12.8 Occupied bandwidth – 99% emission bandwidth

Description:

Measurement of the 99% bandwidth of the modulated signal acc. RSS-GEN.

Measurement:

Measurement parameter	
According to: KDB789033 D02, D.	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	300 kHz / 500 kHz
Video bandwidth:	1 MHz / 3 MHz
Span:	50 MHz / 100 MHz
Measurement procedure:	Measurement of the 99% bandwidth using the integration function of the analyzer
Trace-Mode:	Max hold (allow trace to stabilize)
Used test setup:	see chapter 7.4 – A
Measurement uncertainty:	see chapter 9

Usage:

-/-	IC
Occupied Bandwidth – 99% emission bandwidth	
OBW is necessary for Emission Designator	

Result: antenna port 1

OFDM / a – mode	99% bandwidth [kHz]			
Channel	5180 MHz	5200 MHz	5300 MHz	5320 MHz
	16983	16983	16983	16933
Channel	5500 MHz	5600 MHz	5700 MHz	-/-
	16933	16933	16983	-/-
Channel	5745 MHz	5785 MHz	5805 MHz	5825 MHz
	16983	16983	16933	16933

OFDM / n HT20 – mode	99% bandwidth [kHz]			
Channel	5180 MHz	5200 MHz	5300 MHz	5320 MHz
	18032	18082	18032	18032
Channel	5500 MHz	5600 MHz	5700 MHz	-/-
	18032	18032	17982	-/-
Channel	5745 MHz	5785 MHz	5805 MHz	5825 MHz
	18032	17982	17982	18032

OFDM / n HT40 – mode	99% bandwidth [kHz]			
Channel	5190 MHz	5230 MHz	5270 MHz	5310 MHz
	36663	36763	36763	36763
Channel	5510 MHz	5550 MHz	5630 MHz	5670 MHz
	36663	36763	36763	36763
Channel	5755 MHz	5795 MHz	-/-	-/-
	36863	36763	-/-	-/-

Result: antenna port 2

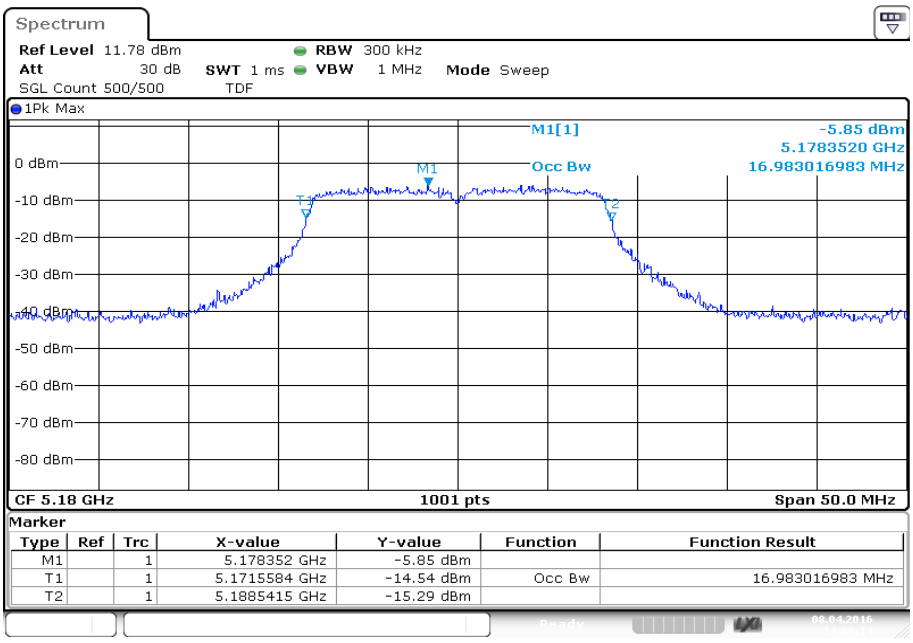
OFDM / a – mode	99% bandwidth [kHz]			
Channel	5180 MHz	5200 MHz	5300 MHz	5320 MHz
	16983	16983	16933	16933
Channel	5500 MHz	5600 MHz	5700 MHz	-/-
	16933	16933	16983	-/-
Channel	5745 MHz	5785 MHz	5805 MHz	5825 MHz
	16933	16883	16933	16983

OFDM / n HT20 – mode	99% bandwidth [kHz]			
Channel	5180 MHz	5200 MHz	5300 MHz	5320 MHz
	18082	18032	17982	17932
Channel	5500 MHz	5600 MHz	5700 MHz	-/-
	18032	17982	17982	-/-
Channel	5745 MHz	5785 MHz	5805 MHz	5825 MHz
	17982	17982	18082	18082

OFDM / n HT40 – mode	99% bandwidth [kHz]			
Channel	5190 MHz	5230 MHz	5270 MHz	5310 MHz
	36863	36663	36762	36763
Channel	5510 MHz	5550 MHz	5630 MHz	5670 MHz
	36663	36663	36963	36763
Channel	5755 MHz	5795 MHz	-/-	-/-
	36763	36863	-/-	-/-

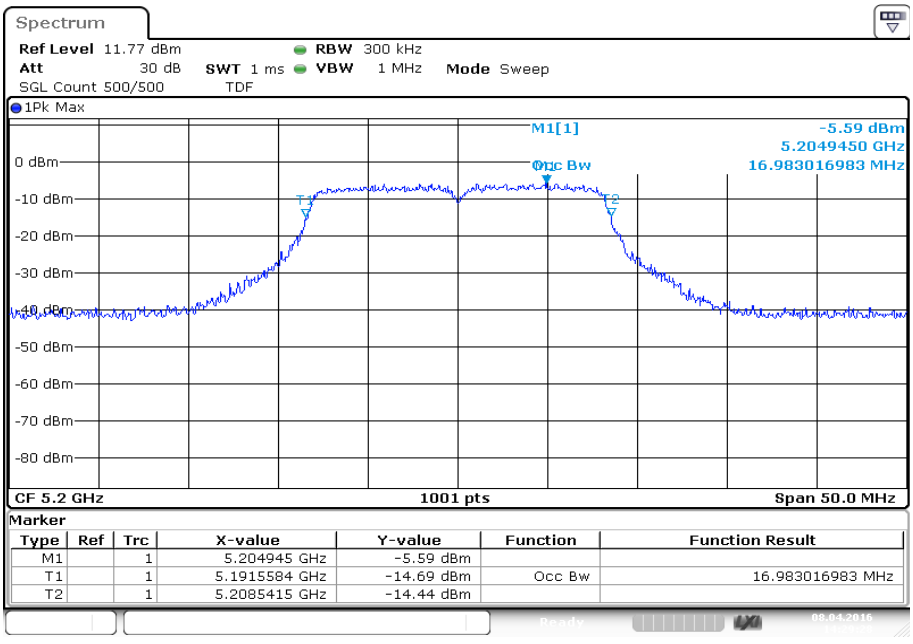
Plots: OFDM / a – mode, antenna port 1

Plot 1: 5180 MHz



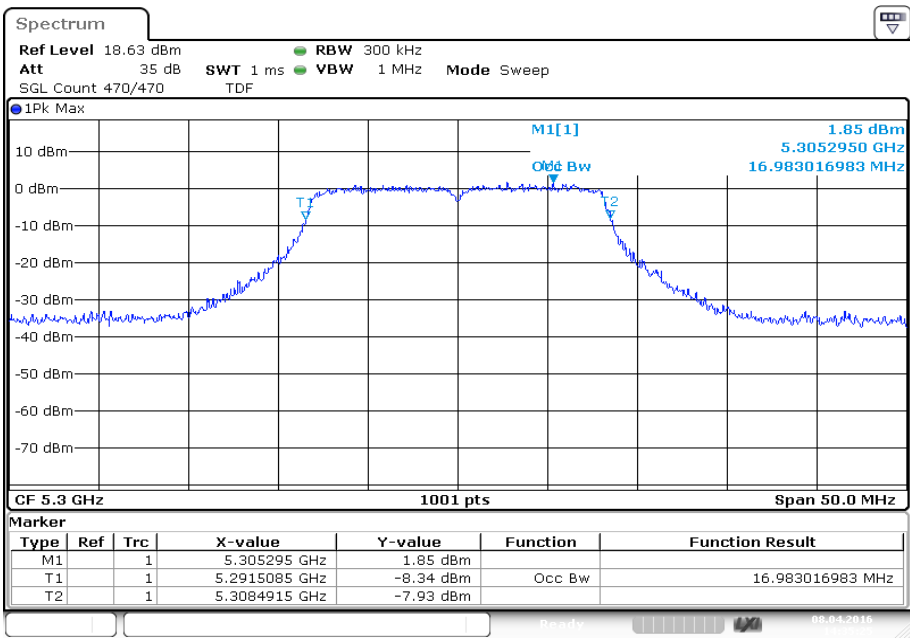
Date: 8.APR.2016 14:28:14

Plot 2: 5200 MHz



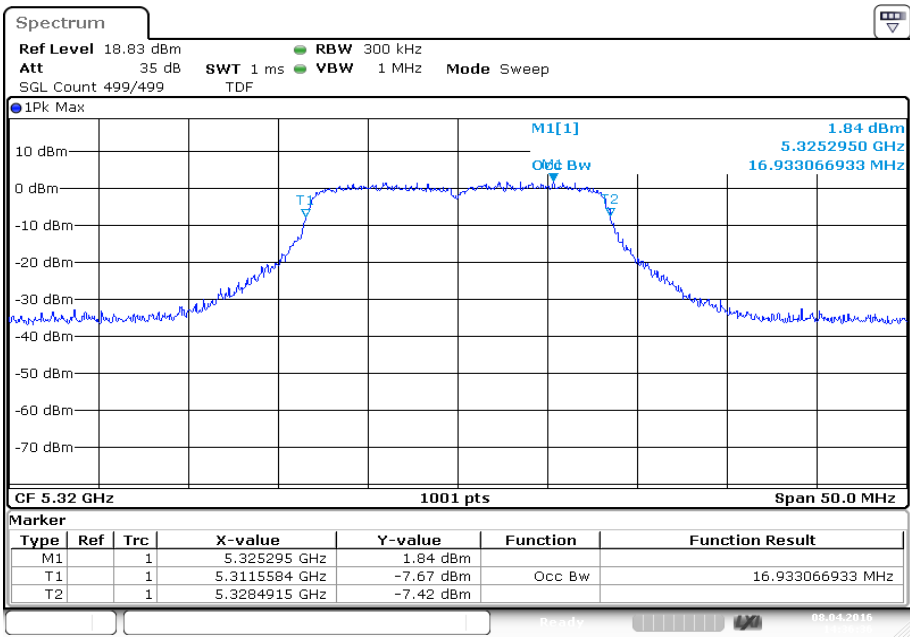
Date: 8.APR.2016 14:29:28

Plot 3: 5300 MHz



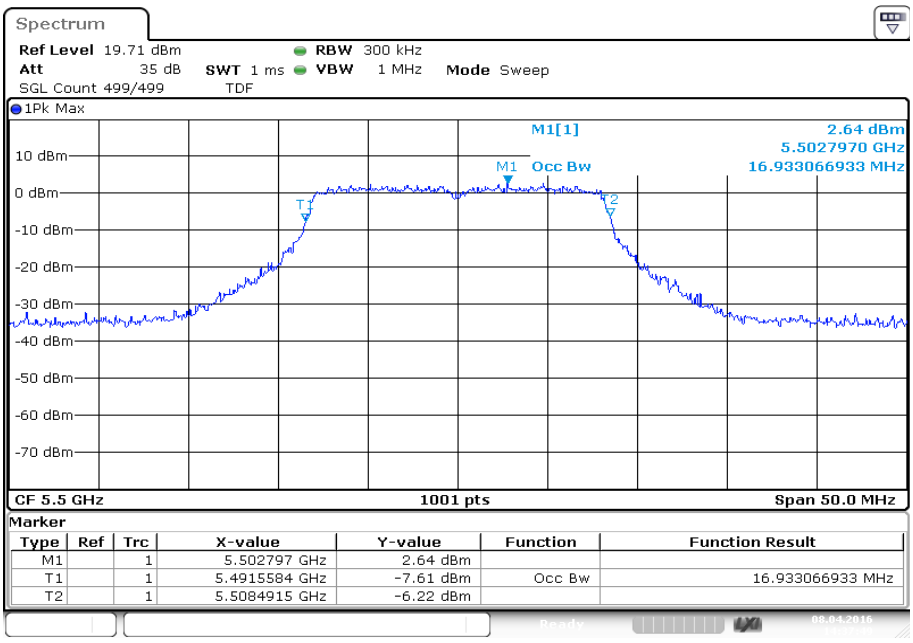
Date: 8.APR.2016 14:35:26

Plot 4: 5320 MHz



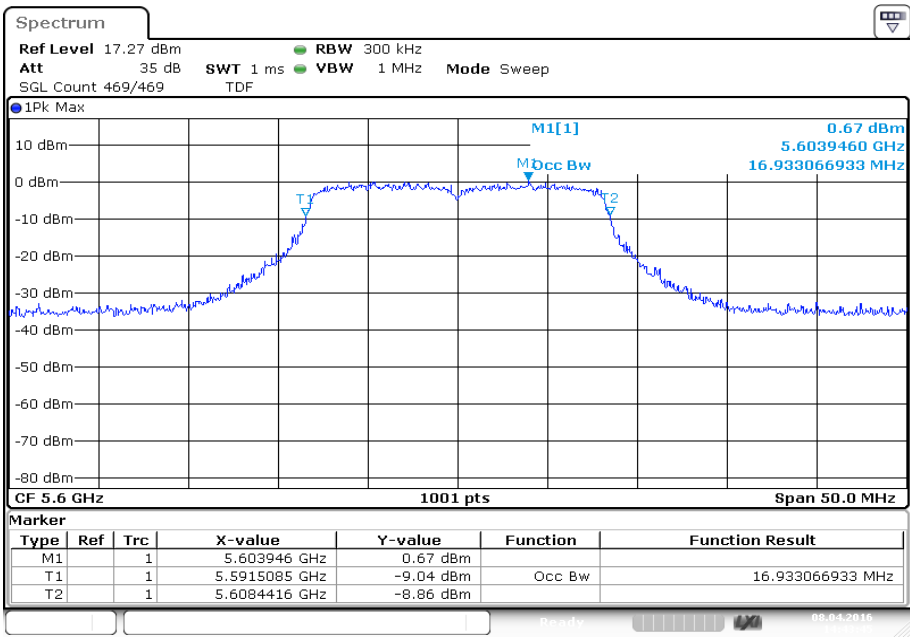
Date: 8.APR.2016 14:36:36

Plot 5: 5500 MHz



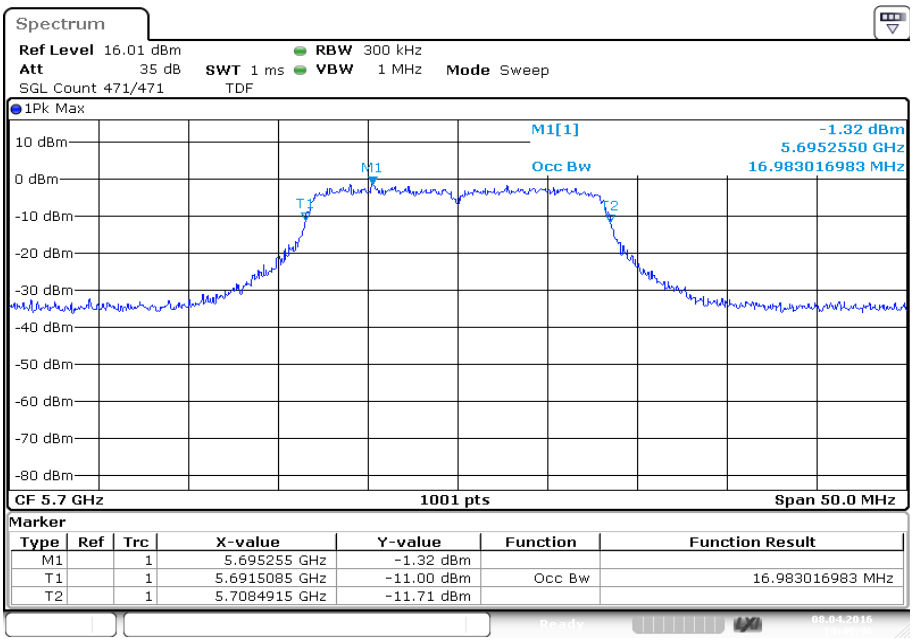
Date: 8.APR.2016 14:37:50

Plot 6: 5600 MHz



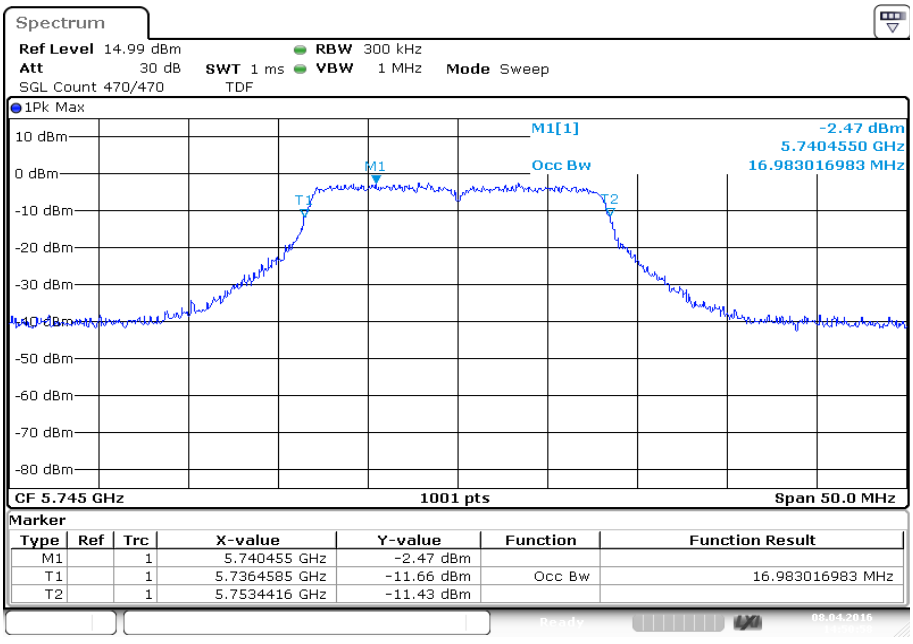
Date: 8.APR.2016 14:43:46

Plot 7: 5700 MHz



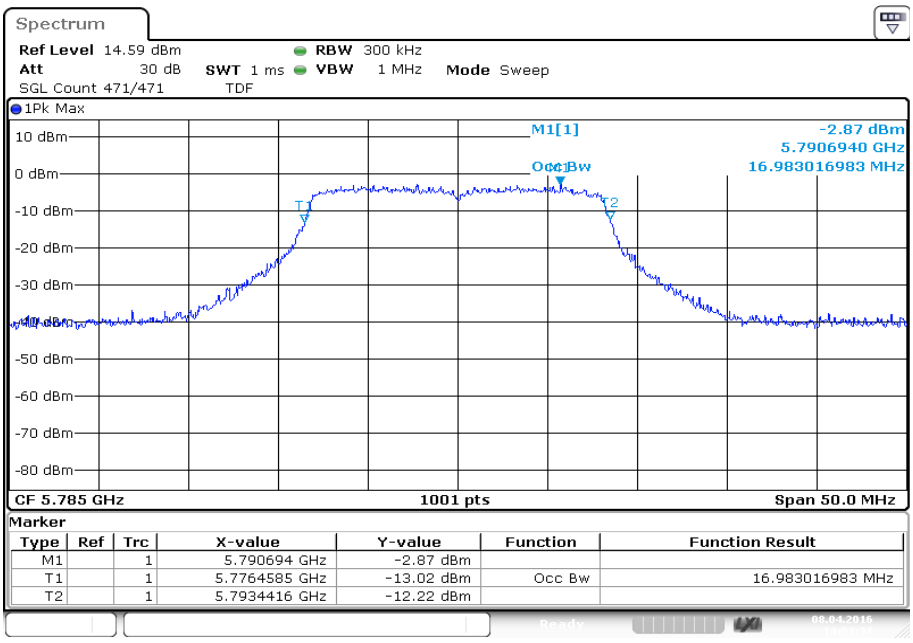
Date: 8.APR.2016 14:49:47

Plot 8: 5745 MHz



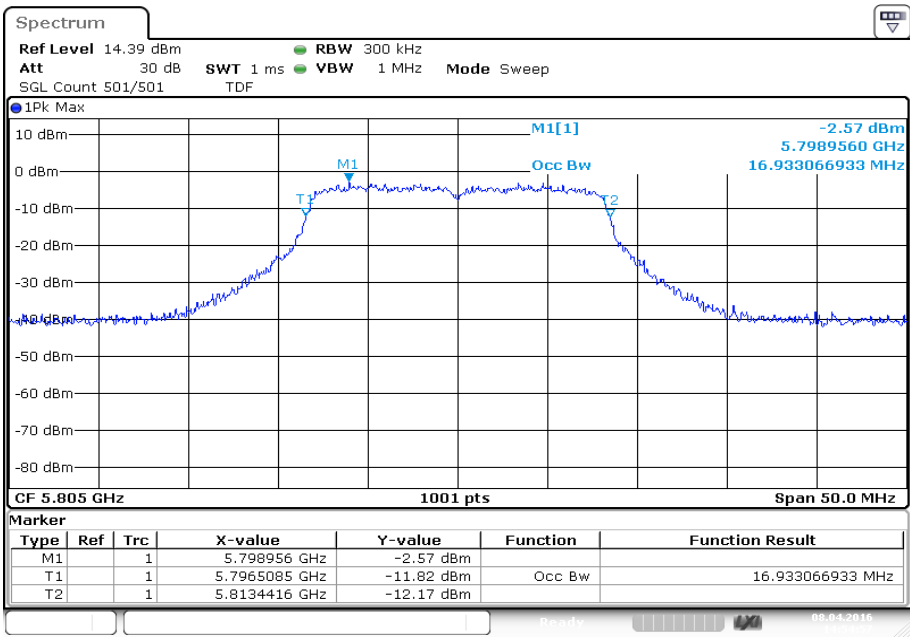
Date: 8.APR.2016 14:50:59

Plot 9: 5785 MHz



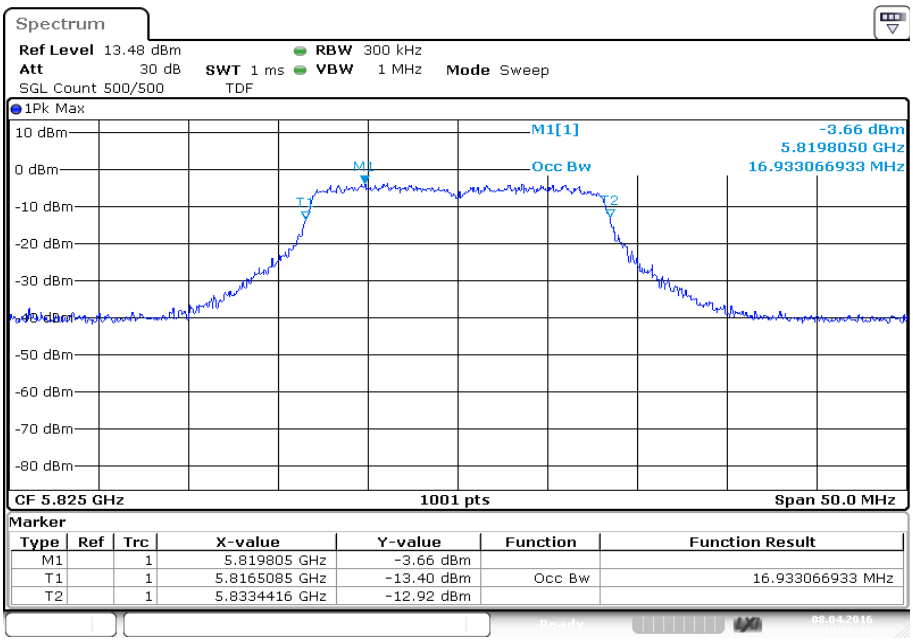
Date: 8.APR.2016 14:53:38

Plot 10: 5805 MHz



Date: 8.APR.2016 14:54:57

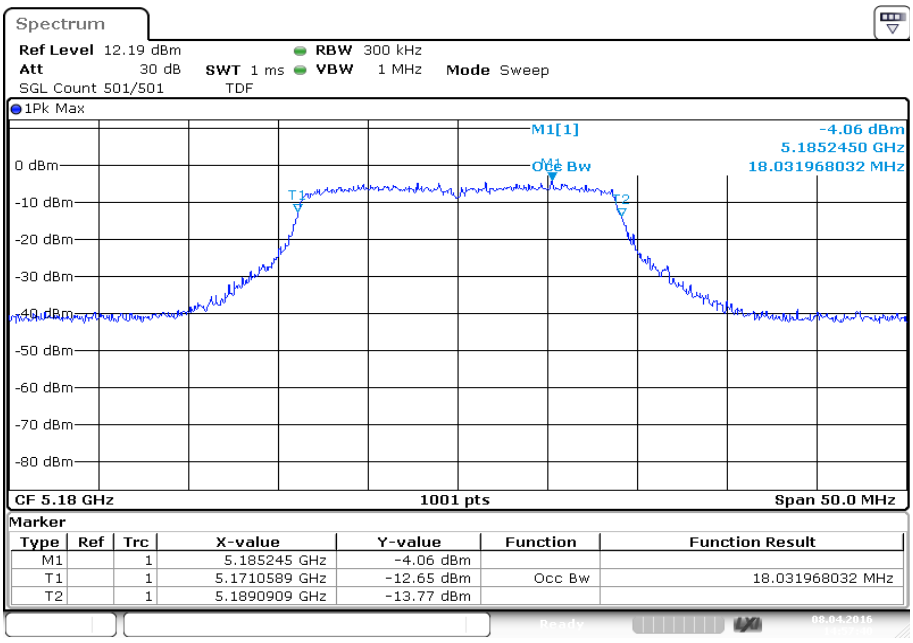
Plot 11: 5825 MHz



Date: 8.APR.2016 14:56:16

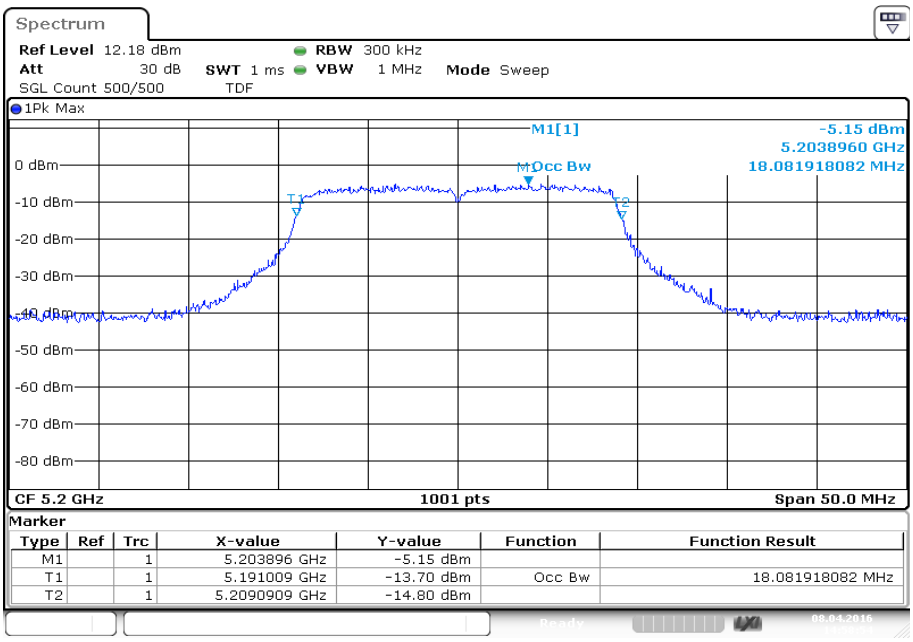
Plots: OFDM / n HT20 – mode, antenna port 1

Plot 1: 5180 MHz



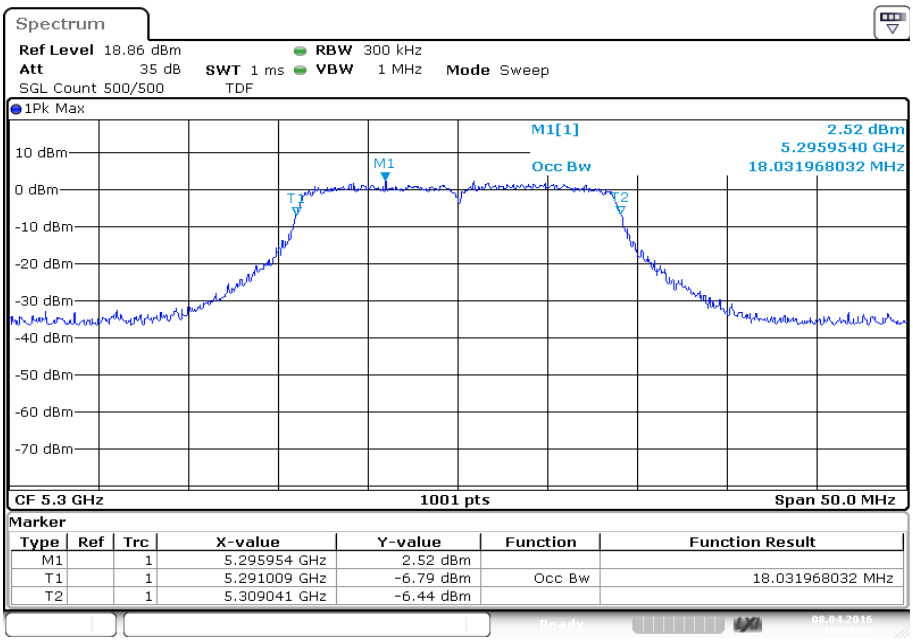
Date: 8.APR.2016 14:57:41

Plot 2: 5200 MHz



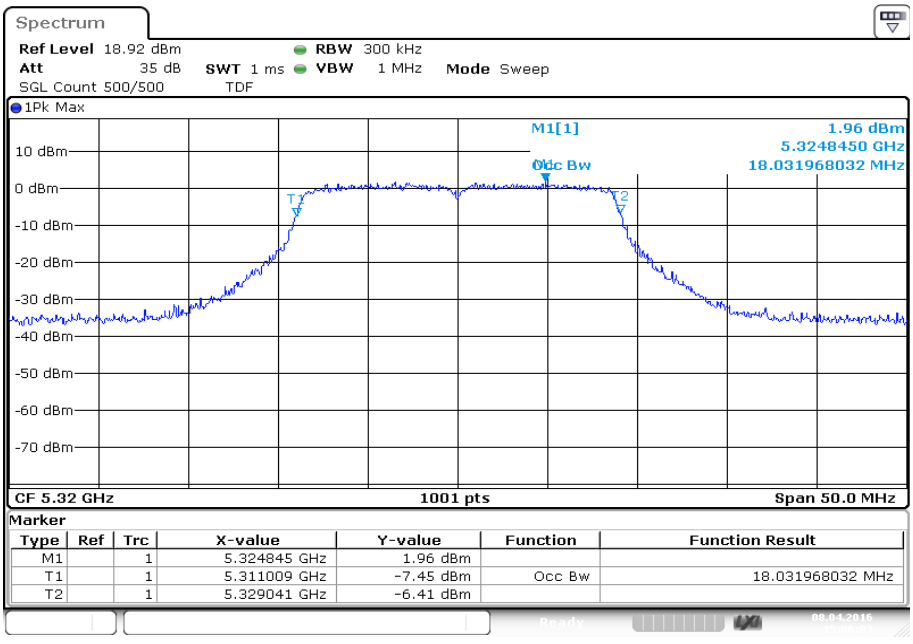
Date: 8.APR.2016 14:58:55

Plot 3: 5300 MHz



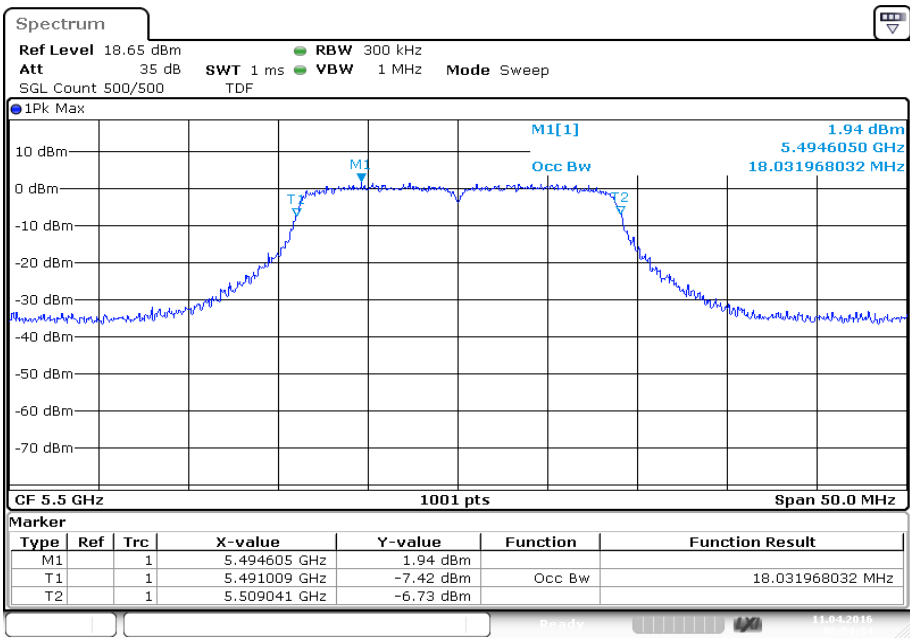
Date: 8.APR.2016 15:04:53

Plot 4: 5320 MHz



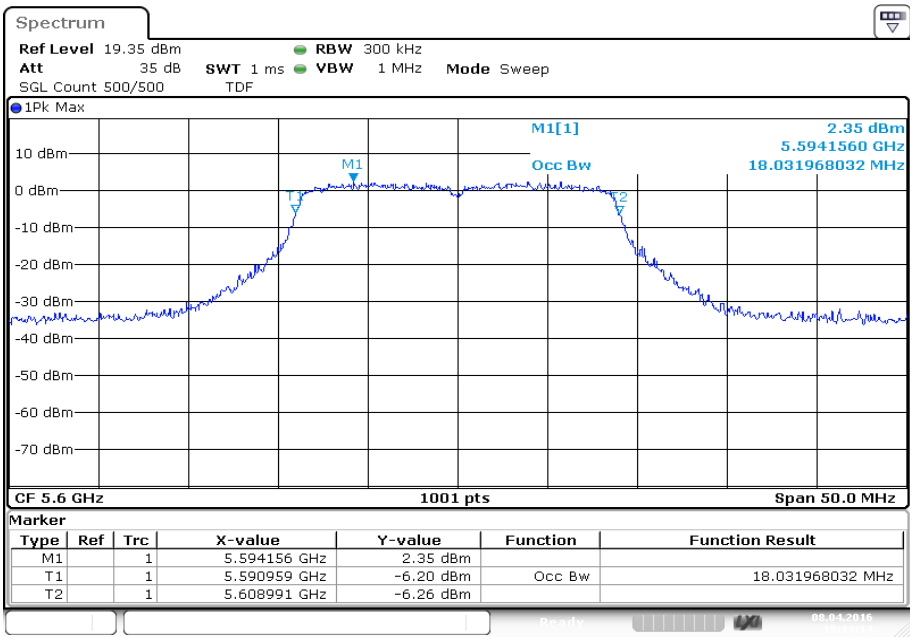
Date: 8.APR.2016 15:06:04

Plot 5: 5500 MHz



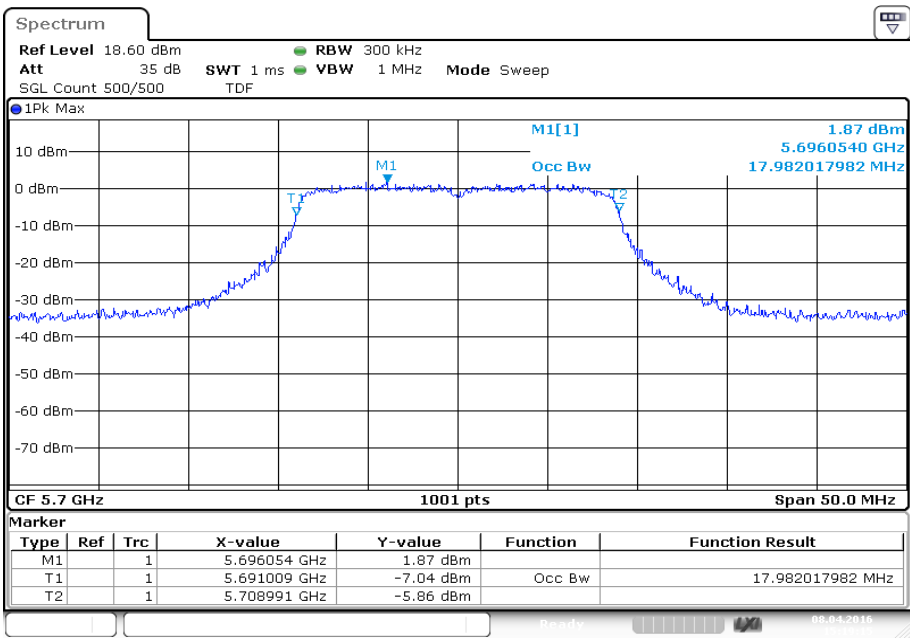
Date: 11.APR.2016 08:54:35

Plot 6: 5600 MHz



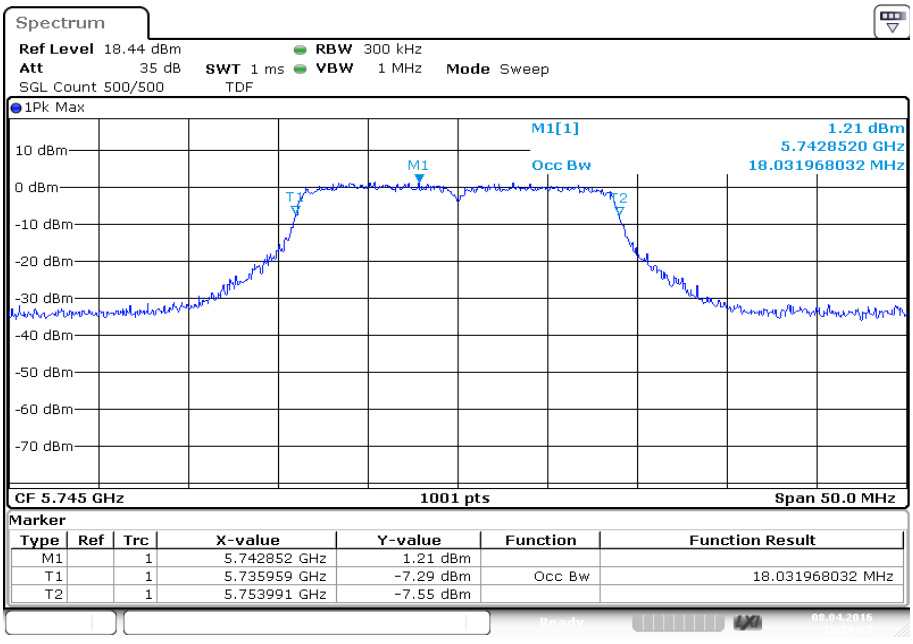
Date: 8.APR.2016 15:13:14

Plot 7: 5700 MHz



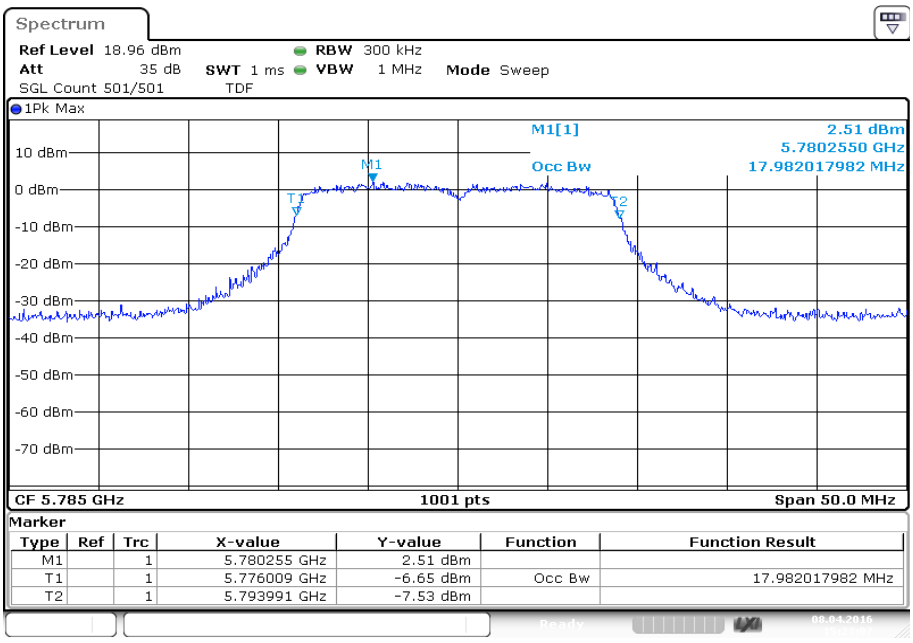
Date: 8.APR.2016 15:19:16

Plot 8: 5745 MHz



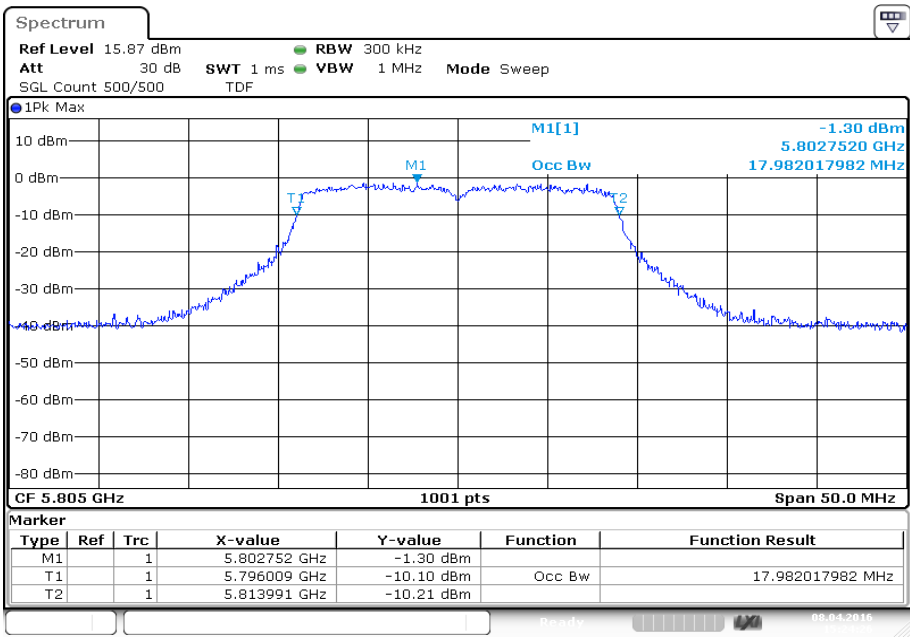
Date: 8.APR.2016 15:20:29

Plot 9: 5785 MHz



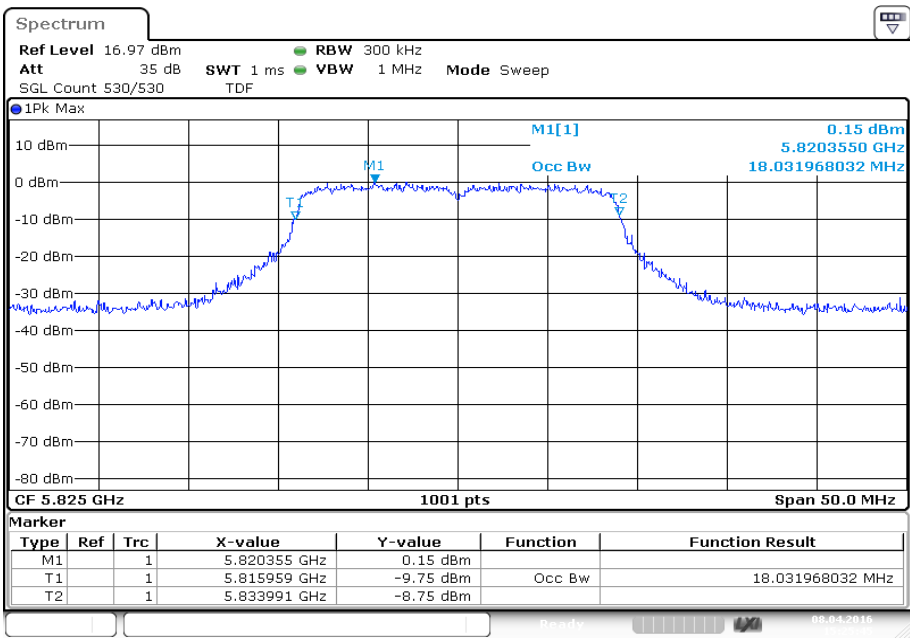
Date: 8.APR.2016 15:23:07

Plot 10: 5805 MHz



Date: 8.APR.2016 15:24:26

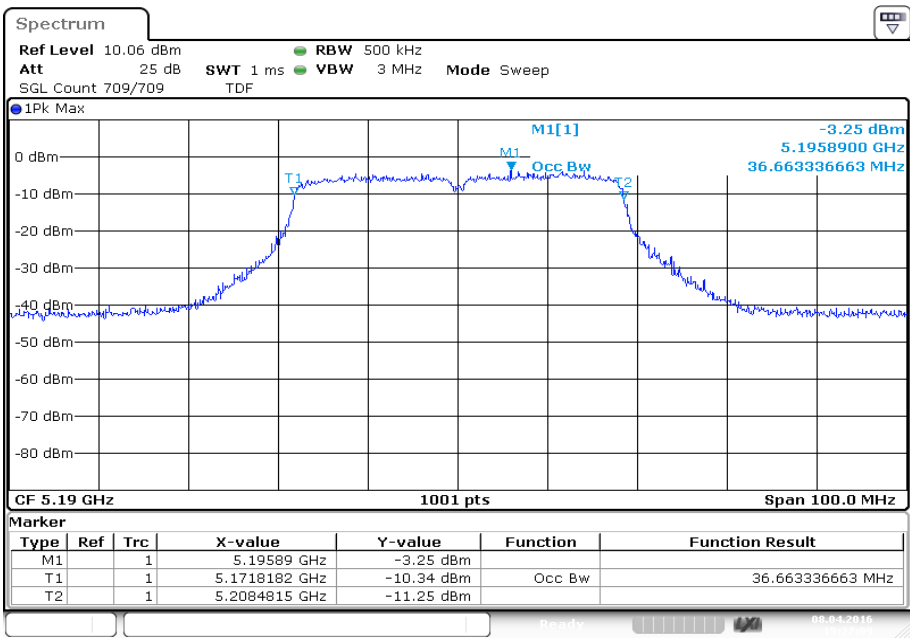
Plot 11: 5825 MHz



Date: 8.APR.2016 15:25:45

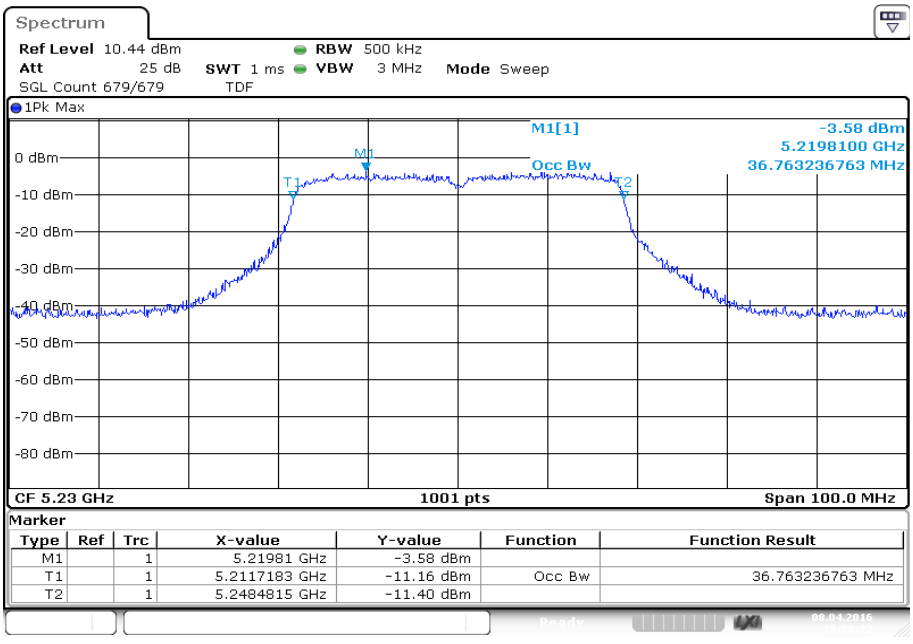
Plots: OFDM / n HT40 – mode, antenna port 1

Plot 1: 5190 MHz



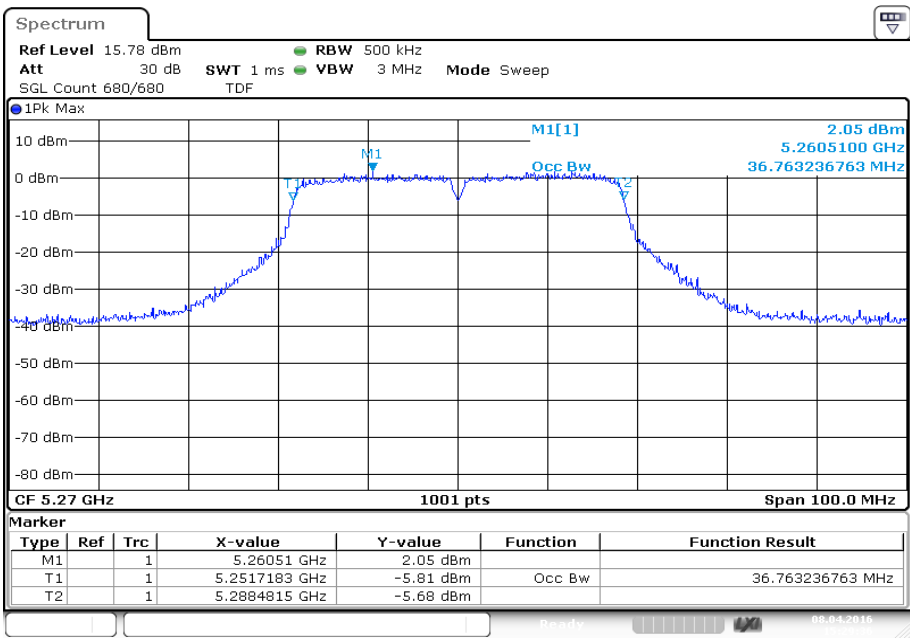
Date: 8.APR.2016 15:27:09

Plot 2: 5230 MHz



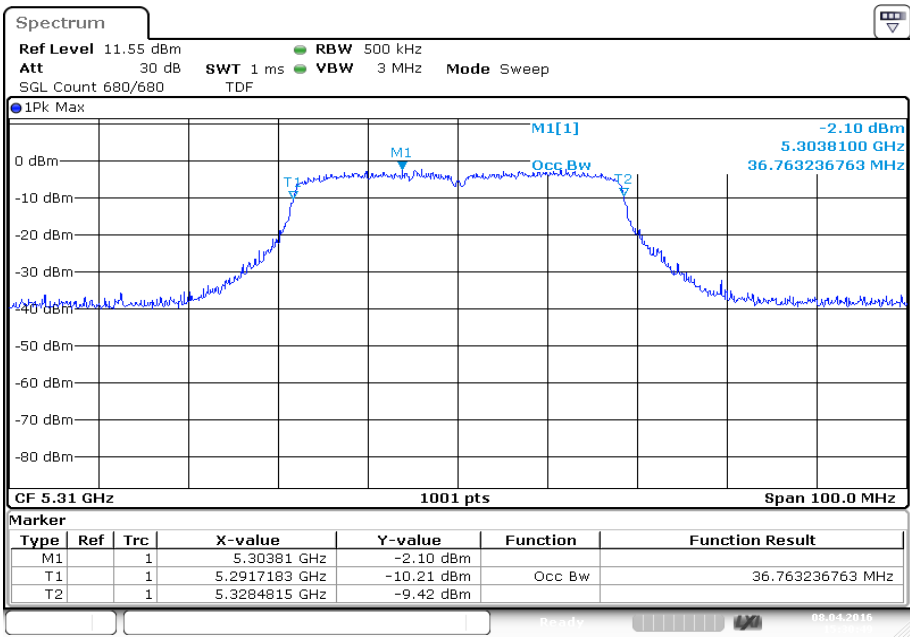
Date: 8.APR.2016 15:28:23

Plot 3: 5270 MHz



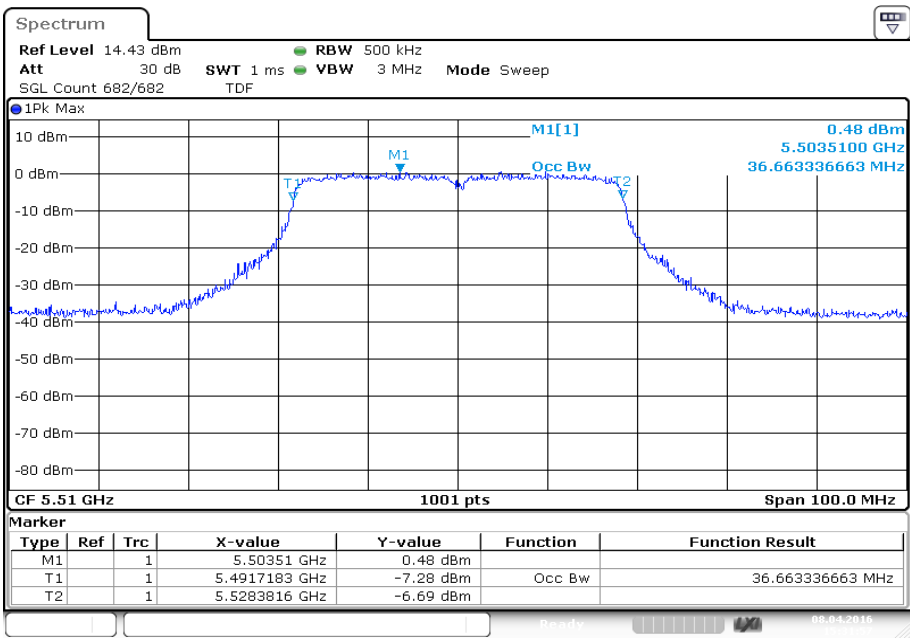
Date: 8.APR.2016 15:29:36

Plot 4: 5310 MHz



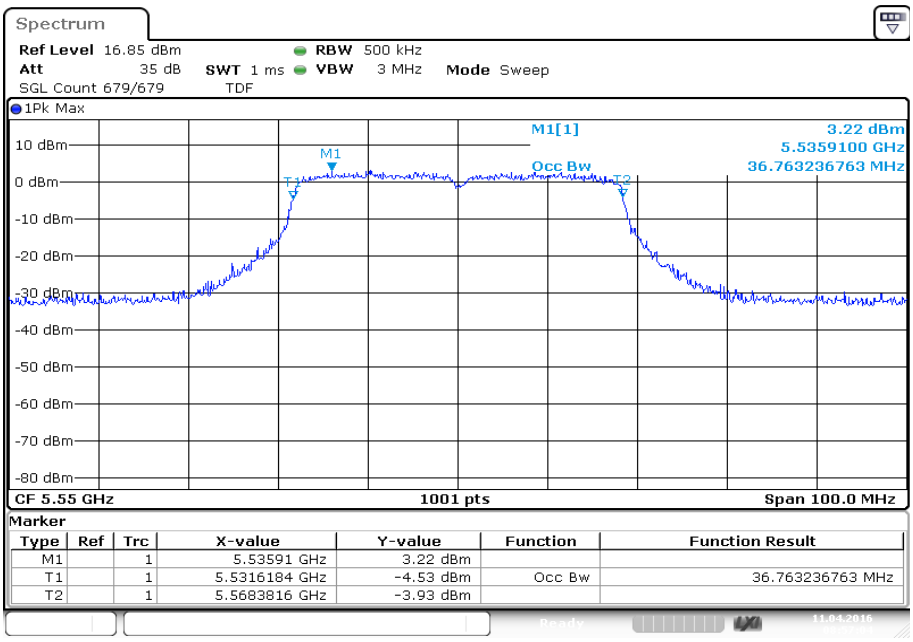
Date: 8.APR.2016 15:30:50

Plot 5: 5510 MHz



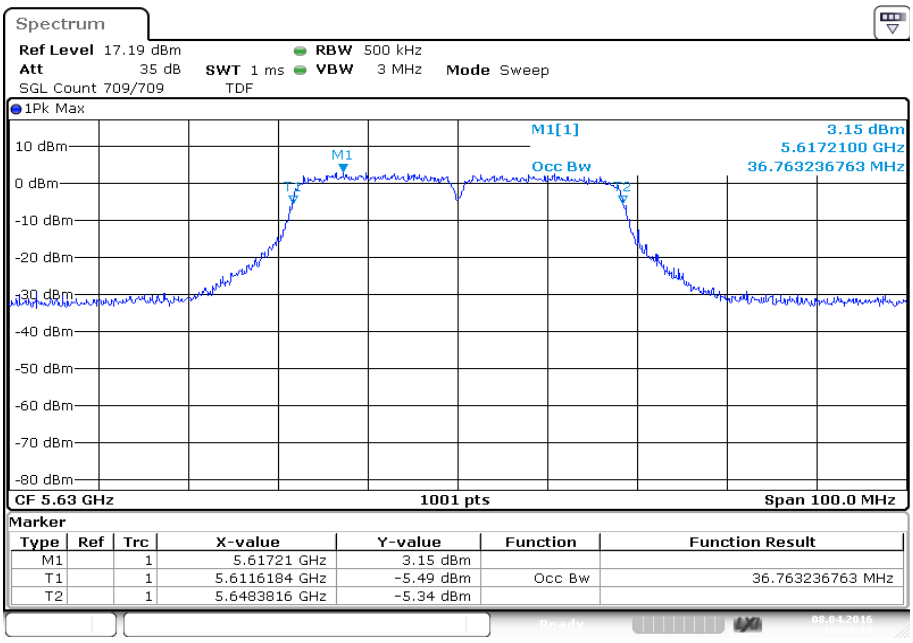
Date: 8.APR.2016 15:31:57

Plot 6: 5550 MHz



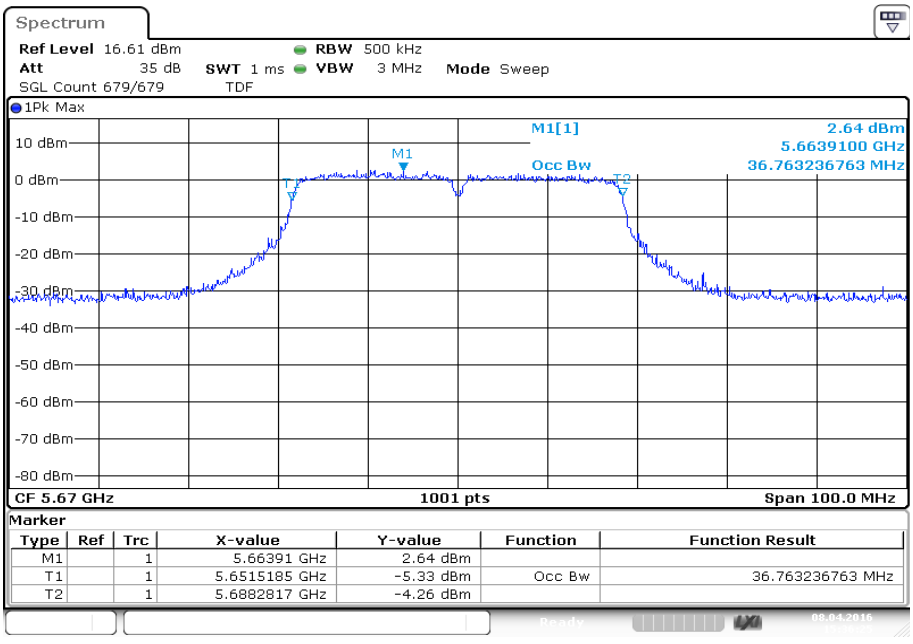
Date: 11.APR.2016 08:57:05

Plot 7: 5630 MHz



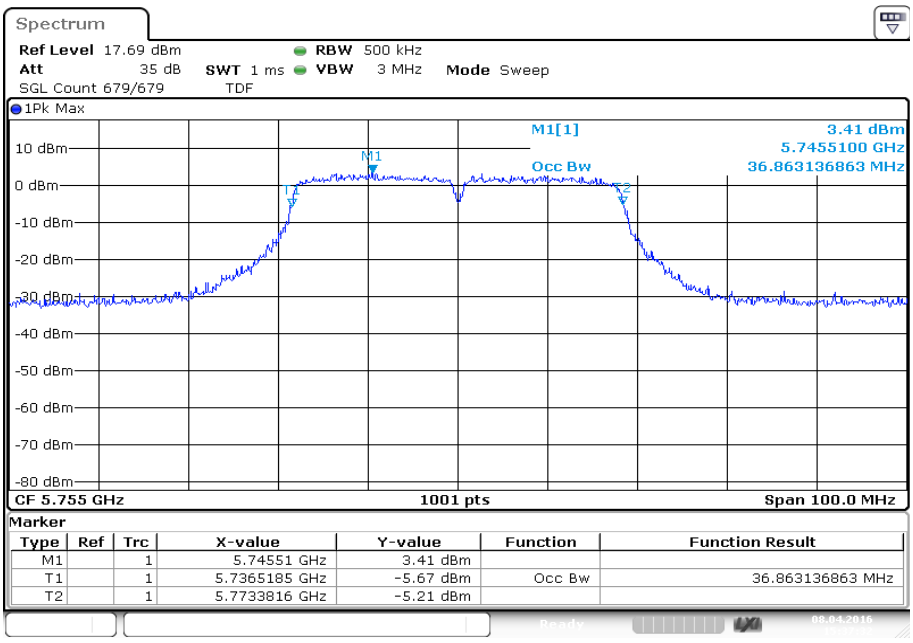
Date: 8.APR.2016 15:35:19

Plot 8: 5670 MHz



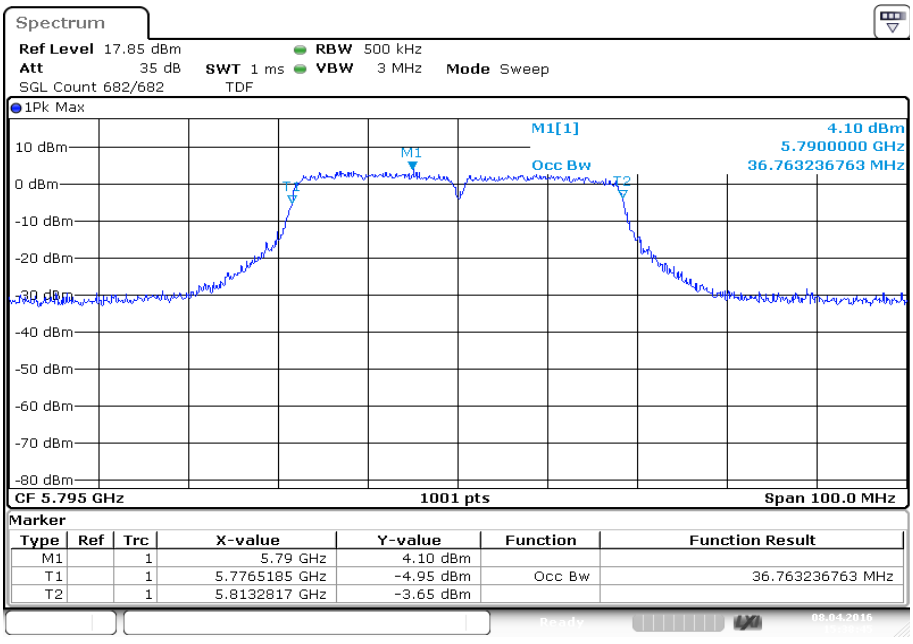
Date: 8.APR.2016 15:36:26

Plot 9: 5755 MHz



Date: 8.APR.2016 15:37:33

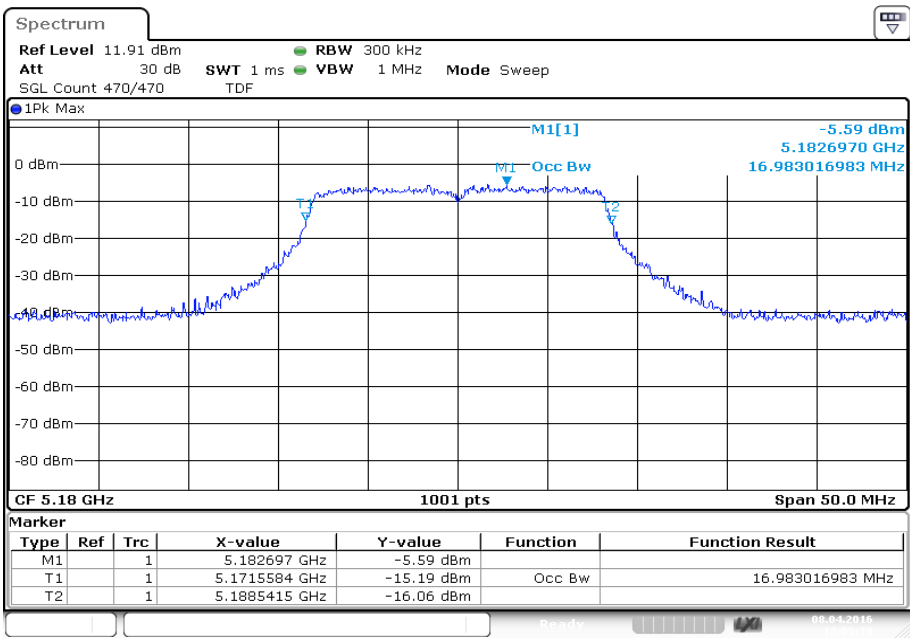
Plot 10: 5795 MHz



Date: 8.APR.2016 15:38:46

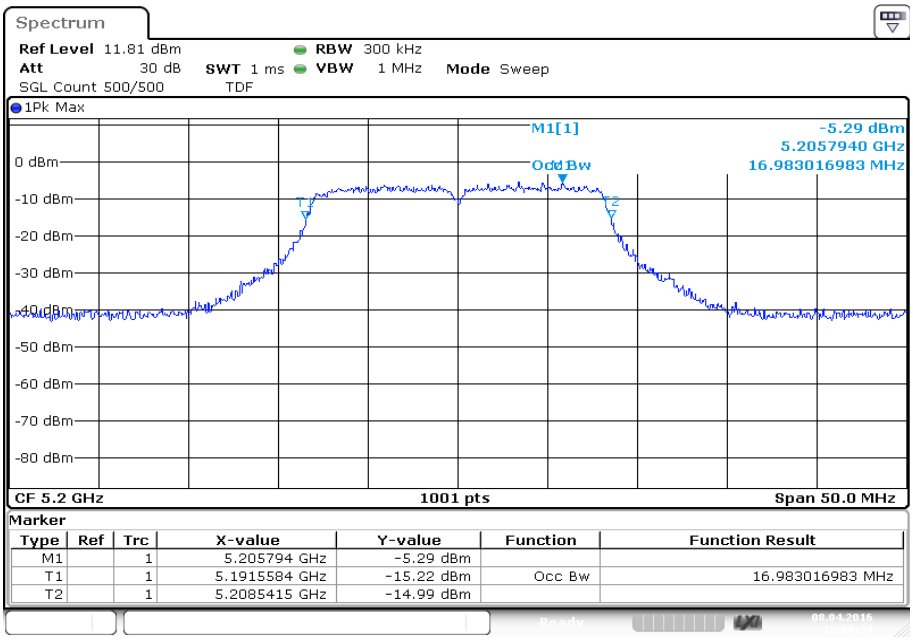
Plots: OFDM / a – mode, antenna port 2

Plot 1: 5180 MHz



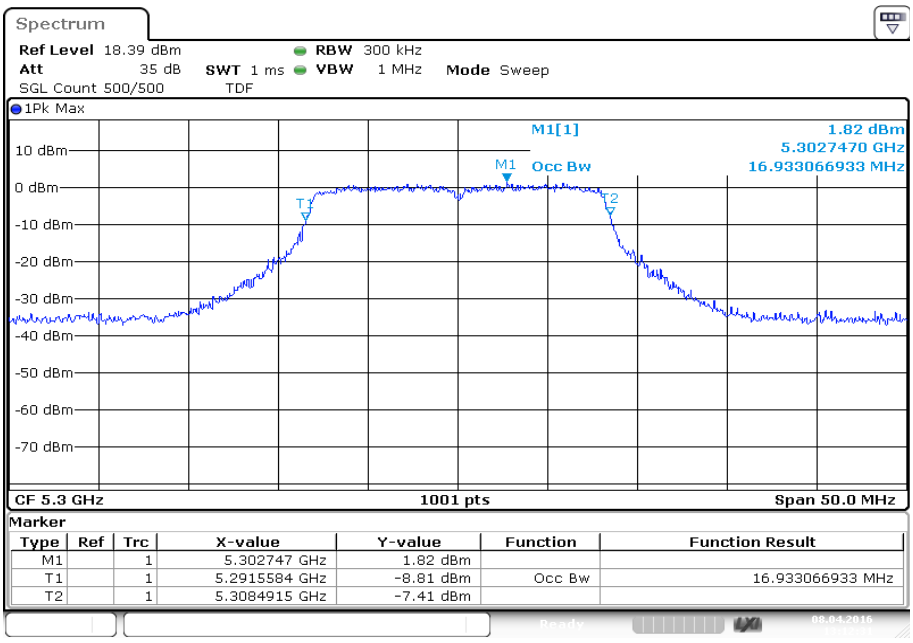
Date: 8.APR.2016 13:05:19

Plot 2: 5200 MHz



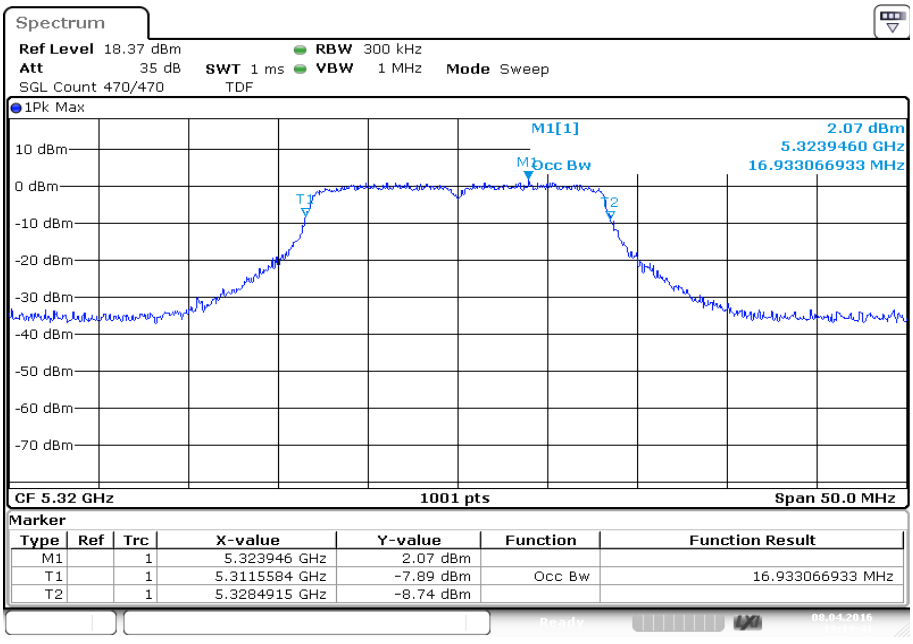
Date: 8.APR.2016 13:06:34

Plot 3: 5300 MHz



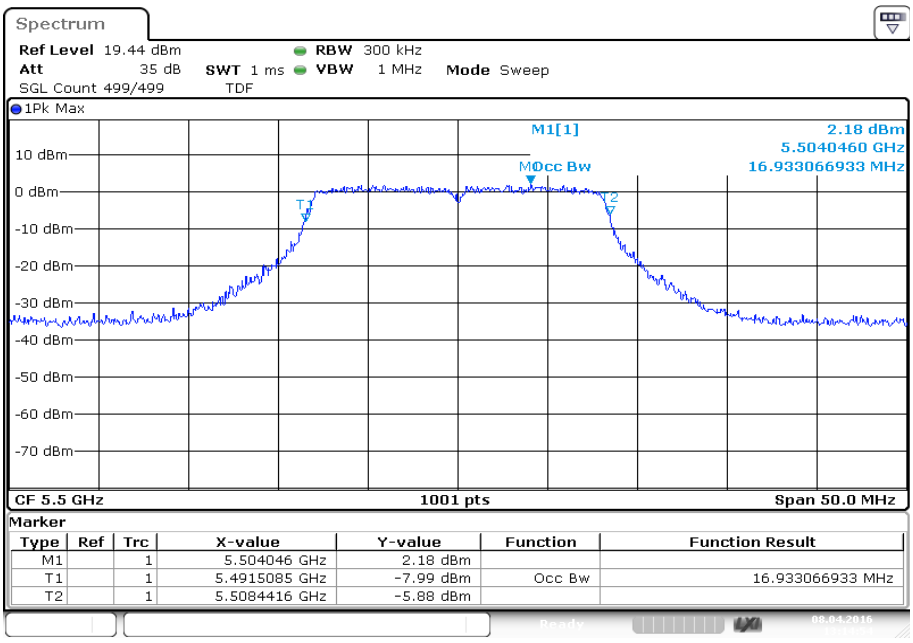
Date: 8.APR.2016 13:12:31

Plot 4: 5320 MHz



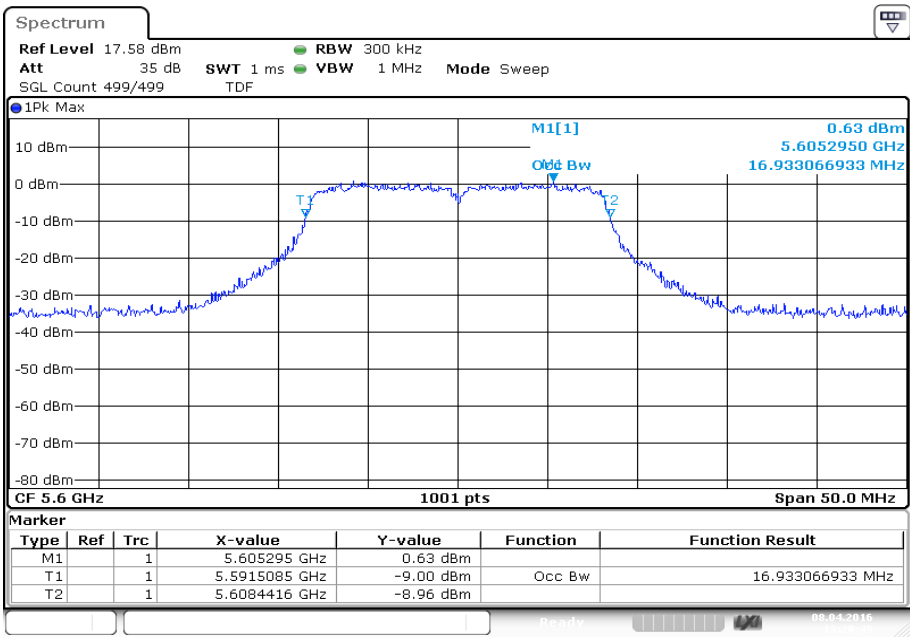
Date: 8.APR.2016 13:13:42

Plot 5: 5500 MHz



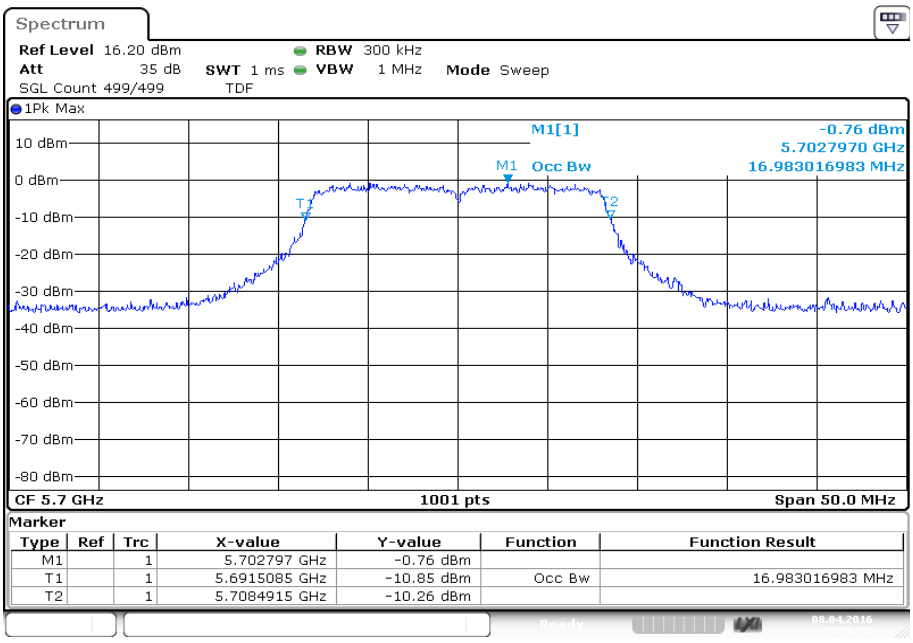
Date: 8.APR.2016 13:14:55

Plot 6: 5600 MHz



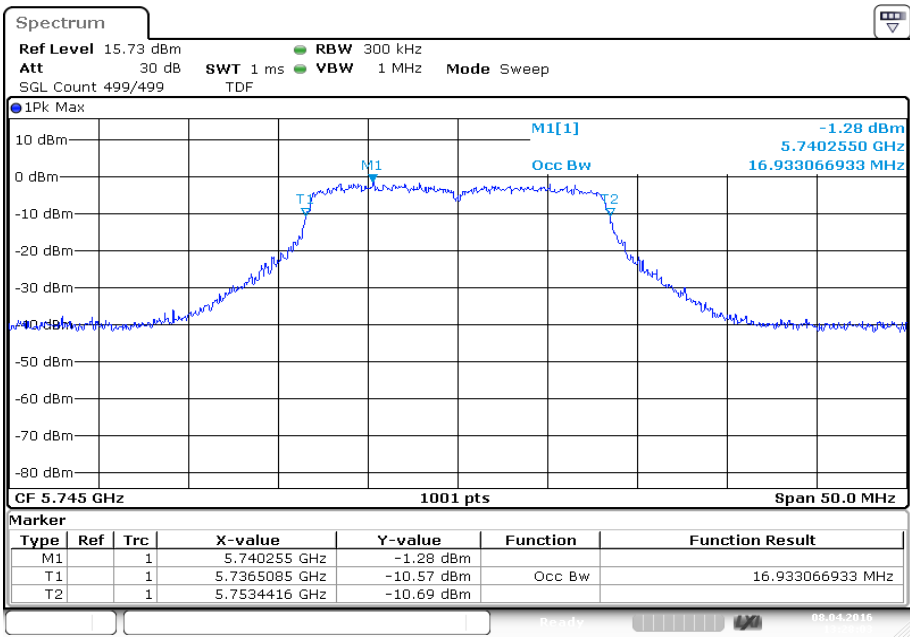
Date: 8.APR.2016 13:20:50

Plot 7: 5700 MHz



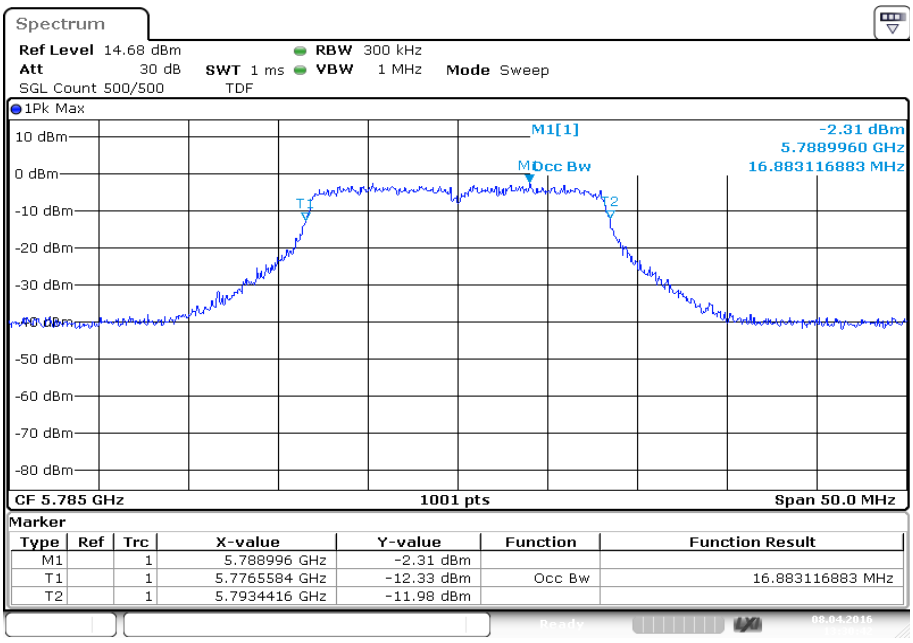
Date: 8.APR.2016 13:26:51

Plot 8: 5745 MHz



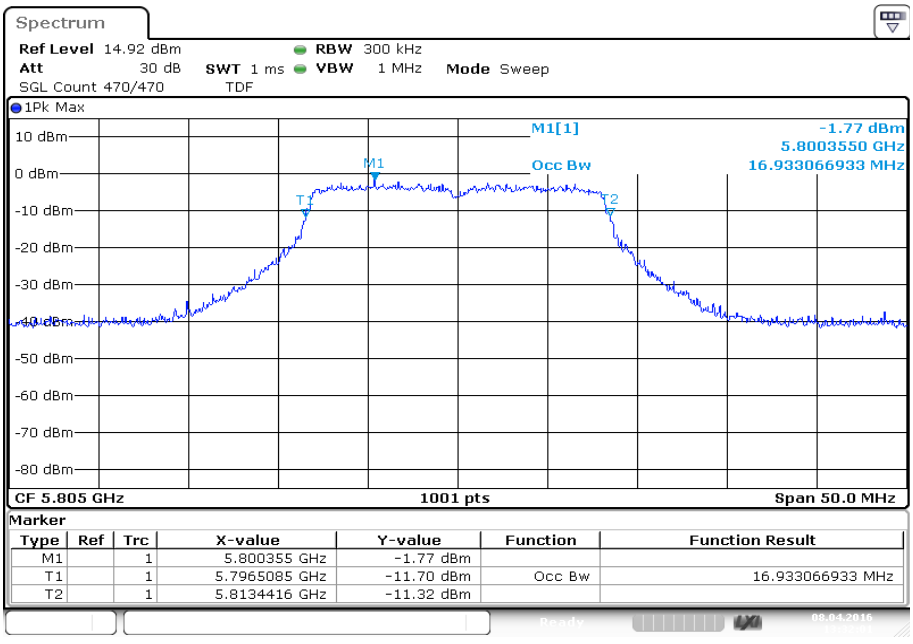
Date: 8.APR.2016 13:28:04

Plot 9: 5785 MHz



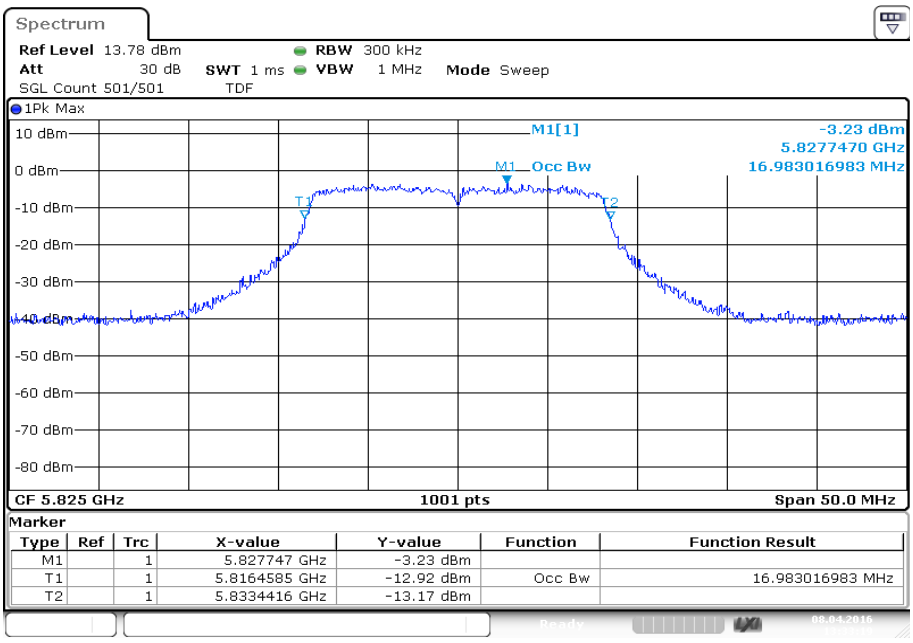
Date: 8.APR.2016 13:30:42

Plot 10: 5805 MHz



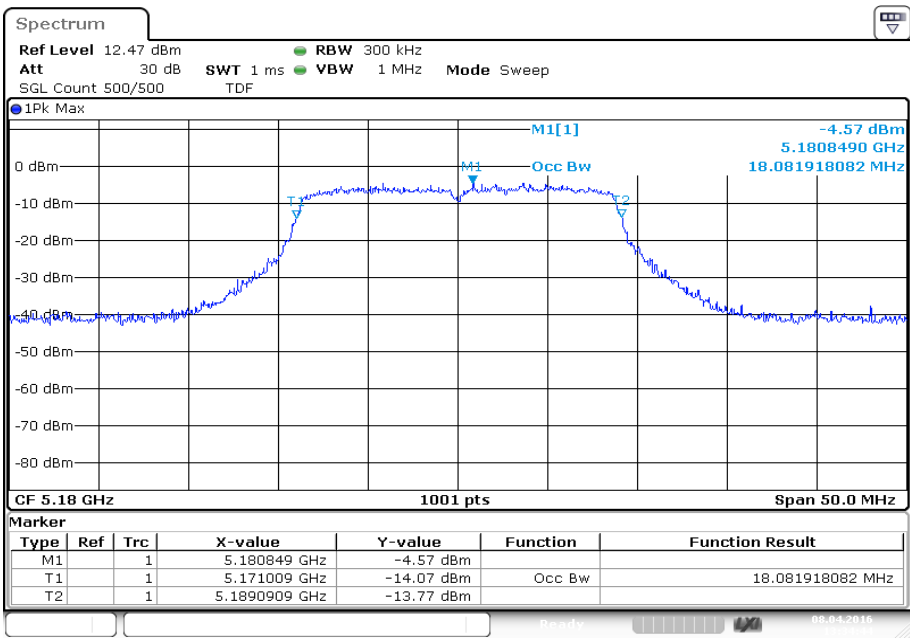
Date: 8.APR.2016 13:32:01

Plot 11: 5825 MHz



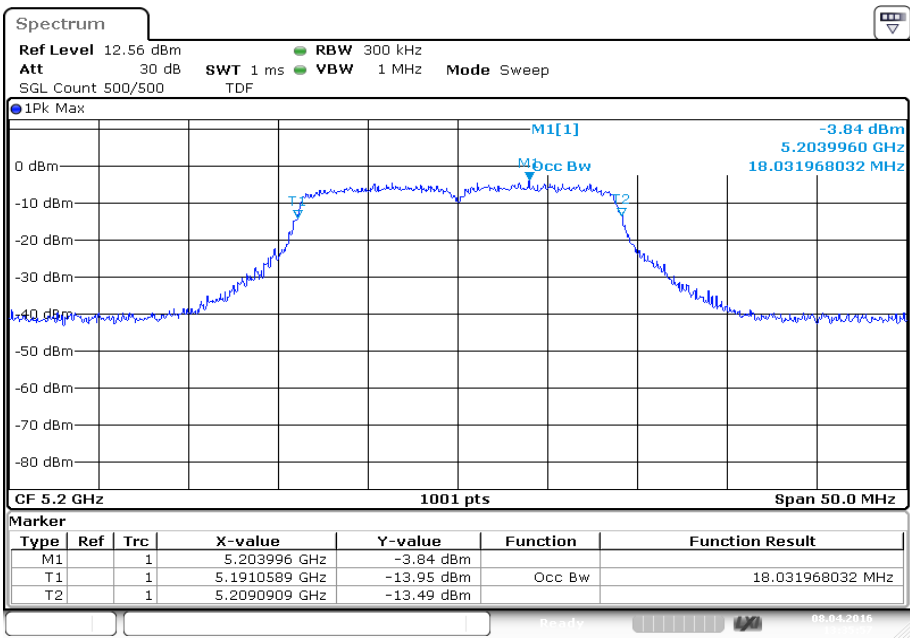
Plots: OFDM / n HT20 – mode, antenna port 2

Plot 1: 5180 MHz



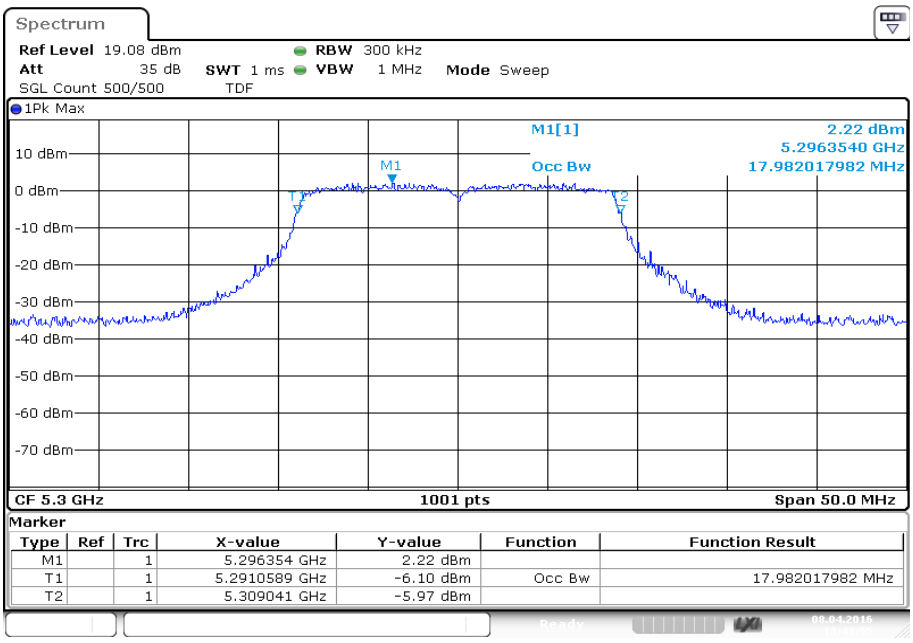
Date: 8.APR.2016 13:34:44

Plot 2: 5200 MHz



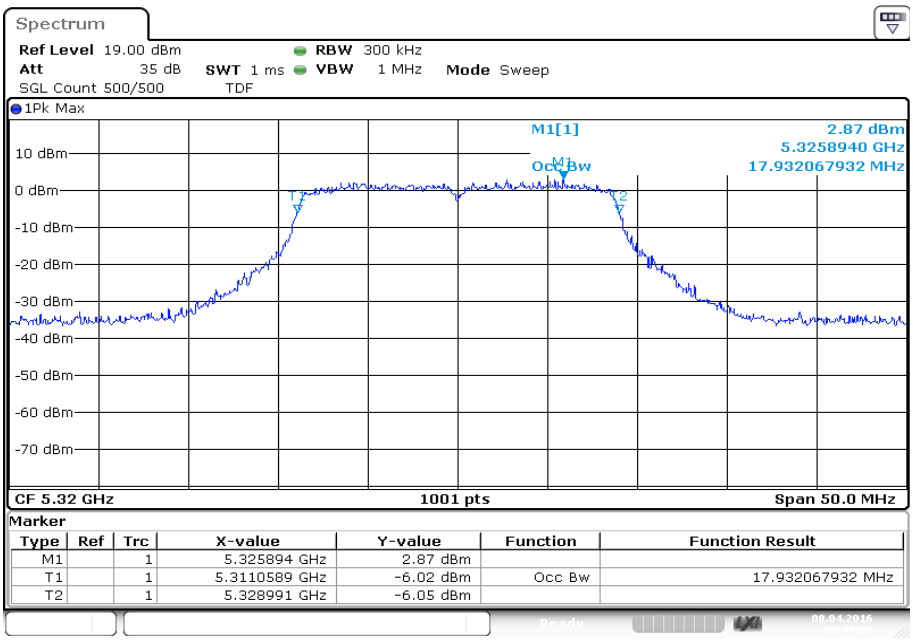
Date: 8.APR.2016 13:35:58

Plot 3: 5300 MHz



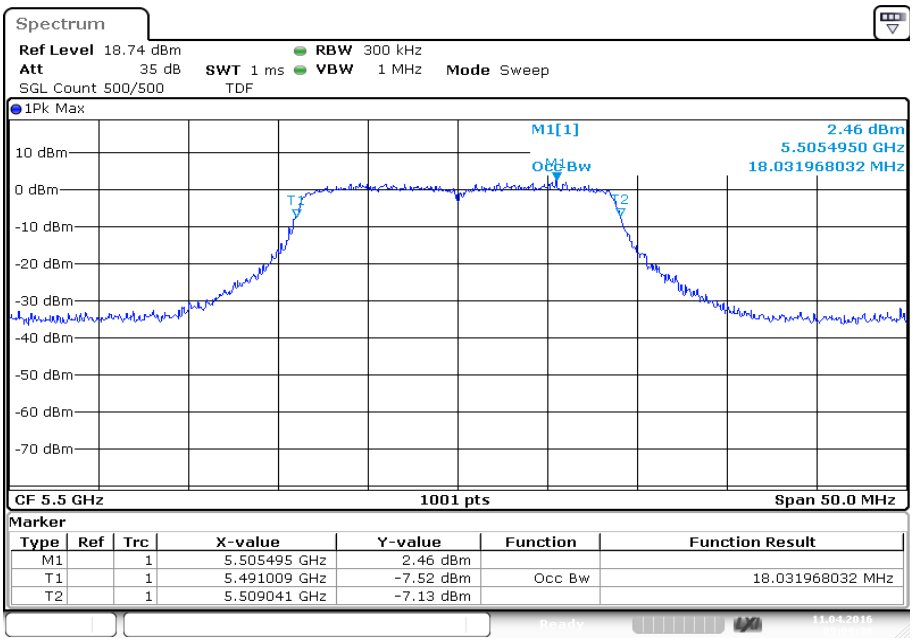
Date: 8.APR.2016 13:41:55

Plot 4: 5320 MHz



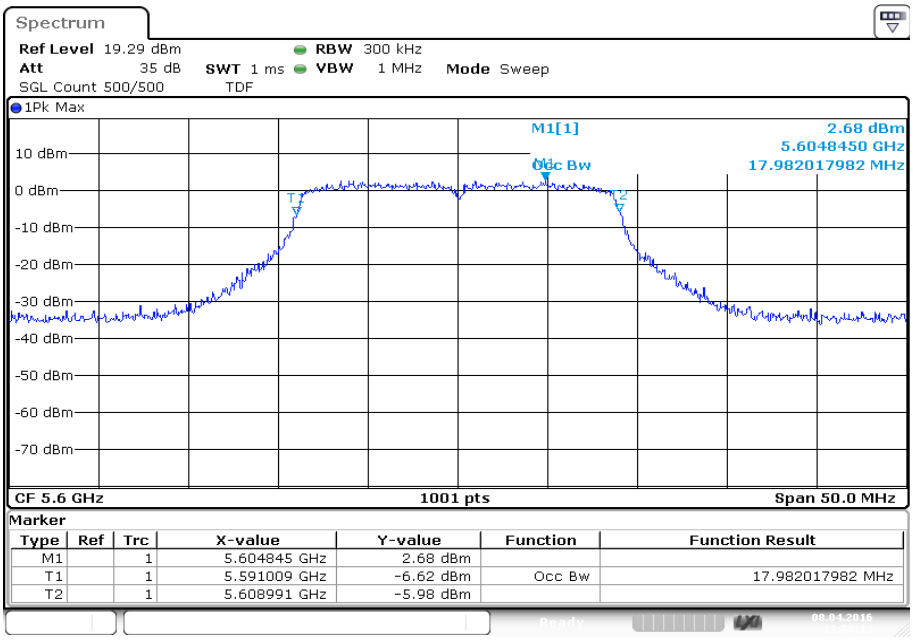
Date: 8.APR.2016 13:43:05

Plot 5: 5500 MHz



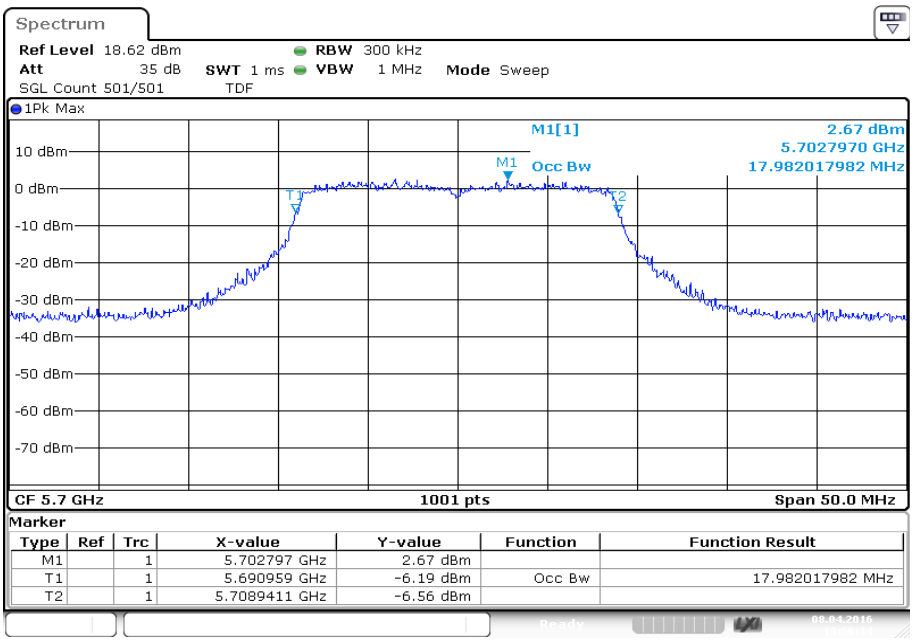
Date: 11.APR.2016 09:09:38

Plot 6: 5600 MHz



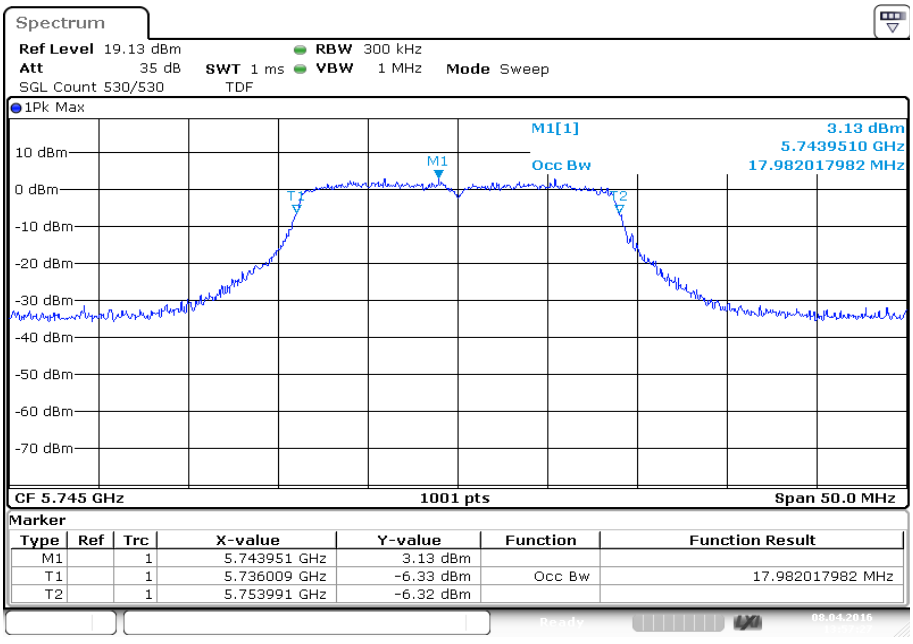
Date: 8.APR.2016 13:50:14

Plot 7: 5700 MHz



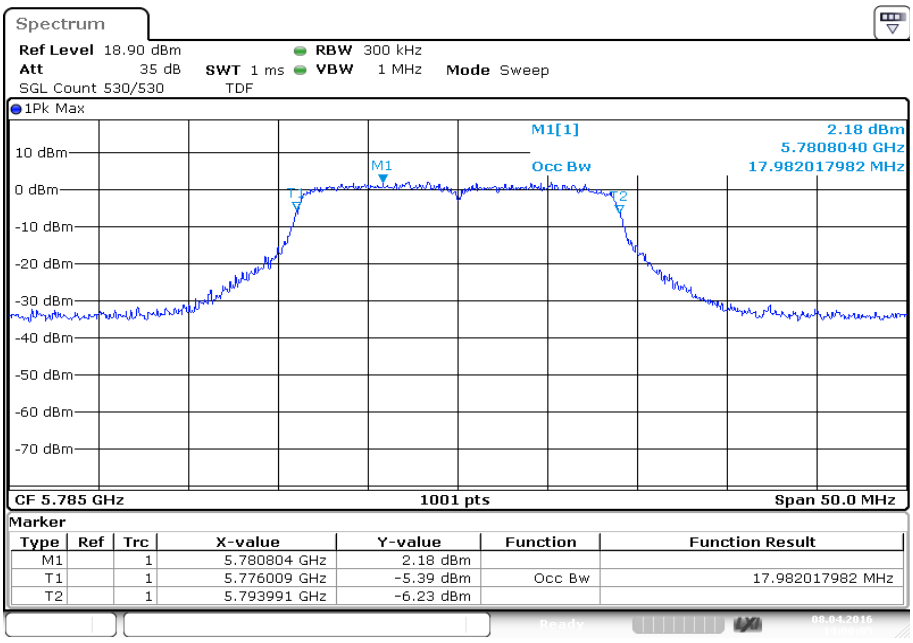
Date: 8.APR.2016 13:56:14

Plot 8: 5745 MHz



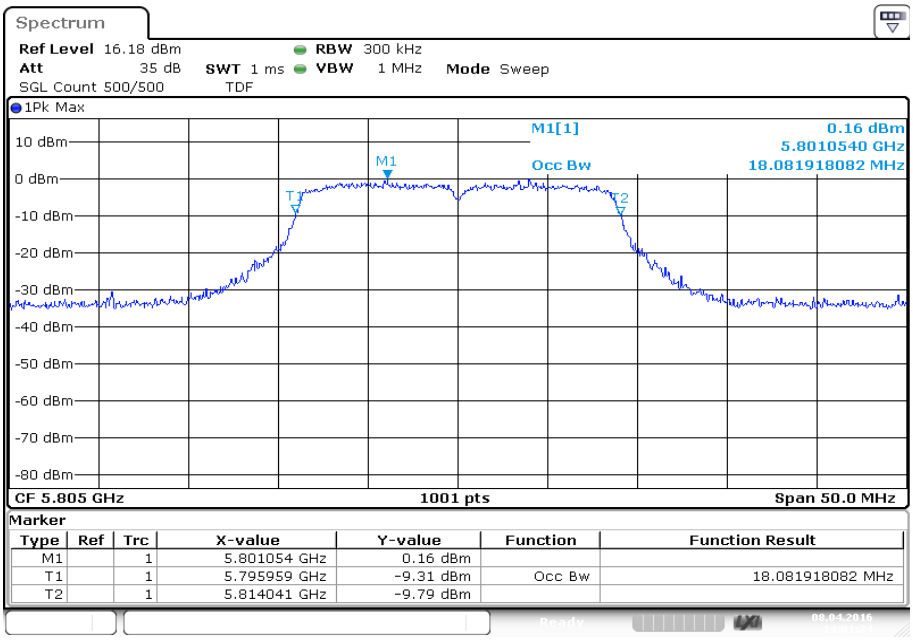
Date: 8.APR.2016 13:57:27

Plot 9: 5785 MHz



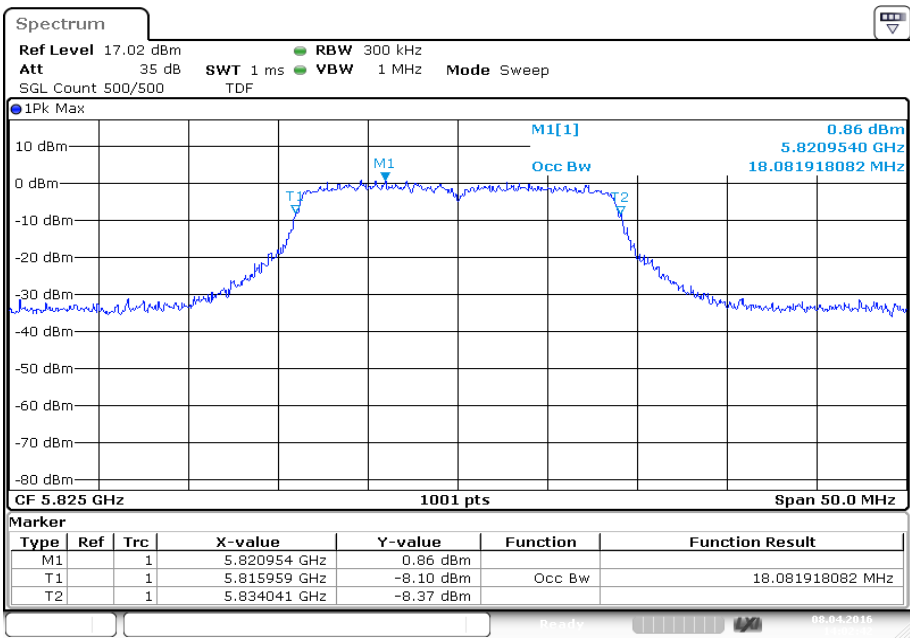
Date: 8.APR.2016 14:00:06

Plot 10: 5805 MHz



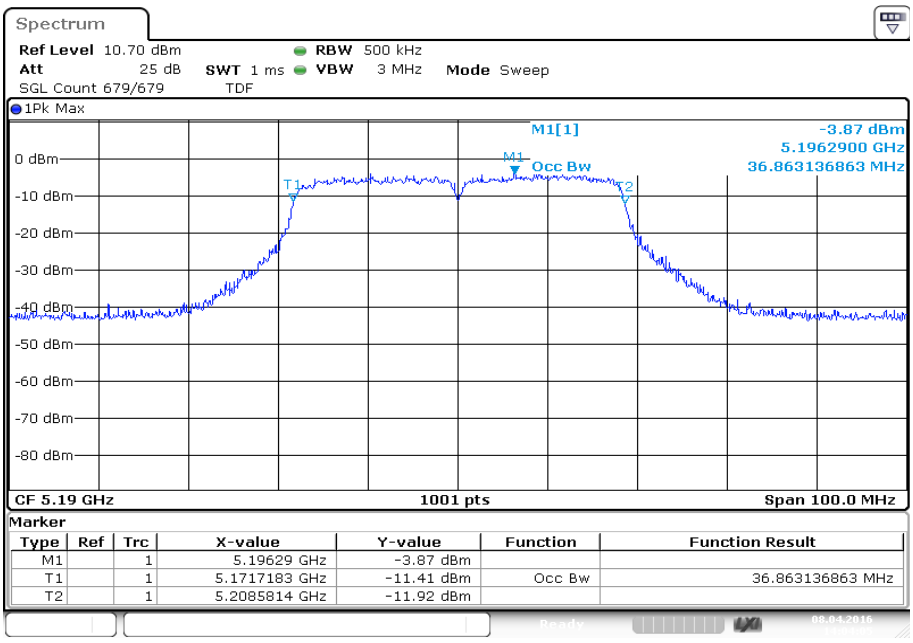
Date: 8.APR.2016 14:01:25

Plot 11: 5825 MHz



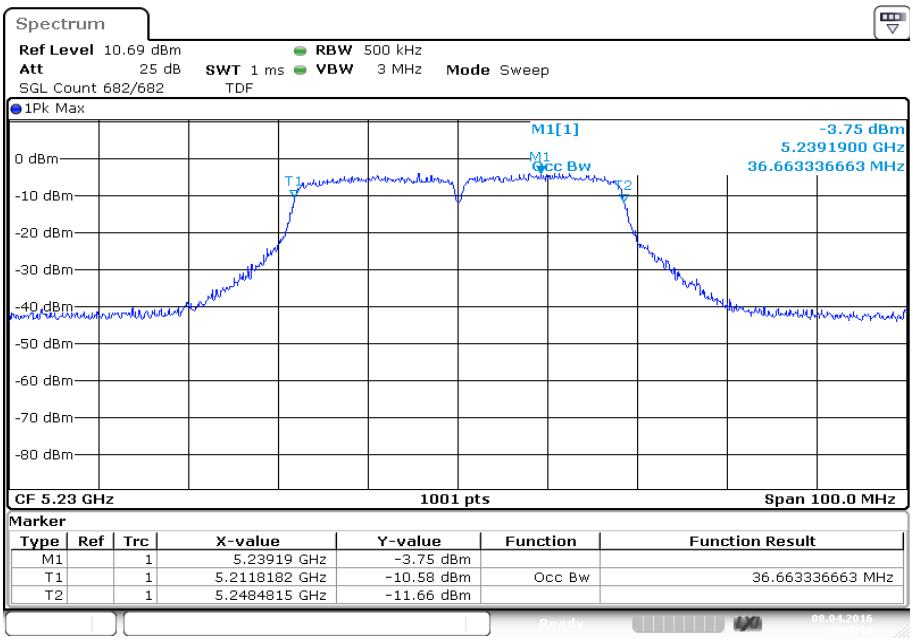
Plots: OFDM / n HT40 – mode, antenna port 2

Plot 1: 5190 MHz



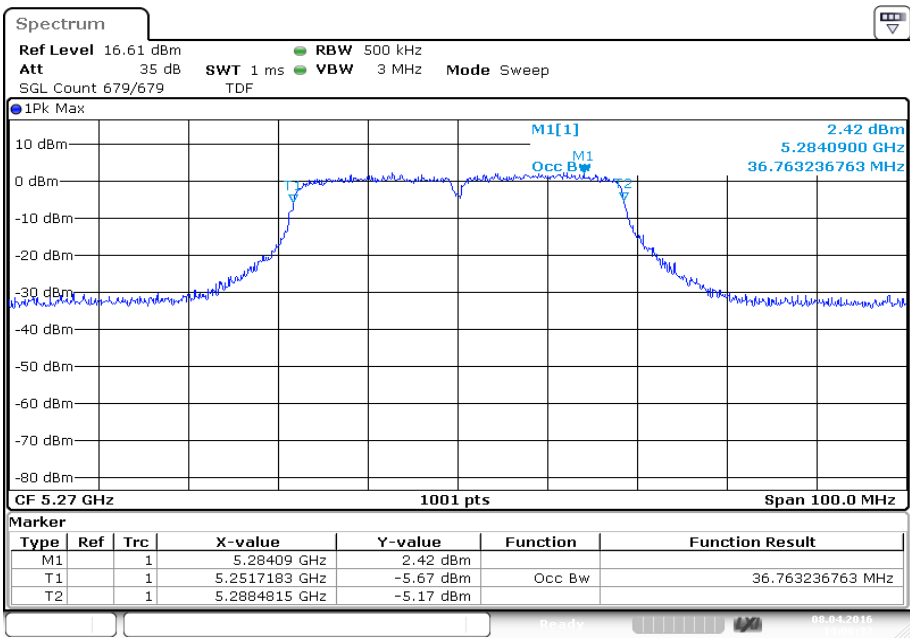
Date: 8.APR.2016 14:04:06

Plot 2: 5230 MHz



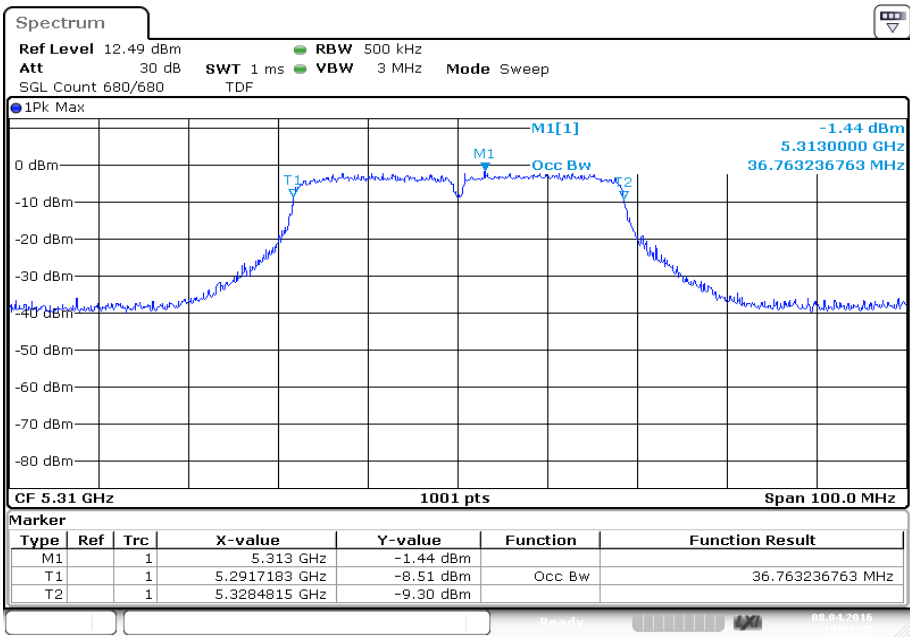
Date: 8.APR.2016 14:05:19

Plot 3: 5270 MHz



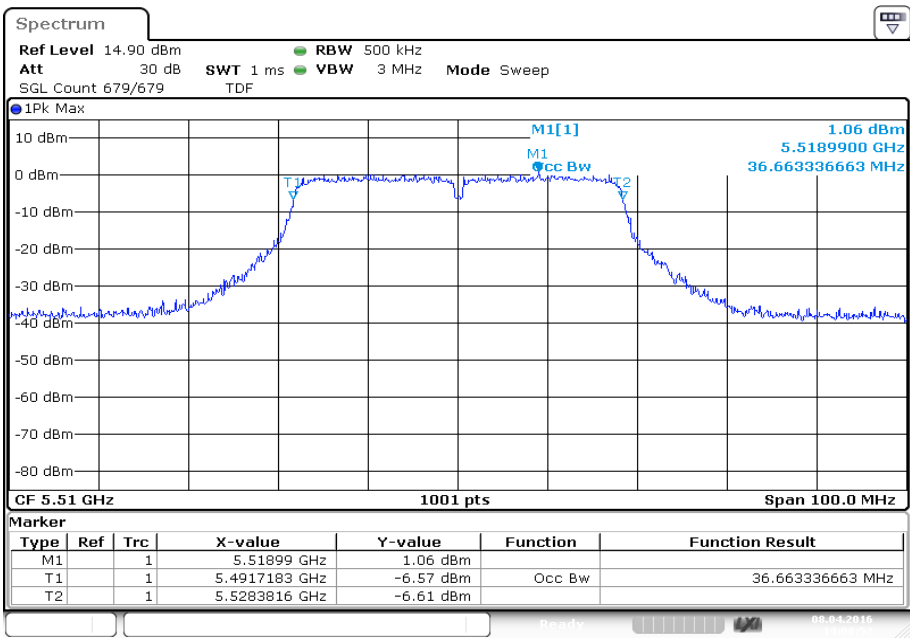
Date: 8.APR.2016 14:06:32

Plot 4: 5310 MHz



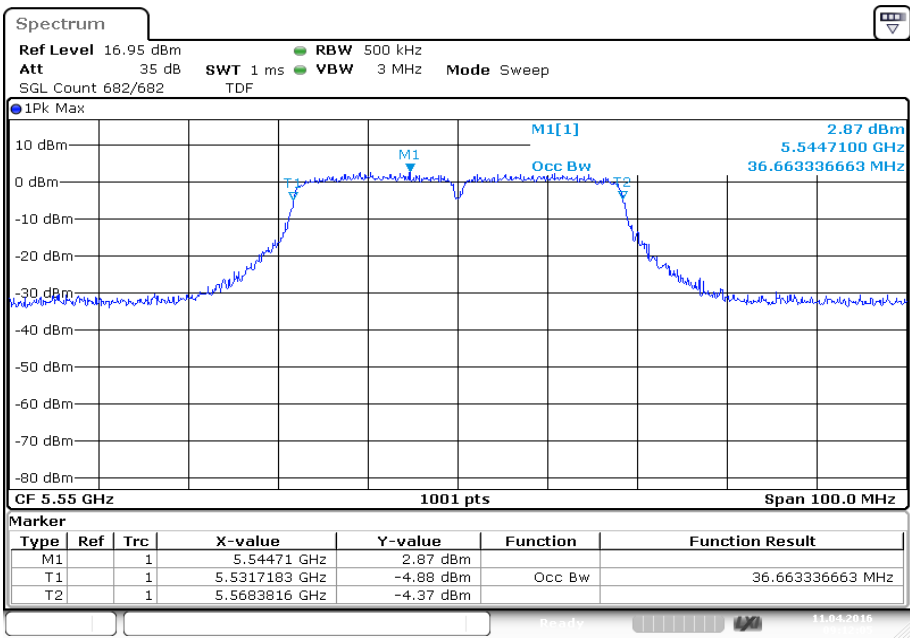
Date: 8.APR.2016 14:07:45

Plot 5: 5510 MHz



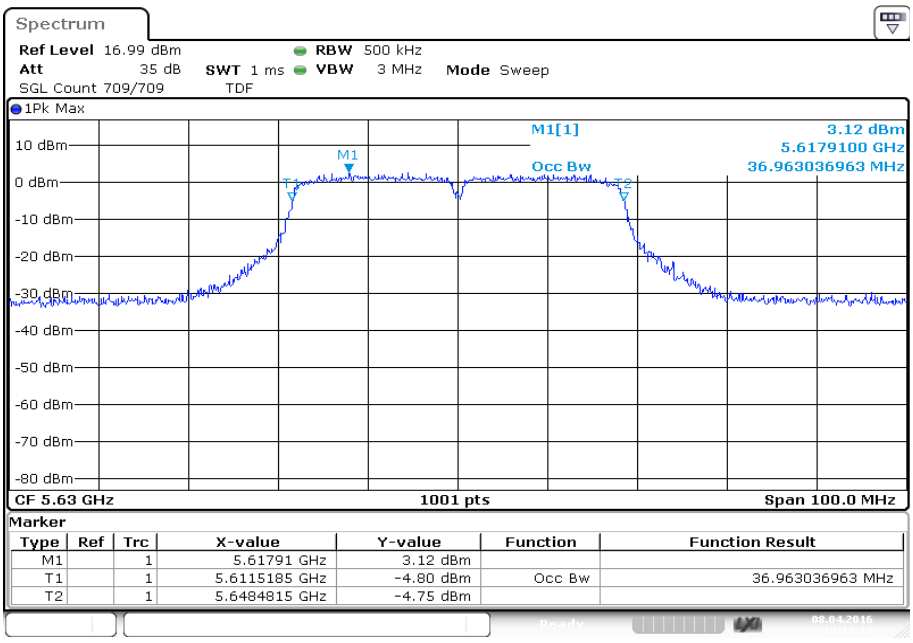
Date: 8.APR.2016 14:08:52

Plot 6: 5550 MHz



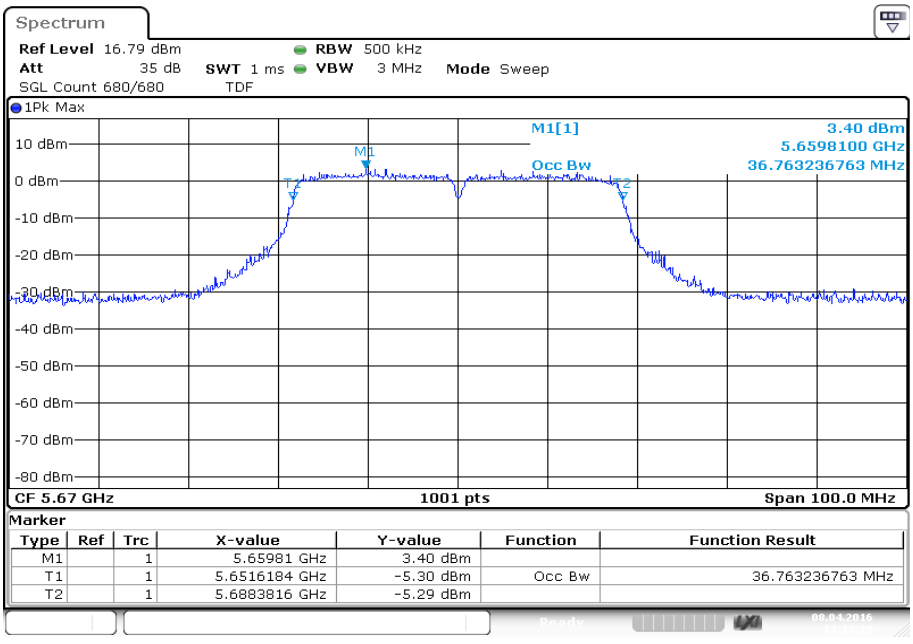
Date: 11.APR.2016 09:12:06

Plot 7: 5630 MHz



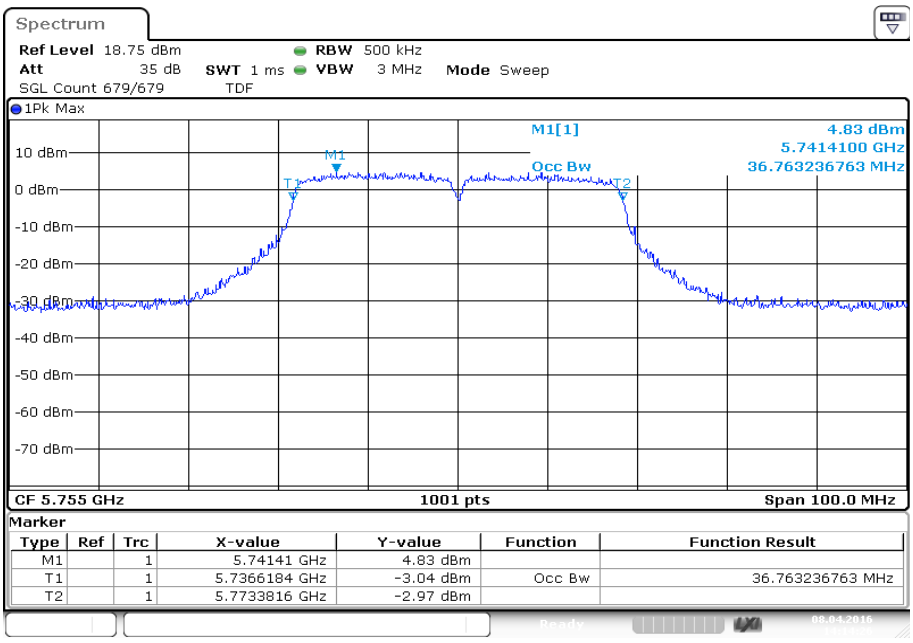
Date: 8.APR.2016 14:12:13

Plot 8: 5670 MHz



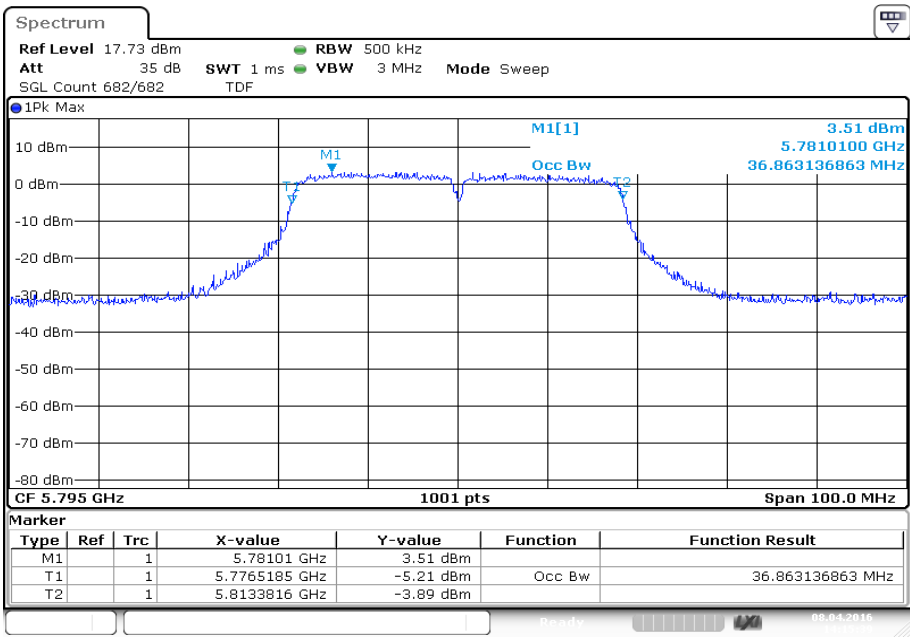
Date: 8.APR.2016 14:13:20

Plot 9: 5755 MHz



Date: 8.APR.2016 14:14:27

Plot 10: 5795 MHz



Date: 8.APR.2016 14:15:39

12.9 Band edge compliance radiated

Description:

Measurement of the radiated band edge compliance. The EUT is turned in the position that results in the maximum level at the band edge. Then a sweep over the corresponding restricted band is performed. The EUT is set to the lowest channel for the lower restricted band and to the highest channel for the upper restricted band. Measurement distance is 3m.

Measurement:

Measurement parameter	
Detector:	Peak / RMS
Sweep time:	Auto
Resolution bandwidth:	1 MHz
Video bandwidth:	3 MHz
Span:	See plots!
Trace mode:	Max Hold
Used test setup:	see chapter 7.2 – A
Measurement uncertainty:	see chapter 9

Limits:

Band Edge Compliance Radiated
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 5.205(c)).
74 dBµV/m PEAK 54 dBµV/m AVG

Result:

Scenario	Band Edge Compliance Radiated [dBµV/m]
band edge	See TX spurious emissions radiated!