

Prüfbericht - Nr.: 19660294 001		Seite 1 von 172	
<i>Test Report No.:</i>		<i>Page 1 of 172</i>	
Auftraggeber: <i>Client:</i>		e-Con Systems India Pvt Ltd. Rishabh Infopark, RR Tower # IV, Thiru-Vi-Ka Industrial Estate Guindy, Chennai -600032	
Gegenstand der Prüfung: <i>Test item:</i>		SOMWB1	
Bezeichnung: <i>Identification:</i>	WL1835_PCIE_CARD_REV1	Serien-Nr.: <i>Serial No.</i>	01
Wareneingangs-Nr.: <i>Receipt No.:</i>	1803214346	Eingangsdatum: <i>Date of receipt:</i>	20.03.2017
Prüfört: <i>Testing location:</i>		Refer Page 4 of 172 for test facilities	
Prüfgrundlage: <i>Test specification:</i>		FCC Part 15 subpart C-15.247 ANSI C63.10-2013	
Prüfergebnis: <i>Test Result:</i>		Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). <i>The test items passed the test specification(s).</i>	
Prüflaboratorium: <i>Testing Laboratory:</i>		TÜV Rheinland (India) Pvt. Ltd. 82/A, 3rd Main, West Wing, Electronic City Phase 1 Hosur Road, Bangalore – 560 100. India FCC Registration No.: 176555	
geprüft / tested by:		kontrolliert / reviewed by:	
21.03.2017	Raghavendra Katti Engineer	17.04.2017	Saibaba Siddapur Assistant Manager
<i>Datum</i> <i>Date</i>	<i>Name/Stellung</i> <i>Name/Position</i>	<i>Datum</i> <i>Date</i>	<i>Name/Stellung</i> <i>Name/Position</i>
	<i>Unterschrift</i> <i>Signature</i>		<i>Unterschrift</i> <i>Signature</i>
Sonstiges / Other Aspects:		FCC ID: 2ALXI-SOMWB1	
Abkürzungen:	P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet	Abbreviations:	P(ass) = passed F(ail) = failed N/A = not applicable N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i>			

TÜV Rheinland India Pvt. Ltd. 82/A, 3rd Main, West Wing Electronic City Phase 1, Hosur Road, Bangalore-560100, India Tel.: +9180 6723 3500 • Fax: +9180 6723 3542 • Web: www.tuv.com

Test Item	FCC	Result
Maximum conducted output power	FCC 15.247(b) (3)	Pass
DTS Bandwidth	FCC 15.247(a) (2)	Pass
Maximum Power Spectral Density	FCC 15.247(e)	Pass
Emissions in non-restricted frequency bands	FCC 15.247(d)	Pass
Spurious Radiated Emissions and Restricted Bands of Operation	FCC 15.209 / FCC 15.205	Pass
Conducted Emissions on a.c Power Lines	FCC 15.207	Pass

Note: Conducted measurements are done according to the procedure given in KDB No **558074 D01**
DTS Measurement Guidance **v03r05**

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List of Test and Measurement Instruments

Equipment	Manufacturer	Model Name	Serial Number	Calibration Due Date	Periodicity	Used for Test Items
EMI Test Receiver	Rohde & Schwarz	ESU 40	100288	29-10-2017	Yearly	Spurious Radiated Emissions
Broadband Antenna	Frankonia	ALX-4000	ALX-4000-806	10-06-2017	Yearly	
Active Loop Antenna	Frankonia	LAX-10	LAX-10-800	22-12-2017	Yearly	
Broadband Horn Antenna	Frankonia	HAX-18	HAX18-802	16-03-2018	Yearly	
Emission Horn Antenna	ETS Lindgren	116706	00107323	02-11-2017	Yearly	
Semi Anechoic Chamber	Frankonia	-	-	-	-	
Spectrum Analyser	Agilent Technologies	E4407B	US41192772	13-02-2018	Yearly	Antenna - Port Conducted Tests
Signal Analyzer	Rohde & Schwarz	FSV7	101644	01-12-2017	Yearly	
LISN	Rohde & Schwarz	ENV216	100022	07-09-2017	Yearly	Conducted Emission Test on AC Power Lines
EMI Receiver	Rohde & Schwarz	ESR7	101133	10-12-2017	Yearly	

Testing Facilities:

TUV Rheinland (India) Private Limited
 108 , Beside ISBR Business School,
 Electronic city Phase I
 Bangalore - 560 100.

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General Product Information

Product Function and Intended Use

The product can operate in Wi-Fi (802.11b, g, n mode) and supports Bluetooth and BLE and its use cases are

- Internet of Things
- Industrial and Home Automation
- Multimedia
- Smart Gateway and Metering
- Home Electronics
- Video Conferencing
- Home Appliances and White Goods
- Video Camera and Security

Ratings and System Details

Frequency Range	2400MHz – 2480MHz	
No. of channel	Refer page 5 of 164	
Channel Spacing	5MHz – Wi-Fi 2MHz – BT LE	
Transmitted Power	802.11b	16.52 dBm / 44.87 mW
	802.11g	19.02 dBm/79.79 mW
	802.11nHT20	19.02 dBm/79.79 mW
	802.11nHT40	10.58 dBm/11.42 mW
	802.11n_MIMO_HT20	22.44 dBm/175.38 mW
	Bluetooth LE	07.11 dBm/5.14 mW
Data Rate	802.11b: 1,2, 5.5,11 Mbps 802.11g: 6, 9, 12, 18, 24, 36,48, 54 Mbps 802.11nHT20,HT40 - MCS0 :: MCS7 :: MCS15 * BT LE – 1 Mbps	
Number of antenna	2	
Antenna Gain	2 dBi	
Antenna Type	Dipole and PCB antenna	
Supply Voltage	5VDC from USB	
Environmental Condition	-20 deg.C to 70 deg.C	

* 802.11n Mode data rate

802.11nHT20: 6.5, 13, 19.5, 26, 39, 52, 58.5,65, 13, 26, 39, 52, 78, 104,117 & 130 Mbps

802.11nHT40: 13.5, 27, 40.5, 54, 81, 108, 121.5, 135, 27, 54, 81, 108, 162, 216, 243, 270 Mbps

Test Conditions:

Supply Voltage: 5VDC from USB

Environmental conditions:

Temperature: +26.4 °C RH: 58.4%

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Test Set-up and Operation Mode

Principle of Configuration Selection

Transmission was enabled with continuous transmission on low, mid and high channel.

Test Operation and Test Software

RTTT (Real Time Tuning Tool) for Wi-Fi & HCI Tester for BLE was used to enable continuous transmission with duty cycle more than 98%, changing channels (low/mid/high) and select data rates on the EUT for the tests in this report.

Special Accessories and Auxiliary Equipment

- None

Countermeasures to achieve EMC Compliance

- None

Test Modes – Data Rates and Modulations

For Radiated spurious emissions, the tests were performed for all data rates and only worst case results are reported in this report.

Antenna Port measurements are performed on the following paths

Chain 0 - CH1

Chain 1 - CH2

Bluetooth & BLE will transmit only on chain 0 or CH1 & Wi-Fi will transmit b/g/n (SISO) mode on Chain 1 or CH2 & Wi-Fi n mode with MIMO will transmit on both Chain 0 & Chain 1.

List of Antenna: Table 1

Manufacturer	Antenna Type	Gain (dBi)	Antenna Part No.	Operating Frequency (GHz)
LSR	Dipole	2	001-0012	2.4-2.5
Laird	PCB	2	CAF94505	2.4-2.5

Transmission configuration

Mode	Chain 0	Chain 1
IEEE802.11b	Yes	No
IEEE802.11g	Yes	No
IEEE802.11n 20MHz (SISO)	Yes	No
IEEE802.11n 20MHz MIMO	Yes	Yes
IEEE802.11n 40MHz (SISO)	Yes	No
Bluetooth & BLE	Yes	No

Measurement Uncertainty

Parameter	Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1,5 dB
Power Spectral Density, conducted	±3 dB
Unwanted Emissions, conducted	±3 dB
All emissions, radiated	±6 dB
Temperature	±3 °C
Supply voltages	±3 %
Time	±5 %

List of Centre Frequencies: Table 2

Frequency Band (MHz)	Channel No.	Channel Frequency (MHz)
2400 – 2483.5 (20MHz Bandwidth)_ Wi-Fi	1	2412
	2	2417
	3	2422
	4	2427
	5	2432
	6	2437
	7	2437
	8	2447
	9	2452
	10	2457
	11	2462
2400 – 2483.5 (40MHz Bandwidth)_Wi-Fi	3	2422
	4	2427
	5	2432
	6	2437
	7	2442
	8	2447
	9	2452
2400 – 2483.5 _BT LE	0	2402
	1	2404
	2	2406
	3	2408
	:	:
	:	:
	18	2438
	19	2440
	20	2437
	:	:
	:	:
	36	2474
	37	2476
	38	2478
	39	2480

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Power level Settings used:

Channels	1	2	3	4	5	6	7	8	9	10	11
802.11b	6.2	8.2	8.2	8.2	8.2	6.2	8.2	8.2	8.2	8.2	8.2
802.11g	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
802.11n (HT20)	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
802.11n (HT40)			8.2	16.2	16.2	16.2	16.2	16.2	9.2		
802.11n (MIMO CH1)	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
802.11n (MIMO CH2)	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2

-all values are in dBm

Test Methodology

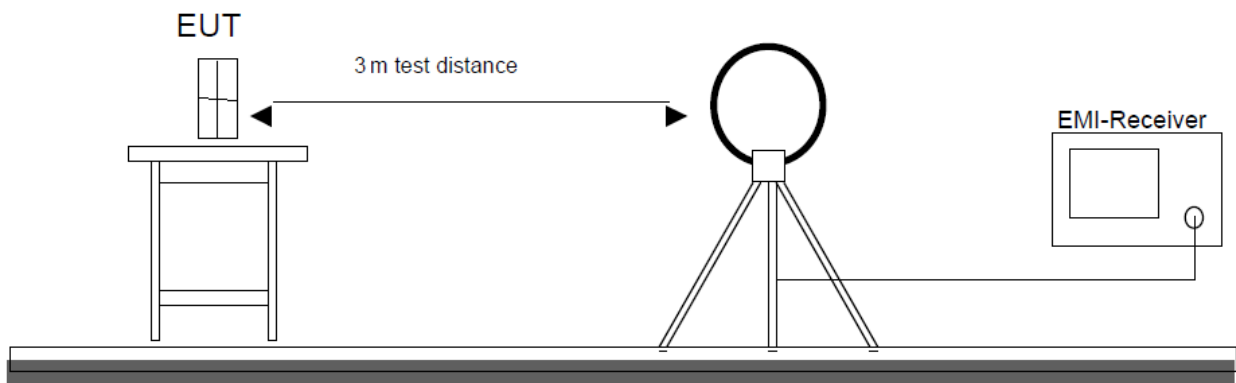
Radiated Emission Test

The radiated emission measurement was performed according to the procedures in ANSI C63.10-2013 & RSS Gen. the equipment under test (EUT) was placed at the middle of the 80 cm high turntable for below 1GHz & 1.5m height for above 1GHz measurement, and the EUT is 3 meters far from the measuring antenna. The turntable was rotated 360° for obtaining the maximum emission. The height of the measuring antennas was scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained. The measurement above 1000MHz was performed by horn antenna. The measurement below 30MHz was performed by loop antenna.

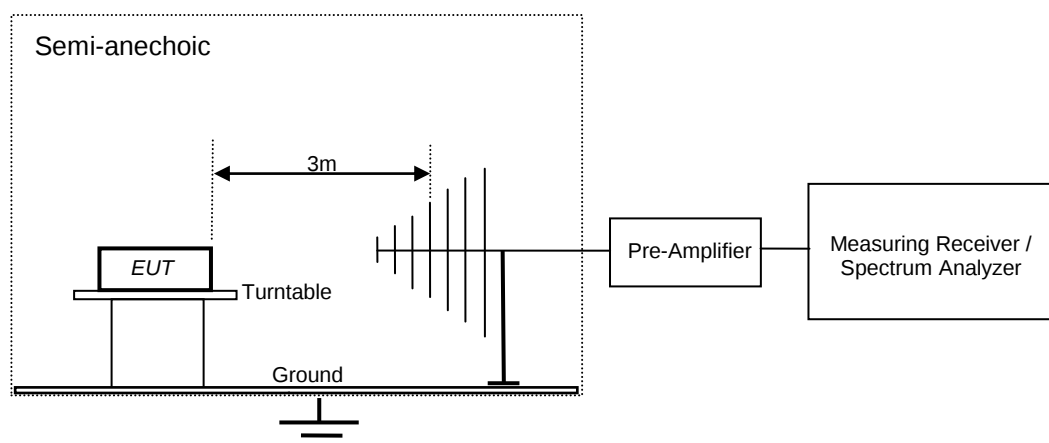
The EUT was rotated around the X-, Y-, and Z-Axis and the results from worst case axis are recorded.

Test Setup Configuration

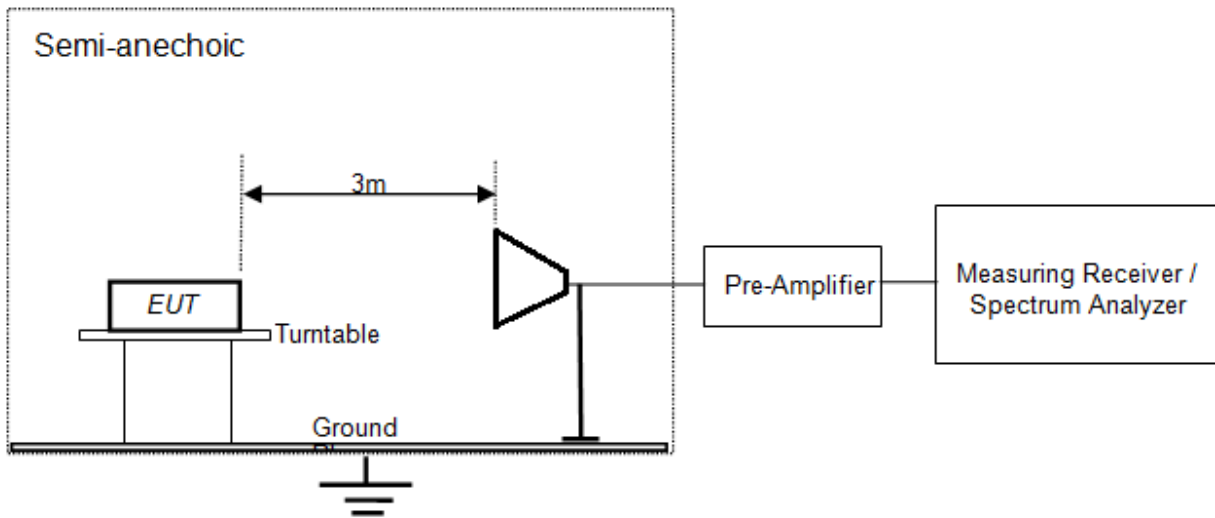
Frequency Range 9 kHz -30 MHz



Frequency Range 30MHz -1GHz

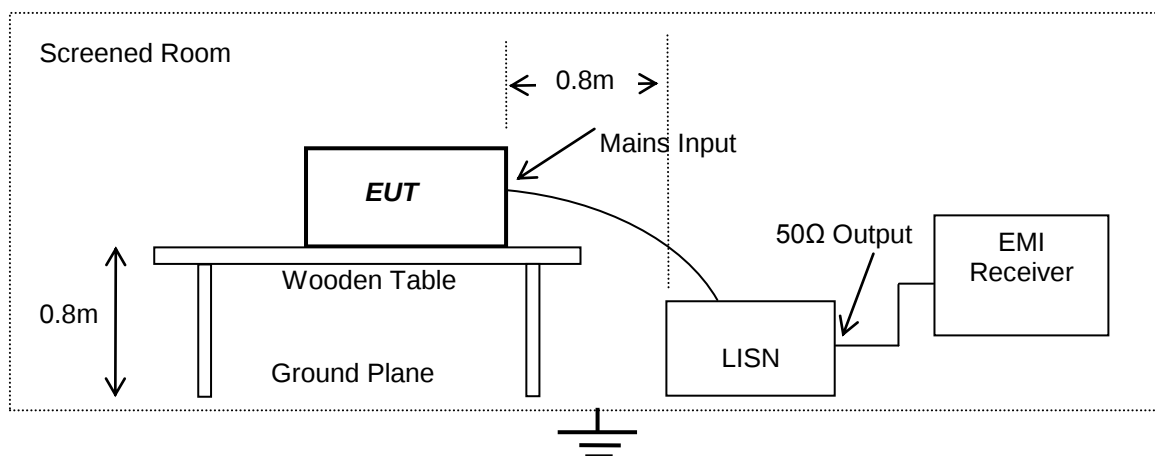


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Frequency above 1GHz



Conducted Emission Test on A.C. mains line

The equipment under test (EUT) was placed on a wooden table 80cm above the ground plane, the LISN was placed 80cm away from the EUT. The test was performed in accordance with ANSI C63.10 - 2013, with the following: an initial measurement was performed in peak and average detection mode on the live and neutral lines. The pre-scan was performed by peak detection on both live and neutral conductors. Any emissions recorded within 20dB of the relevant limit line were re-measured using quasi-peak and average detections, the 6 worst cases were recorded in the table of results.



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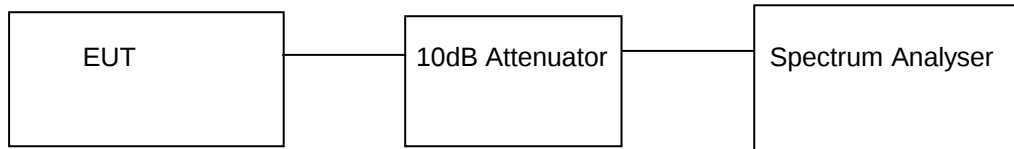
Test Results

Maximum Conducted Output Power Result

Pass

Test Specification	FCC Part 15.247(b)(3)
Measurement Bandwidth (RBW)	20MHz
Detector Function	Peak
Requirement	≤1 watt (30dBm).

Test Method:



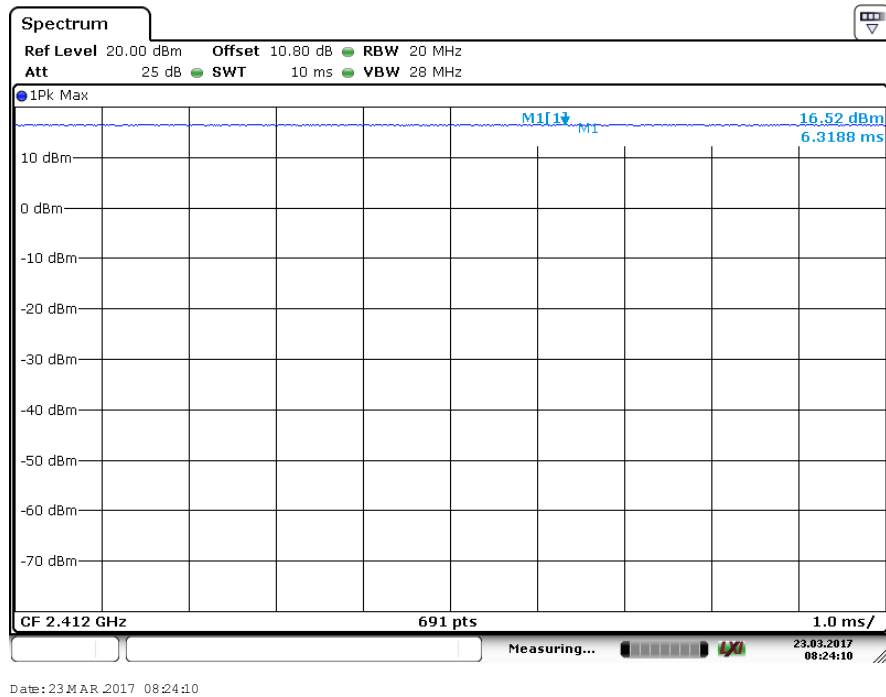
Note: For measurement of Maximum Peak conducted output power option 9.1 was used as mentioned in KDB.

Test Result: Wi-Fi

Test Results for Chain 1

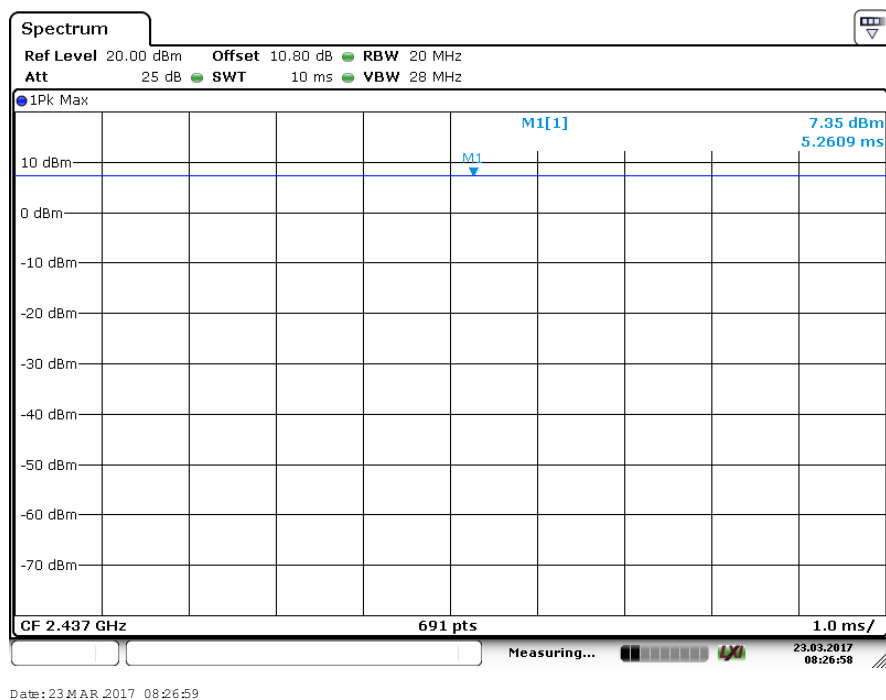
Attenuator (10dB) + cable loss (0.8dB) = 10.80dB Considered in the test result

IEEE 802.11b		
Data Rate (Mbps)	Channel Frequency (MHz)	Peak Power (dBm)
1	2412	16.52
	2437	7.35
	2462	7.37
11	2412	16.22
	2437	7.08
	2462	7.15



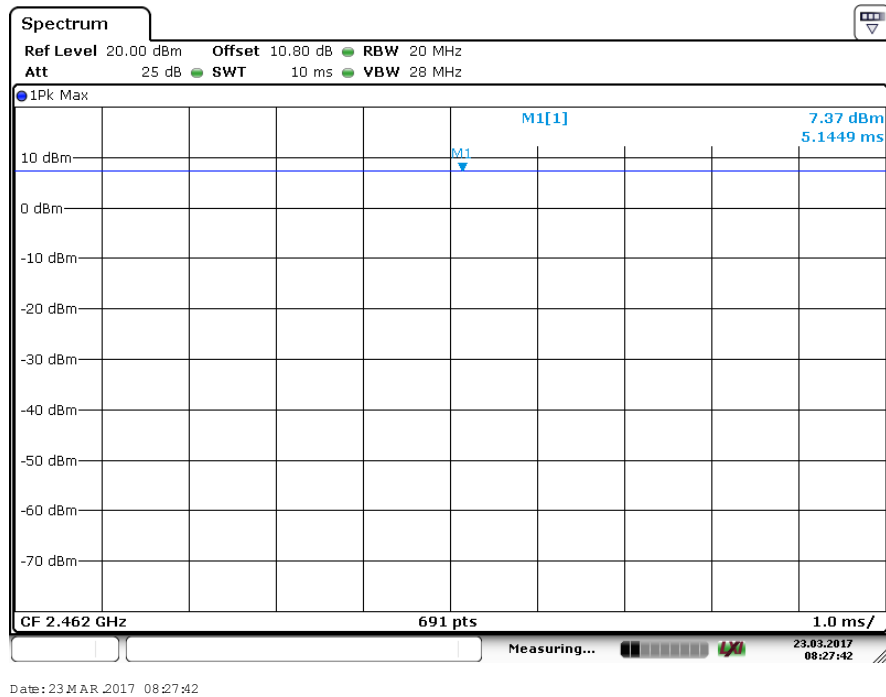
Data rate: 1 Mbps

Channel Frequency: 2412 MHz



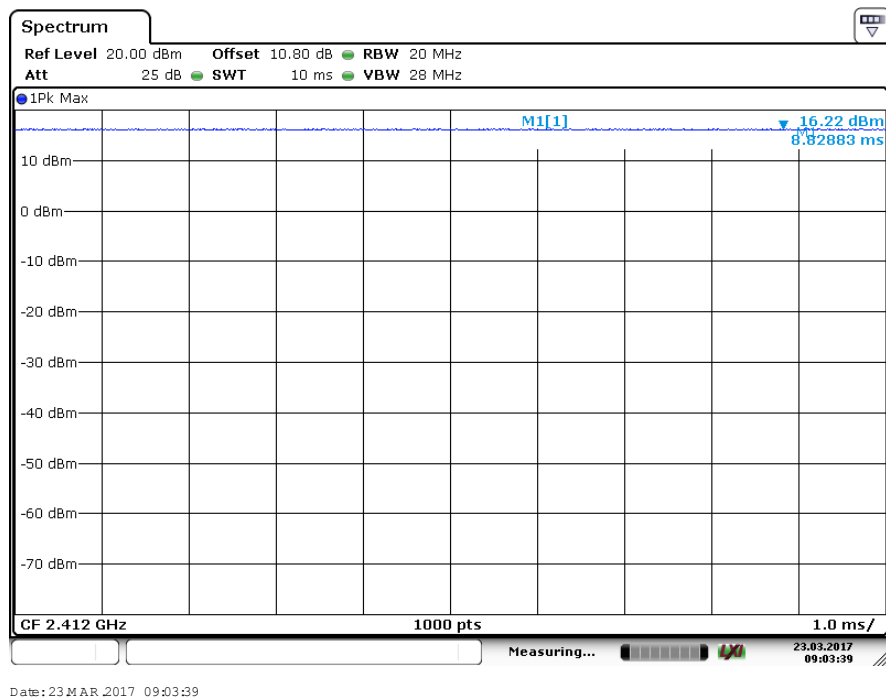
Data rate: 1 Mbps

Channel Frequency: 2437 MHz



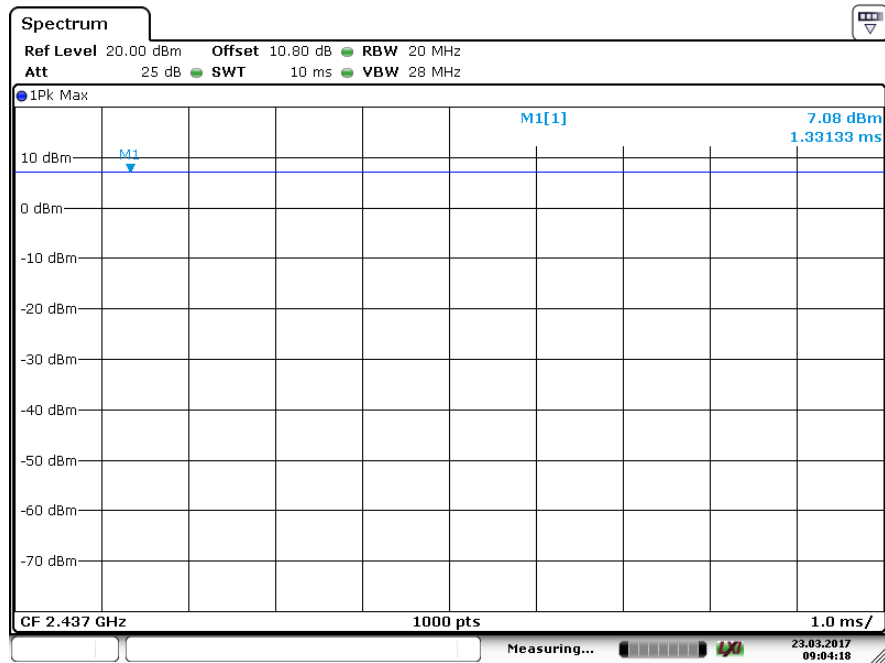
Data rate: 1 Mbps

Channel Frequency: 2462 MHz



Data rate: 11 Mbps

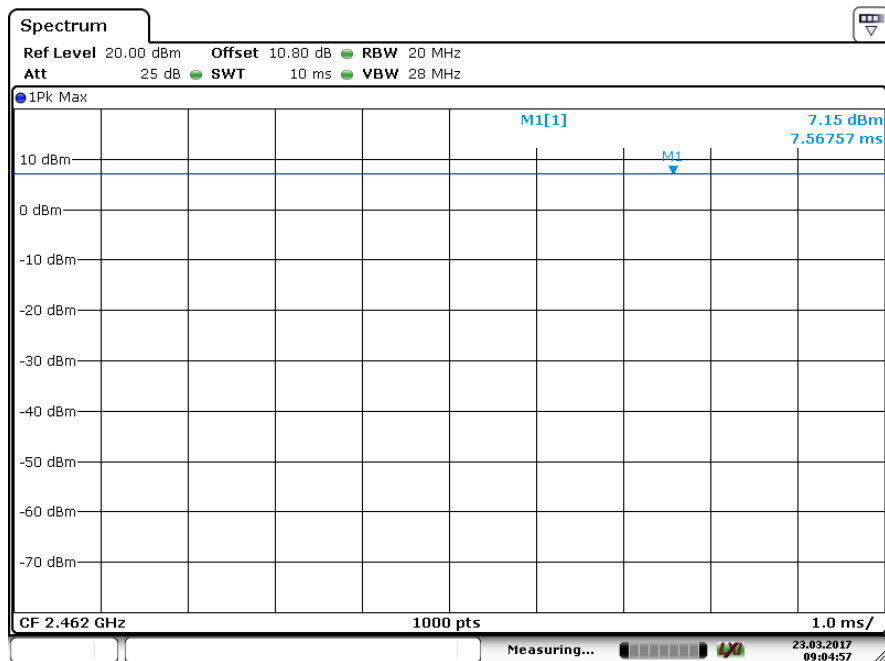
Channel Frequency: 2412 MHz



Date: 23 MAR 2017 09:04:19

Data rate: 11 Mbps

Channel Frequency: 2437 MHz

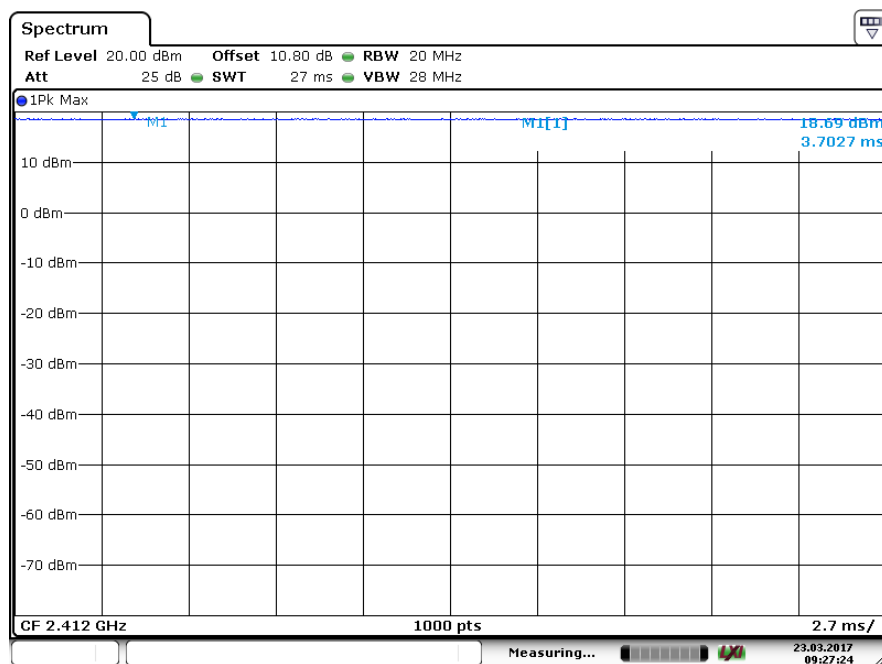


Date: 23 MAR 2017 09:04:57

Data rate: 11 Mbps

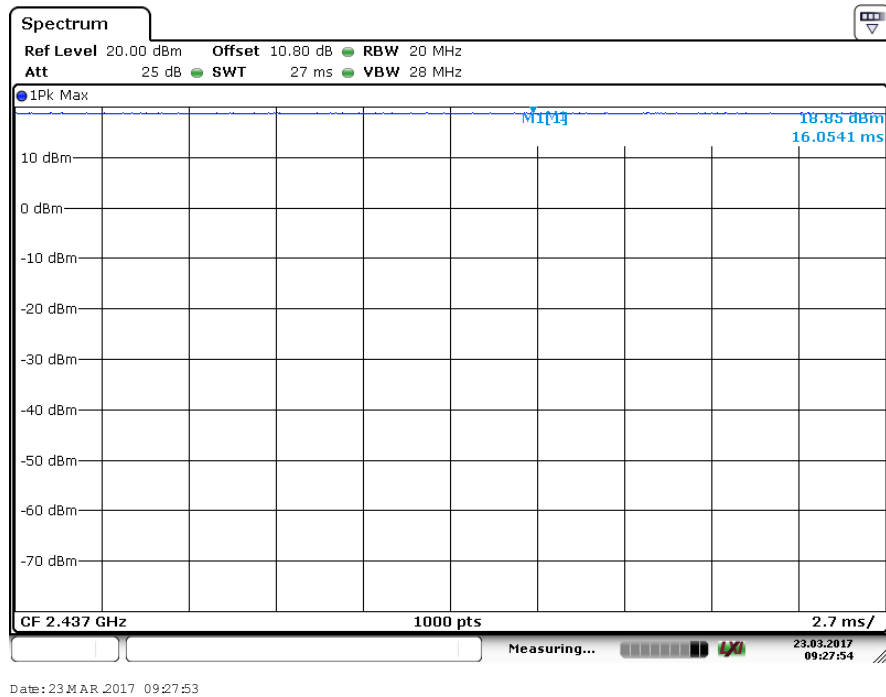
Channel Frequency: 2462 MHz

IEEE 802.11g		
Data Rate (Mbps)	Channel Frequency (MHz)	Peak Power (dBm)
6	2412	18.69
	2437	18.85
	2462	18.57
24	2412	18.84
	2437	19.02
	2462	18.74
54	2412	18.97
	2437	18.94
	2462	18.79



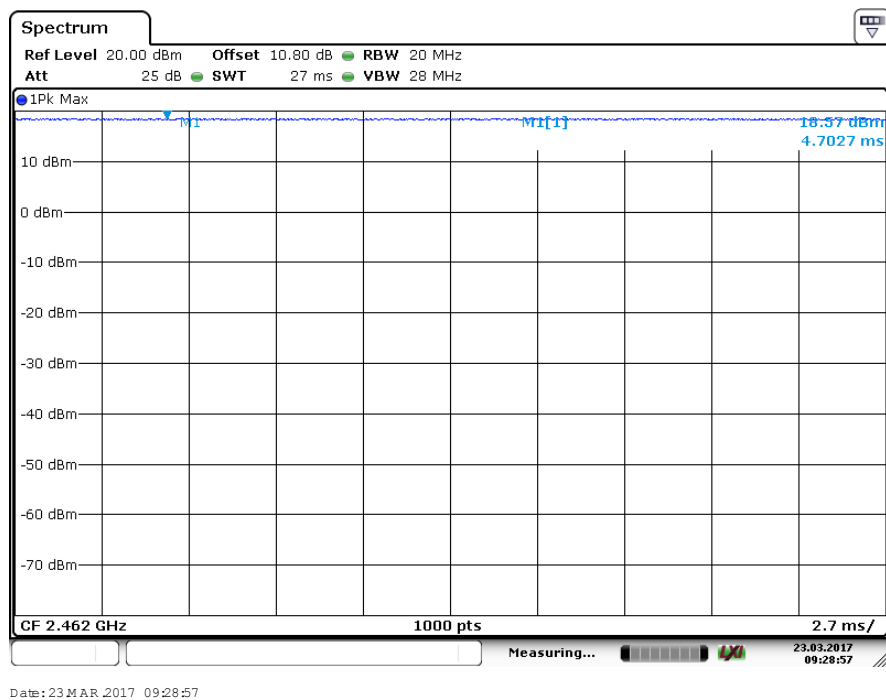
Date: 23 MAR 2017 09:27:24

Data rate: 6 Mbps
Channel Frequency: 2412 MHz



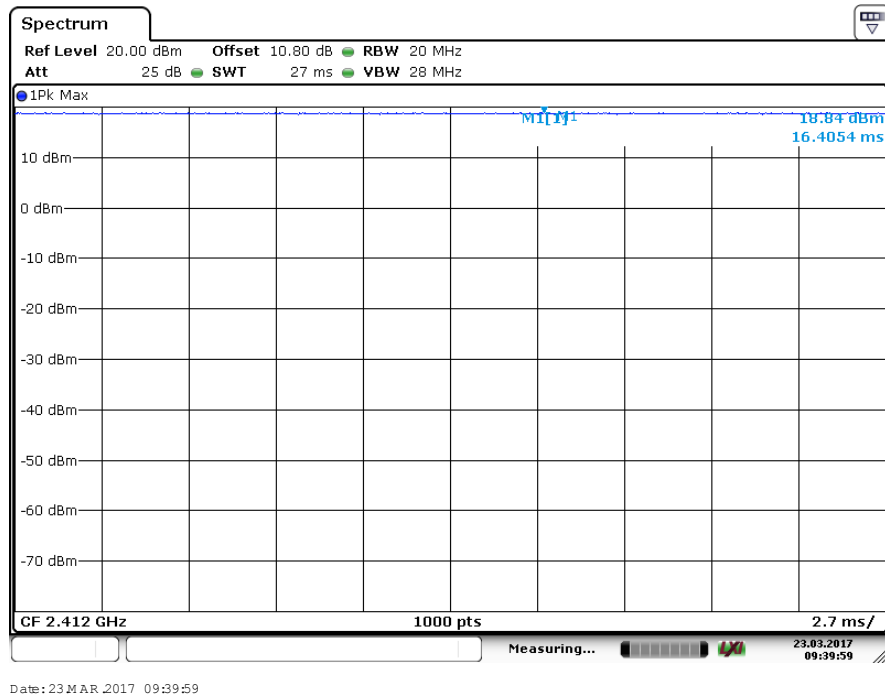
Data rate: 6 Mbps

Channel Frequency: 2437 MHz



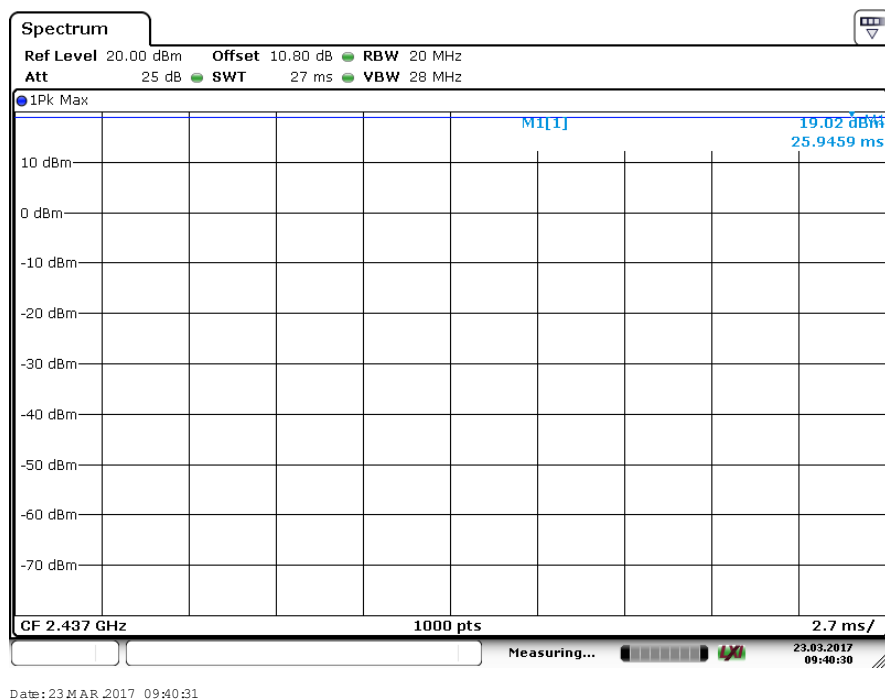
Data rate: 6 Mbps

Channel Frequency: 2462 MHz



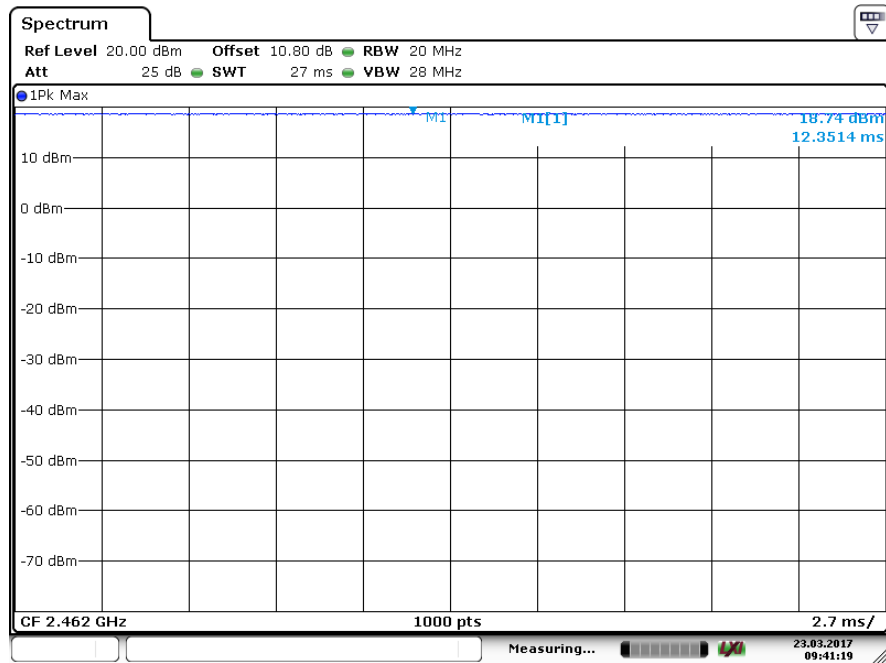
Data rate: 24 Mbps

Channel Frequency: 2412 MHz



Data rate: 24 Mbps

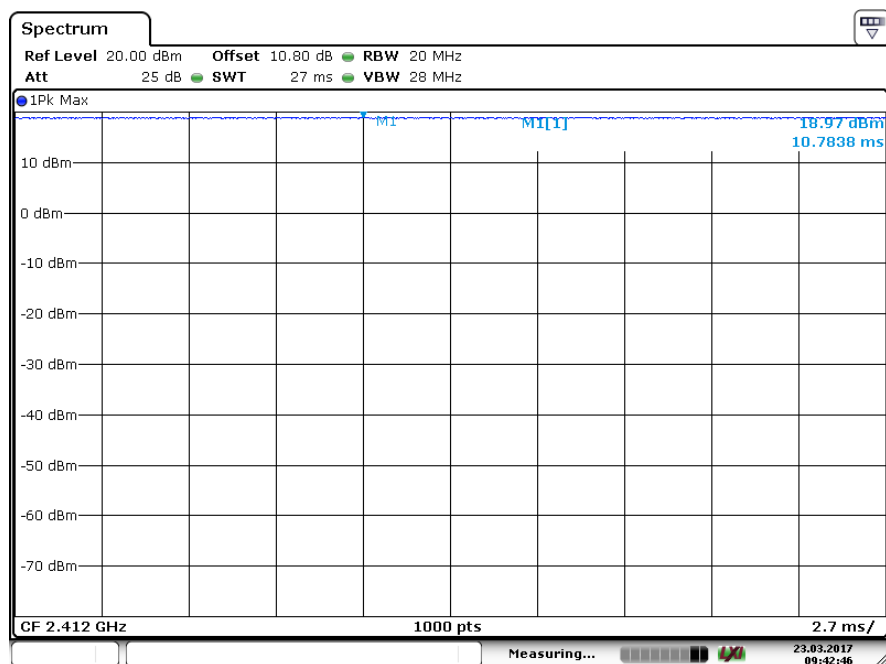
Channel Frequency: 2437 MHz



Date: 23 MAR 2017 09:41:19

Data rate: 24 Mbps

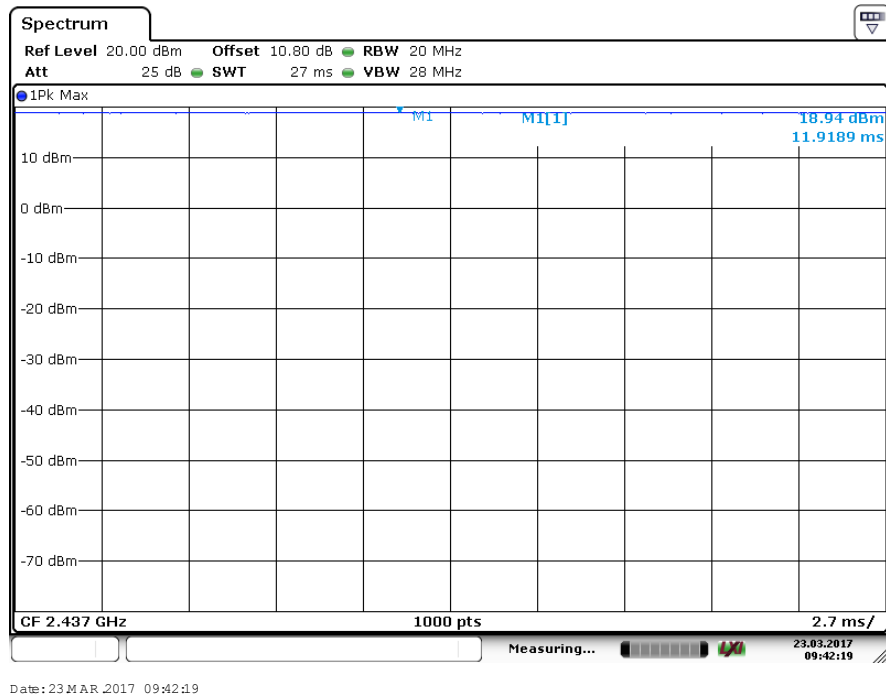
Channel Frequency: 2462 MHz



Date: 23 MAR 2017 09:42:47

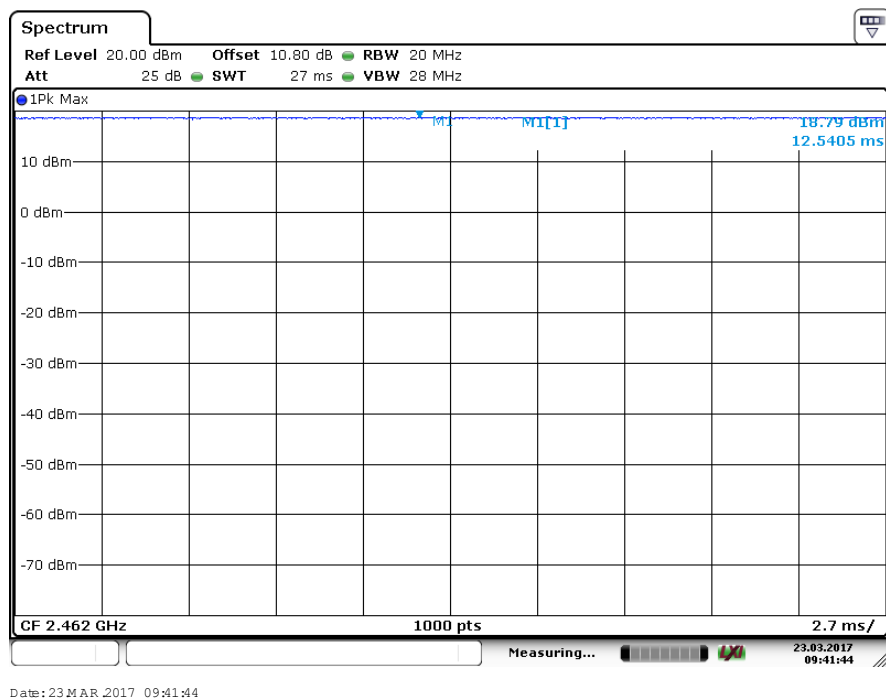
Data rate: 54 Mbps

Channel Frequency: 2412 MHz



Data rate: 54 Mbps

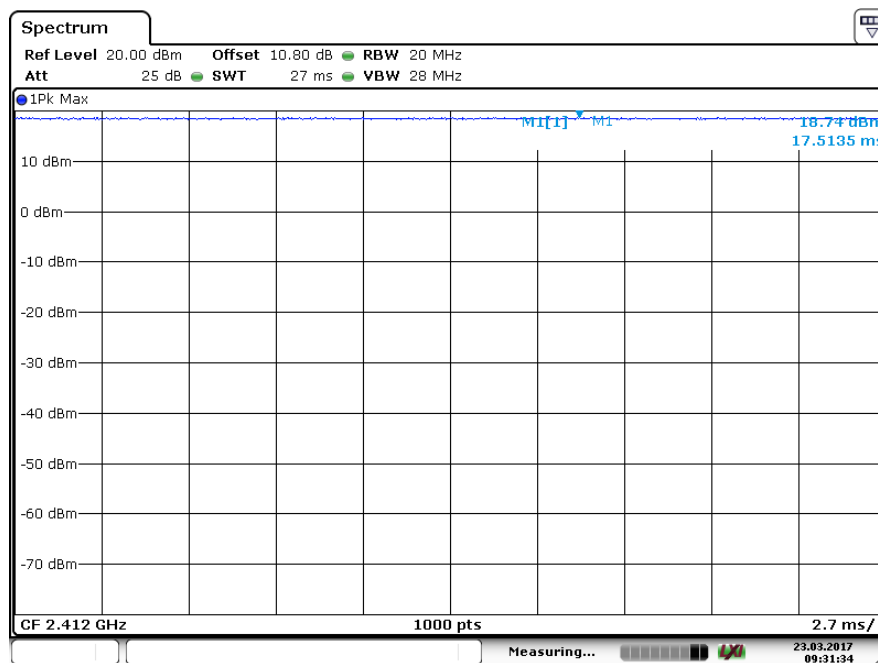
Channel Frequency: 2437 MHz



Data rate: 54 Mbps

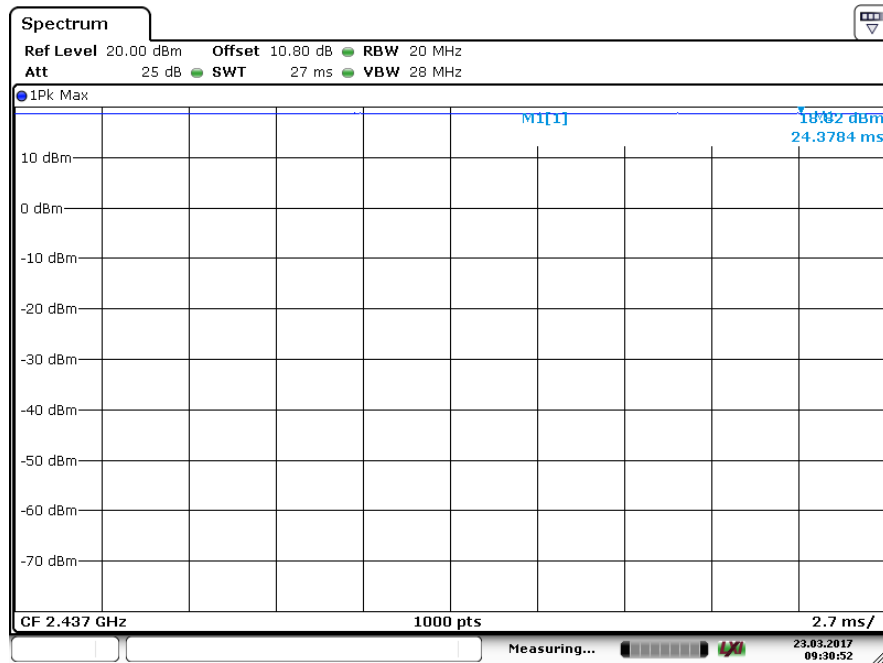
Channel Frequency: 2462 MHz

IEEE802.11nHT20		
Data Rate (Mbps)	Channel Frequency (MHz)	Peak Power (dBm)
MCS0	2412	18.74
	2437	18.82
	2462	18.65
MCS4	2412	18.75
	2437	18.88
	2462	18.71
MCS7	2412	19.02
	2437	18.87
	2462	18.85



Date: 23 MAR 2017 09:31:34

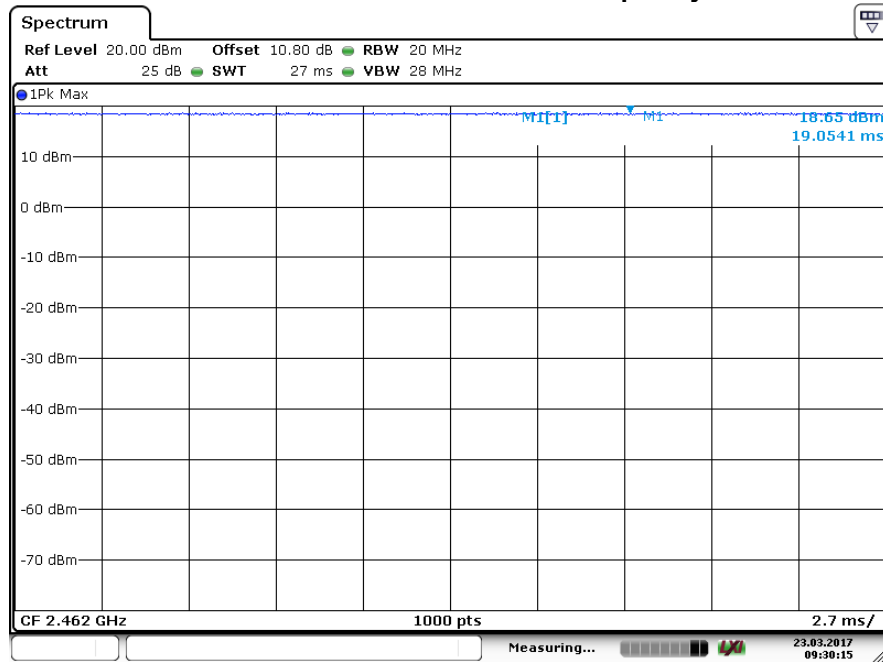
Data Rate: MCS0
Channel Frequency: 2412 MHz



Date: 23 MAR 2017 09:30:52

Data Rate: MCS0

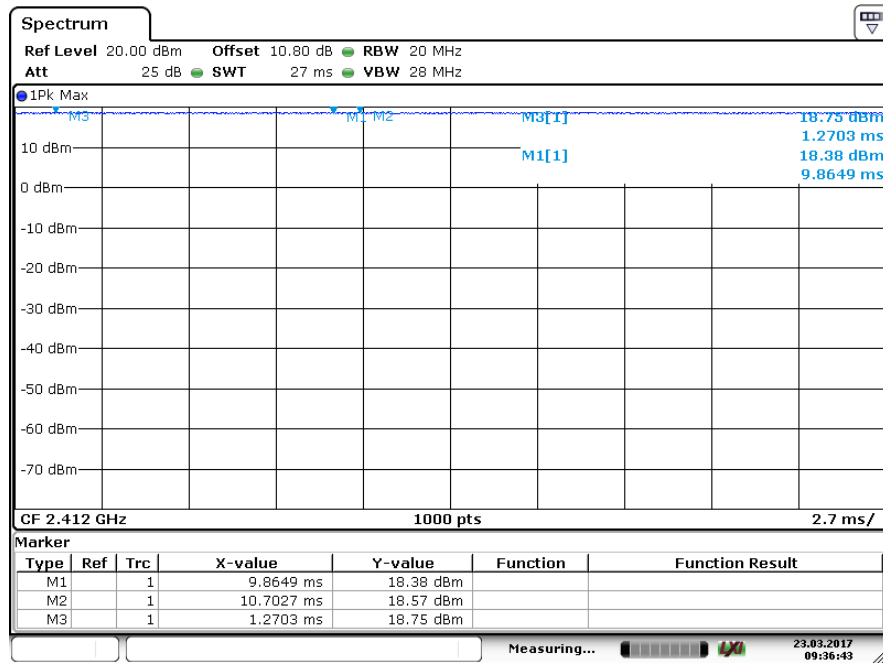
Channel Frequency: 2437 MHz



Date: 23 MAR 2017 09:30:15

Data Rate: MCS0

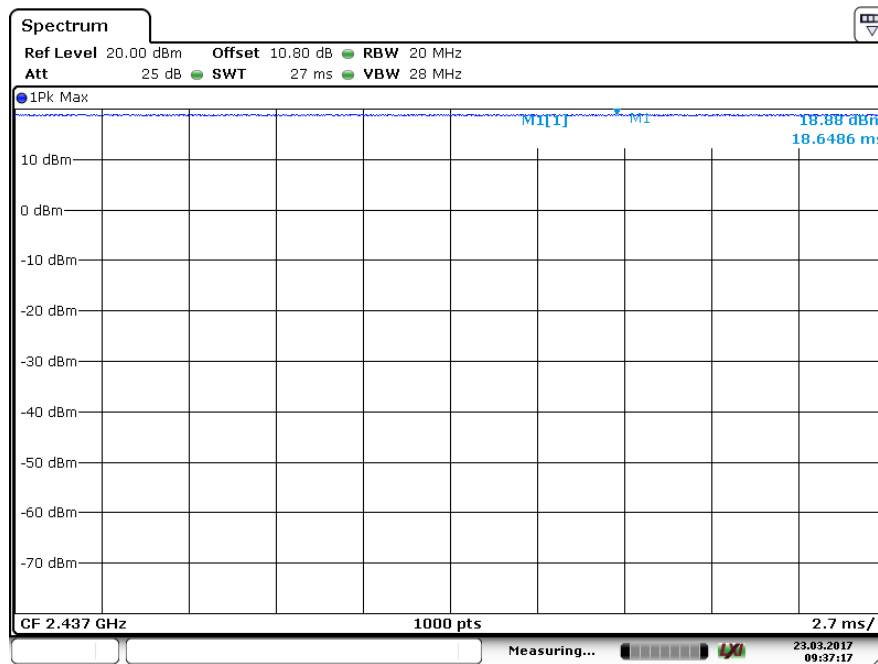
Channel Frequency: 2462 MHz



Date: 23 MAR 2017 09:36:43

Data Rate: MCS4

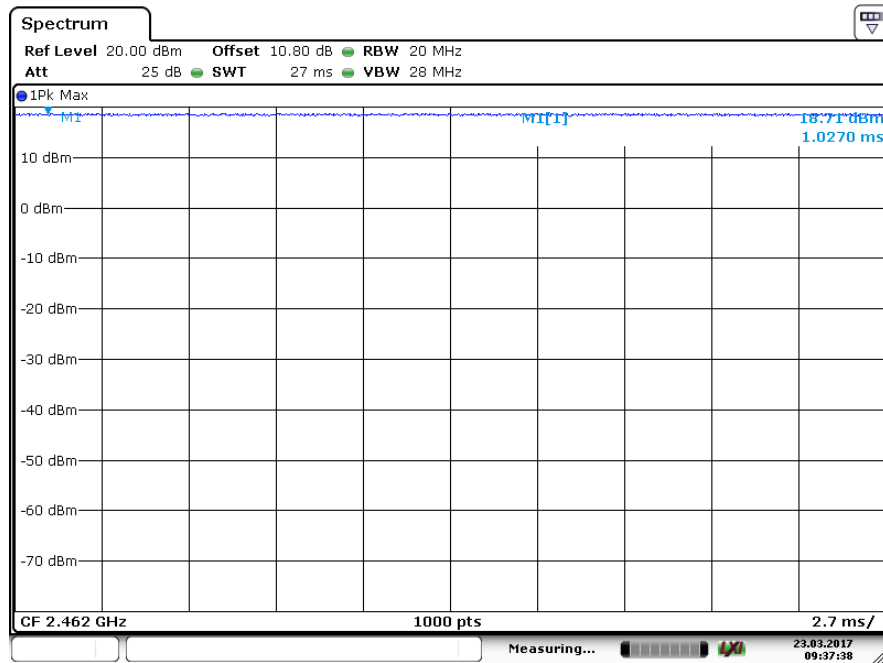
Channel Frequency: 2412 MHz



Date: 23 MAR 2017 09:37:16

Data Rate: MCS4

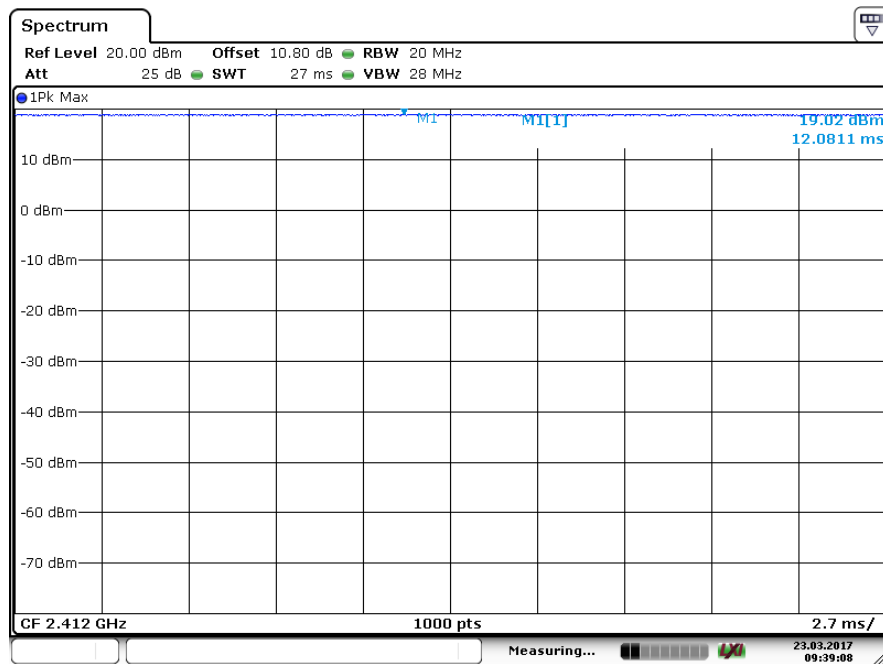
Channel Frequency: 2437 MHz



Date: 23 MAR 2017 09:37:38

Data Rate: MCS4

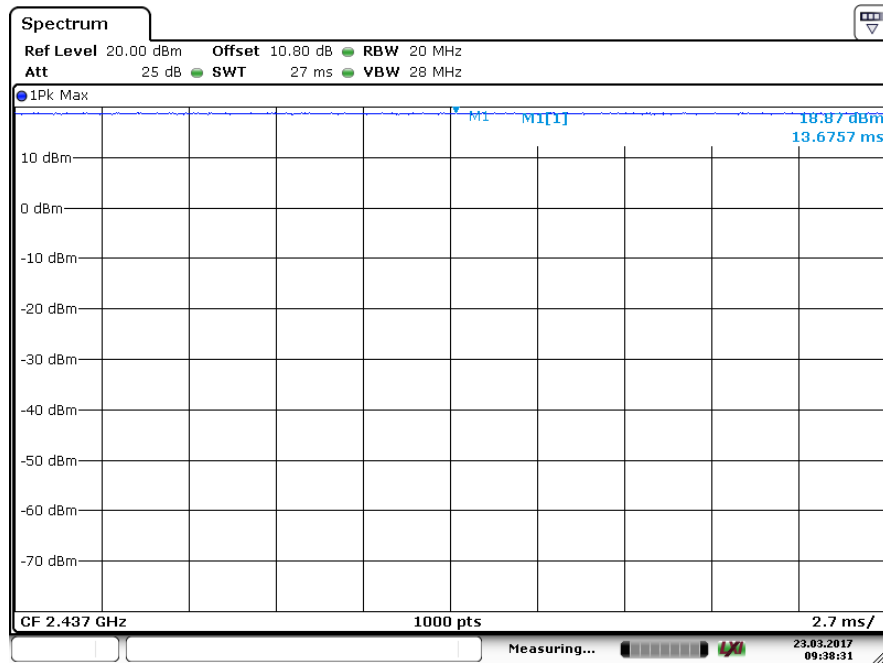
Channel Frequency: 2462 MHz



Date: 23 MAR 2017 09:39:09

Data Rate: MCS7

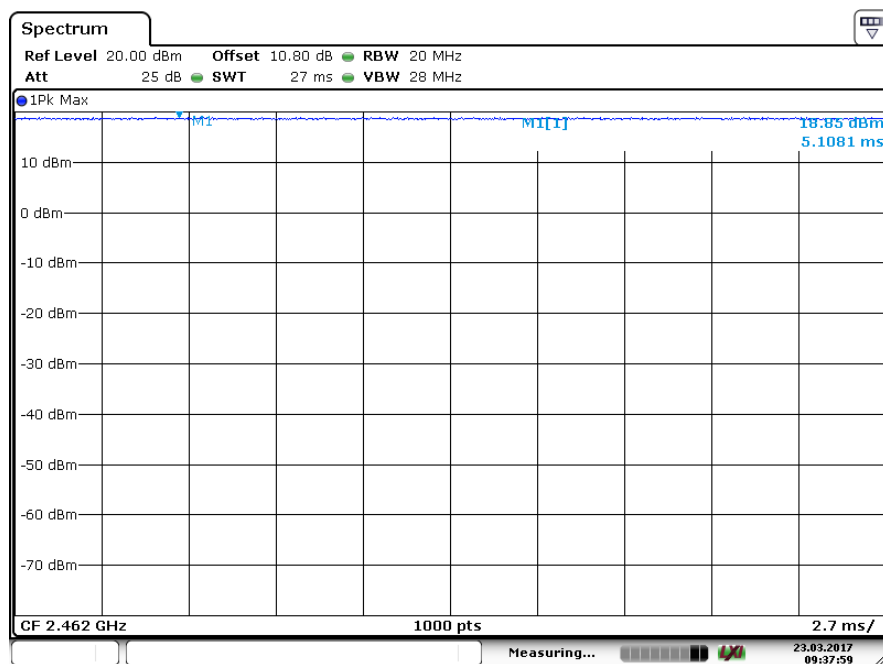
Channel Frequency: 2412 MHz



Date: 23 MAR 2017 09:38:31

Data Rate: MCS7

Channel Frequency: 2437 MHz



Date: 23 MAR 2017 09:37:59

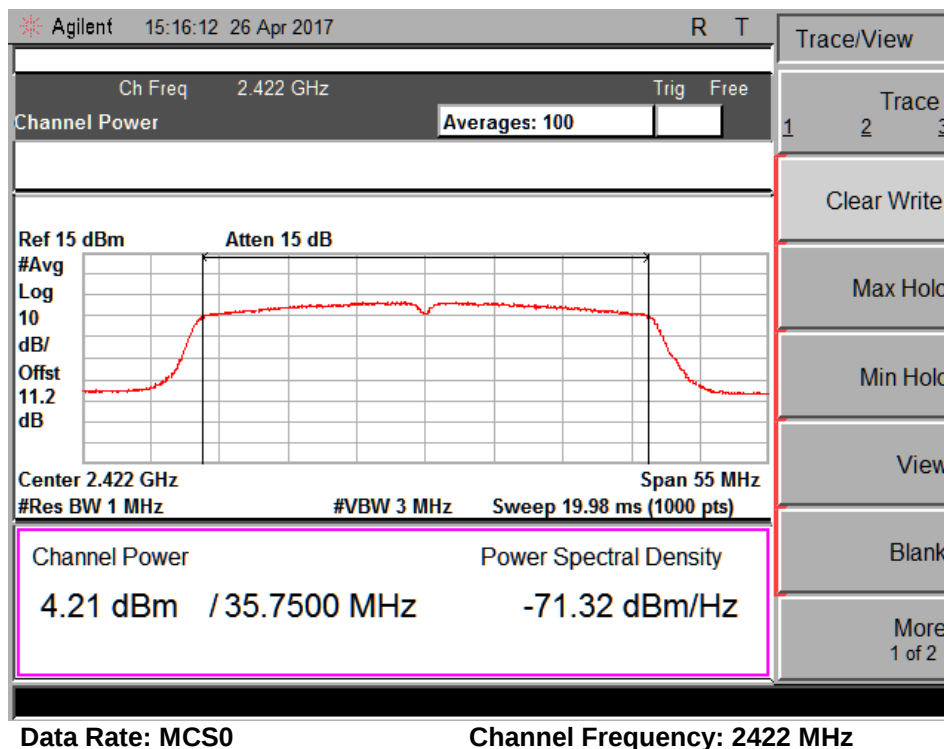
Data Rate: MCS7

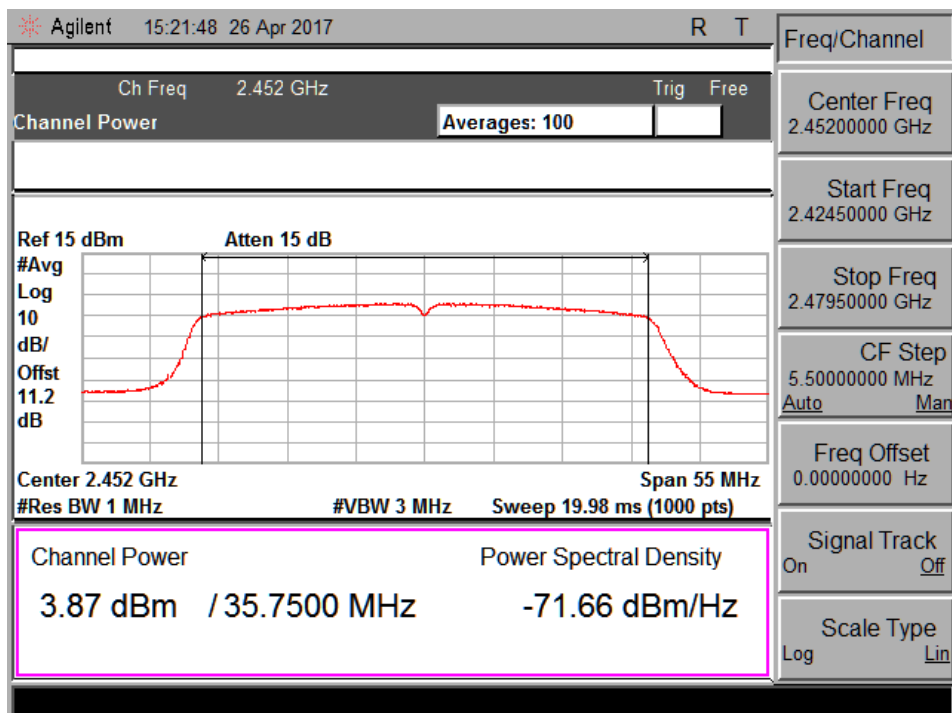
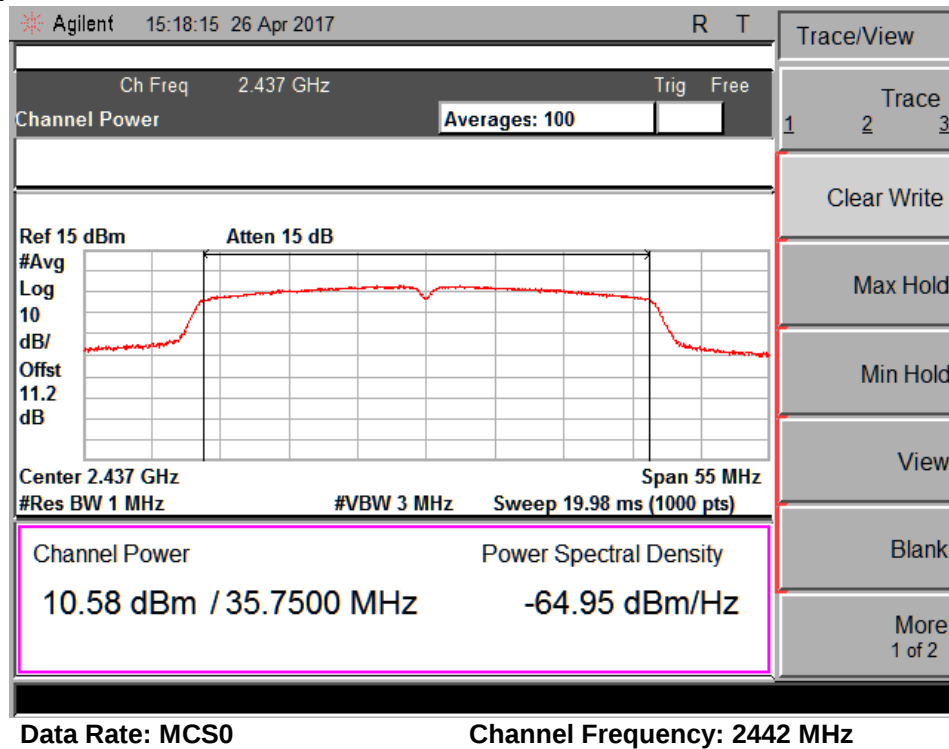
Channel Frequency: 2462 MHz

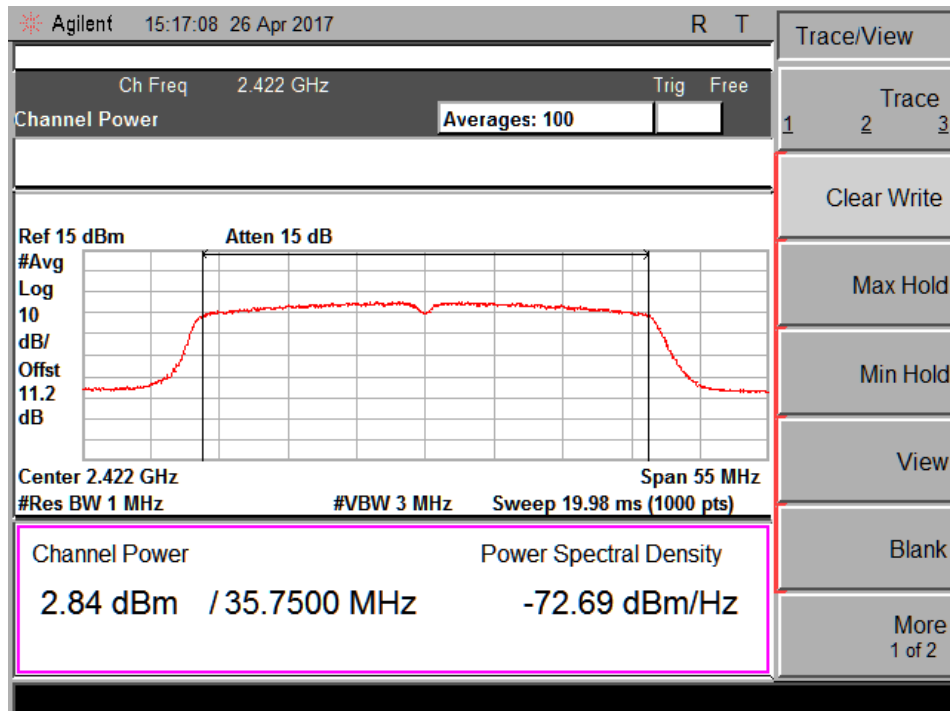
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Attenuator (10dB) + cable loss (0.98 dB)+Duty cycle correction factor(0.33dB) = 11.2 dB Considered in the test result

IEEE802.11n HT40		
Data Rate (Mbps)	Channel Frequency (MHz)	Average Power (dBm)
MCS0	2422	4.21
	2437	10.58
	2452	3.87
MCS4	2422	2.84
	2437	9.23
	2452	2.53
MCS7	2422	5.11
	2437	4.97
	2452	3.00

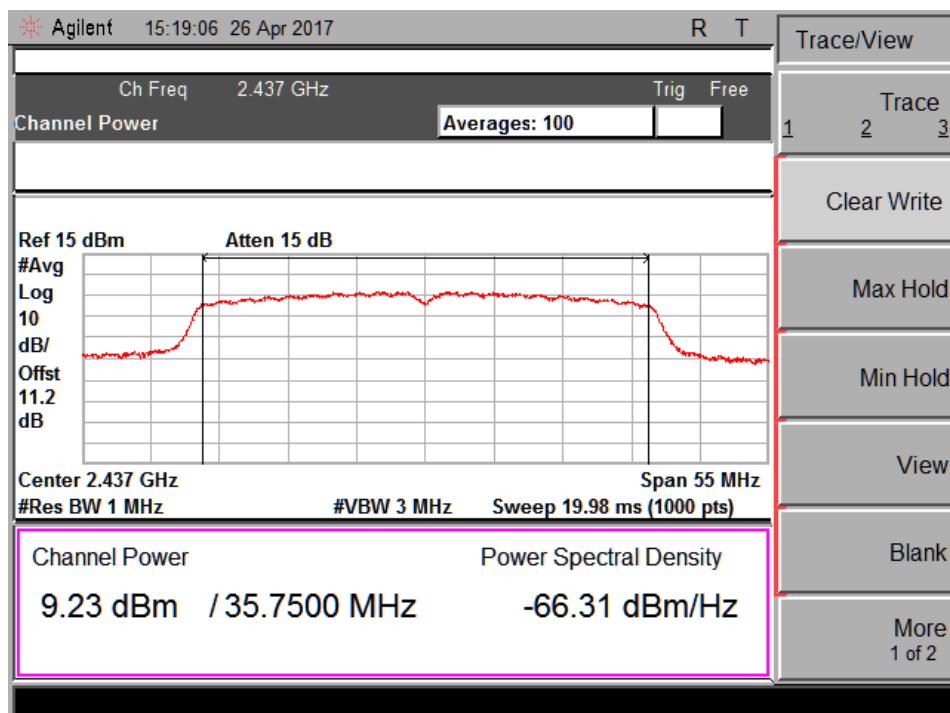






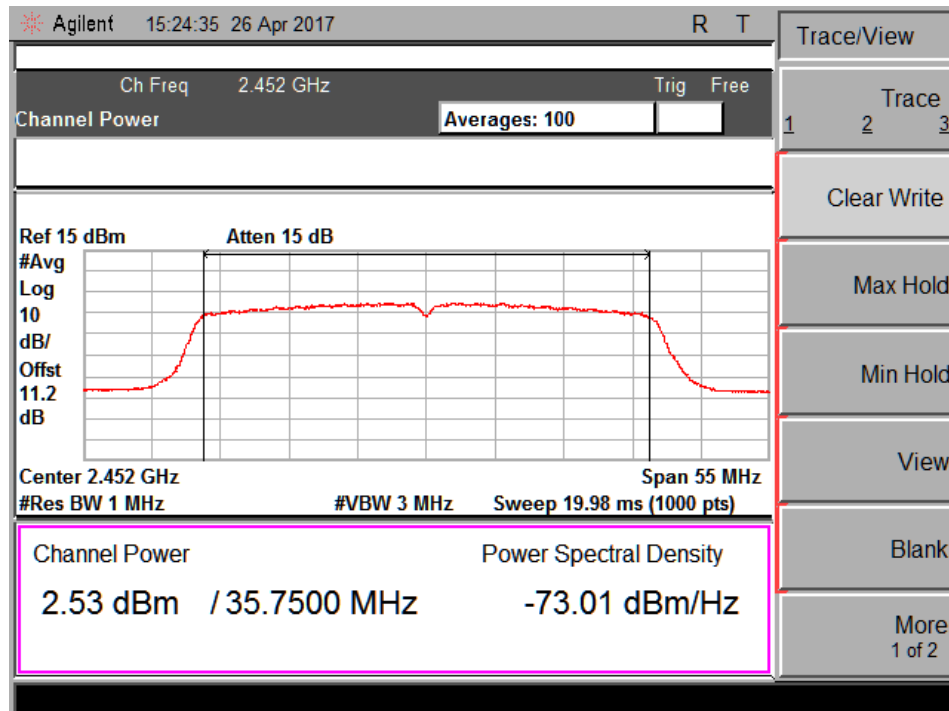
Data Rate: MCS4

Channel Frequency: 2422 MHz



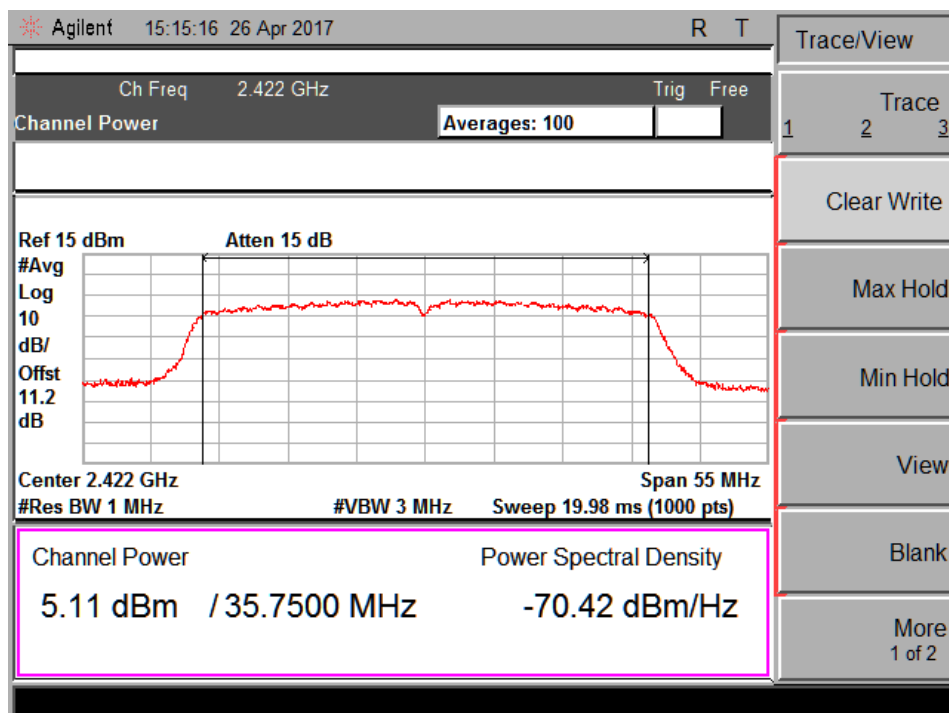
Data Rate: MCS4

Channel Frequency: 2442 MHz



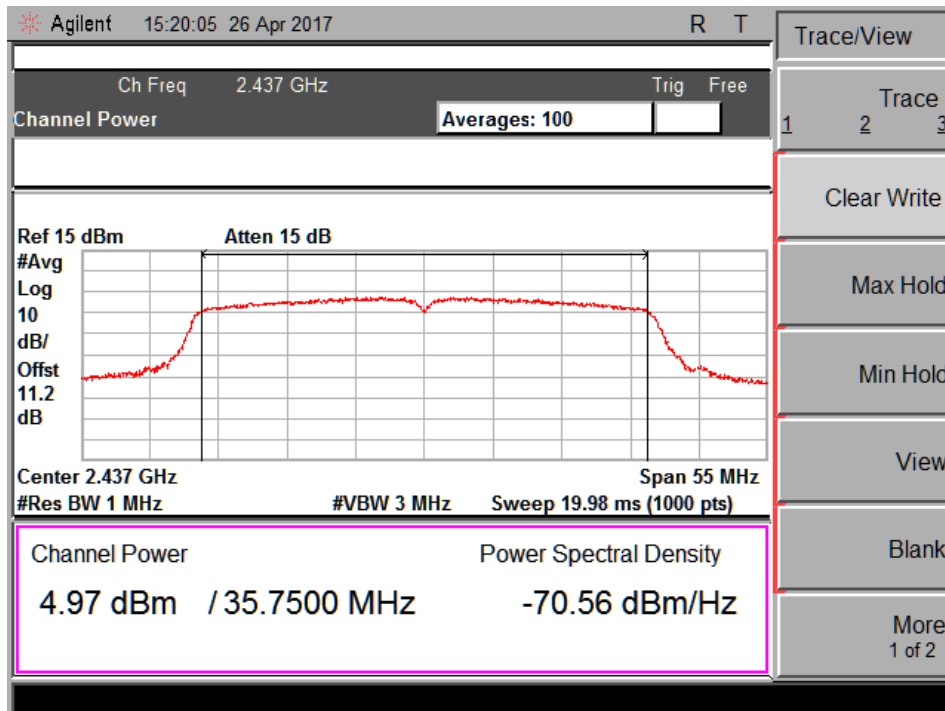
Data Rate: MCS4

Channel Frequency: 2452 MHz



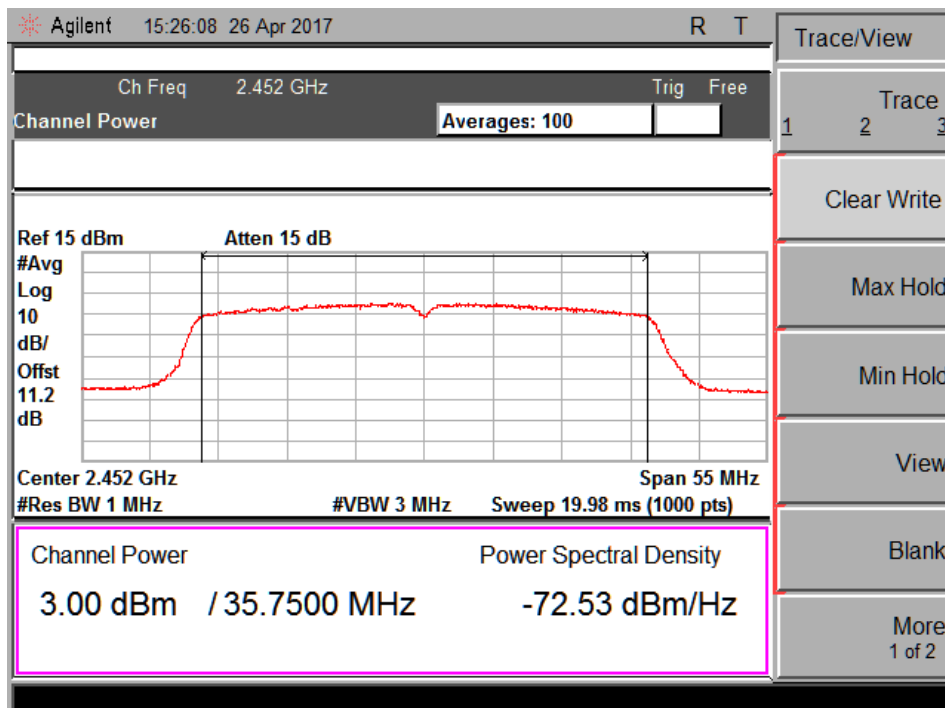
Data Rate: MCS7

Channel Frequency: 2422 MHz



Data Rate: MCS7

Channel Frequency: 2442 MHz



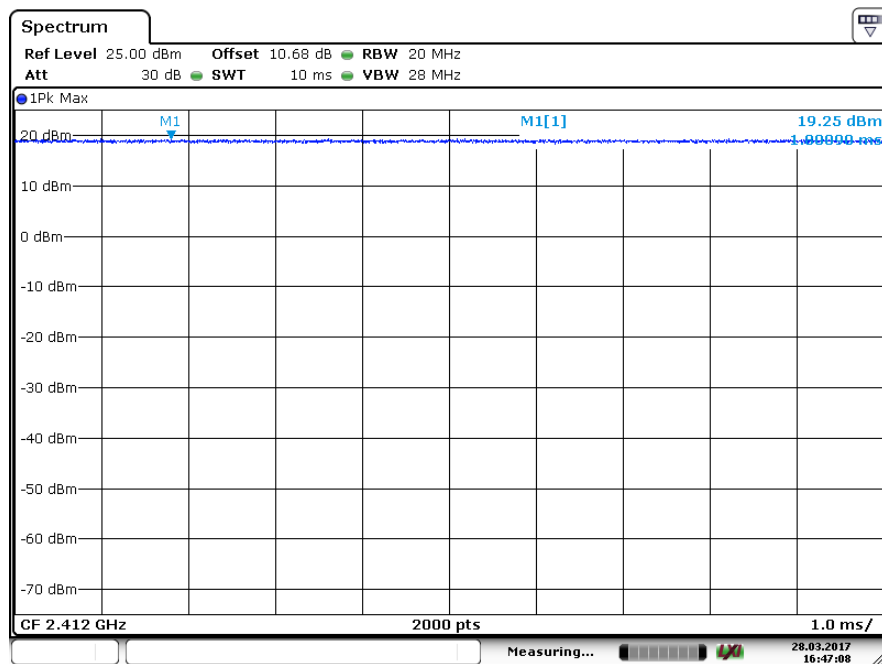
Data Rate: MCS7

Channel Frequency: 2452 MHz

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Attenuator (10dB) + cable loss +Duty cycle correction factor= 10.68 dB Considered in the test result
Chain 0

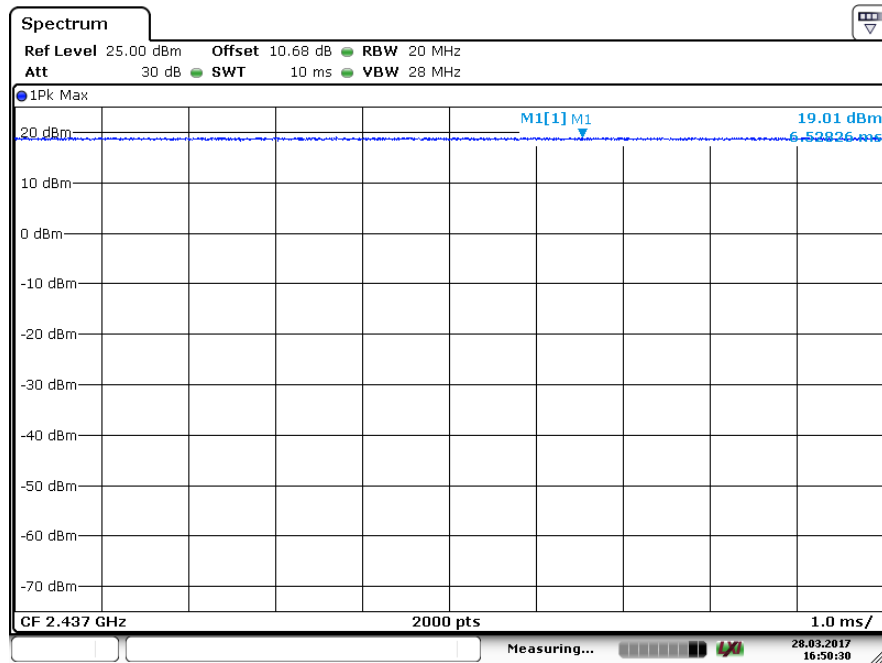
IEEE802.11n MIMO_HT20			
Data Rate (Mbps)	Channel Frequency (MHz)	Peak Power (dBm)	Peak Power (mW)
MCS8	2412	19.25	84.14
	2437	19.01	79.62
	2462	19.12	81.66
MCS12	2412	18.90	77.62
	2437	19.03	79.98
	2462	19.18	82.79
MCS15	2412	18.14	65.16
	2437	18.33	68.08
	2462	18.52	71.12



Date: 28.MAR.2017 16:47:08

Data Rate: MCS8

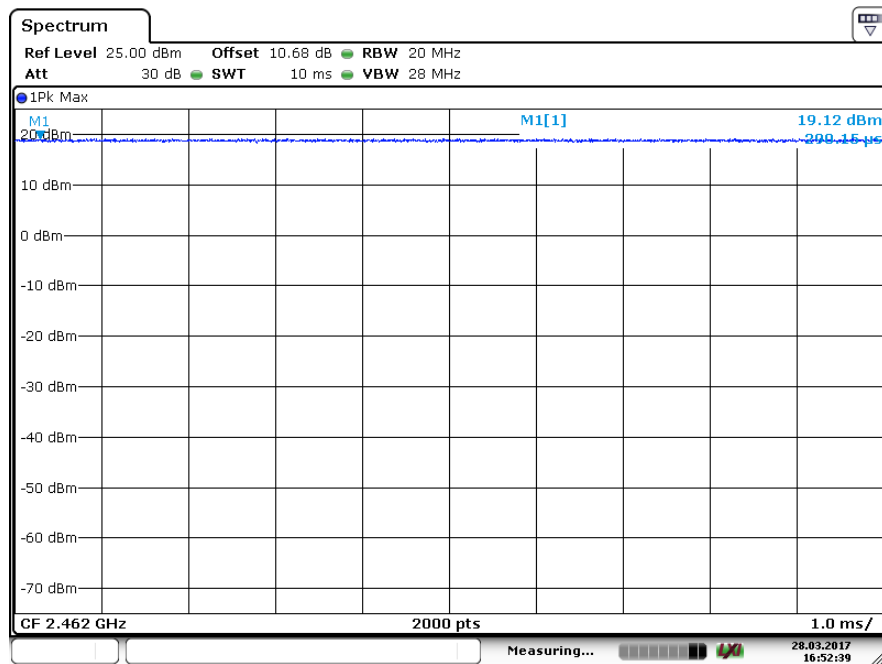
Channel Frequency: 2412 MHz



Date: 28 MAR 2017 16:50:30

Data Rate: MCS8

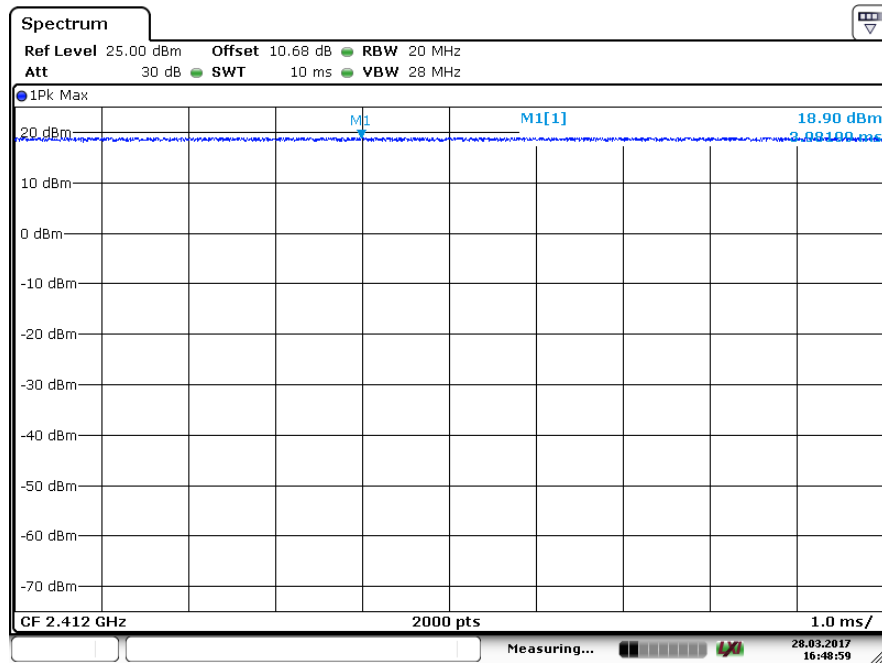
Channel Frequency: 2437 MHz



Date: 28 MAR 2017 16:52:39

Data Rate: MCS8

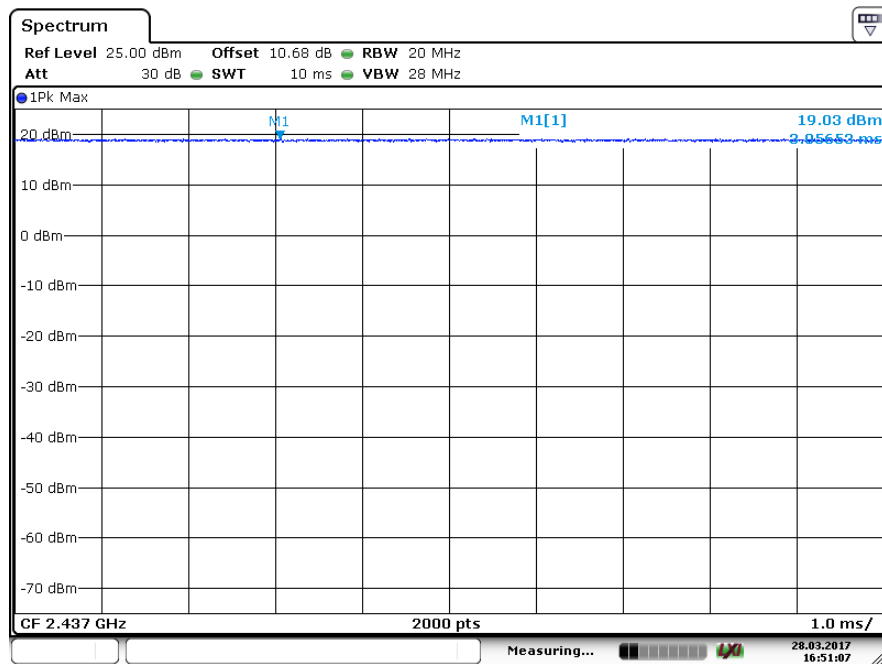
Channel Frequency: 2462 MHz



Date: 28 MAR 2017 16:48:58

Data Rate: MCS12

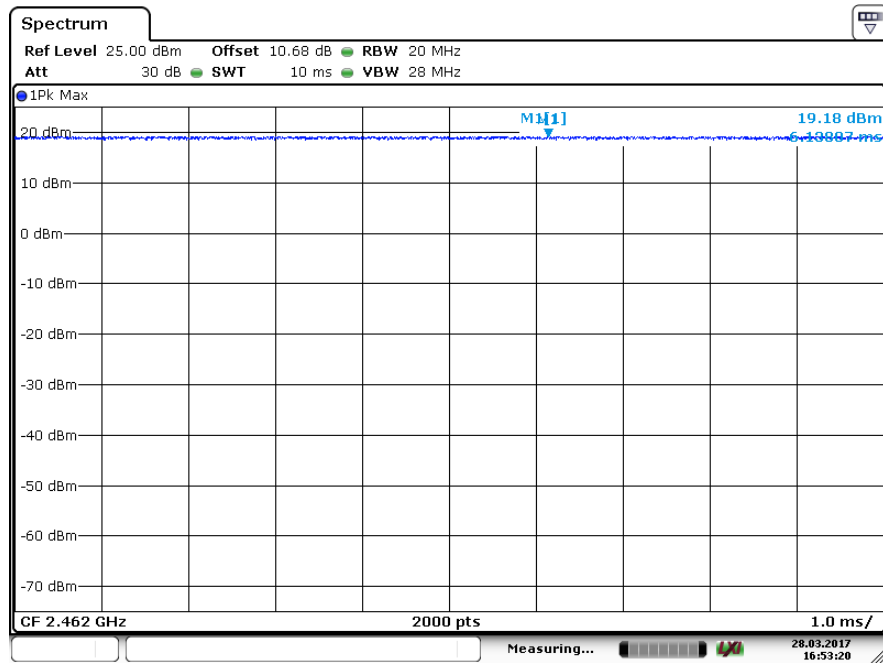
Channel Frequency: 2412 MHz



Date: 28 MAR 2017 16:51:08

Data Rate: MCS12

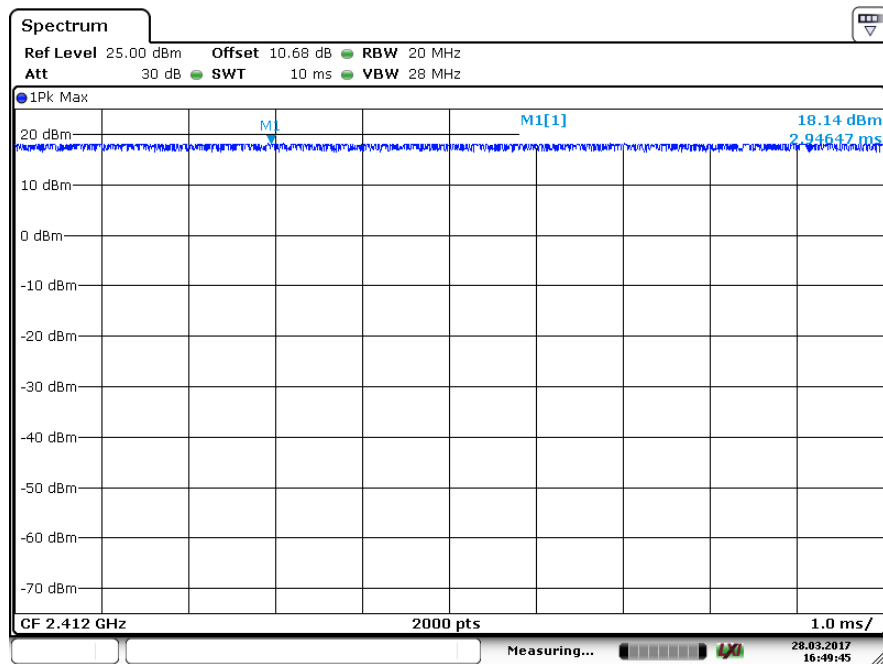
Channel Frequency: 2437 MHz



Date: 28 MAR 2017 16:53:20

Data Rate: MCS12

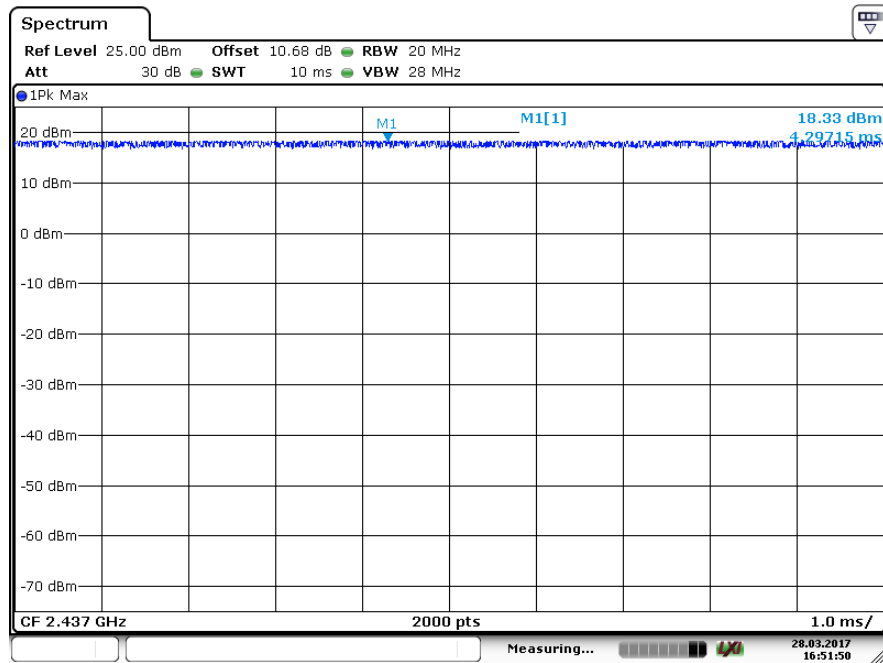
Channel Frequency: 2462 MHz



Date: 28 MAR 2017 16:49:46

Data Rate: MCS15

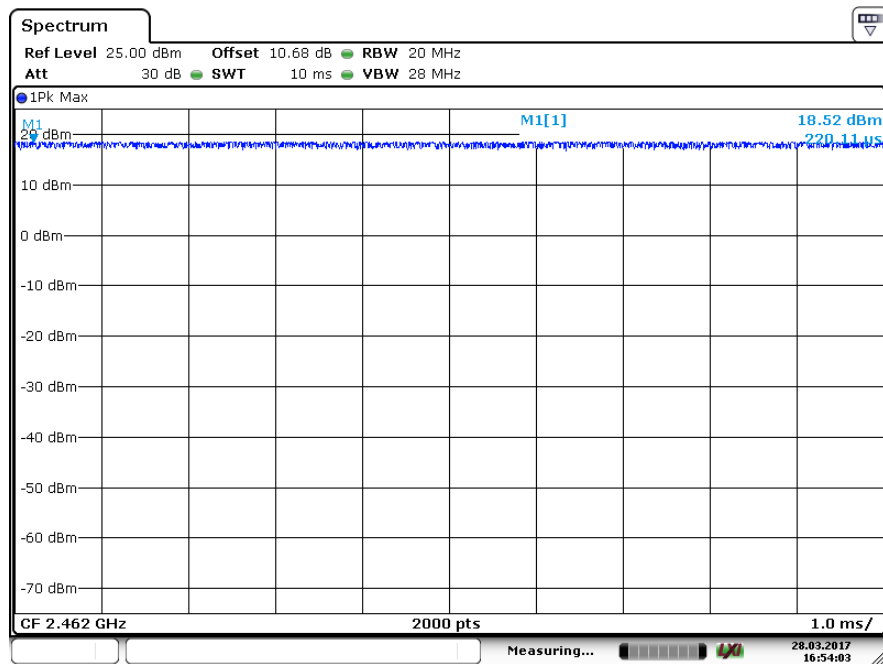
Channel Frequency: 2412 MHz



Date: 28 MAR 2017 16:51:50

Data Rate: MCS15

Channel Frequency: 2437 MHz



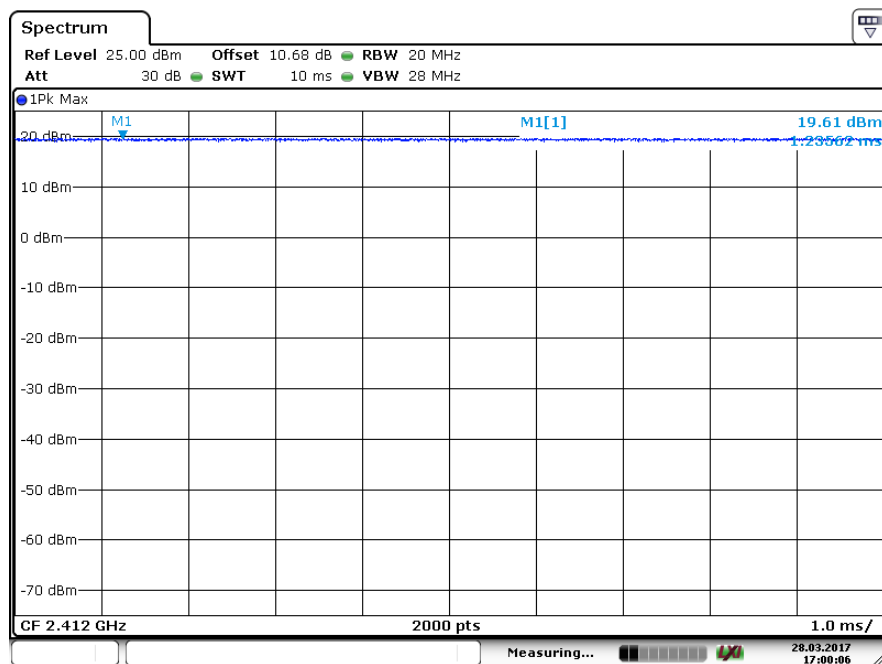
Date: 28 MAR 2017 16:54:03

Data Rate: MCS15

Channel Frequency: 2462 MHz

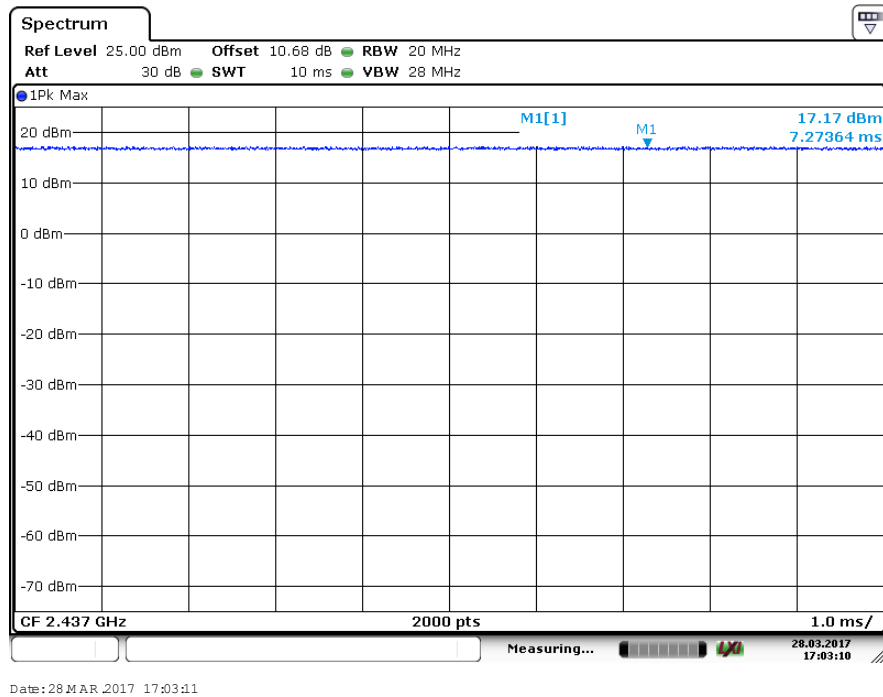
Chain 1

IEEE802.11n MIMO_HT20			
Data Rate (Mbps)	Channel Frequency (MHz)	Peak Power (dBm)	Peak Power (mW)
MCS8	2412	19.61	91.41
	2437	17.17	52.12
	2462	18.94	78.34
MCS12	2412	19.47	88.51
	2437	17.37	54.58
	2462	19.06	80.54
MCS15	2412	19.00	79.43
	2437	18.66	73.45
	2462	18.63	72.95



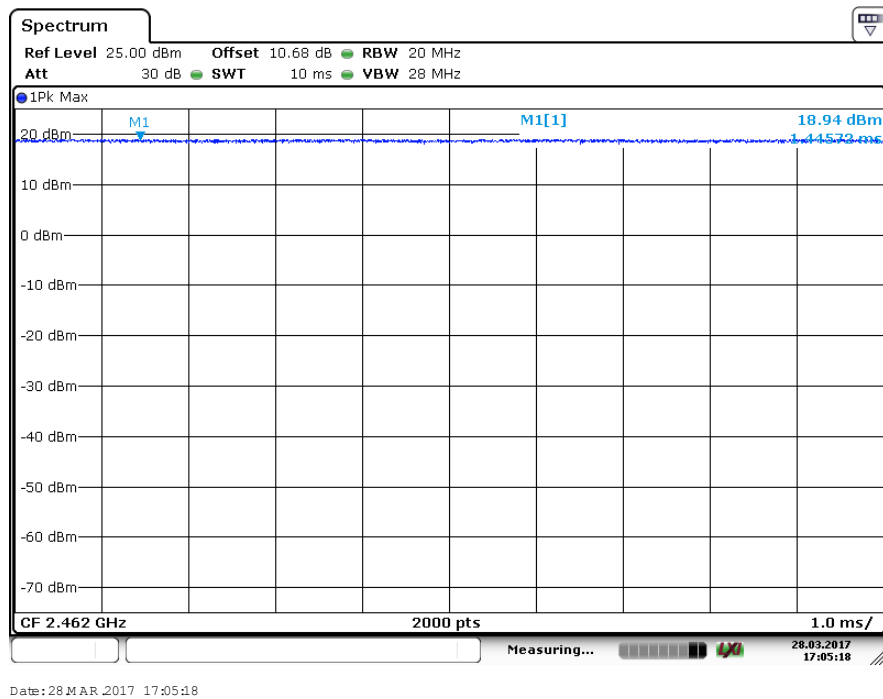
Date: 28 MAR 2017 17:00:06

Data Rate: MCS8
Channel Frequency: 2412 MHz



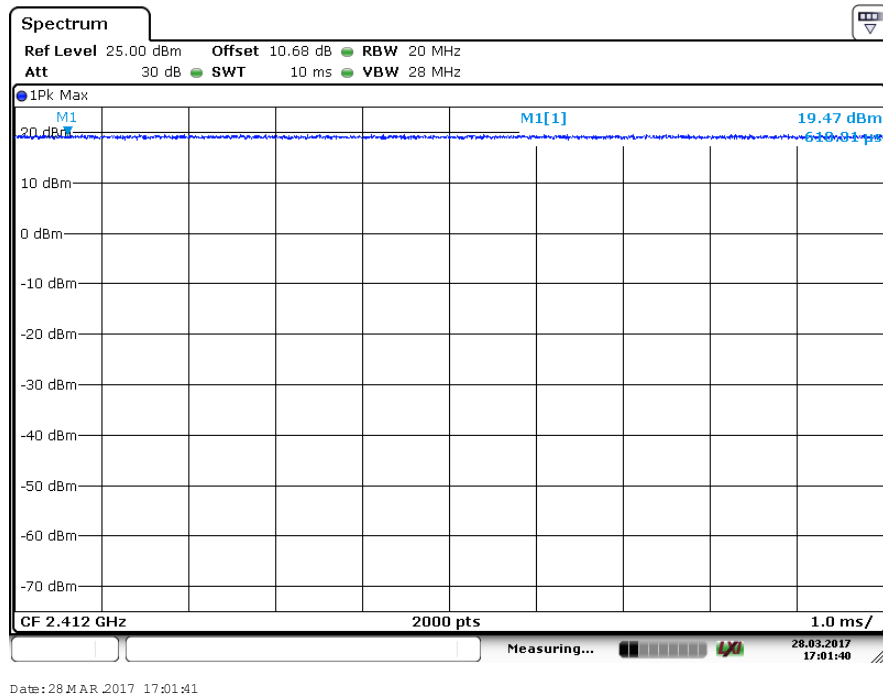
Data Rate: MCS8

Channel Frequency: 2437 MHz



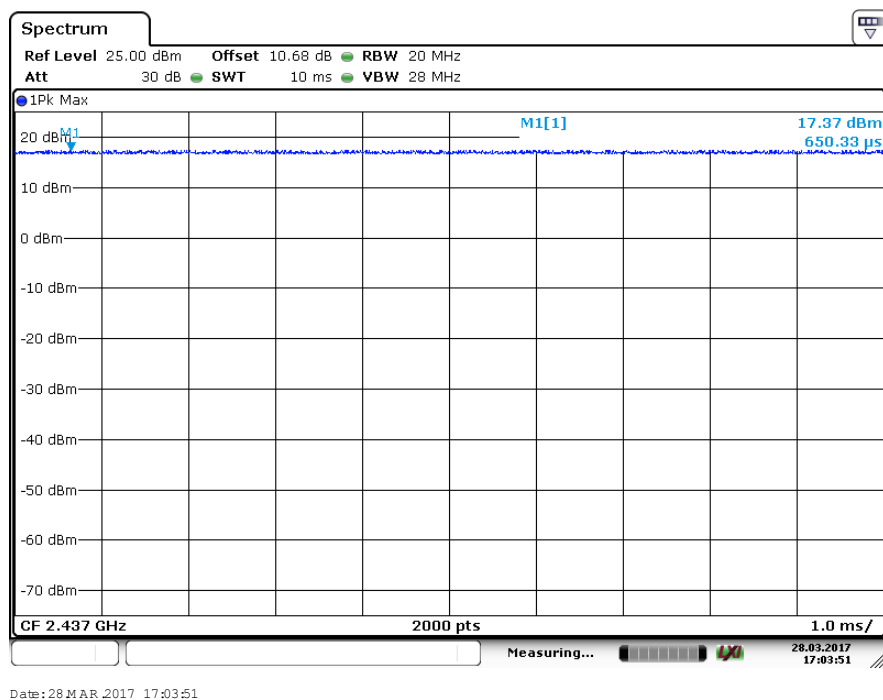
Data Rate: MCS8

Channel Frequency: 2462 MHz



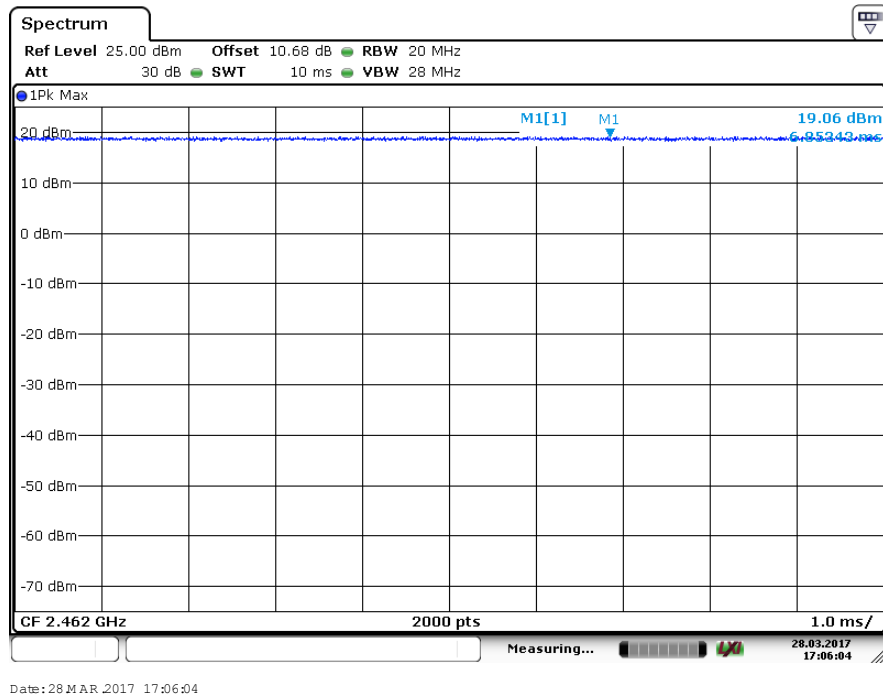
Data Rate: MCS12

Channel Frequency: 2412 MHz



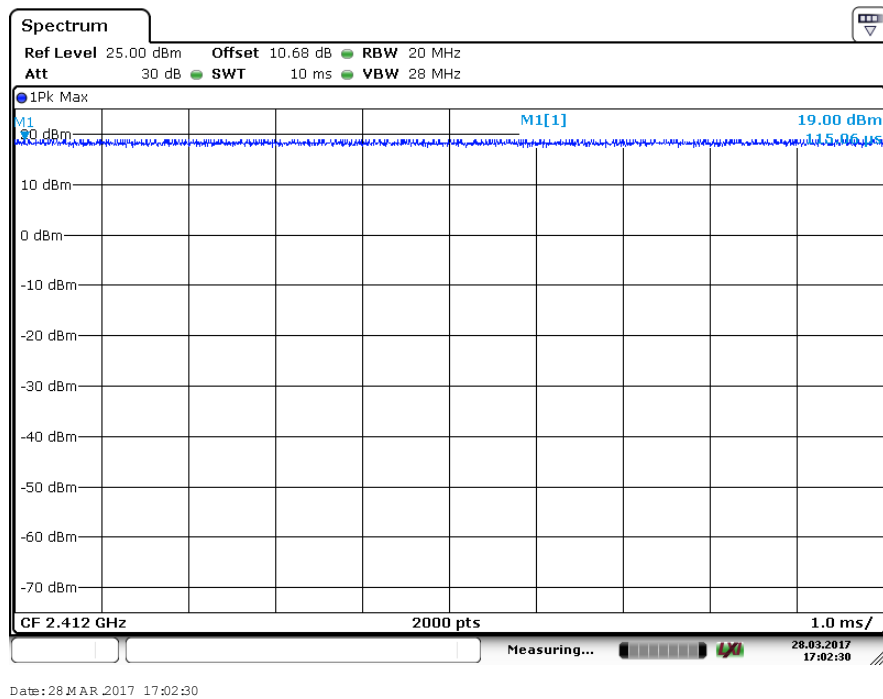
Data Rate: MCS12

Channel Frequency: 2437 MHz



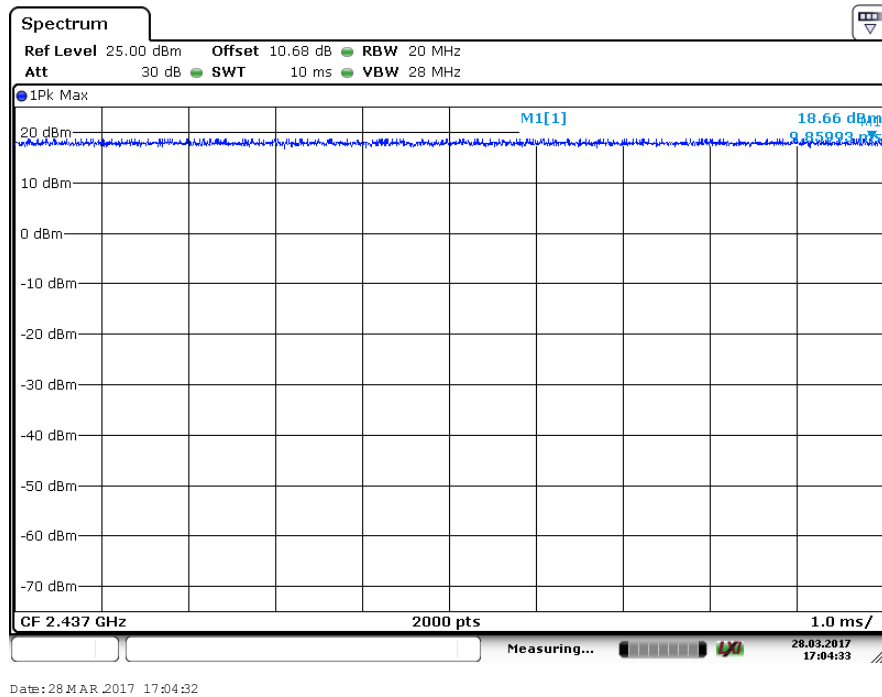
Data Rate: MCS12

Channel Frequency: 2462 MHz



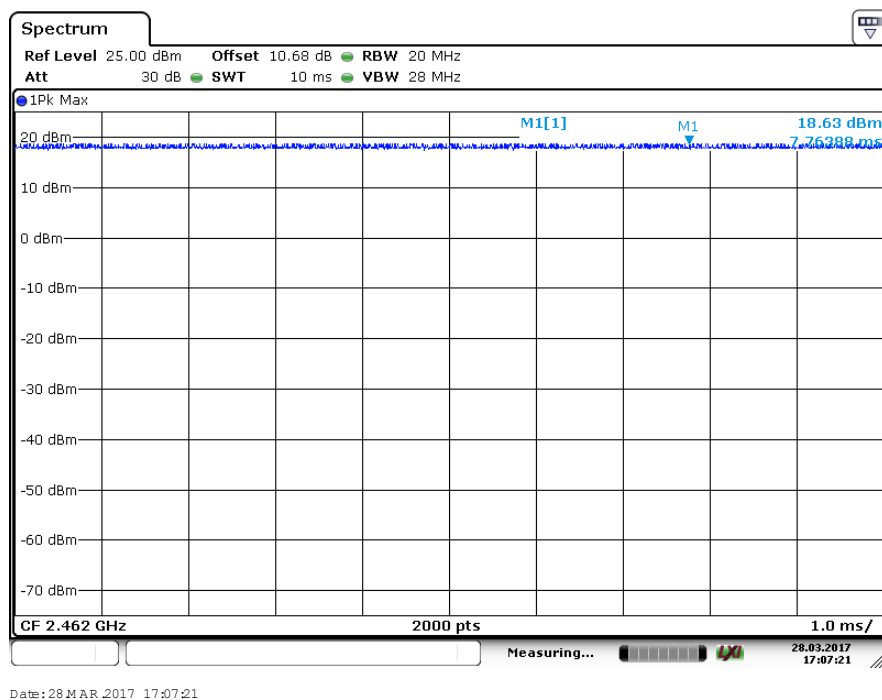
Data Rate: MCS15

Channel Frequency: 2412 MHz



Data Rate: MCS15

Channel Frequency: 2437 MHz



Data Rate: MCS15

Channel Frequency: 2462 MHz

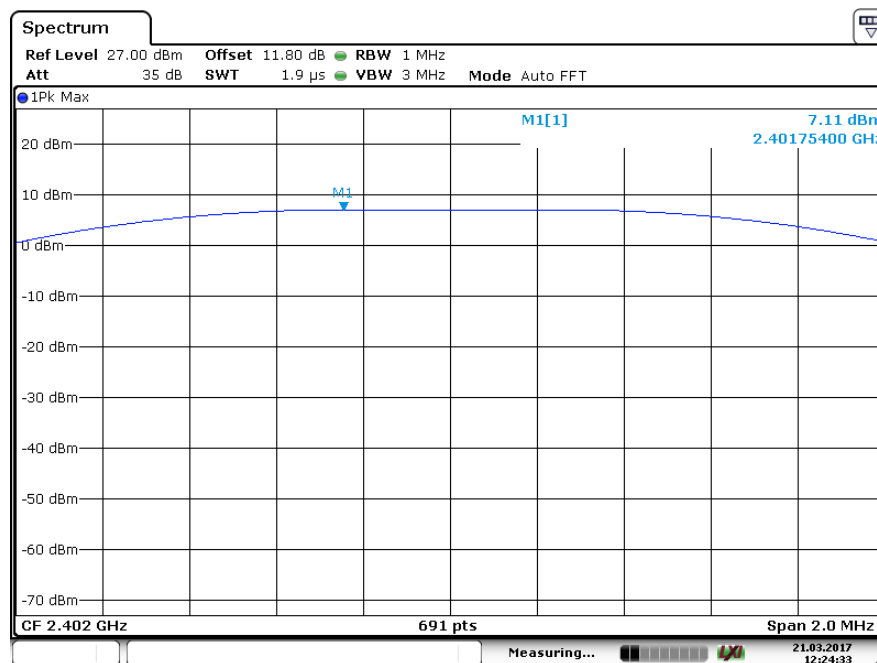
IEEE 802.11n_MIMO_HT20						
Data Rate (Mbps)	Channel Frequency (MHz)	Peak Power (mW) Chain 0	Peak Power (mW) Chain 1	Total Peak Power (mW)	Total Peak Power (dBm)	Limit (dBm)
MCS8	2412	84.14	91.41	175.55	22.44	30
	2437	79.62	52.12	131.74	21.19	30
	2462	81.66	78.34	160.00	22.04	30
MCS12	2412	77.62	88.51	166.13	22.20	30
	2437	79.98	54.58	134.56	21.28	30
	2462	82.79	80.54	163.33	22.13	30
MCS15	2412	65.16	79.43	144.59	21.60	30
	2437	68.08	73.45	141.53	21.50	30
	2462	71.12	72.95	144.07	21.58	30

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Test Result: Bluetooth LE

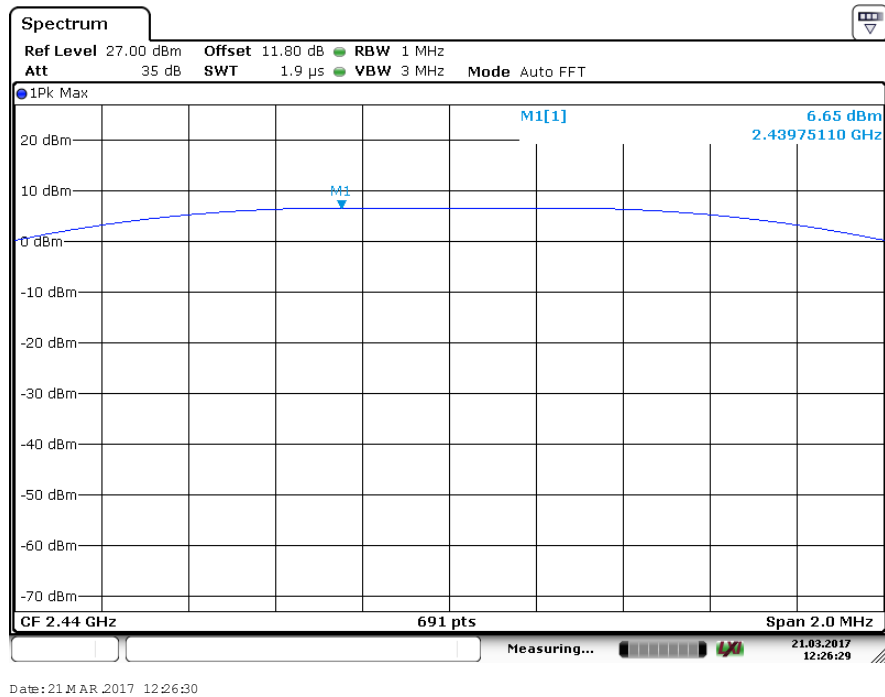
Attenuator (10dB) + cable loss (1.8dB) = 11.8dB Considered in the test result

Channel Frequency (MHz)	Total Power (dBm)	Limit (dBm)	Remarks
2402	7.11	30.00	Pass
2437	6.65	30.00	Pass
2480	6.33	30.00	Pass

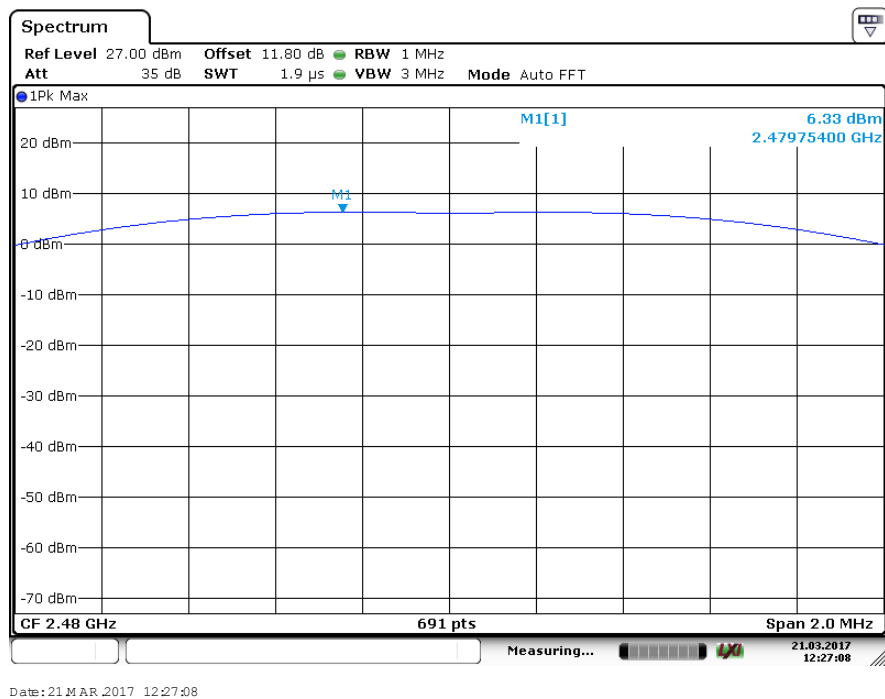


Date: 21.MAR.2017 12:24:32

Channel Frequency: 2402 MHz



Channel Frequency: 2440 MHz



Channel Frequency: 2480 MHz

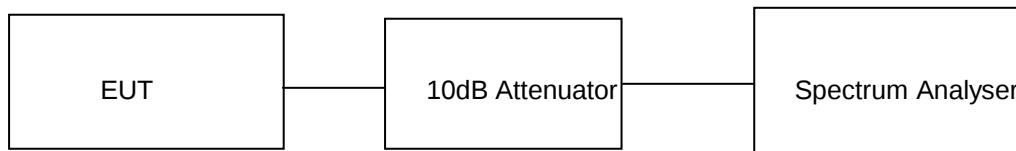
**Maximum Power Spectral Density
Result**
Pass

Test Specification
Detector Function
Requirement

FCC Part 15 Section 15.247 (e)
Peak

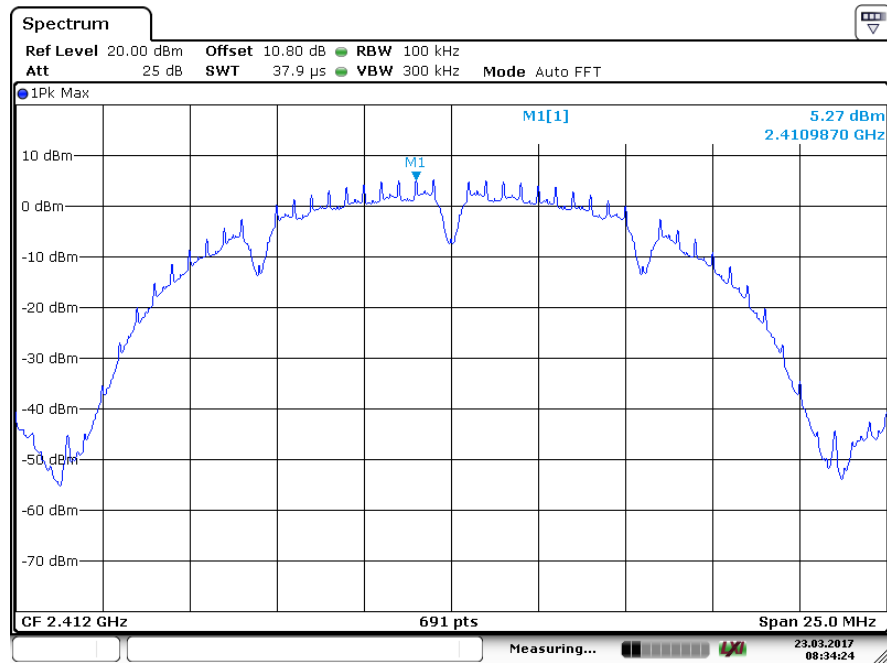
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm.

Note: For measurement of Maximum power spectral density option 10.2 was used as mentioned in KDB.

Test Method:

Test Result:
Test Results for Chain 1

Attenuator (10dB) + cable loss (0.8dB) = 10.8dB Considered in the test result

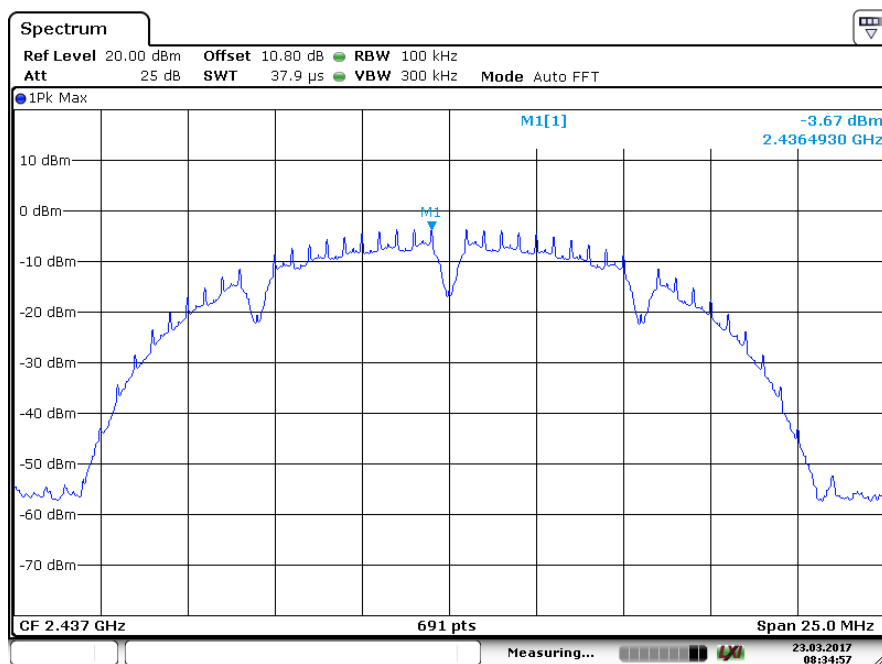
IEEE 802.11b			
Data Rate (Mbps)	Channel Frequency (MHz)	Total PSD (dBm)	Limit (dBm)
1	2412	5.27	8
	2437	-3.67	8
	2462	-3.65	8
11	2412	6.05	8
	2437	-3.82	8
	2462	-2.89	8



Date: 23 MAR 2017 08:34:24

Data rate: 1 Mbps

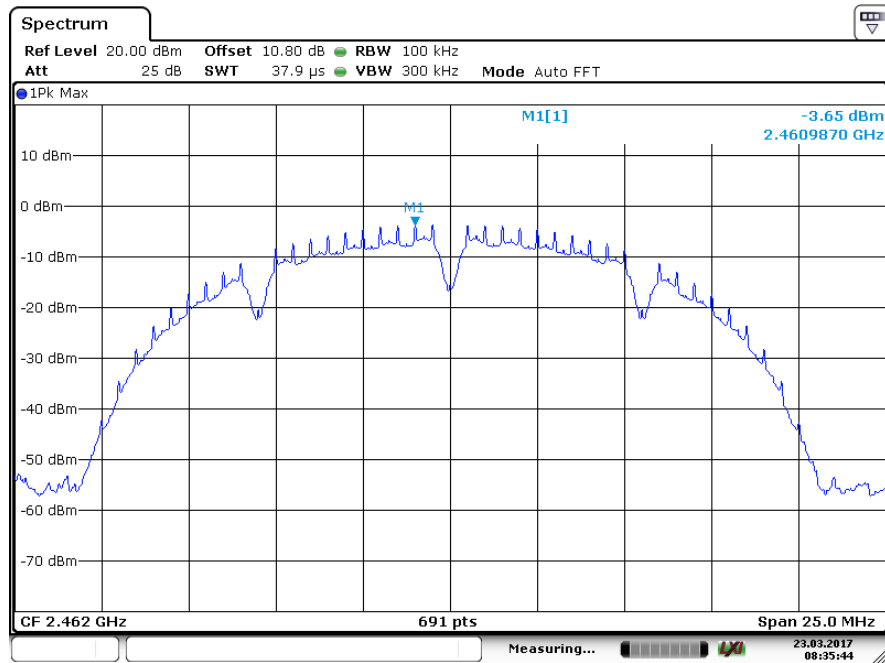
Channel Frequency: 2412 MHz



Date: 23 MAR 2017 08:34:57

Data rate: 1 Mbps

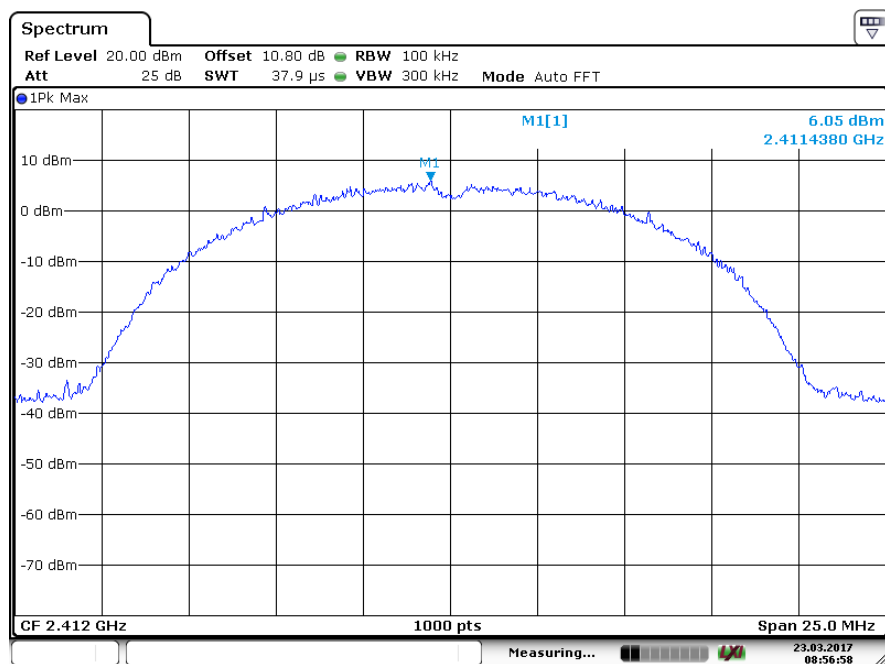
Channel Frequency: 2437 MHz



Date: 23 MAR 2017 08:35:44

Data rate: 1 Mbps

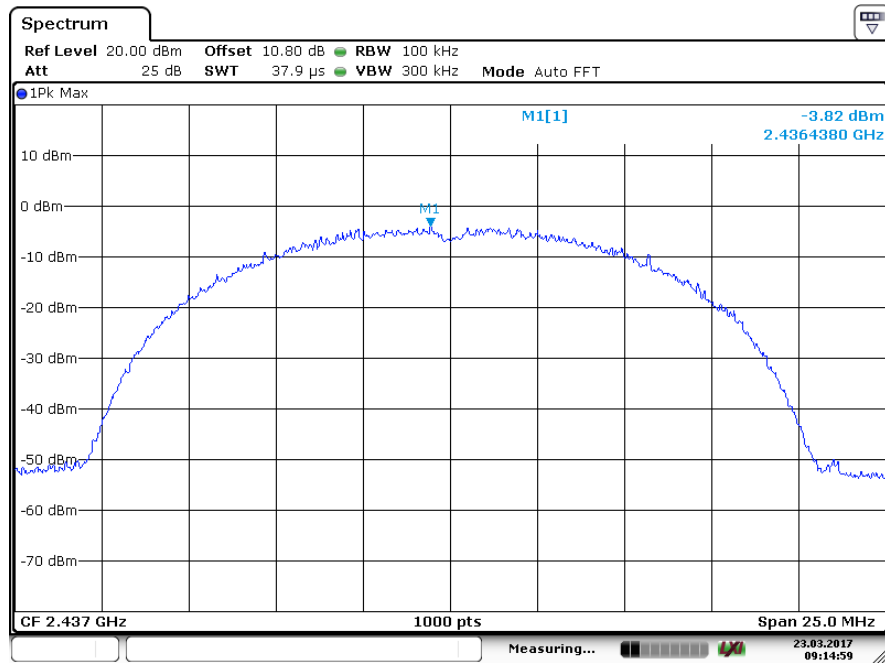
Channel Frequency: 2462 MHz



Date: 23 MAR 2017 08:56:59

Data rate: 11 Mbps

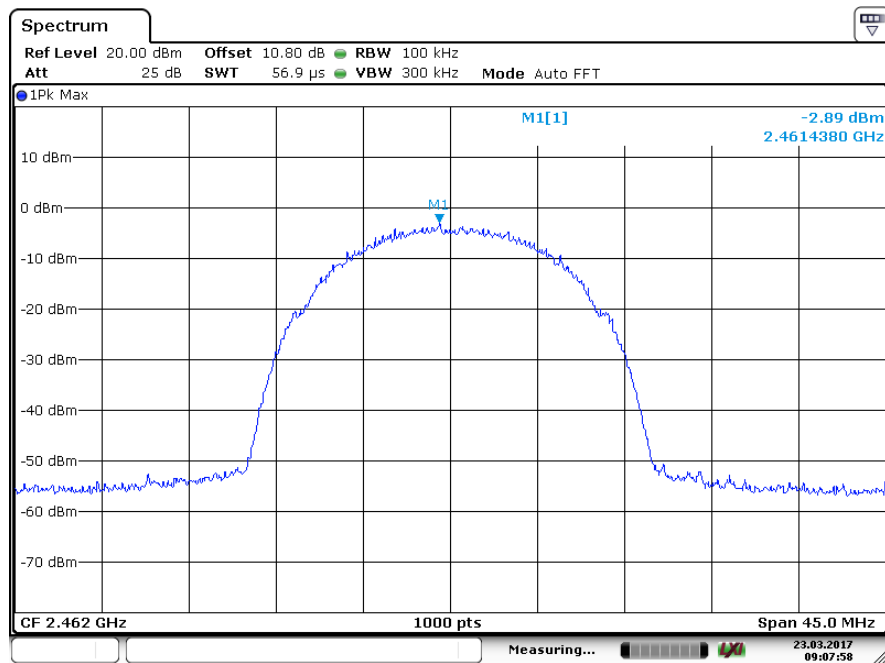
Channel Frequency: 2412 MHz



Date: 23 MAR 2017 09:15:00

Data rate: 11 Mbps

Channel Frequency: 2437 MHz



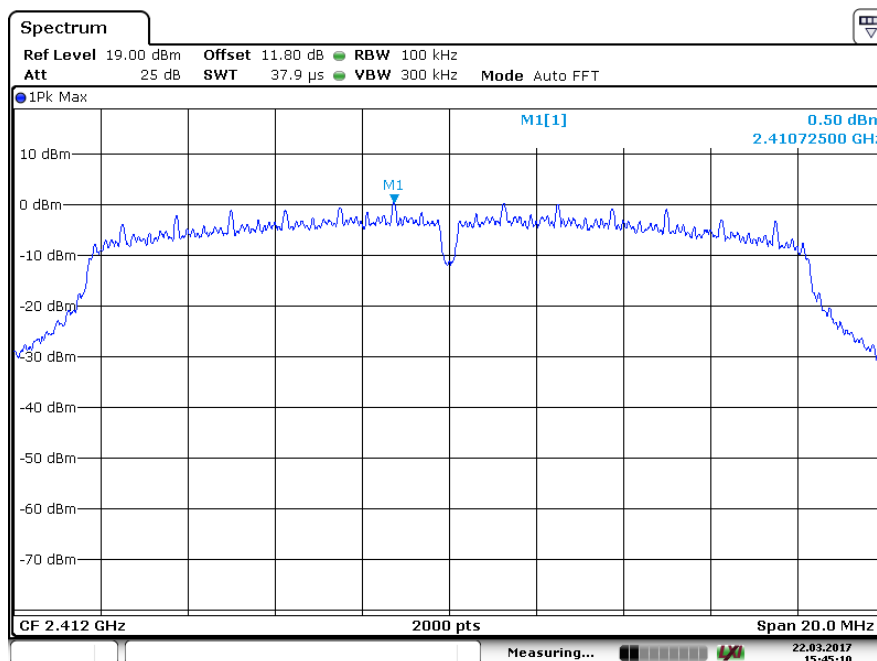
Date: 23 MAR 2017 09:07:58

Data rate: 11 Mbps

Channel Frequency: 2462 MHz

Attenuator (10dB) + cable loss (1.8dB) = 11.8dB Considered in the test result

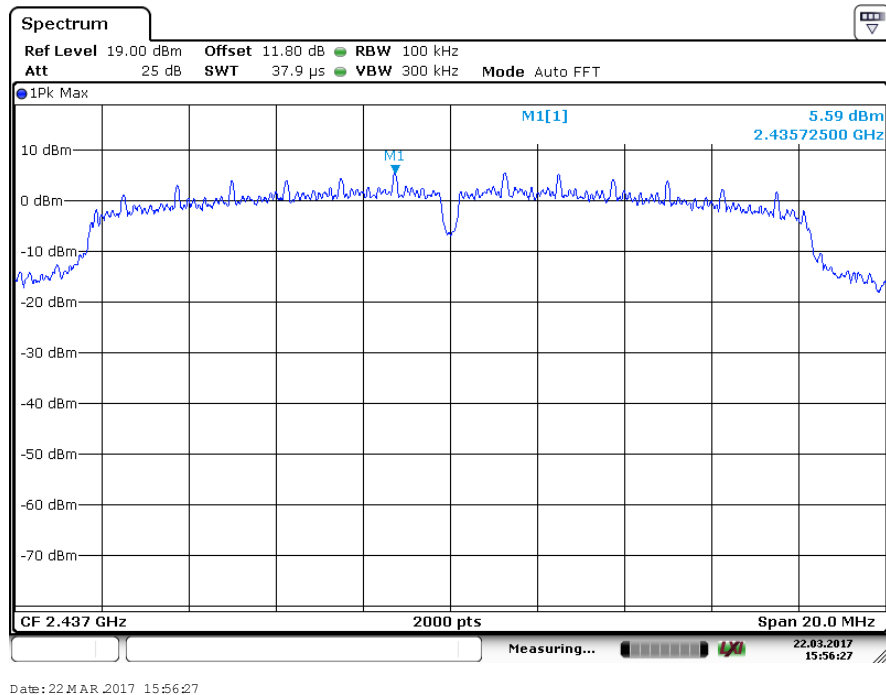
IEEE 802.11g			
Data Rate (Mbps)	Channel Frequency (MHz)	Total PSD (dBm)	Limit (dBm)
6	2412	0.5	8
	2437	5.59	8
	2462	0.07	8
24	2412	0.16	8
	2437	4.31	8
	2462	-0.27	8
54	2412	0.30	8
	2437	1.62	8
	2462	-0.13	8



Date: 22 MAR 2017 15:45:11

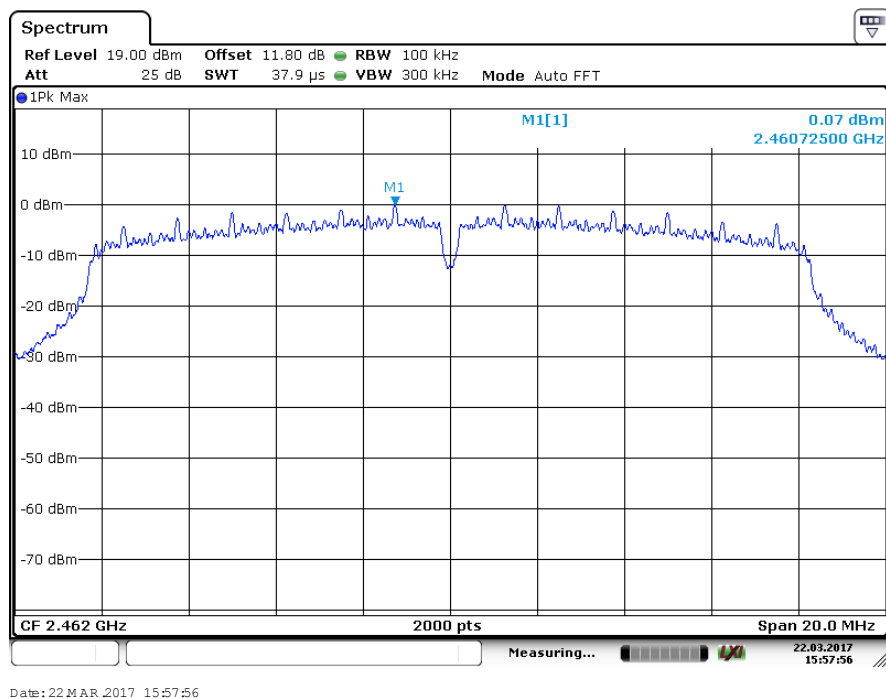
Data rate: 6 Mbps

Channel Frequency: 2412 MHz



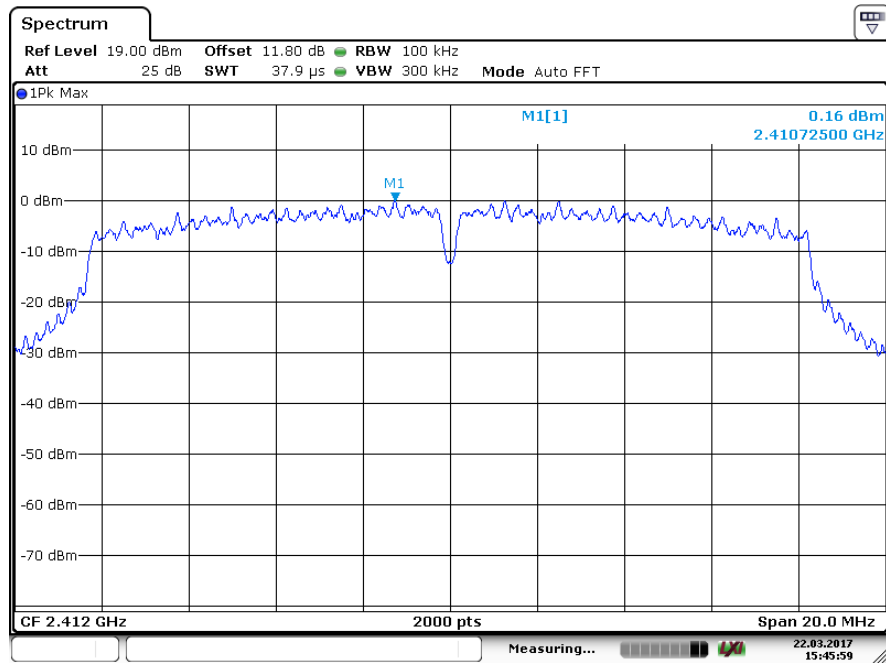
Data rate: 6 Mbps

Channel Frequency: 2437 MHz



Data rate: 6 Mbps

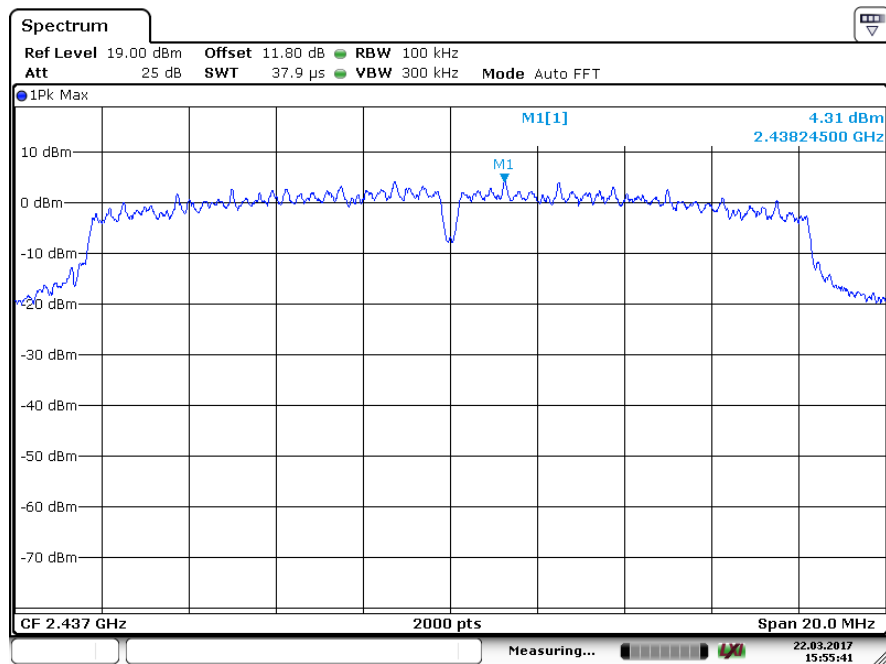
Channel Frequency: 2462 MHz



Date: 22 MAR 2017 15:46:00

Data rate: 24 Mbps

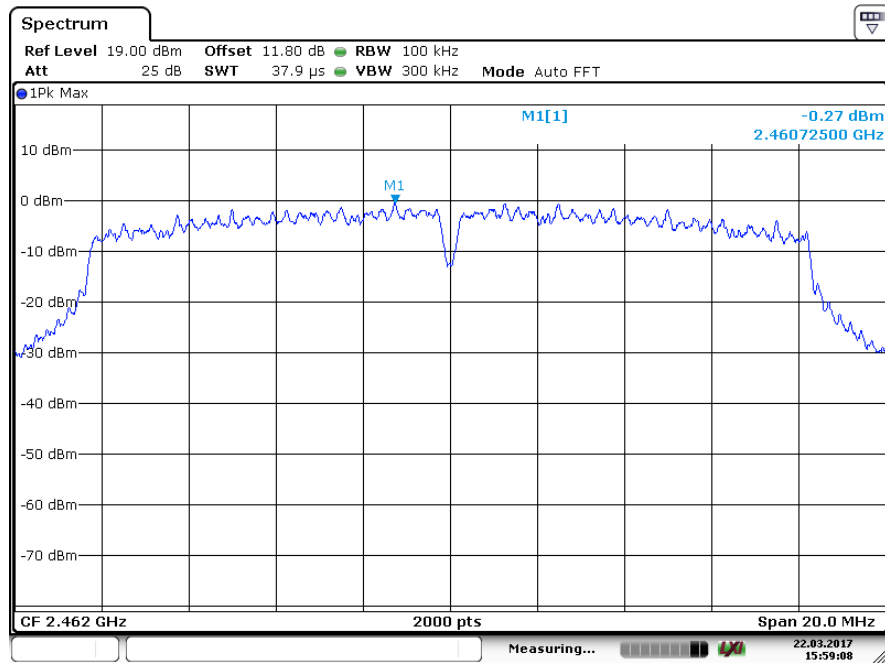
Channel Frequency: 2412 MHz



Date: 22 MAR 2017 15:55:41

Data rate: 24 Mbps

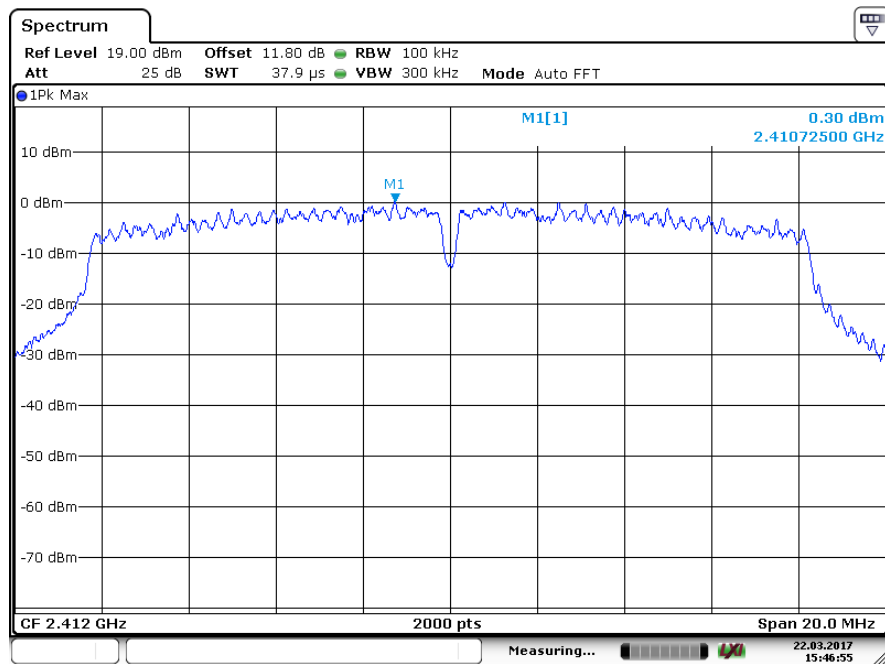
Channel Frequency: 2437 MHz



Date: 22 MAR 2017 15:59:08

Data rate: 24 Mbps

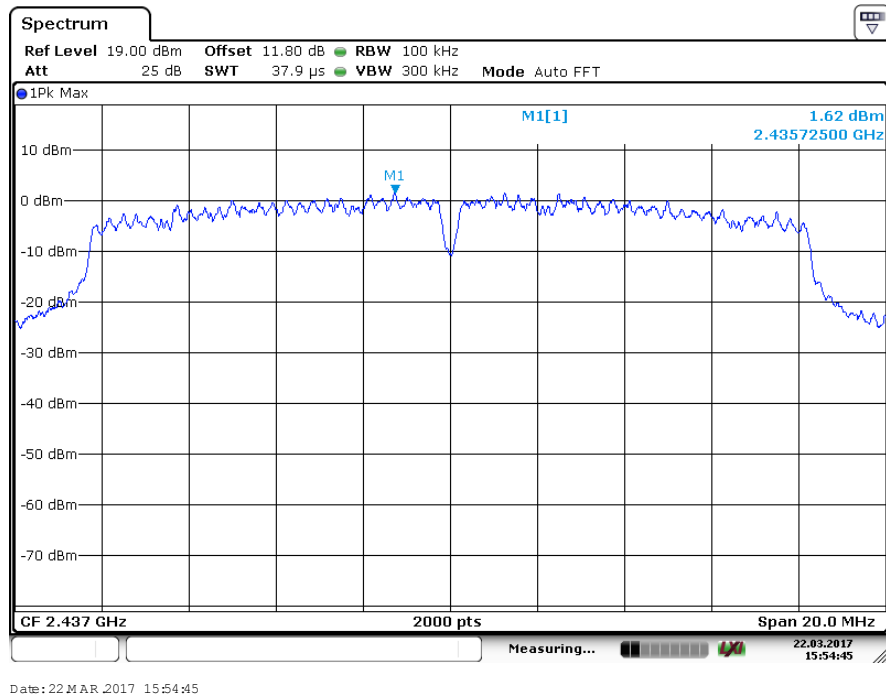
Channel Frequency: 2462 MHz



Date: 22 MAR 2017 15:46:55

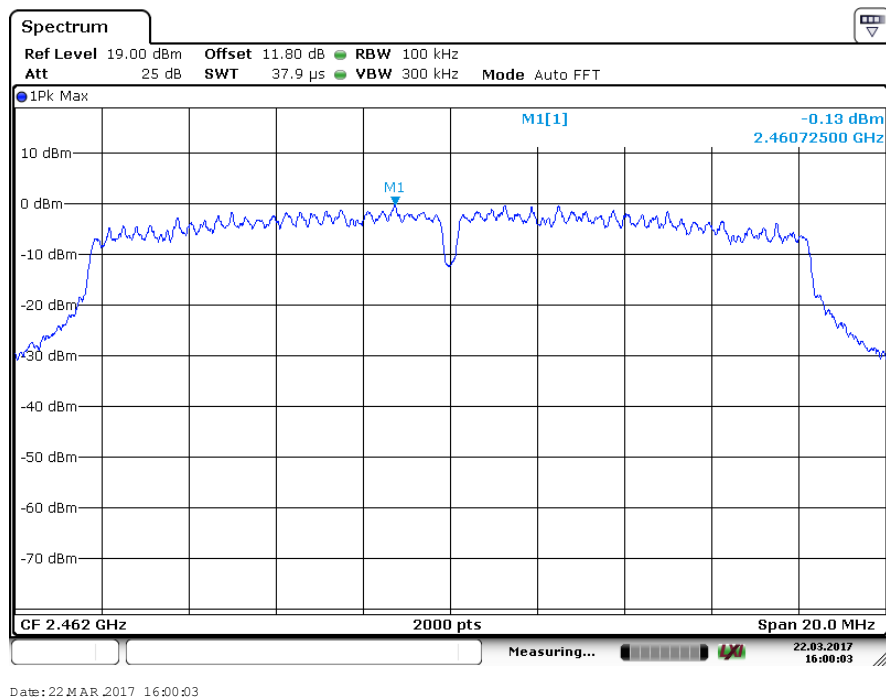
Data rate: 54 Mbps

Channel Frequency: 2412 MHz



Data rate: 54 Mbps

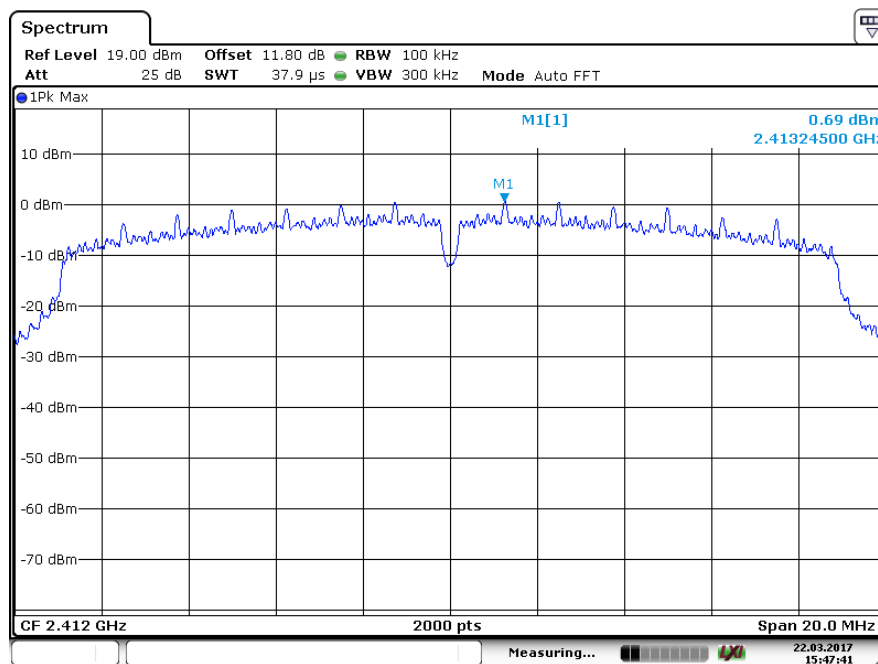
Channel Frequency: 2437 MHz



Data rate: 54 Mbps

Channel Frequency: 2462 MHz

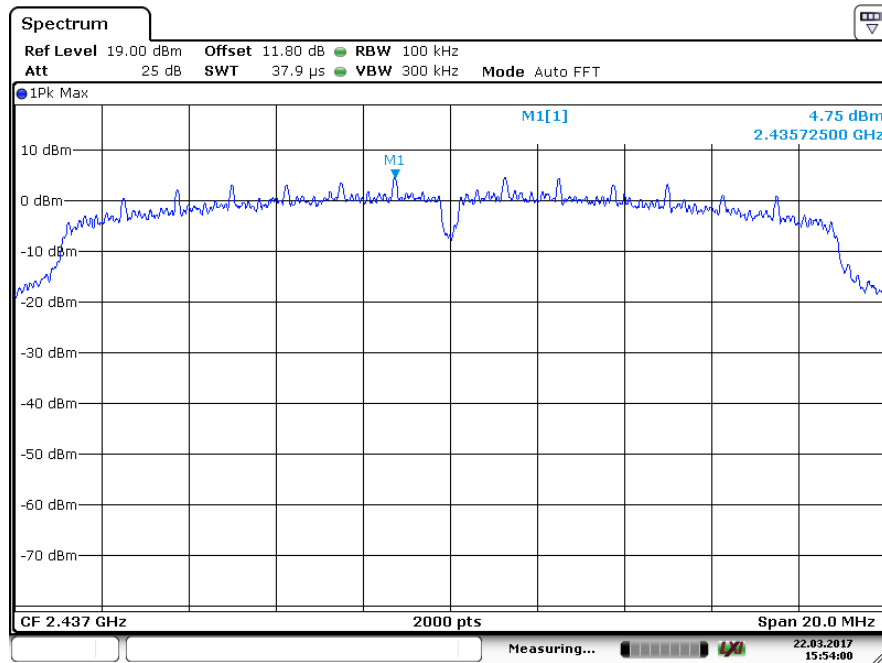
IEEE 802.11n_HT 20			
Data Rate (Mbps)	Channel Frequency (MHz)	Total PSD (dBm)	Limit (dBm)
MCS0	2412	0.69	8
	2437	4.75	8
	2462	0.44	8
MCS4	2412	0.72	8
	2437	3.83	8
	2462	0.31	8
MCS7	2412	0.72	8
	2437	0.91	8
	2462	0.33	8



Date: 22 MAR 2017 15:47:41

Data rate: MCS0

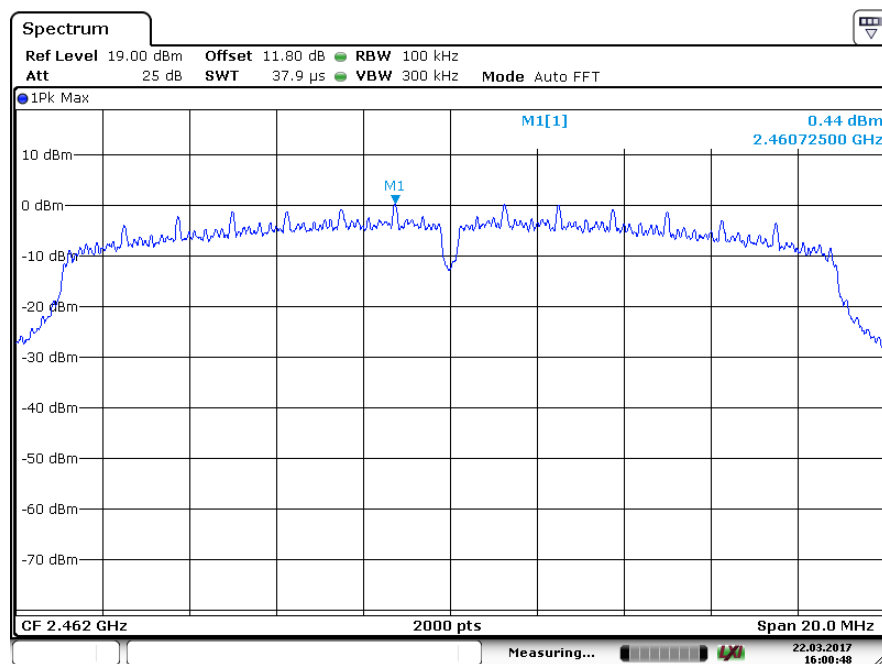
Channel Frequency: 2412 MHz



Date: 22 MAR 2017 15:54:00

Data rate: MCS0

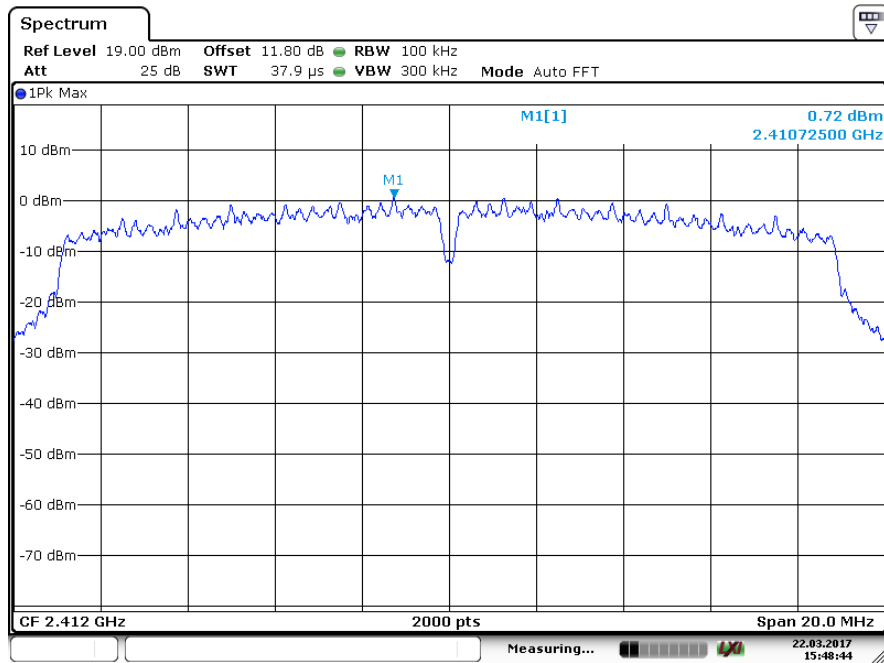
Channel Frequency: 2437 MHz



Date: 22 MAR 2017 16:00:49

Data rate: MCS0

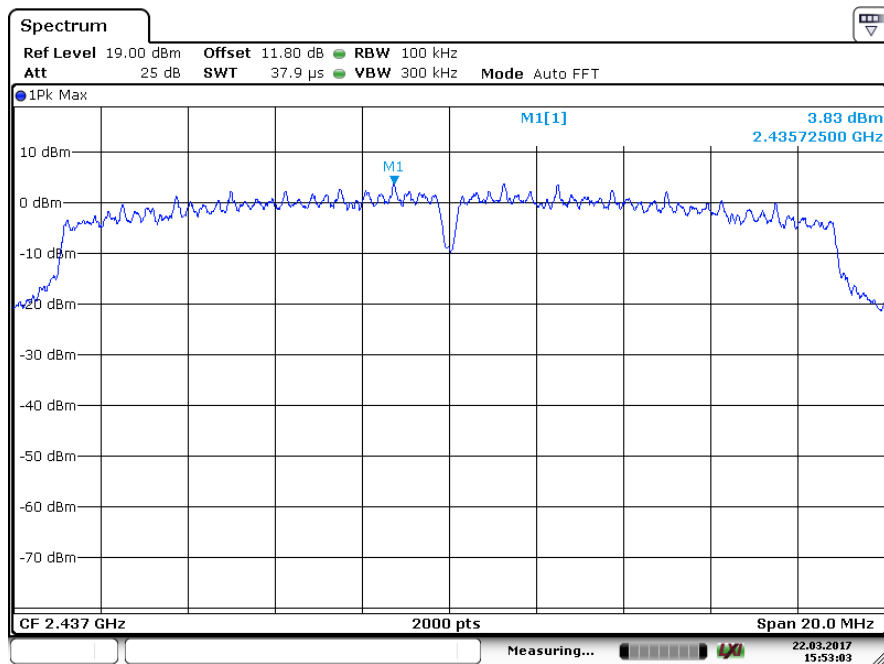
Channel Frequency: 2462 MHz



Date: 22 MAR 2017 15:48:44

Data rate: MCS4

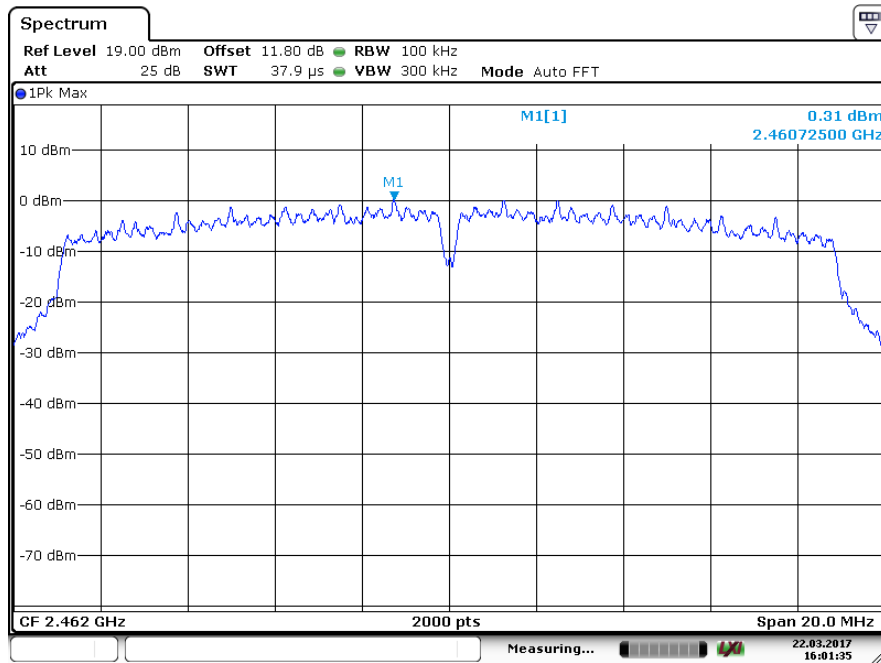
Channel Frequency: 2412 MHz



Date: 22 MAR 2017 15:53:04

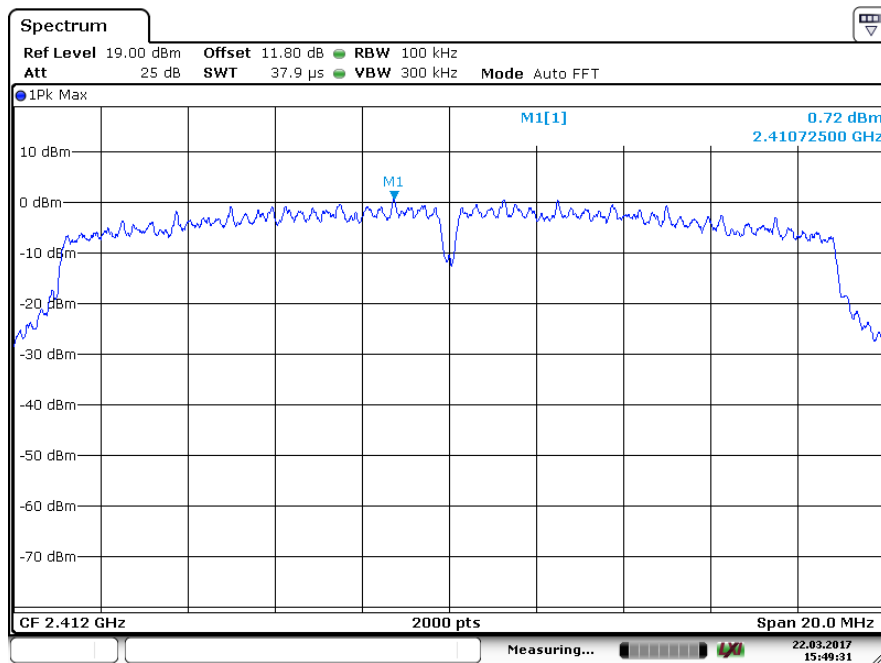
Data rate: MCS4

Channel Frequency: 2437 MHz



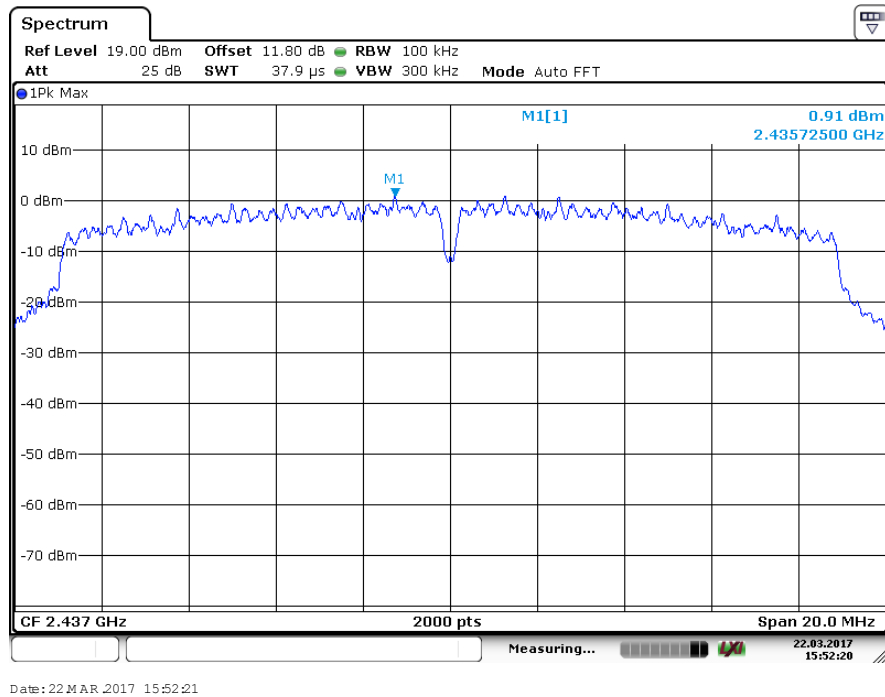
Data rate: MCS4

Channel Frequency: 2462 MHz



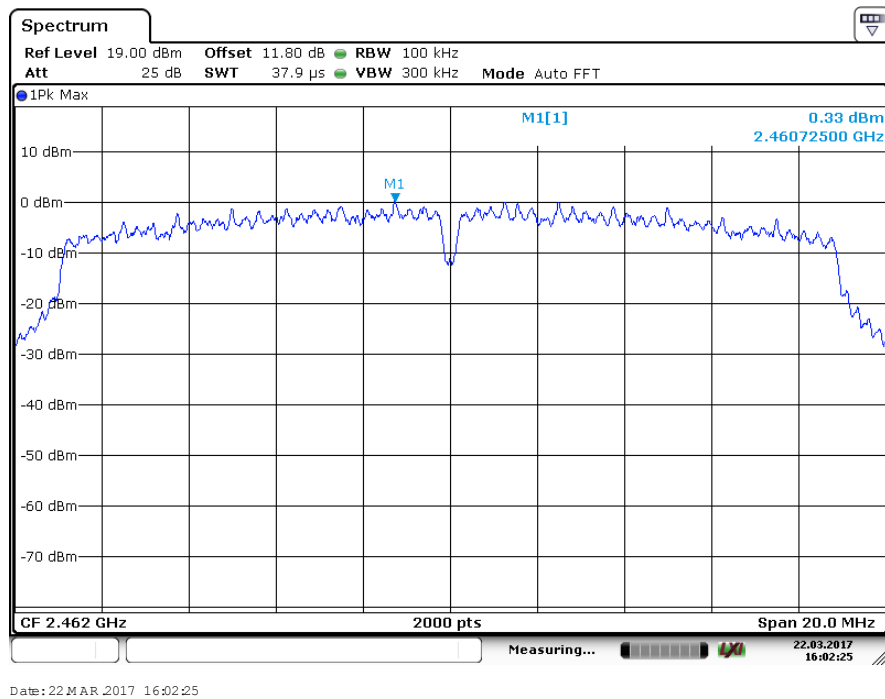
Data rate: MCS7

Channel Frequency: 2412 MHz



Data rate: MCS7

Channel Frequency: 2437 MHz



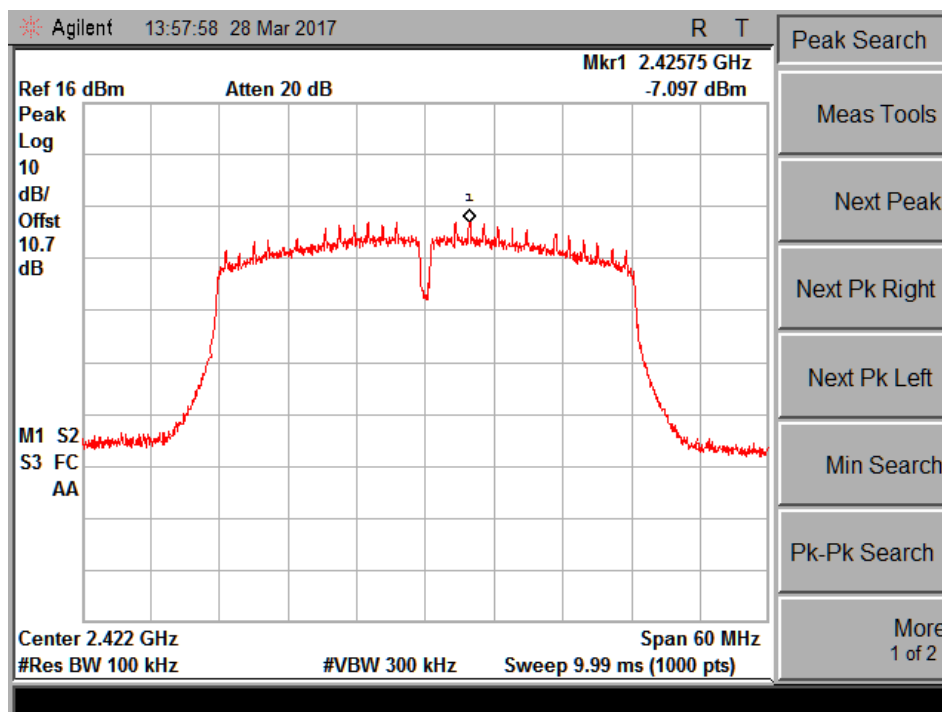
Data rate: MCS7

Channel Frequency: 2462 MHz

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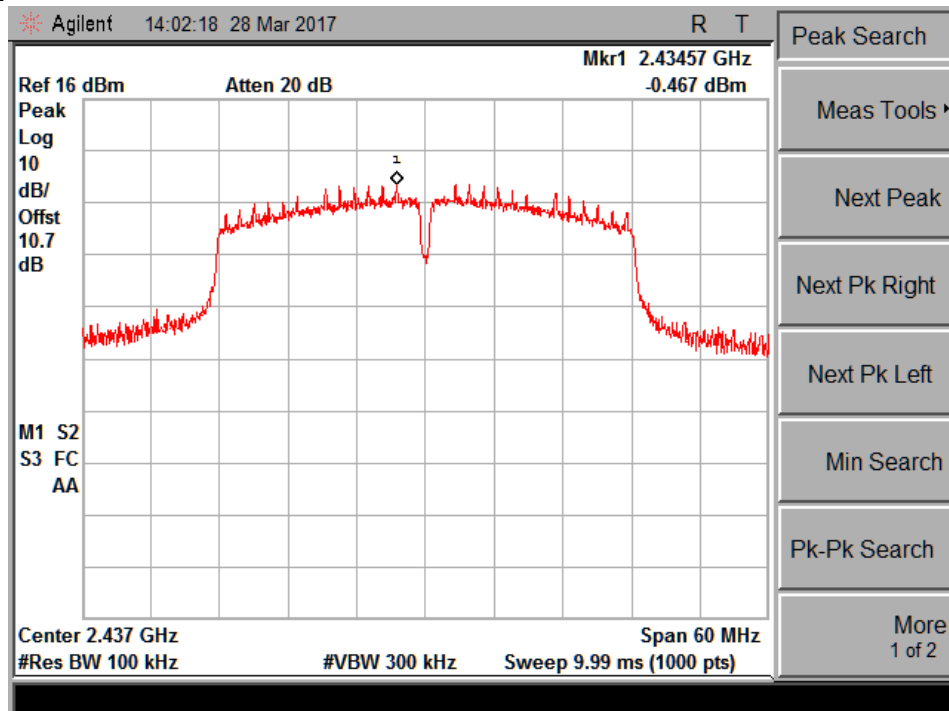
Attenuator (10dB) + cable loss (0.7dB) =10.7dB Considered in the test result

IEEE 802.11n_HT 40			
Data Rate (Mbps)	Channel Frequency (MHz)	Total PSD (dBm)	Limit (dBm)
MCS0	2422	-7.09	8
	2437	-0.46	8
	2452	-6.93	8
MCS4	2422	-6.95	8
	2437	-0.28	8
	2452	-6.94	8
MCS7	2422	-3.82	8
	2437	-3.98	8
	2452	-5.70	8



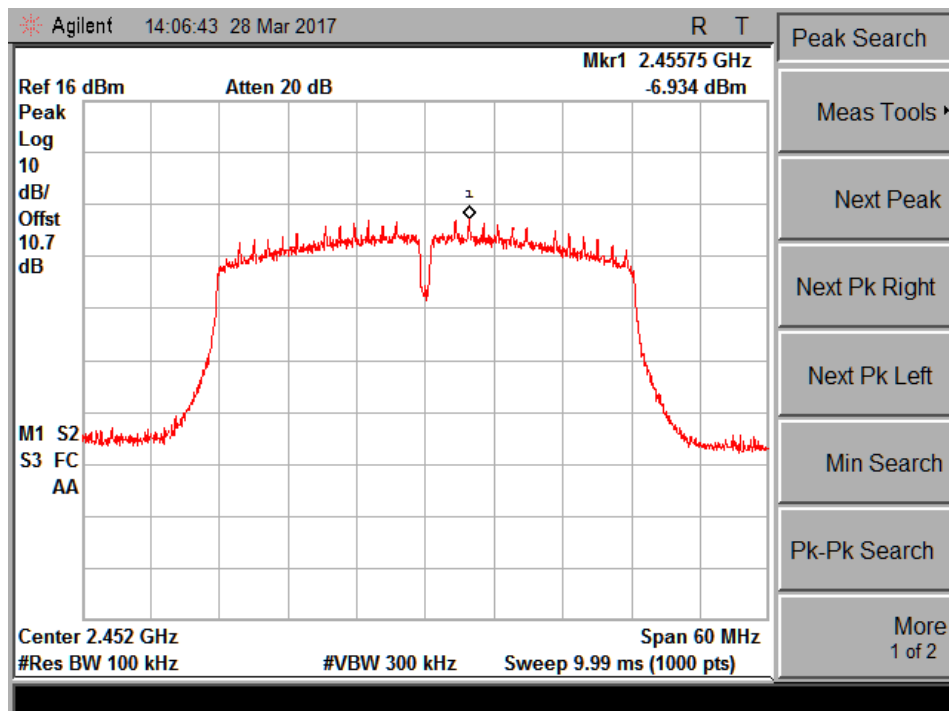
Data rate: MCS0

Channel Frequency: 2422 MHz



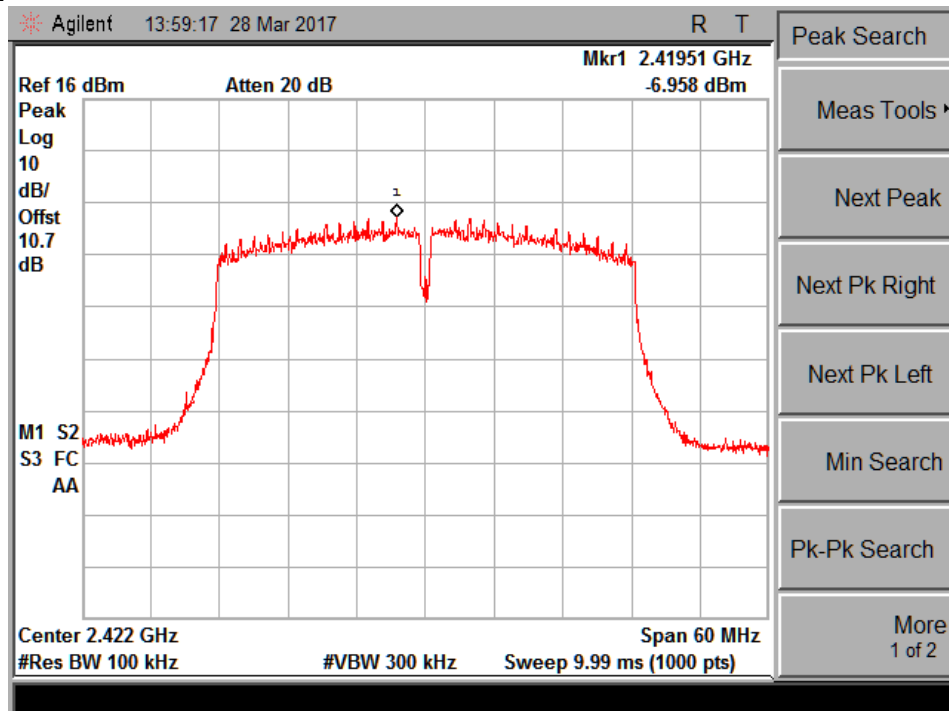
Data rate: MCS0

Channel Frequency: 2437 MHz



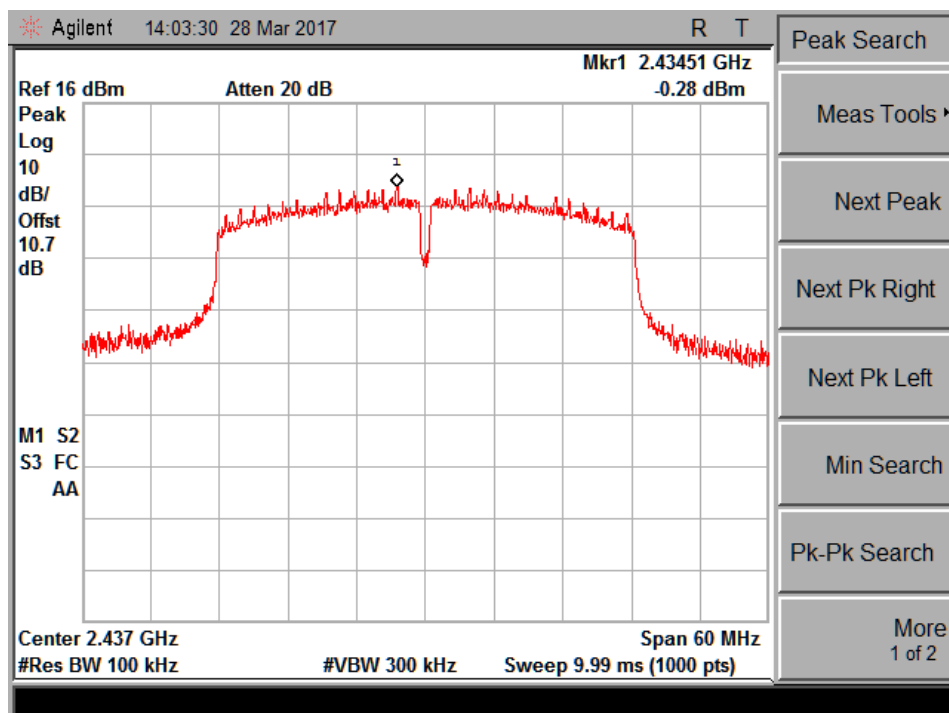
Data rate: MCS0

Channel Frequency: 2452 MHz



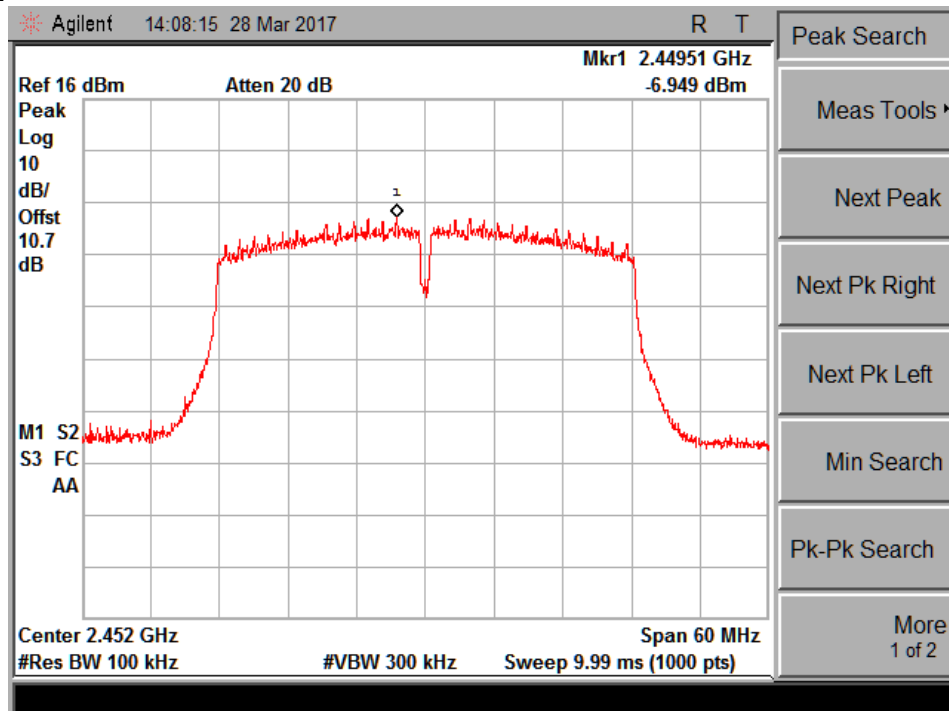
Data rate: MCS4

Channel Frequency: 2422 MHz



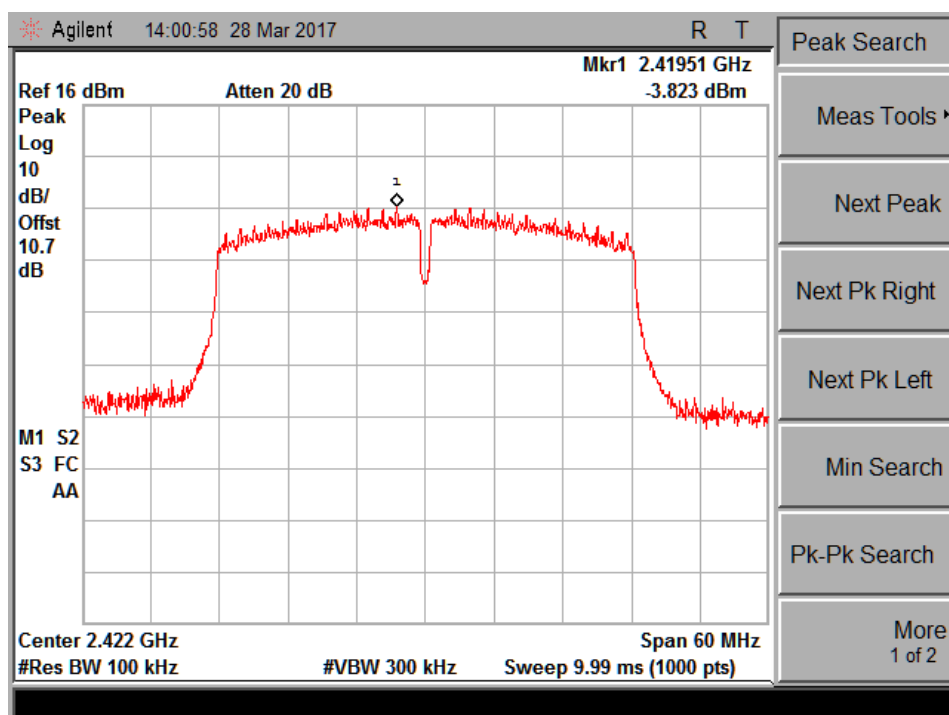
Data rate: MCS4

Channel Frequency: 2437 MHz



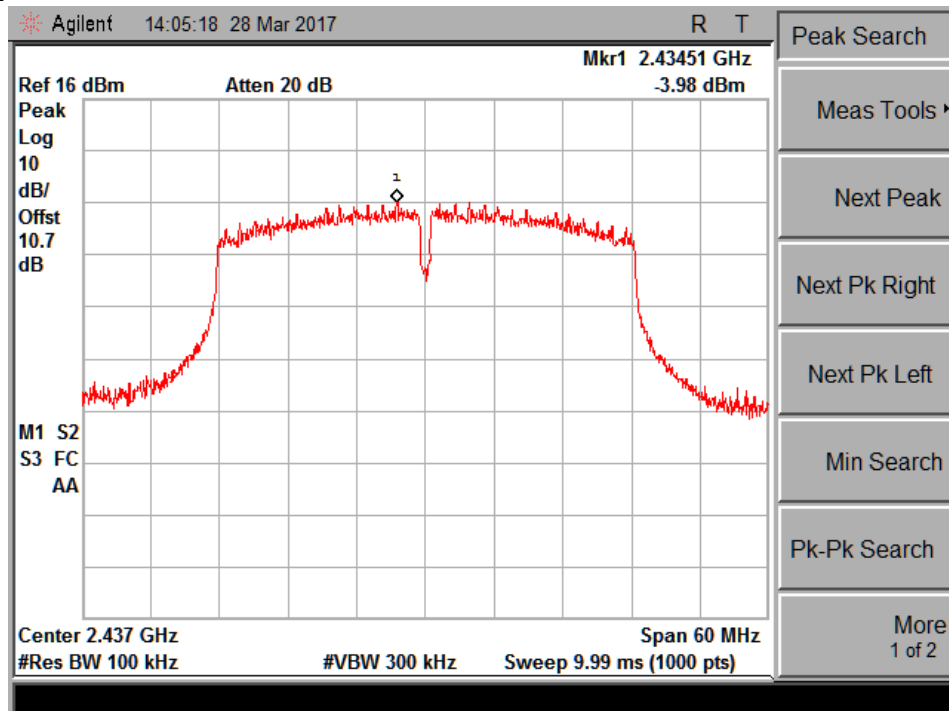
Data rate: MCS4

Channel Frequency: 2452 MHz



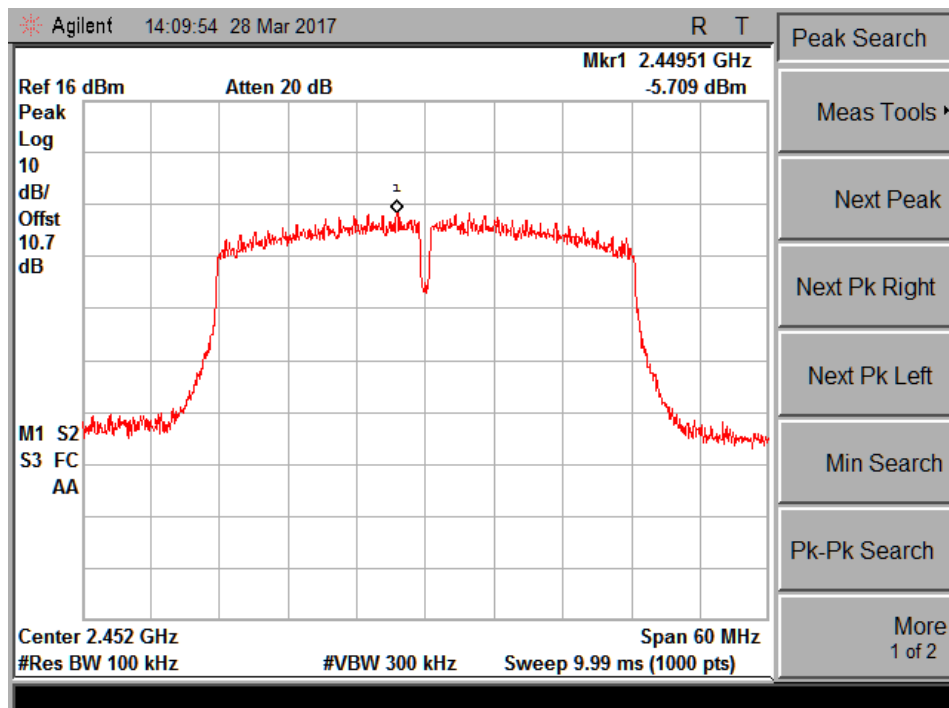
Data rate: MCS7

Channel Frequency: 2422 MHz



Data rate: MCS7

Channel Frequency: 2437 MHz



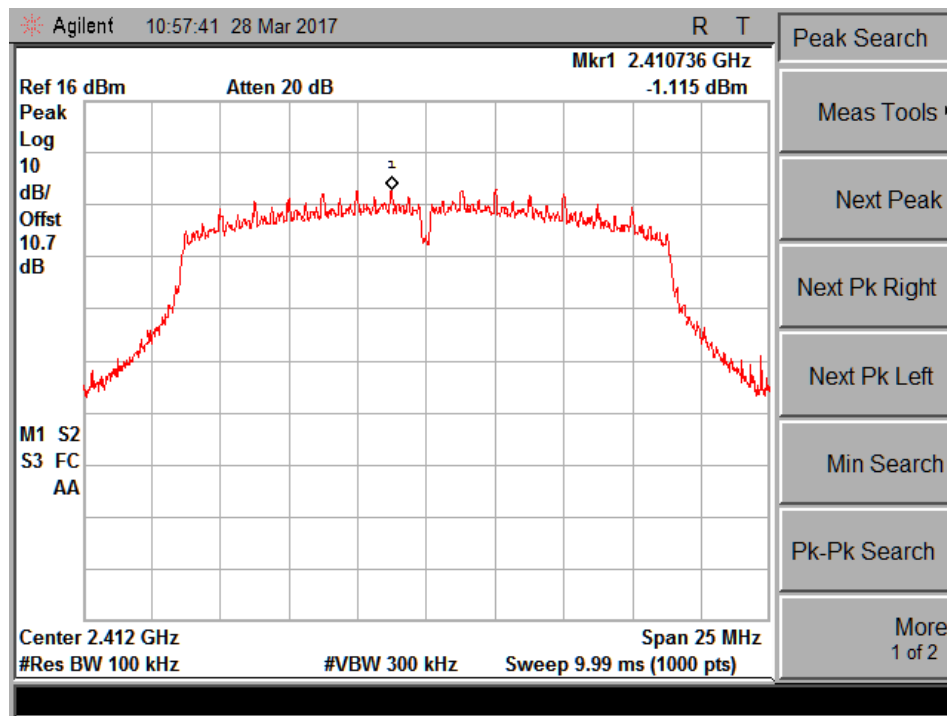
Data rate: MCS7

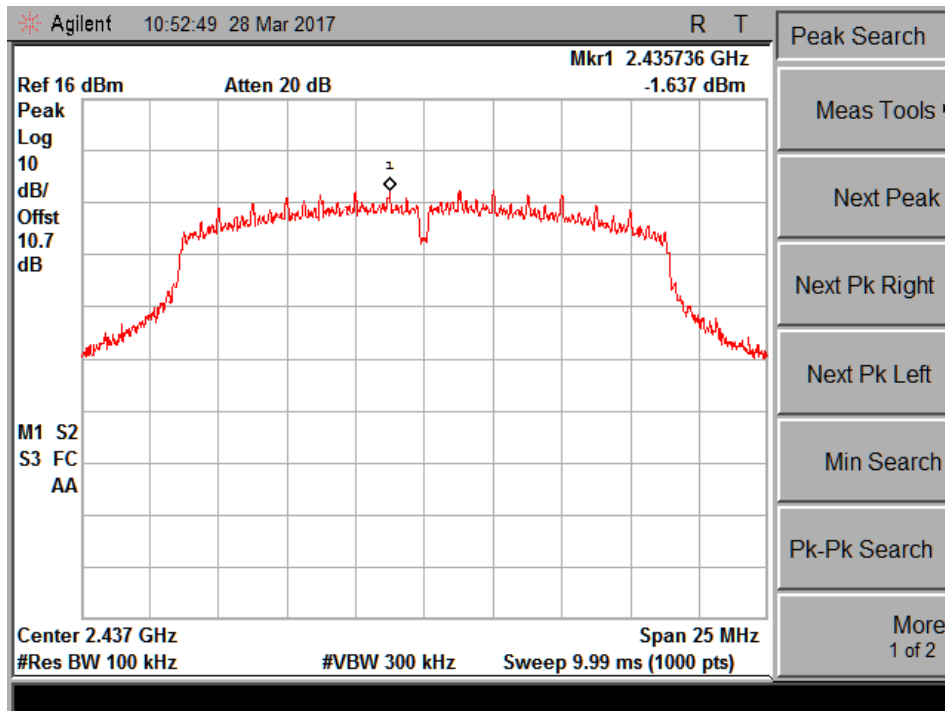
Channel Frequency: 2452 MHz

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Chain 0

Attenuator (10dB) + cable loss (0.7dB) =10.7dB Considered in the test result

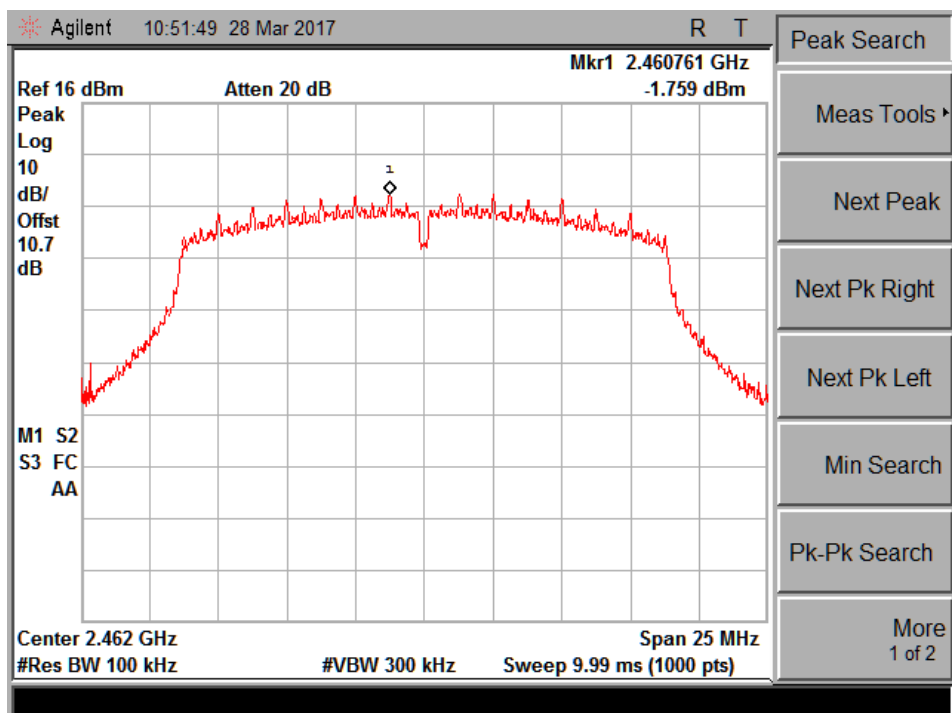
IEEE802.11n_MIMO_HT20					
Data Rate (Mbps)	Channel Frequency (MHz)	PSD (dBm)	Measure & Add 10*log(2)	Total PSD (dBm)	Limit (dBm)
MCS8	2412	-1.11	3.01	1.9	8
	2437	-1.63	3.01	1.38	8
	2462	-1.75	3.01	1.26	8
MCS12	2412	-1.00	3.01	2.01	8
	2437	-1.41	3.01	1.6	8
	2462	-1.12	3.01	1.89	8
MCS15	2412	-2.62	3.01	0.39	8
	2437	-3.1	3.01	-0.09	8
	2462	-2.94	3.01	0.07	8





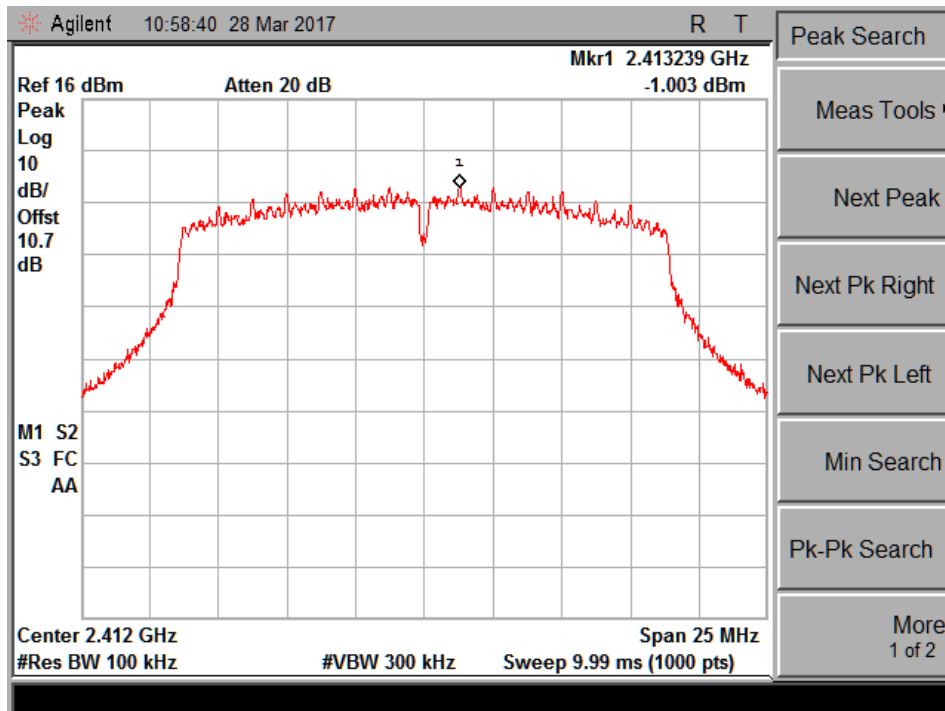
Data rate: MCS8

Channel Frequency: 2437 MHz



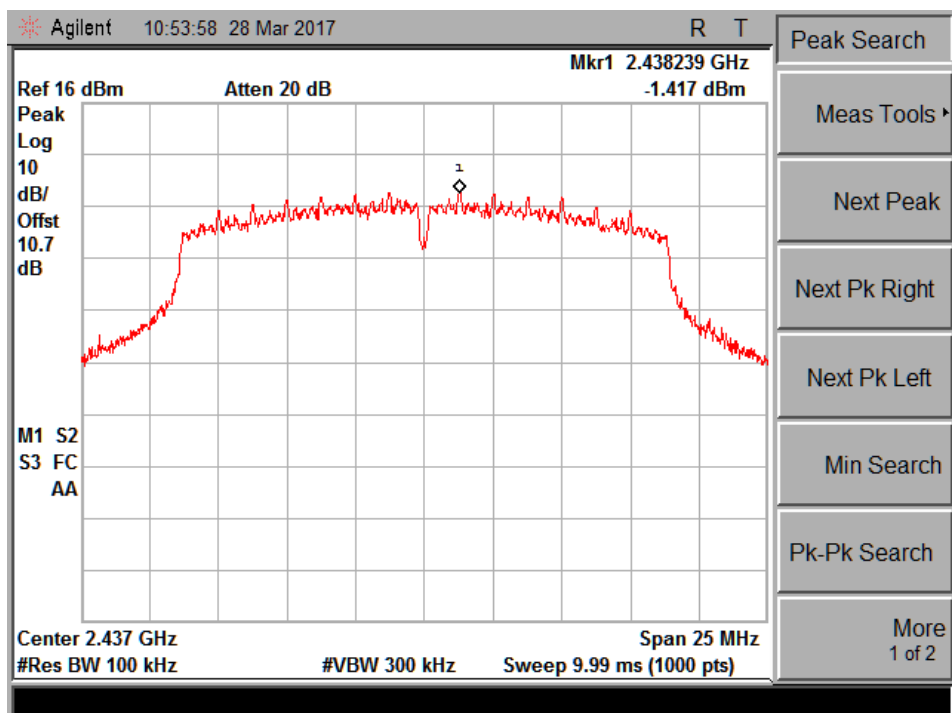
Data rate: MCS8

Channel Frequency: 2452 MHz



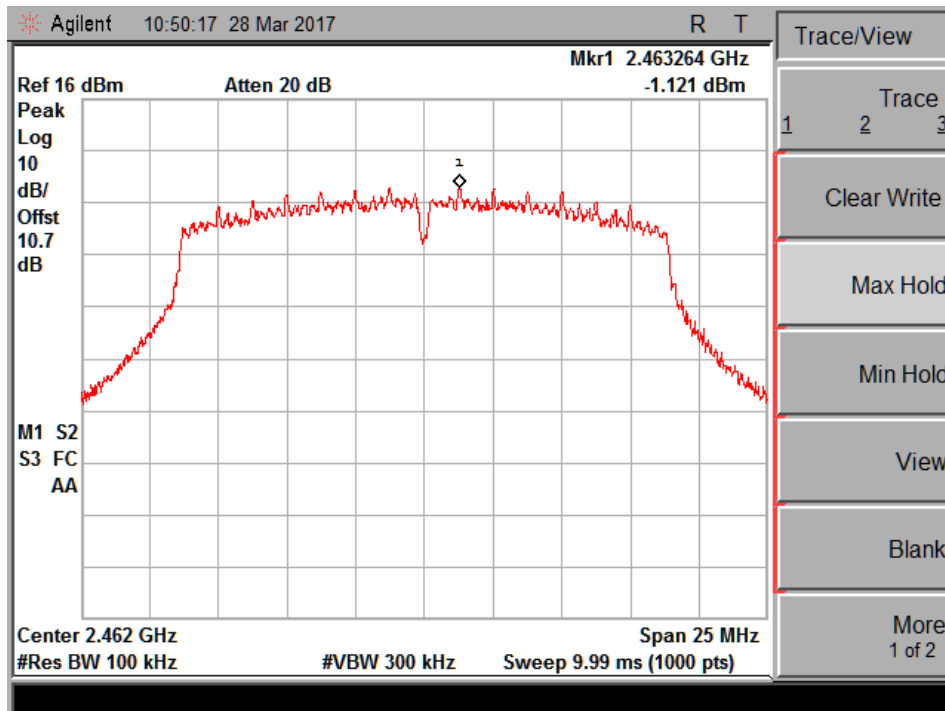
Data rate: MCS12

Channel Frequency: 2412 MHz



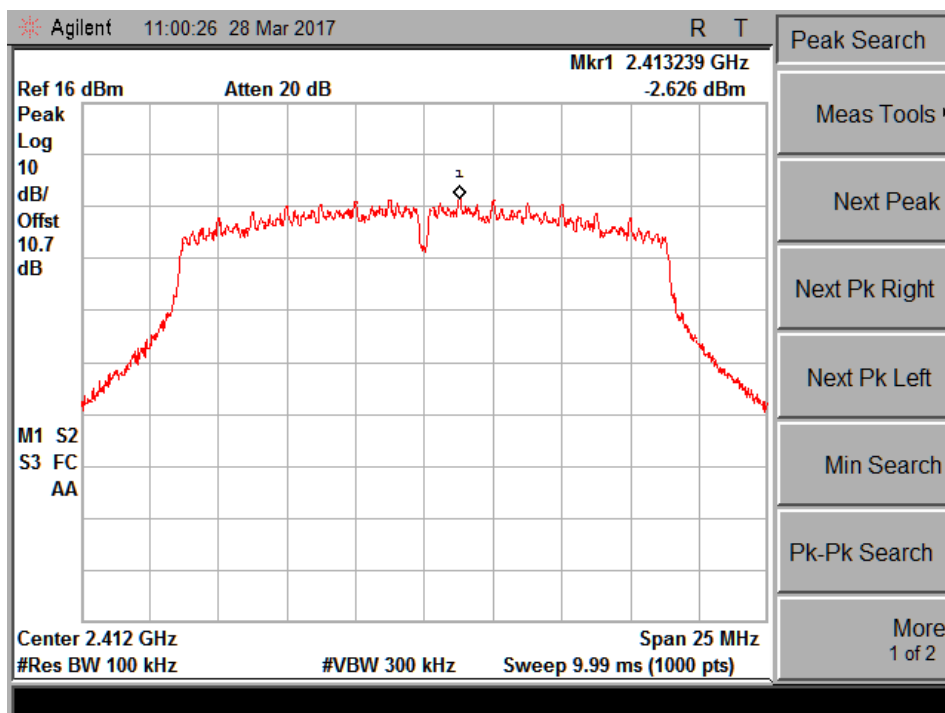
Data rate: MCS12

Channel Frequency: 2437 MHz



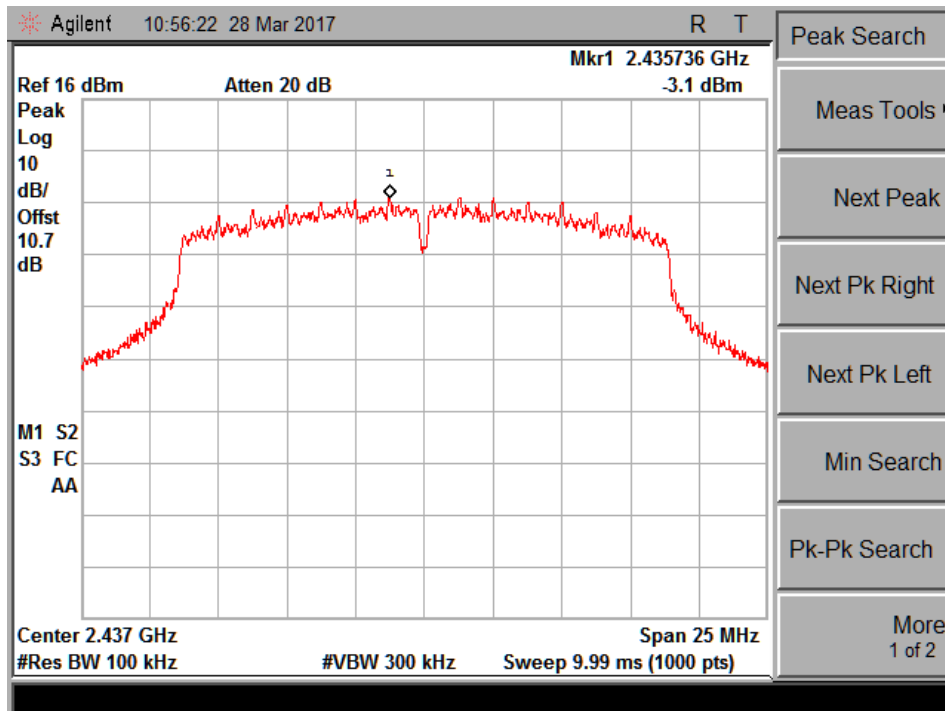
Data rate: MCS12

Channel Frequency: 2462 MHz



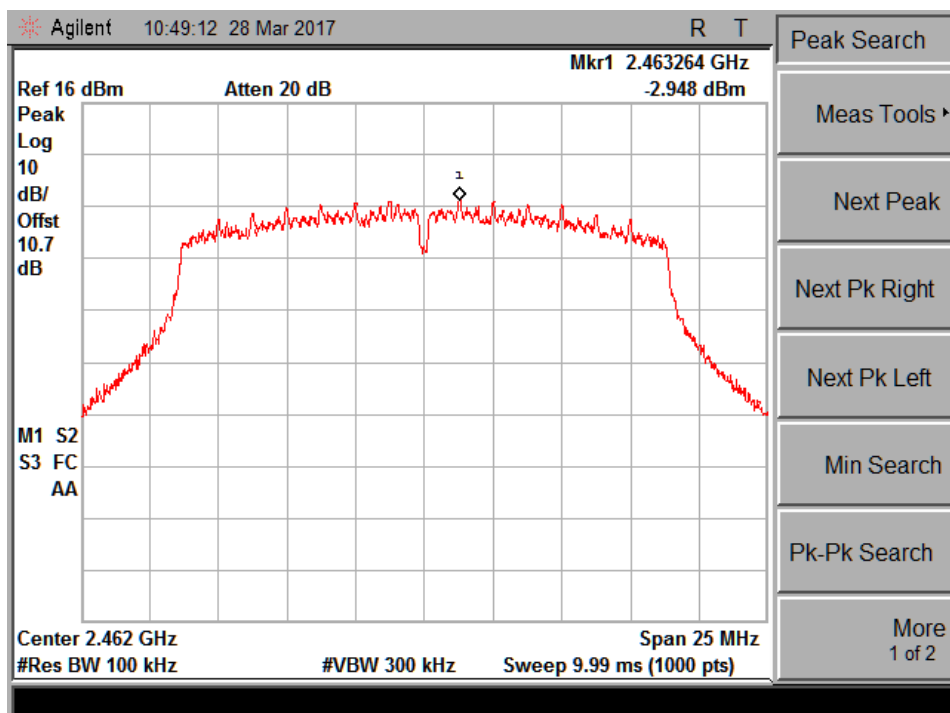
Data rate: MCS15

Channel Frequency: 2412 MHz



Data rate: MCS15

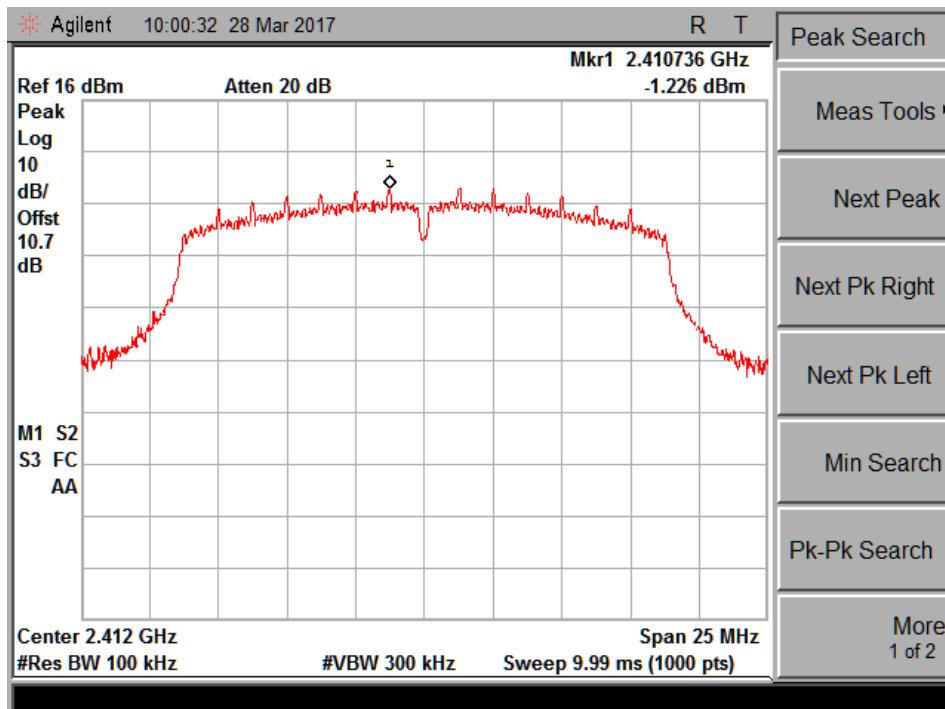
Channel Frequency: 2437 MHz



Data rate: MCS15

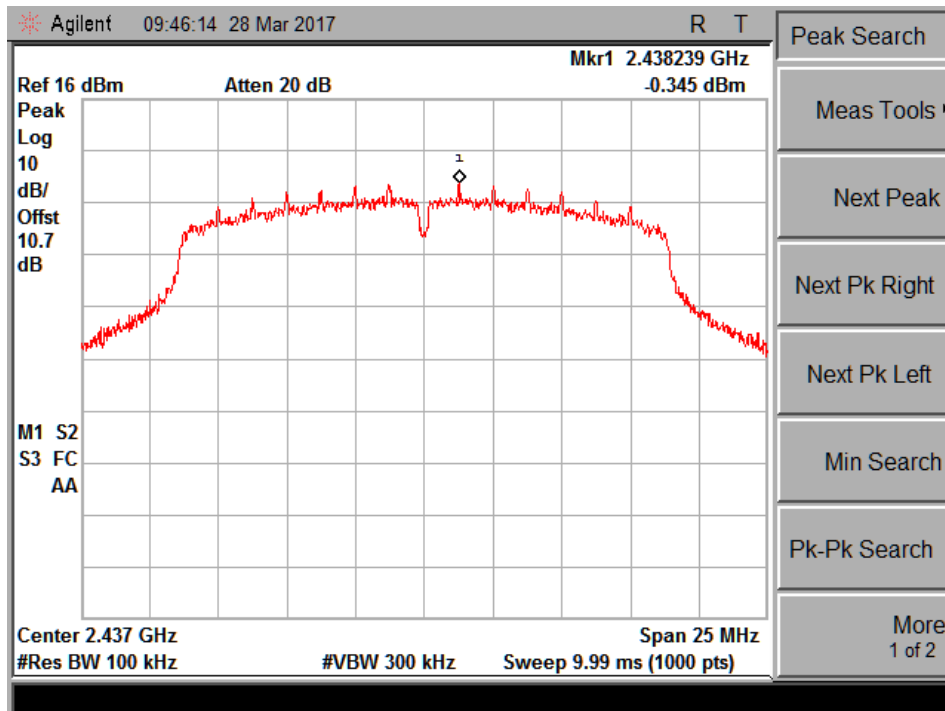
Channel Frequency: 2462 MHz

IEEE802.11n_MIMO_HT20					
Data Rate (Mbps)	Channel Frequency (MHz)	Total PSD (dBm)	Measure & Add 10*log(2)	Total PSD (dBm)	Limit (dBm)
MCS8	2412	-1.22	3.01	1.79	8
	2437	-0.34	3.01	2.67	8
	2462	-1.80	3.01	1.21	8
MCS12	2412	-1.45	3.01	1.56	8
	2437	-0.08	3.01	2.93	8
	2462	-1.60	3.01	1.41	8
MCS15	2412	-3.67	3.01	-0.66	8
	2437	-3.27	3.01	-0.26	8
	2462	-3.96	3.01	-0.95	8



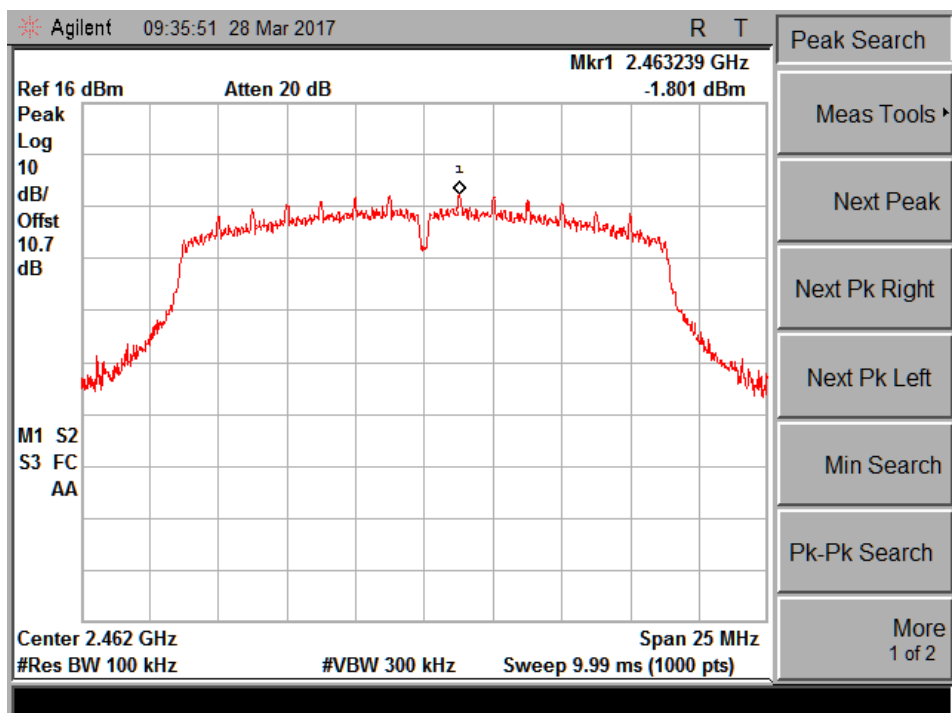
Data rate: MCS8

Channel Frequency: 2412 MHz



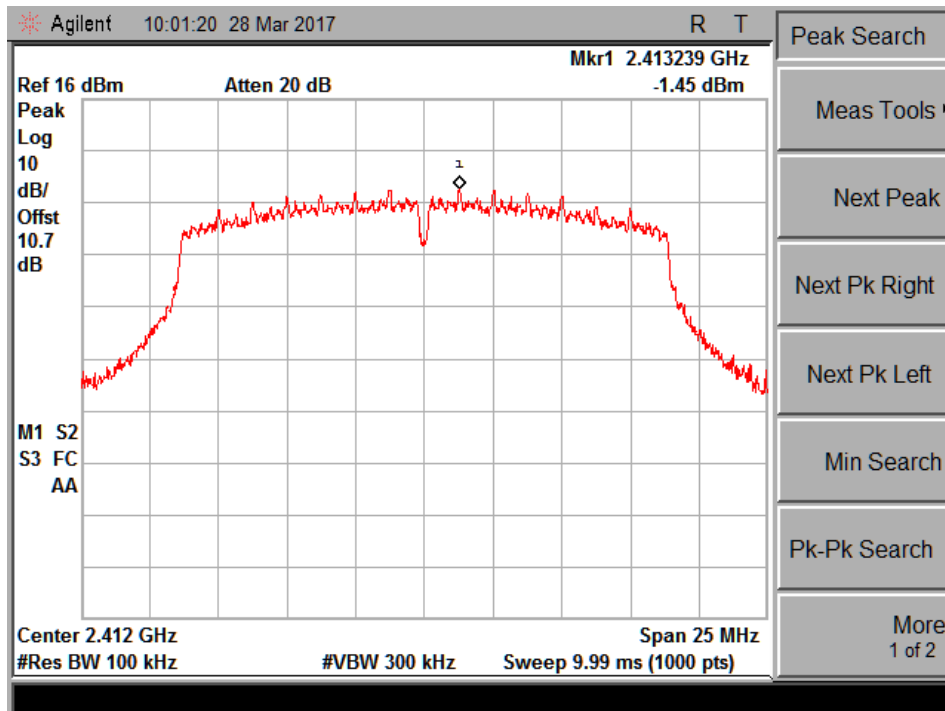
Data rate: MCS8

Channel Frequency: 2437 MHz



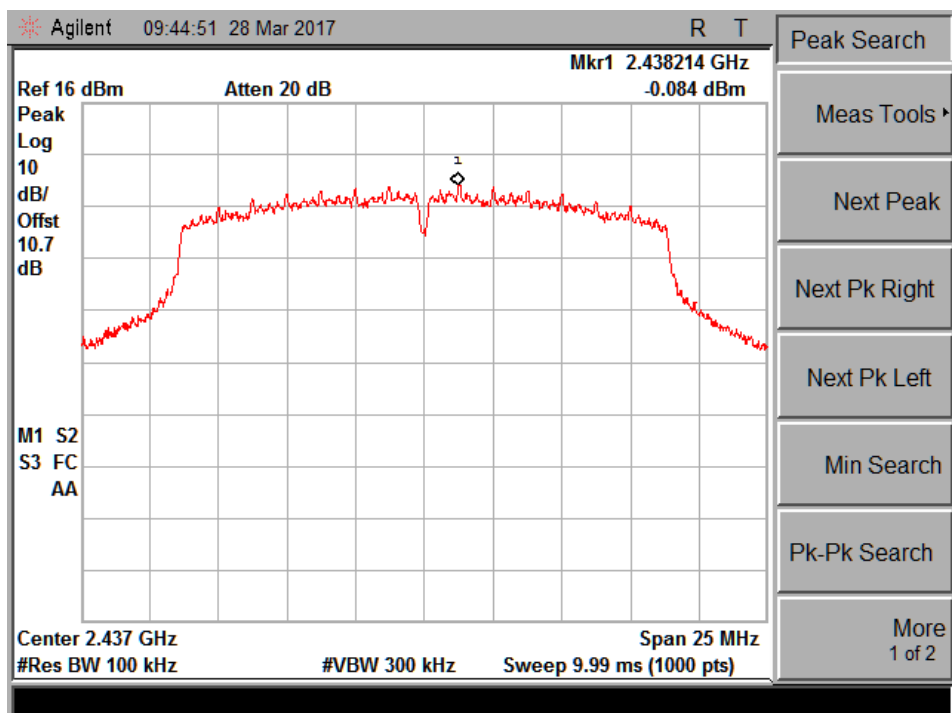
Data rate: MCS8

Channel Frequency: 2452 MHz



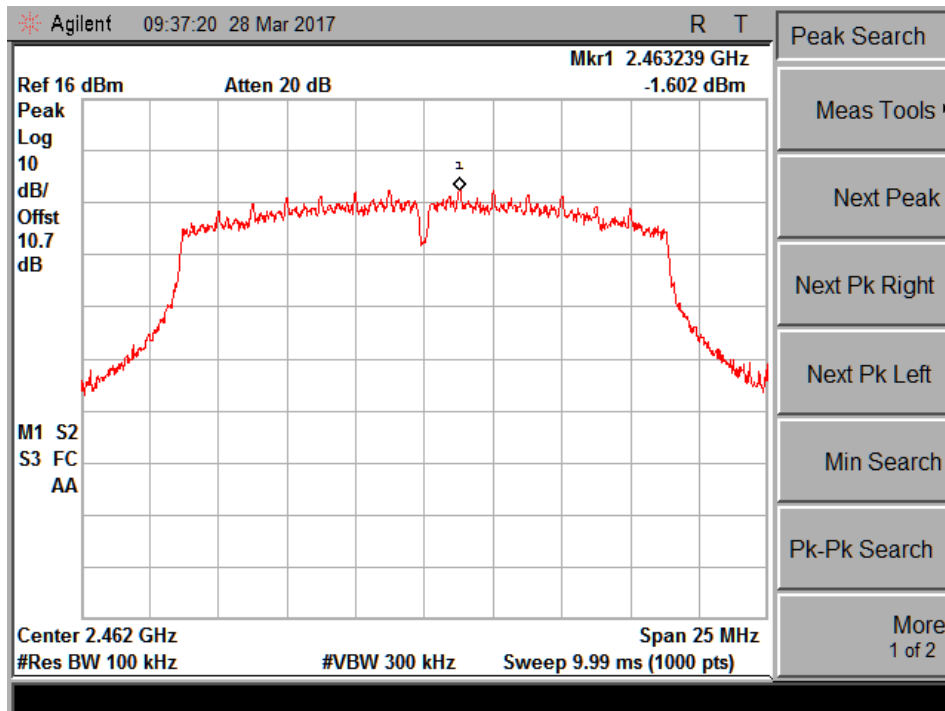
Data rate: MCS12

Channel Frequency: 2412 MHz



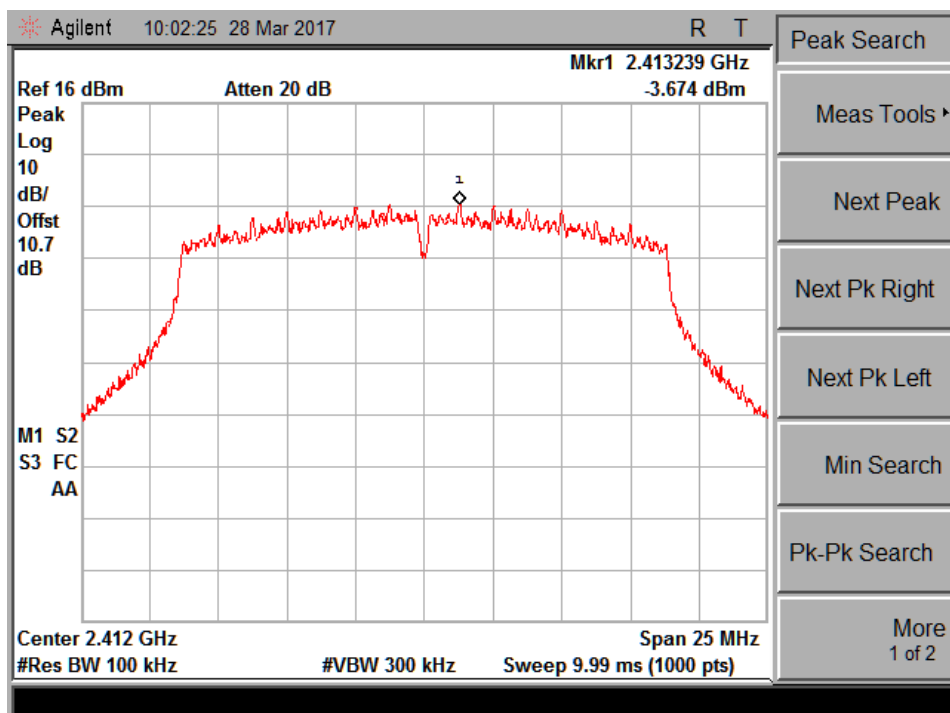
Data rate: MCS12

Channel Frequency: 2437 MHz



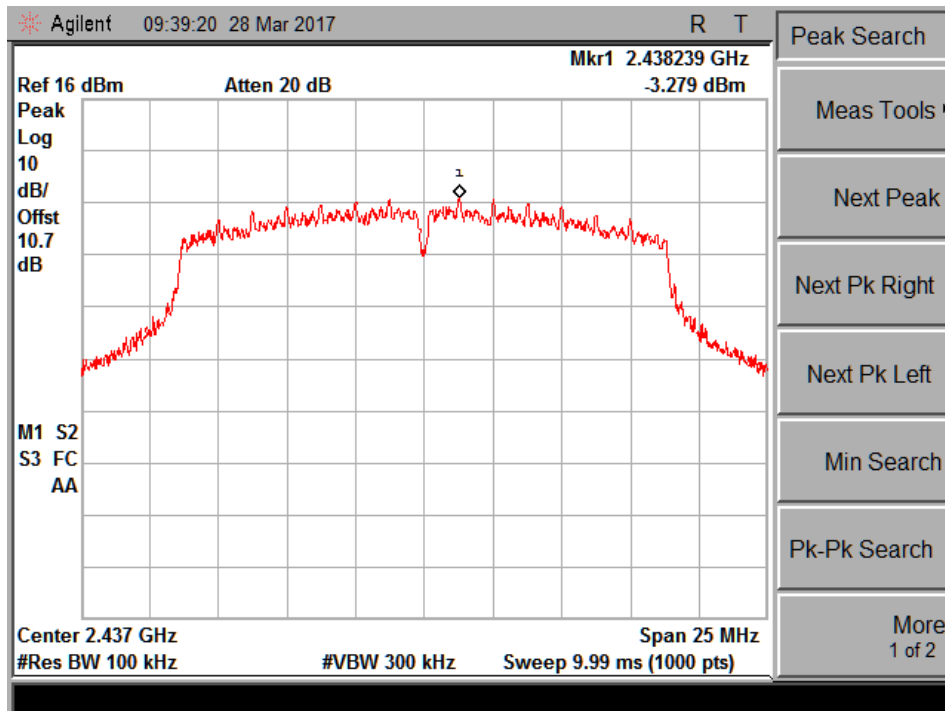
Data rate: MCS12

Channel Frequency: 2462 MHz



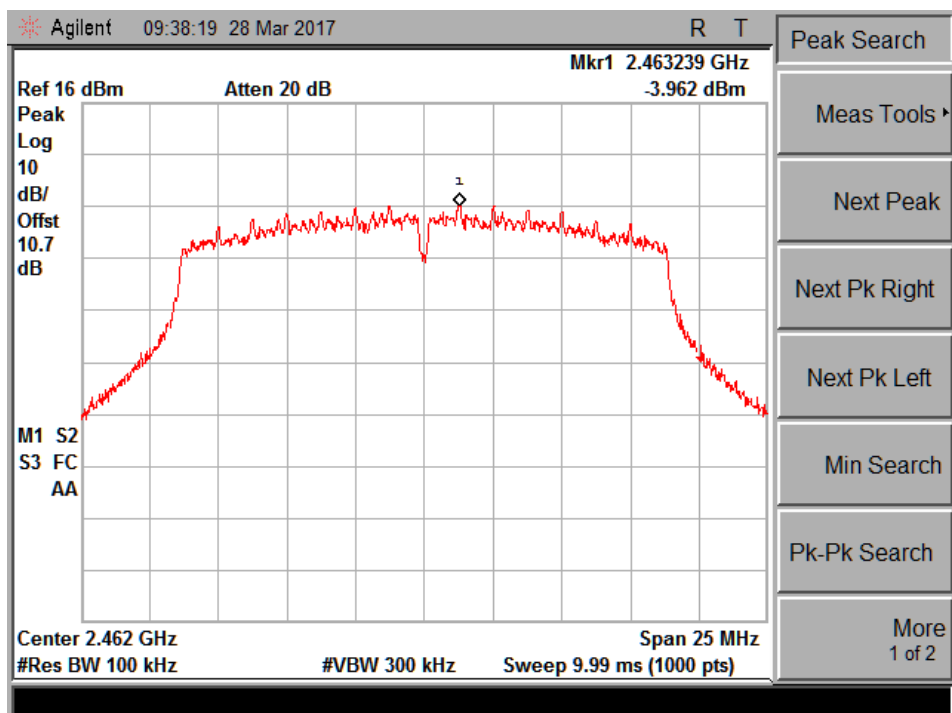
Data rate: MCS15

Channel Frequency: 2412 MHz



Data rate: MCS15

Channel Frequency: 2437 MHz



Data rate: MCS15

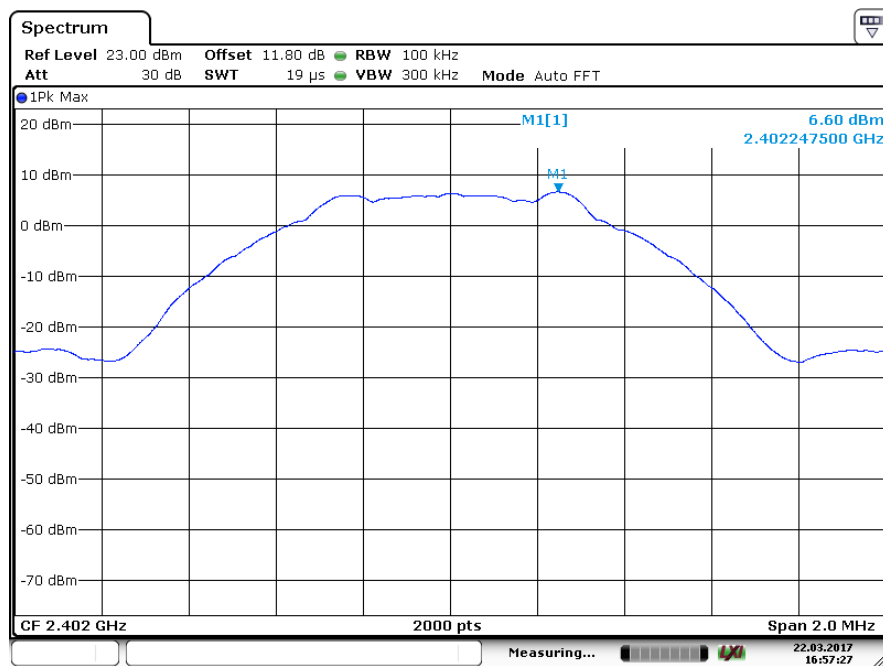
Channel Frequency: 2462 MHz

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Test Result: Bluetooth LE

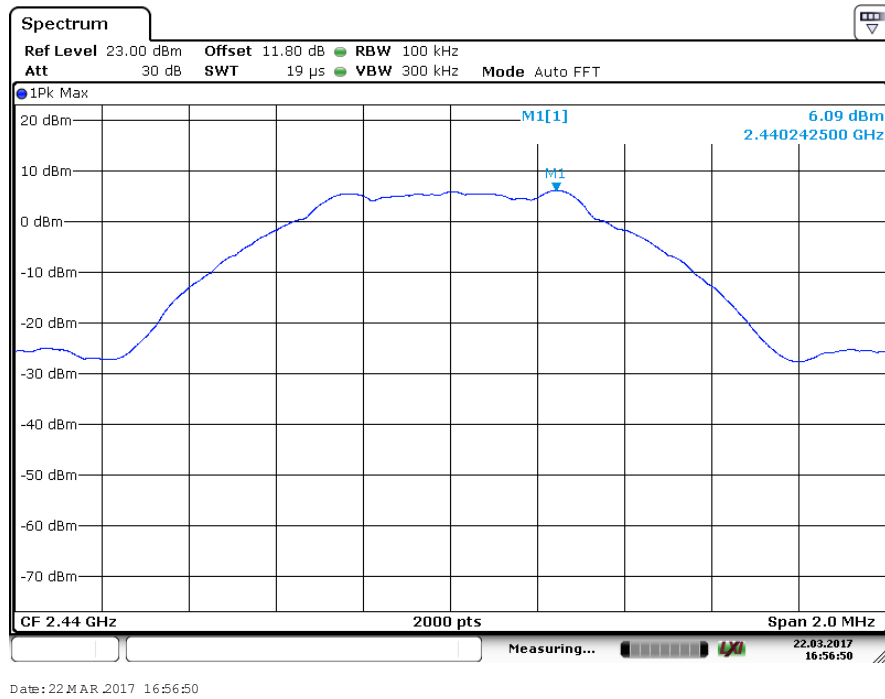
Attenuator (10dB) + cable loss (1.8dB) = 11.80dB Considered in the test result

Channel Frequency (MHz)	Total PSD (dBm)	Limit (dBm)
2402	6.60	8.00
2437	6.09	8.00
2480	5.79	8.00

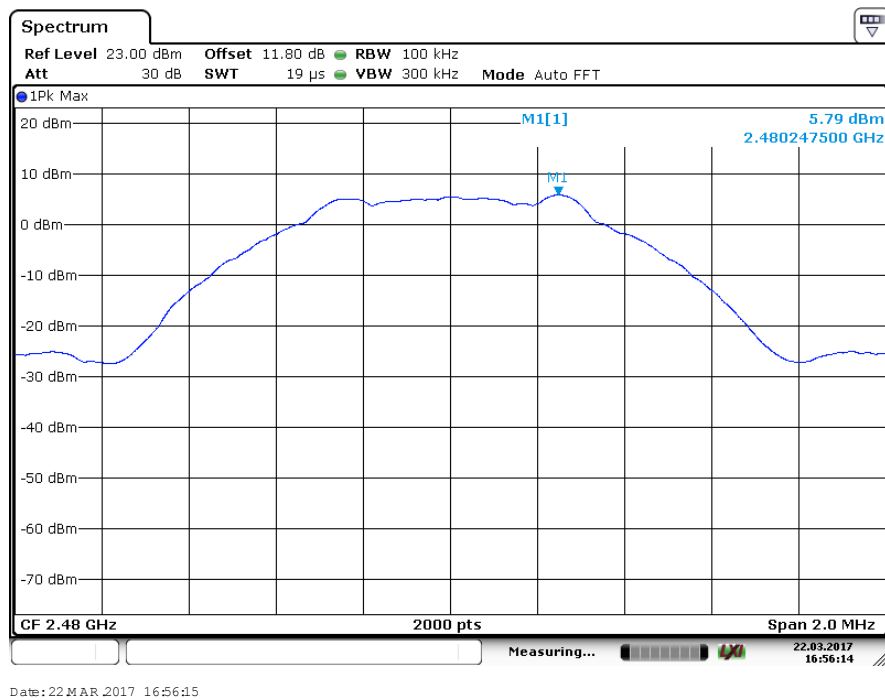


Date: 22.MAR.2017 16:57:28

Channel Frequency: 2402 MHz



Channel Frequency: 2440 MHz



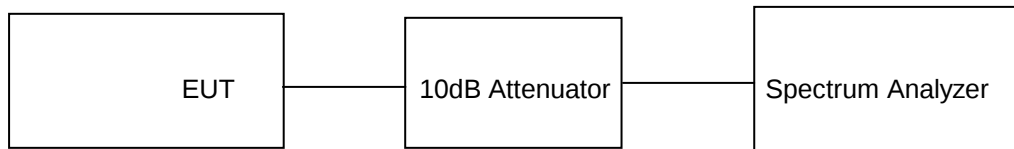
Channel Frequency: 2480 MHz

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DTS Bandwidth
Result

Pass

Test Specification FCC Part 15 Section 15.247 (a) (2)
 Detector Function Peak
 Requirement The minimum 6 dB bandwidth shall be at least 500 kHz/0.5MHz.

Test Method:



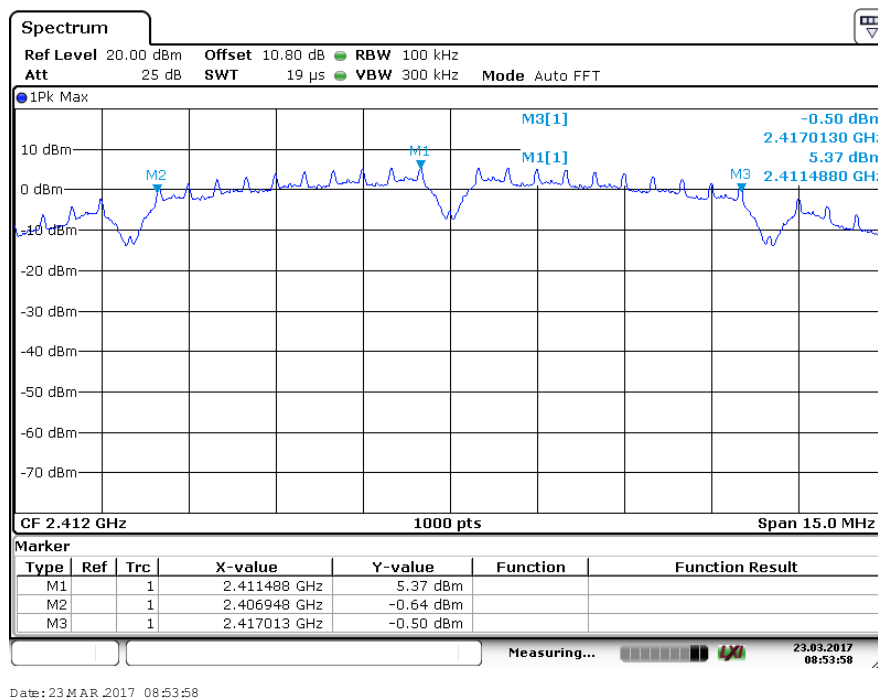
Test Result:

Attenuator (10dB) + cable loss (0.8dB) = 10.8 dB Considered in the test result

IEEE802.11b			
Data Rate (Mbps)	Channel Frequency (MHz)	6 dB Bandwidth (MHz)	99% OBW (MHz)
1	2412	10.07	14.50
	2437	10.07	14.54
	2462	10.07	14.58
11	2412	11.04	14.58
	2437	11.06	14.45
	2462	11.04	14.58

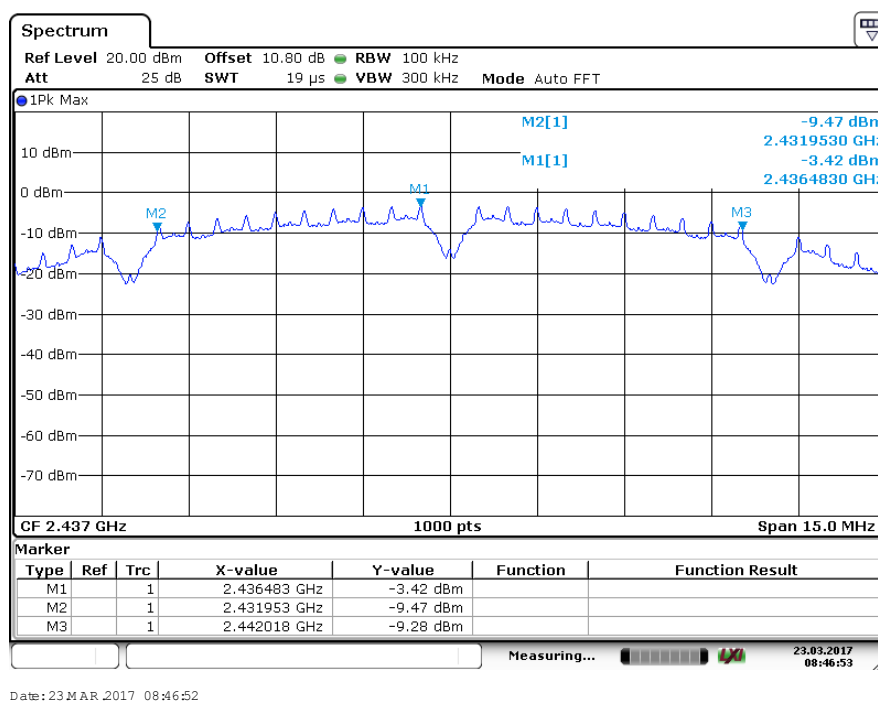
Note: Worst case results are reported

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6dB



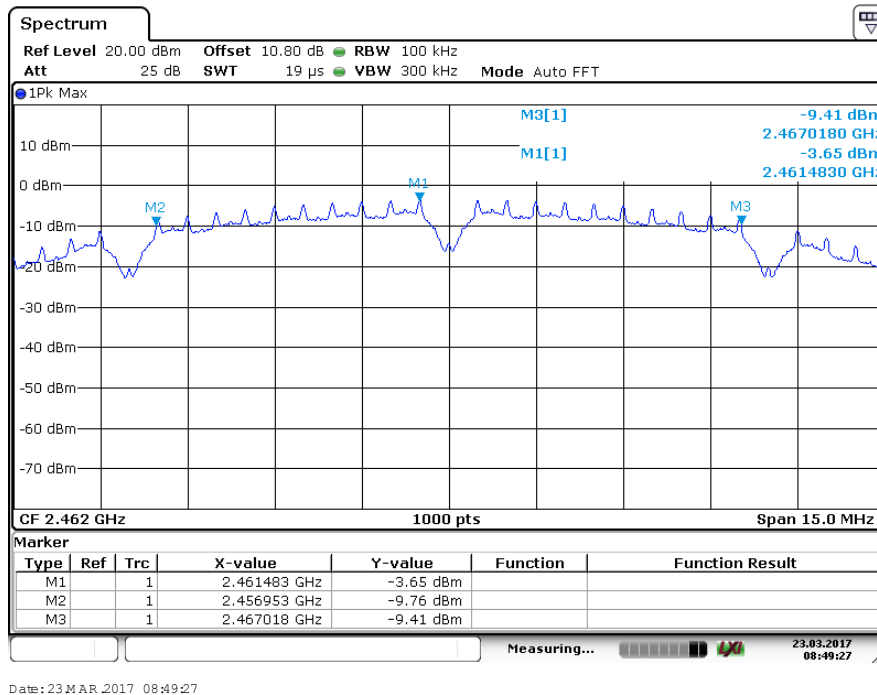
Data Rate: 1 Mbps

Channel frequency: 2412 MHz



Data Rate: 1 Mbps

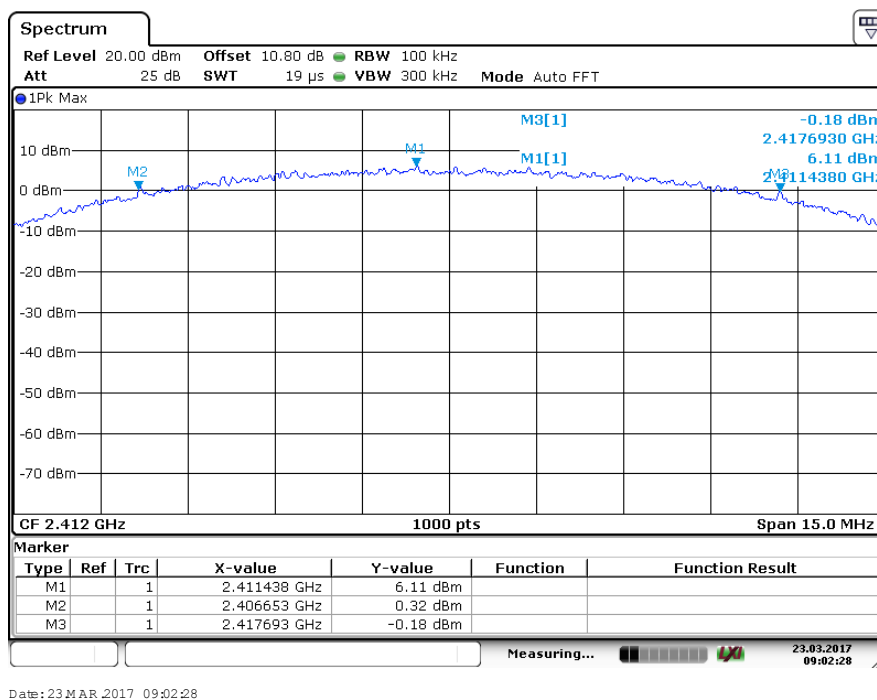
Channel frequency: 2437 MHz



Date: 23 MAR 2017 08:49:27

Data Rate: 1 Mbps

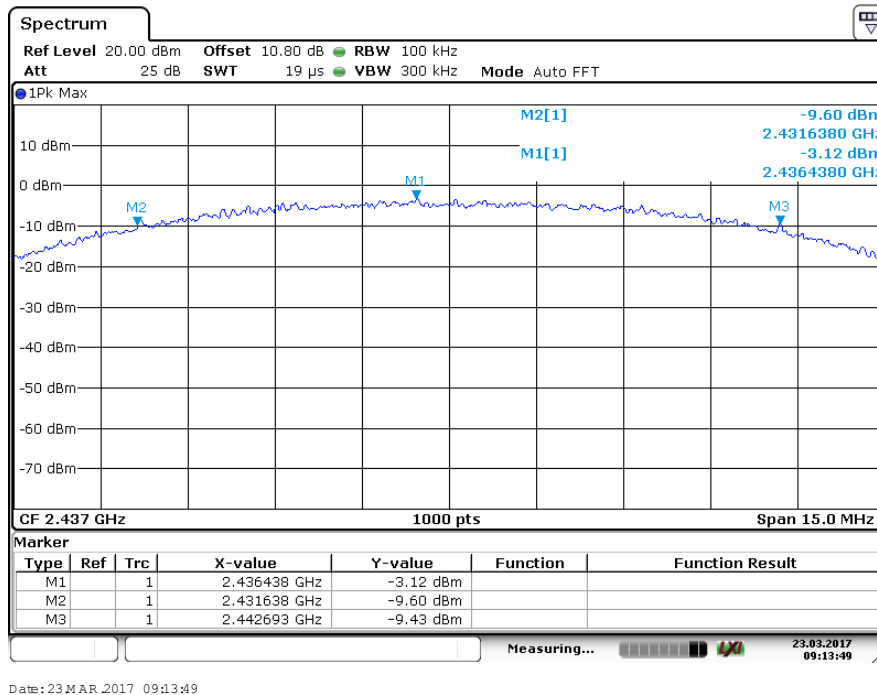
Channel frequency: 2462 MHz



Date: 23 MAR 2017 09:02:28

Data Rate: 11 Mbps

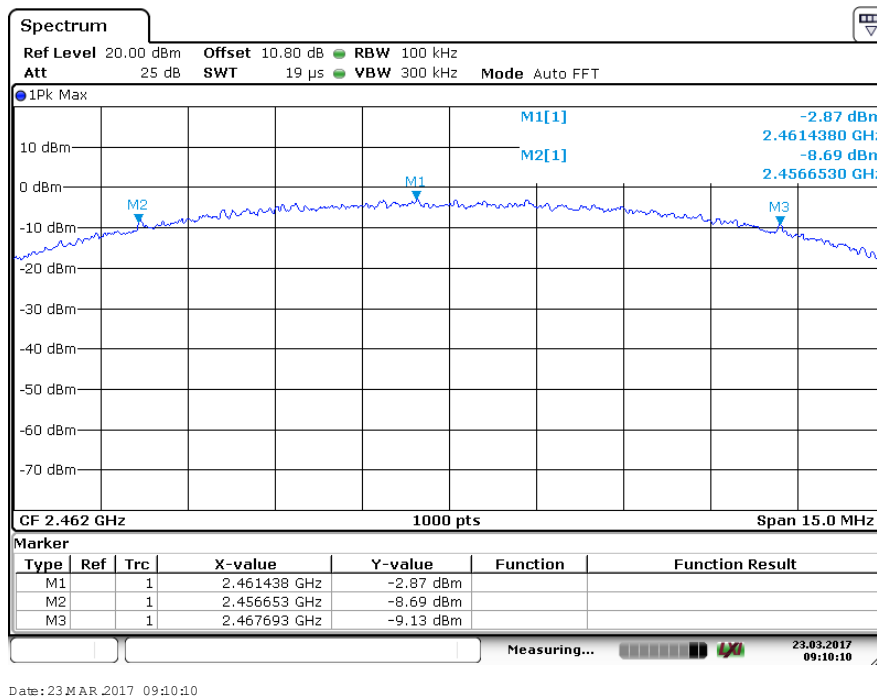
Channel frequencies: 2412 MHz



Date: 23 MAR 2017 09:13:49

Data Rate: 11 Mbps

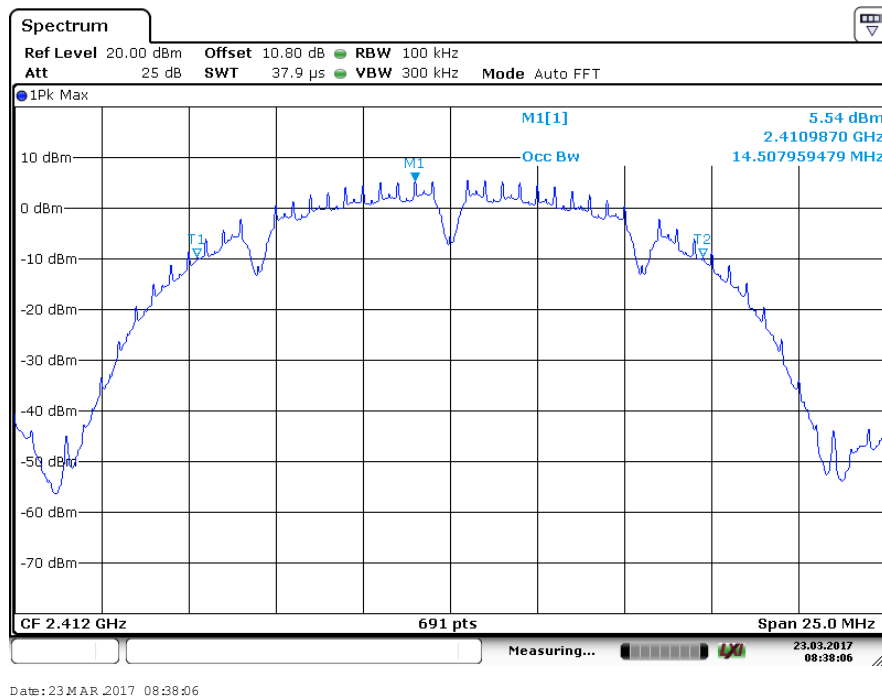
Channel frequency: 2437 MHz



Date: 23 MAR 2017 09:10:10

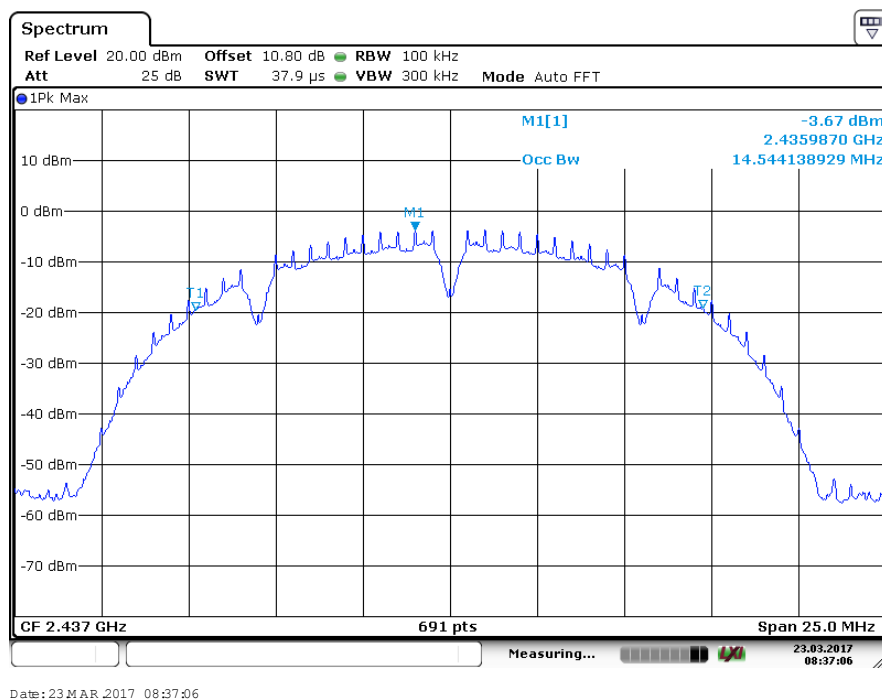
Data Rate: 11 Mbps

Channel frequency: 2462 MHz



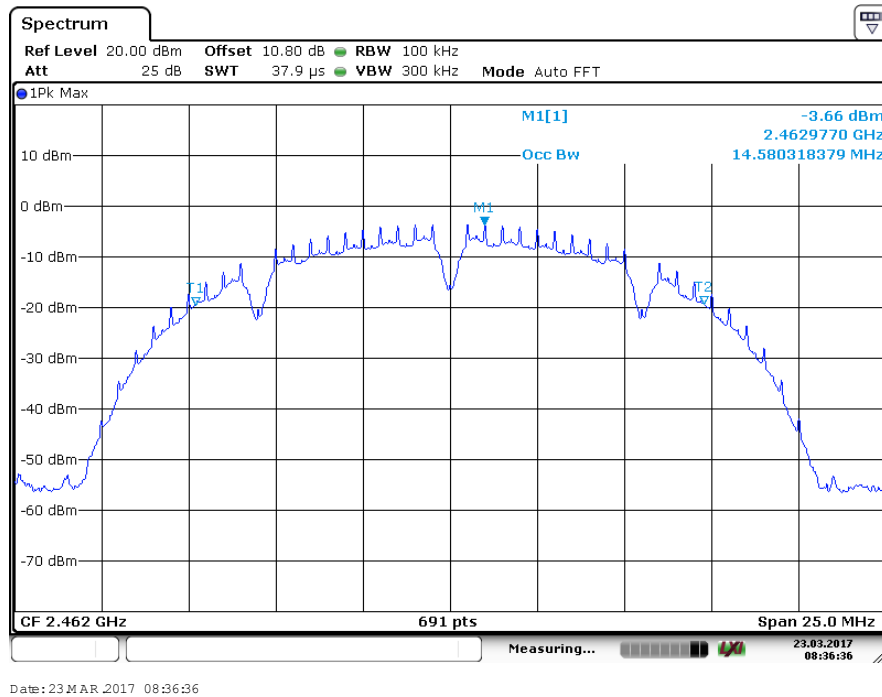
Data Rate: 1 Mbps

Channel frequency: 2412 MHz



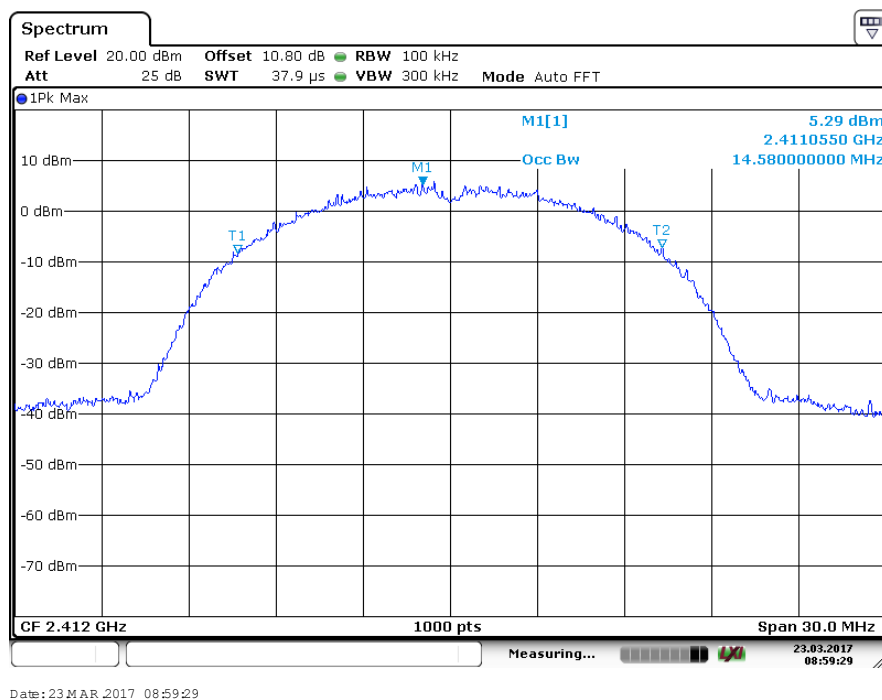
Data Rate: 1 Mbps

Channel frequency: 2437 MHz



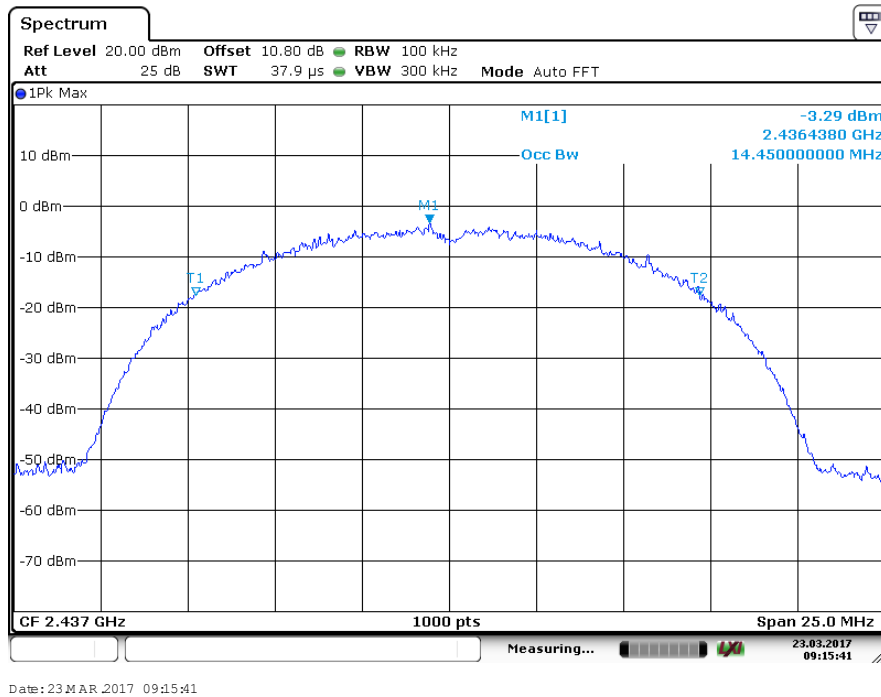
Data Rate: 1 Mbps

Channel frequency: 2462 MHz



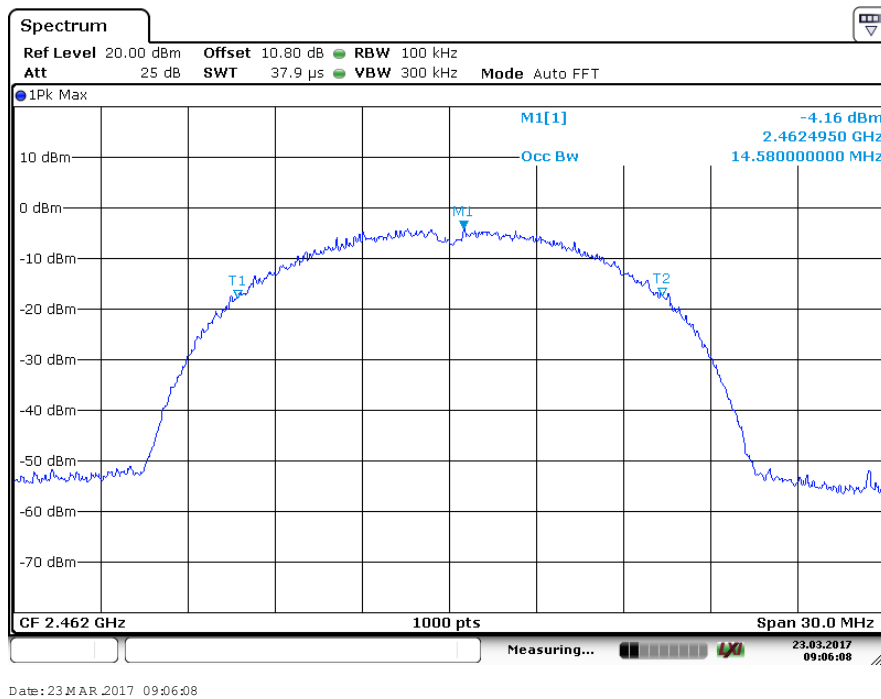
Data Rate: 11 Mbps

Channel frequencies: 2412 MHz



Data Rate: 11 Mbps

Channel frequency: 2437 MHz



Data Rate: 11 Mbps

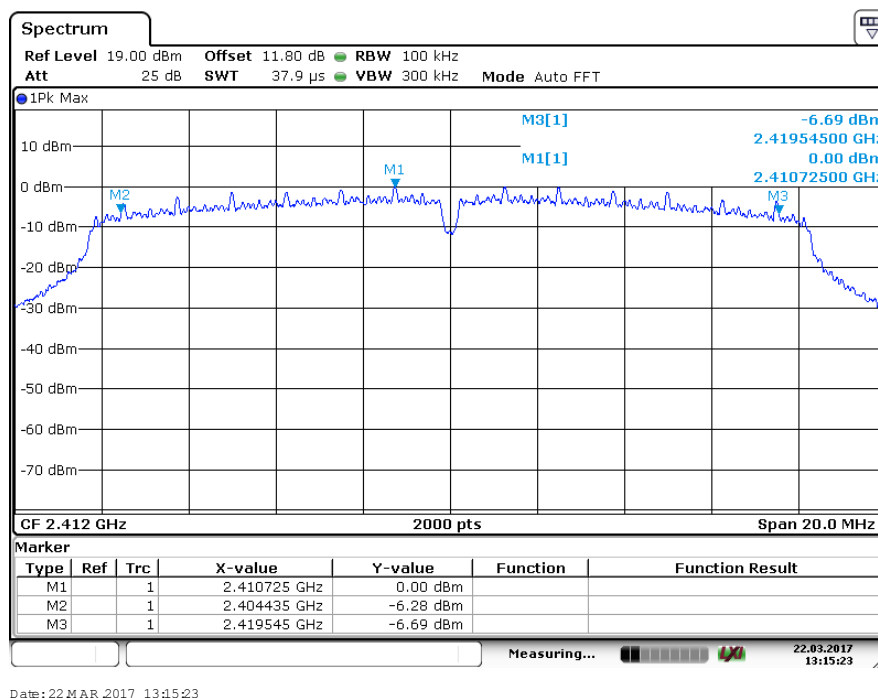
Channel frequency: 2462 MHz

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Attenuator (10dB) + cable loss (1.8dB) = 11.8dB Considered in the test result

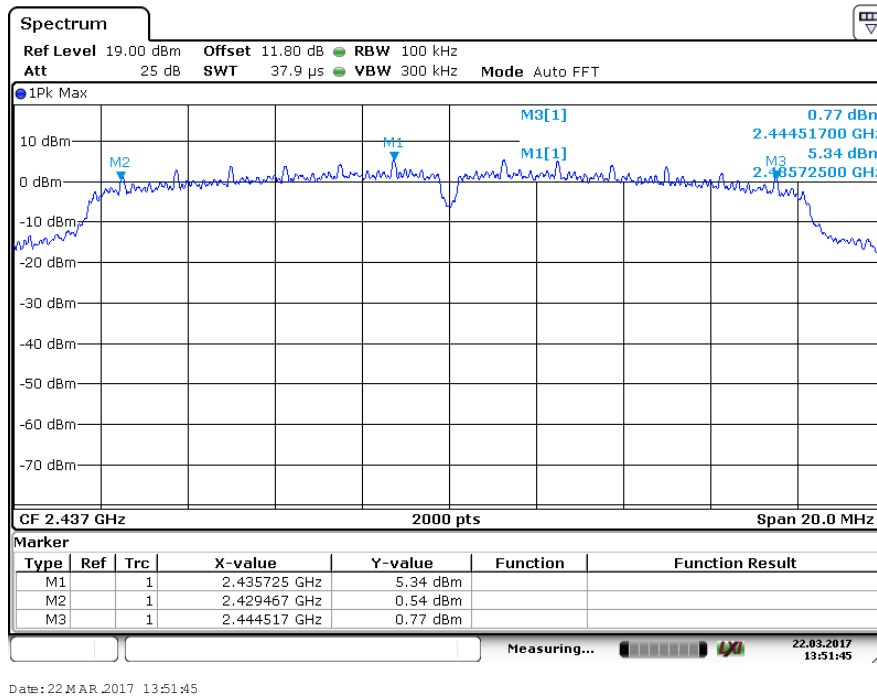
IEEE802.11g			
Data Rate (Mbps)	Channel Frequency (MHz)	6 dB Bandwidth (MHz)	99% OBW (MHz)
6	2412	15.11	16.23
	2437	15.05	16.44
	2462	15.08	16.23
24	2412	16.35	16.25
	2437	16.31	16.34
	2462	16.28	16.27
54	2412	16.35	16.26
	2437	16.30	16.27
	2462	16.02	16.26

6dB



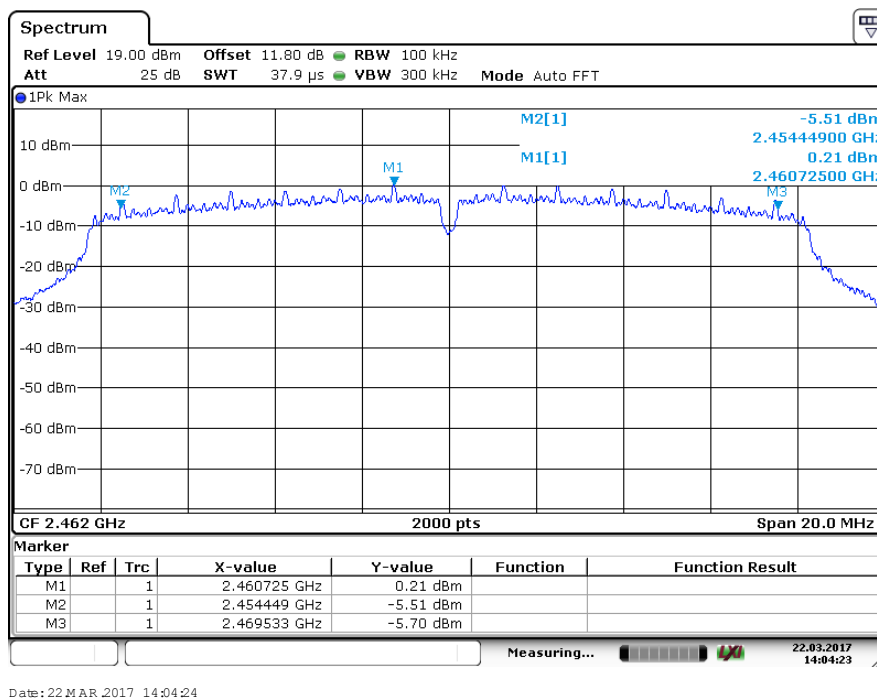
Data Rate: 6 Mbps

Channel frequencies: 2412 MHz



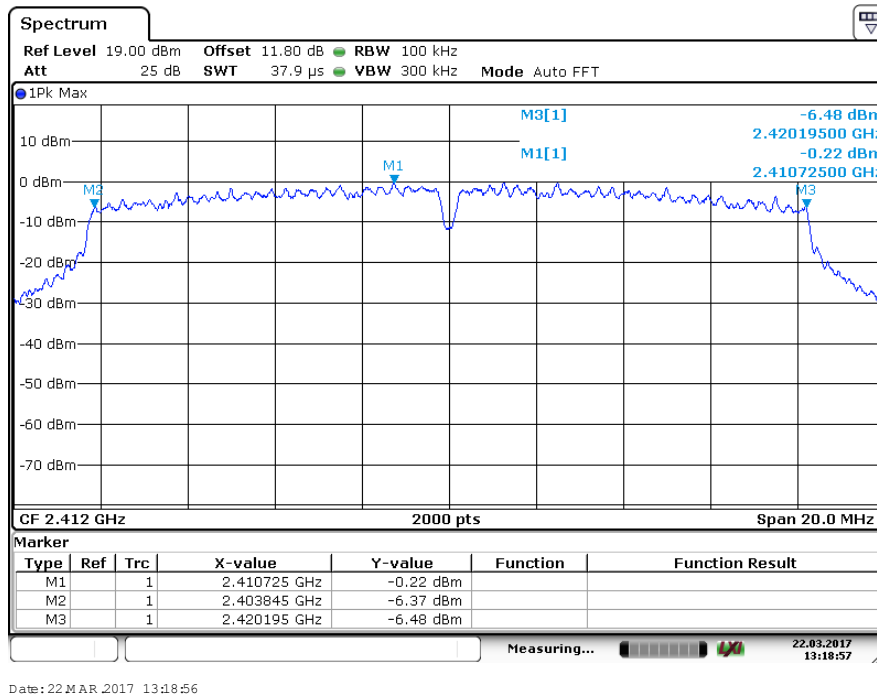
Data Rate: 6 Mbps

Channel frequencies: 2437 MHz



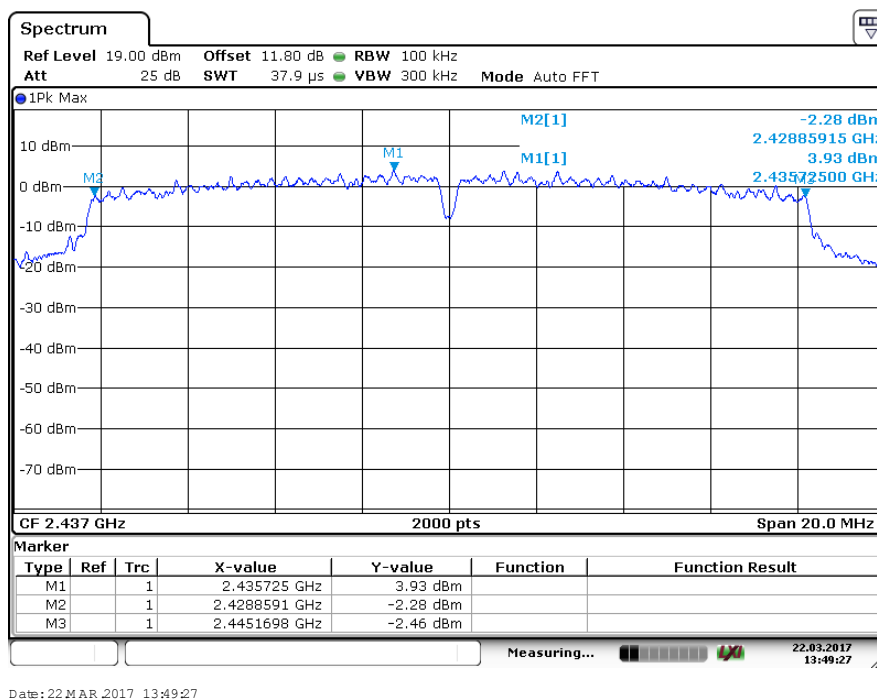
Data Rate: 6 Mbps

Channel frequencies: 2462 MHz



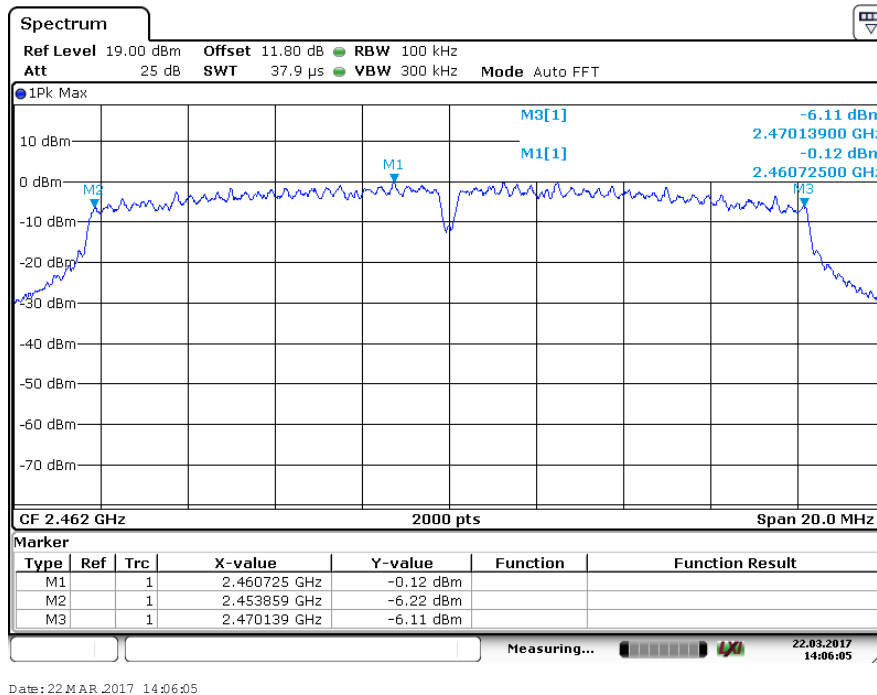
Data Rate: 24 Mbps

Channel frequencies: 2412 MHz



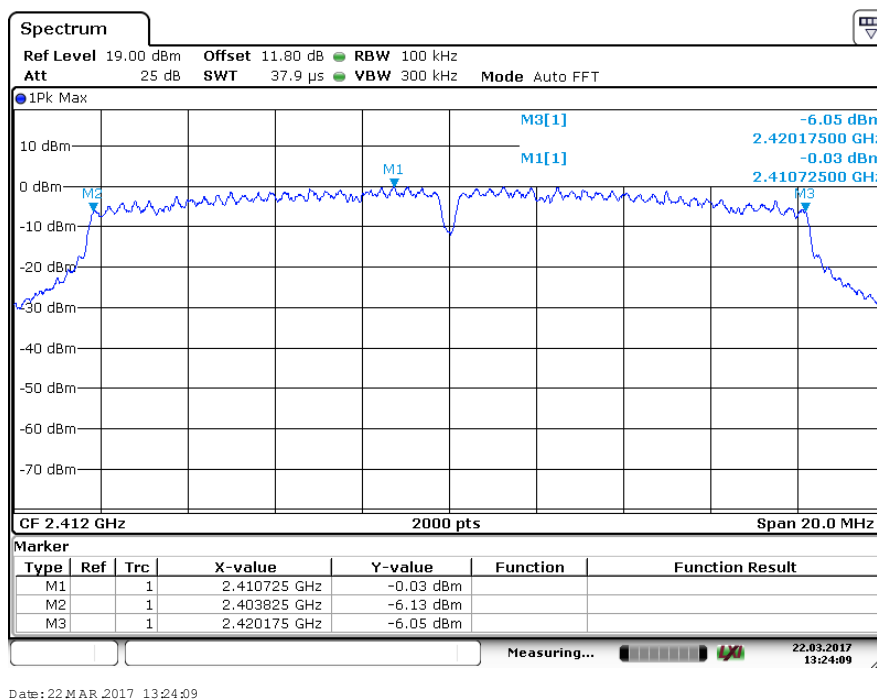
Data Rate: 24 Mbps

Channel frequencies: 2437 MHz



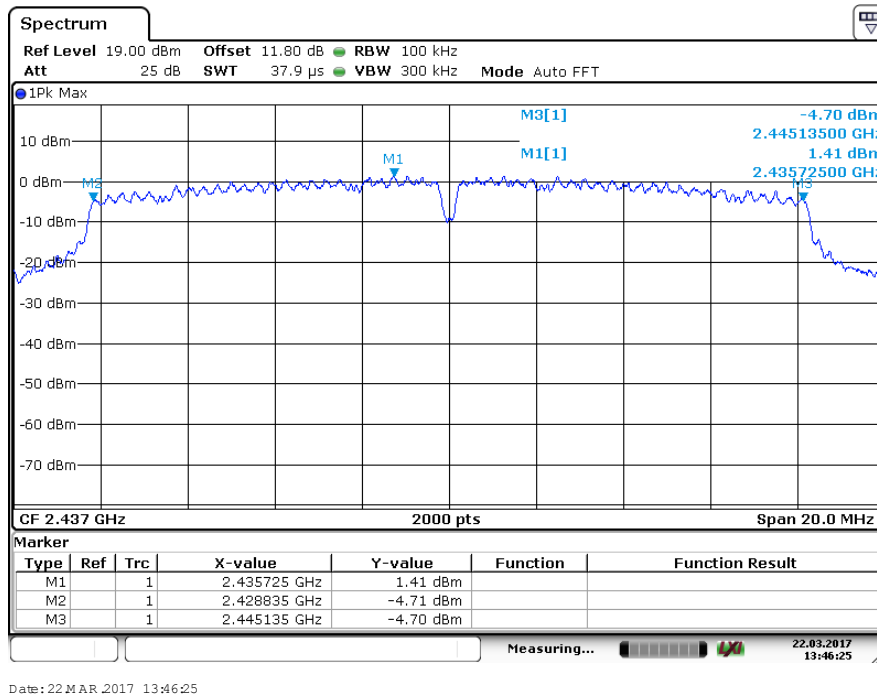
Data Rate: 24 Mbps

Channel frequencies: 2462 MHz



Data Rate: 54 Mbps

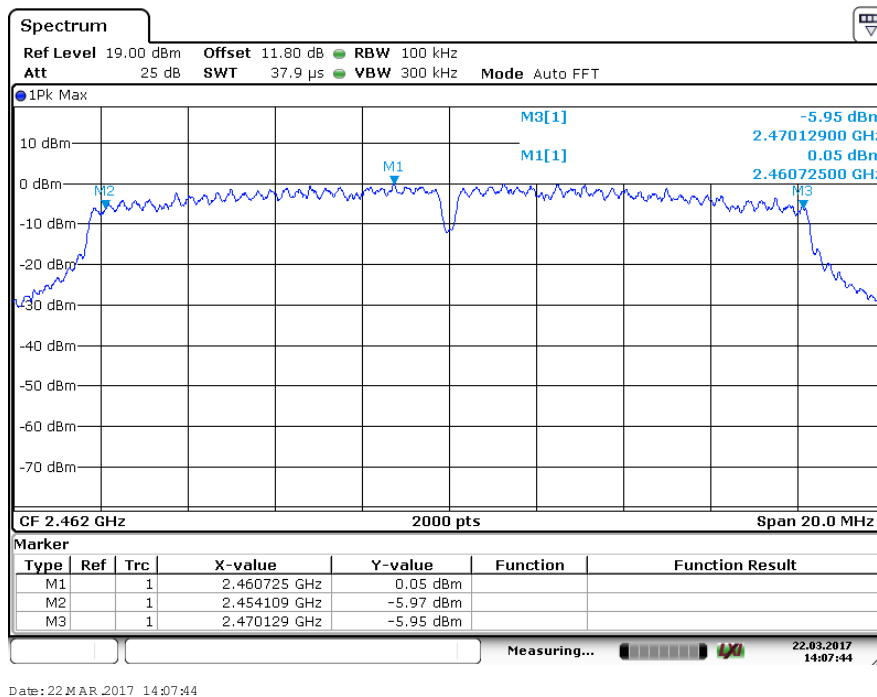
Channel frequencies: 2412 MHz



Date: 22 MAR 2017 13:46:25

Data Rate: 54 Mbps

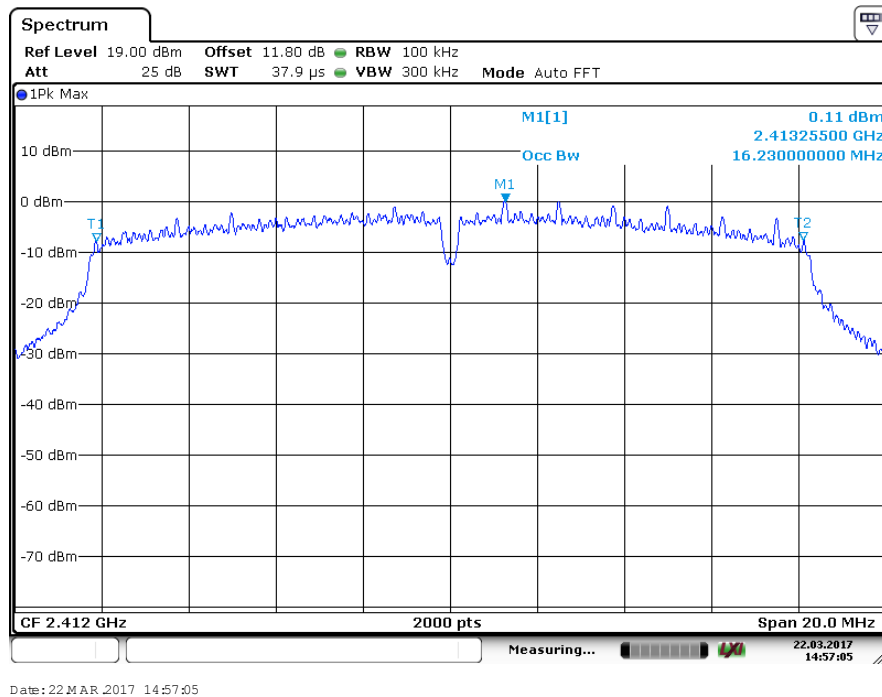
Channel frequencies: 2437MHz



Date: 22 MAR 2017 14:07:44

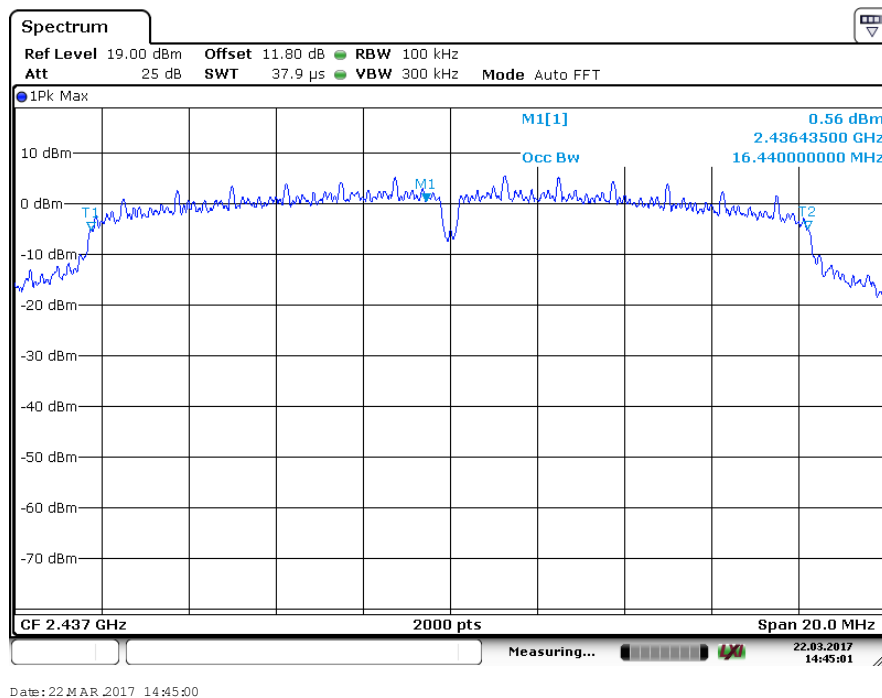
Data Rate: 54 Mbps

Channel frequencies: 2472 MHz



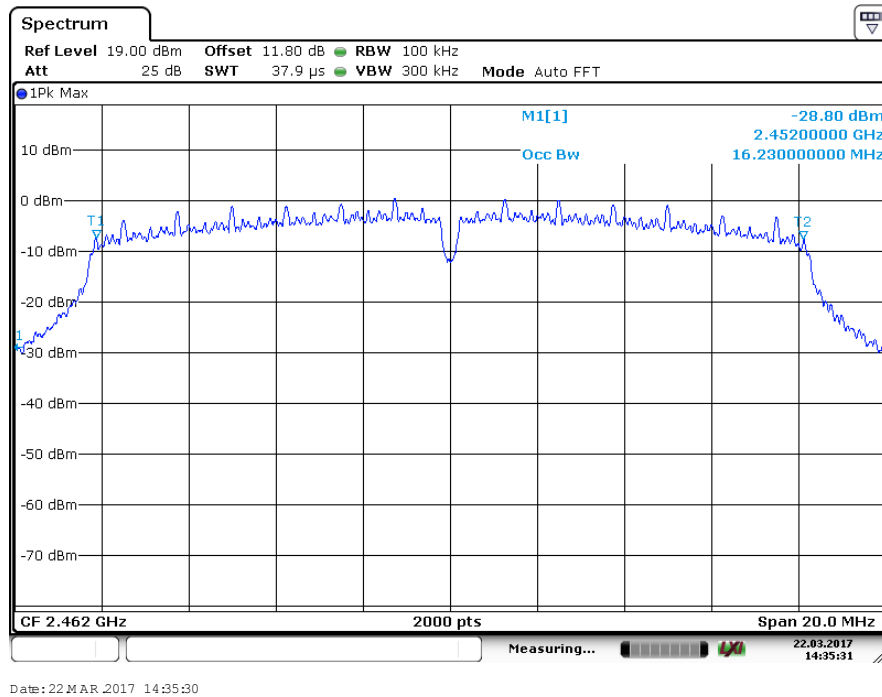
Data Rate: 6 Mbps

Channel frequencies: 2412 MHz



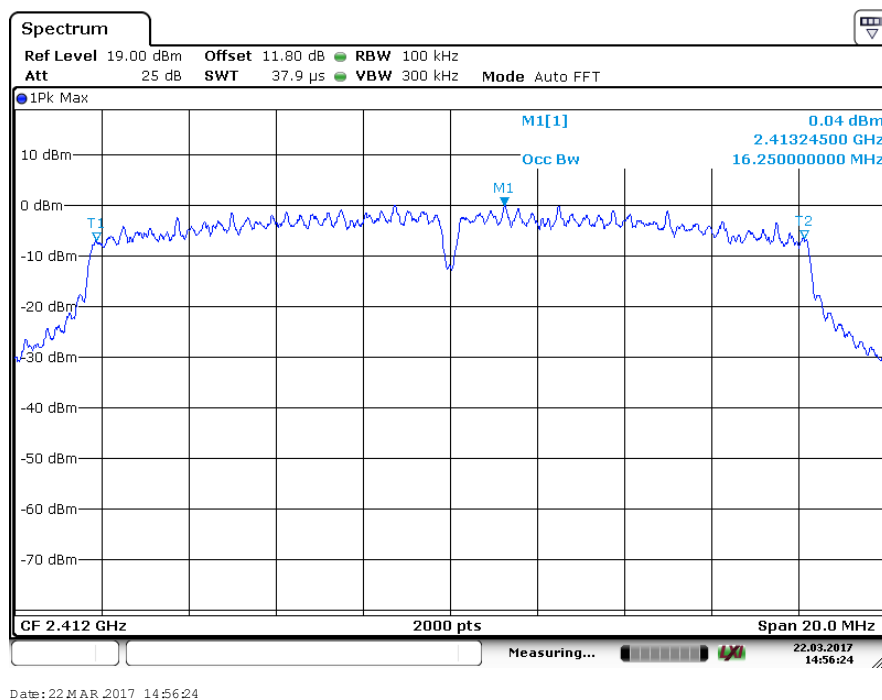
Data Rate: 6 Mbps

Channel frequencies: 2437 MHz



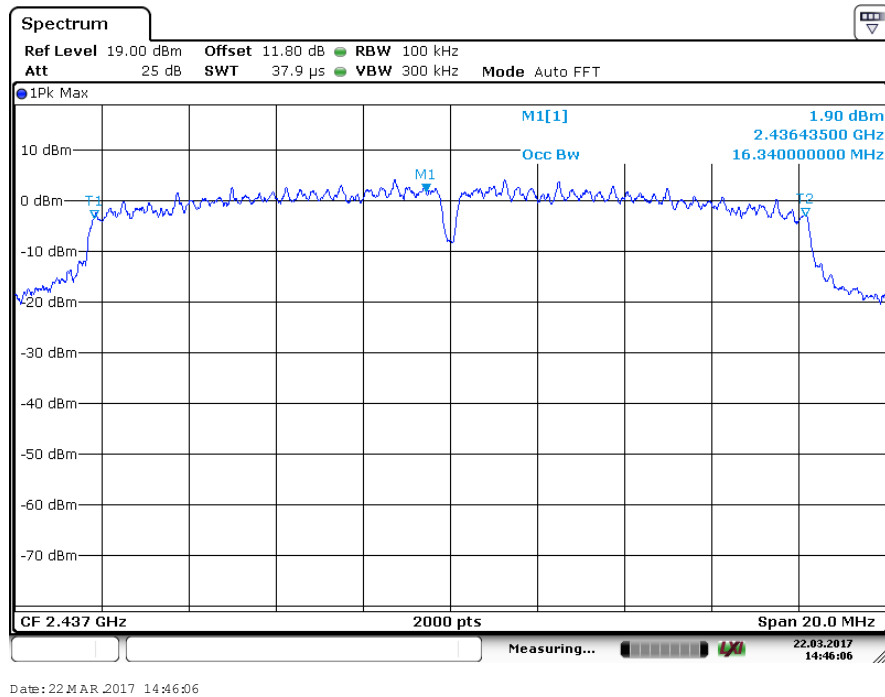
Data Rate: 6 Mbps

Channel frequencies: 2462 MHz



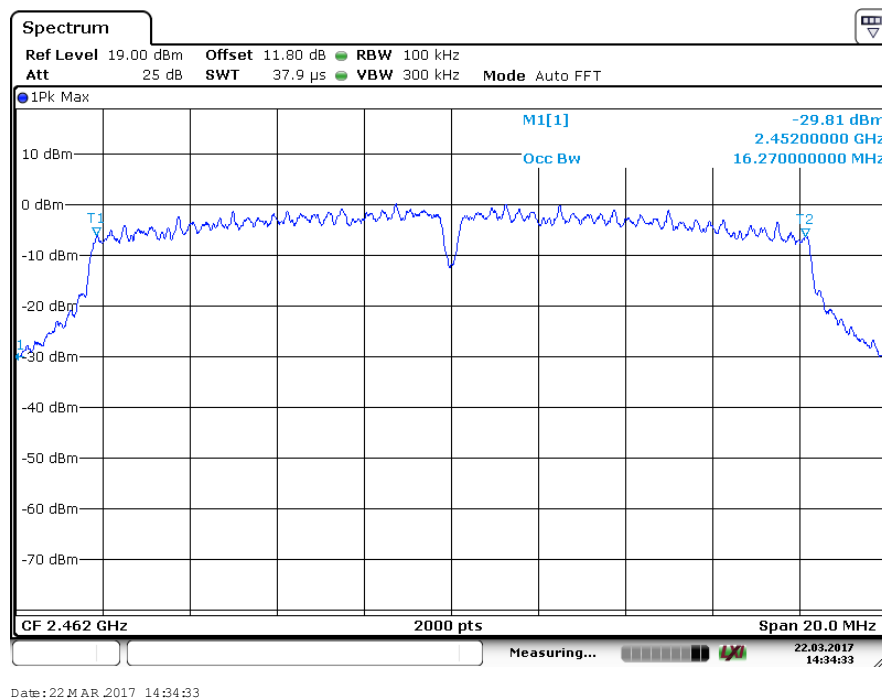
Data Rate: 24 Mbps

Channel frequencies: 2412 MHz



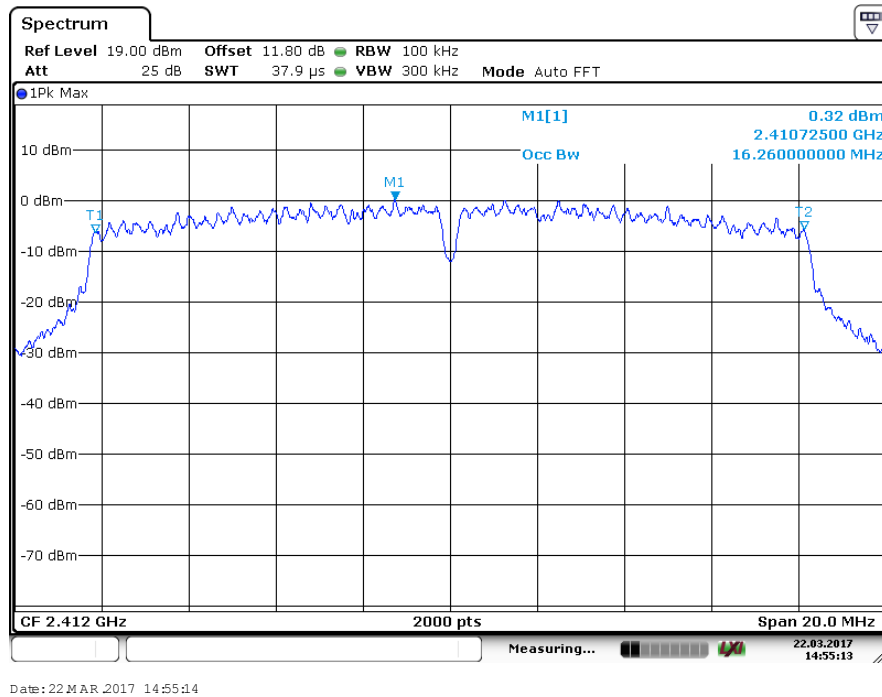
Data Rate: 24 Mbps

Channel frequencies: 2437 MHz



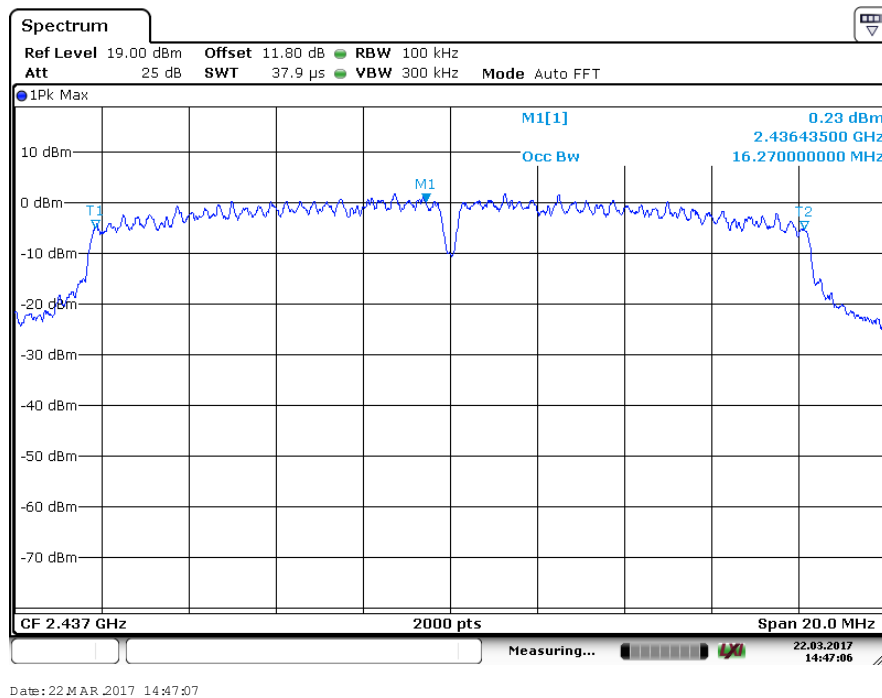
Data Rate: 24 Mbps

Channel frequencies: 2462 MHz



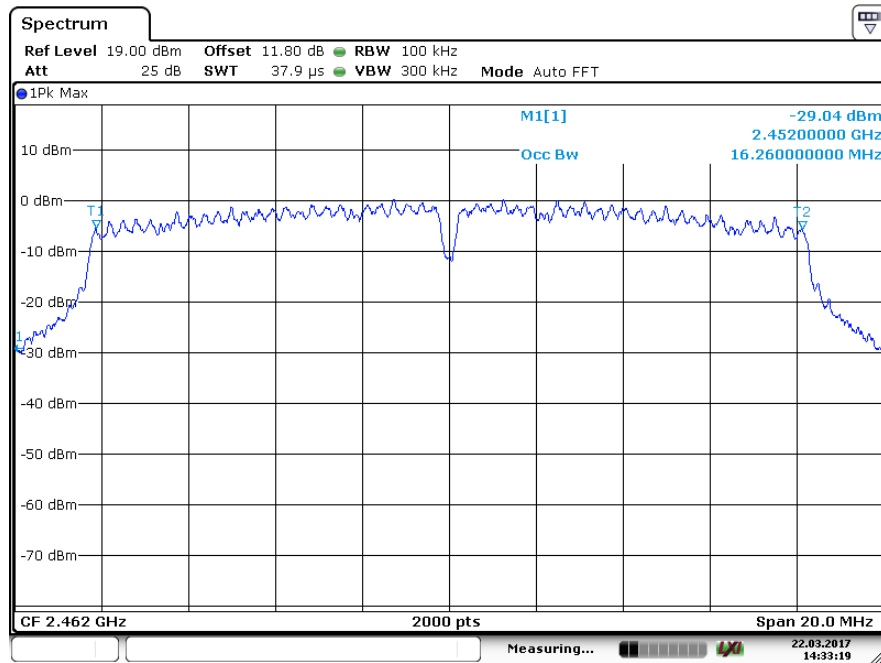
Data Rate: 54 Mbps

Channel frequencies: 2412 MHz



Data Rate: 54 Mbps

Channel frequencies: 2437MHz



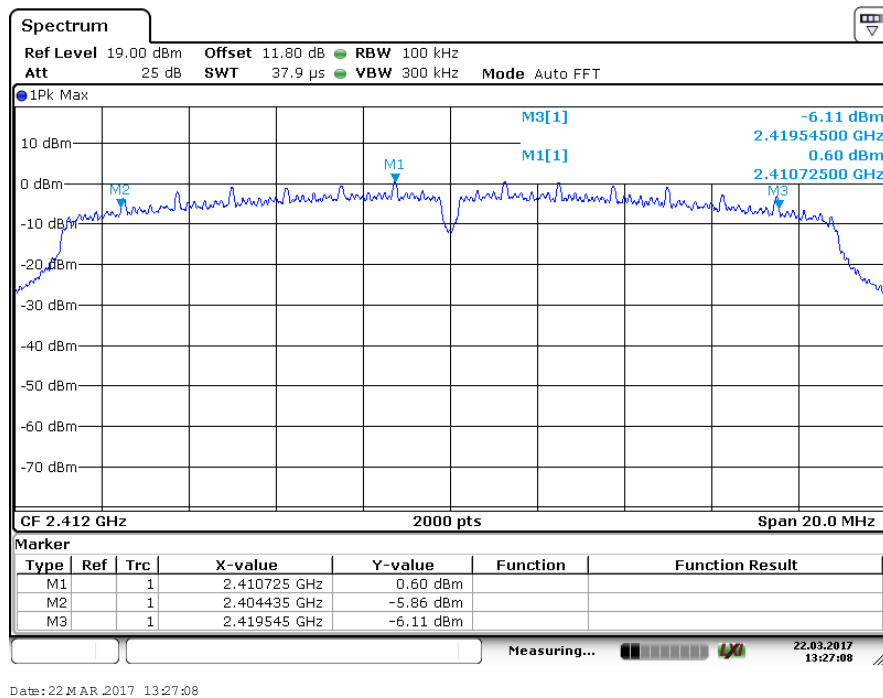
Date: 22.MAR.2017 14:33:19

Data Rate: 54 Mbps

Channel frequencies: 2472 MHz

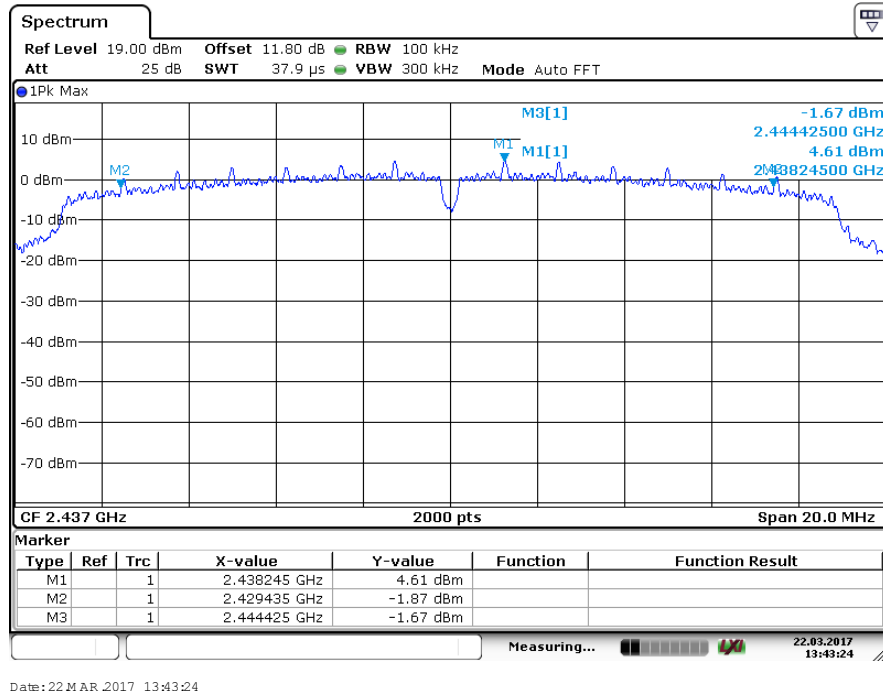
IEEE802.11nHT20			
Data Rate (Mbps)	Channel Frequency (MHz)	6 dB Bandwidth (MHz)	99% OBW (MHz)
MCS0	2412	15.11	17.33
	2437	14.99	17.47
	2462	15.11	17.33
MCS4	2412	16.01	17.42
	2437	16.54	17.46
	2462	15.11	17.43
MCS7	2412	16.91	17.43
	2437	16.94	17.45
	2462	15.99	17.42

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6dB



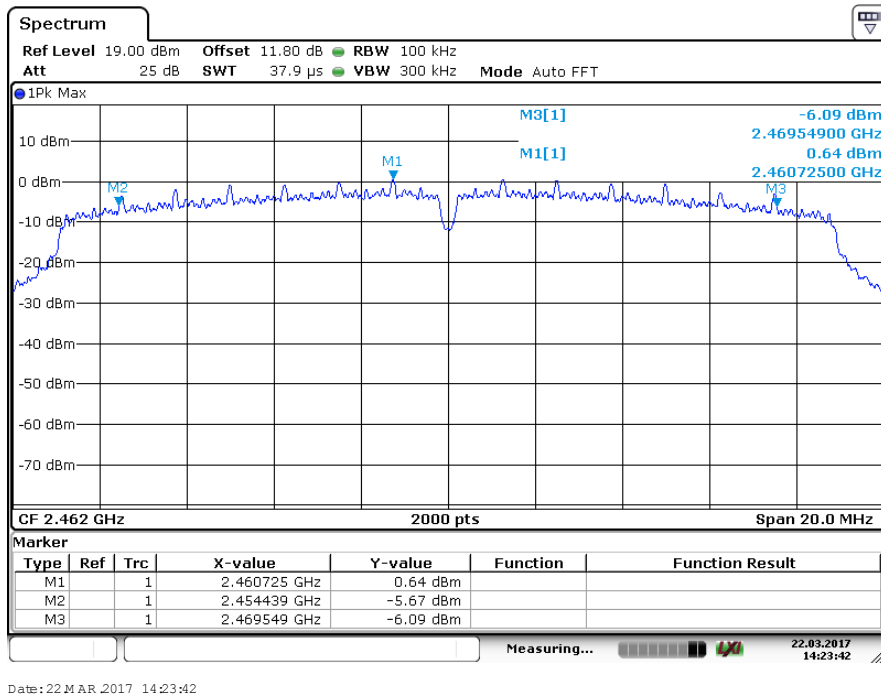
Data Rate: MCS0

Channel: 2412 MHz



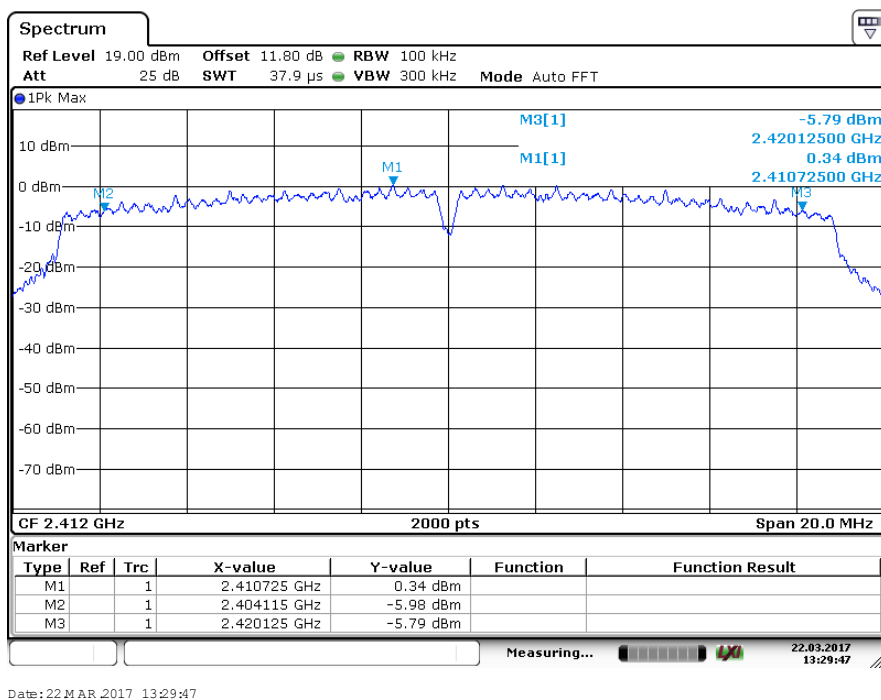
Data Rate: MCS0

Channel: 2437 MHz



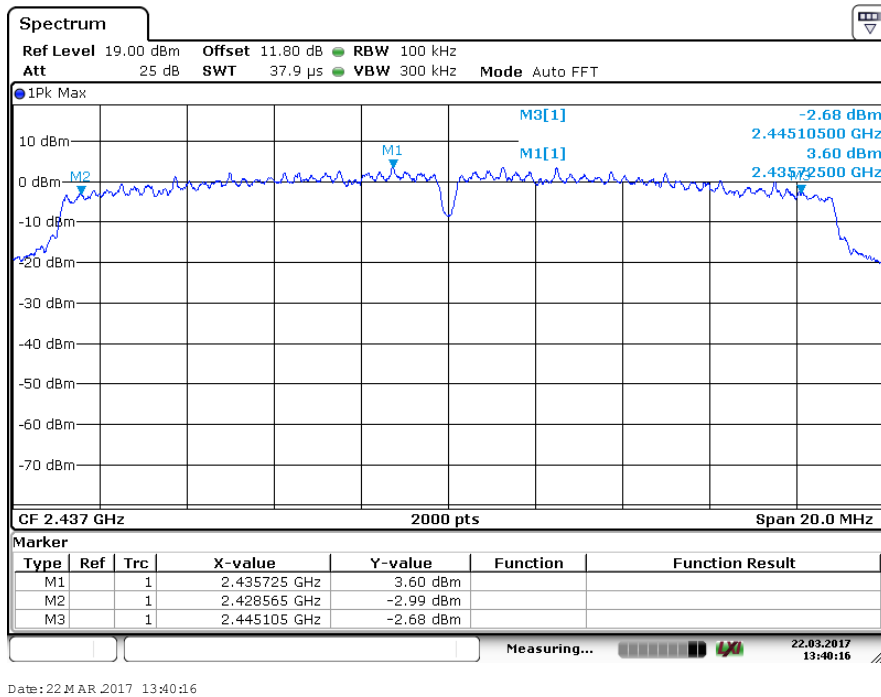
Data Rate: MCS0

Channel: 2462 MHz



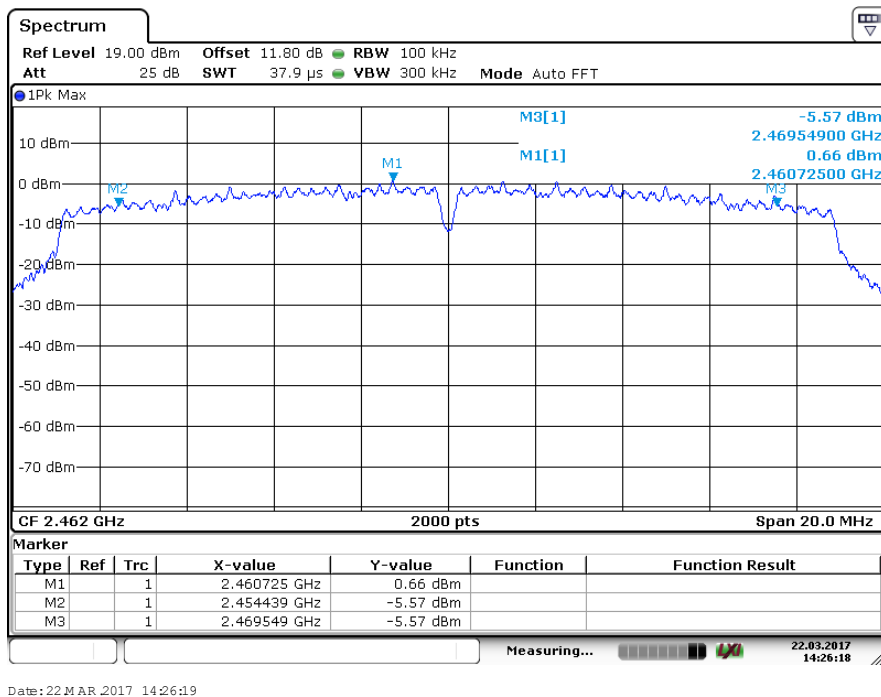
Data Rate: MCS4

Channel: 2412 MHz



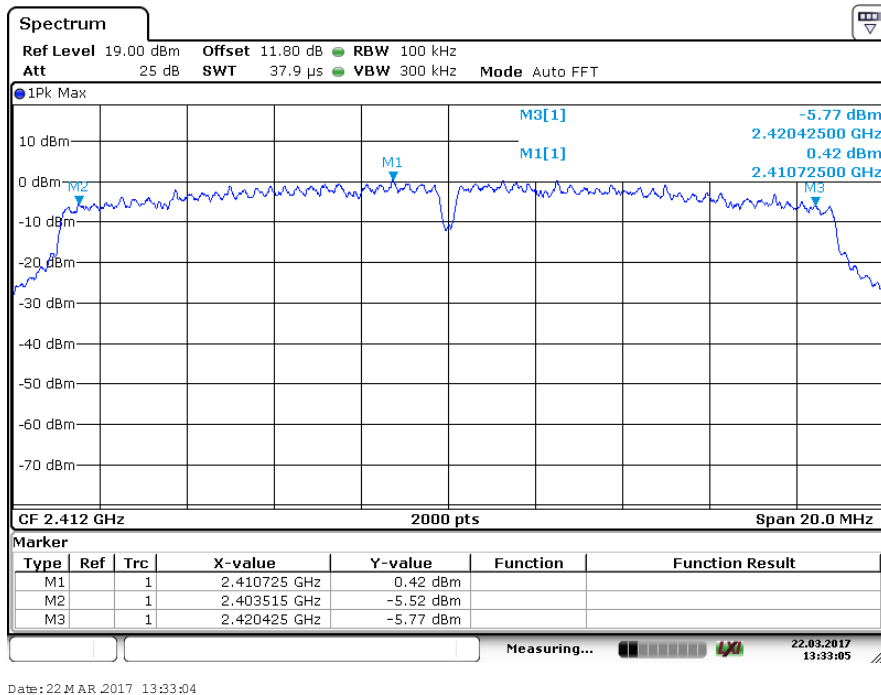
Data Rate: MCS4

Channel: 2437 MHz



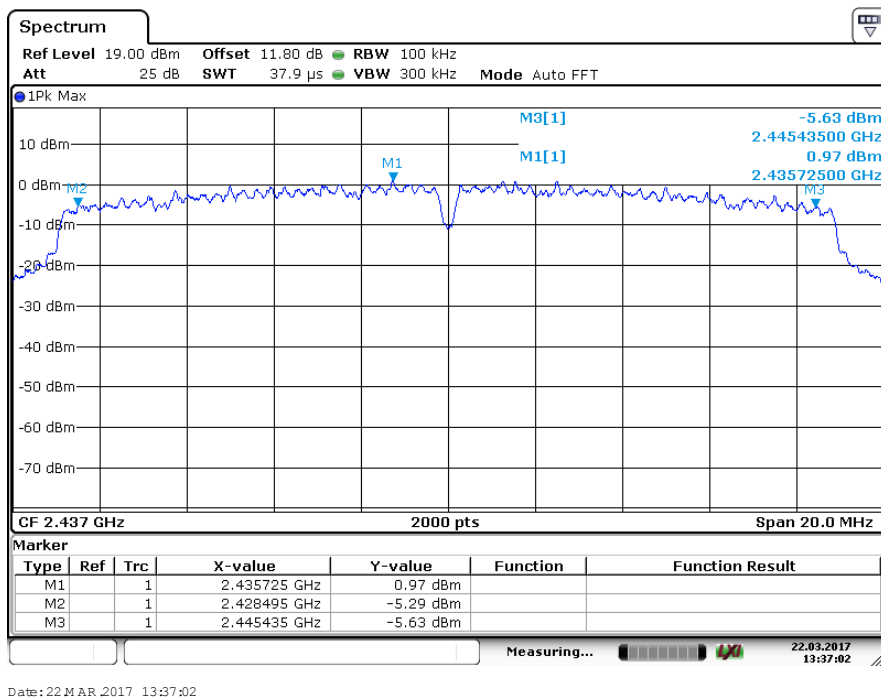
Data Rate: MCS4

Channel: 2462 MHz



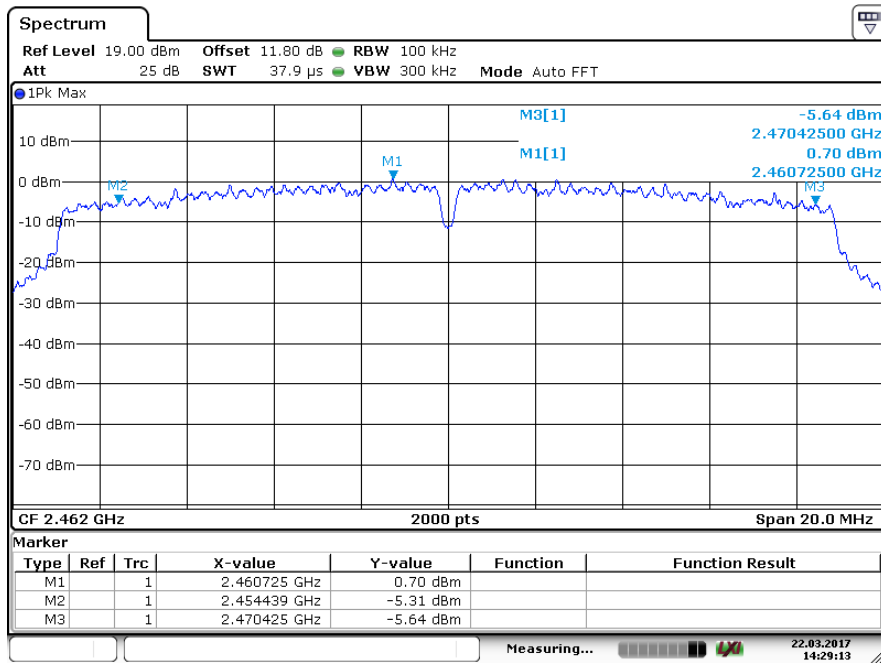
Data Rate: MCS7

Channel: 2412 MHz



Data Rate: MCS7

Channel: 2437 MHz

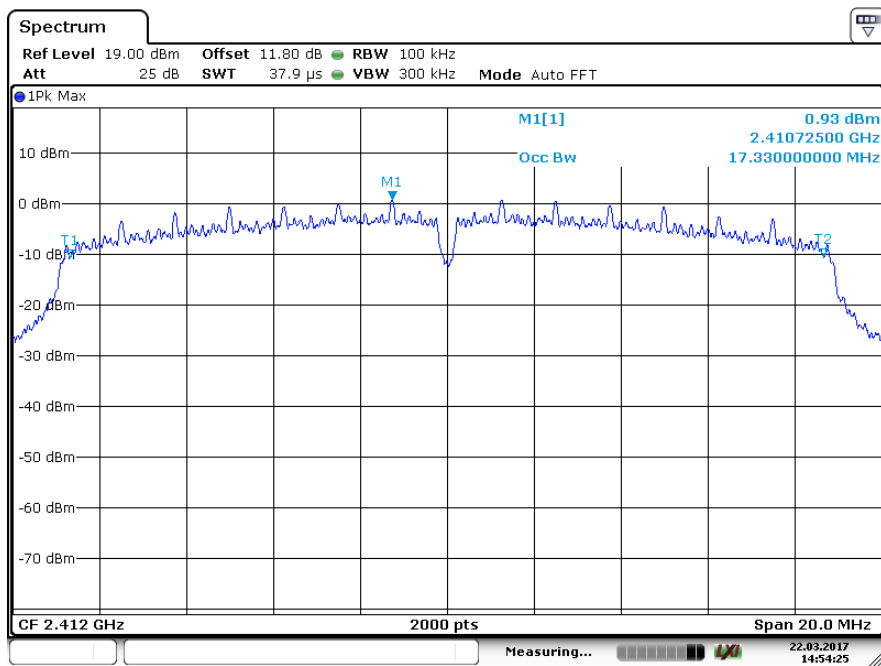


Date: 22 MAR 2017 14:29:13

Data Rate: MCS7

Channel: 2462 MHz

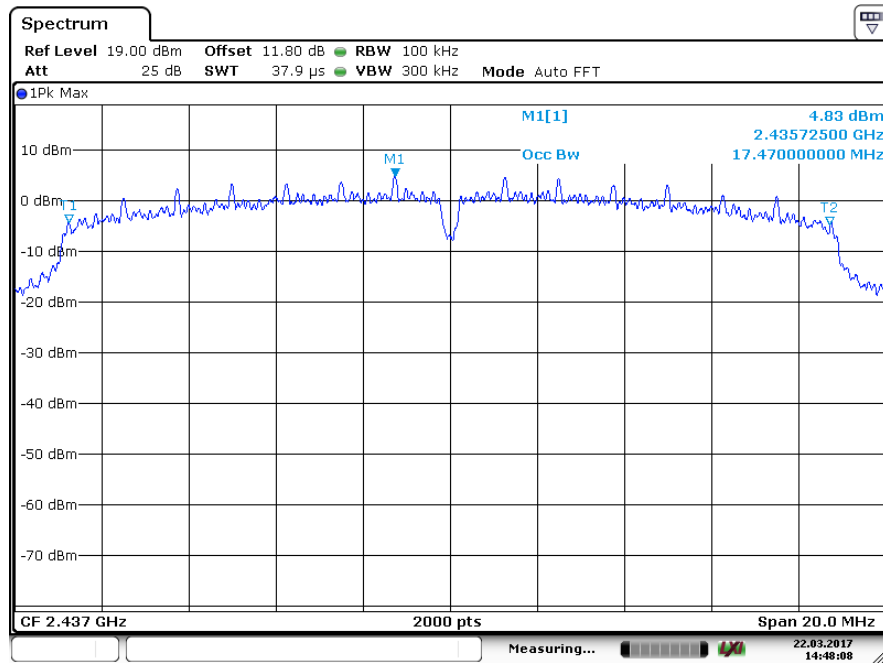
OBW



Date: 22 MAR 2017 14:54:26

Data Rate: MCS0

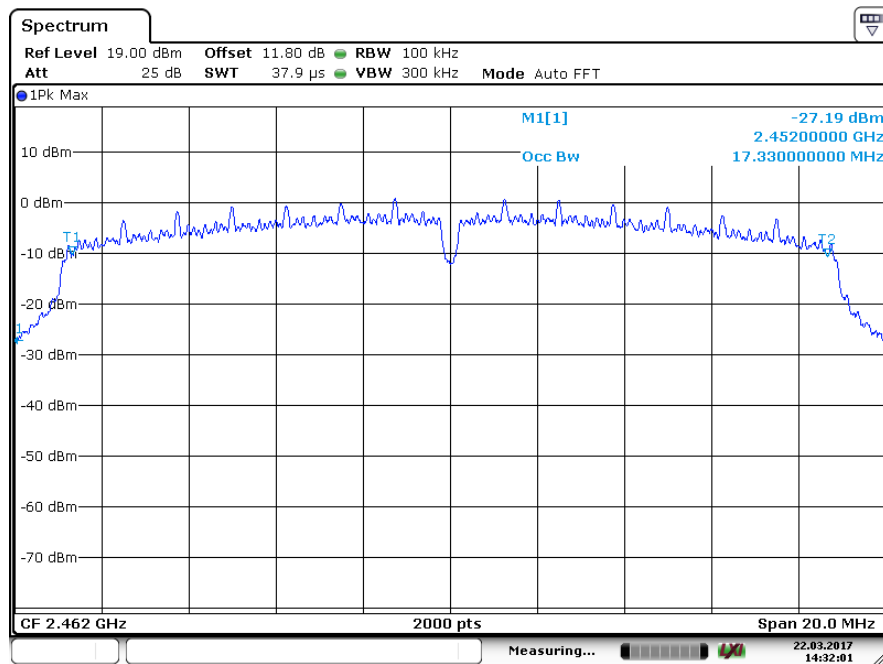
Channel: 2412 MHz



Date: 22 MAR 2017 14:48:08

Data Rate: MCS0

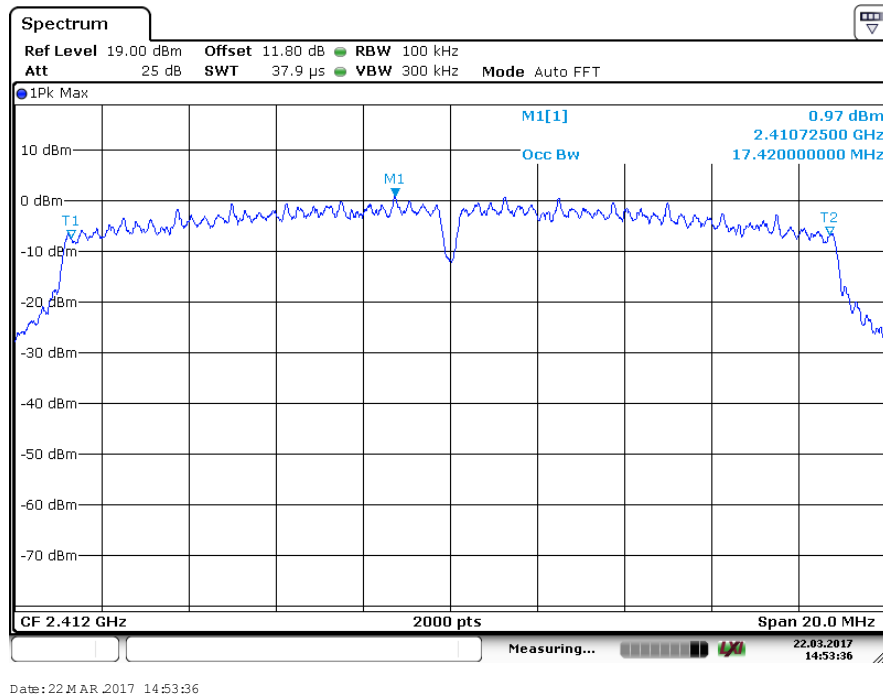
Channel: 2437 MHz



Date: 22 MAR 2017 14:32:01

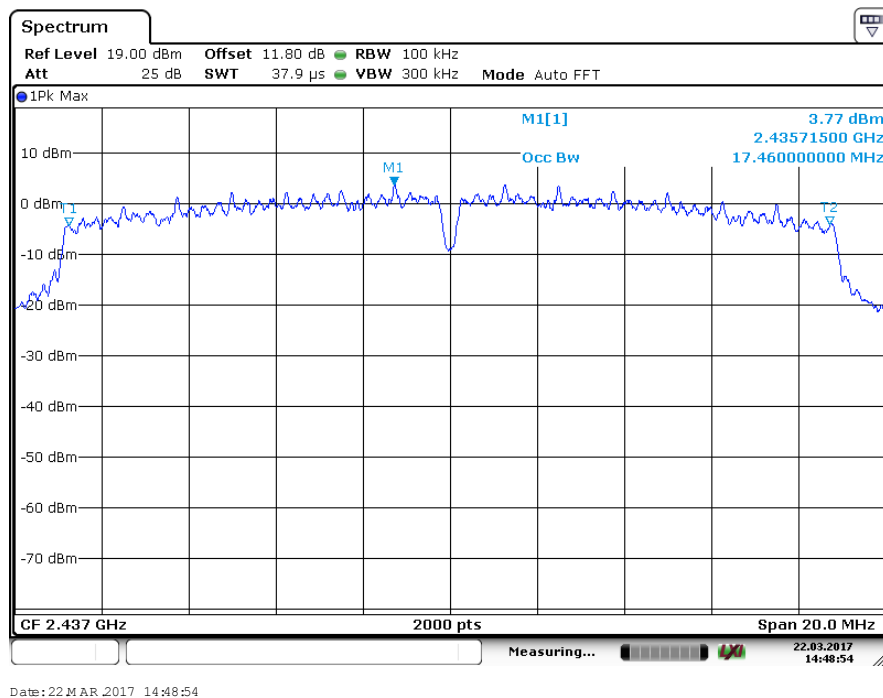
Data Rate: MCS0

Channel: 2462 MHz



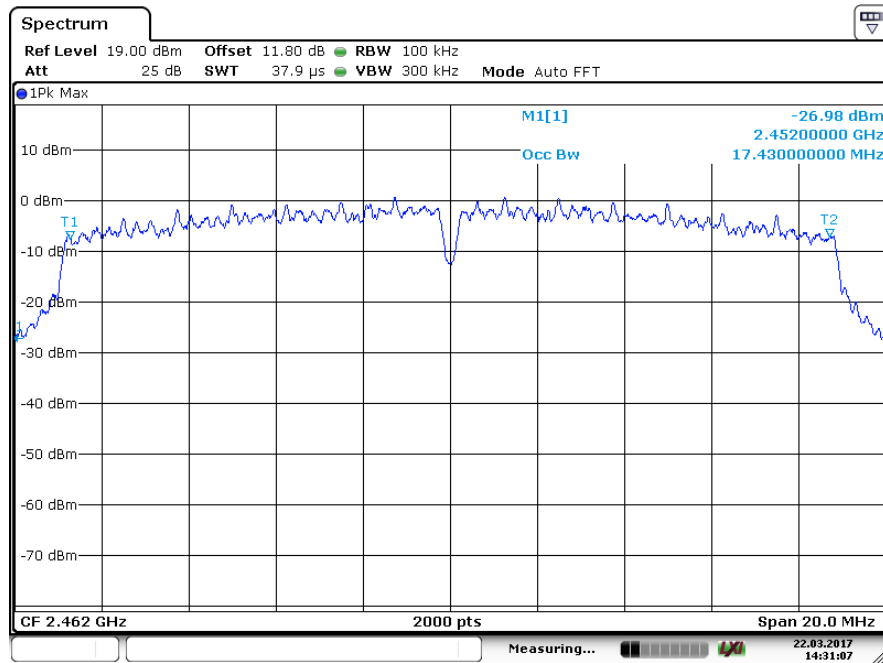
Data Rate: MCS4

Channel: 2412 MHz



Data Rate: MCS4

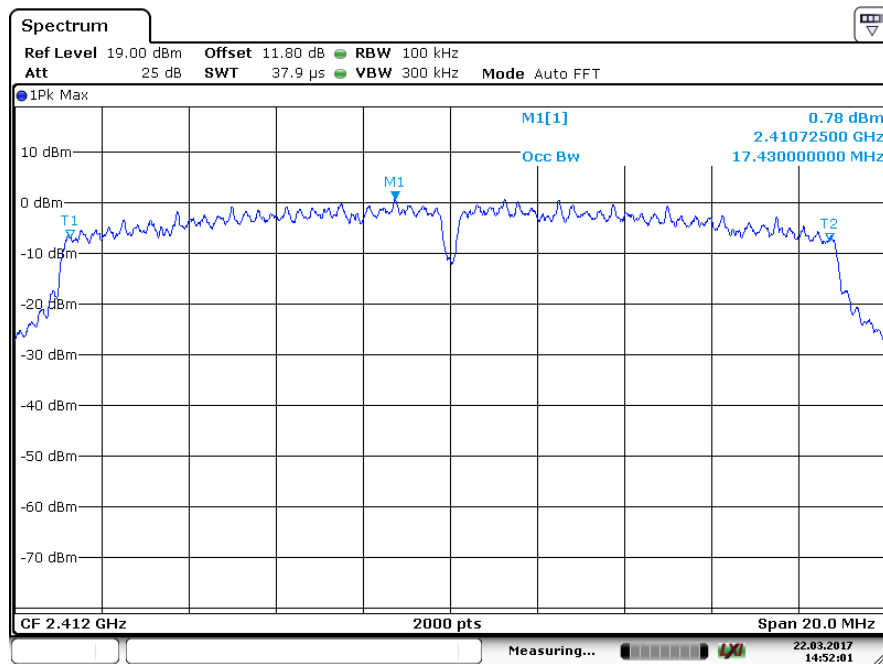
Channel: 2437 MHz



Date: 22 MAR 2017 14:31:07

Data Rate: MCS4

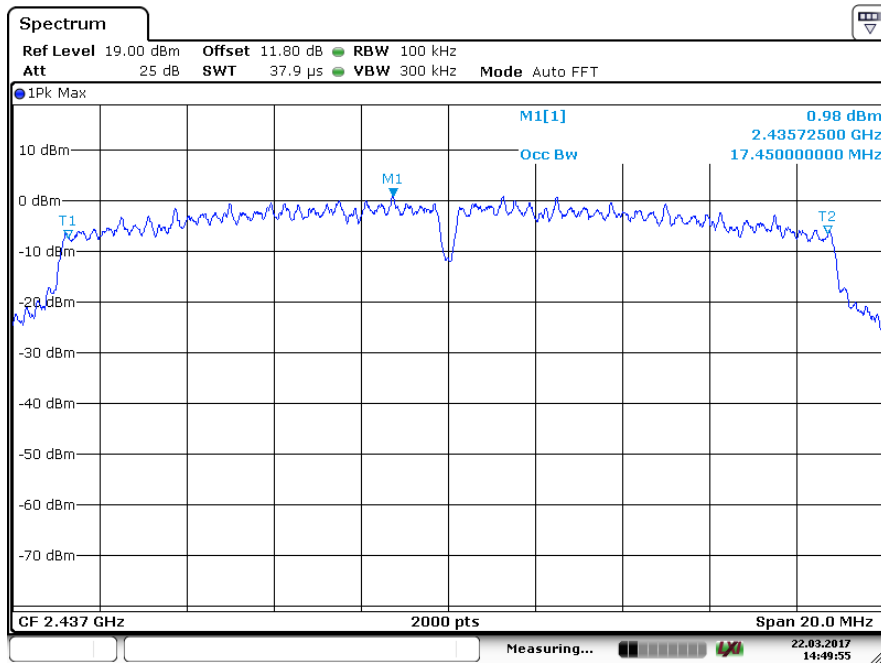
Channel: 2462 MHz



Date: 22 MAR 2017 14:52:02

Data Rate: MCS7

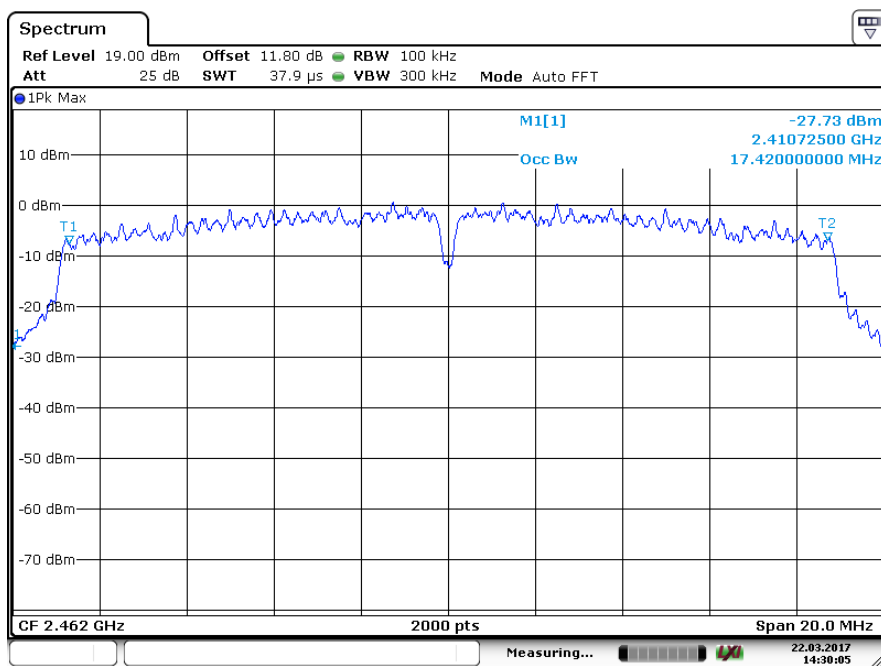
Channel: 2412 MHz



Date: 22 MAR 2017 14:49:55

Data Rate: MCS7

Channel: 2437 MHz

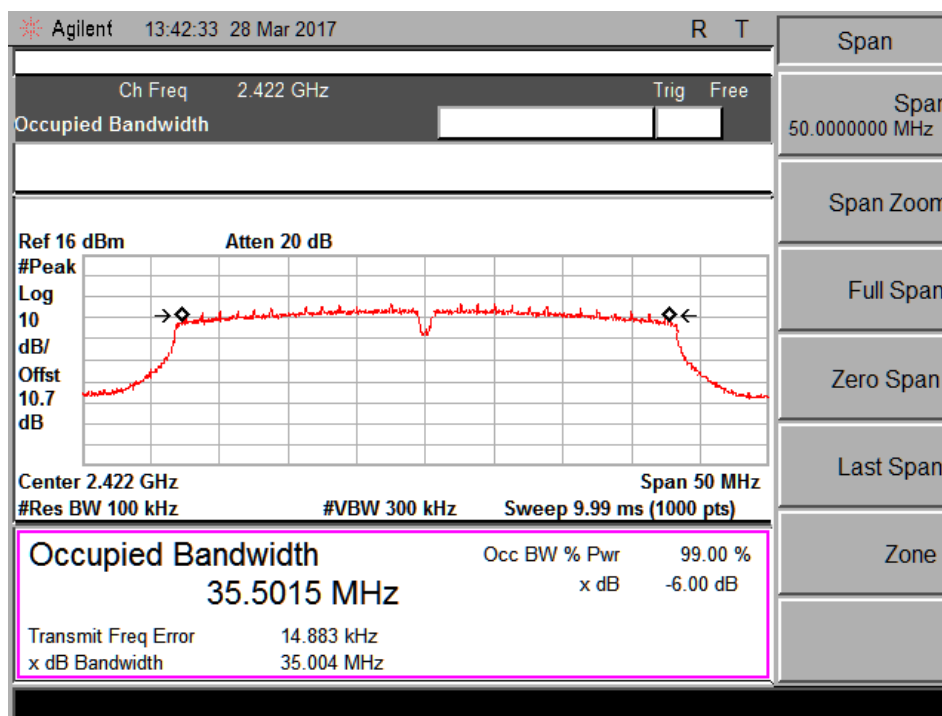


Date: 22 MAR 2017 14:30:06

Data Rate: MCS7

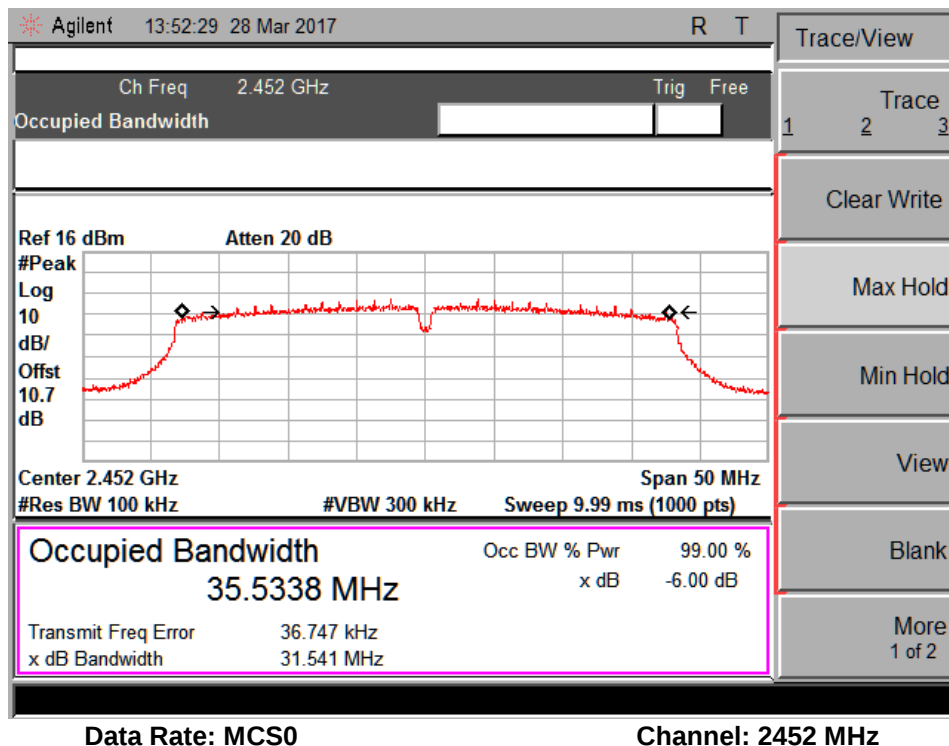
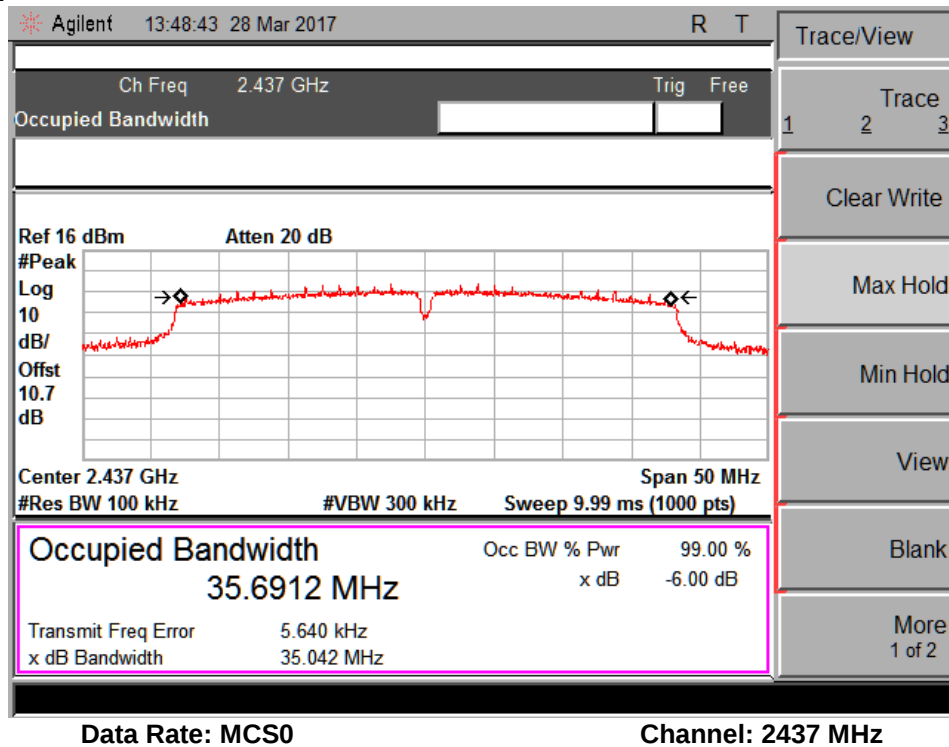
Channel: 2462 MHz

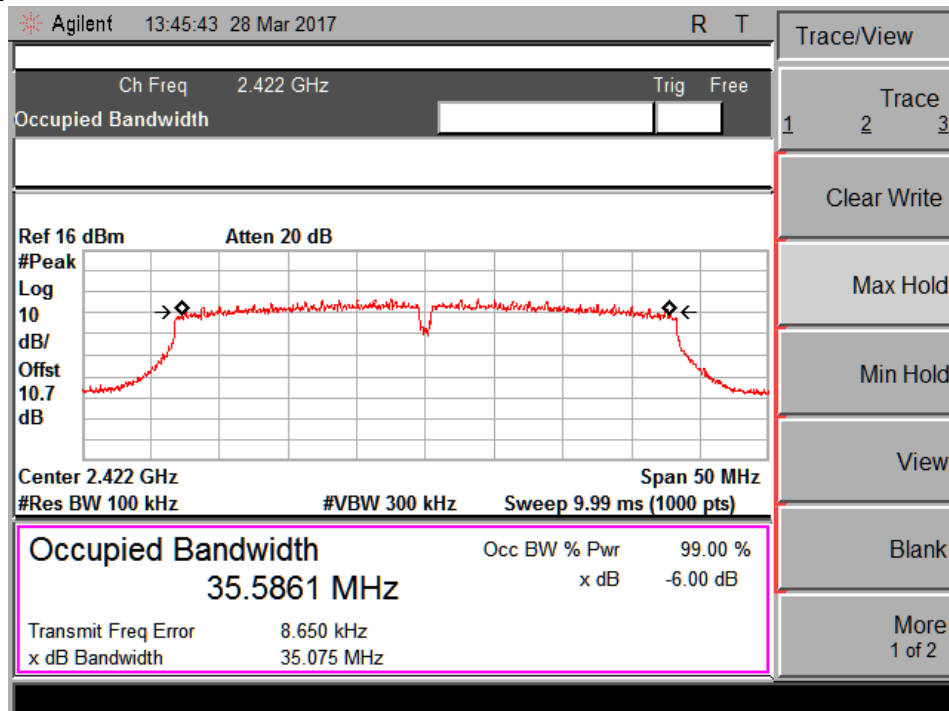
IEEE802.11nHT40			
Data Rate (Mbps)	Channel Frequency (MHz)	6 dB Bandwidth (MHz)	99% OBW (MHz)
MCS0	2422	35.00	35.50
	2437	35.04	35.69
	2452	31.54	35.53
MCS4	2422	35.07	35.58
	2437	35.06	35.72
	2452	35.09	35.61
MCS7	2422	35.08	35.64
	2437	35.09	35.67
	2452	35.09	35.61



Data Rate: MCS0

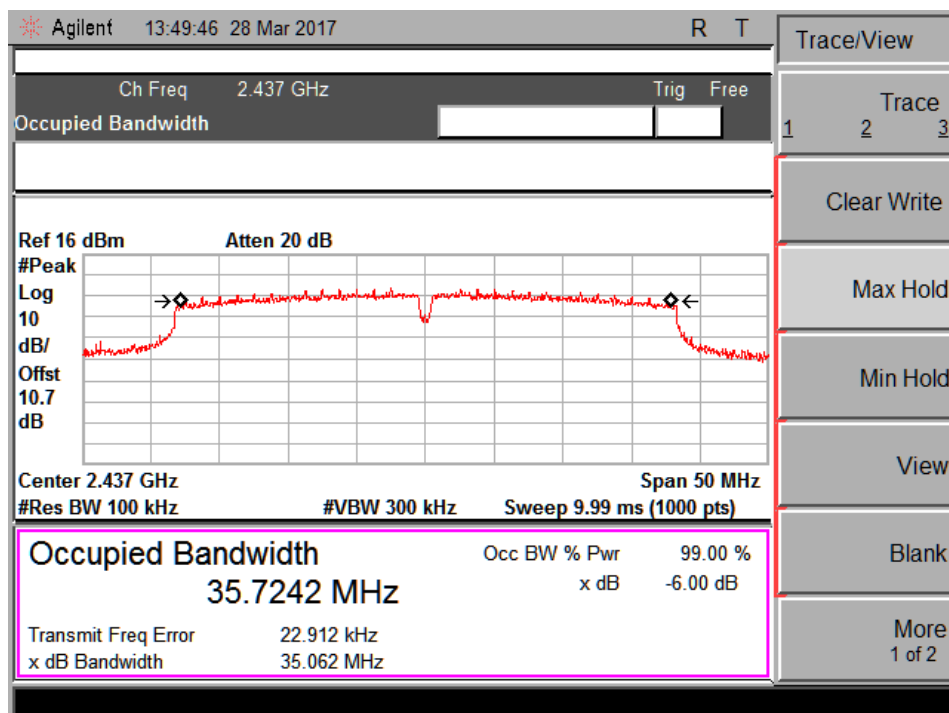
Channel: 2422 MHz





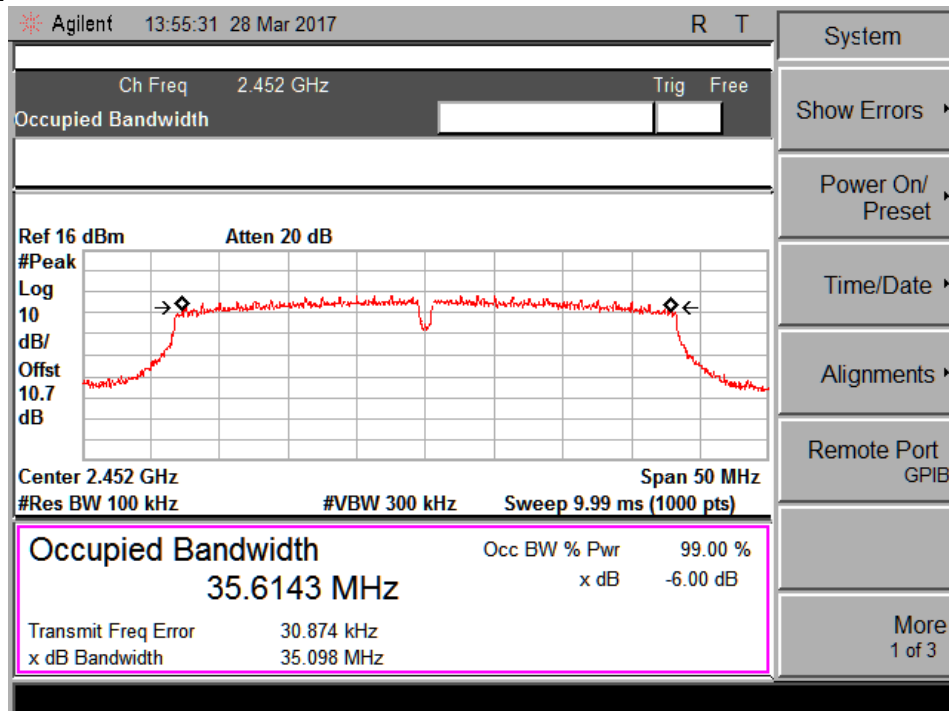
Data Rate: MCS4

Channel: 2422 MHz



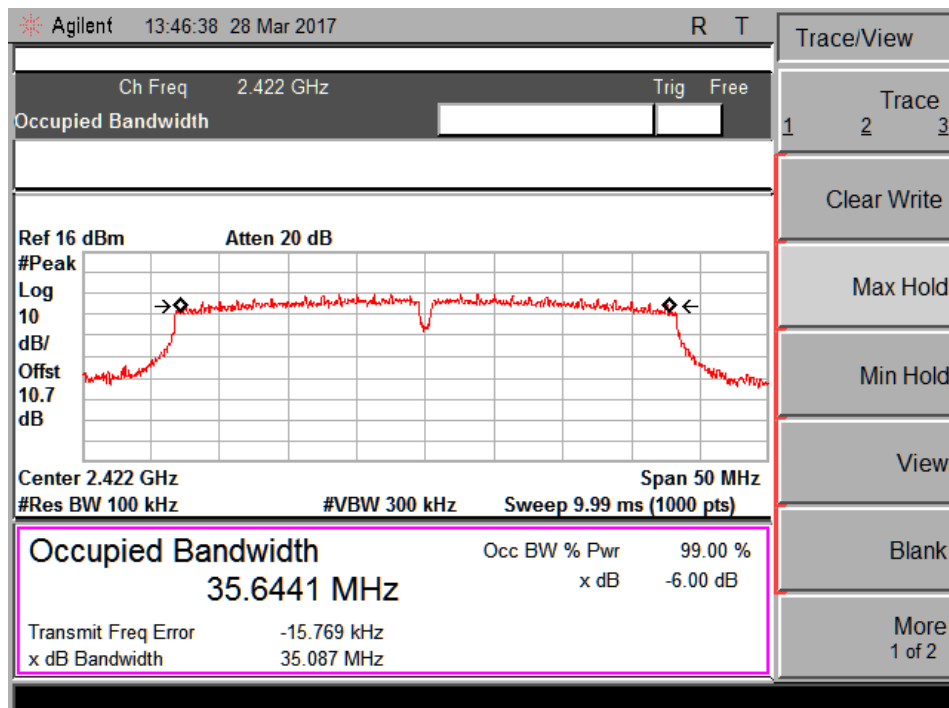
Data Rate: MCS4

Channel: 2437 MHz



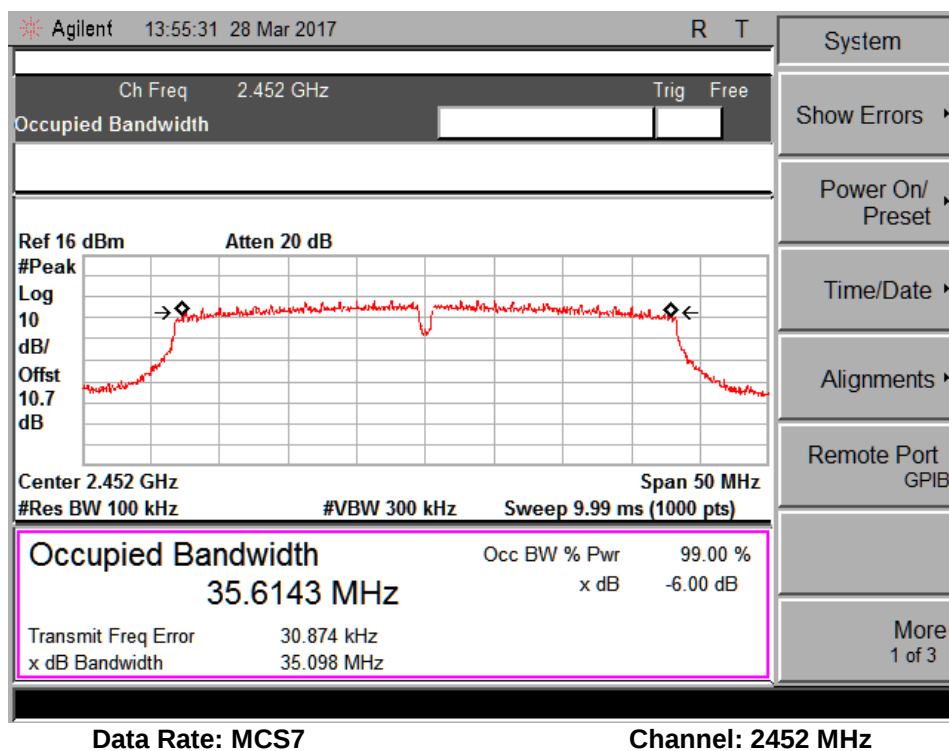
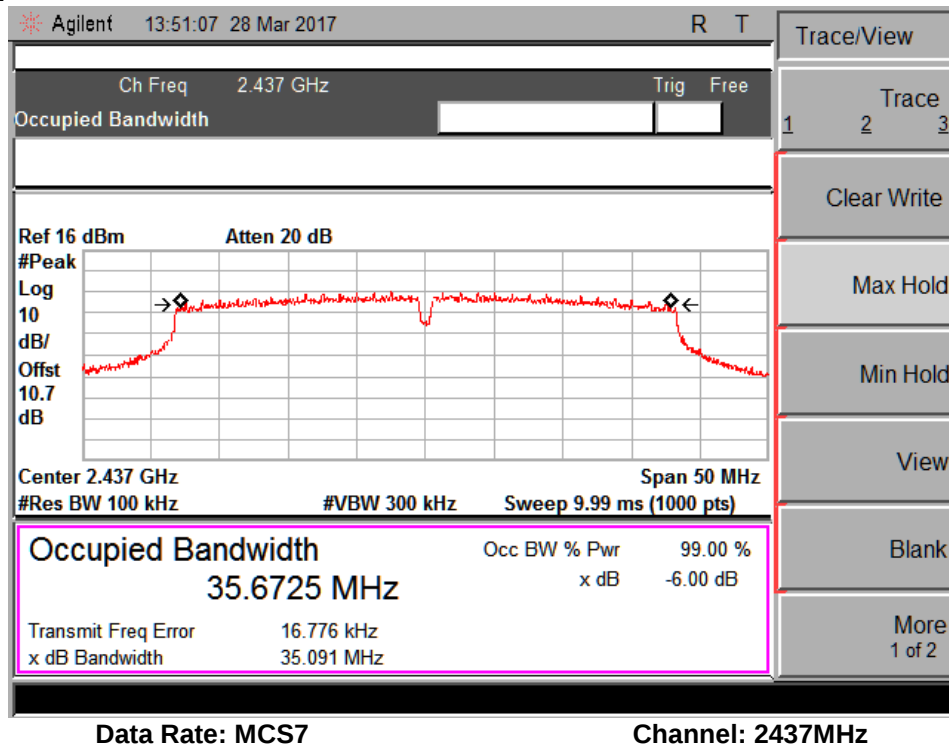
Data Rate: MCS4

Channel: 2452 MHz



Data Rate: MCS7

Channel: 2422 MHz

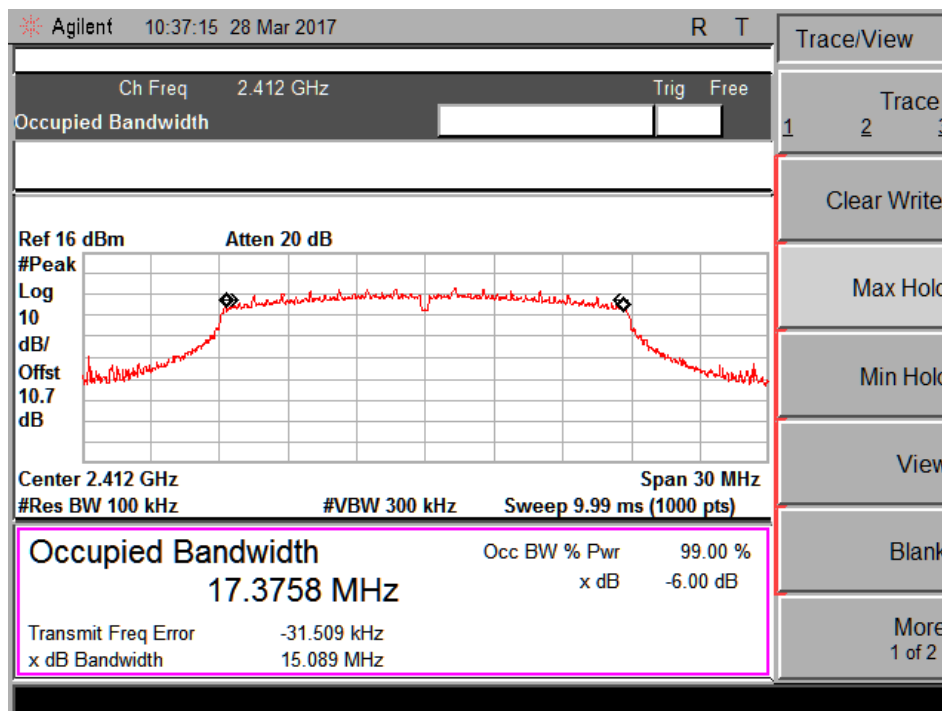


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Worst case test result

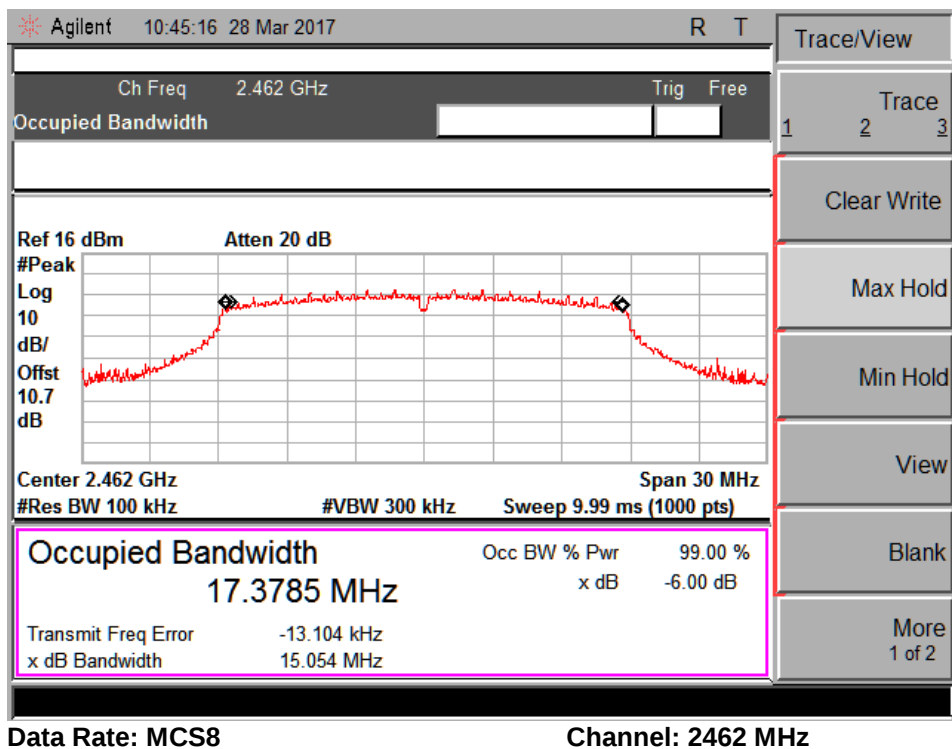
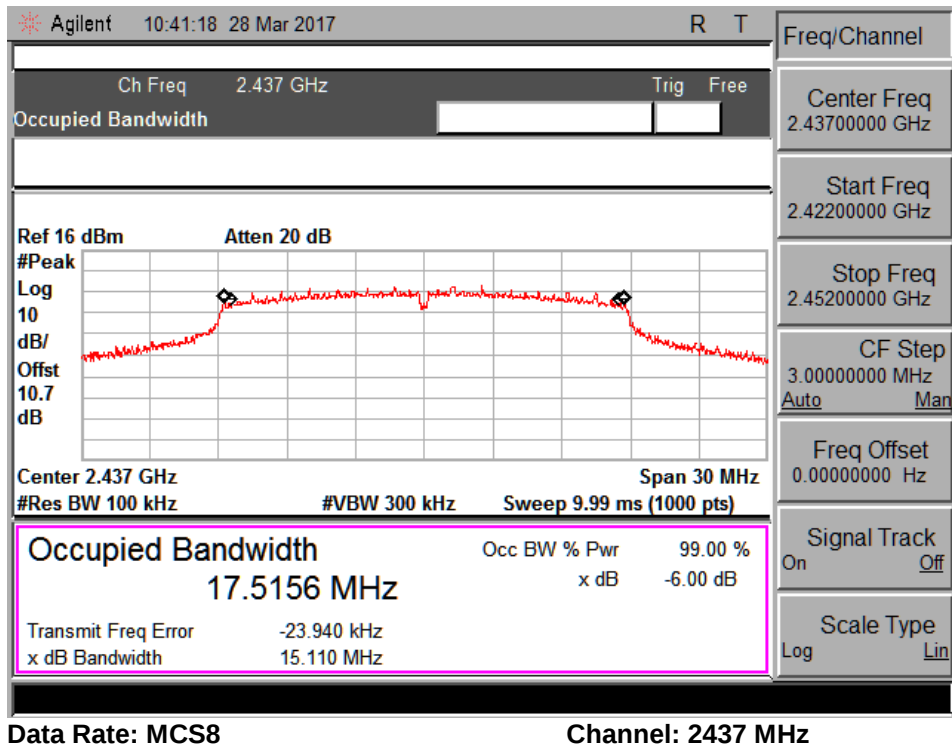
Attenuator (10dB) + cable loss (0.7dB) = 10.7dB Considered in the test result

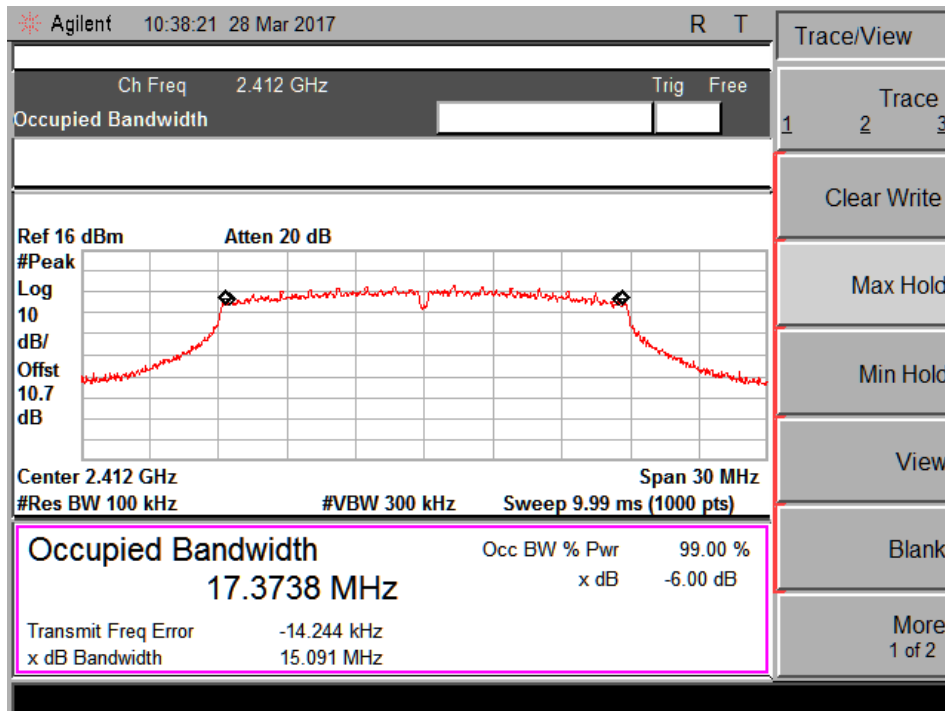
IEEE802.11n_MIMO_HT20			
Data Rate (Mbps)	Channel Frequency (MHz)	6 dB Bandwidth (MHz)	99% OBW (MHz)
MCS8	2412	15.08	17.37
	2437	15.10	17.51
	2462	15.05	17.37
MCS12	2412	15.09	17.37
	2437	15.26	17.47
	2462	15.37	17.39
MCS15	2412	15.12	17.38
	2437	15.63	17.45
	2462	15.67	17.40



Data Rate: MCS8

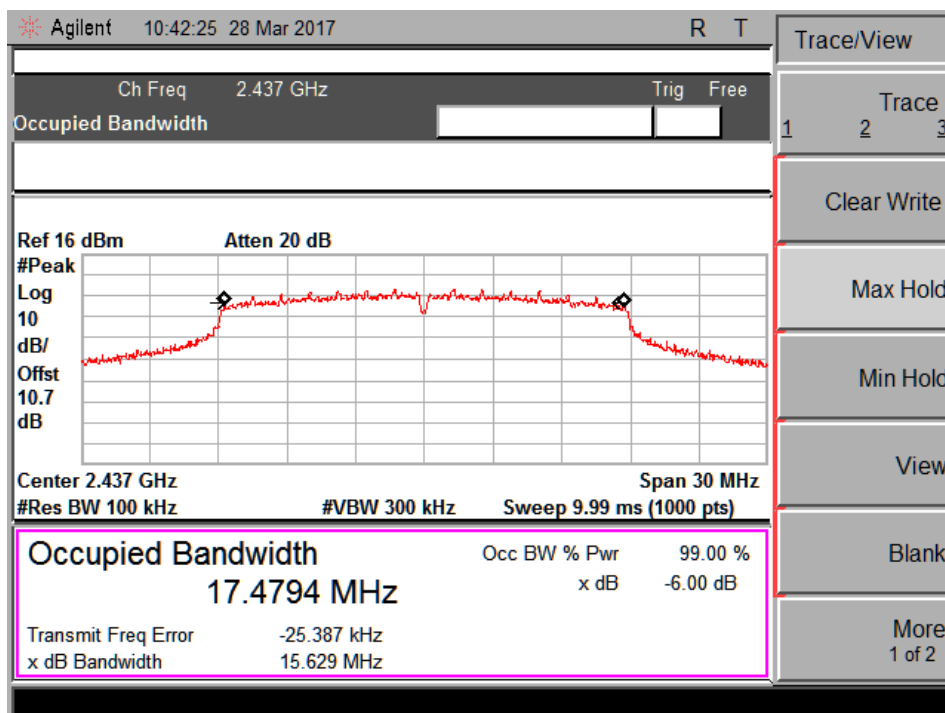
Channel: 2412 MHz





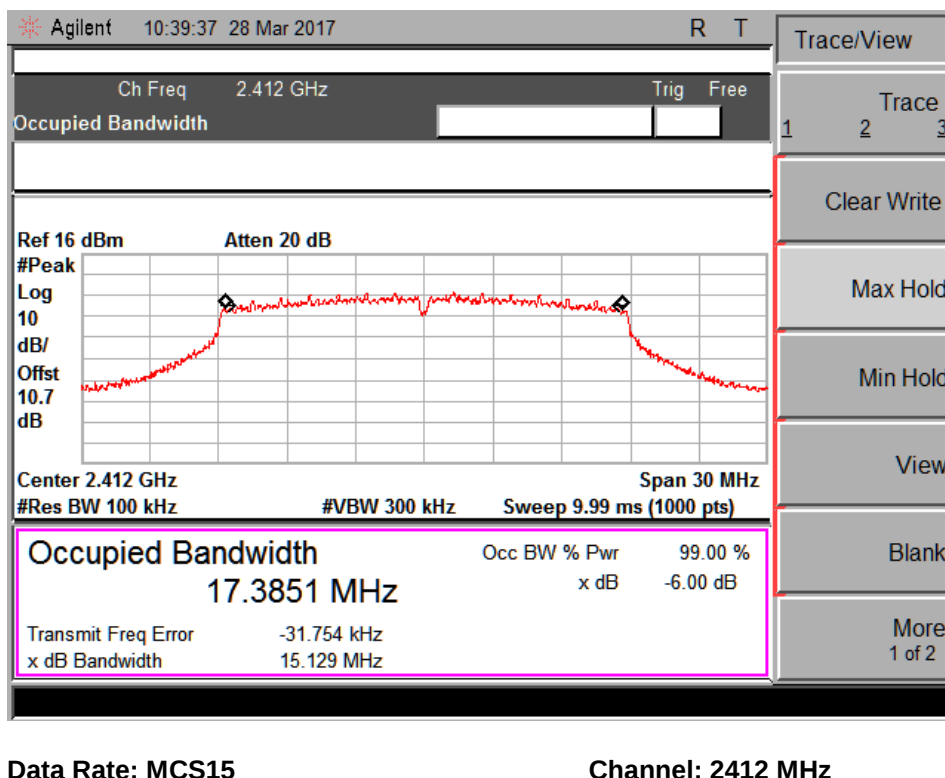
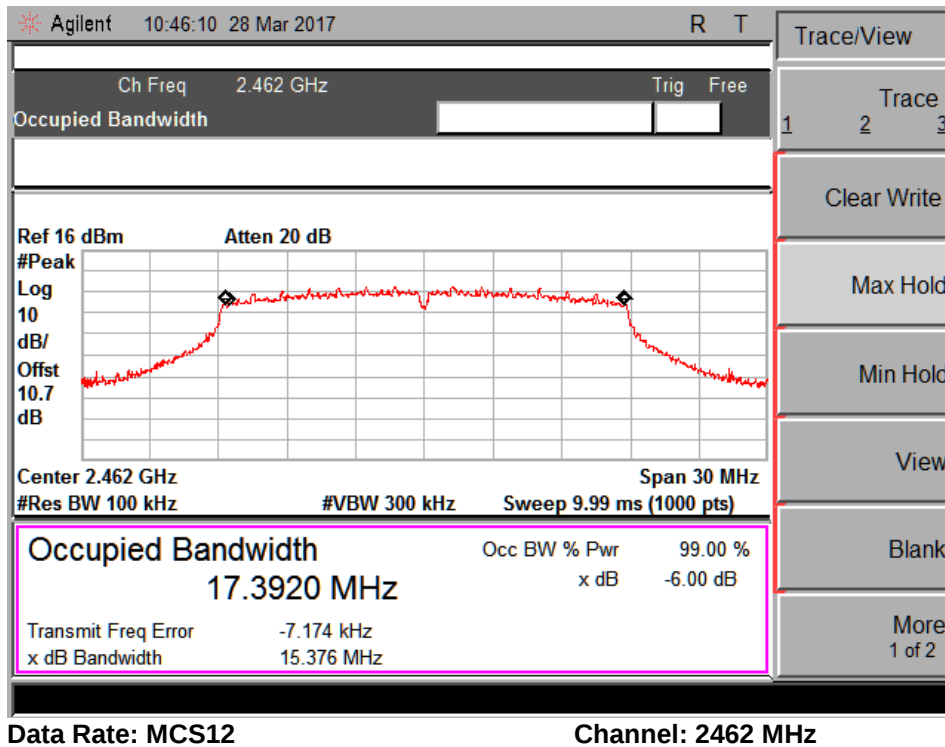
Data Rate: MCS12

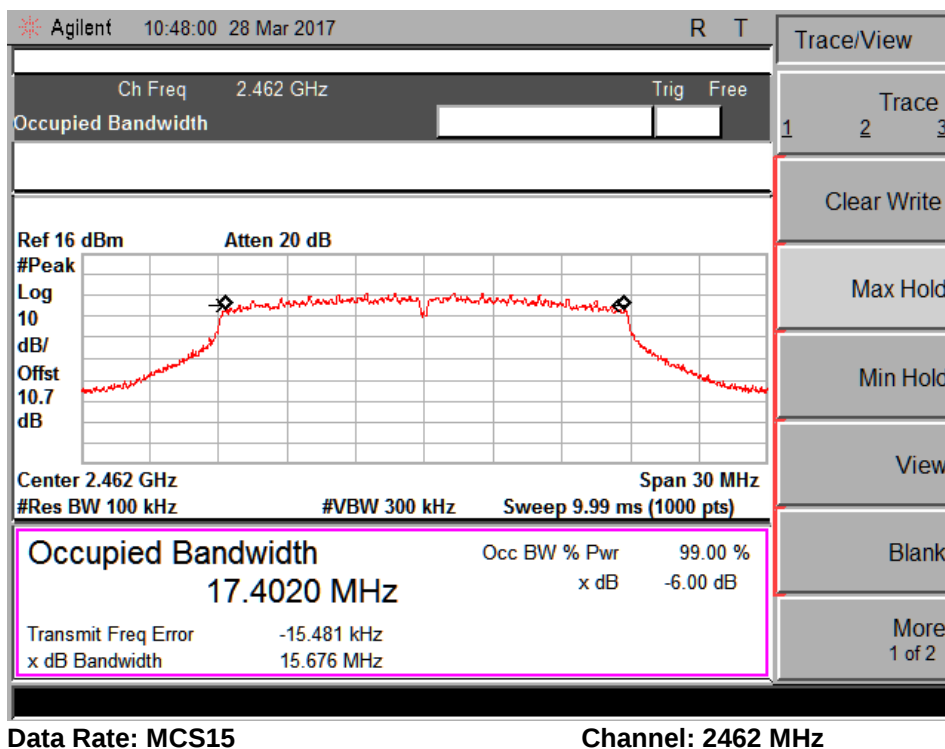
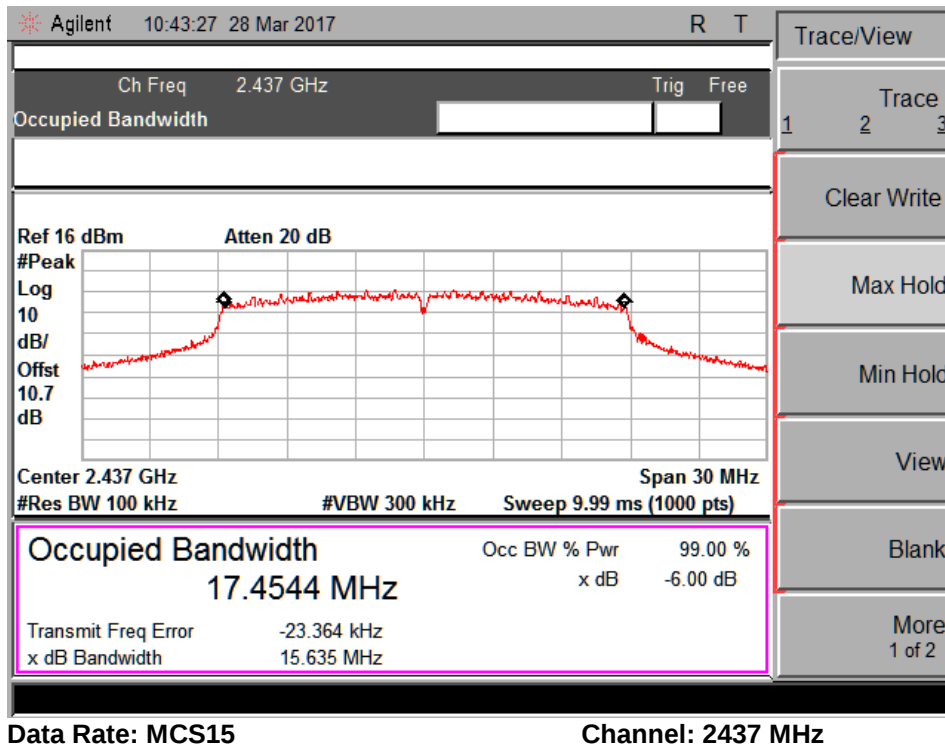
Channel: 2412 MHz



Data Rate: MCS12

Channel: 2437 MHz





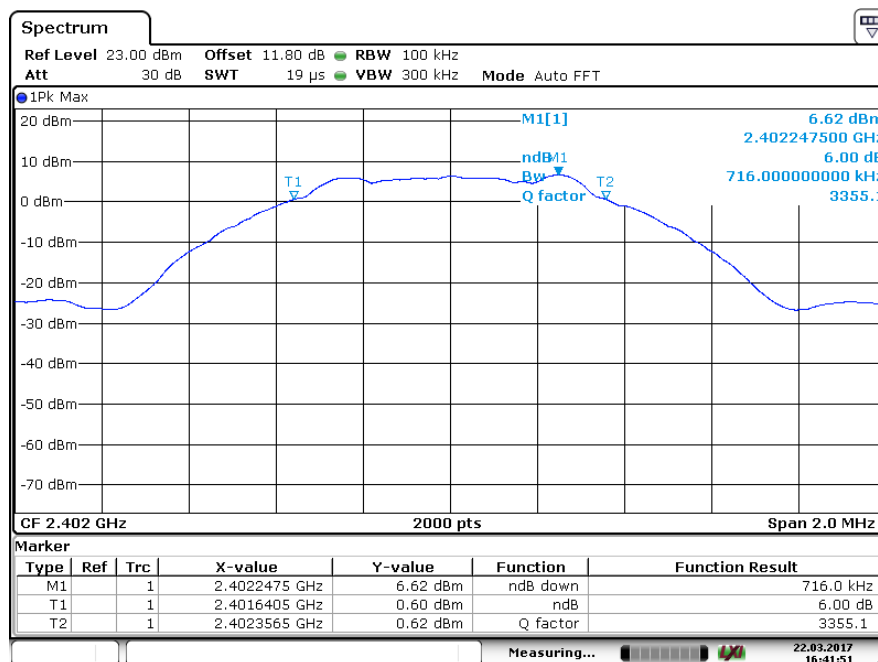
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Test Result: Bluetooth LE

Attenuator (10dB) + cable loss (1.8dB) = 11.8dB Considered in the test result

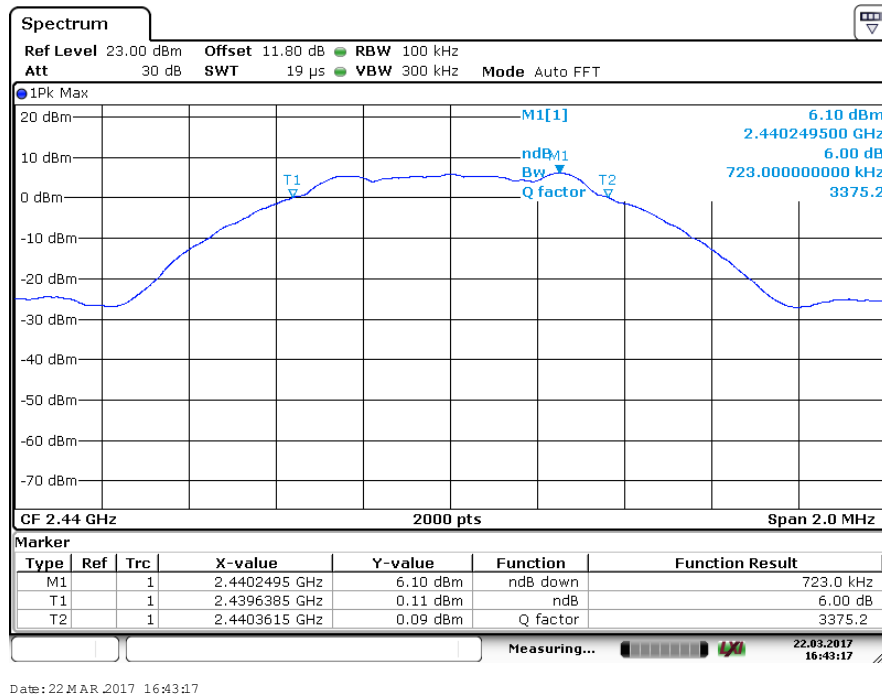
Channel Frequency (MHz)	6 dB Bandwidth (kHz)	99% OBW (MHz)
2402	716	1.03
2440	723	1.04
2480	716	1.03

6dB

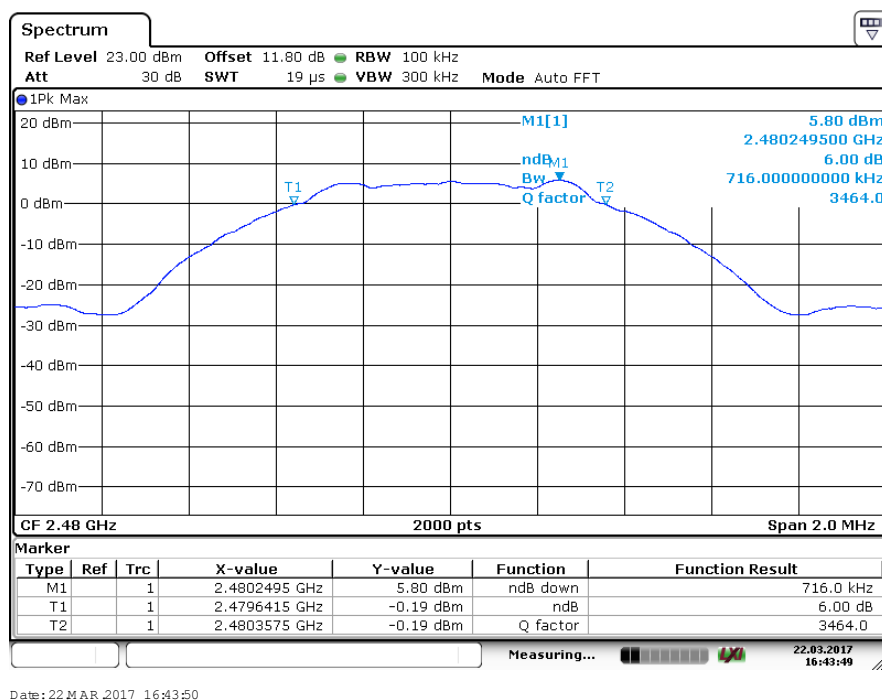


Date: 22 MAR 2017 16:41:51

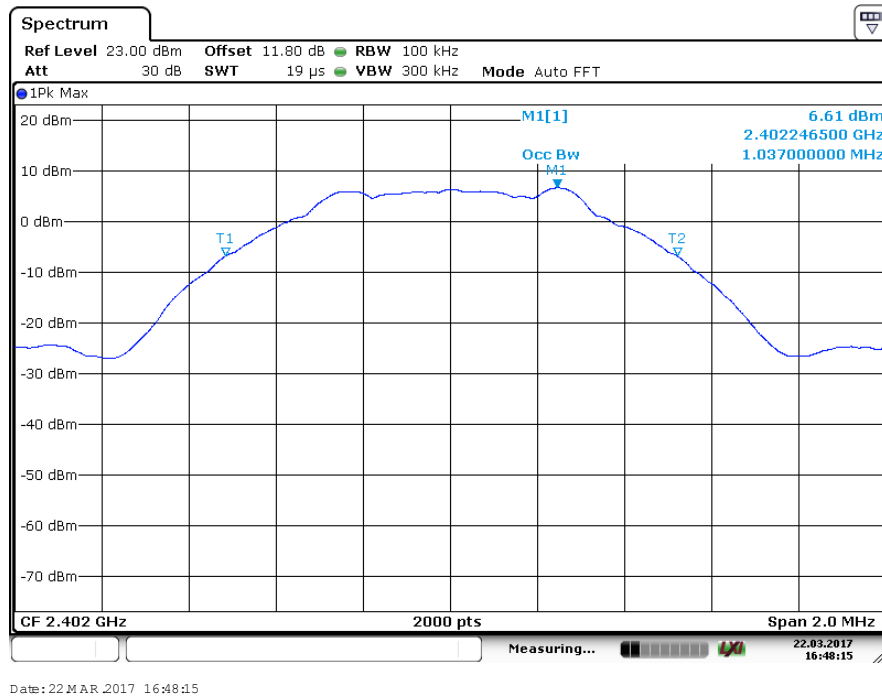
Channel Frequency: 2402 MHz



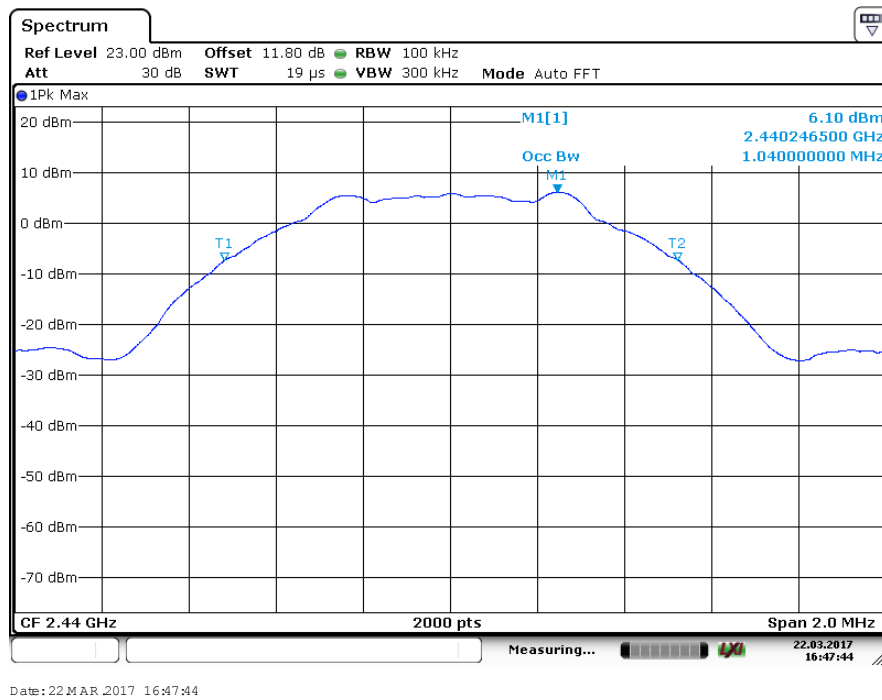
Channel Frequency: 2440 MHz



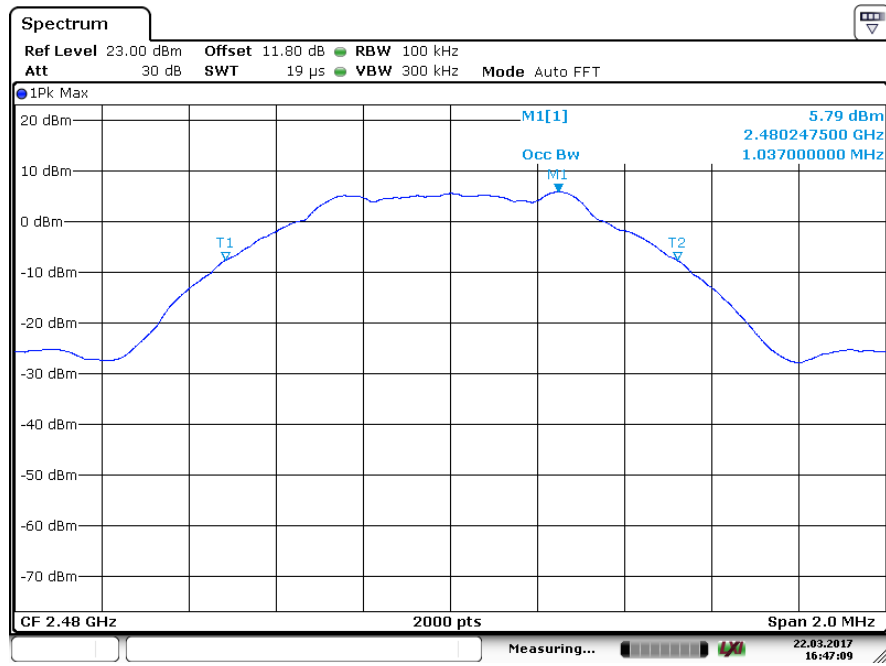
Channel Frequency: 2480 MHz



Channel Frequency: 2402 MHz



Channel Frequency: 2440 MHz



Date: 22 MAR 2017 16:47:09

Channel Frequency: 2480 MHz

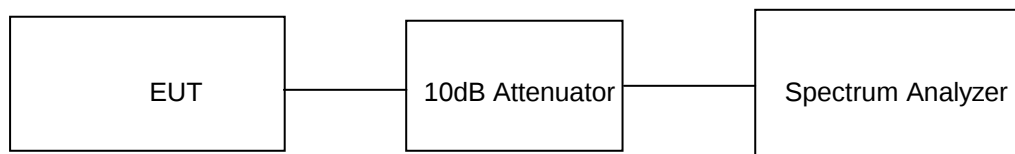
Emissions in non-restricted frequency bands
Result
Pass

Test Specification
Detector Function
Requirement

FCC Part 15 Section 15.247(d)

Peak

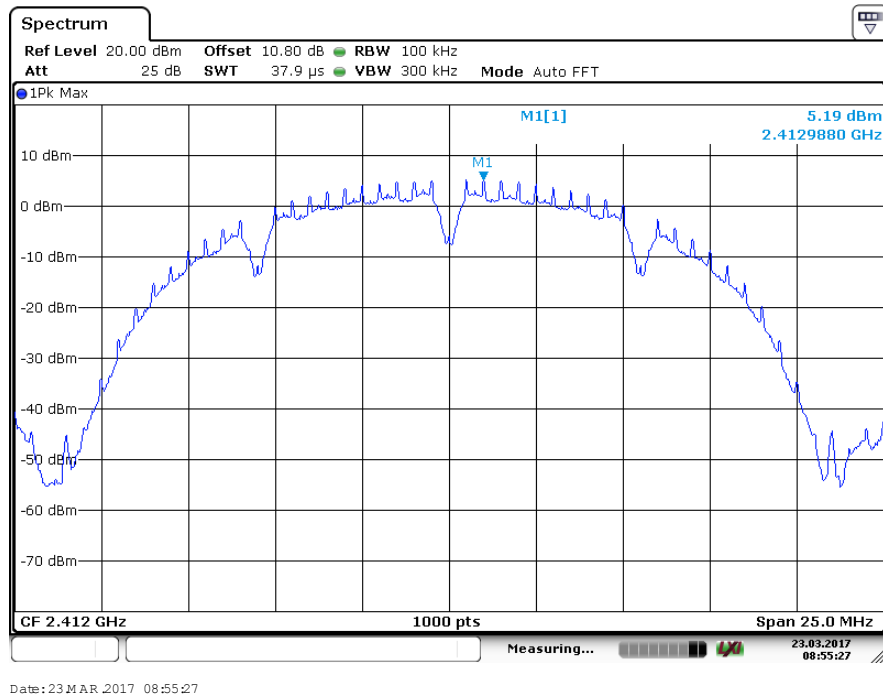
In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below for peak out power & 30dB for average power that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

Test Method:

Test Result: Wi-Fi

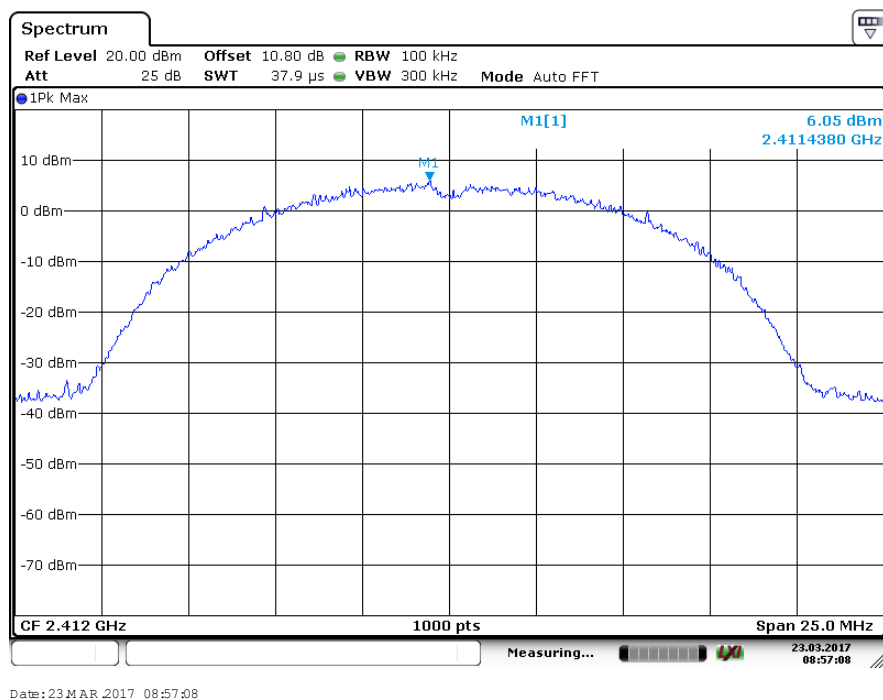
Attenuator (10dB) + cable loss (0.8dB) = 10.8dB Considered in the test result

Test Results for Chain 0

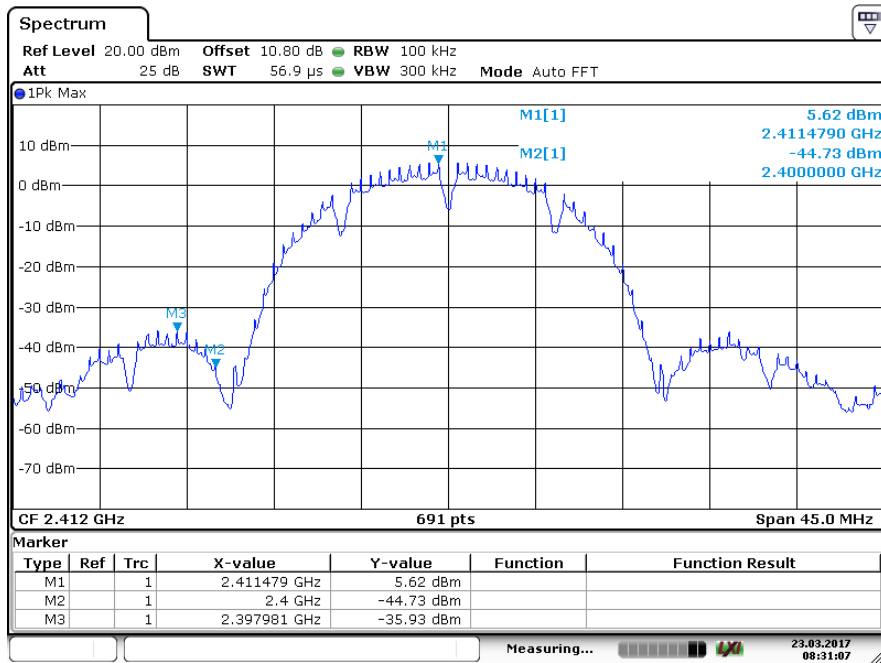
IEEE802.11b						
Data Rate (Mbps)	Channel Frequency (MHz)	Value at Band Edge		Reference Value B (dBm)	Band Edge Value A~B (dB)	Limit (dBc)
		Frequency (MHz)	Value A (dBm)			
1	2412	2397.981	-35.93	5.19	41.12	20
	2462	2483.5	-56.89	5.19	62.08	20
11	2412	2399.76	-35.98	6.05	42.03	20
	2462	2483.5	-55.85	6.05	61.9	20



Reference Level Plot: 1Mbps



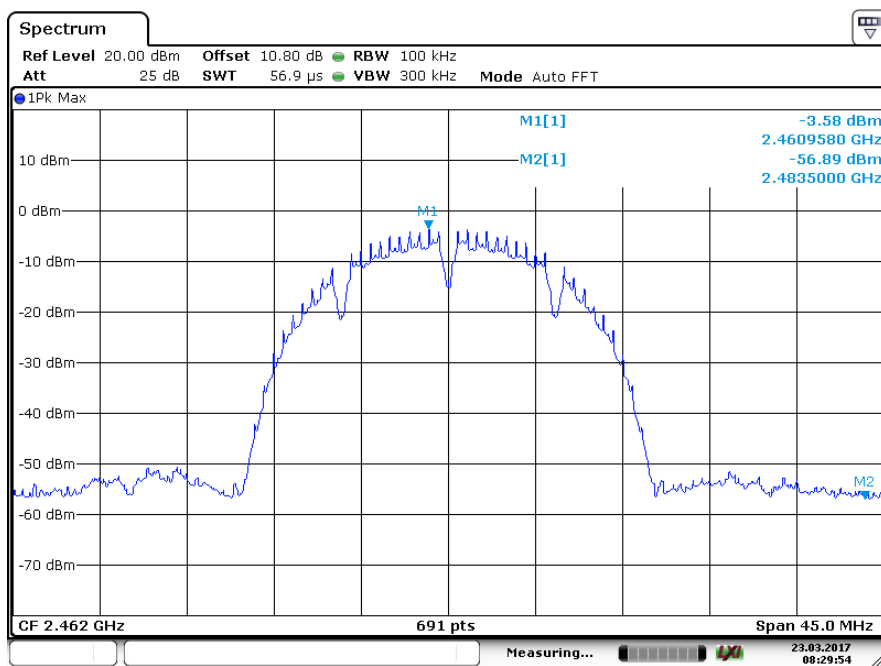
Reference Level Plot: 11Mbps



Date: 23 MAR 2017 08:31:07

Data Rate: 1 Mbps

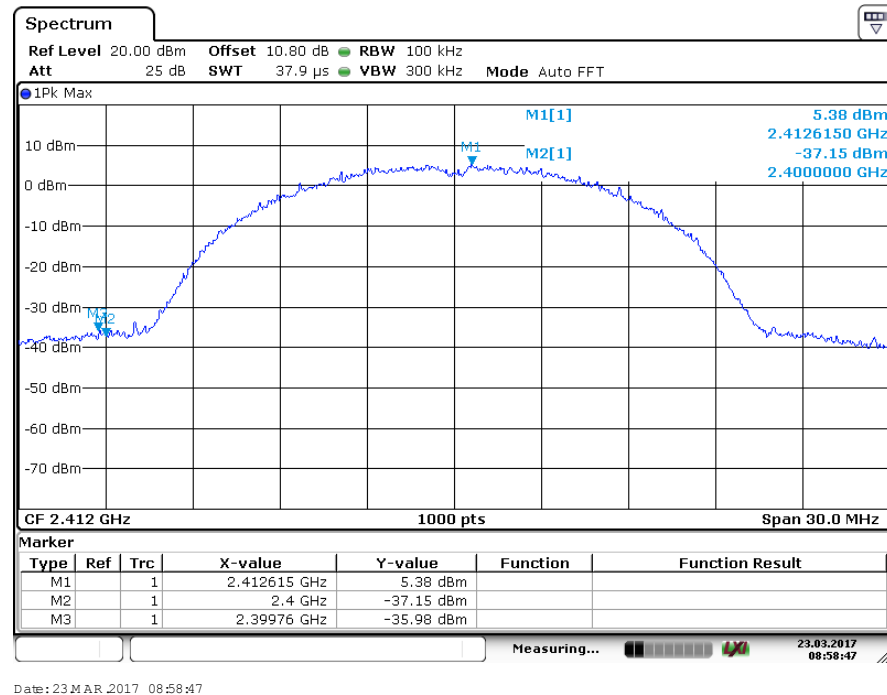
Channel frequency: 2412 MHz



Date: 23 MAR 2017 08:29:54

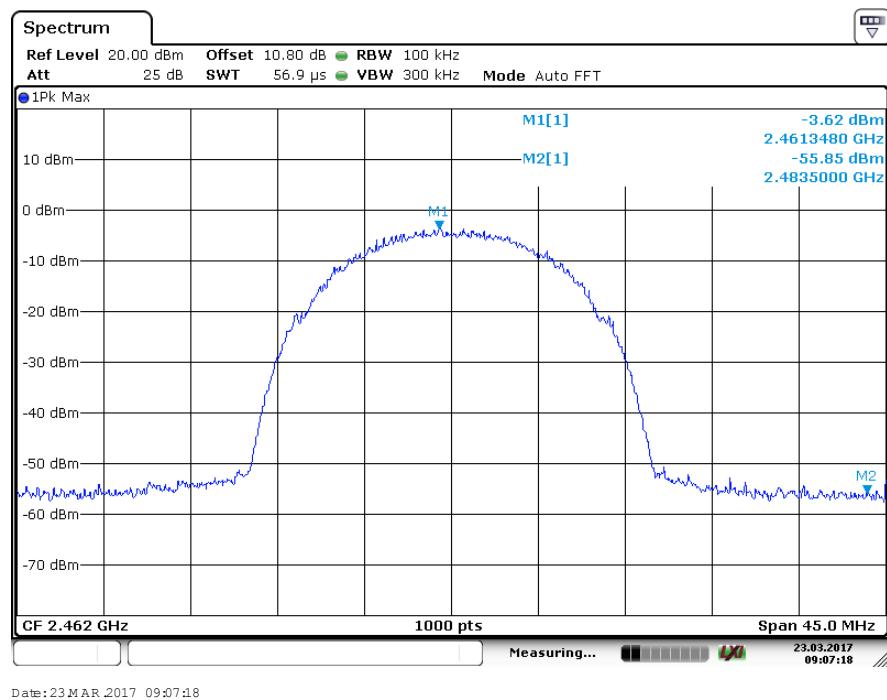
Data Rate: 1 Mbps

Channel frequency: 2462 MHz



Data Rate: 11 Mbps

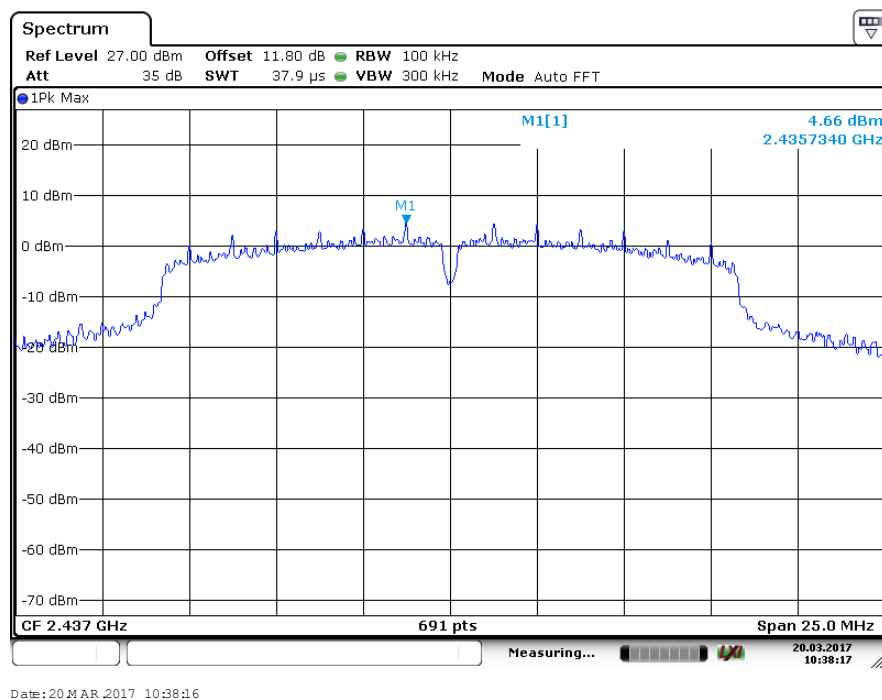
Channel frequency: 2412 MHz



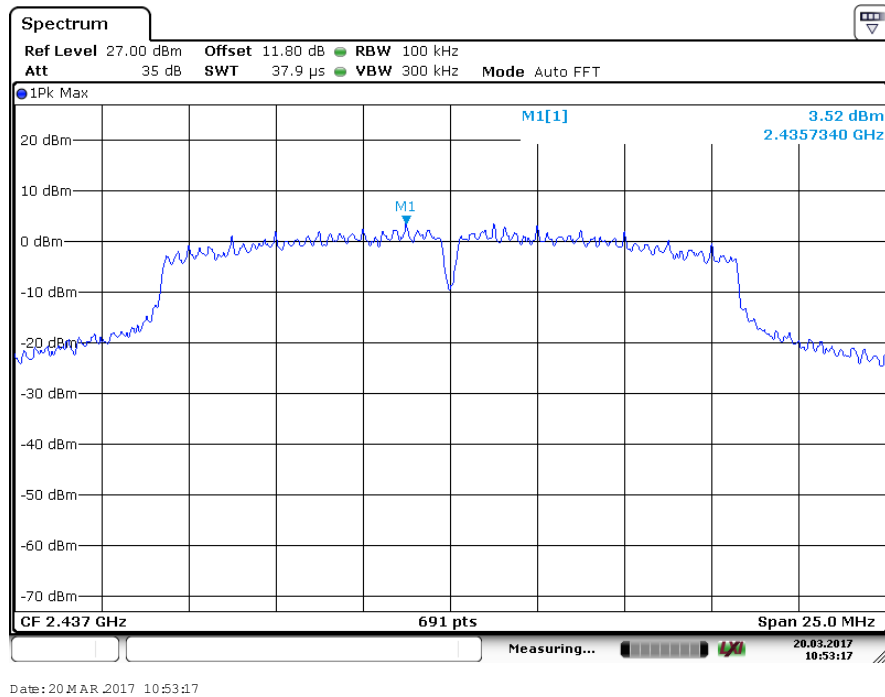
Data Rate: 11 Mbps

Channel frequency: 2462 MHz

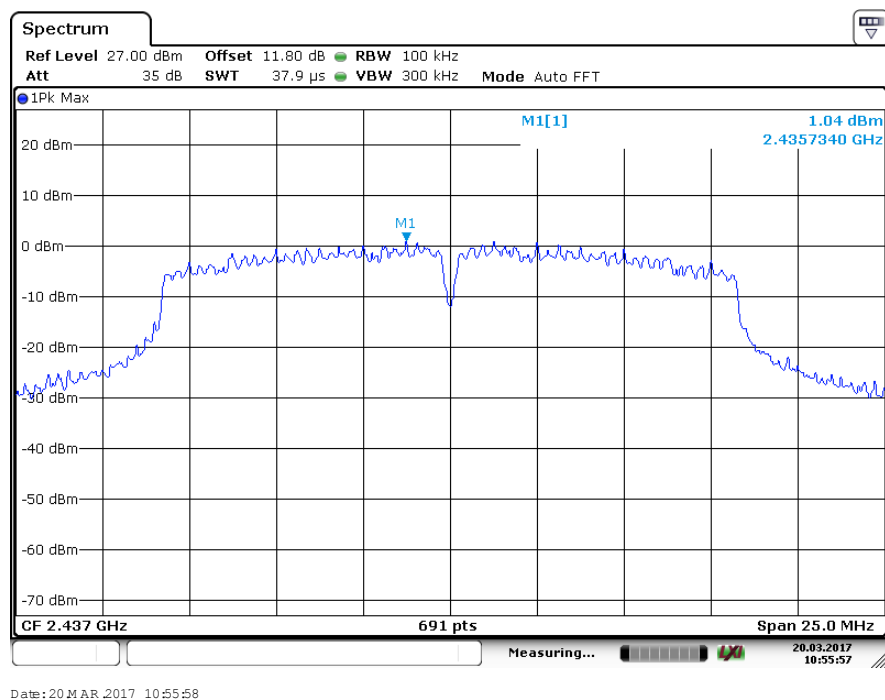
IEEE802.11g						
Data Rate (Mbps)	Channel Frequency (MHz)	Value at Band Edge		Reference Value B (dBm)	Band Edge Value A~B (dB)	Limit (dBc)
		Frequency (MHz)	Value A (dBm)			
6	2412	2395.71	-36.12	4.66	40.78	20
	2462	2483.5	-44.69	4.66	49.35	20
24	2412	2398.82	-33.27	3.52	36.79	20
	2462	2483.5	-43.3	3.52	46.82	20
54	2412	2398.46	-35.57	1.04	36.61	20
	2462	2483.5	-43.92	1.04	44.96	20



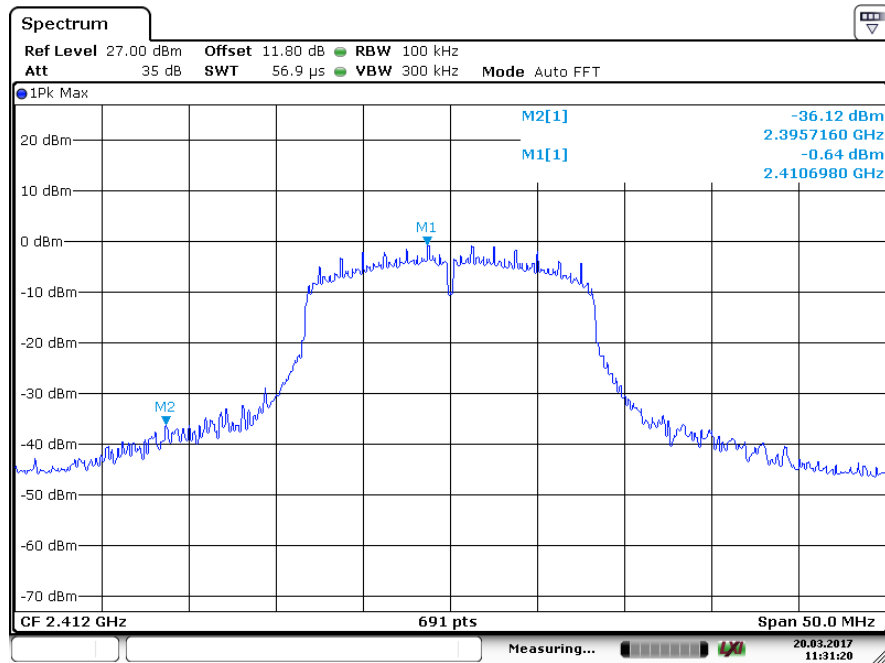
Reference Level Plot: 6 Mbps



Reference Level Plot: 24 Mbps



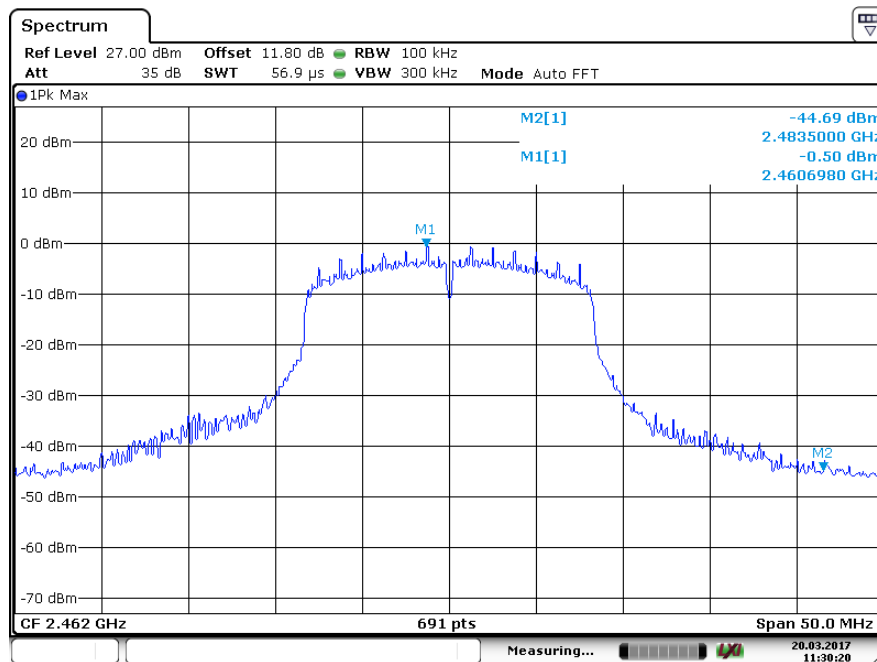
Reference Level Plot: 54 Mbps



Date: 20 MAR 2017 11:31:20

Data Rate: 6 Mbps

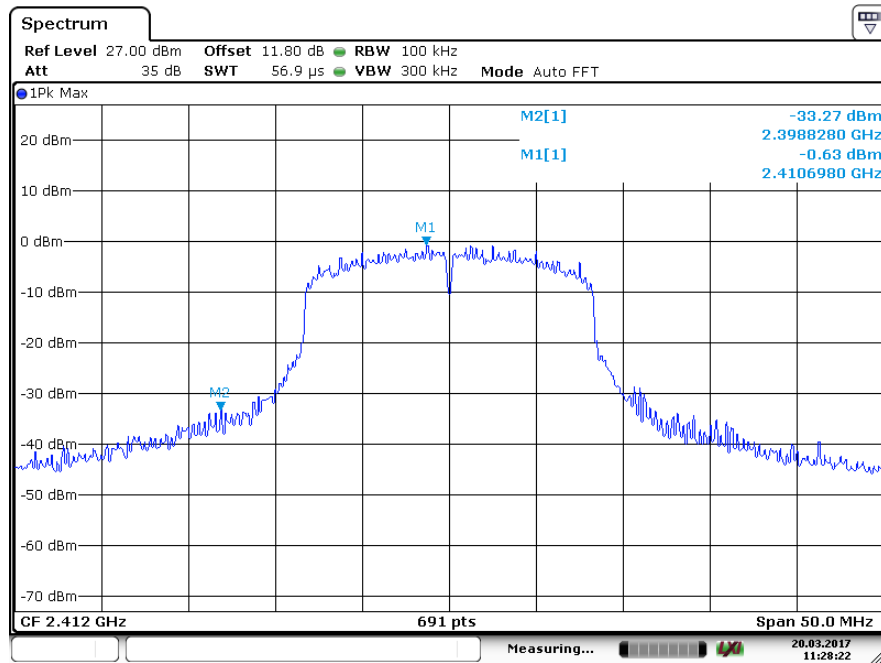
Channel frequency: 2412 MHz



Date: 20 MAR 2017 11:30:20

Data Rate: 6 Mbps

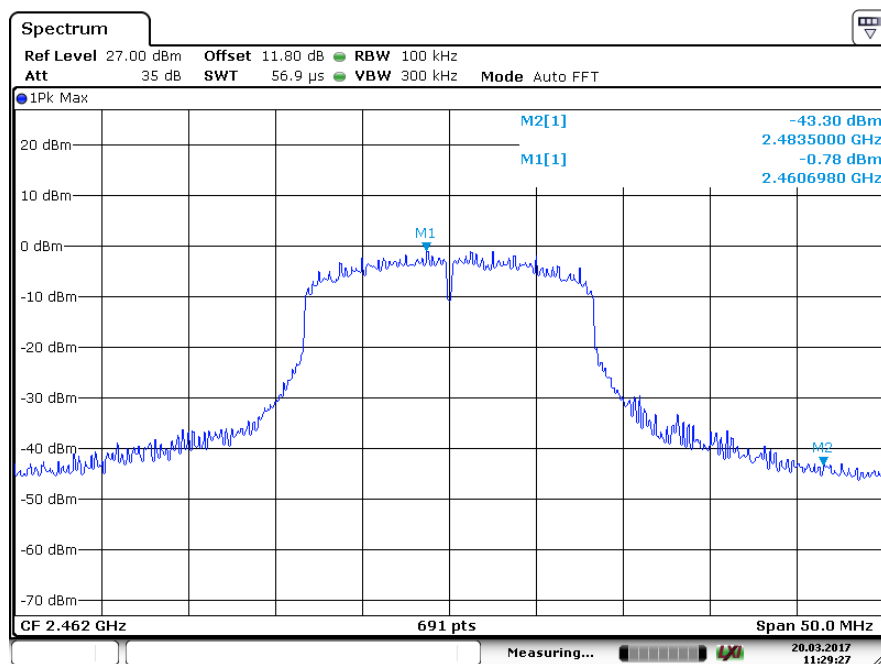
Channel frequency: 2462 MHz



Date: 20 MAR 2017 11:28:23

Data Rate: 24 Mbps

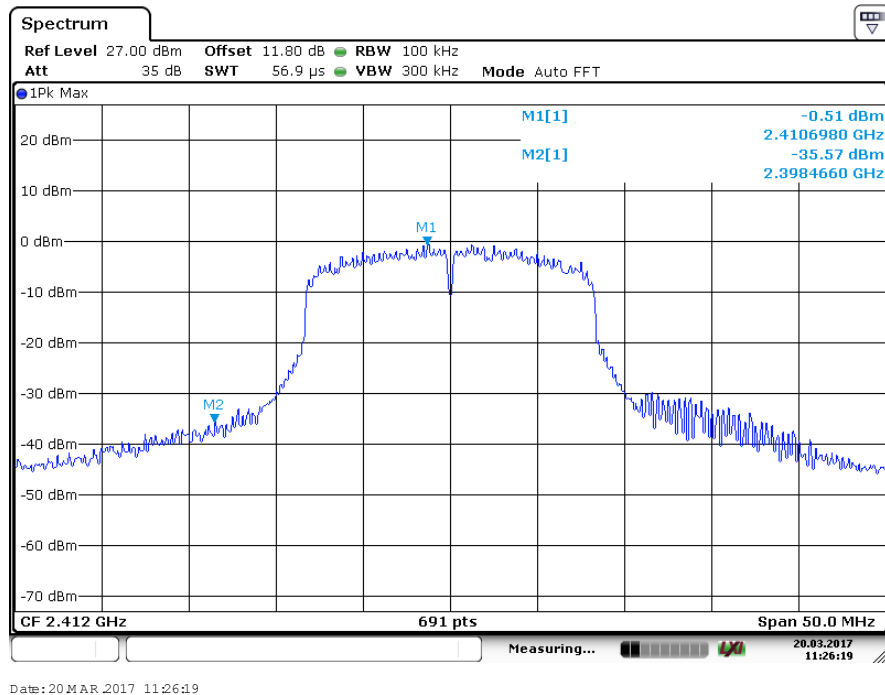
Channel frequency: 2412 MHz



Date: 20 MAR 2017 11:29:27

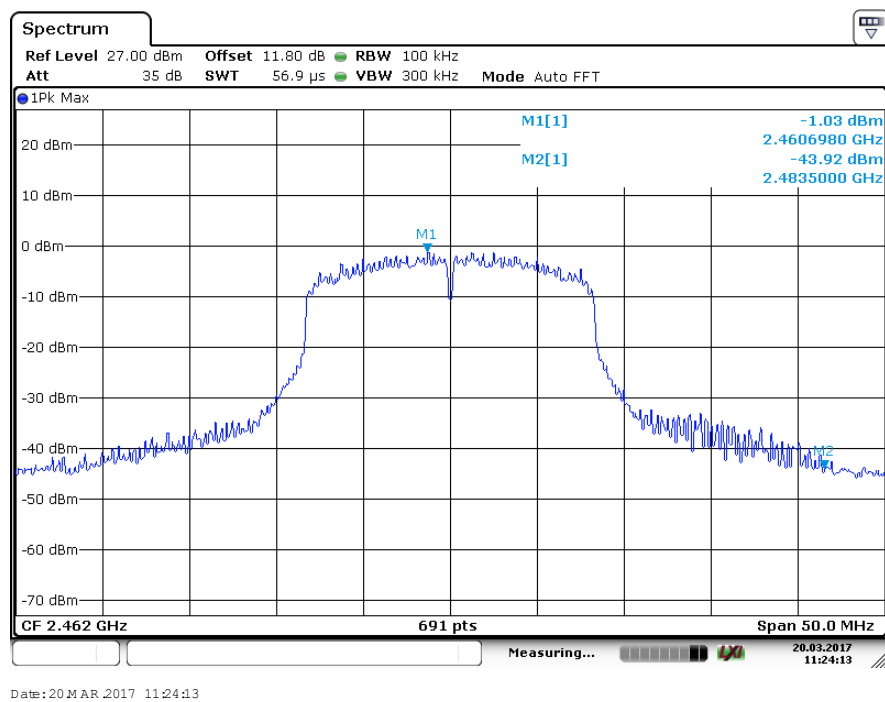
Data Rate: 24 Mbps

Channel frequency: 2462 MHz



Data Rate: 54 Mbps

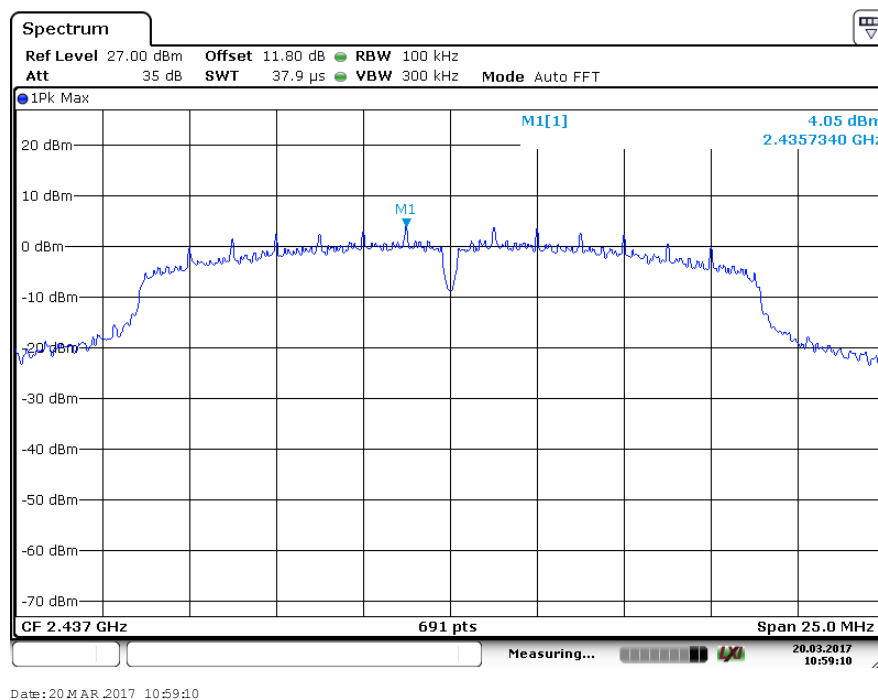
Channel frequency: 2412 MHz



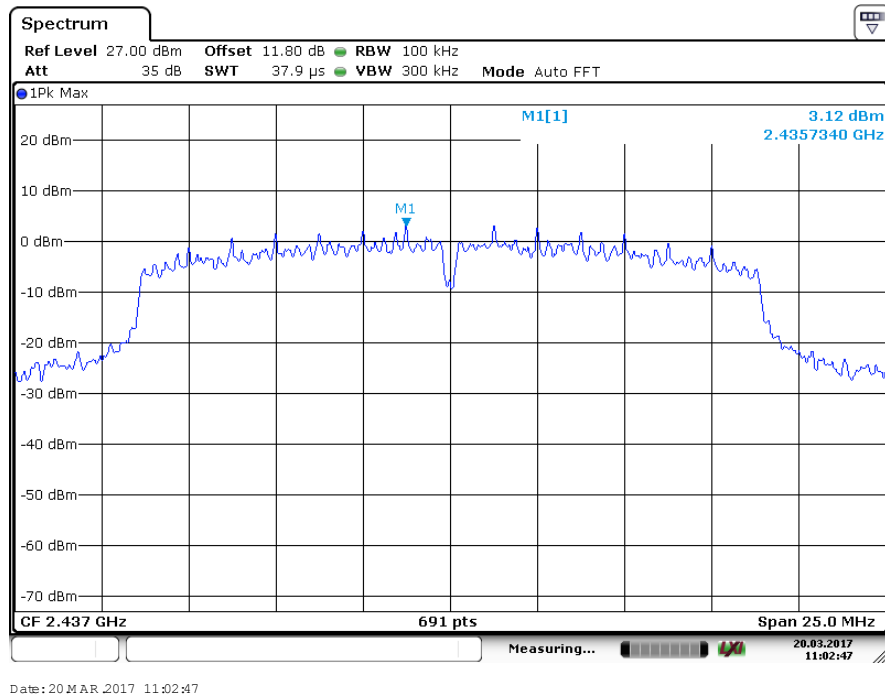
Data Rate: 54 Mbps

Channel frequency: 2462 MHz

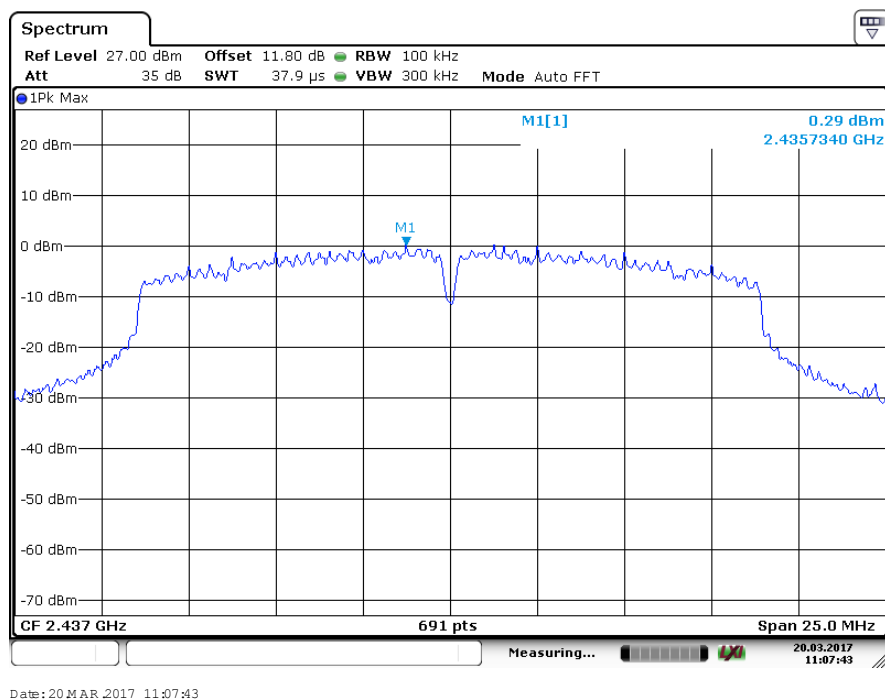
IEEE802.11nHT20						
Data Rate (Mbps)	Channel Frequency (MHz)	Value at Band Edge		Reference Value B (dBm)	Band Edge Value A~B (dBc)	Limit (dBc)
		Frequency (MHz)	Value A (dBm)			
MCS0	2412	2393.47	-35.72	4.05	39.77	20
	2462	2483.5	-43.71	4.05	47.76	20
MCS4	2412	2396	-37.09	3.12	40.21	20
	2462	2483.5	-44.06	3.12	47.18	20
MCS7	2412	2391.66	-37.98	0.29	38.27	20
	2462	2483.5	-42.77	0.29	43.06	20



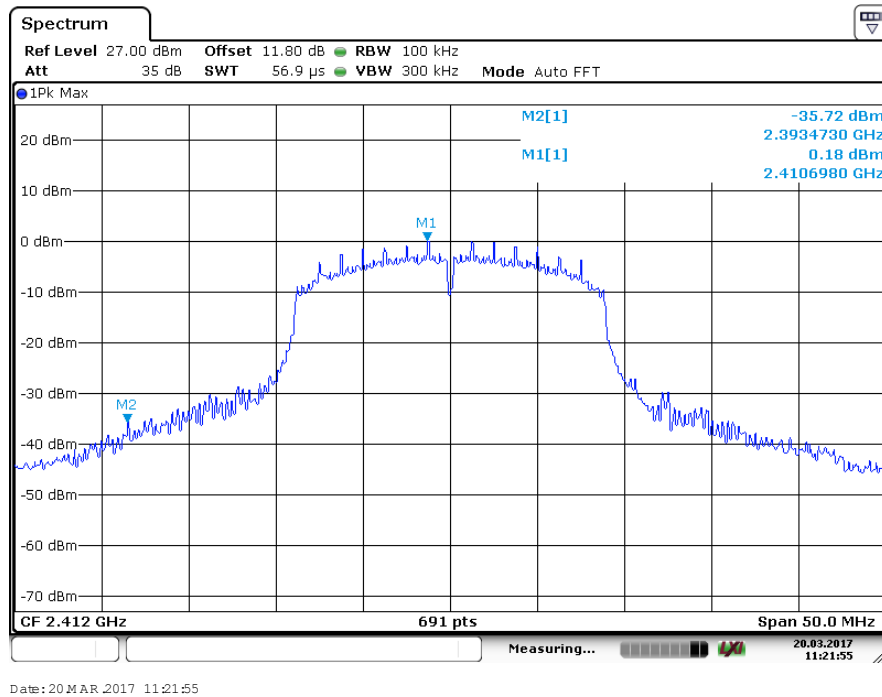
Reference Level Plot: MCS0



Reference Level Plot: MCS4

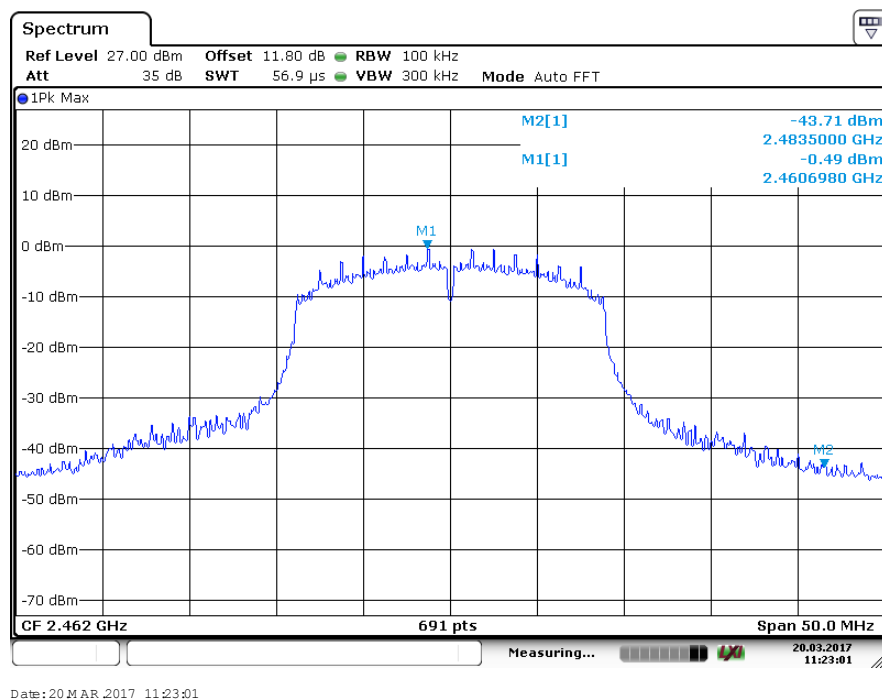


Reference Level Plot: MCS7



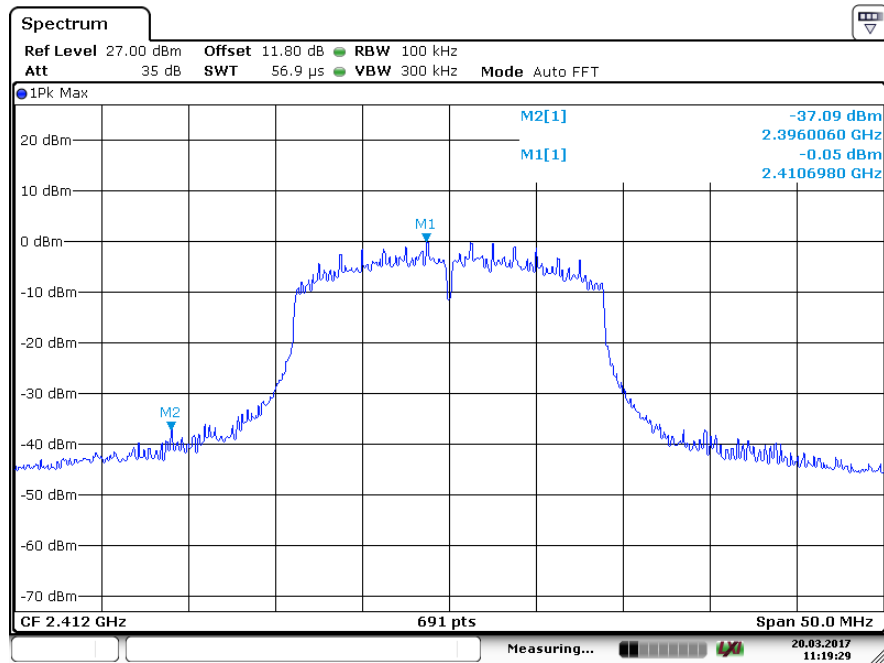
Data Rate: MCS0

Channel frequency: 2412 MHz



Data Rate: MCS0

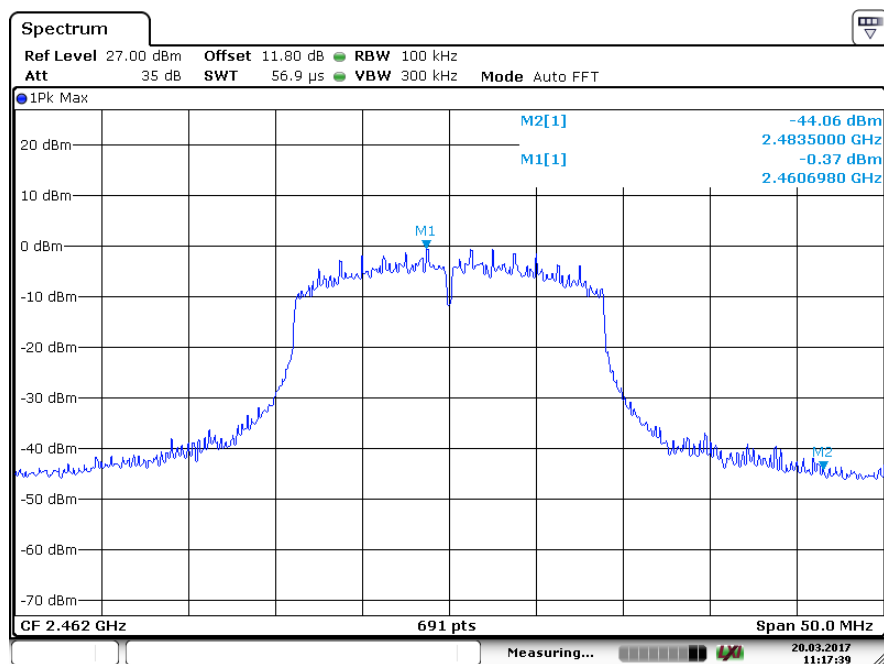
Channel frequency: 2462 MHz



Date: 20 MAR 2017 11:19:29

Data Rate: MCS4

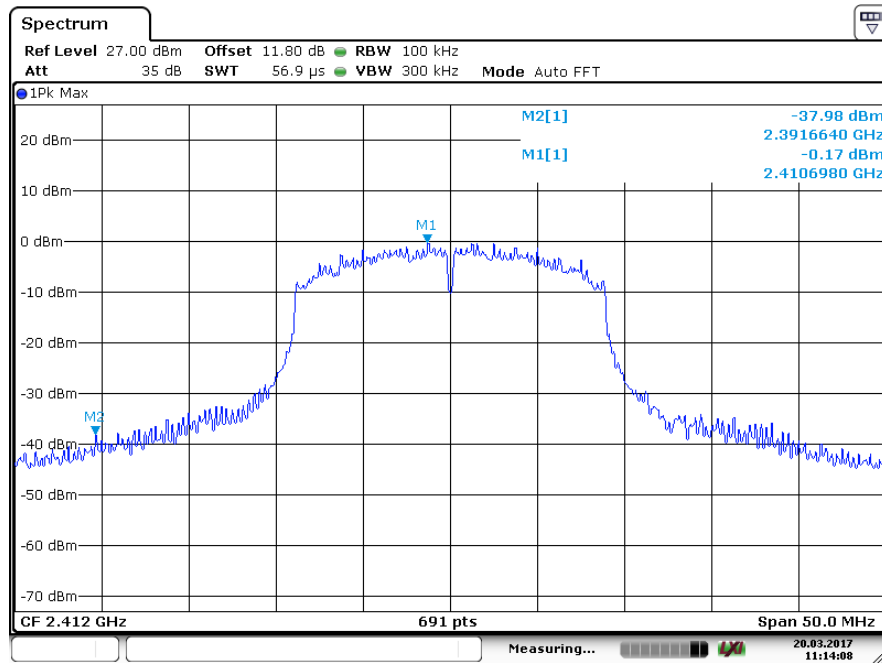
Channel frequency: 2412 MHz



Date: 20 MAR 2017 11:17:39

Data Rate: MCS4

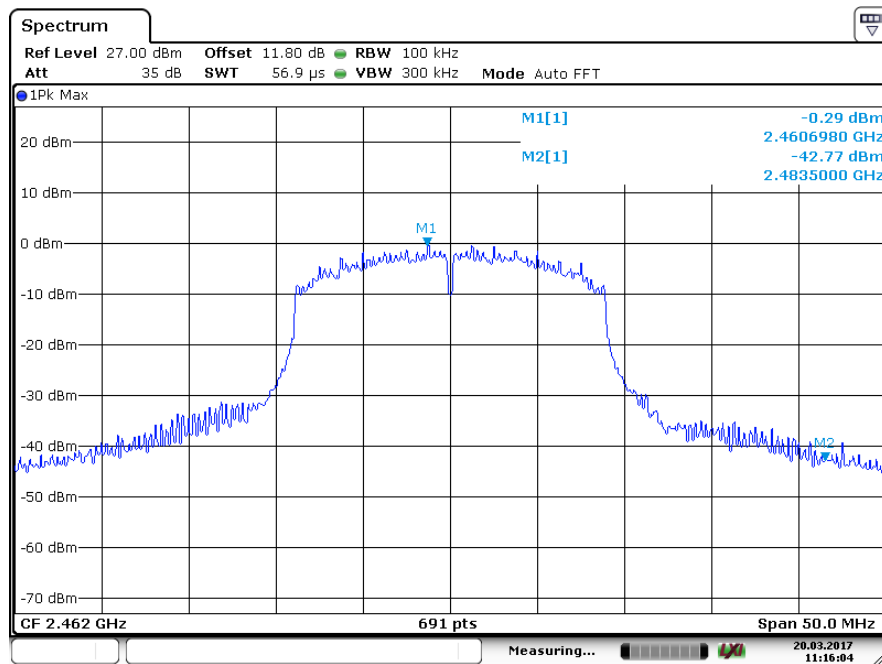
Channel frequency: 2462 MHz



Date: 20 MAR 2017 11:14:08

Data Rate: MCS7

Channel frequency: 2412 MHz

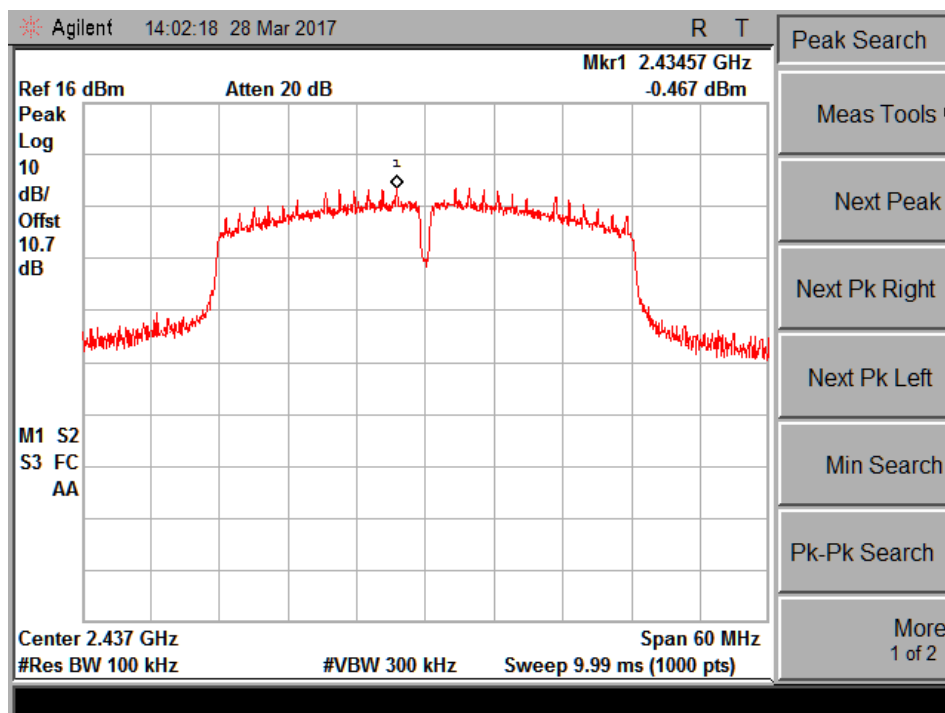


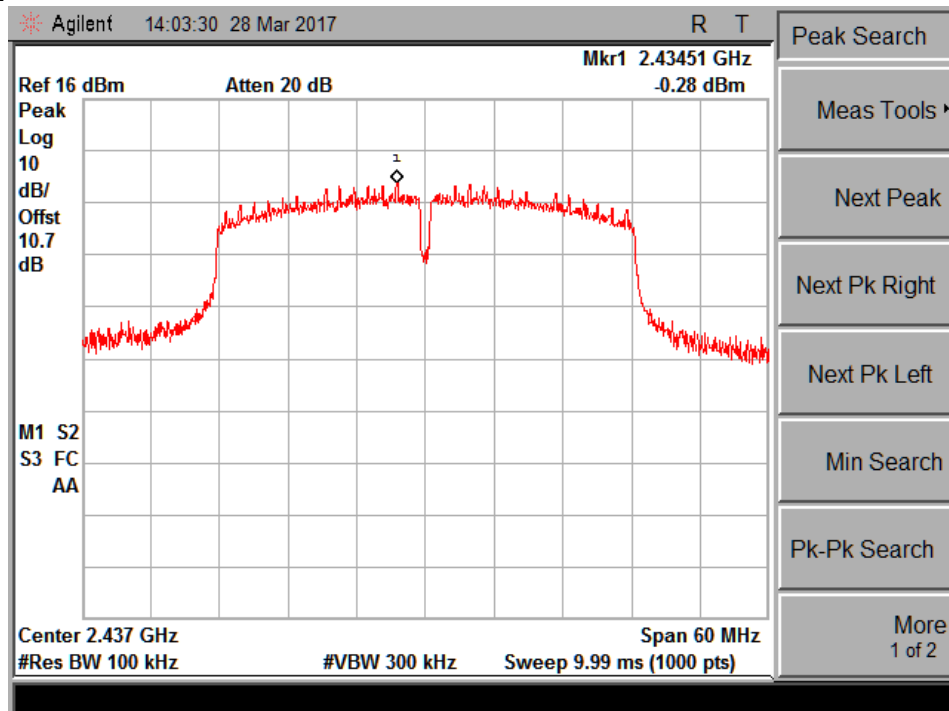
Date: 20 MAR 2017 11:16:04

Data Rate: MCS7

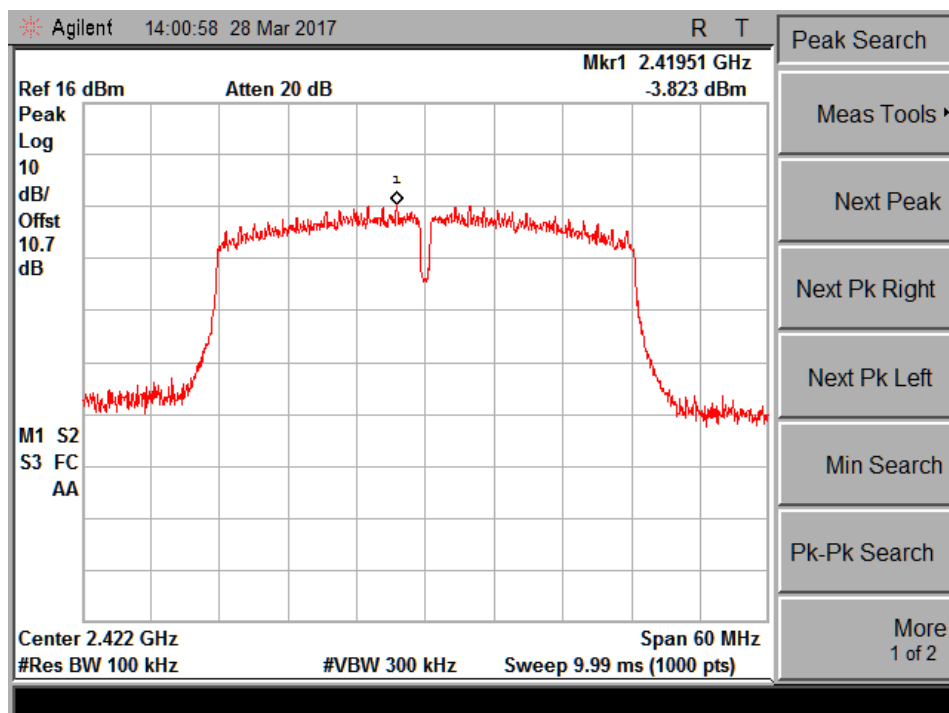
Channel frequency: 2462 MHz

IEEE802.11nHT40						
Data Rate (Mbps)	Channel Frequency (MHz)	Value at Band Edge		Reference Value B (dBm)	Band Edge Value A~B (dBc)	Limit (dBc)
		Frequency (MHz)	Value A (dBm)			
MCS0	2422	2400	-47.41	-0.46	46.95	30
	2452	2483.5	-51.46	-0.46	51	30
MCS4	2422	2400	-46.24	-0.28	45.96	30
	2452	2483.5	-51.06	-0.28	50.78	30
MCS7	2422	2399.84	-39.6	-3.82	35.78	30
	2452	2483.5	-50.44	-3.82	46.62	30

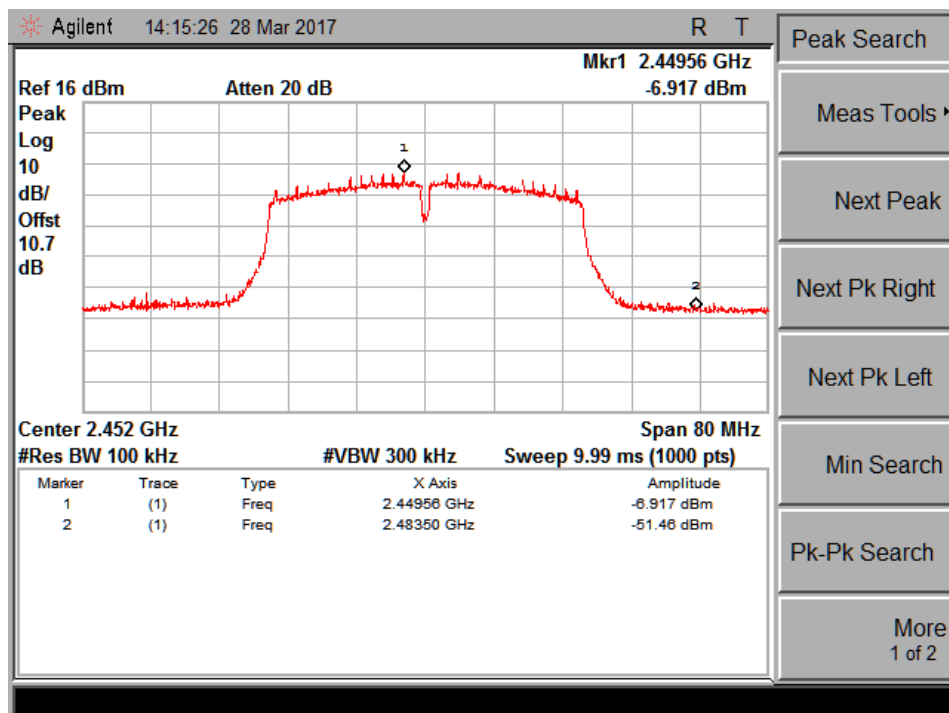
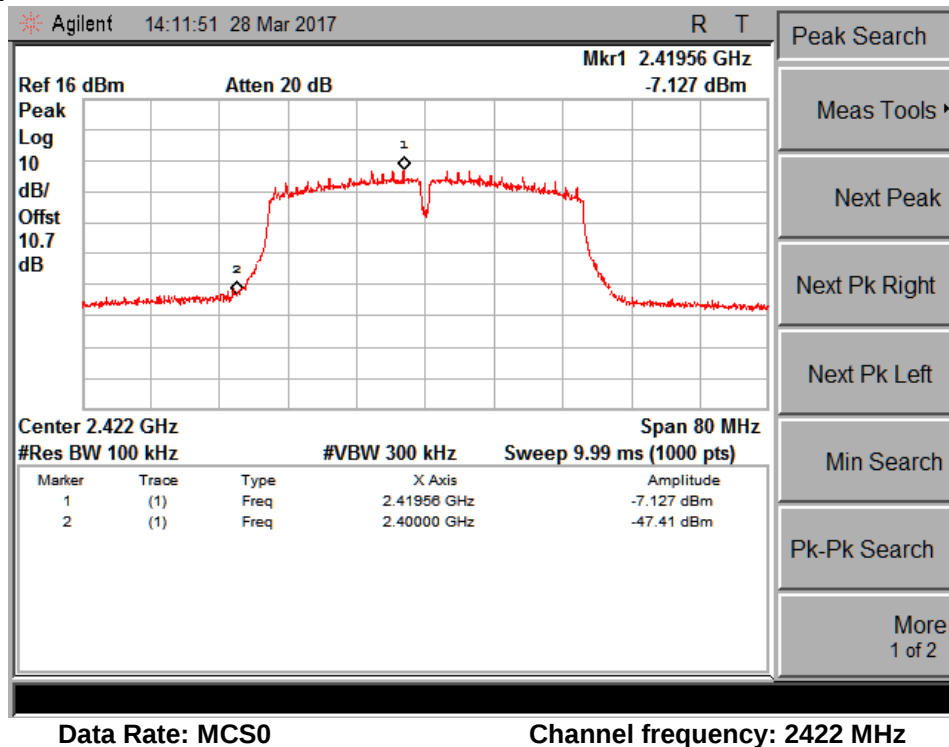


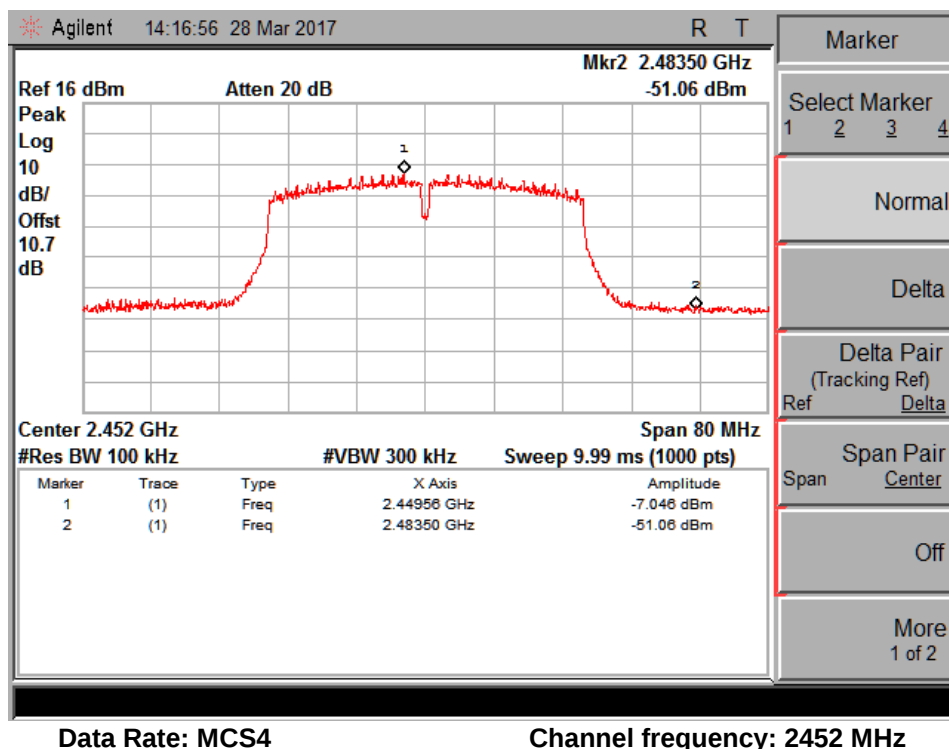
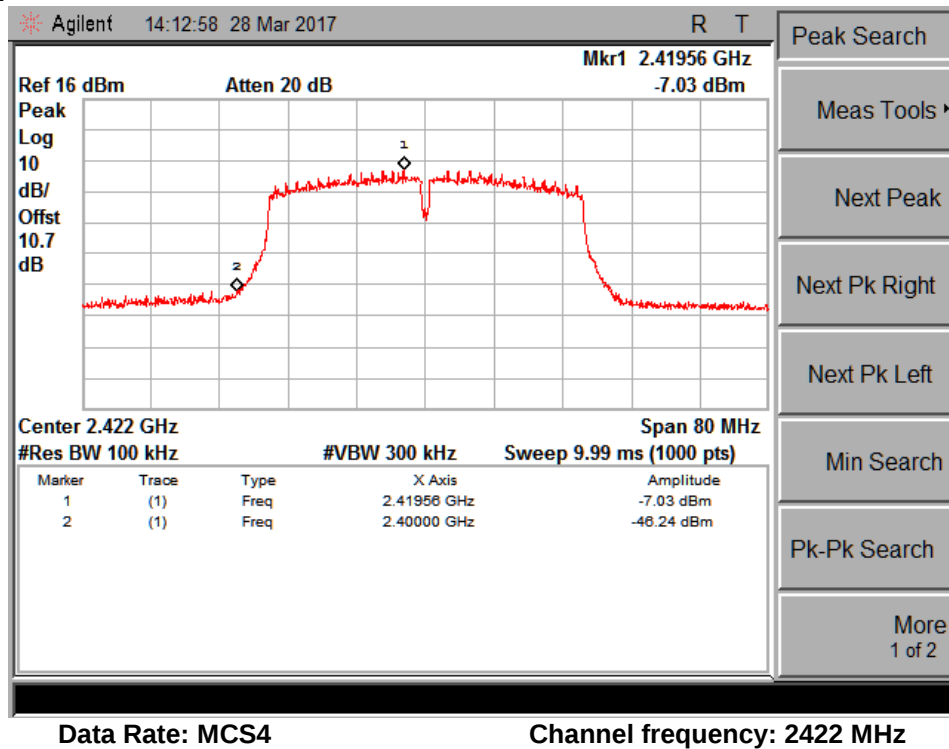


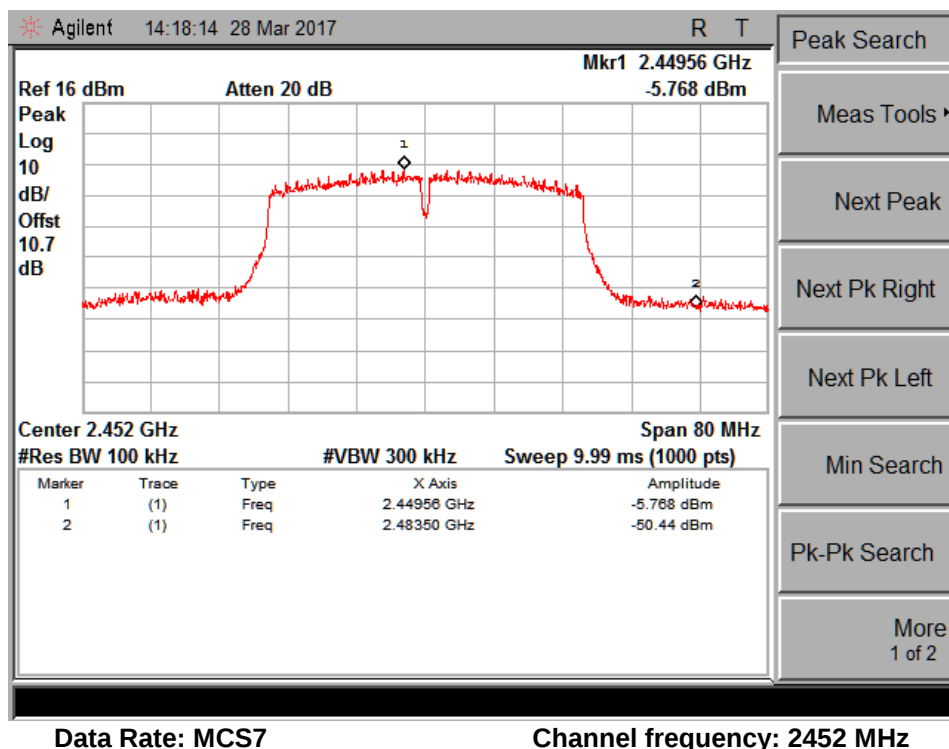
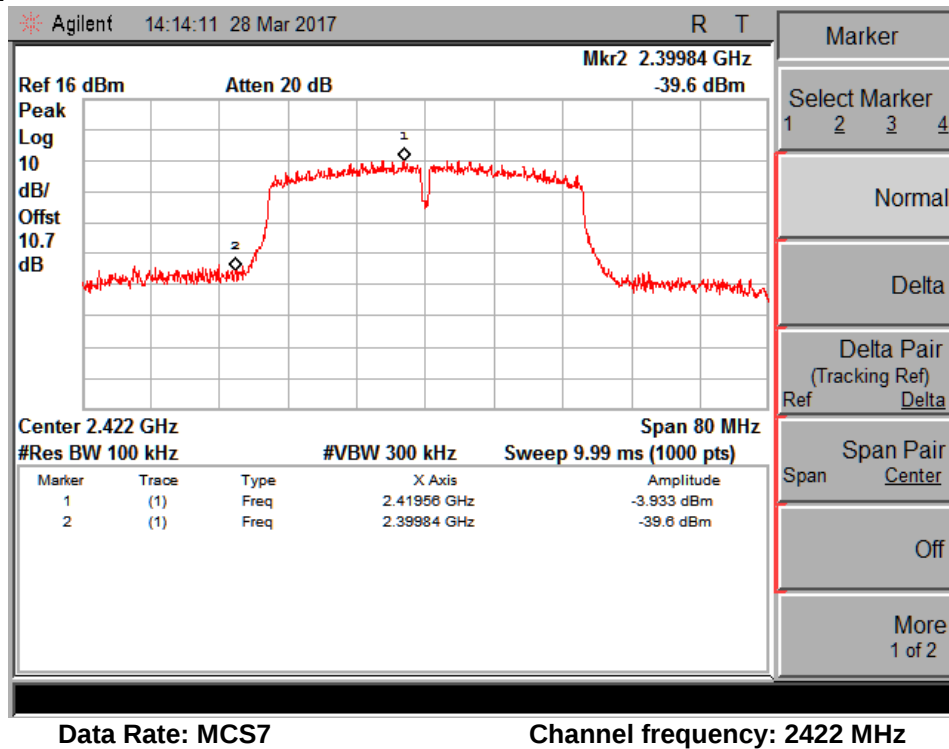
Reference Level Plot: MCS4



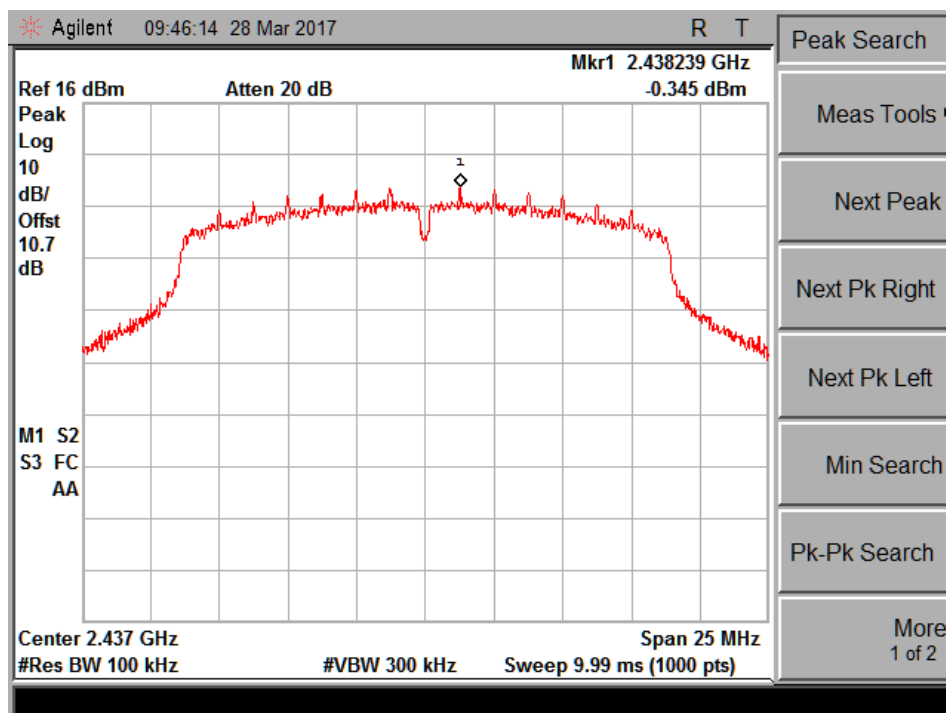
Reference Level Plot: MCS7

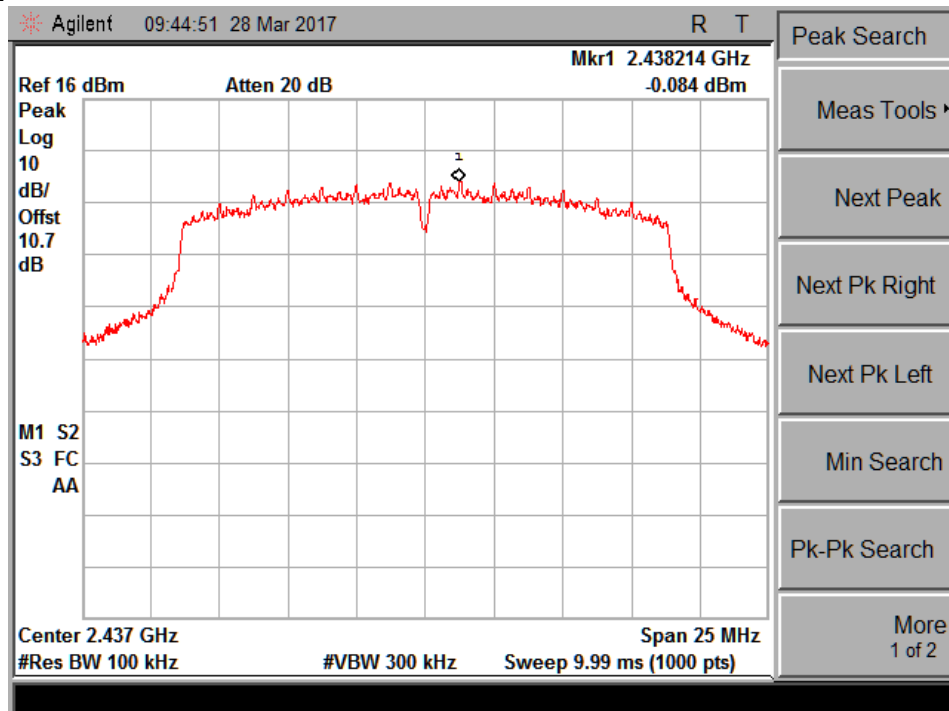




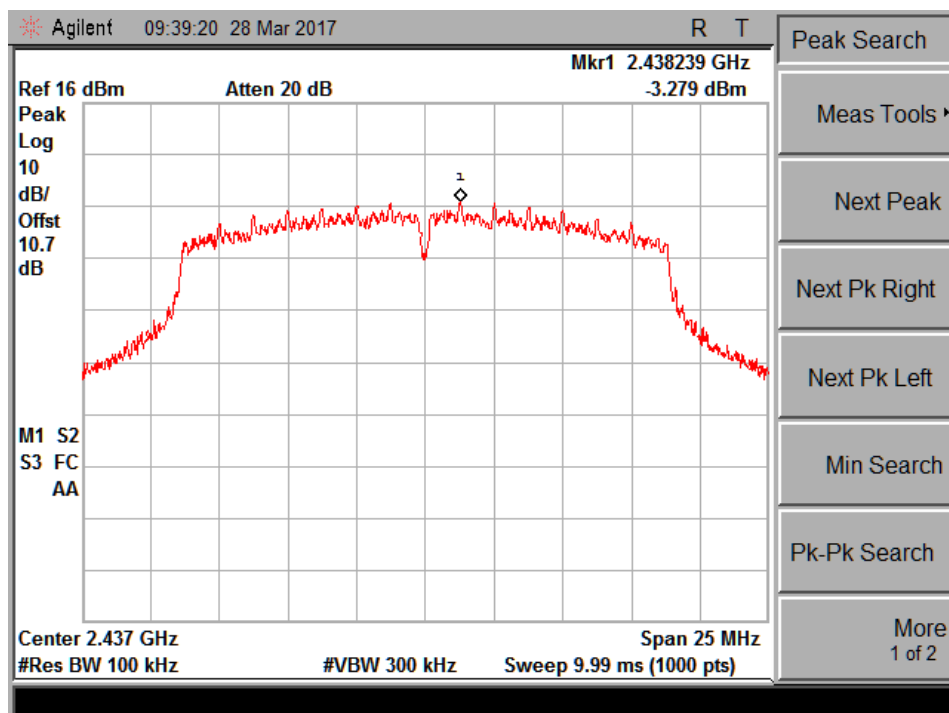


IEEE802.11nHT20						
Data Rate (Mbps)	Channel Frequency (MHz)	Value at Band Edge		Reference Value B (dBm)	Band Edge Value A~B (dBc)	Limit (dBc)
		Frequency (MHz)	Value A (dBm)			
MCS8	2412	2400	-35.46	-0.34	35.12	20
	2462	2484.25	-42.81	-0.34	42.47	20
MCS12	2412	2400	-36.79	-0.08	36.71	20
	2462	2484.25	-47.23	-0.08	47.15	20
MCS15	2412	2399.84	-40.93	-3.27	37.66	20
	2462	2483.5	-50.05	-3.27	46.78	20

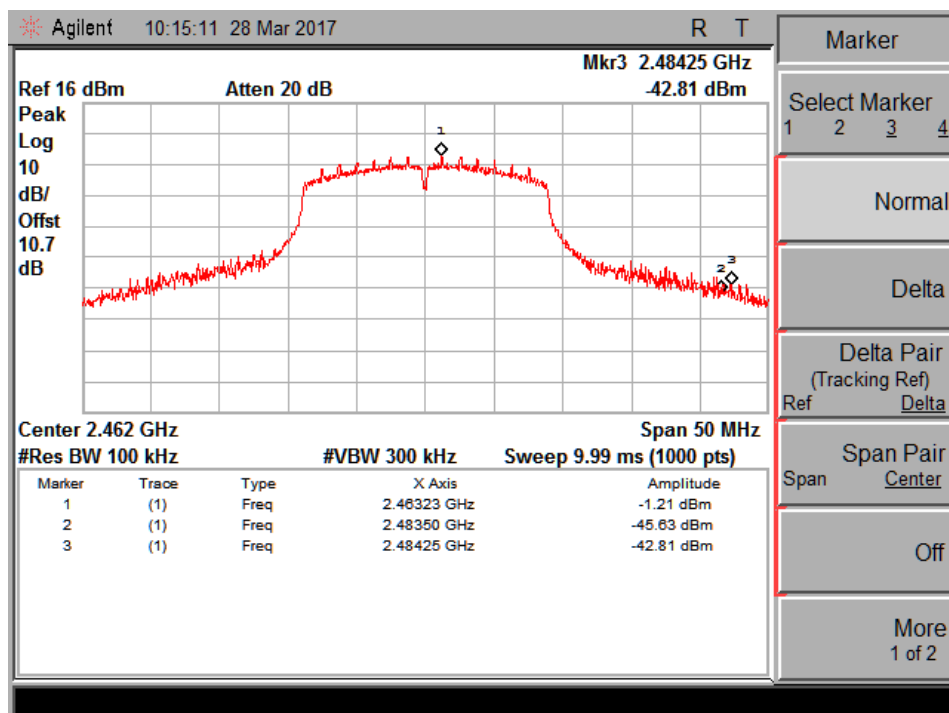
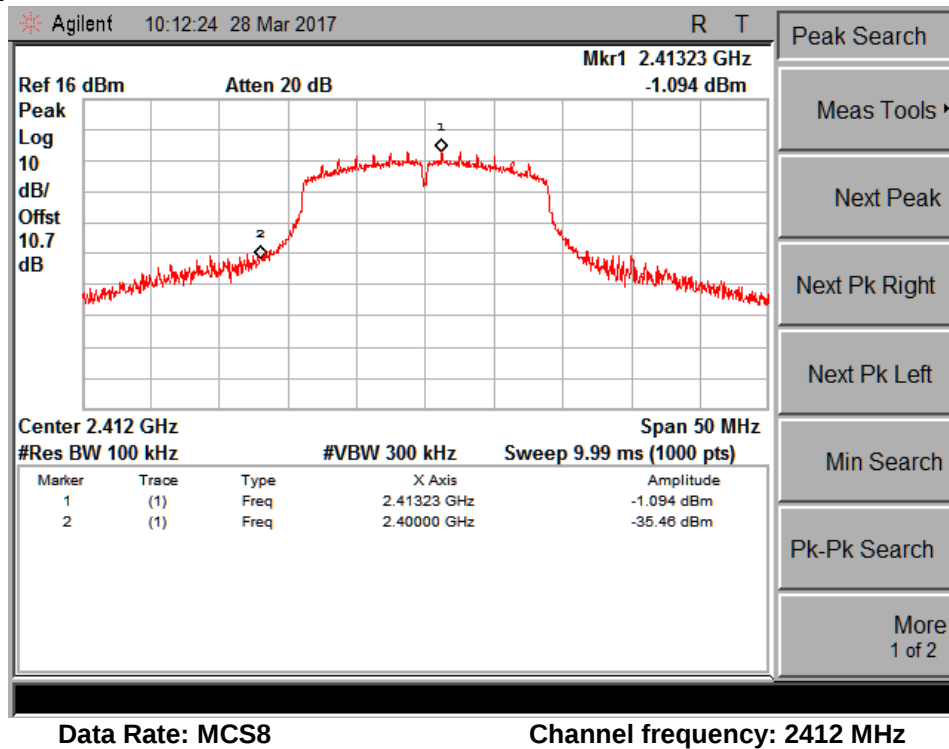


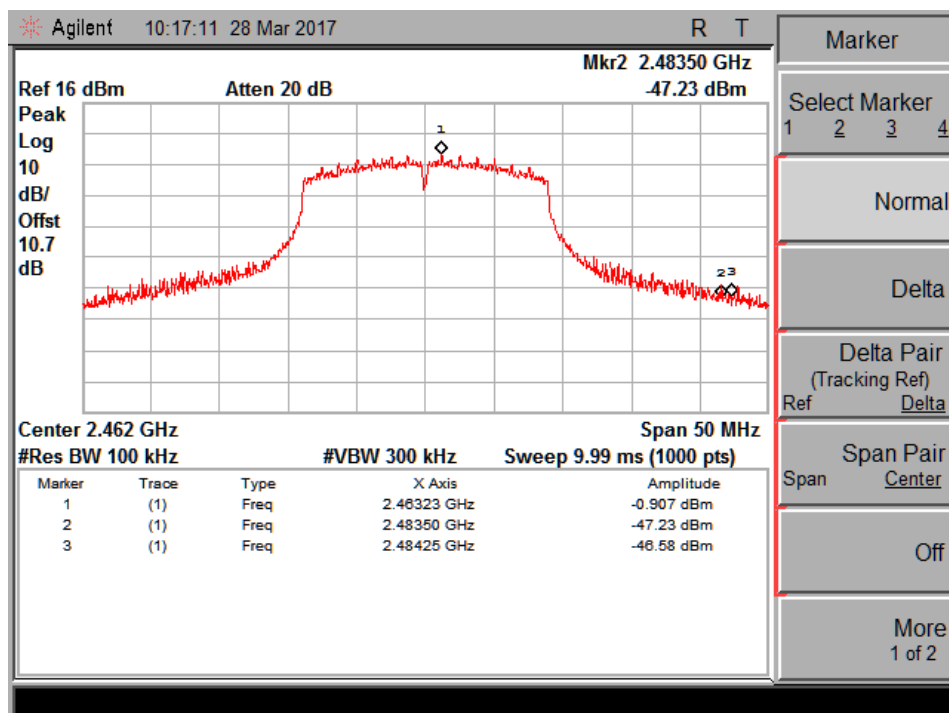
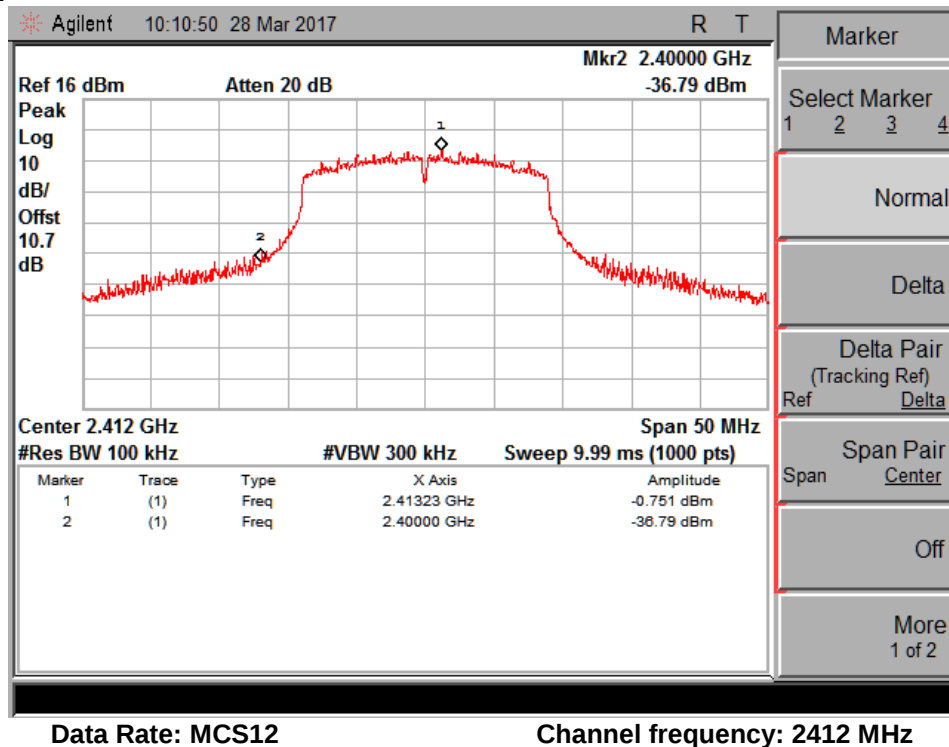


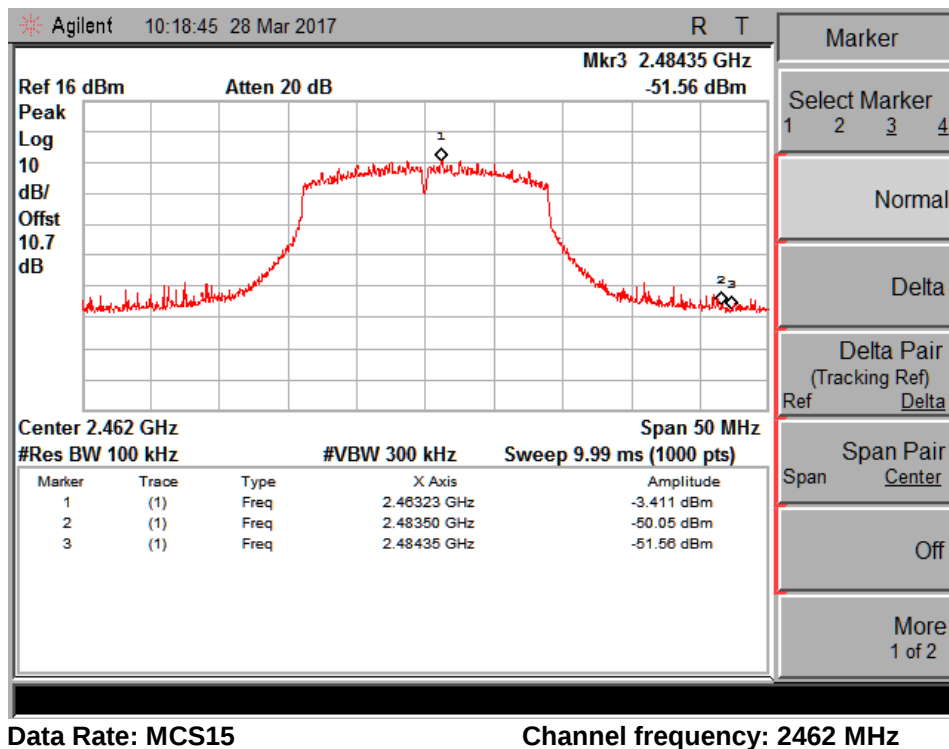
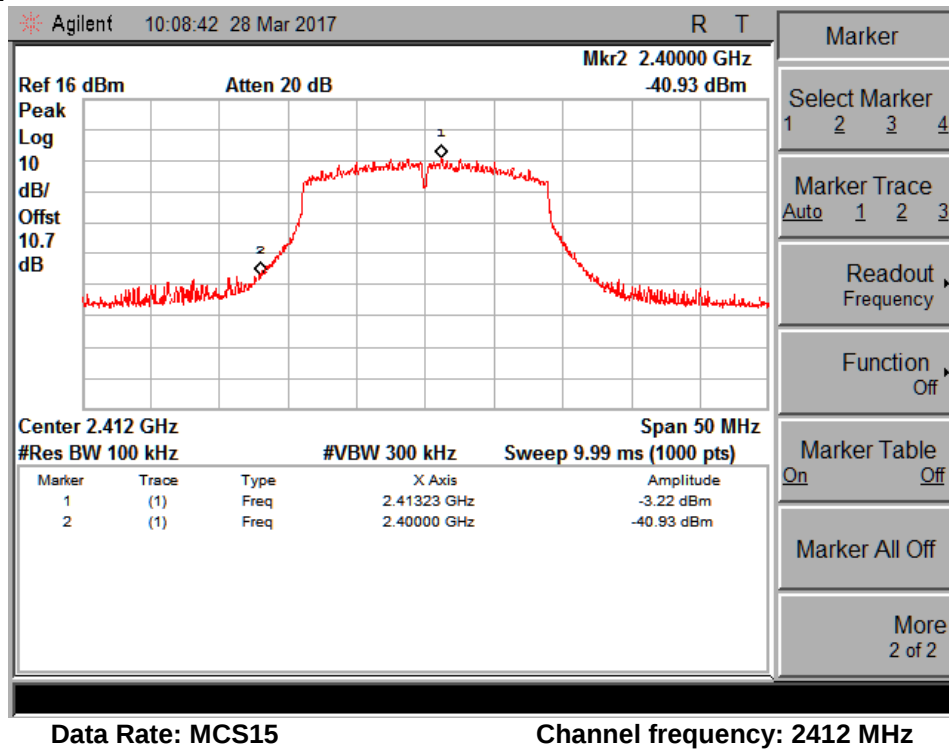
Reference Level Plot: MCS12



Reference Level Plot: MCS15

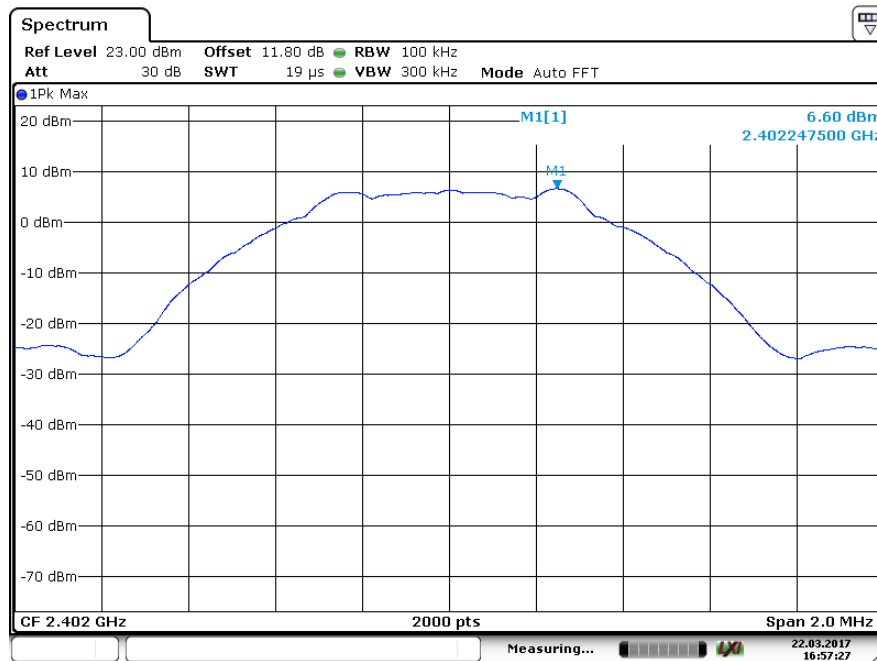






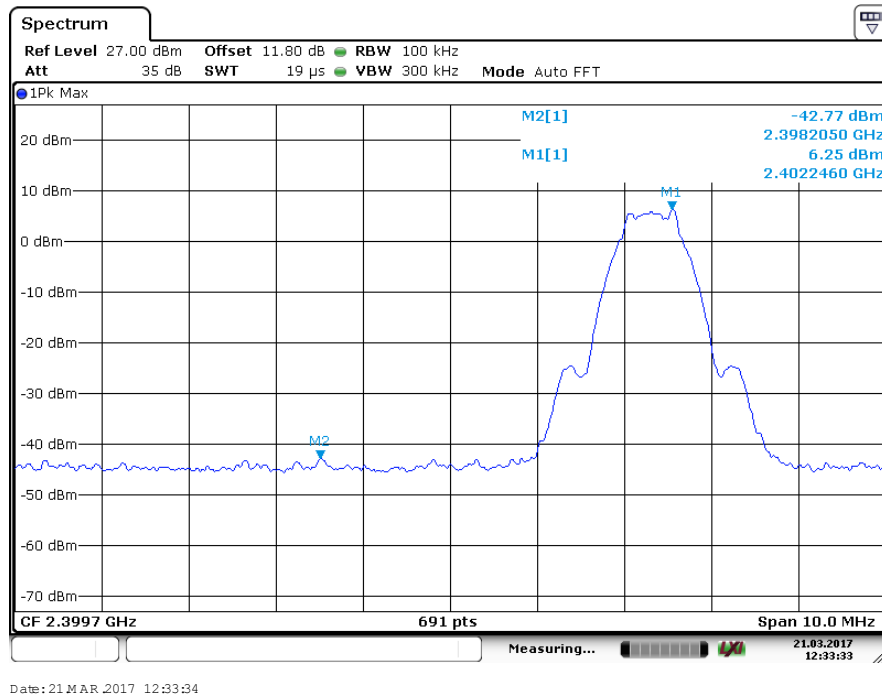
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Test Result: Bluetooth LE

Channel Frequency (MHz)	Value at Band Edge		Reference Value B (dBm)	Band Edge Value A-B (dBc)	Limit (dBc)
	Frequency (MHz)	Value A (dBm)			
2402	2398.2	-42.77	6.6	49.37	20
2480	2483.5	-43.95	6.6	50.55	20

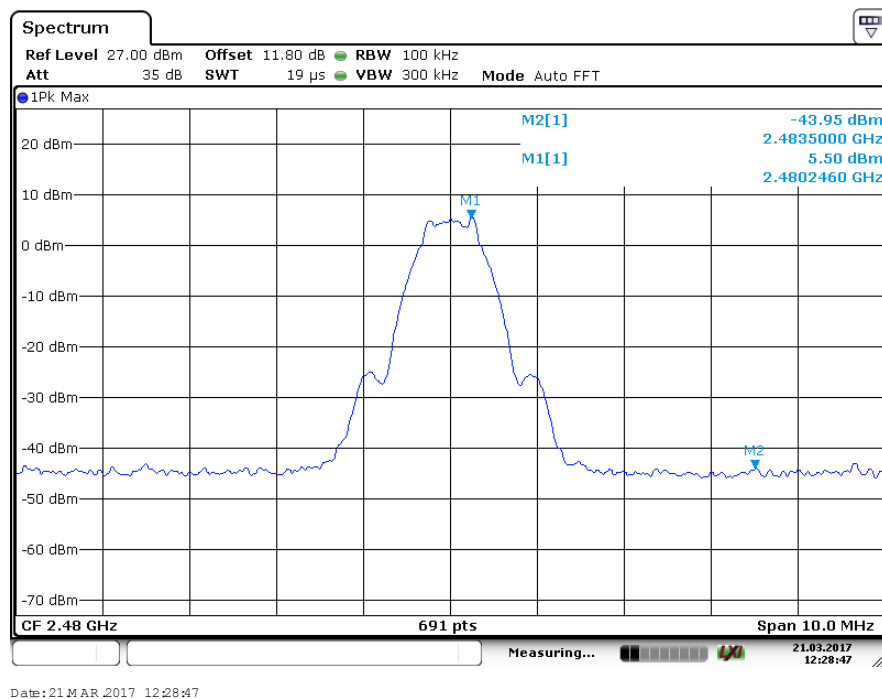


Date: 22 MAR 2017 16:57:28

Reference Level Plot



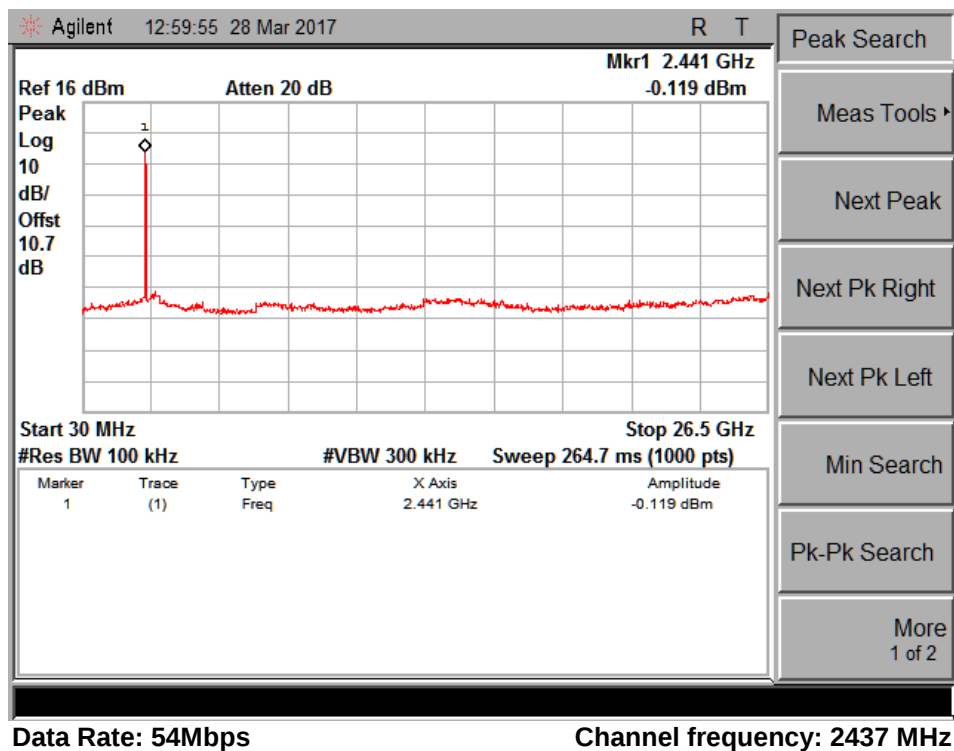
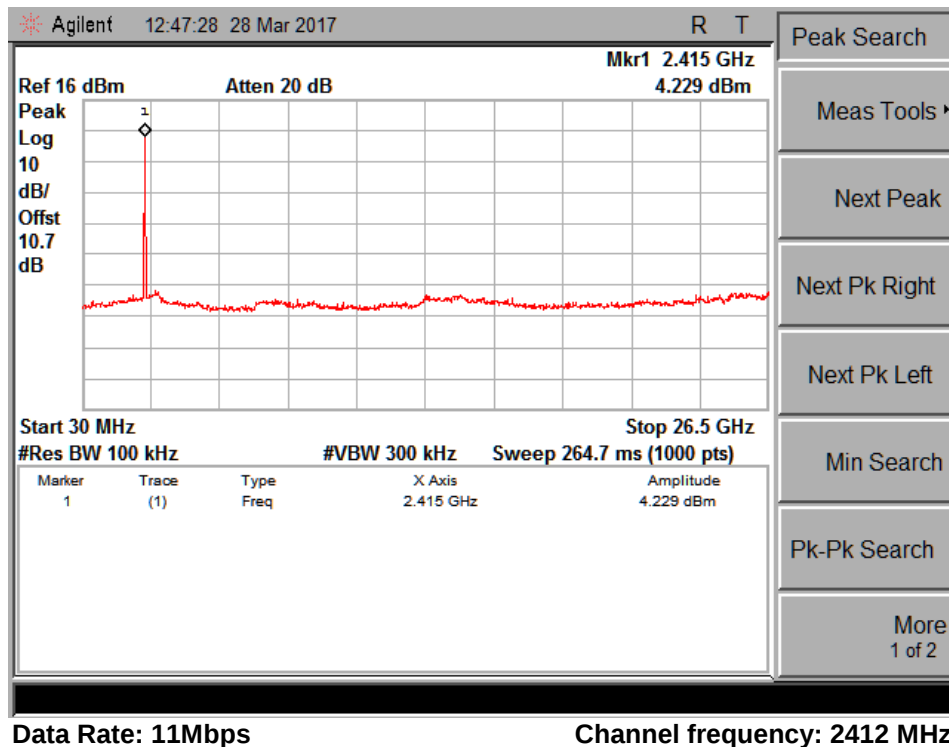
Channel Frequency 2402 MHz

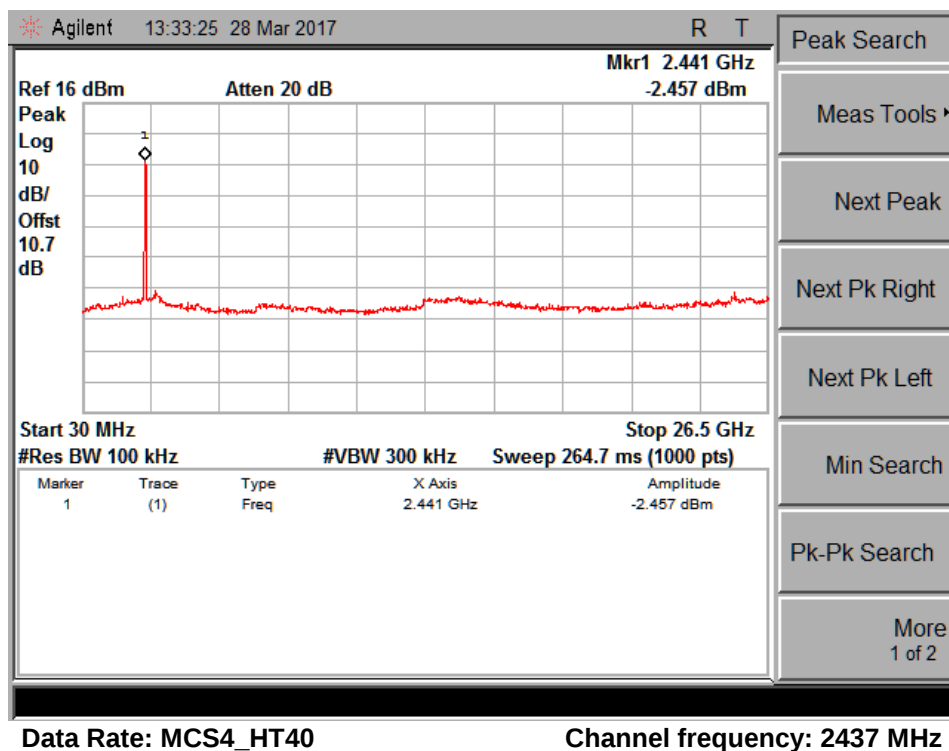
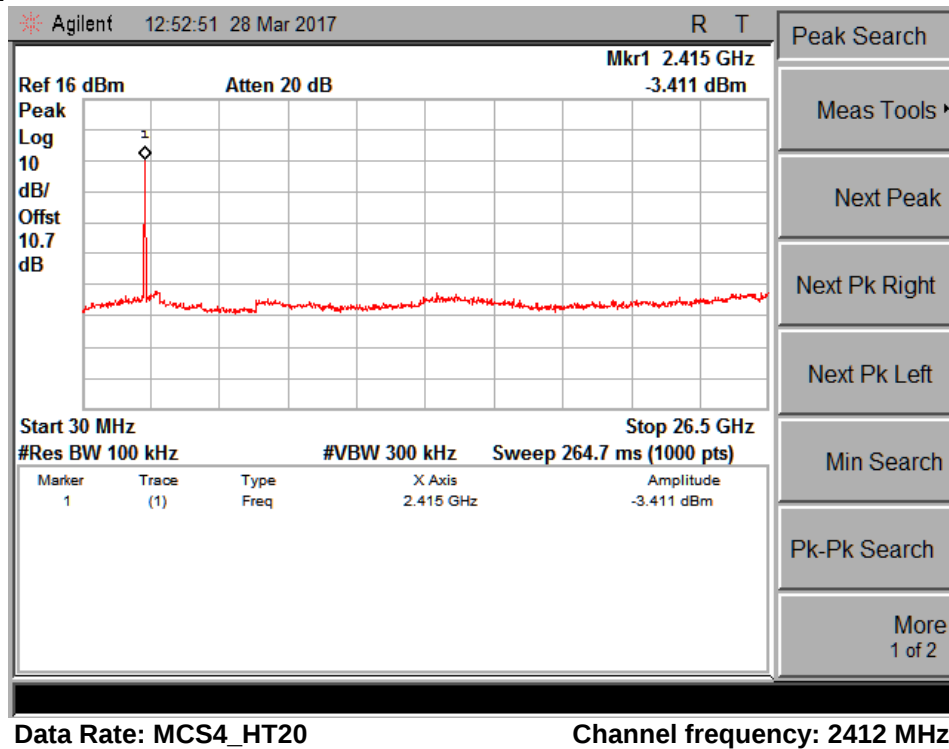


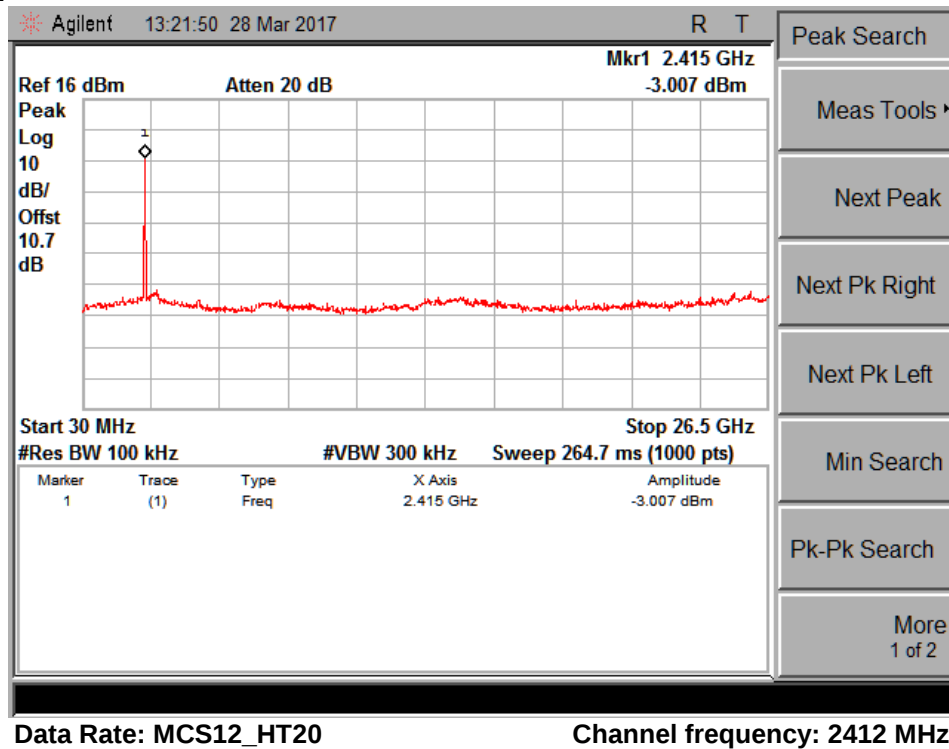
Channel Frequency 2480 MHz

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Worst case test result

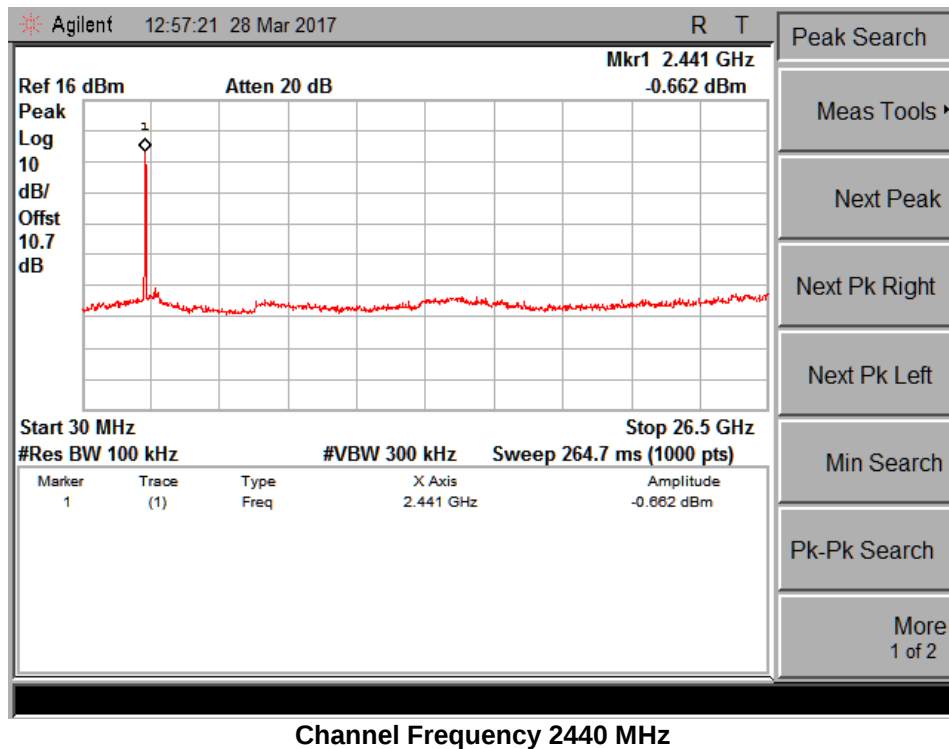
WiFi







Bluetooth LE



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Radiated Spurious Emissions and Restricted Bands of Operation
Result

Pass

Test Specification	FCC Part 15 Section 15.209 &15.205
Test Method	ANSI C63.10-2013
Measurement Location	Semi Anechoic Chamber
Measuring Distance	3m
Detection	QP for frequency below 1GHz, Average for frequency above 1GHz
Requirement	As per the limits mentioned in the bellow table

Limit for Radiated Emission of Section 15.209:

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Distance of Measurement (m)
0.009 – 0.490	2400/F(kHz)	48.50 – 13.80	300*
0.490 – 1.705	24000/F(kHz)	33.80 – 23.00	30*
1.705 -30	30	29.54	30*
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Remark: * The limit shows in the table above of frequency range 0.009 – 0.490, 0.490 – 1.705 MHz and 1.705-30MHz is at 300 meter, 30 meter and 30 meter range respectively, which corresponds to 88.50 – 53.80, 53.80 – 43.00 and 49.5dBμV/m at 3m range by extrapolation calculation and the measurement of loop antenna.

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

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Test results:

For frequency Range 9kHz – 30MHz

All emissions were below 20dB from the applicable limit, hence not reported.

Worst case test results for the frequencies in the range 30MHz- 1GHz are reported in below table.
For the Frequency range 30MHz -1GHz

Polarization	Frequency (MHz)	Spurious Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
Vertical	480.07 MHz	38.09	46	-07.91
	960.12 MHz	38.27	54	-15.73
Horizontal	119.99 MHz	30.91	43.5	-12.59
	240.05 MHz	30.87	46	-15.13
	480.07 MHz	39.58	46	-06.42
	960.06 MHz	38.28	54	-15.72

Worst case test results for the frequencies in the range 1 GHz - 26.5 GHz are reported in below table.

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Wi-Fi

Dipole Antenna

IEEE 802.11b

Data rate (Mbps)	Channel	Polarization	Frequency (MHz)	Spurious Emission value (dB μ v/m)	Limit (dB μ v/m)	Margin (dB)
1	Low	Vertical	2390(Pk)	54.31	74	-19.69
			2390(Av)	47.73	54	-6.27
			2412(Pk)	102.9	*	-
			2412(Av)	99.98	*	-
			4824(Pk)	54.13	74.00	-19.87
			4824(Av)	48.07	54.00	-5.93
		Horizontal	2390(Pk)	47.93	74	-26.07
			2390(Av)	42.14	54	-11.86
			2412(Pk)	96.04	*	-
			2412(Av)	93.19	*	-
			4824(Pk)	52.26	74.00	-21.74
			4824(Av)	44.60	54.00	-9.40
	Mid	Vertical	2437(Pk)	93.94	*	-
			2437(Av)	91.11	*	-
			4874(Pk)	55.46	74.00	-18.54
			4874(Av)	51.09	54.00	-2.91
		Horizontal	2437(Pk)	87.36	*	-
			2437(Av)	84.13	*	-
			4874(Pk)	52.16	74.00	-21.84
			4874(Av)	45.49	54.00	-8.51
	High	Vertical	2483.5(Pk)	50.98	74	-23.02
			2483.5(Av)	44.56	54	-9.44
			2462(Pk)	100.63	*	-
			2462(Av)	97.6	*	-
			4924(Pk)	57.09	74.00	-16.91
			4924(Av)	52.79	54.00	-1.21
		Horizontal	2483.5(Pk)	44.61	74	-29.39
			2483.5(Av)	36.76	54	-17.24
			2462(Pk)	92.69	*	-
			2462(Av)	89.69	*	-
			4924(Pk)	53.49	74.00	-20.51
			4924(Av)	46.40	54.00	-7.60
11	Low	Vertical	2390(Pk)	57.45	74	-16.55
			2390(Av)	46.41	54	-7.59
			2412(Pk)	107.12	*	-
			2412(Av)	98.41	*	-
			4824(Pk)	56.75	74	-17.25
			4824(Av)	44.91	54	-9.09
		Horizontal	2390(Pk)	49.26	74	-24.74

				2390(Av)	39.1	54	-14.9
				2412(Pk)	100.27	*	-
				2412(Av)	91.44	*	-
				4824(Pk)	51.49	74	-22.51
				4824(Av)	39.4	54	-14.6
		Mid	Vertical	2437(Pk)	100.71	*	-
				2437(Av)	92.1	*	-
				4874(Pk)	54.54	74	-19.46
				4874(Av)	44.17	54	-9.83
			Horizontal	2437(Pk)	91.19	*	-
				2437(Av)	82.98	*	-
				4874(Pk)	52.16	74	-21.84
				4874(Av)	40.06	54	-13.94
		High	Vertical	2483.5(Pk)	44.98	74	-29.02
				2483.5(Av)	32	54	-22
				2462(Pk)	100.37	*	-
				2462(Av)	92.16	*	-
				4924(Pk)	56.74	74	-17.26
				4924(Av)	44	54	-10
			Horizontal	2483.5(Pk)	41.59	74	-32.41
				2483.5(Av)	27.87	54	-26.13
				2462(Pk)	91.92	*	-
				2462(Av)	83.81	*	-
				4924(Pk)	52.3	74	-21.7
				4924(Av)	40.47	54	-13.53

IEEE 802.11g

Data rate (Mbps)	Channel	Polarization	Frequency (MHz)	Spurious Emission value (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6	Low	Vertical	2390(Pk)	62.86	74	-11.14
			2390(Av)	39.44	54	-14.56
			2412(Pk)	102.66	*	-
			2412(Av)	92.72	*	-
			4824(Pk)	51.55	74	-22.45
			4824(Av)	39.79	54	-14.21
		Horizontal	2390(Pk)	53.74	74	-20.26
			2390(Av)	33.91	54	-20.09
			2412(Pk)	95.8	*	-
			2412(Av)	86.02	*	-
			4824(Pk)	49.54	74	-24.46
			4824(Av)	37.94	54	-16.06
	Mid	Vertical	2437(Pk)	107.06	*	-
			2437(Av)	97.02	*	-
			4874(Pk)	59.28	74	-14.72
			4874(Av)	46.03	54	-7.97

24	High	Horizontal	2437(Pk)	99.6	*	-
			2437(Av)	89.97	*	-
			4874(Pk)	52.87	74	-21.13
			4874(Av)	40.67	54	-13.33
		Vertical	2483.5(Pk)	62.51	74	-11.49
			2483.5(Av)	38.67	54	-15.33
			2462(Pk)	102.27	*	-
			2462(Av)	92.55	*	-
			4924(Pk)	61.58	74.00	-12.42
			4924(Av)	46.43	54.00	-7.57
		Horizontal	2483.5(Pk)	55.55	74	-18.45
			2483.5(Av)	32.16	54	-21.84
			2462(Pk)	95.88	*	-
			2462(Av)	85.8	*	-
			4924(Pk)	55.88	74.00	-18.12
			4924(Av)	41.58	54.00	-12.42
	Low	Vertical	2390(Pk)	63.35	74	-10.65
			2390(Av)	37.81	54	-16.19
			2412(Pk)	102.85	*	-
			2412(Av)	91.31	*	-
			4824(Pk)	55.12	74.00	-18.88
			4824(Av)	40.48	54.00	-13.52
		Horizontal	2390(Pk)	56.78	74	-17.22
			2390(Av)	32.21	54	-21.79
			2412(Pk)	96.29	*	-
			2412(Av)	84.66	*	-
			4824(Pk)	51.77	74.00	-22.23
			4824(Av)	38.20	54.00	-15.80
	Mid	Vertical	2437(Pk)	107.15	*	-
			2437(Av)	94.79	*	-
			4874(Pk)	51.26	74	-22.74
			4874(Av)	39.8	54	-14.2
		Horizontal	2437(Pk)	99.76	*	-
			2437(Av)	88.21	*	-
			4874(Pk)	50.58	74	-23.42
			4874(Av)	37.94	54	-16.06
	High	Vertical	2483.5(Pk)	67.14	74	-6.86
			2483.5(Av)	37.09	54	-16.91
			2462(Pk)	103.35	*	-
			2462(Av)	91.45	*	-
			4924(Pk)	51.08	74	-22.92
			4924(Av)	37.97	54	-16.03
		Horizontal	2483.5(Pk)	58.83	74	-15.17
			2483.5(Av)	32.31	54	-21.69
			2462(Pk)	96.6	*	-
			2462(Av)	84.22	*	-

54				4924(Pk)	50.99	74	-23.01
				4924(Av)	37.65	54	-16.35
				2390(Pk)	62.87	74	-11.13
				2390(Av)	36.73	54	-17.27
				2412(Pk)	103.65	*	-
				2412(Av)	89.62	*	-
				4824(Pk)	51.24	74	-22.76
				4824(Av)	39.95	54	-14.05
		Low	Vertical	2390(Pk)	55.4	74	-18.6
				2390(Av)	31.79	54	-22.21
				2412(Pk)	95.77	*	-
				2412(Av)	82.49	*	-
				4824(Pk)	51.04	74	-22.96
				4824(Av)	37.92	54	-16.08
		Mid	Vertical	2437(Pk)	104.86	*	-
				2437(Av)	90.64	*	-
				4874(Pk)	59.68	74.00	-14.32
				4874(Av)	42.74	54.00	-11.26
			Horizontal	2437(Pk)	97.01	*	-
				2437(Av)	84.04	*	-
				4874(Pk)	54.52	74.00	-19.48
				4874(Av)	39.39	54.00	-14.61
		High	Vertical	2483.5(Pk)	64.77	74	-9.23
				2483.5(Av)	37.09	54	-16.91
				2462(Pk)	103.75	*	-
				2462(Av)	89.58	*	-
				4924(Pk)	51.15	74	-22.85
				4924(Av)	37.89	54	-16.11
			Horizontal	2483.5(Pk)	59.85	74	-14.15
				2483.5(Av)	31.59	54	-22.41
				2462(Pk)	95.69	*	-
				2462(Av)	83.18	*	-
				4924(Pk)	51.07	74	-22.93
				4924(Av)	37.84	54	-16.16

IEEE 802.11n_HT20

Data rate	Channel	Polarization	Frequency (MHz)	Spurious Emission value (dBuv/m)	Limit (dBuv/m)	Margin (dB)
MCS0	Low	Vertical	2390(Pk)	63.38	74	-10.62
			2390(Av)	40.71	54	-13.29
			2412(Pk)	102.67	*	-
			2412(Av)	93	*	-
			4824(Pk)	51.27	74	-22.73
			4824(Av)	39.91	54	-14.09

MCS4		Horizontal	2390(Pk)	57.45	74	-16.55
			2390(Av)	35.17	54	-18.83
			2412(Pk)	95.81	*	-
			2412(Av)	86.1	*	-
			4824(Pk)	50.2	74	-23.8
			4824(Av)	36.92	54	-17.08
		Vertical	2437(Pk)	105.39	*	-
			2437(Av)	96.05	*	-
			4874(Pk)	58.86	74	-15.14
			4874(Av)	44.96	54	-9.04
		Horizontal	2437(Pk)	98.68	*	-
			2437(Av)	89.68	*	-
			4874(Pk)	52.42	74	-21.58
			4874(Av)	39.75	54	-14.25
	High	Vertical	2483.5(Pk)	64.88	74	-9.12
			2483.5(Av)	40.29	54	-13.71
			2462(Pk)	102.69	*	-
			2462(Av)	92.69	*	-
			4924(Pk)	55.09	74	-18.91
			4924(Av)	41.5	54	-12.5
		Horizontal	2483.5(Pk)	56.61	74	-17.39
			2483.5(Av)	33.69	54	-20.31
			2462(Pk)	96.06	*	-
			2462(Av)	85.68	*	-
			4924(Pk)	51.46	74	-22.54
			4924(Av)	39.27	54	-14.73
	Low	Vertical	2390(Pk)	61.25	74	-12.75
			2390(Av)	39.86	54	-14.14
			2412(Pk)	102.98	*	-
			2412(Av)	91.69	*	-
			4824(Pk)	51.15	74	-22.85
			4824(Av)	39.87	54	-14.13
		Horizontal	2390(Pk)	54.01	74	-19.99
			2390(Av)	34.06	54	-19.94
			2412(Pk)	96.44	*	-
			2412(Av)	84.25	*	-
			4824(Pk)	49.72	74	-24.28
			4824(Av)	37.91	54	-16.09
	Mid	Vertical	2437(Pk)	107.18	*	-
			2437(Av)	93.79	*	-
			4874(Pk)	55.73	74	-18.27
			4874(Av)	43.6	54	-10.4
		Horizontal	2437(Pk)	98.63	*	-
			2437(Av)	87.19	*	-
			4874(Pk)	52.41	74	-21.59
			4874(Av)	39.42	54	-14.58

		High	Vertical	2483.5(Pk)	61.27	74	-12.73
				2483.5(Av)	39.12	54	-14.88
				2462(Pk)	102.72	*	-
				2462(Av)	91.6	*	-
				4924(Pk)	54.09	74	-19.91
				4924(Av)	41.35	54	-12.65
			Horizontal	2483.5(Pk)	54.1	74	-19.9
				2483.5(Av)	33.38	54	-20.62
				2462(Pk)	95.52	*	-
				2462(Av)	84.1	*	-
				4924(Pk)	51.27	74	-22.73
				4924(Av)	39.15	54	-14.85
	MCS7	Low	Vertical	2390(Pk)	64	74	-10
				2390(Av)	39.56	54	-14.44
				2412(Pk)	103.7	*	-
				2412(Av)	90.6	*	-
				4824(Pk)	50.73	74	-23.27
				4824(Av)	39.92	54	-14.08
			Horizontal	2390(Pk)	57.18	74	-16.82
				2390(Av)	33.94	54	-20.06
				2412(Pk)	97.09	*	-
				2412(Av)	84.35	*	-
				4824(Pk)	49.59	74	-24.41
				4824(Av)	38.01	54	-15.99
		Mid	Vertical	2437(Pk)	103.7	*	-
				2437(Av)	90.46	*	-
				4874(Pk)	53.95	74	-20.05
				4874(Av)	41.41	54	-12.59
			Horizontal	2437(Pk)	96.54	*	-
				2437(Av)	83.84	*	-
				4874(Pk)	50.7	74	-23.3
				4874(Av)	38.91	54	-15.09
		High	Vertical	2483.5(Pk)	64.21	74	-9.79
				2483.5(Av)	38.83	54	-15.17
				2462(Pk)	104.04	*	-
				2462(Av)	90.45	*	-
				4924(Pk)	53.69	74	-20.31
				4924(Av)	41.24	54	-12.76
			Horizontal	2483.5(Pk)	57.97	74	-16.03
				2483.5(Av)	32.64	54	-21.36
				2462(Pk)	95.96	*	-
				2462(Av)	83.42	*	-
				4924(Pk)	51.47	74	-22.53
				4924(Av)	39.22	54	-14.78

Data rate	Channel	Polarization	Frequency (MHz)	Spurious Emission value (dBuV/m)	Limit (dBuV/m)	Margin (dB)
MCS0	Low	Vertical	2390(Pk)	52.19	74	26.29
			2390(Av)	33.49	54	36.79
			2422(Pk)	94.35	*	-
			2422(Av)	84.06	*	-
			4844(Pk)	52.29	74.00	-21.71
			4844(Av)	40.96	54.00	-13.04
		Horizontal	2390(Pk)	45.68	74	-28.32
			2390(Av)	28.54	54	-25.46
			2422(Pk)	87.11	*	-
			2422(Av)	76.77	*	-
			4844(Pk)	51.74	74.00	-22.26
			4844(Av)	38.45	54.00	-15.55
	Mid	Vertical	2437(Pk)	100.29	*	-
			2437(Av)	90.79	*	-
			4874(Pk)	54.14	74	-19.86
			4874(Av)	42.08	54	-11.92
		Horizontal	2437(Pk)	91.32	*	-
			2437(Av)	81.6	*	-
			4874(Pk)	51.06	74	-22.94
			4874(Av)	38.91	54	-15.09
	High	Vertical	2483.5(Pk)	48.23	74	-25.77
			2483.5(Av)	32.71	54	-21.29
			2452(Pk)	93.44	*	-
			2452(Av)	83.18	*	-
			4904(Pk)	53.98	74	-20.02
			4904(Av)	42.15	54	-11.85
		Horizontal	2483.5(Pk)	40.94	74	-33.06
			2483.5(Av)	28.69	54	-25.31
			2452(Pk)	85.36	*	-
			2452(Av)	75.54	*	-
			4904(Pk)	51.93	74	-22.07
			4904(Av)	39.44	54	-14.56
MCS4	Low	Vertical	2390(Pk)	52.59	74	-21.41
			2390(Av)	34.25	54	-19.75
			2422(Pk)	95.56	*	-
			2422(Av)	82.38	*	-
			4844(Pk)	50.76	74	-23.24
			4844(Av)	39.96	54	-14.04
		Horizontal	2390(Pk)	46.68	74	-27.32
			2390(Av)	29.51	54	-24.49
			2422(Pk)	86.08	*	-

MCS7	Mid		2422(Av)	72.23	*	-
			4844(Pk)	50.51	74	-23.49
			4844(Av)	38.27	54	-15.73
		Vertical	2437(Pk)	103.43	*	-
			2437(Av)	89.01	*	-
			4874(Pk)	54.86	74	-19.14
			4874(Av)	41.85	54	-12.15
		Horizontal	2437(Pk)	95.25	*	-
			2437(Av)	82.3	*	-
			4874(Pk)	51.03	74	-22.97
			4874(Av)	39.05	54	-14.95
	High	Vertical	2483.5(Pk)	48.67	74	-25.33
			2483.5(Av)	32.7	54	-21.3
			2452(Pk)	94.47	*	-
			2452(Av)	81.09	*	-
			4904(Pk)	54.96	74	-19.04
			4904(Av)	41.87	54	-12.13
		Horizontal	2483.5(Pk)	42.32	74	-31.68
			2483.5(Av)	28.47	54	-25.53
			2452(Pk)	86.87	*	-
			2452(Av)	73.56	*	-
			4904(Pk)	51.37	74	-22.63
			4904(Av)	39.35	54	-14.65
	Low	Vertical	2390(Pk)	52.17	74	-21.83
			2390(Av)	35.23	54	-18.77
			2422(Pk)	98.69	*	-
			2422(Av)	83.4	*	-
			4844(Pk)	50.52	74	-23.48
			4844(Av)	40.06	54	-13.94
		Horizontal	2390(Pk)	45.98	74	-28.02
			2390(Av)	28.35	54	-25.65
			2422(Pk)	88.31	*	-
			2422(Av)	73.05	*	-
			4844(Pk)	50.63	74	-23.37
			4844(Av)	38.38	54	-15.62
		Vertical	2437(Pk)	98.13	*	-
			2437(Av)	83.04	*	-
			4874(Pk)	51.53	74	-22.47
			4874(Av)	40.48	54	-13.52
	Mid	Horizontal	2437(Pk)	87.56	*	-
			2437(Av)	72.34	*	-
			4874(Pk)	51.08	74	-22.92
			4874(Av)	38.62	54	-15.38
	High	Vertical	2483.5(Pk)	51.13	74	-22.87
			2483.5(Av)	30.25	54	-23.75
			2452(Pk)	88.32	*	-

			2452(Av)	72.91	*	-
			4904(Pk)	51.96	74	-22.04
			4904(Av)	40.45	54	-13.55
		Horizontal	2483.5(Pk)	59.16	74	-14.84
			2483.5(Av)	35.87	54	-18.13
			2452(Pk)	96.4	*	-
			2452(Av)	81.07	*	-
			4904(Pk)	51.17	74	-22.83
			4904(Av)	39	54	-15

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Data rate	Channel	Polarization	Frequency (MHz)	Spurious Emission value (dBuV/m)	Limit (dBuV/m)	Margin (dB)
MCS8	Low	Vertical	2390(Pk)	64.08	74	-9.92
			2390(Av)	42.7	54	-11.3
			2412(Pk)	104.35	*	-
			2412(Av)	93.31	*	-
			4824(Pk)	53.92	74.00	-20.08
			4824(Av)	39.43	54.00	-14.57
		Horizontal	2390(Pk)	55.2	74	-18.8
			2390(Av)	34.14	54	-19.86
			2412(Pk)	95.84	*	-
			2412(Av)	85.04	*	-
			4824(Pk)	51.07	74.00	-22.93
			4824(Av)	37.73	54.00	-16.27
	Mid	Vertical	2437(Pk)	105.42	*	-
			2437(Av)	94.63	*	-
			4874(Pk)	56.1	74	-17.9
			4874(Av)	43.55	54	-10.45
		Horizontal	2437(Pk)	99.21	*	-
			2437(Av)	88.58	*	-
			4874(Pk)	51.9	74	-22.1
			4874(Av)	39.7	54	-14.3
	High	Vertical	2483.5(Pk)	68.92	74	-5.08
			2483.5(Av)	41.97	54	-12.03
			2462(Pk)	104.01	*	-
			2462(Av)	92.22	*	-
			4924(Pk)	53.78	74	-20.22
			4924(Av)	40.97	54	-13.03
		Horizontal	2483.5(Pk)	60.72	74	-13.28
			2483.5(Av)	35.14	54	-18.86
			2462(Pk)	98.17	*	-
			2462(Av)	86.58	*	-
			4924(Pk)	51.15	74	-22.85
			4924(Av)	39.17	54	-14.83

MCS12	Low	Vertical	2390(Pk)	62.56	74	-11.44
			2390(Av)	40.44	54	-13.56
			2412(Pk)	104.72	*	-
			2412(Av)	91.08	*	-
			4824(Pk)	52.08	74	-21.92
			4824(Av)	40.4	54	-13.6
		Horizontal	2390(Pk)	52.41	74	-21.59
			2390(Av)	34.44	54	-19.56
			2412(Pk)	97.56	*	-
			2412(Av)	83.43	*	-
			4824(Pk)	49.69	74	-24.31
			4824(Av)	38.37	54	-15.63
	Mid	Vertical	2437(Pk)	106.5	*	-
			2437(Av)	92.76	*	-
			4874(Pk)	56.73	74	-17.27
			4874(Av)	43.03	54	-10.97
		Horizontal	2437(Pk)	100.01	*	-
			2437(Av)	86.03	*	-
			4874(Pk)	53.18	74	-20.82
			4874(Av)	39.63	54	-14.37
	High	Vertical	2483.5(Pk)	64.09	74	-9.91
			2483.5(Av)	40.59	54	-13.41
			2462(Pk)	104.82	*	-
			2462(Av)	90.53	*	-
			4924(Pk)	53.23	74	-20.77
			4924(Av)	41.1	54	-12.9
		Horizontal	2483.5(Pk)	56.79	74	-17.21
			2483.5(Av)	34.18	54	-19.82
			2462(Pk)	99.04	*	-
			2462(Av)	84.37	*	-
			4924(Pk)	51.11	74	-22.89
			4924(Av)	39.24	54	-14.76
MCS15	Low	Vertical	2390(Pk)	60.03	74	-13.97
			2390(Av)	36.12	54	-17.88
			2412(Pk)	102.27	*	-
			2412(Av)	87.09	*	-
			4824(Pk)	50.66	74	-23.34
			4824(Av)	39.87	54	-14.13
		Horizontal	2390(Pk)	50.43	74	-23.57
			2390(Av)	29.94	54	-24.06
			2412(Pk)	95.08	*	-
			2412(Av)	79.12	*	-
			4824(Pk)	50.36	74	-23.64
			4824(Av)	38.23	54	-15.77
	Mid	Vertical	2437(Pk)	102.19	*	-
			2437(Av)	86.74	*	-

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			Horizontal	4874(Pk)	50.77	74	-23.23
				4874(Av)	40.55	54	-13.45
				2437(Pk)	96.04	*	-
				2437(Av)	80.55	*	-
				4874(Pk)	50.94	74	-23.06
				4874(Av)	39.01	54	-14.99
		High	Vertical	2483.5(Pk)	58.28	74	-15.72
				2483.5(Av)	34.48	54	-19.52
				2462(Pk)	101.92	*	-
				2462(Av)	86.89	*	-
				4924(Pk)	51.76	74	-22.24
				4924(Av)	40.23	54	-13.77
			Horizontal	2483.5(Pk)	49.38	74	-24.62
				2483.5(Av)	30.92	54	-23.08
				2462(Pk)	96.33	*	-
				2462(Av)	80.93	*	-
				4924(Pk)	50.71	74	-23.29
				4924(Av)	39.18	54	-14.82

PCB Antenna

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Data rate	Channel	Polarization	Frequency (MHz)	Spurious Emission value (dBuv/m)	Limit (dBuv/m)	Margin (dB)
1	Low	Vertical	2390(Pk)	48.64	74	-25.36
			2390(Av)	41.12	54	-12.88
			2412(Pk)	102.96	*	-
			2412(Av)	100.166	*	-
			4824(Pk)	56.39	74	-17.61
			4824(Av)	52.54	54	-1.46
		Horizontal	2390(Pk)	40.72	74	-33.28
			2390(Av)	30.88	54	-23.12
			2412(Pk)	90.62	*	-
			2412(Av)	87.87	*	-
			4824(Pk)	53.27	74	-20.73
			4824(Av)	47.19	54	-6.81
	Mid	Vertical	2437(Pk)	94	*	-
			2437(Av)	91.296	*	-
			4874(Pk)	56.32	74	-17.68
			4874(Av)	51.77	54	-2.23
		Horizontal	2437(Pk)	81.94	*	-
			2437(Av)	78.81	*	-
			4874(Pk)	53.86	74	-20.14
			4874(Av)	47.92	54	-6.08

		High	Vertical	2483.5(Pk)	45.31	74	-28.69
				2483.5(Av)	37.95	54	-16.05
				2462(Pk)	100.69	*	-
				2462(Av)	97.786	*	-
				4924(Pk)	56.03	74	-17.97
				4924(Av)	51.24	54	-2.76
		Horizontal		2483.5(Pk)	37.4	74	-36.6
				2483.5(Av)	25.5	54	-28.5
				2462(Pk)	87.27	*	-
				2462(Av)	84.37	*	-
				4924(Pk)	55.12	74	-18.88
				4924(Av)	48.8	54	-5.2
	11	Low	Vertical	2390(Pk)	54.02	74	-19.98
				2390(Av)	42.61	54	-11.39
				2412(Pk)	107.07	*	-
				2412(Av)	98.44	*	-
				4824(Pk)	55.99	74	-18.01
				4824(Av)	43.11	54	-10.89
			Horizontal	2390(Pk)	43.23	74	-30.77
				2390(Av)	31.84	54	-22.16
				2412(Pk)	94.5	*	-
				2412(Av)	85.67	*	-
				4824(Pk)	52.62	74	-21.38
				4824(Av)	40.02	54	-13.98
		Mid	Vertical	2437(Pk)	100.66	*	-
				2437(Av)	92.13	*	-
				4874(Pk)	53.78	74	-20.22
				4874(Av)	42.37	54	-11.63
			Horizontal	2437(Pk)	85.42	*	-
				2437(Av)	77.21	*	-
				4874(Pk)	53.29	74	-20.71
				4874(Av)	40.68	54	-13.32
		High	Vertical	2483.5(Pk)	46.03	74	-27.97
				2483.5(Av)	33.94	54	-20.06
				2462(Pk)	100.32	*	-
				2462(Av)	92.19	*	-
				4924(Pk)	55.98	74	-18.02
				4924(Av)	42.2	54	-11.8
			Horizontal	2483.5(Pk)	40.16	74	-33.84
				2483.5(Av)	28.05	54	-25.95
				2462(Pk)	86.15	*	-
				2462(Av)	78.04	*	-
				4924(Pk)	53.43	74	-20.57
				4924(Av)	41.09	54	-12.91

Data rate	Channel	Polarization	Frequency (MHz)	Spurious Emission value (dBuv/m)	Limit (dBuv/m)	Margin (dB)
6	Low	Vertical	2390(Pk)	60.73	74	-13.27
			2390(Av)	38.59	54	-15.41
			2412(Pk)	102.73	*	-
			2412(Av)	93.11	*	-
			4824(Pk)	51.23	74	-22.77
			4824(Av)	37.58	54	-16.42
		Horizontal	2390(Pk)	47.71	74	-26.29
			2390(Av)	28.68	54	-25.32
			2412(Pk)	90.53	*	-
			2412(Av)	80.84	*	-
			4824(Pk)	50.45	74	-23.55
			4824(Av)	36.66	54	-17.34
	Mid	Vertical	2437(Pk)	107.13	*	-
			2437(Av)	97.41	*	-
			4874(Pk)	58.96	74	-15.04
			4874(Av)	43.82	54	-10.18
		Horizontal	2437(Pk)	94.33	*	-
			2437(Av)	84.79	*	-
			4874(Pk)	53.78	74	-20.22
			4874(Av)	39.39	54	-14.61
	High	Vertical	2483.5(Pk)	60.38	74	-13.62
			2483.5(Av)	37.82	54	-16.18
			2462(Pk)	102.34	*	-
			2462(Av)	92.94	*	-
			4924(Pk)	53.34	74	-20.66
			4924(Av)	39.24	54	-14.76
		Horizontal	2483.5(Pk)	49.52	74	-24.48
			2483.5(Av)	26.93	54	-27.07
			2462(Pk)	90.61	*	-
			2462(Av)	80.62	*	-
			4924(Pk)	52.51	74	-21.49
			4924(Av)	37.91	54	-16.09
24	Low	Vertical	2390(Pk)	61.22	74	-12.78
			2390(Av)	36.96	54	-17.04
			2412(Pk)	102.92	*	-
			2412(Av)	91.7	*	-
			4824(Pk)	50.94	74	-23.06
			4824(Av)	37.59	54	-16.41
		Horizontal	2390(Pk)	50.75	74	-23.25
			2390(Av)	26.98	54	-27.02
			2412(Pk)	91.02	*	-
			2412(Av)	79.48	*	-

54	Mid		4824(Pk)	51.28	74	-22.72
			4824(Av)	36.66	54	-17.34
		Vertical	2437(Pk)	107.22	*	-
			2437(Av)	95.18	*	-
			4874(Pk)	50.94	74	-23.06
			4874(Av)	37.59	54	-16.41
			2437(Pk)	94.49	*	-
		Horizontal	2437(Av)	83.03	*	-
			4874(Pk)	51.49	74	-22.51
			4874(Av)	36.66	54	-17.34
			2483.5(Pk)	65.01	74	-8.99
	High	Vertical	2483.5(Av)	36.24	54	-17.76
			2462(Pk)	103.42	*	-
			2462(Av)	91.84	*	-
			4924(Pk)	50.76	74	-23.24
			4924(Av)	35.76	54	-18.24
		Horizontal	2483.5(Pk)	52.8	74	-21.2
			2483.5(Av)	27.08	54	-26.92
			2462(Pk)	91.33	*	-
			2462(Av)	79.04	*	-
			4924(Pk)	51.9	74	-22.1
			4924(Av)	36.37	54	-17.63
	Low	Vertical	2390(Pk)	60.74	74	-13.26
			2390(Av)	35.88	54	-18.12
			2412(Pk)	103.72	*	-
			2412(Av)	90.01	*	-
			4824(Pk)	50.92	74	-23.08
			4824(Av)	37.74	54	-16.26
		Horizontal	2390(Pk)	49.37	74	-24.63
			2390(Av)	26.56	54	-27.44
			2412(Pk)	90.5	*	-
			2412(Av)	77.31	*	-
			4824(Pk)	51.95	74	-22.05
			4824(Av)	36.64	54	-17.36
	Mid	Vertical	2437(Pk)	104.93	*	-
			2437(Av)	91.03	*	-
			4874(Pk)	50.76	74	-23.24
			4874(Av)	35.6	54	-18.4
		Horizontal	2437(Pk)	91.74	*	-
			2437(Av)	78.86	*	-
			4874(Pk)	51.76	74	-22.24
			4874(Av)	36.59	54	-17.41
	High	Vertical	2483.5(Pk)	62.64	74	-11.36
			2483.5(Av)	36.24	54	-17.76
			2462(Pk)	103.82	*	-
			2462(Av)	89.97	*	-

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			4924(Pk)	50.83	74	-23.17
			4924(Av)	35.68	54	-18.32
		Horizontal	2483.5(Pk)	53.82	74	-20.18
			2483.5(Av)	26.36	54	-27.64
			2462(Pk)	90.42	*	-
			2462(Av)	78	*	-
			4924(Pk)	51.98	74	-22.02
			4924(Av)	36.56	54	-17.44

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Data rate	Channel	Polarization	Frequency (MHz)	Spurious Emission value (dBuv/m)	Limit (dBuv/m)	Margin (dB)
MCS0	Low	Vertical	2390(Pk)	63.37	74	-10.63
			2390(Av)	39.81	54	-14.19
			2412(Pk)	102.81	*	-
			2412(Av)	93.08	*	-
			4824(Pk)	50.42	74	-23.58
			4824(Av)	37.7	54	-16.3
		Horizontal	2390(Pk)	47.96	74	-26.04
			2390(Av)	29.69	54	-24.31
			2412(Pk)	90.43	*	-
			2412(Av)	80.72	*	-
			4824(Pk)	49.94	74	-24.06
			4824(Av)	36.7	54	-17.3
	Mid	Vertical	2437(Pk)	105.53	*	-
			2437(Av)	96.13	*	-
			4874(Pk)	58.01	74	-15.99
			4874(Av)	42.75	54	-11.25
		Horizontal	2437(Pk)	93.3	*	-
			2437(Av)	84.3	*	-
			4874(Pk)	52.16	74	-21.84
			4874(Av)	39.53	54	-14.47
	High	Vertical	2483.5(Pk)	64.87	74	-9.13
			2483.5(Av)	39.39	54	-14.61
			2462(Pk)	102.83	*	-
			2462(Av)	92.77	*	-
			4924(Pk)	54.24	74	-19.76
			4924(Av)	39.29	54	-14.71
		Horizontal	2483.5(Pk)	47.12	74	-26.88
			2483.5(Av)	28.21	54	-25.79
			2462(Pk)	90.68	*	-
			2462(Av)	80.3	*	-

MCS4	Low	Vertical	4924(Pk)	51.2	74	-22.8
			4924(Av)	39.05	54	-14.95
			2390(Pk)	61.24	74	-12.76
			2390(Av)	38.96	54	-15.04
			2412(Pk)	103.12	*	-
			2412(Av)	91.77	*	-
			4824(Pk)	50.3	74	-23.7
			4824(Av)	37.66	54	-16.34
		Horizontal	2390(Pk)	44.52	74	-29.48
			2390(Av)	28.58	54	-25.42
			2412(Pk)	91.06	*	-
			2412(Av)	78.87	*	-
			4824(Pk)	49.46	74	-24.54
			4824(Av)	37.69	54	-16.31
	Mid	Vertical	2437(Pk)	107.32	*	-
			2437(Av)	93.87	*	-
			4874(Pk)	54.88	74	-19.12
			4874(Av)	41.39	54	-12.61
		Horizontal	2437(Pk)	93.25	*	-
			2437(Av)	81.81	*	-
			4874(Pk)	52.15	74	-21.85
			4874(Av)	39.2	54	-14.8
	High	Vertical	2483.5(Pk)	61.26	74	-12.74
			2483.5(Av)	38.22	54	-15.78
			2462(Pk)	102.86	*	-
			2462(Av)	91.68	*	-
			4924(Pk)	53.24	74	-20.76
			4924(Av)	39.14	54	-14.86
		Horizontal	2483.5(Pk)	44.61	74	-29.39
			2483.5(Av)	27.9	54	-26.1
			2462(Pk)	90.14	*	-
			2462(Av)	78.72	*	-
			4924(Pk)	51.01	74	-22.99
			4924(Av)	38.93	54	-15.07
MCS7	Low	Vertical	2390(Pk)	63.99	74	-10.01
			2390(Av)	38.66	54	-15.34
			2412(Pk)	103.84	*	-
			2412(Av)	90.68	*	-
			4824(Pk)	49.88	74	-24.12
			4824(Av)	37.71	54	-16.29
		Horizontal	2390(Pk)	47.69	74	-26.31
			2390(Av)	28.46	54	-25.54
			2412(Pk)	91.71	*	-
			2412(Av)	78.97	*	-
			4824(Pk)	49.33	74	-24.67
			4824(Av)	37.79	54	-16.21

		Mid	Vertical	2437(Pk)	103.84	*	-
				2437(Av)	90.54	*	-
				4874(Pk)	53.1	74	-20.9
				4874(Av)	39.2	54	-14.8
			Horizontal	2437(Pk)	91.16	*	-
				2437(Av)	78.46	*	-
				4874(Pk)	50.44	74	-23.56
				4874(Av)	38.69	54	-15.31
		High	Vertical	2483.5(Pk)	64.2	74	-9.8
				2483.5(Av)	37.93	54	-16.07
				2462(Pk)	104.18	*	-
				2462(Av)	90.53	*	-
				4924(Pk)	52.84	74	-21.16
				4924(Av)	39.03	54	-14.97
			Horizontal	2483.5(Pk)	48.48	74	-25.52
				2483.5(Av)	27.16	54	-26.84
				2462(Pk)	90.58	*	-
				2462(Av)	78.04	*	-
				4924(Pk)	51.21	74	-22.79
				4924(Av)	39	54	-15

IEEE 802.11n HT40

Data rate	Channel	Polarization	Frequency (MHz)	Spurious Emission value (dBuv/m)	Limit (dBuv/m)	Margin (dB)
MCS0	Low	Vertical	2390(Pk)	52.41	74	27.48
			2390(Av)	33.27	54	37.93
			2422(Pk)	95.54	*	-
			2422(Av)	85.2	*	-
			4844(Pk)	52.24	74	-21.76
			4844(Av)	41.23	54	-12.77
		Horizontal	2390(Pk)	40.73	74	-33.27
			2390(Av)	28.3	54	-25.7
			2422(Pk)	87.9	*	-
			2422(Av)	78.44	*	-
			4844(Pk)	51.34	74	-22.66
			4844(Av)	38.45	54	-15.55
	Mid	Vertical	2437(Pk)	101.48	*	-
			2437(Av)	91.93	*	-
			4874(Pk)	55.76	74	-18.24
			4874(Av)	43.88	54	-10.12
		Horizontal	2437(Pk)	92.11	*	-
			2437(Av)	83.27	*	-
			4874(Pk)	51.77	74	-22.23
			4874(Av)	40.13	54	-13.87
	High	Vertical	2483.5(Pk)	50.16	74	-23.84

			2483.5(Av)	34.22	54	-19.78
			2452(Pk)	95.67	*	-
			2452(Av)	85.96	*	-
			4904(Pk)	55.6	74	-18.4
			4904(Av)	43.95	54	-10.05
		Horizontal	2483.5(Pk)	46.25	74	-27.75
			2483.5(Av)	30.29	54	-23.71
			2452(Pk)	90.45	*	-
			2452(Av)	79.92	*	-
			4904(Pk)	52.64	74	-21.36
			4904(Av)	40.66	54	-13.34
MCS4	Low	Vertical	2390(Pk)	52.81	74	-21.19
			2390(Av)	34.03	54	-19.97
			2422(Pk)	96.75	*	-
			2422(Av)	83.52	*	-
			4844(Pk)	52.38	74	-21.62
			4844(Av)	41.76	54	-12.24
		Horizontal	2390(Pk)	41.73	74	-32.27
			2390(Av)	29.27	54	-24.73
			2422(Pk)	86.87	*	-
			2422(Av)	73.9	*	-
			4844(Pk)	51.22	74	-22.78
			4844(Av)	39.49	54	-14.51
	Mid	Vertical	2437(Pk)	104.62	*	-
			2437(Av)	90.15	*	-
			4874(Pk)	56.48	74	-17.52
			4874(Av)	43.65	54	-10.35
		Horizontal	2437(Pk)	96.04	*	-
			2437(Av)	83.97	*	-
			4874(Pk)	51.74	74	-22.26
			4874(Av)	40.27	54	-13.73
	High	Vertical	2483.5(Pk)	49.5	74	-24.5
2483.5(Av)			33.13	54	-20.87	
2452(Pk)			96.83	*	-	
2452(Av)			83.44	*	-	
4904(Pk)			56.58	74	-17.42	
4904(Av)			43.67	54	-10.33	
Horizontal		2483.5(Pk)	43.55	74	-30.45	
		2483.5(Av)	29.65	54	-24.35	
		2452(Pk)	91.16	*	-	
		2452(Av)	77.56	*	-	
		4904(Pk)	52.08	74	-21.92	
4904(Av)	40.57	54	-13.43			
MCS7	Low	Vertical	2390(Pk)	52.39	74	-21.61
			2390(Av)	35.01	54	-18.99
			2422(Pk)	99.88	*	-

			Horizontal	2422(Av)	84.54	*	-
				4844(Pk)	52.14	74	-21.86
				4844(Av)	41.86	54	-12.14
				2390(Pk)	41.03	74	-32.97
				2390(Av)	28.11	54	-25.89
				2422(Pk)	89.1	*	-
				2422(Av)	74.72	*	-
				4844(Pk)	51.34	74	-22.66
				4844(Av)	39.6	54	-14.4
		Mid	Vertical	2437(Pk)	99.32	*	-
				2437(Av)	84.18	*	-
				4874(Pk)	53.15	74	-20.85
				4874(Av)	42.28	54	-11.72
			Horizontal	2437(Pk)	88.35	*	-
				2437(Av)	74.01	*	-
				4874(Pk)	51.79	74	-22.21
				4874(Av)	39.84	54	-14.16
		High	Vertical	2483.5(Pk)	53.31	74	-20.69
				2483.5(Av)	34.41	54	-19.59
				2452(Pk)	98.55	*	-
				2452(Av)	82.73	*	-
				4904(Pk)	53.58	74	-20.42
				4904(Av)	42.25	54	-11.75
			Horizontal	2483.5(Pk)	48.65	74	-25.35
				2483.5(Av)	31.24	54	-22.76
				2452(Pk)	91.45	*	-
				2452(Av)	76.45	*	-
				4904(Pk)	51.88	74	-22.12
				4904(Av)	40.22	54	-13.78

IEEE 802.11n_MIMO_HT20

Data rate	Channel	Polarization	Frequency (MHz)	Spurious Emission value (dBuv/m)	Limit (dBuv/m)	Margin (dB)
MCS8	Low	Vertical	2390(Pk)	63.52	74	-10.48
			2390(Av)	40.8	54	-13.2
			2412(Pk)	102.25	*	-
			2412(Av)	92.85	*	-
			4824(Pk)	51.27	74	-22.73
			4824(Av)	38.28	54	-15.72
		Horizontal	2390(Pk)	41.68	74	-32.32
			2390(Av)	27.01	54	-26.99
			2412(Pk)	86.25	*	-
			2412(Av)	76.11	*	-
			4824(Pk)	50.12	74	-23.88
			4824(Av)	37.98	54	-16.02

		Mid	Vertical	2437(Pk)	103.32	*	-
				2437(Av)	94.17	*	-
				4874(Pk)	55.86	74	-18.14
				4874(Av)	41.54	54	-12.46
			Horizontal	2437(Pk)	89.62	*	-
				2437(Av)	79.65	*	-
				4874(Pk)	52.32	74	-21.68
				4874(Av)	39.39	54	-14.61
		High	Vertical	2483.5(Pk)	68.36	74	-5.64
				2483.5(Av)	40.07	54	-13.93
				2462(Pk)	101.91	*	-
				2462(Av)	91.76	*	-
				4924(Pk)	53.54	74	-20.46
				4924(Av)	38.96	54	-15.04
			Horizontal	2483.5(Pk)	47.2	74	-26.8
				2483.5(Av)	28.01	54	-25.99
				2462(Pk)	88.58	*	-
				2462(Av)	77.65	*	-
				4924(Pk)	51.57	74	-22.43
				4924(Av)	38.86	54	-15.14
	MCS12	Low	Vertical	2390(Pk)	62	74	-12
				2390(Av)	38.54	54	-15.46
				2412(Pk)	102.62	*	-
				2412(Av)	90.62	*	-
				4824(Pk)	51.84	74	-22.16
				4824(Av)	38.39	54	-15.61
			Horizontal	2390(Pk)	38.89	74	-35.11
				2390(Av)	27.31	54	-26.69
				2412(Pk)	87.97	*	-
				2412(Av)	74.5	*	-
				4824(Pk)	50.11	74	-23.89
				4824(Av)	38.06	54	-15.94
		Mid	Vertical	2437(Pk)	104.4	*	-
				2437(Av)	92.3	*	-
				4874(Pk)	56.49	74	-17.51
				4874(Av)	41.02	54	-12.98
			Horizontal	2437(Pk)	90.42	*	-
				2437(Av)	77.1	*	-
				4874(Pk)	53.6	74	-20.4
				4874(Av)	39.32	54	-14.68
		High	Vertical	2483.5(Pk)	63.53	74	-10.47
				2483.5(Av)	38.69	54	-15.31
				2462(Pk)	102.72	*	-
				2462(Av)	90.07	*	-
				4924(Pk)	52.99	74	-21.01
				4924(Av)	39.09	54	-14.91

MCS15		Horizontal	2483.5(Pk)	43.27	74	-30.73
			2483.5(Av)	27.05	54	-26.95
			2462(Pk)	89.45	*	-
			2462(Av)	75.44	*	-
			4924(Pk)	51.53	74	-22.47
			4924(Av)	38.93	54	-15.07
	Low	Vertical	2390(Pk)	59.47	74	-14.53
			2390(Av)	34.22	54	-19.78
			2412(Pk)	100.17	*	-
			2412(Av)	86.63	*	-
			4824(Pk)	50.42	74	-23.58
			4824(Av)	37.86	54	-16.14
		Horizontal	2390(Pk)	36.91	74	-37.09
			2390(Av)	22.81	54	-31.19
			2412(Pk)	85.49	*	-
			2412(Av)	70.19	*	-
			4824(Pk)	50.78	74	-23.22
			4824(Av)	37.92	54	-16.08
	Mid	Vertical	2437(Pk)	100.09	*	-
			2437(Av)	86.28	*	-
			4874(Pk)	50.53	74	-23.47
			4874(Av)	38.54	54	-15.46
		Horizontal	2437(Pk)	86.45	*	-
			2437(Av)	71.62	*	-
			4874(Pk)	51.36	74	-22.64
			4874(Av)	38.7	54	-15.3
	High	Vertical	2483.5(Pk)	57.72	74	-16.28
			2483.5(Av)	32.58	54	-21.42
			2462(Pk)	99.82	*	-
			2462(Av)	86.43	*	-
			4924(Pk)	51.52	74	-22.48
			4924(Av)	38.22	54	-15.78
		Horizontal	2483.5(Pk)	35.86	74	-38.14
			2483.5(Av)	23.79	54	-30.21
			2462(Pk)	86.74	*	-
			2462(Av)	72	*	-
			4924(Pk)	51.13	74	-22.87
			4924(Av)	38.87	54	-15.13

BLE

Dipole antenna

Data rate	Channel	Polarization	Frequency (MHz)	Spurious Emission value (dBuv/m)	Limit (dBuv/m)	Margin (dB)
1Mbps	Low	Vertical	2390(Pk)	52.86	74	-21.14
			2390(Av)	39.61	54	-14.39
			2402(Pk)	103.98	*	-
			2402(Av)	103.25	*	-
			4804(Pk)	52.31	74	-21.69
			4804(Av)	43.59	54	-10.41
		Horizontal	2390(Pk)	44.77	74	-29.23
			2390(Av)	31.89	54	-22.11
			2402(Pk)	94.65	*	-
			2402(Av)	93.94	*	-
			4804(Pk)	50.82	74	-23.18
			4804(Av)	41.4	54	-12.6
	Mid	Vertical	2440(Pk)	103.18	*	-
			2440(Av)	102.47	*	-
			4880(Pk)	52.6	74	-21.4
			4880(Av)	41.7	54	-12.3
		Horizontal	2440(Pk)	96.43	*	-
			2440(Av)	95.7	*	-
			4880(Pk)	51.35	74	-22.65
			4880(Av)	38.62	54	-15.38
	High	Vertical	2483.5(Pk)	48.1	74	-25.9
			2483.5(Av)	37.5	54	-16.5
			2480(Pk)	102.31	*	-
			2480(Av)	101.58	*	-
			4960(Pk)	51.21	74	-22.79
			4960(Av)	40.98	54	-13.02
		Horizontal	2483.5(Pk)	40.78	74	-33.22
			2483.5(Av)	28.88	54	-25.12
			2480(Pk)	93.81	*	-
			2480(Av)	93.05	*	-
			4960(Pk)	50.37	74	-23.63
			4960(Av)	38.59	54	-15.41

PCB antenna

Data rate	Channel	Polarization	Frequency (MHz)	Spurious Emission value (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1Mbps	Low	Vertical	2390(Pk)	49.01	74	-24.99
			2390(Av)	35.62	54	-18.38
			2402(Pk)	104.79	*	-
			2402(Av)	104.1	*	-
			4804(Pk)	51.6	74	-22.4
			4804(Av)	41.24	54	-12.76
		Horizontal	2390(Pk)	40.37	74	-33.63
			2390(Av)	27.42	54	-26.58
			2402(Pk)	91.55	*	-
			2402(Av)	90.86	*	-
			4804(Pk)	50.69	74	-23.31
			4804(Av)	40.16	54	-13.84
	Mid	Vertical	2440(Pk)	103.99	*	-
			2440(Av)	103.32	*	-
			4880(Pk)	51.89	74	-22.11
			4880(Av)	39.35	54	-14.65
		Horizontal	2440(Pk)	93.33	*	-
			2440(Av)	92.62	*	-
			4880(Pk)	51.22	74	-22.78
			4880(Av)	37.38	54	-16.62
	High	Vertical	2483.5(Pk)	44.25	74	-29.75
			2483.5(Av)	33.51	54	-20.49
			2480(Pk)	103.12	*	-
			2480(Av)	102.43	*	-
			4960(Pk)	50.5	74	-23.5
			4960(Av)	38.63	54	-15.37
		Horizontal	2483.5(Pk)	36.38	74	-37.62
			2483.5(Av)	24.41	54	-29.59
			2480(Pk)	90.71	*	-
			2480(Av)	89.97	*	-
			4960(Pk)	50.24	74	-23.76
			4960(Av)	37.35	54	-16.65

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Conducted Emission Test on A.C. Power Line

Result

Pass

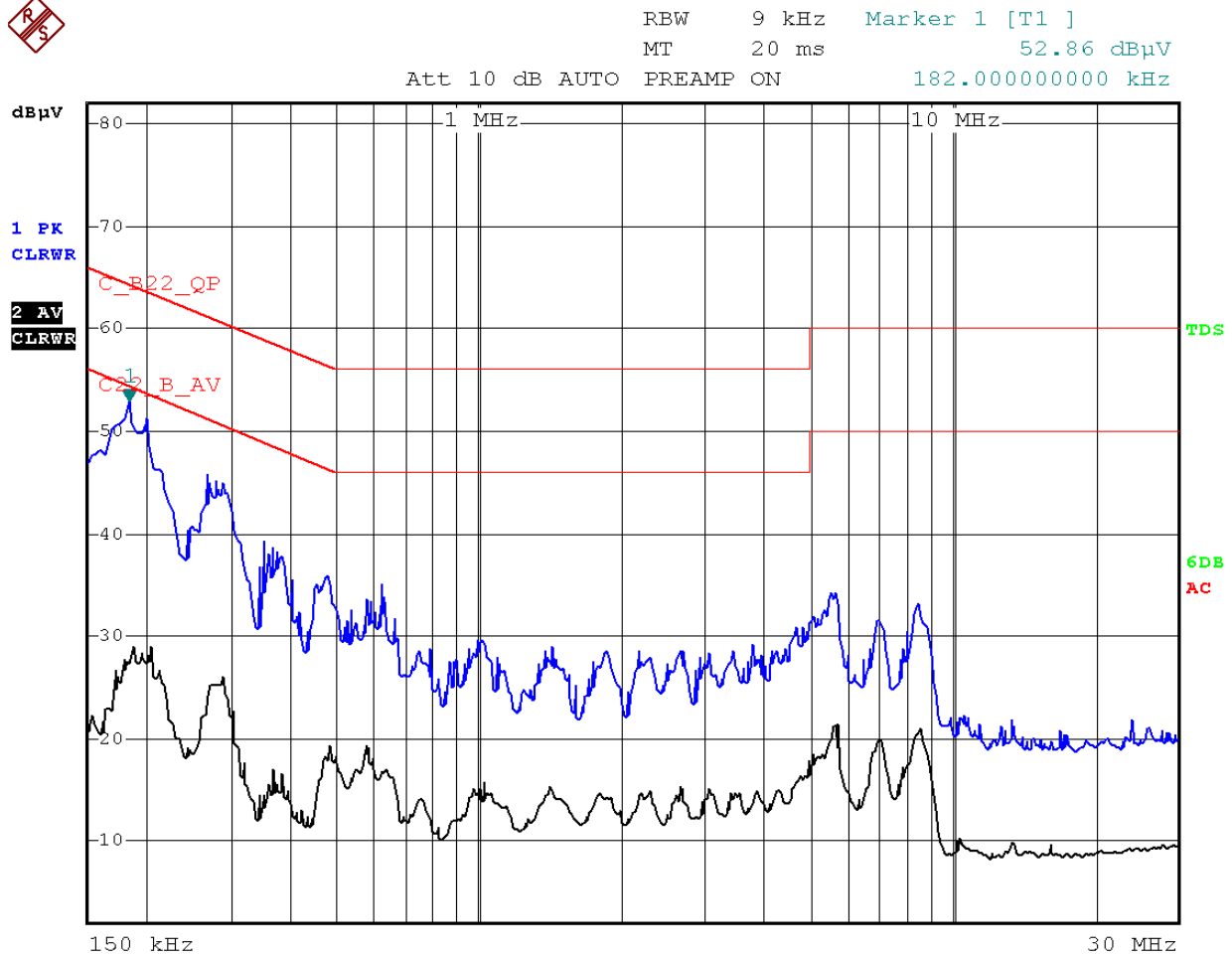
Test Specification : FCC Part 15.207
Test Method : ANSI C63.10-2013
Testing Location : Screened room
Measurement Bandwidth : 9kHz
Frequency Range : 150kHz – 30MHz
Supply Voltage : 110VAC,60Hz

Conducted Emission Test Limits:

Frequency of Emission (MHz)	QP Limit (dB μ V)	AV Limit (dB μ V/m)
0.15 – 0.5	66 – 56*	56 – 46*
0.5 – 5	56	46
5 – 30	60	50

* Decreases with the logarithm of the frequency

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Test Results:



Econ Sys_Esontk1_110V_60Hz_line

Date: 11.APR.2017 19:07:41

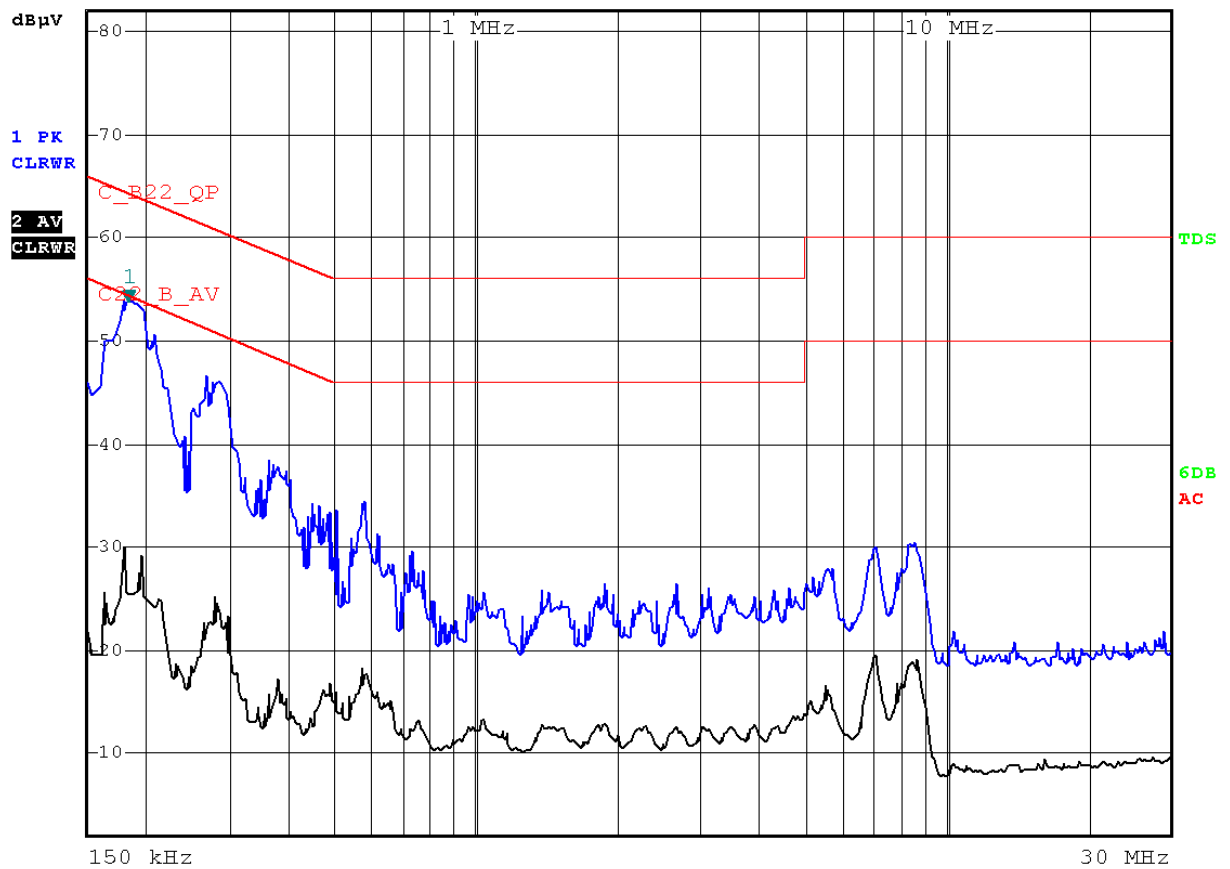
Line Graph

EDIT PEAK LIST (Final Measurement Results)				
Trace1:	C_B22_QP			
Trace2:	C22_B_AV			
Trace3:	---			
	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	182 kHz	44.49	-19.90
2	Average	202 kHz	27.56	-25.95
1	Quasi Peak	266 kHz	36.88	-24.35
2	Average	286 kHz	25.11	-25.52
1	Quasi Peak	350 kHz	29.49	-29.46
1	Quasi Peak	478 kHz	27.78	-28.59
2	Average	578 kHz	19.26	-26.73
1	Quasi Peak	622 kHz	25.21	-30.78
1	Quasi Peak	5.554 MHz	26.63	-33.36
2	Average	5.714 MHz	19.38	-30.61
1	Quasi Peak	6.922 MHz	26.05	-33.94
1	Quasi Peak	8.466 MHz	26.83	-33.16
2	Average	8.626 MHz	18.73	-31.26

Econ Sys_Esomtk1_110V_60Hz_line

Date: 11.APR.2017 19:09:51

Line Table


RBW 9 kHz Marker 1 [T1]
MT 20 ms 53.68 dBμV
Att 10 dB AUTO PREAMP ON 182.000000000 kHz


Econ Sys_Esomtk1_110V_60Hz_neutral

Date: 11.APR.2017 19:14:38

Neutral Graph

EDIT PEAK LIST (Final Measurement Results)				
Trace1:	C_B22_QP			
Trace2:	C22_B_AV			
Trace3:	---			
	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2	Average	178 kHz	26.34	-28.23
1	Quasi Peak	178 kHz	46.05	-18.52
1	Quasi Peak	266 kHz	37.87	-23.36
2	Average	278 kHz	23.83	-27.03
1	Quasi Peak	446 kHz	25.51	-31.43
2	Average	574 kHz	17.79	-28.20
1	Quasi Peak	578 kHz	26.35	-29.64
1	Quasi Peak	730 kHz	19.56	-36.43
1	Quasi Peak	1.882 MHz	18.06	-37.93
1	Quasi Peak	5.634 MHz	23.60	-36.39
2	Average	5.642 MHz	16.64	-33.35
1	Quasi Peak	7.078 MHz	23.87	-36.12
2	Average	7.086 MHz	17.28	-32.71
2	Average	8.486 MHz	17.87	-32.12
1	Quasi Peak	8.614 MHz	24.76	-35.23

Econ Sys_Esomtk1_110V_60Hz_neutral

Date: 11.APR.2017 19:20:51

Neutral Table

*****END OF TEST REPORT*****