

Annex 1: Measurement diagrams to TEST REPORT No.: 16-1-0141801T04-C1

According to:
FCC Regulations
Part 15.209
Part 15.247

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

for

Daimler Trucks North America

CTPMIDDTNA
ECU

FCC-ID: 2AKC8CTP054661
IC: 22221-CTP054661
PMN: CTPMIDDTNA
HVIN: CTPMIDDTNA
FVIN: 16.095.2

Laboratory Accreditation and Listings			
 DAkkS Deutsche Akkreditierungsstelle D-PL-12047-01-01	 FEDERAL COMMUNICATIONS COMMISSION • USA • 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
 WiFi ALLIANCE AUTHORIZED RF LABORATORY	 ctia Authorized TM Test Lab Lab Code: 20011130-00		
accredited according to DIN EN ISO/IEC 17025			
CETECOM GmbH Laboratory Radio Communications & Electromagnetic Compatibility Im Teelbruch 116 • 45219 Essen • Germany Registered in Essen, Germany, Reg. No.: HRB Essen 8984 Tel.: + 49 (0) 20 54 / 95 19-954 • Fax: + 49 (0) 20 54 / 95 19-964 E-mail: info@cetecom.com • Internet: www.cetecom.com			

Table of contents

1. RADIATED FIELD STRENGTH MEASUREMENTS ACCORD. §15.209&15.205.....	3
1.1. Magnetic field measurements $f < 30\text{MHz}$	3
1.2. Field strength measurements $30\text{MHz} < f < 1\text{GHz}$	6
1.3. Field strength measurements $1\text{GHz} < f < 25\text{GHz}$	9
2. RADIATED BAND-EDGE MEASUREMENTS ACCORD. §15.209 & §15.205 (§15.247)	15
2.1. b mode Channel 1 (left band edge)	15
2.2. b mode Channel 11 (right band edge)	16
2.3. g mode Channel 1 (left band edge)	17
2.4. g mode Channel 11 (right band edge)	18
2.5. n mode Channel 1 (left band edge)	19
2.6. n mode Channel 11 (right band edge)	20
3. CONDUCTED RF-MEASUREMENTS ON ANTENNA PORT	21
3.1. Duty cycle	21
3.2. Maximum peak conducted output power	24
3.3. RF-Parameter - Power Spectral Density	25
3.4. RF-Parameter - 6 dB Bandwidth	32
3.5. RF-Parameter - 99% occupied Bandwidth	37
3.6. 20 dBc power specification	42

1. Radiated field strength measurements accord. §15.209&15.205

1.1. Magnetic field measurements $f < 30 \text{ MHz}$

Diagram No. 2.01_WLAN_b mode_1Mbps_Ch1_Pwr 14

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:	AFr
Operating mode:	WLAN b mode 1 Mbps CH1 Pwr 14
Operating conditions:	Humidity: 40%rH; Temperature: 20°C
Power during tests:	12 V DC

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA
HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003843
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC

Full Spectrum

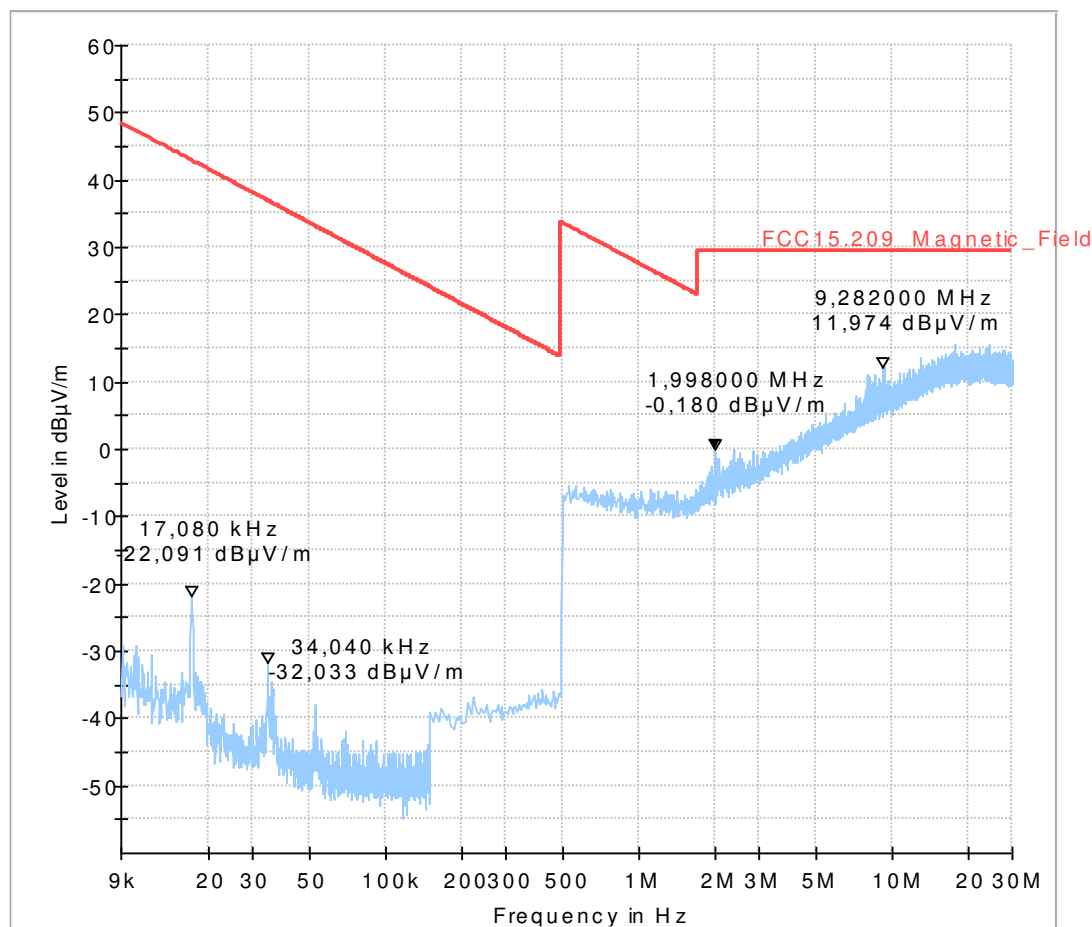


Diagram No. 2.02_WLAN_g mode_24Mbps_Ch11 Pwr 11

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:	AFr
Operating mode:	WLAN g mode 24 Mbps CH11 Pwr 11
Operating conditions:	Humidity: 40%rH; Temperature: 20°C
Power during tests:	12 V DC

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA
HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003843
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC

Full Spectrum

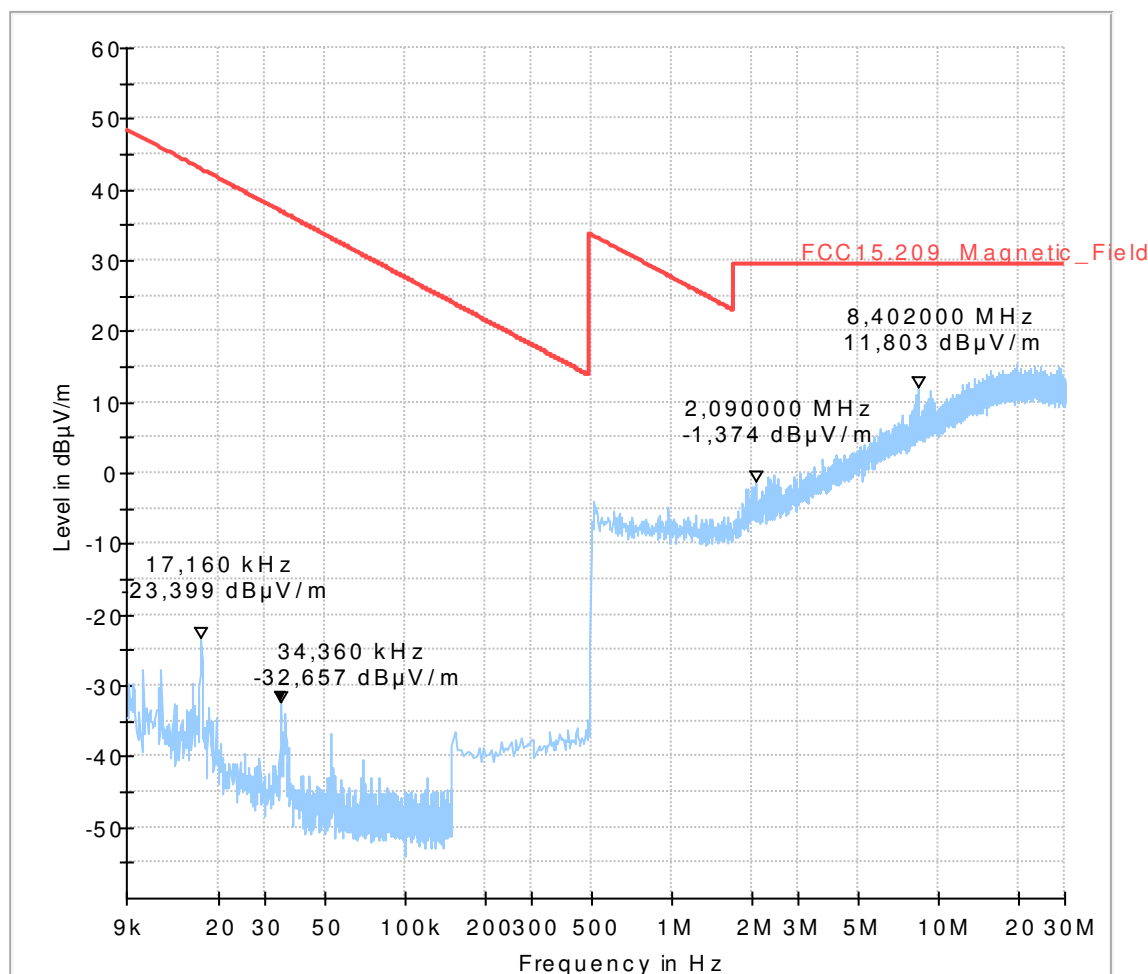


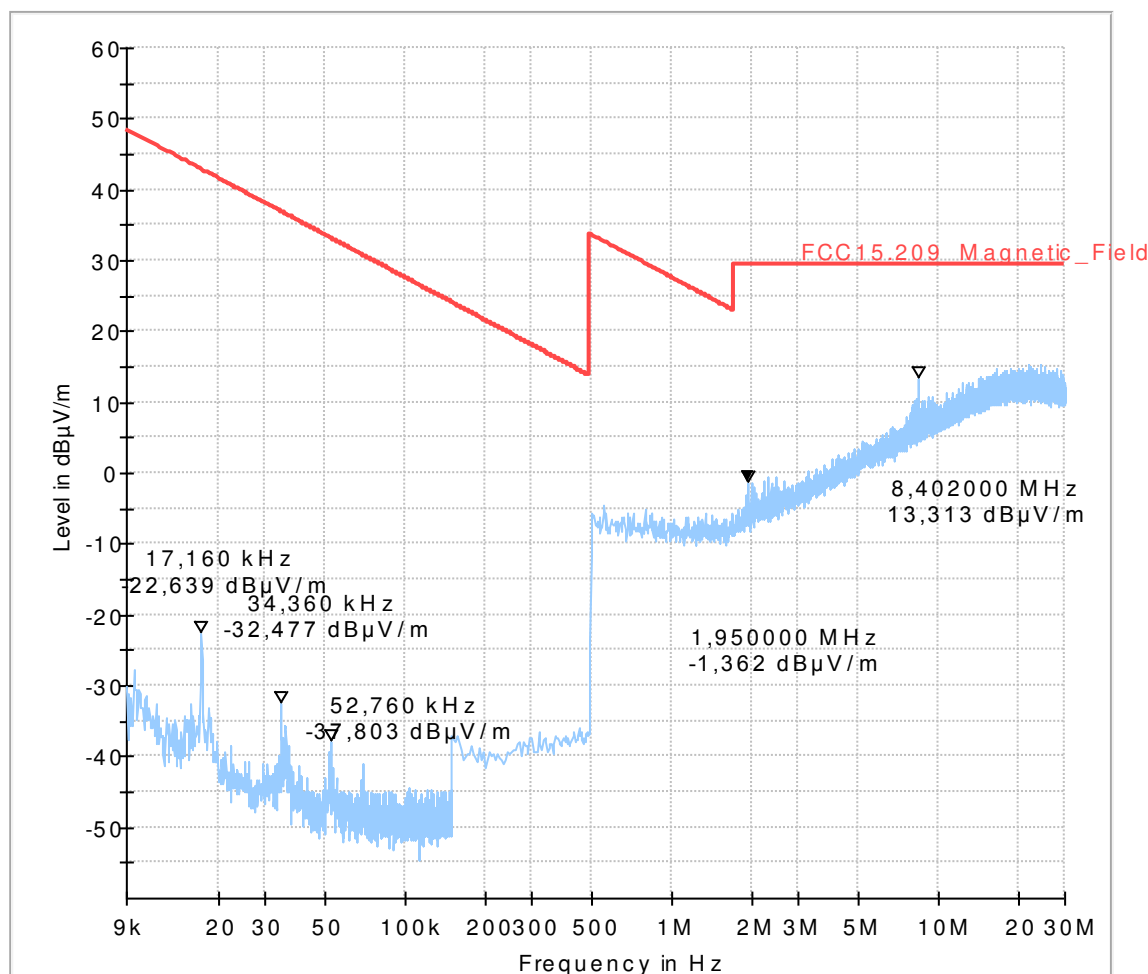
Diagram No. 2.03_WLAN_n mode_MCS0_Ch6_Pwr 11

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:	AFr
Operating mode:	WLAN n mode MCS0 CH6 Pwr 11
Operating conditions:	Humidity: 40%rH; Temperature: 20°C
Power during tests:	12 V DC

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA
HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003843
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC

Full Spectrum



1.2. Field strength measurements 30MHz <f <1GHz

Diagram No. 3.01_WLAN_b mode_1Mbps_Ch1_Pwr 14

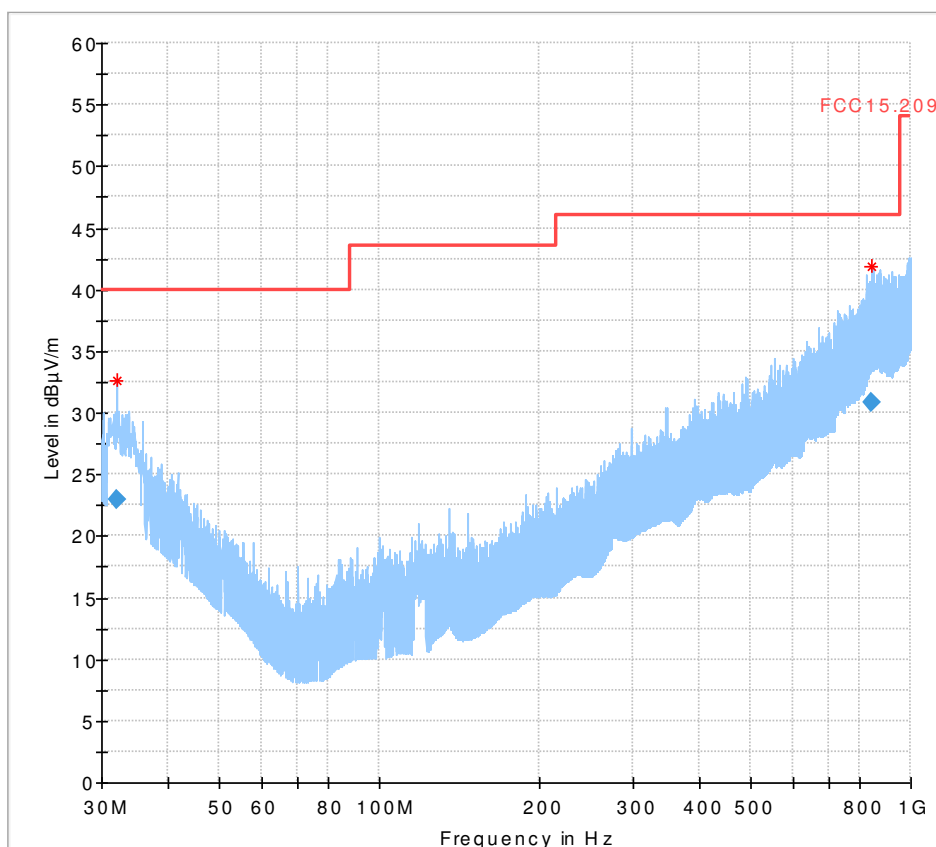
Test description:	Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Distance correction:	not used
Used filter:	not used
Technical Data:	please see page 2 for detailed data of measurement setup
Test specification.:	FCC 15.209; RSS-Gen: Issue 3
Operator:	AFr
Operating mode:	WLAN b mode 1Mbps Ch 1 Pwr 14
Operating conditions:	Humidity: 40%rH; Temperature: 20°C
Power during tests:	12 V DC

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA

HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003843
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
32.068000	22.96	40.00	17.04	1000.0	120.000	113.0	V	156.0	20.6
841.660000	30.85	46.00	15.15	1000.0	120.000	223.0	V	67.0	25.9

Diagram No. 3.02_WLAN_g mode_24Mbps_Ch11 Pwr 11

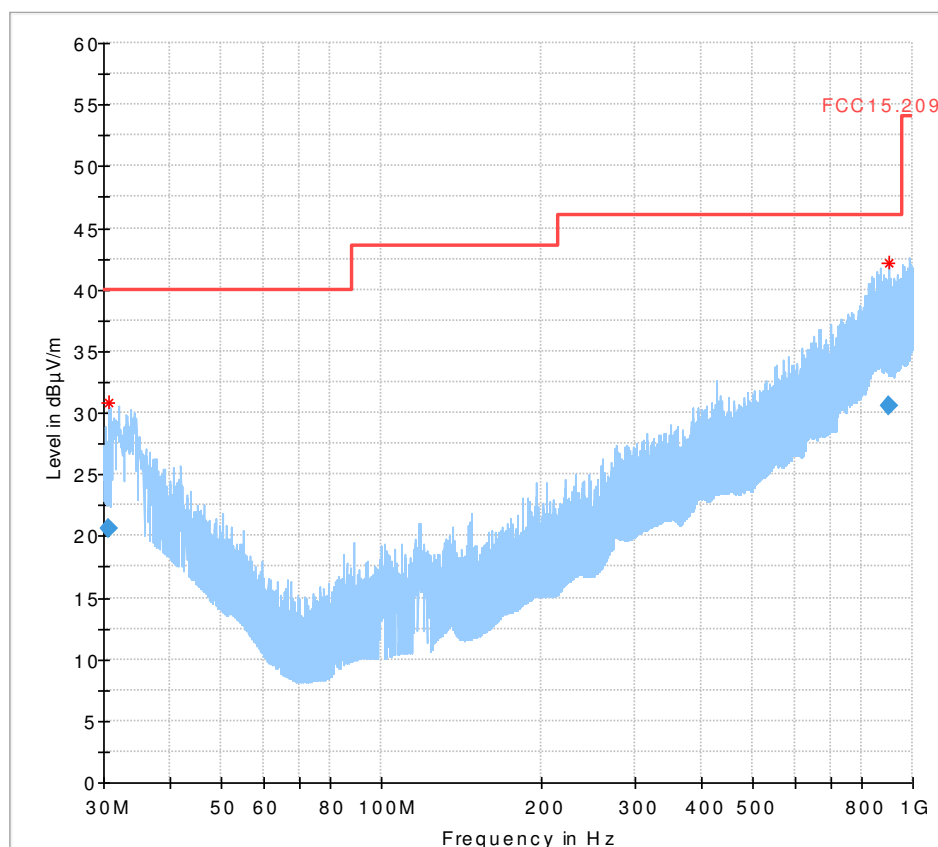
Test description:	Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Distance correction:	not used
Used filter:	not used
Technical Data:	please see page 2 for detailed data of measurement setup
Test specification.:	FCC 15.209; RSS-Gen: Issue 3
Operator:	Afr
Operating mode:	WLAN g mode 24Mbps Ch 11 Pwr 11
Operating conditions:	Humidity: 40%rH; Temperature: 20°C
Power during tests:	12 V DC

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA

HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003843
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.692000	20.62	40.00	19.38	1000.0	120.000	232.0	H	201.0	21.2
901.956000	30.54	46.00	15.46	1000.0	120.000	273.0	H	238.0	26.8

Diagram No. 3.03_WLAN_n mode_MCS0_Ch6_Pwr 11

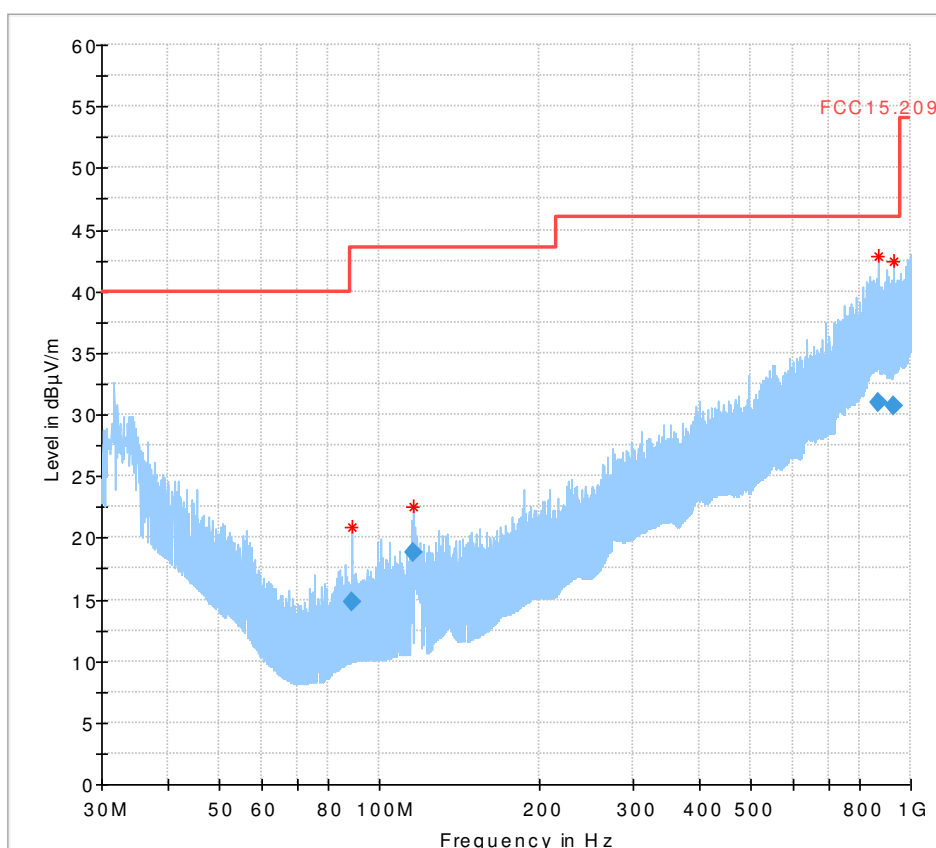
Test description:	Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Distance correction:	not used
Used filter:	not used
Technical Data:	please see page 2 for detailed data of measurement setup
Test specification.:	FCC 15.209; RSS-Gen: Issue 3
Operator:	AFr
Operating mode:	WLAN n mode MCS0 Ch 6 Pwr 11
Operating conditions:	Humidity: 40%rH; Temperature: 20°C
Power during tests:	12 V DC

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA

HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003843
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
88.788000	14.75	43.50	28.75	1000.0	120.000	150.0	V	272.0	8.1
115.836000	18.78	43.50	24.72	1000.0	120.000	286.0	H	0.0	8.0
871.796000	30.93	46.00	15.07	1000.0	120.000	109.0	V	342.0	26.2
927.972000	30.76	46.00	15.24	1000.0	120.000	341.0	H	117.0	27.0

1.3. Field strength measurements 1 GHz < f < 25 GHz

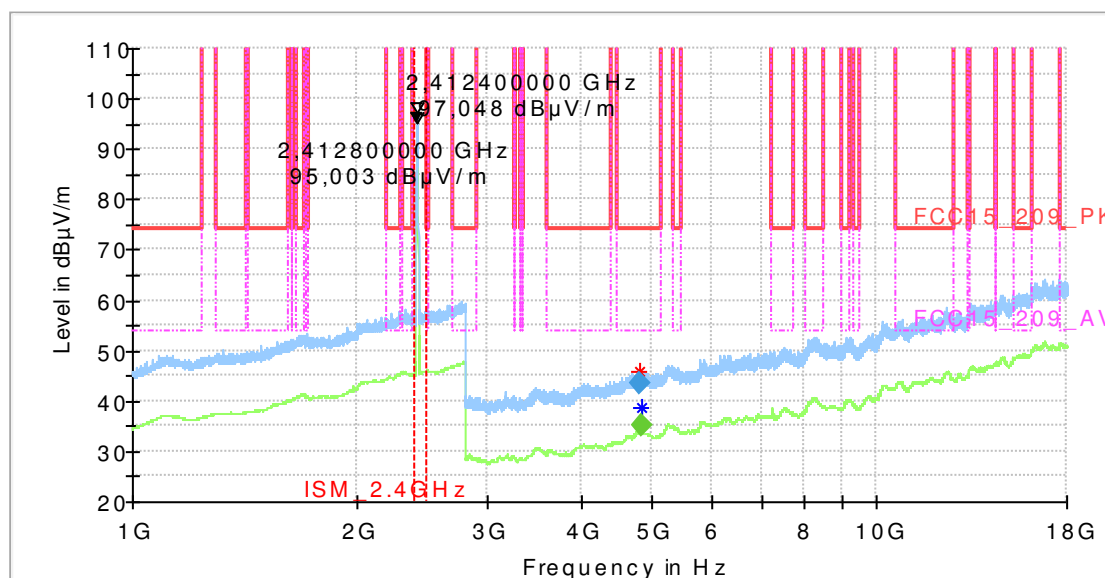
Diagram No. 4.01_WLAN_b mode_1Mbps_Ch1_Pwr14

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:	RLs
Comment:	Channel 1

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA
HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003843
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC



Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
4809.890000	43.48	---	74.00	30.52	100.0	1000.000	155.0	V	107.0	90.0
4823.930000	---	34.95	54.00	19.05	100.0	1000.000	155.0	V	48.0	90.0

Diagram No.: 4.01a_WLAN_bmode_1Mbps_Ch1_PWR14

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:	TX mode continuous
Operator Name:	YSa
Comment:	Channel 1

FCC_Sweep_15.247_18_25GHz_Pre

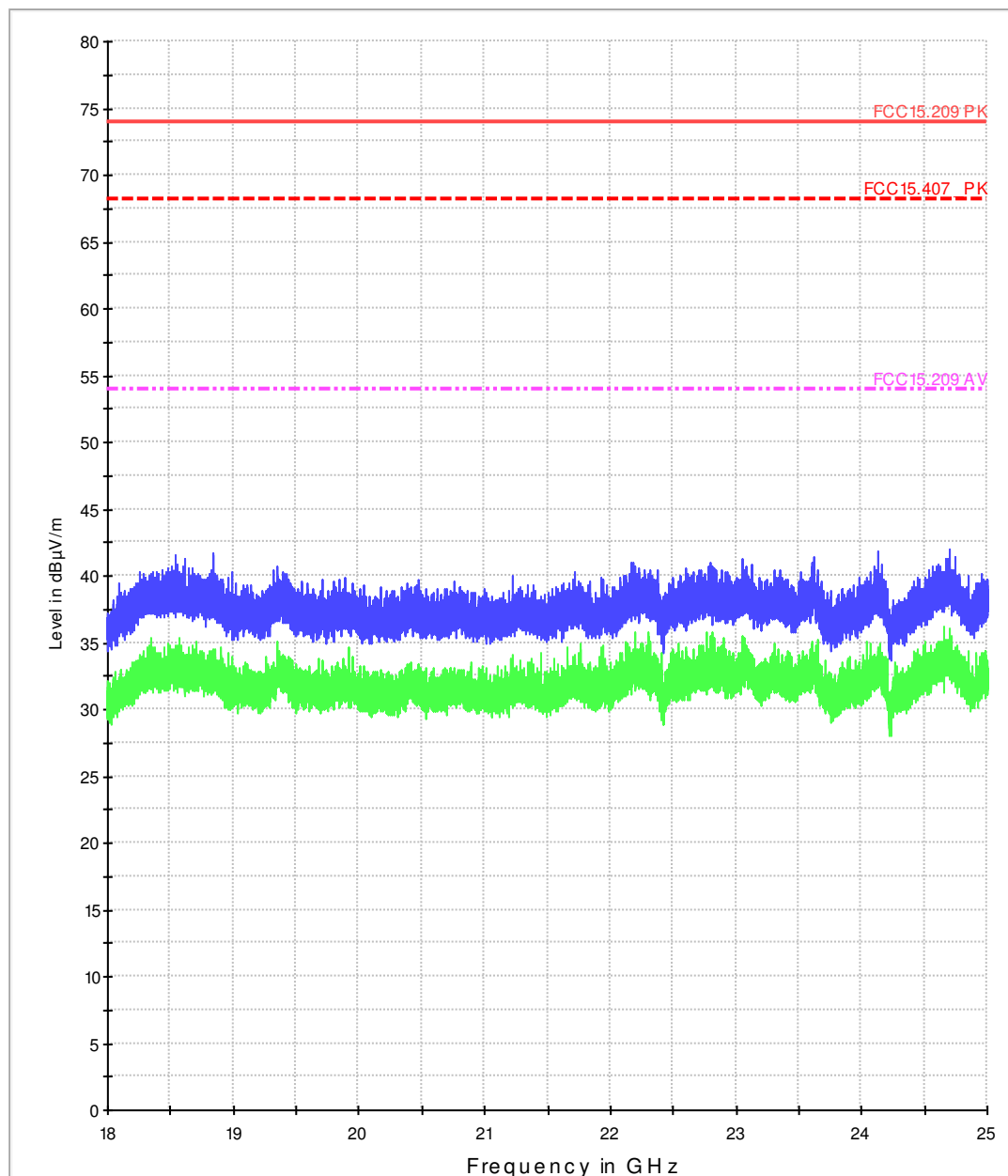


Diagram No. 4.02_WLAN_g mode_24Mbps_Ch11_Pwr11

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:	RLs
Comment:	Channel 11

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA
HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003843
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC

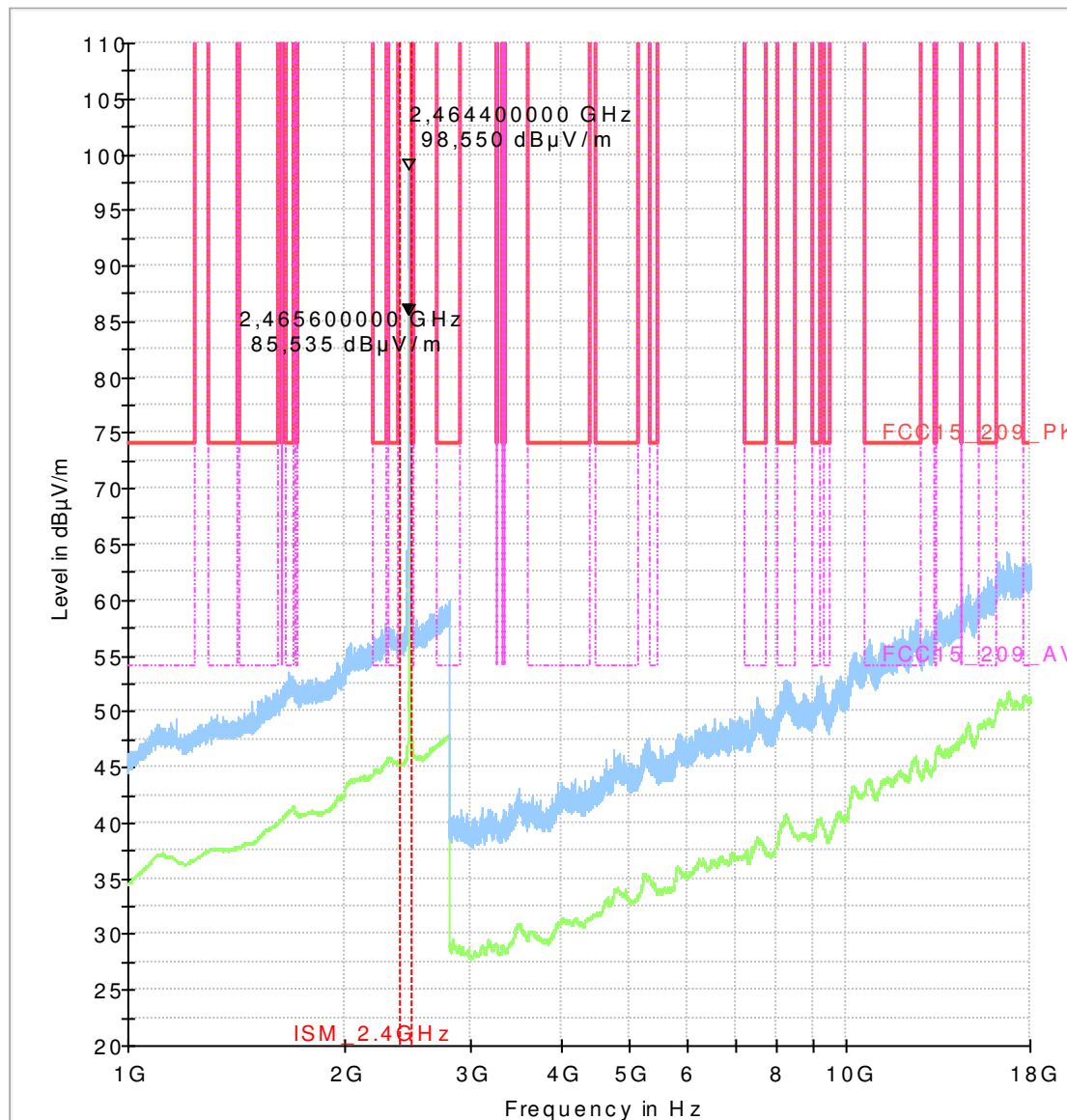


Diagram No.: 4.02a_WLAN_gmode_24Mbps_Ch11_PWR11

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:	TX mode continuous
Operator Name:	YSa
Comment:	Channel 11

FCC_Sweep_15.247_18_25GHz_Pre

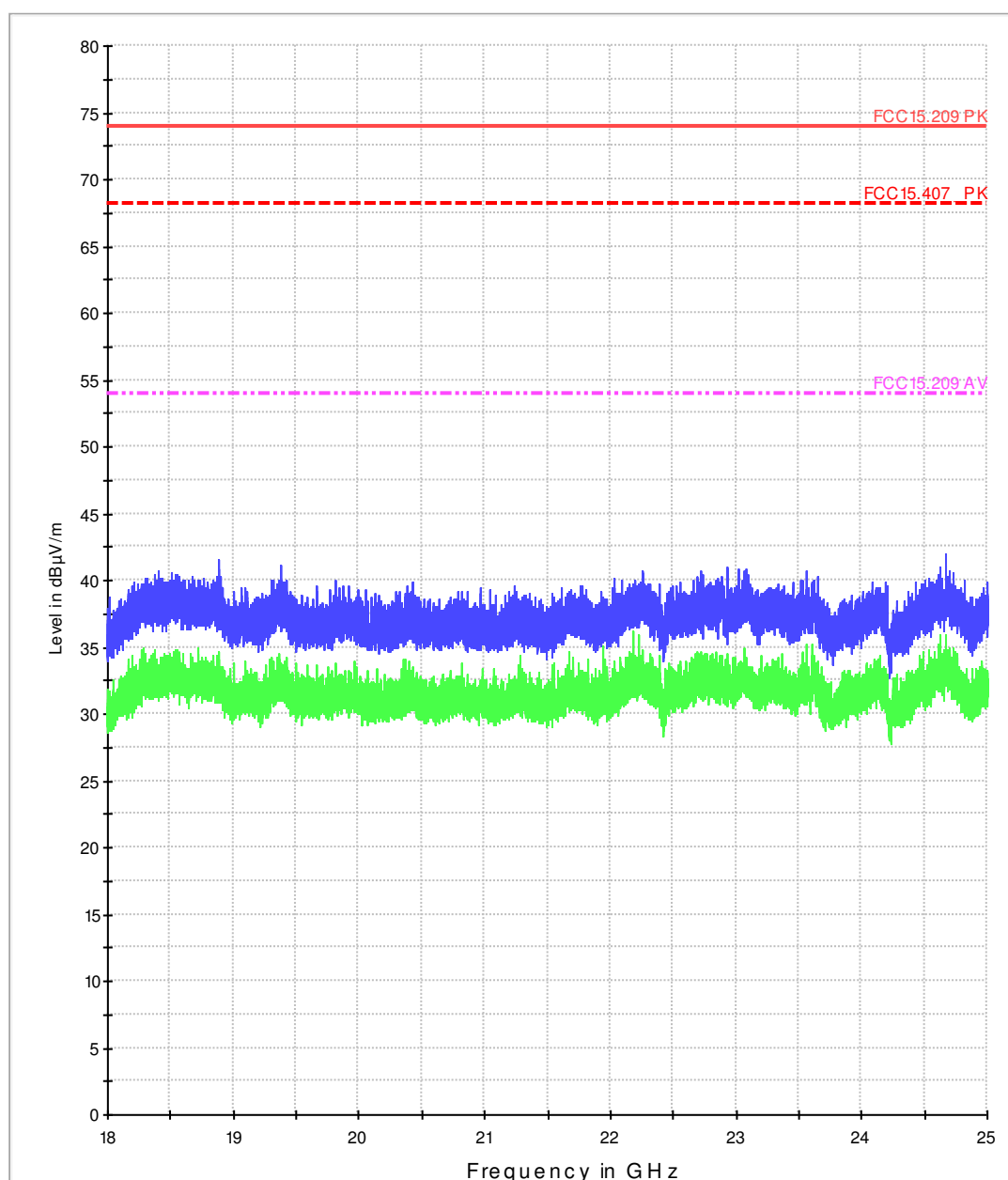


Diagram No. 4.03_WLAN_n(HT20)_MCS0_Ch6_Pwr11

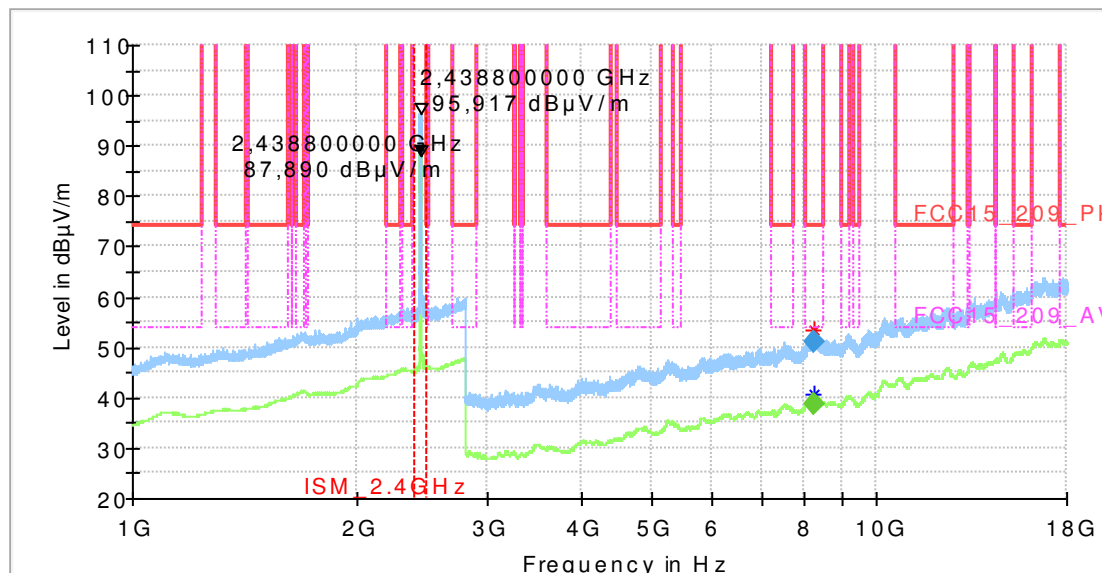
Common Information

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
Comment:	Channel 6

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA

HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003843
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC



Final Result

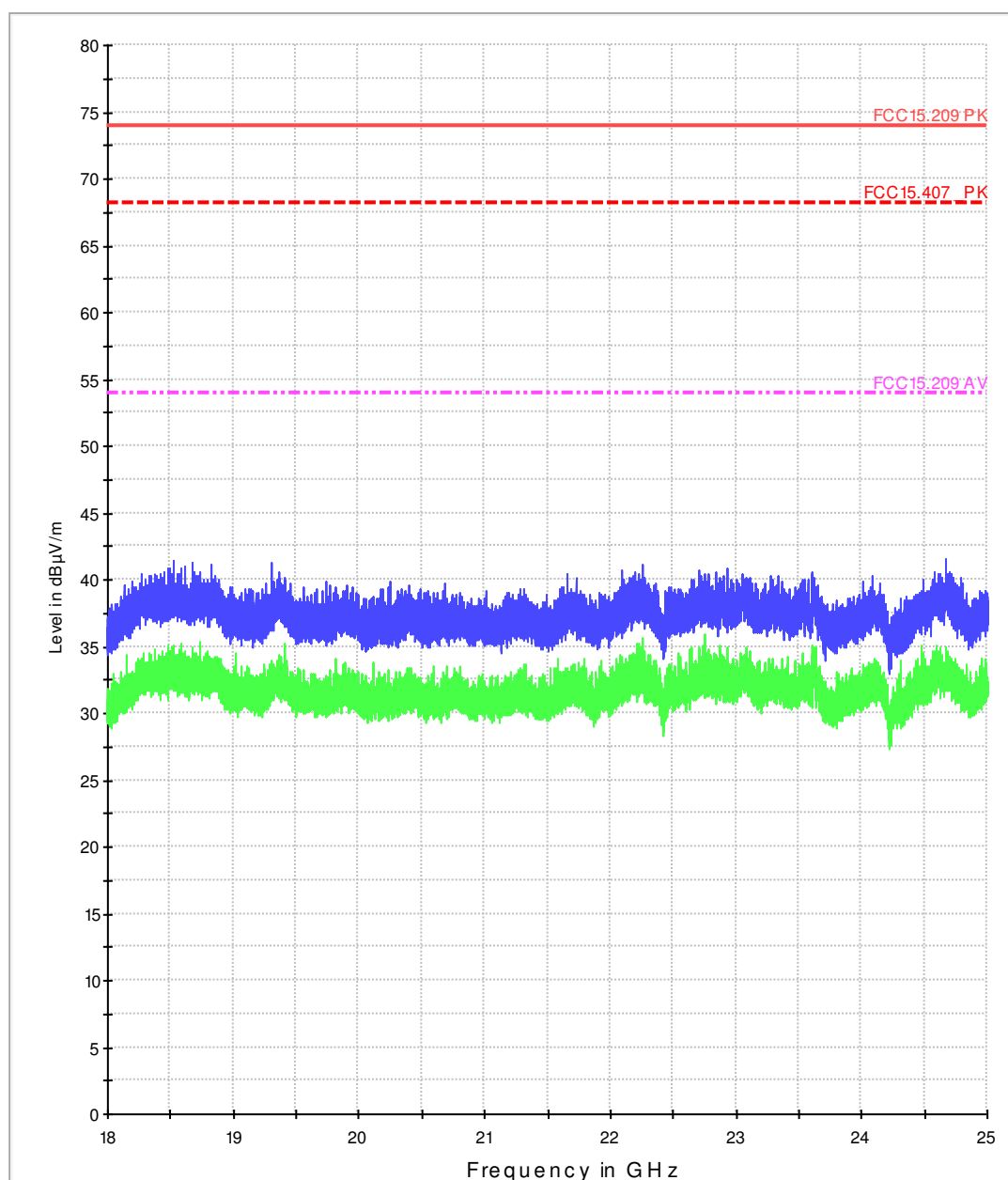
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
8216.250000	51.21	---	74.00	22.79	100.0	1000.000	155.0	H	208.0	0.0
8232.890000	---	38.52	54.00	15.48	100.0	1000.000	155.0	V	18.0	0.0

Diagram No.: 4.03a_WLAN_nmode_2MSC0_Ch6_PWR11

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:	TX mode continuous
Operator Name:	YSa
Comment:	Channel 6

FCC_Sweep_15.247_18_25GHz_Pre



2. Radiated band-edge measurements accord. §15.209 & §15.205 (§15.247)

2.1. b mode Channel 1 (left band edge)

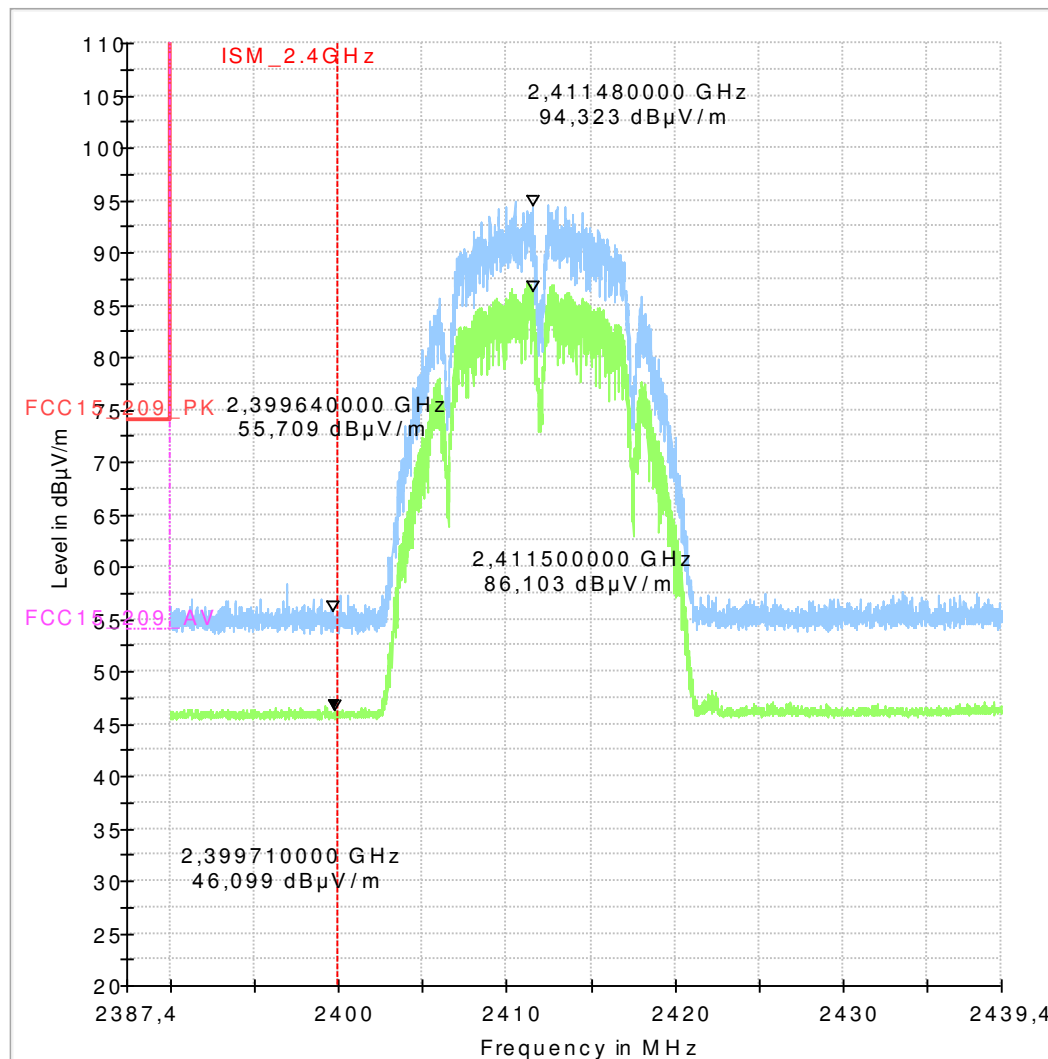
Diagram No.: 9.01_BE_WLAN_b mode_1Mbps_Ch1_Pwr14

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:	KIv
Comment:	Channel 1 (low)
Comment2:	WLAN2.4GHz 1Mbit, Power level: 14

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA
HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003846
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC



2.2. b mode Channel 11 (right band edge)

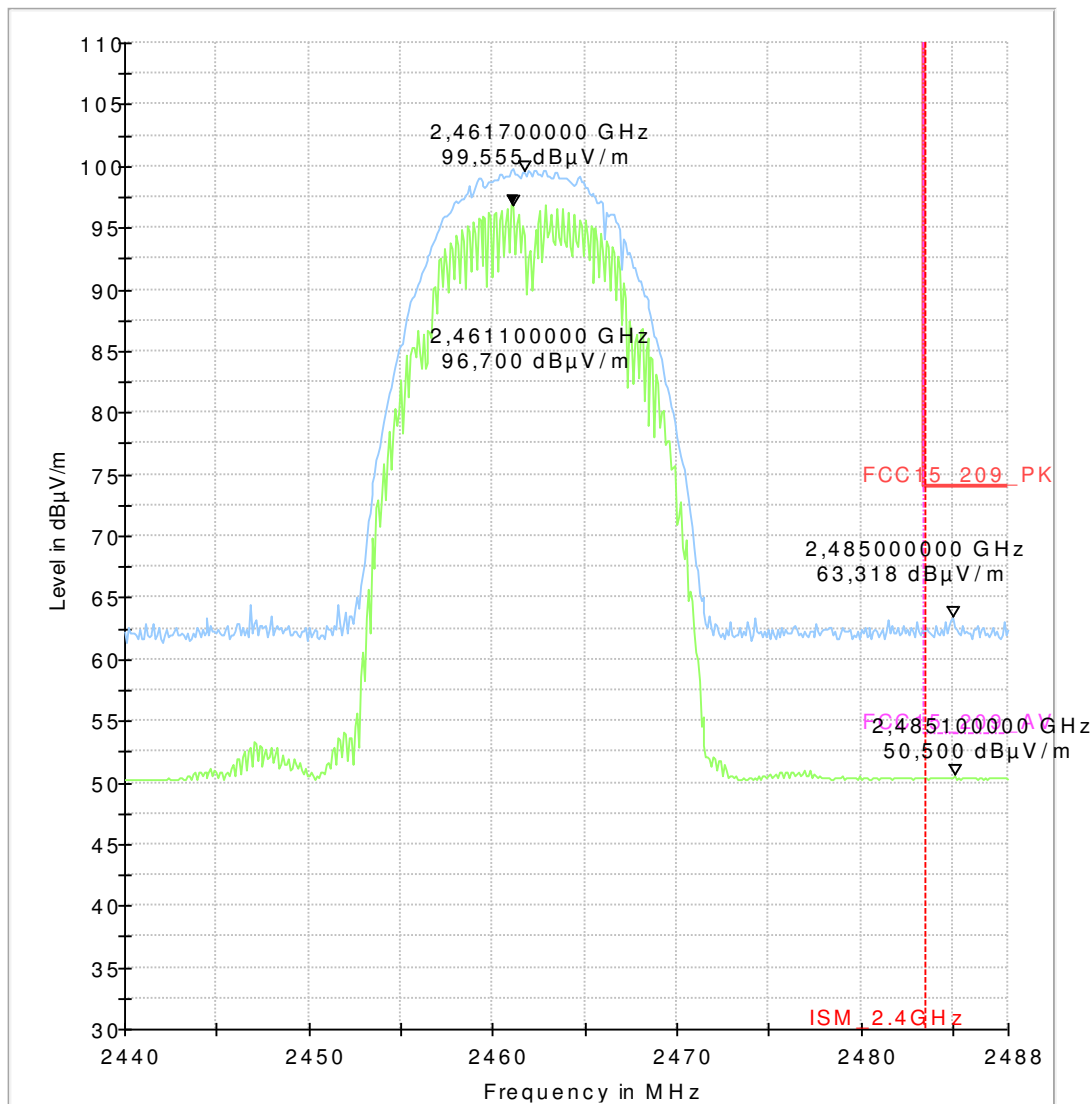
9.02_BE_WLAN_b mode_1Mbps_Ch11_Pwr14

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
Comment:	Channel 11 / high

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDTNA
HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003843
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC



2.3. g mode Channel 1 (left band edge)

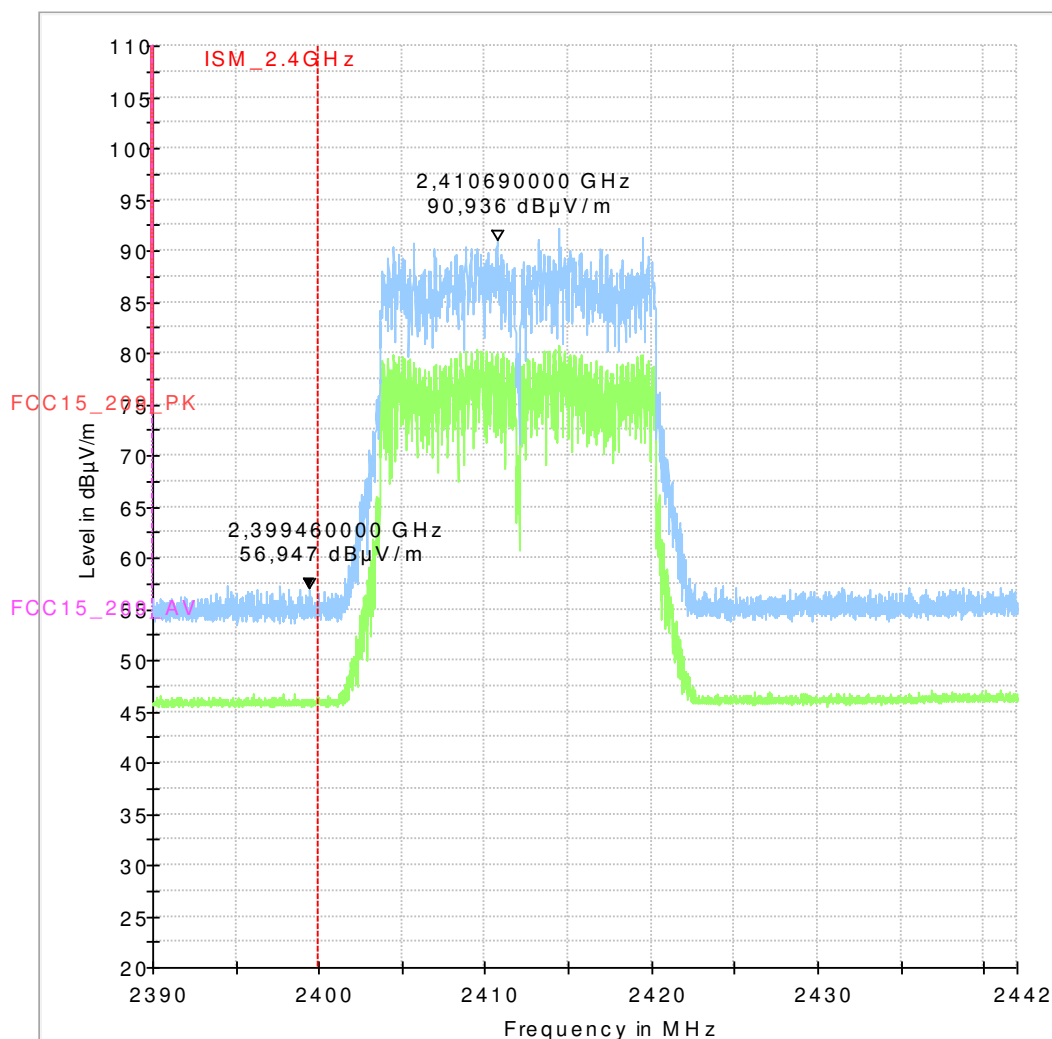
Diagram No.: 9.03_BE_WLAN_g mode_24Mbps_Ch1_Pwr11

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:	HLA
Comment:	Channel no. 1 low
Comment2:	Modulation Type: g-mode Data Rate:24Mbps

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA
HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003846
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC



2.4. g mode Channel 11 (right band edge)

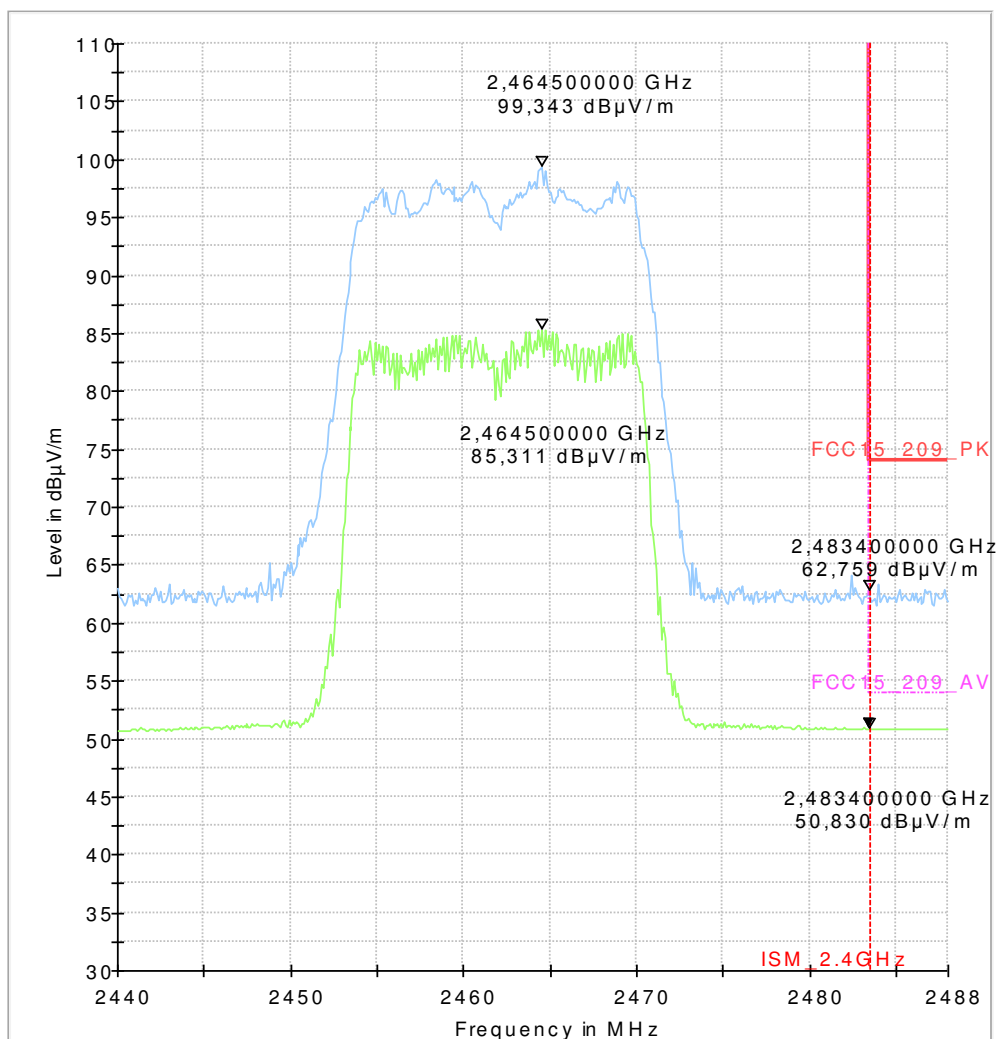
Diagram No. 9.04_BE_WLAN_g mode_24Mbps_Ch11_Pwr11

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
Comment:	Channel 11 / high

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA
HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003843
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC



2.5. n mode Channel 1 (left band edge)

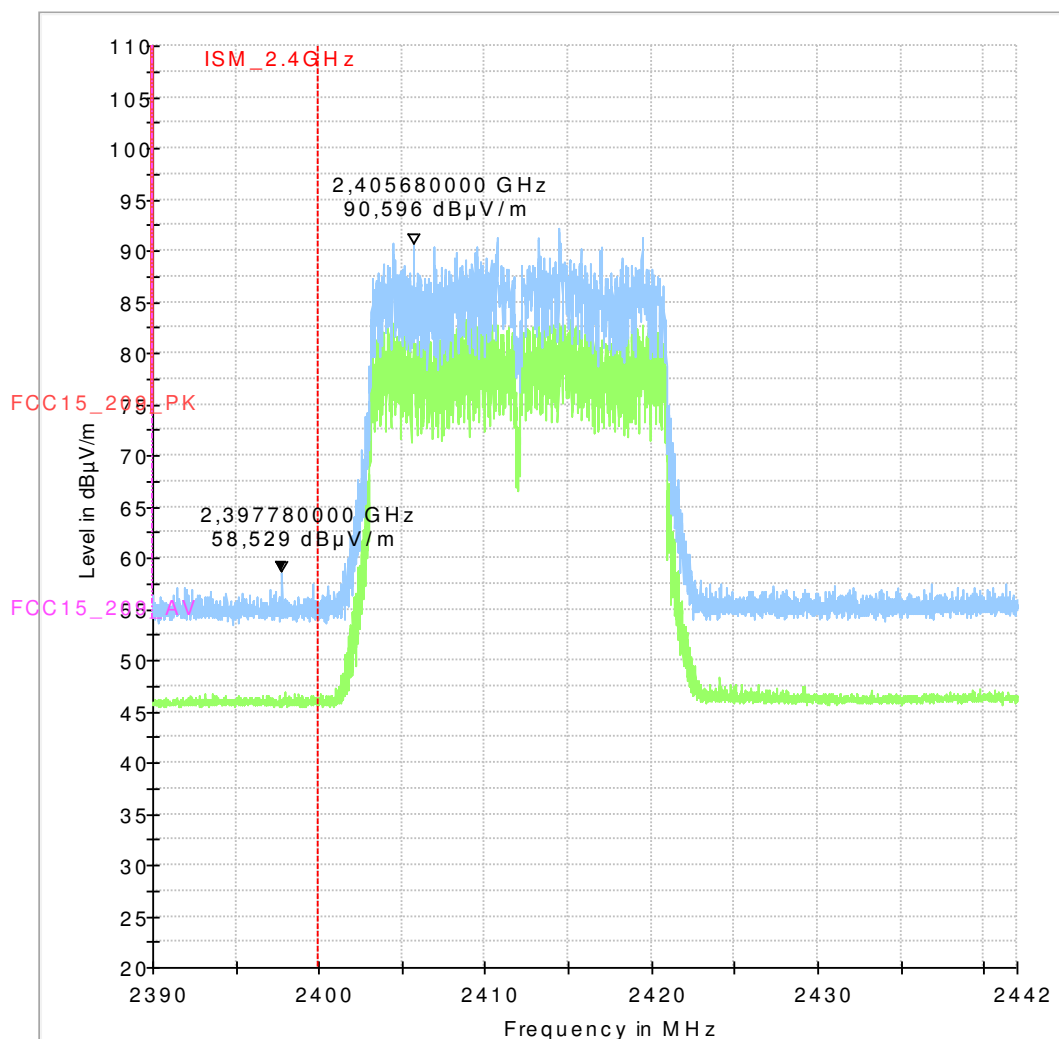
Diagram No.: 9.05_BE_WLAN_n mode_MCS0_Ch1_Pwr11

Common Information

Test Description:	Band-Edge: Radiated Field Strength 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:	HLA
Comment:	Channel no. low
Comment2:	Modulation Type: n-mode Data Rate:MCS0

EUT Information

Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA
HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003846
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC



2.6. n mode Channel 11 (right band edge)

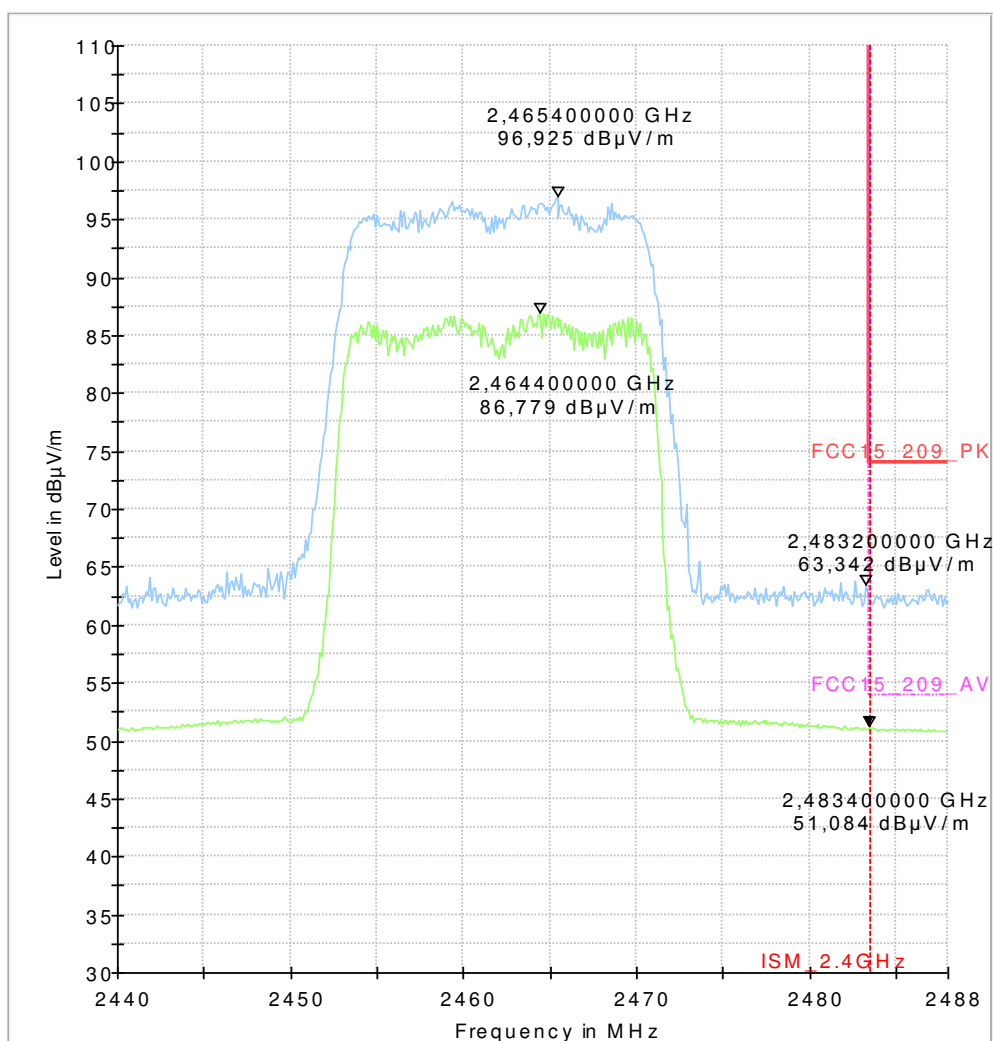
9.06_BE_WLAN_n(HT20)_MCS0_Ch11_Pwr11

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:	RLs
Comment:	Channel 11 / high

EUT Information

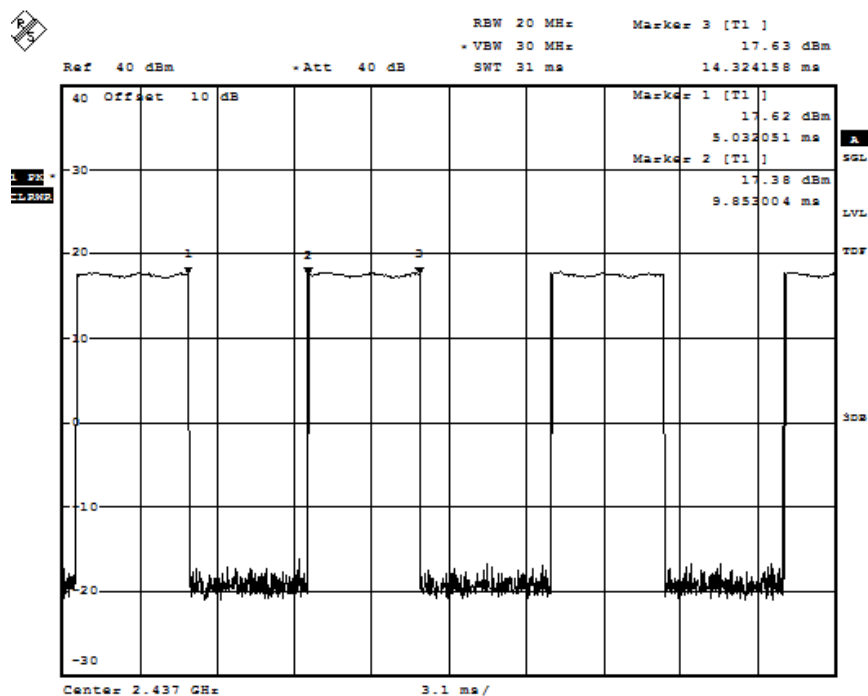
Manufacturer:	Bosch Car Multimedia Portugal, S.A.
EuT:	ECU CTPMIDDTNA
HW Version:	6794G05
SW Version:	DAIMLER_CTP_16.095.2
Serial Number:	2820003843
Connected Interfaces:	USB-cable + main wiring + GSM/GNSS antenna + WLAN antenna
Power Supply:	12 V DC



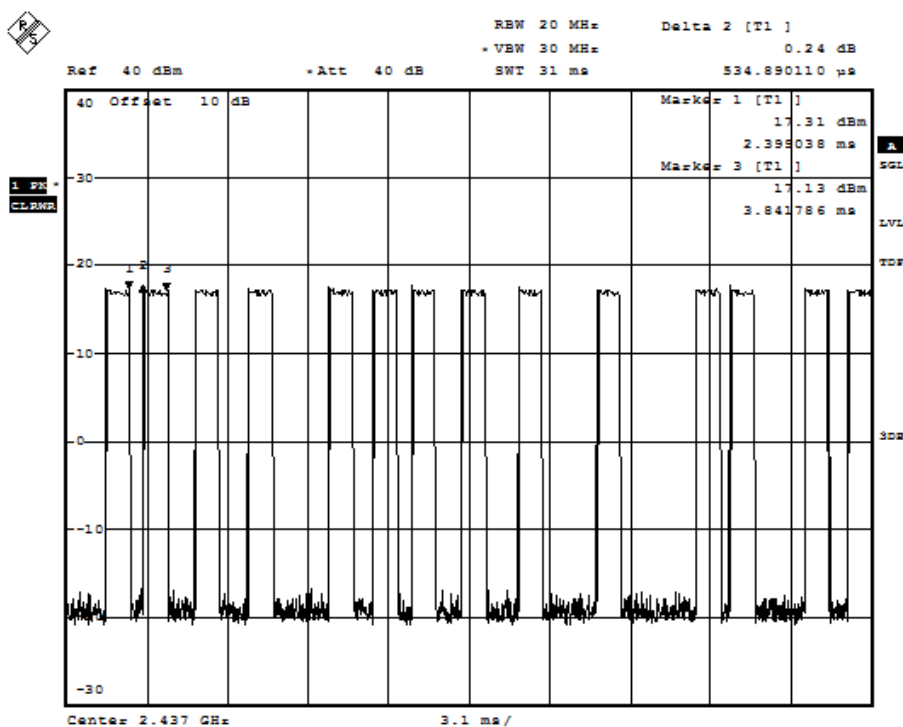
3. Conducted RF-measurements on antenna port

3.1. Duty cycle

3.1.1. b-mode

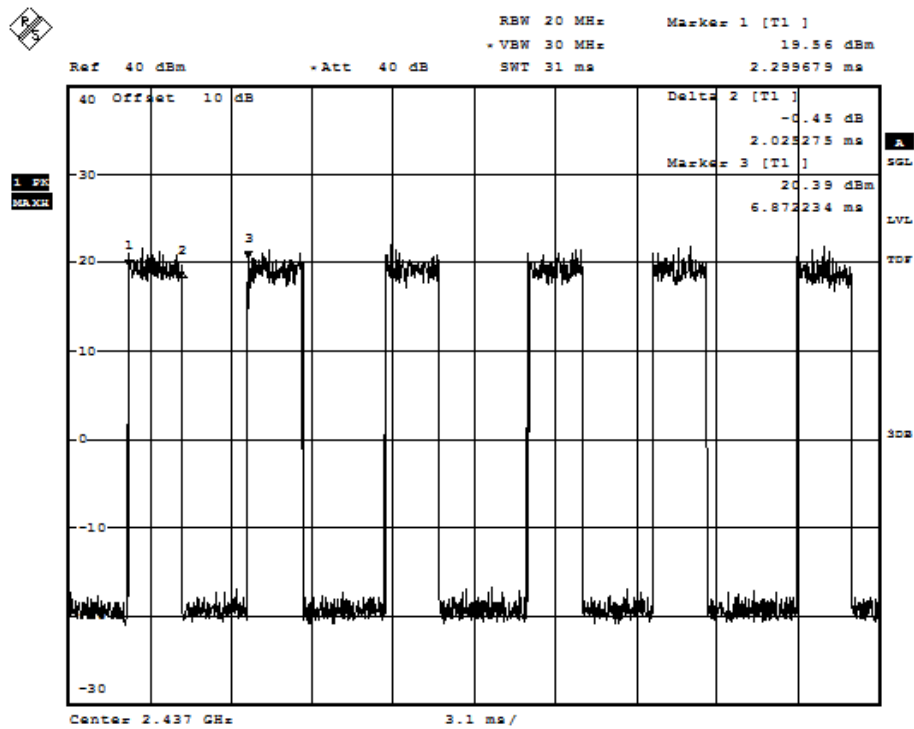


DC_CH6_1Mbit

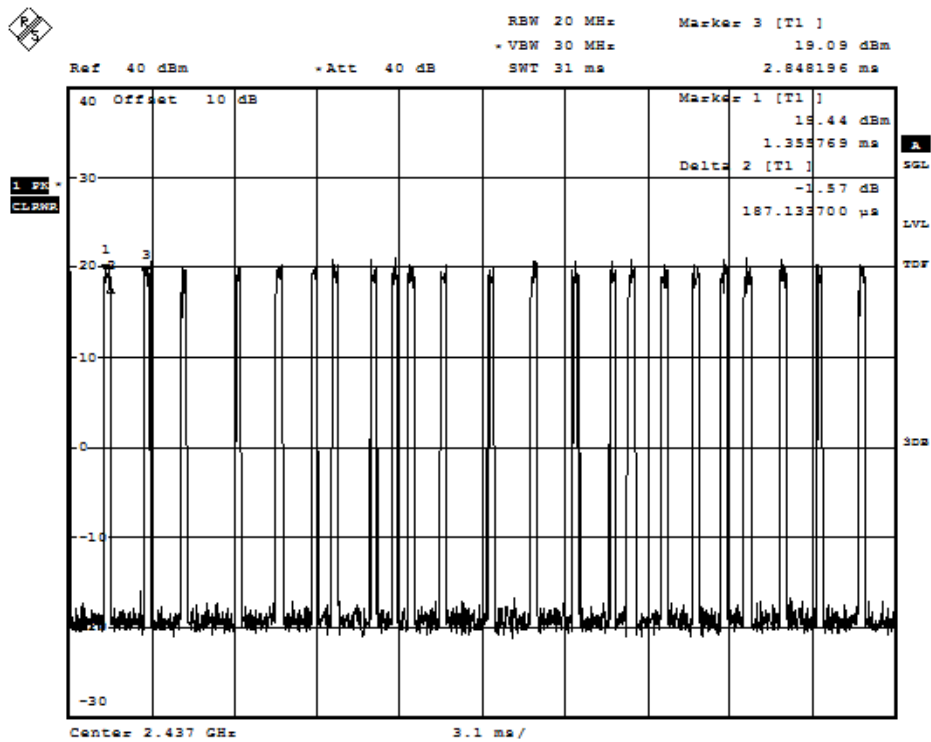


DC_CH6_11Mbit

3.1.2. g-mode

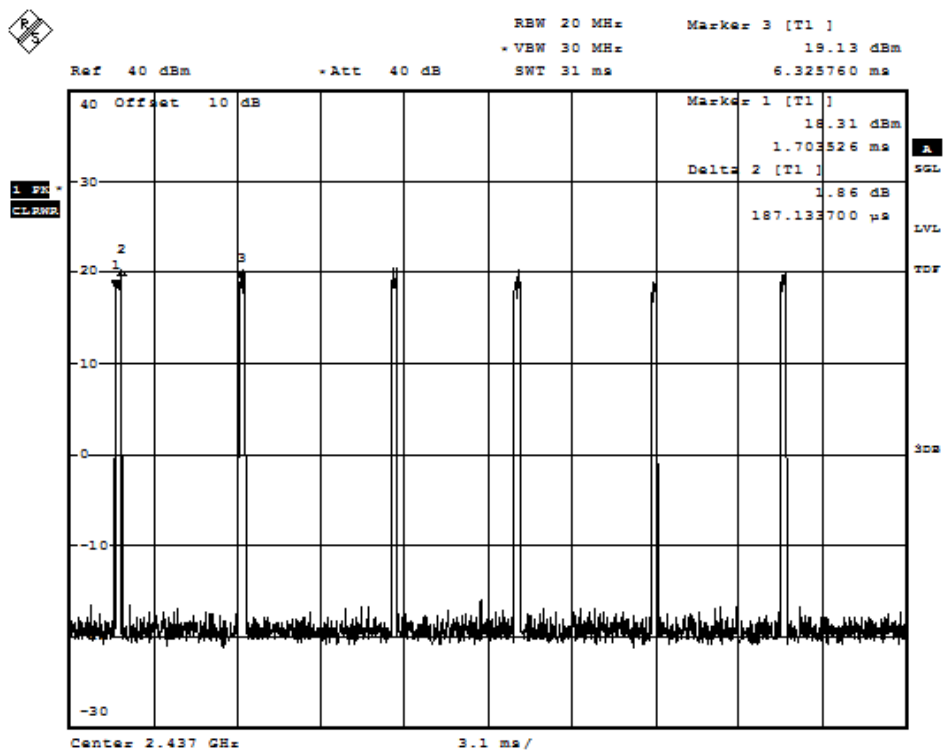
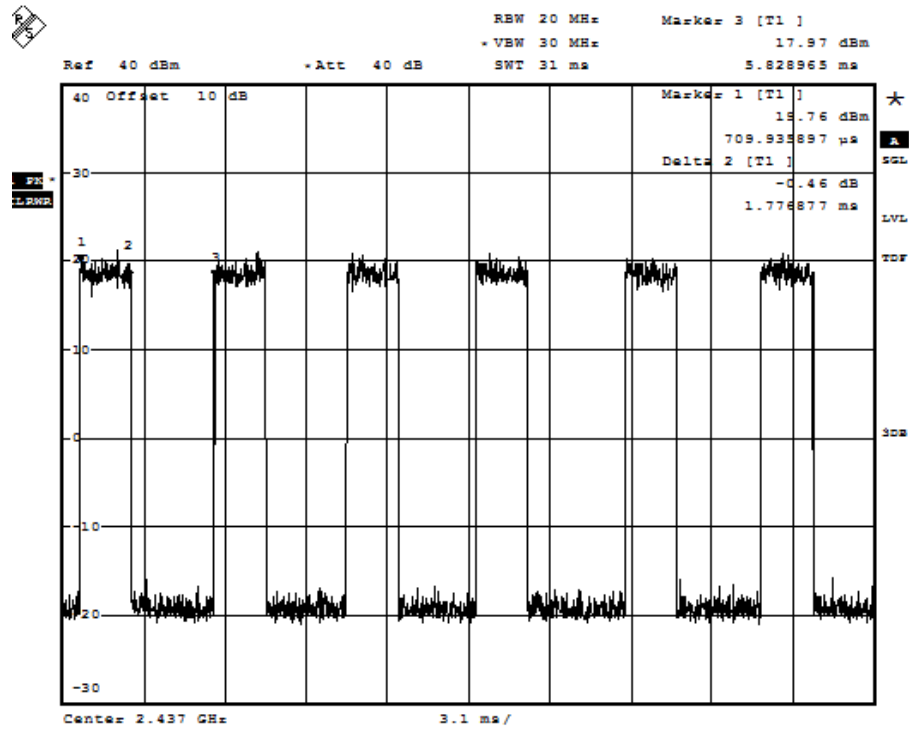


DC_CH6_6Mbit



DC_CH6_54Mbit

3.1.3. n-mode

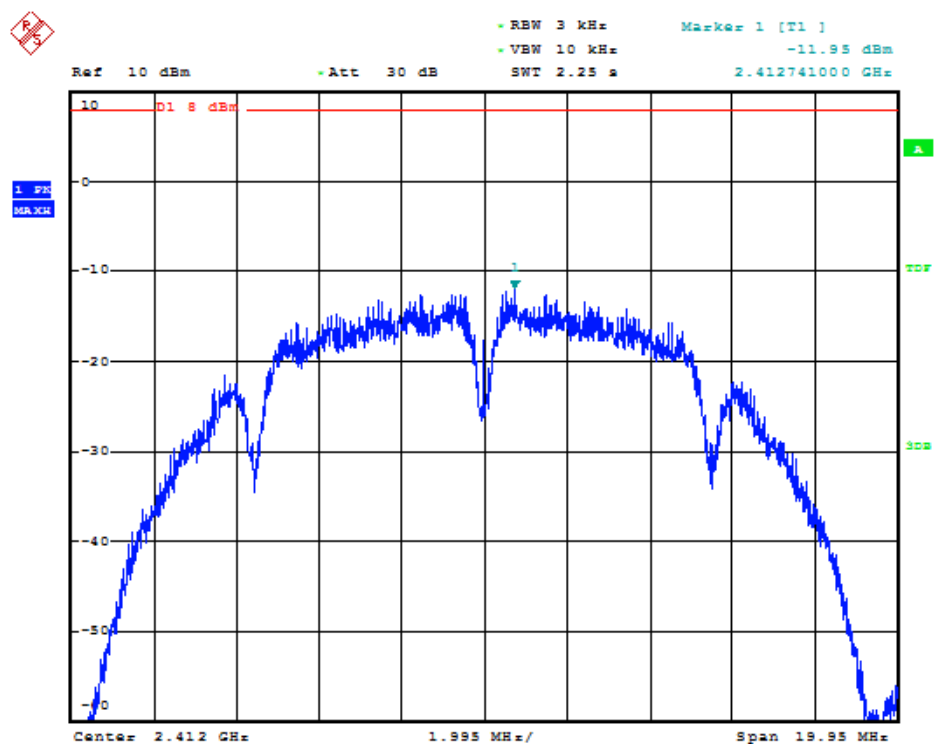


3.2. Maximum peak conducted output power

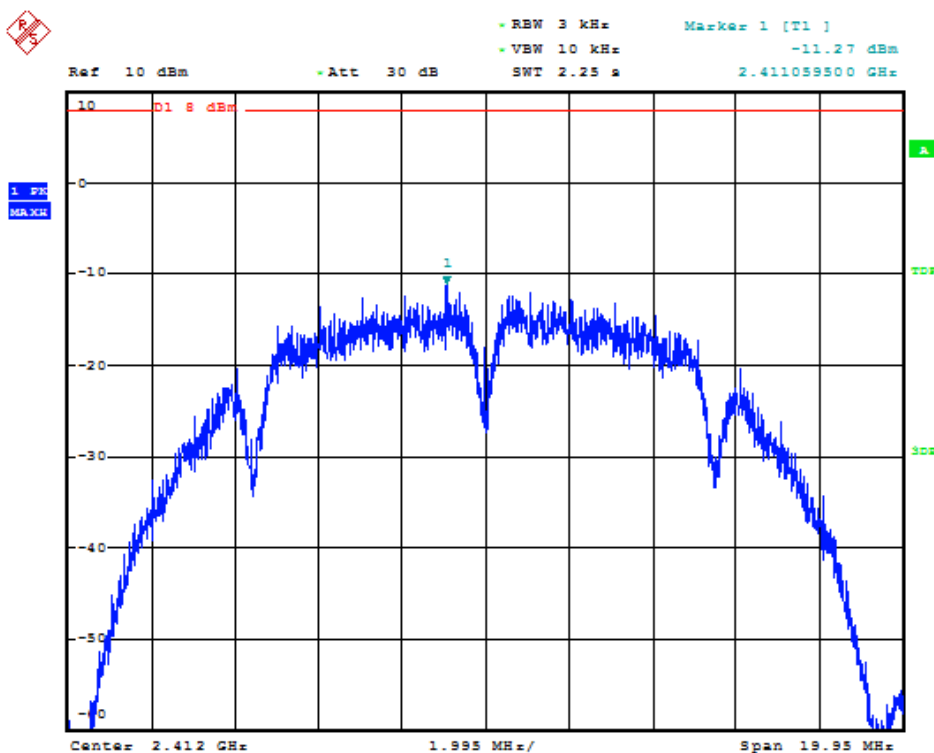
WLAN 2.4 GHz Conducted Peak Power Measurements					
EUT Information	EUT Name	ECU CTPMIDDटना		Hardware Version	6794G05
	Manufacturer	Robert Bosch Car Multimedia GmbH		Software Version	DAIMLER_CTP_16.095.2
	Serial Number	2820003846		Antenna Gain	1.7dBi
WLAN 2.4GHz b-Mode		Channel No. (Frequency MHz)			b-Mode
Data rate	Modulation	1 (2412)	6 (2437)	11 (2462)	Maximum Value
1Mbit		12,72	12,32	12,32	12,72
2Mbit		12,62	12,29	12,30	
5.5Mbit		11,69	11,77	11,22	
11Mbit		12,15	11,77	11,75	
WLAN 2.4 GHz Conducted Peak Power Limits					30.0
WLAN 2.4GHz g-Mode		Channel No. (Frequency MHz)			g-Mode
Data rate	Modulation	1 (2412)	6 (2437)	11 (2462)	Maximum Value
6Mbit		11,05	10,61	10,59	11,31
9Mbit		11,27	10,65	10,71	
12Mbit		11,27	10,72	10,69	
18Mbit		11,09	10,73	10,69	
24Mbit		11,31	10,7	10,77	
36Mbit		11,15	10,59	10,65	
48Mbit		11,08	10,51	10,59	
54Mbit		11,08	10,55	10,6	
WLAN 2.4 GHz Conducted Peak Power Limits					30.0
WLAN 2.4GHz n-Mode HT20		Channel No. (Frequency MHz)			n-Mode HT20
Data rate	Modulation	1 (2412)	6 (2437)	11 (2462)	Maximum Value
MCS0 -6.5Mbps	BPSK	11,05	11,15	10,59	11,15
MCS1 - 13Mbps	QPSK	11,08	10,59	10,67	
MCS2 - 19.5Mbps	QPSK	10,89	10,65	10,59	
MCS3 - 26Mbps	QAM16	10,91	10,62	10,6	
MCS4 -39Mbps	QAM16	10,96	10,49	10,59	
MCS5 - 52Mbps	QAM64	10,98	10,58	10,59	
MCS6 - 58.5Mbps	QAM64	10,98	10,49	10,59	
MCS7 - 65Mbps	QAM64	11,05	10,58	10,12	
WLAN 2.4 GHz Conducted Peak Power Limits					30.0

3.3. RF-Parameter - Power Spectral Density

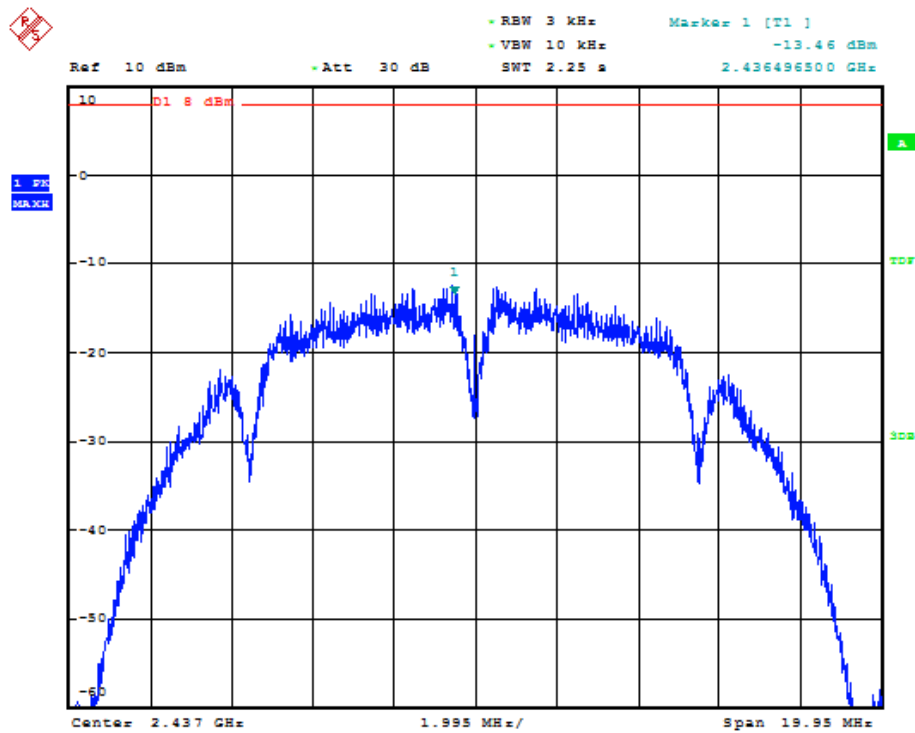
3.3.1. b-mode



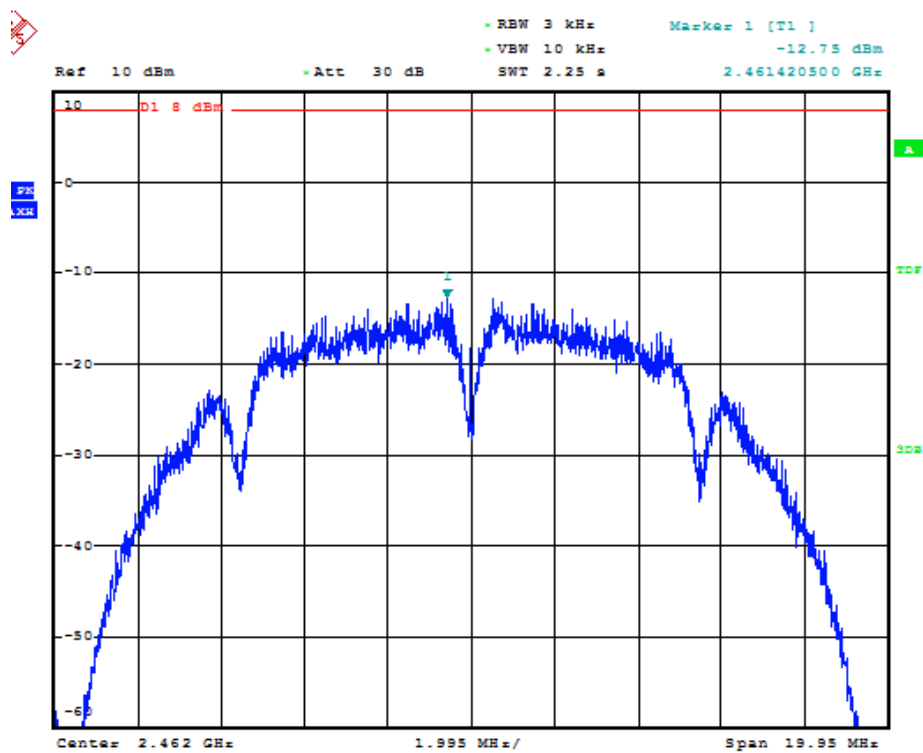
PSD-Pk-Ch1-bMode-1Mbit



PSD-Pk-Ch1-bMode-2Mbit

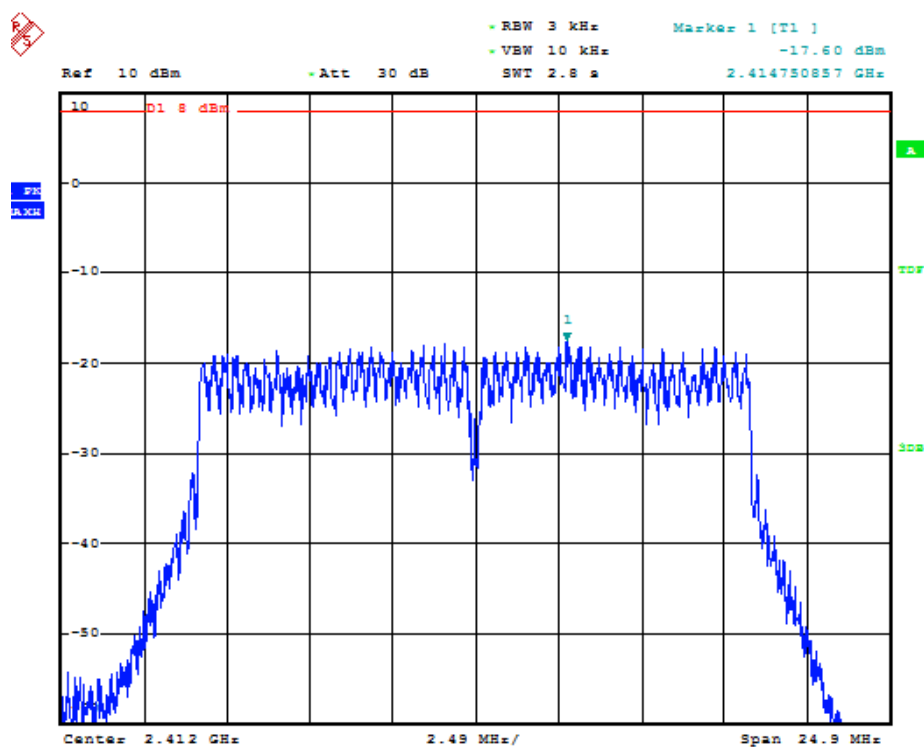


PSD-Pk-Ch6-bMode-1Mbit

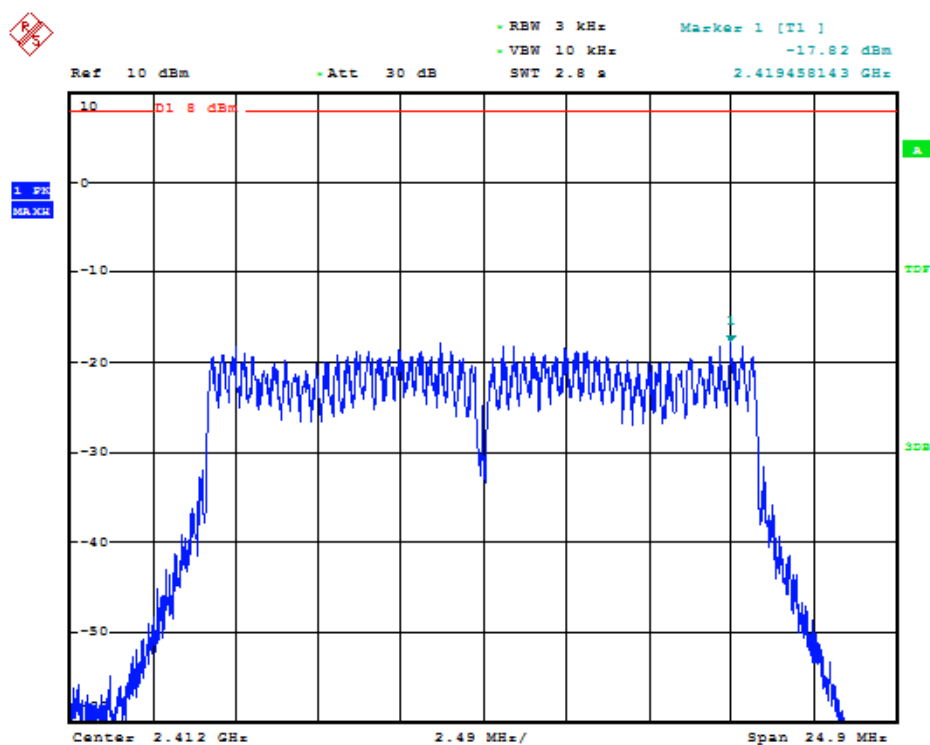


PSD-Pk-Ch11-bMode-1Mbit

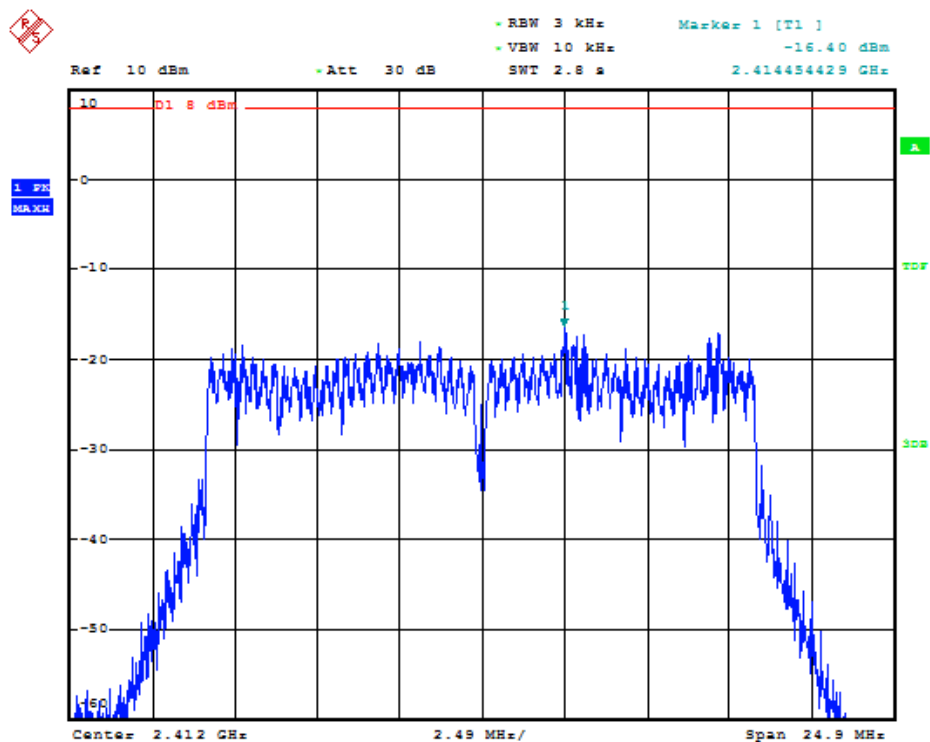
3.3.2. g-mode



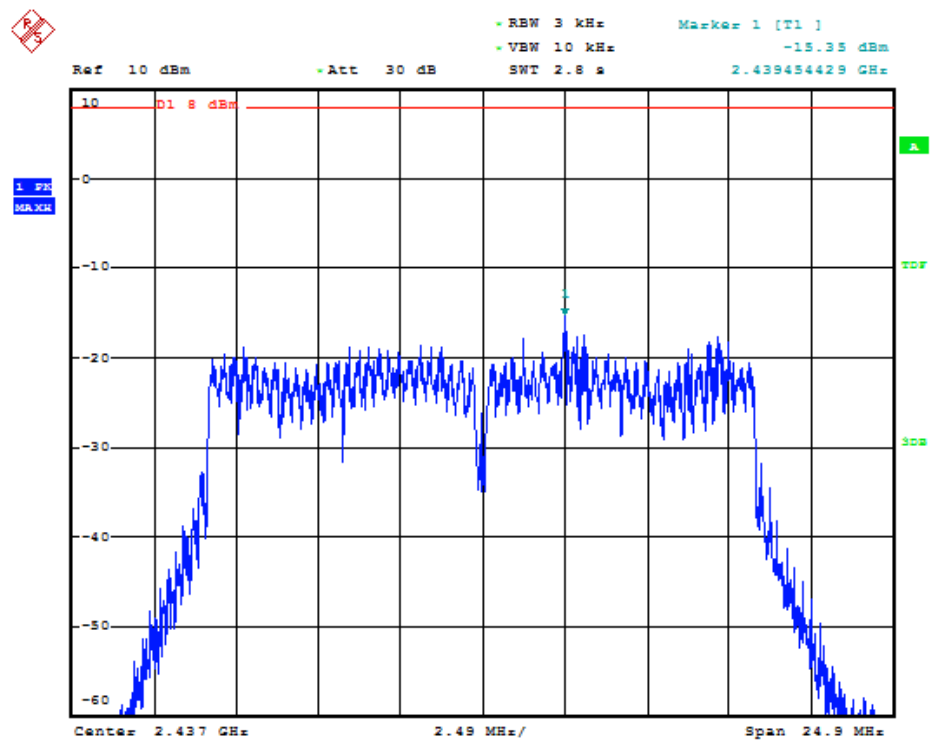
PSD-Pk-Ch1-gMode-9Mbit



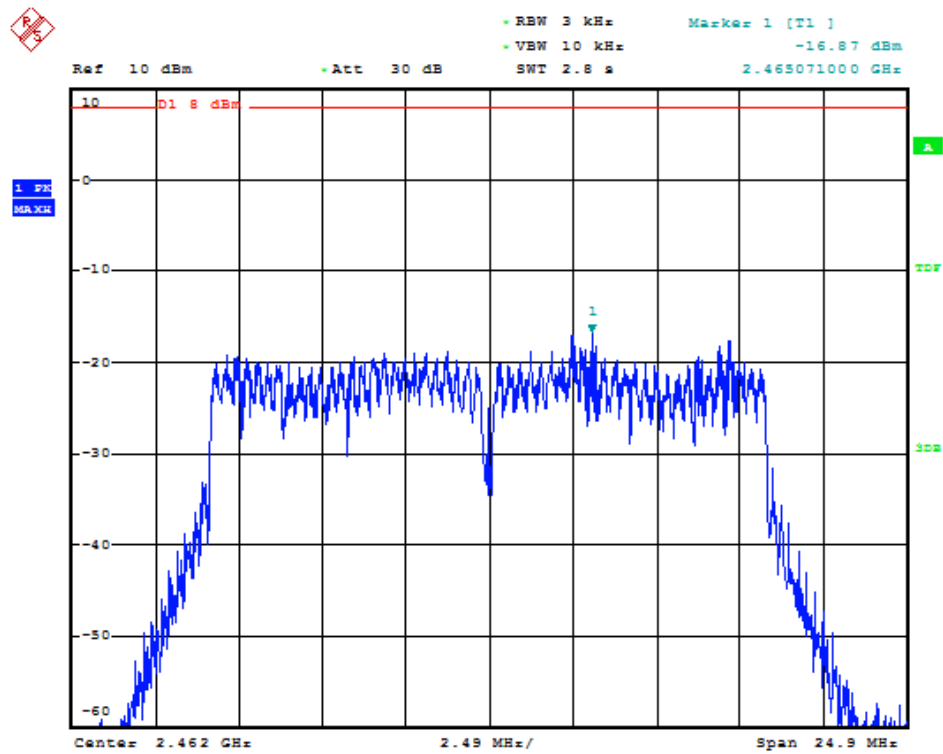
PSD-Pk-Ch1-gMode-12Mbit



PSD-Pk-Ch1-gMode-24Mbit

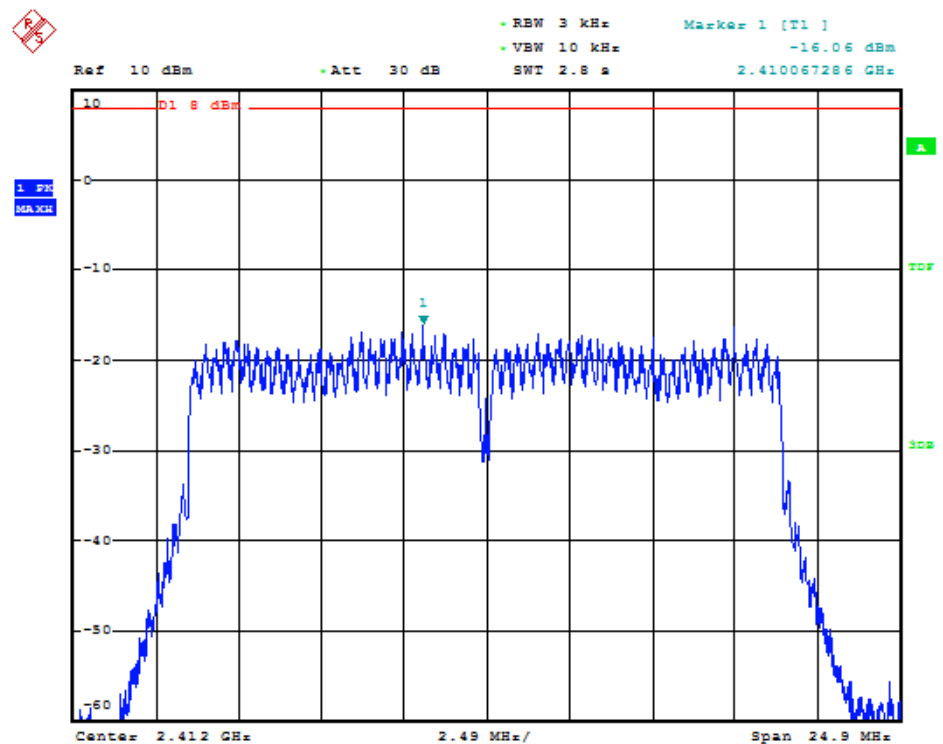


PSD-Pk-Ch6-gMode-24Mbit

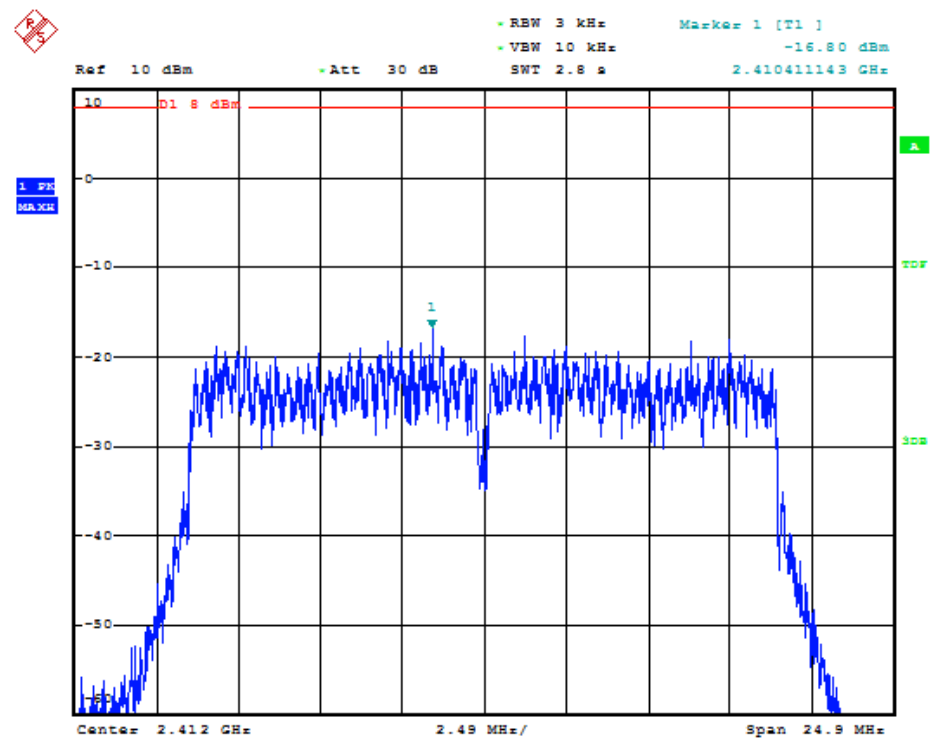
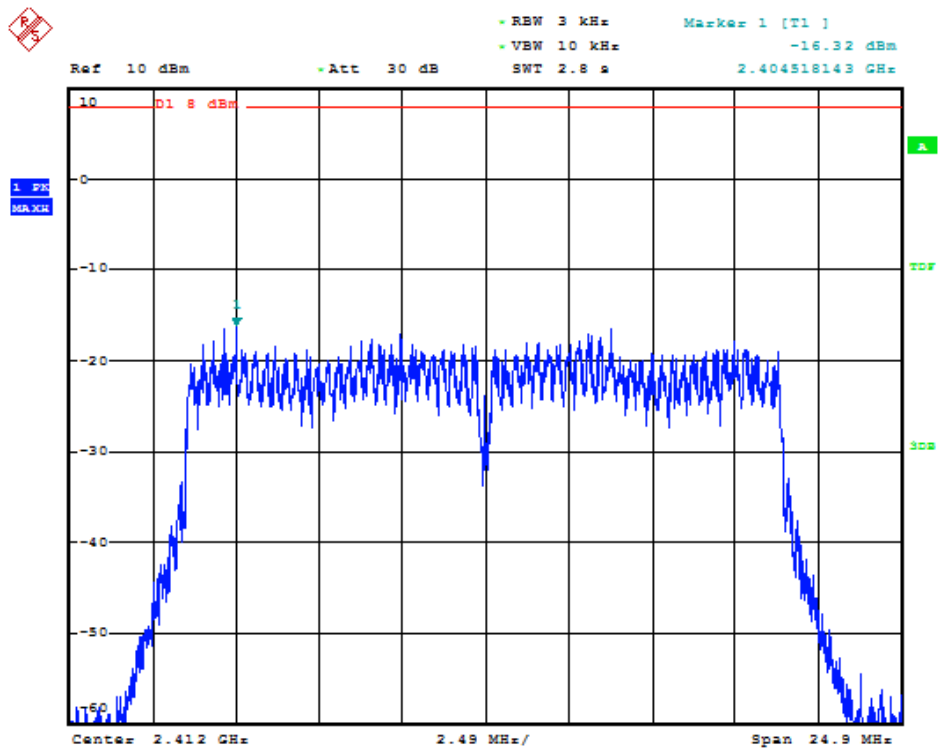


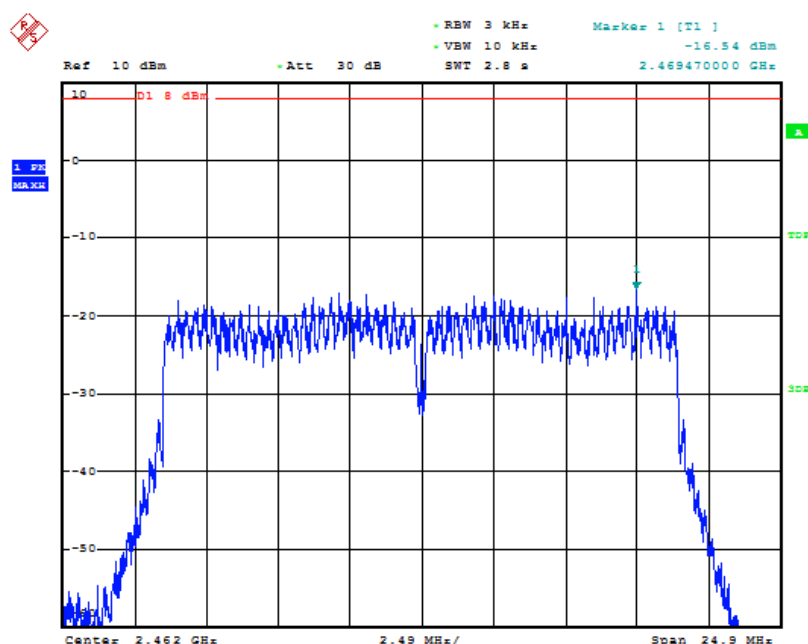
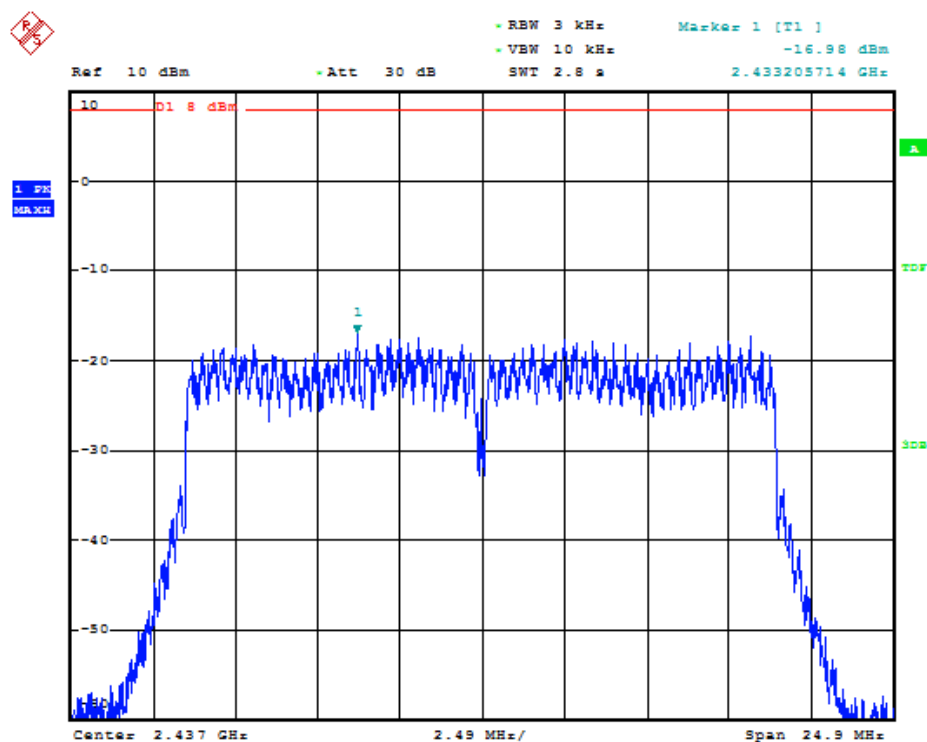
PSD-Pk-Ch11-gMode-24Mbit

3.3.3. n-mode



PSD-Pk-Ch1-nMode-MCS0

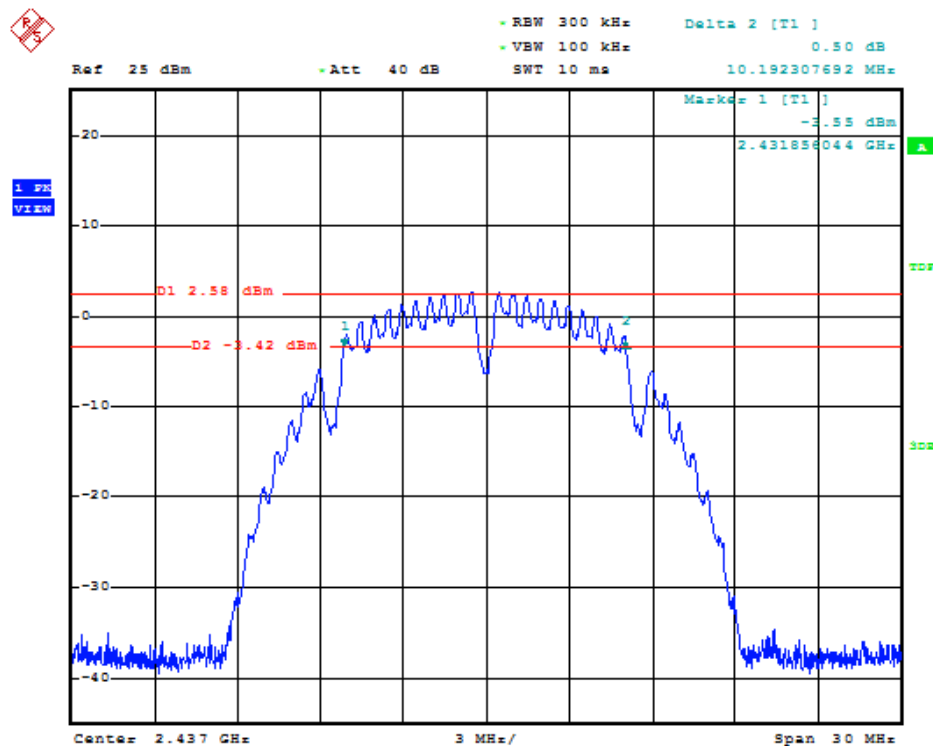
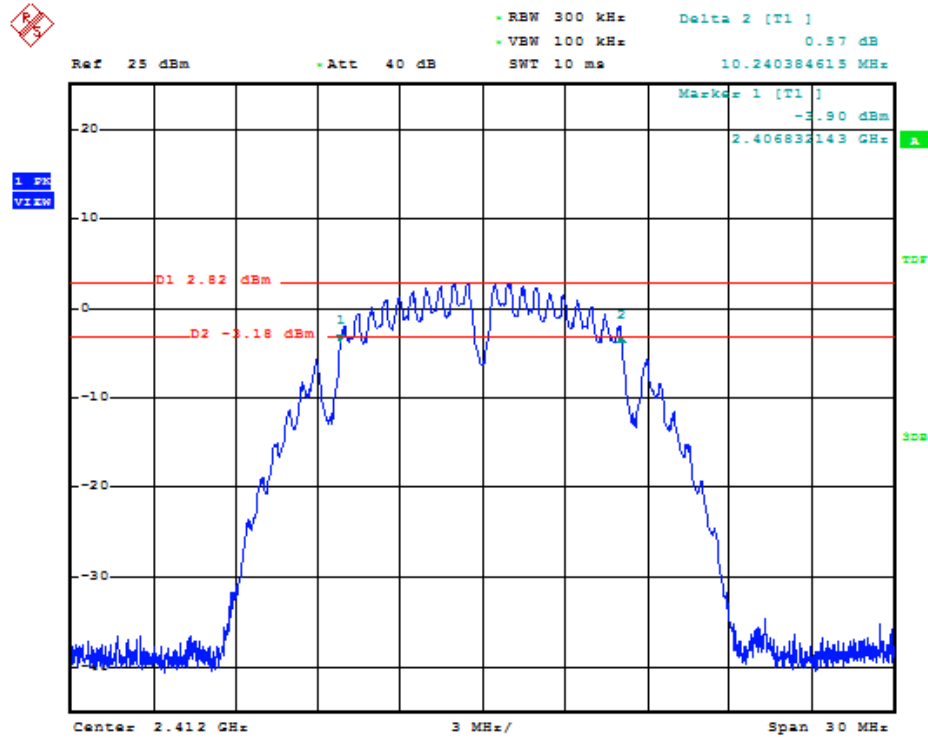


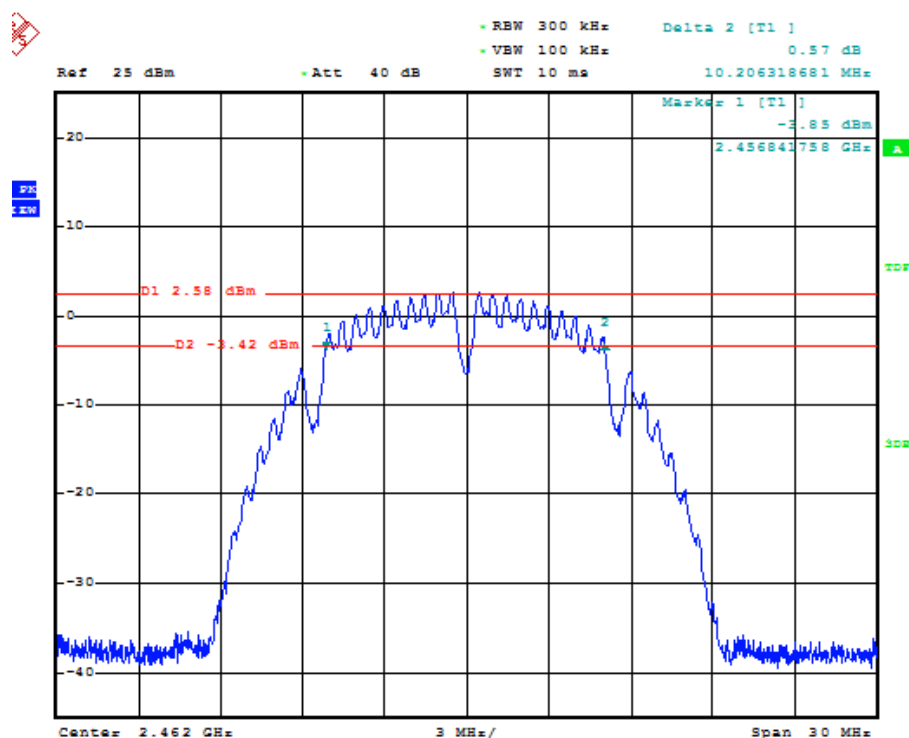


Date: 16. DEC. 2016 12:03:36

3.4. RF-Parameter - 6 dB Bandwidth

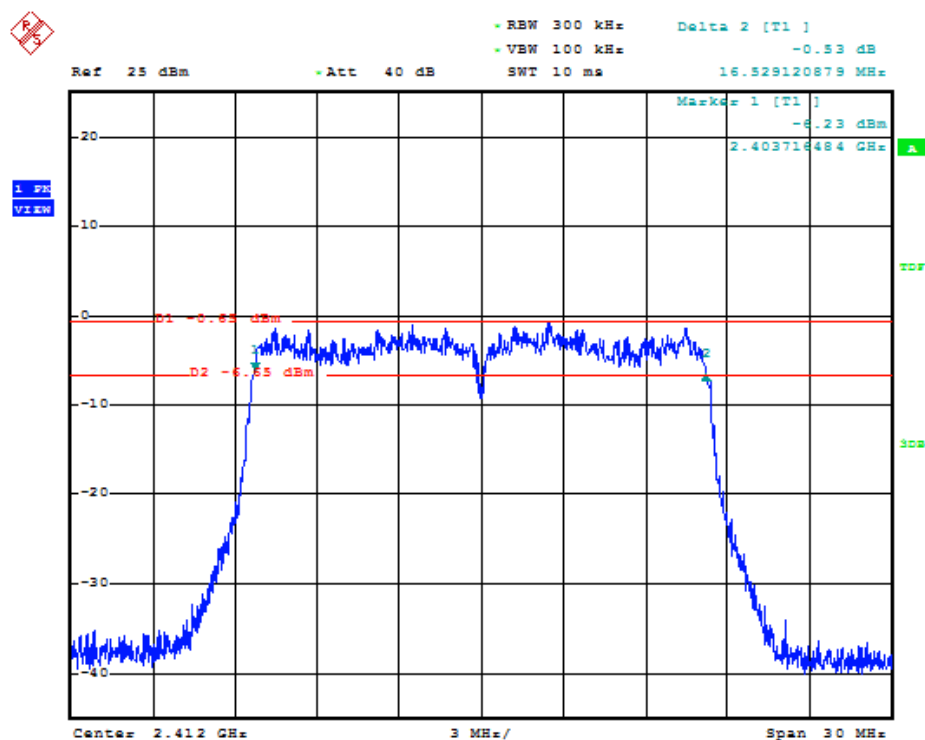
3.4.1. b-mode



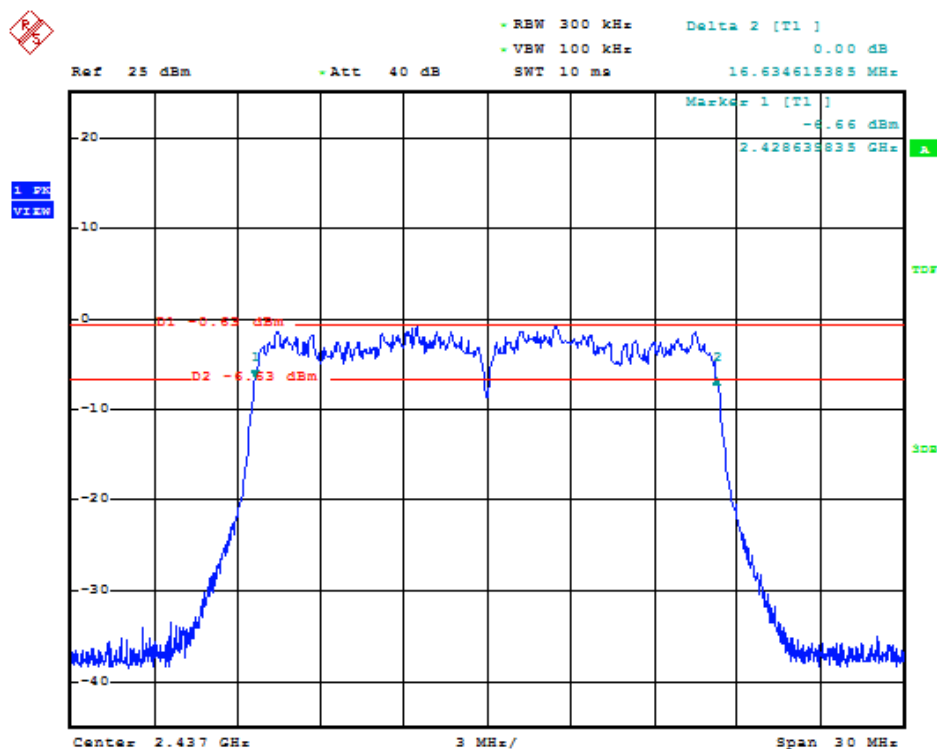


6dB-BW-Ch11-bMode-1Mbit

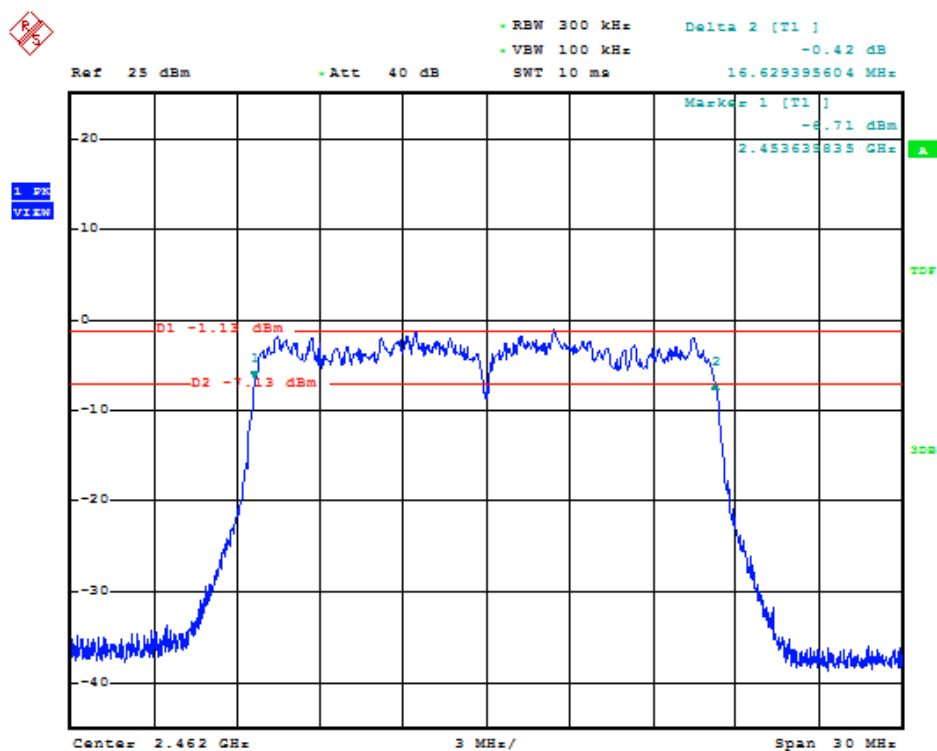
3.4.2. g-mode



6dB-BW-Ch1-gMode-24Mbit

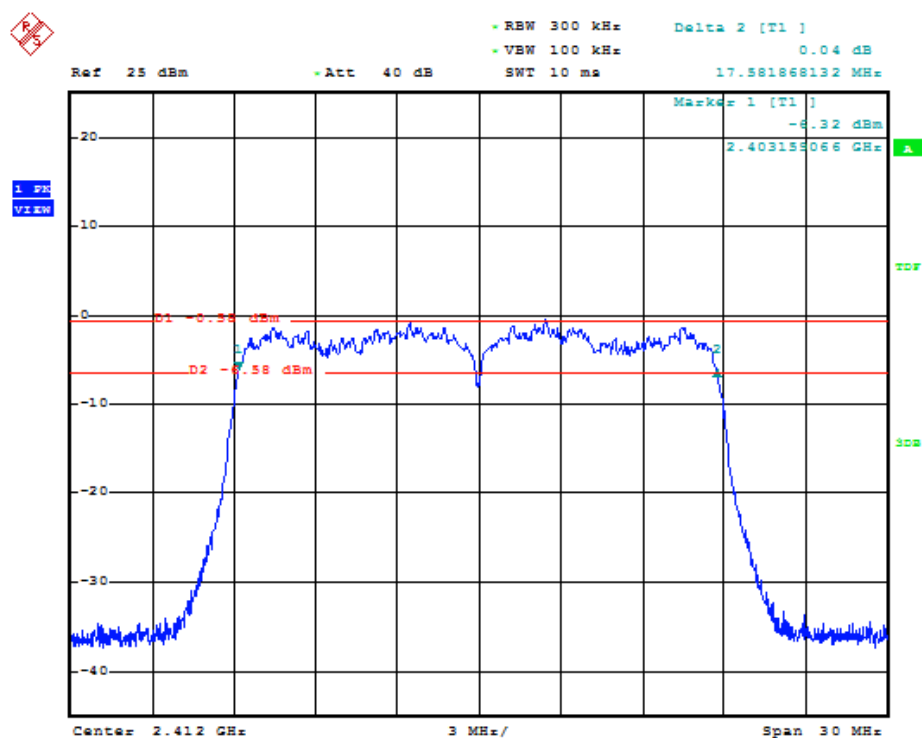


6dB-BW-Ch6-gMode-24Mbit

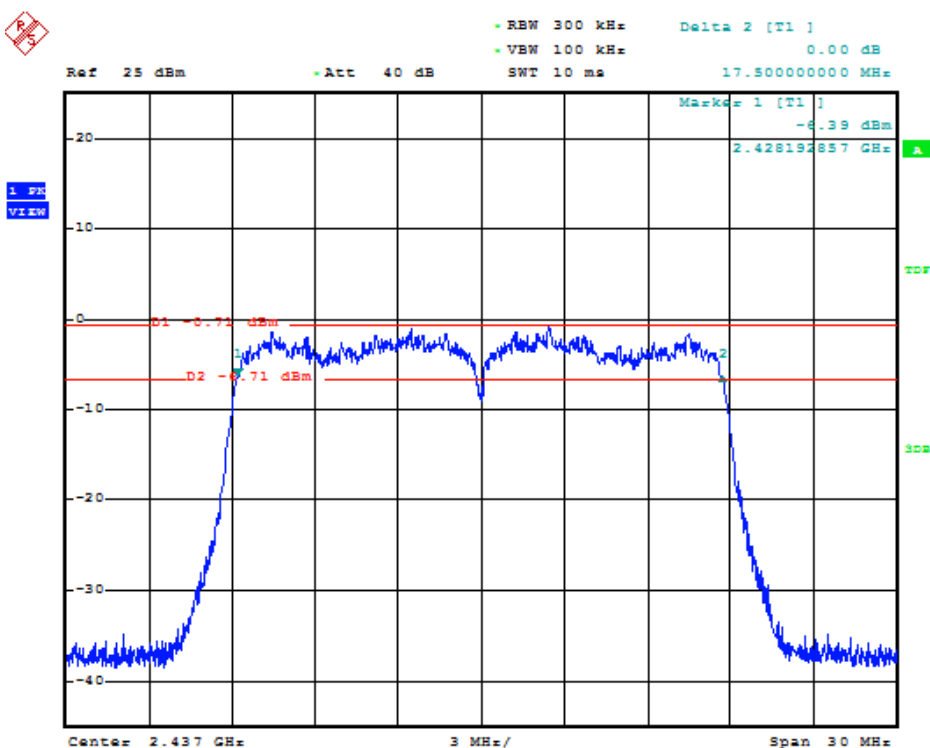


6dB-BW-Ch11-gMode-24Mbit

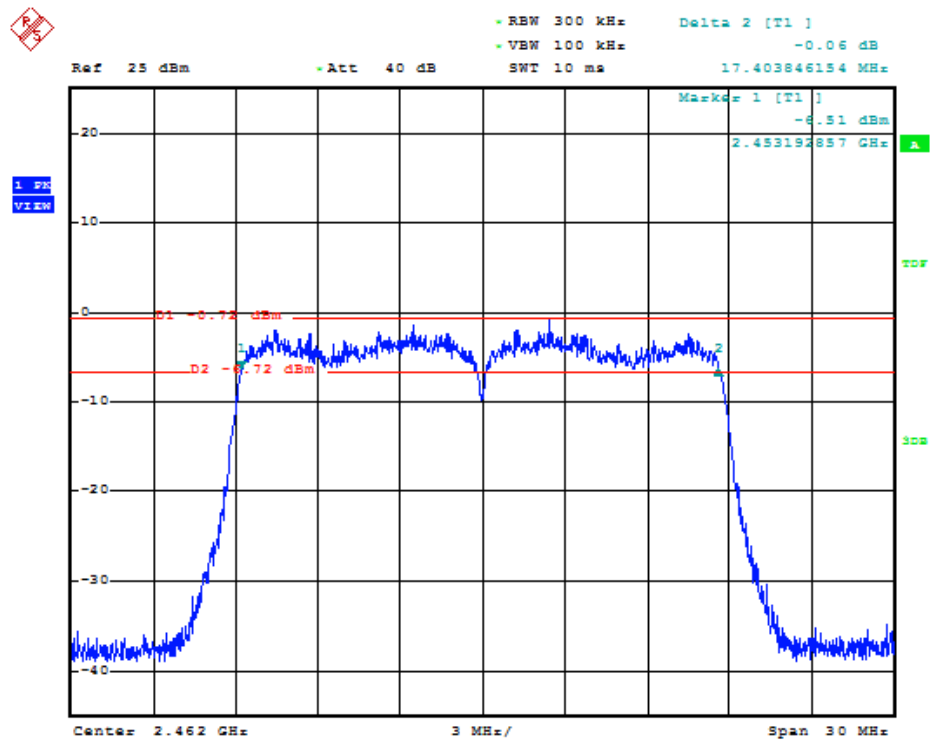
3.4.3. n-mode



6dB-BW-Ch1-nMode-MCS0



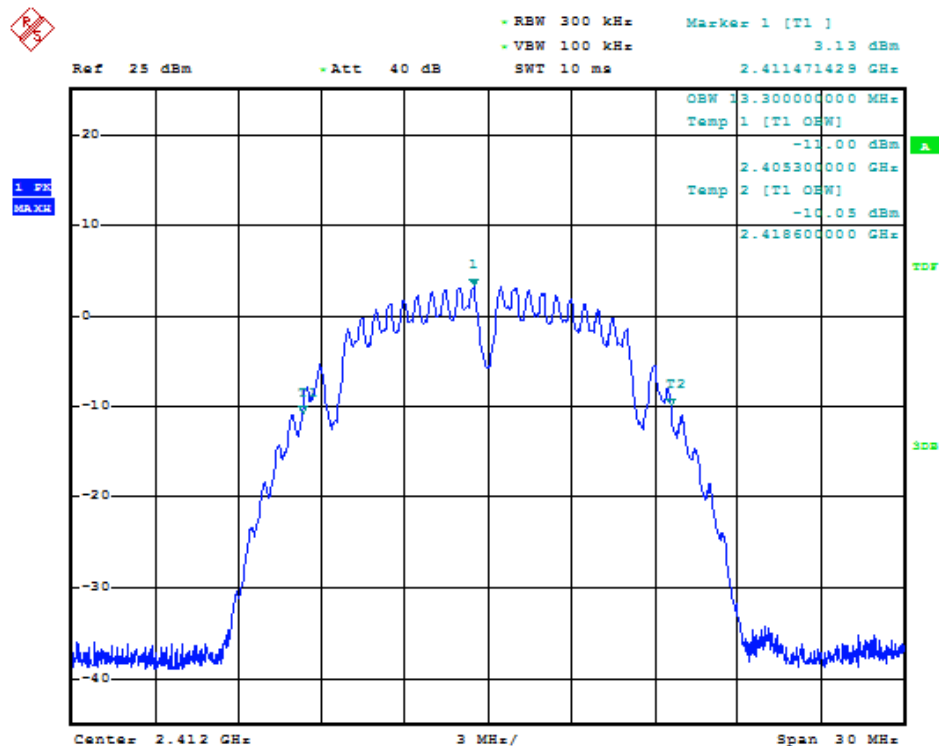
6dB-BW-Ch6-nMode-MCS0



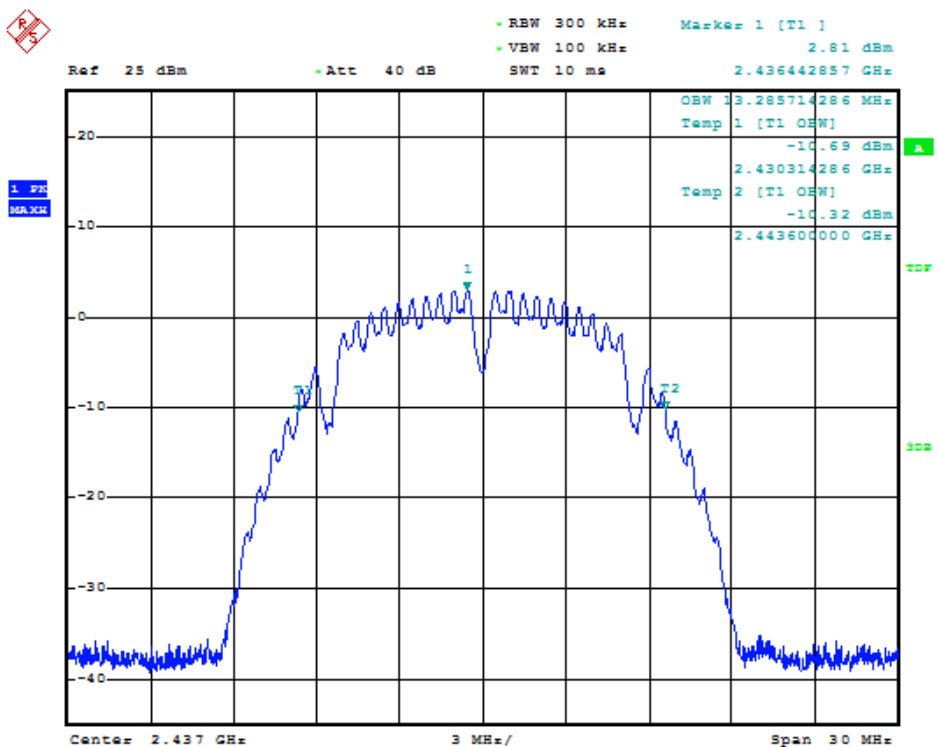
6dB-BW-Ch11-nMode-MCS0

3.5. RF-Parameter - 99% occupied Bandwith

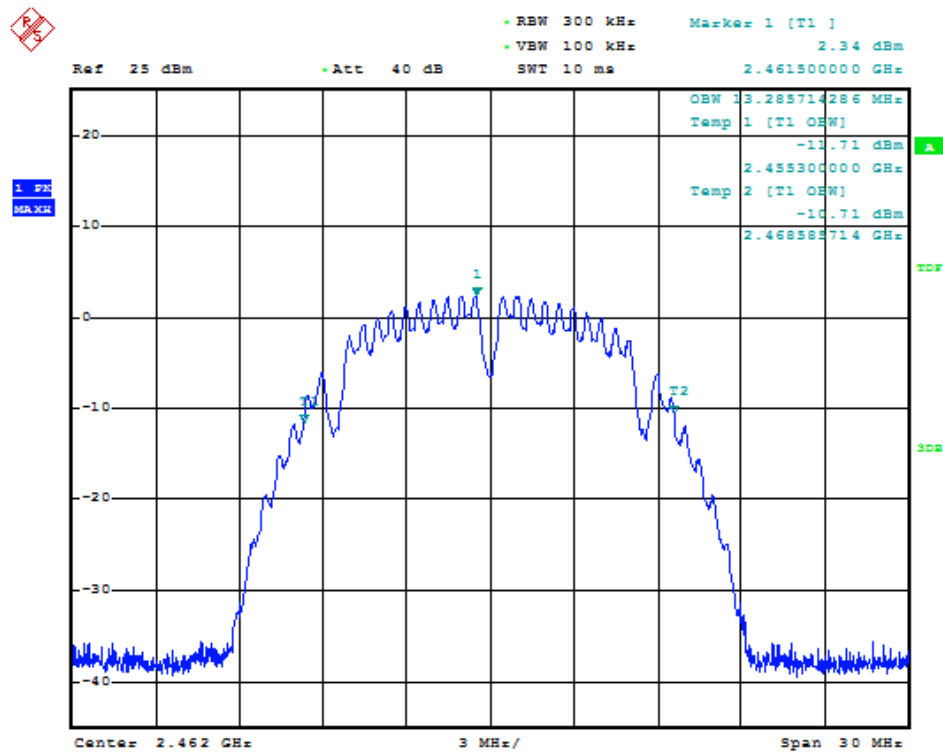
3.5.1. b-mode



99%-BW-Ch1-bMode-1Mbit

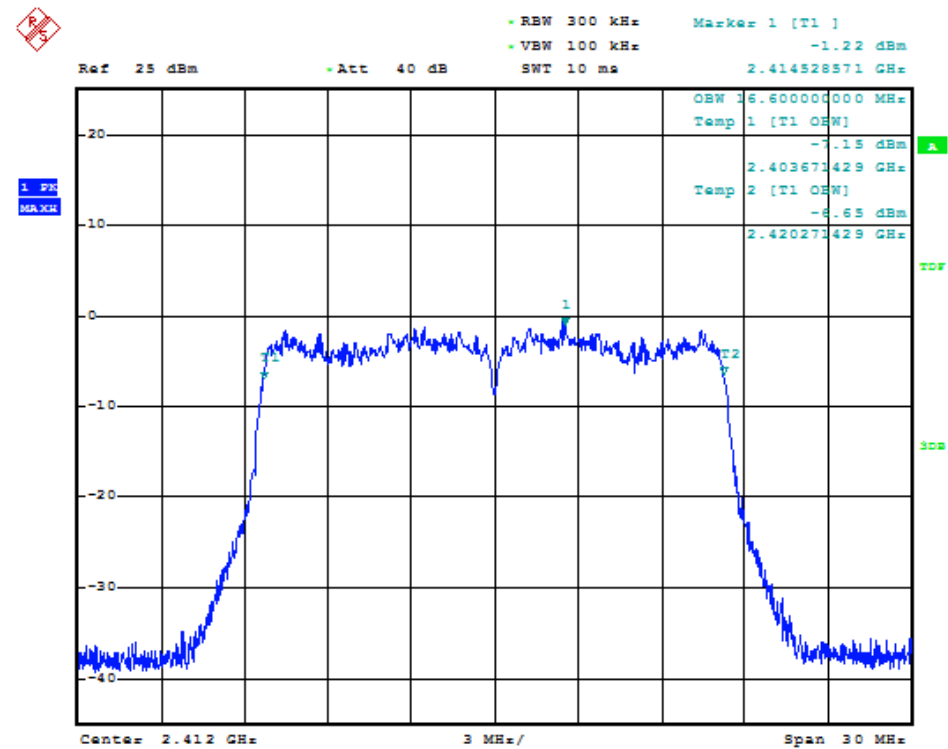


99%-BW-Ch6-bMode-1Mbit

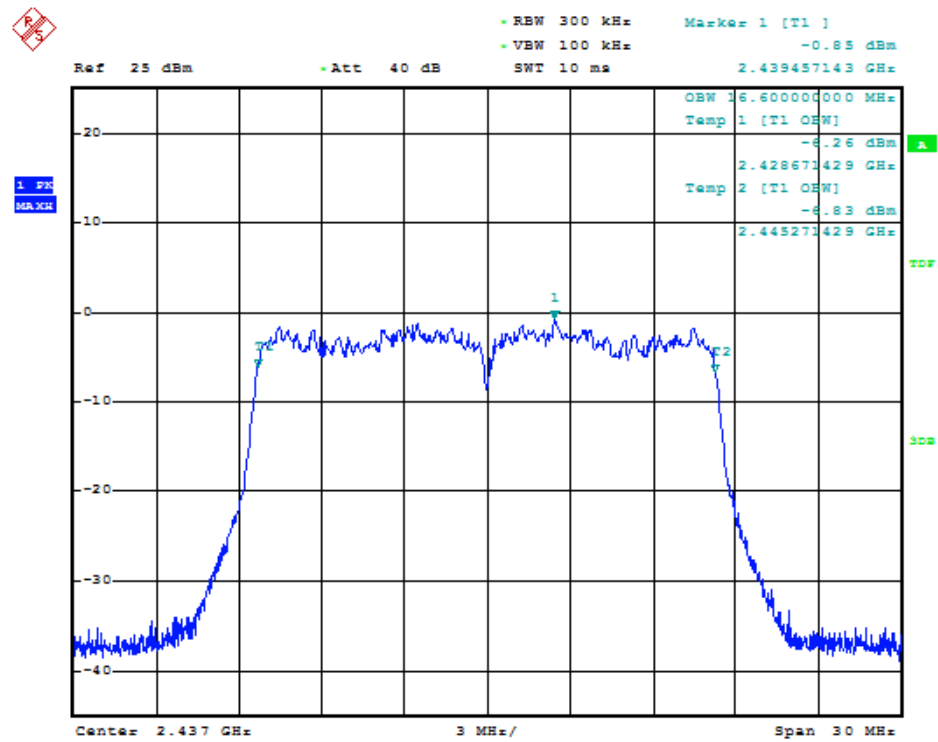


99%-BW-Ch11-bMode-1Mbit

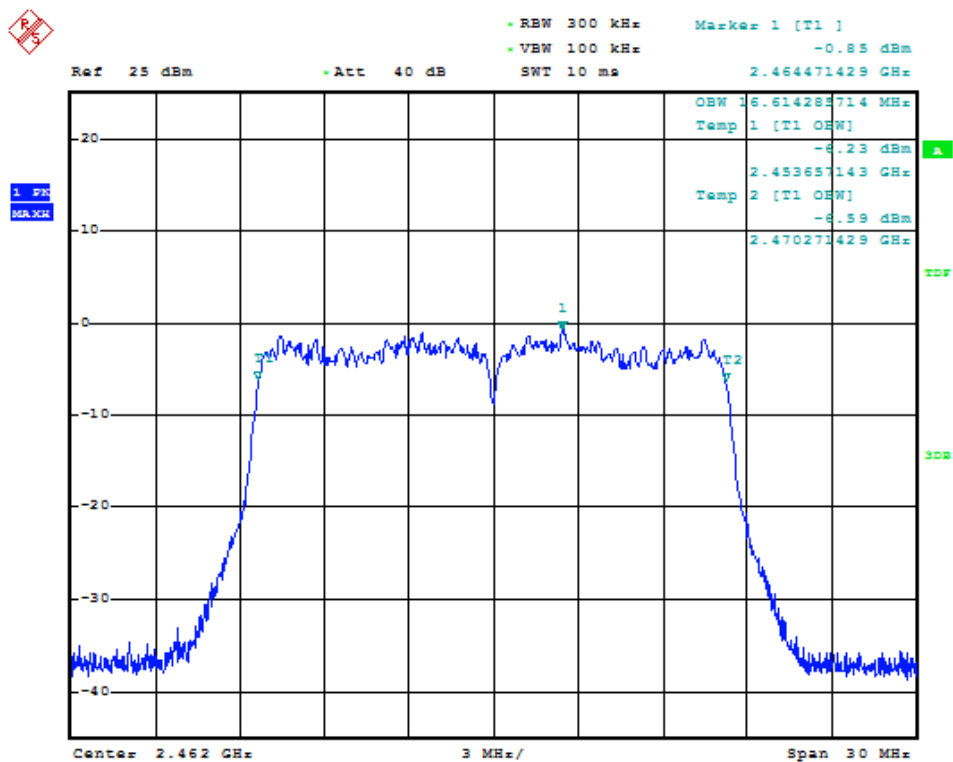
3.5.2. g-mode



99%-BW-Ch1-gMode-24Mbit

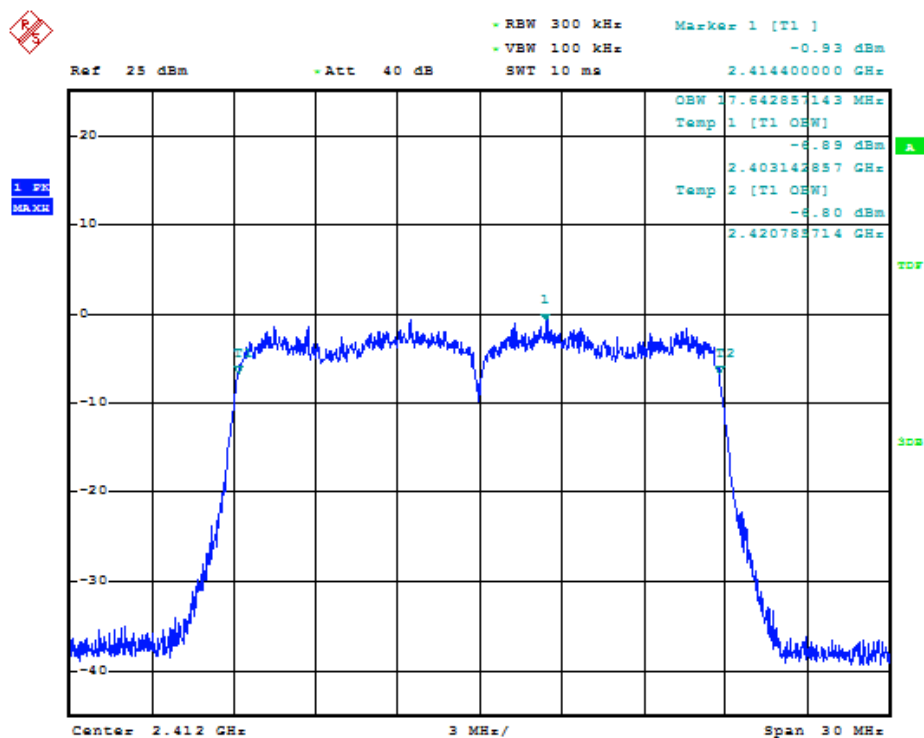


99%-BW-Ch6-gMode-24Mbit

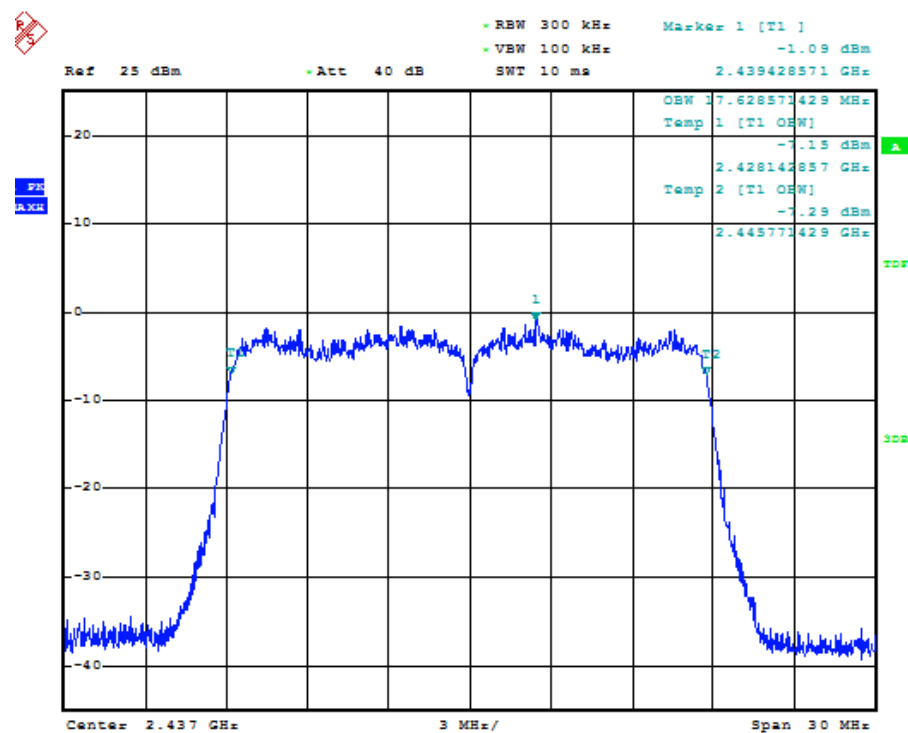


99%-BW-Ch11-gMode-24Mbit

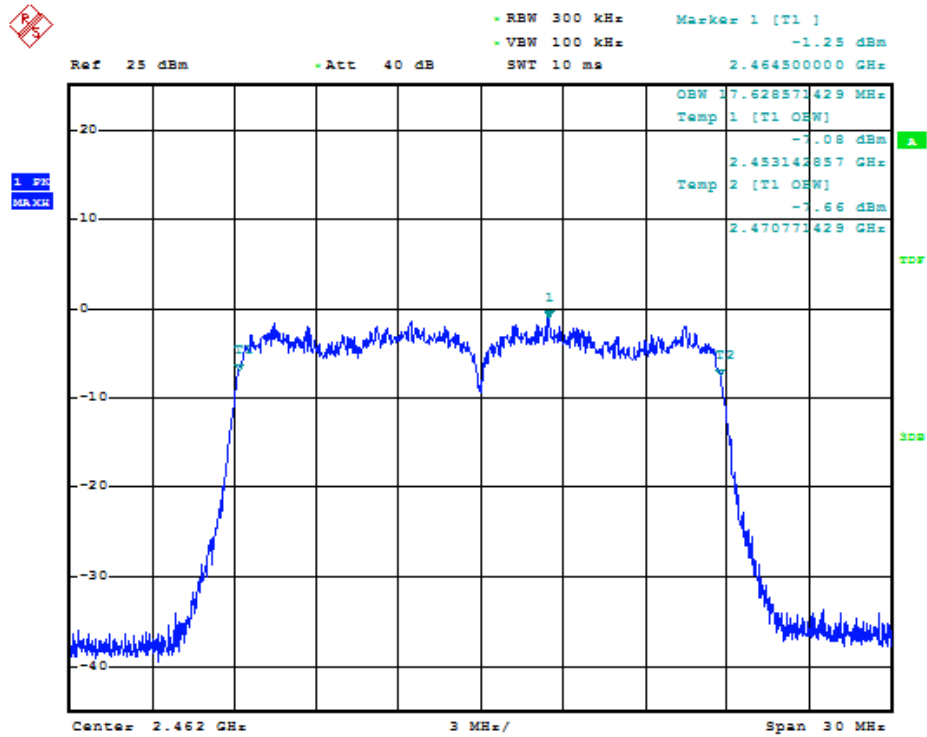
3.5.3. n-mode



99%-BW-Ch1-nMode-MCS0



99%-BW-Ch6-nMode-MCS0

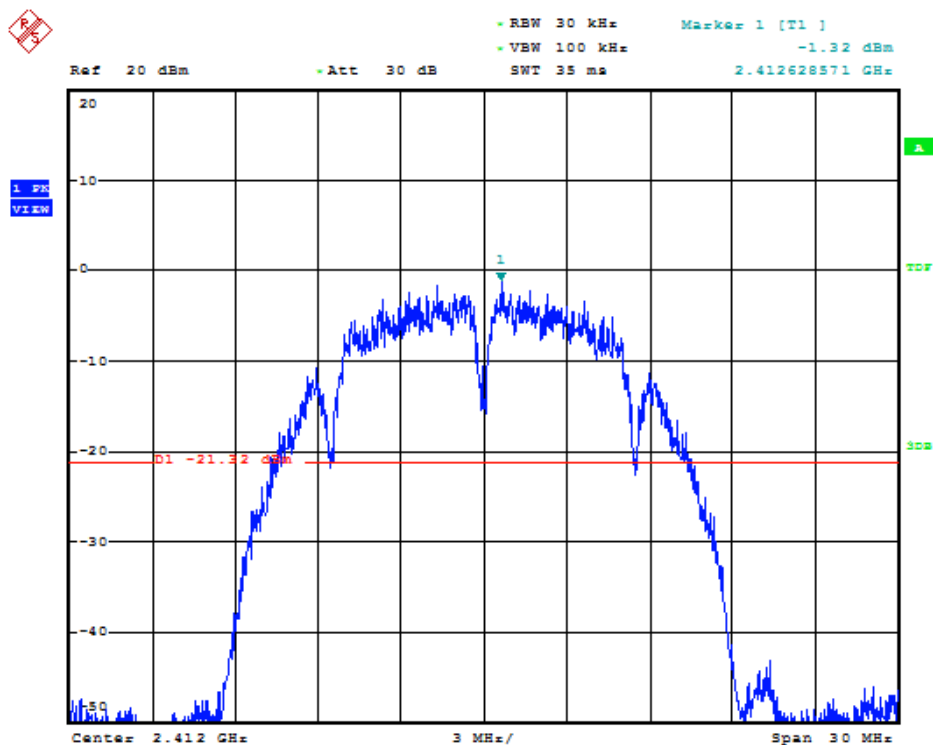


99%-BW-Ch11-nMode-MCS0

3.6. 20 dBc power specification

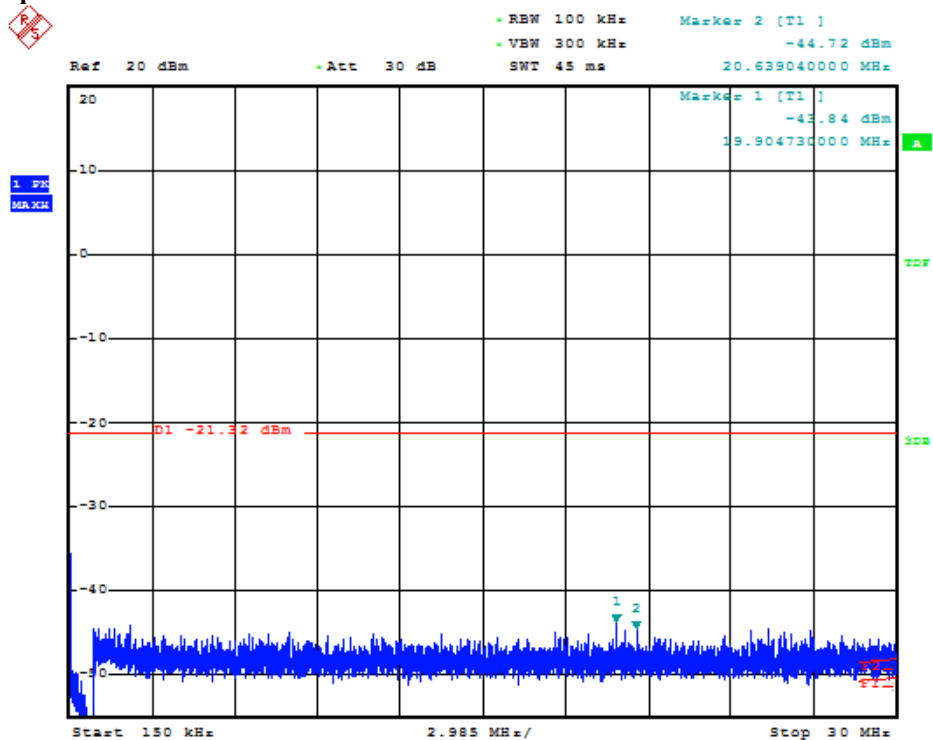
3.6.1. b-mode

b-mode Channel 1 Reference



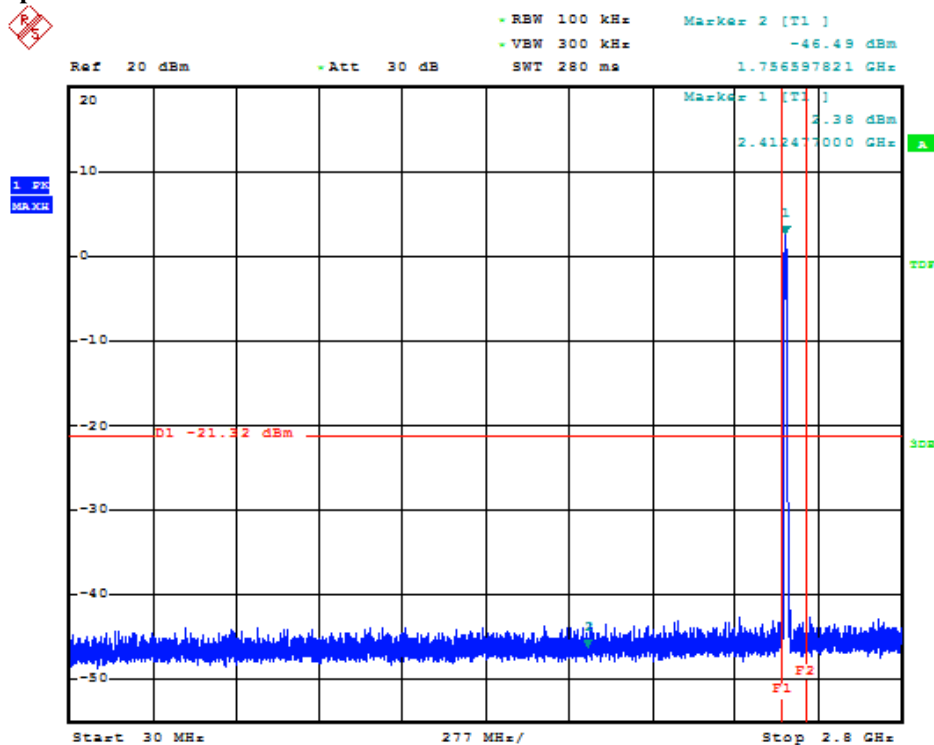
20dBc-Ref-Ch1-bMode-1MBit

b-mode Sweep 1: 150kHz to 30MHz

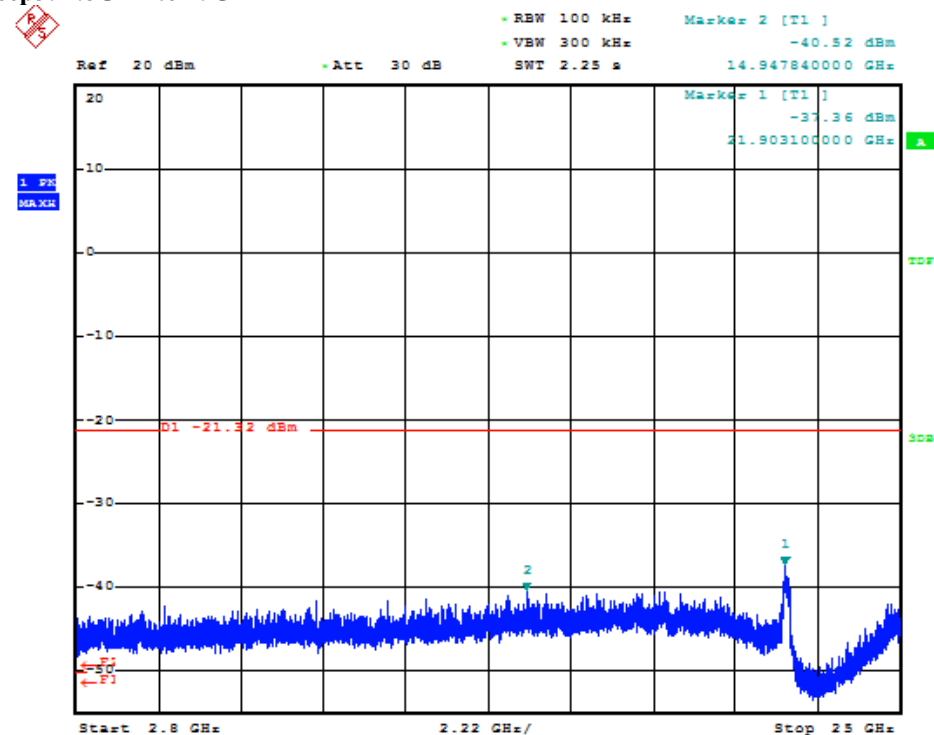


20dBc-0.15-30MHz-Ch1-bMode-1MBit

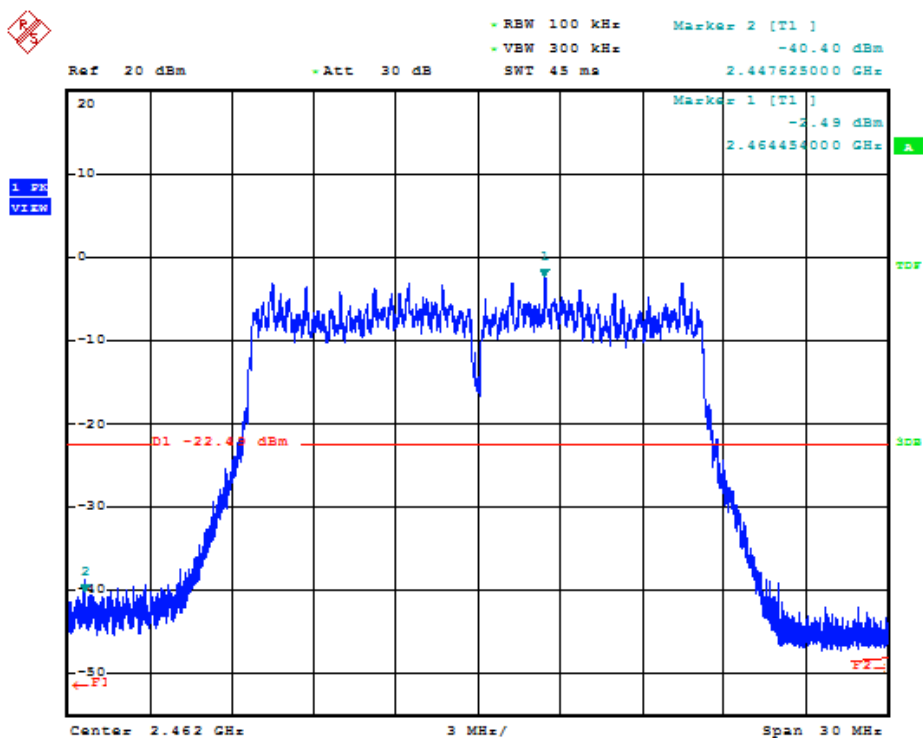
b-mode Sweep 2: 30MHz to 2.8GHz



b-mode Sweep3: 2.8GHz to 25GHz

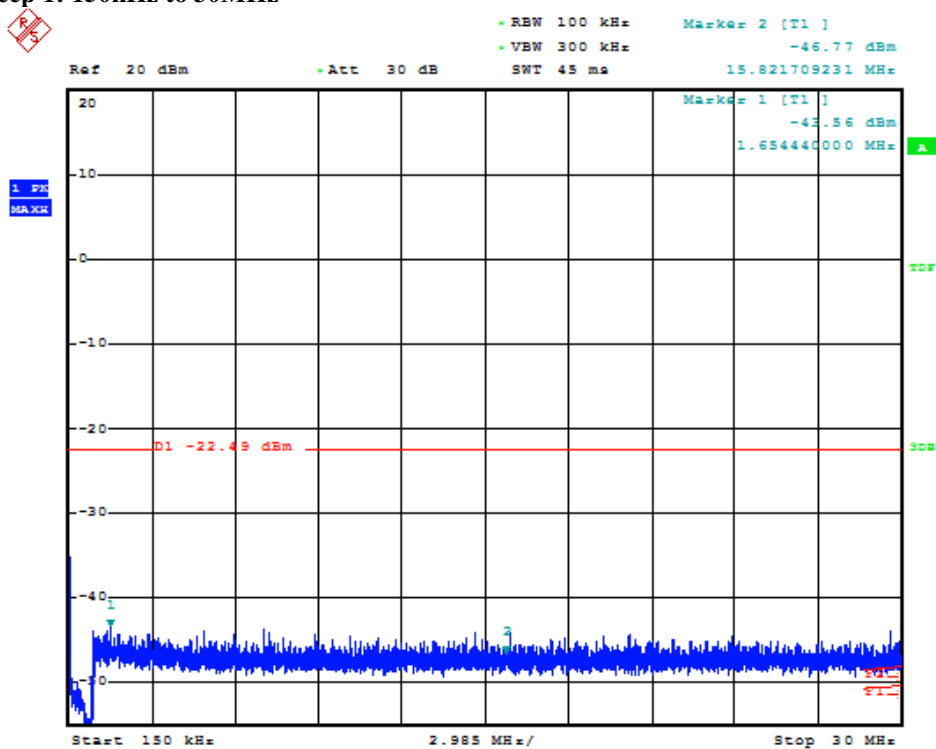


3.6.2. g-mode g-mode Channel 11 Reference



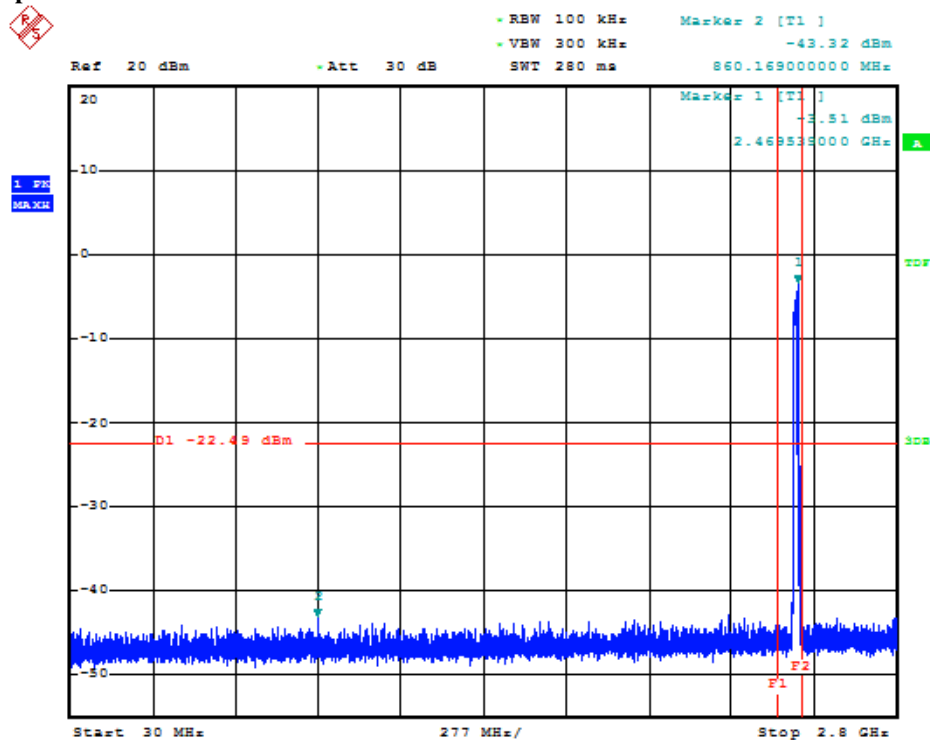
20dBc-Ref-Ch11-gMode-24Mbit

g-mode Sweep 1: 150kHz to 30MHz



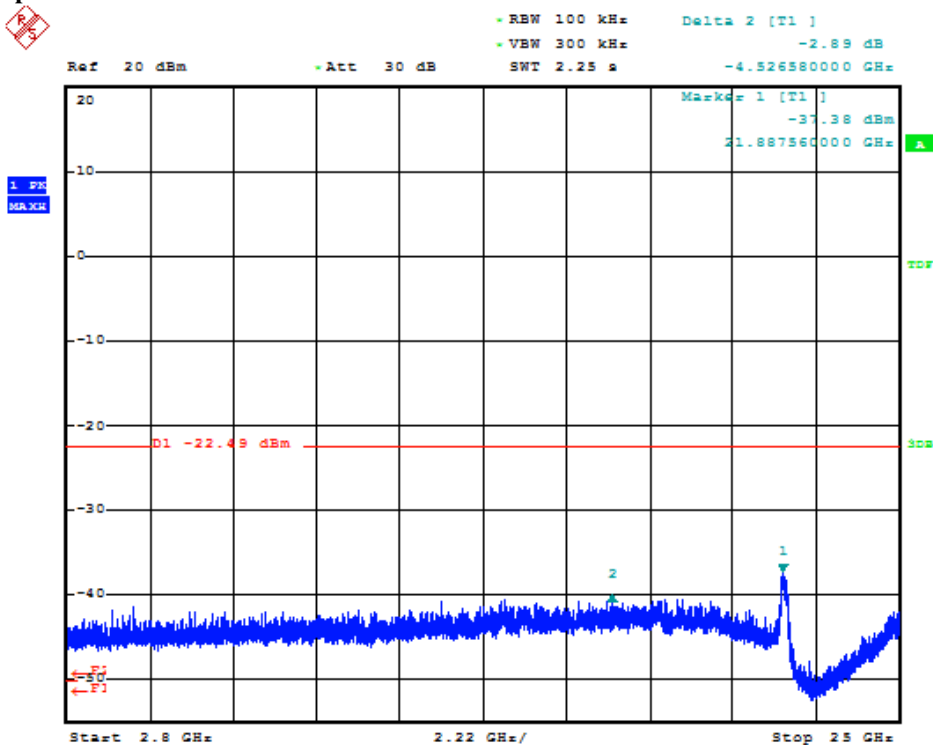
20dBc-0.15-30MHz--Ch11-gMode-24MBit

g-mode Sweep 2: 30MHz to 2.8GHz



20dBc-30MHz-2.8GHz--Ch11-gMode-24Mbit

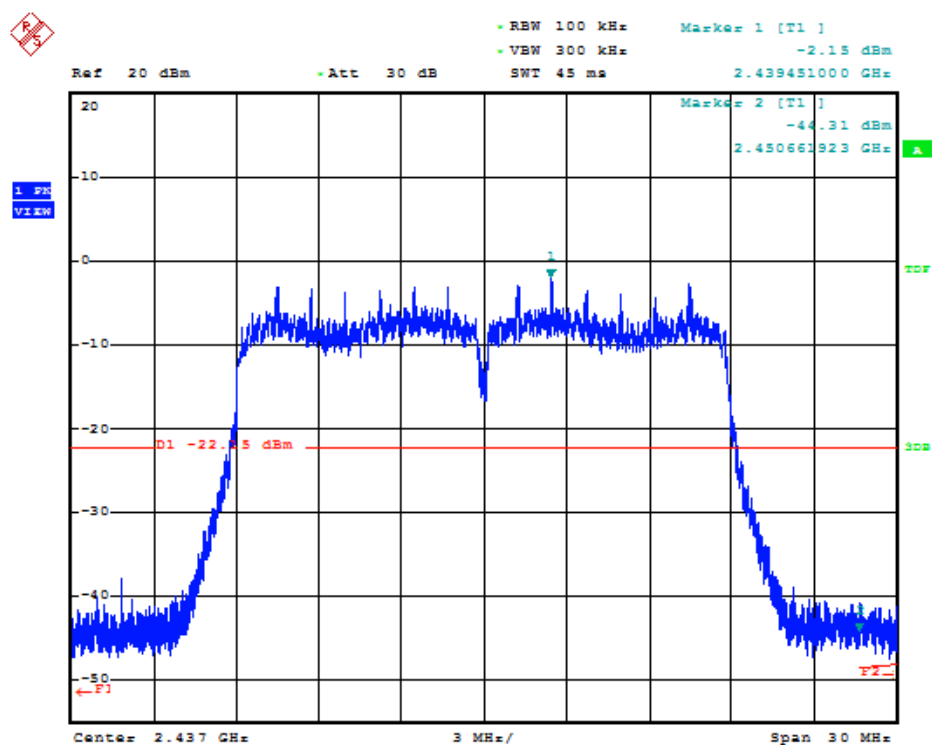
g-mode Sweep3: 2.8GHz to 25GHz



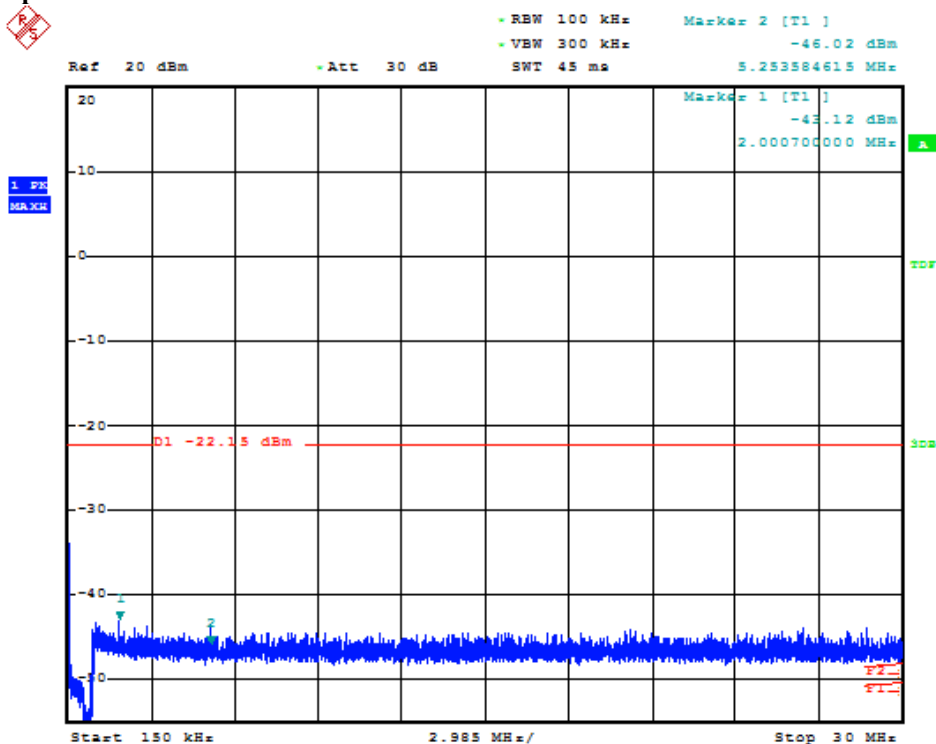
20dBc-2.8GHz-25GHz--Ch11-gMode-24Mbit

3.6.3. n-mode

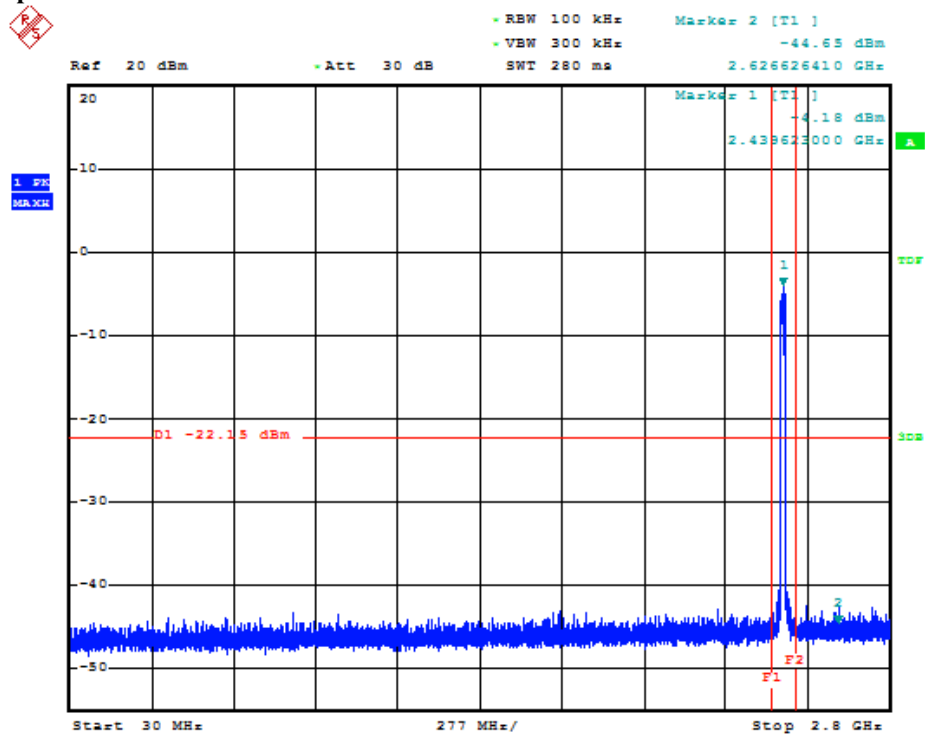
n-mode Channel 6 Reference



n-mode Sweep 1: 150kHz to 30MHz

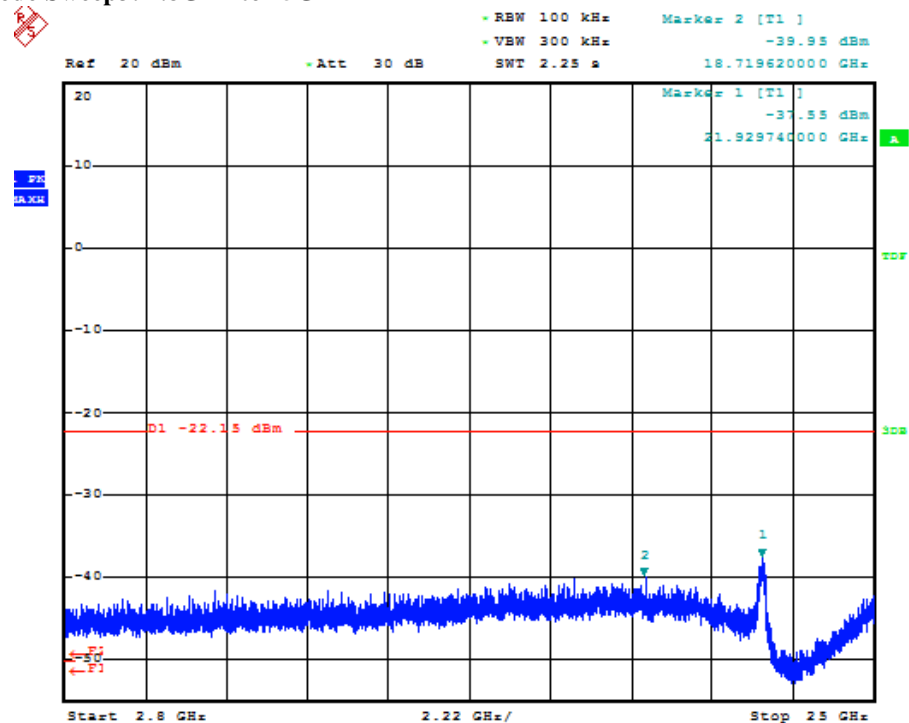


n-mode Sweep 2: 30MHz to 2.8GHz



20dBc-30MHz-2.8GHz-Ch6-nMode-MCS0

3.6.0.1. n-mode Sweep3: 2.8GHz to 25GHz



20dBc-2.8GHz-25GHz-Ch6-nMode-MCS0