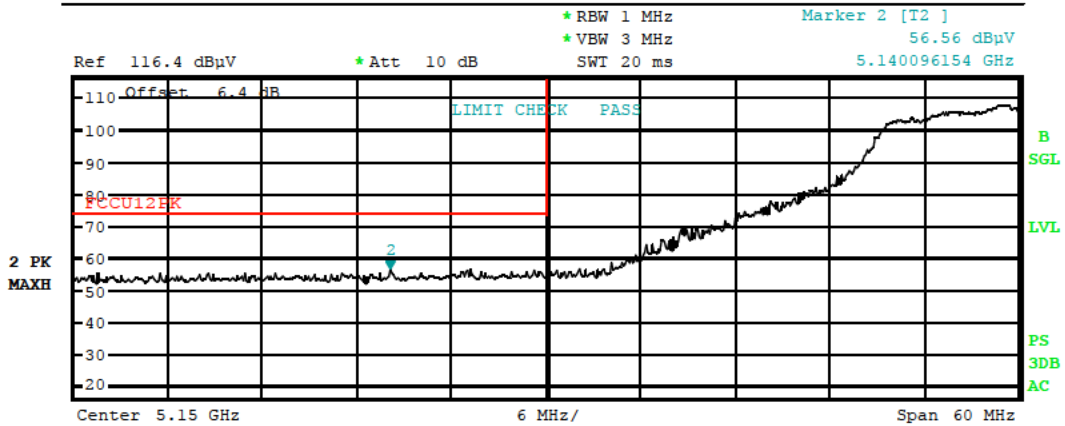
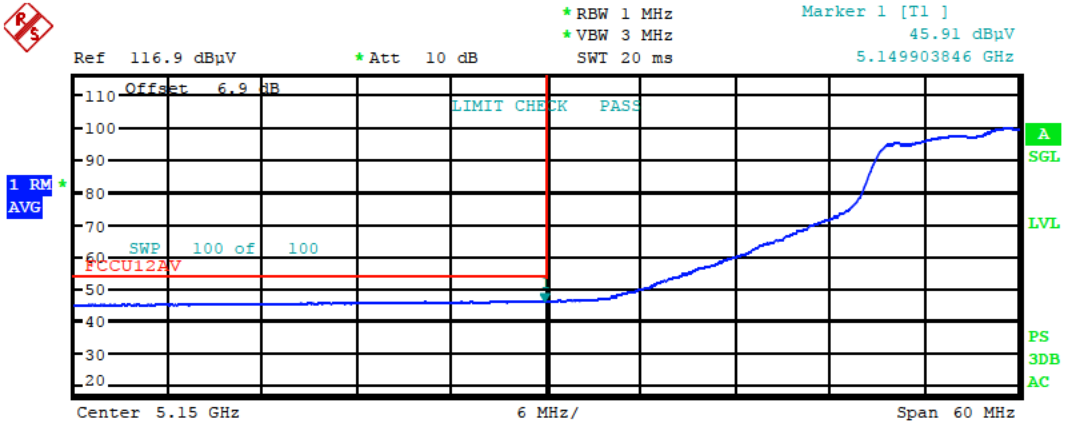


7.7.7 Antenna-2 Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5180MHz
 Channel: 36



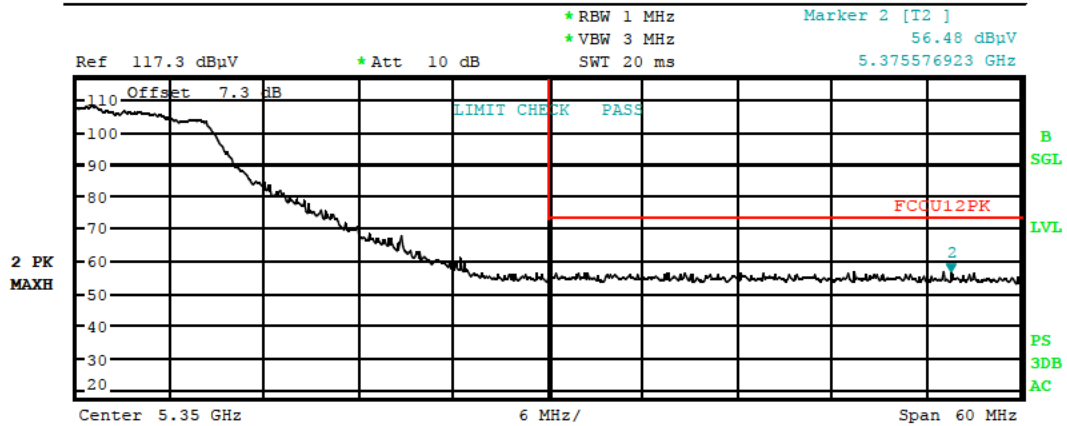
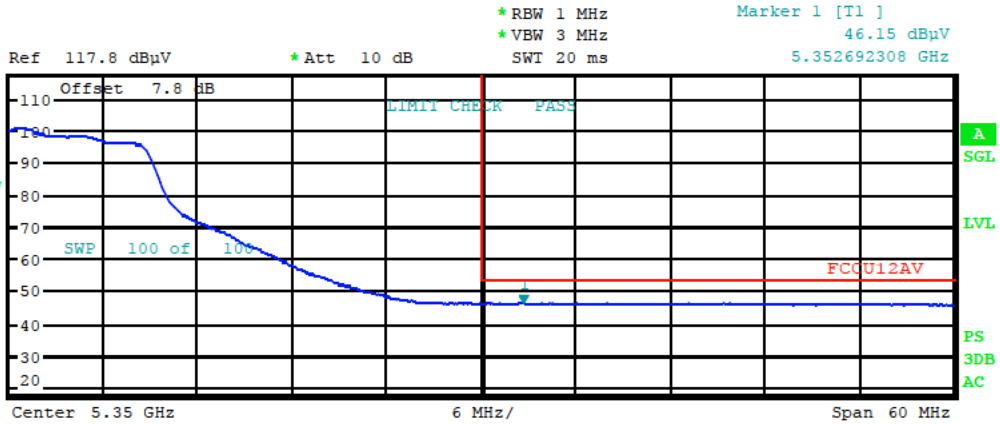
Date: 31.JUL.2017 20:53:15

Plot 7-49. Radiated Restricted Lower Band Edge Plot (Average & Peak – UNII Band 1)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 67 of 114	

Antenna-2 Radiated Band Edge Measurements (20MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64



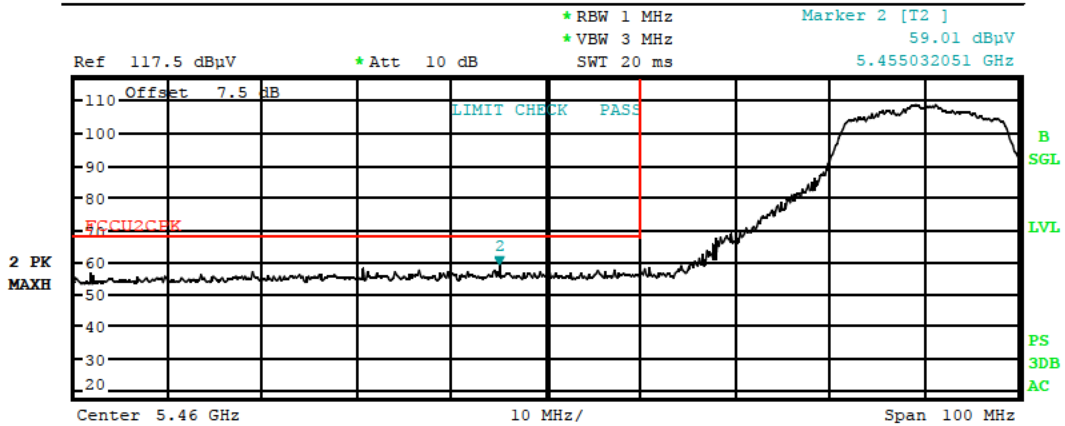
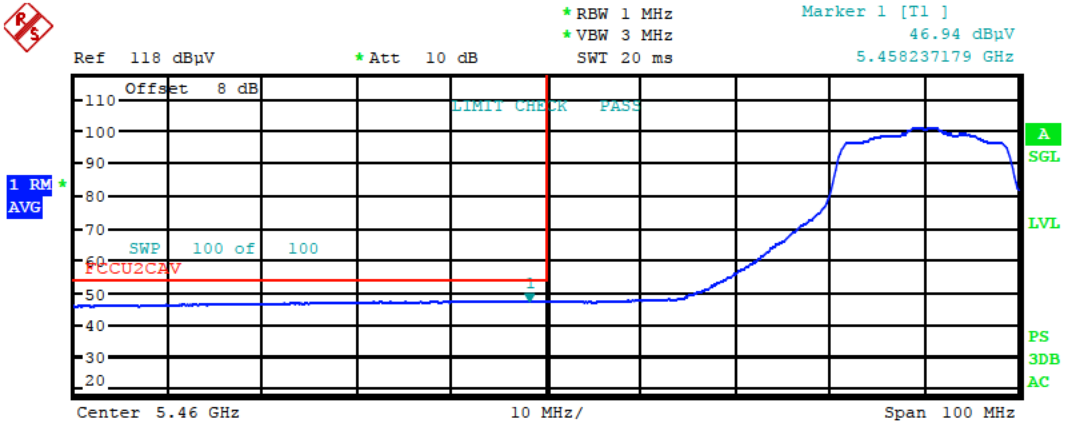
Date: 31.JUL.2017 20:57:19

Plot 7-50. Radiated Restricted Upper Band Edge Plot (Average & Peak – UNII Band 2A)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 68 of 114	

Antenna-2 Radiated Band Edge Measurements (20MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100



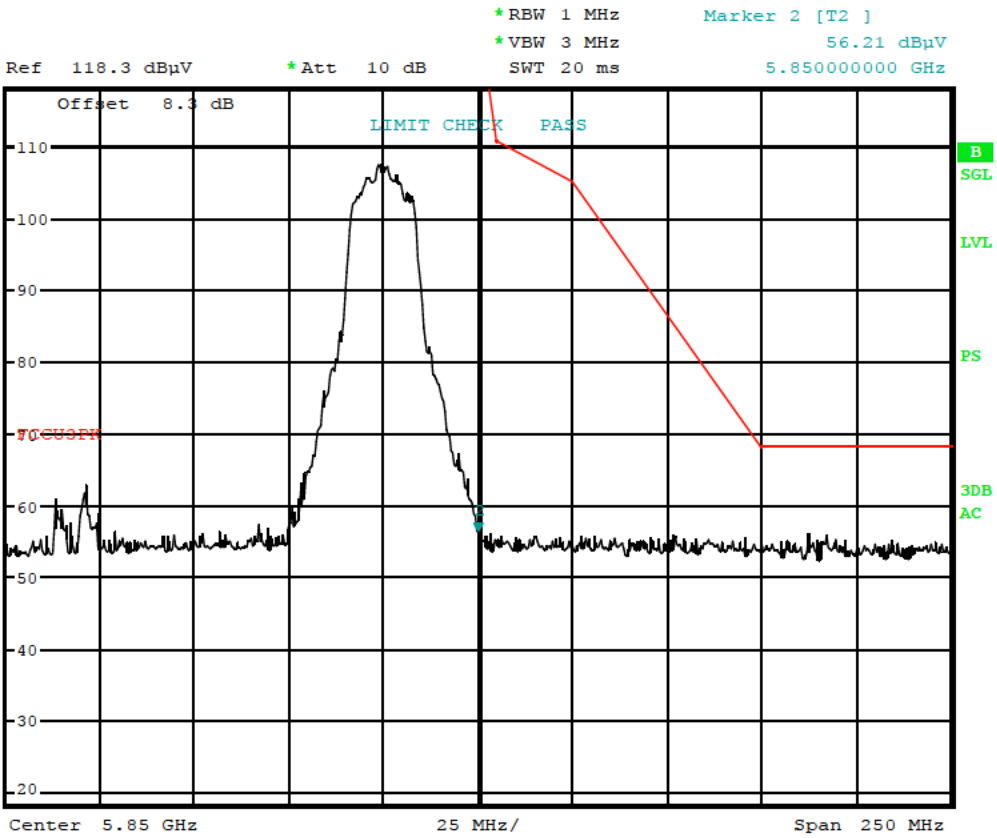
Date: 31.JUL.2017 21:01:25

Plot 7-51. Radiated Restricted Lower Band Edge Plot (Average & Peak – UNII Band 2C)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 69 of 114	

Antenna-2 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165



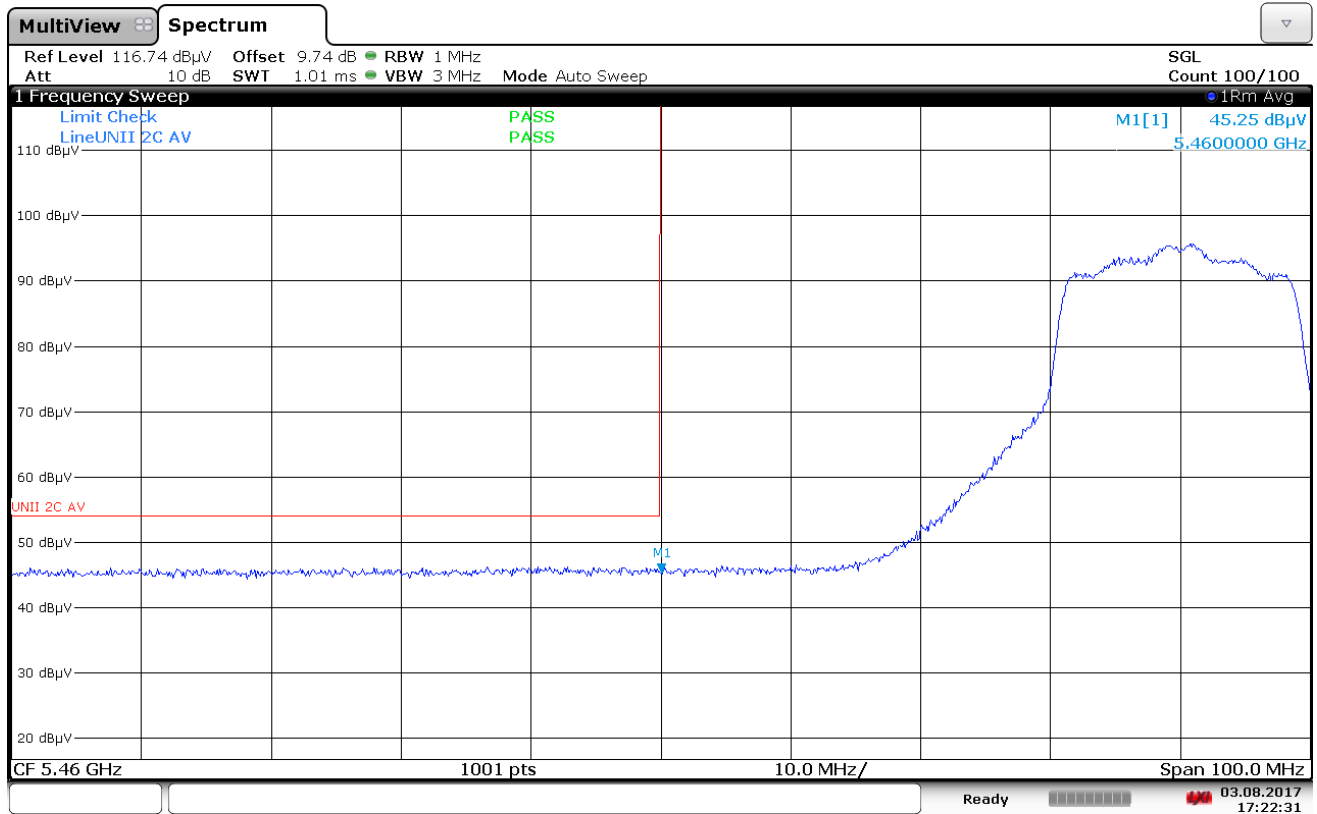
Date: 31.JUL.2017 21:10:32

Plot 7-52. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 70 of 114

Antenna-2 WCP Radiated Band Edge Measurements (20MHz BW) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100



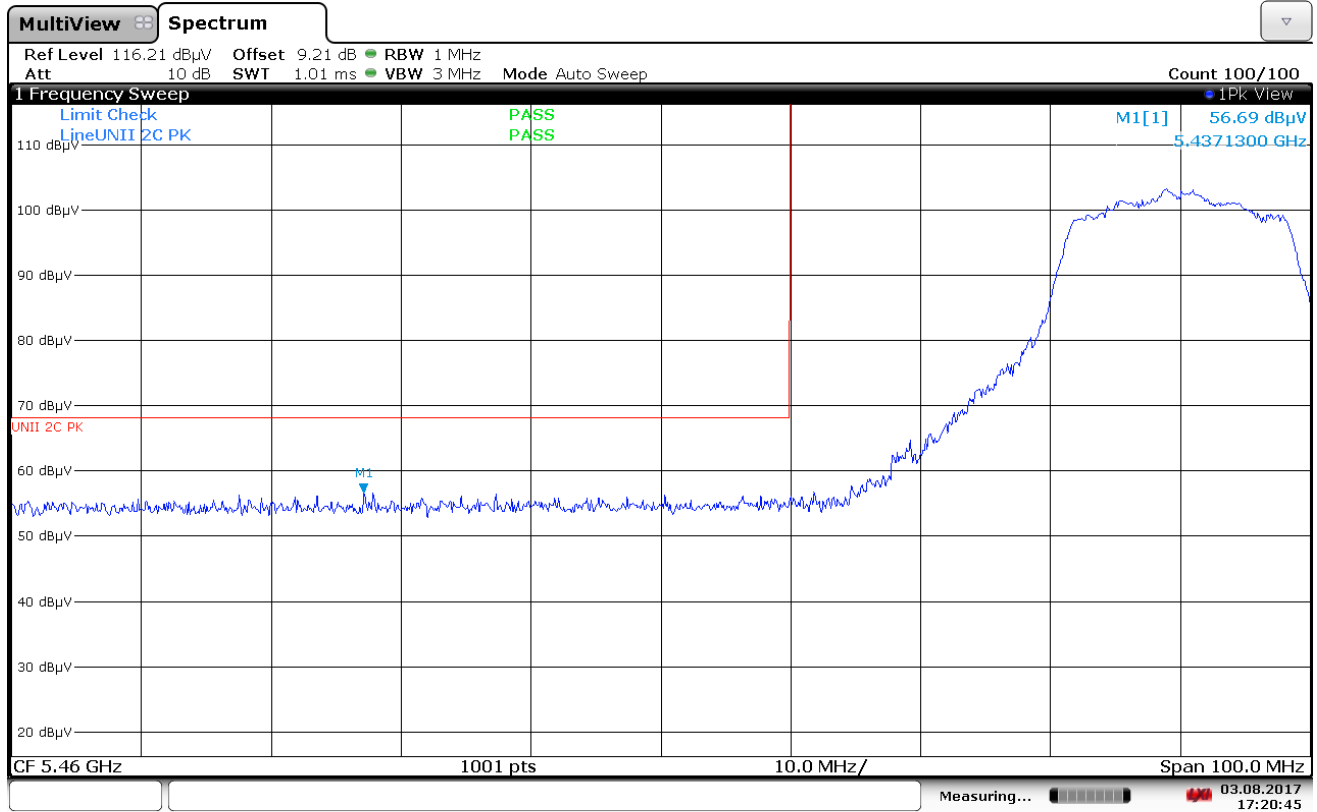
17:22:31 03.08.2017

Plot 7-53. Radiated Restricted Band Edge Plot with WCP

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 71 of 114	

Antenna-2 WCP Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



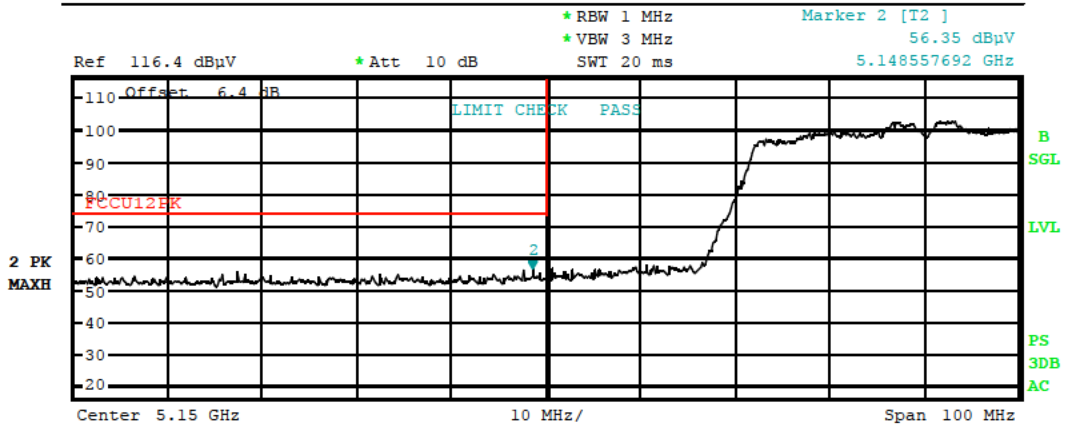
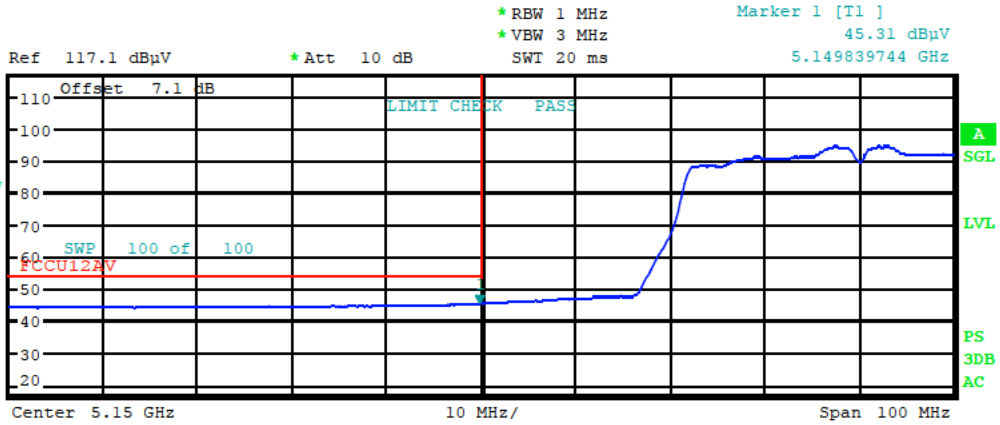
17:20:45 03.08.2017

Plot 7-54. Radiated Restricted Band Edge Plot with WCP

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 72 of 114	

7.7.8 Antenna-2 Radiated Band Edge Measurements (40MHz BW) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5190MHz
 Channel: 38



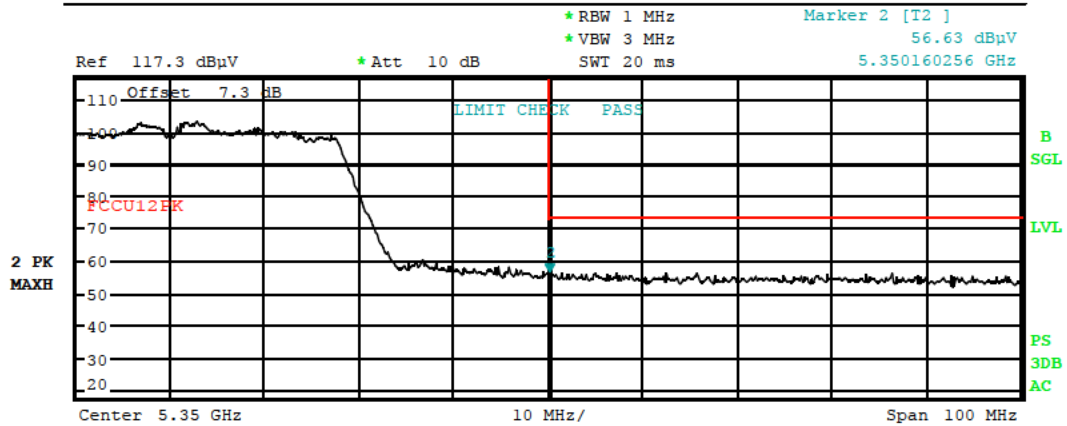
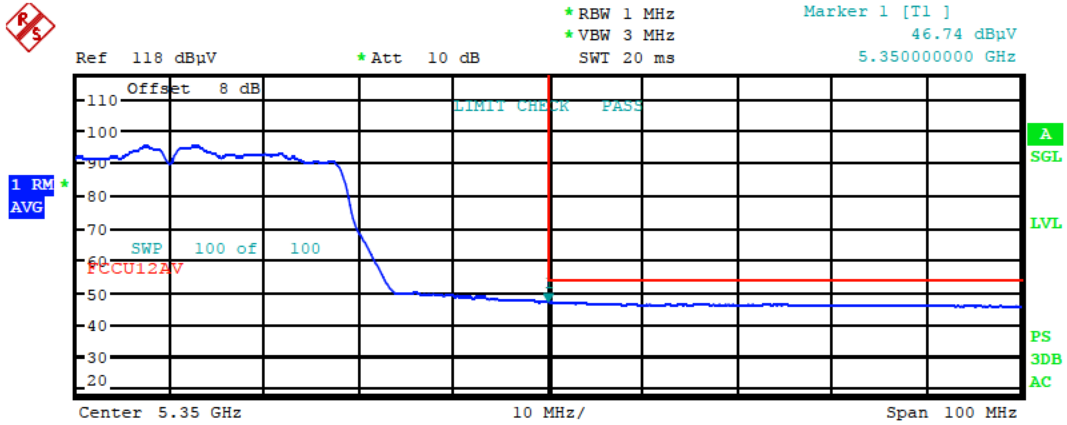
Date: 31.JUL.2017 21:36:25

Plot 7-55. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 73 of 114	

Antenna-2 Radiated Band Edge Measurements (40MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5310MHz
 Channel: 62



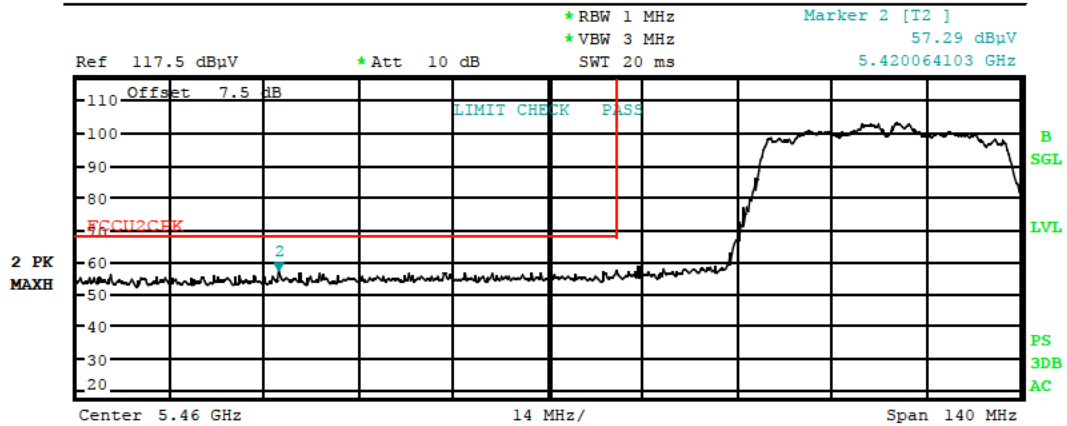
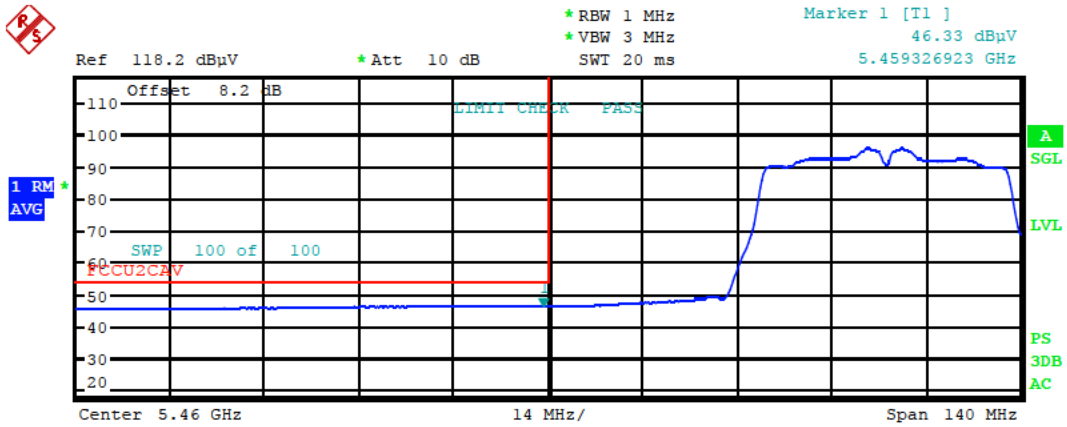
Date: 31.JUL.2017 21:42:59

Plot 7-56. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 74 of 114

Antenna-2 Radiated Band Edge Measurements (40MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5510MHz
 Channel: 102



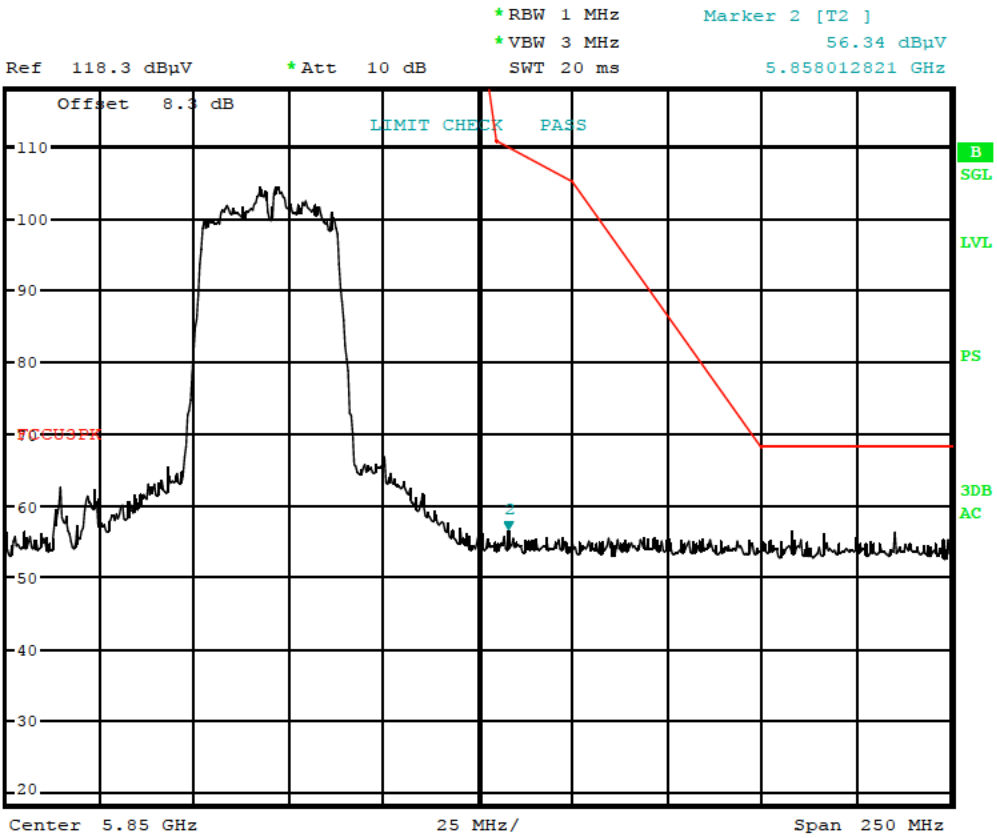
Date: 31.JUL.2017 21:49:02

Plot 7-57. Radiated Restricted Lower Band Edge Plot (Average & Peak – UNII Band 2C)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 75 of 114

Antenna-2 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5795MHz
 Channel: 159



Date: 31.JUL.2017 21:52:57

Plot 7-58. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 76 of 114	

Antenna-2 WCP Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

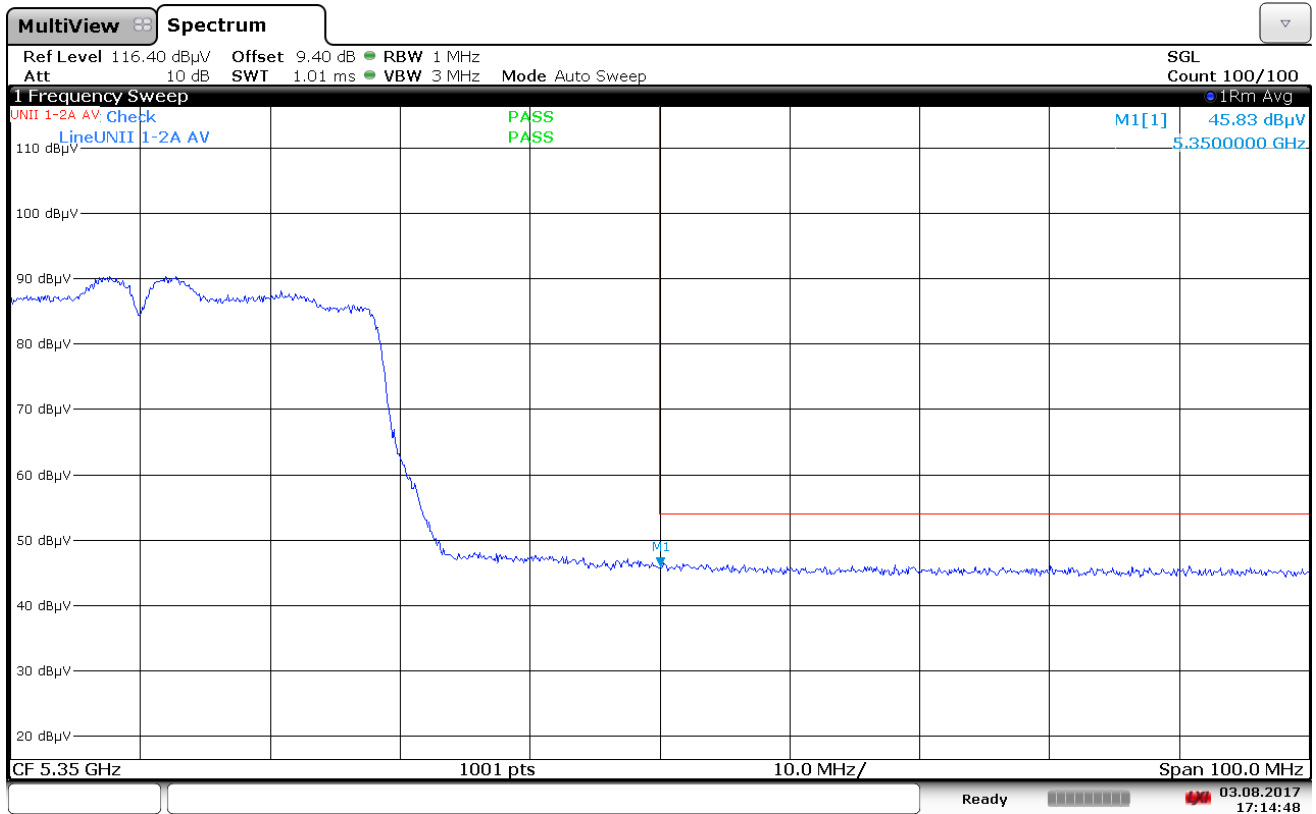
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5350MHz

Channel: 62



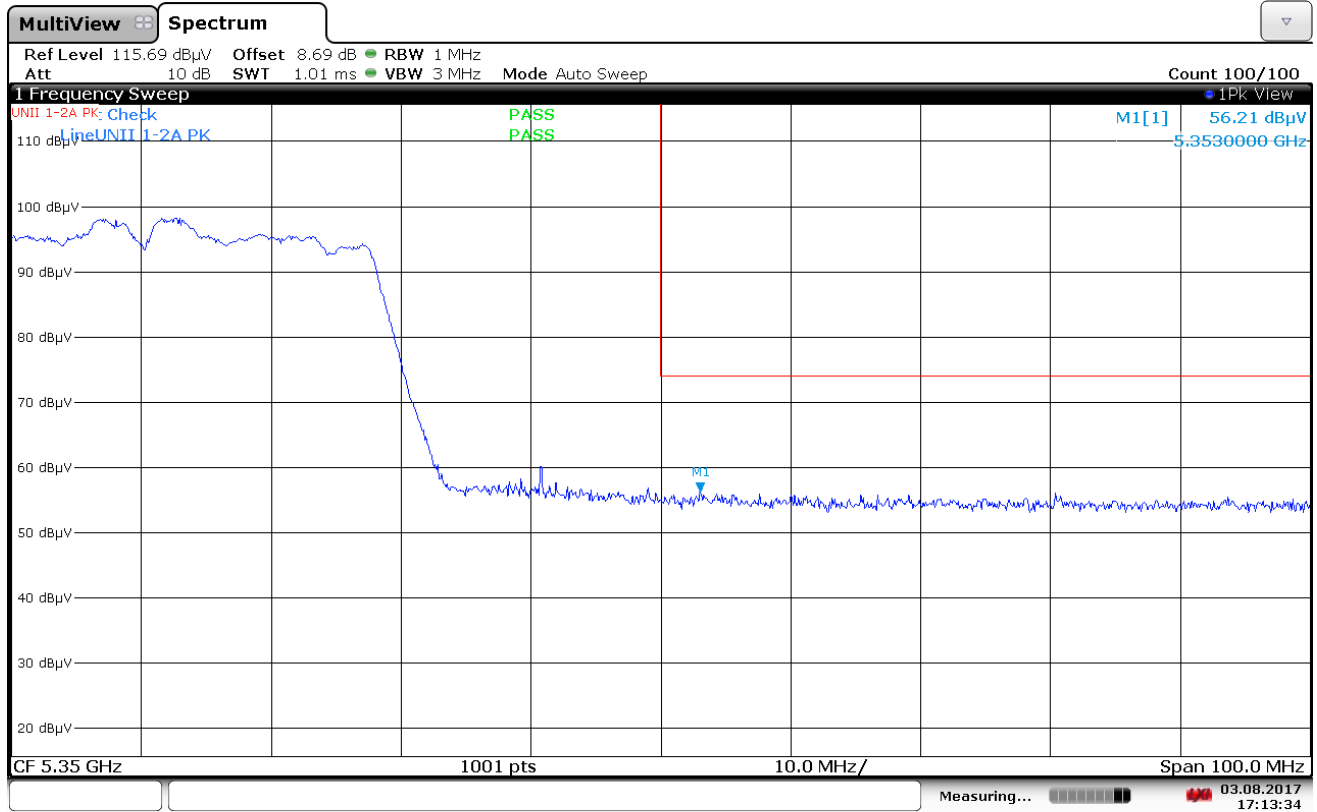
17:14:49 03.08.2017

Plot 7-59. Radiated Restricted Band Edge Plot with WCP

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 77 of 114	

Antenna-2 WCP Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



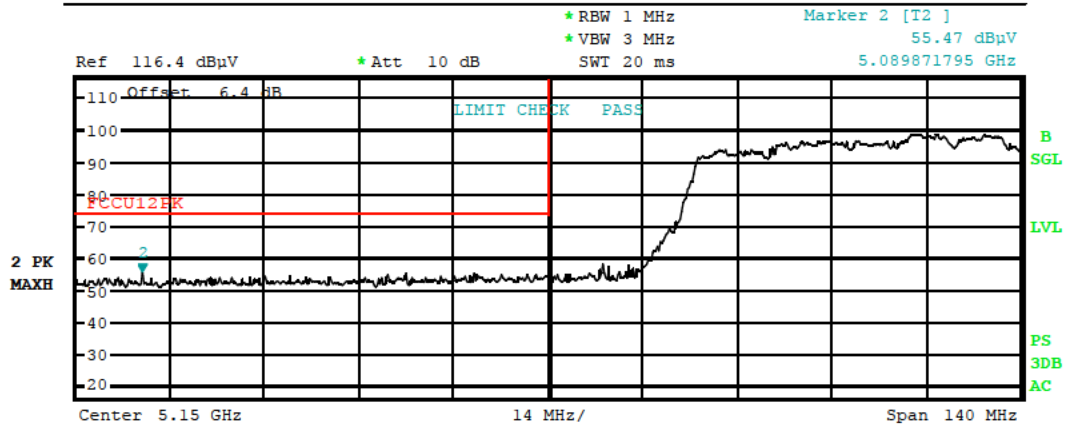
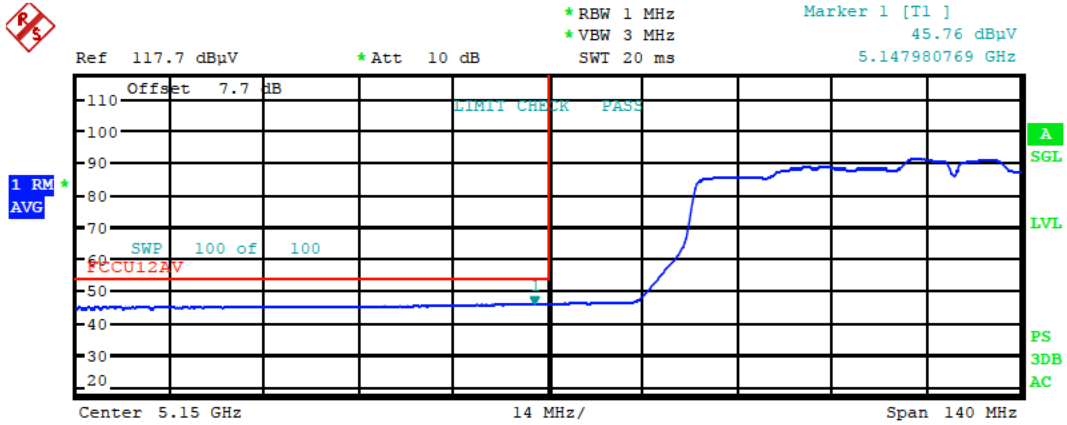
17:13:35 03.08.2017

Plot 7-60. Radiated Restricted Band Edge Plot with WCP

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 78 of 114	

7.7.9 Antenna-2 Radiated Band Edge Measurements (80MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5210MHz
 Channel: 42



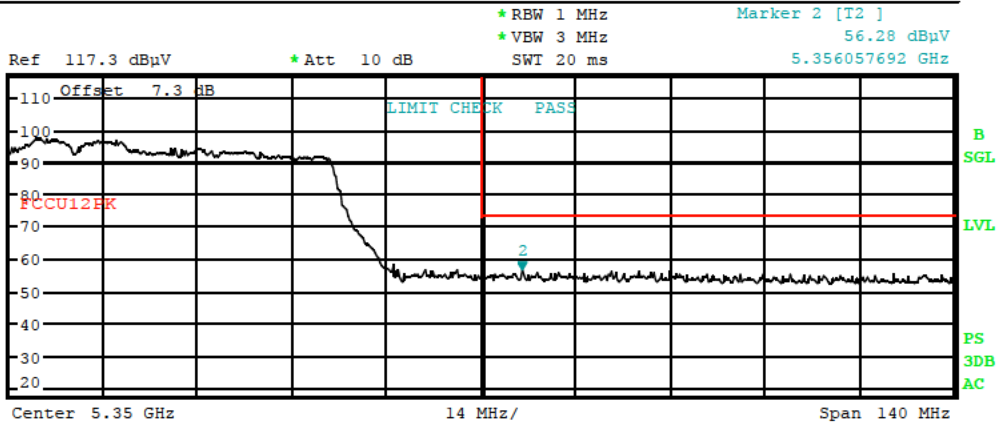
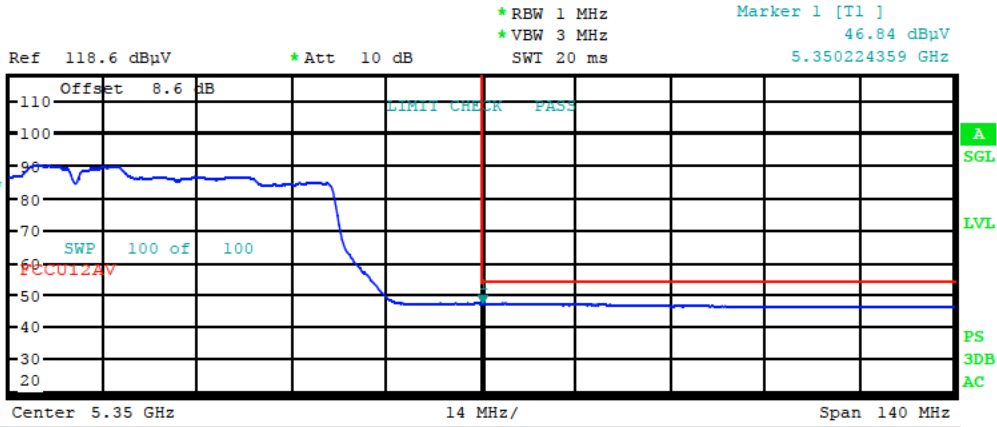
Date: 31.JUL.2017 22:07:38

Plot 7-61. Radiated Restricted Lower Band Edge Plot (Average & Peak – UNII Band 1)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 79 of 114

Antenna-2 Radiated Band Edge Measurements (80MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5290MHz
 Channel: 58



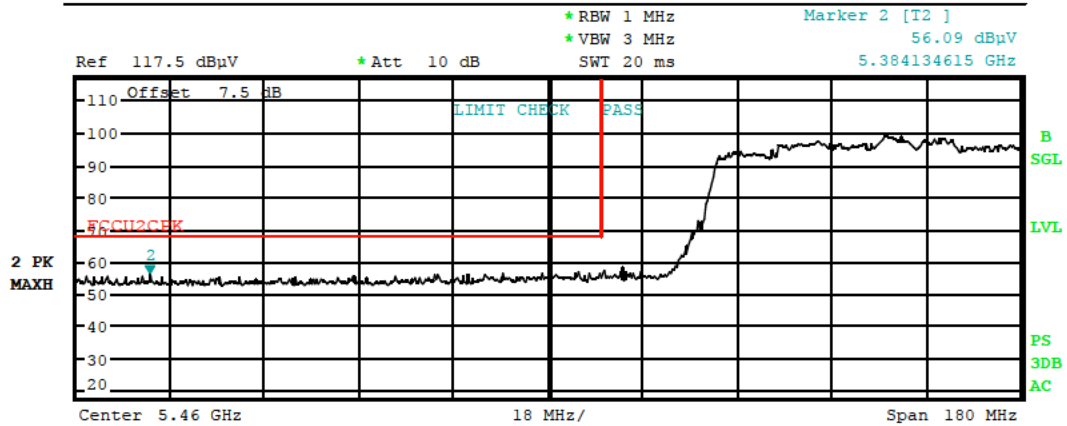
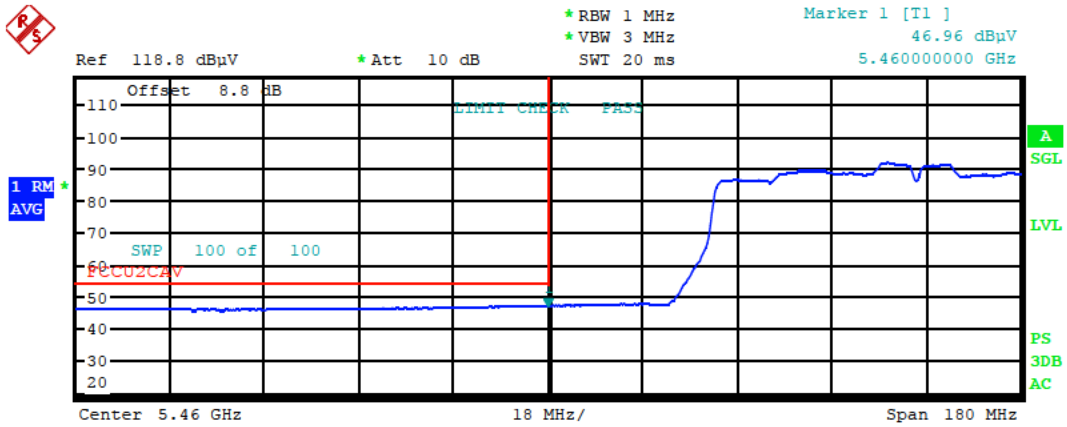
Date: 31.JUL.2017 22:12:07

Plot 7-62. Radiated Restricted Upper Band Edge Plot (Average & Peak – UNII Band 2A)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 80 of 114

Antenna-2 Radiated Band Edge Measurements (80MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5530MHz
 Channel: 106



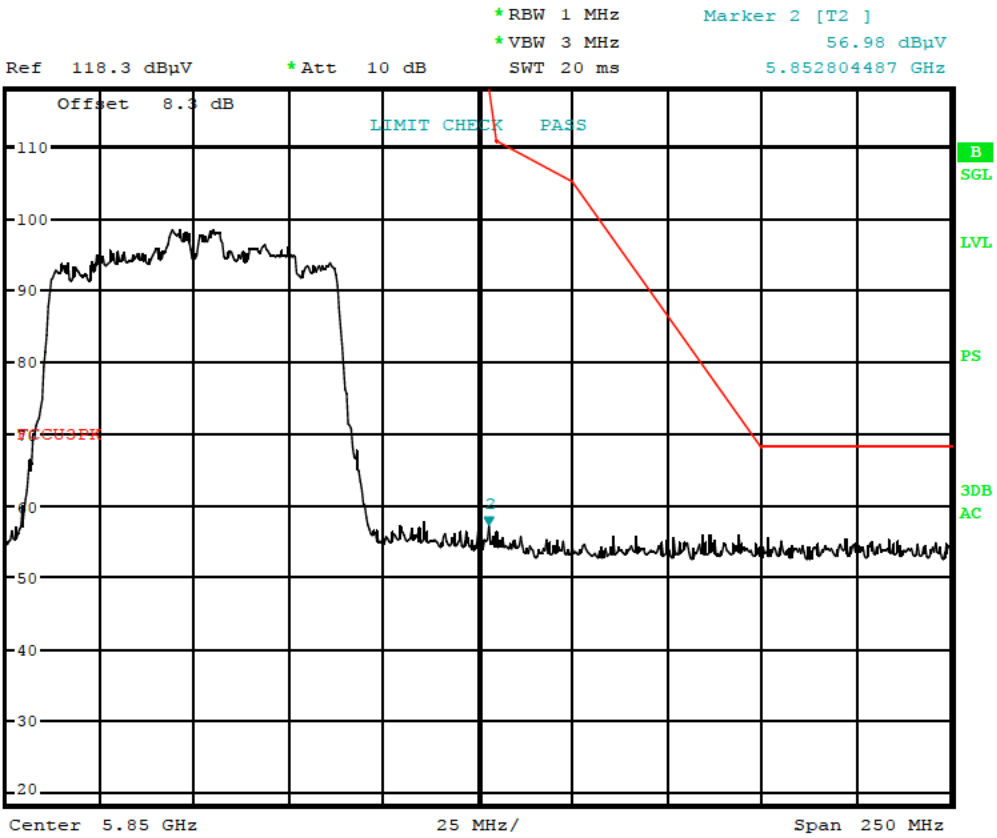
Date: 31.JUL.2017 22:16:10

Plot 7-63. Radiated Restricted Lower Band Edge Plot (Average & Peak – UNII Band 2C)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 81 of 114

Antenna-2 Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5775MHz
 Channel: 155



Date: 31.JUL.2017 22:20:16

Plot 7-64. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 82 of 114	

Antenna-2 WCP Radiated Band Edge Measurements (80MHz BW)

\$15.407(b.1)(b.2) \$15.205 \$15.209

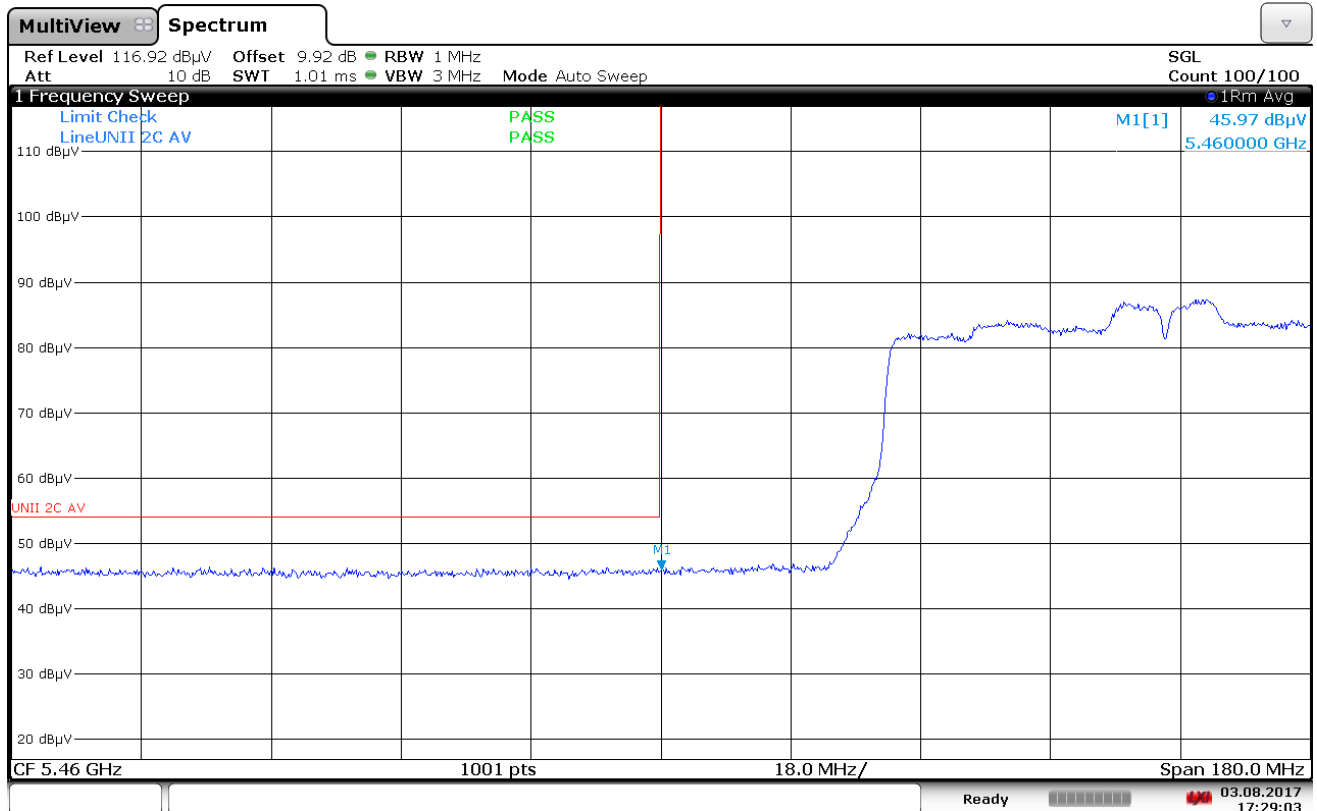
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5530MHz

Channel: 106



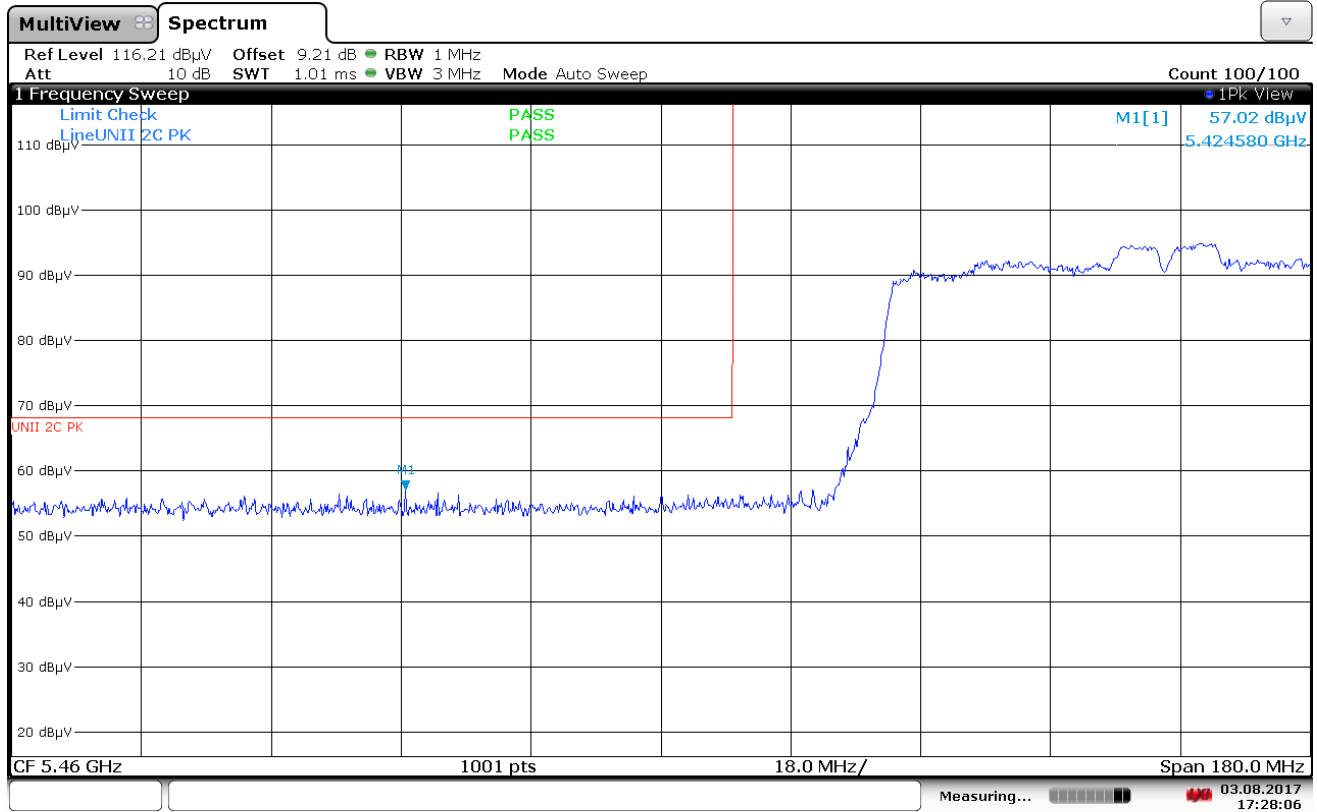
17:29:04 03.08.2017

Plot 7-65. Radiated Restricted Band Edge Plot with WCP

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 83 of 114	

Antenna-2 WCP Radiated Band Edge Measurements (80MHz BW)

\$15.407(b.1)(b.2) \$15.205 \$15.209



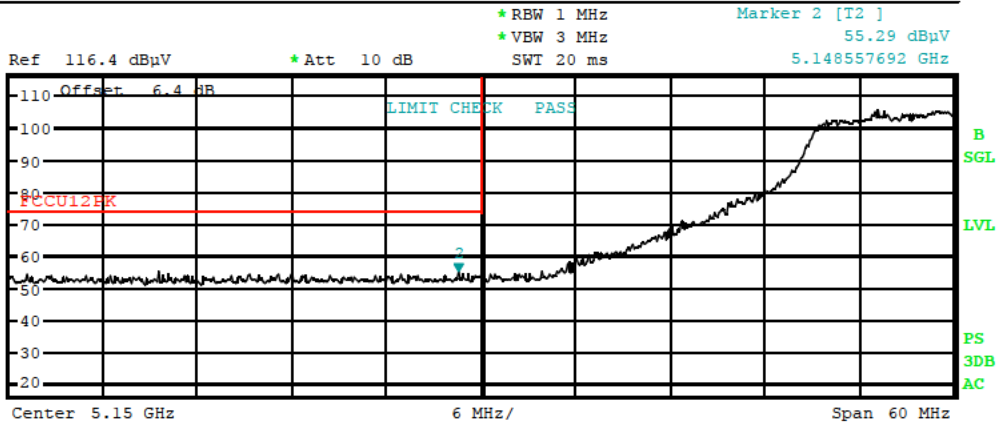
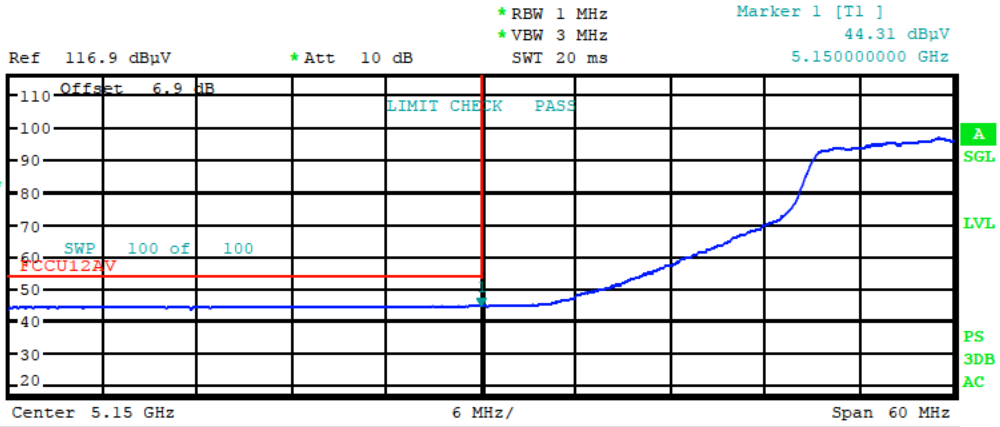
17:28:07 03.08.2017

Plot 7-66. Radiated Restricted Band Edge Plot with WCP

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 84 of 114	

7.7.10 MIMO Radiated Band Edge Measurements (20MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (20MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5180MHz
 Channel: 36



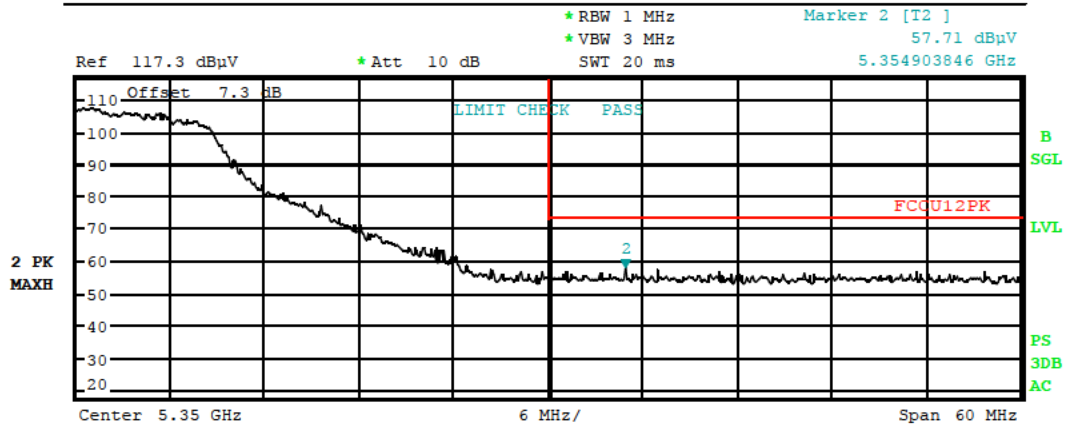
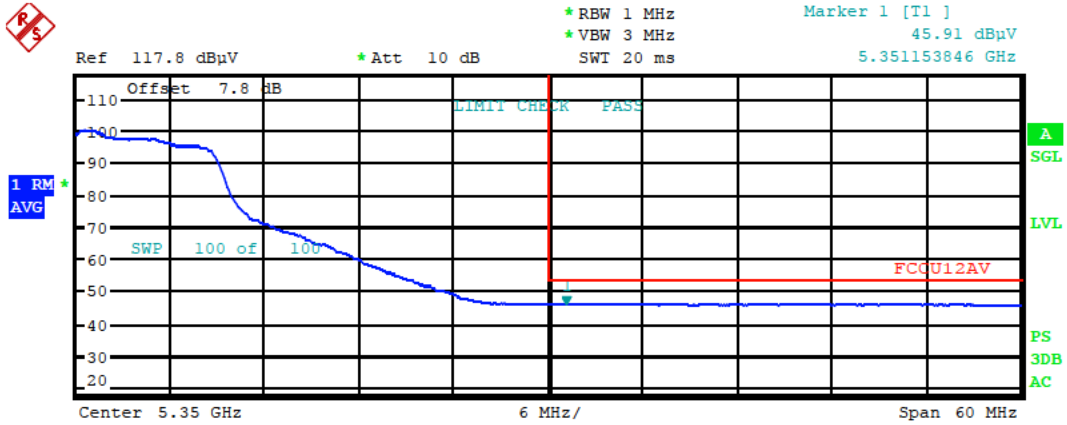
Date: 31.JUL.2017 22:52:27

Plot 7-67. Radiated Restricted Lower Band Edge Plot (Average & Peak – UNII Band 1)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 85 of 114

MIMO Radiated Band Edge Measurements (20MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (20MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64



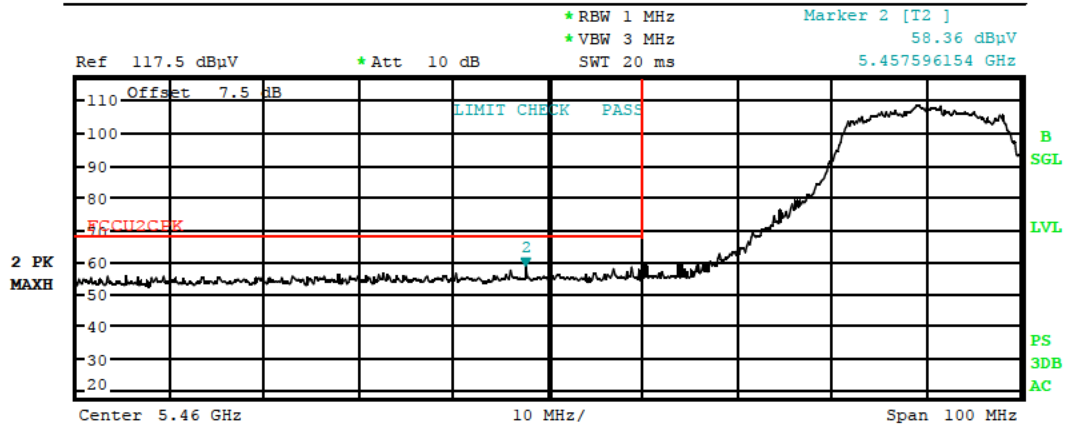
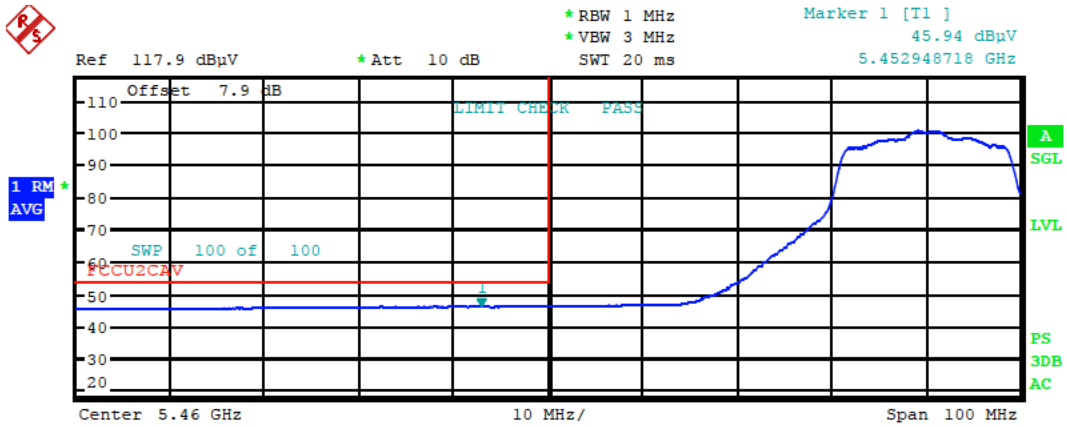
Date: 31.JUL.2017 22:55:57

Plot 7-68. Radiated Restricted Upper Band Edge Plot (Average & Peak – UNII Band 2A)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 86 of 114

MIMO Radiated Band Edge Measurements (20MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (20MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100



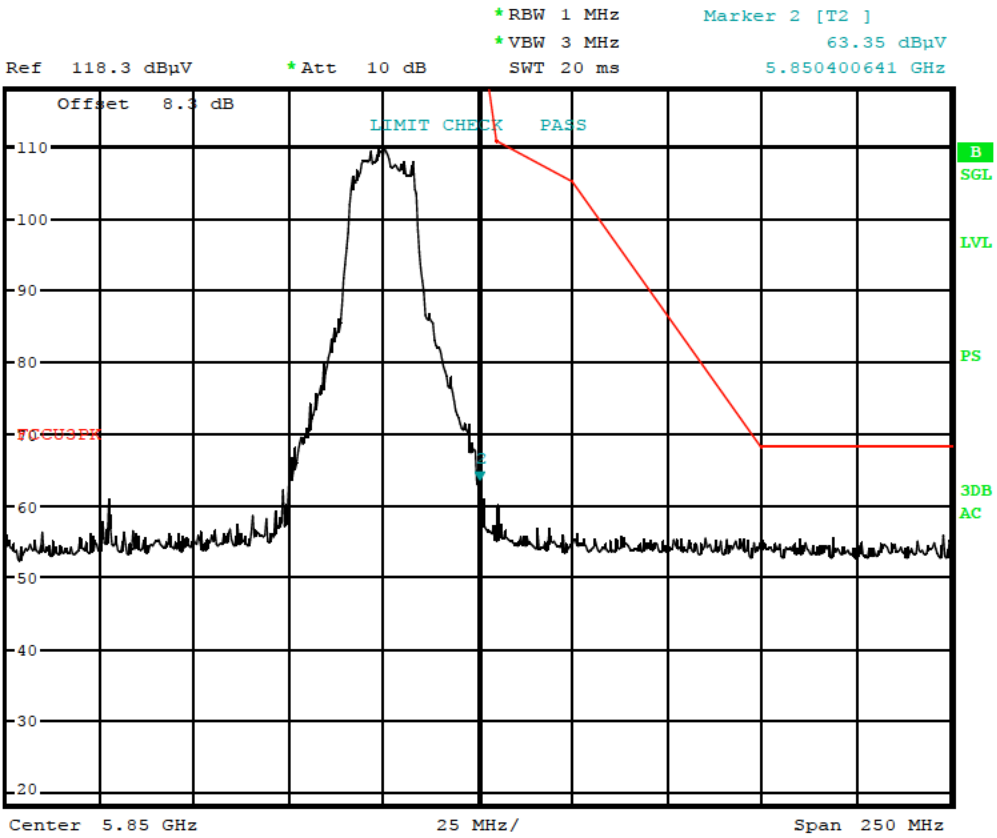
Date: 31.JUL.2017 23:00:05

Plot 7-69. Radiated Restricted Lower Band Edge Plot (Average & Peak – UNII Band 2C)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 87 of 114

MIMO Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (20MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165



Date: 31.JUL.2017 23:03:42

Plot 7-70. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 88 of 114	

MIMO WCP Radiated Band Edge Measurements (20MHz BW)

\$15.407(b.1)(b.2) \$15.205 \$15.209

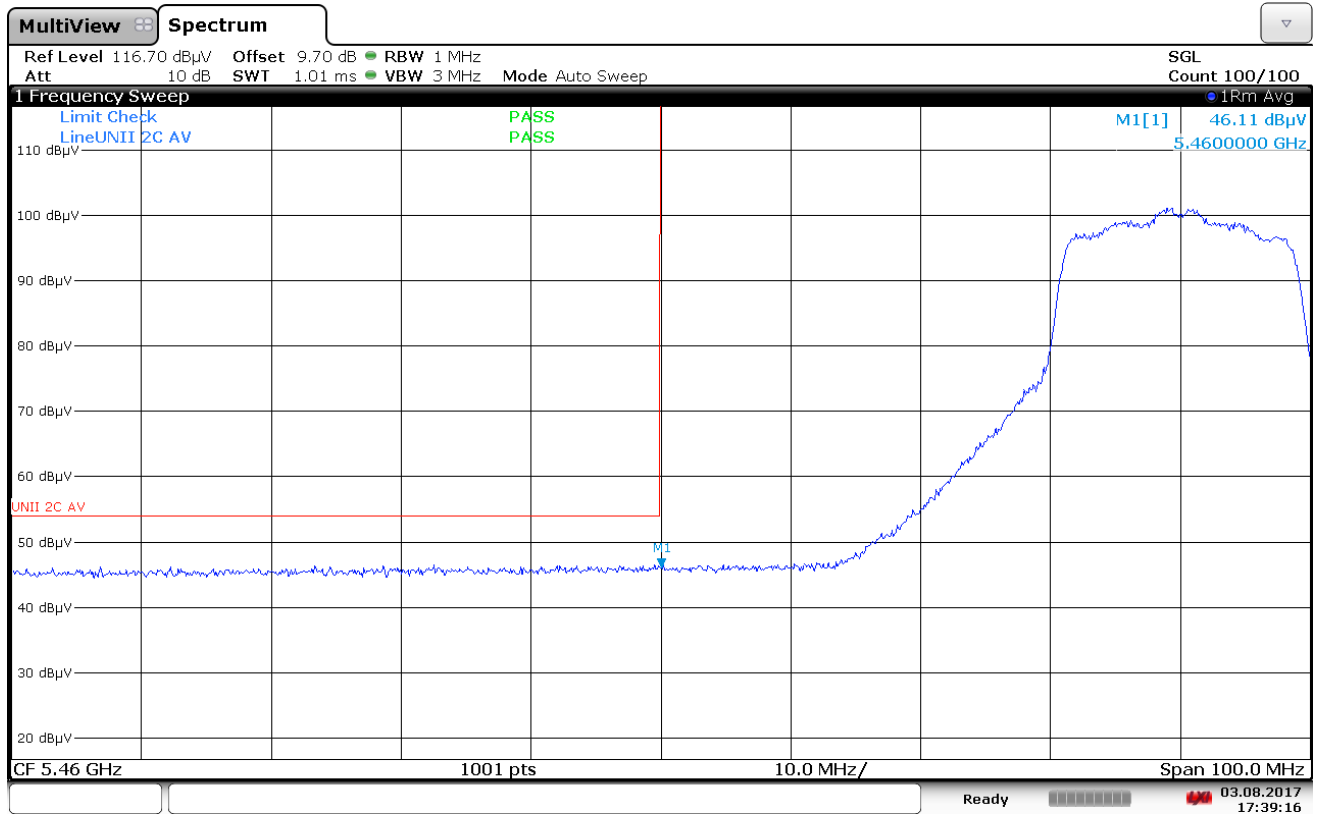
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100



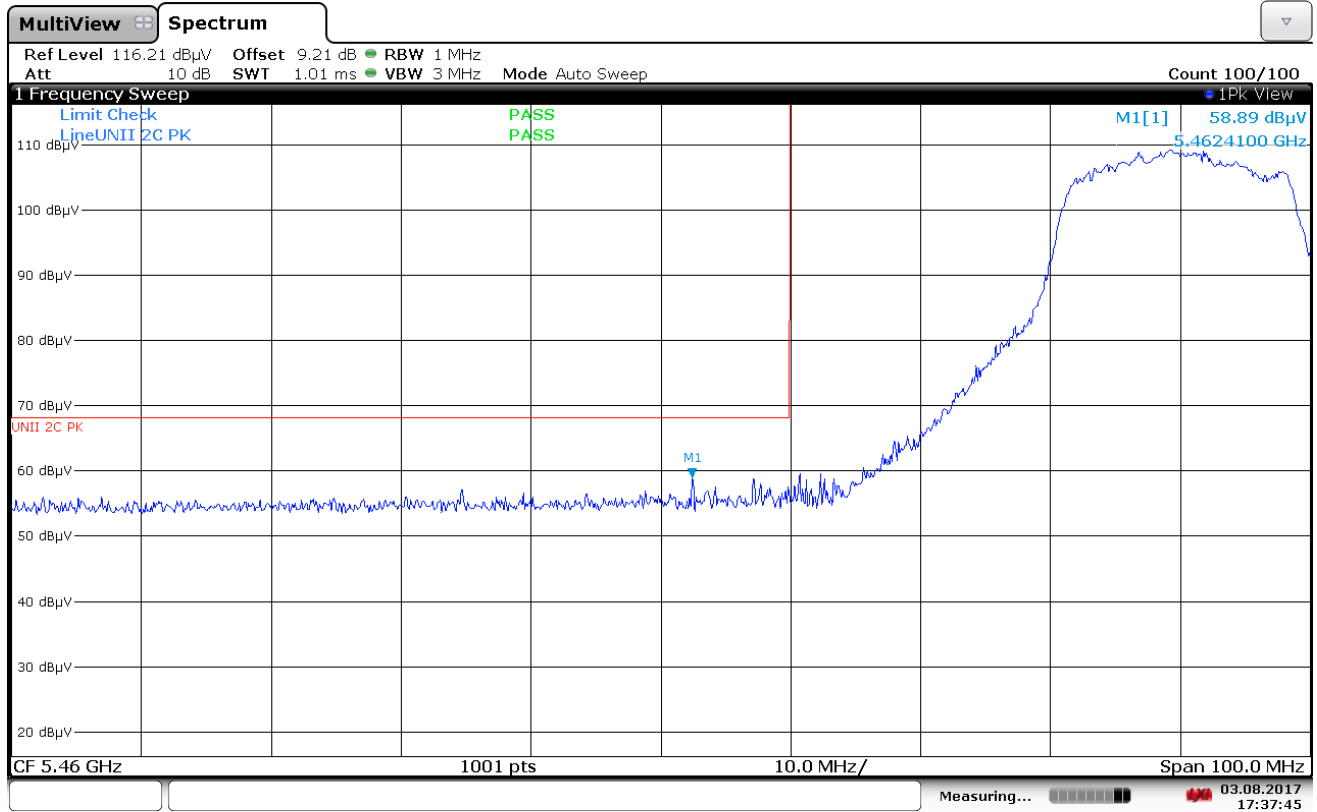
17:39:16 03.08.2017

Plot 7-71. Radiated Restricted Band Edge Plot with WCP

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 89 of 114	

MIMO WCP Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



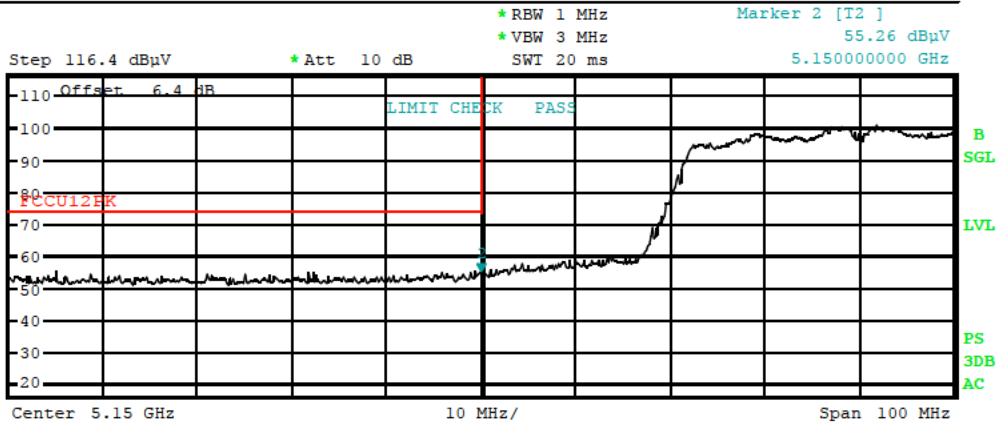
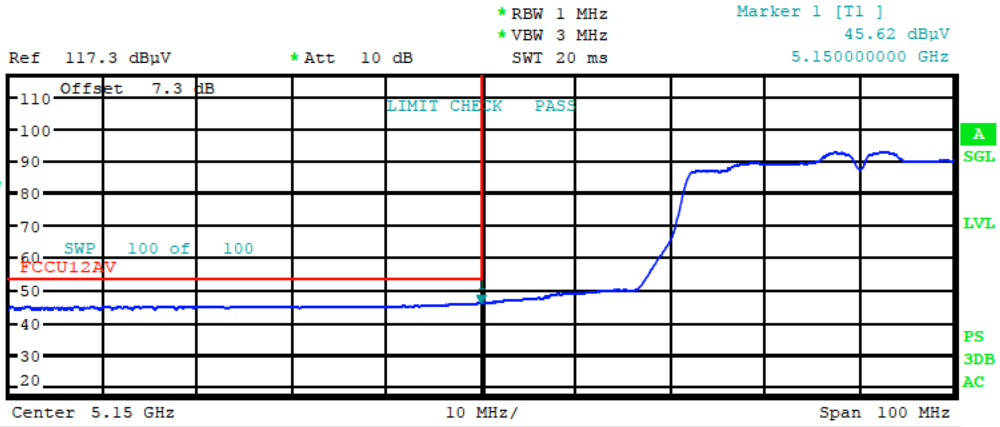
17:37:45 03.08.2017

Plot 7-72. Radiated Restricted Band Edge Plot with WCP

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 90 of 114	

7.7.11 MIMO Radiated Band Edge Measurements (40MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5190MHz
 Channel: 38



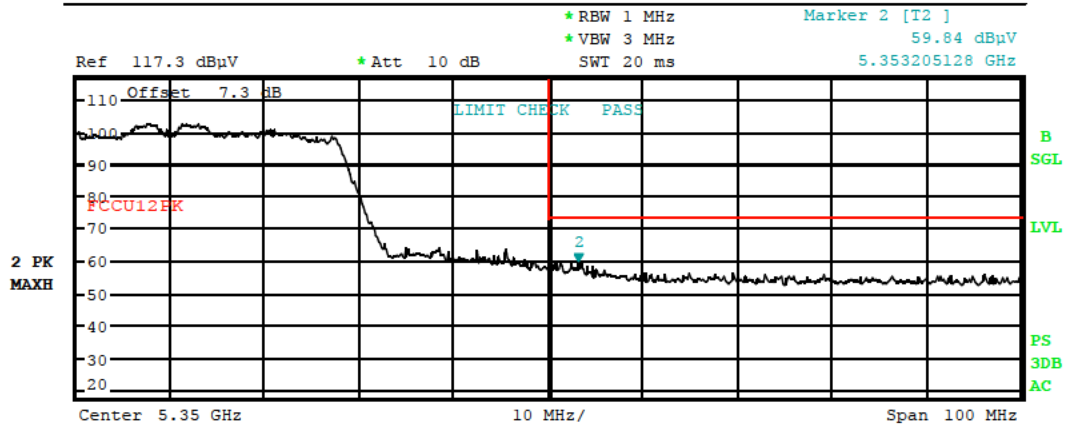
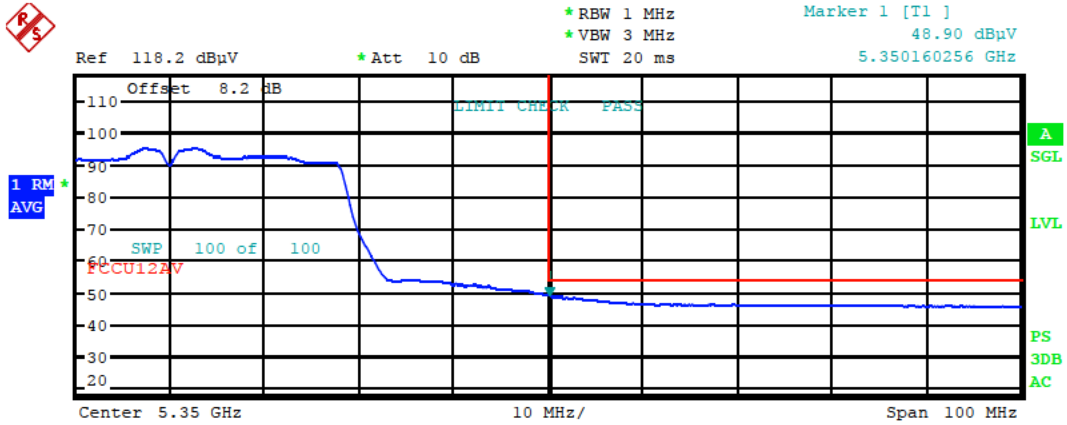
Date: 2.AUG.2017 22:55:25

Plot 7-73. Radiated Restricted Lower Band Edge Plot (Average & Peak – UNII Band 1)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 91 of 114	

MIMO Radiated Band Edge Measurements (40MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5310MHz
 Channel: 62



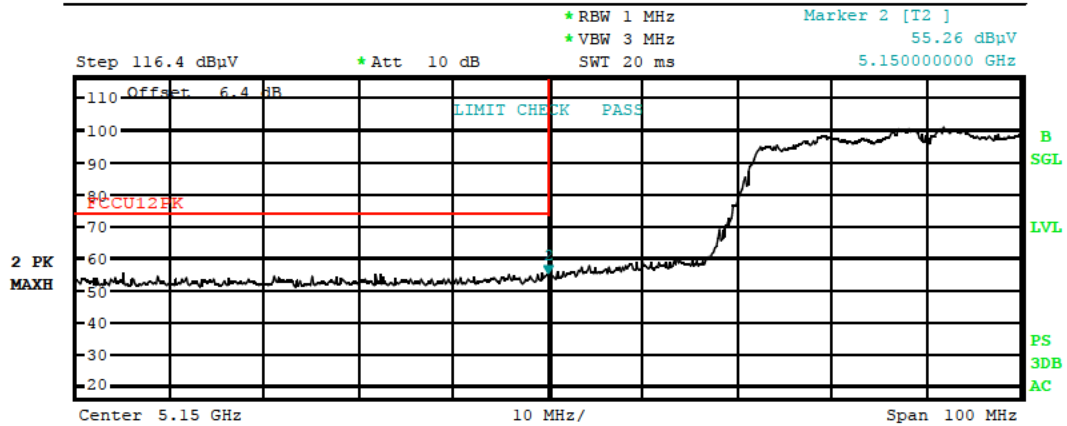
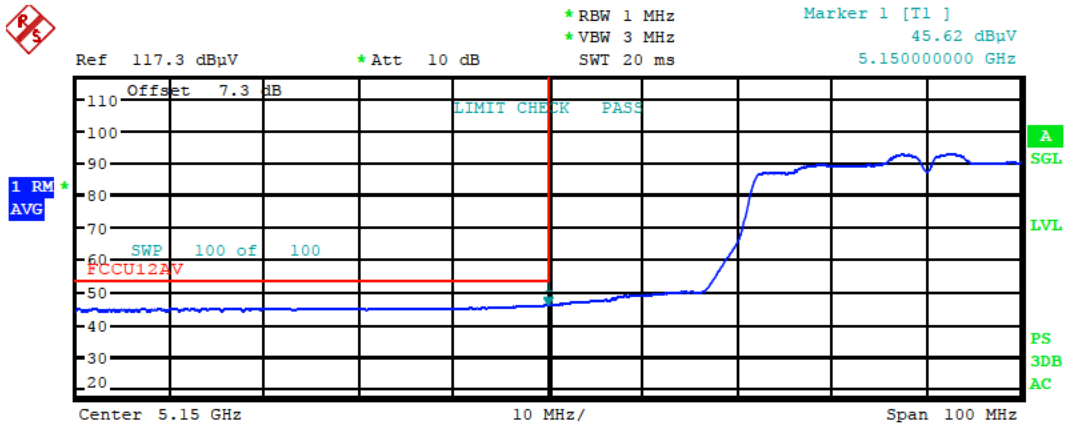
Date: 2.AUG.2017 22:59:46

Plot 7-74. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 92 of 114

MIMO Radiated Band Edge Measurements (40MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5510MHz
 Channel: 102



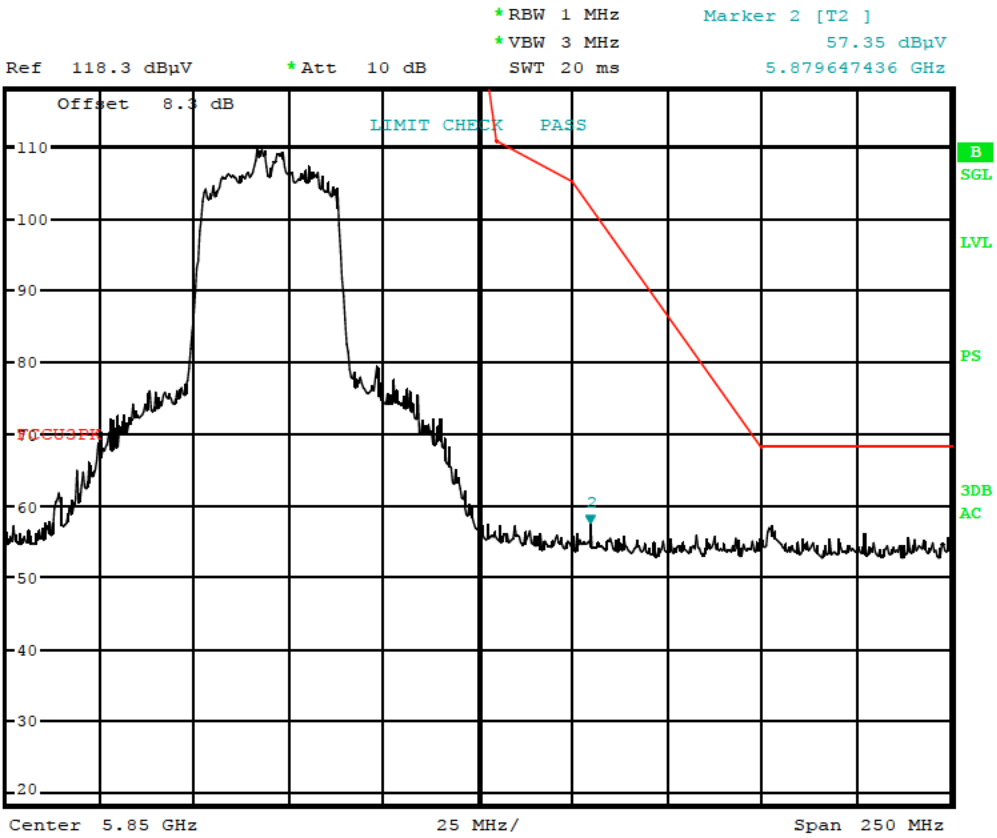
Date: 2.AUG.2017 22:55:25

Plot 7-75. Radiated Restricted Lower Band Edge Plot (Average & Peak – UNII Band 2C)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 93 of 114

MIMO Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5795MHz
 Channel: 159



Date: 2.AUG.2017 23:07:15

Plot 7-76. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 94 of 114

MIMO WCP Radiated Band Edge Measurements (40MHz BW)

\$15.407(b.1)(b.2) \$15.205 \$15.209

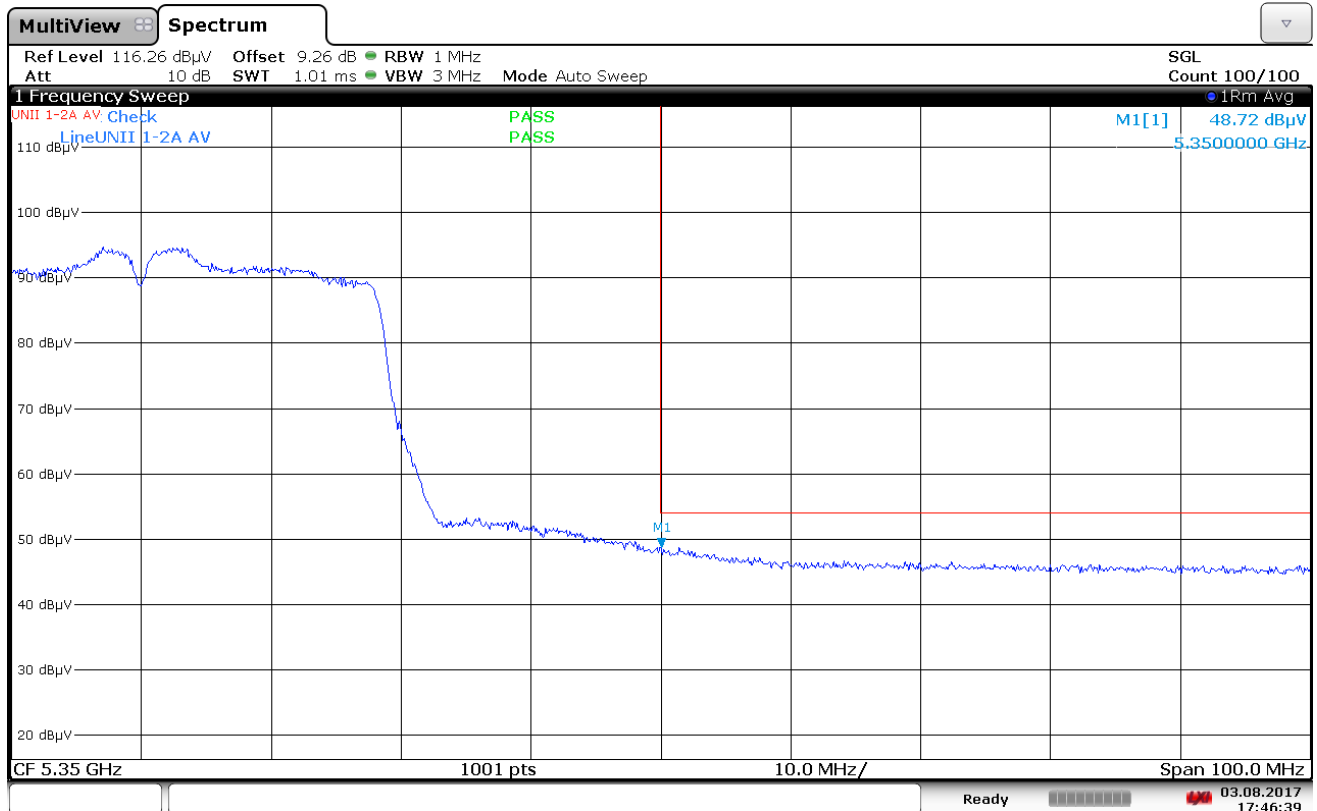
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62



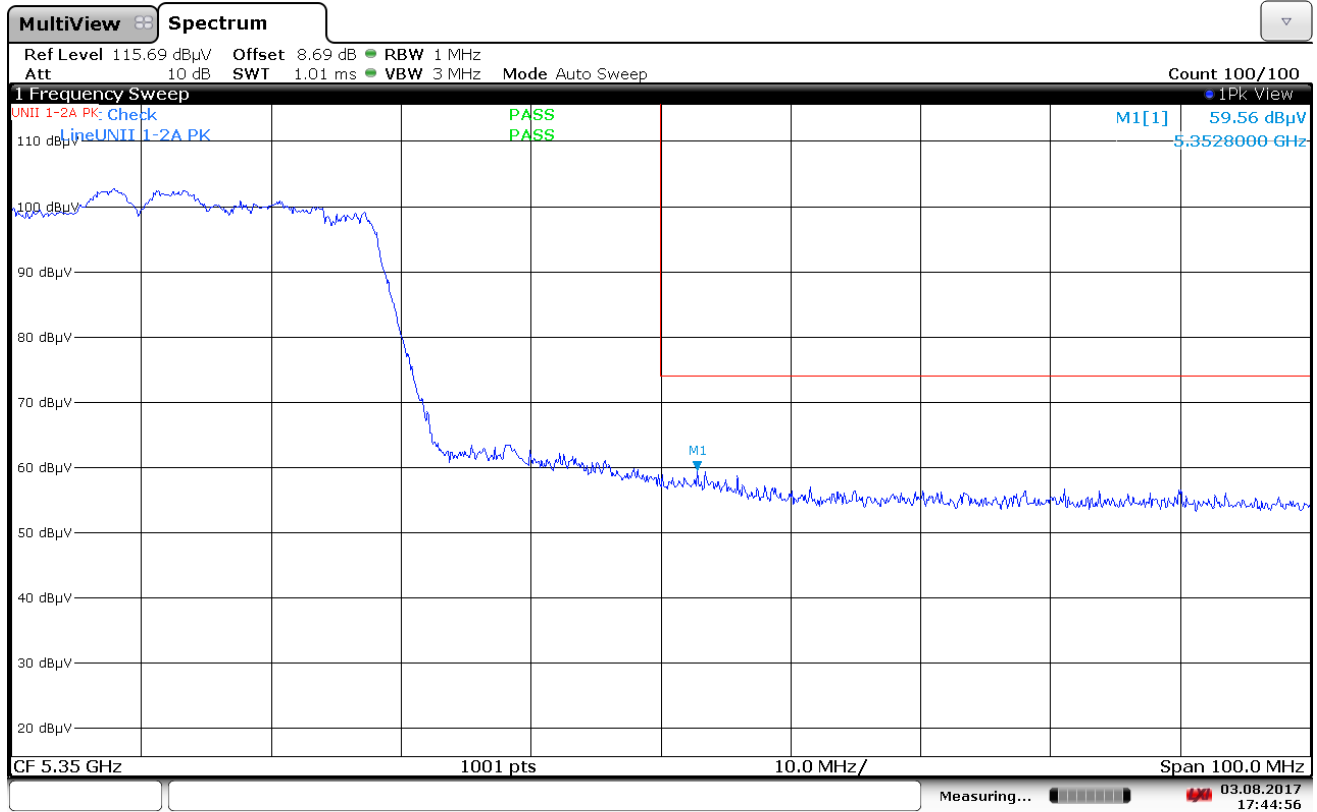
17:46:40 03.08.2017

Plot 7-77. Radiated Restricted Band Edge Plot with WCP (Average)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 95 of 114	

MIMO WCP Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



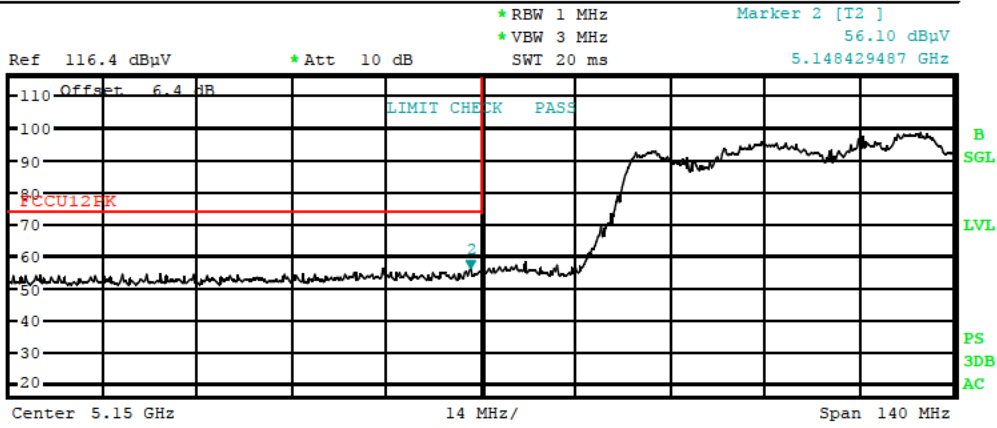
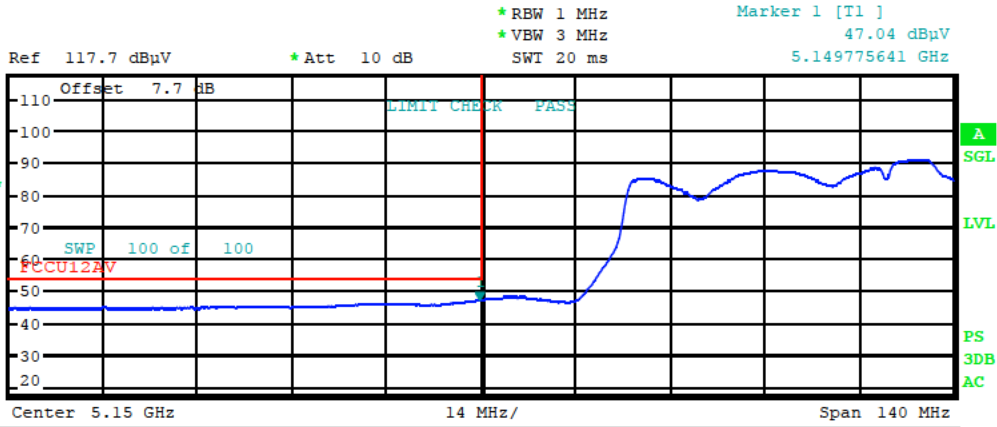
17:44:57 03.08.2017

Plot 7-78. Radiated Restricted Band Edge Plot with WCP (Peak)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 96 of 114	

7.7.12 MIMO Radiated Band Edge Measurements (80MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5210MHz
 Channel: 42



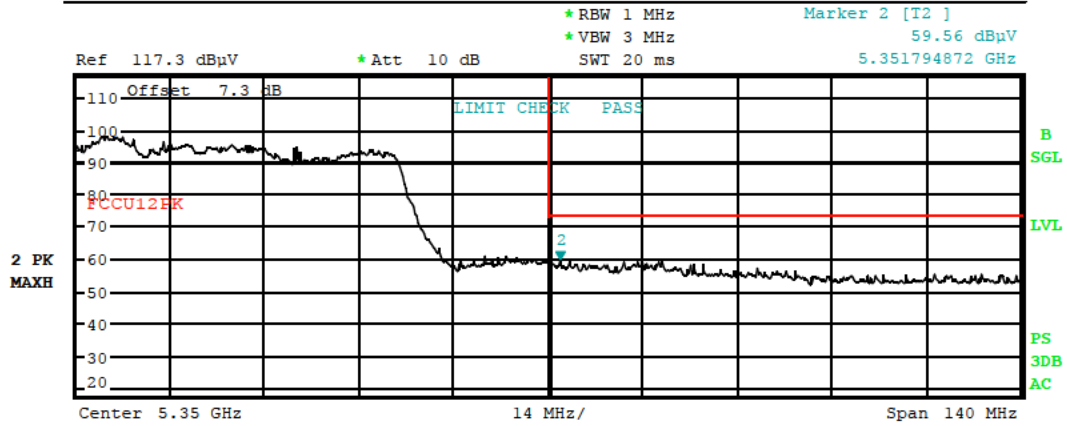
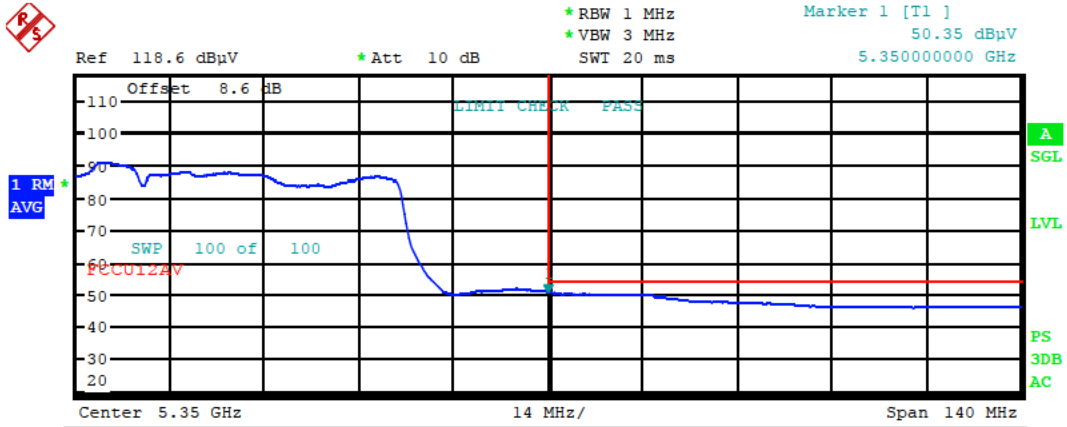
Date: 2.AUG.2017 23:12:47

Plot 7-79. Radiated Restricted Lower Band Edge Plot (Average & Peak – UNII Band 1)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 97 of 114	

MIMO Radiated Band Edge Measurements (80MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5290MHz
 Channel: 58



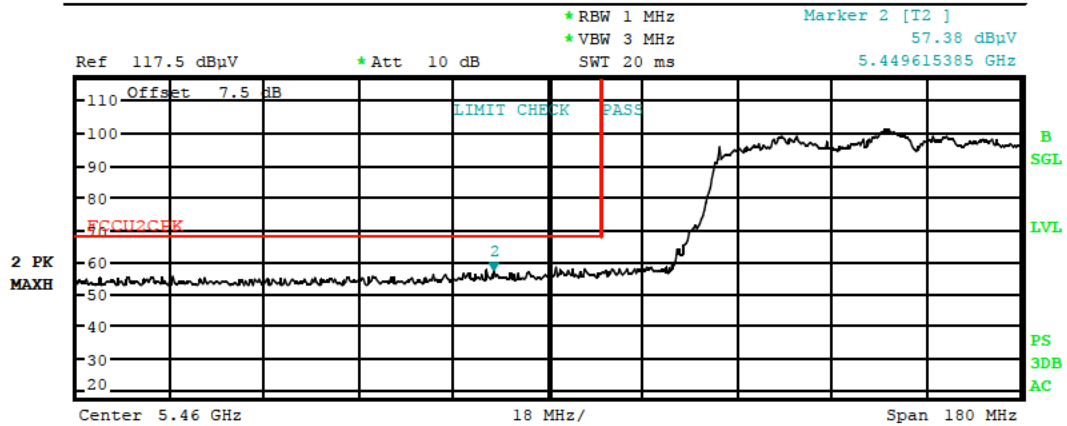
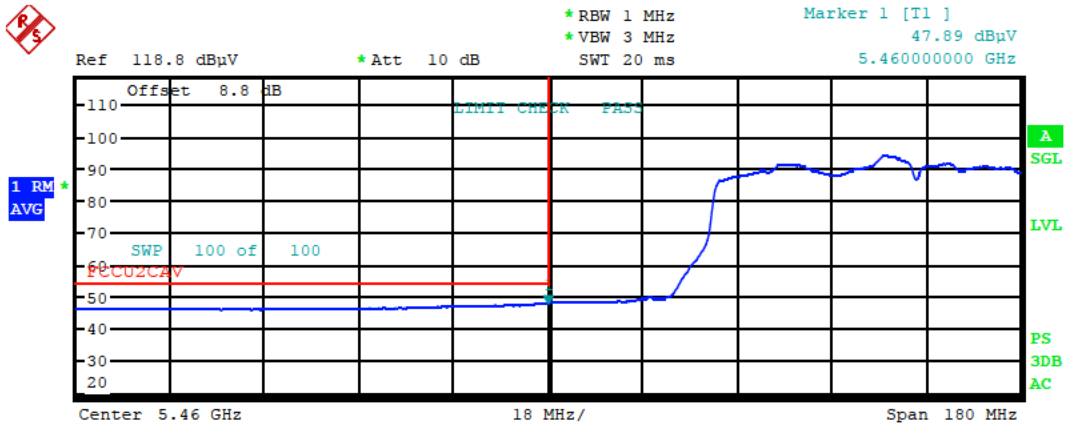
Date: 2.AUG.2017 23:16:31

Plot 7-80. Radiated Restricted Upper Band Edge Plot (Average & Peak – UNII Band 2A)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 98 of 114

MIMO Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5530MHz
 Channel: 106



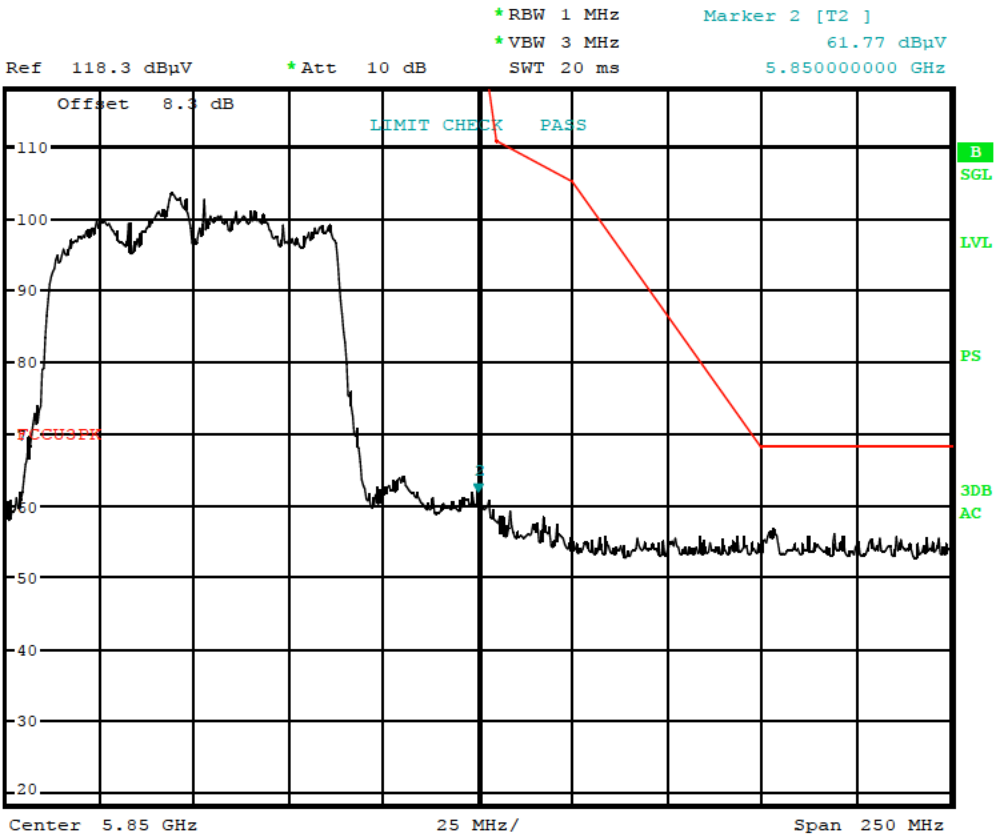
Date: 2.AUG.2017 23:20:31

Plot 7-81. Radiated Restricted Lower Band Edge Plot (Average & Peak – UNII Band 2C)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 99 of 114

MIMO Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5775MHz
 Channel: 155



Date: 2.AUG.2017 23:24:12

Plot 7-82. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 100 of 114	

MIMO WCP Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

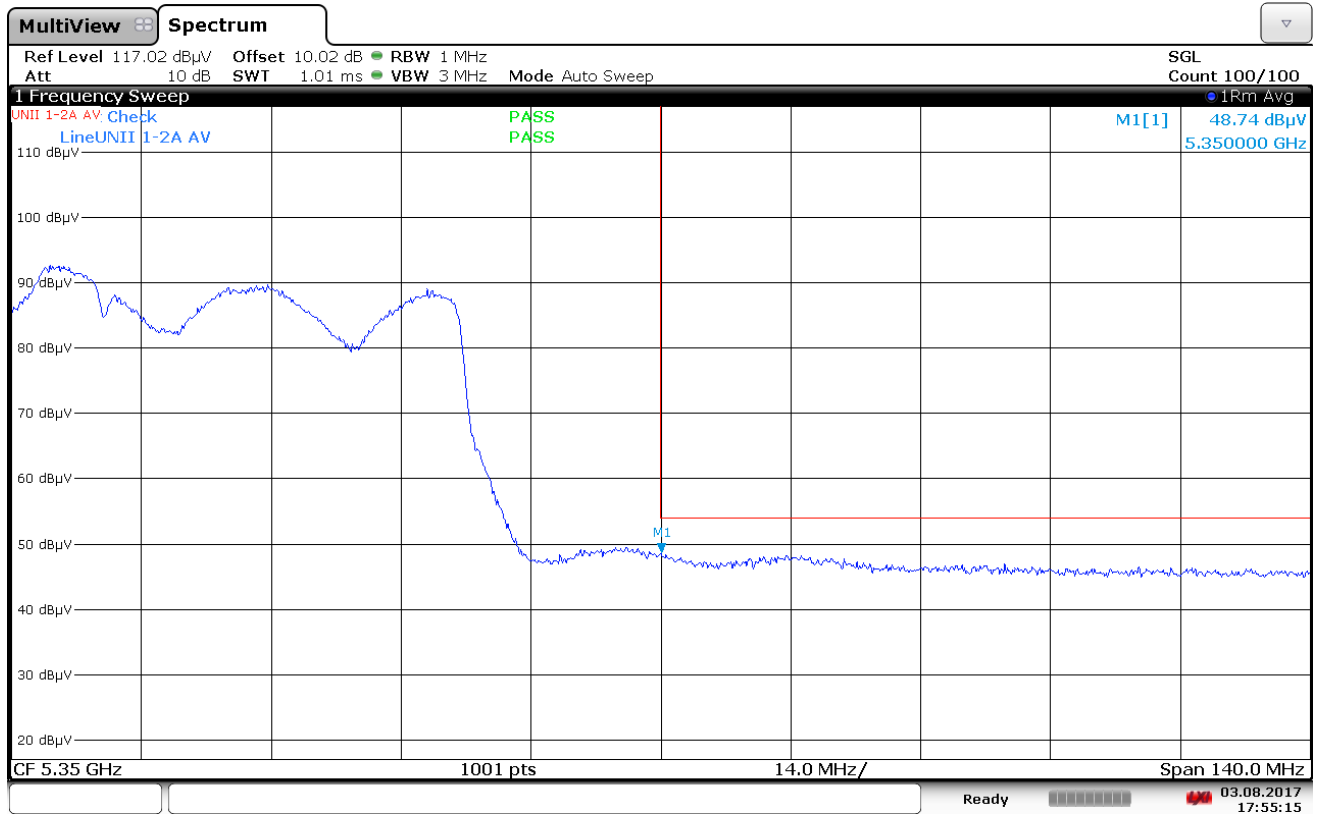
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5290MHz

Channel: 58



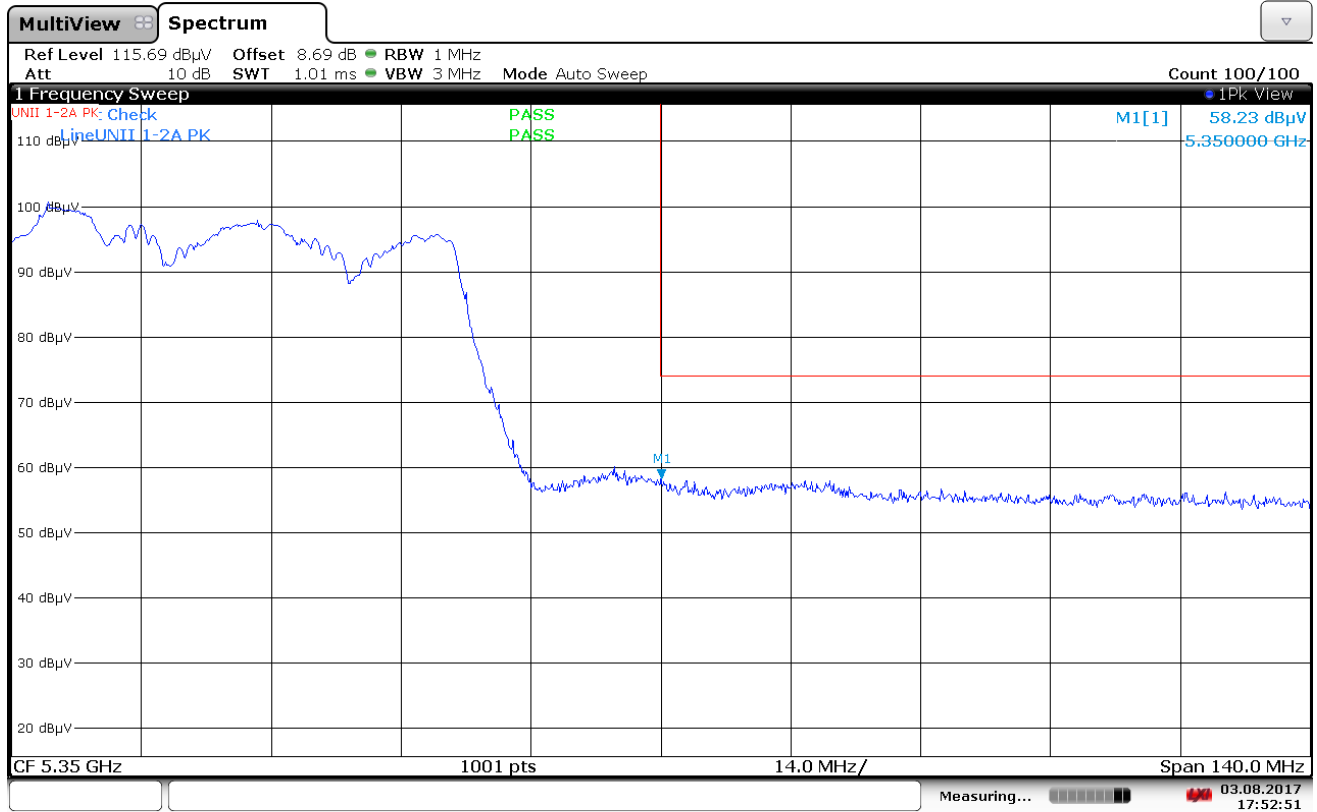
17:55:15 03.08.2017

Plot 7-83. Radiated Restricted Band Edge Plot with WCP

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 101 of 114	

MIMO WCP Radiated Band Edge Measurements (80MHz BW)

\$15.407(b.1)(b.2) \$15.205 \$15.209



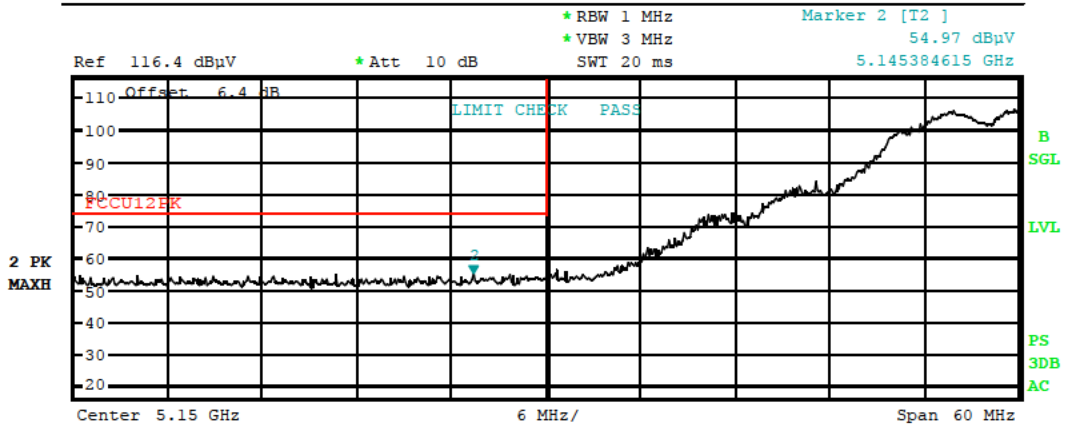
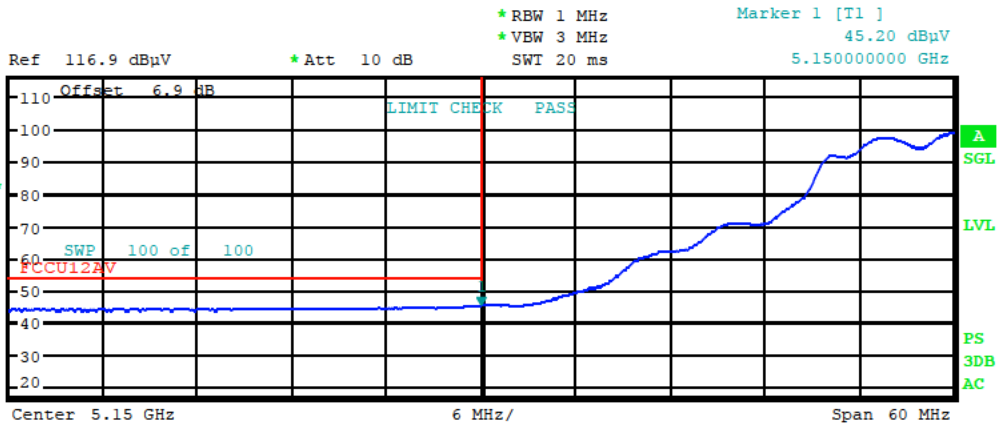
17:52:52 03.08.2017

Plot 7-84. Radiated Restricted Band Edge Plot with WCP

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 102 of 114	

CDD Radiated Band Edge Measurements
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5180MHz
 Channel: 36



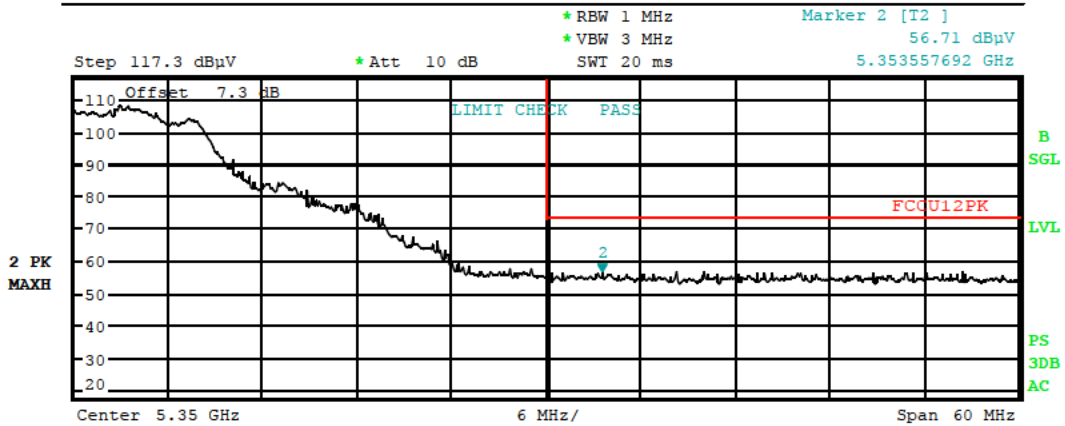
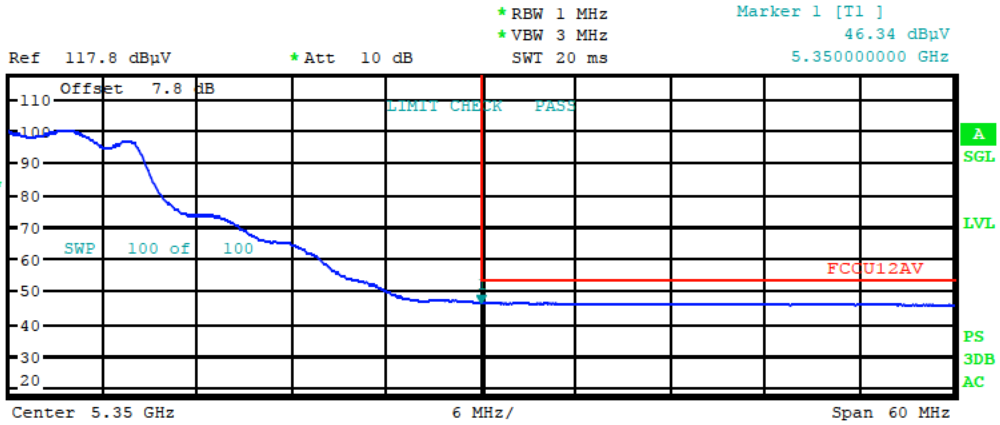
Date: 2.AUG.2017 23:30:46

Plot 7-85. Radiated Restricted Lower Band Edge Plot (Average & Peak – UNII Band 1)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 103 of 114	

CDD Radiated Band Edge Measurements
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64



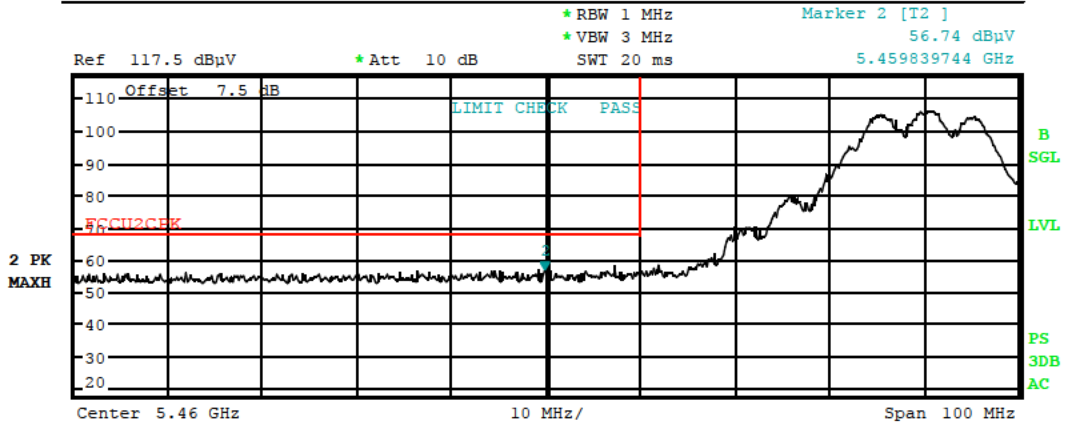
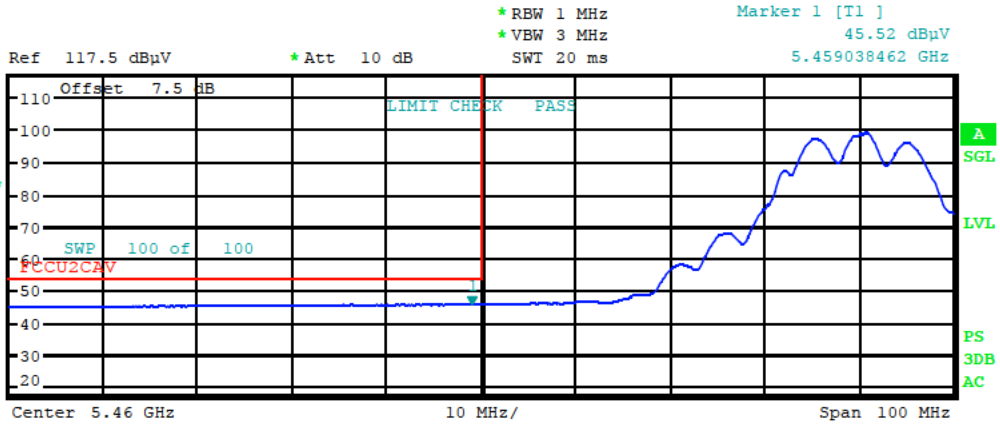
Date: 2.AUG.2017 23:35:24

Plot 7-86. Radiated Restricted Upper Band Edge Plot (Average & Peak – UNII Band 2A)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 104 of 114

CDD Radiated Band Edge Measurements
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100



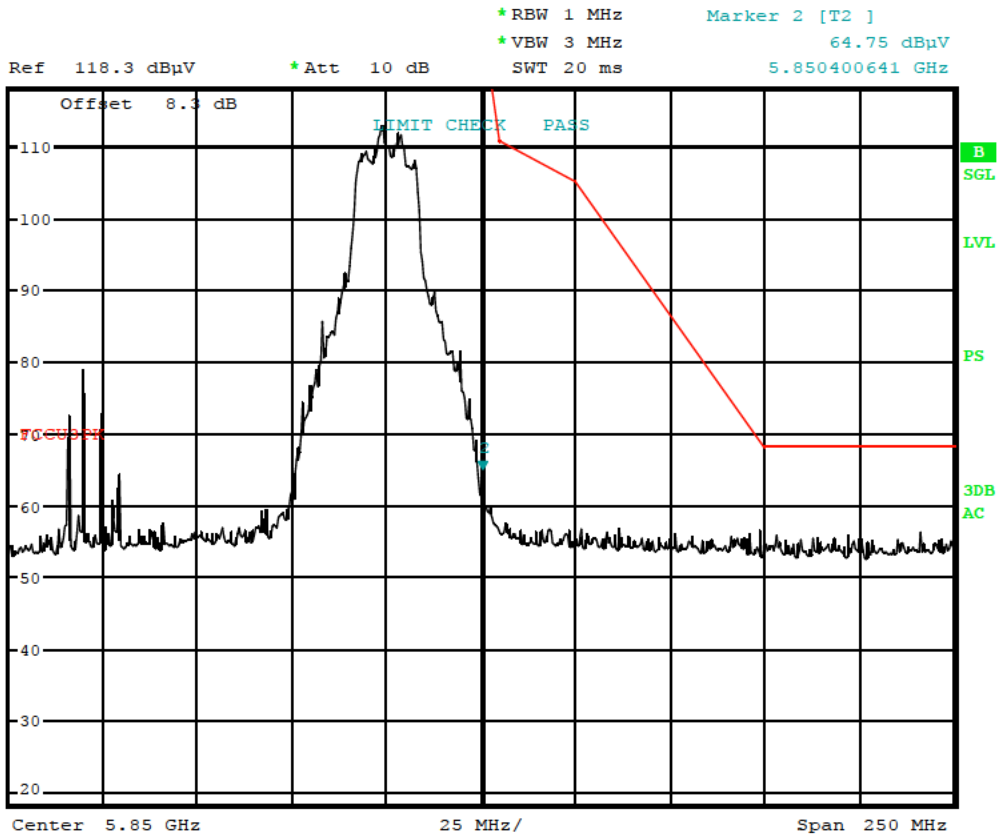
Date: 2.AUG.2017 23:41:21

Plot 7-87. Radiated Restricted Lower Band Edge Plot (Average & Peak – UNII Band 2C)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 105 of 114

CDD Radiated Band Edge Measurements
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165



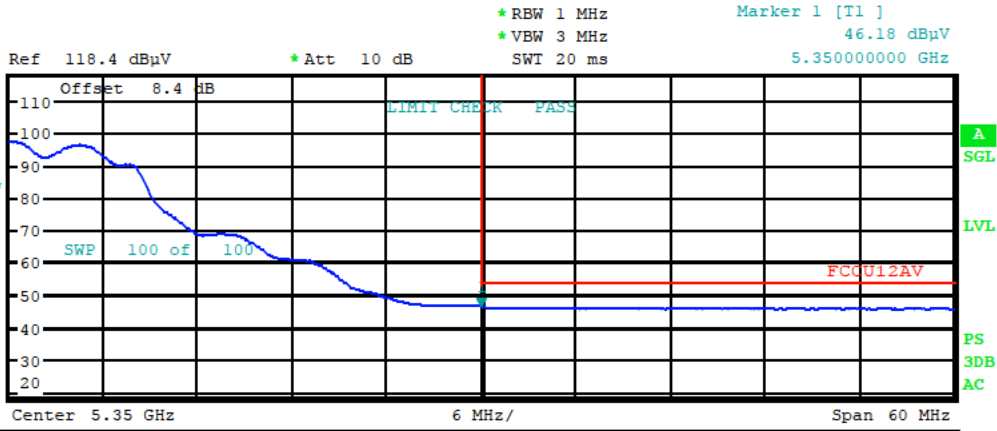
Date: 2.AUG.2017 23:44:41

Plot 7-88. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

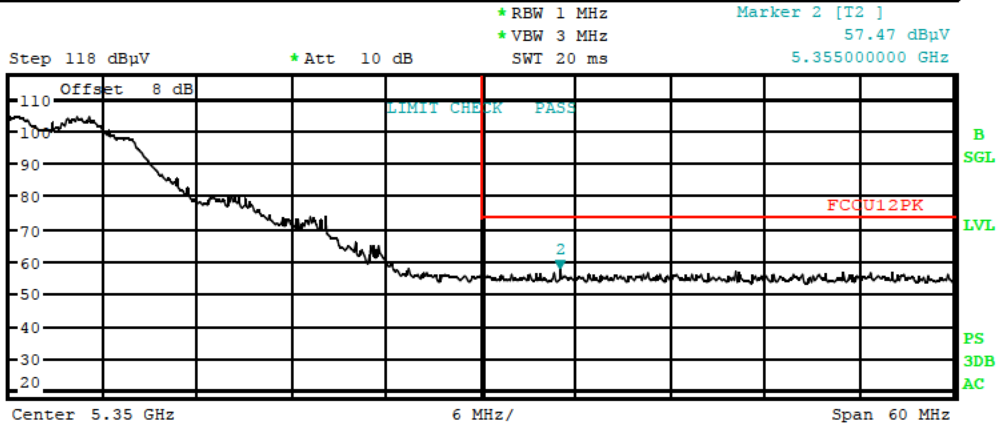
FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1-ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 106 of 114

CDD Radiated Band Edge Measurements
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64



2 PK MAXH



Date: 30.AUG.2017 21:26:42

Plot 7-89. Radiated Restricted Upper Band Edge Plot with WCP

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 107 of 114	

7.3 Radiated Spurious Emissions Measurements – Below 1GHz

§15.209

Test Overview and Limit

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

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table 7-37 per Section 15.209.

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 7-37. 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: ZNFV30A	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	 LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset	Page 108 of 114	

Test Setup

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

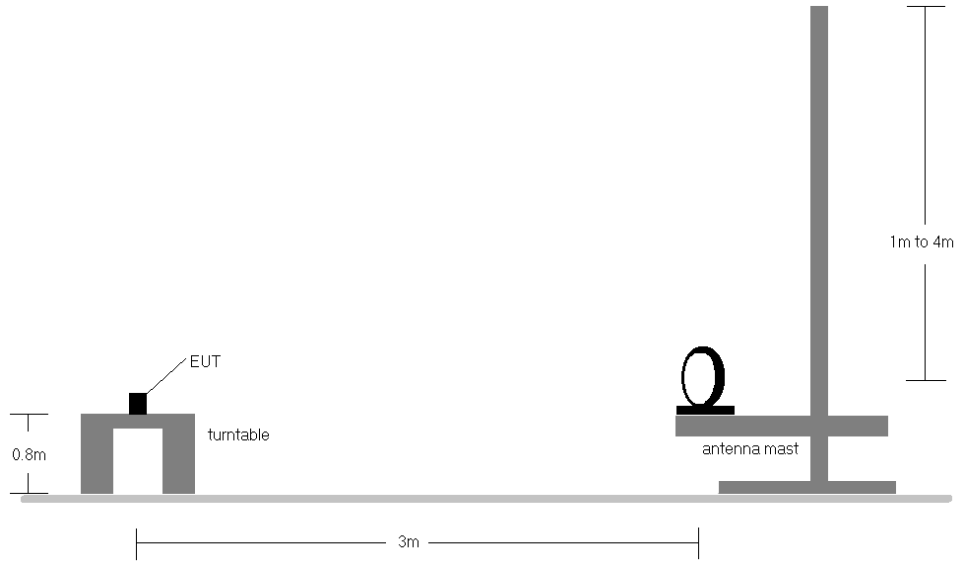


Figure 7-2. Radiated Test Setup < 30MHz

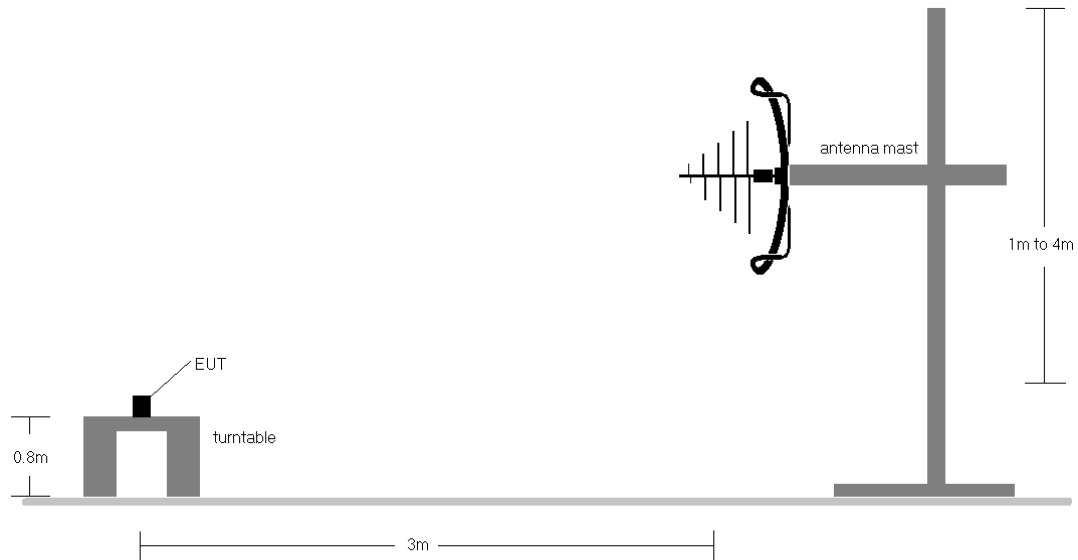






Figure 7-3. Radiated Test Setup < 1GHz

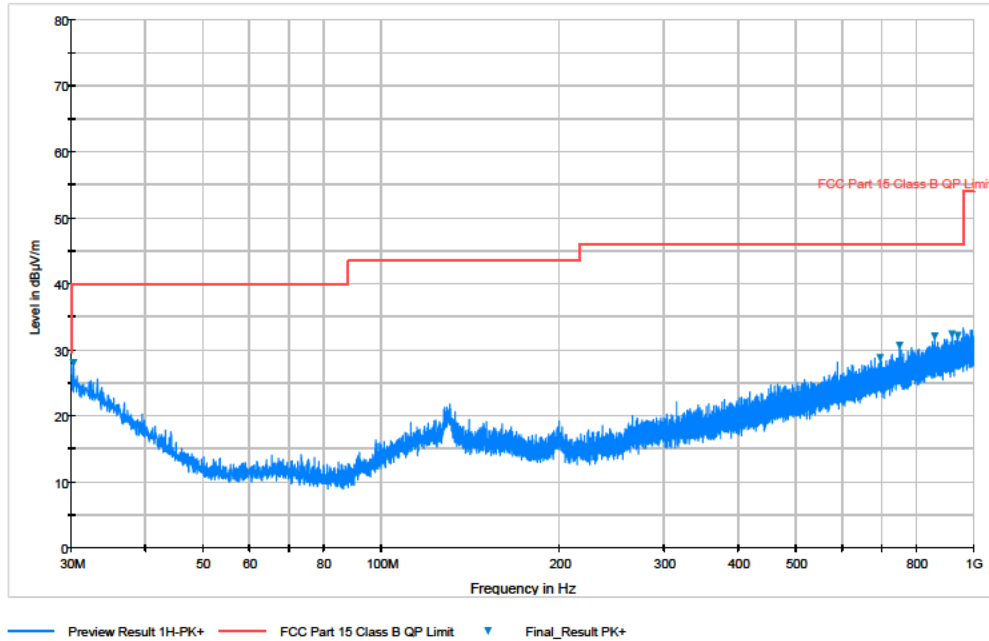
FCC ID: ZNFV30A	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	 LG	Approved by: Quality Manager
Test Report S/N: 1M1707180221-05-R1.ZNF	Test Dates: 7/20 - 8/11/2017	EUT Type: Portable Handset		Page 109 of 114

Test Notes

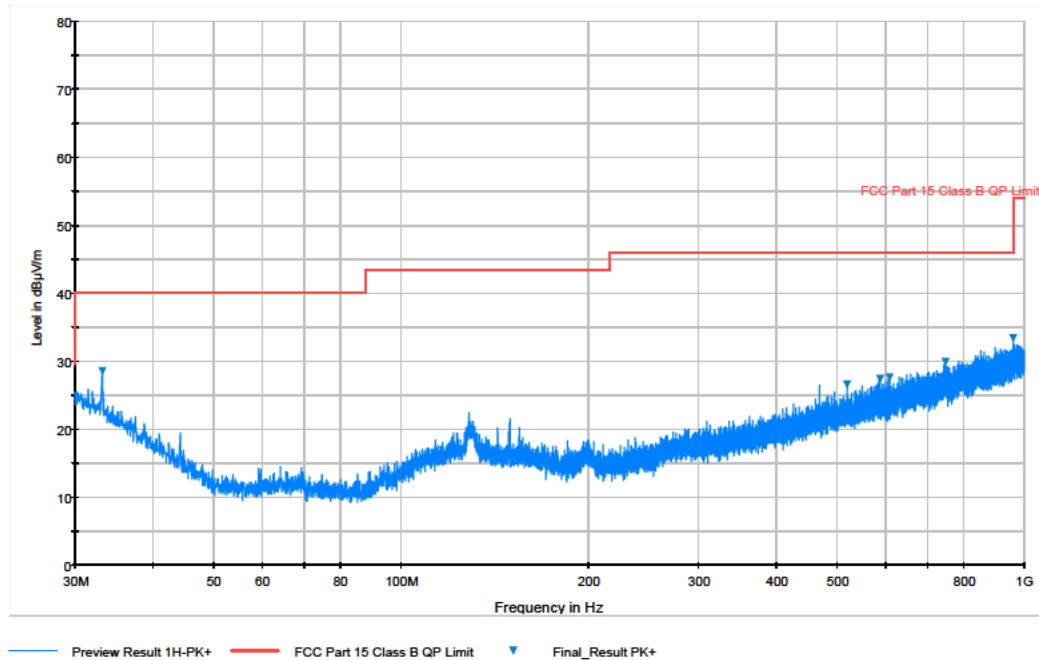
1. All emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 7-37.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
3. This unit was tested with 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.

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Antenna-1 Radiated Spurious Emissions Measurements (Below 1GHz)
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Plot 7-90. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)

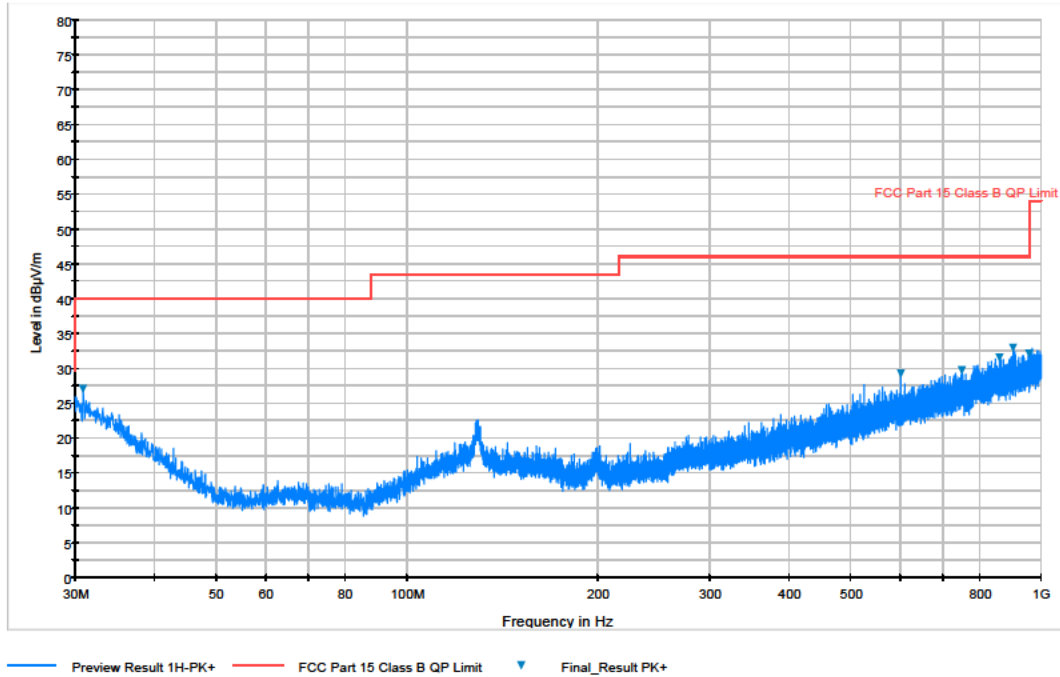


Plot 7-91. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

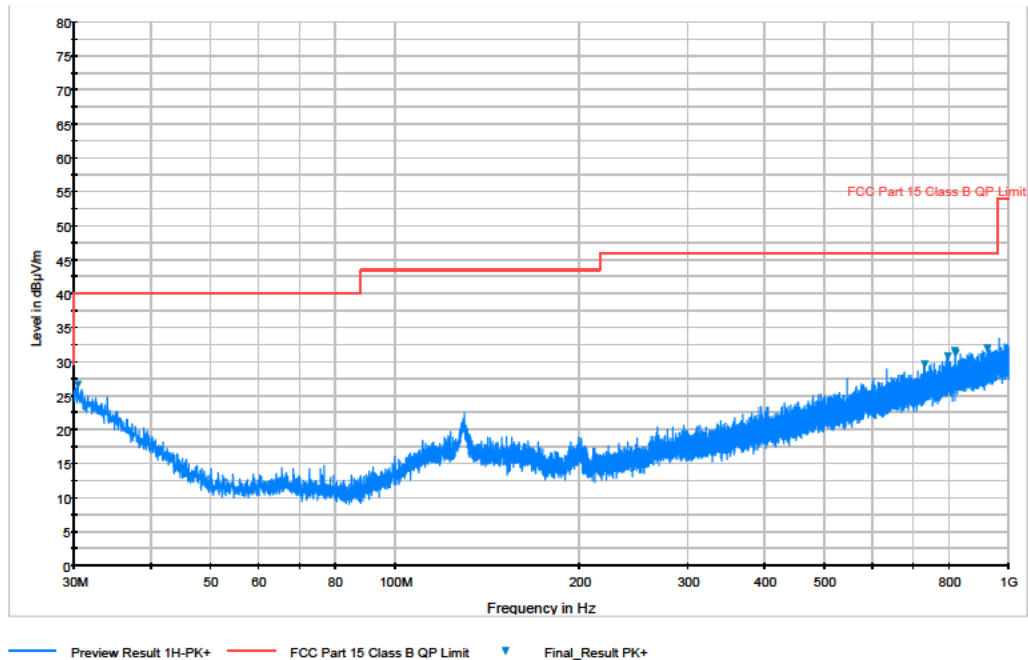
FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
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Antenna-2 Radiated Spurious Emissions Measurements (Below 1GHz)

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Plot 7-92. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)

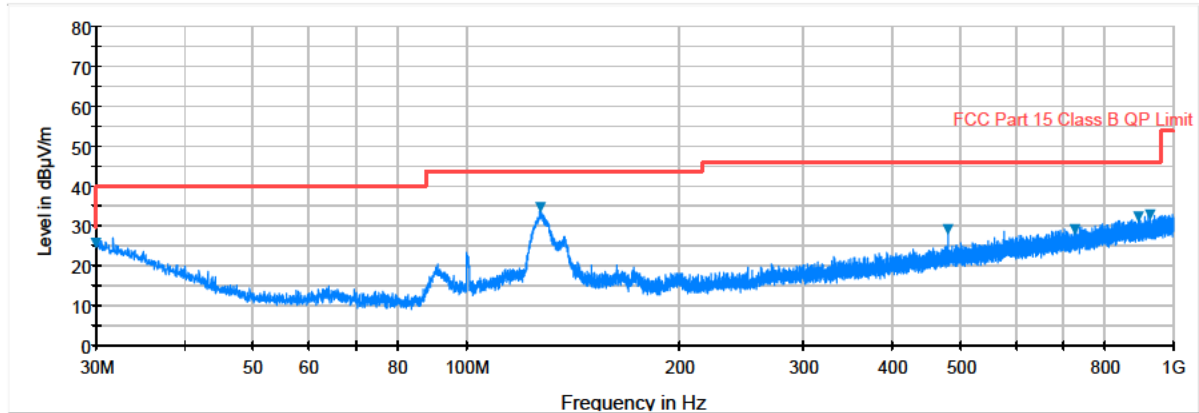


Plot 7-93. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
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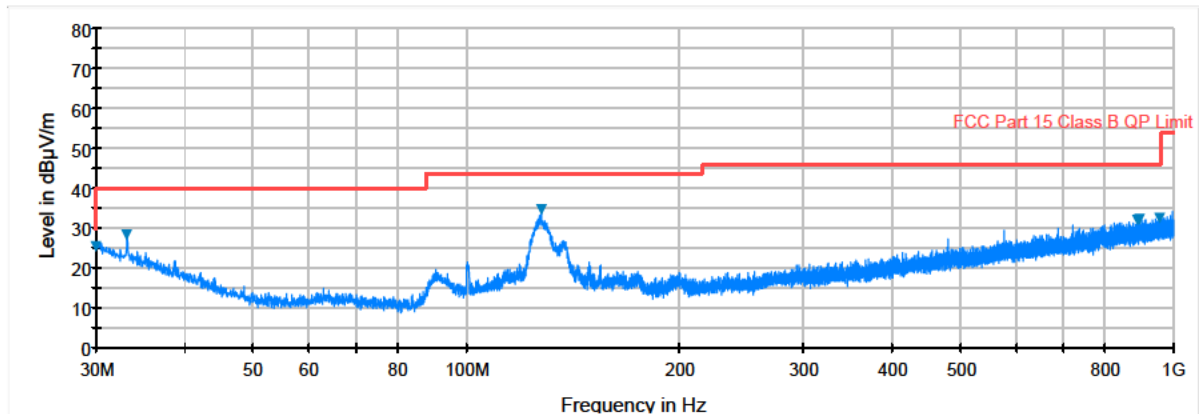
Simultaneous Tx Radiated Spurious Emissions Measurements (Below 1GHz)

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— Preview Result 1H-PK+ — FCC Part 15 Class B QP Limit ▼ Final_Result PK+

Plot 7-94. Radiated Spurious Plot below 1GHz (2.4GHz – 5GHz, Ant. Pol. H)





— Preview Result 1H-PK+ — FCC Part 15 Class B QP Limit ▼ Final_Result PK+

Plot 7-95. Radiated Spurious Plot below 1GHz (2.4GHz – 5GHz, Ant. Pol. V)

FCC ID: ZNFV30A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	LG	Approved by: Quality Manager
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8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFV30A** is in compliance with Part 15E of the FCC Rules.

FCC ID: ZNFV30A		FCC Pt. 15.407 802.11 UNII a/n/ac MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Quality Manager
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