

Annex 1: Measurement diagrams to
TEST REPORT
 No.: 6-0698-15-2-3a-C2

According to:
FCC Regulations
 Part 15.209
 Part 15.247

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

for

Vorwerk Elektrowerke GmbH & Co. KG

WLAN-Interface for kitchen cooking Appliance CK-WLAN
 Cook-Key
 FCC-ID: 2AGELCK1
 IC: 20889-CK1







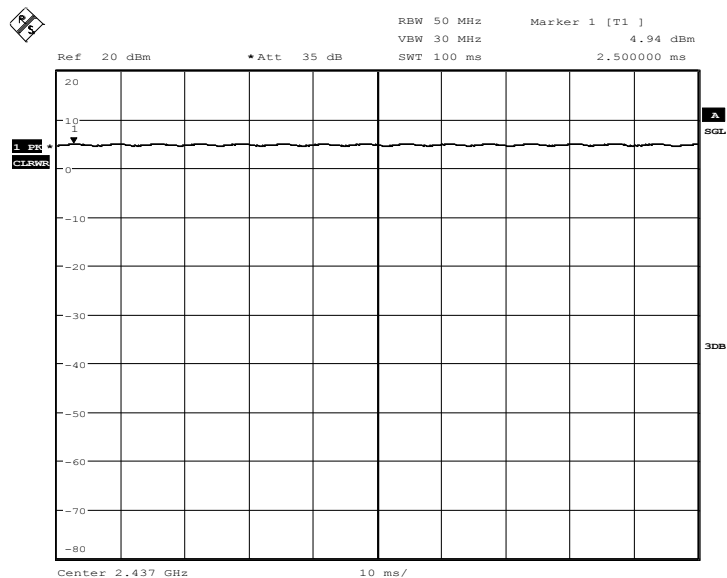
Laboratory Accreditation and Listings			
 Deutsche Akkreditierungsstelle D-PL-12047-01-01	 FEDERAL COMMUNICATIONS COMMISSION USA MRA US-EU 0003	 Industry Canada Reg. No.: 3462D-2 Reg. No.: 3462D-3	 Voluntary Controls for Electromagnetic Emissions Reg. No.: R-2666 C-2914, T-1967, G-301
 AUTHORIZED RF LABORATORY	 Authorized TM Test Lab Lab Code: 20011130-00		
accredited according to DIN EN ISO/IEC 17025			
CETECOM GmbH Laboratory Radio Communications & Electromagnetic Compatibility Im Teelbruch 116 • 45219 Essen • Germany Registered in Essen, Germany, Reg. No.: HRB Essen 8984 Tel.: + 49 (0) 20 54 / 95 19-954 • Fax: + 49 (0) 20 54 / 95 19-964 E-mail: info@cetecom.com • Internet: www.cetecom.com			

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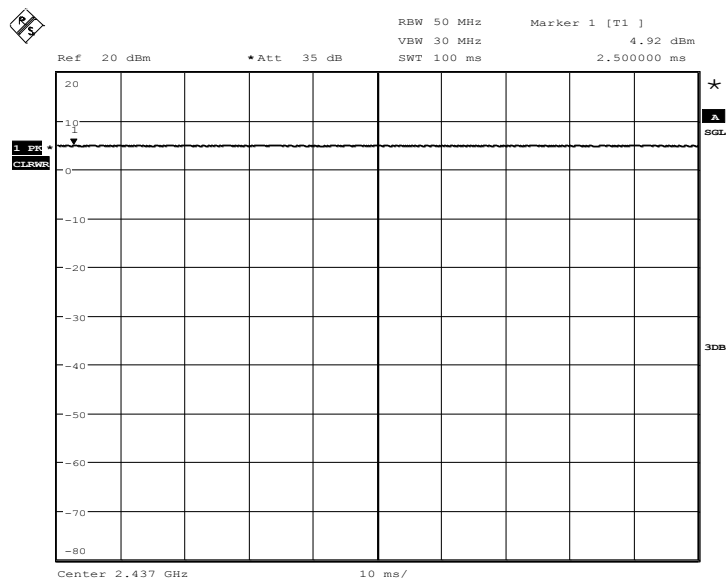
1. Conducted RF-Measurements

1.1. Duty-Cycle



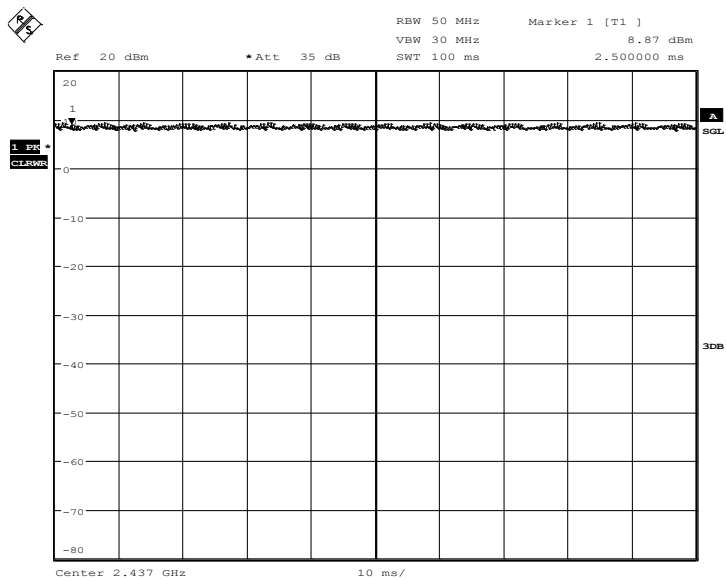
Date: 2.DEC.2016 14:50:44

Duty_Cycle_Ch6_bMode_1MBit



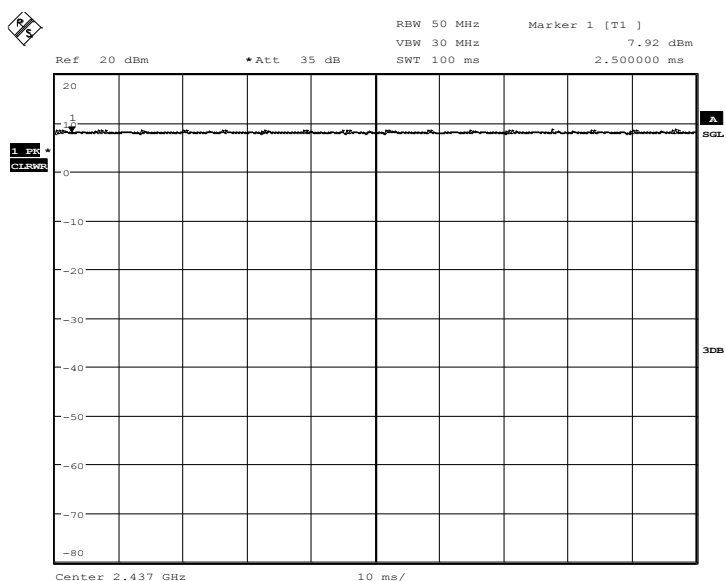
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Duty_Cycle_Ch6_bMode_11Mbit



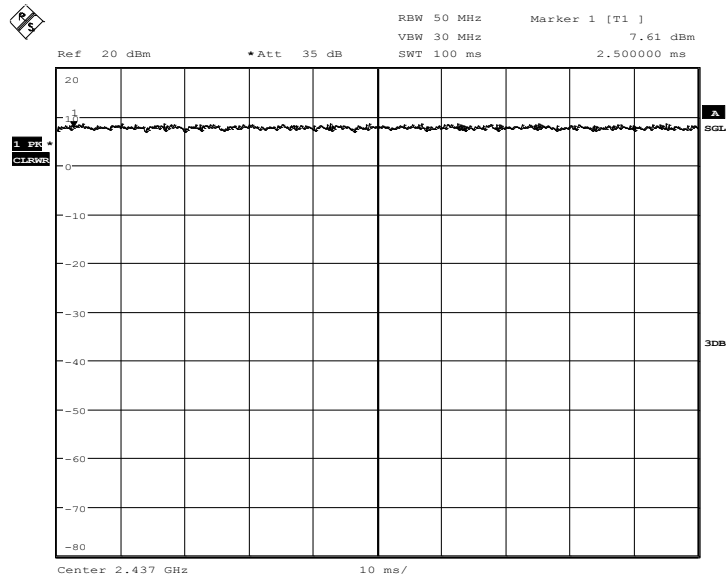
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Duty Cycle_Ch6_gMode_6Mbit



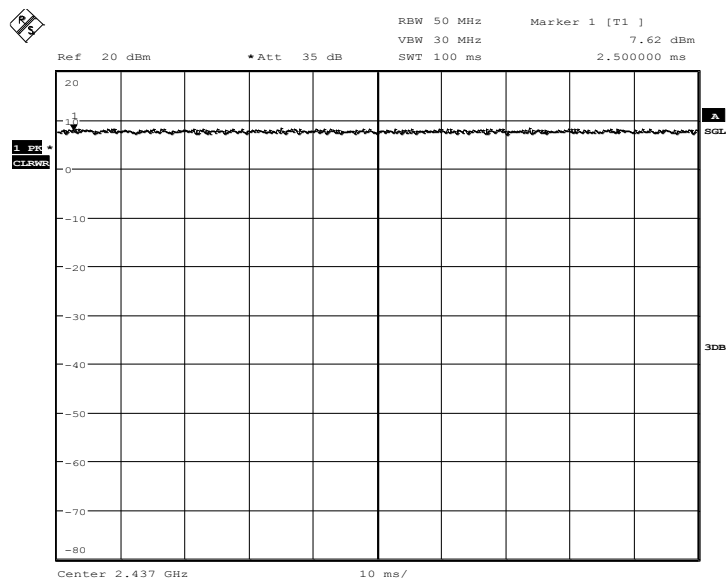
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Duty Cycle_Ch6_gMode_54MBit



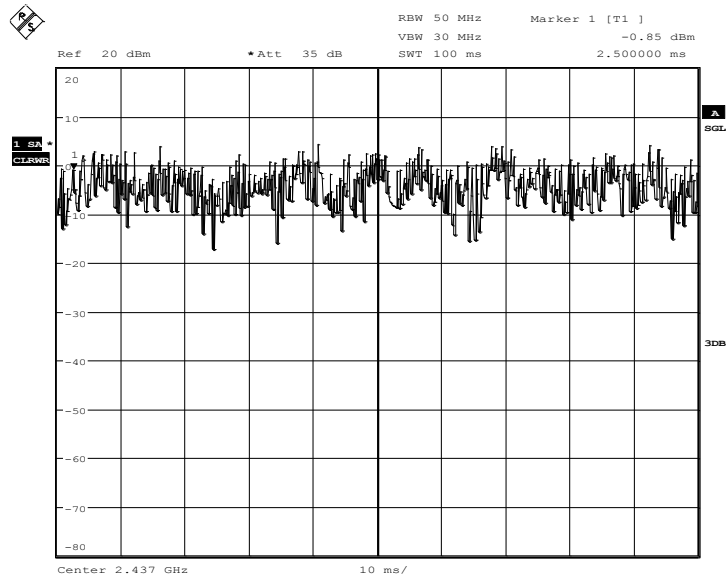
Date: 2.DEC.2016 14:54:24

Duty Cycle_Ch6_nMode_HT20_MCS0



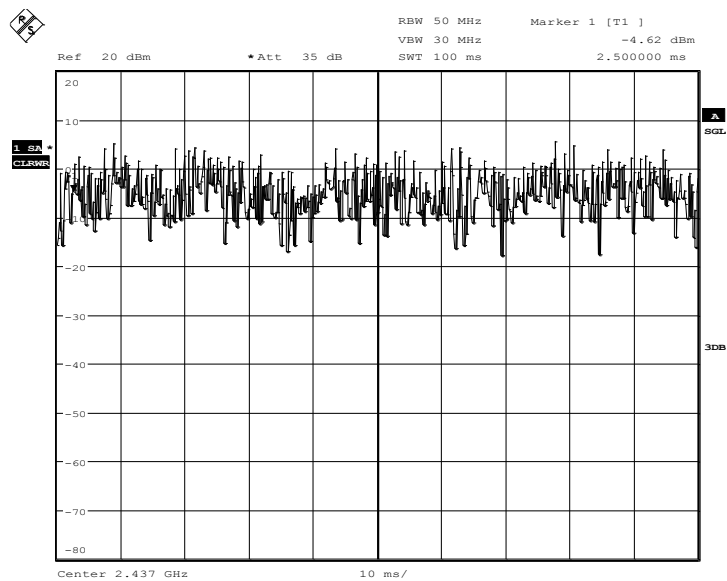
Date: 2.DEC.2016 14:55:10

Duty Cycle_Ch6_nMode_HT20_MCS7



Date: 2.DEC.2016 14:25:23

Duty_Cycle_Ch48_HT40_MCS0



Date: 2.DEC.2016 14:24:18

Duty_Cycle_Ch48_HT40_MCS7

1.2. RF-Power (conducted)

1.2.1. b-Mode

b-mode		Channel no. / [dBm]			Max-Value / [dBm]
Data rate	Modulation	1	6	11	
1MBit		16,19	15,41	16,03	16,19
2Mbit		16,13	15,73	15,95	
5.5Mbit		15,65	15,28	15,35	
11MBit		15,91	15,45	15,54	

1.2.2. g-Mode

g-Mode		Channel no. / [dBm]			Max-Value / [dBm]
Data rate	Modulation	1	6	11	
6Mbit		15,55	16,14	15,54	16,61
9Mbit		15,54	16,03	15,65	
12Mbit		15,57	16,13	15,55	
18Mbit		15,37	16,05	15,47	
24Mbit		15,85	16,28	16,61	
36Mbit		15,19	15,81	15,71	
48Mbit		15,41	16,18	15,48	
54MBit		15,38	16,24	15,59	

1.2.3. n-Mode (HT20)

n-Mode HT20 (1 spatial stream: 1SS)		Channel no. / [dBm]			Max-Value / [dBm]
Data rate	Modulation	1	6	11	
MCS0 -6.5Mbps	BPSK	14,03	14,05	14,33	14,56
MCS1 - 13Mbps	QPSK	14,46	14,09	14,28	
MCS2 - 19.5Mbps	QPSK	14,02	14,15	14,28	
MCS3 - 26Mbps	QAM16	14,48	14,12	14,26	
MCS4 -39Mbps	QAM16	14,44	14,16	14,29	
MCS5 - 52MBps	QAM64	14,44	14,56	14,24	
MCS6 - 58.5MBps	QAM64	14,39	14,51	14,19	
MCS7 - 65MBps	QAM64	14,48	14,53	14,34	

1.2.4. n-Mode (HT40)

n-Mode HT40 (1 spatial stream: 1SS)		Channel no. / [dBm]			Max-Value / [dBm]
Data rate	Modulation	15 (2422MHz)	48 (2437MHz)	711 (2452MHz)	
MCS0 - 6.5Mbps	BPSK	11,89	12,51	12,21	12,72
MCS1 - 13Mbps	QPSK	11,86	12,44	11,79	
MCS2 - 19.5Mbps	QPSK	11,82	12,41	11,88	
MCS3 - 26Mbps	QAM16	12,12	12,64	12,17	
MCS4 - 39Mbps	QAM16	12,51	12,47	12,03	
MCS5 - 52Mbps	QAM64	12,59	12,72	12,10	
MCS6 - 58.5Mbps	QAM64	12,38	12,49	12,31	
MCS7 - 65Mbps	QAM64	12,25	12,17	12,16	

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

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

1.1.1 b –Mode Modulation

Diagram No. 2.01_TX_Ch1_bMode_1MBps

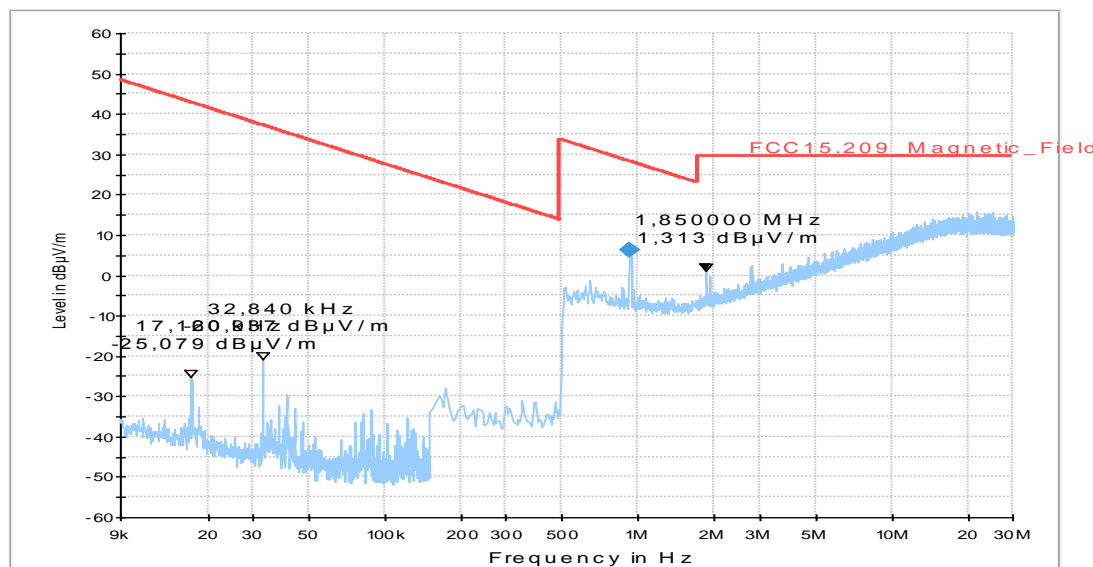
Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V8.51.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used filter:	bypass
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	Lor
Operating conditions:	TX-on
Power during tests:	5V DC USB Cable
Comment 1:	Channel low=1, b-mode, 1Mbps
Comment 2:	BW = 20 MHz

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC

FCC 15.209_ ANS I63_10_2013



Final Result 1

Frequency (MHz)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.926000	6.1	1000.0	10.000	100.0	V	170.0	-20.1	22.20	28.30

1.1.2 g –Mode Modulation

Diagram No. 2.02_TX_Ch6_gMode_6MBps

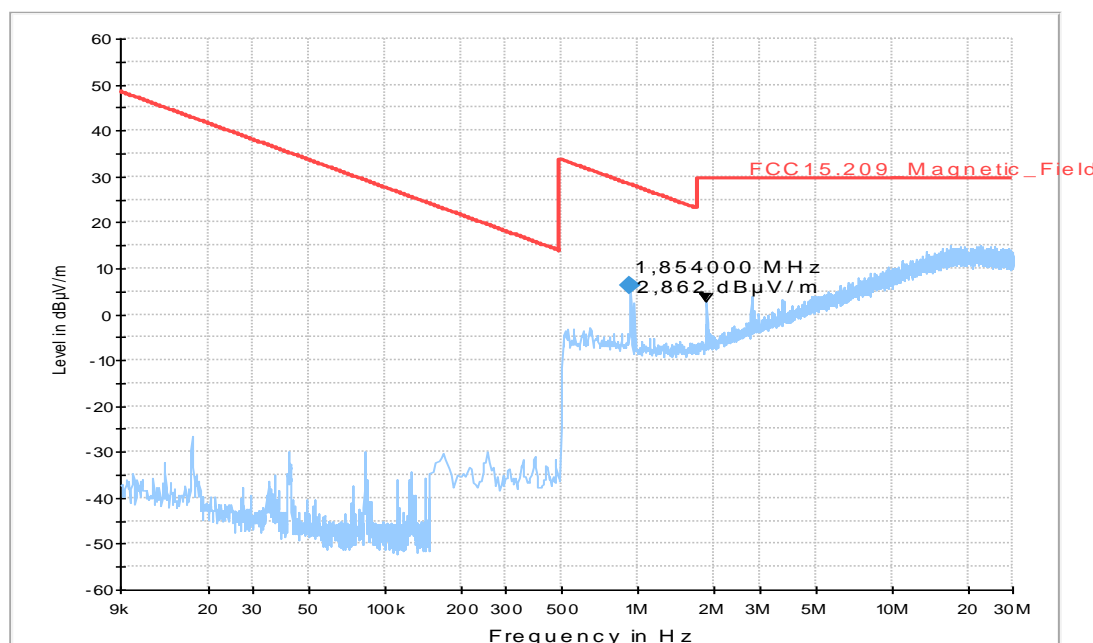
Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V8.51.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used filter:	bypass
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	Lor
Operating conditions:	TX-on
Power during tests:	5V DC USB Cable
Comment 1:	Channel middle 6, g-mode, 6Mbps
Comment 2:	BW = 20 MHz

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC

FCC 15.209 _ANSI63_10_2013



Final Result 1

Frequency (MHz)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.926000	6.3	1000.0	10.000	100.0	V	170.0	-20.1	22.00	28.30

1.1.3 n-Mode Modulation

Diagram No. 2.03_TX_Ch9_n-mode_MCS0

Common Information

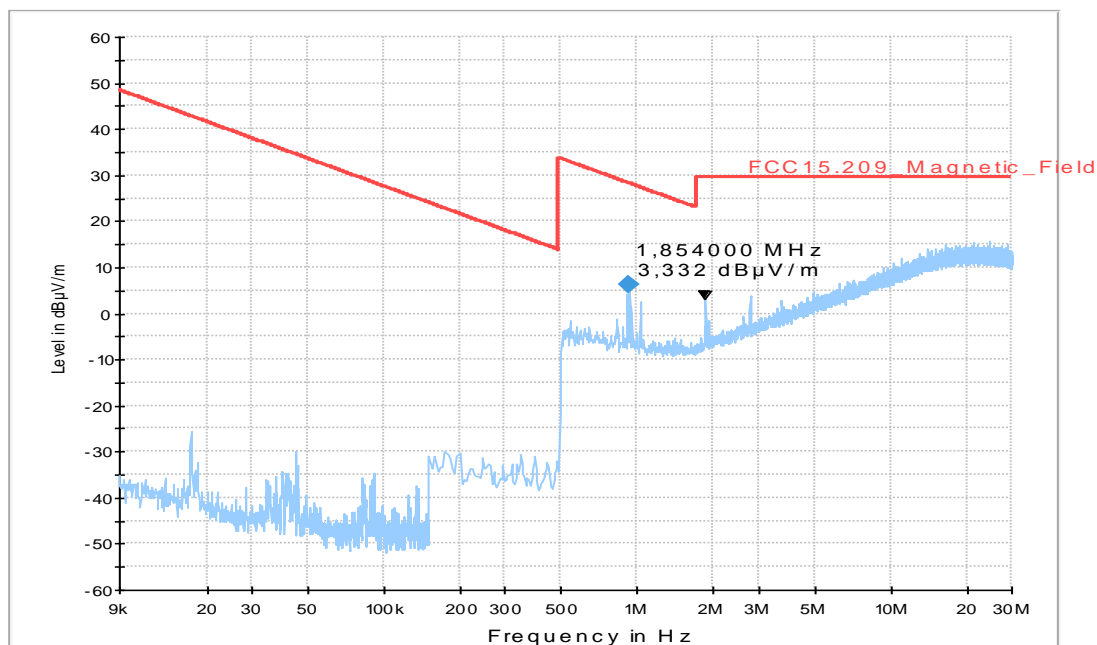
Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V8.51.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used filter:	bypass
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	Lor
Operating conditions:	TX-on
Power during tests:	5V DC USB Cable
Comment 1:	Channel high=9, n-mode, MCS0
Comment 2:	BW = 40 MHz

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key

HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC

FCC 15.209_ANSI63_10_2013



Final Result 1

Frequency (MHz)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.926000	6.2	1000.0	10.000	100.0	V	70.0	-20.1	22.10	28.30

1.2 Field strength measurements 30MHz <f <1GHz

1.2.1 b-Mode-Modulation

Diagram No. 3.01_TX_Ch1_bMode_1Mbps

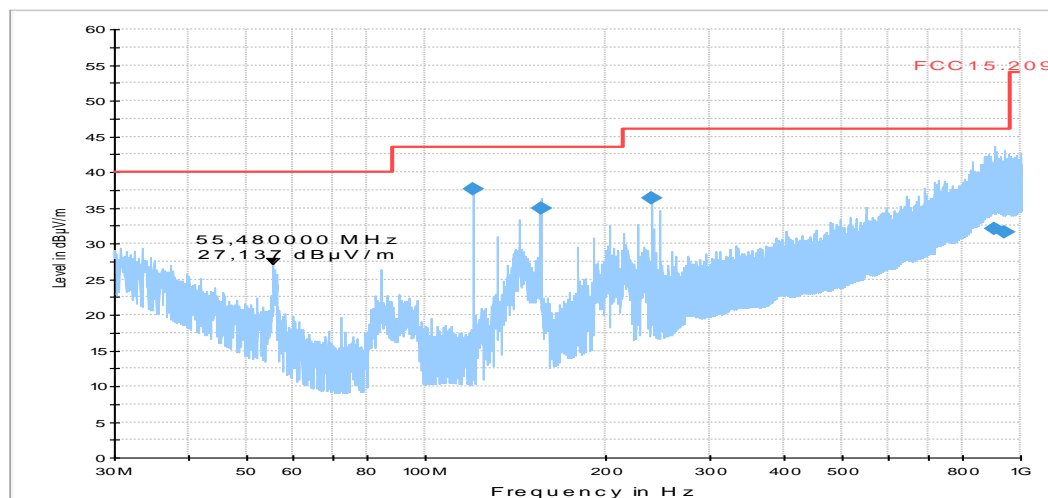
Common Information

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; RSS-Gen: Issue 4
Operator:	Lor
Operating conditions:	WLAN
Power during tests:	5 VDC , USB Cable
Comment 1:	channel 1, b-mode, 1Mbps

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC

01_FCC15.209_hor+vert_kipp



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)
119.990000	37.6	1000.0	120.000	182.0	H	78.0	0.0	8.0	5.90
155.990000	34.9	1000.0	120.000	176.0	H	106.0	0.0	9.1	8.60
239.980000	36.3	1000.0	120.000	105.0	H	94.0	90.0	13.1	9.70
900.950000	32.0	1000.0	120.000	158.0	H	296.0	90.0	27.0	14.00
937.920000	31.7	1000.0	120.000	143.0	V	218.0	0.0	27.1	14.30

Frequency (MHz)	Limit (dBµV/m)
119.990000	43.50
155.990000	43.50
239.980000	46.00
900.950000	46.00
937.920000	46.00

1.2.2 g-Mode-Modulation

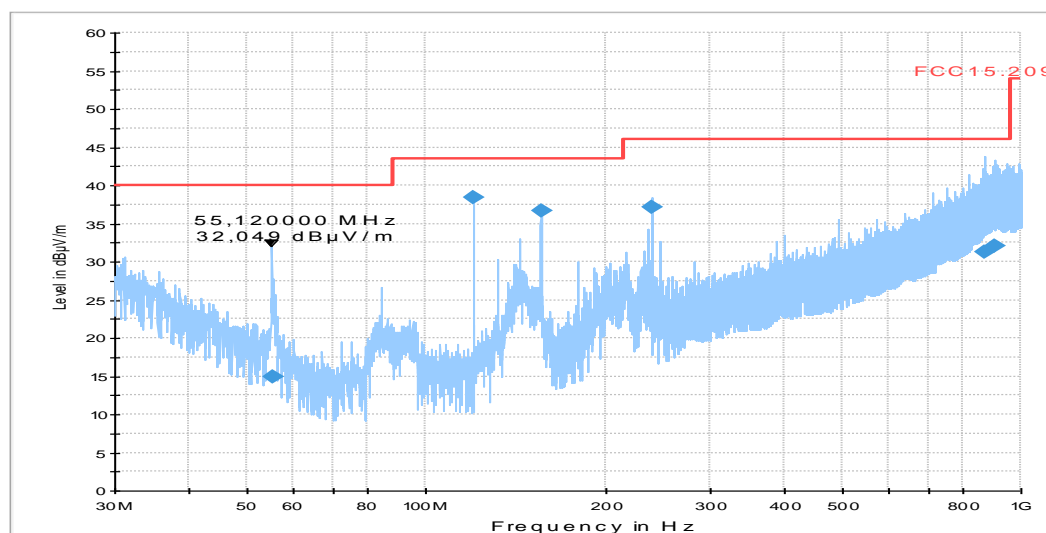
Diagram No. 3.02_TX_Ch6_gMode_6MBps
Common Information

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; RSS-Gen: Issue 3
Operator:	Lor
Operating conditions:	WLAN
Power during tests:	5 VDC , USB Cable
Comment 1:	channel 6, g-mode, 6Mbps

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC

01_FCC15.209_hor+vert_kipp


Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)
55.300000	14.9	1000.0	120.000	182.0	H	137.0	90.0	11.7	25.10
120.000000	38.4	1000.0	120.000	174.0	H	95.0	0.0	8.0	5.10
155.990000	36.7	1000.0	120.000	105.0	V	116.0	90.0	9.1	6.80
240.000000	37.1	1000.0	120.000	105.0	H	93.0	90.0	13.1	8.90
867.550000	31.3	1000.0	120.000	275.0	V	344.0	0.0	26.6	14.70
906.500000	32.0	1000.0	120.000	200.0	H	300.0	90.0	27.0	14.00

Frequency (MHz)	Limit (dBµV/m)
55.300000	40.00
120.000000	43.50
155.990000	43.50
240.000000	46.00
867.550000	46.00
906.500000	46.00

1.2.3 n-Mode-Modulation (HT20-mode)

Diagram No. 3.03_TX_Ch11_nmode_MCS0

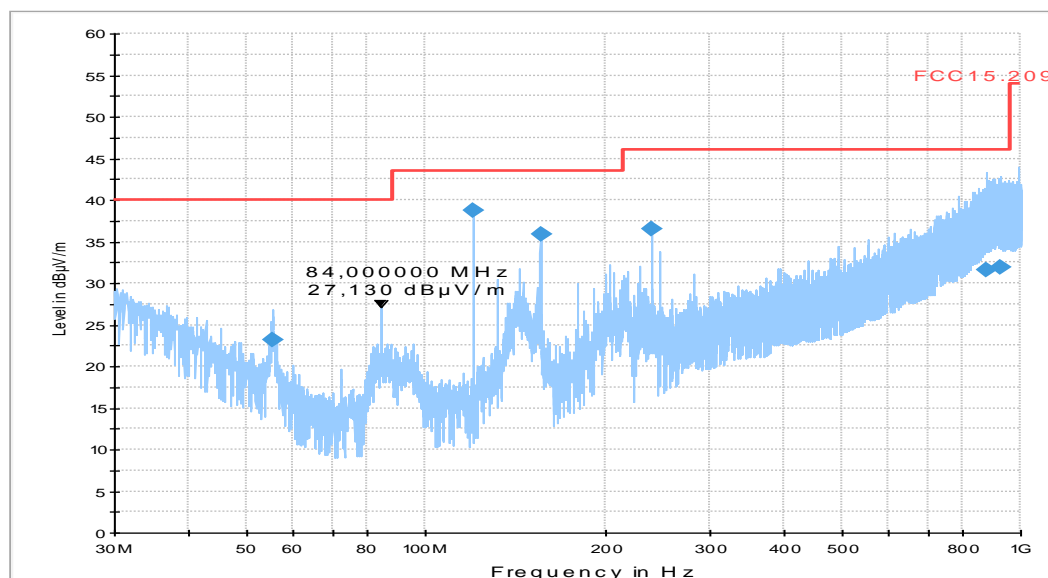
Common Information

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; RSS-Gen: Issue 3
Operator:	Lor
Operating conditions:	WLAN
Power during tests:	5 VDC , USB Cable
Comment 1:	channel 11, n-mode, MCS0

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC

01_FCC15.209_hor+vert_kipp



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Marginal (dB)
55.300000	23.2	1000.0	120.000	116.0	H	120.0	0.0	11.7	16.80
120.010000	38.7	1000.0	120.000	176.0	H	87.0	0.0	8.0	4.80
155.990000	35.9	1000.0	120.000	198.0	H	110.0	0.0	9.1	7.60
239.990000	36.6	1000.0	120.000	105.0	H	91.0	0.0	13.1	9.40
873.830000	31.5	1000.0	120.000	298.0	V	4.0	0.0	26.7	14.50
925.080000	31.9	1000.0	120.000	262.0	H	0.0	0.0	27.1	14.10

Frequency (MHz)	Limit (dBµV/m)
55.300000	40.00
120.010000	43.50
155.990000	43.50
239.990000	46.00
873.830000	46.00

925.080000	46.00
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1.2.4 n-Mode-Modulation (HT40-mode)

Diagram No. 3.04_TX_Ch9_nmode_MSC0_BW_40MHz

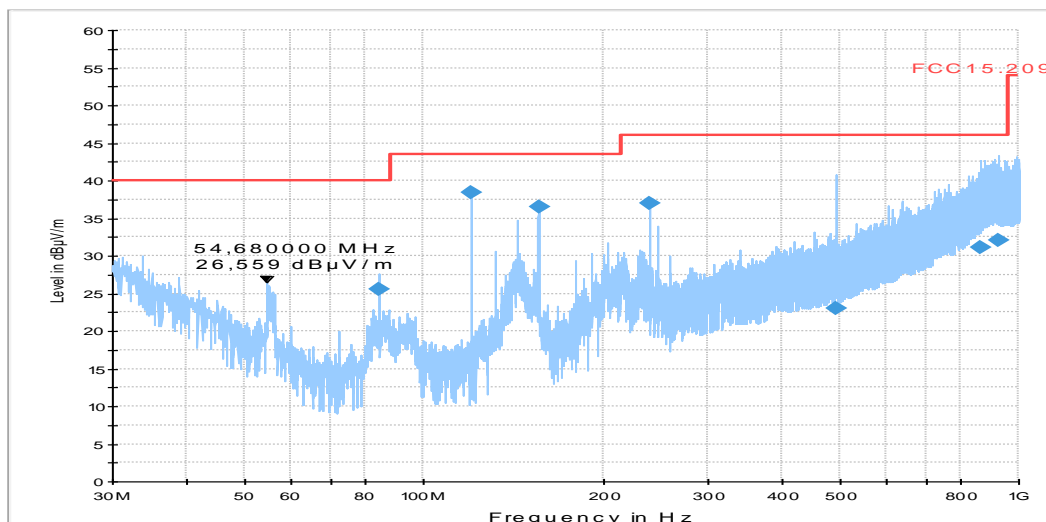
Common Information

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; RSS-Gen: Issue 3
Operator:	Lor
Operating conditions:	WLAN
Power during tests:	5 VDC , USB Cable
Comment 1:	channel 9, n-mode, MCS0, BW= 40 MHz

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC

01_FCC15.209_hor+vert_kipp



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
83.980000	25.5	1000.0	120.000	105.0	V	178.0	0.0	8.2	14.50
120.000000	38.5	1000.0	120.000	176.0	H	88.0	0.0	8.0	5.00
156.000000	36.5	1000.0	120.000	105.0	V	100.0	90.0	9.1	7.00
239.990000	37.0	1000.0	120.000	105.0	H	95.0	90.0	13.1	9.00
493.400000	23.0	1000.0	120.000	181.0	H	129.0	90.0	19.8	23.00
865.600000	31.2	1000.0	120.000	105.0	V	169.0	0.0	26.5	14.80
...

Frequency (MHz)	Limit (dBµV/m)
83.980000	40.00
120.000000	43.50
156.000000	43.50
239.990000	46.00
493.400000	46.00

865.600000	46.00
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1.3 Field strength measurements 1GHz < f < 18GHz

1.3.1 b-Mode-Modulation

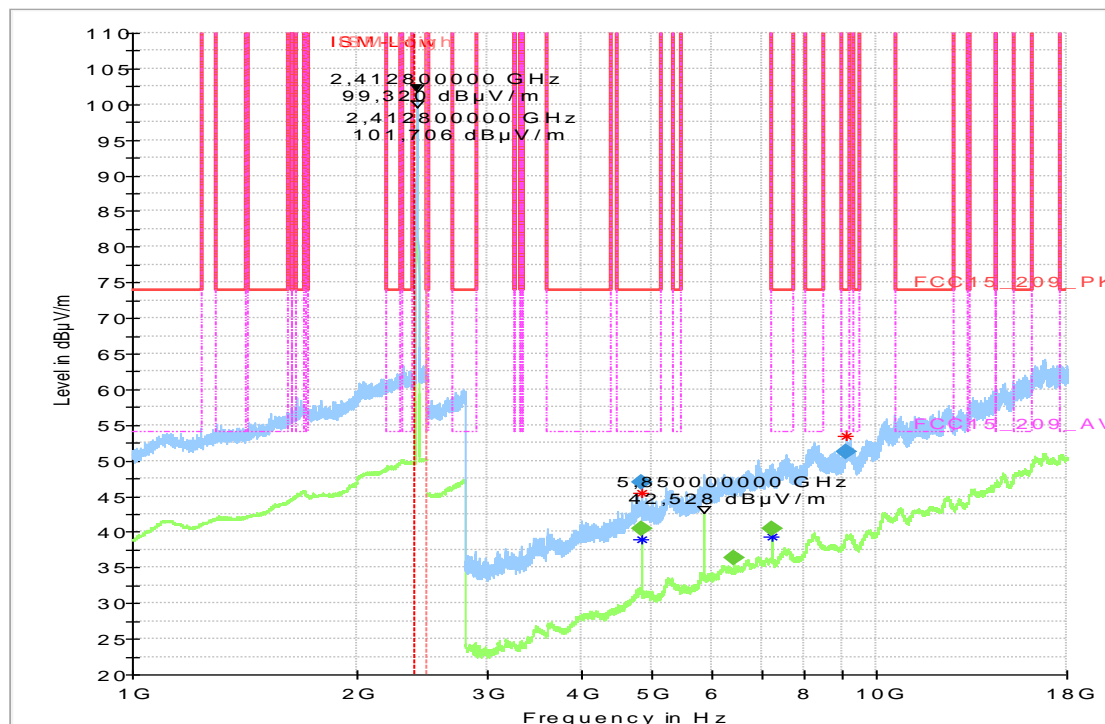
Diagram No.: 4.10_TX_Ch1_bMode_1MBps

Common Information

Test Description:	Radiated Band-Edge Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no. 1 – b Mode - 1Mbps

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC
Comments:	-



Final_Result

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
4824.000000	---	40.46	54.00	13.54	100.0	1000.000	155.0	H	307.0	90.0
4824.000000	46.97	---	74.00	27.03	100.0	1000.000	155.0	H	307.0	90.0
6432.000000	---	36.36	150.00	113.64	100.0	1000.000	155.0	H	298.0	90.0
7236.800000	---	40.52	150.00	109.48	100.0	1000.000	155.0	H	306.0	90.0
9120.640000	51.24	---	74.00	22.76	100.0	1000.000	155.0	H	64.0	0.0

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

Frequency (MHz)	Correction
4824.000000	4.8
4824.000000	4.8
6432.000000	8.5
7236.800000	10.8
9120.640000	14.0

1.3.2 g-Mode-Modulation

Diagram No.: 4.11_TX_Ch6_gMode_6MBps

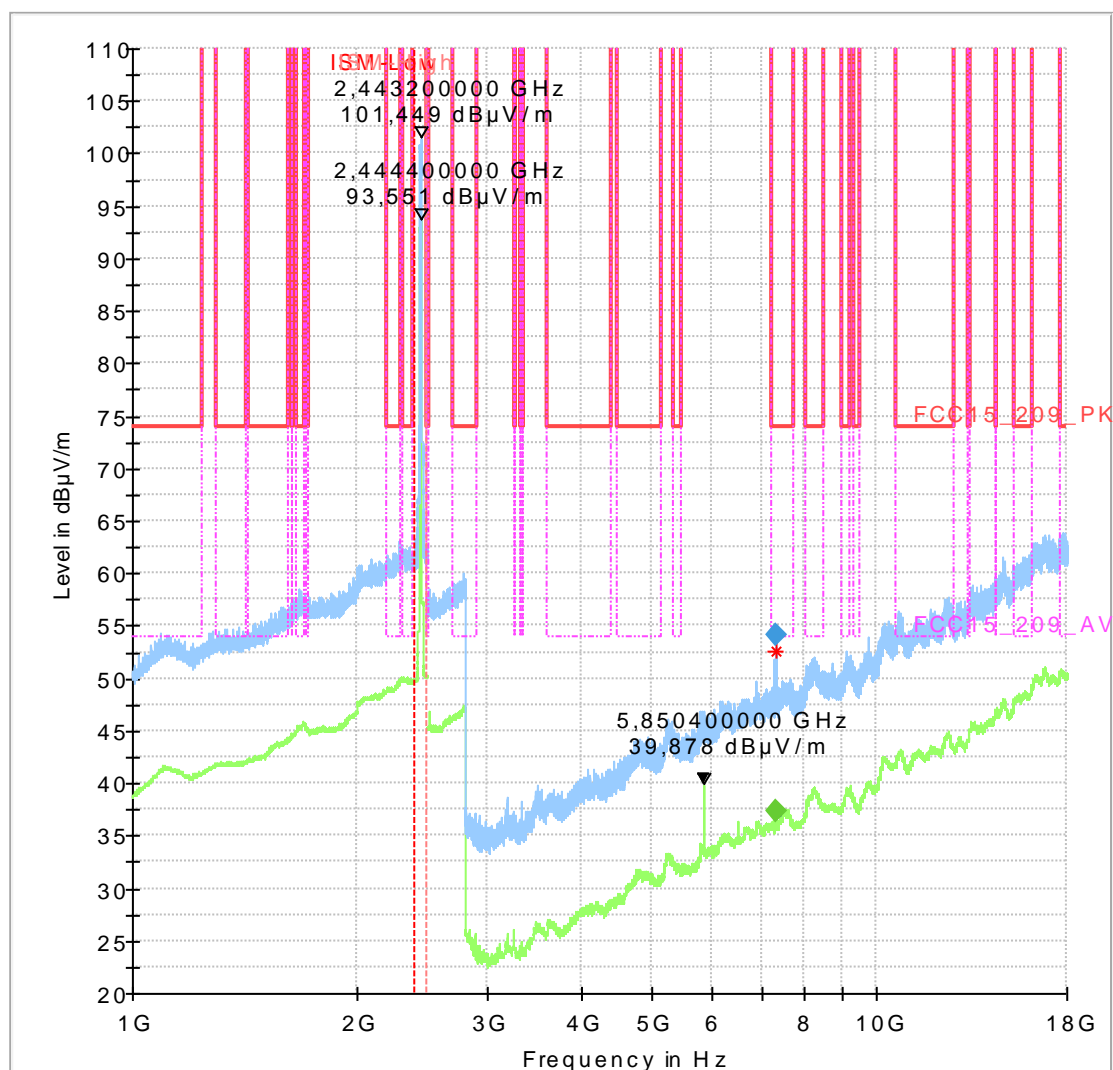
Common Information

Test Description:	Radiated Band-Edge Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous, g-Mode, 6Mbps
Operator Name:	Lor
Comment:	Channel no. middle=6
Comment2:	Power setting=16dBm, 6Mbps data rate

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key

HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC
Comments:	-



Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
7309.400000	---	37.28	54.00	16.72	100.0	1000.000	155.0	H	306.0	90.0
7314.760000	54.17	---	74.00	19.83	100.0	1000.000	155.0	H	298.0	90.0

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

Frequency (MHz)	Corr .
7309.400000	10.1
7314.760000	10.2

1.3.3 n-Mode-Modulation (HT20-mode)

Diagram No.: 4.12_TX_Ch11_nMode_MCS0

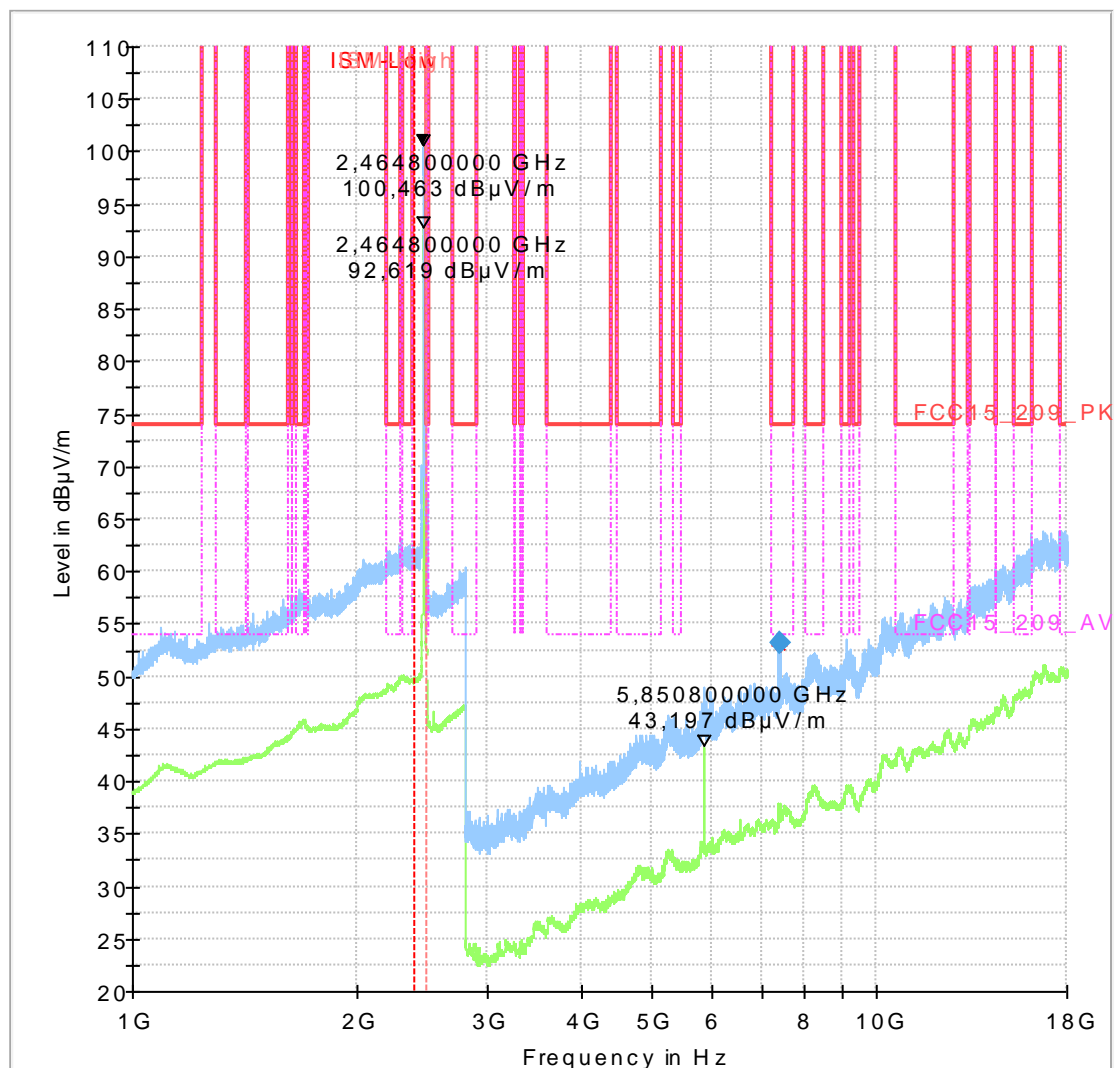
Common Information

Test Description:	Radiated Band-Edge Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 Intentional Radiator/ RSS-247, Issue 1
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no. high=11
Comment 2:	Power setting=15dBm, MCS0 data

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key

HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC
Comments:	-



Final_Result

Frequency (MHz)		MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
7392.800000		53.17	---	74.00	20.83	100.0	1000.000	155.0	H	316.0	90.0

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

Frequency (MHz)	Corr .
7392.800000	10.9

1.3.4 n-Mode-Modulation (HT40-mode)

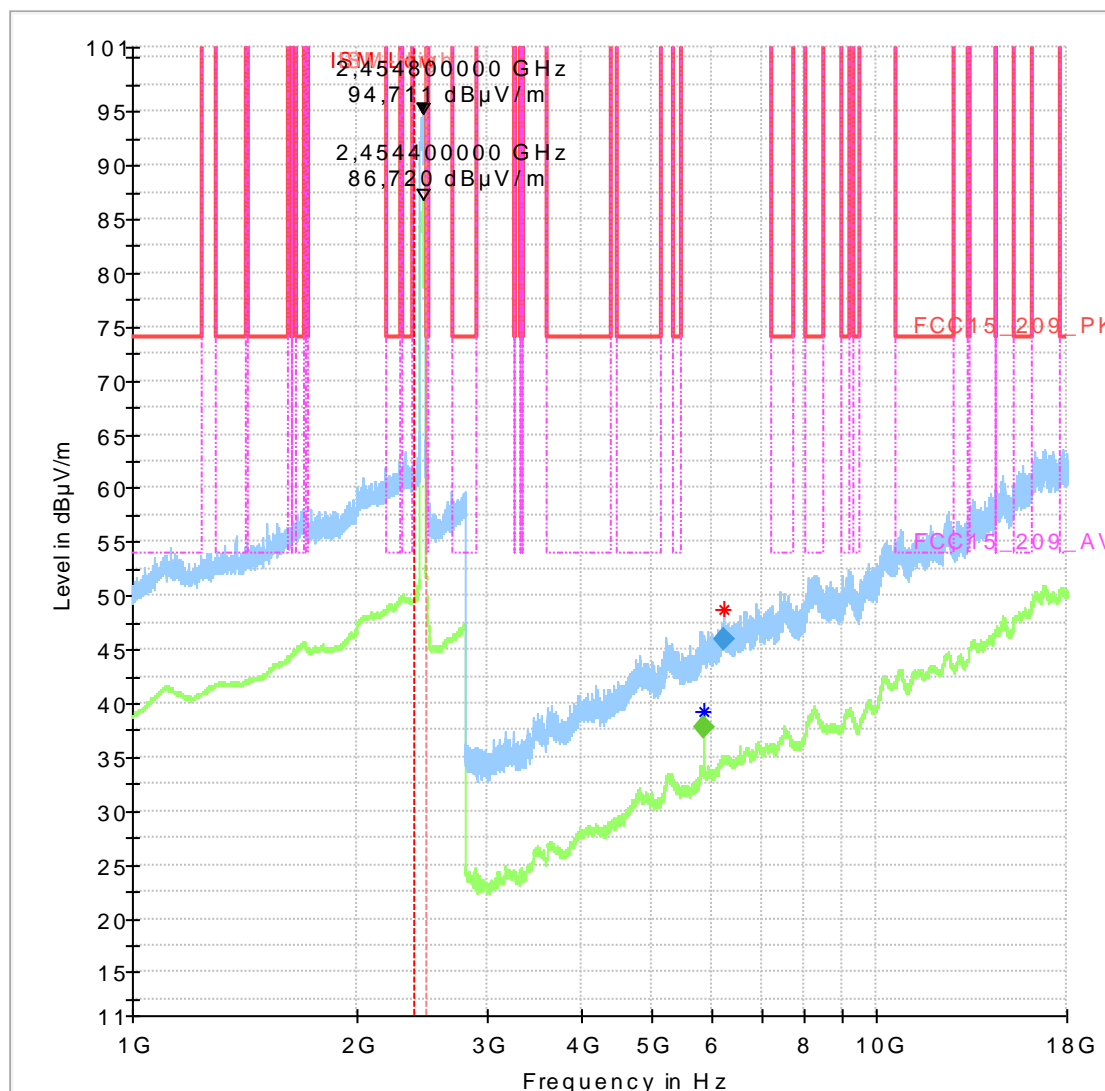
Diagram No.: 4.13_TX_Ch9_nMode_MCS0

Common Information

Test Description:	Radiated Band-Edge Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no. 9

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC
Comments:	-



Final_Result

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
5851.520000	---	37.85	150.00	112.15	100.0	1000.000	155.0	V	70.0	0.0
6245.240000	45.99	---	150.00	104.01	100.0	1000.000	155.0	V	225.0	0.0

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

Frequency (MHz)	Correction
5851.520000	7.5
6245.240000	8.7

1.4 Field strength measurements 18 GHz < f < 25 GHz

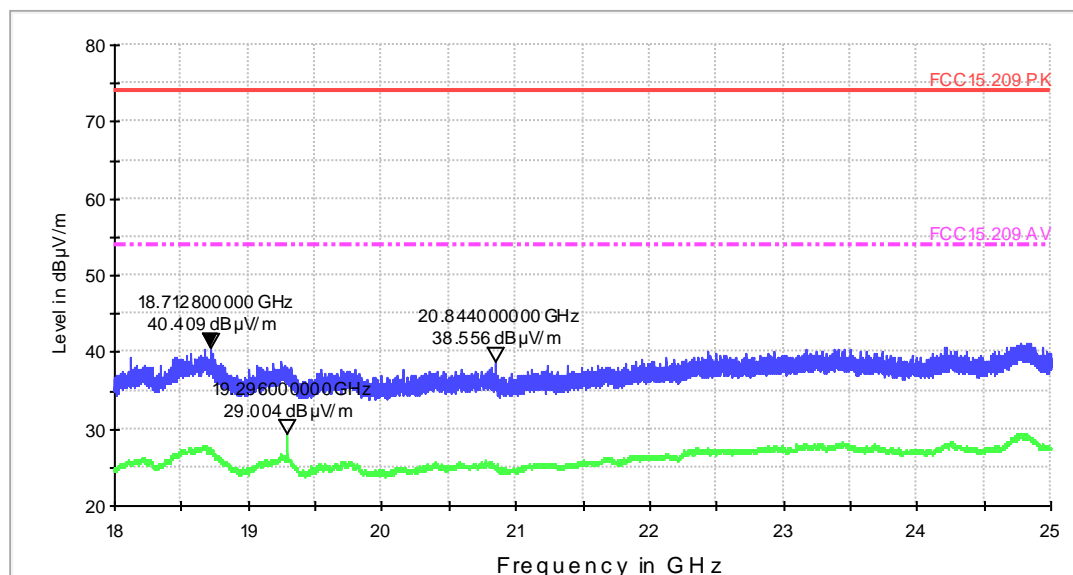
1.4.1 b-Mode-Modulation

Diagram No.: 4.14_TX_Ch1_bMode_1MBit

Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247, 15.205&15.209 Intentional Radiator / RSS-247, Issue 1
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=1, b-Mode, 1 MBit

EMI Scan_18_25GHz_Pre



Scan Setup: EMI Scan_18_25GHz_Pre [EMI radiated]

Hardware Setup:	HW05_ESU_18-40GHz_Preamplifier_Miteq_SN_1750117_dBuV_1m
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamplifier
18 GHz - 25 GHz	400 kHz	PK+; AVG	1 MHz	0.0003 s	0 dB

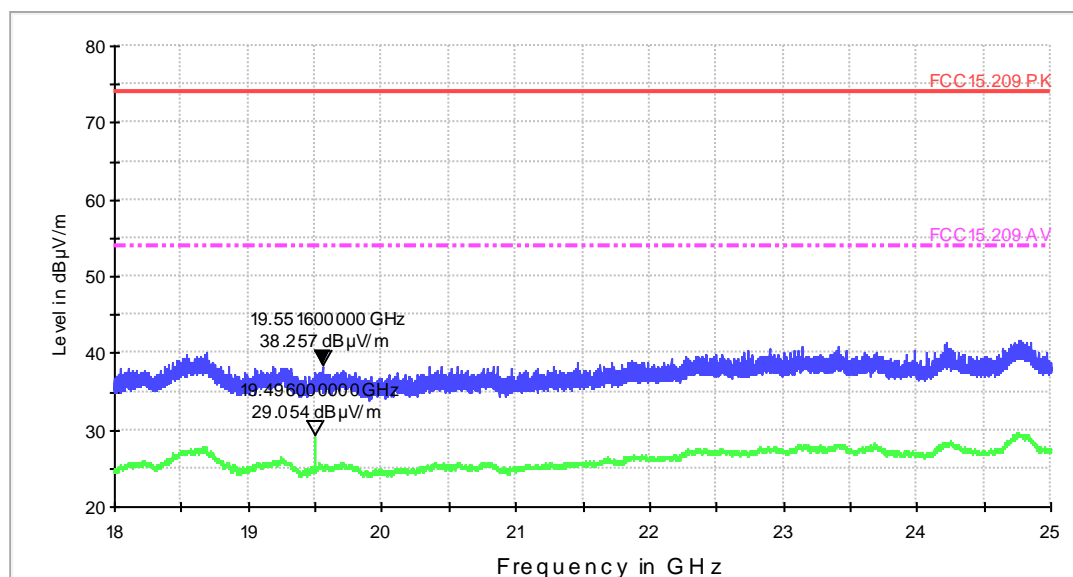
1.4.2 g-Mode-Modulation

Diagram No.: 4.15_TX_Ch6_gMode_6MBit

Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247, 15.205&15.209 Intentional Radiator / RSS-247, Issue 1
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. middle=6, g-Mode, 1 MBit

EMI Scan_18_25GHz_Pre



Scan Setup: EMI Scan_18_25GHz_Pre [EMI radiated]

Hardware Setup:	HW05_ESU_18-40GHz_Preampl_Miteq_SN_1750117_dBuV_1m
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preampl
18 GHz - 25 GHz	400 kHz	PK+; AVG	1 MHz	0.0003 s	0 dB

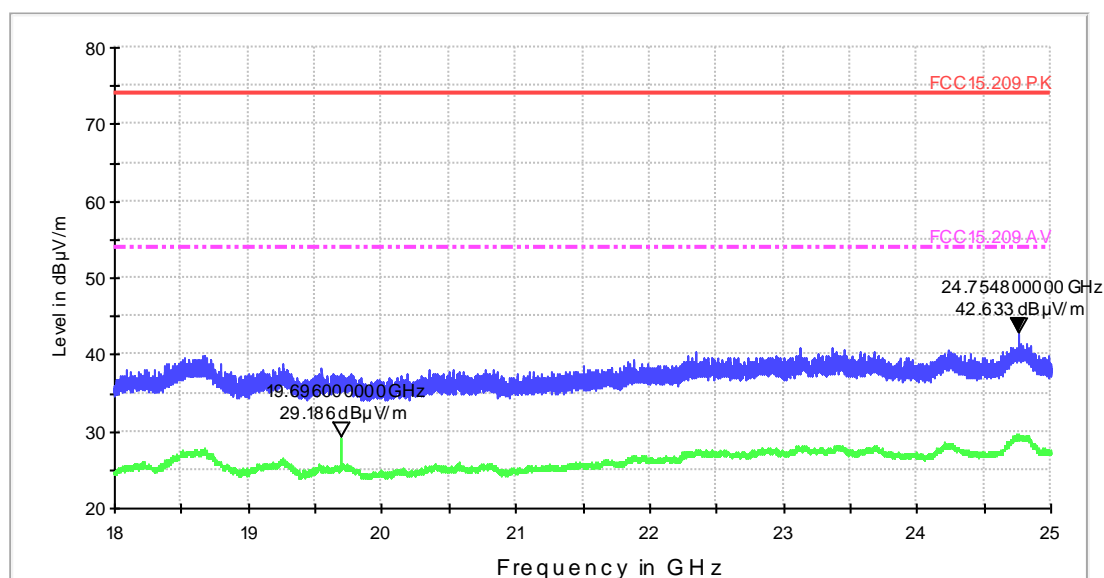
1.4.3 n-Mode-Modulation (HT20-mode)

Diagram No.: 4.16_TX_Ch11_nMode_MCS0

Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247, 15.205&15.209 Intentional Radiator / RSS-247, Issue 1
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. middle=11, n-Mode, MCS0

EMI Scan_18_25GHz_Pre



Scan Setup: EMI Scan_18_25GHz_Pre [EMI radiated]

Hardware Setup:	HW05_ESU_18-40GHz_Preampl_Miteq_SN_1750117_dBuV_1m
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 25 GHz	400 kHz	PK+; AVG	1 MHz	0.0003 s	0 dB

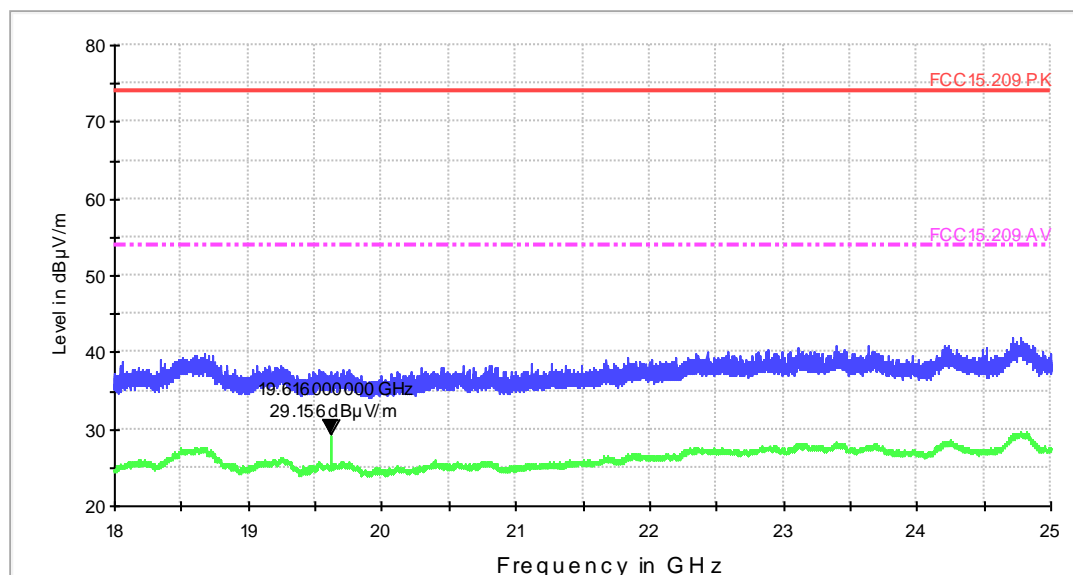
1.4.4 n-Mode-Modulation (HT40-mode)

Diagram No.: 4.17_TX_Ch9_nMode_HT40_MCS0

Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247, 15.205&15.209 Intentional Radiator / RSS-247, Issue 1
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. middle=9, n-Mode, HT40, MCS0

EMI Scan_18_25GHz_Pre



Scan Setup: EMI Scan_18_25GHz_Pre [EMI radiated]

Hardware Setup:	HW05_ESU_18-40GHz_Preampl_Miteq_SN_1750117_dBuV_1m
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preampl
18 GHz - 25 GHz	400 kHz	PK+; AVG	1 MHz	0.0003 s	0 dB

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

3.1. High Channel Band Edge)

Diagram No.: 9.01_BE_High_Ch11_nMode_MCS0

Common Information

Test Description:	Radiated Band-Edge Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no.11 high

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC
Comments:	-

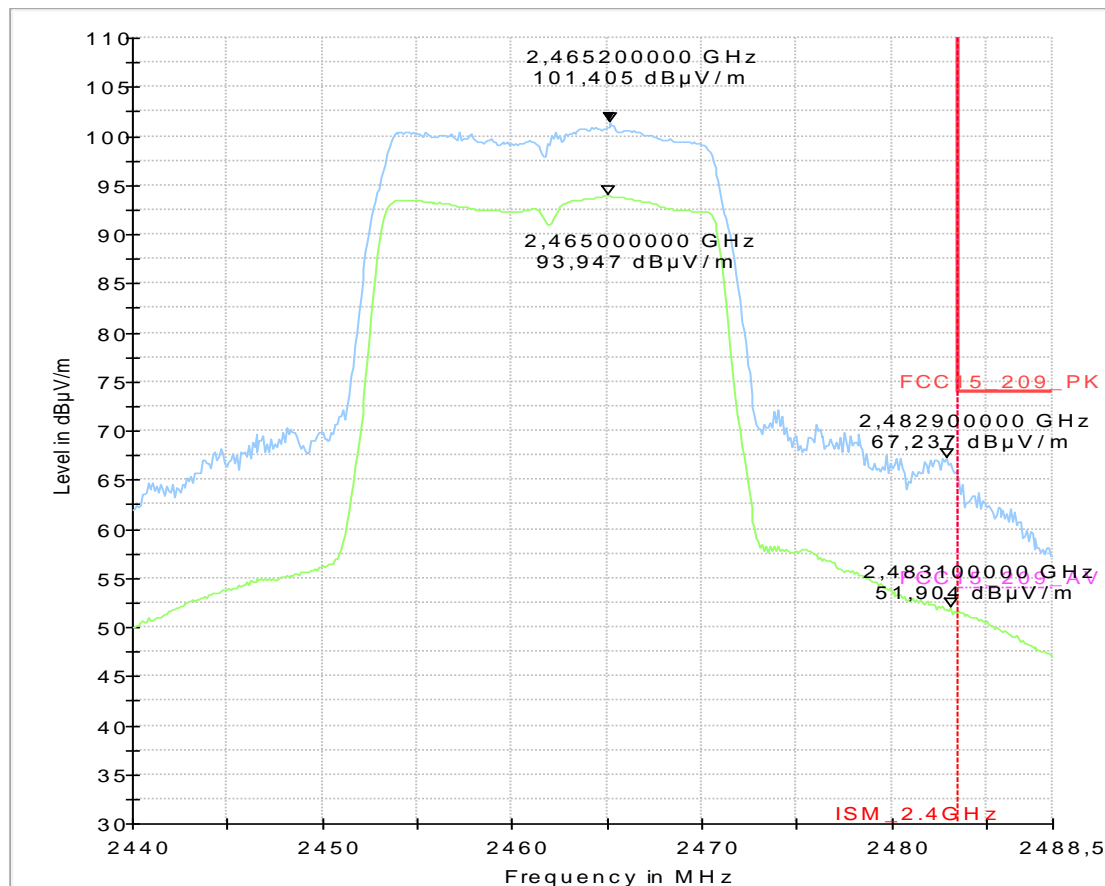


Diagram No.: 9.02_BE_High_Ch9_nMode_MCS0

Common Information

Test Description:	Radiated Band-Edge Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no.9 high

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC
Comments:	-

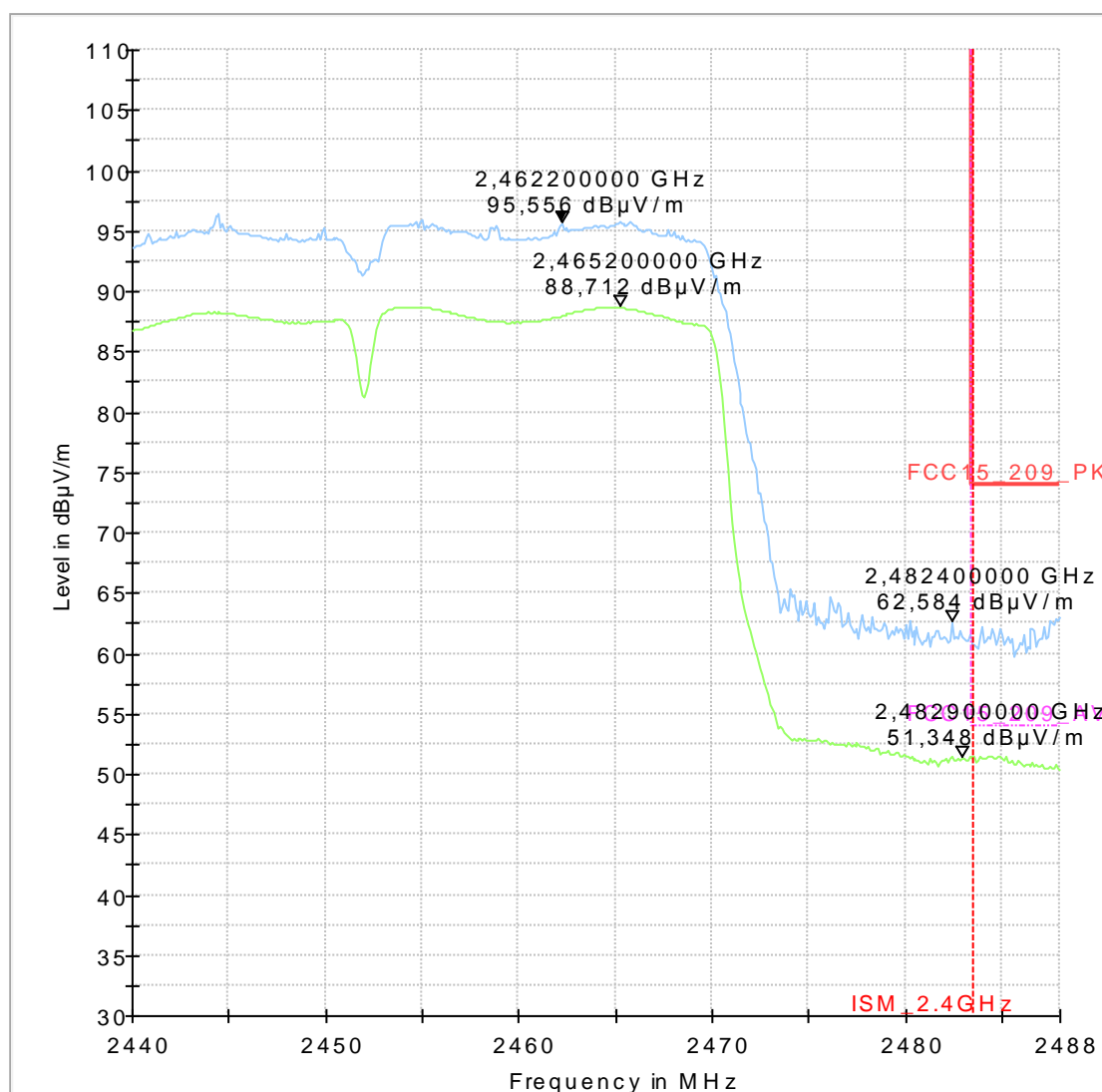


Diagram No.: 9.03_BE_High_Ch11_gMode_6Mbps

Common Information

Test Description:	Radiated Band-Edge Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no. 11 – g Mode - high - 6 Mbps

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC
Comments:	-

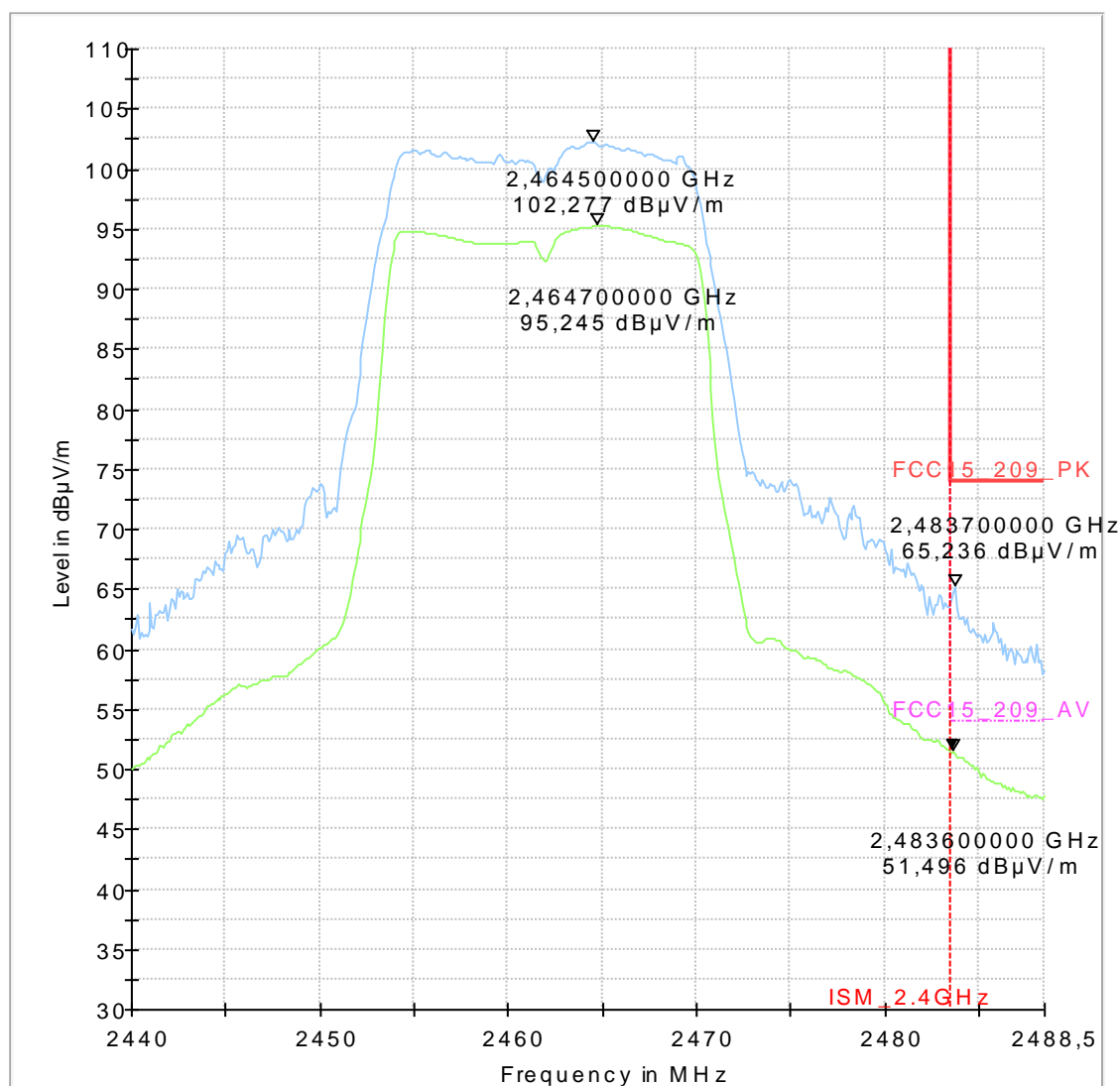


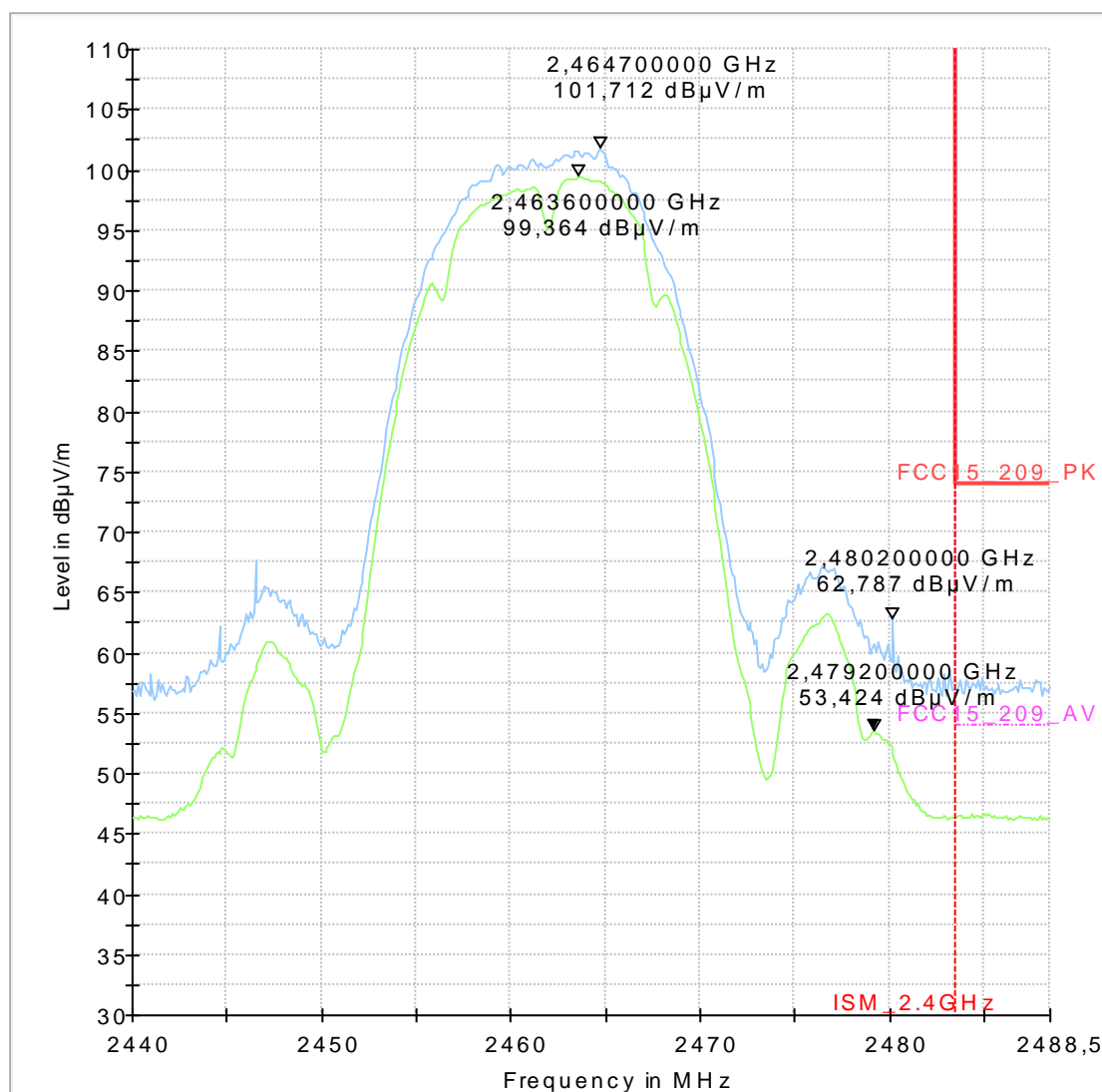
Diagram No.: 9.04_BE_High_Ch11_bMode_1Mbps

Common Information

Test Description:	Radiated Band-Edge Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no. 11 – b Mode - high - 1Mbps

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC
Comments:	-



3.2. Low Channel Band Edge

Diagram No.: 9.05_BE_Low_Ch1_bMode_1Mbps

Common Information

Test Description:	Radiated Band-Edge Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no. 1 – Low – b Mode - 1Mbps

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC
Comments:	-

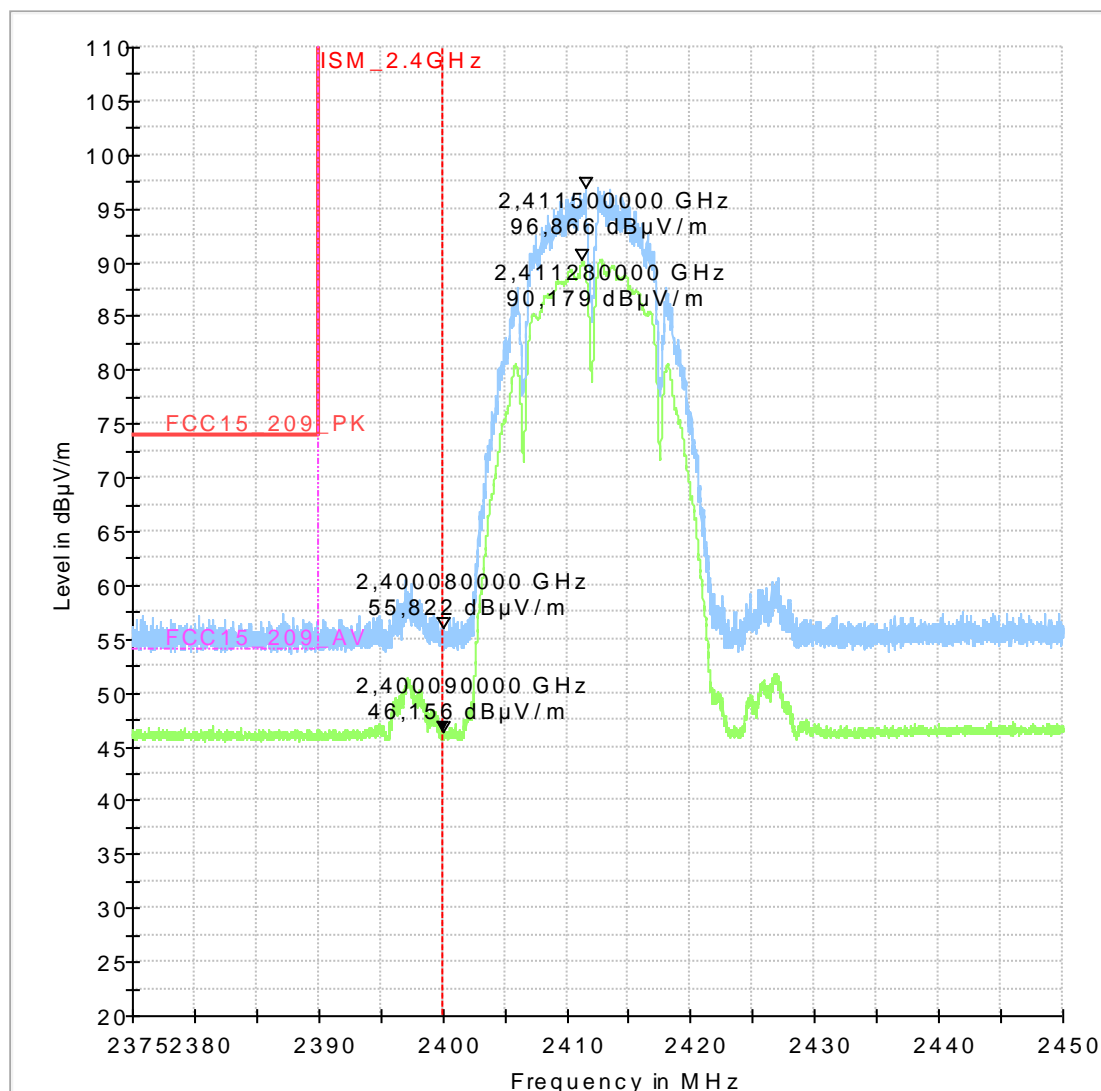


Diagram No.: 9.06_BE_Low_Ch1_gMode_6Mbps

Common Information

Test Description:	Radiated Band-Edge Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no. 1 – g Mode - 6Mbps

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC
Comments:	-

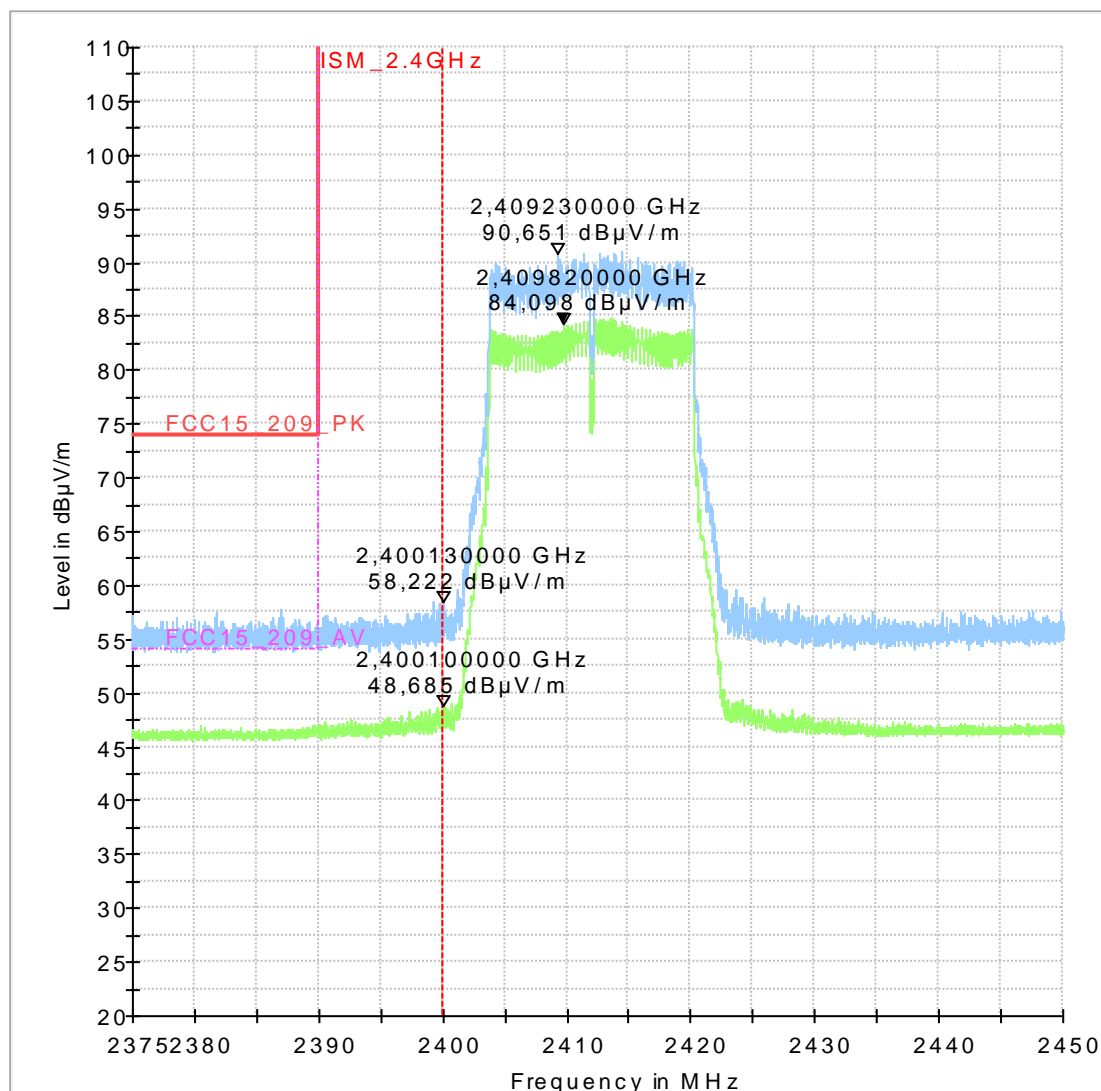


Diagram No.: 9.07_BE_Low_Ch1_nMode_MCS0_HT20

Common Information

Test Description:	Radiated Band-Edge Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 Intentional Radiator/ RSS-247, Issue 1
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no. 1 - -Mode - MCS0

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC
Comments:	-

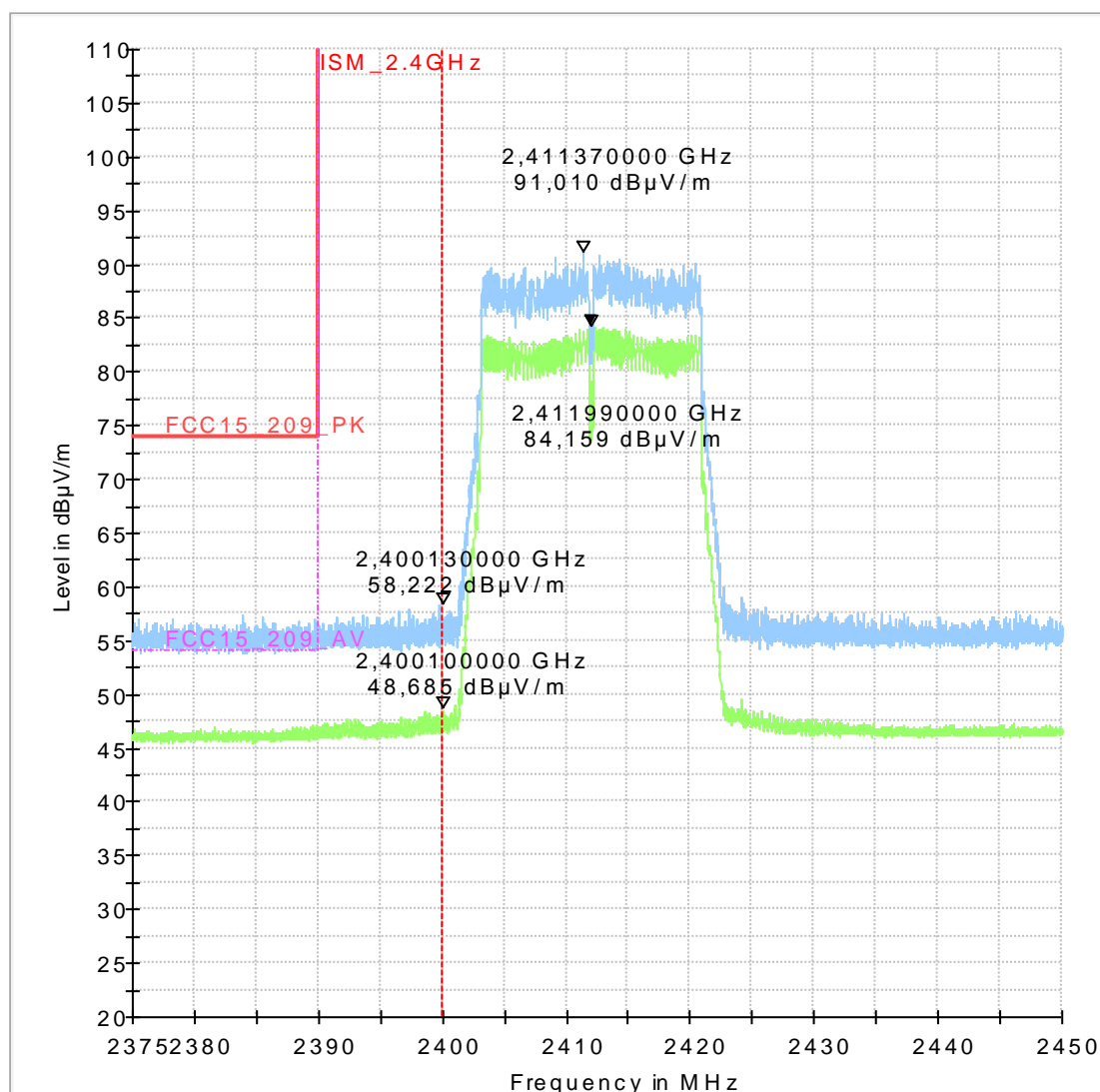


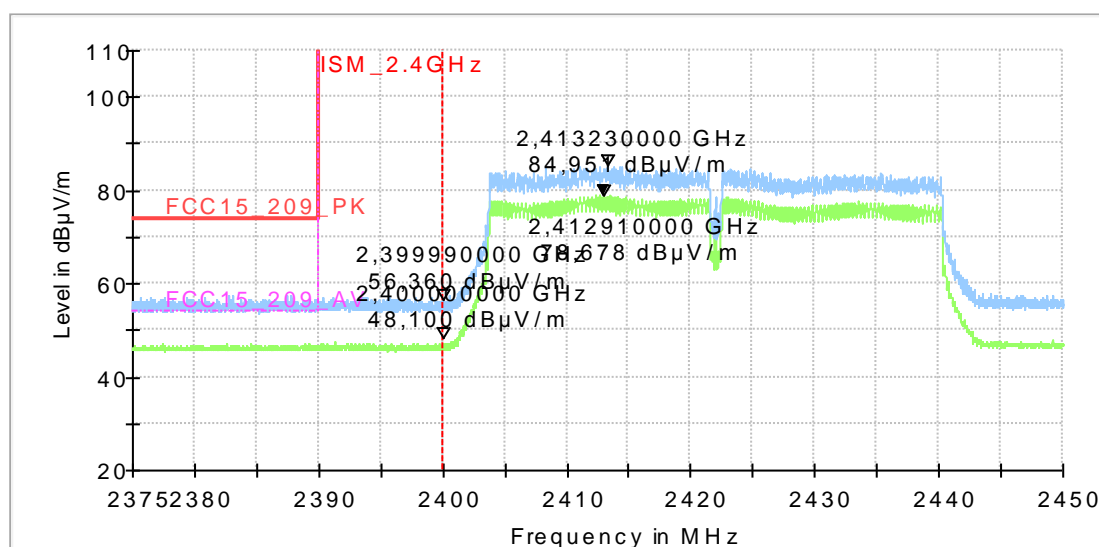
Diagram No.: 9.08_BE_Low_Ch3_nMode_MCS0_HT40

Common Information

Test Description:	Radiated Band-Edge Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 Intentional Radiator/ RSS-247, Issue 1
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Lor
Comment:	Channel no. 1 - n-Mode (HT40) - MCS0

EUT Information

Manufacturer:	VORWERK
EUT:	cook-key
HW version:	Rev. 800
SW version:	V0.992
MAC address:	00:13:43:0f:30:c3
Config:	-
Connected Interfaces:	USB cable with notebook
Power Supply:	5V DC
Comments:	-



4. MPE calculations

4.1. FCC-Limits accord. §1.1310 (d)(2) + Table 1

Distance	20	cm								
Operation Mode	Frequency on channel	Declared maximum conducted output power	Antenna Gain	Declared maximum ERP (Measured+ Tune-up)	Duty cycle	Declared Maximum conducted output power	Equivalent conducted output power (output power x duty cycle) (mW)	MPE Limit accord. Table 1	MPE-Value	Margin to Limit:
	(MHz)	(dBm)	(dBi)	(dBm)	%	(W)		(mW/cm ²)	(mW/cm ²)	
W-LAN 2.4GHz	2412,0	16,19	2,4	18,6	100%	0,0723	72,3	1,0000	0,0144	0,9856
	2437,0	16,28	2,4	18,7		0,0738	73,8	1,0000	0,0147	0,9853
	2462,0	16,61	2,4	19,0		0,0796	79,6	1,0000	0,0158	0,9842

Remark: worst-case power value included for each channel, this is 20MHz signal bandwidth mode

4.2. Canadian limits accord. RSS-102, Issue 5

Distance	0,20	m								
Operation Mode	Frequency on channel	Declared measured conducted output power	Antenna Gain	Calculated maximum ERP (declared+ Tune-up+ antenna Gain+ path loss)	Duty-Cycle	Maximum ERP	Equivalent ERP (ERP x duty cycle)	MPE Limit accord. Table 4	MPE-Value	Margin
	(MHz)	(dBm)	(dBi)	(dBm)		(W)	(W)	(W/m ²)	(W/m ²)	(W/m ²)
W-LAN 2.4GHz	2412,0	16,19	2,4	18,59	100%	0,0723	0,072	5,3660	0,1438	5,2222
	2437,0	16,28	2,4	18,68	100%	0,0738	0,074	5,4040	0,1468	5,2572
	2462,0	16,61	2,4	19,01	100%	0,0796	0,080	5,4418	0,1584	5,2834

Maximum calculated MPE value:		
2.4GHz Band		
Lowest MPE-Limit:	5,3660	[W/m ²]
Highest MPE value:	0,1584	[W/m ²]
Lowest margin to limit	5,2222	[W/m ²]