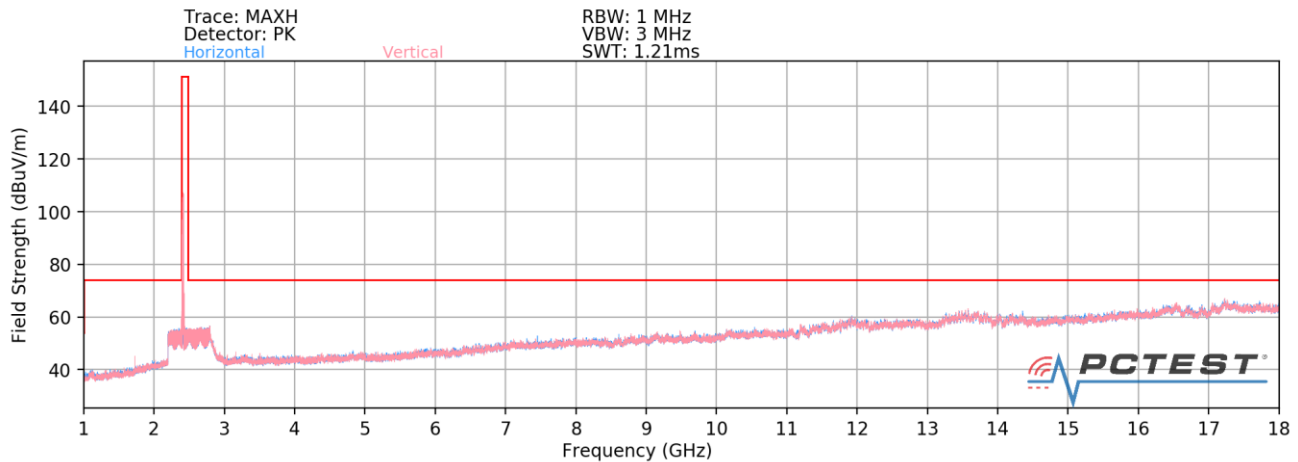
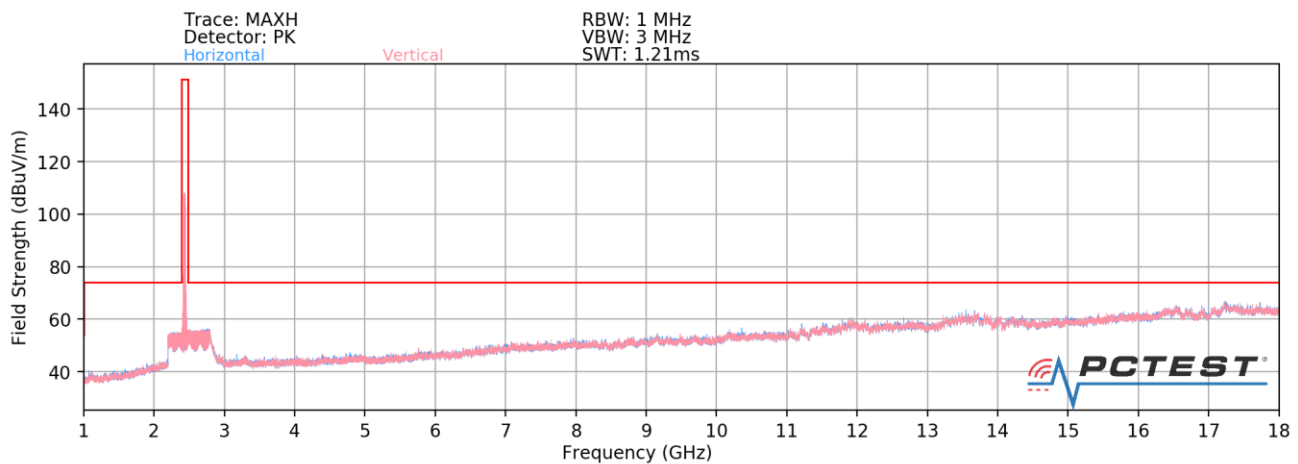


### 7.7.3 MIMO/CDD Radiated Spurious Emission Measurements

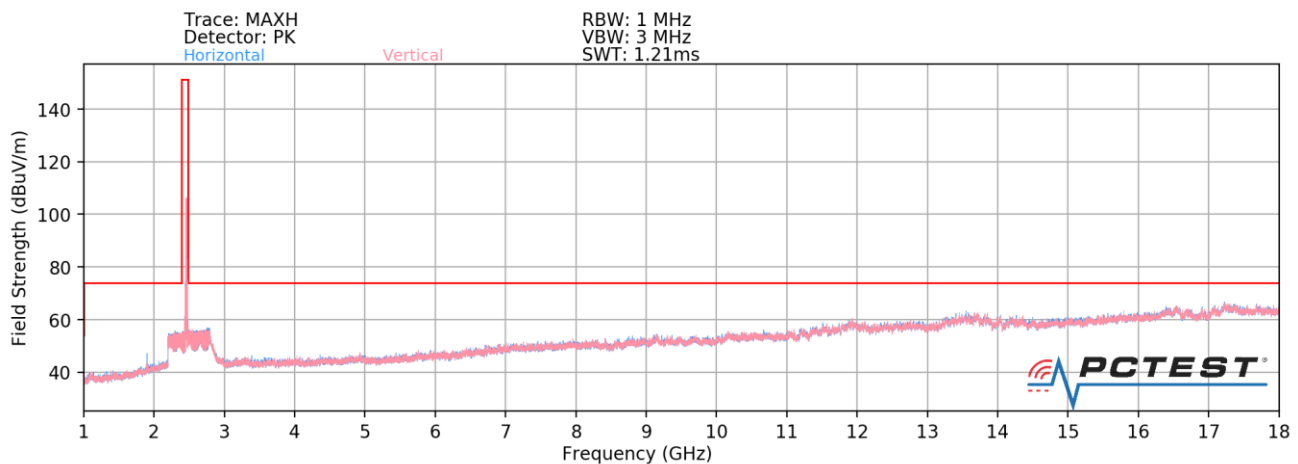
§15.247(d) §15.205 & §15.209; RSS-Gen [8.9]



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



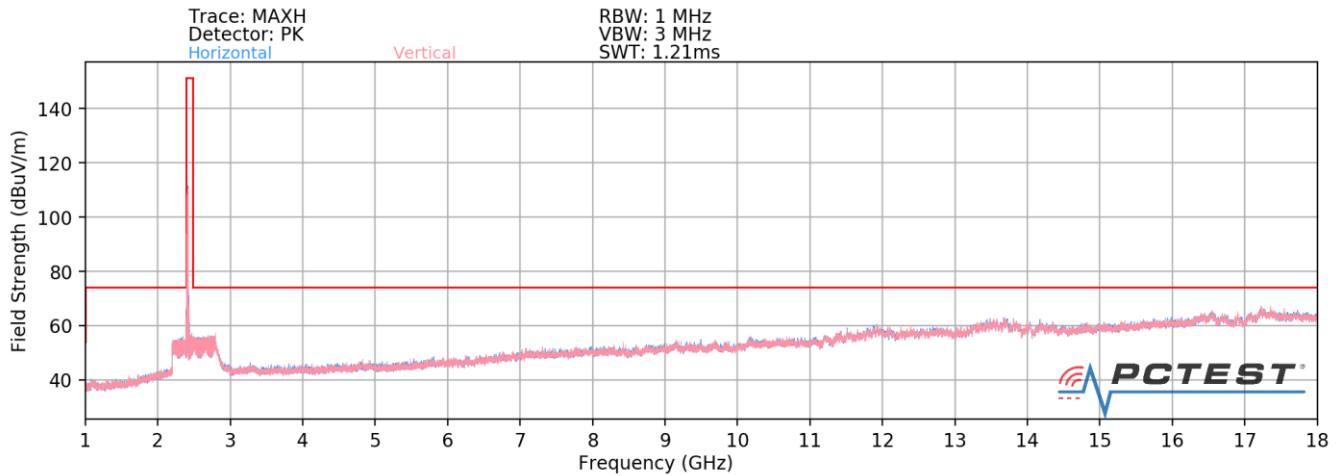
Plot 7-219. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11g – Ch. 11) Closed

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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

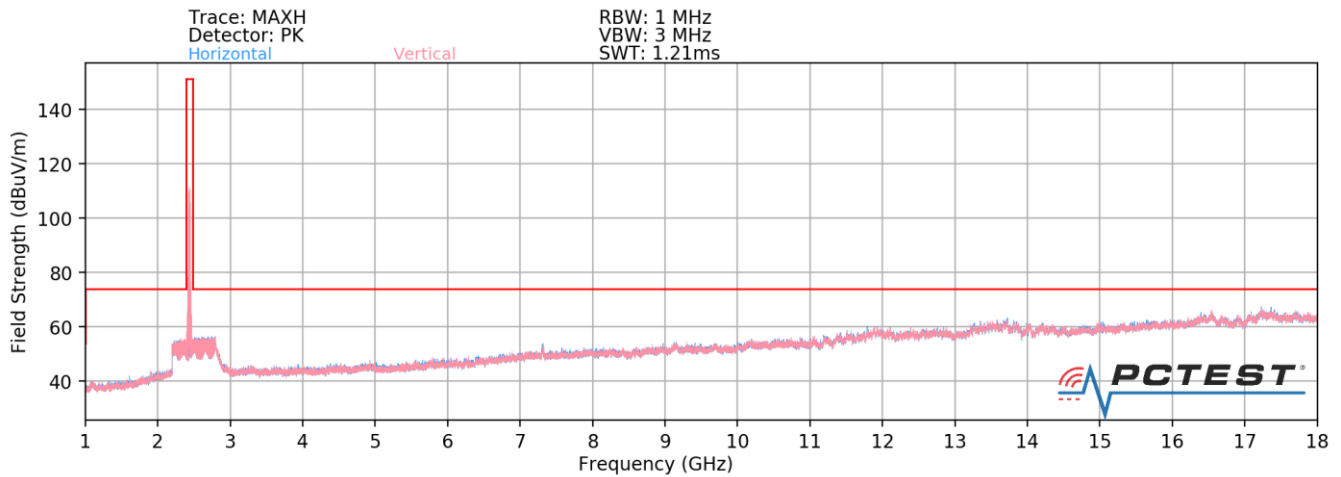
© 2021 PCTEST

V 9.0 02/01/2019

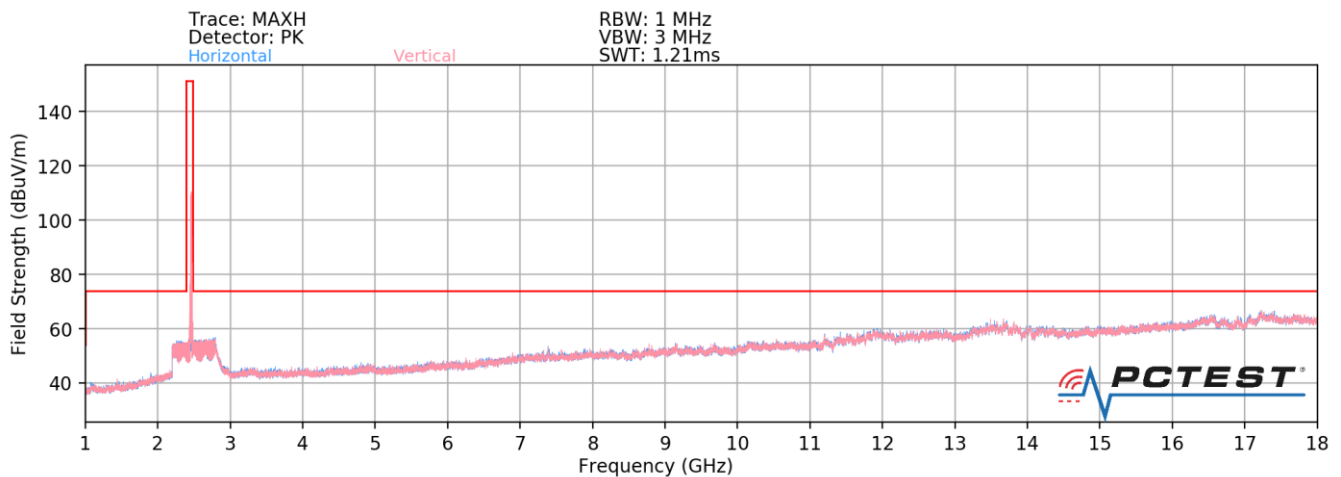
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST. If you have any questions about this international copyright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



**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°**

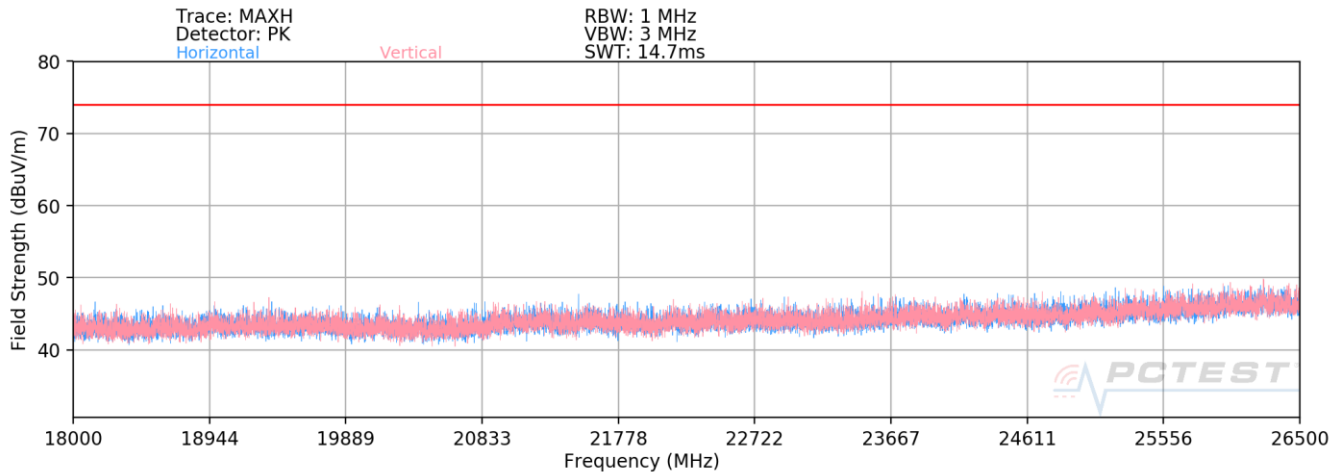


**Plot 7-222. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11g – Ch. 11) 300°**

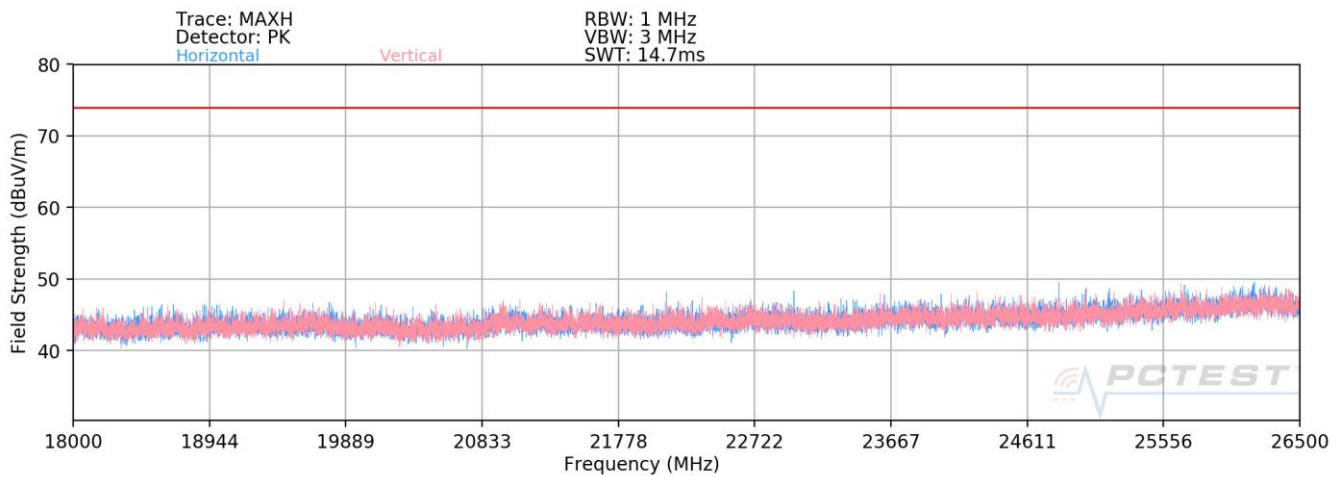
FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Microsoft	Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset		Page 147 of 182

## 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	<b>PCTEST</b> Proud to be part of element	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 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 [dBμV/m]	Limit [dBμV/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 [dBμV/m]	Limit [dBμV/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 <sup>®</sup> Proud to be part of element	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 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 [dBμV/m]	Limit [dBμV/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

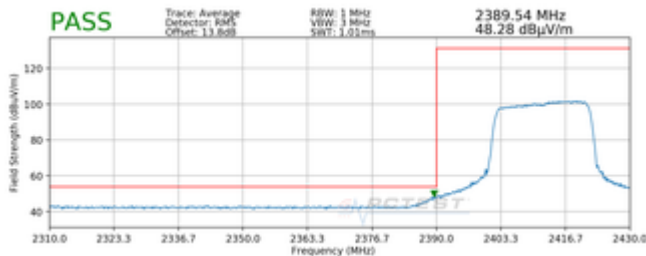
**Table 7-26. Radiated Measurements MIMO/CDD**

FCC ID: C3K1995 IC: 3048A-1995	 <b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	 <b>Microsoft</b>	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

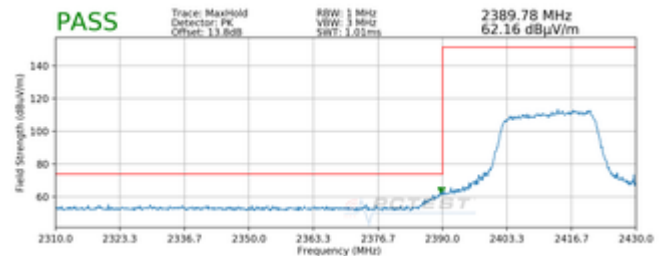
#### 7.7.4 SISO SOUTH Radiated Restricted Band Edge Measurements 20MHz BW §15.205 §15.209; RSS-Gen [8.9]

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

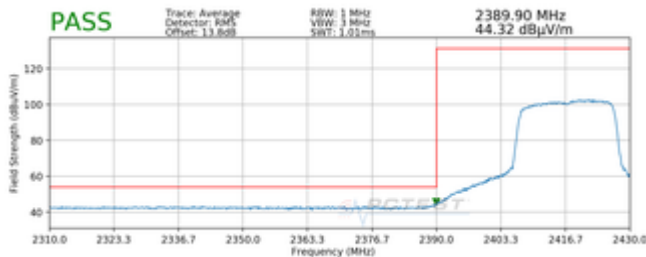


**Plot 7-225. Radiated Restricted Lower Band Edge Measurement SISO SOUTH (Average)**



**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



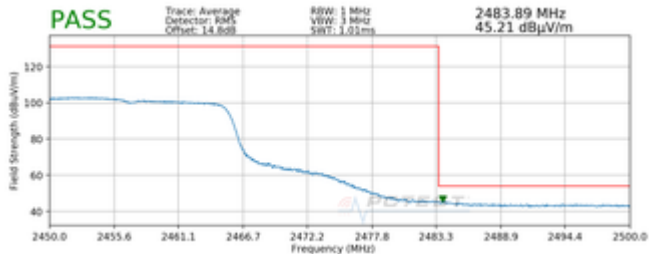
**Plot 7-227. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)**



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

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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

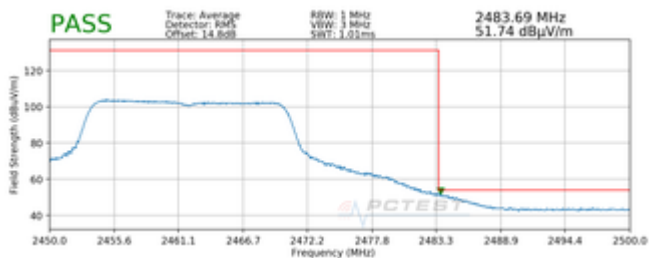


**Plot 7-229. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)**

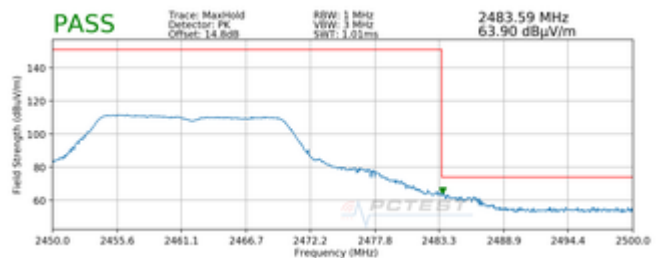


**Plot 7-230. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)**

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



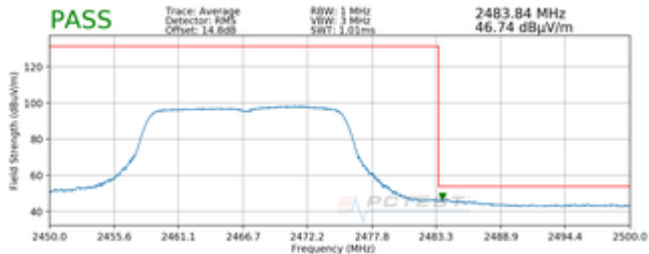
**Plot 7-231. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)**



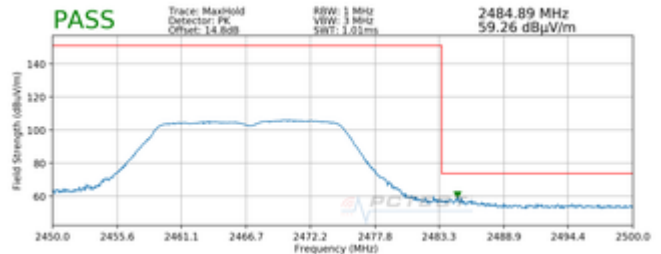
**Plot 7-232. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 152 of 182

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

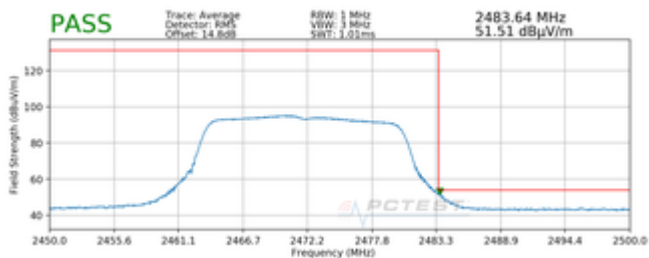


**Plot 7-233. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)**

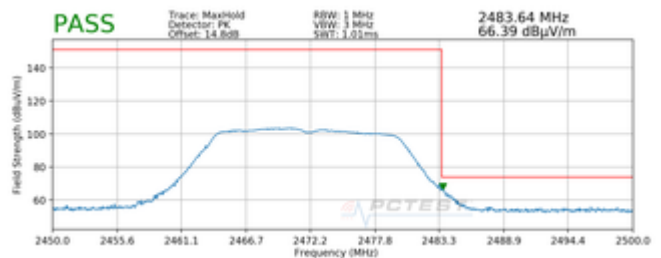


**Plot 7-234. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)**

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	<b>PCTEST</b> Proud to be part of element	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 153 of 182

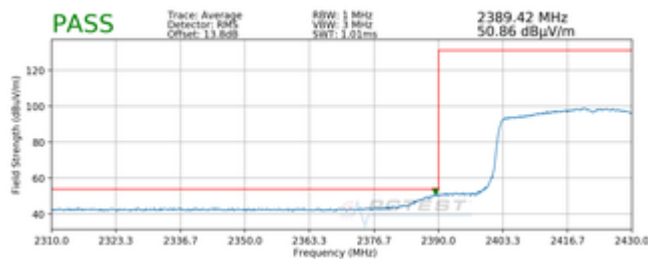


## 7.7.5 SISO SOUTH Radiated Restricted Band Edge Measurements 40MHz BW

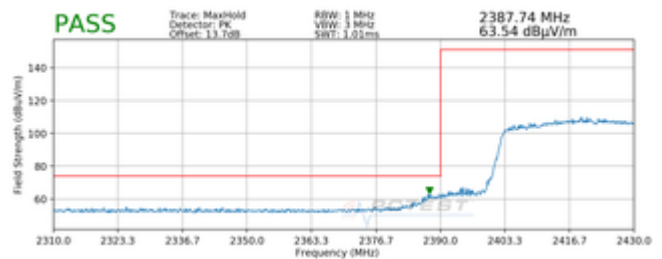
§15.205 §15.209; RSS-Gen [8.9]

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

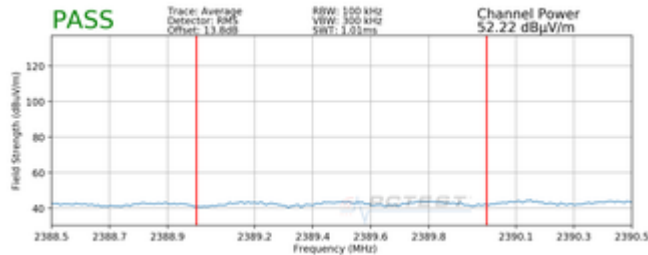


**Plot 7-237. Radiated Restricted Lower Band Edge Measurement SISO SOUTH (Average)**

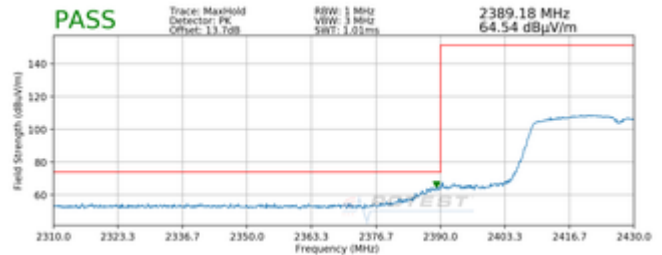


**Plot 7-238. Radiated Restricted Lower Band Edge Measurement SISO SOUTH (Peak)**

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



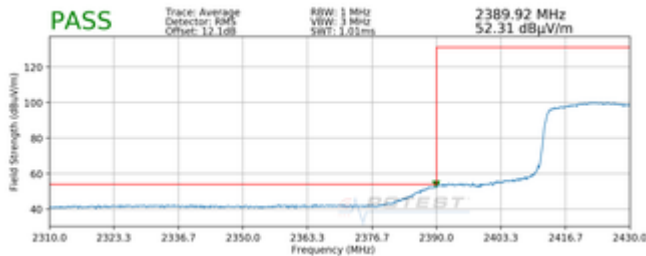
**Plot 7-239. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)**



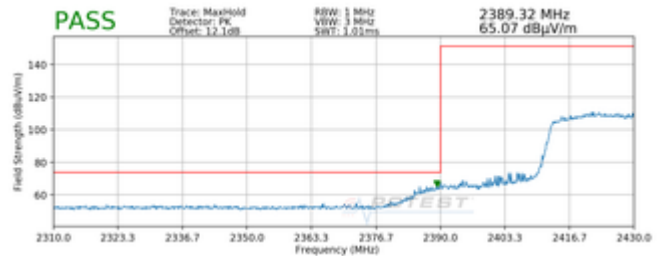
**Plot 7-240. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 154 of 182

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

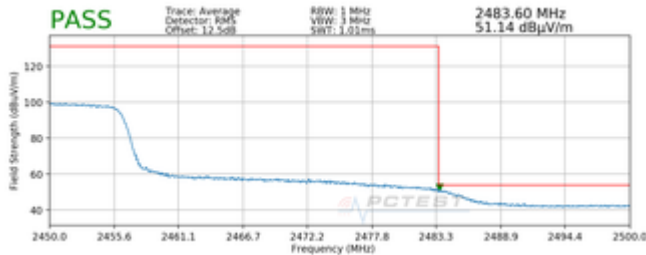


**Plot 7-241. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)**

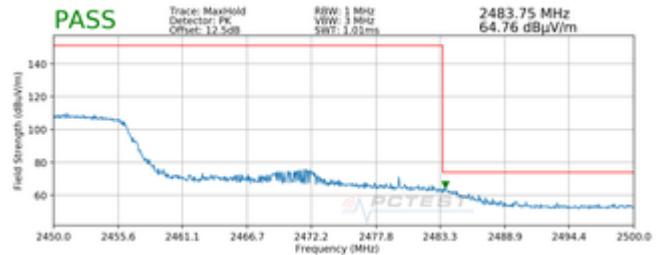


**Plot 7-242. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)**

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



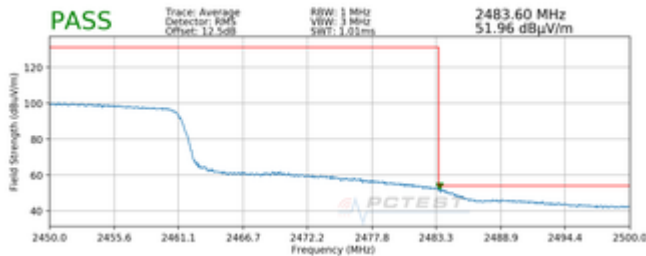
**Plot 7-243. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)**



**Plot 7-244. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 155 of 182

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

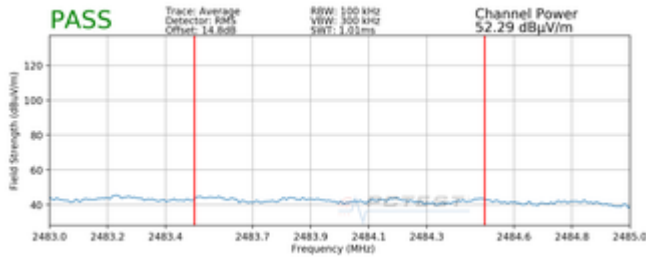


**Plot 7-245. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)**

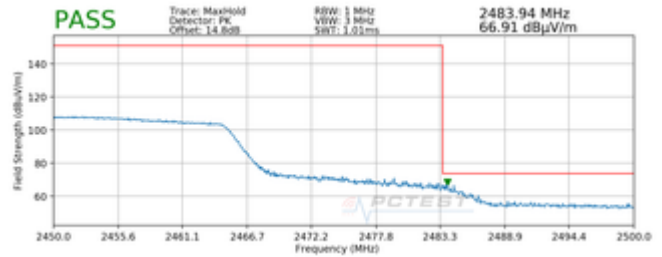


**Plot 7-246. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)**

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



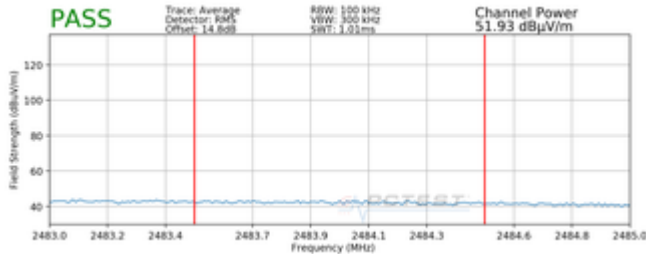
**Plot 7-247. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)**



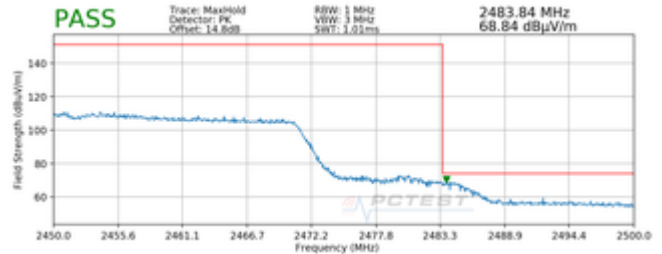
**Plot 7-248. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 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)**



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

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



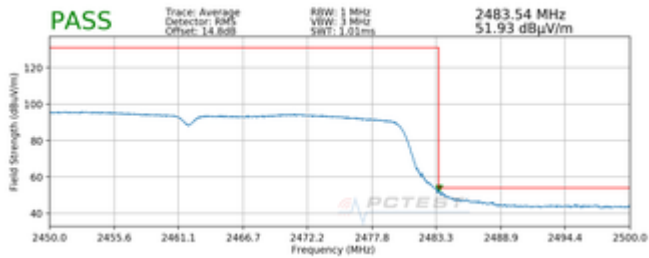
**Plot 7-251. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Average)**



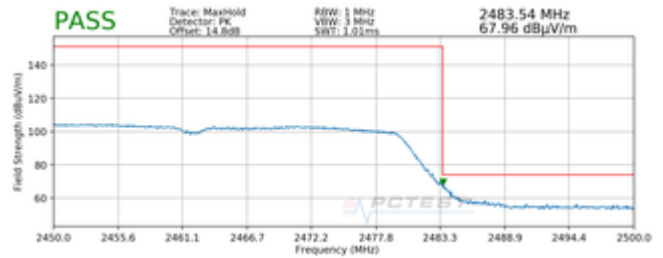
**Plot 7-252. Radiated Restricted Upper Band Edge Measurement SISO SOUTH (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 157 of 182

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)**

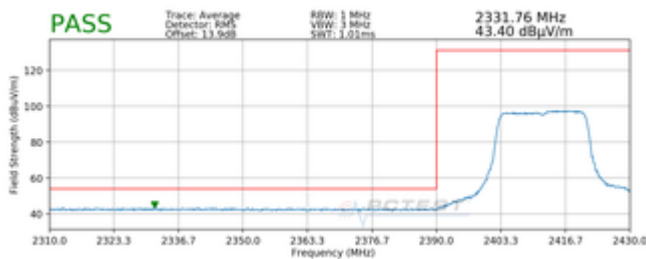
FCC ID: C3K1995 IC: 3048A-1995	 <b>PCTEST</b> Proud to be part of 	<b>MEASUREMENT REPORT (CERTIFICATION)</b>	 <b>Microsoft</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2105060048-12.C3K	<b>Test Dates:</b> 05/20/2021 - 09/02/2021	<b>EUT Type:</b> Portable Handset	Page 158 of 182	

## 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

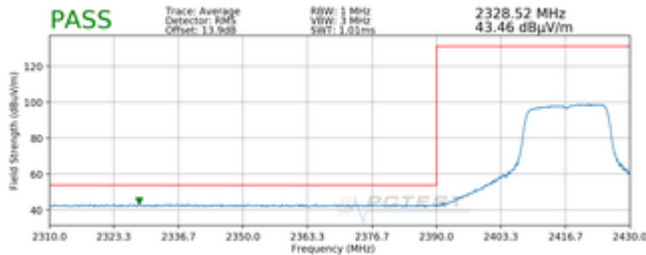


**Plot 7-255. Radiated Restricted Lower Band Edge Measurement SISO NORTH (Average)**

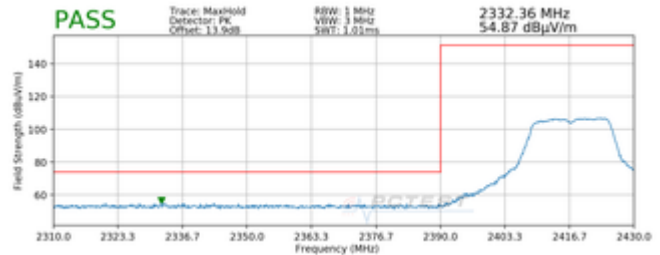


**Plot 7-256. Radiated Restricted Lower Band Edge Measurement SISO NORTH (Peak)**

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



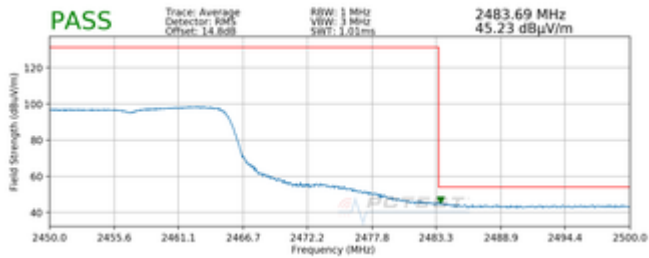
**Plot 7-257. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)**



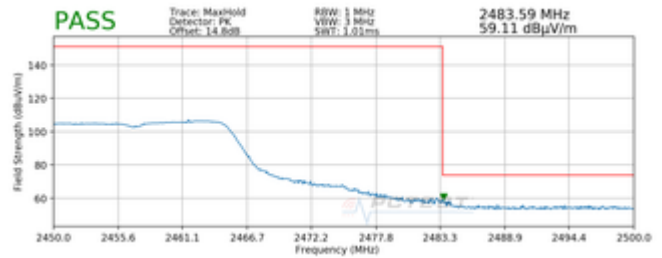
**Plot 7-258. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 159 of 182

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

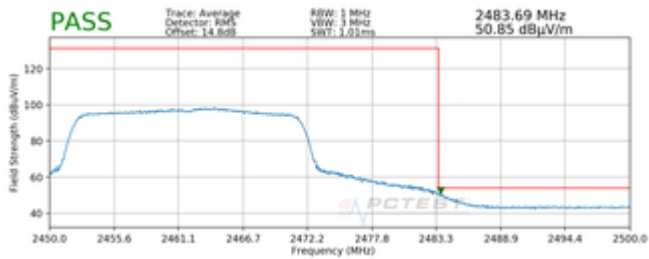


**Plot 7-259. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)**

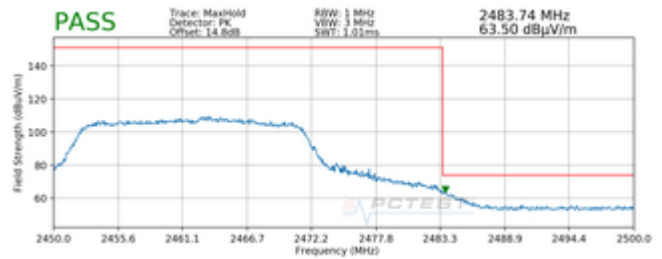


**Plot 7-260. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)**

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



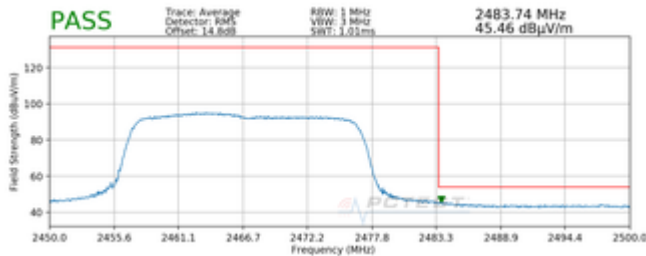
**Plot 7-261. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)**



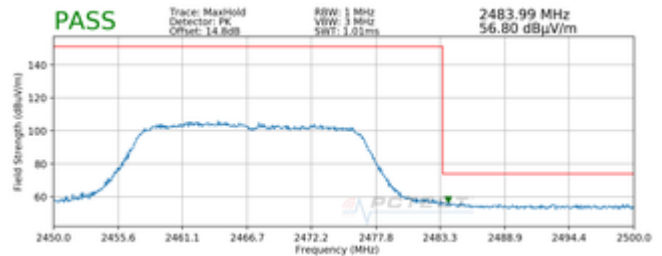
**Plot 7-262. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	 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 160 of 182	

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

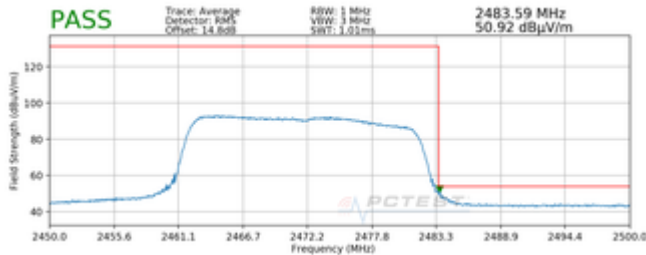


**Plot 7-263. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)**

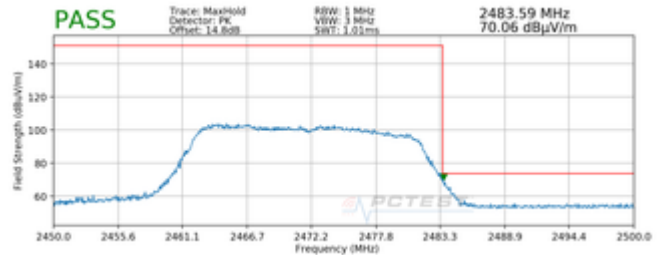


**Plot 7-264. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)**

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



**Plot 7-265. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)**



**Plot 7-266. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)**

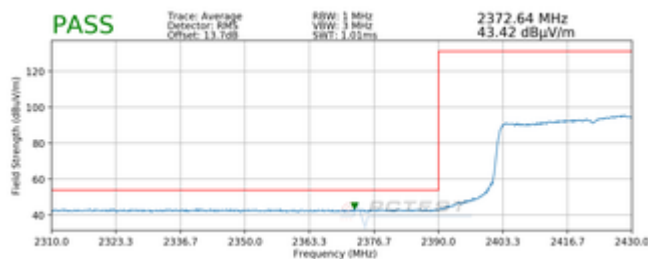
FCC ID: C3K1995 IC: 3048A-1995	 <b>PCTEST</b> Proud to be part of 	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2105060048-12.C3K	<b>Test Dates:</b> 05/20/2021 - 09/02/2021	<b>EUT Type:</b> Portable Handset	Page 161 of 182	



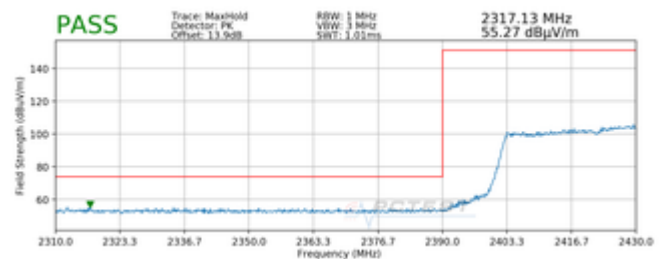
### 7.7.7 SISO NORTH Radiated Restricted Band Edge Measurements 40MHz BW §15.205 §15.209; RSS-Gen [8.9]

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

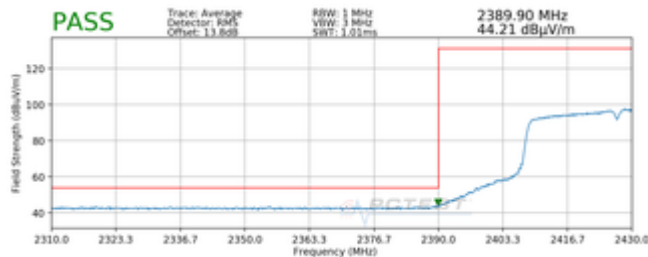


**Plot 7-267. Radiated Restricted Lower Band Edge Measurement SISO NORTH (Average)**

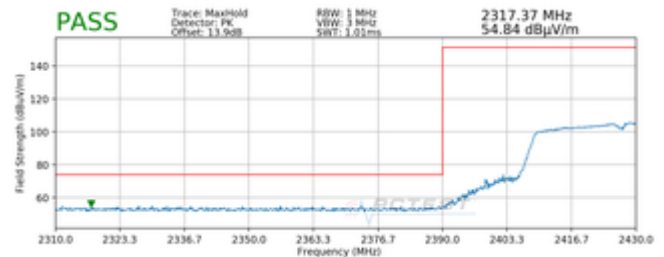


**Plot 7-268. Radiated Restricted Lower Band Edge Measurement SISO NORTH (Peak)**

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



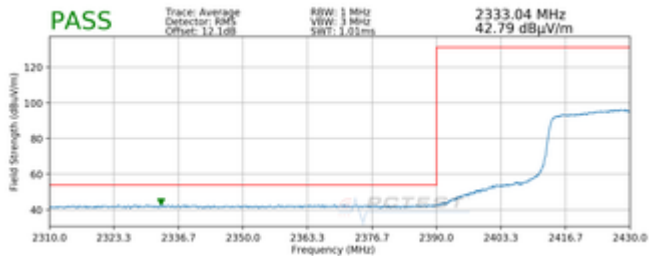
**Plot 7-269. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)**



**Plot 7-270. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 162 of 182

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



**Plot 7-271. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)**



**Plot 7-272. 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: 2437MHz  
Channel: 6



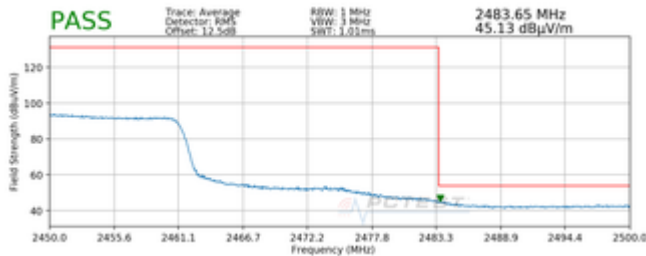
**Plot 7-273. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)**



**Plot 7-274. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 163 of 182

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

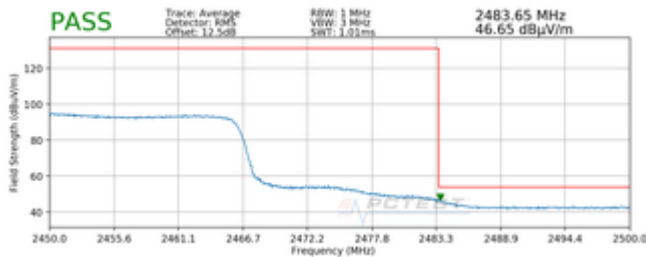


**Plot 7-275. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)**

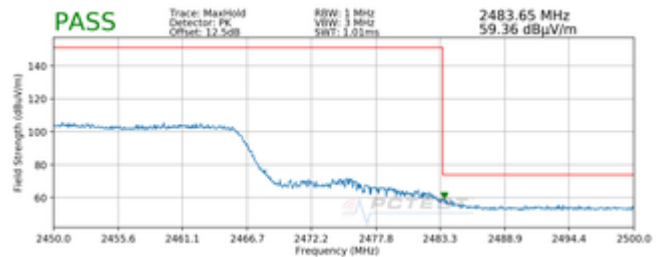


**Plot 7-276. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)**

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



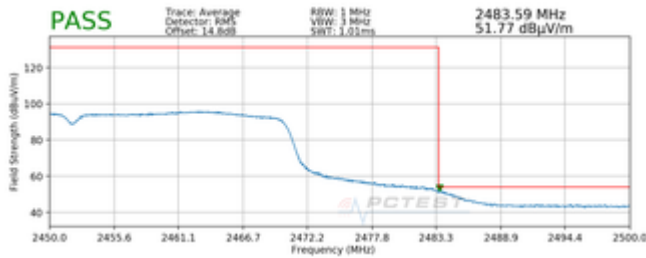
**Plot 7-277. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)**



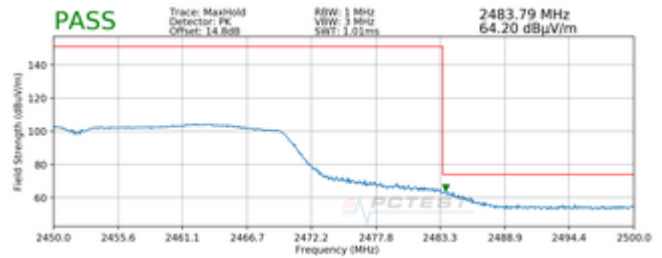
**Plot 7-278. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	 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 164 of 182	

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



**Plot 7-279. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)**



**Plot 7-280. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)**

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



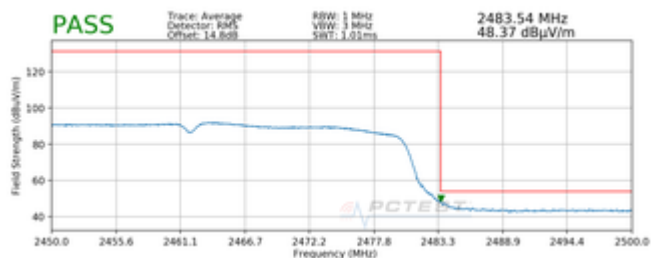
**Plot 7-281. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Average)**



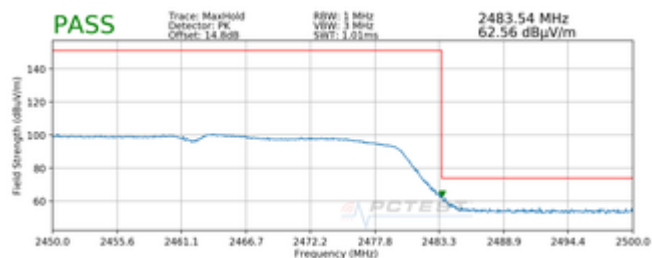
**Plot 7-282. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 165 of 182

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)**



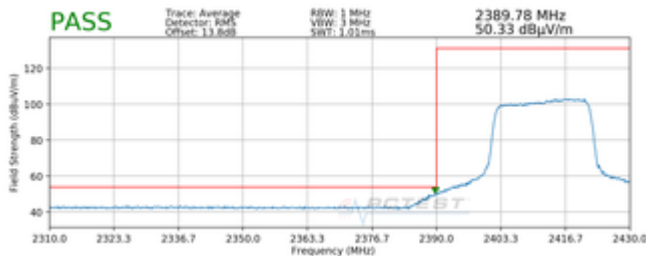
**Plot 7-284. Radiated Restricted Upper Band Edge Measurement SISO NORTH (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	 <b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	 <b>Microsoft</b>	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

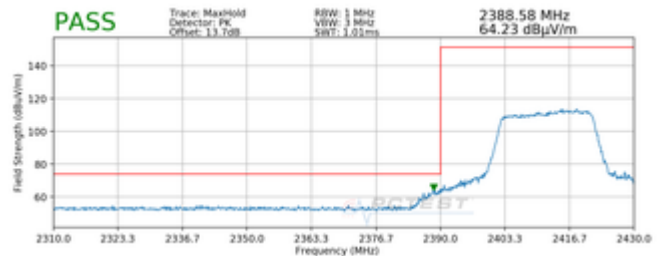
### 7.7.8 MIMO Radiated Restricted Band Edge Measurements 20MHz BW §15.205 §15.209; RSS-Gen [8.9]

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

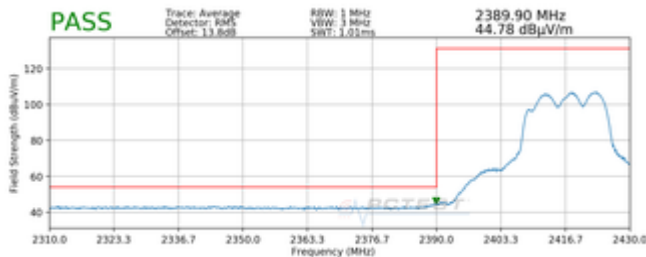


**Plot 7-285. Radiated Restricted Lower Band Edge Measurement MIMO (Average)**

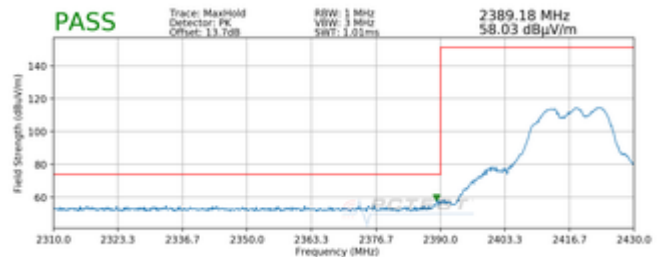


**Plot 7-286. Radiated Restricted Lower Band Edge Measurement MIMO (Peak)**

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



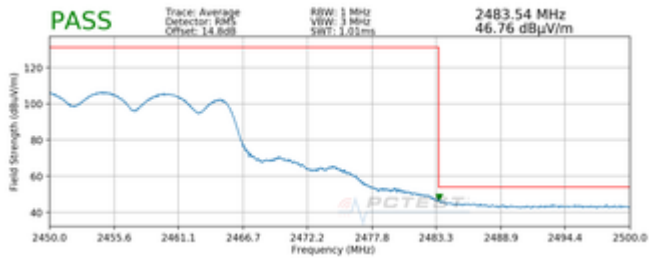
**Plot 7-287. Radiated Restricted Upper Band Edge Measurement MIMO (Average)**



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

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 167 of 182

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

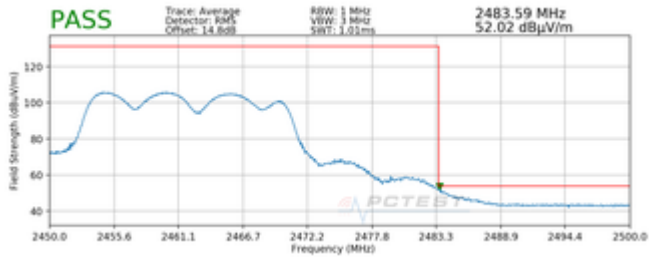


**Plot 7-289. Radiated Restricted Upper Band Edge Measurement MIMO (Average)**



**Plot 7-290. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)**

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



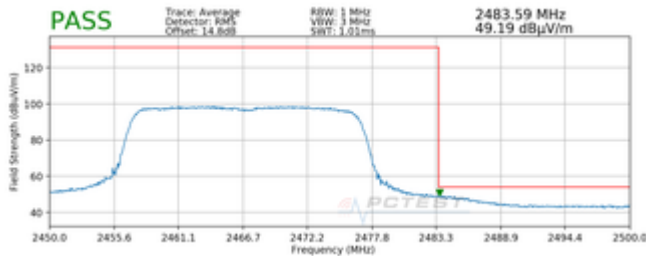
**Plot 7-291. Radiated Restricted Upper Band Edge Measurement MIMO (Average)**



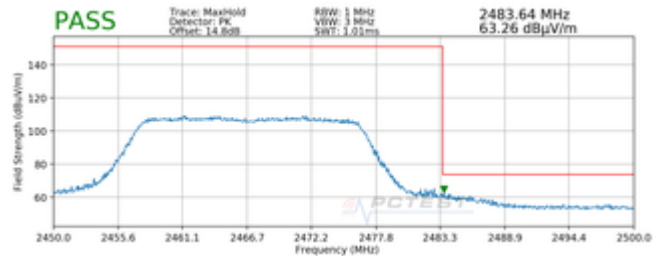
**Plot 7-292. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 168 of 182

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

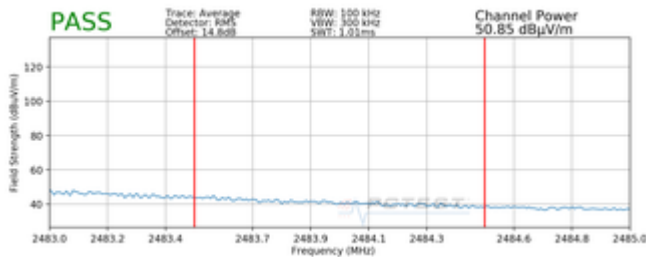


**Plot 7-293. Radiated Restricted Upper Band Edge Measurement MIMO (Average)**

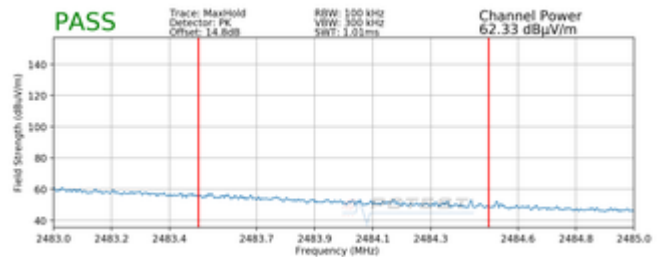


**Plot 7-294. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)**

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)**

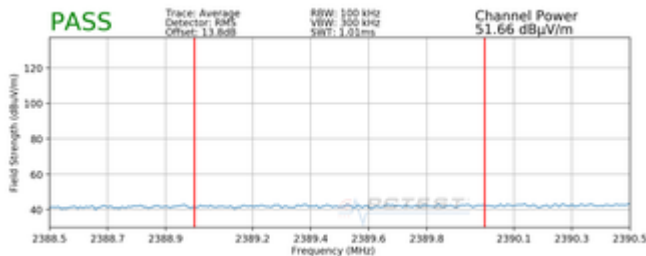
FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Microsoft	Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset		Page 169 of 182



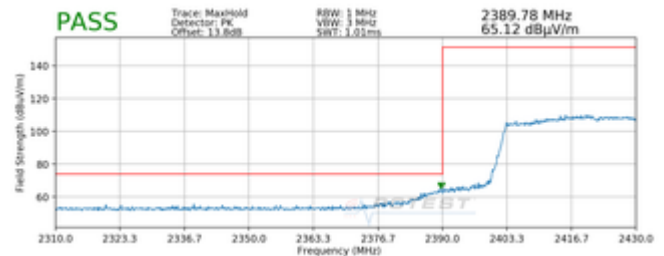
### 7.7.9 MIMO Radiated Restricted Band Edge Measurements 40MHz BW §15.205 §15.209; RSS-Gen [8.9]

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

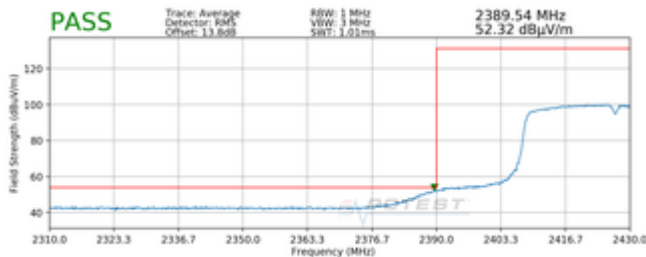


**Plot 7-297. Radiated Restricted Lower Band Edge Measurement MIMO (Average)**

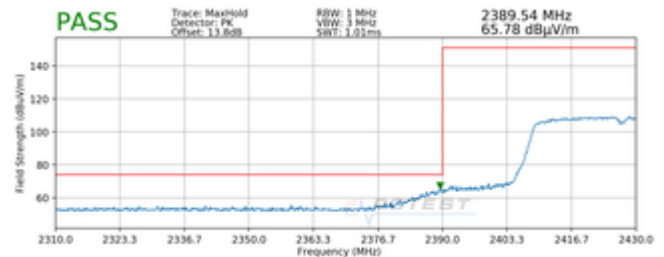


**Plot 7-298. Radiated Restricted Lower Band Edge Measurement MIMO (Peak)**

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



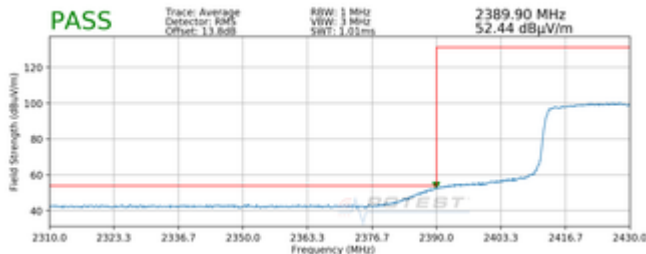
**Plot 7-299. Radiated Restricted Upper Band Edge Measurement MIMO (Average)**



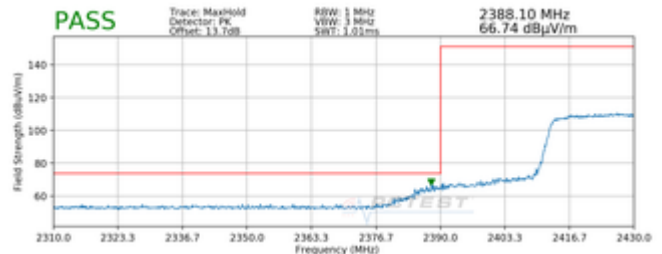
**Plot 7-300. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 170 of 182

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

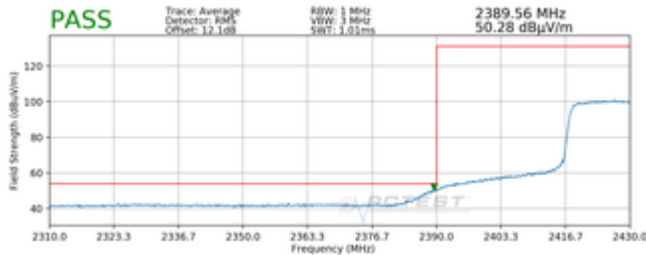


**Plot 7-301. Radiated Restricted Upper Band Edge Measurement MIMO (Average)**

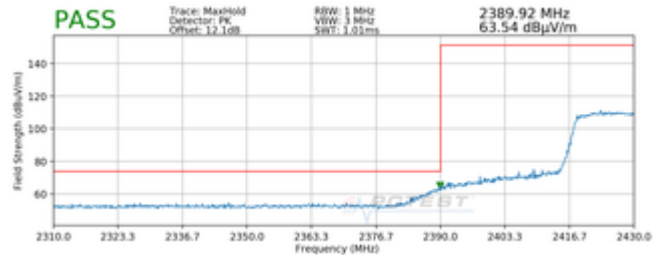


**Plot 7-302. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)**

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



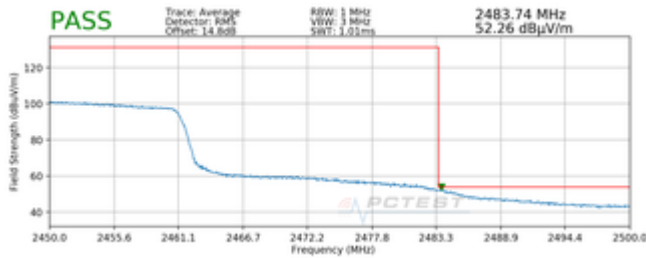
**Plot 7-303. Radiated Restricted Upper Band Edge Measurement MIMO (Average)**



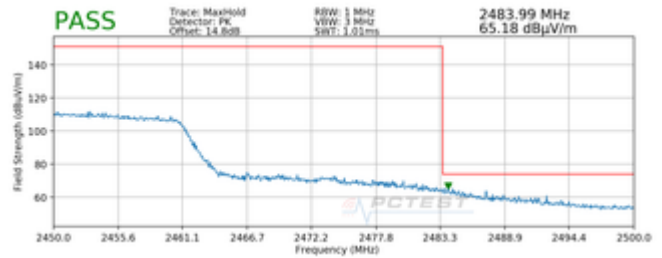
**Plot 7-304. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 171 of 182

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

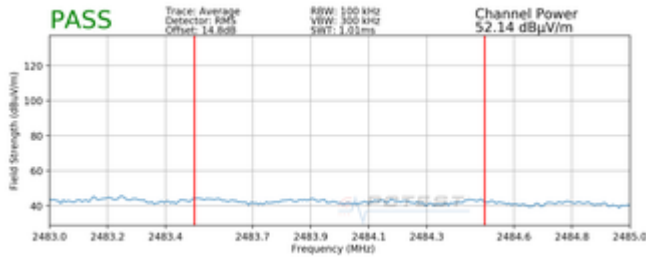


**Plot 7-305. Radiated Restricted Upper Band Edge Measurement MIMO (Average)**

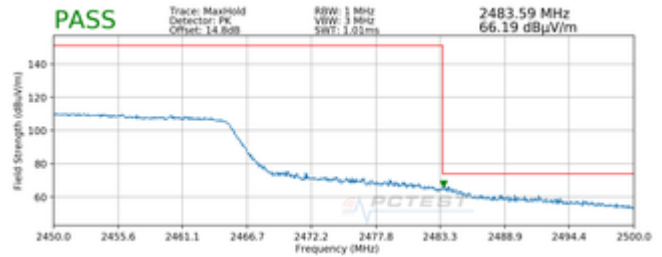


**Plot 7-306. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)**

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



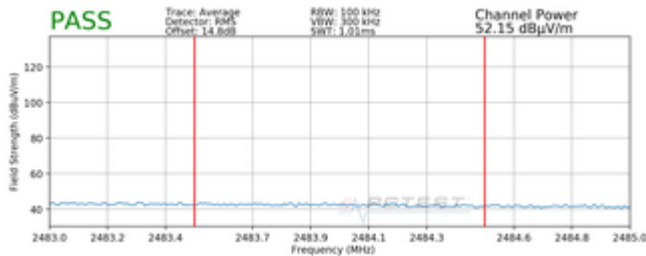
**Plot 7-307. Radiated Restricted Upper Band Edge Measurement MIMO (Average)**



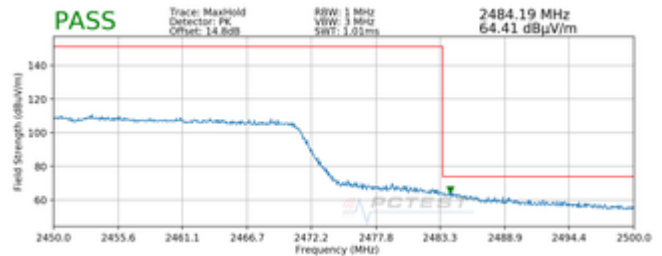
**Plot 7-308. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 172 of 182

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

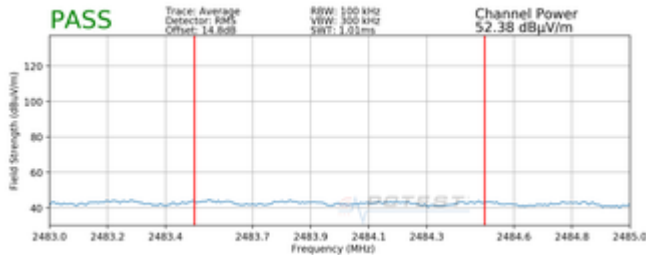


**Plot 7-309. Radiated Restricted Upper Band Edge Measurement MIMO (Average)**

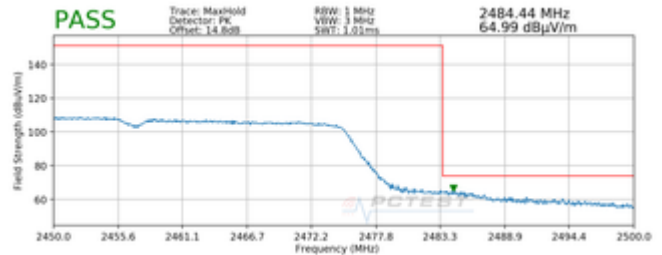


**Plot 7-310. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)**

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



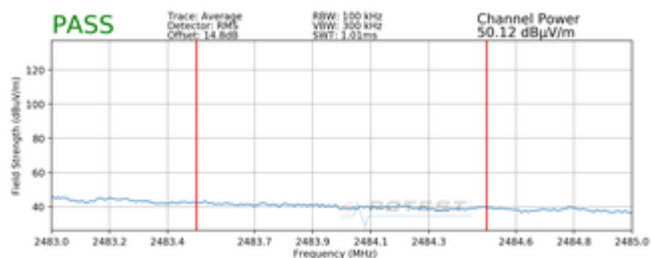
**Plot 7-311. Radiated Restricted Upper Band Edge Measurement MIMO (Average)**



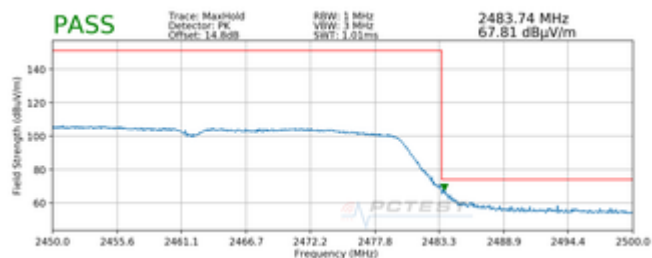
**Plot 7-312. Radiated Restricted Upper Band Edge Measurement MIMO (Peak)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 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)**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 174 of 182

## 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 [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 7-27. Radiated Limits**

### Test Procedures Used

ANSI C63.10-2013

### Test Settings

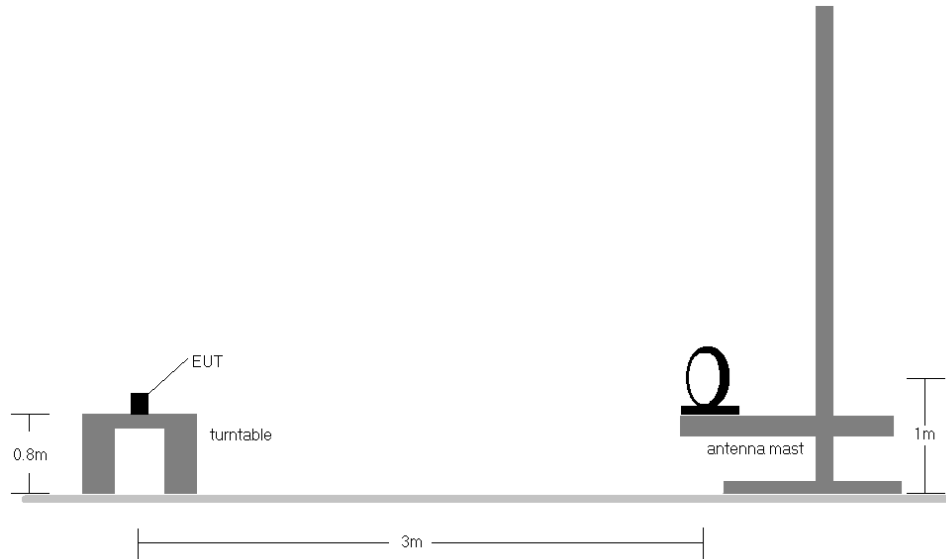
#### Quasi-Peak Field Strength Measurements

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

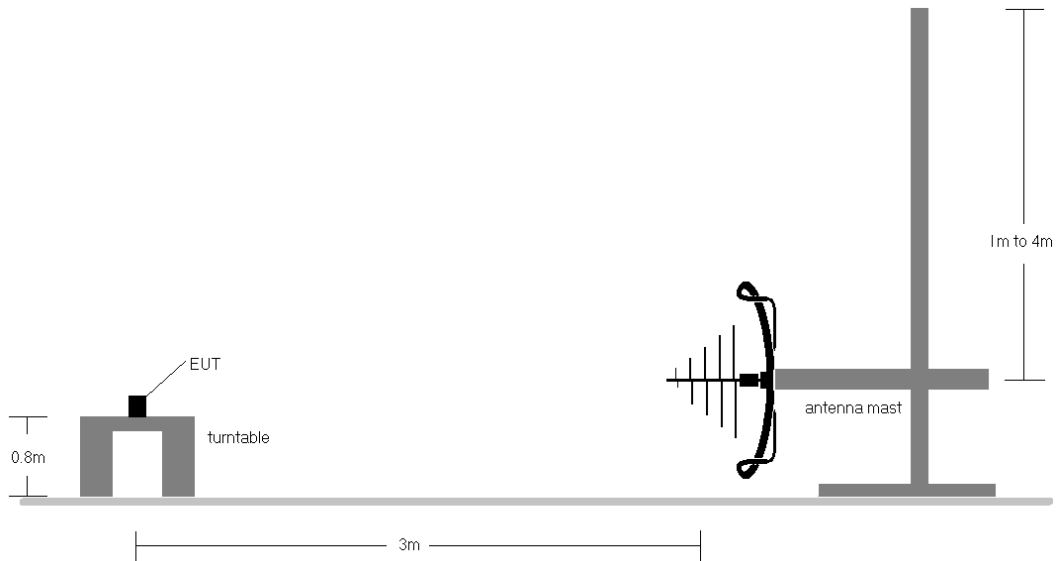
FCC ID: C3K1995 IC: 3048A-1995	 <b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	 <b>Microsoft</b>	Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset	Page 175 of 182	

## 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**

FCC ID: C3K1995 IC: 3048A-1995	 <b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	 <b>Microsoft</b>	Approved by: Technical Manager
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

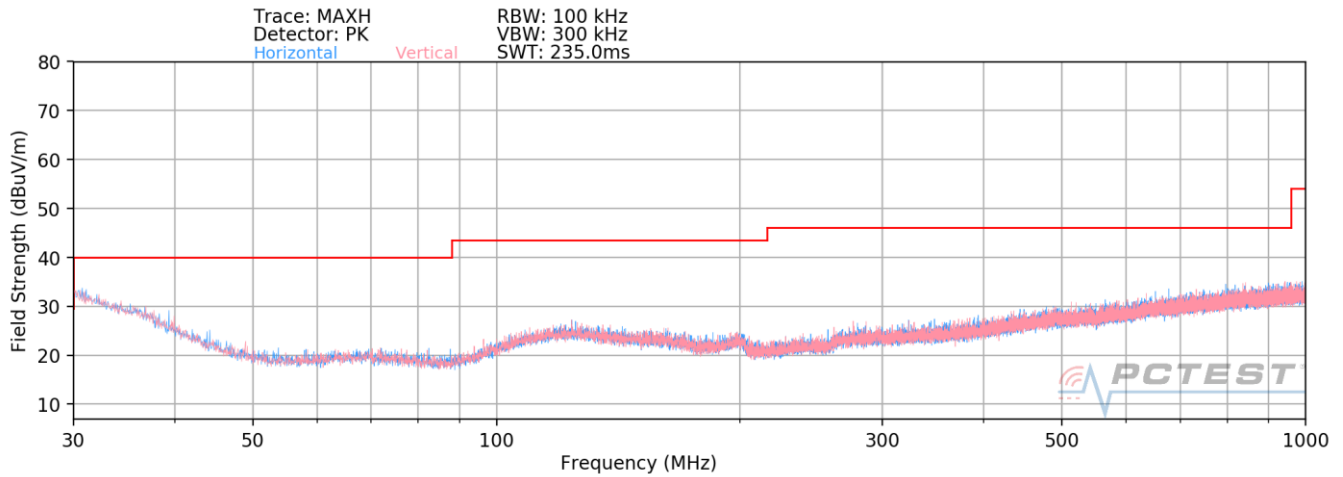
1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen(8.10) are below the limit shown in Table 7-27.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
3. This unit 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.

<b>FCC ID:</b> C3K1995 <b>IC:</b> 3048A-1995		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2105060048-12.C3K	<b>Test Dates:</b> 05/20/2021 - 09/02/2021	<b>EUT Type:</b> Portable Handset	Page 177 of 182	

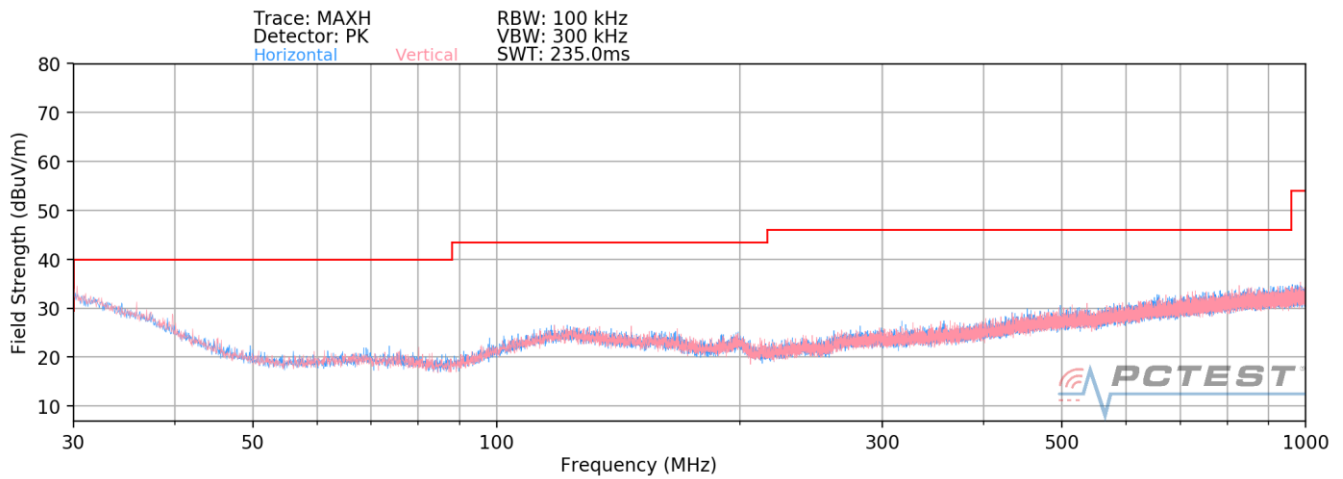


## MIMO Radiated Spurious Emissions Measurements (Below 1GHz)

**§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°**

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 178 of 182

## 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 (dBμV)	
	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

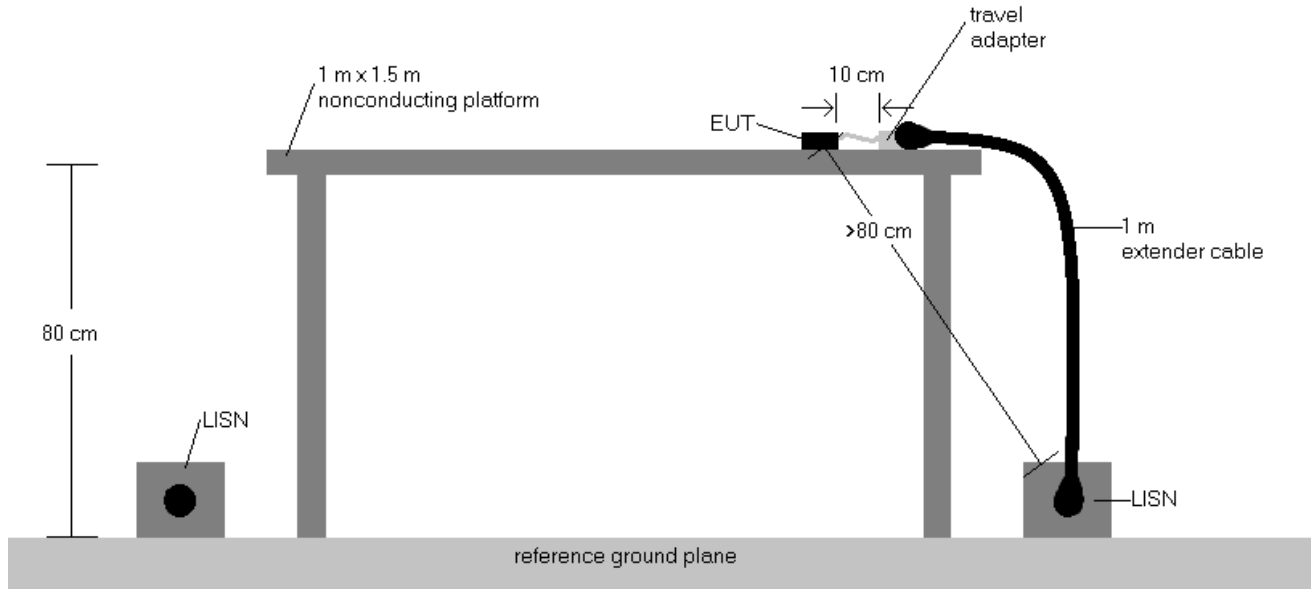
##### Average Field Strength Measurements

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

FCC ID: C3K1995 IC: 3048A-1995	 <b>PCTEST</b> Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	 <b>Microsoft</b>	Approved by: Technical Manager
Test Report S/N: 1M2105060048-12.C3K	Test Dates: 05/20/2021 - 09/02/2021	EUT Type: Portable Handset		Page 179 of 182

## Test Setup

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



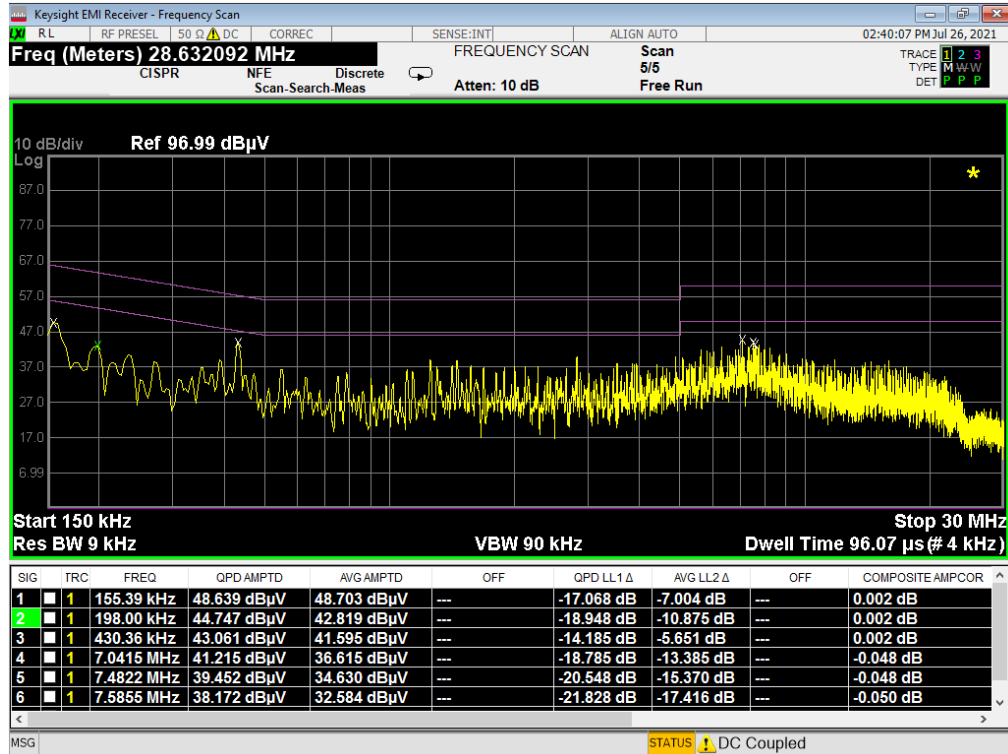
**Figure 7-9. Test Instrument & Measurement Setup**

## Test Notes

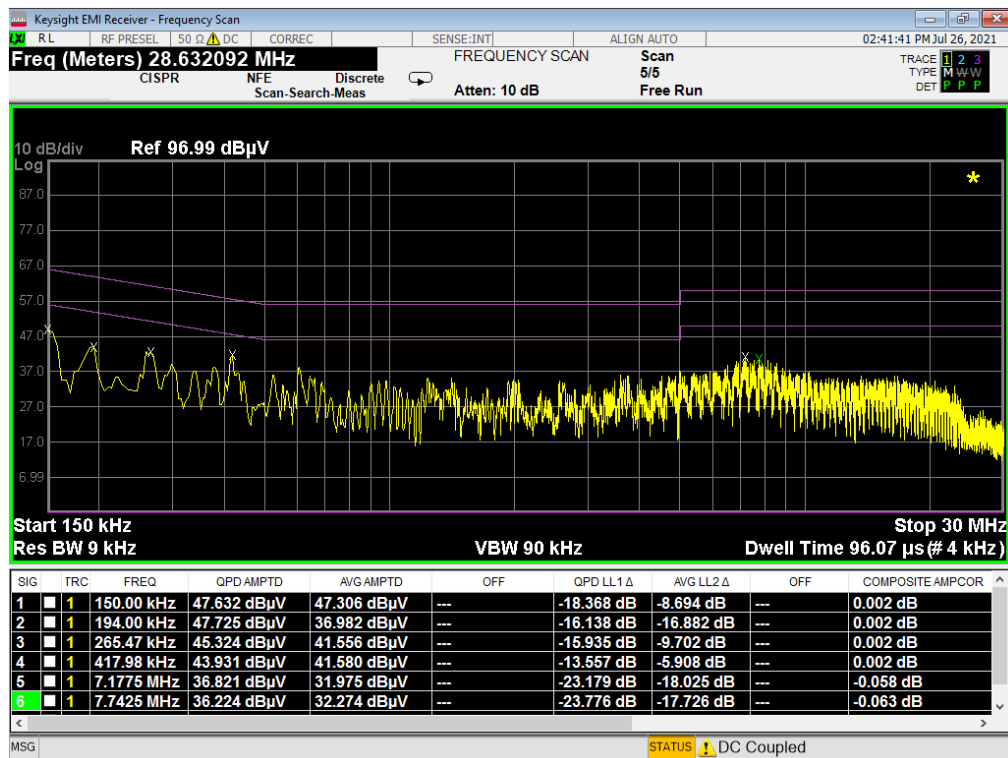
1. All modes of operation were investigated and the worst-case emissions are reported using mid channel. The emissions found were not affected by the choice of channel used during testing.
2. The limit for an intentional radiator from 150kHz to 30MHz are specified in Part 15.207 and RSS-Gen(8.8).
3.  $\text{Corr. (dB)} = \text{Cable loss (dB)} + \text{LISN insertion factor (dB)}$
4.  $\text{QP/AV Level (dB}\mu\text{V)} = \text{QP/AV Analyzer/Receiver Level (dB}\mu\text{V)} + \text{Corr. (dB)}$
5.  $\text{Margin (dB)} = \text{QP/AV Limit (dB}\mu\text{V)} - \text{QP/AV Level (dB}\mu\text{V)}$
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.

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 180 of 182



Plot 7-317. Line Conducted Plot with 802.11b (L1)



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

FCC ID: C3K1995 IC: 3048A-1995	<b>PCTEST</b> Proud to be part of element	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 181 of 182

## 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.

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