBm} + -1.30 \text{ dBm}) = (0.77 \text{ mW} + 0.74 \text{ mW}) = 1.51 \text{ mW} = 1.80 \text{ dBm}$$

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

At 5955 MHz in 802.11a (20MHz BW) mode, the average MIMO power density was calculated to be 1.80 dBm with directional gain of -2.85 dBi.

$$\text{e.i.r.p. Power Spectral Density(dBm)} = \text{Power Spectral Density (dBm)} + \text{Ant gain (dBi)}$$

$$1.80 \text{ dBm} + -2.85 \text{ dBi} = -1.05 \text{ dBm}$$

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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

KDB 987594 D02 v01r01

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 $\geq 3 \times$ RBW
 - d) Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$.
 - 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:
 - i) Suppressed by 20 dB at 1 MHz outside of the channel edge. (The channel edge is defined as the 26-dB point on either side of the carrier center frequency.)
 - j) Suppressed by 28 dB at one channel bandwidth from the channel center.
 - k) Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.
7. Adjust the span to encompass the entire mask as necessary.
8. Clear trace.
9. Trace average at least 100 traces in power averaging (rms) mode.
10. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask.

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Test Setup

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



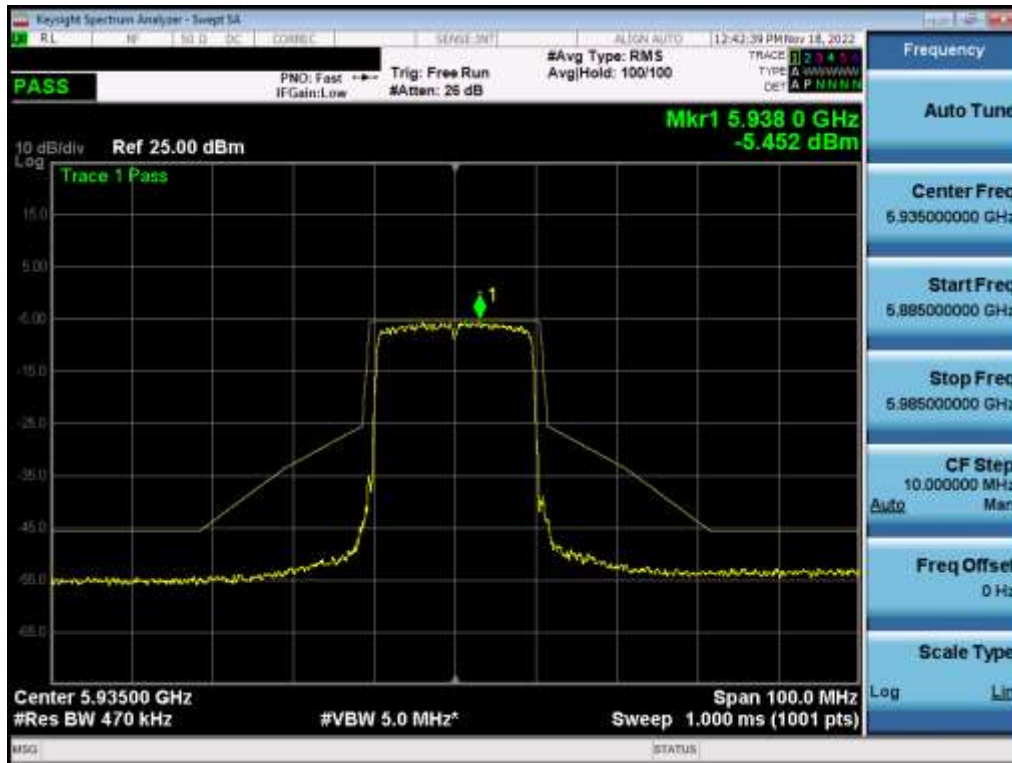
Figure 7-4. Test Instrument & Measurement Setup

Test Notes

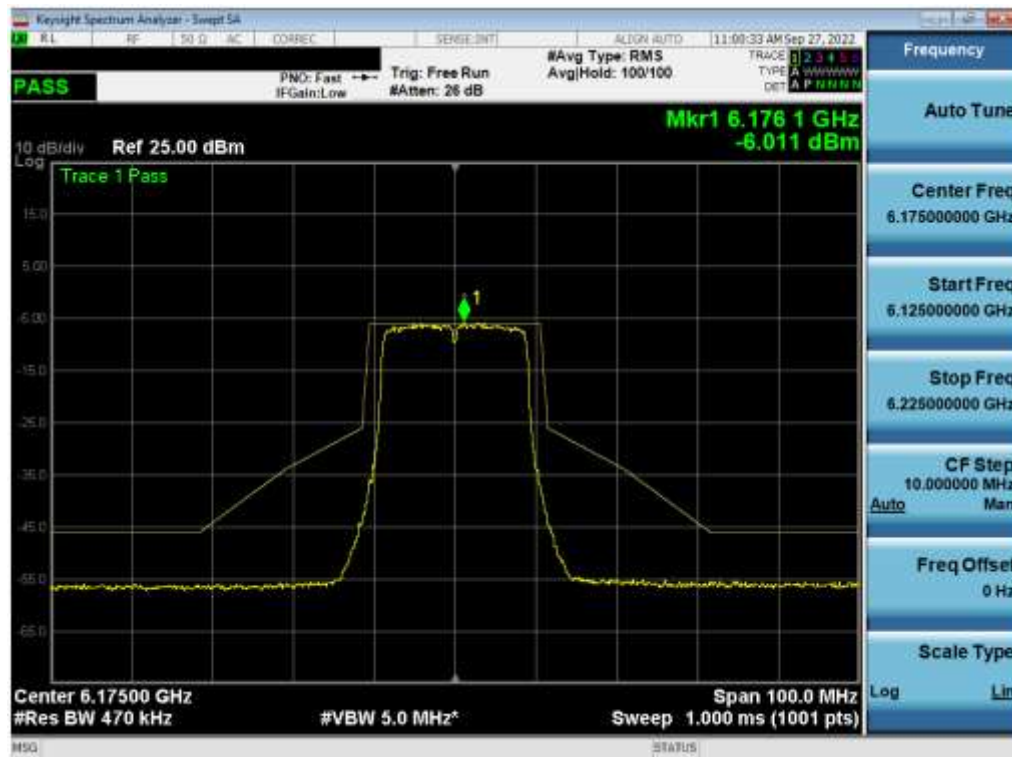
None.

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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MIMO Antenna-1 In-Band Emission Plot Measurement - (UNII Band 5)

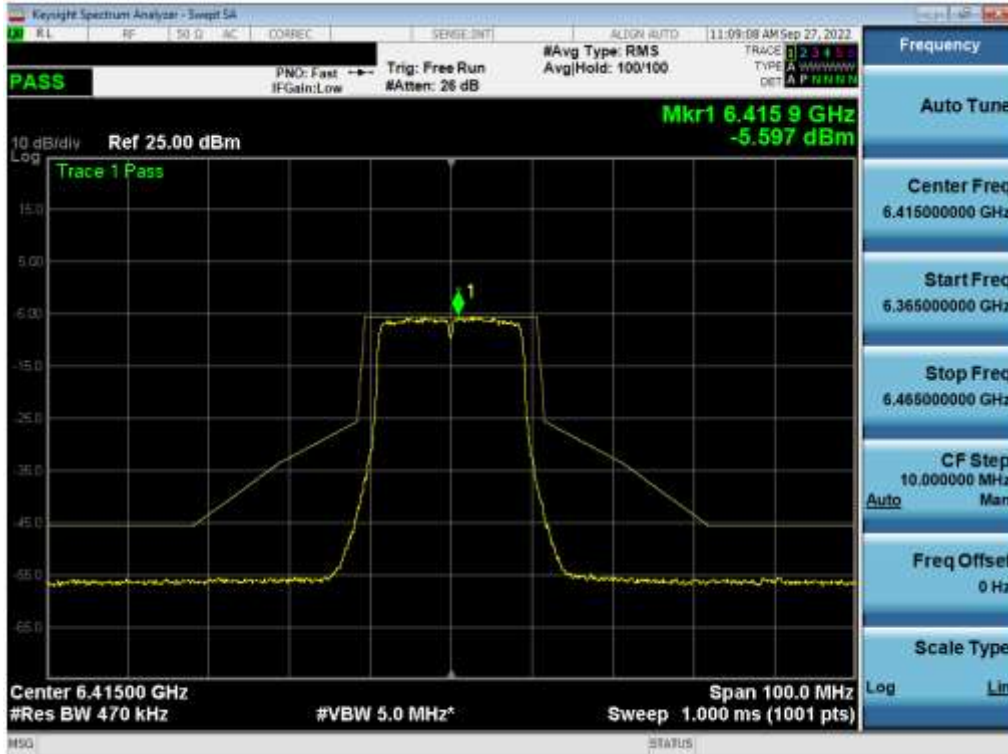


Plot 7-209. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11a (UNII Band 5) – Ch. 2)

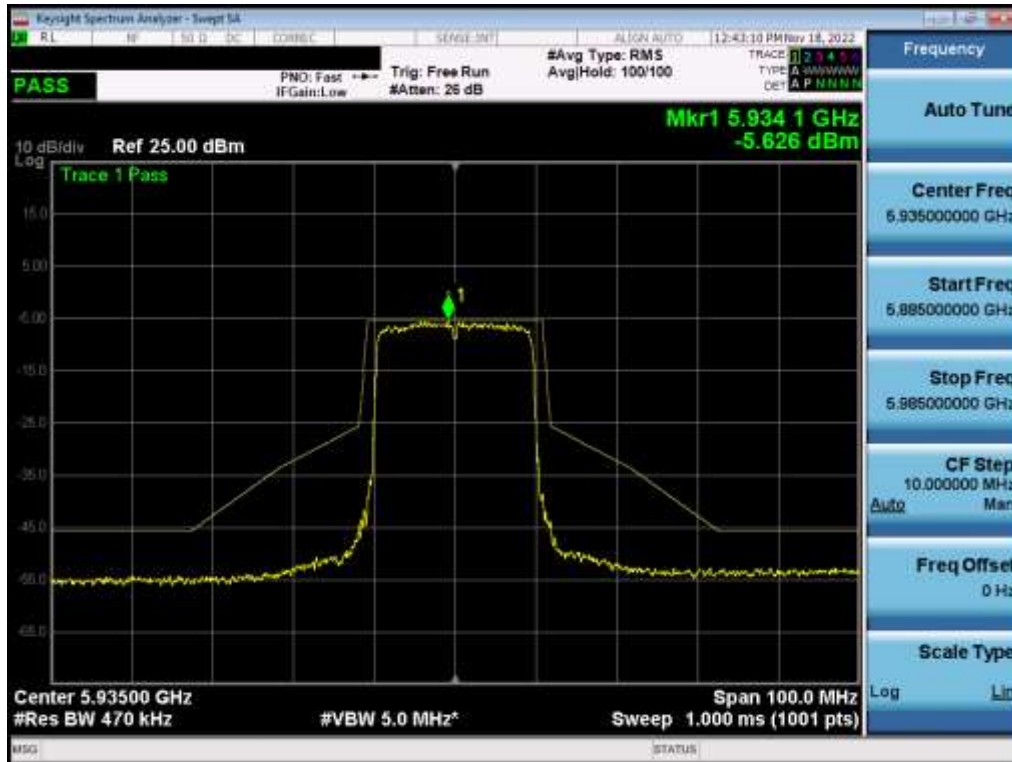


Plot 7-210. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11a (UNII Band 5) – Ch. 45)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 134 of 239

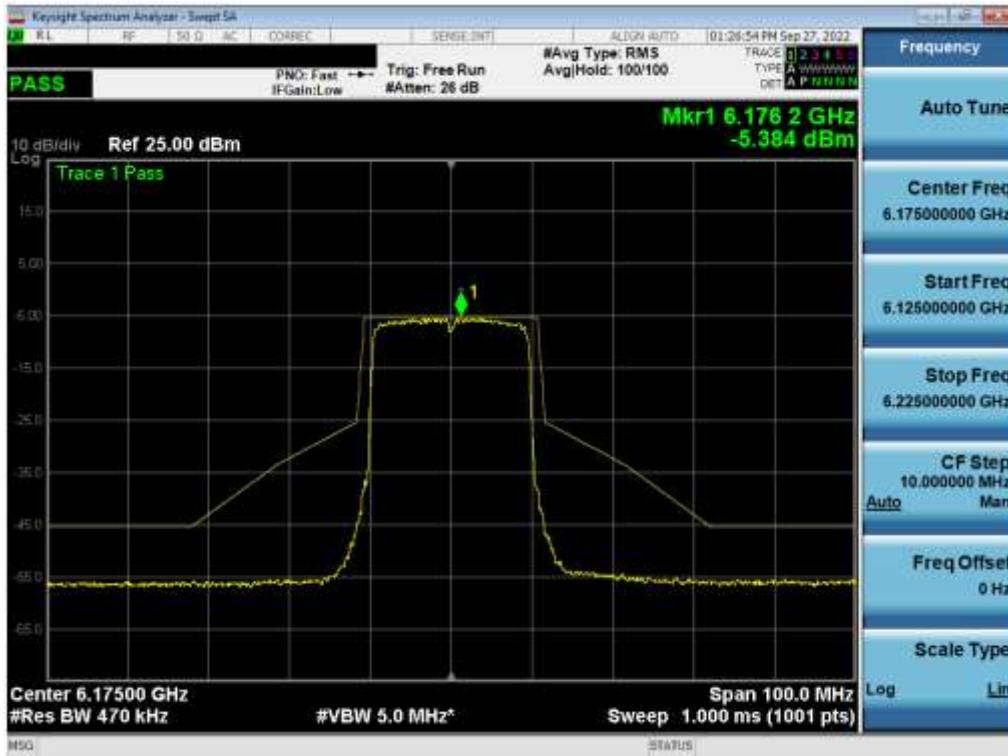


Plot 7-211. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11a (UNII Band 5) – Ch. 93)

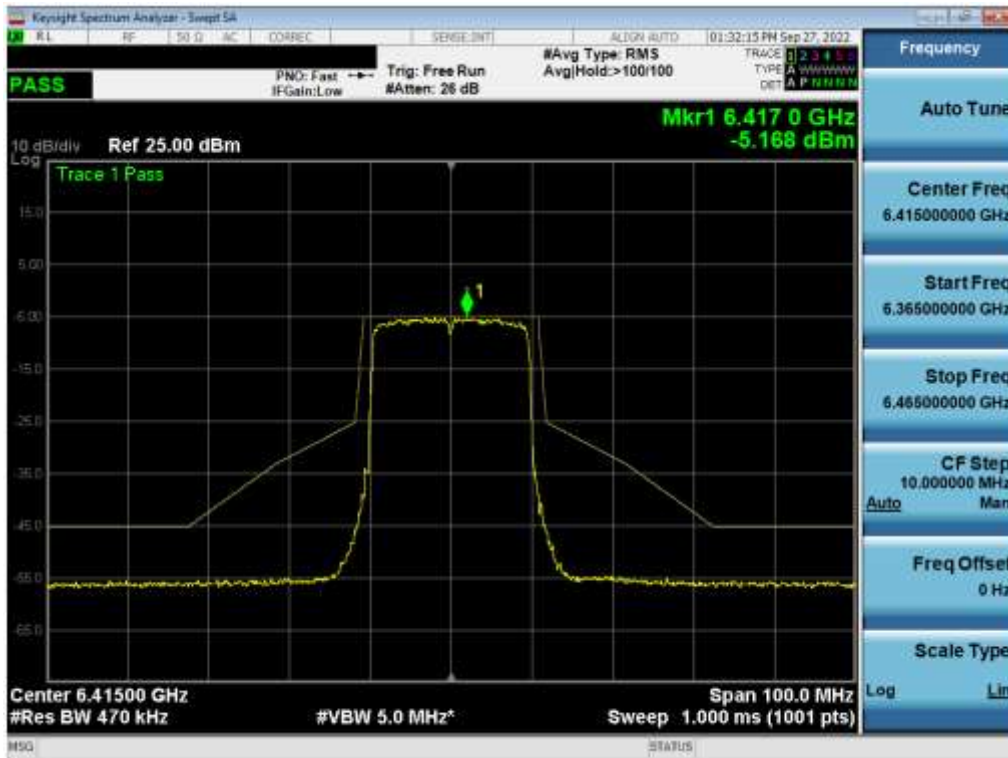


Plot 7-212. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11ax (UNII Band 5) – Ch. 2)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 135 of 239

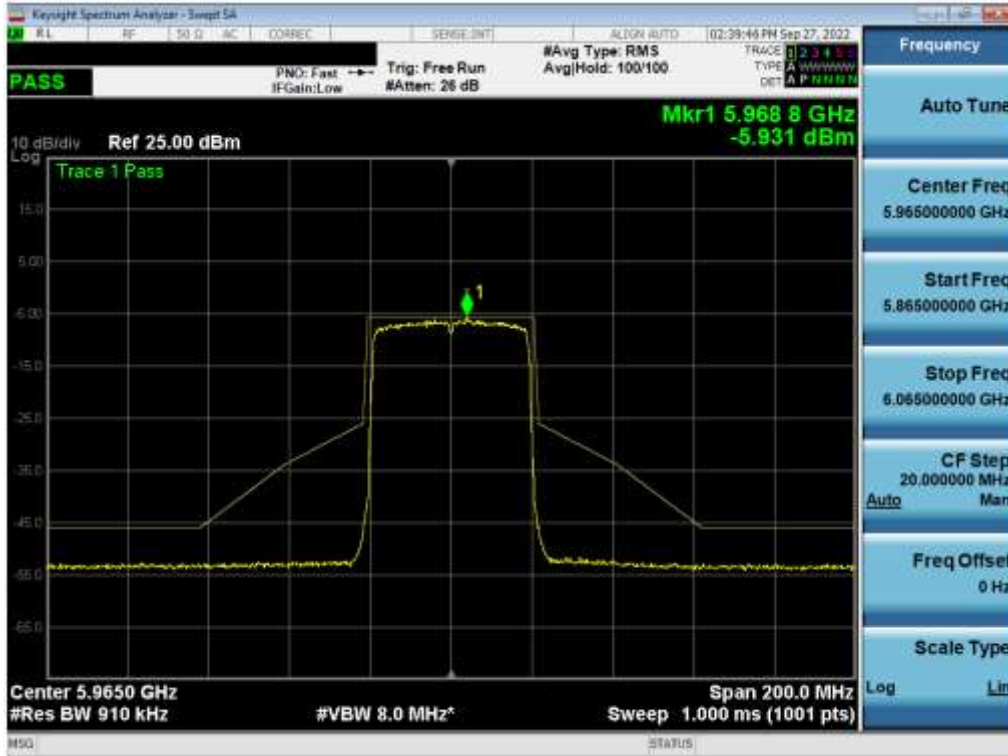


Plot 7-213. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11ax (UNII Band 5) – Ch. 45)

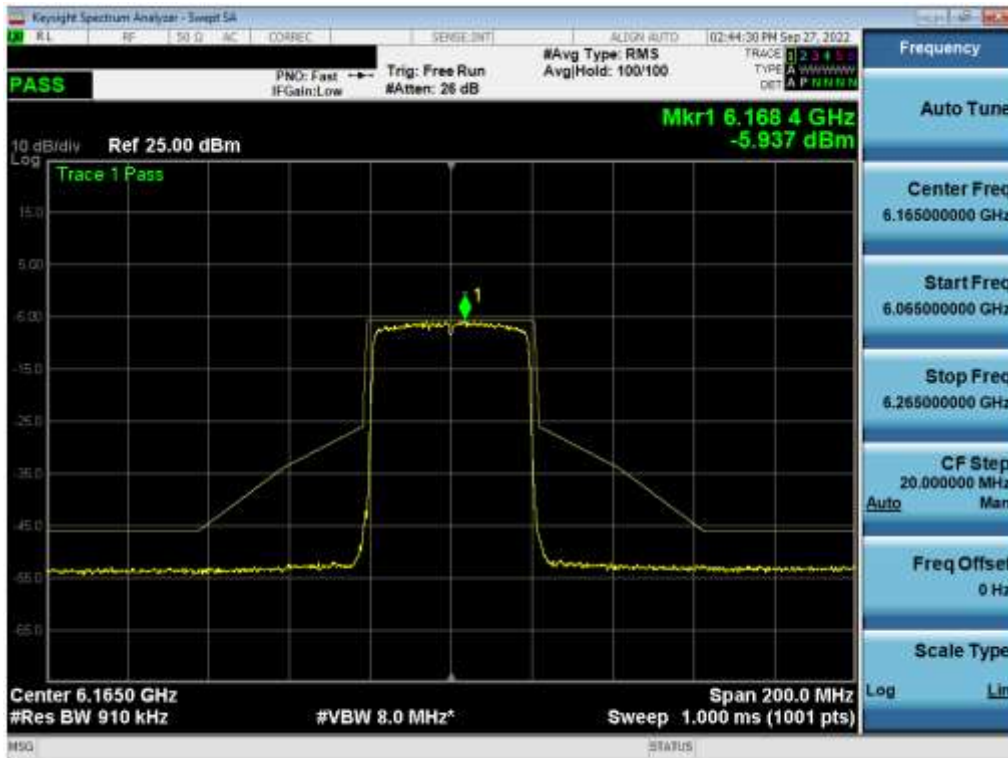


Plot 7-214. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11ax (UNII Band 5) – Ch. 93)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 136 of 239

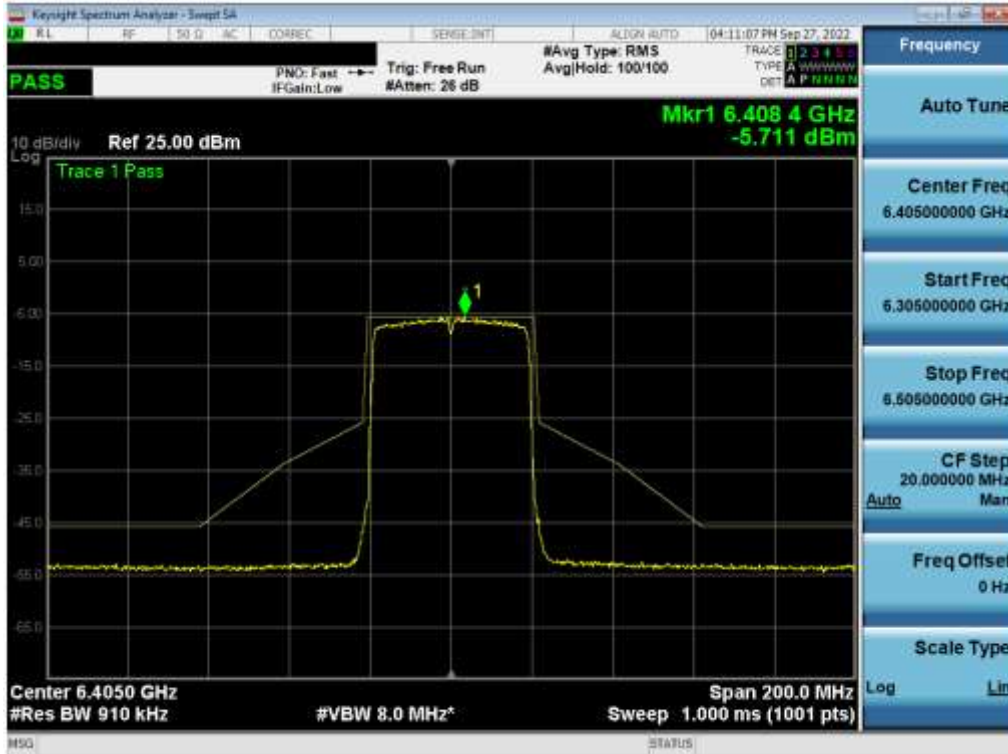


Plot 7-215. In-Band Emission Plot Measurement MIMO ANT1 (40MHz 802.11ax (UNII Band 5) – Ch. 3)

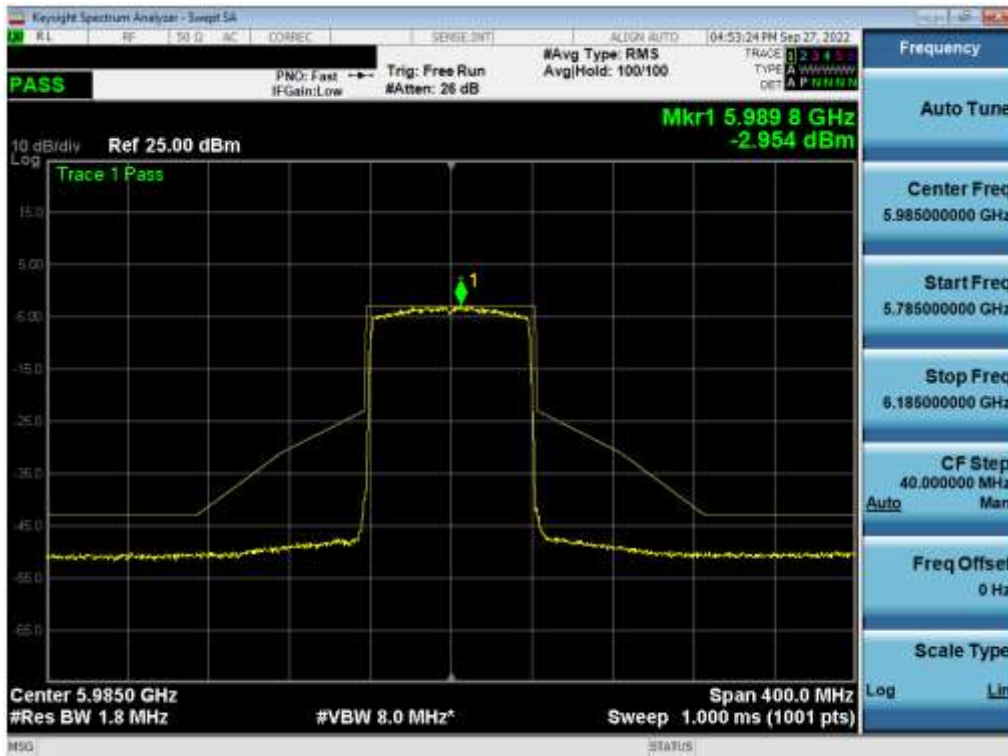


Plot 7-216. In-Band Emission Plot Measurement MIMO ANT1 (40MHz 802.11ax (UNII Band 5) – Ch. 43)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 137 of 239

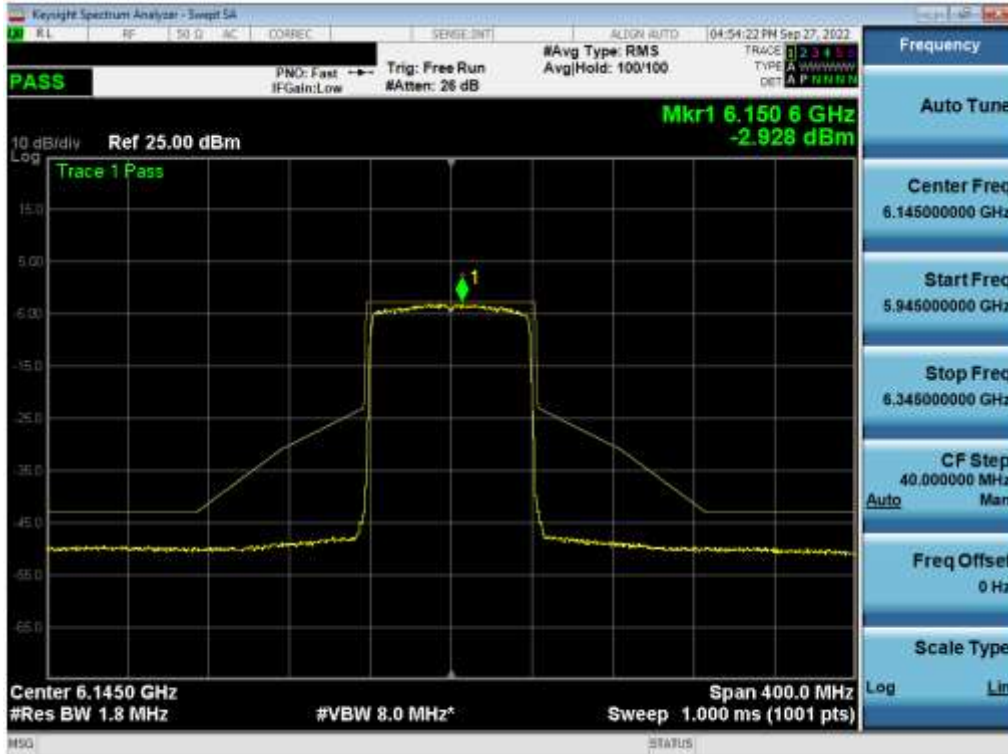


Plot 7-217. In-Band Emission Plot Measurement MIMO ANT1 (40MHz 802.11ax (UNII Band 5) – Ch. 91)

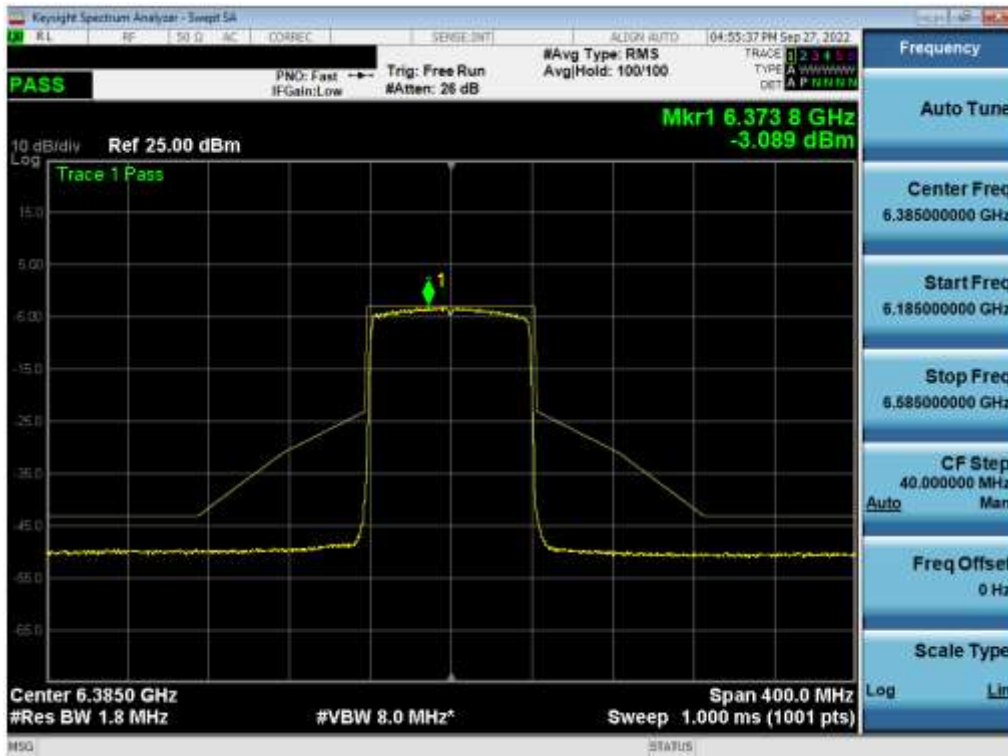


Plot 7-218. In-Band Emission Plot Measurement MIMO ANT1 (80MHz 802.11ax (UNII Band 5) – Ch. 7)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 138 of 239

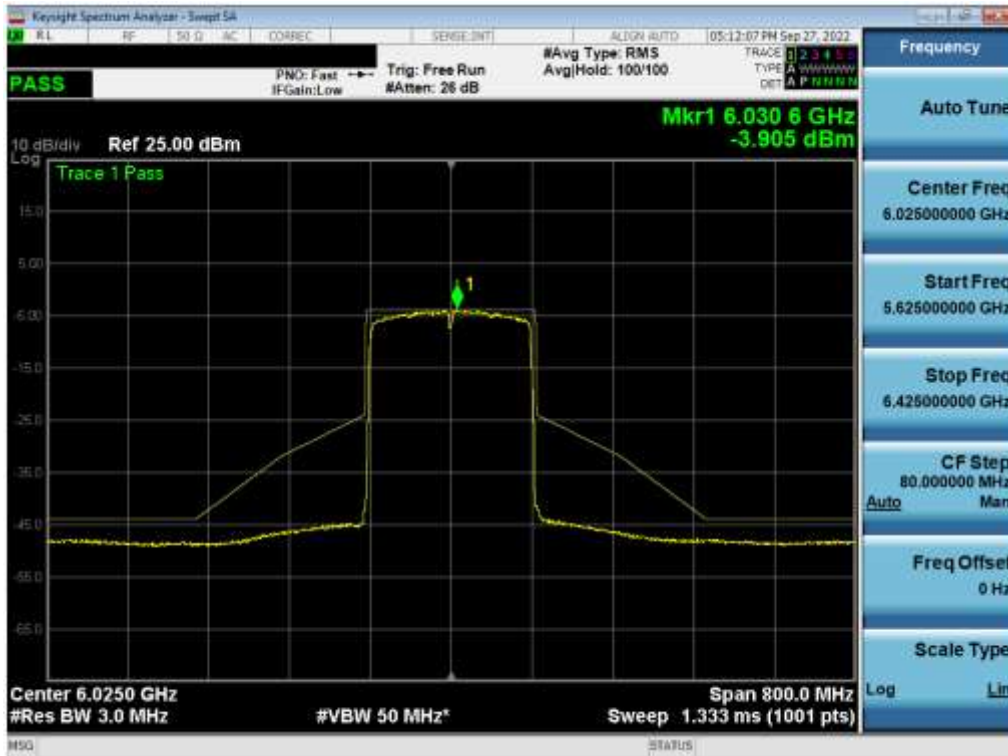


Plot 7-219. In-Band Emission Plot Measurement MIMO ANT1 (80MHz 802.11ax (UNII Band 5) – Ch. 39)

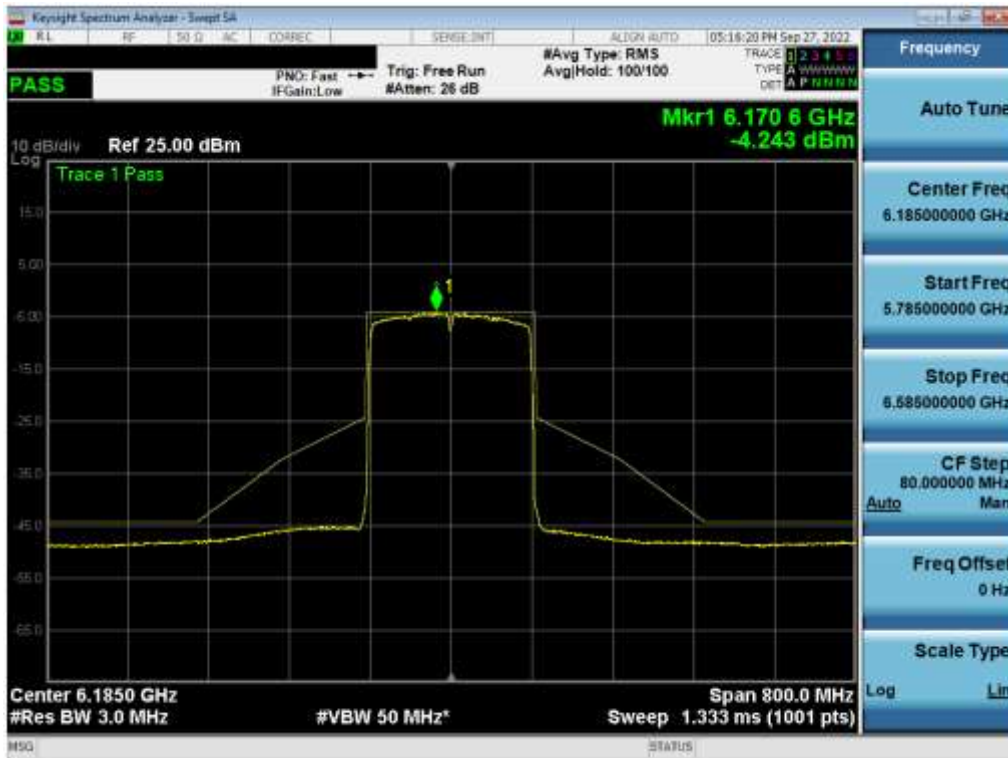


Plot 7-220. In-Band Emission Plot Measurement MIMO ANT1 (80MHz 802.11ax (UNII Band 5) – Ch. 87)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 139 of 239

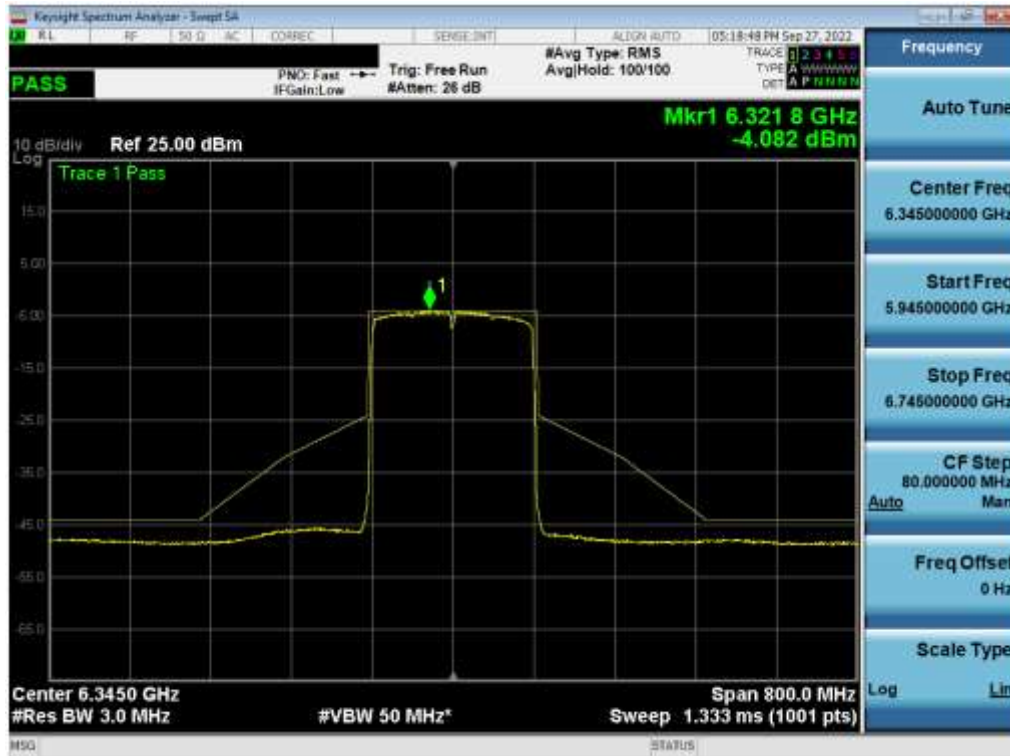


Plot 7-221. In-Band Emission Plot Measurement MIMO ANT1 (160MHz 802.11ax (UNII Band 5) – Ch. 15)



Plot 7-222. In-Band Emission Plot Measurement MIMO ANT1 (160MHz 802.11ax (UNII Band 5) – Ch. 47)

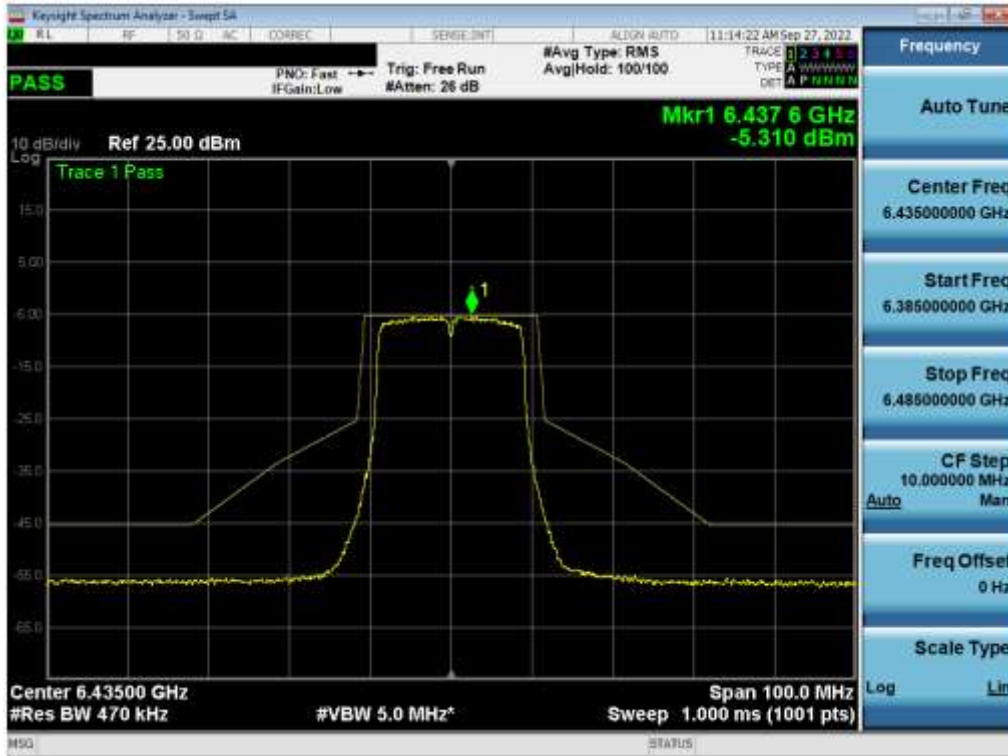
FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 140 of 239



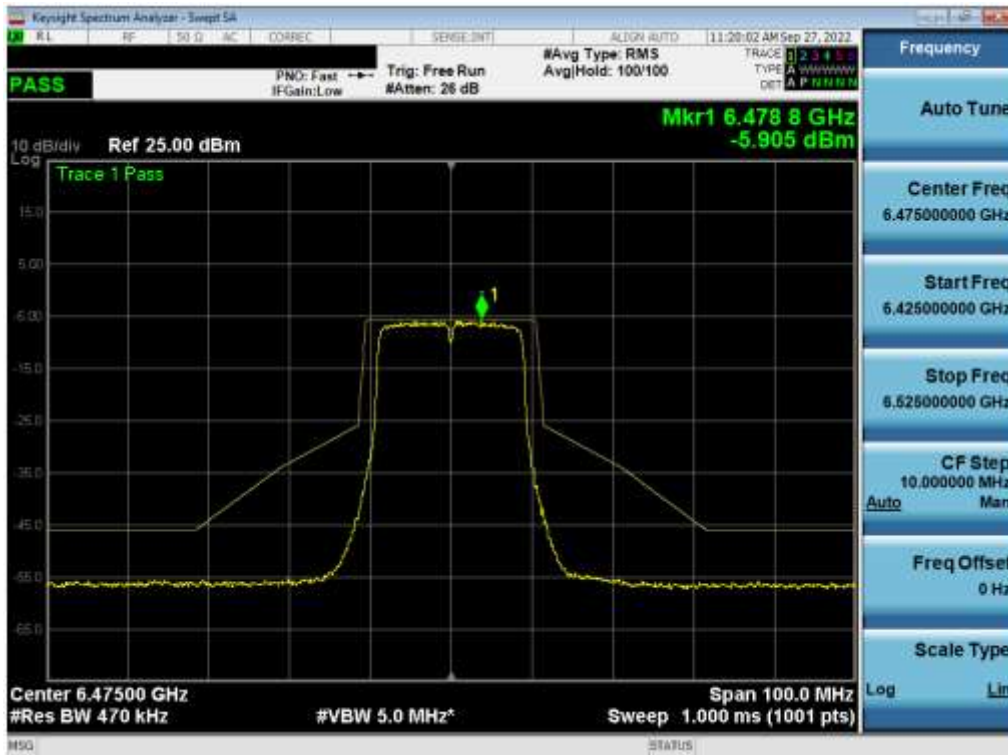
Plot 7-223. In-Band Emission Plot Measurement MIMO ANT1 (160MHz 802.11ax (UNII Band 5) – Ch. 79)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 141 of 239

MIMO Antenna-1 In-Band Emission Plot Measurement - (UNII Band 6)

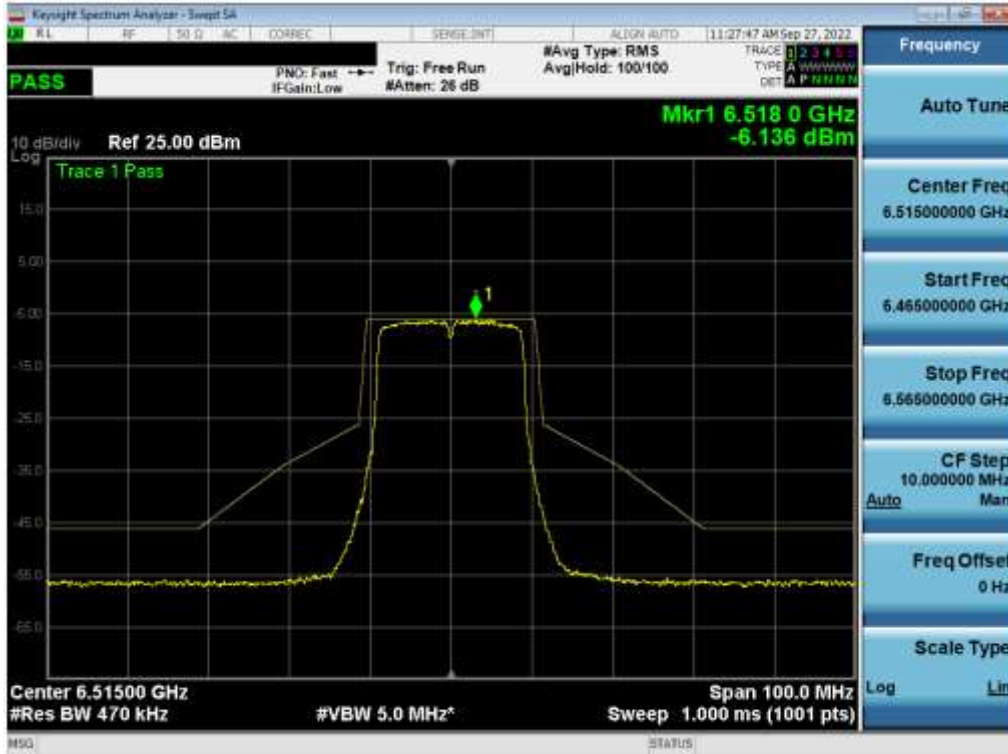


Plot 7-224. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11a (UNII Band 6) – Ch. 97)

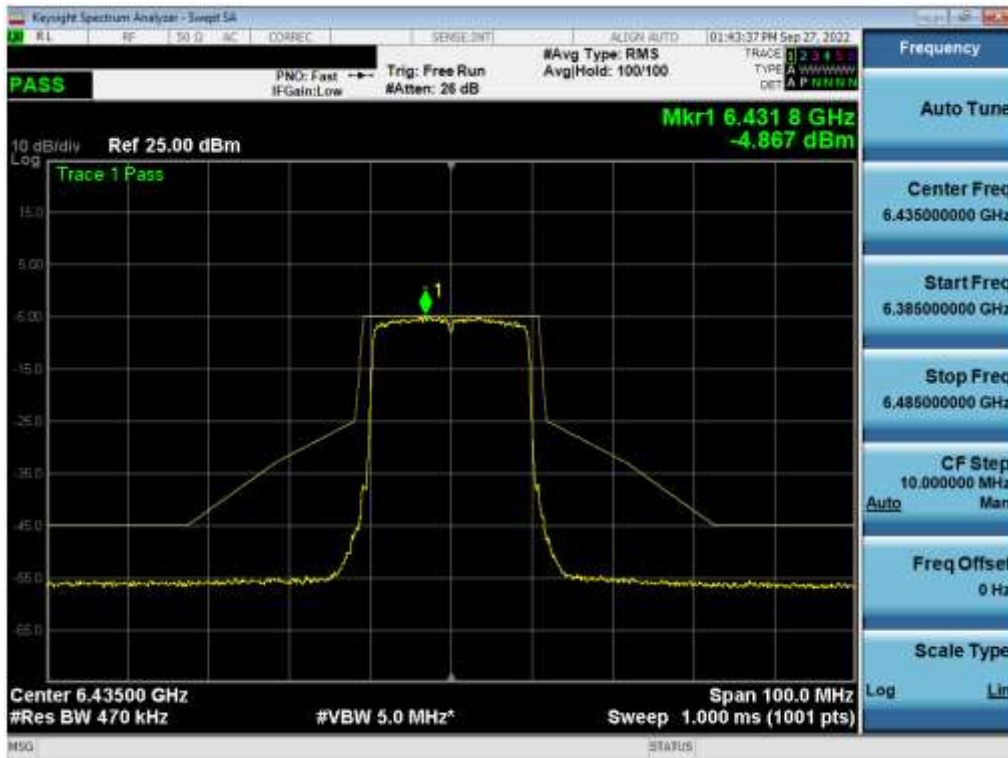


Plot 7-225. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11a (UNII Band 6) – Ch. 105)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 142 of 239

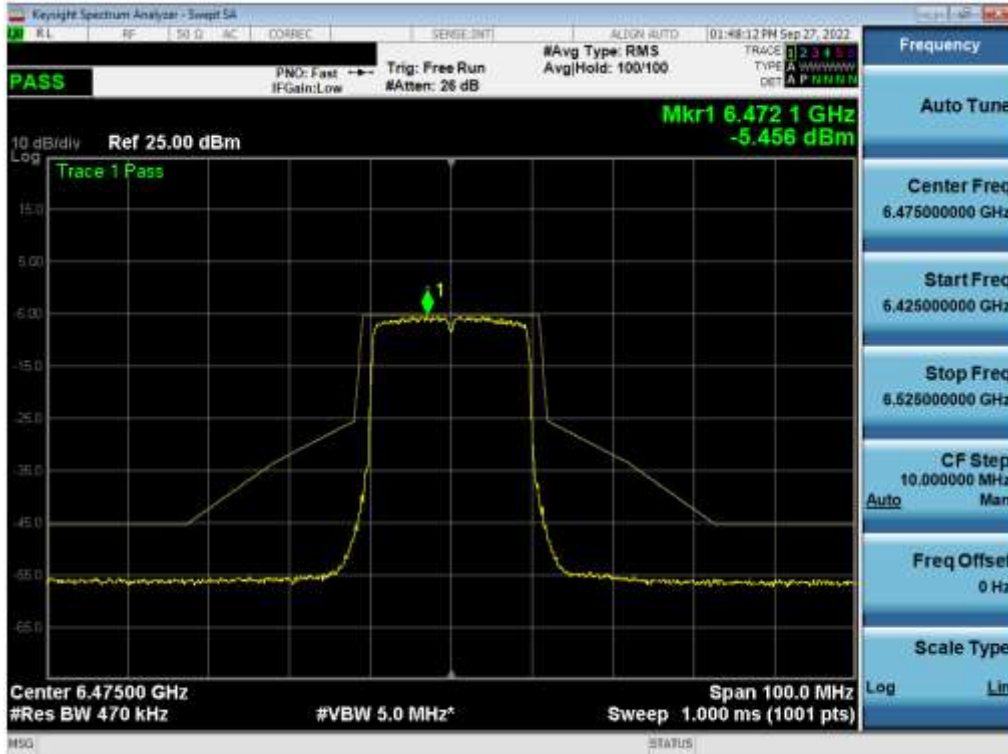


Plot 7-226. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11a (UNII Band 6) – Ch. 113)

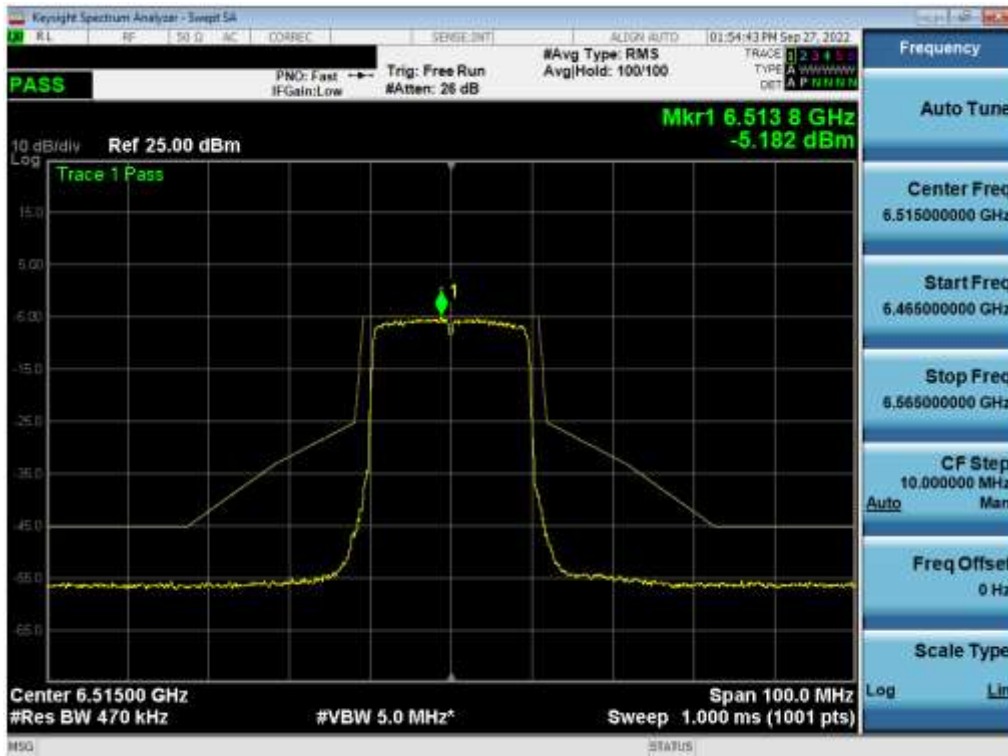


Plot 7-227. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11ax (UNII Band 6) – Ch. 97)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 143 of 239

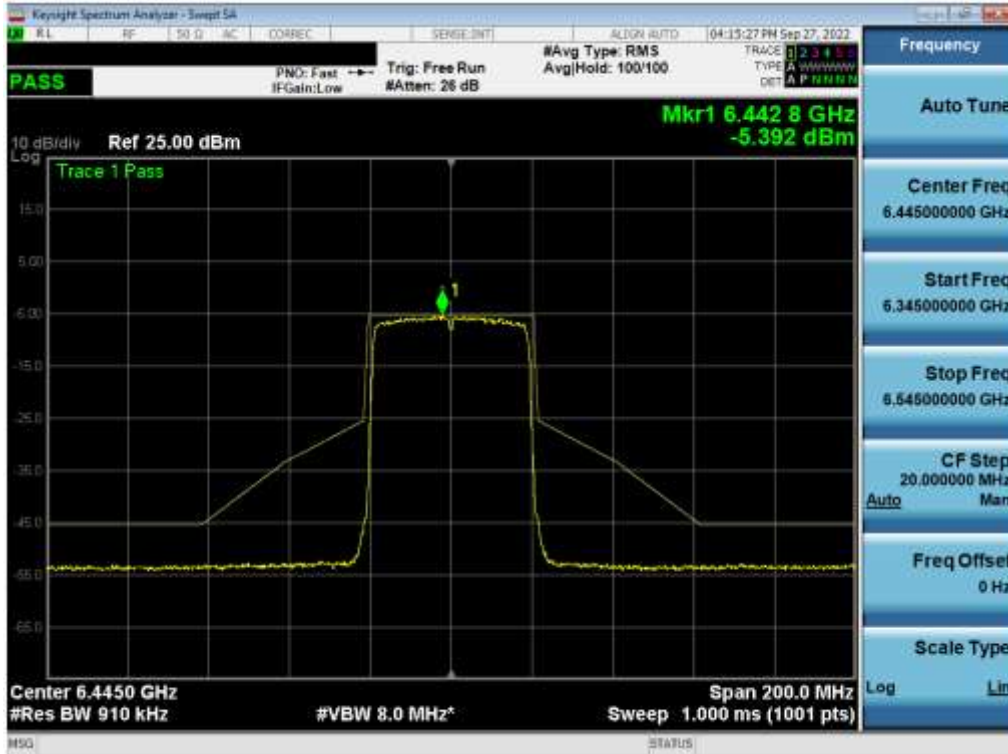


Plot 7-228. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11ax (UNII Band 6) – Ch. 105)

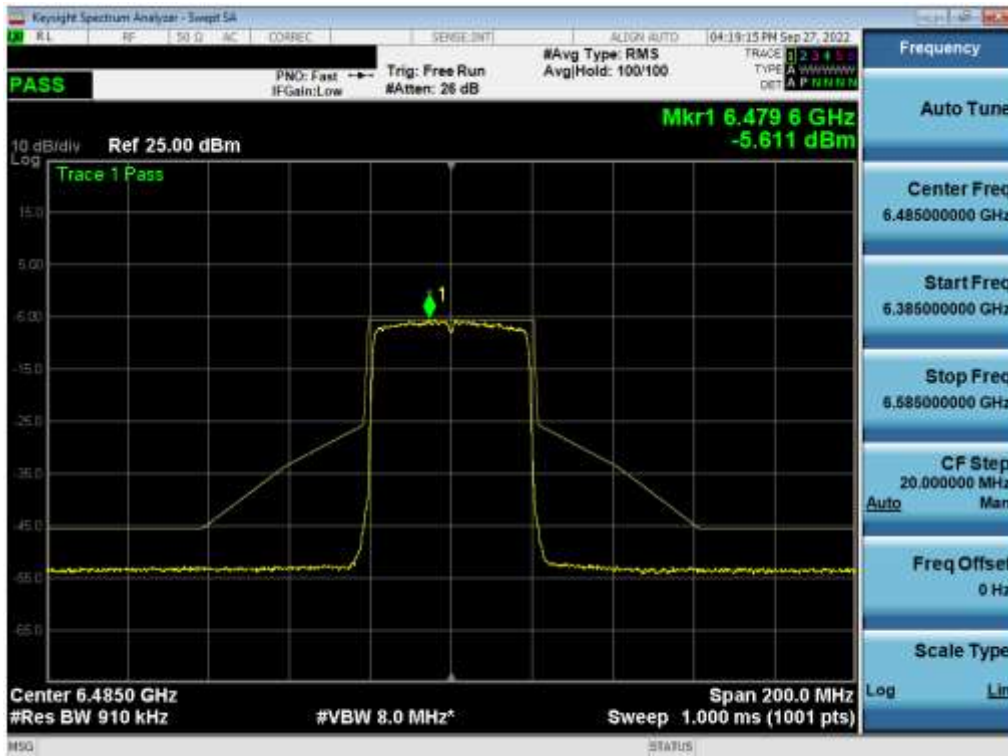


Plot 7-229. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11ax (UNII Band 6) – Ch. 113)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 144 of 239

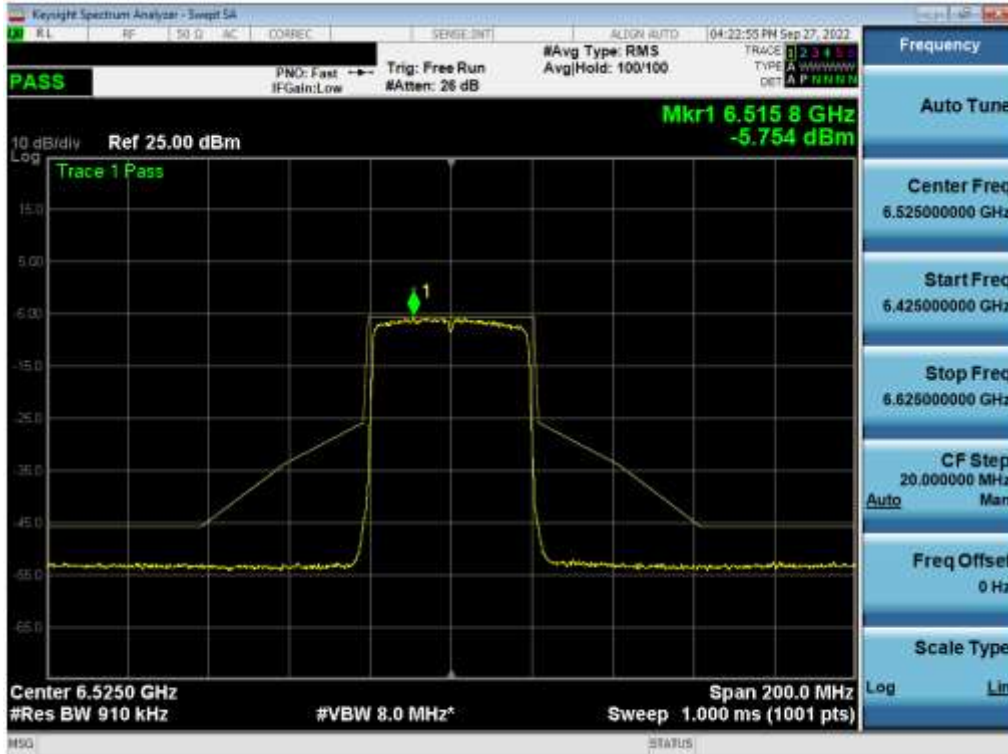


Plot 7-230. In-Band Emission Plot Measurement MIMO ANT1 (40MHz 802.11ax (UNII Band 6) – Ch. 99)

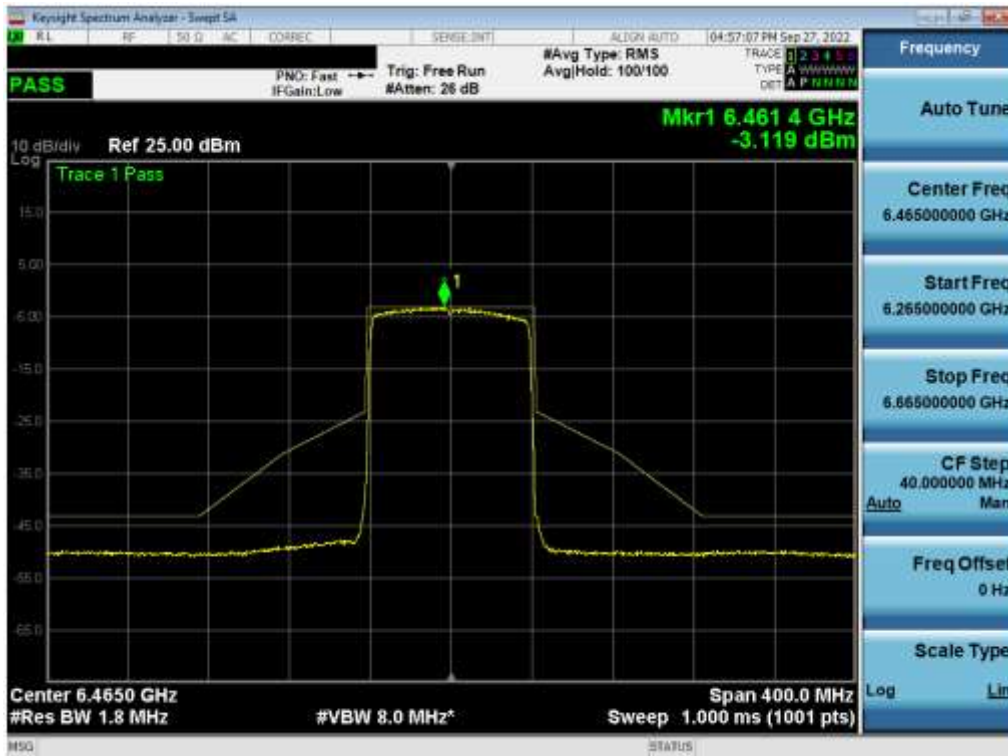


Plot 7-231. In-Band Emission Plot Measurement MIMO ANT1 (40MHz 802.11ax (UNII Band 6) – Ch. 107)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 145 of 239

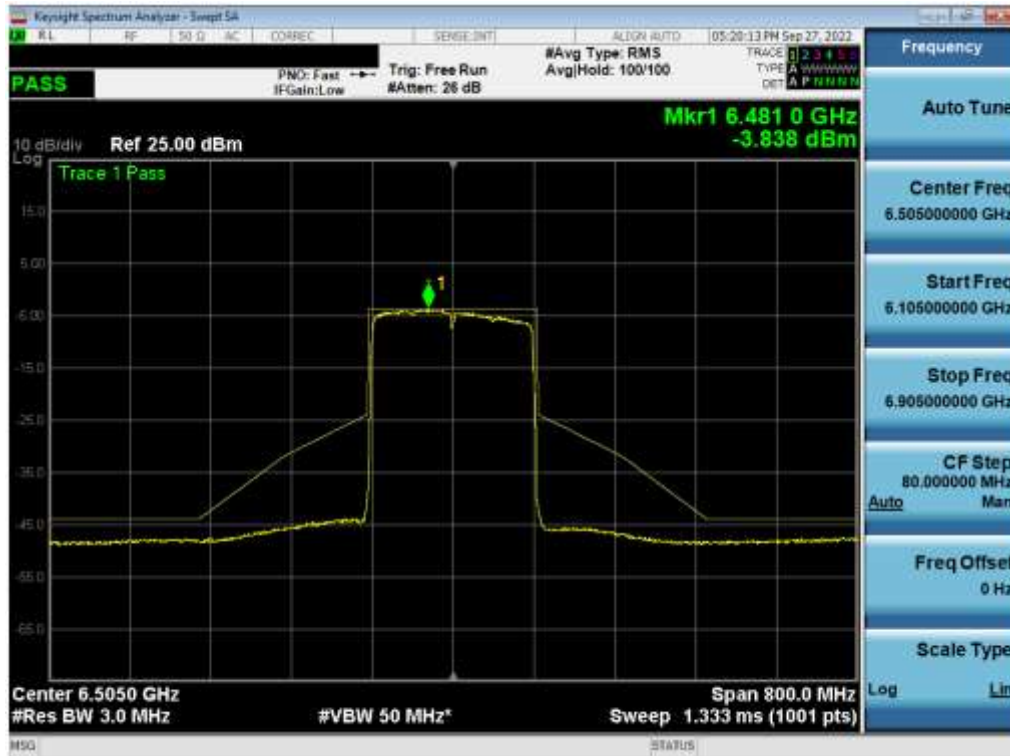


Plot 7-232. In-Band Emission Plot Measurement MIMO ANT1 (40MHz 802.11ax (UNII Band 6) – Ch. 115)



Plot 7-233. In-Band Emission Plot Measurement MIMO ANT1 (80MHz 802.11ax (UNII Band 6) – Ch. 103)

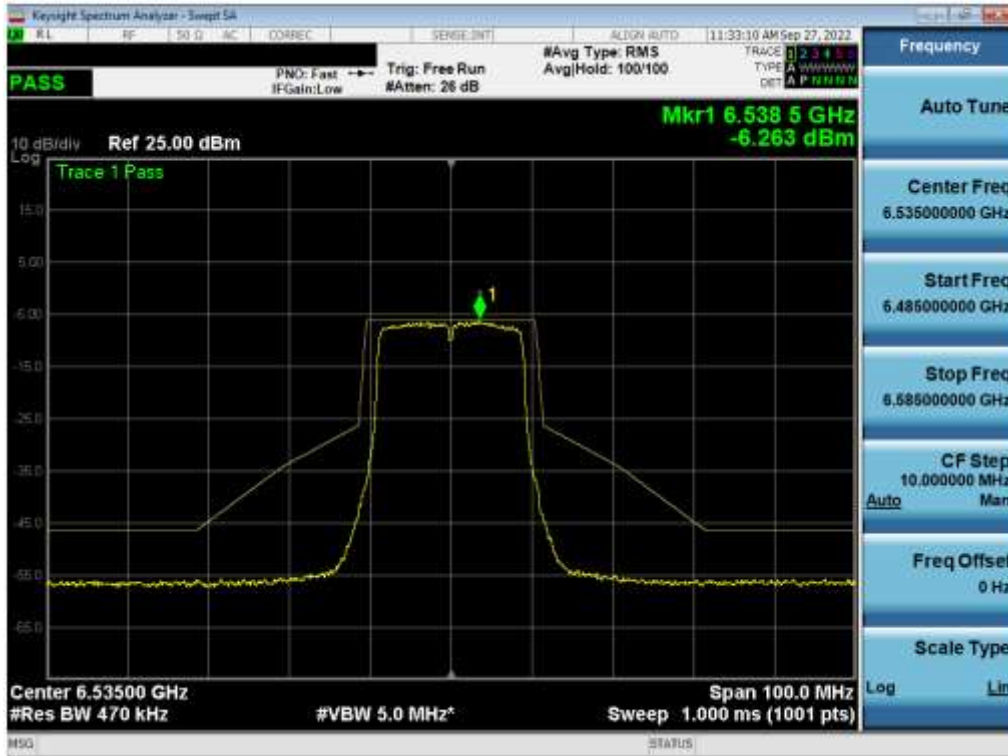
FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 146 of 239



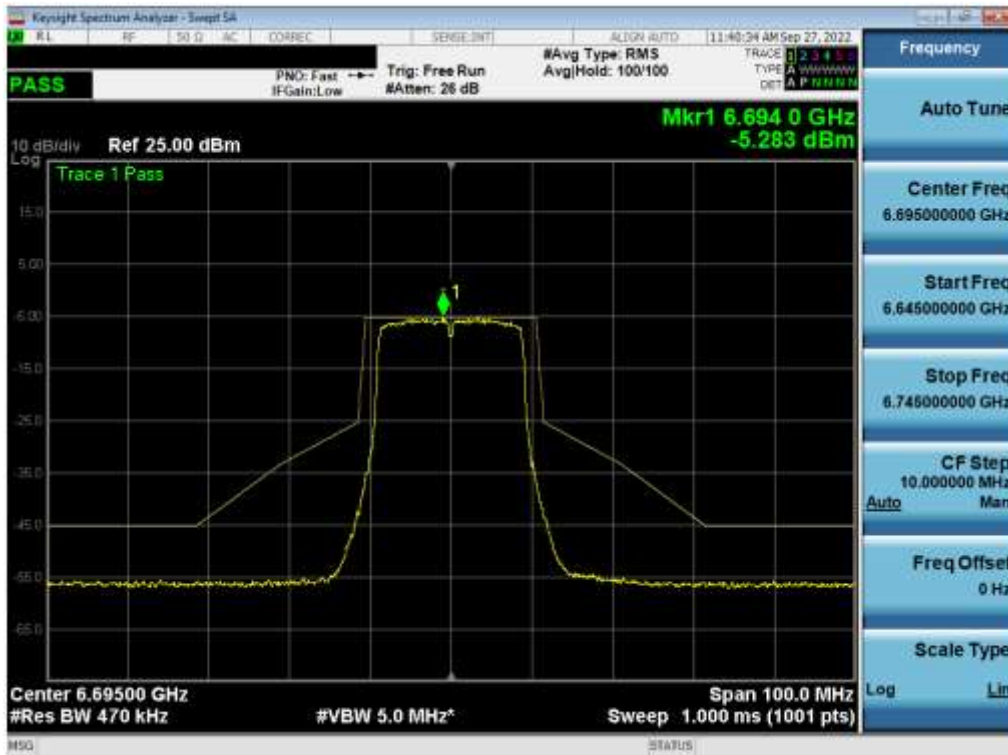
Plot 7-234. In-Band Emission Plot Measurement MIMO ANT1 (160MHz 802.11ax (UNII Band 6) – Ch. 111)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 147 of 239

MIMO Antenna-1 In-Band Emission Plot Measurement - (UNII Band 7)

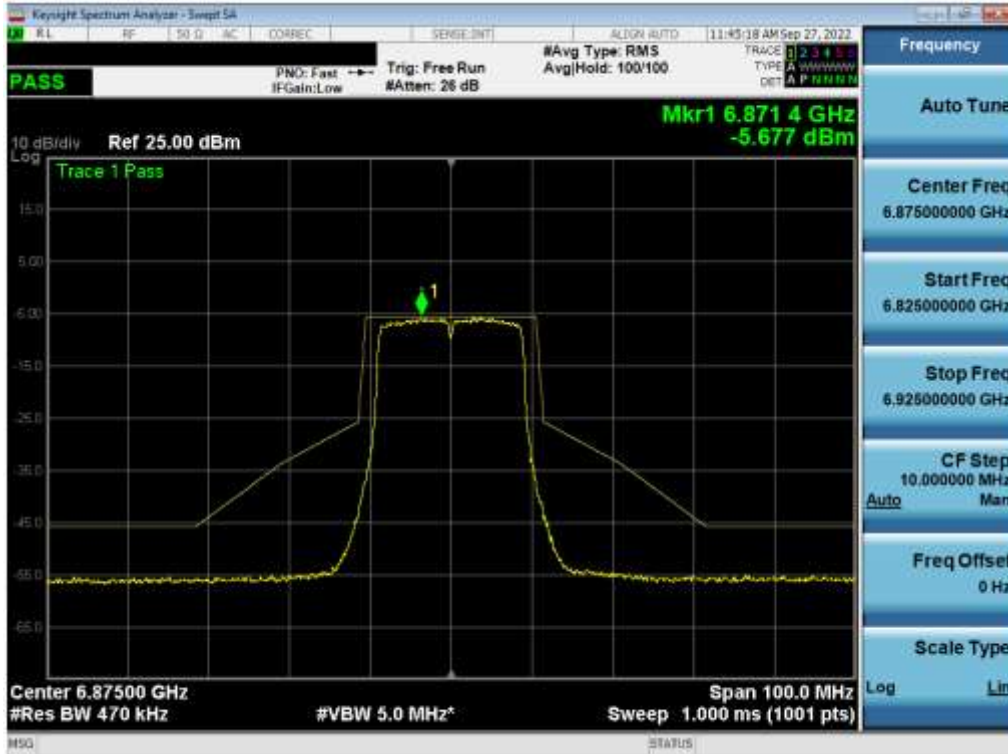


Plot 7-235. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11a (UNII Band 7) – Ch. 117)

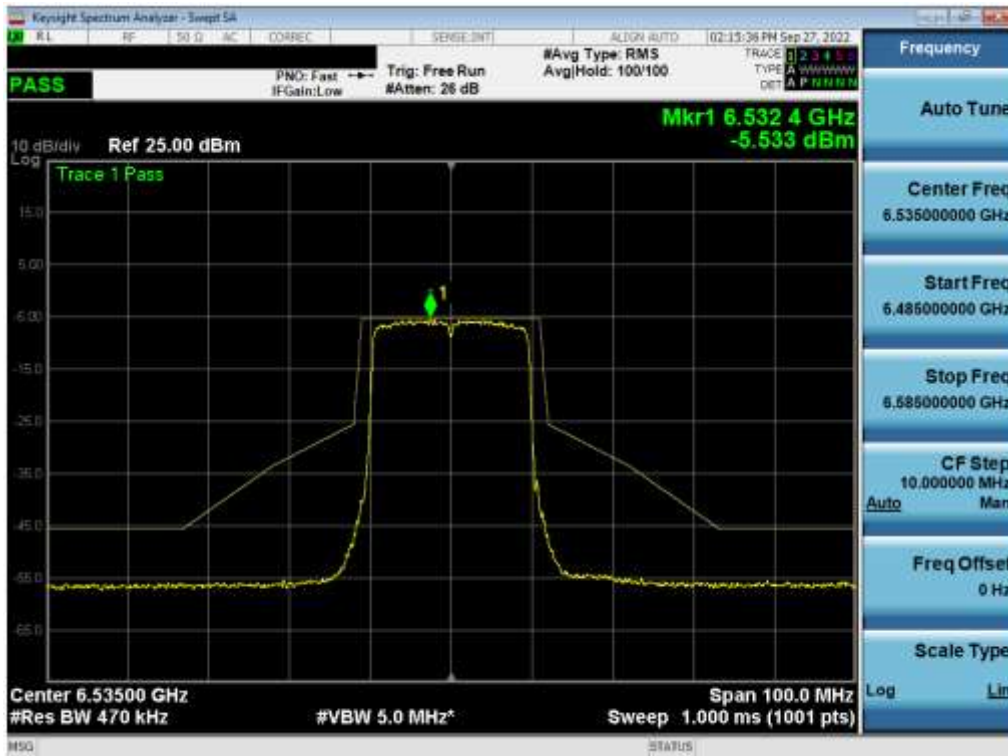


Plot 7-236. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11a (UNII Band 7) – Ch. 149)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 148 of 239

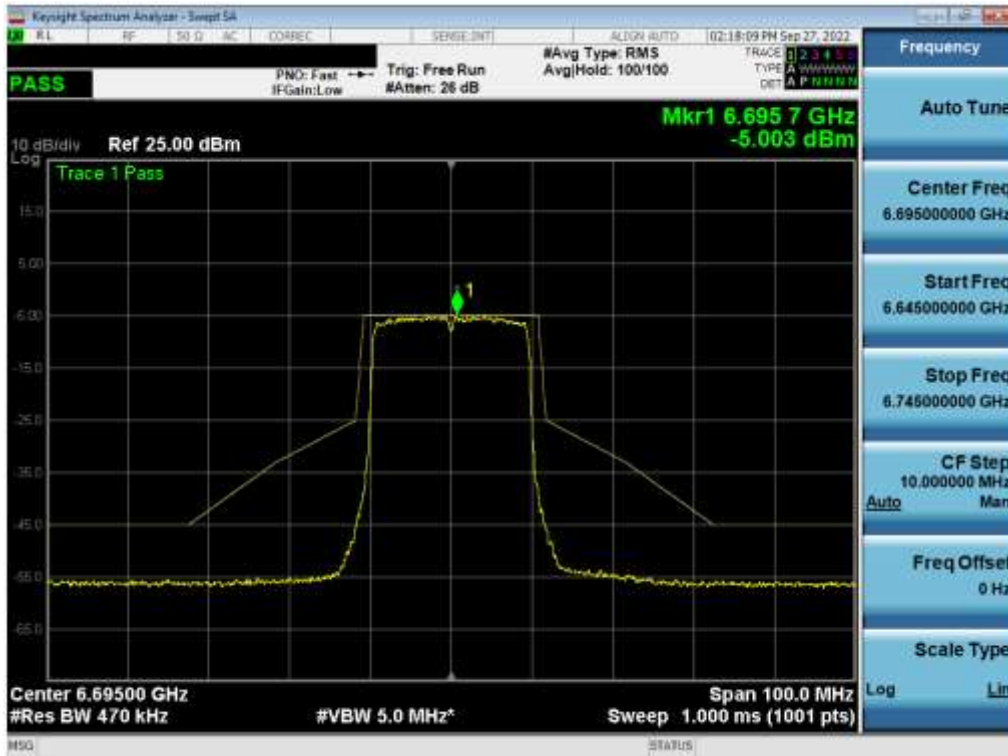


Plot 7-237. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11a (UNII Band 7) – Ch. 185)

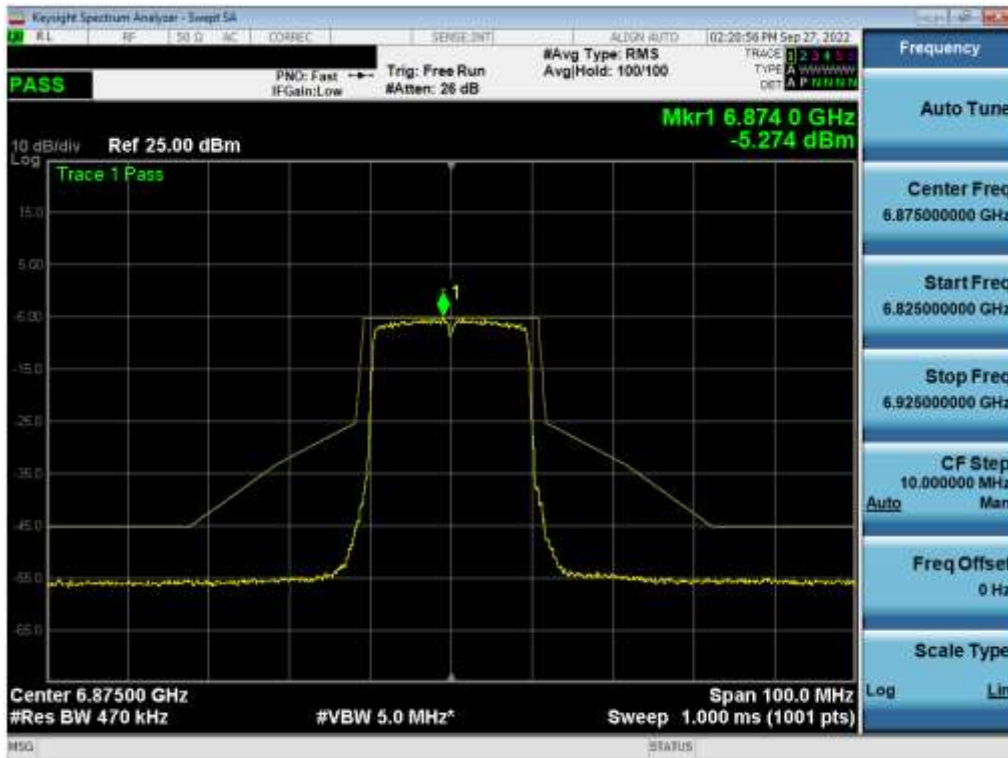


Plot 7-238. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11ax (UNII Band 7) – Ch. 117)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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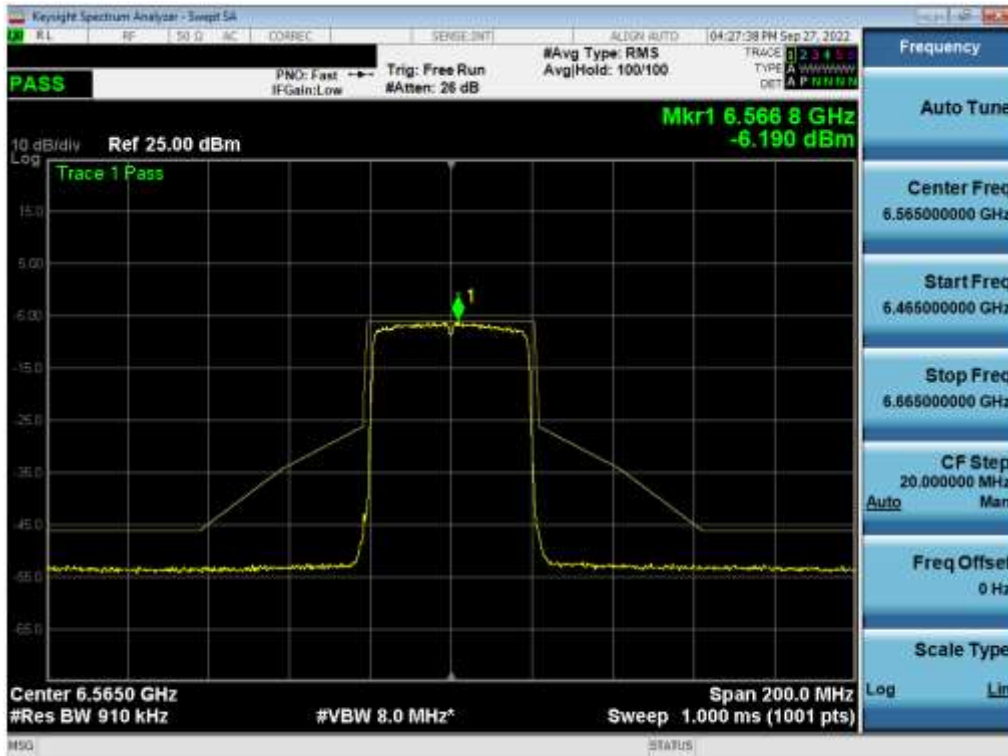


Plot 7-239. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11ax (UNII Band 7) – Ch. 149)

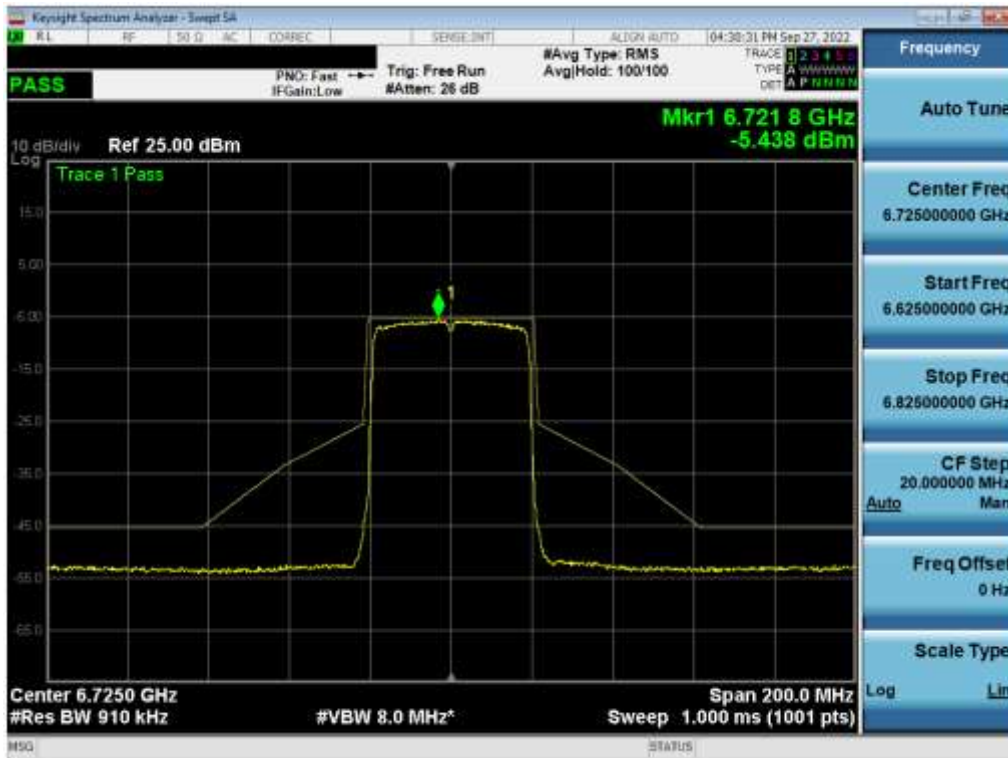


Plot 7-240. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11ax (UNII Band 7) – Ch. 185)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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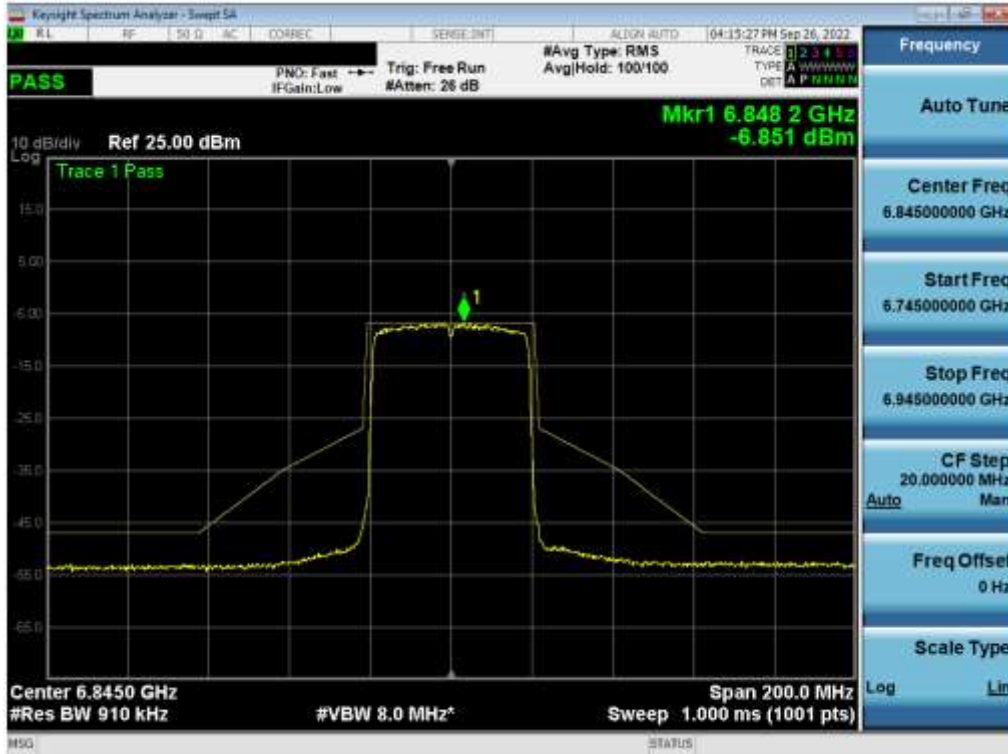


Plot 7-241. In-Band Emission Plot Measurement MIMO ANT1 (40MHz 802.11ax (UNII Band 7) – Ch. 123)

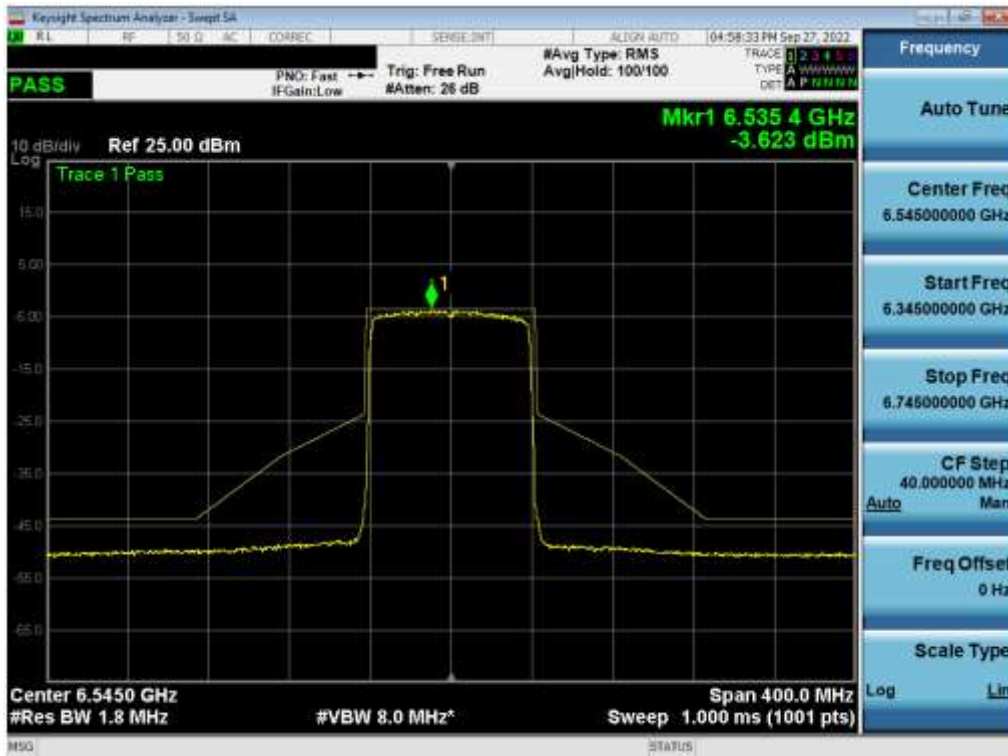


Plot 7-242. In-Band Emission Plot Measurement MIMO ANT1 (40MHz 802.11ax (UNII Band 7) – Ch. 155)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 151 of 239

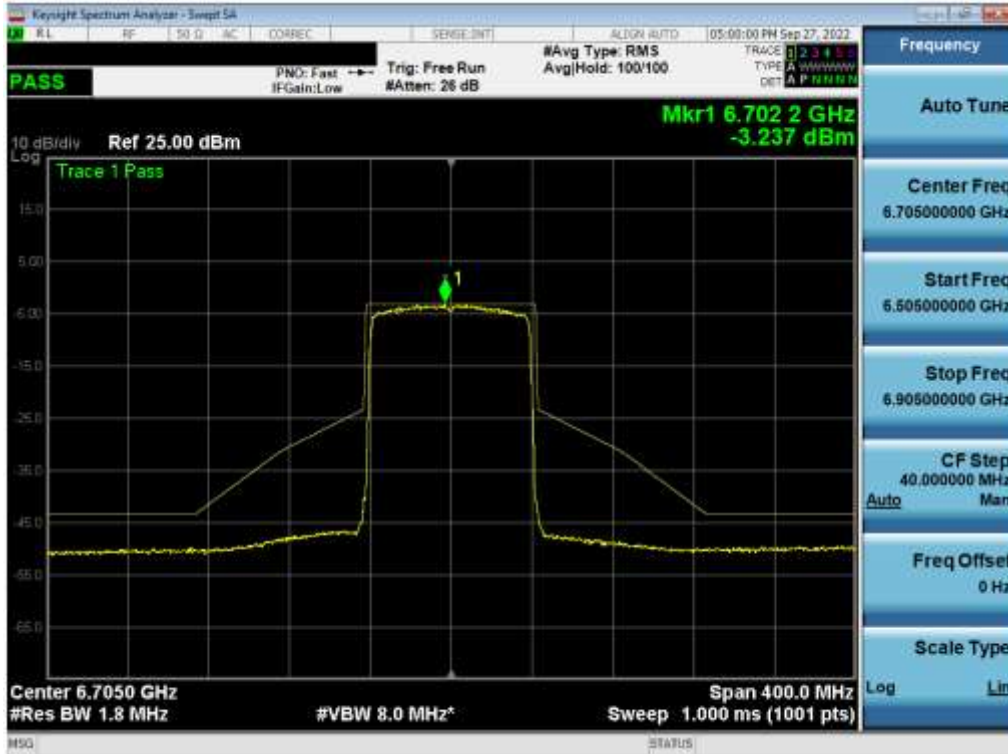


Plot 7-243. In-Band Emission Plot Measurement MIMO ANT1 (40MHz 802.11ax (UNII Band 7) – Ch. 179)

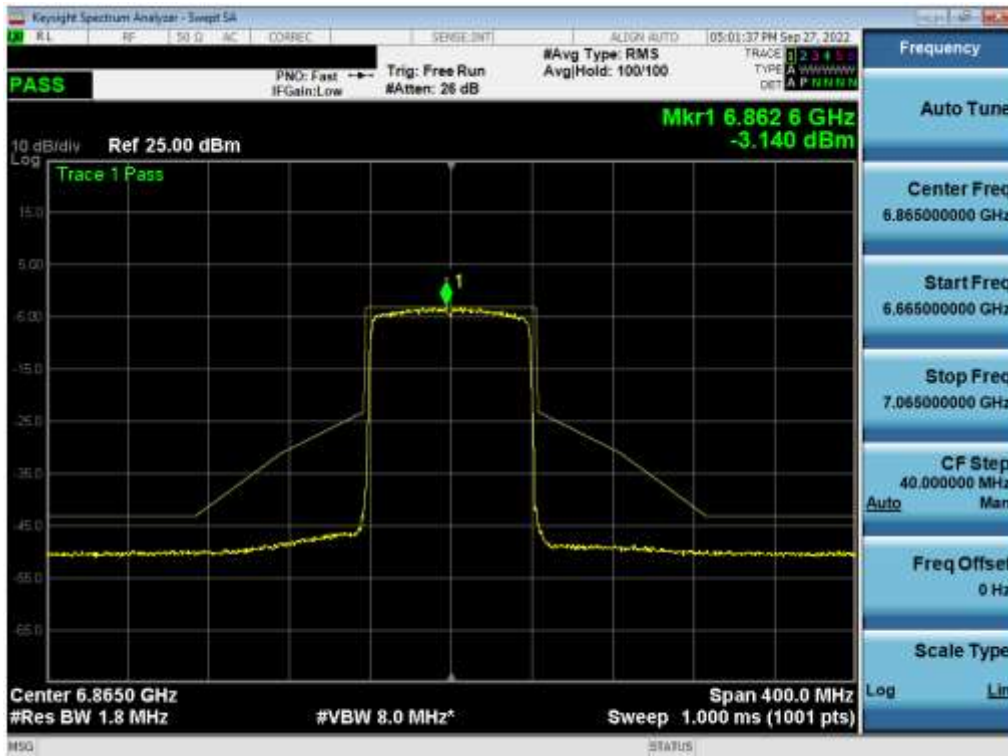


Plot 7-244. In-Band Emission Plot Measurement MIMO ANT1 (80MHz 802.11ax (UNII Band 7) – Ch. 119)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 152 of 239

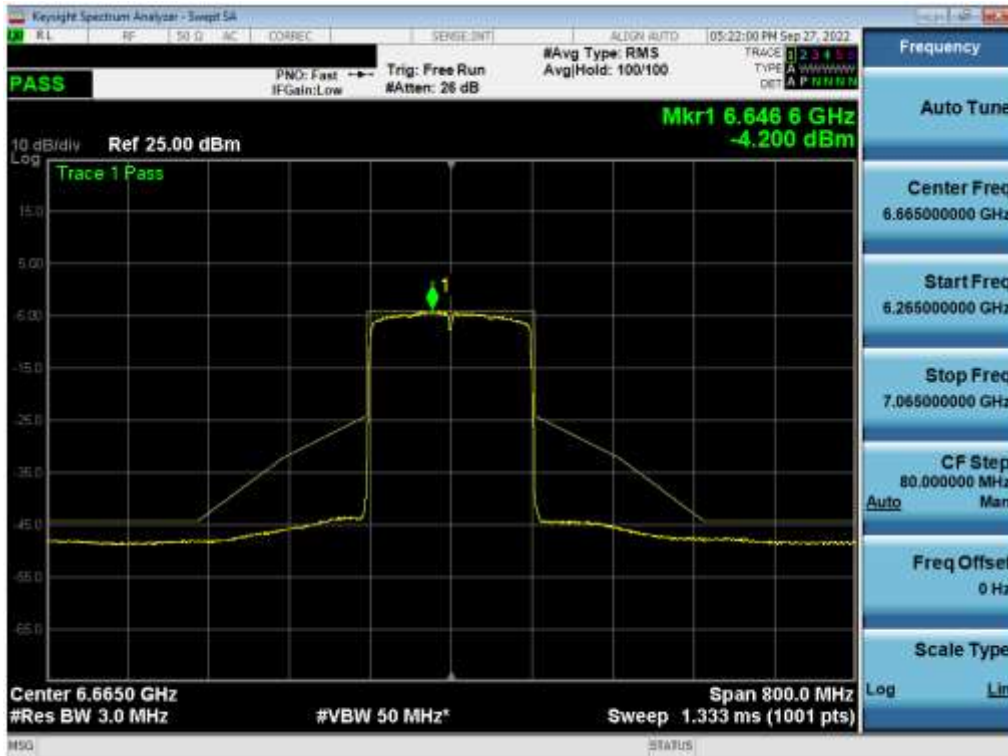


Plot 7-245. In-Band Emission Plot Measurement MIMO ANT1 (80MHz 802.11ax (UNII Band 7) – Ch. 151)

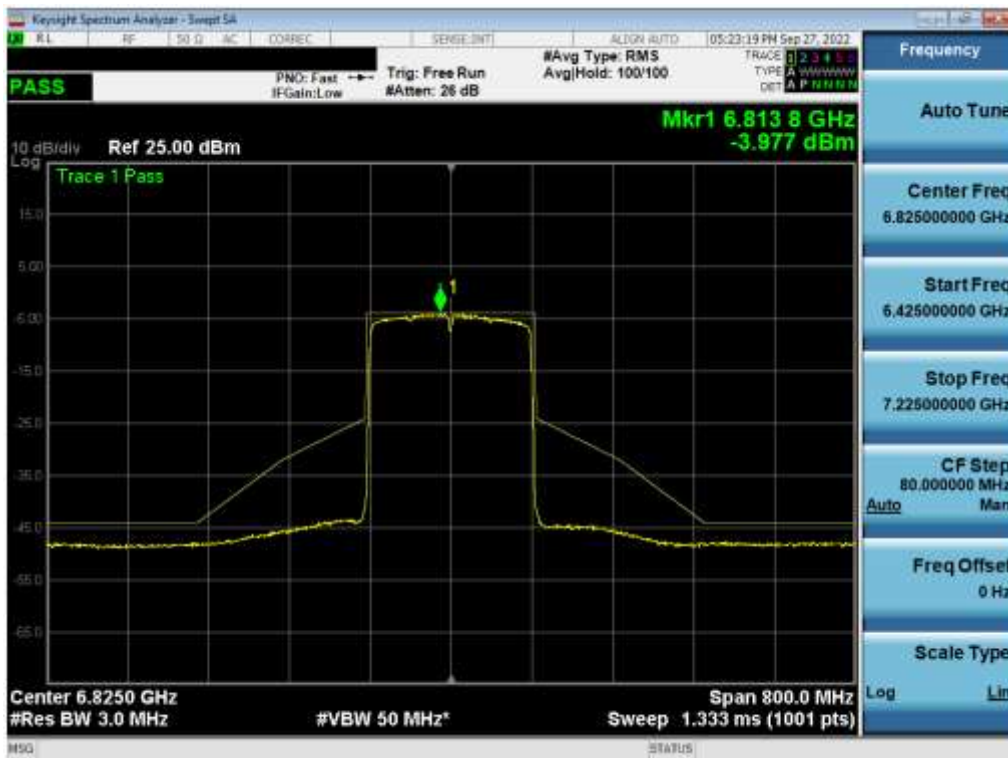


Plot 7-246. In-Band Emission Plot Measurement MIMO ANT1 (80MHz 802.11ax (UNII Band 7) – Ch. 183)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 153 of 239



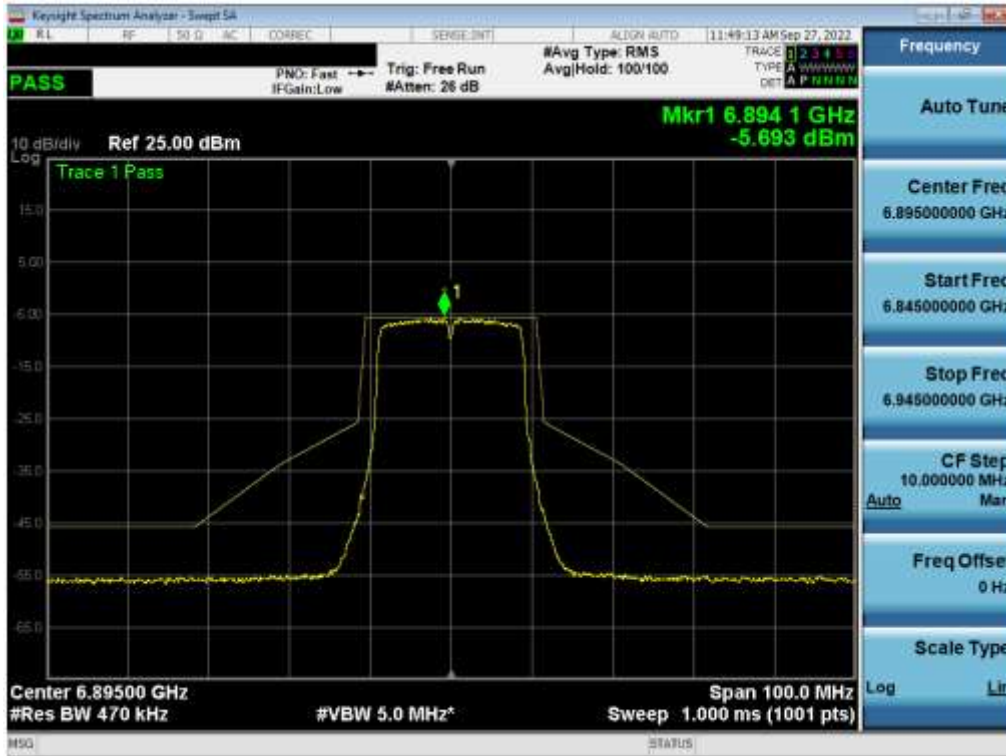
Plot 7-247. In-Band Emission Plot Measurement MIMO ANT1 (160MHz 802.11ax (UNII Band 7) – Ch. 143)



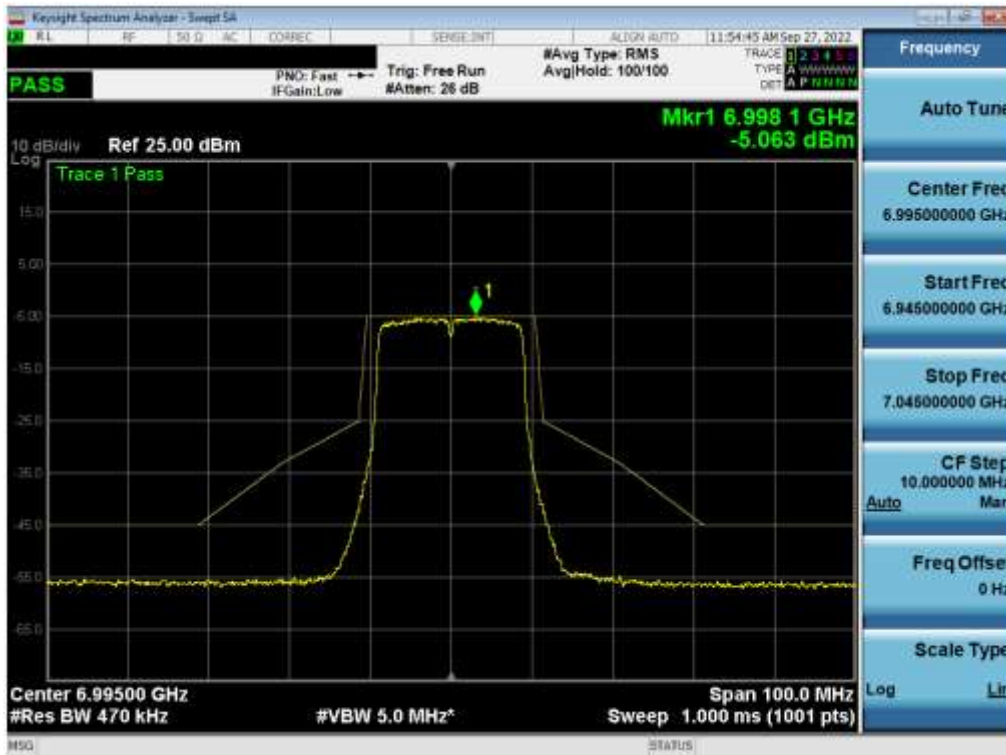
Plot 7-248. In-Band Emission Plot Measurement MIMO ANT1 (160MHz 802.11ax (UNII Band 7) – Ch. 175)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 154 of 239

MIMO Antenna-1 In-Band Emission Plot Measurement - (UNII Band 8)

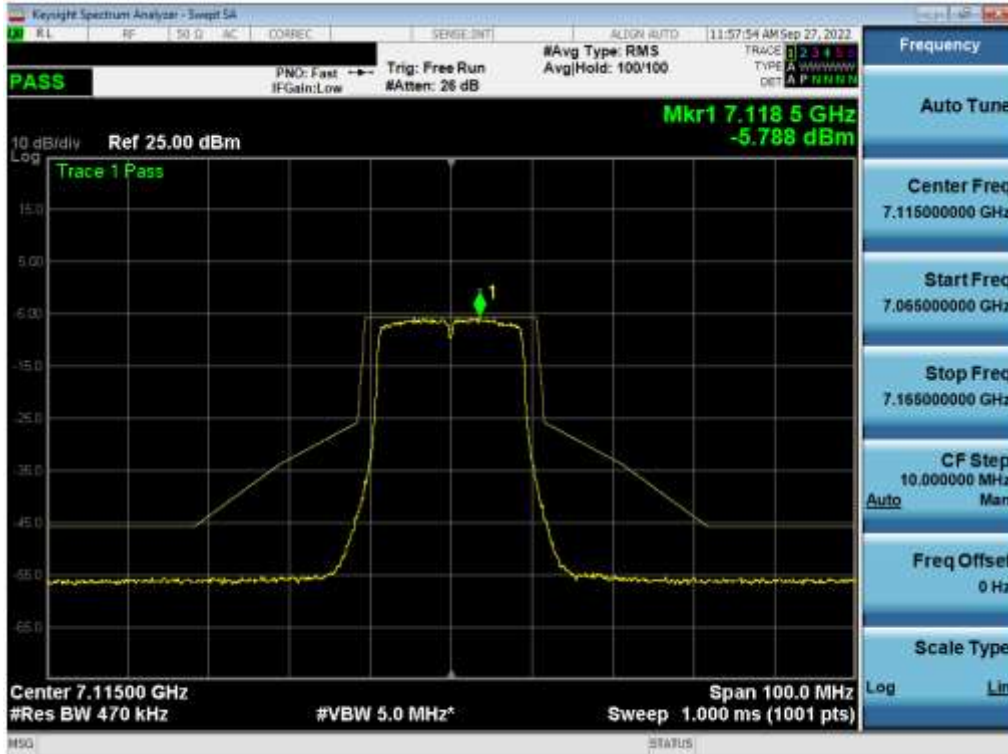


Plot 7-249. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11a (UNII Band 8) – Ch. 189)

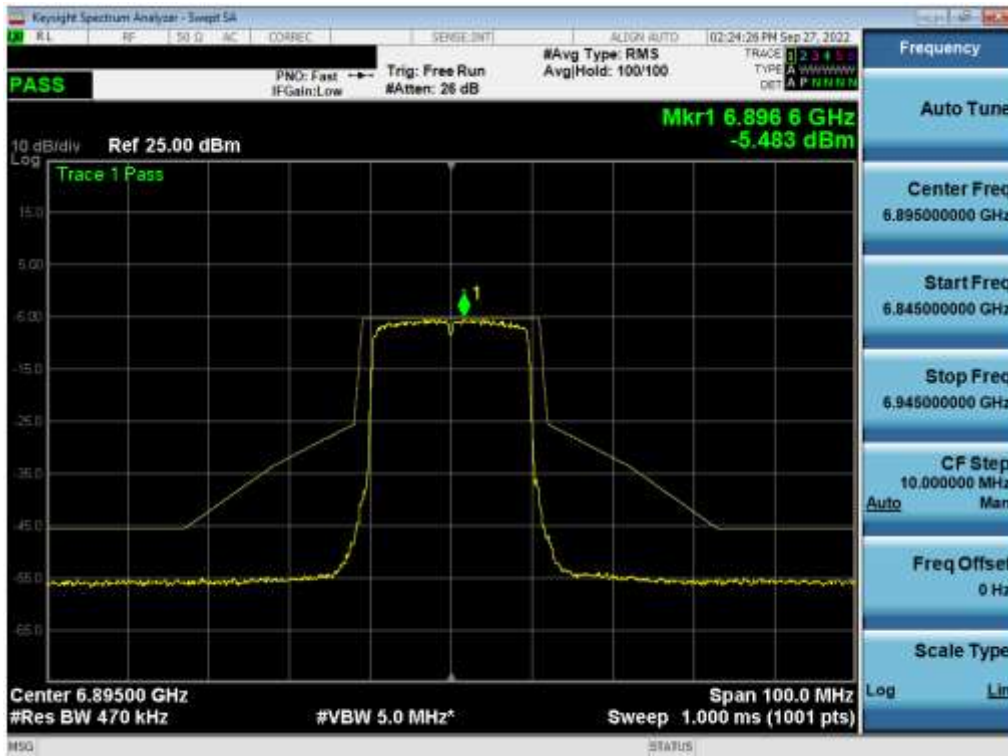


Plot 7-250. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11a (UNII Band 8) – Ch. 209)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 155 of 239

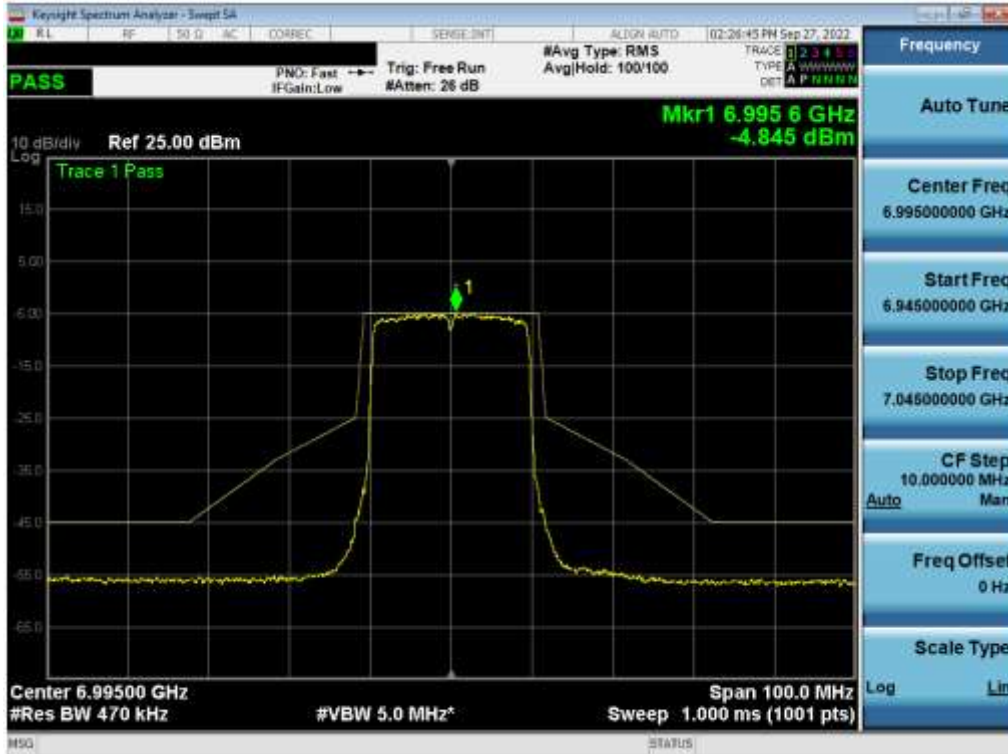


Plot 7-251. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11a (UNII Band 8) – Ch. 233)

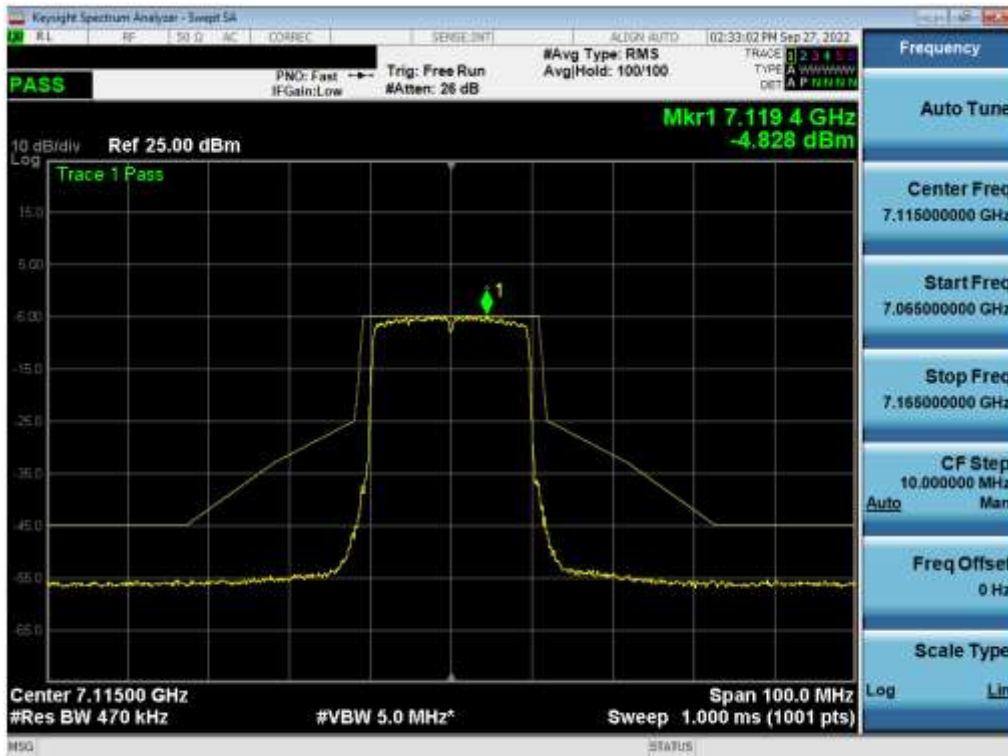


Plot 7-252. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11ax (UNII Band 8) – Ch. 189)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 156 of 239

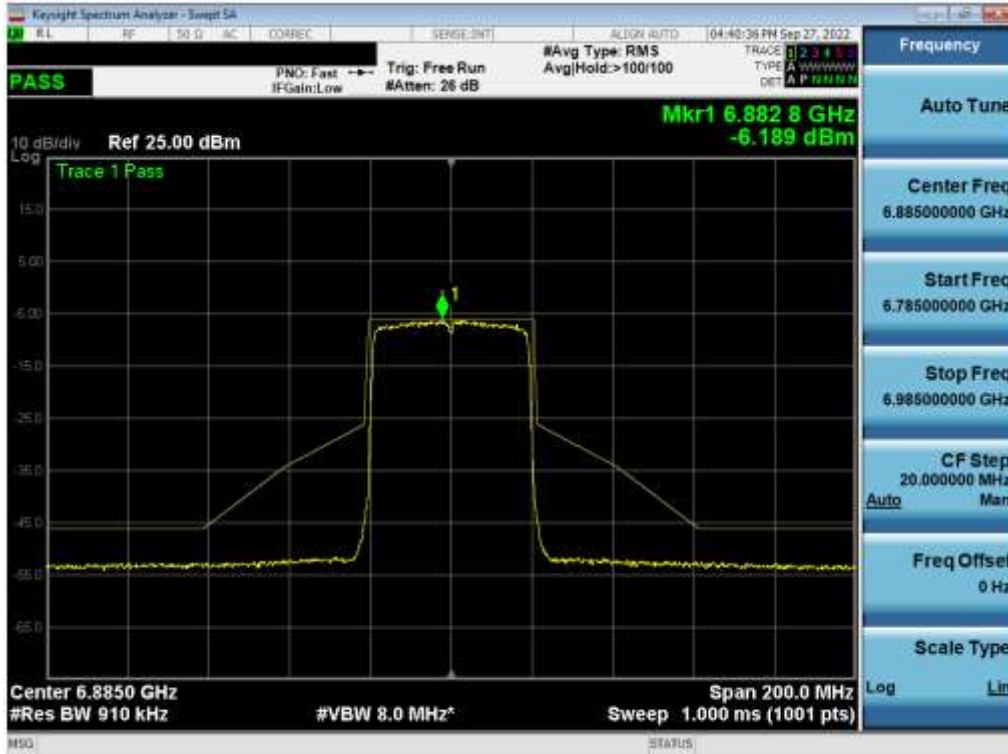


Plot 7-253. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11ax (UNII Band 8) – Ch. 209)

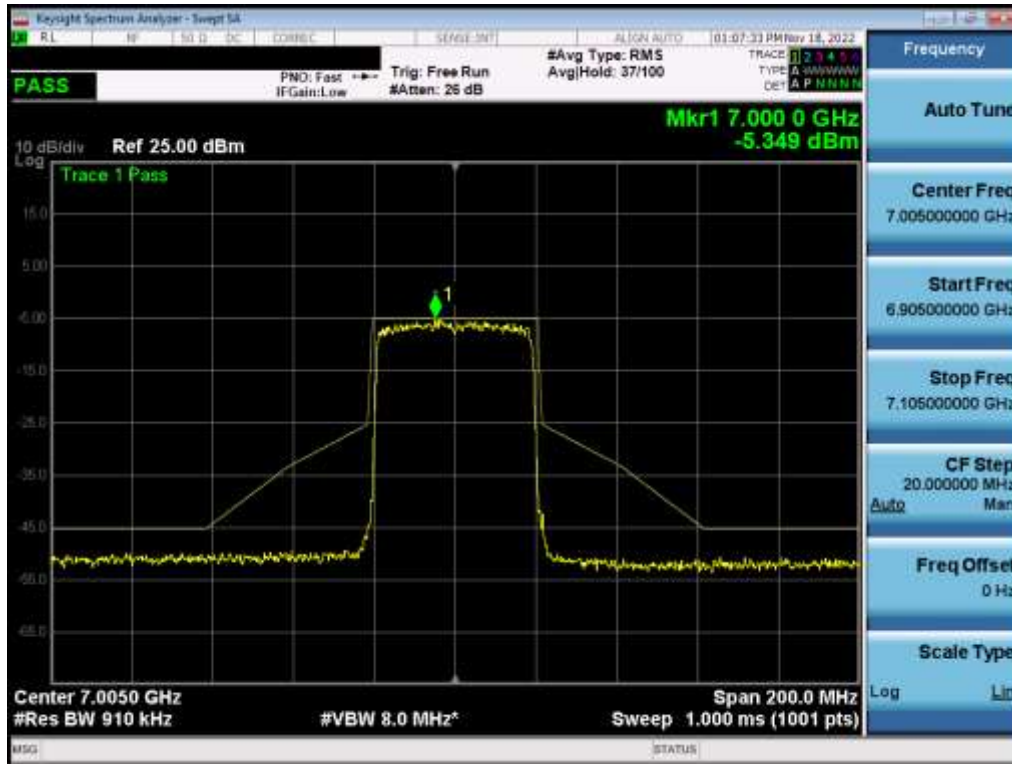


Plot 7-254. In-Band Emission Plot Measurement MIMO ANT1 (20MHz 802.11ax (UNII Band 8) – Ch. 233)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 157 of 239

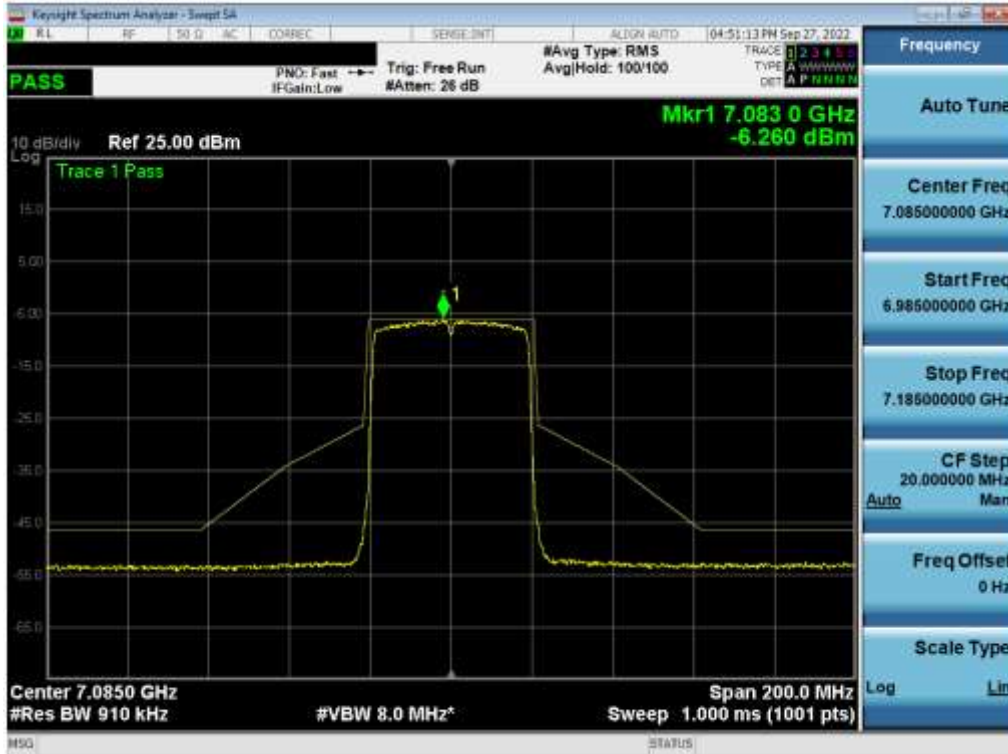


Plot 7-255. In-Band Emission Plot Measurement MIMO ANT1 (40MHz 802.11ax (UNII Band 8) – Ch. 187)

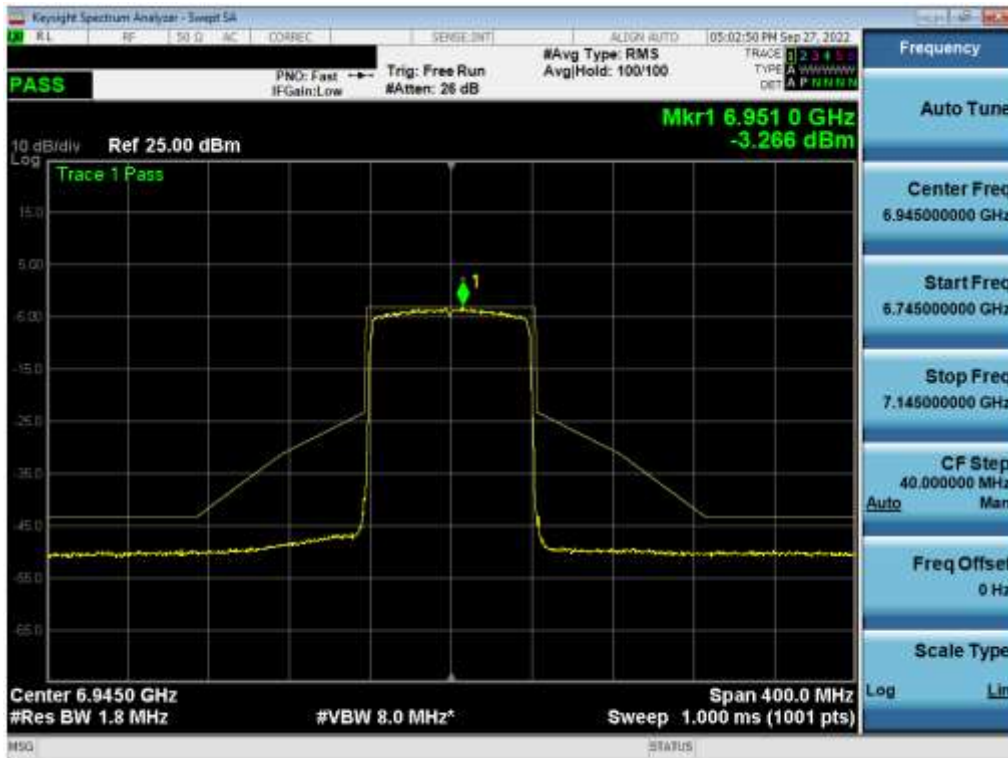


Plot 7-256. In-Band Emission Plot Measurement MIMO ANT1 (40MHz 802.11ax (UNII Band 8) – Ch. 211)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 158 of 239

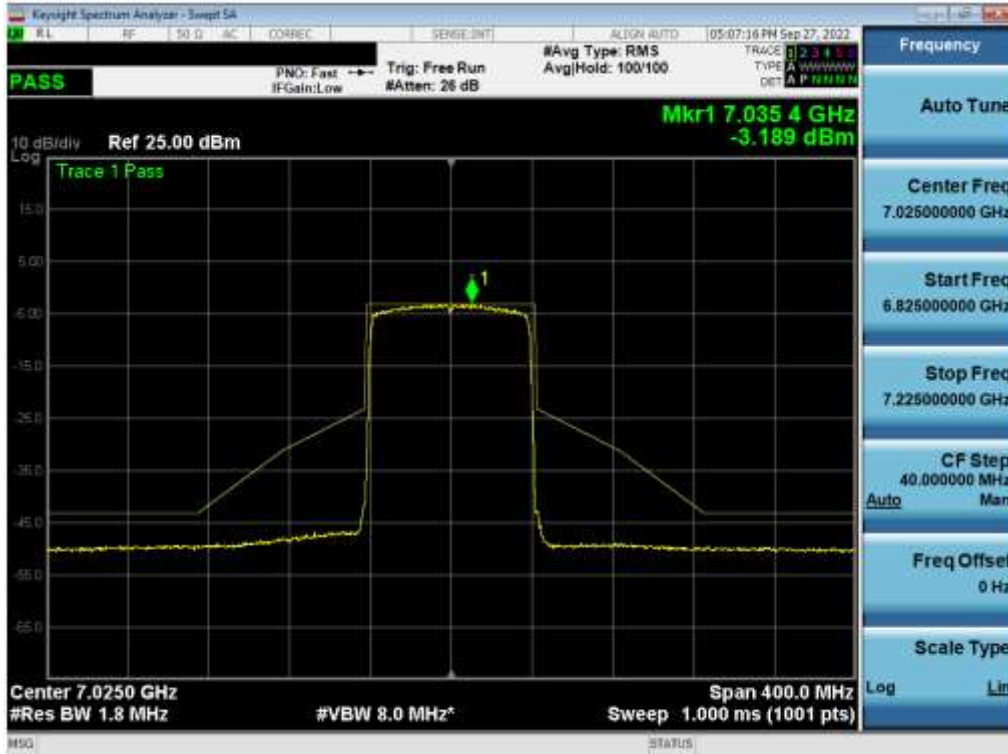


Plot 7-257. In-Band Emission Plot Measurement MIMO ANT1 (40MHz 802.11ax (UNII Band 8) – Ch. 227)

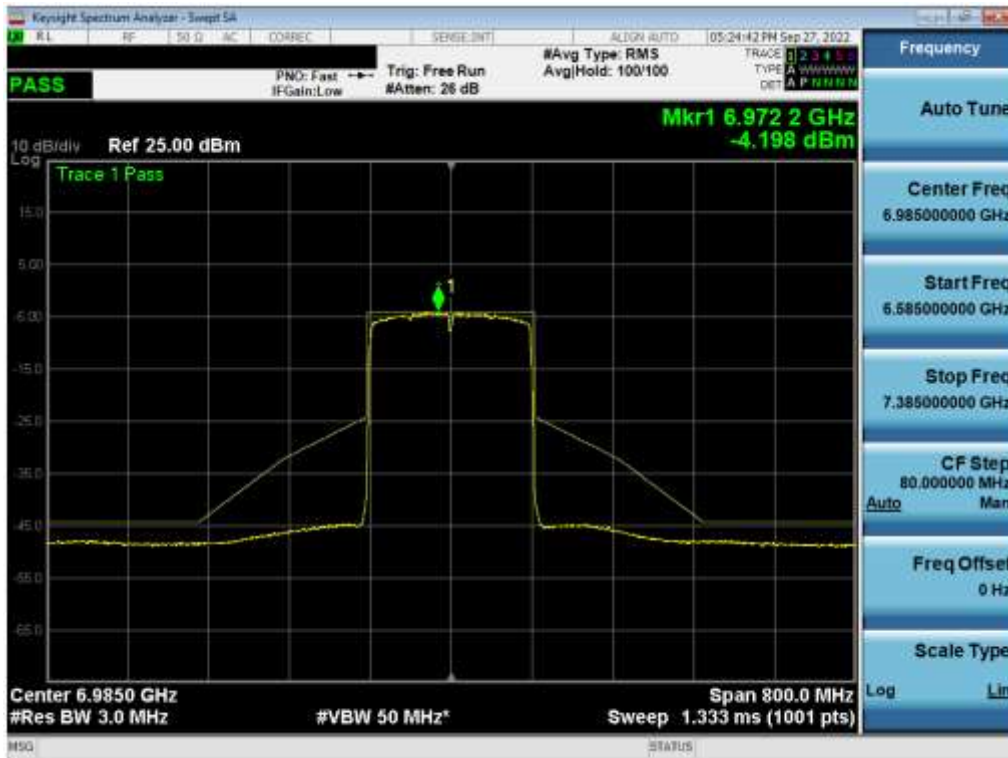


Plot 7-258. In-Band Emission Plot Measurement MIMO ANT1 (80MHz 802.11ax (UNII Band 8) – Ch. 199)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 159 of 239



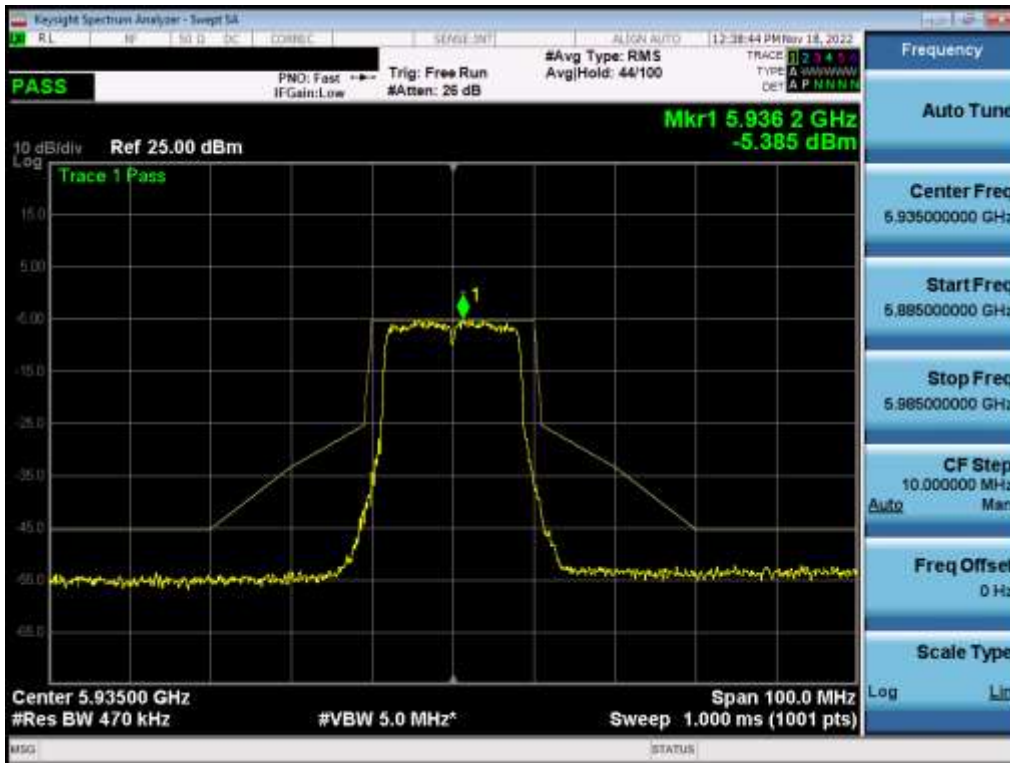
Plot 7-259. In-Band Emission Plot Measurement MIMO ANT1 (80MHz 802.11ax (UNII Band 8) – Ch. 215)



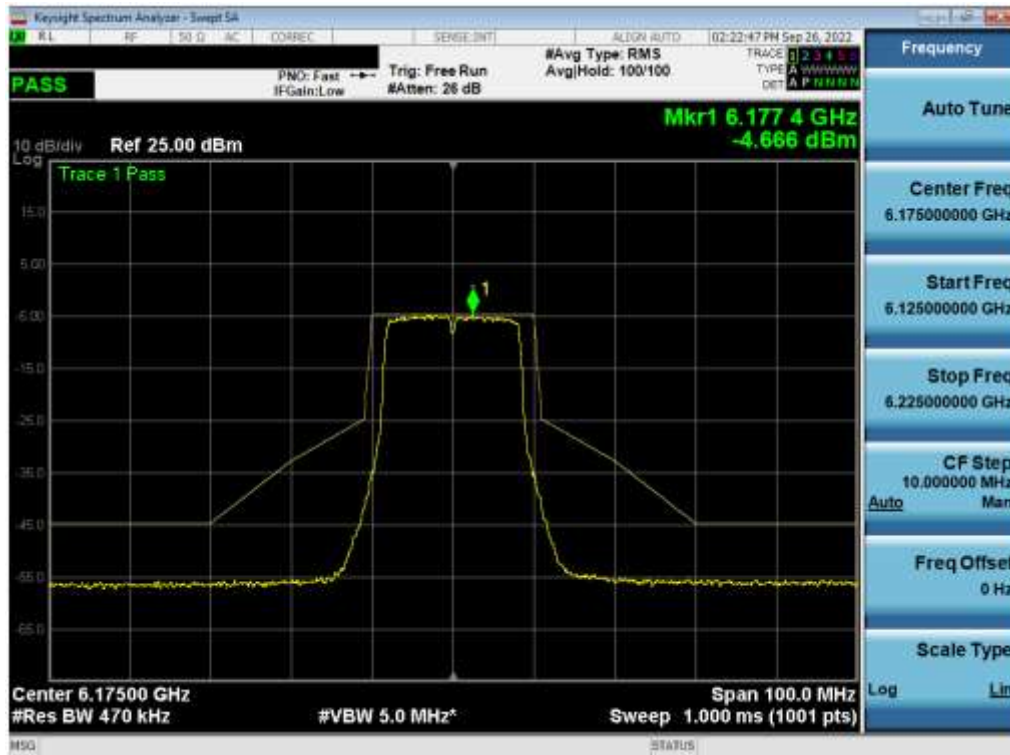
Plot 7-260. In-Band Emission Plot Measurement MIMO ANT1 (160MHz 802.11ax (UNII Band 8) – Ch. 207)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 160 of 239

MIMO Antenna-2 In-Band Emission Plot Measurement - (UNII Band 5)

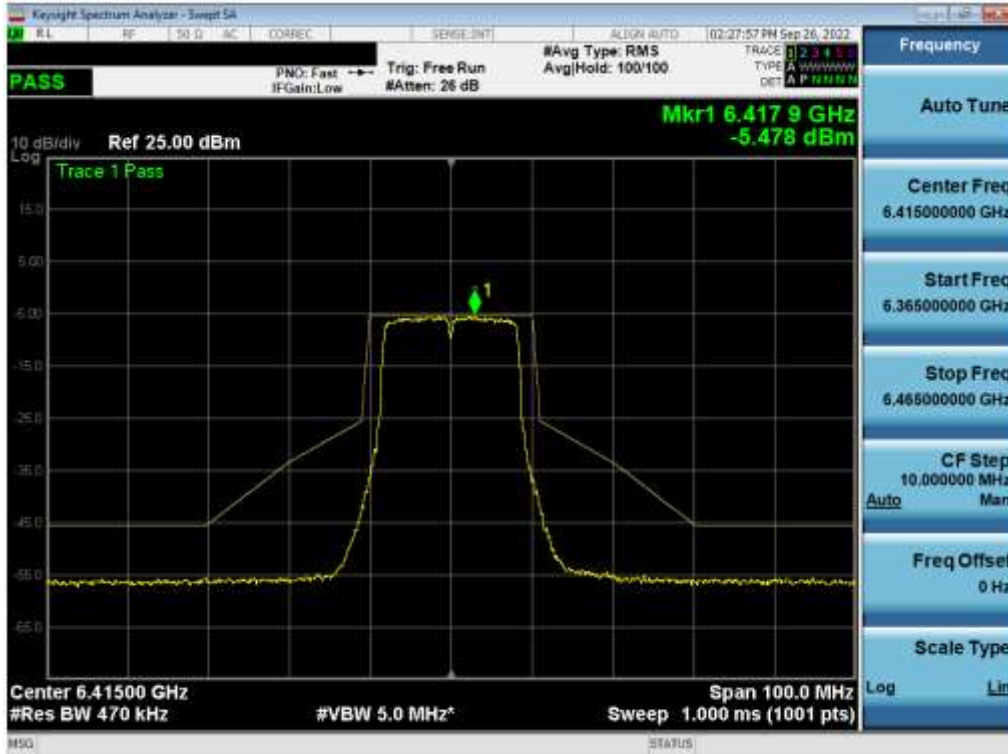


Plot 7-261. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 5) – Ch. 2)

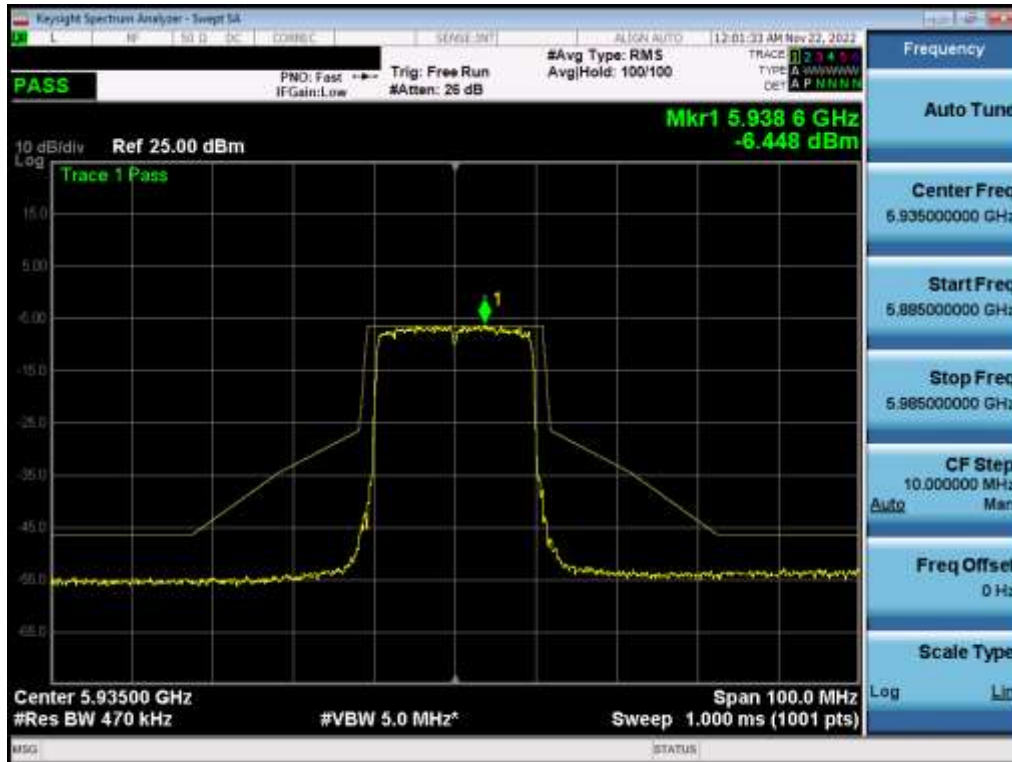


Plot 7-262. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 5) – Ch. 45)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 161 of 239

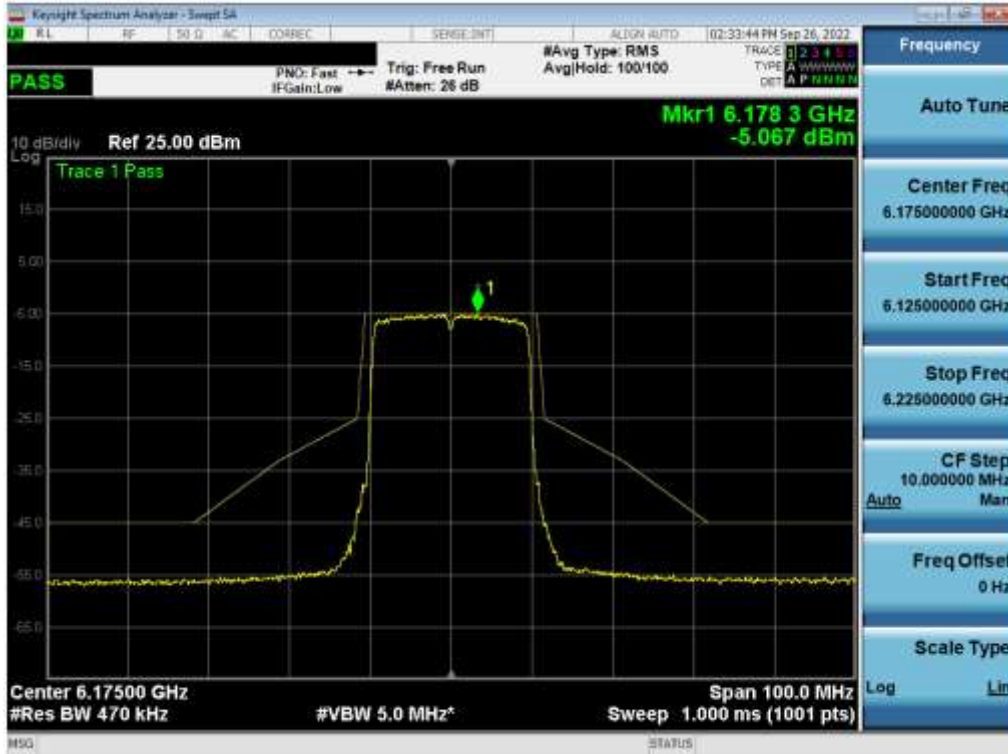


Plot 7-263. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 5) – Ch. 93)

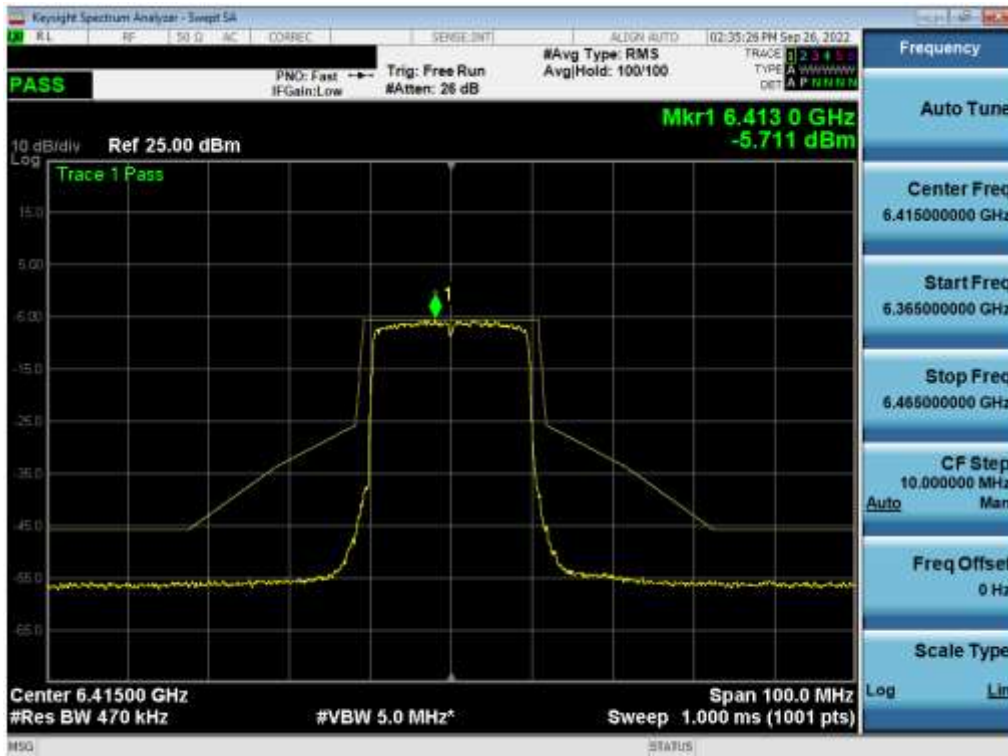


Plot 7-264. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 5) – Ch. 2)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 162 of 239

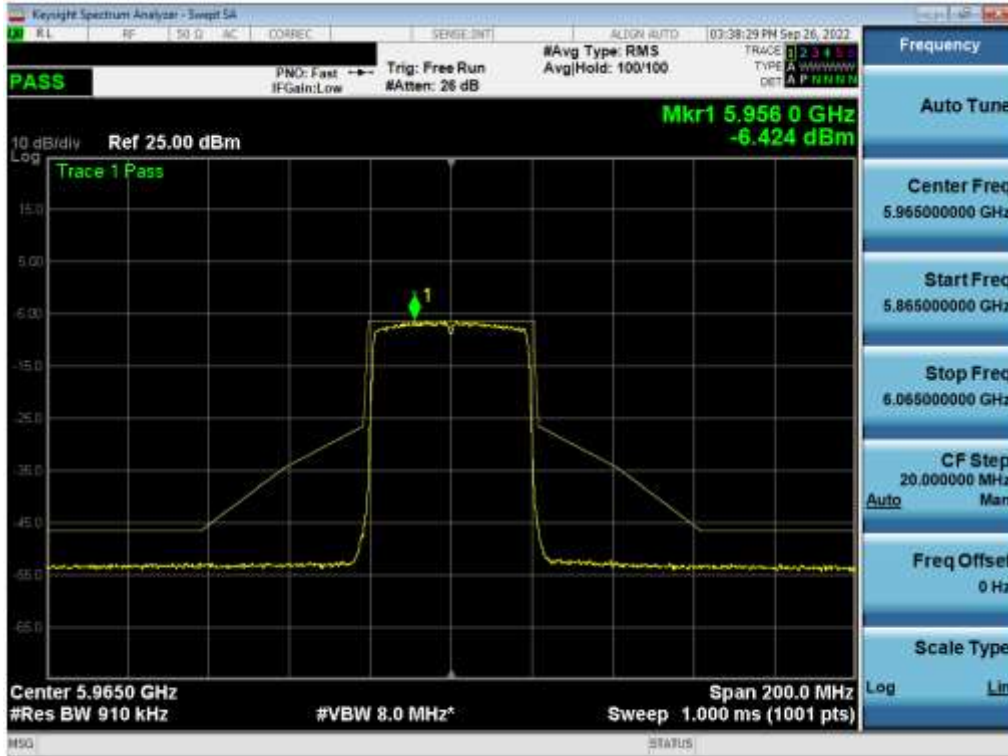


Plot 7-265. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 5) – Ch. 45)

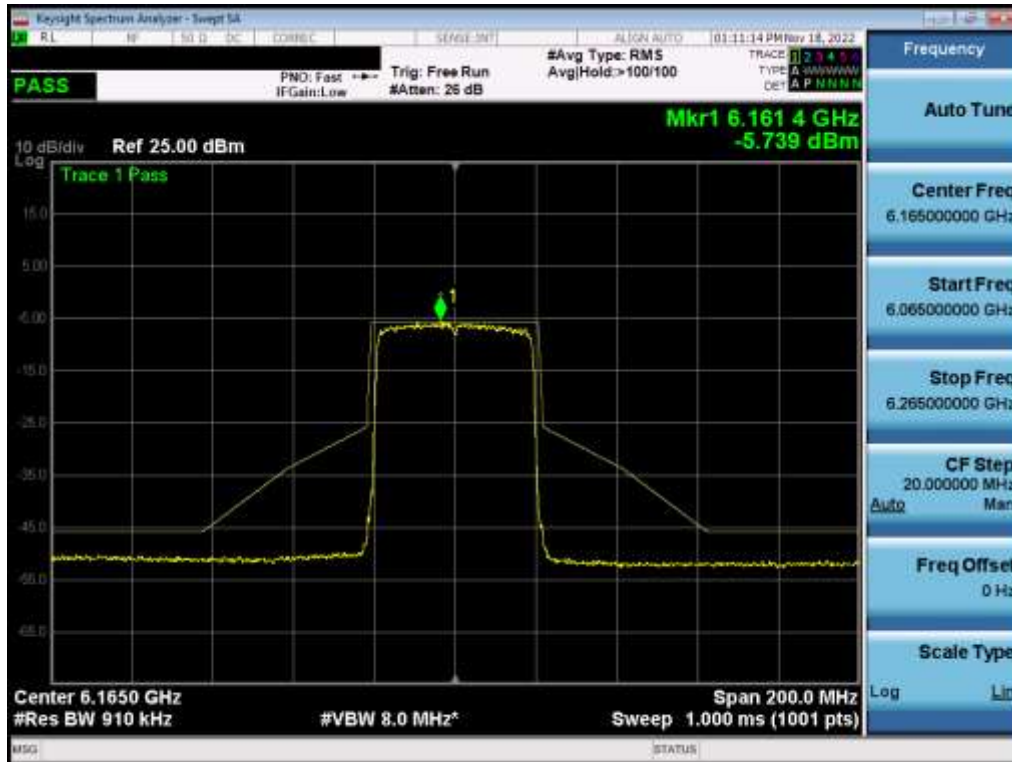


Plot 7-266. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 5) – Ch. 93)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 163 of 239

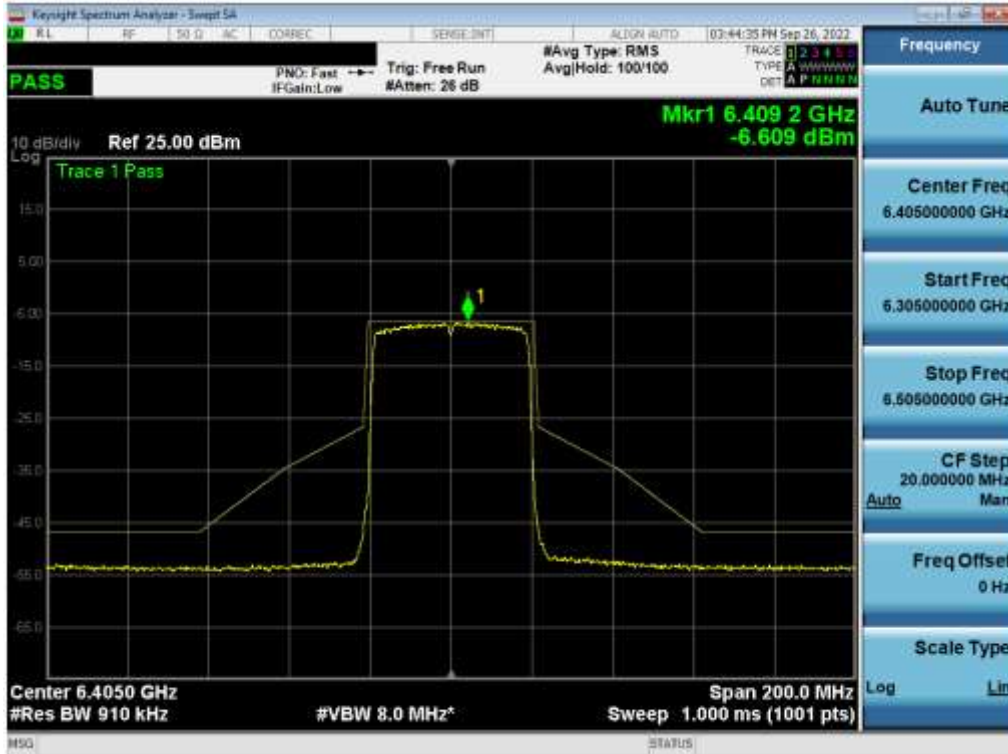


Plot 7-267. In-Band Emission Plot Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 5) – Ch. 3)

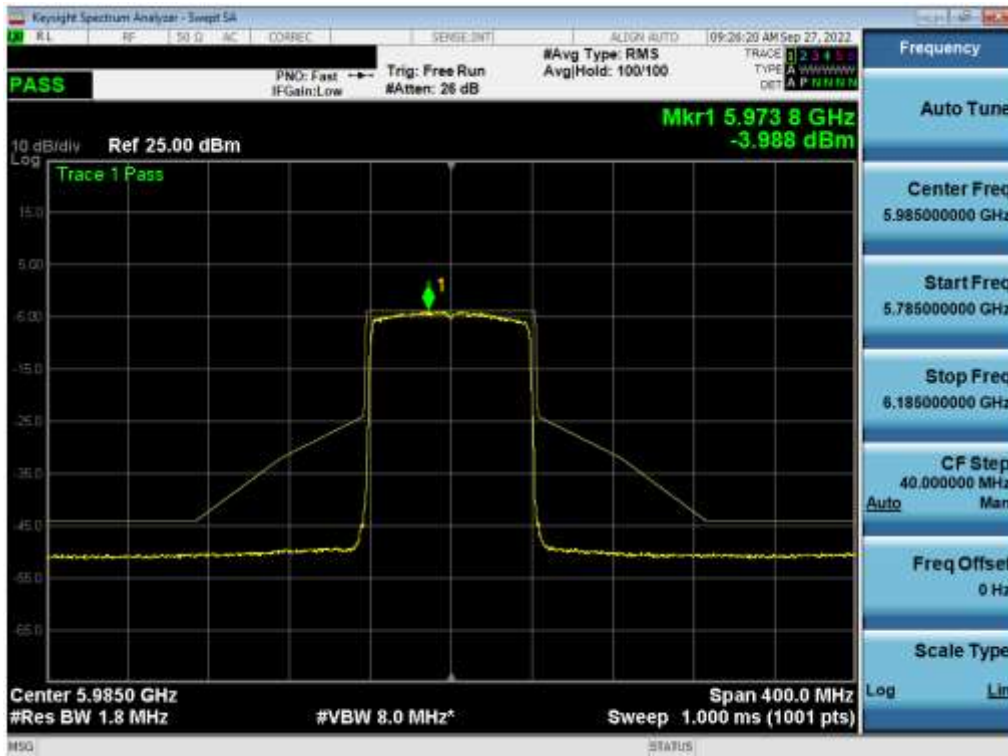


Plot 7-268. In-Band Emission Plot Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 5) – Ch. 43)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 164 of 239

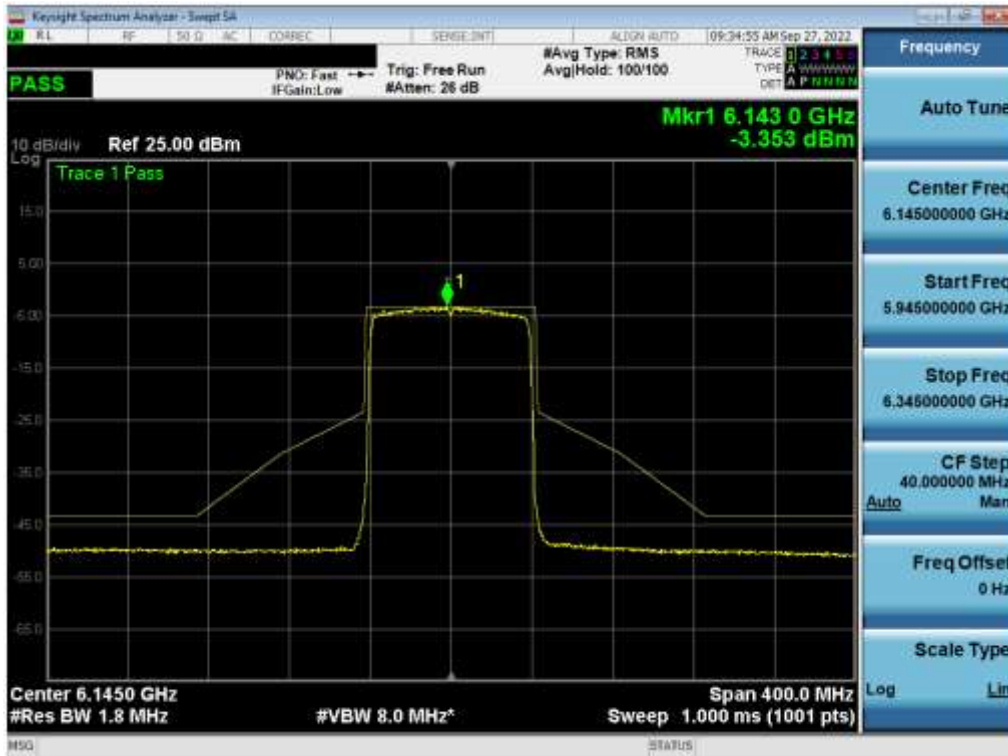


Plot 7-269. In-Band Emission Plot Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 5) – Ch. 91)

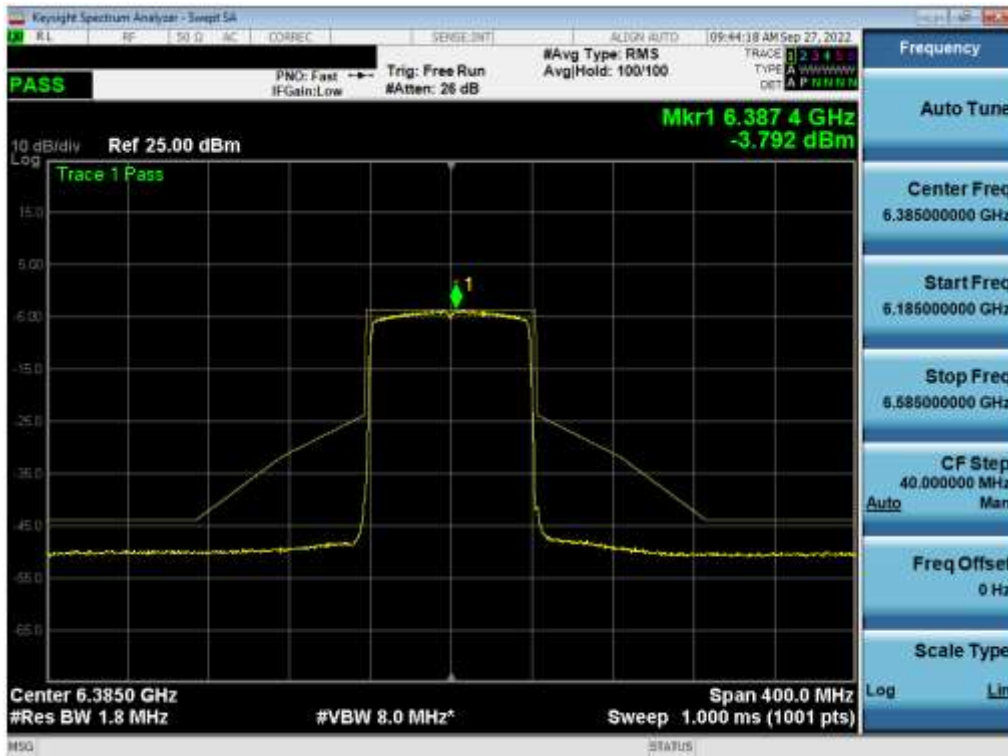


Plot 7-270. In-Band Emission Plot Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 5) – Ch. 7)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 165 of 239

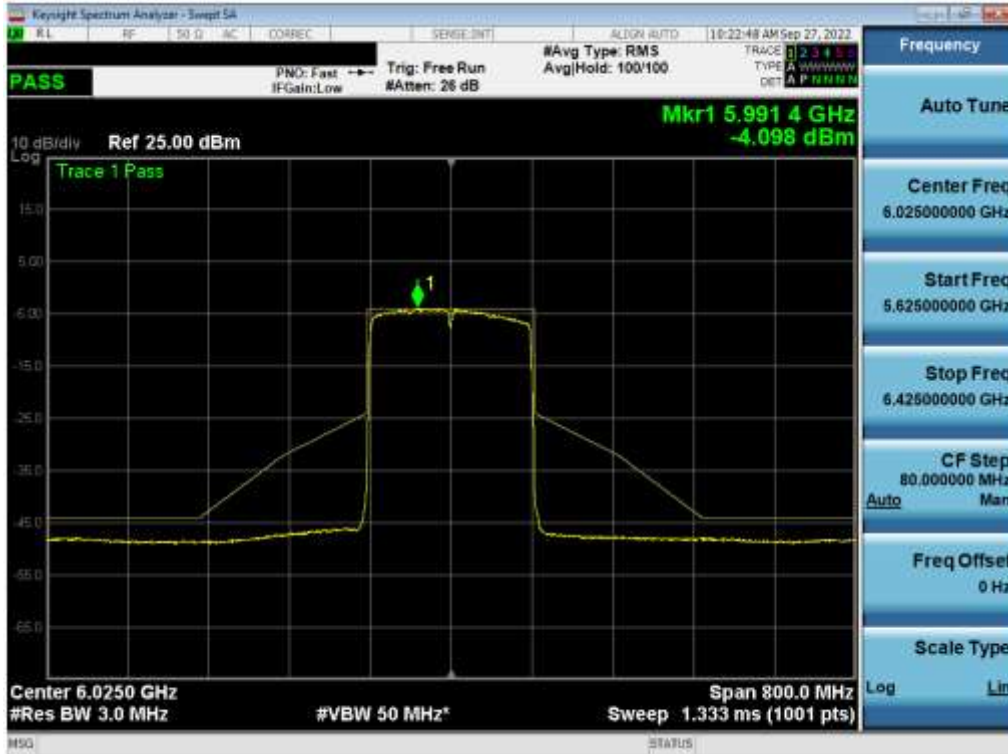


Plot 7-271. In-Band Emission Plot Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 5) – Ch. 39)

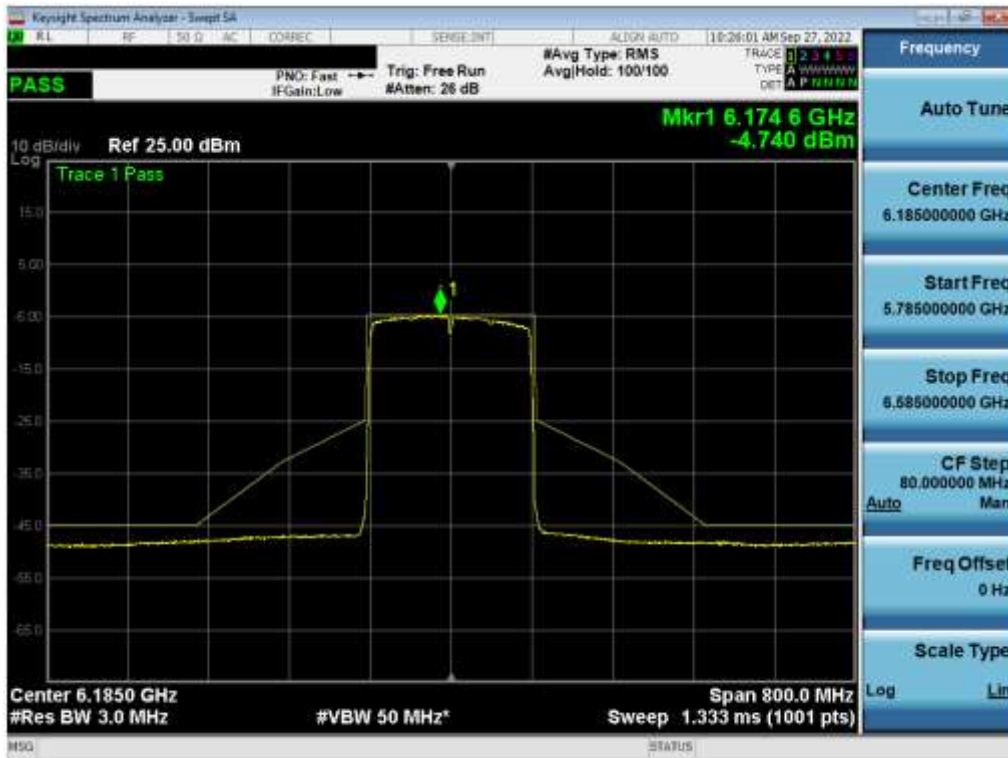


Plot 7-272. In-Band Emission Plot Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 5) – Ch. 87)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 166 of 239



Plot 7-273. In-Band Emission Plot Measurement MIMO ANT2 (160MHz 802.11ax (UNII Band 5) – Ch. 15)



Plot 7-274. In-Band Emission Plot Measurement MIMO ANT2 (160MHz 802.11ax (UNII Band 5) – Ch. 47)

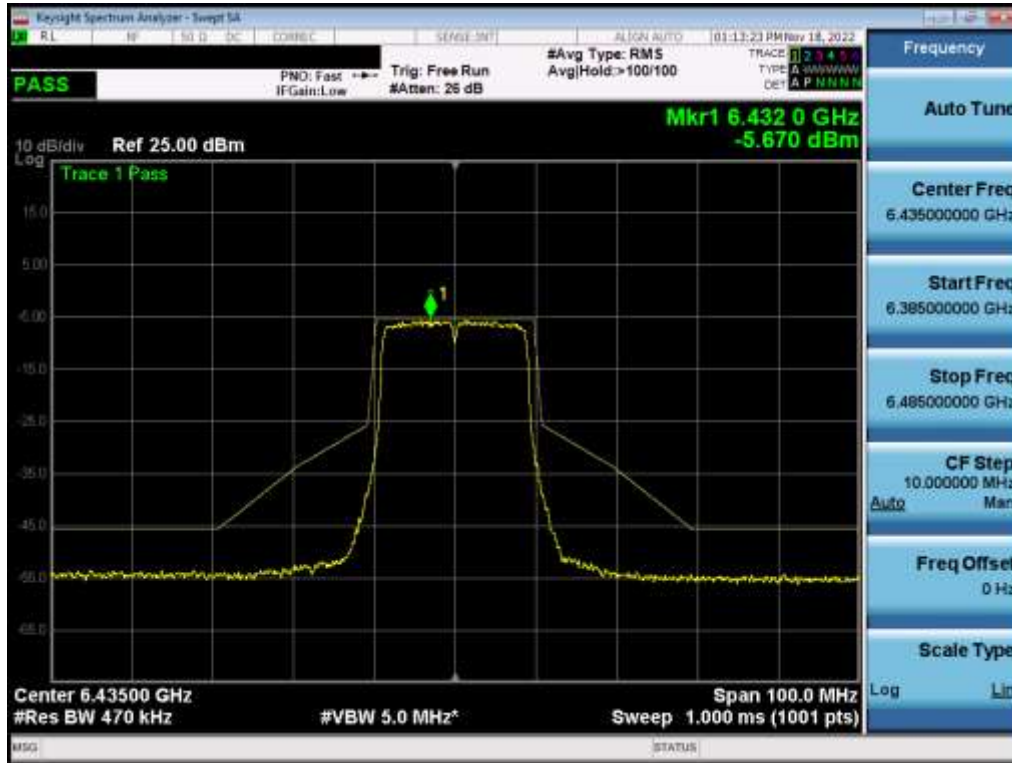
FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 167 of 239



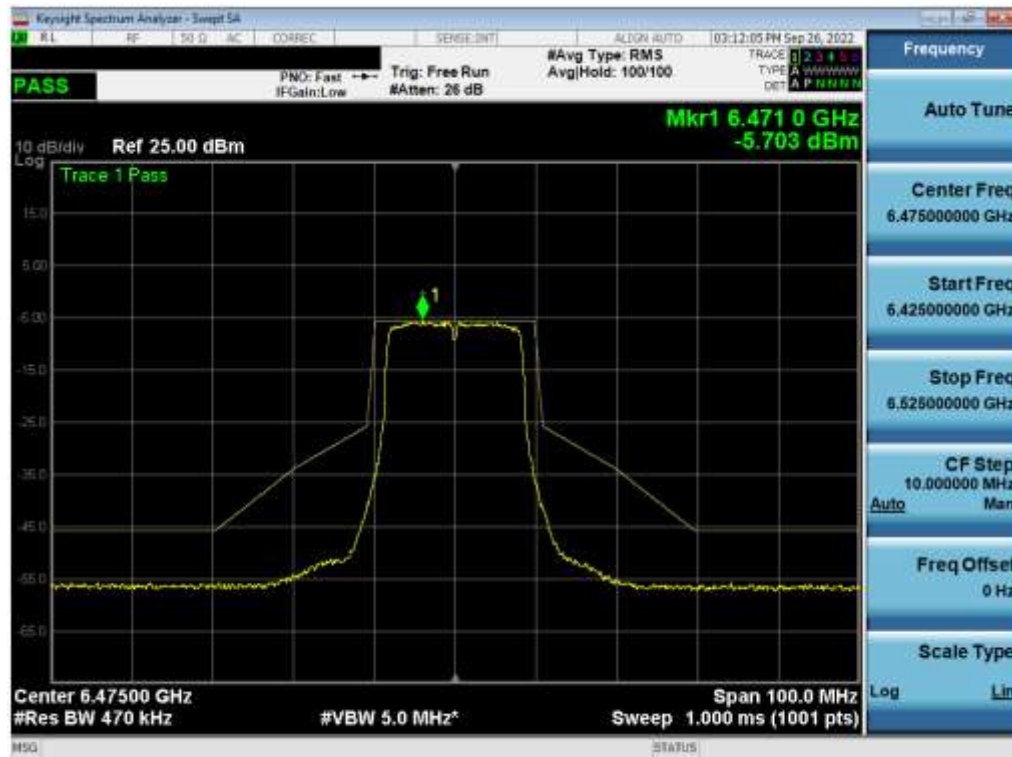
Plot 7-275. In-Band Emission Plot Measurement MIMO ANT2 (160MHz 802.11ax (UNII Band 5) – Ch. 79)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 168 of 239

MIMO Antenna-2 In-Band Emission Plot Measurement - (UNII Band 6)

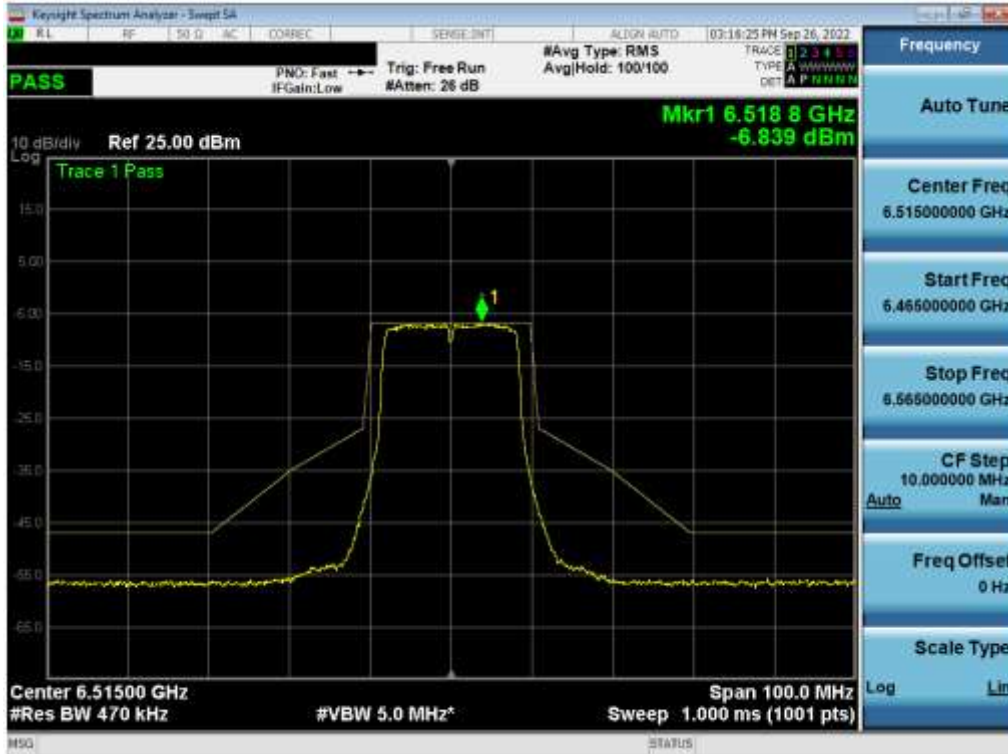


Plot 7-276. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 6) – Ch. 97)

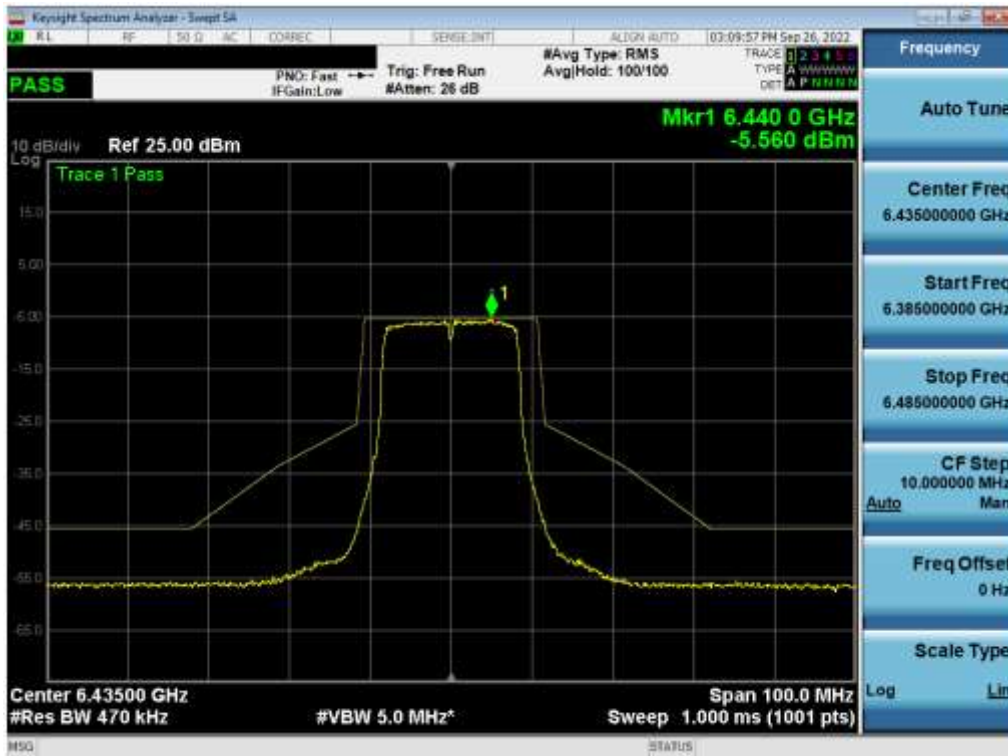


Plot 7-277. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 6) – Ch. 105)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 169 of 239

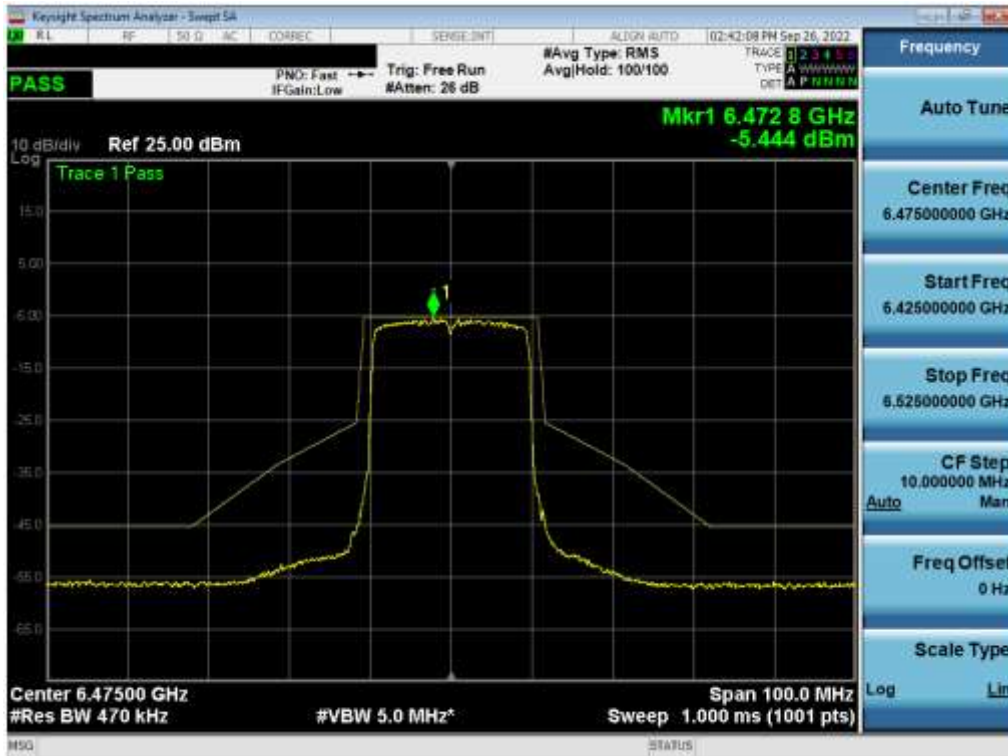


Plot 7-278. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 6) – Ch. 113)

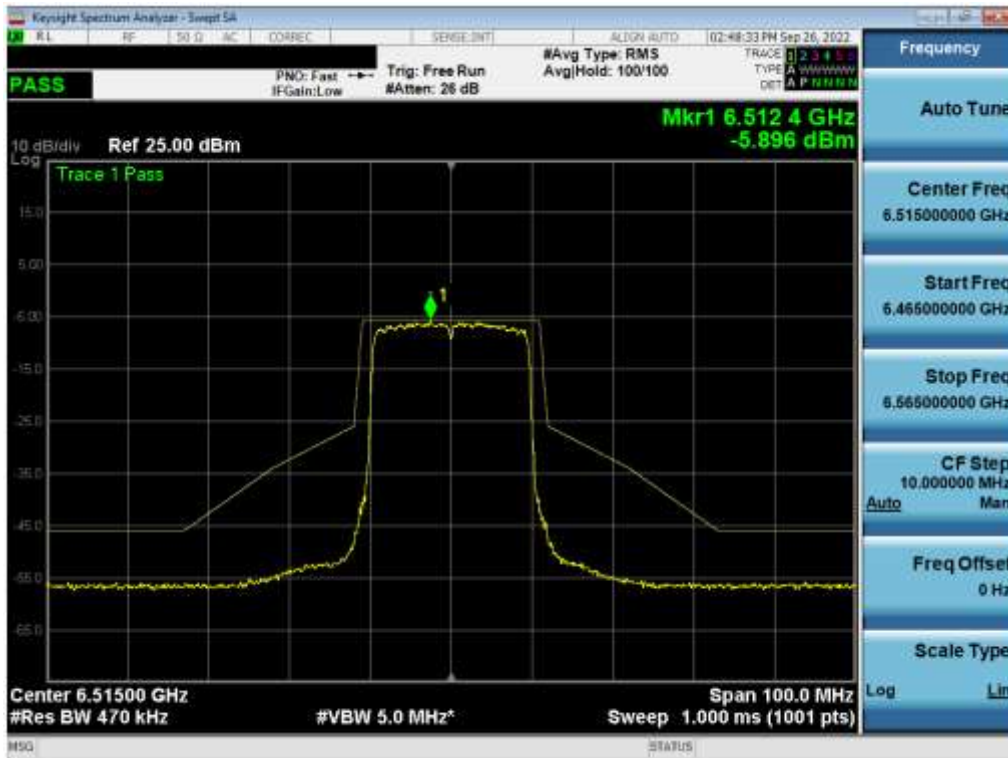


Plot 7-279. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 6) – Ch. 97)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 170 of 239

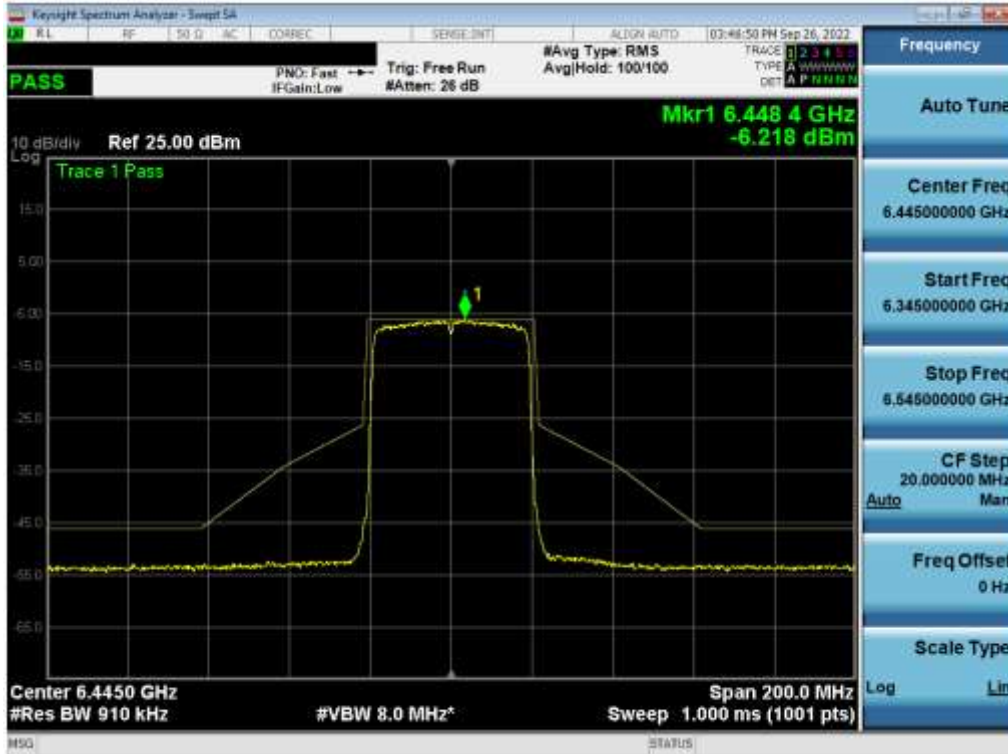


Plot 7-280. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 6) – Ch. 105)

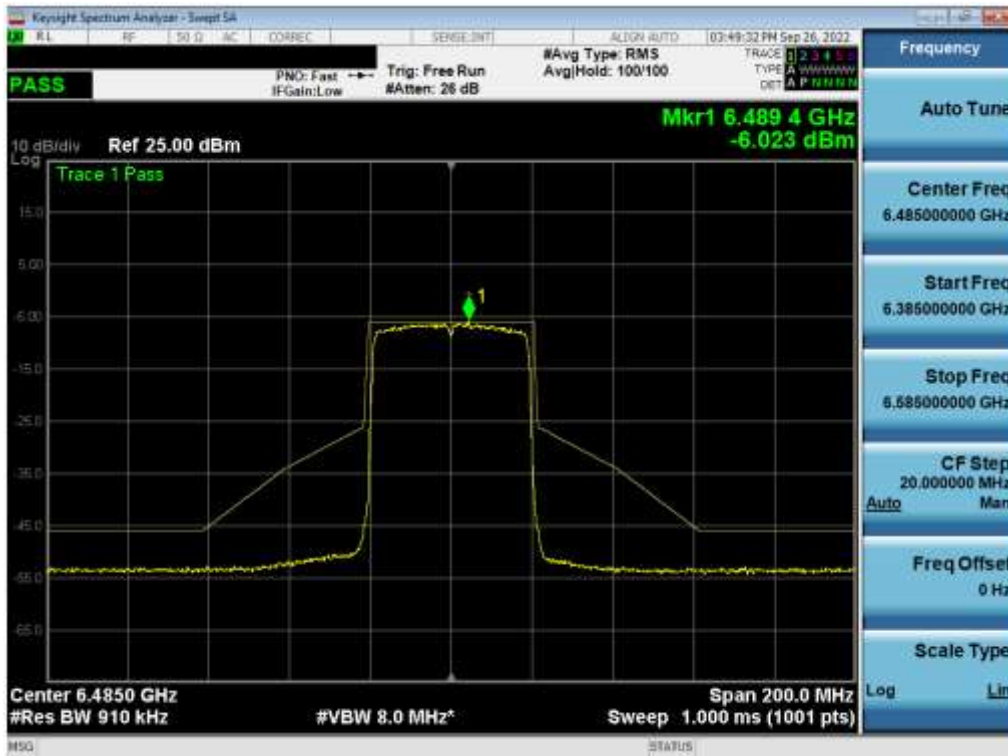


Plot 7-281. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 6) – Ch. 113)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 171 of 239

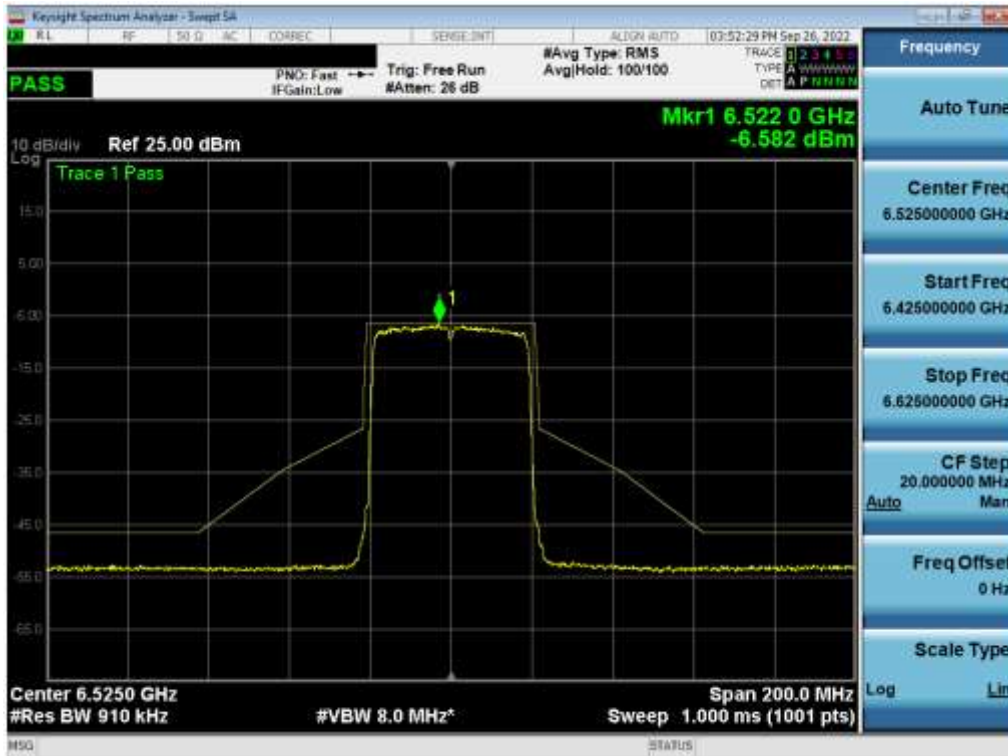


Plot 7-282. In-Band Emission Plot Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 6) – Ch. 99)

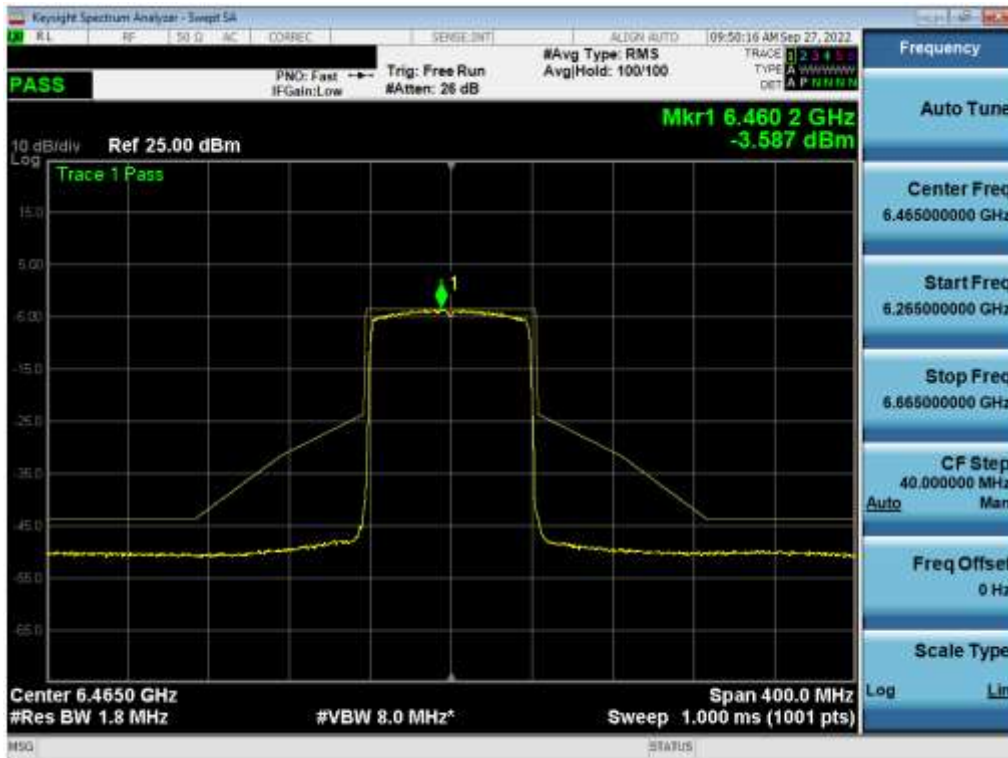


Plot 7-283. In-Band Emission Plot Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 6) – Ch. 107)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 172 of 239

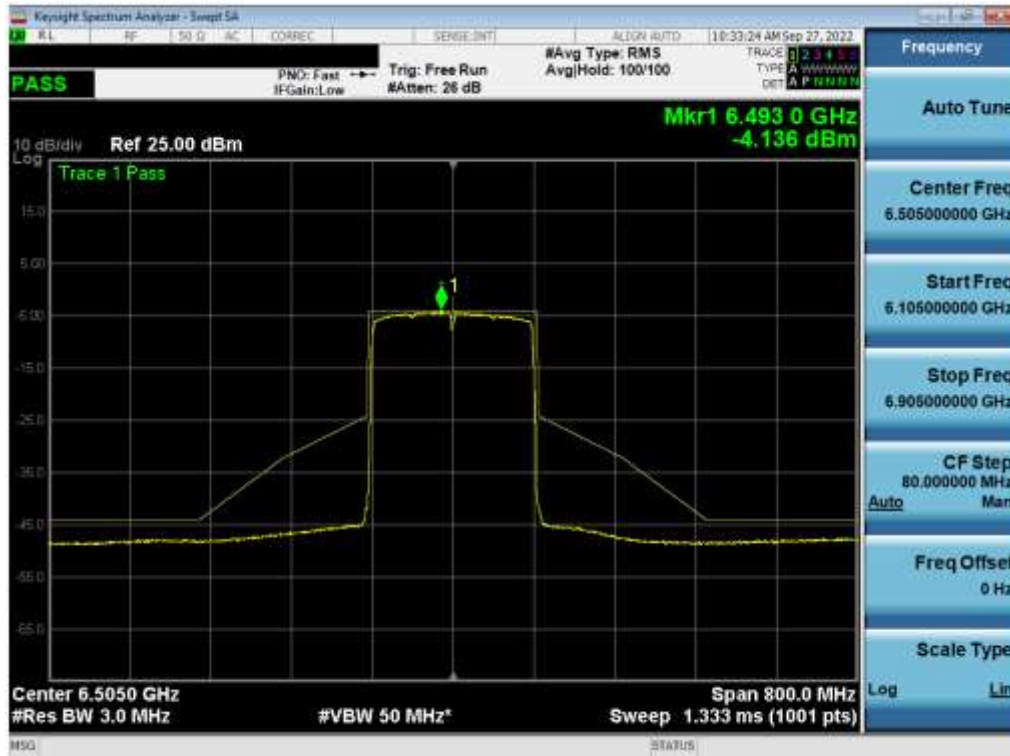


Plot 7-284. In-Band Emission Plot Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 6) – Ch. 115)



Plot 7-285. In-Band Emission Plot Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 6) – Ch. 103)

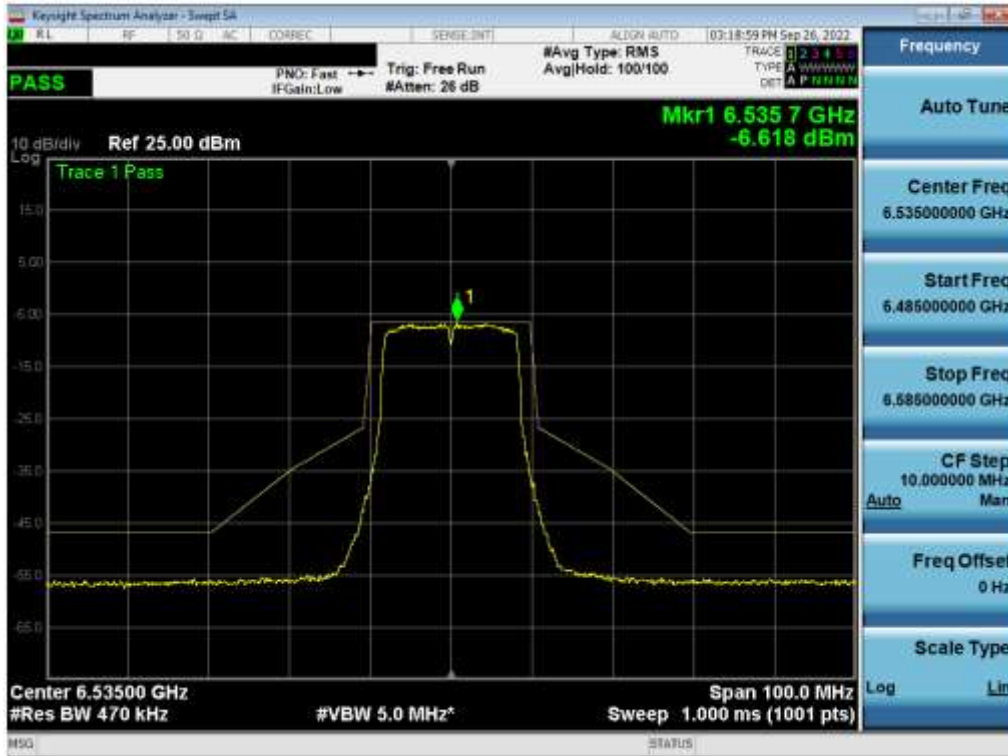
FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 173 of 239



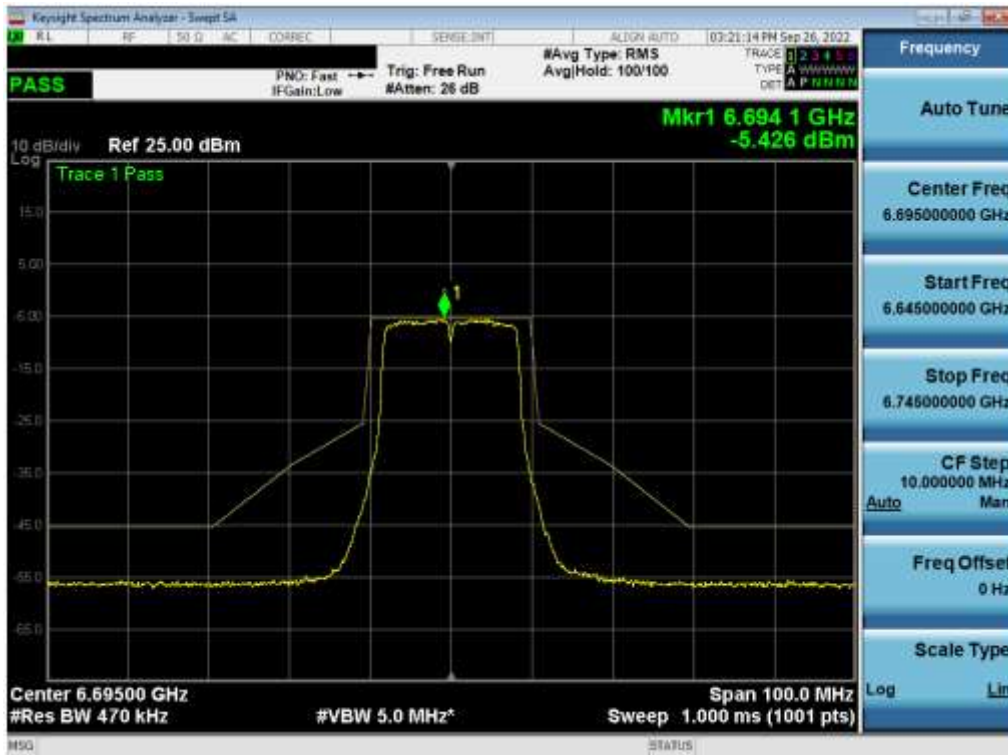
Plot 7-286. In-Band Emission Plot Measurement MIMO ANT2 (160MHz 802.11ax (UNII Band 6) – Ch. 111)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 174 of 239

MIMO Antenna-2 In-Band Emission Plot Measurement - (UNII Band 7)

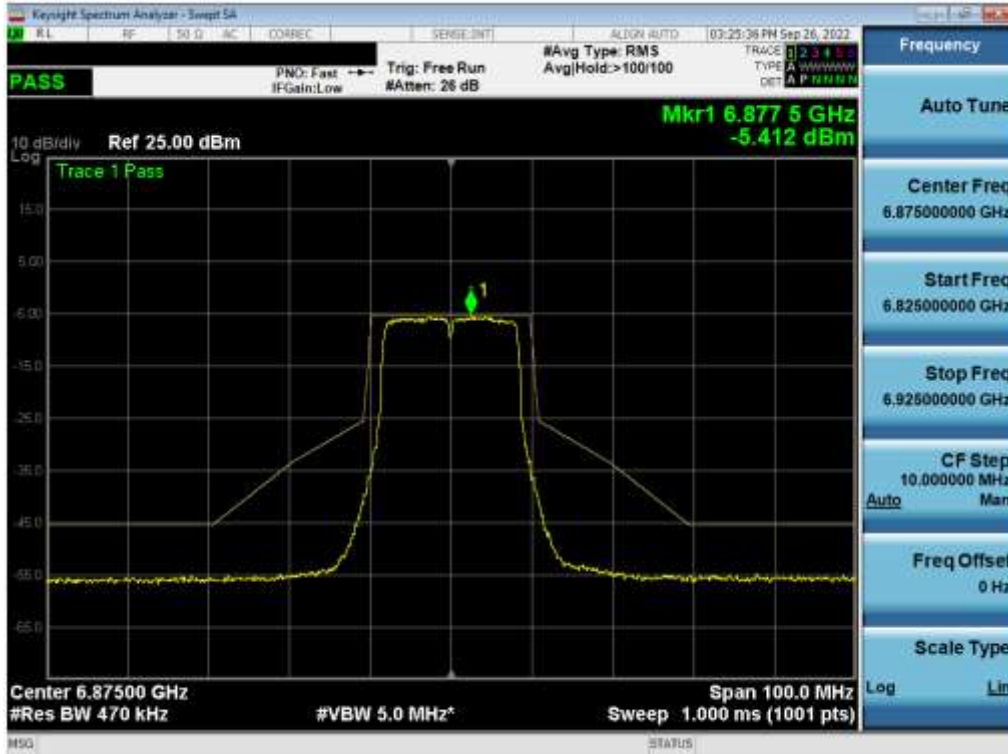


Plot 7-287. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 7) – Ch. 117)

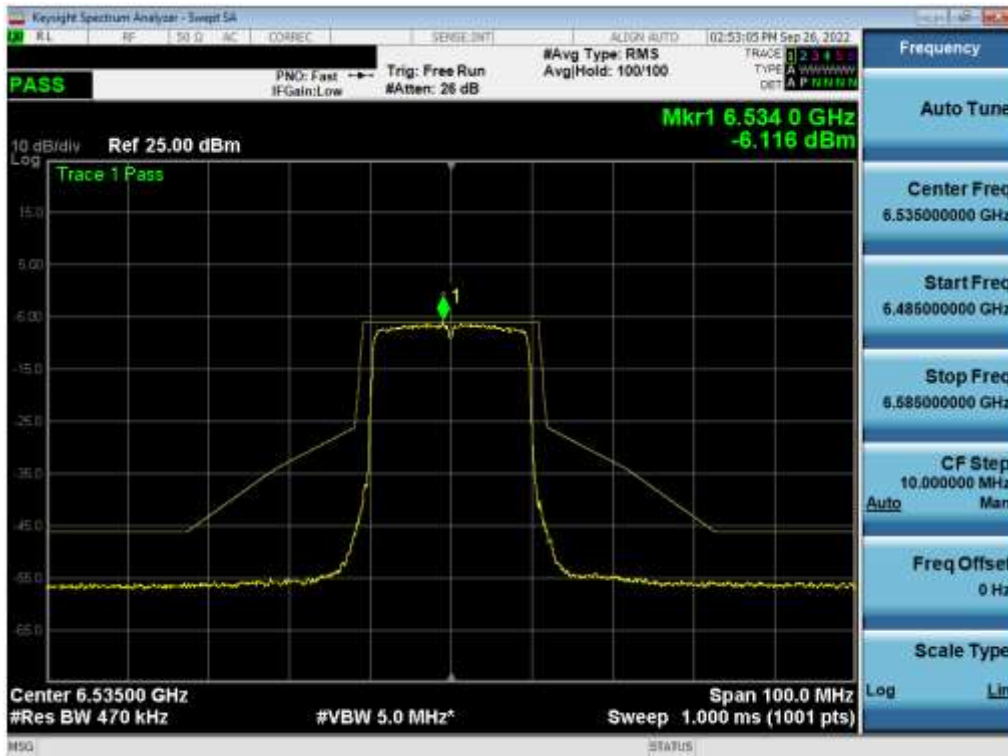


Plot 7-288. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 7) – Ch. 149)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 175 of 239

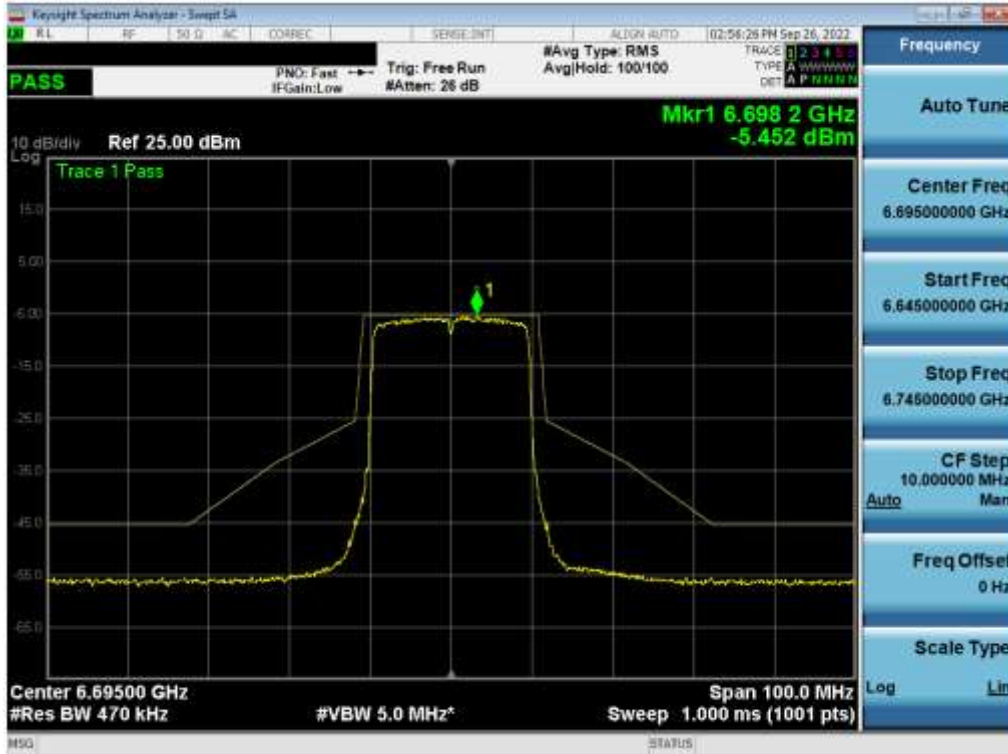


Plot 7-289. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 7) – Ch. 185)

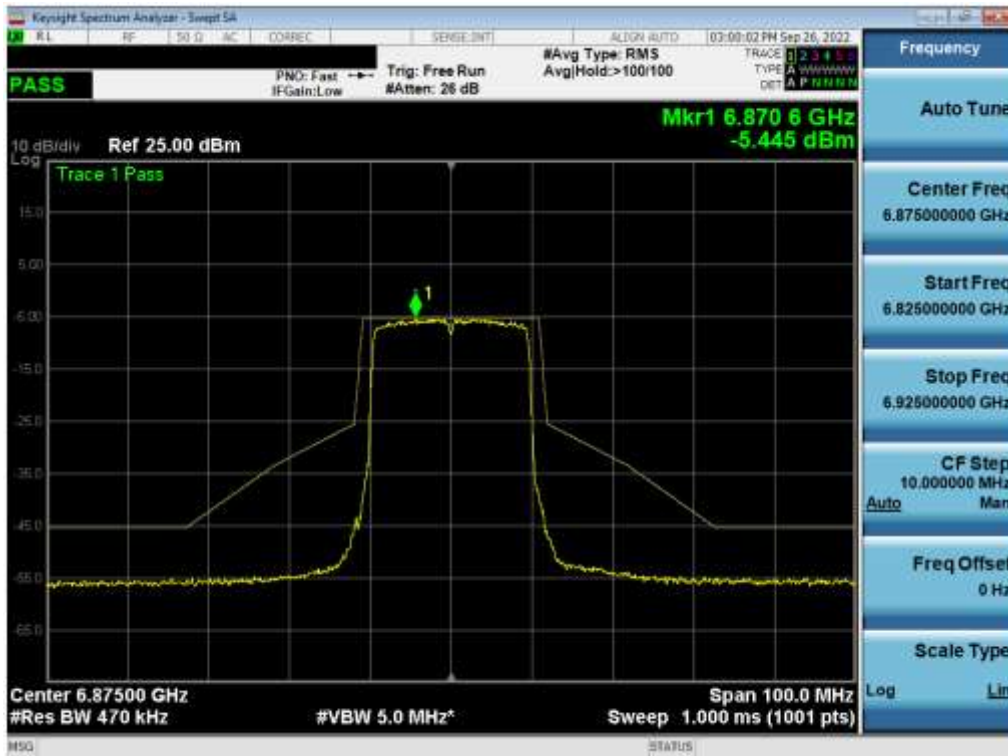


Plot 7-290. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 7) – Ch. 117)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 176 of 239

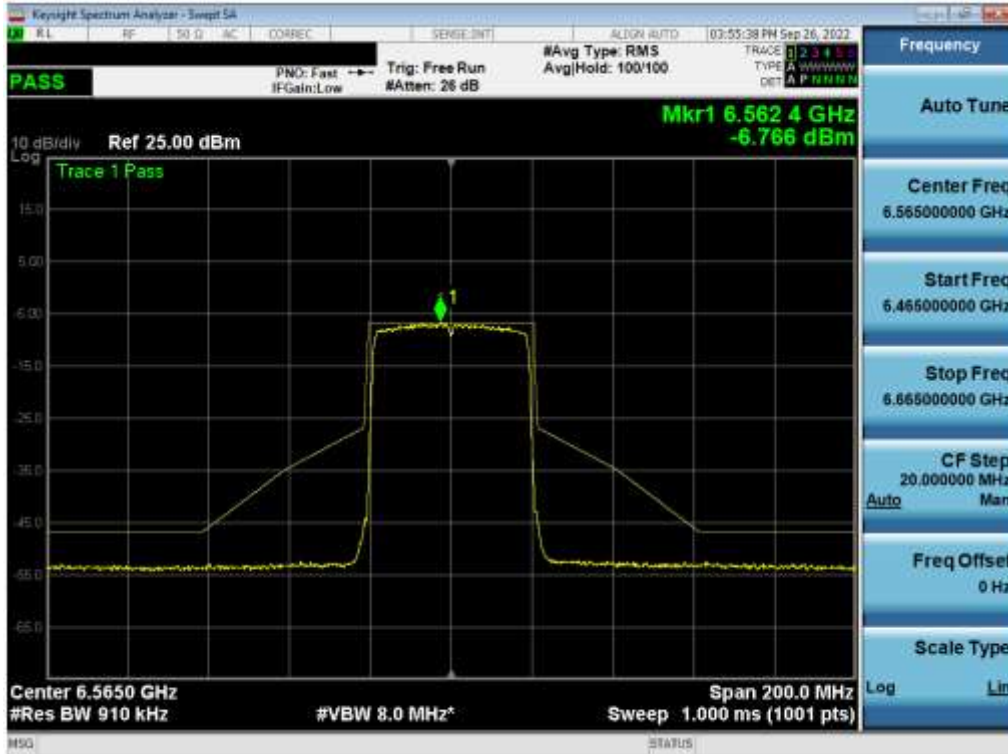


Plot 7-291. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 7) – Ch. 149)

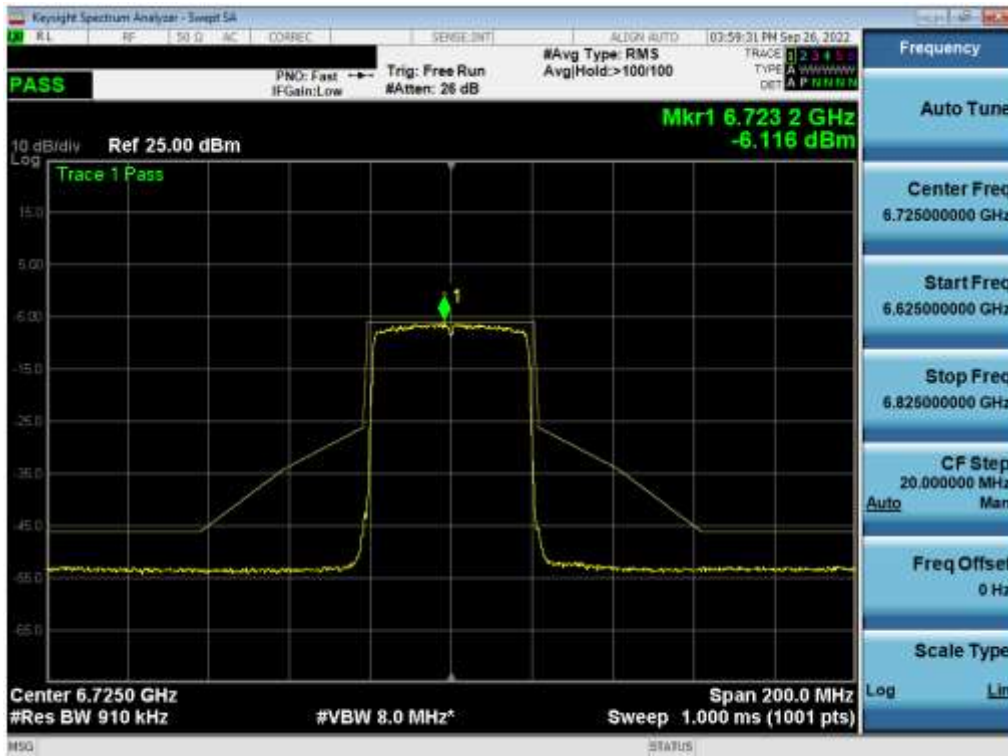


Plot 7-292. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 7) – Ch. 185)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 177 of 239

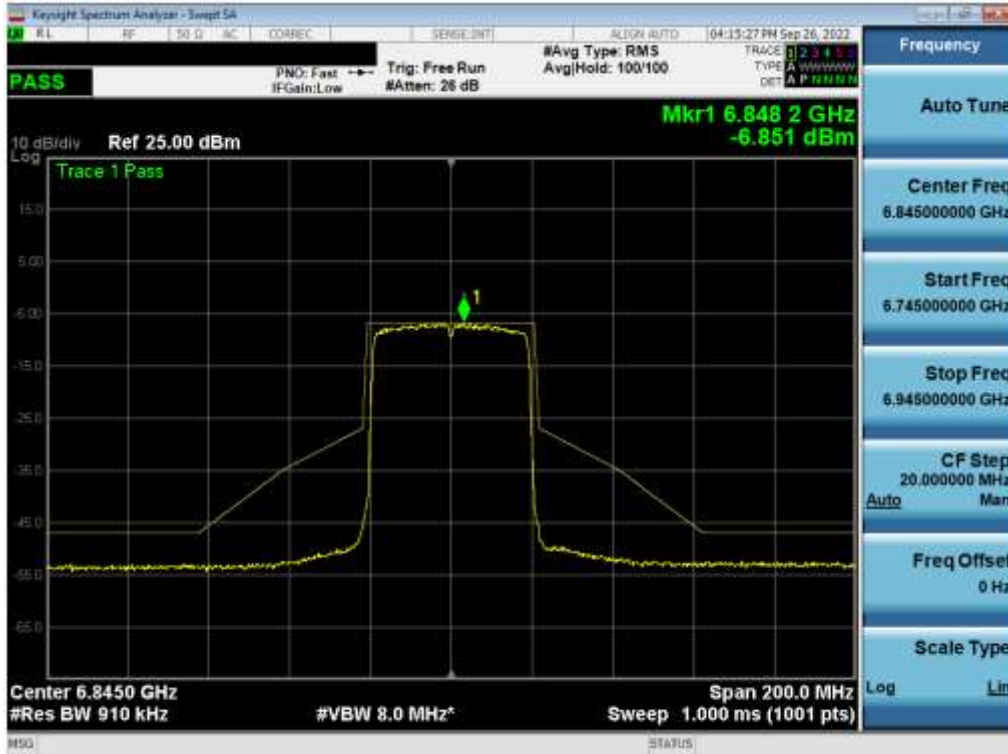


Plot 7-293. In-Band Emission Plot Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 7) – Ch. 123)

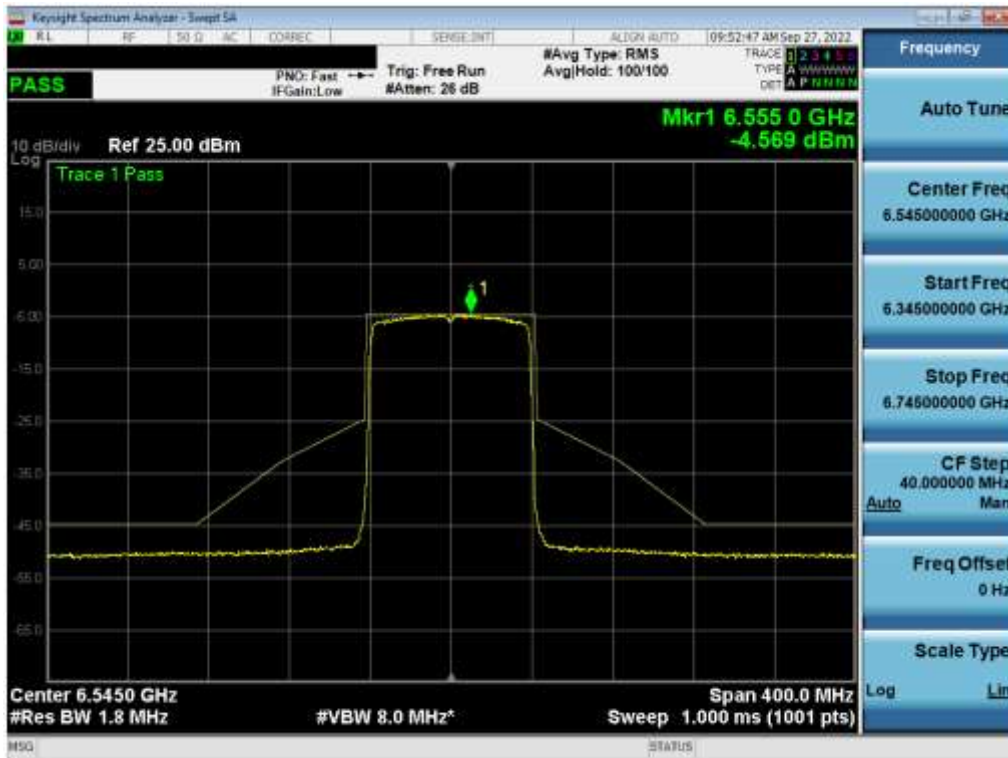


Plot 7-294. In-Band Emission Plot Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 7) – Ch. 155)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 178 of 239

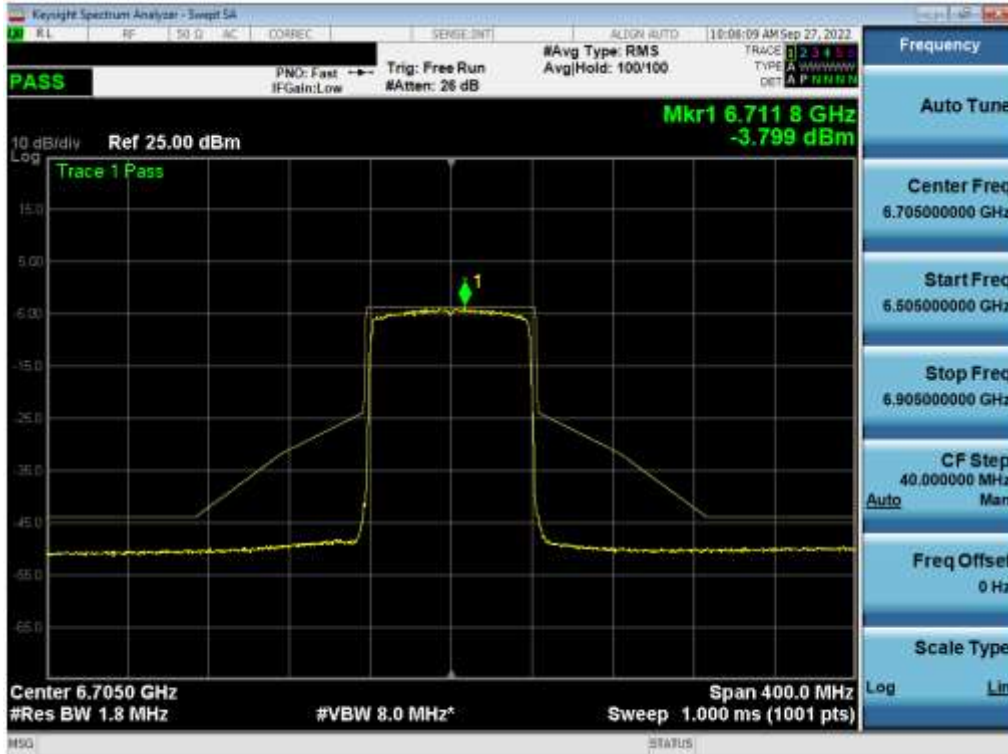


Plot 7-295. In-Band Emission Plot Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 7) – Ch. 179)

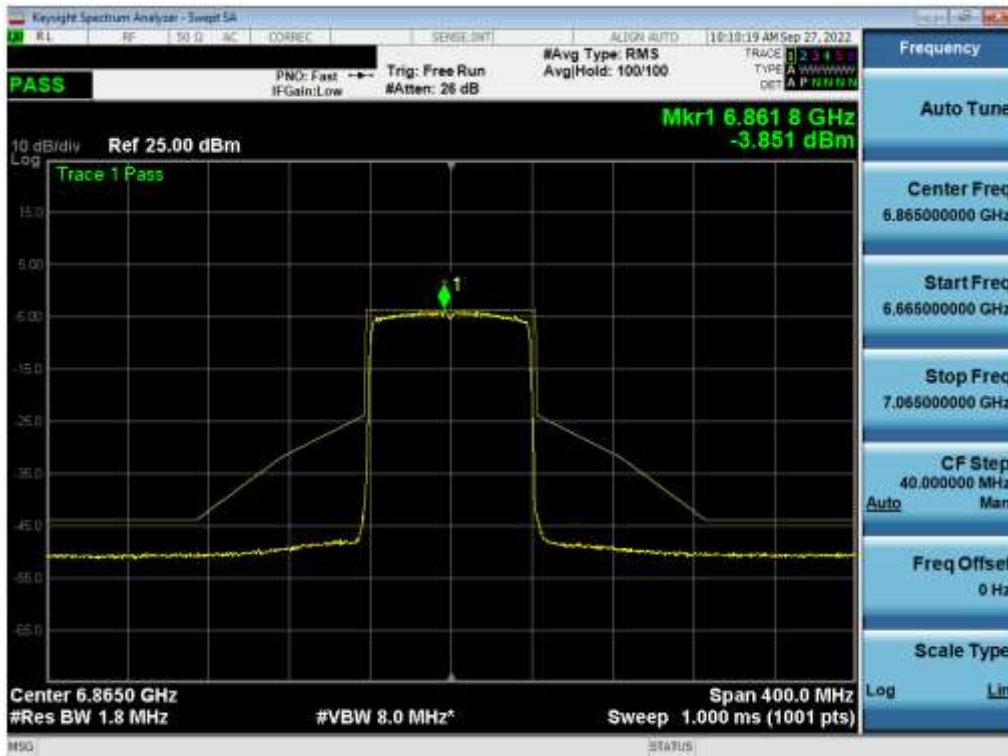


Plot 7-296. In-Band Emission Plot Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 7) – Ch. 119)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 179 of 239

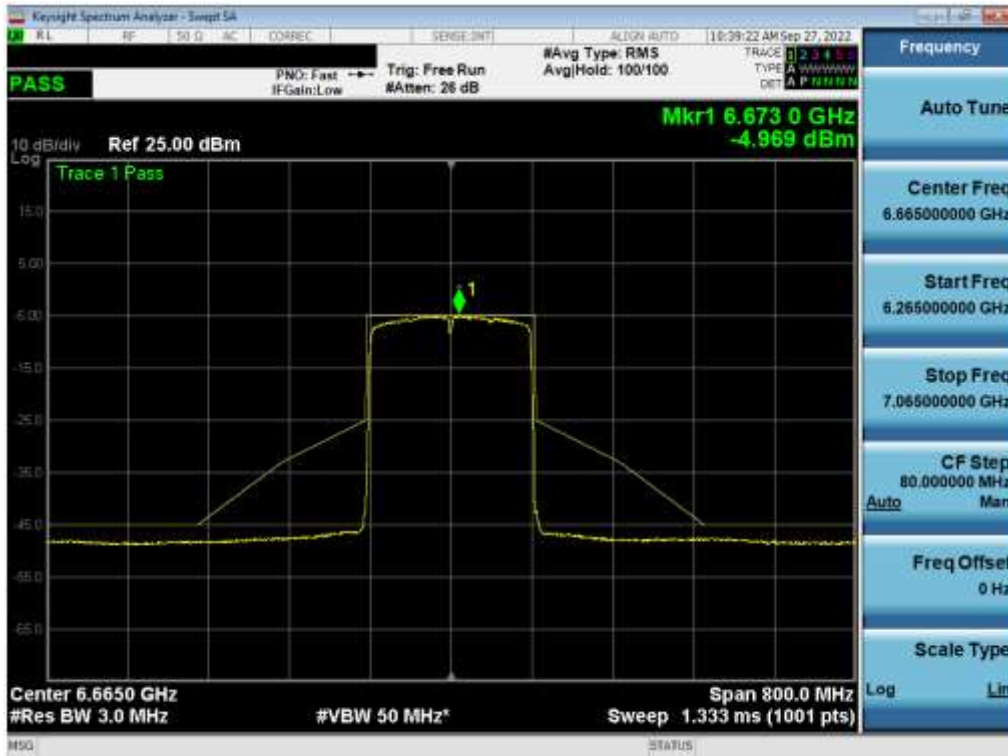


Plot 7-297. In-Band Emission Plot Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 7) – Ch. 151)



Plot 7-298. In-Band Emission Plot Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 7) – Ch. 183)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 180 of 239



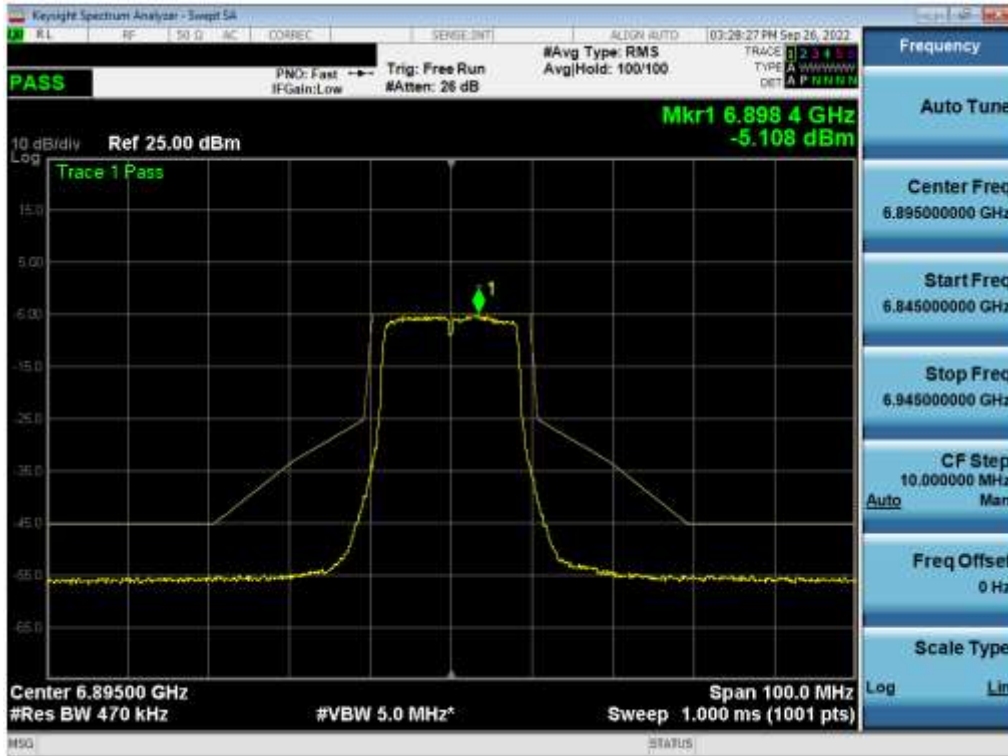
Plot 7-299. In-Band Emission Plot Measurement MIMO ANT2 (160MHz 802.11ax (UNII Band 7) – Ch. 143)



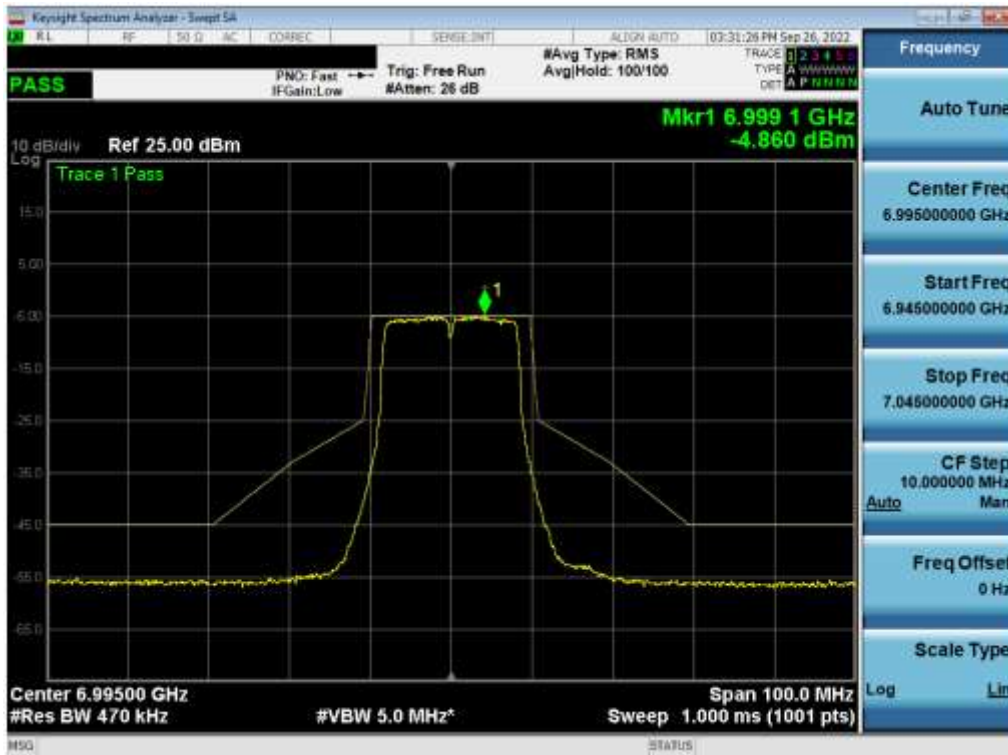
Plot 7-300. In-Band Emission Plot Measurement MIMO ANT2 (160MHz 802.11ax (UNII Band 7) – Ch. 175)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 181 of 239

MIMO Antenna-2 In-Band Emission Plot Measurement - (UNII Band 8)

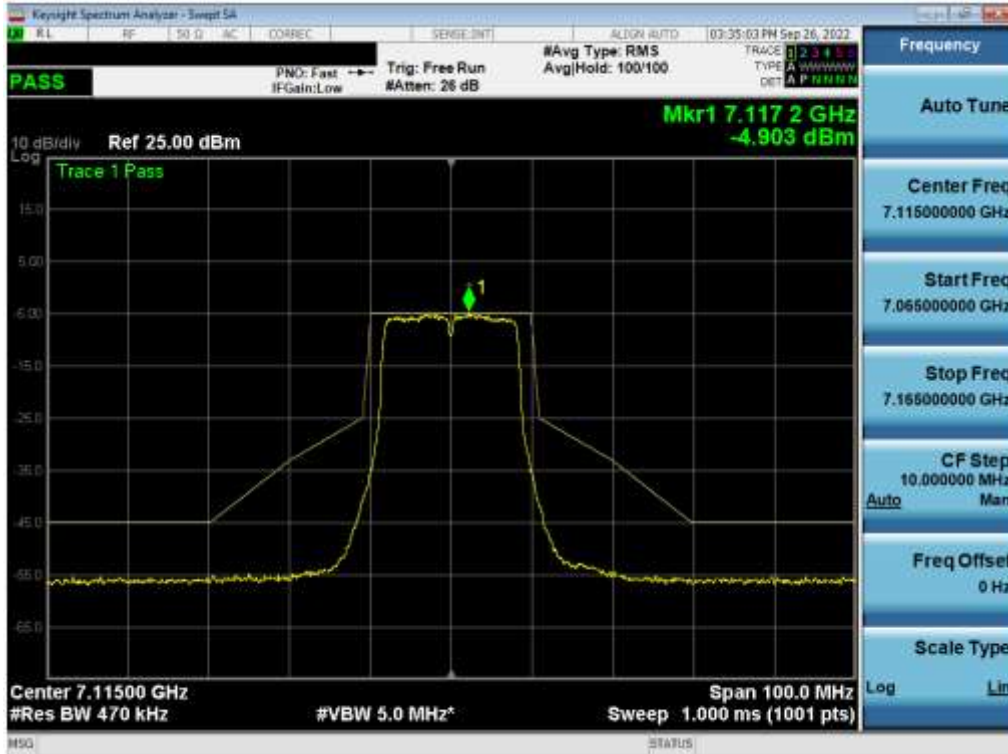


Plot 7-301. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 8) – Ch. 189)

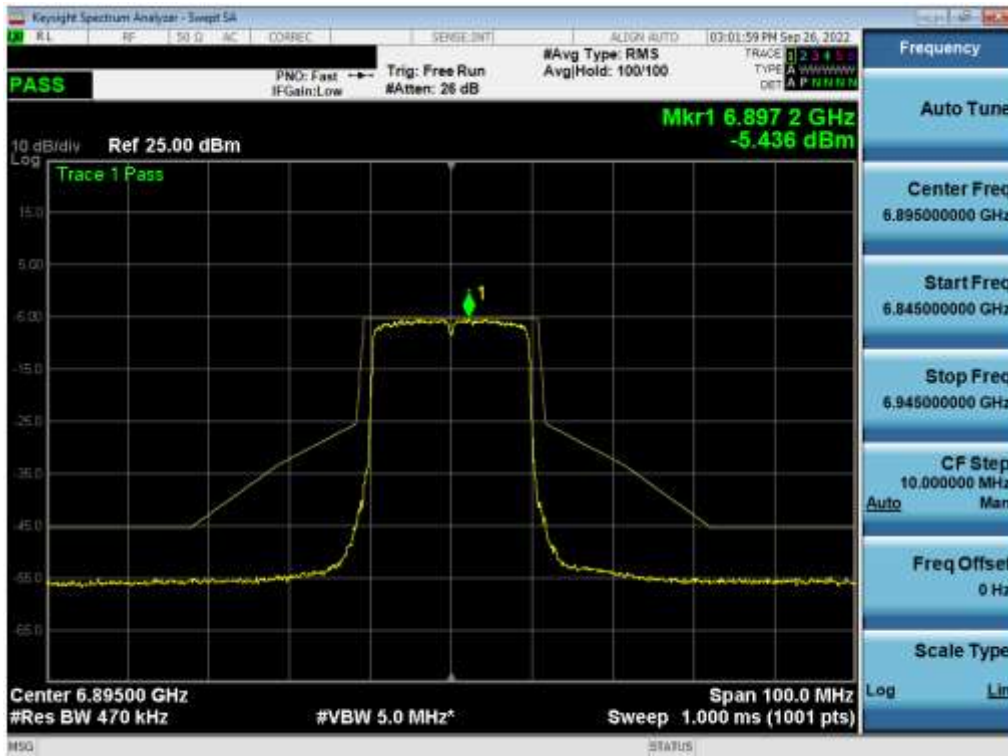


Plot 7-302. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 8) – Ch. 209)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 182 of 239

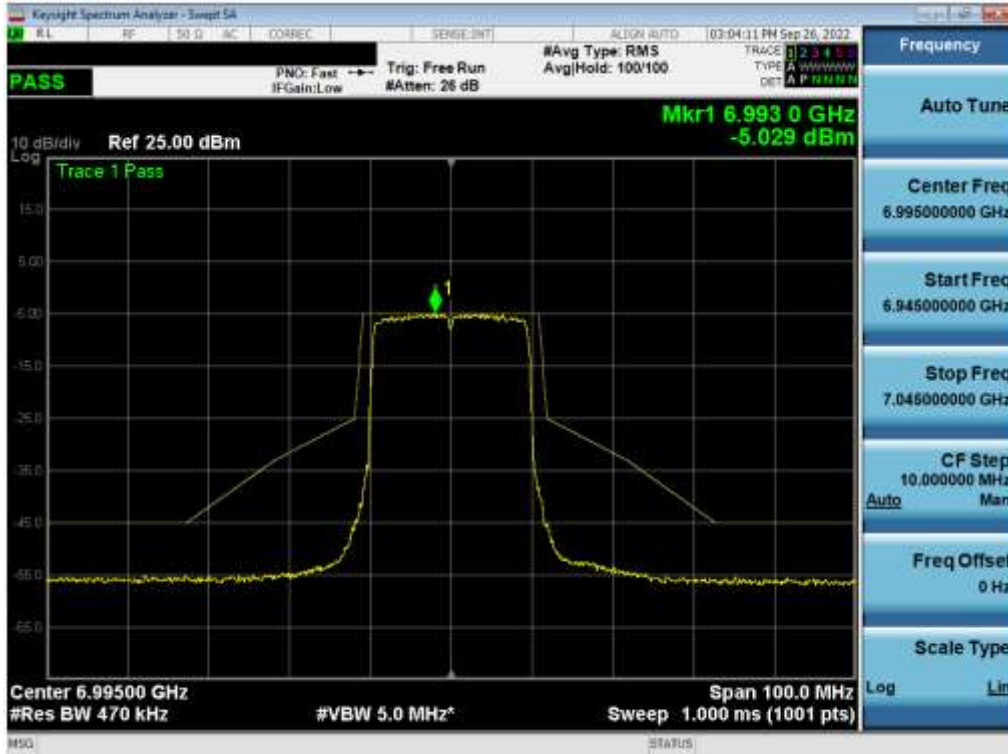


Plot 7-303. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11a (UNII Band 8) – Ch. 233)

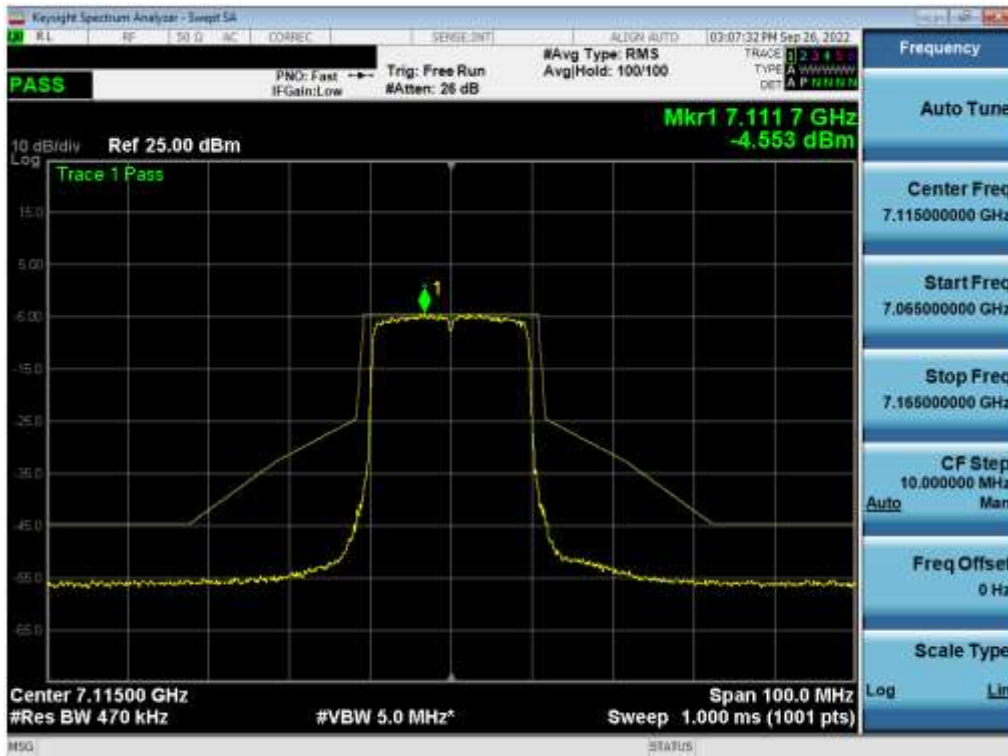


Plot 7-304. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 8) – Ch. 189)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 183 of 239

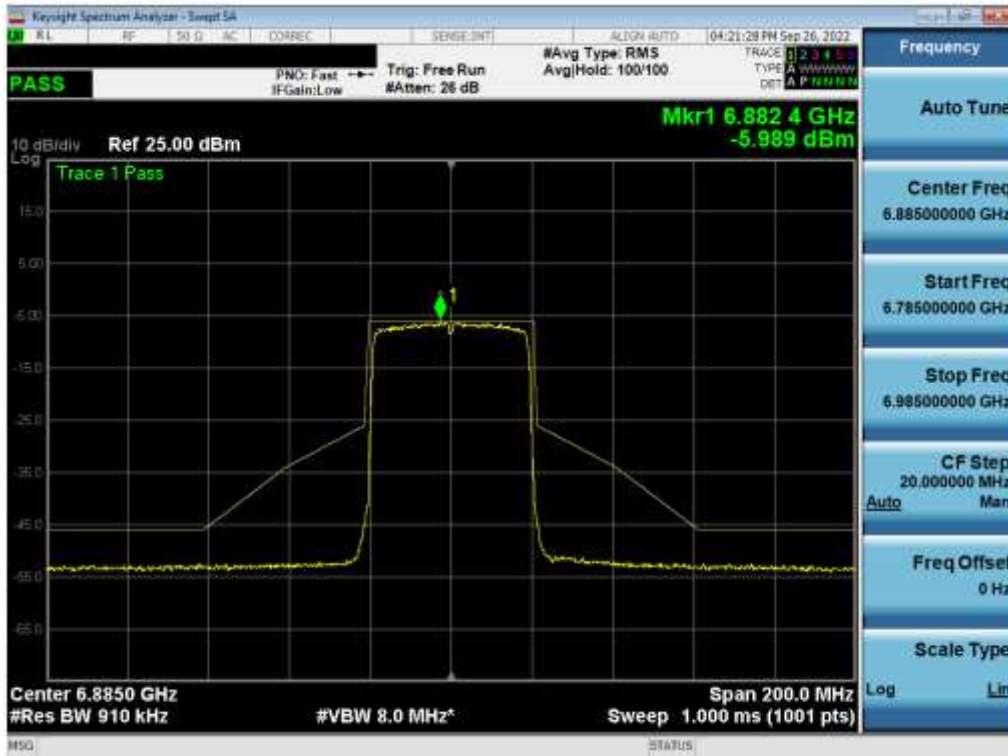


Plot 7-305. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 8) – Ch. 209)

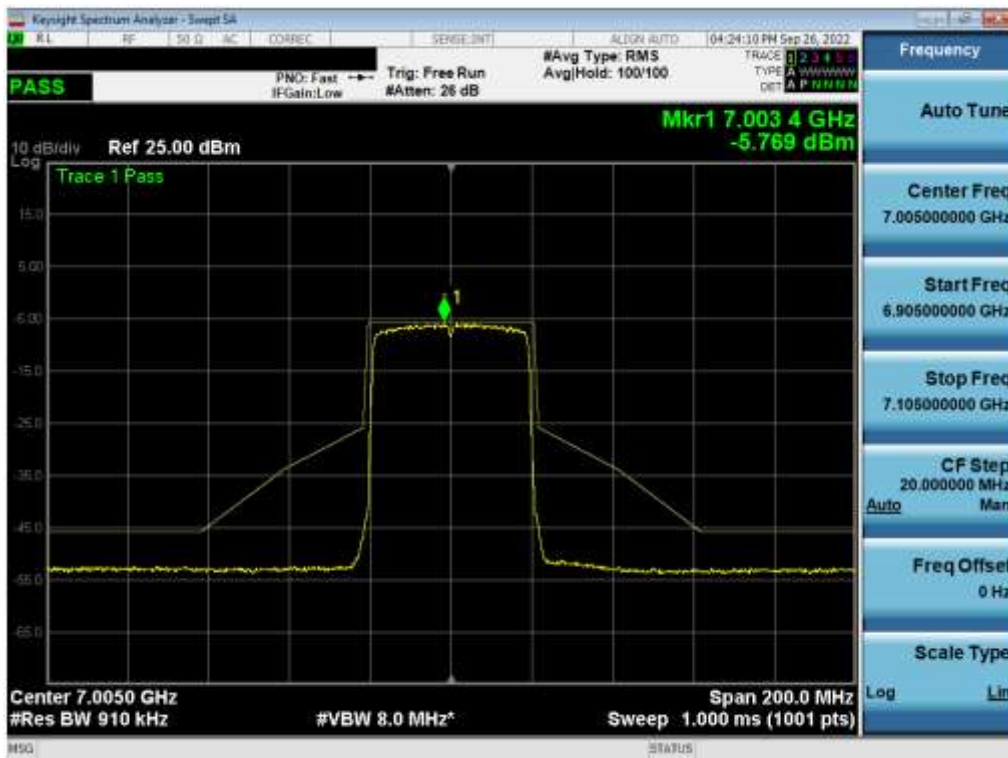


Plot 7-306. In-Band Emission Plot Measurement MIMO ANT2 (20MHz 802.11ax (UNII Band 8) – Ch. 233)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 184 of 239

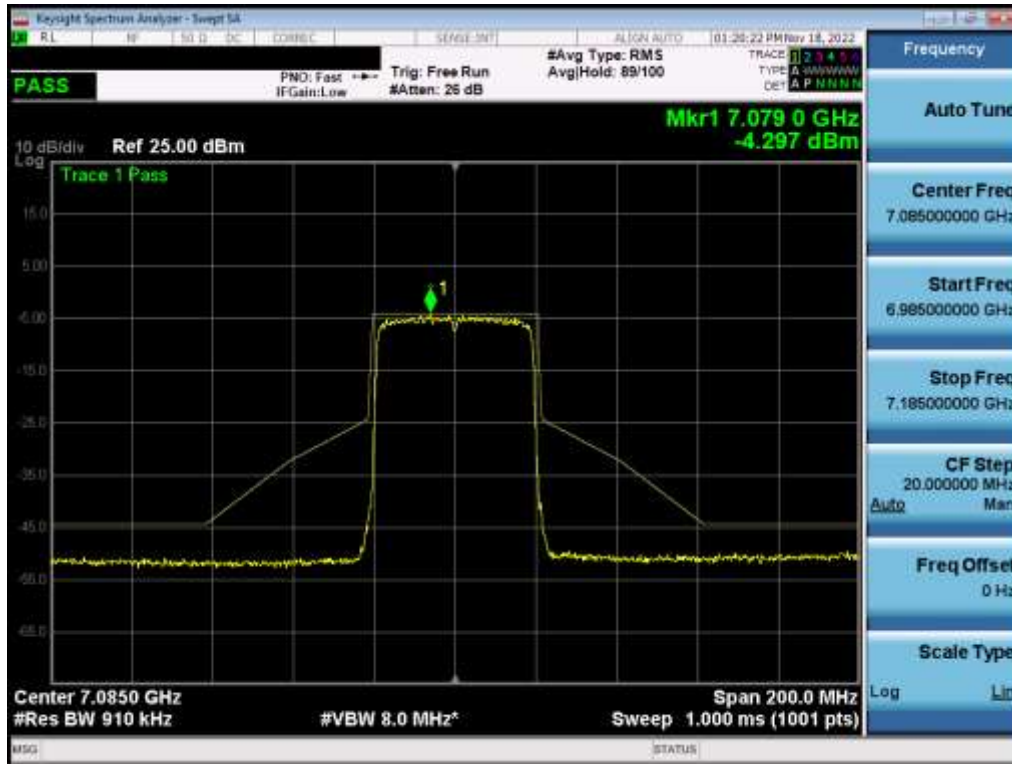


Plot 7-307. In-Band Emission Plot Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 8) – Ch. 187)

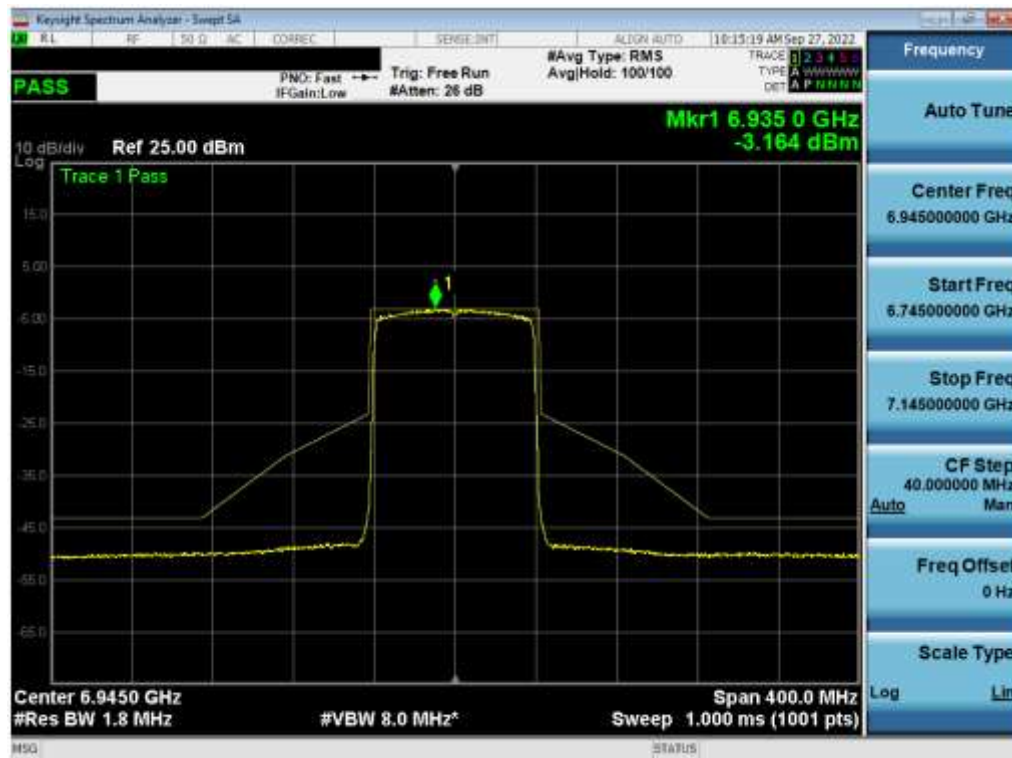


Plot 7-308. In-Band Emission Plot Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 8) – Ch. 211)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 185 of 239

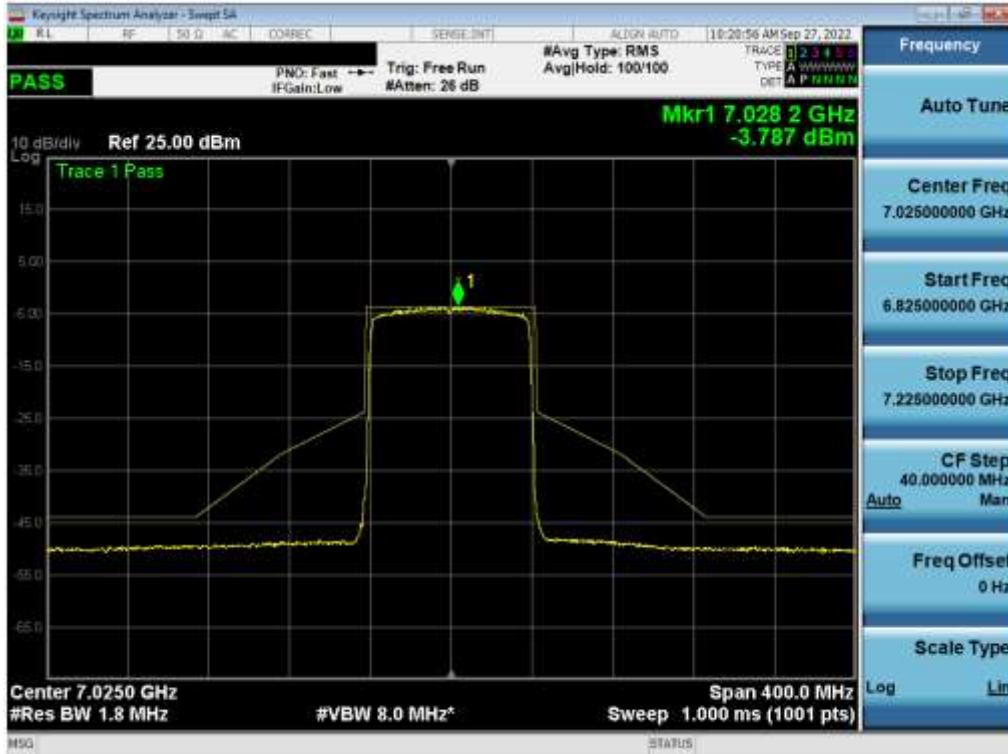


Plot 7-309. In-Band Emission Plot Measurement MIMO ANT2 (40MHz 802.11ax (UNII Band 8) – Ch. 227)

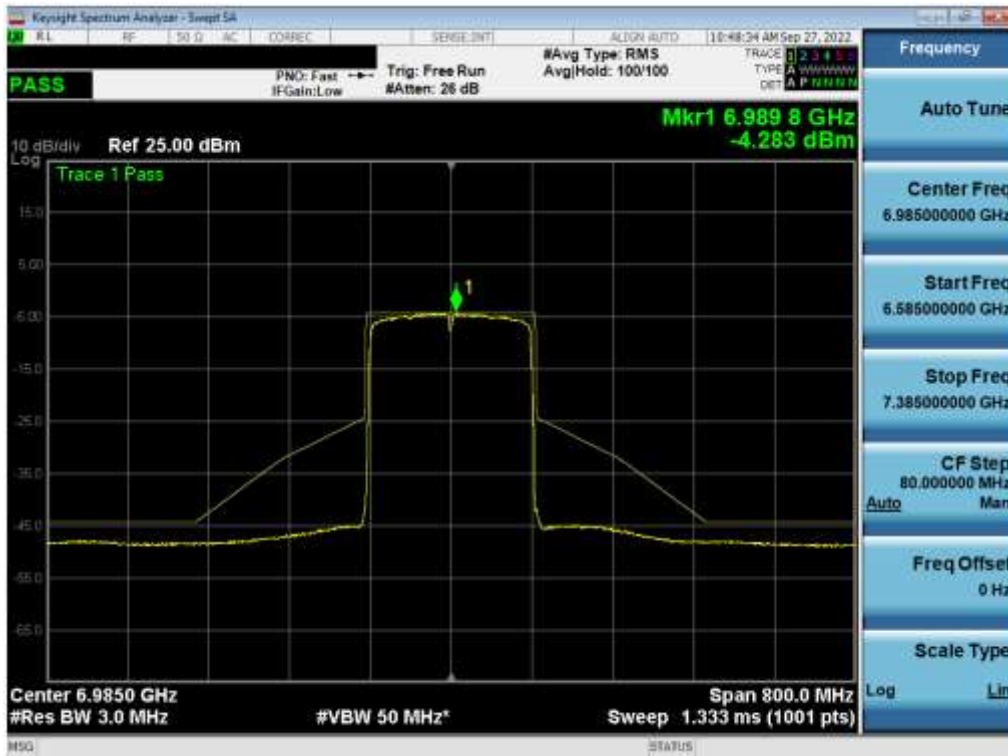


Plot 7-310. In-Band Emission Plot Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 8) – Ch. 199)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 186 of 239



Plot 7-311. In-Band Emission Plot Measurement MIMO ANT2 (80MHz 802.11ax (UNII Band 8) – Ch. 215)



Plot 7-312. In-Band Emission Plot Measurement MIMO ANT2 (160MHz 802.11ax (UNII Band 8) – Ch. 207)

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 187 of 239



7.6 Contention Based Protocol – 802.11a/ax §15.407(d)(6)

Test Overview and Limit

Indoor access points, subordinate devices and client devices operating in the 5.925-7.125 GHz band (herein referred to as unlicensed devices) are required to use technologies that include a contention-based protocol to avoid co-channel interference with incumbent devices sharing the band. To ensure incumbent co-channel operations are detected in a technology-agnostic manner, unlicensed devices are required to detect co-channel radio frequency energy (energy detect) and avoid simultaneous transmission.

Unlicensed indoor low-power devices must detect co-channel radio frequency power that is at least -62 dBm or lower. Upon detection of energy in the band, unlicensed low power indoor devices must vacate the channel and stay off the channel as long as detected radio frequency power is equal to or greater than the threshold (-62 dBm). The -62 dBm (or lower) threshold is referenced to a 0 dBi antenna gain.

To ensure incumbent operations are reliably detected in the band, low power indoor devices must detect RF energy throughout their intended operating channel.

Test Procedure Used

KDB 987594 D02 v01r01

Test Settings

Configure the EUT to transmit with a constant duty cycle.

Set the operating parameters of the EUT including power level, operating frequency, modulation and bandwidth.

Set the signal analyzer center frequency to the nominal EUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT. Connect the output port of the EUT to the signal analyzer 2. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver.

Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters set at step two.

Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 MHz-wide AWGN signal. Use Table 1 to determine the center frequency of the 10 MHz AWGN signal relative to the EUT's channel bandwidth and center frequency.

Set the AWGN signal power to an extremely low level (more than 20 dB below the -62 dBm threshold). Connect the AWGN signal source, via a 3-dB splitter, to the signal analyzer 1 and the EUT as shown in Figure 2.

Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.

Monitor the signal analyzer 2 to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.

(Including all losses in the RF paths) Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.

Refer to Table 1 of KDB 987594 D02 v01r01 to determine number of times the detection threshold testing needs to be repeated. If testing is required more than once, then go back to step 5, choose a different center frequency for the AWGN signal and repeat the process.

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Test Setup

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

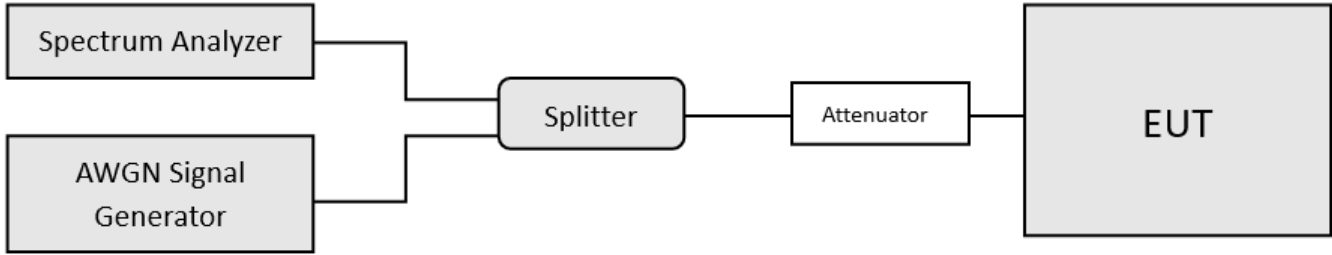


Figure 7-5. Contention-based protocol test setup, conducted method

Test Notes

1. Per guidance from KDB 987594 D02 v01r01, contention based protocol was tested using an AWGN signal with a bandwidth of 10MHz (see Plot 7-313). The amplitude of the signal was increased until detected by the EUT, signaled by the ceasing of transmission (see Plot 7-329), M1 indicates the point at which the AWGN signal is introduced. D1 indicates where the AWGN signal is terminated, at least 10 seconds following M1.
2. 15 trials were ran in order to assure that at least 90% of certainty was met.
3. Per Guidance from KDB 987594 D04 v01, contention based protocol was tested with receiver with the lowest antenna gain.
4. All CBP Timing Plots shown are for the ceased condition. Some spikes that may be shown are from adjacent portions of the spectrum that are still transmitting.

$$\text{Detection Level} = \text{Injected AWGN Power (dBm)} - \text{Antenna Gain (dBi)} + \text{Path Loss (dB)}$$

Equation 7-1. Detection Level Calculation

Band	Channel	Channel Freq [MHz]	Channel BW [MHz]	Incumbent Freq [MHz]	Injected (AWGN) [dBm]	Antenna Gain [dBi]	Adjusted Power Level [dBm]	Detection Limit [dBm]	Margin [dB]
UNII Band 5	53	6215	20	6215	-73.48	-7.62	-65.86	-62.0	-3.86
				6110	-70.69	-7.62	-63.07	-62.0	-1.07
	47	6185	160	6185	-70.06	-7.62	-62.44	-62.0	-0.44
				6260	-74.85	-7.62	-67.23	-62.0	-5.23
UNII Band 6	101	6455	20	6455	-81.92	-4.98	-76.94	-62.0	-14.94
				6430	-73.98	-4.98	-69.00	-62.0	-7.00
	111	6505	160	6505	-69.72	-4.98	-64.74	-62.0	-2.74
				6580	-74.02	-4.98	-69.04	-62.0	-7.04
UNII Band 7	149	6695	20	6695	-80.18	-7.18	-73.00	-62.0	-11.00
				6750	-73.48	-7.18	-66.30	-62.0	-4.30
	175	6825	160	6825	-69.52	-7.18	-62.34	-62.0	-0.34
				6900	-72.37	-7.18	-65.19	-62.0	-3.19
UNII Band 8	197	6935	20	6935	-79.01	-7.35	-71.66	-62.0	-9.66
				6910	-70.49	-7.35	-63.14	-62.0	-1.14
	207	6985	160	6985	-70.87	-7.35	-63.52	-62.0	-1.52
				7060	-72.16	-7.35	-64.81	-62.0	-2.81

Table 7-8. Contention Based Protocol – Incumbent Detection Results

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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Band	Channel	Channel Freq [MHz]	Channel BW [MHz]	Incumbent Freq [MHz]	Antenna Gain [dBi]	EUT Transmission Status			Detection Limit [dBm]	Margin [dB]
						Adjusted AWGN Power (dBm)				
						Normal	Minimal	Ceased		
UNII Band 5	53	6215	20	6215	-7.62	-68.66	-66.66	-65.86	-62.0	-3.86
				6110	-7.62	-68.57	-66.57	-63.07	-62.0	-1.07
	47	6185	160	6185	-7.62	-62.84	-62.54	-62.44	-62.0	-0.44
				6260	-7.62	-67.83	-67.43	-67.23	-62.0	-5.23
UNII Band 6	101	6455	20	6455	-4.98	-82.64	-80.64	-76.94	-62.0	-14.94
				6430	-4.98	-70.30	-69.30	-69.00	-62.0	-7.00
	111	6505	160	6505	-4.98	-67.64	-65.64	-64.74	-62.0	-2.74
				6580	-4.98	-70.54	-69.54	-69.04	-62.0	-7.04
UNII Band 7	149	6695	20	6695	-7.18	-82.40	-80.40	-73.00	-62.0	-11.00
				6750	-7.18	-70.70	-66.70	-66.30	-62.0	-4.30
	175	6825	160	6825	-7.18	-62.94	-62.74	-62.34	-62.0	-0.34
				6900	-7.18	-69.69	-67.69	-65.19	-62.0	-3.19
UNII Band 8	197	6935	20	6935	-7.35	-75.66	-74.66	-71.66	-62.0	-9.66
				6910	-7.35	-68.44	-66.44	-63.14	-62.0	-1.14
	207	6985	160	6985	-7.35	-64.12	-63.62	-63.52	-62.0	-1.52
				7060	-7.35	-68.41	-67.41	-64.81	-62.0	-2.81

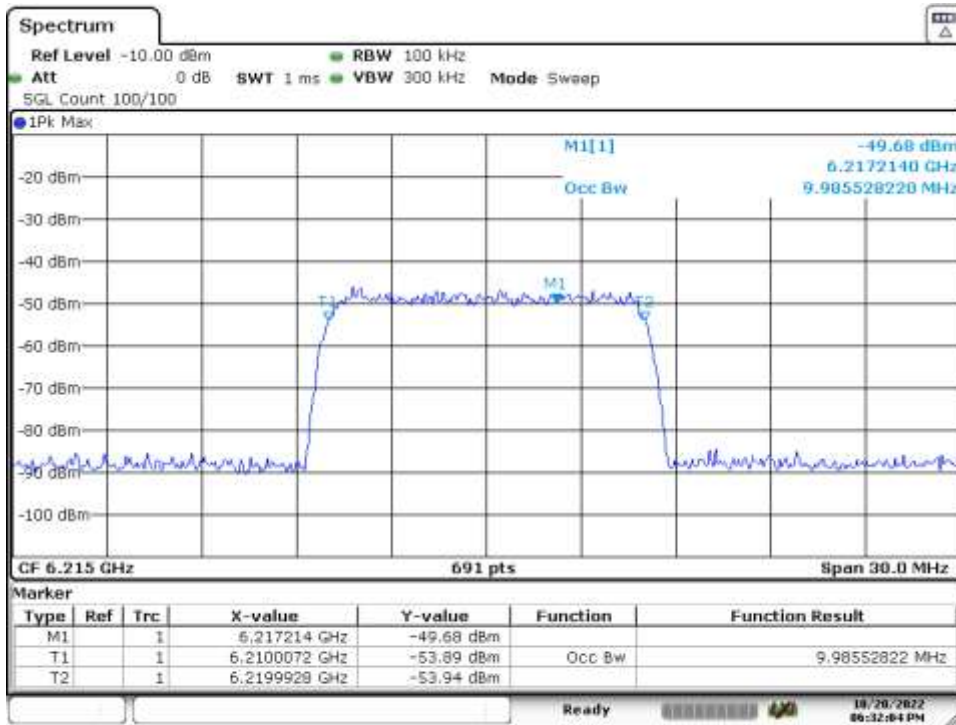
Table 7-9. Contention Based Protocol – Detection Results – All Tx Cases

CBP Detection (1 = Detection, Blank = No Detection)																					
Band	Channel	Channel Freq [MHz]	Channel BW [MHz]	Incumbent Freq [MHz]	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Detection Rate (%)	
UNII Band 5	53	6215	20	6215	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100	
				6110	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	47	6185	160	6185	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100
				6260	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
UNII Band 6	101	6455	20	6455	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100
				6430	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	111	6505	160	6505	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100
				6580	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
UNII Band 7	149	6695	20	6695	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100
				6750	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	175	6825	160	6825	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100
				6900	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
UNII Band 8	197	6935	20	6935	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100
				6910	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	207	6985	160	6985	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100
				7060	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Table 7-10. Contention Based Protocol – Incumbent Detection Trial Results

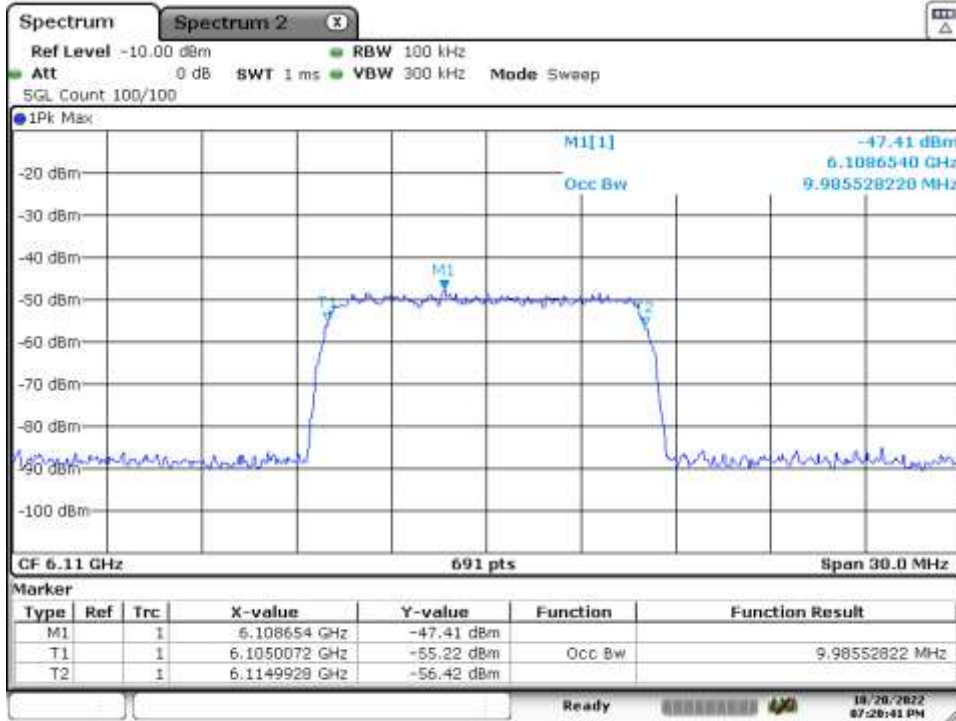
FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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AWGN Plots



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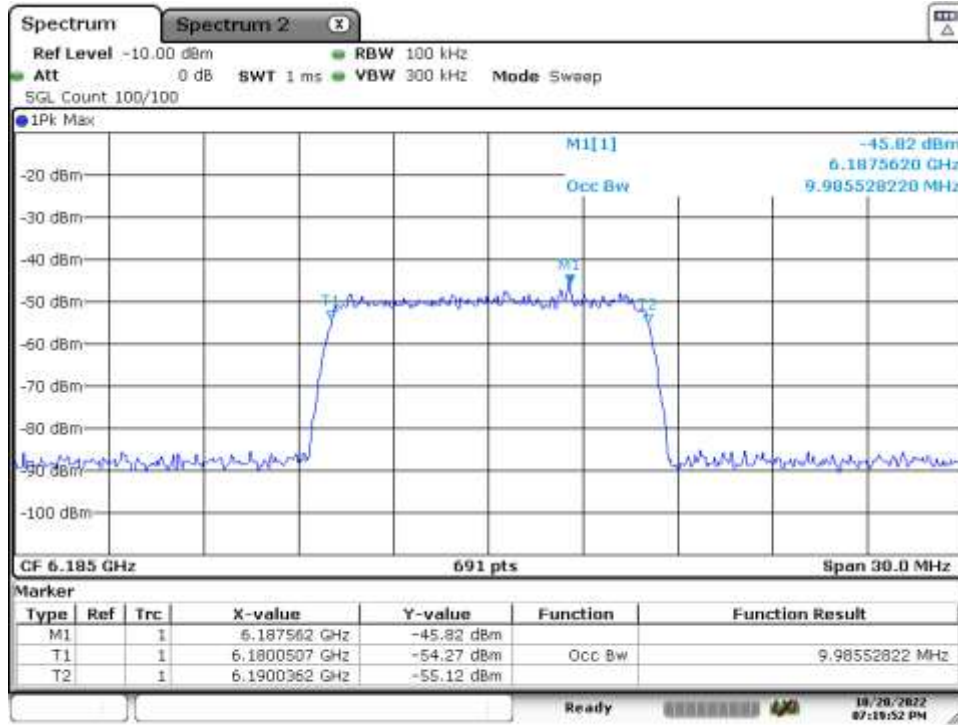
Plot 7-313. AWGN Signal – UNII 5 – 20MHz



Date: 20.OCT.2022 19:28:41

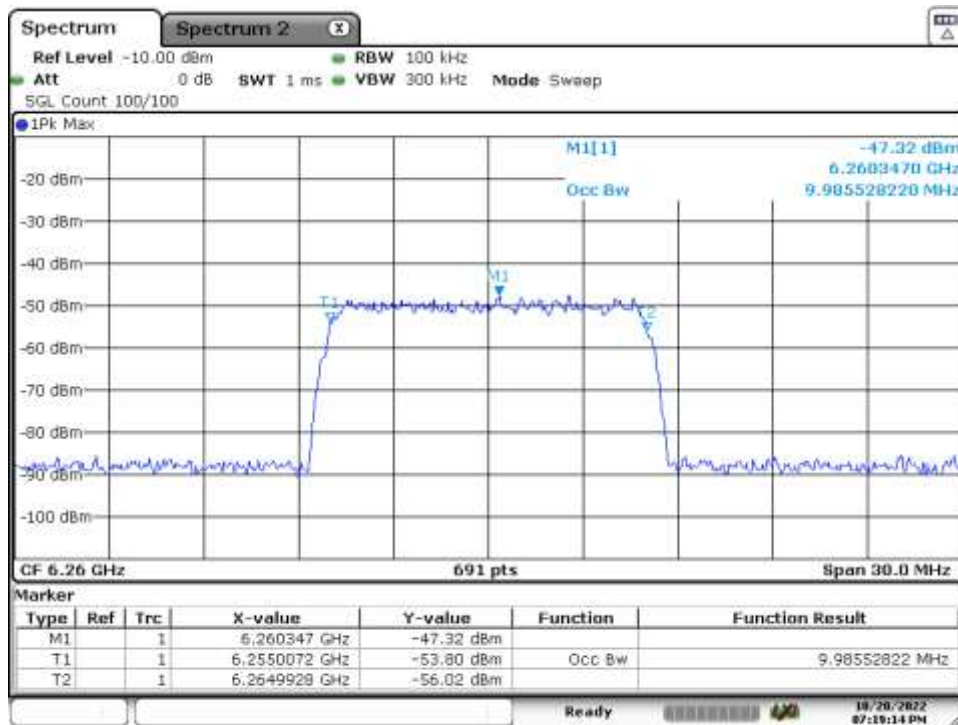
Plot 7-314. AWGN Signal – UNII 5 – 160MHz - Low

MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
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		EUT Type: Portable Handset	



Date: 20.OCT.2022 19:19:52

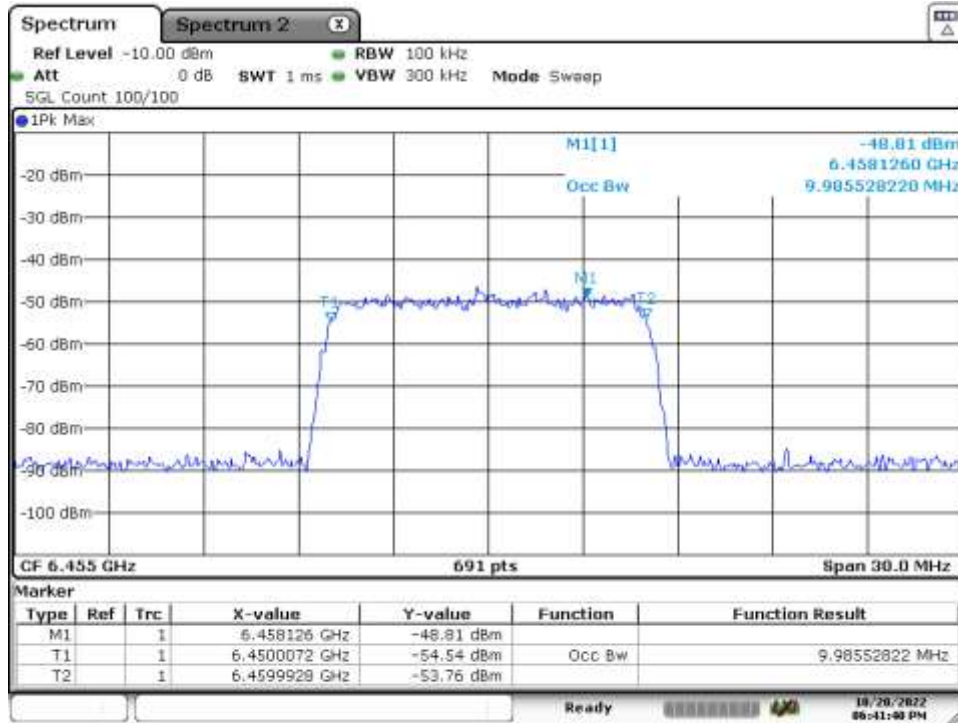
Plot 7-315. AWGN Signal – UNII 5 – 160MHz - Mid



Date: 20.OCT.2022 19:19:13

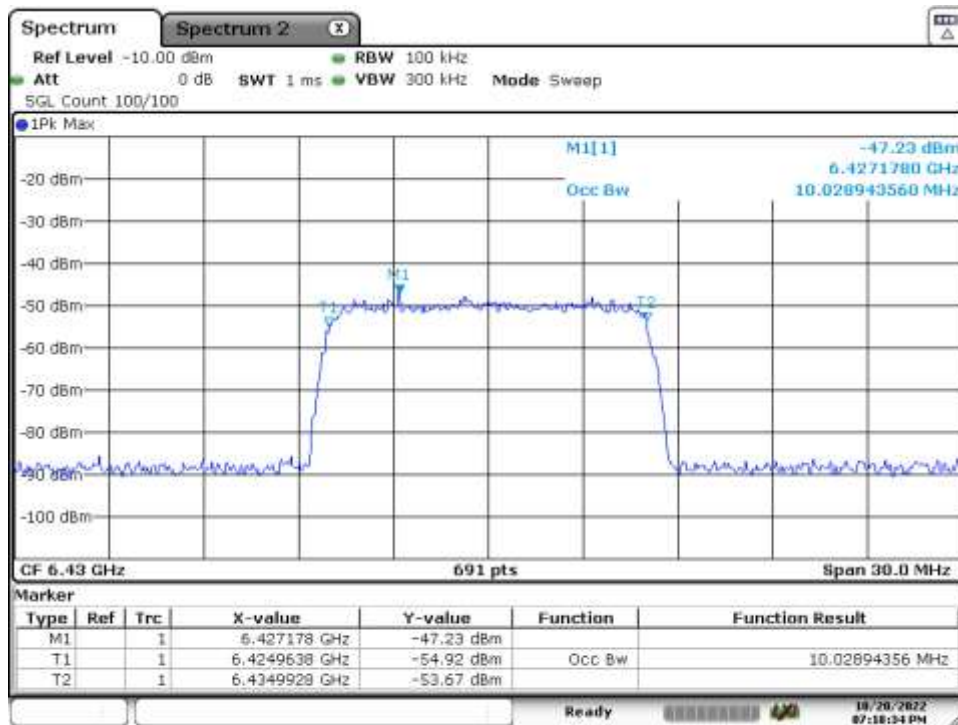
Plot 7-316. AWGN Signal – UNII 5 – 160MHz - High

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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Plot 7-317. AWGN Signal – UNII 6 – 20MHz



Date: 20.OCT.2022 19:18:34

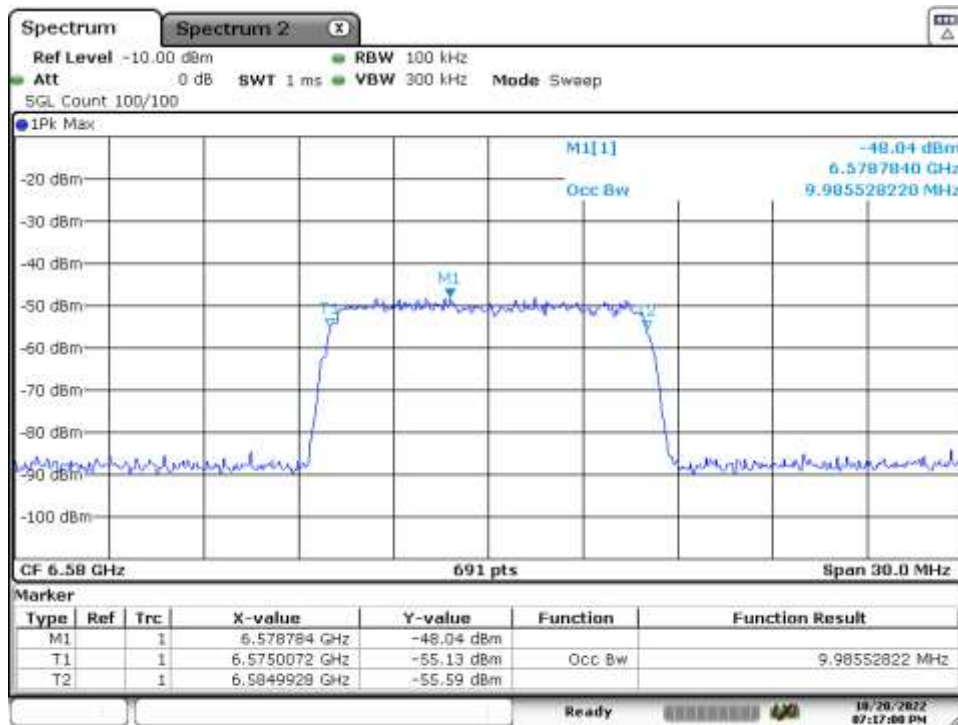
Plot 7-318. AWGN Signal – UNII 6 – 160MHz - Low

FCC: A3LSMS911JPN		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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Date: 20.OCT.2022 19:17:39

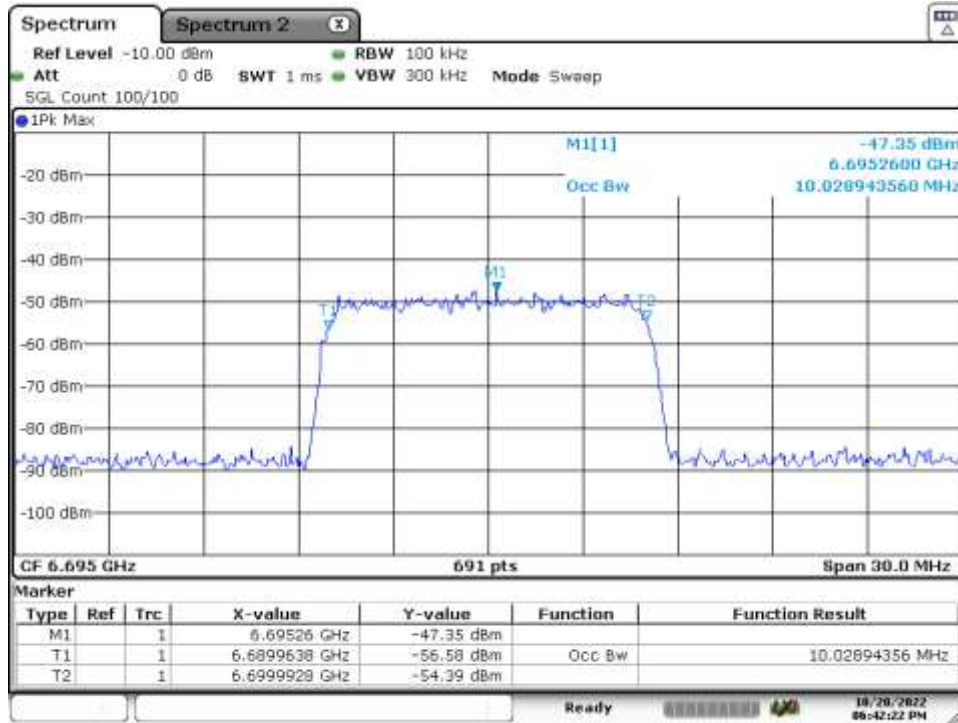
Plot 7-319. AWGN Signal – UNII 6 – 160MHz - Mid



Date: 20.OCT.2022 19:17:00

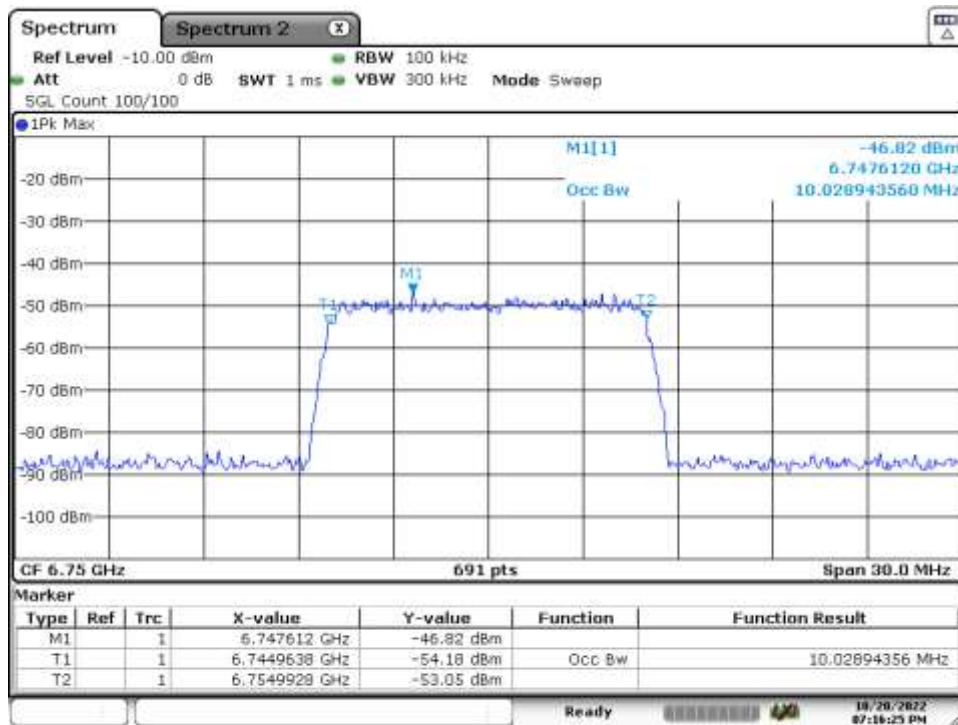
Plot 7-320. AWGN Signal – UNII 6 – 160MHz - High

FCC: A3LSMS911JPN		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2212080136-12-R1.A3L	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset		Page 194 of 239



Date: 20.OCT.2022 18:42:21

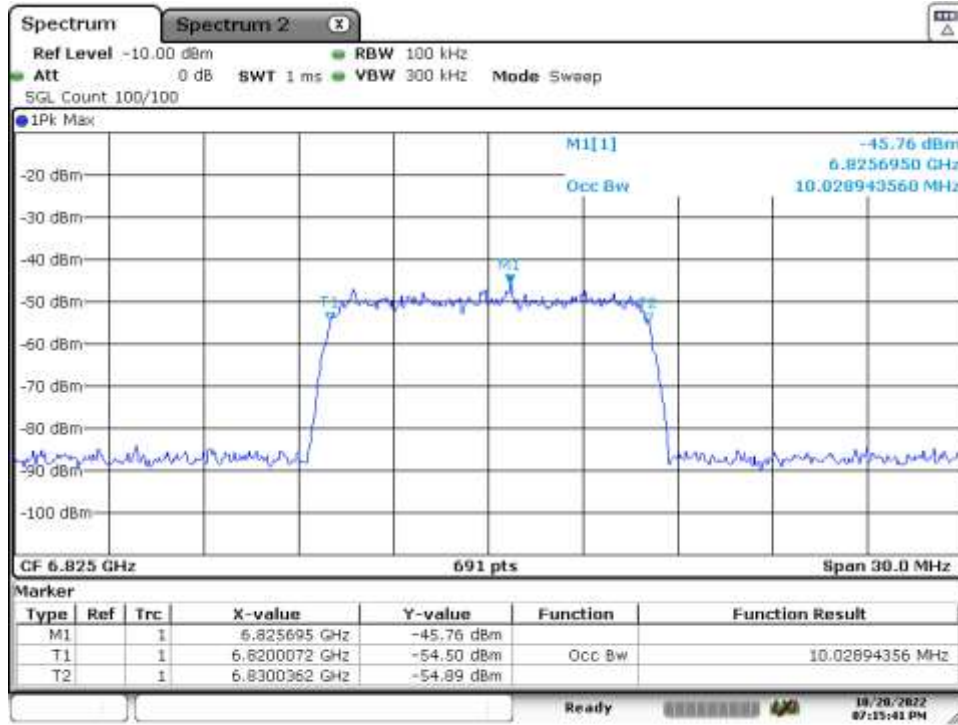
Plot 7-321. AWGN Signal – UNII 7 – 20MHz



Date: 20.OCT.2022 19:16:25

Plot 7-322. AWGN Signal – UNII 7 – 160MHz - Low

MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
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Date: 20.OCT.2022 19:15:40

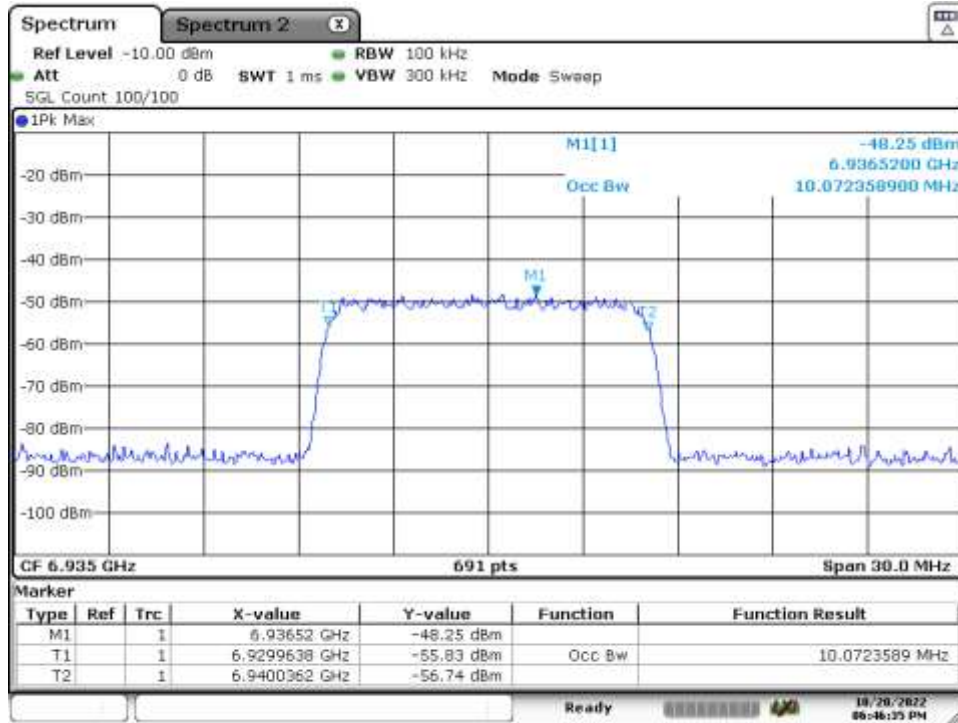
Plot 7-323. AWGN Signal – UNII 7 – 160MHz - Mid



Date: 20.OCT.2022 19:15:01

Plot 7-324. AWGN Signal – UNII 7 – 160MHz - High

MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
FCC: A3LSMS911JPN	Test Dates: 9/3/2022 – 11/22/2022	EUT Type: Portable Handset	Page 196 of 239



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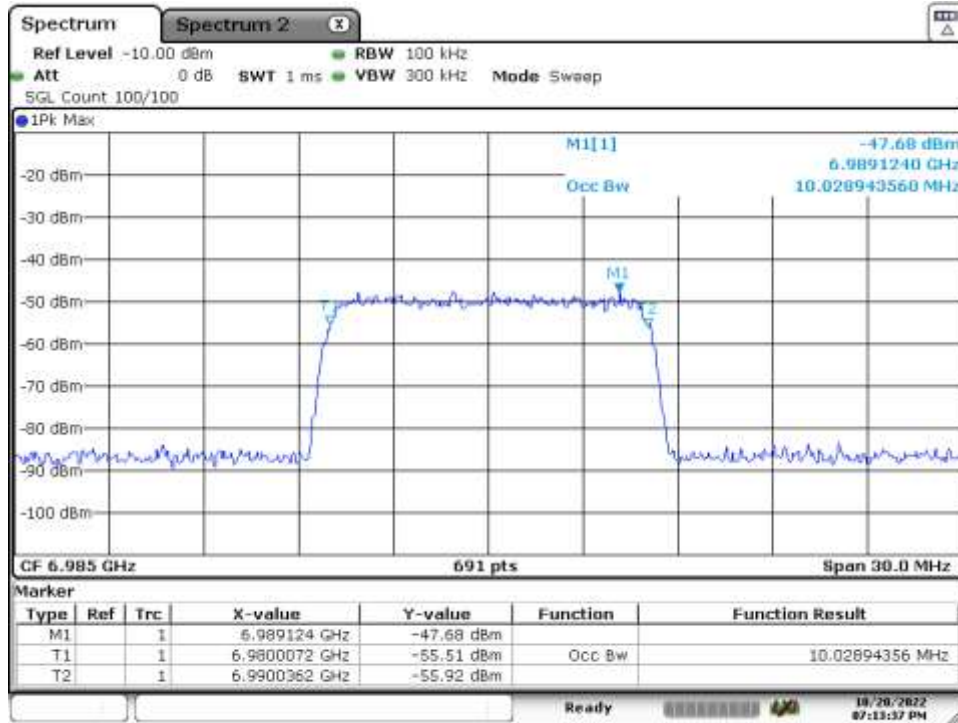
Plot 7-325. AWGN Signal – UNII 8 – 20MHz



Date: 20.OCT.2022 19:14:18

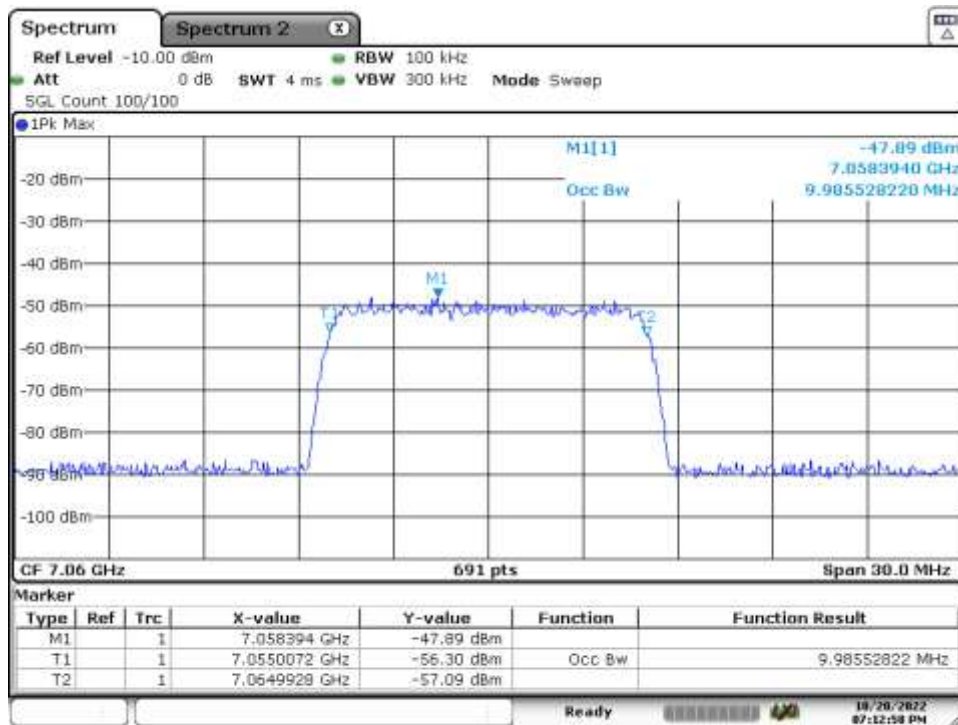
Plot 7-326. AWGN Signal – UNII 8 – 160MHz - Low

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Date: 20.OCT.2022 19:13:37

Plot 7-327. AWGN Signal – UNII 8 – 160MHz - Mid

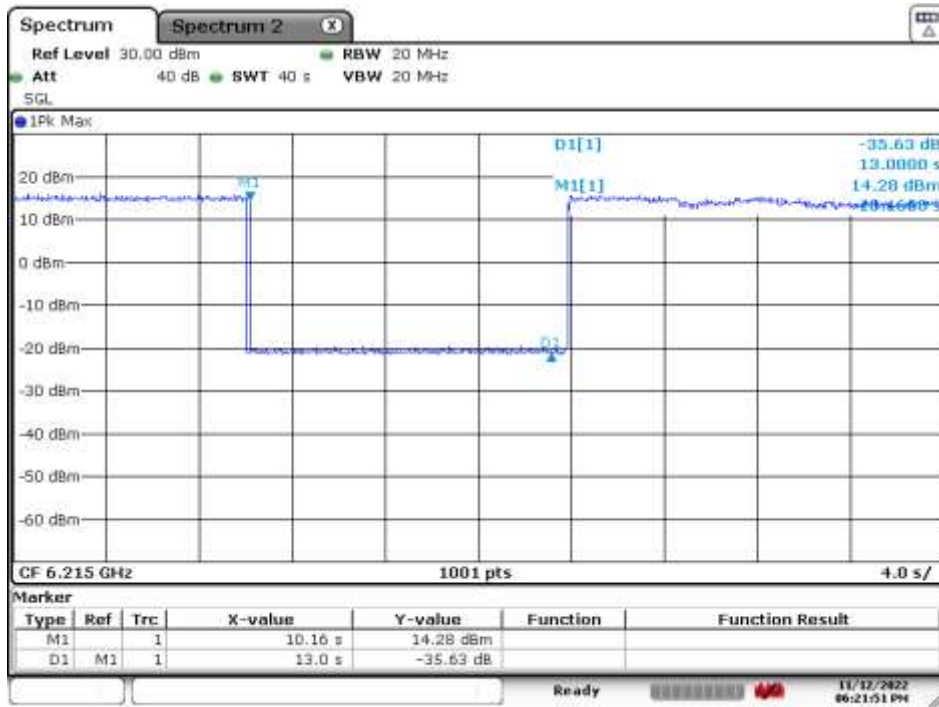


Date: 20.OCT.2022 19:12:58

Plot 7-328. AWGN Signal – UNII 8 – 160MHz - High

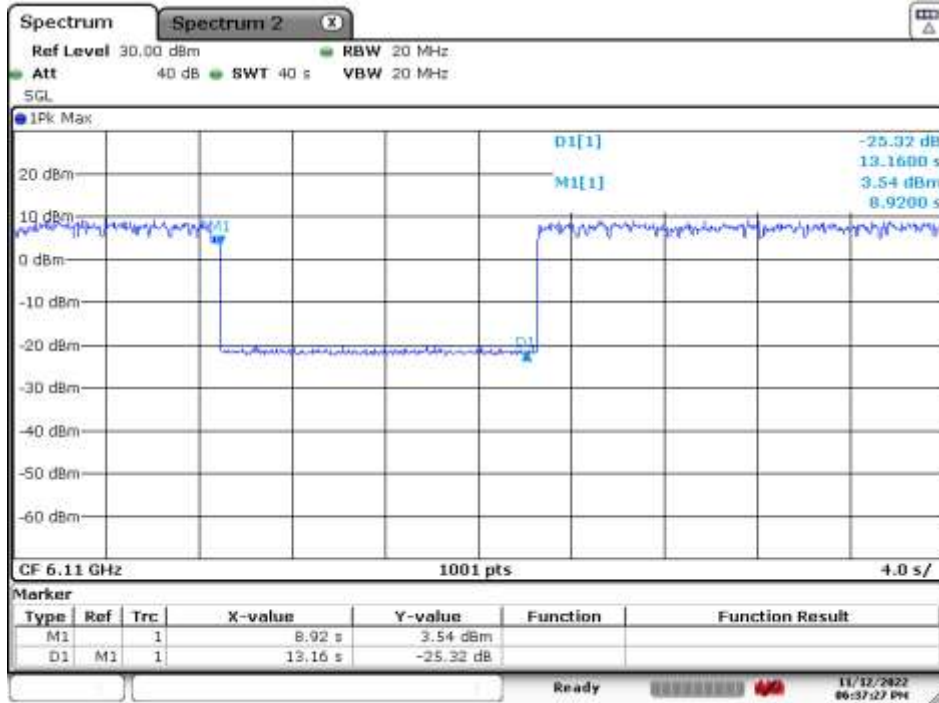
MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
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CBP Timing Plots



Date: 12/NOV/2022 18:21:51

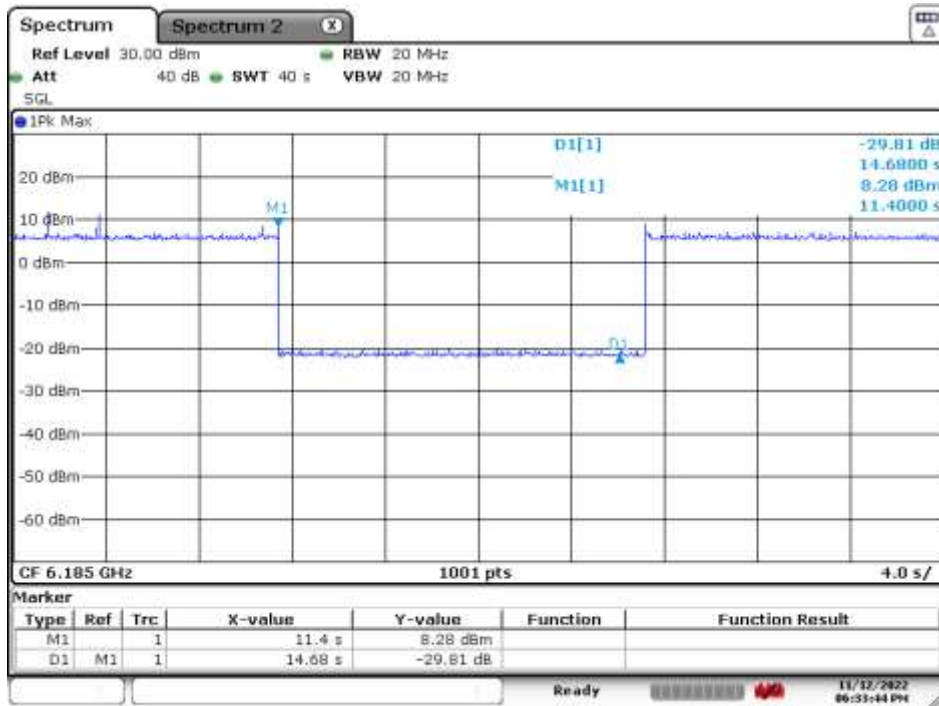
Plot 7-329. Contention Based Protocol Timing Plot – UNII 5 – 20MHz Ch53



Date: 12/NOV/2022 18:37:27

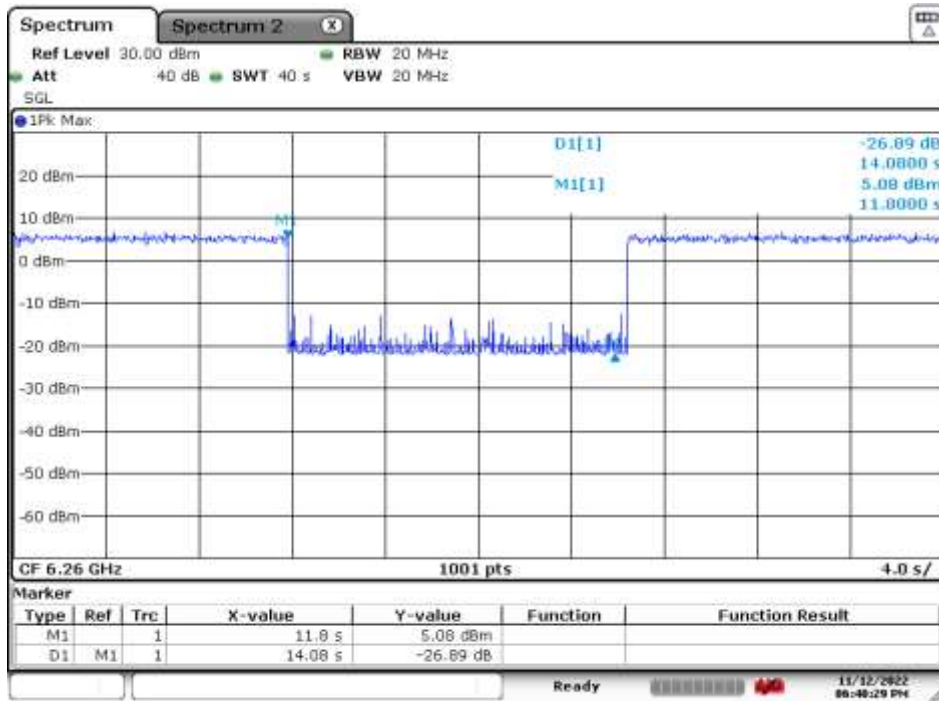
Plot 7-330. Contention Based Protocol Timing Plot – UNII 5 – 160MHz Ch47 – Low

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Plot 7-331. Contention Based Protocol Timing Plot – UNII 5 – 160MHz Ch47 – Mid



Date: 12.NOV.2022 16:40:28

Plot 7-332. Contention Based Protocol Timing Plot – UNII 5 – 160MHz Ch47 - High

FCC: A3LSMS911JPN	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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