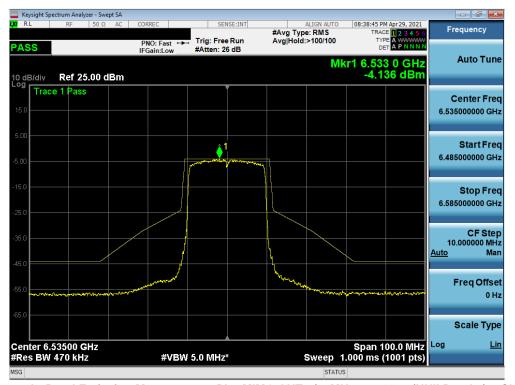


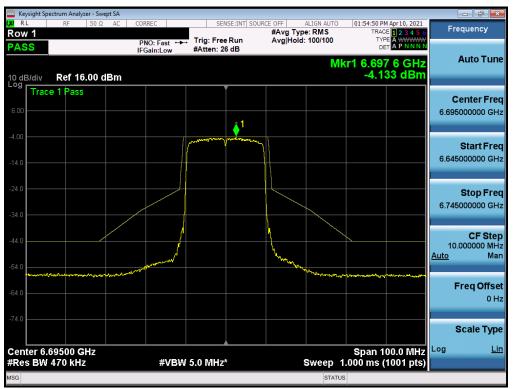
Plot 7-325. In-Band Emission Measurement Plot MIMO ANT2 (20MHz 802.11a (UNII Band 7) - Ch. 185)



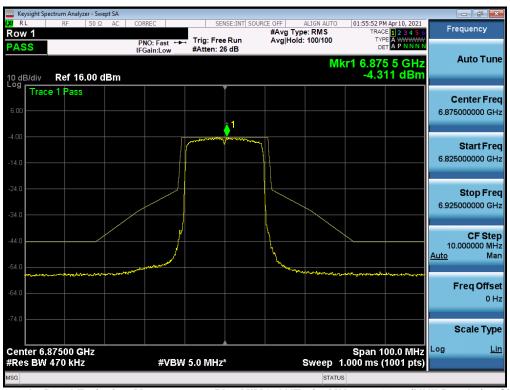
Plot 7-326. In-Band Emission Measurement Plot MIMO ANT2 (20MHz 802.11ax (UNII Band 7) - Ch. 117)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 201 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 201 01 201





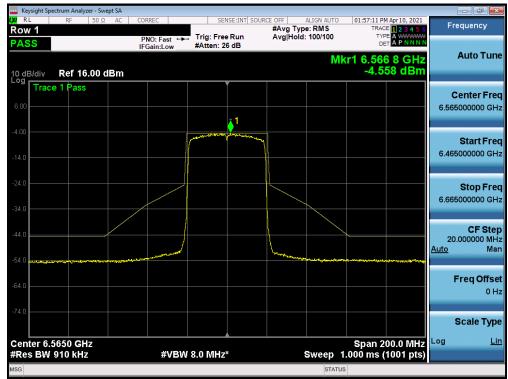
Plot 7-327. In-Band Emission Measurement Plot MIMO ANT2 (20MHz 802.11ax (UNII Band 7) - Ch. 149)



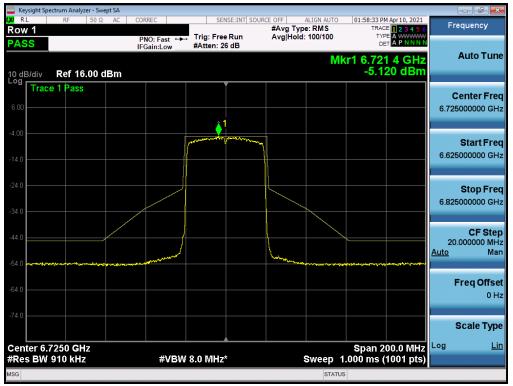
Plot 7-328. In-Band Emission Measurement Plot MIMO ANT2 (20MHz 802.11ax (UNII Band 7) - Ch. 185)

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 202 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 202 01 201





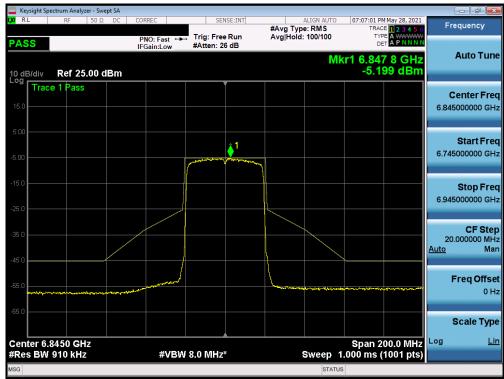
Plot 7-329. In-Band Emission Measurement Plot MIMO ANT2 (40MHz 802.11ax (UNII Band 7) - Ch. 123)



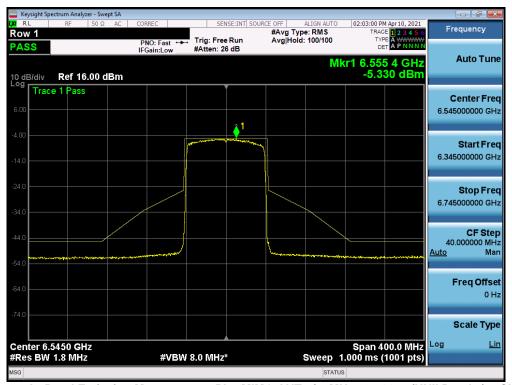
Plot 7-330. In-Band Emission Measurement Plot MIMO ANT2 (40MHz 802.11ax (UNII Band 7) - Ch. 155)

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 203 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet		raye 203 01 201
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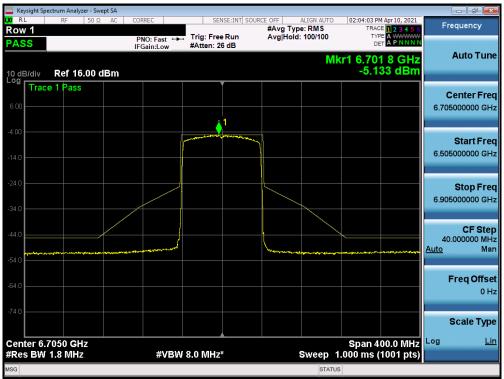
Plot 7-331. In-Band Emission Measurement Plot MIMO ANT2 (40MHz 802.11ax (UNII Band 7) - Ch. 179)



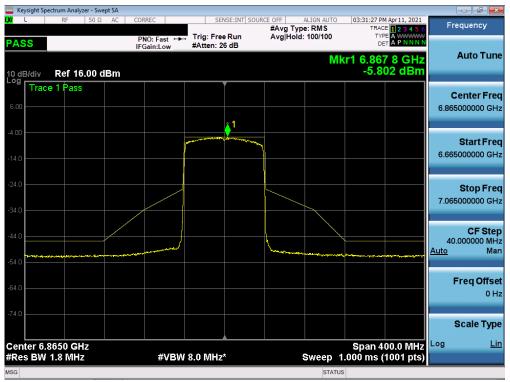
Plot 7-332. In-Band Emission Measurement Plot MIMO ANT2 (80MHz 802.11ax (UNII Band 7) - Ch. 119)

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 204 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 204 01 201





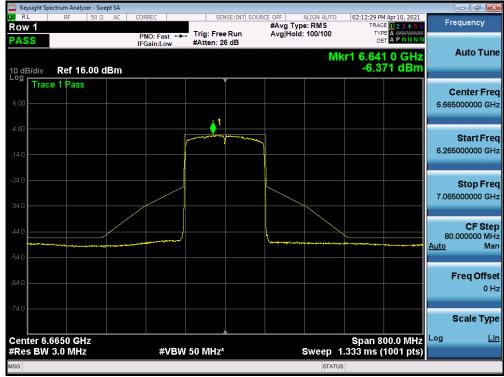
Plot 7-333. In-Band Emission Measurement Plot MIMO ANT2 (80MHz 802.11ax (UNII Band 7) - Ch. 151)



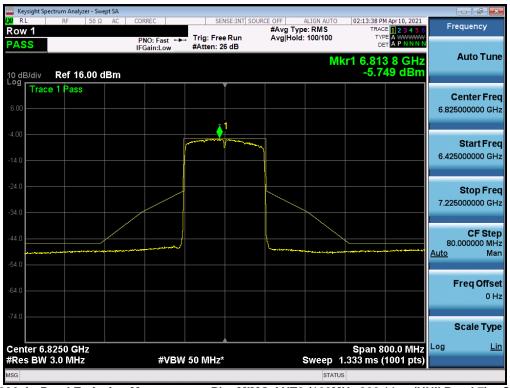
Plot 7-334. In-Band Emission Measurement Plot MIMO ANT2 (80MHz 802.11ax (UNII Band 7) - Ch. 183)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 205 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 205 01 201





Plot 7-335. In-Band Emission Measurement Plot MIMO ANT2 (160MHz 802.11ax (UNII Band 7) - Ch. 143)

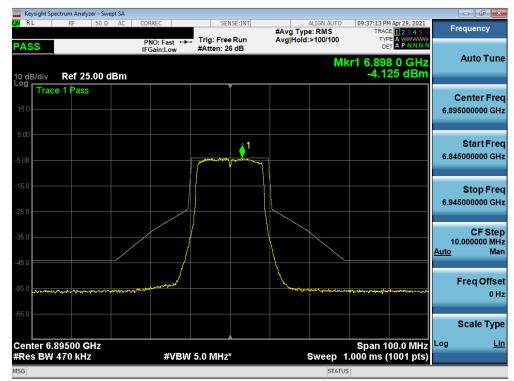


Plot 7-336. In-Band Emission Measurement Plot MIMO ANT2 (160MHz 802.11ax (UNII Band 7) - Ch. 175)

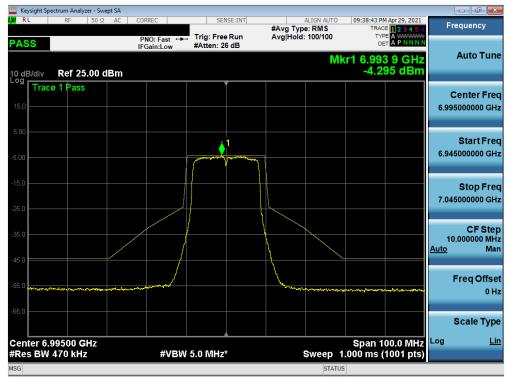
FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 206 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 200 01 201



## MIMO Antenna-2 In-Band Emission Measurements - (UNII Band 8)



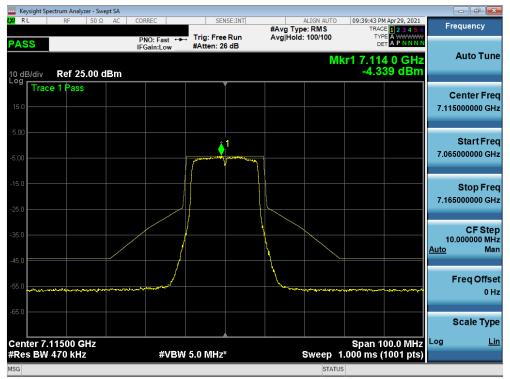
Plot 7-337. In-Band Emission Measurement Plot MIMO ANT2 (20MHz 802.11a (UNII Band 8) - Ch. 189)



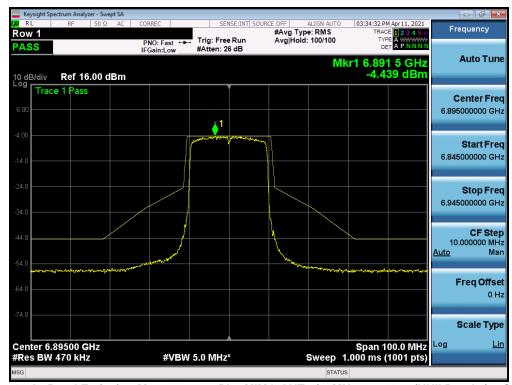
Plot 7-338. In-Band Emission Measurement Plot MIMO ANT2 (20MHz 802.11a (UNII Band 8) - Ch. 209)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 207 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 207 01 201





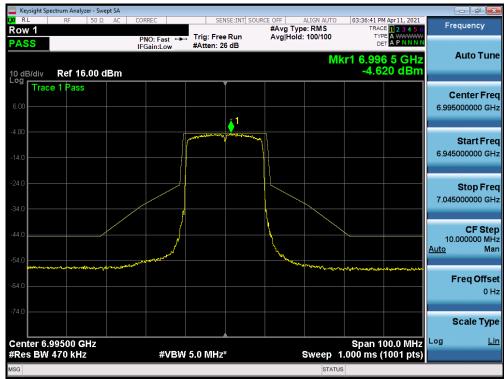
Plot 7-339. In-Band Emission Measurement Plot MIMO ANT2 (20MHz 802.11a (UNII Band 8) - Ch. 233)



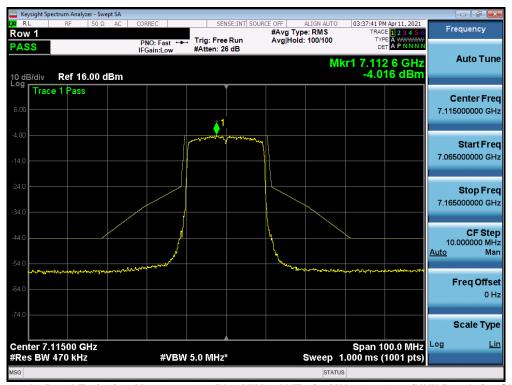
Plot 7-340. In-Band Emission Measurement Plot MIMO ANT2 (20MHz 802.11ax (UNII Band 8) - Ch. 189)

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 208 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 208 01 26 1
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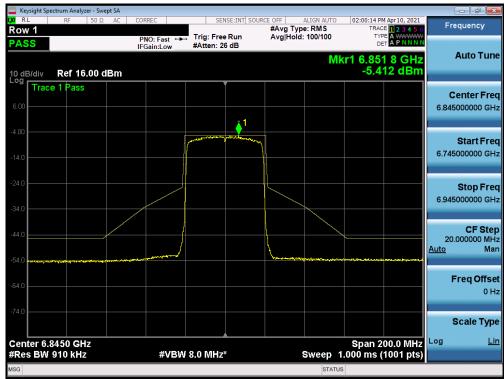
Plot 7-341. In-Band Emission Measurement Plot MIMO ANT2 (20MHz 802.11ax (UNII Band 8) - Ch. 209)



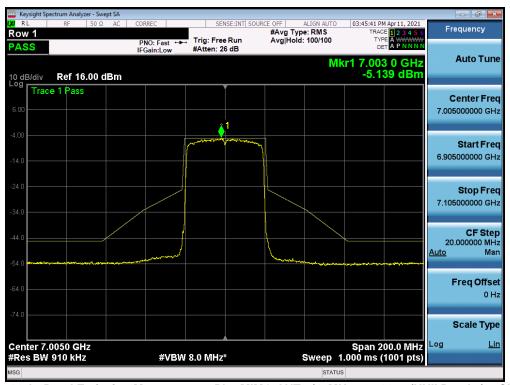
Plot 7-342. In-Band Emission Measurement Plot MIMO ANT2 (20MHz 802.11ax (UNII Band 8) - Ch. 233)

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 209 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 209 01 201





Plot 7-343. In-Band Emission Measurement Plot MIMO ANT2 (40MHz 802.11ax (UNII Band 8) - Ch. 187)



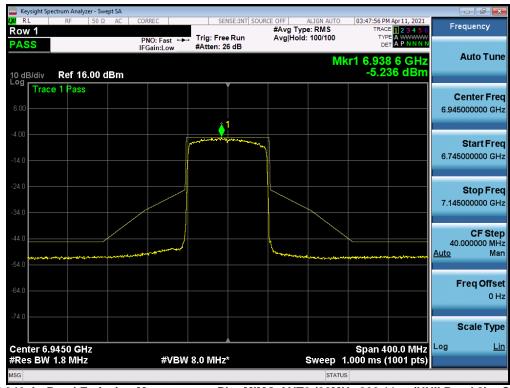
Plot 7-344. In-Band Emission Measurement Plot MIMO ANT2 (40MHz 802.11ax (UNII Band 8) - Ch. 211)

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 210 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 210 01 201





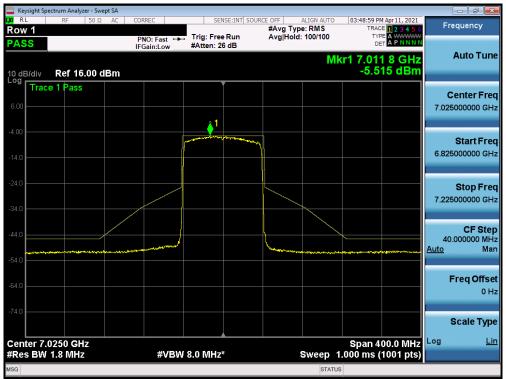
Plot 7-345. In-Band Emission Measurement Plot MIMO ANT2 (40MHz 802.11ax (UNII Band 8) - Ch. 227)



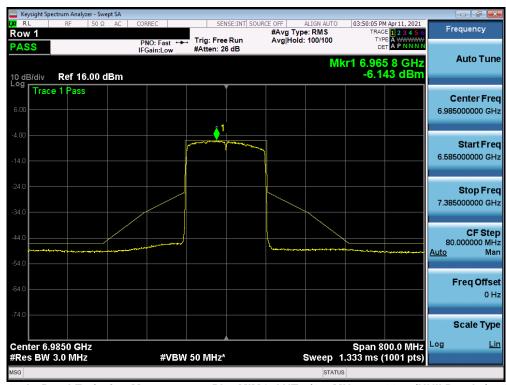
Plot 7-346. In-Band Emission Measurement Plot MIMO ANT2 (80MHz 802.11ax (UNII Band 8) - Ch. 199)

FCC ID: A3LSMF926JPN	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 211 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 211 of 261





Plot 7-347. In-Band Emission Measurement Plot MIMO ANT2 (80MHz 802.11ax (UNII Band 8) - Ch. 215)



Plot 7-348. In-Band Emission Measurement Plot MIMO ANT2 (160MHz 802.11ax (UNII Band 8) - Ch. 207)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 212 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 212 01 261

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# 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**

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

#### **Test Settings**

- 1) Using the 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.
- 2) Connect the AWGN signal source to antenna 1, as shown in Figure 3, and transmit the signal (RF ON).
- 3) Using signal analyzer 1 and antenna 2, measure the AWGN signal power level. Align antenna 2 and antenna 1 to maximize emission.
- **4)** Using equation 1, correct the measured power  $P_{MEAS}$  by the gain of antenna 2, G2 and all cable losses and attenuations L to obtain the AWGN signal power level at antenna 2, P2.
- 5) Set the corrected power P2 to an extremely low level (more than 20 dB below the -62 dBm threshold).
- 6) Place the EUT exactly where antenna 2 was. Configure the EUT to transmit a constant duty cycle.
- 7) Set the operating parameters of the EUT including power level, operating frequency, modulation and bandwidth.
- 8) Set the signal analyzer 1 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 EUT.
- 9) Monitor the signal analyzer 1 to verify if AWGN signal has been detected and EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.
- 10) Determine and record the AWGN signal power level at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect the AWGN signal with 90% (or better) level of certainty.
- 11) Refer to Table 1 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.

FCC ID: A3LSMF926JPN	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 212 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 213 of 261



#### **Test Setup**

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

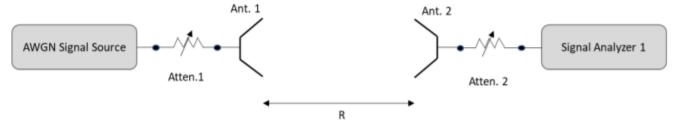


Figure 7-5. Test Instrument & Measurement Setup - Power Measurement

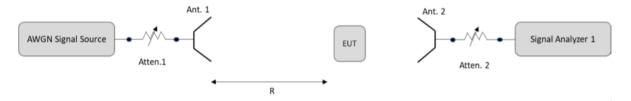


Figure 7-6. Test Instrument & Measurement Setup – Detection Threshold Measurement

## **Test Notes**

1. Per guidance from KDB 987594 D02, contention based protocol was tested using an AWGN signal with a bandwidth of 10MHz (see Plot 7-349). The amplitude of the signal was increased until detected by the EUT, signaled by the ceasing of transmission (see Plot 7-350), marker indicates the point at which the AWGN signal is introduced.

$$P_2 = P_{meas} + L - G_2$$

$$P_2 = -53.21 + 1.92 - 10.72$$

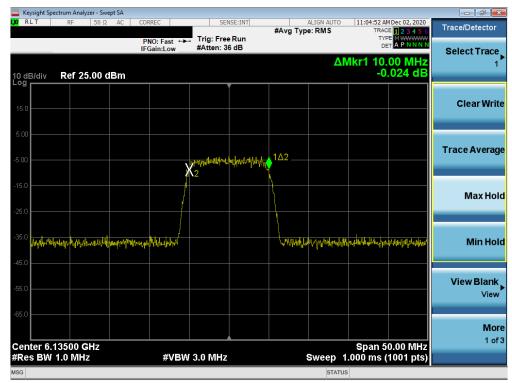
$$P_2 = -62.01dBm$$

Equation 7-1. Incumbent Detection Level Calculation

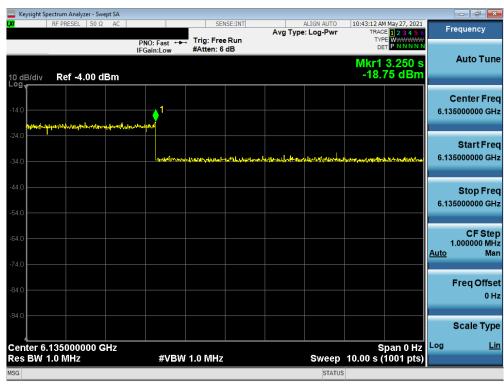
FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dags 24.4 of 264
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 214 of 261
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Plot 7-349. AWGN Sample Signal



Plot 7-350. Contention Based Protocol Timing Plot

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 215 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 215 01 201



Band	Channel	Channel Freq [MHz]	Channel BW [MHz]	Incumbent Freq [MHz]	Detection Power Level [dBm]	Detection Limit [dBm]	Margin [dB]
	37	6135	20	6135	-66.22	-62.0	-4.22
UNII				6110	-66.79	-62.0	-4.79
Band 5	47	6185	160	6175	-67.13	-62.0	-5.13
				6240	-66.12	-62.0	-4.12
	101	6455	20	6455	-68.83	-62.0	-6.83
UNII				6435	-65.70	-62.0	-3.70
Band 6	111	6505	160	6495	-65.12	-62.0	-3.12
				6575	-65.44	-62.0	-3.44
	149	6695	20	6695	-80.02	-62.0	-18.02
UNII				6595	-78.95	-62.0	-16.95
Band 7	143	6665	160	6655	-78.37	-62.0	-16.37
				6735	-77.35	-62.0	-15.35
	213	7015	20	7015	-71.11	-62.0	-9.11
UNII				6915	-69.85	-62.0	-7.85
Band 8	207	6985	160	6975	-69.72	-62.0	-7.72
				7055	-69.32	-62.0	-7.32

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

	,	,	CE	P Detection (	 1 = Dete	ction, B	ank = No	Detect	ion)						
Band	Channel	Channel Freq [MHz]	Channel BW [MHz]	Incumbent Freq [MHz]	1	2	3	4	5	6	7	8	9	10	Detection Rate (%)
	37	6135	20	6135	1	1	1	1	1	1	1	1	1	1	100
UNII				6110	1	1	1	1	1	1	1	1	1	1	100
Band 5	47	6185	160	6175	1	1	1	1	1	1	1	1	1	1	100
				6240	1	1	1	1	1	1	1	1	1	1	100
	101	6455	20	6455	1	1	1	1	1	1	1	1	1	1	100
UNII				6435	1	1	1	1	1	1	1	1	1	1	100
Band 6	111	6505	160	6495	1	1	1	1	1	1	1	1	1	1	100
				6575	1	1	1	1	1	1	1	1	1	1	100
	149	6695	20	6695	1	1	1	1	1	1	1	1	1	1	100
UNII				6595	1	1	1	1	1	1	1	1	1	1	100
Band 7	143	6665	160	6655	1	1	1	1	1	1	1	1	1	1	100
				6735	1	1	1	1	1	1	1	1	1	1	100
	213	7015	20	7015	1	1	1	1	1	1	1	1	1	1	100
UNII				6915	1	1	1	1	1	1	1	1	1	1	100
Band 8	207	6985	160	6975	1	1	1	1	1	1	1	1	1	1	100
				7055	1	1	1	1	1	1	1	1	1	1	100

Table 7-11. Contention Based Protocol – Incumbent Detection Trial Results

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 216 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 210 01 201



# 7.7 Radiated Spurious Emission Measurements – Above 1GHz §15.205, §15.209

### **Test Overview and Limit**

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in ANSI C63.10-2013 and KDB 789033 D02 v02r01, and at the appropriate frequencies. All channels, modes (e.g. 802.11a, 802.11ax (20/40/80/160MHz), and modulations/data rates were investigated among all UNII bands. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

For transmitters operating in the 5.925-7.125 GHz band: All emissions outside of the 5.925-7.125 GHz band shall not exceed an EIRP of −27 dBm/MHz.

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

Table 7-12. Radiated Limits

#### **Test Procedures Used**

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

#### **Test Settings**

## Average Measurements above 1GHz (Method AD)

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

#### **Peak Measurements above 1GHz**

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

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 217 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 217 of 261



## **Peak Measurements below 1GHz**

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. Span was set greater than 1MHz
- 3. RBW = 120kHz
- 4. Detector = CISPR quasi-peak
- 5. Sweep time = auto couple
- 6. Trace was allowed to stabilize

### **Test Setup**

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

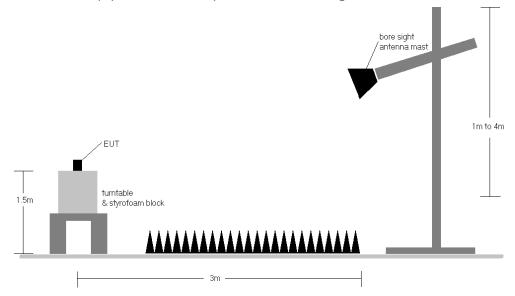


Figure 7-7. Test Instrument & Measurement Setup

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 218 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 210 01 201



#### **Test Notes**

- 1. All emissions that lie in the restricted bands (denoted by a \* next to the frequency) specified in §15.205 the limit shown in Table 7-12.
- 2. All spurious emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 7-10. All spurious emissions that do not lie in a restricted band are subject to an average limit of -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB<sub>μ</sub>V/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB<sub>μ</sub>V/m.
- 3. All spurious emissions that do not lie in a restricted band are subject to a peak limit not to exceed 20dB of the average limit [68.2dB $\mu$ V/m]. If a peak measurement passes the average limit it was determined no further investigation is necessary.
- 4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- 5. This unit was tested with its standard battery.
- 6. The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average and peak measurements were taken using linearly polarized horn antennas. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
- 7. Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 8. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. Any emissions found to be within 20dB of the limit are fully investigated and the results are shown in this section.
- 9. The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 10. In the case where a peak-detector measurement passed the given RMS limit it was determined sufficient to demonstrate compliance.

#### **Sample Calculations**

## **Determining Spurious Emissions Levels**

- Field Strength Level [dBμV/m] = Analyzer Level [dBm] + 107 + AFCL [dB/m]
- O AFCL [dB/m] = Antenna Factor [dB/m] + Cable Loss [dB]
- Margin [dB] = Field Strength Level [dBμV/m] Limit [dBμV/m]

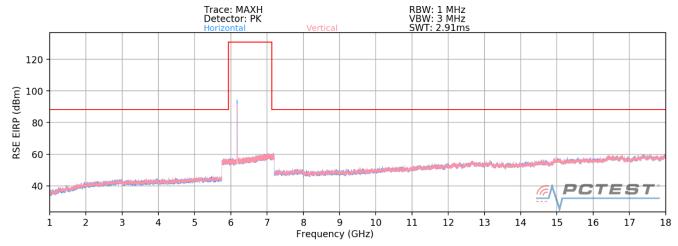
## Radiated Band Edge Measurement Offset

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

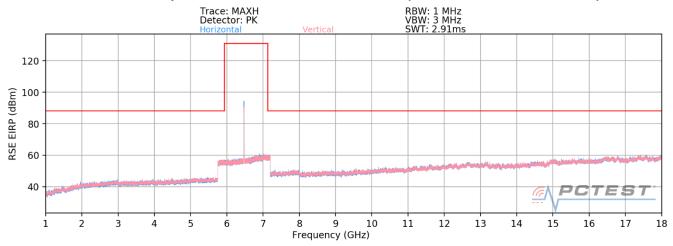
FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 210 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 219 of 261



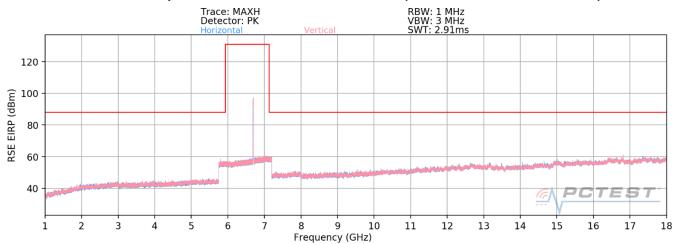
## 7.6.1 SISO Antenna-1 Radiated Spurious Emission Measurements



Plot 7-351. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a - UNII Band 5- Ch.45) - OPEN



Plot 7-352. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a- UNII Band 6 - Ch.105) - OPEN

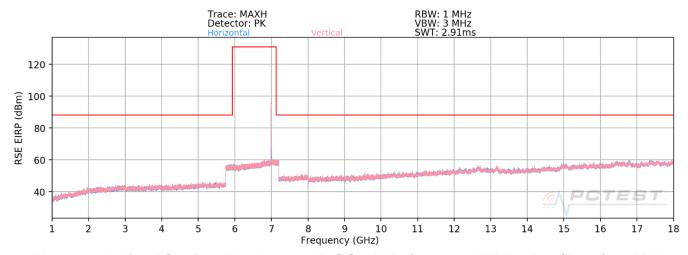


Plot 7 314. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a- UNII Band 7 -Ch.149) - OPEN

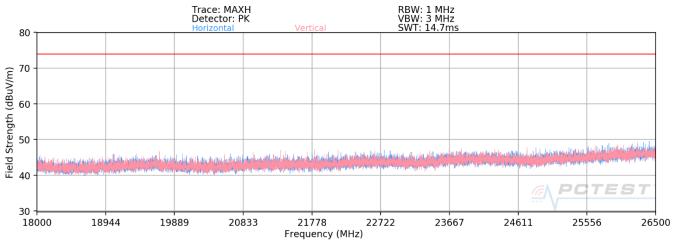
FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dogo 220 of 261	
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet		Page 220 of 261	
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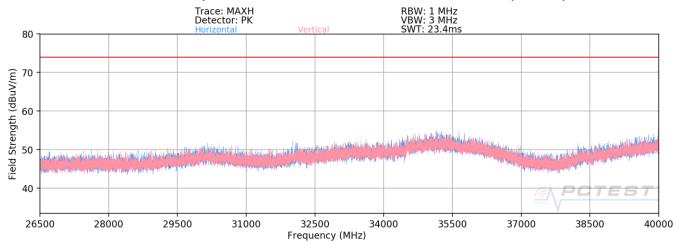




Plot 7 314. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a- UNII Band 8 -Ch.209) - OPEN



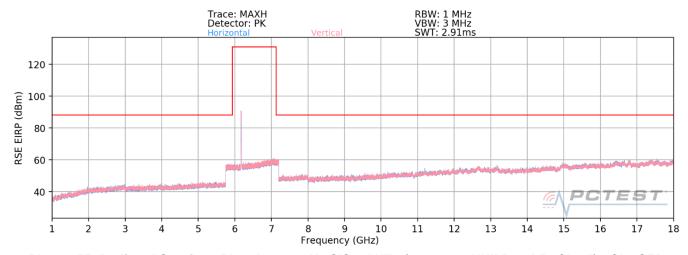
Plot 7-353. Radiated Spurious Plot above 18GHz - 26.5GHz SISO ANT1 (802.11a) - OPEN



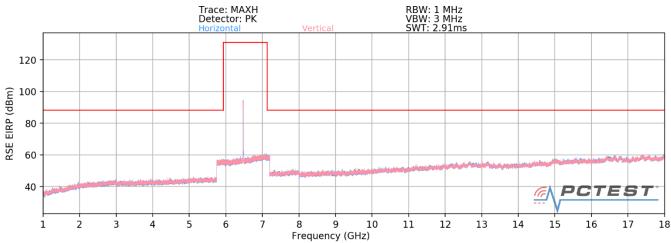
Plot 7-354. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT1 (802.11a) - OPEN

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 221 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 221 01 201

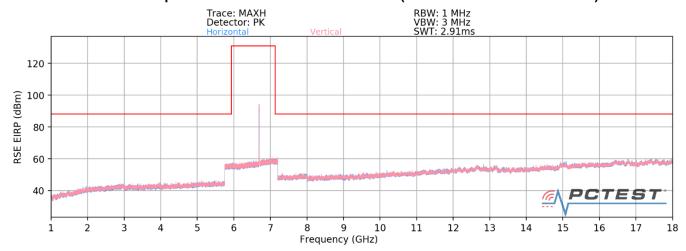




Plot 7-355. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a - UNII Band 5- Ch.45) - CLOSED



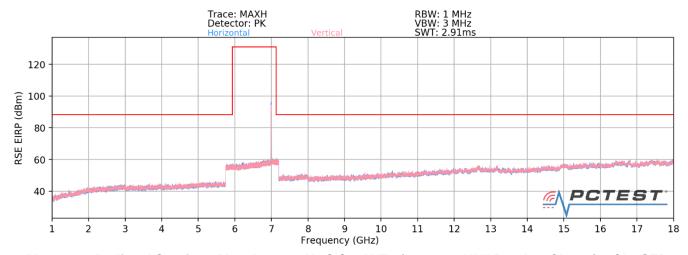
Plot 7-356. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a-UNII Band 6 - Ch.105) - CLOSED



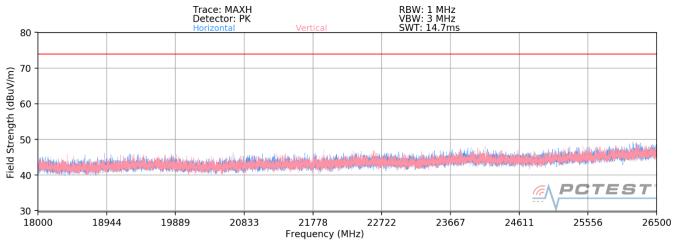
Plot 7 314. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a- UNII Band 7 -Ch.149) - CLOSED

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 222 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 222 01 261
@ 2024 DOTECT			1/ 0 0 00/04/2040

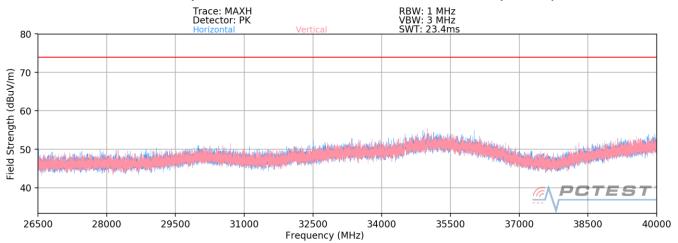




Plot 7 314. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a- UNII Band 8 -Ch.209) - CLOSED



Plot 7-357. Radiated Spurious Plot above 18GHz - 26.5GHz SISO ANT1 (802.11a) - CLOSED



Plot 7-358. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT1 (802.11a) - CLOSED

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 223 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 223 01 201



## **SISO Antenna-1 Radiated Spurious Emission Measurements** §15.407(b) §15.205 & §15.209

Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps Distance of Measurements: 1 & 3 Meters Operating Frequency: 5935MHz Channel: 2

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	11870.00	Average	Н	-	-	-82.78	18.92	0.00	43.14	53.98	-10.84
	11870.00	Peak	Н	-	=	-70.66	18.92	0.00	55.26	73.98	-18.72
*	17805.00	Average	Н	-	-	-83.62	25.52	0.00	48.90	53.98	-5.08
*	17805.00	Peak	Н	-	-	-72.19	25.52	0.00	60.33	73.98	-13.65
*	23740.00	Average	Н	-	-	-67.41	5.80	-9.54	35.85	53.98	-18.13
*	23740.00	Peak	Н	-	-	-56.75	5.80	-9.54	46.51	73.98	-27.47
	29675.00	Peak	Н		=	-57.53	9.28	-9.54	49.21	68.20	-18.99

Table 7-13. Radiated Measurements SISO ANT1 (UNII Band 5 – Low Channel – 20MHz)

Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps Distance of Measurements: 1 & 3 Meters Operating Frequency: 6175MHz Channel: 45

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	12350.00	Average	Н	-	-	-82.18	18.87	0.00	43.69	53.98	-10.29
	12350.00	Peak	Н	-	-	-70.44	18.87	0.00	55.43	73.98	-18.55
*	18525.00	Average	Н	-	-	-66.99	3.60	-9.54	34.08	53.98	-19.90
*	18525.00	Peak	Н	-	-	-56.74	3.60	-9.54	44.33	73.98	-29.65
*	24700.00	Peak	Н	-	-	-56.92	5.96	-9.54	46.50	68.20	-21.70
	30875.00	Peak	Н	-	-	-56.95	9.50	-9.54	50.00	68.20	-18.20

Table 7-14. Radiated Measurements SISO ANT1 (UNII Band 5 – Mid Channel – 20MHz)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 224 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 224 of 261



Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 6415MHz

Channel: 93

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	12830.00	Peak	Н	-	-	-70.38	19.45	0.00	56.07	68.20	-12.13
*	19245.00	Average	Н	-	-	-67.42	4.55	-9.54	34.59	53.98	-19.39
*	19245.00	Peak	Н	-	-	-56.98	4.55	-9.54	45.02	73.98	-28.95
*	25660.00	Peak	Н	-	-	-56.85	6.65	-9.54	47.26	68.20	-20.94
	32075.00	Peak	Н	=	-	-58.15	10.45	-9.54	49.76	68.20	-18.44

Table 7-15. Radiated Measurements SISO ANT1 (UNII Band 5 – High Channel – 20MHz)

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 6435MHz

Channel: 97

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	12870.00	Peak	Н	-	-	-70.25	19.20	0.00	55.95	68.20	-12.25
*	19305.00	Average	Н	-	-	-67.29	4.43	-9.54	34.60	53.98	-19.38
*	19305.00	Peak	Н	-	-	-57.30	4.43	-9.54	44.59	73.98	-29.39
*	25740.00	Peak	Н	-	-	-57.43	6.62	-9.54	46.65	68.20	-21.55
	32175.00	Peak	Н	=	-	-57.50	10.16	-9.54	50.11	68.20	-18.09

Table 7-16. Radiated Measurements SISO ANT1 (UNII Band 6 – Low Channel – 20MHz)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 225 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 225 01 261



Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 6475MHz

Channel: 105

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	12950.00	Peak	Н	-	-	-71.37	19.91	0.00	55.54	68.20	-12.66
*	19425.00	Average	Н	=	-	-66.74	4.32	-9.54	35.03	53.98	-18.95
*	19425.00	Peak	Н	-	-	-56.86	4.32	-9.54	44.92	73.98	-29.06
*	25900.00	Peak	Н	-	-	-56.31	6.92	-9.54	48.07	68.20	-20.13
	32375.00	Peak	Ι	=	-	-57.56	10.44	-9.54	50.34	68.20	-17.86

Table 7-17. Radiated Measurements SISO ANT1 (UNII Band 6 – Mid Channel – 20MHz)

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 6515MHz

Channel: 113

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	13030.00	Peak	Н	-	-	-70.10	19.53	0.00	56.43	68.20	-11.77
*	19545.00	Average	Н	-	-	-66.94	4.54	-9.54	35.06	53.98	-18.92
*	19545.00	Peak	Н	-	-	-55.98	4.54	-9.54	46.01	73.98	-27.97
*	26060.00	Peak	Н	-	-	-56.98	7.13	-9.54	47.61	68.20	-20.59
	32575.00	Peak	Н	=	-	-57.45	9.98	-9.54	49.99	68.20	-18.21

Table 7-18. Radiated Measurements SISO ANT1 (UNII Band 6 – High Channel – 20MHz)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 226 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 226 01 261



Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 6535MHz

Channel: 117

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	13070.00	Peak	Н	-	-	-71.37	19.74	0.00	55.37	68.20	-12.83
*	19605.00	Average	Н	-	-	-66.77	4.51	-9.54	35.20	53.98	-18.78
	19605.00	Peak	Н	-	-	-55.87	4.51	-9.54	46.09	73.98	-27.89
	26140.00	Peak	Н	-	-	-56.93	7.23	-9.54	47.76	68.20	-20.44
	32675.00	Peak	Н	-	-	-57.08	10.06	-9.54	50.44	68.20	-17.76

Table 7-19. Radiated Measurements SISO ANT1 (UNII Band 7 – Low Channel – 20MHz)

Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11a

6Mbps

1 & 3 Meters

6695MHz

149

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	13390.00	Average	I	-		-82.89	20.17	0.00	44.28	53.98	-9.70
*	13390.00	Peak	Н	-	-	-70.83	20.17	0.00	56.34	73.98	-17.64
	20085.00	Average	Н	-	-	-66.98	4.17	-9.54	34.65	53.98	-19.33
*	20085.00	Peak	Н	-	-	-56.83	4.17	-9.54	44.79	73.98	-29.19
*	26780.00	Peak	Н	-	-	-56.95	7.89	-9.54	48.40	68.20	-19.80
	33475.00	Peak	Н	-	-	-56.91	10.77	-9.54	51.32	68.20	-16.88

Table 7-20. Radiated Measurements SISO ANT1 (UNII Band 7 – Mid Channel – 20MHz)

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 227 of 261	
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 227 of 261	



Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11a

6Mbps

1 & 3 Meters

6875MHz

185

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	13750.00	Peak	Н	-	-		20.76	0.00	56.06	68.20	-12.14
	20625.00	Average	Н	-	-	-67.11	4.46	-9.54	34.80	53.98	-19.18
*	20625.00	Peak	Н	-	-	-56.91	4.46	-9.54	45.00	73.98	-28.98
*	27500.00	Peak	Н	=	-	-55.86	7.69	-9.54	49.29	68.20	-18.91
	34375.00	Peak	Н	=	-	-57.46	11.71	-9.54	51.70	68.20	-16.50

Table 7-21. Radiated Measurements SISO ANT1 (UNII Band 7 – High Channel – 20MHz)

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 6895MHz

Channel: 189

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	13790.00	Peak	Н	-	-	-71.51	20.56	0.00	56.05	68.20	-12.15
	20685.00	Average	Н	-	-	-67.18	4.97	-9.54	35.25	53.98	-18.73
*	20685.00	Peak	Н	-	-	-57.40	4.97	-9.54	45.03	73.98	-28.95
*	27580.00	Peak	Н	-	-	-56.31	8.05	-9.54	49.19	68.20	-19.01
	34475.00	Peak	Н	-	-	-57.56	11.54	-9.54	51.44	68.20	-16.76

Table 7-22. Radiated Measurements SISO ANT1 (UNII Band 8 – Low Channel – 20MHz)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 228 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 226 01 261



Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 6995MHz

Channel: 209

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	13990.00	Peak	Н	-	-	-71.37	20.64	0.00	56.27	68.20	-11.93
*	20985.00	Average	Н	-	-	-67.45	5.18	-9.54	35.19	53.98	-18.79
	20985.00	Peak	Н	-	-	-56.97	5.18	-9.54	45.66	73.98	-28.32
	27980.00	Peak	Н	-	-	-57.14	8.15	-9.54	48.46	68.20	-19.74
	34975.00	Peak	Н	-	-	-57.39	11.97	-9.54	52.04	68.20	-16.16

Table 7-23. Radiated Measurements SISO ANT1 (UNII Band 8 – Mid Channel – 20MHz)

Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11a

6Mbps

1 & 3 Meters

7115MHz

233

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	14230.00	Peak	Н	-	-	-70.79	20.94	0.00	57.15	68.20	-11.05
*	21345.00	Average	Н	-	-	-67.48	5.06	-9.54	35.04	53.98	-18.94
	21345.00	Peak	Н	-	-	-57.17	5.06	-9.54	45.35	73.98	-28.63
	28460.00	Peak	Н	-	-	-57.19	8.29	-9.54	48.56	68.20	-19.64
	35575.00	Peak	Н	-	-	-57.72	11.52	-9.54	51.26	68.20	-16.94

Table 7-24. Radiated Measurements SISO ANT1 (UNII Band 8 – High Channel – 20MHz)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 229 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 229 01 201



Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps Distance of Measurements: 1 & 3 Meters Operating Frequency: 5935 Channel: 2

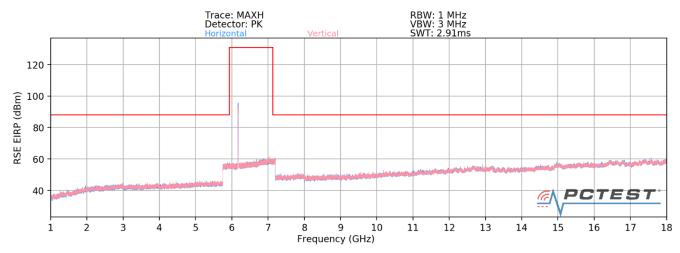
	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	11870.00	Average	Н	-	-	-82.48	18.92	0.00	43.44	53.98	-10.54
	11870.00	Peak	Н	-		-70.58	18.92	0.00	55.34	73.98	-18.64
*	17805.00	Average	Н	-	-	-83.59	25.52	0.00	48.93	53.98	-5.05
*	17805.00	Peak	Н	-	-	-72.18	25.52	0.00	60.34	73.98	-13.64
*	23740.00	Average	Н	-	-	-68.18	5.80	-9.54	35.08	53.98	-18.90
*	23740.00	Peak	Н	-	-	-56.39	5.80	-9.54	46.87	73.98	-27.11
	29675.00	Peak	Н	ı	ı	-57.38	9.28	-9.54	49.36	68.20	-18.84

Table 7-25. Radiated Measurements SISO ANT1 with WCP

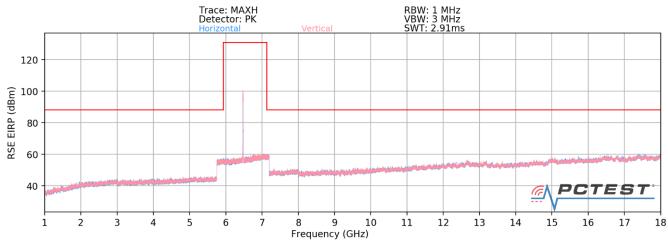
FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 220 of 261	
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 230 of 261	



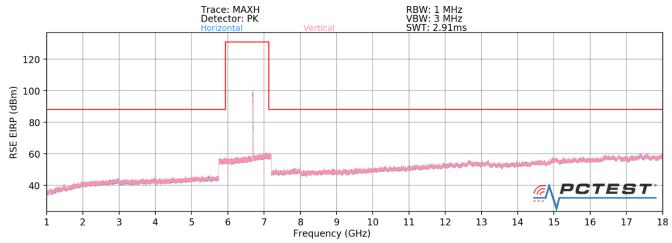
## 7.6.2 MIMO Radiated Spurious Emission Measurements



Plot 7-359. Radiated Spurious Plot above 1GHz MIMO (802.11ax – UNII Band 5 – 20MHz – Ch.45) - OPEN



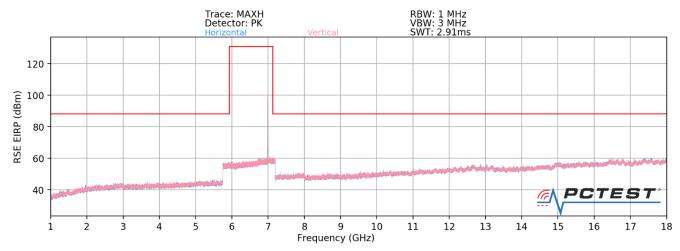
Plot 7-360. Radiated Spurious Plot above 1GHz MIMO (802.11ax-UNII Band 6 - 20MHz - Ch.105) - OPEN



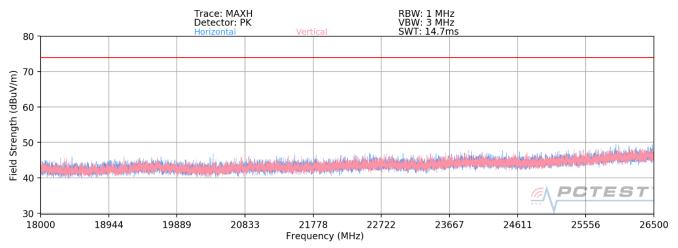
Plot 7 314. Radiated Spurious Plot above 1GHz MIMO (802.11ax- UNII Band 7 - 20MHz - Ch.149) - OPEN

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 221 of 261	
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 231 of 261	

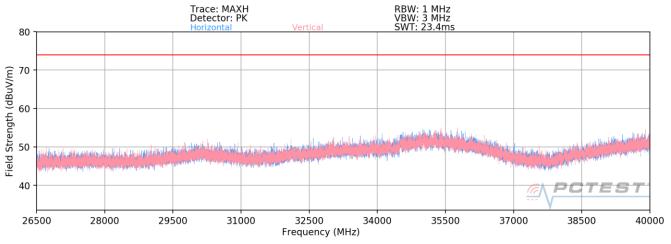




Plot 7 314. Radiated Spurious Plot above 1GHz MIMO (802.11ax-UNII Band 8 - 20MHz - Ch.209) - OPEN



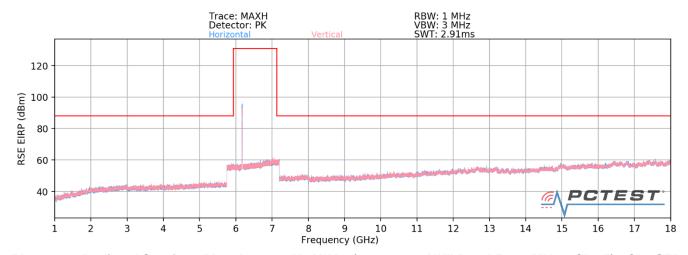
Plot 7-361. Radiated Spurious Plot above 18GHz - 26.5GHz MIMO (802.11ax) - OPEN



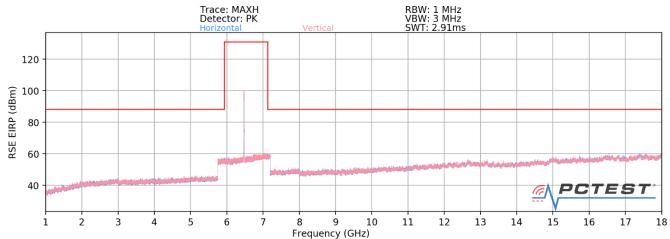
Plot 7-362. Radiated Spurious Plot 26.5GHz - 40GHz MIMO (802.11ax) - OPEN

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 232 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 232 01 201

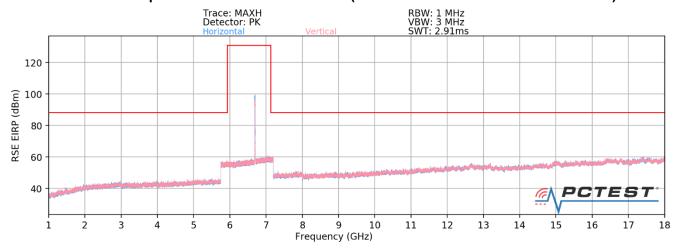




Plot 7-363. Radiated Spurious Plot above 1GHz MIMO (802.11ax – UNII Band 5 – 20MHz – Ch.45) - CLOSED



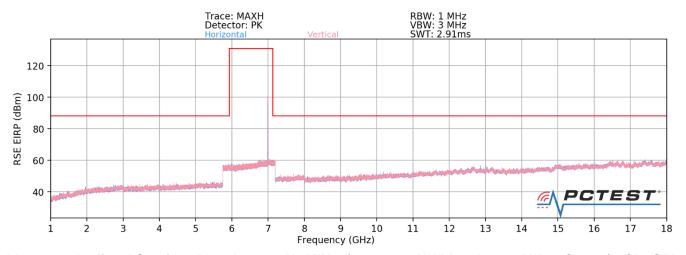
Plot 7-364. Radiated Spurious Plot above 1GHz MIMO (802.11ax- UNII Band 6 - 20MHz - Ch.105) - CLOSED



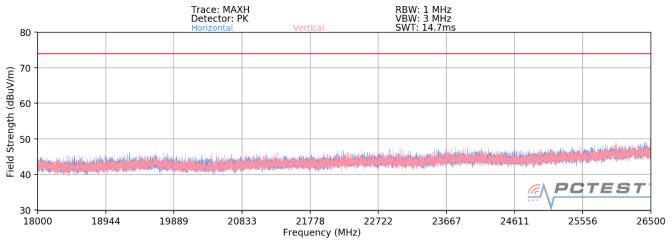
Plot 7 314. Radiated Spurious Plot above 1GHz MIMO (802.11ax-UNII Band 7 - 20MHz - Ch.149) - CLOSED

FCC ID: A3LSMF926JPN	PCTEST* Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 233 of 261	ĺ
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	. Page 233 01 201	ĺ
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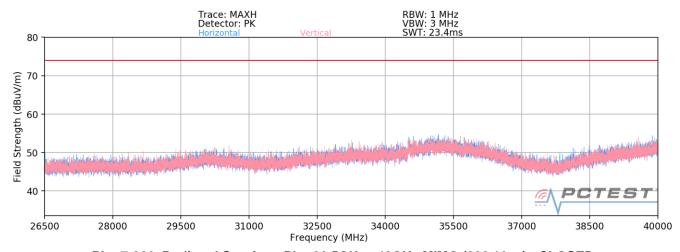




Plot 7 314. Radiated Spurious Plot above 1GHz MIMO (802.11ax-UNII Band 8 - 20MHz - Ch.209) - CLOSED



Plot 7-365. Radiated Spurious Plot above 18GHz - 26.5GHz MIMO (802.11ax) - CLOSED



Plot 7-366. Radiated Spurious Plot 26.5GHz - 40GHz MIMO (802.11ax) - CLOSED

FCC ID: A3LSMF926JPN	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 234 of 261	
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	raye 234 01 201	



# MIMO Radiated Spurious Emission Measurements §15.407(b) §15.205 & §15.209

Worst Case Mode: 802.11ax

Worst Case Transfer Rate: MCS0

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5935MHz

Channel: 2

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correctio n Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11870.00	Average	Н	-	-	-80.18	16.01	0.00	42.83	53.98	-11.15
*	11870.00	Peak	Н	-	-	-68.31	16.01	0.00	54.70	73.98	-19.28
*	17805.00	Average	Н	-	-	-81.22	22.89	0.00	48.67	53.98	-5.31
*	17805.00	Peak	Н	-	-	-69.71	22.89	0.00	60.18	73.98	-13.80
*	23740.00	Average	Н	-	-	-66.76	5.80	-9.54	36.50	53.98	-17.48
*	23740.00	Peak	Н	-	-	-56.70	5.80	-9.54	46.56	73.98	-27.42
	29675.00	Peak	Н	-	-	-56.98	9.28	-9.54	49.76	68.20	-18.44

Table 7-26. Radiated Measurements MIMO (UNII Band 5 – Low Channel – 20MHz)

Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11ax

MCS0

1 & 3 Meters

6175MHz

45

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correctio n Factor [dB]	Stranath	Limit [dBµV/m]	Margin [dB]
*	12350.00	Average	Н	-	-	-80.59	14.49	0.00	40.90	53.98	-13.08
*	12350.00	Peak	н	-	-	-68.94	14.49	0.00	52.55	73.98	-21.43
*	18525.00	Average	н	-	-	-67.04	3.60	-9.54	34.02	53.98	-19.96
*	18525.00	Peak	Н	-	-	-56.59	3.60	-9.54	44.48	73.98	-29.50
	24700.00	Peak	Н	-	-	-57.31	5.96	-9.54	46.10	68.20	-22.10
	30875.00	Peak	Н	-	-	-58.20	9.50	-9.54	48.76	68.20	-19.44

Table 7-27. Radiated Measurements MIMO (UNII Band 5 – Mid Channel – 20MHz)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 225 of 261	
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 235 of 261	



Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11ax

MCS0

1 & 3 Meters

6415MHz

93

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correctio n Factor [dB]	Strength	Limit [dBµV/m]	Margin [dB]
	12830.00	Peak	Н	-	-	-67.59	14.56	0.00	53.97	68.20	-14.23
*	19245.00	Average	Н	-	-	-67.19	4.55	-9.54	34.82	53.98	-19.16
*	19245.00	Peak	Н	-	-	-56.86	4.55	-9.54	45.15	73.98	-28.83
	25660.00	Peak	Н	-	-	-57.31	6.65	-9.54	46.81	68.20	-21.39
	32075.00	Peak	Н	-	-	-58.02	10.45	-9.54	49.89	68.20	-18.31

Table 7-28. Radiated Measurements MIMO (UNII Band 5 – High Channel – 20MHz)

Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11ax

MCS0

1 & 3 Meters

6435MHz

97

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	12870.00	Peak	Н	-	-	-68.17	14.76	0.00	53.59	68.20	-14.61
*	19305.00	Average	Н	-	-	-67.07	4.43	-9.54	34.83	53.98	-19.15
*	19305.00	Peak	Н	-	-	-56.25	4.43	-9.54	45.65	73.98	-28.33
	25740.00	Peak	Н	-	-	-57.17	6.62	-9.54	46.91	68.20	-21.29
	32175.00	Peak	Н	-	-	-57.38	10.16	-9.54	50.24	68.20	-17.96

Table 7-29. Radiated Measurements MIMO (UNII Band 6 - Low Channel - 20MHz)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 236 of 261	
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 230 01 201	

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Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11ax

MCS0

1 & 3 Meters

6475MHz

105

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]		Margin [dB]
	12950.00	Peak	Н	-	-	-67.93	14.69	0.00	53.76	68.20	-14.44
*	19425.00	Average	Н	-	-	-67.12	4.32	-9.54	34.65	53.98	-19.32
*	19425.00	Peak	Н	-	-	-56.89	4.32	-9.54	44.89	73.98	-29.09
	25900.00	Peak	Н	-	-	-56.97	6.92	-9.54	47.41	68.20	-20.79
	32375.00	Peak	Н	-	-	-57.94	10.44	-9.54	49.95	68.20	-18.25

Table 7-30. Radiated Measurements MIMO (UNII Band 6 - Mid Channel - 20MHz)

Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11ax

MCS0

1 & 3 Meters

6515MHz

113

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	13030.00	Peak	Н	-	-	-68.60	15.59	0.00	53.99	68.20	-14.21
*	19545.00	Average	Ι	-	-	-67.06	4.54	-9.54	34.94	53.98	-19.04
*	19545.00	Peak	Н	-	-	-56.96	4.54	-9.54	45.04	73.98	-28.94
	26060.00	Peak	Н	-	-	-57.23	7.13	-9.54	47.36	68.20	-20.84
	32575.00	Peak	Н	-	-	-58.02	9.98	-9.54	49.41	68.20	-18.79

Table 7-31. Radiated Measurements MIMO (UNII Band 6 – High Channel – 20MHz)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 237 of 261	
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Faye 23/ 01/201	

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Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 6535MHz
Channel: 117

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	13070.00	Peak	Н	-	-	-68.71	16.02	0.00	54.31	68.20	-13.89
*	19605.00	Average	Н	-	-	-66.79	4.51	-9.54	35.17	53.98	-18.81
*	19605.00	Peak	Н	-	-	-55.59	4.51	-9.54	46.38	73.98	-27.60
	26140.00	Peak	Н	-	-	-57.19	7.23	-9.54	47.50	68.20	-20.70
	32675.00	Peak	Н	-	-	-57.01	10.06	-9.54	50.51	68.20	-17.69

Table 7-32. Radiated Measurements MIMO (UNII Band 7 - Low Channel - 20MHz)

Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11ax

MCS0

1 & 3 Meters

6695MHz

149

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	13390.00	Average	Н	-	-	-80.46	15.48	0.00	42.02	53.98	-11.96
*	13390.00	Peak	н	-	-	-69.06	15.48	0.00	53.42	73.98	-20.56
*	20085.00	Average	н	-	-	-66.97	4.17	-9.54	34.65	53.98	-19.33
*	20085.00	Peak	Н	-	-	-56.06	4.17	-9.54	45.56	73.98	-28.41
	26780.00	Peak	Н	-	-	-56.45	7.89	-9.54	48.90	68.20	-19.30
	33475.00	Peak	Н	-	-	-57.70	10.77	-9.54	50.53	68.20	-17.67

Table 7-33. Radiated Measurements MIMO (UNII Band 7 – Mid Channel – 20MHz)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 238 of 261	
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 230 01 201	

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Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 6875MHz
Channel: 185

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	13750.00	Peak	Н	-	-	-68.76	17.13	0.00	55.37	68.20	-12.83
*	20625.00	Average	Н	-	-	-67.40	4.46	-9.54	34.51	53.98	-19.47
*	20625.00	Peak	Н	-	-	-55.69	4.46	-9.54	46.23	73.98	-27.75
	27500.00	Peak	Н	-	-	-55.66	7.69	-9.54	49.49	68.20	-18.71
	34375.00	Peak	Н	=	=	-56.11	11.71	-9.54	53.05	68.20	-15.15

Table 7-34. Radiated Measurements MIMO (UNII Band 7 – High Channel – 20MHz)

Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11ax

MCS0

1 & 3 Meters

6895MHz

189

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	13790.00	Peak	Н	-	-	-68.51	16.84	0.00	55.33	68.20	-12.87
*	20685.00	Average	Ι	-	-	-66.83	4.97	-9.54	35.59	53.98	-18.39
*	20685.00	Peak	Н	-	-	-56.22	4.97	-9.54	46.21	73.98	-27.77
	27580.00	Peak	Н	-	-	-57.19	8.05	-9.54	48.32	68.20	-19.88
	34475.00	Peak	Н	-	-	-57.34	11.54	-9.54	51.66	68.20	-16.54

Table 7-35. Radiated Measurements MIMO (UNII Band 8 – Low Channel – 20MHz)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 239 of 261	
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 239 01 201	

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Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 6995MHz
Channel: 209

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	13990.00	Peak	Н	-	-	-68.79	17.39	0.00	55.60	68.20	-12.60
*	20985.00	Average	Н	-	-	-66.89	5.18	-9.54	35.74	53.98	-18.24
*	20985.00	Peak	Н	-	-	-56.57	5.18	-9.54	46.06	73.98	-27.92
	27980.00	Peak	Н	-	-	-57.16	8.15	-9.54	48.45	68.20	-19.75
	34975.00	Peak	Н	-	-	-57.44	11.97	-9.54	51.99	68.20	-16.21

Table 7-36. Radiated Measurements MIMO (UNII Band 8 - Mid Channel - 20MHz)

Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11ax

MCS0

1 & 3 Meters

7115MHz

233

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	14230.00	Peak	Н	-	-	-68.19	17.37	0.00	56.18	68.20	-12.02
*	21345.00	Average	Н	-	-	-67.25	5.06	-9.54	35.27	53.98	-18.71
*	21345.00	Peak	Н	-	-	-56.78	5.06	-9.54	45.73	73.98	-28.24
	28460.00	Peak	Н	-	-	-57.07	8.29	-9.54	48.68	68.20	-19.52
	35575.00	Peak	Н	ı	-	-57.51	11.52	-9.54	51.47	68.20	-16.73

Table 7-37. Radiated Measurements MIMO (UNII Band 8 – High Channel – 20MHz)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 240 of 261	
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 240 01 201	

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Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5935
Channel: 2

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correctio n Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11870.00	Average	Н	-	-	-80.19	16.01	0.00	42.82	53.98	-11.16
*	11870.00	Peak	Н	-	-	-68.24	16.01	0.00	54.77	73.98	-19.21
*	17805.00	Average	Н	-	-	-80.64	22.89	0.00	49.25	53.98	-4.73
*	17805.00	Peak	Н	-	-	-69.72	22.89	0.00	60.17	73.98	-13.81
*	23740.00	Average	Н	-	-	-66.77	5.80	-9.54	36.49	53.98	-17.49
	23740.00	Peak	Н	-	-	-56.86	5.80	-9.54	46.40	73.98	-27.58
	29675.00	Peak	I	-	-	-57.02	9.28	-9.54	49.71	68.20	-18.49

Table 7-38. Radiated Measurements MIMO with WCP

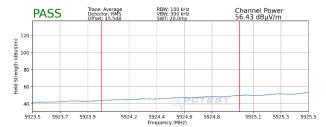
FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 241 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 241 01 201



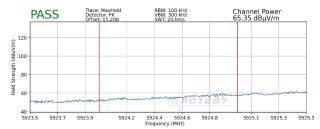
## 7.6.3 SISO Antenna-1 Radiated Band Edge Measurements (20MHz BW) §15.407(b.5) §15.205 §15.209

Worst Case Mode:
Worst Case Transfer Rate:
Distance of Measurements:
Operating Frequency:
Channel:

802.11a
6Mbps
3 Meters
5935MHz
2



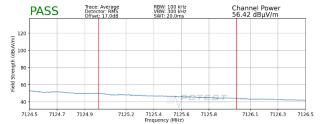
Plot 7-367. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 5)



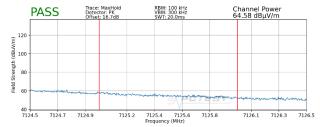
Plot 7-368. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 5)

Worst Case Mode:
Worst Case Transfer Rate:
Distance of Measurements:
Operating Frequency:
Channel:

802.11a
6Mbps
3 Meters
7115MHz
233



Plot 7-369. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 8)



Plot 7-370. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 8)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 242 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 242 01 261

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# 7.6.4 MIMO Radiated Band Edge Measurements (20MHz BW) §15.407(b.5) §15.205 §15.209

Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11ax

MCS0

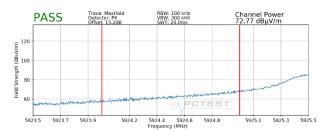
3 Meters

5935MHz

2



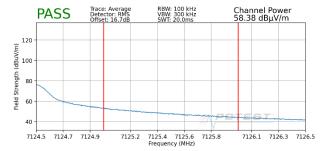
Plot 7-371. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)



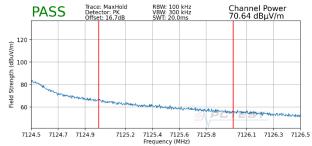
Plot 7-372. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

Worst Case Mode:
Worst Case Transfer Rate:
Distance of Measurements:
Operating Frequency:
Channel:

802.11ax
MCS0
3 Meters
7115MHz
233



Plot 7-373. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



Plot 7-374. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

FCC ID: A3LSMF926JPN	PCTEST* Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 243 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 243 01 201



# 7.6.5 MIMO Radiated Band Edge Measurements (40MHz BW) §15.407(b.5) §15.205 §15.209

Worst Case Mode:
Worst Case Transfer Rate:
Distance of Measurements:
Operating Frequency:
Channel:

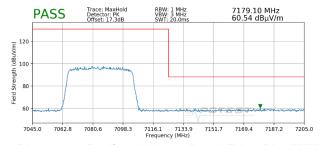
802.11ax
MCS0
3 Meters
5965MHz
3



Plot 7-375. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

Worst Case Mode:
Worst Case Transfer Rate:
Distance of Measurements:
Operating Frequency:
Channel:

802.11ax
MCS0
3 Meters
7085MHz
227



Plot 7-376. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

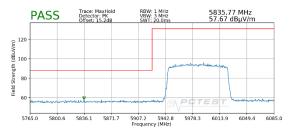
FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 244 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 244 01 201



# 7.6.6 MIMO Radiated Band Edge Measurements (80MHz BW) §15.407(b.5) §15.205 §15.209

Worst Case Mode:
Worst Case Transfer Rate:
Distance of Measurements:
Operating Frequency:
Channel:

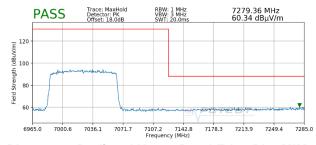
802.11ax
MCS0
3 Meters
5985MHz
7



Plot 7-377. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 5)

Worst Case Mode:
Worst Case Transfer Rate:
Distance of Measurements:
Operating Frequency:
Channel:

802.11ax
MCS0
3 Meters
7025MHz
215



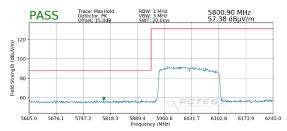
Plot 7-378. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 245 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 245 01 201



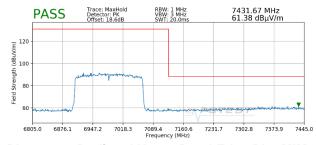
#### 7.6.7 MIMO Radiated Band Edge Measurements (160MHz BW) §15.407(b.5) §15.205 §15.209

Worst Case Mode: 802.11ax Worst Case Transfer Rate: MCS0 Distance of Measurements: 3 Meters Operating Frequency: 6025MHz Channel: 15



Plot 7-379. Radiated Lower Band Edge Plot MIMO (Peak - UNII Band 5)

Worst Case Mode: 802.11ax Worst Case Transfer Rate: MCS0 Distance of Measurements: 3 Meters Operating Frequency: 6985MHz Channel: 207



Plot 7-380. Radiated Upper Band Edge Plot MIMO (Peak - UNII Band 8)

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 246 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 240 01 20 1

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#### Radiated Spurious Emissions Measurements - Below 1GHz 7.8 §15.209

### **Test Overview and Limit**

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

#### All emissions <1GHz must not exceed the limit shown in Table 7-39 per Section 15.209

Frequency	Field Strength [μV/m]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 7-39. Radiated Limits

### **Test Procedures Used**

ANSI C63.10-2013

#### **Test Settings**

### **Quasi-Peak Field Strength Measurements**

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 120kHz (for emissions from 30MHz 1GHz)
- 3. Detector = quasi-peak
- 4. Sweep time = auto couple
- 5. Trace mode = max hold
- 6. Trace was allowed to stabilize

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 247 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 247 01 261

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### **Test Setup**

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

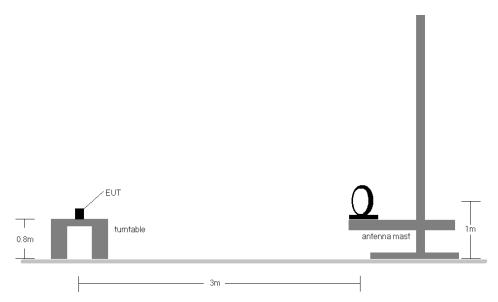


Figure 7-8. Radiated Test Setup < 30MHz

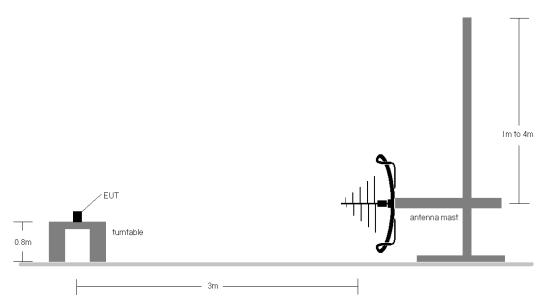


Figure 7-9. Radiated Test Setup < 1GHz

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 248 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 240 01 201

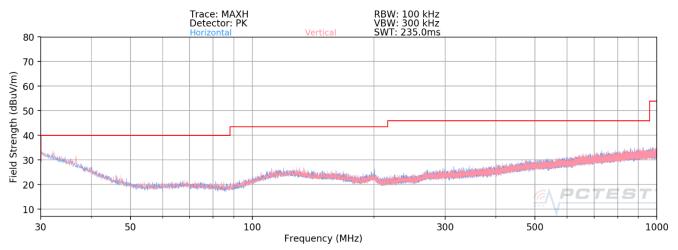


#### **Test Notes**

- 1. All emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 7-39.
- 2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
- 3. This unit was tested with its standard battery.
- 4. The spectrum is investigated using a peak detector and final measurements are recorded using CISPR quasi peak detector. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
- 5. Emissions were measured at a 3 meter test distance.
- 6. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
- 7. No spurious emissions were detected within 20dB of the limit below 30MHz.
- 8. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.
- The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. There were no emissions detected in the 30MHz – 1GHz frequency range, as shown in the subsequent plots.



# Radiated Spurious Emissions Measurements (Below 1GHz) §15.209



Plot 7-381. Radiated Spurious Plot below 1GHz

FCC ID: A3LSMF926JPN	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 250 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 250 of 261



## 7.9 Line-Conducted Test Data §15.407

### **Test Overview and Limit**

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.

All conducted emissions must not exceed the limits shown in the table below, per Section 15.207).

Frequency of emission (MHz)	Conducted Limit (dBμV)		
(IVITIZ)	Quasi-peak	Average	
0.15 – 0.5	66 to 56*	56 to 46*	
0.5 – 5	56	46	
5 – 30	60	50	

Table 7-40. Conducted Limits

#### **Test Procedures Used**

ANSI C63.10-2013, Section 6.2

### **Test Settings**

#### **Quasi-Peak Field Strength Measurements**

- 1. Analyzer center frequency was set to the frequency of the spurious emission of interest
- 2. RBW = 9kHz (for emissions from 150kHz 30MHz)
- 3. Detector = quasi-peak
- 4. Sweep time = auto couple
- 5. Trace mode = max hold
- 6. Trace was allowed to stabilize

### **Average Field Strength Measurements**

- 1. Analyzer center frequency was set to the frequency of the spurious emission of interest
- 2. RBW = 9kHz (for emissions from 150kHz 30MHz)
- 3. Detector = RMS
- 4. Sweep time = auto couple
- 5. Trace mode = max hold
- 6. Trace was allowed to stabilize

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 251 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 251 01 261

<sup>\*</sup>Decreases with the logarithm of the frequency.



#### **Test Setup**

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

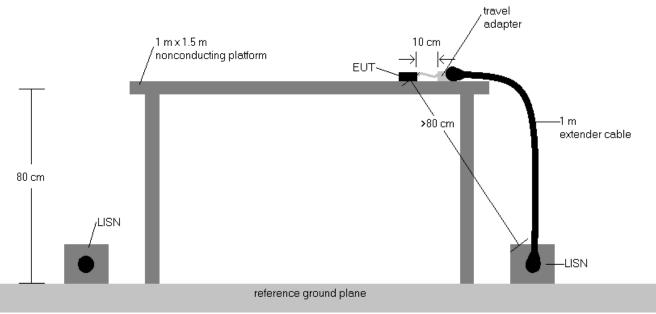


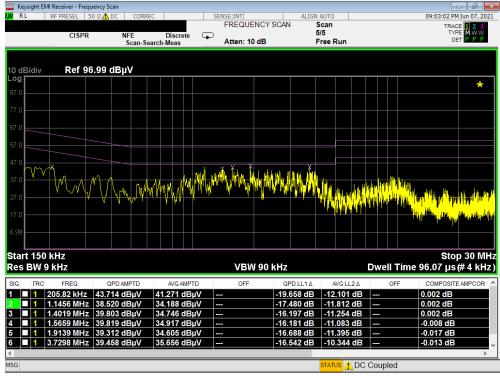
Figure 7-10. Test Instrument & Measurement Setup

### **Test Notes**

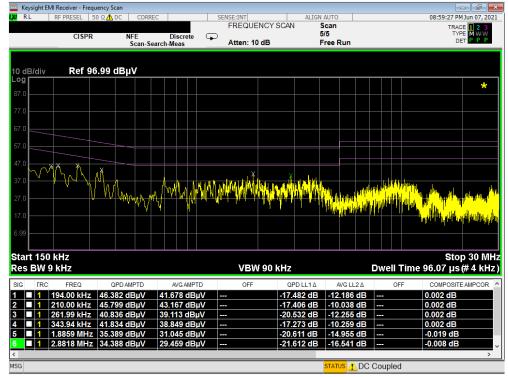
- 1. All modes of operation were investigated and the worst-case emissions are reported using mid channel. The emissions found were not affected by the choice of channel used during testing.
- 2. The limit for an intentional radiator from 150kHz to 30MHz are specified in 15.207.
- 3. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- 4. QP/AV Level (dB $\mu$ V) = QP/AV Analyzer/Receiver Level (dB $\mu$ V) + Corr. (dB)
- 5. Margin (dB) = QP/AV Limit (dB $\mu$ V) QP/AV Level (dB $\mu$ V)
- 6. Traces shown in plot are made using a peak detector.
- 7. Deviations to the Specifications: None.

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 252 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 252 01 261





Plot 7-382. Line Conducted Plot with 802.11a UNII Band 5 (L1)

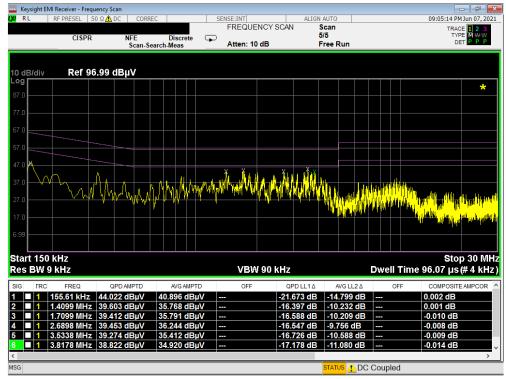


Plot 7-383. Line Conducted Plot with 802.11a UNII Band 5 (N)

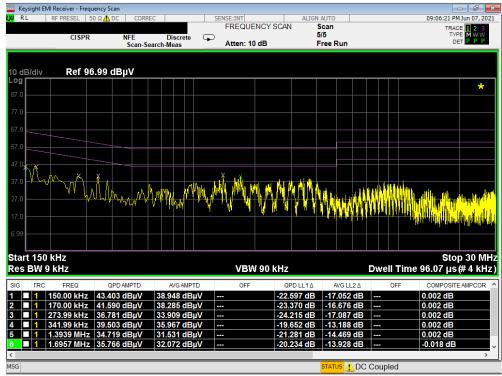
FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 252 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 253 of 261

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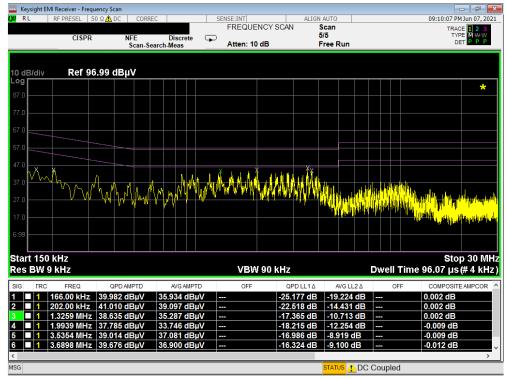
Plot 7-384. Line Conducted Plot with 802.11a UNII Band 6 (L1)



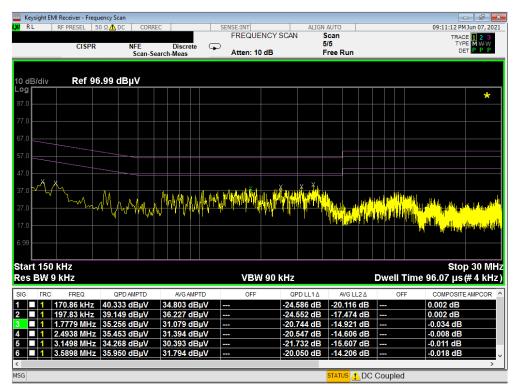
Plot 7-385. Line Conducted Plot with 802.11a UNII Band 6 (N)

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dags 254 of 264
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 254 of 261
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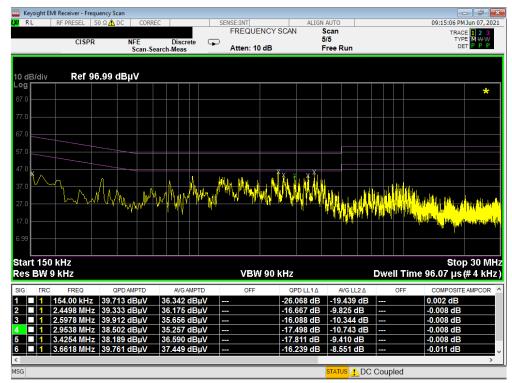
Plot 7-386. Line Conducted Plot with 802.11a UNII Band 7 (L1)



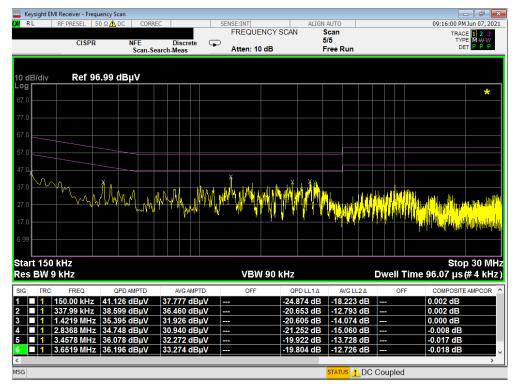
Plot 7-387. Line Conducted Plot with 802.11a UNII Band 7 (N)

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage OFF of OCA
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 255 of 261
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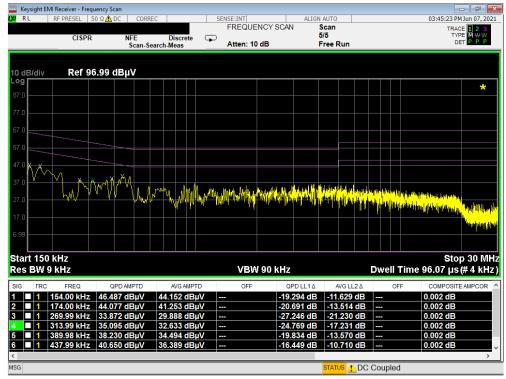
Plot 7-388. Line Conducted Plot with 802.11a UNII Band 8 (L1)



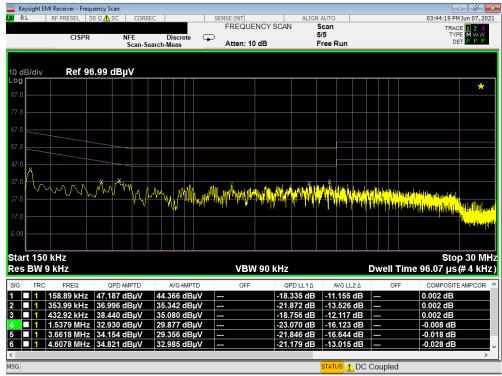
Plot 7-389. Line Conducted Plot with 802.11a UNII Band 8 (N)

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 256 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 256 of 261





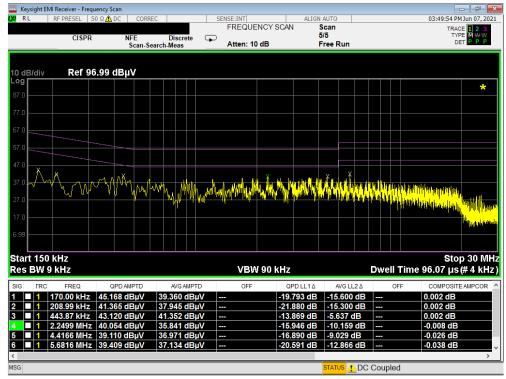
Plot 7-390. Line Conducted Plot with 802.11a UNII Band 5 (L1) with WCP



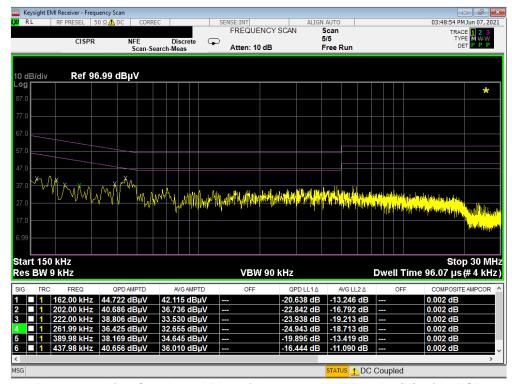
Plot 7-391. Line Conducted Plot with 802.11a UNII Band 5 (N) with WCP

FCC ID: A3LSMF926JPN	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 257 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 257 of 261





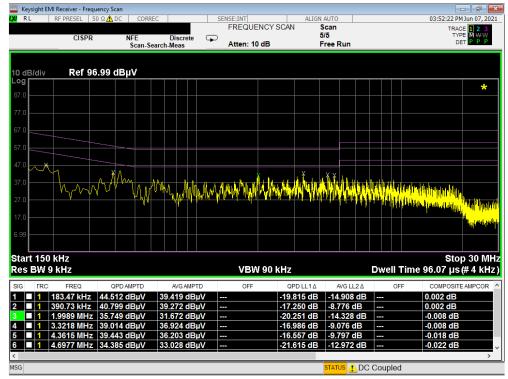
Plot 7-392. Line Conducted Plot with 802.11a UNII Band 6 (L1) with WCP



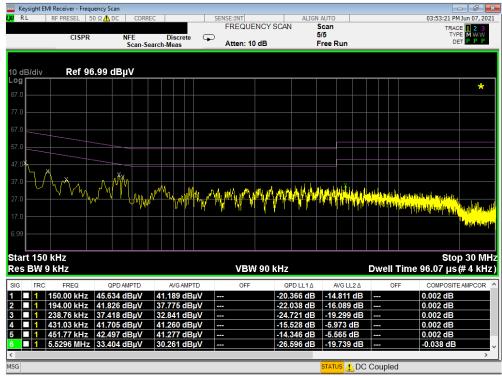
Plot 7-393. Line Conducted Plot with 802.11a UNII Band 6 (N) with WCP

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 258 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 236 01 201





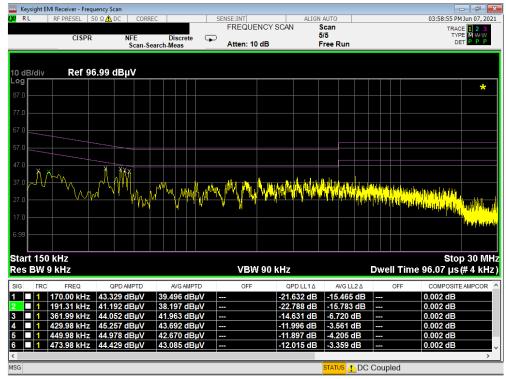
Plot 7-394. Line Conducted Plot with 802.11a UNII Band 7 (L1) with WCP



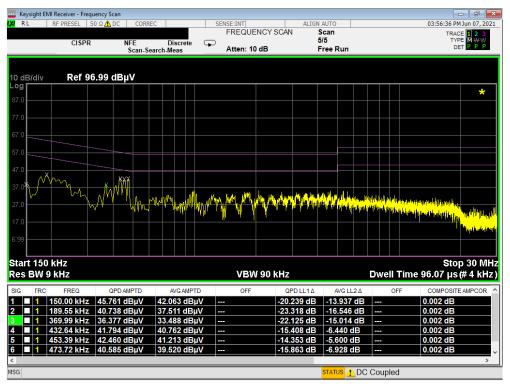
Plot 7-395. Line Conducted Plot with 802.11a UNII Band 7 (N) with WCP

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 259 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Fage 259 01 201





Plot 7-396. Line Conducted Plot with 802.11a UNII Band 8 (L1) with WCP



Plot 7-397. Line Conducted Plot with 802.11a UNII Band 8 (N) with WCP

FCC ID: A3LSMF926JPN	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 260 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 200 01 201



### 8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Tablet FCC ID: A3LSMF926JPN** is in compliance with FCC Part 15.407.

FCC ID: A3LSMF926JPN	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 261 of 261
1M2106230070-11-R1.A3L	04/07/2021 - 06/08/2021	Portable Tablet	Page 261 01 261