

Annex 1: Measurement diagrams to
TEST REPORT
No.: 16-1-0120001T02a-C3

According to:

FCC Regulations
Part 15.205
Part 15.209
Part 15.407

Actia Nordic AB

VCM
FCC: 2AGKKVCM

Laboratory Accreditation and Listings



Deutsche
Akkreditierungsstelle
D-PL-12047-01-01
D-PL-12047-01-03
D-PL-12047-01-04

accredited according to DIN EN ISO/IEC 17025

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1. Conducted measurements

1.1. 99%occupied channel bandwidth

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

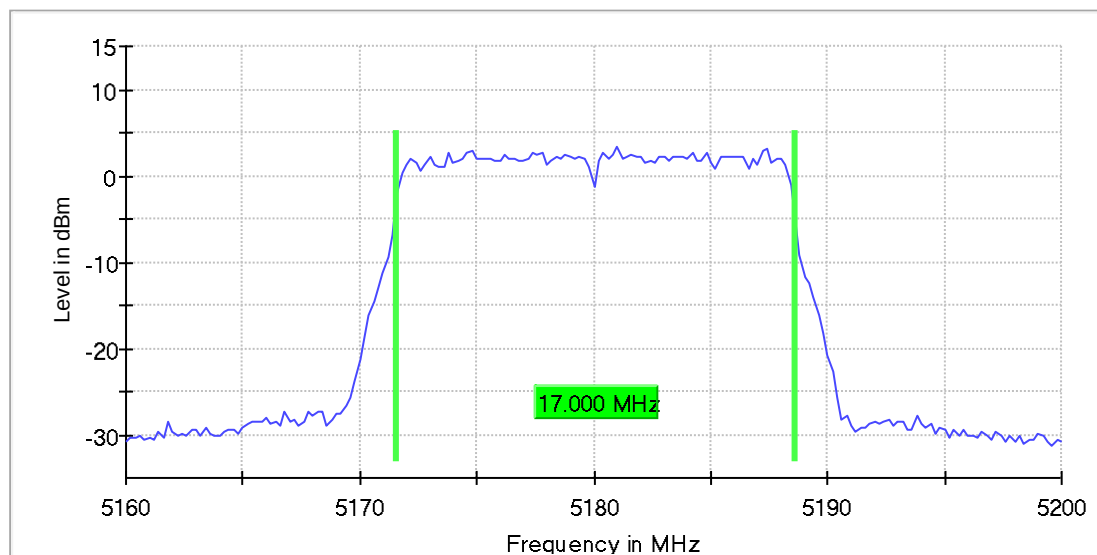
Measured Channel Occupied Bandwidth in MHz.

Channel	36	40	48	52	56	64	100	116	140	149	157	165
a mode	17	16.8	16.8	17	16.8	16.8	17.2	17	16.8	17	16.8	17
n mode	18	18	18	18	18	18	18.2	18.2	18	18.2	18	18.2

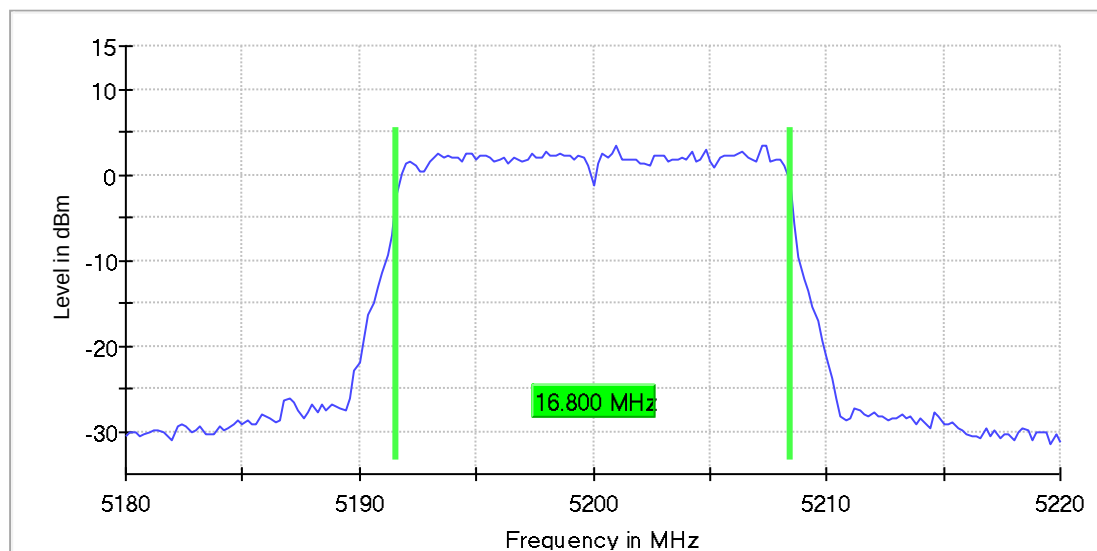
Channel	38	46	54	62	102	110	134	151	159
n40 mode	36.5	36.5	36.5	36.5	36.8	36.5	36.5	36.5	36.8

a Mode

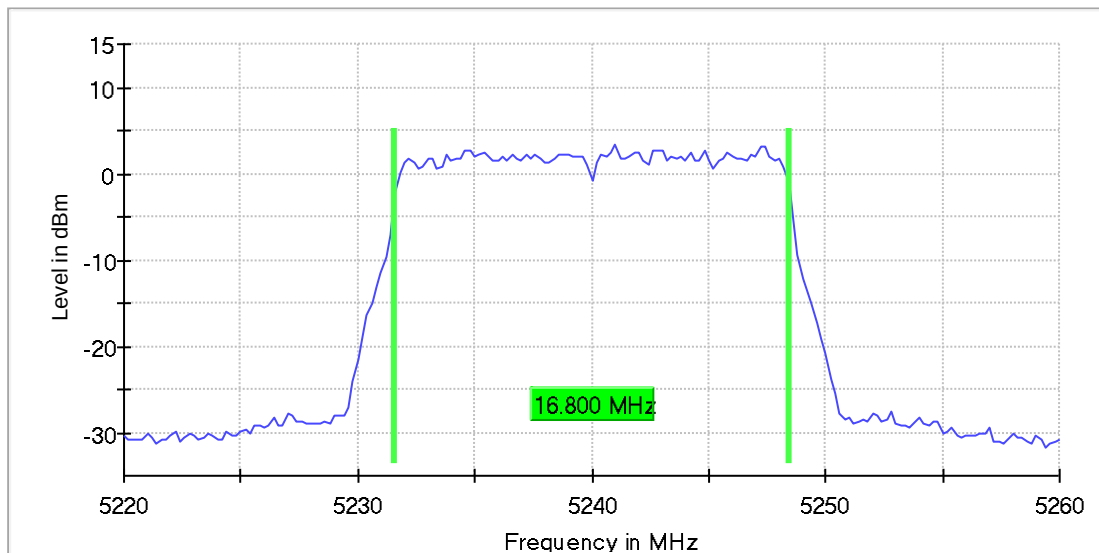
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	36	17.0	5171.600000	5188.600000



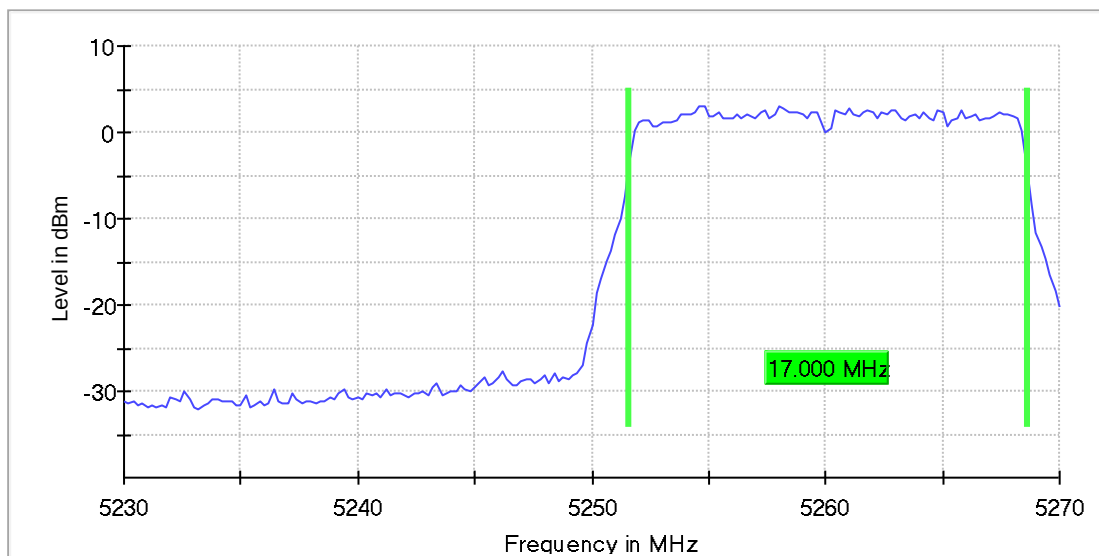
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5200.000000	40	16.8	5191.600000	5208.400000



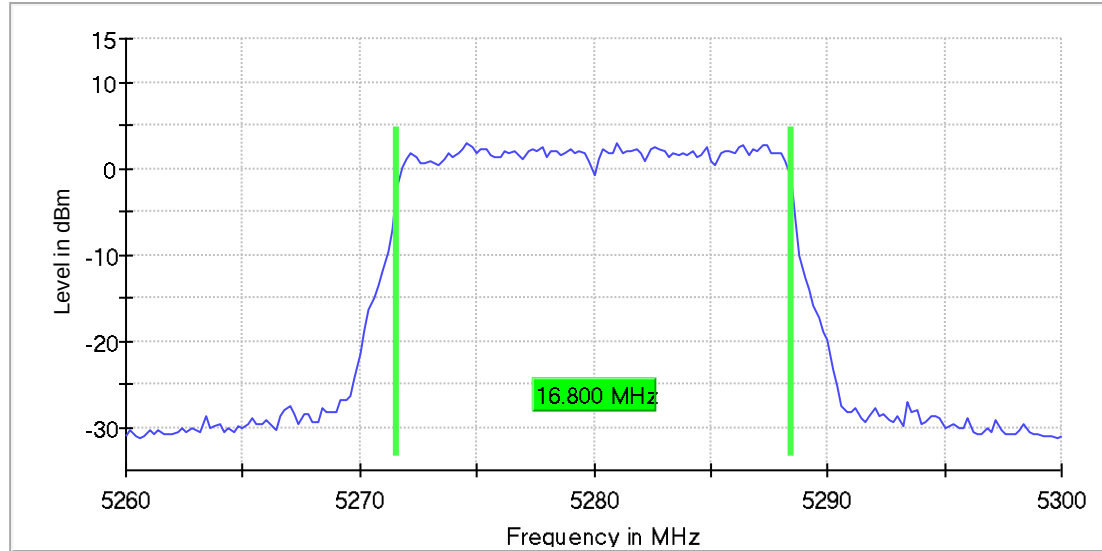
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	48	16.8	5231.600000	5248.400000



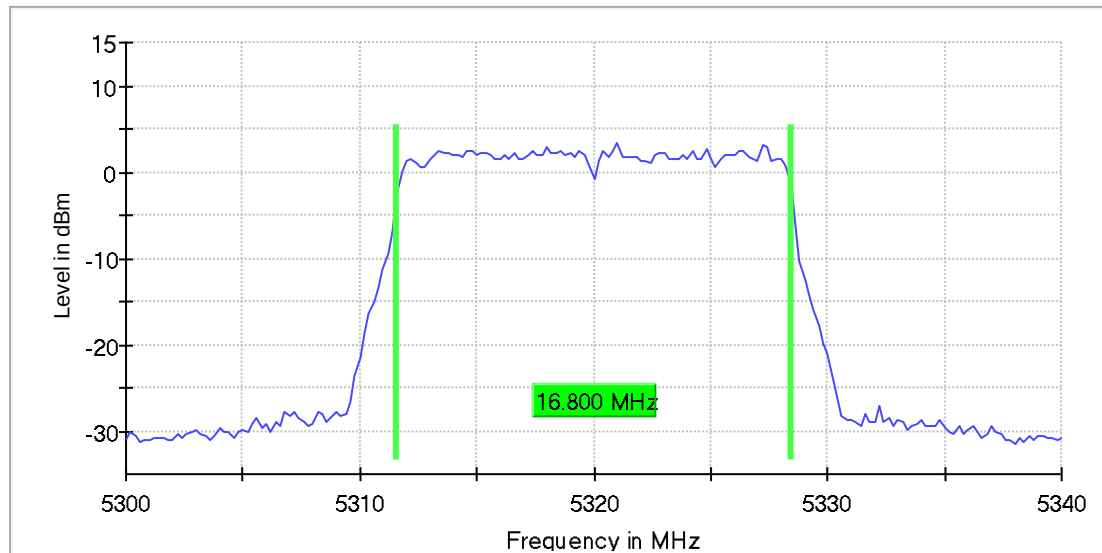
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5260.000000	52	17.0	5251.600000	5268.600000



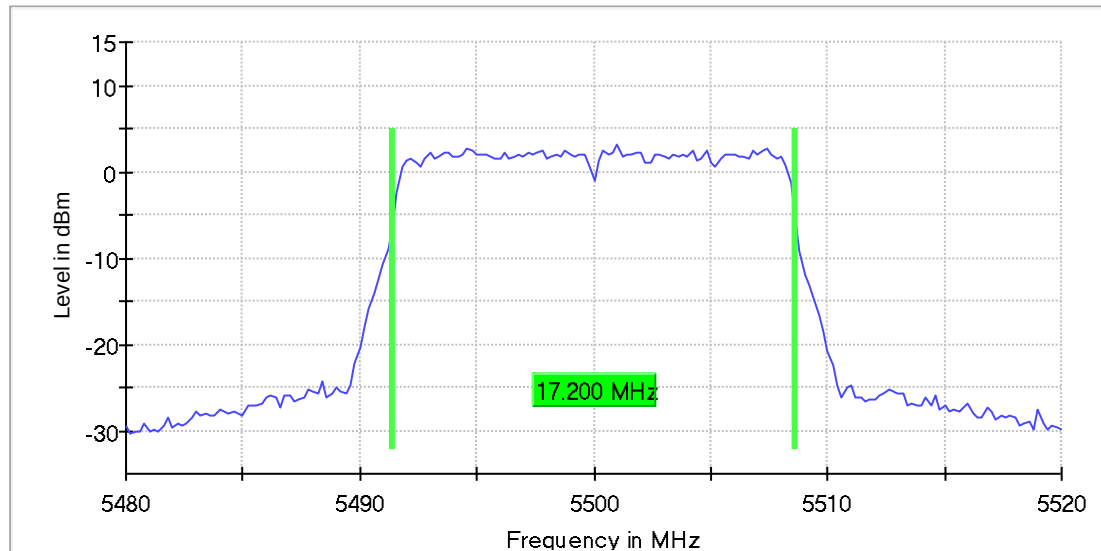
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5280.000000	56	16.8	5271.600000	5288.400000



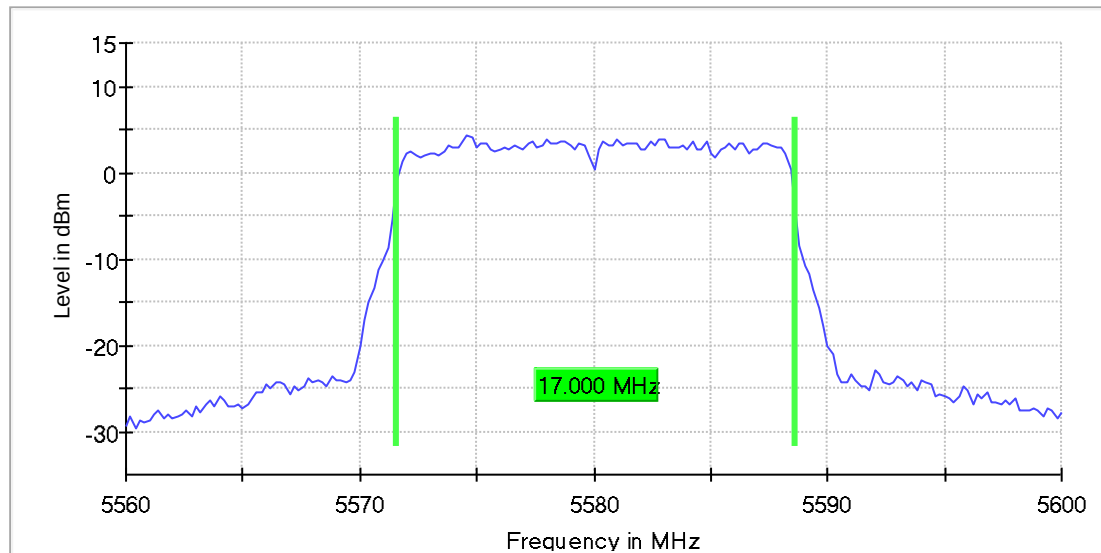
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5320.000000	64	16.8	5311.600000	5328.400000



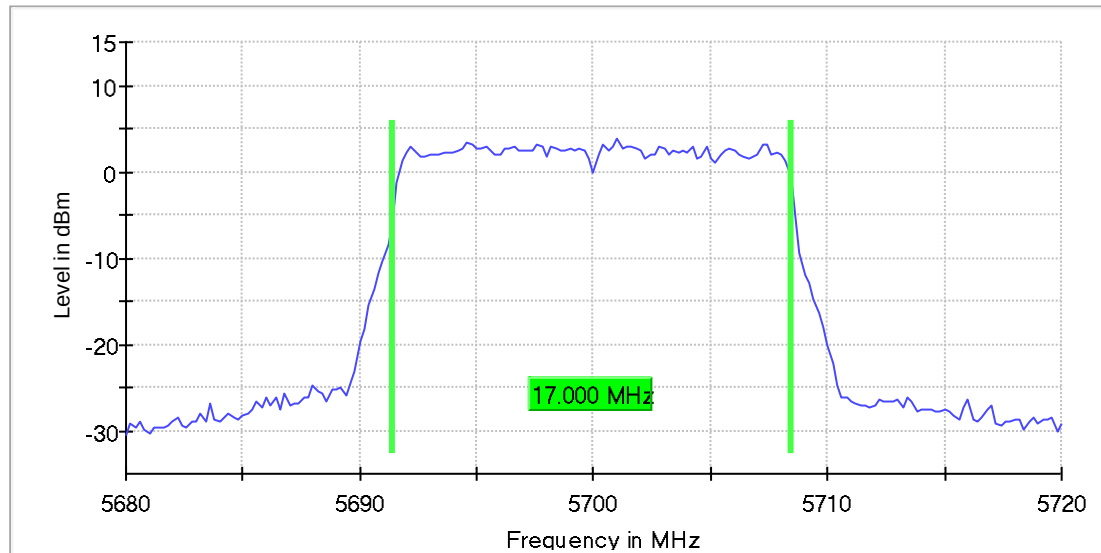
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5500.000000	100	17.2	5491.400000	5508.600000



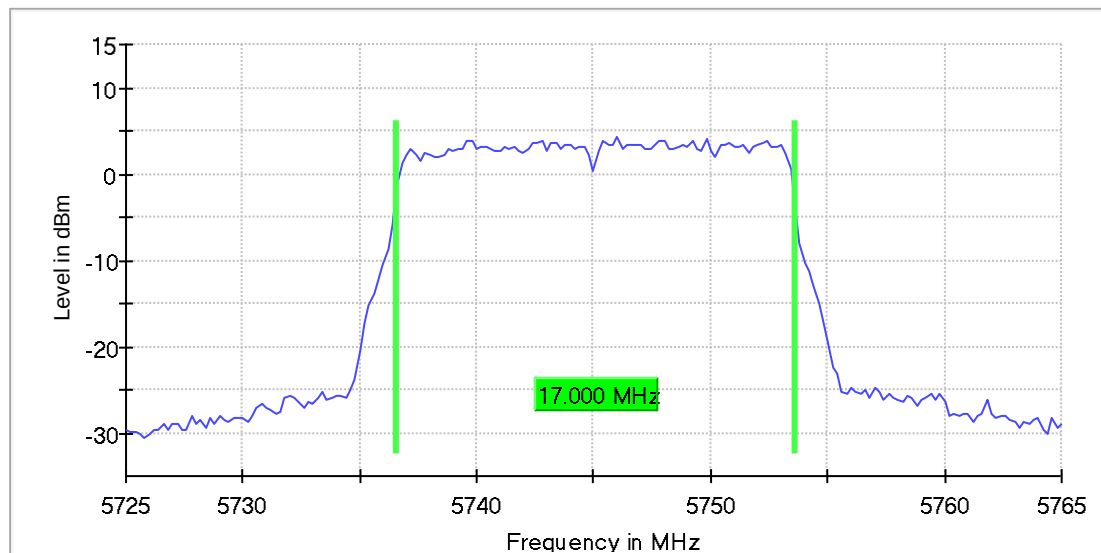
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5580.000000	116	17	5571.600000	5588.600000



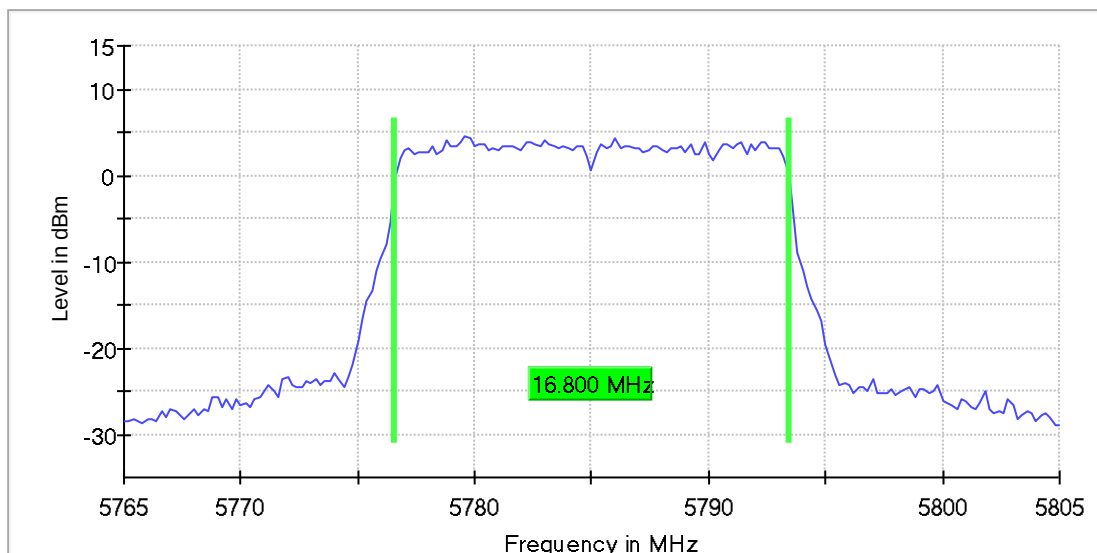
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5700.000000	140	17.0	5691.400000	5708.400000



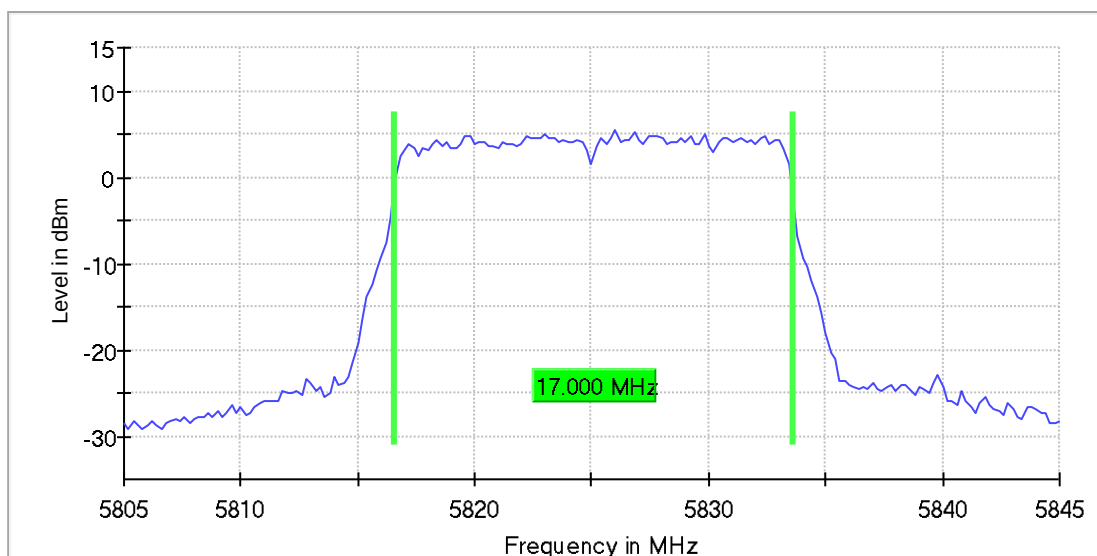
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5745.000000	149	17.0	5736.600000	5753.600000



DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5785.000000	157	16.8	5776.600000	5793.400000

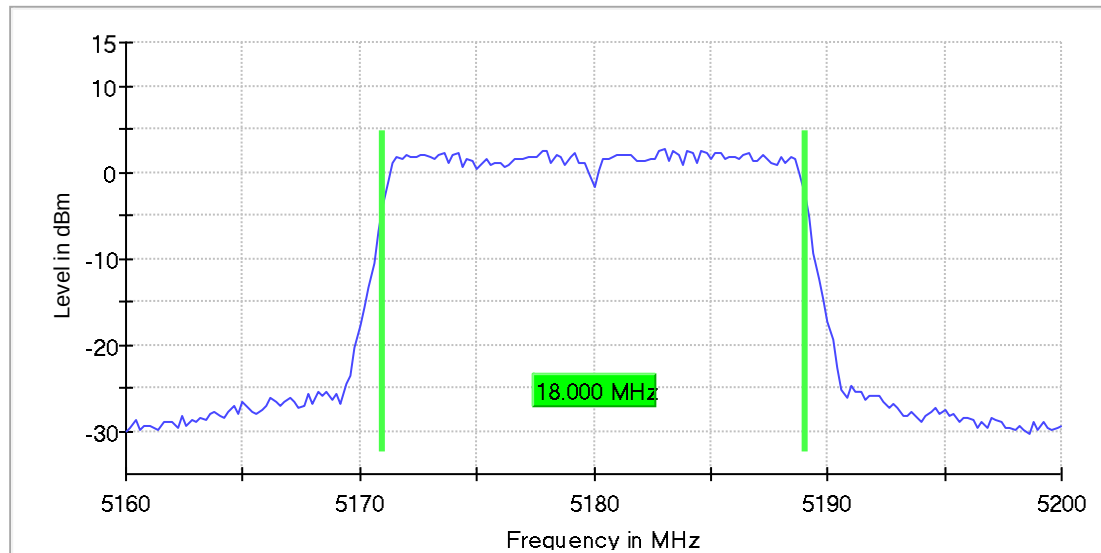


DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5825.000000	165	17.0	5816.600000	5833.600000

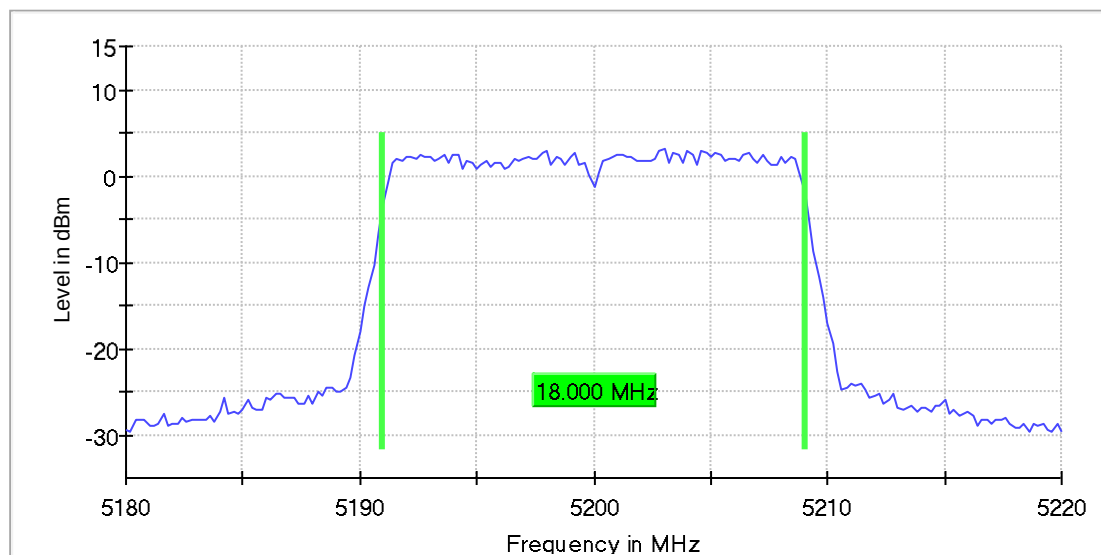


n mode

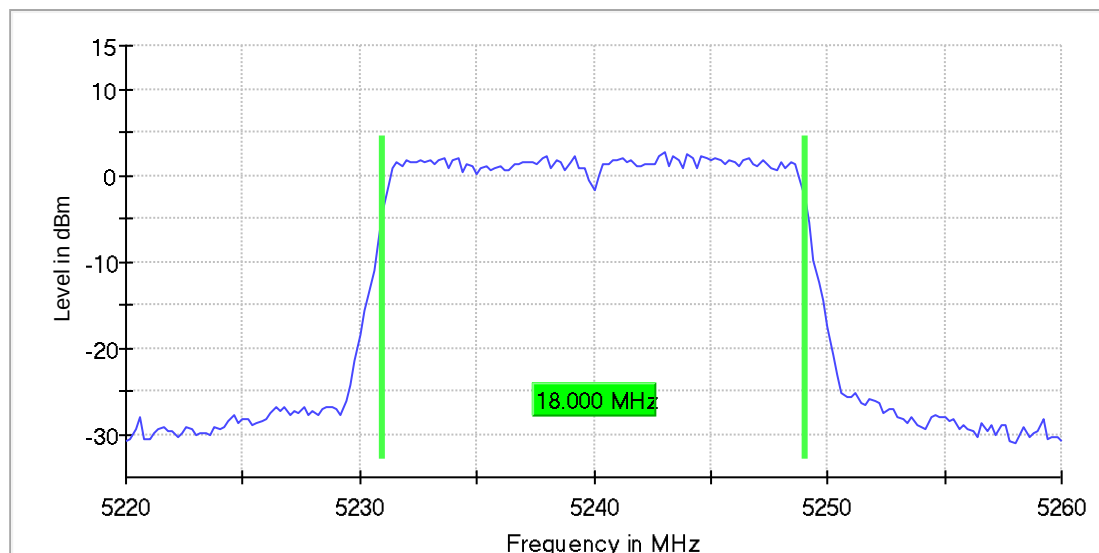
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	36	18.0	5171.000000	5189.000000



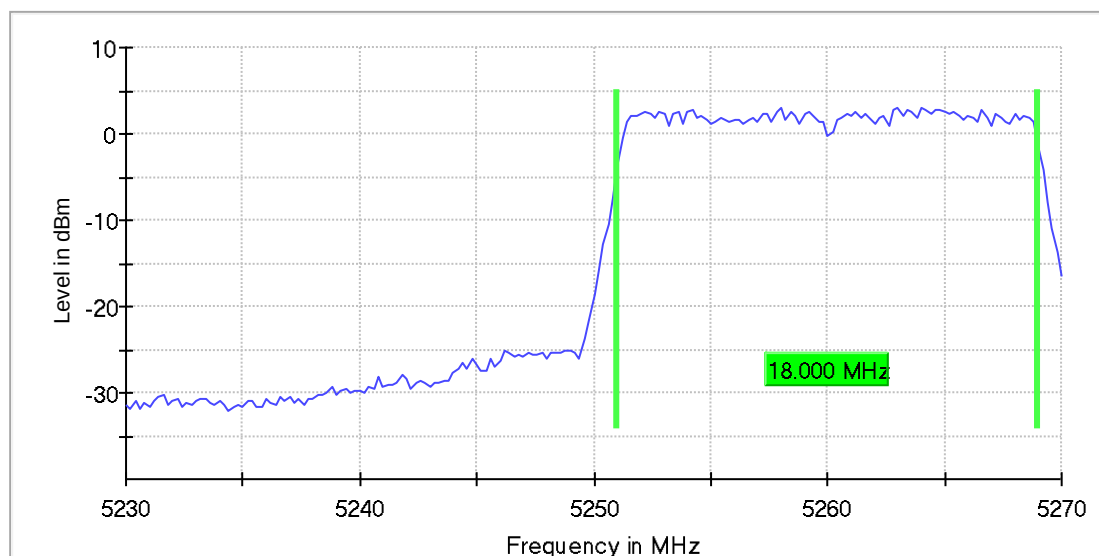
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5200.000000	40	18.0	5191.000000	5209.000000



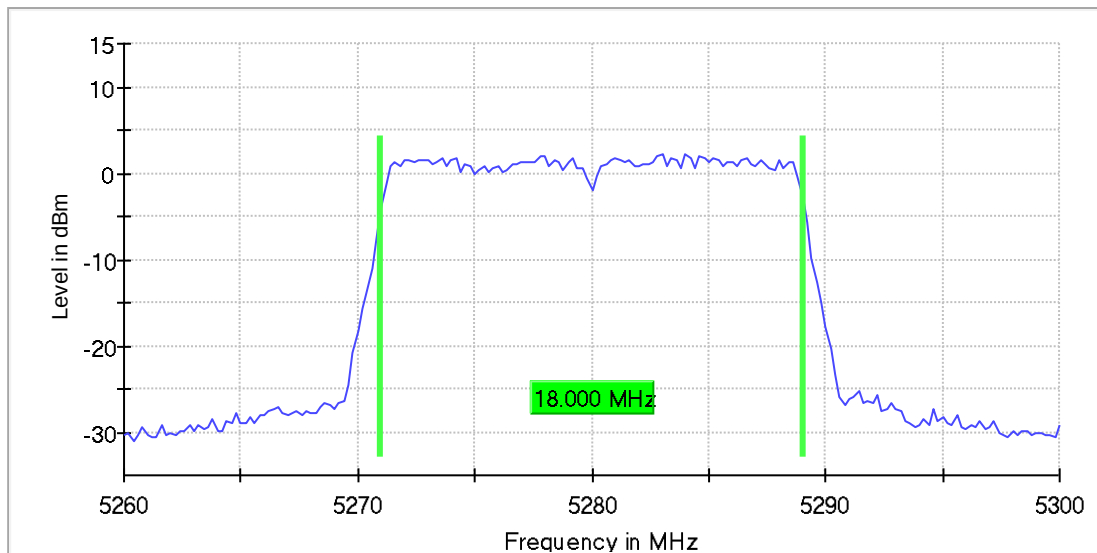
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	48	18.0	5231.000000	5249.000000



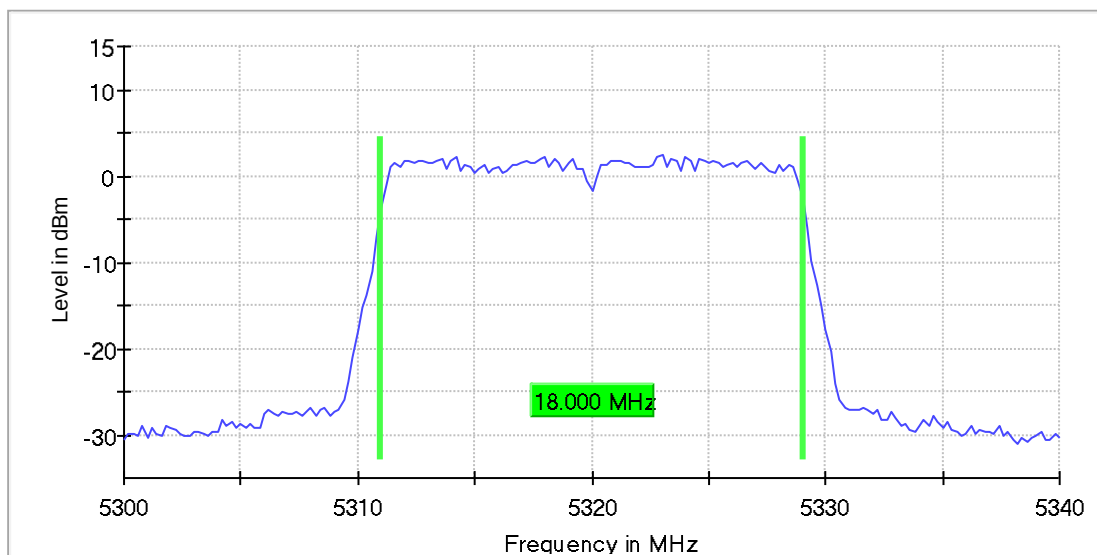
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5260.000000	52	18.0	5251.000000	5269.000000



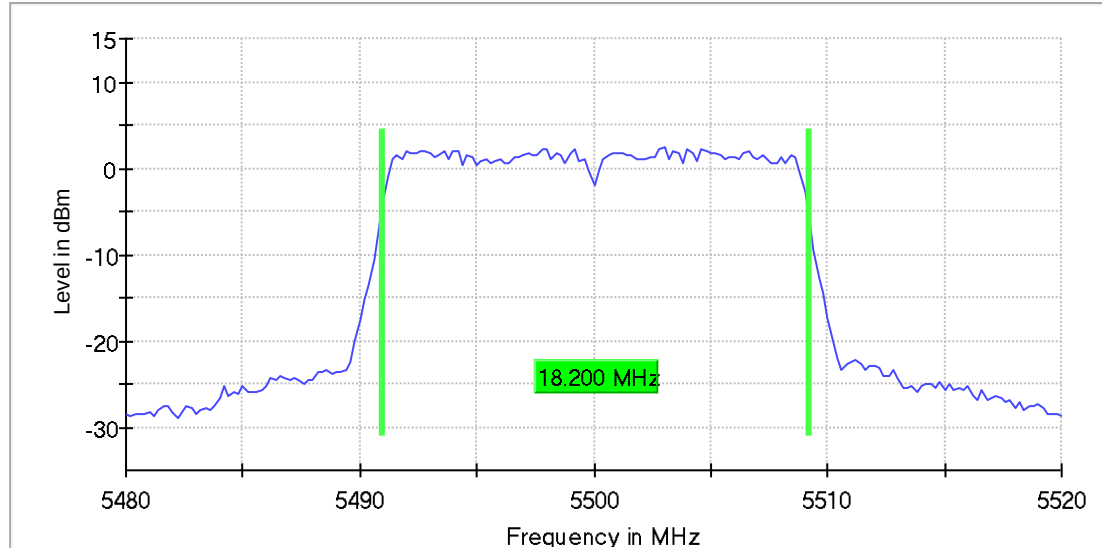
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5280.000000	56	18.0	5271.000000	5289.000000



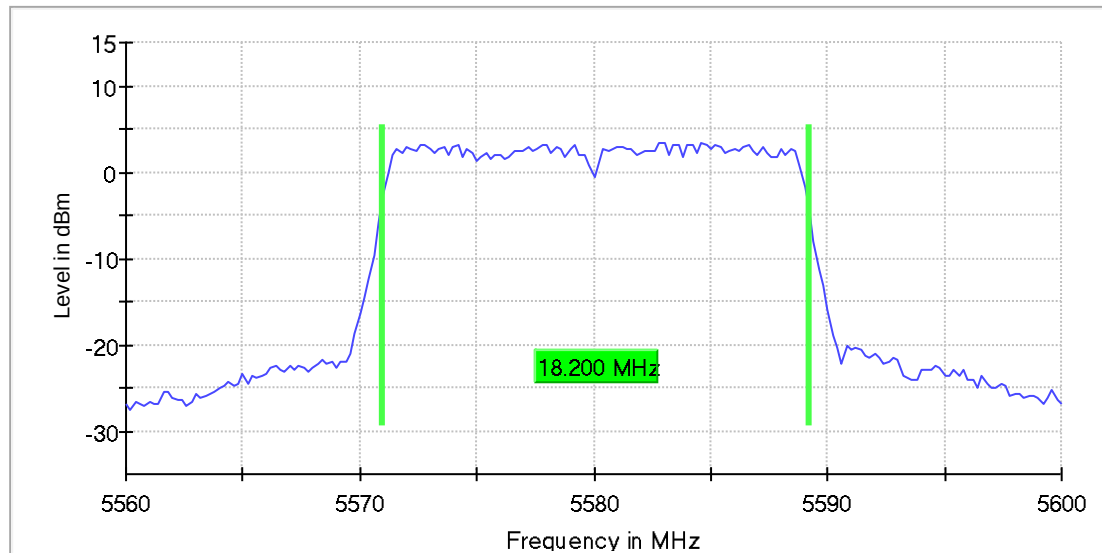
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5320.000000	64	18.0	5311.000000	5329.000000



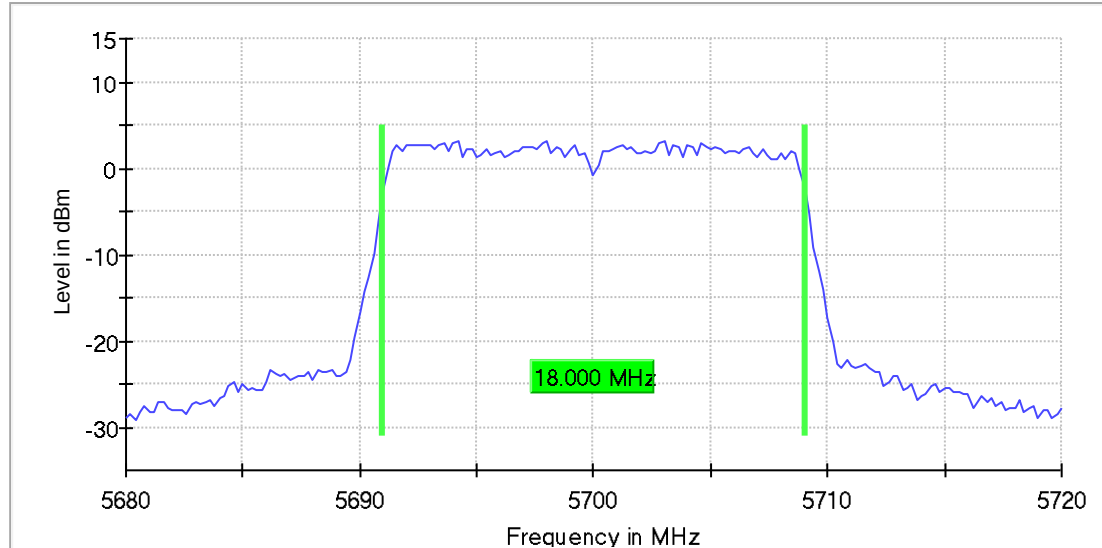
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5500.000000	100	18.2	5491.000000	5509.200000



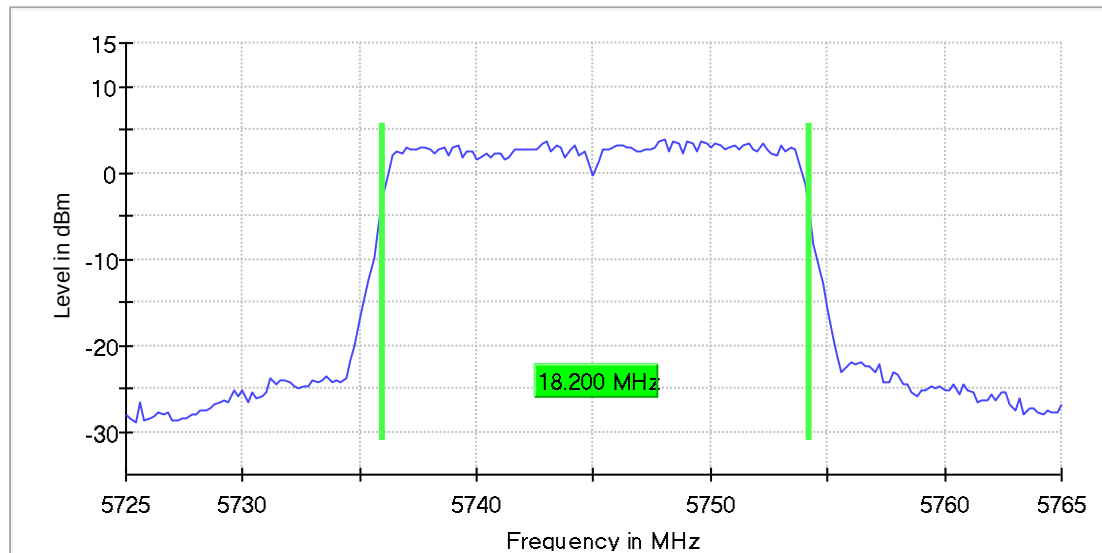
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5580.000000	116	18.2	5571.000000	5589.200000



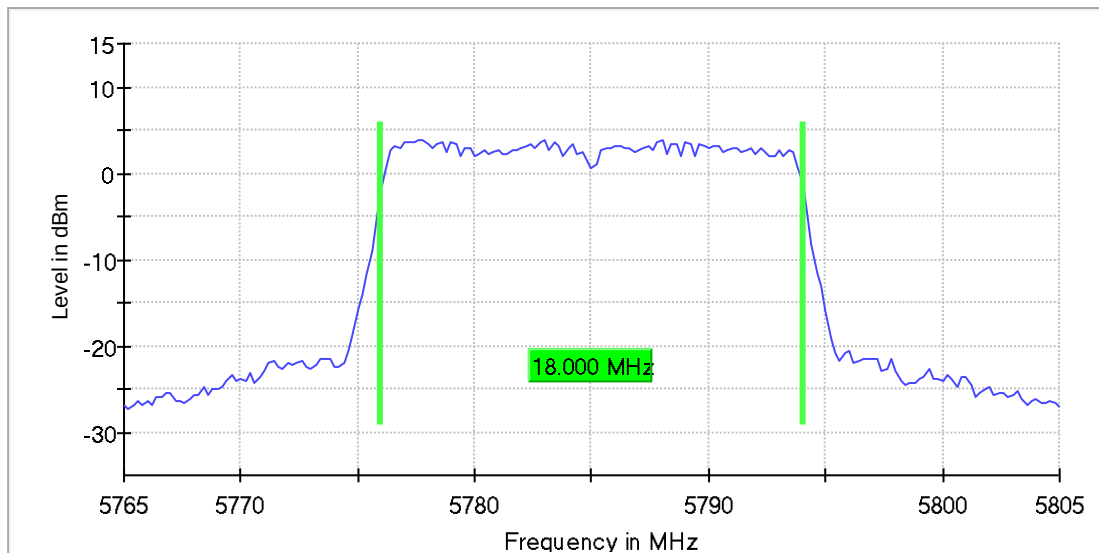
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5700.000000	140	18.0	5691.000000	5709.000000



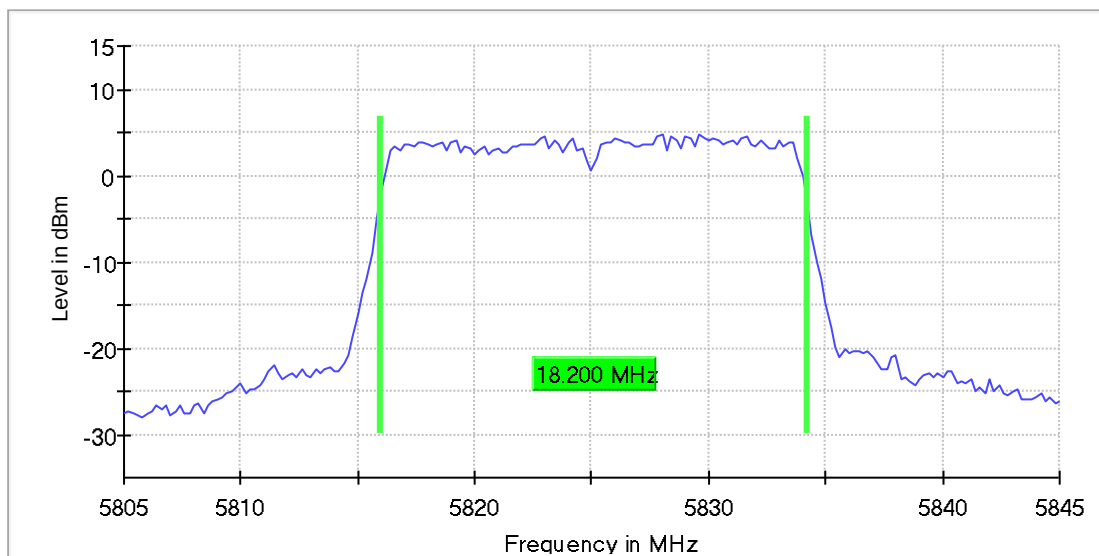
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5745.000000	149	18.2	5736.000000	5754.200000



DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5785.000000	157	18.0	5776.000000	5794.000000

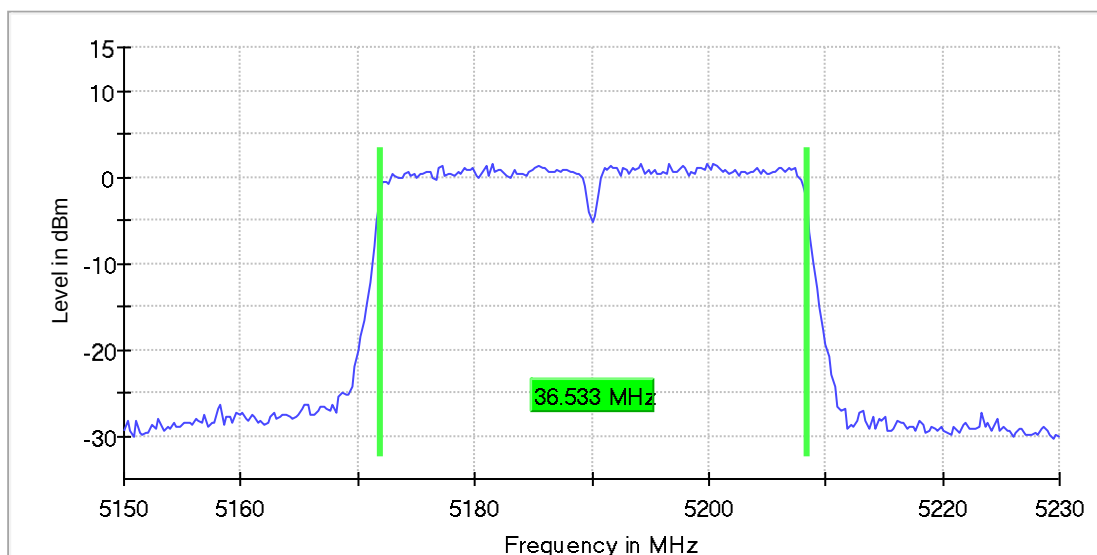


DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5825.000000	165	18.2	5816.000000	5834.200000

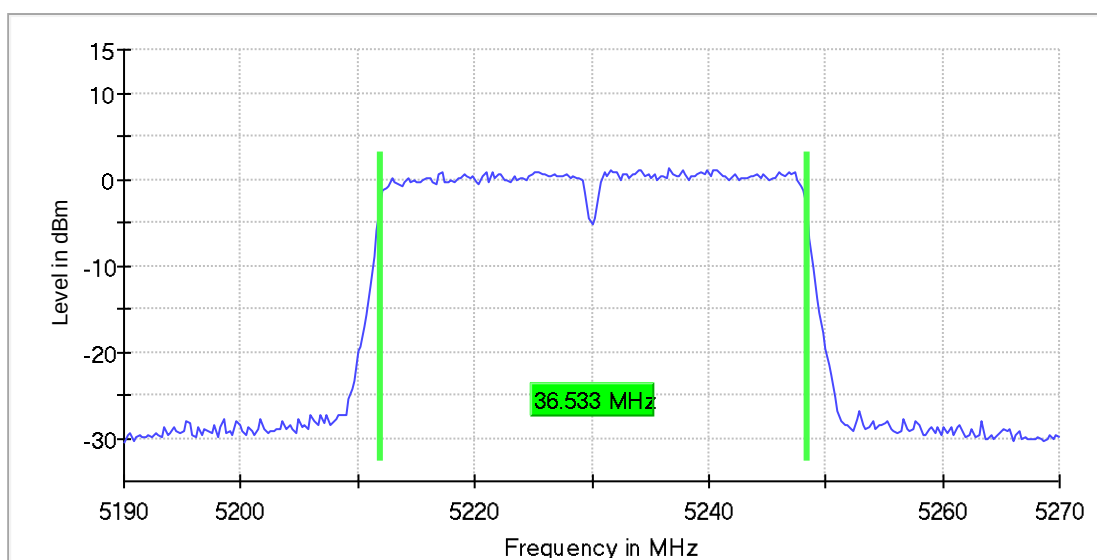


n40 Mode

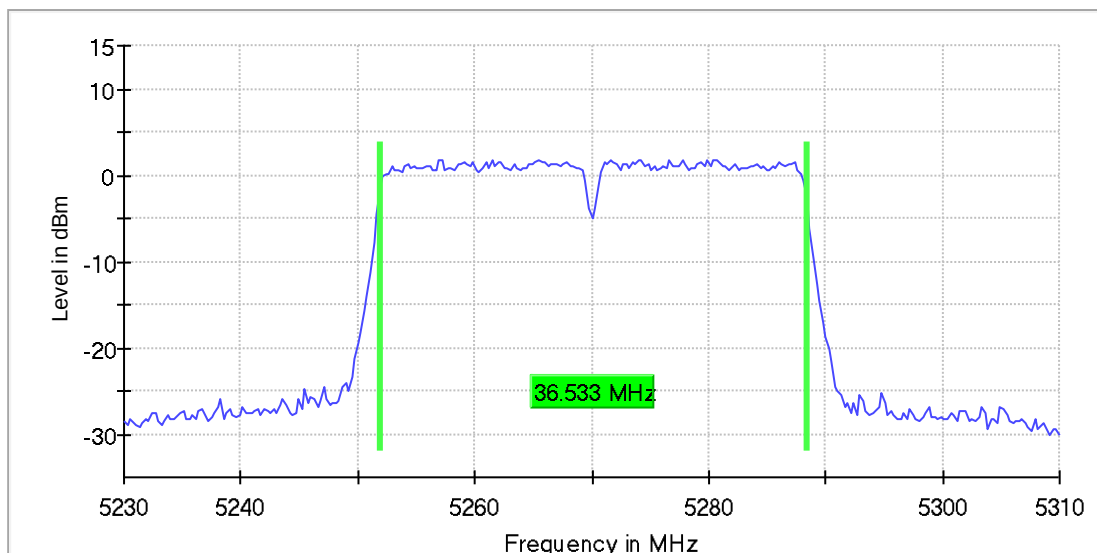
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5190.000000	38	36.53	5171.866667	5208.400000



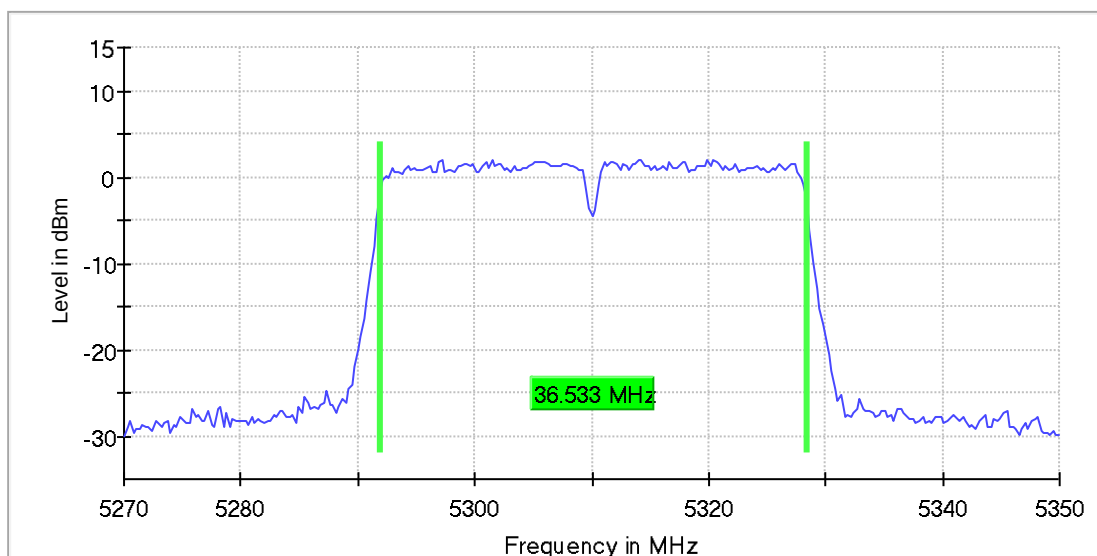
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5230.000000	46	36.53	5211.866667	5248.400000



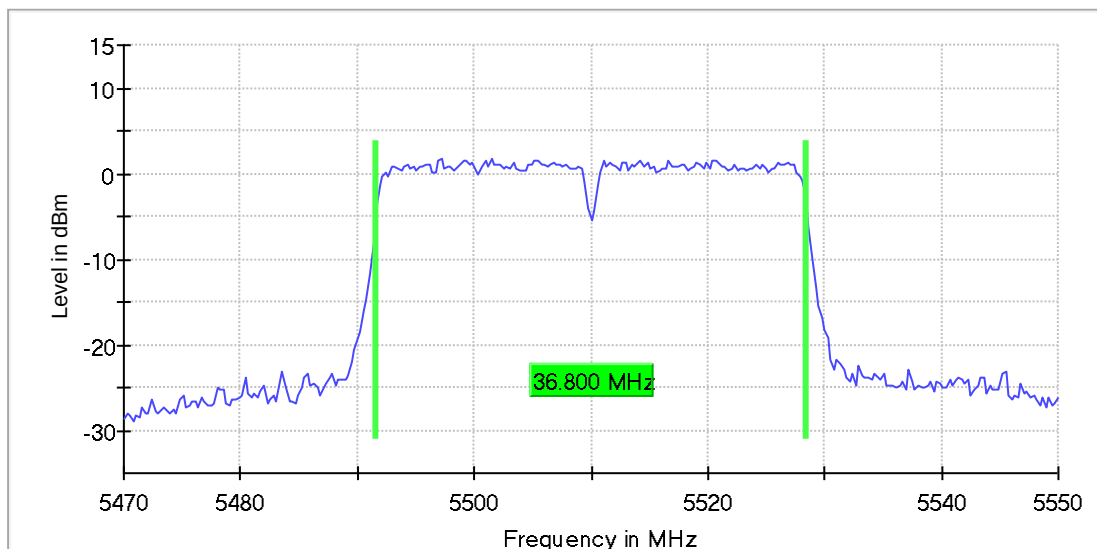
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5270.000000	54	36.53	5251.866667	5288.400000



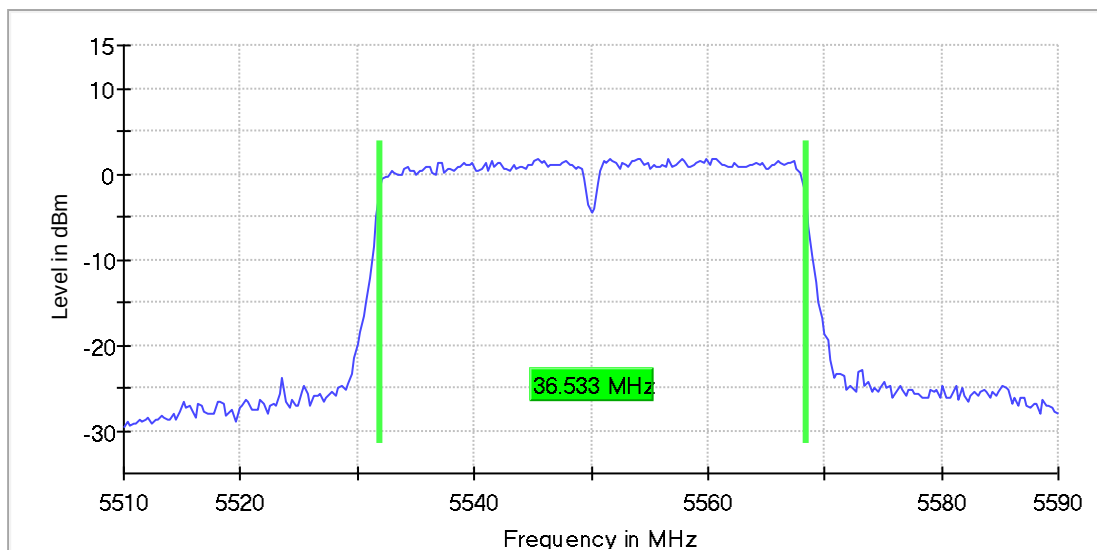
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5310.000000	62	36.53	5291.866667	5328.400000



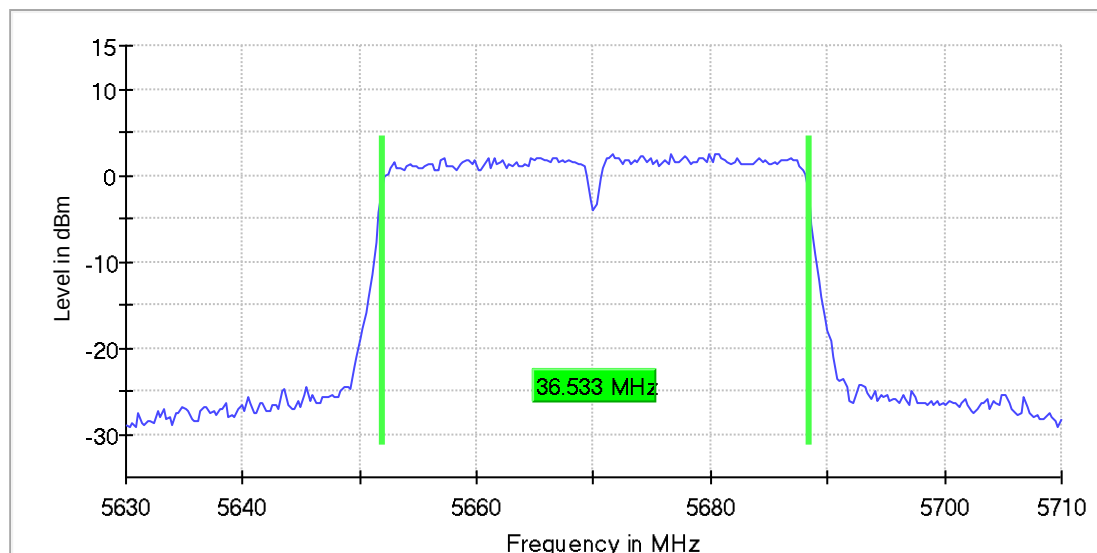
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5510.000000	102	36.80	5491.600000	5528.400000



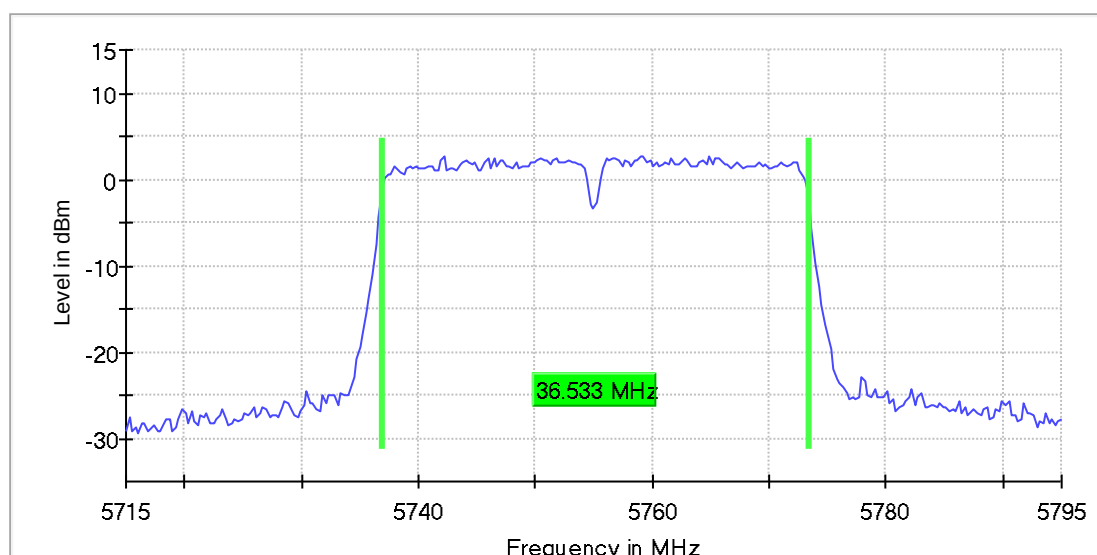
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5550.000000	110	36.53	5531.866667	5568.400000



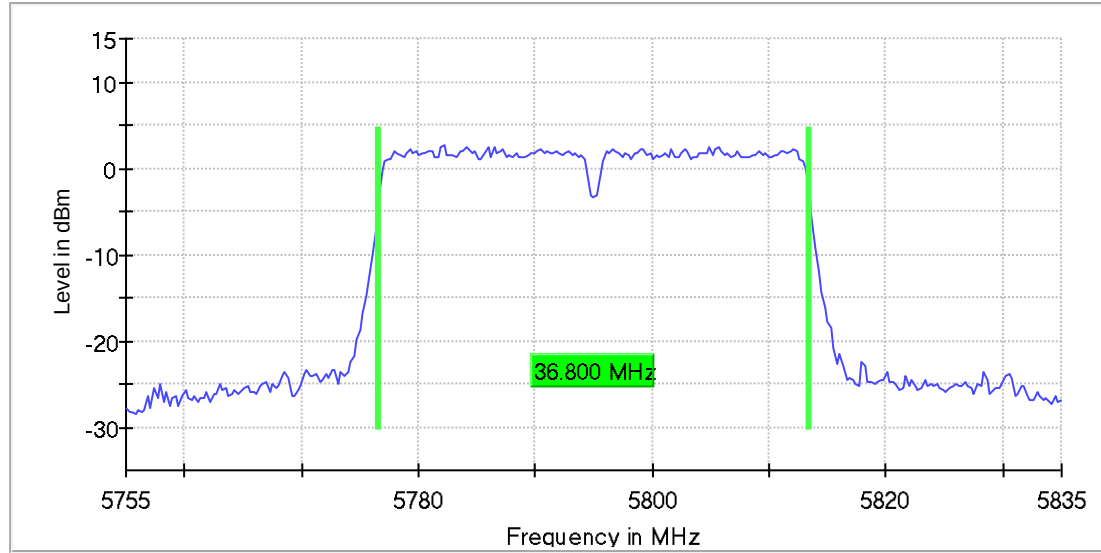
DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5670.000000	134	36.53	5651.866667	5688.400000



DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5755.000000	151	36.53	5736.866667	5773.400000



DUT Frequency (MHz)	Channel	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5795.000000	159	36.8	5776.600000	5813.400000



2. Radiated field strength measurements

2.1. Magnetic field strength measurements in the range 9 kHz to 30 MHz

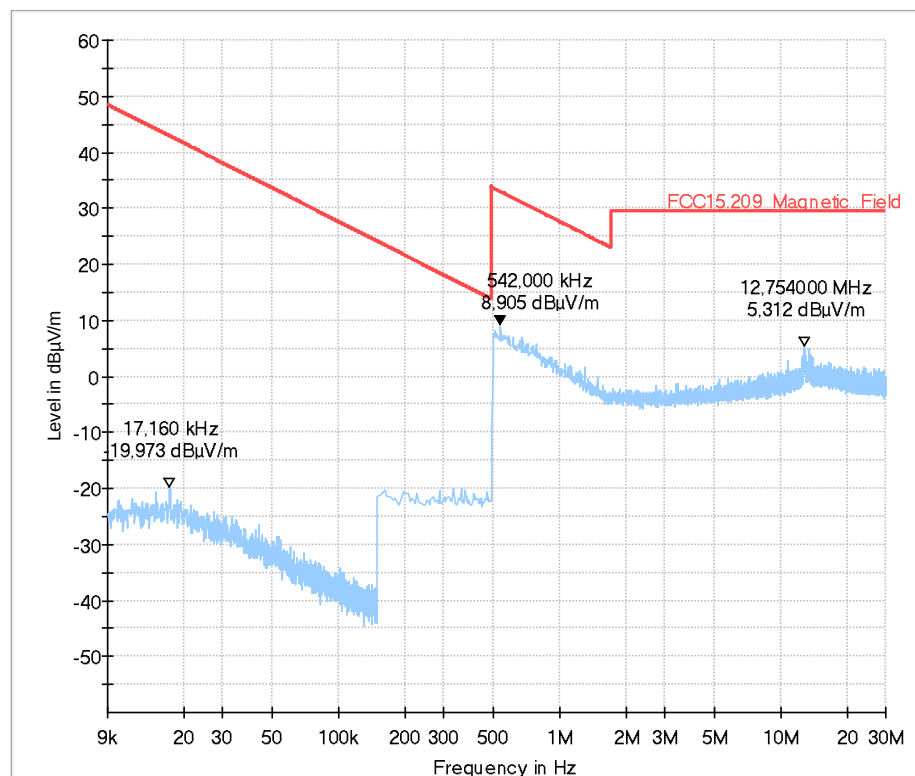
2.01a_WLAN_a mode_54Mbit_Ch64__laying

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 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;
Operator:	HEL
Operating conditions:	a 9 Mbit Ch 64

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC



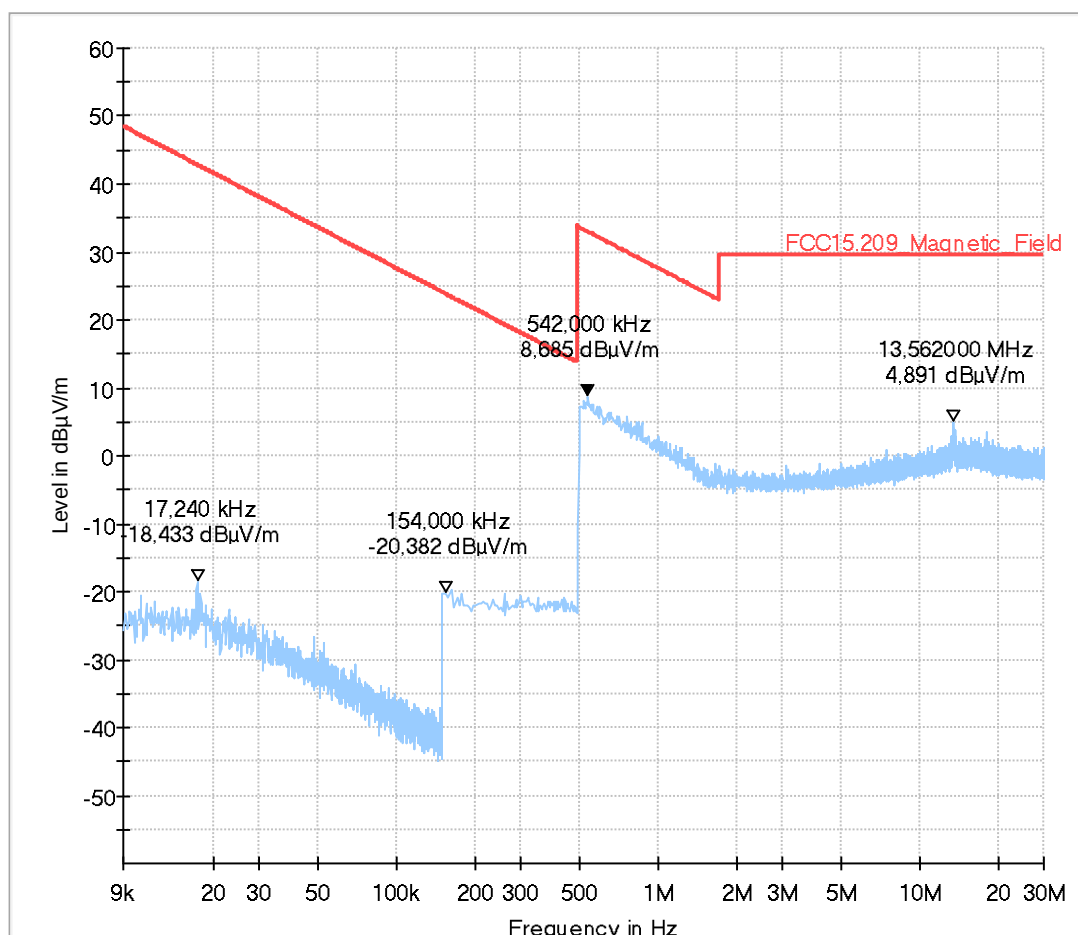
2.01b_WLAN_a mode_54Mbit_Ch64__standing

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 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;
Operator:	Sra
Operating conditions:	a 9 Mbit Ch 64

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC



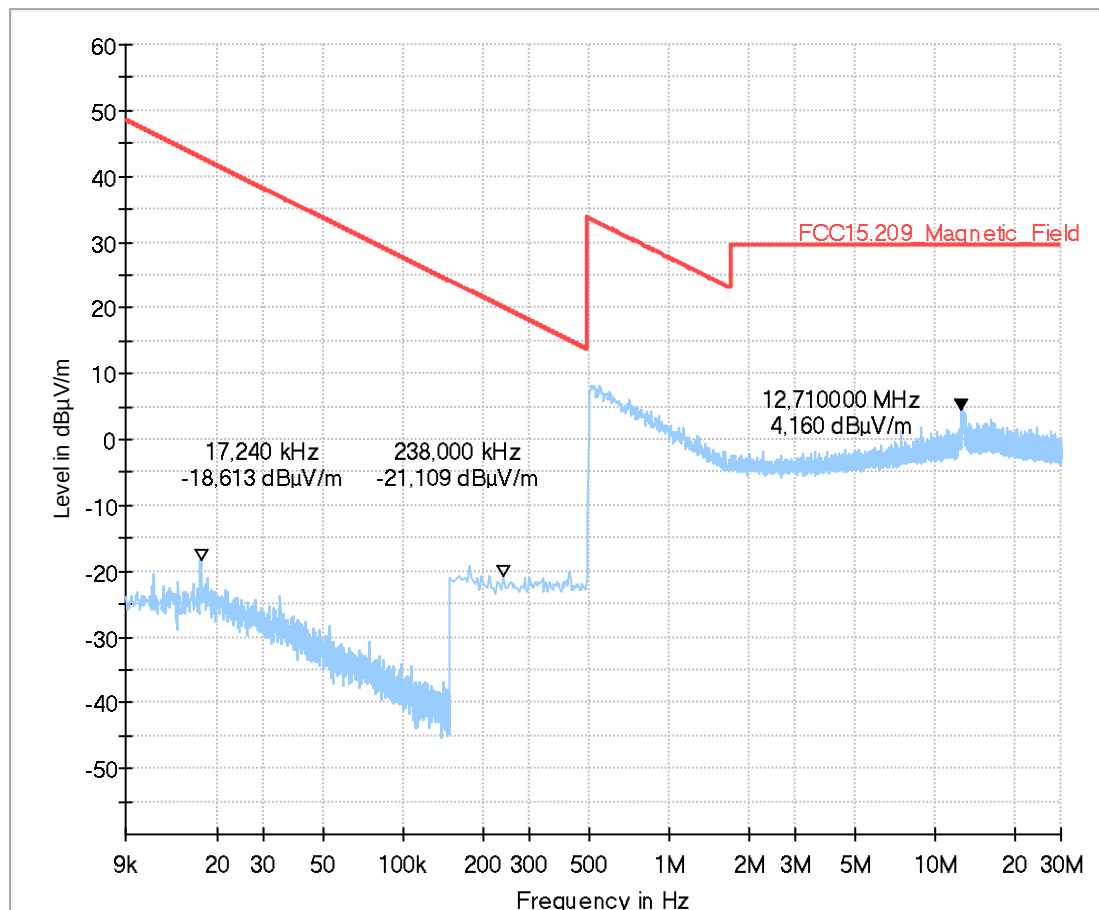
2.02a_WLAN_n mode_MCS5_Ch140__laying

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 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;
Operator:	HEI
Operating conditions:	n(HT20) MCS5 Ch 140

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC



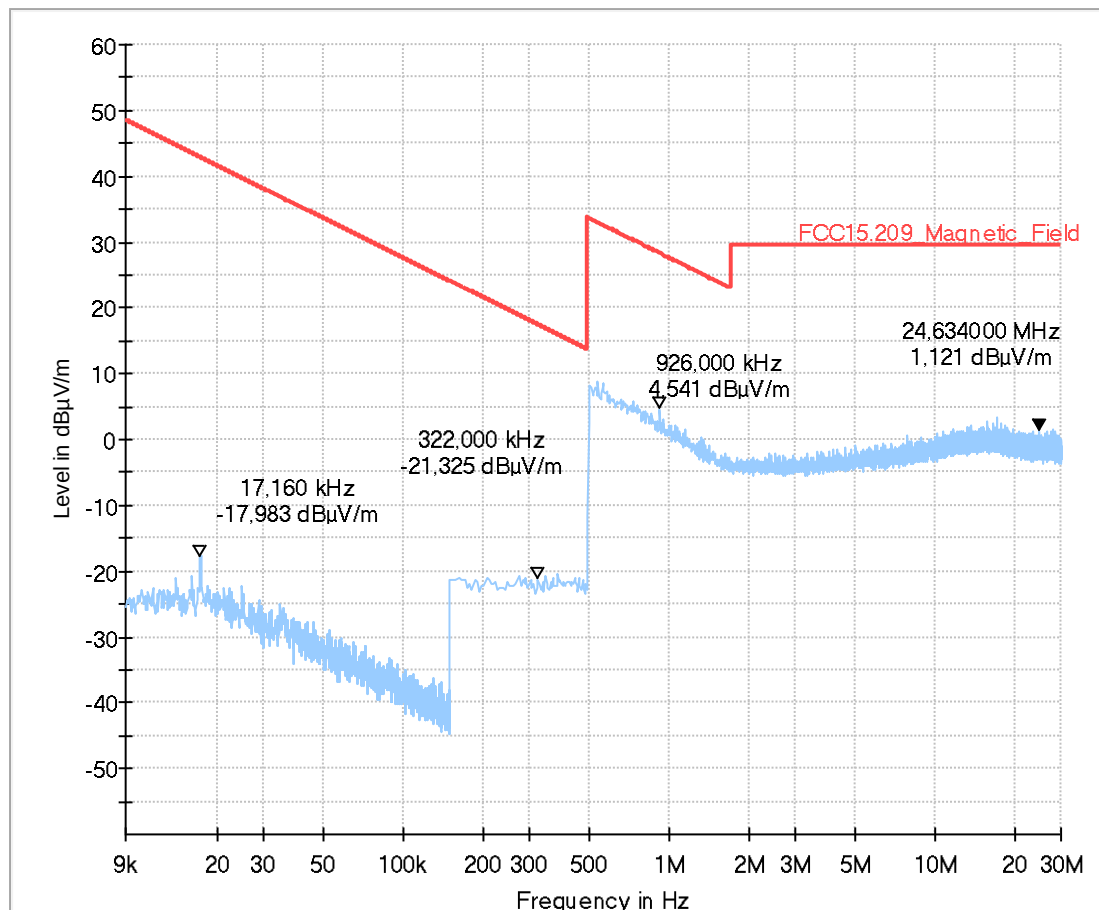
2.02b_WLAN_n mode_MCS5_Ch140__standing

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 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;
Operator:	HEI
Operating conditions:	n(HT20) MCS5 Ch 140

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC



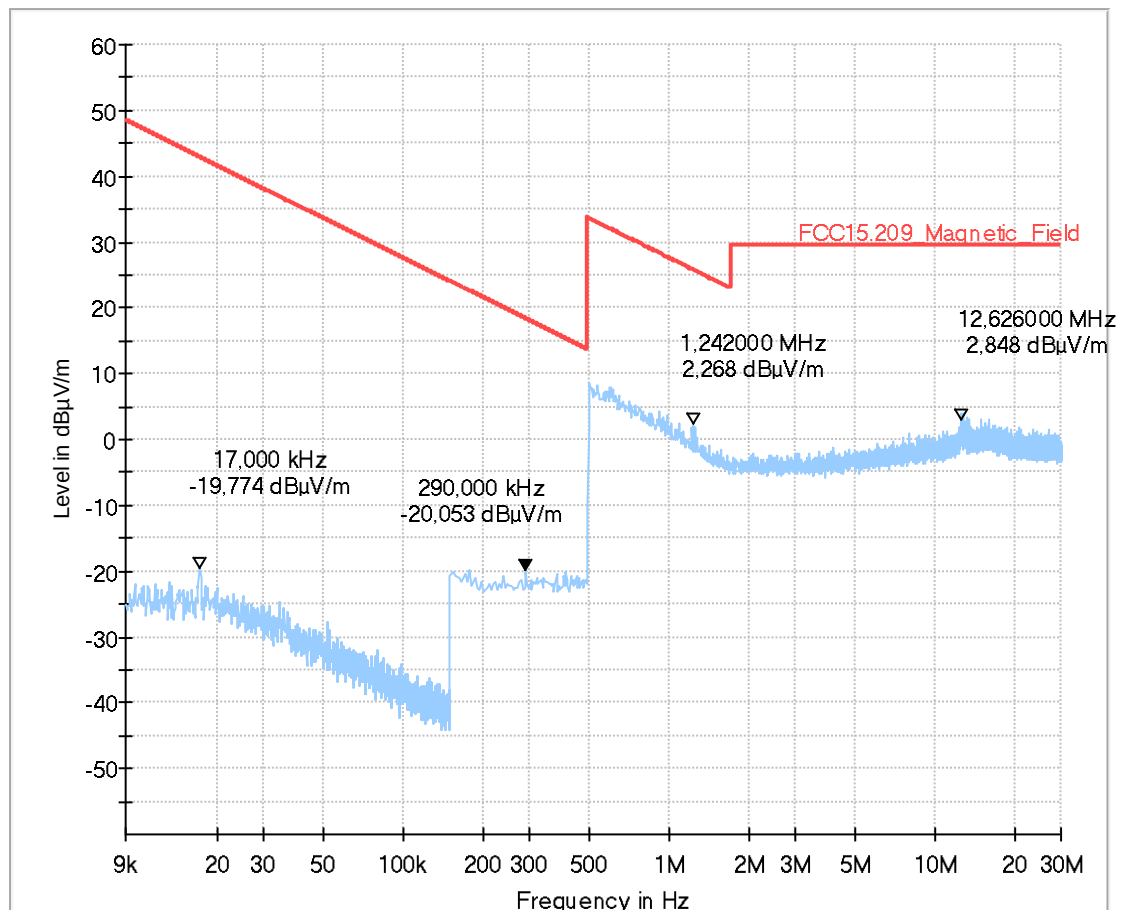
2.03a_WLAN_n-mode_MCS0_Ch159__laying

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 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;
Operator:	HEI
Operating conditions:	n(HT40) MCS0 Ch 159

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC



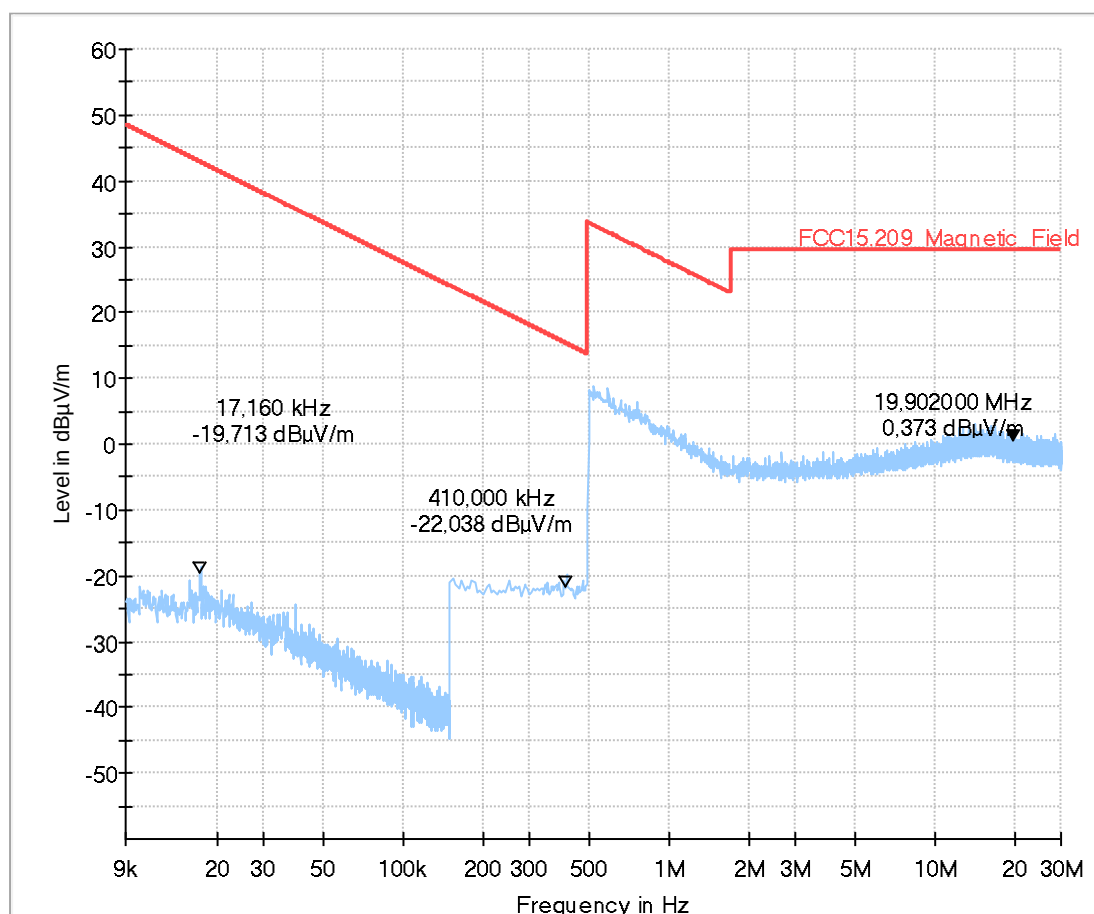
2.03b_WLAN_n-mode_MCS0_Ch159__standing

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 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;
Operator:	HEI
Operating conditions:	n(HT40) MCS0 Ch 159

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC



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

3.01a_WLAN_a mode_54Mbit_Ch64_laying

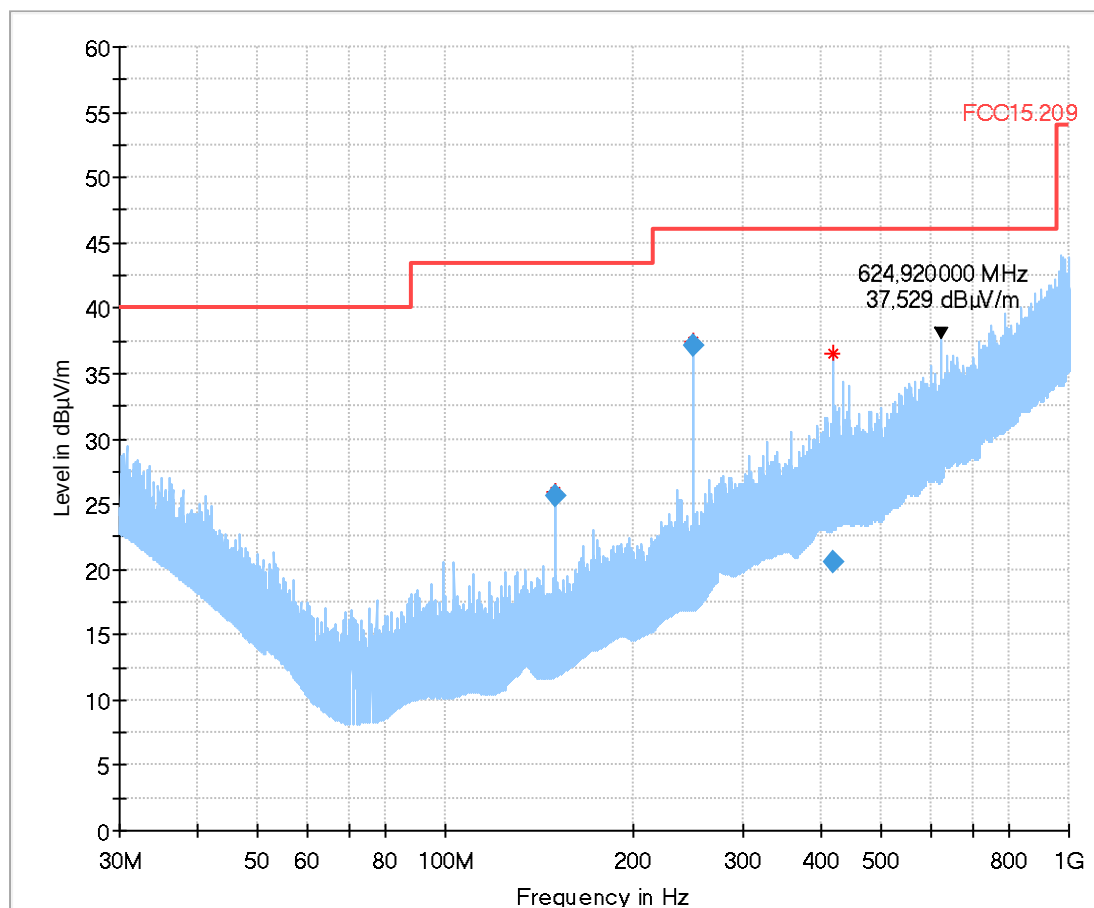
Common Information

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
Test specification.:	FCC 15.209;
Operator:	RI
Operating conditions:	a 9 Mbit Ch 64
Power during tests:	12V DC

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
149.996000	25.55	43.50	17.95	1000.0	120.000	105.0	V	6.0	8.6
249.996000	37.15	46.00	8.85	1000.0	120.000	105.0	H	77.0	13.0
419.164000	20.52	46.00	25.48	1000.0	120.000	309.0	V	348.0	18.8

3.01b_WLAN_a mode_54Mbit_Ch64__standing

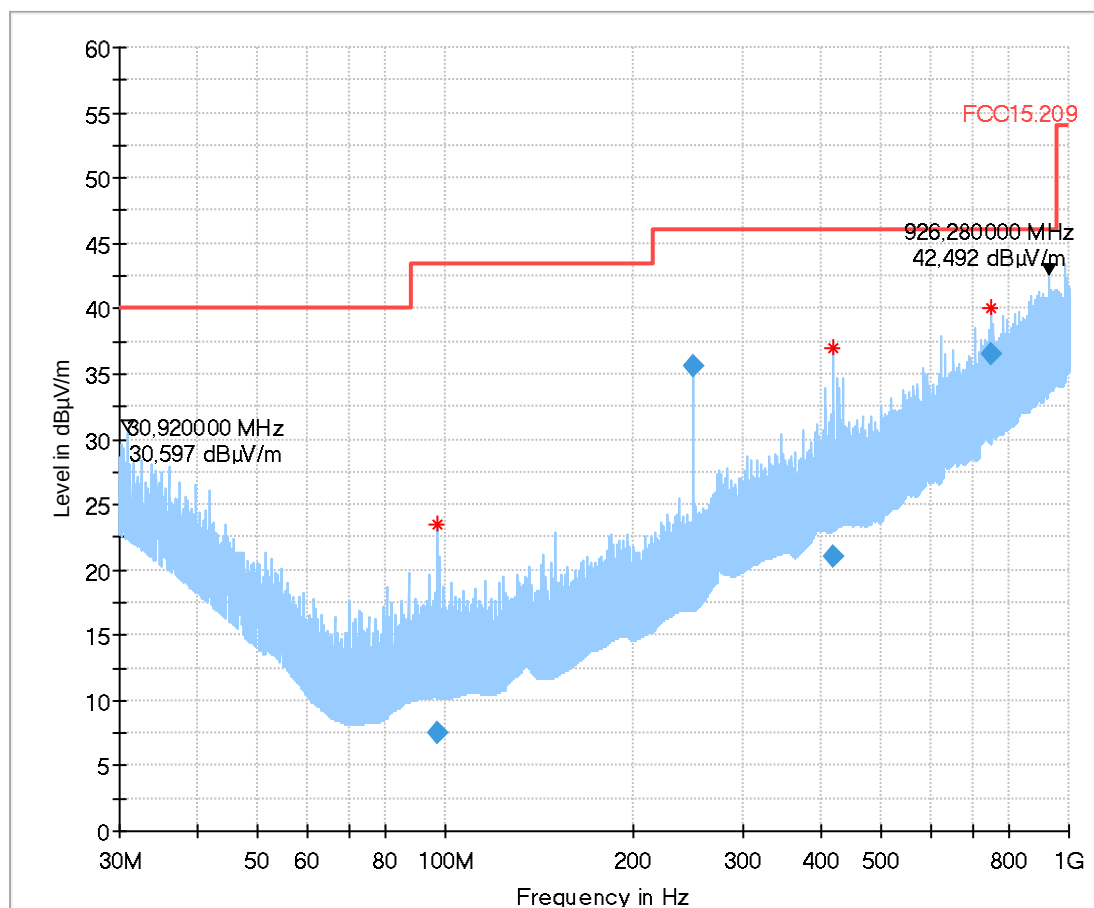
Common Information

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
Test specification.:	FCC 15.209;
Operator:	RIs
Operating conditions:	a 9 Mbit Ch 64
Power during tests:	12V DC

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
97.164000	7.48	43.50	36.02	1000.0	120.000	262.0	V	262.0	8.2
249.996000	35.61	46.00	10.39	1000.0	120.000	105.0	H	87.0	13.0
418.980000	21.01	46.00	24.99	1000.0	120.000	302.0	V	41.0	18.8
749.940000	36.48	46.00	9.52	1000.0	120.000	118.0	V	180.0	24.0

3.02a_WLAN_n mode_MCS5_Ch140_laying

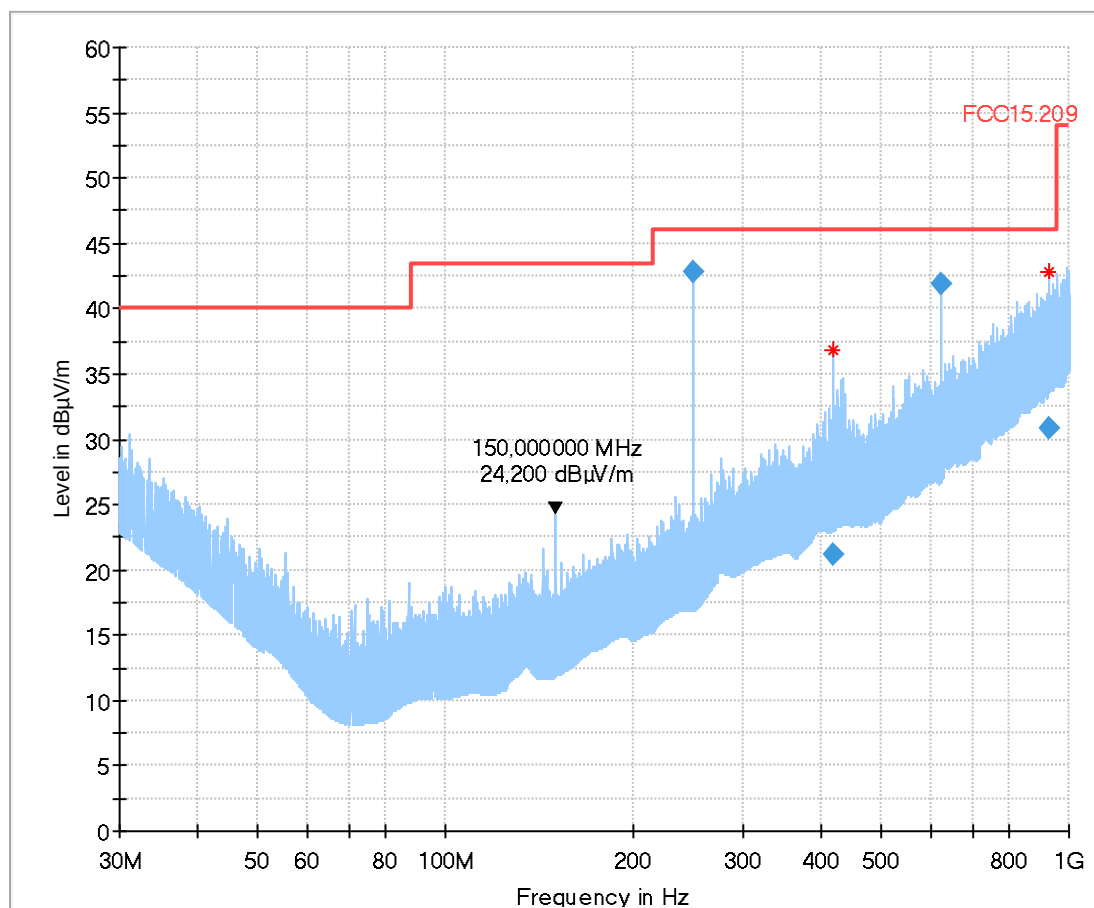
Common Information

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
Test specification.:	FCC 15.209;
Operator:	RLs
Operating conditions:	n(HT20) MCS5 Ch 140
Power during tests:	12V DC

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
249.980000	42.80	46.00	3.20	1000.0	120.000	108.0	H	269.0	13.0
419.108000	21.20	46.00	24.80	1000.0	120.000	360.0	V	247.0	18.8
624.948000	41.90	46.00	4.10	1000.0	120.000	214.0	H	68.0	22.2
929.972000	30.88	46.00	15.12	1000.0	120.000	253.0	H	16.0	27.0

3.02b_WLAN_n mode_MCS5_Ch140__standing

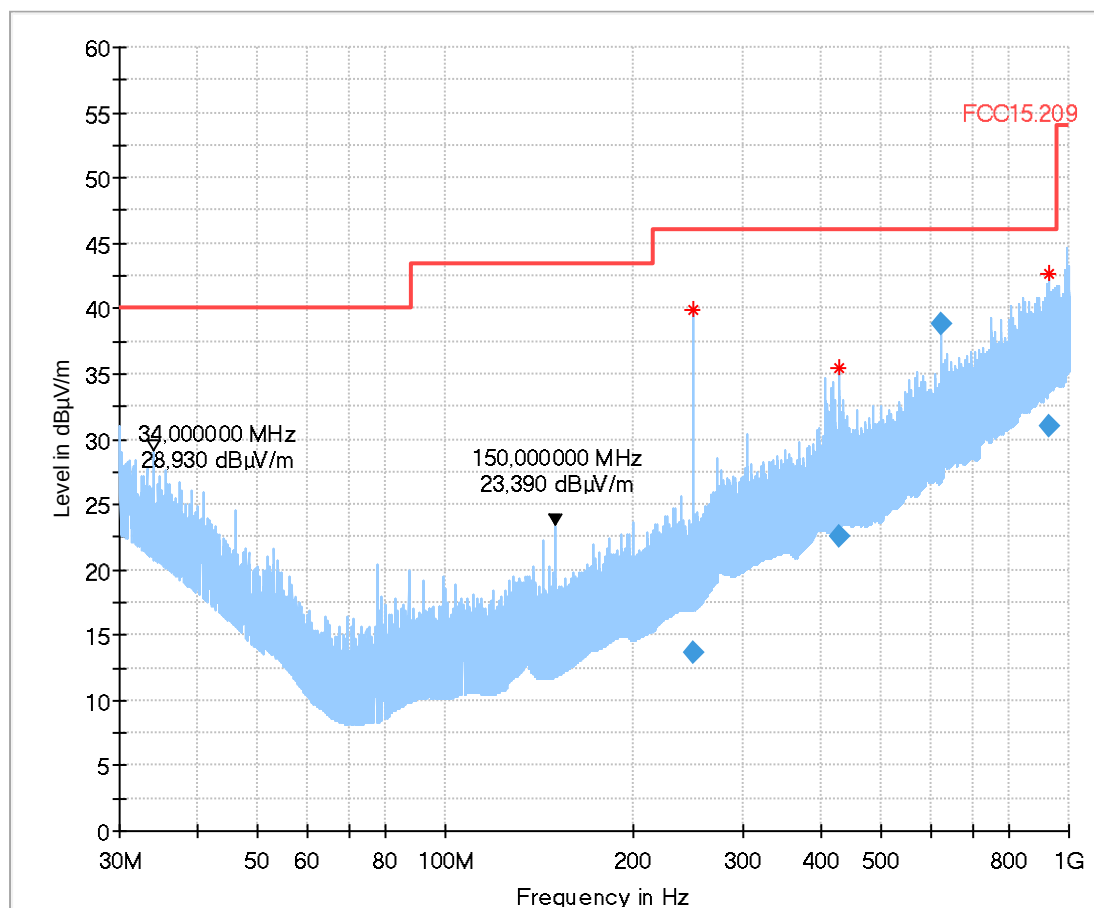
Common Information

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
Technical Data:	please see page 2 for detailed data of measurement setup
Test specification.:	FCC 15.209;
Operator:	RLs
Operating conditions:	n(HT20) MCS5 Ch 140
Power during tests:	12V DC

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
249.948000	13.67	46.00	32.33	1000.0	120.000	316.0	H	149.0	13.0
427.332000	22.59	46.00	23.41	1000.0	120.000	336.0	V	14.0	19.2
624.948000	38.86	46.00	7.14	1000.0	120.000	108.0	V	73.0	22.2
927.596000	30.94	46.00	15.06	1000.0	120.000	118.0	H	93.0	27.0

3.03a_WLAN_n mode_MCS0_Ch159__laying

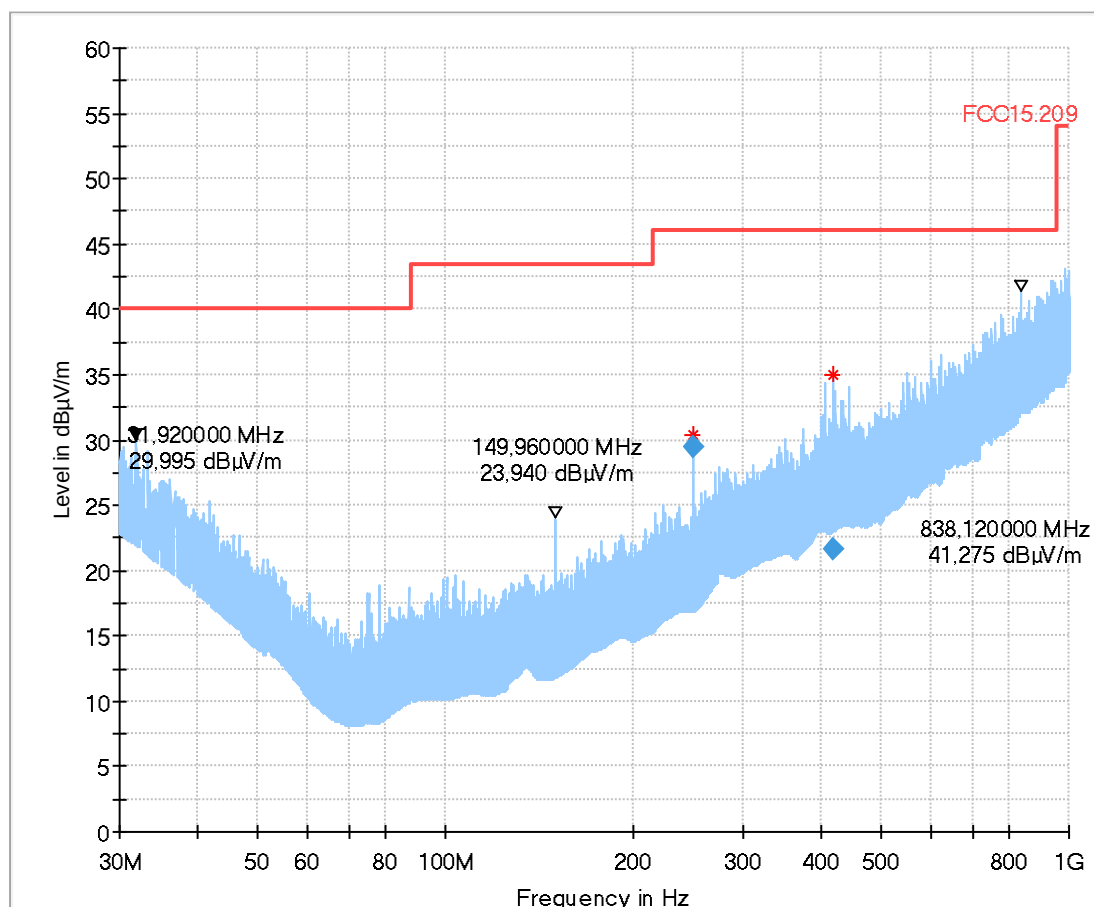
Common Information

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
Test specification.:	FCC 15.209;
Operator:	RI
Operating conditions:	n(HT40) MCS0 Ch 159
Power during tests:	12V DC

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
249.980000	29.44	46.00	16.56	1000.0	120.000	113.0	H	271.0	13.0
419.108000	21.66	46.00	24.34	1000.0	120.000	350.0	V	206.0	18.8

3.03b_WLAN_n mode_MCS0_Ch159__standing

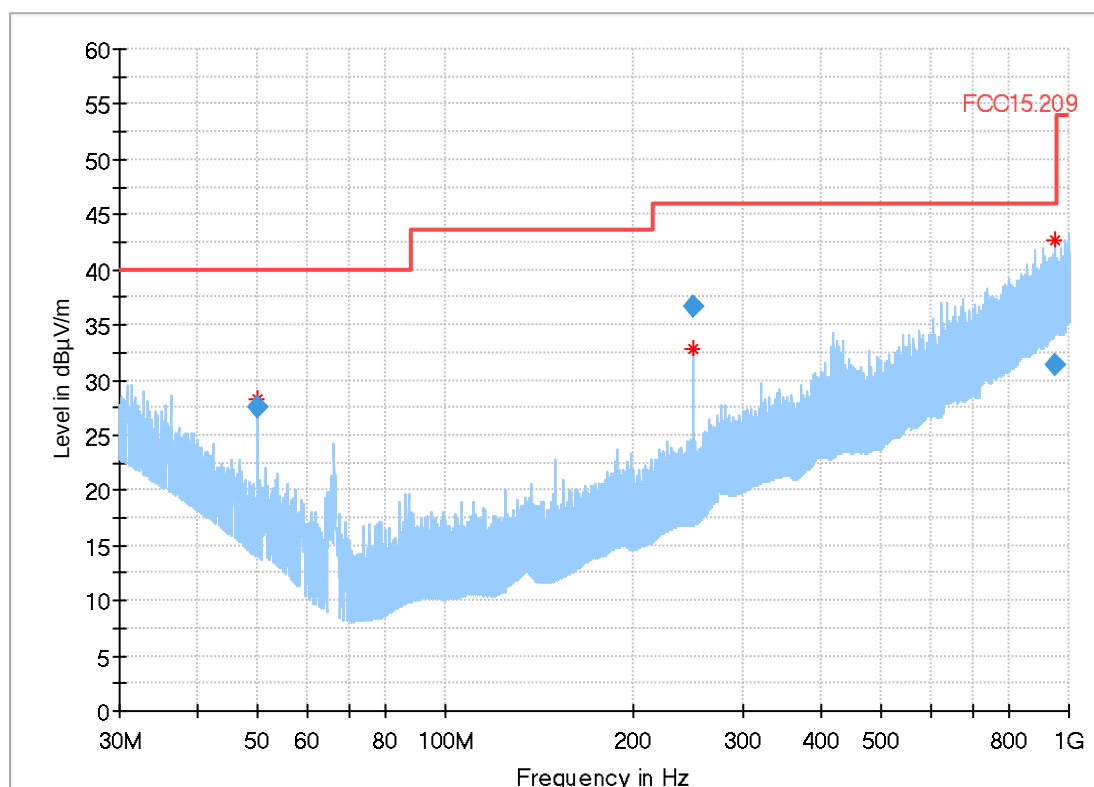
Common Information

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;
Operator:	HLA
Operating conditions:	n(HT40) MCS0 Ch 159
Power during tests:	12V DC

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
50.000000	27.49	40.00	12.51	1000.0	120.000	105.0	V	137.0	13.0
249.980000	36.65	46.00	9.35	1000.0	120.000	112.0	H	49.0	13.0
952.964000	31.38	46.00	14.62	1000.0	120.000	308.0	V	50.0	27.3

2.3. Field strength measurements 1GHz < f < 7GHz

4.01_TX_54Mbit_CH36_BW20MHz_ver

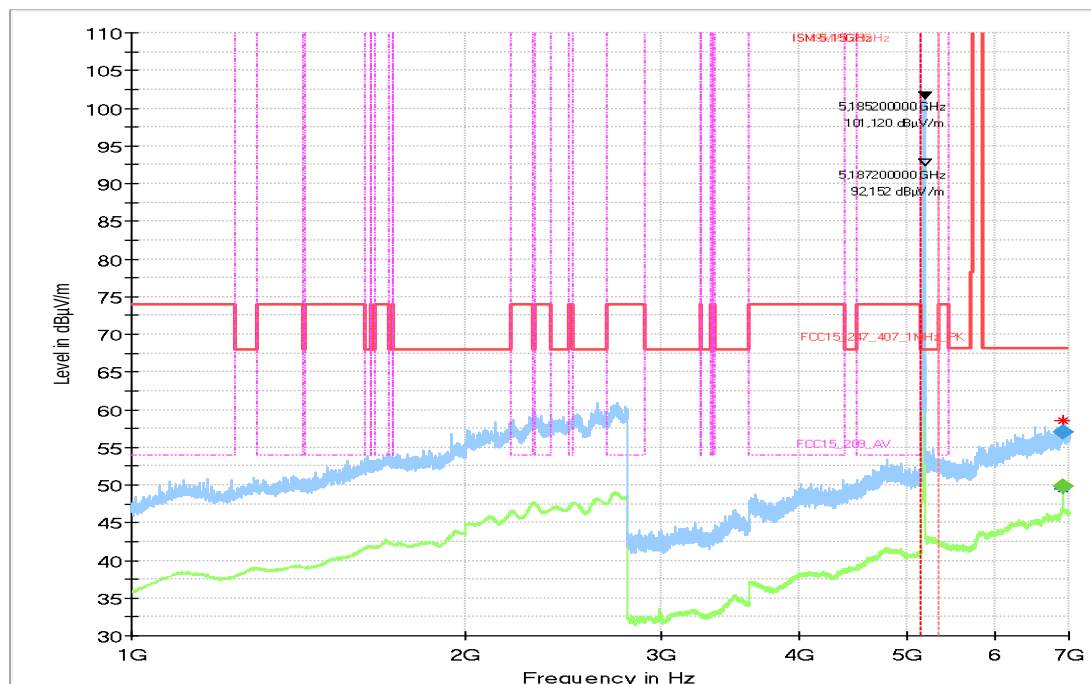
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Operation mode:	Wlan 5Ghz,TX, Channel 36 , 54Mbit, BW20MHz,
Operator Name:	KMo
Comment:	EUT - standing position

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
6906.550000	---	49.82	150.00	100.18	100.0	1000.000	155.0	V	210.0	0.0	16.3
6921.100000	57.00	---	68.20	11.20	100.0	1000.000	155.0	H	87.0	0.0	16.3

4.02_TX_54Mbit_CH36_BW20MHz__hor

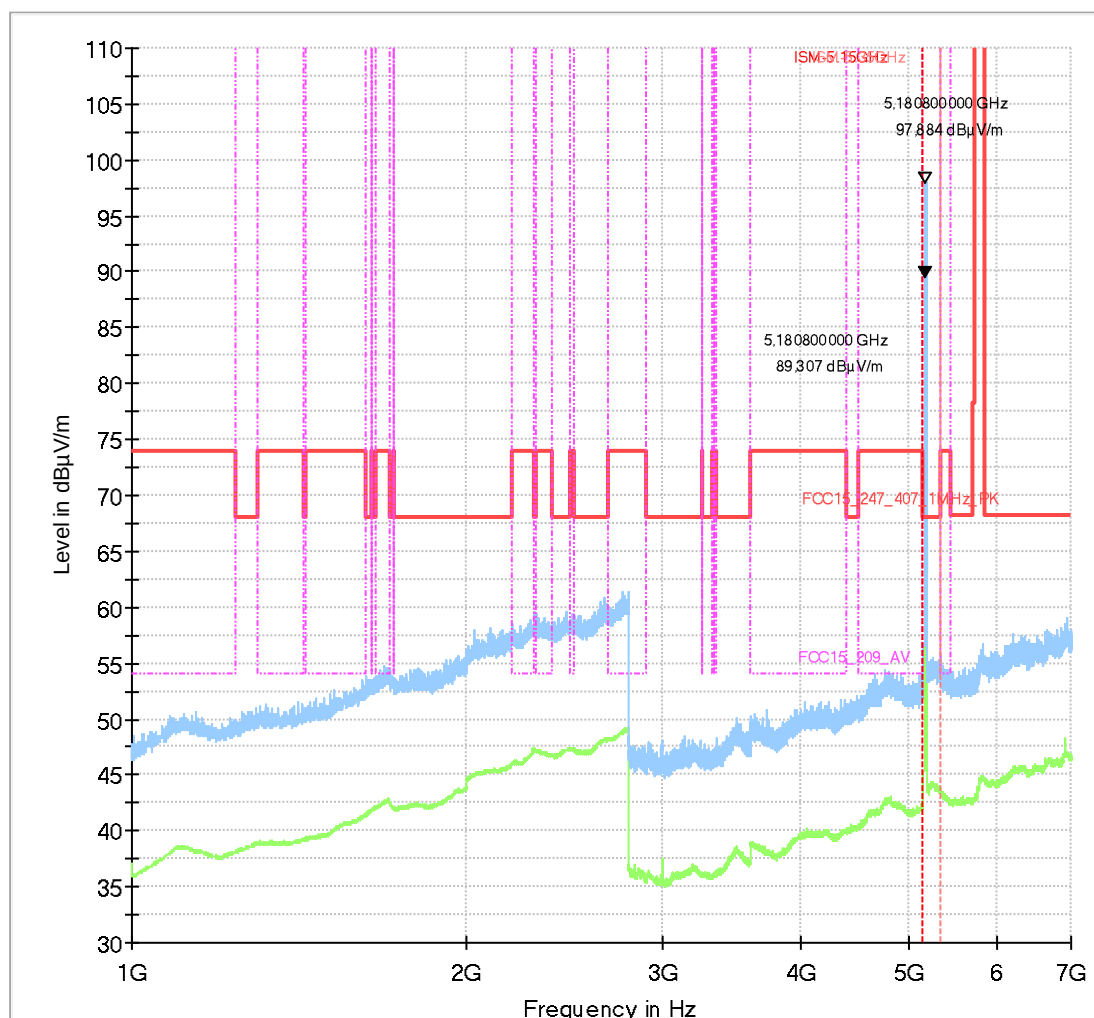
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Operation mode:	Wlan 5Ghz,TX, Channel 36 , 54Mbit, BW20MHz, ,
Operator Name:	KMo
Comment:	EUT - laying position

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



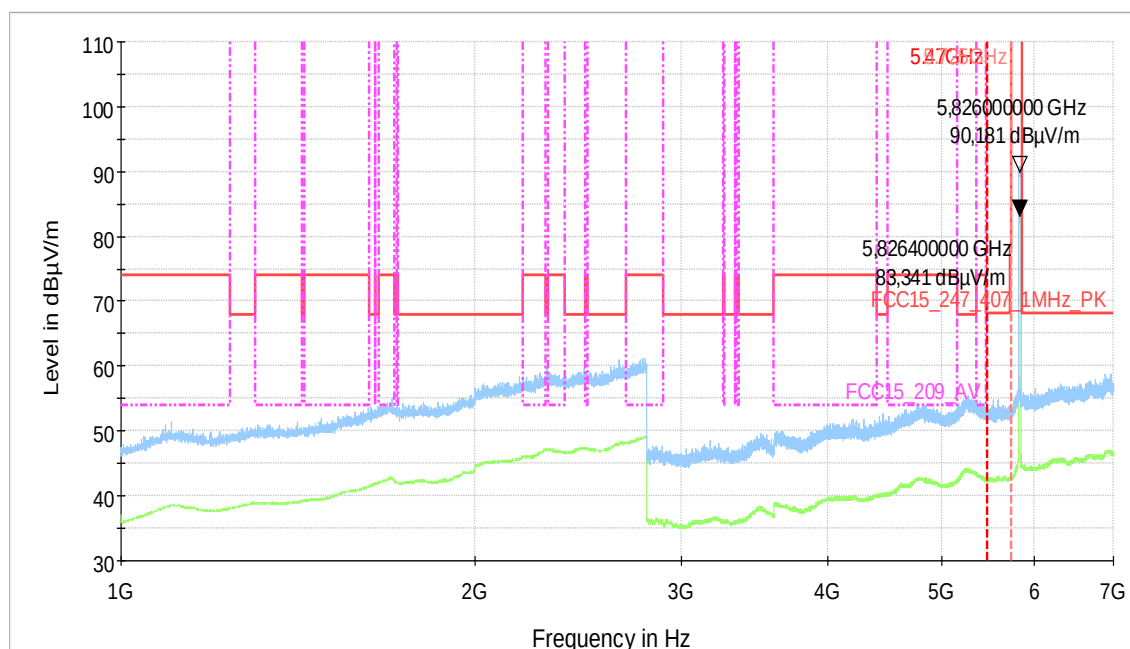
4.03_TX_MCS7_CH165_BW20MHz__Interne

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	MCS7_CH165__BW20

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC



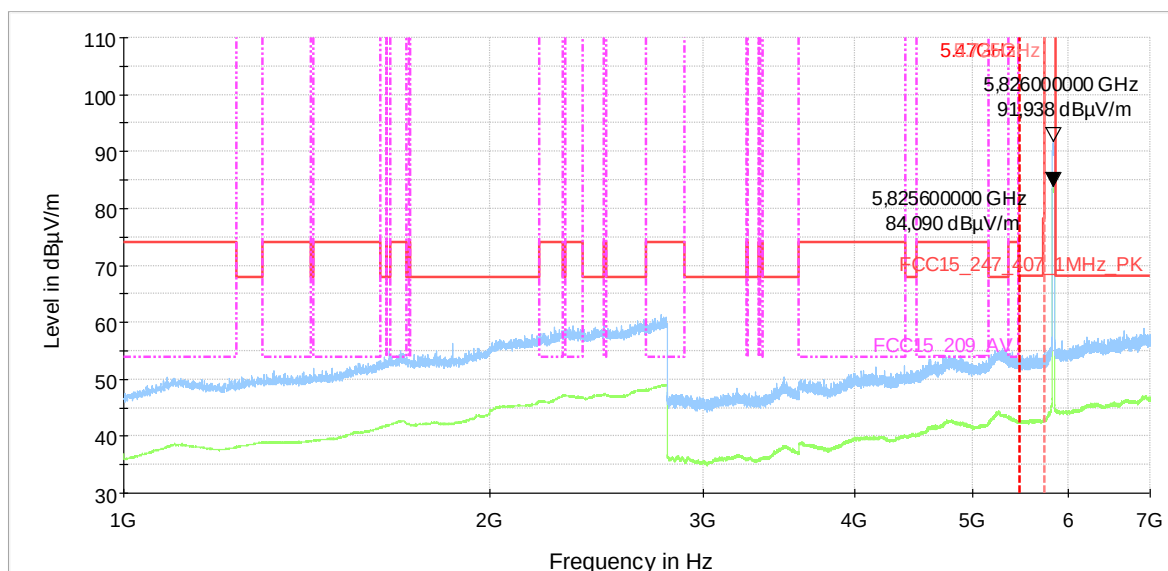
4.04_TX_MCS7_CH165__hor

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no. low/middle/high

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC



4.05_TX_MCS0_CH38__hor

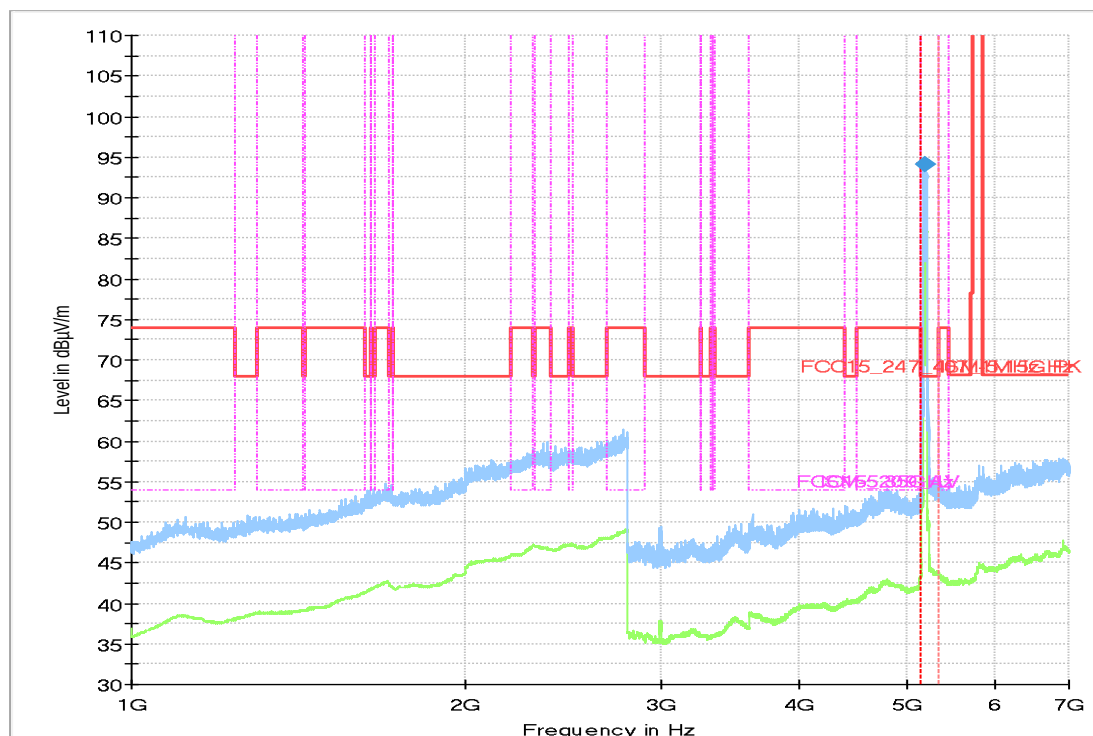
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Operation mode:	TX, continuous
Operator Name:	Klv/TFr
Comment:	Channel no. 38 , BW40MHz,

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5187.550000	94.13	---	68.00	-26.13	100.0	1000.000	155.0	V	291.0	11.6

4.06_TX_MCS0_CH38__ver

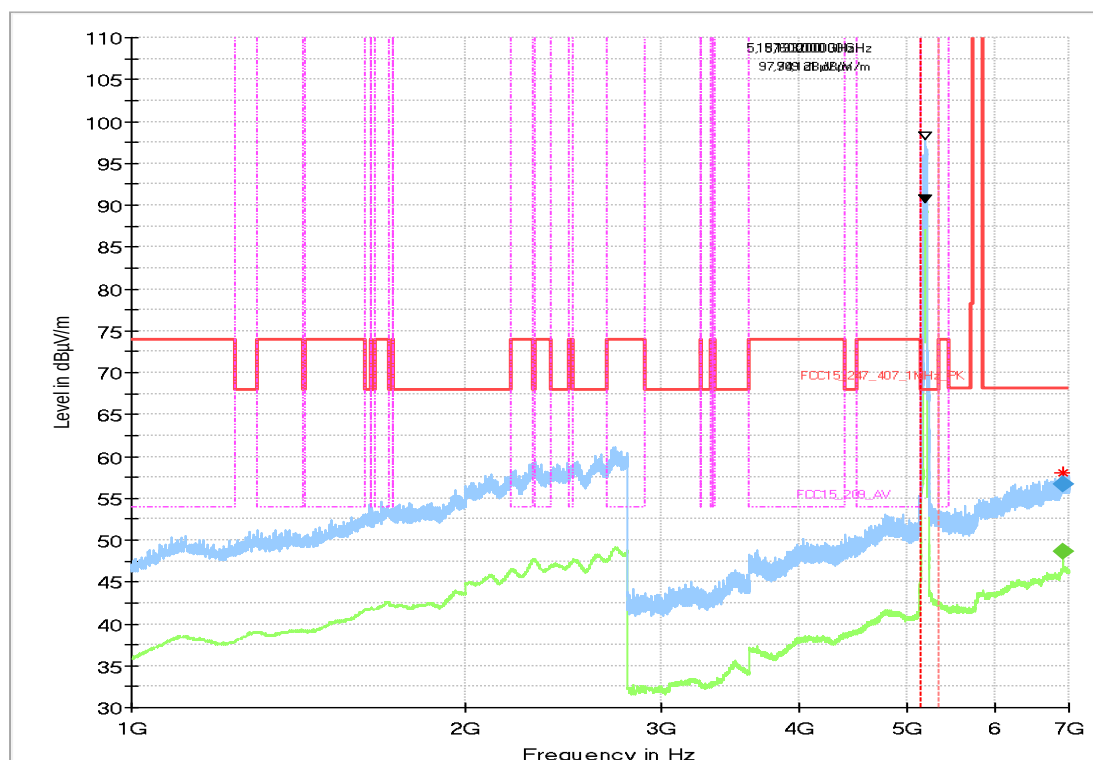
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Operation mode:	Wlan 5Ghz,TX, Channel 38 , MCS0, BW40MHz, ,
Operator Name:	KMo
Comment:	EUT - standing position

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
6900.800000	56.73	---	68.20	11.47	100.0	1000.000	155.0	V	135.0	0.0	16.3
6920.000000	---	48.67	150.00	101.33	100.0	1000.000	155.0	V	210.0	0.0	16.3

4.07_TX_MCS0_CH159__laying

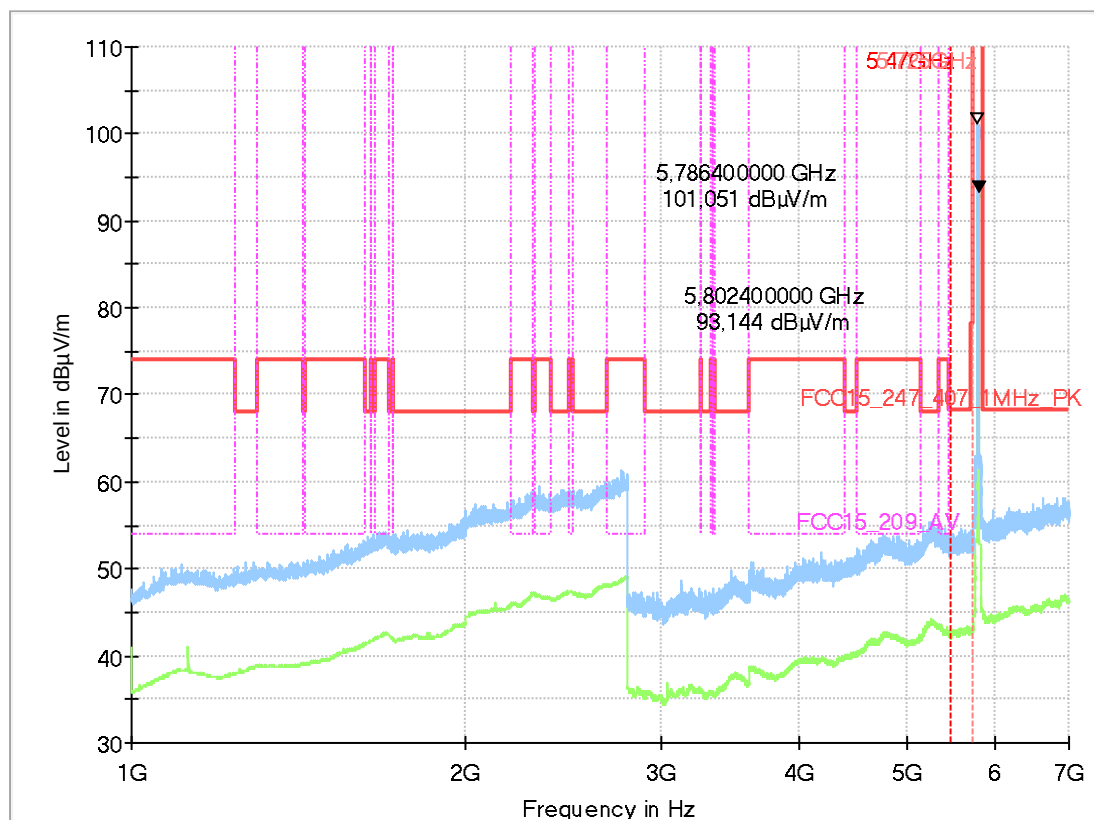
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Operation mode:	TX, continuous
Operator Name:	Mah
Comment:	Channel no. 159 , BW40MHz,

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



4.08_TX_MCS0_CH159__Standing

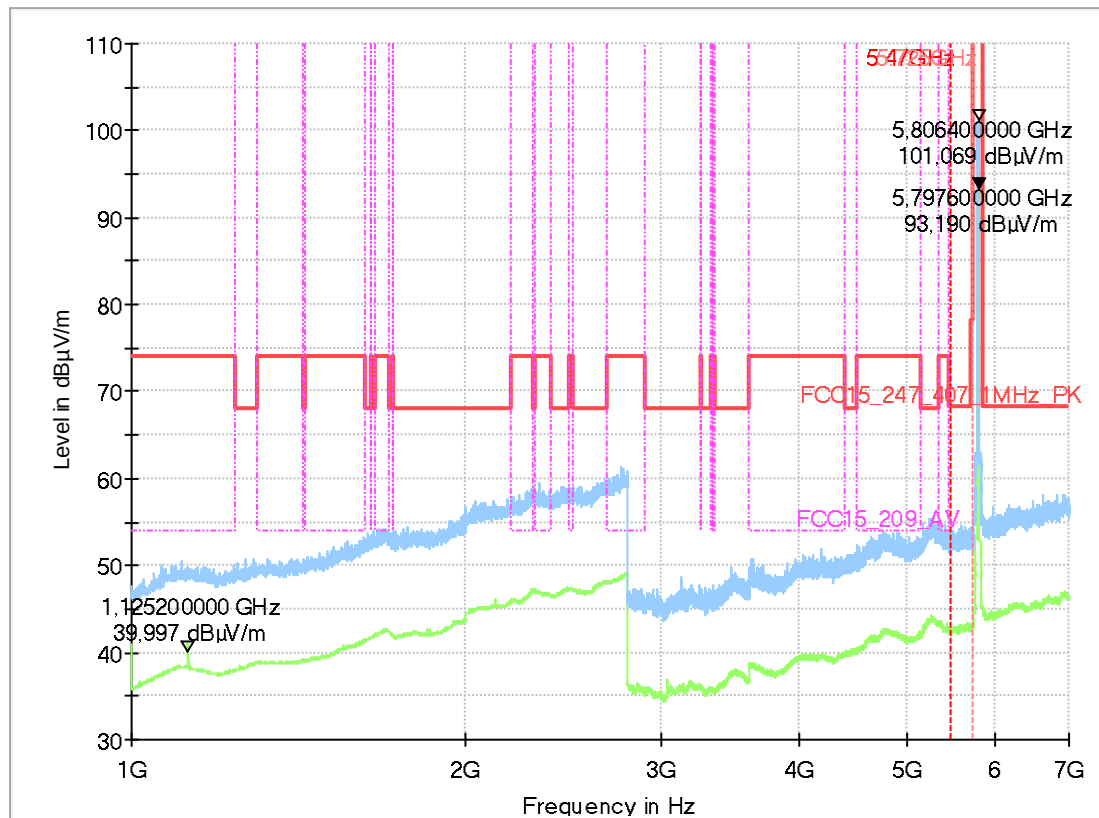
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Operation mode:	TX, continuous
Operator Name:	Mah
Comment:	Channel no. 159 , BW40MHz,

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



2.4. Field strength measurements 7GHz <f <18GHz

4.11_TX_Ch36_54Mbit__Laying

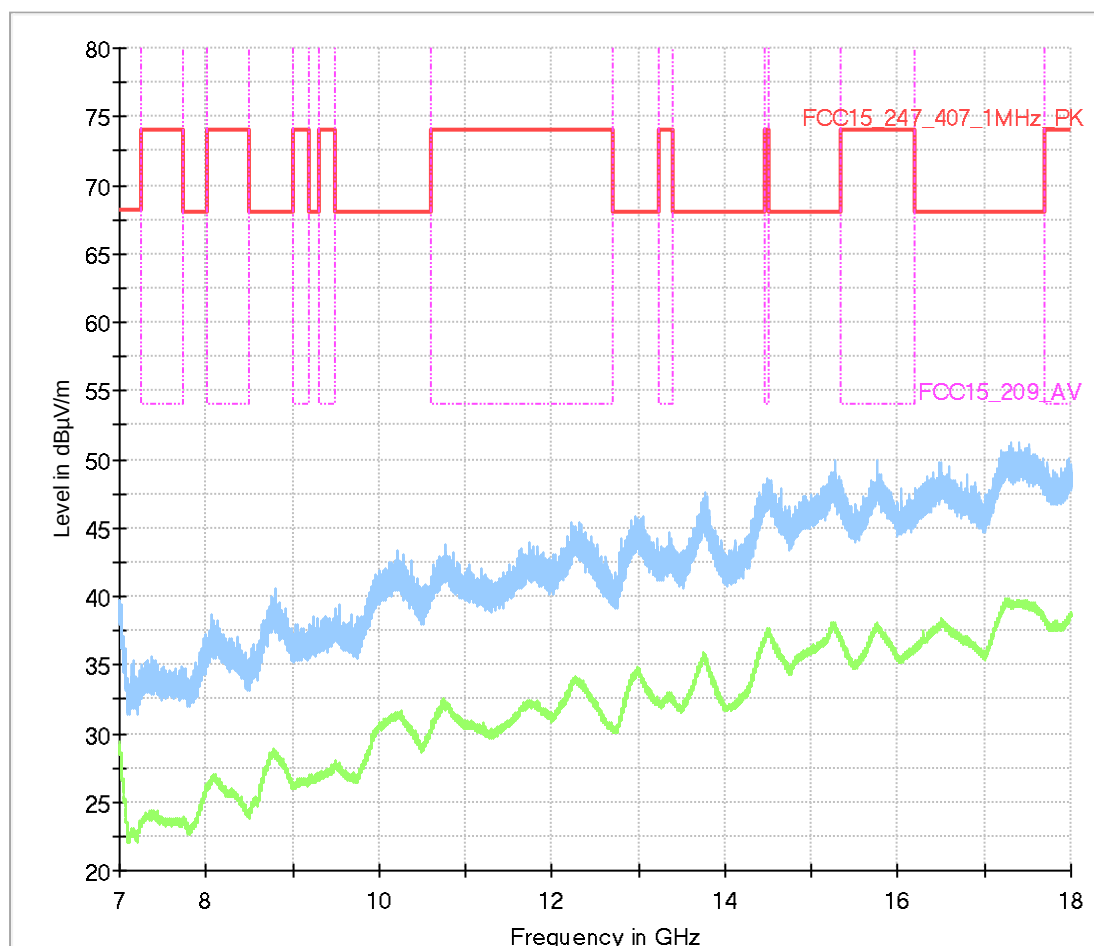
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Software Version:	#Ver
Operation mode:	TX_Ch36_54Mbit__
Operator Name:	AFr
Comment:	DUT Laying

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



4.12_TX_Ch36_54Mbit__Standing

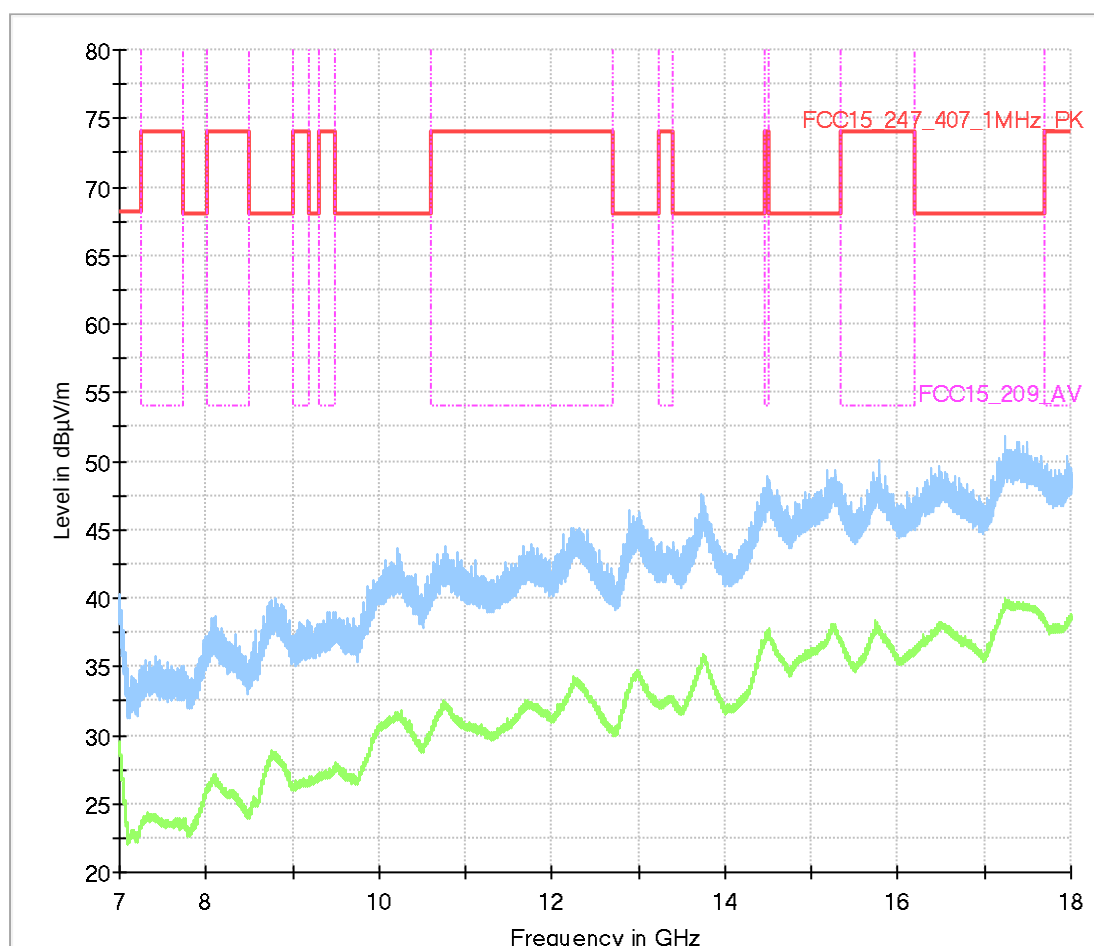
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Software Version:	#Ver
Operation mode:	TX_Ch36_54Mbit_
Operator Name:	AFr
Comment:	DUT Standing

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



4.13_ TX_Ch165_MCS7__Standing

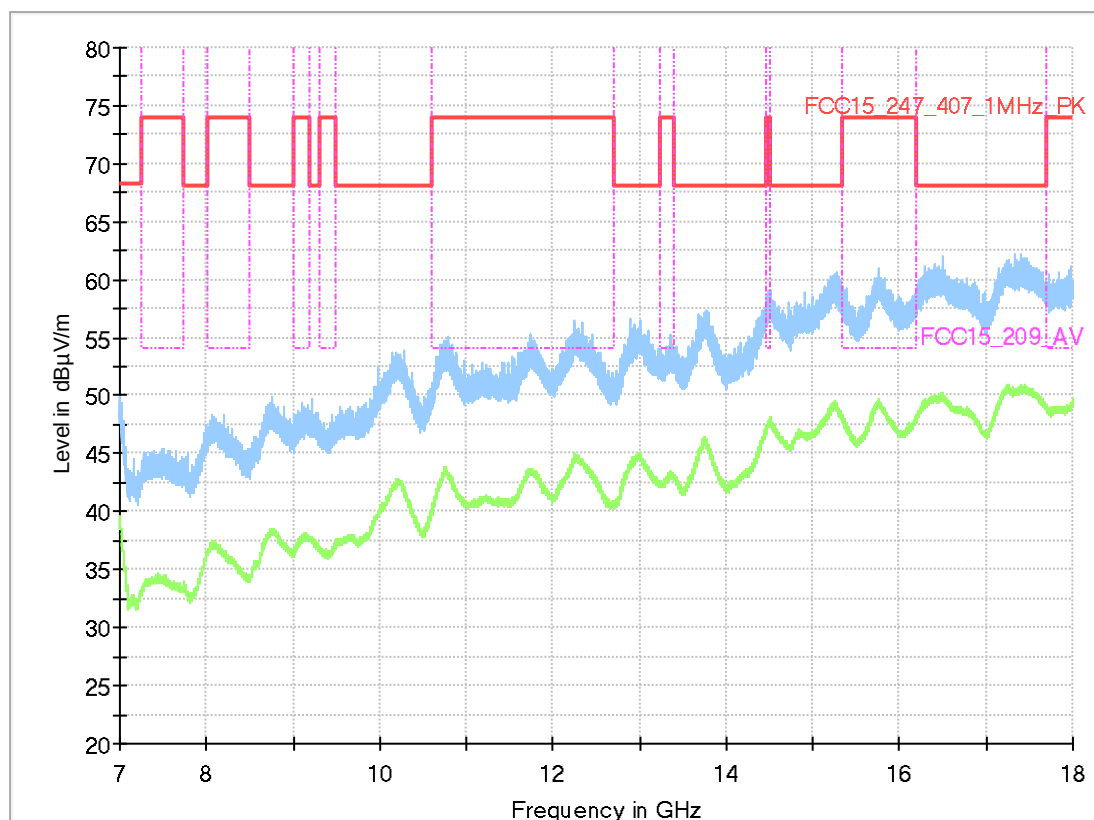
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Software Version:	#Ver
Operation mode:	MCS7_CH165__BW20
Operator Name:	AFr
Comment:	DUT Standing

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



4.14_TX_Ch165_MCS7__laying

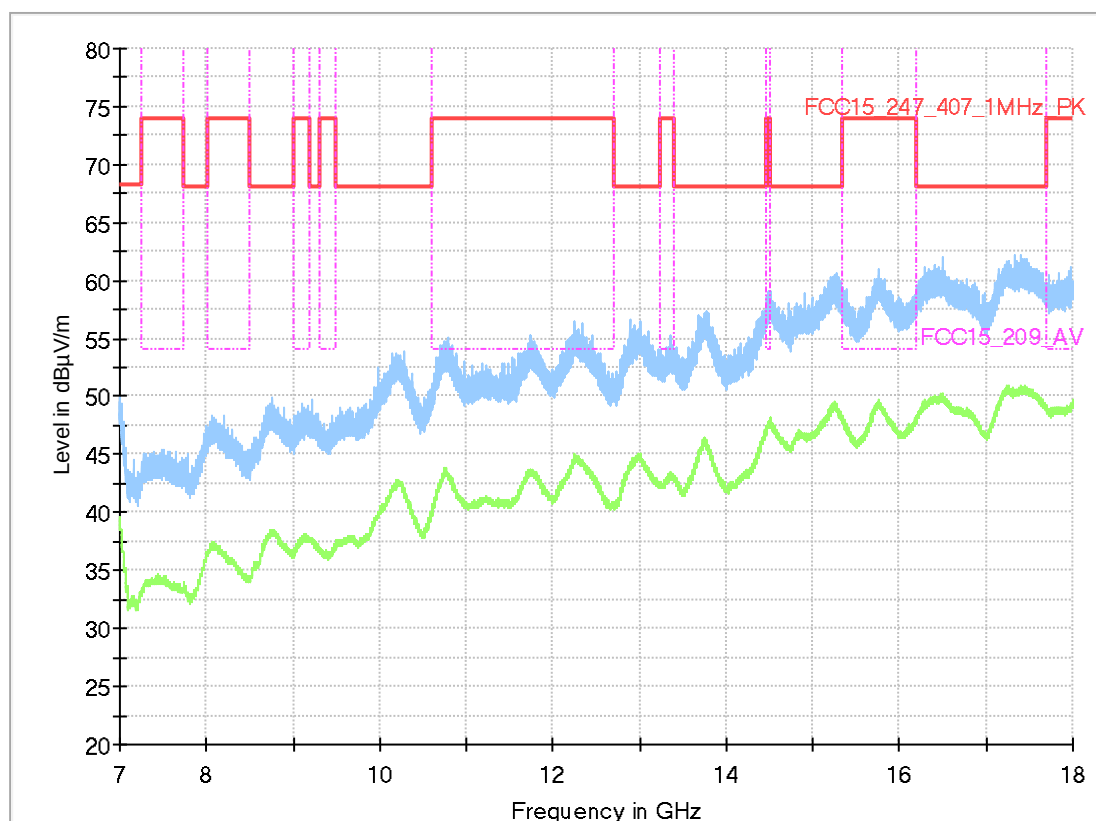
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Software Version:	#Ver
Operation mode:	MCS7_CH165__BW20
Operator Name:	AFr
Comment:	DUT laying

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



4.15_TX_Ch38_MCS0__40MHzBW_laying

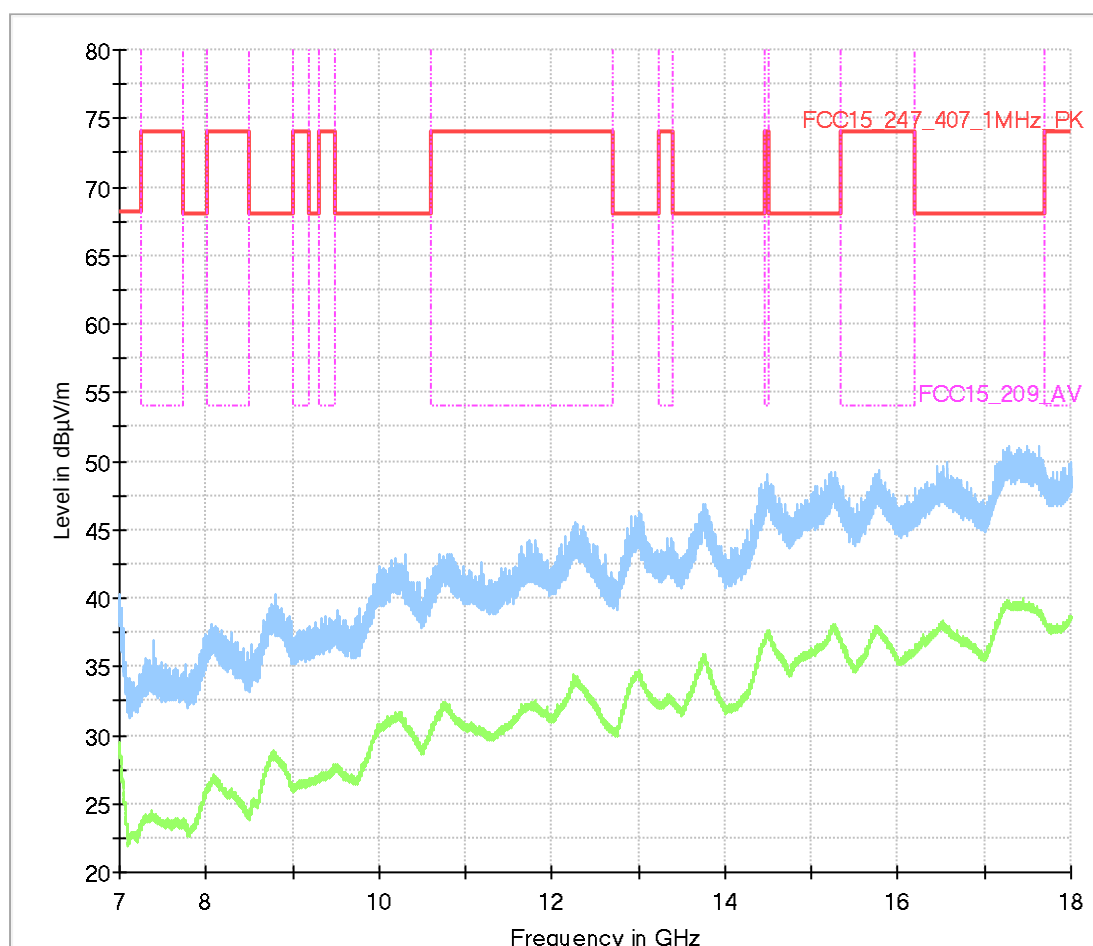
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Software Version:	#Ver
Operation mode:	TX_Ch38_MCS0_
Operator Name:	AFr
Comment:	DUT Laying

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



4.16_TX_Ch38_MCS0__40MHzBW_Standing

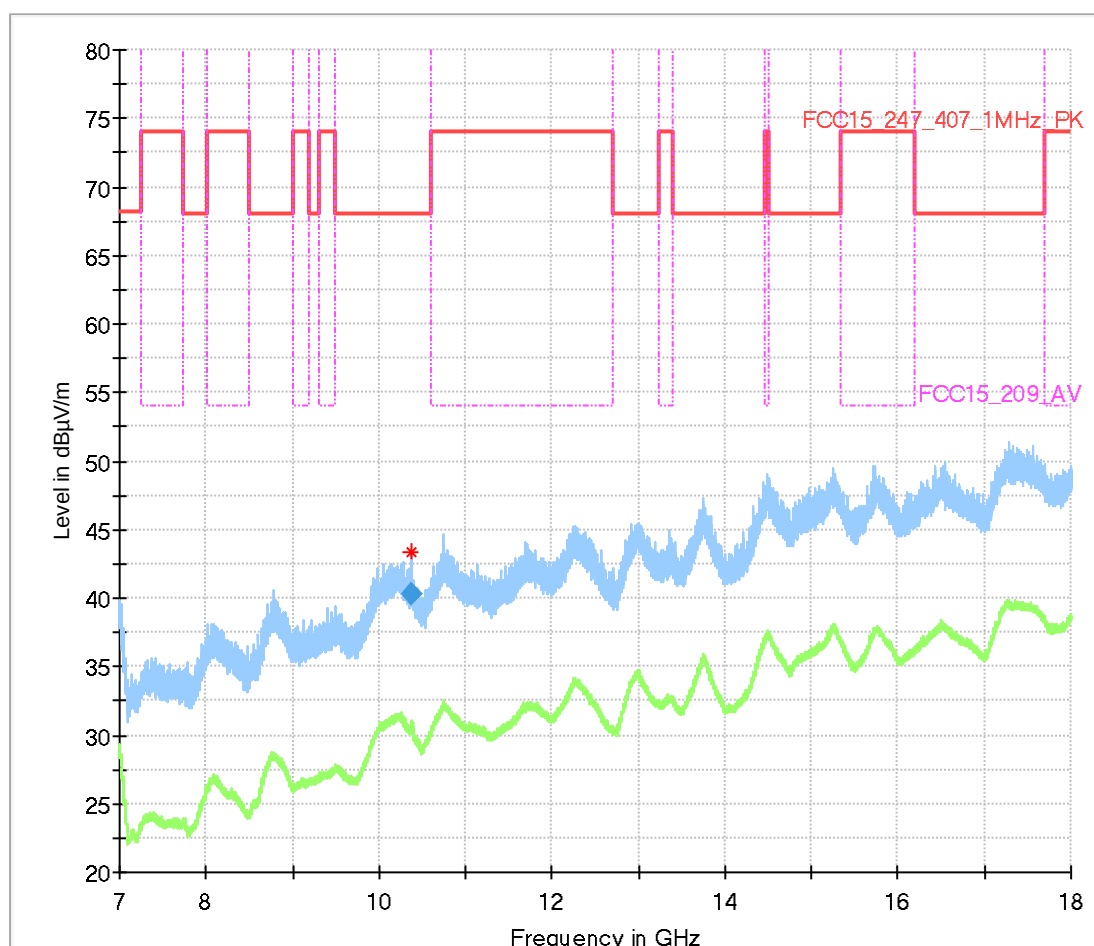
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Software Version:	#Ver
Operation mode:	TX_Ch38_MCS0_
Operator Name:	AFr
Comment:	DUT Standing

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
10379.000000	40.29	68.00	27.71	100.0	1000.000	155.0	H	256.0	5.0

4.17_TX_Ch159_MCS0__40MHzBW_laying

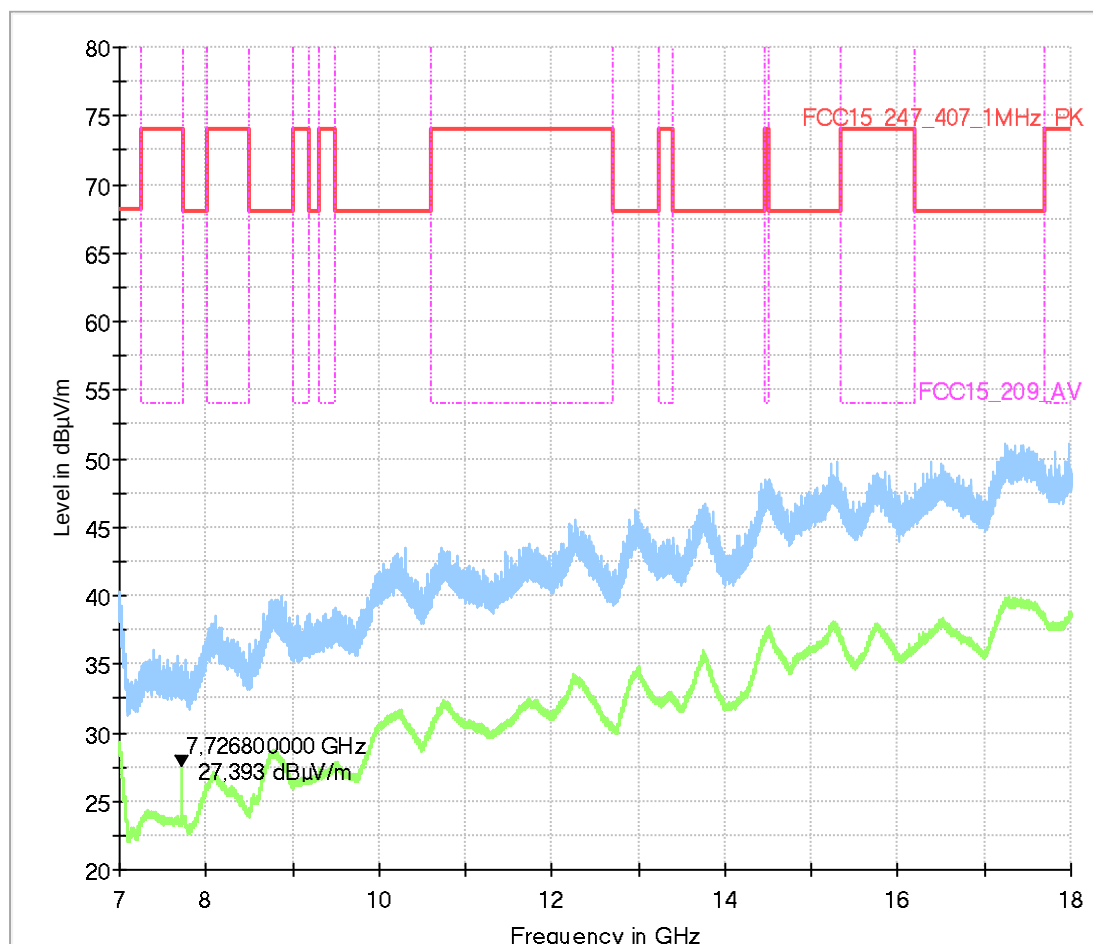
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Software Version:	#Ver
Operation mode:	TX_Ch159_MCS0_
Operator Name:	Mah
Comment:	DUT Laying

EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

Full Spectrum



4.18_TX_Ch159_MCS0__40MHzBW_Standing

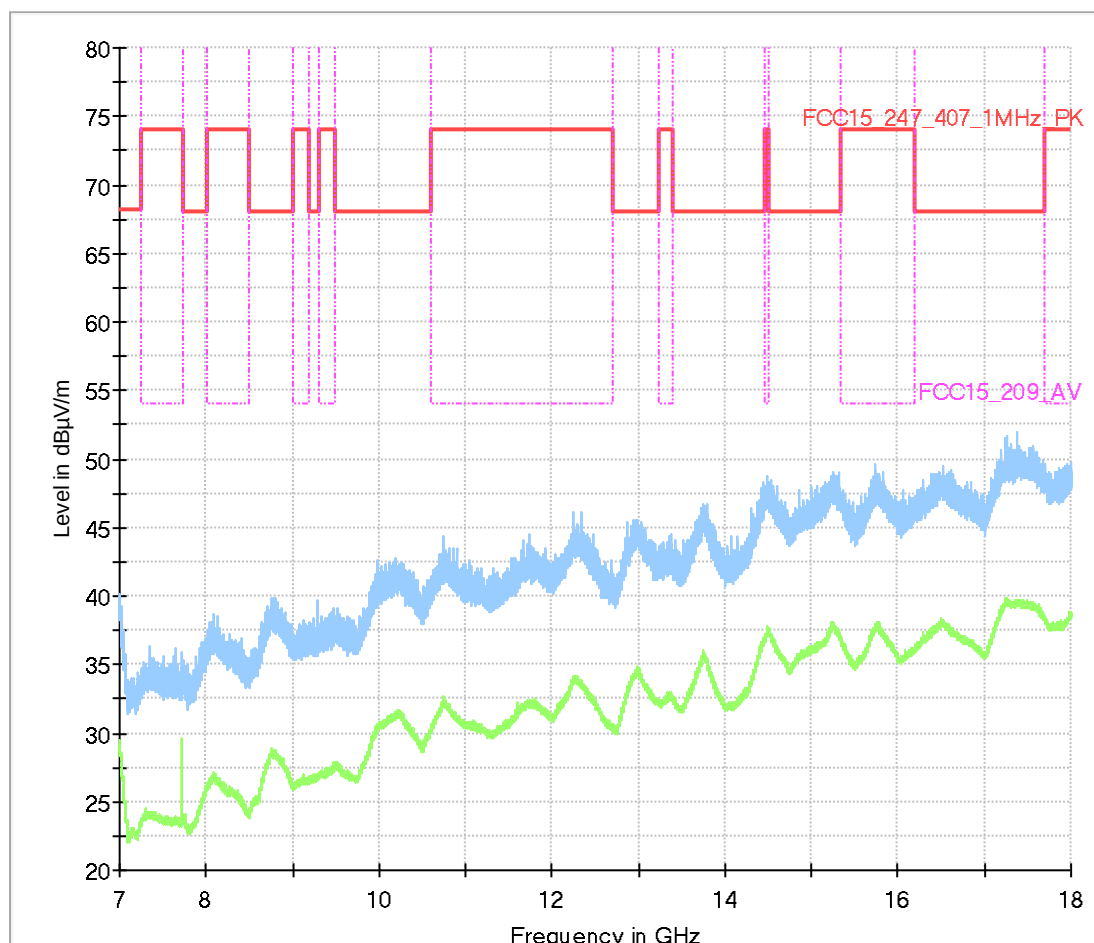
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.407&15.209 Intentional Radiator
Antenna polarisation:	laying/Standing
Software Version:	#Ver
Operation mode:	TX_Ch159_MCS0_
Operator Name:	Mah
Comment:	DUT Standing

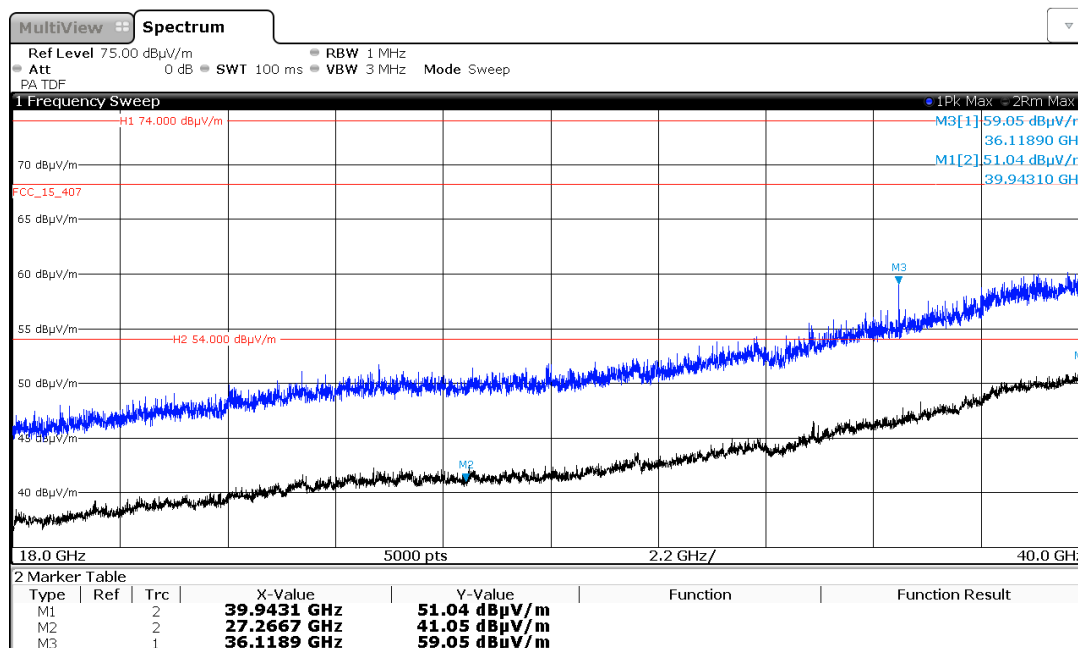
EUT Information

Manufacturer:	ACTIA Nordic AB
Model:	VCM
HW version:	31444563
SW version:	tbd1
Serial number:	10093027
Power Supply:	12VDC

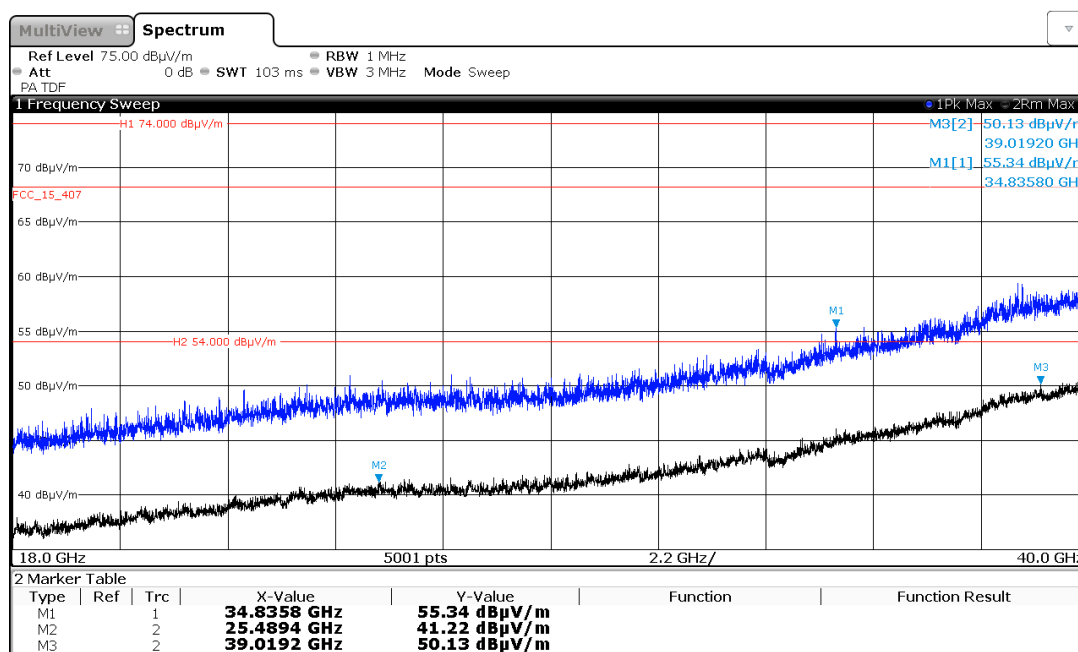
Full Spectrum



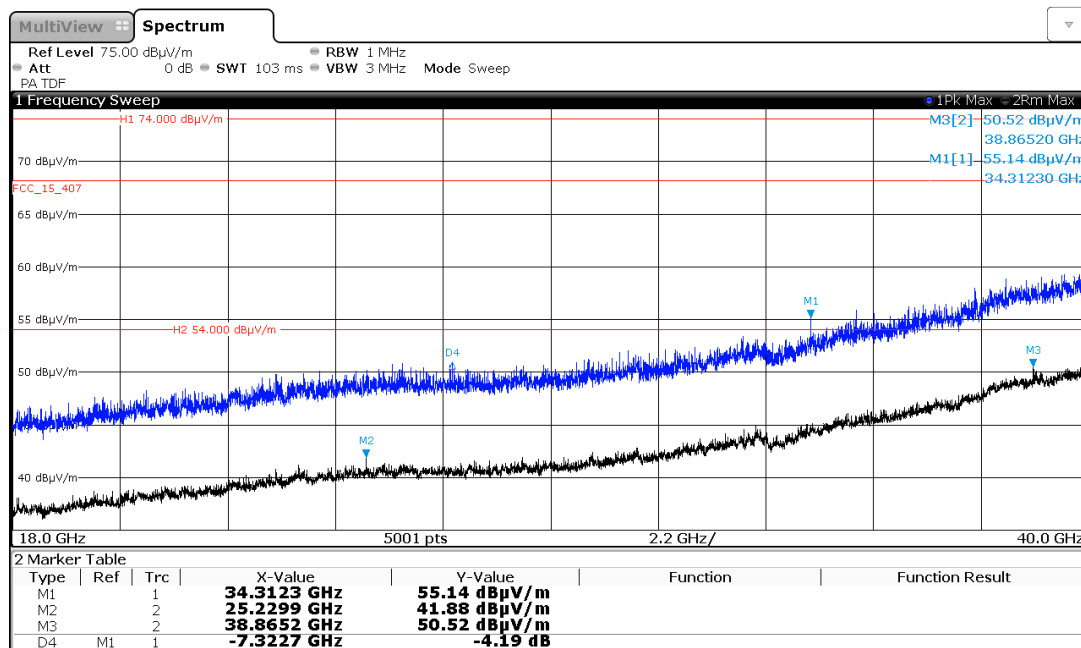
2.5. Field strength measurements 18GHz <f <40GHz



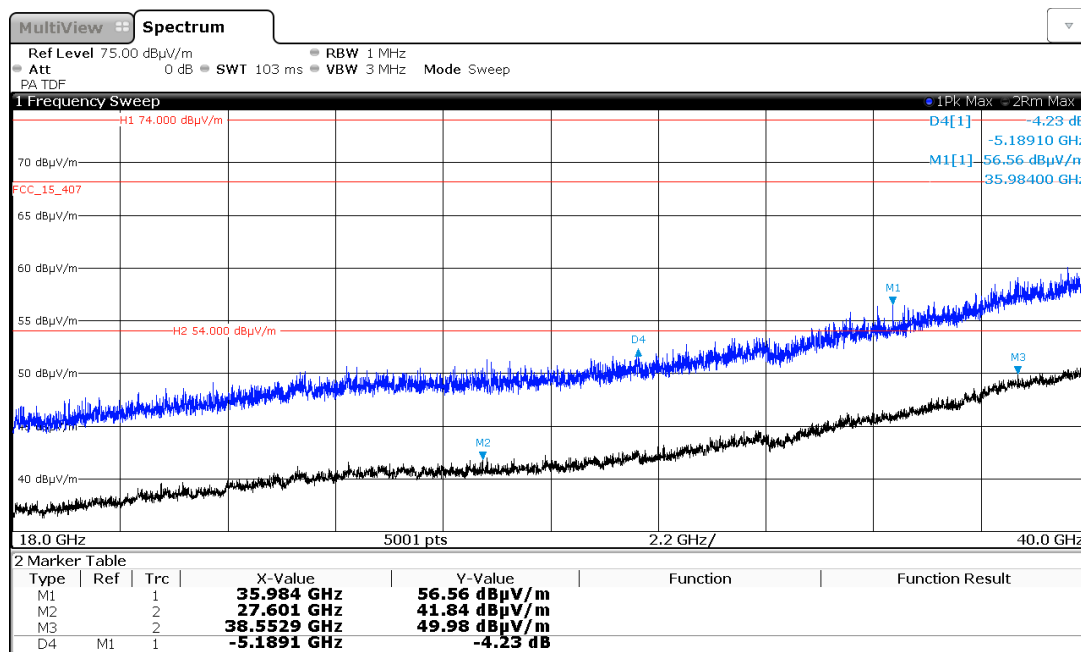
4.21_54Mbit_CH36_ – aMode



4.22_MCS7_CH165_(nMode HT20)



4.23_MCS0_CH38_(nMode HT40)

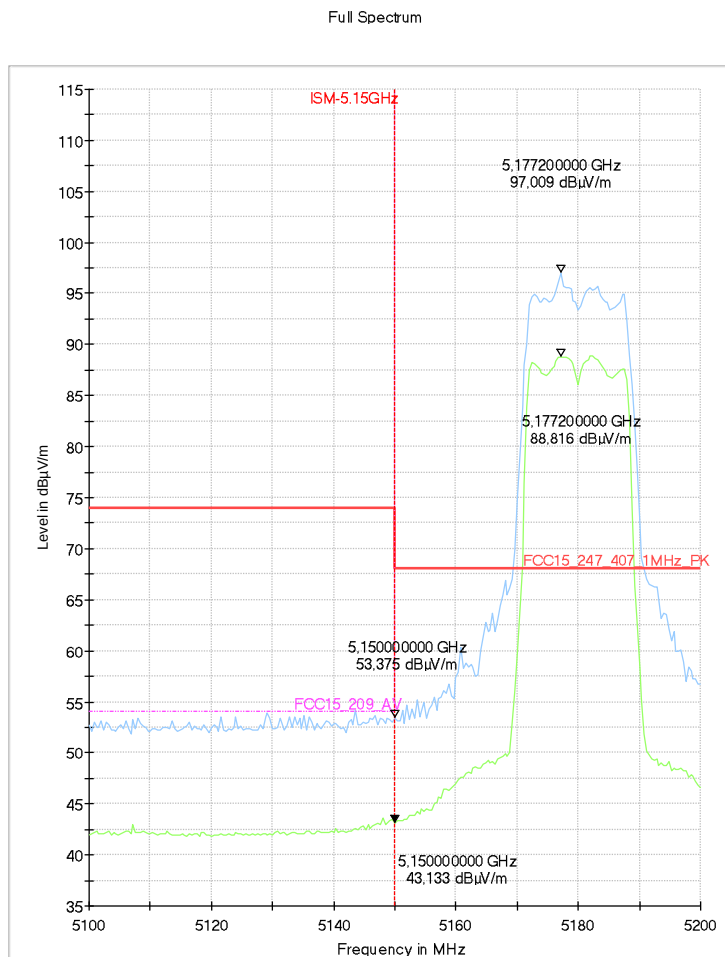


4.24_MCS0_CH159_(nMode HT40)

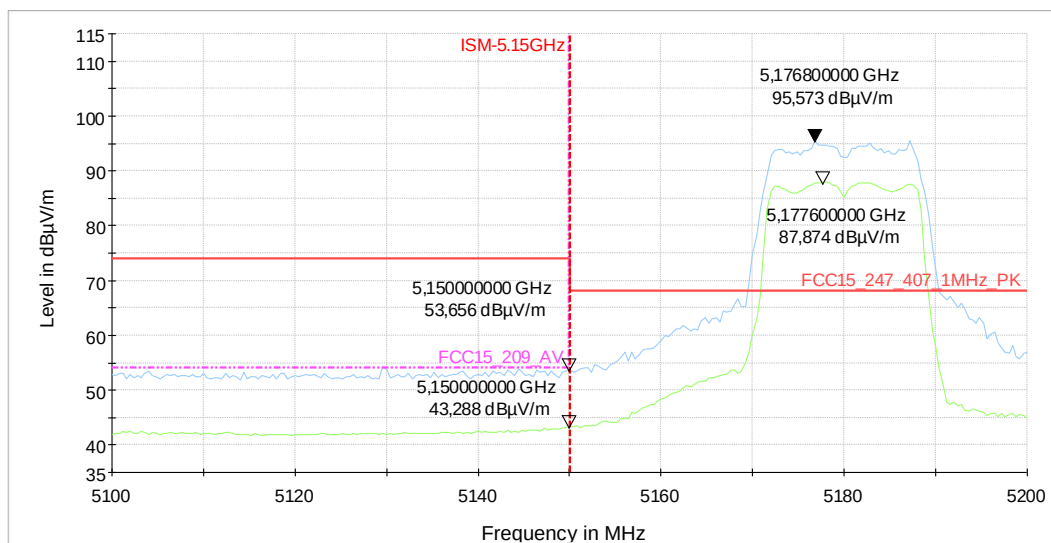
3. Radiated band-edge measurements

3.1. a Mode

3.1.1 Channel 36 a-Mode (left band edge)

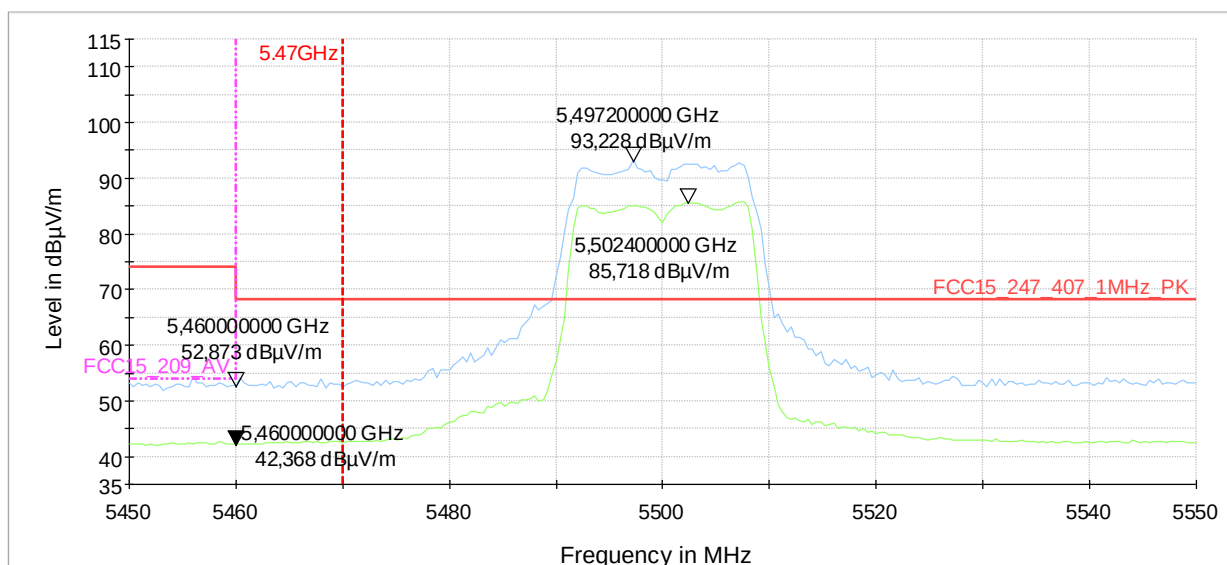


9.25_Channel36_a-Mode_54Mbit_Standing_ExtAnt_BE_Low

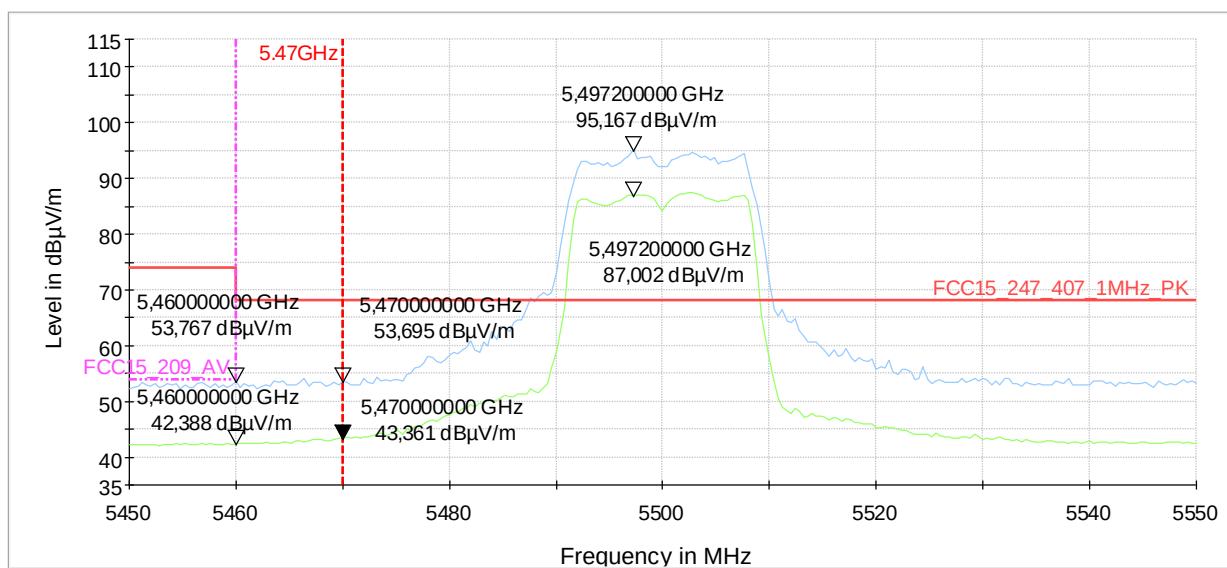


9.26_Channel36_a-Mode_54Mbit_laying_ExtAnt_BE_Low

3.1.2 Channel 100 a-Mode (left band edge)

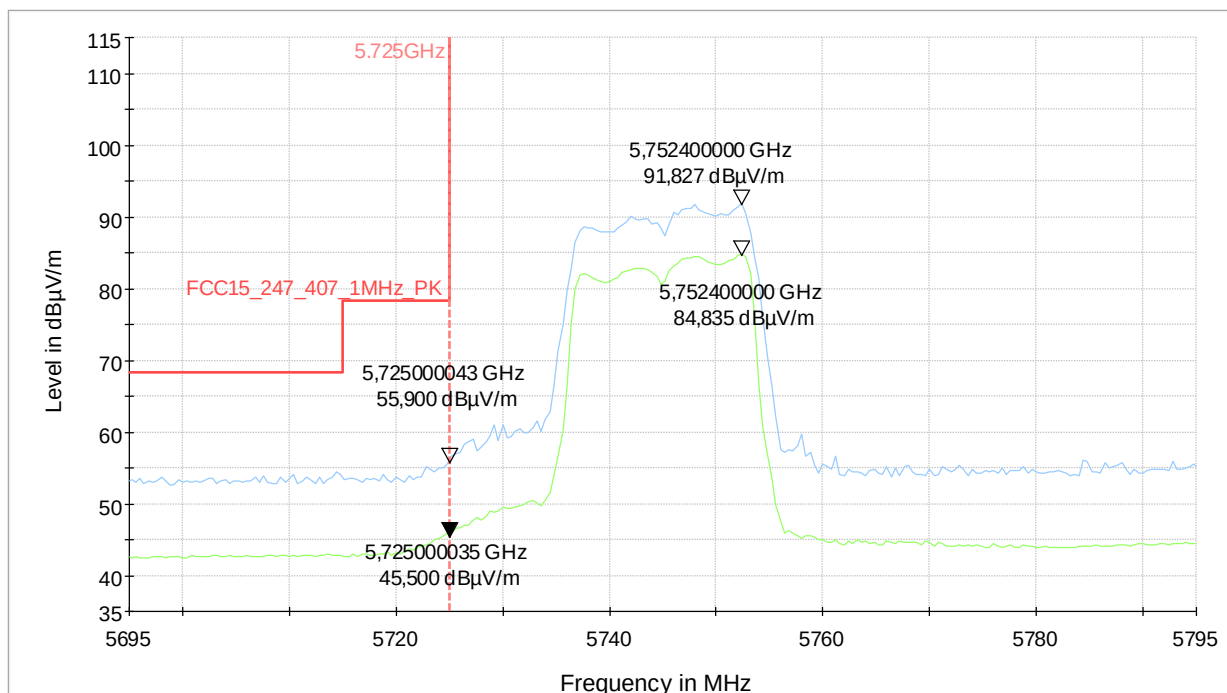


9.29_Channel100_a-Mode_54Mbit_Laying_ExtAnt_BE_Low

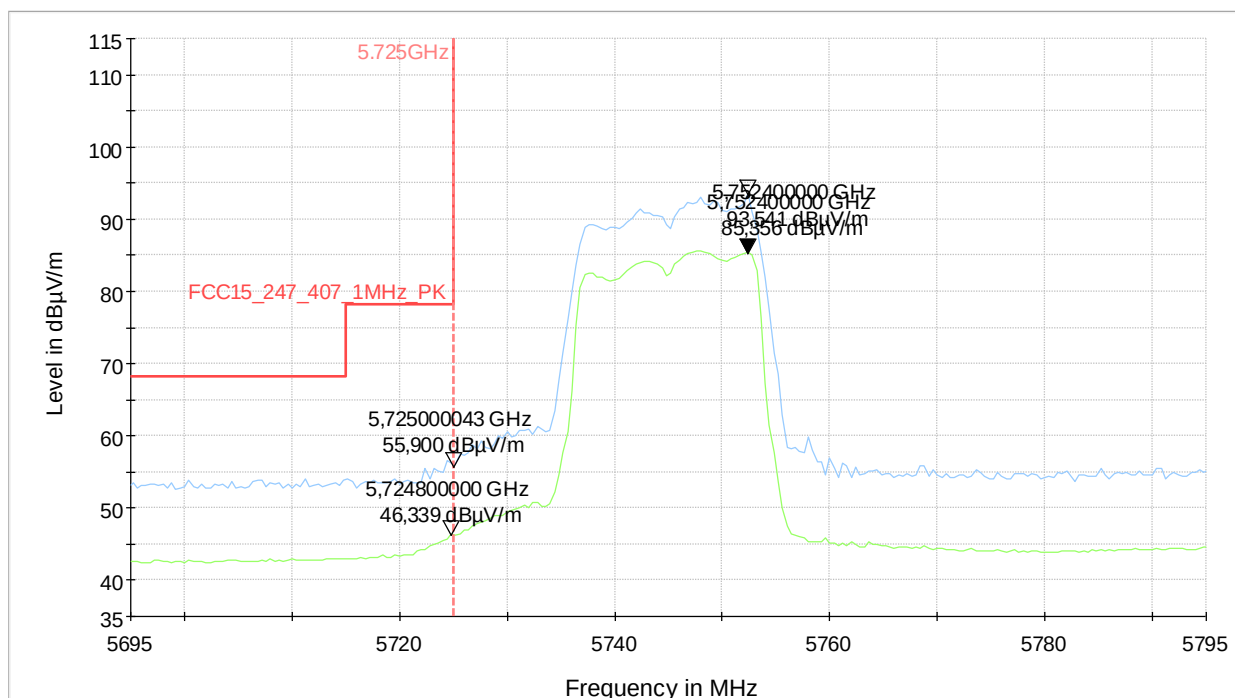


9.30_Channel100_a-Mode_54Mbit_Standing_ExtAnt_BE_Low

3.1.3. Channel 149 a-Mode (left band edge)

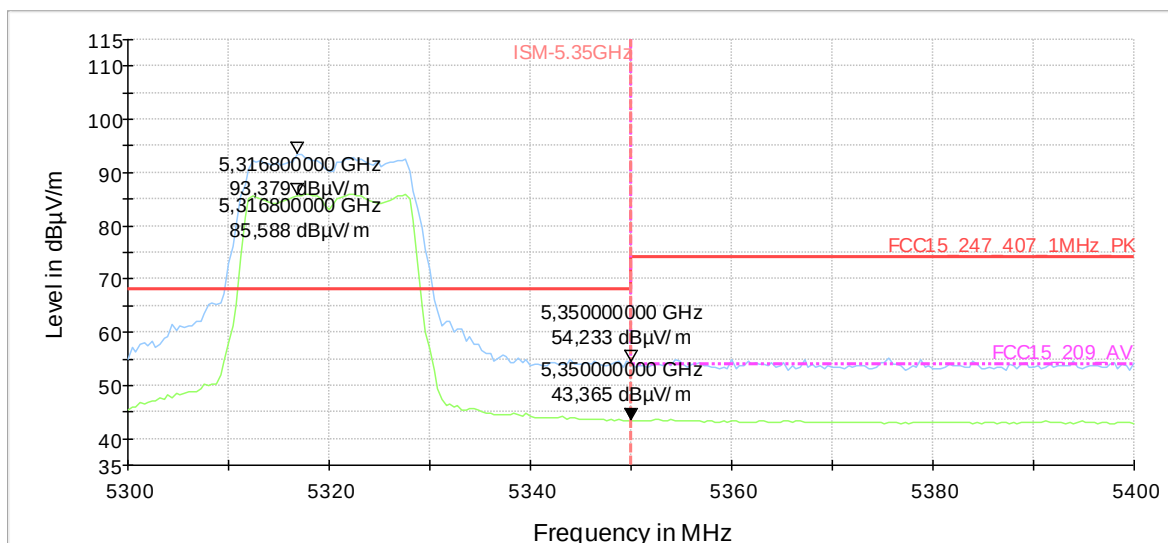


9.33_Channel149_a-Mode_54Mbit_Laying_ExtAnt_BE_Low

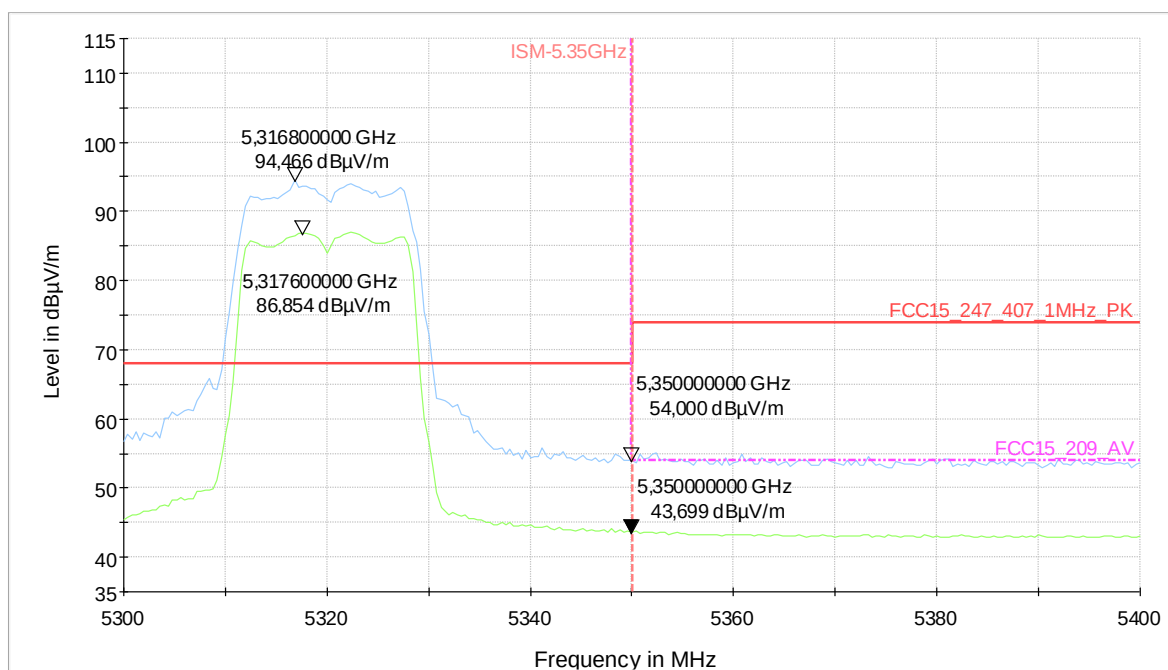


9.34_Channel149_a-Mode_54Mbit_Standing_ExtAnt_BE_Low

3.1.4 Channel 64 a-Mode (right band edge)

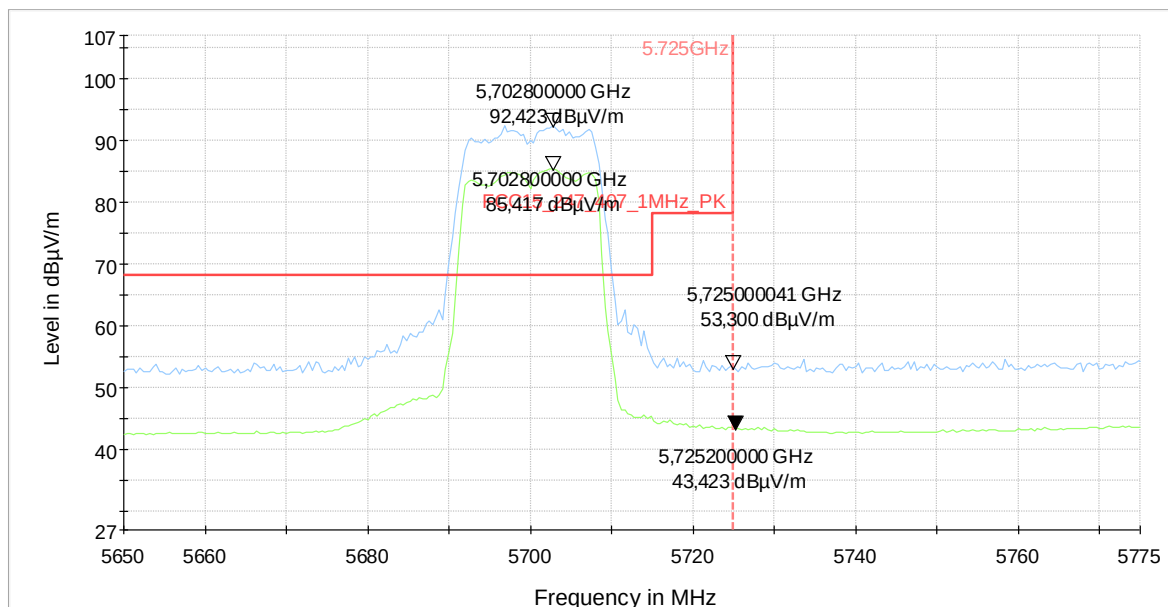


9.27_Channel64_a-Mode_54Mbit_laying_ExtAnt_BE_High

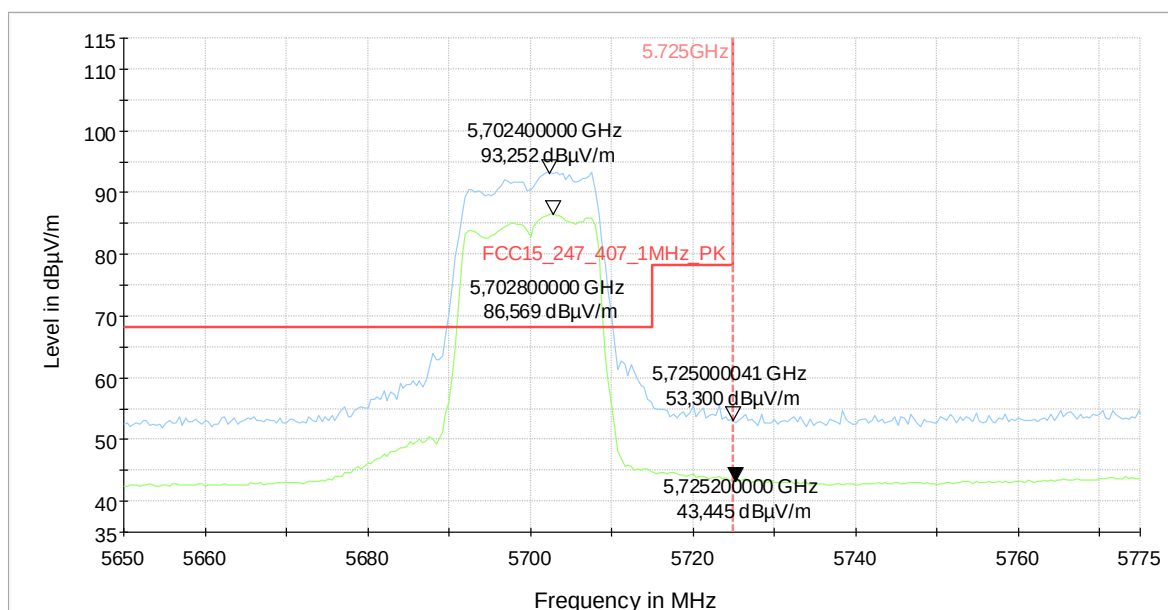


9.28_Channel64_a-Mode_54Mbit_Standing_ExtAnt_BE_High

3.1.5. Channel 140 a-Mode (right band edge)

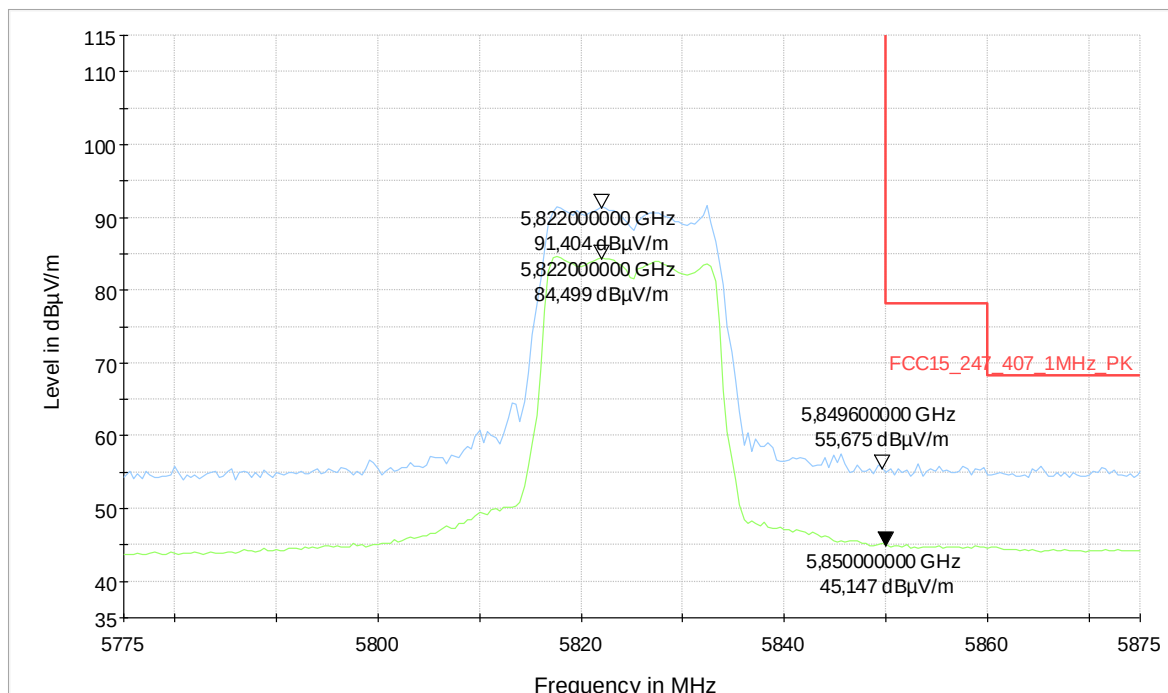


9.31_Channel140_a-Mode_54Mbit_Laying_ExtAnt_BE_High

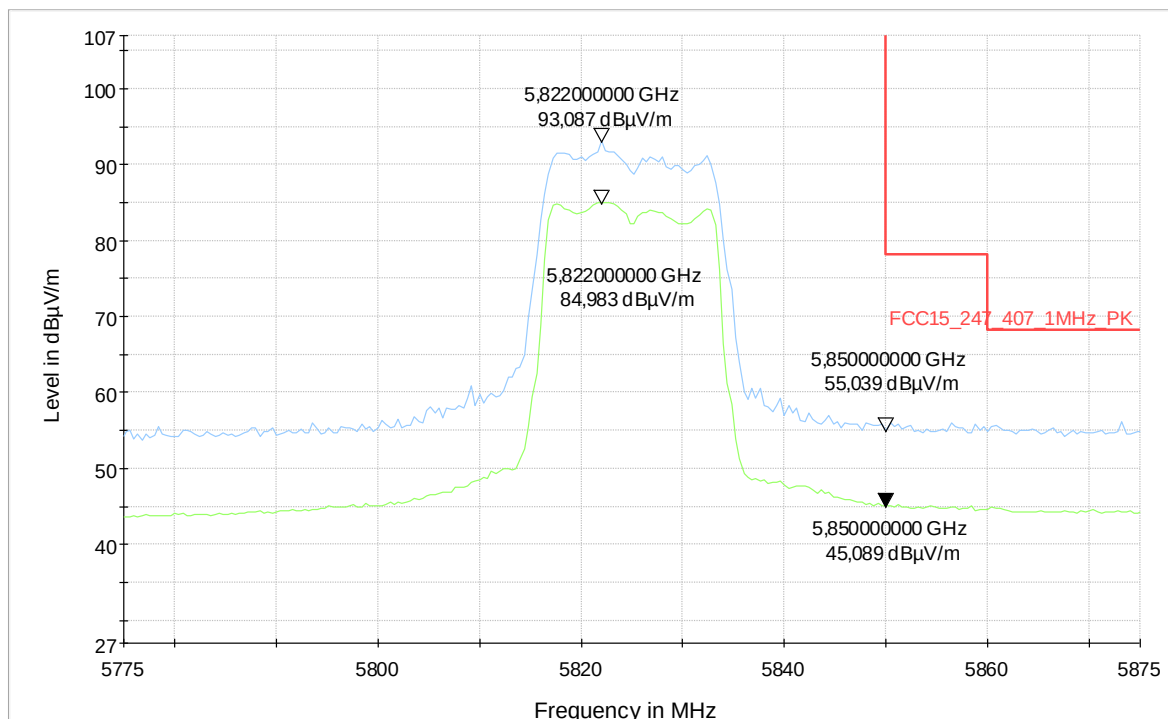


9.32_Channel140_a-Mode_54Mbit_Standing_ExtAnt_BE_High

3.1.6. Channel 165 a-Mode (right band edge)



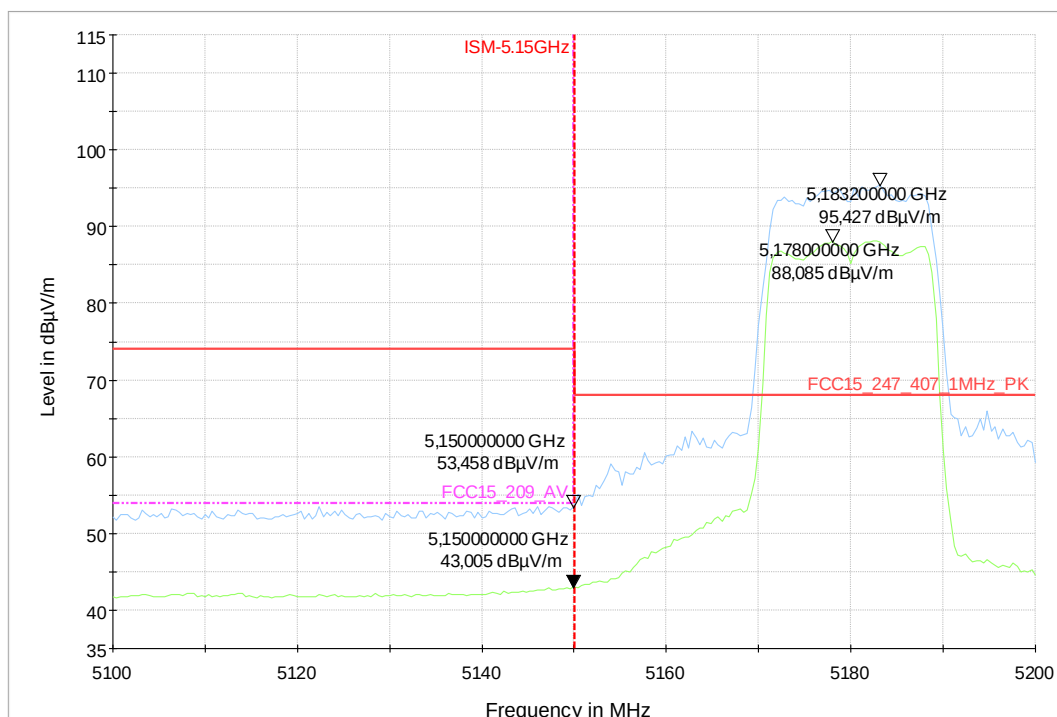
9.35_Channel165_a-Mode_54Mbit_laying_ExtAnt_BE_High



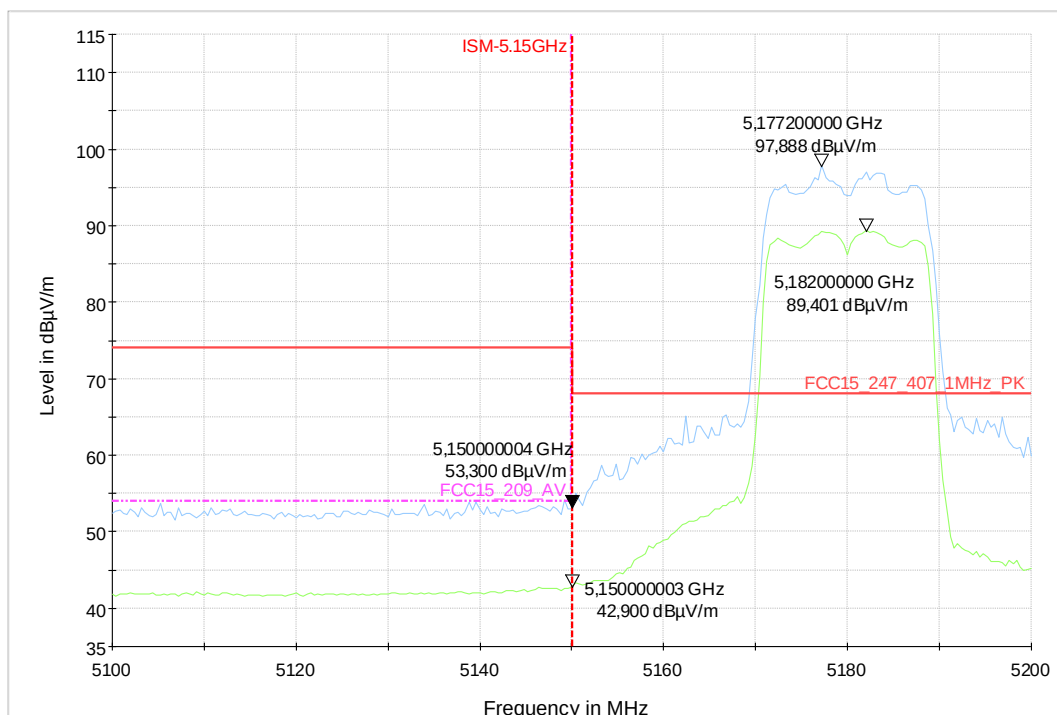
9.36_Channel165_a-Mode_54Mbit_Standing_ExtAnt_BE_High

3.2. n Mode

3.2.1 Channel 36 n-Mode (left band edge)

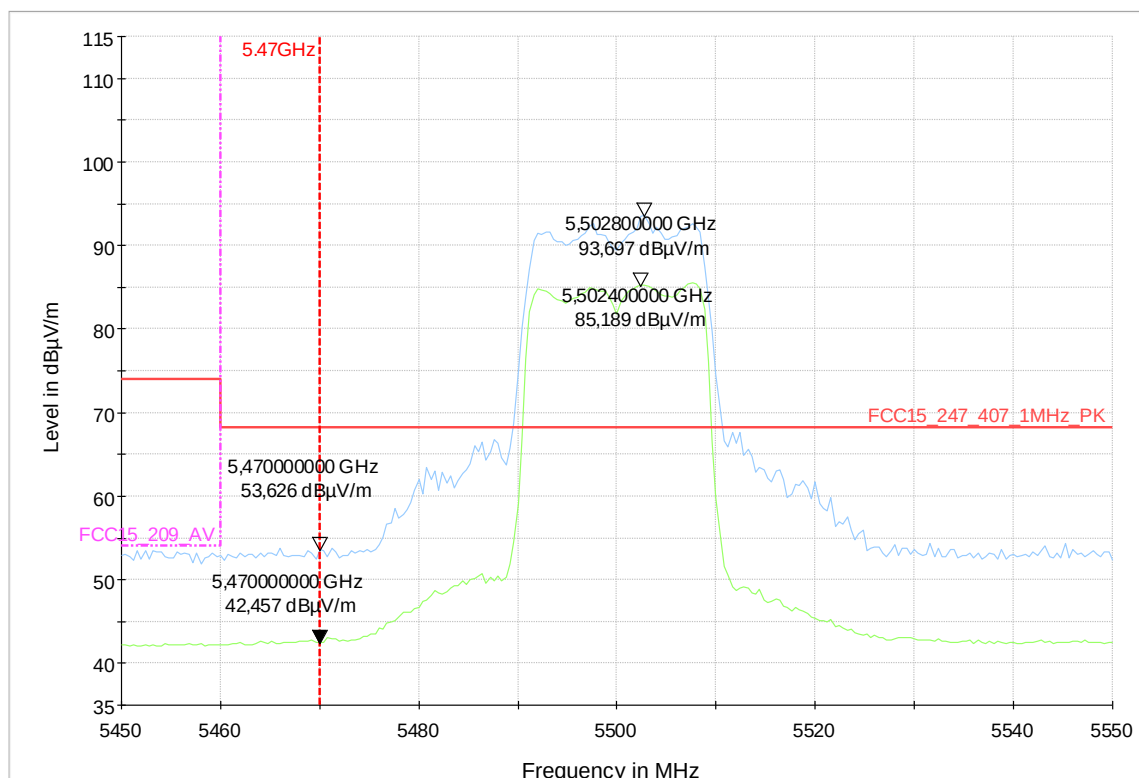


9.49_Channel36_n-Mode_MCS0__Laying_ExtAnt

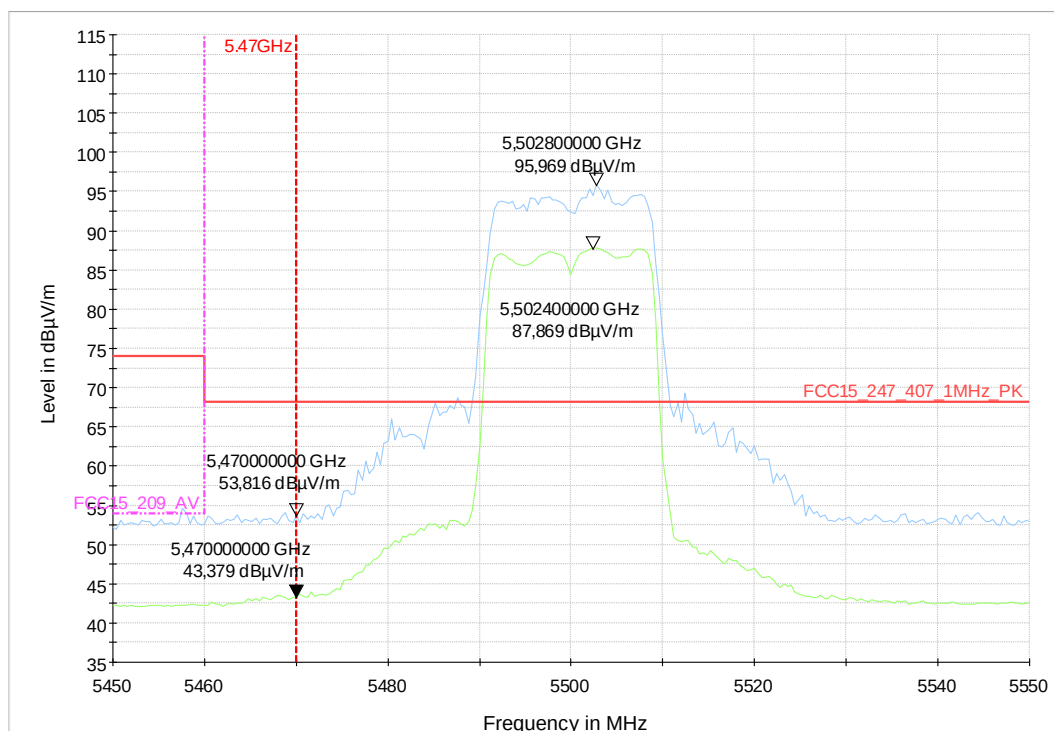


9.50_Channel36_n-Mode_MCS0__Standing_ExtAnt

3.2.2 Channel 100 n-Mode (left band edge)

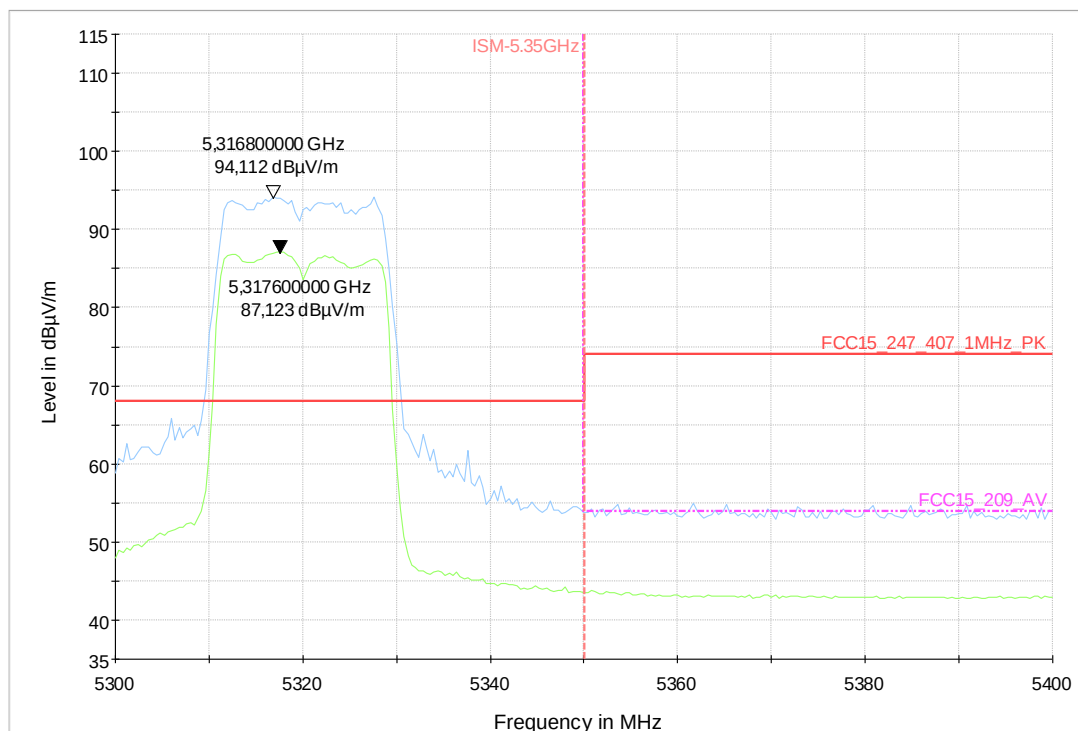


9.53_Channel100_n-Mode_MCS0__Laying_ExtAnt

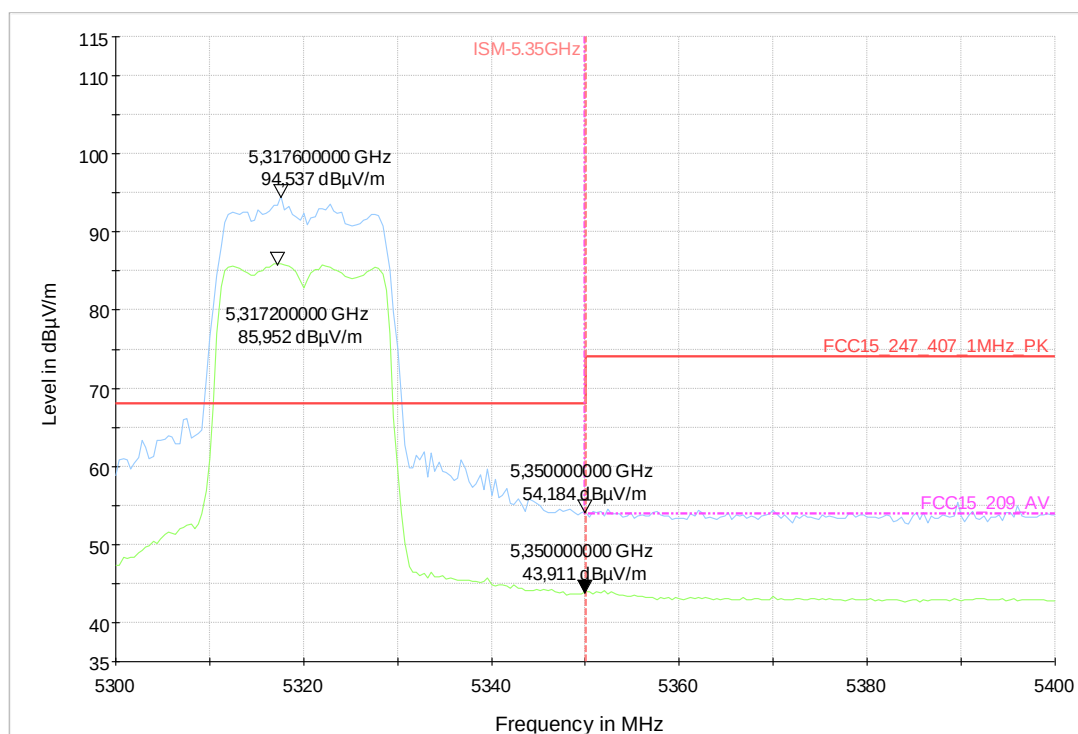


9.54_Channel100_n-Mode_MCS0__Standing_ExtAnt

3.2.3 Channel 64 n-Mode (right band edge)

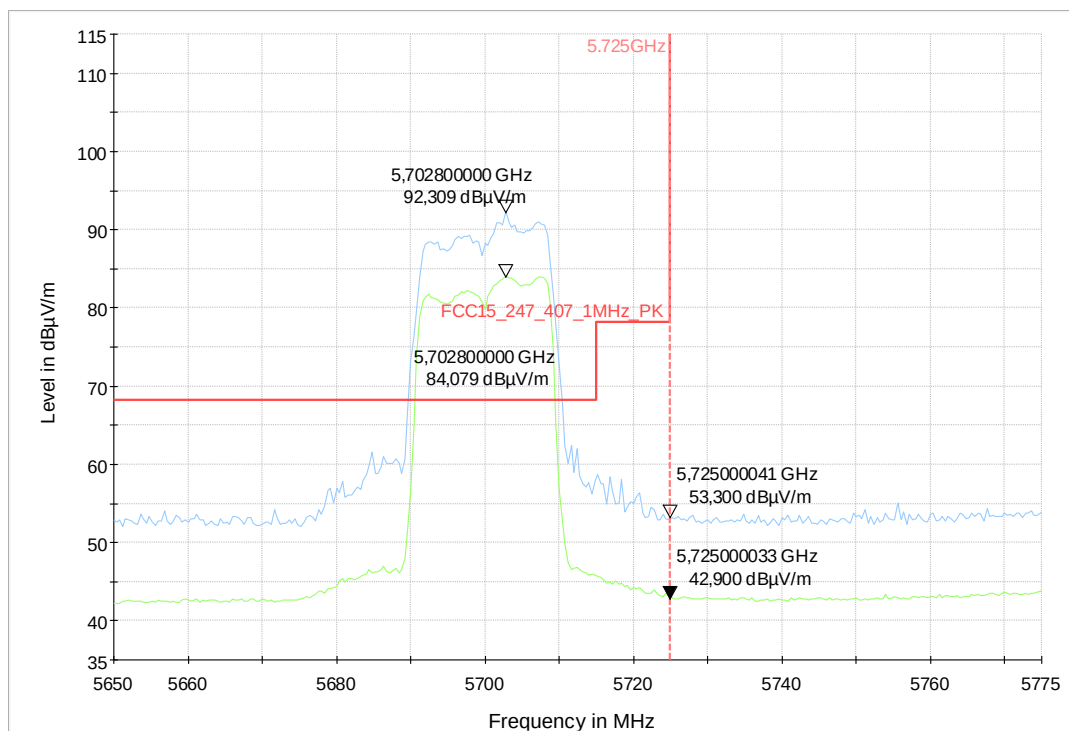


9.51_Channel64_n-Mode_MCS0__Laying_ExtAnt

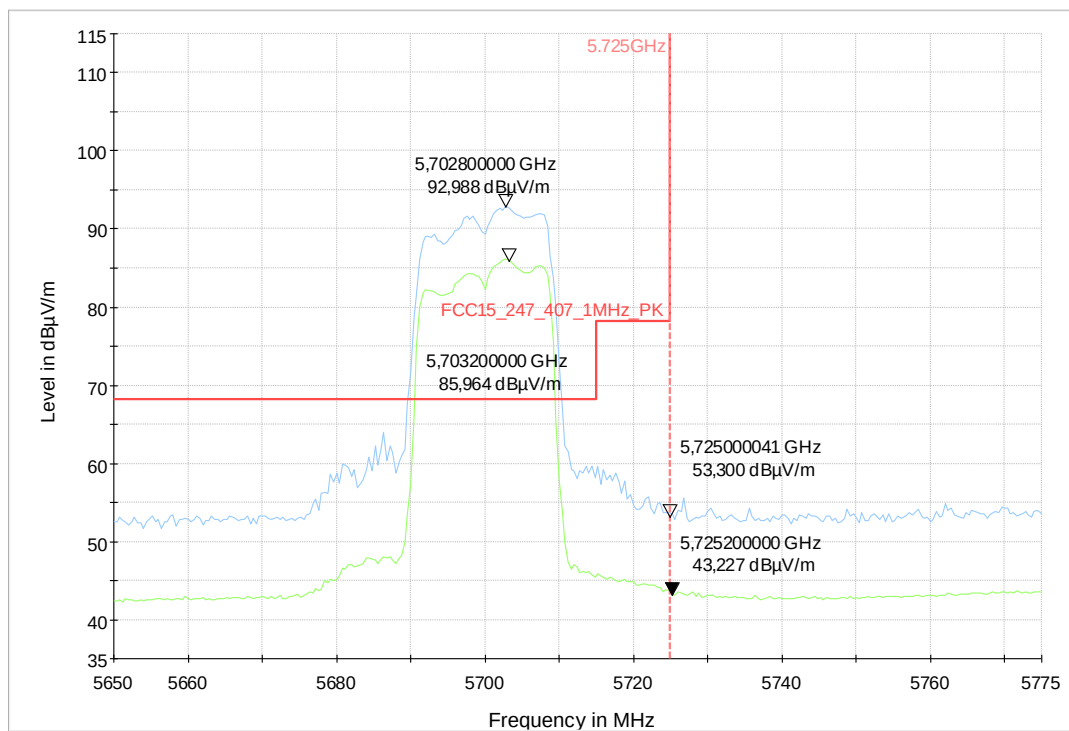


9.52_Channel64_n-Mode_MCS0__Standing_ExtAnt

3.2.4 Channel 140 n-Mode (right band edge)

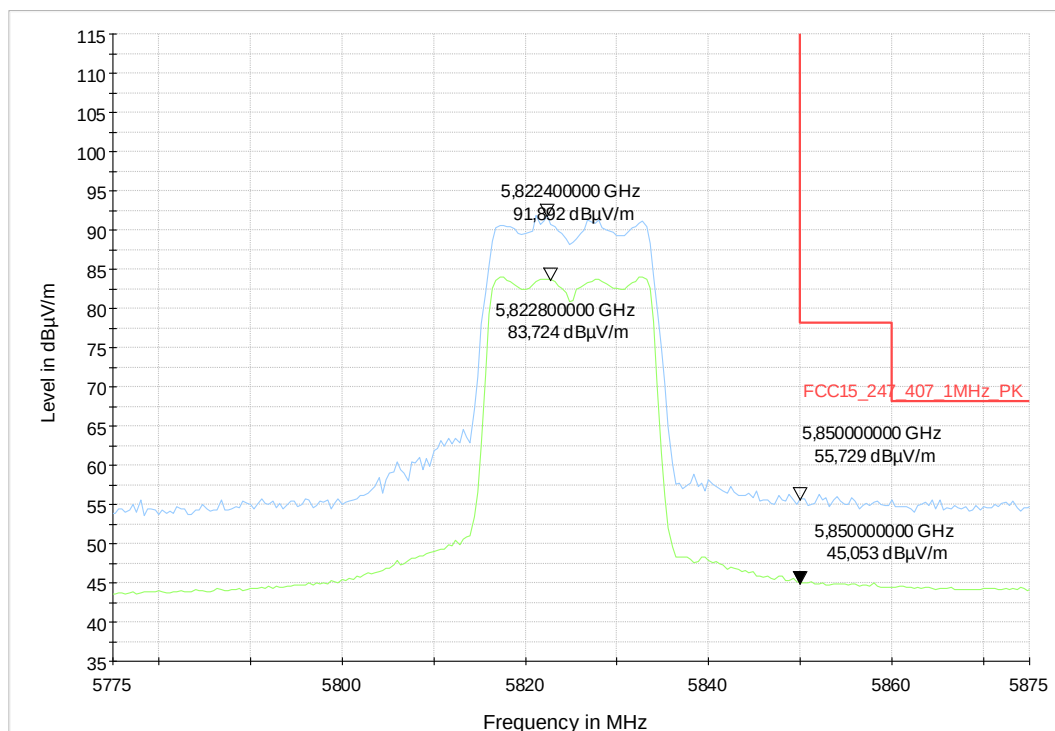


9.55_Channel140_n-Mode_MCS0__Laying_ExtAnt

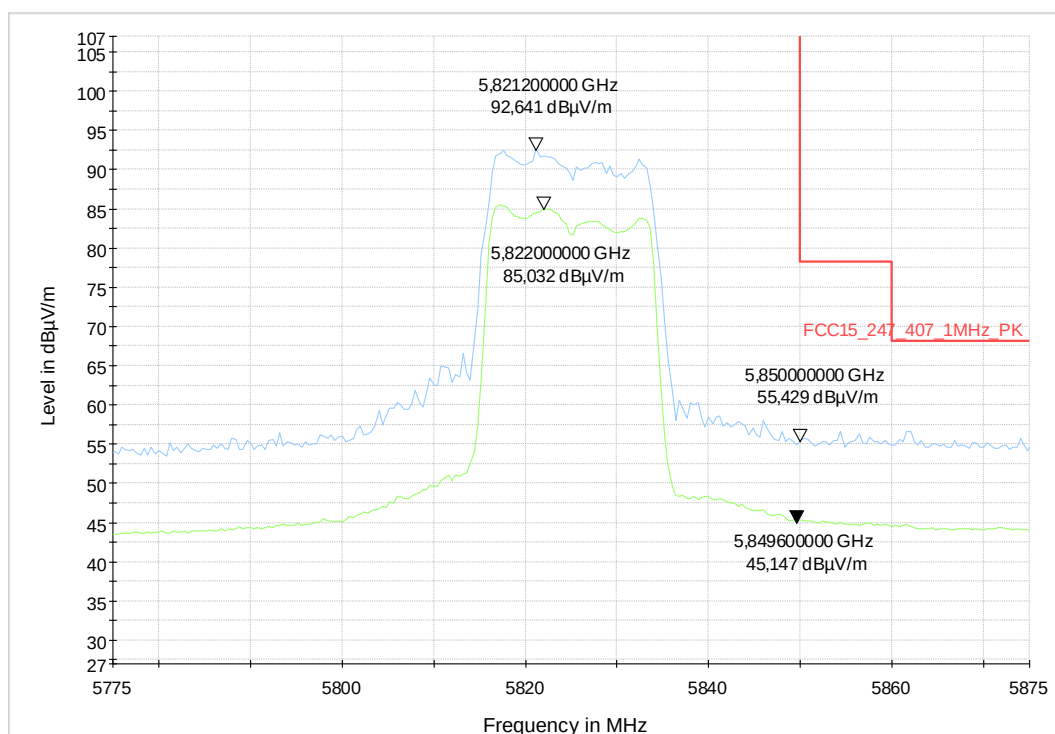


9.56_Channel140_n-Mode_MCS0__Standing_ExtAnt

3.2.5 Channel 165 n-Mode (right band edge)



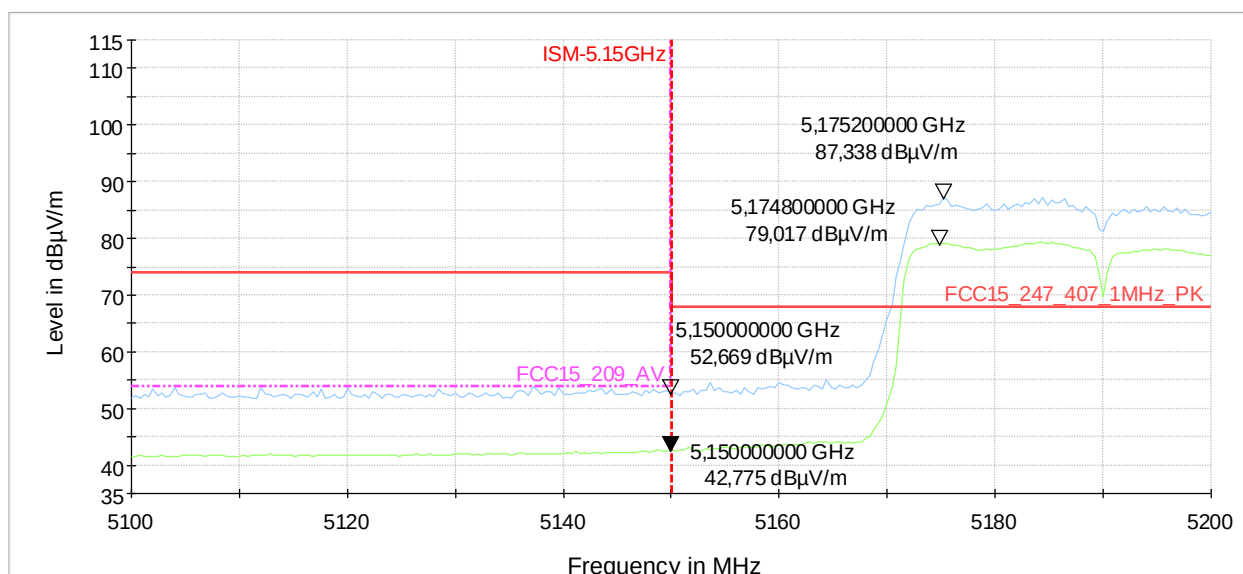
9.59_Channel165_n-Mode_MCS0__Laying_ExtAnt



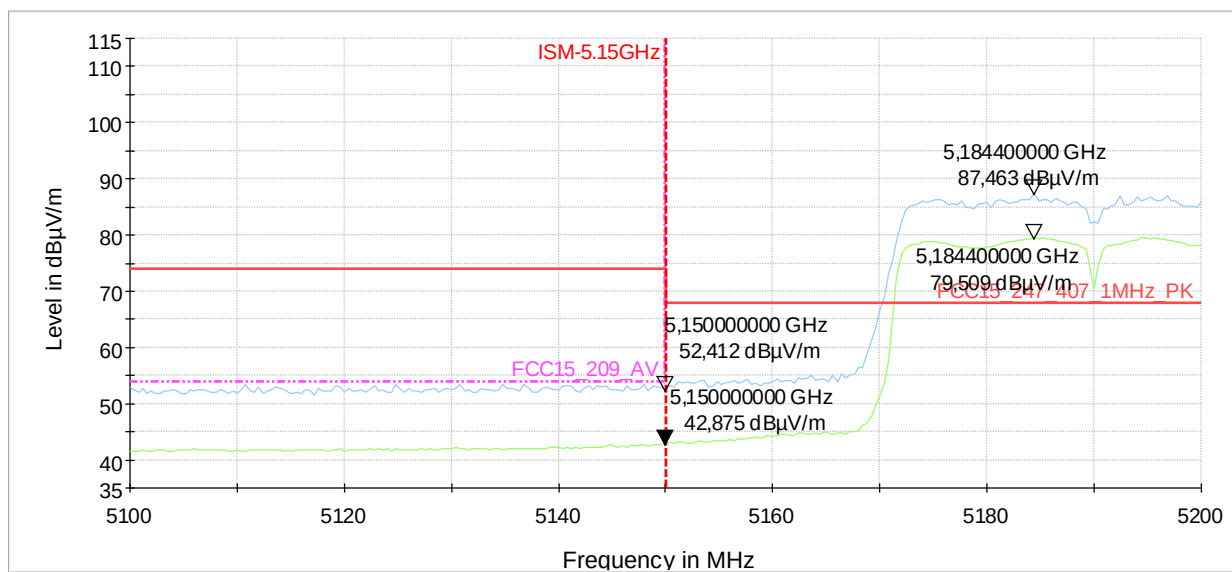
9.60_Channel165_n-Mode_MCS0__Standing_ExtAnt

3.3. n40 Mode

3.3.1 Channel 38 n-Mode (left band edge)

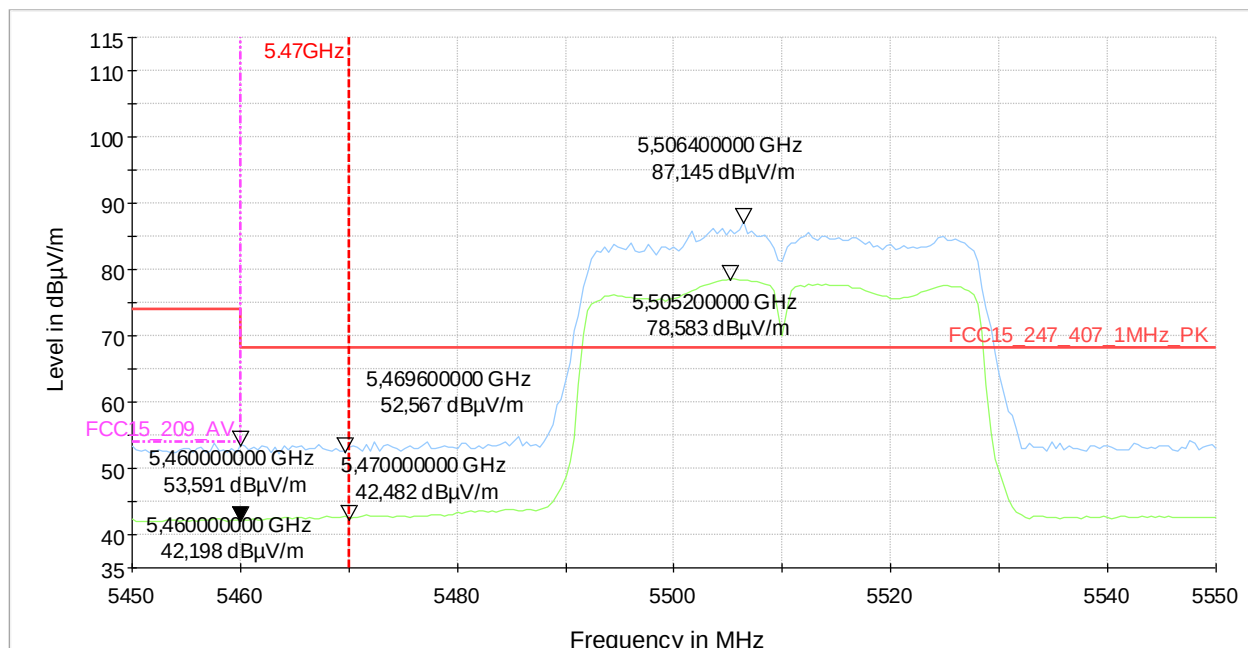


9.73_Channel38_n-Mode_MCS0__Laying_ExtAnt

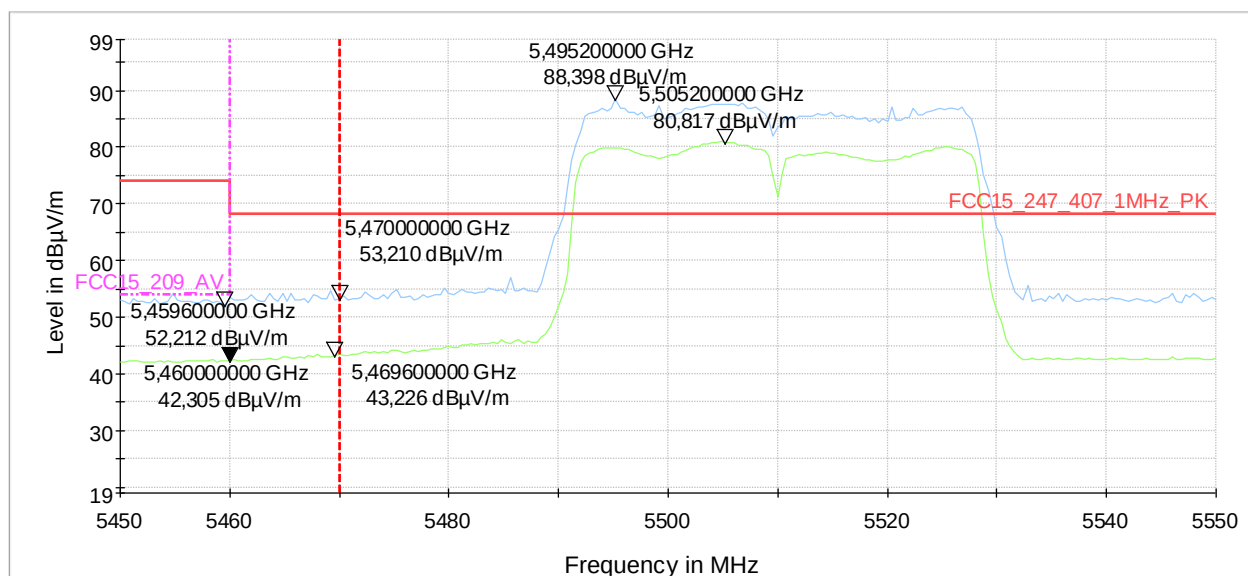


9.74_Channel38_n-Mode_MCS0__Standing_ExtAnt

3.3.2 Channel 102 n-Mode (left band edge)

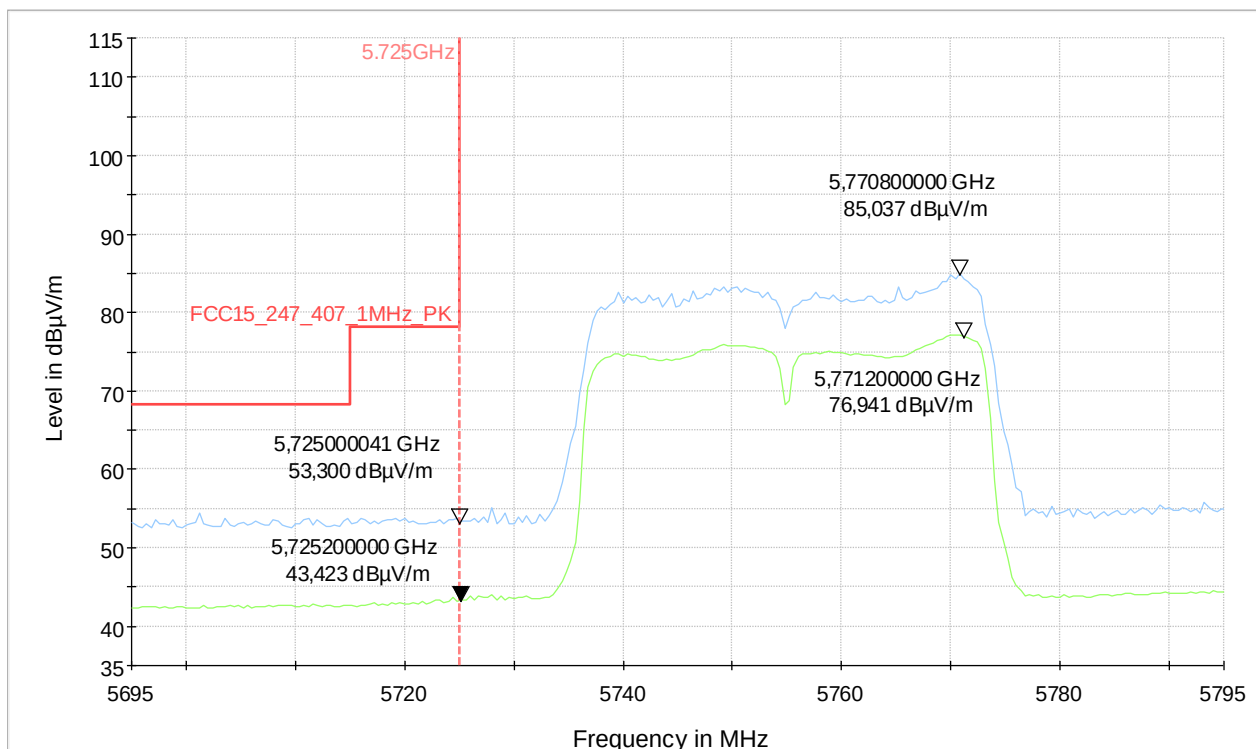


9.77_Channel102_n-Mode_MCS0__Laying_ExtAnt

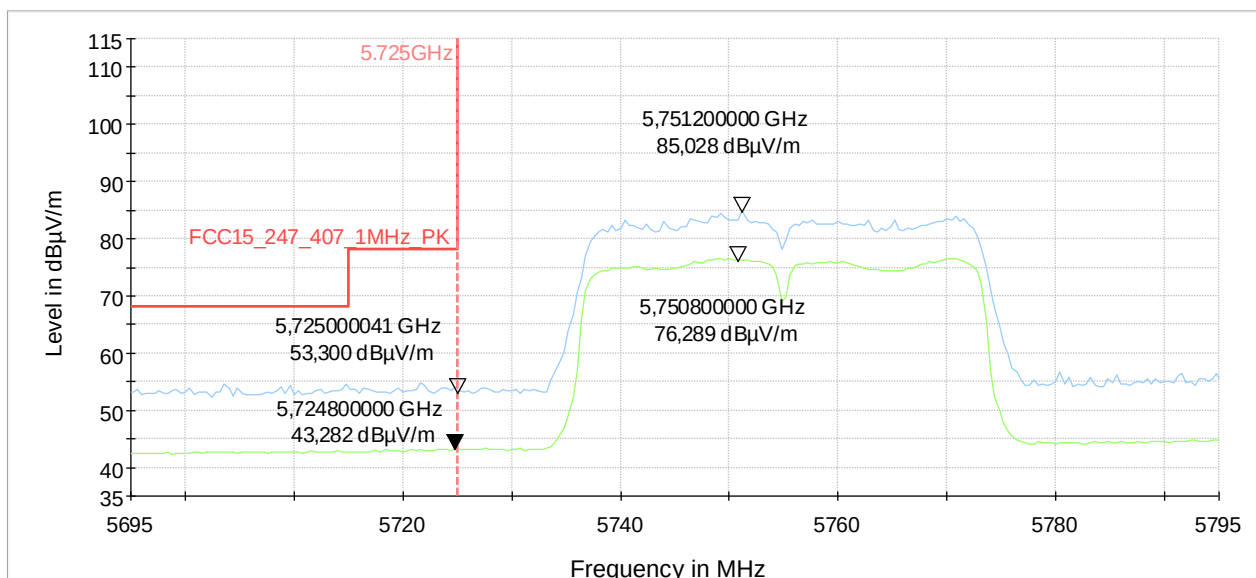


9.78_Channel102_n-Mode_MCS0__Standing_ExtAnt

3.3.3 Channel 102 n-Mode (left band edge)

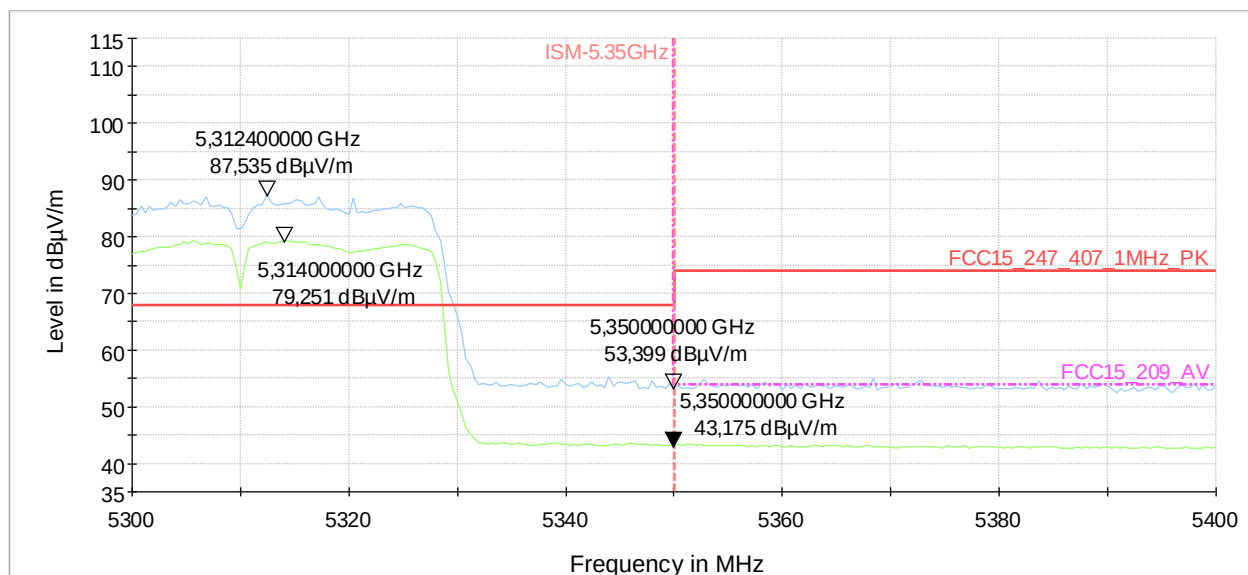


9.81_Channel151_n-Mode_MCS0__Laying_ExtAnt

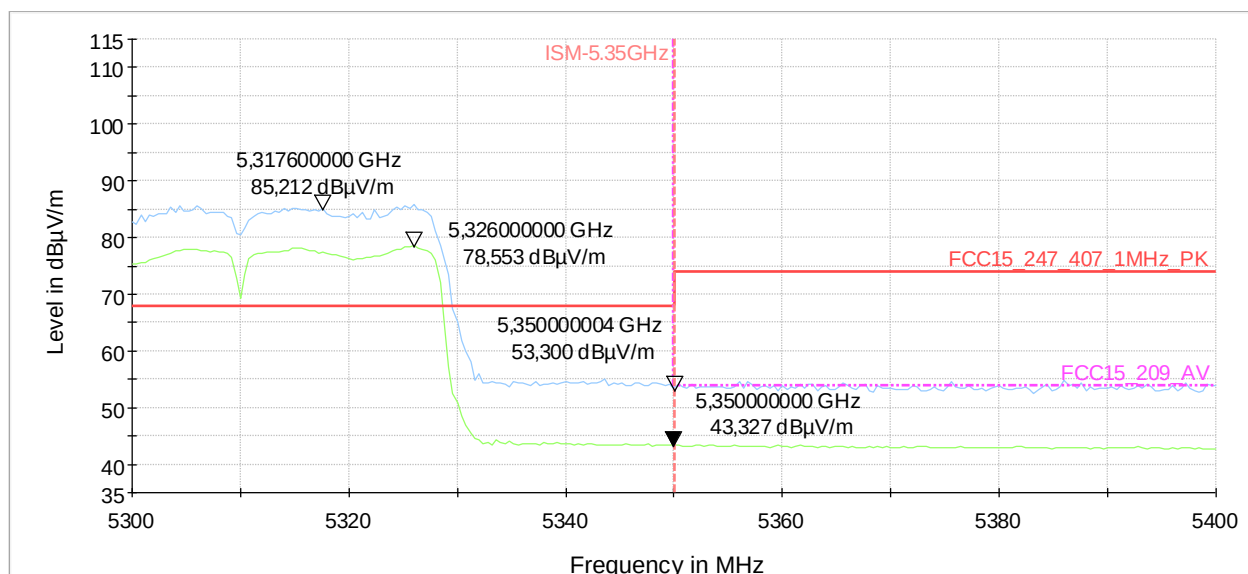


9.82_Channel151_n-Mode_MCS0__Standing_ExtAnt

3.3.4 Channel 62 n-Mode (right band edge)

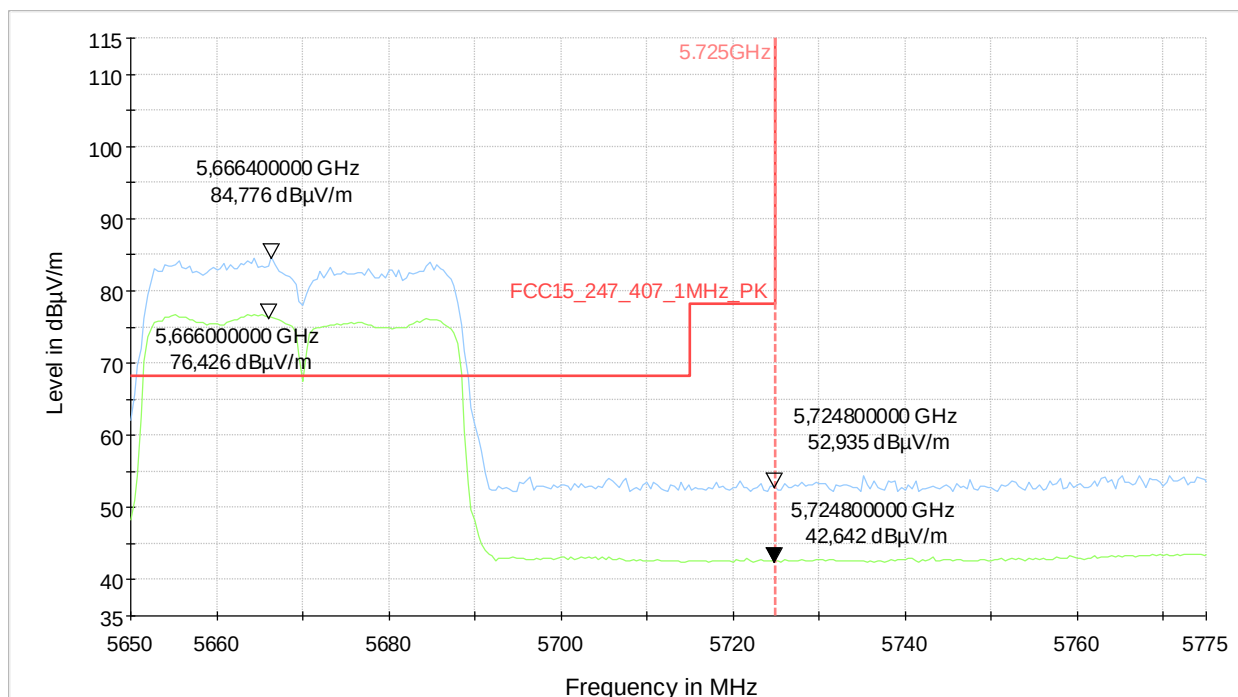


9.75_Channel62_n-Mode_MCS0__Laying_ExtAnt

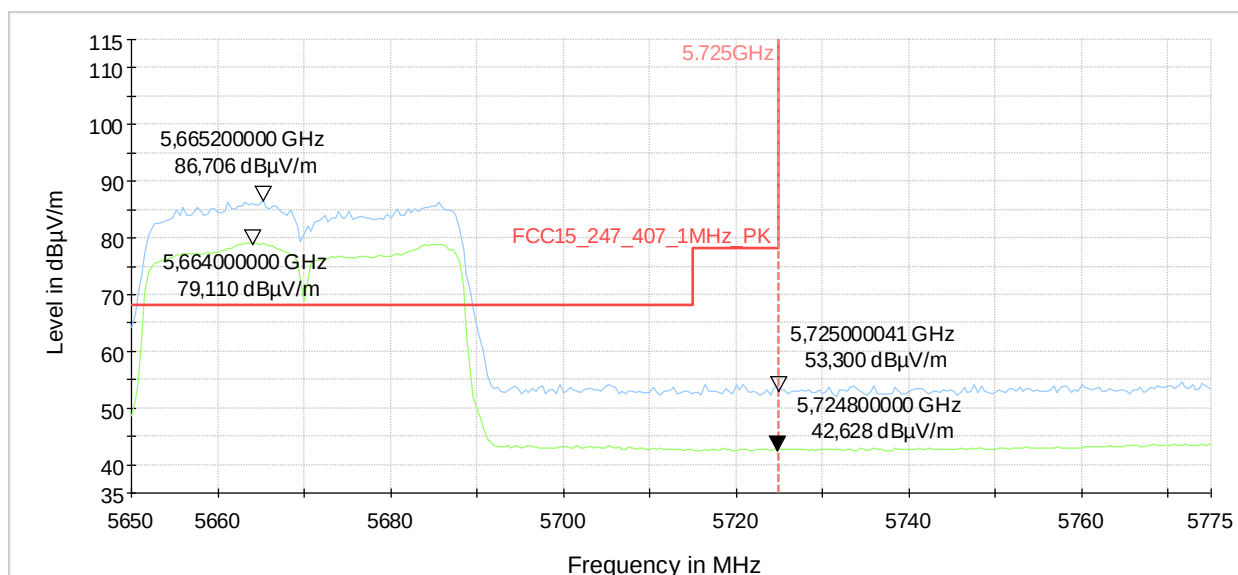


9.76_Channel62_n-Mode_MCS0__Standing_ExtAnt

3.3.5 Channel 134 n-Mode (right band edge)

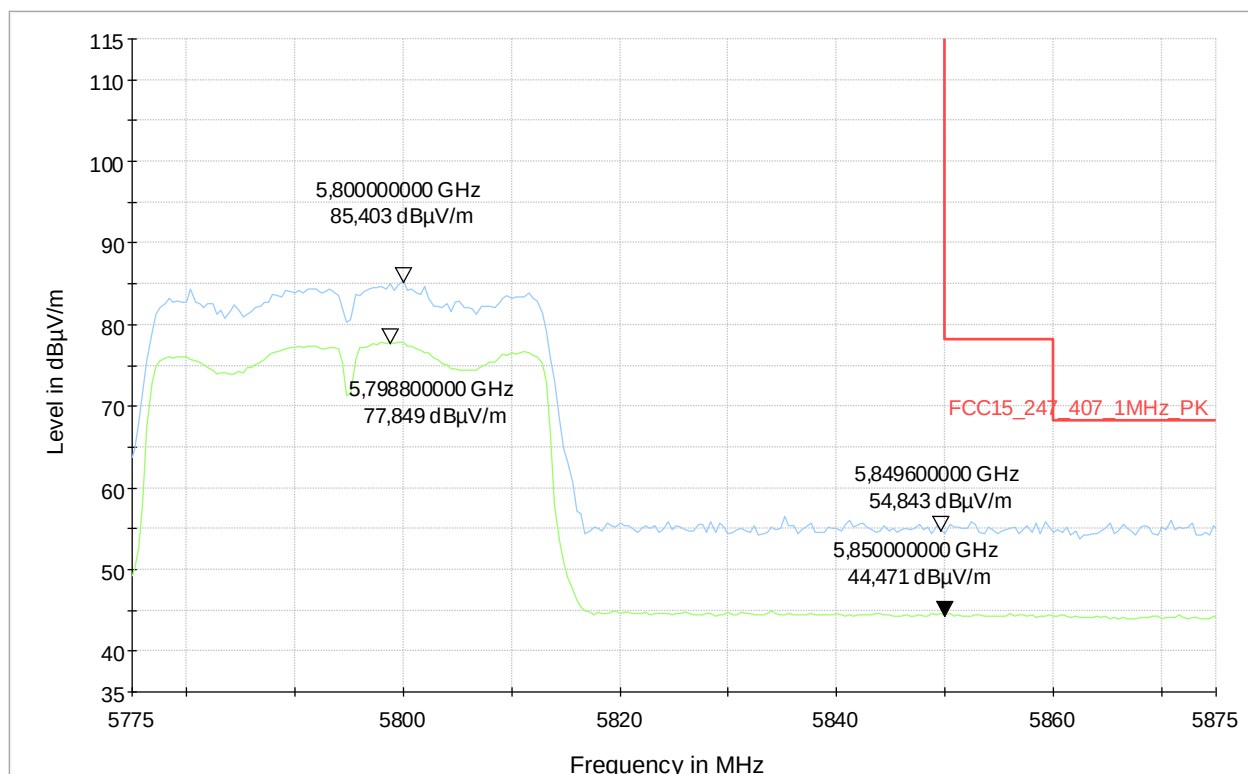


9.79_Channel134_n-Mode_MCS0_Laying_ExtAnt

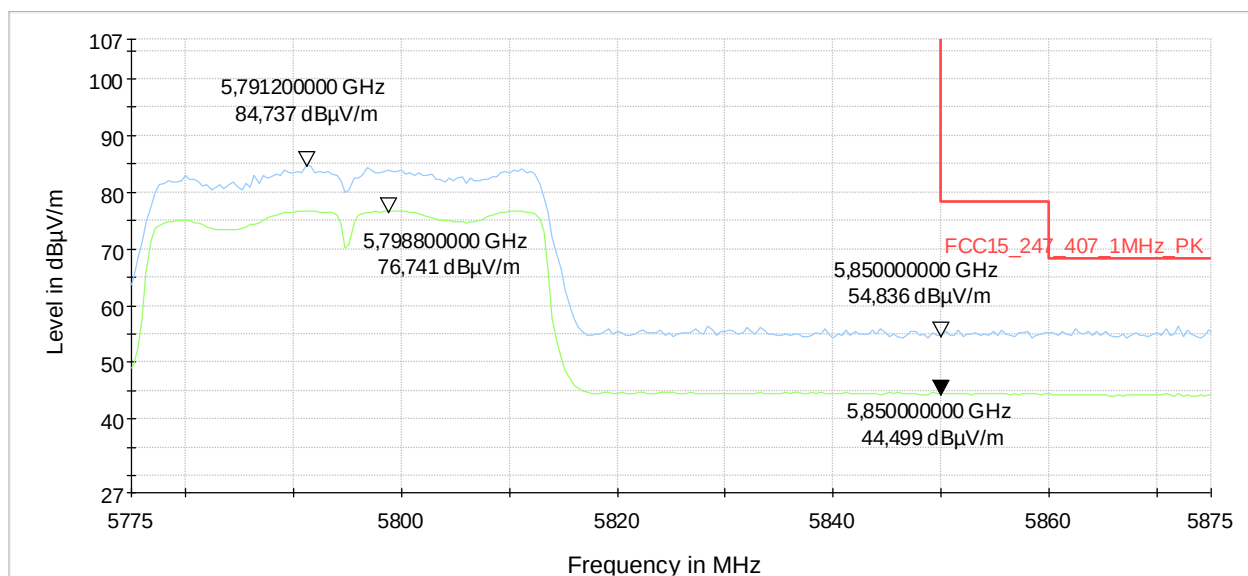


9.80_Channel134_n-Mode_MCS0_Standing_ExtAnt

3.3.6 Channel 159 n-Mode (right band edge)



9.83_Channel159_n-Mode_MCS0__Laying_ExtAnt



9.84_Channel159_n-Mode_MCS0__Standing_ExtAnt