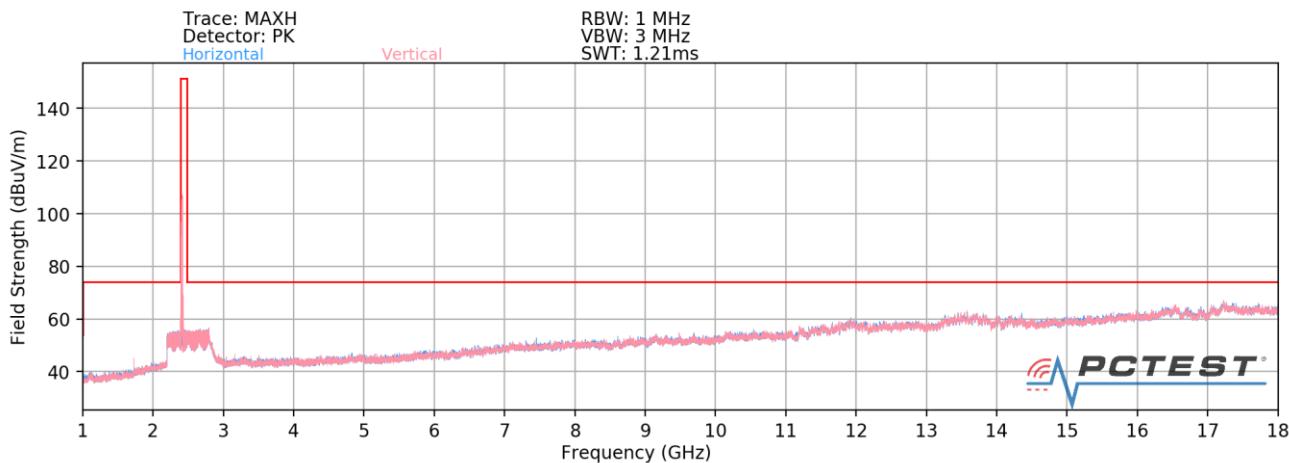
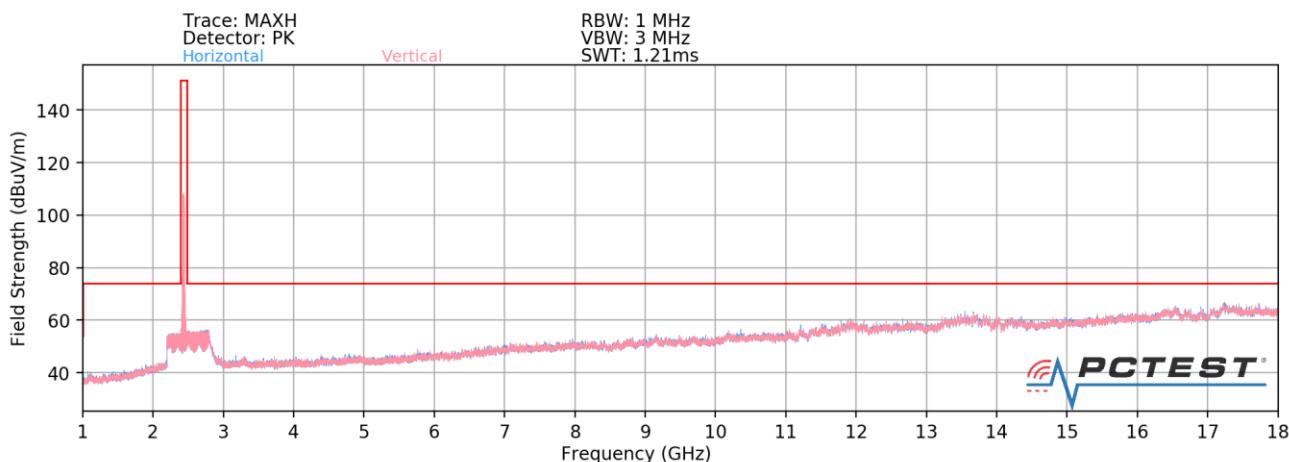


7.7.3 MIMO/CDD Radiated Spurious Emission Measurements

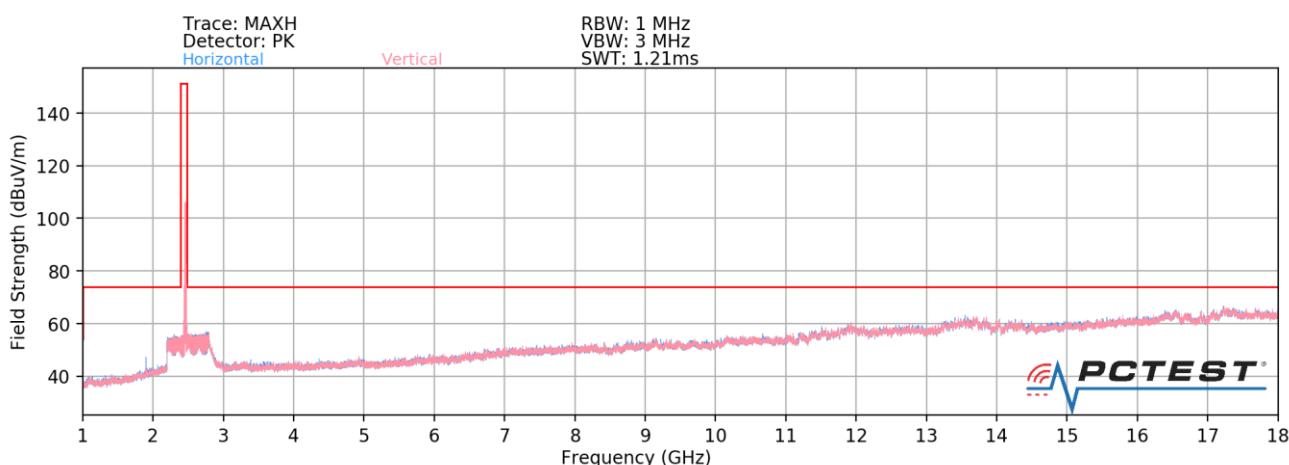
§15.247(d) §15.205 & §15.209; RSS-Gen [8.9]



Plot 7-217. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11g – Ch. 1) Closed

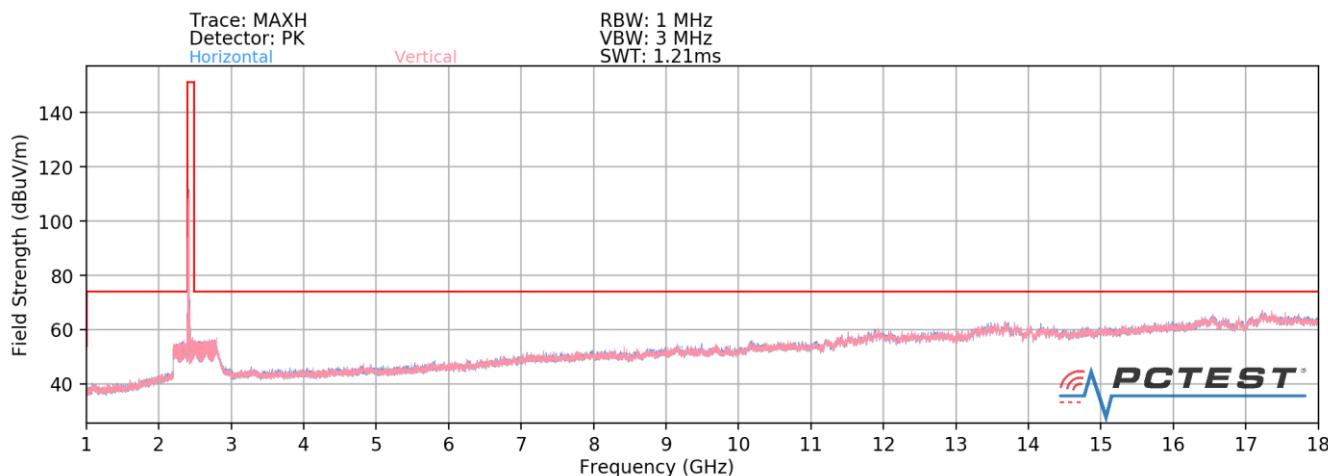


Plot 7-218. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11g – Ch. 6) Closed

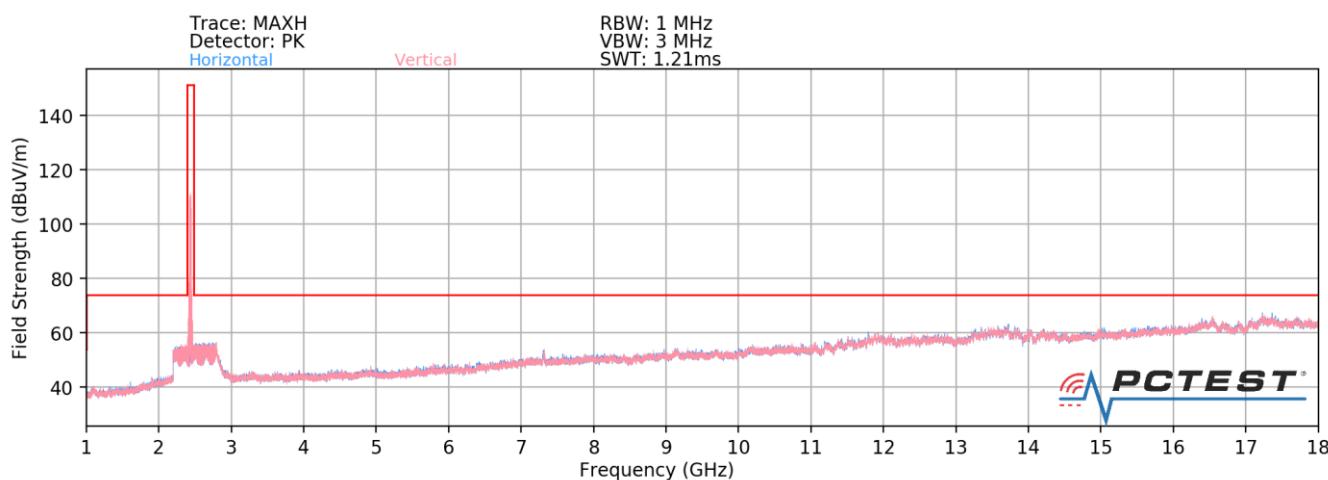


Plot 7-219. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11g – Ch. 11) Closed

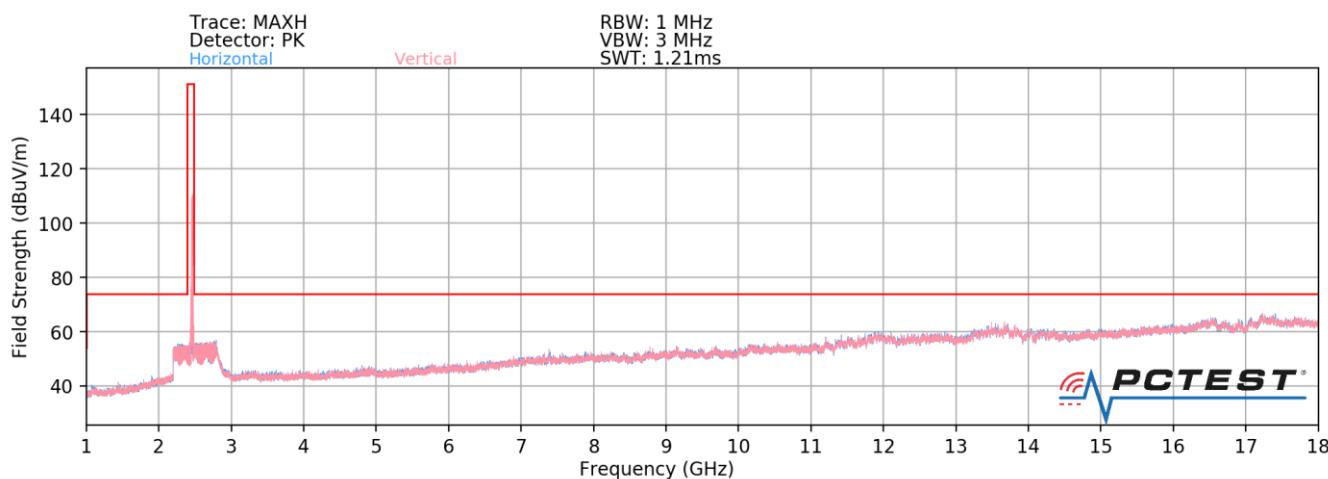
FCC ID: C3K1995 IC: 3048A-1995	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	 Microsoft	Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset		Page 146 of 182



Plot 7-220. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11g – Ch. 1) 300°



Plot 7-221. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11g – Ch. 6) 300°

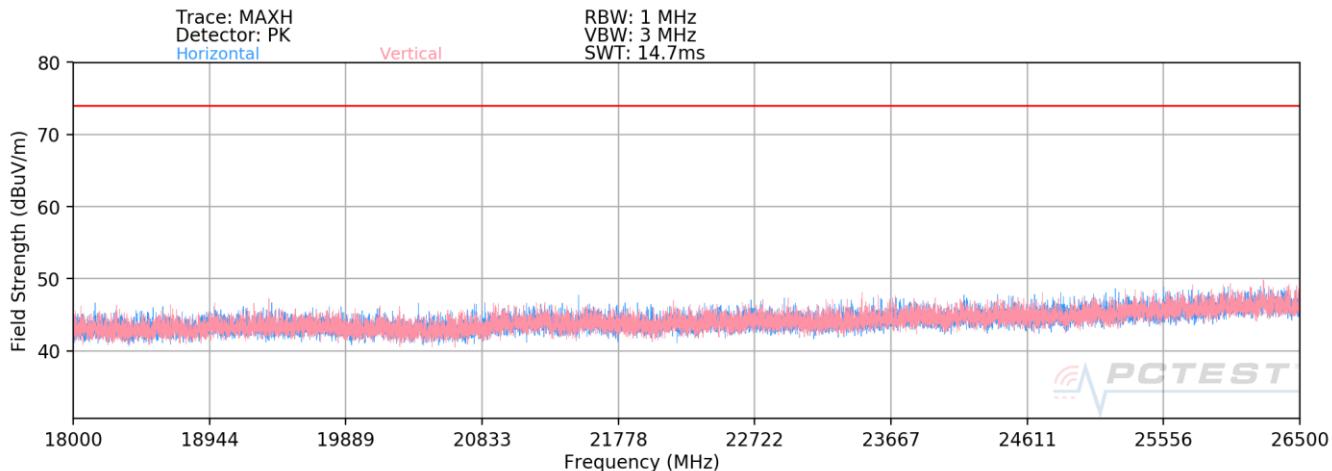


Plot 7-222. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11g – Ch. 11) 300°

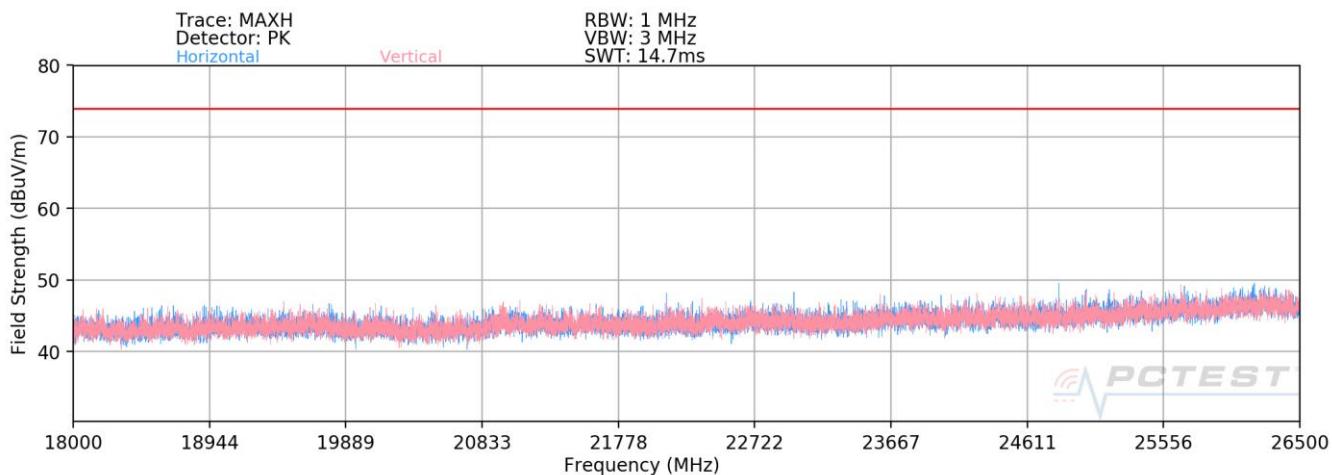
FCC ID: C3K1995 IC: 3048A-1995	 PCTEST® Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	 Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset	Page 147 of 182

MIMO/CDD Radiated Spurious Emissions Measurements (Above 18GHz)

§15.209; RSS-Gen [8.9]



Plot 7-223. Radiated Spurious Plot above 18GHz MIMO/CDD Closed



Plot 7-224. Radiated Spurious Plot above 18GHz MIMO/CDD 300°

FCC ID: C3K1995 IC: 3048A-1995	 PCTEST® Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset		Page 148 of 182

MIMO/CDD Radiated Spurious Emission Measurements
§15.247(d) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode:	802.11b
Worst Case Transfer Rate:	1 Mbps
Distance of Measurements:	3 Meters
Operating Frequency:	2412MHz
Channel:	01

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
4824.00	Avg	H	376	273	-78.74	9.44	37.70	53.98	-16.28
4824.00	Peak	H	376	273	-66.47	9.44	49.97	73.98	-24.01
12060.00	Avg	H	-	-	-84.42	23.67	46.25	53.98	-7.73
12060.00	Peak	H	-	-	-73.74	23.67	56.93	73.98	-17.05

Table 7-24. Radiated Measurements MIMO/CDD

Worst Case Mode:	802.11b
Worst Case Transfer Rate:	1 Mbps
Distance of Measurements:	3 Meters
Operating Frequency:	2437MHz
Channel:	06

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
4874.00	Avg	H	333	271	-78.72	9.34	37.62	53.98	-16.36
4874.00	Peak	H	333	271	-66.55	9.34	49.79	73.98	-24.19
7311.00	Avg	H	180	300	-77.46	15.28	44.82	53.98	-9.16
7311.00	Peak	H	180	300	-64.72	15.28	57.56	73.98	-16.42
12185.00	Avg	H	-	-	-84.30	24.02	46.72	53.98	-7.26
12185.00	Peak	H	-	-	-73.57	24.02	57.45	73.98	-16.53

Table 7-25. Radiated Measurements MIMO/CDD

FCC ID: C3K1995 IC: 3048A-1995	 PCTEST® <small>Proud to be part of element</small>	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset		Page 149 of 182

Worst Case Mode: 802.11b
 Worst Case Transfer Rate: 1 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2462MHz
 Channel: 11

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
4924.00	Avg	H	-	-	-80.14	9.87	36.73	53.98	-17.25
4924.00	Peak	H	-	-	-69.08	9.87	47.79	73.98	-26.19
7386.00	Avg	H	204	297	-78.58	15.40	43.82	53.98	-10.16
7386.00	Peak	H	204	297	-65.18	15.40	57.22	73.98	-16.76
12310.00	Avg	H	-	-	-84.55	24.00	46.45	53.98	-7.53
12310.00	Peak	H	-	-	-73.43	24.00	57.57	73.98	-16.41

Table 7-26. Radiated Measurements MIMO/CDD

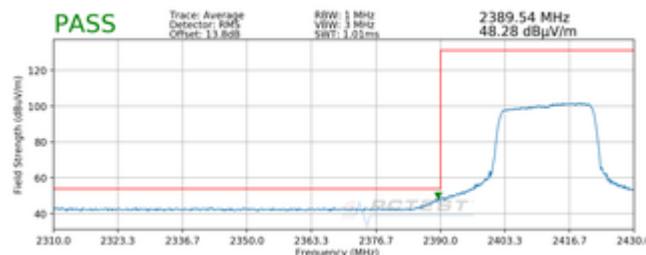
FCC ID: C3K1995 IC: 3048A-1995	 PCTEST® <small>Proud to be part of element</small>		MEASUREMENT REPORT (CERTIFICATION)	 Microsoft	Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021		EUT Type: Portable Handset	Page 150 of 182	

7.7.4 SISO SOUTH Radiated Restricted Band Edge Measurements 20MHz BW

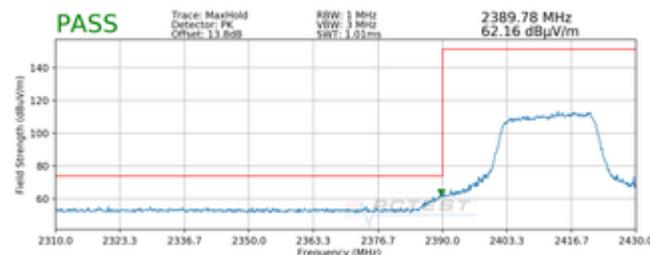
§15.205 §15.209; RSS-Gen [8.9]

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

Worst Case Mode: 802.11ax SU
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2412MHz
Channel: 1

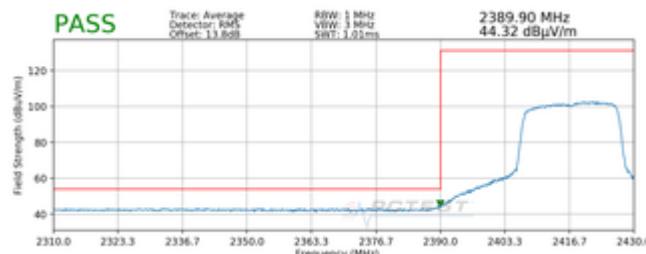


Plot 7-225. Radiated Restricted Lower Band Edge Measurement SISO SOUTH (Average)

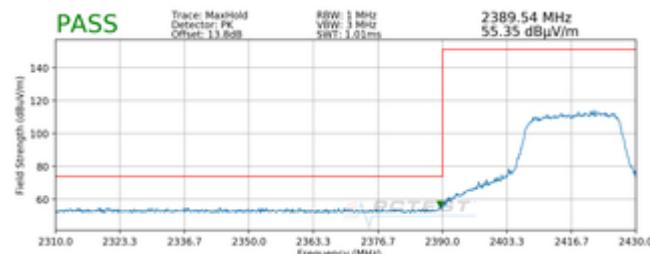


Plot 7-226. Radiated Restricted Lower Band Edge Measurement SISO SOUTH (Peak)

Worst Case Mode: 802.11ax SU
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2417MHz
Channel: 2



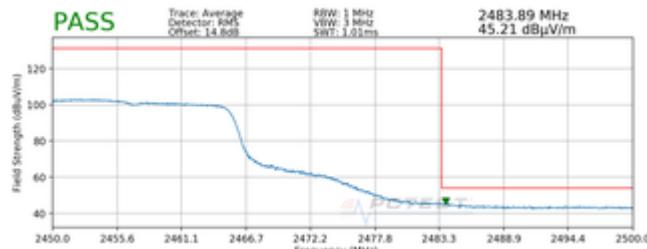
Plot 7-227. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)



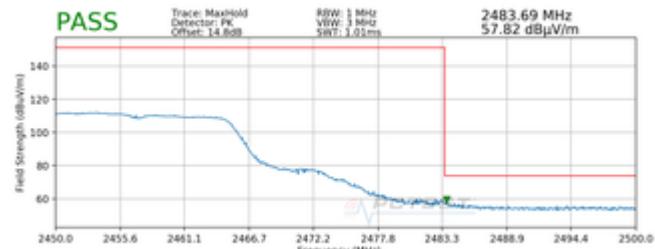
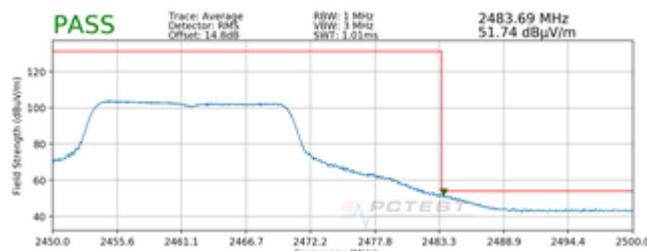
Plot 7-228. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)

FCC ID: C3K1995 IC: 3048A-1995	 PCTEST® Proud to be part of 		MEASUREMENT REPORT (CERTIFICATION)	 Microsoft	Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset			Page 151 of 182

Worst Case Mode: 802.11g
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2457MHz
 Channel: 10



Worst Case Mode: 802.11g
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2462MHz
 Channel: 11



FCC ID: C3K1995	IC: 3048A-1995
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021



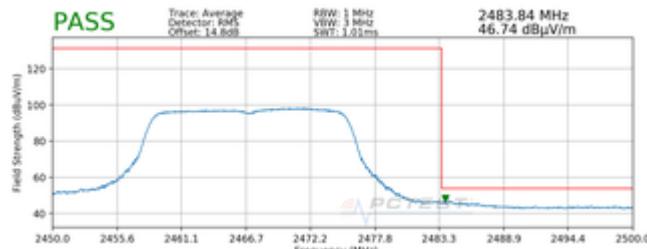
MEASUREMENT REPORT
(CERTIFICATION)



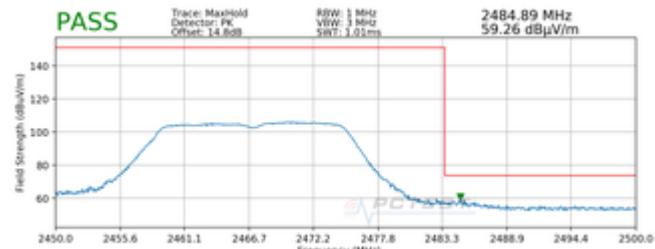
Approved by:
Technical Manager

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Worst Case Mode: 802.11g
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2467MHz
 Channel: 12



Plot 7-233. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)



Plot 7-234. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)

Worst Case Mode: 802.11g
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2472MHz
 Channel: 13



Plot 7-235. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)



Plot 7-236. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)

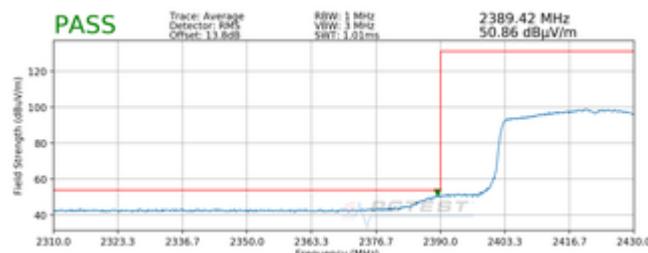
FCC ID: C3K1995 IC: 3048A-1995	PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	 Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset	Page 153 of 182

7.7.5 SISO SOUTH Radiated Restricted Band Edge Measurements 40MHz BW

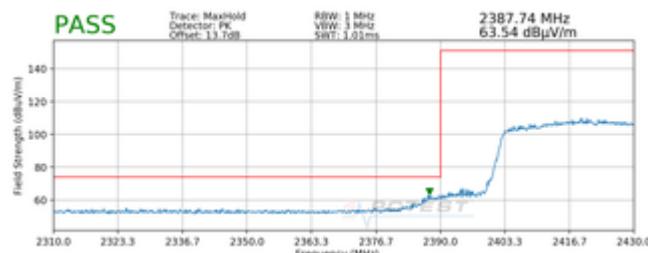
§15.205 §15.209; RSS-Gen [8.9]

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

Worst Case Mode:	802.11ax SU
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2422MHz
Channel:	3

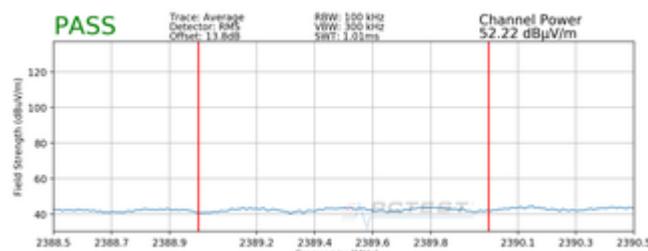


Plot 7-237. Radiated Restricted Lower Band Edge Measurement SISO SOUTH (Average)

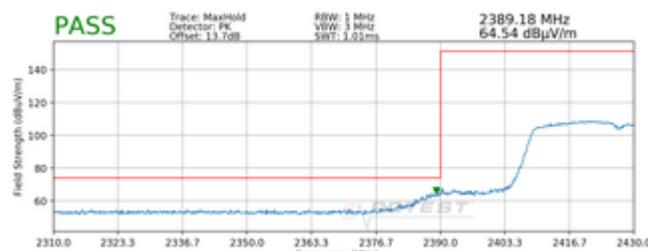


Plot 7-238. Radiated Restricted Lower Band Edge Measurement SISO SOUTH (Peak)

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2427MHz
Channel:	4



Plot 7-239. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)



Plot 7-240. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)

FCC ID: C3K1995
IC: 3048A-1995
Test Report S/N:
1M2105060048-12.C3K



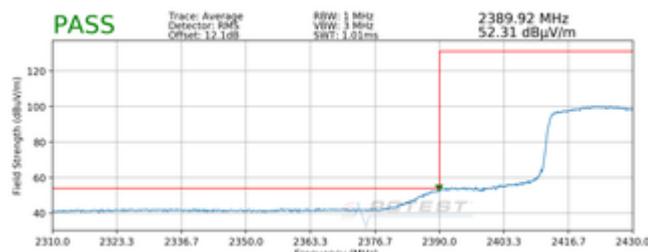
MEASUREMENT REPORT
(CERTIFICATION)



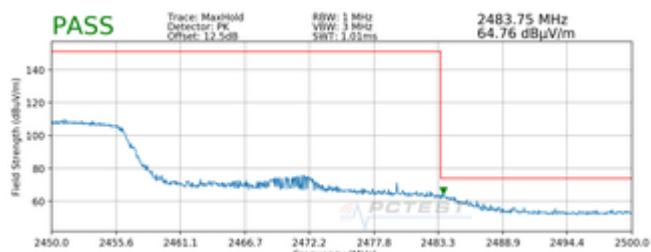
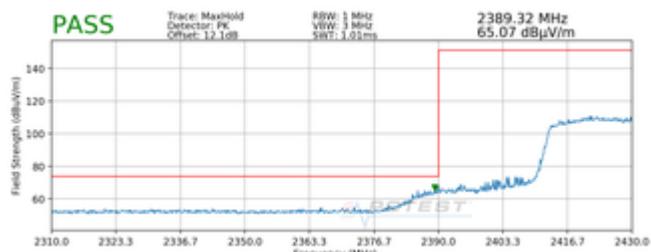
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Technical Manager

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Worst Case Mode: 802.11ax SU
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 2432MHz
 Channel: 5



Worst Case Mode: 802.11ax SU
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 2437MHz
 Channel: 6



FCC ID: C3K1995	IC: 3048A-1995
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021



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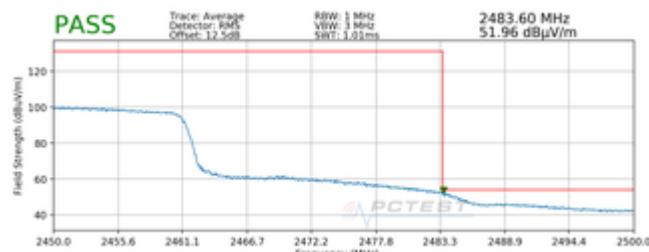
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V 9.0 02/01/2019

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Worst Case Mode: 802.11ax SU
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 2442MHz
 Channel: 7

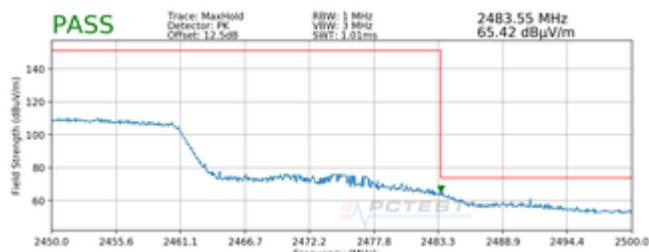


Plot 7-245. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)

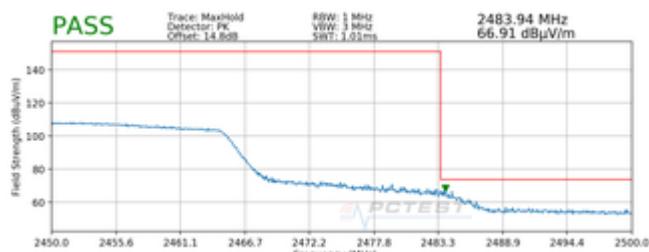
Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 2447MHz
 Channel: 8



Plot 7-247. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)



Plot 7-246. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)



Plot 7-248. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)

FCC ID: C3K1995 IC: 3048A-1995	 PCTEST® Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset		Page 156 of 182

Worst Case Mode: 802.11ax SU
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2452MHz
Channel: 9

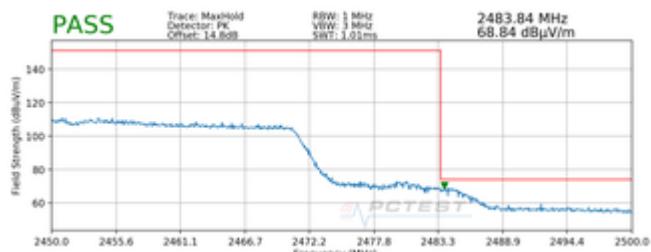


Plot 7-249. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)

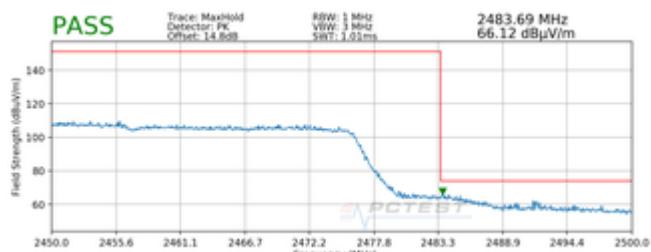
Worst Case Mode: 802.11ax SU
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2457MHz
Channel: 10



Plot 7-251. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)



Plot 7-250. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)



Plot 7-252. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)

FCC ID: C3K1995	IC: 3048A-1995
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021



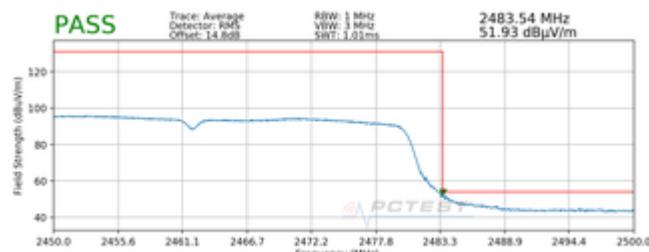
MEASUREMENT REPORT
(CERTIFICATION)



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Technical Manager

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Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2462MHz
Channel: 11



Plot 7-253. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)



Plot 7-254. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)

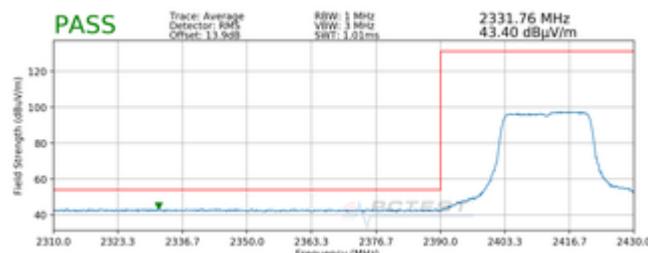
FCC ID: C3K1995 IC: 3048A-1995	 MEASUREMENT REPORT (CERTIFICATION)		 Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset	Page 158 of 182

7.7.6 SISO NORTH Radiated Restricted Band Edge Measurements 20MHz

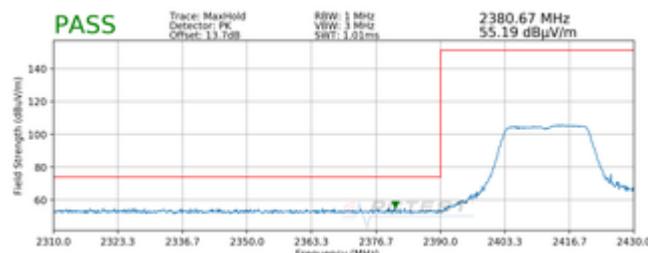
§15.205 §15.209; RSS-Gen [8.9]

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

Worst Case Mode:	802.1n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	2412MHz
Channel:	1

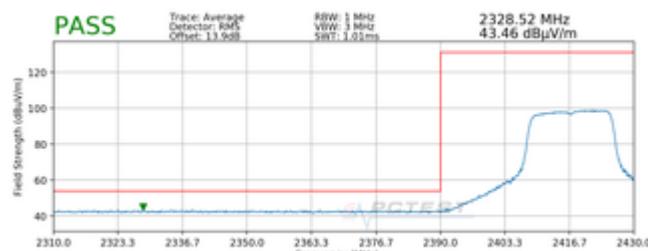


Plot 7-255. Radiated Restricted Lower Band Edge Measurement SISO NORTH (Average)

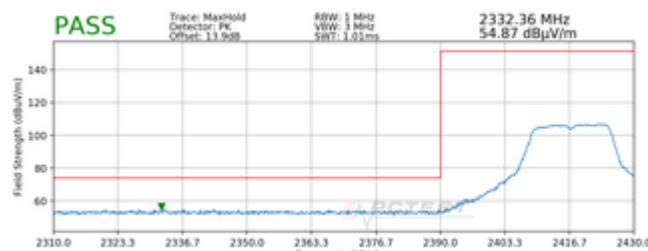


Plot 7-256. Radiated Restricted Lower Band Edge Measurement SISO NORTH (Peak)

Worst Case Mode:	802.11g
Worst Case Transfer Rate:	6 Mbps
Distance of Measurements:	3 Meters
Operating Frequency:	2417MHz
Channel:	2



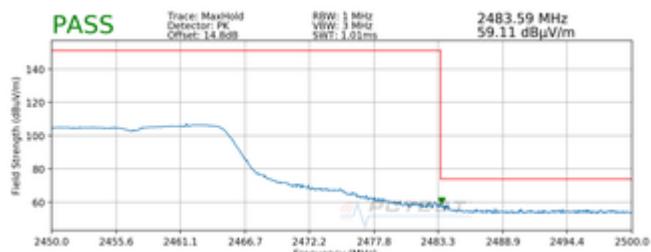
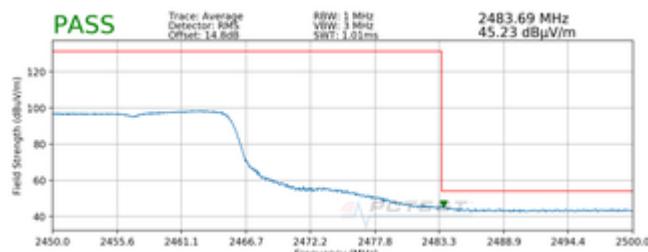
Plot 7-257. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)



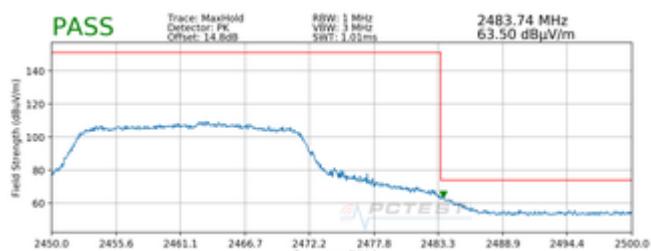
Plot 7-258. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)

FCC ID: C3K1995 IC: 3048A-1995	 PCTEST [®] Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset		Page 159 of 182

Worst Case Mode: 802.11g
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2457MHz
 Channel: 10



Worst Case Mode: 802.11ax SU
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 2462MHz
 Channel: 11



FCC ID: C3K1995	IC: 3048A-1995
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021



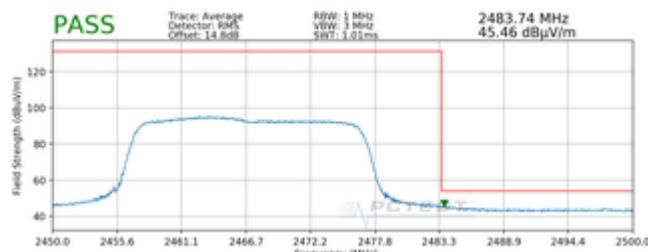
MEASUREMENT REPORT
(CERTIFICATION)



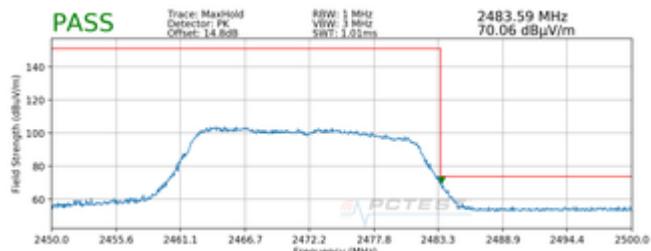
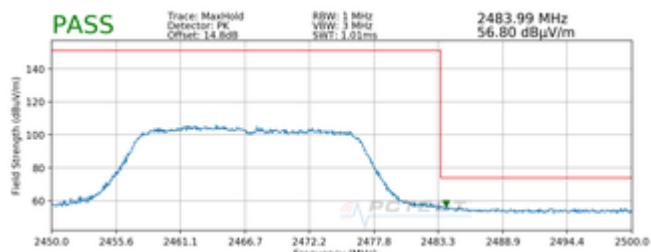
Approved by:
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Worst Case Mode: 802.11ax SU
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 2467MHz
 Channel: 12



Worst Case Mode: 802.11ax SU
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 2472MHz
 Channel: 13



FCC ID: C3K1995	IC: 3048A-1995
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021



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Technical Manager

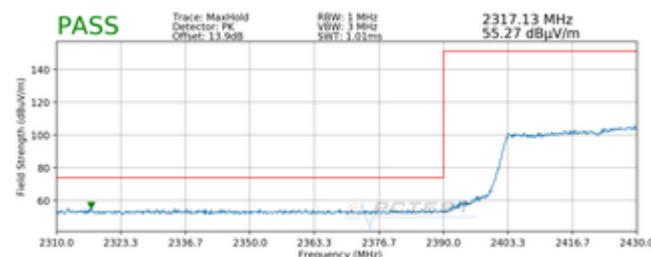
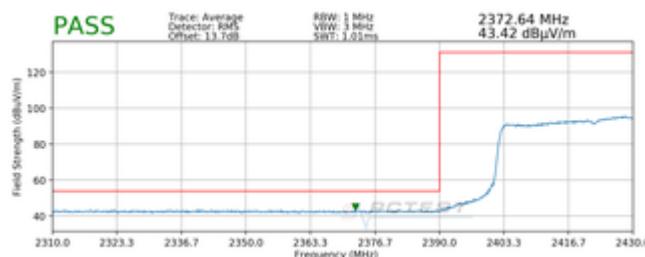
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7.7.7 SISO NORTH Radiated Restricted Band Edge Measurements 40MHz BW

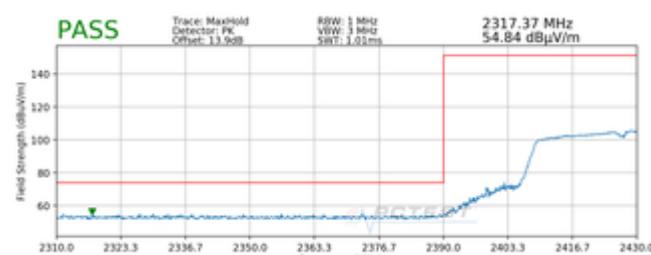
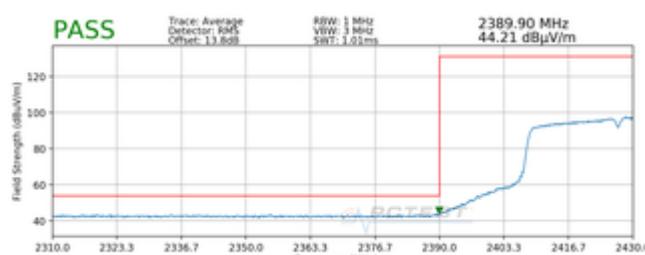
§15.205 §15.209; RSS-Gen [8.9]

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

Worst Case Mode: 802.11ax SU
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2422MHz
Channel: 3



Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2427MHz
Channel: 4



FCC ID: C3K1995	IC: 3048A-1995
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021



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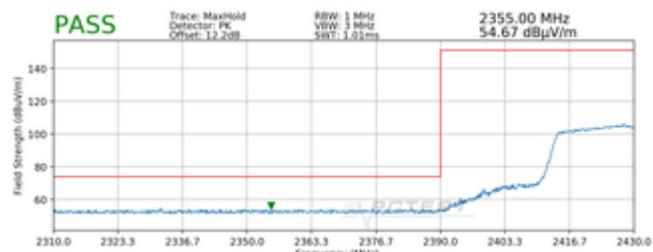
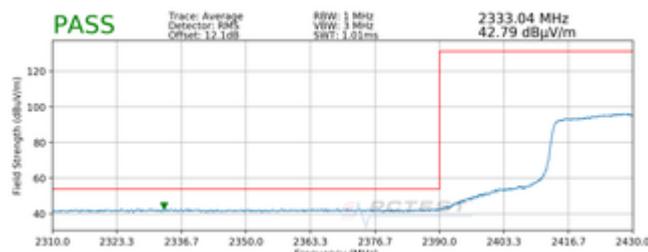
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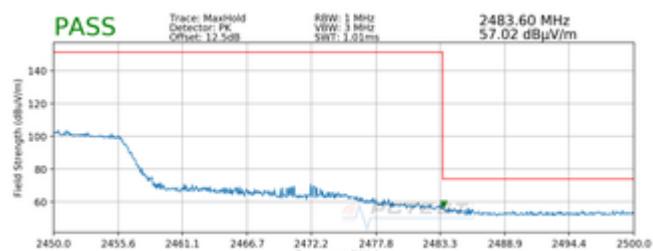
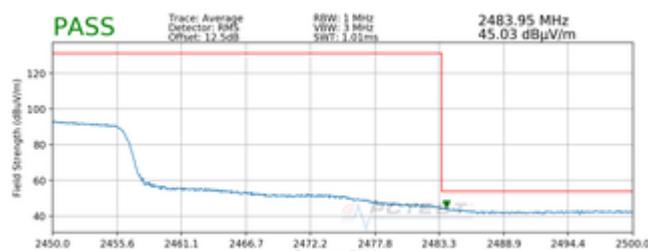
V 9.0 02/01/2019

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Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 2432MHz
 Channel: 5



Worst Case Mode: 802.11ax SU
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 2437MHz
 Channel: 6



FCC ID: C3K1995	IC: 3048A-1995
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021



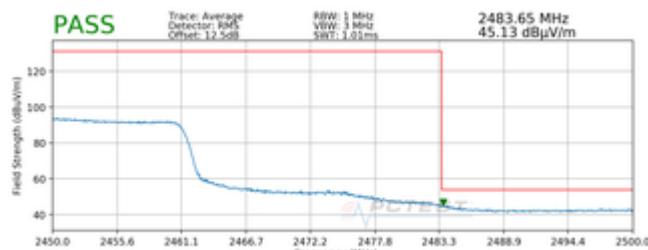
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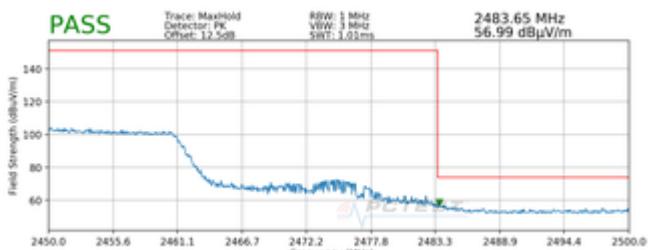
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Worst Case Mode: 802.11ax SU
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2442MHz
Channel: 7

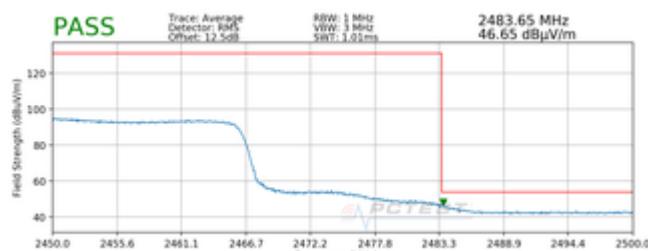


Plot 7-275. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)

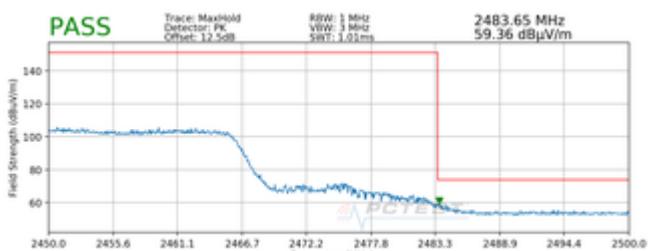


Plot 7-276. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)

Worst Case Mode: 802.11ax SU
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2447MHz
Channel: 8



Plot 7-277. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)



Plot 7-278. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)

FCC ID: C3K1995	IC: 3048A-1995
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021



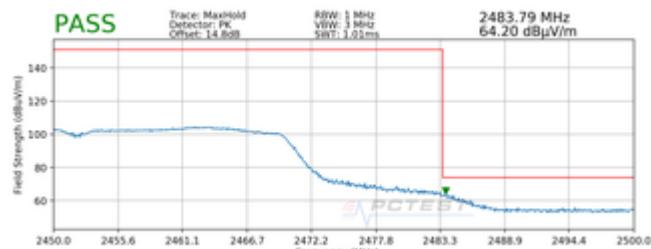
MEASUREMENT REPORT
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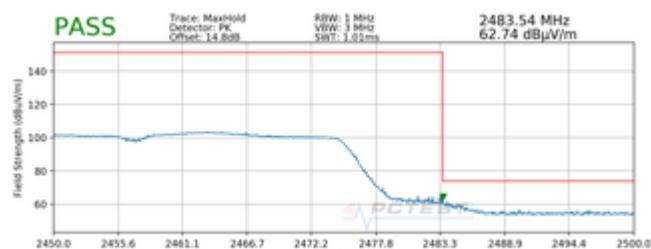
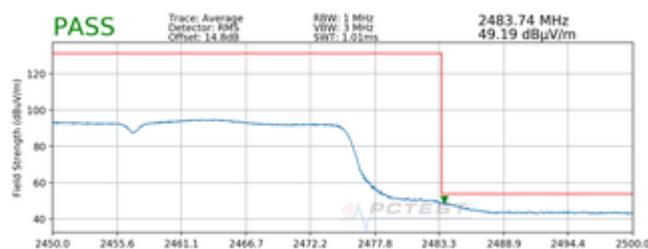
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Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 2452MHz
 Channel: 9

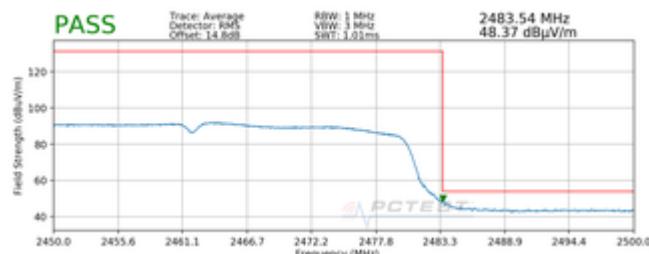


Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 2457MHz
 Channel: 10



FCC ID: C3K1995 IC: 3048A-1995	 PCTEST® Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	 Microsoft	Approved by: Technical Manager
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Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2462MHz
Channel: 11



Plot 7-283. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)



Plot 7-284. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)

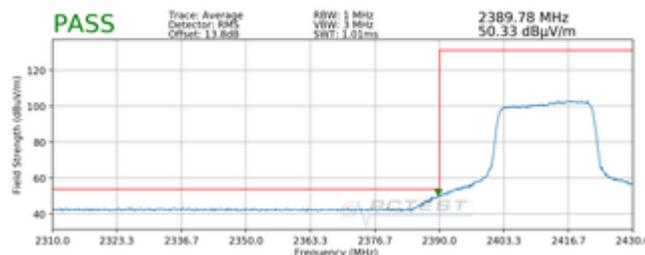
FCC ID: C3K1995 IC: 3048A-1995	 MEASUREMENT REPORT (CERTIFICATION)		 Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset	Page 166 of 182

7.7.8 MIMO Radiated Restricted Band Edge Measurements 20MHz BW

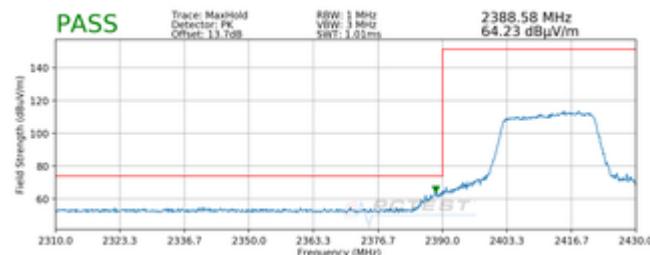
§15.205 §15.209; RSS-Gen [8.9]

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

Worst Case Mode: 802.11ax SU
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2412MHz
Channel: 1

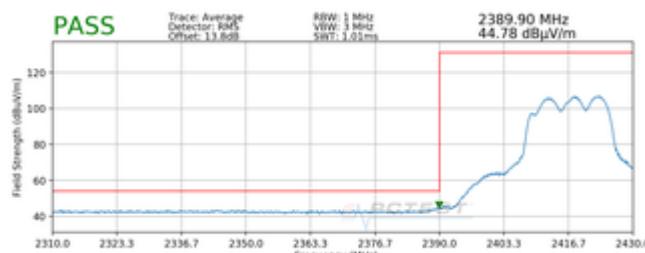


Plot 7-285. Radiated Restricted Lower Band Edge Measurement MIMO (Average)

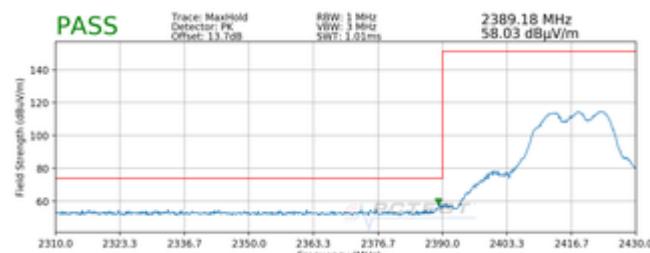


Plot 7-286. Radiated Restricted Lower Band Edge Measurement MIMO (Peak)

Worst Case Mode: 802.11g
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 2417MHz
Channel: 2



Plot 7-287. Radiated Restricted Upper Band Edge Measurement MIMO (Average)



Plot 7-288. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)

FCC ID: C3K1995 IC: 3048A-1995	
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021



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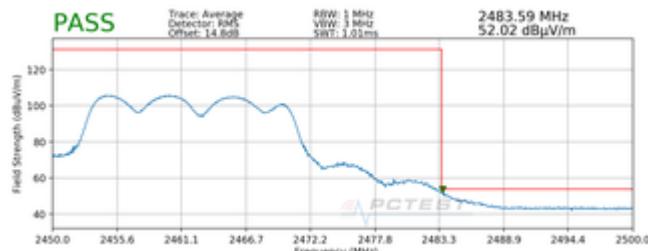
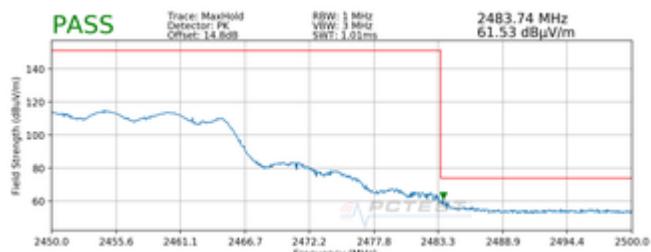
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Worst Case Mode: 802.11g
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2457MHz
 Channel: 10

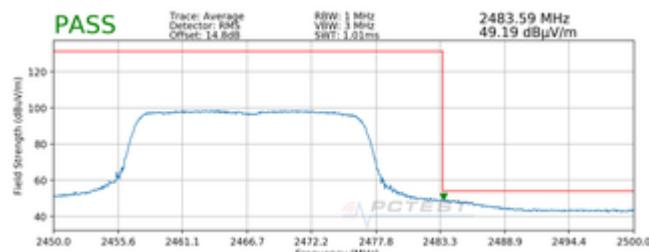


Worst Case Mode: 802.11g
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2462MHz
 Channel: 11

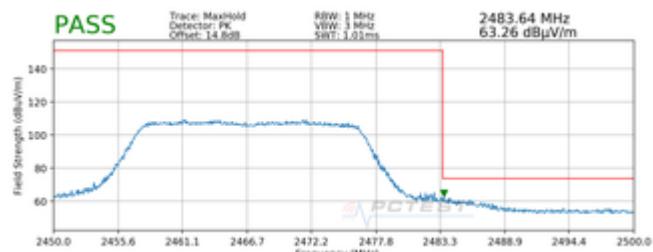


FCC ID: C3K1995 IC: 3048A-1995	PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	 Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset	Page 168 of 182

Worst Case Mode: 802.11ax SU
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2467MHz
Channel: 12



Plot 7-293. Radiated Restricted Upper Band Edge Measurement MIMO (Average)

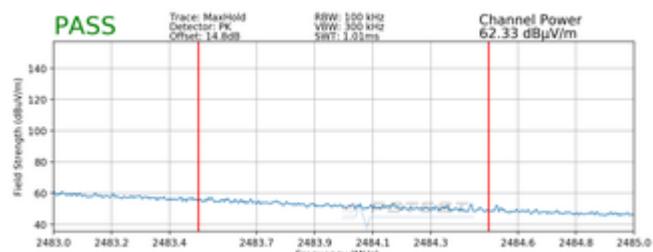


Plot 7-294. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)

Worst Case Mode: 802.11ax SU
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2472MHz
Channel: 13



Plot 7-295. Radiated Restricted Upper Band Edge Measurement MIMO (Average)



Plot 7-296. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)

FCC ID: C3K1995	IC: 3048A-1995
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021



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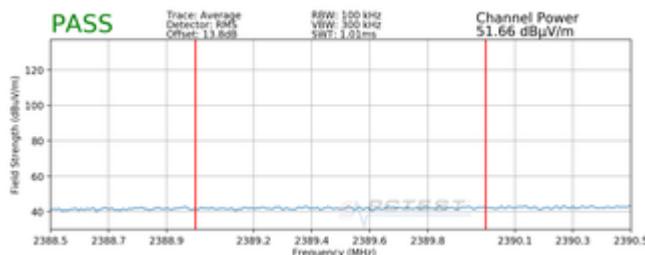
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7.7.9 MIMO Radiated Restricted Band Edge Measurements 40MHz BW

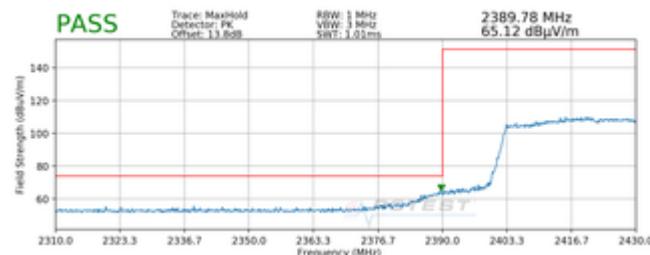
§15.205 §15.209; RSS-Gen [8.9]

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

Worst Case Mode: 802.11ax SU
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2422MHz
Channel: 3

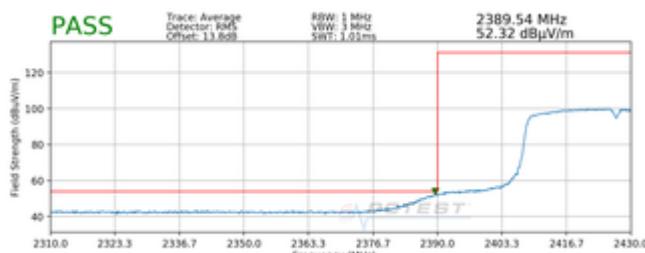


Plot 7-297. Radiated Restricted Lower Band Edge Measurement MIMO (Average)

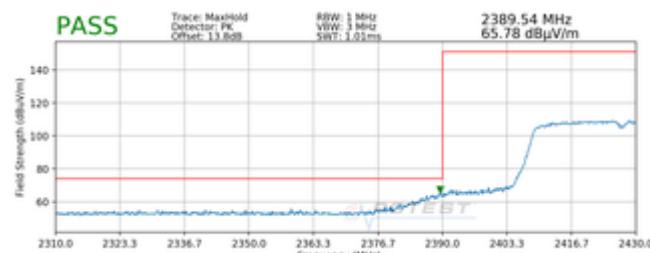


Plot 7-298. Radiated Restricted Lower Band Edge Measurement MIMO (Peak)

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2427MHz
Channel: 4



Plot 7-299. Radiated Restricted Upper Band Edge Measurement MIMO (Average)



Plot 7-300. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)

FCC ID: C3K1995 IC: 3048A-1995	
Test Report S/N: 1M2105060048-12.C3K	



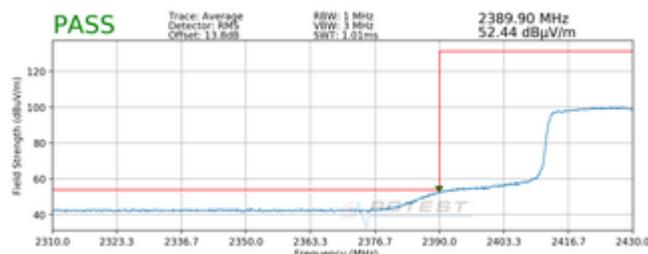
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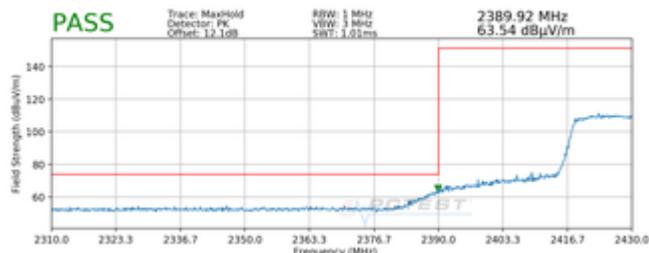
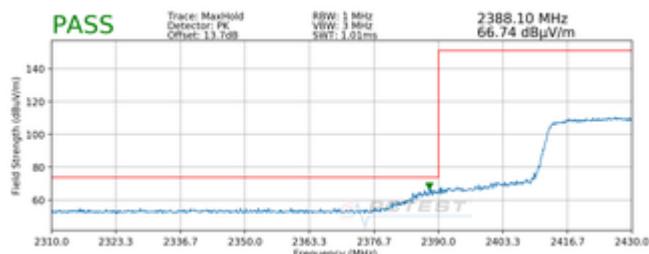
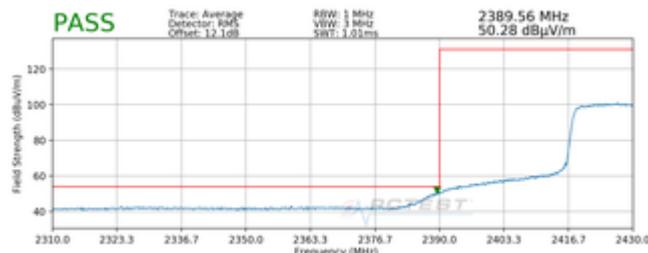
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Worst Case Mode: 802.11ax SU
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 2432MHz
 Channel: 5



Worst Case Mode: 802.11ax SU
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 2437MHz
 Channel: 6



FCC ID: C3K1995
IC: 3048A-1995
Test Report S/N: 1M2105060048-12.C3K
Test Dates: 05/20/2021 - 09/02/2021



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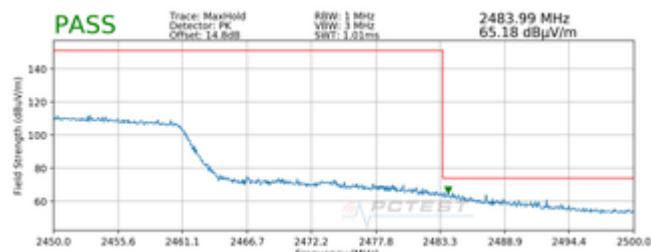
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Worst Case Mode: 802.11ax SU
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2442MHz
Channel: 7

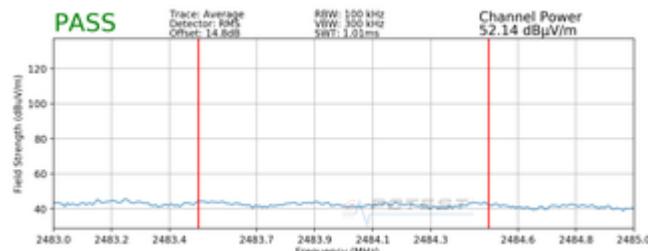


Plot 7-305. Radiated Restricted Upper Band Edge Measurement MIMO (Average)

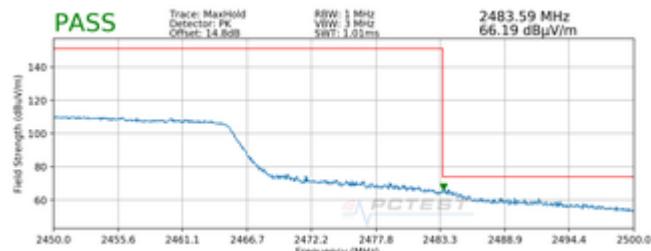


Plot 7-306. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2447MHz
Channel: 8



Plot 7-307. Radiated Restricted Upper Band Edge Measurement MIMO (Average)



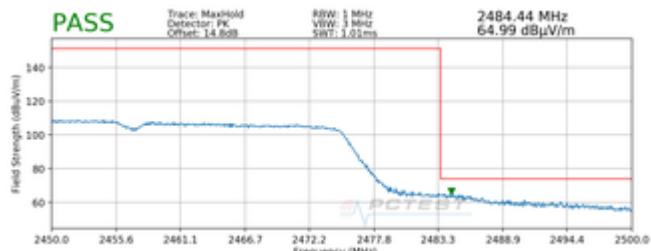
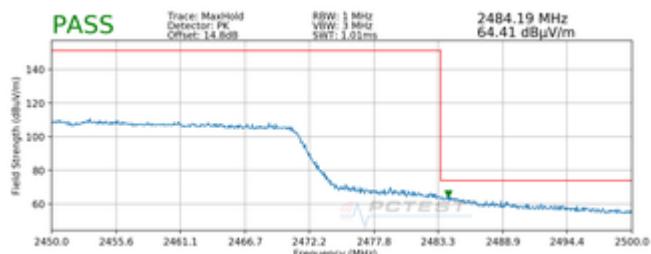
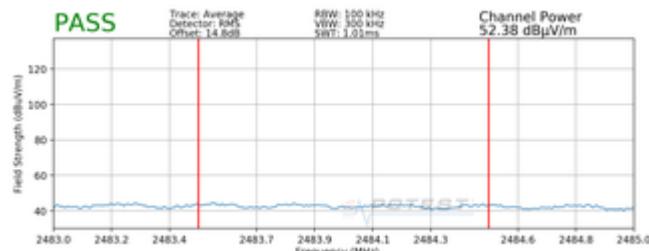
Plot 7-308. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)

FCC ID: C3K1995 IC: 3048A-1995	 PCTEST® Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	 Microsoft	Approved by: Technical Manager
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Worst Case Mode: 802.11ax SU
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2452MHz
Channel: 9

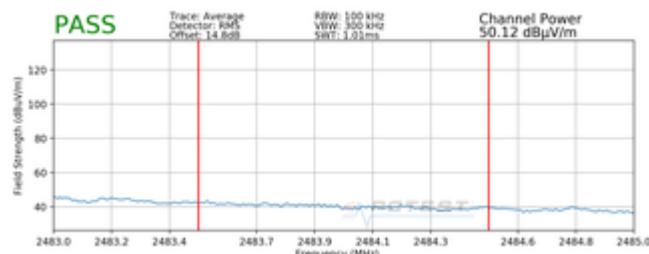


Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2457MHz
Channel: 10

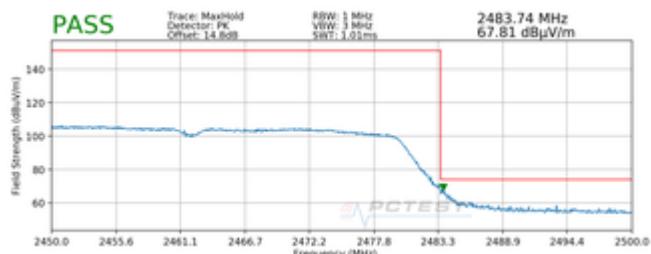


FCC ID: C3K1995 IC: 3048A-1995	 PCTEST® Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset		Page 173 of 182

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 2462MHz
Channel: 11



Plot 7-313. Radiated Restricted Upper Band Edge Measurement MIMO (Average)



Plot 7-314. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)

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7.7.10 Radiated Spurious Emissions Measurements – Below 1GHz

[§15.209; RSS-Gen \[8.9\]](#)

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at 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 out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 6 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-27 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [μ V/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 7-27. 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

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Test Setup

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

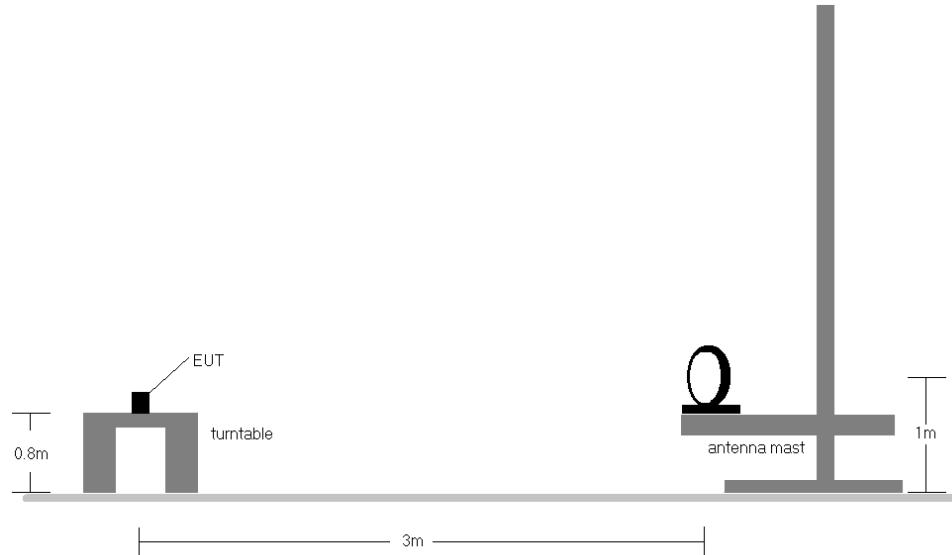


Figure 7-7. Radiated Test Setup < 30Mhz

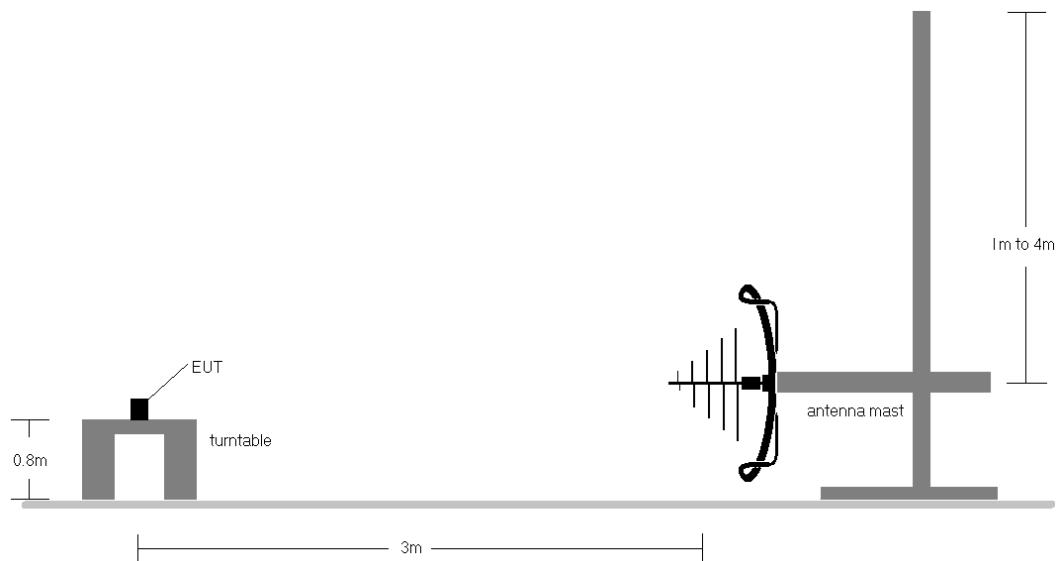


Figure 7-8. Radiated Test Setup < 1GHz

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Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset		Page 176 of 182

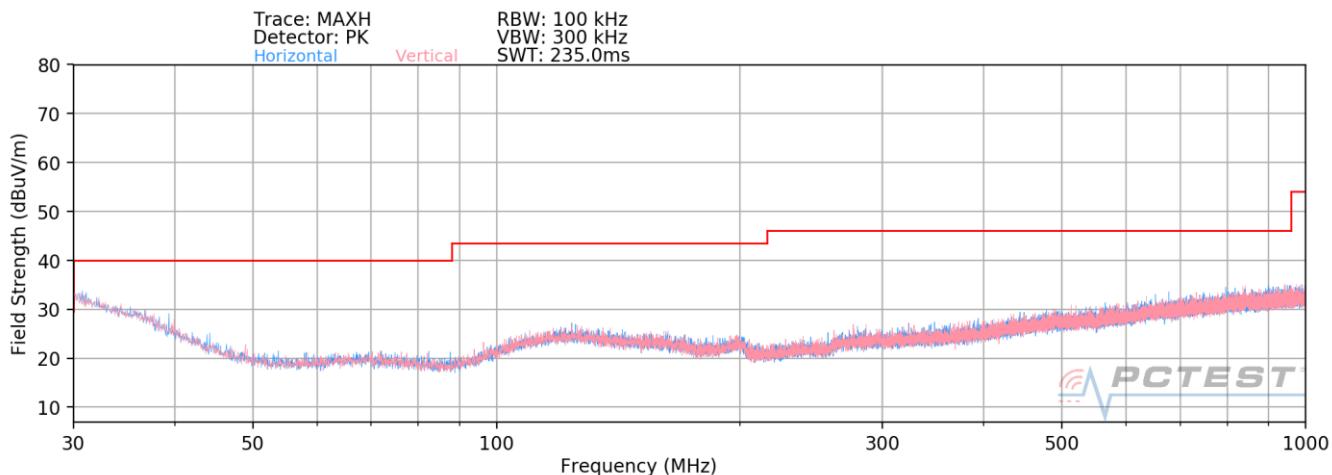
Test Notes

1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen(8.10) are below the limit shown in Table 7-27.
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.
9. 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.

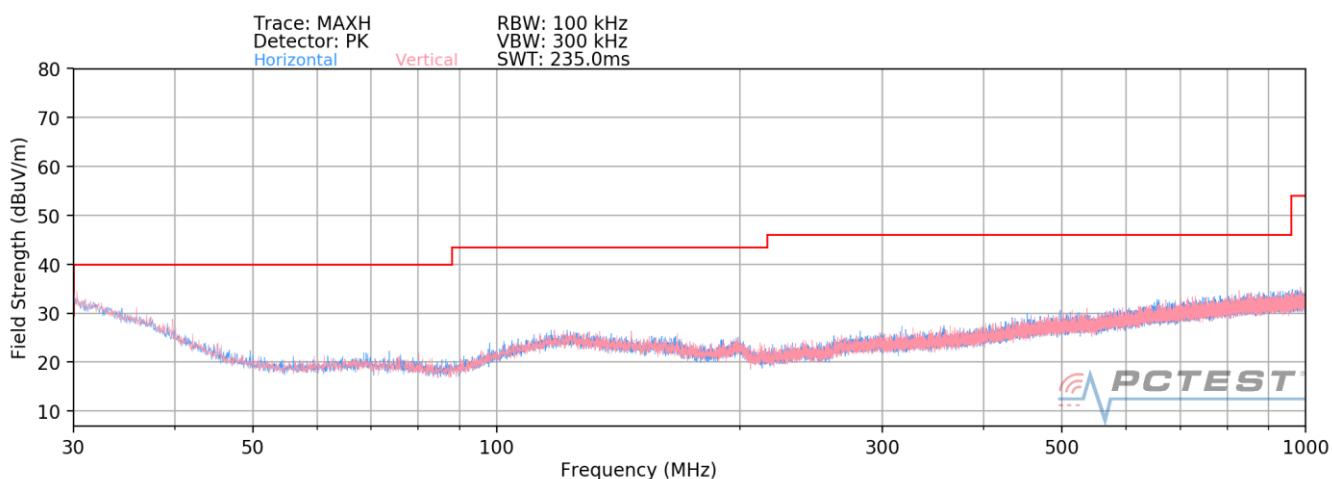
FCC ID: C3K1995 IC: 3048A-1995	 PCTEST [®] Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	 Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset	Page 177 of 182

MIMO Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]



Plot 7-315. Radiated Spurious Plot below 1GHz MIMO/CDD Closed



Plot 7-316. Radiated Spurious Plot below 1GHz MIMO/CDD 300°

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7.8 Line-Conducted Test Data

§15.207; RSS-Gen [8.8]

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 and RSS-Gen (8.8).

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

Table 7-28. Conducted Limits

*Decreases with the logarithm of the frequency.

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

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Test Setup

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

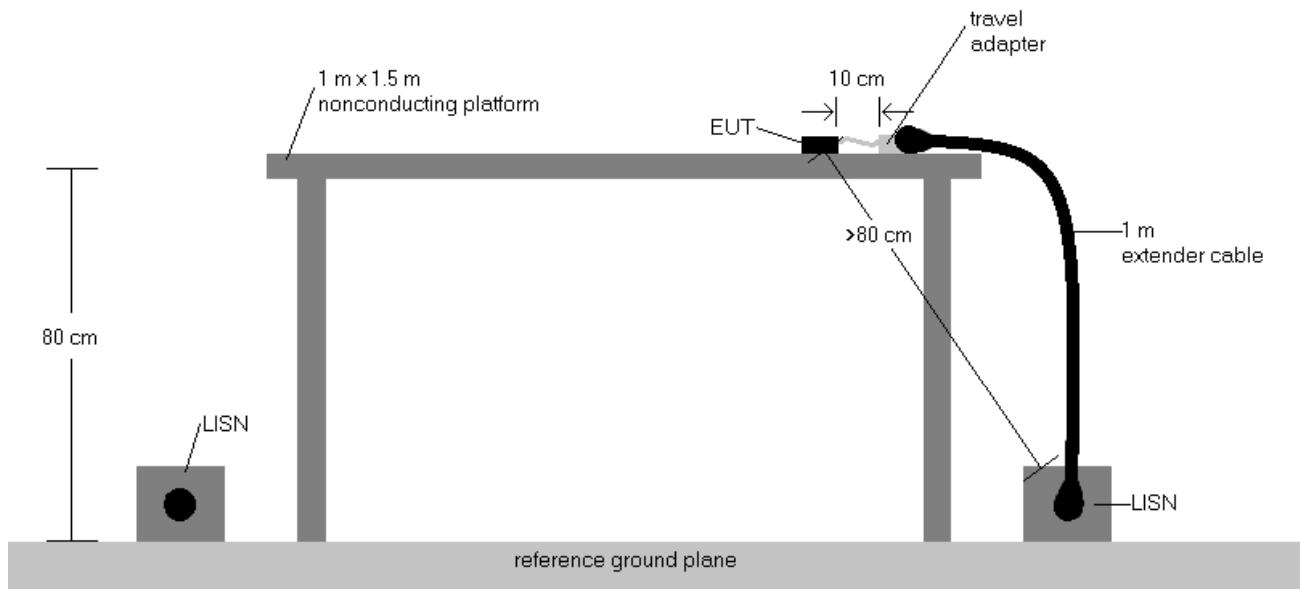


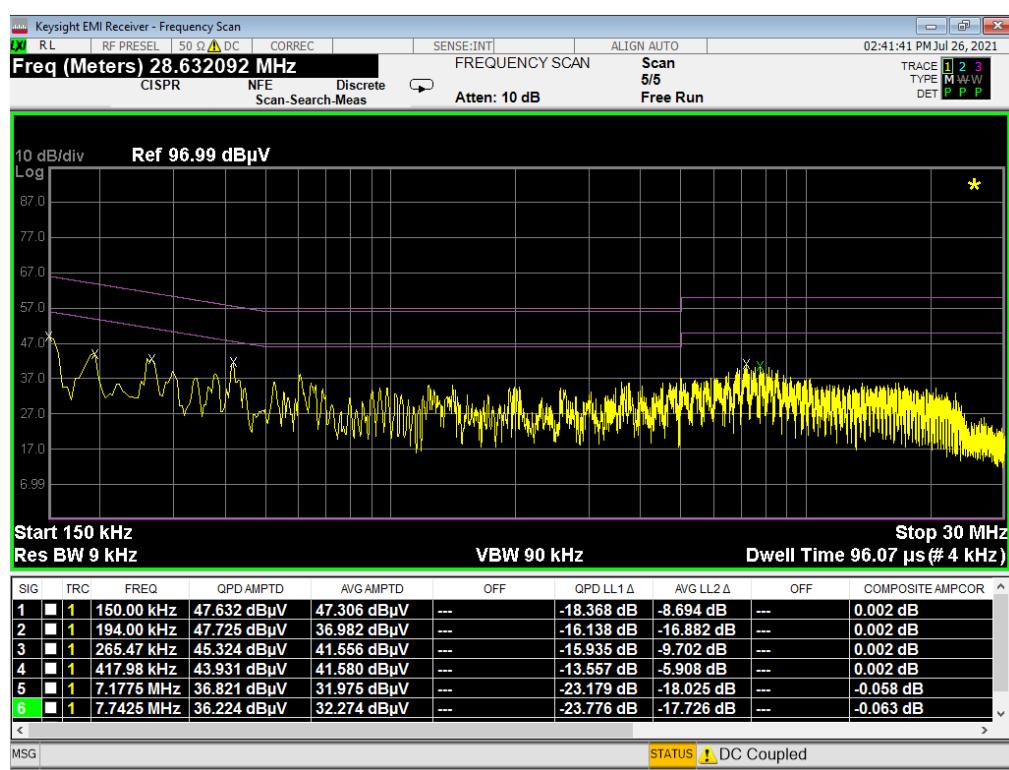
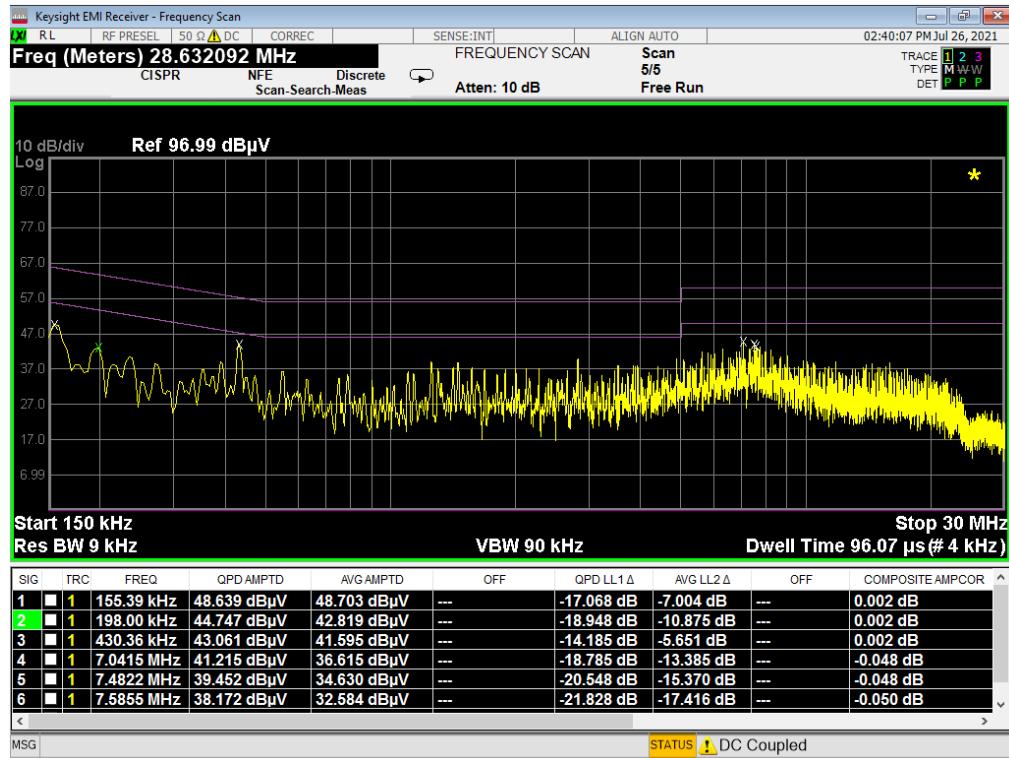
Figure 7-9. Test Instrument & Measurement Setup

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 Part 15.207 and RSS-Gen(8.8).
3. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
4. QP/AV Level (dB μ V) = QP/AV Analyzer/Receiver Level (dB μ V) + Corr. (dB)
5. Margin (dB) = QP/AV Limit (dB μ V) - QP/AV Level (dB μ V)
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

The EMI Receiver mode of the Agilent MXE was used to perform AC line conducted emissions testing.

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Plot 7-318. Line Conducted Plot with 802.11b (N)

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8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Microsoft Corporation Portable Handset FCC ID: C3K1995** is in compliance with Part 15 Subpart C (15.247) of the FCC Rules and with RSS-247 of the Innovation, Science and Economic Development Canada rules.

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