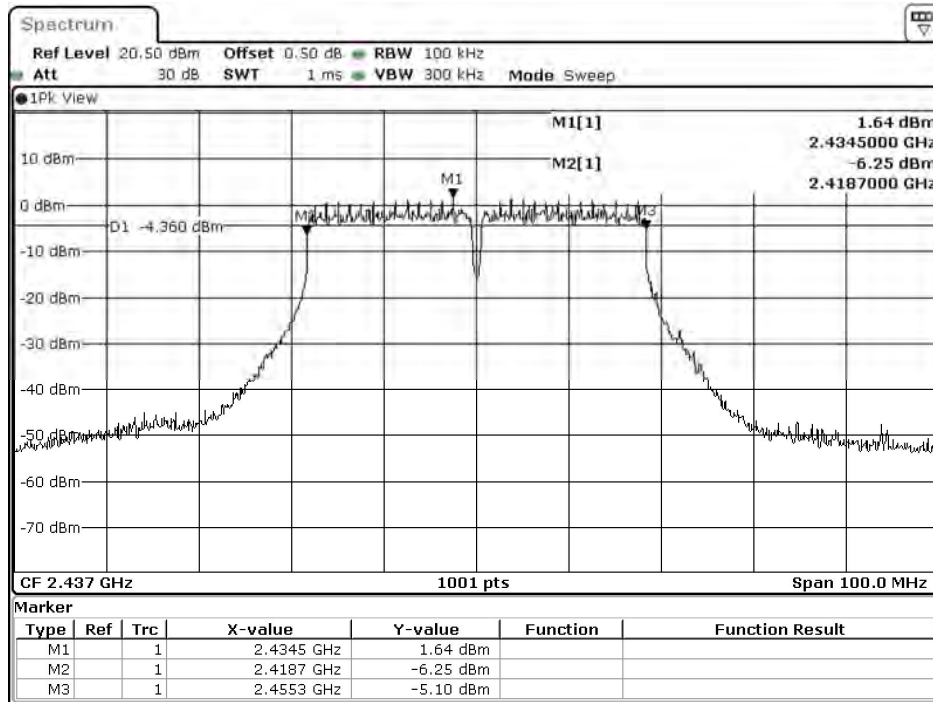
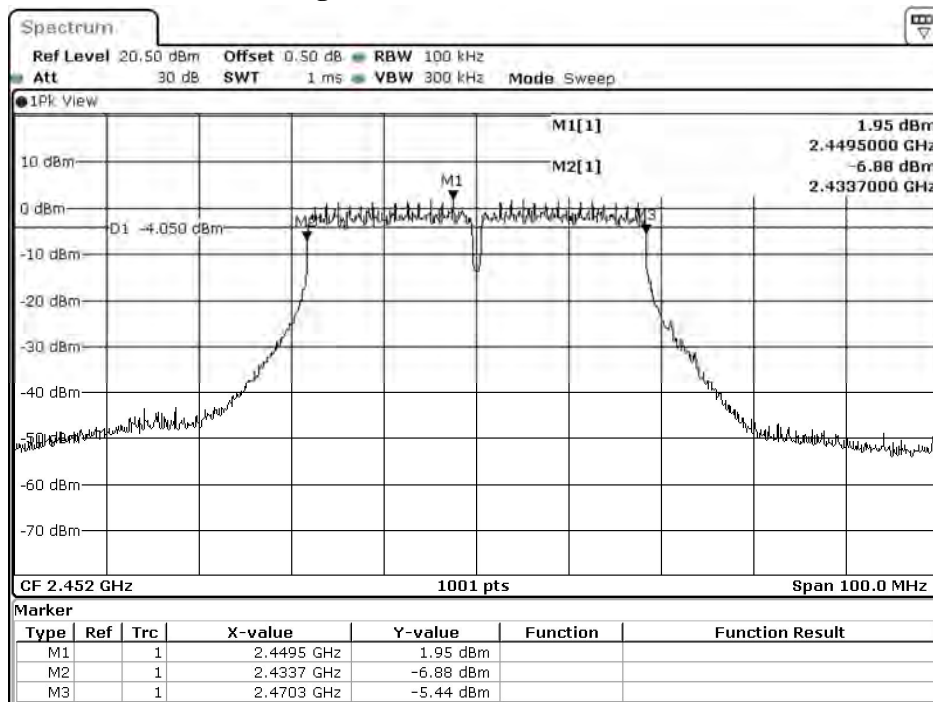


Figure Channel 06: (Chain A)



Date: 19.FEB.2021 08:58:54

Figure Channel 09: (Chain A)



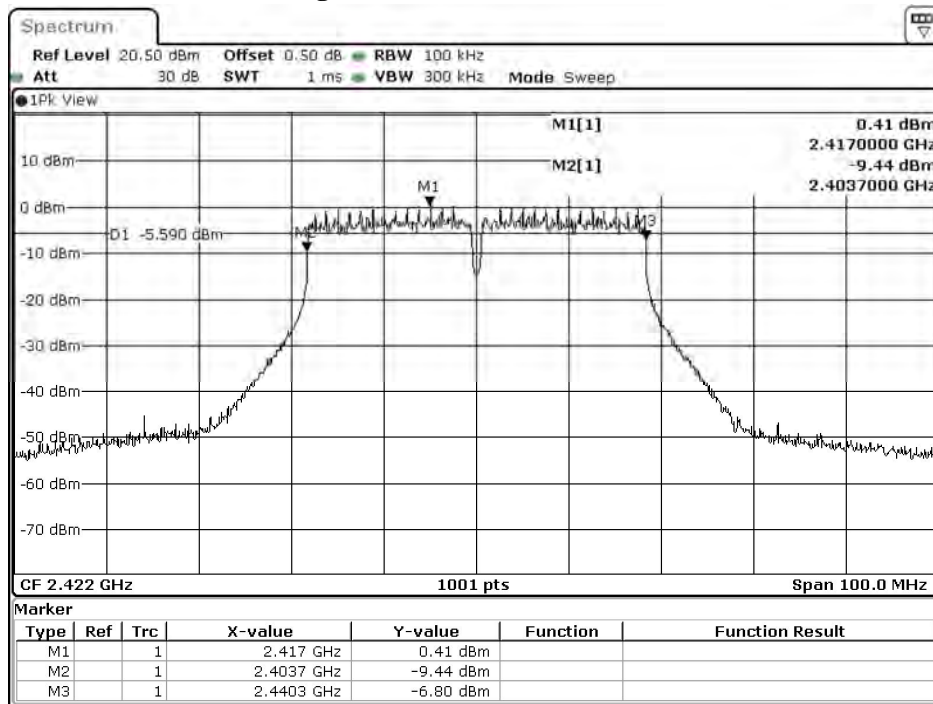
Date: 19.FEB.2021 09:01:27

Product : Wireless module  
 Test Item : 6dB Bandwidth Data  
 Test Mode : Mode 6: Transmit (802.11ac-40MBW 30Mbps) – Dipole Antenna

**Chain B**

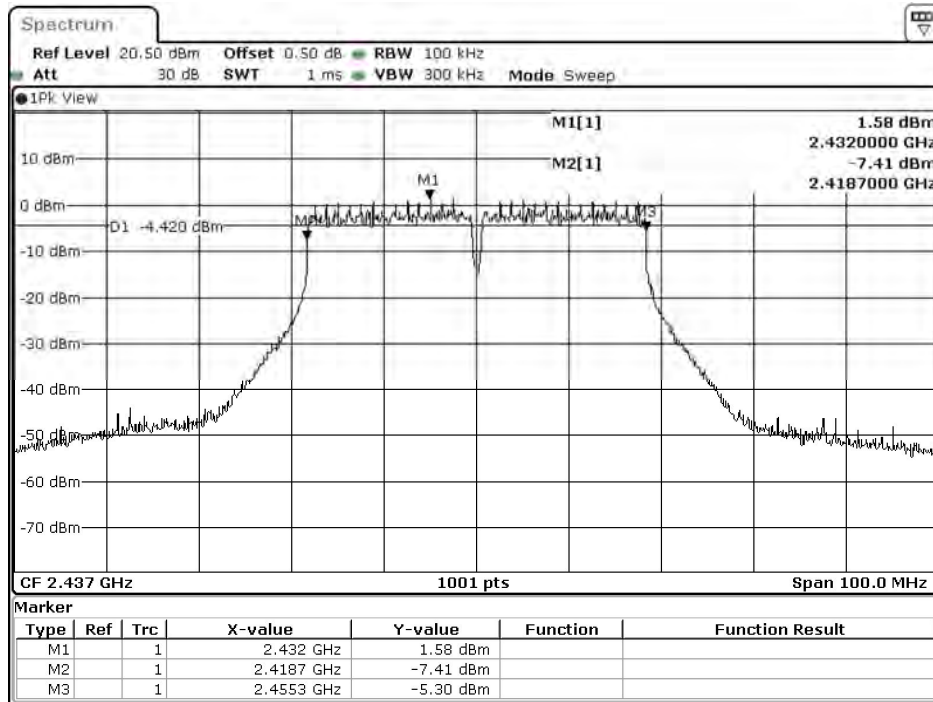
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
03	2422	36600	>500	Pass
06	2437	36600	>500	Pass
09	2452	36600	>500	Pass

**Figure Channel 03: (Chain B)**



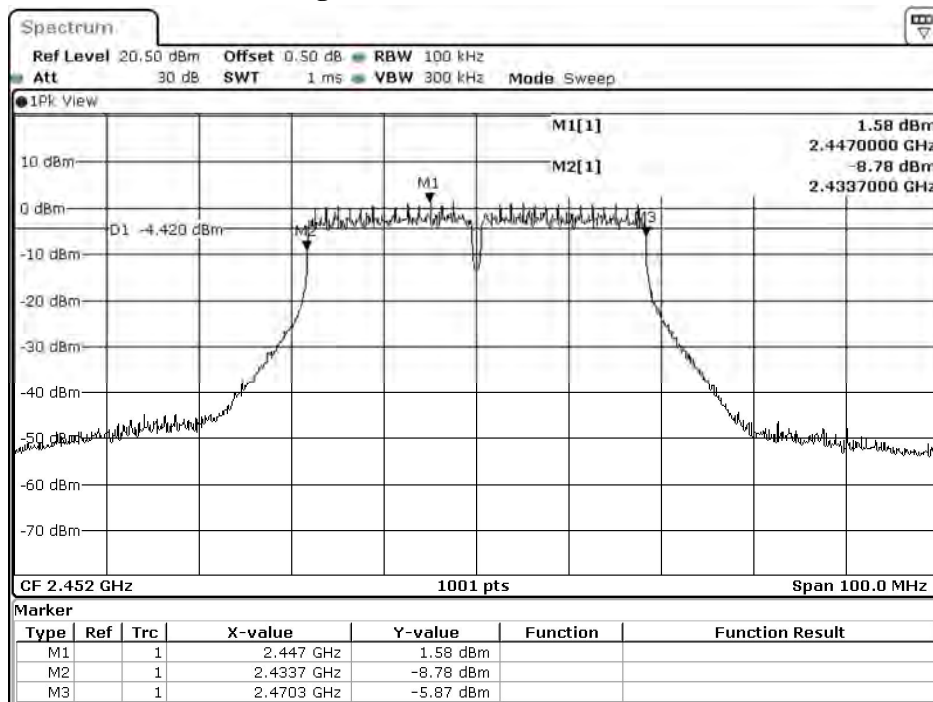
Date: 19.FEB.2021 11:01:39

Figure Channel 06: (Chain B)



Date: 19.FEB.2021 11:04:19

Figure Channel 09: (Chain B)

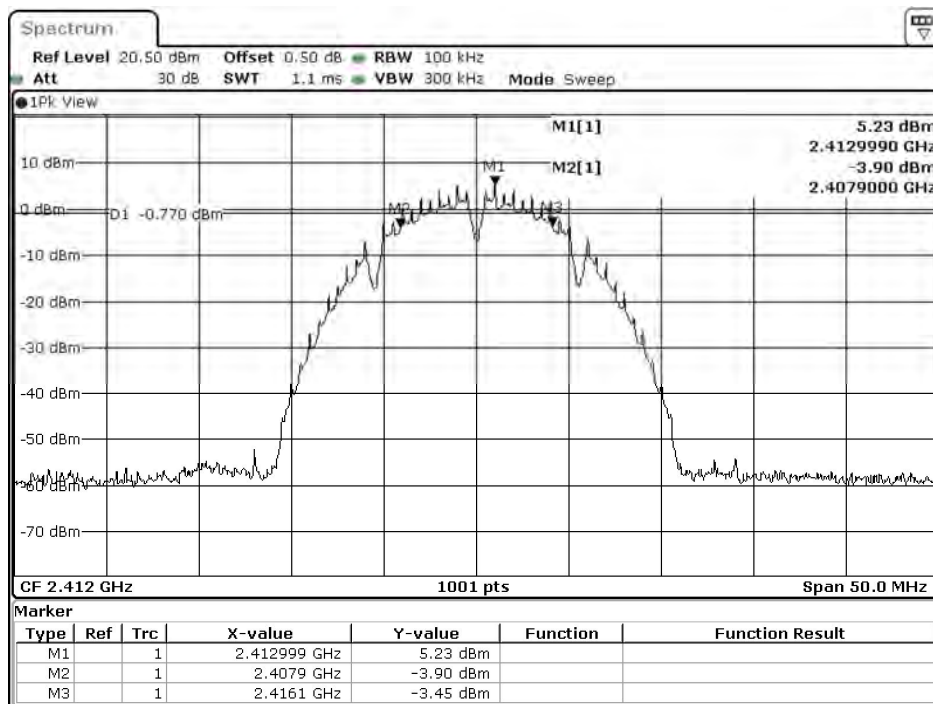


Date: 19.FEB.2021 11:06:52

Product : Wireless module  
 Test Item : 6dB Bandwidth Data  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) – Panel Antenna

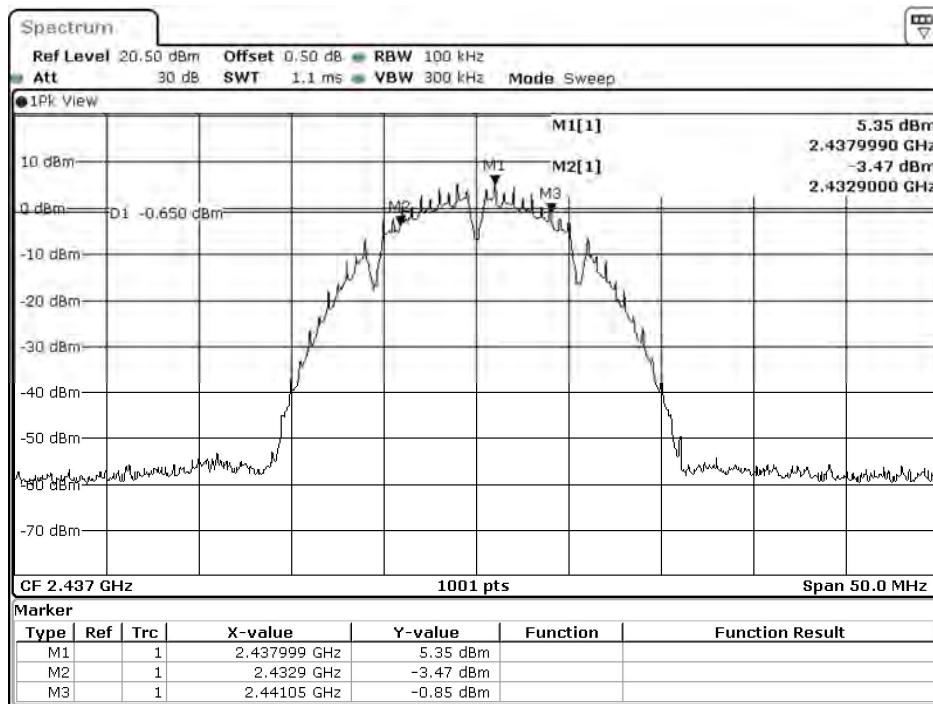
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	8200	>500	Pass
06	2437	8150	>500	Pass
11	2462	8150	>500	Pass

Figure Channel 01:



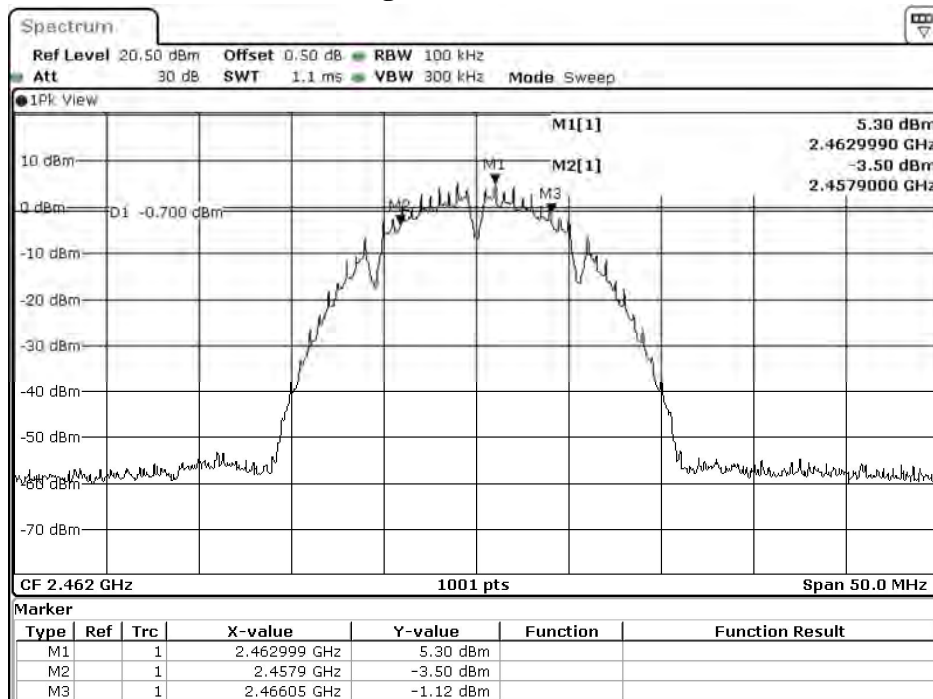
Date: 20.FEB.2021 01:10:30

Figure Channel 06:



Date: 20.FEB.2021 01:13:24

Figure Channel 11:

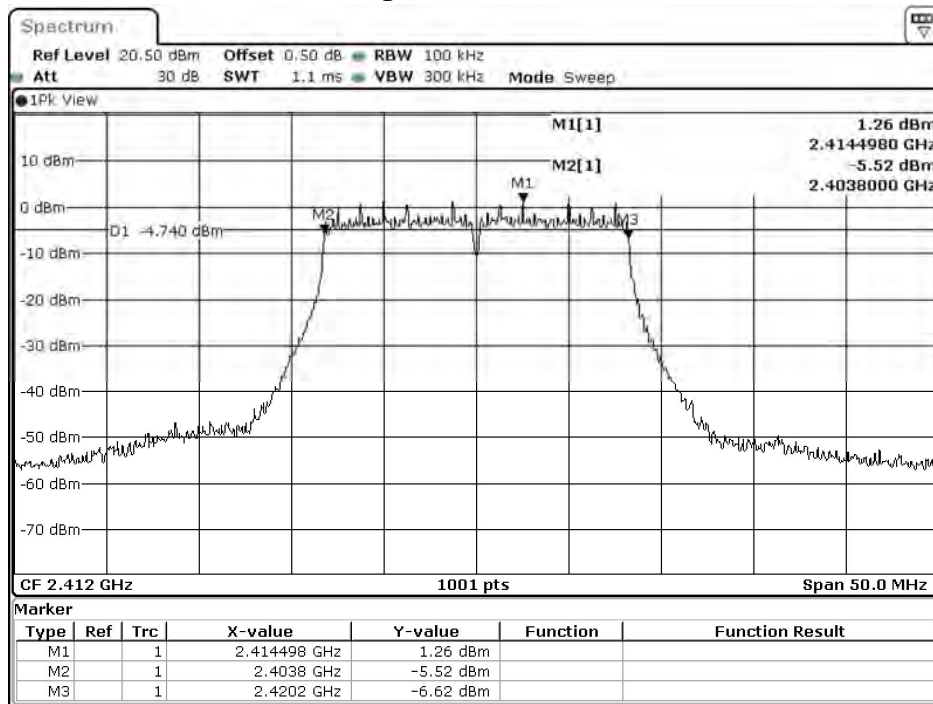


Date: 20.FEB.2021 01:16:16

Product : Wireless module  
 Test Item : 6dB Bandwidth Data  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) – Panel Antenna

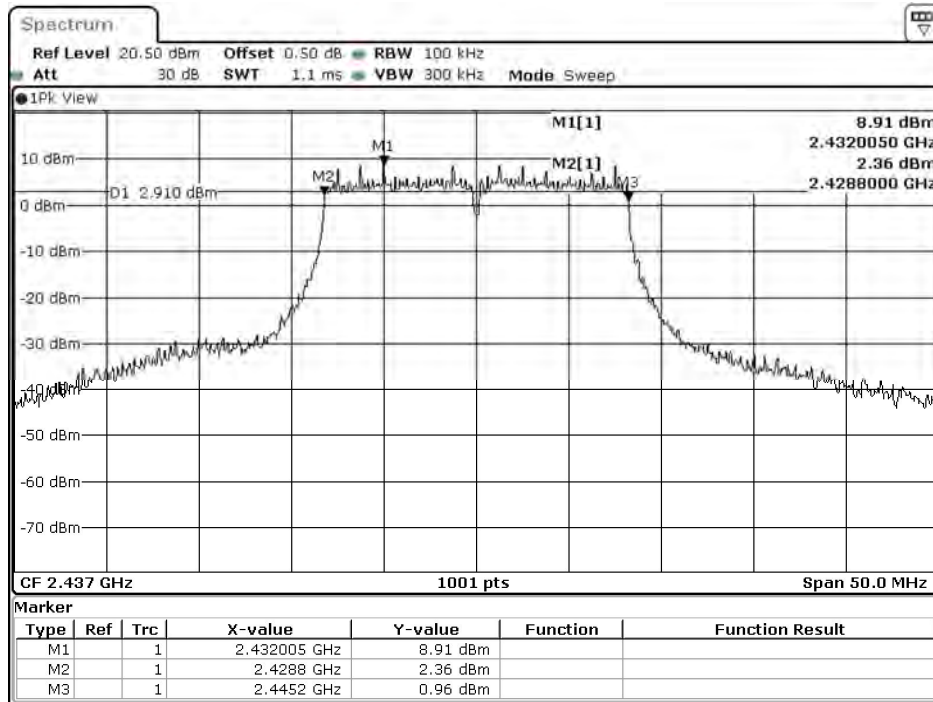
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	16400	>500	Pass
06	2437	16400	>500	Pass
11	2462	16450	>500	Pass

Figure Channel 01:



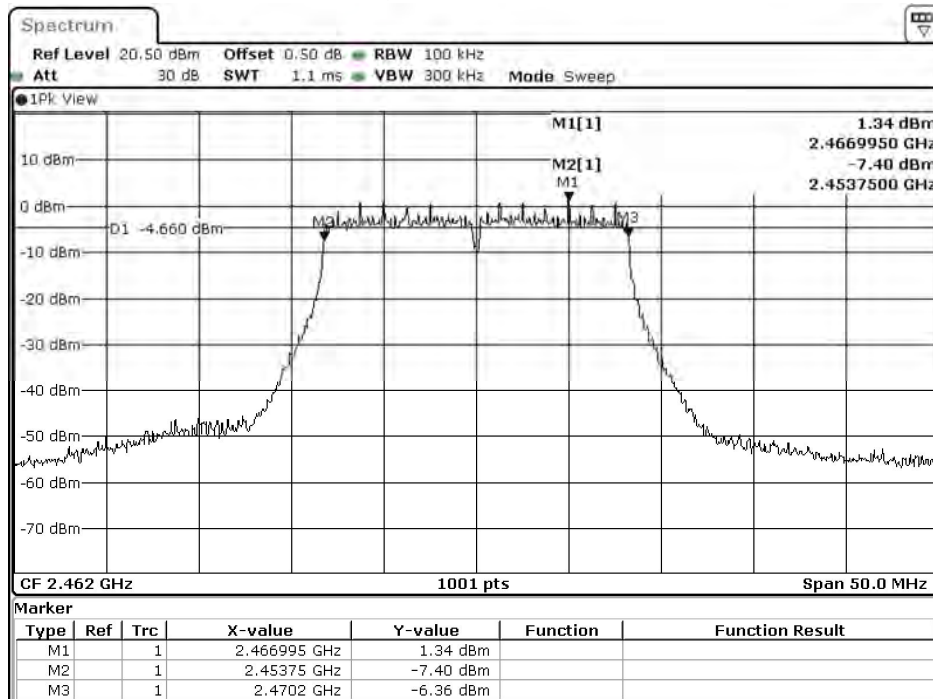
Date: 20.FEB.2021 01:18:52

Figure Channel 06:



Date: 20.FEB.2021 01:21:25

Figure Channel 11:



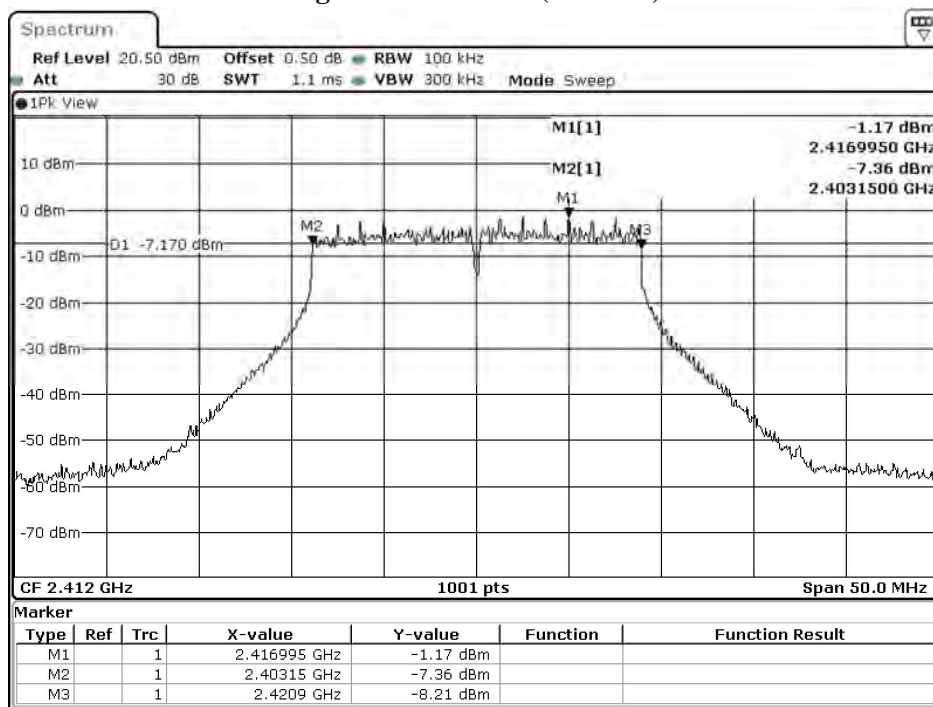
Date: 20.FEB.2021 01:25:57

Product : Wireless module  
 Test Item : 6dB Bandwidth Data  
 Test Mode : Mode 5: Transmit (802.11ac-20MBW 14.4Mbps) – Panel Antenna

**Chain A**

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	17750	>500	Pass
06	2437	17800	>500	Pass
11	2462	17800	>500	Pass

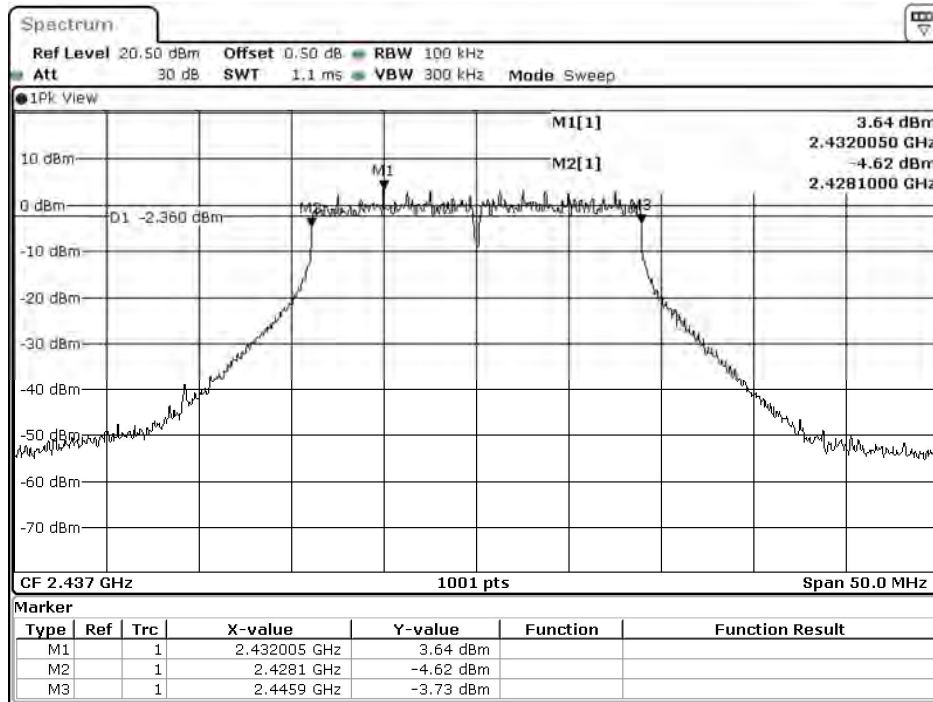
**Figure Channel 01: (Chain A)**



Date: 20.FEB.2021 01:30:24

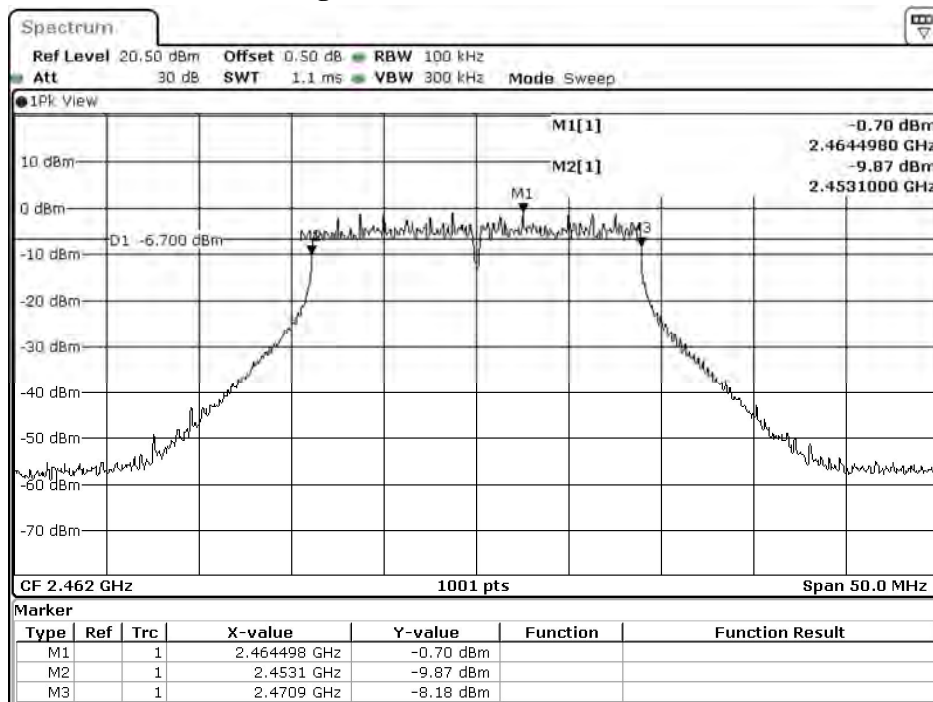


Figure Channel 06: (Chain A)



Date: 20.FEB.2021 01:33:10

Figure Channel 11: (Chain A)



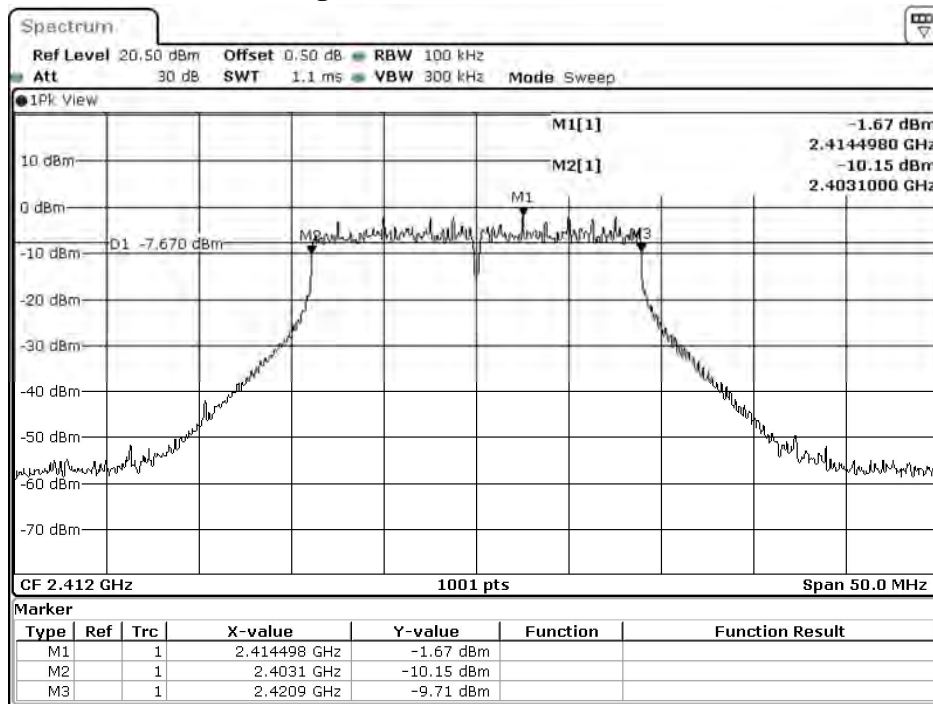
Date: 20.FEB.2021 01:36:04

Product : Wireless module  
 Test Item : 6dB Bandwidth Data  
 Test Mode : Mode 5: Transmit (802.11ac-20MBW 14.4Mbps) – Panel Antenna

**Chain B**

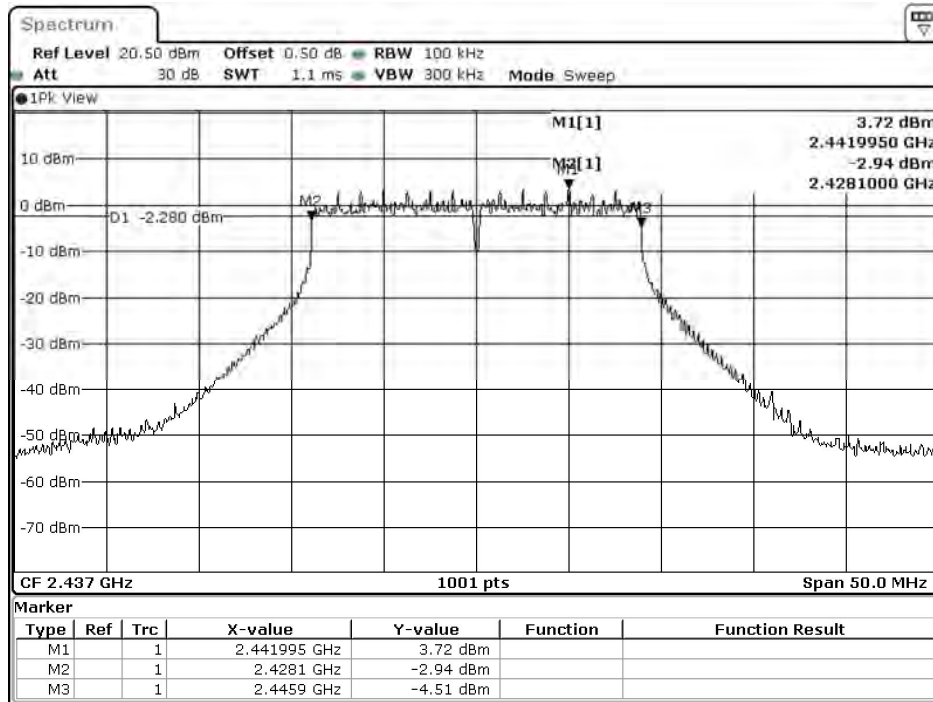
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	17800	>500	Pass
06	2437	17800	>500	Pass
11	2462	17800	>500	Pass

**Figure Channel 01: (Chain B)**



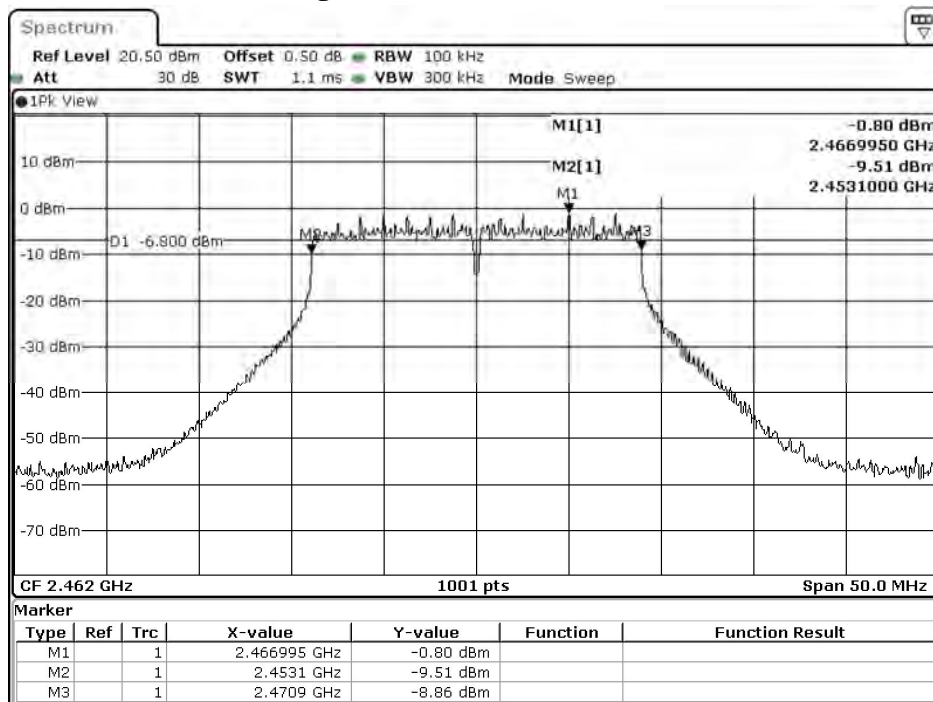
Date: 20.FEB.2021 03:35:50

Figure Channel 06: (Chain B)



Date: 20.FEB.2021 03:38:35

Figure Channel 11: (Chain B)



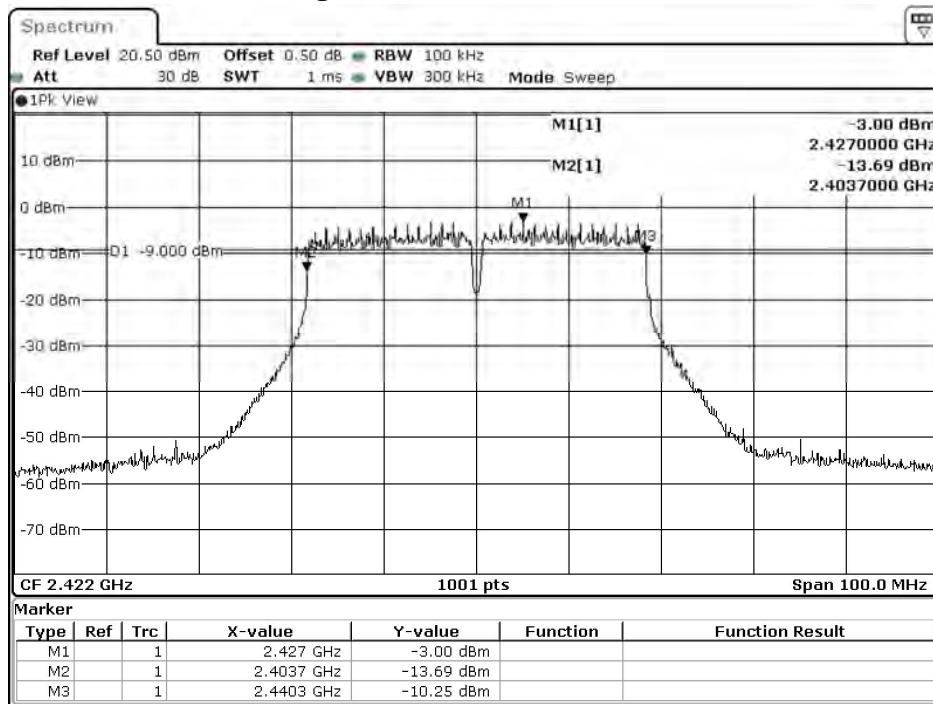
Date: 20.FEB.2021 03:41:29

Product : Wireless module  
 Test Item : 6dB Bandwidth Data  
 Test Mode : Mode 6: Transmit (802.11ac-40MBW 30Mbps) – Panel Antenna

**Chain A**

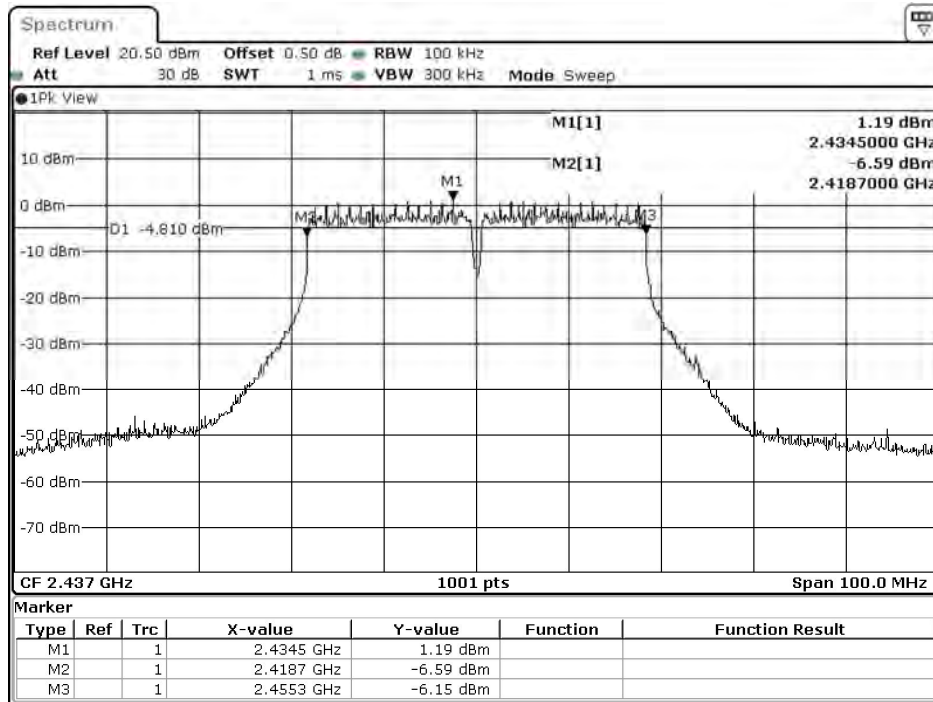
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
03	2422	36600	>500	Pass
06	2437	36600	>500	Pass
09	2452	36700	>500	Pass

**Figure Channel 03: (Chain A)**



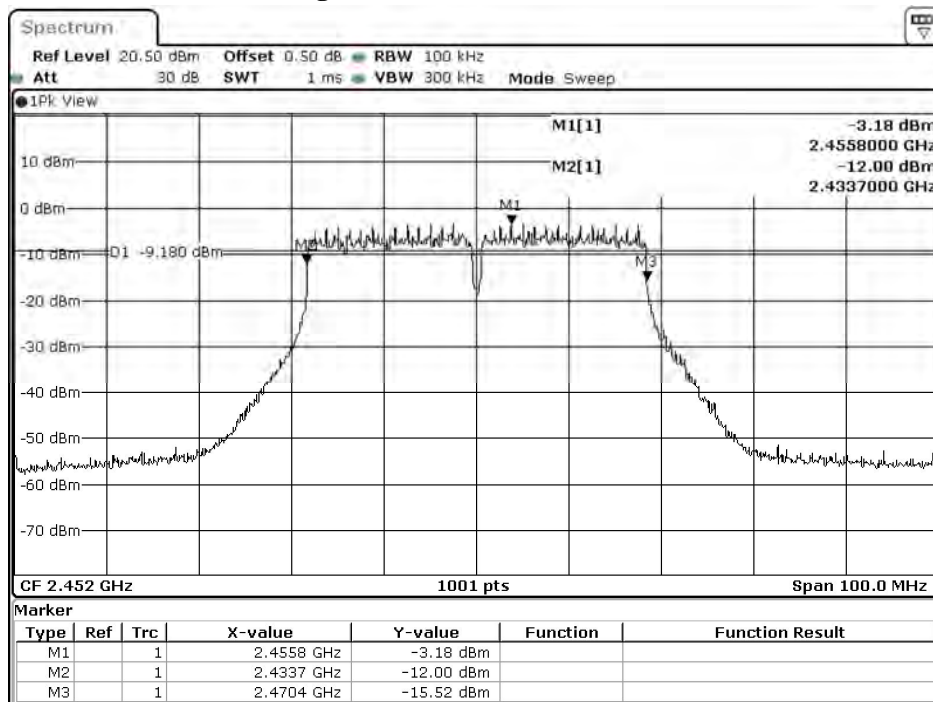
Date: 20.FEB.2021 01:38:58

Figure Channel 06: (Chain A)



Date: 20.FEB.2021 01:48:38

Figure Channel 09: (Chain A)



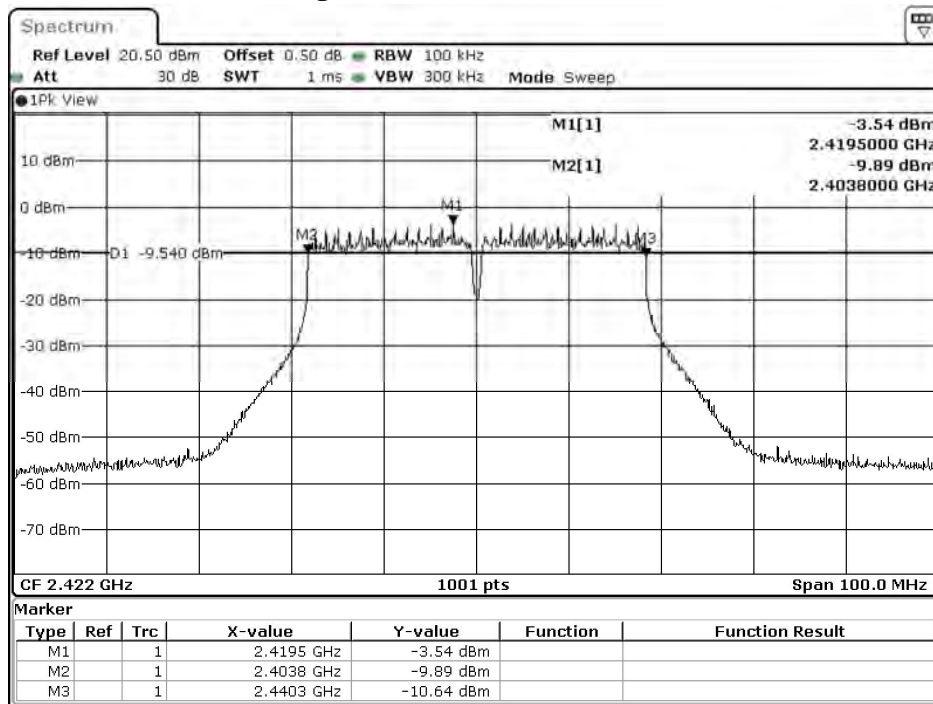
Date: 20.FEB.2021 01:52:17

Product : Wireless module  
 Test Item : 6dB Bandwidth Data  
 Test Mode : Mode 6: Transmit (802.11ac-40MBW 30Mbps) – Panel Antenna

**Chain B**

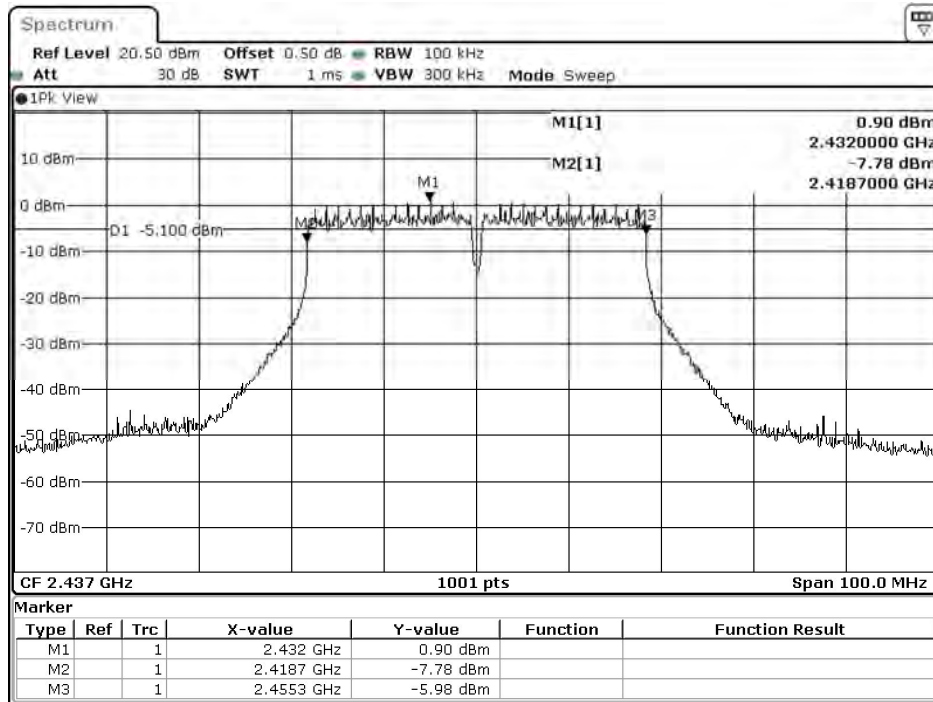
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
03	2422	36500	>500	Pass
06	2437	36600	>500	Pass
09	2452	36600	>500	Pass

**Figure Channel 03: (Chain B)**



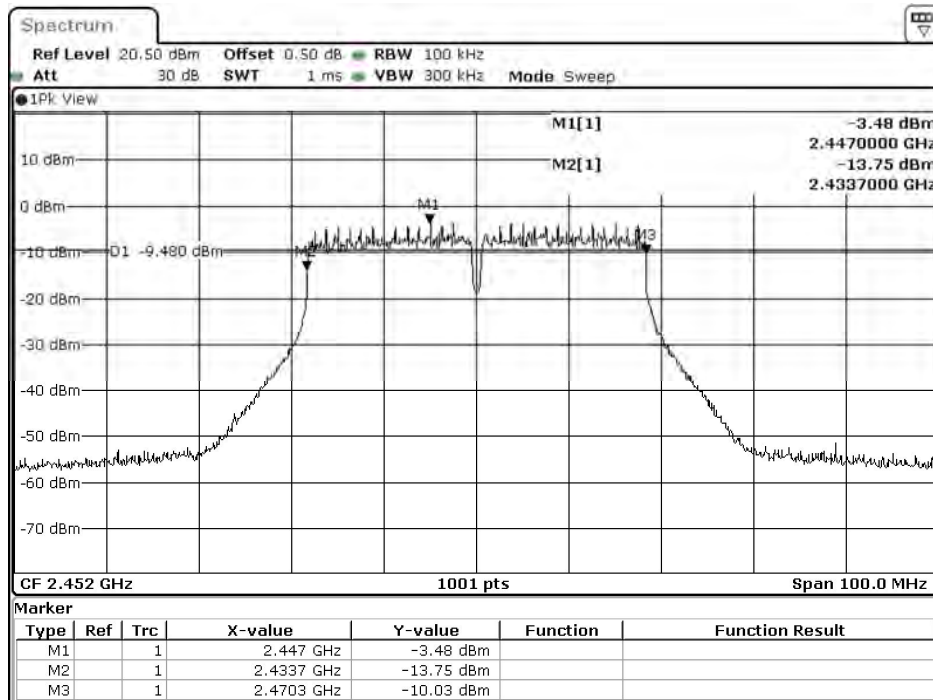
Date: 20.FEB.2021 03:44:23

Figure Channel 06: (Chain B)



Date: 20.FEB.2021 03:54:03

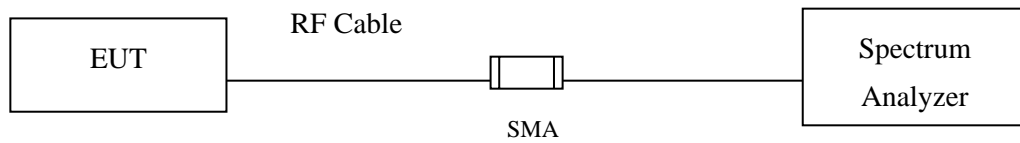
Figure Channel 09: (Chain B)



Date: 20.FEB.2021 03:57:42

## 8. Power Density

### 8.1. Test Setup



### 8.2. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

### 8.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

The maximum power spectral density using C63.10 Section 11.10.2 Method PKPSD (peak PSD)

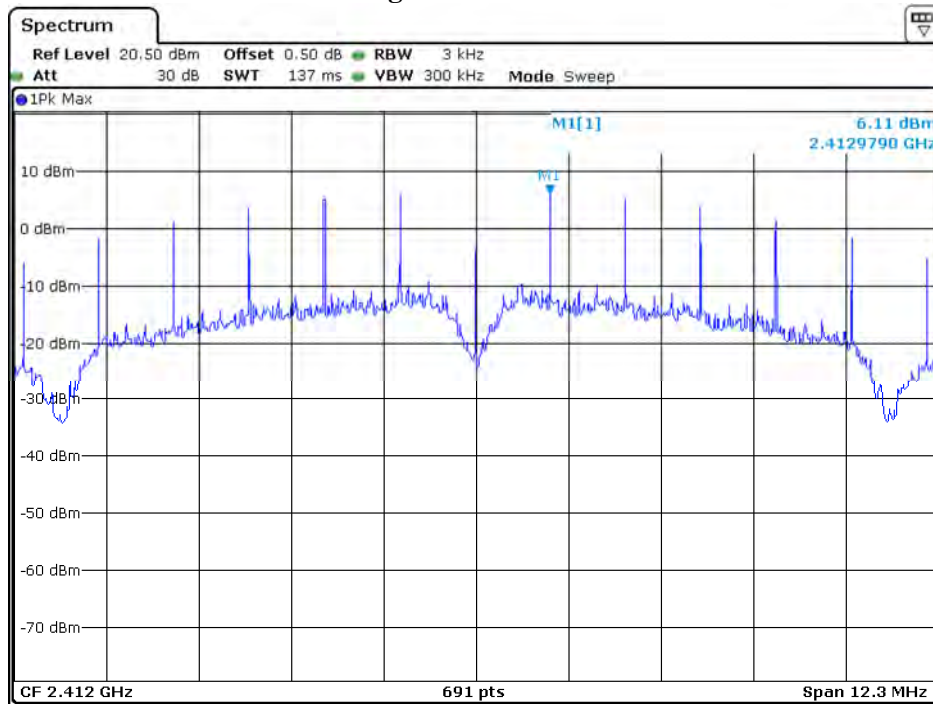


### 8.4. Test Result of Power Density

Product : Wireless module  
 Test Item : Power Density Data  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) – Dipole Antenna

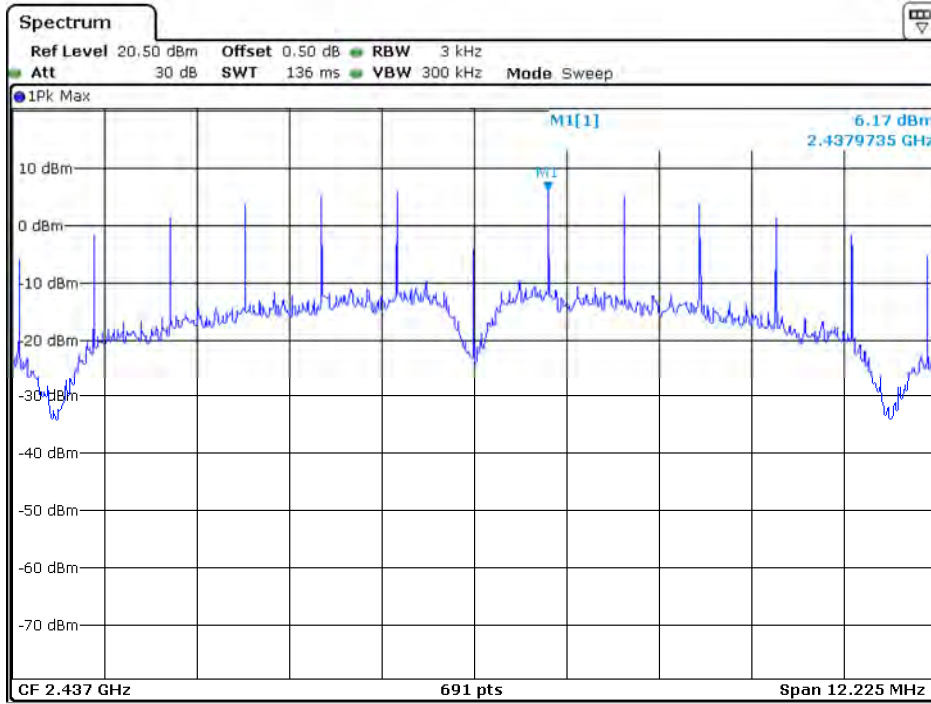
Channel No.	Frequency (MHz)	PPSD/MHz (dBm)	Limit (dBm)	Result
01	2412.000	6.110	≤ 6.6dBm	Pass
06	2437.000	6.170	≤ 6.6dBm	Pass
11	2462.000	6.550	≤ 6.6dBm	Pass

Figure Channel 1:



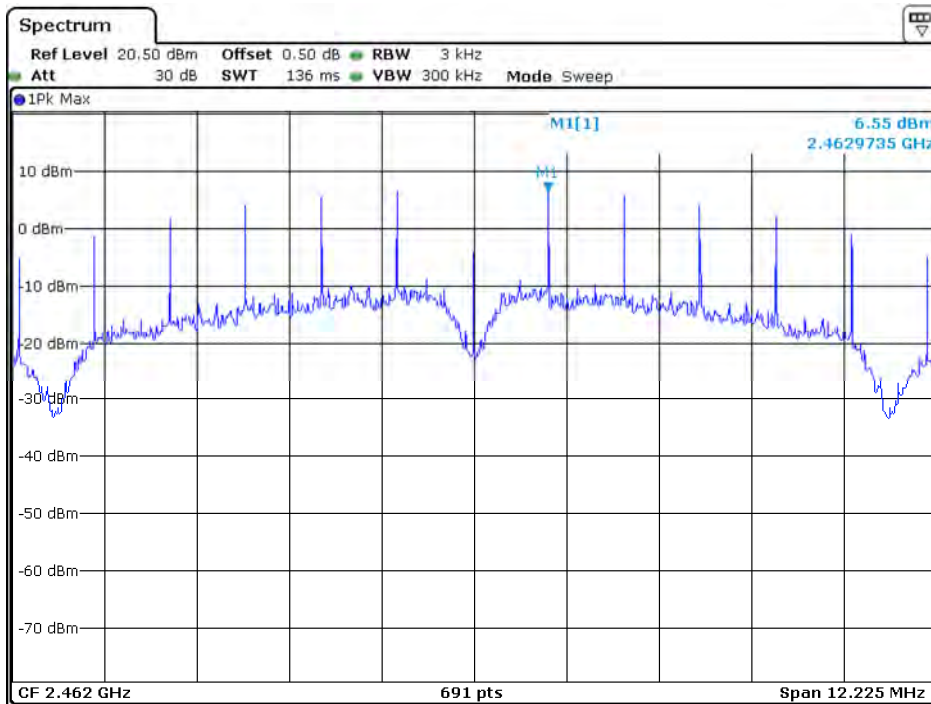
Date: 20.FEB.2021 04:14:26

Figure Channel 6:



Date: 20.FEB.2021 04:18:08

Figure Channel 11:

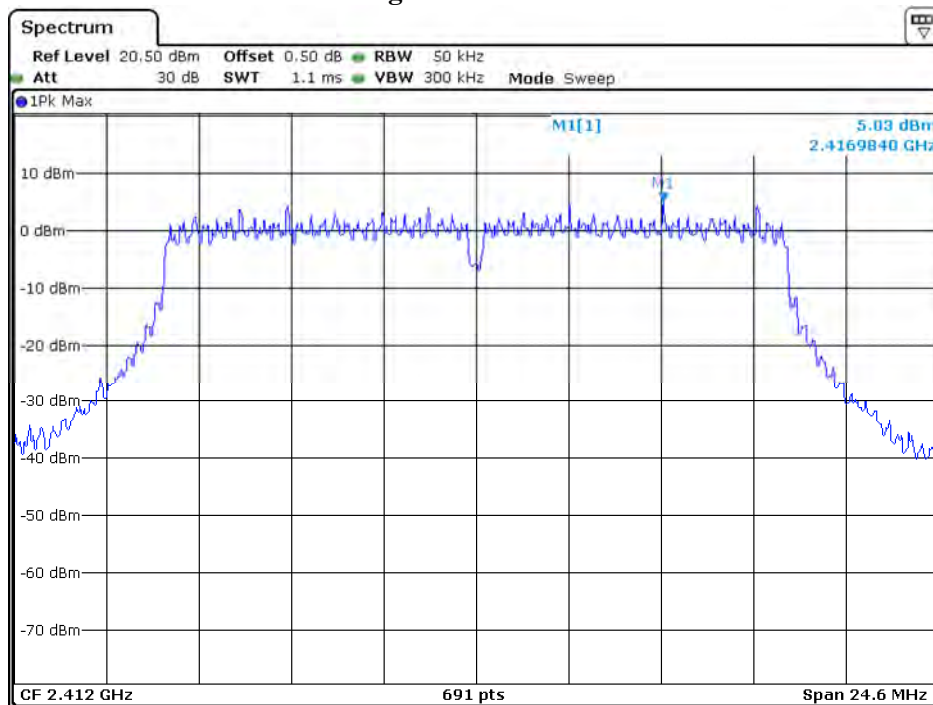


Date: 20.FEB.2021 04:30:04

Product : Wireless module  
 Test Item : Power Density Data  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) – Dipole Antenna

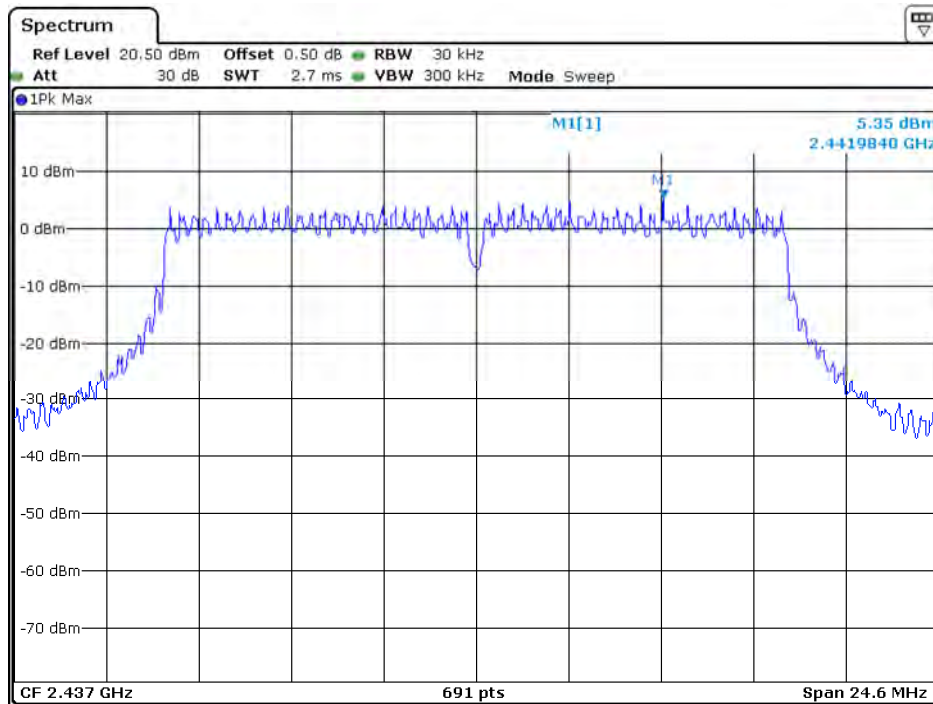
Channel No.	Frequency (MHz)	PPSD/MHz (dBm)	Limit (dBm)	Result
01	2412.000	5.030	≤ 6.6dBm	Pass
06	2437.000	5.350	≤ 6.6dBm	Pass
11	2462.000	5.910	≤ 6.6dBm	Pass

Figure Channel 1:



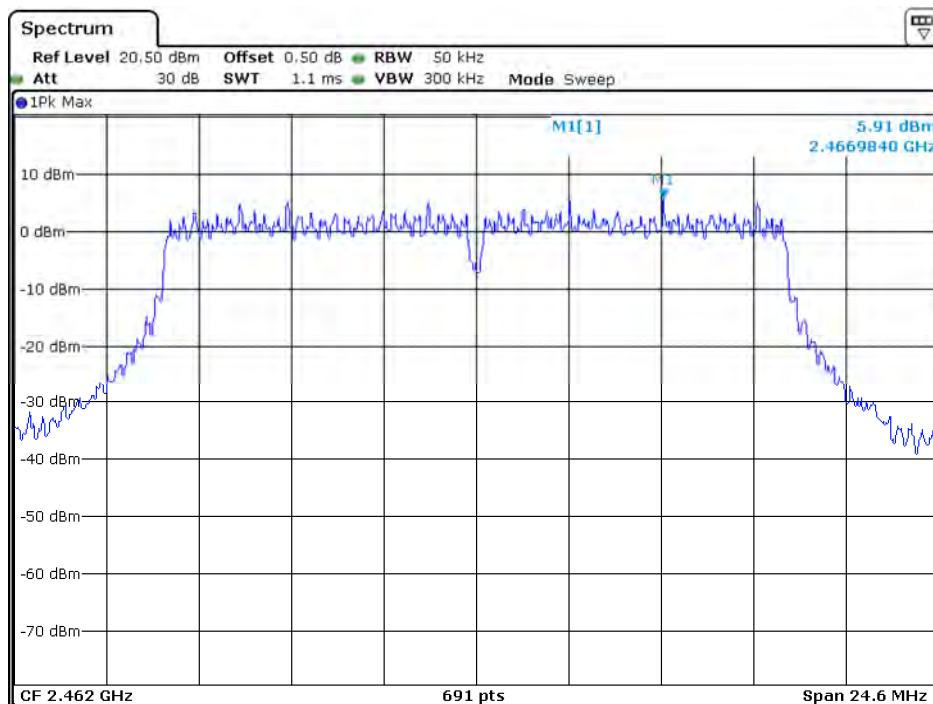
Date: 20.FEB.2021 04:44:53

Figure Channel 6:



Date: 20.FEB.2021 04:47:03

Figure Channel 11:



Date: 20.FEB.2021 04:48:30

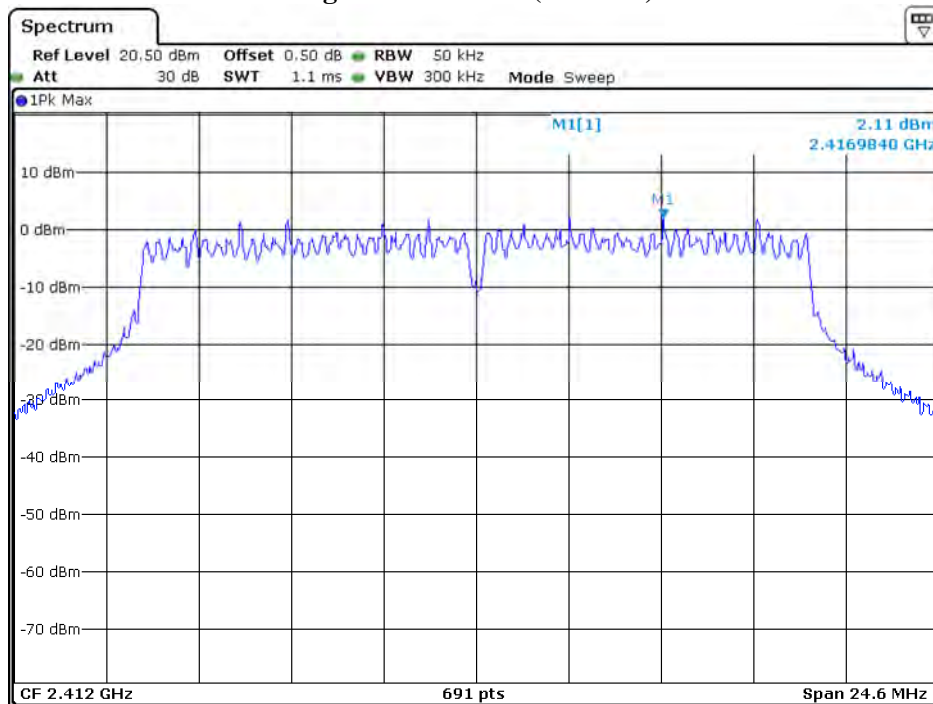
Product : Wireless module  
 Test Item : Power Density Data  
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) – Dipole Antenna

Channel No.	Frequency (MHz)	Chain	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)	Limit (dBm)	Result
01	2412.000	A	2.110	5.120	≤ 6.6dBm	Pass
		B	1.850	4.860	≤ 6.6dBm	Pass
06	2437.000	A	1.980	4.990	≤ 6.6dBm	Pass
		B	1.870	4.880	≤ 6.6dBm	Pass
11	2462.000	A	2.920	5.930	≤ 6.6dBm	Pass
		B	2.610	5.620	≤ 6.6dBm	Pass

Note :

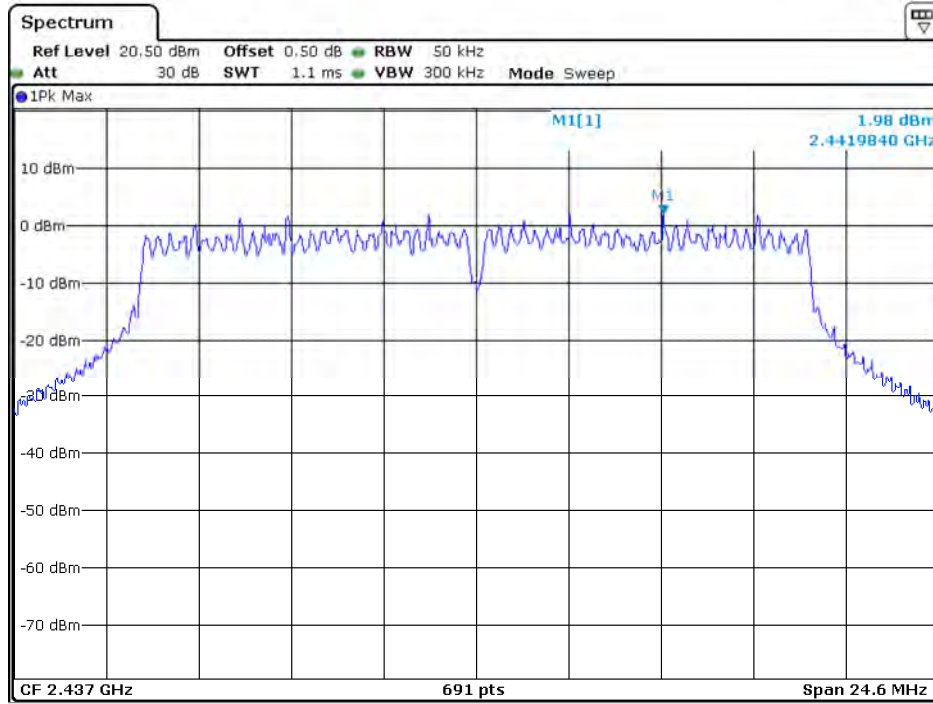
The quantity 10\*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 1: (Chain A)



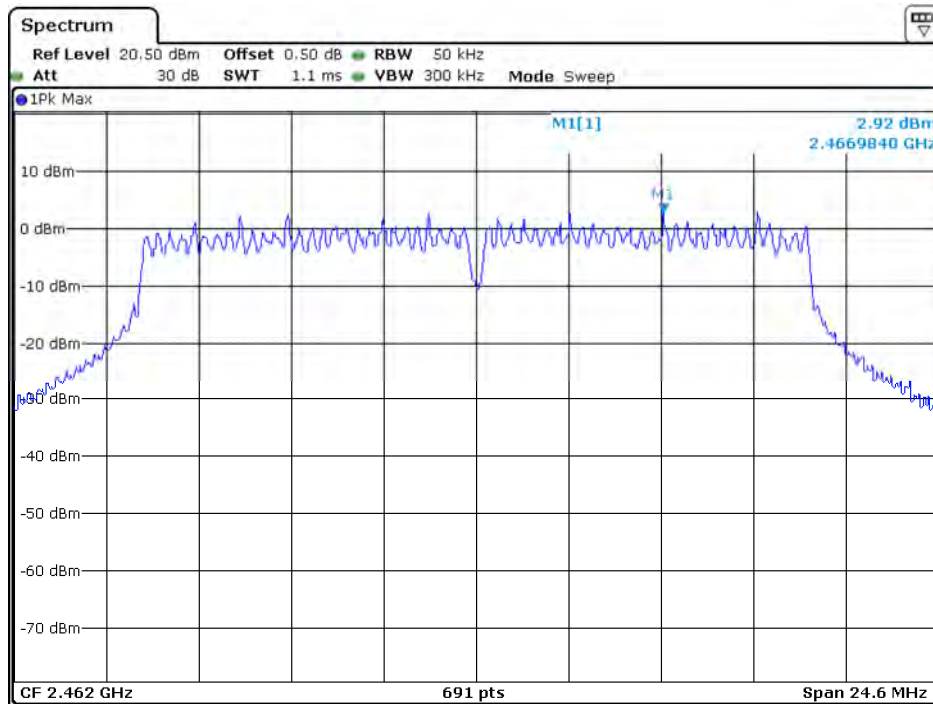
Date: 20.FEB.2021 04:51:57

Figure Channel 6: (Chain A)



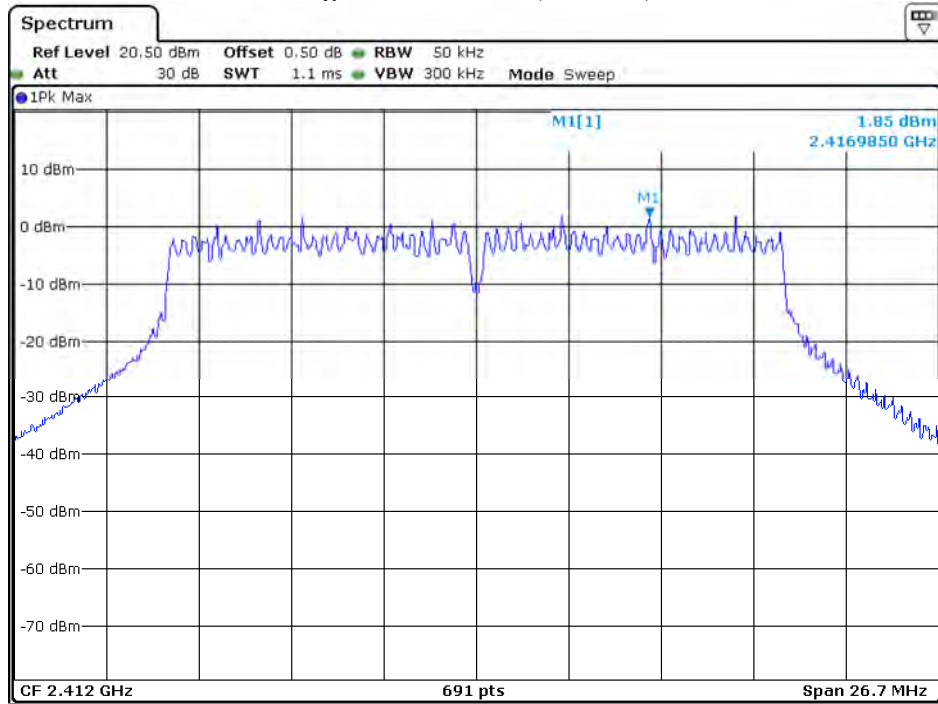
Date: 20.FEB.2021 04:54:33

Figure Channel 11: (Chain A)



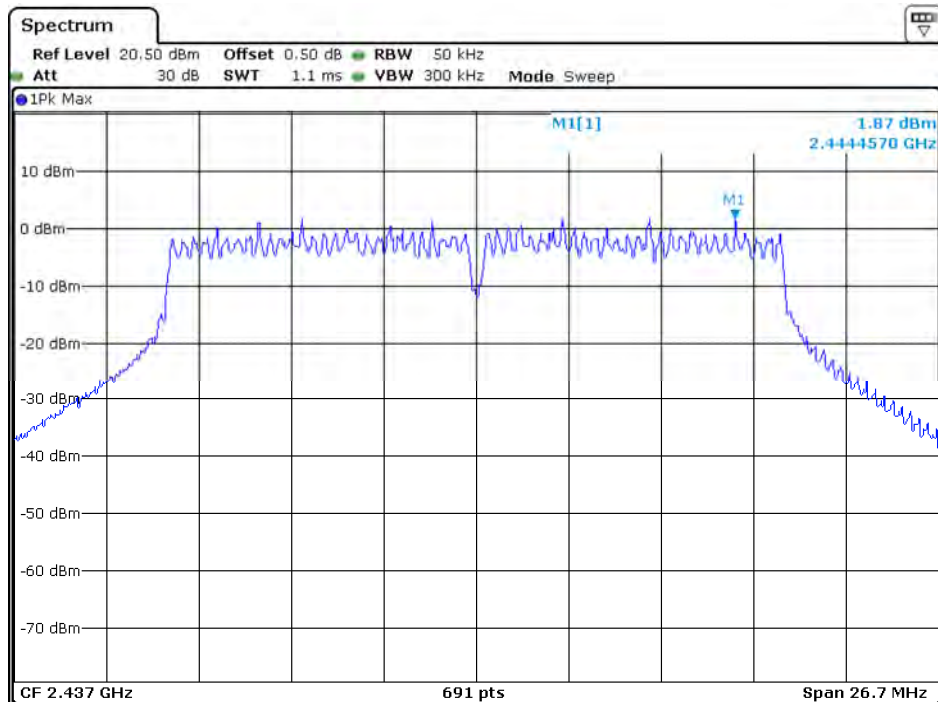
Date: 20.FEB.2021 04:55:50

Figure Channel 1: (Chain B)



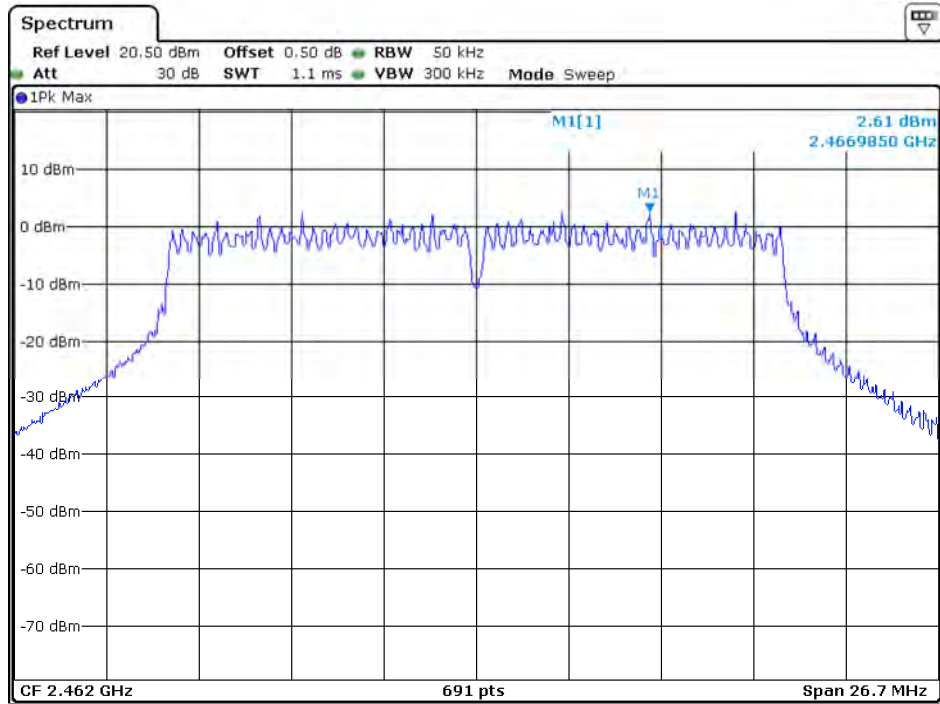
Date: 20.FEB.2021 06:58:01

Figure Channel 6: (Chain B)



Date: 20.FEB.2021 06:59:28

Figure Channel 11: (Chain B)



Date: 20.FEB.2021 07:01:38



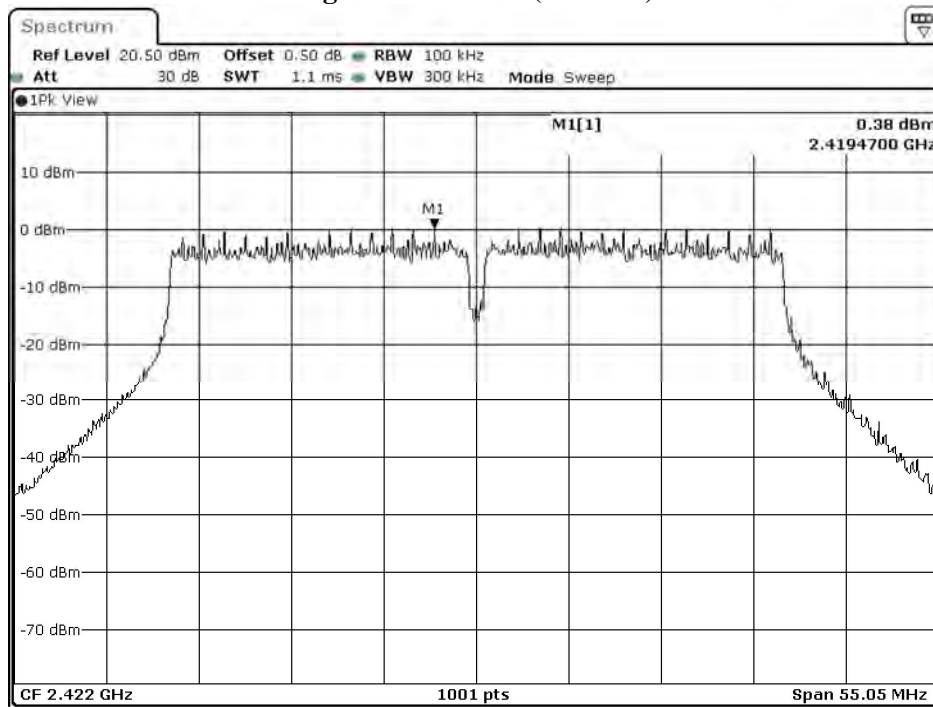
Product : Wireless module  
 Test Item : Power Density Data  
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) – Dipole Antenna

Channel No.	Frequency (MHz)	Chain	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)	Limit (dBm)	Result
03	2422.000	A	0.380	3.390	≤ 6.6dBm	Pass
		B	0.310	3.320	≤ 6.6dBm	Pass
06	2437.000	A	1.460	4.470	≤ 6.6dBm	Pass
		B	1.360	4.370	≤ 6.6dBm	Pass
09	2452.000	A	1.680	4.690	≤ 6.6dBm	Pass
		B	1.410	4.420	≤ 6.6dBm	Pass

Note :

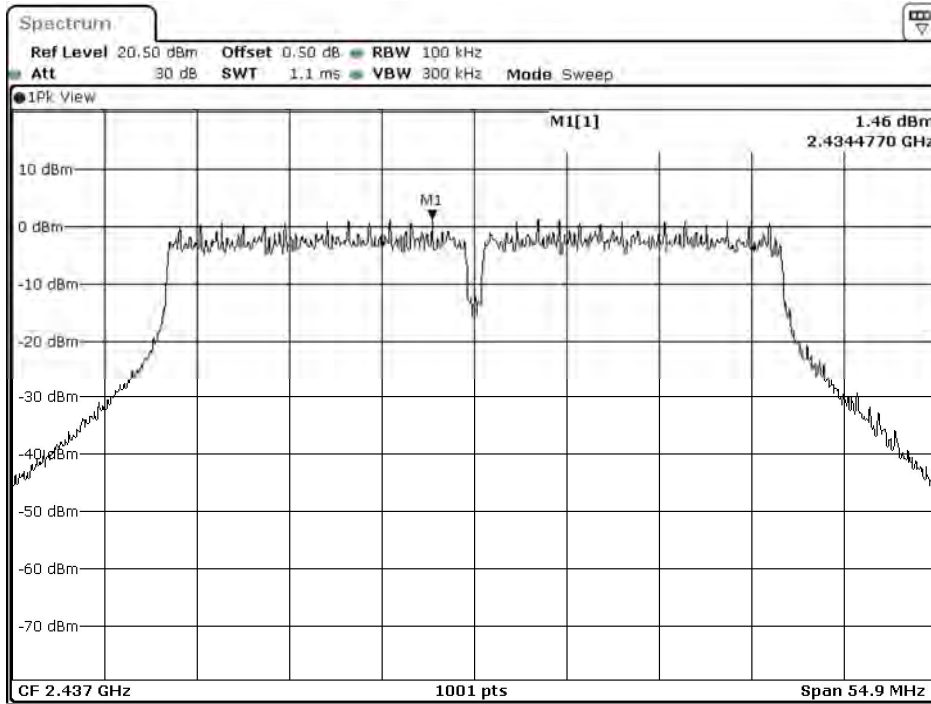
The quantity 10\*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 3: (Chain A)



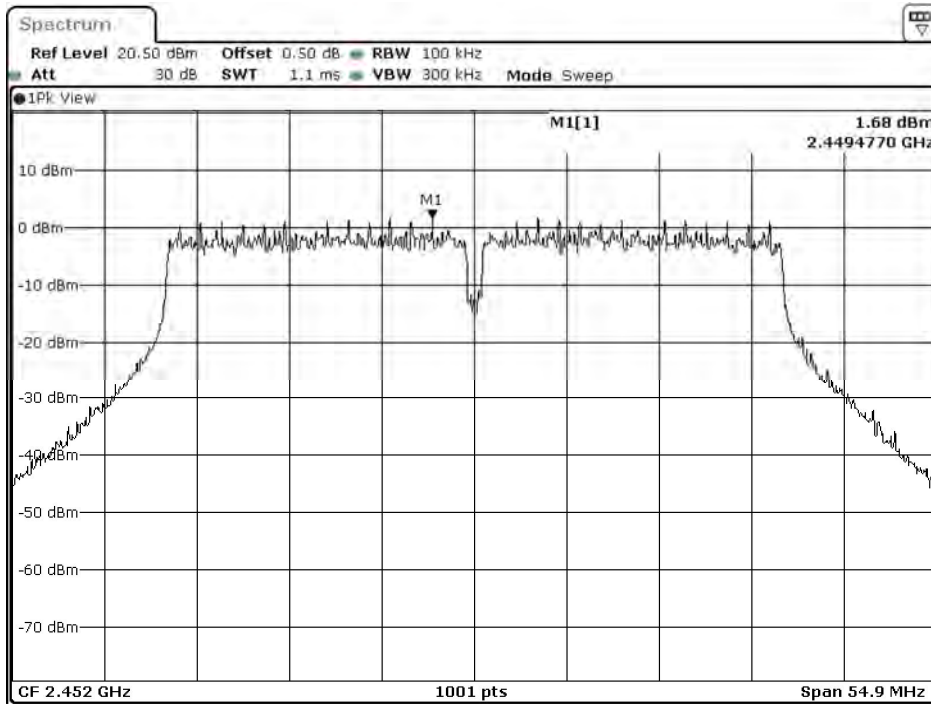
Date: 19.FEB.2021 08:56:38

Figure Channel 6: (Chain A)



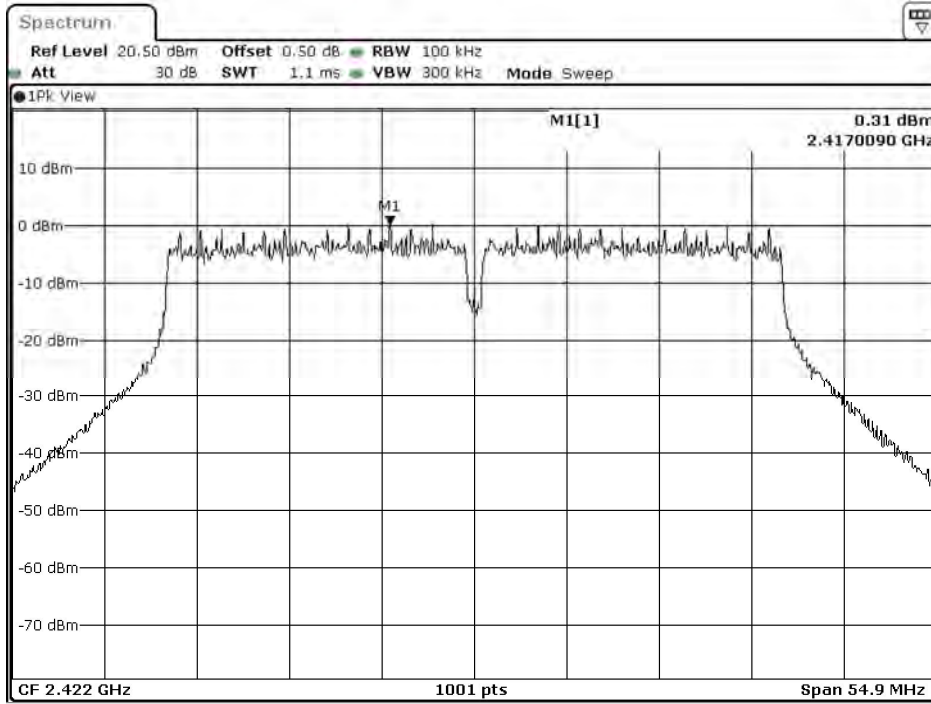
Date: 19.FEB.2021 08:59:17

Figure Channel 9: (Chain A)



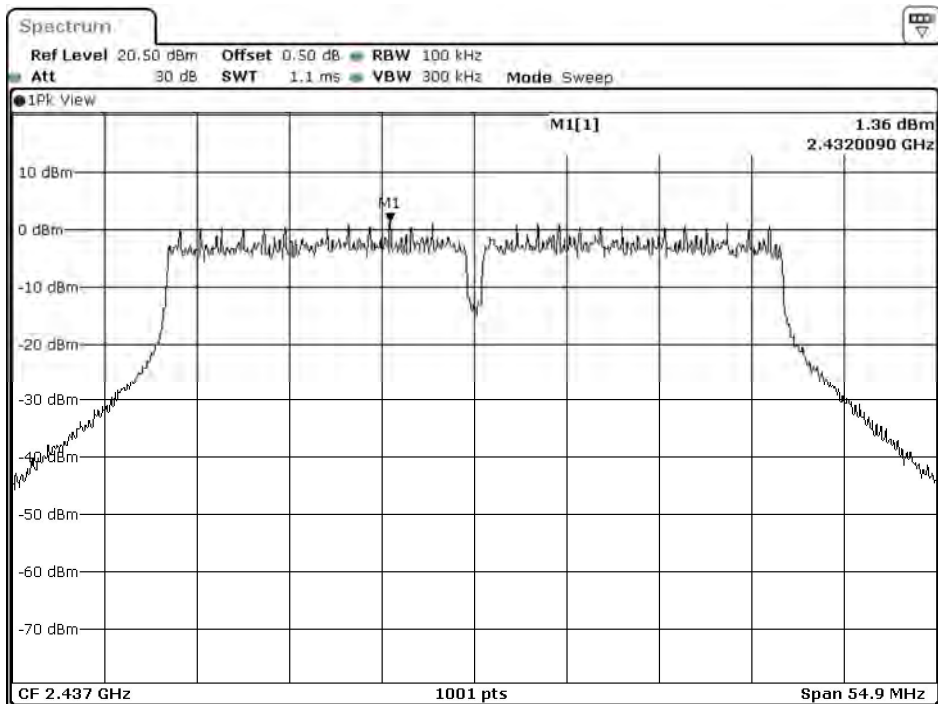
Date: 19.FEB.2021 09:01:51

**Figure Channel 3: (Chain B)**



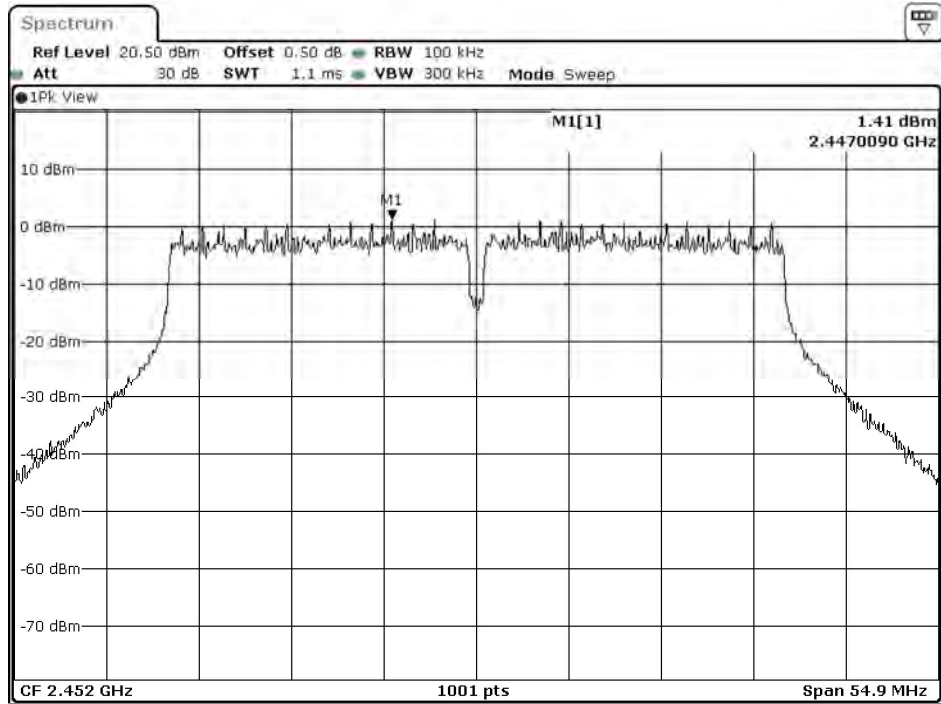
Date: 19.FEB.2021 11:02:03

**Figure Channel 6: (Chain B)**



Date: 19.FEB.2021 11:04:43

Figure Channel 9: (Chain B)

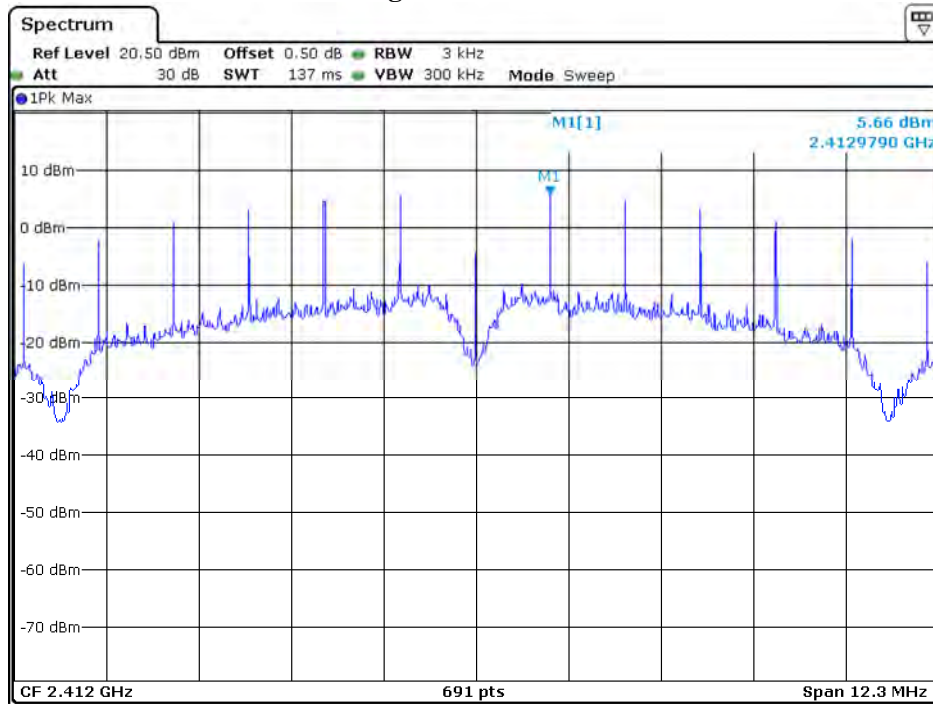


Date: 19.FEB.2021 11:07:16

Product : Wireless module  
 Test Item : Power Density Data  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) – Panel Antenna

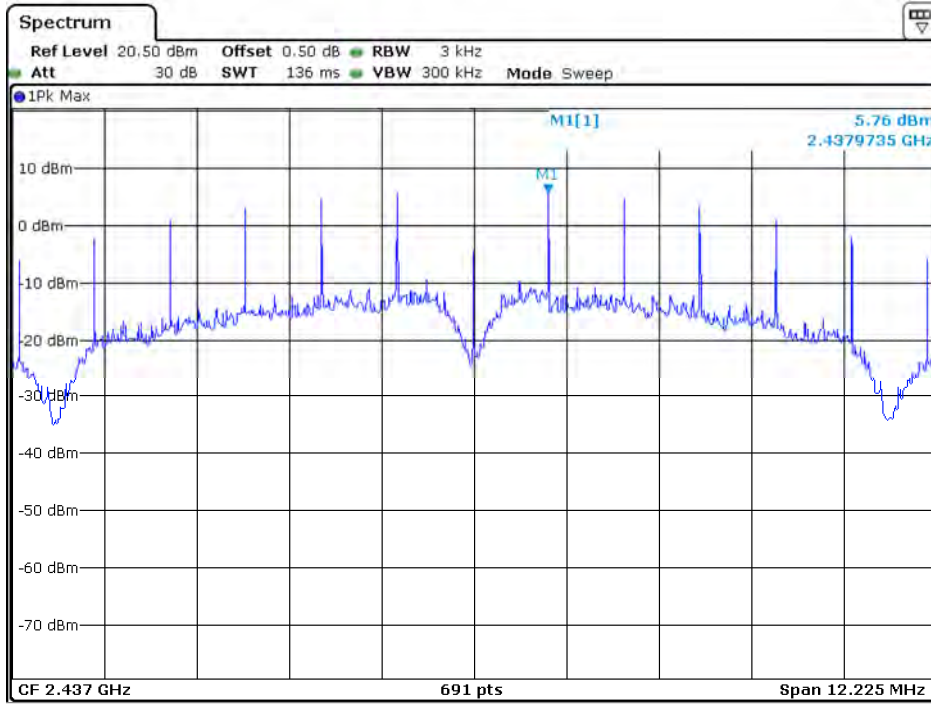
Channel No.	Frequency (MHz)	PPSD/MHz (dBm)	Limit (dBm)	Result
01	2412.000	5.660	≤ 6dBm	Pass
06	2437.000	5.760	≤ 6dBm	Pass
11	2462.000	5.690	≤ 6dBm	Pass

Figure Channel 1:



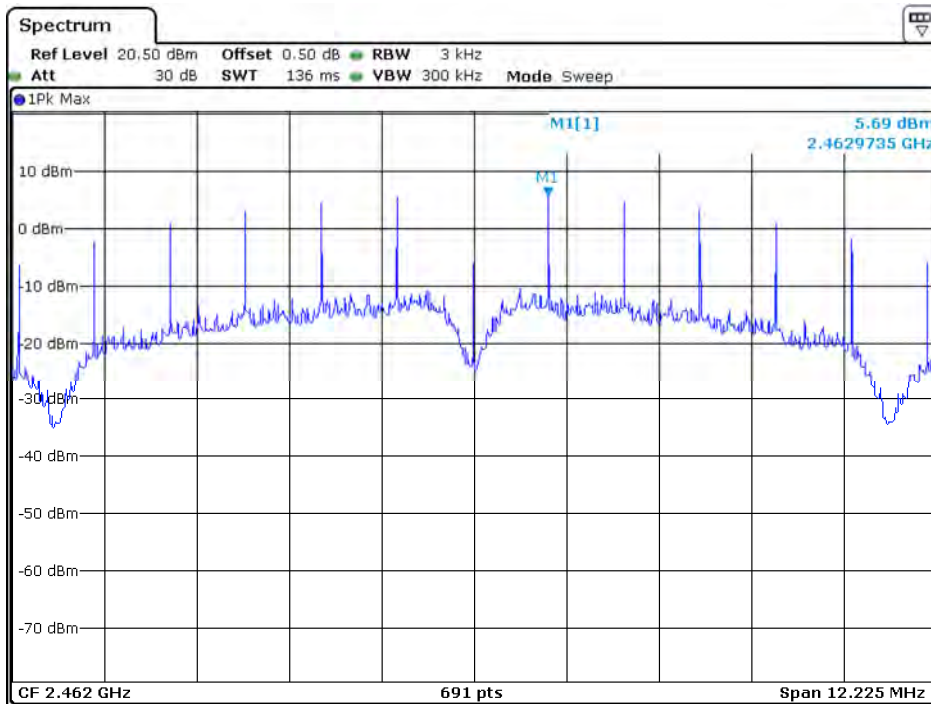
Date: 20.FEB.2021 04:12:04

Figure Channel 6:



Date: 20.FEB.2021 04:24:22

Figure Channel 11:

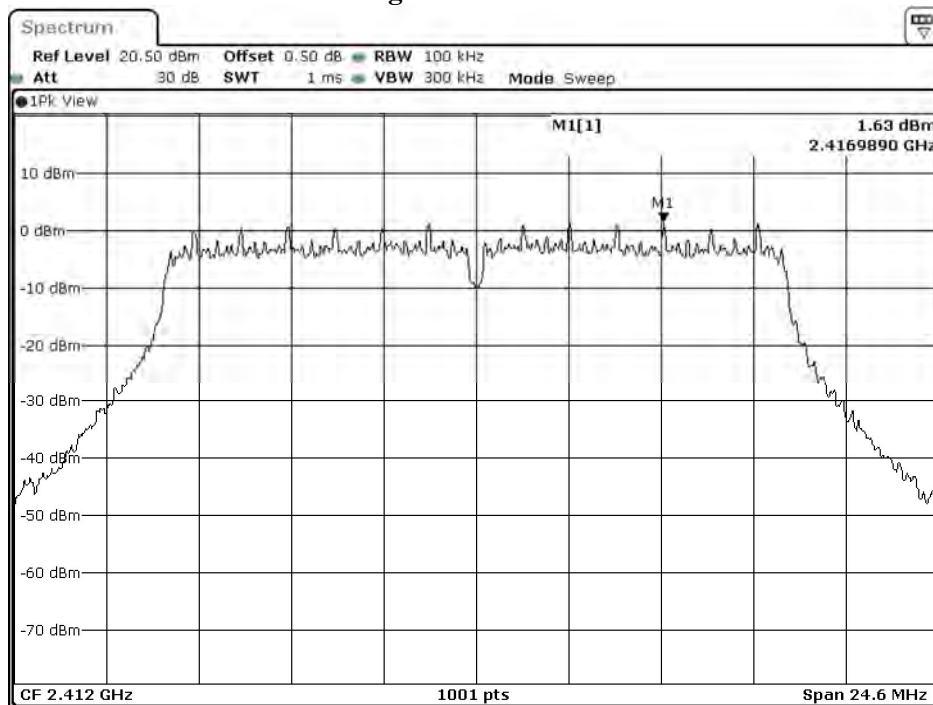


Date: 20.FEB.2021 04:31:52

Product : Wireless module  
 Test Item : Power Density Data  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) – Panel Antenna

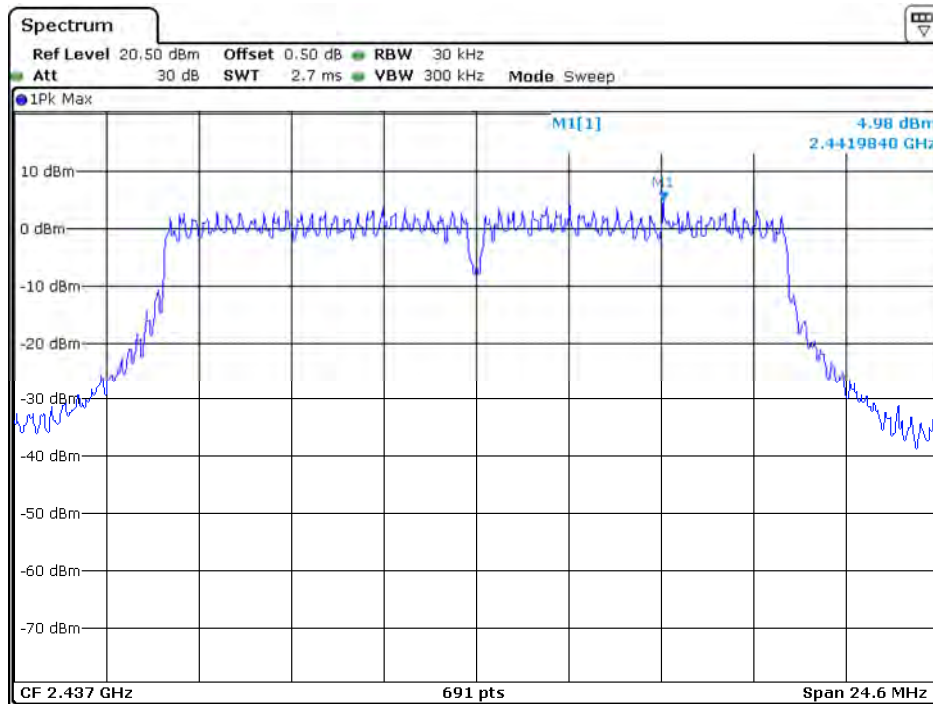
Channel No.	Frequency (MHz)	PPSD/MHz (dBm)	Limit (dBm)	Result
01	2412.000	1.630	≤ 6dBm	Pass
06	2437.000	4.980	≤ 6dBm	Pass
11	2462.000	1.400	≤ 6dBm	Pass

Figure Channel 1:



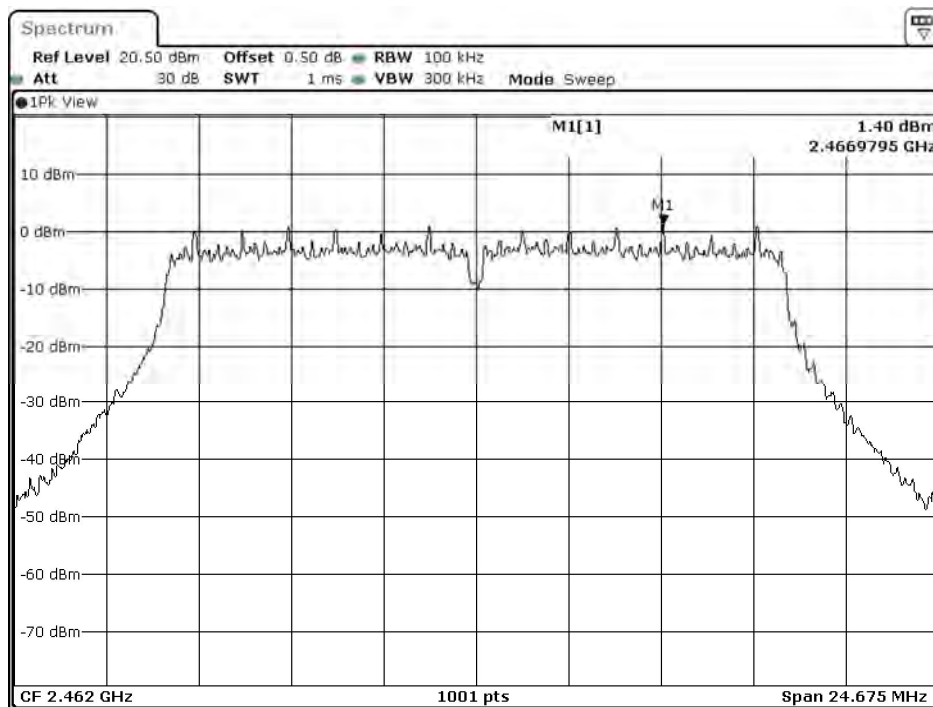
Date: 20.FEB.2021 01:19:14

Figure Channel 6:



Date: 20.FEB.2021 03:35:07

Figure Channel 11:



Date: 20.FEB.2021 01:26:19



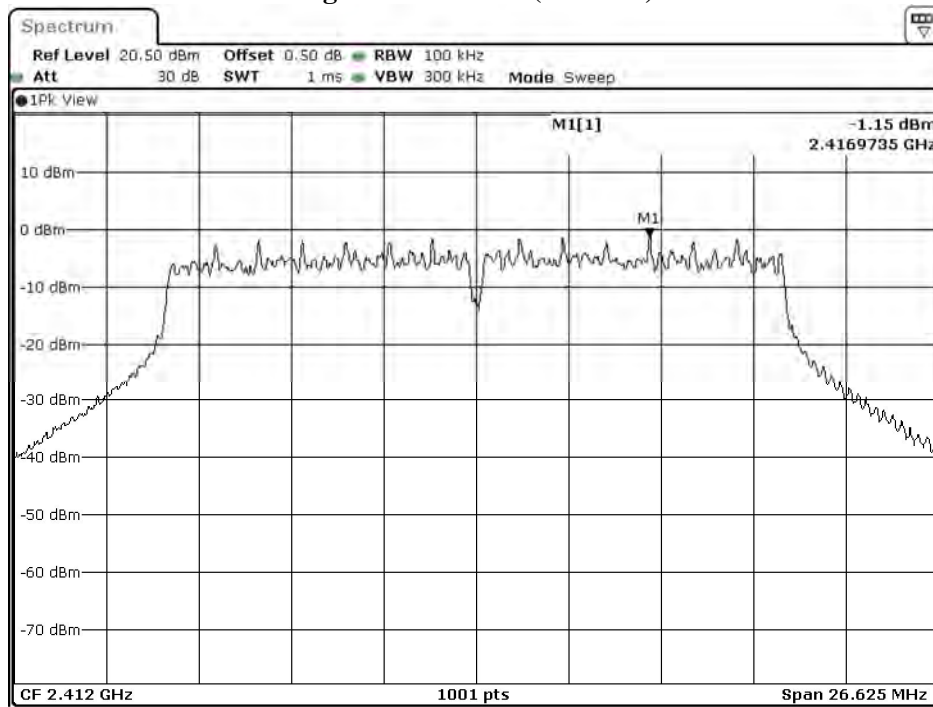
Product : Wireless module  
 Test Item : Power Density Data  
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) – Panel Antenna

Channel No.	Frequency (MHz)	Chain	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)	Limit (dBm)	Result
01	2412.000	A	-1.150	1.860	≤ 6dBm	Pass
		B	-1.530	1.480	≤ 6dBm	Pass
06	2437.000	A	1.400	4.410	≤ 6dBm	Pass
		B	1.390	4.400	≤ 6dBm	Pass
11	2462.000	A	-0.700	2.310	≤ 6dBm	Pass
		B	-0.910	2.100	≤ 6dBm	Pass

Note :

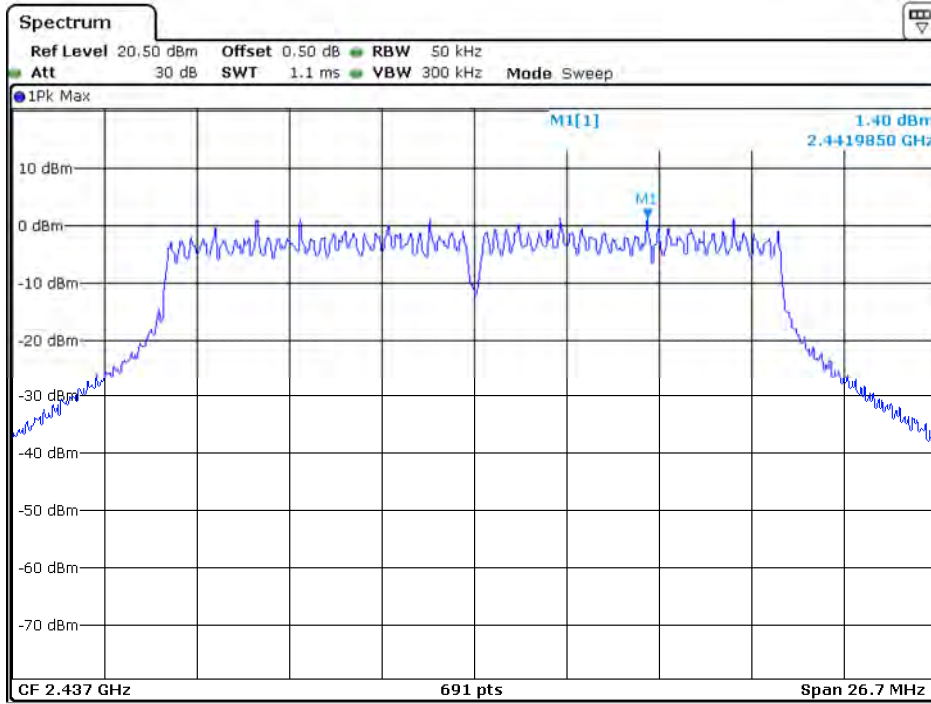
The quantity 10\*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 1: (Chain A)



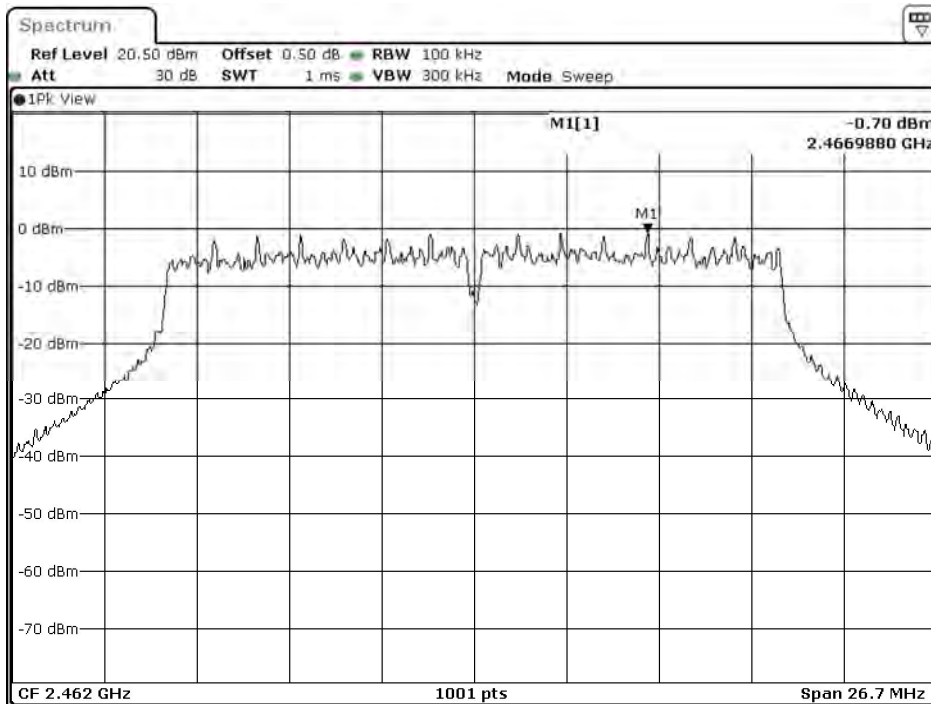
Date: 20.FEB.2021 01:30:48

Figure Channel 6: (Chain A)



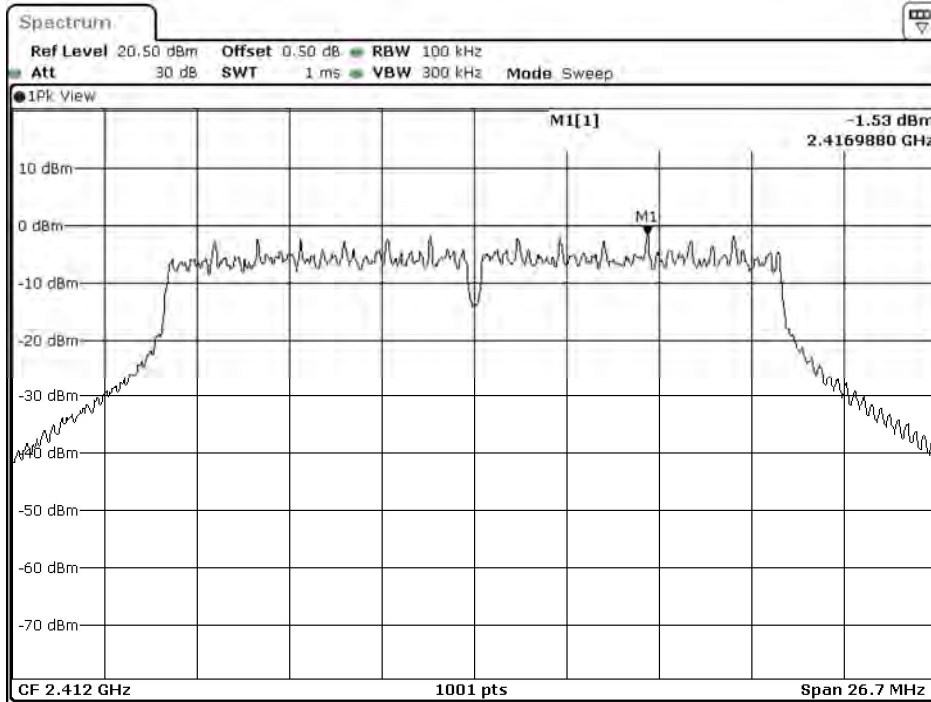
Date: 20.FEB.2021 03:27:03

Figure Channel 11: (Chain A)



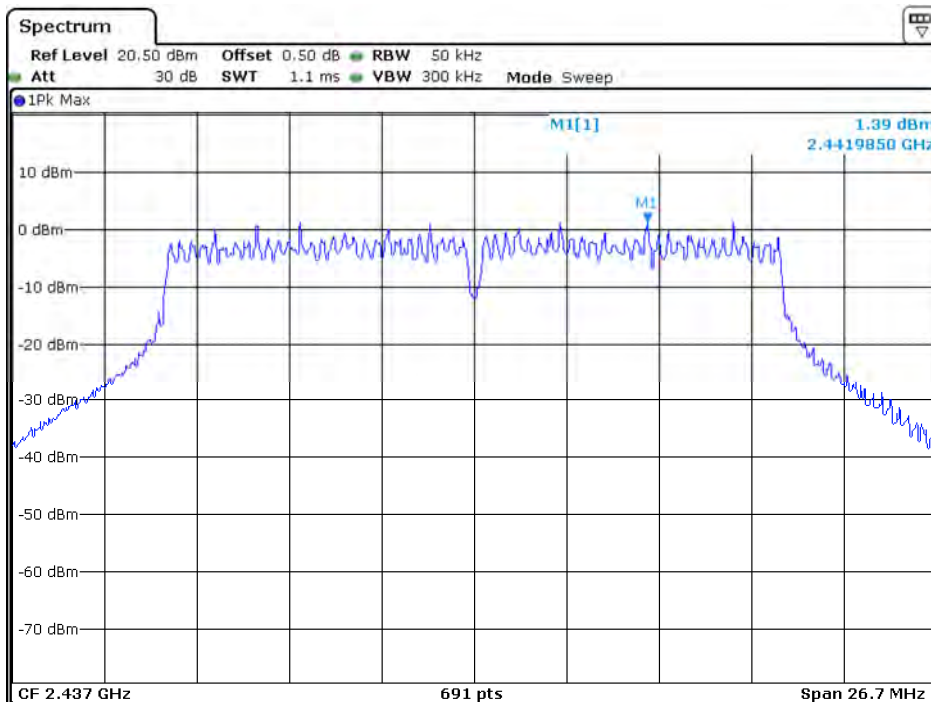
Date: 20.FEB.2021 01:36:28

Figure Channel 1: (Chain B)



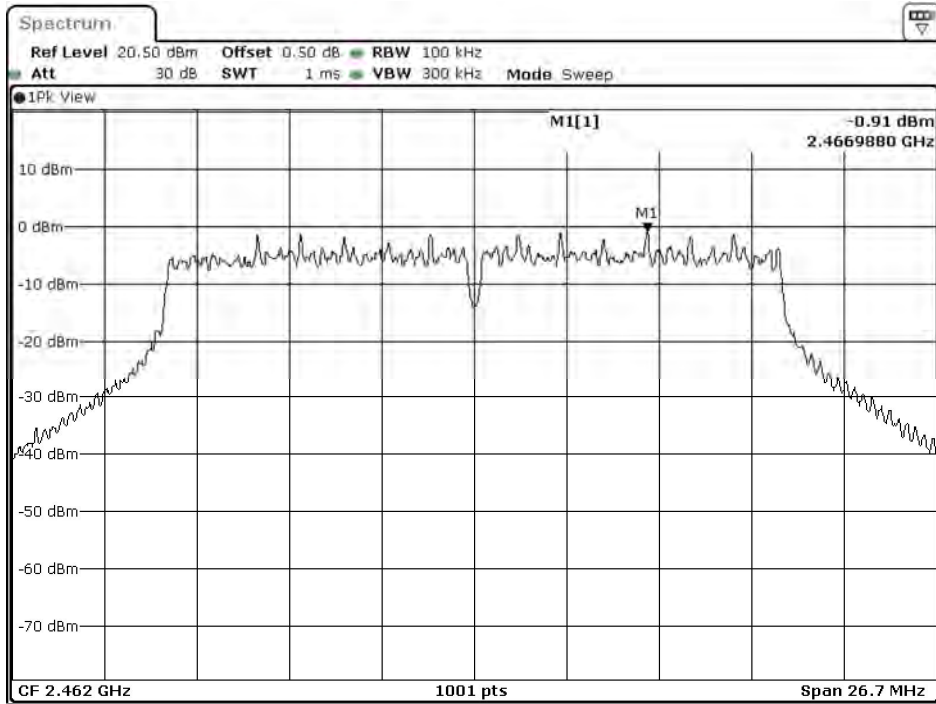
Date: 20.FEB.2021 03:36:13

Figure Channel 6: (Chain B)



Date: 20.FEB.2021 05:35:11

Figure Channel 11: (Chain B)



Date: 20.FEB.2021 03:41:53

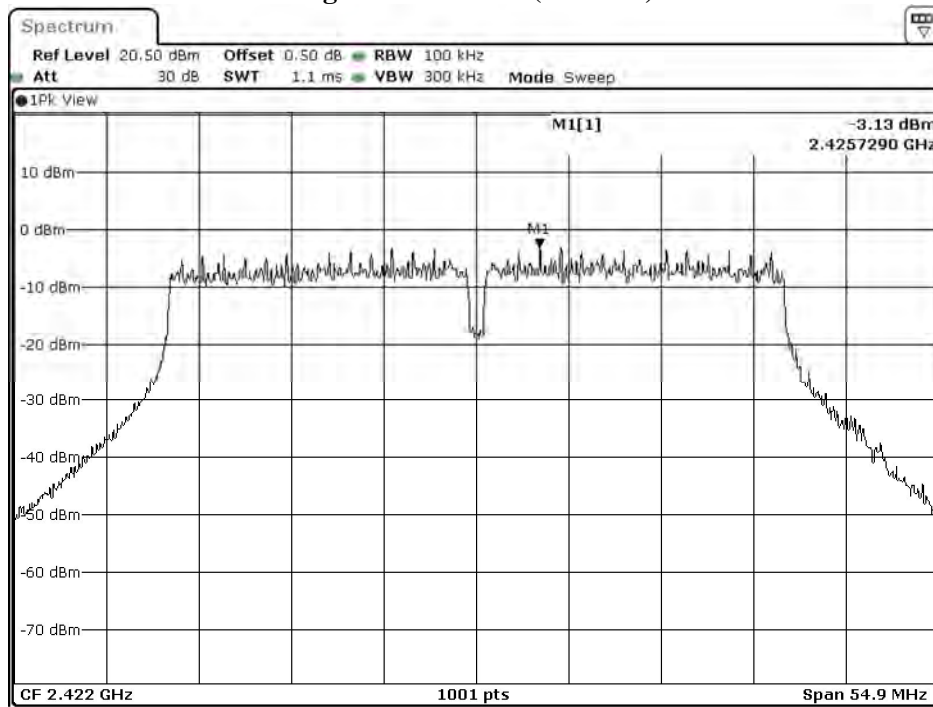
Product : Wireless module  
 Test Item : Power Density Data  
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) – Panel Antenna

Channel No.	Frequency (MHz)	Chain	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)	Limit (dBm)	Result
03	2422.000	A	-3.130	-0.120	≤ 6dBm	Pass
		B	-3.710	-0.700	≤ 6dBm	Pass
06	2437.000	A	0.960	3.970	≤ 6dBm	Pass
		B	0.830	3.840	≤ 6dBm	Pass
09	2452.000	A	-3.360	-0.350	≤ 6dBm	Pass
		B	-3.730	-0.720	≤ 6dBm	Pass

Note :

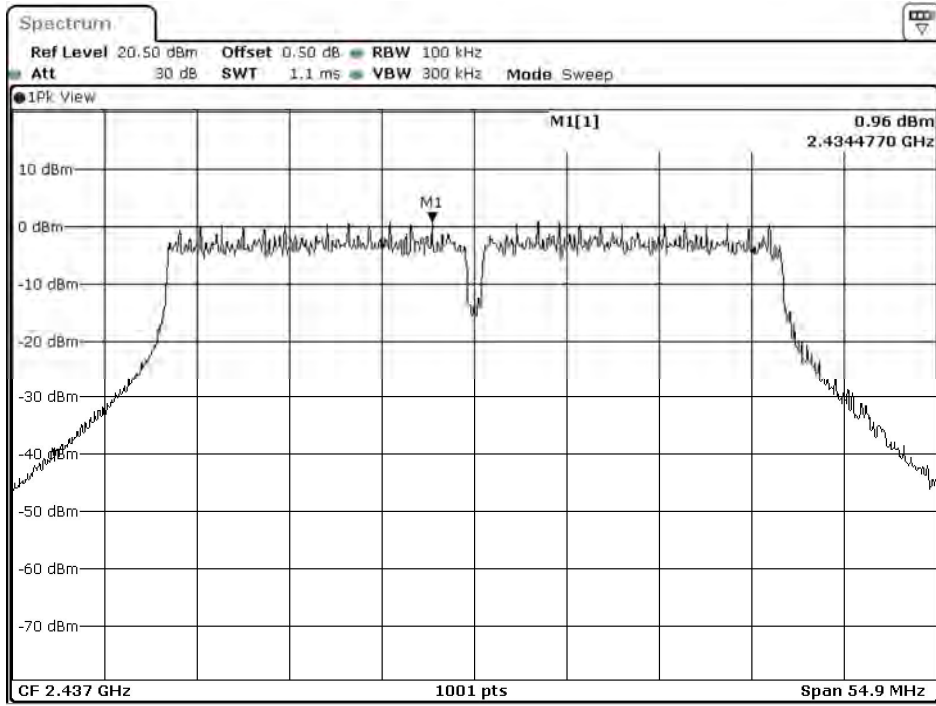
The quantity 10\*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 3: (Chain A)



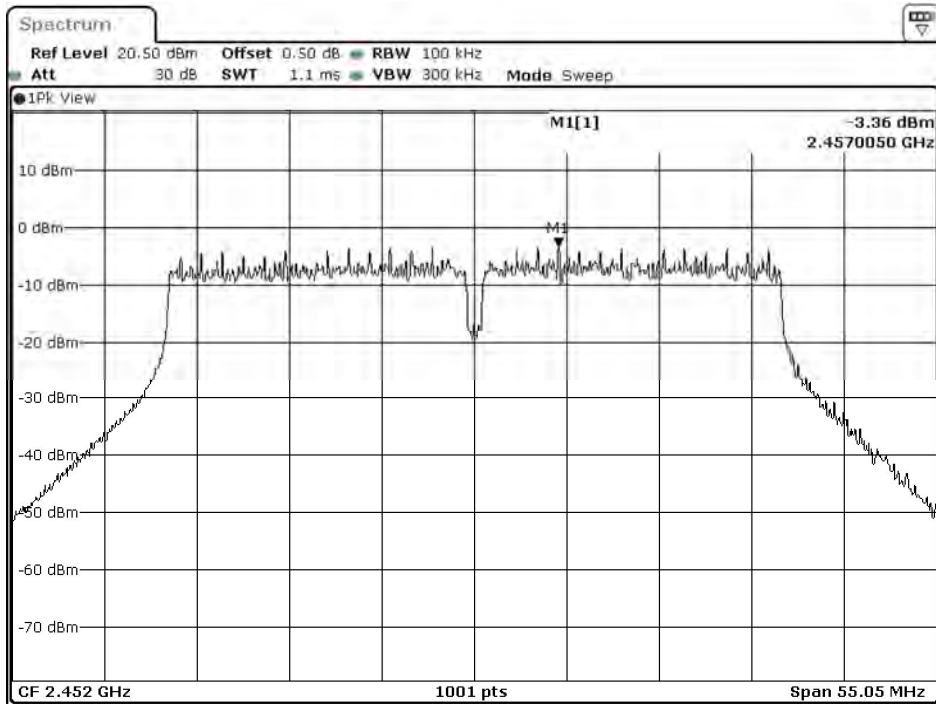
Date: 20.FEB.2021 01:39:21

Figure Channel 6: (Chain A)



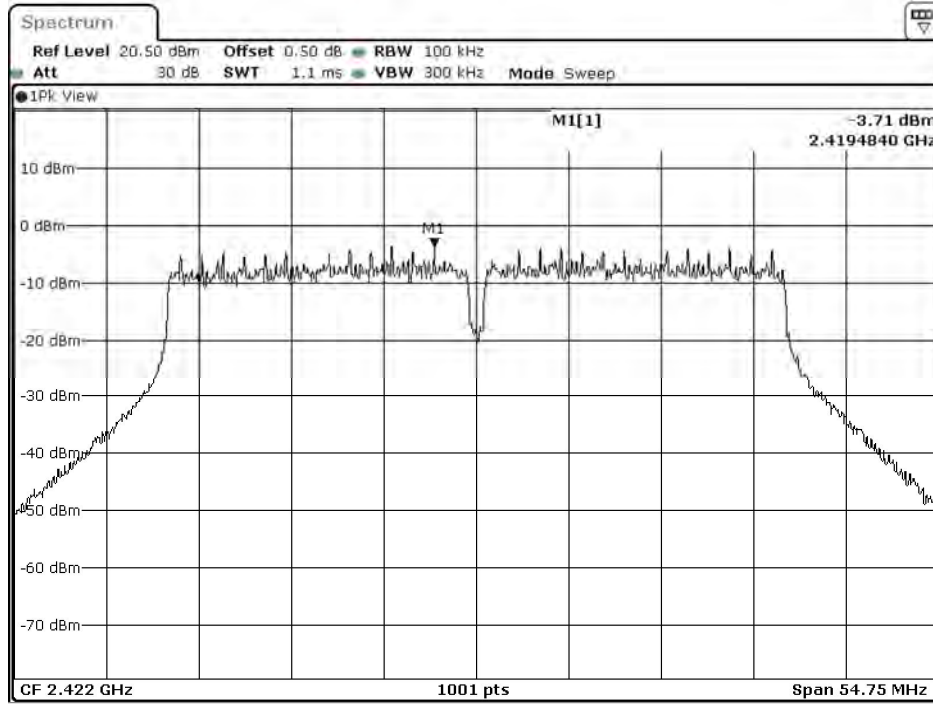
Date: 20.FEB.2021 01:49:02

Figure Channel 9: (Chain A)



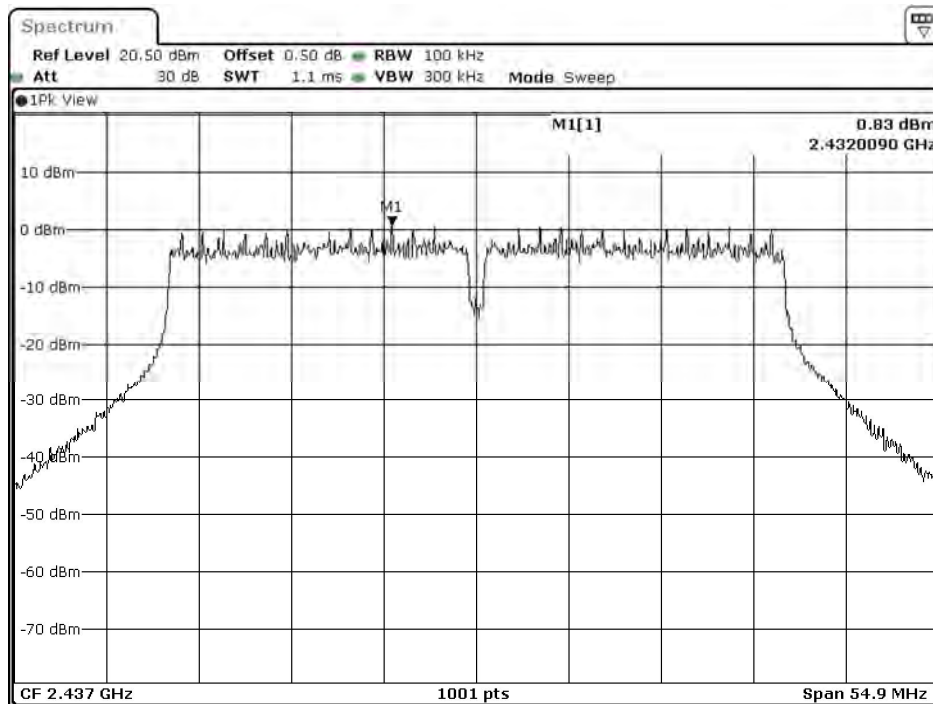
Date: 20.FEB.2021 01:52:41

Figure Channel 3: (Chain B)



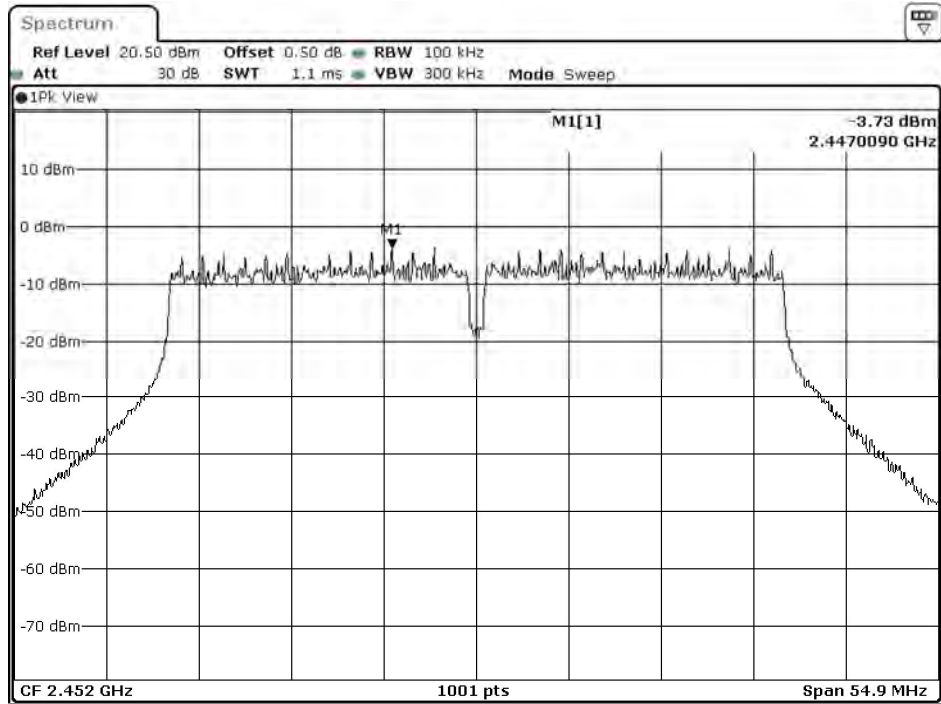
Date: 20.FEB.2021 03:44:46

Figure Channel 6: (Chain B)



Date: 20.FEB.2021 03:54:27

Figure Channel 9: (Chain B)

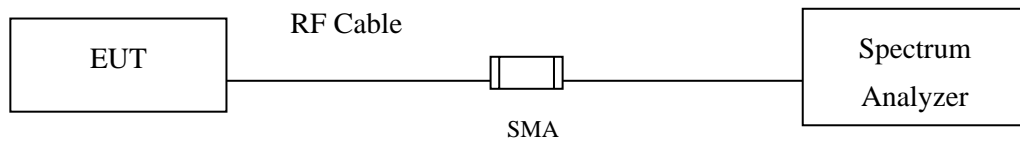


Date: 20.FEB.2021 03:58:06



## 9. Duty Cycle

### 9.1. Test Setup



### 9.2. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to ANSI C63.10 2013 for compliance to FCC 47CFR 15.247 requirements.

### 9.3. Test Result of Duty Cycle

Product : Wireless module  
Test Item : Duty Cycle  
Test Mode : Transmit

Duty Cycle Formula:

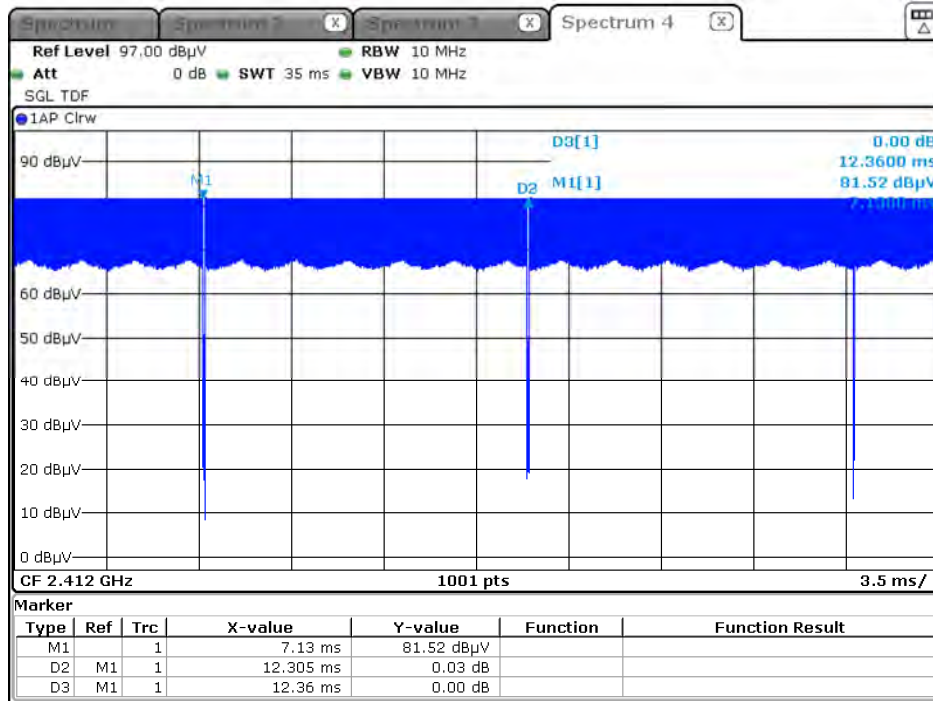
$\text{Duty Cycle} = \text{Ton} / (\text{Ton} + \text{Toff})$

$\text{Duty Factor} = 10 \text{ Log} (1/\text{Duty Cycle})$

Results:

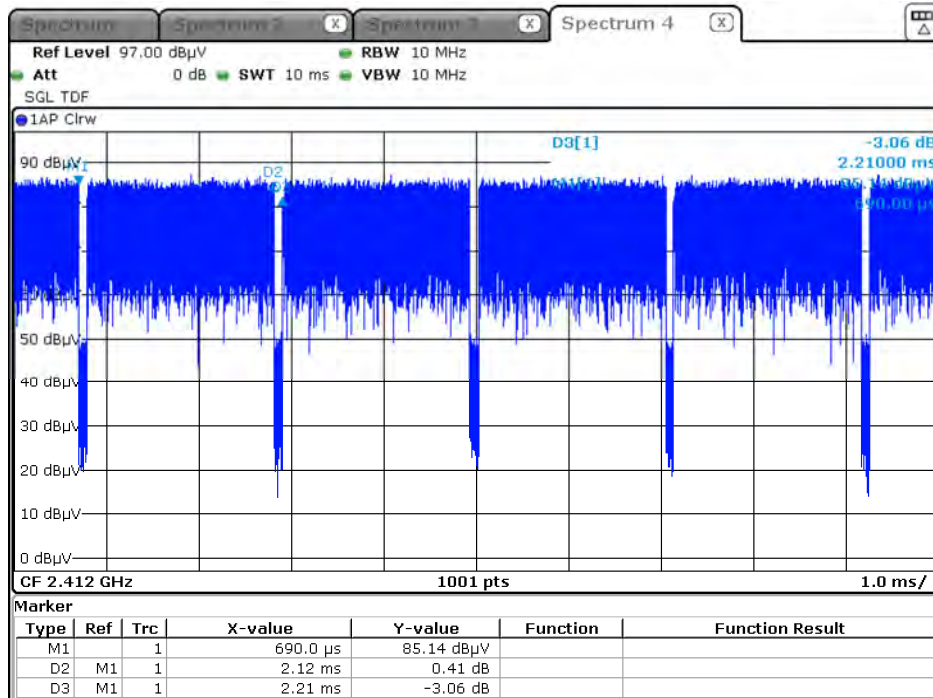
2.4GHz band	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11 b	12.3050	12.3600	99.56	0.02
802.11 g	2.1200	2.2100	95.93	0.18
802.11 n20	2.6000	2.6800	97.01	0.13
802.11 n40	1.3150	1.4000	93.93	0.27

802.11b



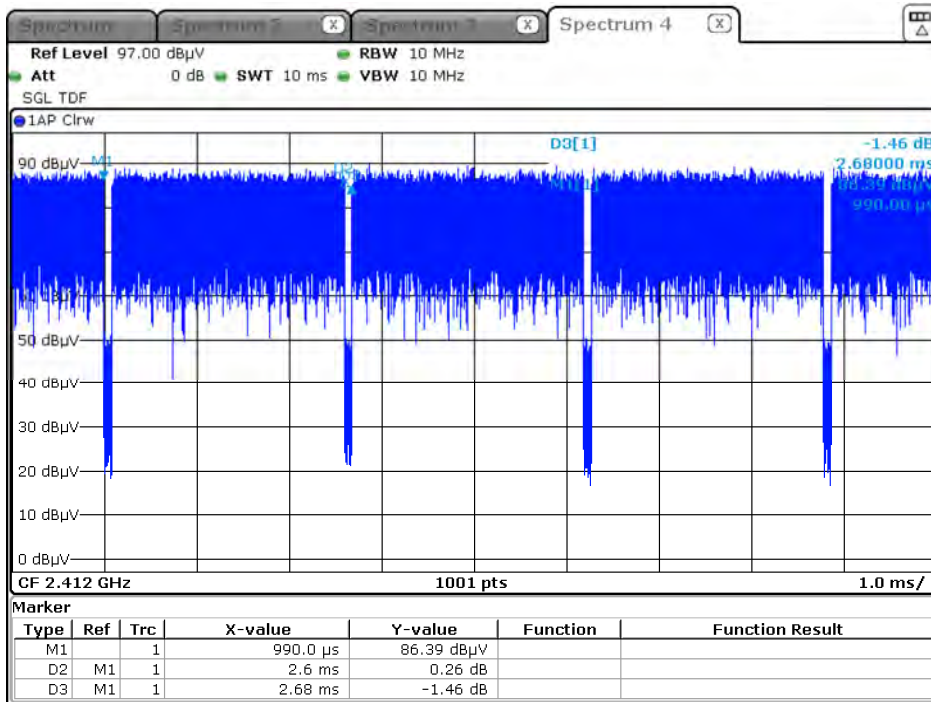
Date: 3.FEB.2021 13:12:02

802.11g



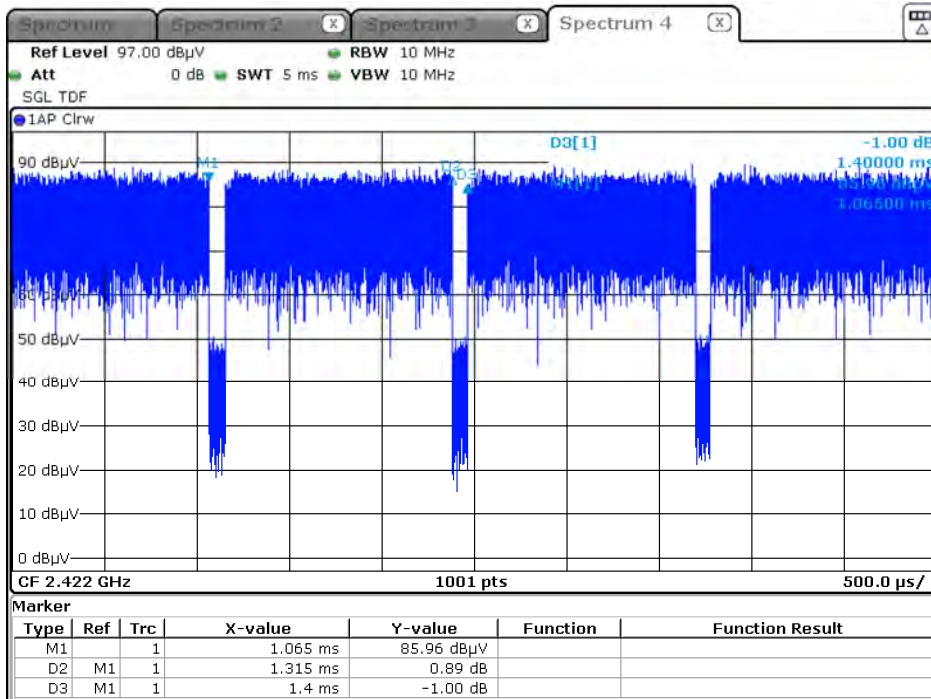
Date: 3.FEB.2021 13:10:31

802.11n20



Date: 3.FEB.2021 13:14:03

802.11n40



Date: 3.FEB.2021 13:31:44

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**10. EMI Reduction Method During Compliance Testing**

No modification was made during testing.