SPORTON International Inc.
No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
Ph: 886-3-327-3456 / FAX: 886-3-327-0973 / www.sporton.com.tw

FCC RADIO TEST REPORT

Applicant's company	**Symbol Technologies, Inc.**
Applicant Address	One Zebra Plaza Holtsville, NY 11742 USA
FCC ID	**UZ7AP7522**
Manufacturer's company	**Wistron NeWeb Corporation**
Manufacturer Address	20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan, R.O.C.

Product Name	Oak External
Brand Name	Symbol
Model No.	AP-7522
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5150 ~ 5350MHz / 5470 ~ 5725MHz / 5725 ~ 5850 MHz
Received Date	Apr. 15, 2014
Final Test Date	Sep. 08, 2015
Submission Type	Class II Change

Statement

Test result included is for the IEEE 802.11n and IEEE 802.11a/ac of the product.

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2013**, **47 CFR FCC Part 15 Subpart E, KDB789033 D02 v01, KDB662911 D01 v02r01, KDB644545 D03 v01.**

The test equipment used to perform the test is calibrated and traceable to NML/ROC.

TAF
Testing Laboratory
1190

Table of Contents

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR441804-22AB	Rev. 01	Initial issue of report	Oct. 08, 2015

1. VERIFICATION OF COMPLIANCE

Product Name	:	Oak External
Brand Name	:	Symbol
Model No.	:	AP-7522
Applicant	:	Symbol Technologies, Inc.
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart E § 15.407

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Apr. 15, 2014 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Sam Chen

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart E				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	11.59 dB
4.2	15.407(a)	26dB Spectrum Bandwidth and 99% Occupied Bandwidth	Complies	-
4.3	15.407(e)	6dB Spectrum Bandwidth	Complies	-
4.4	15.407(a)	Maximum Conducted Output Power	Complies	0.01 dB
4.5	15.407(a)	Power Spectral Density	Complies	0.01 dB
4.6	15.407(b)	Radiated Emissions	Complies	1.00 dB
4.7	15.407(b)	Band Edge Emissions	Complies	1.01 dB
4.8	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Product Type	WLAN (1TX,2TX, 1RX,2RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter or PoE
Modulation	IEEE 802.11a: OFDM IEEE 802.11n/ac: see the below table
Data Modulation	IEEE 802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Data Rate (Mbps)	IEEE 802.11a: OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n/ac: see the below table
Frequency Range	5150 ~ 5350MHz / 5470 ~ 5725MHz / 5725 ~ 5850 MHz
Channel Number	25 for 20MHz bandwidth ; 12 for 40MHz bandwidth 6 for 80MHz bandwidth
Channel Band Width (99%)	**<For Non-Beamforming Mode>** **For indoor use** **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.67 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.49 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 20.49 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 38.49 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz **For outdoor use** **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.76 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.76 MHz

	IEEE 802.11ac MCS0/Nss1 (VHT80): 76.12 MHz **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.76 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.83 MHz **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.66 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.48 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.12 MHz **Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 1TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.90 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz **For indoor / outdoor use** **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)** Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.84 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.63 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.84 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.34 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.12 MHz Band 4: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.76 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.96 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.12 MHz **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)** Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.58 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.63 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.12 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.58 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.77 MHz

	IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz Band 4: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.58 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.90 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)** Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.75 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.62 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.12 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.58 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.77 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz Band 4: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.75 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.77 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz <For STBC Mode> **For indoor use** **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.84 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 39.80 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.41 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 19.16 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 39.22 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz

	For outdoor use **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.41 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.63 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.61 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.61 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz **Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 2TX)** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.89 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.61 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz **For indoor / outdoor use** **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)** Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.76 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.77 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.76 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.43 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz Band 4: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.67 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.76 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)** Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz

	IEEE 802.11ac MCS0/Nss1 (VHT40): 36.61 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.54 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.89 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.61 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz Band 4: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.84 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.61 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)** Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.84 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.77 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 21.68 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.77 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz Band 4: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.84 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.04 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz

Maximum Conducted Output Power	**<For Non-Beamforming Mode>** **For indoor use** **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)** Band 1: IEEE 802.11a: 21.91 dBm IEEE 802.11n MCS0 (HT20): 21.90 dBm IEEE 802.11n MCS0 (HT40): 20.51 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.92 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.55 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.49 dBm **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)** Band 1: IEEE 802.11a: 24.47 dBm IEEE 802.11n MCS0 (HT20): 24.47 dBm IEEE 802.11n MCS0 (HT40): 23.12 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 24.48 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.18 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.68 dBm **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)** Band 1: IEEE 802.11a: 21.61 dBm IEEE 802.11n MCS0 (HT20): 21.66 dBm IEEE 802.11n MCS0 (HT40): 19.98 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.61 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.04 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.16 dBm **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)** Band 1: IEEE 802.11a: 24.47 dBm IEEE 802.11n MCS0 (HT20): 24.47 dBm IEEE 802.11n MCS0 (HT40): 23.12 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 24.48 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.18 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.36 dBm **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)** Band 1: IEEE 802.11a: 21.77 dBm

	IEEE 802.11n MCS0 (HT20): 21.78 dBm IEEE 802.11n MCS0 (HT40): 21.09 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.89 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.14 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 14.68 dBm **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)** Band 1: IEEE 802.11a: 24.47 dBm IEEE 802.11n MCS0 (HT20): 24.47 dBm IEEE 802.11n MCS0 (HT40): 23.50 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 24.48 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.50 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.37 dBm **For outdoor use** **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)** Band 1: IEEE 802.11a: 15.26 dBm IEEE 802.11n MCS0 (HT20): 15.25 dBm IEEE 802.11n MCS0 (HT40): 15.22 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 15.27 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 15.20 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.31 dBm **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)** Band 1: IEEE 802.11a: 15.27 dBm IEEE 802.11n MCS0 (HT20): 15.27 dBm IEEE 802.11n MCS0 (HT40): 15.21 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 15.25 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 15.21 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.28 dBm **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)** Band 1: IEEE 802.11a: 13.58 dBm IEEE 802.11n MCS0 (HT20): 13.61 dBm IEEE 802.11n MCS0 (HT40): 13.62 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 13.62 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 13.64 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 13.52 dBm

	Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX) Band 1: IEEE 802.11a: 13.47 dBm IEEE 802.11n MCS0 (HT20): 13.46 dBm IEEE 802.11n MCS0 (HT40): 13.60 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 13.49 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 13.61 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 13.66 dBm **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)** Band 1: IEEE 802.11a: 19.55 dBm IEEE 802.11n MCS0 (HT20): 19.47 dBm IEEE 802.11n MCS0 (HT40): 19.53 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.59 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.59 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 14.68 dBm **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)** Band 1: IEEE 802.11a: 19.59 dBm IEEE 802.11n MCS0 (HT20): 19.58 dBm IEEE 802.11n MCS0 (HT40): 19.64 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.60 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.65 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.37 dBm **Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 1TX)** Band 1: IEEE 802.11a: 16.61 dBm IEEE 802.11n MCS0 (HT20): 16.59 dBm IEEE 802.11n MCS0 (HT40): 16.61 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 16.67 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 16.61 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.32 dBm **Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 2TX)** Band 1: IEEE 802.11a: 16.69 dBm IEEE 802.11n MCS0 (HT20): 16.68 dBm IEEE 802.11n MCS0 (HT40): 16.65 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 16.68 dBm

	IEEE 802.11ac MCS0/Nss1 (VHT40): 16.68 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.64 dBm **For indoor / outdoor use** **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)** Band 2: IEEE 802.11a: 19.89 dBm IEEE 802.11n MCS0 (HT20): 19.97 dBm IEEE 802.11n MCS0 (HT40): 20.16 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 20.07 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.22 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 12.88 dBm Band 3: IEEE 802.11a: 19.81 dBm IEEE 802.11n MCS0 (HT20): 19.88 dBm IEEE 802.11n MCS0 (HT40): 19.06 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.82 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.07 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.12 dBm Band 4: IEEE 802.11a: 21.34 dBm IEEE 802.11n MCS0 (HT20): 21.33 dBm IEEE 802.11n MCS0 (HT40): 15.35 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.39 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 15.36 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 13.59 dBm **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)** Band 2: IEEE 802.11a: 20.82 dBm IEEE 802.11n MCS0 (HT20): 20.79 dBm IEEE 802.11n MCS0 (HT40): 22.59 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 20.83 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.61 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.17 dBm Band 3: IEEE 802.11a: 21.23 dBm IEEE 802.11n MCS0 (HT20): 21.25 dBm IEEE 802.11n MCS0 (HT40): 22.12 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.24 dBm

	IEEE 802.11ac MCS0/Nss1 (VHT40): 22.12 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 20.58 dBm Band 4: IEEE 802.11a: 22.68 dBm IEEE 802.11n MCS0 (HT20): 22.75 dBm IEEE 802.11n MCS0 (HT40): 17.48 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 22.75 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.46 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.61 dBm **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)** Band 2: IEEE 802.11a: 19.23 dBm IEEE 802.11n MCS0 (HT20): 19.24 dBm IEEE 802.11n MCS0 (HT40): 19.22 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.28 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.24 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 13.53 dBm Band 3: IEEE 802.11a: 19.16 dBm IEEE 802.11n MCS0 (HT20): 19.14 dBm IEEE 802.11n MCS0 (HT40): 19.09 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.17 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.12 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.69 dBm Band 4: IEEE 802.11a: 21.22 dBm IEEE 802.11n MCS0 (HT20): 21.19 dBm IEEE 802.11n MCS0 (HT40): 16.30 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.24 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 16.32 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 14.15 dBm **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)** Band 2: IEEE 802.11a: 19.23 dBm IEEE 802.11n MCS0 (HT20): 19.23 dBm IEEE 802.11n MCS0 (HT40): 19.15 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.26 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.15 dBm

	IEEE 802.11ac MCS0/Nss1 (VHT80): 16.43 dBm Band 3: IEEE 802.11a: 19.21 dBm IEEE 802.11n MCS0 (HT20): 19.20 dBm IEEE 802.11n MCS0 (HT40): 19.10 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.22 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.15 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.17 dBm Band 4: IEEE 802.11a: 23.29 dBm IEEE 802.11n MCS0 (HT20): 23.28 dBm IEEE 802.11n MCS0 (HT40): 20.04 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.29 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.10 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.95 dBm **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)** Band 2: IEEE 802.11a: 18.53 dBm IEEE 802.11n MCS0 (HT20): 18.52 dBm IEEE 802.11n MCS0 (HT40): 17.81 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 18.57 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.79 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 14.58 dBm Band 3: IEEE 802.11a: 19.26 dBm IEEE 802.11n MCS0 (HT20): 19.31 dBm IEEE 802.11n MCS0 (HT40): 18.68 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.28 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.69 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.71 dBm Band 4: IEEE 802.11a: 21.21 dBm IEEE 802.11n MCS0 (HT20): 21.23 dBm IEEE 802.11n MCS0 (HT40): 19.56 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.22 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.66 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.57 dBm

	Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX) Band 2: IEEE 802.11a: 21.87 dBm IEEE 802.11n MCS0 (HT20): 21.87 dBm IEEE 802.11n MCS0 (HT40): 22.59 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.89 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.61 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.87 dBm Band 3: IEEE 802.11a: 21.78 dBm IEEE 802.11n MCS0 (HT20): 21.80 dBm IEEE 802.11n MCS0 (HT40): 23.42 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.81 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.43 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 22.76 dBm Band 4: IEEE 802.11a: 24.27 dBm IEEE 802.11n MCS0 (HT20): 24.29 dBm IEEE 802.11n MCS0 (HT40): 20.57 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 24.30 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.57 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.56 dBm **<For Beamforming Mode>** **For indoor use** **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)** Band 1: IEEE 802.11a: 24.53 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 24.58 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 24.14 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.08 dBm **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)** Band 1: IEEE 802.11a: 23.57 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.57 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.18 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.68 dBm

	Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX) Band 1: IEEE 802.11a: 24.53 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 24.58 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 24.56 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.08 dBm **For outdoor use** **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)** Band 1: IEEE 802.11a: 12.26 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 12.28 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 12.24 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 12.09 dBm **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)** Band 1: IEEE 802.11a: 13.47 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 13.49 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 13.61 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 13.66 dBm **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)** Band 1: IEEE 802.11a: 16.51 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 16.56 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 16.60 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.54 dBm **Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 2TX)** Band 1: IEEE 802.11a: 13.59 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 13.65 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 13.68 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 13.45 dBm **For indoor / outdoor use** **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)** Band 2: IEEE 802.11a: 20.50 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 20.58 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.53 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.17 dBm

	Band 3: IEEE 802.11a: 20.57 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 20.57 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.56 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.39 dBm Band 4: IEEE 802.11a: 21.41 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.45 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.78 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.61 dBm **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)** Band 2: IEEE 802.11a: 19.23 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.26 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.15 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.16 dBm Band 3: IEEE 802.11a: 19.21 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.22 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.15 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.17 dBm Band 4: IEEE 802.11a: 20.78 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 20.75 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.57 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.25 dBm **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)** Band 2: IEEE 802.11a: 21.53 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.54 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.53 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.42 dBm Band 3: IEEE 802.11a: 21.39 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.56 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.40 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 21.52 dBm Band 4:

	IEEE 802.11a: 24.27 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 24.30 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.82 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.56 dBm <For STBC Mode> For indoor use Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX) Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 24.51 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 24.21 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.25 dBm Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX) Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 24.51 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.70 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.13 dBm Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX) Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 24.51 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 24.54 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.52 dBm For outdoor use Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX) Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 15.29 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 15.27 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.23 dBm Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX) Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 13.63 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 13.61 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 13.66 dBm Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX) Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 19.65 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.65 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.52 dBm

	Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 2TX) Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 16.68 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 16.68 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.49 dBm **For indoor / outdoor use** **Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)** Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 23.58 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.82 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.02 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 23.24 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.33 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.91 dBm Band 4: IEEE 802.11ac MCS0/Nss1 (VHT20): 22.87 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.69 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.29 dBm **Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)** Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 19.29 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.17 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.34 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 19.28 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.15 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.21 dBm Band 4: IEEE 802.11ac MCS0/Nss1 (VHT20): 23.59 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 19.04 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.90 dBm **Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)** Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 23.58 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.82 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.80 dBm

	Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 23.24 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.56 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 22.55 dBm Band 4: IEEE 802.11ac MCS0/Nss1 (VHT20): 24.14 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.83 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.51 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Items	Description	
Communication Mode	☒ IP Based (Load Based)	☐ Frame Based
TPC Function	☒ With TPC	☐ Without TPC
Weather Band (5600~5650MHz)	☒ With 5600~5650MHz	☐ Without 5600~5650MHz
Beamforming Function	☒ With beamforming	☐ Without beamforming
Operating Mode	☒ Outdoor access point	
	☒ Indoor access point	
	☐ Fixed point-to-point access points	
	☐ Mobile and portable client devices	

Note: The beamforming function supports 802.11g/n/ac in 2.4GHz and 802.11a/n/ac in 5GHz.

Antenna and Band width

Antenna	Single (TX)			Two (TX)		
Band width Mode	20 MHz	40 MHz	80 MHz	20 MHz	40 MHz	80 MHz
IEEE 802.11a	V	X	X	V	X	X
IEEE 802.11n	V	V	X	V	V	X
IEEE 802.11ac	V	V	V	V	V	V

IEEE 11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	1,2	MCS 0-15
802.11n (HT40)	1,2	MCS 0-15
802.11ac (VHT20)	1,2	MCS 0-9/Nss1-2
802.11ac (VHT40)	1,2	MCS 0-9/Nss1-2
802.11ac (VHT80)	1,2	MCS 0-9/Nss1-2

Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput). Then EUT supports HT20 and HT40.

Note 2: IEEE Std. 802.11ac modulation consists of VHT20, VHT40, VHT80 and VHT160 (VHT: Very High Throughput). Then EUT supports VHT20, VHT40 and VHT80.

Note 3: Modulation modes consist of below configuration:
HT20/HT40: IEEE 802.11n, VHT20/VHT40/VHT80: IEEE 802.11ac

3.2. Accessories

Power	Brand	Model	Rating
Adapter	Leader	NU60-H120500-13	INPUT: 100-240V ~ 50/60Hz, 1.4A OUTPUT: 12.0V, 5.0A

3.3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Indoor/ Outdoor	Antenna Gain (dBi)		Cable Loss (dBi)		True Gain (dBi)	
						2.4G	5G	2.4G	5G	2.4G	5G
1	MOTOROLA	ML-2452-APA2-01	Dipole	RP-SMA Male	Indoor	3.17	4.85	-	-	3.17	4.85
2	MOTOROLA	ML-2452-HPA5-036	Dipole	RP-SMA Male	Indoor/ Outdoor	3	5	-	-	3	5
3	MOTOROLA	ML-2452-APAG2A1-01	Dipole	RP-SMA Male	Indoor	2.7	1.7	-	-	2.7	1.7
4	MOTOROLA	ML-2452-PNA5-01R	Panel	N-Type Male	Indoor/ Outdoor	5.5	6	0.7	0.9	4.8	5.1
5	ZEBRA	ML-2452-HPA6-01	Dipole	N-Type	Indoor/ Outdoor	5.3	6.1	0.7	0.9	4.6	5.2
6	ZEBRA	ML-2452-HPAG4A6-01	Dipole	N male	Indoor/ Outdoor	4	7.3	0.7	0.9	3.3	6.4
7	ZEBRA	ML-2452-PNL9M3-N36	Polarized Panel	N-Type Male*3	Indoor/ Outdoor	11	10.7	-	-	11	10.7
8	ZEBRA	ML-2452-PTA3M3-036	Patch	RP-SMA Male*3	Indoor	5	4	-	-	5	4
9	ZEBRA	ML-2452-VMM5M3-N72	Patch	N-Type Male*3	Indoor/ Outdoor	4.5	5.4	-	-	4.5	5.4

Note1: There are 9 antennas in the antenna table list.

For Ant. 1~Ant. 4

The test result of Ant. 1~Ant. 4 for 5GHz, please refer to FR441804-04AB and FR441804-08 radio test report.

For Ant. 2 and Ant. 4: adding outdoor use. Only Ant. 4 it was selected to perform the test and recorded in this report.

For Ant. 5~Ant. 9

The EUT has three types of antenna. Only the highest gain antenna was selected from each different type of antenna to test and record in this report.

Ant. 6, Ant. 7 and Ant. 9 were selected to perform the test and recorded in this report.

For Ant. 7: One is Horizontal and the others are Vertical for antenna position.

Note2: Cables to use the N connector antennas to the AP (RP-SMA) are list in the Antenna Guide.

Note3: RF Connector Adapter used during testing, settings adjusted for measured loss.

<For 2.4GHz Band>

For IEEE 802.11b/g/n/ac mode (1TX,2TX/1RX,2RX):

The EUT can support 1TX, 2TX and 1RX, 2RX functions.

For 1TX (Ant. 5 and Ant. 8)

Both Chain 1 and Chain 2 support transmit and receive functions, but only one of them will be used at one time.

After evaluating, Chain 1 has been evaluated to be the worst case, so it's selected to record in this test report.

For 1TX (Ant. 7)

Both Chain 1 and Chain 2 support transmit and receive functions, but only one of them will be used at one time.

After evaluating, Chain 2 has been evaluated to be the worst case, so it's selected to record in this test report.

For 2TX

Chain 1 and Chain 2 could transmit/receive simultaneously.

<For 5GHz Band>

For IEEE 802.11a/n/ac mode (1TX,2TX/1RX,2RX):

The EUT can support 1TX, 2TX and 1RX, 2RX functions.

For 1TX (Ant. 4, Ant. 6 and Ant. 7)

Both Chain 1 and Chain 2 support transmit and receive functions, but only one of them will be used at one time.

After evaluating, Chain 2 has been evaluated to be the worst case, so it's selected to record in this test report.

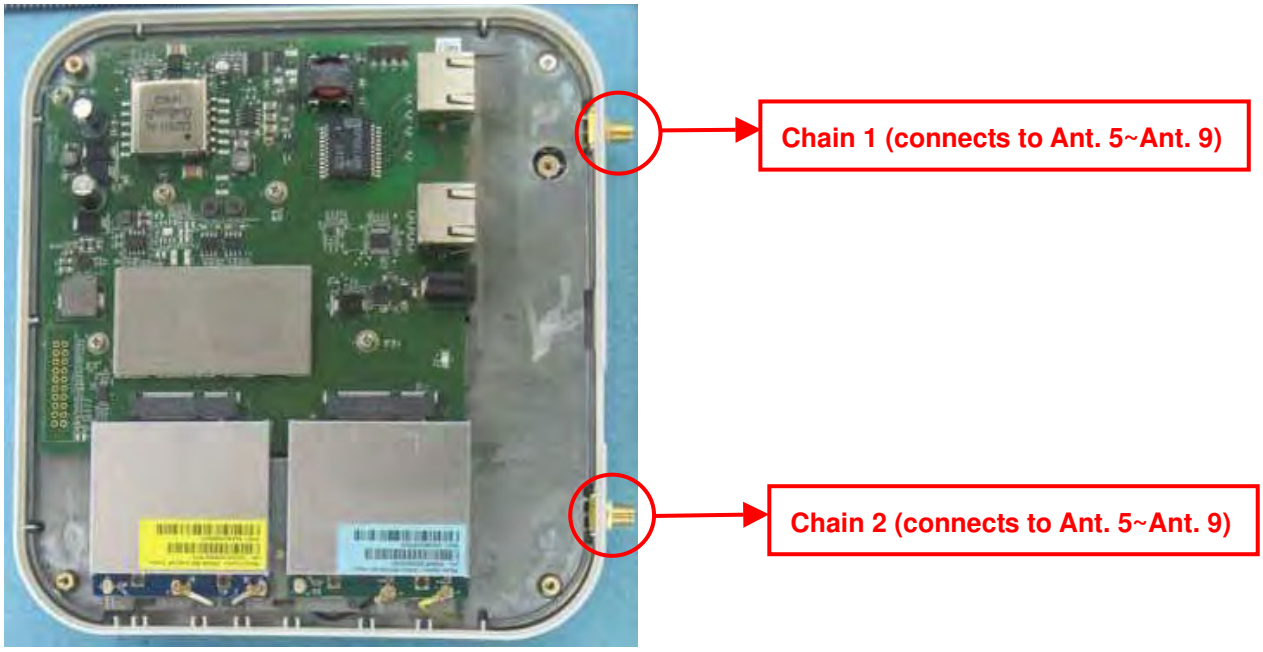
For 1TX (Ant. 9)

Both Chain 1 and Chain 2 support transmit and receive functions, but only one of them will be used at one time.

After evaluating, Chain 1 has been evaluated to be the worst case, so it's selected to record in this test report.

For 2TX

Chain 1 and Chain 2 could transmit/receive simultaneously.


Chain 1 (connects to Ant. 5~Ant. 9)
Chain 2 (connects to Ant. 5~Ant. 9)

3.4. Table for Carrier Frequencies

There are three bandwidth systems.

For 20MHz bandwidth systems, use Channel 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144, 149, 153, 157, 161, 165.

For 40MHz bandwidth systems, use Channel 38, 46, 54, 62, 102, 110, 118, 126, 134, 142, 151, 159.

For 80MHz bandwidth systems, use Channel 42, 58, 106, 122, 138, 155.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz Band 1	36	5180 MHz	44	5220 MHz
	38	5190 MHz	46	5230 MHz
	40	5200 MHz	48	5240 MHz
	42	5210 MHz	-	-
5250~5350 MHz Band 2	52	5260 MHz	60	5300 MHz
	54	5270 MHz	62	5310 MHz
	56	5280 MHz	64	5320 MHz
	58	5290 MHz	-	-
5470~5725 MHz Band 3	100	5500 MHz	124	5620 MHz
	102	5510 MHz	126	5630 MHz
	104	5520 MHz	128	5640 MHz
	106	5530 MHz	132	5660 MHz
	108	5540 MHz	134	5670 MHz
	110	5550 MHz	136	5680 MHz
	112	5560 MHz	138	5690 MHz
	116	5580 MHz	140	5700 MHz
	118	5590 MHz	142	5710 MHz
	120	5600 MHz	144	5720 MHz
	122	5610 MHz	-	-
5725~5850 MHz Band 4	149	5745 MHz	157	5785 MHz
	151	5755 MHz	159	5795 MHz
	153	5765 MHz	161	5805 MHz
	155	5775 MHz	165	5825 MHz

3.5. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode		Data Rate	Channel	Chain
AC Power Conducted Emission	Normal Link		-	-	-
Max. Conducted Output Power	**For Non-Beamforming Mode**				
	11a/BPSK	Band 1-4	6Mbps	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1(Ant. 9) 2(Ant. 4.6.7) 1+2
	11n HT20	Band 1-4	MCS0	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1(Ant. 9) 2(Ant. 4.6.7) 1+2
	11n HT40	Band 1-4	MCS0	38/46/54/62/ 102/110/134/ 142/151/159	1(Ant. 9) 2(Ant. 4.6.7) 1+2
	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1(Ant. 9) 2(Ant. 4.6.7) 1+2
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1(Ant. 9) 2(Ant. 4.6.7) 1+2
	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1(Ant. 9) 2(Ant. 4.6.7) 1+2
	For Beamforming Mode				
	11a/BPSK	Band 1-4	6Mbps	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1+2

	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1+2
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1+2
	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1+2
	For STBC Mode				
	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1+2
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1+2
	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1+2
Power Spectral Density	**For Non-Beamforming Mode**				
	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1(Ant. 9) 2(Ant. 4.6.7) 1+2
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1(Ant. 9) 2(Ant. 4.6.7) 1+2
	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1(Ant. 9) 2(Ant. 4.6.7) 1+2
	For Beamforming Mode				
	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1+2
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1+2

	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1+2
	For STBC Mode				
	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1+2
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1+2
	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1+2
26dB Spectrum Bandwidth & 99% Occupied Bandwidth Measurement	**For Non-Beamforming Mode**				
	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1(Ant. 9) 2(Ant. 4.6.7)
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1(Ant. 9) 2(Ant. 4.6.7)
	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1(Ant. 9) 2(Ant. 4.6.7)
	For STBC Mode				
	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1+2
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1+2
	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1+2

6dB Spectrum Bandwidth Measurement	**For Non-Beamforming Mode**				
	11ac VHT20	Band 4	MCS0/Nss1	149/157/165	1(Ant. 9) 2(Ant. 4.6.7)
	11ac VHT40	Band 4	MCS0/Nss1	151/159	1(Ant. 9) 2(Ant. 4.6.7)
	11ac VHT80	Band 4	MCS0/Nss1	155	1(Ant. 9) 2(Ant. 4.6.7)
	For STBC Mode				
	11ac VHT20	Band 4	MCS0/Nss1	149/157/165	1+2
	11ac VHT40	Band 4	MCS0/Nss1	151/159	1+2
	11ac VHT80	Band 4	MCS0/Nss1	155	1+2
Radiated Emission Below 1GHz	Normal Link		-	-	-
Radiated Emission Above 1GHz	**For Non-Beamforming Mode**				
	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1(Ant. 9) 2(Ant. 6.7) 1+2
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1(Ant. 9) 2(Ant. 6.7) 1+2
	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1(Ant. 9) 2(Ant. 6.7) 1+2
	For Beamforming Mode				
	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1+2
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1+2
	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1+2
	For STBC Mode				

	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1+2
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1+2
	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1+2
Band Edge Emissions	**For Non-Beamforming Mode**				
	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1(Ant. 9) 2(Ant. 6.7) 1+2
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1(Ant. 9) 2(Ant. 6.7) 1+2
	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1(Ant. 9) 2(Ant. 6.7) 1+2
	For Beamforming Mode				
	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1+2
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1+2
	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1+2
	For STBC Mode				
	11ac VHT20	Band 1-4	MCS0/Nss1	36/40/48/52/ 60/64/100/ 116/140/144/ 149/157/ 165	1+2
	11ac VHT40	Band 1-4	MCS0/Nss1	38/46/54/62/ 102/110/134/ 142/151/159	1+2

	11ac VHT80	Band 1-4	MCS0/Nss1	42/58/106/ 122/138/155	1+2

Note: VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.

The following test modes were performed for all tests:

For Conducted Emission test:

Mode 1. Normal Link - EUT + Ant. 7 + Adapter

Mode 2. Normal Link - EUT + Ant. 7 + PoE

Mode 1 is the worst case, so it was selected to record in this test report.

For Radiated Emission below 1GHz test:

Mode 1. Normal Link - EUT in Z axis + Ant. 7 + Adapter

Mode 2. Normal Link - EUT in Y axis + Ant. 7 + Adapter

Mode 2 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 will follow this same test mode.

Mode 3. Normal Link - EUT in Y axis + Ant. 7 + PoE

Mode 2 is the worst case, so it was selected to record in this test report.

For Radiated Emission above 1GHz test:

The EUT was performed at Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found at Y axis. So the measurement will follow this same test configuration.

Mode 1. CTX - EUT in Y axis + Ant. 6

Mode 2. CTX - EUT in Y axis + Ant. 7

Mode 3. CTX - EUT in Y axis + Ant. 9

For Co-location MPE and Radiated Emission Co-location Test:

The EUT could be applied with 2.4GHz WLAN function and 5GHz WLAN function; therefore Co-location Maximum Permissible Exposure (Please refer to FA: 441804-22) and Radiated Emission Co-location (please refer to Appendix B) tests are added for simultaneously transmit between 2.4GHz WLAN function and 5GHz WLAN function.

Note1: The PoE is for measurement only, would not be marketed.

The PoE information as below:

Power	Brand	Model
PoE	Motorola	PD-9001GR/AT/AC

Note2: indoor / outdoor test mode

Item	Band 1	Band 2	Band 3	Band 4
Indoor	V	V	V	V
Outdoor	V			

3.6. Table for Testing Locations

Test Site Location					
Address:	No.8, Lane 724, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.				
TEL:	886-3-656-9065				
FAX:	886-3-656-9085				
Test Site No.	**Site Category**	**Location**	**FCC Reg. No.**	**IC File No.**	**VCCI Reg. No**
03CH01-CB	SAC	Hsin Chu	262045	IC 4086D	-
CO01-CB	Conduction	Hsin Chu	262045	IC 4086D	-
TH01-CB	OVEN Room	Hsin Chu	-	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC).

3.7. Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR441804-04AB and FR441804-08.

Below is the table for the change of the product with respect to the original one.

Modifications	
1. Changing Applicant to "Symbol Technologies, Inc." from "Motorola Solutions, Inc." 2. Changing Applicant address to "One Zebra Plaza Holtsville, NY 11742 USA" from "One Motorola Plaza Holtsville, NY 11742 USA". 3. Changing brand name to "Symbol" from "MOTOROLA"	
Modifications	**Performance Checking**
4. Adding 5 antennas. (Ant. 5-Model name: ML-2452-HPA6-01) (Ant. 6-Model name: ML-2452-HPAG4A6-01) (Ant. 7-Model name: ML-2452-PNL9M3-N36) (Ant. 8-Model name: ML-2452-PTAC3-036) (Ant. 9-Model name: ML-2452-VMM5M3-N72)	1. Conducted Emissions 2. 26dB Bandwidth and 99% Occupied Bandwidth 3. 6dB Spectrum Bandwidth 4. Maximum Conducted Output Power 5. Power Spectral Density 6. Radiated Emissions Below 1GHz 7. Radiated Emissions Above 1GHz 8. Band Edge Emissions 9. Radiated Emission Co-location
5. Ant. 2 (Model name: ML-2452-HPA5-036) applies to indoor use only in the original filing and it applies to both indoor/outdoor uses now. 6. Ant. 4 (Model name: ML-2452-PNA5-01R) applies to indoor use only in the original filing and it applies to both indoor/outdoor uses now.	1. 26dB Bandwidth and 99% Occupied Bandwidth 2. Maximum Conducted Output Power 3. Power Spectral Density

3.8. Table for Supporting Units

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
Notebook*3	DELL	E6430	DoC

For Test Site No: 03CH01-CB (For Below 1GHz)

Support Unit	Brand	Model	FCC ID
Notebook*3	EDLL	E4300	DoC

For Test Site No: 03CH01-CB (For Above 1GHz / For Non-Beamforming Mode)

Support Unit	Brand	Model	FCC ID
Notebook	EDLL	E4300	DoC

For Test Site No: 03CH01-CB (For Above 1GHz / For Beamforming Mode)

Support Unit	Brand	Model	FCC ID
Notebook*2	EDLL	E4300	DoC
WLAN Dongle	Netgear	A6200	PY31220200

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC

3.9. Table for Parameters of Test Software Setting

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

<For Non-Beamforming Mode>

For indoor use

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)

Test Software Version	MTOOL_2.0.1.0		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	81	96	87
802.11n MCS0 HT20	81	96	87
802.11ac MCS0/Nss1 VHT20	81	91	87
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	75	87	
802.11ac MCS0/Nss1 VHT40	75	87	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	75		

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	78	90	85
802.11n MCS0 HT20	78	90	85
802.11ac MCS0/Nss1 VHT20	78	90	85
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	71	87	
802.11ac MCS0/Nss1 VHT40	71	87	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	70		

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)

Test Software Version	MTOOL_2.0.1.0		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	77	90	86
802.11n MCS0 HT20	77	90	86
802.11ac MCS0/Nss1 VHT20	77	90	86
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	71	85	
802.11ac MCS0/Nss1 VHT40	71	85	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	70		

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	78	90	86
802.11n MCS0 HT20	78	90	86
802.11ac MCS0/Nss1 VHT20	78	90	86
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	73	87	
802.11ac MCS0/Nss1 VHT40	73	87	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	69		

Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)

Test Software Version	MTOOL_2.0.1.0		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	85	92	93
802.11n MCS0 HT20	85	92	93
802.11ac MCS0/Nss1 VHT20	85	92	93
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	74	91	
802.11ac MCS0/Nss1 VHT40	74	91	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	71		

Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	78	90	88
802.11n MCS0 HT20	74	90	89
802.11ac MCS0/Nss1 VHT20	78	90	89
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	75	88	
802.11ac MCS0/Nss1 VHT40	75	88	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	73		

For outdoor use

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)

Test Software Version	MTOOL_2.0.1.0		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	66	66	67
802.11n MCS0 HT20	66	66	67
802.11ac MCS0/Nss1 VHT20	66	66	67
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	65	65	
802.11ac MCS0/Nss1 VHT40	65	65	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	71		

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	56	56	56
802.11n MCS0 HT20	56	56	56
802.11ac MCS0/Nss1 VHT20	56	56	56
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	59	55	
802.11ac MCS0/Nss1 VHT40	59	55	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	55		

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)

Test Software Version	MTOOL_2.0.1.0		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	59	59	59
802.11n MCS0 HT20	59	59	59
802.11ac MCS0/Nss1 VHT20	59	59	59
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	59	59	
802.11ac MCS0/Nss1 VHT40	59	59	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	61		

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	49	50	48
802.11n MCS0 HT20	49	50	48
802.11ac MCS0/Nss1 VHT20	49	50	48
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	49	48	
802.11ac MCS0/Nss1 VHT40	49	48	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	49		

Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)

Test Software Version	MTOOL_2.0.1.0		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	85	85	85
802.11n MCS0 HT20	85	85	85
802.11ac MCS0/Nss1 VHT20	85	85	85
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	74	85	
802.11ac MCS0/Nss1 VHT40	74	85	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	71		

Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	74	74	74
802.11n MCS0 HT20	74	74	74
802.11ac MCS0/Nss1 VHT20	74	74	74
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	74	74	
802.11ac MCS0/Nss1 VHT40	74	74	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	73		

Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 1TX)

Test Software Version	MTOOL_2.0.1.0		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	72	72	73
802.11n MCS0 HT20	72	72	73
802.11ac MCS0/Nss1 VHT20	72	72	73
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	71	73	
802.11ac MCS0/Nss1 VHT40	71	73	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	71		

Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	62	62	62
802.11n MCS0 HT20	62	62	62
802.11ac MCS0/Nss1 VHT20	62	62	62
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11n MCS0 HT40	60	62	
802.11ac MCS0/Nss1 VHT40	60	62	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	60		

For indoor / outdoor use

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)

Test Software Version	MTOOL_2.0.1.0									
Mode	Test Frequency (MHz)									
	NCB: 20MHz									
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	95	90	74	77	90	66	82	66	93	70
802.11n MCS0 HT20	95	90	74	77	90	66	82	66	93	70
802.11ac MCS0/Nss1 VHT20	82	81	74	77	81	66	82	66	93	70

Mode	NCB: 40MHz							
	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz
802.11n MCS0 HT40	89	63	70	82	72	82	62	68
802.11ac MCS0/Nss1 VHT40	84	63	70	82	72	82	62	68

Mode	NCB: 80MHz				
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz	5775 MHz
	57	66	72	83	62

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)

Test Software Version	DOS									
Mode	Test Frequency (MHz)									
	NCB: 20MHz									
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	76	78	75	78	77	68	80	66	89	65
802.11n MCS0 HT20	76	78	75	78	77	68	80	66	88	65
802.11ac MCS0/Nss1 VHT20	76	78	75	78	77	68	90	66	88	65
Mode	NCB: 40MHz									
	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz		
802.11n MCS0 HT40	86	60	67	80	71	80	62	67		
802.11ac MCS0/Nss1 VHT40	86	60	67	80	71	90	62	67		
Mode	NCB: 80MHz									
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz		5690 MHz		5775 MHz	
	57		66		73		83		59	

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)

Test Software Version	MTOOL_2.0.1.0									
Mode	Test Frequency (MHz)									
	NCB: 20MHz									
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	81	81	73	73	80	67	84	68	90	72
802.11n MCS0 HT20	81	81	73	73	80	67	84	68	90	72
802.11ac MCS0/Nss1 VHT20	81	81	73	73	80	67	87	68	90	72
Mode	NCB: 40MHz									
	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz		
802.11n MCS0 HT40	79	61	66	79	70	84	63	71		
802.11ac MCS0/Nss1 VHT40	79	61	66	79	70	87	63	71		
Mode	NCB: 80MHz									
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz		5690 MHz		5775 MHz	
	58		65		72		82		64	

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)

Test Software Version	DOS									
Mode	Test Frequency (MHz)									
	NCB: 20MHz									
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	70	71	71	70	70	68	71	71	91	69
802.11n MCS0 HT20	70	71	71	70	70	68	71	71	91	78
802.11ac MCS0/Nss1 VHT20	70	71	71	70	70	68	81	71	91	78
Mode	NCB: 40MHz									
	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz		
802.11n MCS0 HT40	70	62	67	69	71	71	62	76		
802.11ac MCS0/Nss1 VHT40	70	62	67	69	71	81	62	76		
Mode	NCB: 80MHz									
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz		5690 MHz		5775 MHz	
	58		65		70		80		60	

Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)

Test Software Version	MTOOL_2.0.1.0									
Mode	Test Frequency (MHz)									
	NCB: 20MHz									
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	81	81	81	85	80	83	92	83	98	87
802.11n MCS0 HT20	81	81	81	85	80	83	92	83	98	87
802.11ac MCS0/Nss1 VHT20	81	81	81	85	80	83	89	83	98	87
Mode	NCB: 40MHz									
	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz		
802.11n MCS0 HT40	79	72	74	79	82	92	79	91		
802.11ac MCS0/Nss1 VHT40	79	72	74	79	82	89	79	91		
Mode	NCB: 80MHz									
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz		5690 MHz		5775 MHz	
	69		74		78		89		77	

Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)

Test Software Version	DOS									
Mode	Test Frequency (MHz)									
	NCB: 20MHz									
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	82	83	79	79	82	75	81	77	96	82
802.11n MCS0 HT20	82	83	79	79	82	75	81	77	96	82
802.11ac MCS0/Nss1 VHT20	82	83	79	79	82	75	89	77	96	82
Mode	NCB: 40MHz									
	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz		
802.11n MCS0 HT40	86	69	73	89	76	81	70	80		
802.11ac MCS0/Nss1 VHT40	86	69	73	89	76	89	70	80		
Mode	NCB: 80MHz									
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz		5690 MHz		5775 MHz	
	70		73		83		89		72	

<For Beamforming Mode>

For indoor use

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	73	91	85
802.11ac MCS0/Nss1 VHT20	73	91	85
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	75	90	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	72		

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	70	87	83
802.11ac MCS0/Nss1 VHT20	70	87	83
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	65	87	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	70		

Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	78	91	92
802.11ac MCS0/Nss1 VHT20	78	91	92
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	75	92	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	72		

For outdoor use

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	44	44	44
802.11ac MCS0/Nss1 VHT20	44	44	44
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	42	42	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	42		

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	49	50	48
802.11ac MCS0/Nss1 VHT20	49	50	48
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	49	48	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	49		

Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	62	62	62
802.11ac MCS0/Nss1 VHT20	62	62	62
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	60	61	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	61		

Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11a	49	49	49
802.11ac MCS0/Nss1 VHT20	49	49	49
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	49	49	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	47		

For indoor / outdoor use

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)

Test Software Version	DOS									
Mode	Test Frequency (MHz)									
	NCB: 20MHz									
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	75	77	74	76	76	62	80	62	84	63
802.11ac MCS0/Nss1 VHT20	75	77	74	76	76	62	80	62	84	63
Mode	NCB: 40MHz									
	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz		
802.11ac MCS0/Nss1 VHT40	76	58	65	76	70	82	60	68		
Mode	NCB: 80MHz									
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz		5690 MHz		5775 MHz	
	57		68		69		78		59	

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)

Test Software Version	DOS									
Mode	Test Frequency (MHz)									
	NCB: 20MHz									
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	70	71	71	68	70	64	71	69	80	77
802.11ac MCS0/Nss1 VHT20	70	71	71	68	70	64	71	69	80	77
Mode	NCB: 40MHz									
	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz		
802.11ac MCS0/Nss1 VHT40	70	62	65	69	69	81	66	75		
Mode	NCB: 80MHz									
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz		5690 MHz		5775 MHz	
	58		63		67		80		57	

Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)

Test Software Version	DOS									
Mode	Test Frequency (MHz)									
	NCB: 20MHz									
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	81	81	78	79	80	76	81	77	96	78
802.11ac MCS0/Nss1 VHT20	81	81	78	79	81	76	81	77	96	79
Mode	NCB: 40MHz									
	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz		
802.11ac MCS0/Nss1 VHT40	81	69	74	80	75	85	71	81		
Mode	NCB: 80MHz									
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz		5690 MHz		5775 MHz	
	64		71		82		84		72	

<For STBC Mode>

For indoor use

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11ac MCS0/Nss1 VHT20	77	89	89
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	75	91	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	72		

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11ac MCS0/Nss1 VHT20	76	89	86
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	72	85	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	68		

Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11ac MCS0/Nss1 VHT20	84	89	91
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	76	92	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	74		

For outdoor use

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11ac MCS0/Nss1 VHT20	55	54	55
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	54	54	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	54		

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11ac MCS0/Nss1 VHT20	49	50	48
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	49	48	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	49		

Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11ac MCS0/Nss1 VHT20	75	75	75
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	75	75	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	74		

Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 2TX)

Test Software Version	DOS		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	5180 MHz	5200 MHz	5240 MHz
802.11ac MCS0/Nss1 VHT20	62	62	62
Mode	NCB: 40MHz		
	5190 MHz	5230 MHz	
802.11ac MCS0/Nss1 VHT40	60	61	
Mode	NCB: 80MHz		
802.11ac MCS0/Nss1 VHT80	5210 MHz		
	60		

For indoor / outdoor use

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)

Test Software Version	DOS									
Mode	Test Frequency (MHz)									
	NCB: 20MHz									
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11ac MCS0/Nss1 VHT20	87	85	75	76	85	67	91	66	90	66
Mode	NCB: 40MHz									
	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz		
802.11ac MCS0/Nss1 VHT40	85	63	69	79	71	89	64	72		
Mode	NCB: 80MHz									
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz		5690 MHz		5775 MHz	
	61		66		70		80		66	

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)

Test Software Version	DOS									
Mode	Test Frequency (MHz)									
	NCB: 20MHz									
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11ac MCS0/Nss1 VHT20	71	71	70	71	70	69	72	72	91	69
Mode	NCB: 40MHz									
	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz		
802.11ac MCS0/Nss1 VHT40	71	63	67	69	71	81	66	74		
Mode	NCB: 80MHz									
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz		5690 MHz		5775 MHz	
	58		64		69		81		60	

Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)

Test Software Version	DOS									
Mode	Test Frequency (MHz)									
	NCB: 20MHz									
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11ac MCS0/Nss1 VHT20	87	85	85	83	85	76	91	80	95	82
Mode	NCB: 40MHz									
	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz		
802.11ac MCS0/Nss1 VHT40	85	68	74	89	80	89	76	81		
Mode	NCB: 80MHz									
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz		5610 MHz		5690 MHz		5775 MHz	
	65		72		83		89		72	

3.10. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN XP were executed.

The program was executed as follows:

1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under DOS.
3. Executed "Lantest.exe " to link with the remote workstation to receive and transmit packet by WLAN Dongle and transmit duty cycle no less 98%

3.11. Duty Cycle

For non-beamforming mode:

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.070	2.080	99.52	0.02	0.01
802.11ac MCS0/Nss1 VHT20	1.920	1.940	98.97	0.05	0.01
802.11ac MCS0/Nss1 VHT40	0.960	0.984	97.56	0.11	1.04
802.11ac MCS0/Nss1 VHT80	0.448	0.472	94.92	0.23	2.23

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.070	2.080	99.52	0.02	0.01
802.11ac MCS0/Nss1 VHT20	1.920	1.940	98.97	0.05	0.01
802.11ac MCS0/Nss1 VHT40	0.960	0.984	97.56	0.11	1.04
802.11ac MCS0/Nss1 VHT80	0.430	0.492	87.40	0.58	2.33

Mode 3 (Ant. 9 Patch antenna / 5.4dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.070	2.080	99.52	0.02	0.01
802.11ac MCS0/Nss1 VHT20	1.920	1.940	98.97	0.05	0.01
802.11ac MCS0/Nss1 VHT40	0.960	0.984	97.56	0.11	1.04
802.11ac MCS0/Nss1 VHT80	0.430	0.492	87.40	0.58	2.33

Mode 4 (Ant. 4 Panel antenna / 5.1dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.070	2.080	99.52	0.02	0.01
802.11ac MCS0/Nss1 VHT20	1.920	1.940	98.97	0.05	0.01
802.11ac MCS0/Nss1 VHT40	0.960	0.984	97.56	0.11	1.04
802.11ac MCS0/Nss1 VHT80	0.430	0.492	87.40	0.58	2.33

For beamforming mode:

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	4.959	5.233	94.78	0.23	0.20
802.11ac MCS0/Nss1 VHT40	4.544	4.984	91.16	0.40	0.22
802.11ac MCS0/Nss1 VHT80	4.959	5.233	94.78	0.23	0.20

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	4.959	5.233	94.78	0.23	0.20
802.11ac MCS0/Nss1 VHT40	4.544	4.984	91.16	0.40	0.22
802.11ac MCS0/Nss1 VHT80	4.959	5.233	94.78	0.23	0.20

Mode 3 (Ant. 9 Patch antenna / 5.4dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	4.959	5.233	94.78	0.23	0.20
802.11ac MCS0/Nss1 VHT40	4.544	4.984	91.16	0.40	0.22
802.11ac MCS0/Nss1 VHT80	4.959	5.233	94.78	0.23	0.20

Mode 4 (Ant. 4 Panel antenna / 5.1dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	4.959	5.233	94.78	0.23	0.20
802.11ac MCS0/Nss1 VHT40	4.544	4.984	91.16	0.40	0.22
802.11ac MCS0/Nss1 VHT80	4.959	5.233	94.78	0.23	0.20

For STBC mode:

Mode 1 (Ant. 6 Dipole antenna / 6.4dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	1.940	1.960	98.98	0.04	0.01
802.11ac MCS0/Nss1 VHT40	0.928	0.984	94.31	0.25	1.08
802.11ac MCS0/Nss1 VHT80	0.440	0.490	89.80	0.47	2.27

Mode 2 (Ant. 7 Polarized Panel / 10.7dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	1.940	1.960	98.98	0.04	0.01
802.11ac MCS0/Nss1 VHT40	0.928	0.984	94.31	0.25	1.08
802.11ac MCS0/Nss1 VHT80	0.440	0.490	89.80	0.47	2.27

Mode 3 (Ant. 9 Patch antenna / 5.4dBi)

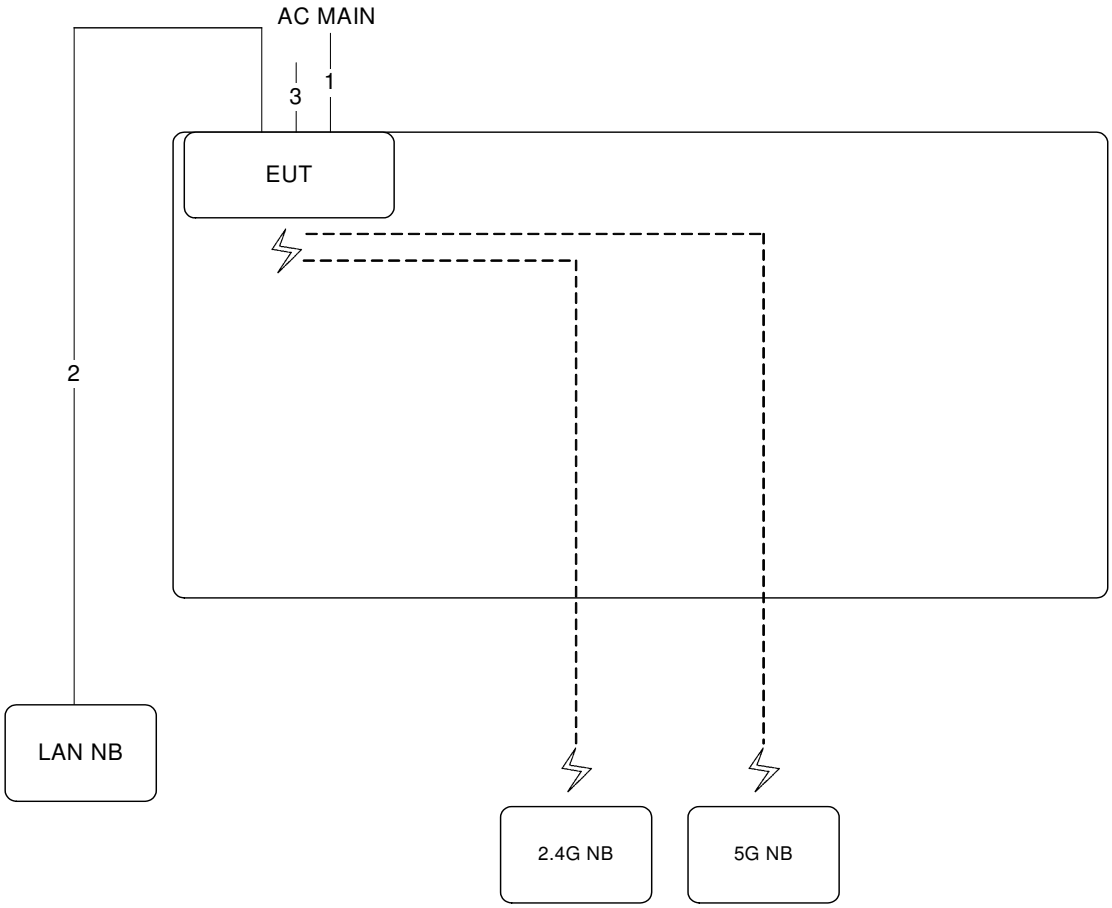
Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	1.940	1.960	98.98	0.04	0.01
802.11ac MCS0/Nss1 VHT40	0.928	0.984	94.31	0.25	1.08
802.11ac MCS0/Nss1 VHT80	0.440	0.490	89.80	0.47	2.27

Mode 4 (Ant. 4 Panel antenna / 5.1dBi)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	1.940	1.960	98.98	0.04	0.01
802.11ac MCS0/Nss1 VHT40	0.928	0.984	94.31	0.25	1.08
802.11ac MCS0/Nss1 VHT80	0.440	0.490	89.80	0.47	2.27

3.12. Test Configurations

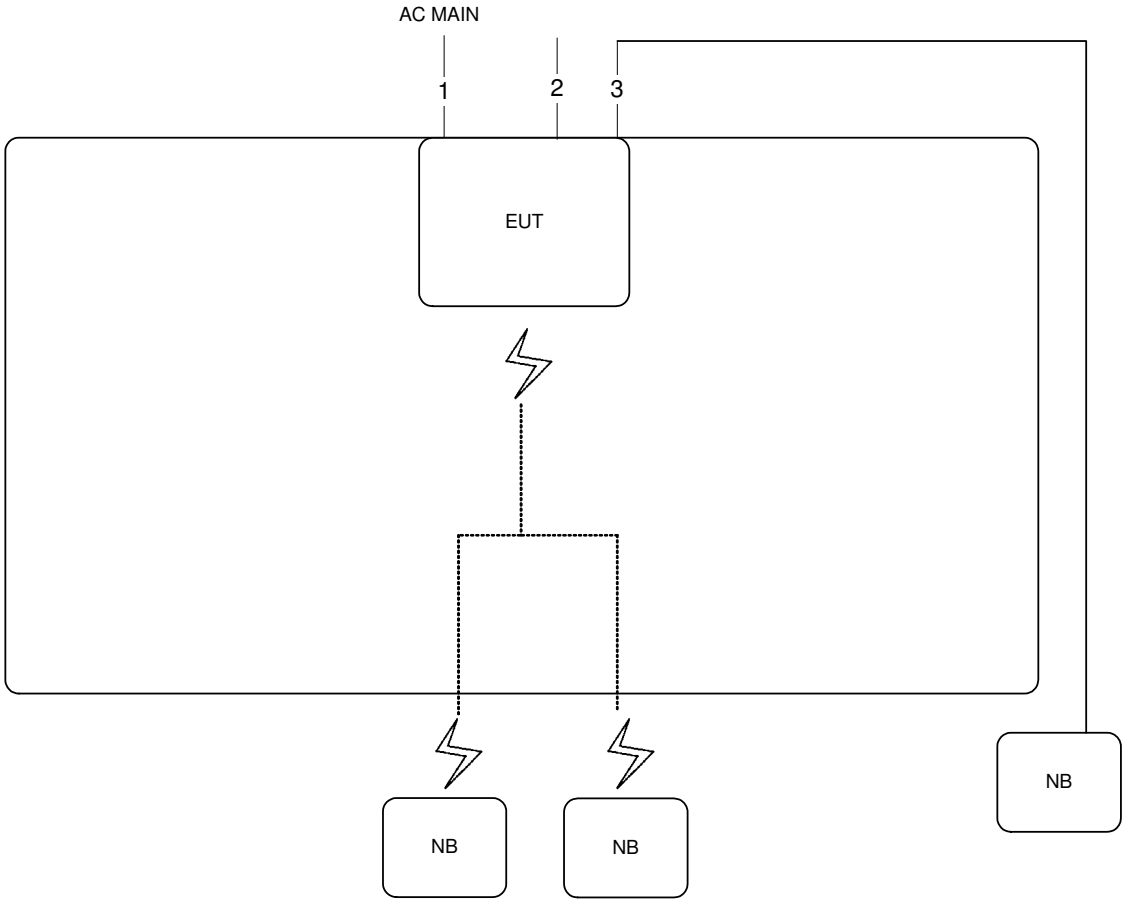
3.12.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power cable	No	3.3m
2	RJ-45 cable	No	10m
3	Console cable	No	1.5m

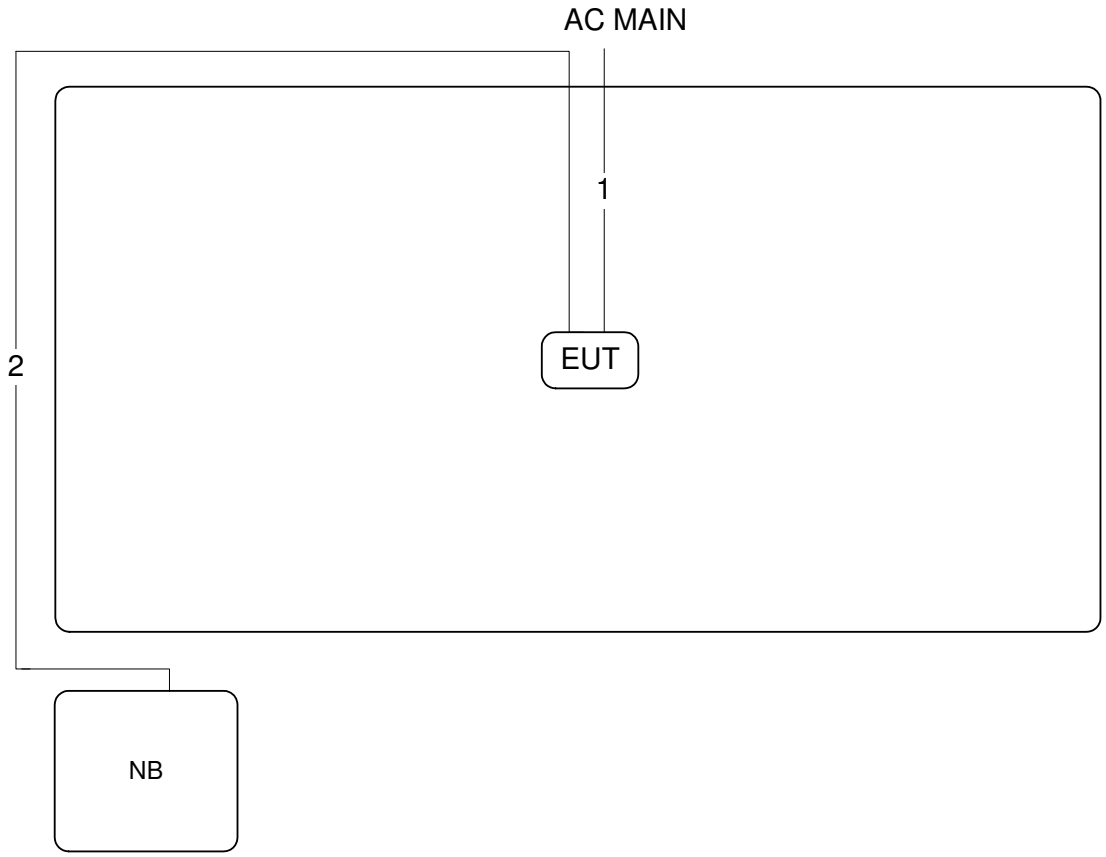
3.12.2. Radiation Emissions Test Configuration

Test Configuration: 30MHz ~1GHz



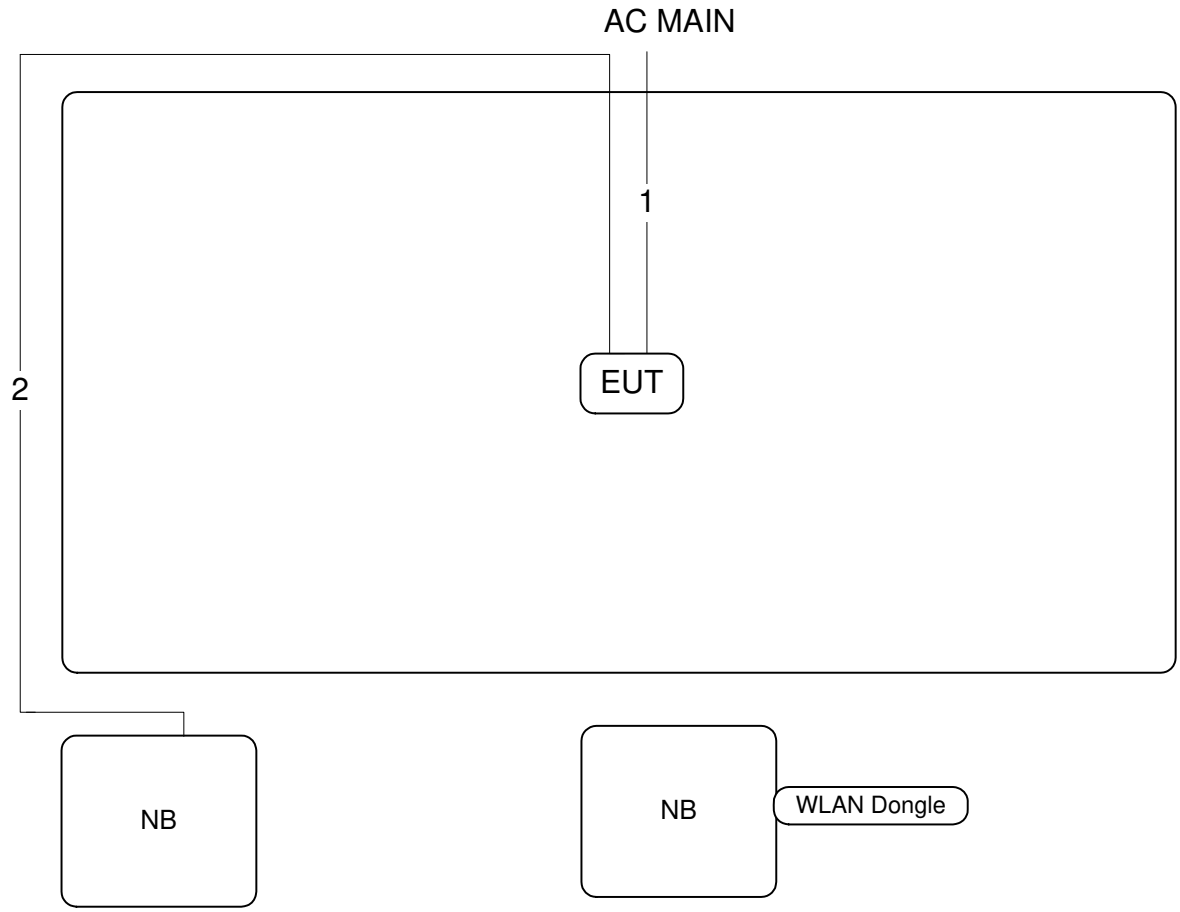
Item	Connection	Shielded	Length
1	Power cable	No	3.3m
2	Console cable	No	1.5m
3	RJ-45 cable	No	10m

Test Configuration: above 1GHz / For Non-Beamforming Mode



Item	Connection	Shielded	Length
1	Power cable	No	3.3m
2	RJ-45 cable	No	10m

For Beamforming Mode



tem	Connection	Shielded	Length
1	Power cable	No	3.3m
2	RJ-45 cable	No	10m

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product that is designed to connect to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

4.1.2. Measuring Instruments and Setting

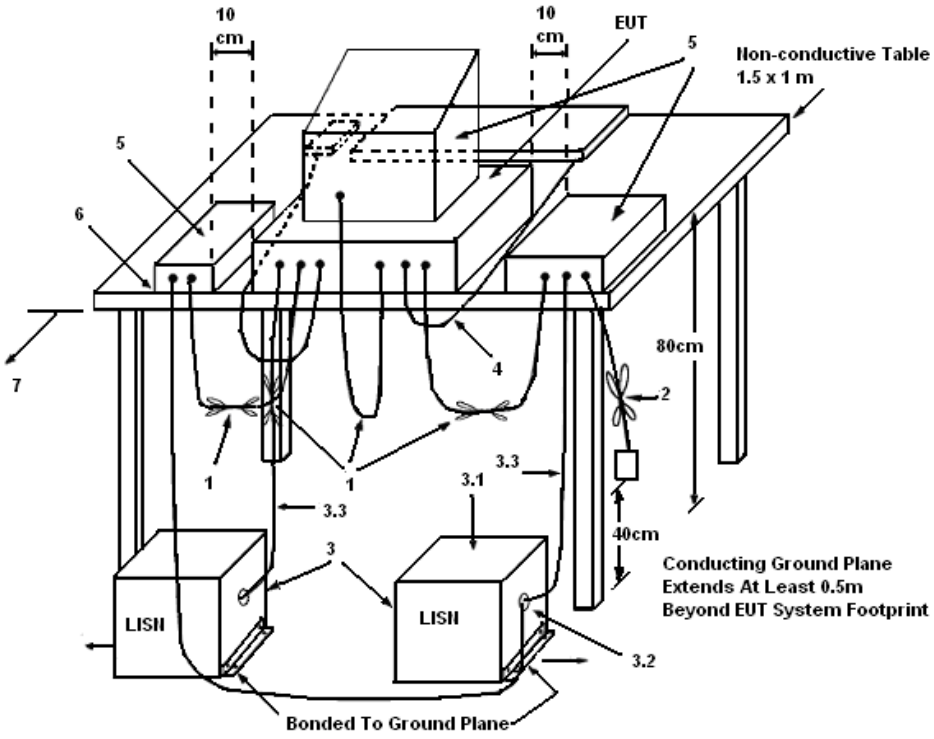
Please refer to section **5** of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 kHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

4.1.4. Test Setup Layout



LEGEND:

(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5. Test Deviation

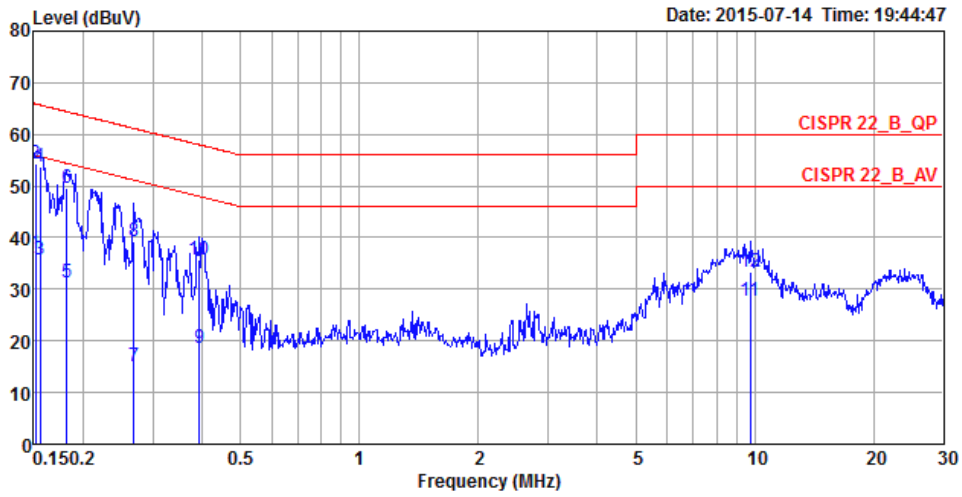
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

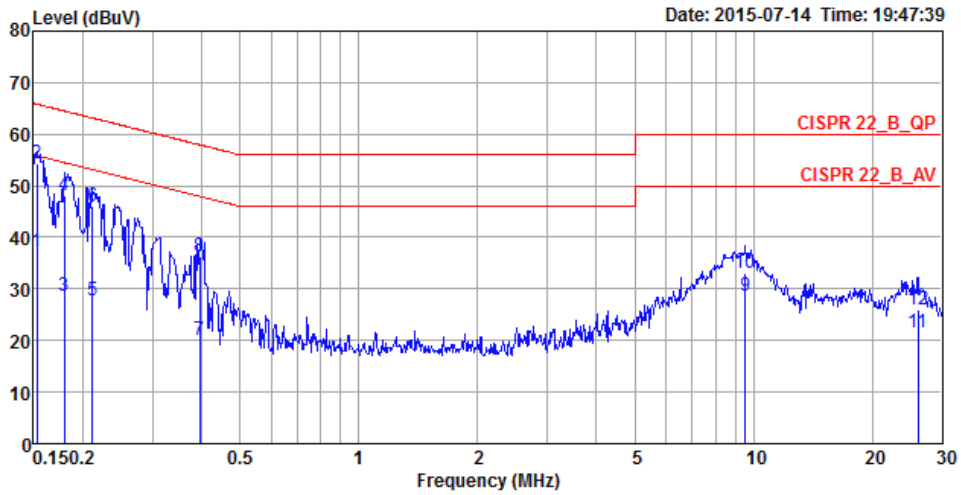
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	26°C	Humidity	63%
Test Engineer	Edison Lin	Phase	Line
Configuration	Normal Link	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1516	36.88	-19.03	55.91	26.93	9.93	0.02	LINE	Average
2	0.1516	54.27	-11.64	65.91	44.32	9.93	0.02	LINE	QP
3	0.1557	35.62	-20.07	55.69	25.67	9.93	0.02	LINE	Average
4	0.1557	53.73	-11.96	65.69	43.78	9.93	0.02	LINE	QP
5	0.1815	31.17	-23.25	54.42	21.22	9.93	0.02	LINE	Average
6	0.1815	49.72	-14.70	64.42	39.77	9.93	0.02	LINE	QP
7	0.2687	15.17	-35.99	51.16	5.21	9.93	0.03	LINE	Average
8	0.2687	39.15	-22.01	61.16	29.19	9.93	0.03	LINE	QP
9	0.3934	18.71	-29.28	47.99	8.74	9.93	0.04	LINE	Average
10	0.3934	35.80	-22.19	57.99	25.83	9.93	0.04	LINE	QP
11	9.7567	27.68	-22.32	50.00	17.27	10.18	0.23	LINE	Average
12	9.7567	33.41	-26.59	60.00	23.00	10.18	0.23	LINE	QP

Temperature	26°C	Humidity	63%
Test Engineer	Edison Lin	Phase	Neutral
Configuration	Normal Link	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1532	37.29	-18.53	55.82	27.49	9.78	0.02	NEUTRAL	Average
2	0.1532	54.23	-11.59	65.82	44.43	9.78	0.02	NEUTRAL	QP
3	0.1796	28.67	-25.83	54.50	18.86	9.79	0.02	NEUTRAL	Average
4	0.1796	48.26	-16.24	64.50	38.45	9.79	0.02	NEUTRAL	QP
5	0.2117	27.65	-25.49	53.14	17.84	9.79	0.02	NEUTRAL	Average
6	0.2117	46.05	-17.09	63.14	36.24	9.79	0.02	NEUTRAL	QP
7	0.3955	20.09	-27.86	47.95	10.26	9.79	0.04	NEUTRAL	Average
8	0.3955	36.35	-21.60	57.95	26.52	9.79	0.04	NEUTRAL	QP
9	9.5521	28.61	-21.39	50.00	18.38	10.00	0.23	NEUTRAL	Average
10	9.5521	33.12	-26.88	60.00	22.89	10.00	0.23	NEUTRAL	QP
11	26.1393	21.41	-28.59	50.00	10.84	10.29	0.28	NEUTRAL	Average
12	26.1393	25.91	-34.09	60.00	15.34	10.29	0.28	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss

4.2. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.2.1. Limit

No restriction limits.

4.2.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

26dB Bandwidth	
Spectrum Parameters	**Setting**
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RBW	Approximately 1% of the emission bandwidth
VBW	VBW > RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto
99% Occupied Bandwidth	
Spectrum Parameters	**Setting**
Span	1.5 times to 5.0 times the OBW
RBW	1 % to 5 % of the OBW
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold

4.2.3. Test Procedures

For Radiated 26dB Bandwidth and 99% Occupied Bandwidth Measurement:

7. The transmitter was radiated to the spectrum analyzer in peak hold mode.
8. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.2.4. Test Setup Layout

For Radiated 26dB Bandwidth and 99% Occupied Bandwidth Measurement:

This test setup layout is the same as that shown in section **4.6.4**.

4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.2.7. Test Result of 26dB Bandwidth and 99% Occupied Bandwidth

<For Non-Beamforming Mode>

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai		
Test Mode	Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)		

For indoor use

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	21.65	18.06
	5200 MHz	38.78	18.67
	5240 MHz	36.61	18.32
802.11ac MCS0/Nss1 VHT40	5190 MHz	41.01	36.76
	5230 MHz	64.78	37.19
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.32	75.83

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.61	17.97
	5200 MHz	35.48	18.49
	5240 MHz	30.70	18.15
802.11ac MCS0/Nss1 VHT40	5190 MHz	40.87	36.76
	5230 MHz	59.71	37.19
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.90	75.83

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	27.65	18.15
	5200 MHz	38.78	18.84
	5240 MHz	40.78	20.49
802.11ac MCS0/Nss1 VHT40	5190 MHz	41.01	36.76
	5230 MHz	83.19	38.49
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.03	75.83

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai		
Test Mode	Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)		

For outdoor use

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	29.74	18.15
	5200 MHz	34.61	18.67
	5240 MHz	36.70	18.76
802.11ac MCS0/Nss1 VHT40	5190 MHz	41.01	36.76
	5230 MHz	40.87	36.76
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.61	76.12

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.61	17.97
	5200 MHz	20.87	17.97
	5240 MHz	20.70	17.97
802.11ac MCS0/Nss1 VHT40	5190 MHz	41.16	36.61
	5230 MHz	41.01	36.76
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.90	75.83

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	33.47	18.40
	5200 MHz	36.43	18.49
	5240 MHz	37.21	18.66
802.11ac MCS0/Nss1 VHT40	5190 MHz	41.59	36.90
	5230 MHz	69.71	37.48
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.60	76.12

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 1TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.78	18.06
	5200 MHz	20.78	17.97
	5240 MHz	22.52	18.06
802.11ac MCS0/Nss1 VHT40	5190 MHz	40.87	36.75
	5230 MHz	43.18	36.90
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.89	75.83

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai		
Test Mode	Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)		

For indoor / outdoor use

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	36.00	18.84
	5300 MHz	38.43	18.76
	5320 MHz	28.61	18.15
	5500 MHz	23.48	18.15
	5580 MHz	38.17	18.84
	5700 MHz	20.78	17.97
	5745 MHz	21.83	18.15
	5785 MHz	38.87	18.76
	5825 MHz	23.22	17.97
802.11ac MCS0/Nss1 VHT40	5270 MHz	78.99	37.63
	5310 MHz	41.01	36.76
	5510 MHz	41.01	36.90
	5550 MHz	65.65	37.34
	5670 MHz	47.83	36.90
	5755 MHz	40.73	36.76
	5795 MHz	41.01	36.90
802.11ac MCS0/Nss1 VHT80	5290 MHz	83.19	75.83
	5530 MHz	82.90	75.83
	5610 MHz	82.90	76.12
	5775 MHz	82.90	76.12

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	33.66	18.40	5703.98	5710.77	21.02	12.64	14.23	4.17
802.11ac MCS0/Nss1 VHT40	5710 MHz	76.10	37.66	5671.50	5691.12	53.50	22.60	33.88	3.78
802.11ac MCS0/Nss1 VHT80	5690 MHz	134.20	76.70	5629.13	5651.80	95.87	38.33	73.20	3.50

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	34.17	18.58
	5300 MHz	35.65	18.58
	5320 MHz	28.87	18.15
	5500 MHz	20.96	17.97
	5580 MHz	38.35	18.58
	5700 MHz	20.78	17.97
	5745 MHz	20.78	17.97
	5785 MHz	37.22	18.58
	5825 MHz	24.35	18.15
802.11ac MCS0/Nss1 VHT40	5270 MHz	77.54	37.63
	5310 MHz	41.16	36.76
	5510 MHz	40.73	36.90
	5550 MHz	83.62	37.77
	5670 MHz	53.19	36.90
	5755 MHz	41.16	36.76
	5795 MHz	57.25	36.90
802.11ac MCS0/Nss1 VHT80	5290 MHz	82.90	76.12
	5530 MHz	82.90	75.83
	5610 MHz	111.88	76.41
	5775 MHz	82.90	76.70

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	37.20	18.52	5701.28	5710.65	23.72	13.48	14.35	4.17
802.11ac MCS0/Nss1 VHT40	5710 MHz	93.00	45.75	5665.60	5687.82	59.40	33.60	37.18	8.58
802.11ac MCS0/Nss1 VHT80	5690 MHz	137.40	76.72	5626.80	5651.64	98.20	39.20	73.36	3.36

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	32.86	18.58
	5300 MHz	36.17	18.75
	5320 MHz	37.56	18.75
	5500 MHz	32.00	18.32
	5580 MHz	36.60	18.58
	5700 MHz	37.30	18.49
	5745 MHz	33.21	18.32
	5785 MHz	37.47	18.75
	5825 MHz	39.21	18.75
802.11ac MCS0/Nss1 VHT40	5270 MHz	78.69	37.62
	5310 MHz	64.78	37.19
	5510 MHz	53.33	36.90
	5550 MHz	85.07	37.77
	5670 MHz	82.75	37.77
	5755 MHz	67.68	37.19
	5795 MHz	77.91	37.77
802.11ac MCS0/Nss1 VHT80	5290 MHz	88.40	76.12
	5530 MHz	98.55	76.12
	5610 MHz	148.40	76.70
	5775 MHz	103.48	76.41

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	41.13	20.92	5698.86	5709.66	26.14	14.99	15.34	5.58
802.11ac MCS0/Nss1 VHT40	5710 MHz	87.97	42.11	5664.78	5688.72	60.22	27.75	36.28	5.83
802.11ac MCS0/Nss1 VHT80	5690 MHz	172.46	78.14	5603.33	5650.63	121.67	50.79	74.37	3.77

<For STBC Mode>

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai		
Test Mode	Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)		

For indoor use

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.61	17.89
	5200 MHz	33.57	18.23
	5240 MHz	36.35	18.84
802.11ac MCS0/Nss1 VHT40	5190 MHz	40.29	36.47
	5230 MHz	84.49	39.80
802.11ac MCS0/Nss1 VHT80	5210 MHz	81.74	75.83

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.78	17.97
	5200 MHz	33.04	18.41
	5240 MHz	30.70	18.23
802.11ac MCS0/Nss1 VHT40	5190 MHz	41.16	36.76
	5230 MHz	60.00	37.19
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.61	75.83

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	24.87	18.15
	5200 MHz	33.30	18.41
	5240 MHz	39.22	19.16
802.11ac MCS0/Nss1 VHT40	5190 MHz	40.87	36.76
	5230 MHz	87.83	39.22
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.61	75.83

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai		
Test Mode	Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)		

For outdoor use

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	21.74	17.97
	5200 MHz	34.87	18.32
	5240 MHz	34.17	18.41
802.11ac MCS0/Nss1 VHT40	5190 MHz	40.29	36.61
	5230 MHz	74.35	37.63
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.32	75.83

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.52	17.80
	5200 MHz	20.43	17.80
	5240 MHz	20.61	17.97
802.11ac MCS0/Nss1 VHT40	5190 MHz	40.58	36.61
	5230 MHz	40.29	36.61
802.11ac MCS0/Nss1 VHT80	5210 MHz	81.74	75.83

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.52	17.88
	5200 MHz	20.60	17.88
	5240 MHz	21.47	17.97
802.11ac MCS0/Nss1 VHT40	5190 MHz	40.58	36.61
	5230 MHz	40.43	36.61
802.11ac MCS0/Nss1 VHT80	5210 MHz	83.47	75.83

Temperature	23℃	Humidity	61%
Test Engineer	Kenneth Huang		
Test Mode	Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 2TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.43	17.89
	5200 MHz	20.26	17.89
	5240 MHz	20.35	17.80
802.11ac MCS0/Nss1 VHT40	5190 MHz	40.44	36.61
	5230 MHz	40.44	36.61
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.03	75.83

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai		
Test Mode	Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)		

For indoor / outdoor use

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	39.91	18.76
	5300 MHz	32.17	18.49
	5320 MHz	21.74	17.97
	5500 MHz	20.43	17.97
	5580 MHz	35.22	18.76
	5700 MHz	20.43	17.89
	5745 MHz	20.26	17.80
	5785 MHz	35.30	18.67
	5825 MHz	20.61	17.80
802.11ac MCS0/Nss1 VHT40	5270 MHz	81.16	37.77
	5310 MHz	40.44	36.61
	5510 MHz	40.29	36.61
	5550 MHz	54.93	36.90
	5670 MHz	40.29	36.61
	5755 MHz	40.73	36.61
	5795 MHz	41.88	36.76
802.11ac MCS0/Nss1 VHT80	5290 MHz	82.03	75.83
	5530 MHz	82.61	75.83
	5610 MHz	89.57	75.83
	5775 MHz	82.03	75.83

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	39.57	20.32	5700.00	5709.58	25.00	14.57	15.42	4.90
802.11ac MCS0/Nss1 VHT40	5710 MHz	85.94	43.84	5667.10	5687.57	57.90	28.04	37.43	6.41
802.11ac MCS0/Nss1 VHT80	5690 MHz	93.62	75.83	5641.01	5652.08	83.99	9.64	72.92	2.91

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	20.61	17.89
	5300 MHz	21.57	17.97
	5320 MHz	20.78	17.97
	5500 MHz	20.52	17.89
	5580 MHz	20.61	17.89
	5700 MHz	20.43	17.89
	5745 MHz	20.52	17.80
	5785 MHz	37.39	18.84
	5825 MHz	21.39	17.89
802.11ac MCS0/Nss1 VHT40	5270 MHz	41.30	36.61
	5310 MHz	40.58	36.61
	5510 MHz	40.15	36.61
	5550 MHz	40.44	36.61
	5670 MHz	40.44	36.61
	5755 MHz	40.44	36.61
	5795 MHz	40.87	36.61
802.11ac MCS0/Nss1 VHT80	5290 MHz	81.74	75.54
	5530 MHz	82.03	75.83
	5610 MHz	81.74	75.83
	5775 MHz	82.32	75.83

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	20.34	17.92	5709.74	5710.95	15.26	5.08	14.05	3.87
802.11ac MCS0/Nss1 VHT40	5710 MHz	41.50	36.66	5688.50	5691.52	36.50	5.00	33.48	3.18
802.11ac MCS0/Nss1 VHT80	5690 MHz	84.00	75.72	5648.80	5652.04	76.20	7.80	72.96	2.76

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	38.17	18.84
	5300 MHz	37.65	18.75
	5320 MHz	38.34	18.84
	5500 MHz	27.91	17.97
	5580 MHz	37.39	18.84
	5700 MHz	21.30	17.88
	5745 MHz	24.86	18.66
	5785 MHz	39.91	18.84
	5825 MHz	31.04	18.48
802.11ac MCS0/Nss1 VHT40	5270 MHz	76.08	37.77
	5310 MHz	40.72	36.75
	5510 MHz	40.58	36.61
	5550 MHz	83.91	37.77
	5670 MHz	66.23	36.90
	5755 MHz	41.88	36.61
	5795 MHz	78.40	37.04
802.11ac MCS0/Nss1 VHT80	5290 MHz	82.02	75.83
	5530 MHz	84.05	75.83
	5610 MHz	141.74	76.70
	5775 MHz	83.18	75.83

Straddle Channel

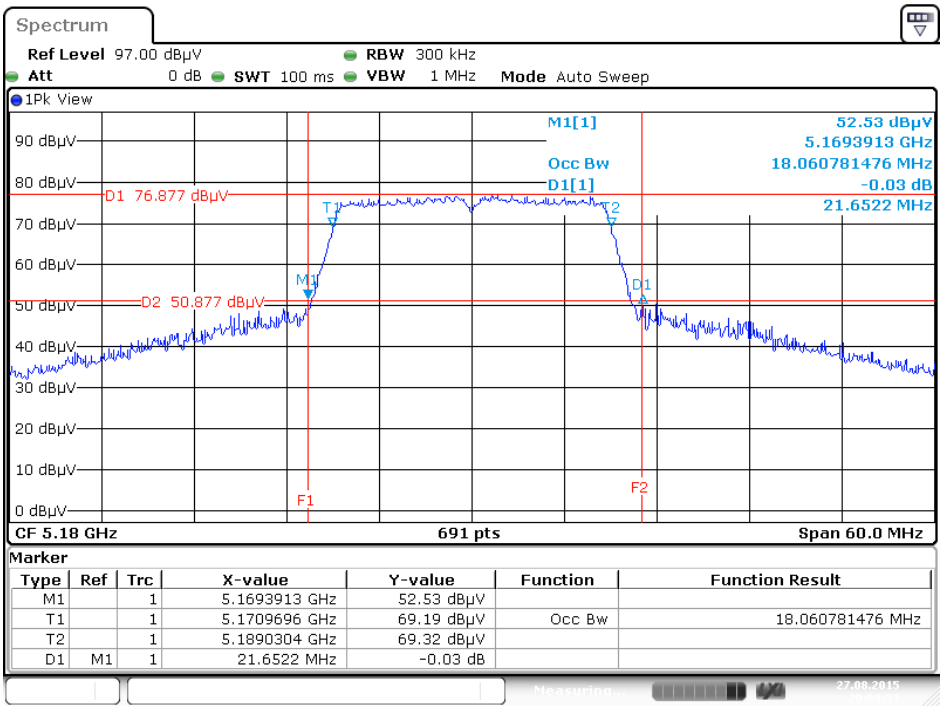
Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	48.43	33.08	5695.21	5703.32	29.79	18.64	21.68	11.40
802.11ac MCS0/Nss1 VHT40	5710 MHz	85.94	41.24	5667.39	5689.16	57.61	28.33	35.84	5.40
802.11ac MCS0/Nss1 VHT80	5690 MHz	162.02	78.14	5612.60	5650.92	112.40	49.62	74.08	4.06

<For Non-Beamforming Mode>

For indoor use

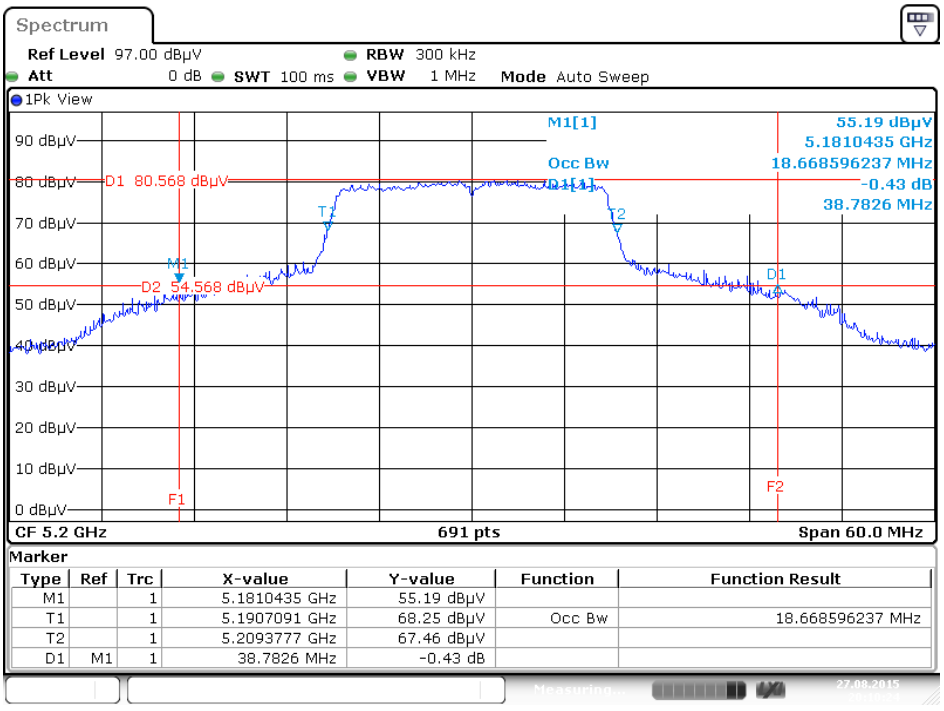
Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5180 MHz



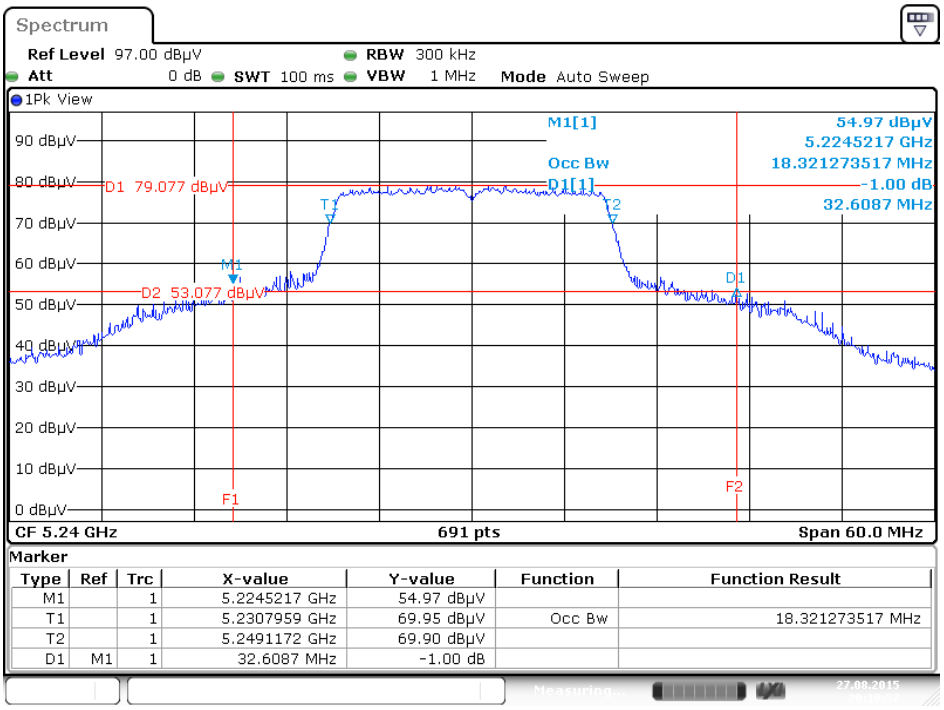
Date: 27.AUG.2015 20:09:53

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5200 MHz



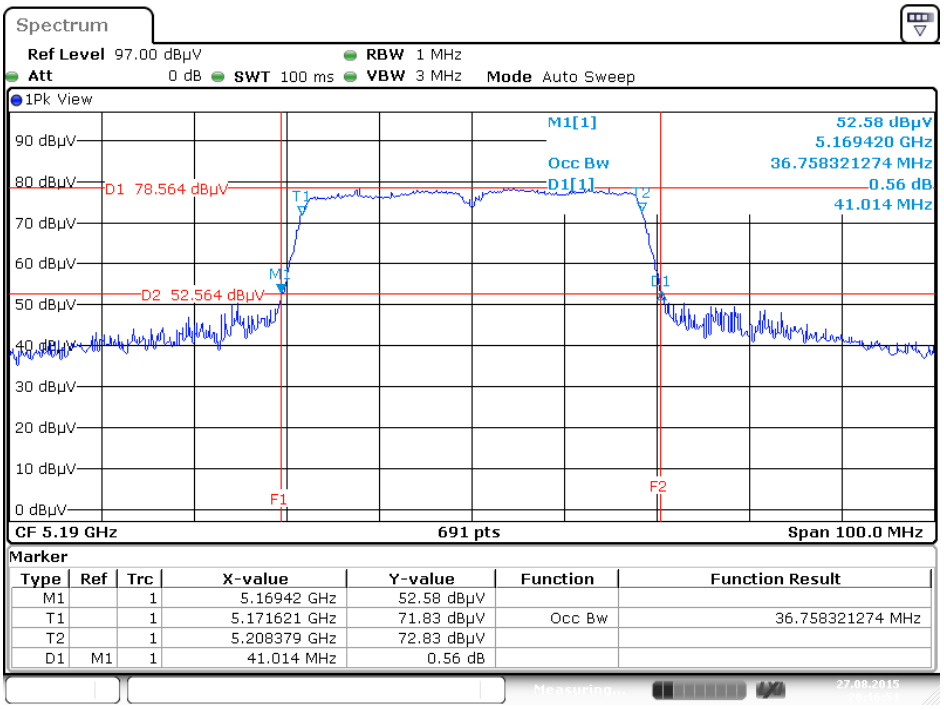
Date: 27.AUG.2015 20:10:24

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5240 MHz



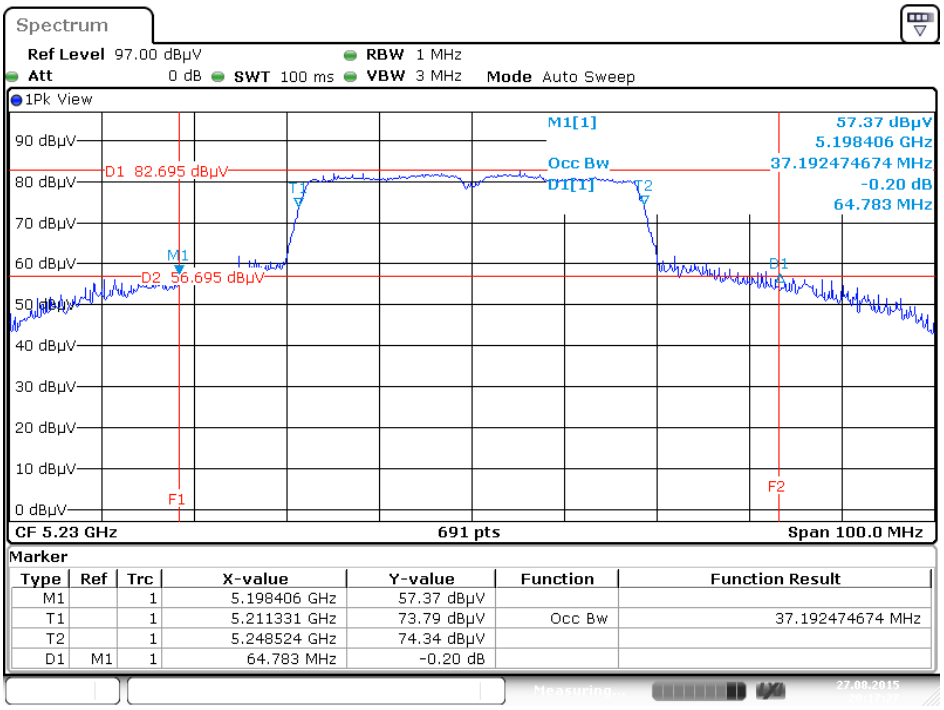
Date: 27.AUG.2015 20:10:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5190 MHz



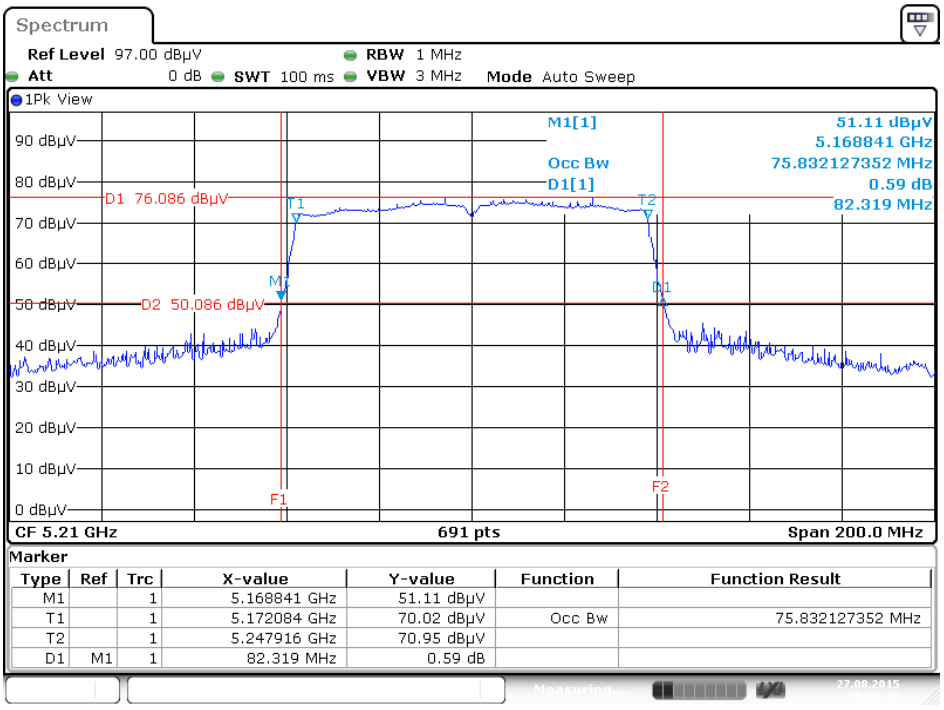
Date: 27.AUG.2015 20:16:52

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5230 MHz



Date: 27.AUG.2015 20:17:27

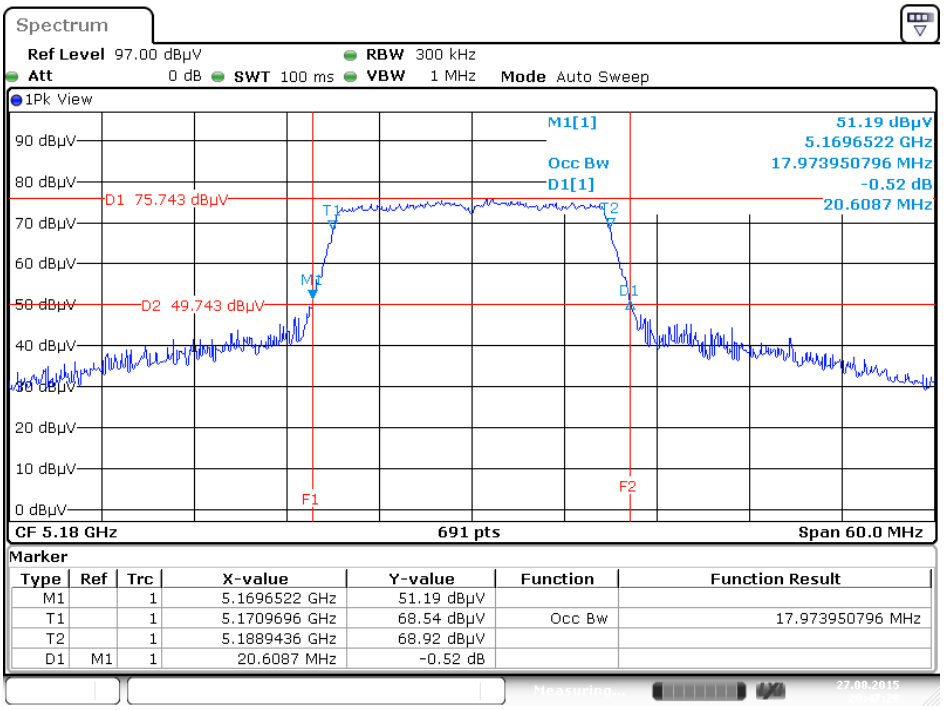
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5210 MHz



Date: 27.AUG.2015 20:20:48

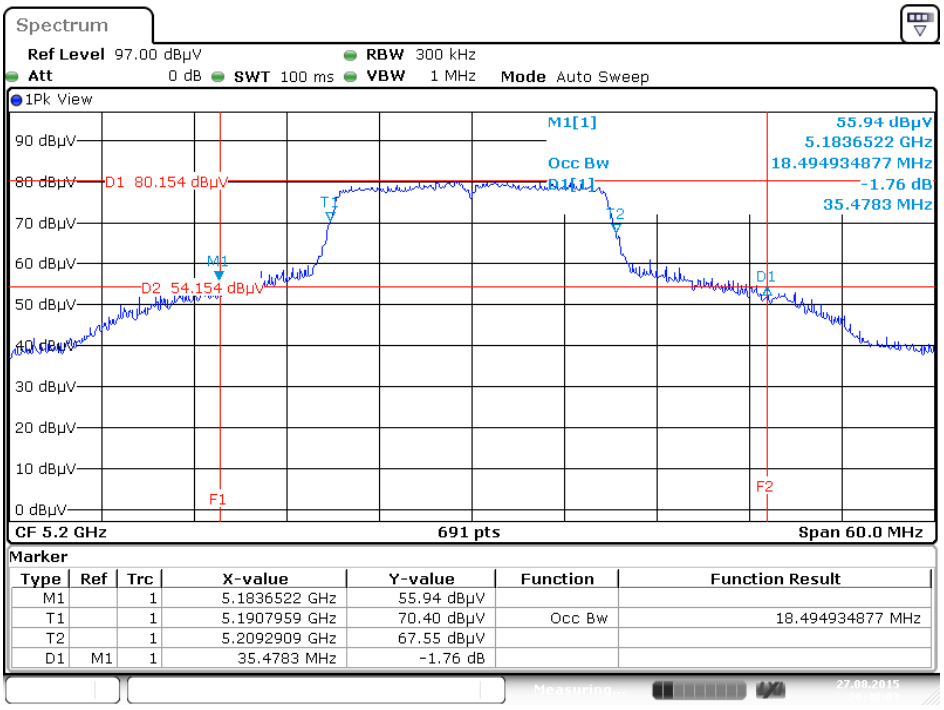
Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5180 MHz



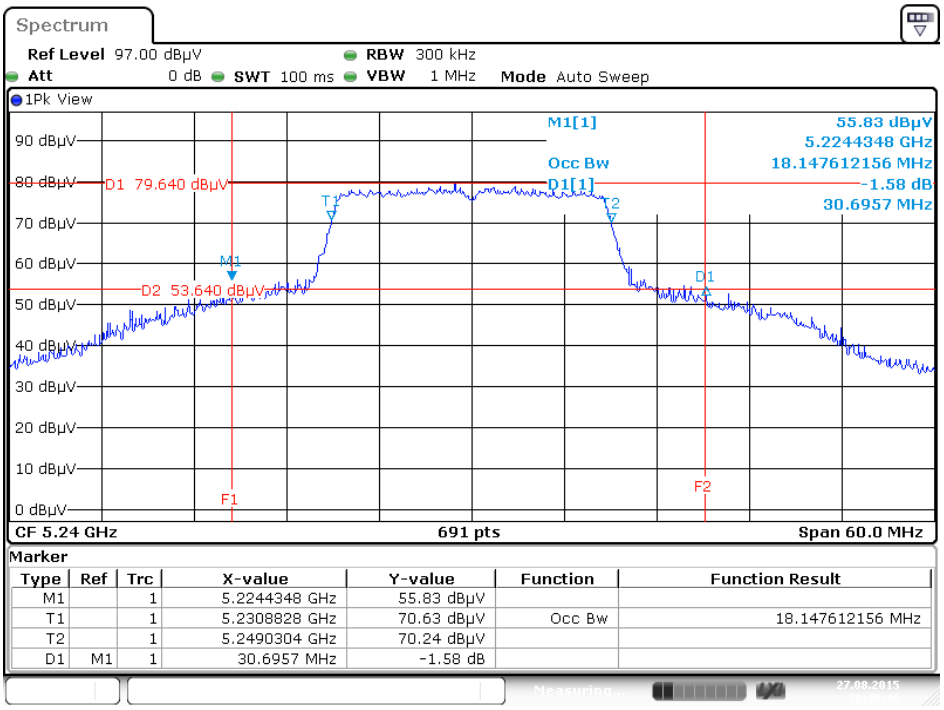
Date: 27.AUG.2015 20:47:29

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5200 MHz



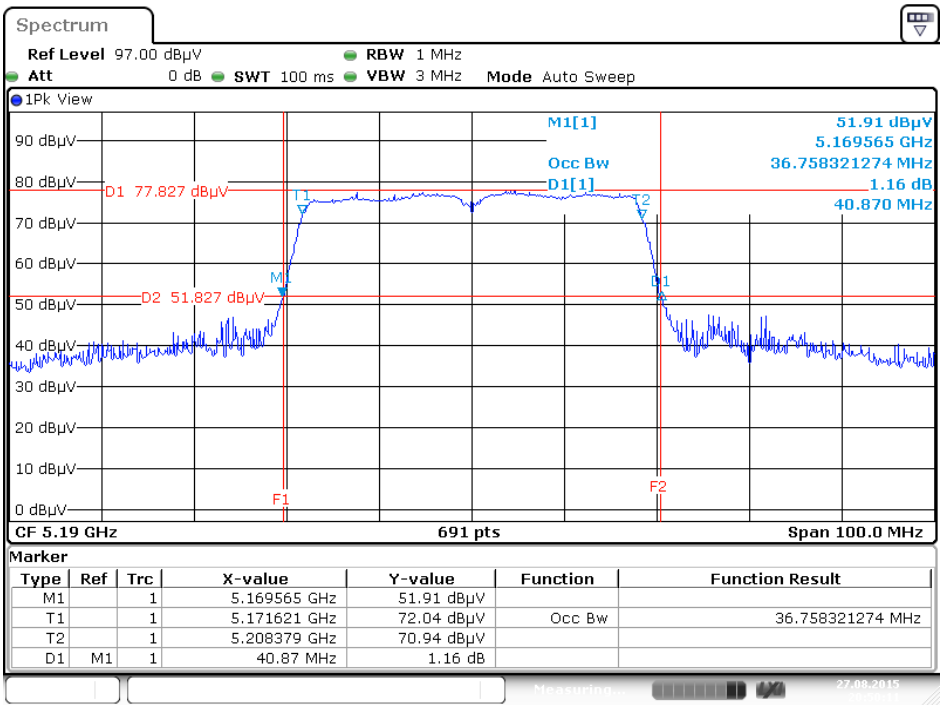
Date: 27.AUG.2015 20:48:03

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5240 MHz



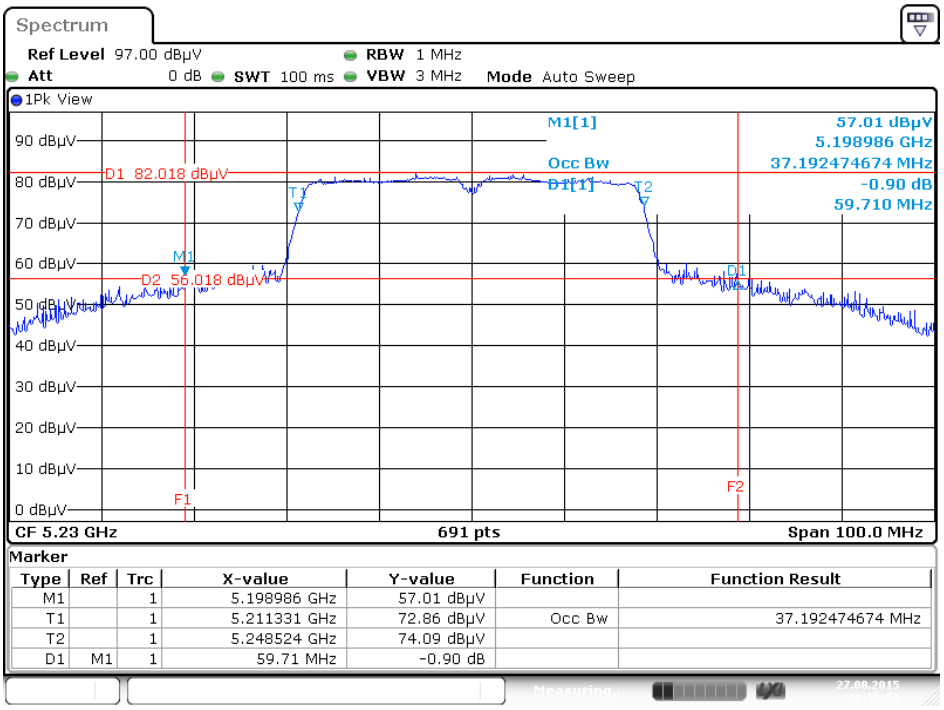
Date: 27.AUG.2015 20:48:40

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5190 MHz



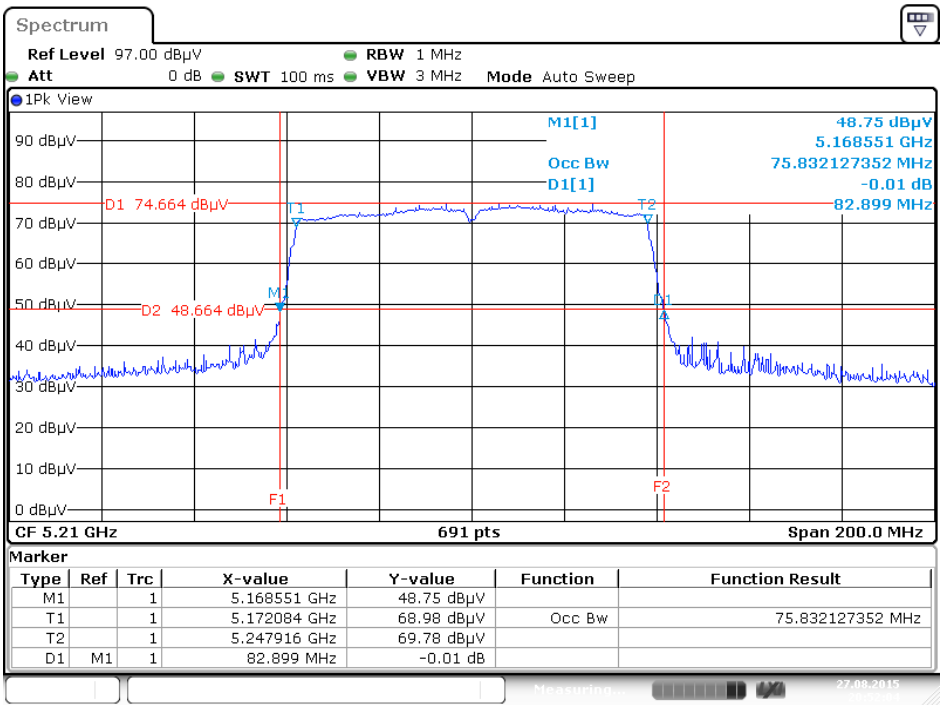
Date: 27.AUG.2015 20:50:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5230 MHz



Date: 27.AUG.2015 20:50:53

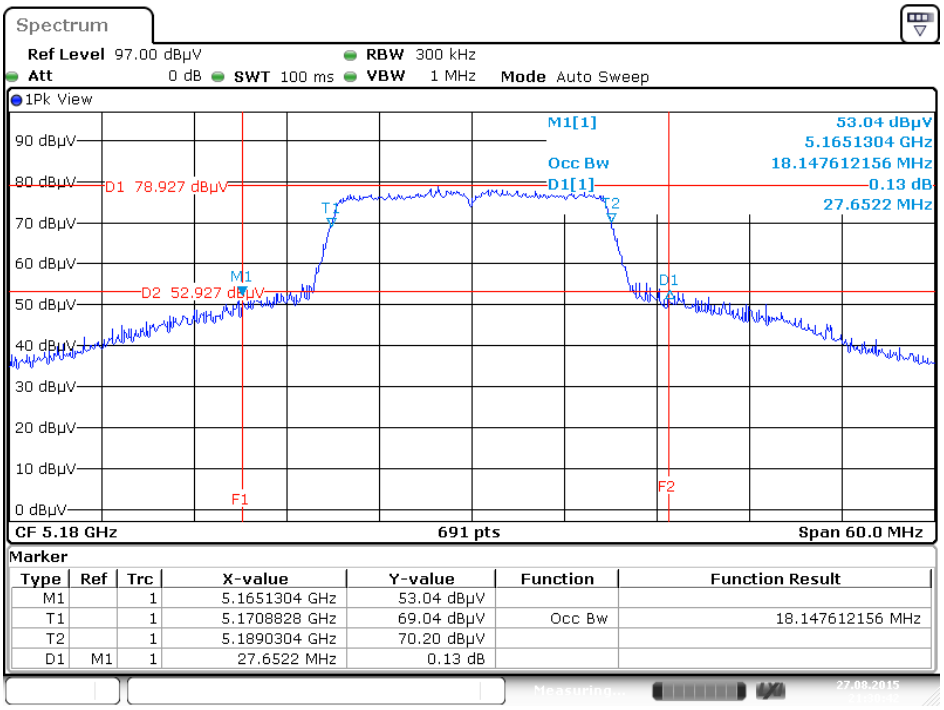
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5210 MHz



Date: 27.AUG.2015 20:52:04

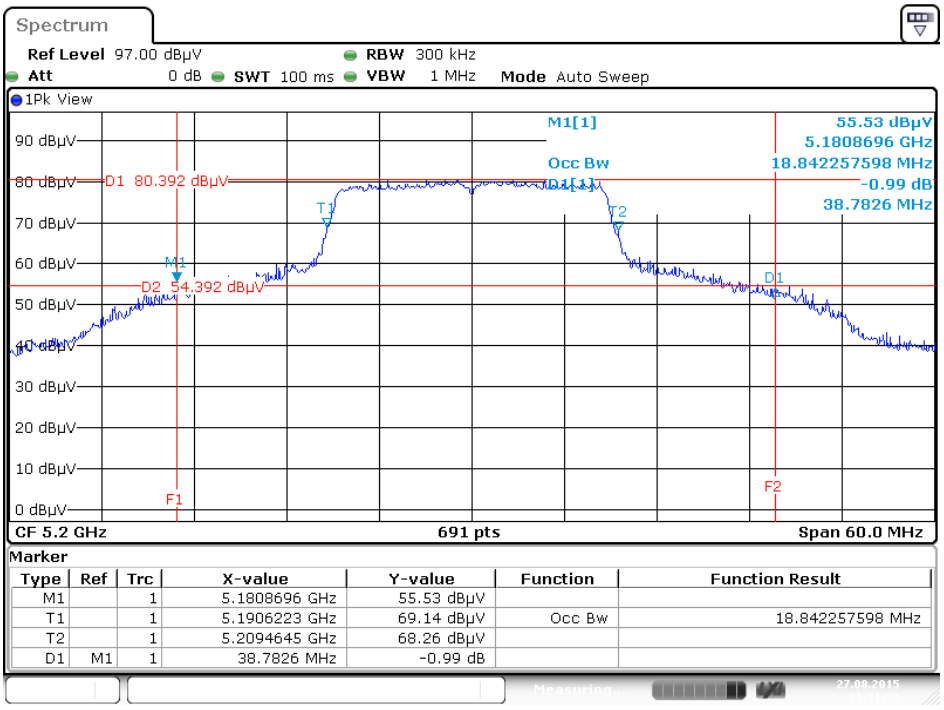
Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5180 MHz



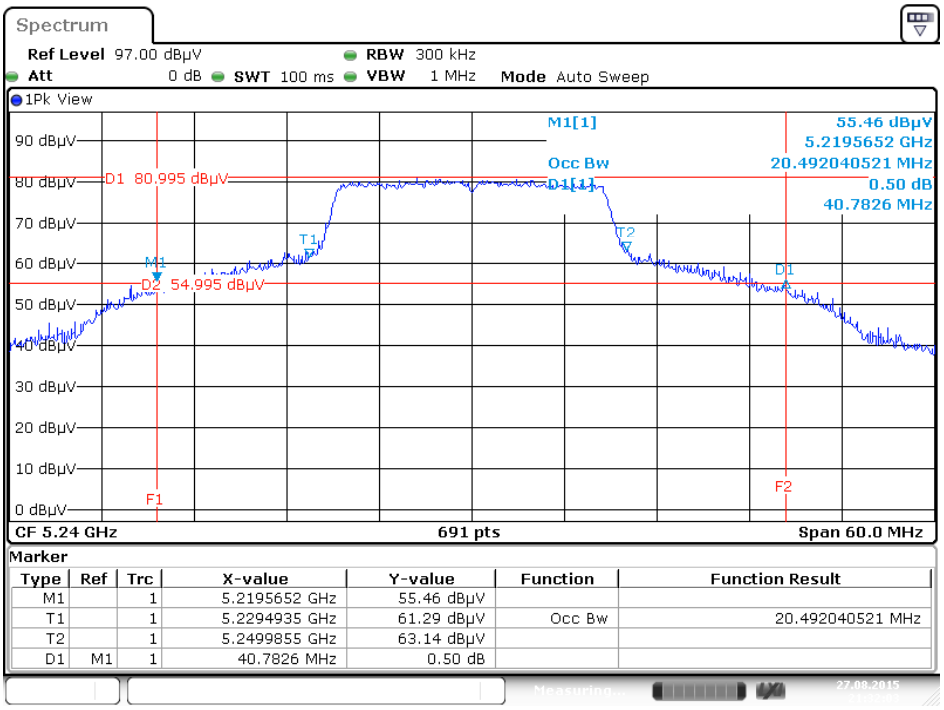
Date: 27.AUG.2015 21:30:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5200 MHz



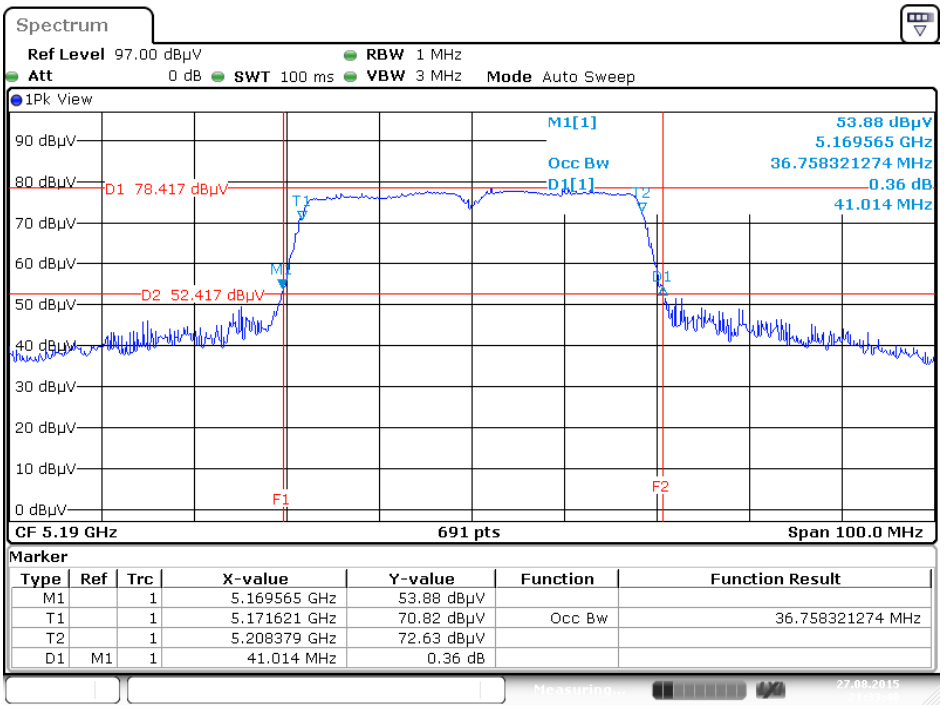
Date: 27.AUG.2015 21:31:33

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5240 MHz



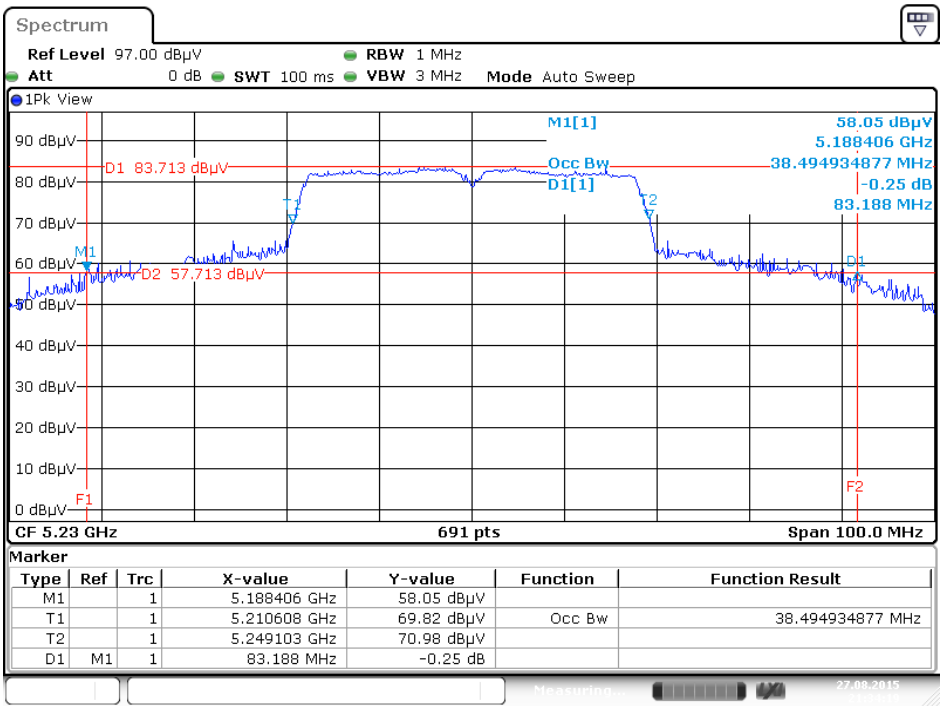
Date: 27.AUG.2015 21:32:03

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5190 MHz



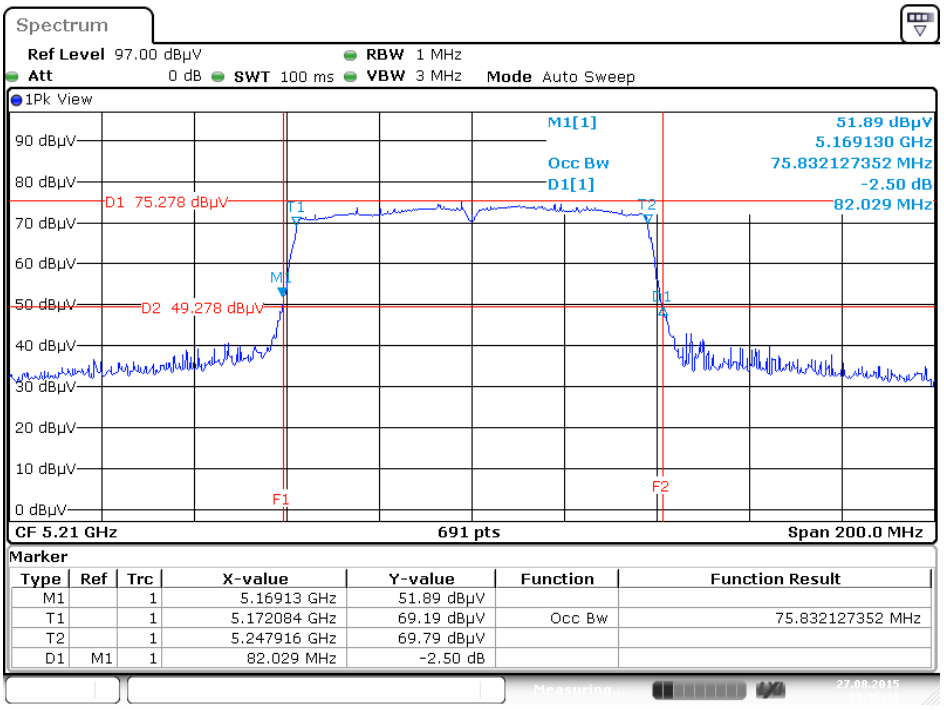
Date: 27.AUG.2015 21:33:41

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5230 MHz



Date: 27.AUG.2015 21:34:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5210 MHz

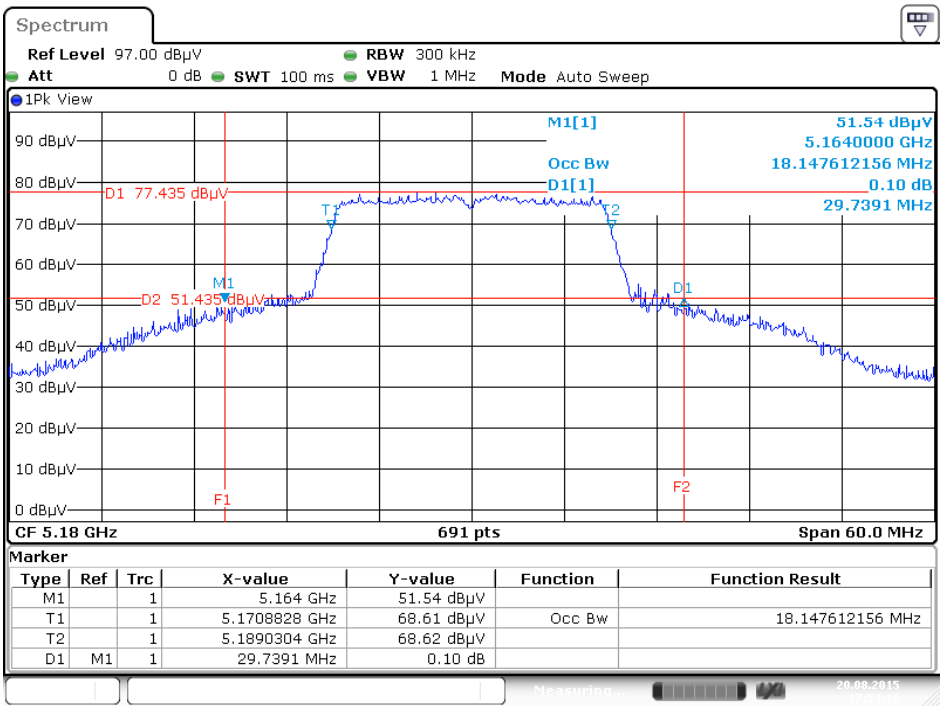


Date: 27.AUG.2015 21:35:31

For outdoor use

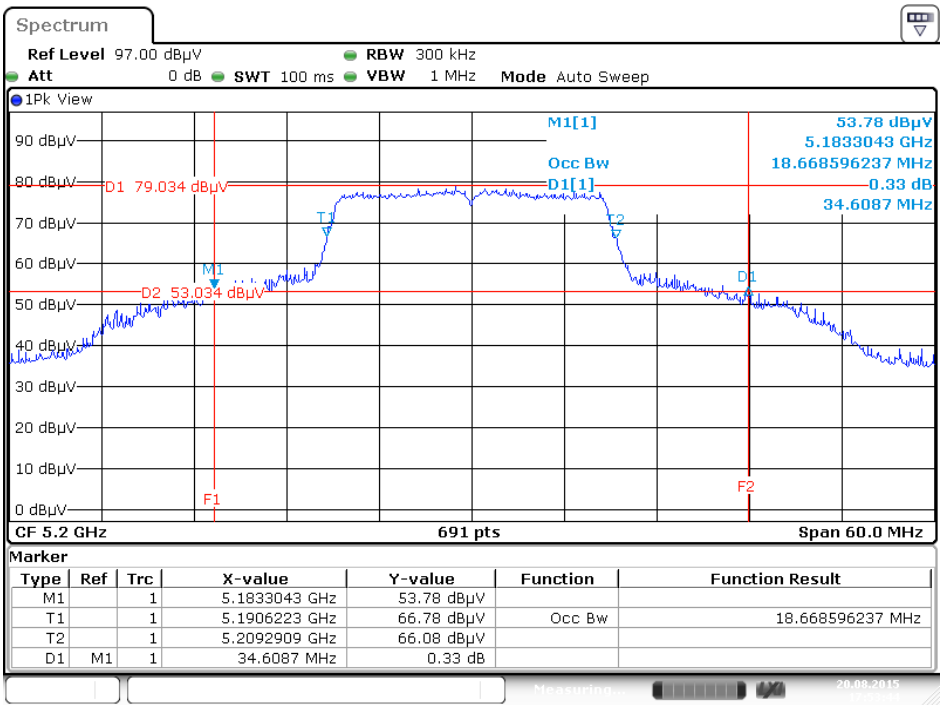
Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5180 MHz



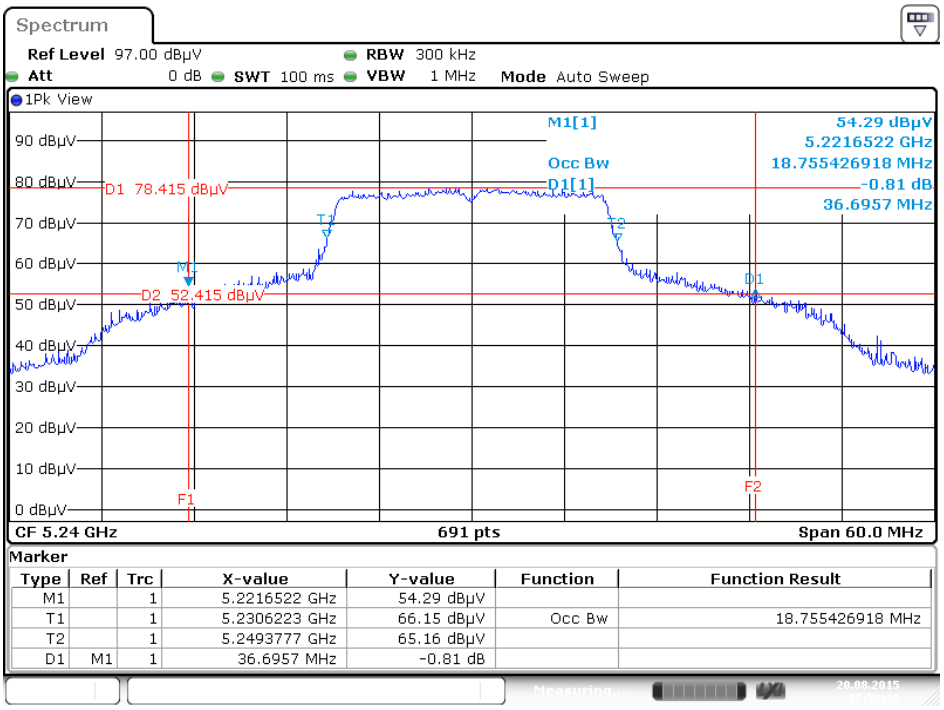
Date: 20.AUG.2015 17:54:18

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5200 MHz



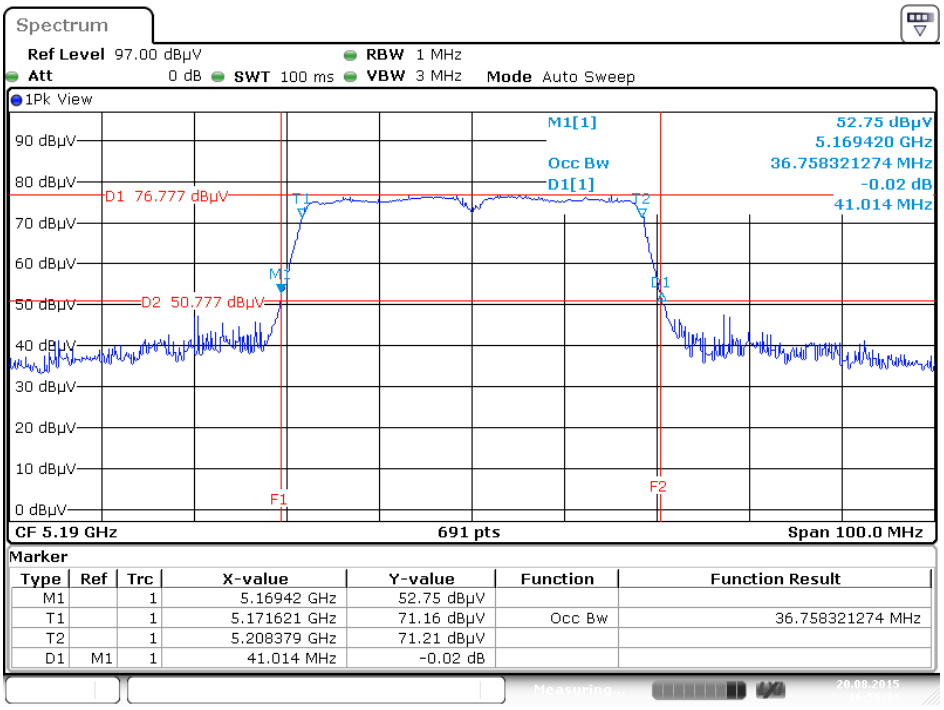
Date: 20.AUG.2015 17:53:45

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5240 MHz



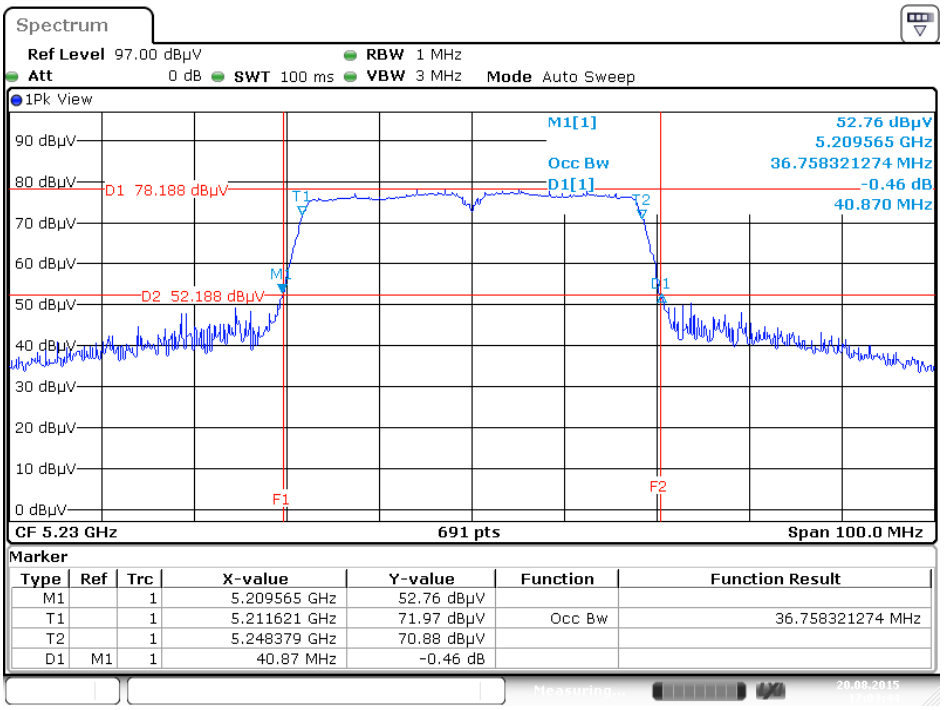
Date: 20.AUG.2015 17:52:31

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5190 MHz



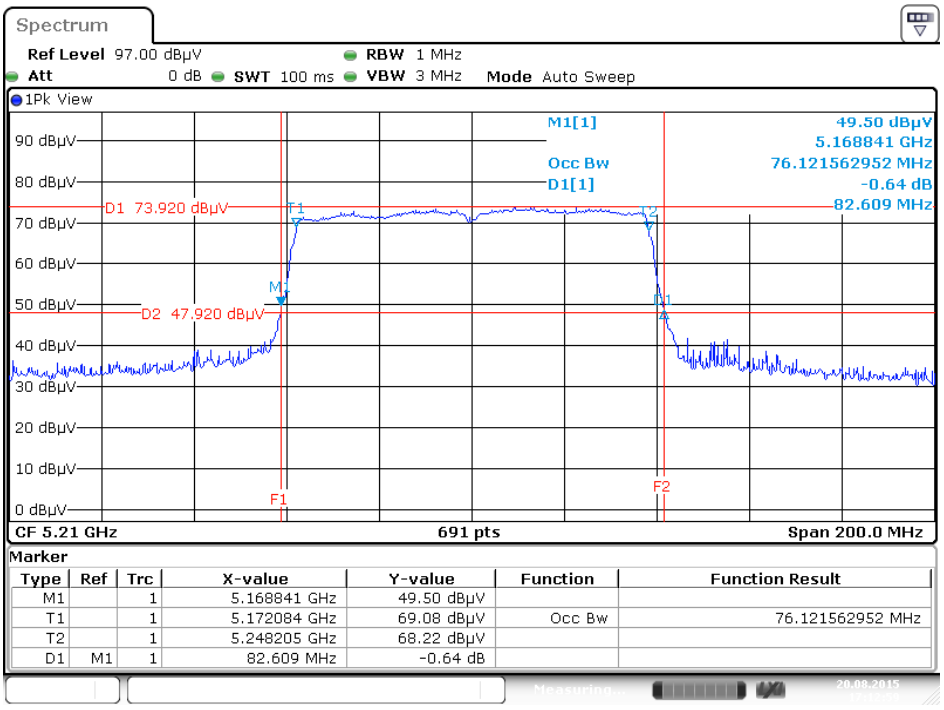
Date: 20.AUG.2015 16:56:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5230 MHz



Date: 20.AUG.2015 17:03:44

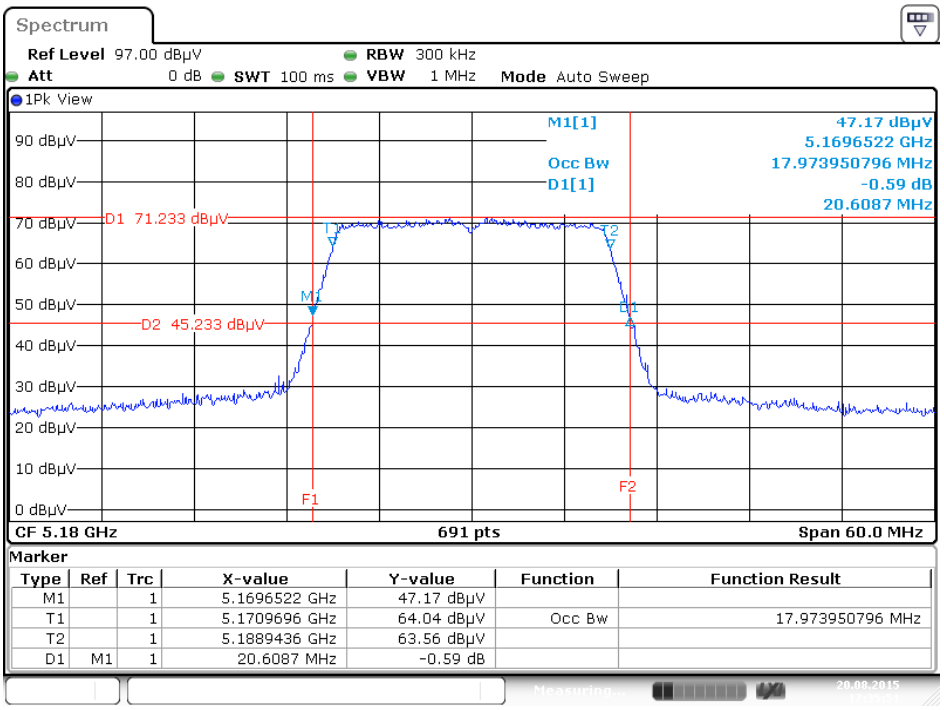
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5210 MHz



Date: 20.AUG.2015 17:12:58

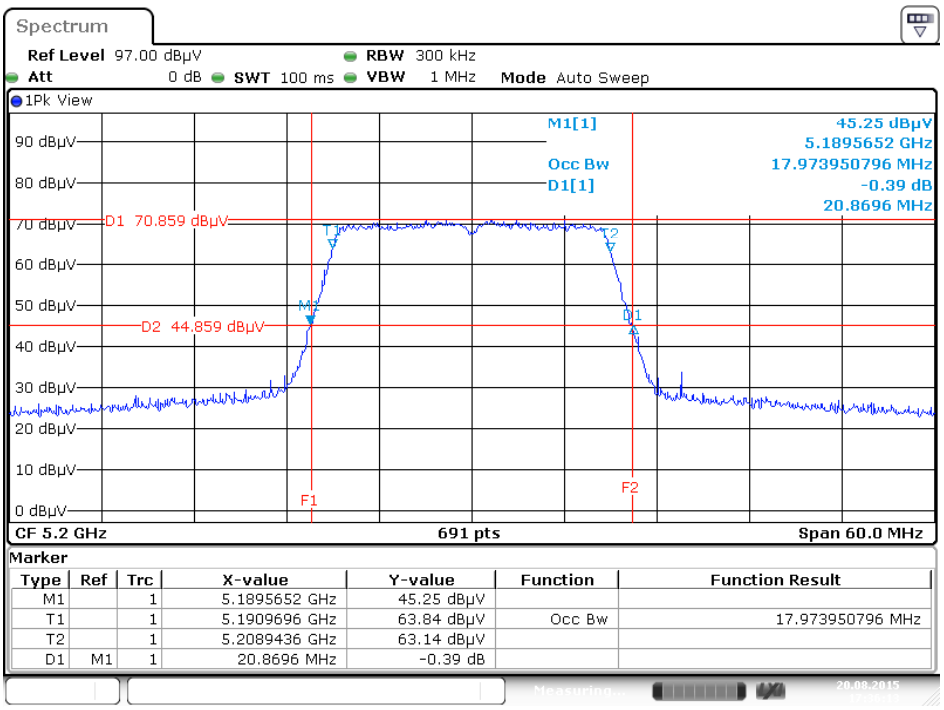
Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5180 MHz



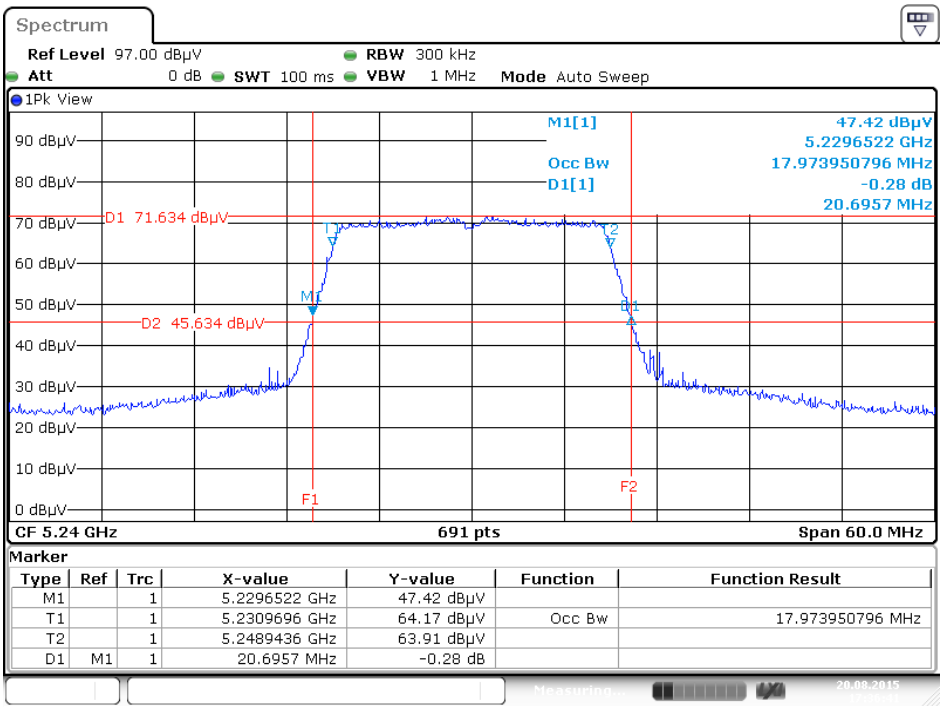
Date: 20.AUG.2015 17:35:51

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5200 MHz



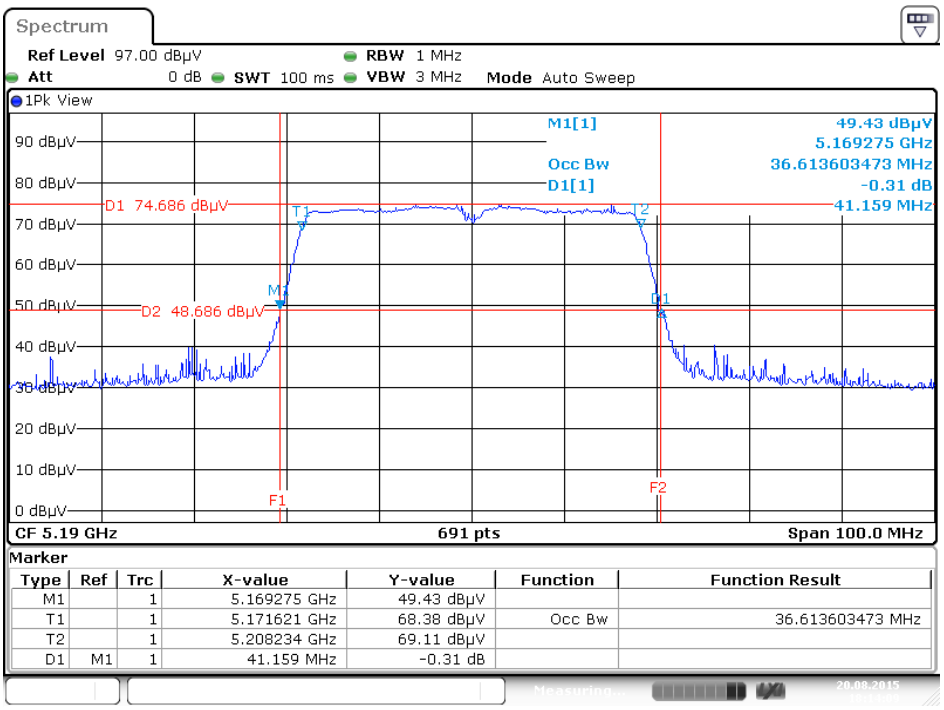
Date: 20.AUG.2015 17:36:14

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5240 MHz



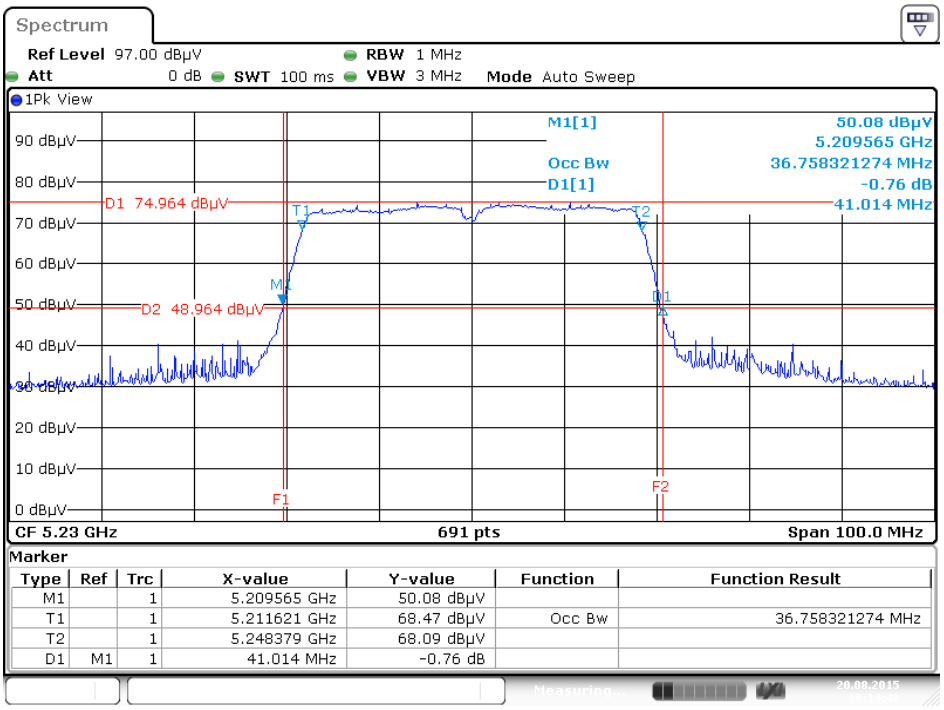
Date: 20.AUG.2015 17:36:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5190 MHz



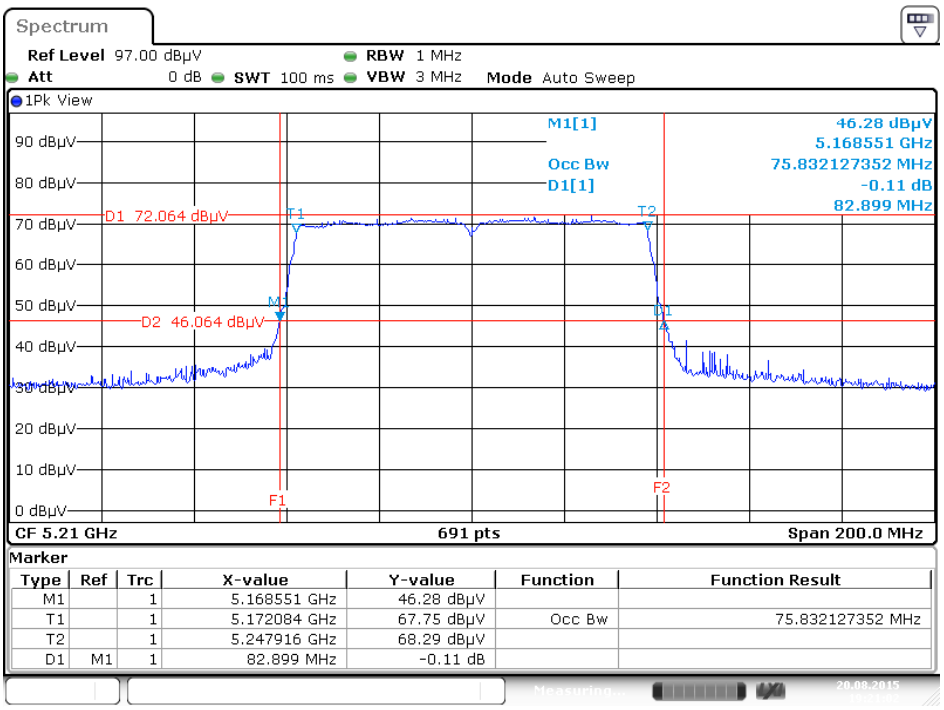
Date: 20.AUG.2015 18:14:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5230 MHz



Date: 20.AUG.2015 18:14:48

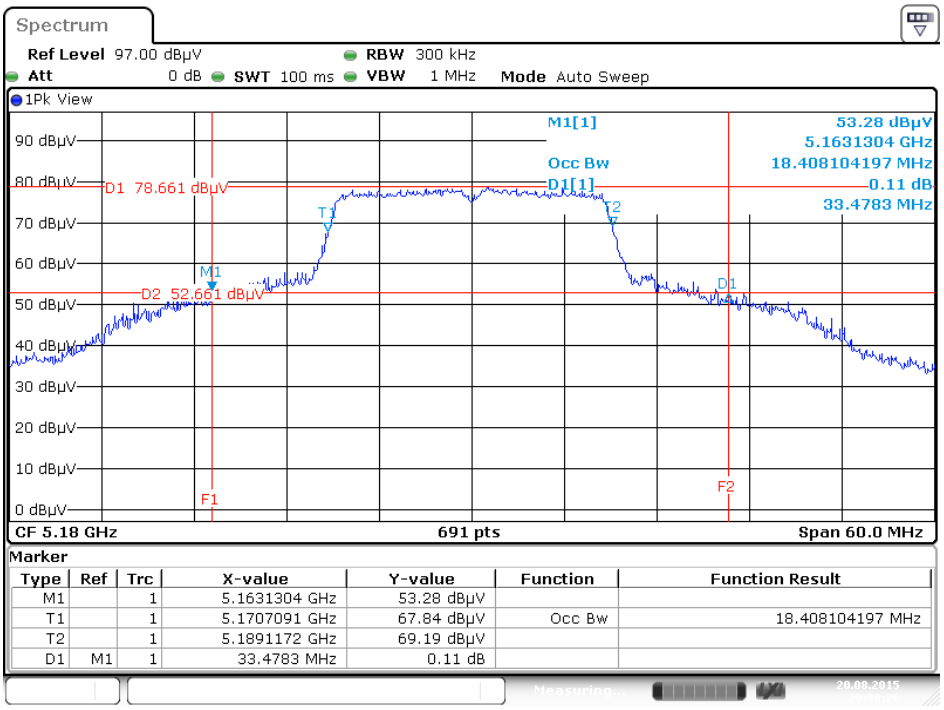
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5210 MHz



Date: 20.AUG.2015 19:21:02

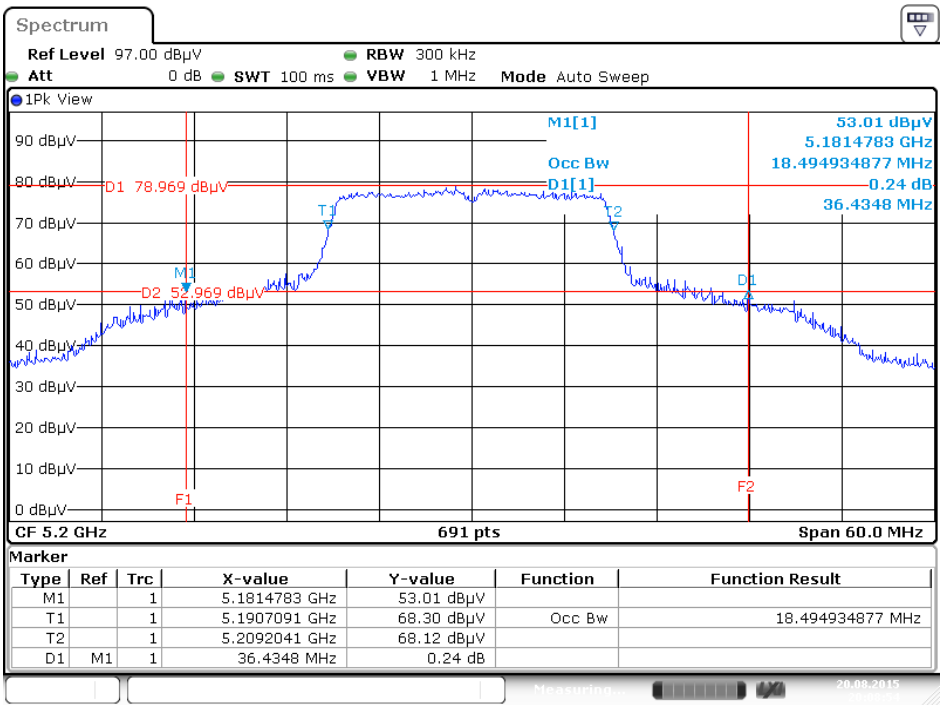
Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5180 MHz



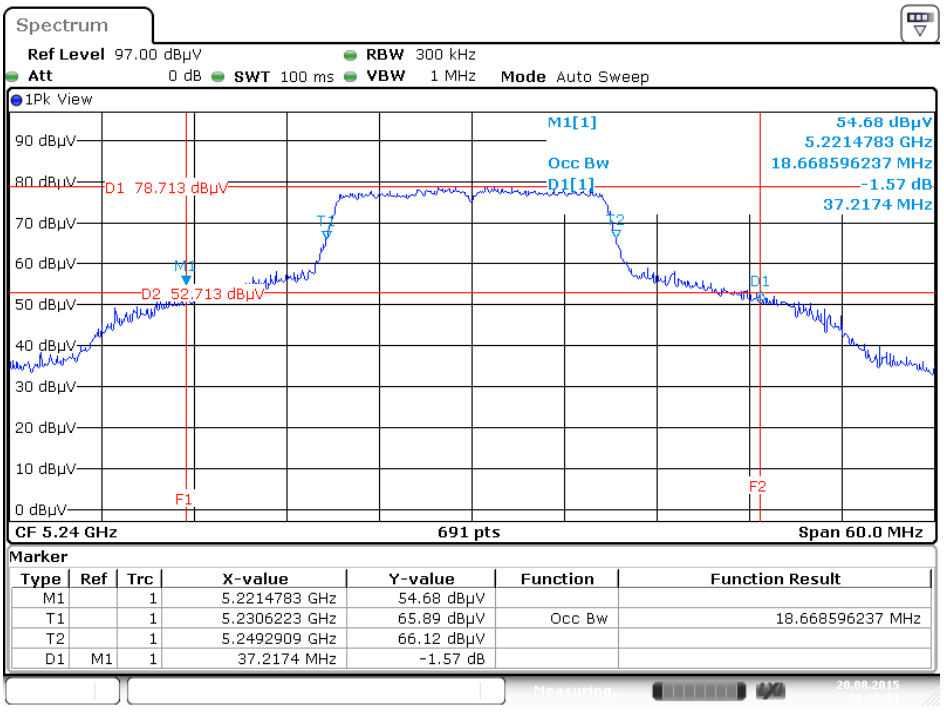
Date: 20.AUG.2015 20:08:26

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5200 MHz



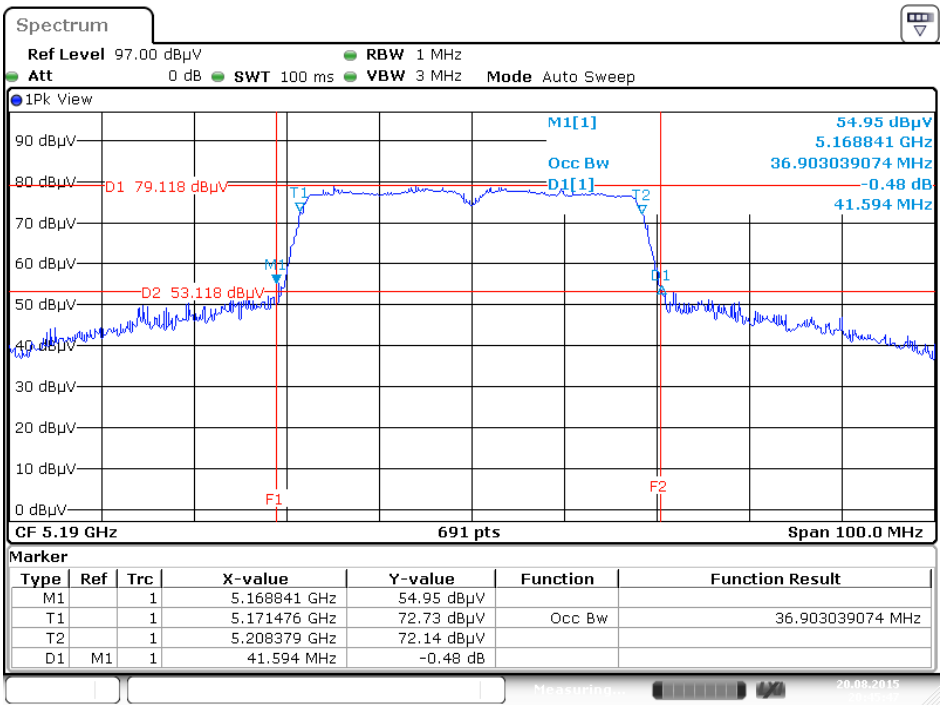
Date: 20.AUG.2015 20:08:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5240 MHz



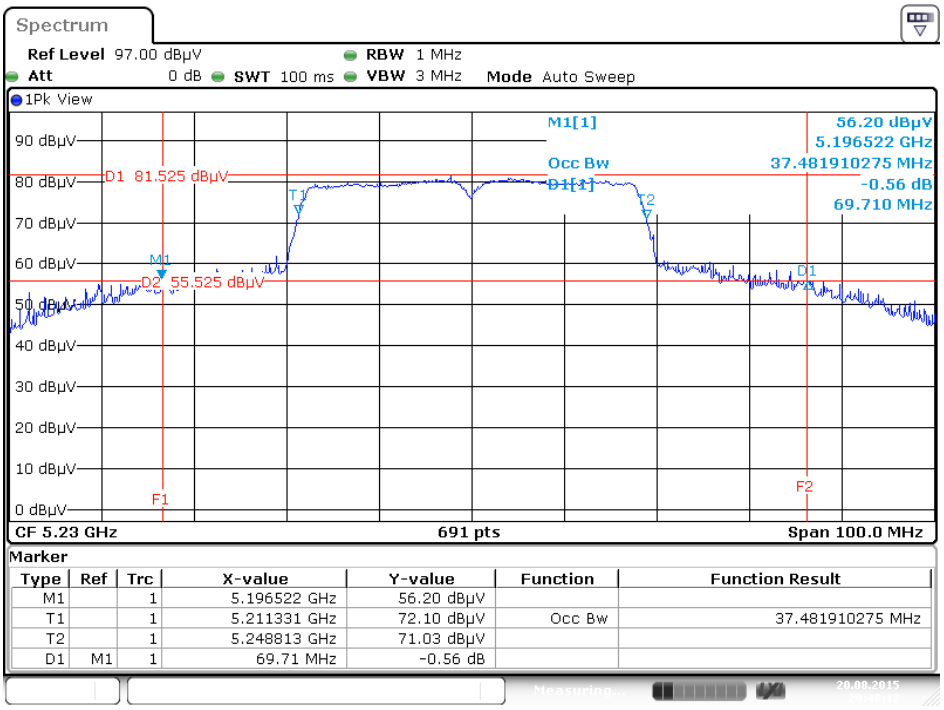
Date: 20.AUG.2015 20:09:31

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5190 MHz



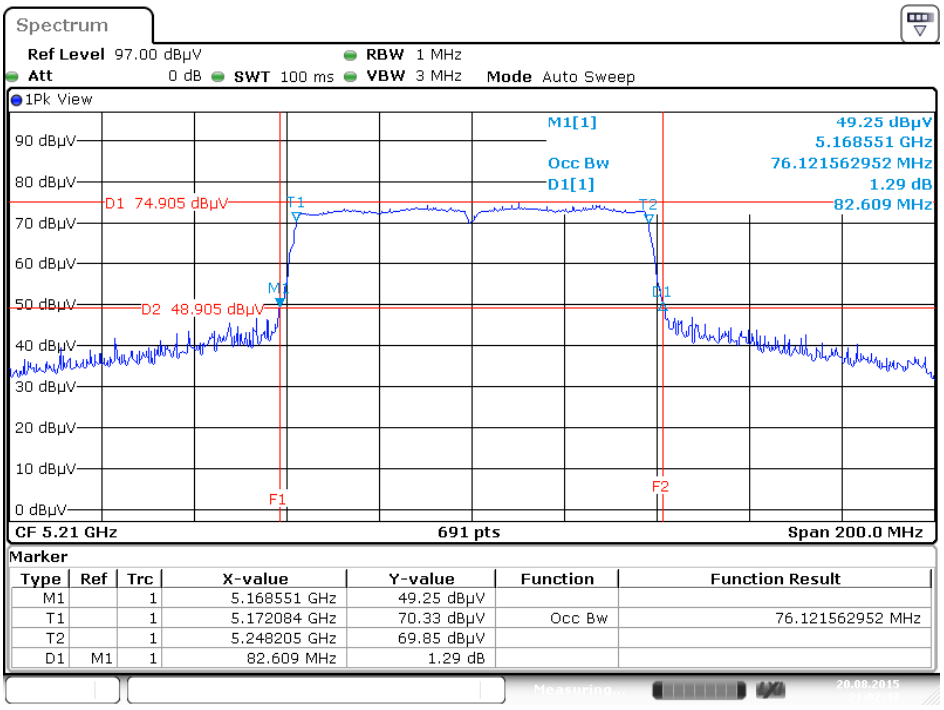
Date: 20.AUG.2015 20:45:47

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5230 MHz



Date: 20.AUG.2015 20:48:12

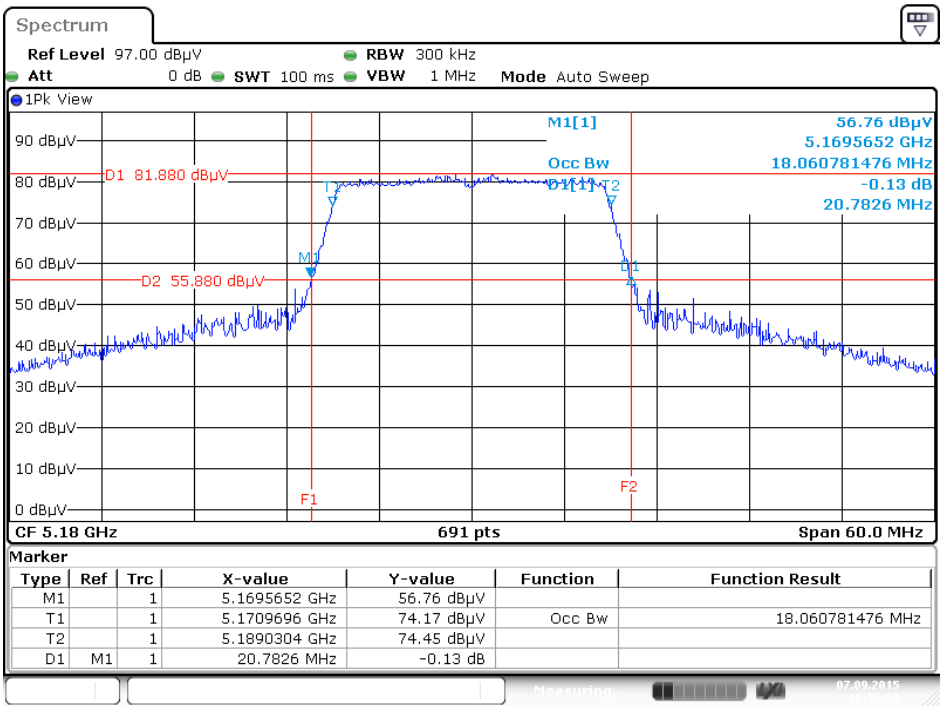
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 3 / 5210 MHz



Date: 20.AUG.2015 21:02:48

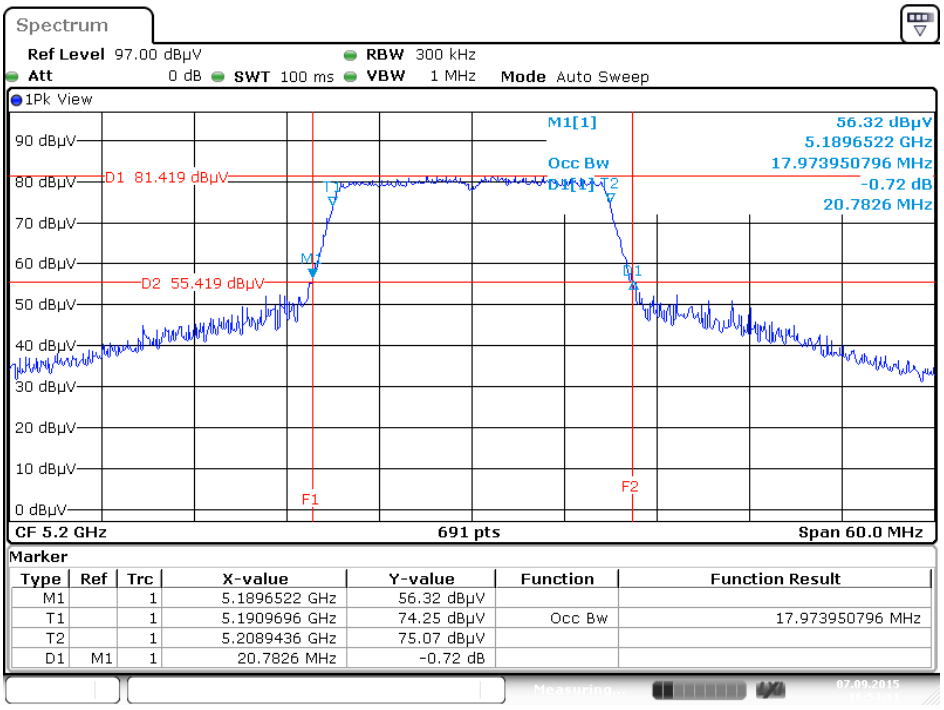
Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 1TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5180 MHz



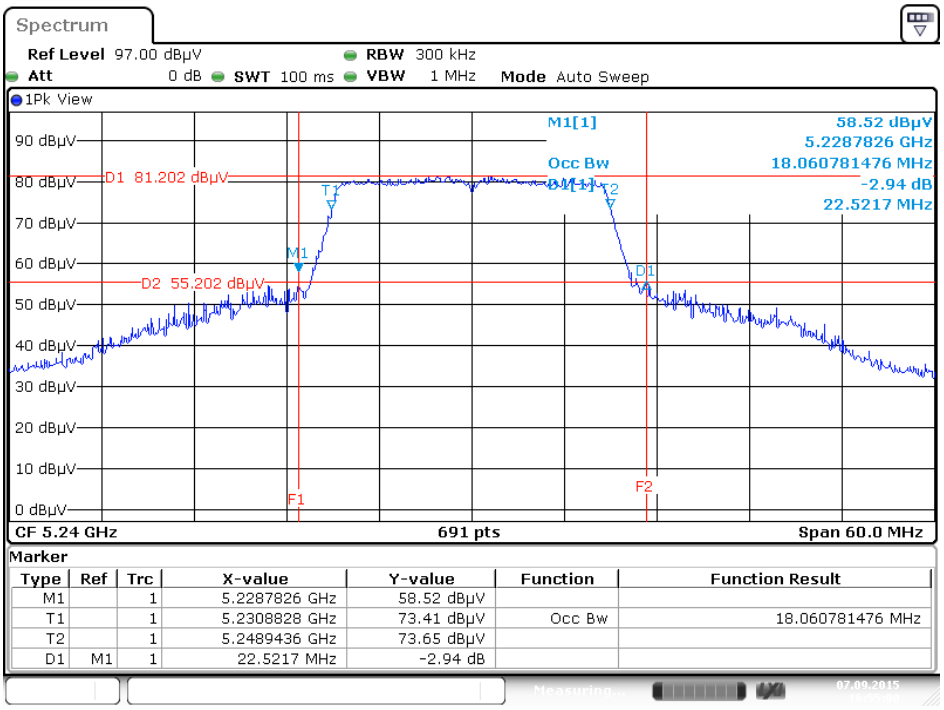
Date: 7.SEP.2015 16:53:28

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5200 MHz

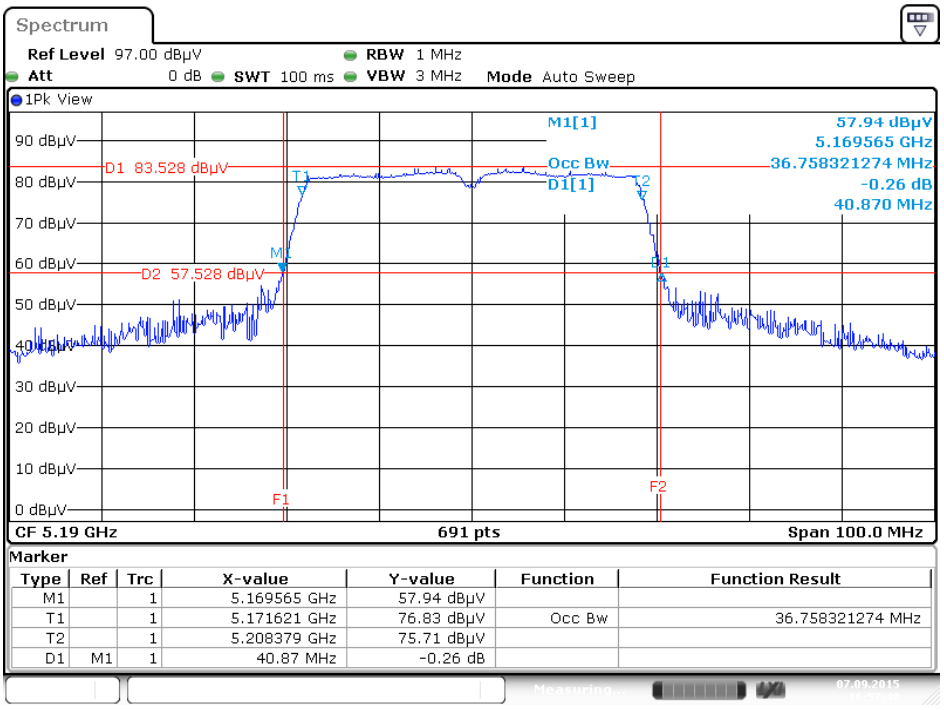


Date: 7.SEP.2015 16:54:12

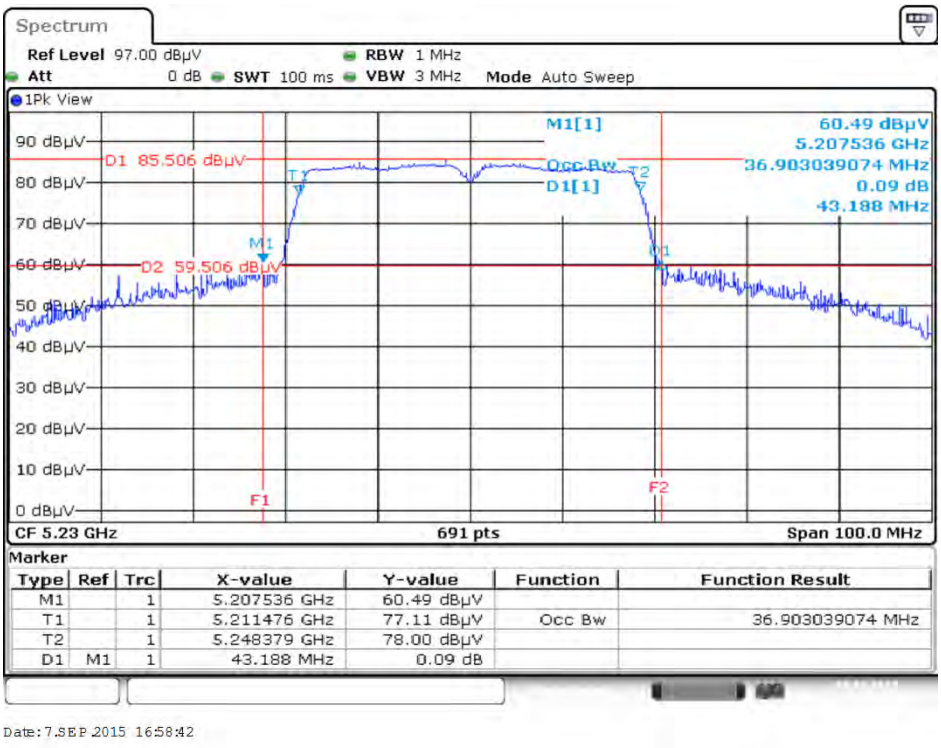
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5240 MHz



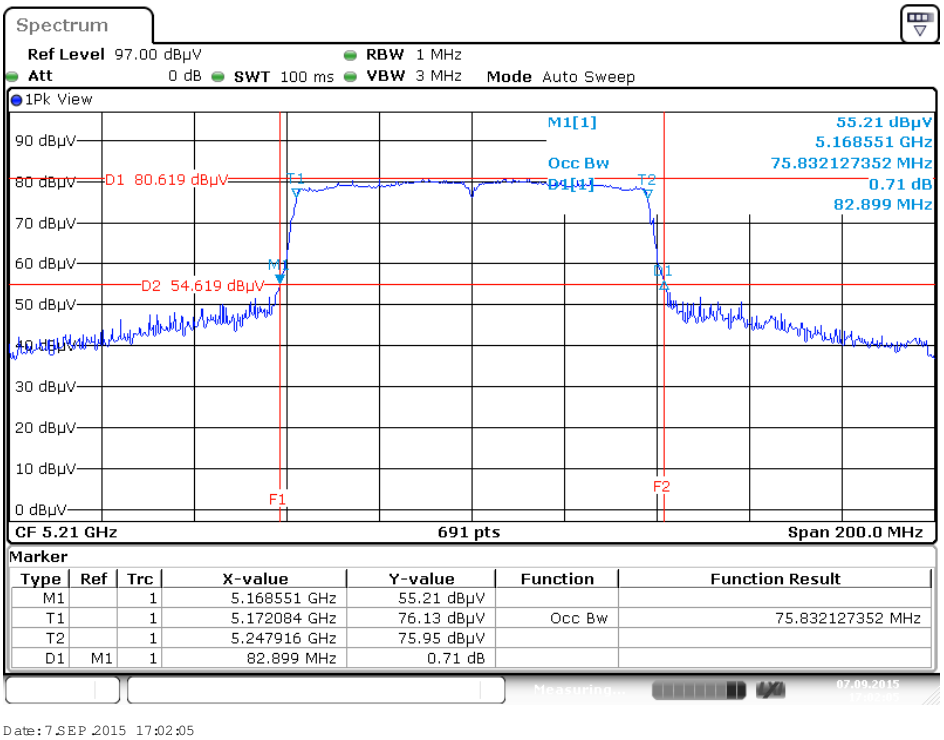
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5190 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5230 MHz



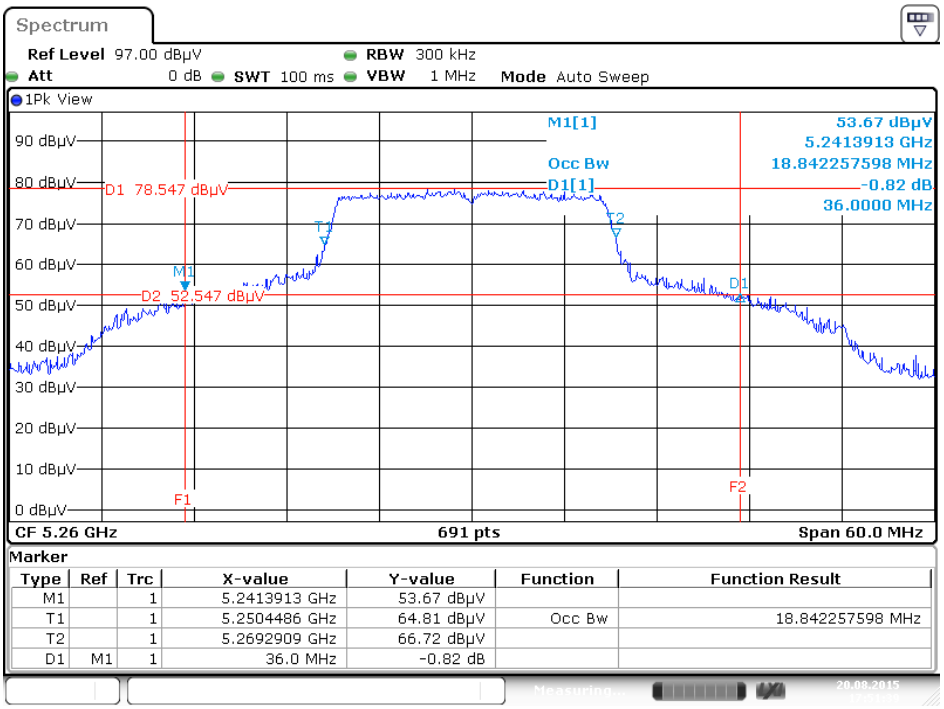
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5210 MHz



For indoor / outdoor use

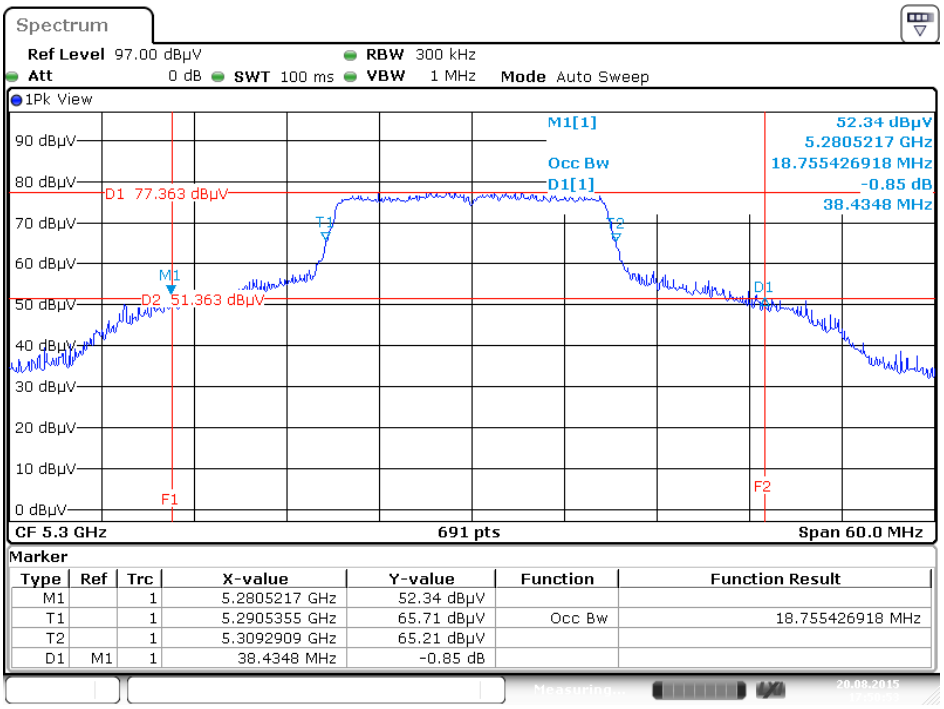
Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5260 MHz



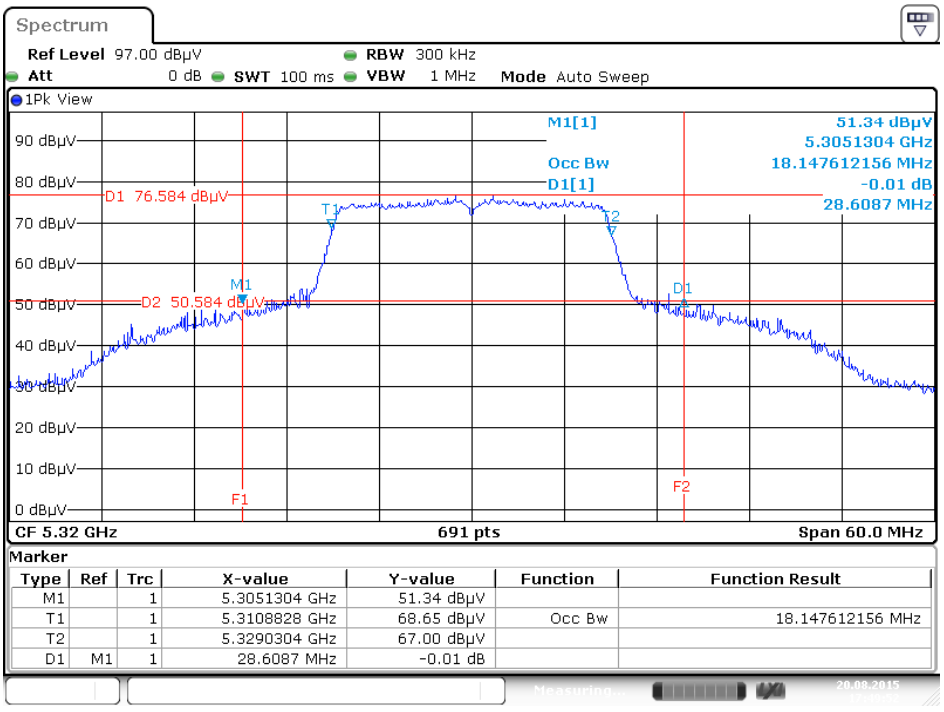
Date: 20.AUG.2015 17:51:39

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5300 MHz



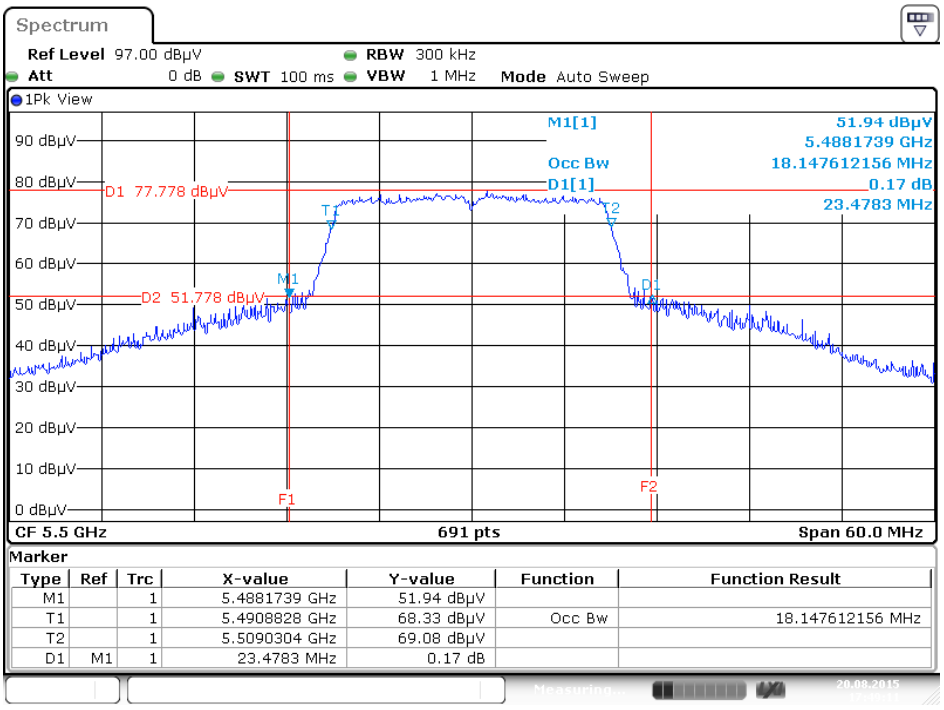
Date: 20.AUG.2015 17:50:53

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5320 MHz



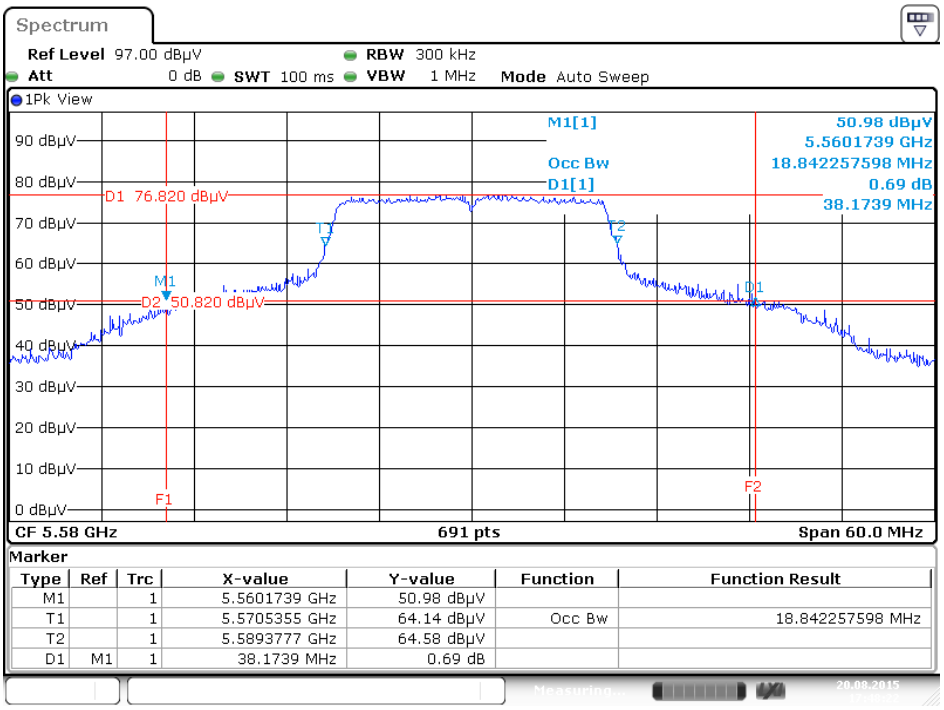
Date: 20.AUG.2015 17:49:52

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5500 MHz



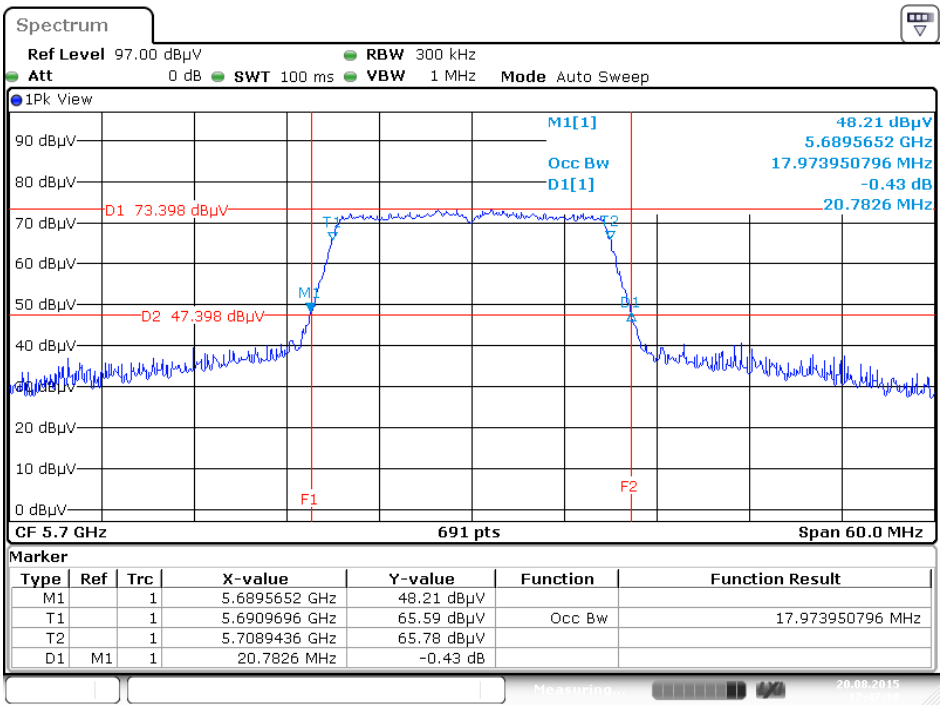
Date: 20.AUG.2015 17:49:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5580 MHz



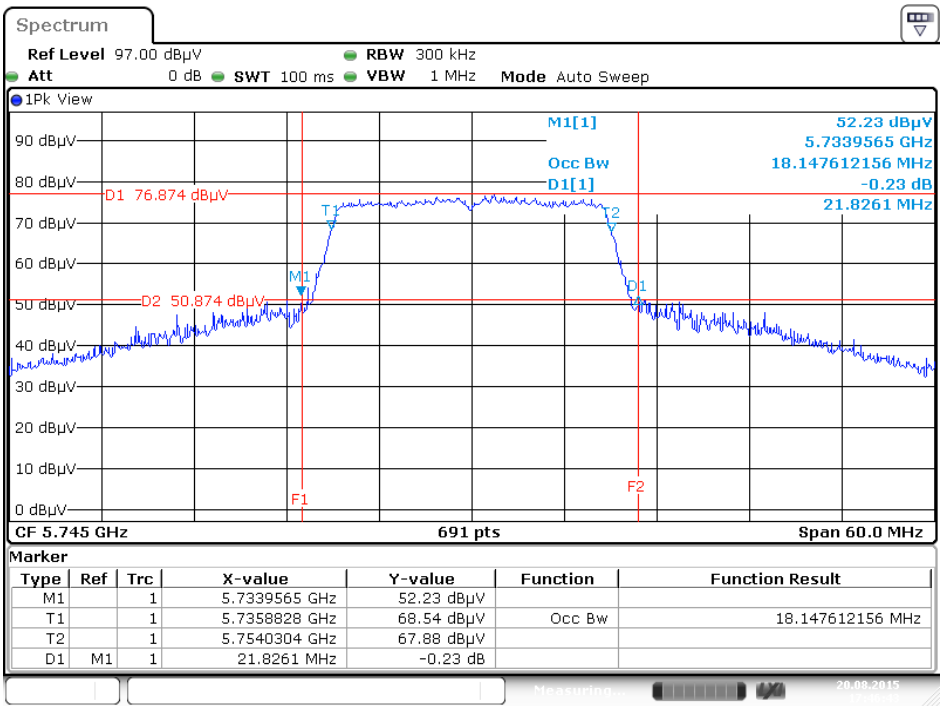
Date: 20.AUG.2015 17:48:22

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5700 MHz



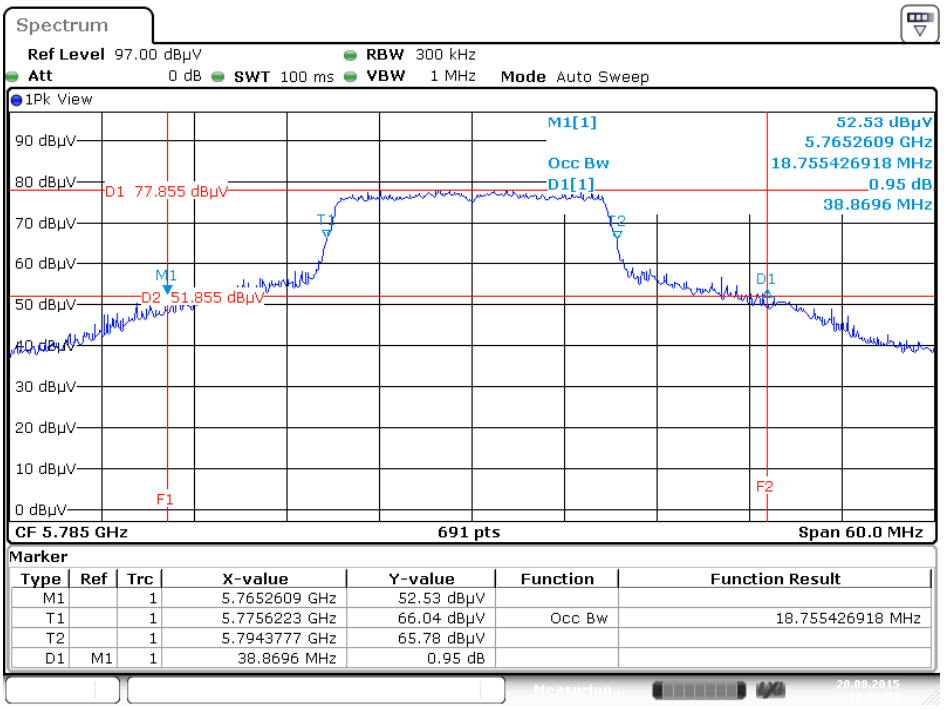
Date: 20.AUG.2015 17:47:18

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5745 MHz



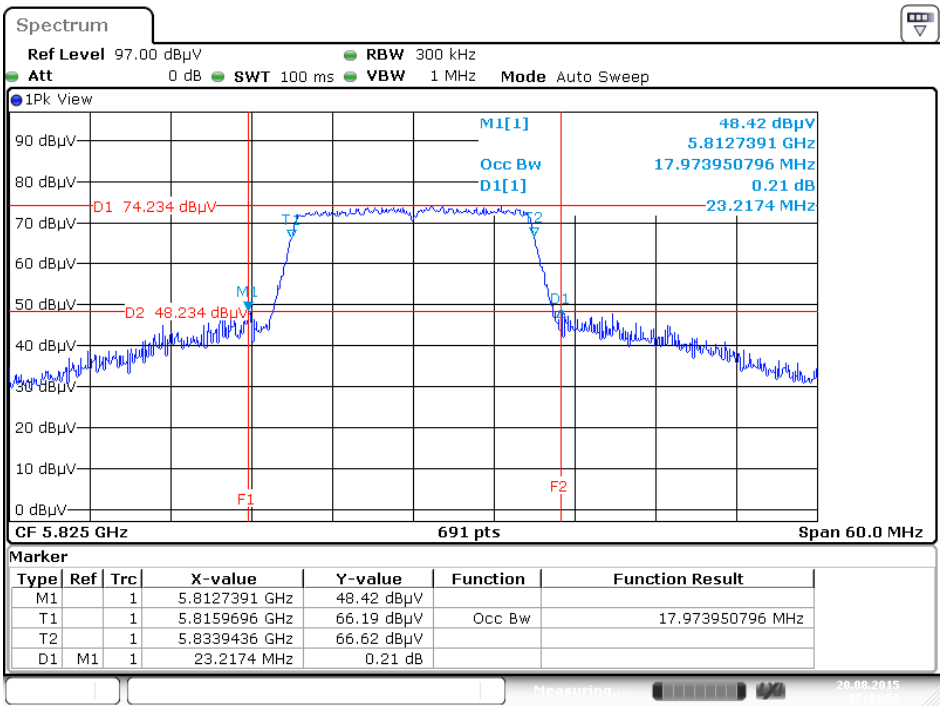
Date: 20.AUG.2015 17:46:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5785 MHz



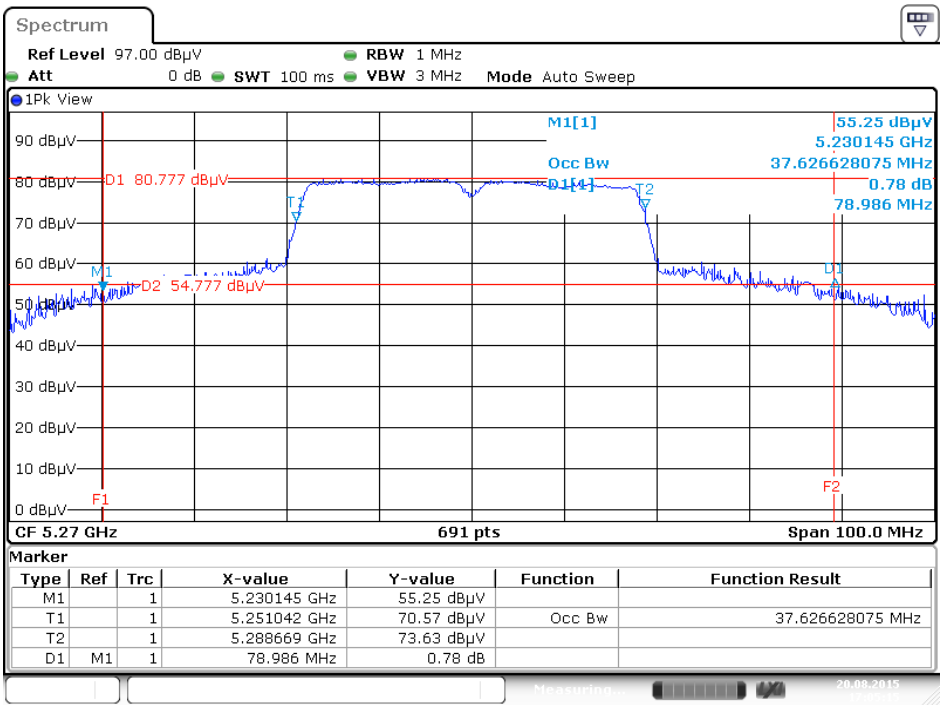
Date: 20.AUG.2015 17:45:51

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5825 MHz



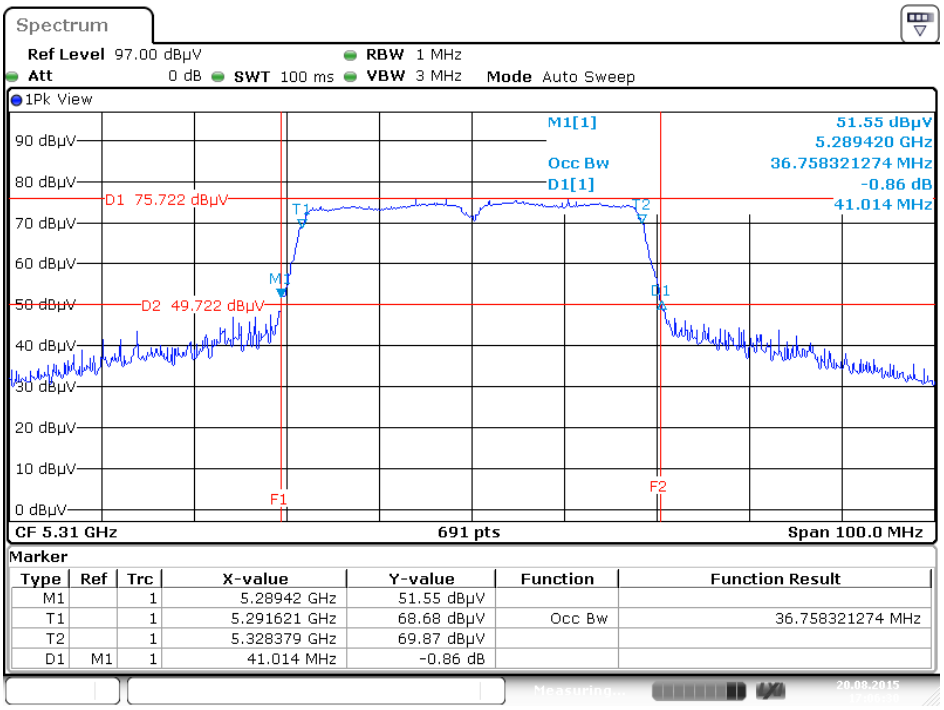
Date: 20.AUG.2015 17:44:52

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5270 MHz



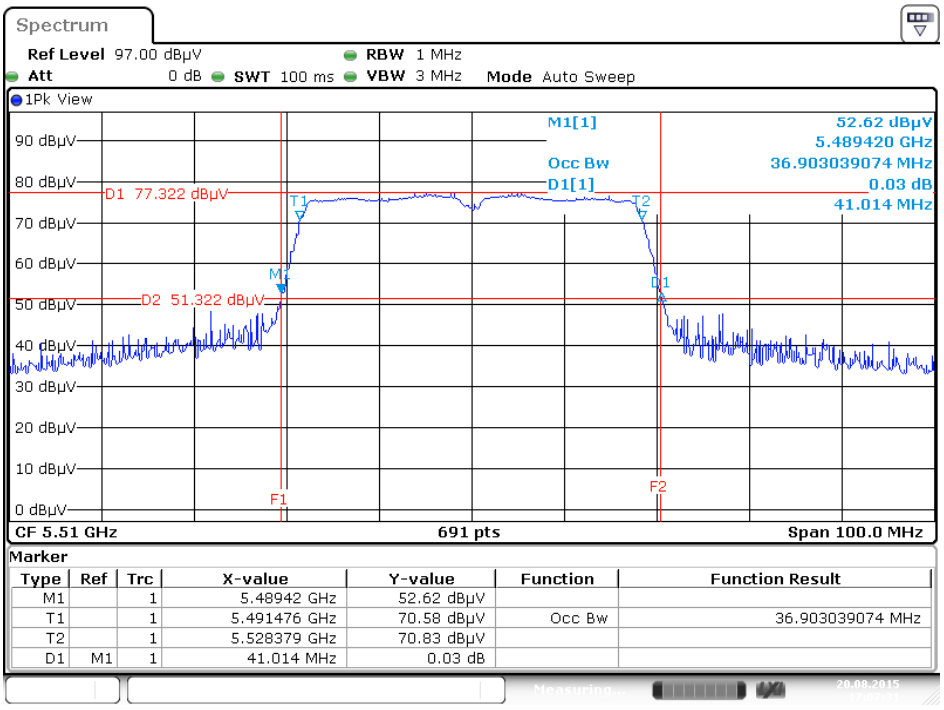
Date: 20.AUG.2015 17:05:15

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5310 MHz



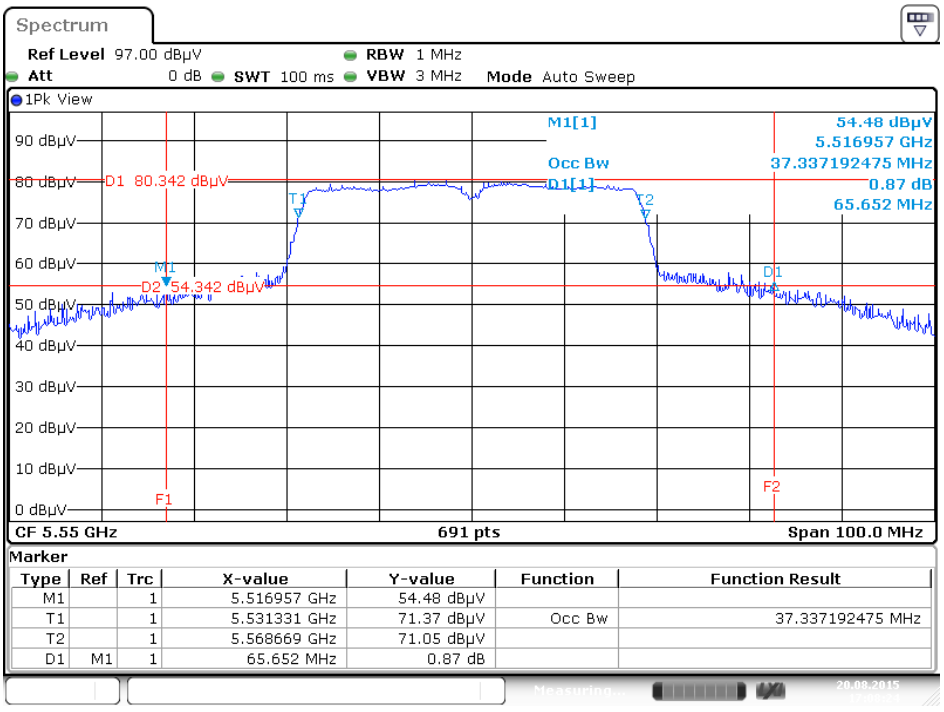
Date: 20.AUG.2015 17:06:30

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5510 MHz



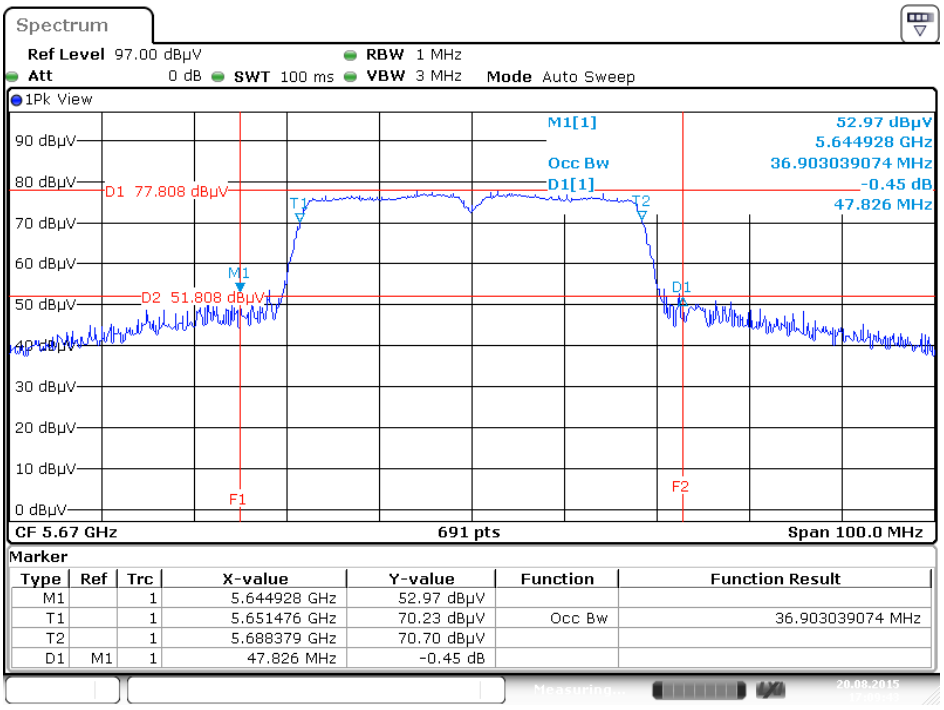
Date: 20.AUG.2015 17:07:31

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5550 MHz



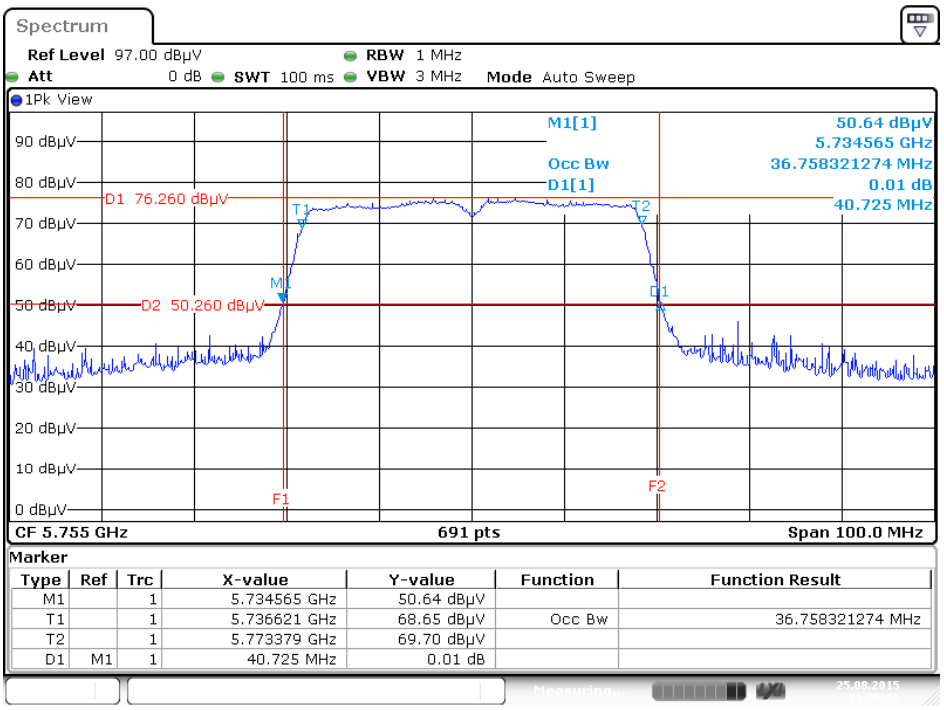
Date: 20.AUG.2015 17:08:24

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5670 MHz



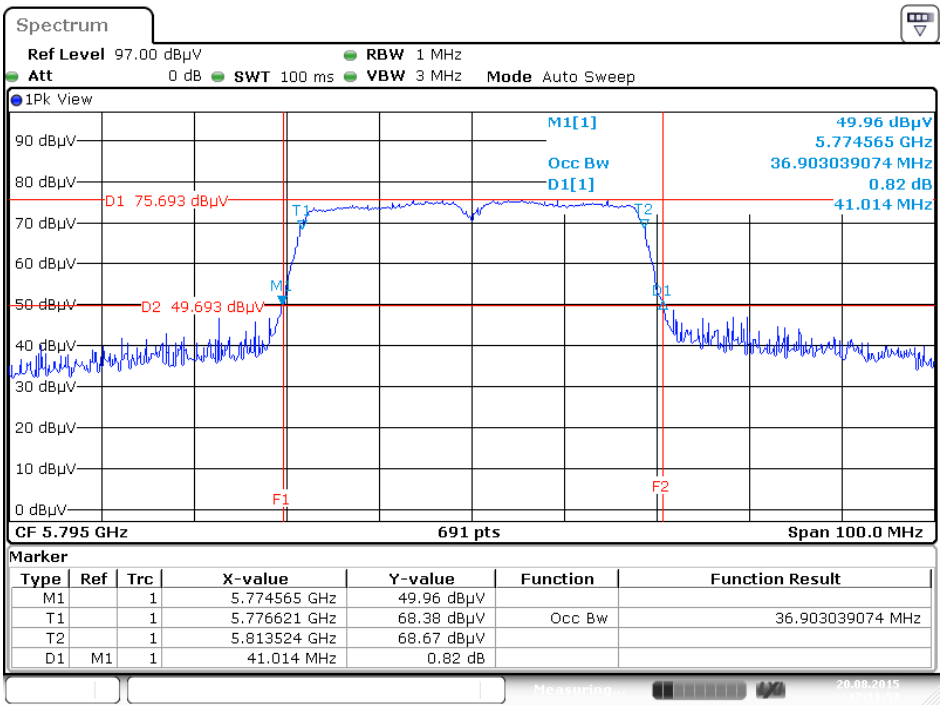
Date: 20.AUG.2015 17:09:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5755 MHz



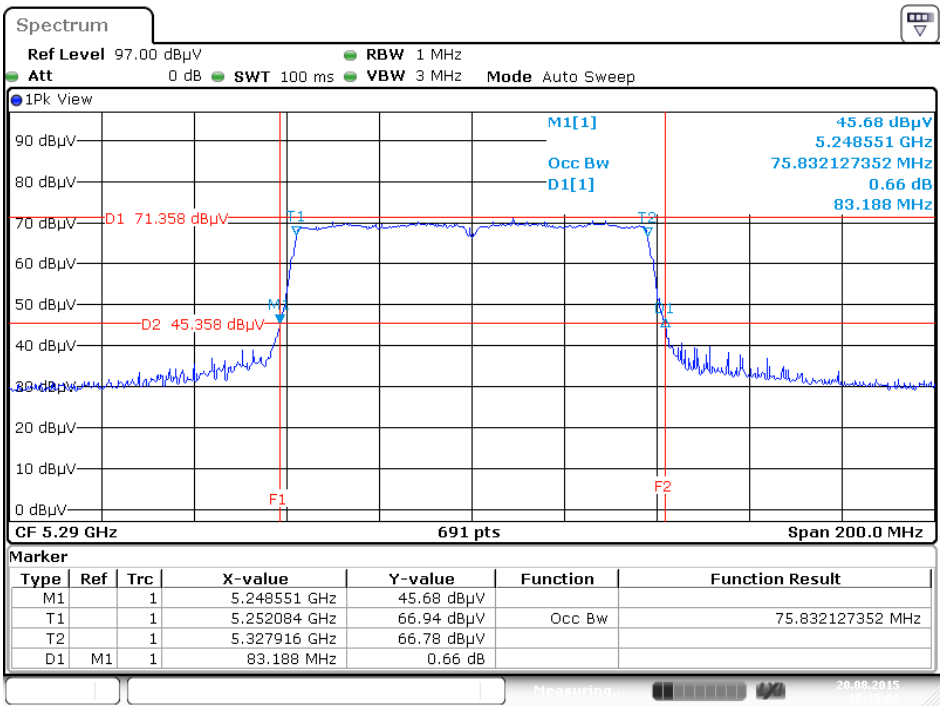
Date: 25.AUG.2015 01:06:26

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5795 MHz



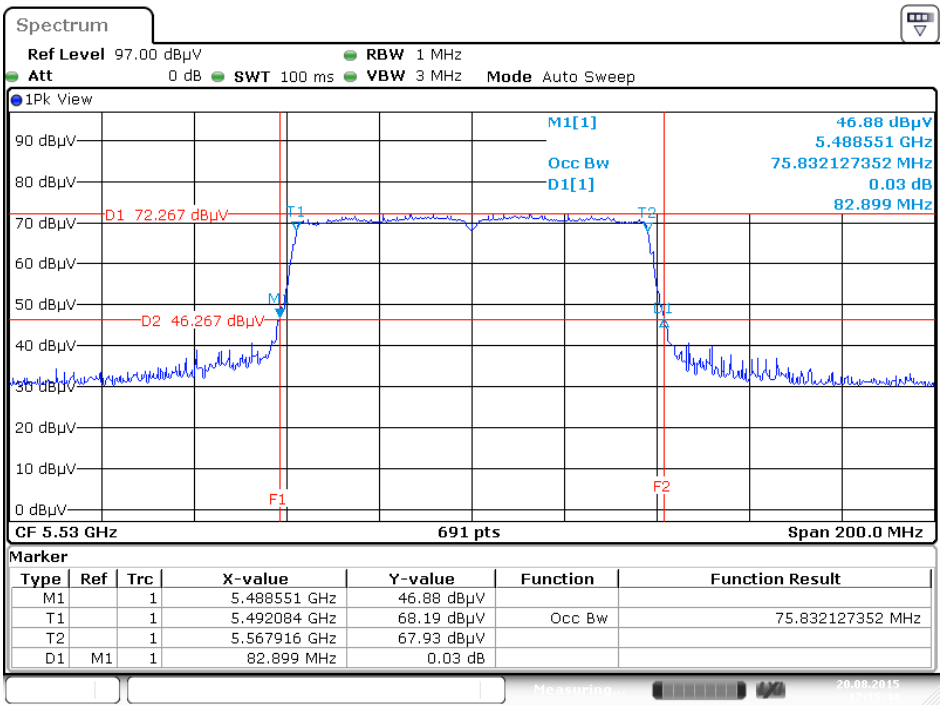
Date: 20.AUG.2015 17:11:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5290 MHz



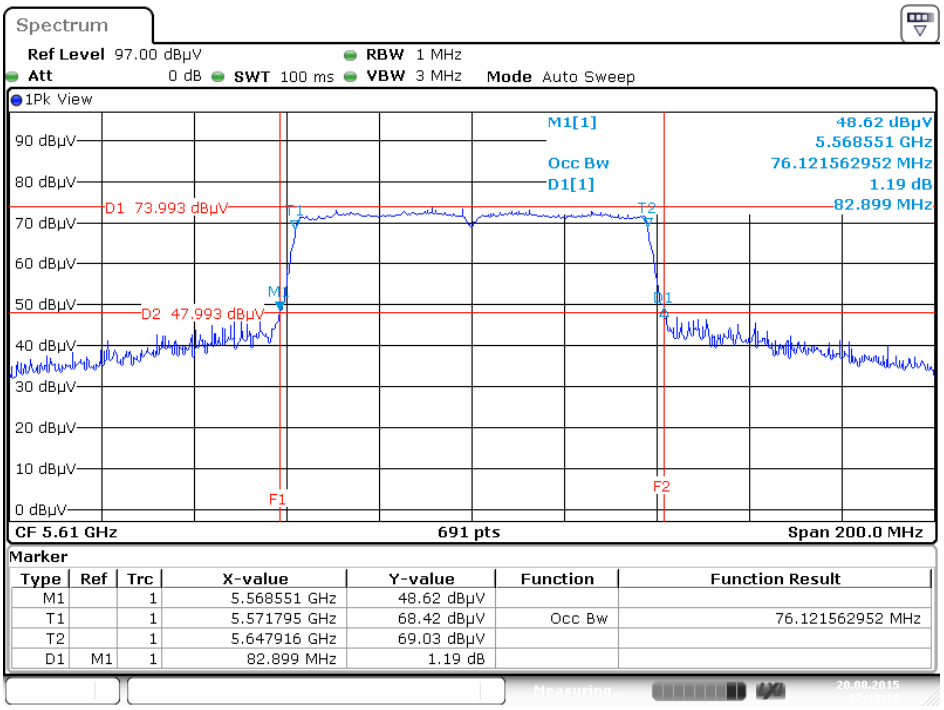
Date: 20.AUG.2015 17:15:02

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5530 MHz



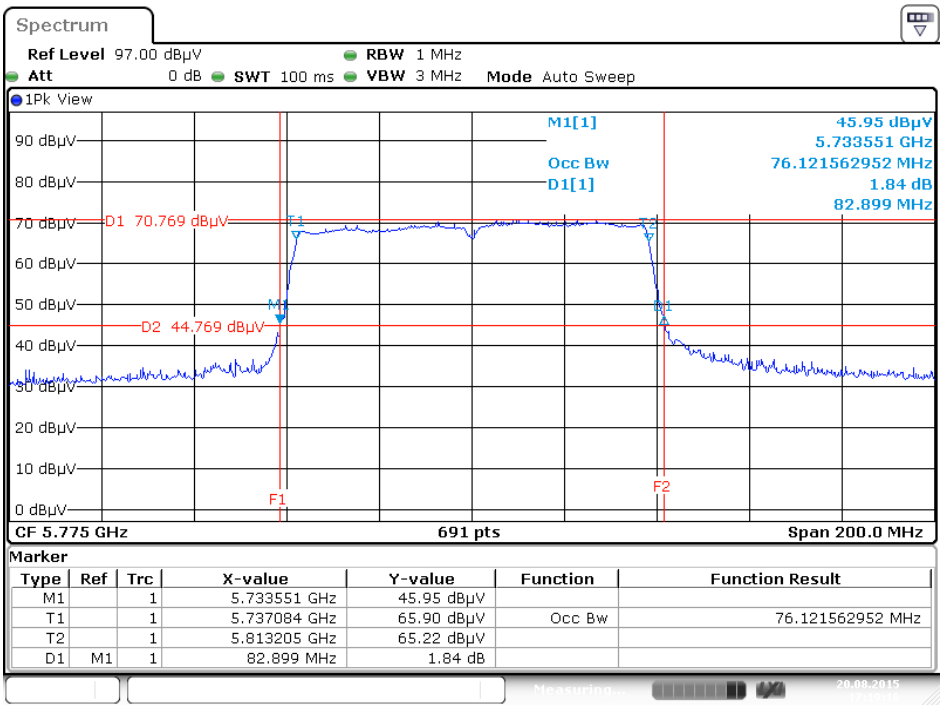
Date: 20.AUG.2015 17:15:44

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5610 MHz



Date: 20.AUG.2015 17:18:10

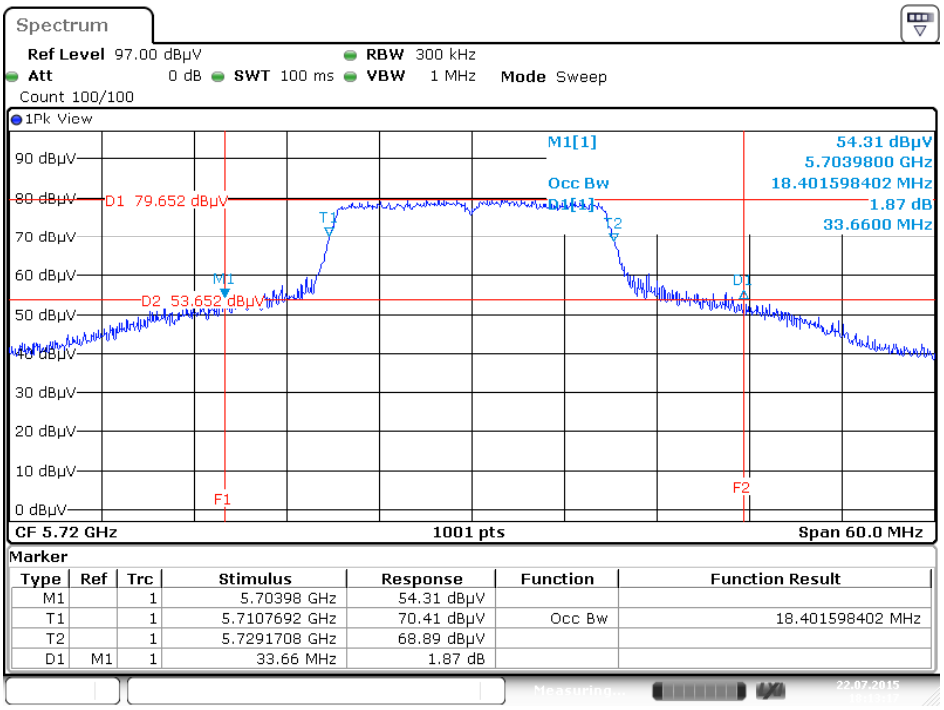
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5775 MHz



Date: 20.AUG.2015 17:19:16

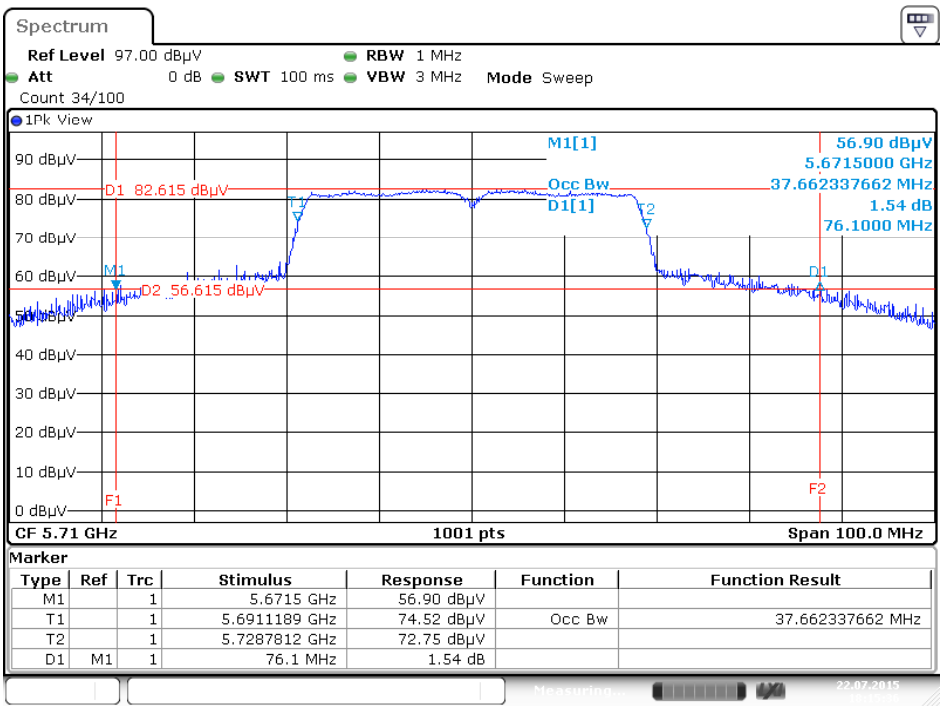
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5720 MHz



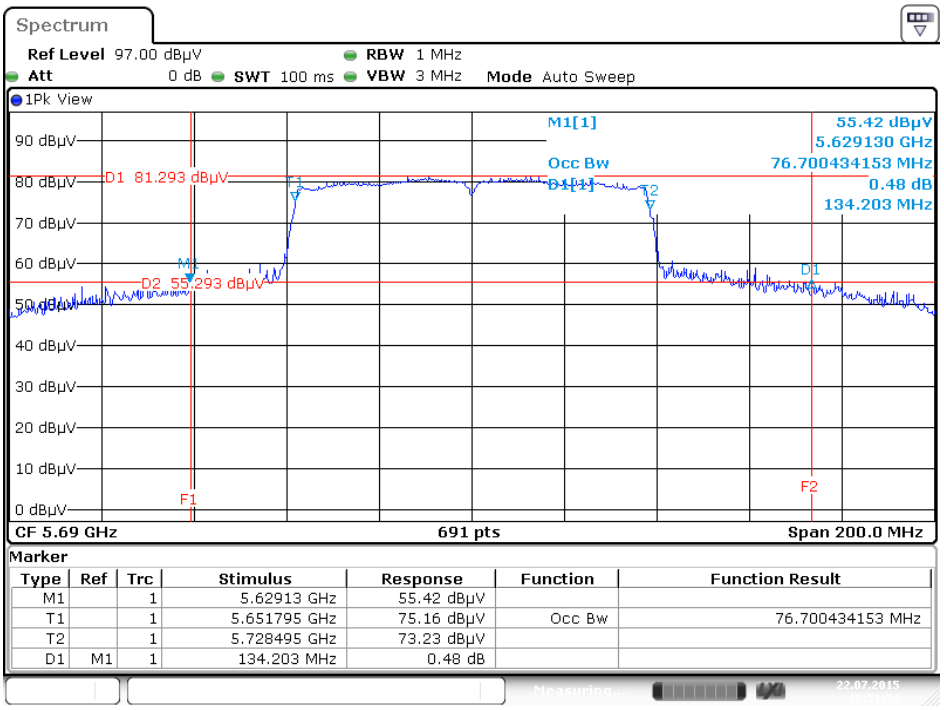
Date: 22.JUL.2015 18:13:17

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5710 MHz



Date: 22.JUL.2015 18:15:36

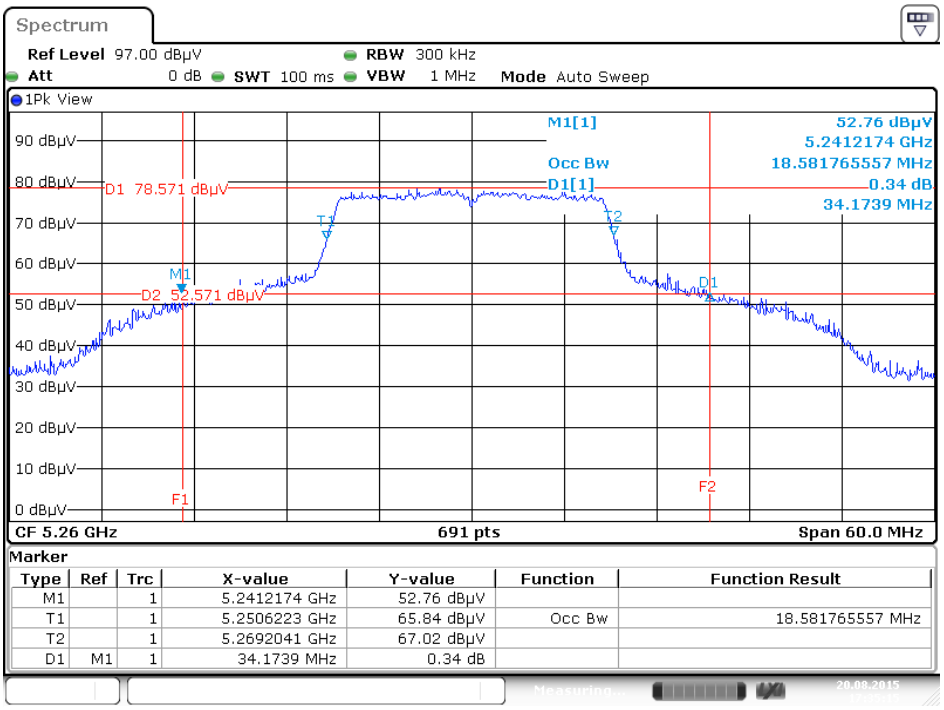
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5690 MHz



Date: 22.JUL.2015 10:51:55

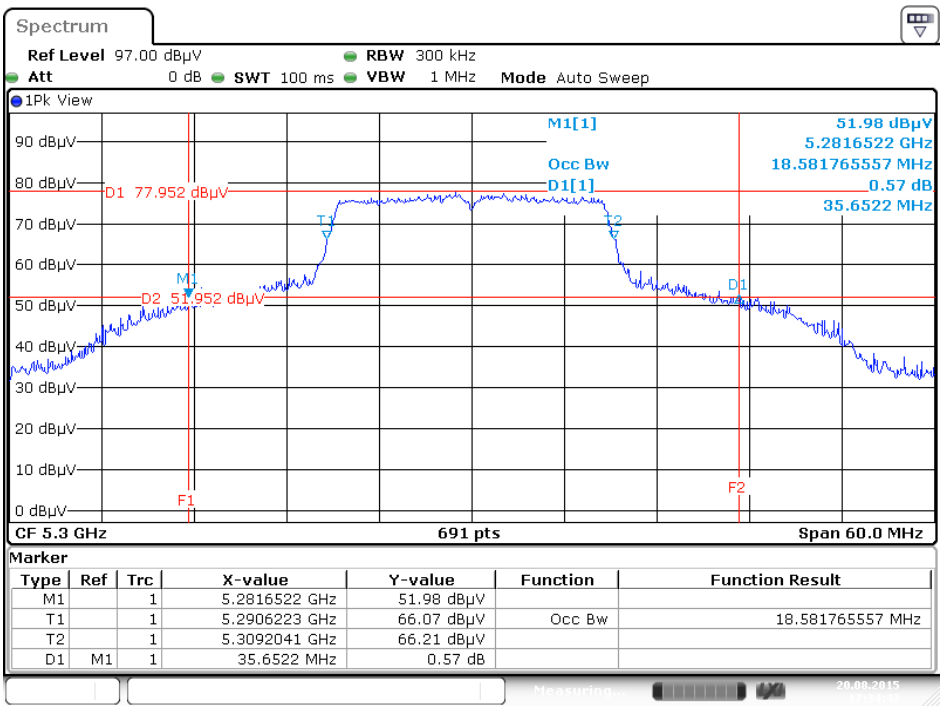
Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5260 MHz



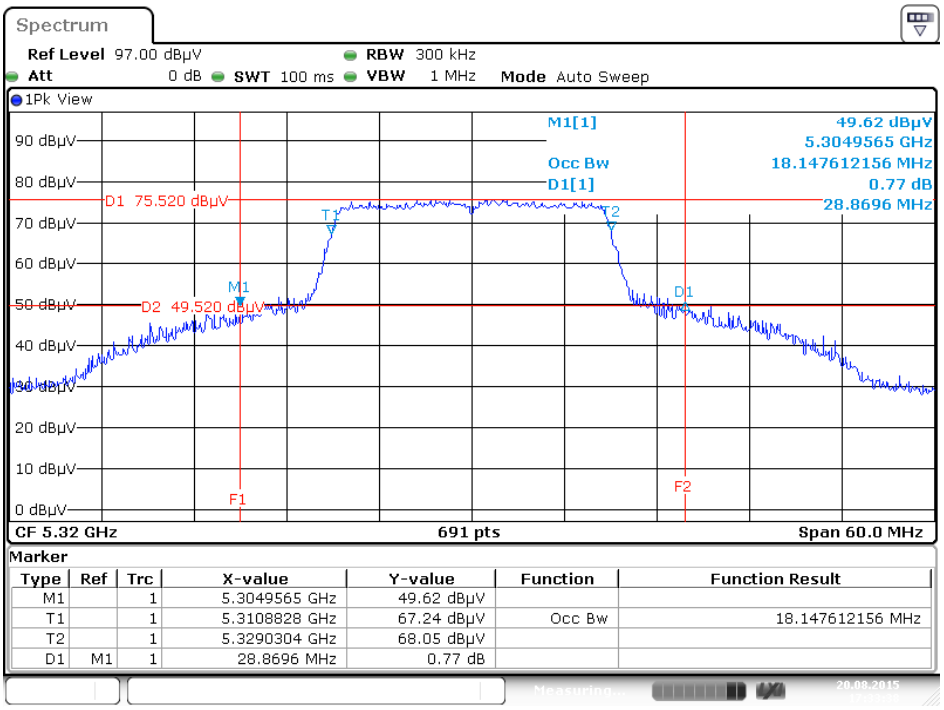
Date: 20.AUG.2015 17:35:15

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5300 MHz



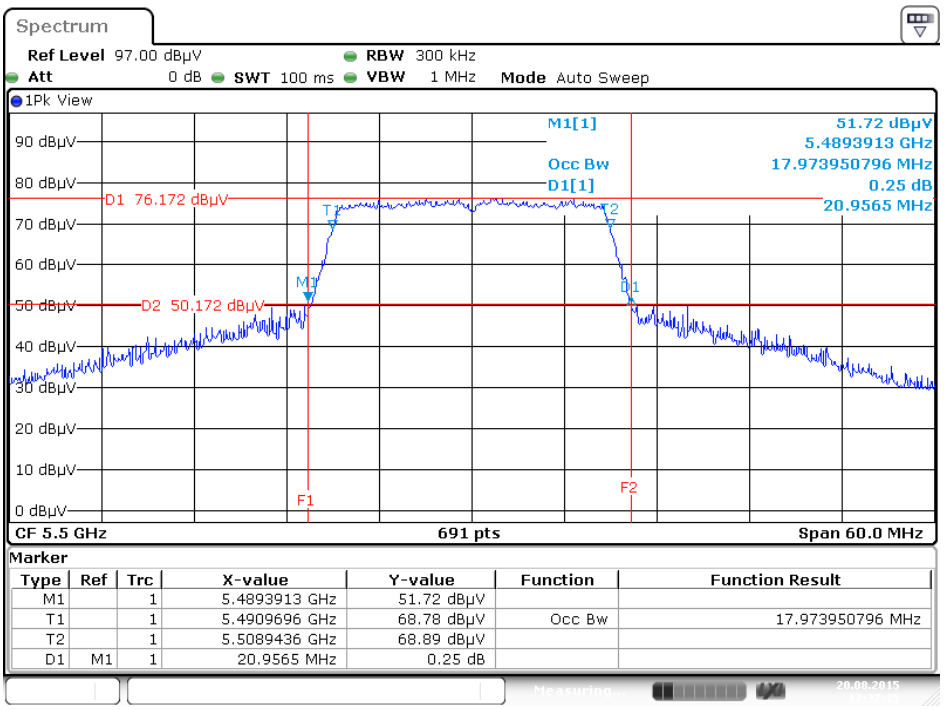
Date: 20.AUG.2015 17:34:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5320 MHz



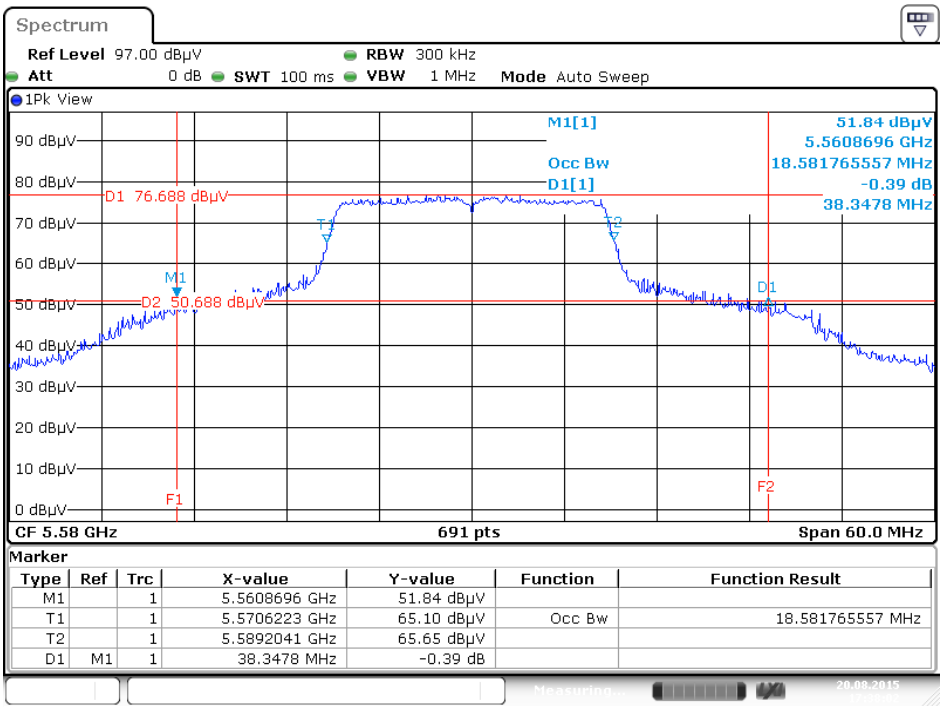
Date: 20.AUG.2015 17:33:38

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5500 MHz



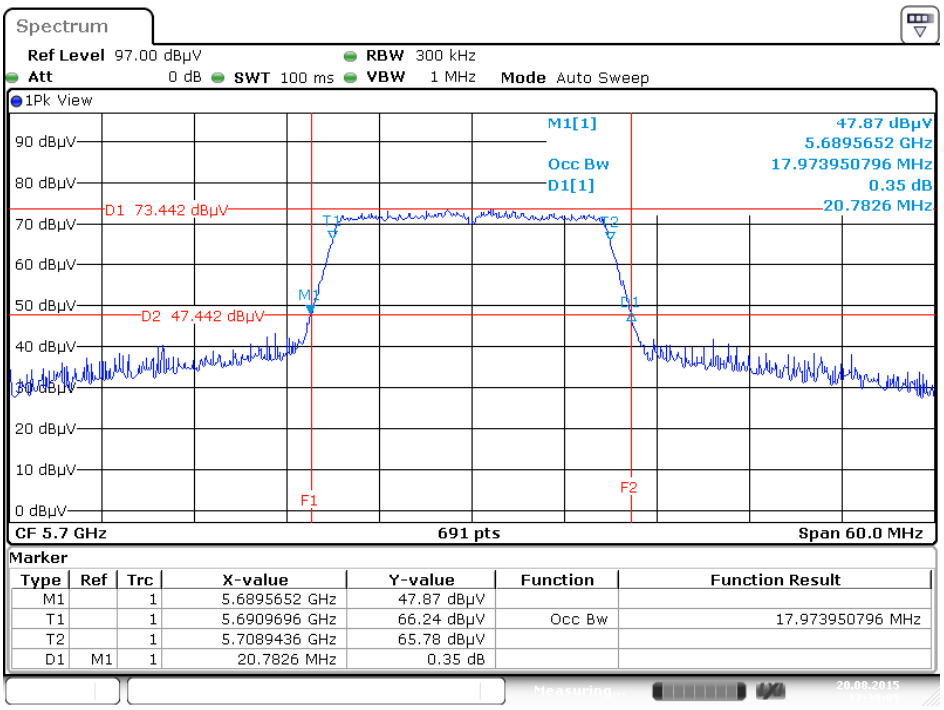
Date: 20.AUG.2015 17:37:15

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5580 MHz



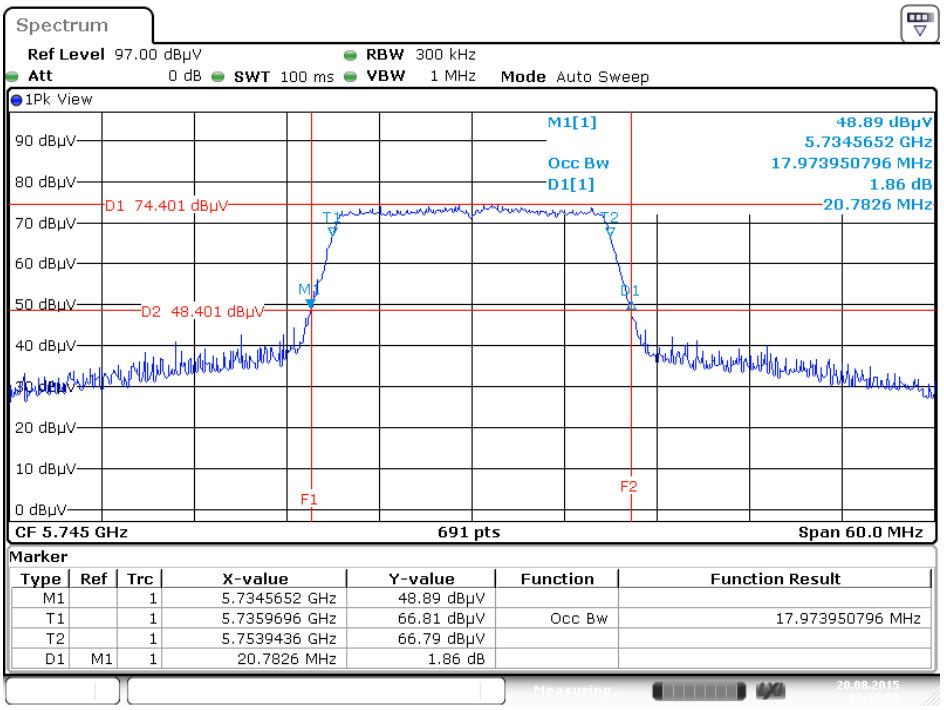
Date: 20.AUG.2015 17:38:03

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5700 MHz



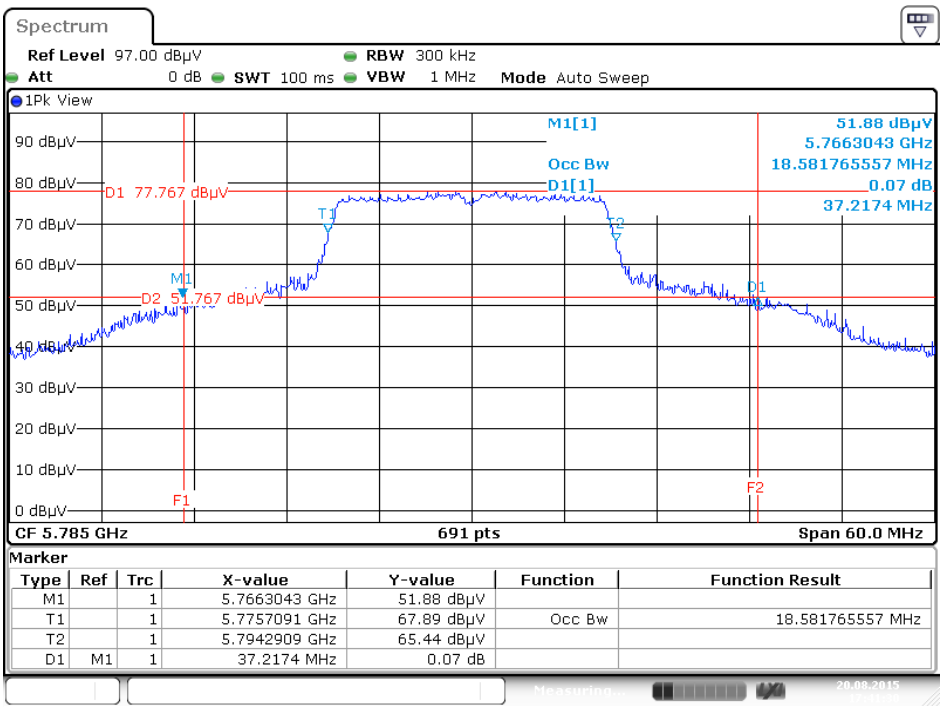
Date: 20.AUG.2015 17:39:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5745 MHz



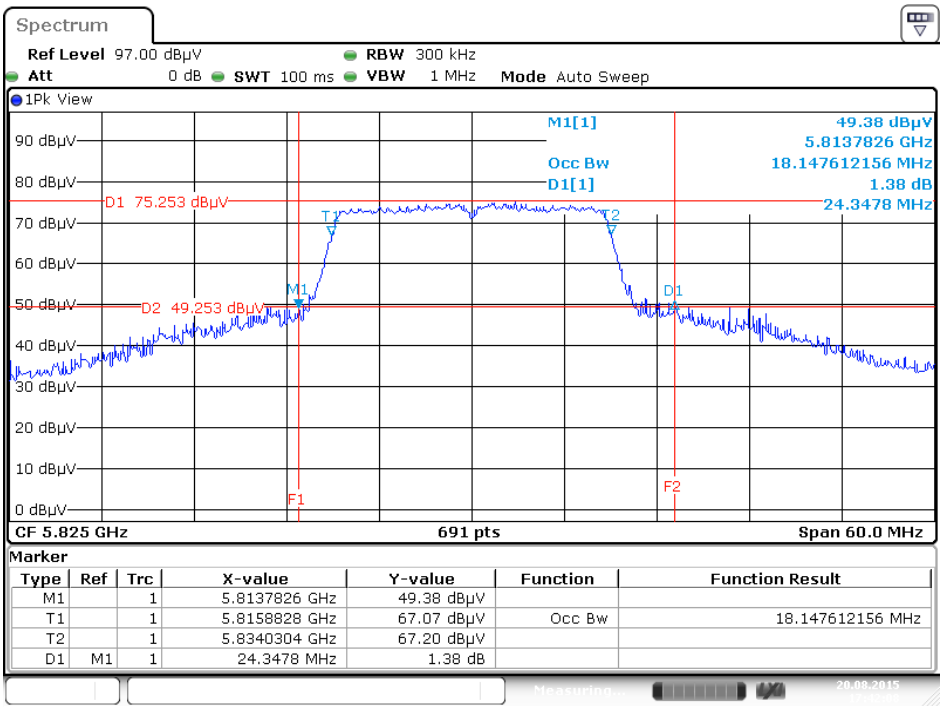
Date: 20.AUG.2015 17:39:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5785 MHz



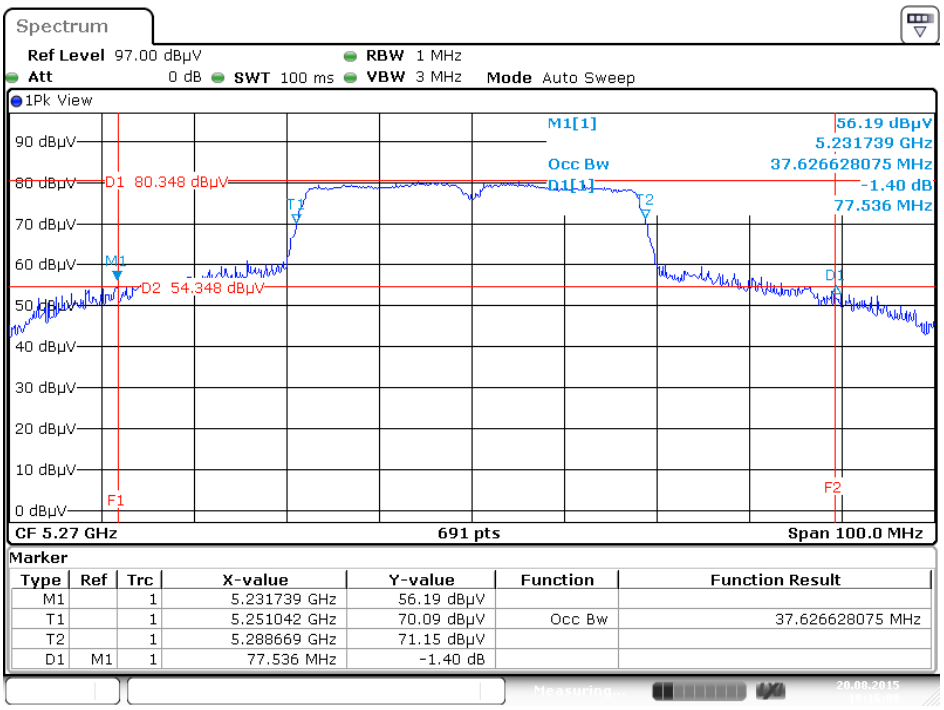
Date: 20.AUG.2015 17:41:31

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5825 MHz



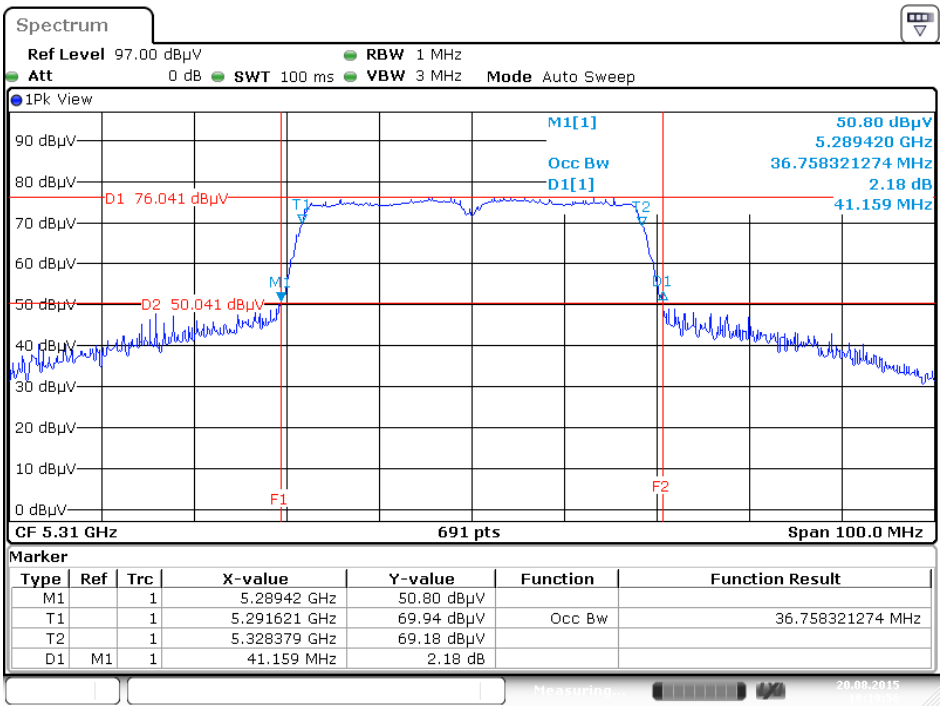
Date: 20.AUG.2015 17:42:08

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5270 MHz



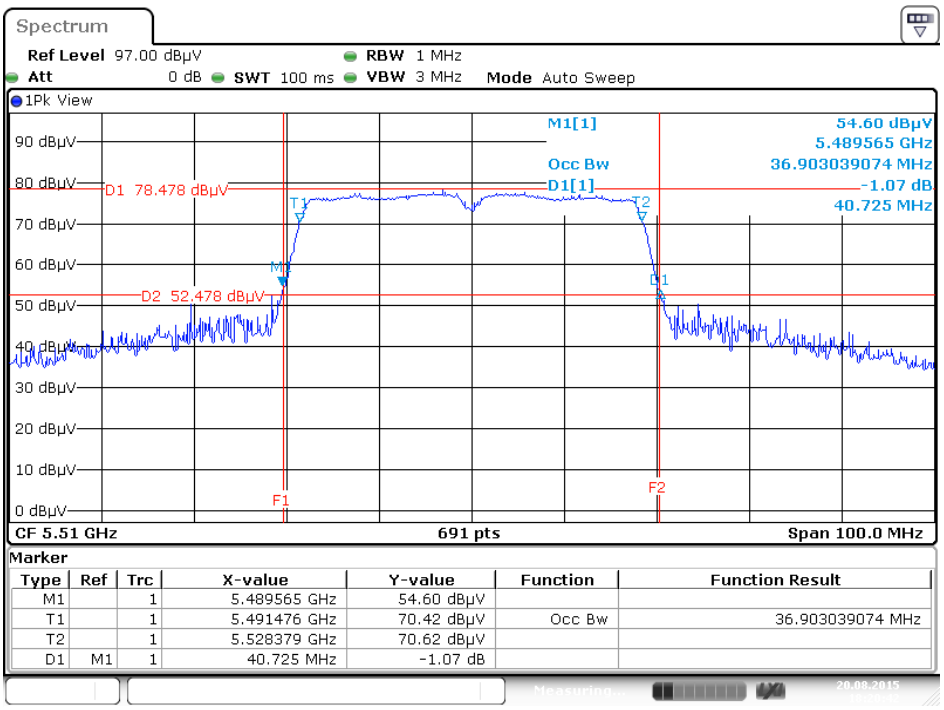
Date: 20.AUG.2015 18:16:10

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5310 MHz



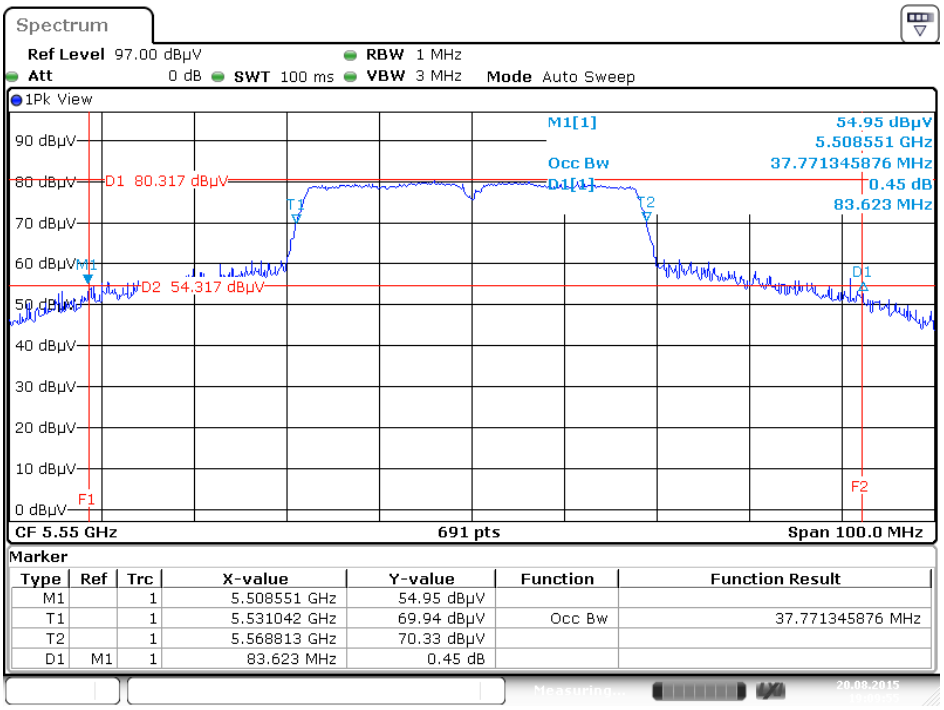
Date: 20.AUG.2015 18:19:56

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5510 MHz



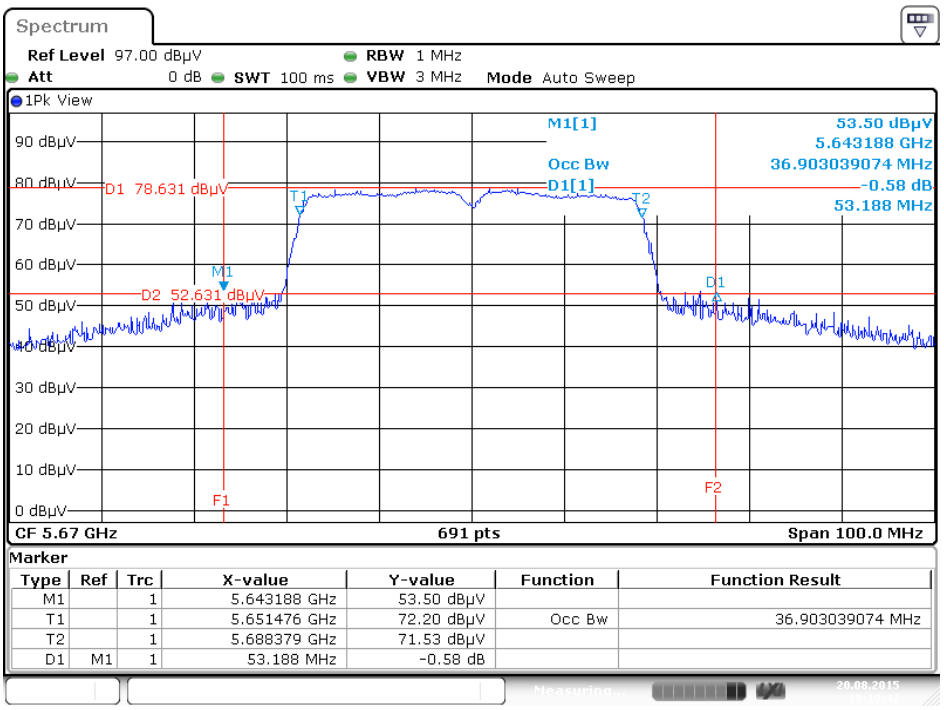
Date: 20.AUG.2015 18:20:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5550 MHz



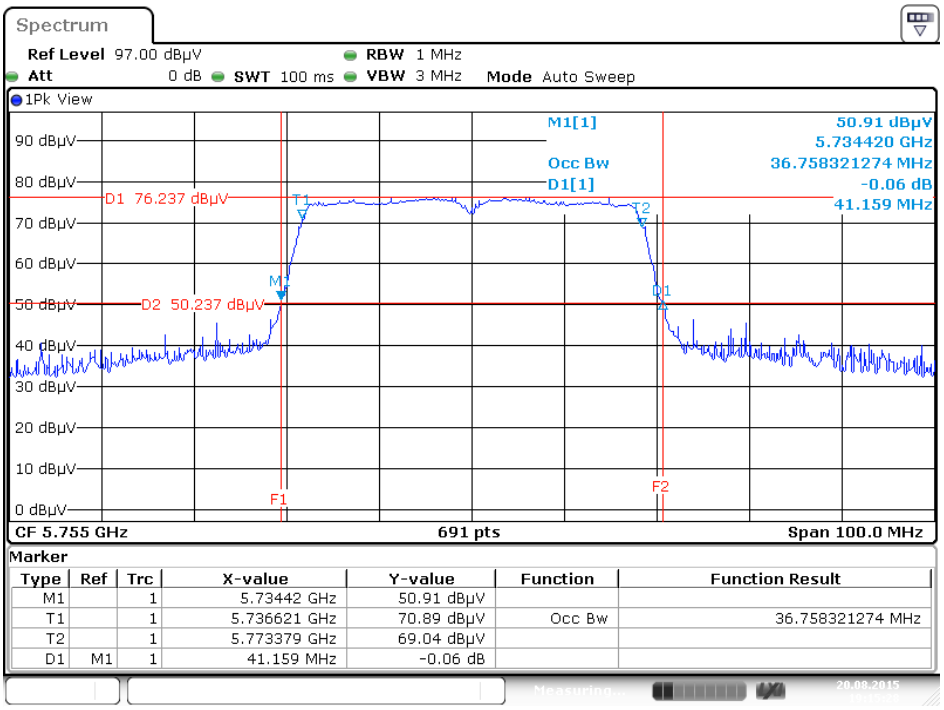
Date: 20.AUG.2015 19:09:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5670 MHz



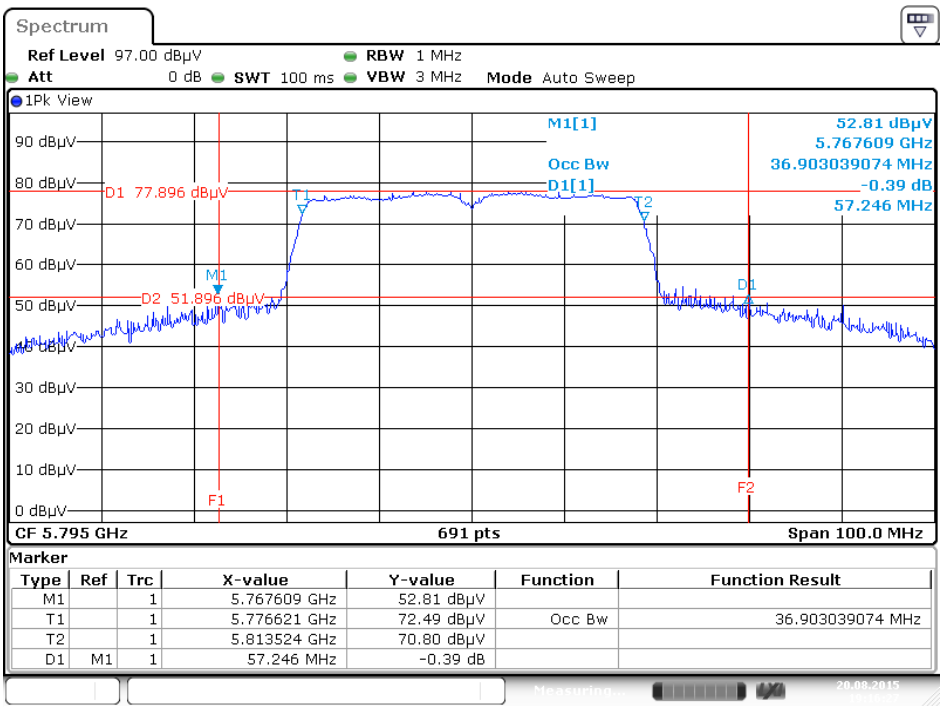
Date: 20.AUG.2015 19:10:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5755 MHz



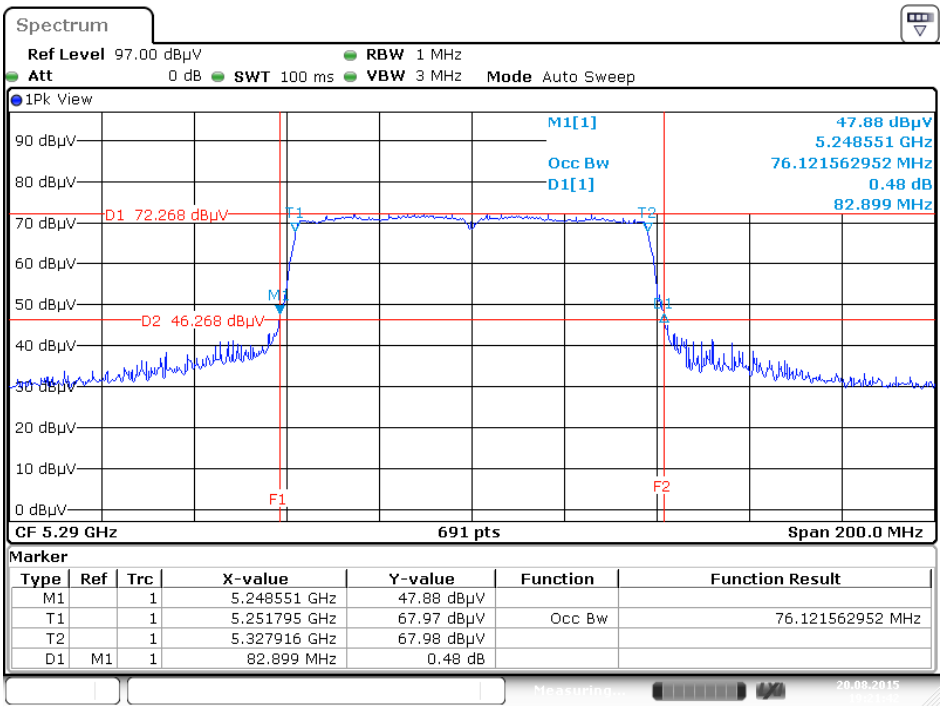
Date: 20.AUG.2015 19:15:28

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5795 MHz



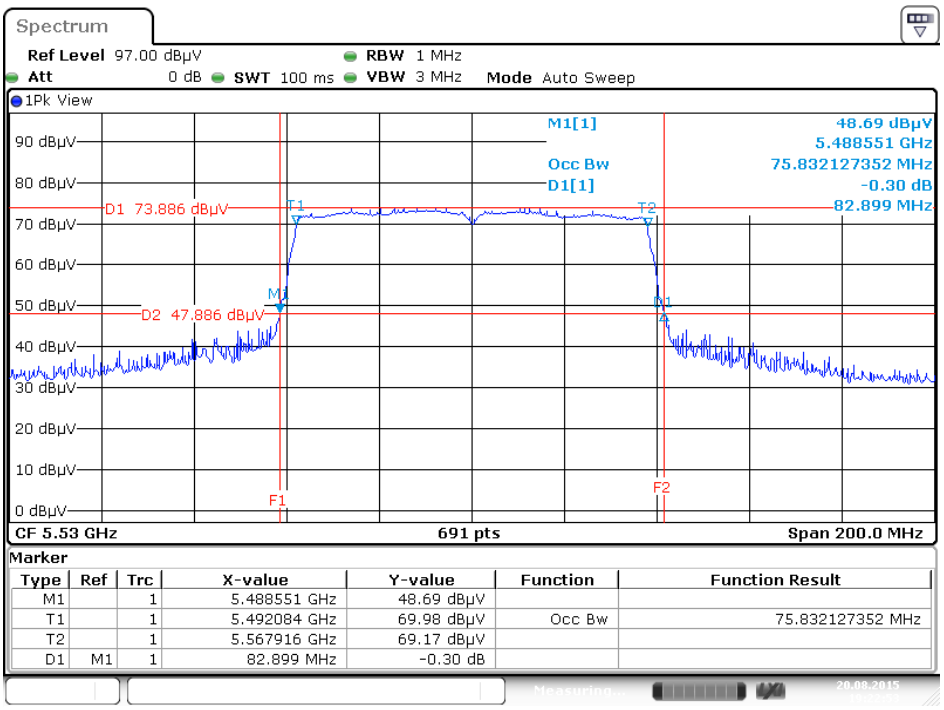
Date: 20.AUG.2015 19:16:28

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5290 MHz



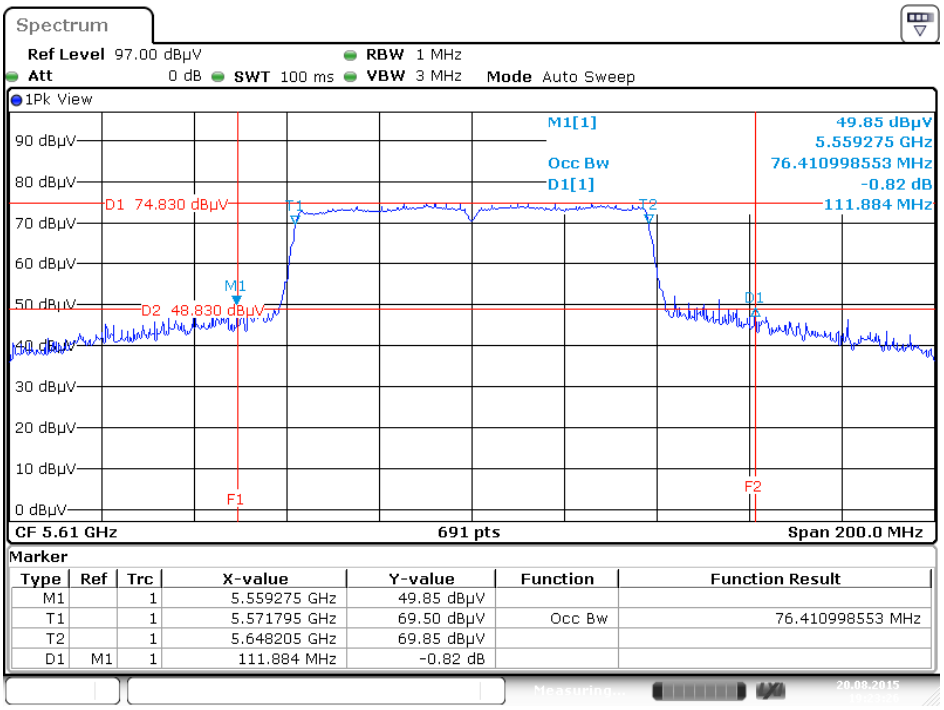
Date: 20.AUG.2015 19:21:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5530 MHz



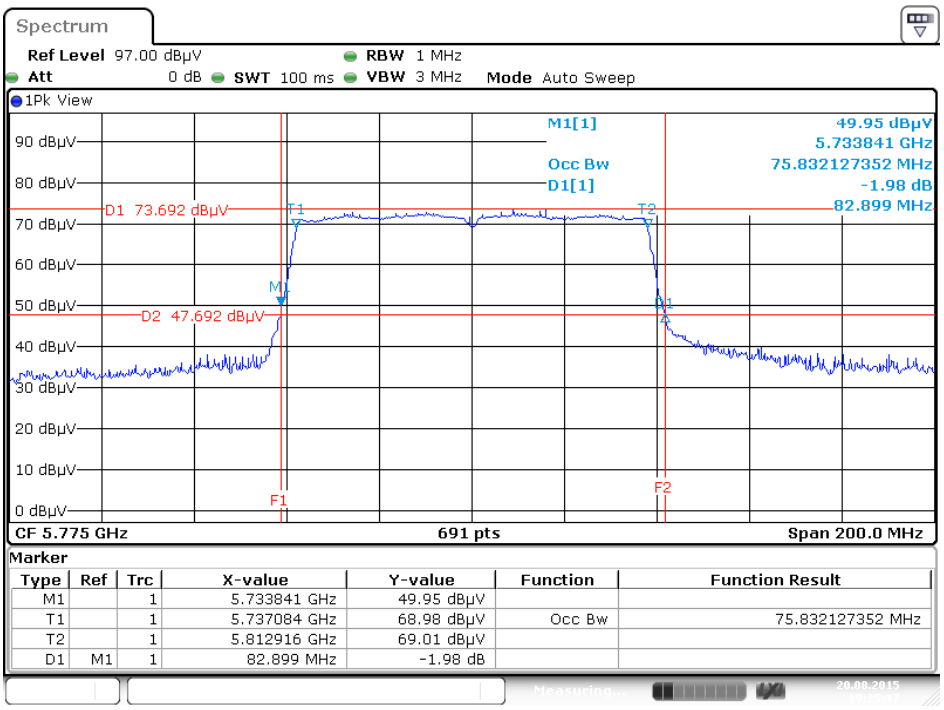
Date: 20.AUG.2015 19:22:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5610 MHz



Date: 20.AUG.2015 19:23:26

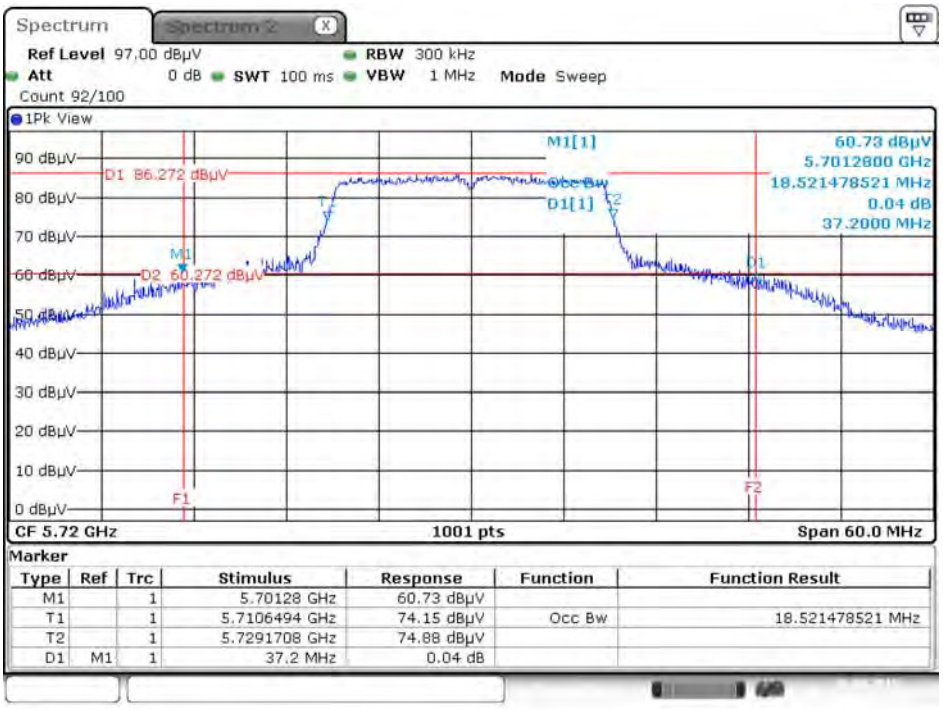
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5775 MHz



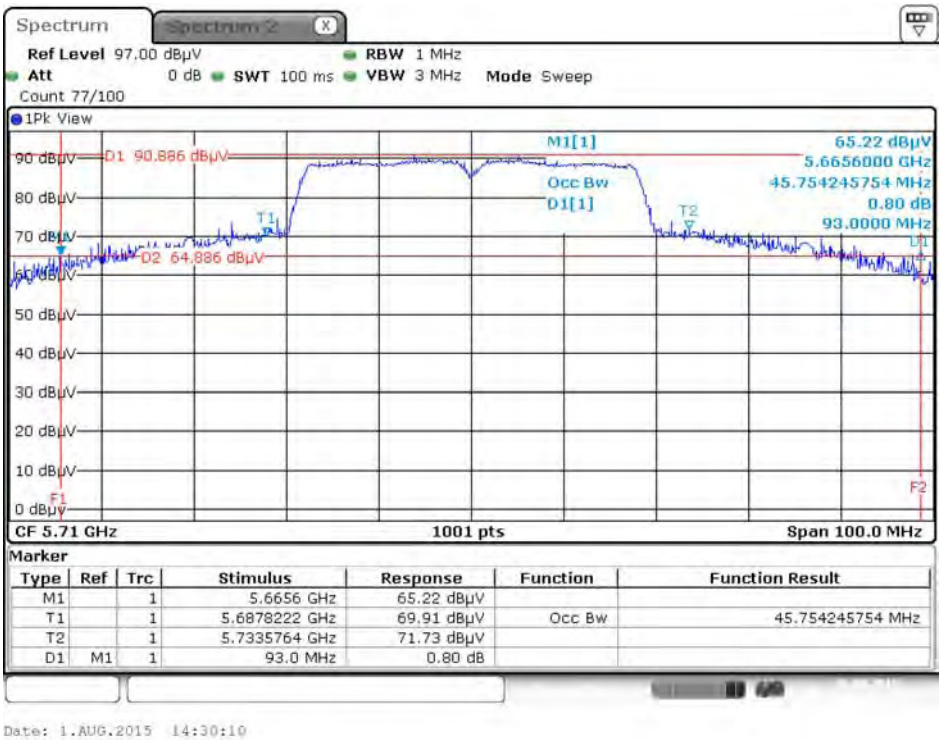
Date: 20.AUG.2015 19:25:17

Straddle Channel

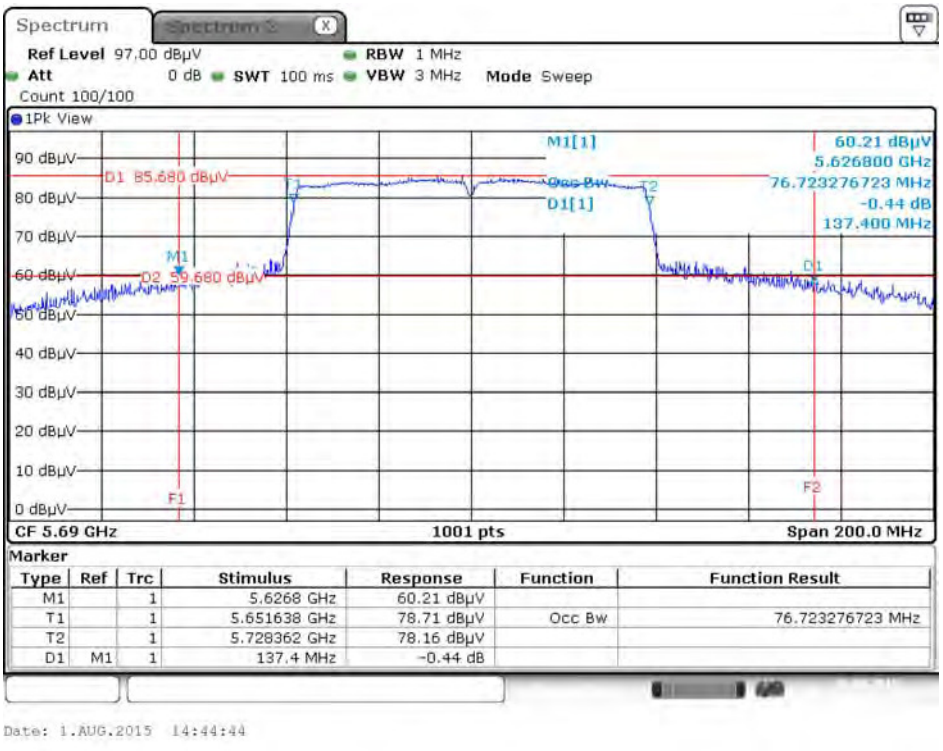
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5720 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5710 MHz

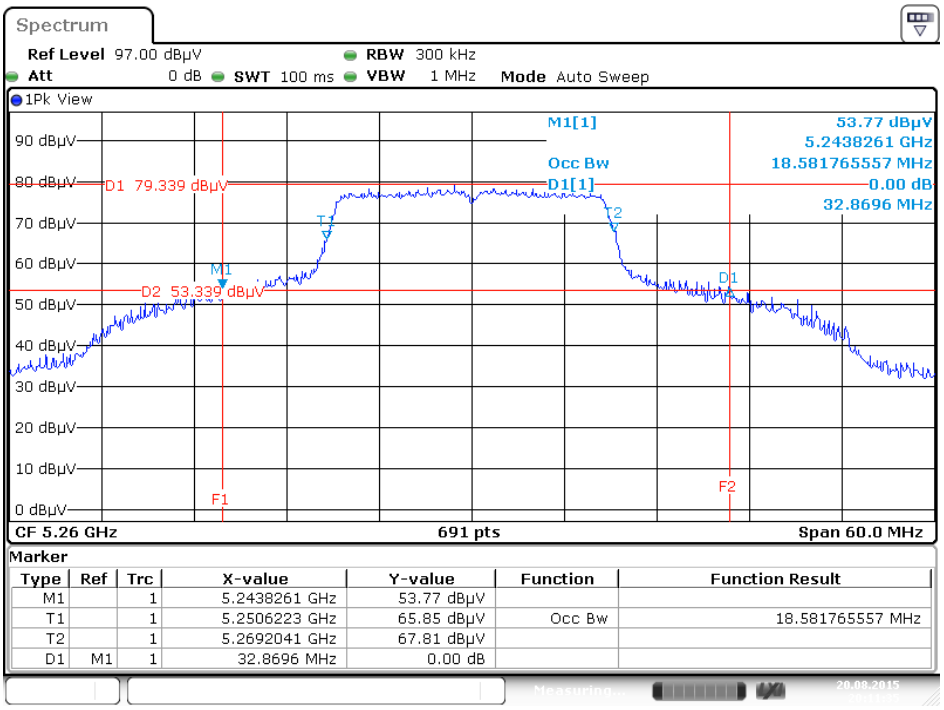


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5690 MHz



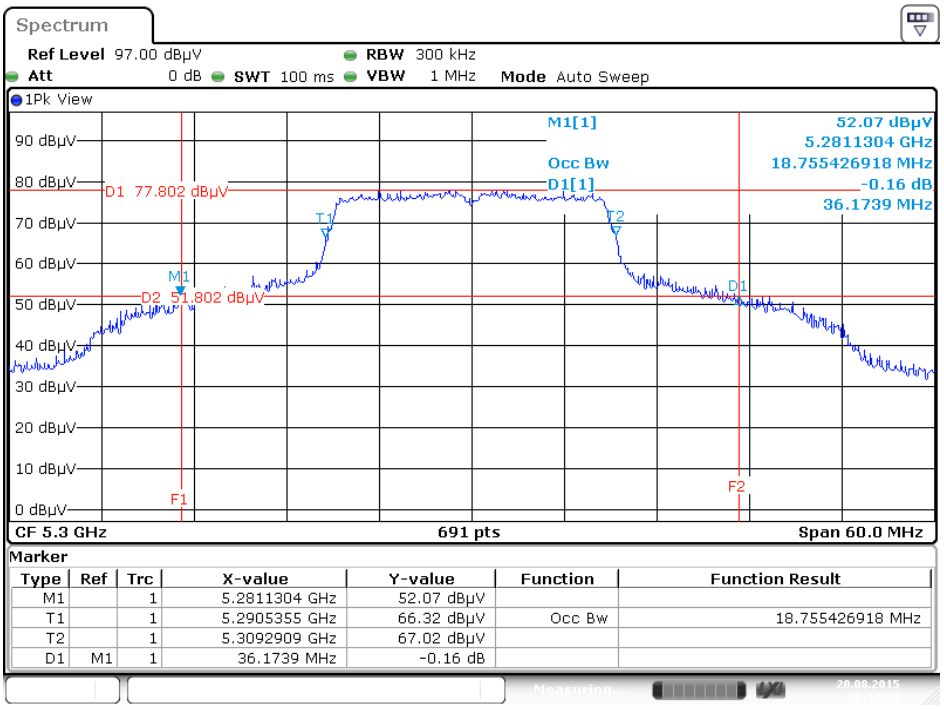
Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5260 MHz



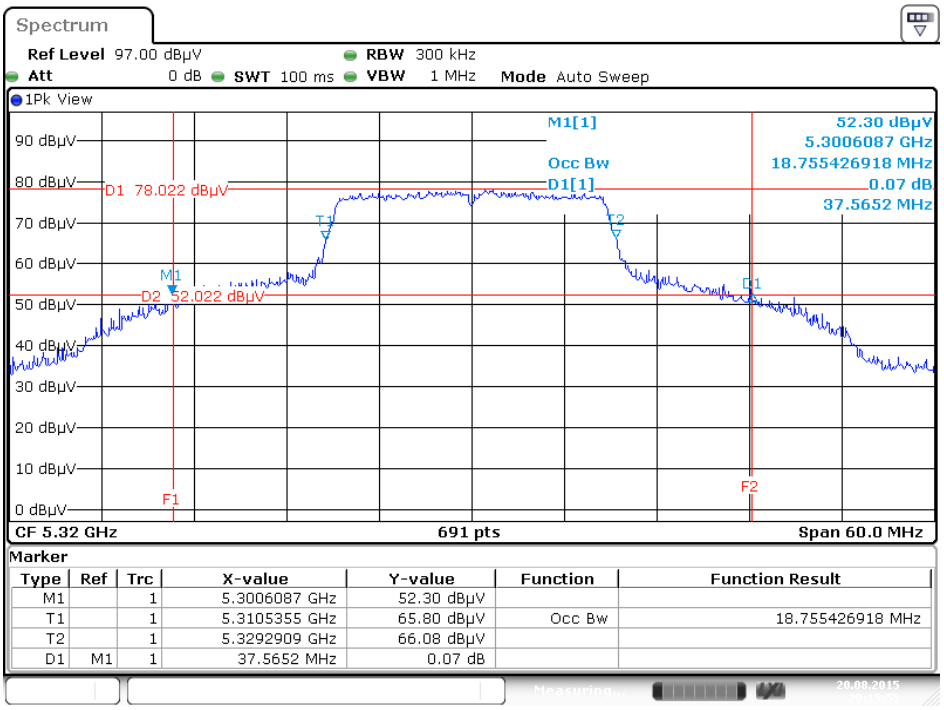
Date: 20.AUG.2015 20:11:35

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5300 MHz



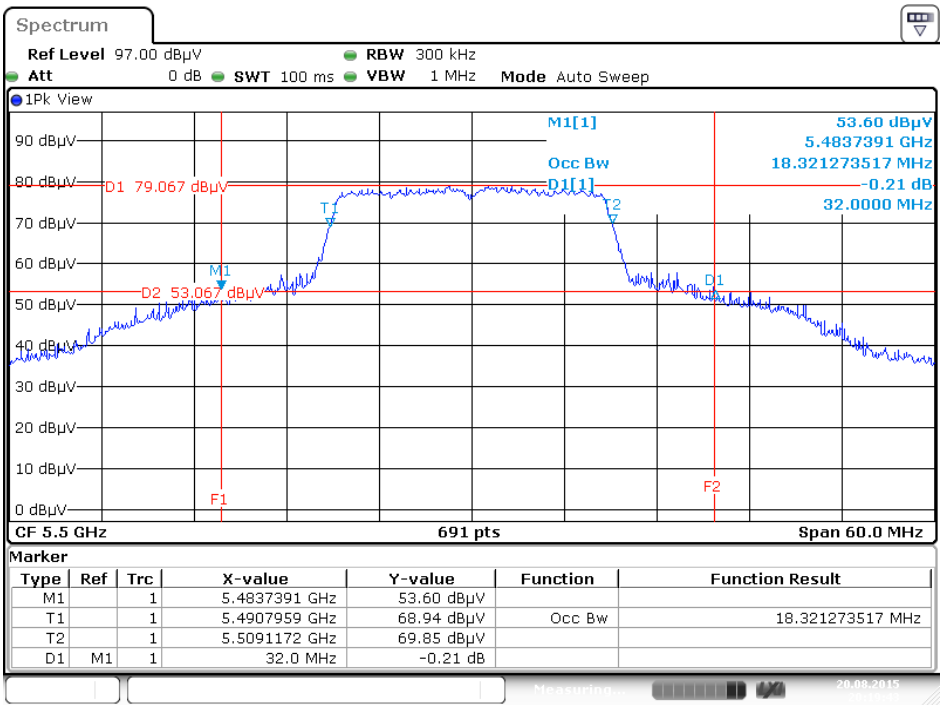
Date: 20.AUG.2015 20:13:03

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5320 MHz



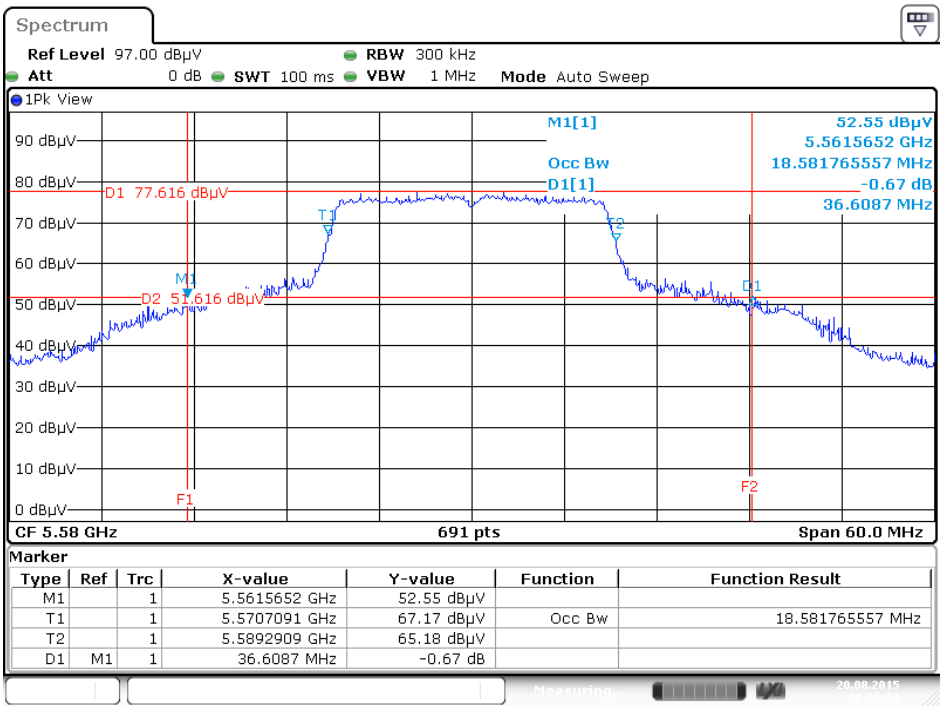
Date: 20.AUG.2015 20:15:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5500 MHz



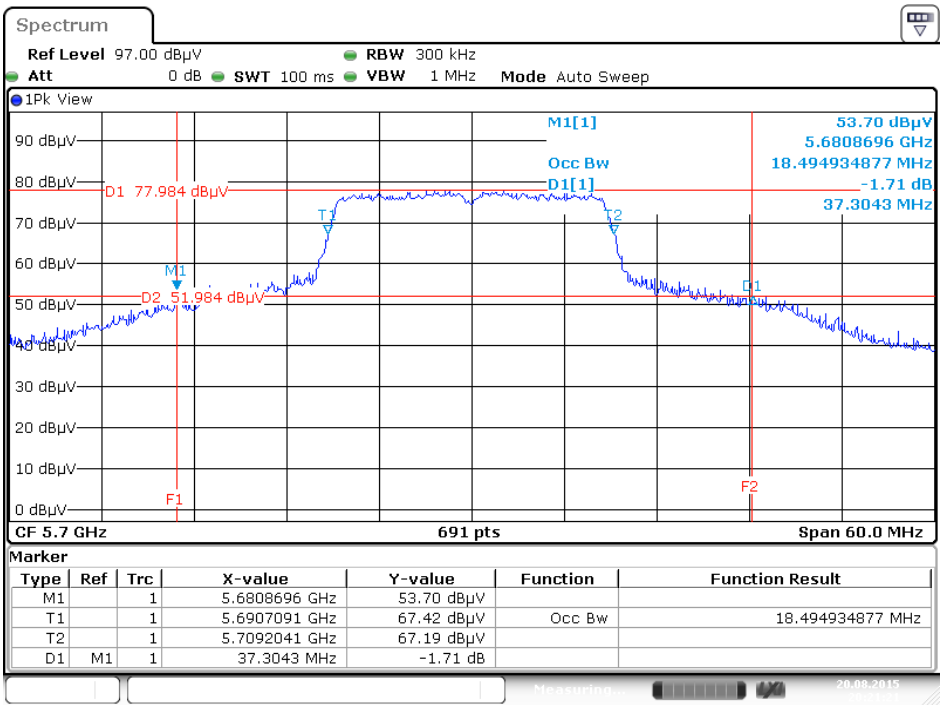
Date: 20.AUG.2015 20:19:44

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5580 MHz



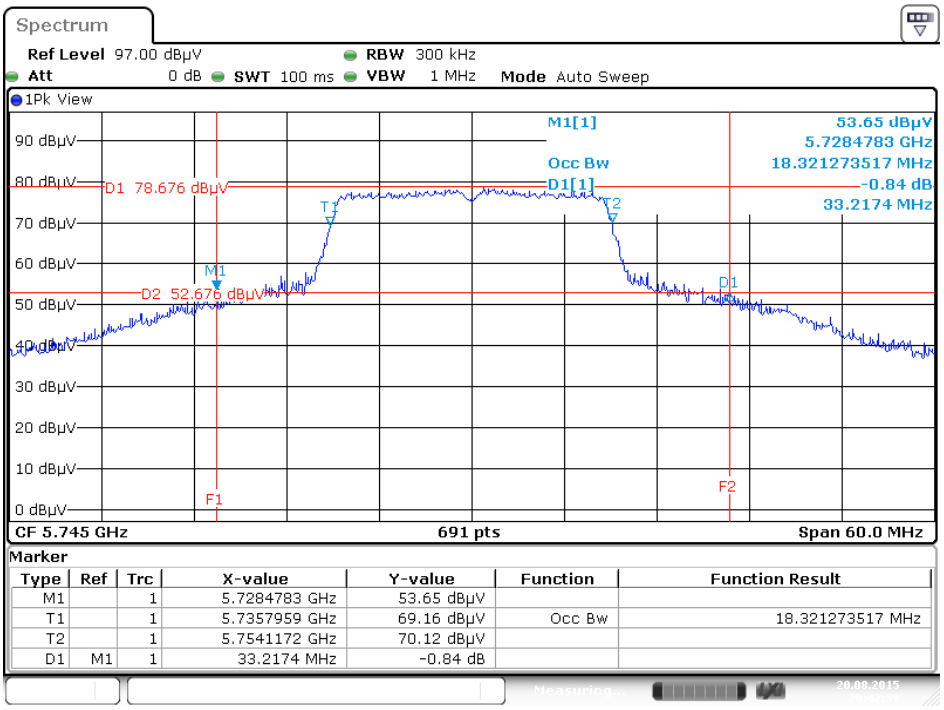
Date: 20.AUG.2015 20:20:33

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5700 MHz



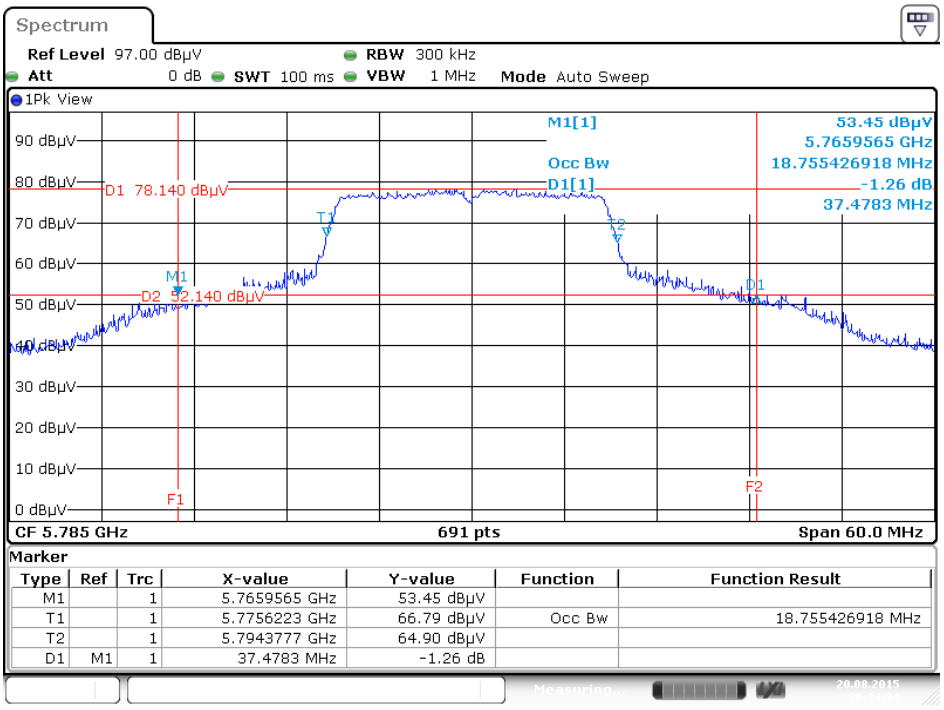
Date: 20.AUG.2015 20:21:21

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5745 MHz



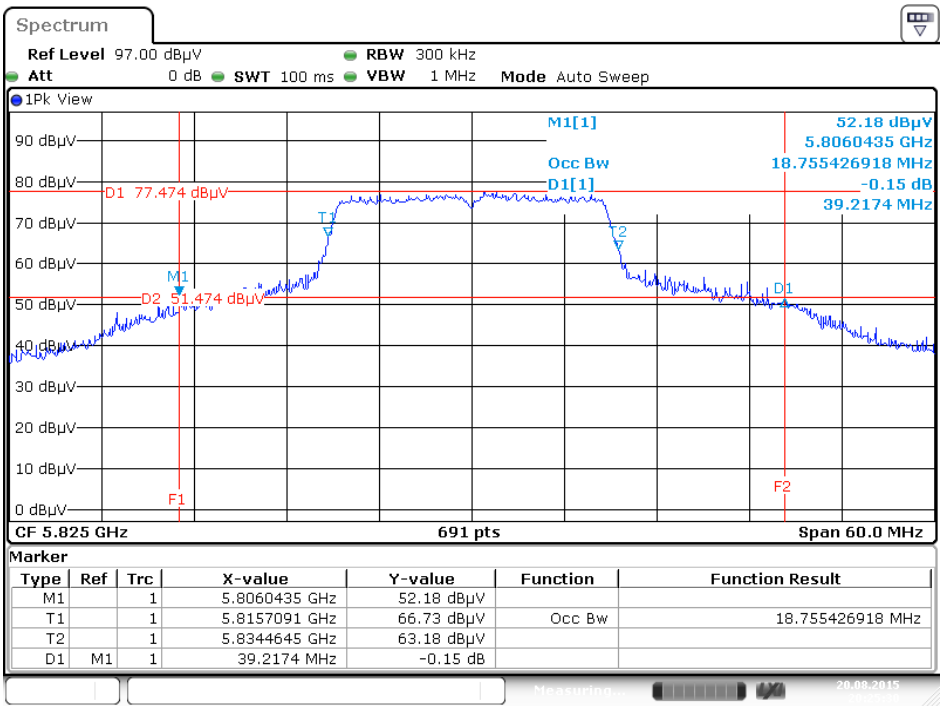
Date: 20.AUG.2015 20:42:58

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5785 MHz



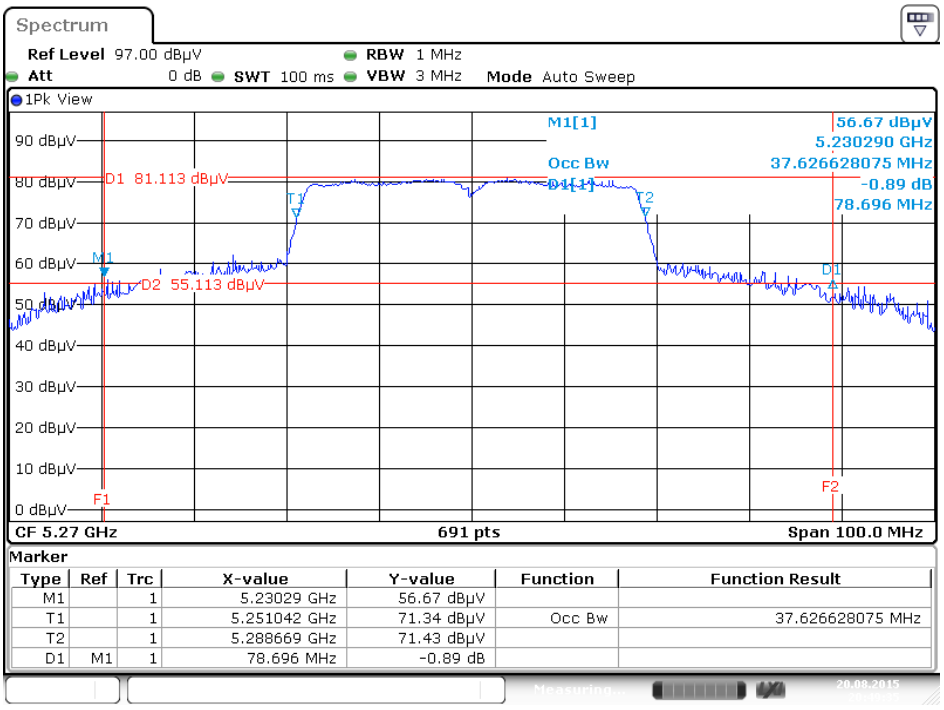
Date: 20.AUG.2015 20:24:35

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5825 MHz



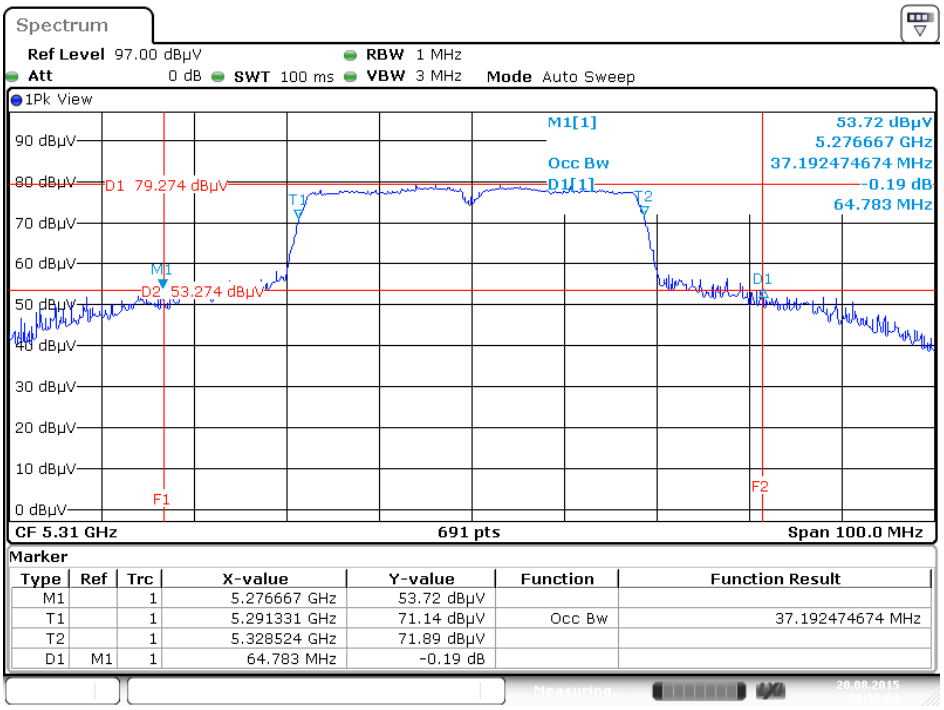
Date: 20.AUG.2015 20:25:30

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5270 MHz



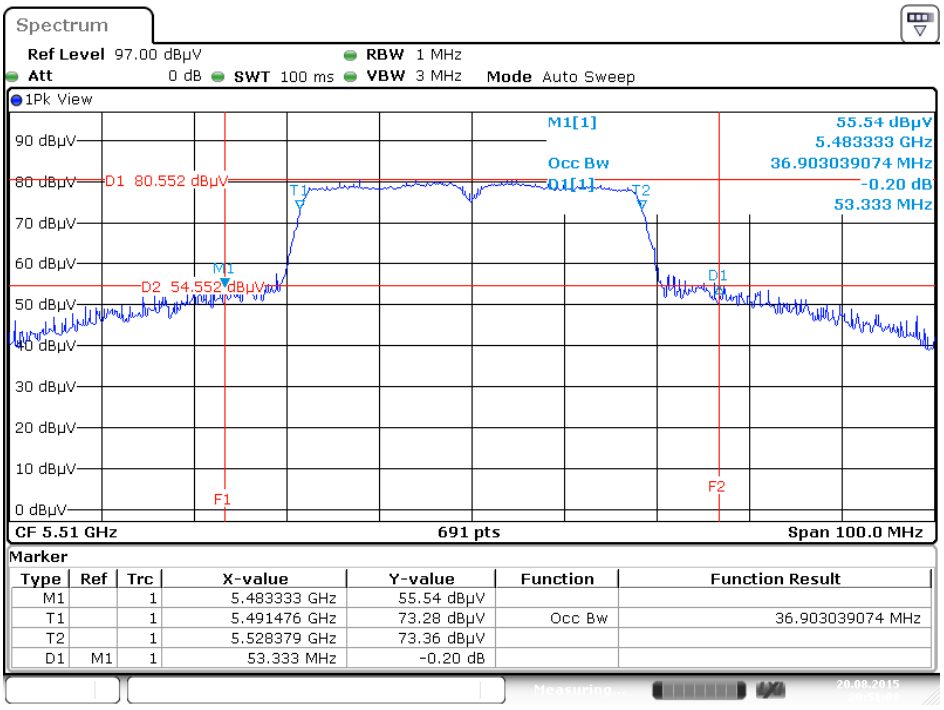
Date: 20.AUG.2015 20:49:35

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5310 MHz



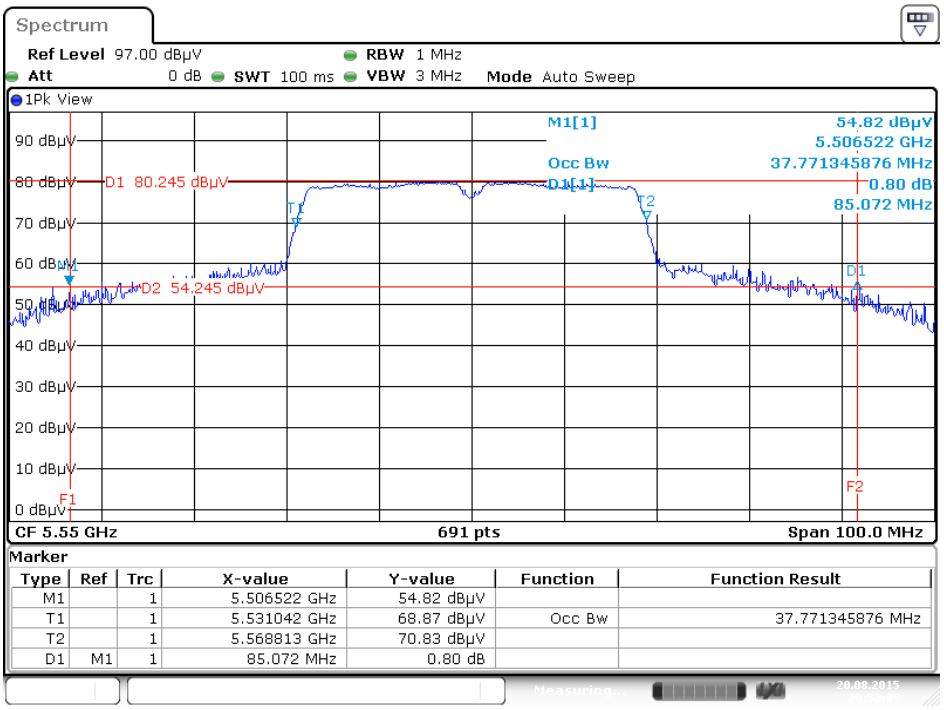
Date: 20.AUG.2015 20:50:24

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5510 MHz



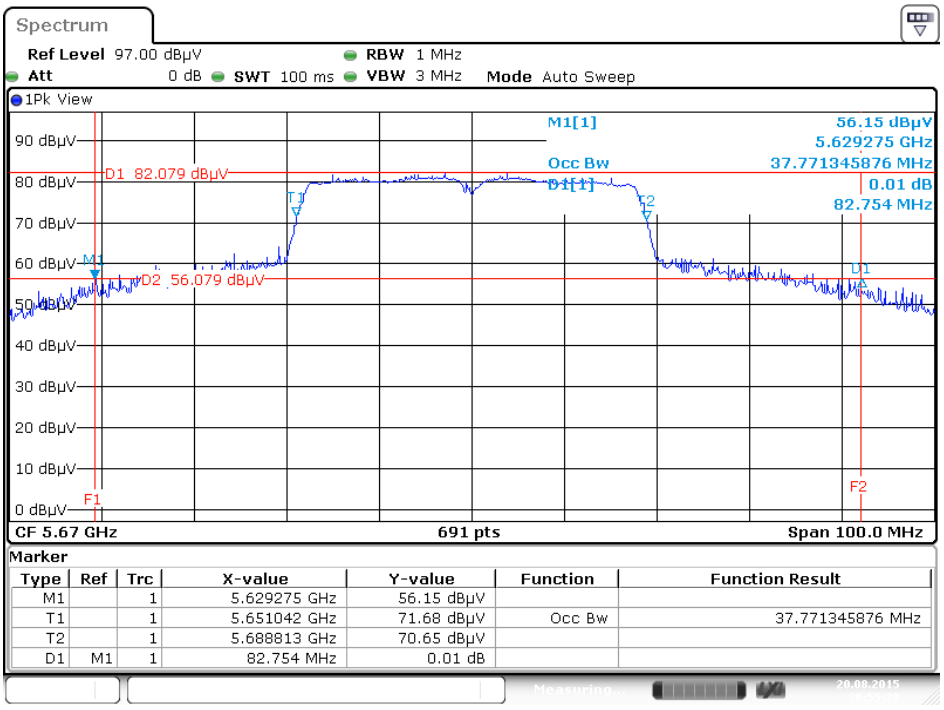
Date: 20.AUG.2015 20:51:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5550 MHz



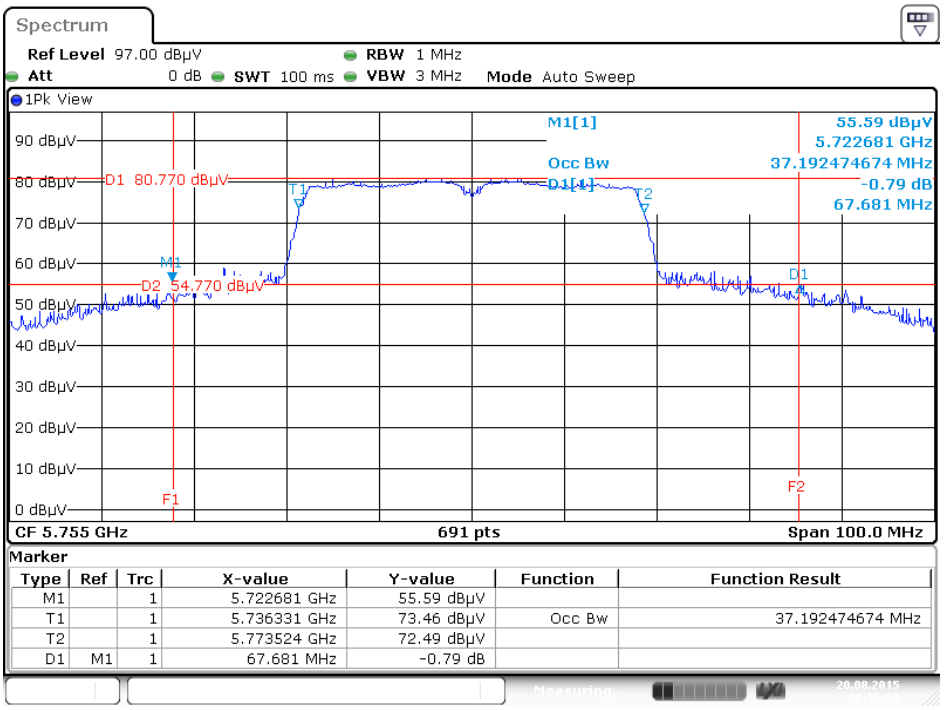
Date: 20.AUG.2015 20:52:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5670 MHz



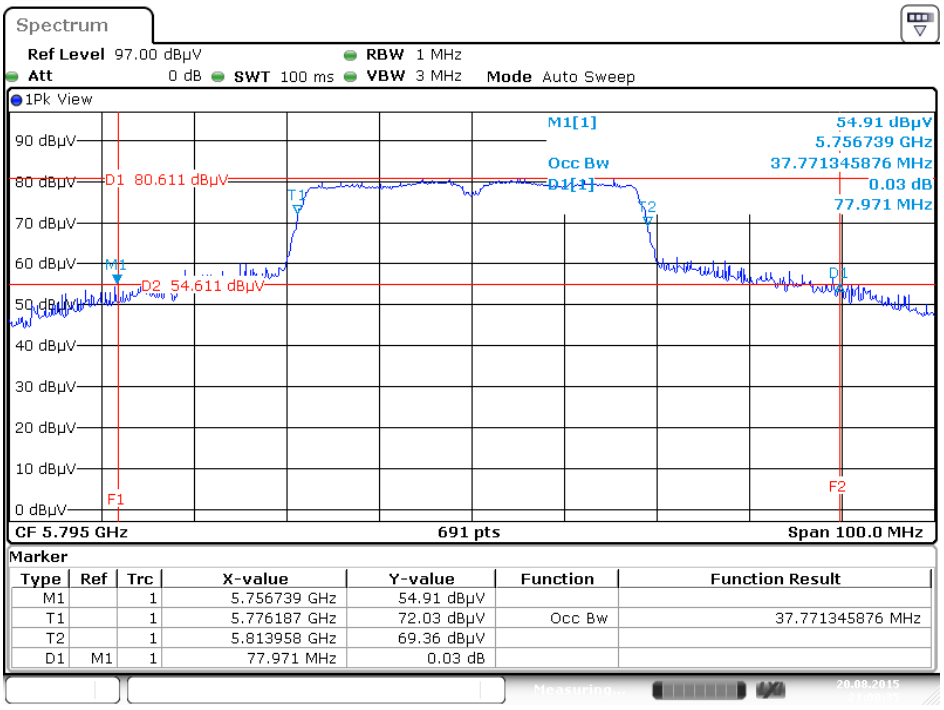
Date: 20.AUG.2015 20:55:28

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5755 MHz



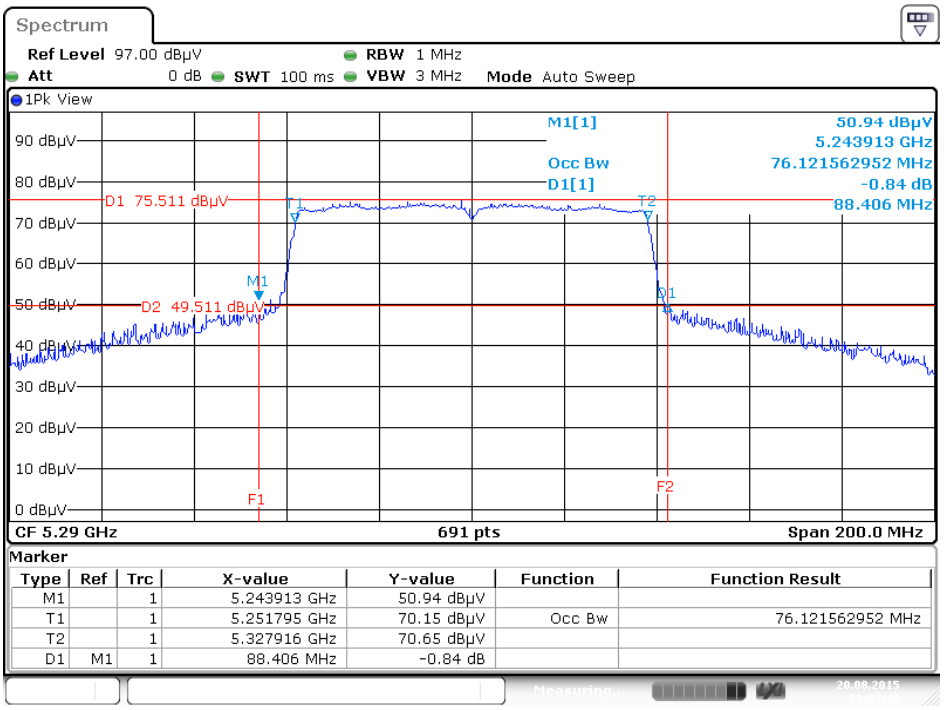
Date: 20.AUG.2015 20:59:29

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5795 MHz



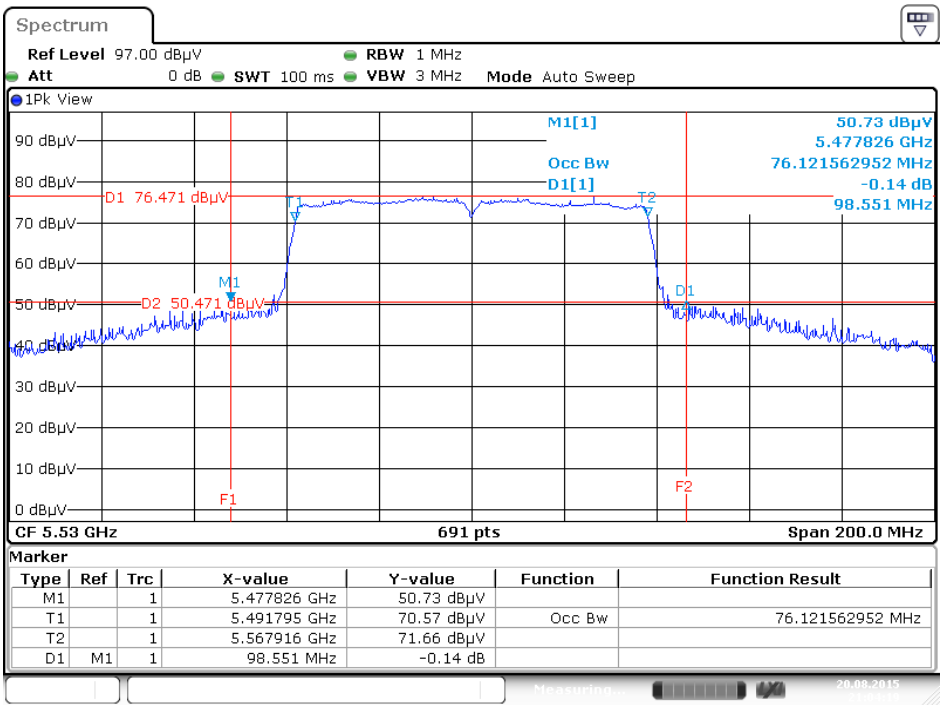
Date: 20.AUG.2015 21:00:35

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 3 / 5290 MHz



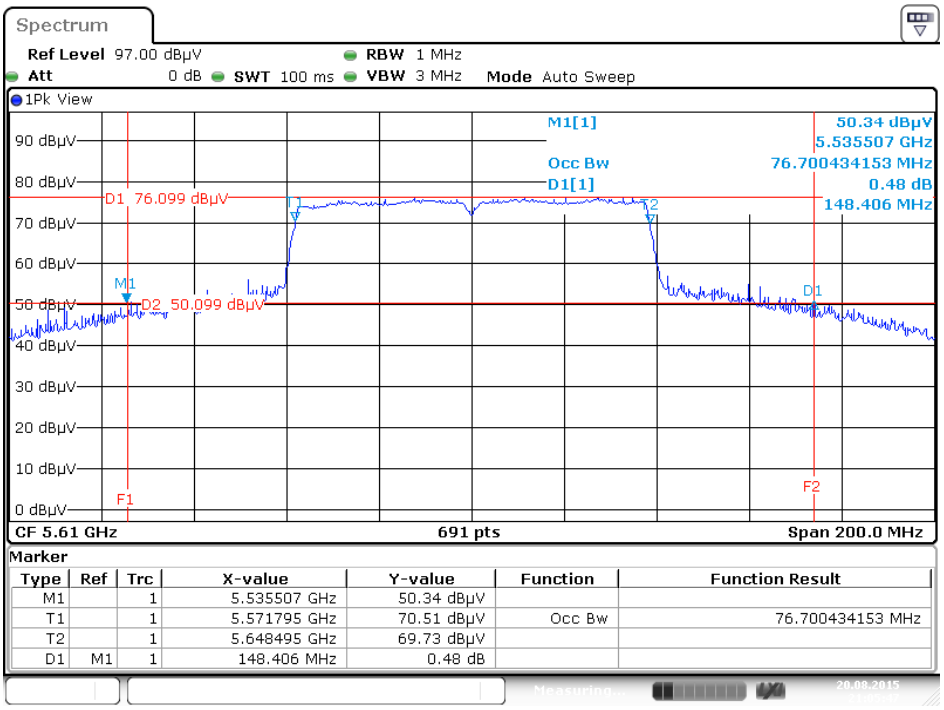
Date: 20.AUG.2015 21:03:48

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 3 / 5530 MHz



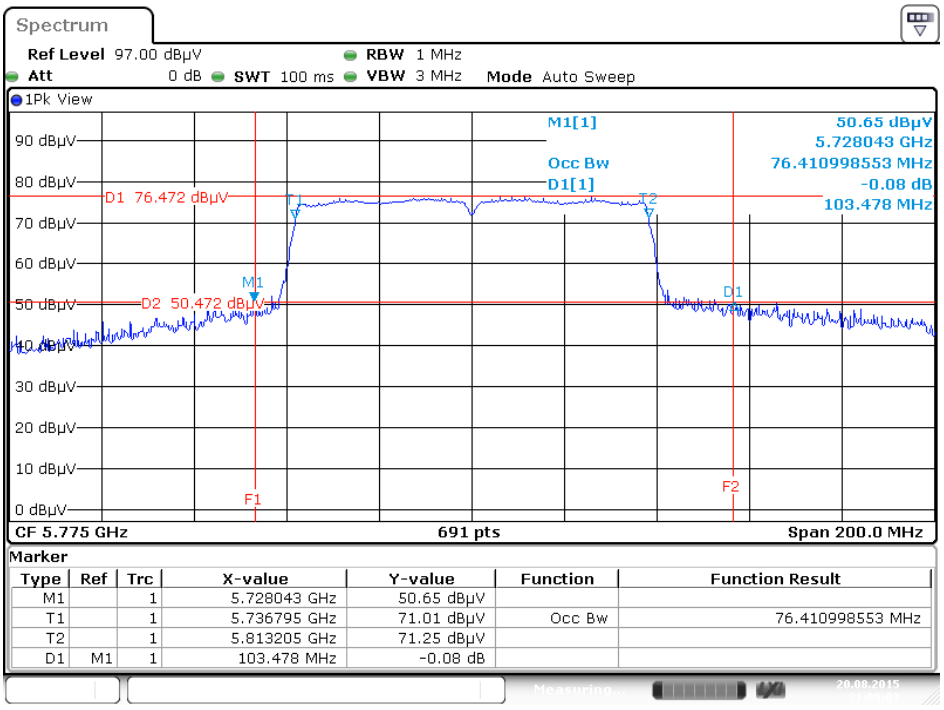
Date: 20.AUG.2015 21:04:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 3 / 5610 MHz



Date: 20.AUG.2015 21:05:46

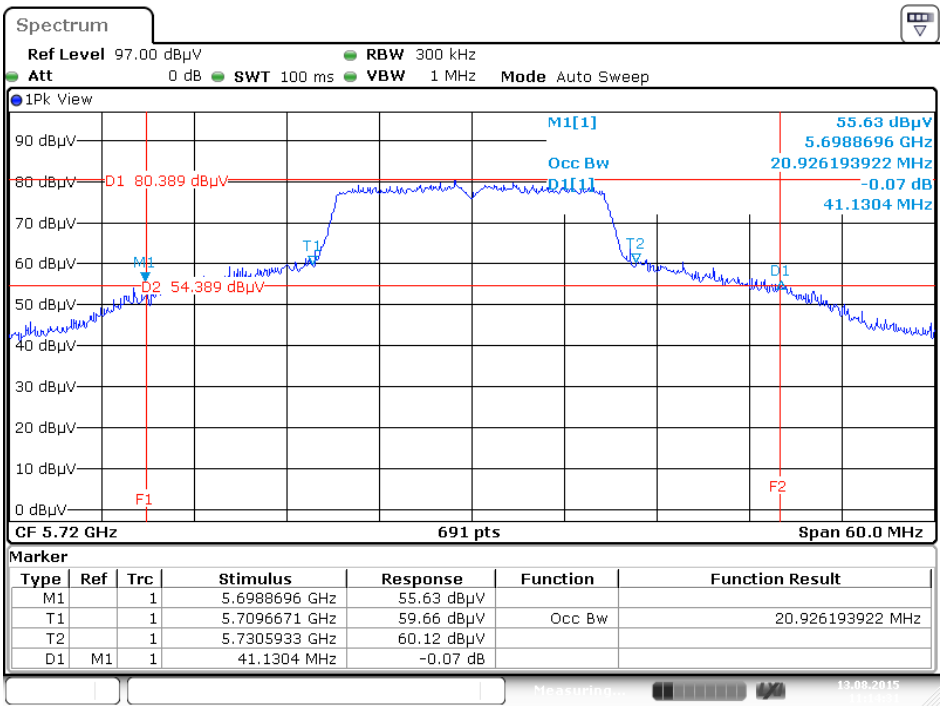
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 3 / 5775 MHz



Date: 20.AUG.2015 21:09:04

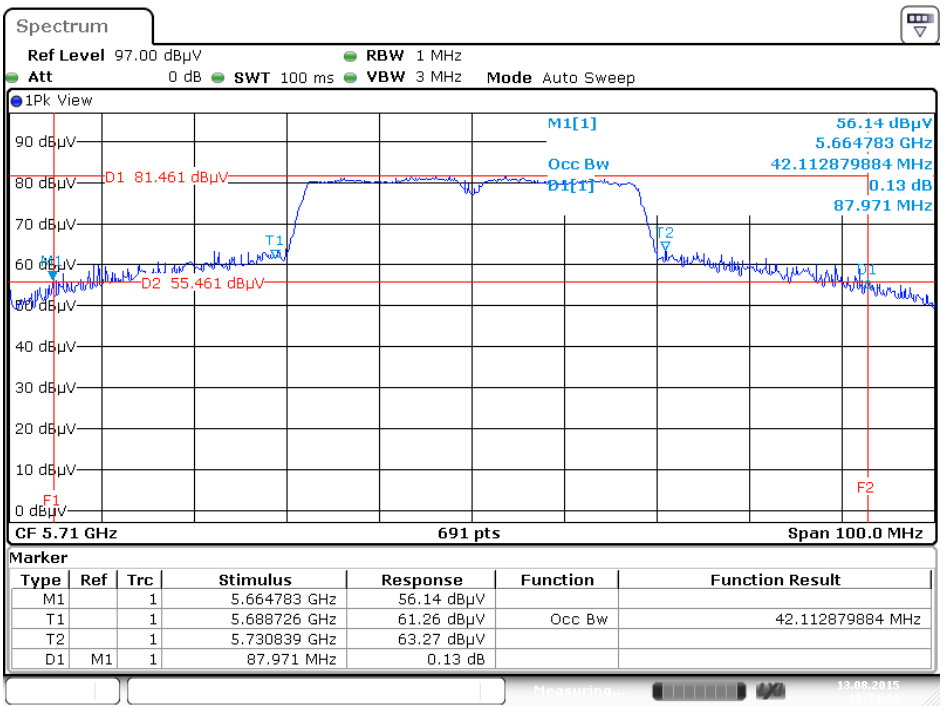
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5720 MHz



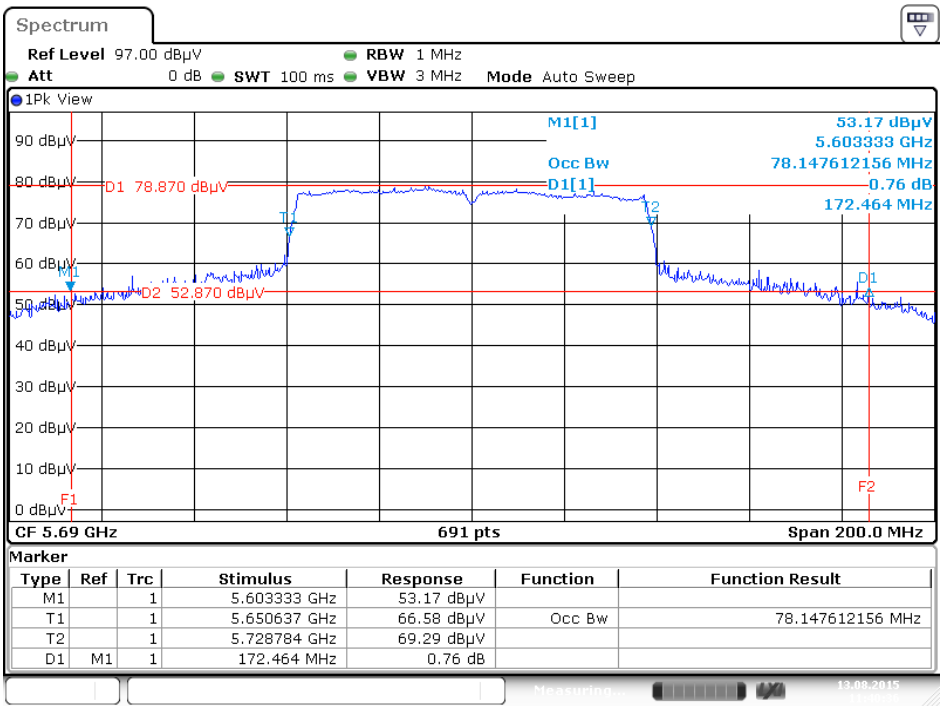
Date: 13.AUG.2015 11:14:31

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5710 MHz



Date: 13.AUG.2015 11:34:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 3 / 5690 MHz



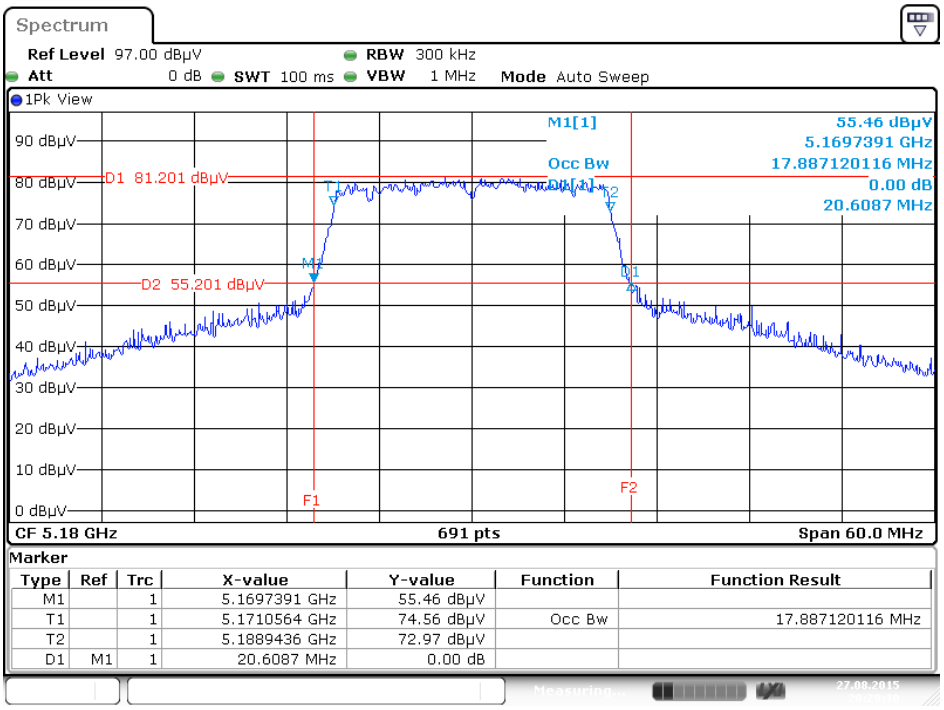
Date: 13.AUG.2015 11:40:36

<For STBC Mode>

For indoor use

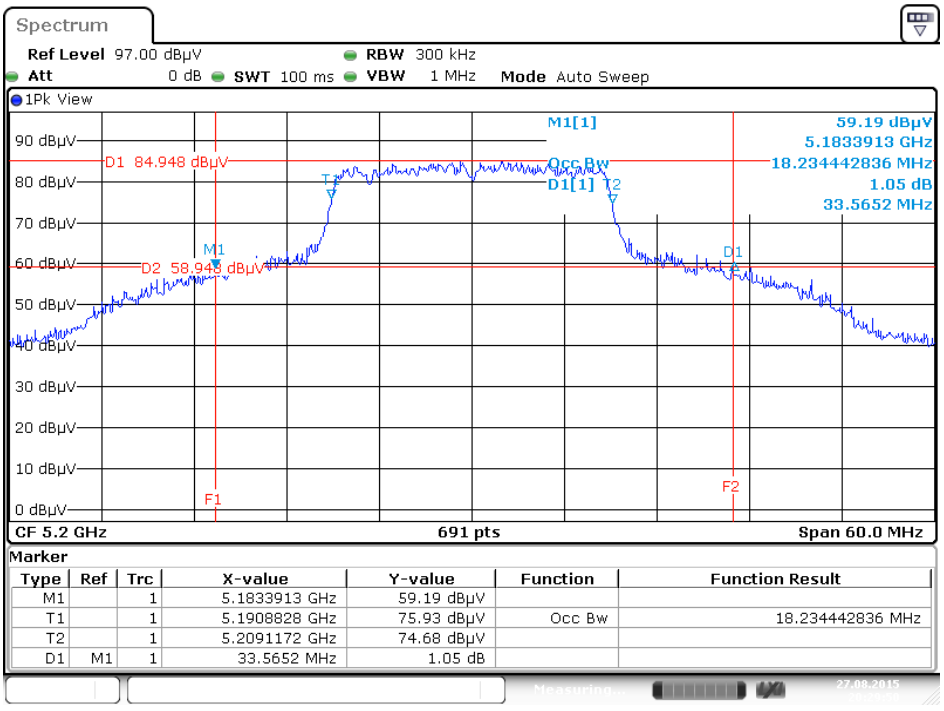
Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5180 MHz



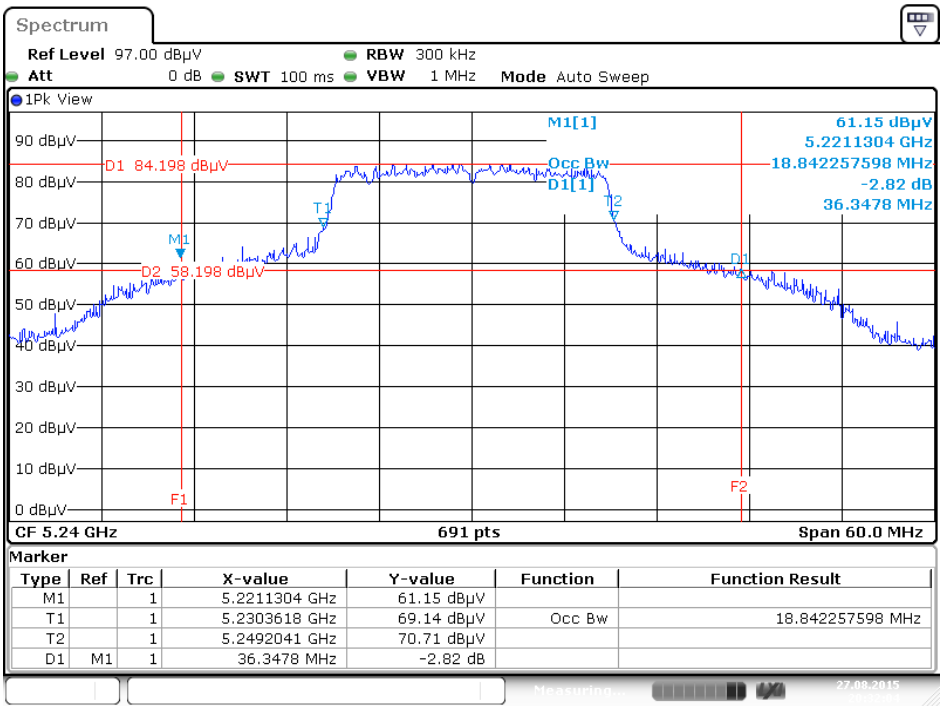
Date: 27.AUG.2015 20:29:10

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5200 MHz



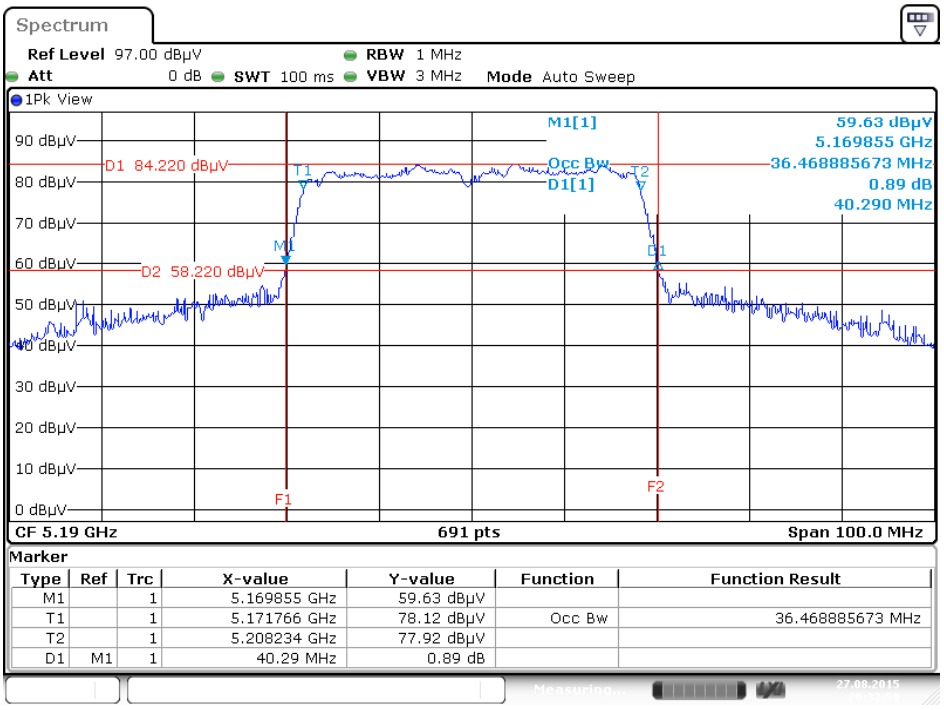
Date: 27.AUG.2015 20:29:50

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5240 MHz



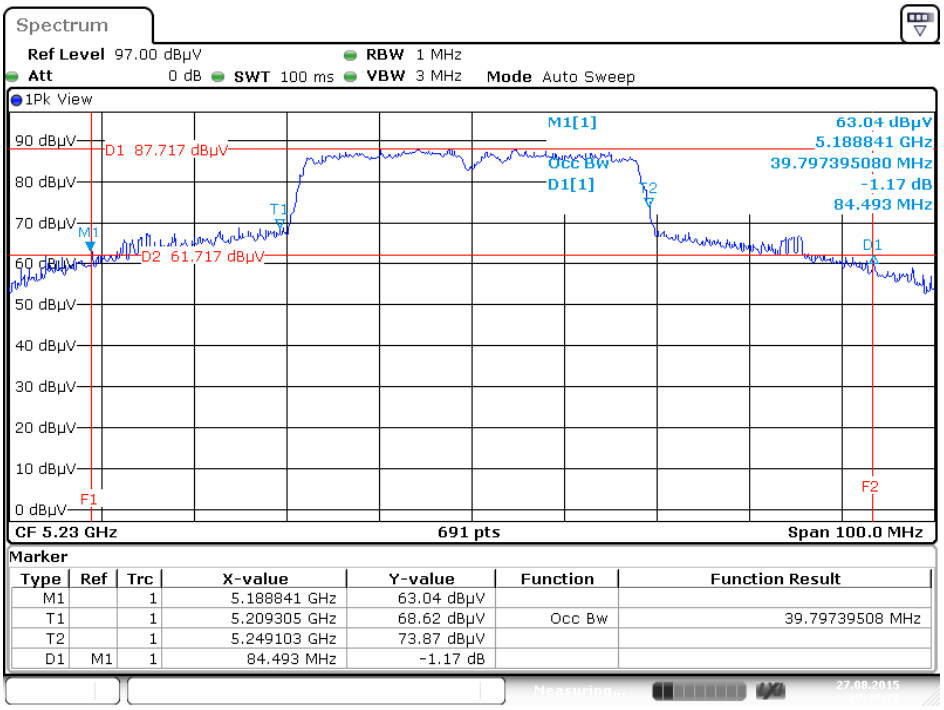
Date: 27.AUG.2015 20:32:04

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5190 MHz



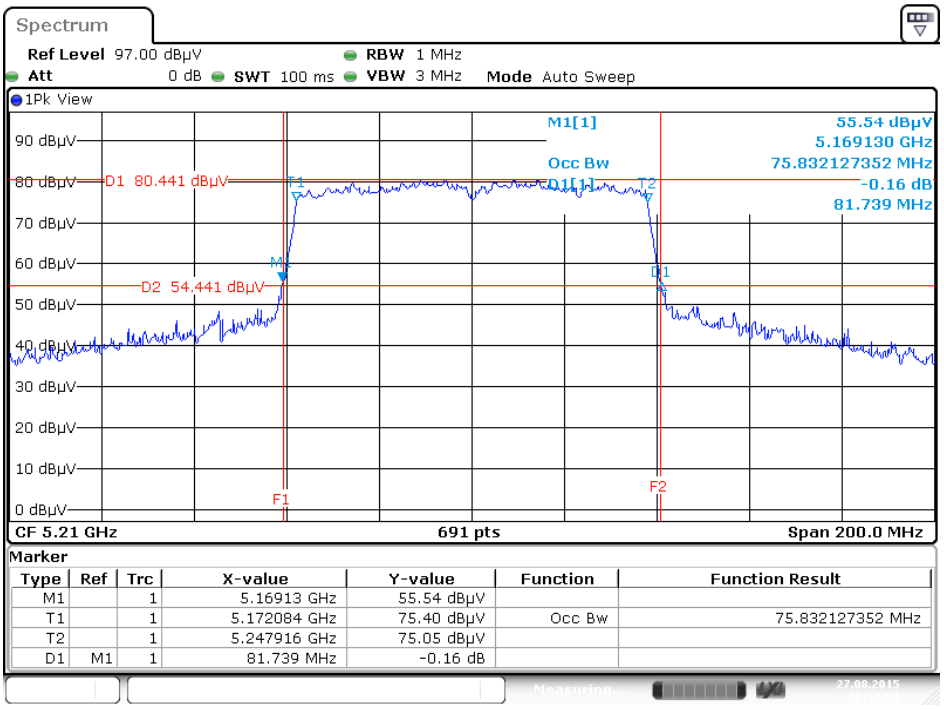
Date: 27.AUG.2015 20:33:59

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5230 MHz



Date: 27.AUG.2015 20:36:22

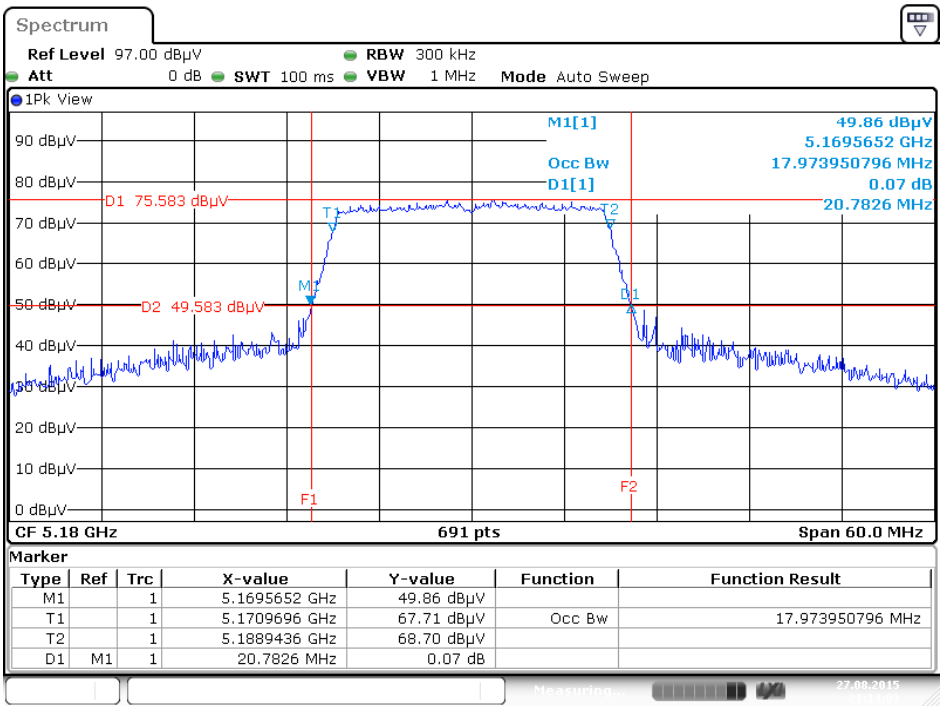
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5210 MHz



Date: 27.AUG.2015 20:37:51

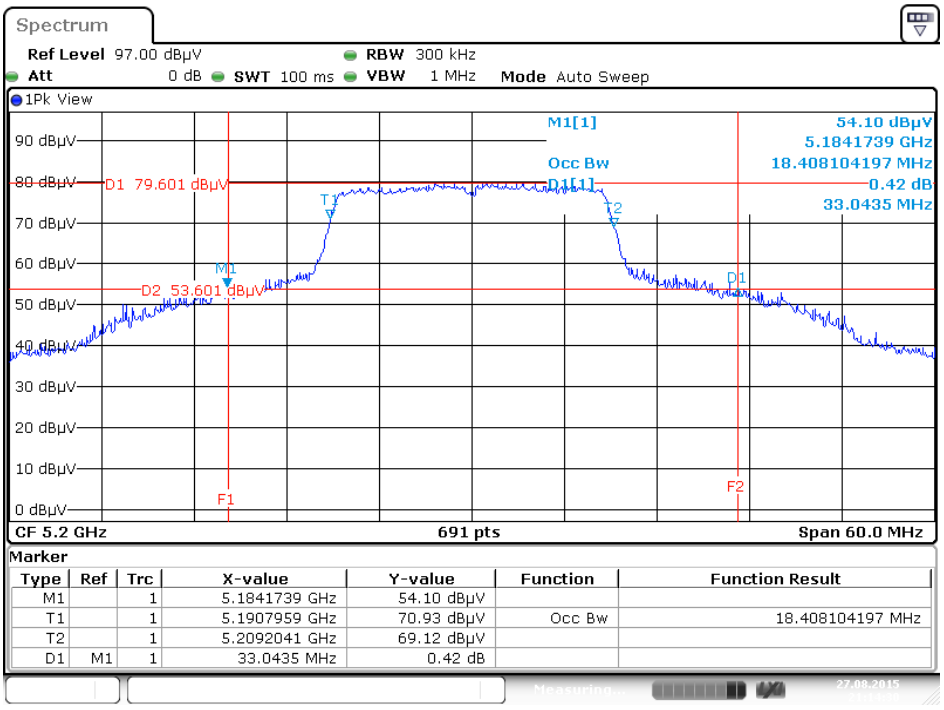
Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5180 MHz



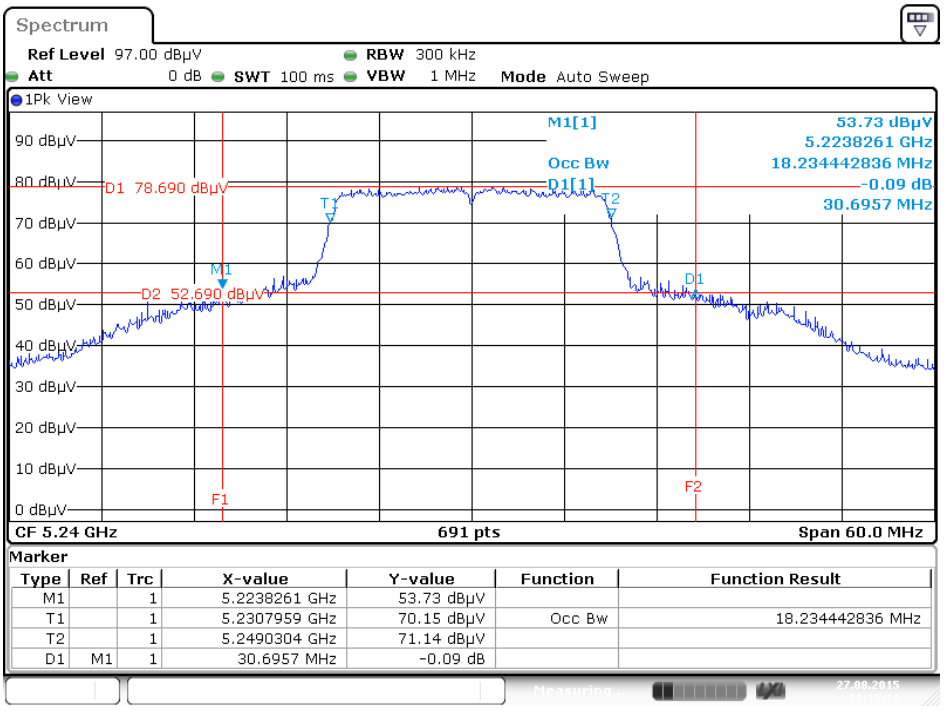
Date: 27.AUG.2015 21:14:03

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5200 MHz



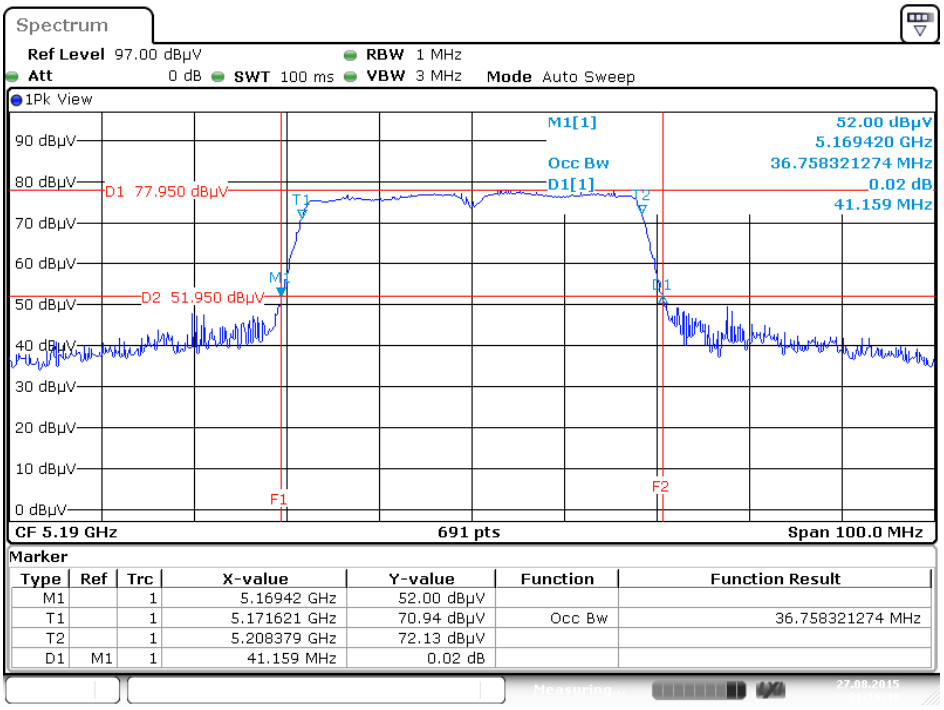
Date: 27.AUG.2015 21:14:30

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5240 MHz



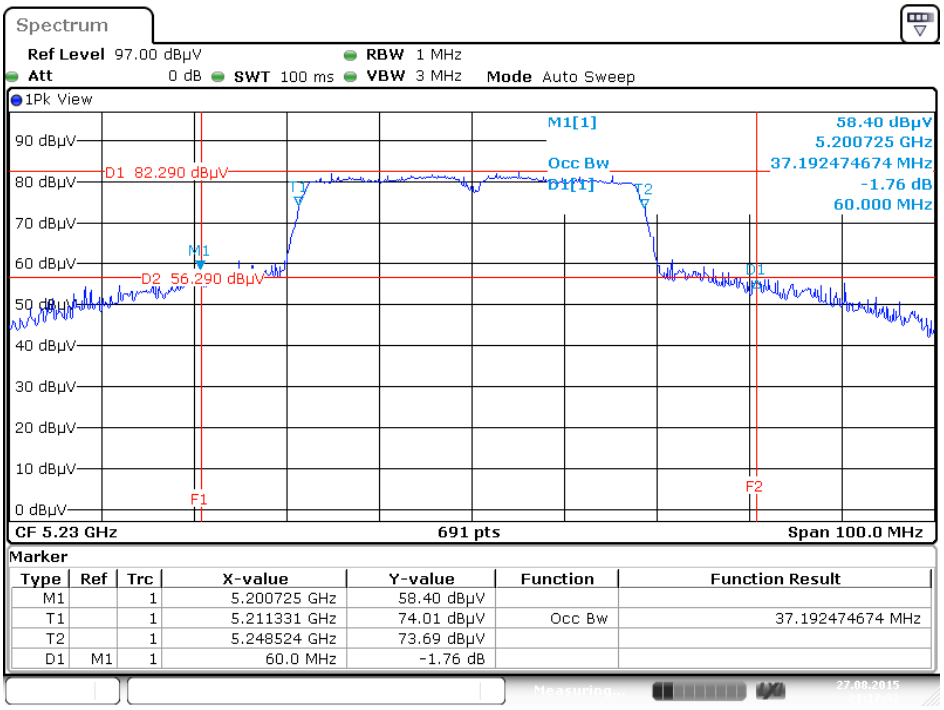
Date: 27.AUG.2015 21:15:12

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5190 MHz



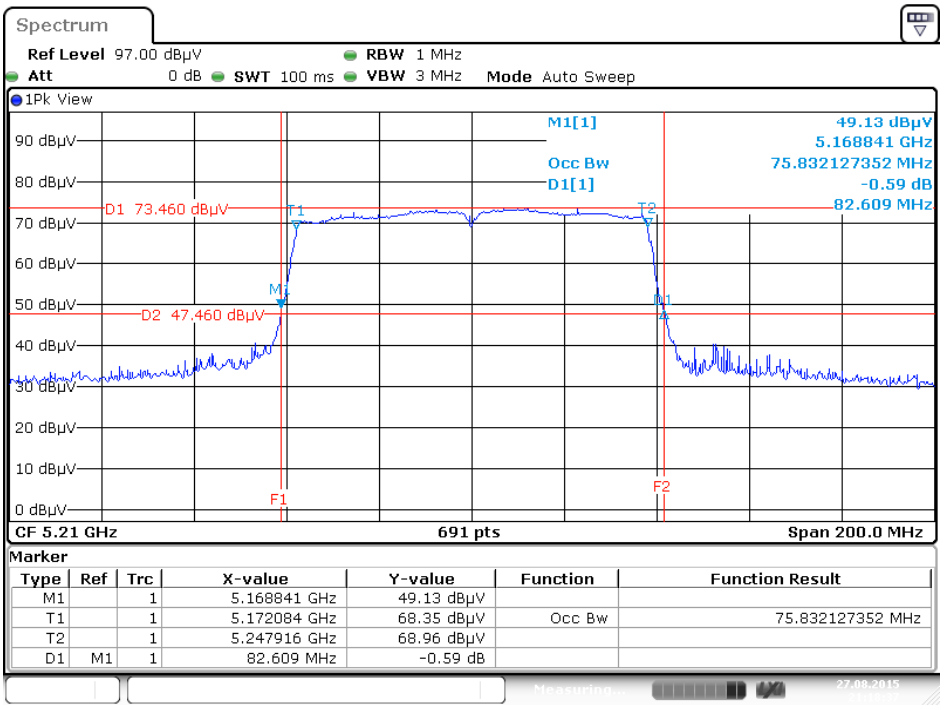
Date: 27.AUG.2015 21:16:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5230 MHz



Date: 27.AUG.2015 21:17:32

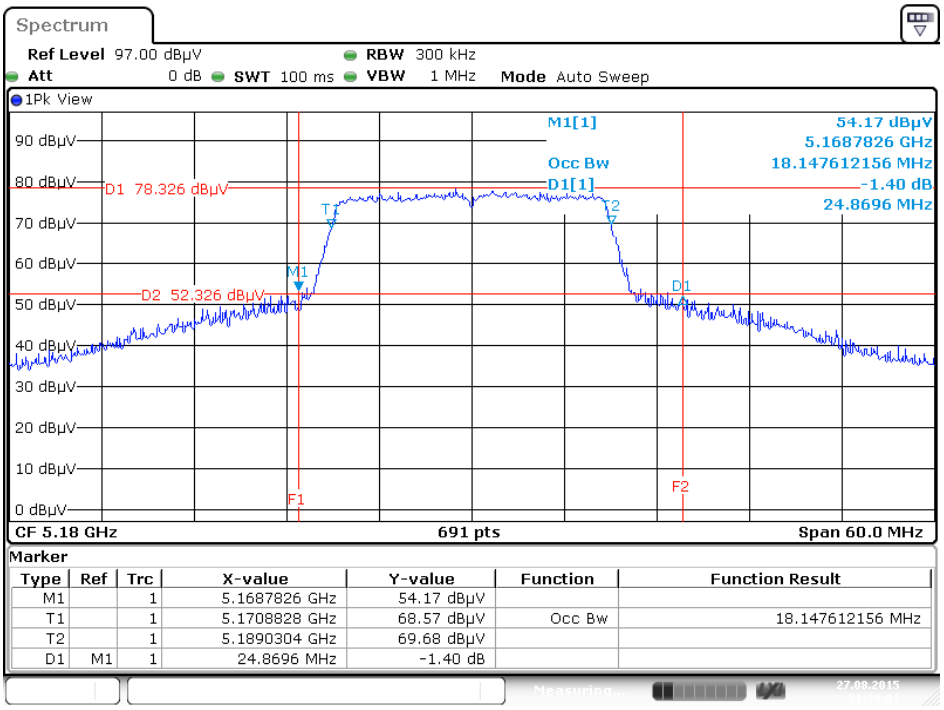
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5210 MHz



Date: 27.AUG.2015 21:18:36

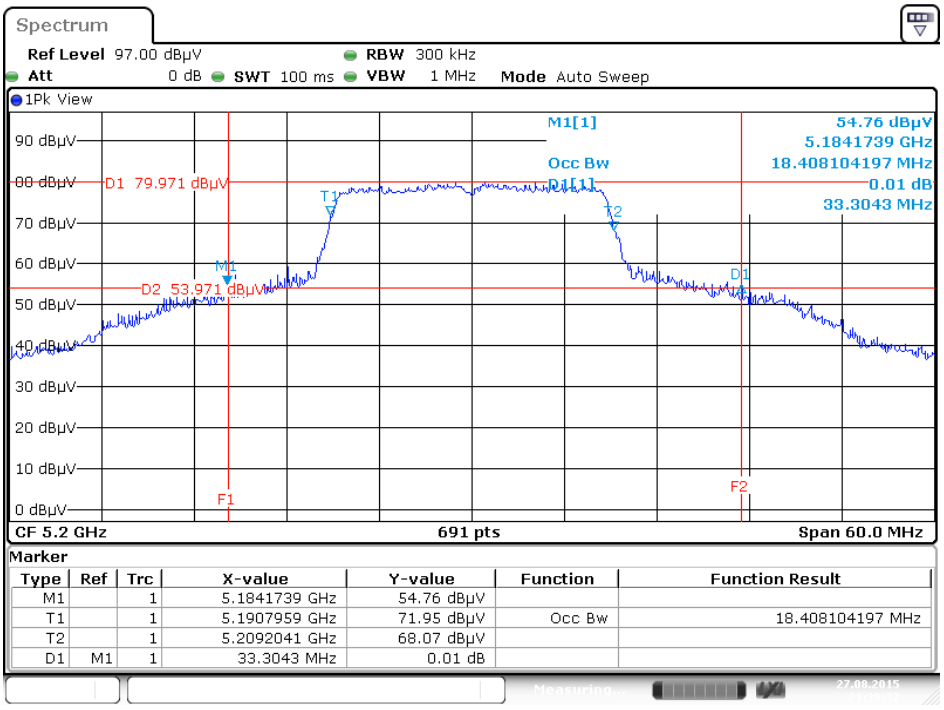
Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5180 MHz



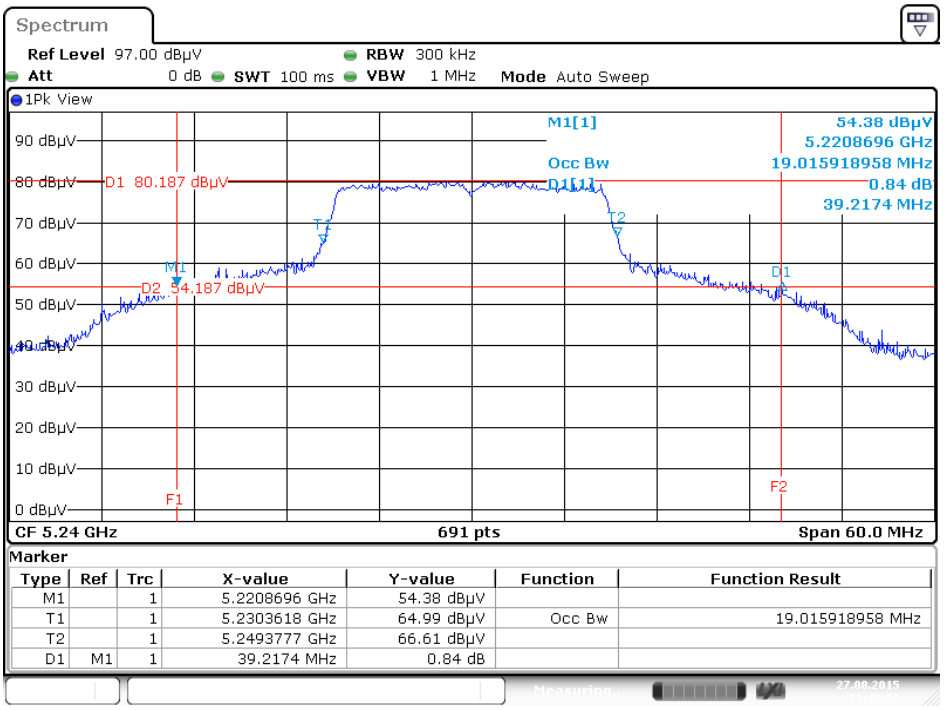
Date: 27.AUG.2015 21:39:00

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5200 MHz



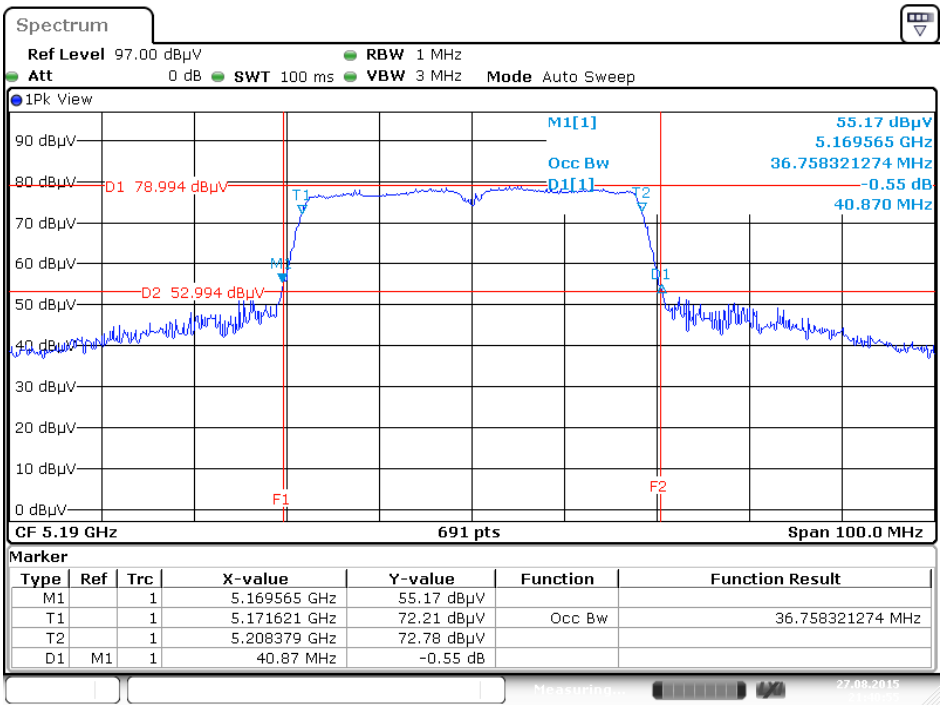
Date: 27.AUG.2015 21:39:32

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5240 MHz



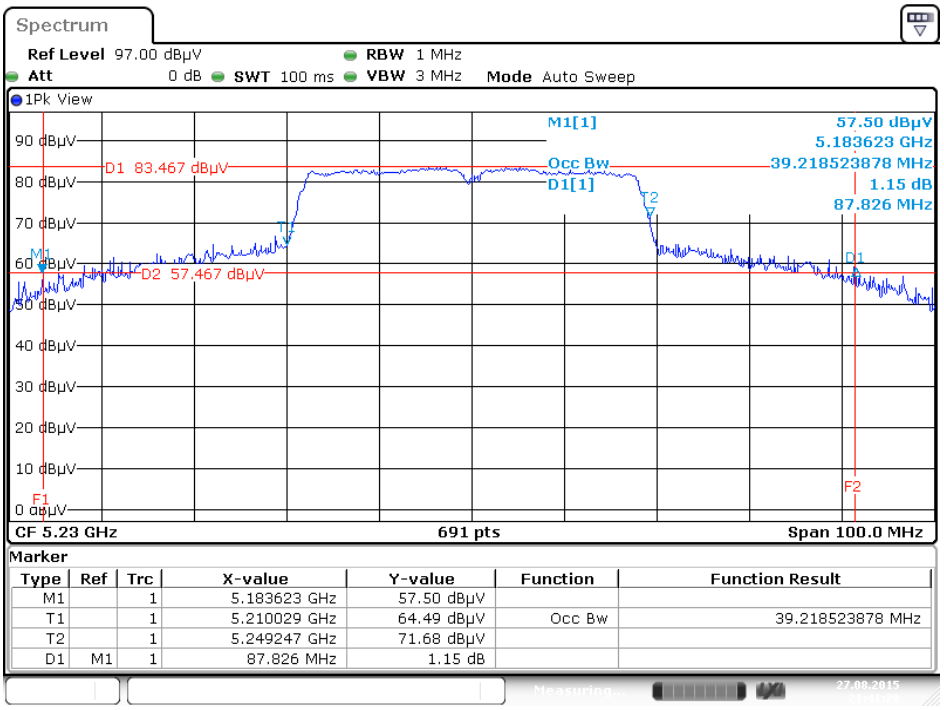
Date: 27.AUG.2015 21:40:07

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5190 MHz



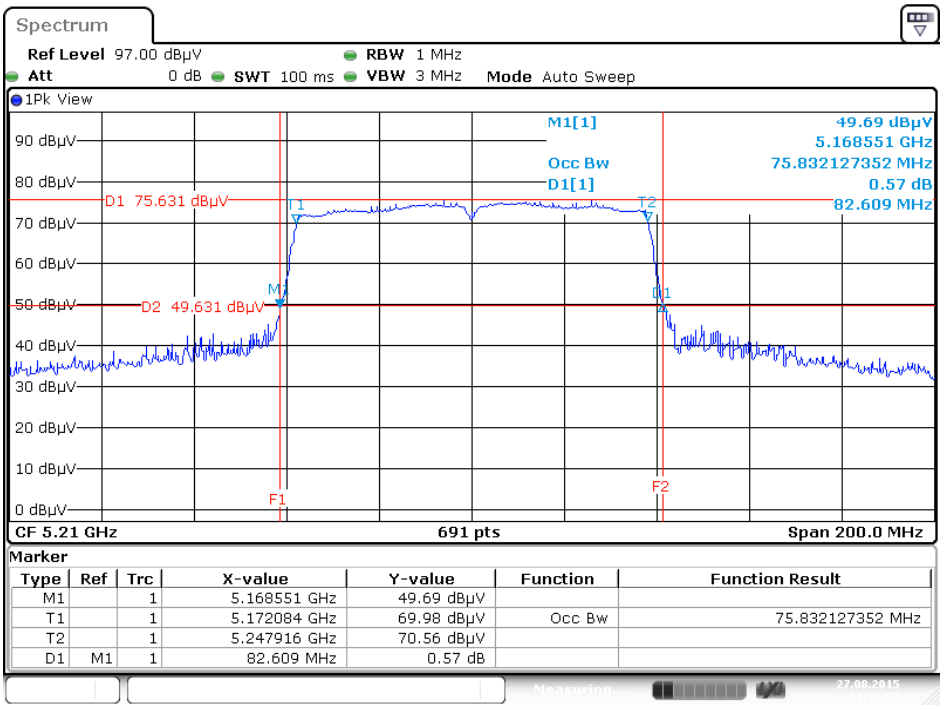
Date: 27.AUG.2015 21:40:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5230 MHz



Date: 27.AUG.2015 21:41:21

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5210 MHz

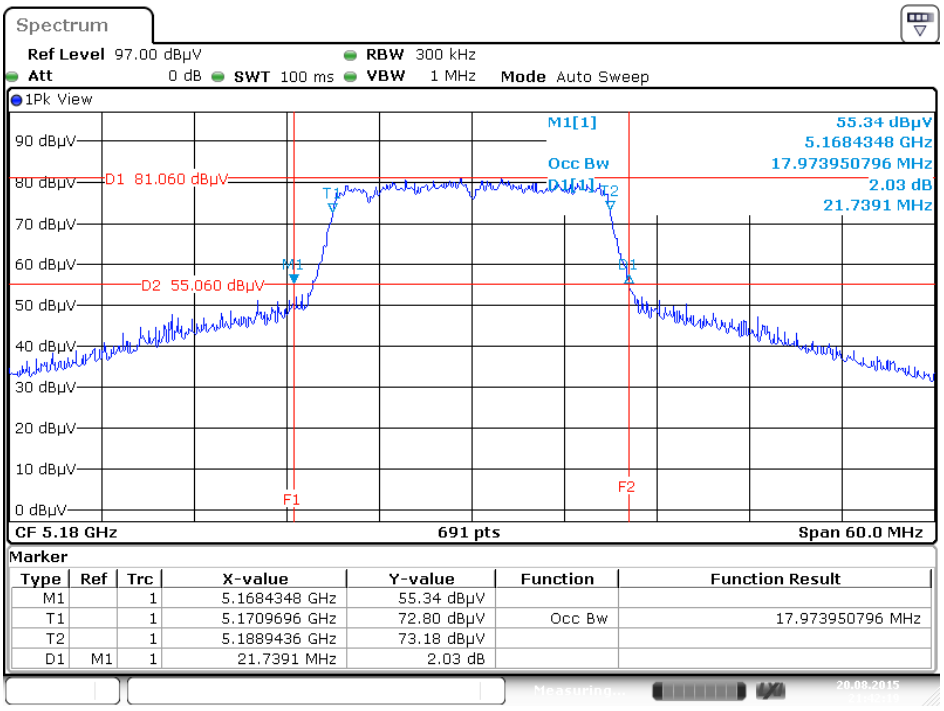


Date: 27.AUG.2015 21:41:57

For outdoor use

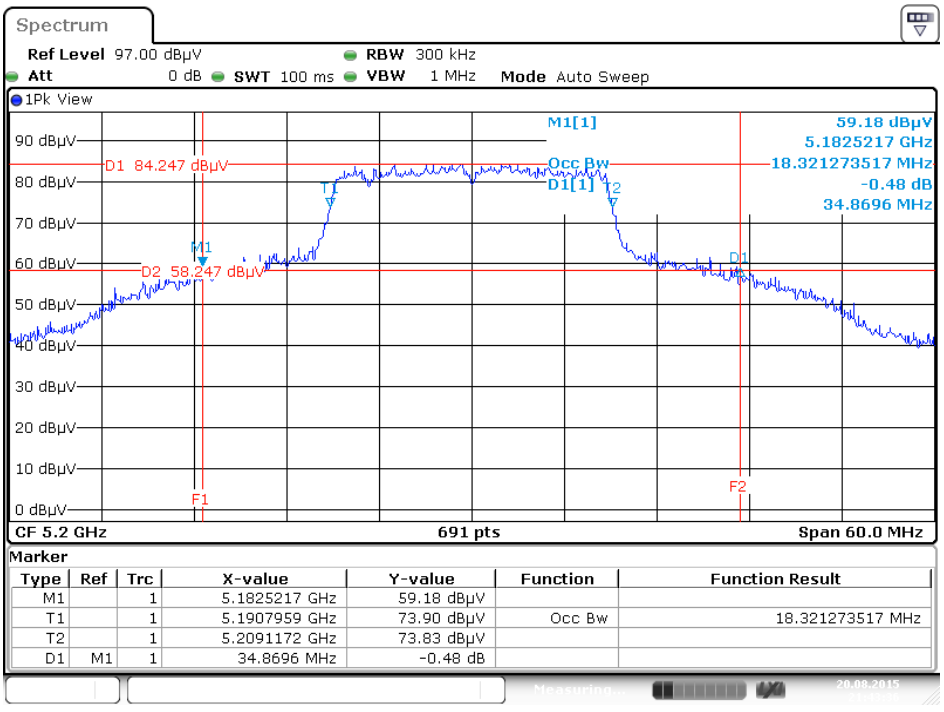
Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5180 MHz



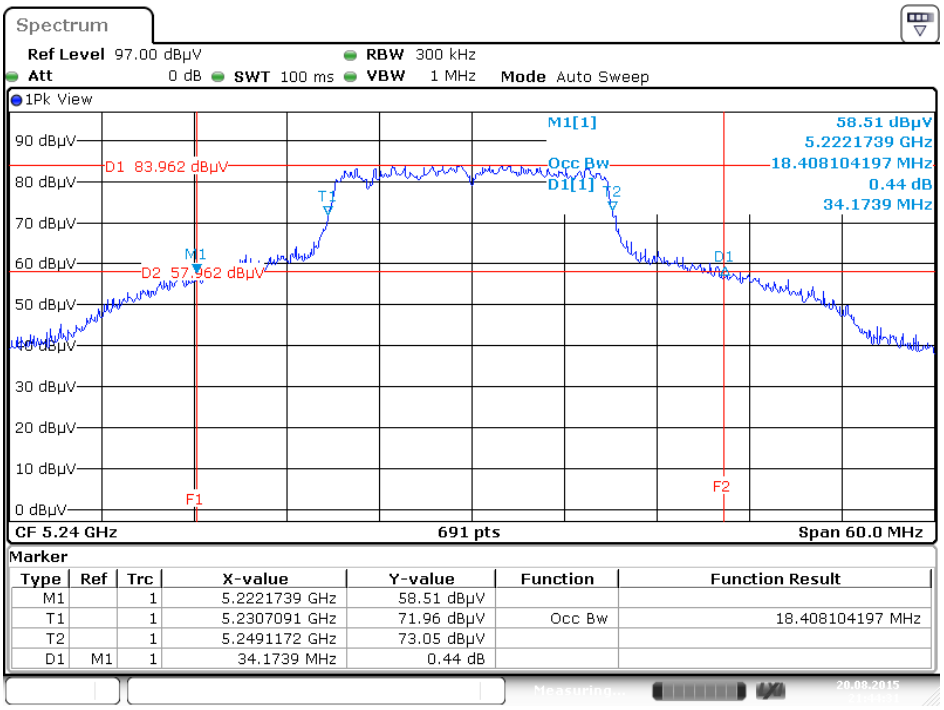
Date: 20.AUG.2015 21:42:20

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5200 MHz



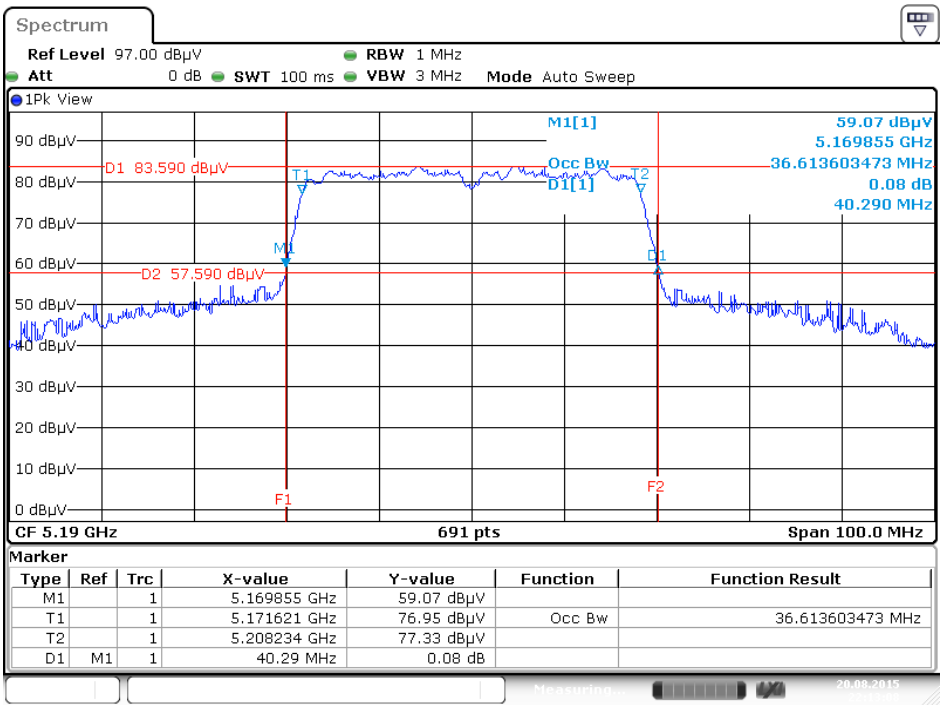
Date: 20.AUG.2015 21:43:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5240 MHz



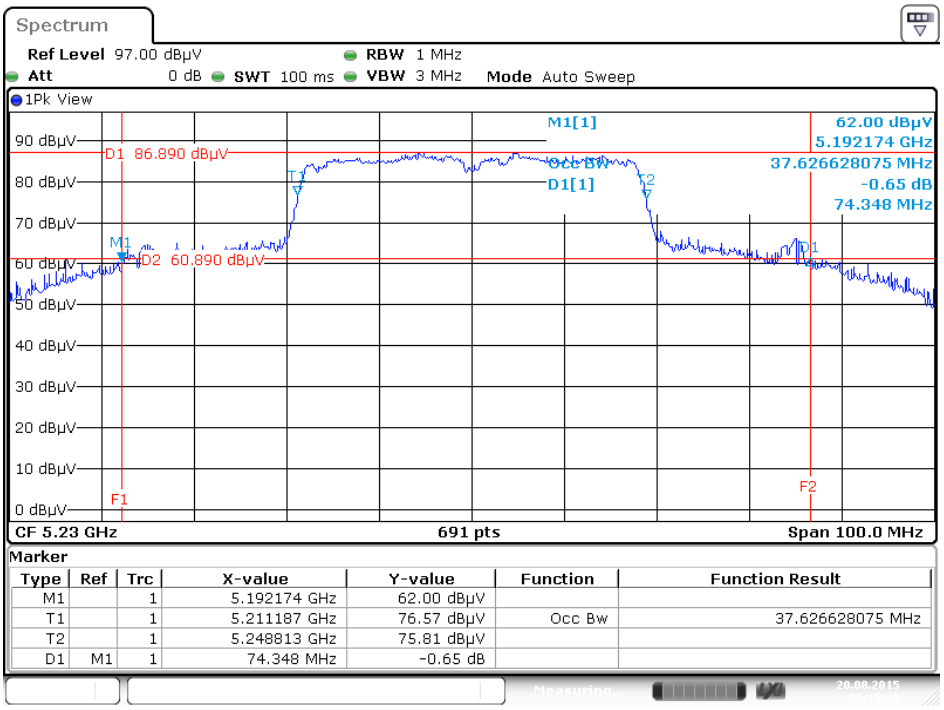
Date: 20.AUG.2015 21:44:31

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5190 MHz



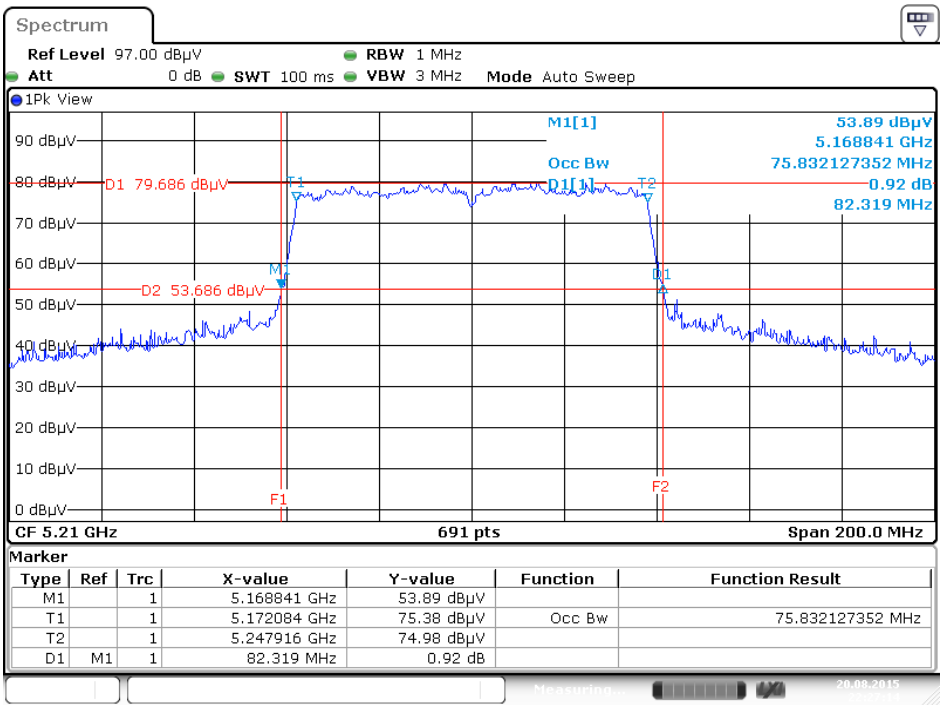
Date: 20.AUG.2015 22:13:08

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5230 MHz



Date: 20.AUG.2015 22:15:27

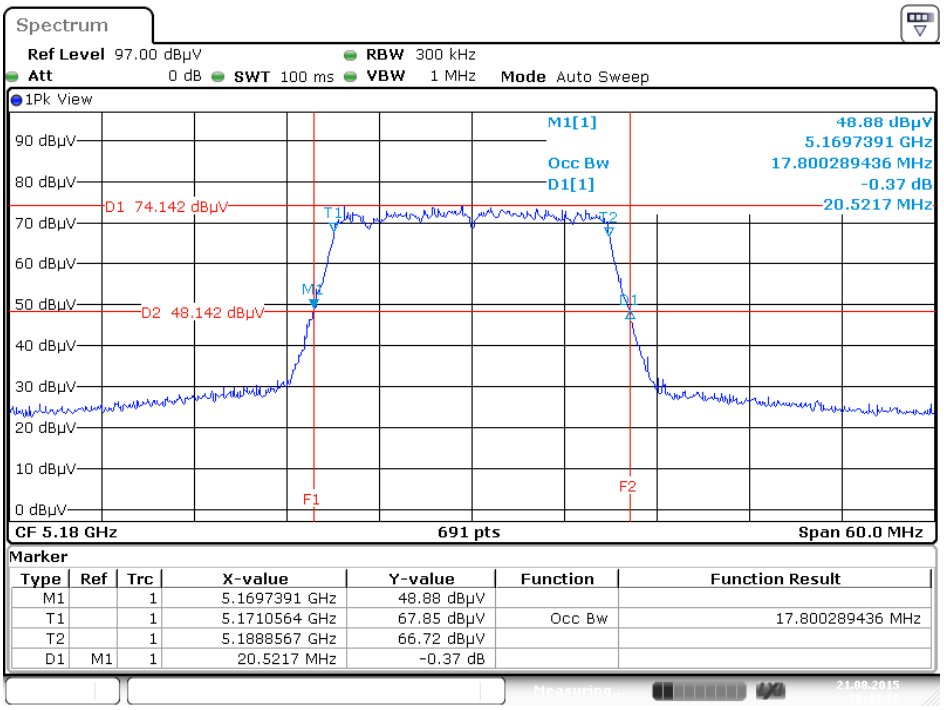
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5210 MHz



Date: 20.AUG.2015 22:27:14

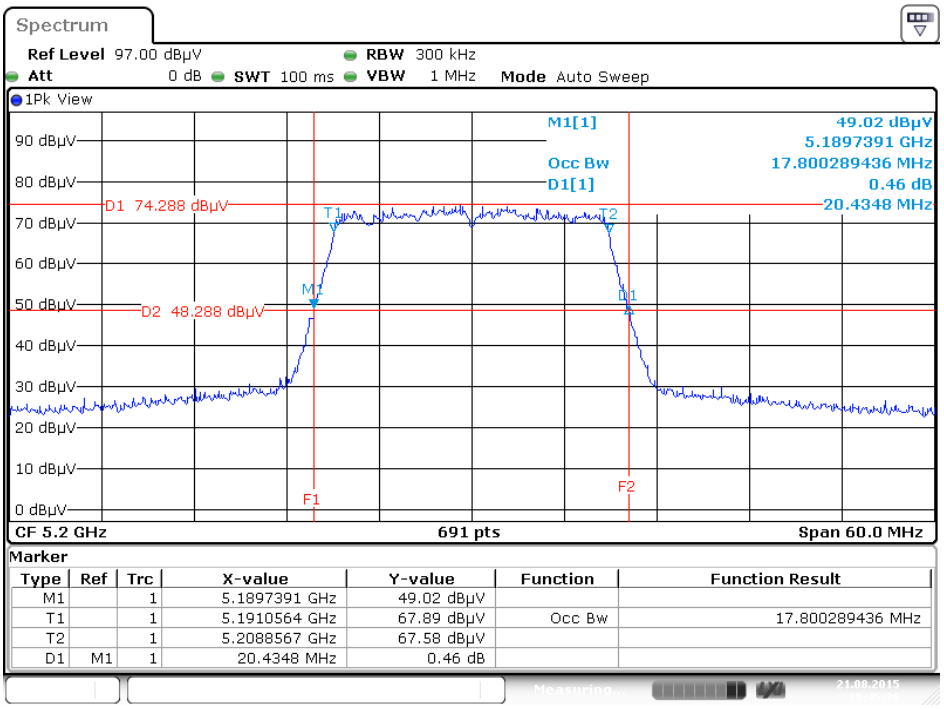
Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5180 MHz



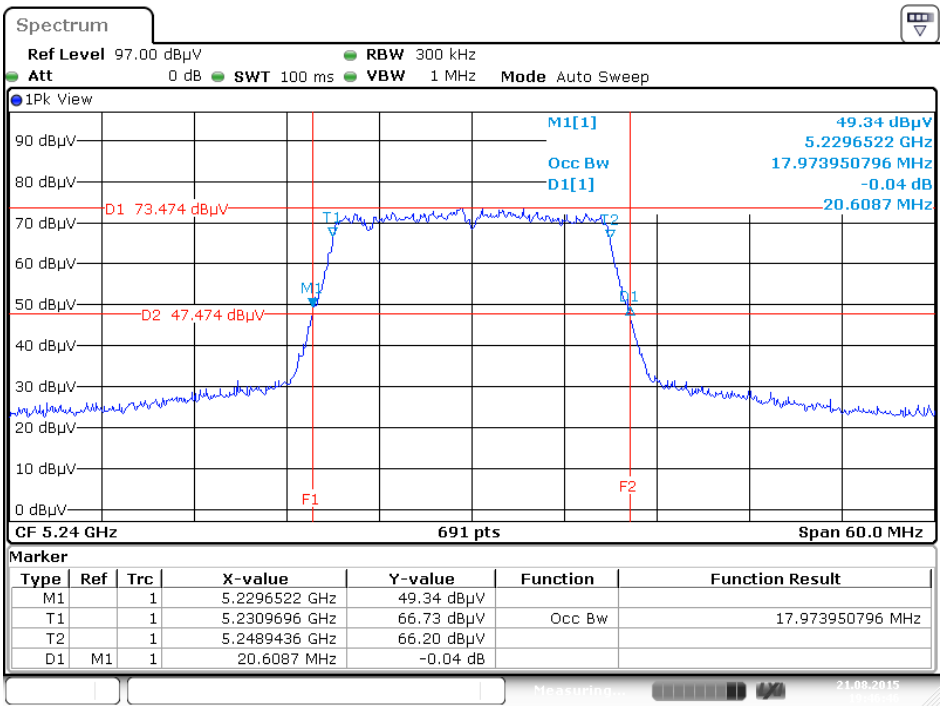
Date: 21.AUG.2015 19:44:28

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5200 MHz



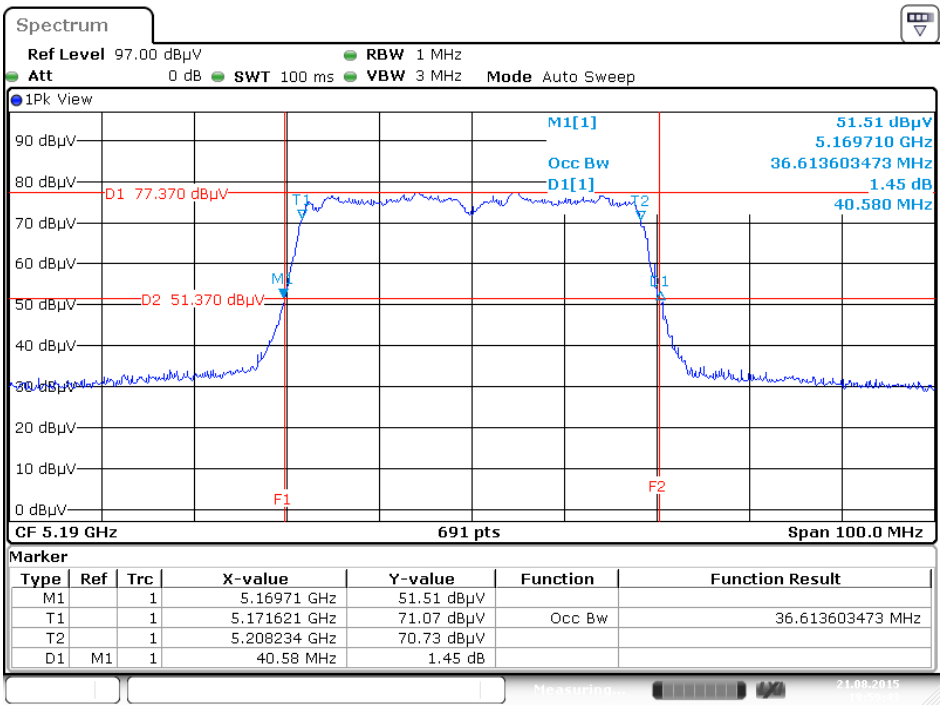
Date: 21.AUG.2015 19:45:37

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5240 MHz



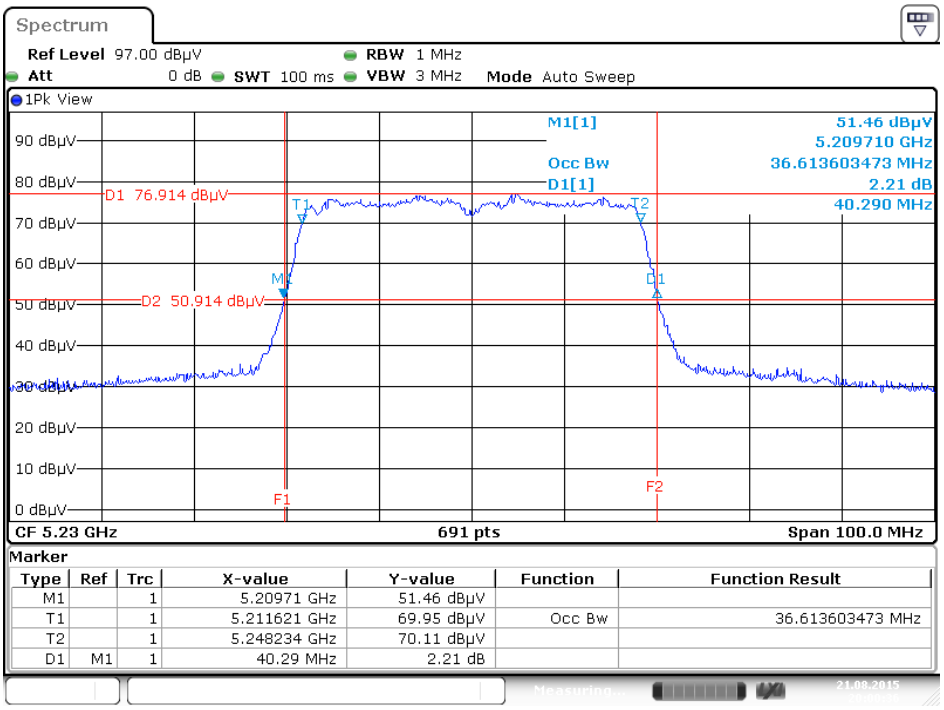
Date: 21.AUG.2015 19:46:47

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5190 MHz



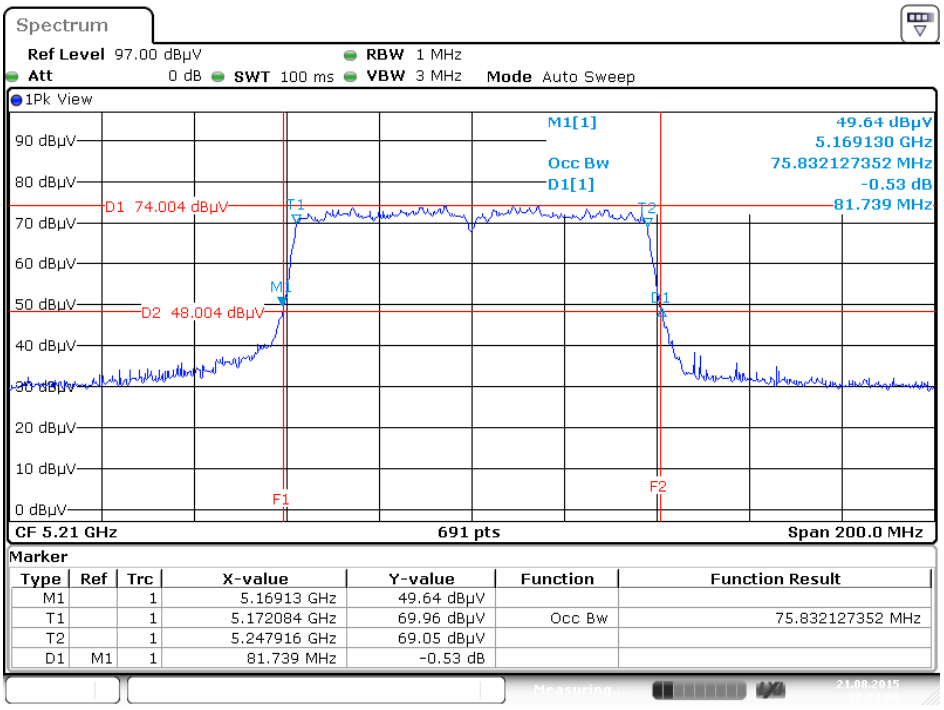
Date: 21.AUG.2015 19:59:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5230 MHz



Date: 21.AUG.2015 20:00:37

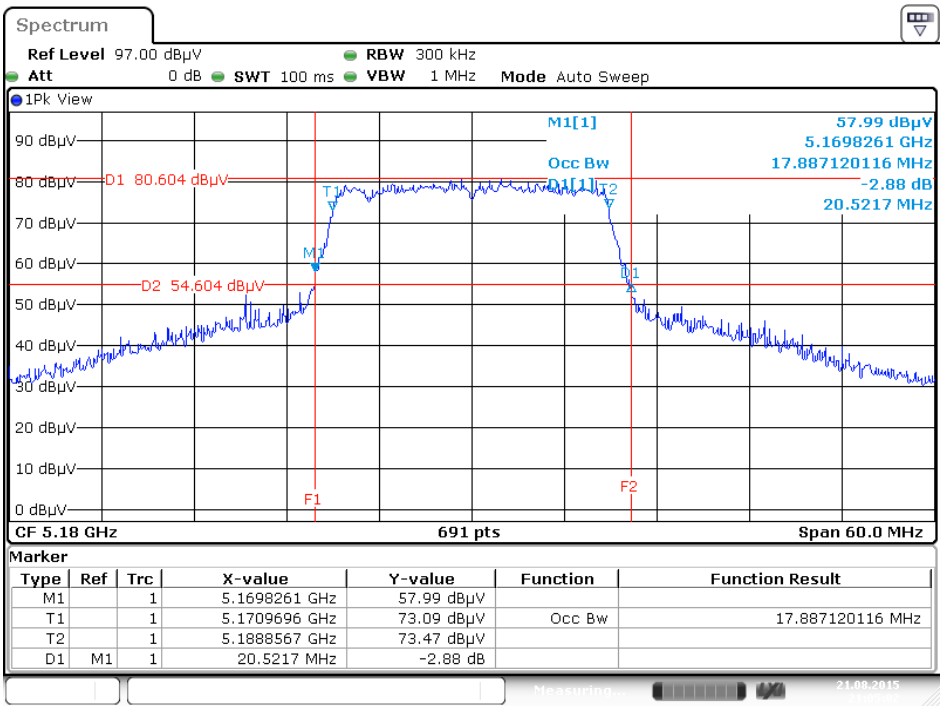
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5210 MHz



Date: 21.AUG.2015 20:23:01

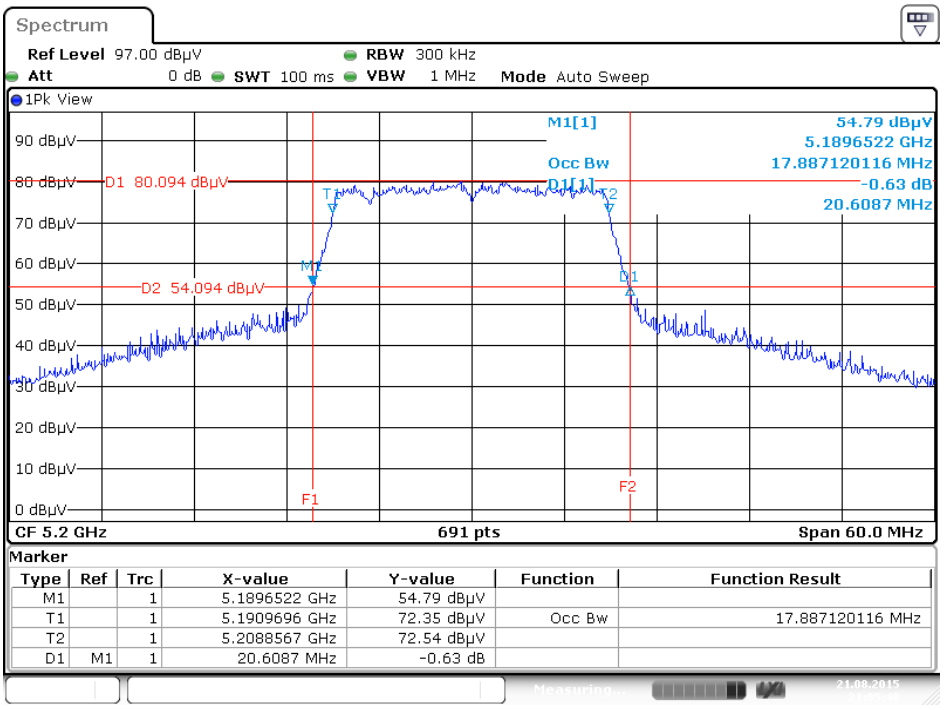
Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5180 MHz



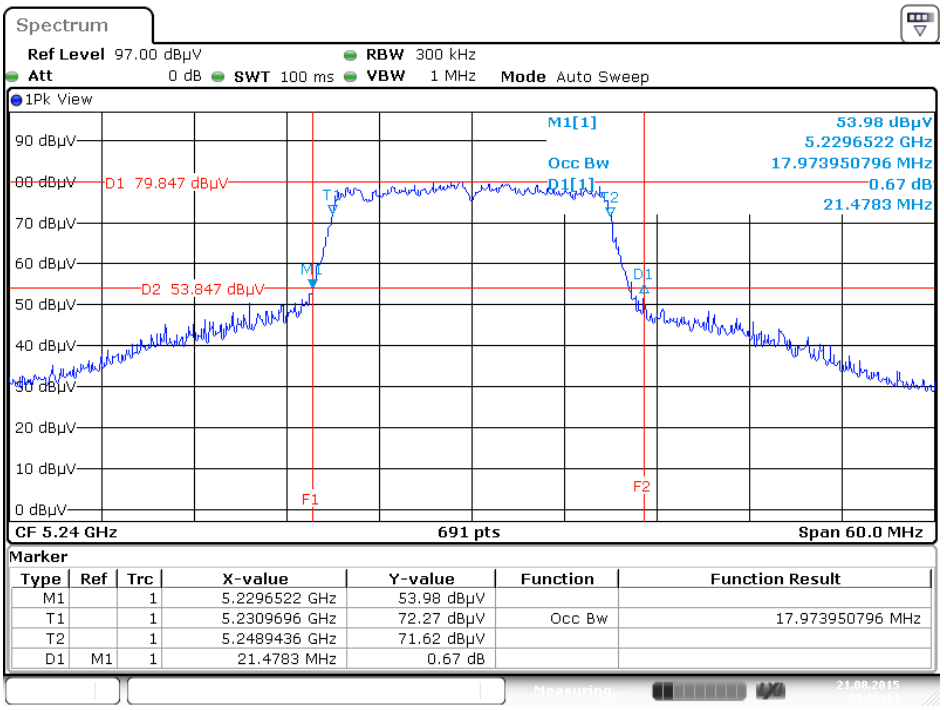
Date: 21.AUG.2015 21:05:02

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5200 MHz



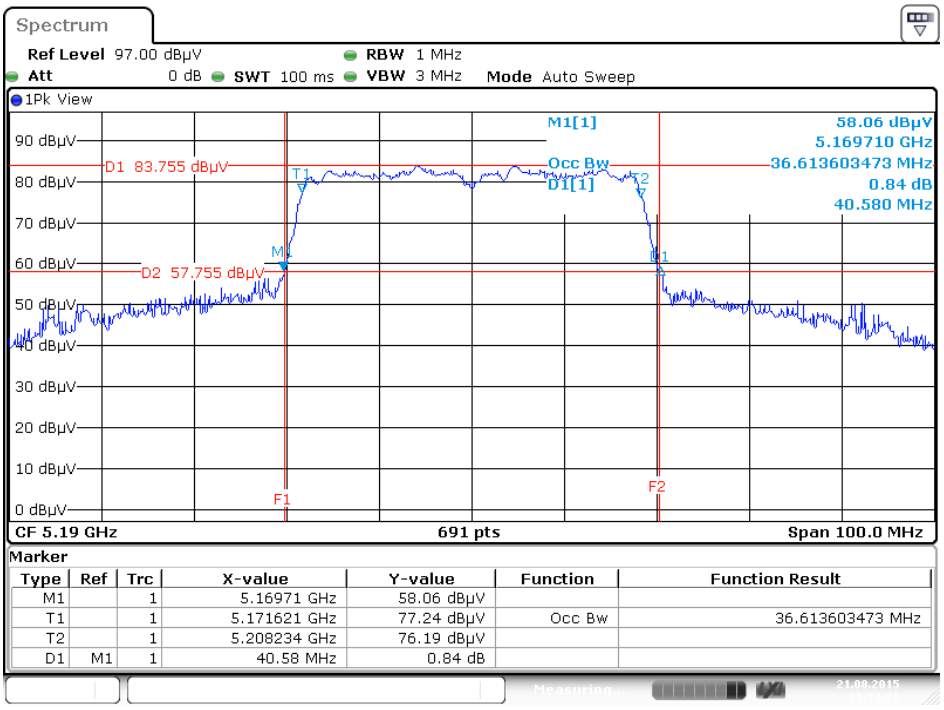
Date: 21.AUG.2015 21:05:40

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5240 MHz



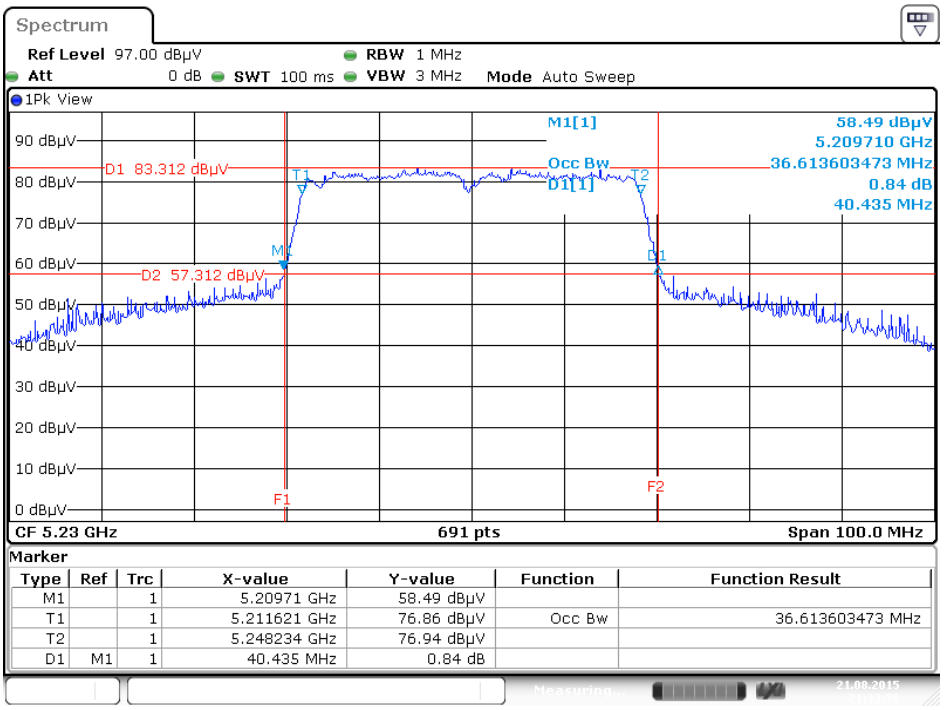
Date: 21.AUG.2015 21:06:13

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5190 MHz



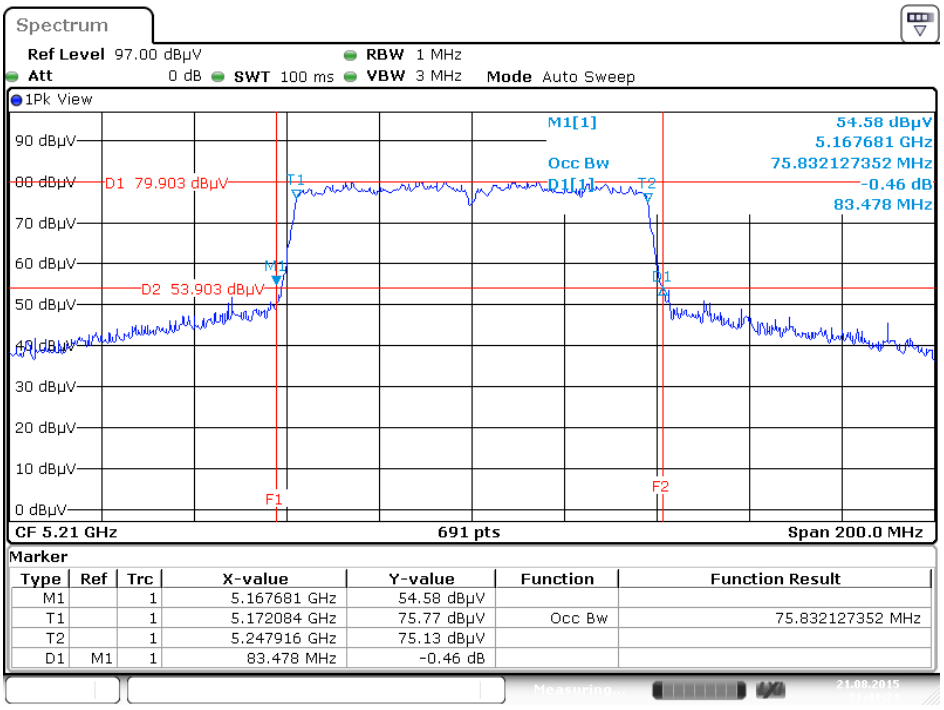
Date: 21.AUG.2015 21:33:26

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5230 MHz



Date: 21.AUG.2015 21:33:56

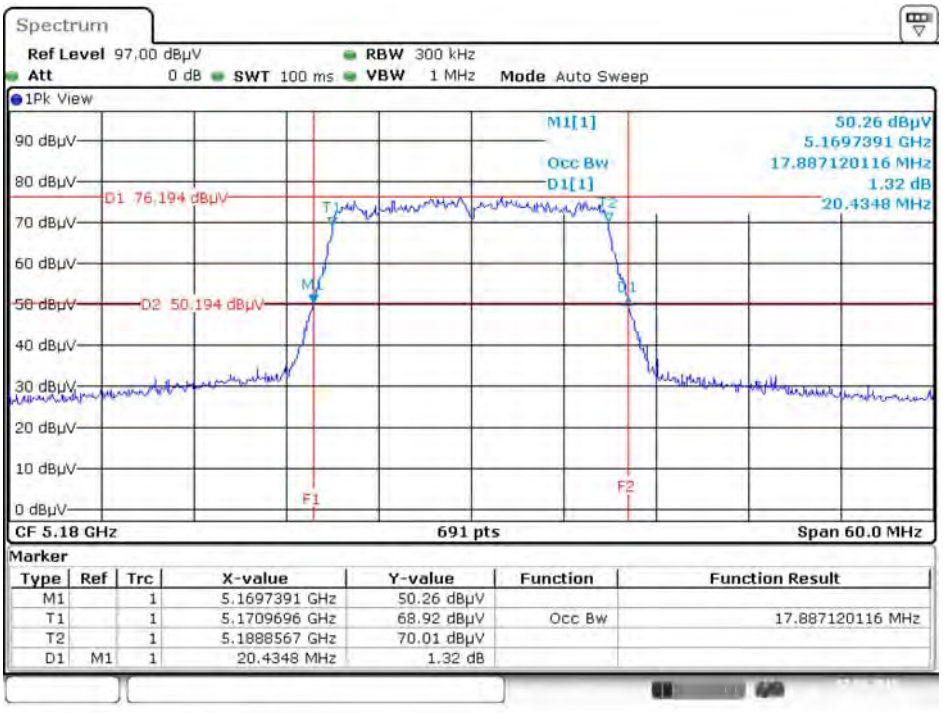
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5210 MHz



Date: 21.AUG.2015 21:41:24

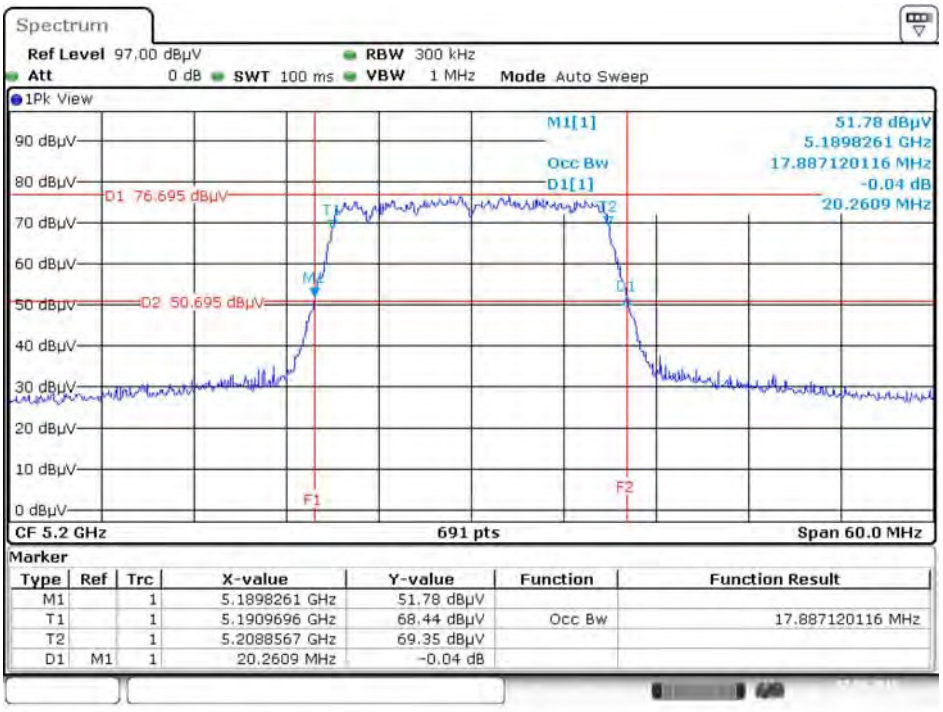
Mode 4 (Ant. 4 Panel antenna / 5.1dBi / 2TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5180 MHz



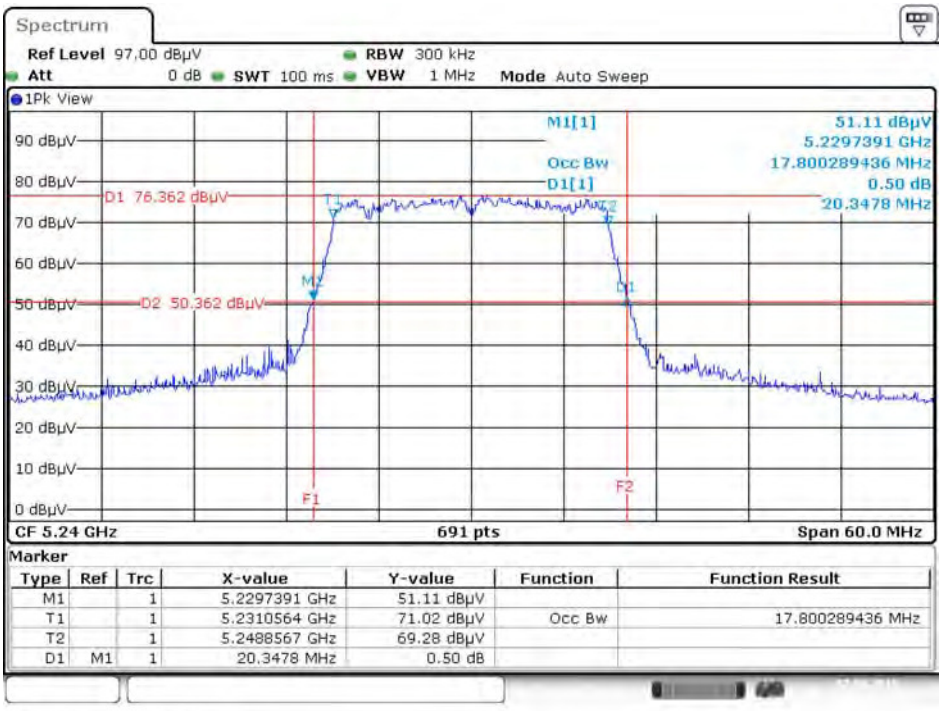
Date: 7.SEP.2015 23:59:03

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5200 MHz



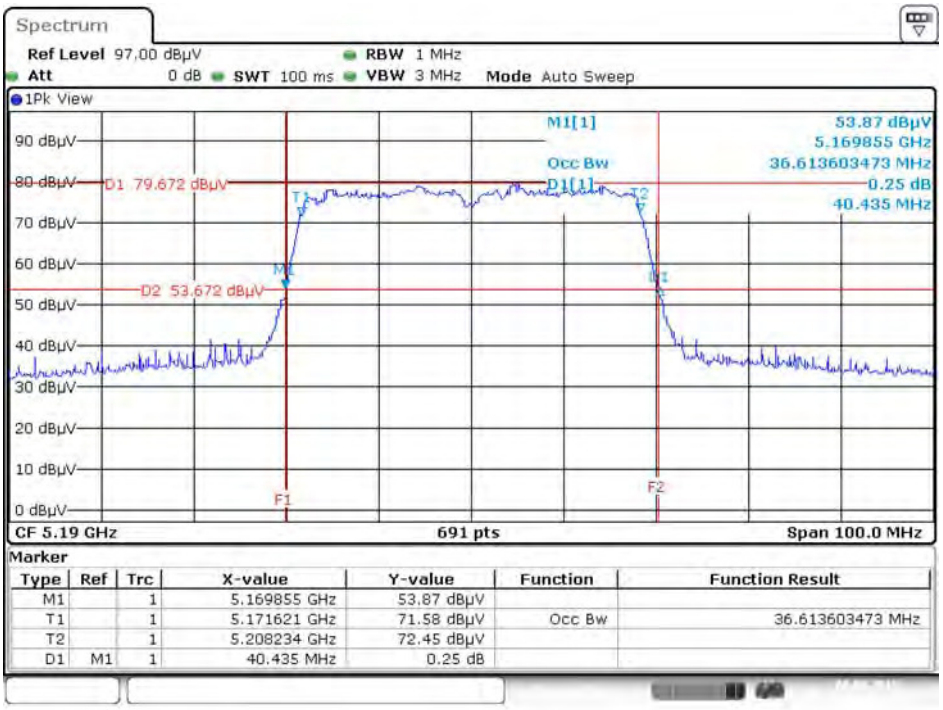
Date: 7.SEP.2015 23:58:20

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5240 MHz



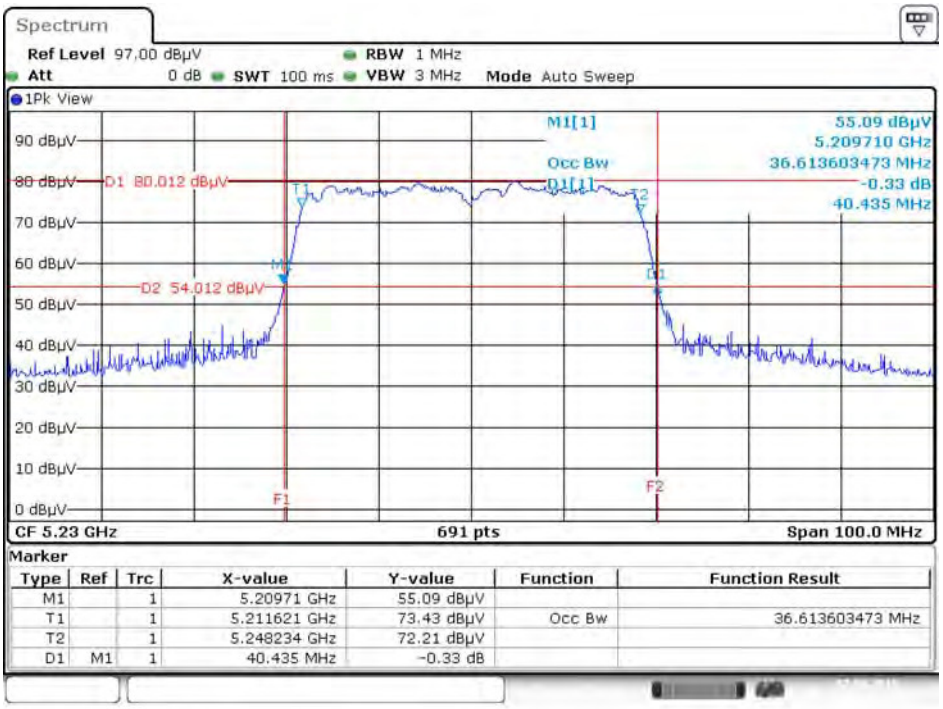
Date: 7.SEP.2015 23:57:15

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5190 MHz



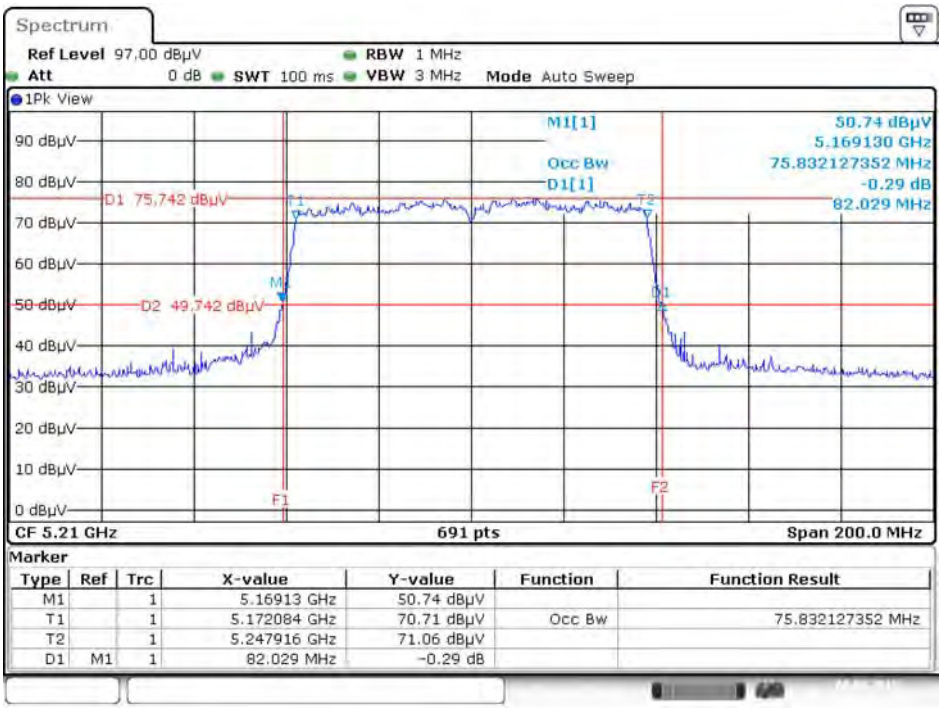
Date: 8.SEP.2015 00:00:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5230 MHz



Date: 7.SEP.2015 23:59:50

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5210 MHz

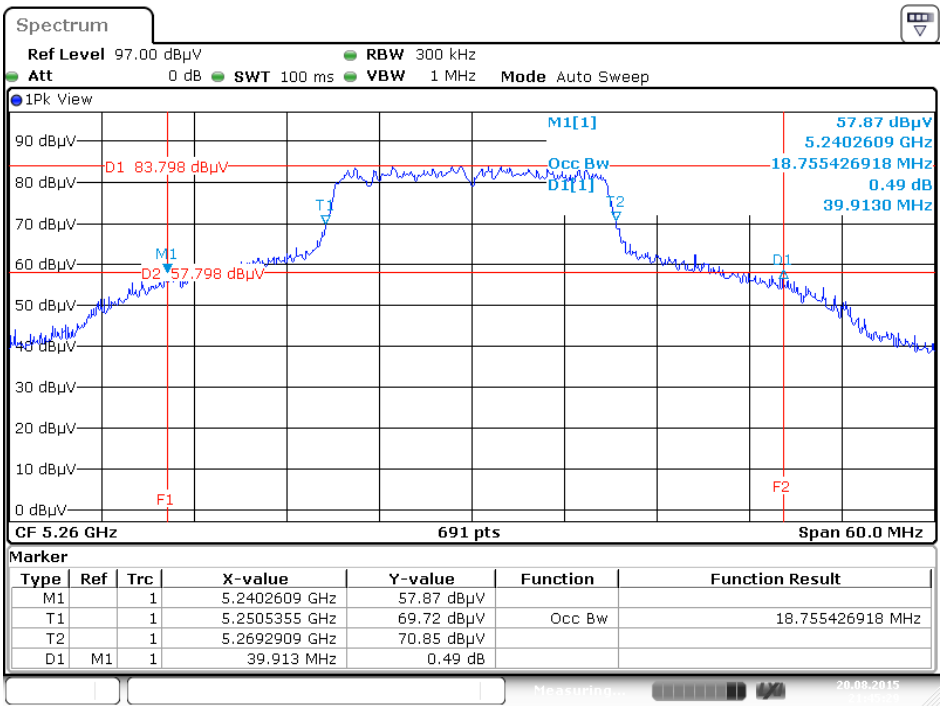


Date: 8.SEP.2015 00:01:21

For indoor / outdoor use

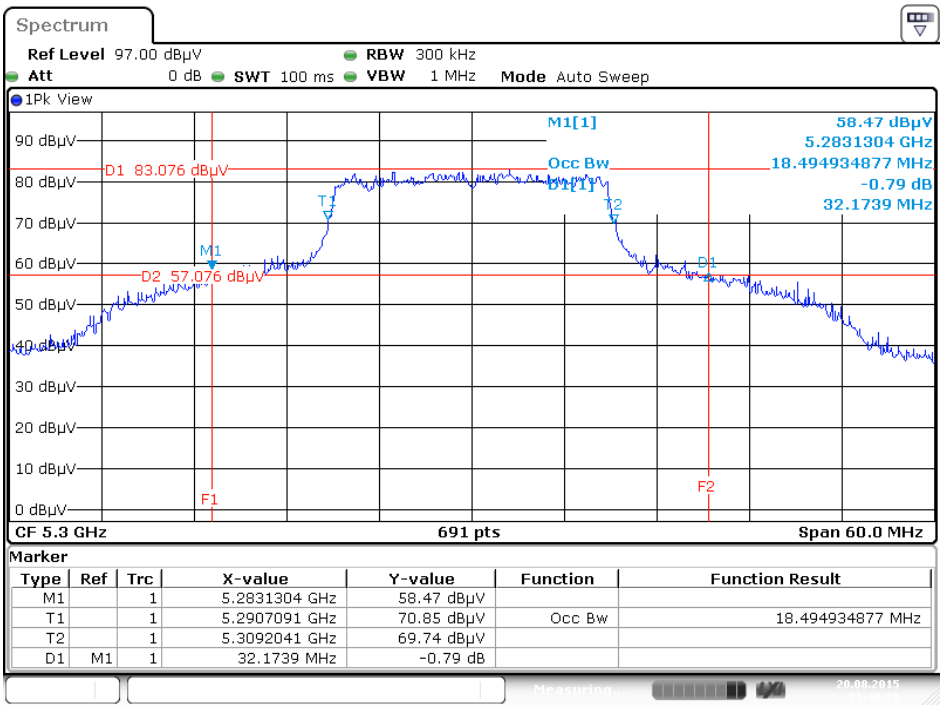
Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5260 MHz



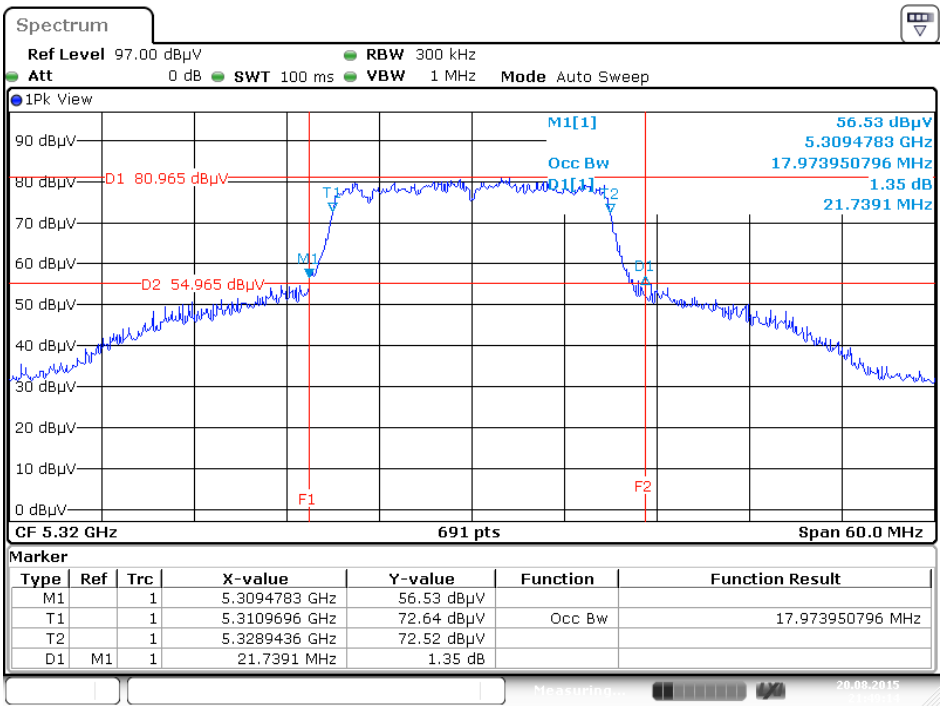
Date: 20.AUG.2015 21:45:28

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5300 MHz



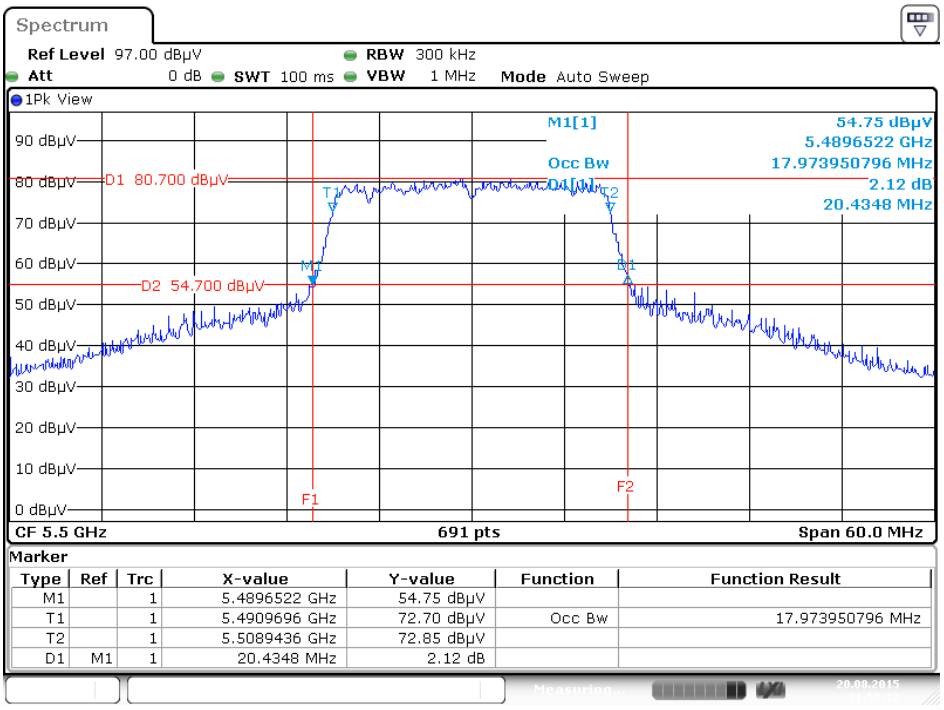
Date: 20.AUG.2015 21:48:28

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5320 MHz



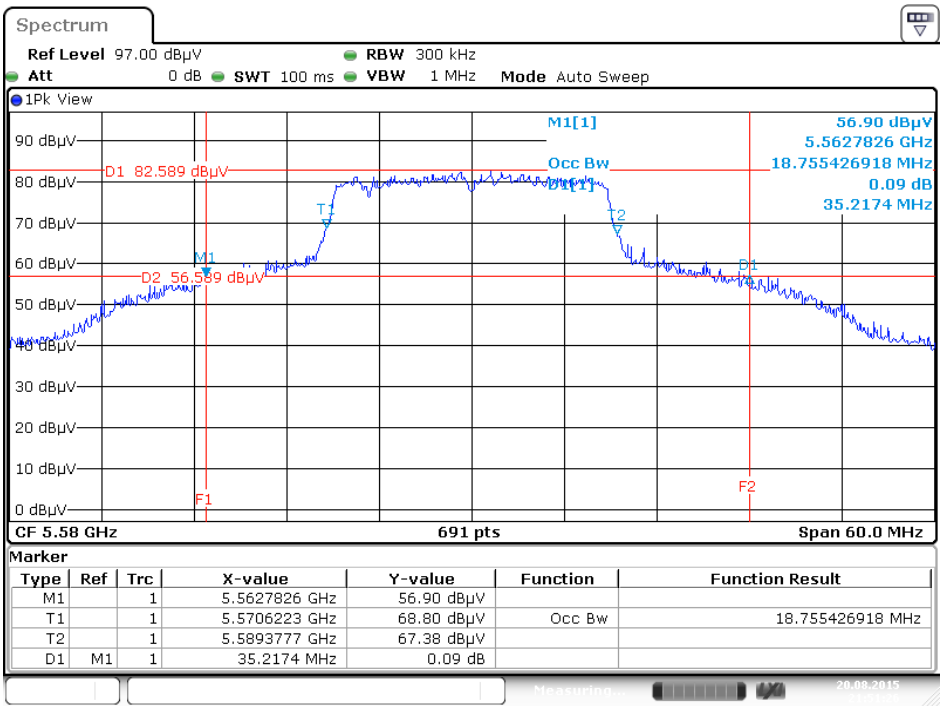
Date: 20.AUG.2015 21:49:14

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5500 MHz



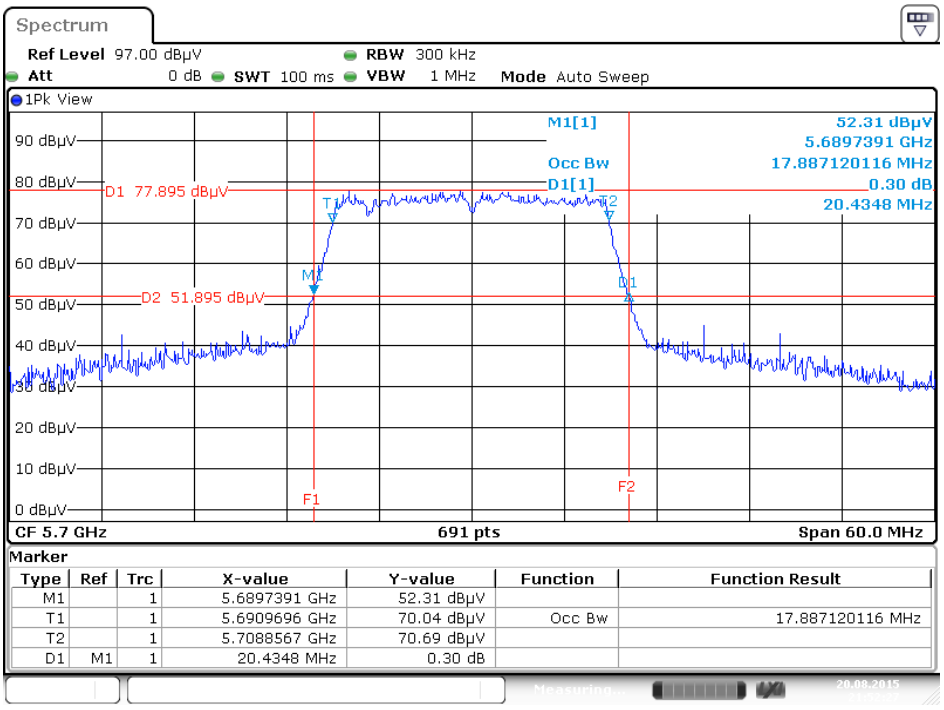
Date: 20.AUG.2015 21:50:13

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5580 MHz



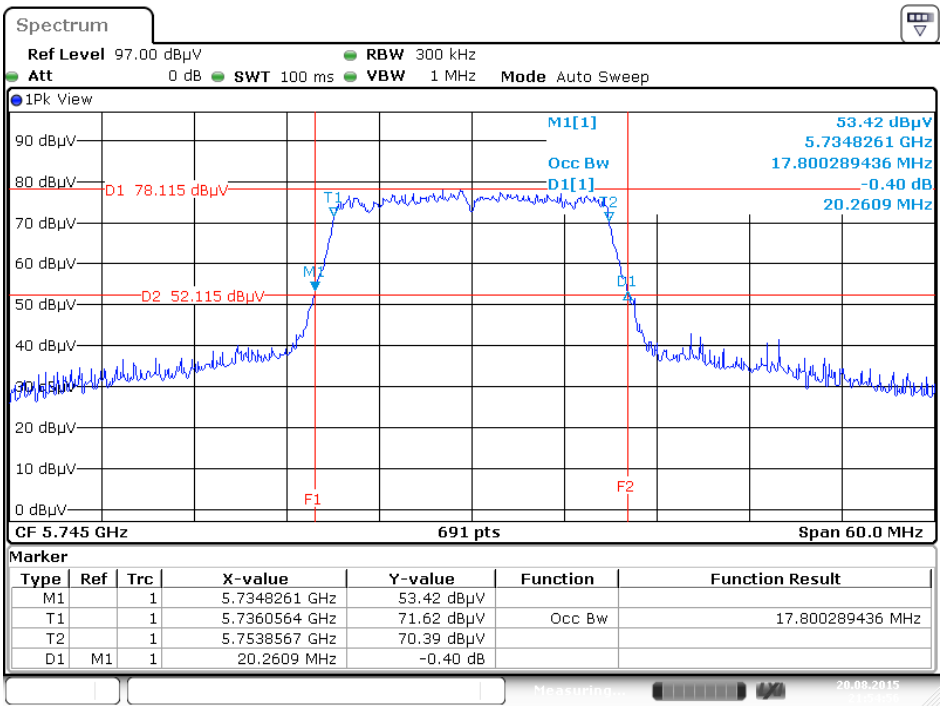
Date: 20.AUG.2015 21:51:27

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5700 MHz



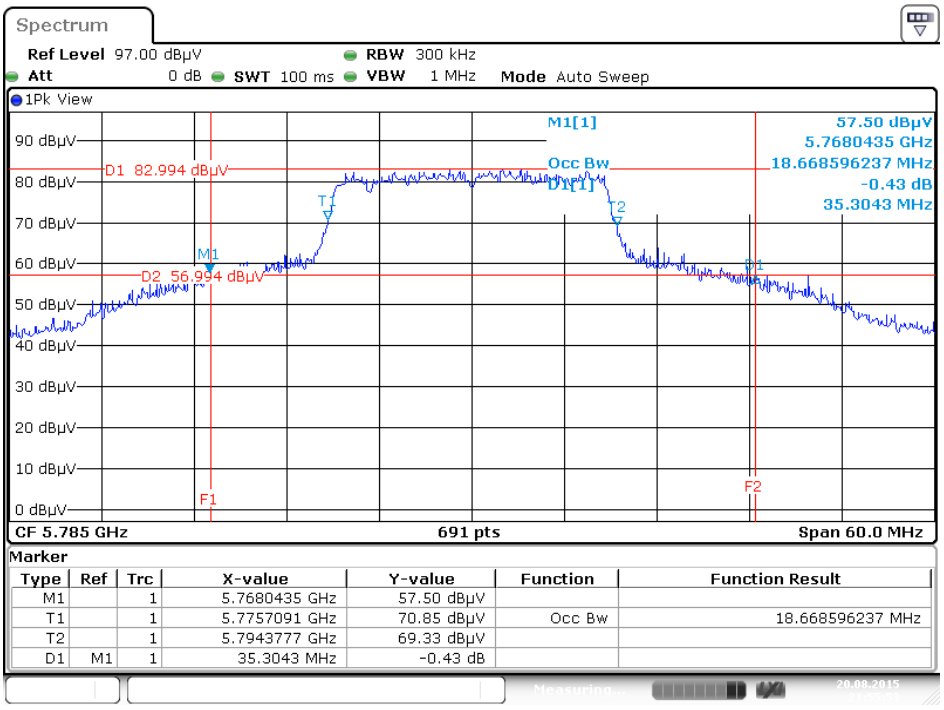
Date: 20.AUG.2015 21:52:28

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5745 MHz



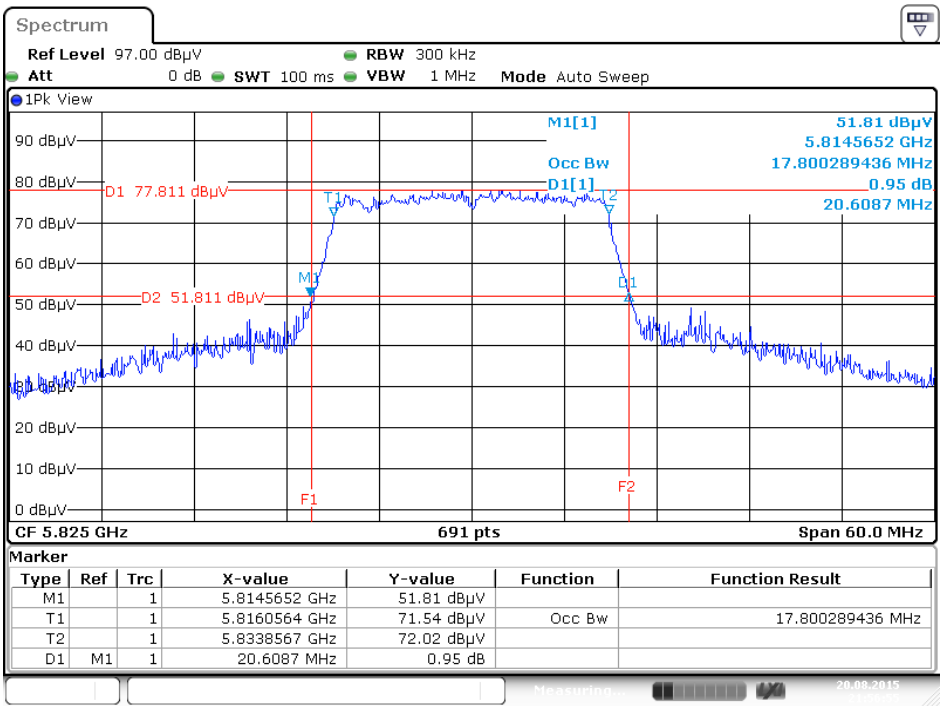
Date: 20.AUG.2015 21:54:56

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5785 MHz



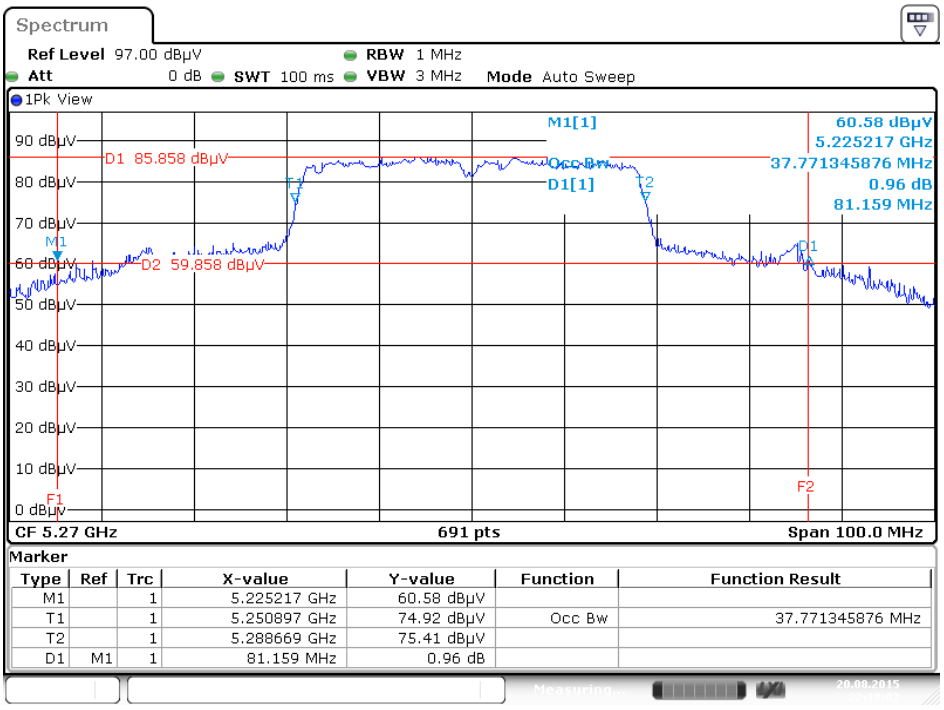
Date: 20.AUG.2015 21:55:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5825 MHz



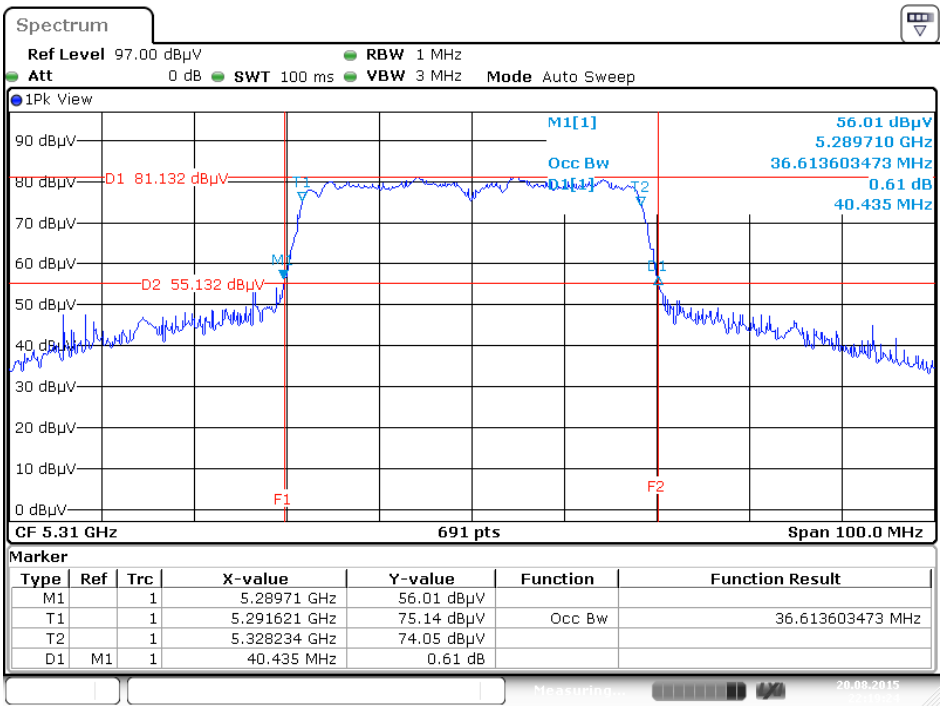
Date: 20.AUG.2015 21:56:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5270 MHz



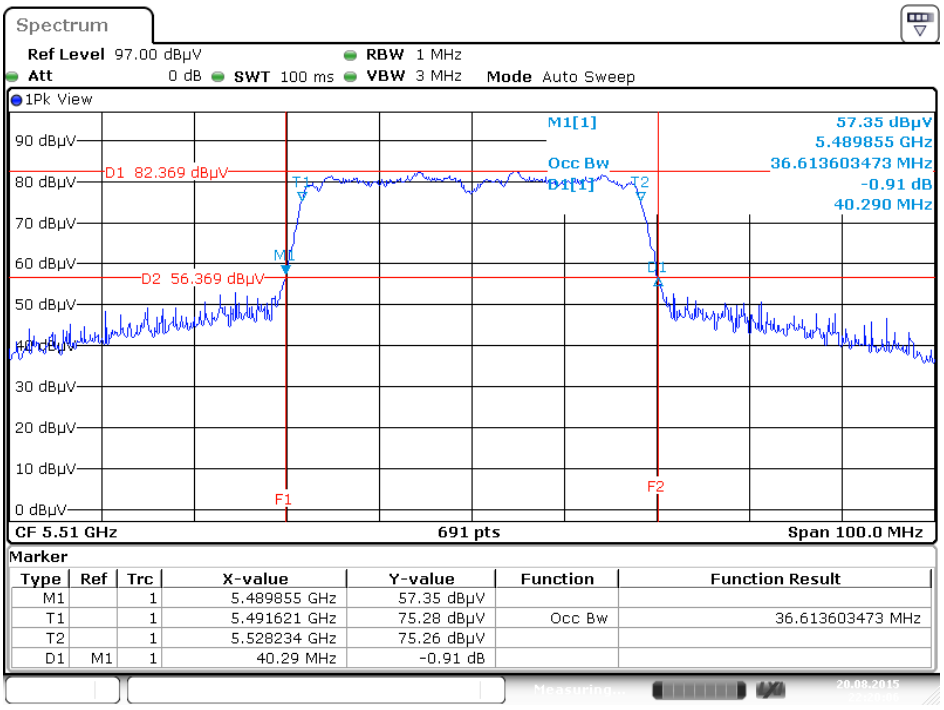
Date: 20.AUG.2015 22:18:03

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5310 MHz



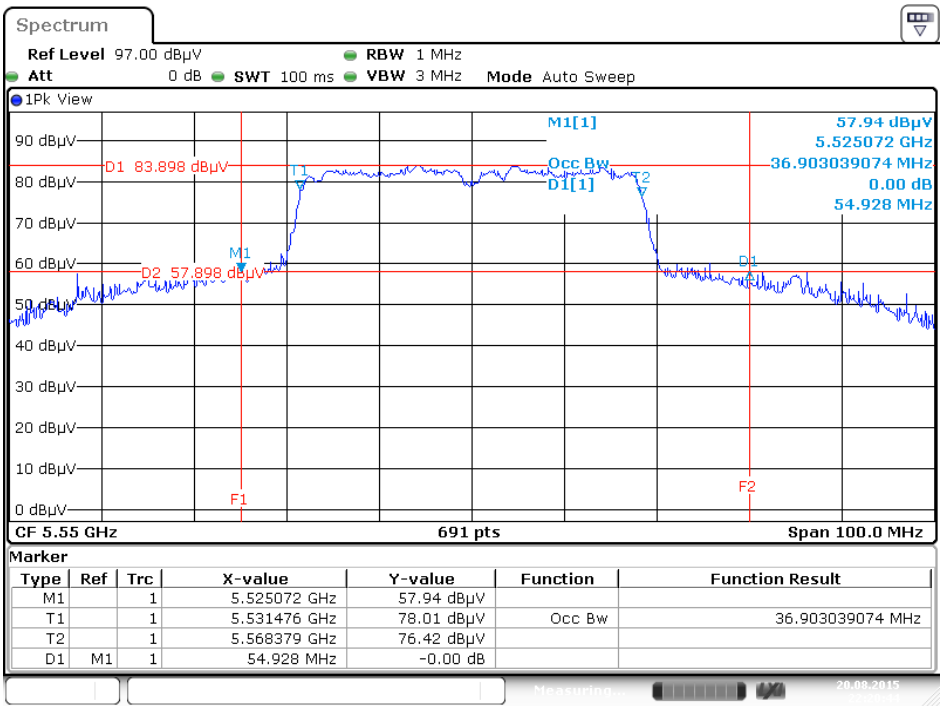
Date: 20.AUG.2015 22:19:24

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5510 MHz



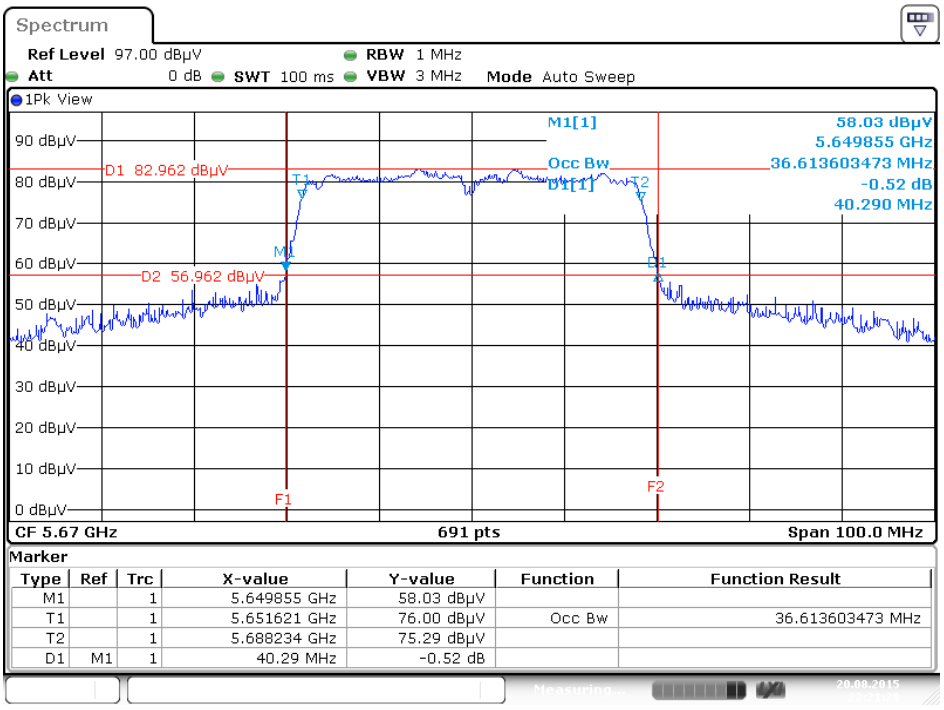
Date: 20.AUG.2015 22:20:07

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5550 MHz



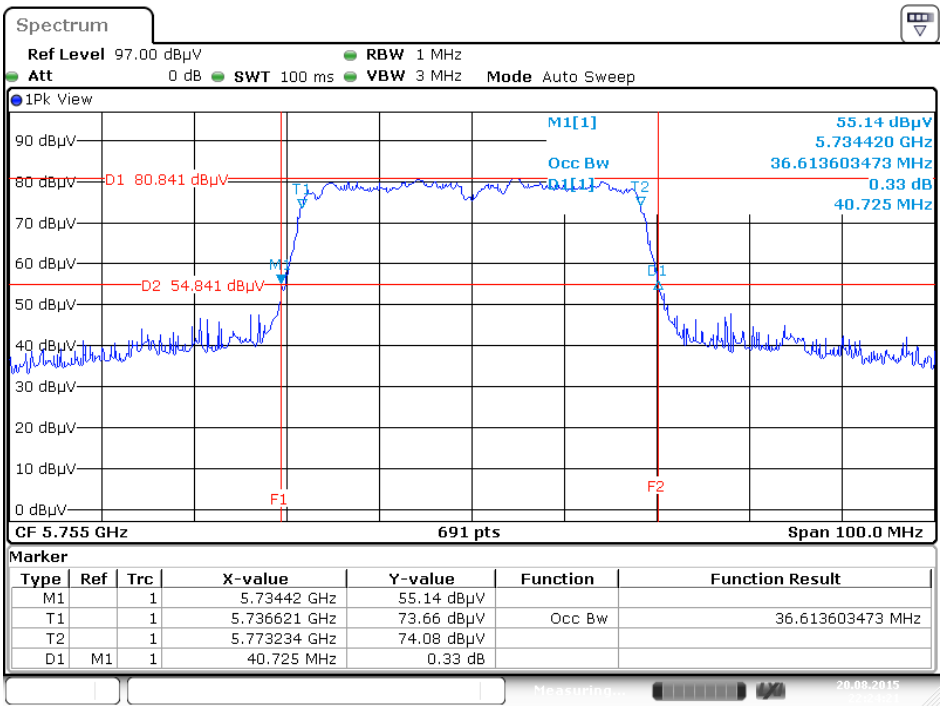
Date: 20.AUG.2015 22:20:44

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5670 MHz



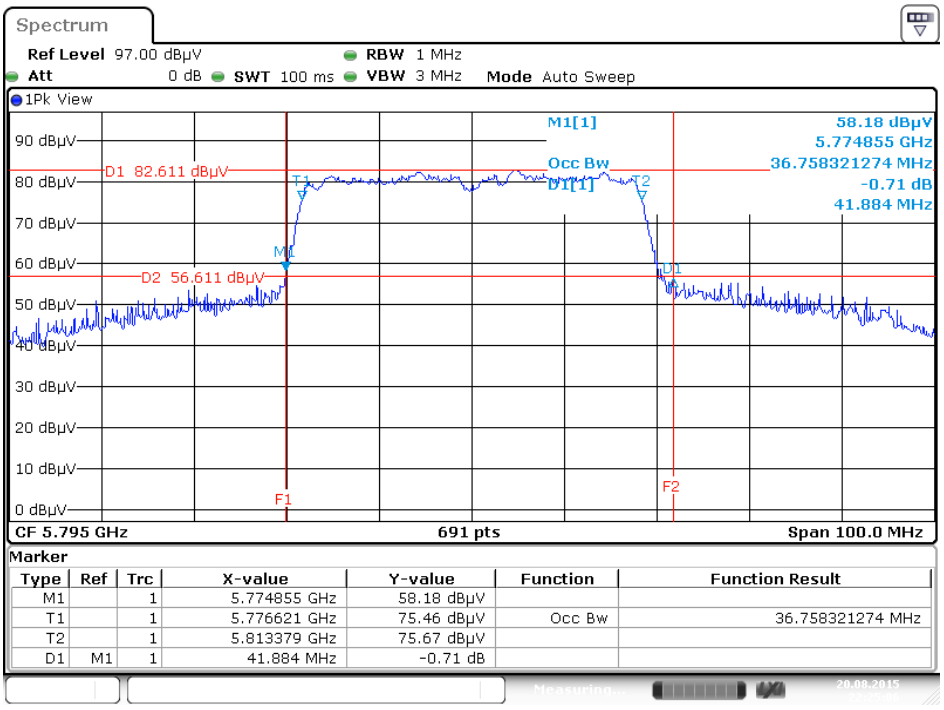
Date: 20.AUG.2015 22:21:29

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5755 MHz



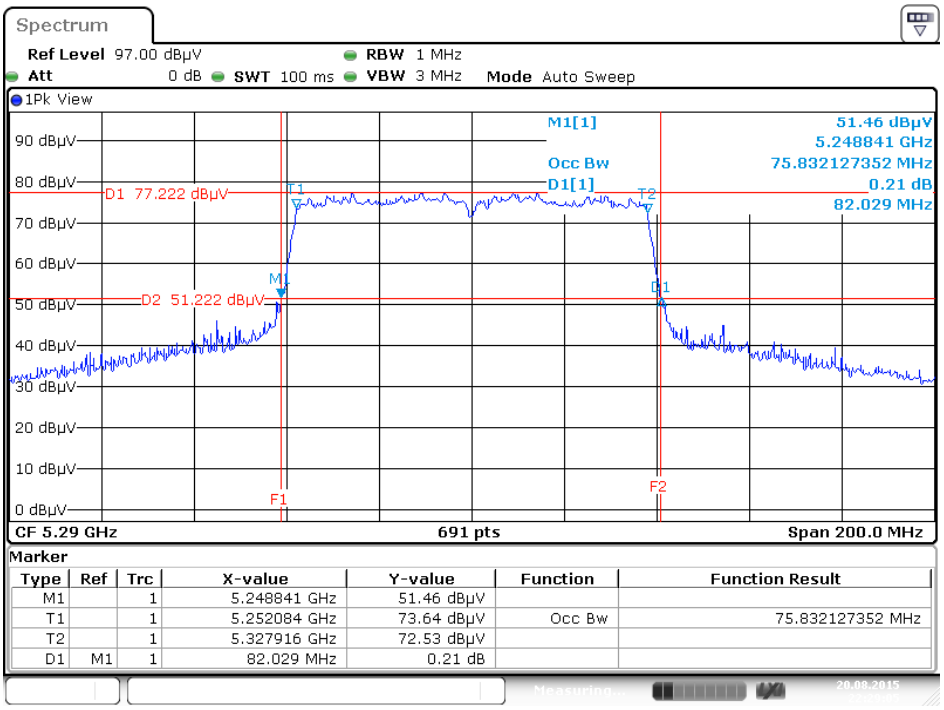
Date: 20.AUG.2015 22:24:21

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5795 MHz



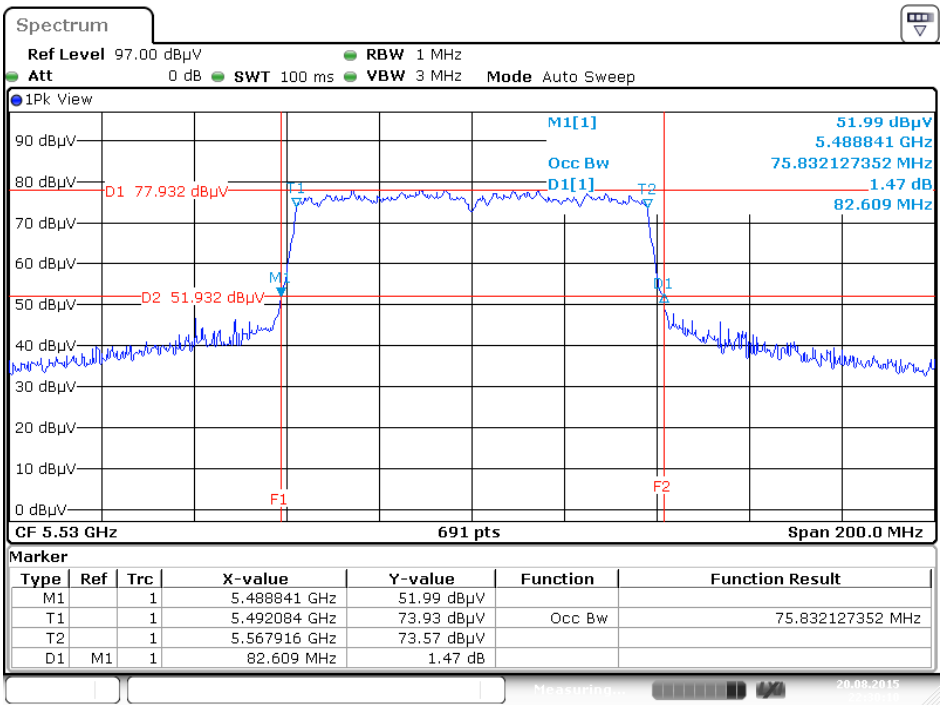
Date: 20.AUG.2015 22:25:07

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5290 MHz



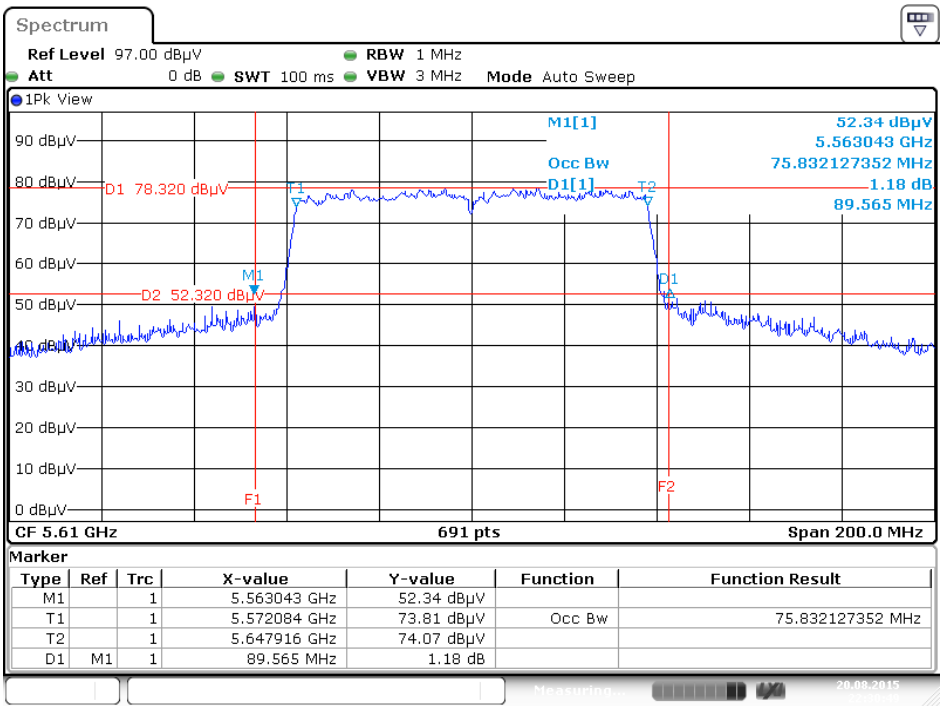
Date: 20.AUG.2015 22:29:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5530 MHz



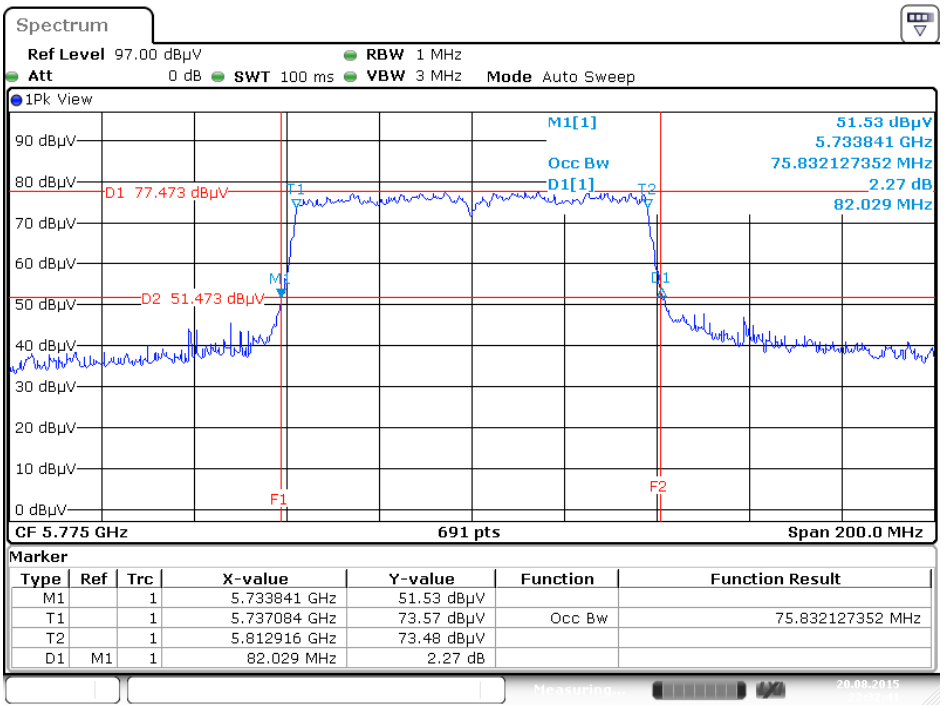
Date: 20.AUG.2015 22:30:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5610 MHz



Date: 20.AUG.2015 22:30:50

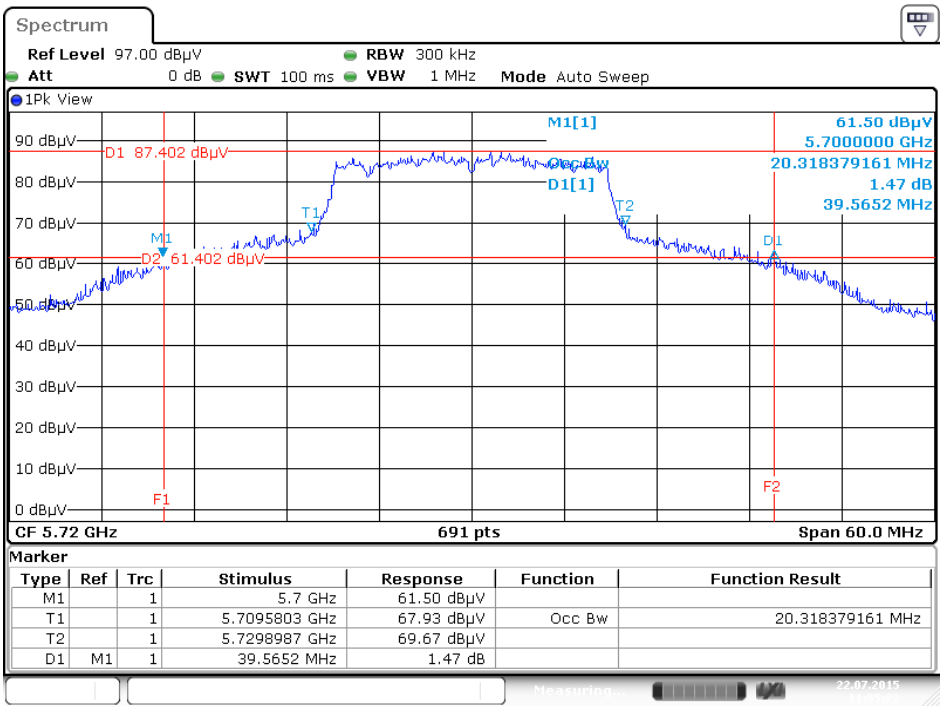
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5775 MHz



Date: 20.AUG.2015 22:32:41

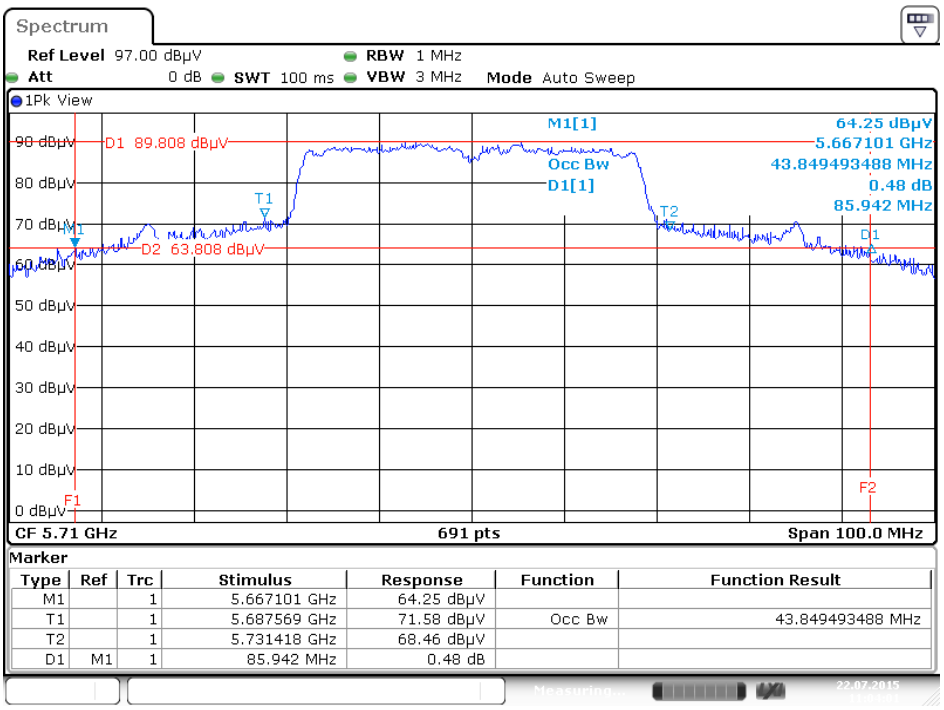
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz



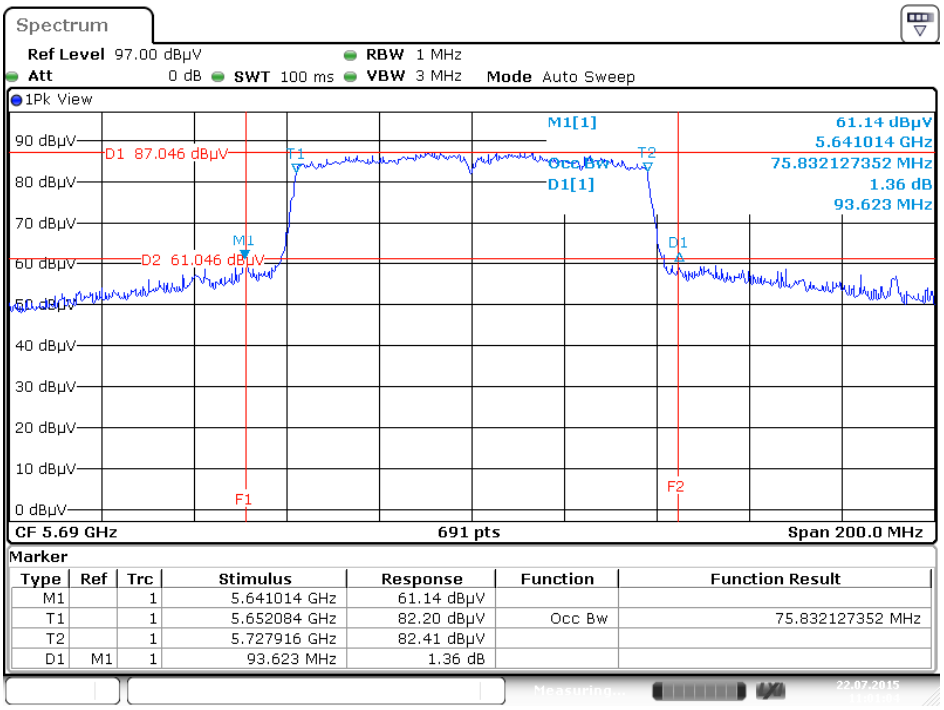
Date: 22.JUL.2015 11:05:22

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz



Date: 22.JUL.2015 11:04:01

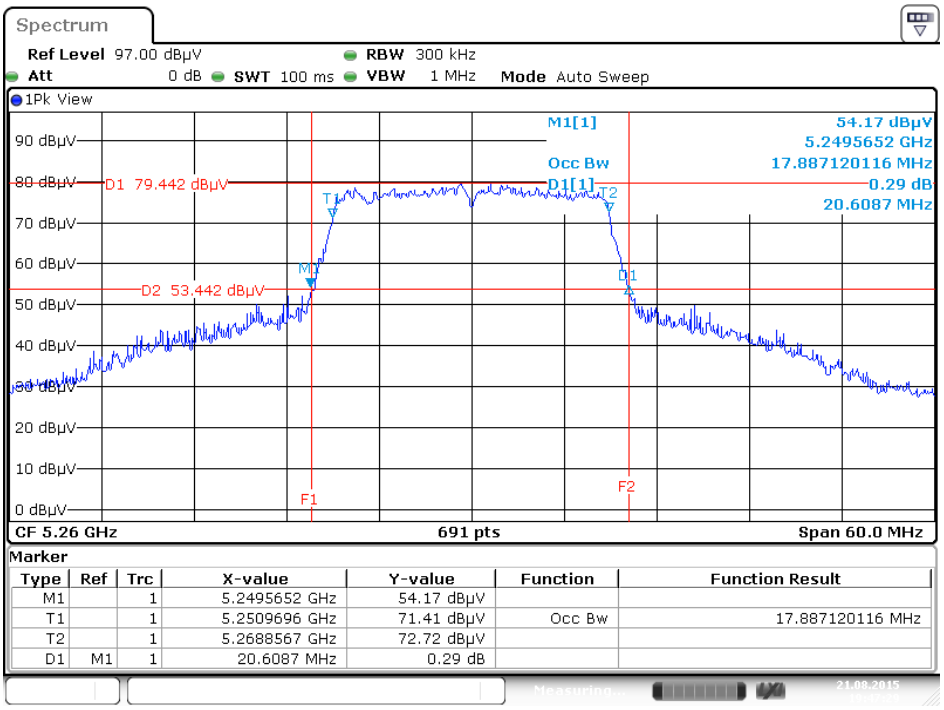
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz



Date: 22.JUL.2015 11:01:04

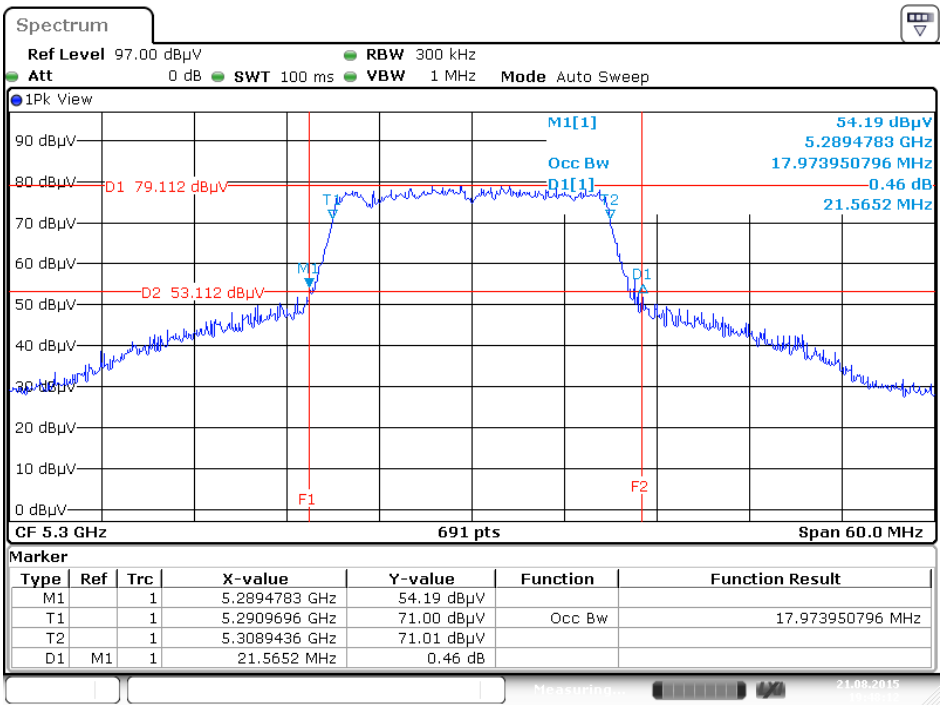
Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5260 MHz



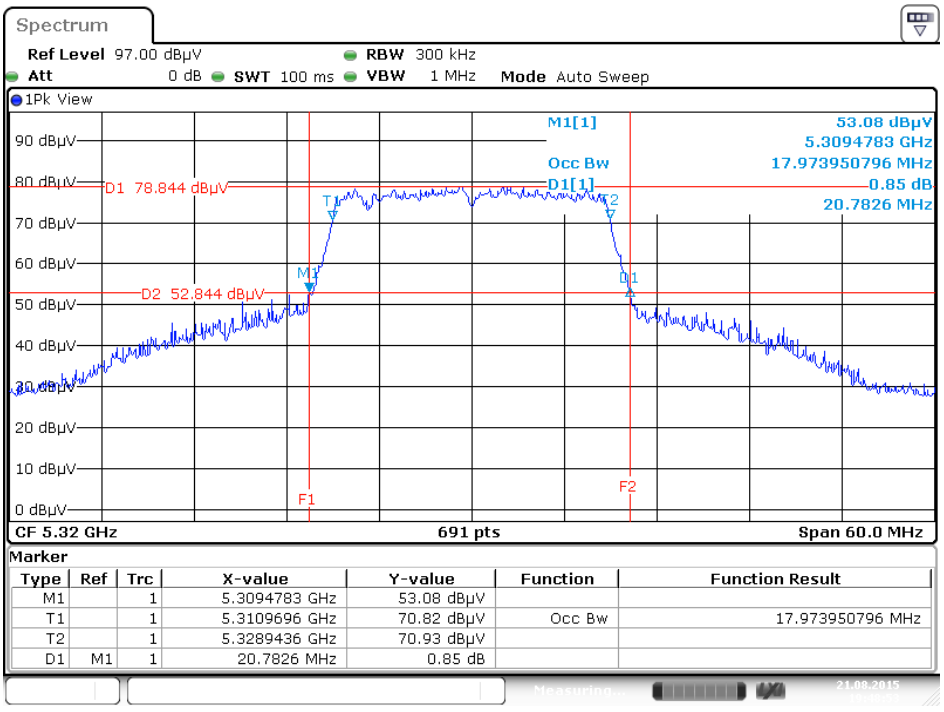
Date: 21.AUG.2015 19:47:29

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5300 MHz



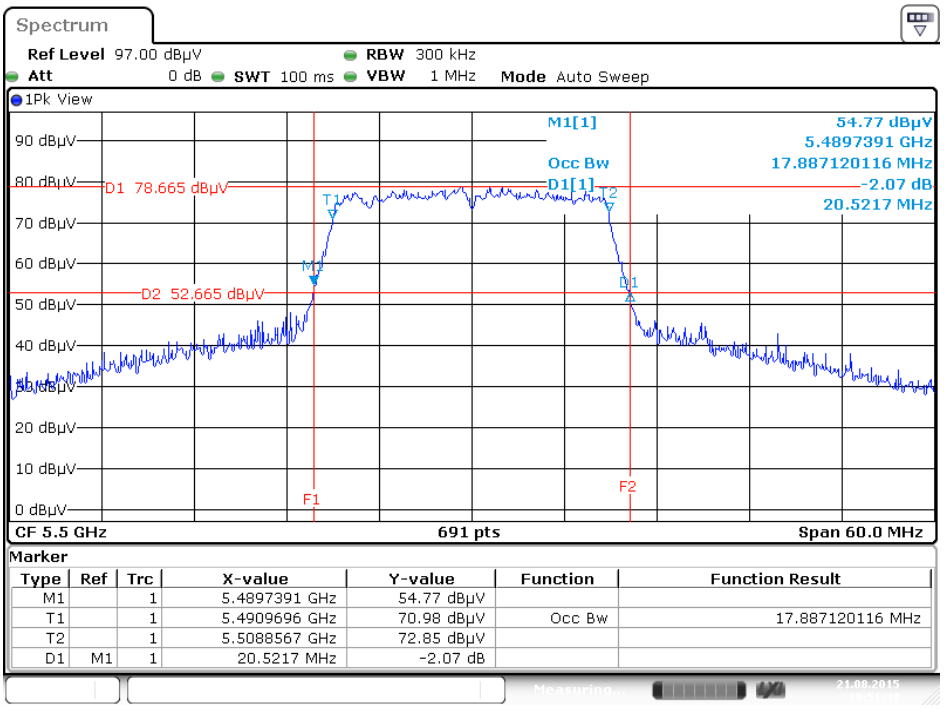
Date: 21.AUG.2015 19:48:12

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5320 MHz



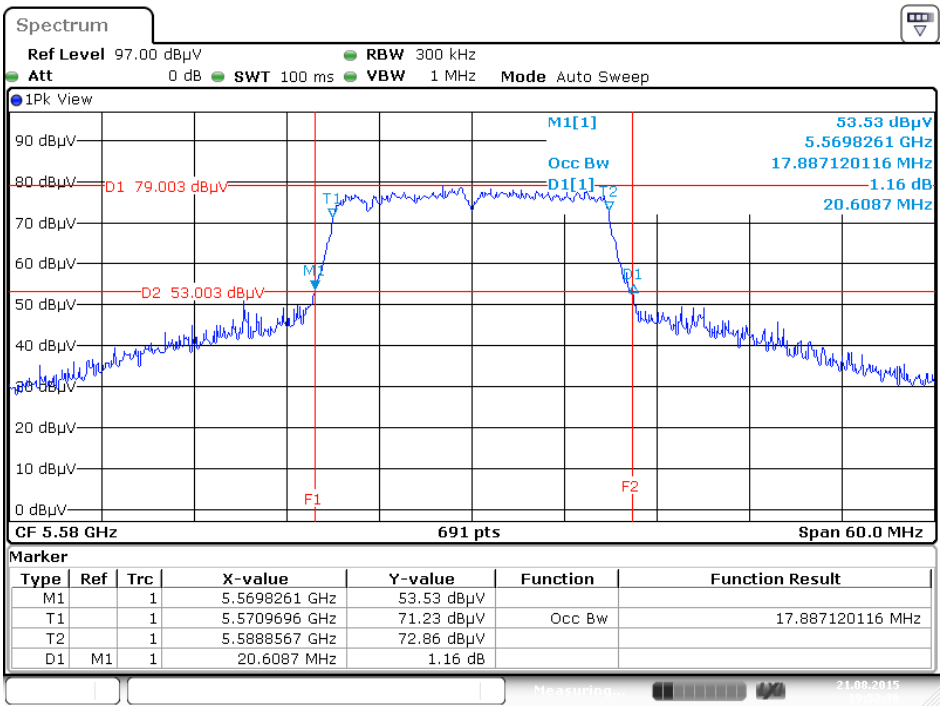
Date: 21.AUG.2015 19:48:53

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5500 MHz



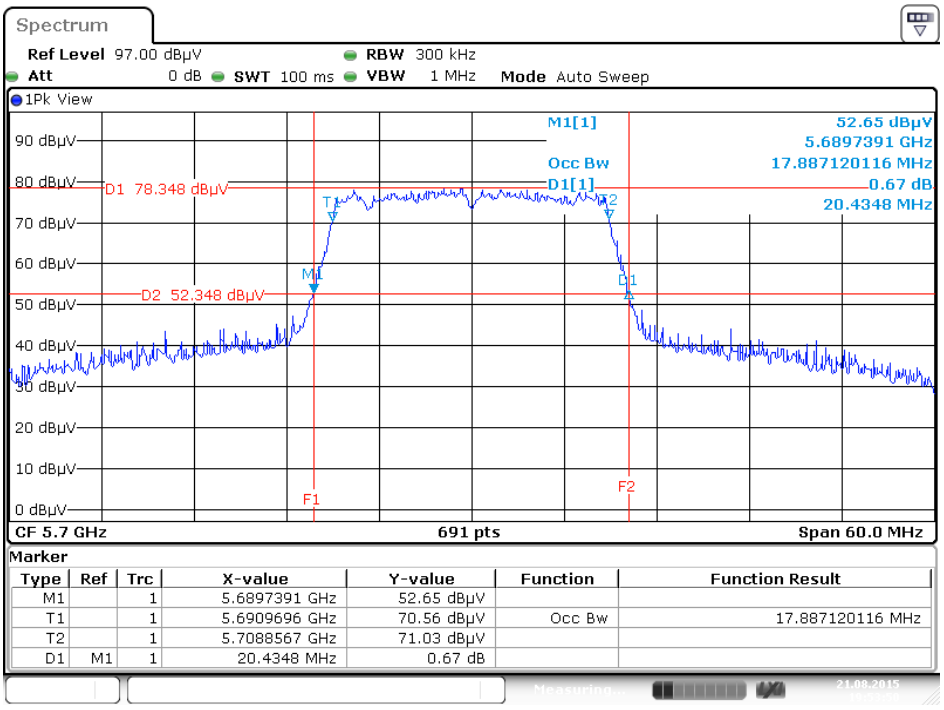
Date: 21.AUG.2015 19:51:50

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5580 MHz



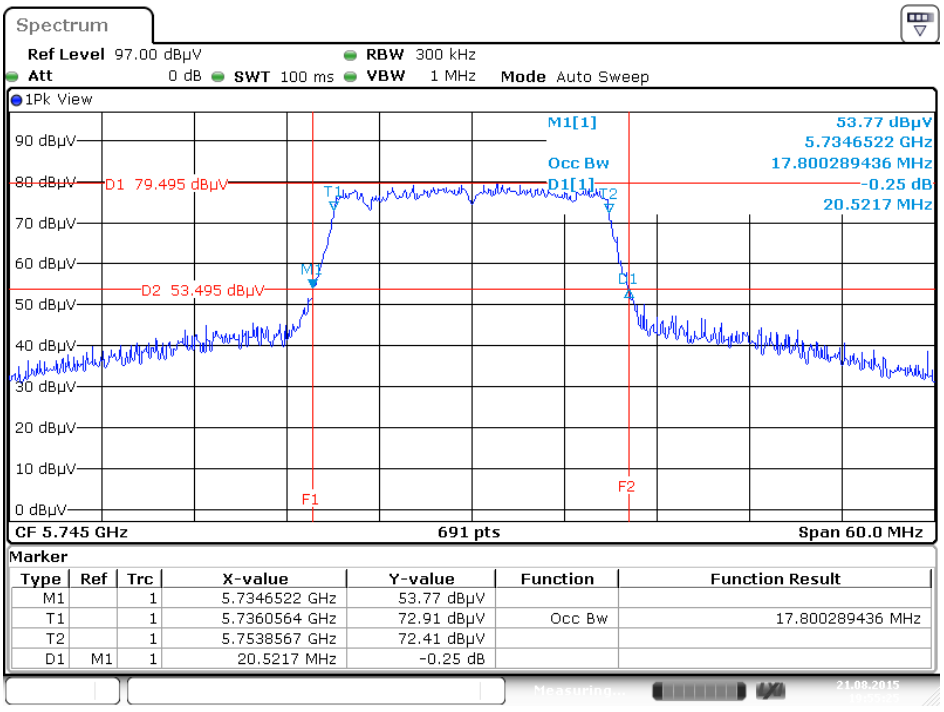
Date: 21.AUG.2015 19:52:30

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5700 MHz



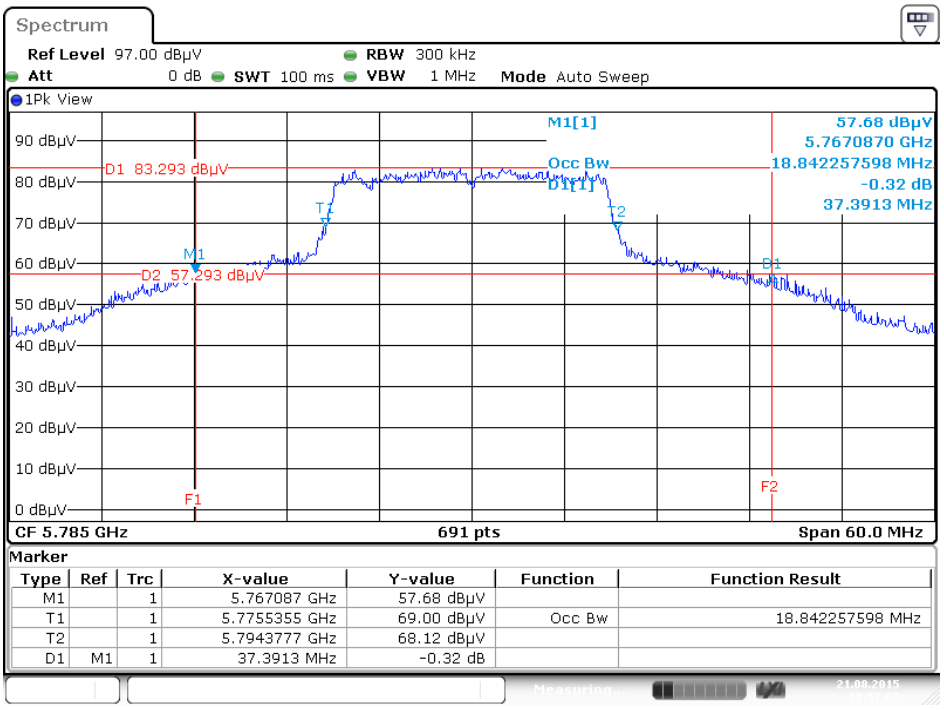
Date: 21.AUG.2015 19:53:50

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5745 MHz



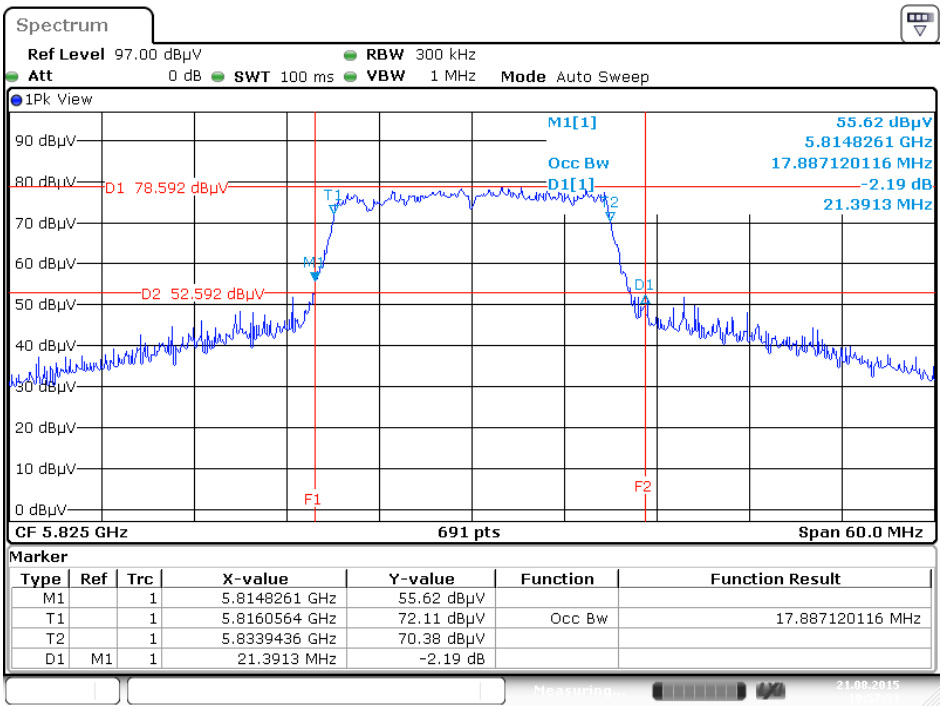
Date: 21.AUG.2015 19:55:25

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5785 MHz



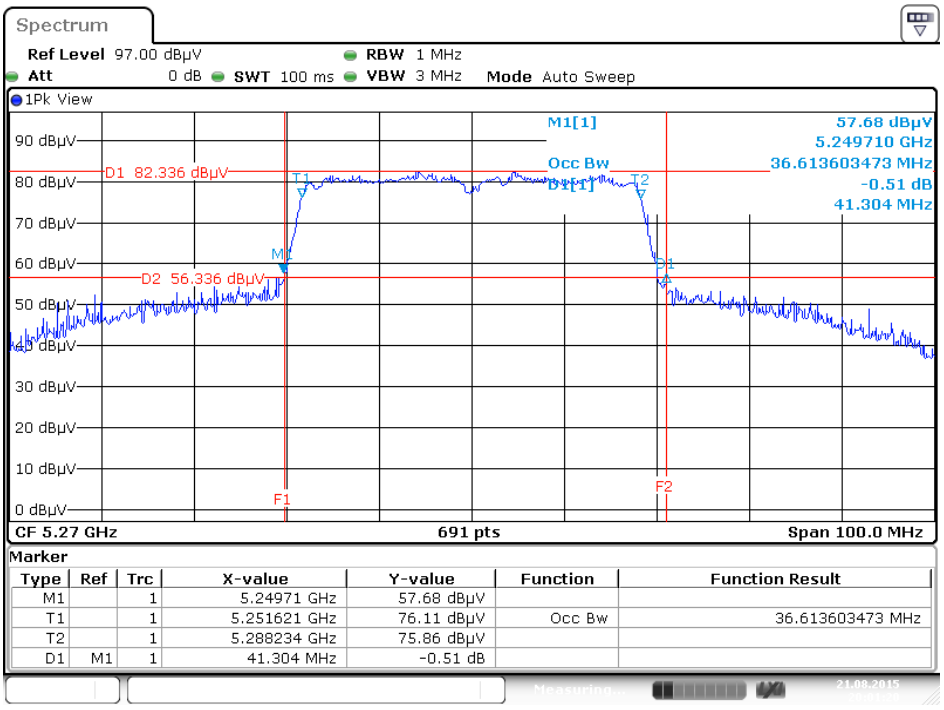
Date: 21.AUG.2015 19:57:07

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5825 MHz



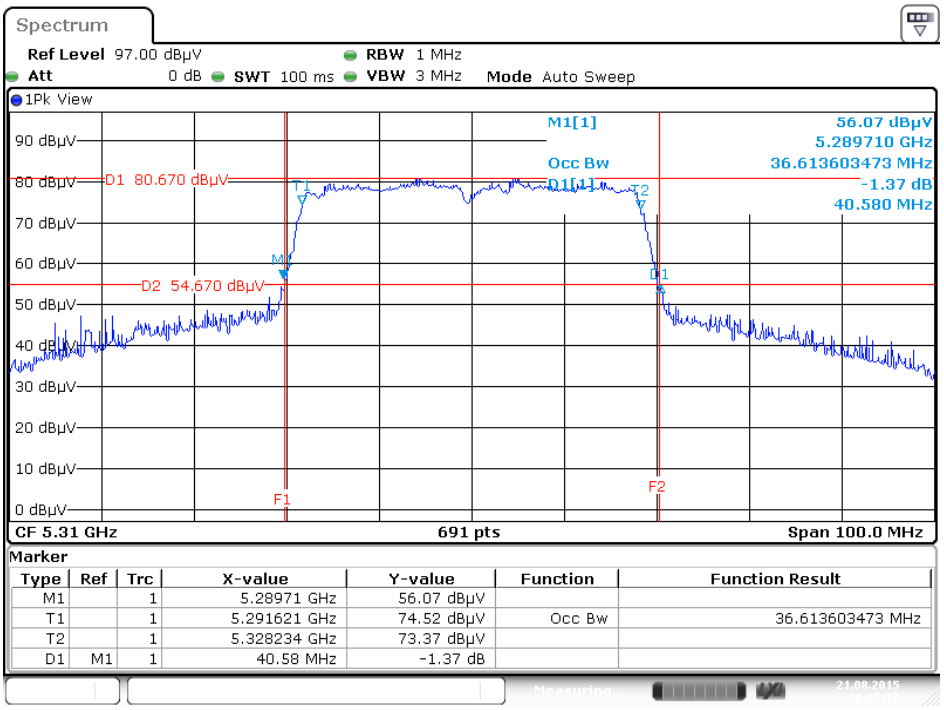
Date: 21.AUG.2015 19:57:53

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5270 MHz



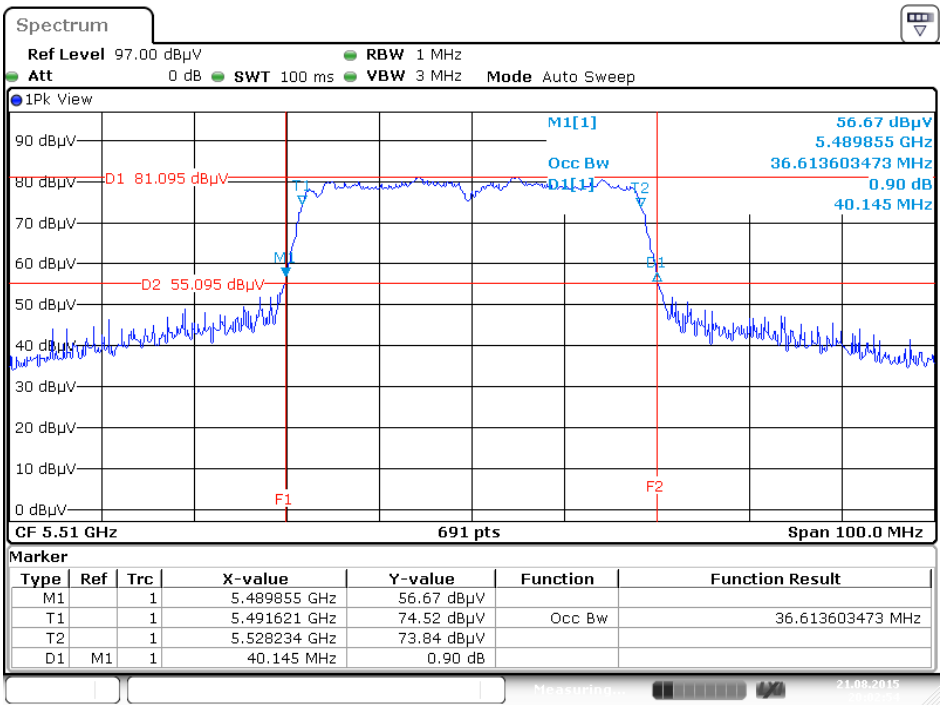
Date: 21.AUG.2015 20:01:20

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5310 MHz



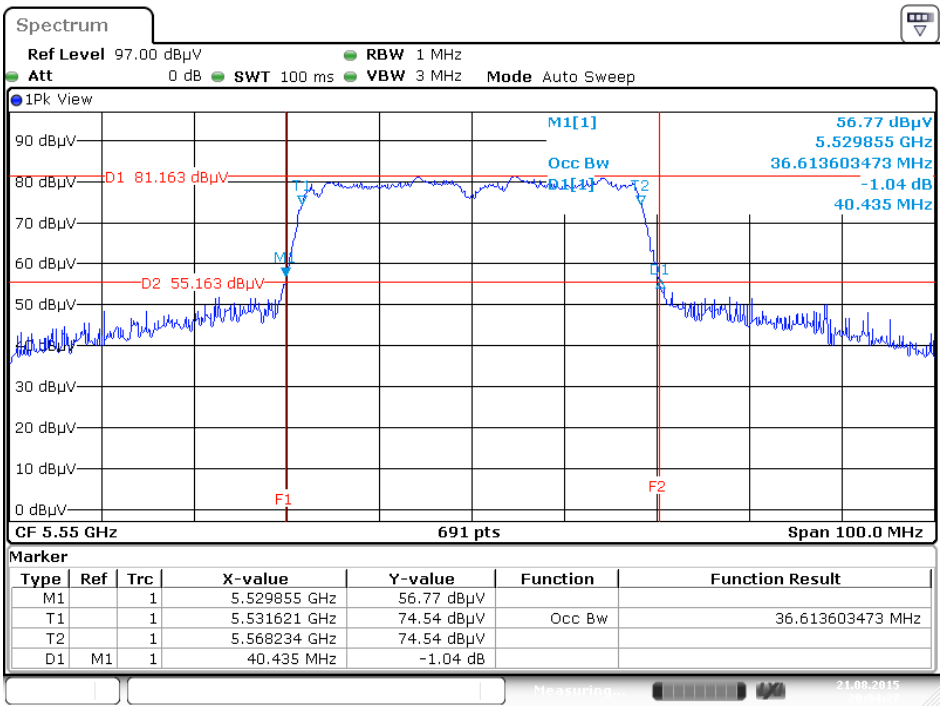
Date: 21.AUG.2015 20:02:12

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5510 MHz



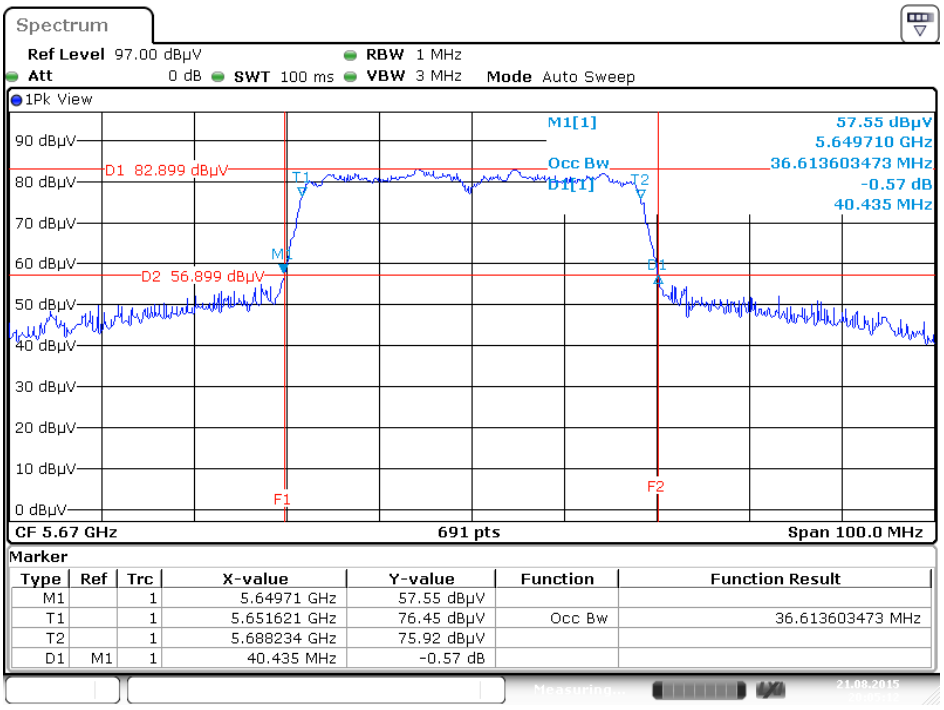
Date: 21.AUG.2015 20:02:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5550 MHz



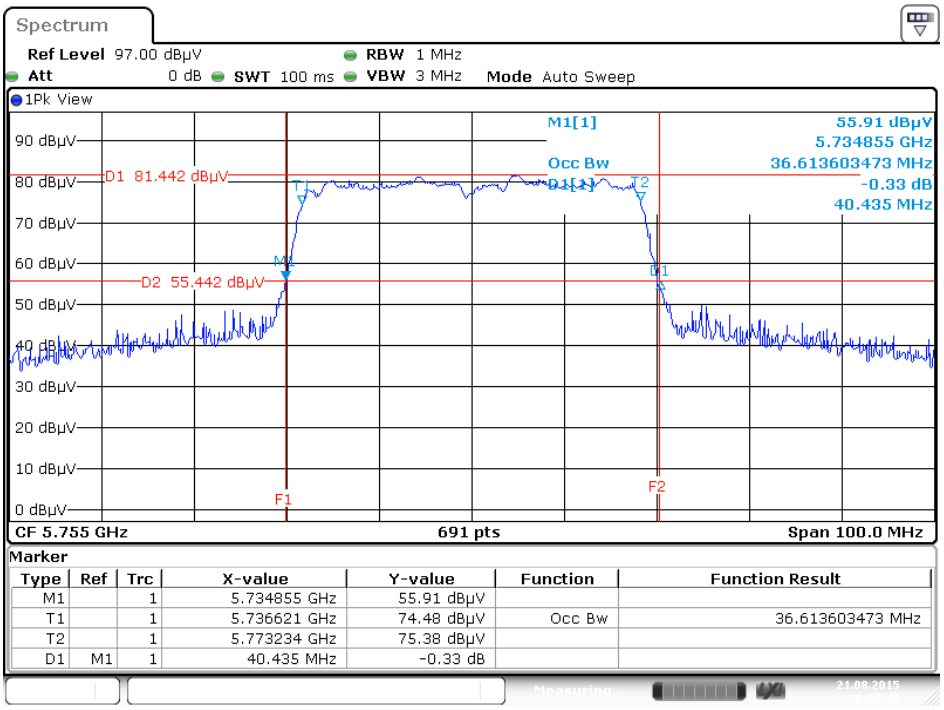
Date: 21.AUG.2015 20:04:26

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5670 MHz



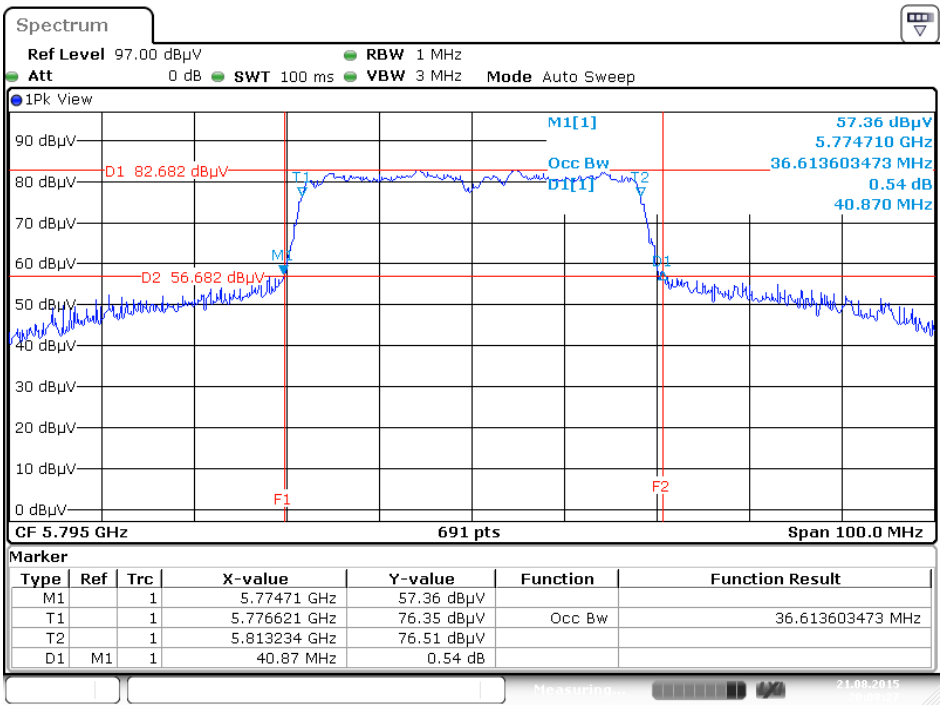
Date: 21.AUG.2015 20:05:13

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5755 MHz



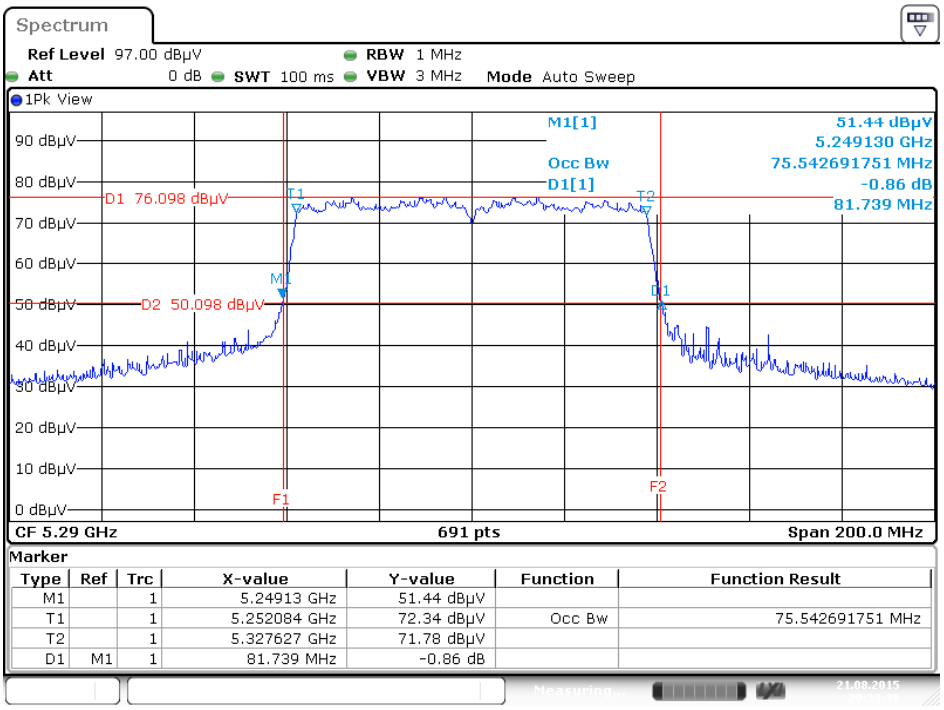
Date: 21.AUG.2015 20:07:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5795 MHz



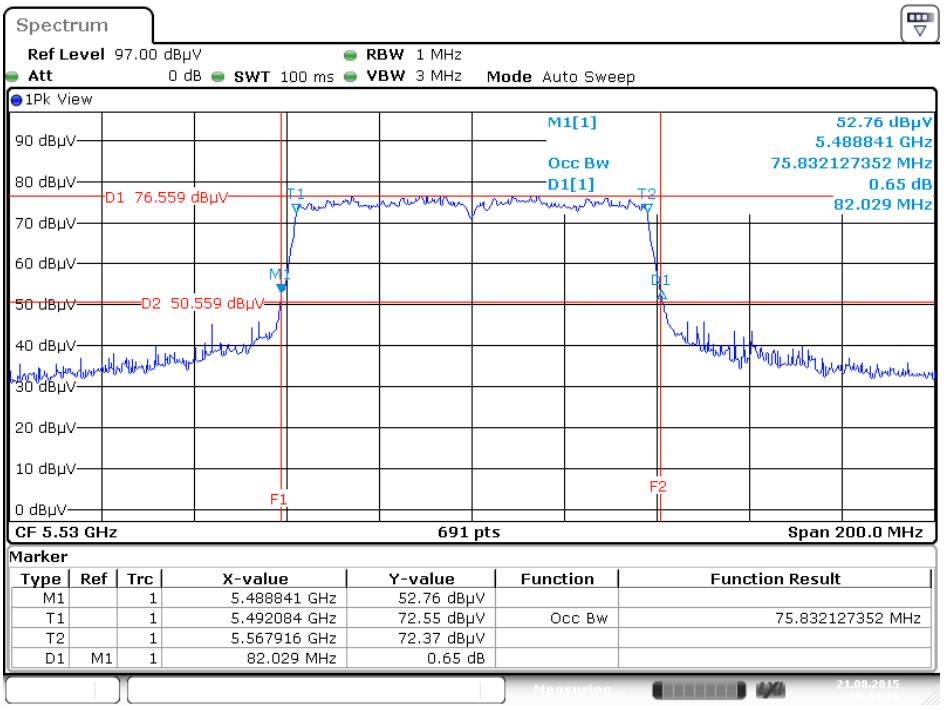
Date: 21.AUG.2015 20:08:28

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5290 MHz



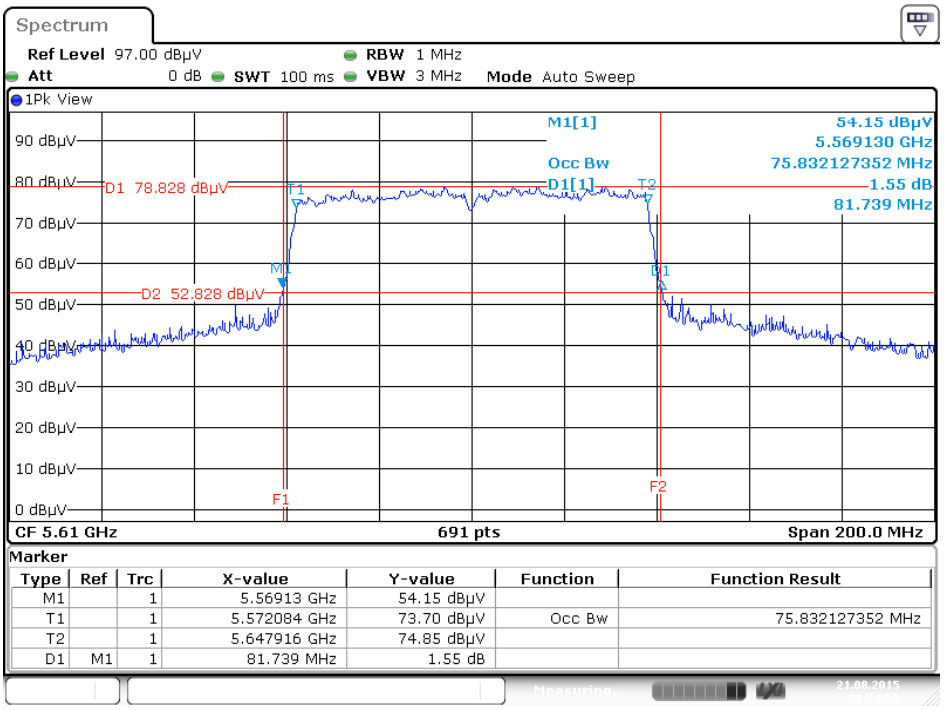
Date: 21.AUG.2015 20:23:39

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5530 MHz



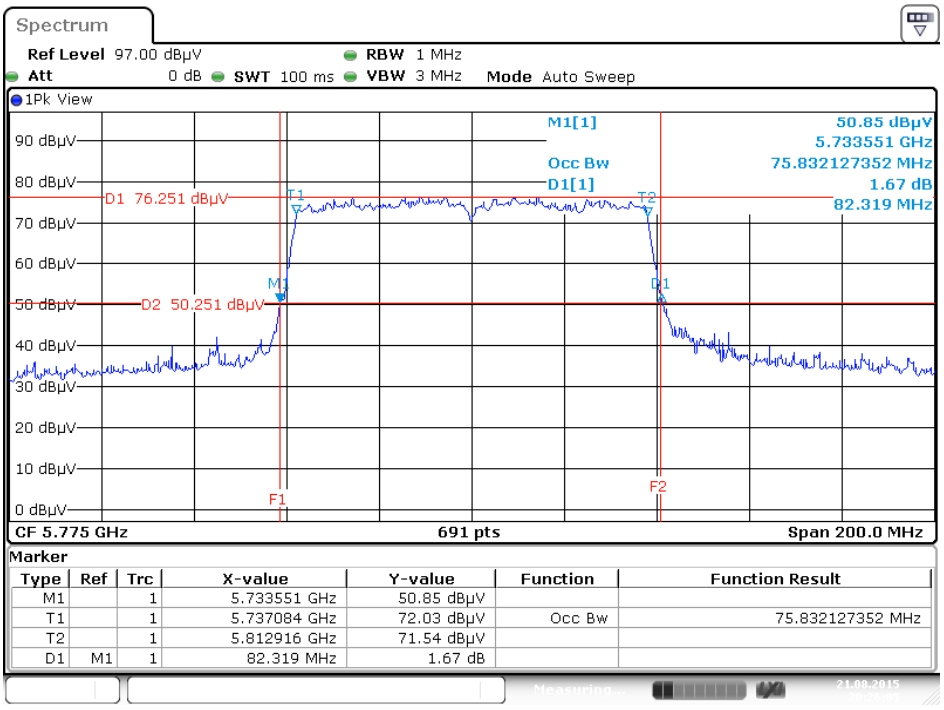
Date: 21.AUG.2015 20:24:16

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5610 MHz



Date: 21.AUG.2015 20:24:54

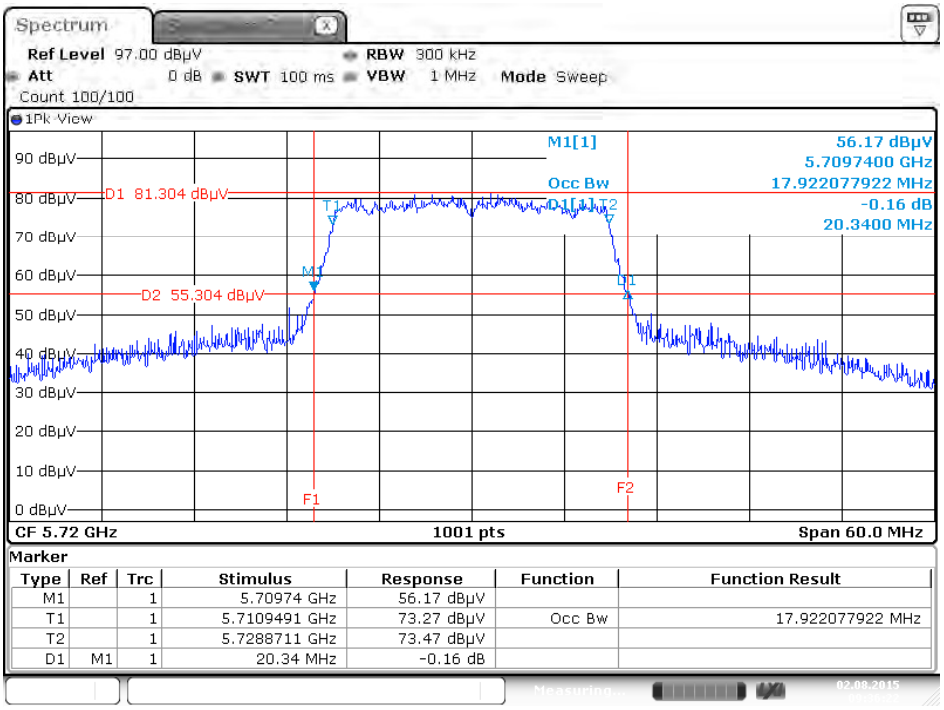
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5775 MHz



Date: 21.AUG.2015 20:26:04

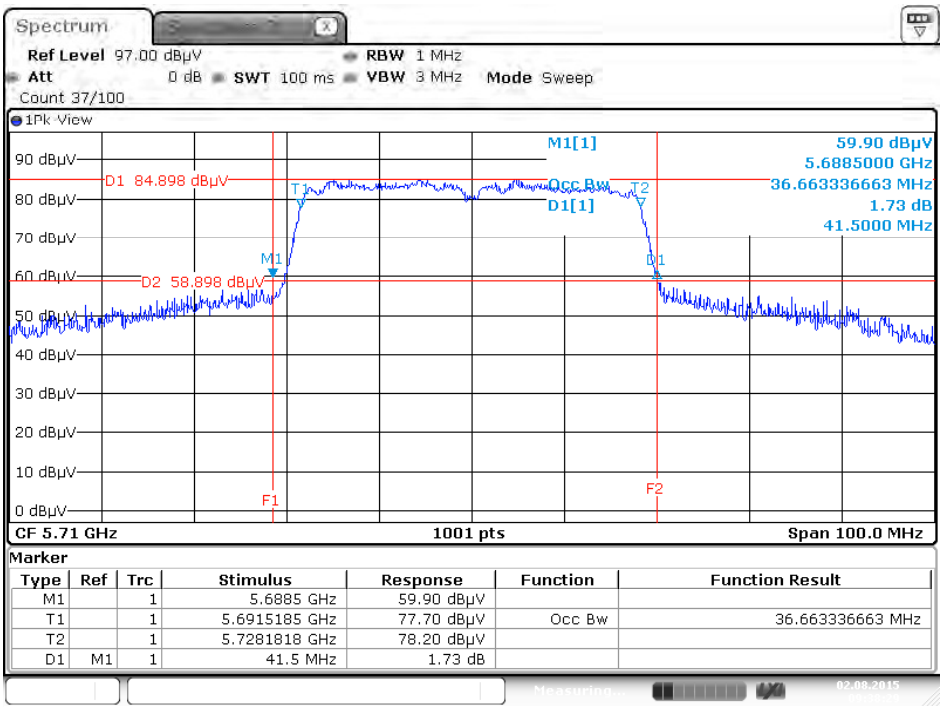
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz



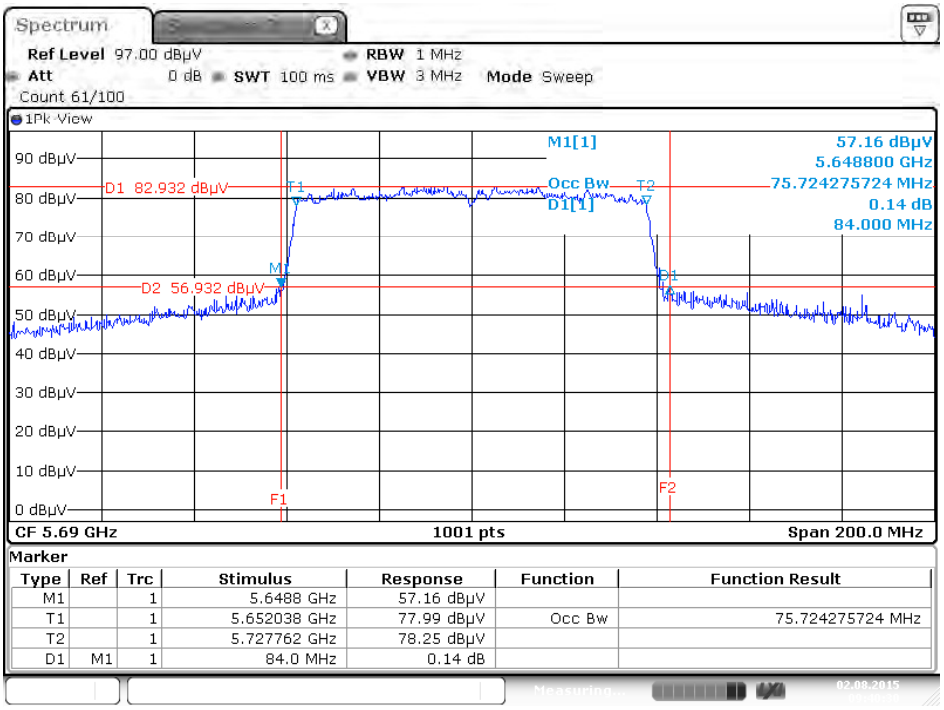
Date: 2.AUG.2015 09:36:22

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz



Date: 2.AUG.2015 09:38:29

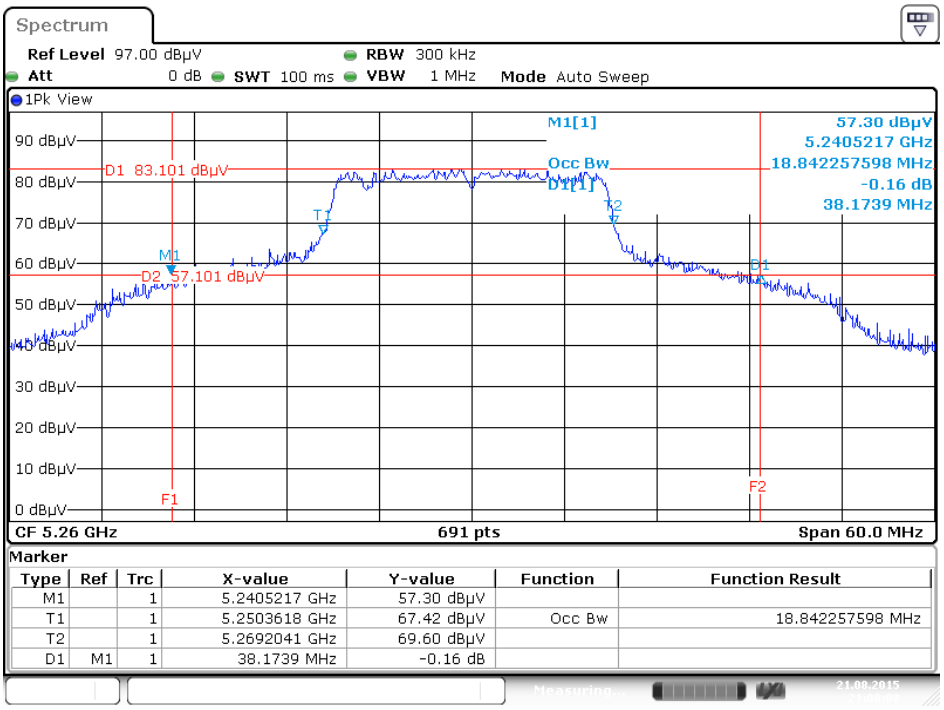
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz



Date: 2.AUG.2015 09:40:30

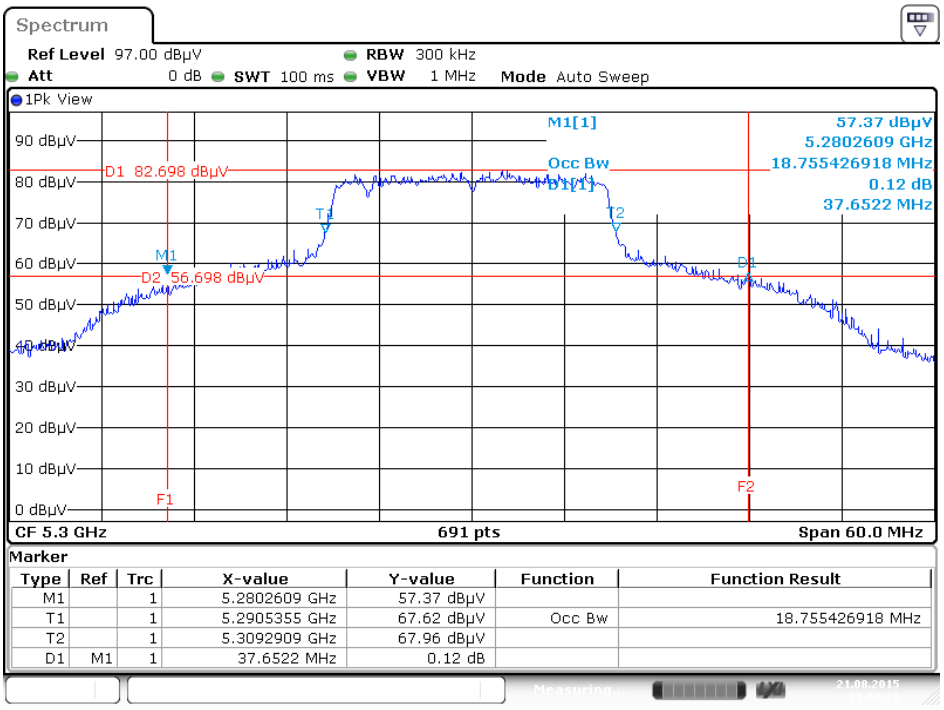
Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5260 MHz



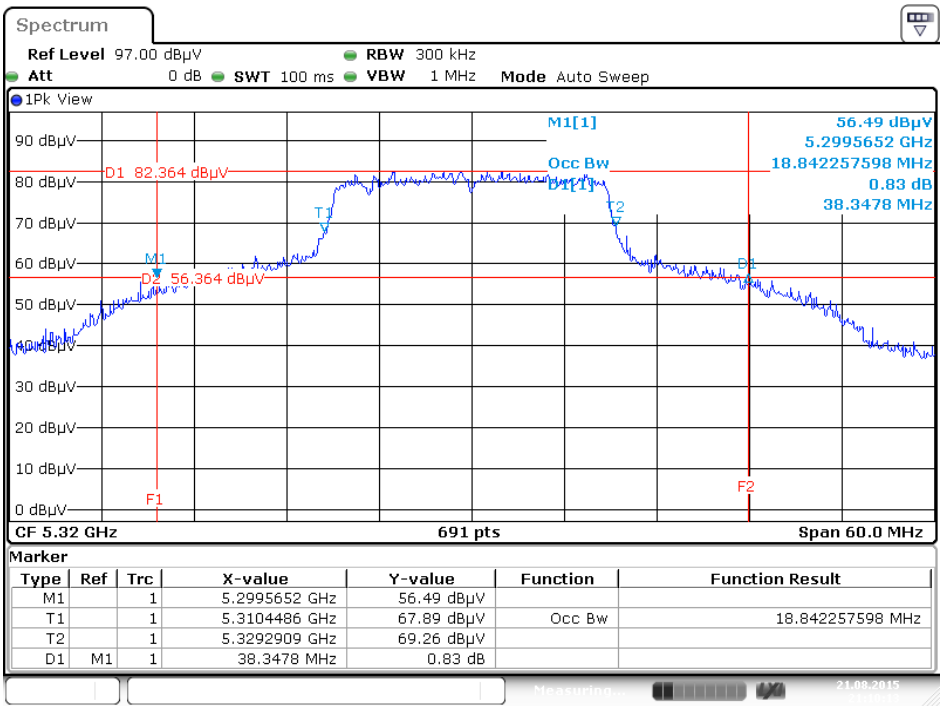
Date: 21.AUG.2015 21:08:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5300 MHz



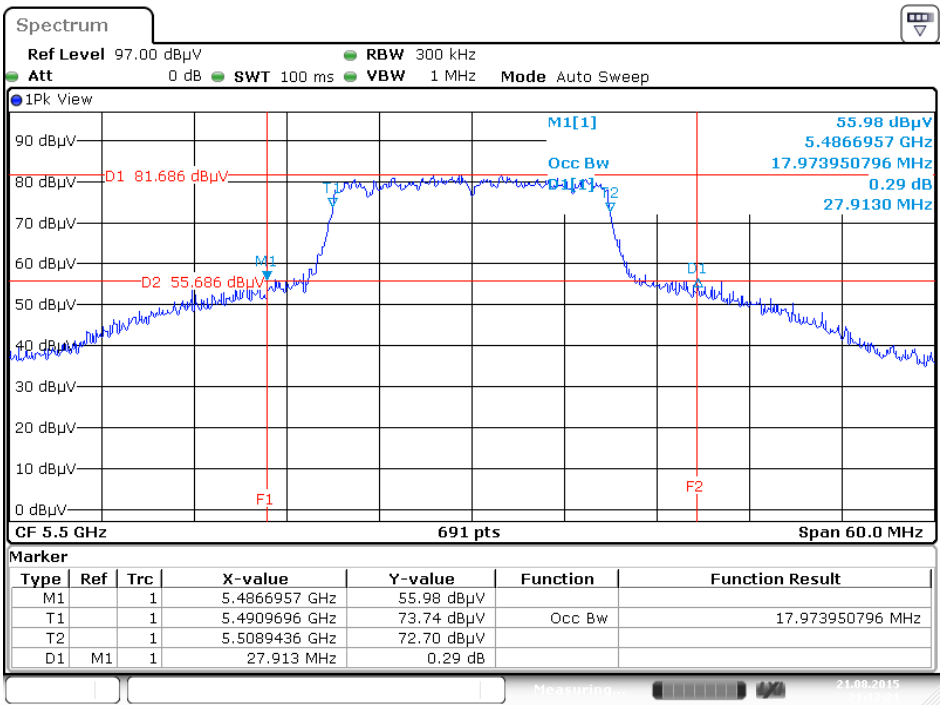
Date: 21.AUG.2015 21:09:25

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5320 MHz



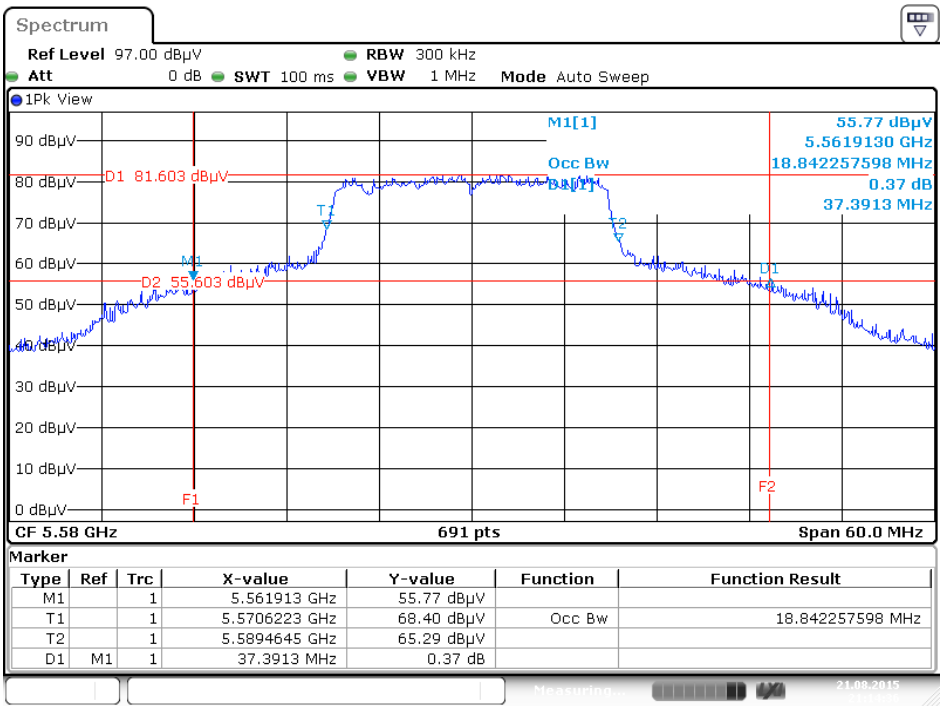
Date: 21.AUG.2015 21:10:14

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5500 MHz



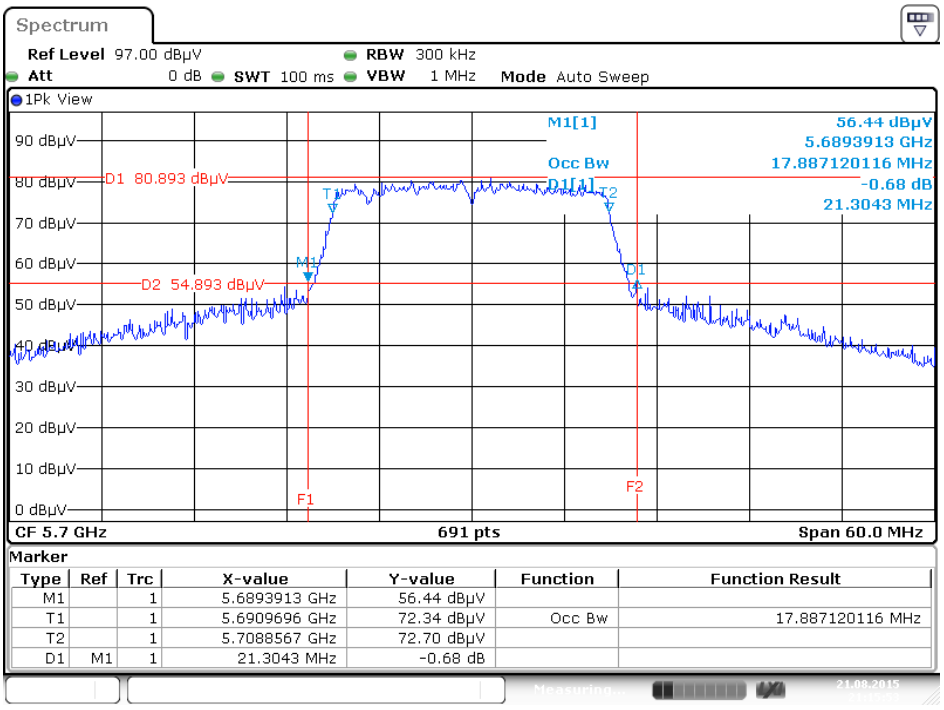
Date: 21.AUG.2015 21:12:21

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5580 MHz



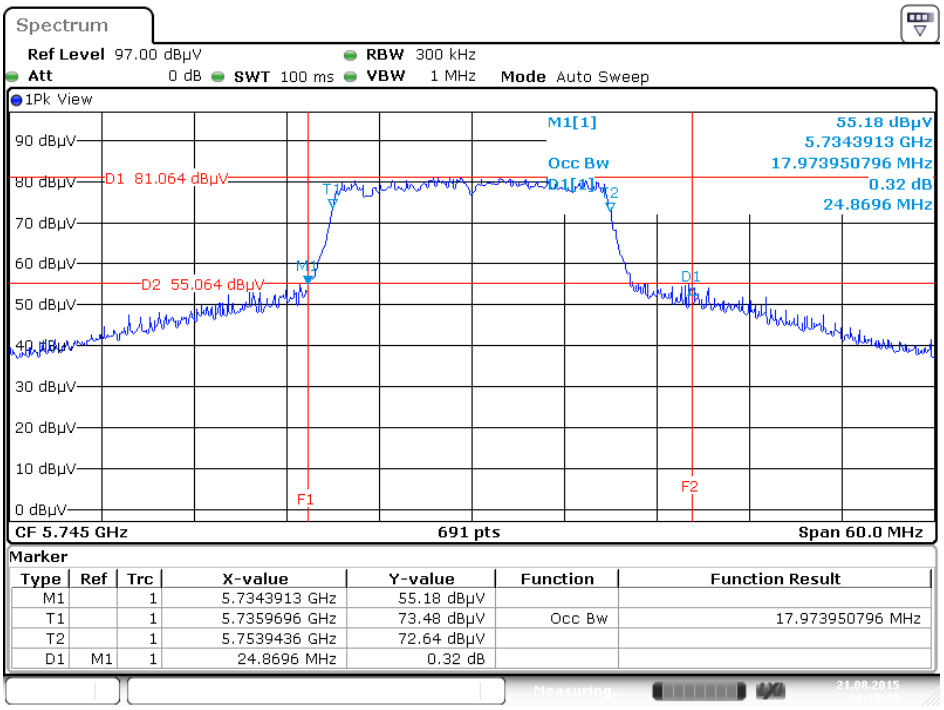
Date: 21.AUG.2015 21:14:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5700 MHz



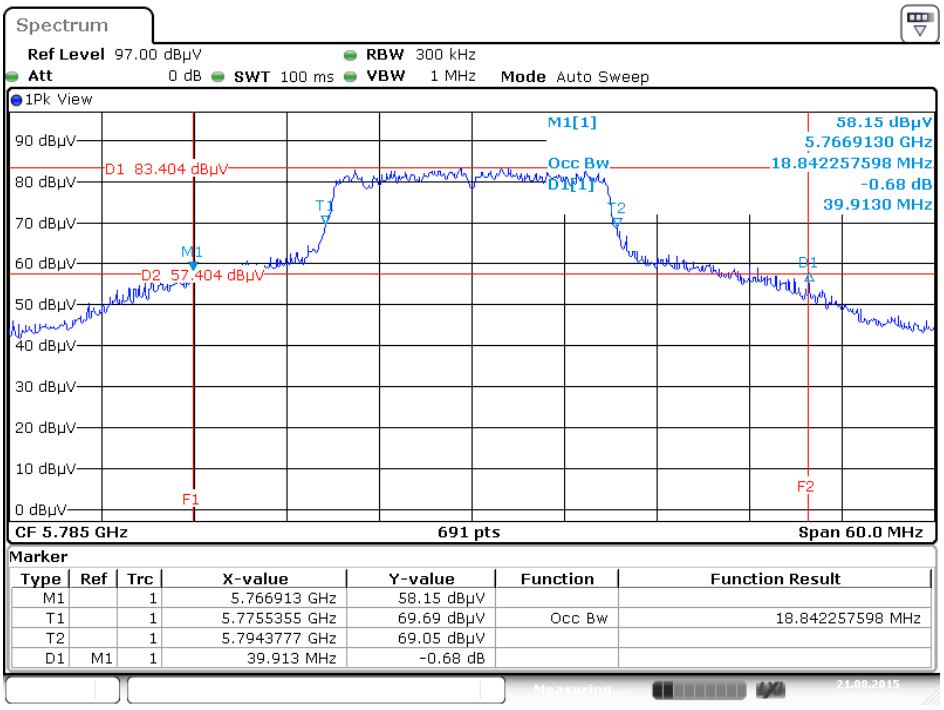
Date: 21.AUG.2015 21:15:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5745 MHz



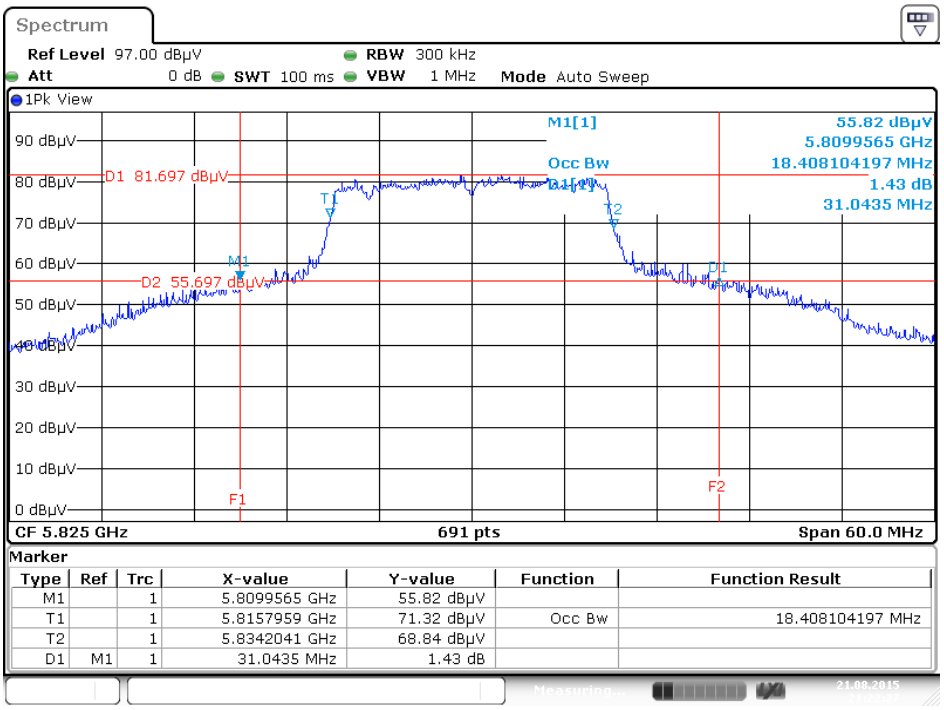
Date: 21.AUG.2015 21:19:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5785 MHz



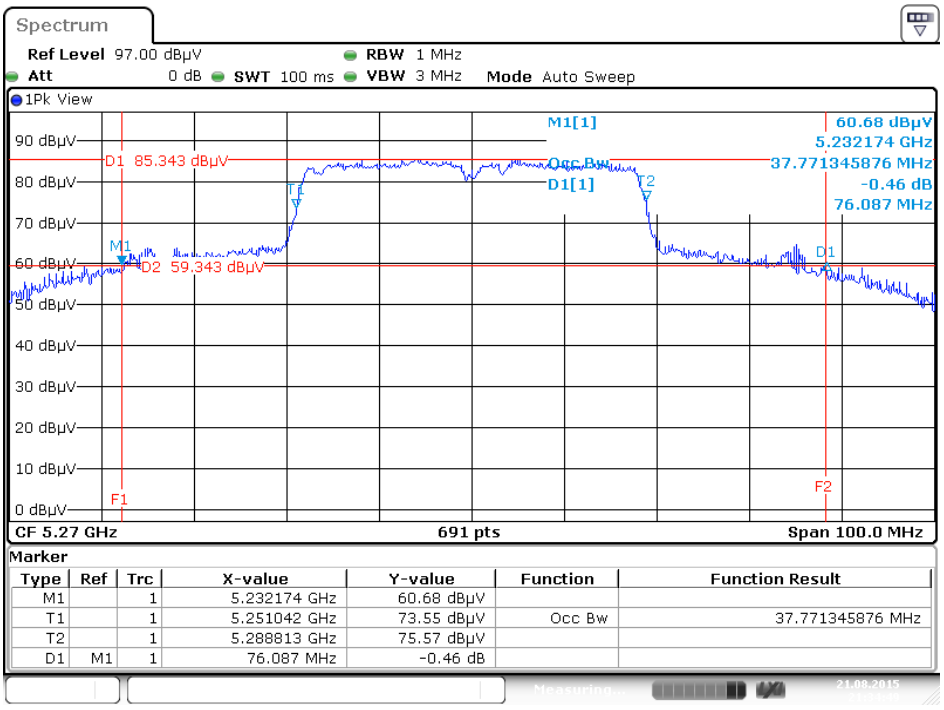
Date: 21.AUG.2015 21:20:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5825 MHz



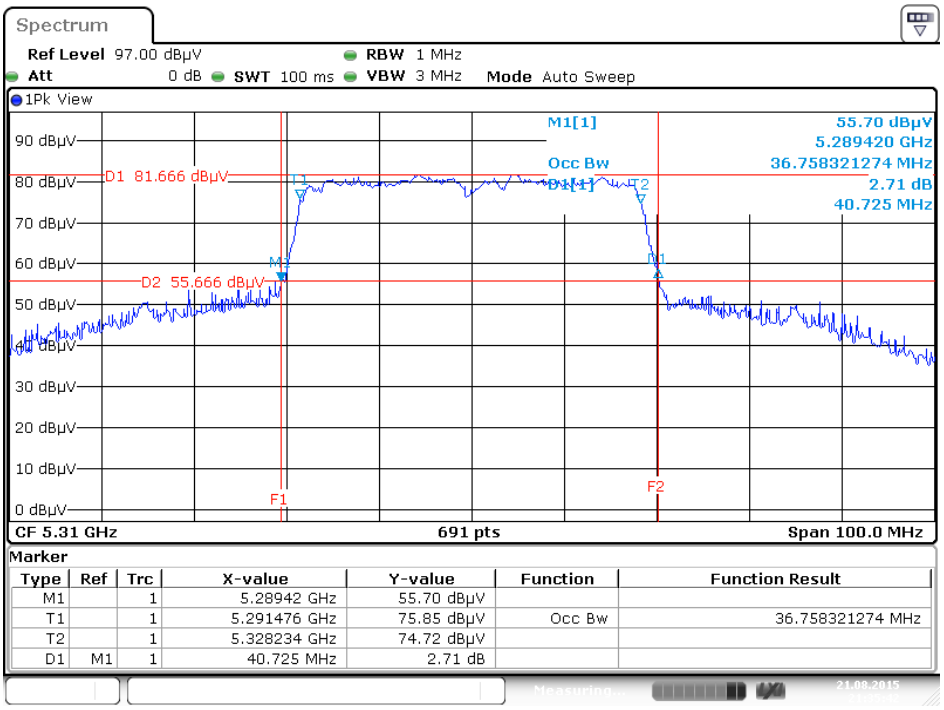
Date: 21.AUG.2015 21:22:28

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5270 MHz



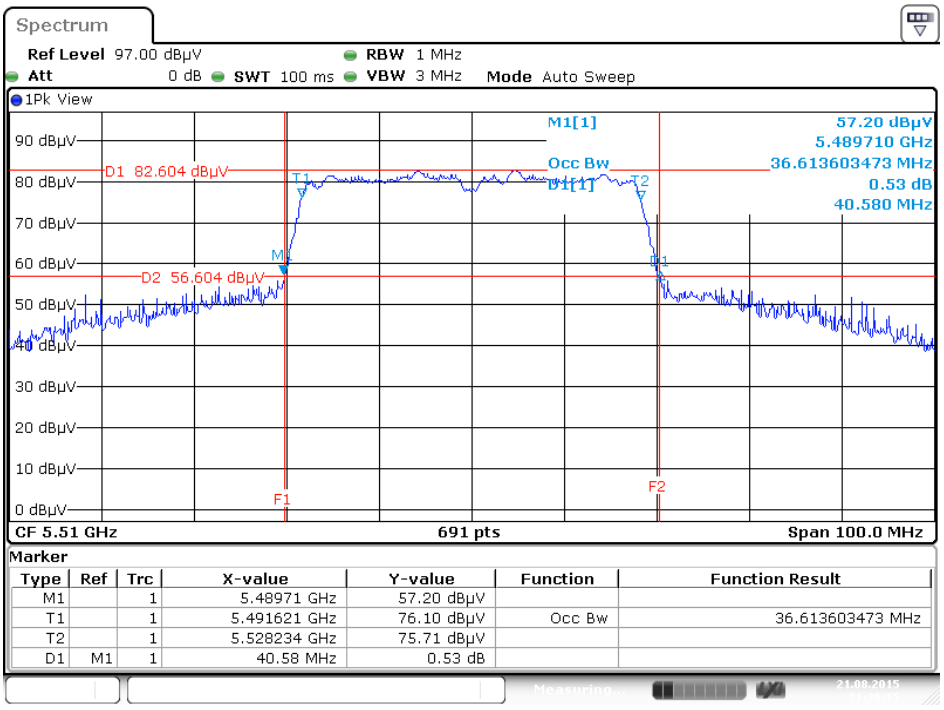
Date: 21.AUG.2015 21:34:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5310 MHz



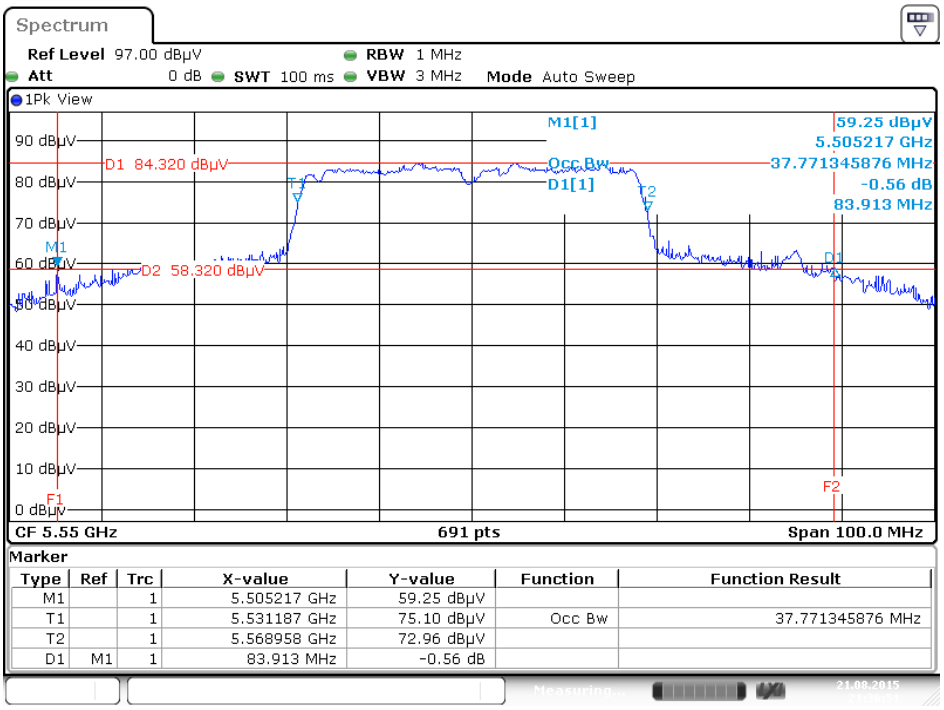
Date: 21.AUG.2015 21:35:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5510 MHz



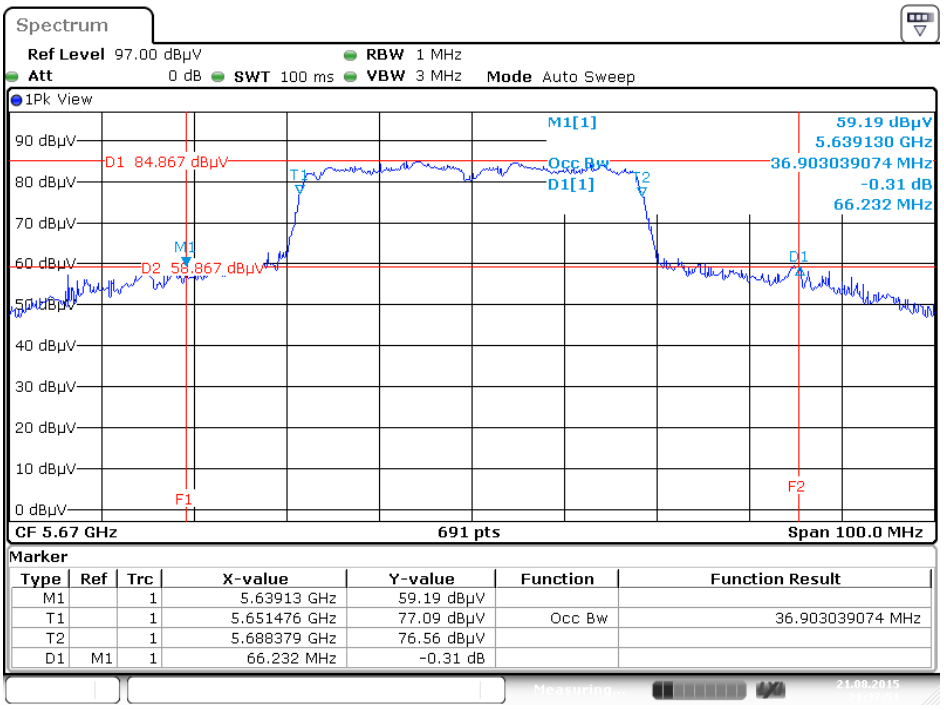
Date: 21.AUG.2015 21:36:15

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5550 MHz



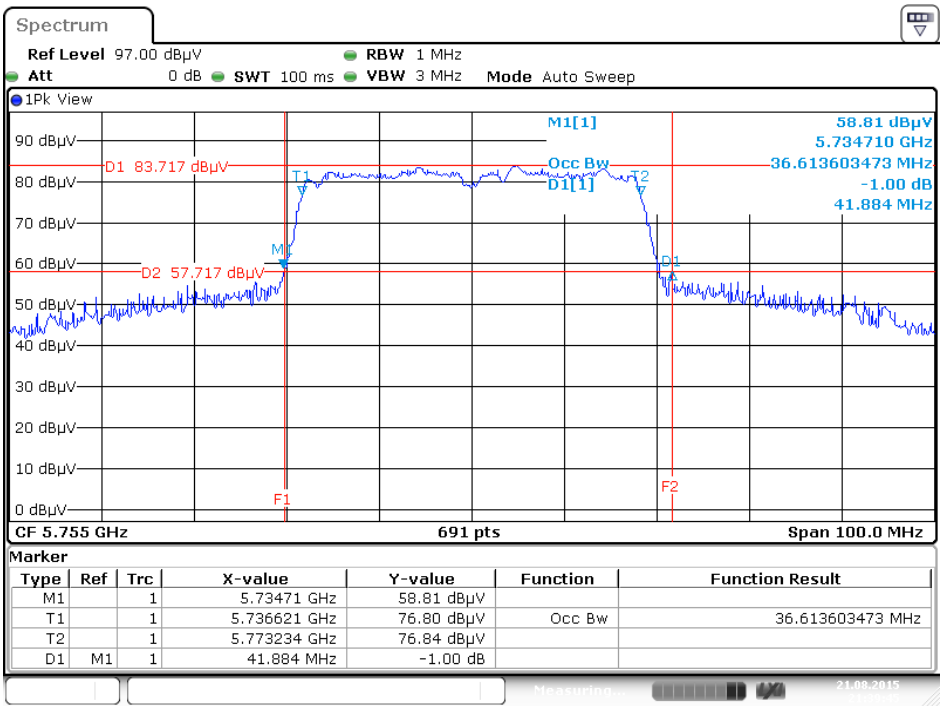
Date: 21.AUG.2015 21:36:51

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5670 MHz



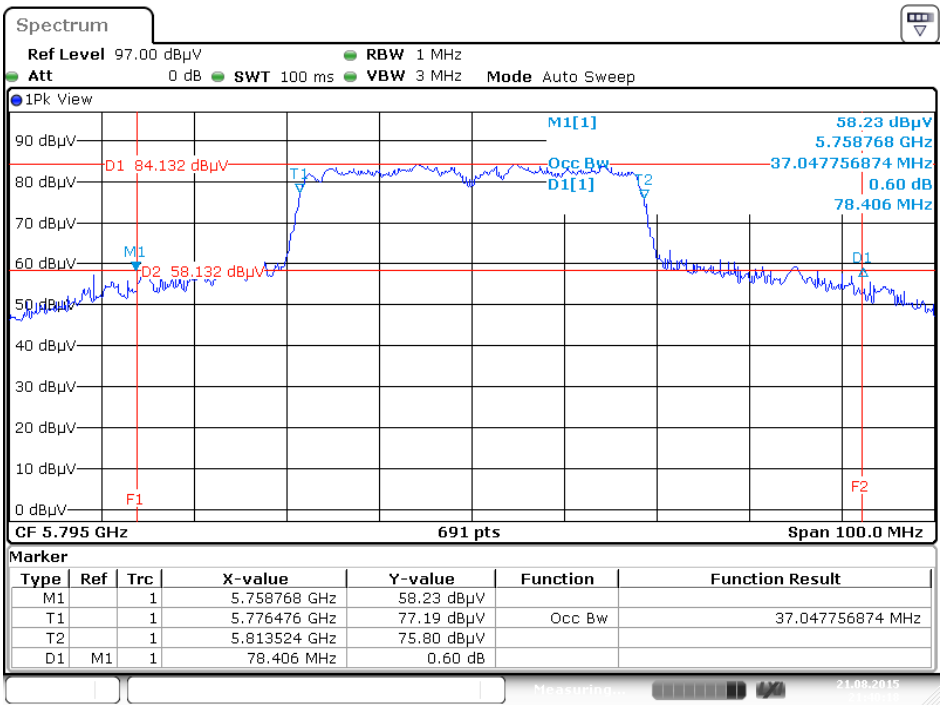
Date: 21.AUG.2015 21:37:51

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5755 MHz



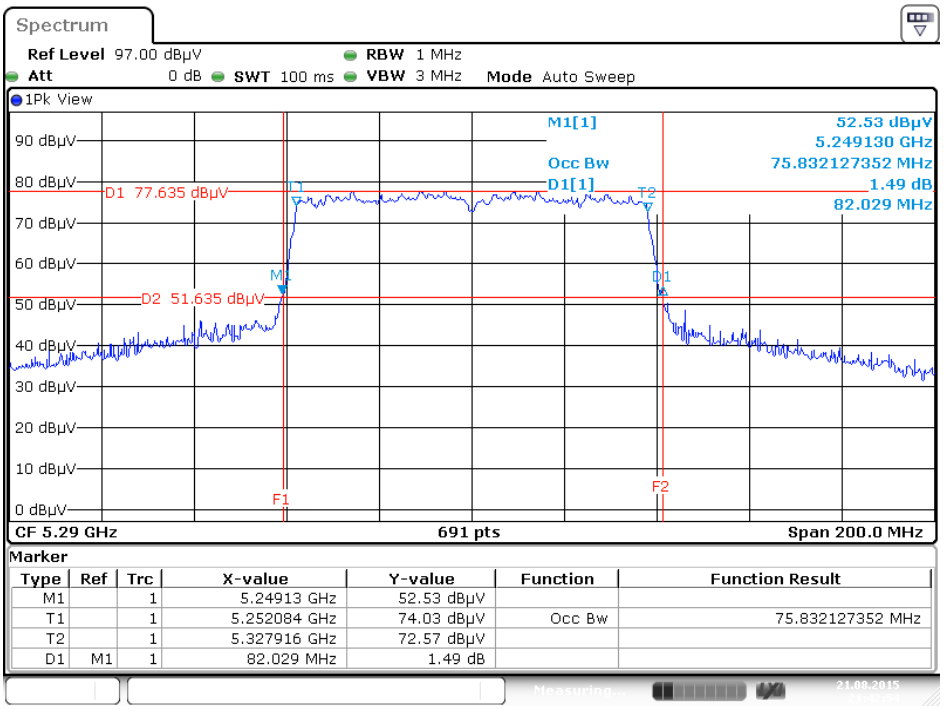
Date: 21.AUG.2015 21:39:44

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5795 MHz



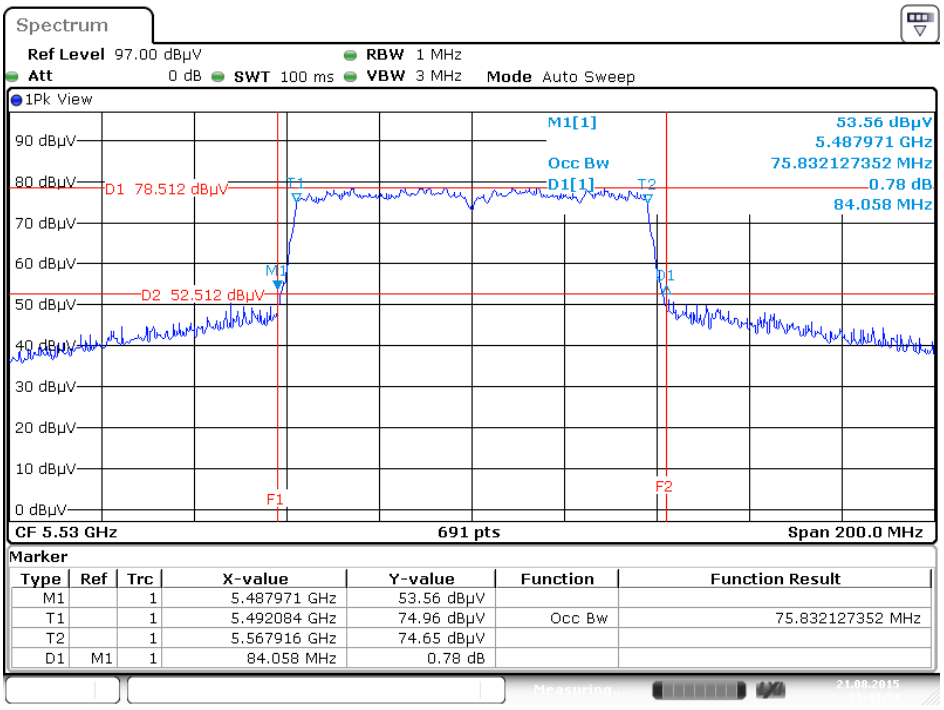
Date: 21.AUG.2015 21:40:18

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5290 MHz



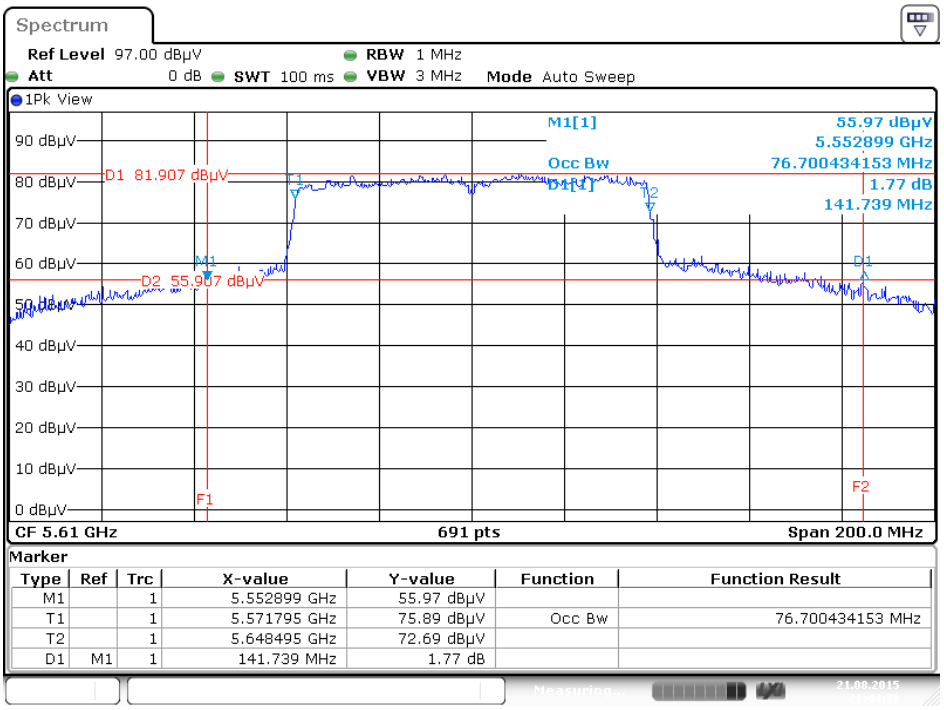
Date: 21.AUG.2015 21:42:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5530 MHz



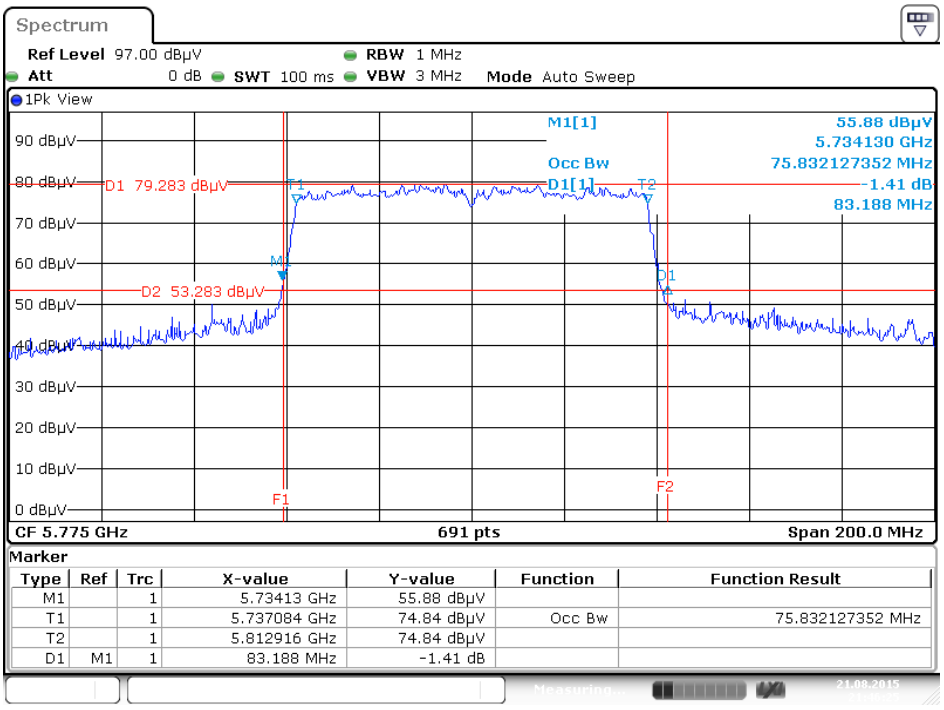
Date: 21.AUG.2015 21:43:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5610 MHz



Date: 21.AUG.2015 21:44:38

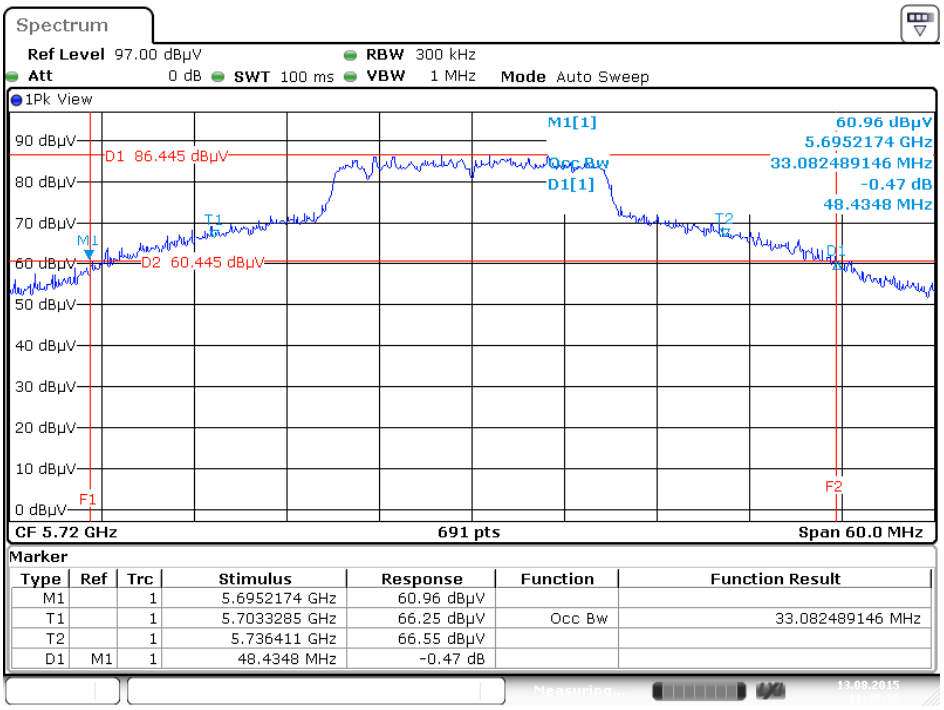
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5775 MHz



Date: 21.AUG.2015 21:46:25

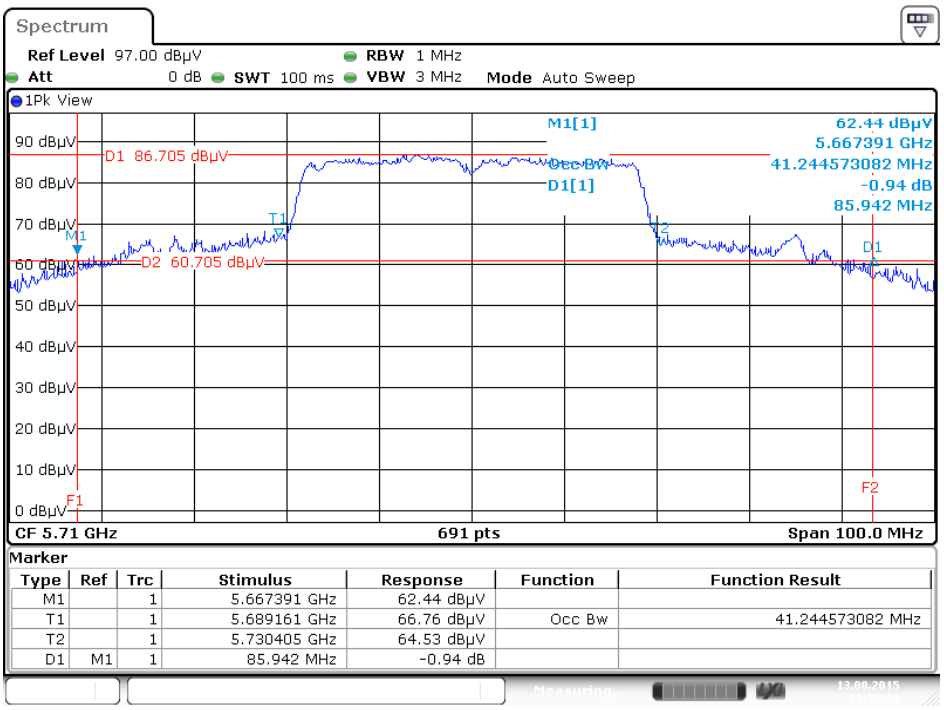
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz



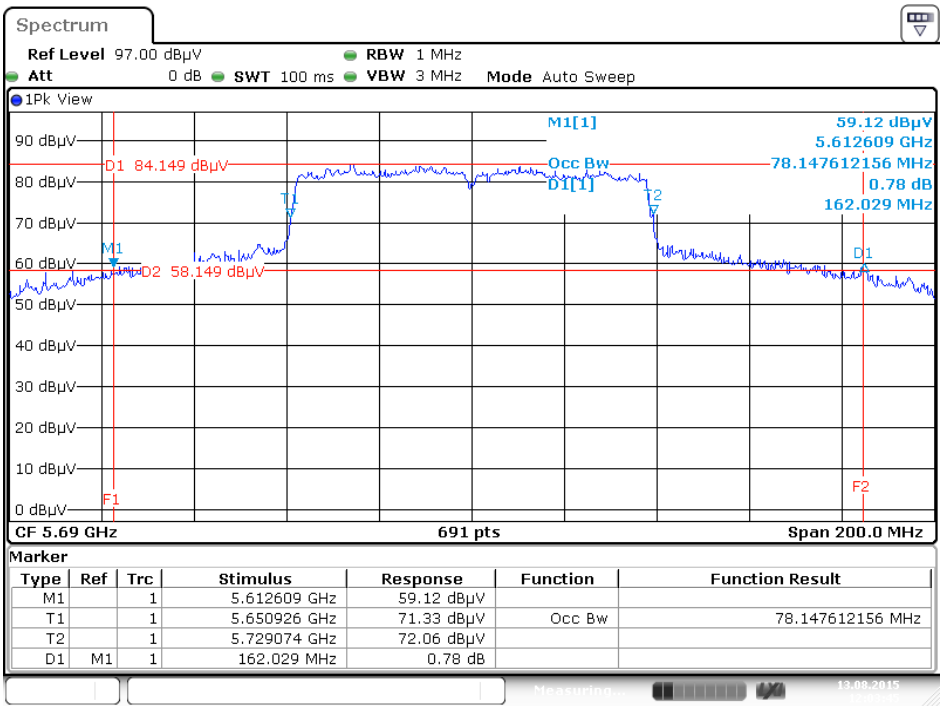
Date: 13.AUG.2015 11:48:50

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz



Date: 13.AUG.2015 11:52:26

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz



Date: 13.AUG.2015 12:03:45

4.3. 6dB Spectrum Bandwidth Measurement

4.3.1. Limit

For digital modulation systems, the minimum 6dB bandwidth shall be at least 500 kHz.

4.3.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer.

6dB Spectrum Bandwidth	
Spectrum Parameters	**Setting**
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RBW	100kHz
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.3.3. Test Procedures

For Radiated 6dB Bandwidth Measurement:

1. The transmitter was radiated to the spectrum analyzer in peak hold mode.
2. Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (C) Emission Bandwidth.
3. Multiple antenna system was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. Measured the spectrum width with power higher than 6dB below carrier.

4.3.4. Test Setup Layout

For Radiated 6dB Bandwidth Measurement:

This test setup layout is the same as that shown in section 4.6.4.

4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of 6dB Spectrum Bandwidth

<For Non-Beamforming Mode>

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai		
Test Mode	Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)		

For indoor / outdoor use

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5745 MHz	17.62	500	Complies
	5785 MHz	17.57	500	Complies
	5825 MHz	17.62	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	36.29	500	Complies
	5795 MHz	36.29	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	76.23	500	Complies

Straddle Channel

Mode	Frequency	6dB BW (MHz)	6dB BW F2 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5720 MHz	17.62	5711.13	3.75	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	36.29	5691.80	3.09	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	76.23	5651.74	2.97	500	Complies

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5745 MHz	17.62	500	Complies
	5785 MHz	17.57	500	Complies
	5825 MHz	17.62	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	36.29	500	Complies
	5795 MHz	36.29	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	76.23	500	Complies

Straddle Channel

Mode	Frequency	6dB BW (MHz)	6dB BW F2 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5720 MHz	17.62	5711.13	3.75	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	36.29	5691.80	3.09	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	76.52	5651.74	3.26	500	Complies

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5745 MHz	17.62	500	Complies
	5785 MHz	17.51	500	Complies
	5825 MHz	17.62	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	36.29	500	Complies
	5795 MHz	36.06	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	76.23	500	Complies

Straddle Channel

Mode	Frequency	6dB BW (MHz)	6dB BW F2 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5720 MHz	17.62	5711.13	3.75	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	36.29	5691.80	3.09	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	75.94	5651.74	2.68	500	Complies

<For STBC Mode>

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai		
Test Mode	Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)		

For indoor / outdoor use

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5745 MHz	17.51	500	Complies
	5785 MHz	17.57	500	Complies
	5825 MHz	17.57	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	35.48	500	Complies
	5795 MHz	35.71	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	75.36	500	Complies

Straddle Channel

Mode	Frequency	6dB BW (MHz)	6dB BW F2 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5720 MHz	16.64	5712.06	3.70	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	35.36	5692.49	2.86	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	75.94	5651.74	2.68	500	Complies

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5745 MHz	17.62	500	Complies
	5785 MHz	17.51	500	Complies
	5825 MHz	17.00	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	35.48	500	Complies
	5795 MHz	35.48	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	75.36	500	Complies

Straddle Channel

Mode	Frequency	6dB BW (MHz)	6dB BW F2 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5720 MHz	17.62	5711.13	3.75	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	35.48	5692.38	2.86	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	75.36	5652.03	2.39	500	Complies

Temperature	23℃	Humidity	61%
Test Engineer	Nick Peng		
Test Mode	Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5745 MHz	17.57	500	Complies
	5785 MHz	17.62	500	Complies
	5825 MHz	17.51	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	35.01	500	Complies
	5795 MHz	35.13	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	75.07	500	Complies

Straddle Channel

Mode	Frequency	6dB BW (MHz)	6dB BW F2 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5720 MHz	16.12	5712.17	3.29	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	35.13	5692.38	2.51	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	75.36	5652.32	2.68	500	Complies

Note: All the test values were listed in the report.

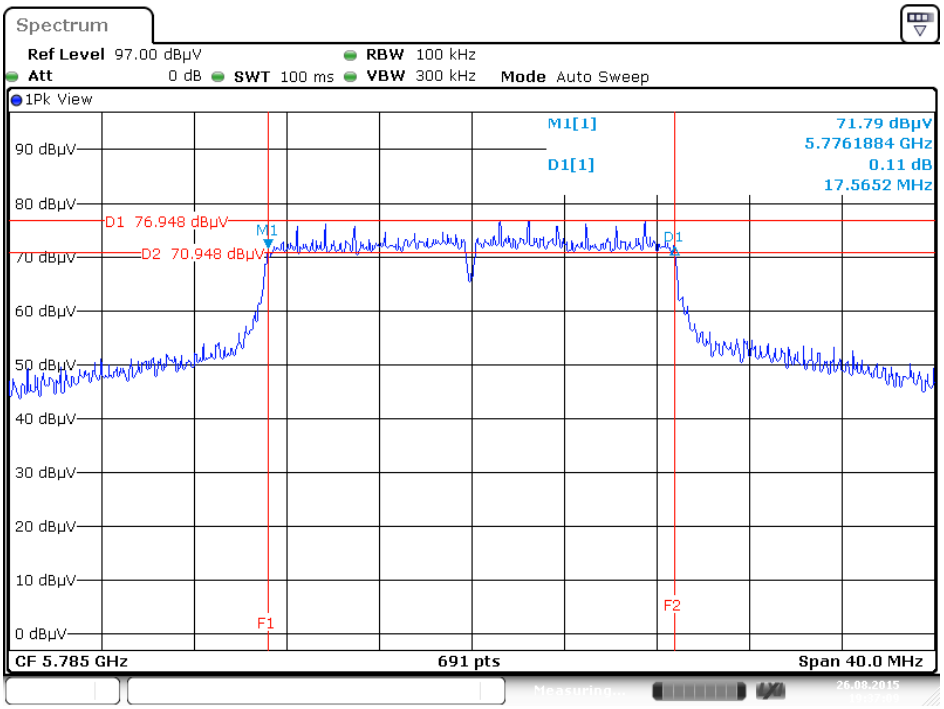
For plots, only the channel with worse result was shown.

<For Non-Beamforming Mode>

For indoor / outdoor use

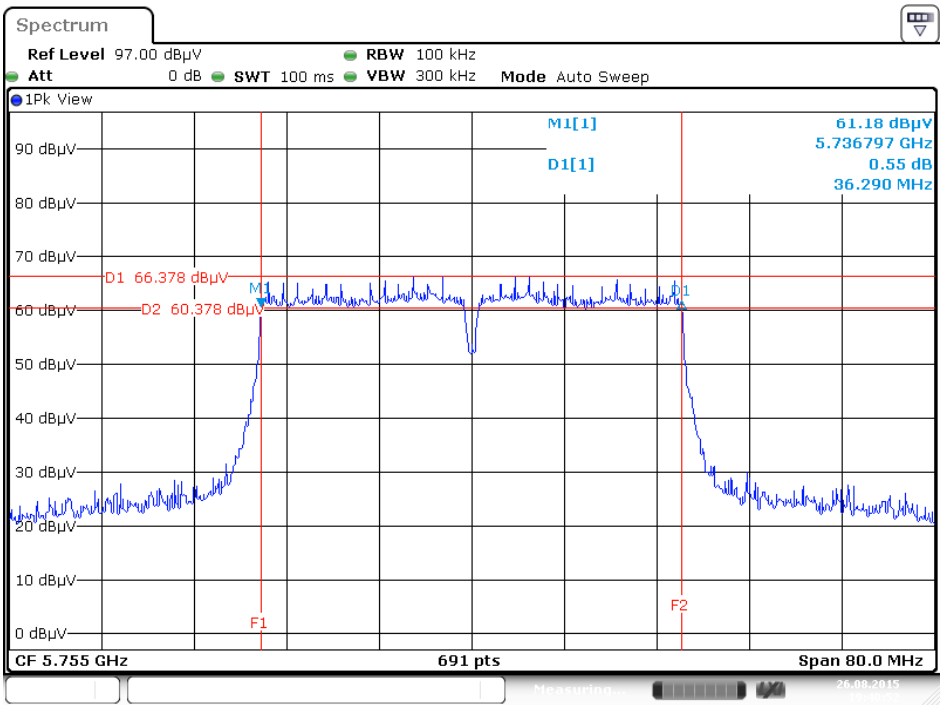
Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5785 MHz



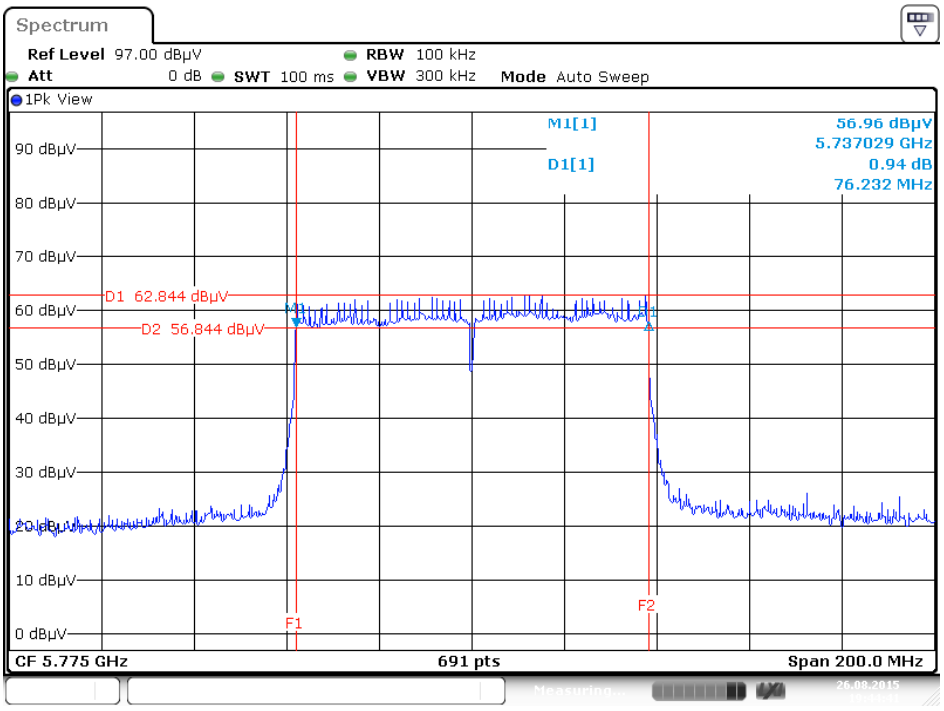
Date: 26.AUG.2015 19:37:09

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5755MHz



Date: 26.AUG.2015 19:40:52

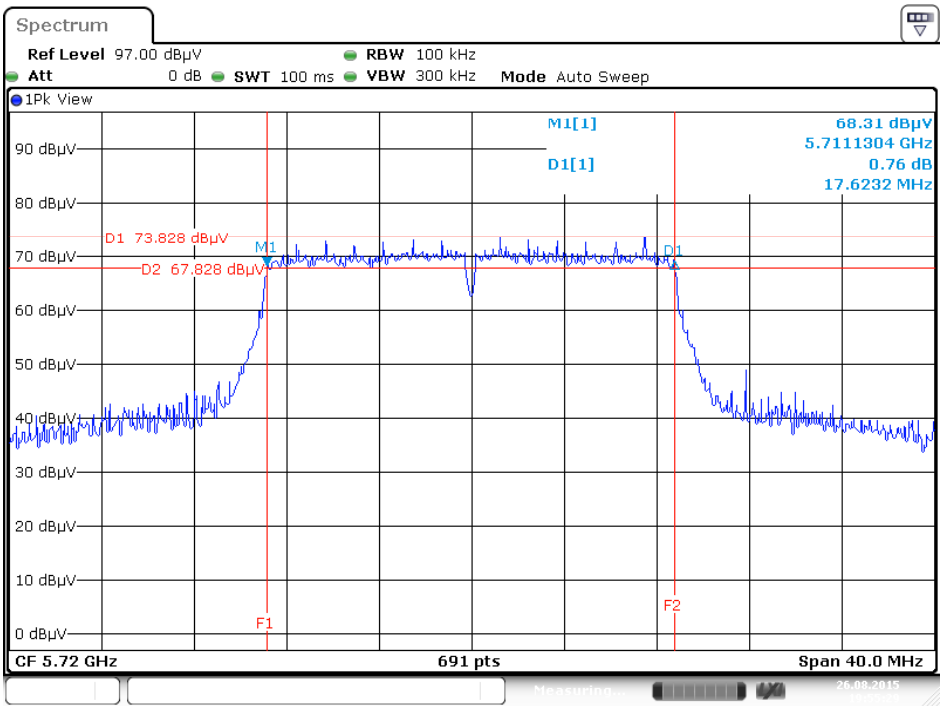
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5775 MHz



Date: 26.AUG.2015 19:44:42

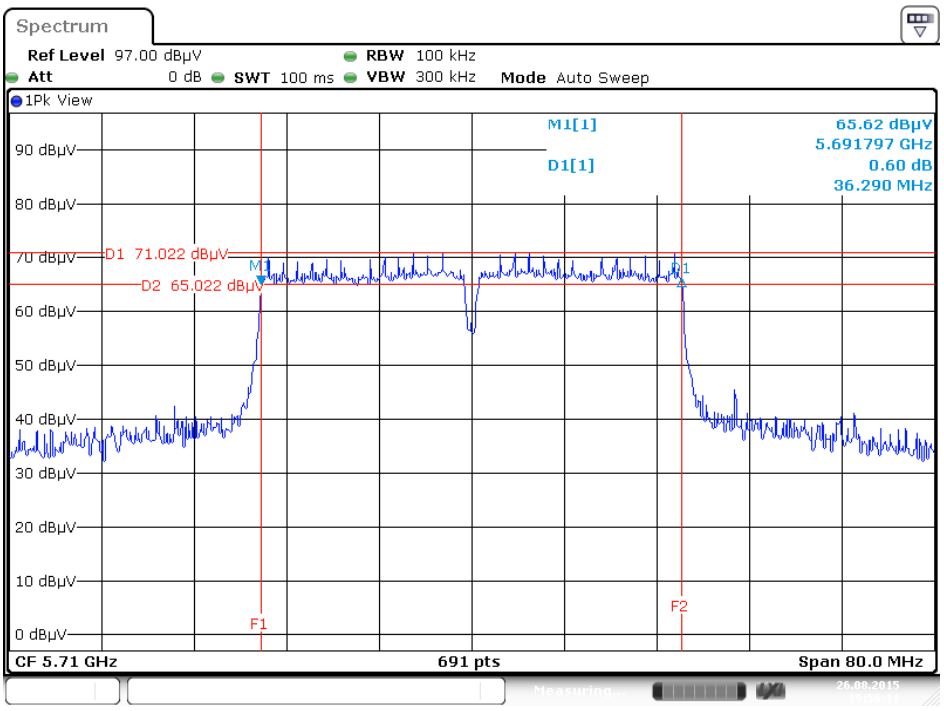
Straddle Channel

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5720 MHz



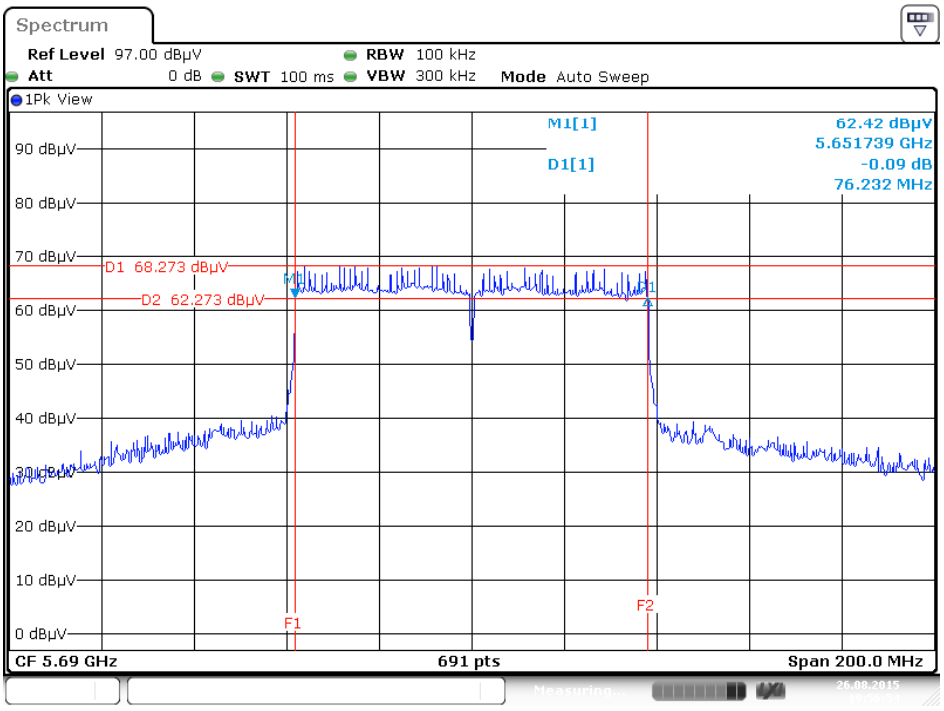
Date: 26.AUG.2015 19:55:30

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5710 MHz



Date: 26.AUG.2015 19:56:12

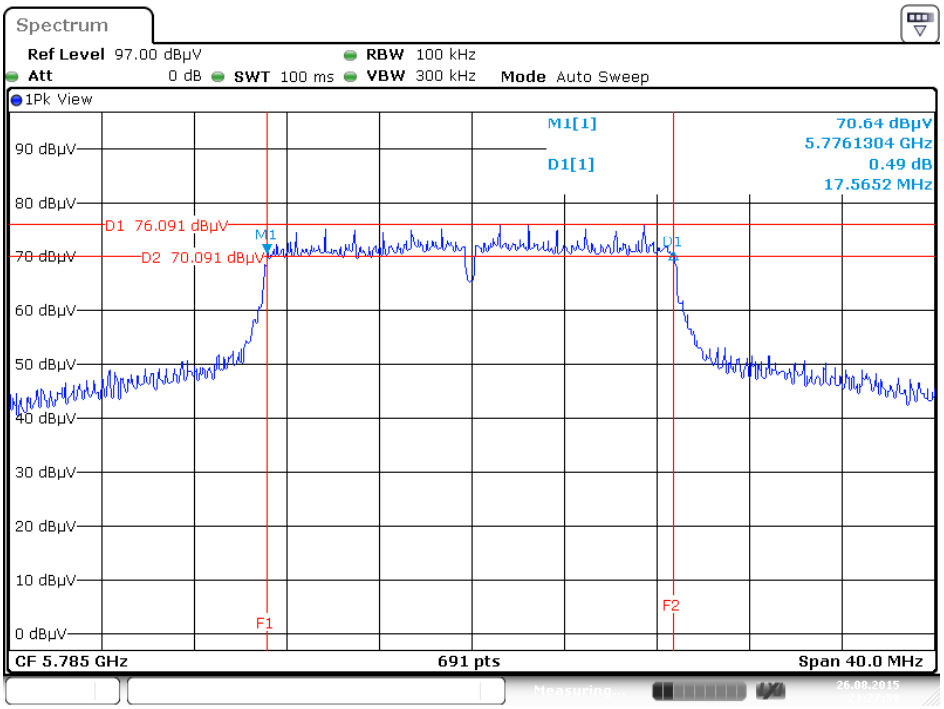
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5690 MHz



Date: 26.AUG.2015 19:56:53

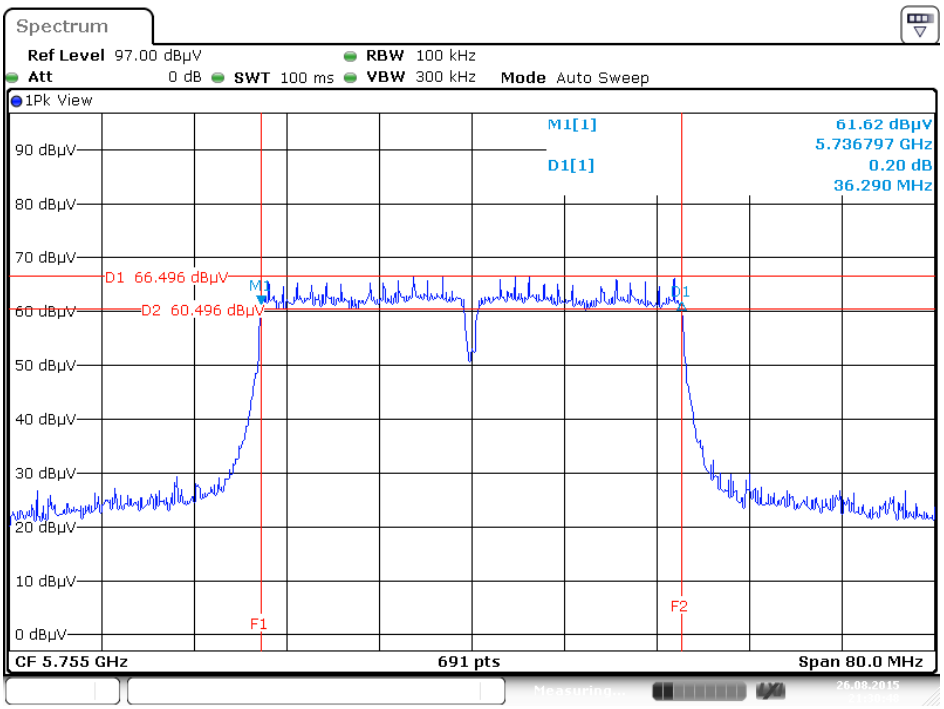
Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 1TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5785 MHz



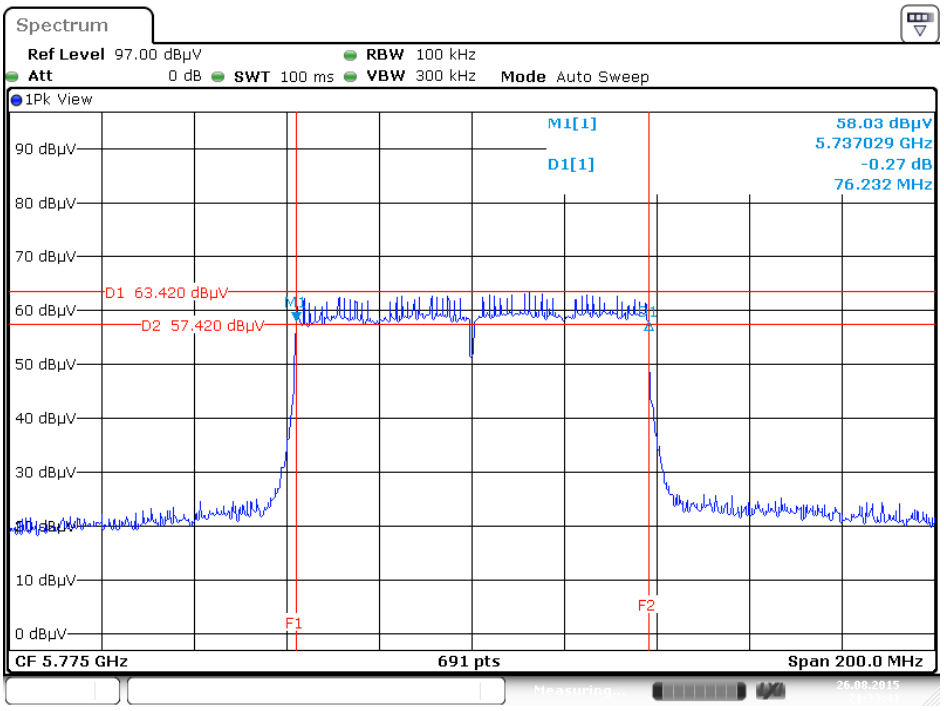
Date: 26.AUG.2015 21:28:00

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5755MHz



Date: 26.AUG.2015 21:30:49

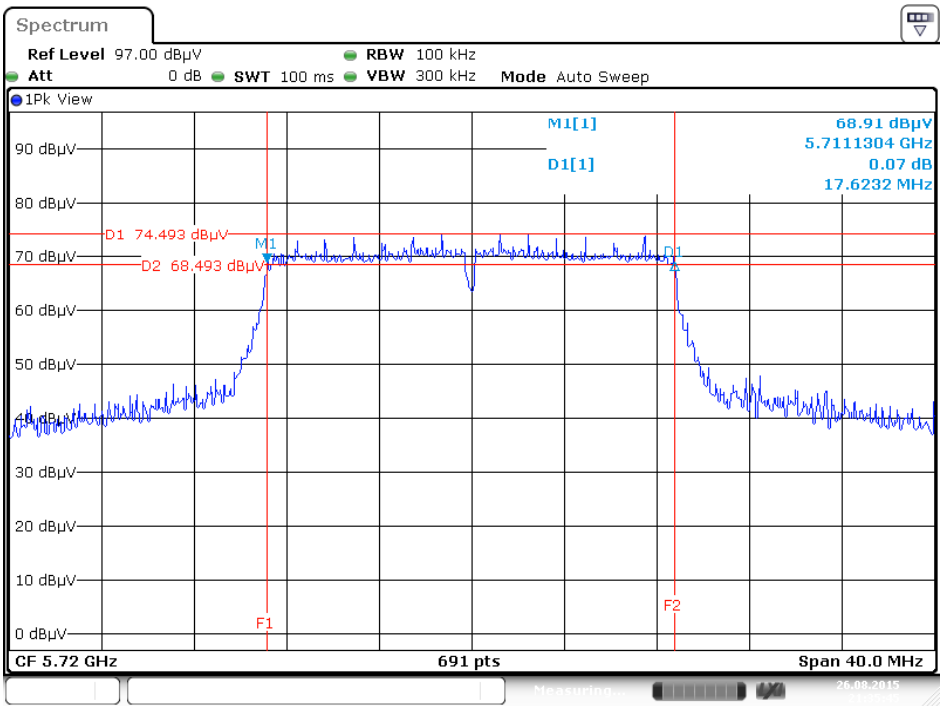
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5775 MHz



Date: 26.AUG.2015 21:33:41

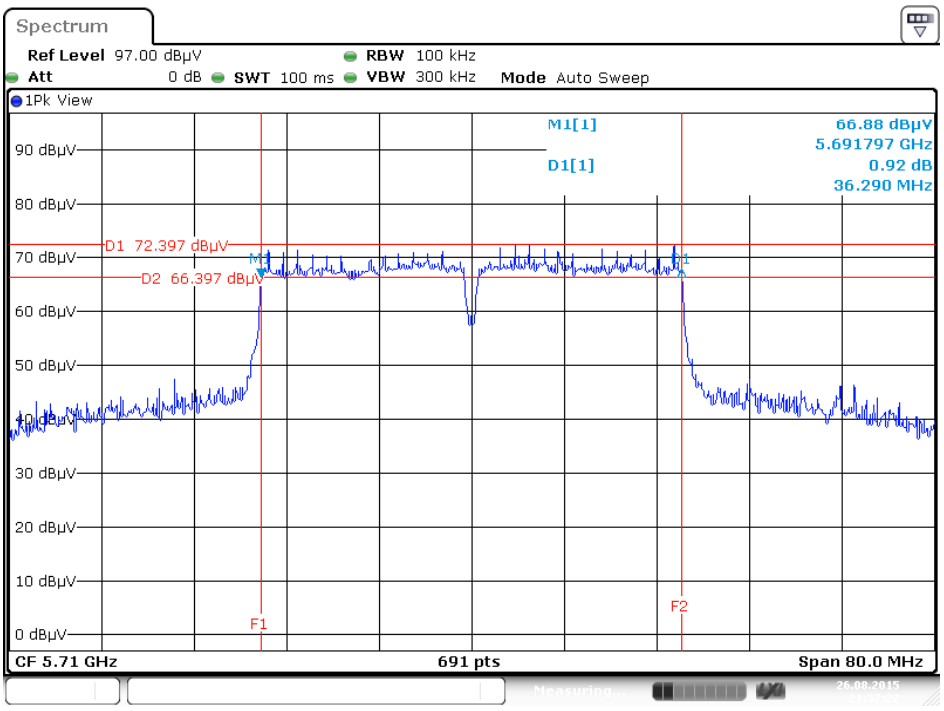
Straddle Channel

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5720 MHz



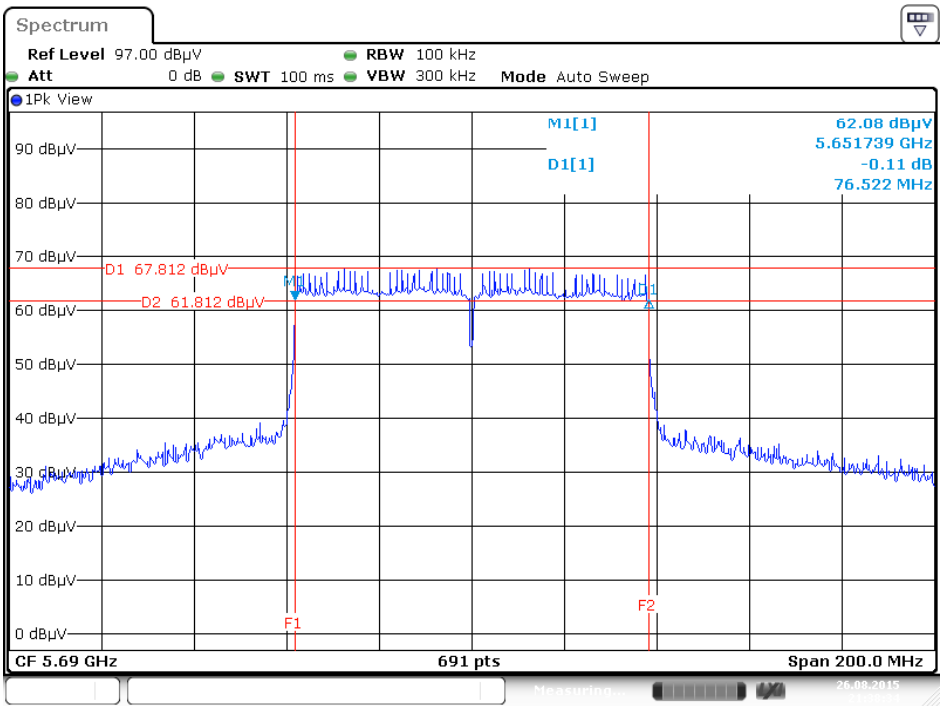
Date: 26.AUG.2015 21:35:46

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5710 MHz



Date: 26.AUG.2015 21:37:22

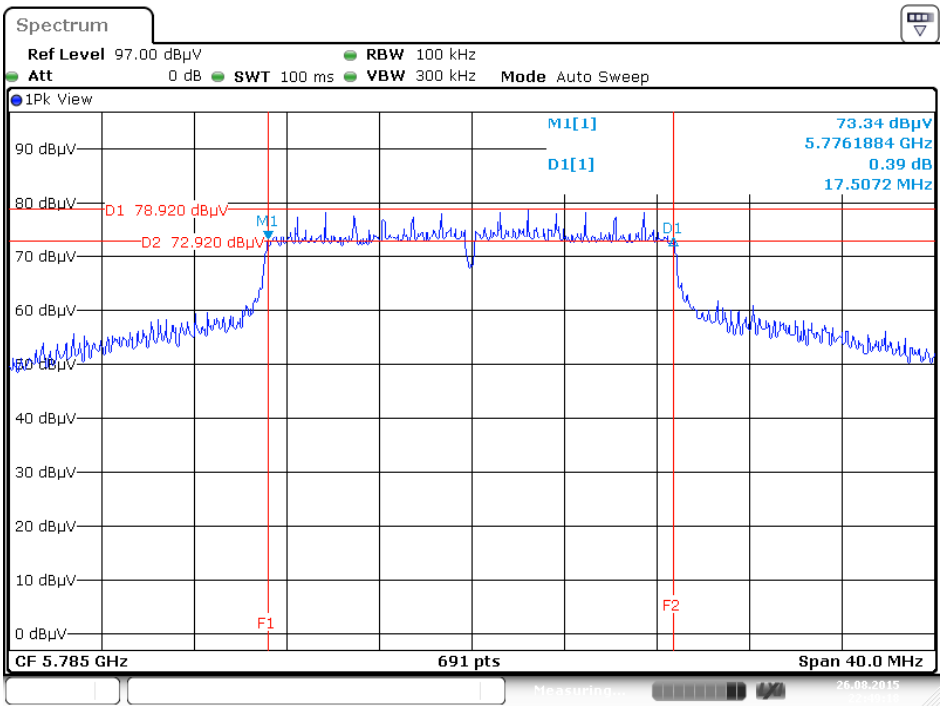
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5690 MHz



Date: 26.AUG.2015 21:38:34

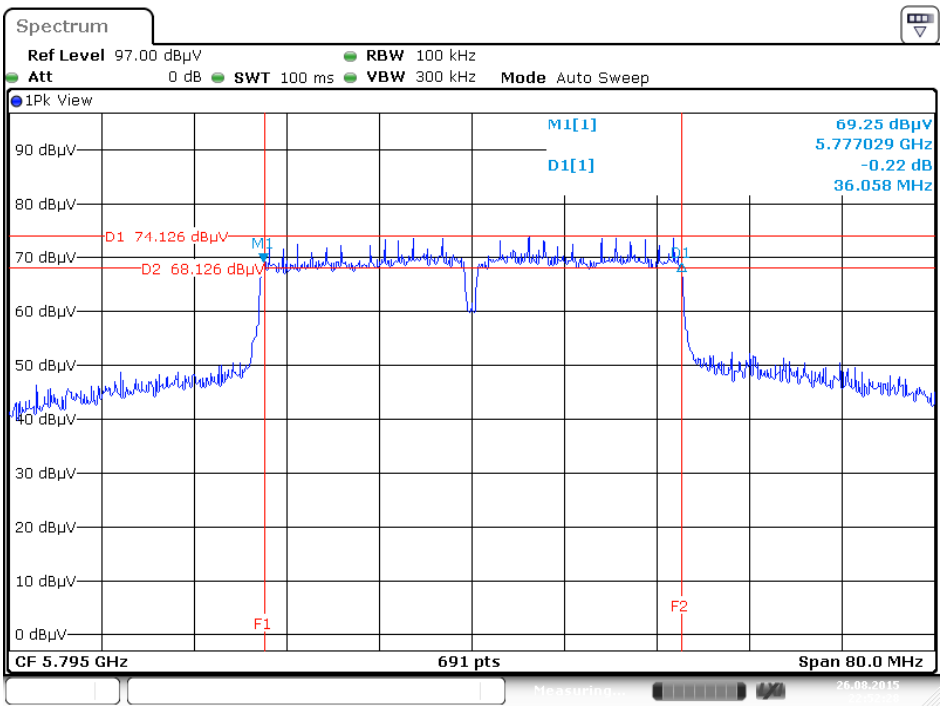
Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 1TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5785 MHz



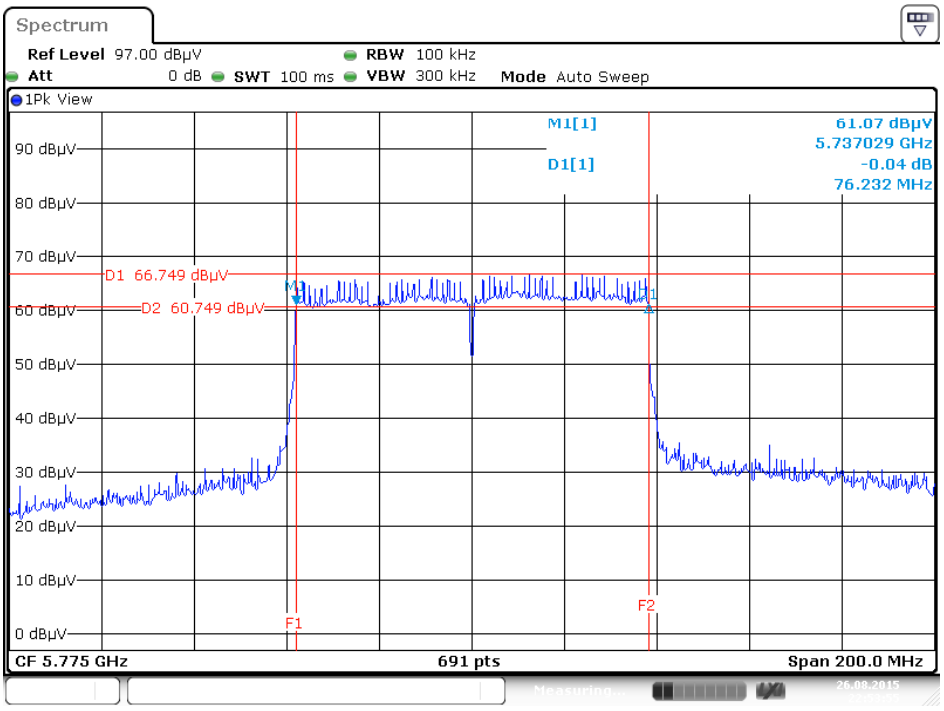
Date: 26.AUG.2015 22:49:19

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5795MHz



Date: 26.AUG.2015 22:52:28

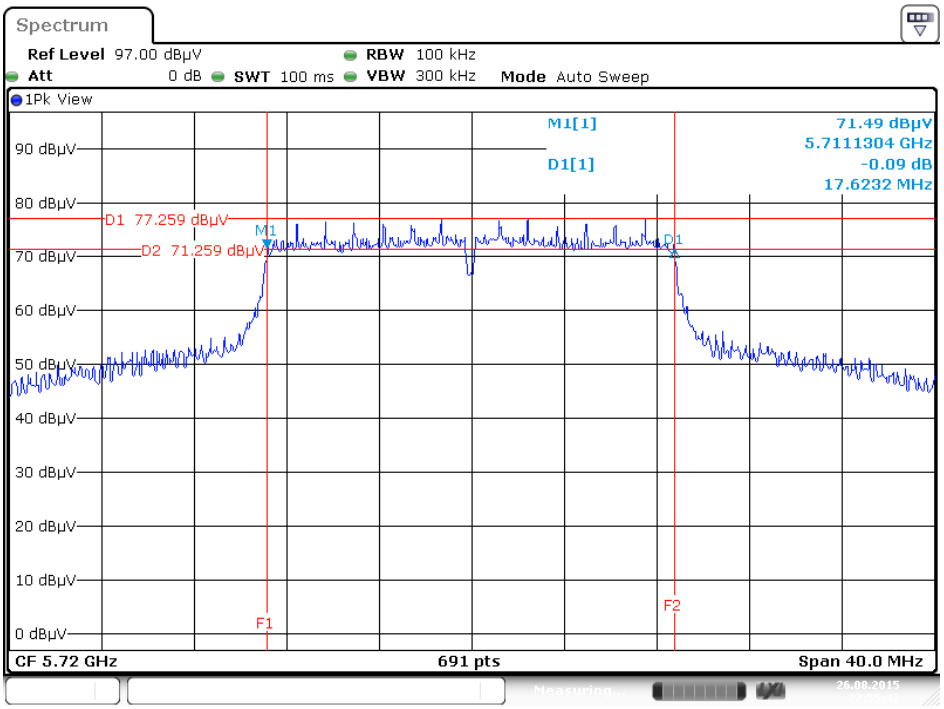
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5775 MHz



Date: 26.AUG.2015 22:53:55

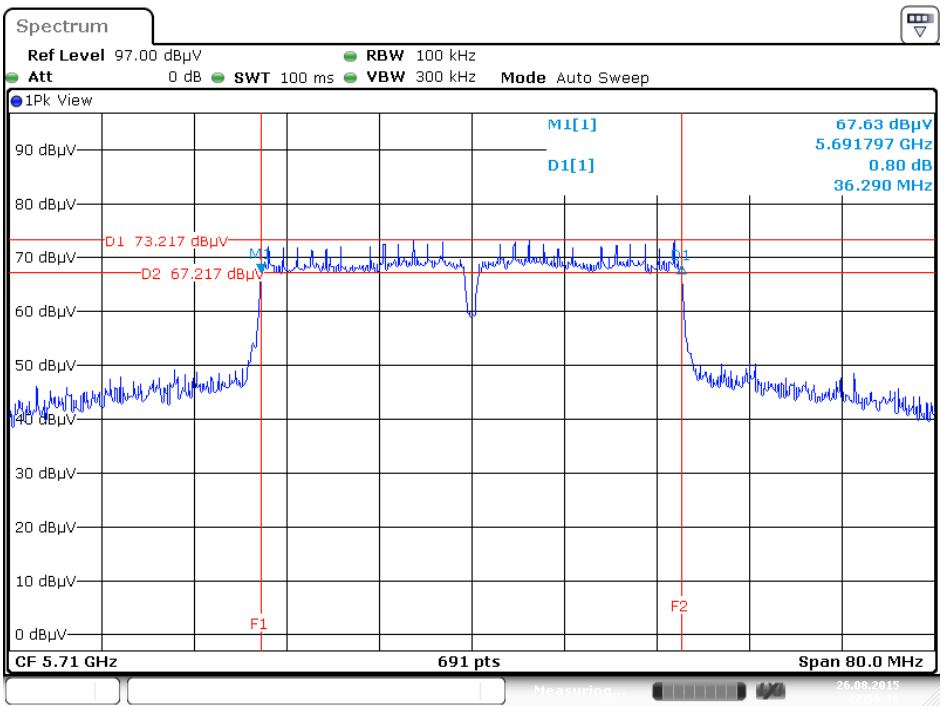
Straddle Channel

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5720 MHz



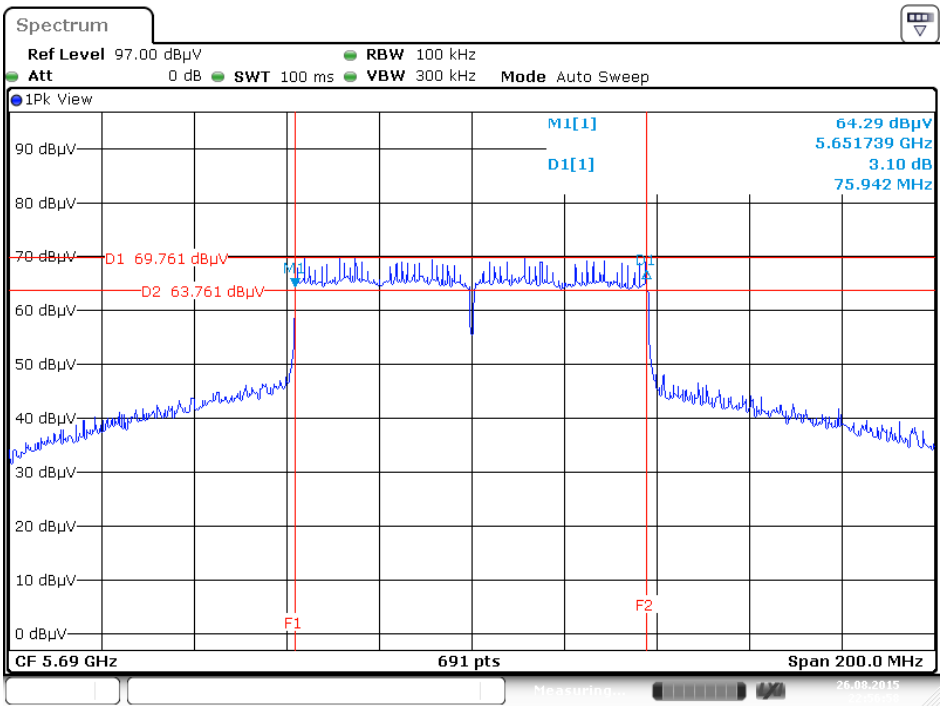
Date: 26.AUG.2015 22:55:42

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5710 MHz



Date: 26.AUG.2015 22:56:16

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5690 MHz

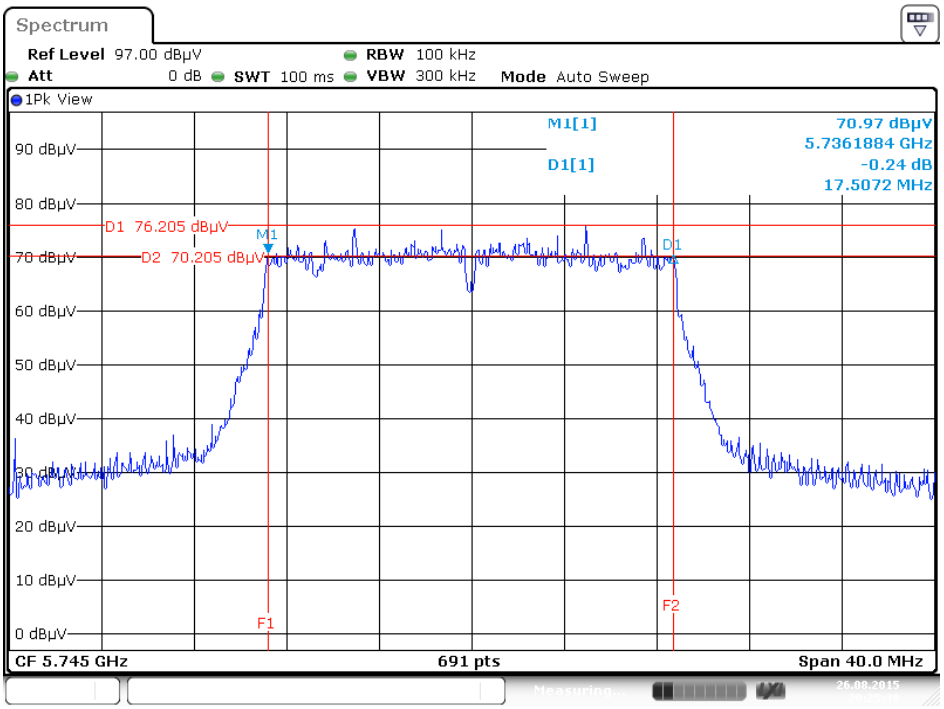


<For STBC Mode>

For indoor / outdoor use

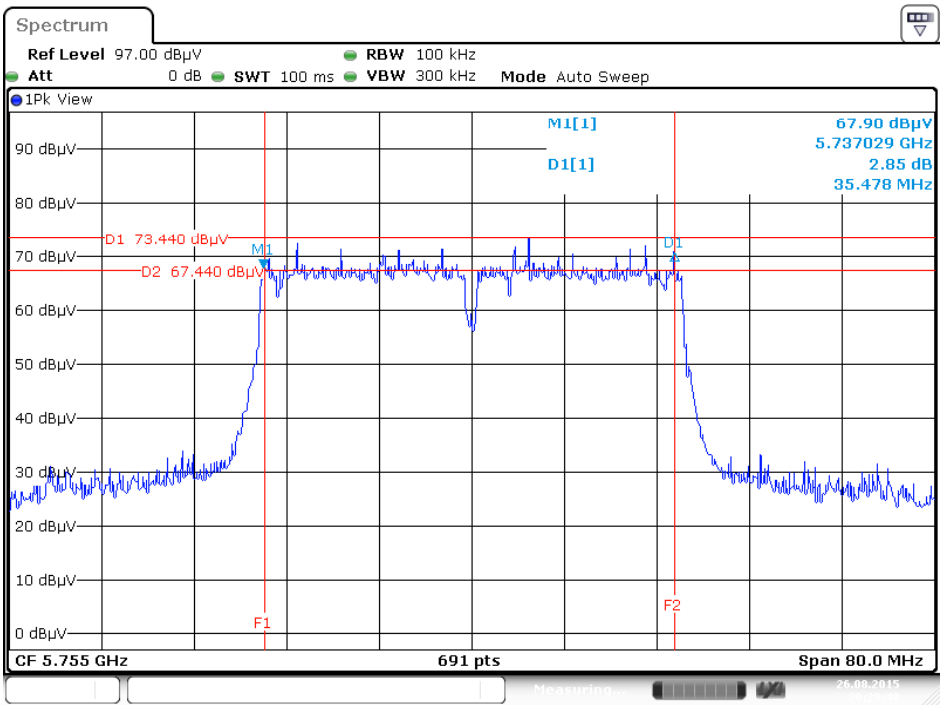
Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 2TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5745 MHz



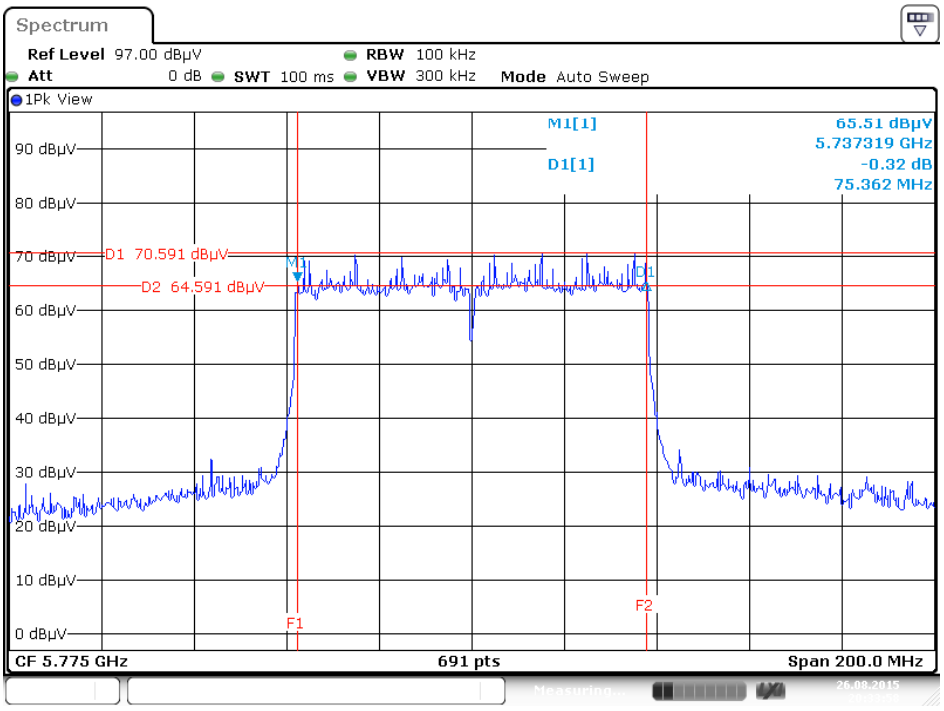
Date: 26.AUG.2015 20:25:31

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5755MHz



Date: 26.AUG.2015 20:29:40

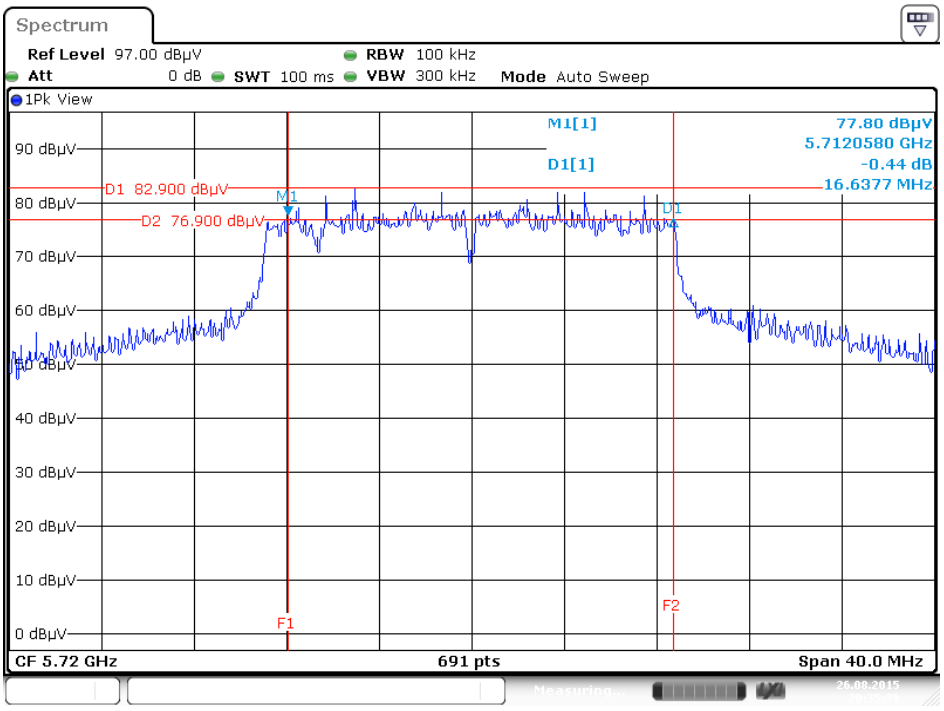
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5775 MHz



Date: 26.AUG.2015 20:33:58

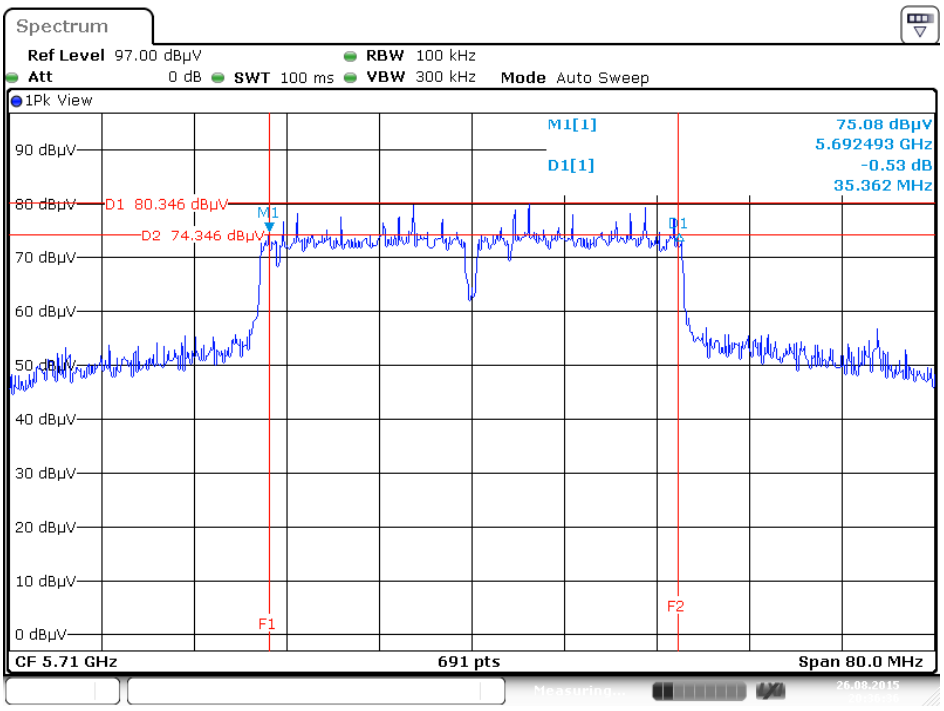
Straddle Channel

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz



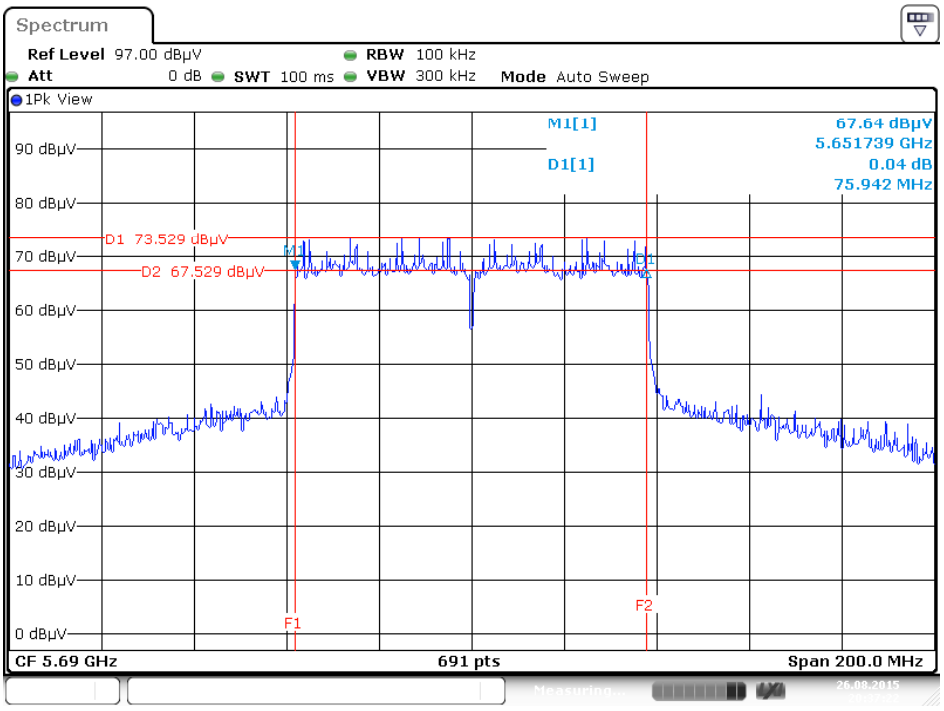
Date: 26.AUG.2015 20:35:39

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz



Date: 26.AUG.2015 20:36:37

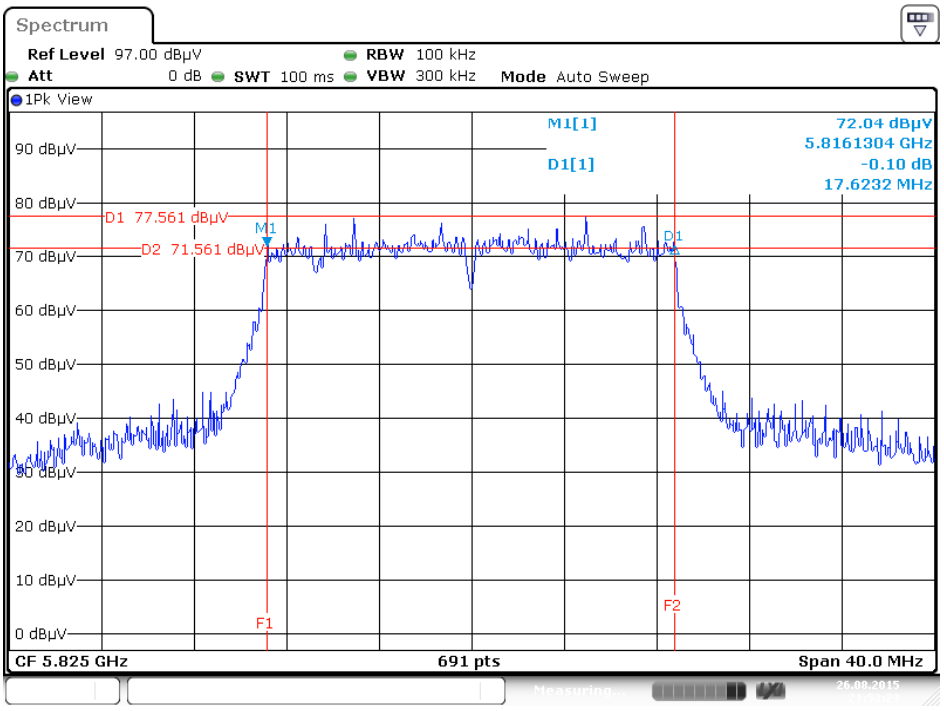
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz



Date: 26.AUG.2015 20:37:22

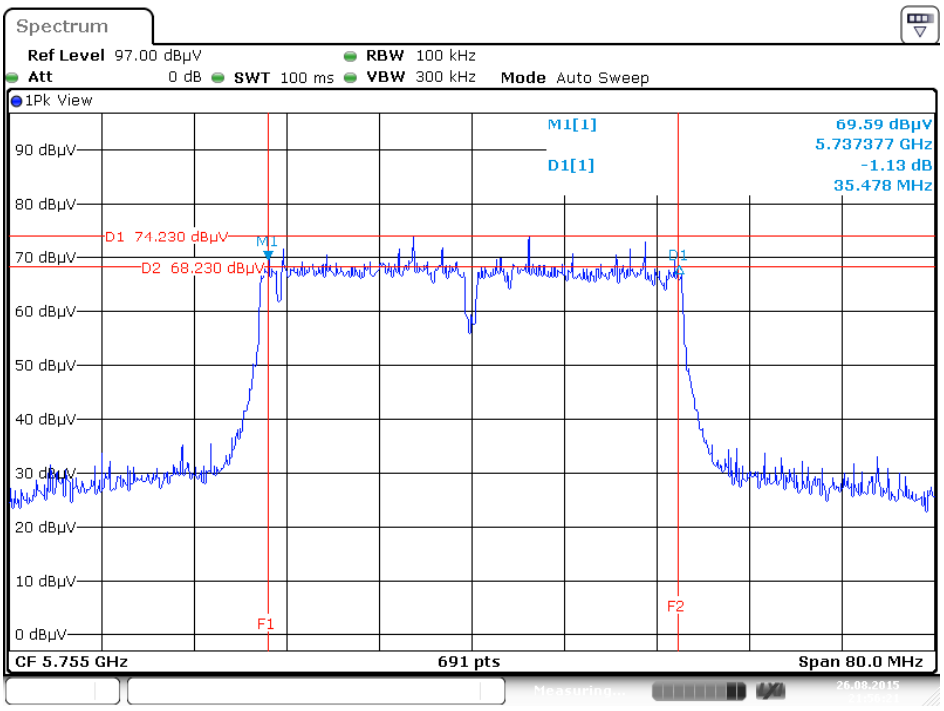
Mode 2 (Ant. 7 Polarized Panel / 10.7dBi / 2TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5825 MHz



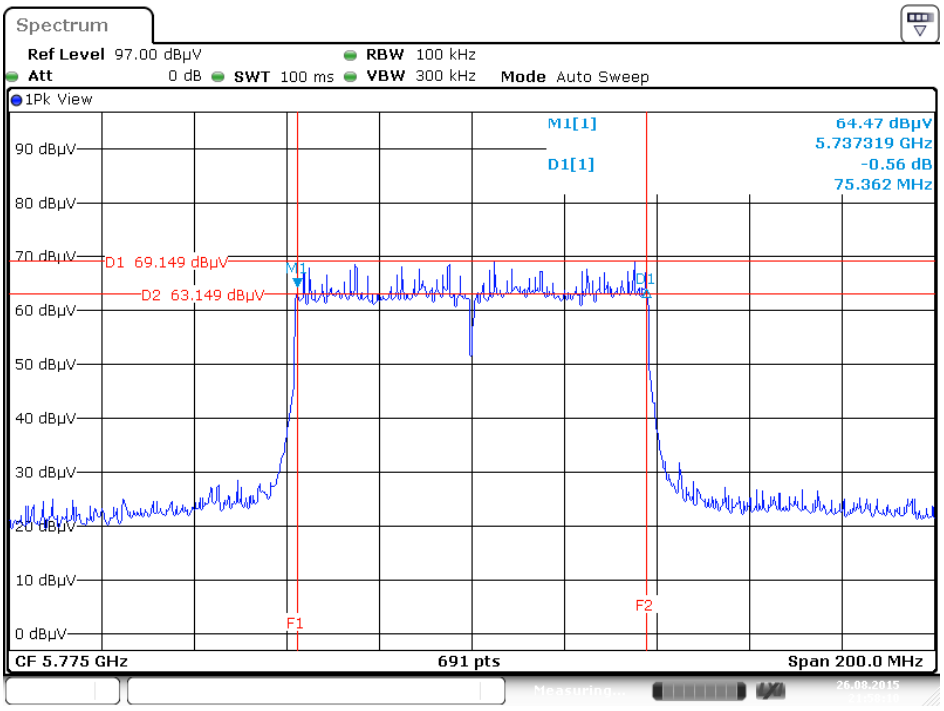
Date: 26.AUG.2015 21:53:24

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5755MHz



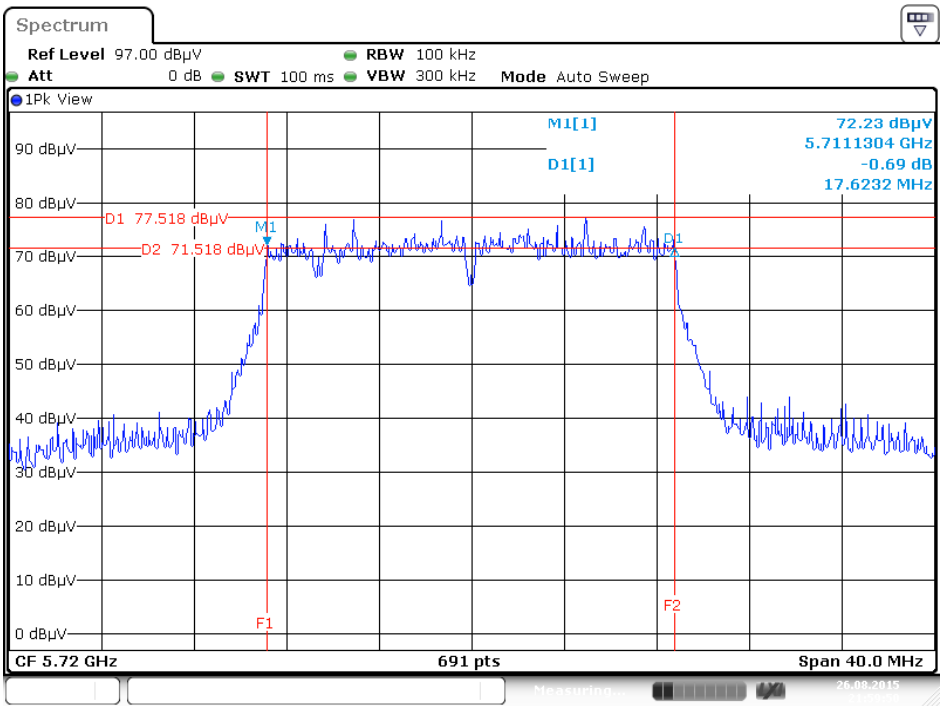
Date: 26.AUG.2015 21:56:20

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5775 MHz



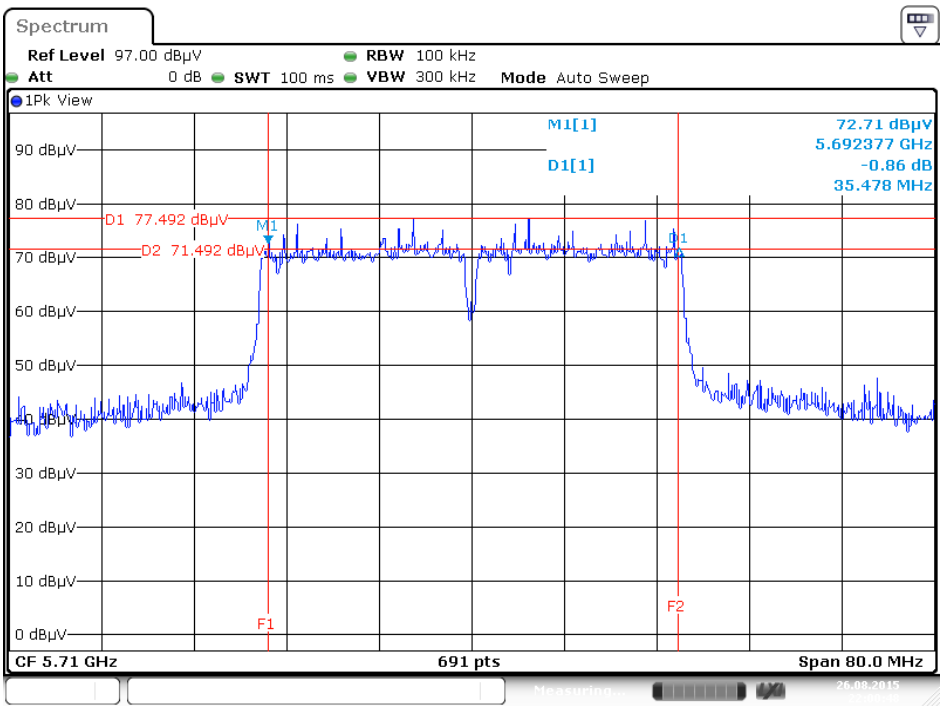
Straddle Channel

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz



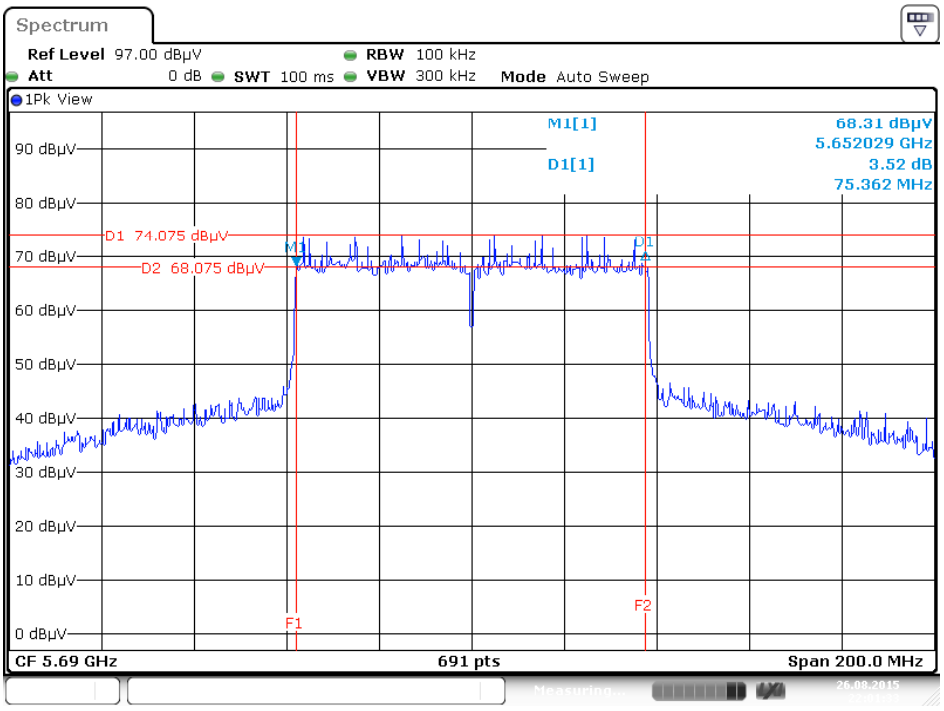
Date: 26.AUG.2015 21:59:51

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz



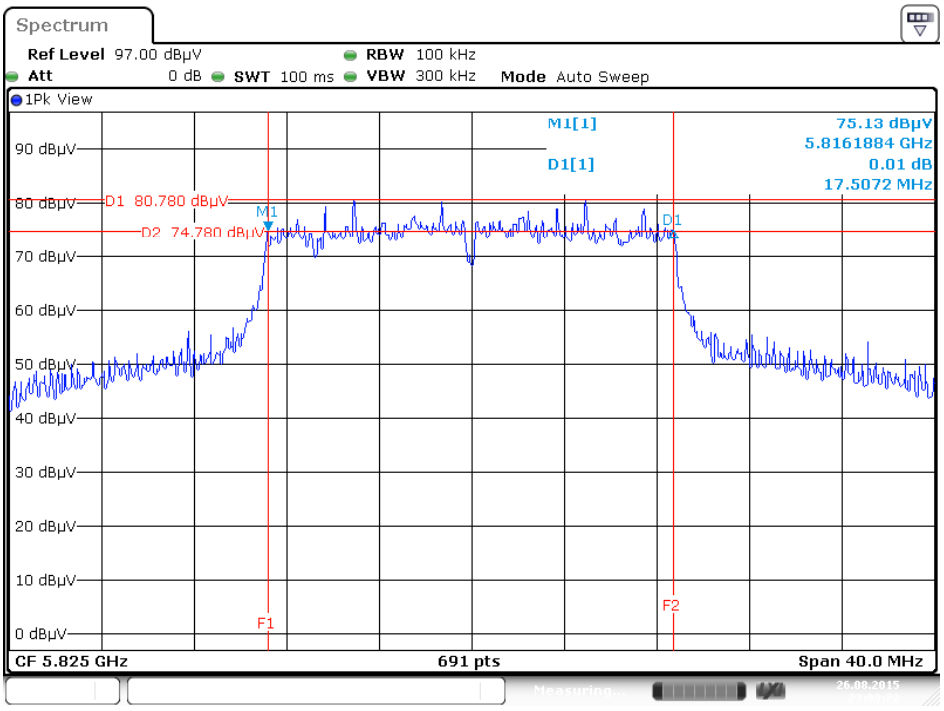
Date: 26.AUG.2015 22:00:48

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz



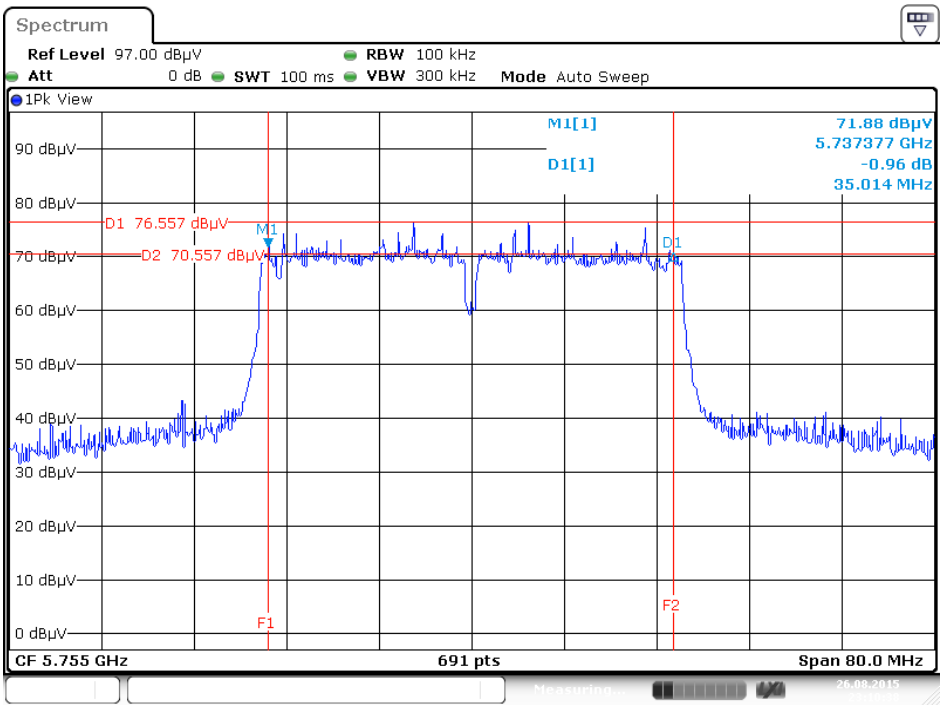
Mode 3 (Ant. 9 Patch antenna / 5.4dBi / 2TX)

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5825 MHz



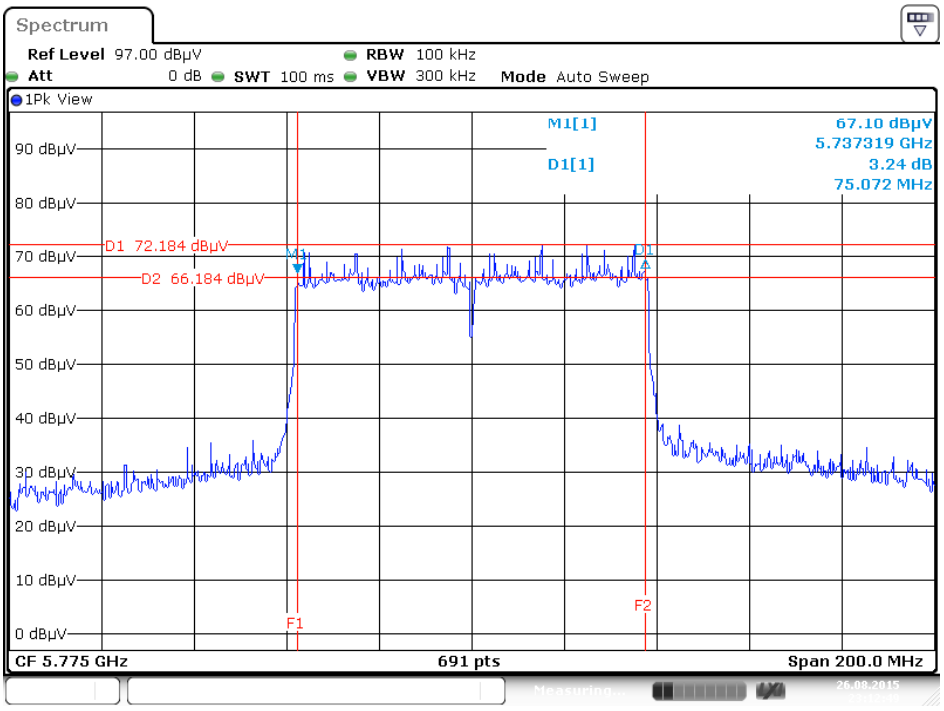
Date: 26.AUG.2015 23:09:22

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5755MHz



Date: 26.AUG.2015 23:10:38

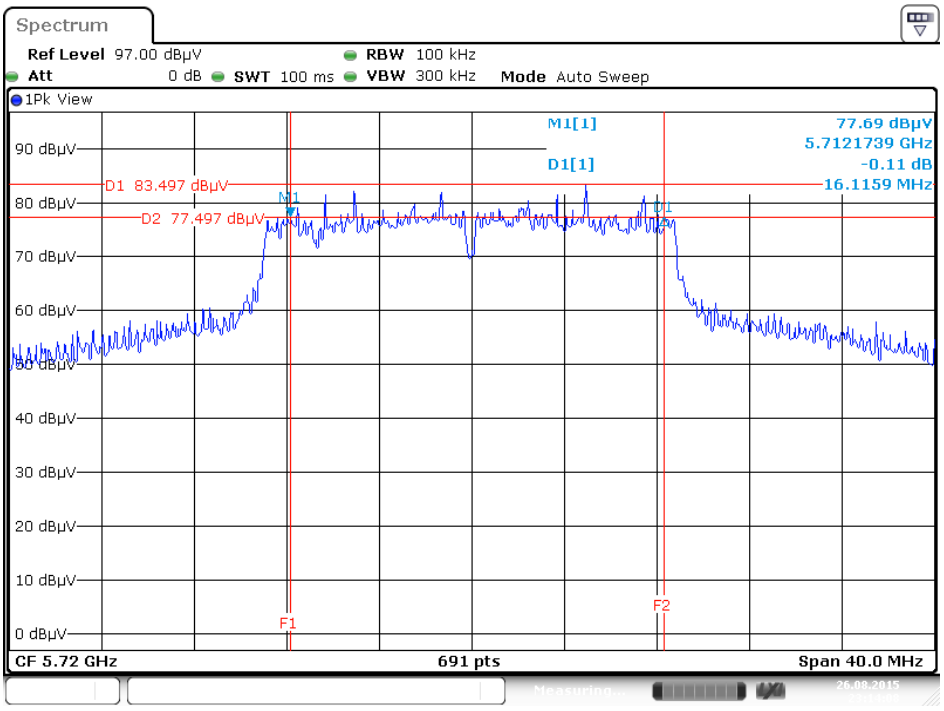
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5775 MHz



Date: 26.AUG.2015 23:12:49

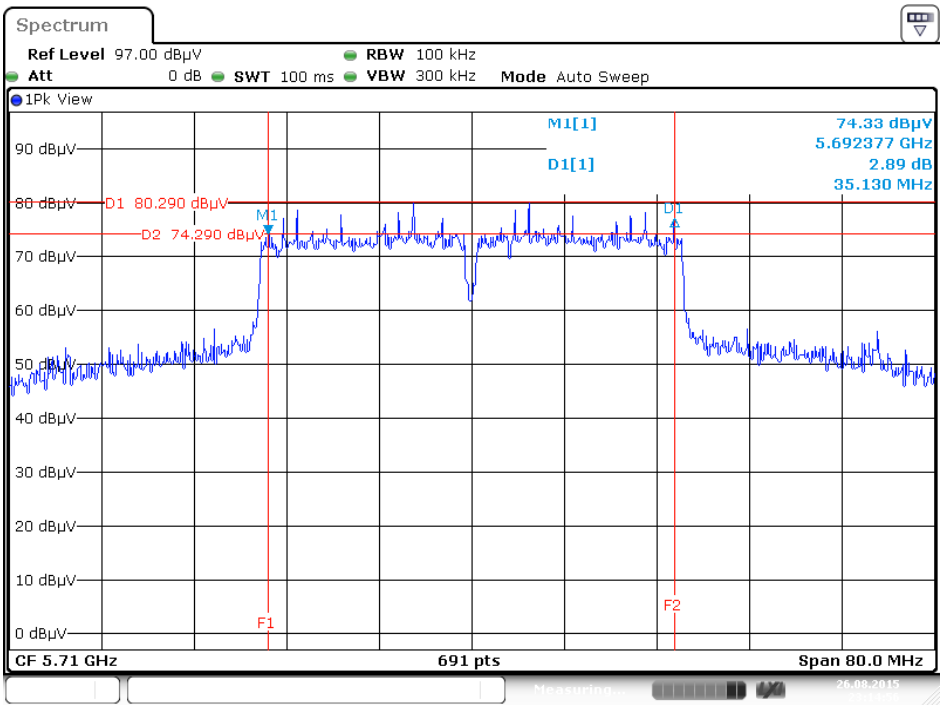
Straddle Channel

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz



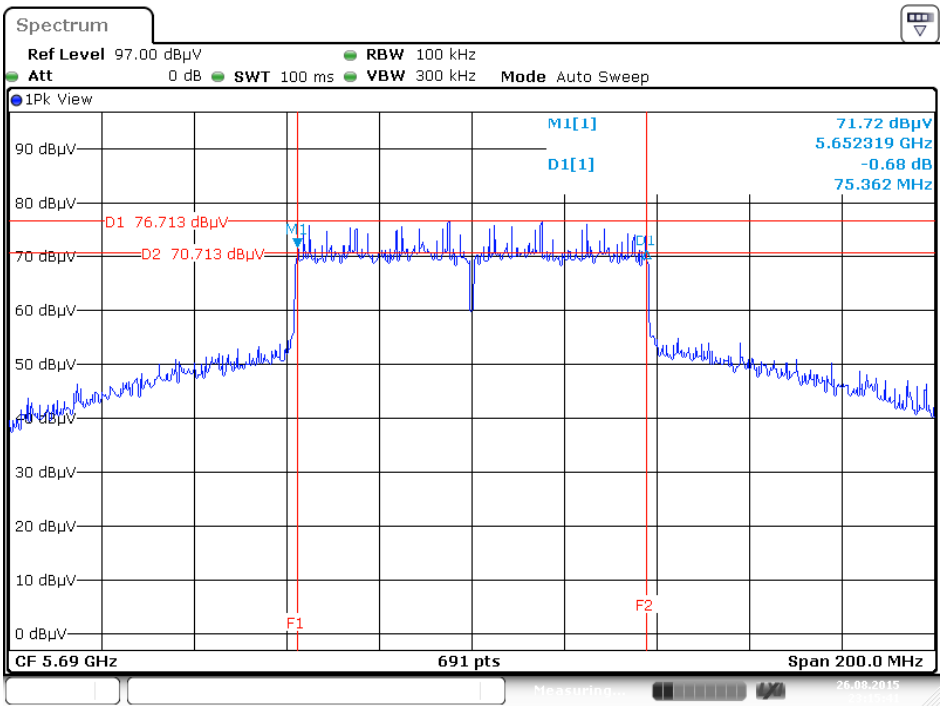
Date: 26.AUG.2015 23:14:08

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz



Date: 26.AUG.2015 23:14:56

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz



Date: 26.AUG.2015 23:15:42

4.4. Maximum Conducted Output Power Measurement

4.4.1. Limit

Frequency Band			Limit
☒	5.15~5.25 GHz		
	Operating Mode		
	☒	Outdoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
	☒	Indoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
	☐	Fixed point-to-point access points	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.
	☐	Mobile and portable client devices	The maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

☒	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☒	5.470-5.725 GHz	
☒	5.725~5.85 GHz	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.

4.4.2. Measuring Instruments and Setting

For other channel:

Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
Detector	AVERAGE

For straddle channel:

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1000 kHz
VBW	3000 kHz
Detector	RMS
Trace	Average Sweep count 100
Sweep Time	Auto

4.4.3. Test Procedures

For other channel:

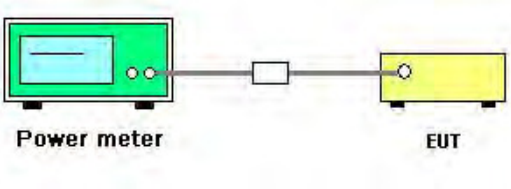
1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (E) Maximum conducted output power =>3. Measurement using a Power Meter (PM) =>b) Method PM-G (Measurement using a gated RF average power meter).
3. Multiple antenna systems was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. When measuring maximum conducted output power with multiple antenna systems,add every result of the values by mathematic formula.

For straddle channel:

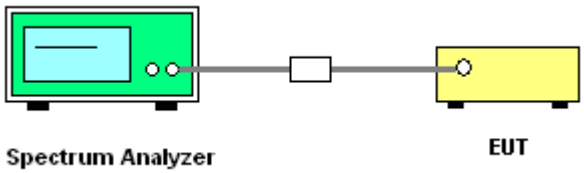
1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Test was performed in accordance with FCC Public Notice DA 02-2138, August 30, 2002.

4.4.4. Test Setup Layout

For other channel:



For straddle channel:



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of Maximum Conducted Output Power

<For Non-Beamforming Mode>

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Test Date	Jul. 22, 2015 ~ Aug. 27, 2015
Test Mode	Mode 1 (Ant. 6 Dipole antenna / 6.4dBi / 1TX)		

For indoor use

Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Chain 2		
802.11a	5180 MHz	19.55	29.60	Complies
	5200 MHz	21.91	29.60	Complies
	5240 MHz	20.44	29.60	Complies
802.11n MCS0 HT20	5180 MHz	19.56	29.60	Complies
	5200 MHz	21.90	29.60	Complies
	5240 MHz	20.49	29.60	Complies
802.11n MCS0 HT40	5190 MHz	17.66	29.60	Complies
	5230 MHz	20.51	29.60	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	19.58	29.60	Complies
	5200 MHz	21.92	29.60	Complies
	5240 MHz	20.57	29.60	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	17.69	29.60	Complies
	5230 MHz	20.55	29.60	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	17.49	29.60	Complies

Note: Antenna gain=6.40dBi >6dBi, so the B1 limit 30-(6.40-6)=29.60dBm.