Annex 1: Measurement diagrams
to
PARTIAL T E S T R E P O R T
No.: 6-0542-14-3-2b

According to:

FCC Part 15.407

for

Bosch Security Systems BV

DICENTIS Wireless Access Point DCNM-WAP
+
FCC-ID: UX8-DCNMWAP

Laboratory Accreditation and Listings			
DAkkS Deutsche Akkreditierungsstelle D-PL-12047-01-01	MRA US-EU 0003	Industry Canada Reg. No.: 3462D-1 Reg. No.: 3462D-2 Reg. No.: 3462D-3	Voluntary Controls for Electromagnetic Emissions Reg. No.: R-2666 C-2914, T-1967, G-301
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accredited according to DIN EN ISO/IEC 17025			

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1. Measurement diagrams

1.1. Conducted EMI measurements on AC-mains port according 15.207, class B

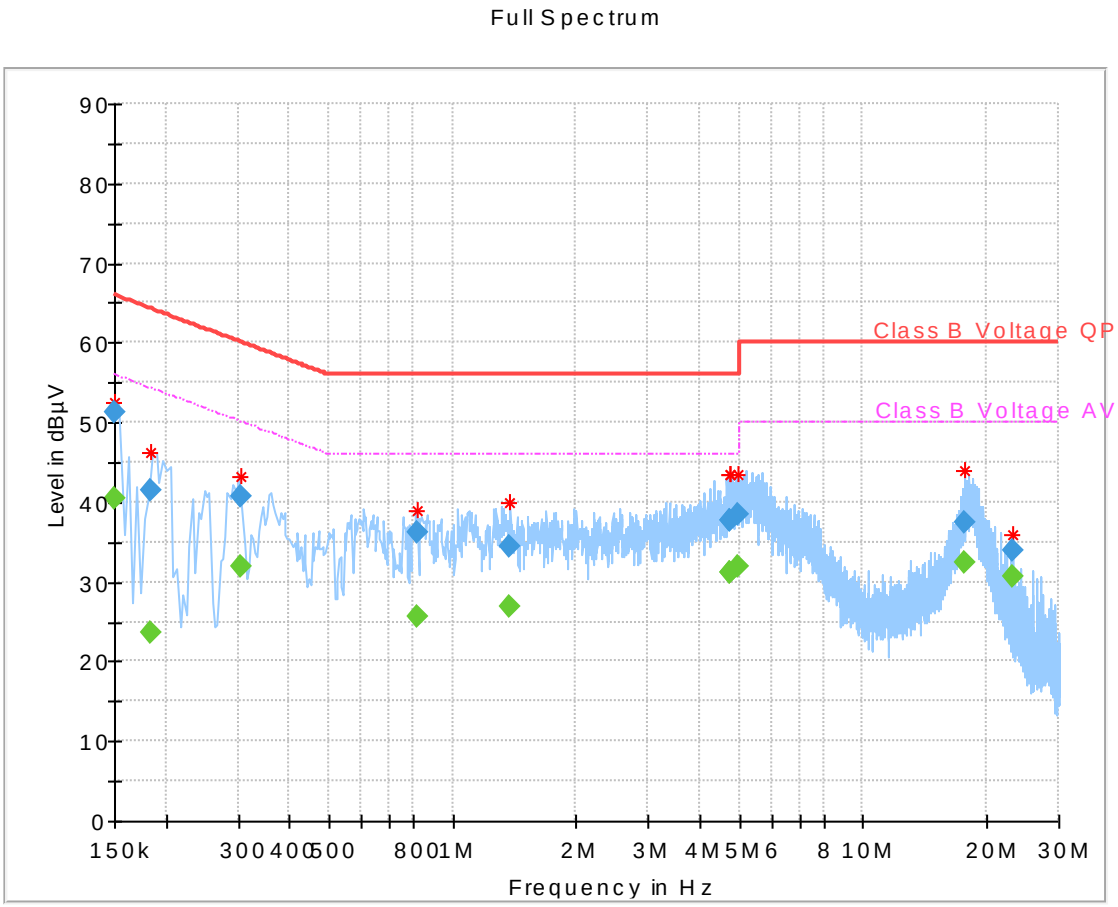
Diagram 1.002_EMI_AC_WAP_Ch36

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 15.207
Operating Mode:	TX, Channel 36 (5180 MHz) + Ping from Notebook to Router + to WAP
Measured on line:	N/L1
Diagram details:	Shows the peak values as a sum of measured ports in maxhold mode
Environmental Conditions:	Humidity: 28%rH; Temperature: 21,4°C
Operator:	Lor
Comments:	MCS8, Ant0+1

EUT Information

Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e cable
Power Supply:	120V AC 60 Hz



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)
0.150000	---	40.59	56.00
0.150000	51.36	---	66.00
0.182656	41.59	---	64.36
0.182656	---	23.54	54.36
0.304844	---	31.89	50.11
0.304844	40.70	---	60.11
0.821563	---	25.75	46.00
0.821563	36.23	---	56.00
1.377969	34.53	---	56.00
1.377969	---	26.96	46.00
4.717188	---	31.26	46.00
4.717188	37.71	---	56.00
4.746250	37.69	---	56.00
4.746250	---	31.22	46.00
4.952813	38.39	---	56.00
4.952813	---	31.90	46.00
17.686563	---	32.31	50.00
17.686563	37.46	---	60.00
23.129063	---	30.78	50.00
23.129063	33.98	---	60.00

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)
0.150000	---	40.59	56.00
0.150000	51.36	---	66.00
0.182656	41.59	---	64.36
0.182656	---	23.54	54.36
0.304844	---	31.89	50.11
0.304844	40.70	---	60.11
0.821563	---	25.75	46.00
0.821563	36.23	---	56.00
1.377969	34.53	---	56.00
1.377969	---	26.96	46.00
4.717188	---	31.26	46.00
4.717188	37.71	---	56.00
4.746250	37.69	---	56.00
4.746250	---	31.22	46.00
4.952813	38.39	---	56.00
4.952813	---	31.90	46.00
17.686563	---	32.31	50.00
17.686563	37.46	---	60.00
23.129063	---	30.78	50.00
23.129063	33.98	---	60.00

Diagram 1.003_EMI_AC_WAP_Ch134

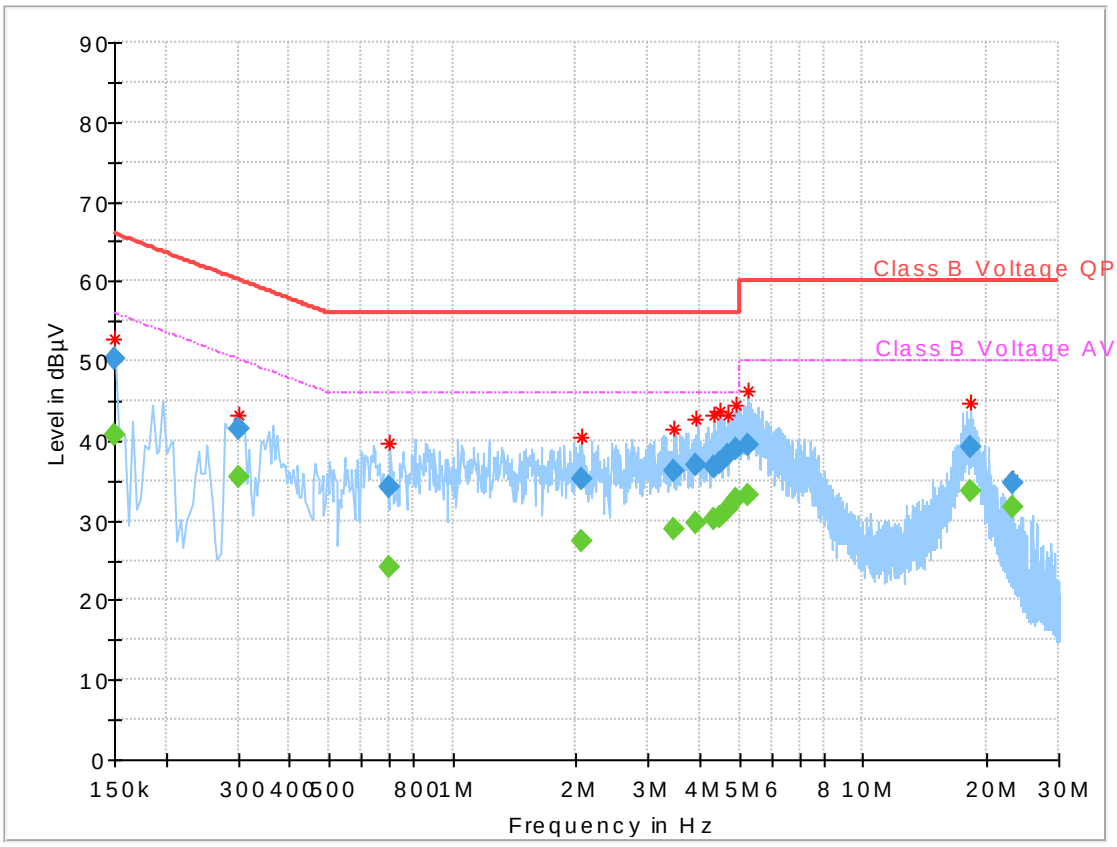
Common Information

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 15.207
Operating Mode:	TX, Channel 134 (5660 MHz) + Ping from Notebook to Router + to WAP
Measured on line:	N/L1
Diagram details:	Shows the peak values as a sum of measured ports in maxhold mode
Environmental Conditions:	Humidity: 28%rH; Temperature: 21,4°C
Operator:	Lor
Comments:	MCS8, Ant0+1

EUT Information

Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e cable
Power Supply:	120V AC 60 Hz

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)
0.150000	---	40.61	56.00
0.150000	50.31	---	66.00
0.302031	41.53	---	60.19
0.302031	---	35.39	50.19
0.698281	34.28	---	56.00
0.698281	---	24.08	46.00
2.053750	---	27.45	46.00
2.053750	35.14	---	56.00
3.458906	36.09	---	56.00
3.458906	---	28.94	46.00
3.934375	36.90	---	56.00
3.934375	---	29.79	46.00
4.336094	36.82	---	56.00
4.336094	---	30.13	46.00
4.503438	---	30.46	46.00
4.503438	37.27	---	56.00
4.685938	38.29	---	56.00
4.685938	---	31.48	46.00
4.913594	39.05	---	56.00
4.913594	---	32.63	46.00
5.244688	39.44	---	60.00
5.244688	---	33.06	50.00
18.301563	---	33.81	50.00
18.301563	39.16	---	60.00
23.127969	---	31.78	50.00
23.127969	34.72	---	60.00

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)
0.150000	---	40.61	56.00
0.150000	50.31	---	66.00
0.302031	41.53	---	60.19
0.302031	---	35.39	50.19
0.698281	34.28	---	56.00
0.698281	---	24.08	46.00
2.053750	---	27.45	46.00
2.053750	35.14	---	56.00
3.458906	36.09	---	56.00
3.458906	---	28.94	46.00
3.934375	36.90	---	56.00
3.934375	---	29.79	46.00
4.336094	36.82	---	56.00
4.336094	---	30.13	46.00
4.503438	---	30.46	46.00
4.503438	37.27	---	56.00
4.685938	38.29	---	56.00
4.685938	---	31.48	46.00
4.913594	39.05	---	56.00
4.913594	---	32.63	46.00
5.244688	39.44	---	60.00
5.244688	---	33.06	50.00
18.301563	---	33.81	50.00
18.301563	39.16	---	60.00
23.127969	---	31.78	50.00
23.127969	34.72	---	60.00

1.2. Radiated field strength measurements accord. §15.209 (15.205) and §15.407

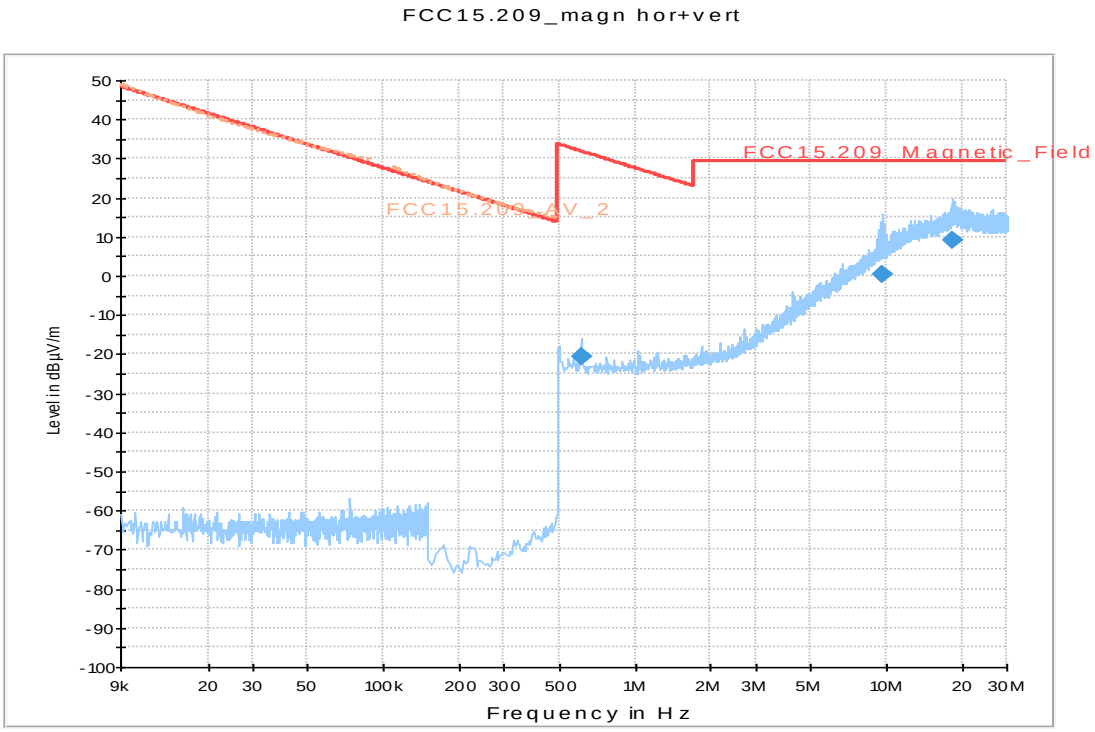
1.2.1. Magnetic field measurements f<30MHz

Diagram No. 2.06a_Tx_Ch36_HT20_MCS8

	Date: 21.01.2015 Page 1 of 2
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
Operator:	Lor
Operating conditions:	TX-on , continuous, modulation on, Channel 36
Power during tests:	120V AC/ 60Hz powered
Comment 1:	Channel middle=5180MHz

EUT Information

Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e cable



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.612000	-20.7	1000.0	10.000	V	119.0	-35.5	52.60	31.90
9.612000	0.6	1000.0	10.000	V	356.0	-4.6	29.00	29.50
18.112000	9.2	1000.0	10.000	H	212.0	3.1	20.30	29.50

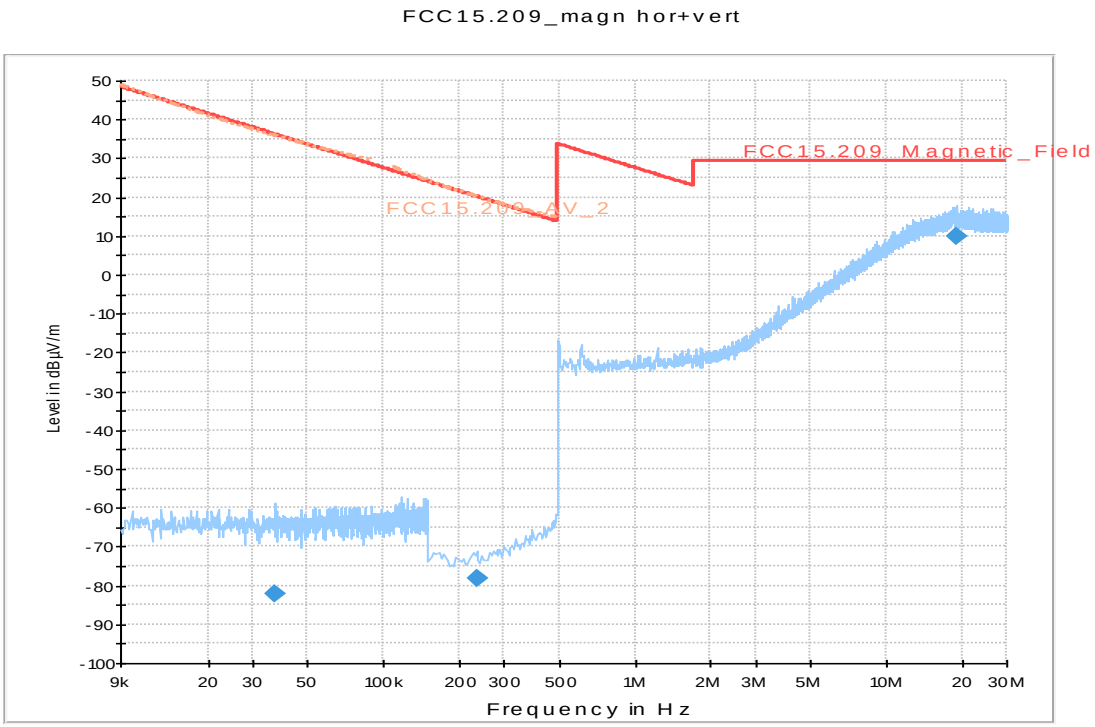
Diagram No. 2.08a_Tx_Ch134_HT40_MCS8

Date: 21.01.2015 Page 1 of 2

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
Operator:	Lor
Operating conditions:	TX-on , continuous, modulation on, Channel 134
Power during tests:	120V AC/ 60Hz powered
Comment 1:	Channel middle=5670MHz

EUT Information

Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e cable



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.037000	-82.2	1000.0	0.200	H	332.0	-96.0	118.5	36.20
0.234000	-78.2	1000.0	10.000	H	0.0	-90.4	98.40	20.20
...	...	...	...	...	...	...	...	...

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

Diagram No. 3.02a_Tx_Ch36

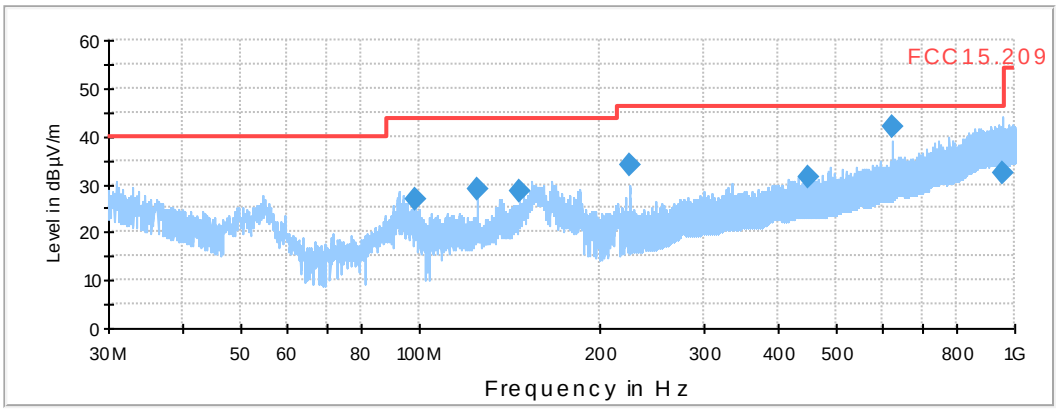
Common Information

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 V8.51.0
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:	Kta/Lor
Operating conditions:	WLAN, channel 36, MCS8
Power during tests:	120V/ 60Hz

EUT Information

Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e LAN cable

01_FCC15.209_hor+vert_KP0



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
98.310000	26.7	1000.0	120.000	148.0	V	310.0	8.7	16.80	43.50
125.010000	29.0	1000.0	120.000	116.0	V	40.0	8.3	14.50	43.50
147.450000	28.6	1000.0	120.000	105.0	V	258.0	8.9	14.90	43.50
224.990000	34.0	1000.0	120.000	105.0	H	130.0	12.7	12.00	46.00
449.990000	31.6	1000.0	120.000	116.0	V	258.0	19.4	14.40	46.00
624.990000	41.9	1000.0	120.000	105.0	H	303.0	22.8	4.10	46.00
...	...	...	...	...	...	...	...	...	...

Diagram No. 3.02b_Tx_Ch36

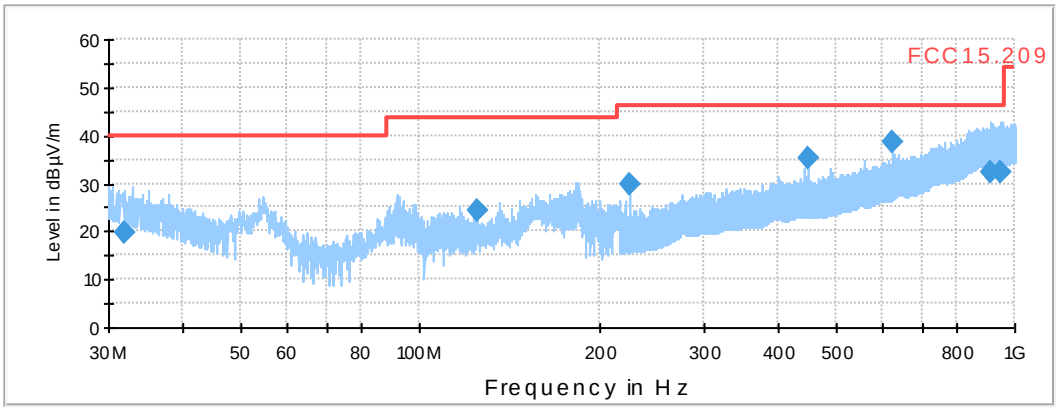
Common Information

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 V8.51.0
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:	Kta/Lor
Operating conditions:	WLAN, channel 36, MCS8
Power during tests:	120V/ 60Hz

EUT Information

Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e LAN cable

01_FCC15.209_hor+vert_KP0



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
31.960000	19.5	1000.0	120.000	295.0	V	177.0	21.1	20.50	40.00
125.020000	24.2	1000.0	120.000	174.0	H	248.0	8.3	19.30	43.50
224.990000	30.0	1000.0	120.000	157.0	V	56.0	12.7	16.00	46.00
450.000000	35.2	1000.0	120.000	165.0	H	200.0	19.4	10.80	46.00
625.010000	38.5	1000.0	120.000	105.0	H	314.0	22.8	7.50	46.00
908.620000	32.3	1000.0	120.000	157.0	V	273.0	27.4	13.70	46.00
...	...	...	...	...	...	...	...	...	...

Diagram No. 3.03a_Tx_Ch134

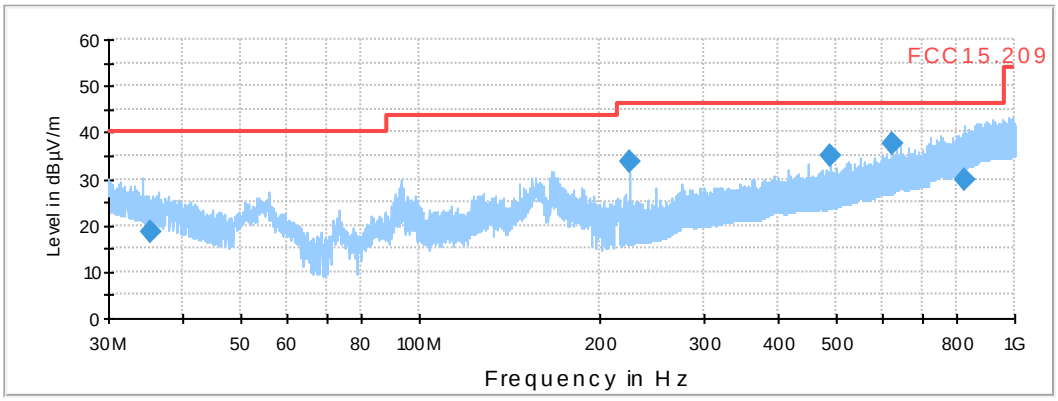
09.12.2014 Page 1 of 1

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 V8.51.0
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:	GAr
Operating conditions:	WLAN 5GHz, Channel 134, HT40 Mode
Power during tests:	120V/ 60Hz

EUT Information

Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e LAN cable

01_FCC15.209_hor+vert_KP0



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
35.330000	18.8	1000.0	120.000	191.0	H	235.0	19.5	21.20	40.00
224.970000	33.8	1000.0	120.000	105.0	H	113.0	12.7	12.20	46.00
491.490000	35.1	1000.0	120.000	133.0	H	222.0	19.7	10.90	46.00
625.000000	37.6	1000.0	120.000	105.0	V	264.0	22.8	8.40	46.00
825.770000	29.7	1000.0	120.000	133.0	V	102.0	25.8	16.30	46.00

Diagram No. 3.03b_Tx_Ch134

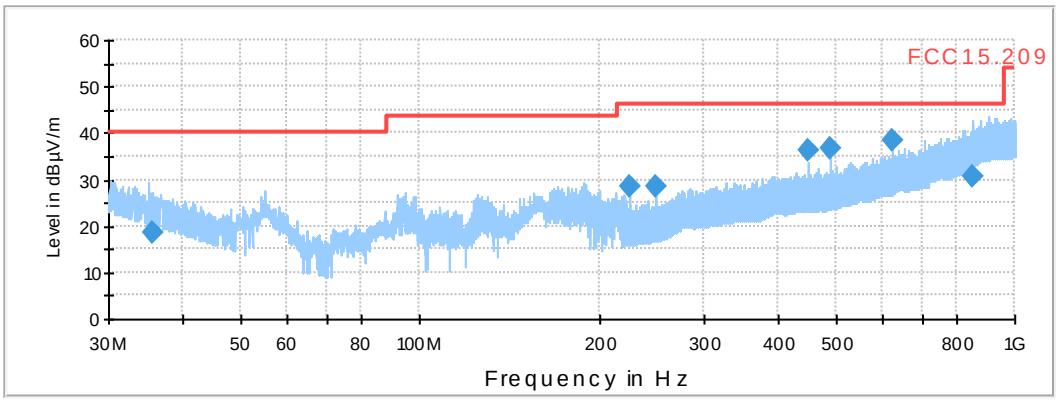
09.12.2014 Page 1 of 1

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 V8.51.0
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:	GAr
Operating conditions:	WLAN 5GHz, Channel 134, HT40 Mode
Power during tests:	120V/ 60Hz

EUT Information

Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e LAN cable

01_FCC15.209_hor+vert_KP0



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
35.580000	18.5	1000.0	120.000	125.0	H	298.0	19.4	21.50	40.00
225.000000	28.6	1000.0	120.000	105.0	V	40.0	12.7	17.40	46.00
250.010000	28.6	1000.0	120.000	105.0	H	72.0	13.3	17.40	46.00
449.990000	36.1	1000.0	120.000	149.0	H	181.0	19.4	9.90	46.00
491.490000	36.9	1000.0	120.000	133.0	H	217.0	19.7	9.10	46.00
625.000000	38.4	1000.0	120.000	105.0	H	2.0	22.8	7.60	46.00
847.390000	30.5	1000.0	120.000	360.0	V	95.0	26.0	15.50	46.00

1.2.3. Field strength measurements 1GHz < f < 18GHz

Diagram No.:4.02a_RSE_5G_CH36_MCS8

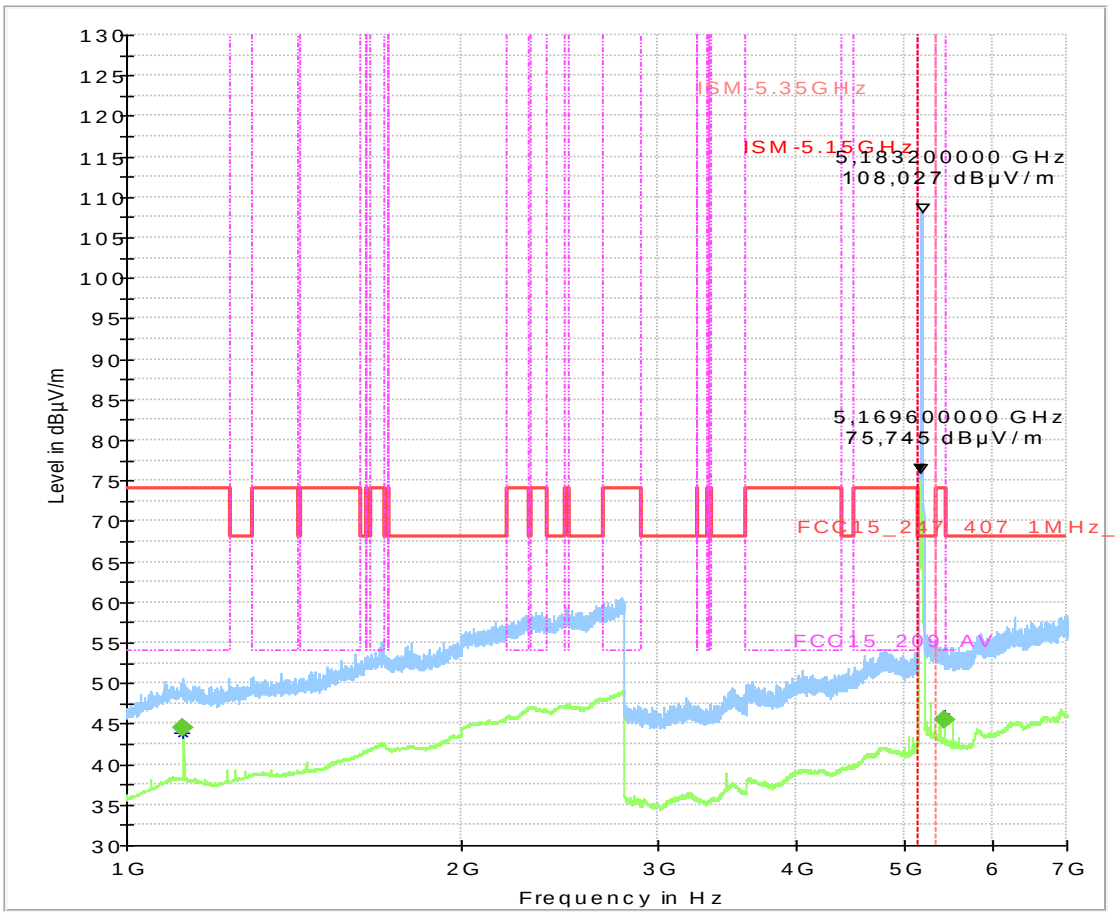
Common Information

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:	horizontal/vertical
Operation mode:	TX, continuous, 100%
Operator Name:	Lor/MFr
Comment:	Channel no. low=36, MCS8, HT20

EUT Information

Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e cable
Power Supply:	120V AC 60 Hz

Full Spectrum



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	AV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
1125.050000	---	44.50	54.00	9.50	100.0	1000.000	155.0	H	3.0	90.0
5440.000000	---	45.45	54.00	8.55	100.0	1000.000	155.0	H	54.0	90.0

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

Frequency (MHz)	Corr.
1125.050000	34.0
5440.000000	11.4

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	AV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
1125.050000	---	44.50	54.00	9.50	100.0	1000.000	155.0	H	3.0	90.0
5440.000000	---	45.45	54.00	8.55	100.0	1000.000	155.0	H	54.0	90.0

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

Frequency (MHz)	Corr.
1125.050000	34.0
5440.000000	11.4

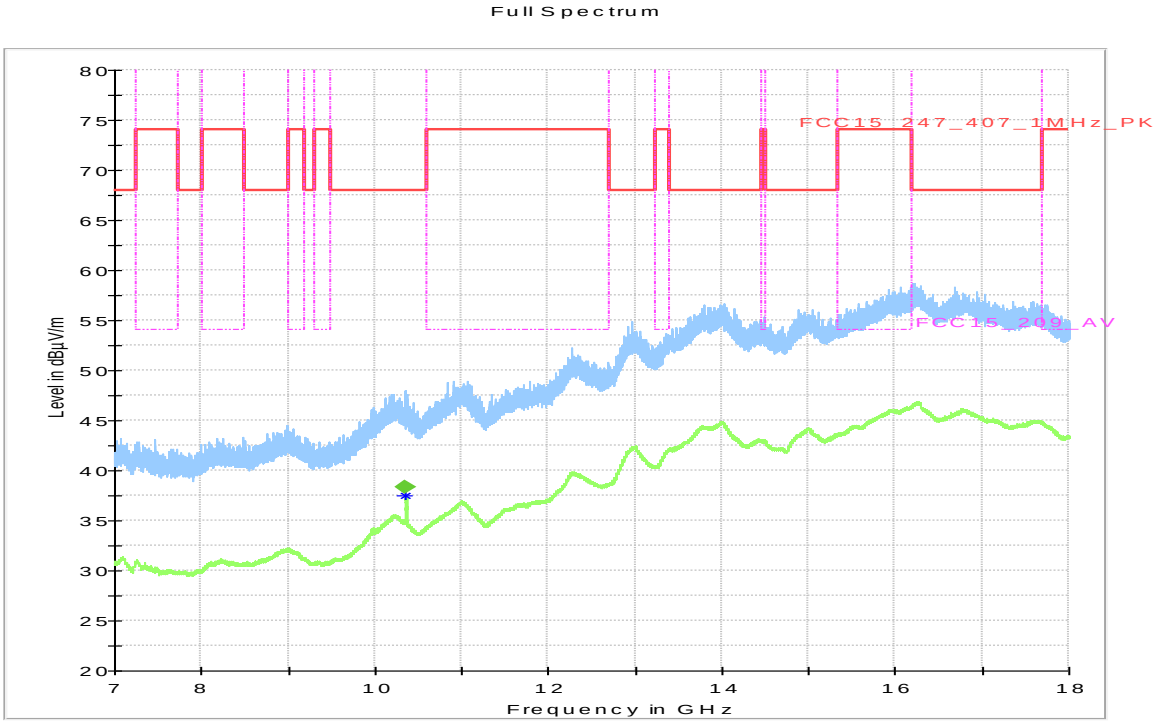
Diagram No.:4.02b_5G_CH36_MCS8

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:	horizontal/vertical
Operation mode:	TX, continuous, 100%
Operator Name:	MFr/Kru
Comment:	Channel no. low=36, MCS8, HT20

EUT Information

Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e cable
Power Supply:	120V AC 60 Hz



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	AV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
10360.550000	---	38.37	150.00	111.63	100.0	1000.000	155.0	H	96.0	90.0

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

Frequency (MHz)	Corr.
10360.550000	9.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	AV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
10360.550000	---	38.37	150.00	111.63	100.0	1000.000	155.0	H	96.0	90.0

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

Frequency (MHz)	Corr.	Comment
10360.550000	9.8	14:21:40 - 10.12.2014

Diagram No.:4.03a_TX_RSE_Ch134_MCS8

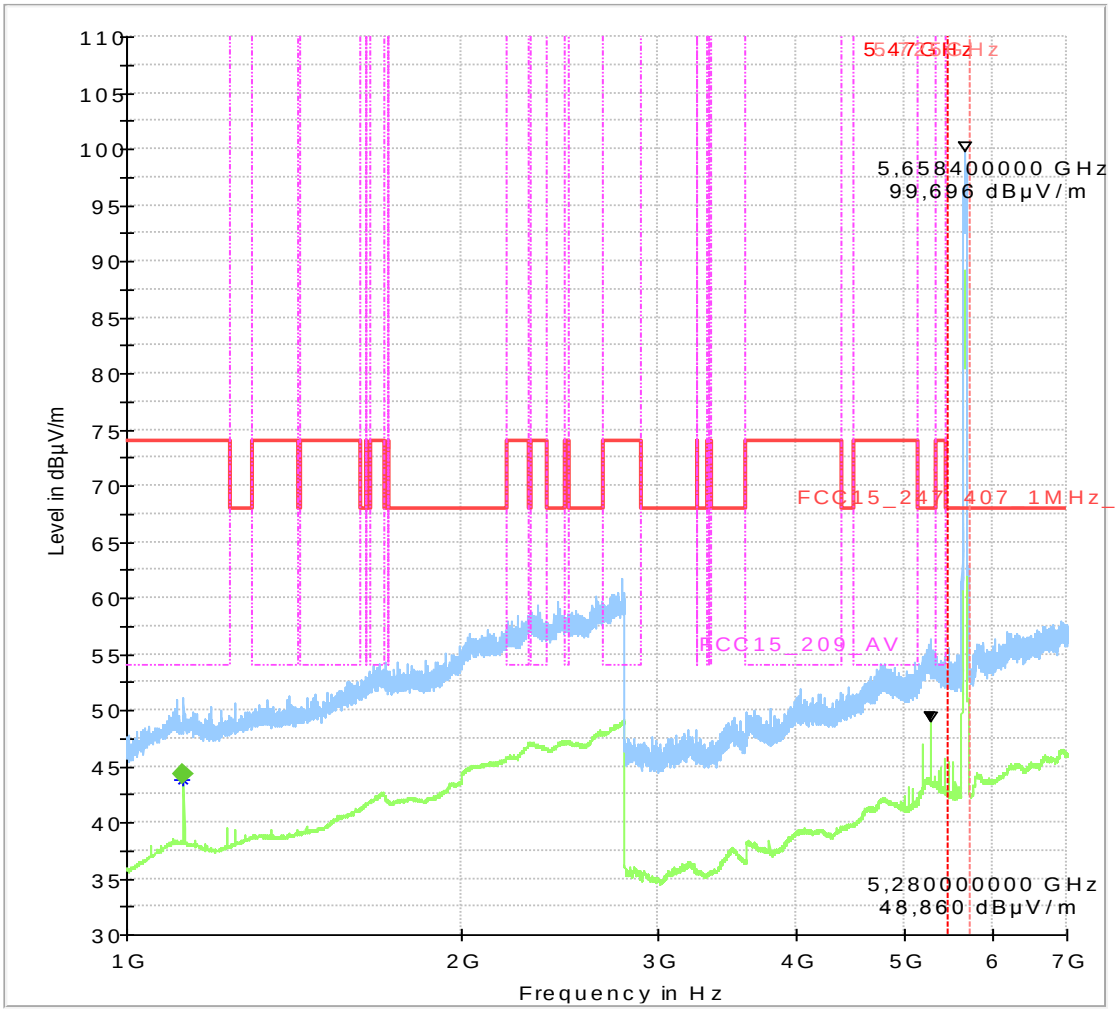
Common Information

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:	horizontal/vertical
Operation mode:	TX, continuous, 100%
Operator Name:	Lor
Comment:	Channel no. high=134, HT40, MCS8

EUT Information

Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e cable
Power Supply:	120V AC 60 Hz

Full Spectrum



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	AV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
1124.950000	---	44.24	54.00	9.76	100.0	1000.000	155.0	H	179.0	0.0

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

Frequency (MHz)	Corr.	Comment
1124.950000	34.0	09:03:13 - 10.12.2014

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	AV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
1124.950000	---	44.24	54.00	9.76	100.0	1000.000	155.0	H	179.0	0.0

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

Frequency (MHz)	Corr.	Comment
1124.950000	34.0	09:03:13 - 10.12.2014

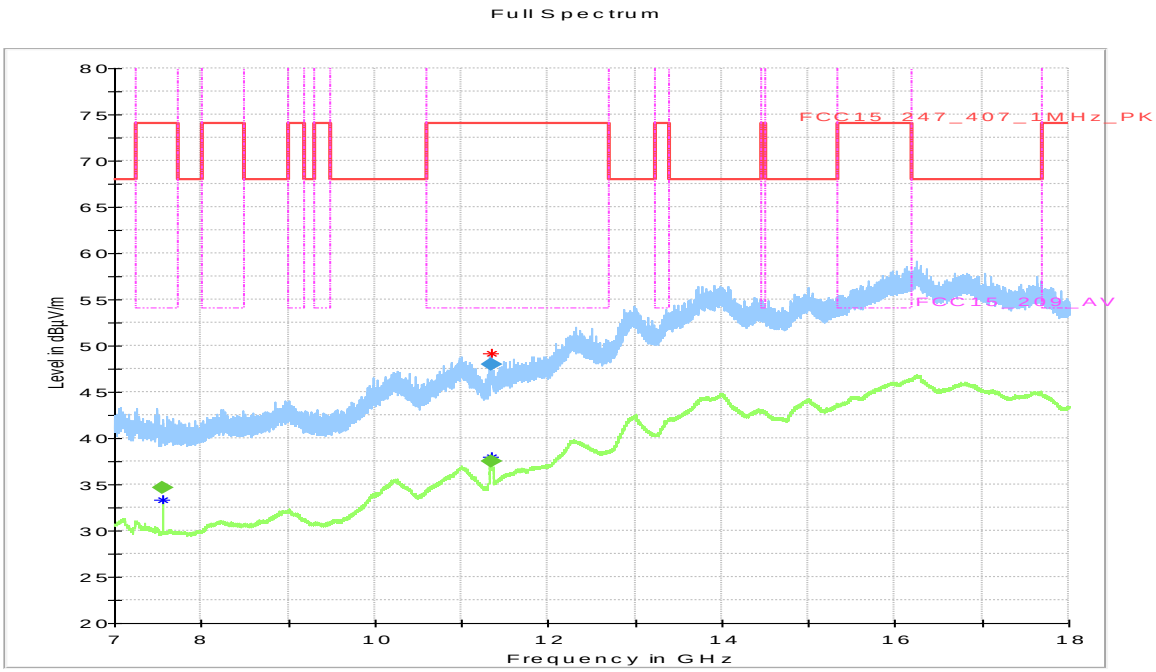
Diagram No.: 4.03b

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:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Kmo
Comment:	Channel no. 134

EUT Information

Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e cable
Power Supply:	120V AC 60 Hz



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	AV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
7560.000000	---	34.69	54.00	19.31	100.0	1000.000	155.0	V	16.0	90.0
11337.250000	48.00	---	74.00	26.00	100.0	1000.000	155.0	H	-36.0	90.0
11341.250000	---	37.51	54.00	16.49	100.0	1000.000	155.0	H	-35.0	90.0

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

Frequency (MHz)	Corr.
7560.000000	4.3
11337.250000	10.3
11341.250000	10.3

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

Diagram No.: 4.02c_5G_Ch36_MCS8

Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	15.407&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:	Lor
Comment:	Channel no. low=36

EUT Information

Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e cable

EMI Scan_18_40GHz_Pre

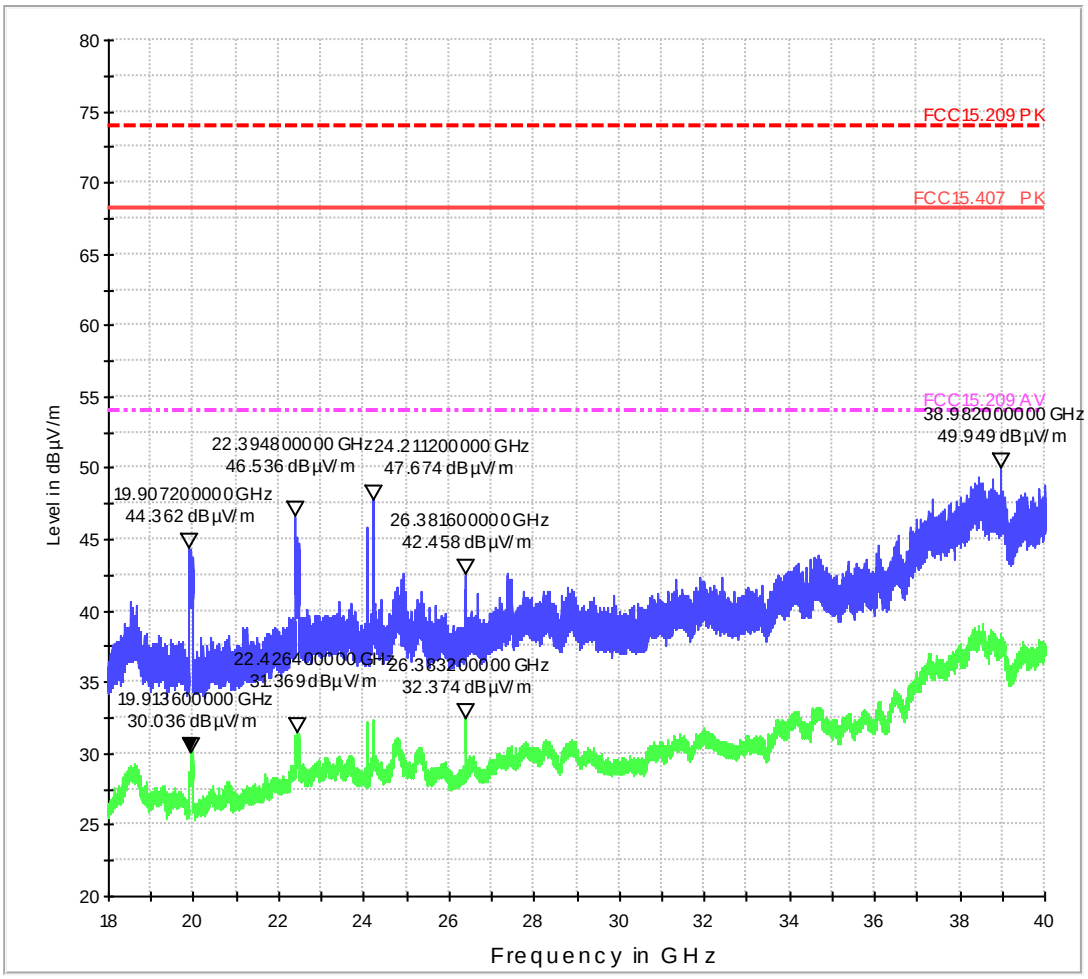


Diagram No.: 4.03c_5G_Ch134_MCS8

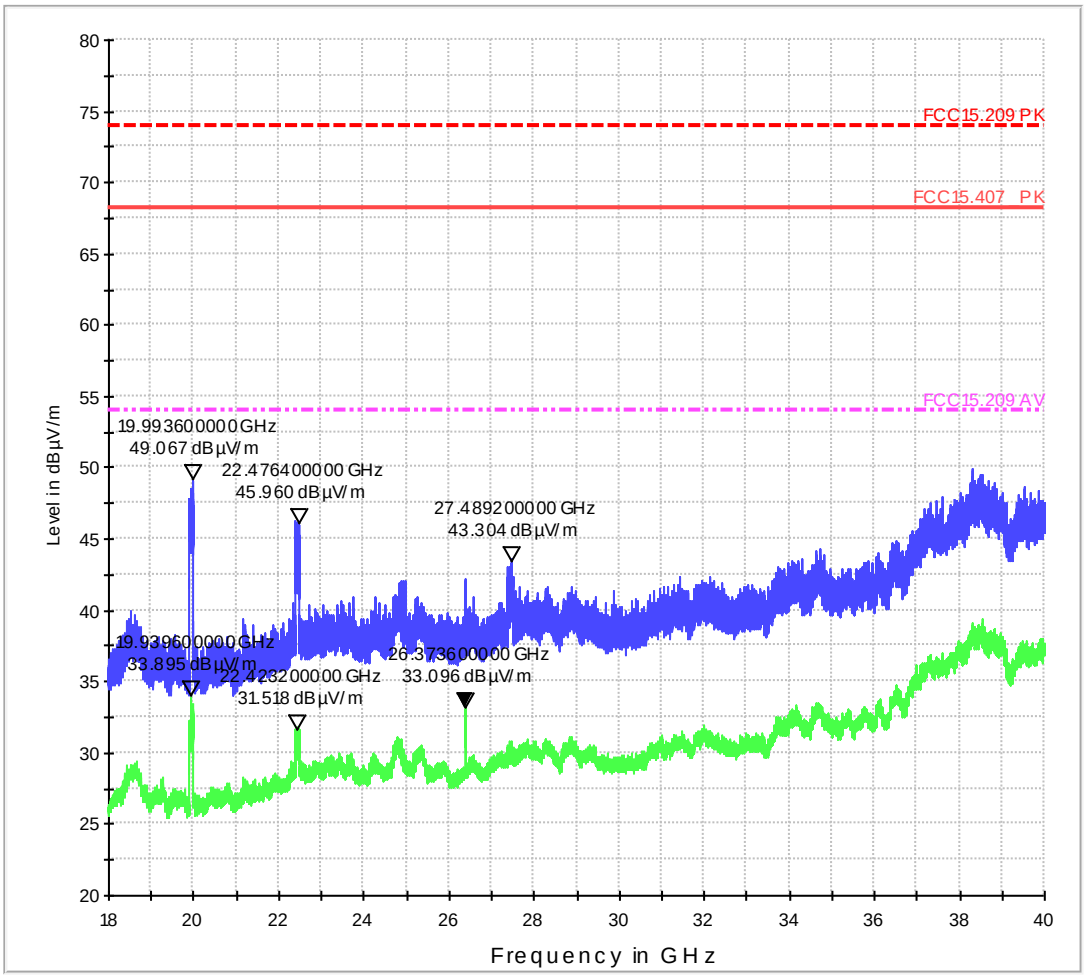
Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	15.407&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:	Lor
Comment:	Channel no. high=134

EUT Information

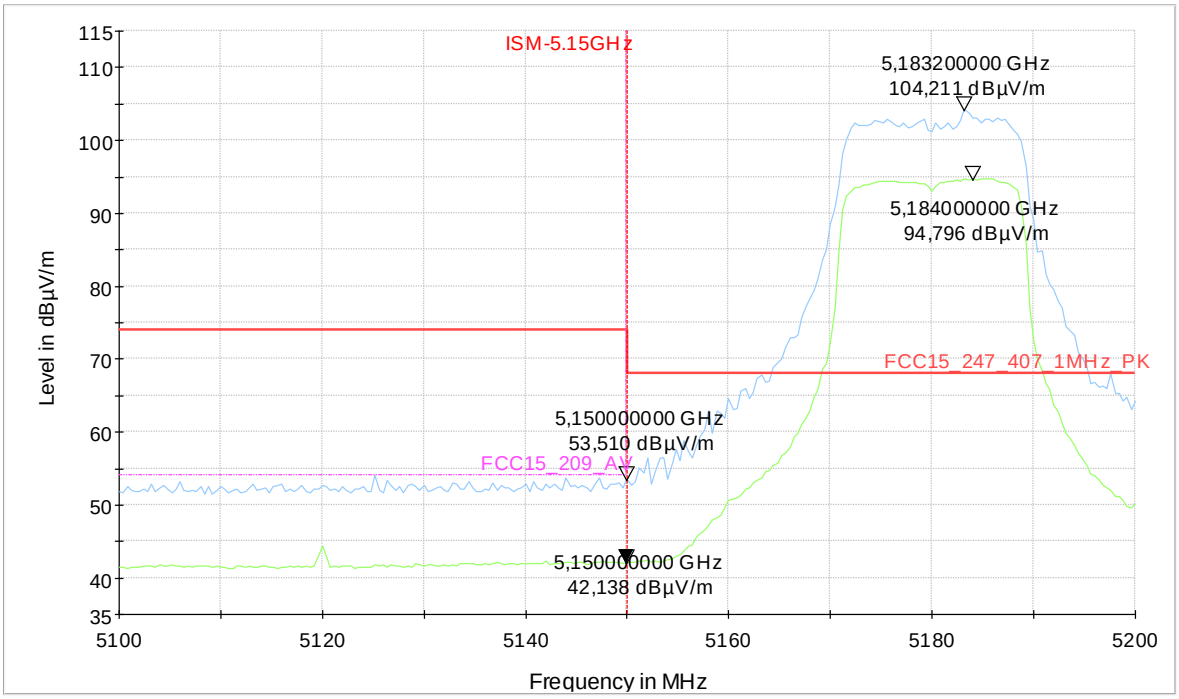
Manufacturer:	Bosch Security
EuT:	DCNM-WAP
---	---
Serial Number:	045888245831022003
Connected Interfaces:	AC adapter, 2 audio lines with load, CAT5e cable

EMI Scan_18_40GHz_Pre

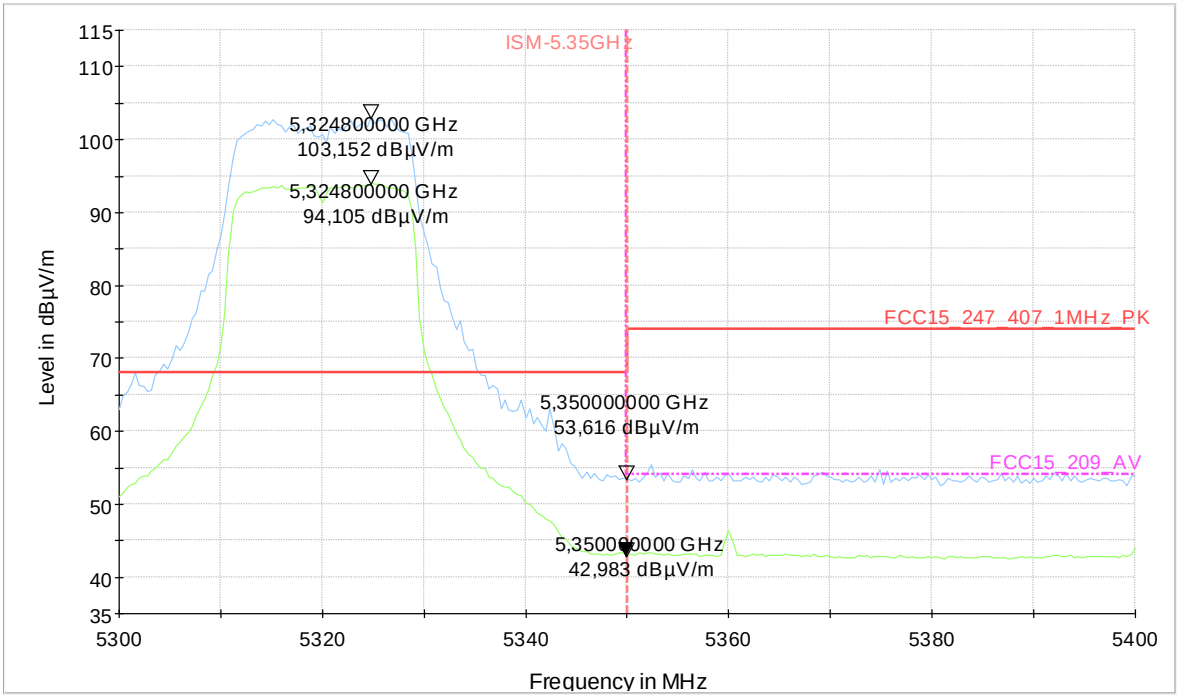


1.3. Radiated band-edge measurements accord. §15.205 (§15.209) and §15.407

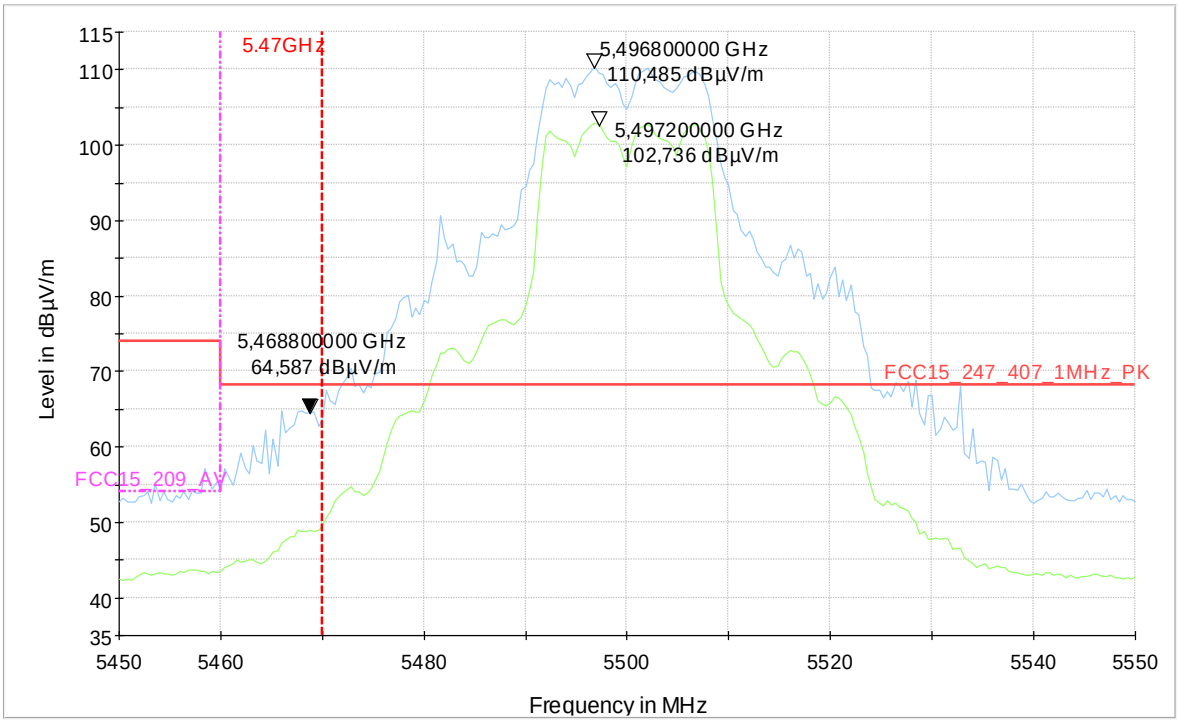
1.3.1. Channel 36 (20MHz Signal BW - left band edge)



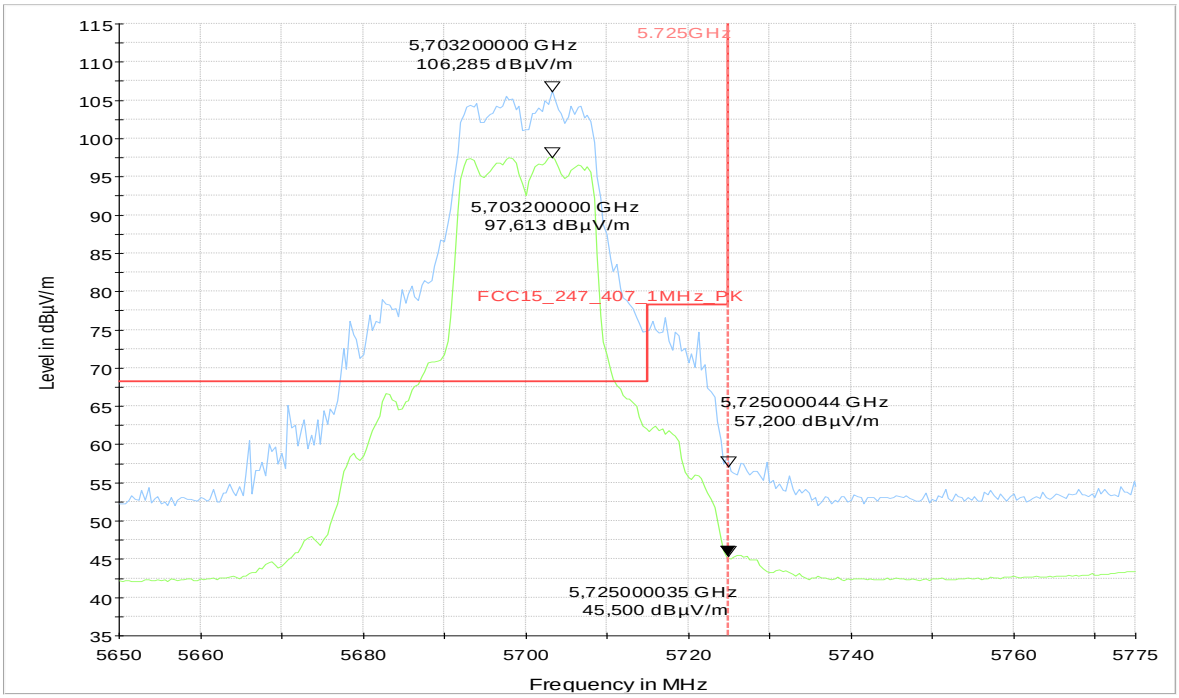
1.3.2. Channel 64 (20MHz Signal BW - right band edge)



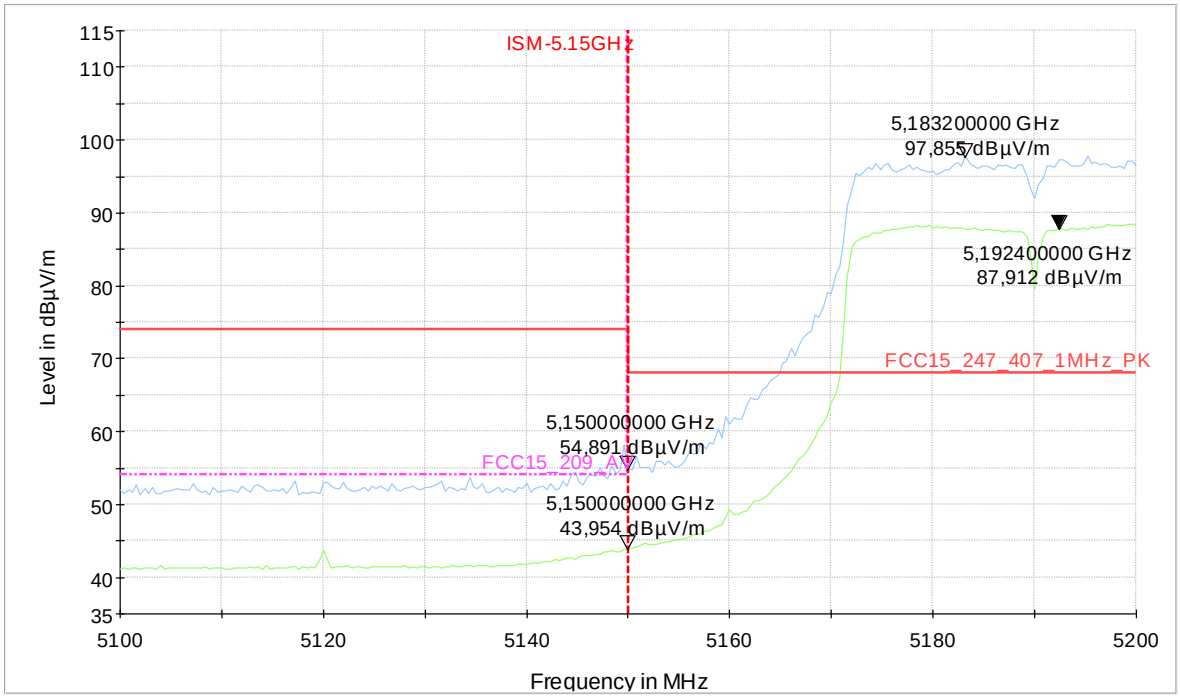
3.3. Channel 100 (20MHz Signal BW - left band edge)



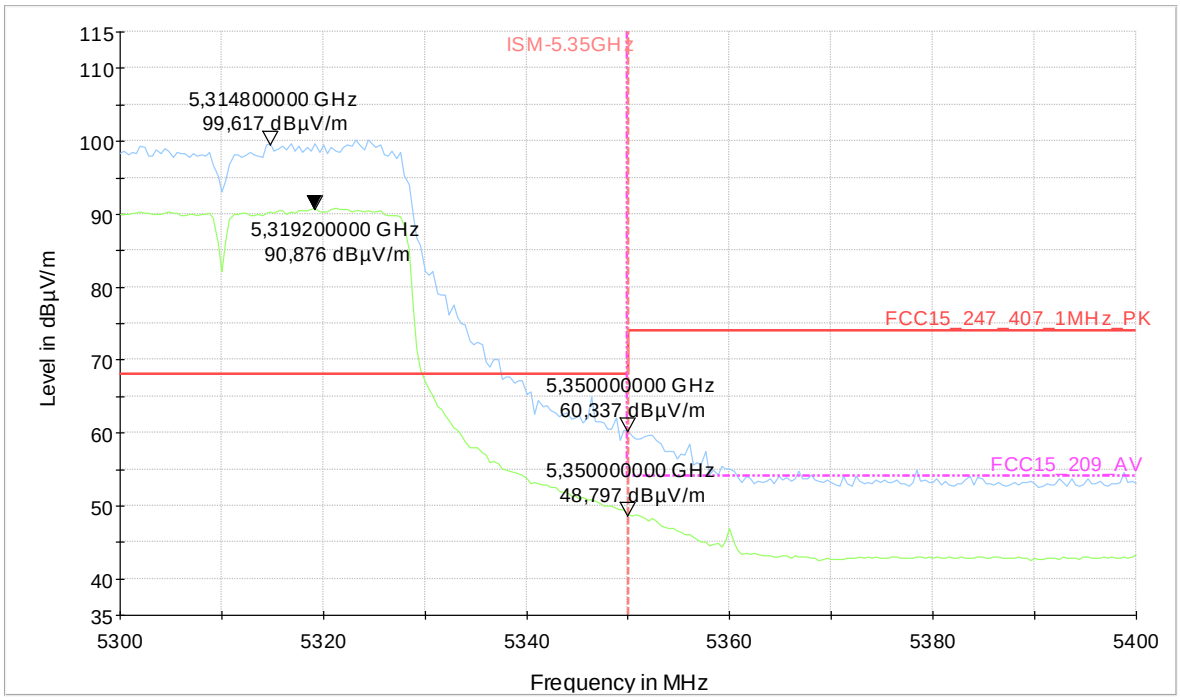
1.3.3. Channel 140 (20MHz Signal BW - right band edge)



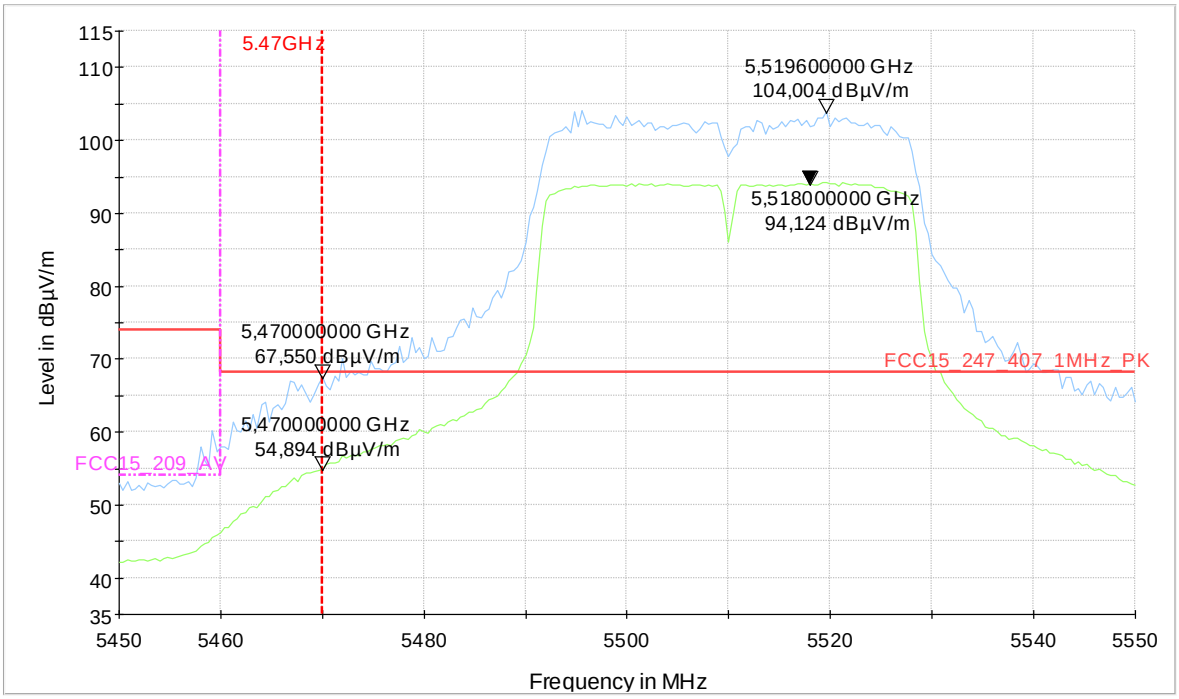
1.3.4. Channel 38 (40MHz Signal BW - left band edge)



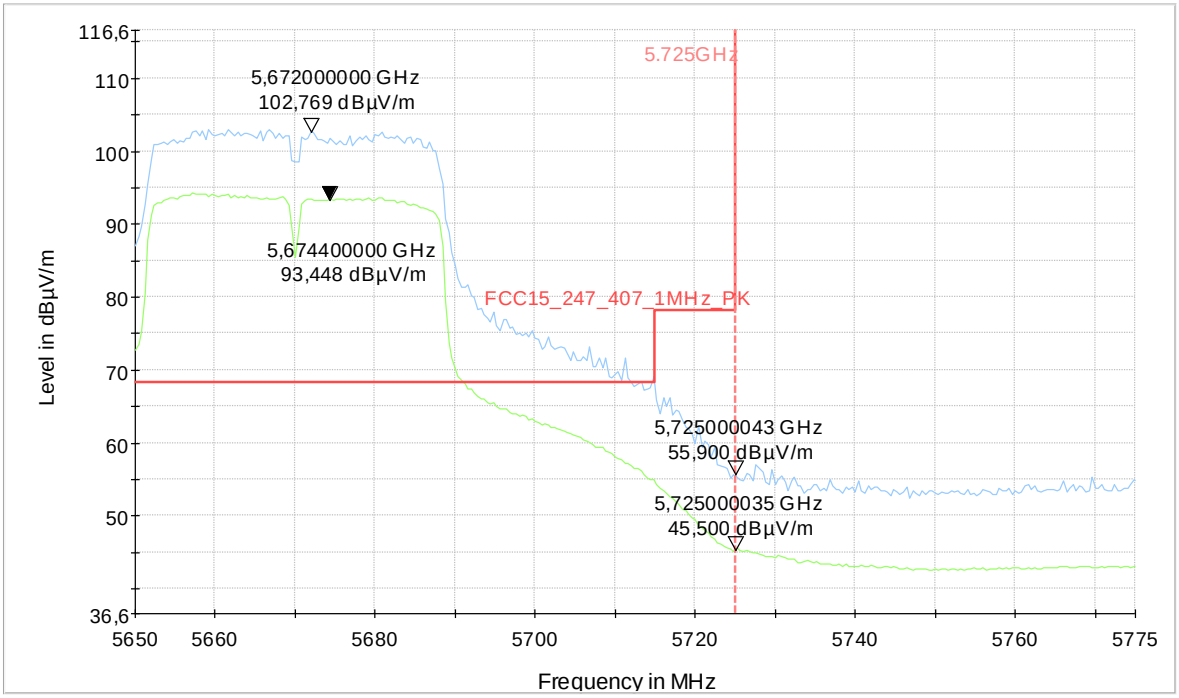
1.3.5. Channel 62 (40MHz Signal BW - right band edge)



1.3.6. Channel 102 (40MHz Signal BW - left band edge)



1.3.7. Channel 134 (40MHz Signal BW - right band edge)



1.4. Conducted RF-measurements on antenna port

1.4.1. Conducted RF-power (HT20-Mode)

Operational bands:	U-NII 1			U-NII-2A			U-NII 2C		
Channel no.:	Channel 36 (5180MHz)	Channel 40 (5200MHz)	Channel 48 (5240MHz)	Channel 52 5260MHz	Channel 56 (5280MHz)	Channel 64 (5320MHz)	Channel 100 (5500MHz)	Channel 116 (5580MHz)	Channel 140 (5700MHz)
Chain 0 only									
Max. Cond. Power 13MBit/MCS8	11,9	11,9	12,4	18,2	16,5	17,9	16,7	16,1	15,0
Chain 1 only									
Max. Cond. Power 13MBit/MCS8	11,1	11,6	10,8	17,0	15,4	16,8	15,5	15,4	15,3
Chain 0+1									
Max. Cond. Power 13MBit/MCS8	13,7	13,9	14,4	19,6	18,0	18,6	18,5	18,1	17,5

Operational bands:	**U-NII 1**	**U-NII-2A**	**U-NII 2C**
FCC-Limits [dBm]	23,98	23,98	23,98
Limit Check:	**Limit Check:**		
Highest conducted power value over channels and modulations:	14,4	19,6	18,5
Margin to Limit:	9,58	4,38	5,48
Verdict:	pass	pass	pass

1.4.2. Conducted RF-power (HT40-Mode)

Operational bands:	U-NII-1			U-NII-2A		U-NII-2C		
Channel no.:	Channel 38 (5190MHz)		Channel 46 (5230MHz)	Channel 54 5270MHz	Channel 62 (5310MHz)	Channel 102 (5510MHz)	Channel 110 (5550MHz)	Channel 134 (5670MHz)
Set-up PWR-Level:	10	7	11,5	17	10	10	16	16
Chain 0 only								
Max. Cond. Power 13MBit/MCS8	14,3	11,5	15,4	19,1	13,5	14,7	16	16,6
Chain 1 only								
Max. Cond. Power 13MBit/MCS8	13,5	9,7	11,8	17,1	12,2	14,9	15,2	15,3
Chain 0+1								
Max. Cond. Power 13MBit/MCS8	13,8	11,7	15,5	20,4	12,3	14,2	18,1	17,3

Operational bands:	U-NII 1	U-NII-2A	U-NII 2C
FCC-Limits [dBm]	23,98	23,98	23,98

Limit Check:	Limit Check:		
Highest conducted power value over channels and modulations:	15,5	20,4	18,1
Margin to Limit:	8,48	3,58	5,88
Verdict:	pass	pass	pass

1.4.3. 6-dB Bandwidth

The conducted measurements from the original report for the RF-Module should be re-used.

1.4.4. 99% Occupied Bandwidth

The conducted measurements from the original report for the RF-Module should be re-used.

1.4.5. Power Spectral Density

The conducted measurements from the original report for the RF-Module should be re-used.

1.5. MPE calculation

A minimum distance to the user of 20cm is assumed.

Following calculations show assumption with the limits. The maximum tolerance according the manufacturer was assumed to +2dB according the data sheet of the RF-module.

Operation Mode	Frequency on channel (MHz)	Declared maximum conducted output power (dBm)	Max. antenna gain: (dBi)	Max. positive tolerance according manfacturer (dB)	Declared maximum output power (Measured+ Tune-up) (dBm)	Duty cycle	Declared Maximum conducted output power (W)	Equivalent conducted output power (maximum conducted output power x duty cycle) (mW)
W-LAN 5150-5250MHz (20MHz BW)	5180,0	13,70	5,0	2,00	20,70	100%	0,117	117
	5200,0	13,90			20,90		0,123	123
	5240,0	14,40			21,40		0,138	138
W-LAN 5250-5350MHz (20MHz BW)	5260,0	19,60	5,0	2,00	26,60	100%	0,457	457
	5280,0	18,00			23,00		0,200	200
	5320,0	18,60			25,60		0,363	363
W-LAN 5470-5700MHz (20MHz BW)	5500,0	18,50	5,0	2,00	25,50	100%	0,355	355
	5580,0	18,10			25,10		0,324	324
	5700,0	17,50			24,50		0,282	282
W-LAN 5150-5250MHz (40MHz BW)	5190,0	14,30	5,0	2,00	21,30	100%	0,135	135
	5230,0	15,50			22,50		0,178	178
W-LAN 5250-5350MHz (40MHz BW)	5270,0	20,40	5,0	2,00	27,40	100%	0,550	550
	5310,0	13,50			20,50		0,112	112
W-LAN 5470-5700MHz (40MHz BW)	5510,0	14,90	5,0	2,00	21,90	100%	0,155	155
	5550,0	18,10			23,10		0,204	204
	5670,0	17,30			24,30		0,269	269

Maximum calculated MPE value:		
MPE-Limit:	1	[mW/cm^2]
Highest MPE value:	0,1093	[mW/cm^2]
Margin to limit	0,8907	[mW/cm^2]