Annex 1: Measurement diagrams to
T E S T R E P O R T
No.: 16-1-0092001T02a

According to:
FCC Regulations
Part 15.207
Part 15.247

IC-Regulations
RSS-Gen, Issue 4
RSS-247, Issue 1

for
QSC AG

Vitoconnect 100, Variant OT1
OpenTherm

FCC-ID: 2AIZ9-VC0616
IC: 21680-VC0616
PMN: Vitoconnect 100
HVIN: Vitoconnect 100 OT1

Laboratory Accreditation and Listings			
DAkkS Deutsche Akkreditierungsstelle D-PL-12047-01-01	MRA US-EU 0003	Industry Canada Reg. No.: 3462D-2 Reg. No.: 3462D-3	Voluntary Controls for Electromagnetic Emissions Reg. No.: R-2666 C-2914, T-1967, G-301
Wi Fi ALLIANCE AUTHORIZED RF LABORATORY	ctia Authorized™ Test Lab Lab Code: 20011130-00		
accredited according to DIN EN ISO/IEC 17025			

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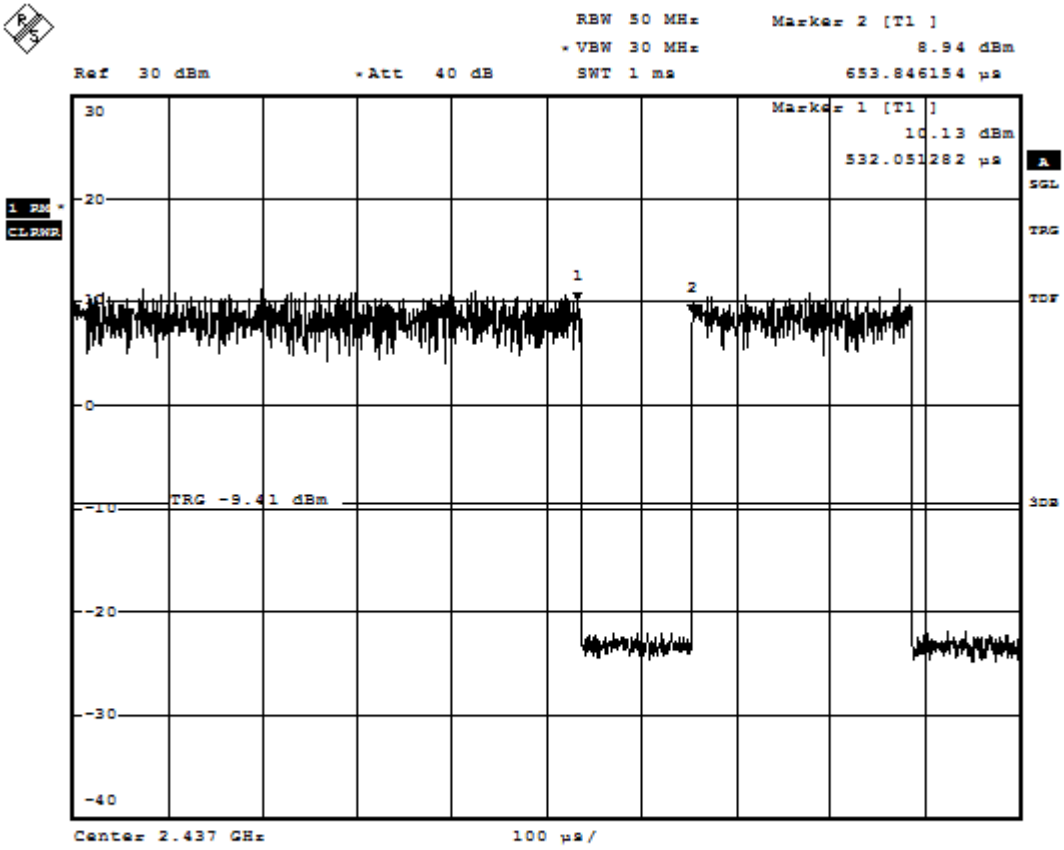
1.1. Duty-Cycle

1.1.1. b-mode

WLAN2.4GHz-DC-bMode-1Mbit-CH6



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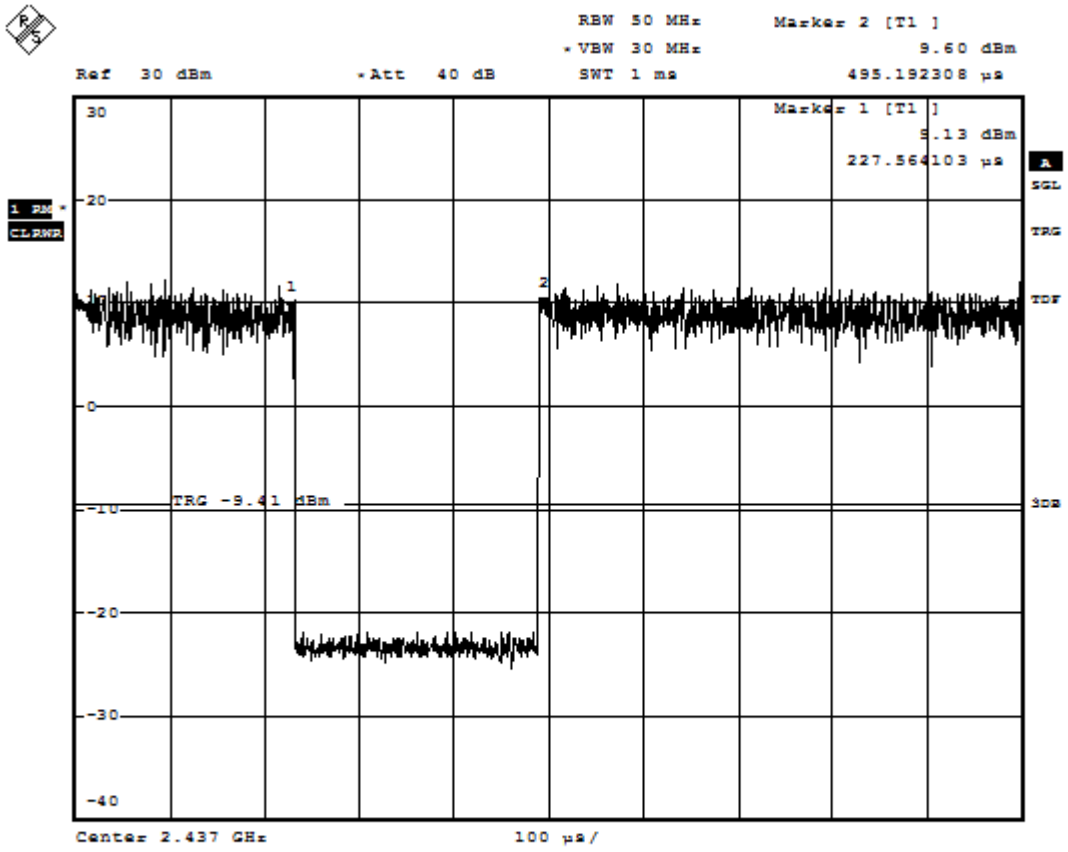
WLAN2.4GHz-DC-bMode-11Mbit-CH6



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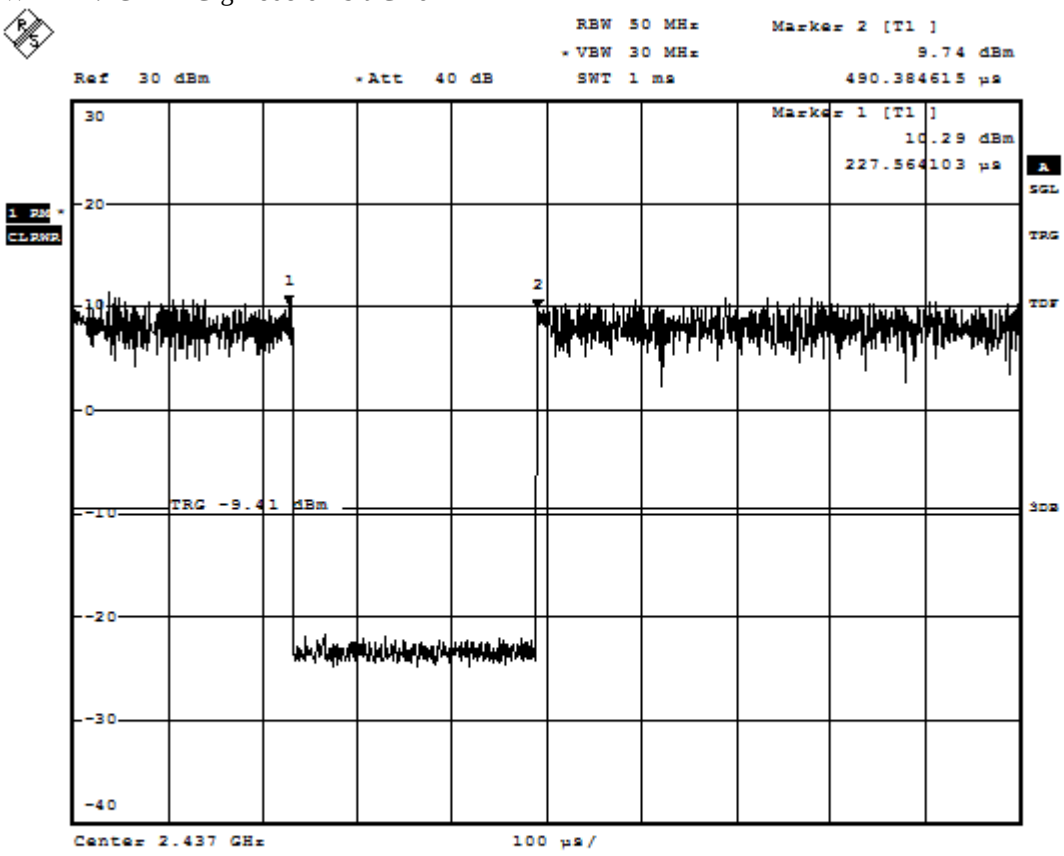
1.1.2. g-mode

WLAN2.4GHz-DC-gMode-6Mbit-CH6



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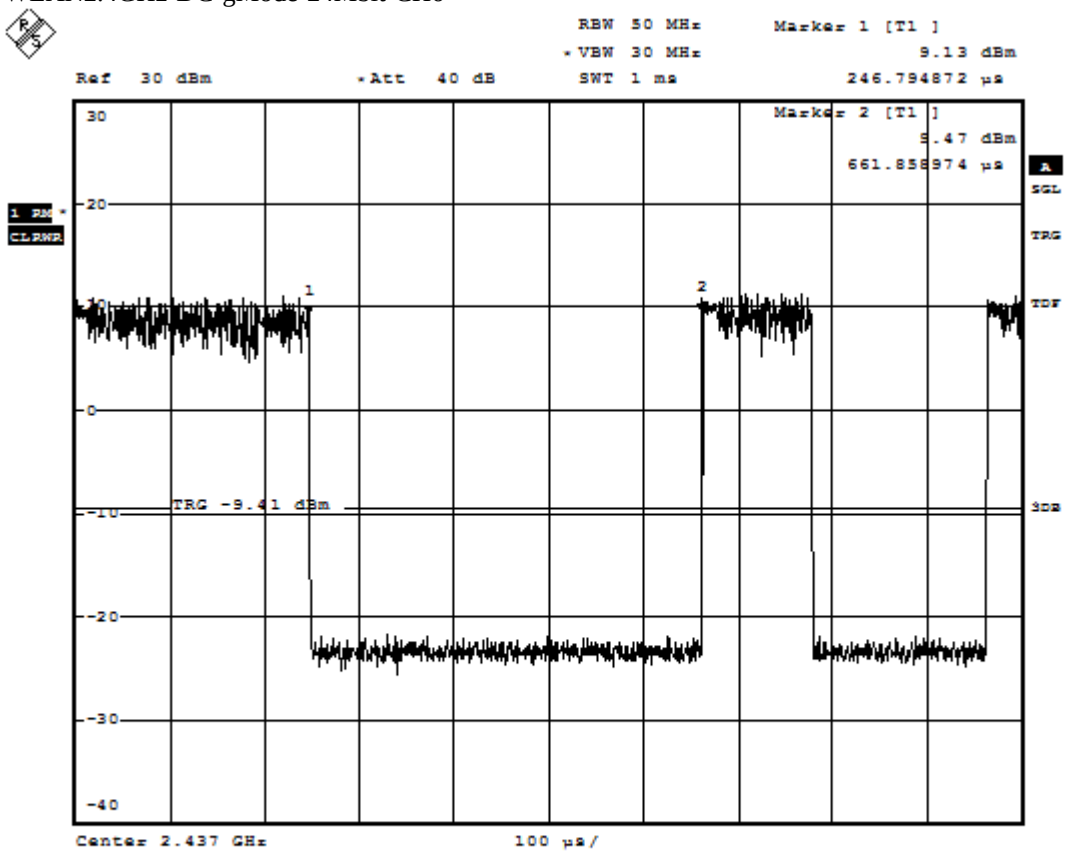

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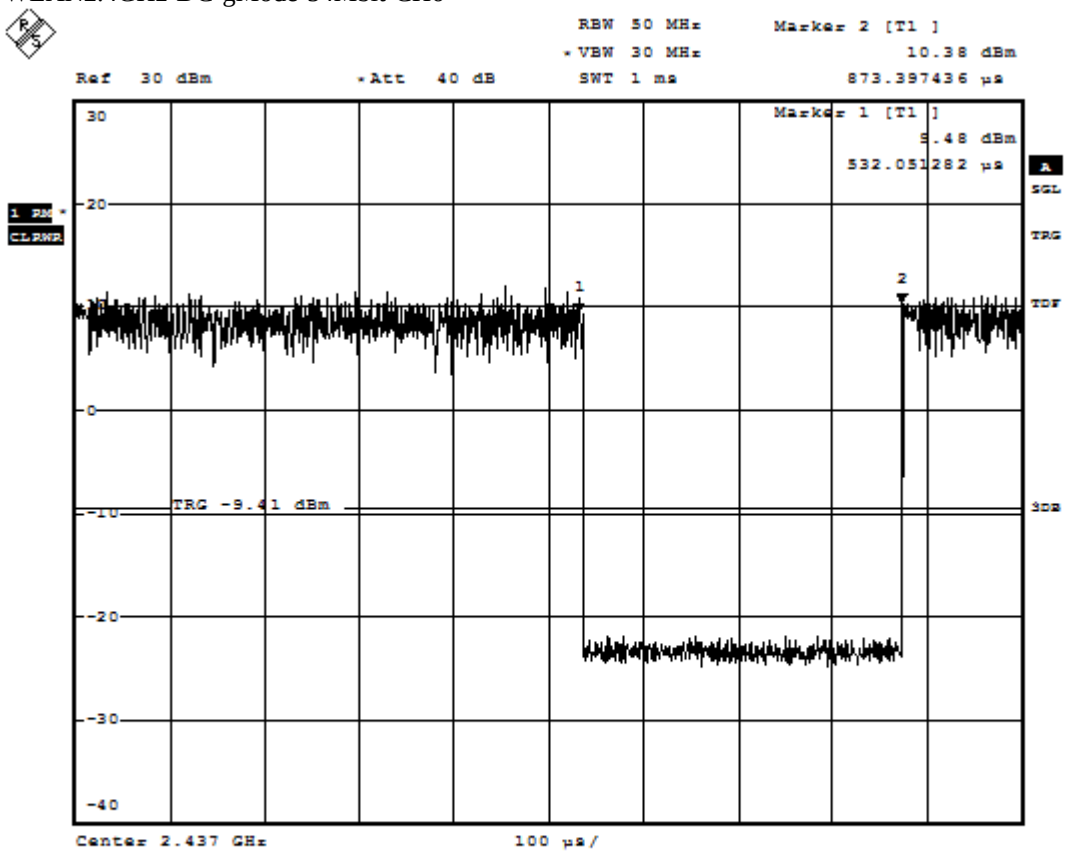

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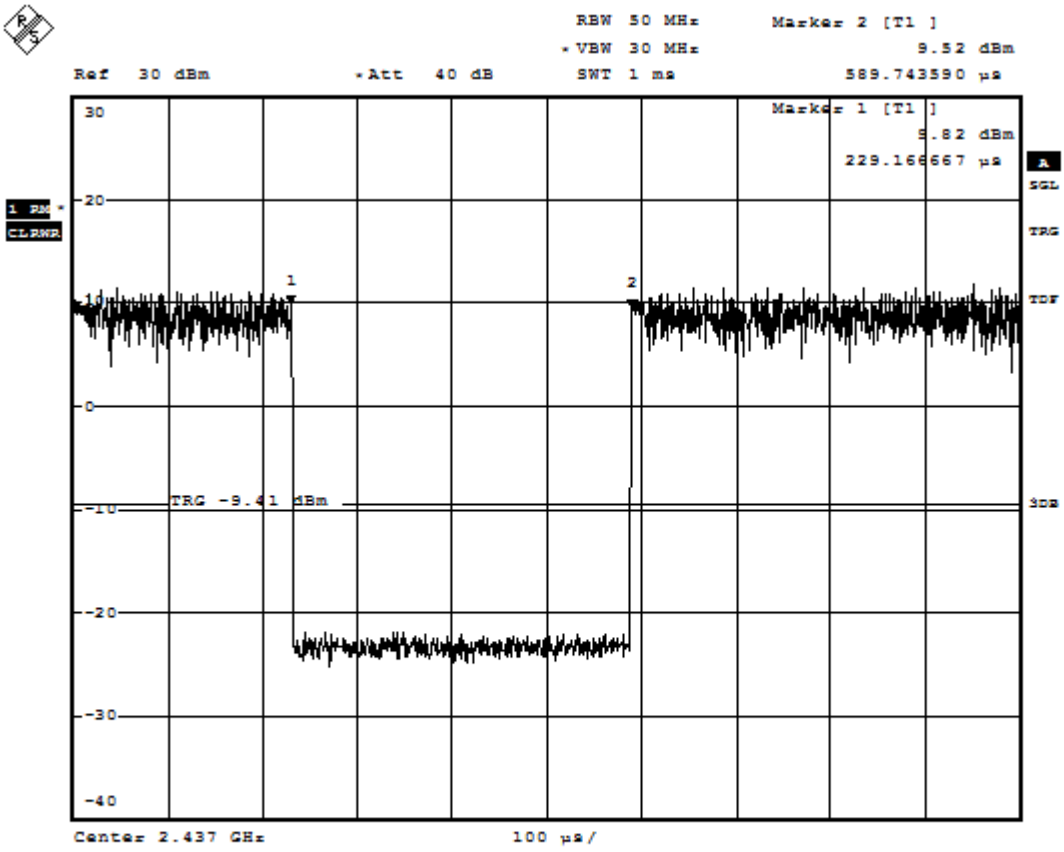
1.1.3. n-mode

WLAN2.4GHz-DC-nMode-MCS0-CH6



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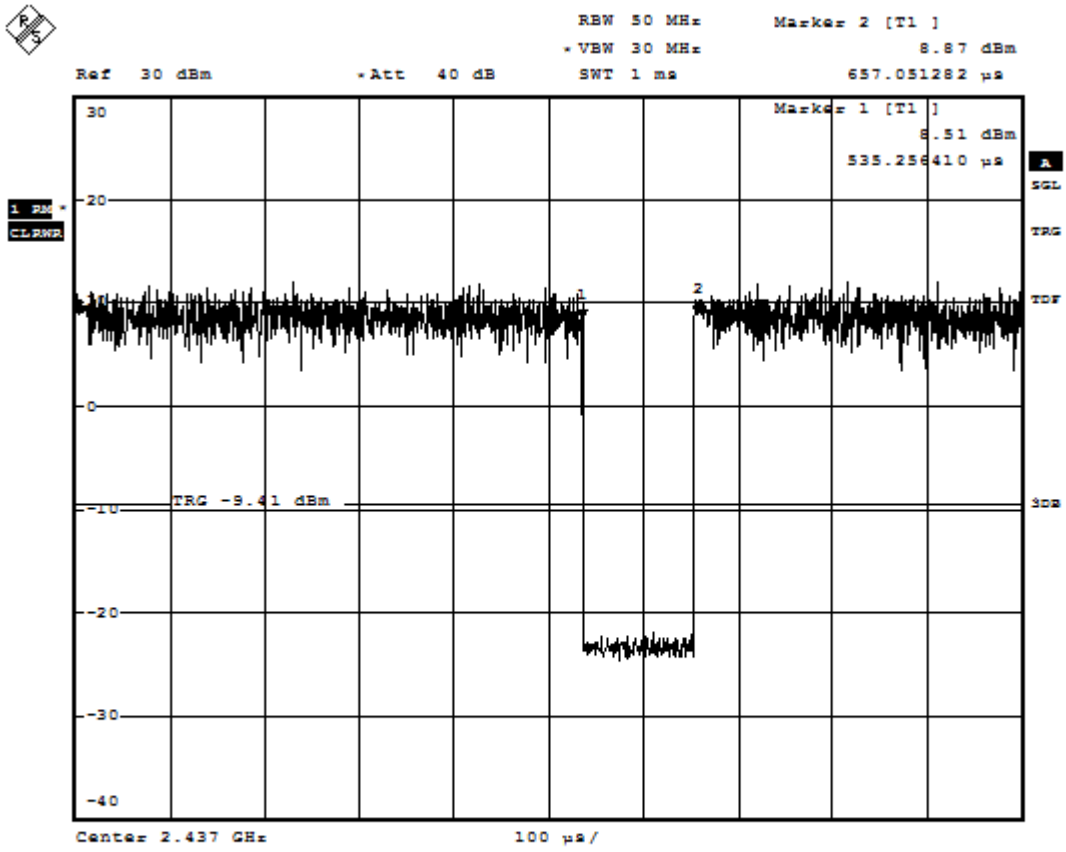

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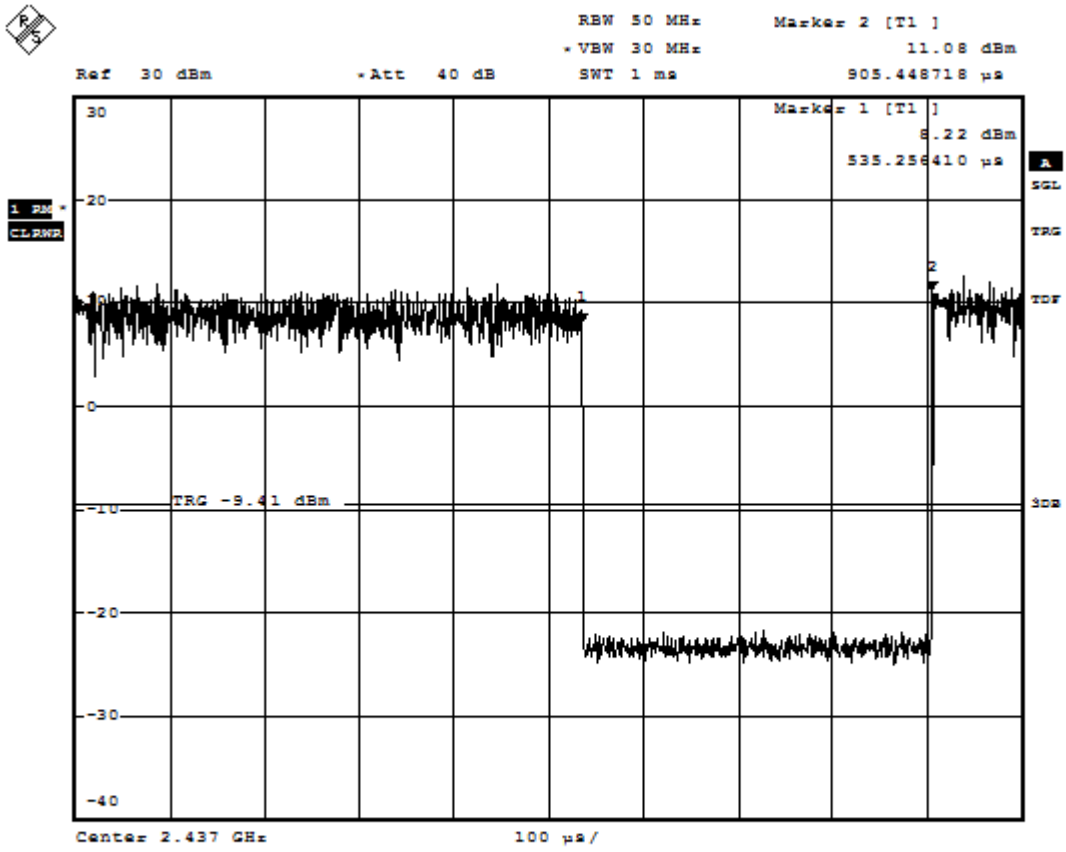

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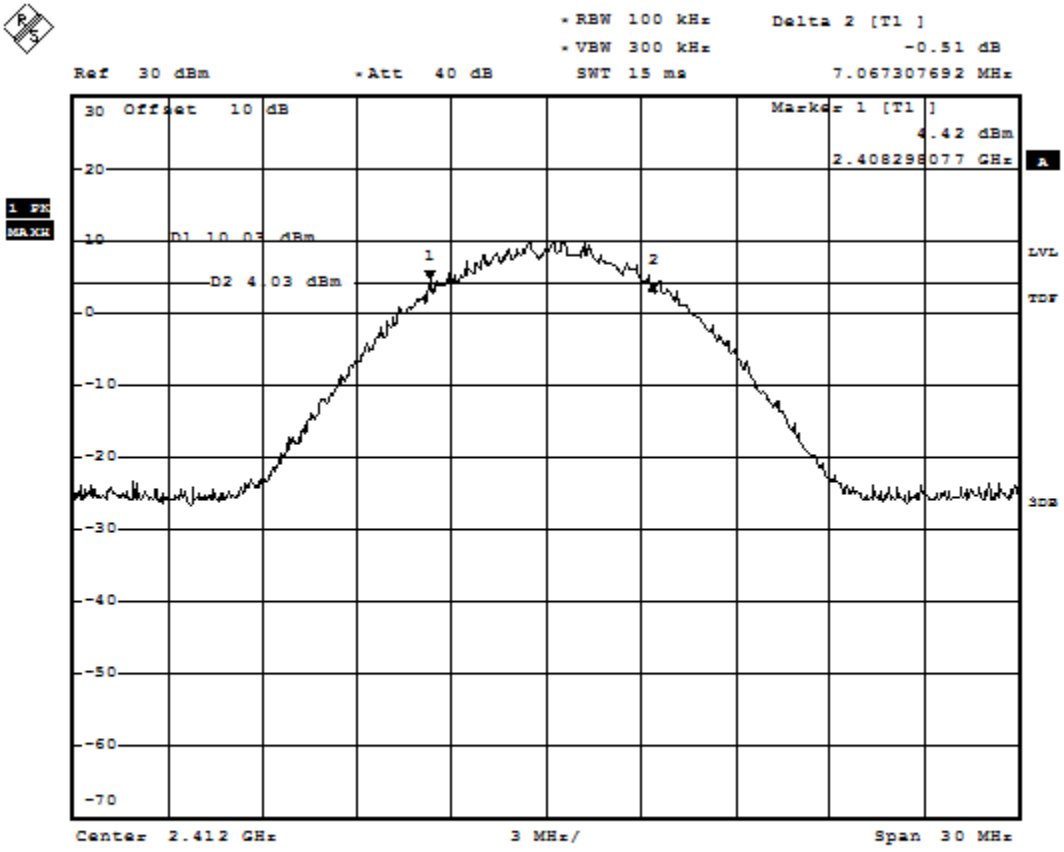
1.2. RF-Parameter - 6 dB Bandwidth and 99% occupied Bandwith

1.2.1. 6db BW b Mode 11Mbit

WLAN2.4GHz-bMode-11MBit-6dB-BW-CH1



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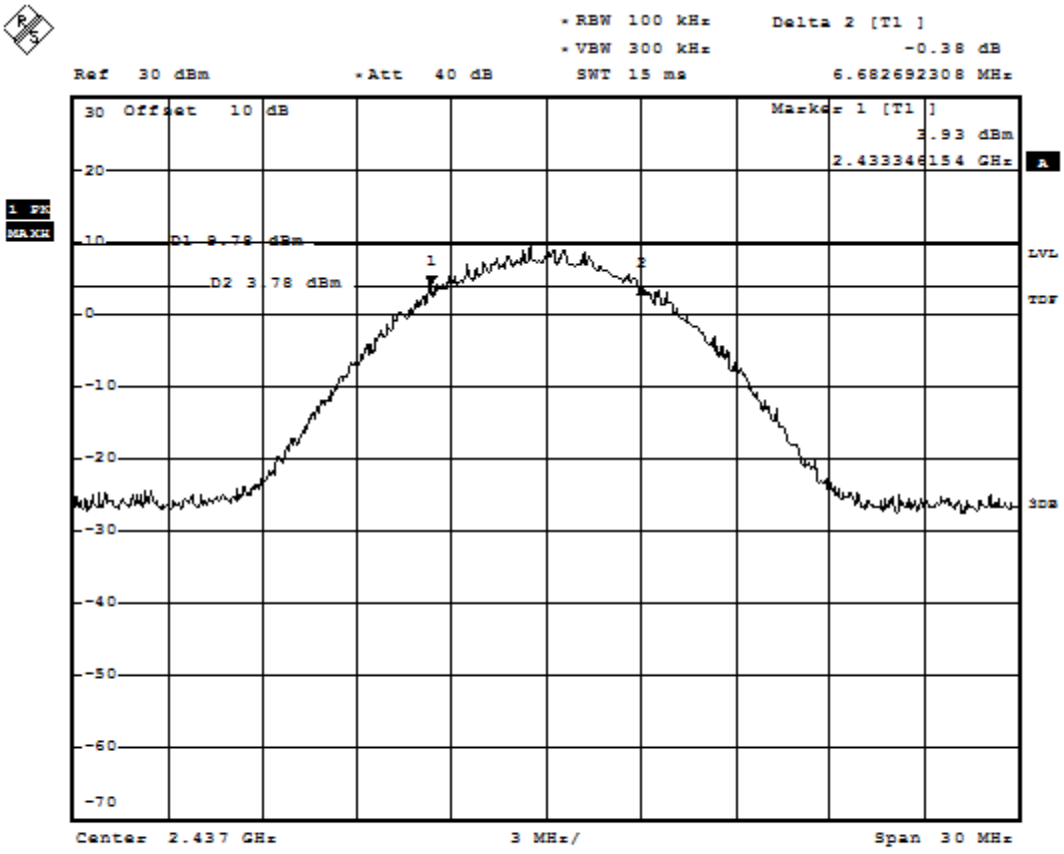

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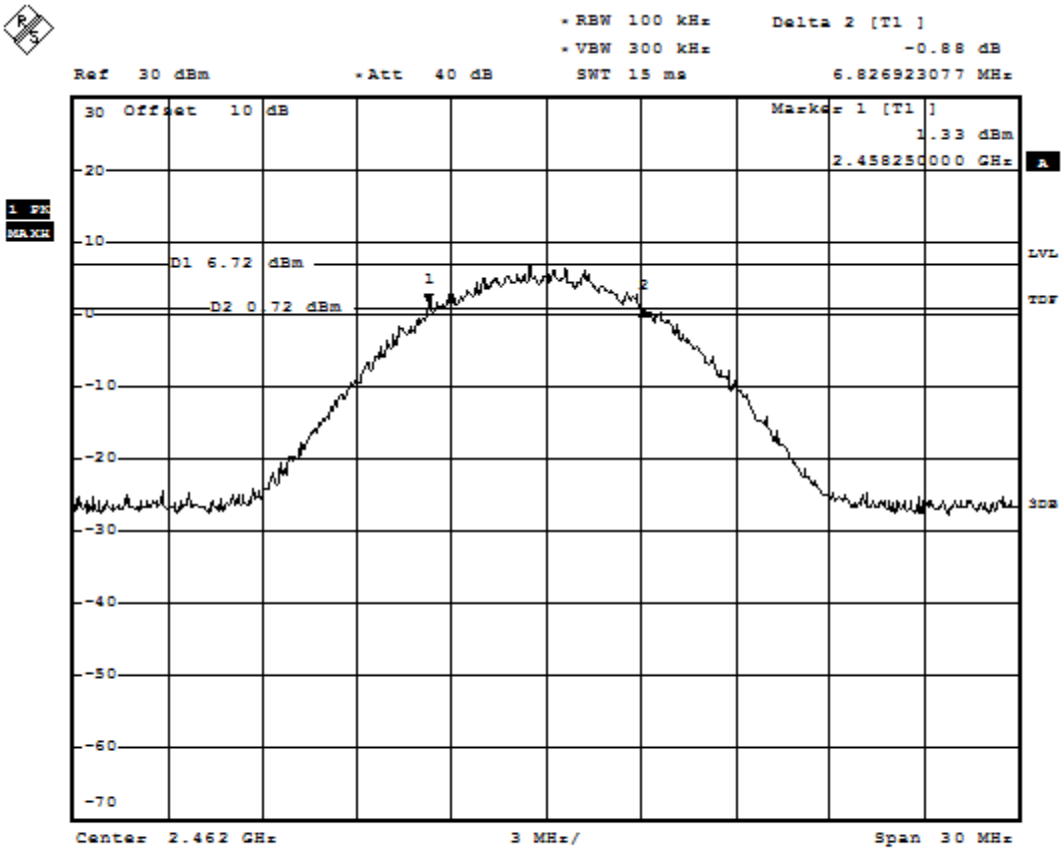
WLAN2.4GHz-bMode-11MBit-6dB-BW-CH11



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1.2.2. 6dB BW g-Mode 24Mbit

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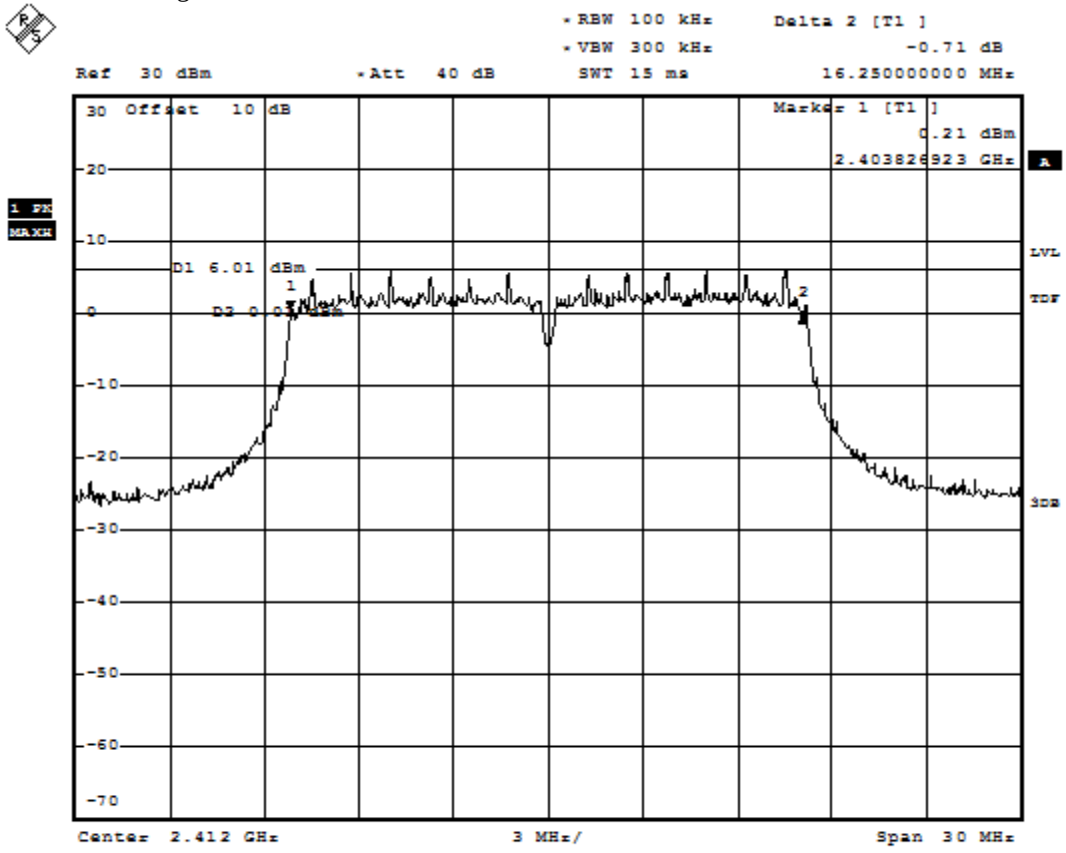

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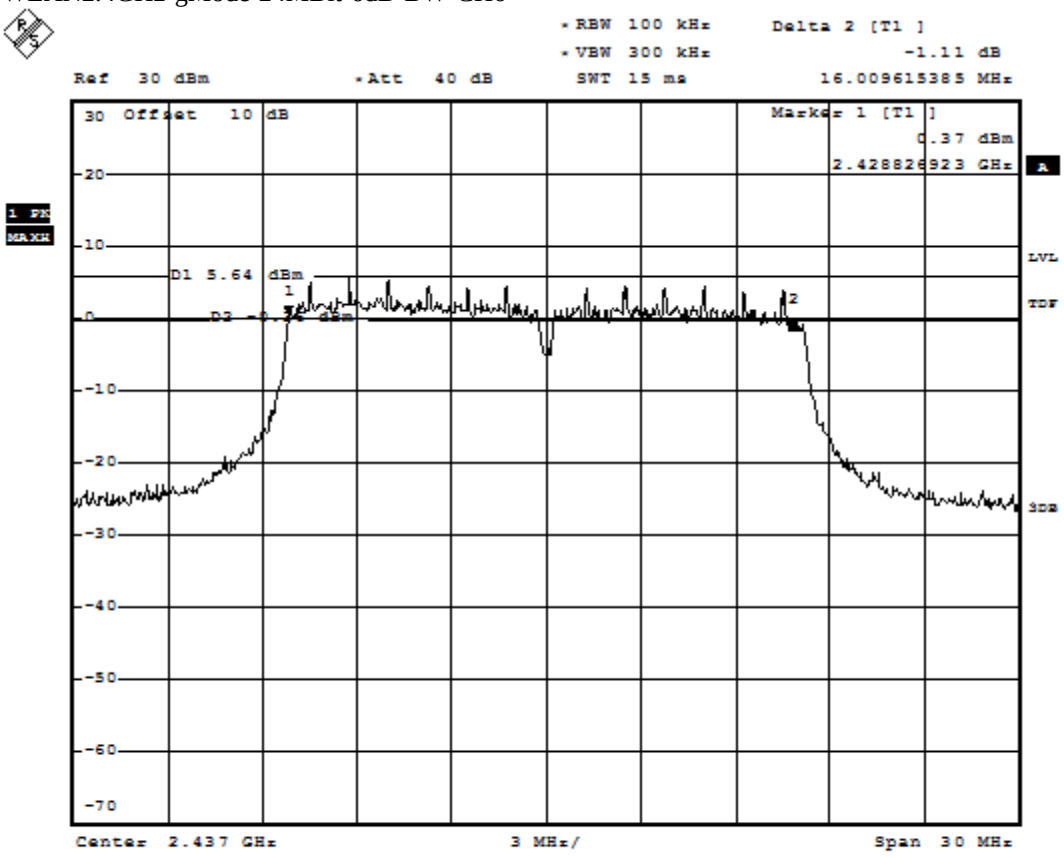

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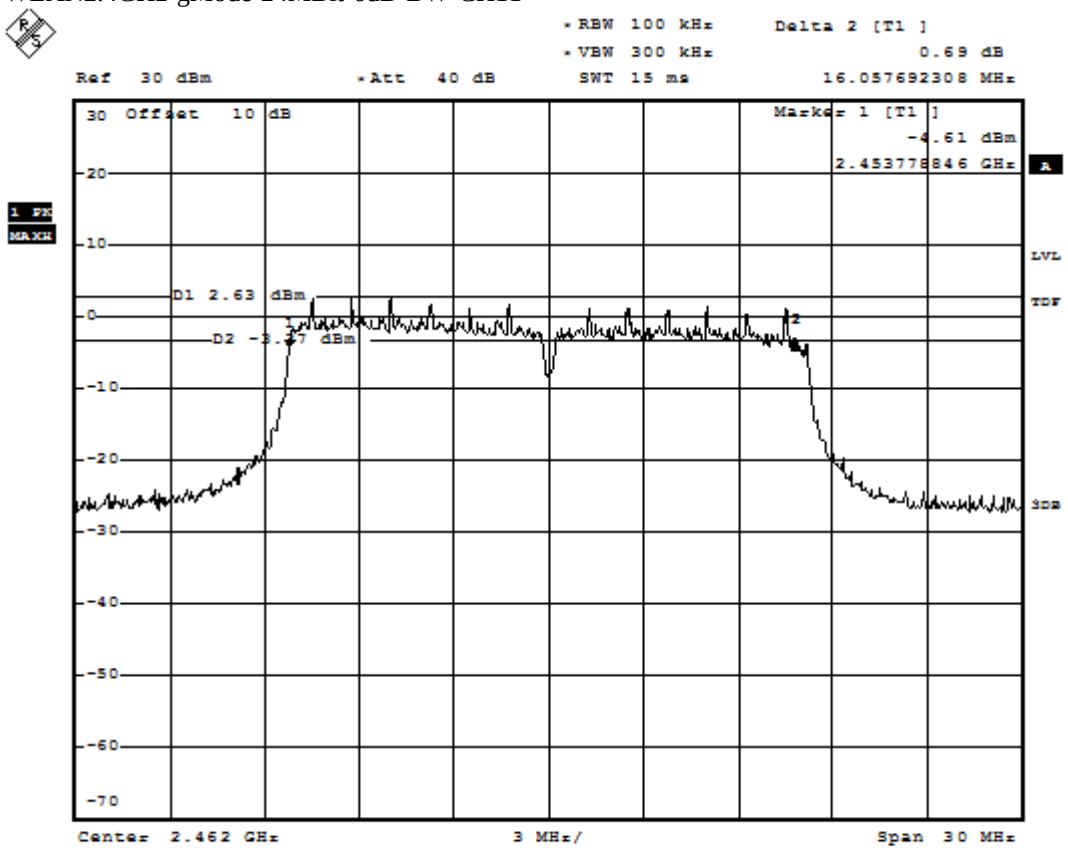

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1.2.3. 6dB BW n-Mode (HT20) MCS4

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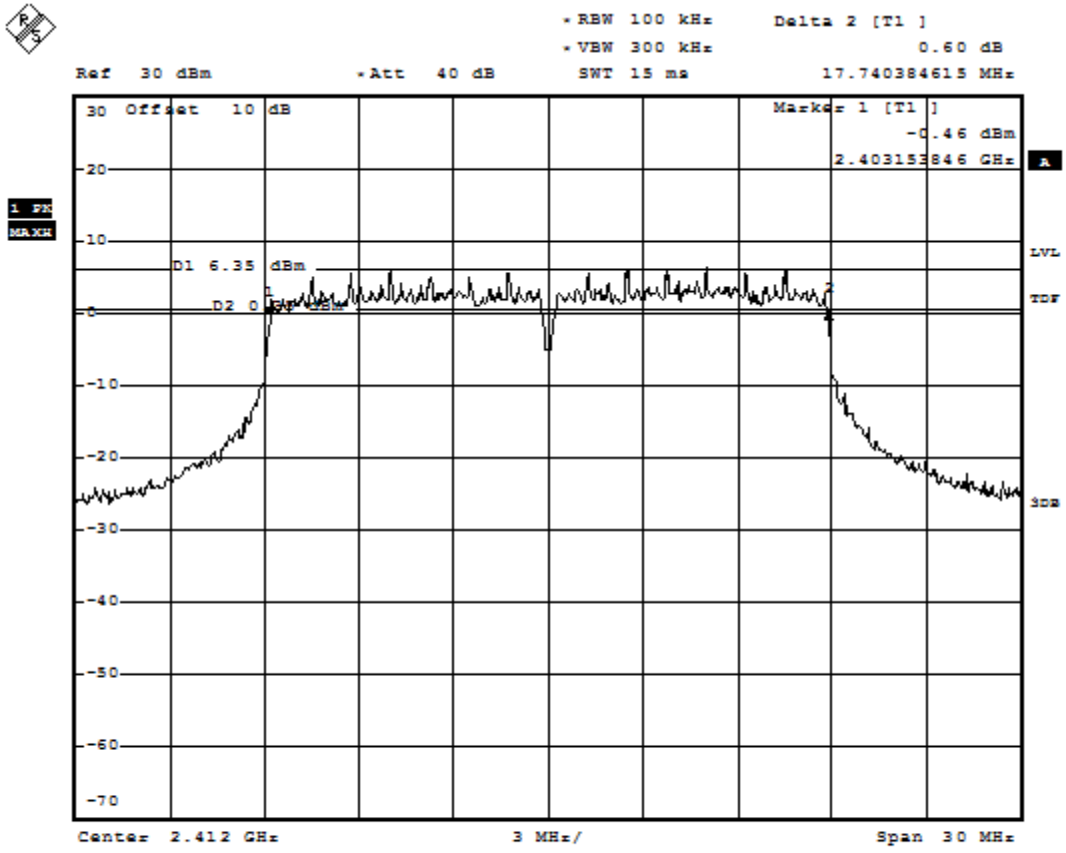

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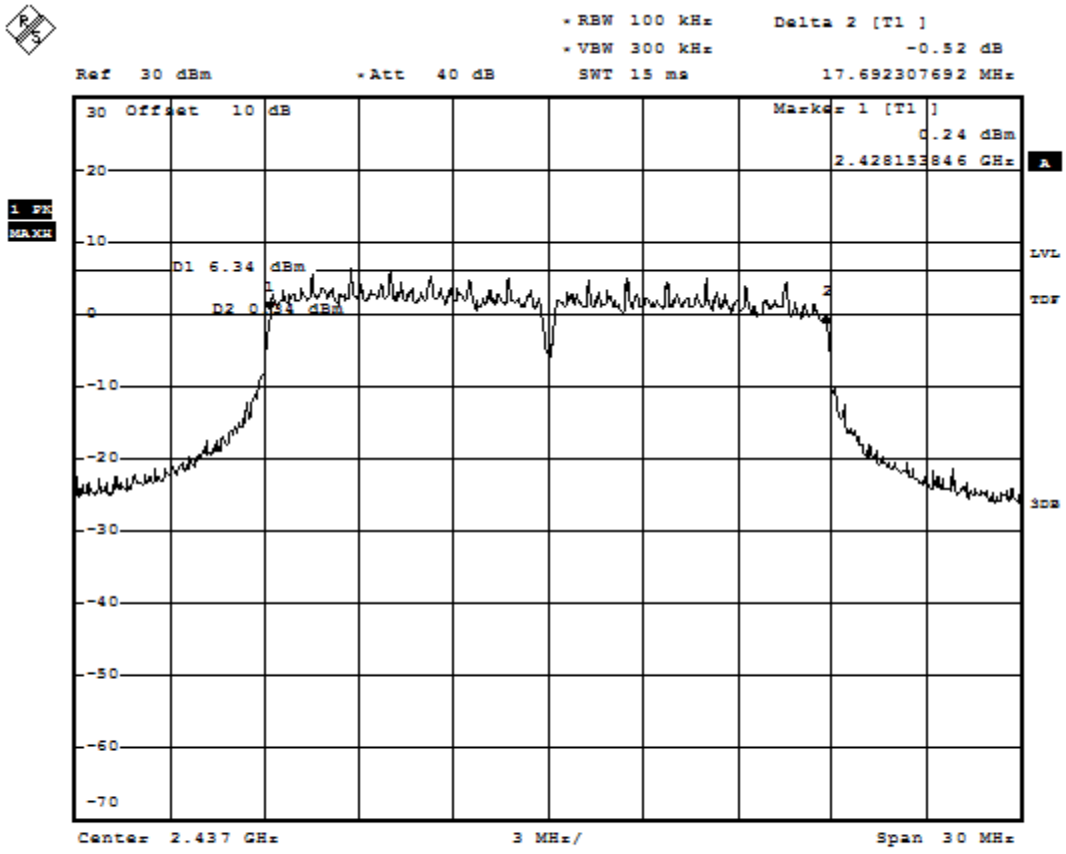

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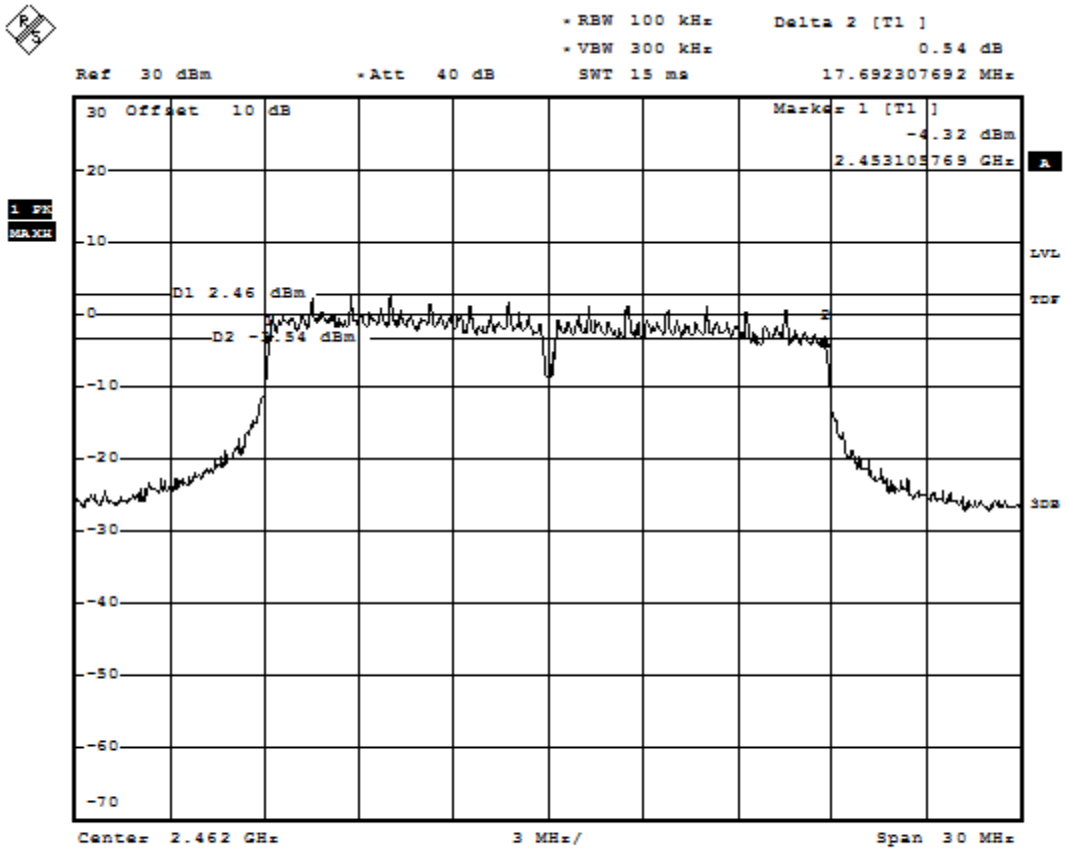
WLAN2.4GHz-nMode-MCS4-6dB-BW-CH11



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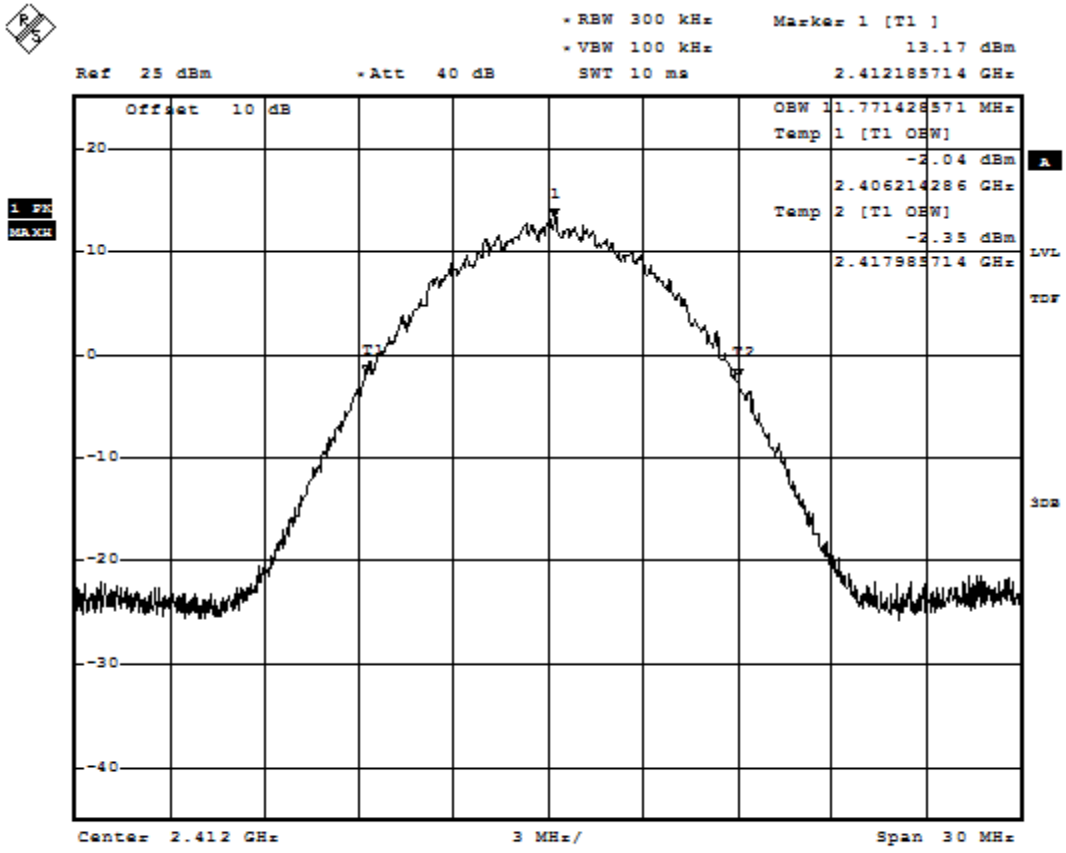
1.2.4. 99% OBW b Mode 11Mbit

WLAN2.4GHZ-99OBW-bMode-11MBit-Ch1



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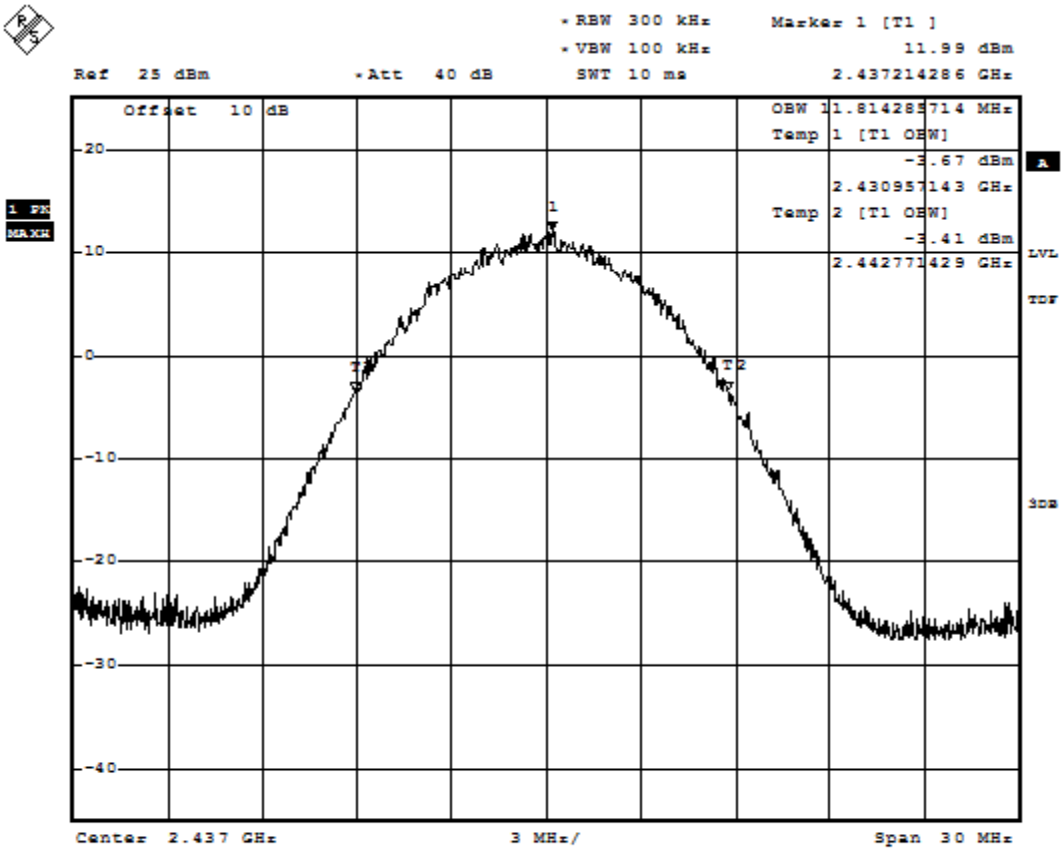

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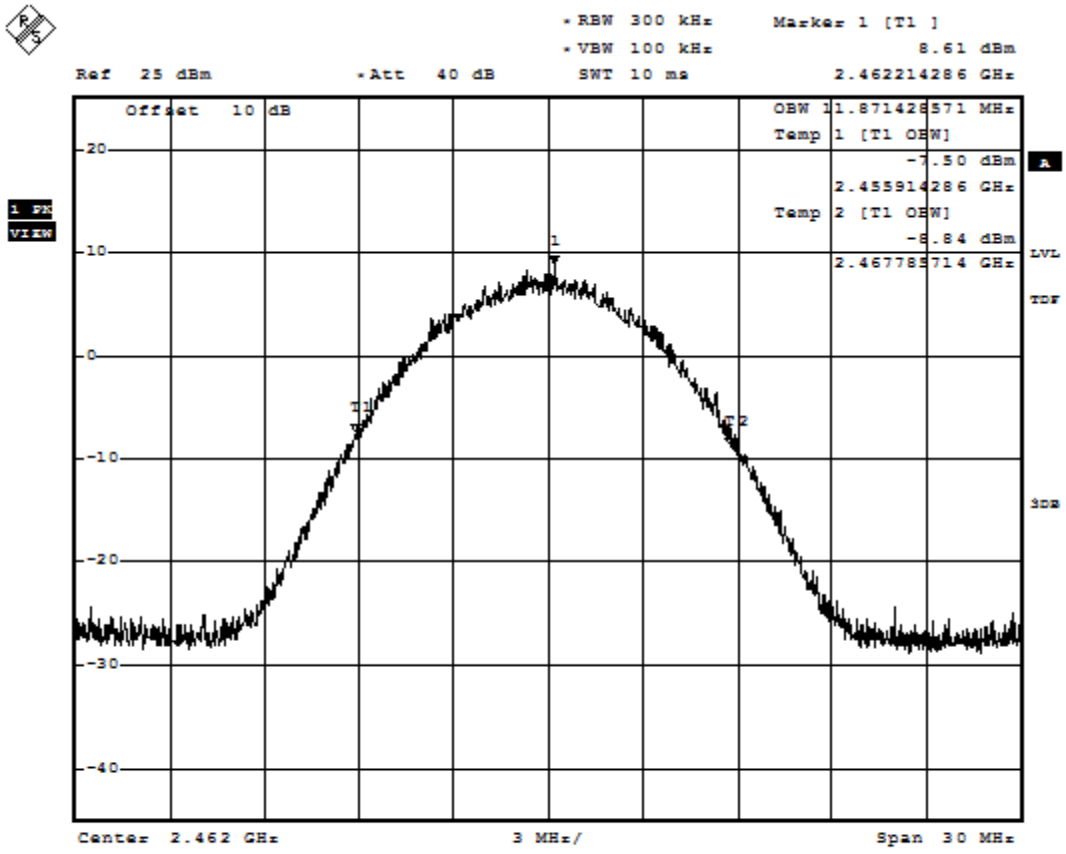

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1.2.5. 99% OBW g-Mode 24Mbit

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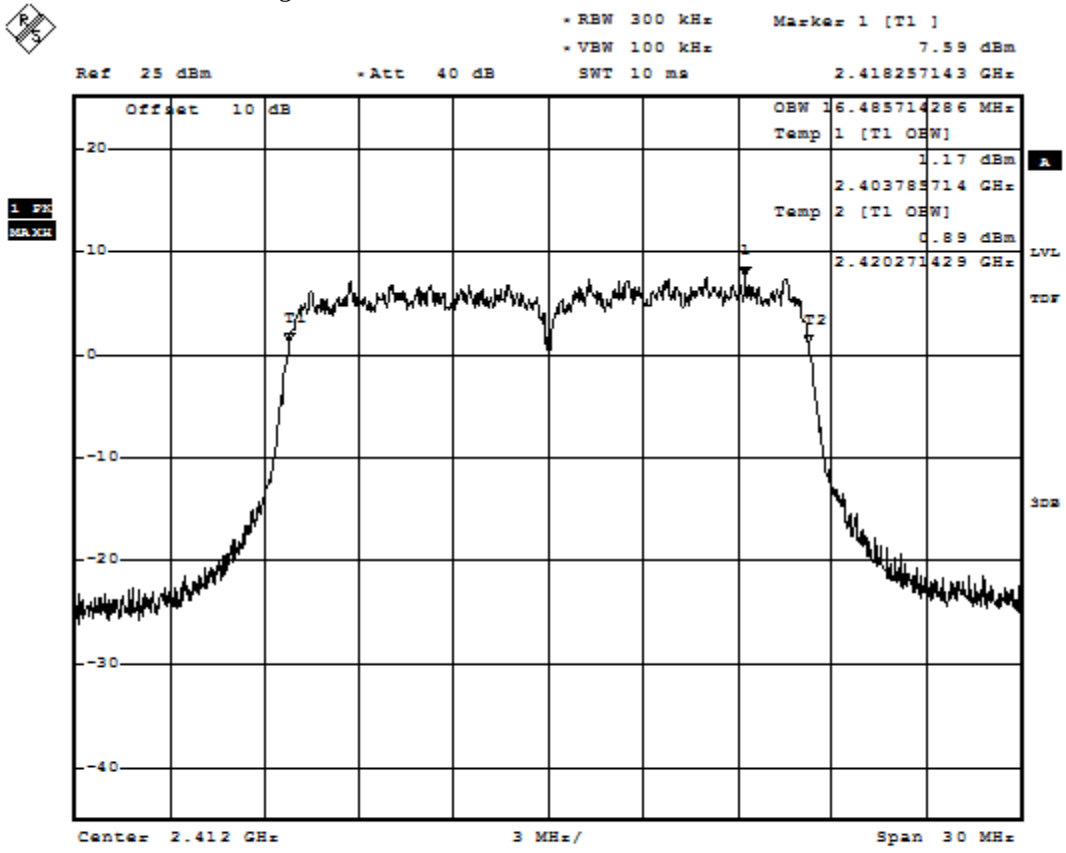

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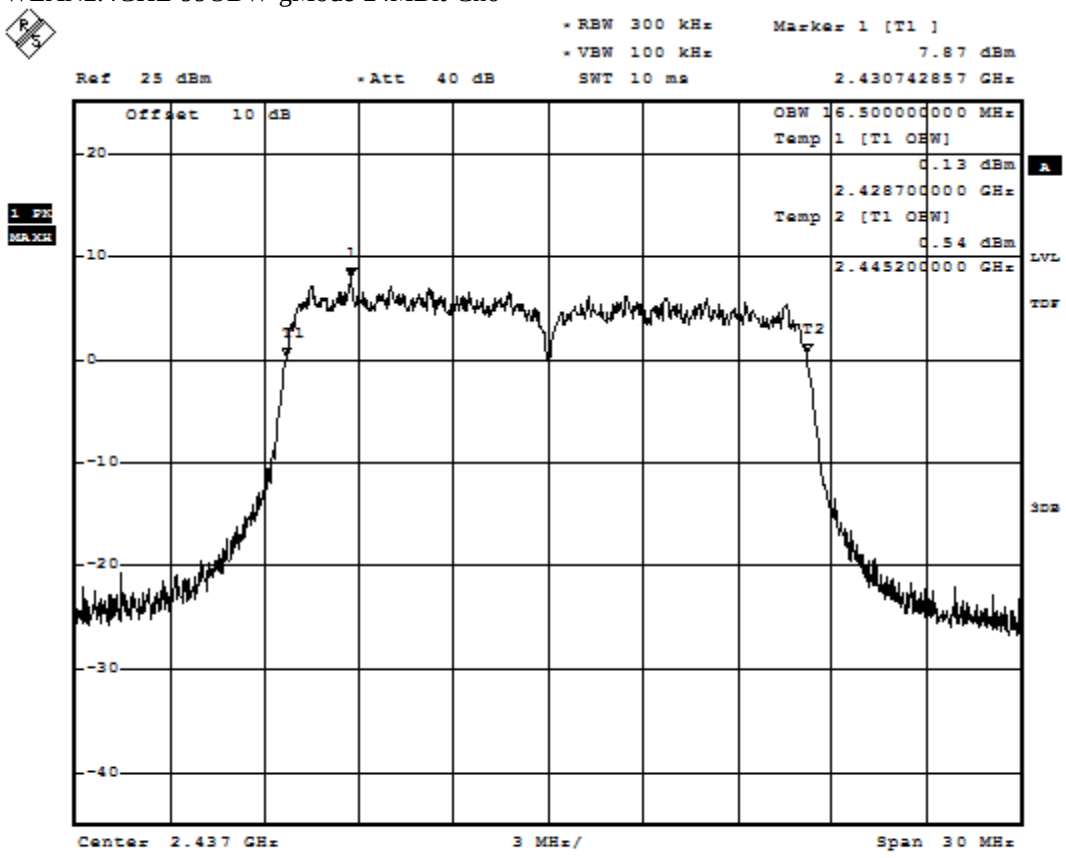

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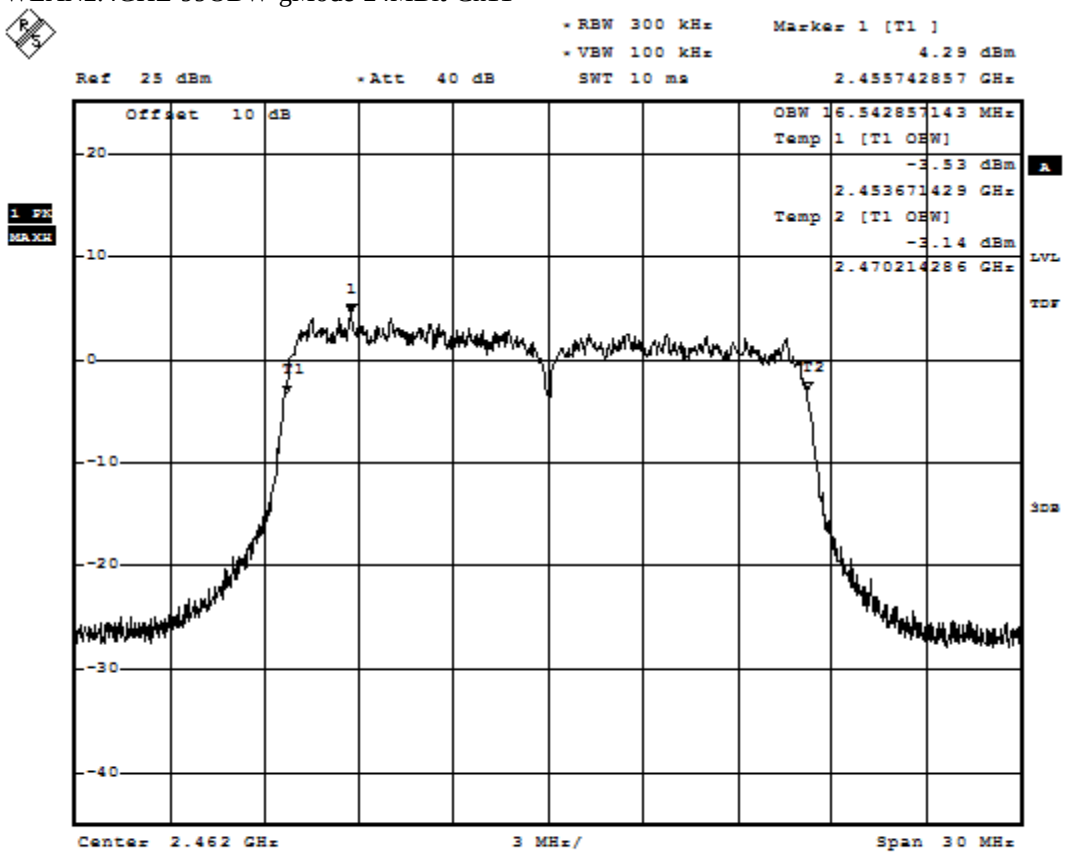
WLAN2.4GHZ-99OBW-gMode-24MBit-Ch11



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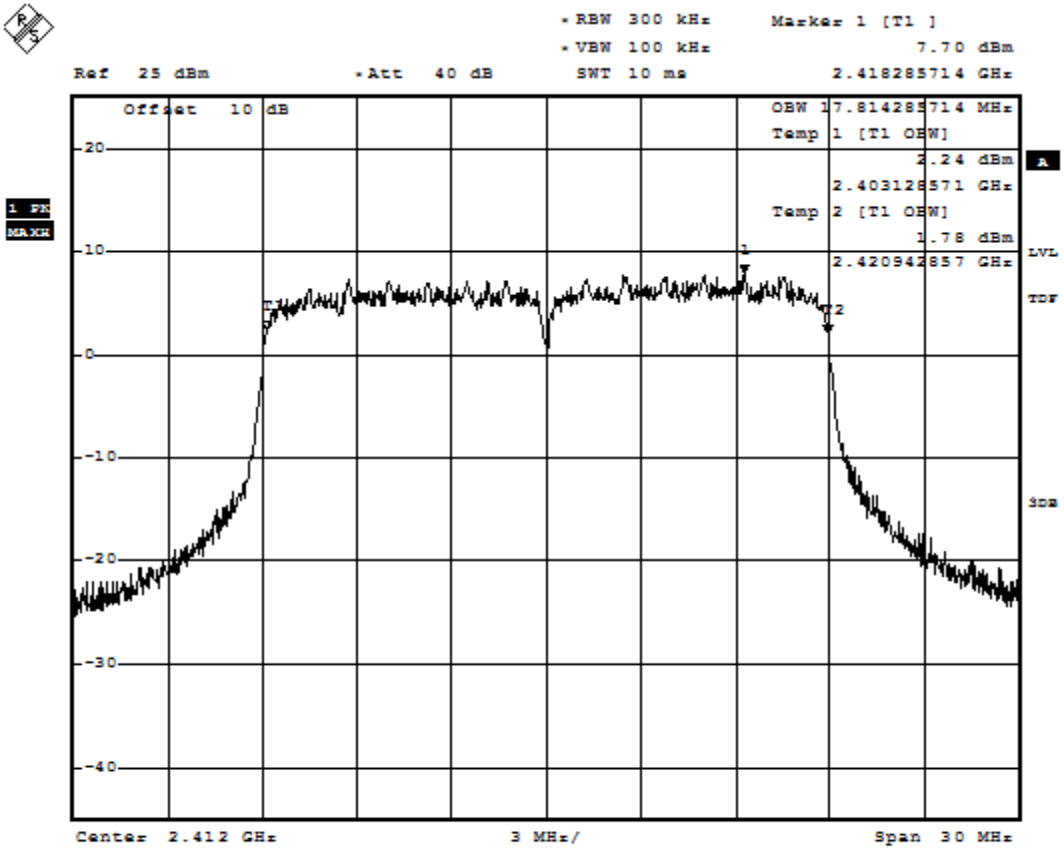
1.2.6. 99% OBW n-mode (HT20) MCS4

WLAN2.4GHZ-99OBW-nMode-MCS4-Ch1



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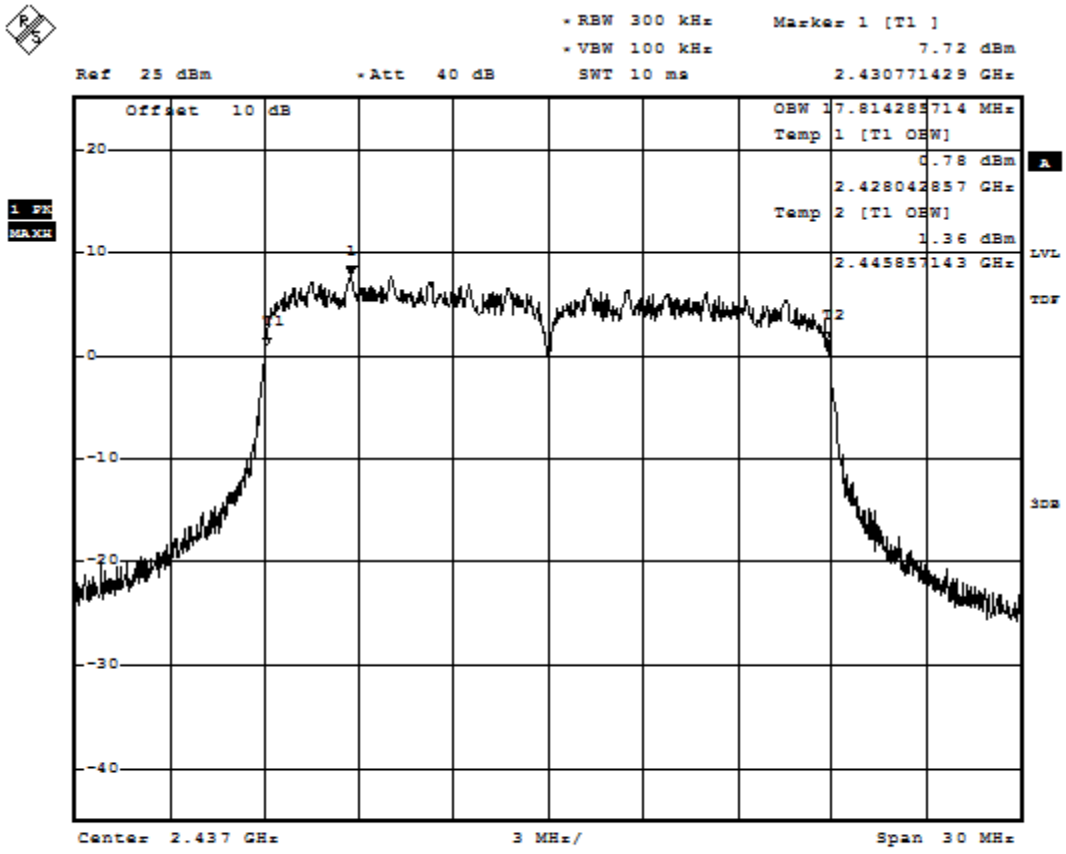
WLAN2.4GHZ-99OBW-nMode-MCS4-Ch6



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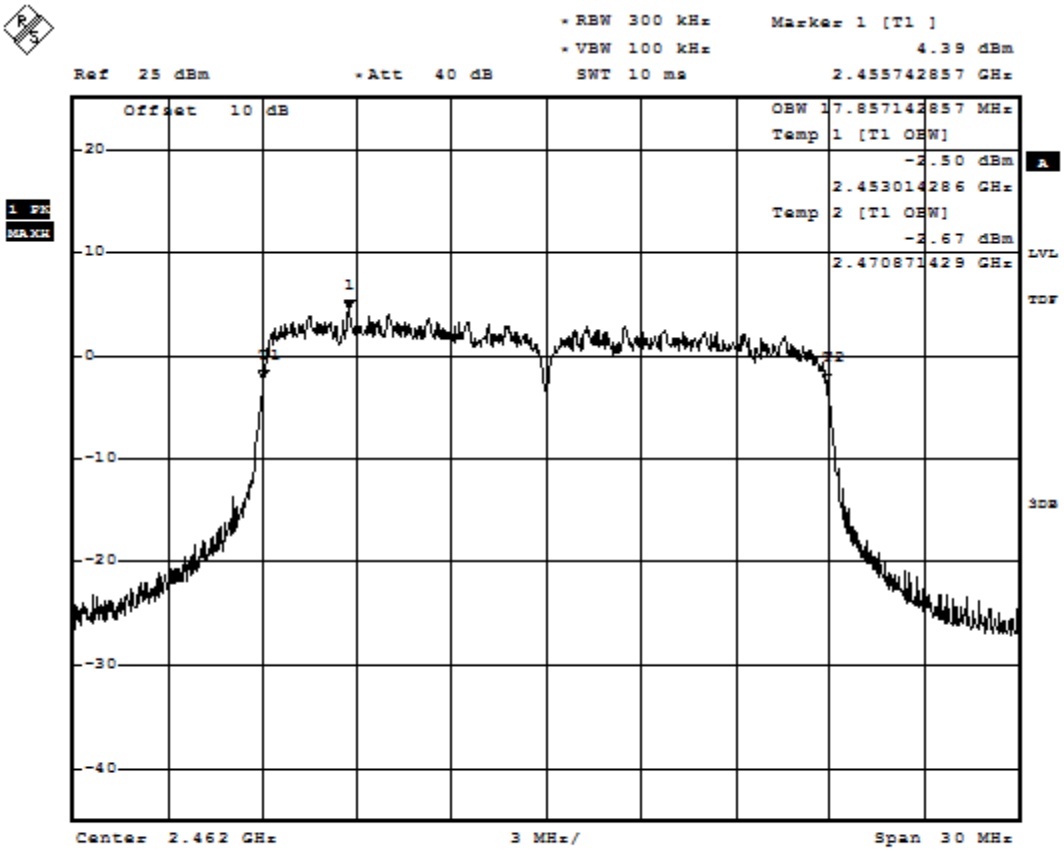
WLAN2.4GHZ-99OBW-nMode-MCS4-Ch11



Date: 15.SEP.2016 11:08:49

1.3. Maximum peak conducted output power

b-mode		Channel no. / [dBm]			Max-Value / [dBm]
Data rate	Modulation	1	6	11	
1MBit		10,85	9,29	5,04	11,05
2Mbit		10,97	9,28	5,02	
5.5Mbit		10,97	9,28	5,17	
11MBit		11,05	9,45	5,31	

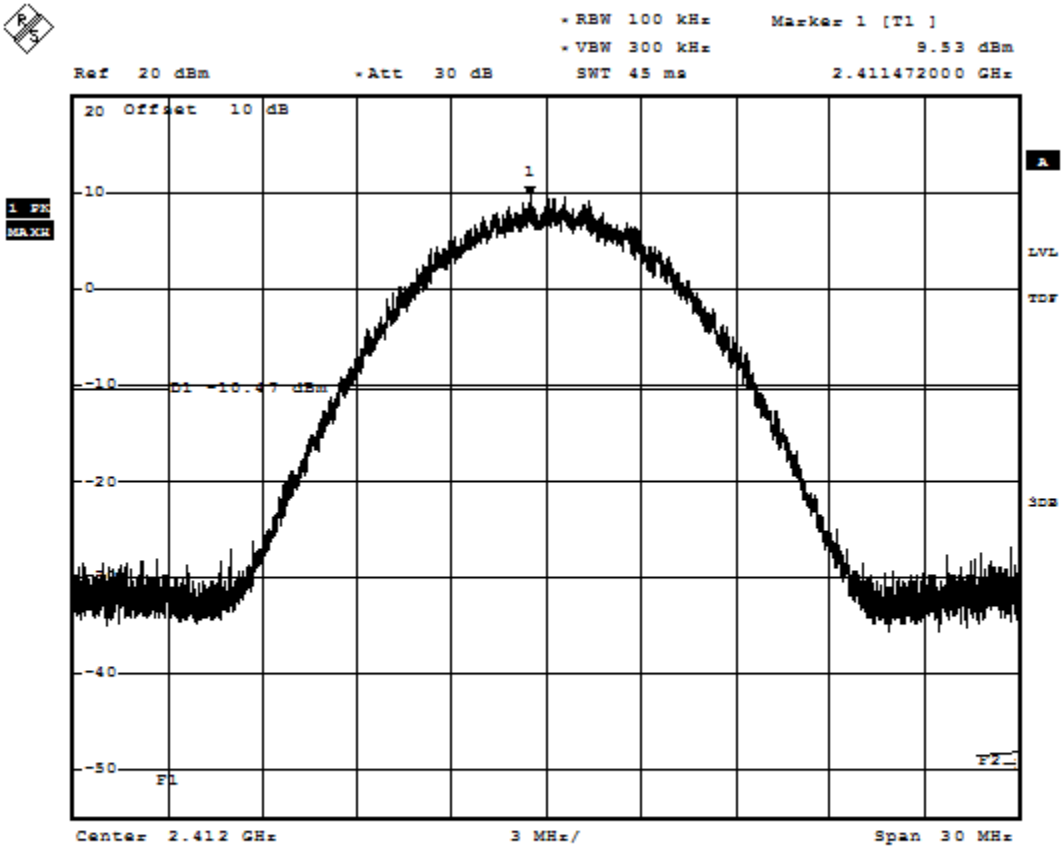
g-Mode		Channel no. / [dBm]			Max-Value / [dBm]
Data rate	Modulation	1	6	11	
6Mbit		11,2	9,79	4,02	11,92
9Mbit		11,63	9,8	3,97	
12Mbit		11,77	9,81	3,91	
18Mbit		11,75	9,75	3,85	
24Mbit		11,92	10,19	4,33	
36Mbit		11,56	10,05	4,34	
48Mbit		11,81	10,17	4,32	
54MBit		11,77	10,19	4,33	

n-Mode HT20 (1 spatial stream: 1SS)		Channel no. / [dBm]			Max-Value / [dBm]
Data rate	Modulation	1	6	11	
MCS0 -6.5Mbps	BPSK	11,2	11,76	4,07	11,85
MCS1 - 13Mbps	QPSK	11,45	10,19	4,05	
MCS2 - 19.5Mbps	QPSK	11,74	10,23	4,04	
MCS3 - 26Mbps	QAM16	11,8	10,26	4,03	
MCS4 -39Mbps	QAM16	11,85	10,28	4,11	
MCS5 - 52MBps	QAM64	11,75	10,41	4,09	
MCS6 - 58.5MBps	QAM64	11,76	10,29	4,12	
MCS7 - 65MBps	QAM64	11,75	10,41	4,12	

1.4. 20 dBc power specification

1.4.1. b-mode 11Mbit

WLAN2.4GHz-20dBc-Ref-bMode-11Mbit-CH1



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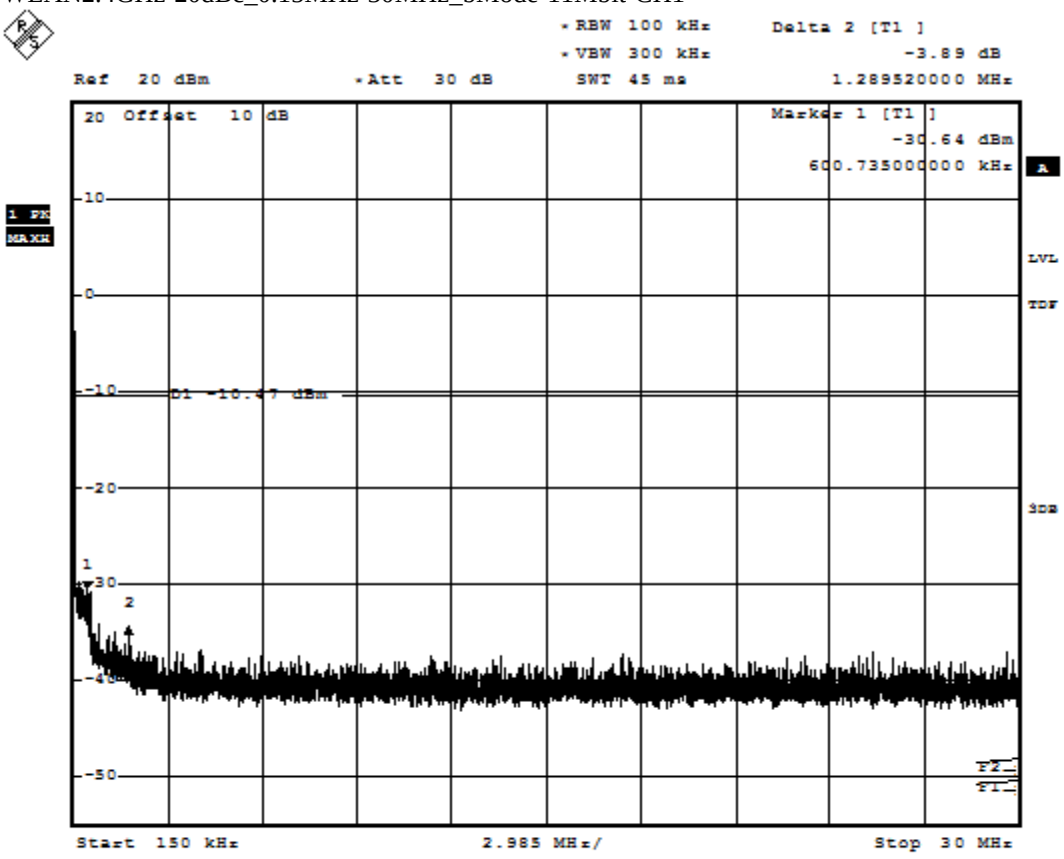
WLAN2.4GHz-20dBc_0.15MHz-30MHz_bMode-11Mbit-CH1



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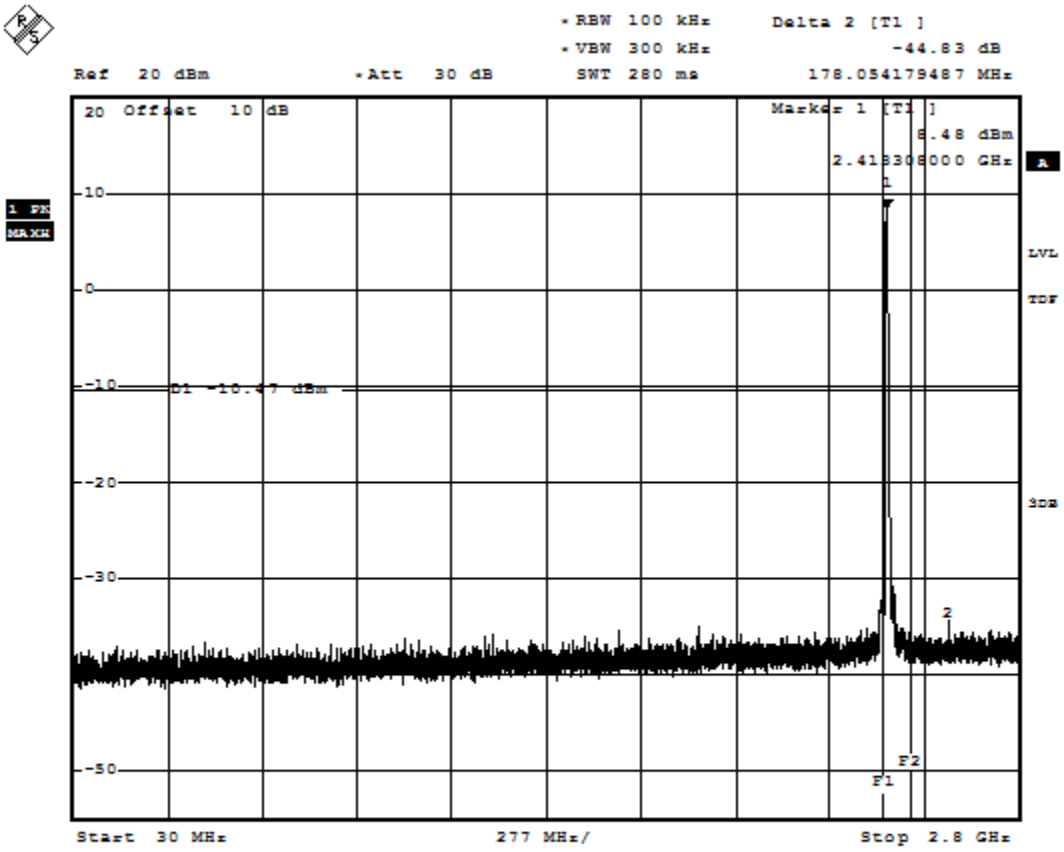
WLAN2.4GHz-20dBc_30MHz-2.8GHz_bMode-11Mbit-CH1



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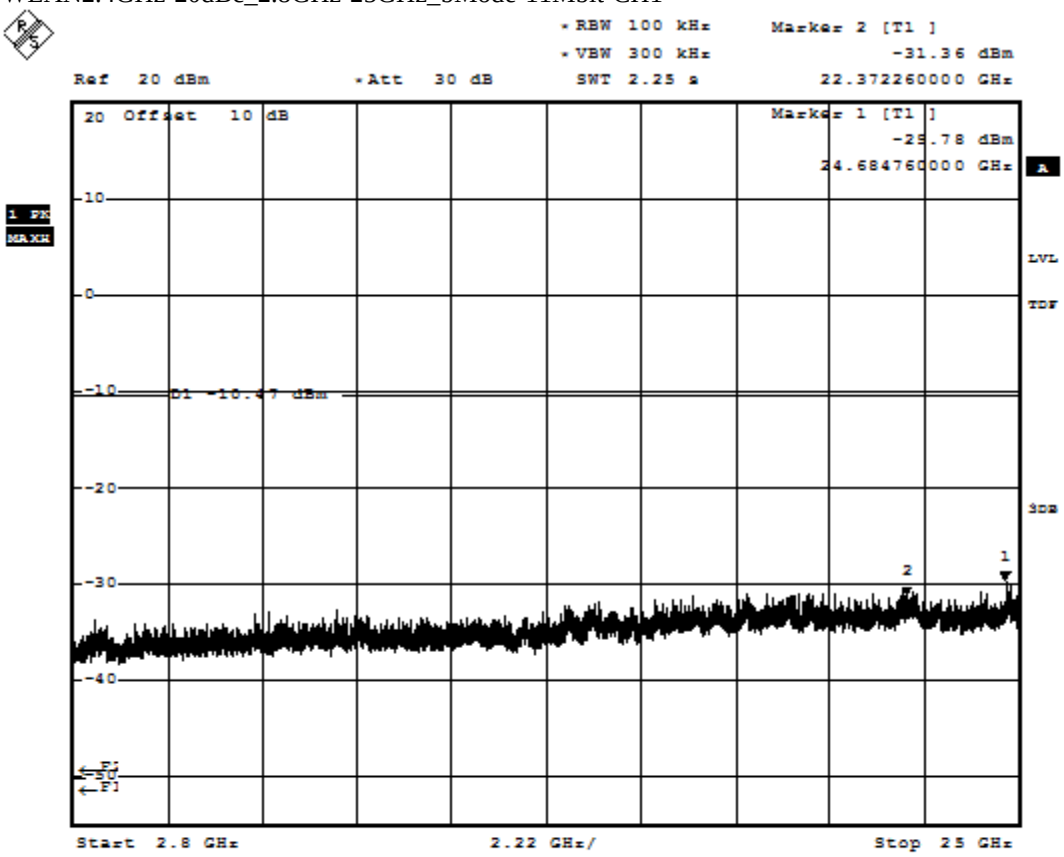
WLAN2.4GHz-20dBc_2.8GHz-25GHz_bMode-11Mbit-CH1



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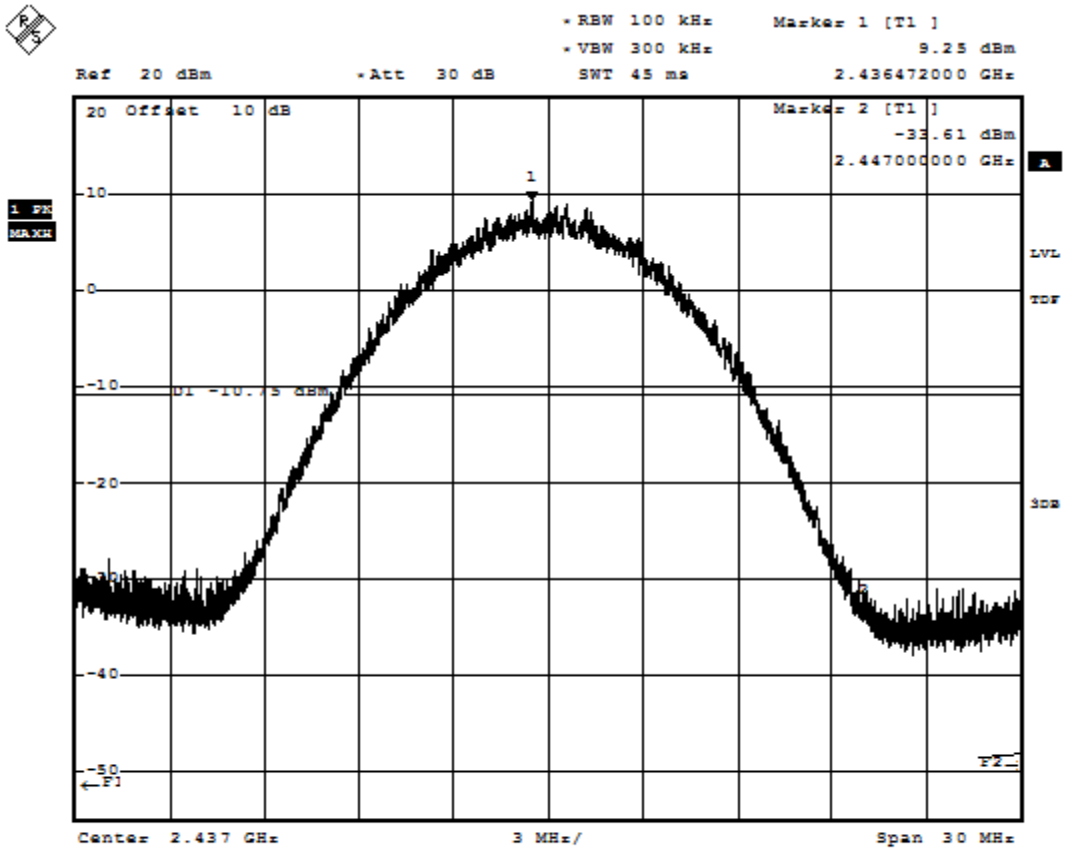
WLAN2.4GHz-20dBc-Ref-bMode-11Mbit-CH6



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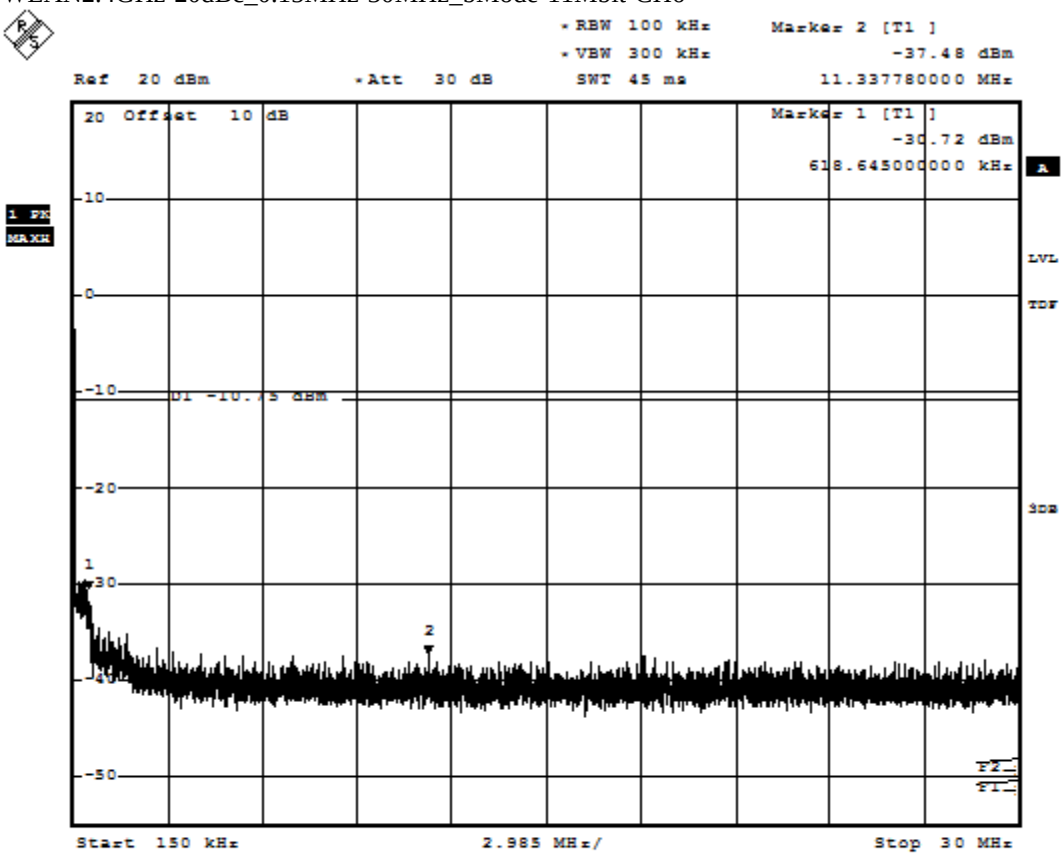

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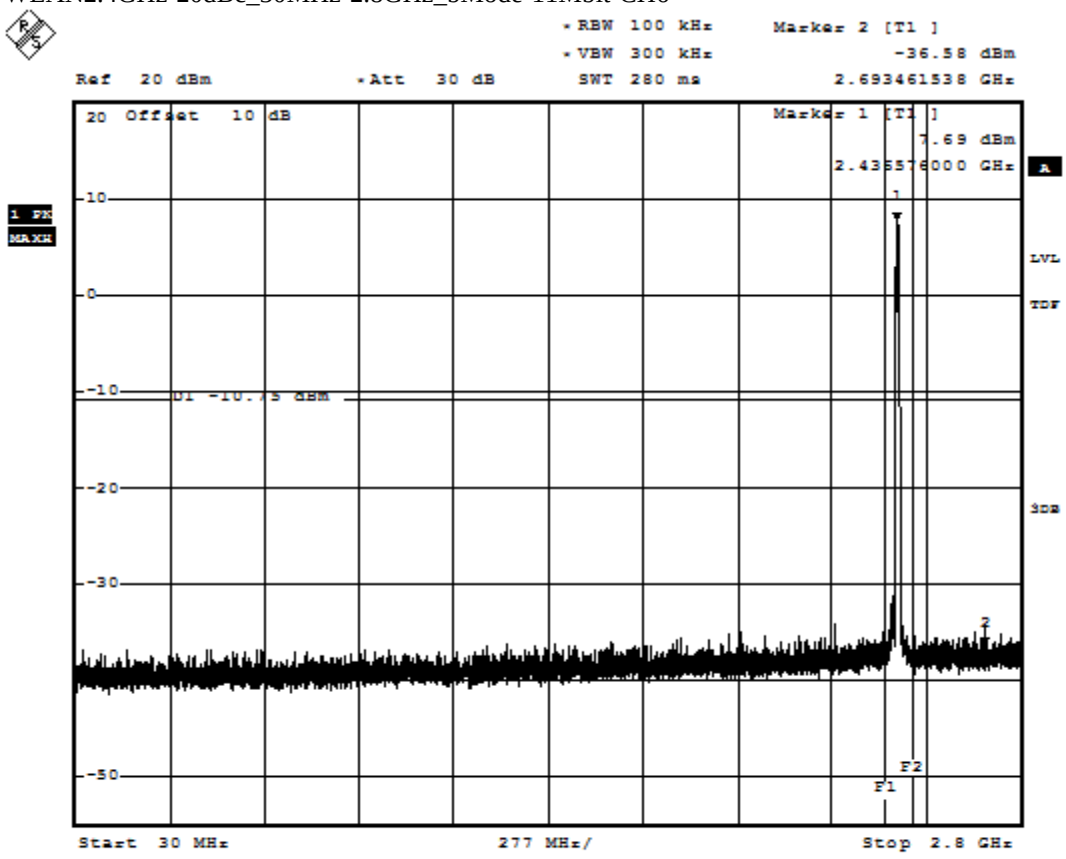
WLAN2.4GHz-20dBc_30MHz-2.8GHz_bMode-11Mbit-CH6



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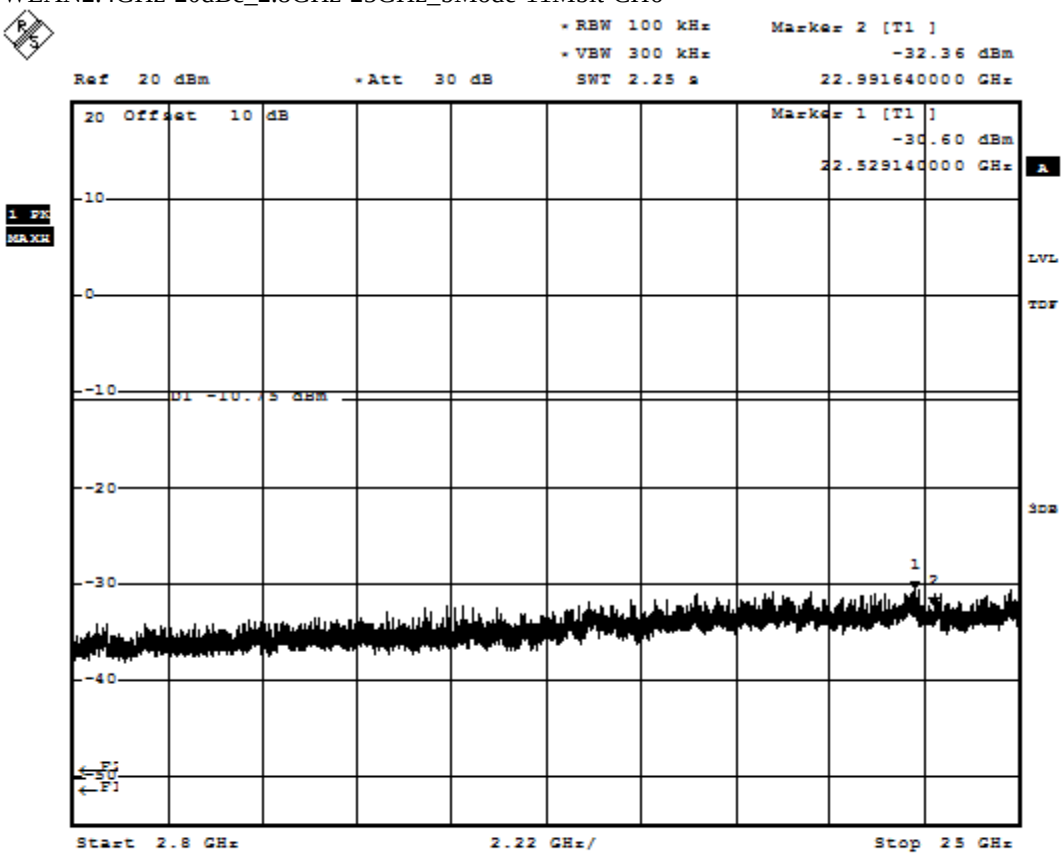
WLAN2.4GHz-20dBc_2.8GHz-25GHz_bMode-11Mbit-CH6



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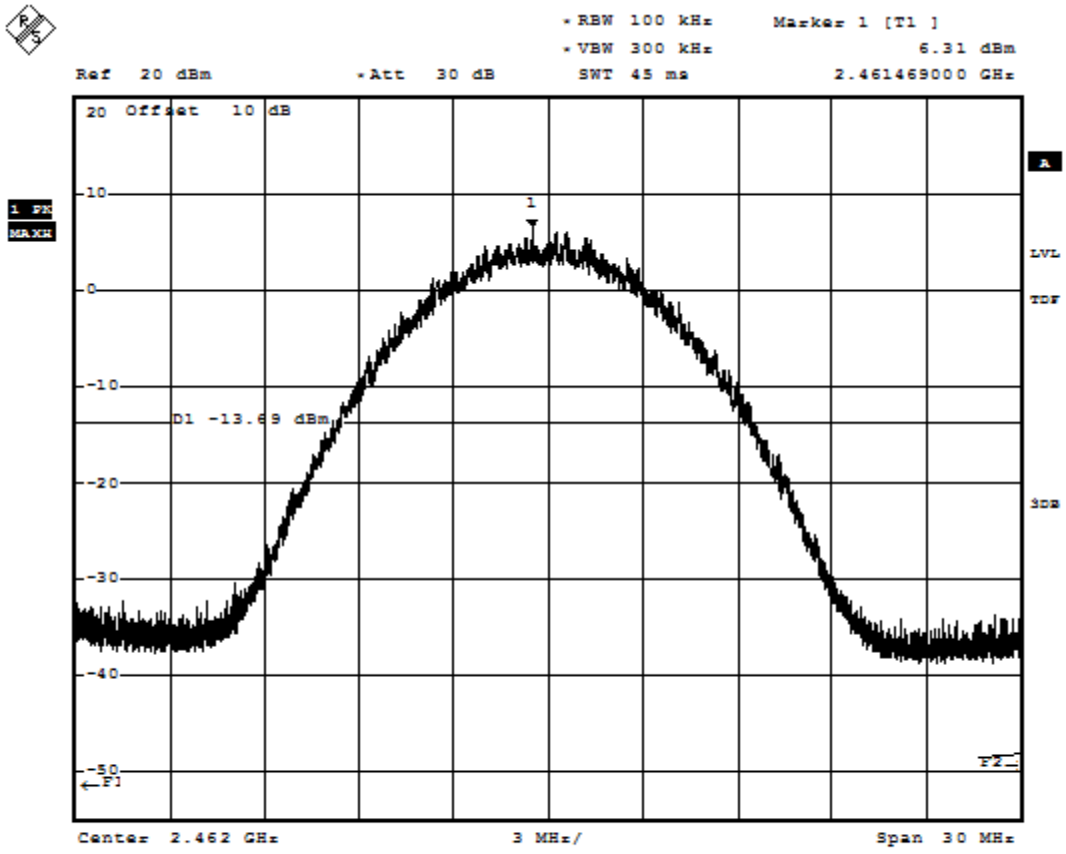
WLAN2.4GHz-20dBc-Ref-bMode-11Mbit-CH11



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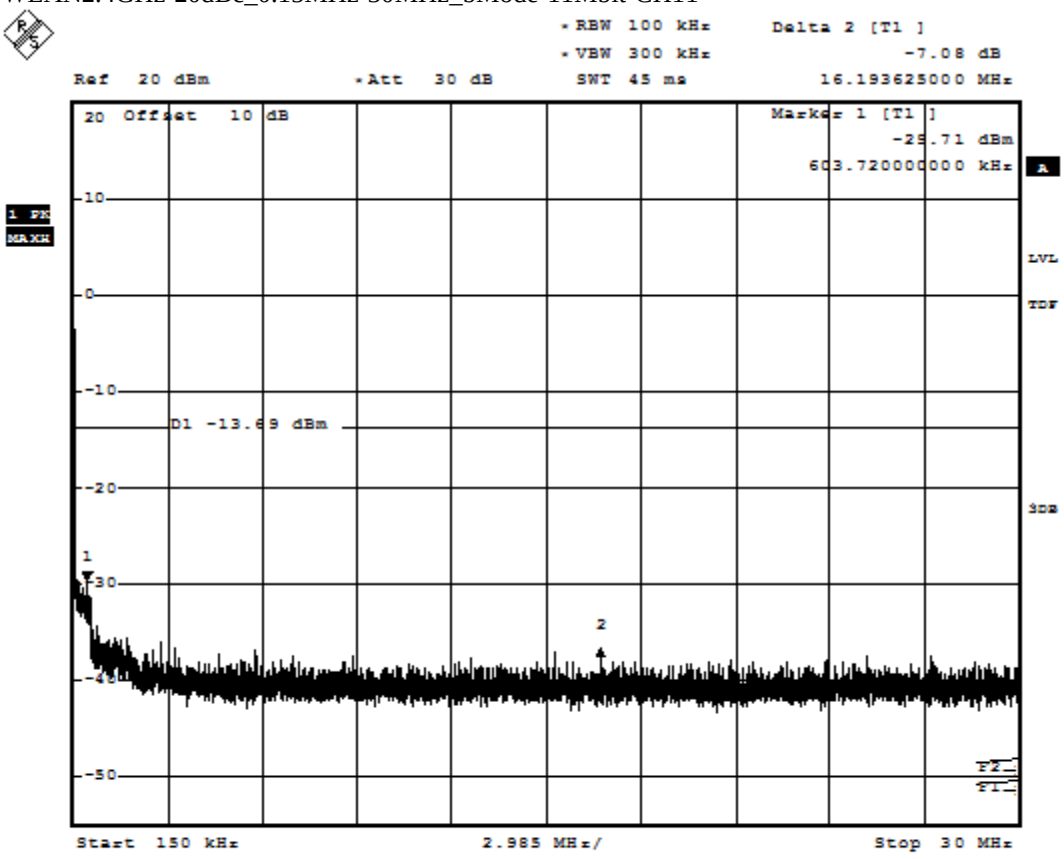

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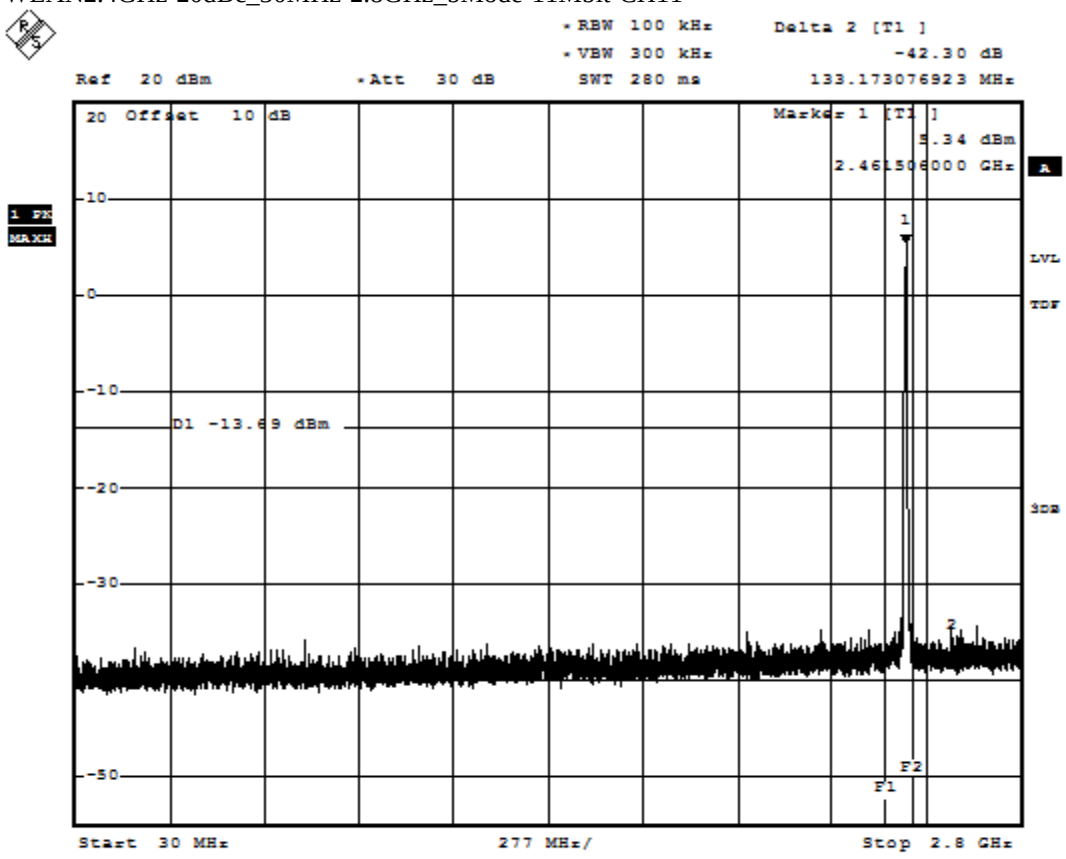
WLAN2.4GHz-20dBc_30MHz-2.8GHz_bMode-11Mbit-CH11



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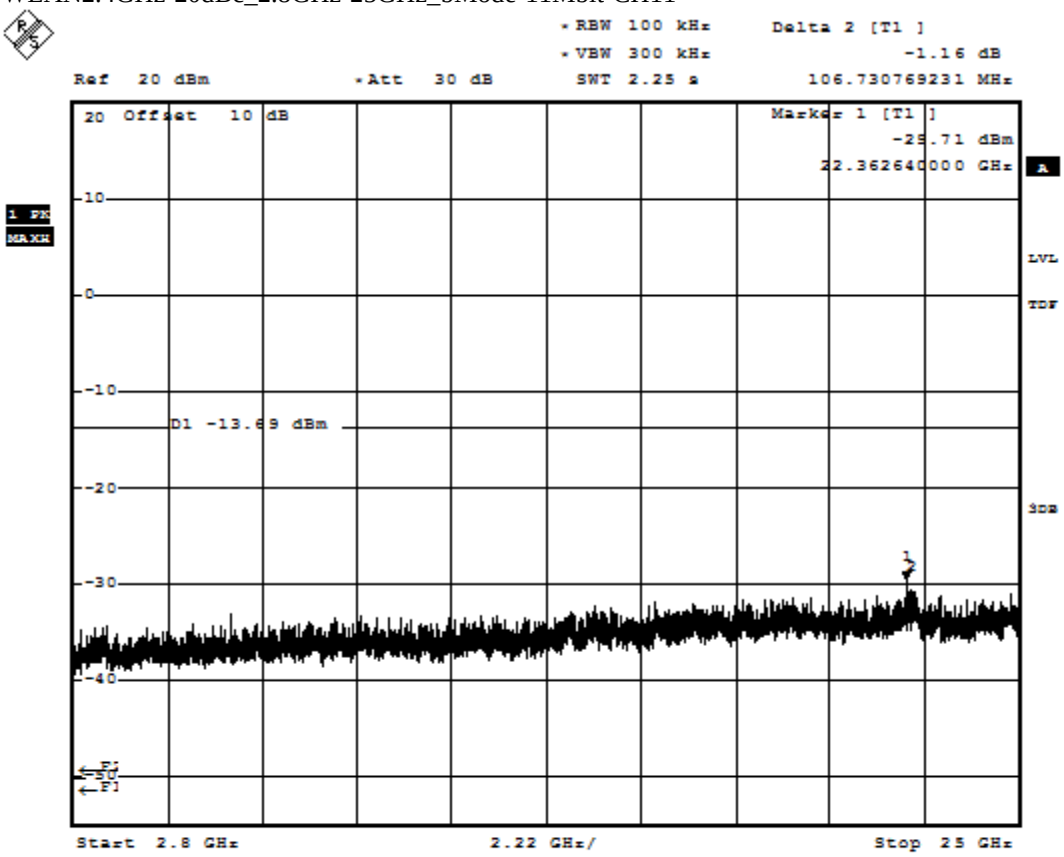
WLAN2.4GHz-20dBc_2.8GHz-25GHz_bMode-11Mbit-CH11



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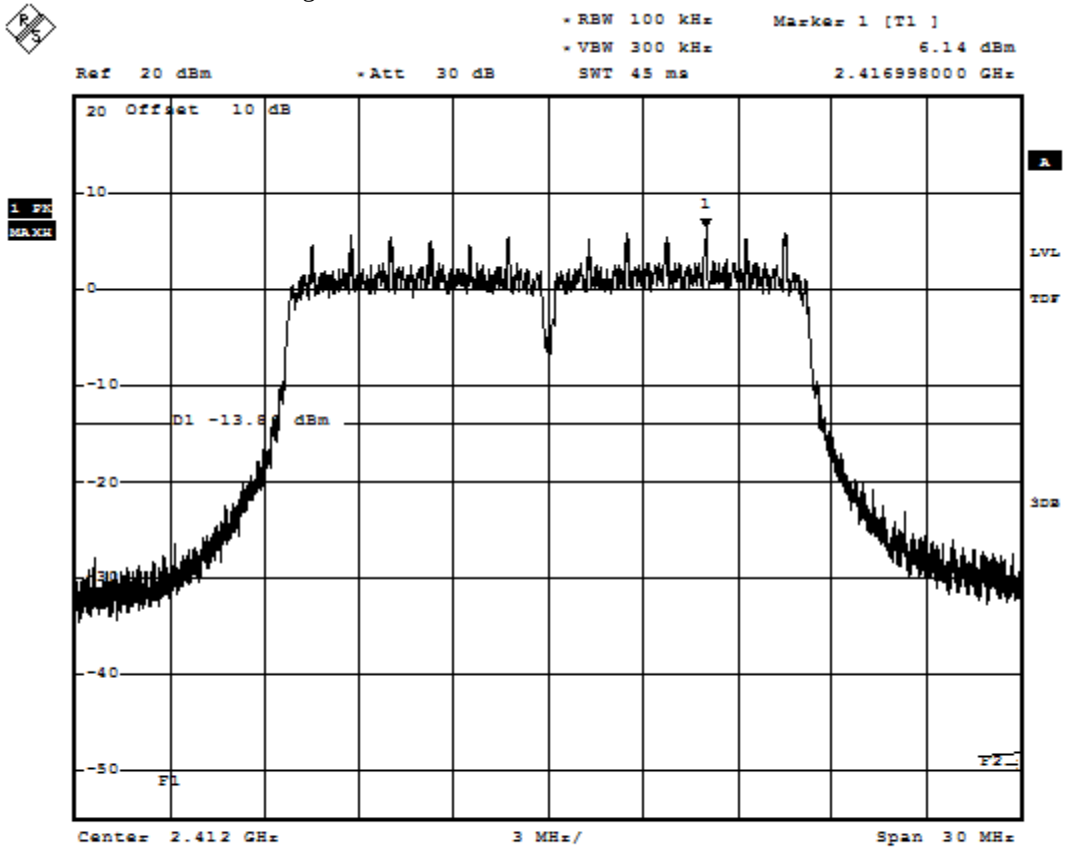
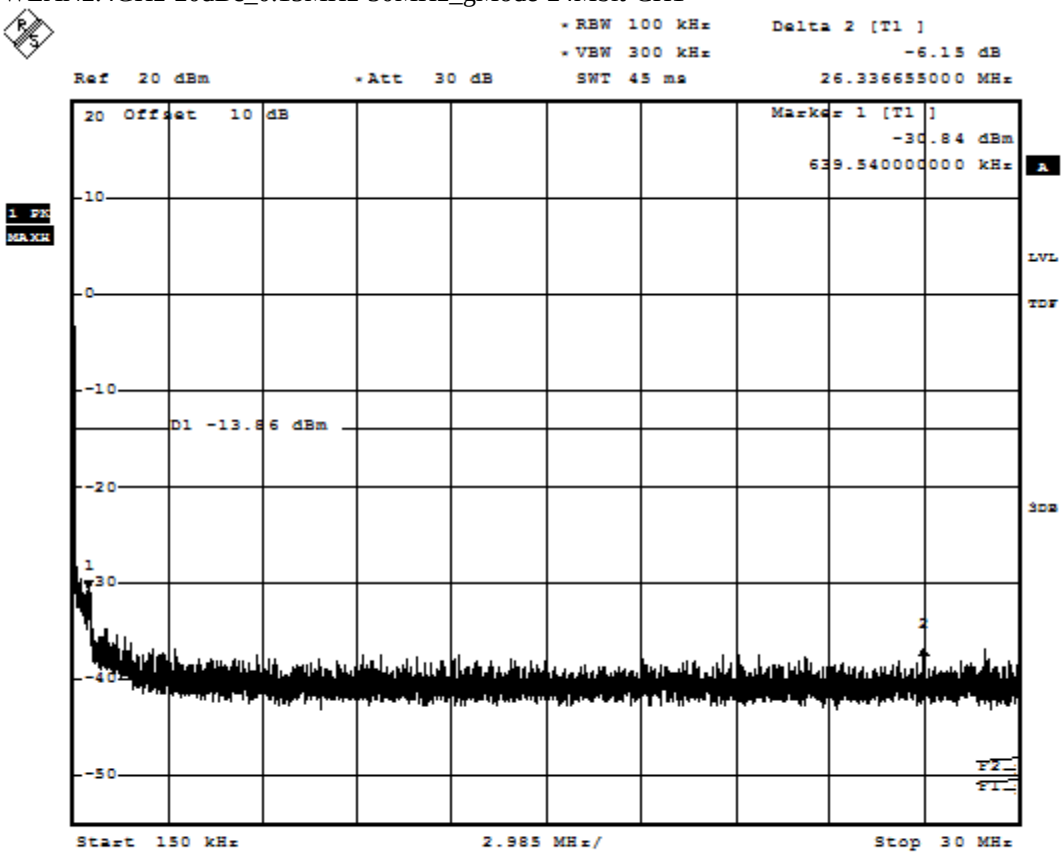
1.4.2. g-mode 24Mbit

WLAN2.4GHz-20dBc-Ref-gMode-24Mbit-CH1



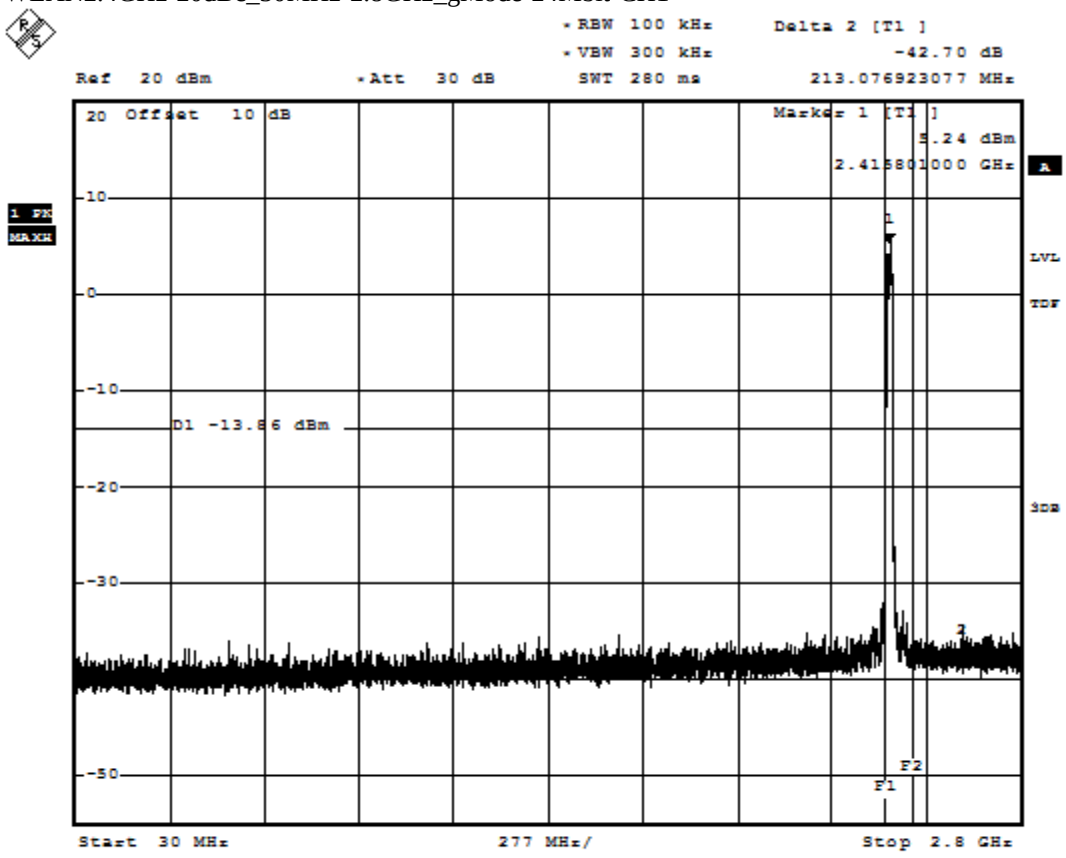
Date: 15.SEP.2016 13:02:28

WLAN2.4GHz-20dBc_0.15MHz-30MHz_gMode-24Mbit-CH1



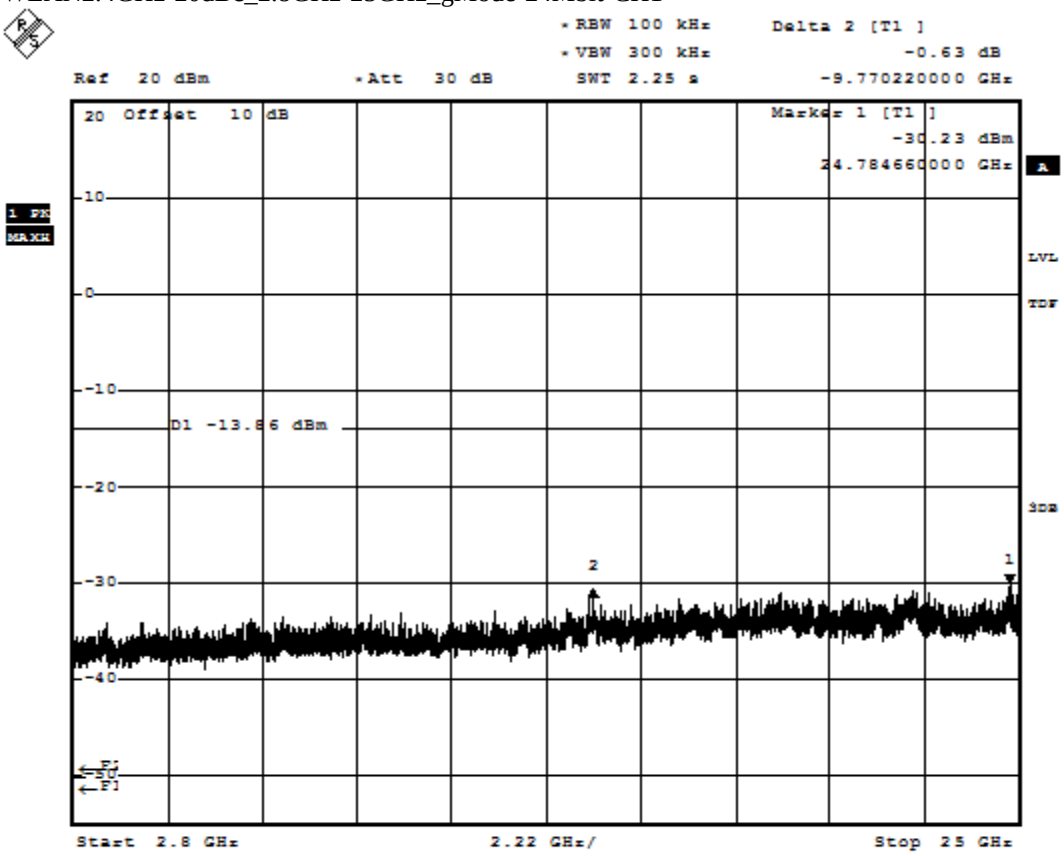
Date: 15.SEP.2016 13:04:03

WLAN2.4GHz-20dBc_30MHz-2.8GHz_gMode-24Mbit-CH1



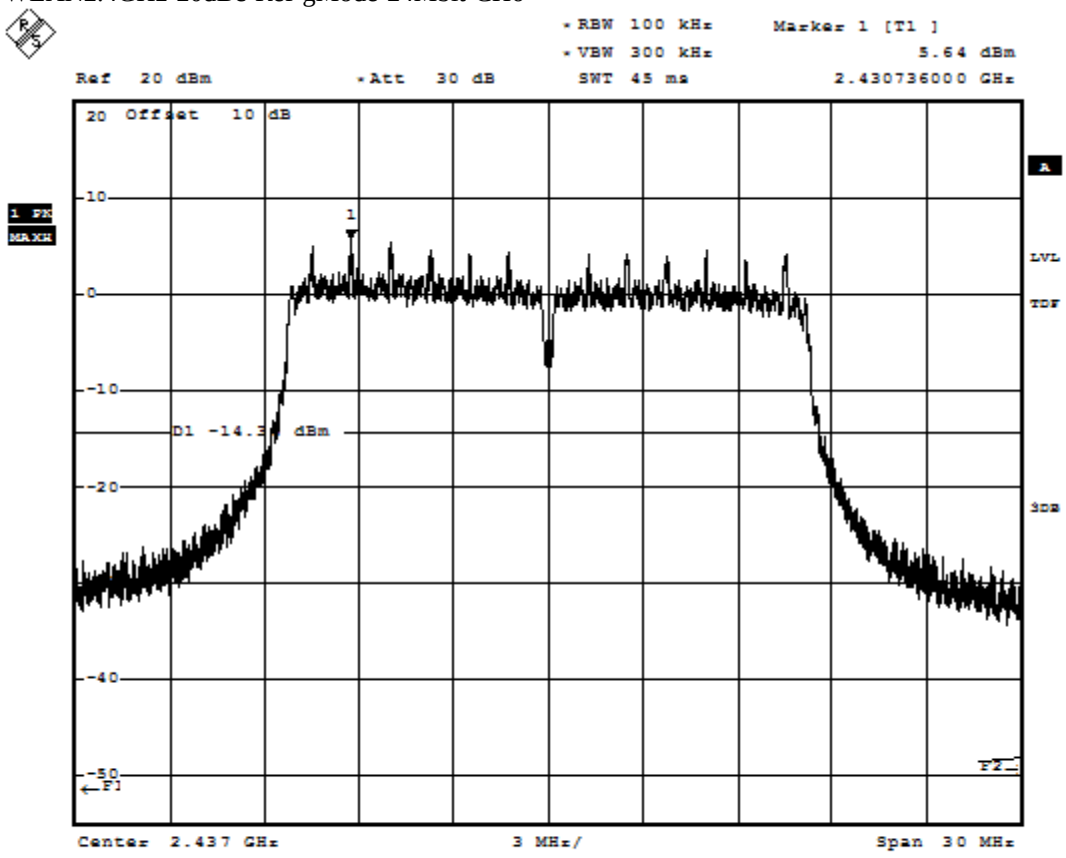
Date: 15.SEP.2016 13:05:50

WLAN2.4GHz-20dBc_2.8GHz-25GHz_gMode-24Mbit-CH1



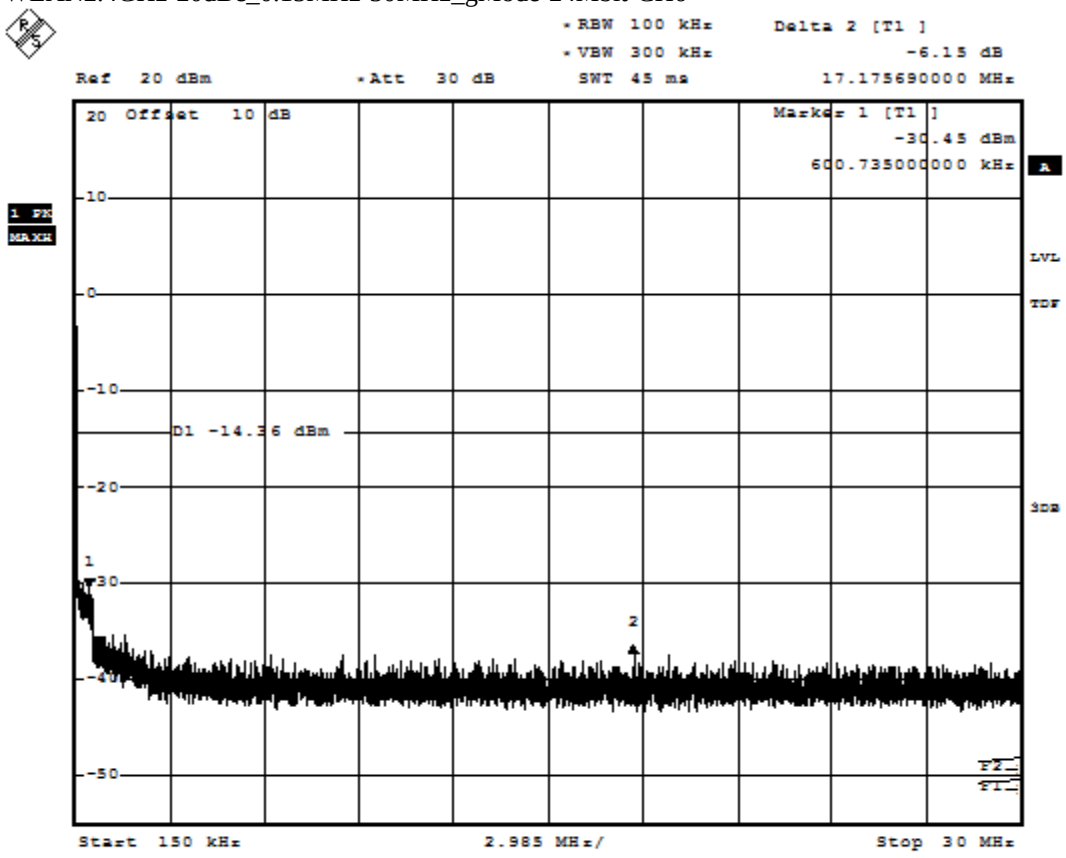
Date: 15.SEP.2016 13:07:17

WLAN2.4GHz-20dBc-Ref-gMode-24Mbit-CH6



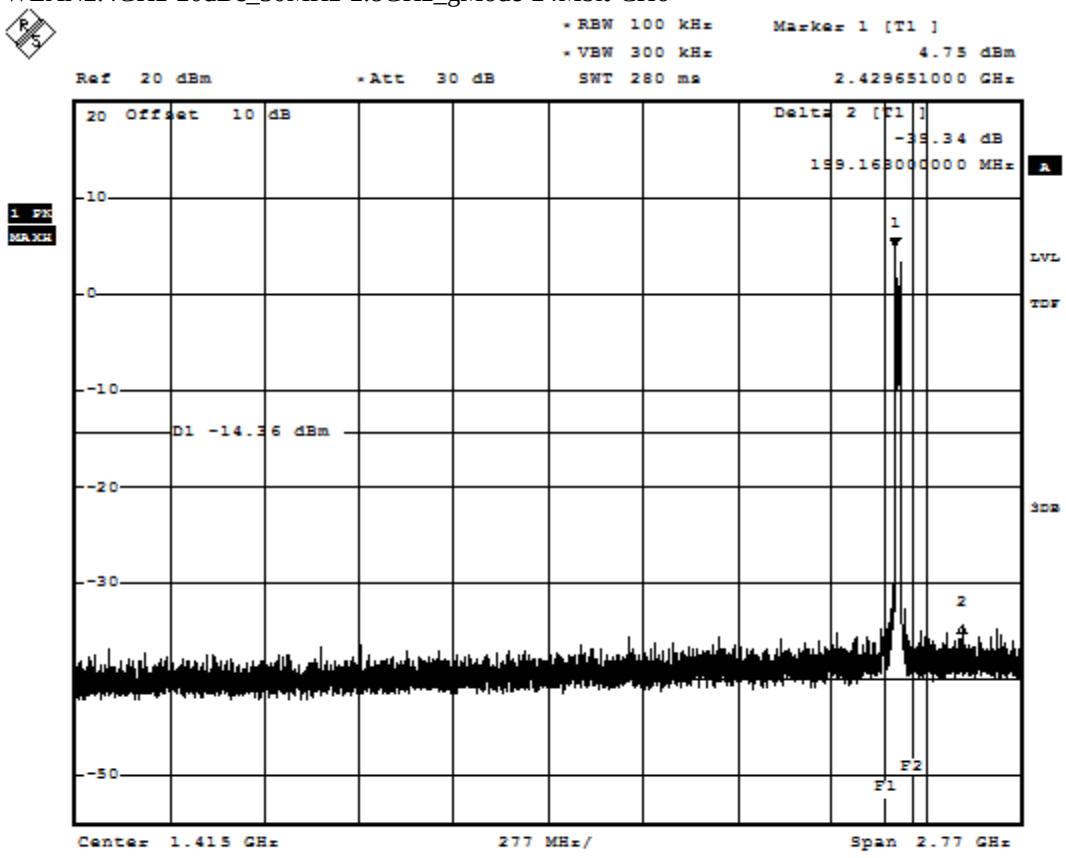
Date: 15.SEP.2016 13:10:09

WLAN2.4GHz-20dBc_0.15MHz-30MHz_gMode-24Mbit-CH6



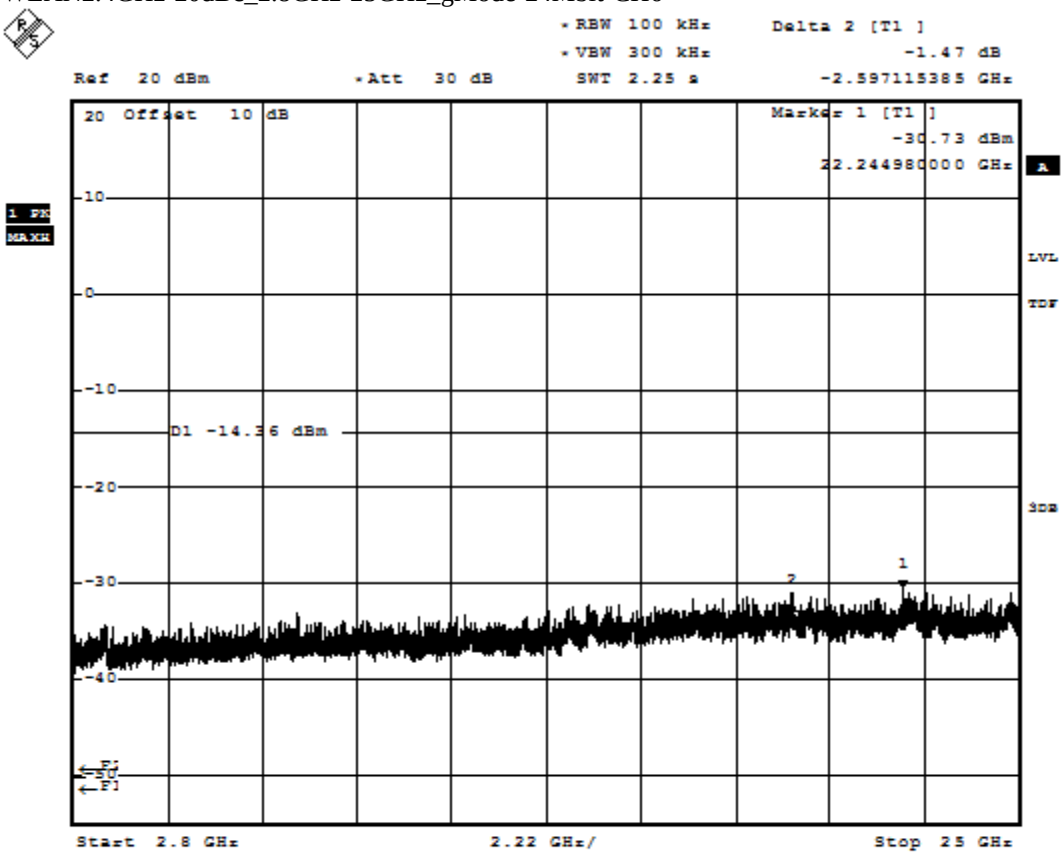
Date: 15.SEP.2016 13:11:23

WLAN2.4GHz-20dBc_30MHz-2.8GHz_gMode-24Mbit-CH6



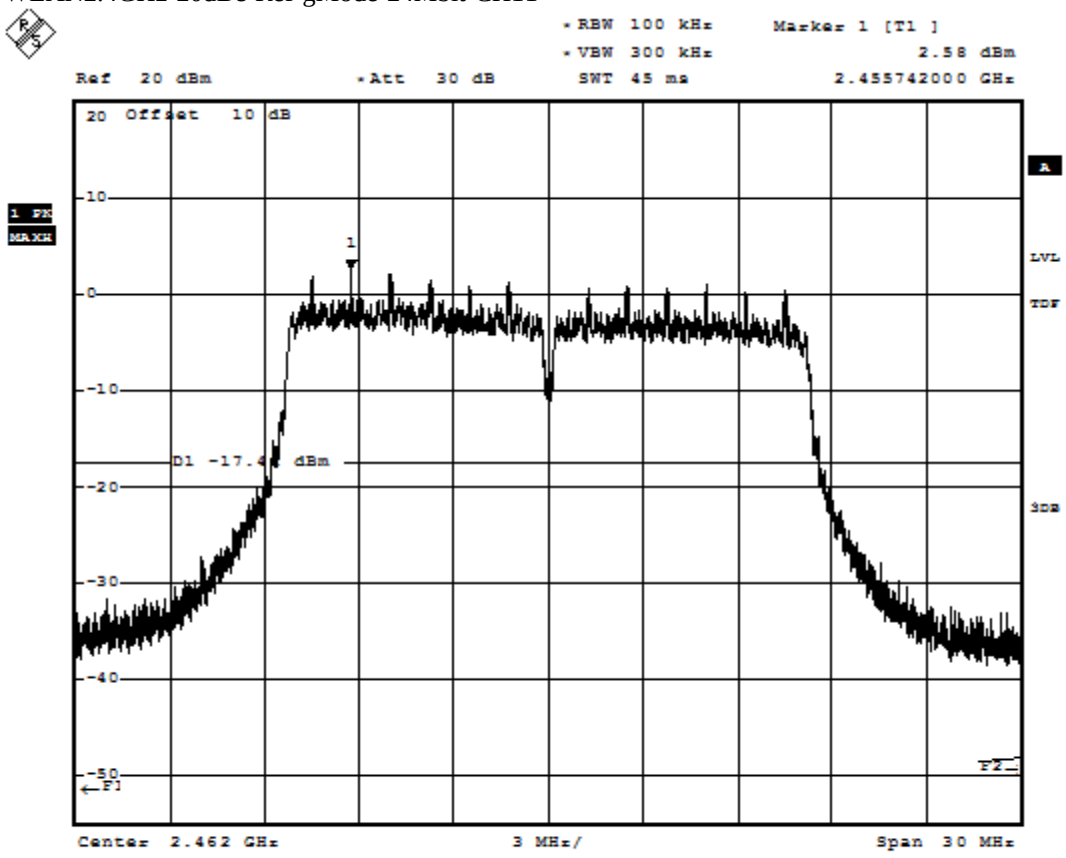
Date: 15.SEP.2016 13:12:20

WLAN2.4GHz-20dBc_2.8GHz-25GHz_gMode-24Mbit-CH6



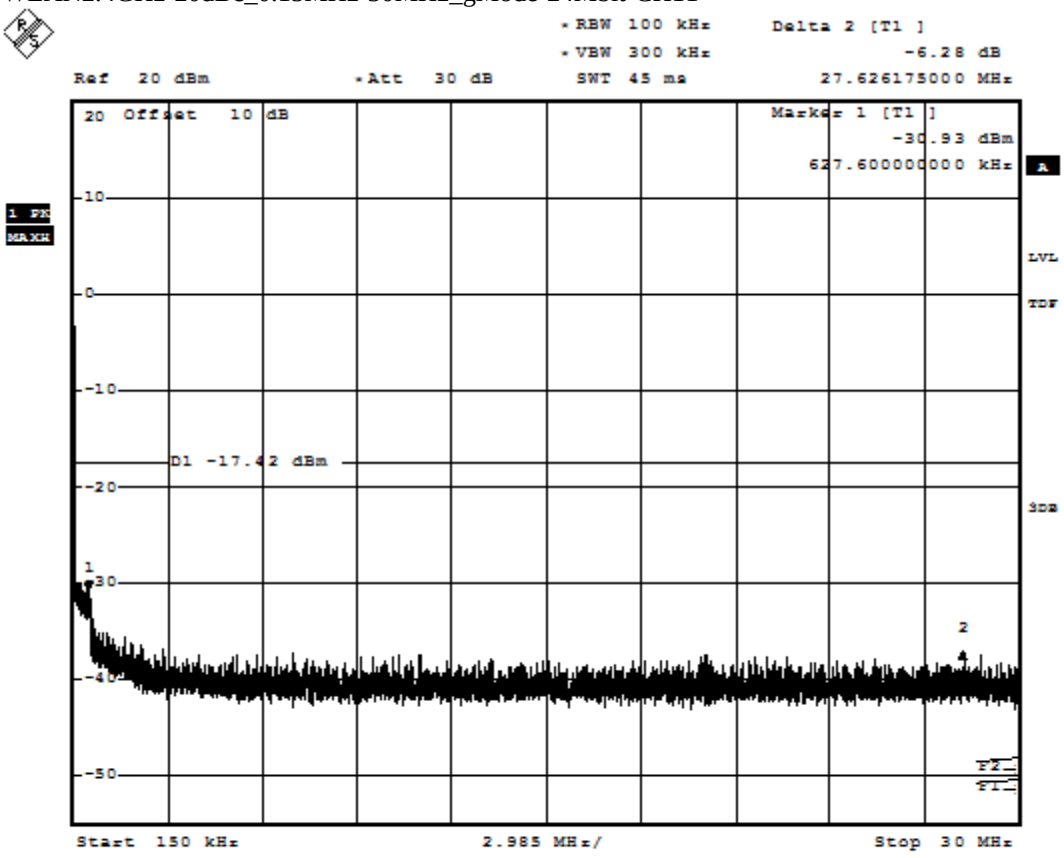
Date: 15.SEP.2016 13:13:34

WLAN2.4GHz-20dBc-Ref-gMode-24Mbit-CH11



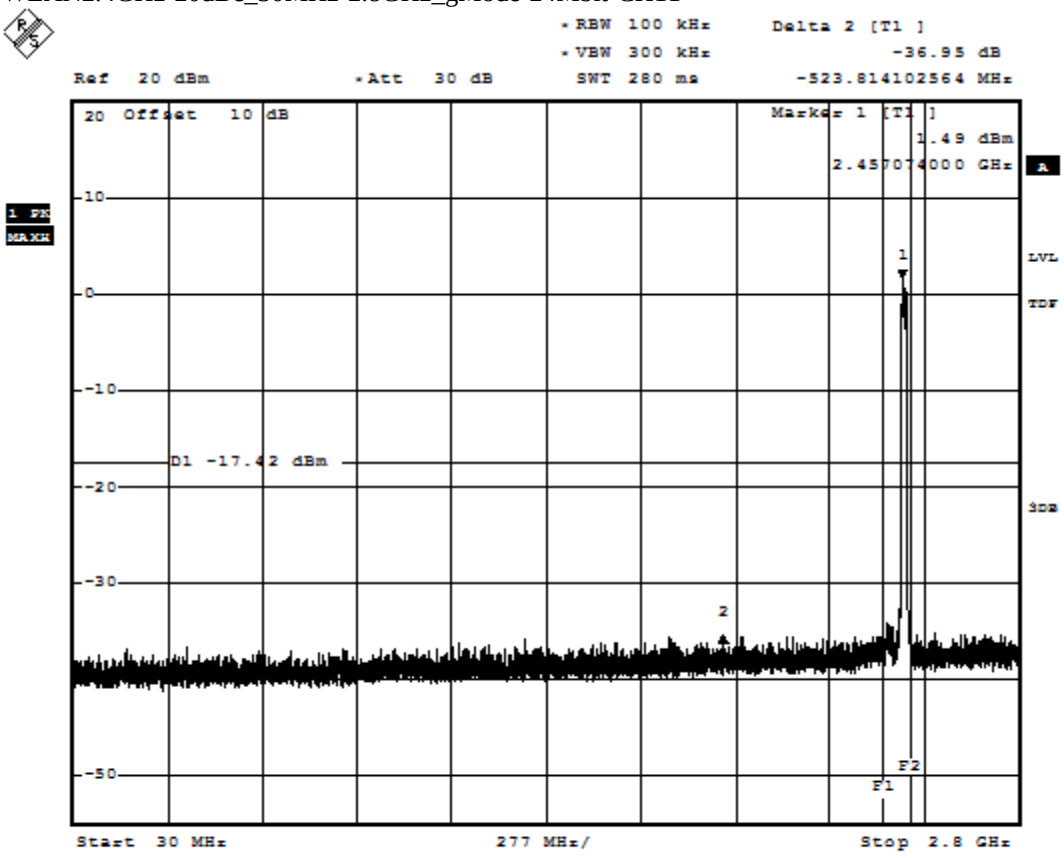
Date: 15.SEP.2016 13:17:03

WLAN2.4GHz-20dBc_0.15MHz-30MHz_gMode-24Mbit-CH11



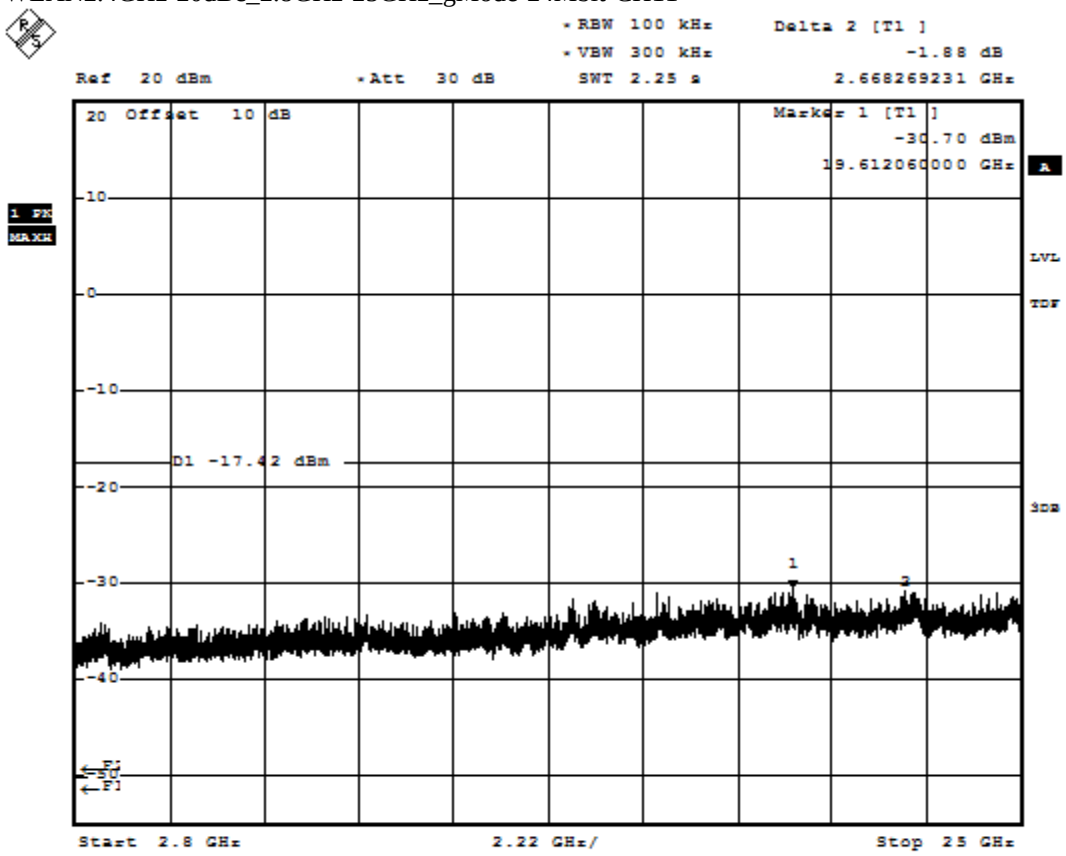
Date: 15.SEP.2016 13:18:19

WLAN2.4GHz-20dBc_30MHz-2.8GHz_gMode-24Mbit-CH11



Date: 15.SEP.2016 13:20:24

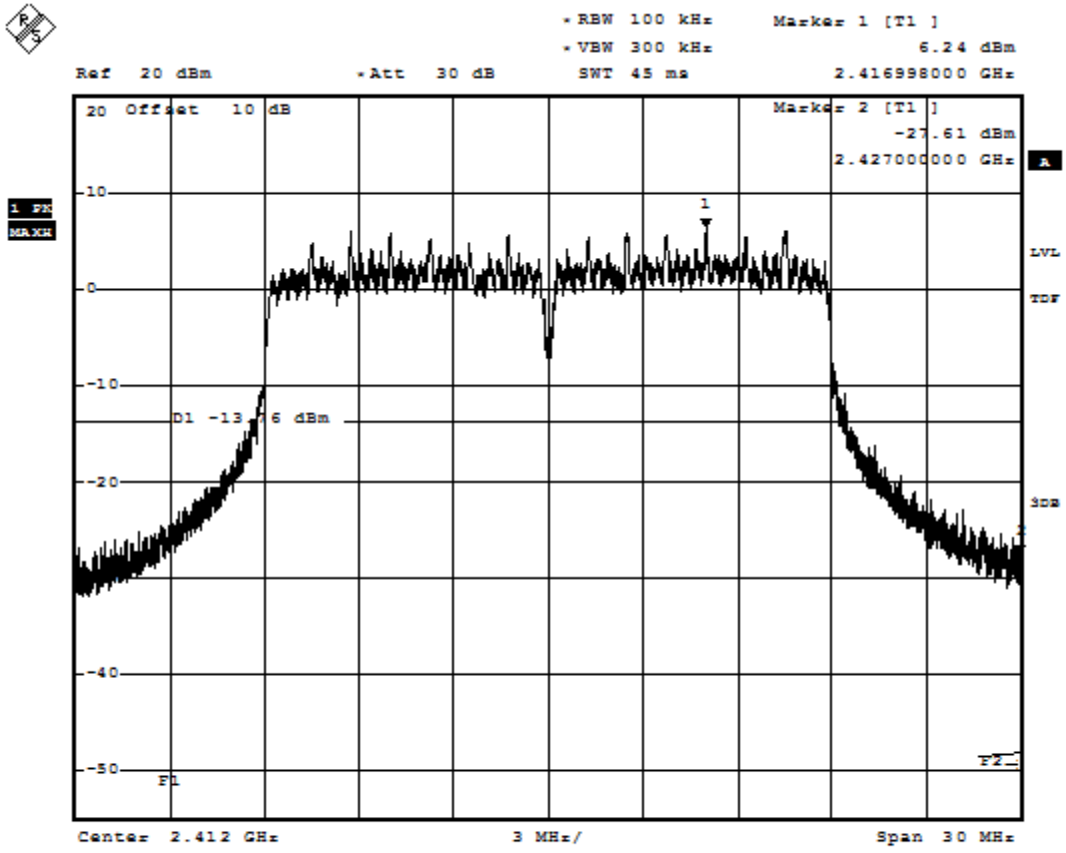
WLAN2.4GHz-20dBc_2.8GHz-25GHz_gMode-24Mbit-CH11



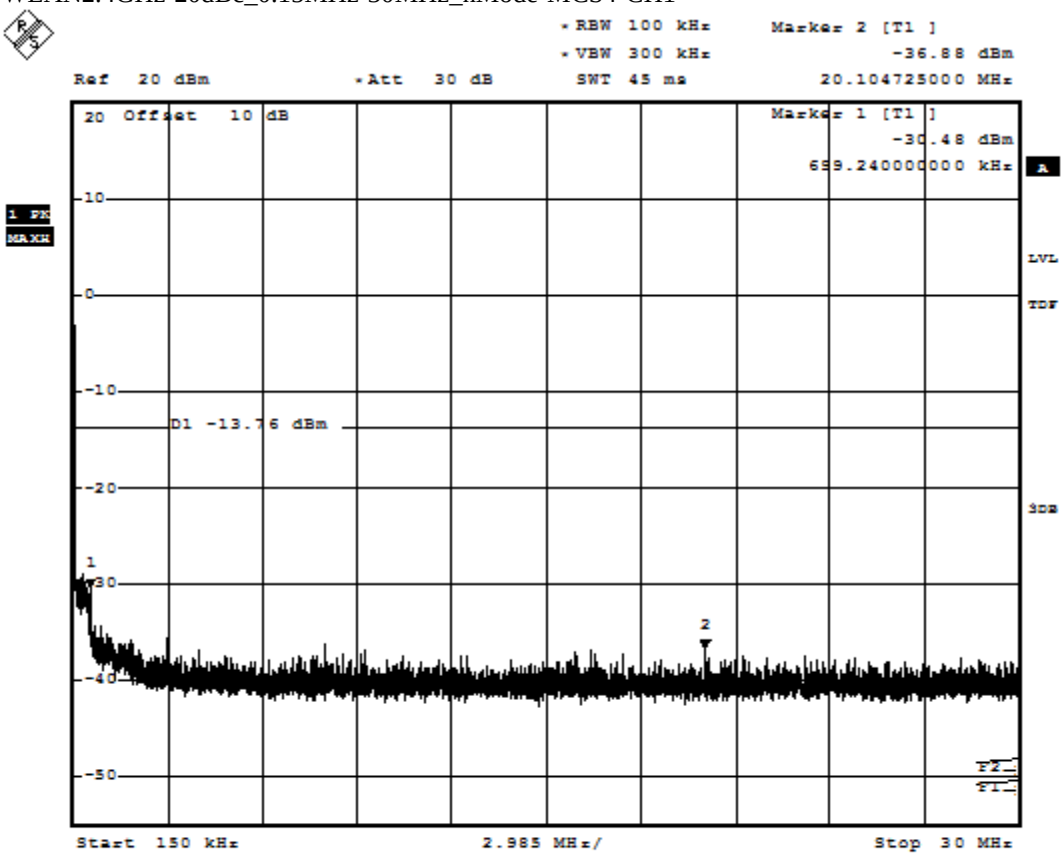
Date: 15.SEP.2016 13:21:58

1.4.3. n-mode (HT20) MCS4

WLAN2.4GHz-20dBc-Ref-nMode-MCS4-CH1

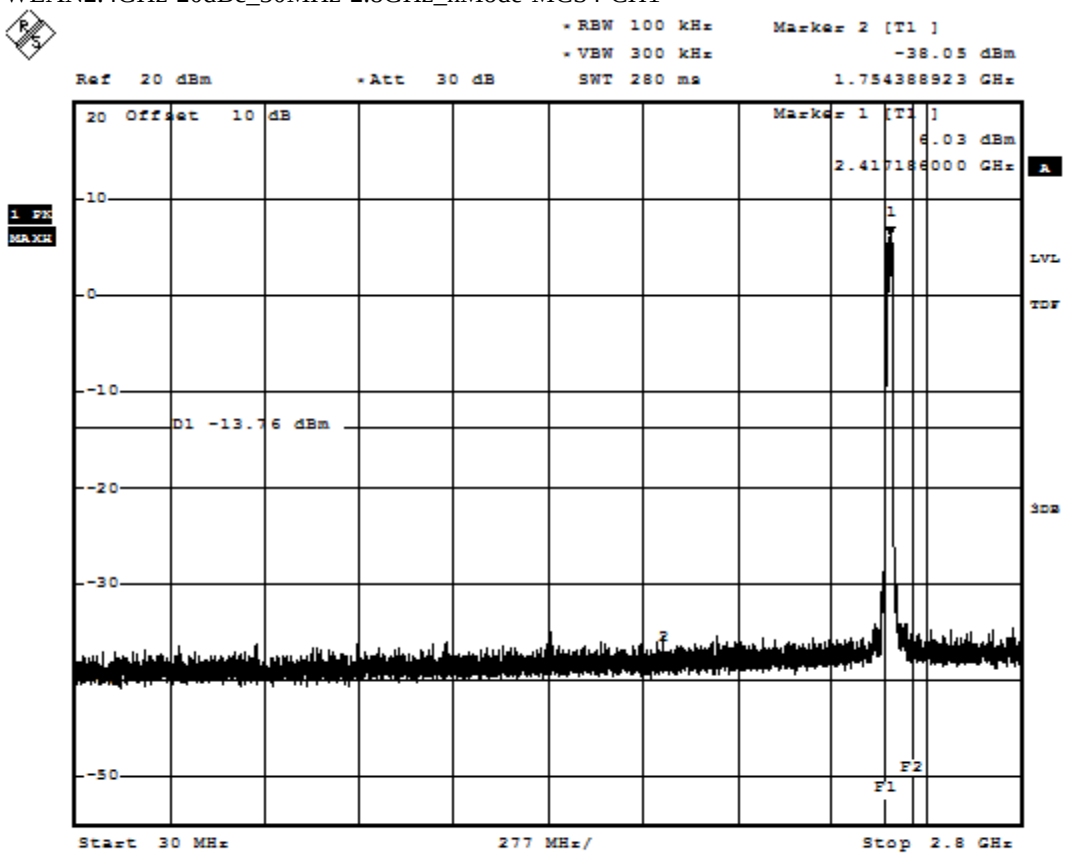


WLAN2.4GHz-20dBc_0.15MHz-30MHz_nMode-MCS4-CH1



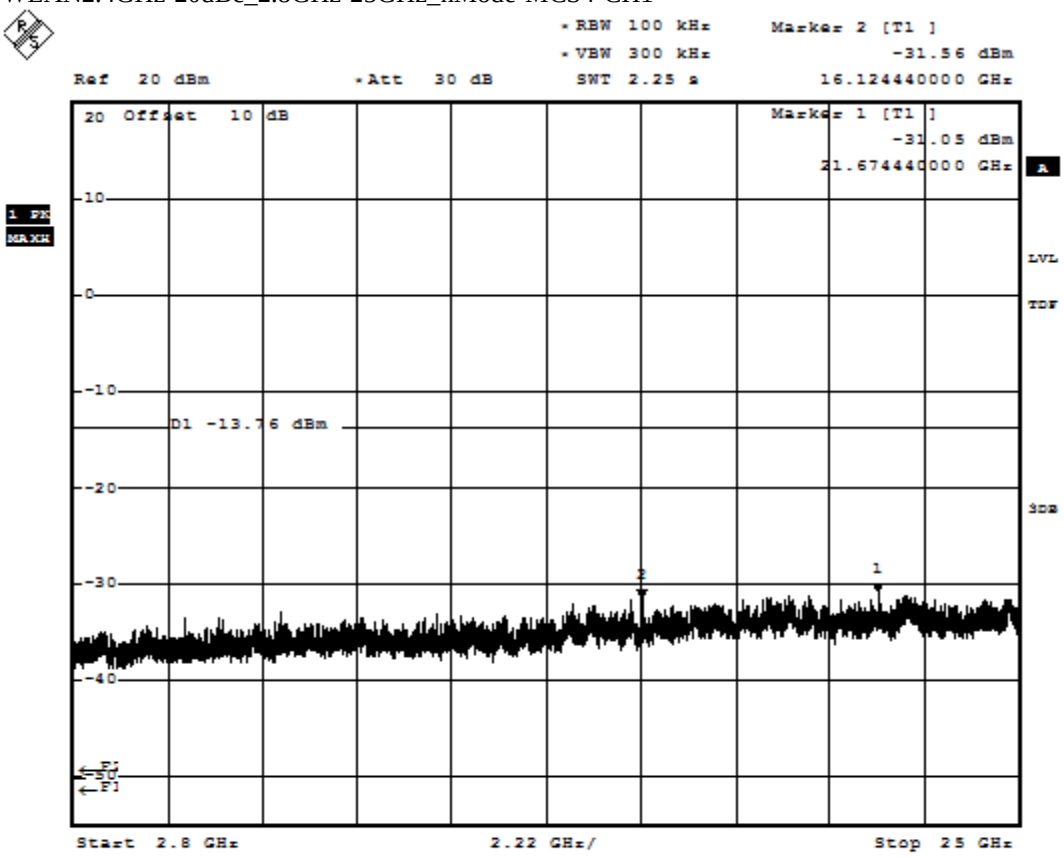
Date: 15.SEP.2016 13:28:16

WLAN2.4GHz-20dBc_30MHz-2.8GHz_nMode-MCS4-CH1



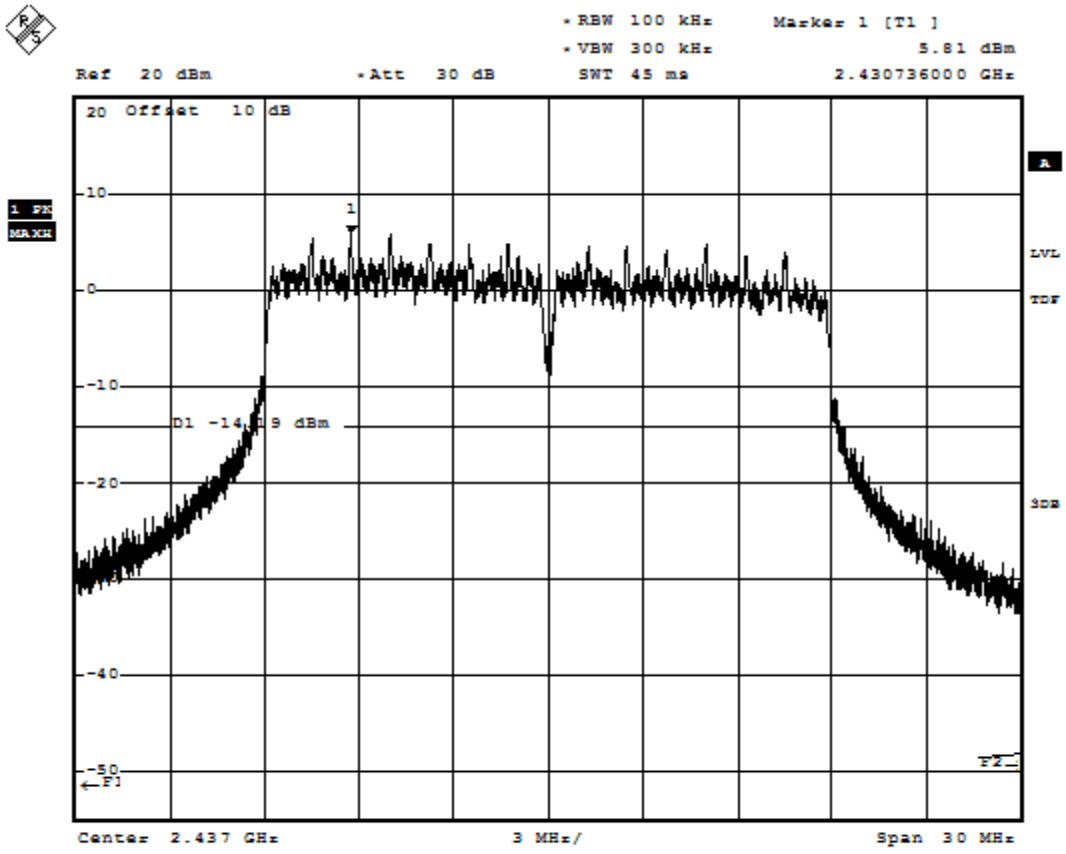
Date: 15.SEP.2016 13:31:37

WLAN2.4GHz-20dBc_2.8GHz-25GHz_nMode-MCS4-CH1



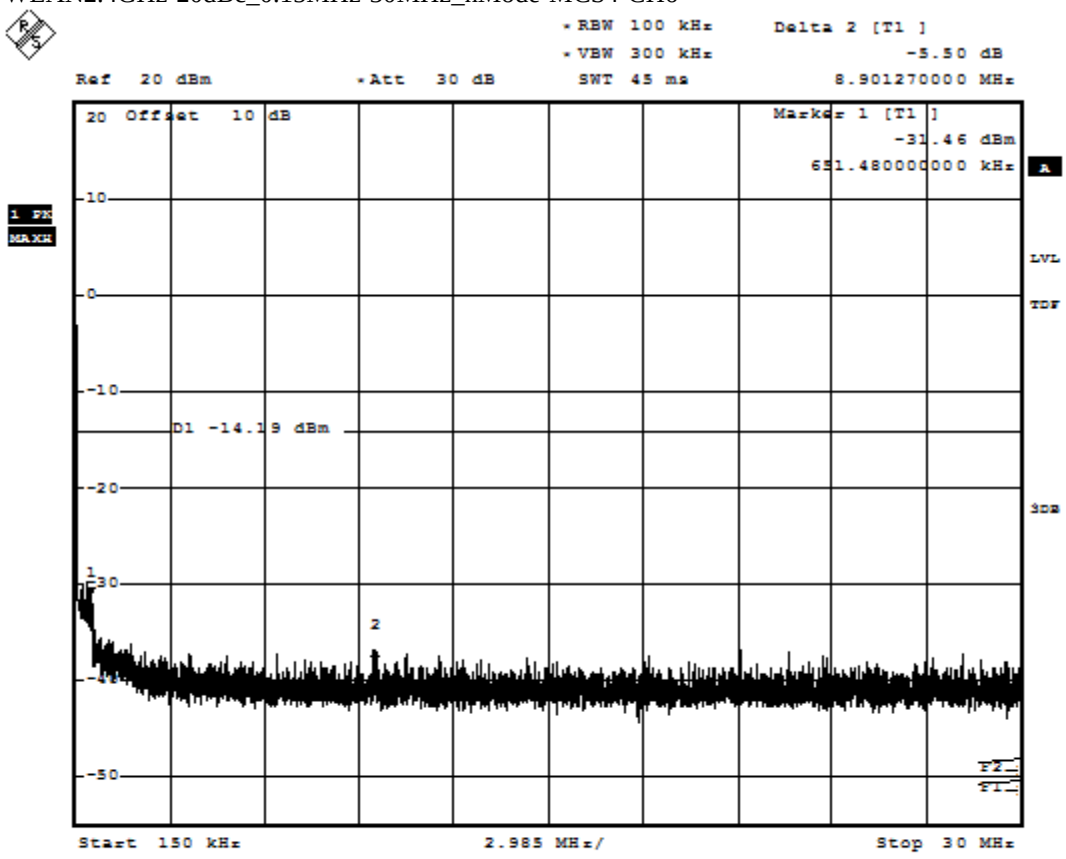
Date: 15.SEP.2016 13:33:15

WLAN2.4GHz-20dBc-Ref-nMode-MCS4-CH6



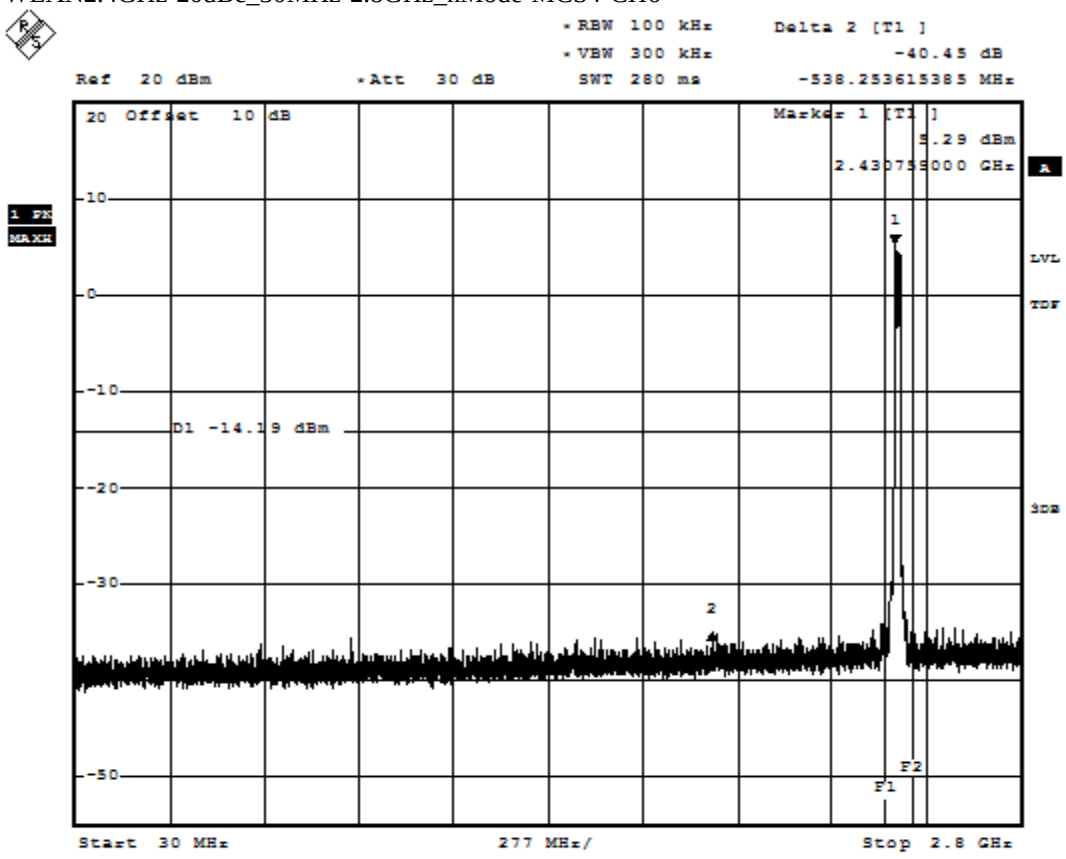
Date: 15.SEP.2016 13:35:56

WLAN2.4GHz-20dBc_0.15MHz-30MHz_nMode-MCS4-CH6



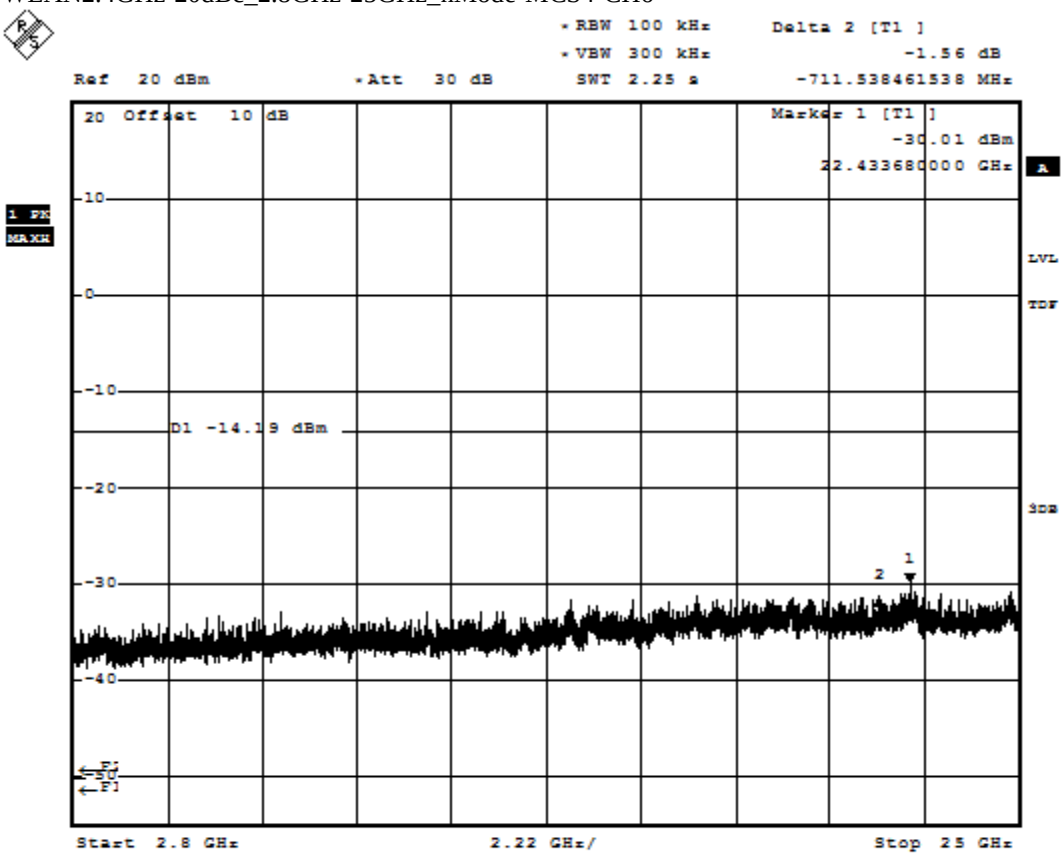
Date: 15.SEP.2016 13:36:59

WLAN2.4GHz-20dBc_30MHz-2.8GHz_nMode-MCS4-CH6



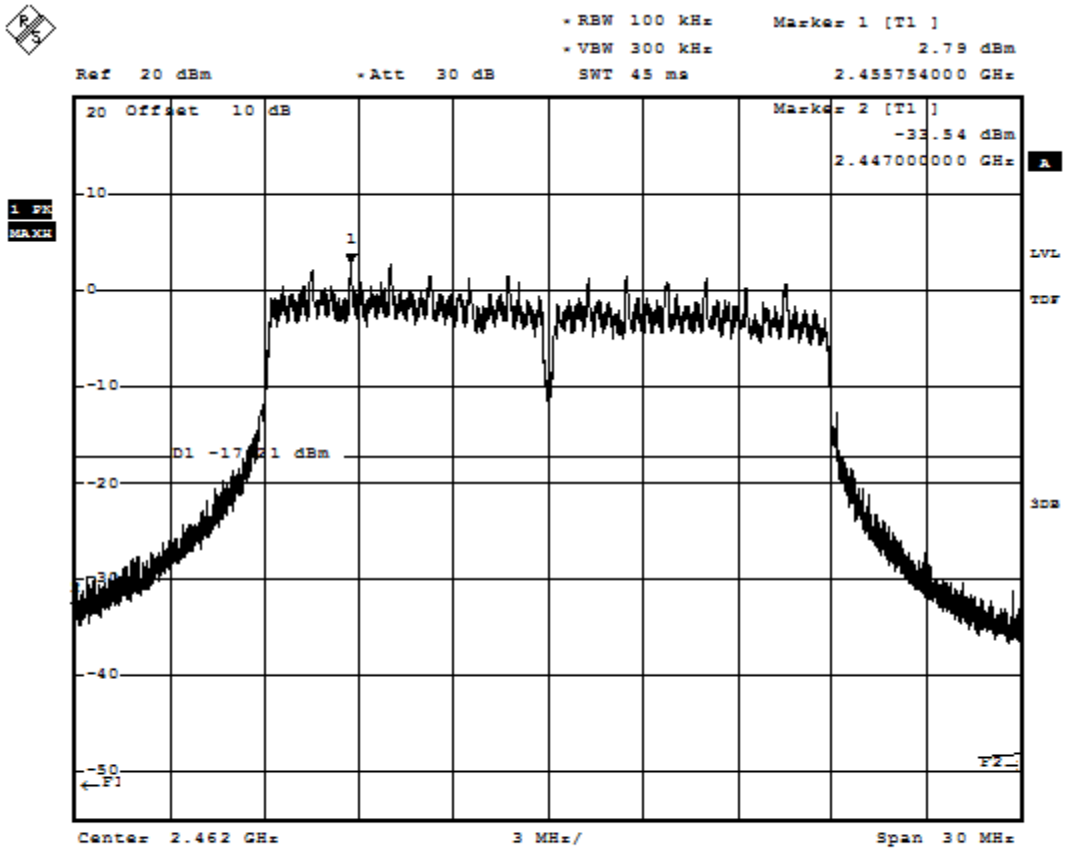
Date: 15.SEP.2016 13:39:23

WLAN2.4GHz-20dBc_2.8GHz-25GHz_nMode-MCS4-CH6



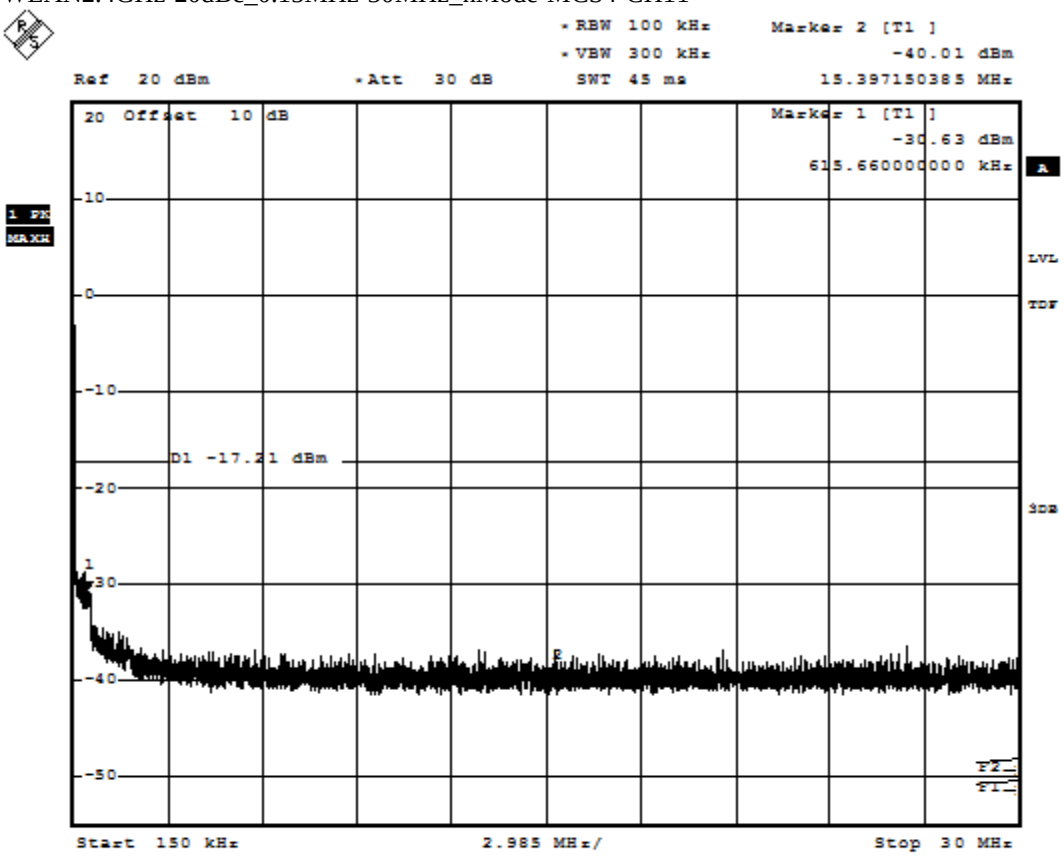
Date: 15.SEP.2016 13:41:19

WLAN2.4GHz-20dBc-Ref-nMode-MCS4-CH11



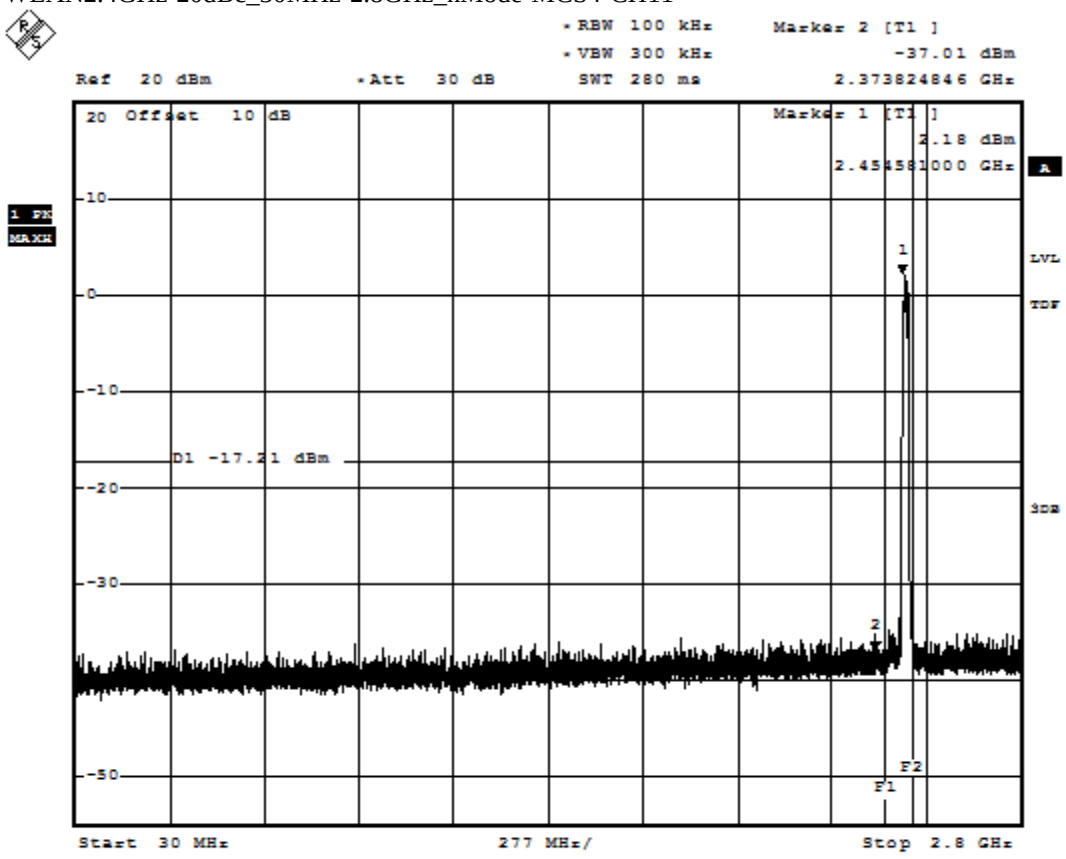
Date: 15.SEP.2016 13:46:42

WLAN2.4GHz-20dBc_0.15MHz-30MHz_nMode-MCS4-CH11



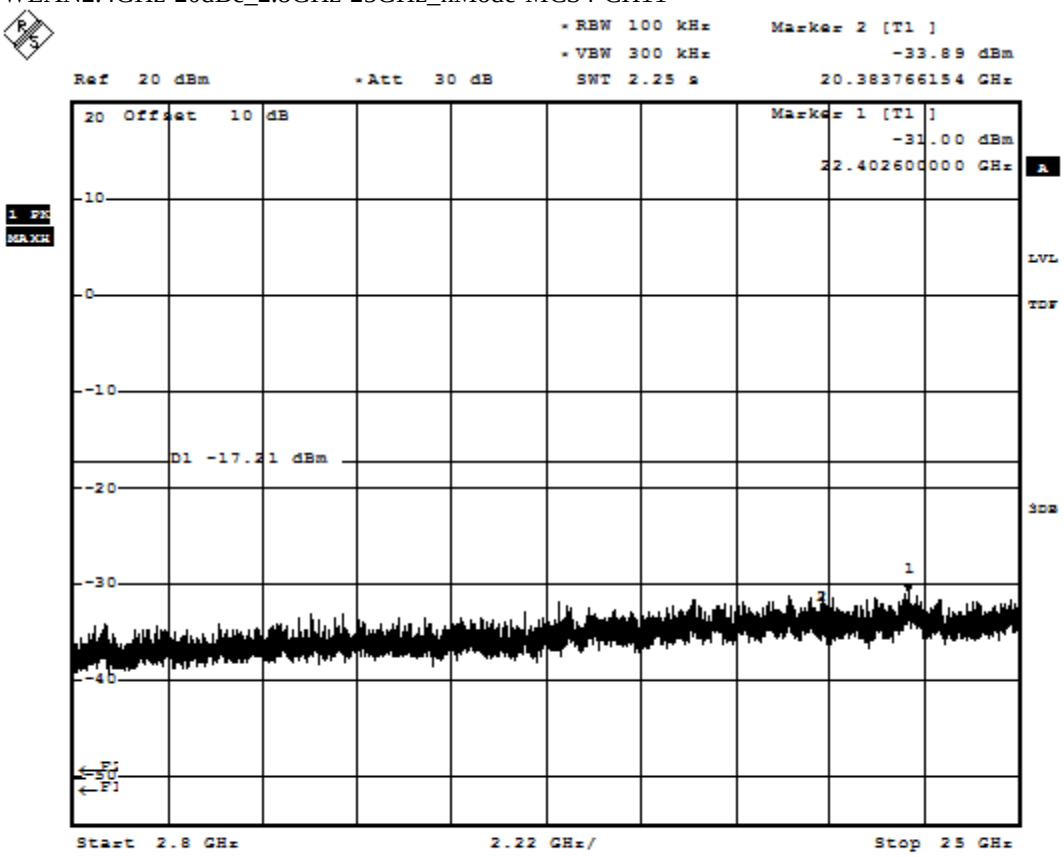
Date: 15.SEP.2016 13:52:03

WLAN2.4GHz-20dBc_30MHz-2.8GHz_nMode-MCS4-CH11



Date: 15.SEP.2016 13:53:29

WLAN2.4GHz-20dBc_2.8GHz-25GHz_nMode-MCS4-CH11

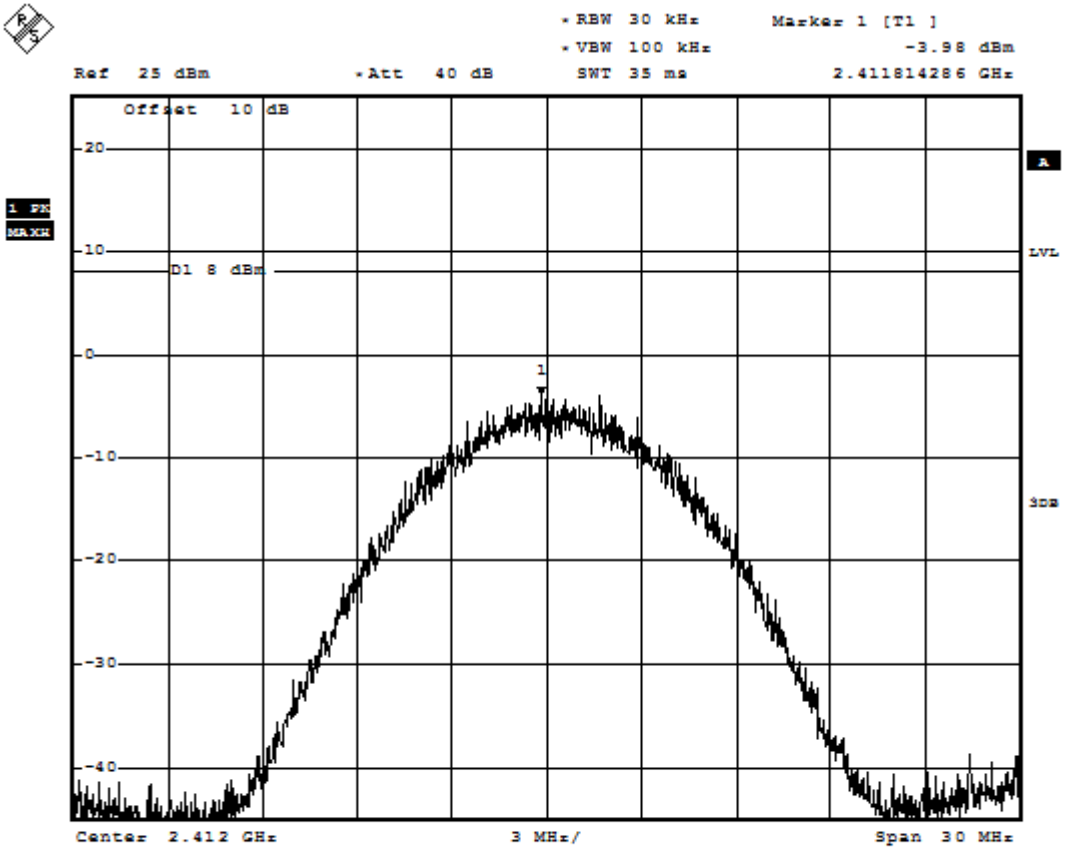


Date: 15.SEP.2016 13:54:37

1.5. RF-Parameter - Power Spectral Density

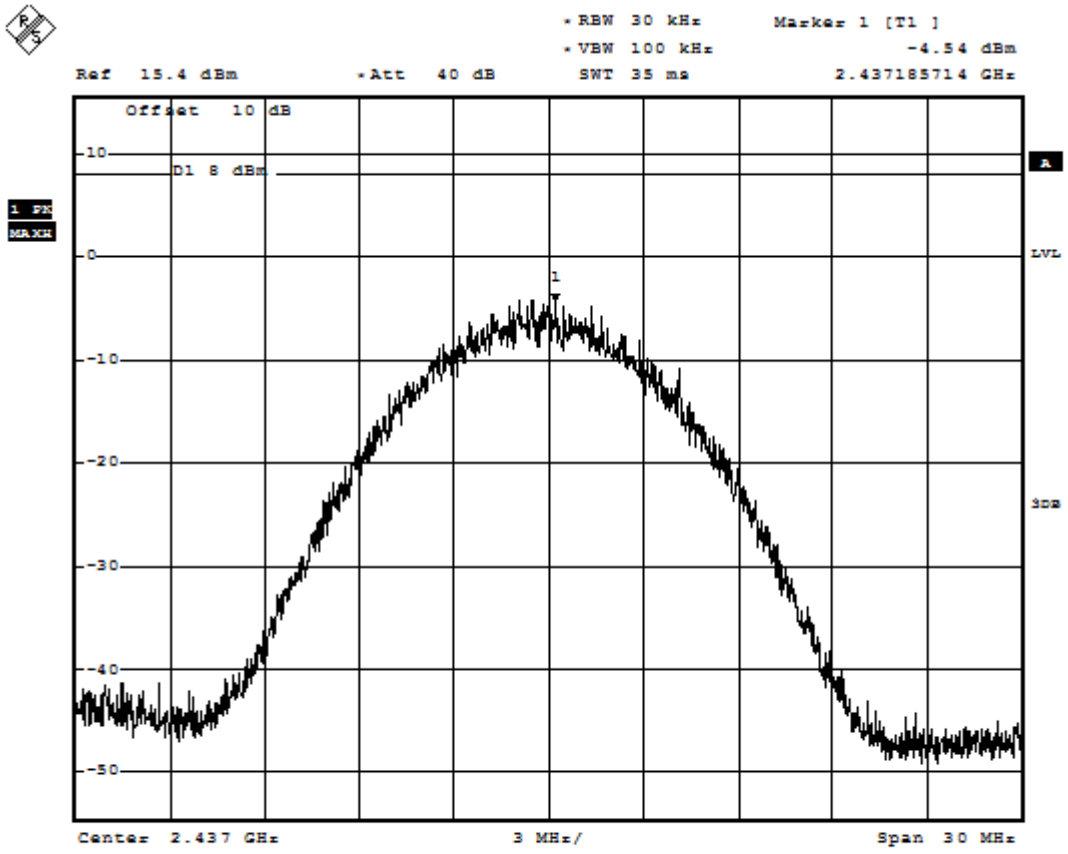
1.5.1. b-mode 11Mbit

WLAN2.4GHz--PSD-bMode-11MBit-CH1



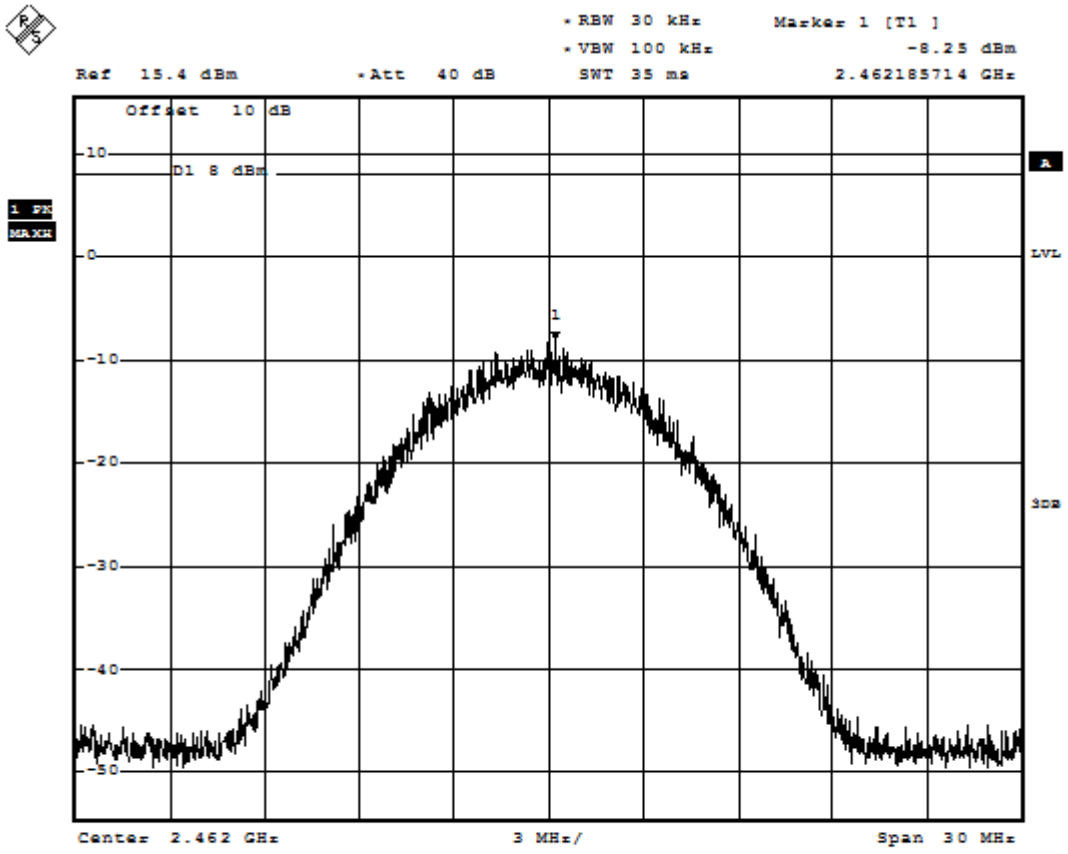
Date: 27.SEP.2016 16:16:20

WLAN2.4GHz--PSD-bMode-11MBit-CH6



Date: 27.SEP.2016 16:18:31

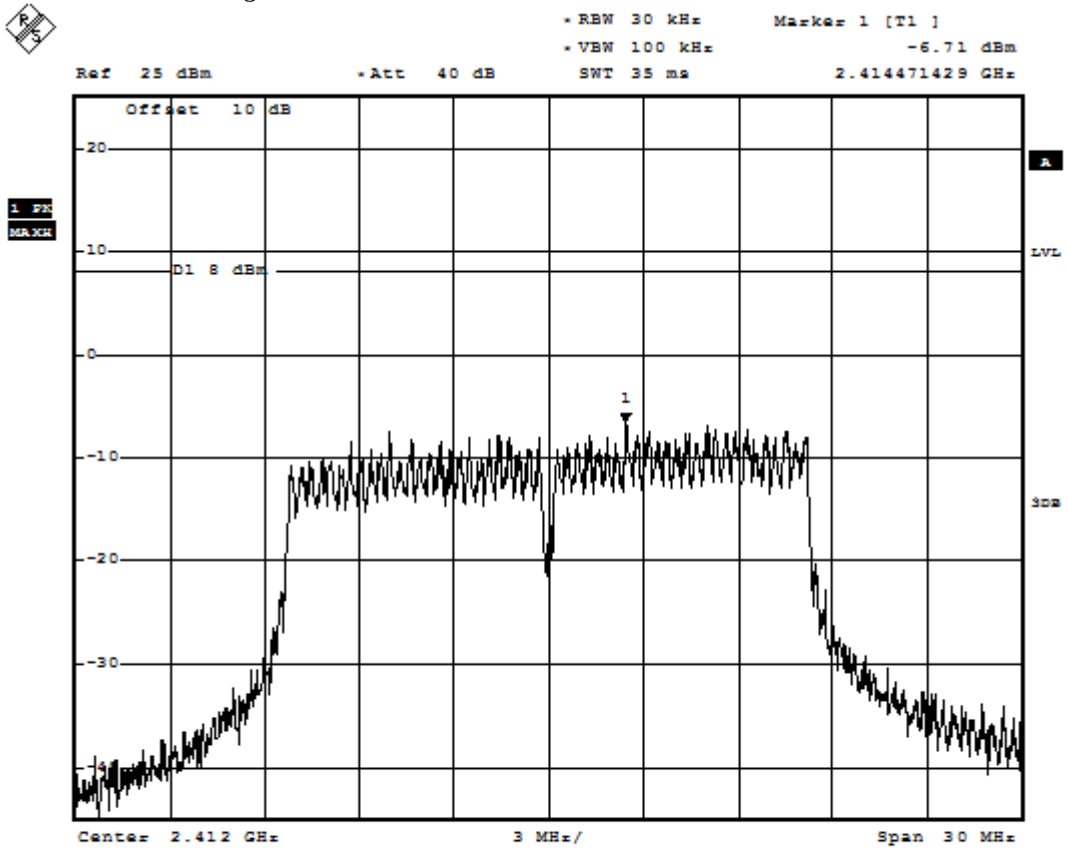
WLAN2.4GHz--PSD-bMode-11MBit-CH11



Date: 27.SEP.2016 16:19:29

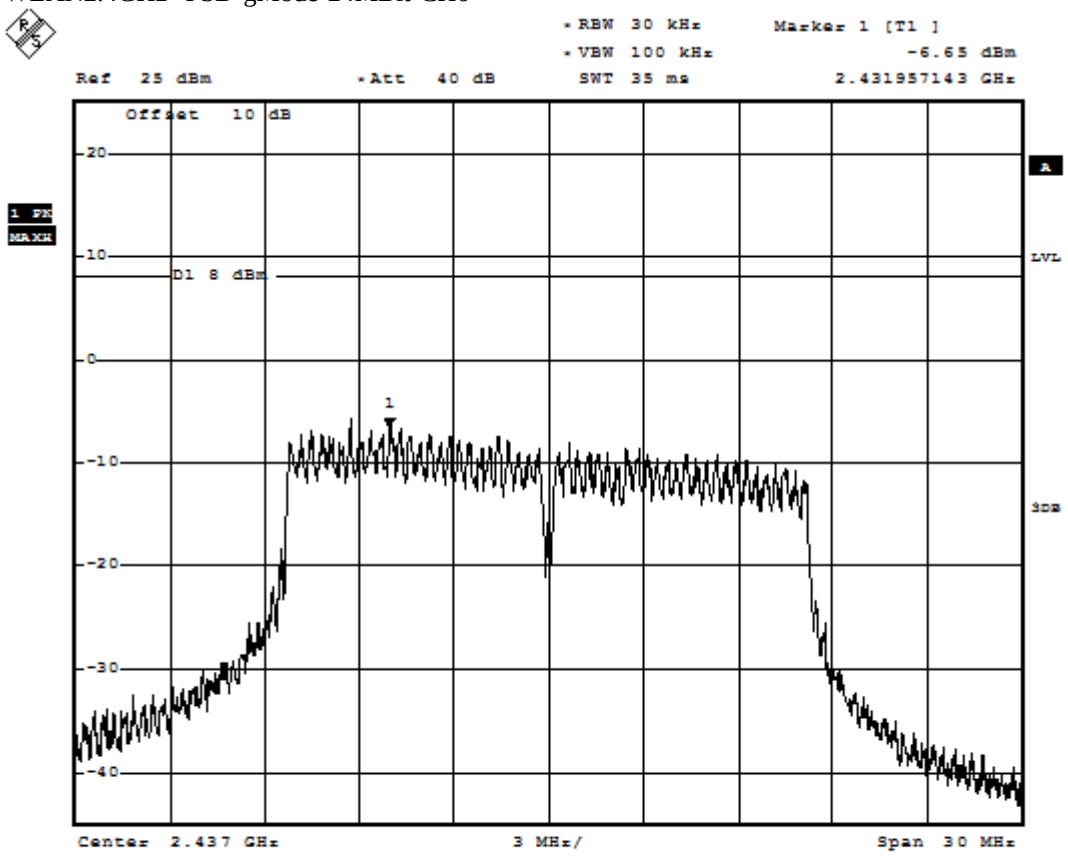
1.5.2. g-mode 24Mbit

WLAN2.4GHz--PSD-gMode-24MBit-CH1



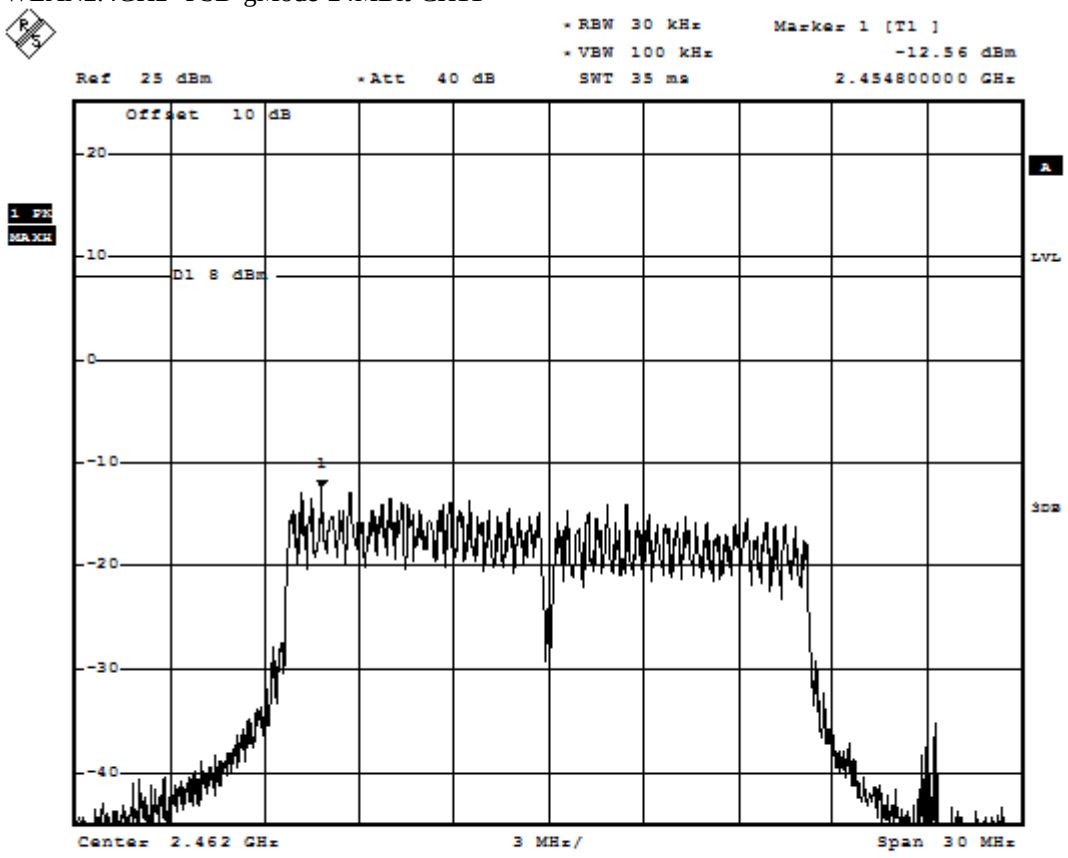
Date: 27.SEP.2016 16:12:14

WLAN2.4GHz--PSD-gMode-24MBit-CH6



Date: 27.SEP.2016 16:10:15

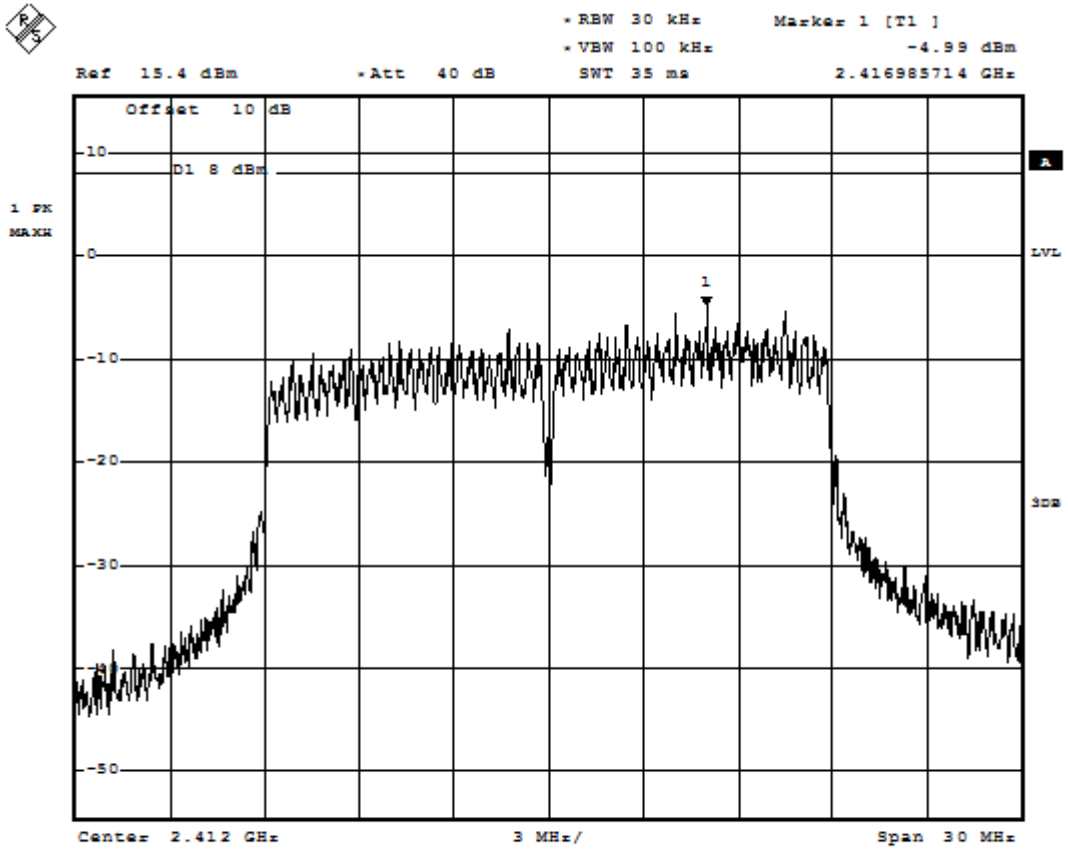
WLAN2.4GHz--PSD-gMode-24MBit-CH11



Date: 27.SEP.2016 16:13:48

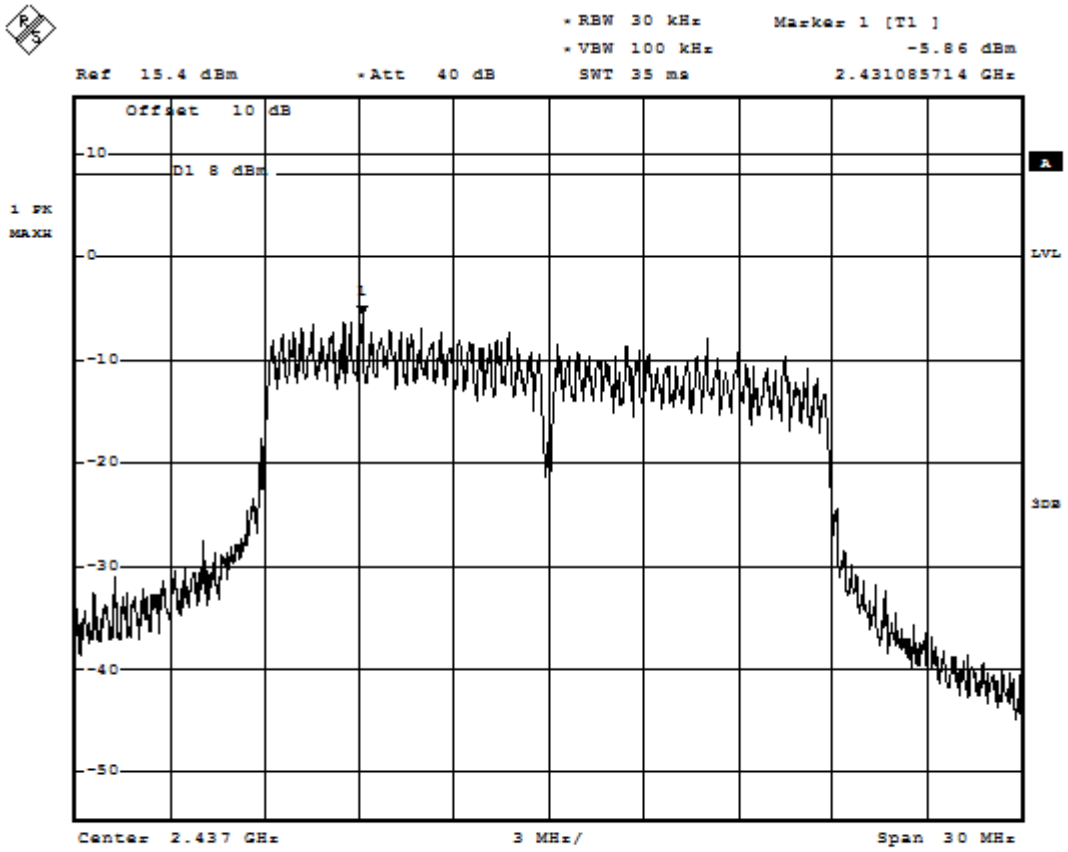
1.5.3. n-mode (HT20) MCS4

WLAN2.4GHz--PSD-nMode-MCS4-CH1



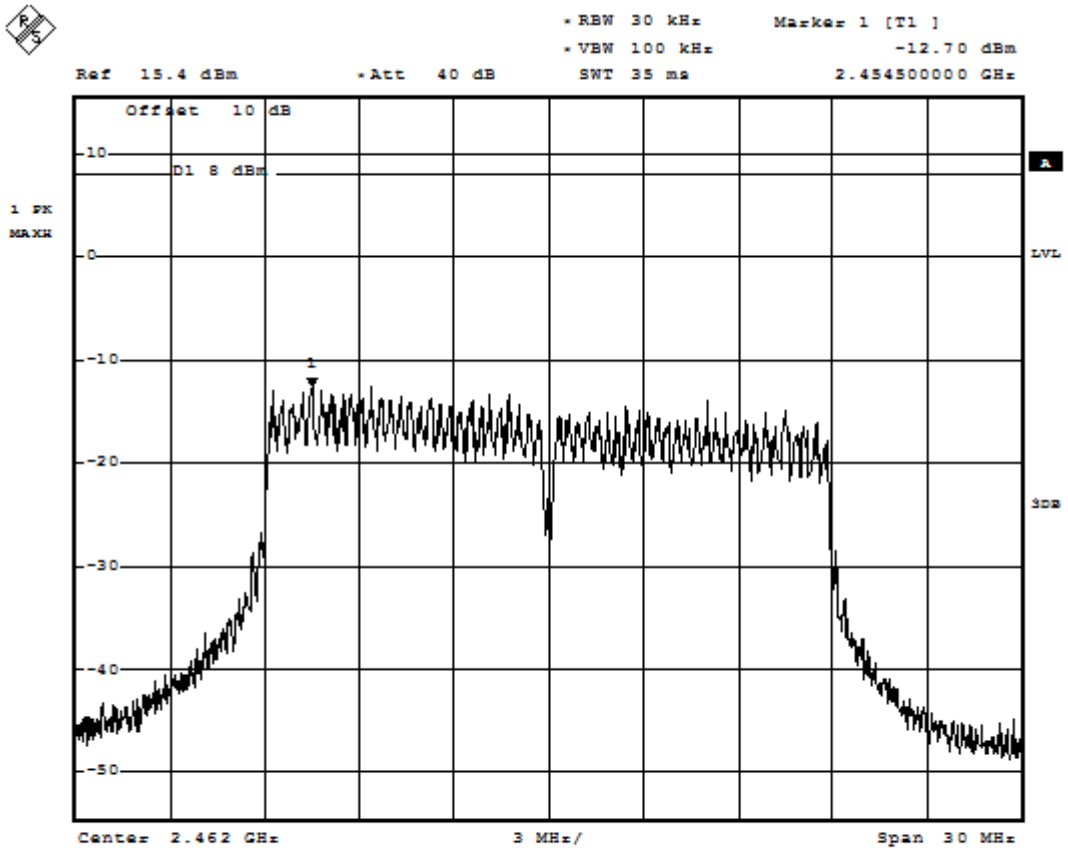
Date: 27.SEP.2016 16:21:55

WLAN2.4GHz--PSD-nMode-MCS4-CH6



Date: 27.SEP.2016 16:23:34

WLAN2.4GHz--PSD-nMode-MCS4-CH11



Date: 27.SEP.2016 16:24:58

1.6. General Limit - Radiated field strength emissions below 30 MHz

1.6.1. b-mode 11Mbit

Diagram No. 2.01_WLAN_b mode_11Mbps_Ch1

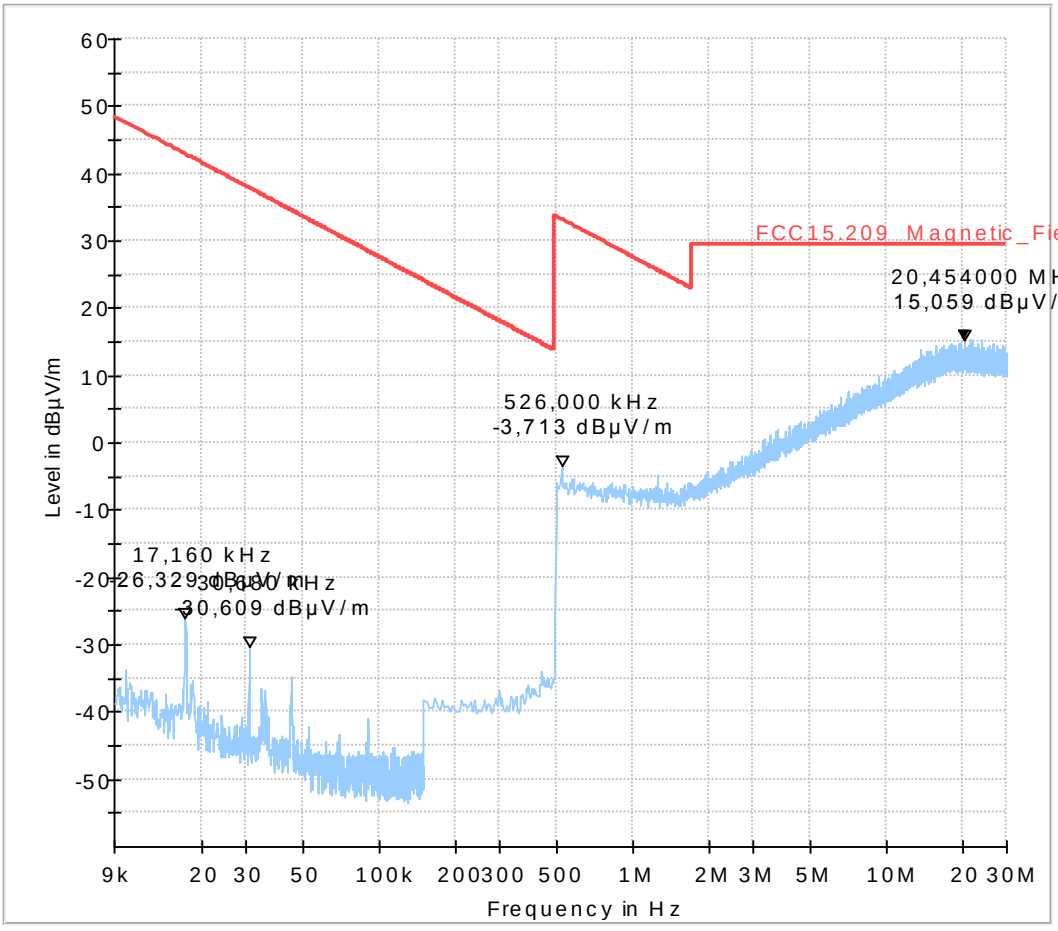
Date: 31.08.2016 Page 1 of 5

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used filter:	bypass
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	HLa
Operating conditions:	WLAN_TX_b-mode_ 11 Mbps_CH1
Power during tests:	5V DC using AC/DC Adapater (connected to 120V/60Hz)

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter (120 V AC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m

Full Spectrum



1.6.2. g-mode 24Mbit

Diagram No. 2.02_WLAN_g mode_24Mbps_Ch6

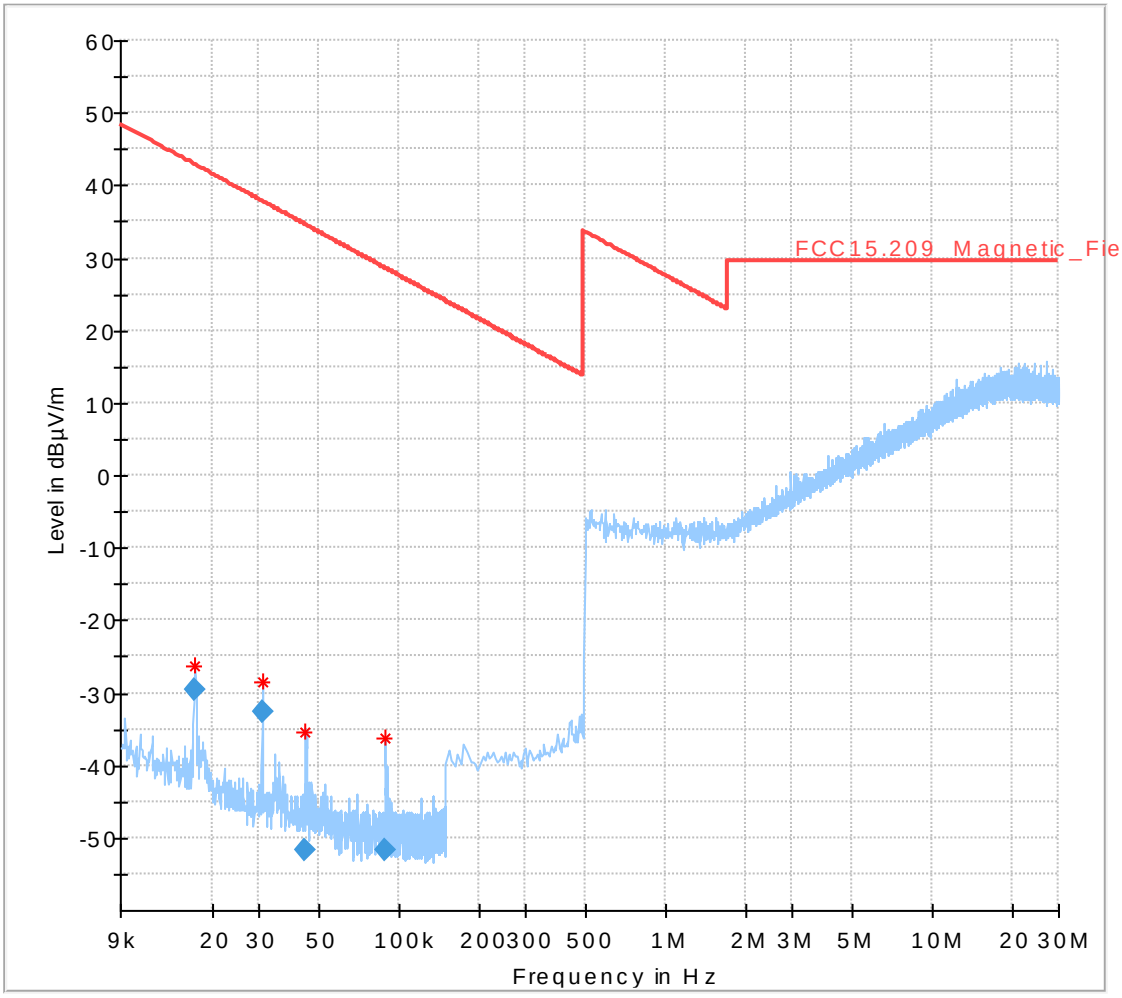
Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V8.51.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used filter:	bypass
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	RIs
Operating conditions:	WLAN_TX_g-mode_ 24 Mbps_CH6
Power during tests:	5V DC using AC/DC Adapater (connected to 120V/60Hz)

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter (120 V AC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
0.017160	-29.46	42.91	72.36	1000.0	0.200	100.0	H	3.0	-58.7
0.030680	-32.63	37.86	70.49	1000.0	0.200	100.0	H	71.0	-59.4
0.044600	-51.81	34.61	86.42	1000.0	0.200	100.0	V	91.0	-59.6
0.089320	-51.80	28.58	80.38	1000.0	0.200	100.0	V	-6.0	-59.9

(continuation of the "Final_Result" table from column 16 ...)

Frequency (MHz)	Comment
0.017160	16:13:10 - 31.08.2016
0.030680	16:18:43 - 31.08.2016
0.044600	16:25:59 - 31.08.2016
0.089320	16:32:48 - 31.08.2016

1.6.3. n-mode (HT20) MCS4

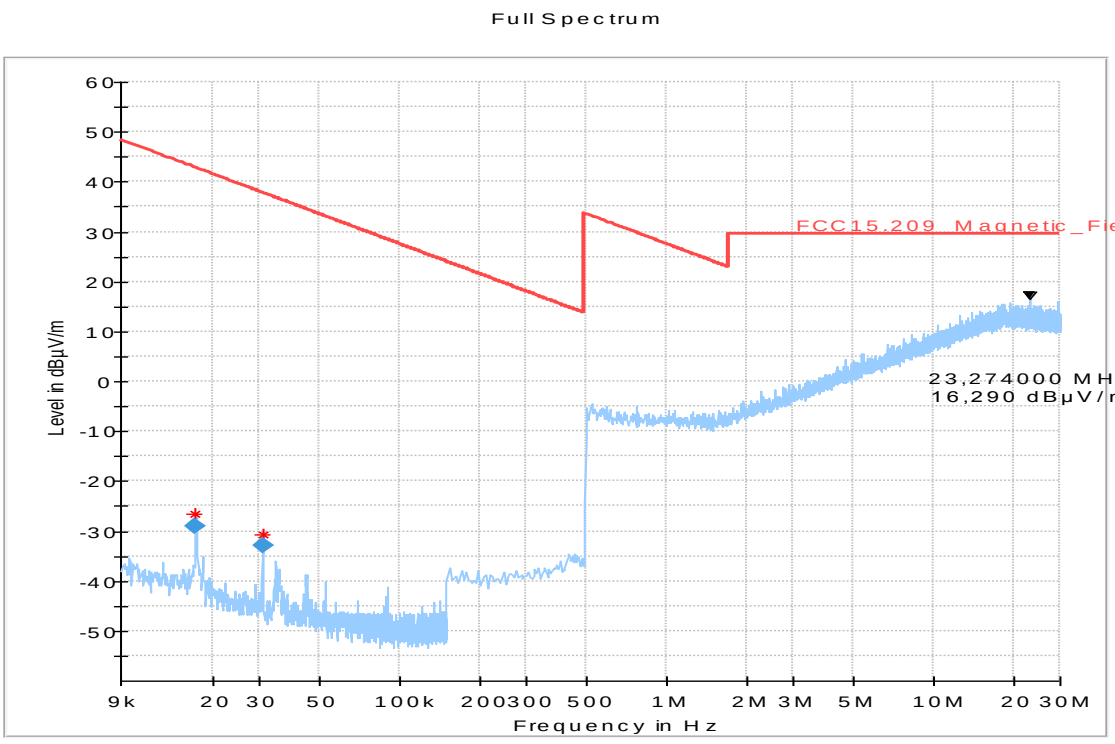
Diagram No. 2.03_WLAN_n mode_MCS4_C11

Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V8.51.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used filter:	bypass
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	RIs
Operating conditions:	WLAN_TX_n-mode_ MCS4_CH11
Power during tests:	5V DC using AC/DC Adapater (connected to 120V/60Hz)

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter (120 V AC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m



Final_Result

Frequency (MHz)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
0.017160	-28.92	42.91	71.82	1000.0	0.200	100.0	H	20.0	-58.7
0.030760	-32.80	37.84	70.64	1000.0	0.200	100.0	V	262.0	-59.4

(continuation of the "Final_Result" table from column 16 ...)

Frequency (MHz)	Comment
0.017160	17:39:43 - 31.08.2016
0.030760	17:54:45 - 31.08.2016

1.7. General Limit - Radiated field strength emissions, 30 MHz - 1 GHz

1.7.1. b-mode 11Mbit

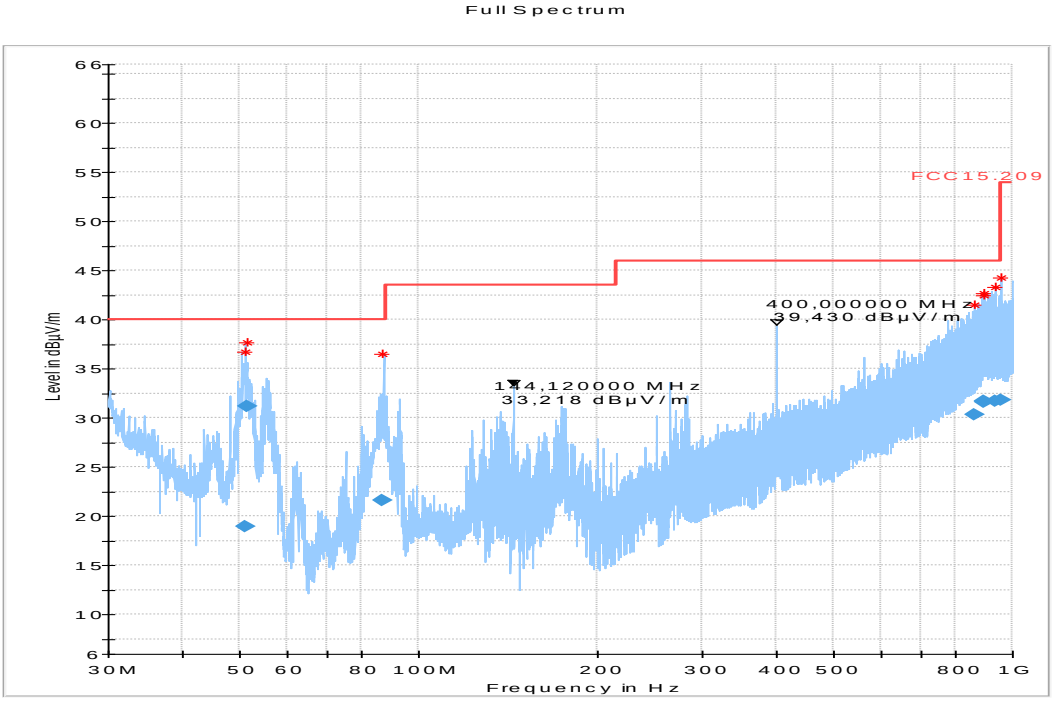
Diagram No. 3.01_WLAN_b mode_11Mbit_Ch1_30 MHz - 1 GHz_

13.09.2016 Page 1 of 2

Test description:	Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Distance correction:	not used
Used filter:	not used
Technical Data:	please see page 2 for detailed data of measurement setup
Test specification.:	FCC 15.209; RSS-Gen: Issue 4
Operator:	KIv
Operating conditions:	TX-on WLAN 802.11 b-mode, channel1;11Mbit;
Power during tests:	110V 60Hz
Comment 1:	Humidity: 60%rH; Temperature: 22°C

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter (120 V AC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m



Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
51.220000	18.99	40.00	21.01	1000.0	120.000	219.0	H	290.0	0.0	12.5
51.250000	31.21	40.00	8.79	1000.0	120.000	105.0	V	351.0	90.0	12.5
86.750000	21.65	40.00	18.36	1000.0	120.000	249.0	H	207.0	0.0	8.0
863.370000	30.38	46.00	15.62	1000.0	120.000	188.0	H	227.0	0.0	25.9
892.930000	31.69	46.00	14.31	1000.0	120.000	118.0	H	202.0	90.0	26.7
898.270000	31.78	46.00	14.22	1000.0	120.000	211.0	H	173.0	90.0	26.7
936.920000	31.78	46.00	14.22	1000.0	120.000	293.0	V	355.0	90.0	27.0
959.600000	31.89	46.00	14.11	1000.0	120.000	217.0	H	247.0	0.0	27.5

1.7.2. g-mode 24Mbit

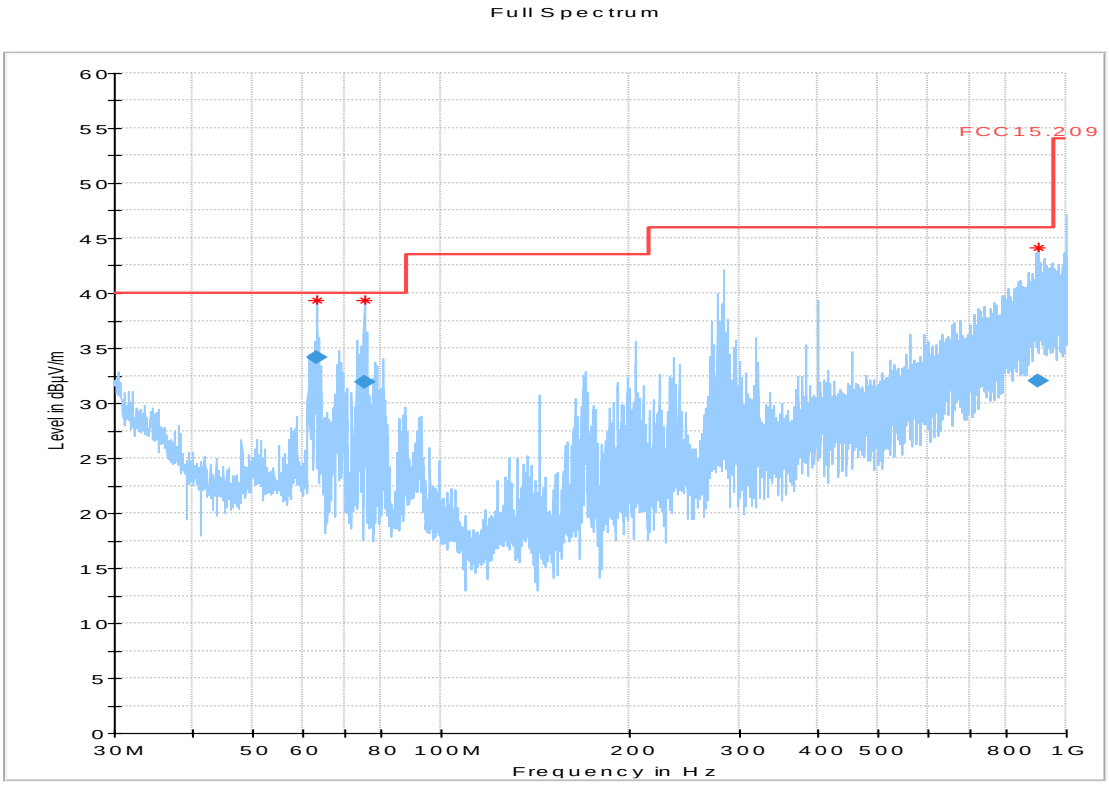
Diagram No. 3.03_WLAN_n mode_MCS4_Ch11_30 MHz - 1 GHz_

12.09.2016 Page 1 of 4

Test description:	Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Distance correction:	not used
Used filter:	not used
Technical Data:	please see page 2 for detailed data of measurement setup
Test specification.:	FCC 15.209; RSS-Gen: Issue 4
Operator:	KLv
Operating conditions:	WLAN n-mode MCS4 ch11

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter (120 V AC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m



Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
63.230000	34.20	40.00	5.80	1000.0	120.000	330.0	H	4.0	0.0	7.8
75.250000	31.92	40.00	8.08	1000.0	120.000	153.0	V	65.0	90.0	6.7
903.330000	32.05	46.00	13.95	1000.0	120.000	191.0	V	302.0	0.0	26.8

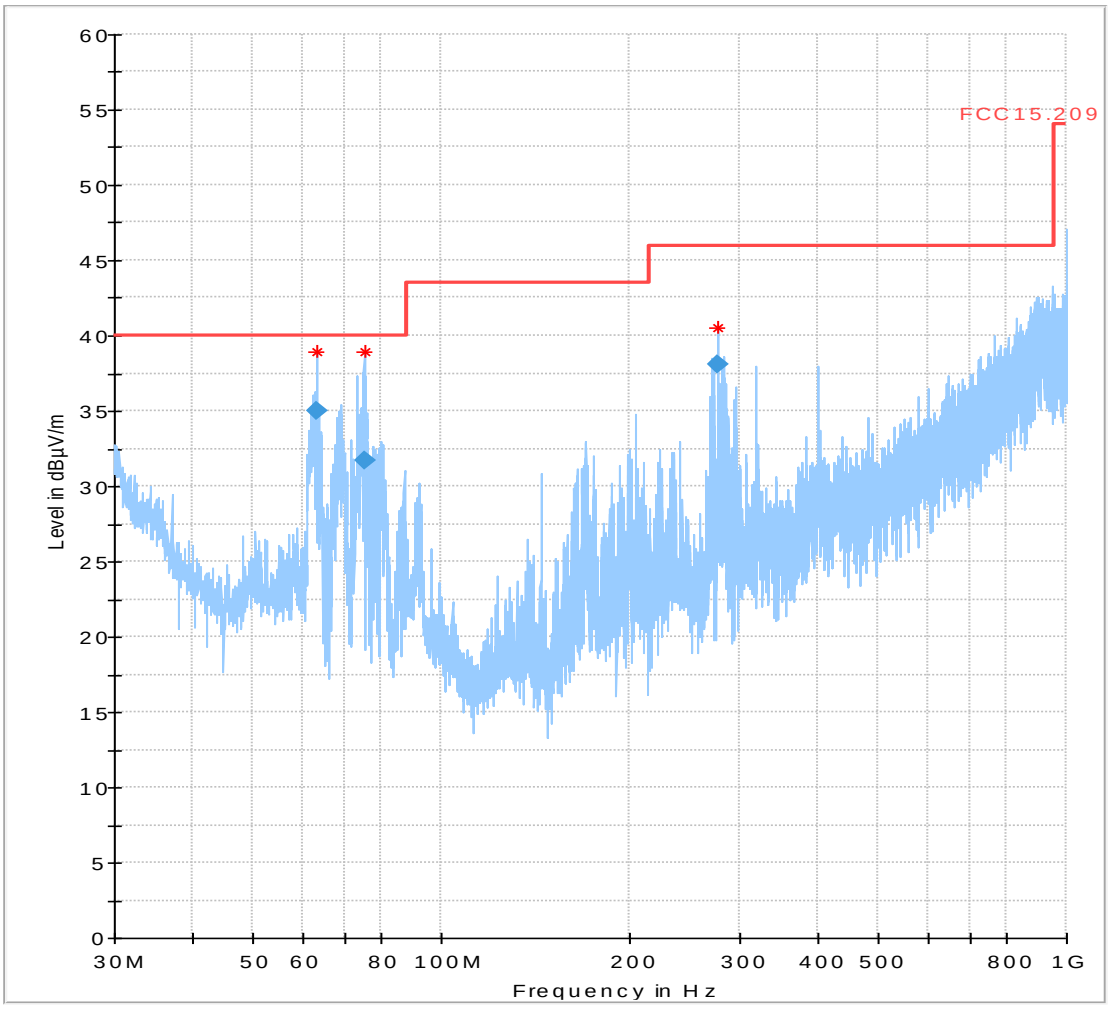
1.7.3. n-mode (HT20) MCS4

3.03_WLAN_nMode_MCS4_C11

12.09.2016 Page 1 of 7

Test description:	Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Distance correction:	not used
Used filter:	not used
Technical Data:	please see page 2 for detailed data of measurement setup
Test specification.:	FCC 15.209; RSS-Gen: Issue 4
Operator:	KLv
Operating conditions:	WLAN n-mode MCS4

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
63.220000	35.04	40.00	4.96	1000.0	120.000	330.0	H	359.0	0.0	7.8
75.280000	31.73	40.00	8.27	1000.0	120.000	118.0	V	216.0	90.0	6.7
276.110000	38.08	46.00	7.92	1000.0	120.000	105.0	H	337.0	0.0	14.7

1.8. General Limit - Radiated emissions, above 1 GHz

1.8.1. b-mode 11Mbit

4.01_WLAN_bMode_11Mbps_Ch1

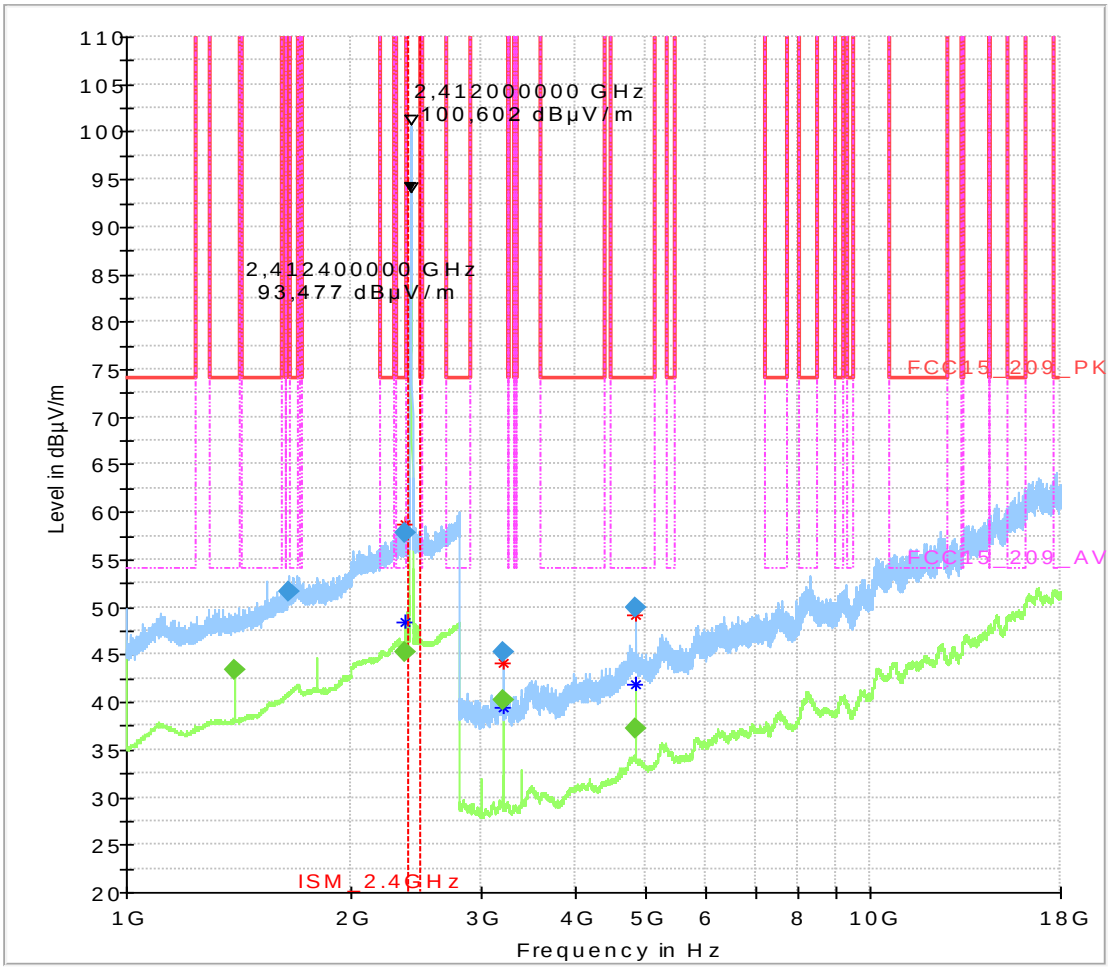
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	RIs

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter(120 VAC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m

Full Spectrum



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
1400.010000	---	43.47	54.00	10.53	100.0	1000.000	155.0	H	-24.0	90.0
1650.370000	51.66	---	150.00	98.34	100.0	1000.000	155.0	V	293.0	90.0
2370.730000	57.70	---	74.00	16.30	100.0	1000.000	155.0	H	270.0	0.0
2371.170000	---	45.34	54.00	8.66	100.0	1000.000	155.0	H	189.0	0.0
3216.010000	45.21	---	150.00	104.79	100.0	1000.000	155.0	V	141.0	90.0
3216.010000	---	40.28	150.00	109.72	100.0	1000.000	155.0	V	139.0	90.0
4824.010000	---	37.16	54.00	16.84	100.0	1000.000	155.0	V	4.0	0.0
4824.010000	49.89	---	74.00	24.11	100.0	1000.000	155.0	V	1.0	0.0

(continuation of the "Final_Result" table from column 16 ...)

Frequency (MHz)	Corr.	Comment
1400.010000	29.2	18:14:23 - 08.09.2016
1650.370000	31.9	18:10:52 - 08.09.2016
2370.730000	35.5	18:09:06 - 08.09.2016
2371.170000	35.5	18:12:40 - 08.09.2016
3216.010000	-0.1	18:50:23 - 08.09.2016
3216.010000	-0.1	18:53:55 - 08.09.2016
4824.010000	4.8	18:52:10 - 08.09.2016
4824.010000	4.8	18:48:37 - 08.09.2016

Diagram No.: 4.01a_WLAN_b_Mode_11MBit_CH1

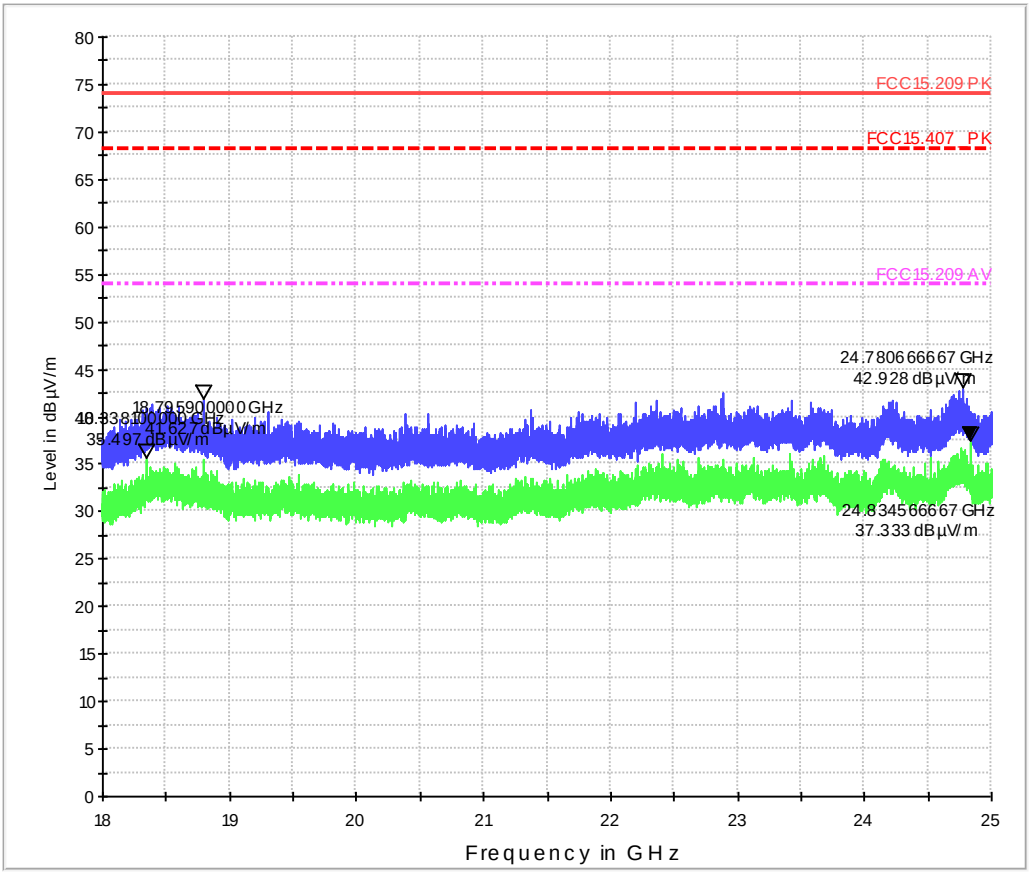
Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247, 15.205&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Distance correction factor	3 to 1m: -10.5 dB applying to measurement results
SW-Version:	EMC32 V8.53.0
Operation mode:	WLAN2.4GHz_TX mode continuous_bMode-11MBit-Ch1
Operator Name:	KIv/TFr
Comment:	Channel no. low, 2412MHz_

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter(120 VAC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m

FCC_Sweep_15.247_18_25GHz_Pre



1.8.2. g-mode 24Mbit

4.02_WLAN_gMode_24Mbps_Ch6

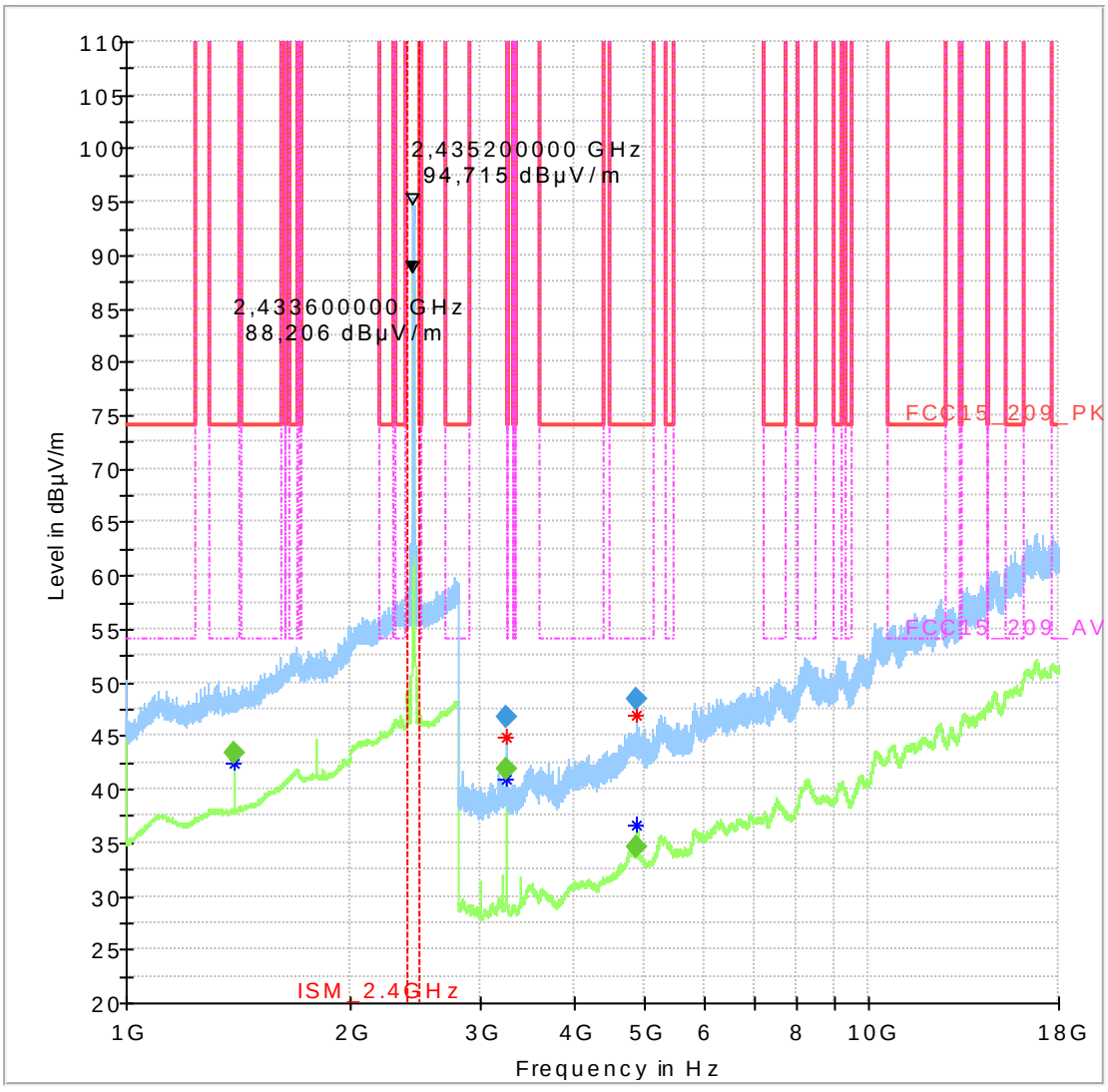
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	RIs

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter(120 VAC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m

Full Spectrum



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
1400.010000	---	43.31	54.00	10.69	100.0	1000.000	155.0	H	336.0	90.0
3249.330000	---	41.86	150.00	108.14	100.0	1000.000	155.0	V	187.0	90.0
3249.330000	46.76	---	150.00	103.24	100.0	1000.000	155.0	V	139.0	90.0
4872.130000	---	34.55	54.00	19.45	100.0	1000.000	155.0	V	3.0	0.0
4873.130000	48.37	---	74.00	25.63	100.0	1000.000	155.0	V	3.0	0.0

(continuation of the "Final_Result" table from column 16 ...)

Frequency (MHz)	Corr.	Comment
1400.010000	29.2	19:28:09 - 08.09.2016
3249.330000	-0.3	20:15:18 - 08.09.2016
3249.330000	-0.3	20:11:46 - 08.09.2016
4872.130000	4.7	20:13:32 - 08.09.2016
4873.130000	4.7	20:10:01 - 08.09.2016

Diagram No.: 4.02a_WLAN_g_Mode_24MBit_CH6

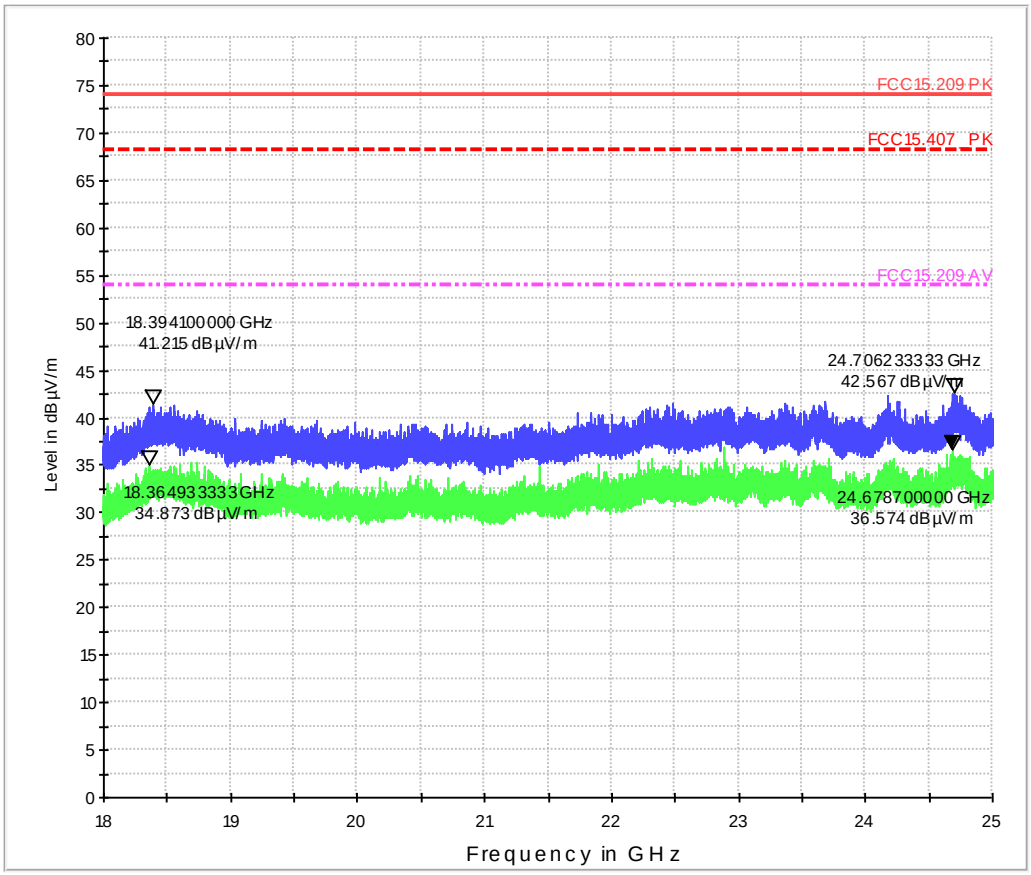
Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247, 15.205&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Distance correction factor	3 to 1m: -10.5 dB applying to measurement results
SW-Version:	EMC32 V8.53.0
Operation mode:	WLAN2.4GHz_TX mode continuous_g-Mode-24MBit-Ch6
Operator Name:	KIv/TFr
Comment:	Channel no. middle 2437_MHz

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	tbd
SW Version:	tbd
Input:	5 V DC using AC/DC adapter
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C) + OpenTerm Cable

FCC_Sweep_15.247_18_25GHz_Pre



1.8.3. n-mode (HT20) MCS4

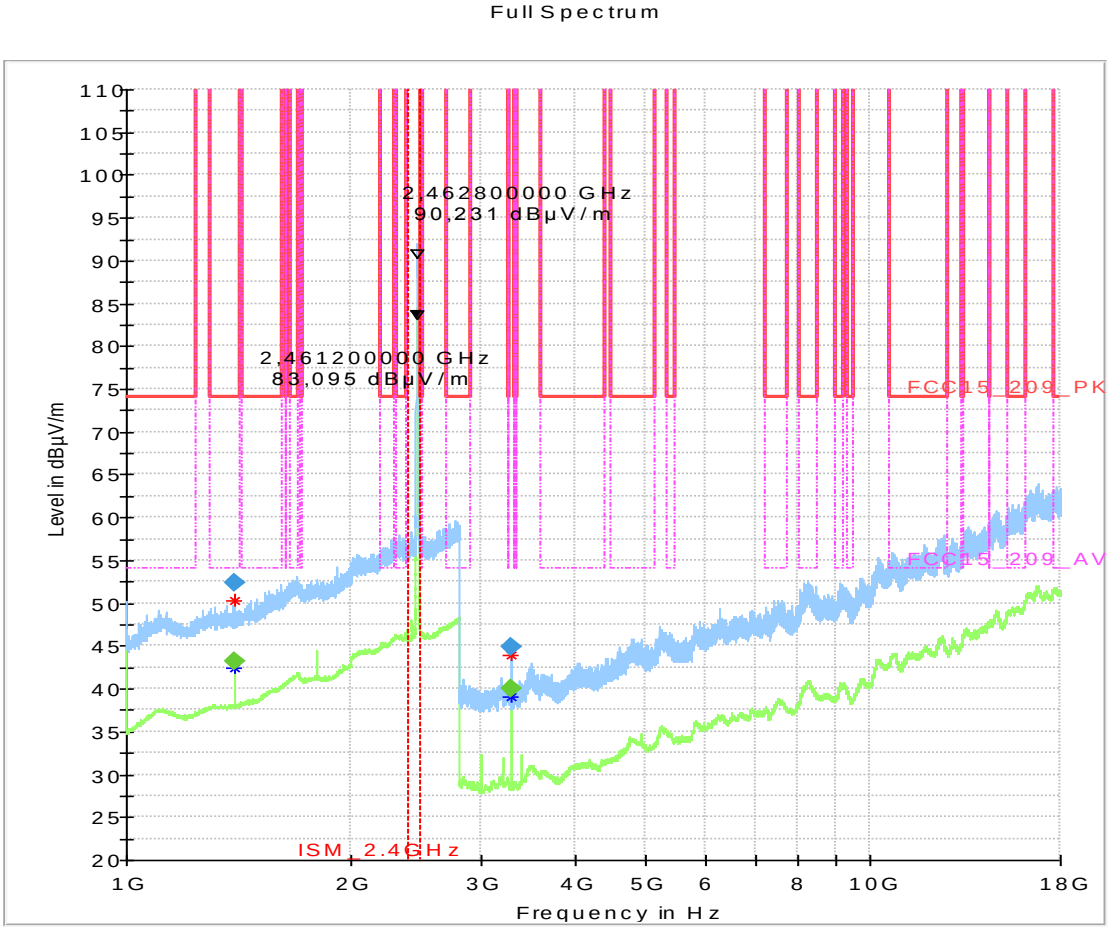
4.03_WLAN_nMode_MCS4_C11

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	RIs

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter(120 VAC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
1400.010000	---	43.27	54.00	10.73	100.0	1000.000	155.0	H	-27.0	90.0
1400.010000	52.33	---	74.00	21.67	100.0	1000.000	155.0	H	-38.0	90.0
3282.690000	---	40.07	150.00	109.93	100.0	1000.000	155.0	V	145.0	90.0
3282.690000	44.85	---	150.00	105.15	100.0	1000.000	155.0	V	145.0	90.0

(continuation of the "Final_Result" table from column 16 ...)

Frequency (MHz)	Corr.	Comment
1400.010000	29.2	20:41:52 - 08.09.2016
1400.010000	29.2	20:40:29 - 08.09.2016
3282.690000	-0.5	21:14:16 - 08.09.2016
3282.690000	-0.5	21:12:45 - 08.09.2016

Diagram No.: 4.03a_WLAN_n-Mode_MSC4_CH11

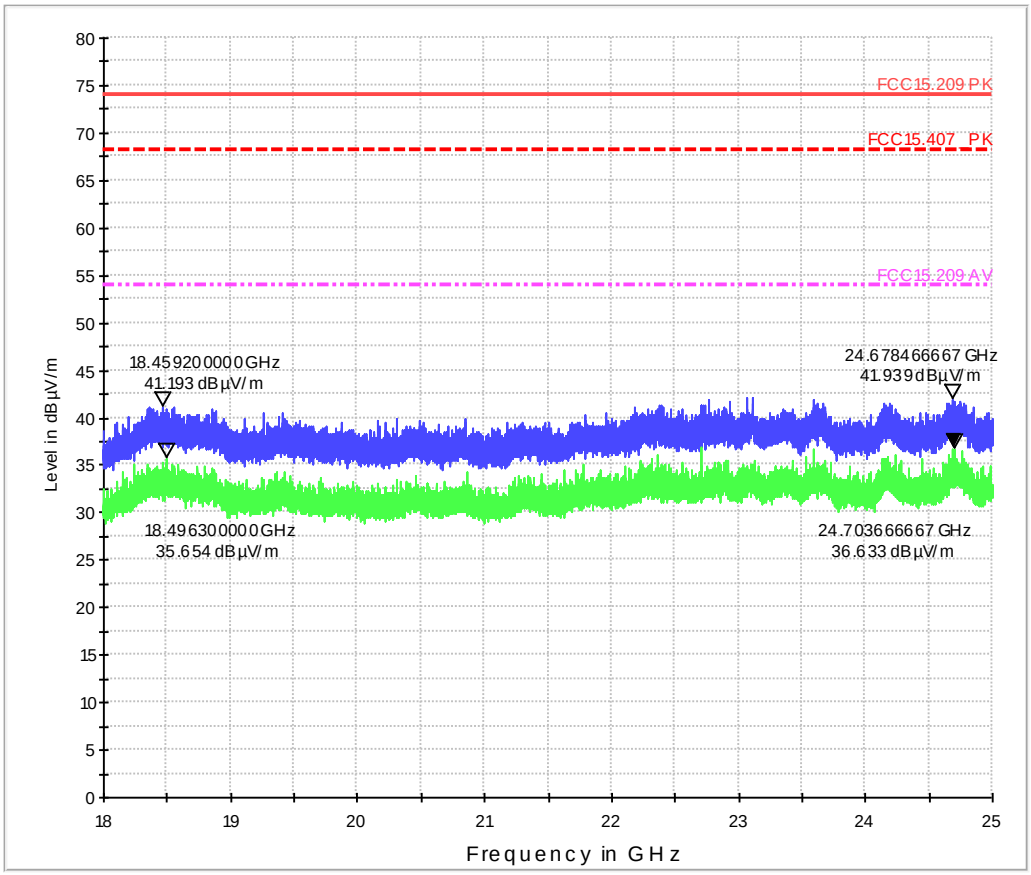
Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247, 15.205&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Distance correction factor	3 to 1m: -10.5 dB applying to measurement results
SW-Version:	EMC32 V8.53.0
Operation mode:	WLAN2.4GHz_TX mode continuous_n-Mode-MSC4_Ch11
Operator Name:	KIv/TFr
Comment:	Channel no. high, 2462MHz

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter(120 VAC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m

FCC_Sweep_15.247_18_25GHz_Pre



1.9. RF-Parameter - Radiated Band Edge compliance measurements

1.9.1. b-mode 11Mbit

9.01_BE_WLAN_bMode_11Mbps_Ch11

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter(120 VAC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m

Full Spectrum

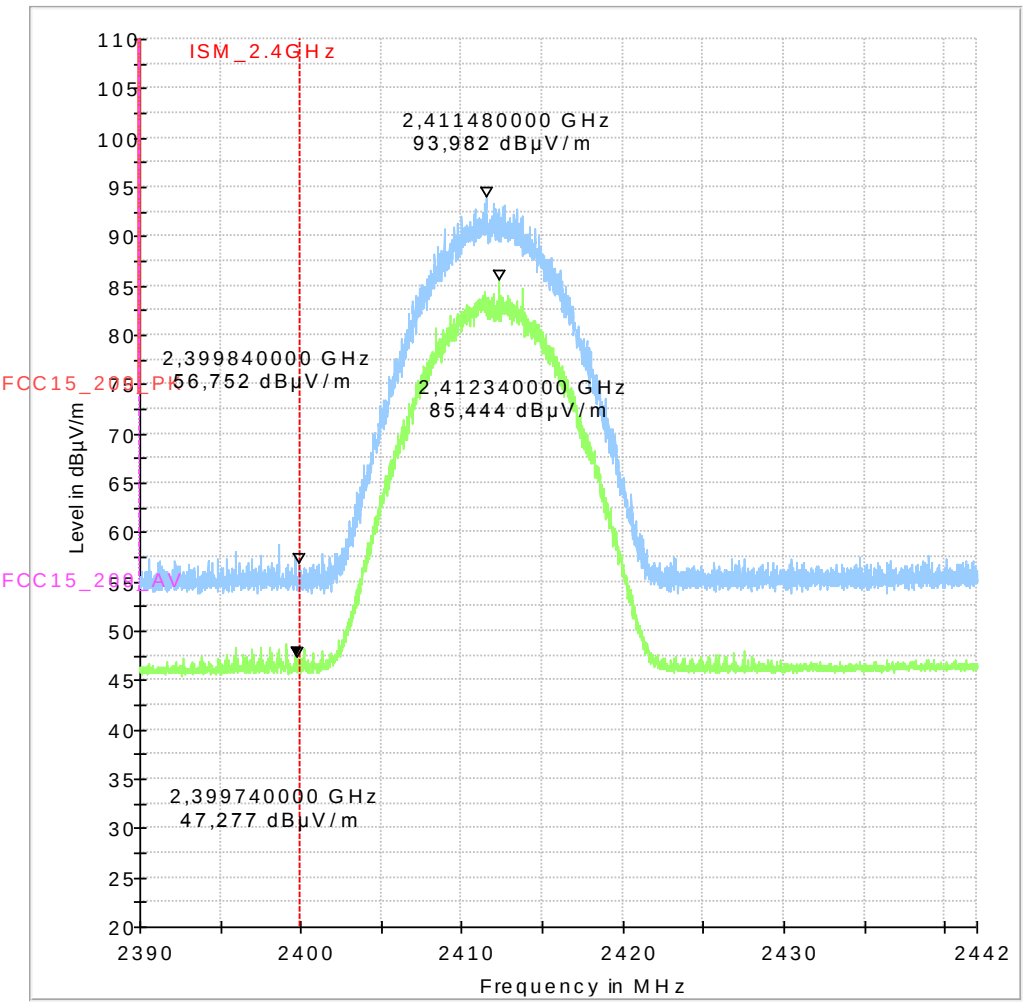


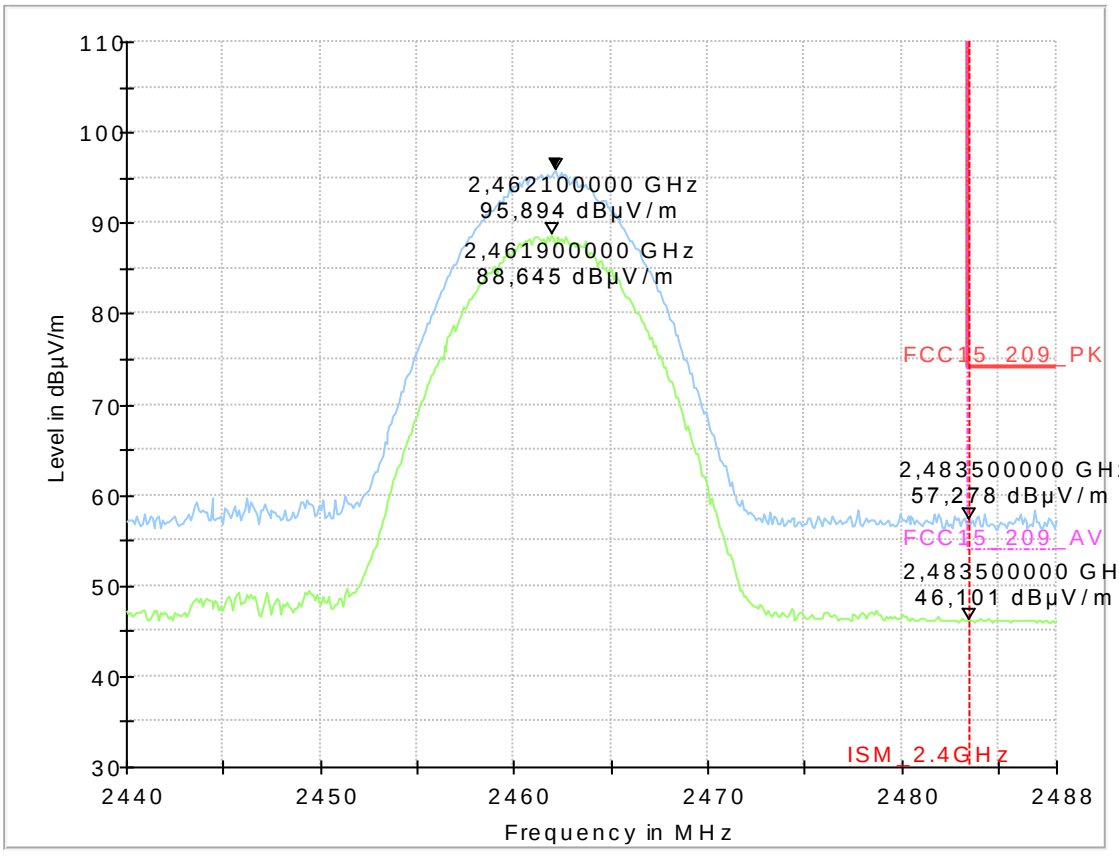
Diagram No.: 9.02_BE_WLAN_b mode_11Mbps_Ch11

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no. high=11

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter(120 VAC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m



1.9.2. g-mode 24Mbit

Diagram No.: 9.03_BE_WLAN_g mode_24Mbps_Ch1

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	WLAN 2.4GHz_TX, continuous_gMode-24MBit-CH1
Operator Name:	APh
Comment:	Channel no. low=1
Comment2:	--

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter(120 VAC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m

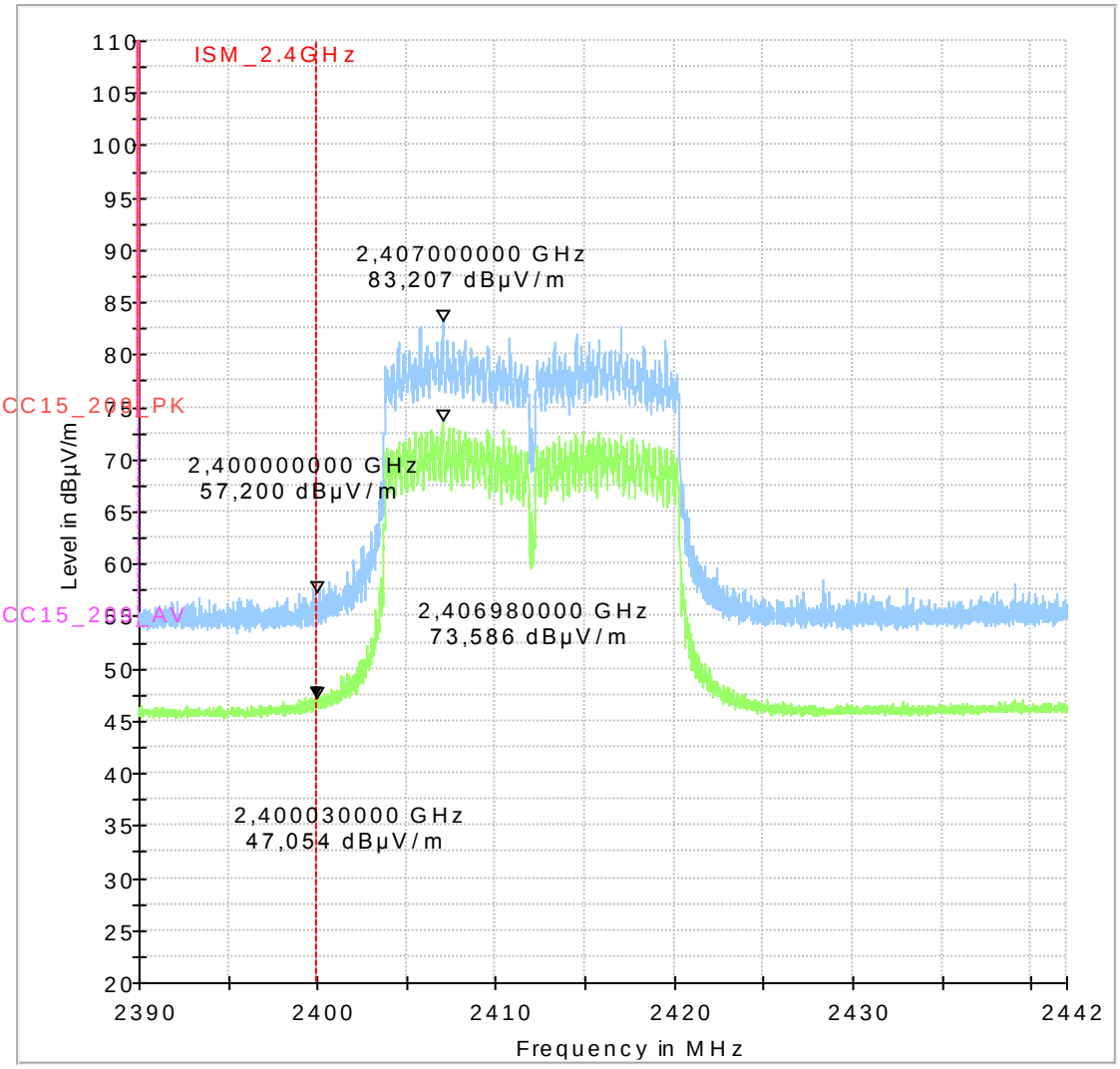
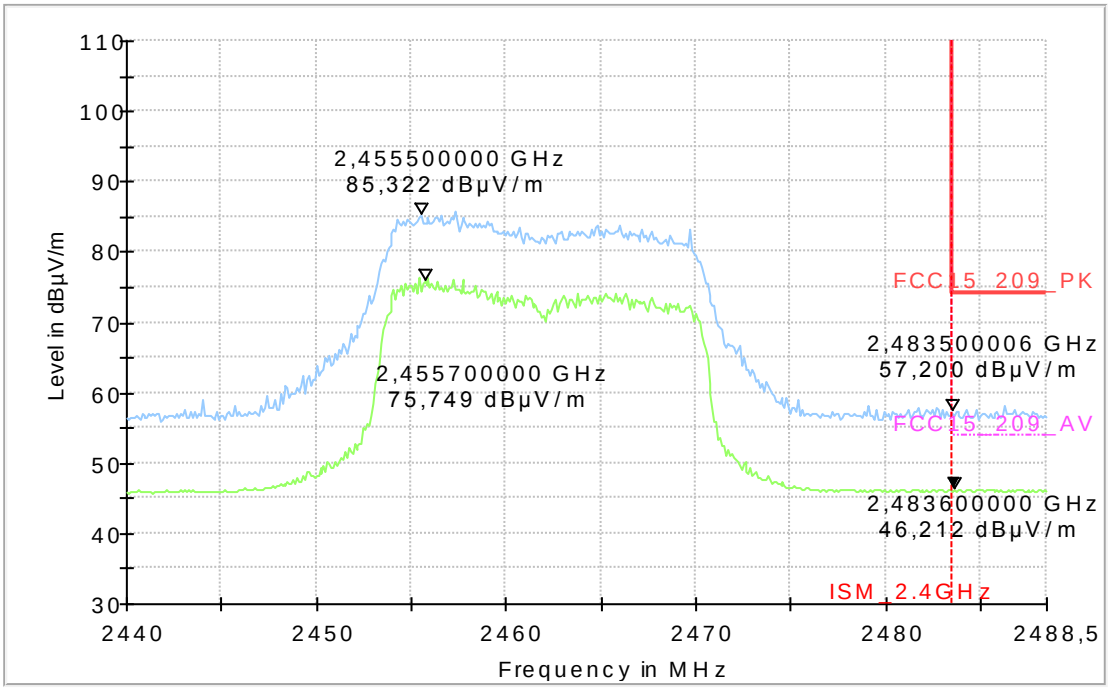


Diagram No.: 9.04_BE_WLAN_g mode_24Mbps_Ch11

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no. high=11
Comment2:	Modulation Type: g-mode Data Rate: 24Mbps



1.9.3. n-mode (HT20) MCS4

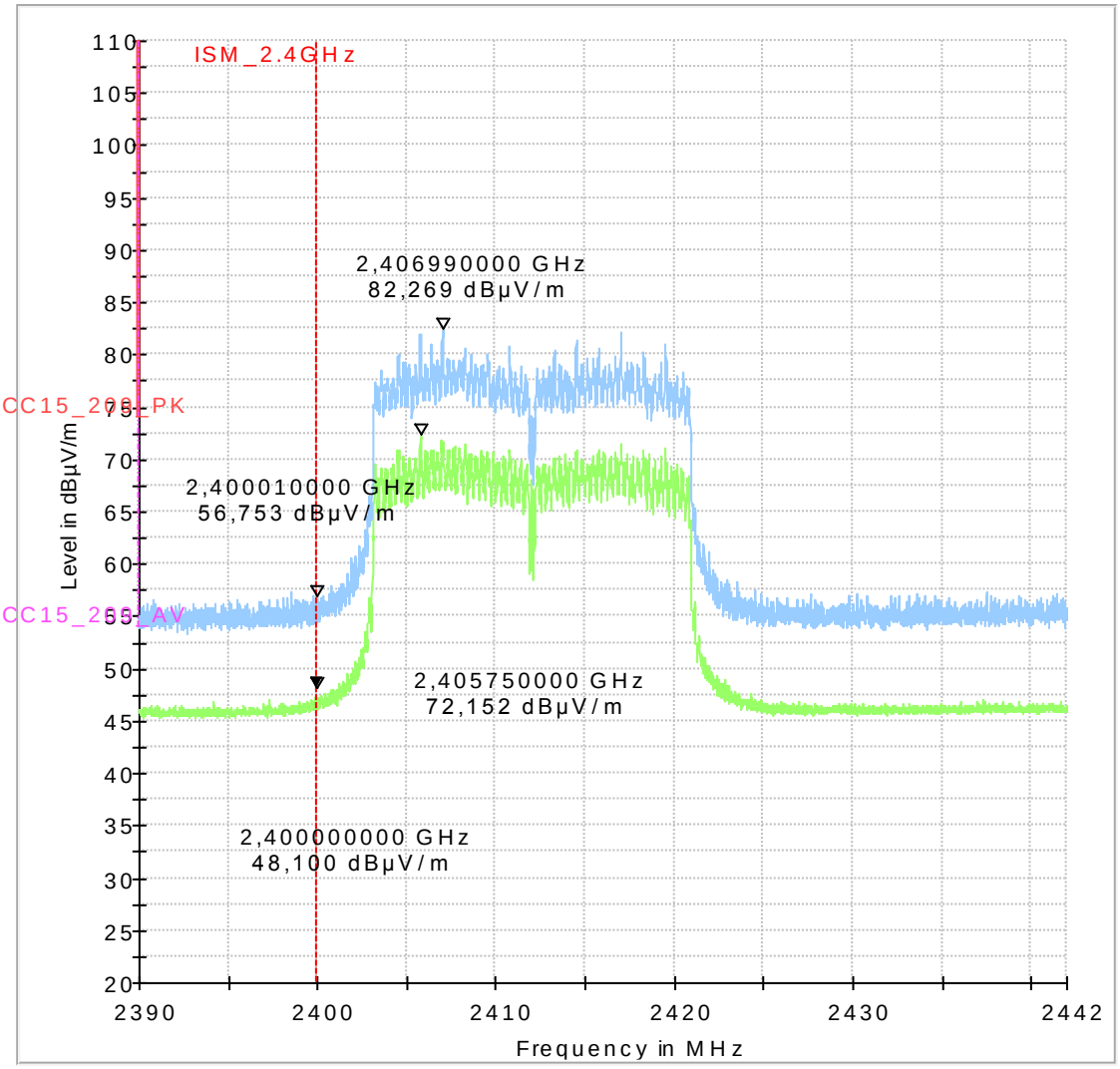
Diagram No.: 9.05_BE_WLAN_n-mode_MSC4_Ch1

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	WLAN 2.4GHz_TX, continuous_n(HT20)-MCS4-CH1
Operator Name:	APh
Comment:	Channel no. low
Comment2:	--

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter(120 VAC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m



9.06_BE_WLAN_nMode_MCS4_Ch11

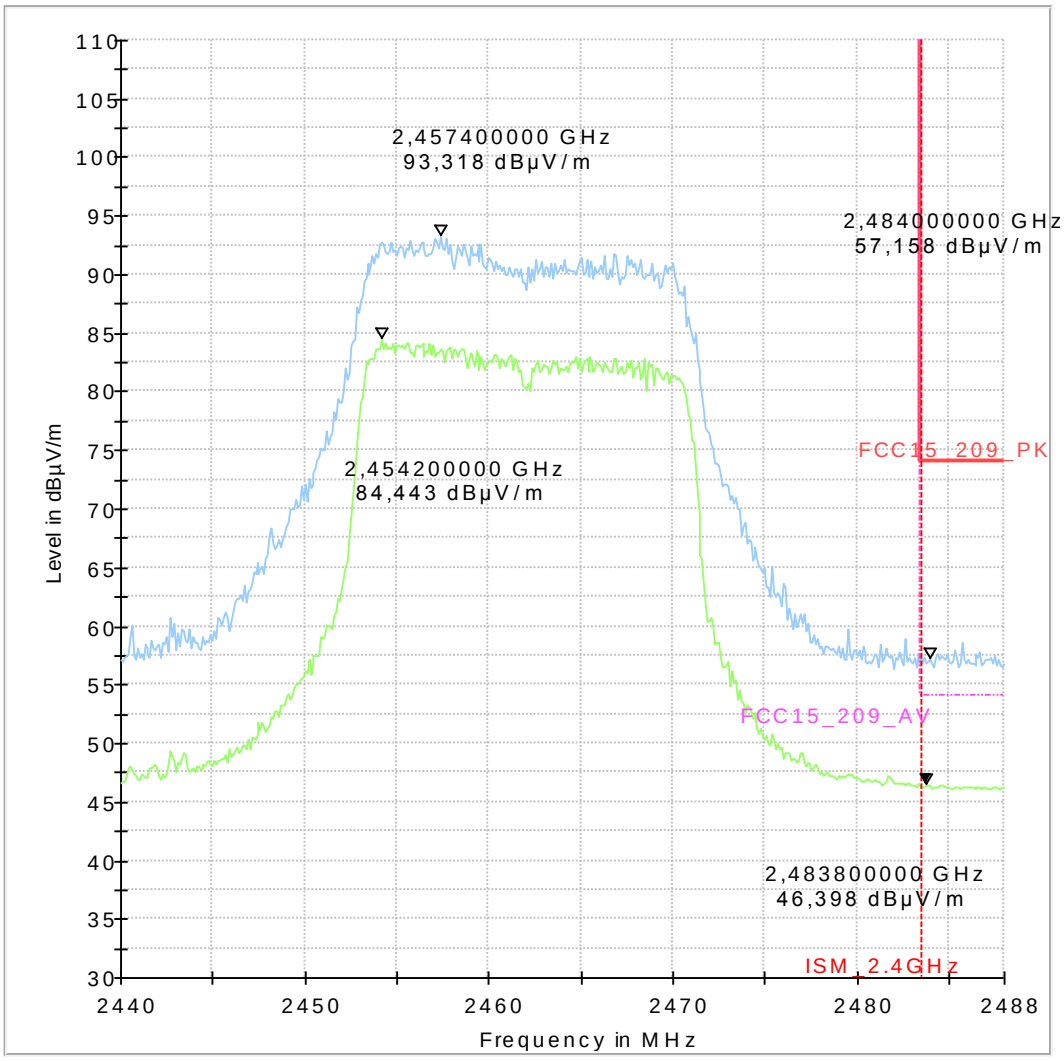
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	RIs

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter(120 VAC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m

Full Spectrum



1.10. General Limit - Conducted emissions on AC-Power lines

Diagram 1.02

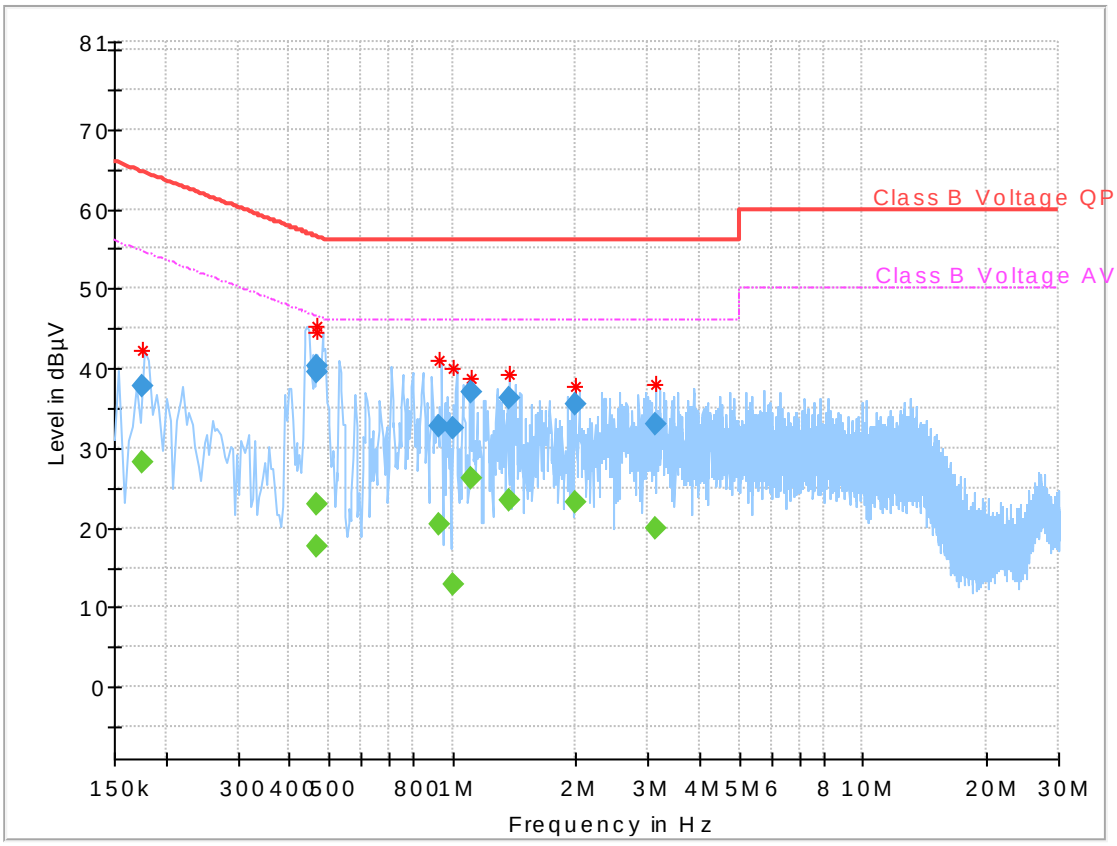
Common Information

Test Description:	Conducted Voltage Measurement Class B
Test Site & Location:	Conducted Emission, CETECOM GmbH Essen
Test Software:	R&S EMC32 v9.15
Test Specification:	FCC 15.107, FCC 15.207
Operating Mode:	Tx mode at Ch:6
Measured on line:	N/L1
Diagram details:	Shows the peak values as a sum of measured ports in maxhold mode
Environmental Conditions:	Humidity: 50%rH; Temperature: 22°C
Operator:	HLa
Comments:	

EUT Information

Manufacturer:	VIESSMANN
MODEL:	Vitoconnect 100
HW Version:	1
SW Version:	1.2
Input:	5 V DC using AC/DC adapter(120 VAC 60 Hz)
Connected interfaces:	Optolink Cable (TypeVW-1 24AWG/2C)Length= 1.5m

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE
0.174844	---	28.28	54.73	26.45	1000.0	9.000	N	GN
0.174844	37.64	---	64.73	27.09	1000.0	9.000	N	GN
0.465469	40.26	---	56.59	16.33	1000.0	9.000	N	GN
0.465469	---	23.04	46.59	23.55	1000.0	9.000	N	GN
0.469531	---	17.70	46.52	28.82	1000.0	9.000	L1	GN
0.469531	39.45	---	56.52	17.07	1000.0	9.000	L1	GN
0.925469	---	20.44	46.00	25.56	1000.0	9.000	N	GN
0.925469	32.77	---	56.00	23.23	1000.0	9.000	N	GN
1.003594	32.42	---	56.00	23.58	1000.0	9.000	L1	GN
1.003594	---	12.76	46.00	33.24	1000.0	9.000	L1	GN
1.105625	37.10	---	56.00	18.90	1000.0	9.000	L1	GN
1.105625	---	26.11	46.00	19.89	1000.0	9.000	L1	GN
1.369063	36.28	---	56.00	19.72	1000.0	9.000	L1	GN
1.369063	---	23.47	46.00	22.53	1000.0	9.000	L1	GN
1.990156	---	23.23	46.00	22.77	1000.0	9.000	L1	GN
1.990156	35.56	---	56.00	20.44	1000.0	9.000	L1	GN
3.136875	---	20.00	46.00	26.00	1000.0	9.000	L1	GN
3.136875	32.87	---	56.00	23.13	1000.0	9.000	L1	GN