

# Annex 1: Measurement diagrams to Test Report 19-1-0142201T08a



<b>Number of pages:</b>	40	<b>Date of Report:</b>	2020-Feb-17
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<b>Test Object / Tested Device(s):</b>	Remote Control, Rainshower 310 SmartConnect (26646)		
<b>Contains FCC ID:</b>	WFK-RCBT001	<b>Contains ISED:</b>	7787A-RCBT001
<b>Testing has been carried out in accordance with:</b>	Title 47 CFR, Chapter I FCC Regulations, Subchapter A Subpart C: §15.247 (DTS) ,  RSS-247, Issue 2 (DTS) RSS-Gen., Issue 5		

# 1 Measurement diagrams

## 1.1 Conducted

### Minimum Emission Bandwidth 6 dB

Mode	DUT Frequency (MHz)	Bandwidth h (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
10 dBm) 2MHz	2402.0000	0.752476	0.500000	---	2401.7227	2402.4752
10 dBm) 2MHz	2442.0000	0.752476	0.500000	---	2441.7227	2442.4752
10 dBm) 2MHz	2480.0000	0.752476	0.500000	---	2479.7227	2480.4752

### Peak output power (Sweep)

Mode	DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
10 dBm) 2MHz	2402.000000	-1.1	30.0	PASS
10 dBm) 2MHz	2442.000000	-0.9	30.0	PASS
10 dBm) 2MHz	2480.000000	-1.2	30.0	PASS

### Power Spectral Density

Mode	DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
10 dBm) 2MHz	2402.000000	2402.092500	-11.437	8.0	PASS
10 dBm) 2MHz	2442.000000	2442.092500	-11.643	8.0	PASS
10 dBm) 2MHz	2480.000000	2480.097500	-11.482	8.0	PASS

### Occupied Channel Bandwidth 99%

Mode	DUT Frequency (MHz)	Bandwidth h (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
10 dBm) 2MHz	2402.0000	1.040000	---	---	2401.5950	2402.6350
10 dBm) 2MHz	2442.0000	1.050000	---	---	2441.5850	2442.6350
10 dBm) 2MHz	2480.0000	1.050000	---	---	2479.5850	2480.6350

## Minimum Emission Bandwidth 6 dB (2402 MHz; 10 (10 dBm); 2 MHz)

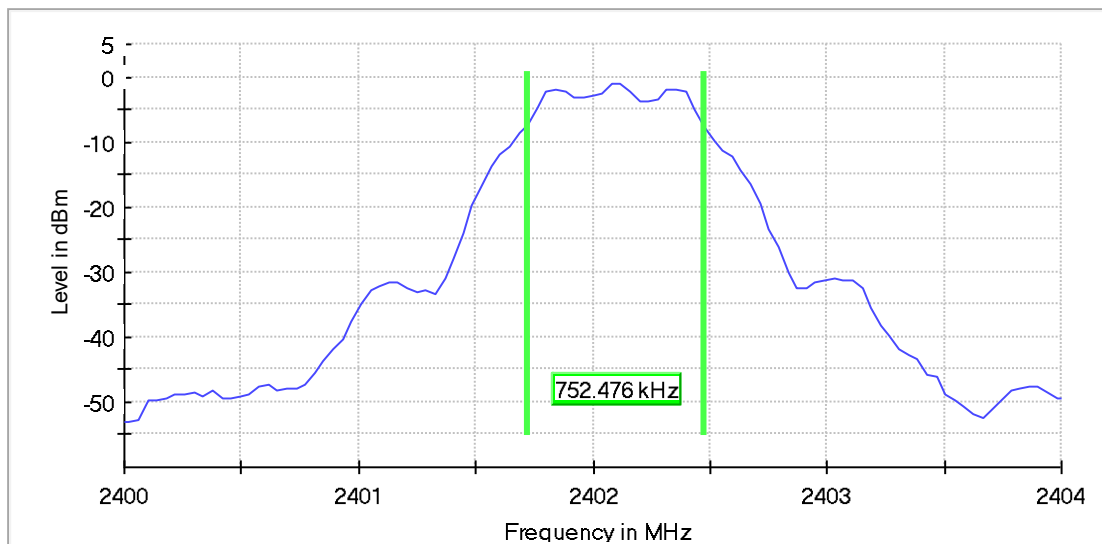
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### 6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.752476	0.500000	---	2401.722772	2402.475248

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-1.1	PASS



### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	4.000 MHz	4.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 80
SweepTime	1.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.19 dB	0.50 dB

## Minimum Emission Bandwidth 6 dB (2442 MHz; 10 (10 dBm); 2 MHz)

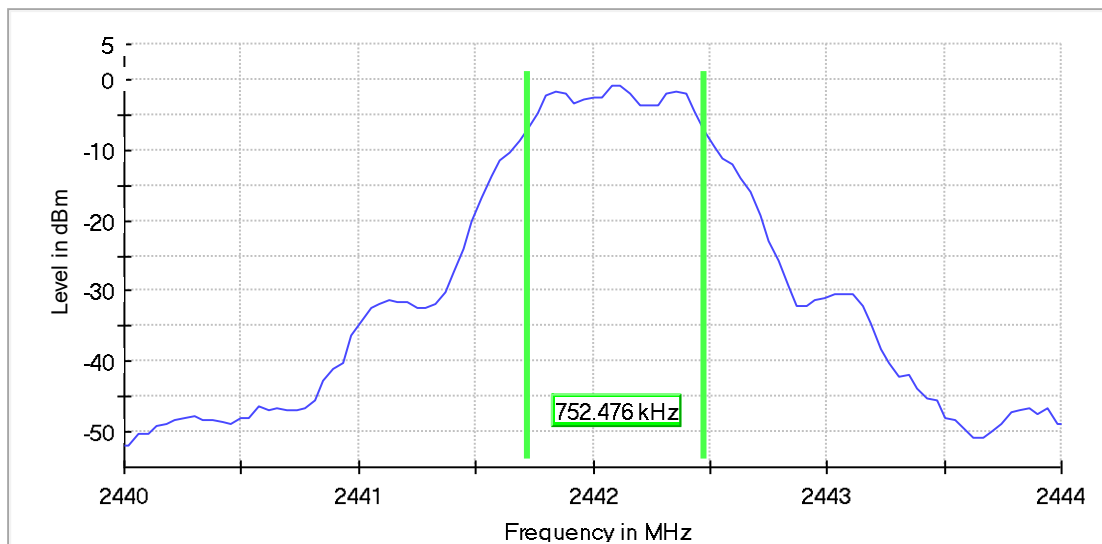
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### 6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2442.000000	0.752476	0.500000	---	2441.722772	2442.475248

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2442.000000	-1.0	PASS



### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44400 GHz	2.44400 GHz
Span	4.000 MHz	4.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 80
SweepTime	1.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.15 dB	0.50 dB

## Minimum Emission Bandwidth 6 dB (2480 MHz; 10 (10 dBm); 2 MHz)

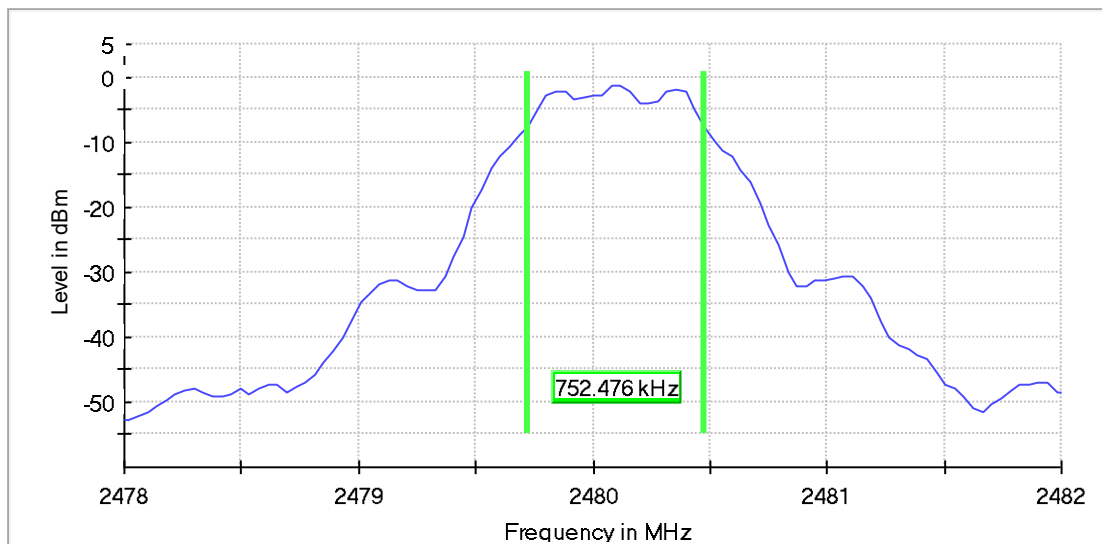
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### 6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.752476	0.500000	---	2479.722772	2480.475248

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-1.3	PASS



### Measurement

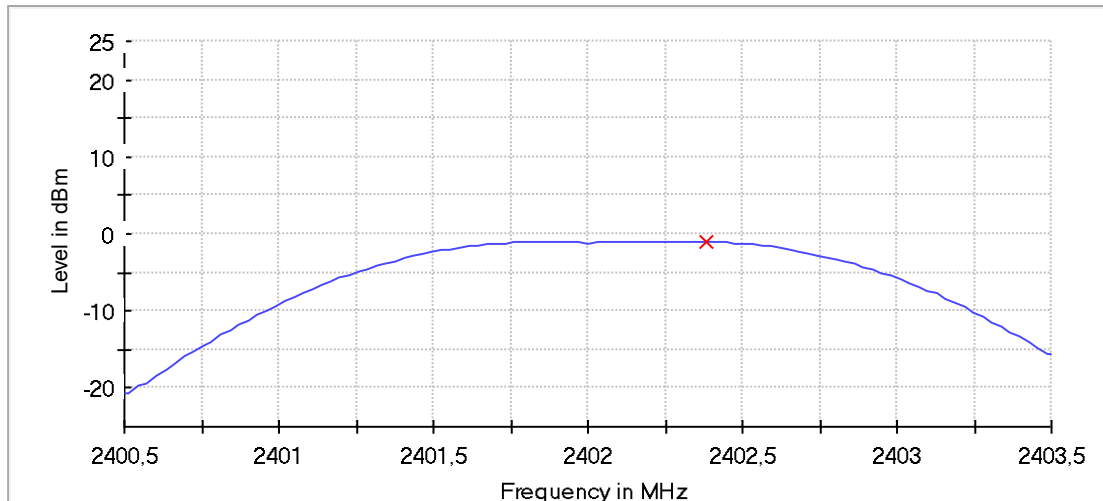
Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48200 GHz	2.48200 GHz
Span	4.000 MHz	4.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 80
SweepTime	1.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.09 dB	0.50 dB

## Peak output power (Sweep) (2402 MHz; 10 (10 dBm); 2 MHz)

Test according to FCC title 47 part 15 §15.247(b), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2402.000000	-1.1	30.0	PASS



— Connector 1      × Peak Connector 1

### Measurement

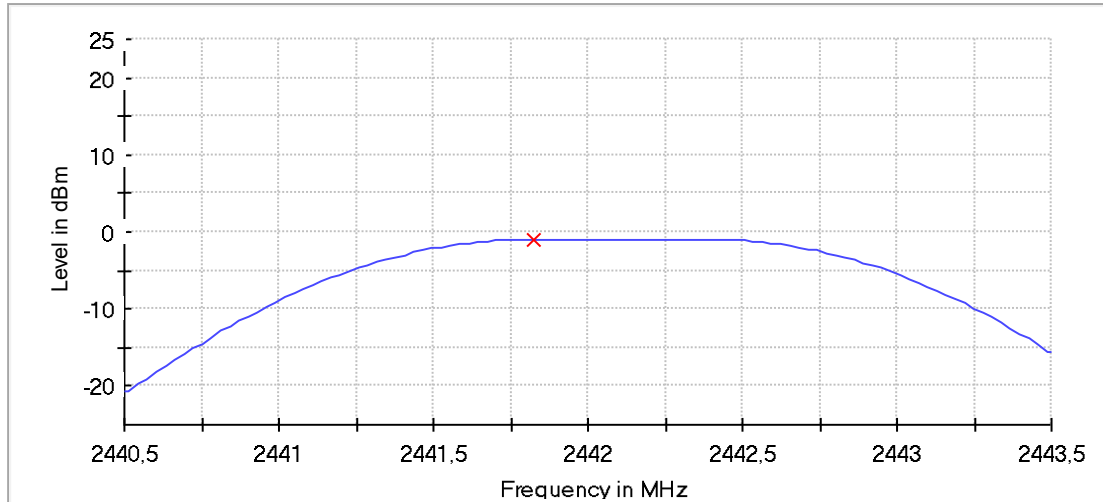
Setting	Instrument Value	Target Value
Start Frequency	2.40050 GHz	2.40050 GHz
Stop Frequency	2.40350 GHz	2.40350 GHz
Span	3.000 MHz	3.000 MHz
RBW	1.000 MHz	>= 752.477 kHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	101	~ 101
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.08 dB	0.50 dB

## Peak output power (Sweep) (2442 MHz; 10 (10 dBm); 2 MHz)

Test according to FCC title 47 part 15 §15.247(b), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2442.000000	-0.9	30.0	PASS



— Connector 1      × Peak Connector 1

### Measurement

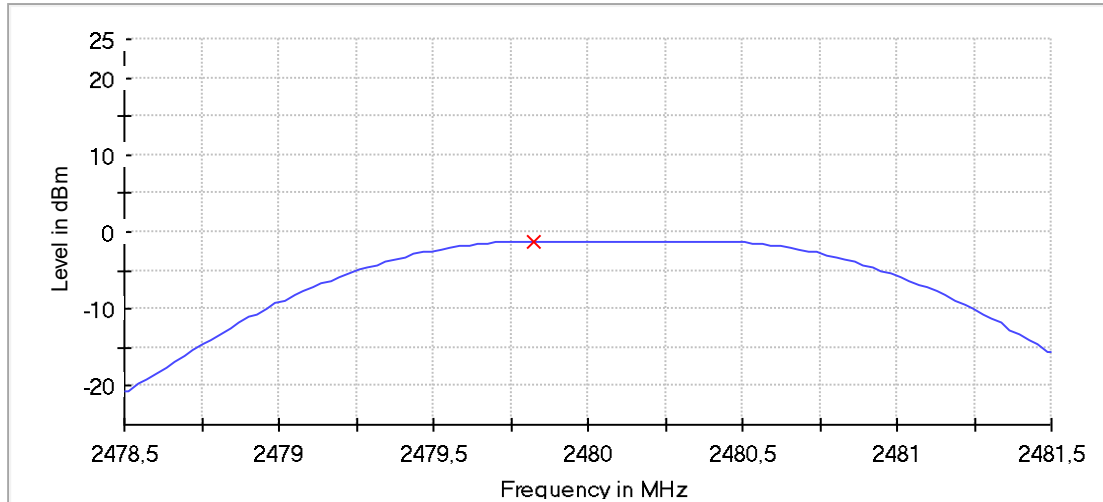
Setting	Instrument Value	Target Value
Start Frequency	2.44050 GHz	2.44050 GHz
Stop Frequency	2.44350 GHz	2.44350 GHz
Span	3.000 MHz	3.000 MHz
RBW	1.000 MHz	>= 752.477 kHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	101	~ 101
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.02 dB	0.50 dB

## Peak output power (Sweep) (2480 MHz; 10 (10 dBm); 2 MHz)

Test according to FCC title 47 part 15 §15.247(b), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2480.000000	-1.2	30.0	PASS



— Connector 1      × Peak Connector 1

### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47850 GHz	2.47850 GHz
Stop Frequency	2.48150 GHz	2.48150 GHz
Span	3.000 MHz	3.000 MHz
RBW	1.000 MHz	>= 752.477 kHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	101	~ 101
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.05 dB	0.50 dB

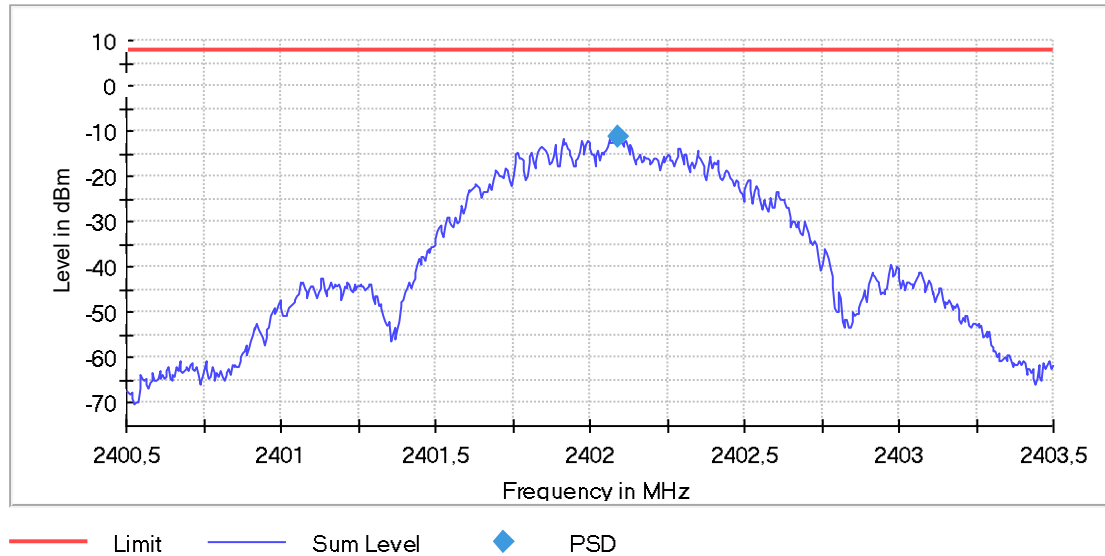


## Power Spectral Density (2402 MHz; 10 (10 dBm); 2 MHz)

Test according to FCC title 47 part 15 §15.247(a),(e), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2402.000000	2402.092500	-11.437	8.0	PASS



### Measurement

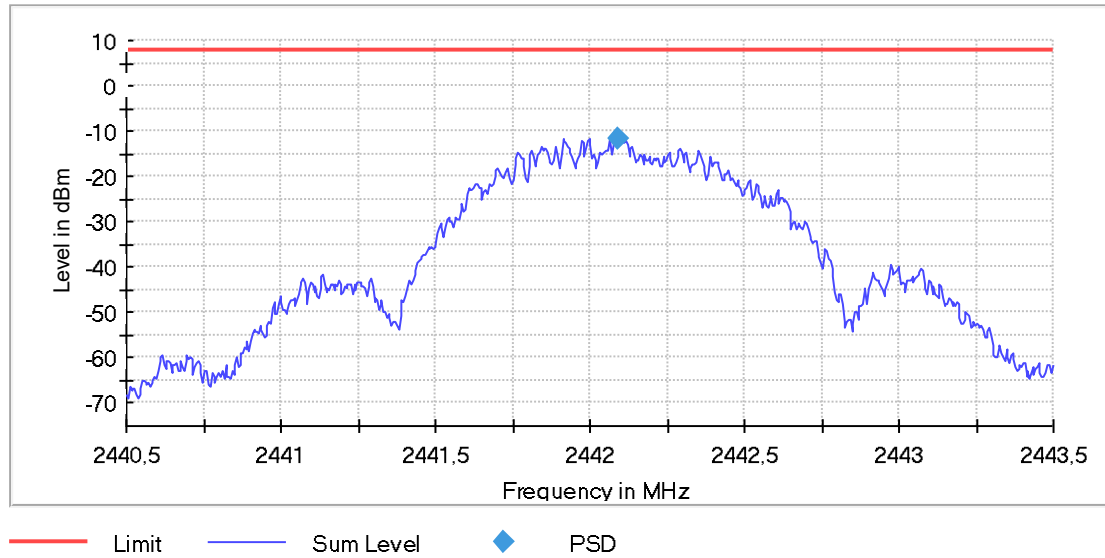
Setting	Instrument Value	Target Value
Start Frequency	2.40050 GHz	2.40050 GHz
Stop Frequency	2.40350 GHz	2.40350 GHz
Span	3.000 MHz	3.000 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	600	~ 600
SweepTime	12.000 ms	12.000 ms
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	49 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.20 dB	0.50 dB

## Power Spectral Density (2442 MHz; 10 (10 dBm); 2 MHz)

Test according to FCC title 47 part 15 §15.247(a),(e), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2442.000000	2442.092500	-11.643	8.0	PASS



### Measurement

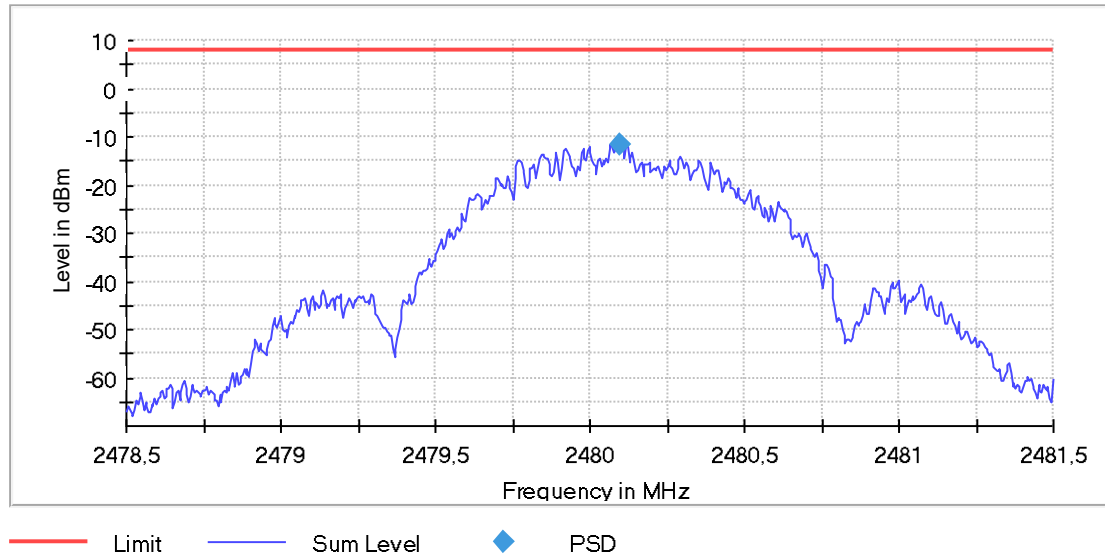
Setting	Instrument Value	Target Value
Start Frequency	2.44050 GHz	2.44050 GHz
Stop Frequency	2.44350 GHz	2.44350 GHz
Span	3.000 MHz	3.000 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	600	~ 600
SweepTime	12.000 ms	12.000 ms
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	40 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.17 dB	0.50 dB

## Power Spectral Density (2480 MHz; 10 (10 dBm); 2 MHz)

Test according to FCC title 47 part 15 §15.247(a),(e), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2480.000000	2480.097500	-11.482	8.0	PASS



### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47850 GHz	2.47850 GHz
Stop Frequency	2.48150 GHz	2.48150 GHz
Span	3.000 MHz	3.000 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	600	~ 600
SweepTime	12.000 ms	12.000 ms
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	43 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.05 dB	0.50 dB

## Occupied Channel Bandwidth 99% (2402 MHz; 10 (10 dBm); 2 MHz)

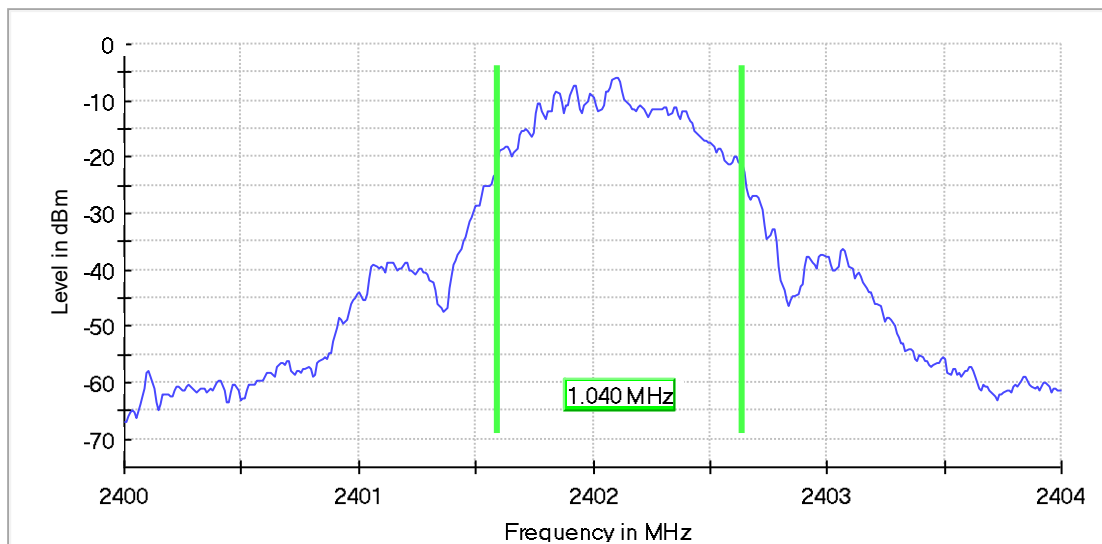
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.040000	---	---	2401.595000	2402.635000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS



### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	4.000 MHz	4.000 MHz
RBW	20.000 kHz	>= 20.000 kHz
VBW	100.000 kHz	>= 60.000 kHz
SweepPoints	400	~ 400
SweepTime	210.000 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	10 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.04 dB	0.30 dB

## Occupied Channel Bandwidth 99% (2442 MHz; 10 (10 dBm); 2 MHz)

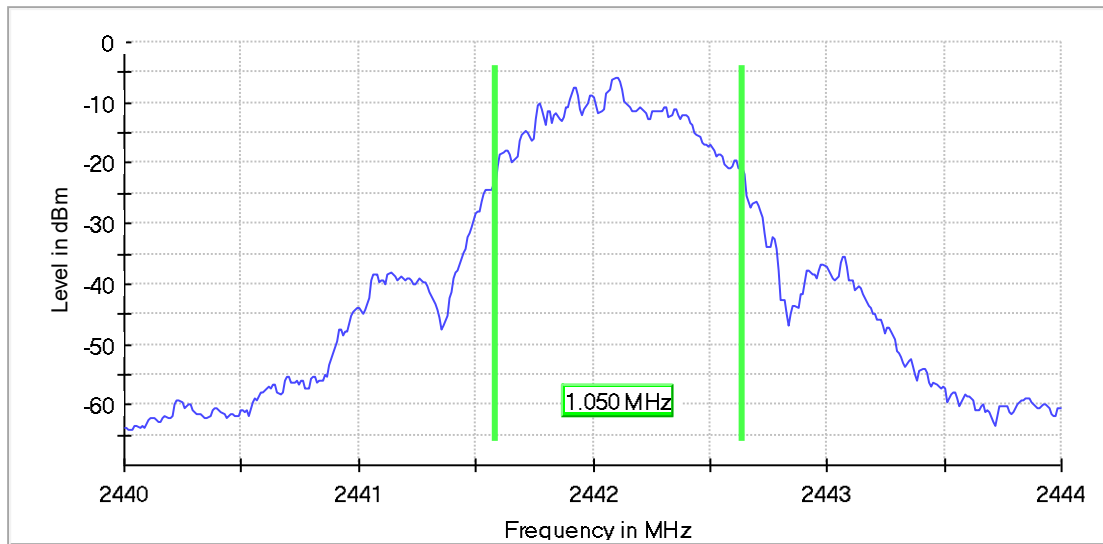
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2442.000000	1.050000	---	---	2441.585000	2442.635000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2442.000000	PASS



### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44400 GHz	2.44400 GHz
Span	4.000 MHz	4.000 MHz
RBW	20.000 kHz	>= 20.000 kHz
VBW	100.000 kHz	>= 60.000 kHz
SweepPoints	400	~ 400
SweepTime	210.000 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	6 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.13 dB	0.30 dB

## Occupied Channel Bandwidth 99% (2480 MHz; 10 (10 dBm); 2 MHz)

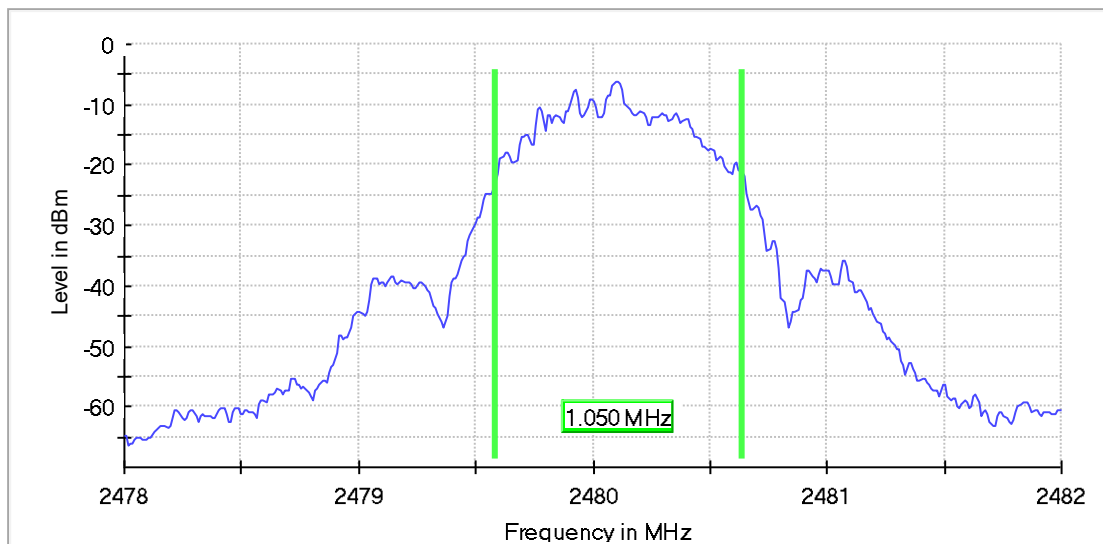
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.050000	---	---	2479.585000	2480.635000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS



### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48200 GHz	2.48200 GHz
Span	4.000 MHz	4.000 MHz
RBW	20.000 kHz	>= 20.000 kHz
VBW	100.000 kHz	>= 60.000 kHz
SweepPoints	400	~ 400
SweepTime	210.000 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.28 dB	0.30 dB

## Tx Spurious Emission (2402 MHz; 10 (10 dBm); 2 MHz)

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### Result

DUT Frequency (MHz)	Result
2402.000000	PASS

### Final measurements

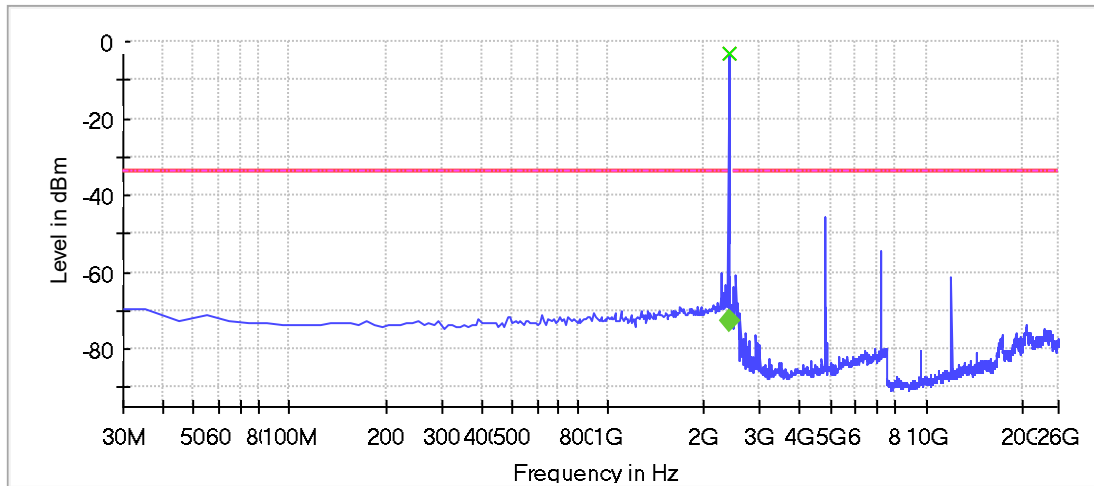
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2399.908789	-4.8	-72.8	-33.8	39.0	PASS

### Pre Measurements

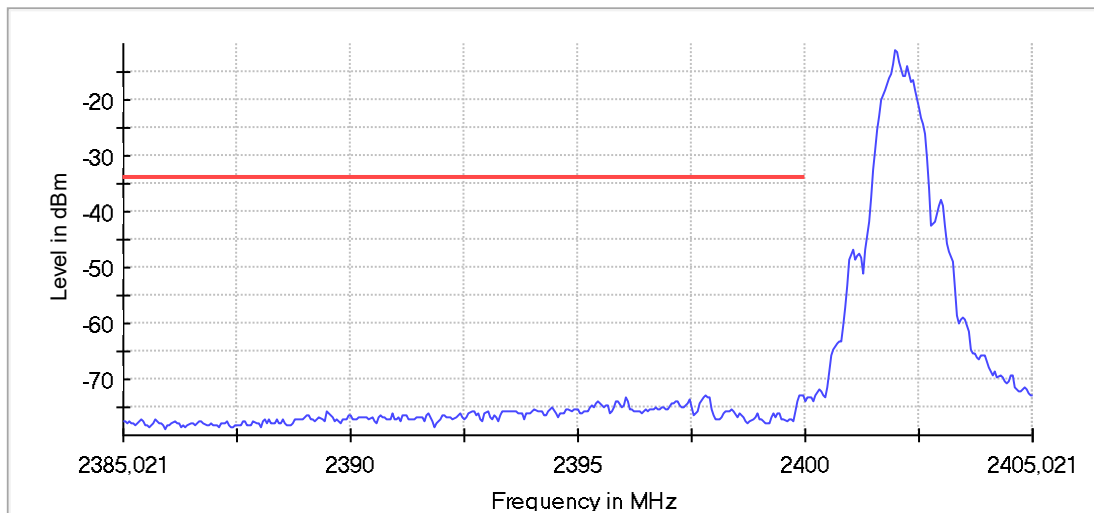
Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2395.021008	-2.9	-30.9	-33.8
4807.166065	-45.6	11.8	-33.8
7205.789099	-54.8	21.0	-33.8
2265.567227	-60.3	26.5	-33.8
2528.474182	-60.9	27.1	-33.8
12013.029431	-61.1	27.3	-33.8
2518.479919	-63.1	29.3	-33.8
2335.273109	-63.5	29.7	-33.8
2305.399160	-65.4	31.6	-33.8
2508.485657	-65.5	31.7	-33.8
2255.609244	-66.2	32.4	-33.8
2385.063025	-66.9	33.1	-33.8
2365.147059	-67.5	33.7	-33.8
2375.105042	-67.6	33.8	-33.8
2205.819328	-67.9	34.1	-33.8

### Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	26000.000000	1	1



— Limit  
— Sum Level  
- - - Threshold  
x Final Critical  
◆ Fail  
◆ Pass  
x Critical



— Sum Level    — Limit

### Final Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	401	~ 401
Sweeptime	1.010 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	Sample	Sample
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Average Linear	Average Linear
Sweeptype	Sweep	AUTO
Preamp	off	off



## Tx Spurious Emission (2442 MHz; 10 (10 dBm); 2 MHz)

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### Result

DUT Frequency (MHz)	Result
2442.000000	PASS

### Final measurements

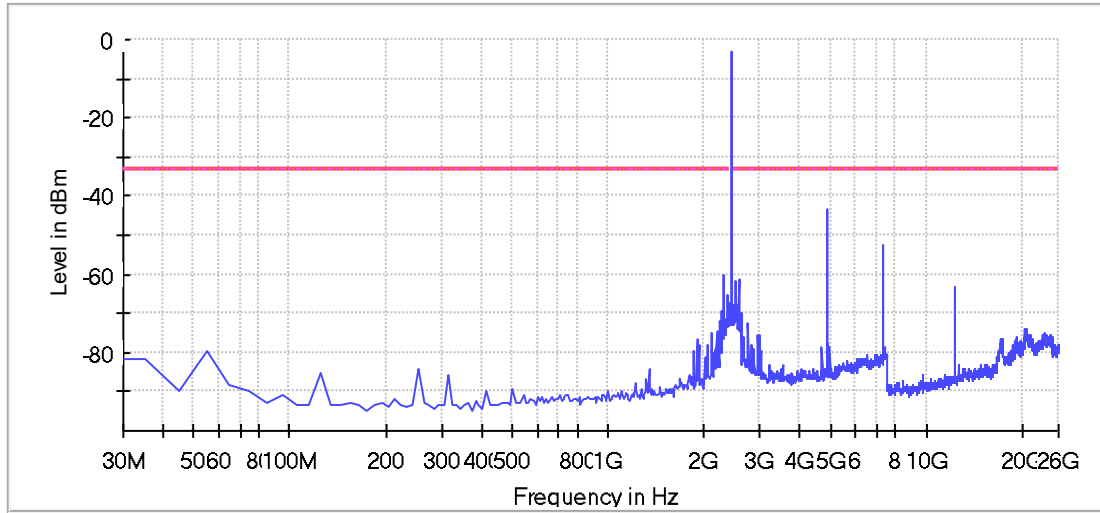
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

### Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
4887.120166	-43.5	10.3	-33.3
7325.720251	-52.6	19.3	-33.3
2305.399160	-60.2	26.9	-33.3
2568.451232	-61.2	27.9	-33.3
2508.485657	-61.9	28.6	-33.3
12212.914683	-63.3	30.0	-33.3
2375.105042	-65.5	32.2	-33.3
2538.468445	-68.0	34.7	-33.3
2275.525210	-69.6	36.3	-33.3
2618.422546	-69.8	36.5	-33.3
2528.474182	-70.9	37.6	-33.3
2598.434020	-70.9	37.6	-33.3
2518.479919	-71.0	37.7	-33.3
2548.462707	-71.1	37.9	-33.3
2345.231092	-71.4	38.2	-33.3

### Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	26000.000000	1	1



## Tx Spurious Emission (2480 MHz; 10 (10 dBm); 2 MHz)

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

### Result

DUT Frequency (MHz)	Result
2480.000000	PASS

### Final measurements

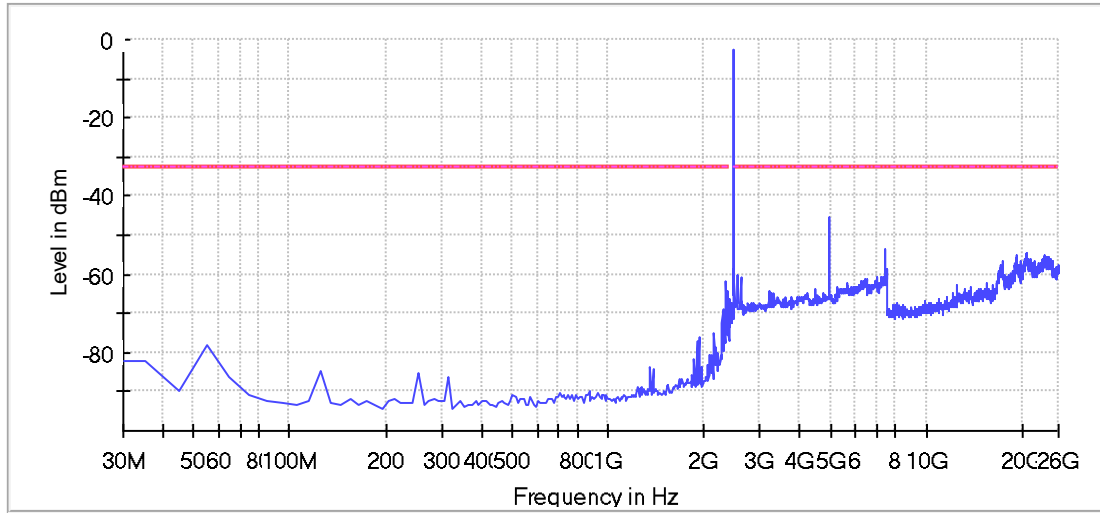
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

### Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
4957.080004	-45.5	12.8	-32.7
7445.651402	-53.4	20.7	-32.7
7435.657140	-54.2	21.5	-32.7
20588.106779	-54.4	21.7	-32.7
20608.095304	-54.4	21.7	-32.7
20558.123991	-54.9	22.1	-32.7
23636.356885	-54.9	22.2	-32.7
20668.060880	-55.0	22.3	-32.7
20538.135465	-55.0	22.3	-32.7
20718.032193	-55.1	22.4	-32.7
19098.961645	-55.3	22.6	-32.7
23976.161815	-55.4	22.7	-32.7
23996.150340	-55.5	22.8	-32.7
20578.112516	-55.6	22.8	-32.7
23566.397046	-55.6	22.9	-32.7

### Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	26000.000000	1	1



— Limit    — Sum Level    - - - Threshold    × Critical    × Final Critical

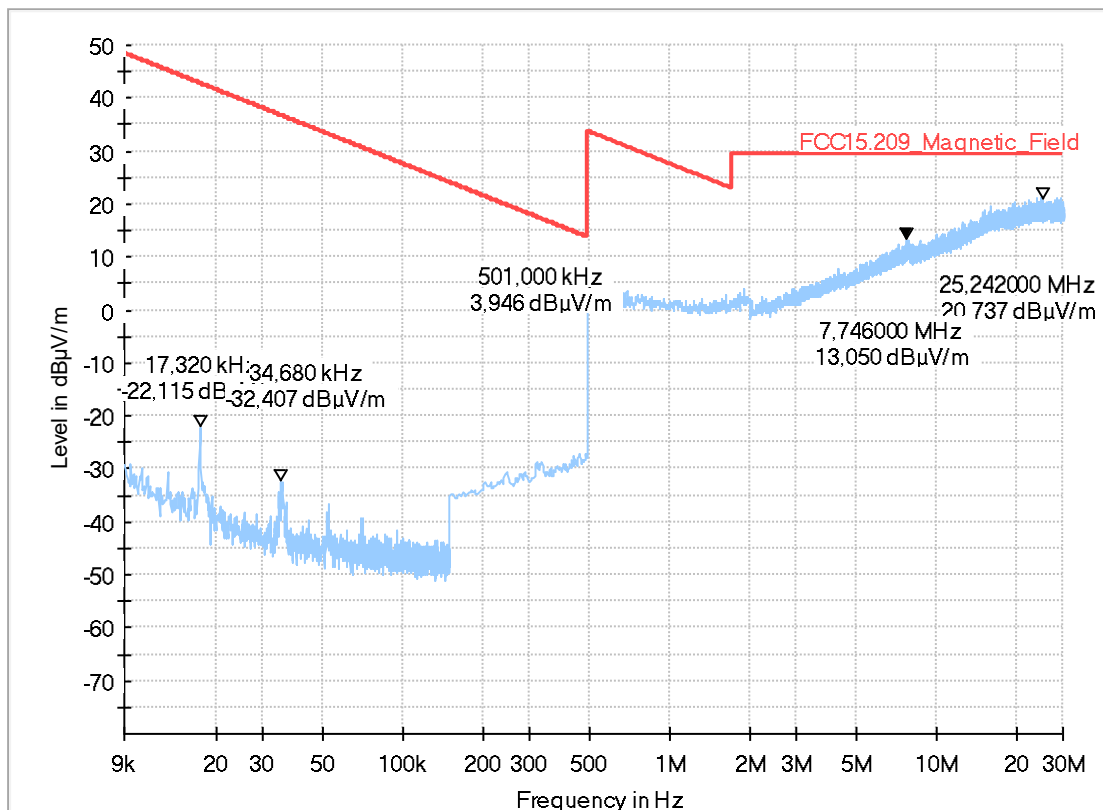
## 1.2 Radiated

### 2.01a\_BT\_LE\_low\_standing

#### Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.60.0
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 Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	LKu
Operating Mode:	BT_LE Channel 0
Power during tests:	via Laptop
Environmental Conditions::	Humidity : 40% rH; Temperature: 20° C
EUT Setup:	standing
Verdict:	Pass

Full Spectrum



## 2.01b\_BT\_LE\_low\_laying

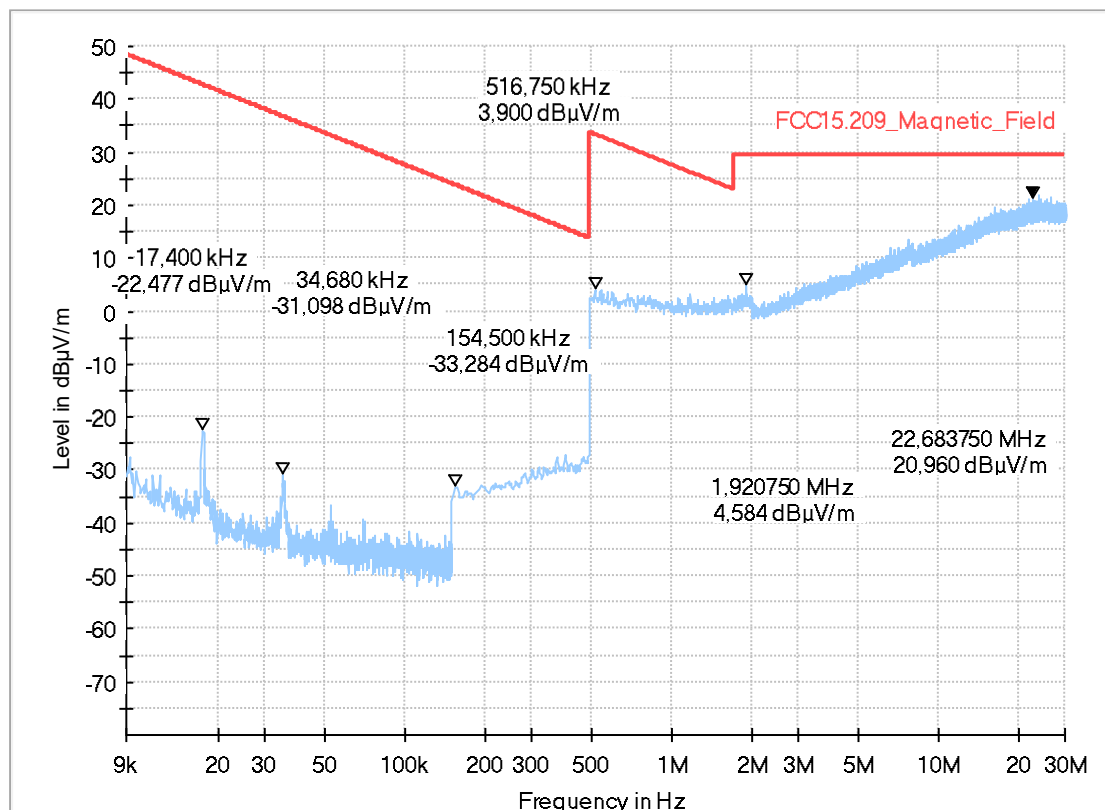
### Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.60.0
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 Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	LKu
Operating Mode:	BT_LE Channel 0
Power during tests:	via Laptop
Environmental Conditions:	Humidity : 40% rH; Temperature: 20° C
EUT Setup:	Laying
Verdict:	Pass

### EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
HW version:	GH_RC-1V3
SW version:	--
Serial number:	--
Power Supply:	via Laptop

Full Spectrum



## 2.02a\_BT\_LE\_mid\_standing

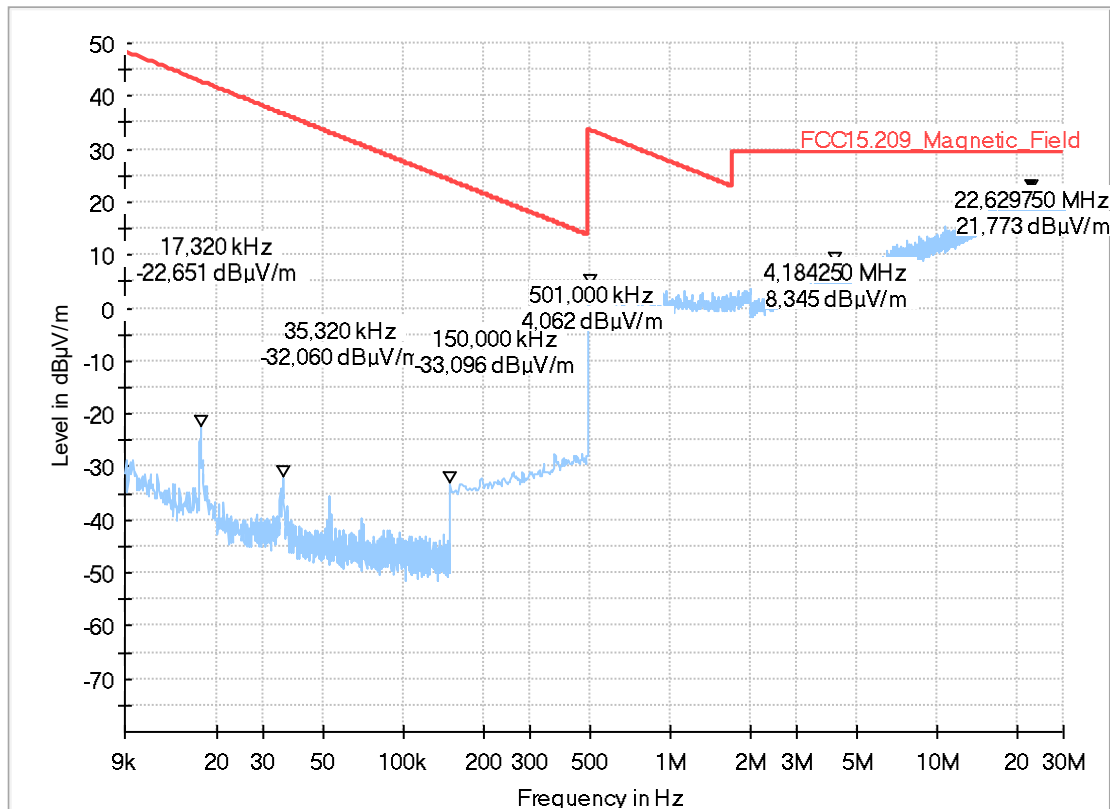
### Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.60.0
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 Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	LKu
Operating Mode:	BT_LE Channel 20
Power during tests:	via Laptop
Environmental Conditions::	Humidity : 40% rH; Temperature: 20° C
EUT Setup:	standing
Verdict:	Pass

### EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
HW version:	GH_RC-1V3
SW version:	--
Serial number:	--
Power Supply:	via Laptop

Full Spectrum



## 2.02b\_BT\_LE\_mid\_laying

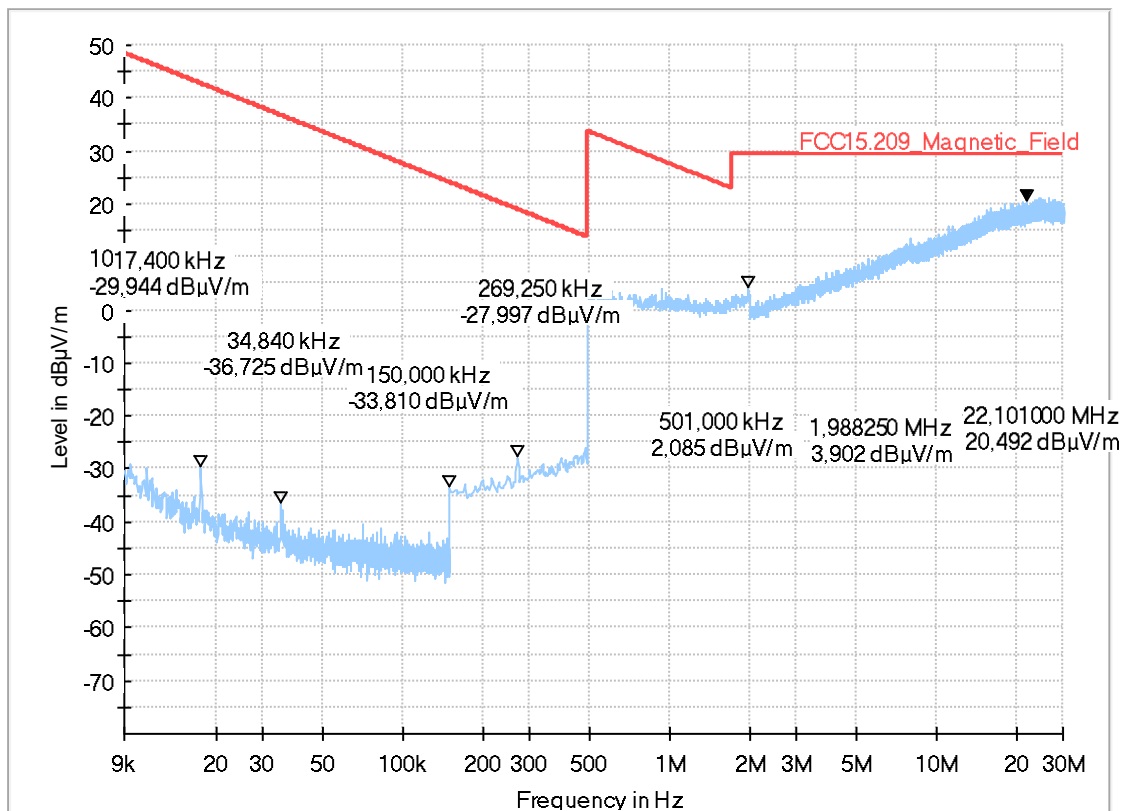
### Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.60.0
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 Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	Mkh
Operating Mode:	BT_LE Channel 20
Power during tests:	via Laptop
Environmental Conditions::	Humidity : 51% rH; Temperature: 21° C
EUT Setup:	laying
Verdict:	Pass

### EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
HW version:	GH_RC-1V3
SW version:	--
Serial number:	--
Power Supply:	via Laptop

Full Spectrum





## 2.03a\_BT\_LE\_high\_standing

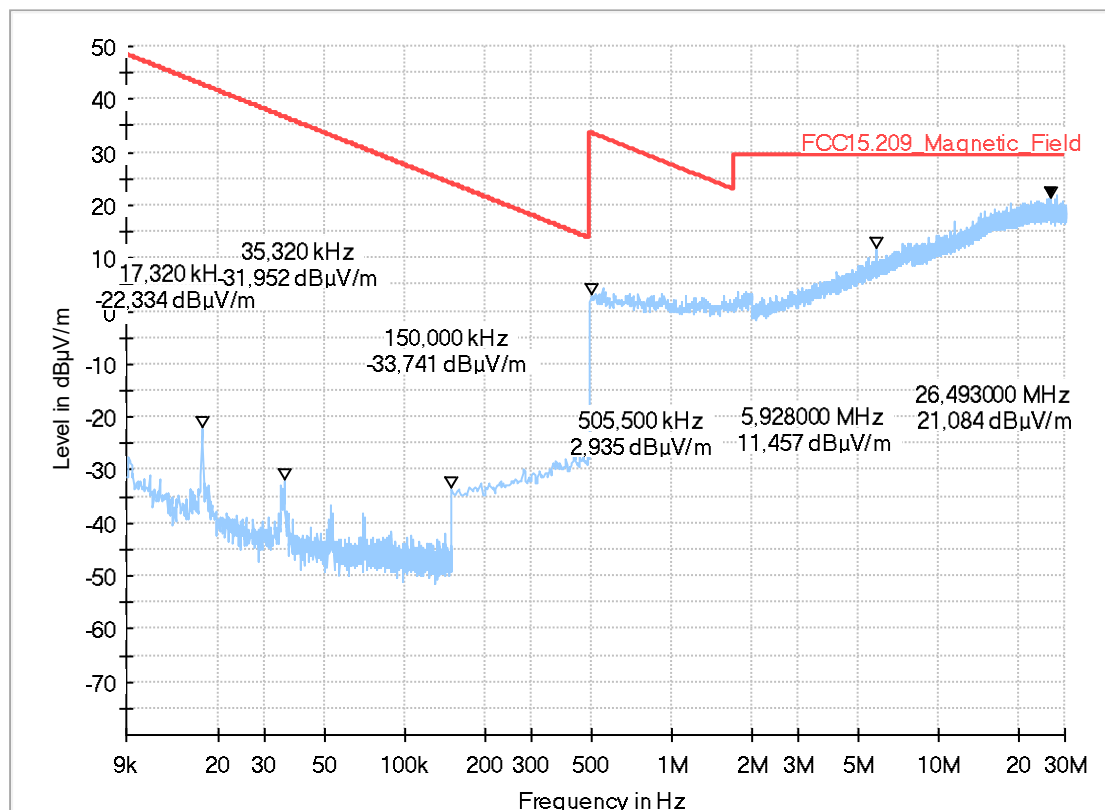
### Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.60.0
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 Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	Mkh
Operating Mode:	BT_LE Channel 39
Power during tests:	via Laptop
Environmental Conditions:	Humidity : 51% rH; Temperature: 21° C
EUT Setup:	standing
Verdict:	Pass

### EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
HW version:	GH_RC-1V3
SW version:	--
Serial number:	--
Power Supply:	via Laptop

Full Spectrum



## 2.03b\_BT\_LE\_high\_laying

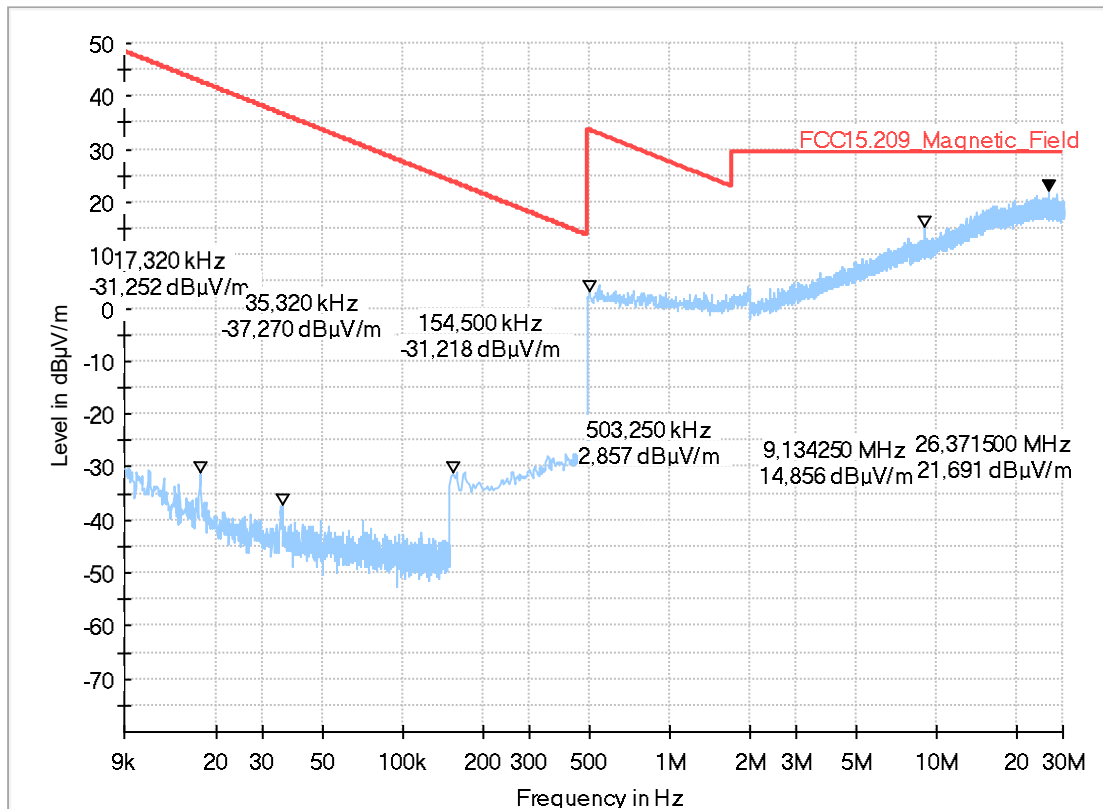
### Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.60.0
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 Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	Mkh
Operating Mode:	BT_LE Channel 39
Power during tests:	via Laptop
Environmental Conditions:	Humidity : 51% rH; Temperature: 21° C
EUT Setup:	laying
Verdict:	Pass

### EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
HW version:	GH_RC-1V3
SW version:	--
Serial number:	--
Power Supply:	via Laptop

Full Spectrum



## 3.01a\_BT\_LE\_low\_Standing

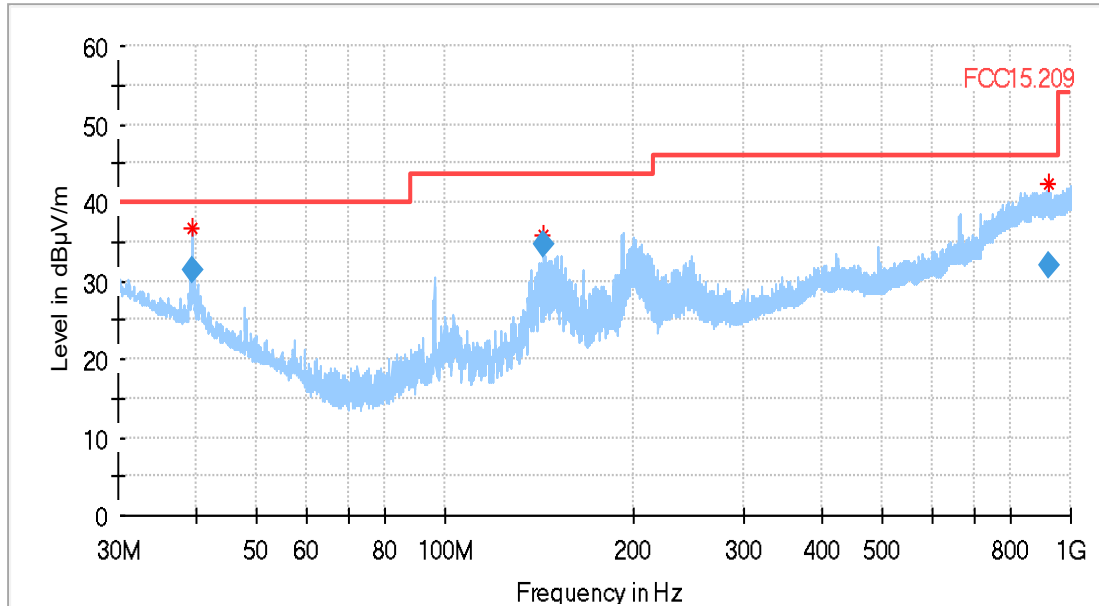
### Common Information

Test description:	Electric Field Strength Measurement
Test Site Location:	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 Standard:	FCC 15.209; RSS-Gen: Issue 5
Operator:	mkh
Operating Mode:	Bleetooth Low Energy _ Low Channel (00)-2402 MHz
Verdict:	Pass

### EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
-----	
HW version:	GH_RC-1V3
SW version:	--
SVN:	--
Config:	--
Serial number:	--
Connected Interfaces:	--
Power Supply:	via PC through development board
Comments:	--

Full Spectrum



### Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
39.380000	31.45	40.00	8.55	120.000	105.0	V	238.0	17.4
144.004000	34.64	43.50	8.86	120.000	112.0	V	243.0	8.6
925.096000	32.06	46.00	13.94	120.000	360.0	V	288.0	27.0

## 3.01b\_BT\_LE\_low\_Laying

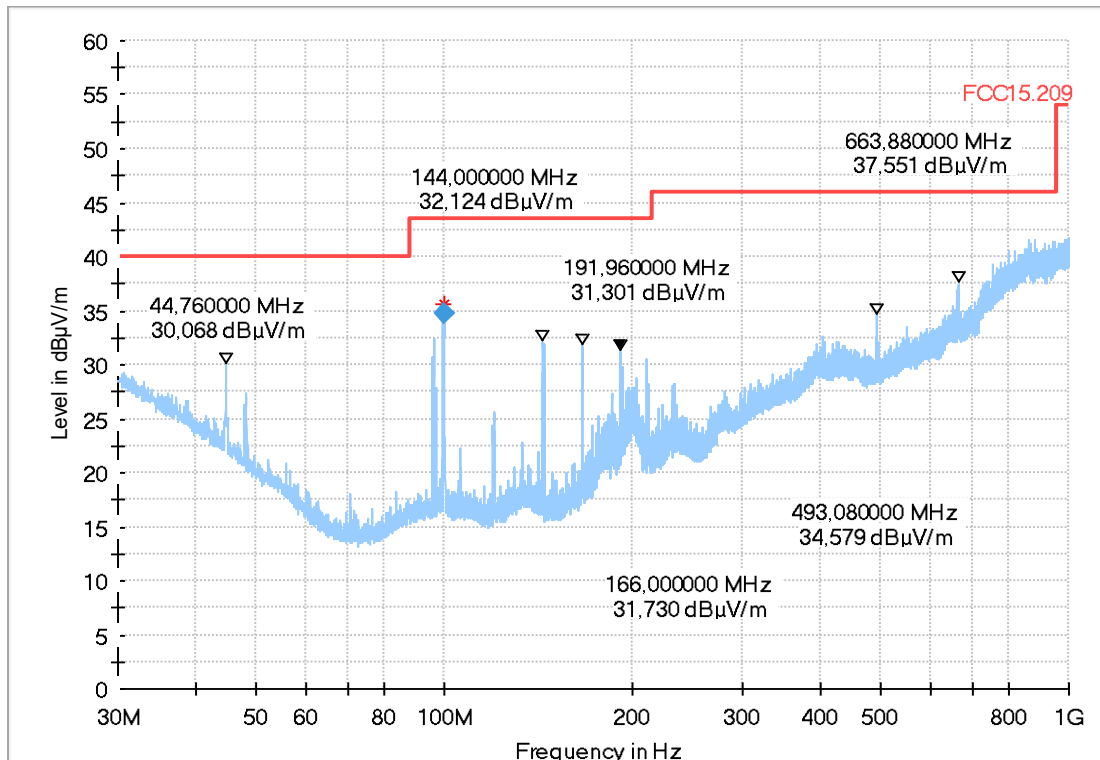
### Common Information

Test description:	Electric Field Strength Measurement
Test Site Location:	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 Standard:	FCC 15.209; RSS-Gen: Issue 5
Operator:	mkh
Operating Mode:	Bleetooth Low Energy _ Low Channel (00)-2402 MHz
Verdict:	Pass

### EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
-----	
HW version:	GH_RC-1V3
SW version:	--
SVN:	--
Config:	--
Serial number:	--
Connected Interfaces:	--
Power Supply:	via PC through development board

Full Spectrum



### Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
99.648000	34.79	43.50	8.71	120.000	105.0	V	136.0	8.1

## 3.02a\_BT\_LE\_mid\_Standing

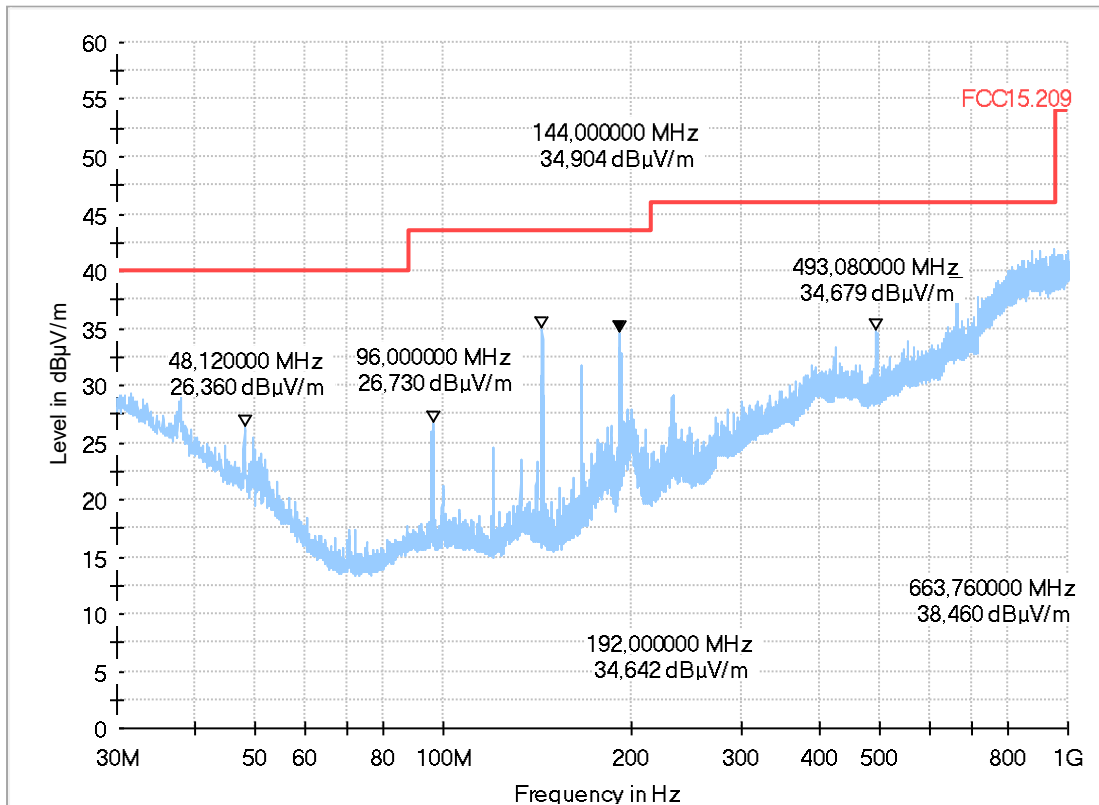
### Common Information

Test description:	Electric Field Strength Measurement
Test Site Location:	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 Standard.:	FCC 15.209; RSS-Gen: Issue 5
Operator:	mkh
Operating Mode:	Bleetooth Low Energy _ Mid Channel (20)-2442 MHz
Verdict:	Pass

### EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
-----	
HW version:	GH_RC-1V3
SW version:	--
SVN:	
Config:	--
Serial number:	--
Connected Interfaces:	--
Power Supply:	via PC through development board
Comments:	--

Full Spectrum



## 3.02b\_BT\_LE\_low\_Laying

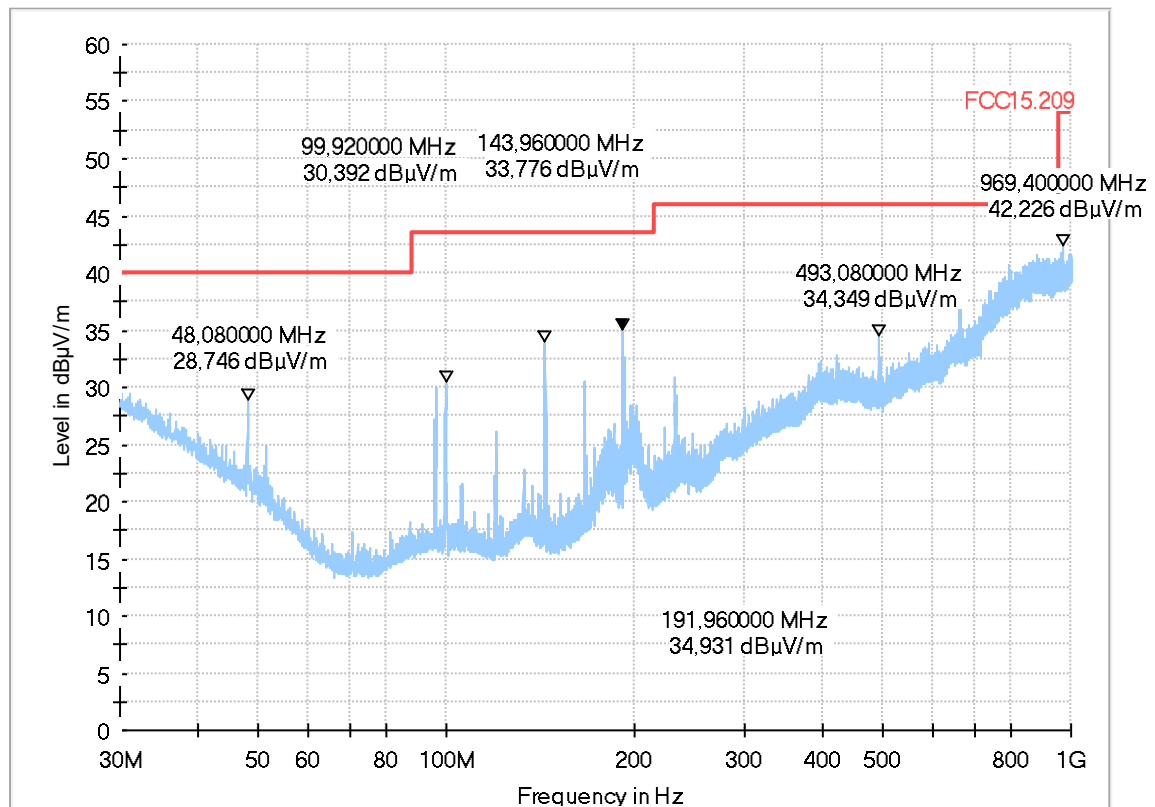
### Common Information

Test description:	Electric Field Strength Measurement
Test Site Location:	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 Standard.:	FCC 15.209; RSS-Gen: Issue 5
Operator:	mkh
Operating Mode:	Bleetooth Low Energy _ Mid Channel (20)-2442 MHz
Verdict:	Pass

### EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
-----	
HW version:	GH_RC-1V3
SW version:	--
SVN:	--
Config:	--
Serial number:	--
Connected Interfaces:	--
Power Supply:	via PC through development board
Comments:	--

Full Spectrum



### 3.03a\_BT\_LE\_high\_Standing

#### Common Information

Test description: Electric Field Strength Measurement  
 Test Site Location: 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 Standard.: FCC 15.209; RSS-Gen: Issue 5  
 Operator: mkh  
 Operating Mode: Bluetooth Low Energy \_ High Channel (39)-2480 MHz  
 Verdict: Pass

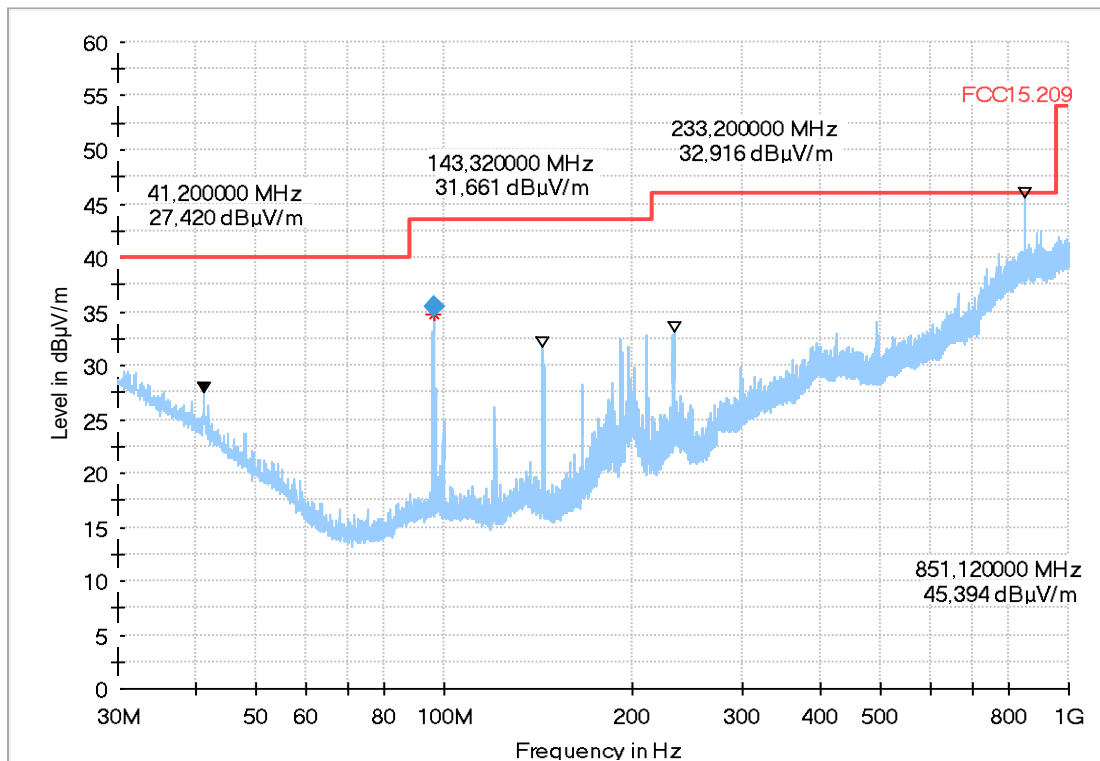
#### EUT Information

PMT number: 19-1-01422S30  
 Manufacturer: Grohe AG  
 Product: Remote Control  
 Model: Rainshower 310 SmartConnect (26646)

---

HW version: GH\_RC-1V3  
 SW version: --  
 SVN: --  
 Config: --  
 Serial number: --  
 Connected Interfaces: --  
 Power Supply: via PC through development board

Full Spectrum



**Remarks:** The peak at 851.12MHz is a known external disturbance and does not come from the EUT.

#### Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
96.000000	35.44	43.50	8.06	120.000	105.0	V	88.0	8.2

### 3.03b\_BT\_LE\_high\_Laying

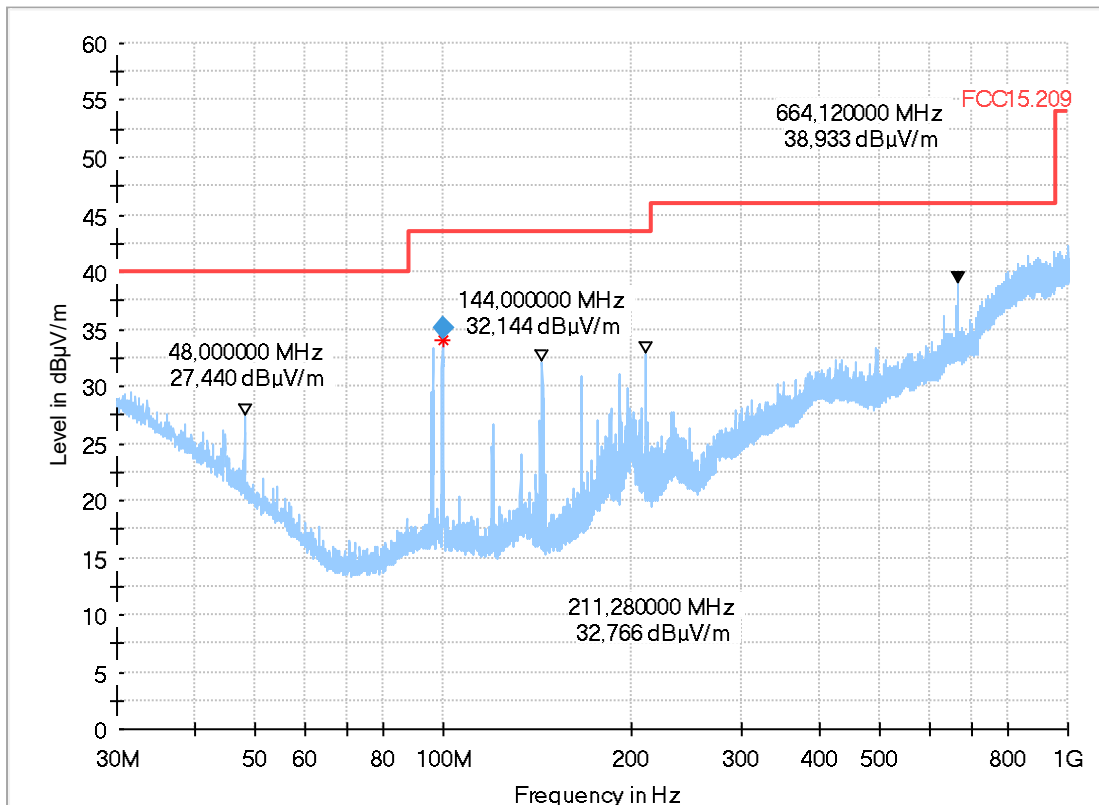
**Common Information**

Test description:	Electric Field Strength Measurement
Test Site Location:	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 Standard.:	FCC 15.209; RSS-Gen: Issue 5
Operator:	mkh
Operating Mode:	Bluetooth Low Energy _ High Channel (39)-2480 MHz
Verdict:	Passed

**EUT Information**

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
HW version:	GH_RC-1V3
SW version:	--
Serial number:	--
Connected Interfaces:	--
Power Supply:	via PC through development board
Comments:	--

Full Spectrum



**Final\_Result**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
99.648000	35.01	43.50	8.49	120.000	105.0	V	284.0	8.1



# 4.01a\_BT\_LE\_low

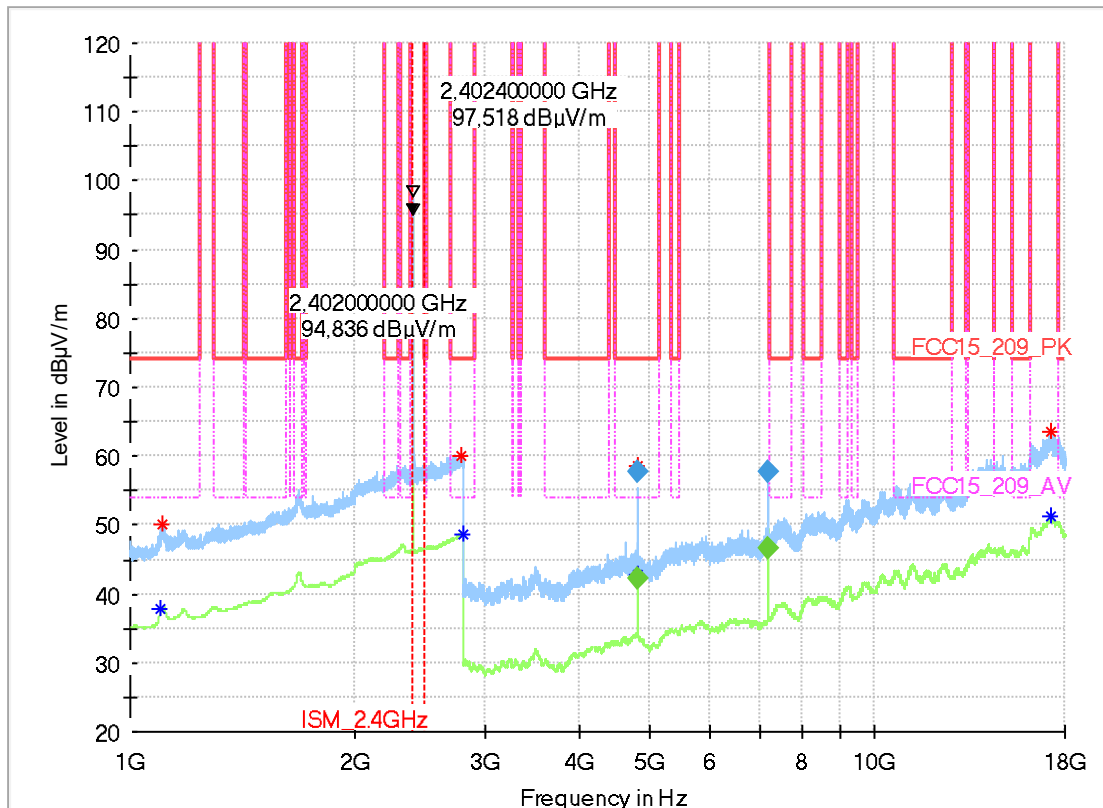
## Common Information

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 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	Bletooth Low Energy _ Low Channel (00)-2402 MHz
Operator:	mkh
Verdict:	Passed

## EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
-----	
HW version:	GH_RC-1V3
SW version:	--
SVN:	--
Config:	--
Serial number:	--
Connected Interfaces:	--
Power Supply:	via PC through development board
Comments:	--

Full Spectrum



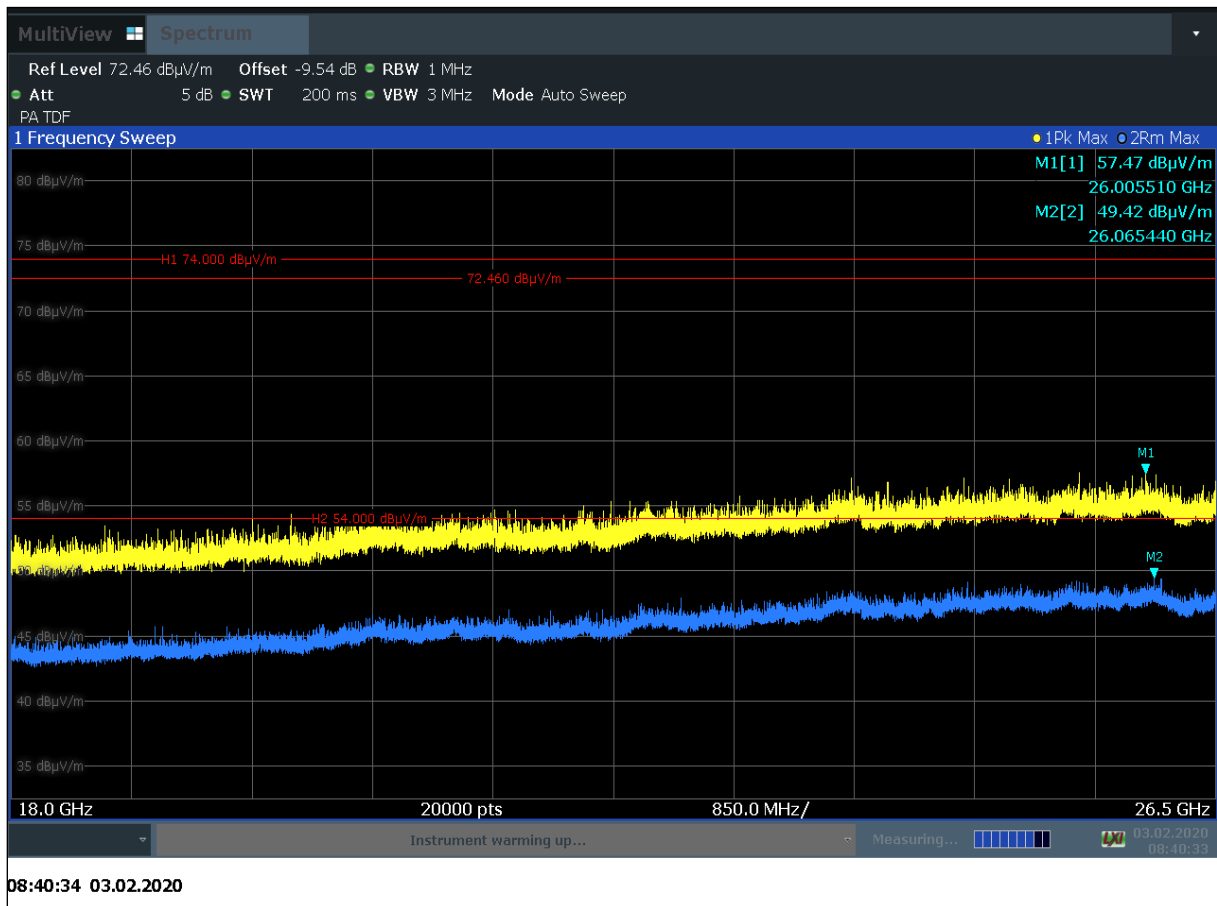
**Final\_Result**

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margi n	Bandwidt h	Heigh t	Pol	Azimut h	Elevatio n	Corr. (dB/m)
4804.000000	---	42.11	54.00	11.89	1000.000	155.0	H	49.0	0.0	6
4804.000000	57.83	---	74.00	16.17	1000.000	155.0	V	84.0	0.0	6
7205.600000	57.83	---	150.00	92.17	1000.000	155.0	V	48.0	0.0	12
7206.800000	---	46.58	150.00	103.42	1000.000	155.0	V	48.0	0.0	12

**Critical Freqs**

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Limit (dBµV/m)	Margi n	Bandwidt h	Heigh t	Pol	Azimut h	Elevatio n	Corr. (dB/m)
1100.000000	---	37.96	54.00	16.04	---	155.0	H	315.0	0.0	29
1102.000000	50.17	---	74.00	23.83	---	155.0	H	270.0	0.0	29
2784.000000	60.16	---	74.00	13.84	---	155.0	H	315.0	90.0	39
2798.400000	---	48.75	54.00	5.25	---	155.0	V	270.0	90.0	39
4804.000000	58.54	---	74.00	18.63	---	155.0	V	84.0	0.0	6
4804.000000	---	42.87	54.00	10.24	---	155.0	H	49.0	0.0	6
7205.600000	57.88	---	150.00	92.44	---	155.0	V	48.0	0.0	12
7206.800000	---	46.68	150.00	100.40	---	155.0	V	48.0	0.0	12
17250.000000	63.63	---	150.00	86.37	---	155.0	V	90.0	90.0	31
17269.200000	---	51.27	150.00	98.73	---	155.0	H	225.0	90.0	31

**4.01b\_BT\_LE\_low**



## 4.02a\_BT\_LE\_mid

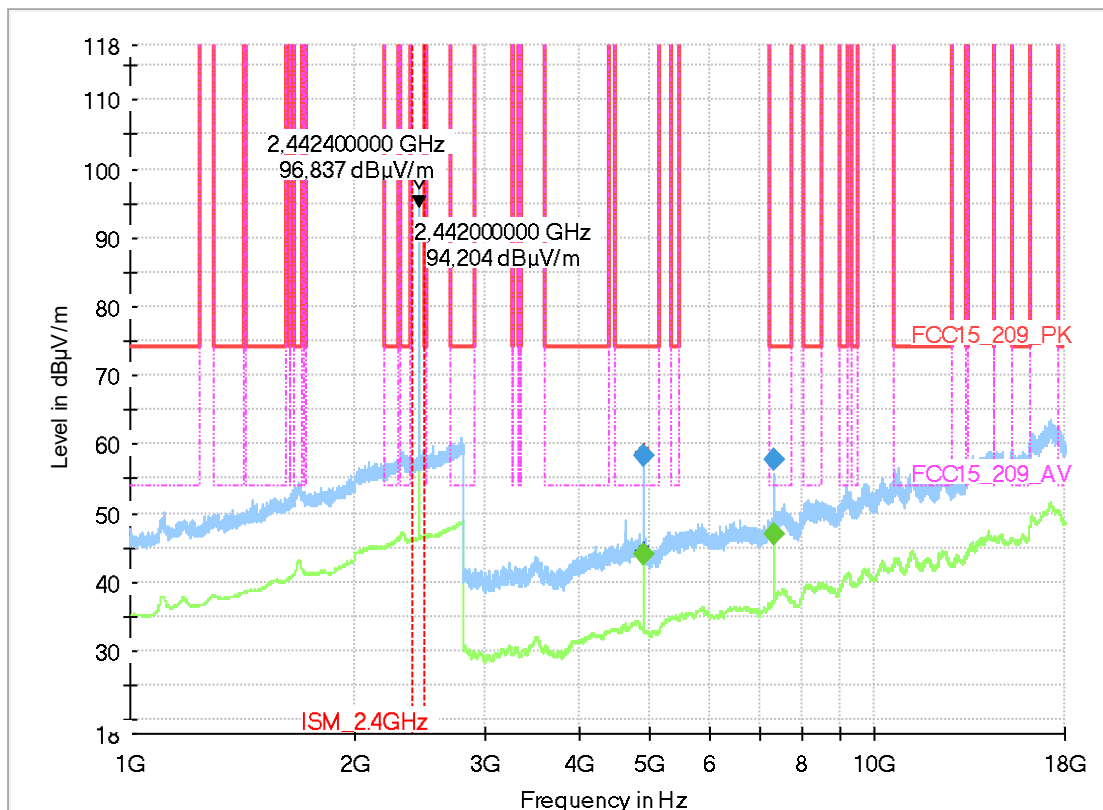
### Common Information

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 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	Bluetooth Low Energy _ Mid Channel (20)-2442 MHz
Operator:	RIs
EUT Setup:	1

### EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
-----	
HW version:	GH_RC-1V3
SW version:	--
SVN:	--
Config:	--
Serial number:	--
Connected Interfaces:	--
Power Supply:	via PC through development board
Comments:	--

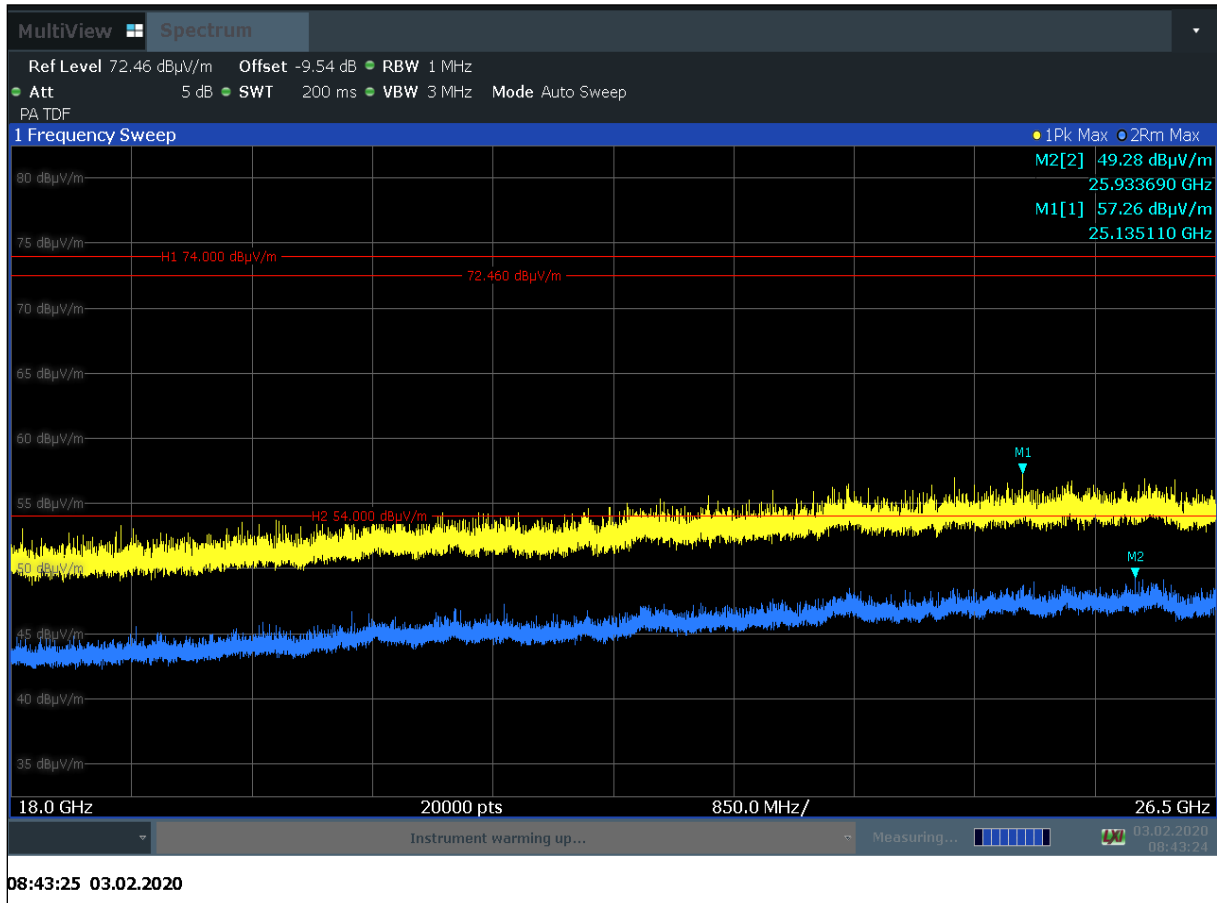
Full Spectrum



Final\_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin	Bandwidth (kHz)	Height (cm)	Pol	Meas. Time	Azimuth (deg)	Elevation
4884.000000	---	43.98	54.00	10.02	1000.000	155.0	V	100.0	128.0	0.0
4884.400000	58.42	---	74.00	15.58	1000.000	155.0	V	100.0	94.0	0.0
7325.600000	---	46.91	54.00	7.09	1000.000	155.0	V	100.0	-14.0	90.0
7325.600000	57.62	---	74.00	16.38	1000.000	155.0	V	100.0	-14.0	90.0

### 4.02b\_BT\_LE\_low



## 4.03a\_BT\_LE\_high

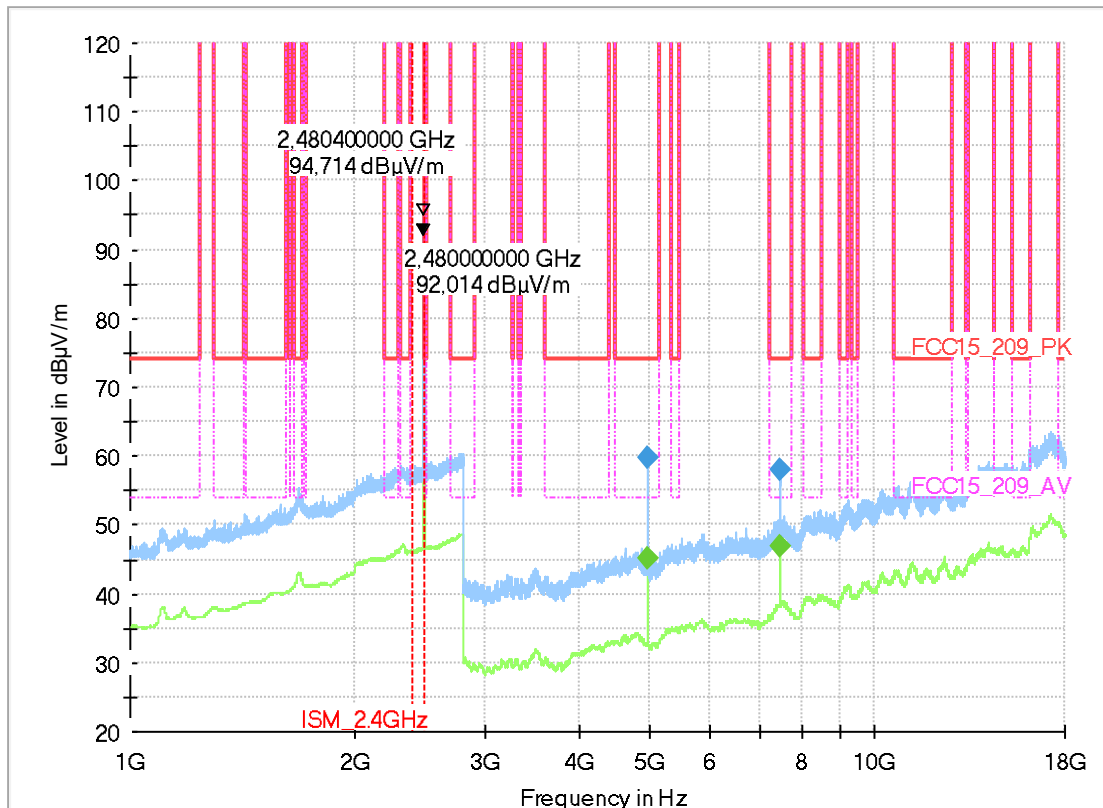
### Common Information

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 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	Bluetooth Low Energy _ High Channel (39)-2480 MHz
Operator:	RIs
EUT Setup:	1

### EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
-----	
HW version:	GH_RC-1V3
SW version:	--
SVN:	--
Config:	--
Serial number:	--
Connected Interfaces:	--
Power Supply:	via PC through development board
Comments:	--

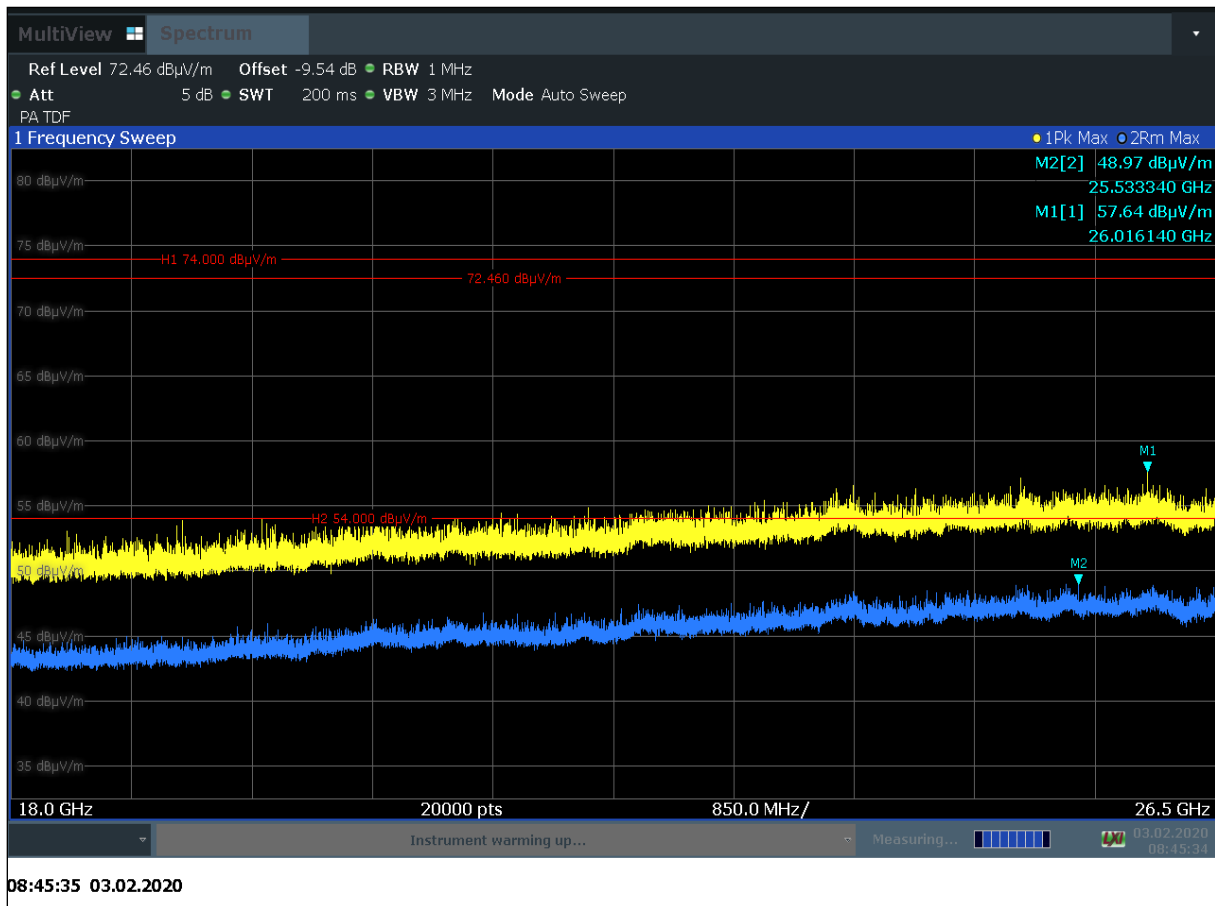
Full Spectrum



Final\_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margi n	Meas. Time (ms)	Bandwidt h	Heigh t	Pol	Azimet h	Elevatio n
4960.000000	---	45.29	54.00	8.71	100.0	1000.000	155.0	V	126.0	0.0
4960.400000	59.88	---	74.00	14.12	100.0	1000.000	155.0	V	86.0	0.0
7440.800000	---	46.94	54.00	7.06	100.0	1000.000	155.0	V	35.0	90.0
7441.200000	58.05	---	74.00	15.95	100.0	1000.000	155.0	V	-6.0	90.0

### 4.03b\_BT\_LE\_low



## 9.01\_BE\_BT\_LE\_low

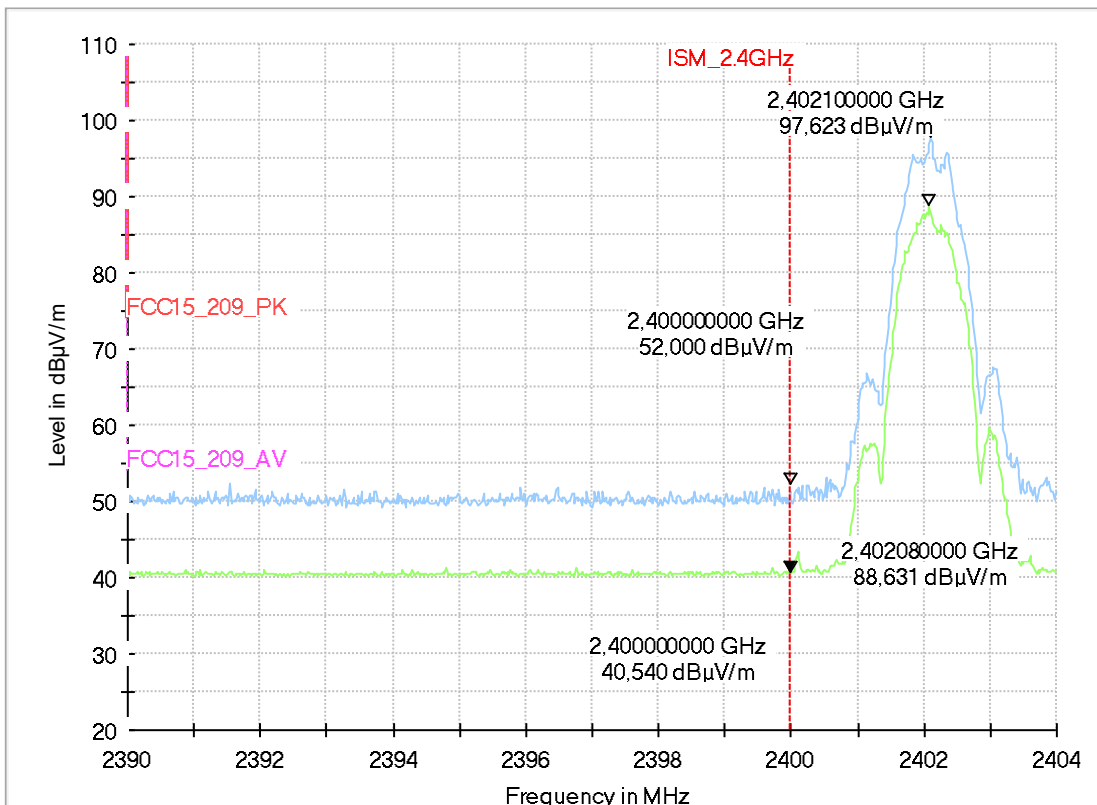
### Common Information

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 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	Bluetooth Low Energy _ Low Channel (00)-2402 MHz
Operator:	mkh
Verdict:	Passed
Conditions:	Humidity : 46% rH; Temperature: 20° C

### EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
-----	
HW version:	GH_RC-1V3
SW version:	--
SVN:	--
Config:	--
Serial number:	--
Connected Interfaces:	--
Power Supply:	via PC through development board
Comments:	--

Full Spectrum



## 9.02\_BE\_BT\_LE\_high

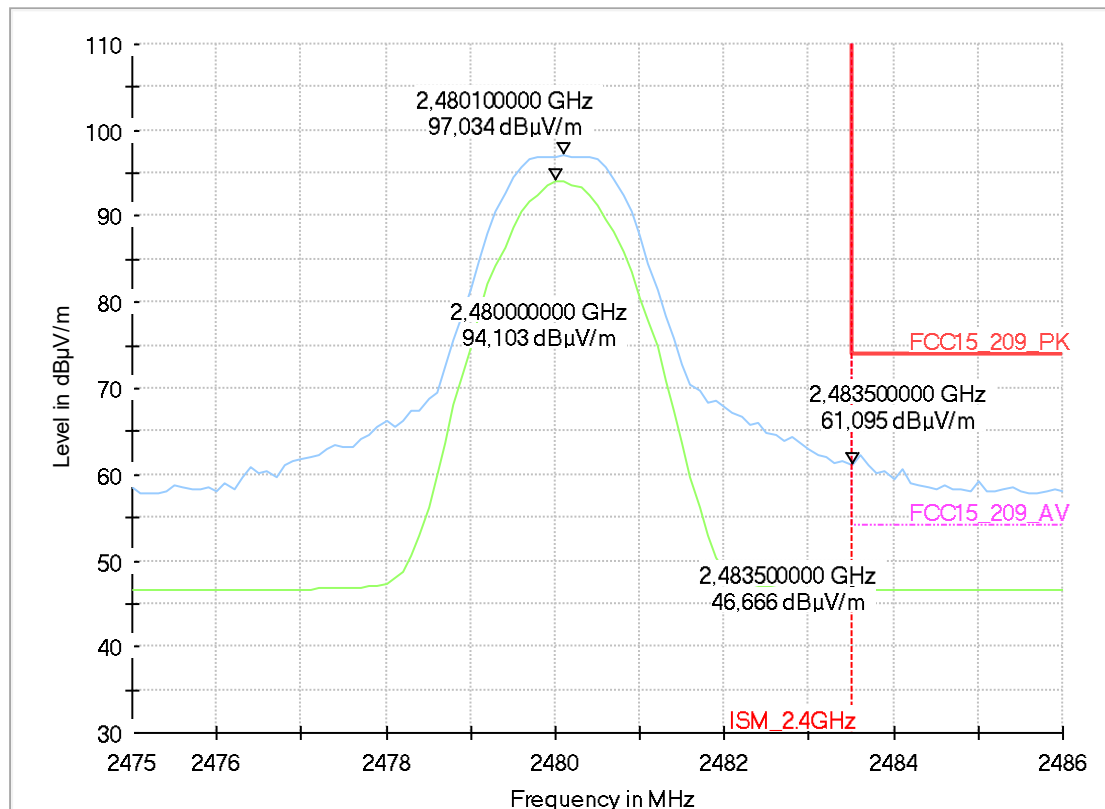
### Common Information

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 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	Bluetooth Low Energy _ Low Channel (01)-2404 MHz
Operator:	RIs
EUT Setup:	1

### EUT Information

PMT number:	19-1-01422S30
Manufacturer:	Grohe AG
Product:	Remote Control
Model:	Rainshower 310 SmartConnect (26646)
HW version:	GH_RC-1V3
SW version:	--
Serial number:	--
Connected Interfaces:	--
Power Supply:	via PC through development board

Full Spectrum



End Of Annex 1