

ANNEX 4: MEASUREMENT DIAGRAMS
TO
PARTIAL TEST REPORT
No.: 2-0037-12-1-1 L

According to:
FCC Regulations
Part 15.247, Part 15.407
Part 15.207, Part 15.109

IC-Regulations
RSS-Gen, Issue 3
RSS-210, Issue 8

for

Research In Motion Limited
Mobile Phone RFG81UW

FCC-ID: L6ARFG80UW
IC: 2503A-RFG80UW

Laboratory Accreditation and Listings			
 Deutsche Akkreditierungsstelle D-PL-12047-01-01	 Reg. No.: 736496 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-2665, R-2666 C-2914, T-1967, G-301
 AUTHORIZED RF LABORATORY	 Authorized Test Lab LAB CODE 20011130-00		
accredited according to DIN EN ISO/IEC 17025			
CETECOM GmbH Laboratory Radio Communications & Electromagnetic Compatibility Im Teelbruch 116 • 45219 Essen • Germany Registered in Essen, Germany, Reg. No.: HRB Essen 8984 Tel.: + 49 (0) 20 54 / 95 19-954 • Fax: + 49 (0) 20 54 / 95 19-964 E-mail: info@cetecom.com • Internet: www.cetecom.com			

Table of contents

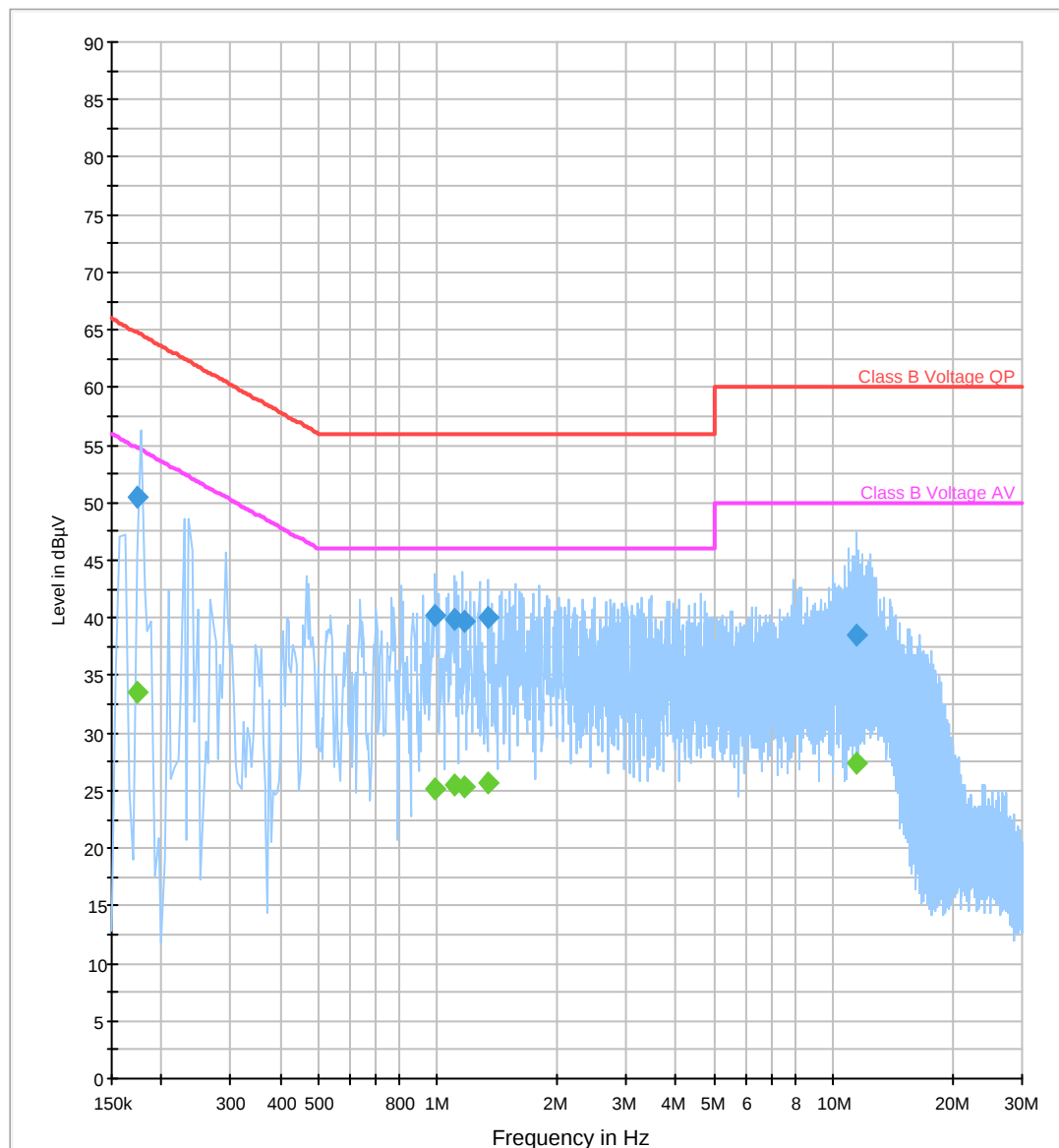
1. CONDUCTED EMI MEASUREMENTS ON AC-MAINS PORT ACCORDING §15.207	3
2. RADIATED FIELD STRENGTH MEASUREMENTS ACCORD. §15.209&15.205.....	5
2.1. Channel 36 (g-Mode, 6Mbps).....	5
2.2. Channel 48 (g-Mode, 6Mbps).....	15
2.3. Channel 64 (g-Mode, 6Mbps).....	24
2.4. Channel 100 (g-Mode, 6Mbps).....	33
2.5. Channel 120 (g-Mode, 6Mbps).....	42
2.6. Channel 140 (g-Mode, 6Mbps).....	49
2.7. Channel 149 (g-Mode, 6Mbps).....	58
2.8. Channel 157 (g-Mode, 6Mbps).....	61
2.9. Channel 161 (g-Mode, 6Mbps).....	71
2.10. Channel 36 (n-Mode, MCS0)	80
2.11. Channel 48 (n-Mode, MCS0)	89
2.12. Channel 64 (n-Mode, MCS0)	98
2.13. Channel 100 (n-Mode, MCS0)	105
2.14. Channel 120 (n-Mode, MCS0)	112
2.15. Channel 140 (n-Mode, MCS0)	119
2.16. Channel 149 (n-Mode, MCS0)	126
2.17. Channel 157 (n-Mode, MCS0)	133
2.18. Channel 161 (n-Mode, MCS0)	141
3. RADIATED BAND-EDGE MEASUREMENTS ACCORD. §15.209 & §15.205	149
3.1. Channel 36 g-Mode (left band edge)	149
3.2. Channel 64 g-Mode (right band edge)	152
3.3. Channel 100 g-Mode (left band edge)	155
3.4. Channel 140 g-Mode (right band edge)	159
3.5. Channel 149 g-Mode (left band edge)	161
3.6. Channel 165 g-Mode (right band edge)	163
3.7. Channel 36 n-Mode (left band edge)	165
3.8. Channel 64 n-Mode (right band edge)	168
3.9. Channel 100 n-Mode (left band edge)	171
3.10. Channel 140 n-Mode (right band edge)	174
3.11. Channel 149 n-Mode (left band edge)	176
3.12. Channel 165 n-Mode (right band edge)	178
4. RADIATED EMI MEASUREMENTS ACCORD. §15.109 CLASS B.....	180
4.1. Frequency range 30MHz to 1000MHz	180
4.2. Frequency range 1000MHz to 18MHz	182
5. DUTY-CYCLE USED FOR RADIATED MEASUREMENTS	183
5.1. g-Mode, 6Mbit.....	183
5.2. n-Mode, MCS0-Mode.....	183

1. Conducted EMI measurements on AC-mains port according §15.207

Diagram No. 1.1_WLAN_a_Mode

Test Description:	Date: 03.08.2012 Page 1 of 3
Test Description:	Conducted Voltage Measurement Class B
Test specification:	FCC 15.207
Technical Data:	Please see next page for detailed information
Diagram:	Shows the peak values as a sum of measured ports (N+L1) in maxhold mode
Operator name:	Dpa
Report - Nr.	2-0037-12-1L
EUT:	RFG81UW (sample 5) + HS1 + CH7 + USB3 + ACC2
Manufacturer:	RIM
Operating mode:	WiFi Tx (802.11a 5GHz)
Measured on line:	Mains AC L1 and N
Power during test:	110 V AC 60 Hz
Comment 1:	
Comment 2:	

01_Class B_Voltage_PK_QPAV_N_L1



Date: 03.08.2012 Page 2 of 3

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.173844	50.5	15000.0	9.000	GN	L1	0.0	14.3	64.8
0.987438	40.2	15000.0	9.000	GN	L1	0.1	15.8	56.0
1.104625	39.8	15000.0	9.000	GN	L1	0.1	16.2	56.0
1.164313	39.6	15000.0	9.000	GN	L1	0.1	16.4	56.0
1.334000	40.1	15000.0	9.000	GN	L1	0.1	16.0	56.0
11.497438	38.4	15000.0	9.000	GN	L1	0.1	21.6	60.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.173844	33.5	15000.0	9.000	GN	L1	0.0	21.3	54.8
0.987438	25.1	15000.0	9.000	GN	L1	0.1	20.9	46.0
1.104625	25.6	15000.0	9.000	GN	L1	0.1	20.4	46.0
1.164313	25.4	15000.0	9.000	GN	L1	0.1	20.6	46.0
1.334000	25.7	15000.0	9.000	GN	L1	0.1	20.3	46.0
11.497438	27.3	15000.0	9.000	GN	L1	0.1	22.7	50.0

Technical Data of Measurements with R&S EMC32 V8.52.0**EMI Auto Test Template: 01_Class B_Voltage_PK_QPAV_N_L1**

Hardware Setup: ESH2-Z5
 Measurement Type: 4 Line LISN
 Frequency Range: 150 kHz - 30 MHz
 Graphics Level Range: 0 dBμV - 90 dBμV

Preview Measurements:

Scan Test Template: 02_Class B_pre_PK_fast

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	61.035 Hz	PK+	200 Hz	0,00005 s	0 dB
150 kHz - 30 MHz	3.906 kHz	PK+	9 kHz	0,00005 s	0 dB

Receiver: [ESCS 30]

Data Reduction:

Limit Line #1: Class B Voltage QP
 Limit Line #2: Class B Voltage AV
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -13 dB
 Maximum Number of Results: 30
 After Data Reduction: Interactive data reduction

Frequency Zoom:

Zoom Scan Template: 08_Class B_maxZoom_PK100mS

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	5 kHz	PK+	200 Hz	0,1 s	0 dB
150 kHz - 30 MHz	5 kHz	PK+	9 kHz	0,1 s	0 dB

Receiver: [ESCS 30]

Final Measurements:

Template for Single Meas.: 07_Class B_fin_AV_QP

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	4.5 kHz	QPK; CAV	200 Hz	15 s	0 dB
150 kHz - 30 MHz	4.5 kHz	QPK; CAV	9 kHz	15 s	0 dB

Receiver: [ESCS 30]

Report Settings:

Report Template: Ctc_Standard_class_B
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

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

2.1. Channel 36 (g-Mode, 6Mbps)

Diagram No. 8.07_Ch36_Sweep1

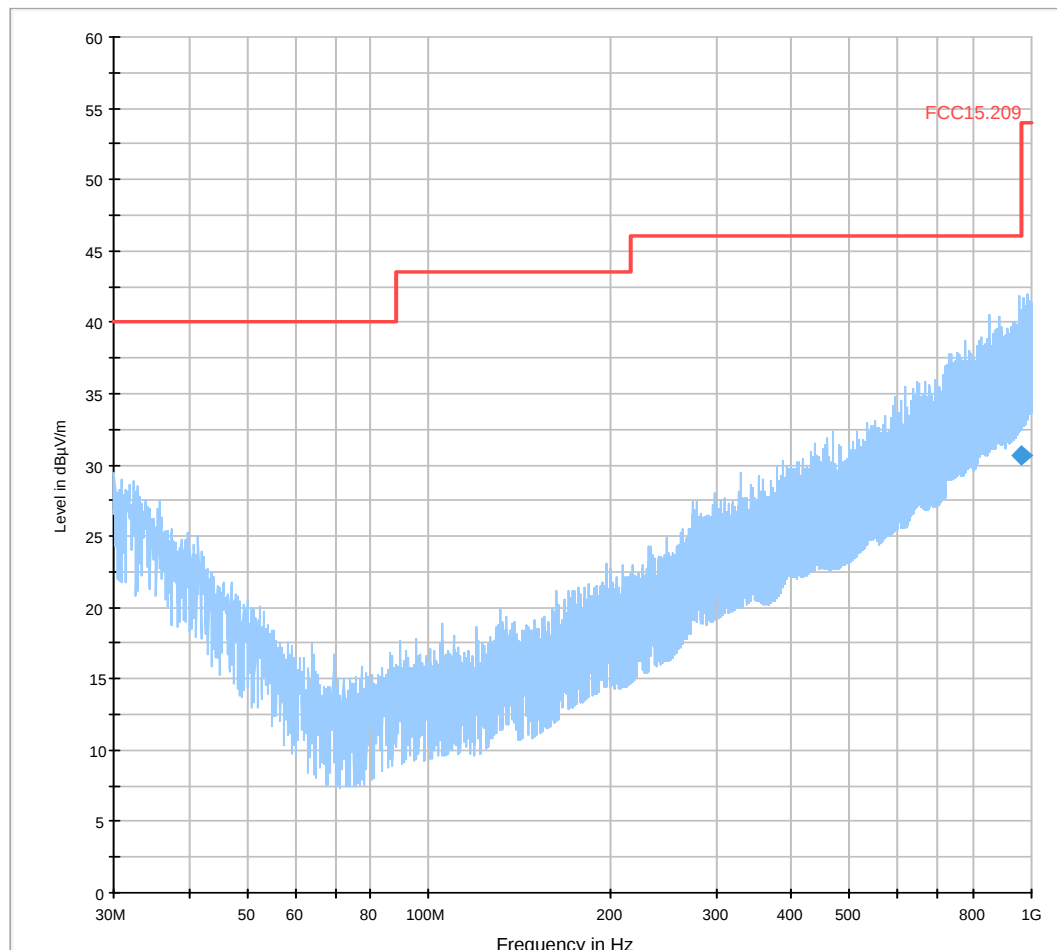
Test description: 12.06.2012 Page 1 of 2
 Test site and distance: Electric Field Strength Measurement
 Distance correction: Semi Anechoic Room (SAR) with 3 m measurement distance
 Used filter: not used
 Technical Data: not used
 please see page 2 for detailed data of measurement setup
 Test specification.: FCC 15.209; RSS-Gen: Issue 3

Operator: OOU
 Operating conditions: WLAN a-Mode, High Band, Ch. 36 (5180MHz)
 Power during tests: full loaded batteries
 Comment 1: WLAN-Carrier monitored with spectrum-analyzer

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...757
 Setup: Full battery

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 - QPK (dB)	Limit - QPK (dBµV/m)
958.920000	30.7	1000.0	120.000	303.0	V	187.0	0.0	27.0	15.30	46.00

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dB μ V/m - 60 dB μ V/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB

Receiver: [ESS]

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB

Receiver: [ESS]

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:
 Test start
 Notify: "EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
 Notify: "bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
 Data Reduction: Before
 Notify: Sound (WAV file) 'tada.wav'
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"
 Final Measurements: After
 Notify: Sound (WAV file) 'tada.wav'

Diagram 8.07_Ch36_Sweep2a

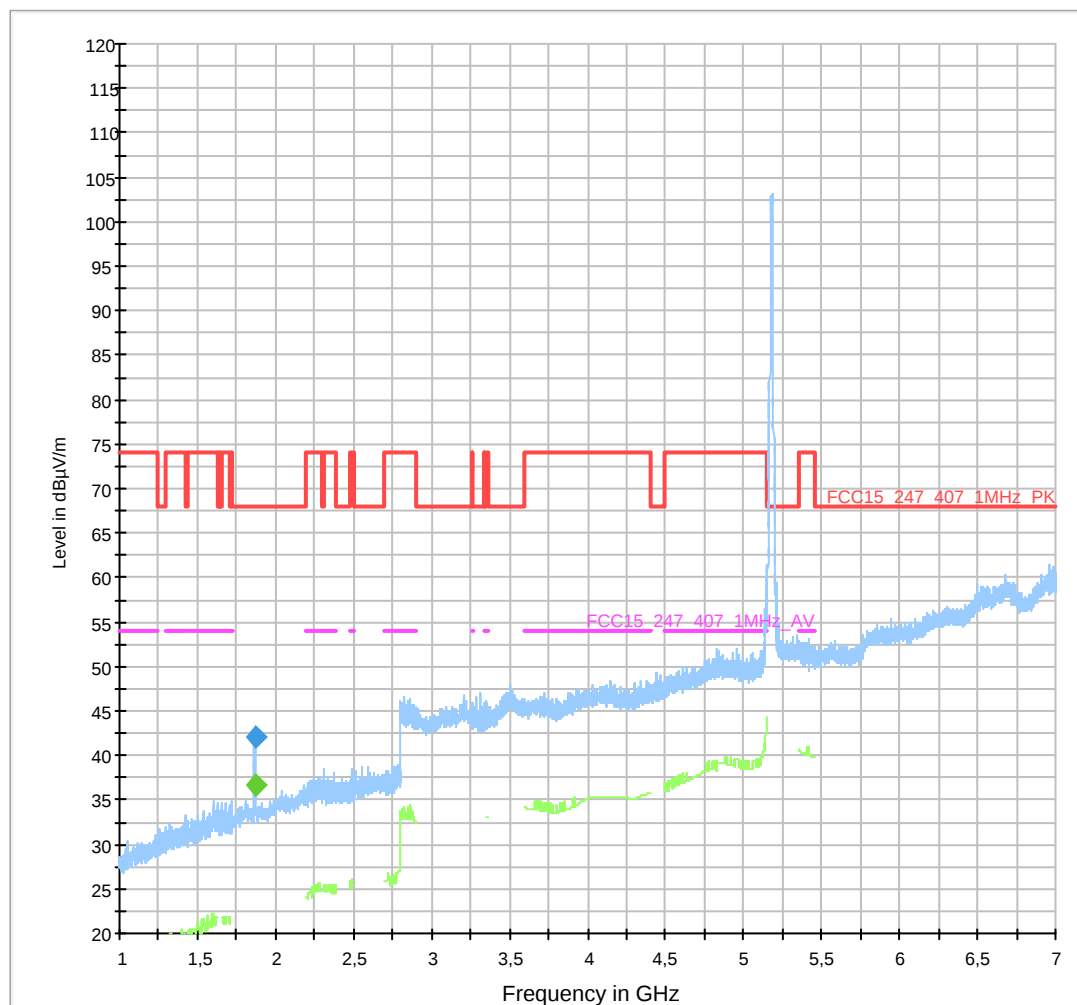
Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously on channel 36; Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 42 %rH; Temperature: 25°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	
Power Supply:	full internal battery
Comments:	Sample1

030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1867.526854	42.0	1000.0	1000.000	H	71.0	0.0	1.3	26.0	68.0

Final Result 2

Frequency (MHz)	RMS (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1867.526854	36.8	1000.0	1000.000	H	71.0	0.0	1.3	---	---

Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]**Subrange 1**

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEK
Measurement Type: E(I)RP
Frequency Range: 1 GHz - 7 GHz
Graphics Level Range: 20 dBμV/m - 80 dBμV/m

Preview Measurements:
Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:
Limit Line #1: FCC15_247_407_1MHz_PK
Limit Line #2: FCC15_247_407_1MHz_AV
Peak Search: 6 dB , Maximum Results: 5
Subrange Maxima: 10 Subranges , Maxima per Subrange: 1
Maximum Number of Results: 5
After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test stop
Park Accessories

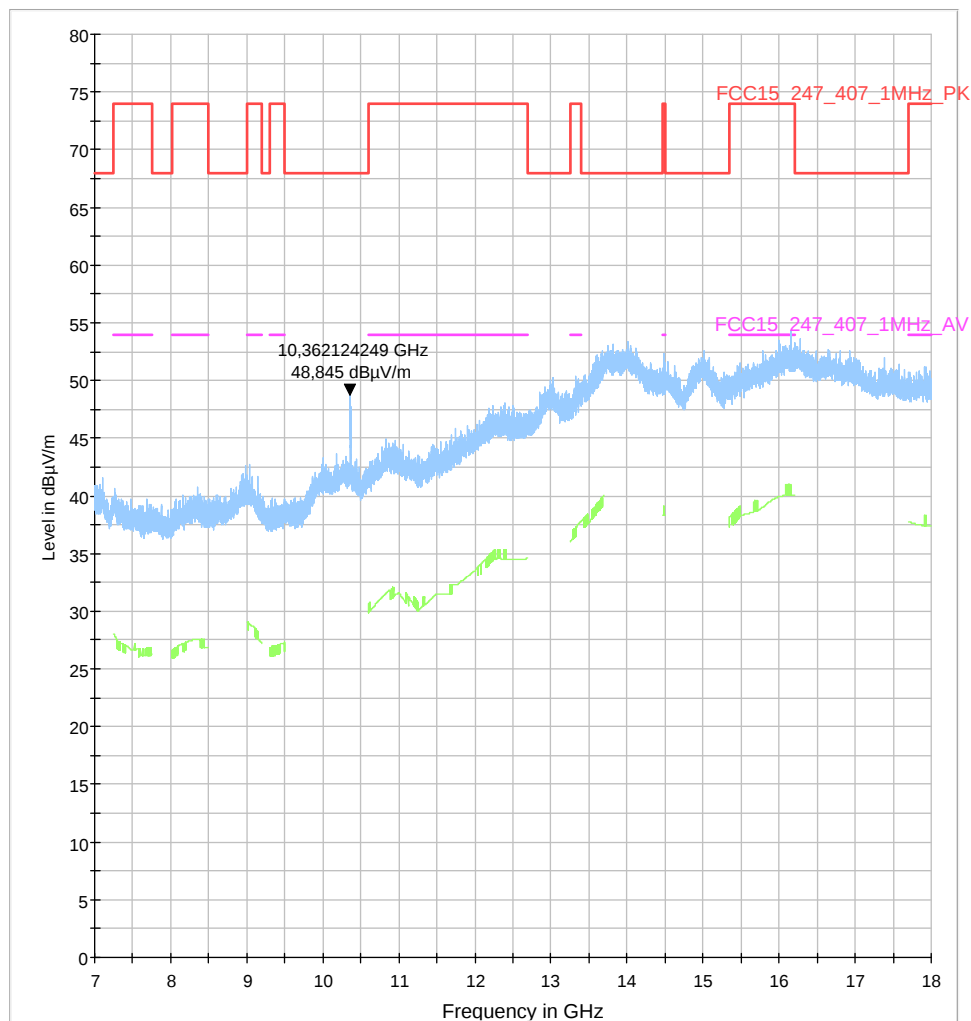
Diagram 8.07_Ch36_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 36; Data Rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030453_FCC_Part15.247-15.407_RSE_WLAN_802.11a_7G-18G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 7 GHz - 18 GHz

Graphics Level Range: 0 dBμV/m - 80 dBμV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

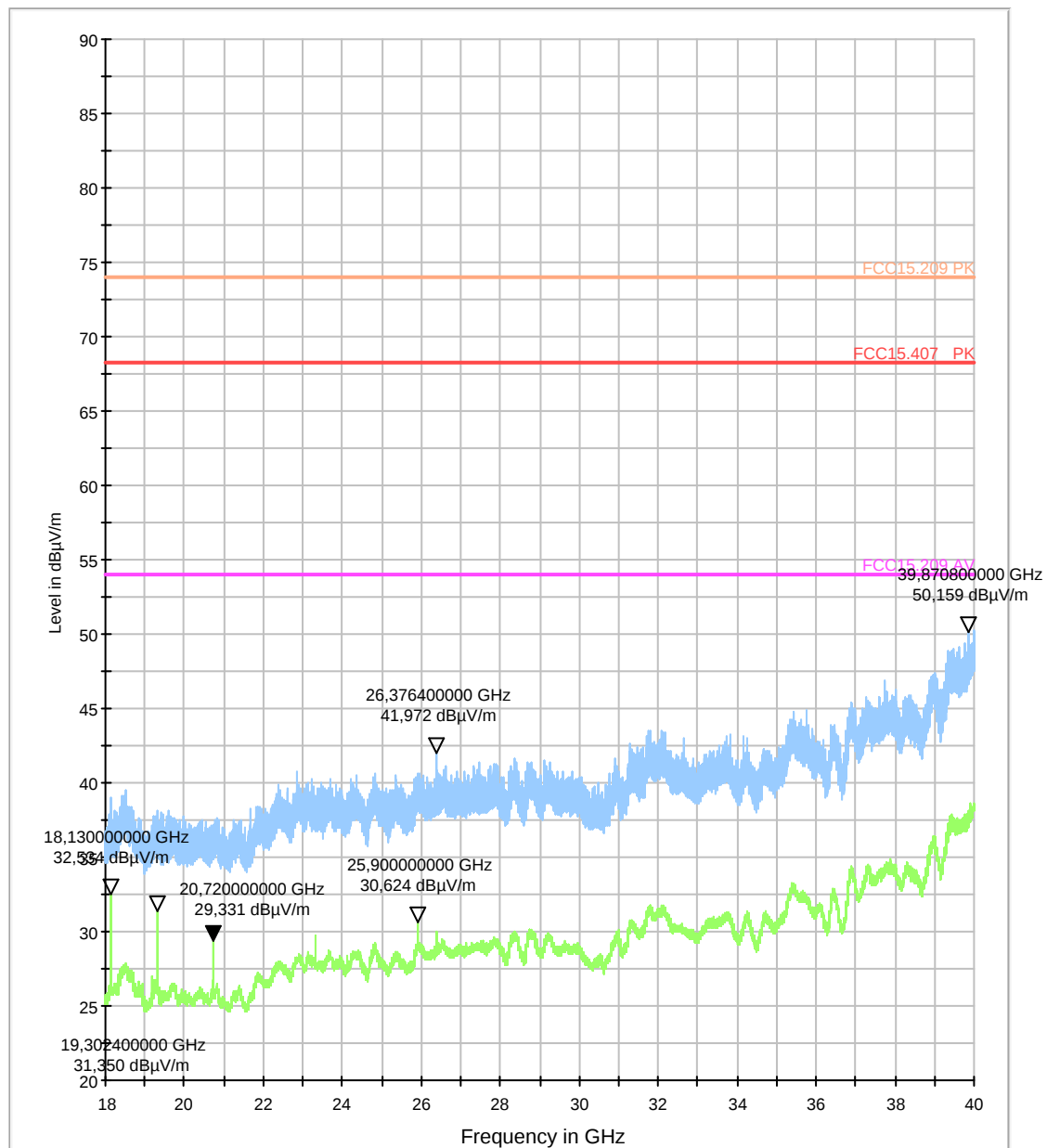
Actions:
Test start
Notify: "Messentfernung 1m ?"
Test stop
Park Accessories

Diagram No.: 8.07_Ch36_Sweep3

Common Information

Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC Part 15.247 / 15.407
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no. low/
Op. Mode:	5 GHz WLAN / Ch36/ 6Mbps

01_FCC_18_40GHz_Preamplifier_1m



EMI Auto Test Template: 01_FCC_18_40GHz_Preamp_1m

Hardware Setup: HW02_ESU_18-40GHz
Measurement Type: E(I)RP
Frequency Range: 18 GHz - 40 GHz
Graphics Level Range: 20 dB μ V/m - 90 dB μ V/m

Preview Measurements:
Scan Test Template: EMI Scan_14_40GHz_Pre_fast

Data Reduction:
Limit Line #1: FCC15.407_PK
Limit Line #2: FCC15.209 AV
Limit Line #3: FCC15.209 PK
Peak Search: 6 dB , Maximum Results: 10
Subrange Maxima: 10 Subranges , Maxima per Subrange: 1
Maximum Number of Results: 20
After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Scan Template: EMI Scan_14_40GHz_Pre_zoom

Adjustment:
Template for Single Meas.: EMI Scan_14_40GHz_Pre_zoom

Final Measurements:
Template for Single Meas.: EMI Scan_14_40GHz_Pre_final
Template for Single Meas.:(>1GHz) EMI Scan_14_40GHz_Pre_final

Report Settings:
Report Template: Report Setup FCC 15_247
Create Electronic Report: RTF PDF
Document Name: EMI Report_FCC15247

2.2. Channel 48 (g-Mode, 6Mbps)

Diagram No. 8.07_Ch48_Sweep1

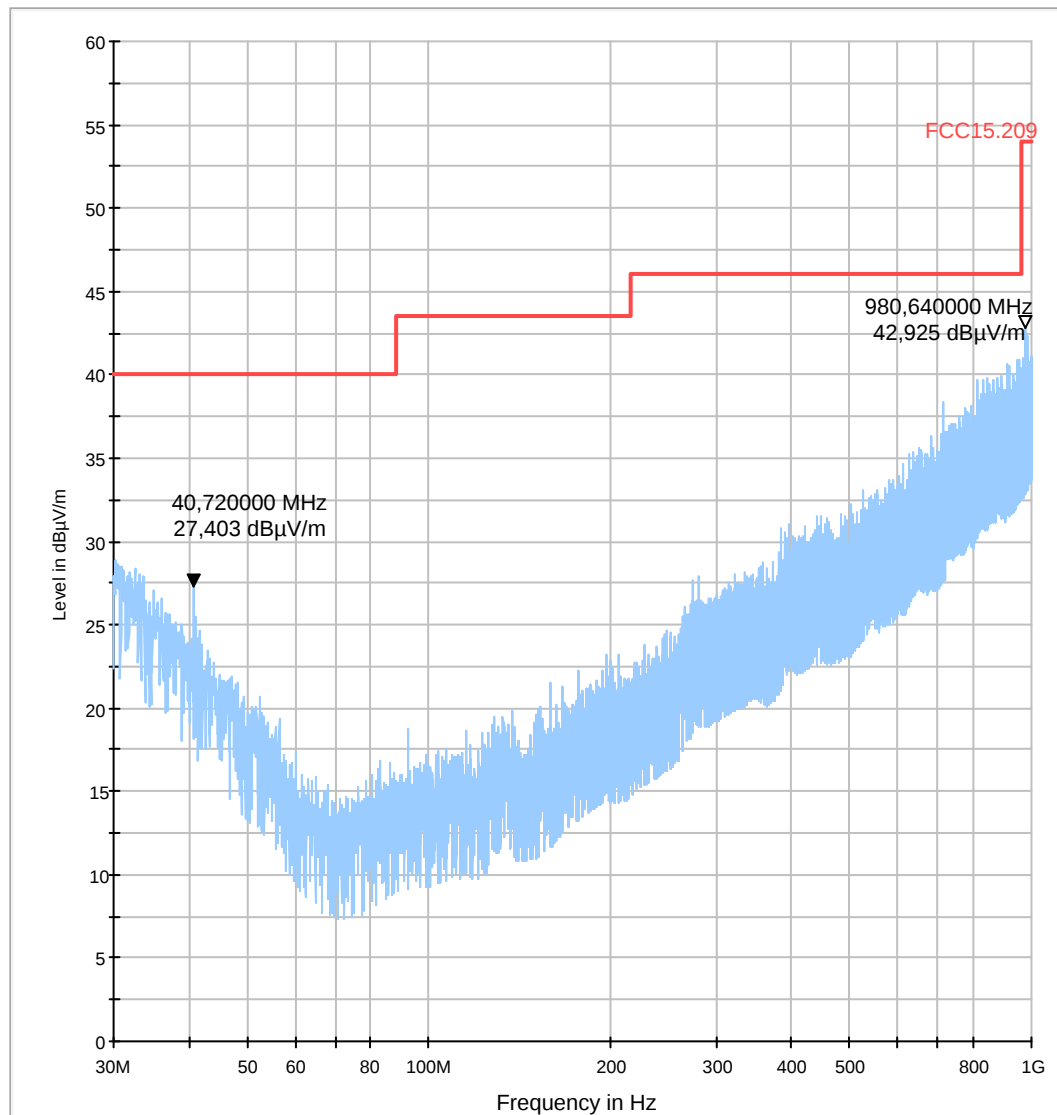
Test description: 12.06.2012 Page 1 of 2
 Test site and distance: Electric Field Strength Measurement
 Distance correction: Semi Anechoic Room (SAR) with 3 m measurement distance
 Used filter: not used
 Technical Data: please see page 2 for detailed data of measurement setup
 Test specification.: FCC 15.209; RSS-Gen: Issue 3

Operator: OOU
 Operating conditions: WLAN a-Mode, High Band, Ch. 48 (5240MHz)
 Power during tests: full loaded batteries
 Comment 1: WLAN-Carrier monitored with spectrum-analyzer

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...757
 Setup: Full battery

01_FCC15.209_hor+vert_kipp



Date: 12.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB
Receiver: [ESS]					

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB
Receiver: [ESS]					

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:

Test start	
Notify:	"EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
Notify:	"bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
Data Reduction: Before	
Notify:	Sound (WAV file) 'tada.wav'
Frequency Zoom 2: Before	
Notify:	"EUT sendet noch ?"
Final Measurements: After	
Notify:	Sound (WAV file) 'tada.wav'

Diagram 8.07_Ch48_Sweep2a

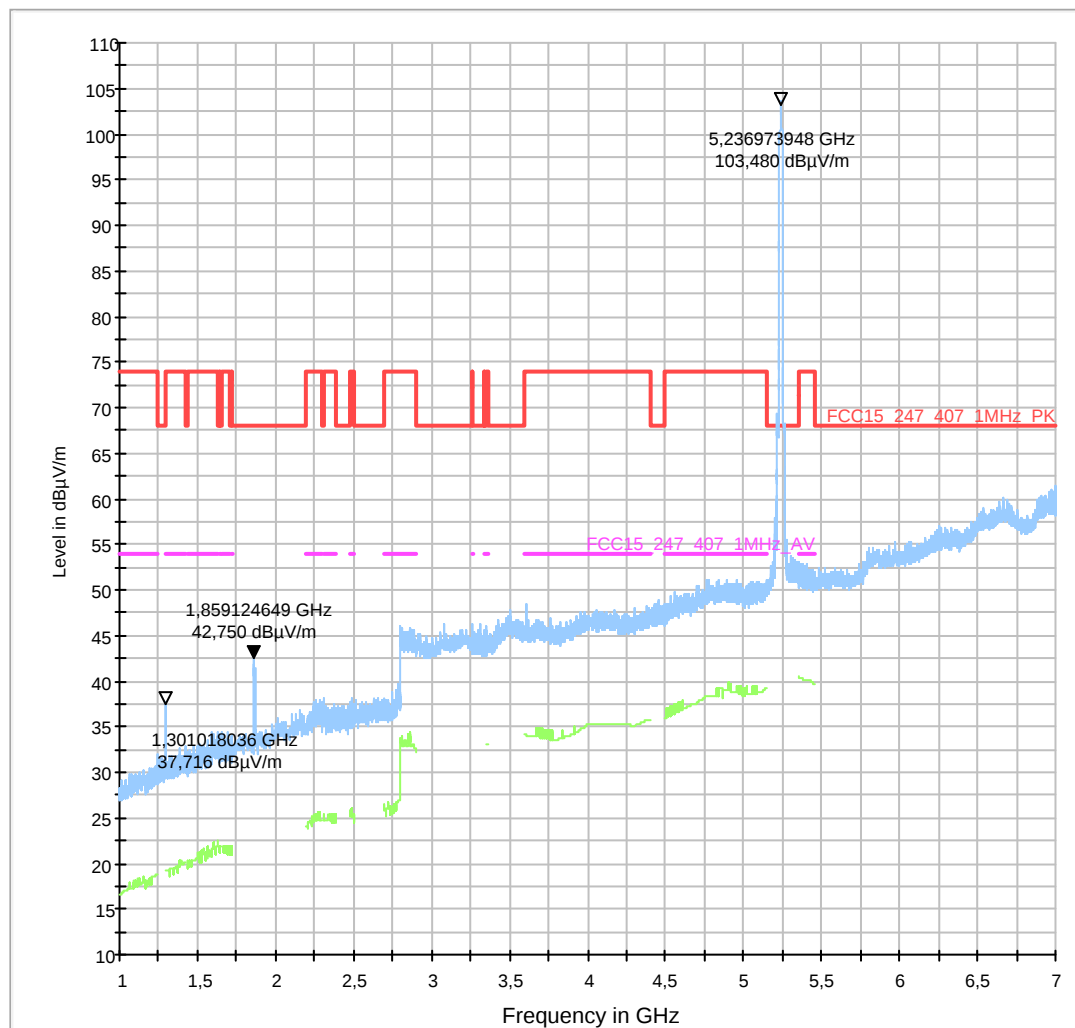
Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously rx on channel 48; Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 42 %rH; Temperature: 25°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dB μ V/m - 80 dB μ V/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction:	Interactive data reduction
Frequency Zoom:	
Zoom Sweep Template:	010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G
Adjustment:	
Template for Single Meas.:	020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan
Final Measurements:	
Template for Single Meas.:	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz)	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Report Settings:	
Report Template:	Report Setup FCC Part15.247 15.407
Create Electronic Report:	PDF
Document Name:	EMI Report
Actions:	
Test stop	
Park Accessories	

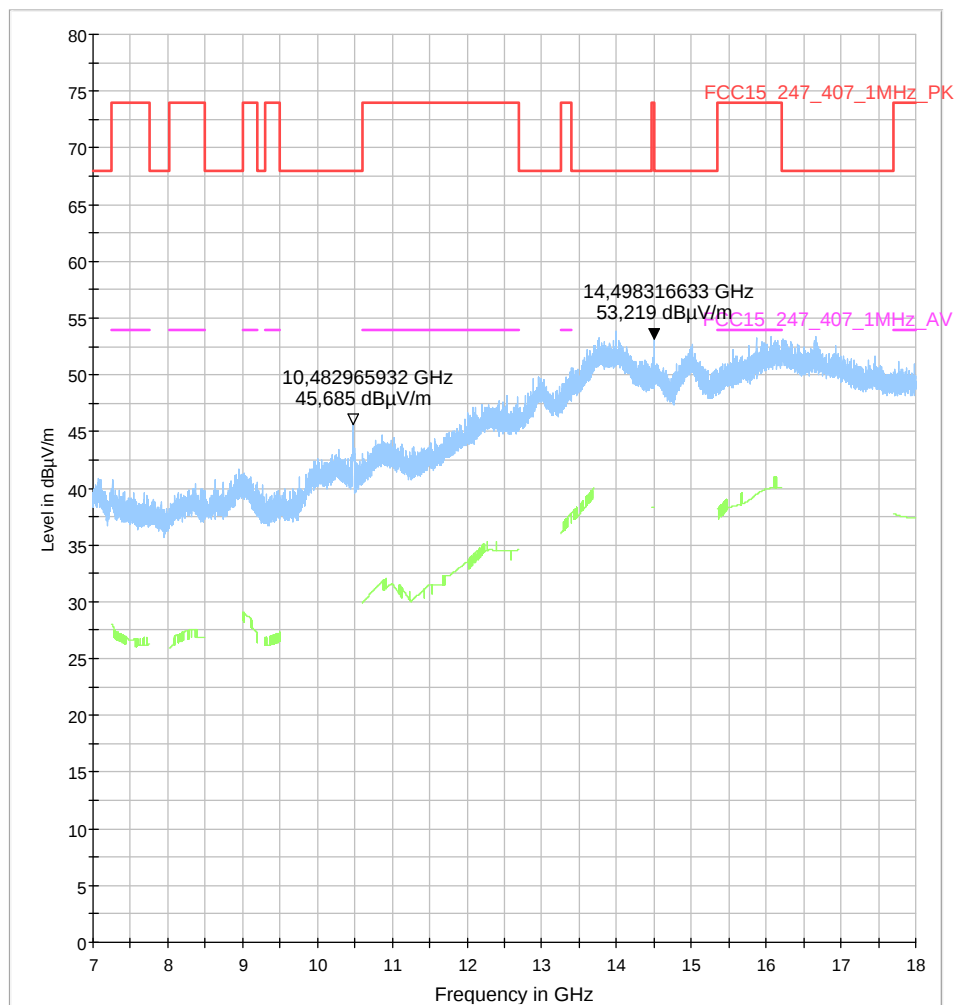
Diagram 8.07_Ch48_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 48 Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1	
Frequency Range:	1 GHz - 3 GHz
Receiver:	Spectrum_Analyzer_FSEx [FSEK] @ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012
Signal Path:	00102_HL562_Through1_Amp4G_Out3 FW 1.0 Correction Table: 00102_HL562_Through1_Amp4G_Out3
Antenna:	00103_HL562_30M-3G_dBuV_AF_FCC_3m Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Antenna Tower:	Mast_1 PSN Ultralog [Generic Tripod] @ GPIB0 (ADR 21), SN ?
Turntable:	EMCO2090 Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.21
Subrange 2	
Frequency Range:	3 GHz - 7 GHz
Receiver:	Spectrum_Analyzer_FSEx [FSEK] @ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012
Signal Path:	00122_HL025_HP2.8-18G_Amp18G_Through3_Out3 FW 1.0 Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
Antenna:	00113_HL025_1G-26G_dBuV_AF_FCC_3m Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Antenna Tower:	Mast_2 PSN Horn [Generic Tripod] @ GPIB0 (ADR 21), SN ?
Turntable:	EMCO2090 Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.21
Subrange 3	
Frequency Range:	7 GHz - 18 GHz
Receiver:	Spectrum_Analyzer_FSEx [FSEK] @ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012
Signal Path:	00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3 FW 1.0 Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
Antenna:	00111_HL025_1G-26G_dBuV_AF_FCC_1m Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Antenna Tower:	Mast_2 PSN Horn [Generic Tripod] @ GPIB0 (ADR 21), SN ?
Turntable:	EMCO2090 Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup:	00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx
Measurement Type:	E(I)RP
Frequency Range:	1 GHz - 7 GHz
Graphics Level Range:	20 dBµV/m - 80 dBµV/m
Preview Measurements:	
Sweep Test Template:	010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G
Data Reduction:	
Limit Line #1:	FCC15_247_407_1MHz_PK
Limit Line #2:	FCC15_247_407_1MHz_AV
Peak Search:	6 dB , Maximum Results: 5
Subrange Maxima:	10 Subranges , Maxima per Subrange: 1
Maximum Number of Results:	5
After Data Reduction:	Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test stop
Park Accessories

Diagram No.: 8.07_Ch48_Sweep3

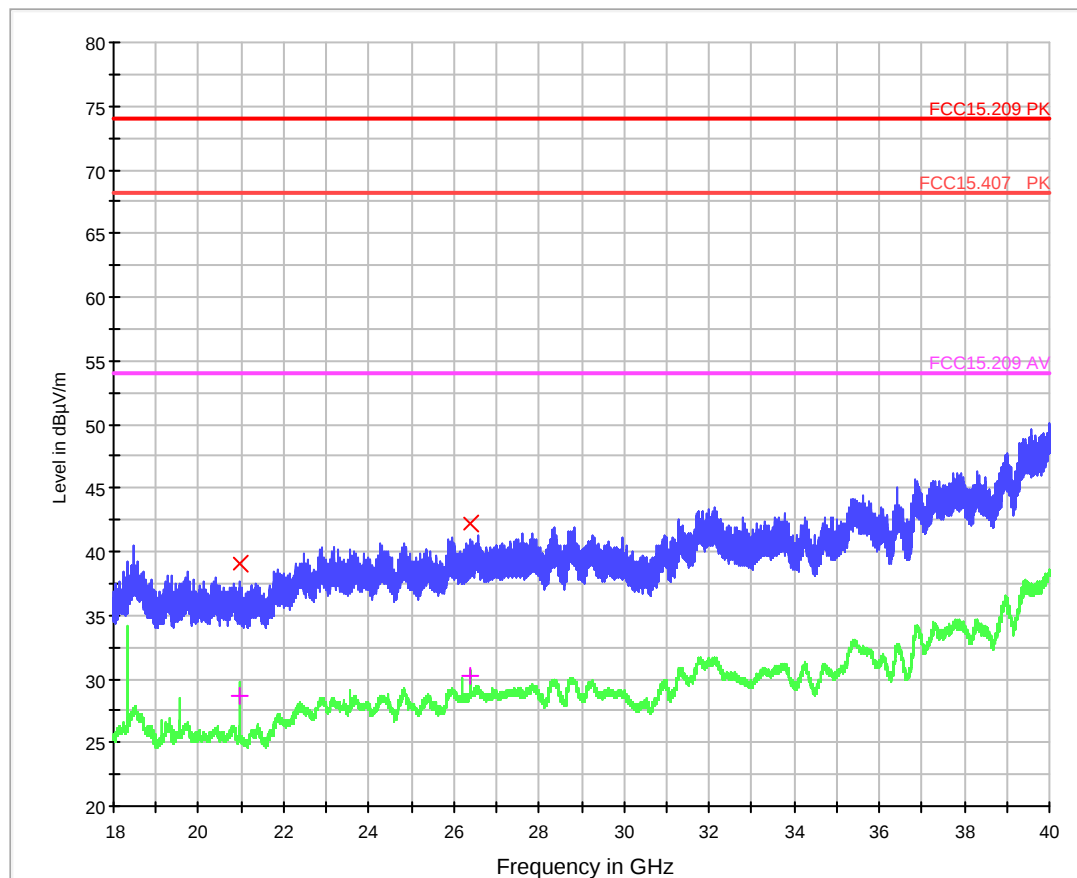
Common Information

Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC Part 15.247 / 15.407
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no. middle
Op. Mode:	5 GHz WLAN / Ch48/ 6Mbps

Result Table Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
26390.400000	42.2	30.2	20.0	1000.000	0.0	H	0.0	-13.4
20960.000000	39.0	28.7	20.0	1000.000	0.0	H	0.0	-15.0

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup:	HW02_ESU_18-40GHz
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.3. Channel 64 (g-Mode, 6Mbps)

Diagram No. 8.07_Ch64_Sweep1

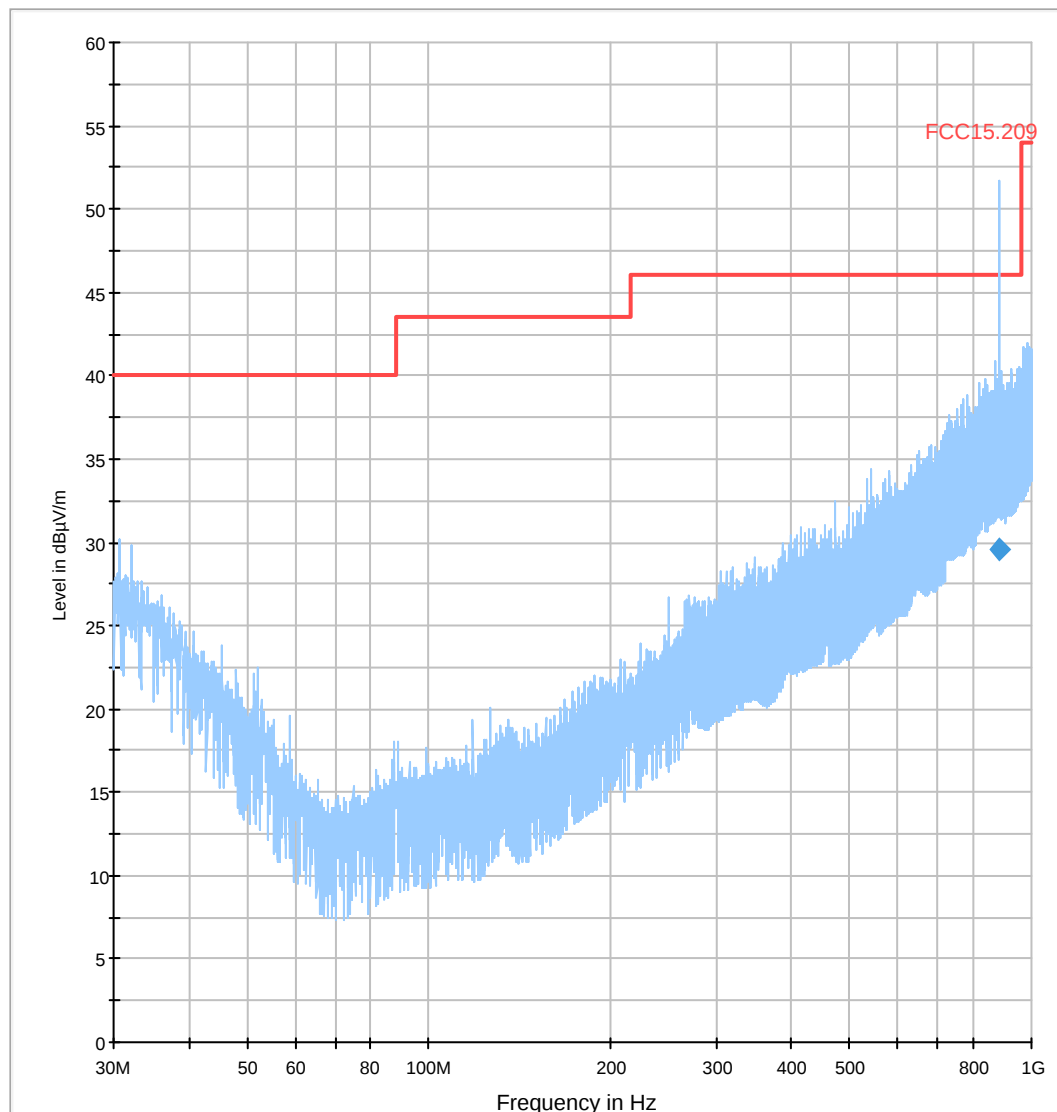
Test description: 12.06.2012 Page 1 of 2
Test site and distance: Electric Field Strength Measurement
Distance correction: Semi Anechoic Room (SAR) with 3 m measurement distance
Used filter: not used
Technical Data: not used
Test specification.: please see page 2 for detailed data of measurement setup
FCC 15.209; RSS-Gen: Issue 3

Operator: OOU
Operating conditions: WLAN a-Mode, High Band, Ch. 64 (5320MHz)
Power during tests: full loaded batteries
Comment 1: WLAN-Carrier monitored with spectrum-analyzer

EUT Information

EUT Name: RFG81UW
Manufacturer: RIM
IMEI: ...757
Setup: Full battery

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 - QPK (dB)	Limit - QPK (dBµV/m)
885.250000	29.6	1000.0	120.000	130.0	H	59.0	90.0	26.3	16.40	46.00

Date: 12.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBµV/m - 60 dBµV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB

Receiver: [ESS]

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB

Receiver: [ESS]

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:
 Test start
 Notify: "EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
 Notify: "bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
 Data Reduction: Before
 Notify: Sound (WAV file) 'tada.wav'
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"
 Final Measurements: After
 Notify: Sound (WAV file) 'tada.wav'

Diagram 8.07_Ch64_Sweep2a

Common Information

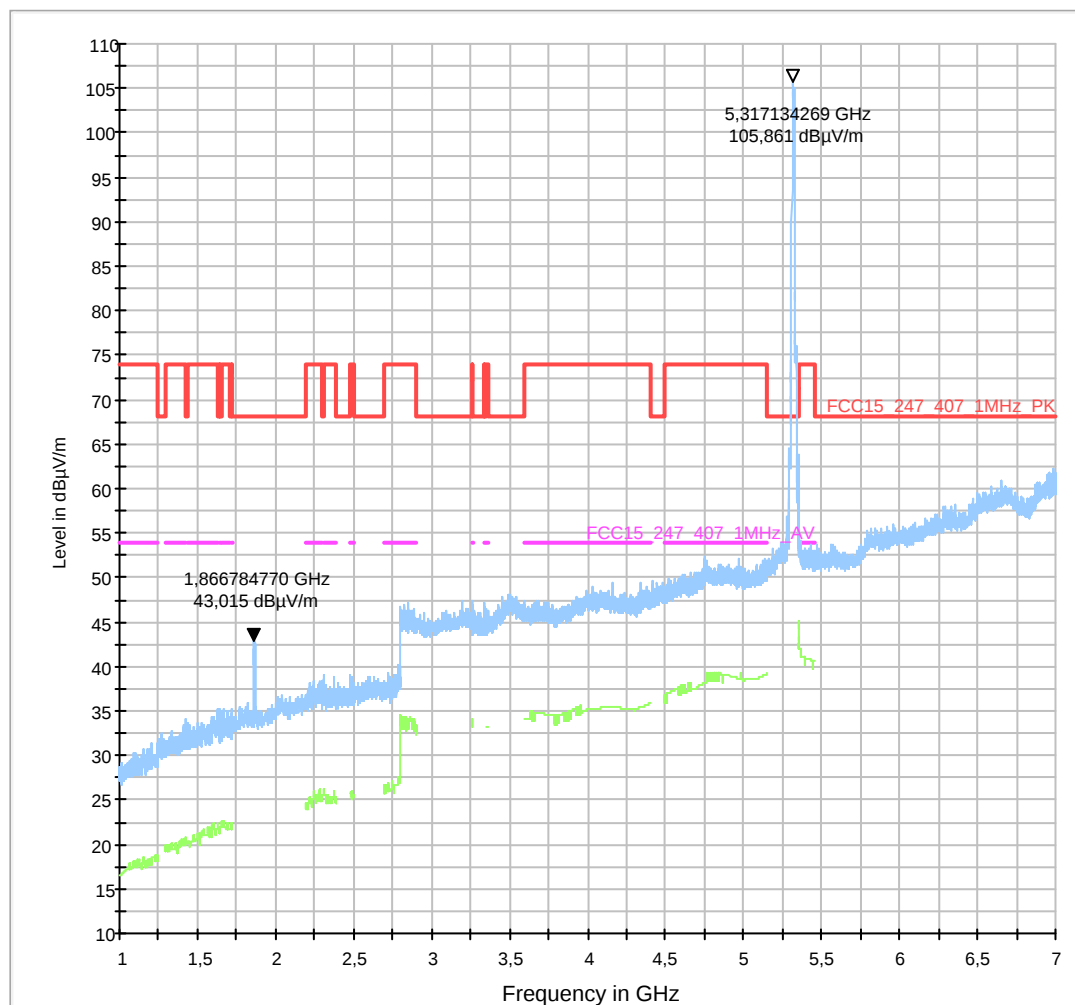
Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously on channel 64; Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	Lor

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1

EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	Sample 1

030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dB μ V/m - 80 dB μ V/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction:	Interactive data reduction
Frequency Zoom:	
Zoom Sweep Template:	010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G
Adjustment:	
Template for Single Meas.:	020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan
Final Measurements:	
Template for Single Meas.:	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz)	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Report Settings:	
Report Template:	Report Setup FCC Part15.247 15.407
Create Electronic Report:	PDF
Document Name:	EMI Report
Actions:	
Test stop	
Park Accessories	

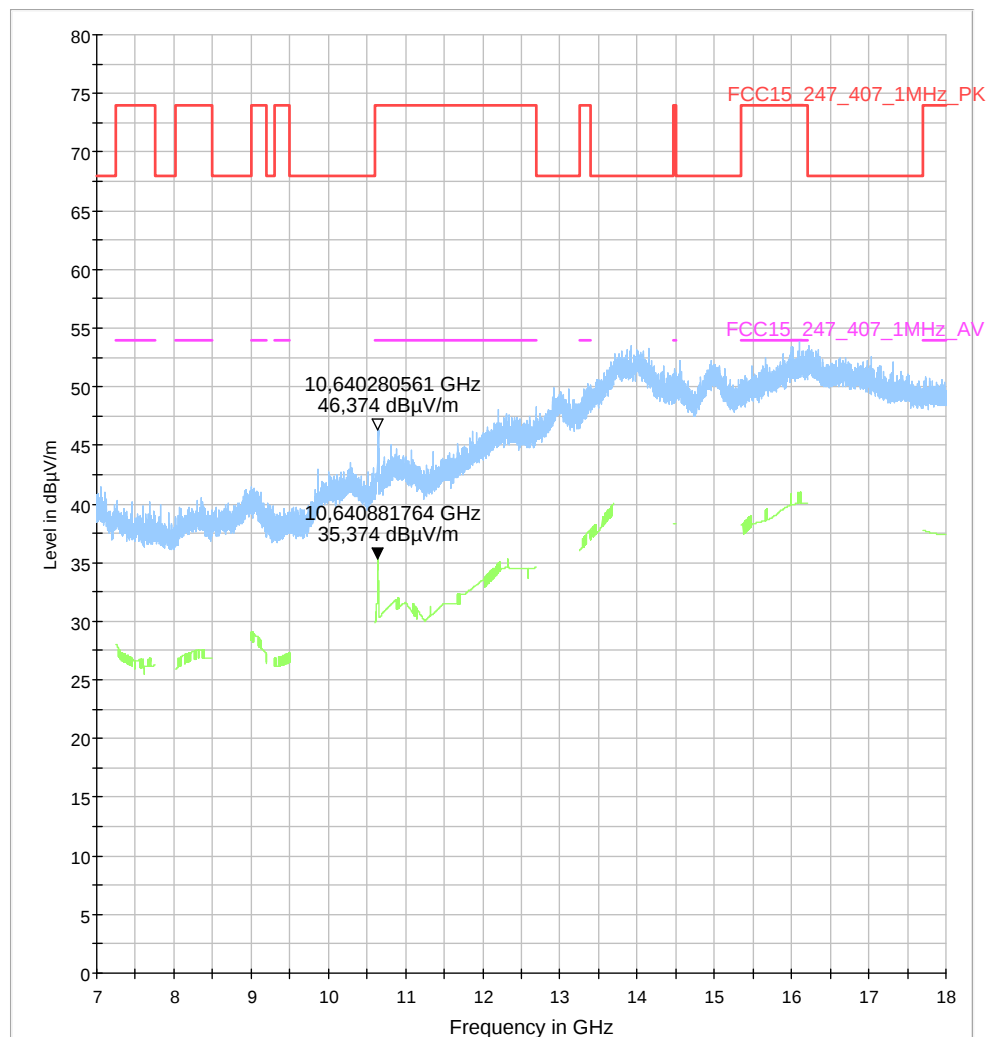
Diagram 8.07_Ch64_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 64 Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dB μ V/m - 80 dB μ V/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction:	Interactive data reduction
Frequency Zoom:	
Zoom Sweep Template:	010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G
Adjustment:	
Template for Single Meas.:	020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan
Final Measurements:	
Template for Single Meas.:	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz)	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Report Settings:	
Report Template:	Report Setup FCC Part15.247 15.407
Create Electronic Report:	PDF
Document Name:	EMI Report
Actions:	
Test stop	
Park Accessories	

Diagram No.: 8.07_Ch64_Sweep3

Common Information

Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: FCC Part 15.247 / 15.407
 Antenna polarisation: horizontal/vertical

Operator Name: Lor
 Op. Mode: 5 GHz WLAN / Ch64/ 6Mbps

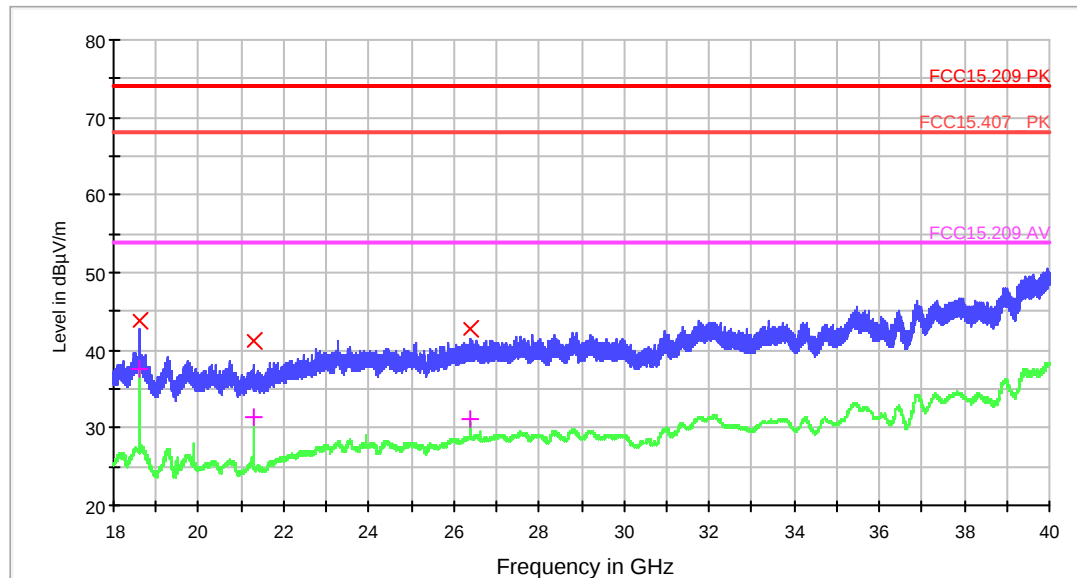
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #1118422047
 Hardware Rev: --
 Software Rev: --
 Comment: Unit 1

Result Table_Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
18620.000000	43.8	37.6	20.0	1000.000	0.0	H	0.0	-11.9
21280.000000	41.2	31.3	20.0	1000.000	0.0	H	0.0	-15.1
26385.600000	42.8	31.2	20.0	1000.000	0.0	H	0.0	-13.4

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup: HW02_ESU_18-40GHz
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,002 s	0 dB

2.4. Channel 100 (g-Mode, 6Mbps)

Diagram No. 8.07_Ch100_Sweep1

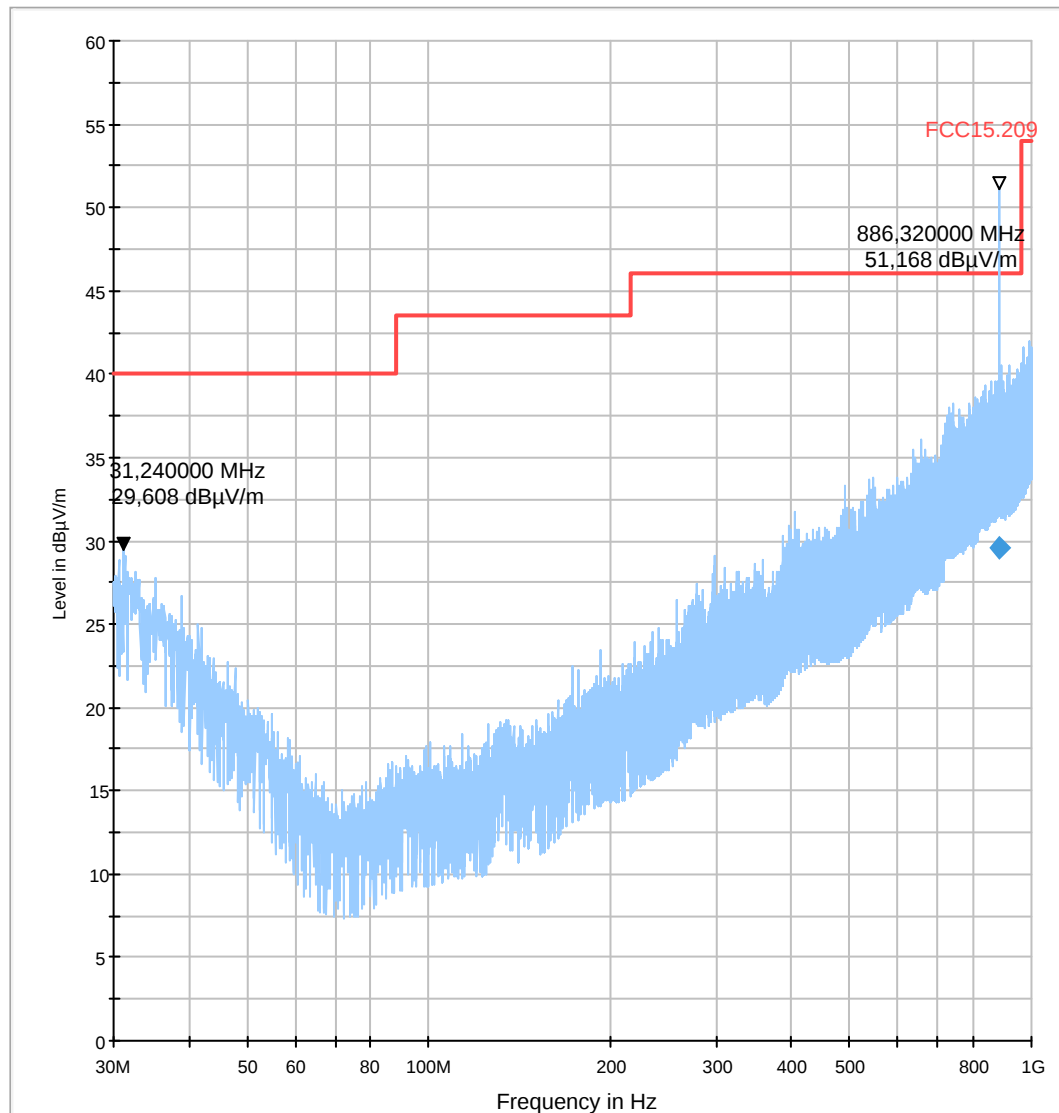
Test description: 12.06.2012 Page 1 of 2
 Test site and distance: Electric Field Strength Measurement
 Distance correction: Semi Anechoic Room (SAR) with 3 m measurement distance
 Used filter: not used
 Technical Data: please see page 2 for detailed data of measurement setup
 Test specification.: FCC 15.209; RSS-Gen: Issue 3

Operator: OOU
 Operating conditions: WLAN a-Mode, High Band, Ch. 100 (5500MHz)
 Power during tests: full loaded batteries
 Comment 1: WLAN-Carrier monitored with spectrum-analyzer

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...757
 Setup: Full battery

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 - QPK (dB)	Limit - QPK (dBµV/m)
886.180000	29.6	1000.0	120.000	274.0	V	318.0	90.0	26.3	16.40	46.00

Date: 12.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBµV/m - 60 dBµV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB

Receiver: [ESS]

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB

Receiver: [ESS]

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:
 Test start
 Notify: "EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
 Notify: "bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
 Data Reduction: Before
 Notify: Sound (WAV file) 'tada.wav'
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"
 Final Measurements: After
 Notify: Sound (WAV file) 'tada.wav'

Diagram 8.07_Ch100_Sweep2a

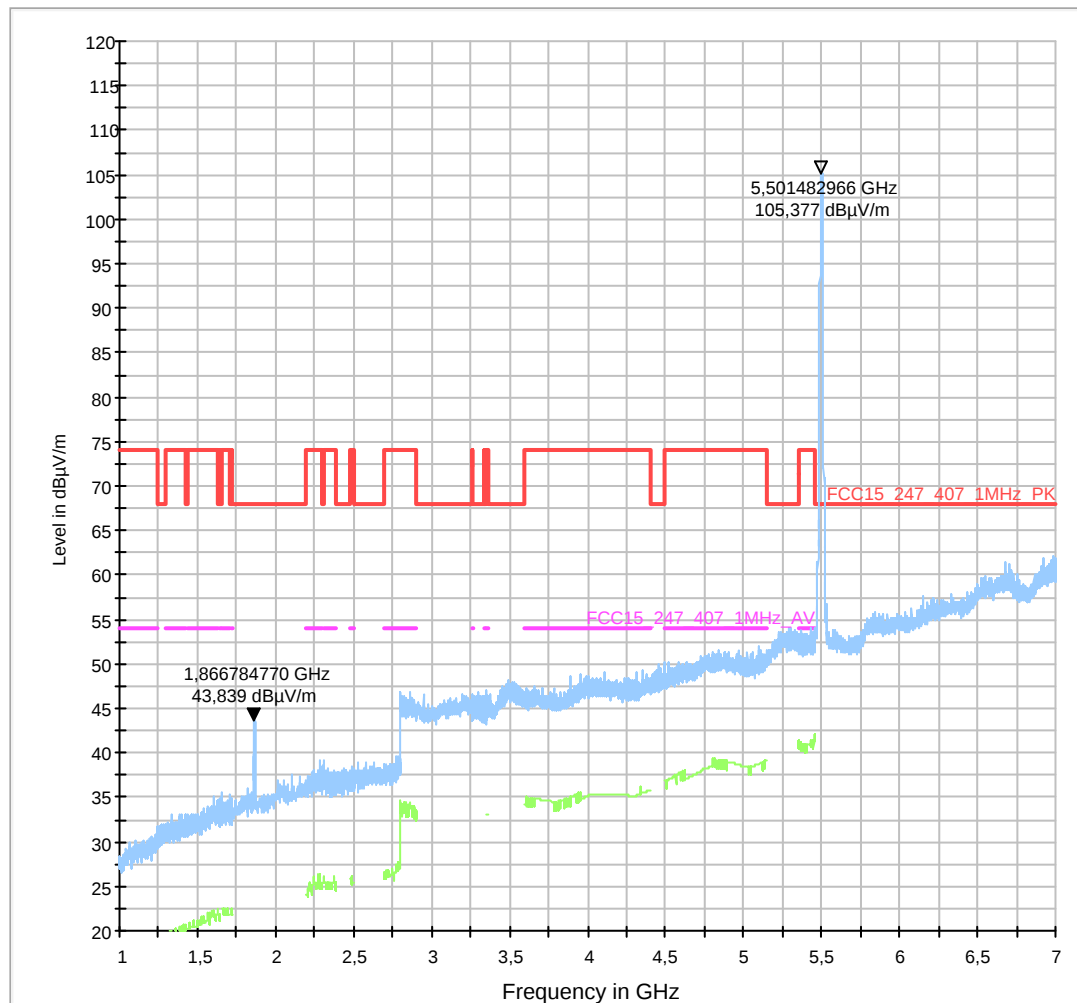
Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously on channel 100; Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	Lor

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dB μ V/m - 80 dB μ V/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction:	Interactive data reduction
Frequency Zoom:	
Zoom Sweep Template:	010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G
Adjustment:	
Template for Single Meas.:	020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan
Final Measurements:	
Template for Single Meas.:	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz)	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Report Settings:	
Report Template:	Report Setup FCC Part15.247 15.407
Create Electronic Report:	PDF
Document Name:	EMI Report
Actions:	
Test stop	
Park Accessories	

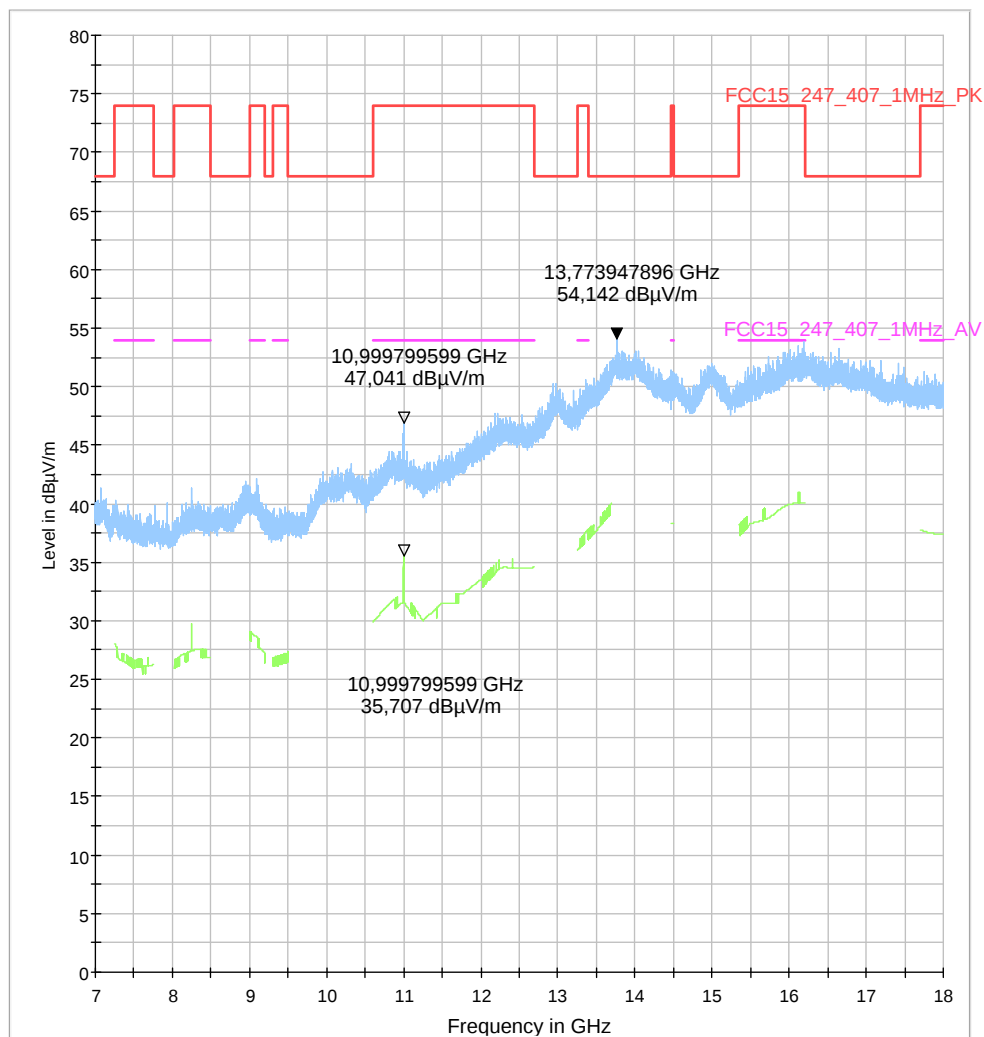
Diagram 8.07_Ch100_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 100 Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dBμV/m - 80 dBμV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test stop
Park Accessories

Diagram No.: 8.07_Ch100_Sweep3

Common Information

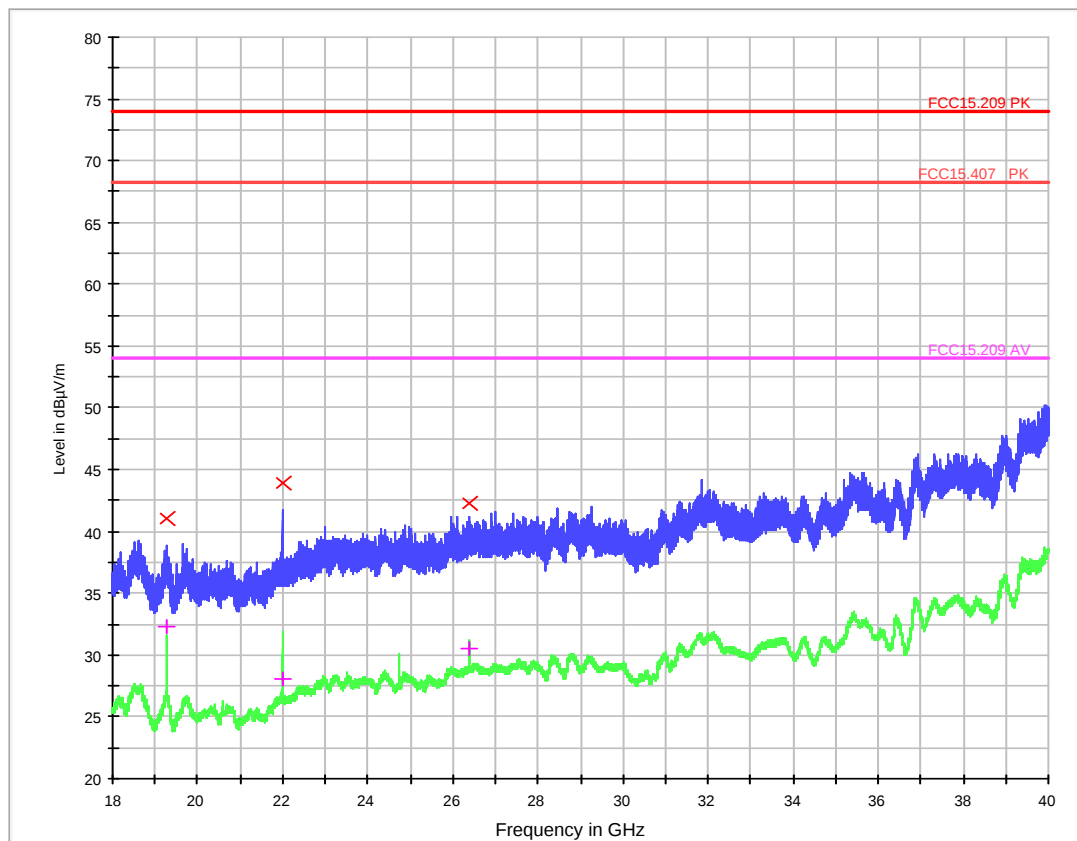
Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: FCC Part 15.247 / 15.407
 Antenna polarisation: horizontal/vertical

 Operator Name: Lor
 Op. Mode: 5 GHz WLAN / Ch100/ 6MBps

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #1118422047
 Hardware Rev: --
 Software Rev: --
 Comment: Unit 1

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup: HW02_ESU_18-40GHz
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.5. Channel 120 (g-Mode, 6Mbps)

Diagram No. 8.07_Ch120_Sweep1

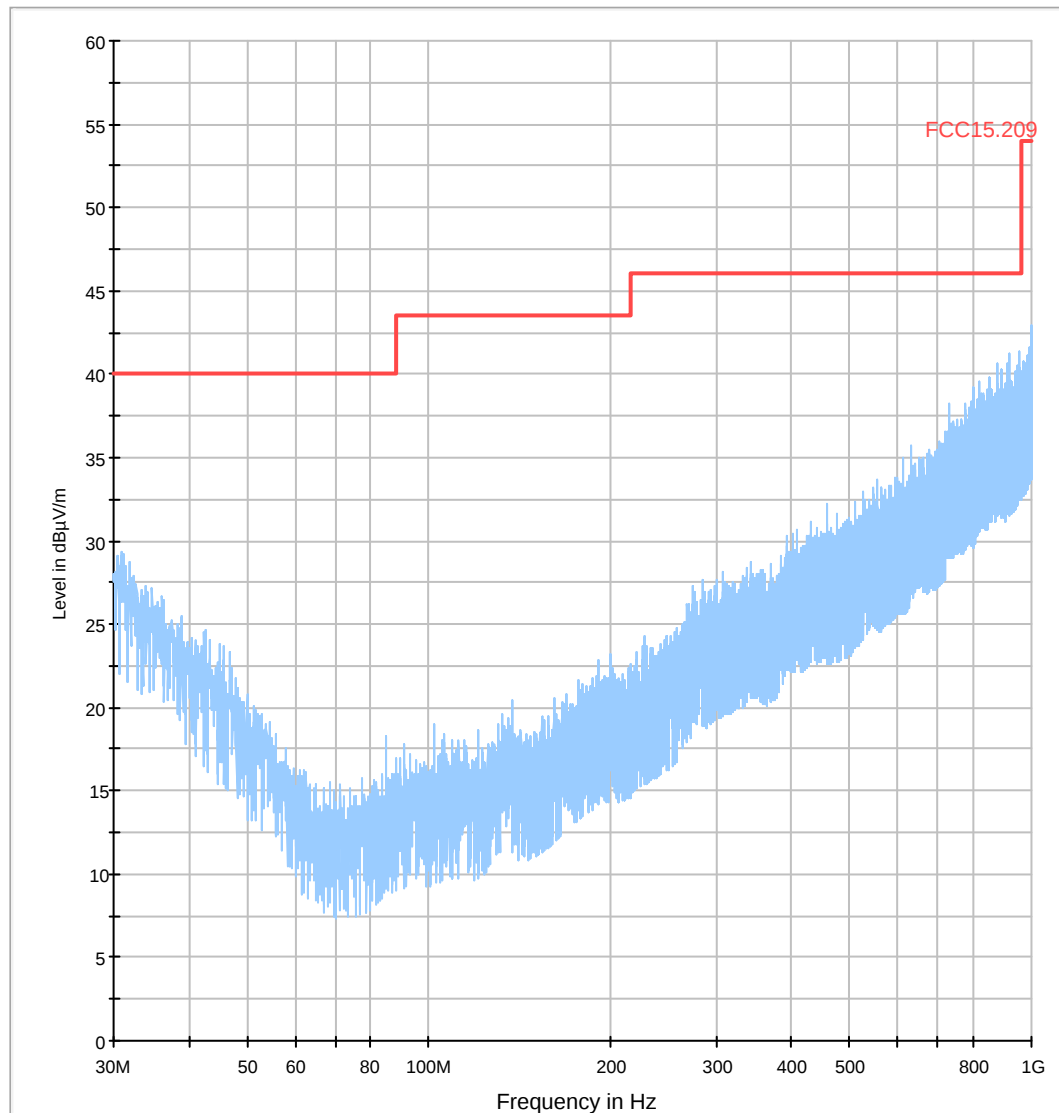
Test description: 12.06.2012 Page 1 of 2
Electric Field Strength Measurement
Test site and distance: Semi Anechoic Room (SAR) with 3 m measurement distance
Distance correction: not used
Used filter: not used
Technical Data: please see page 2 for detailed data of measurement setup
Test specification.: FCC 15.209; RSS-Gen: Issue 3

Operator: OOU
Operating conditions: WLAN a-Mode, High Band, Ch. 120 (5600MHz)
Power during tests: full loaded batteries
Comment 1: WLAN-Carrier monitored with spectrum-analyzer

EUT Information

EUT Name: RFG81UW
Manufacturer: RIM
IMEI: ...757
Setup: Full battery

01_FCC15.209_hor+vert_kipp



Date: 12.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBµV/m - 60 dBµV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB

Receiver: [ESS]

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB

Receiver: [ESS]

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:
 Test start
 Notify: "EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
 Notify: "bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
 Data Reduction: Before
 Notify: Sound (WAV file) 'tada.wav'
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"
 Final Measurements: After
 Notify: Sound (WAV file) 'tada.wav'

Diagram 8.07_Ch120_Sweep2a

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 120; Data Rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

030452_FCC_Part15.247-15.407_RSE_WLAN_802,11a_1G-7G_FSEK

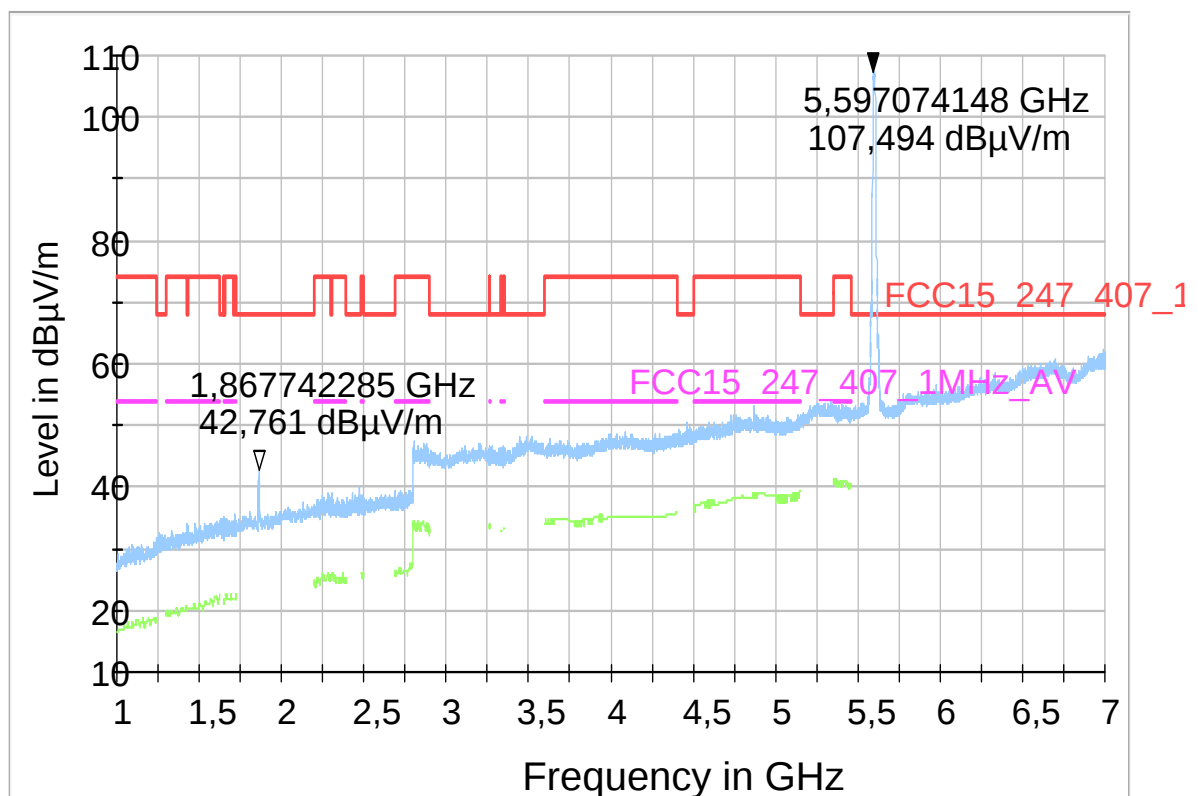


Diagram 8.07_Ch120_sweep2b

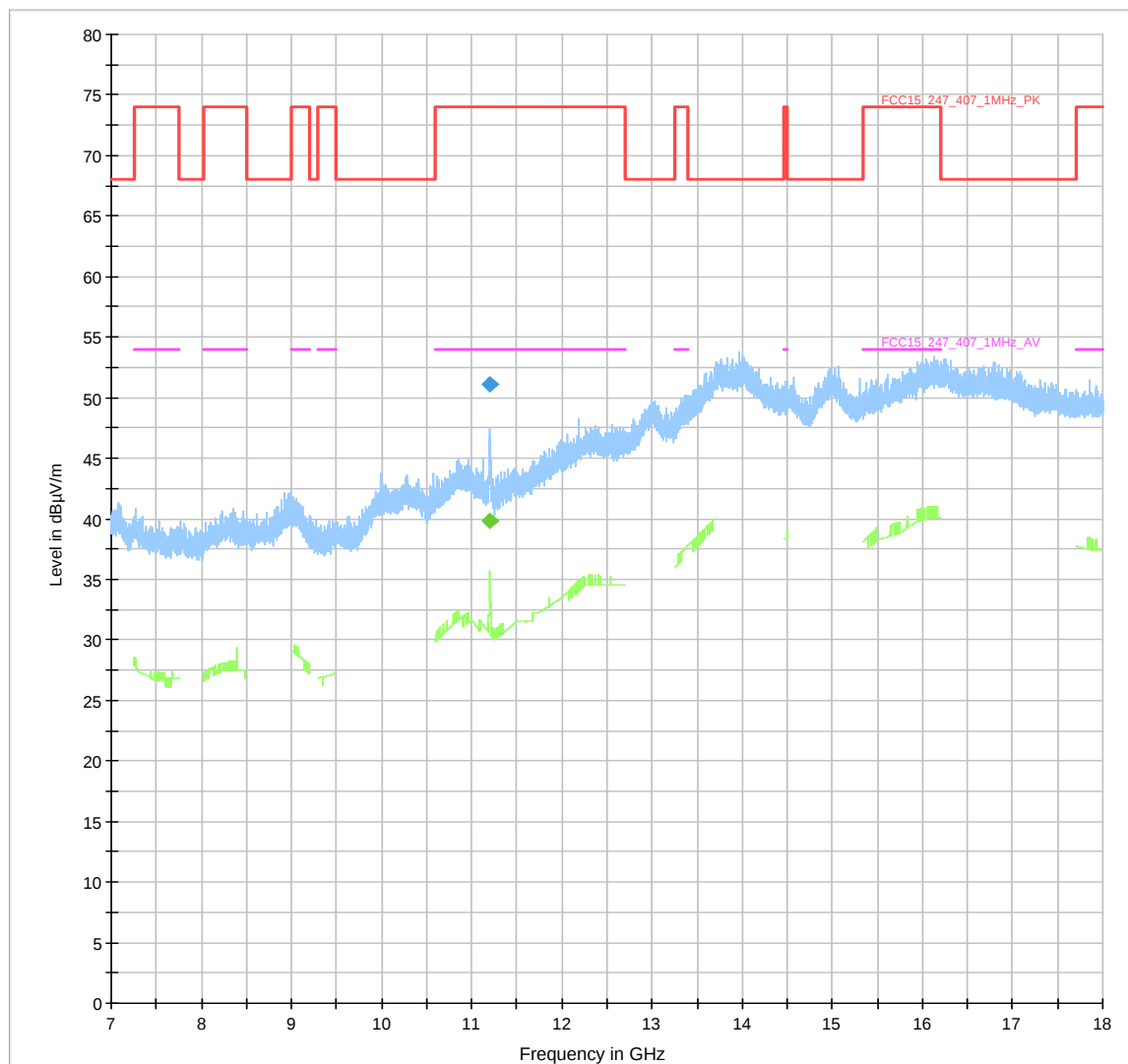
Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 120 Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	HLA

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1

EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dBμV/m - 80 dBμV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5
After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test stop
Park Accessories

Diagram No.: 8.07_Ch120_Sweep3

Common Information

Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: FCC Part 15.247 / 15.407
 Antenna polarisation: horizontal/vertical

Operator Name: Lor
 Op. Mode: 5 GHz WLAN / Ch120/ 6MBps

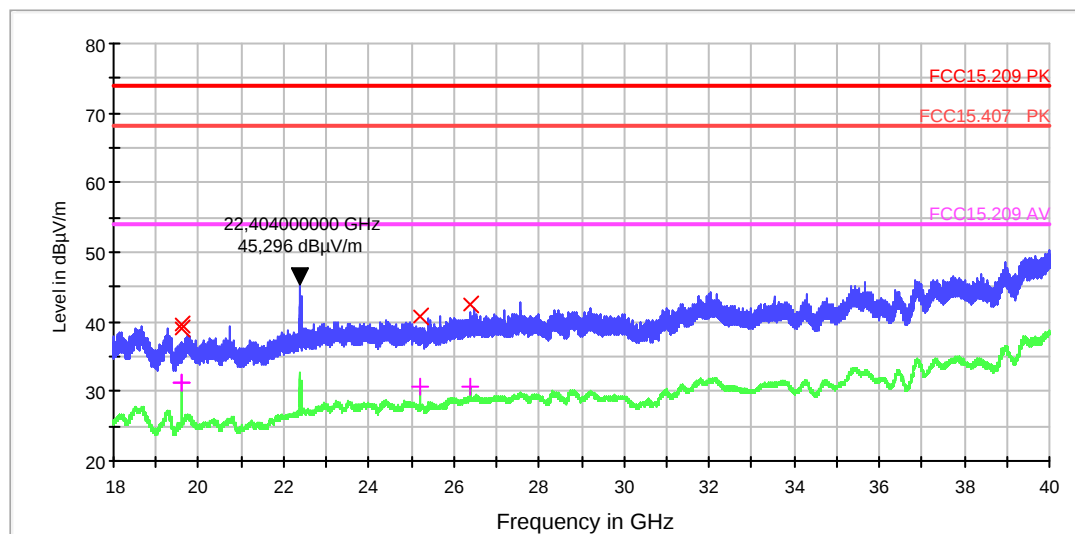
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #1118422047
 Hardware Rev: --
 Software Rev: --
 Comment: Unit 1

Result Table_Single

Frequency (MHz)	MaxPeak (dBμV/m)	RMS (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
19600.000000	39.0	31.1	20.0	1000.000	0.0	H	0.0	-13.7
19600.000000	39.5	31.1	20.0	1000.000	0.0	H	0.0	-13.7
25200.000000	40.8	30.6	20.0	1000.000	0.0	H	0.0	-14.1
26372.400000	42.4	30.7	20.0	1000.000	0.0	H	0.0	-13.4

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup: HW02_ESU_18-40GHz
 Receiver: [ESU 40]
 Level Unit: dBμV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.6. Channel 140 (g-Mode, 6Mbps)

Diagram No. 8.07_Ch140_Sweep1

Test description: 12.06.2012 Page 1 of 2
 Test site and distance: Electric Field Strength Measurement
 Distance correction: Semi Anechoic Room (SAR) with 3 m measurement distance
 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

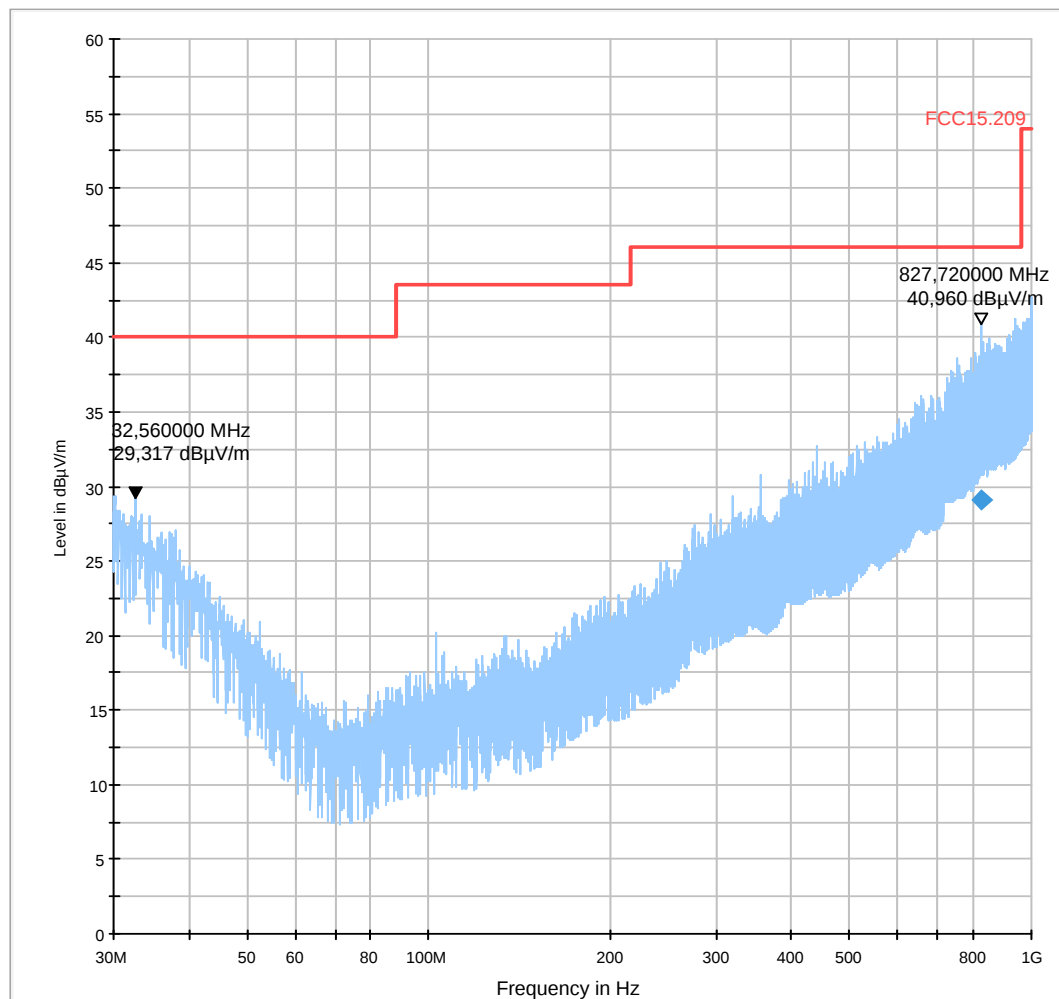
Operator: OOu
 Operating conditions: WLAN a-Mode, High Band, Ch. 140 (5700MHz)
 Power during tests: full loaded batteries
 Comment 1: WLAN-Carrier monitored with spectrum-analyzer

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...757
 Setup: Full battery

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
827.140000	29.1	1000.0	120.000	368.0	H	36.0	0.0	25.6	16.90	46.00

01_FCC15.209_hor+vert_kipp



Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dB μ V/m - 60 dB μ V/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB

Receiver: [ESS]

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB

Receiver: [ESS]

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:
 Test start
 Notify: "EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
 Notify: "bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
 Data Reduction: Before
 Notify: Sound (WAV file) 'tada.wav'
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"
 Final Measurements: After
 Notify: Sound (WAV file) 'tada.wav'

Diagram 8.07_Ch140_Sweep2a

Common Information

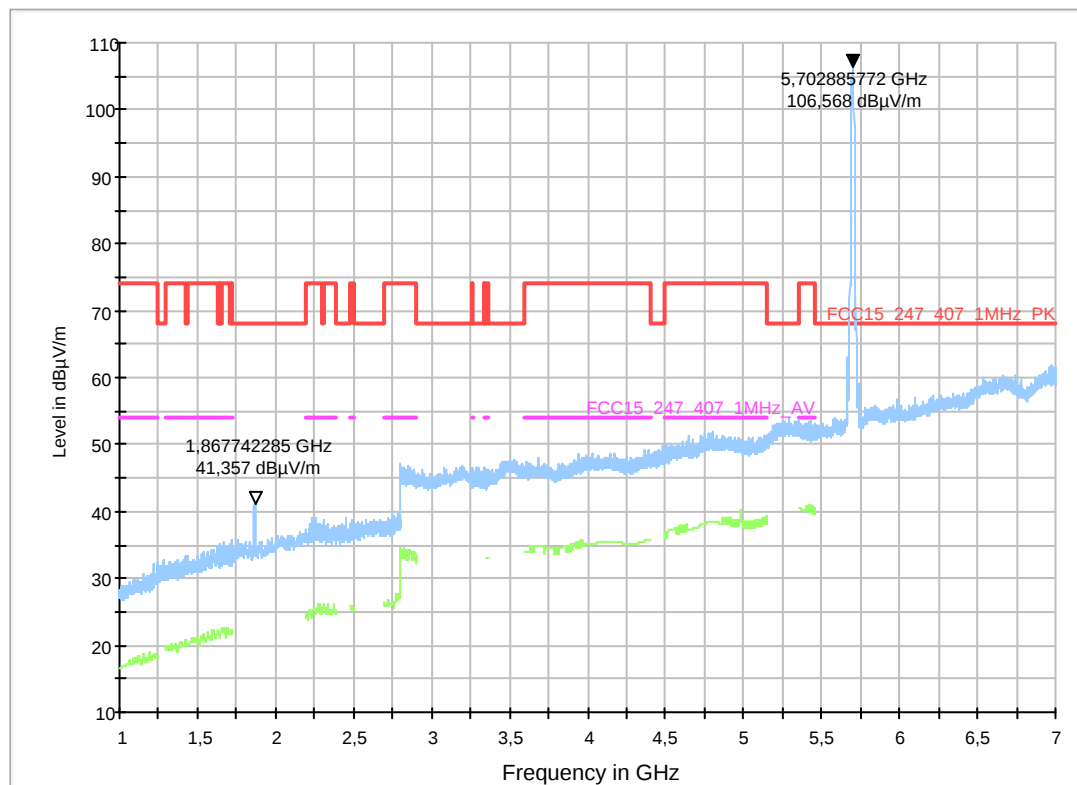
Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously on channel 140 Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1

EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dB μ V/m - 80 dB μ V/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction:	Interactive data reduction
Frequency Zoom:	
Zoom Sweep Template:	010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G
Adjustment:	
Template for Single Meas.:	020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan
Final Measurements:	
Template for Single Meas.:	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz)	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Report Settings:	
Report Template:	Report Setup FCC Part15.247 15.407
Create Electronic Report:	PDF
Document Name:	EMI Report
Actions:	
Test stop	
Park Accessories	

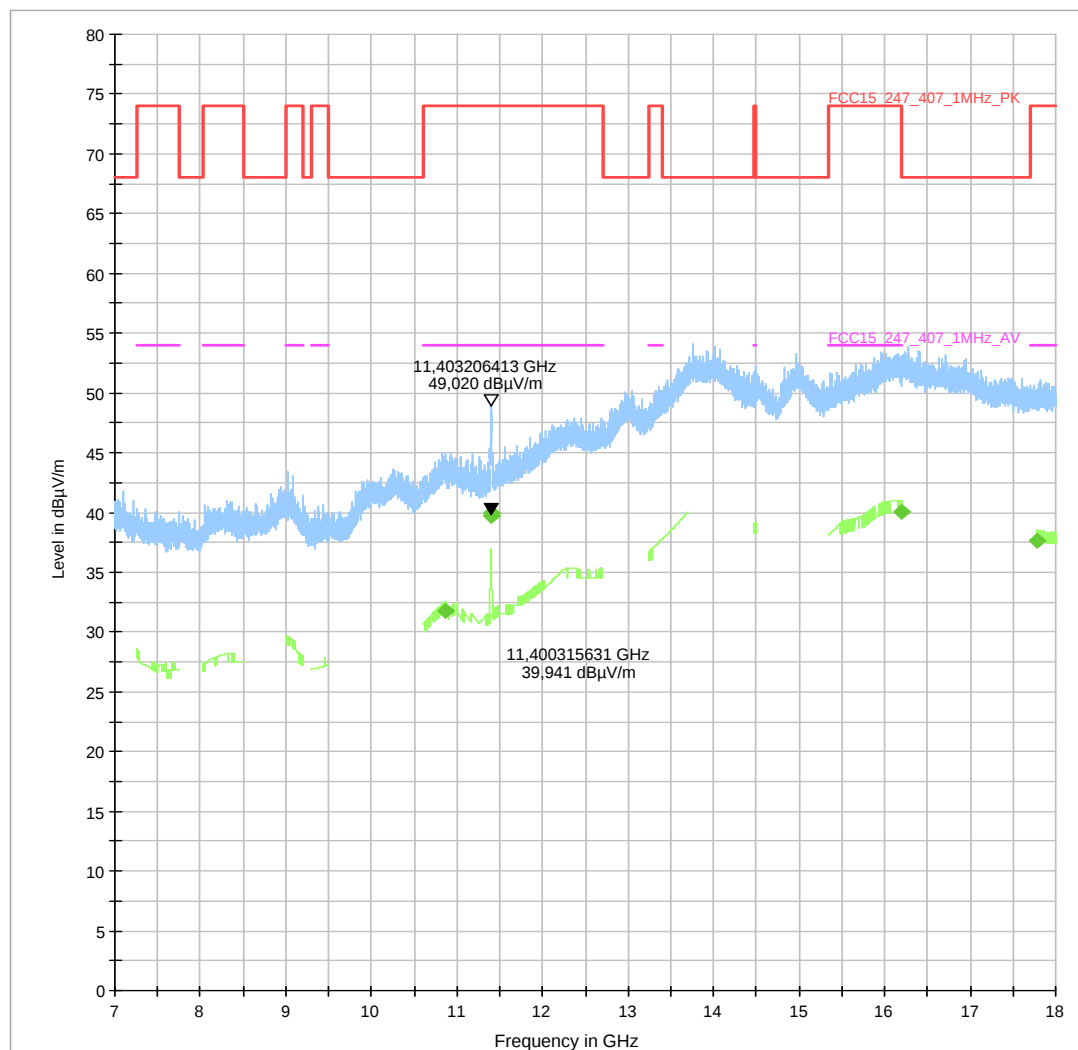
Diagram 8.07_Ch140_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 140 Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	HLA

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dBµV/m - 80 dBµV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction:	Interactive data reduction
Frequency Zoom:	
Zoom Sweep Template:	010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G
Adjustment:	
Template for Single Meas.:	020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan
Final Measurements:	
Template for Single Meas.:	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz)	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Report Settings:	
Report Template:	Report Setup FCC Part15.247 15.407
Create Electronic Report:	PDF
Document Name:	EMI Report
Actions:	
Test stop	
Park Accessories	

Diagram No.: 8.07_Ch140_Sweep3

Common Information

Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: FCC Part 15.247 / 15.407
 Antenna polarisation: horizontal/vertical

Operator Name: Lor
 Op. Mode: 5 GHz WLAN / Ch140/ 6MBps

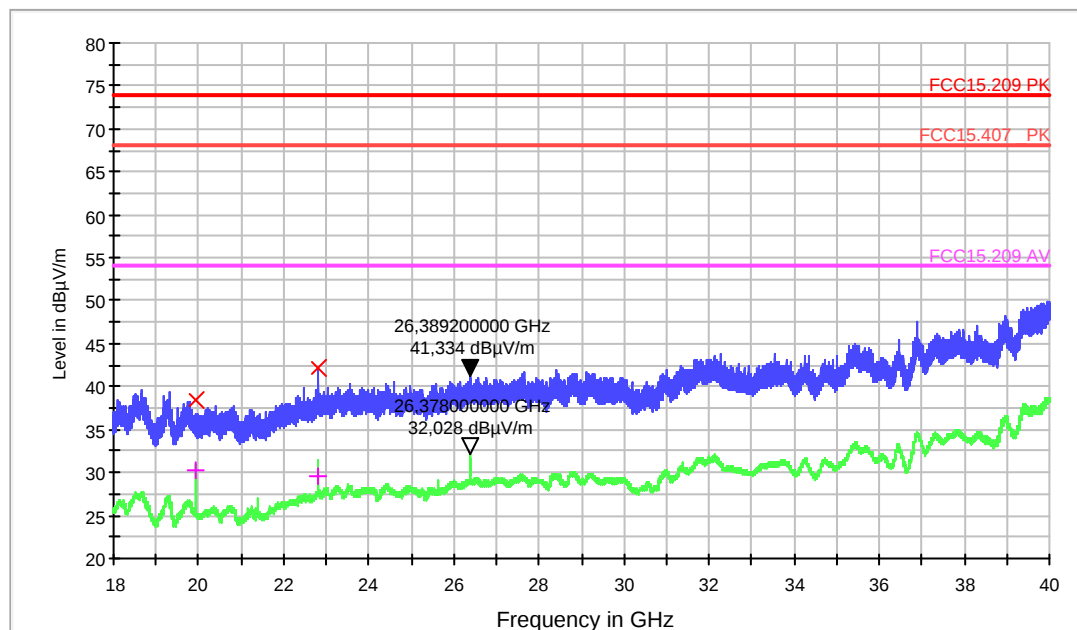
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #1118422047
 Hardware Rev: --
 Software Rev: --
 Comment: Unit 1

Result Table_Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
19950.000000	38.5	30.3	20.0	1000.000	0.0	H	0.0	-13.7
22799.600000	42.3	29.7	20.0	1000.000	0.0	H	0.0	-13.7

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup: HW02_ESU_18-40GHz
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.7. Channel 149 (g-Mode, 6Mbps)

Diagram No. 8.07_Ch149_Sweep1

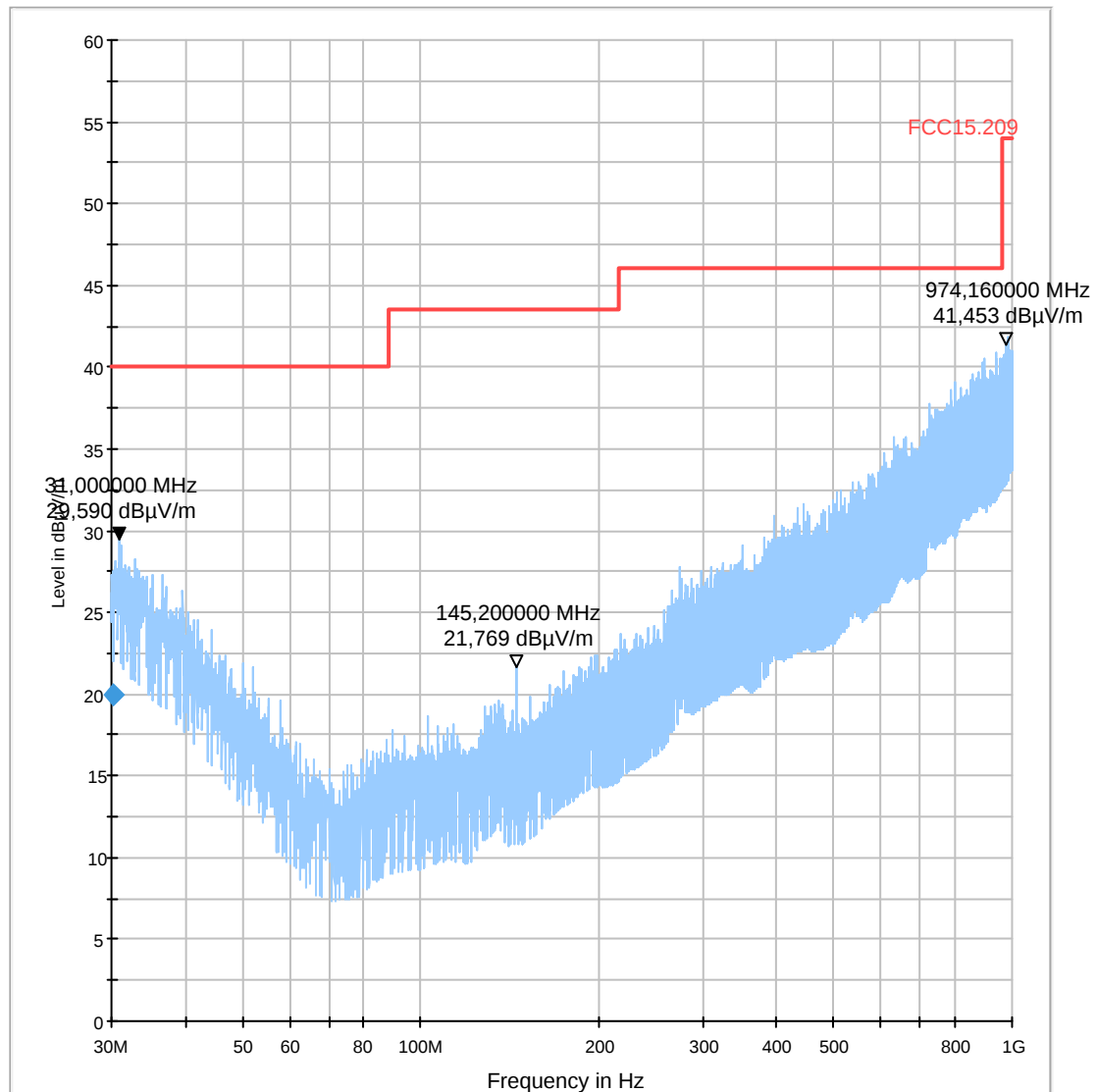
Test description: 12.06.2012 Page 1 of 2
 Test site and distance: Electric Field Strength Measurement
 Distance correction: Semi Anechoic Room (SAR) with 3 m measurement distance
 Used filter: not used
 Technical Data: please see page 2 for detailed data of measurement setup
 Test specification.: FCC 15.209; RSS-Gen: Issue 3

Operator: Lor
 Operating conditions: WLAN a-Mode, High Band, Ch. 149 (5745MHz)
 Power during tests: full loaded batteries
 Comment 1: WLAN-Carrier monitored with spectrum-analyzer

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...757
 Setup: Full battery

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 - QPK (dB)	Limit - QPK (dBµV/m)
30.200000	20.0	1000.0	120.000	128.0	V	302.0	90.0	21.7	20.00	40.00

Date: 12.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBµV/m - 60 dBµV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB

Receiver: [ESS]

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB

Receiver: [ESS]

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:
 Test start
 Notify: "EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
 Notify: "bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
 Data Reduction: Before
 Notify: Sound (WAV file) 'tada.wav'
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"
 Final Measurements: After
 Notify: Sound (WAV file) 'tada.wav'

Diagram 8.07_Ch149_Sweep3

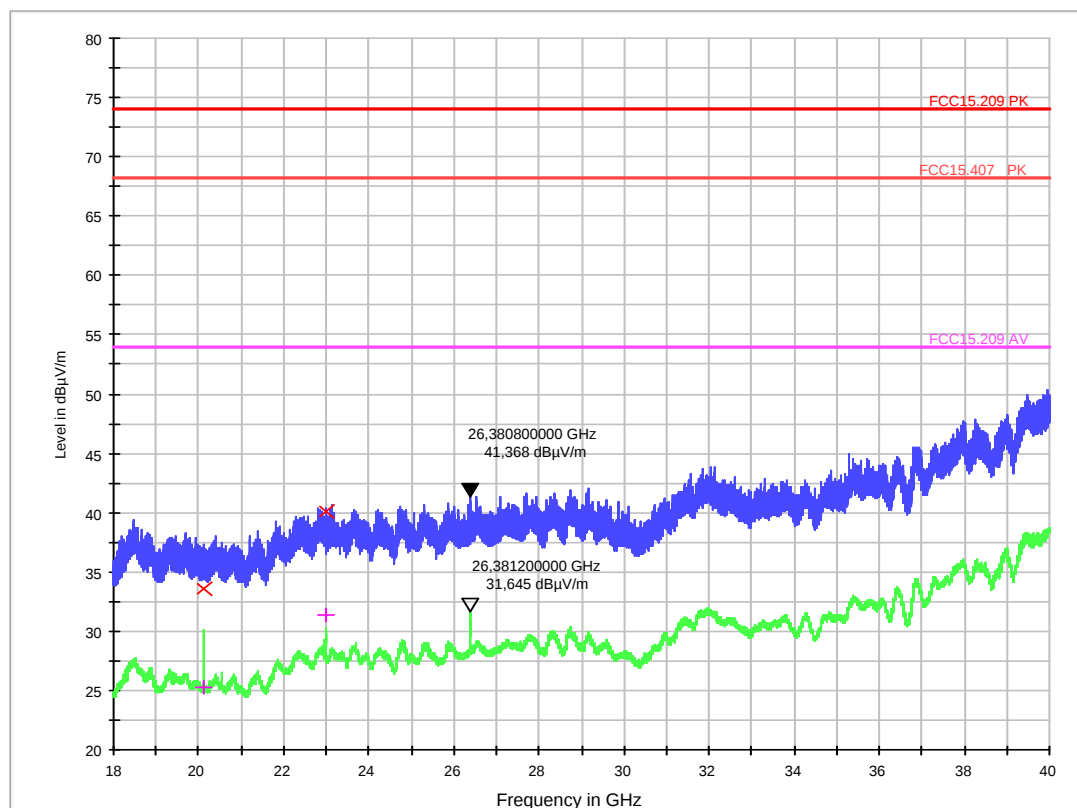
Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC Part 15.247 / 15.407
Antenna polarisation:	horizontal/vertical
Operation mode:	TX mode continuous
	5 GHz WLAN / Ch149/ 6MBps
Operator:	dpa

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401139037002
Hardware Rev:	--
Software Rev:	--
Comment:	Sample 1, Rev 2, 17-Jul-12

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup:	HW02_ESU_18-40GHz_Preamp_Cernex_Sbr_dBuV_1m
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.8. Channel 157 (g-Mode, 6Mbps)

Diagram No. 8.07_Ch157_Sweep1

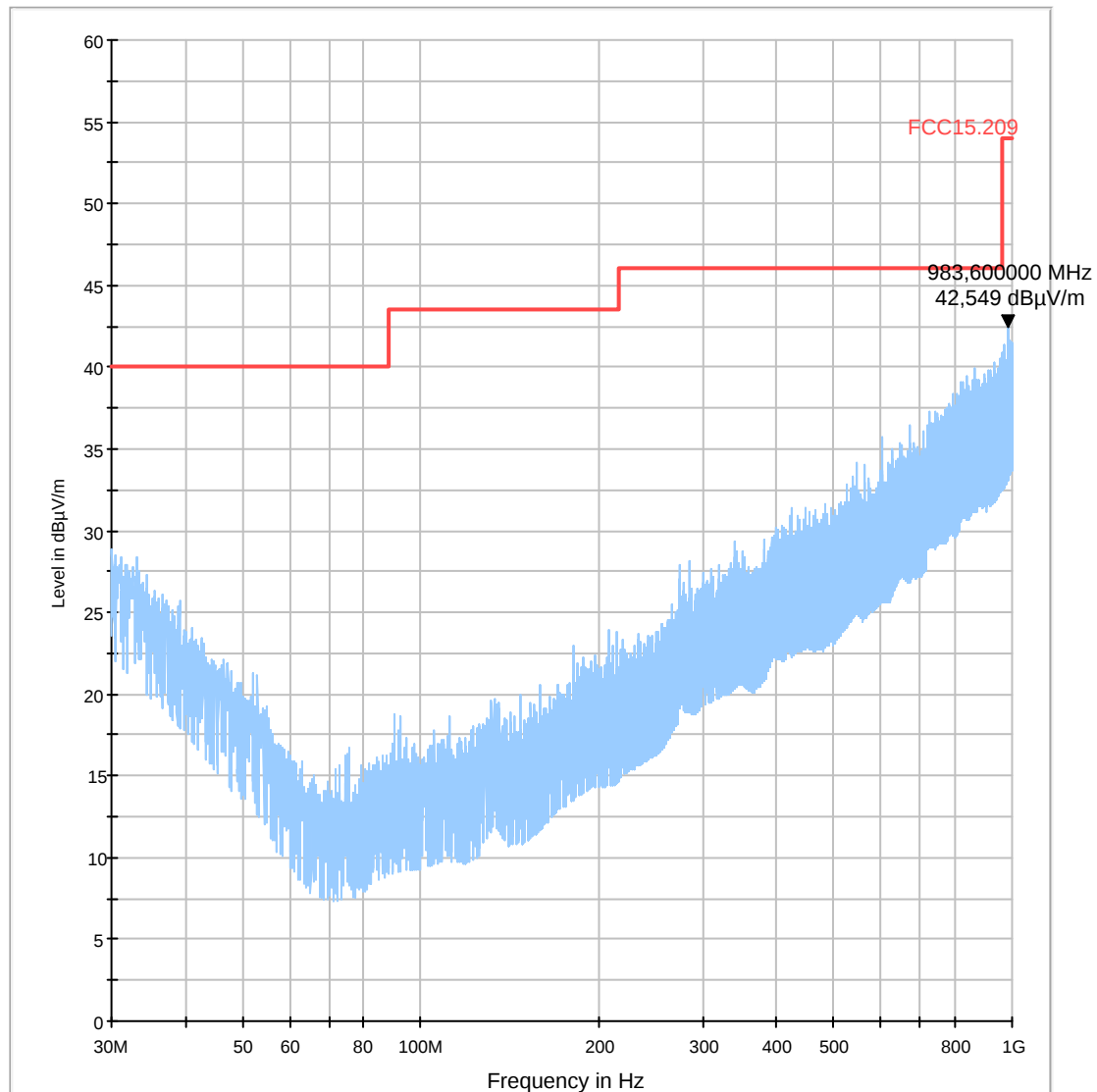
Test description: 12.06.2012 Page 1 of 2
Electric Field Strength Measurement
Test site and distance: Semi Anechoic Room (SAR) with 3 m measurement distance
Distance correction: not used
Used filter: not used
Technical Data: please see page 2 for detailed data of measurement setup
Test specification.: FCC 15.209 ; RSS-Gen: Issue 3

Operator: Lor
Operating conditions: WLAN a-Mode, High Band, Ch. 157 (5785MHz)
Power during tests: full loaded batteries
Comment 1: WLAN-Carrier monitored with spectrum-analyzer

EUT Information

EUT Name: RFG81UW
Manufacturer: RIM
IMEI: ...757
Setup: Full battery

01_FCC15.209_hor+vert_kipp



Date: 12.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB
Receiver: [ESS]					

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB
Receiver: [ESS]					

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:

Test start	
Notify:	"EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
Notify:	"bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
Data Reduction: Before	
Notify:	Sound (WAV file) 'tada.wav'
Frequency Zoom 2: Before	
Notify:	"EUT sendet noch ?"
Final Measurements: After	
Notify:	Sound (WAV file) 'tada.wav'

Diagram 8.07_Ch157_Sweep2a

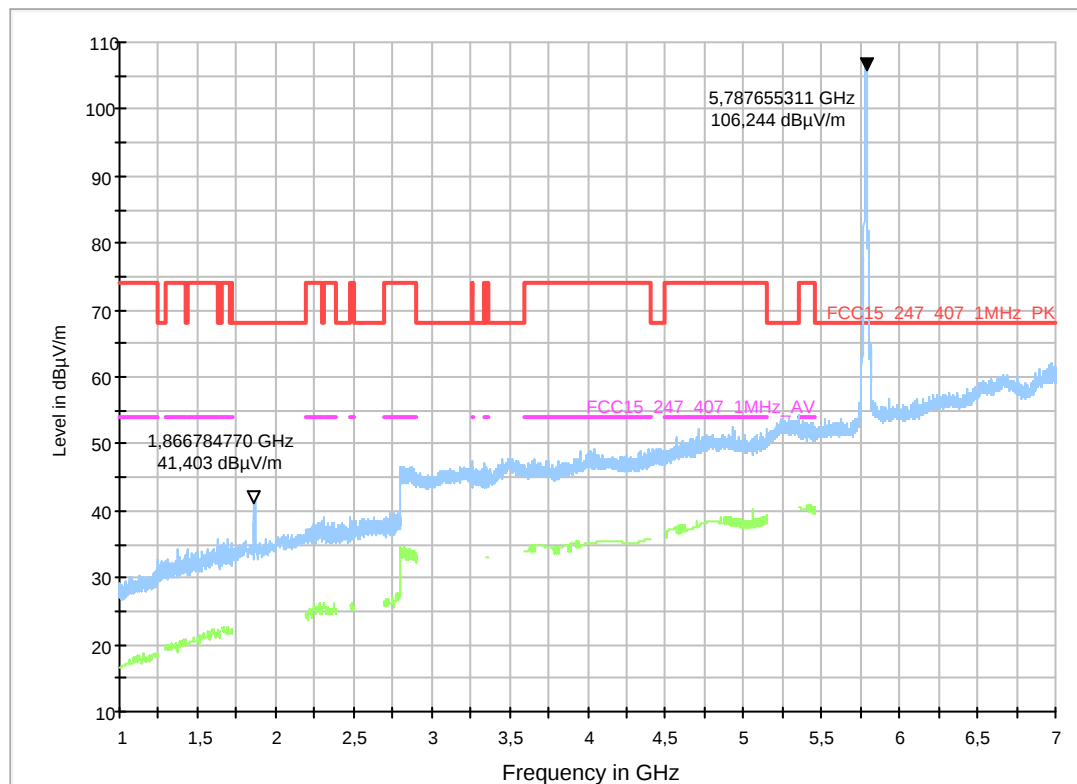
Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 157 Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	HLA

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dB μ V/m - 80 dB μ V/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction:	Interactive data reduction
Frequency Zoom:	
Zoom Sweep Template:	010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G
Adjustment:	
Template for Single Meas.:	020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan
Final Measurements:	
Template for Single Meas.:	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz)	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Report Settings:	
Report Template:	Report Setup FCC Part15.247 15.407
Create Electronic Report:	PDF
Document Name:	EMI Report
Actions:	
Test stop	
Park Accessories	

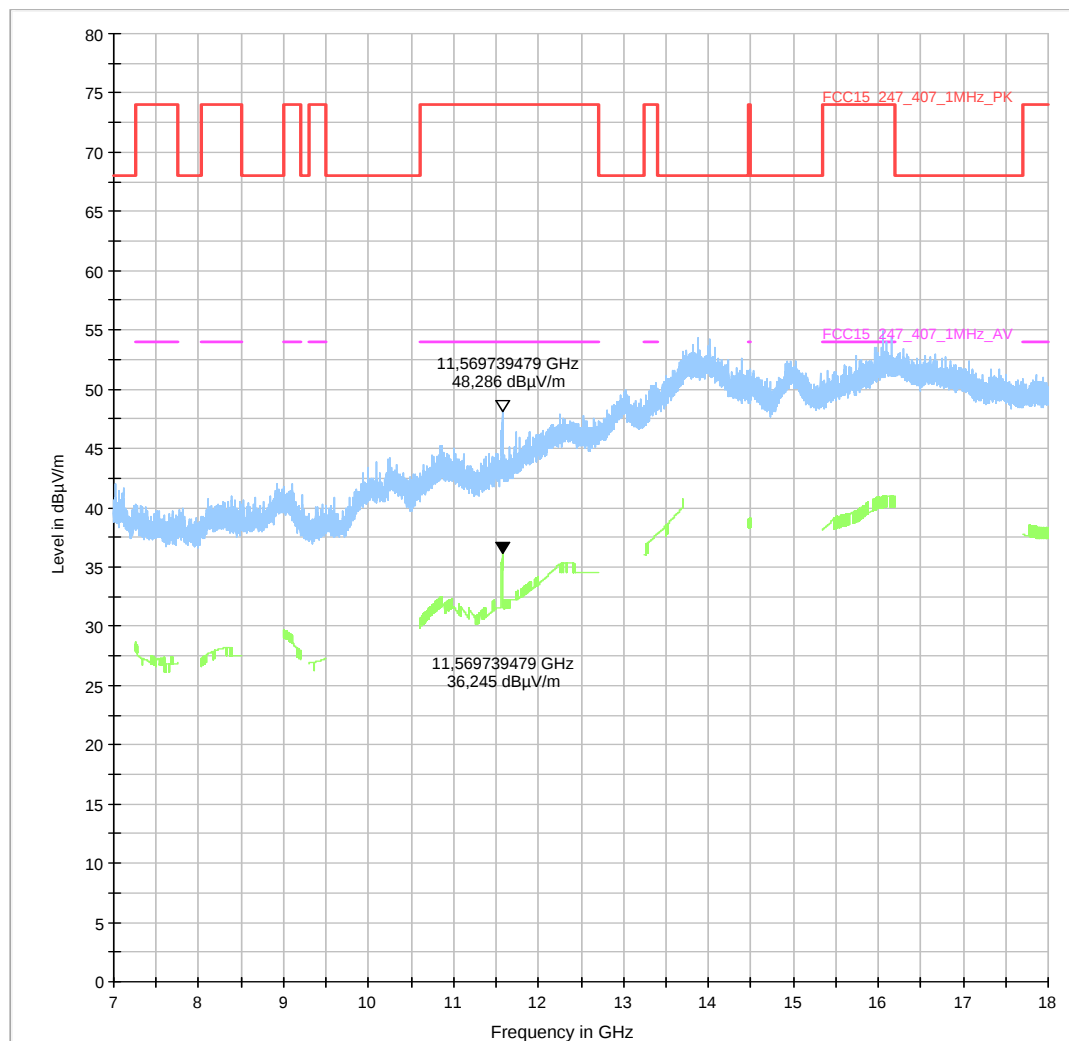
Diagram 8.07_Ch157_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 157 Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	HLA

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]
Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dBμV/m - 80 dBμV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5
After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test stop
Park Accessories

Diagram 8.07_Ch157_Sweep3

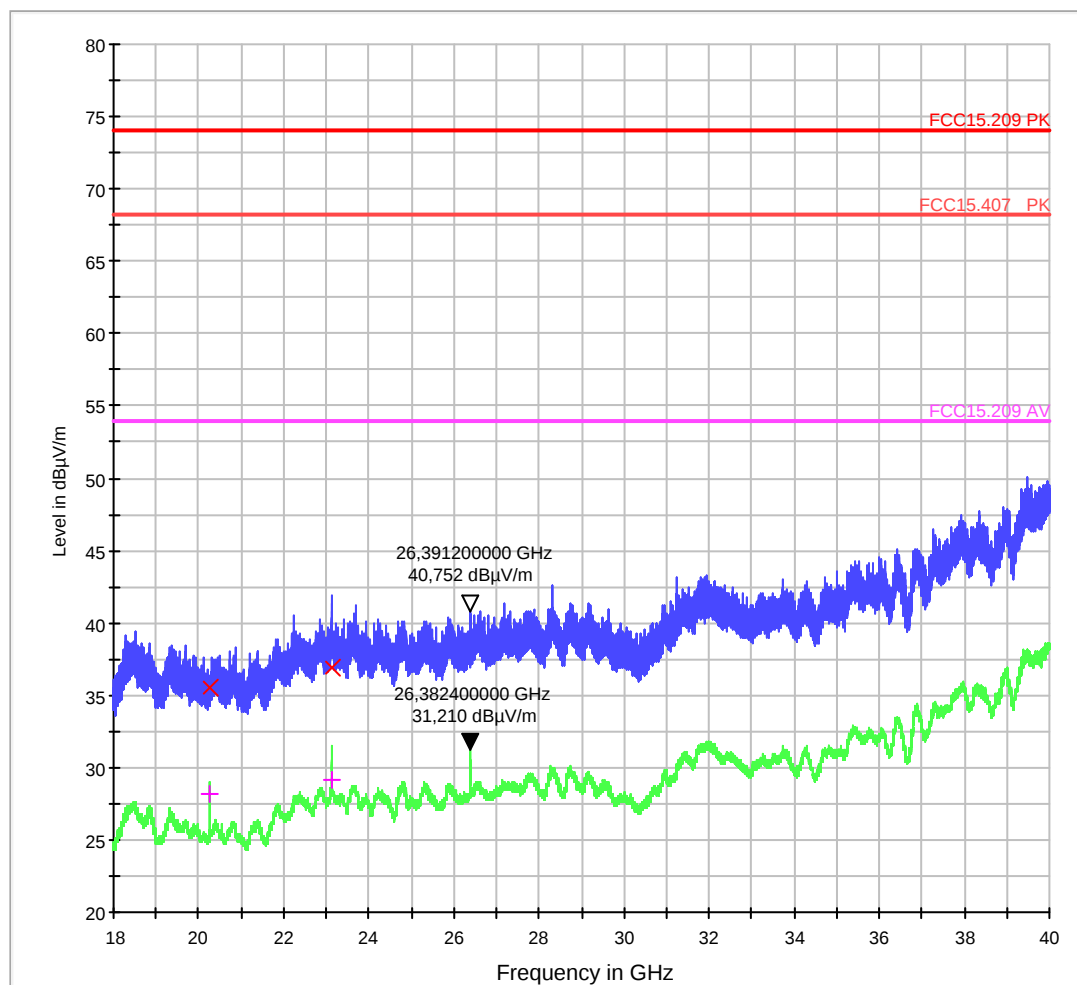
Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC Part 15.247 / 15.407
Antenna polarisation:	horizontal/vertical
Operation mode:	TX mode continuous
	5 GHz WLAN / Ch157/ 6Mbps
Operator:	dpa

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401139037002
Hardware Rev:	--
Software Rev:	--
Comment:	Sample 1, Rev 2, 17-Jul-12

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup: HW02_ESU_18-40GHz_Preamp_Cernex_Sbr_dBuV_1m
Receiver: [ESU 40]
Level Unit: dB μ V/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.9. Channel 161 (g-Mode, 6Mbps)

Diagram No. 2-0037-12-1L-8.07_Ch161_Sweep1

Test description: 12.06.2012 Page 1 of 2
 Test site and distance: Electric Field Strength Measurement
 Distance correction: Semi Anechoic Room (SAR) with 3 m measurement distance
 Used filter: not used
 Technical Data: not used
 Test specification.: please see page 2 for detailed data of measurement setup
 FCC 15.209; RSS-Gen: Issue 3

Operator: Lor
 Operating conditions: WLAN a-Mode, High Band, Ch. 161 (5805MHz)
 Power during tests: full loaded batteries
 Comment 1: Carrier monitored with spectrum-analyzer

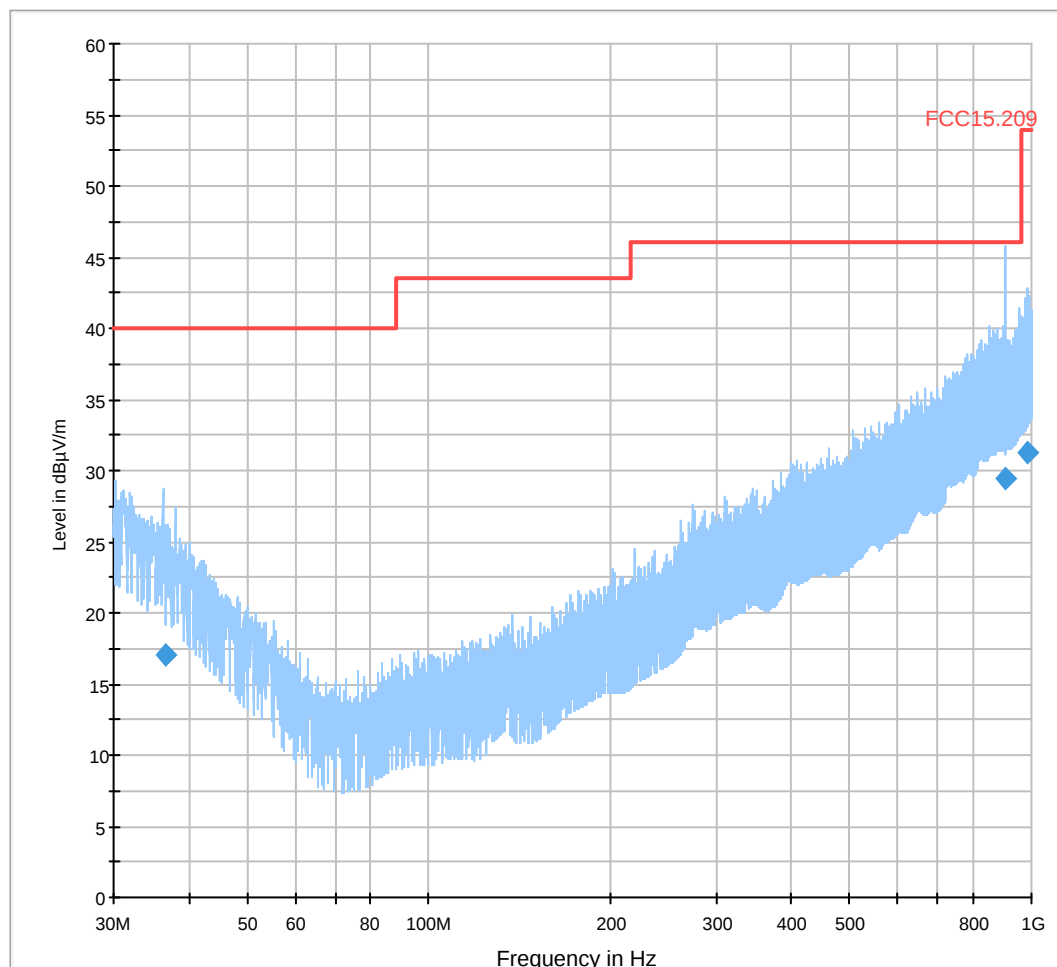
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...757
 Setup: Full battery

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
36.590000	17.1	1000.0	120.000	321.0	H	72.0	0.0	18.9	22.90	40.00
902.920000	29.4	1000.0	120.000	356.0	H	277.0	90.0	26.3	16.60	46.00
984.850000	31.2	1000.0	120.000	295.0	H	2.0	90.0	27.3	22.80	54.00

01_FCC15.209_hor+vert_kipp



Date: 12.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBµV/m - 60 dBµV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB
Receiver:	[ESS]				

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver:	[ESS]				

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver:	[ESS]				

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB
Receiver:	[ESS]				

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:
 Test start
 Notify: "EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
 Notify: "bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
 Data Reduction: Before
 Notify: Sound (WAV file) 'tada.wav'
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"
 Final Measurements: After
 Notify: Sound (WAV file) 'tada.wav'

Diagram 8.07_Ch161_Sweep2a

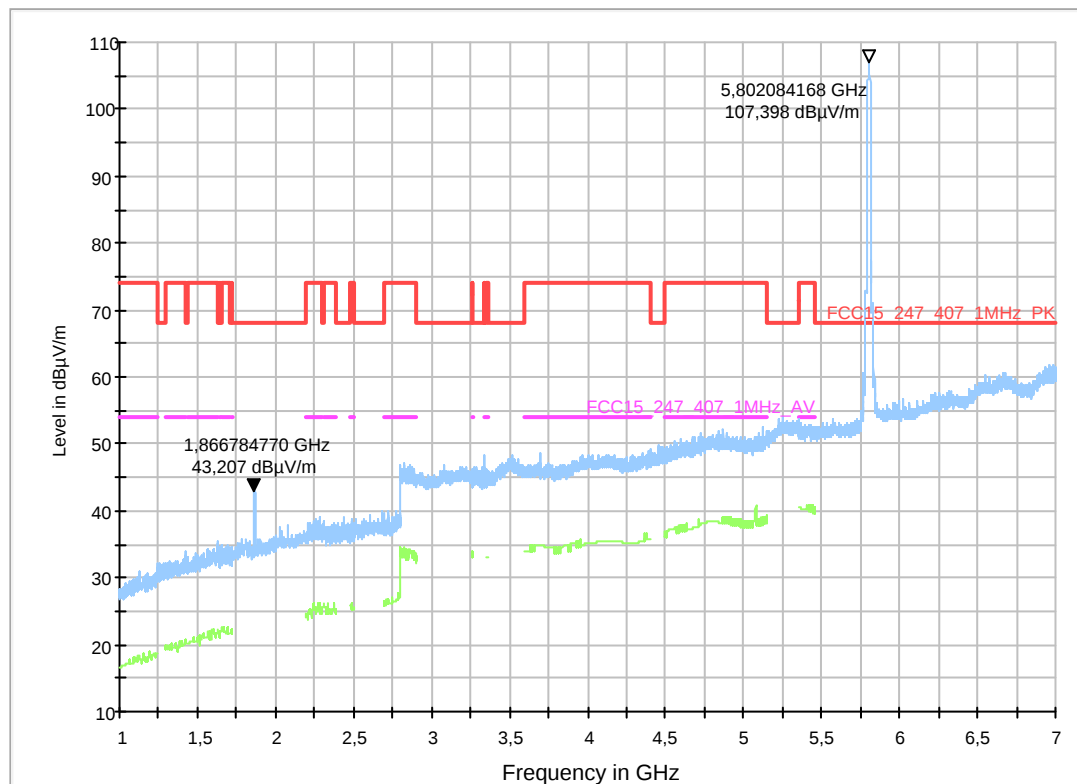
Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 161 Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	HLA

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dB μ V/m - 80 dB μ V/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction:	Interactive data reduction
Frequency Zoom:	
Zoom Sweep Template:	010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G
Adjustment:	
Template for Single Meas.:	020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan
Final Measurements:	
Template for Single Meas.:	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz)	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Report Settings:	
Report Template:	Report Setup FCC Part15.247 15.407
Create Electronic Report:	PDF
Document Name:	EMI Report
Actions:	
Test stop	
Park Accessories	

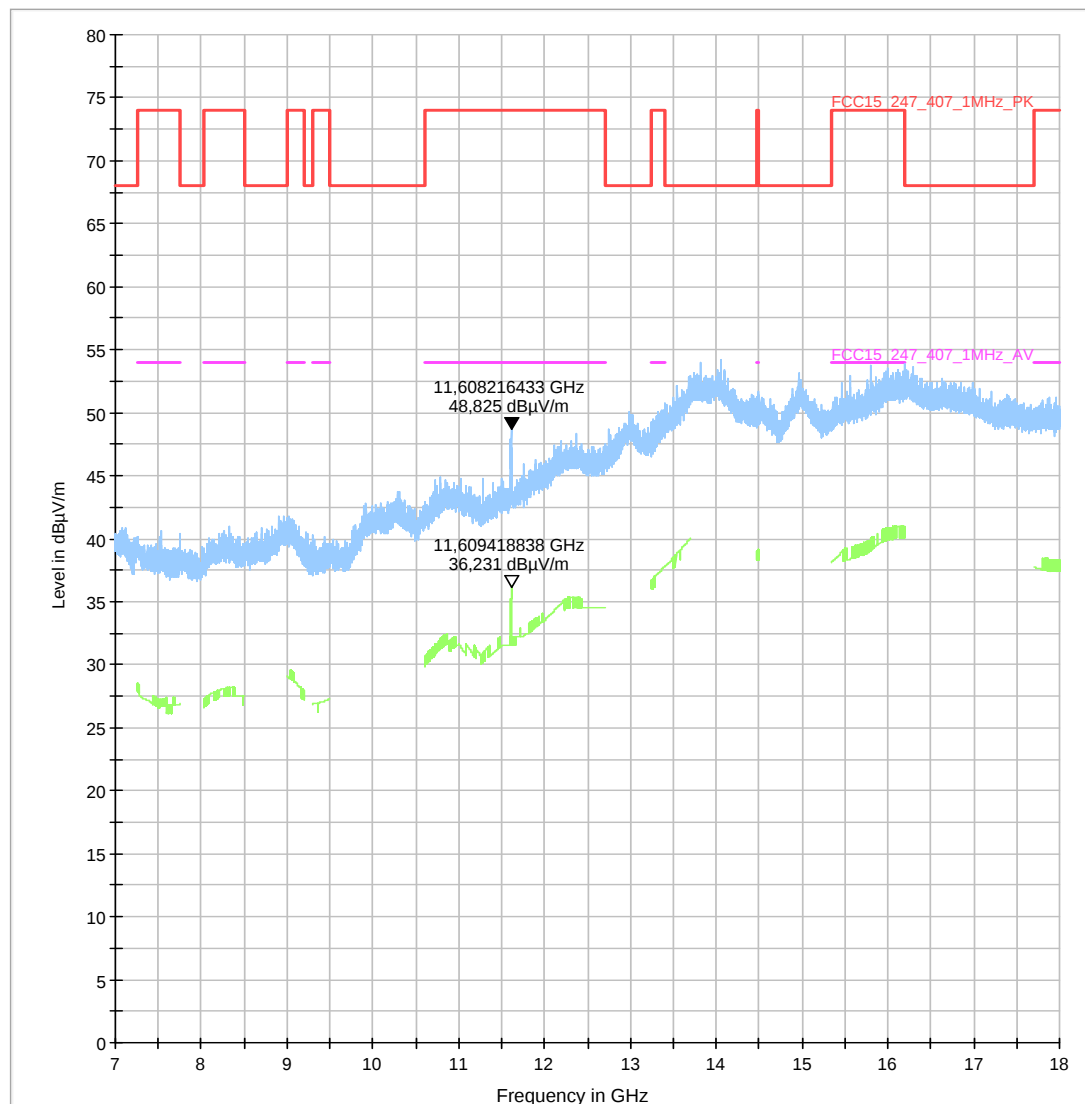
Diagram 8.07_Ch161_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 161 Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	HLA

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dB μ V/m - 80 dB μ V/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction:	Interactive data reduction
Frequency Zoom:	
Zoom Sweep Template:	010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G
Adjustment:	
Template for Single Meas.:	020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan
Final Measurements:	
Template for Single Meas.:	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz)	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Report Settings:	
Report Template:	Report Setup FCC Part15.247 15.407
Create Electronic Report:	PDF
Document Name:	EMI Report
Actions:	
Test stop	
Park Accessories	

Diagram 8.07_Ch161_Sweep3

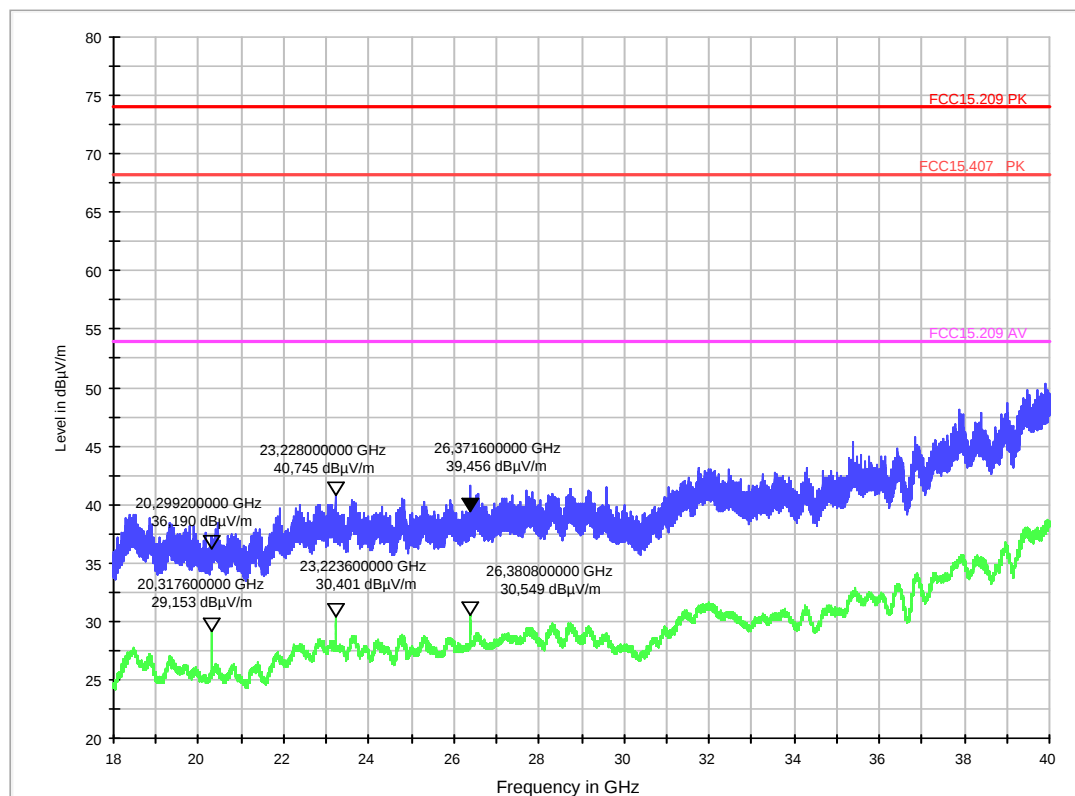
Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC Part 15.247 / 15.407
Antenna polarisation:	horizontal/vertical
Operation mode:	TX mode continuous
	5 GHz WLAN / Ch161/ 6MBps
Operator:	dpa

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401139037002
Hardware Rev:	--
Software Rev:	--
Comment:	Sample 1, Rev 2, 17-Jul-12

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup:	HW02_ESU_18-40GHz_Preamp_Cernex_Sbr_dBuV_1m
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.10. Channel 36 (n-Mode, MCS0)

Diagram No. 8.08_Ch36_Sweep1

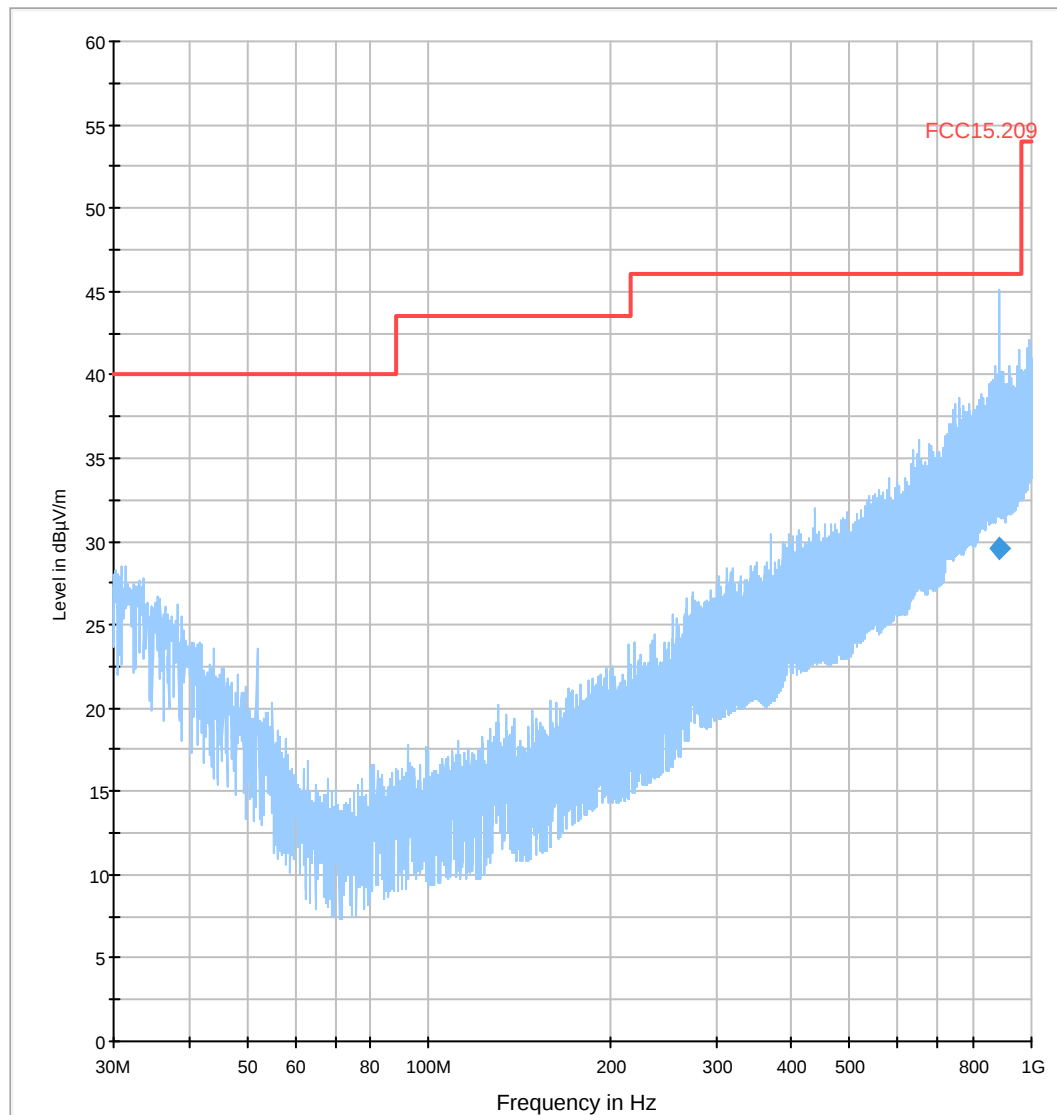
Test description: 12.06.2012 Page 1 of 2
Test site and distance: Electric Field Strength Measurement
Distance correction: Semi Anechoic Room (SAR) with 3 m measurement distance
Used filter: not used
Technical Data: please see page 2 for detailed data of measurement setup
Test specification.: FCC 15.209 ; RSS-Gen: Issue 3

Operator: OOU
Operating conditions: WLAN n-Mode, MCS0, Ch. 36 (5180MHz)
Power during tests: full loaded batteries
Comment 1: WLAN-Carrier monitored with spectrum-analyzer

EUT Information

EUT Name: RFG81UW
Manufacturer: RIM
IMEI: ...757
Setup: Full battery

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 - QPK (dB)	Limit - QPK (dBµV/m)
885.570000	29.6	1000.0	120.000	160.0	H	190.0	0.0	26.3	16.40	46.00

Date: 12.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBµV/m - 60 dBµV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB

Receiver: [ESS]

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB

Receiver: [ESS]

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:
 Test start
 Notify: "EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
 Notify: "bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
 Data Reduction: Before
 Notify: Sound (WAV file) 'tada.wav'
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"
 Final Measurements: After
 Notify: Sound (WAV file) 'tada.wav'

Diagram 8.08_Ch36_Sweep2a

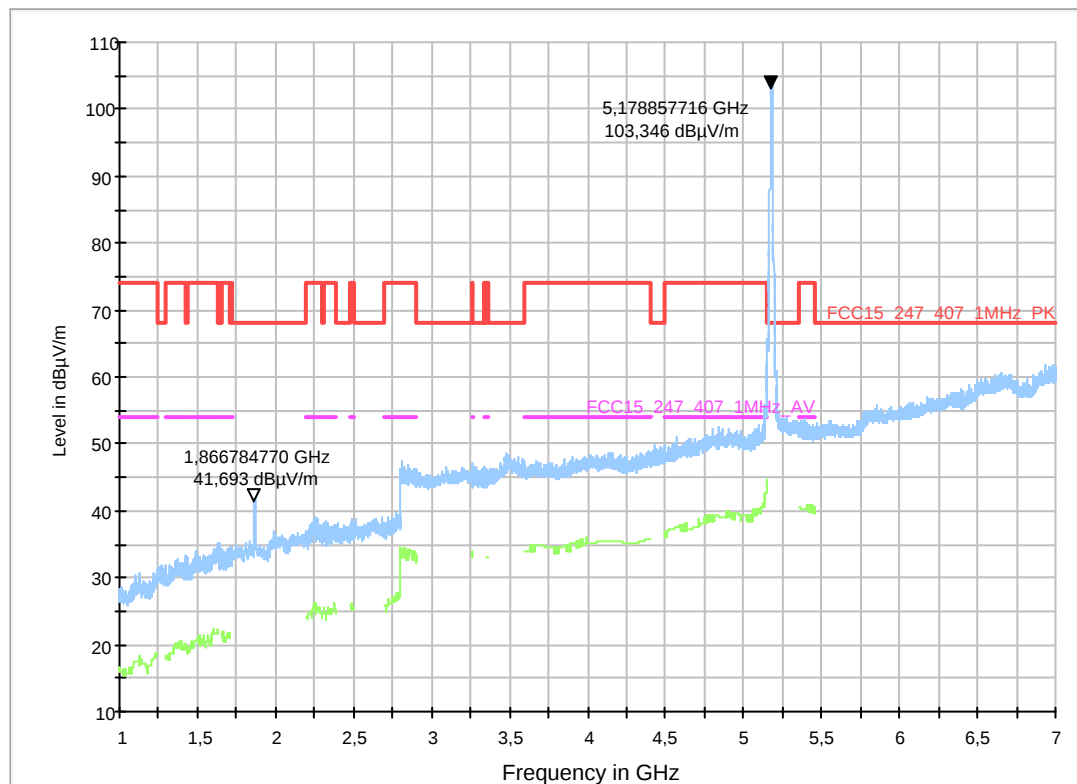
Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 36 Data rate MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	HLA

EUT Information

Manufacturer:	Research In Motion Limited
Type:	Sample 1
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dB μ V/m - 80 dB μ V/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction:	Interactive data reduction
Frequency Zoom:	
Zoom Sweep Template:	010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G
Adjustment:	
Template for Single Meas.:	020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan
Final Measurements:	
Template for Single Meas.:	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz)	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Report Settings:	
Report Template:	Report Setup FCC Part15.247 15.407
Create Electronic Report:	PDF
Document Name:	EMI Report
Actions:	
Test stop	
Park Accessories	

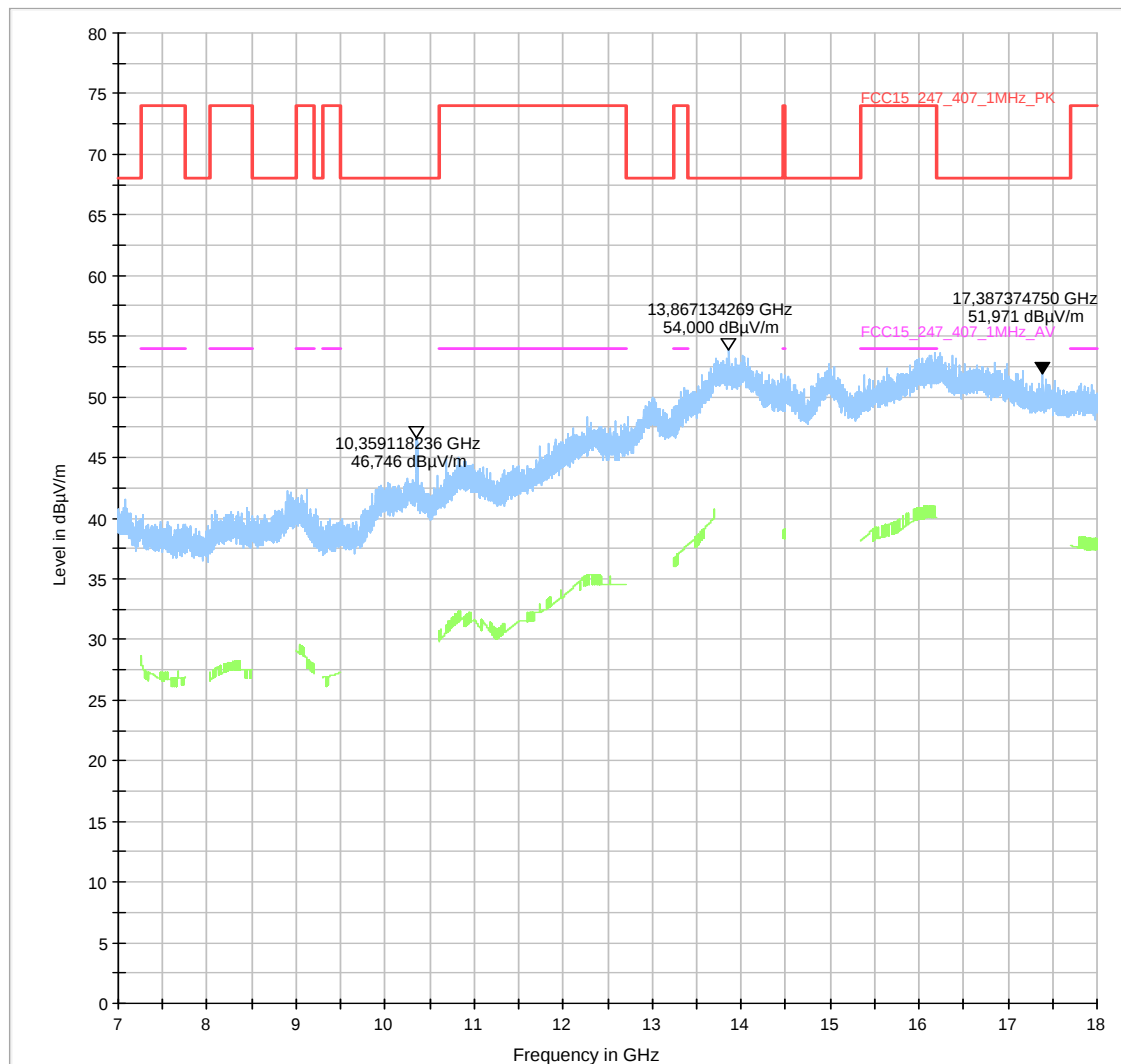
Diagram 8.08_Ch36_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 36; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	tas

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030453_FCC_Part15.247-15.407_RSE_WLAN_802.11a_7G-18G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 7 GHz - 18 GHz

Graphics Level Range: 0 dBμV/m - 80 dBμV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test start
Notify: "Messentfernung 1m ?"
Test stop
Park Accessories

Diagram No.: 8.08_Ch36_Sweep3

Common Information

Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: FCC Part 15.247 / 15.407
 Antenna polarisation: horizontal/vertical

Operator Name: Lor
 Op. Mode: 5 GHz WLAN / Ch36/ MCS0

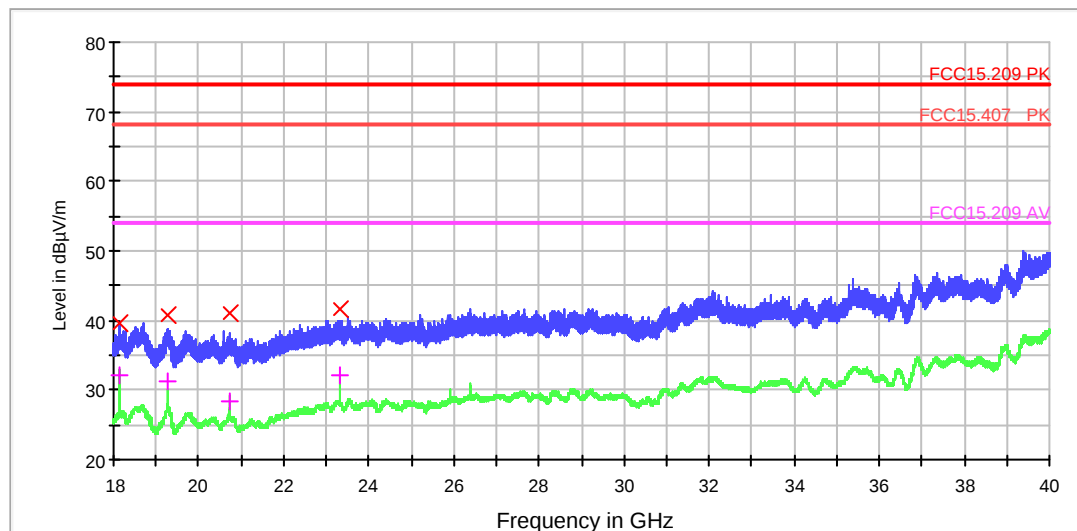
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #1118422047
 Hardware Rev: --
 Software Rev: --
 Comment: Unit 1

Result Table_Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
18130.000000	39.6	32.2	20.0	1000.000	0.0	H	0.0	-12.8
19276.400000	40.8	31.2	20.0	1000.000	0.0	H	0.0	-13.5
20720.000000	41.1	28.4	20.0	1000.000	0.0	H	0.0	-14.8
23310.000000	41.7	32.1	20.0	1000.000	0.0	H	0.0	-13.9

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup: HW02_ESU_18-40GHz
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.11. Channel 48 (n-Mode, MCS0)

Diagram No. 8.08_Ch48_Sweep1

13.06.2012 Page 1 of 2
 Test description: Electric Field Strength Measurement
 Test site and distance: Semi Anechoic Room (SAR) with 3 m measurement distance
 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 n-Mode, MCS0, Ch. 48 (5240MHz)
 Power during tests: full loaded batteries
 Comment 1: WLAN-Carrier monitored with spectrum-analyzer

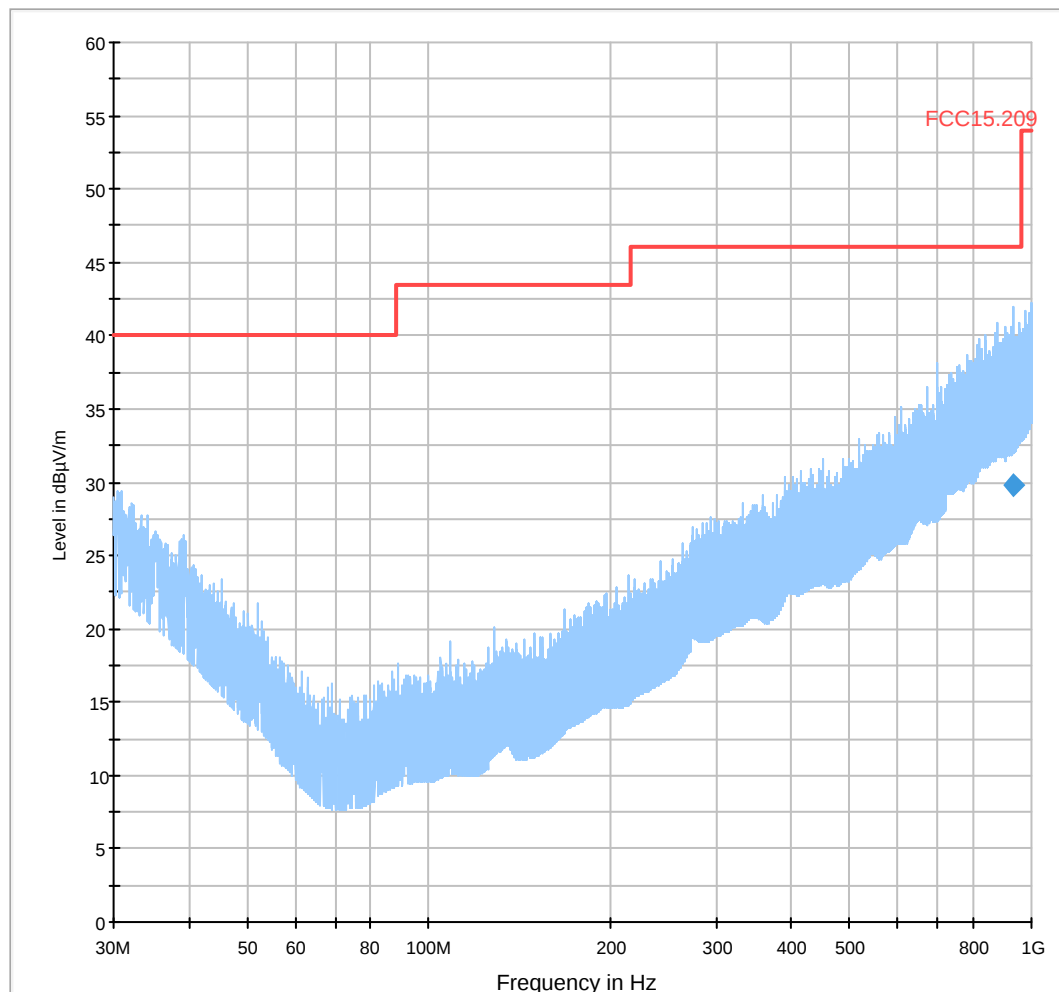
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...435
 Setup: Full battery

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
933.130000	29.8	1000.0	120.000	187.0	H	249.0	0.0	26.5	16.20	46.00

01_FCC15.209_hor+vert_kipp



Date: 13.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB
Receiver: [ESS]					

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB
Receiver: [ESS]					

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:

Test start	
Notify:	"EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
Notify:	"bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
Data Reduction: Before	
Notify:	Sound (WAV file) 'tada.wav'
Frequency Zoom 2: Before	
Notify:	"EUT sendet noch ?"
Final Measurements: After	
Notify:	Sound (WAV file) 'tada.wav'

Diagram 8.08_Ch48_Sweep2a

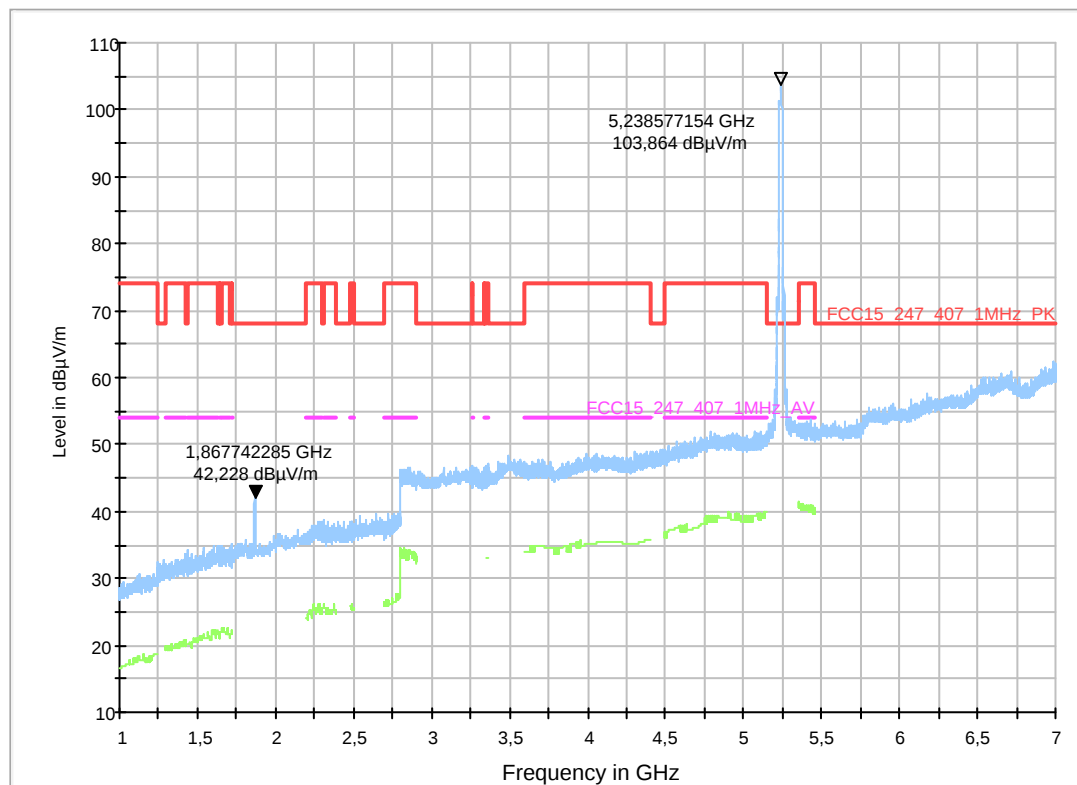
Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11n-mode, continuously tx on channel 48 Data rate 6Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	HLA

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 1 GHz - 7 GHz

Graphics Level Range: 20 dBμV/m - 80 dBμV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction:	Interactive data reduction
Frequency Zoom:	
Zoom Sweep Template:	010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G
Adjustment:	
Template for Single Meas.:	020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan
Final Measurements:	
Template for Single Meas.:	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz)	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Report Settings:	
Report Template:	Report Setup FCC Part15.247 15.407
Create Electronic Report:	PDF
Document Name:	EMI Report
Actions:	
Test stop	
Park Accessories	

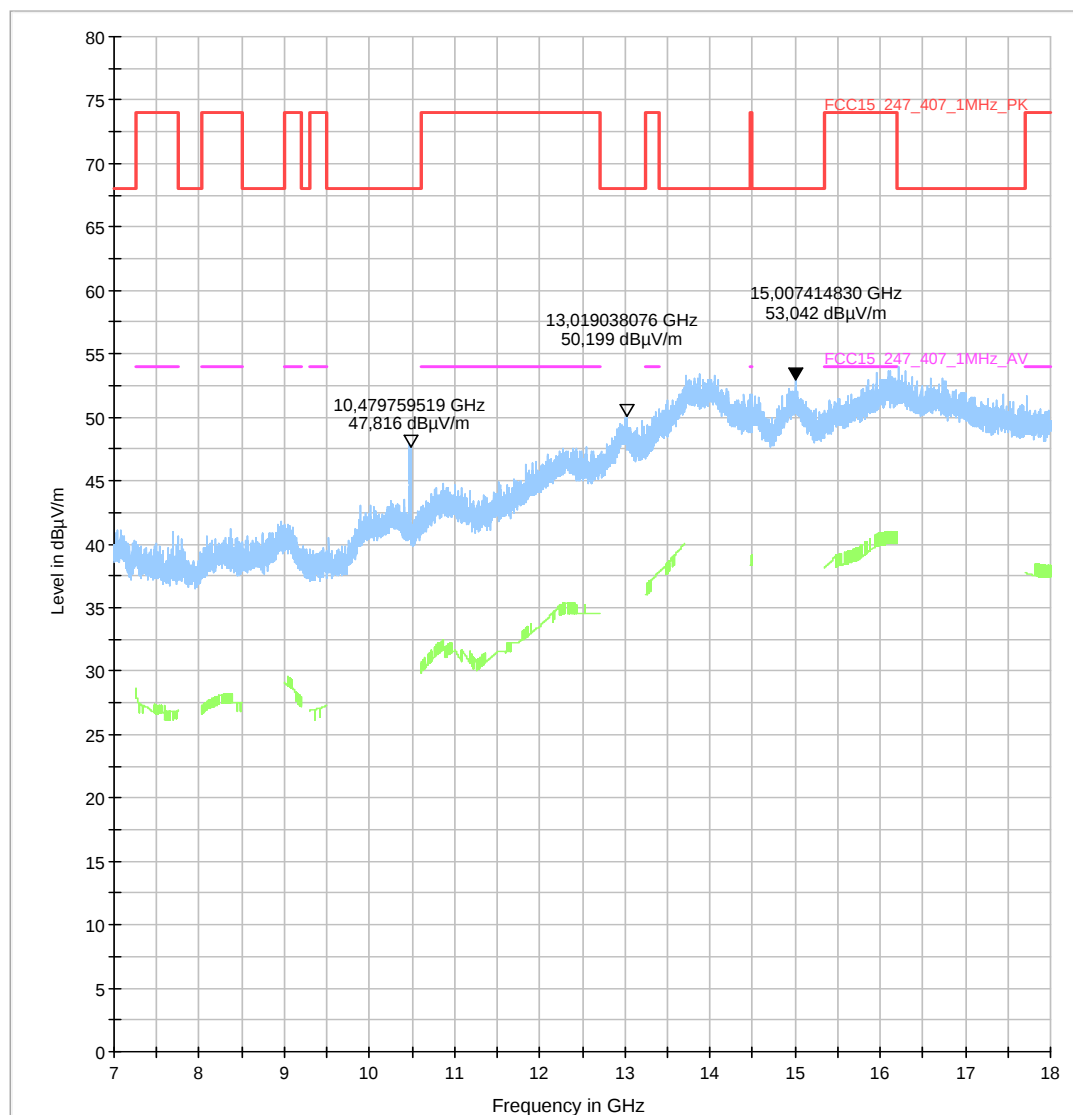
Diagram 8.08_Ch48_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 48; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	tas

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030453_FCC_Part15.247-15.407_RSE_WLAN_802.11a_7G-18G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 7 GHz - 18 GHz

Graphics Level Range: 0 dBμV/m - 80 dBμV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test start
Notify: "Messentfernung 1m ?"
Test stop
Park Accessories

Diagram No.: 8.08_Ch48_Sweep3

Common Information

Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: FCC Part 15.247 / 15.407
 Antenna polarisation: horizontal/vertical

Operator Name: Lor
 Op. Mode: 5 GHz WLAN / Ch48/ MCS0

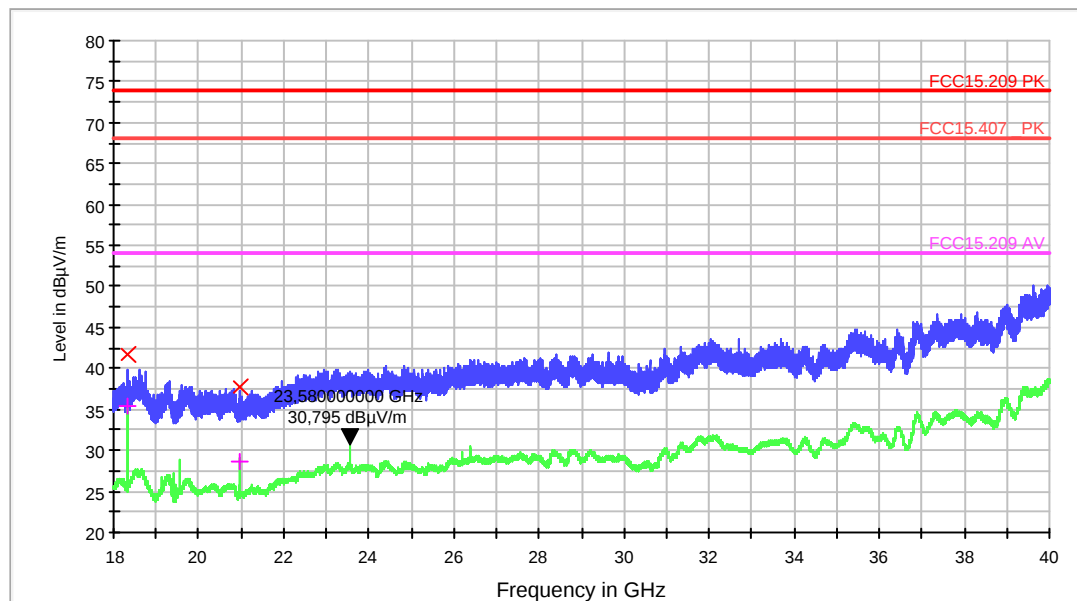
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #1118422047
 Hardware Rev: --
 Software Rev: --
 Comment: Unit 1

Result Table Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
18340.000000	41.7	35.3	20.0	1000.000	0.0	H	0.0	-12.0
20960.000000	37.8	28.7	20.0	1000.000	0.0	H	0.0	-15.0

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup: HW02_ESU_18-40GHz
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamplifier
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.12. Channel 64 (n-Mode, MCS0)

Diagram No. 8.08_Ch64_Sweep1

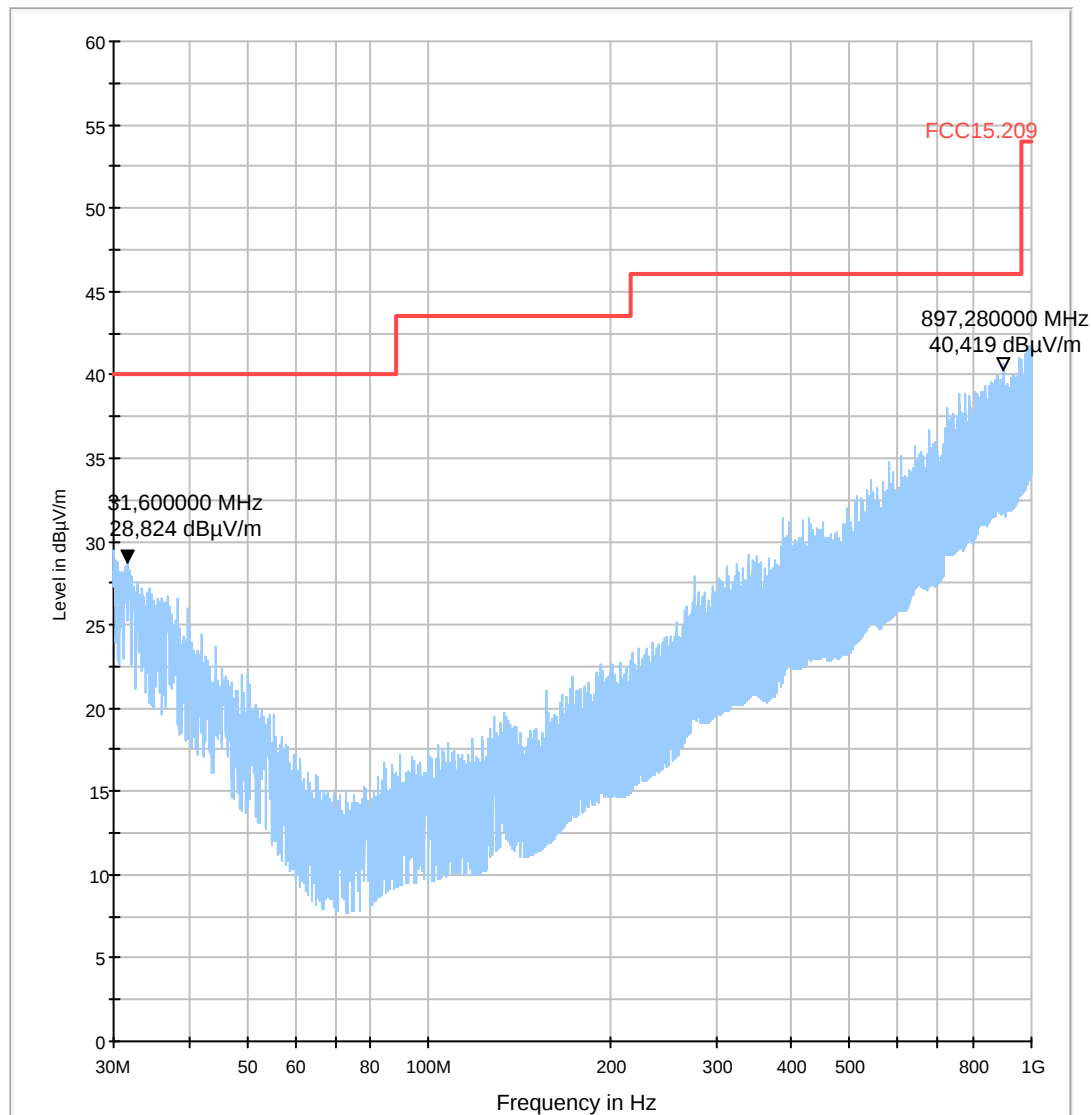
Test description: 13.06.2012 Page 1 of 2
 Test site and distance: Electric Field Strength Measurement
 Distance correction: Semi Anechoic Room (SAR) with 3 m measurement distance
 Used filter: not used
 Technical Data: please see page 2 for detailed data of measurement setup
 Test specification.: FCC 15.209; RSS-Gen: Issue 3

Operator: Lor
 Operating conditions: WLAN n-Mode, MCS0, Ch. 64 (5320MHz)
 Power during tests: full loaded batteries
 Comment 1: WLAN-Carrier monitored with spectrum-analyzer

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...435
 Setup: Full battery

01_FCC15.209_hor+vert_kipp



Date: 13.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB
Receiver: [ESS]					

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB
Receiver: [ESS]					

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:

Test start	
Notify:	"EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
Notify:	"bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
Data Reduction: Before	
Notify:	Sound (WAV file) 'tada.wav'
Frequency Zoom 2: Before	
Notify:	"EUT sendet noch ?"
Final Measurements: After	
Notify:	Sound (WAV file) 'tada.wav'

Diagram 8.08_Ch64_Sweep2a

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 64 Data rate MCS0 Mbps
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	Tas

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

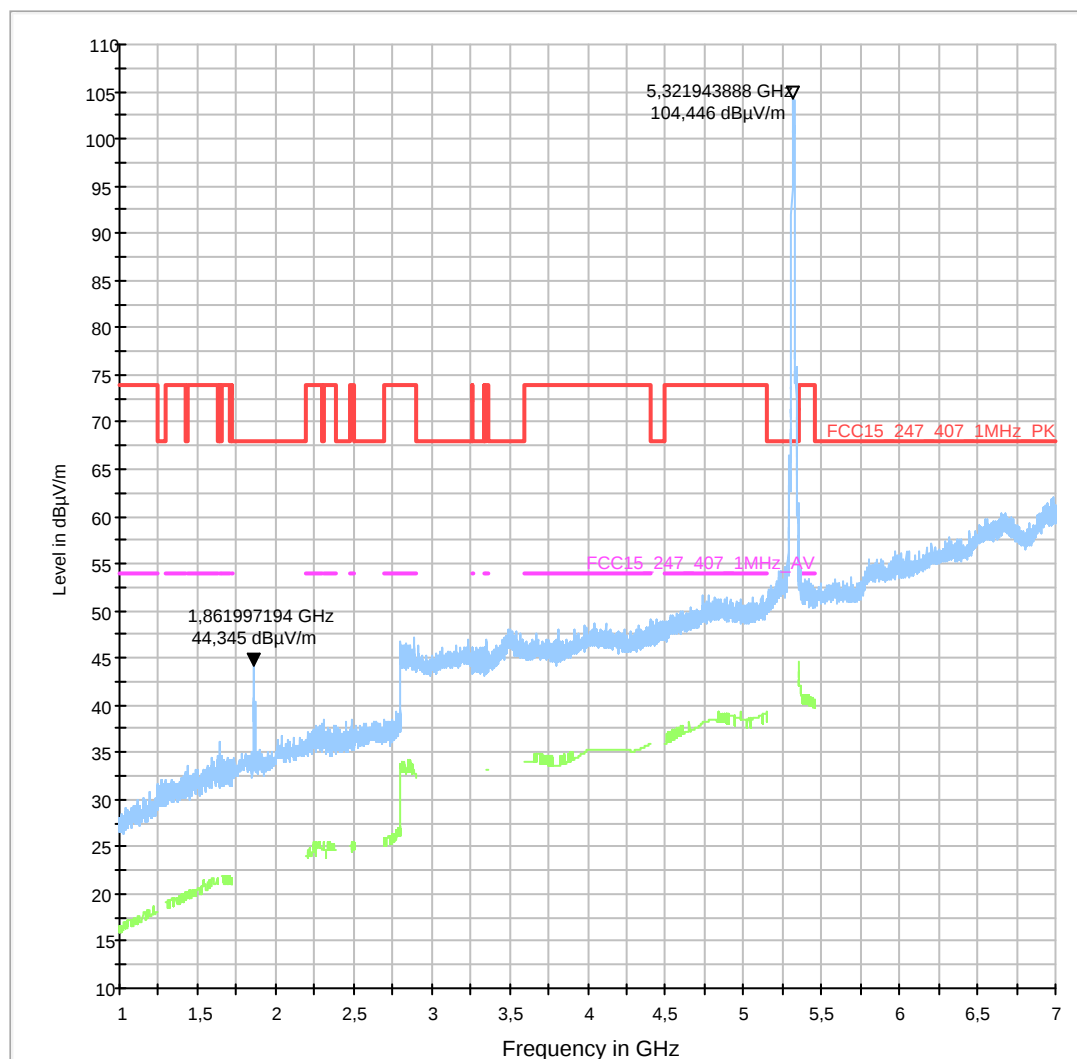


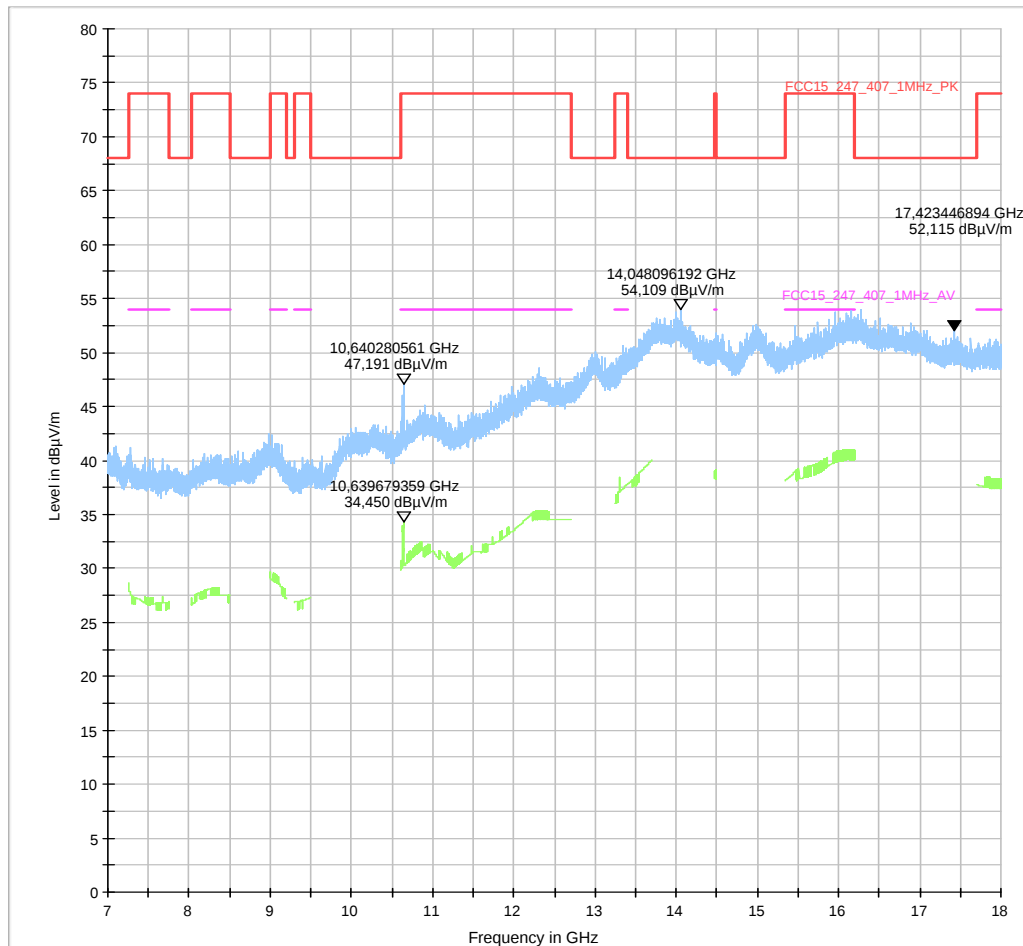
Diagram 8.08_Ch64_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 64; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	tas

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030453_FCC_Part15.247-15.407_RSE_WLAN_802.11a_7G-18G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 7 GHz - 18 GHz

Graphics Level Range: 0 dBμV/m - 80 dBμV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test start
Notify: "Messentfernung 1m ?"
Test stop
Park Accessories

Diagram No.: 8.08_Ch64_Sweep3

Common Information

Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: FCC Part 15.247 / 15.407
 Antenna polarisation: horizontal/vertical

Operator Name: Lor
 Op. Mode: 5 GHz WLAN / Ch64/ MCS0

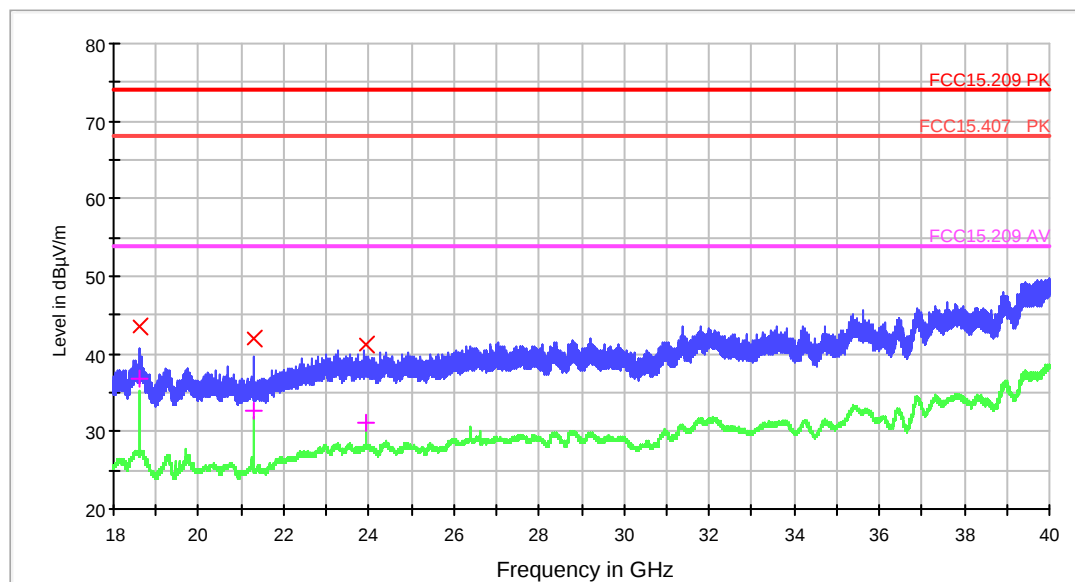
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #1118422047
 Hardware Rev: --
 Software Rev: --
 Comment: Unit 1

Result Table_Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
21280.000000	42.0	32.8	20.0	1000.000	0.0	H	0.0	-15.1
23940.000000	41.3	31.0	20.0	1000.000	0.0	H	0.0	-14.0
18620.000000	43.4	36.7	20.0	1000.000	0.0	H	0.0	-11.9

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup: HW02_ESU_18-40GHz
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.13. Channel 100 (n-Mode, MCS0)

Diagram No. 8.08_Ch100_Sweep1

13.06.2012 Page 1 of 2
 Electric Field Strength Measurement
 Semi Anechoic Room (SAR) with 3 m measurement distance
 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 n-Mode, MCS0, Ch.100 (5500MHz)
 Power during tests: full loaded batteries
 Comment 1: WLAN-Carrier monitored with spectrum-analyzer

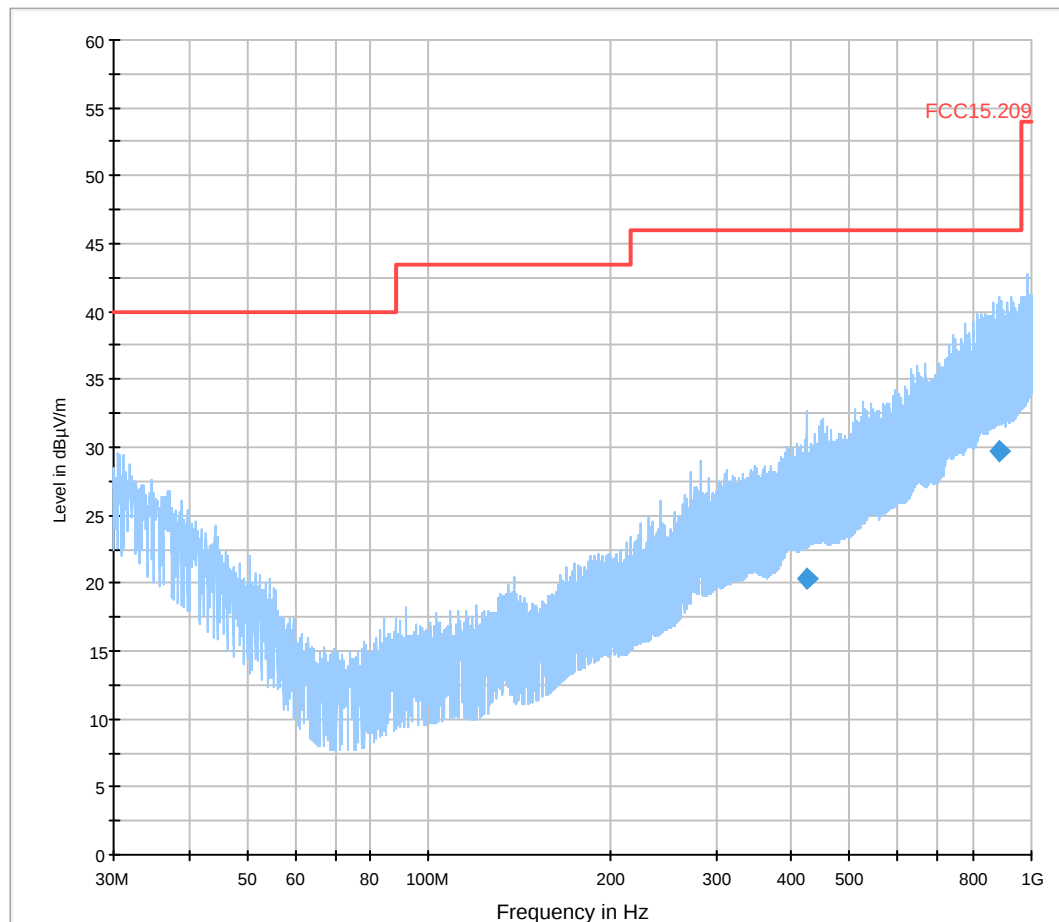
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...435
 Setup: Full battery

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
424.560000	20.3	1000.0	120.000	360.0	V	349.0	90.0	19.0	25.70	46.00
886.700000	29.7	1000.0	120.000	154.0	H	87.0	90.0	26.3	16.30	46.00

01_FCC15.209_hor+vert_kipp



Date: 13.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB
Receiver: [ESS]					

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB
Receiver: [ESS]					

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:

Test start	
Notify:	"EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
Notify:	"bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
Data Reduction: Before	
Notify:	Sound (WAV file) 'tada.wav'
Frequency Zoom 2: Before	
Notify:	"EUT sendet noch ?"
Final Measurements: After	
Notify:	Sound (WAV file) 'tada.wav'

Diagram 8.08_Ch100_Sweep2a

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 100 Data rate MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

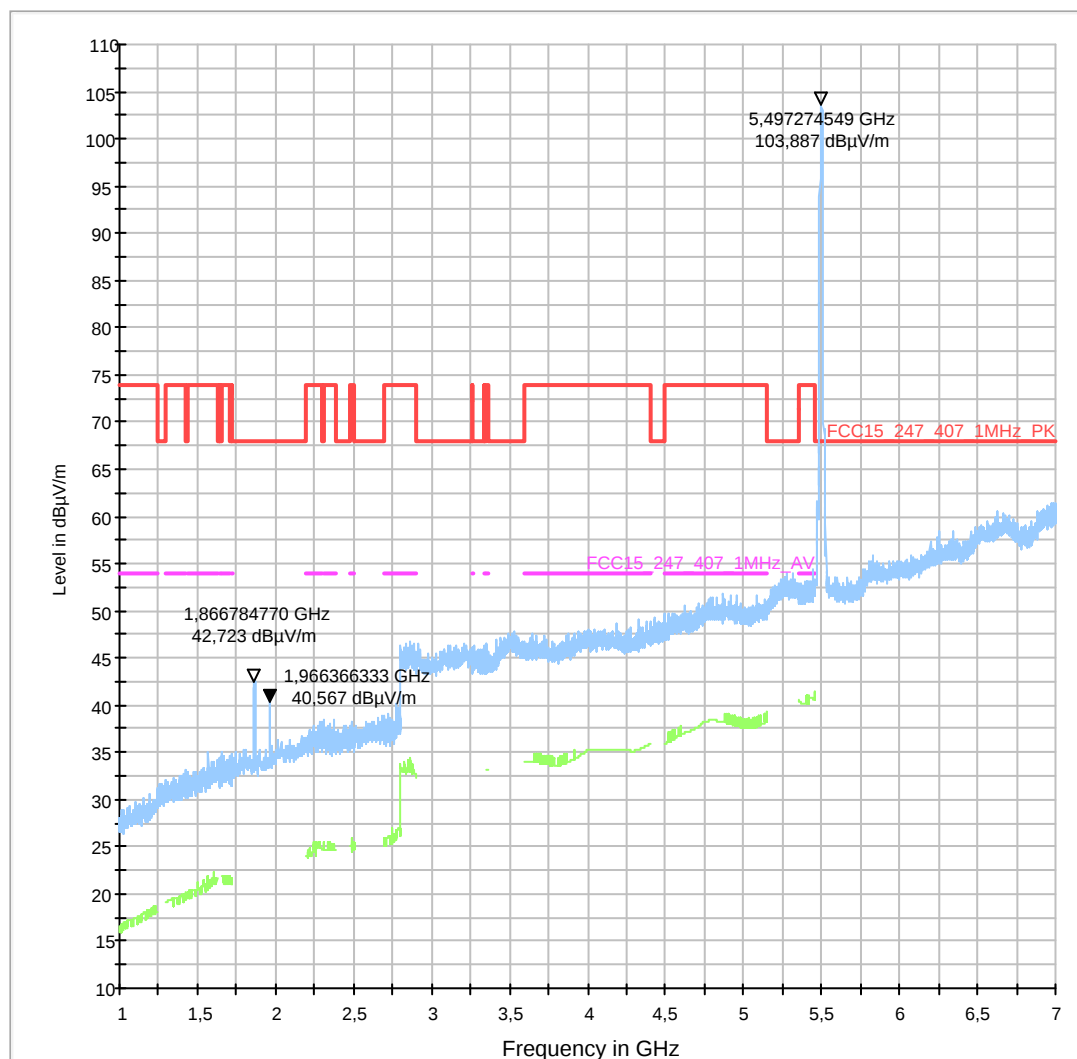


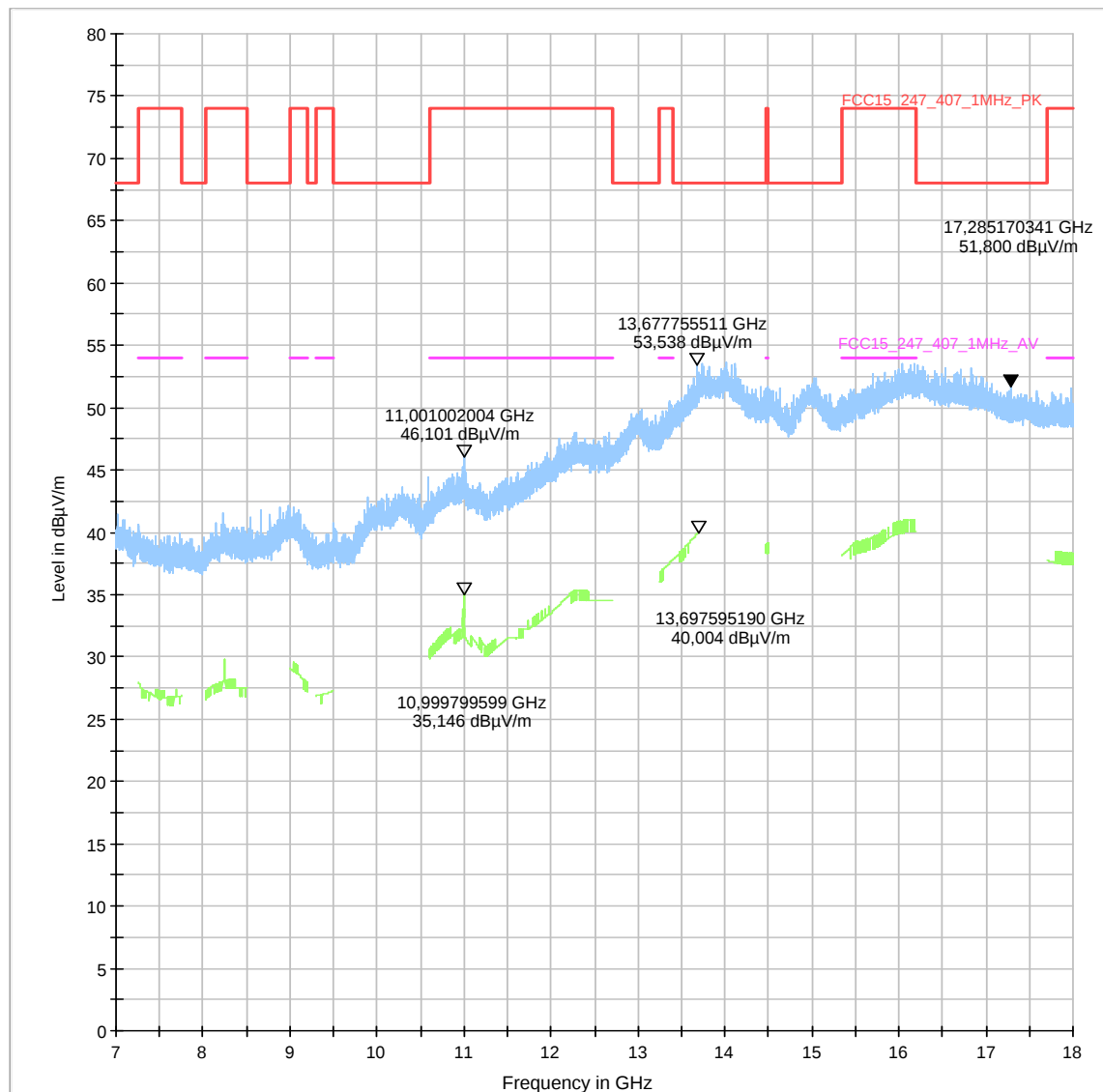
Diagram 8.08_Ch100_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 100; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	tas

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030453_FCC_Part15.247-15.407_RSE_WLAN_802.11a_7G-18G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 7 GHz - 18 GHz

Graphics Level Range: 0 dBμV/m - 80 dBμV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test start
Notify: "Messentfernung 1m ?"
Test stop
Park Accessories

Diagram No.: 8.08_Ch100_Sweep3

Common Information

Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: FCC Part 15.247 / 15.407
 Antenna polarisation: horizontal/vertical

Operator Name: Lor
 Op. Mode: 5 GHz WLAN / Ch100/ MCS0

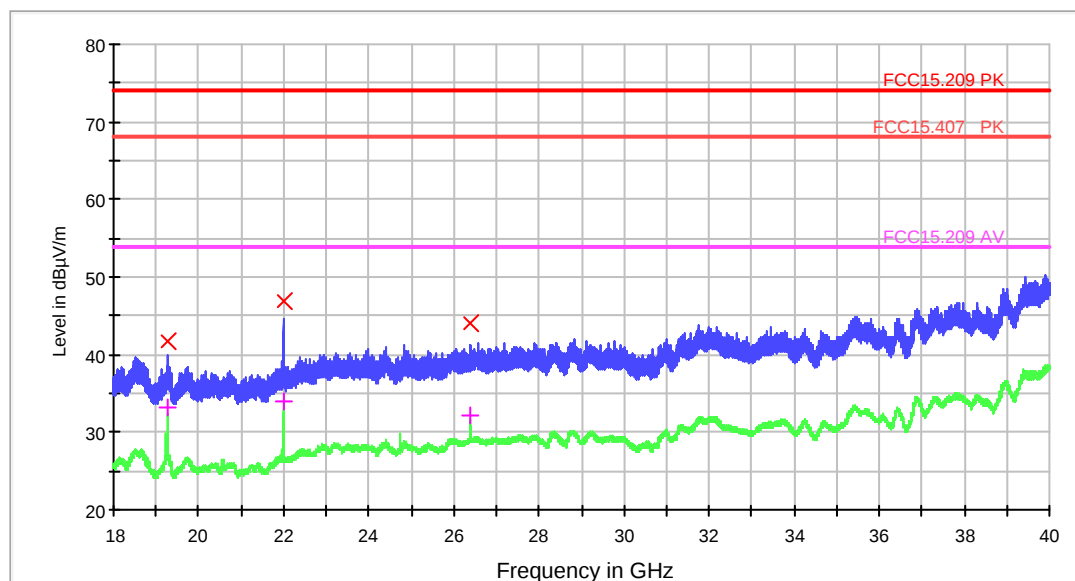
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #1118422047
 Hardware Rev: --
 Software Rev: --
 Comment: Unit 1

Result Table_Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
26372.400000	44.1	32.1	20.0	1000.000	0.0	H	0.0	-13.4
22000.000000	46.9	34.1	20.0	1000.000	0.0	H	0.0	-14.5
19250.000000	41.6	33.1	20.0	1000.000	0.0	H	0.0	-13.5

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup: HW02_ESU_18-40GHz
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.14. Channel 120 (n-Mode, MCS0)

Diagram No. 8.08_Ch120_Sweep1

Test description: 13.06.2012 Page 1 of 2
 Test site and distance: Electric Field Strength Measurement
 Distance correction: Semi Anechoic Room (SAR) with 3 m measurement distance
 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 n-Mode, MCS0, Ch.120 (5600MHz)
 Power during tests: full loaded batteries
 Comment 1: WLAN-Carrier monitored with spectrum-analyzer

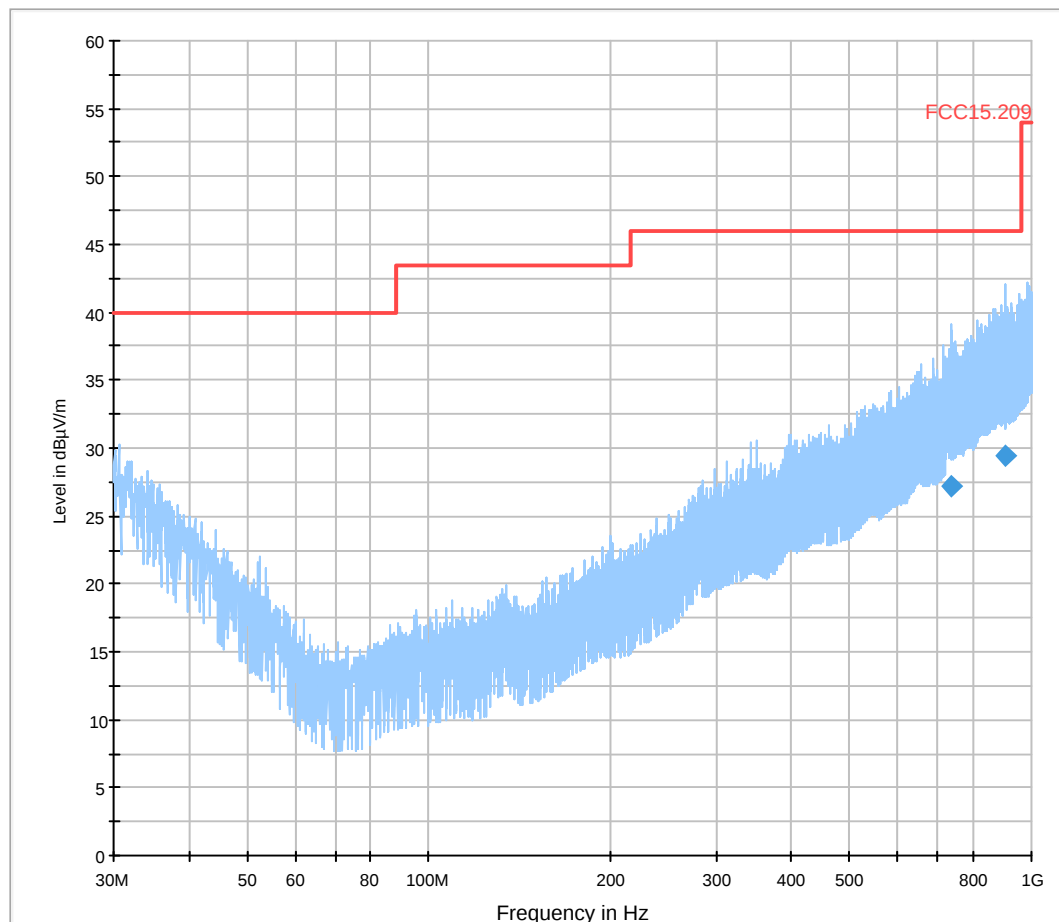
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...435
 Setup: Full battery

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
738.260000	27.2	1000.0	120.000	262.0	V	43.0	0.0	23.9	18.80	46.00
906.700000	29.5	1000.0	120.000	263.0	V	335.0	90.0	26.2	16.50	46.00

01_FCC15.209_hor+vert_kipp



Date: 13.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB
Receiver: [ESS]					

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB
Receiver: [ESS]					

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:

Test start	
Notify:	"EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
Notify:	"bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
Data Reduction: Before	
Notify:	Sound (WAV file) 'tada.wav'
Frequency Zoom 2: Before	
Notify:	"EUT sendet noch ?"
Final Measurements: After	
Notify:	Sound (WAV file) 'tada.wav'

Diagram 8.08_Ch120_Sweep2a

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 120; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

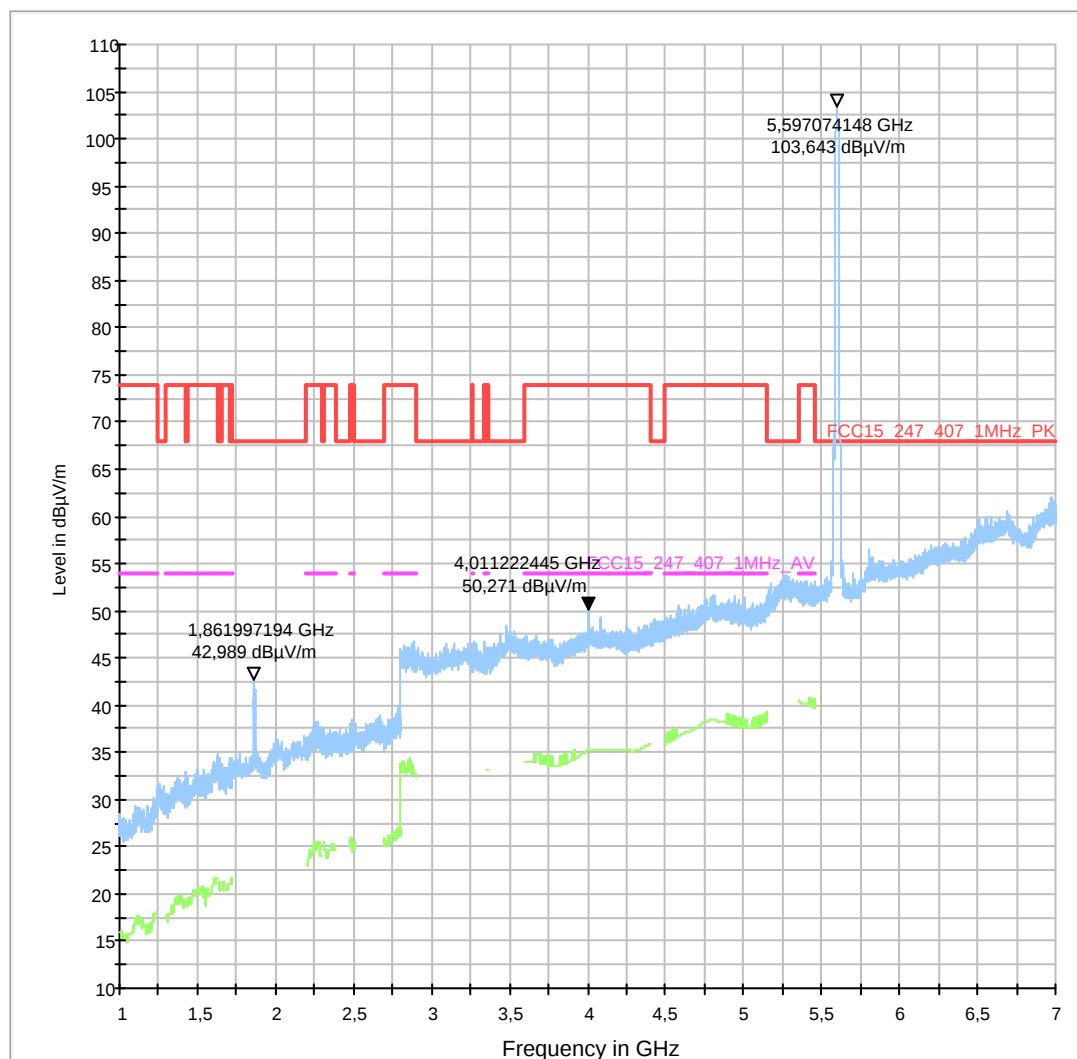


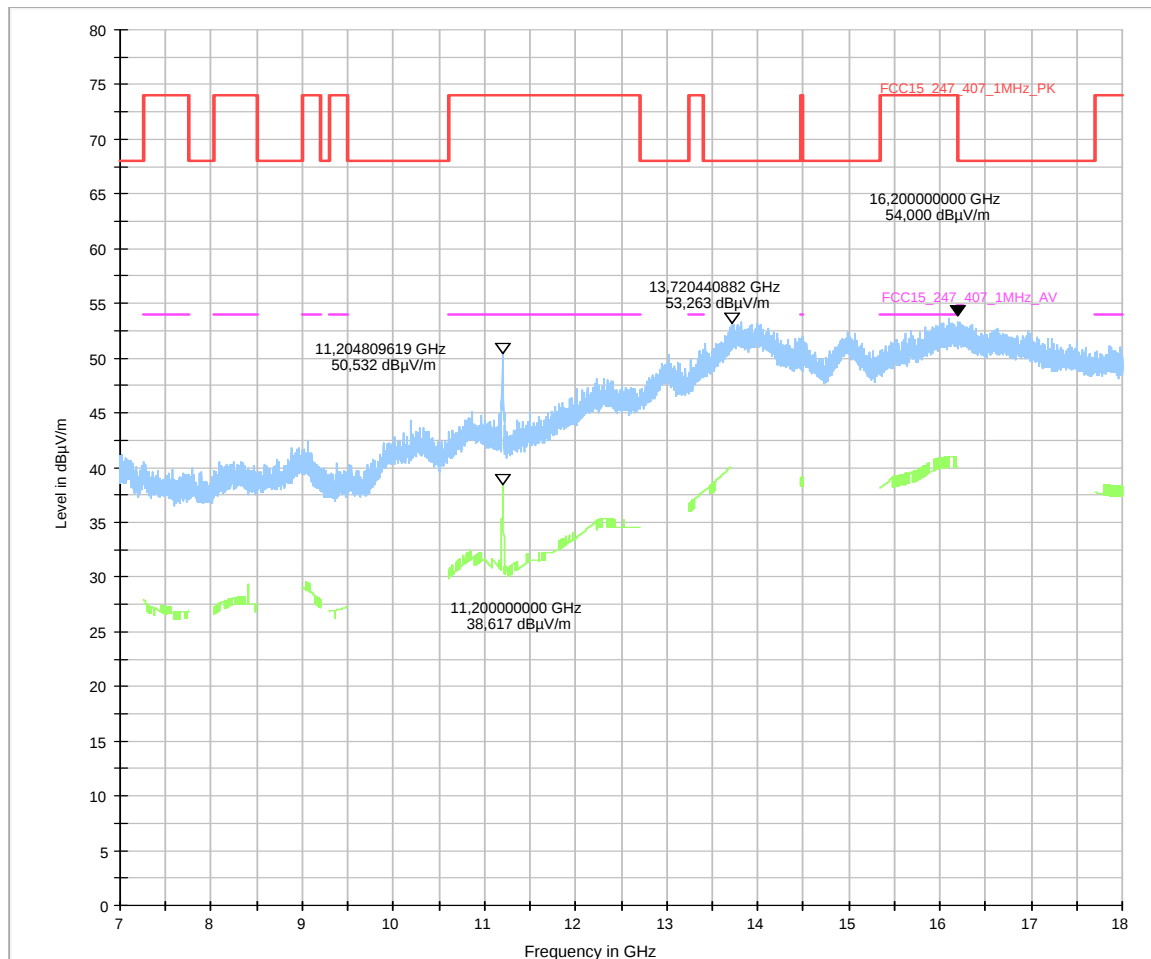
Diagram 8.08_Ch120_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 120; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	tas

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030453_FCC_Part15.247-15.407_RSE_WLAN_802.11a_7G-18G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 7 GHz - 18 GHz

Graphics Level Range: 0 dBμV/m - 80 dBμV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test start
Notify: "Messentfernung 1m ?"
Test stop
Park Accessories

Diagram No.: 8.08_Ch120_Sweep3

Common Information

Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: FCC Part 15.247 / 15.407
 Antenna polarisation: horizontal/vertical

Operator Name: Lor
 Op. Mode: 5 GHz WLAN / Ch120/ MCS0

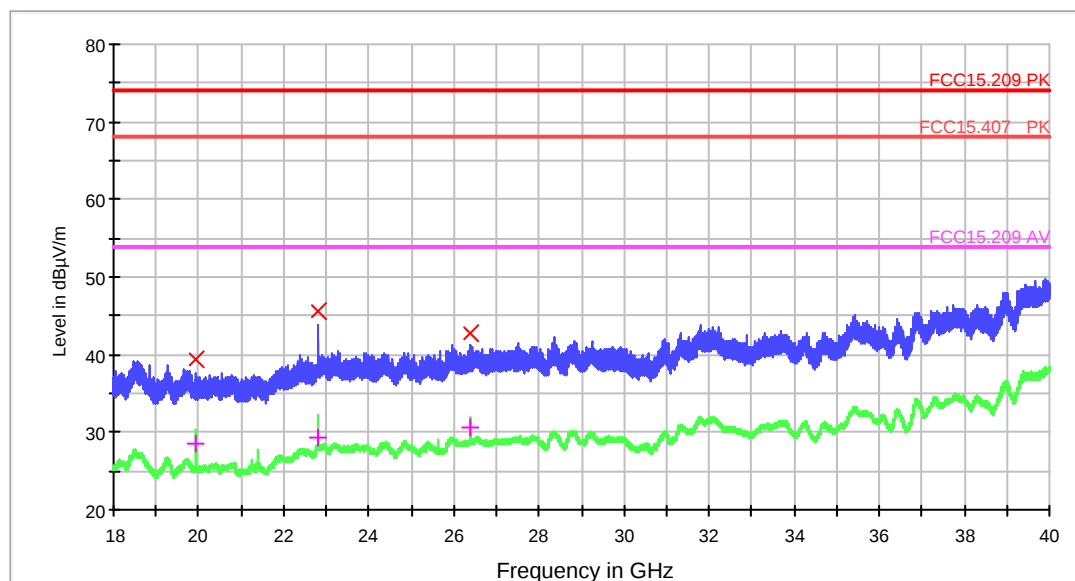
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #1118422047
 Hardware Rev: --
 Software Rev: --
 Comment: Unit 1

Result Table_Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
22795.600000	45.6	29.4	20.0	1000.000	0.0	H	0.0	-13.7
26372.400000	42.8	30.6	20.0	1000.000	0.0	H	0.0	-13.4
19950.000000	39.4	28.6	20.0	1000.000	0.0	H	0.0	-13.7

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup: HW02_ESU_18-40GHz
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.15. Channel 140 (n-Mode, MCS0)

Diagram No. 8.08_Ch140_Sweep1

Test description: 13.06.2012 Page 1 of 2
 Test site and distance: Electric Field Strength Measurement
 Distance correction: Semi Anechoic Room (SAR) with 3 m measurement distance
 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 n-Mode, MCS0, Ch.140 (5700MHz)
 Power during tests: full loaded batteries
 Comment 1: WLAN-Carrier monitored with spectrum-analyzer

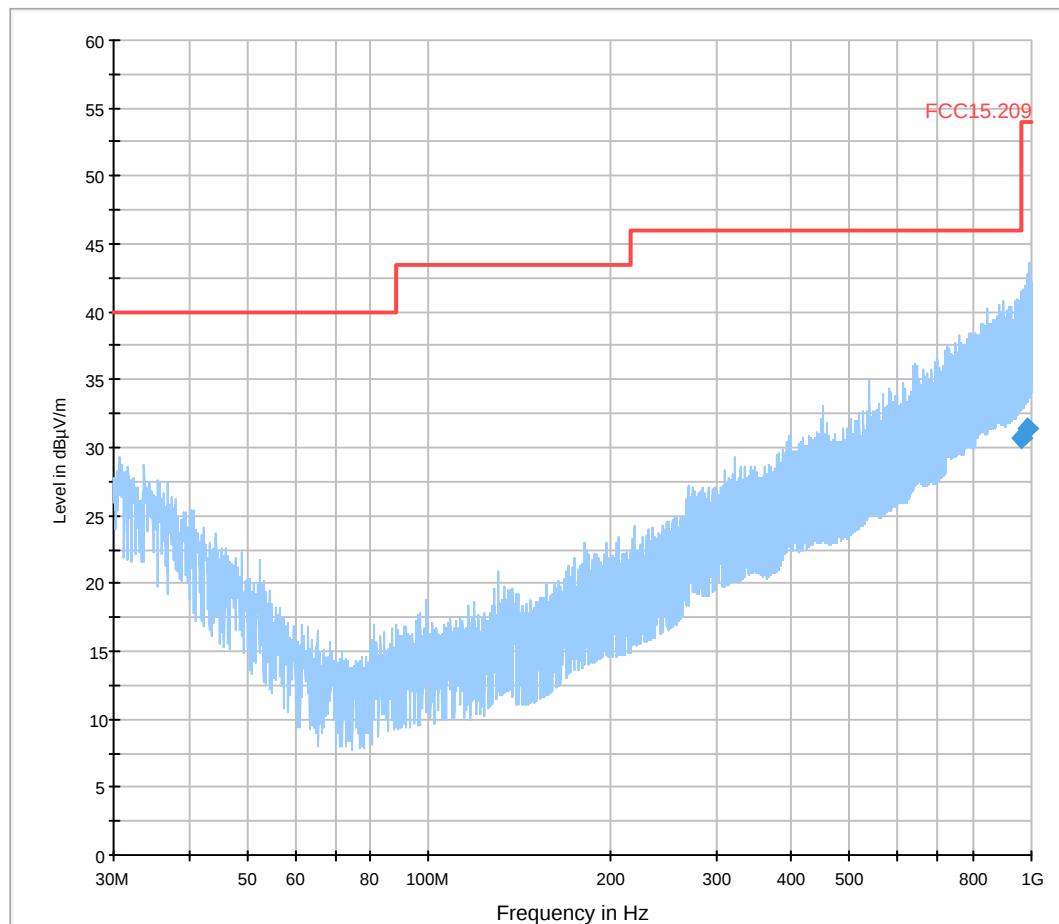
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...435
 Setup: Full battery

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
959.900000	30.7	1000.0	120.000	113.0	V	339.0	0.0	27.0	15.30	46.00
983.980000	31.4	1000.0	120.000	360.0	V	2.0	90.0	27.3	22.60	54.00

01_FCC15.209_hor+vert_kipp



Date: 13.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB
Receiver: [ESS]					

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB
Receiver: [ESS]					

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:

Test start	
Notify:	"EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
Notify:	"bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
Data Reduction: Before	
Notify:	Sound (WAV file) 'tada.wav'
Frequency Zoom 2: Before	
Notify:	"EUT sendet noch ?"
Final Measurements: After	
Notify:	Sound (WAV file) 'tada.wav'

Diagram 8.08_Ch140_Sweep2a

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 140; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

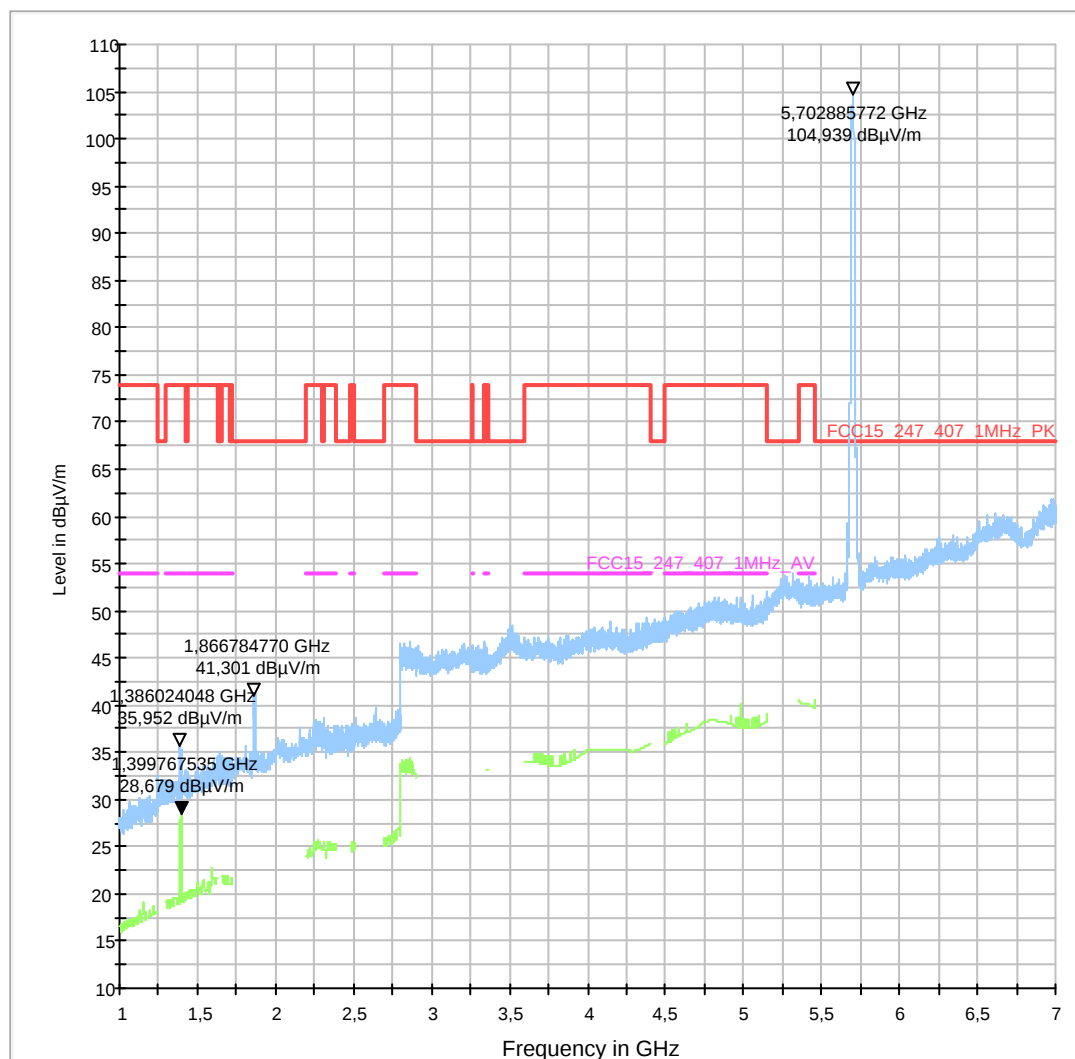


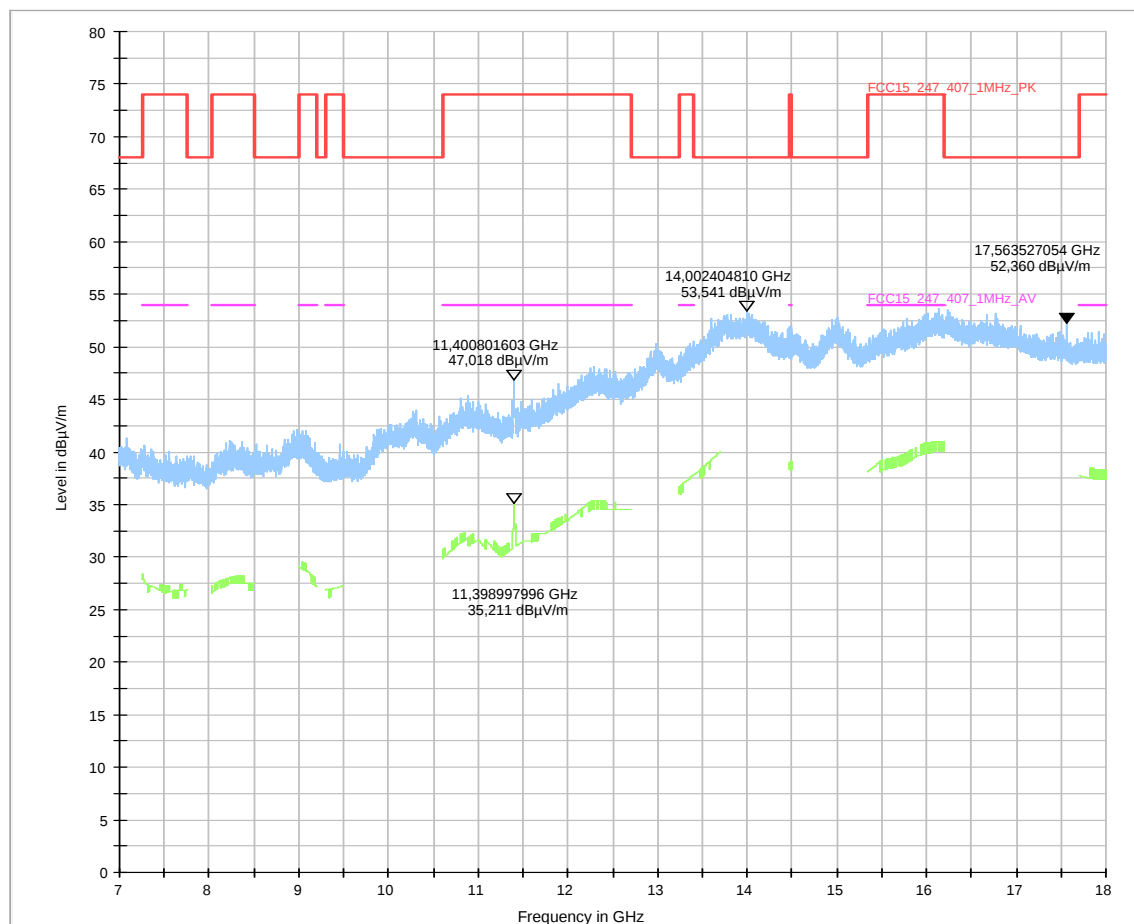
Diagram 8.08_Ch140_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 140; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	tas

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030453_FCC_Part15.247-15.407_RSE_WLAN_802.11a_7G-18G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 7 GHz - 18 GHz

Graphics Level Range: 0 dBμV/m - 80 dBμV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test start
Notify: "Messentfernung 1m ?"
Test stop
Park Accessories

Diagram 8.08_Ch140_Sweep3

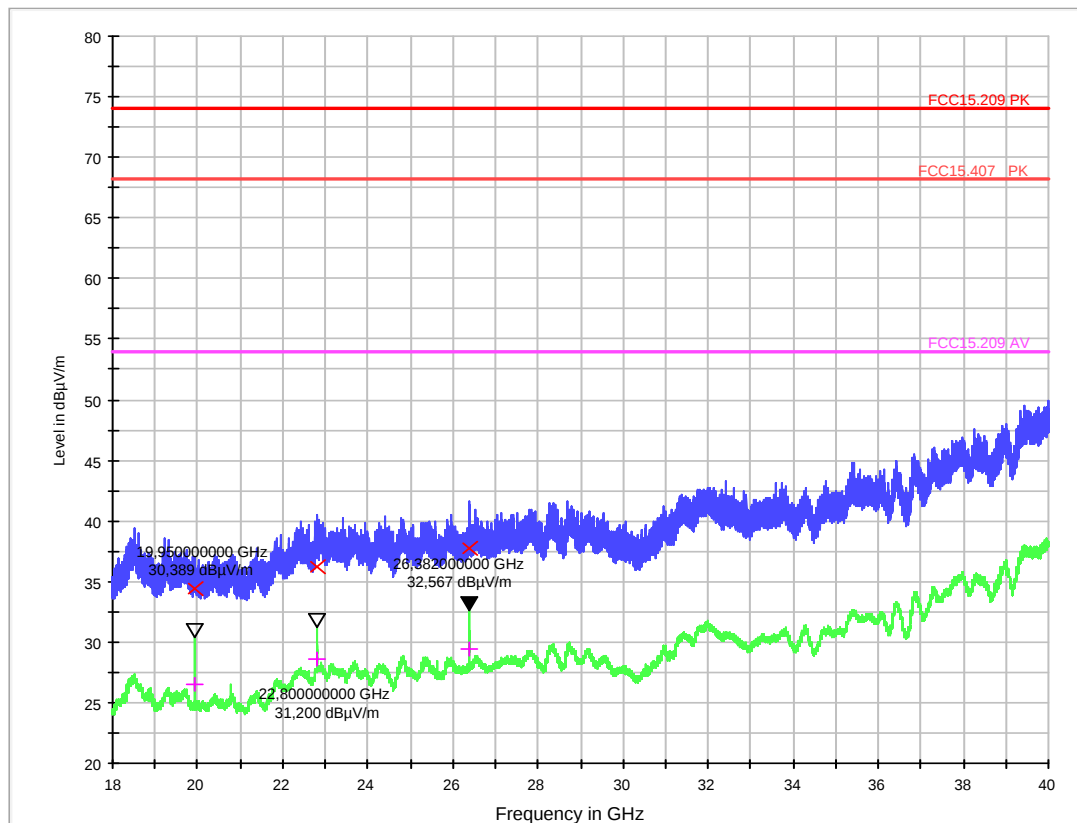
Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC Part 15.247 / 15.407
Antenna polarisation:	horizontal/vertical
Operation mode:	TX mode continuous
	5 GHz WLAN / Ch140/ MCS0
Operator:	dpa

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401139037002
Hardware Rev:	--
Software Rev:	--
Comment:	Sample 1, Rev 2, 17-Jul-12

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup:	HW02_ESU_18-40GHz_Preampl_Cernex_Sbr_dBuV_1m
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preampl
18 GHz - 40 GHz	400 kHz	PK+, RMS	1 MHz	0,0005 s	0 dB

2.16. Channel 149 (n-Mode, MCS0)

Diagram No. 8.08_Ch149_Sweep1

Test description: 13.06.2012 Page 1 of 2
 Test site and distance: Electric Field Strength Measurement
 Distance correction: Semi Anechoic Room (SAR) with 3 m measurement distance
 Used filter: not used
 Technical Data: not used
 Test specification.: please see page 2 for detailed data of measurement setup
 FCC 15.209; RSS-Gen: Issue 3

Operator: Lor
 Operating conditions: WLAN n-Mode, MCS0, Ch.149 (5745MHz)
 Power during tests: full loaded batteries
 Comment 1: WLAN-Carrier monitored with spectrum-analyzer

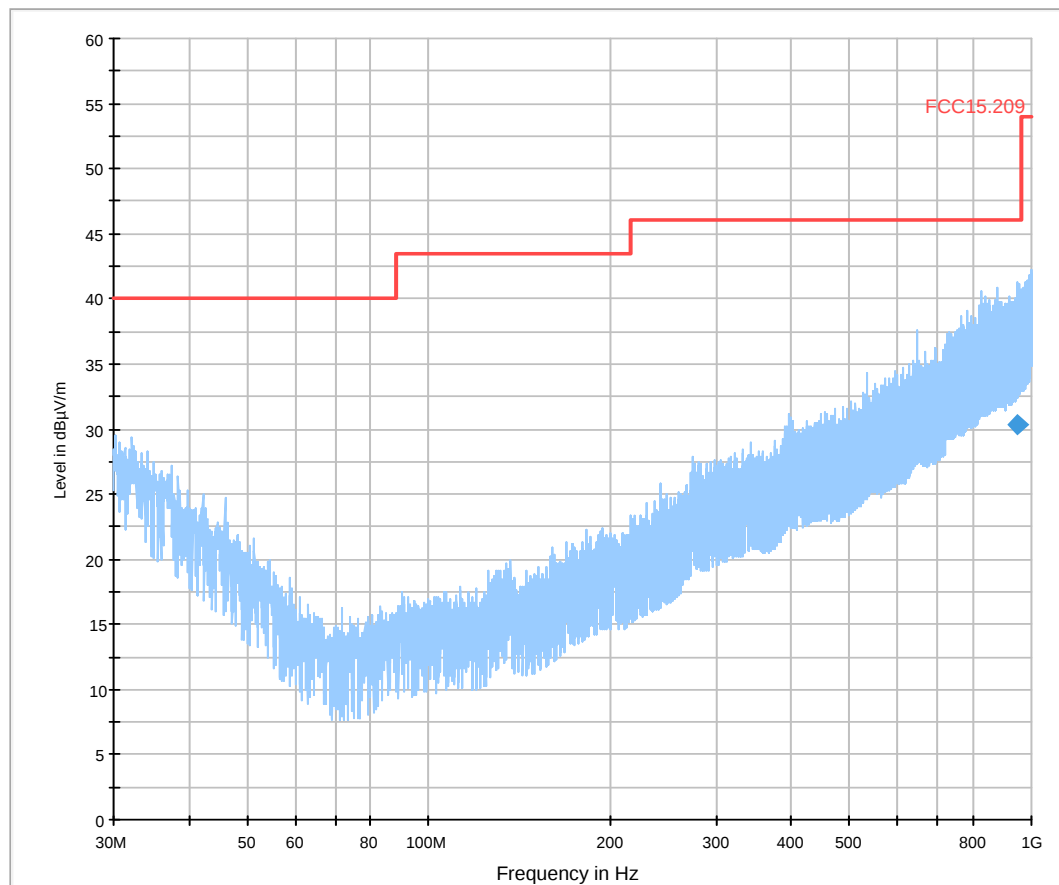
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...435
 Setup: Full battery

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
946.650000	30.3	1000.0	120.000	323.0	H	11.0	0.0	26.8	15.70	46.00

01_FCC15.209_hor+vert_kipp



Date: 13.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB
Receiver: [ESS]					

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB
Receiver: [ESS]					

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:

Test start	
Notify:	"EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
Notify:	"bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
Data Reduction: Before	
Notify:	Sound (WAV file) 'tada.wav'
Frequency Zoom 2: Before	
Notify:	"EUT sendet noch ?"
Final Measurements: After	
Notify:	Sound (WAV file) 'tada.wav'

Diagram 8.08_Ch149_Sweep2a

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 149; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

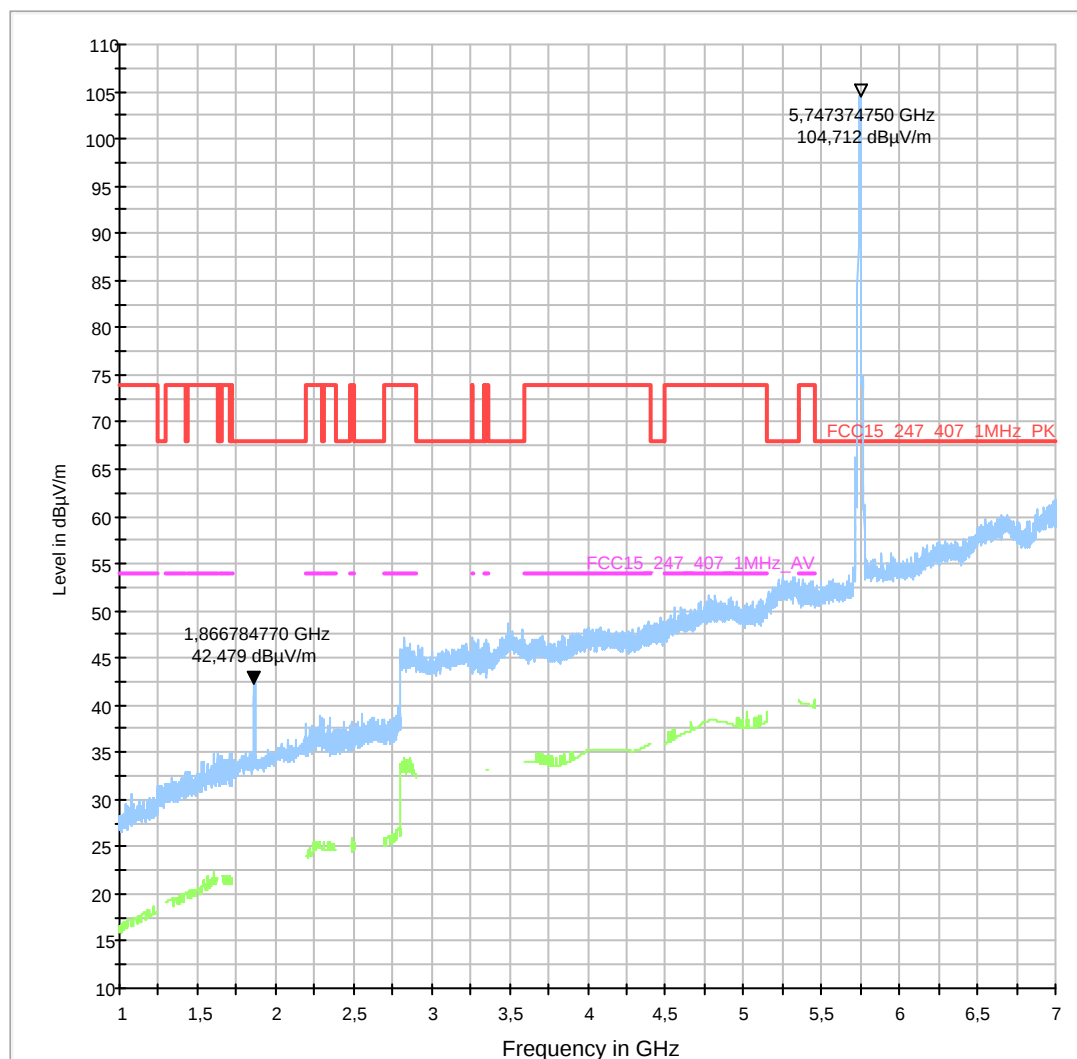


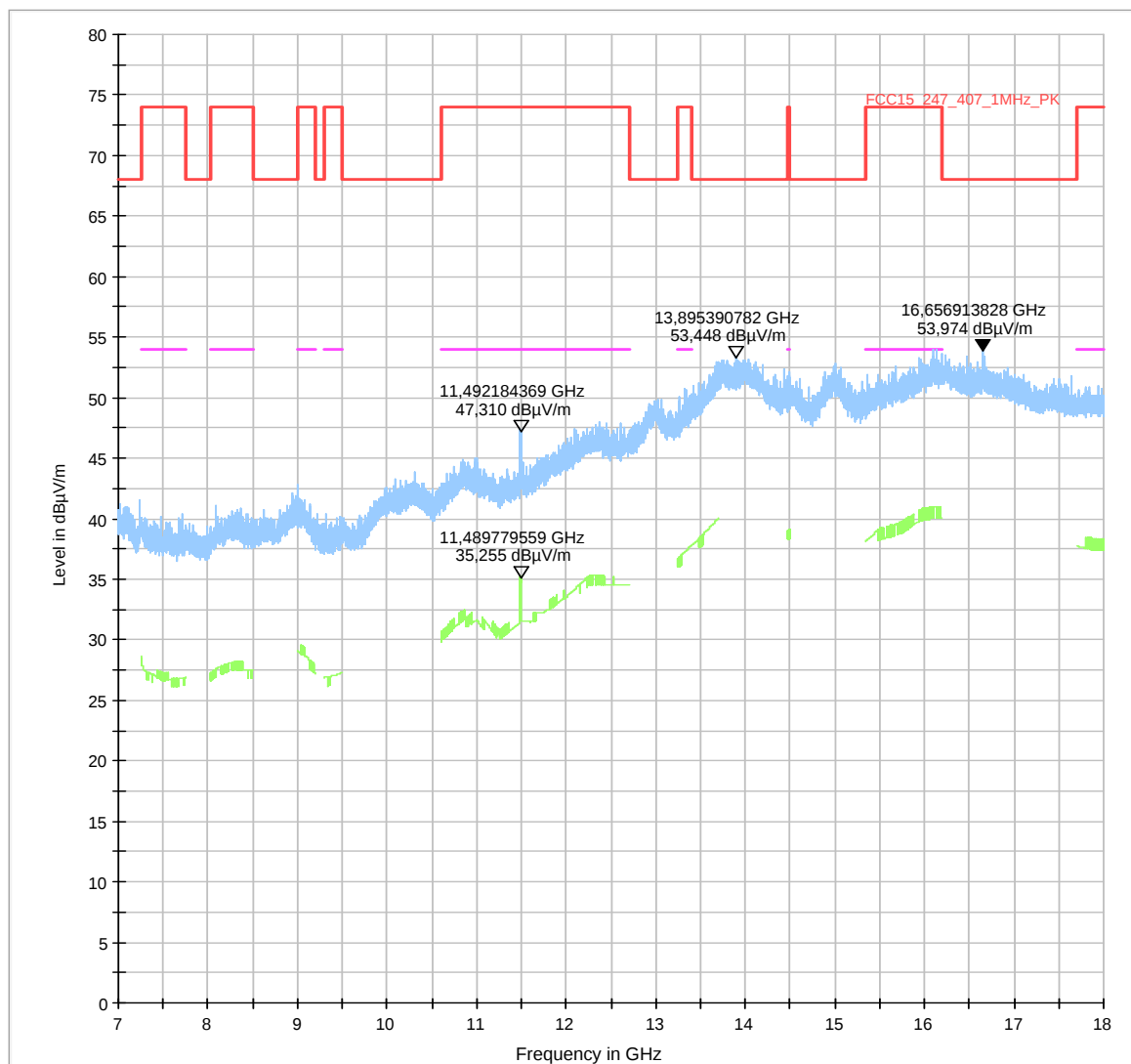
Diagram 8.08_Ch149_Sweep2b

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 149; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	tas

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030453_FCC_Part15.247-15.407_RSE_WLAN_802.11a_7G-18G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 7 GHz - 18 GHz

Graphics Level Range: 0 dBμV/m - 80 dBμV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction:	Interactive data reduction
Frequency Zoom:	
Zoom Sweep Template:	010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G
Adjustment:	
Template for Single Meas.:	020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan
Final Measurements:	
Template for Single Meas.:	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz)	020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Report Settings:	
Report Template:	Report Setup FCC Part15.247 15.407
Create Electronic Report:	PDF
Document Name:	EMI Report
Actions:	
Test start	
Notify:	"Messentfernung 1m ?"
Test stop	
Park Accessories	

Diagram 8.08_Ch149_Sweep3

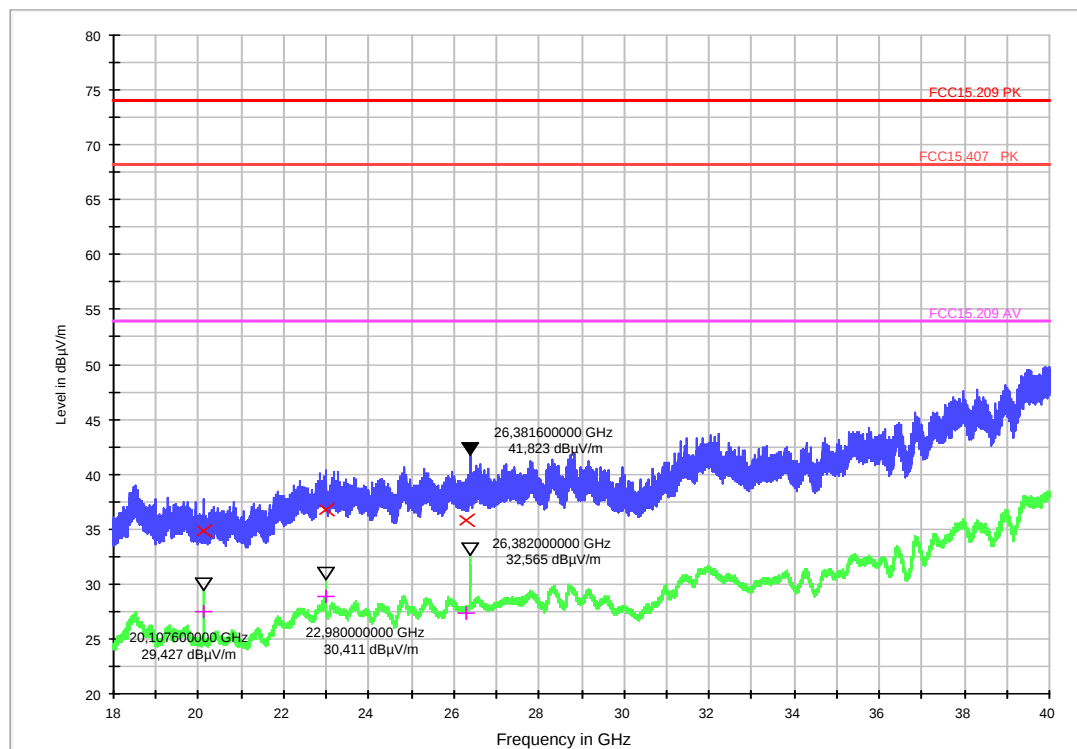
Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC Part 15.247 / 15.407
Antenna polarisation:	horizontal/vertical
Operation mode:	TX mode continuous
	5 GHz WLAN / Ch149/ MCS0
Operator:	dpa

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401139037002
Hardware Rev:	--
Software Rev:	--
Comment:	Sample 1, Rev 2, 17-Jul-12

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup:	HW02_ESU_18-40GHz_Preamp_Cernex_Sbr_dBuV_1m
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.17. Channel 157 (n-Mode, MCS0)

Diagram No. 8.08_Ch157_Sweep1

13.06.2012 Page 1 of 2
 Test description: Electric Field Strength Measurement
 Test site and distance: Semi Anechoic Room (SAR) with 3 m measurement distance
 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: dpa
 Operating conditions: WLAN n-Mode, MCS0, Ch.157 (5785MHz)
 Power during tests: full loaded batteries
 Comment 1: WLAN-Carrier monitored with spectrum-analyzer

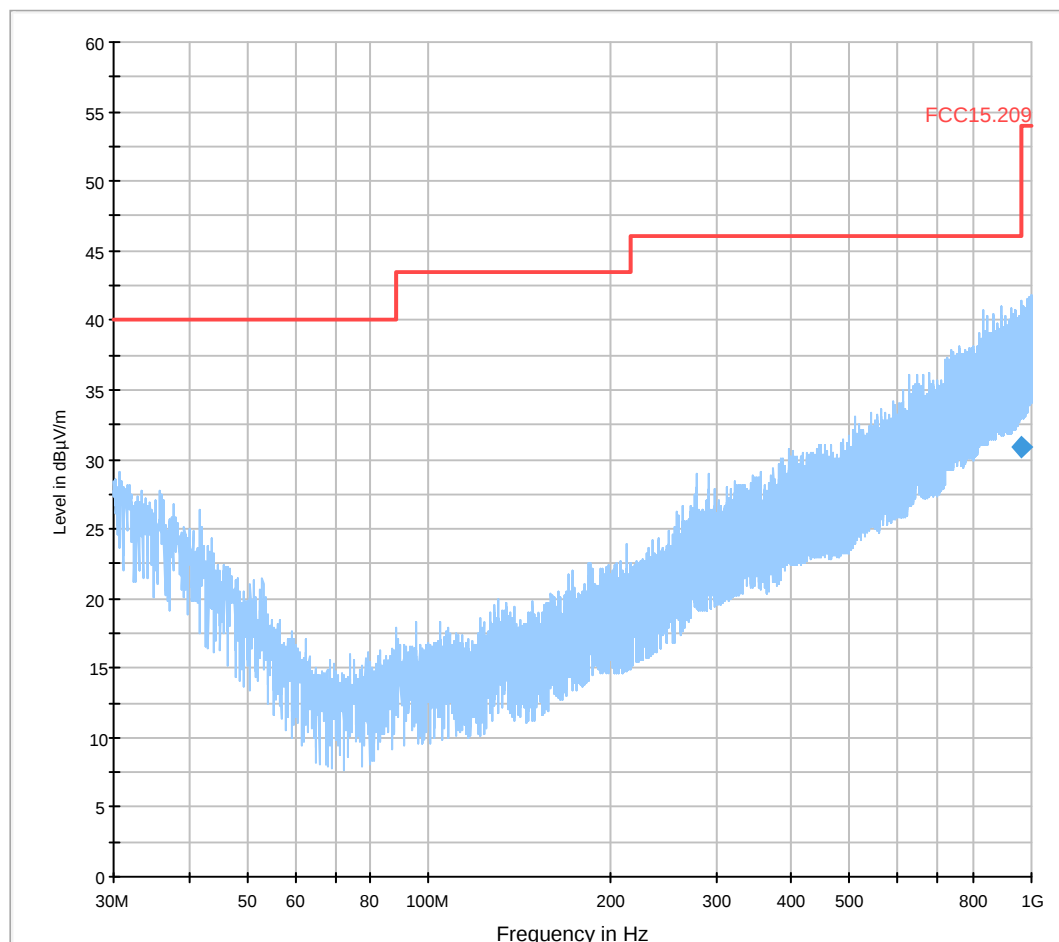
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...435
 Setup: Full battery

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
962.570000	30.9	1000.0	120.000	321.0	H	0.0	90.0	27.0	23.10	54.00

01_FCC15.209_hor+vert_kipp



Date: 13.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB
Receiver: [ESS]					

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB
Receiver: [ESS]					

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:

Test start	
Notify:	"EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
Notify:	"bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
Data Reduction: Before	
Notify:	Sound (WAV file) 'tada.wav'
Frequency Zoom 2: Before	
Notify:	"EUT sendet noch ?"
Final Measurements: After	
Notify:	Sound (WAV file) 'tada.wav'

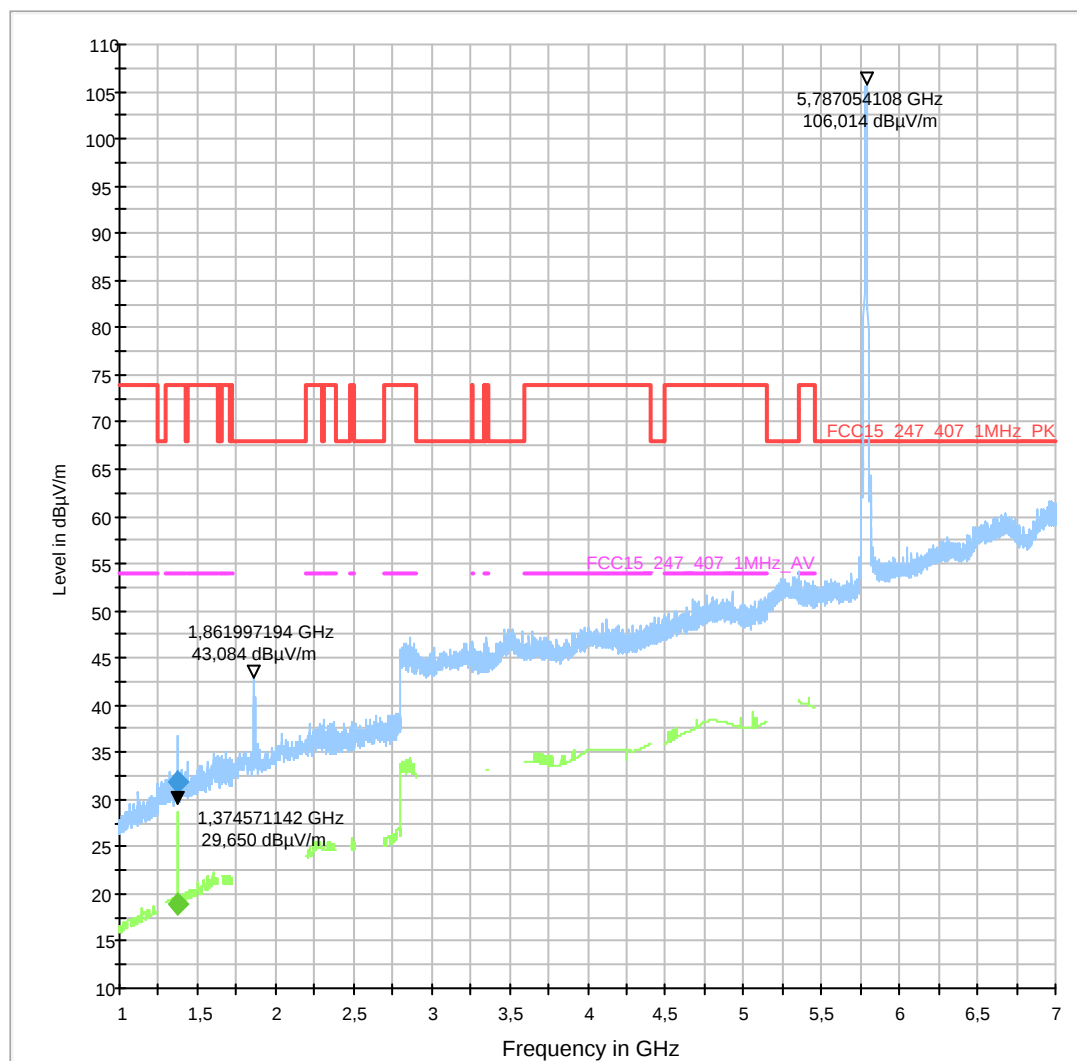
Diagram 8.08_Ch157_Sweep2a

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 157; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)	Limit (dBμV/m)
1371.584168	31.8	1000.0	1000.000	V	152.0	0.0	-2.1	42.2	74.0

Final Result 2

Frequency (MHz)	RMS (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)	Limit (dBμV/m)
1374.780561	19.0	1000.0	1000.000	V	143.0	0.0	-2.0	35.0	54.0

EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEK
 Measurement Type: E(I)RP
 Frequency Range: 1 GHz - 7 GHz
 Graphics Level Range: 20 dBμV/m - 80 dBμV/m

Preview Measurements:
 Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:
 Limit Line #1: FCC15_247_407_1MHz_PK
 Limit Line #2: FCC15_247_407_1MHz_AV
 Peak Search: 6 dB , Maximum Results: 5
 Subrange Maxima: 10 Subranges , Maxima per Subrange: 1
 Maximum Number of Results: 5
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
 Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
 Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
 Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
 Report Template: Report Setup FCC Part15.247 15.407
 Create Electronic Report: PDF
 Document Name: EMI Report

Actions:
 Test start
 Notify: "Messentfernung 3m !?"
 Test stop
 Park Accessories

Diagram 8.08_Ch157_Sweep2b

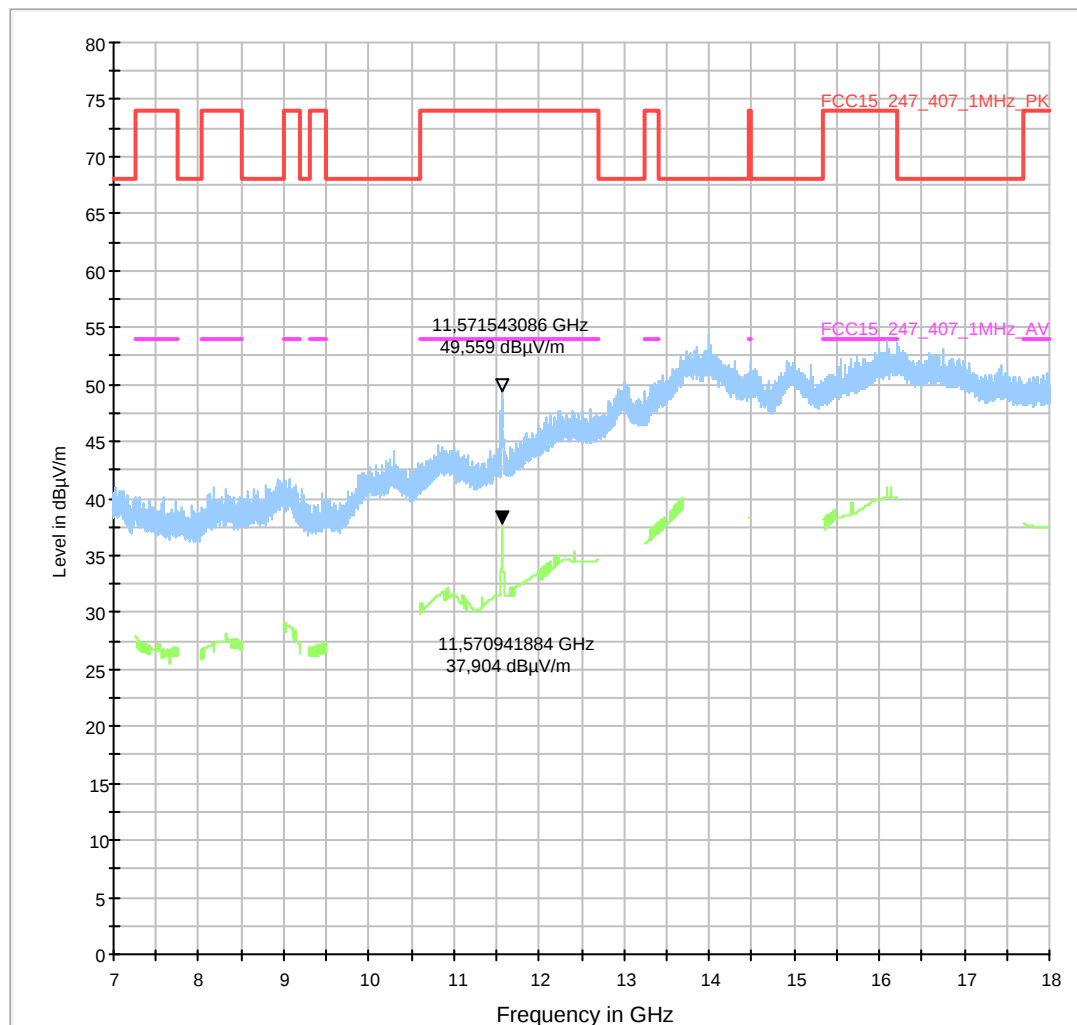
Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 157; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

030453_FCC_Part15.247-15.407_RSE_WLAN_802.11a_7G-18G_FSEK



Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]

Turntable: @ GPIB0 (ADR 21), SN ?
EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030453_FCC_Part15.247-15.407_RSE_WLAN_802.11a_7G-18G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx

Measurement Type: E(I)RP

Frequency Range: 7 GHz - 18 GHz

Graphics Level Range: 0 dBμV/m - 80 dBμV/m

Preview Measurements:

Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:

Limit Line #1: FCC15_247_407_1MHz_PK

Limit Line #2: FCC15_247_407_1MHz_AV

Peak Search: 6 dB , Maximum Results: 5

Subrange Maxima: 10 Subranges , Maxima per Subrange: 1

Maximum Number of Results: 5

After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test start
Notify: "Messentfernung 1m ?"
Test stop
Park Accessories

Diagram 8.08_Ch157_Sweep3

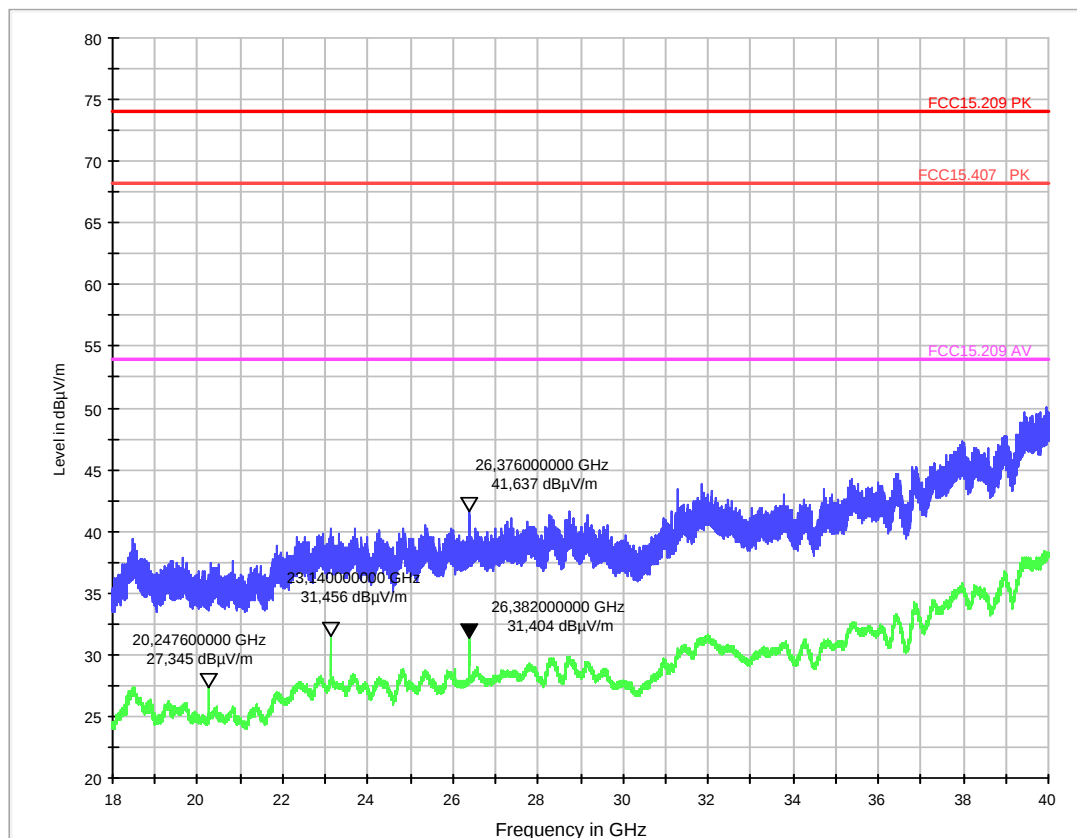
Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC Part 15.247 / 15.407
Antenna polarisation:	horizontal/vertical
Operation mode:	TX mode continuous
	5 GHz WLAN / Ch157/ MCS0
Operator:	dpa

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401139037002
Hardware Rev:	--
Software Rev:	--
Comment:	Sample 1, Rev 2, 17-Jul-12

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup:	HW02_ESU_18-40GHz_Preamplifier_Cernex_Sbr_dBuV_1m
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamplifier
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

2.18. Channel 161 (n-Mode, MCS0)

Diagram No. 8.08_Ch161_Sweep1

Test description: 13.06.2012 Page 1 of 2
 Test site and distance: Electric Field Strength Measurement
 Distance correction: Semi Anechoic Room (SAR) with 3 m measurement distance
 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: dpa
 Operating conditions: WLAN n-Mode, MCS0, Ch.161 (5805MHz)
 Power during tests: full loaded batteries
 Comment 1: WLAN-Carrier monitored with spectrum-analyzer

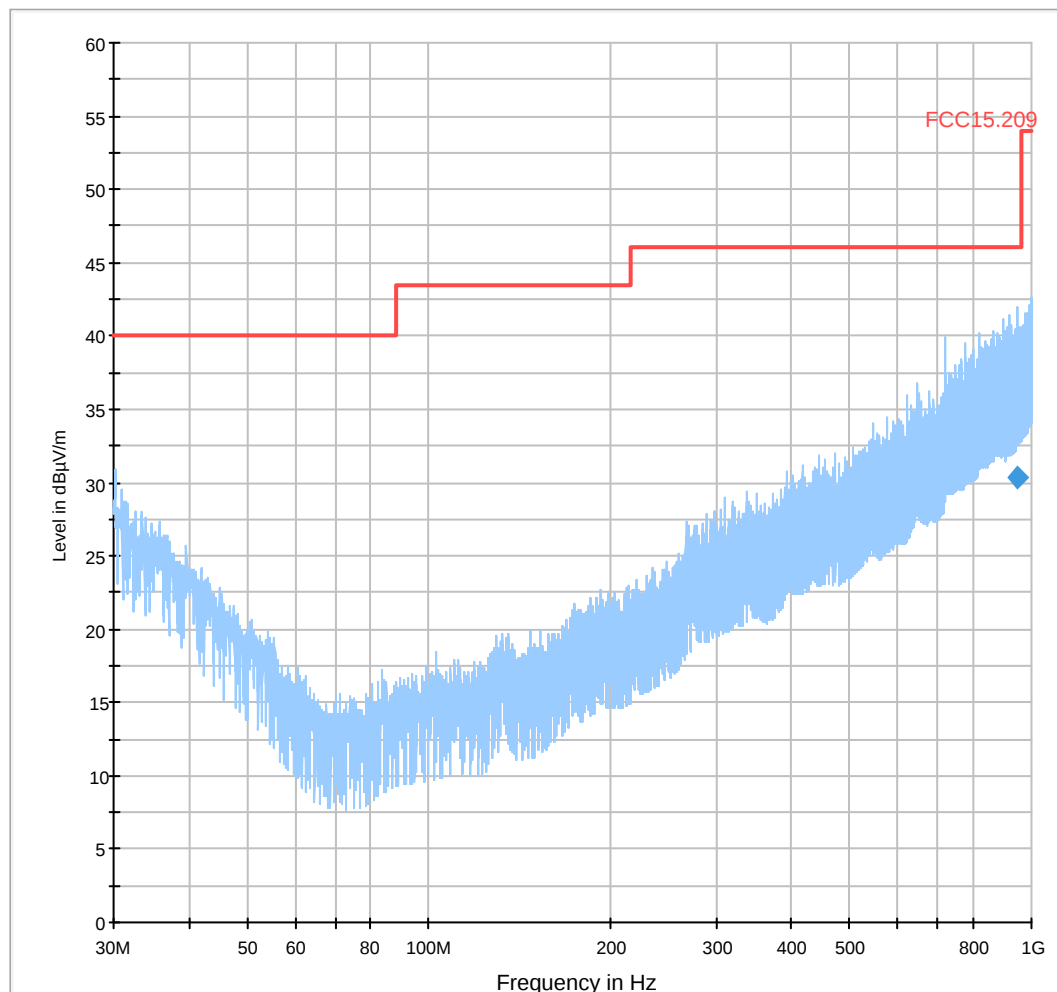
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: ...435
 Setup: Full battery

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
945.030000	30.4	1000.0	120.000	100.0	H	328.0	0.0	26.8	15.60	46.00

01_FCC15.209_hor+vert_kipp



Date: 13.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

EMI Auto Test Template: 01_FCC15.209_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB
Receiver: [ESS]					

Data Reduction:
 Limit Line #1: FCC15.209
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB
Receiver: [ESS]					

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB
Receiver: [ESS]					

Report Settings:
 Report Template: FCC15_209_vert_hor-30MHz-1GHz
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:

Test start	
Notify:	"EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
Notify:	"bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
Data Reduction: Before	
Notify:	Sound (WAV file) 'tada.wav'
Frequency Zoom 2: Before	
Notify:	"EUT sendet noch ?"
Final Measurements: After	
Notify:	Sound (WAV file) 'tada.wav'

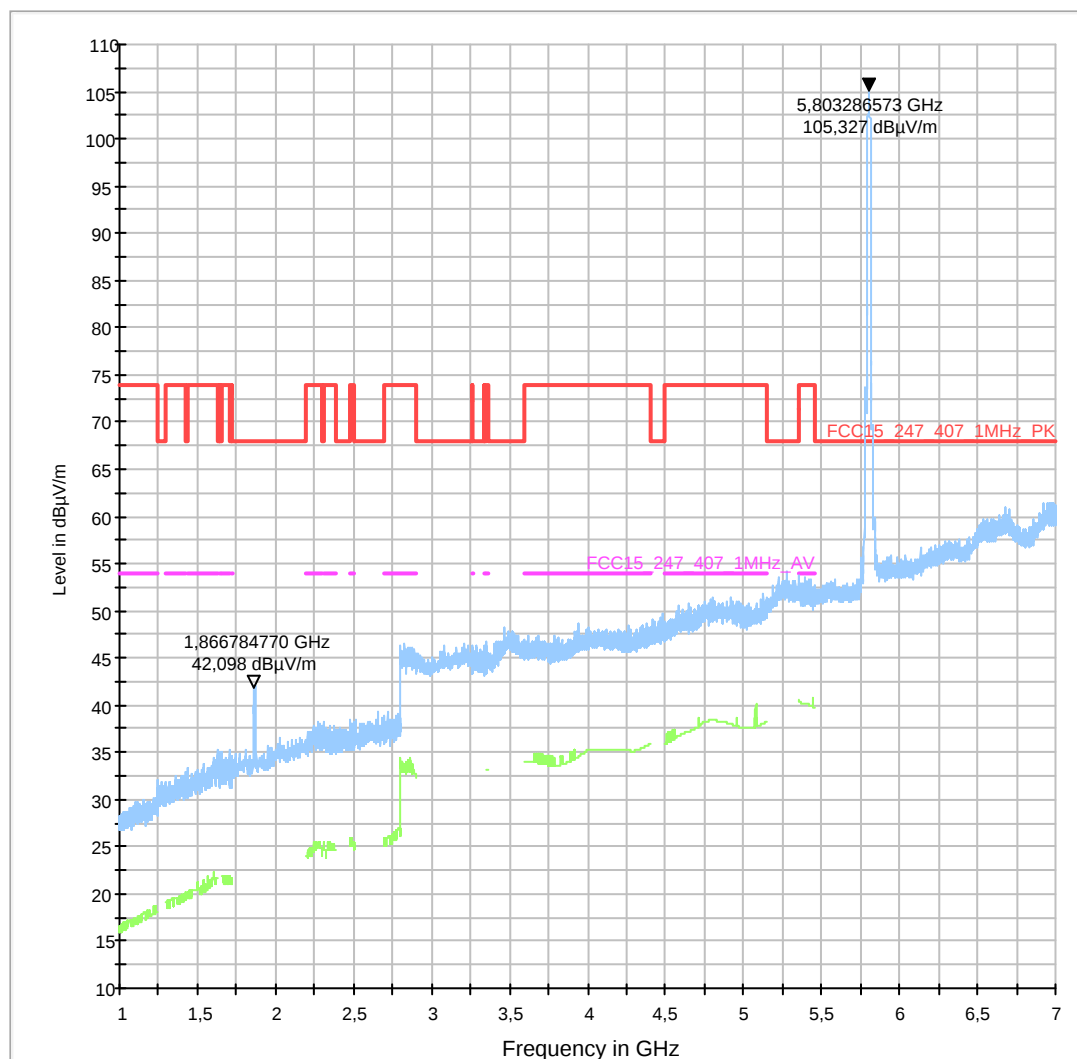
Diagram 8.08_Ch161_Sweep2a

Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 161; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--



EMI Auto Test Template: 030452_FCC_Part15.247-15.407_RSE_WLAN_802.11a_1G-7G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx
Measurement Type: E(I)RP
Frequency Range: 1 GHz - 7 GHz
Graphics Level Range: 20 dBµV/m - 80 dBµV/m

Preview Measurements:
Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:
Limit Line #1: FCC15_247_407_1MHz_PK
Limit Line #2: FCC15_247_407_1MHz_AV
Peak Search: 6 dB , Maximum Results: 5
Subrange Maxima: 10 Subranges , Maxima per Subrange: 1
Maximum Number of Results: 5
After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test start
Notify: "Messentfernung 3m !?"
Test stop
Park Accessories

Diagram 8.08_Ch161_Sweep2b

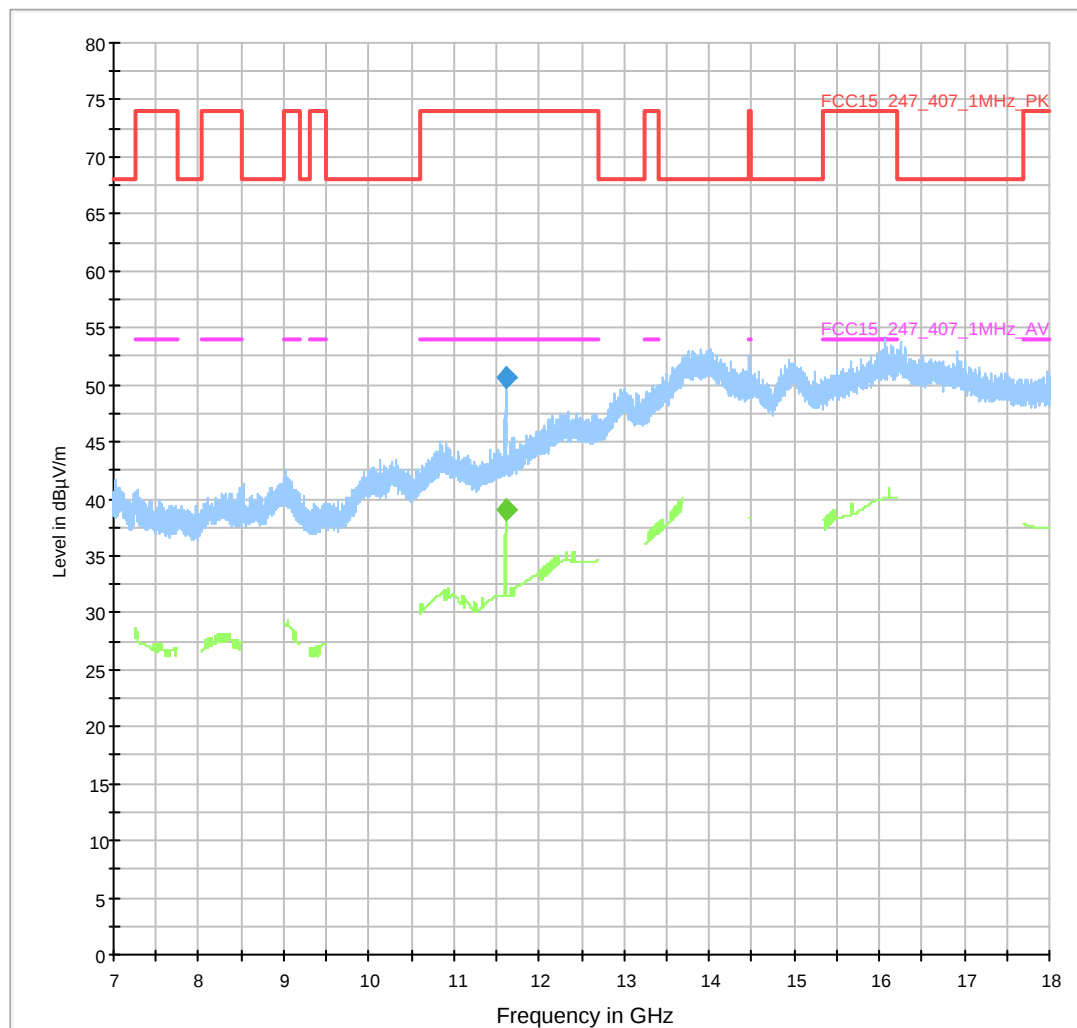
Common Information

Test Description:	Radiated field strength emission accord. §15.247/15.407 in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.247 / 15.407
Section:	TX
Operating Mode:	WLAN 802.11a-mode, continuously tx on channel 161; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	dpa

EUT Information

Manufacturer:	Research In Motion Limited
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

030453_FCC_Part15.247-15.407_RSE_WLAN_802.11a_7G-18G_FSEK



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
11606.748498	50.6	1000.0	1000.000	V	181.0	0.0	11.2	23.4	74.0

Final Result 2

Frequency (MHz)	RMS (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
11610.636273	39.0	1000.	1000.000	V	183.0	0.0	11.2	15.0	54.0

Hardware Setup: EMI radiated\00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 3 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00102_HL562_Through1_Amp4G_Out3
FW 1.0
Correction Table: 00102_HL562_Through1_Amp4G_Out3

Antenna: 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (vertical): 00103_HL562_30M-3G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00103_HL562_30M-3G_dBuV_AF_FCC_3m

Antenna Tower: Mast_1 PSN Ultralog [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 2

Frequency Range: 3 GHz - 7 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00122_HL025_HP2.8-18G_Amp18G_Through3_Out3

Antenna: 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (vertical): 00113_HL025_1G-26G_dBuV_AF_FCC_3m
Correction Table (horizontal): 00113_HL025_1G-26G_dBuV_AF_FCC_3m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

Subrange 3

Frequency Range: 7 GHz - 18 GHz

Receiver: Spectrum_Analyzer_FSEx [FSEK]
@ GPIB0 (ADR 30), SN 826939/005, FW 3.20, CAL 21.03.2012

Signal Path: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3
FW 1.0
Correction Table: 00127_HL025_HP_VHF-7150+_Amp18G_Through3_Out3

Antenna: 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (vertical): 00111_HL025_1G-26G_dBuV_AF_FCC_1m
Correction Table (horizontal): 00111_HL025_1G-26G_dBuV_AF_FCC_1m

Antenna Tower: Mast_2 PSN Horn [Generic Tripod]
@ GPIB0 (ADR 21), SN ?

Turntable: EMCO2090 Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.21

EMI Auto Test Template: 030453_FCC_Part15.247-15.407_RSE_WLAN_802.11a_7G-18G_FSEK

Hardware Setup: 00439_FCC_Part15.247-15.407_2.4GHz_ISM_Band_TX_1G-18G_dBuV_FSEx
Measurement Type: E(I)RP
Frequency Range: 7 GHz - 18 GHz
Graphics Level Range: 0 dBμV/m - 80 dBμV/m

Preview Measurements:
Sweep Test Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Data Reduction:
Limit Line #1: FCC15_247_407_1MHz_PK
Limit Line #2: FCC15_247_407_1MHz_AV
Peak Search: 6 dB , Maximum Results: 5
Subrange Maxima: 10 Subranges , Maxima per Subrange: 1
Maximum Number of Results: 5
After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Sweep Template: 010457_FCC_Part15.247-15.407_WLAN_5GHz_TX_Spurious_1G_18G

Adjustment:
Template for Single Meas.: 020466_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Precsan

Final Measurements:
Template for Single Meas.: 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan
Template for Single Meas.:(>1GHz) 020467_FCC_Part15.407_WLAN_5GHz_TX_RSE_FSEK_Finalcsan

Report Settings:
Report Template: Report Setup FCC Part15.247 15.407
Create Electronic Report: PDF
Document Name: EMI Report

Actions:
Test start
Notify: "Messentfernung 1m ?"
Test stop
Park Accessories

Diagram 8.08_Ch161_Sweep3

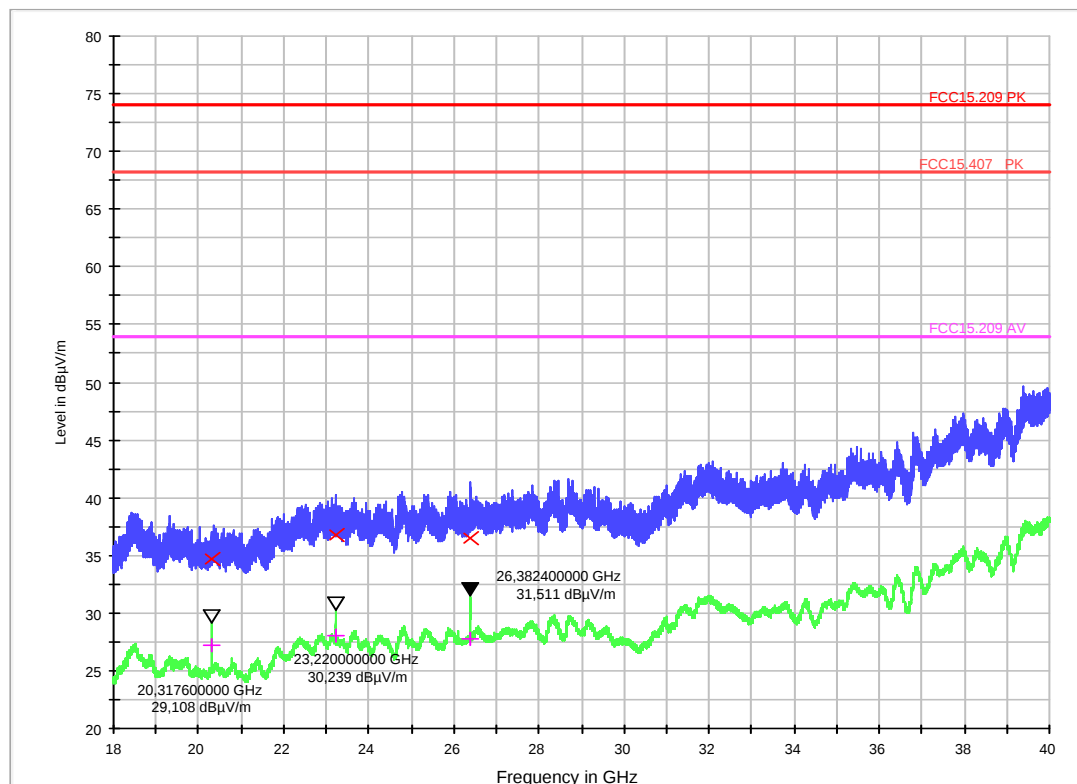
Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC Part 15.247 / 15.407
Antenna polarisation:	horizontal/vertical
Operation mode:	TX mode continuous
	5 GHz WLAN / Ch161/ MCS0
Operator:	dpa

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401139037002
Hardware Rev:	--
Software Rev:	--
Comment:	Sample 1, Rev 2, 17-Jul-12

EMI Scan_14_40GHz_Pre_fast



Scan Setup: EMI Scan_14_40GHz_Pre_fast [EMI radiated]

Hardware Setup:	HW02_ESU_18-40GHz_Preamp_Cernex_Sbr_dBuV_1m
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
18 GHz - 40 GHz	400 kHz	PK+; RMS	1 MHz	0,0005 s	0 dB

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

3.1. Channel 36 g-Mode (left band edge)

Diagram No.: 8.07_Ch36_BE_1_PWR

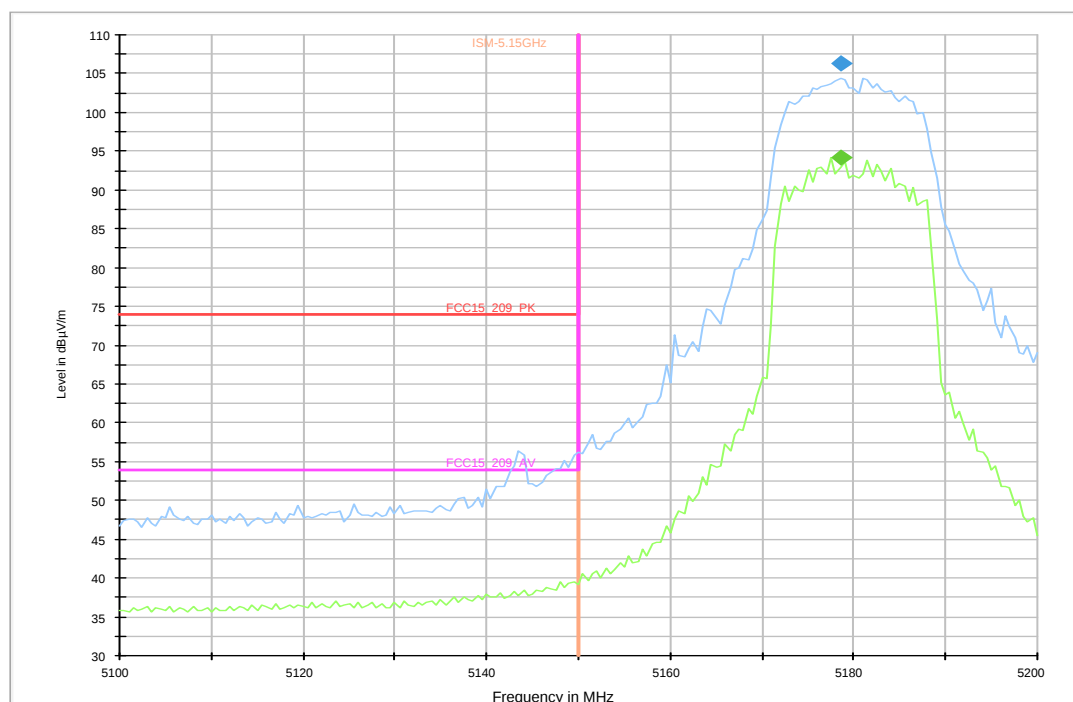
Common Information

Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & §15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no. low=36
Op. Mode:	TX mode continuous, 5GHZ WLAN, 6Mbit/s

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

BE_5.15GHz_Sweep2_SM1_KP1_WLAN_5GHz



Final Result 1

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)
5178.500000	106.3	100.0	1000.000	155.0	H	146.0	0.0	4.1	43.7

Final Result 2

Frequency (MHz)	Average (dBµV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)
5178.700000	94.2	100.0	1000.000	155.0	H	145.0	0.0	4.1	55.8

EMI Auto Test Template: BE_5.15GHz_Sweep2_SM1_KP1_WLAN_5GHz

Hardware Setup: 549_dBuVm_PA484_TH3_KP1_ESU
Measurement Type: E(I)RP
Frequency Range: 5,1 GHz - 5,2 GHz
Graphics Level Range: 30 dBµV/m - 110 dBµV/m

Preview Measurements:
Scan Test Template: Sweep2_pre_5GHz

Data Reduction:
Limit Line #1: FCC15_209_PK
Limit Line #2: FCC15_209_AV
Limit Line #3: ISM-5.15GHz
Limit Line #4: ISM-5.25GHz
Peak Search: 6 dB , Maximum Results: 10
Subrange Maxima: 50 Subranges , Maxima per Subrange: 1
Acceptance Offset: -20 dB
Maximum Number of Results: 10
After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Scan Template: Sweep2_zoom

Adjustment:
Template for Single Meas.: Sweep2_zoom

Final Measurements:
Template for Single Meas.: Sweep2_fin

Report Settings:
Report Template: Report Setup FCC 15_247
Create Electronic Report: RTF PDF
Document Name: dummy EMI Report

Actions:
Test start
Notify: "Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"

Diagram No.: 8.07_Ch36_BE_2

Common Information

Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: §15.205 & §15.209 Intentional Radiator
 Antenna polarisation: horizontal/vertical

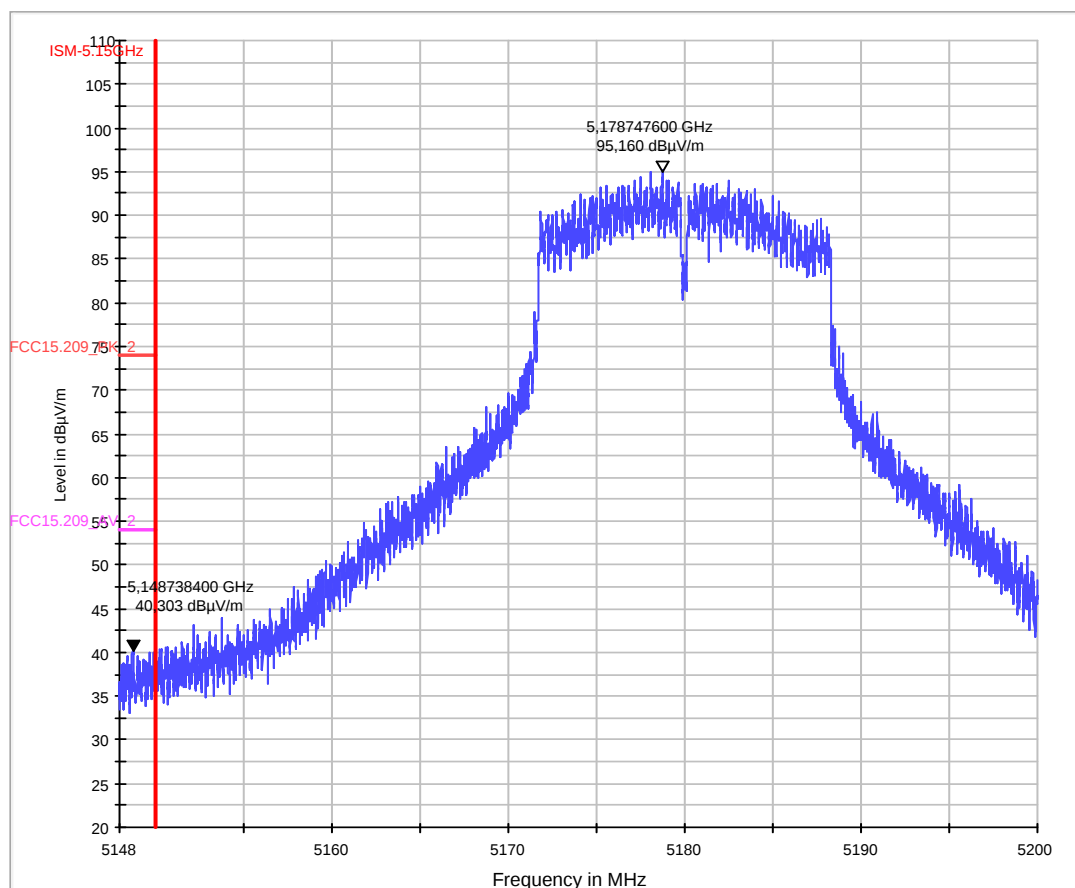
Operator Name: Lor
 Comment: Channel no. low=36
 Op. Mode: TX mode continuous, 5GHZ WLAN, 6Mbit/s

EUT Information

Manufacturer: Research In Motion Limited
 Type: GSM/WCDMA/LTE Mobile Terminal

EUT: RFG81UW
 EUT additional information: CER-48928-001 Rev2 17-Jul-12
 HW version: new
 SW version: tbd
 Serial number: 004401139037002
 Power Supply: full internal battery
 Comments: --

10_ESU_5GHZ_Band_Edge_Channel_36_RBW_30kHz



Sweep Setup: 10_ESU_5GHZ_Band_Edge_Channel_36_RBW_30kHz [EMI radiated]

Hardware Setup: 549_dBuVm_PA484_TH3_KP1_ESU
 Receiver: [ESU 40]
 Level Unit: dBμV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamplifier
5.148 GHz - 5,2 GHz	5,2 kHz	PK+	30 kHz	Coupled	0 dB

3.2. Channel 64 g-Mode (right band edge)

Diagram No.: 8.07_Ch64_BE_1_PWR

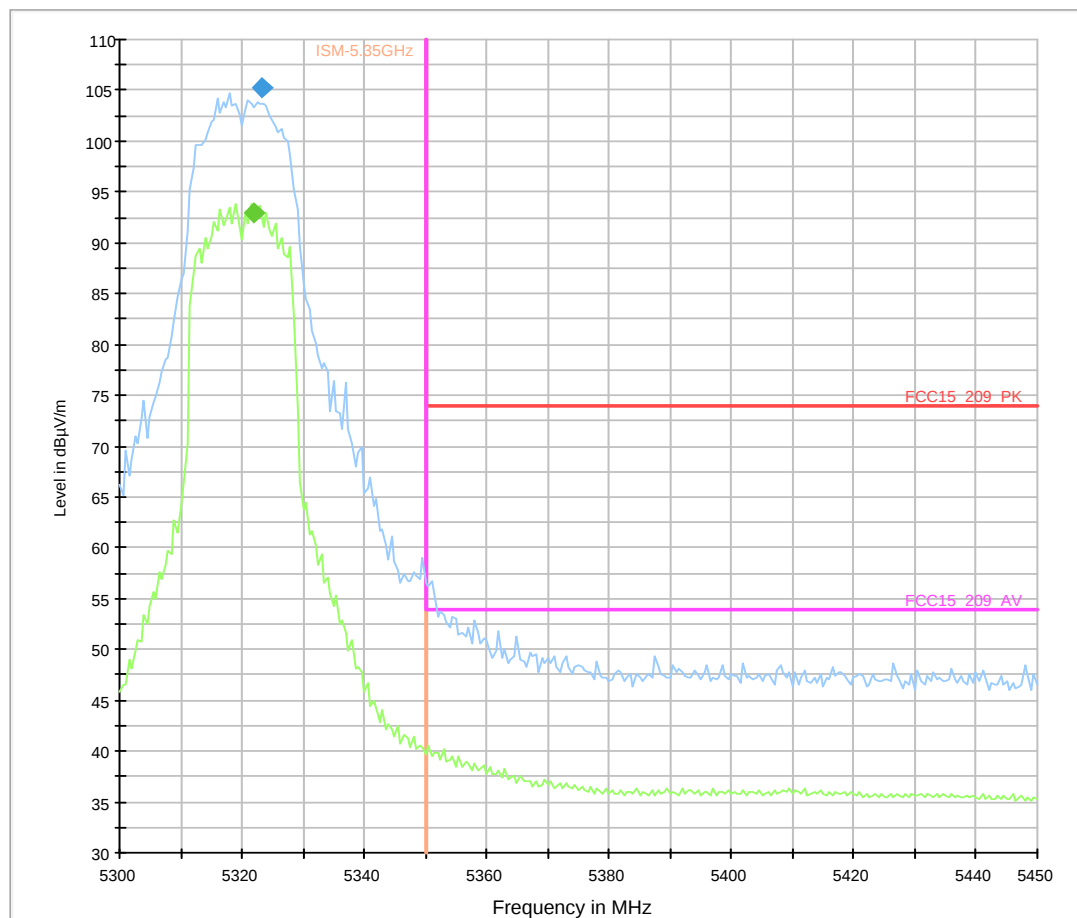
Common Information

Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & §15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no. high=64
Op. Mode:	TX mode continuous, 5GHZ WLAN, 6Mbit/s

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

BE_5.35GHz_Sweep2_SM1_KP1_WLAN_5GHz



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
5323.200000	105.3	100.0	1000.000	155.0	H	143.0	0.0	4.3	44.7

Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
5322.000000	93.0	100.0	1000.000	155.0	H	144.0	0.0	4.3	57.0

EMI Auto Test Template: BE_5.35GHz_Sweep2_SM1_KP1_WLAN_5GHz

Hardware Setup: 549_dBuVm_PA484_TH3_KP1_ESU
 Measurement Type: E(I)RP
 Frequency Range: 5,3 GHz - 5,45 GHz
 Graphics Level Range: 30 dBμV/m - 110 dBμV/m

Preview Measurements:
 Scan Test Template: Sweep2_pre_5GHz

Data Reduction:
 Limit Line #1: FCC15_209_PK
 Limit Line #2: FCC15_209_AV
 Limit Line #3: ISM-5.35GHz
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 50 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -20 dB
 Maximum Number of Results: 10
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: Sweep2_zoom

Adjustment:
 Template for Single Meas.: Sweep2_zoom

Final Measurements:
 Template for Single Meas.: Sweep2_fin

Report Settings:
 Report Template: Report Setup FCC 15_247
 Create Electronic Report: RTF PDF
 Document Name: dummy EMI Report

Actions:
 Test start
 Notify: "Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"

Diagram No.: 8.07_Ch64_BE_2

Common Information

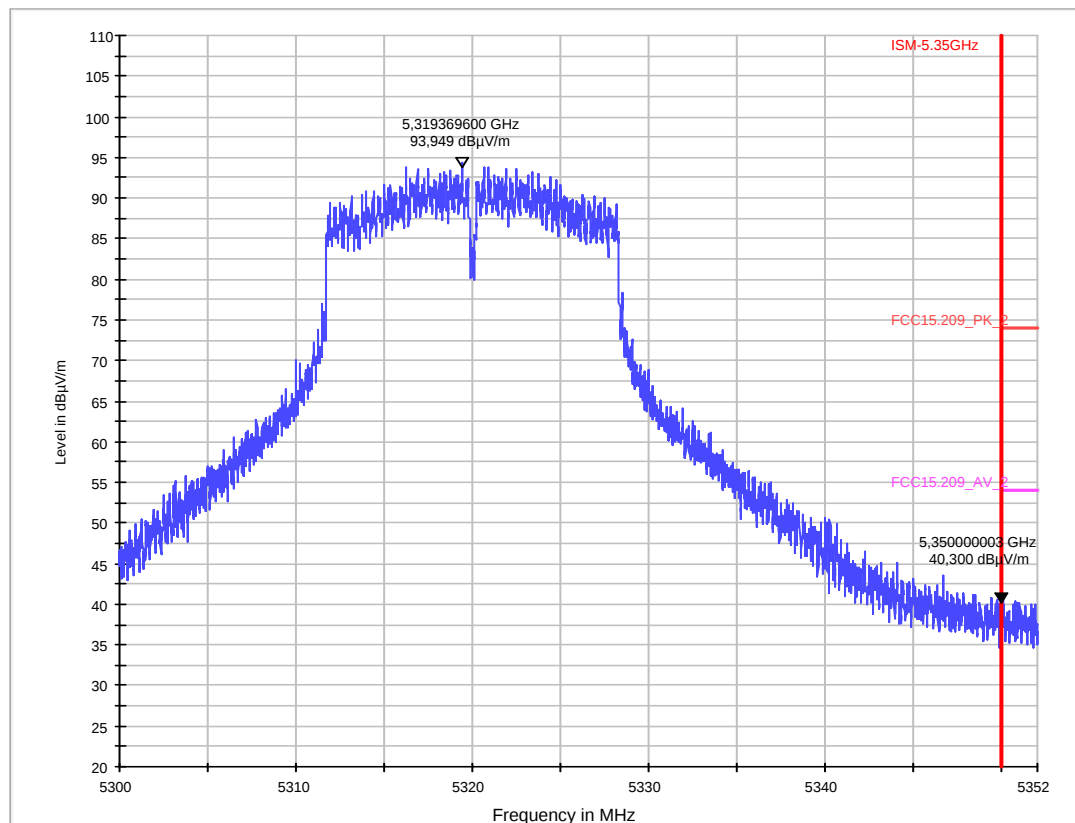
Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & §15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no. high=64
Op. Mode:	TX mode continuous, 5GHZ WLAN, 6Mbit/s

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal

EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

11_ESU_5GHZ_Band_Edge_Channel_64_RBW_30kHz



Sweep Setup: 11_ESU_5GHZ_Band_Edge_Channel_64_RBW_30kHz [EMI radiated]

Hardware Setup:	549_dBuVm_PA484_TH3_KP1_ESU
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamplifier
5.28 GHz - 5,352 GHz	7,2 kHz	PK+	30 kHz	Coupled	0 dB

3.3. Channel 100 g-Mode (left band edge)

Diagram No.: 8.07_Ch100_BE_1_PWR

Common Information

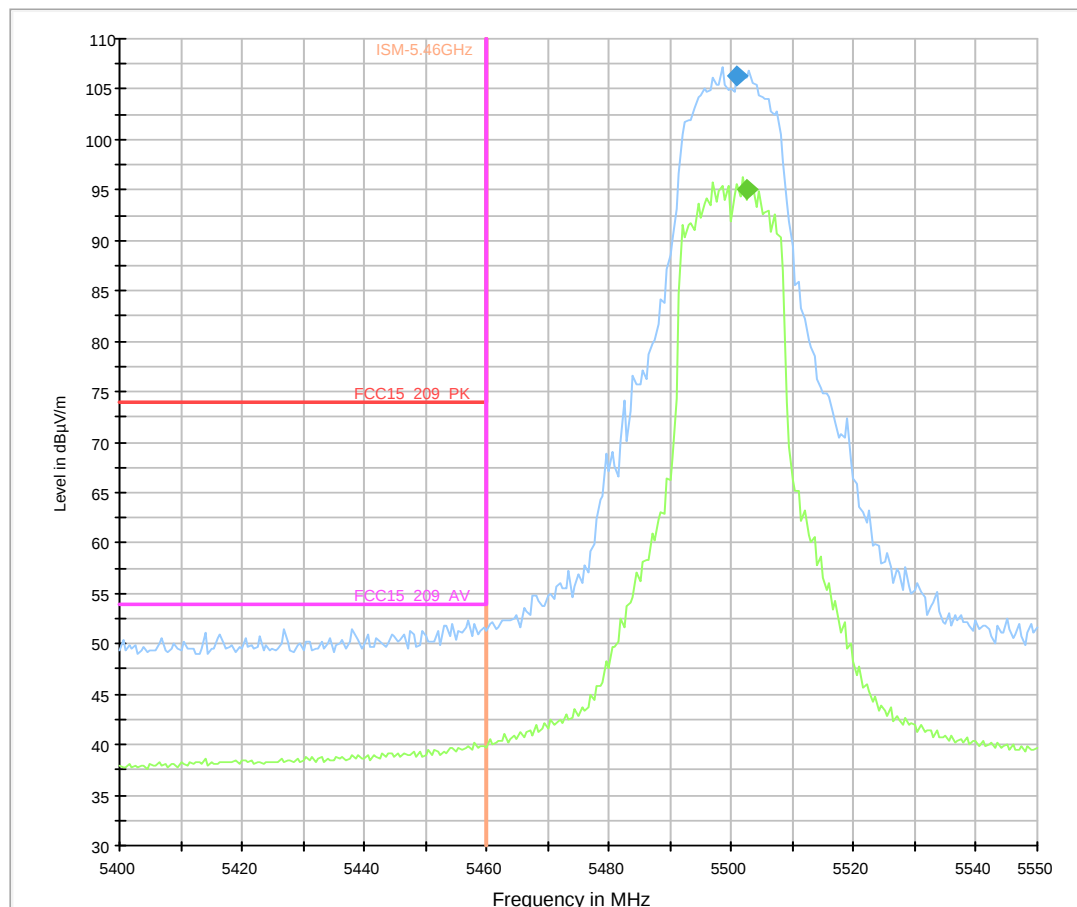
Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & §15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	
Comment:	Channel no. low/middle/high - nicht benötigt löschen !!!
Op. Mode:	WLAN / Bluetooth

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal

EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

BE_5.46GHz_Sweep2_SM1_KP1_WLAN_5GHz



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
5500.900000	106.2	100.0	1000.000	155.0	H	136.0	0.0	4.2	43.8

Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
5502.400000	95.1	100.0	1000.000	155.0	H	140.0	0.0	4.2	54.9

EMI Auto Test Template: BE_5.46GHz_Sweep2_SM1_KP1_WLAN_5GHz

Hardware Setup: 549_dBuVm_PA484_TH3_KP1_ESU
 Measurement Type: E(I)RP
 Frequency Range: 5,4 GHz - 5,55 GHz
 Graphics Level Range: 30 dBμV/m - 110 dBμV/m

Preview Measurements:
 Scan Test Template: Sweep2_pre_5GHz

Data Reduction:
 Limit Line #1: FCC15_209_PK
 Limit Line #2: FCC15_209_AV
 Limit Line #3: ISM-5.46GHz
 Peak Search: 6 dB , Maximum Results: 5
 Subrange Maxima: 50 Subranges , Maxima per Subrange: 1
 Maximum Number of Results: 1
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: Sweep2_zoom

Adjustment:
 Template for Single Meas.: Sweep2_zoom

Final Measurements:
 Template for Single Meas.: Sweep2_fin

Report Settings:
 Report Template: Report Setup FCC 15_247
 Create Electronic Report: RTF PDF
 Document Name: dummy EMI Report

Actions:
 Test start
 Notify: "Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"
 Notify: "Marker PK und AV auf max. manuell stellen in der Data-Reduktion Tab..."

Diagram No.: 8.07_Ch100_BE_2

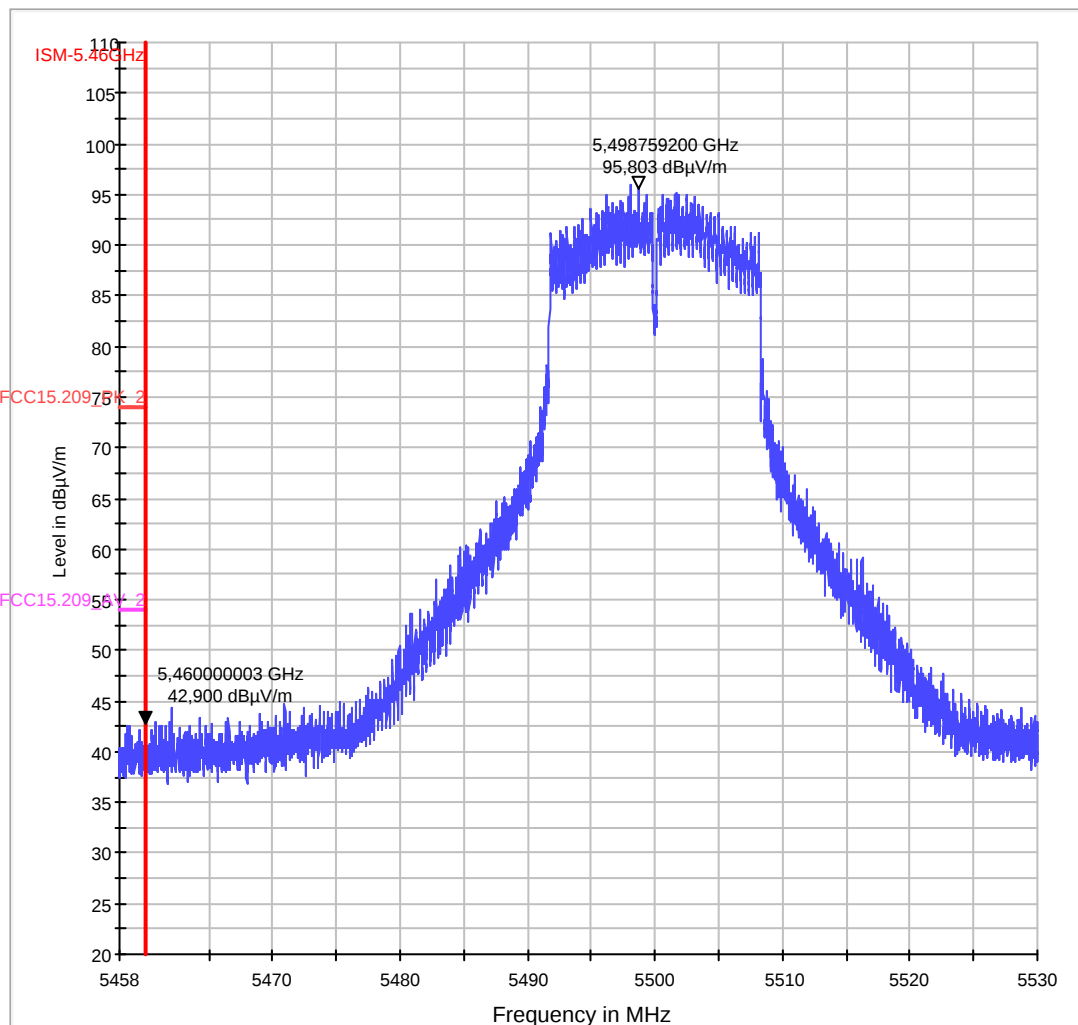
Common Information

Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & 15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no. low=100
Op. Mode:	TX mode continuous, 5GHZ WLAN, 6Mbit/s

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

12_ESU_5GHZ_Band_Edge_Channel_100_RBW_30kHz



Sweep Setup: 12_ESU_5GHZ_Band_Edge_Channel_100_RBW_30kHz [EMI radiated]

Hardware Setup: 549_dBuVm_PA484_TH3_KP1_ESU
Receiver: [ESU 40]
Level Unit: dBμV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamplifier
5.458 GHz - 5.53 GHz	7,2 kHz	PK+	30 kHz	Coupled	0 dB

3.4. Channel 140 g-Mode (right band edge)

Diagram No.: 8.07_Ch140_BE

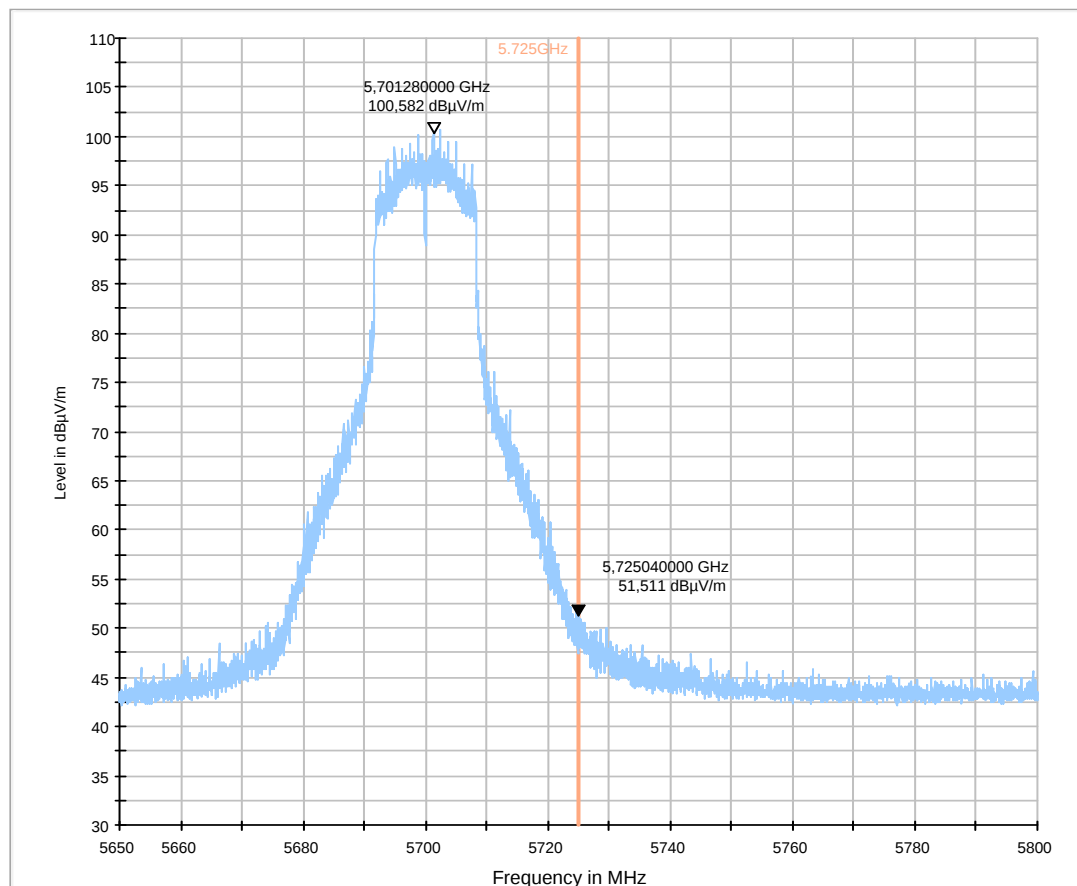
Common Information

Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & §15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no. high=140
Op. Mode:	TX mode continuous, 5GHz WLAN, 6Mbit/s

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

BE_5.725GHz_Sweep2_SM1_KP1_WLAN_5GHz



EMI Auto Test Template: BE_5.725GHz_Sweep2_SM1_KP1_WLAN_5GHz

Hardware Setup:	549_dBuVm_PA484_TH3_KP1_ESU
Measurement Type:	E(l)RP

Frequency Range:	5,65 GHz - 5,8 GHz
Graphics Level Range:	30 dBµV/m - 110 dBµV/m
Preview Measurements:	
Scan Test Template:	Sweep2_pre_5GHz_BE_100kHz
Data Reduction:	
Limit Line #1:	FCC15_209_PK
Limit Line #2:	FCC15_209_AV
Limit Line #3:	5.725GHz
Peak Search:	6 dB , Maximum Results: 5
Subrange Maxima:	50 Subranges , Maxima per Subrange: 1
Maximum Number of Results:	1
Frequency Zoom:	
Zoom Scan Template:	Sweep2_zoom_5GHz
Adjustment:	
Template for Single Meas.:	Sweep2_zoom
Final Measurements:	
Template for Single Meas.:	Sweep2_fin
Report Settings:	
Report Template:	Report Setup FCC 15_247
Create Electronic Report:	RTF PDF
Document Name:	dummy EMI Report
Actions:	
Test start	
Notify:	"Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"
Notify:	"Marker PK und AV auf max. manuell stellen in der Data-Reduktion Tab..."

3.5. Channel 149 g-Mode (left band edge)

Diagram No.: 8.08_Ch149_BE

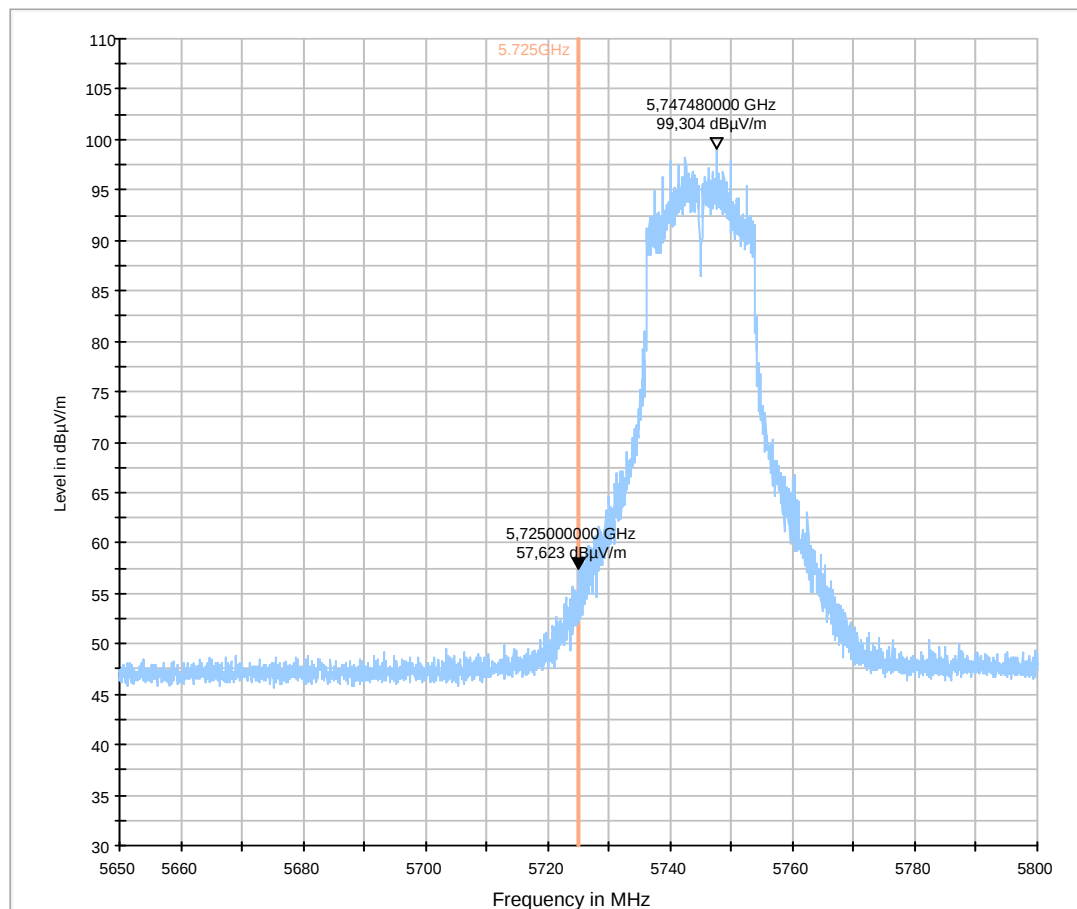
Common Information

Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & 15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no.149=5745MHz
Op. Mode:	WLAN, a-Mode, MCS0

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

BE_5.725GHz_Sweep2_SM1_KP1_WLAN_5GHz

**EMI Auto Test Template: BE_5.725GHz_Sweep2_SM1_KP1_WLAN_5GHz**

Hardware Setup: 549_dBuVm_PA484_TH3_KP1_ESU

Measurement Type:	E(I)RP
Frequency Range:	5,65 GHz - 5,8 GHz
Graphics Level Range:	30 dB μ V/m - 110 dB μ V/m
Preview Measurements:	
Scan Test Template:	Sweep2_pre_5GHz_BE_100kHz
Data Reduction:	
Limit Line #1:	FCC15_209_PK
Limit Line #2:	FCC15_209_AV
Limit Line #3:	5.725GHz
Peak Search:	6 dB , Maximum Results: 5
Subrange Maxima:	50 Subranges , Maxima per Subrange: 1
Maximum Number of Results:	1
Frequency Zoom:	
Zoom Scan Template:	Sweep2_zoom_5GHz
Adjustment:	
Template for Single Meas.:	Sweep2_zoom
Final Measurements:	
Template for Single Meas.:	Sweep2_fin
Report Settings:	
Report Template:	Report Setup FCC 15_247
Create Electronic Report:	RTF PDF
Document Name:	dummy EMI Report
Actions:	
Test start	
Notify:	"Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"
Notify:	"Marker PK und AV auf max. manuell stellen in der Data-Reduktion Tab..."

3.6. Channel 165 g-Mode (right band edge)

Diagram No.: 8.07_Ch165_BE

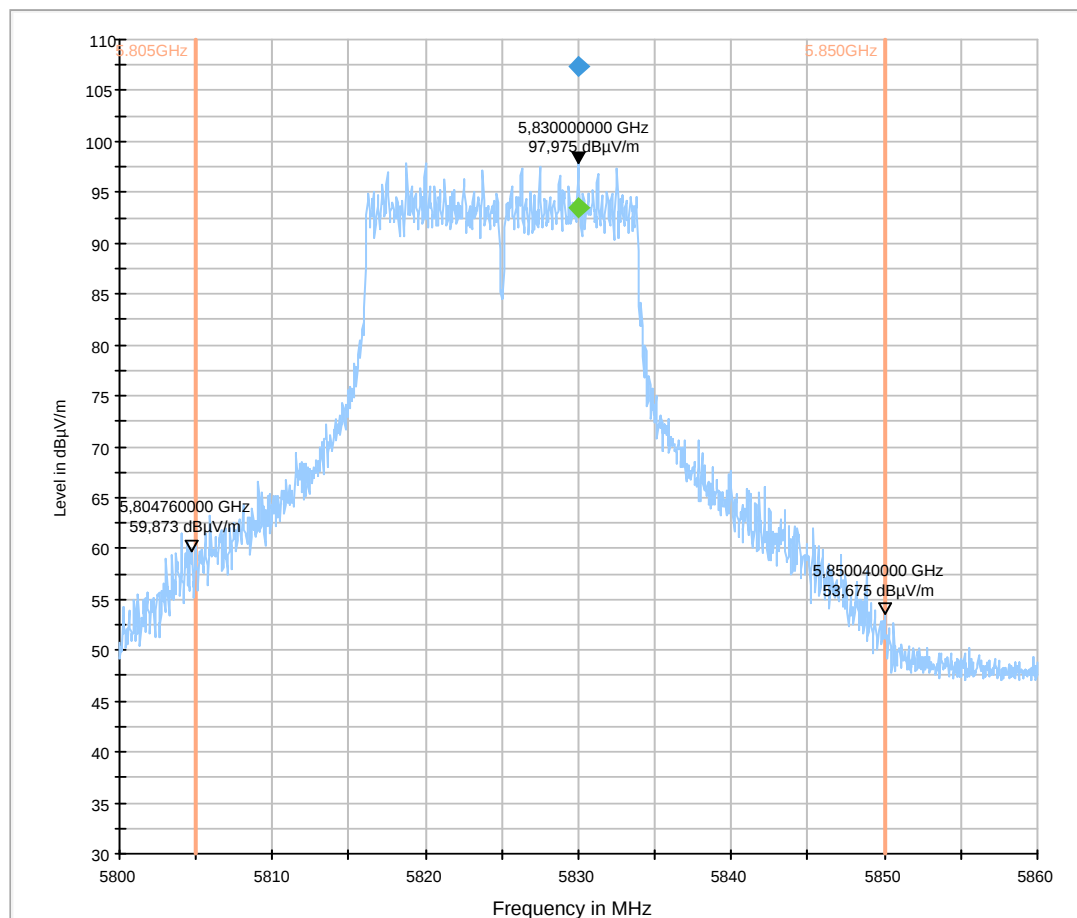
Common Information

Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & §15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no.165=5825MHz
Op. Mode:	WLAN, a-Mode, 6MBit

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

BE_5.850GHz_Sweep2_SM1_KP1_WLAN_5GHz



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
5830.000000	107.3	100.0	1000.000	155.0	H	111.0	0.0	5.2	42.7

Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
5830.000000	93.5	100.0	1000.000	155.0	H	110.0	0.0	5.2	56.5

EMI Auto Test Template: BE_5.850GHz_Sweep2_SM1_KP1_WLAN_5GHz

Hardware Setup: 549_dBuVm_PA484_TH3_KP1_ESU
 Measurement Type: E(I)RP
 Frequency Range: 5,8 GHz - 5,86 GHz
 Graphics Level Range: 30 dBμV/m - 110 dBμV/m

Preview Measurements:
 Scan Test Template: Sweep2_pre_5GHz_BE_100kHz

Data Reduction:
 Limit Line #1: FCC15_209_PK
 Limit Line #2: FCC15_209_AV
 Limit Line #3: 5.805GHz
 Limit Line #4: 5.850GHz
 Peak Search: 6 dB , Maximum Results: 5
 Subrange Maxima: 50 Subranges , Maxima per Subrange: 1
 Maximum Number of Results: 1

Adjustment:
 Template for Single Meas.: Sweep2_zoom

Final Measurements:
 Template for Single Meas.: Sweep2_fin

Report Settings:
 Report Template: Report Setup FCC 15_247
 Create Electronic Report: RTF PDF
 Document Name: dummy EMI Report

Actions:
 Test start
 Notify: "Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"
 Notify: "Marker PK und AV auf max. manuell stellen in der Data-Reduktion Tab..."

3.7. Channel 36 n-Mode (left band edge)

Diagram No.: 8.08_Ch36_BE_1_PWR

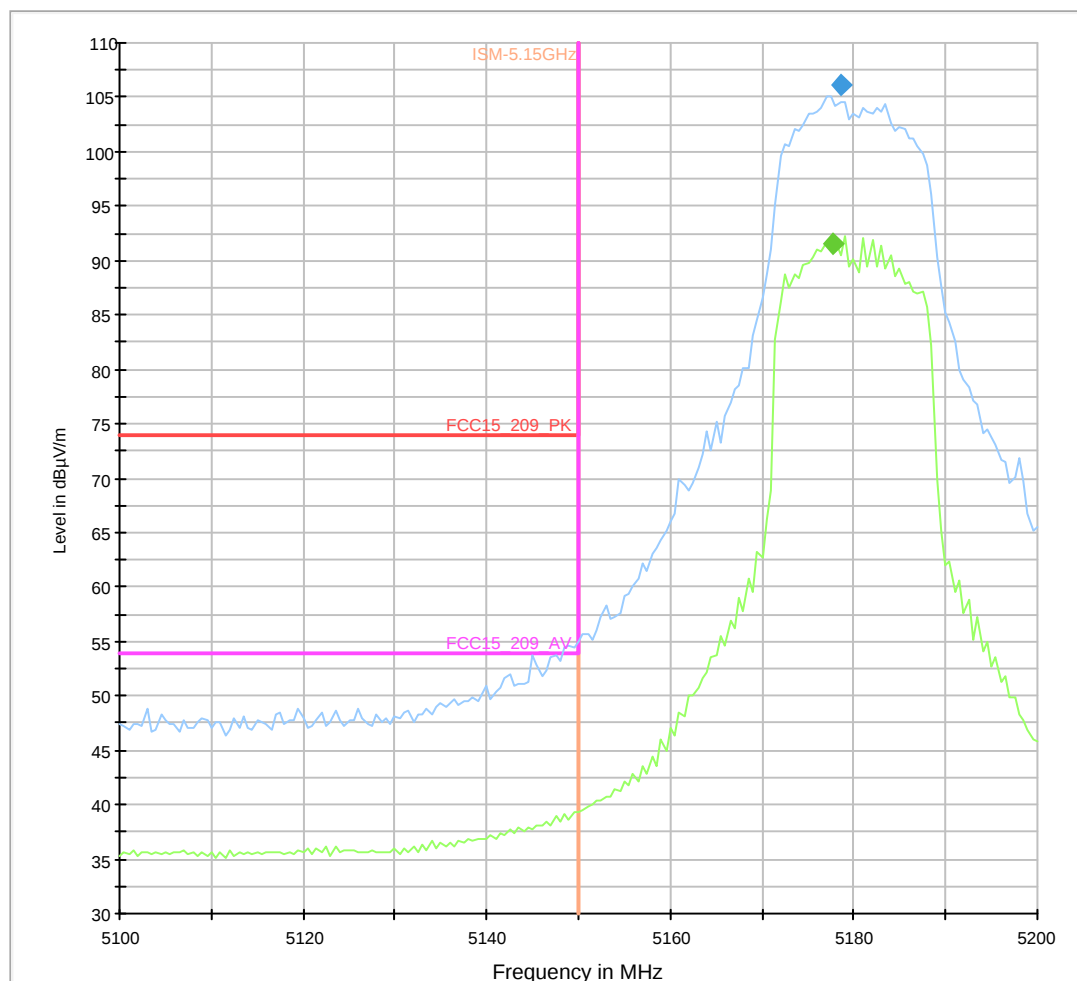
Common Information

Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & §15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no. low=36
Op. Mode:	TX mode continuous, 5GHZ WLAN, MCS0

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

BE_5.15GHz_Sweep2_SM1_KP1_WLAN_5GHz



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
5178.700000	106.2	100.0	1000.000	155.0	H	144.0	0.0	4.1	43.8

Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
5177.800000	91.5	100.0	1000.000	155.0	H	140.0	0.0	4.1	58.5

EMI Auto Test Template: BE_5.15GHz_Sweep2_SM1_KP1_WLAN_5GHz

Hardware Setup: 549_dBuVm_PA484_TH3_KP1_ESU
 Measurement Type: E(l)RP
 Frequency Range: 5,1 GHz - 5,2 GHz
 Graphics Level Range: 30 dBμV/m - 110 dBμV/m

Preview Measurements:
 Scan Test Template: Sweep2_pre_5GHz

Data Reduction:
 Limit Line #1: FCC15_209_PK
 Limit Line #2: FCC15_209_AV
 Limit Line #3: ISM-5.15GHz
 Limit Line #4: ISM-5.25GHz
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 50 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -20 dB
 Maximum Number of Results: 10
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: Sweep2_zoom

Adjustment:
 Template for Single Meas.: Sweep2_zoom

Final Measurements:
 Template for Single Meas.: Sweep2_fin

Report Settings:
 Report Template: Report Setup FCC 15_247
 Create Electronic Report: RTF PDF
 Document Name: dummy EMI Report

Actions:
 Test start
 Notify: "Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"

Diagram No.: 8.08_Ch36_Band_BE_2

Common Information

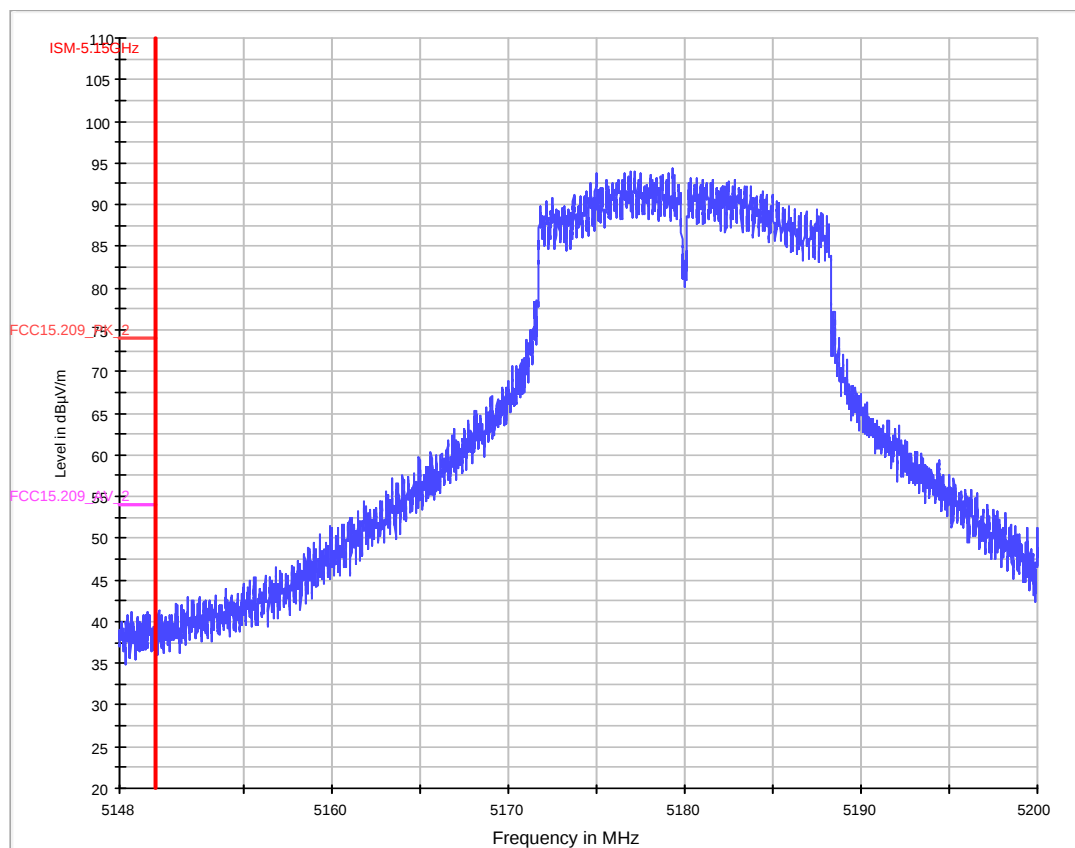
Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & 15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no. low=36
Op. Mode:	TX mode continuous, 5GHZ WLAN, MCS0

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal

EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

10_ESU_5GHZ_Band_Edge_Channel_36_RBW_30kHz



Sweep Setup: 10_ESU_5GHZ_Band_Edge_Channel_36_RBW_30kHz [EMI radiated]

Hardware Setup:	549_dBuVm_PA484_TH3_KP1_ESU
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamplifier
5.148 GHz - 5.2 GHz	5,2 kHz	PK+	30 kHz	Coupled	0 dB

3.8. Channel 64 n-Mode (right band edge)

Diagram No.: 8.08_Ch64_BE_1_PWR

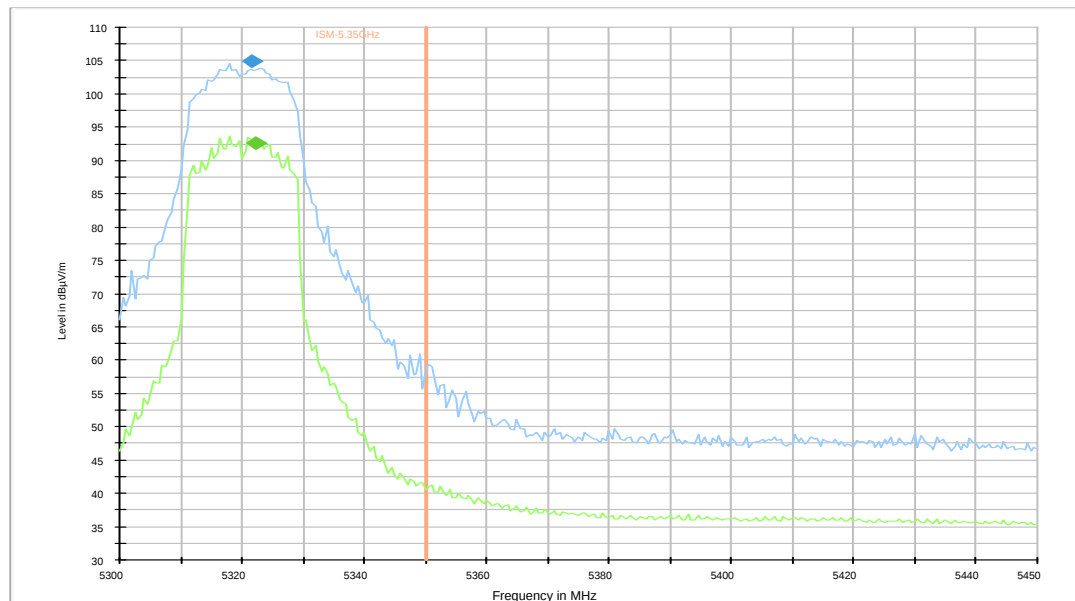
Common Information

Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: §15.205 & §15.209 Intentional Radiator
 Antenna polarisation: horizontal/vertical
 Operator Name: Lor
 Comment: Channel no. high=64
 Op. Mode: TX mode continuous, 5GHZ WLAN, MCS0

EUT Information

Manufacturer: Research In Motion Limited
 Type: GSM/WCDMA/LTE Mobile Terminal
 EUT: RFG81UW
 EUT additional information: CER-48928-001 Rev2 17-Jul-12
 HW version: new
 SW version: tbd
 Serial number: 004401139037002
 Power Supply: full internal battery
 Comments: --

BE_5.35GHz_Sweep2_SM1_KP1_WLAN_5GHz



Final Result 1

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
5321.600000	104.8	100.0	1000.000	155.0	H	140.0	0.0	4.3	

Final Result 2

Frequency (MHz)	Average (dBµV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
5322.400000	92.6	100.0	1000.000	155.0	H	136.0	0.0	4.3	

EMI Auto Test Template: BE_5.35GHz_Sweep2_SM1_KP1_WLAN_5GHz

Hardware Setup:	549_dBuVm_PA484_TH3_KP1_ESU
Measurement Type:	E(I)RP
Frequency Range:	5,3 GHz - 5,45 GHz
Graphics Level Range:	30 dBμV/m - 110 dBμV/m
Preview Measurements:	
Scan Test Template:	Sweep2_pre_5GHz
Data Reduction:	
Limit Line #1:	ISM-5.35GHz
Peak Search:	6 dB , Maximum Results: 5
Subrange Maxima:	50 Subranges , Maxima per Subrange: 1
Maximum Number of Results:	1
Frequency Zoom:	
Zoom Scan Template:	Sweep2_zoom
Adjustment:	
Template for Single Meas.:	Sweep2_zoom
Final Measurements:	
Template for Single Meas.:	Sweep2_fin
Report Settings:	
Report Template:	Report Setup FCC 15_247
Create Electronic Report:	RTF PDF
Document Name:	dummy EMI Report
Actions:	
Test start	
Notify:	"Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"

Diagram No.: 8.08_Ch64_BE_2

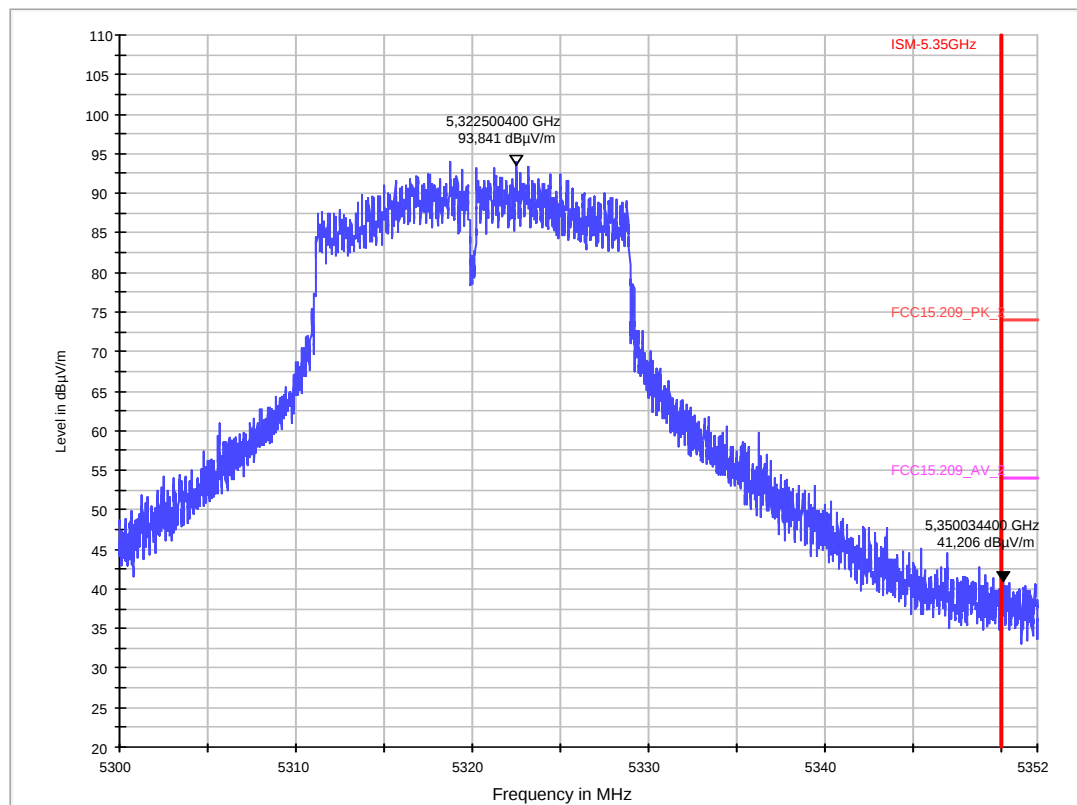
Common Information

Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & §15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no. high=64
Op. Mode:	TX mode continuous, 5GHZ WLAN, MCS0

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

11_ESU_5GHZ_Band_Edge_Channel_64_RBW_30kHz



Sweep Setup: 11_ESU_5GHZ_Band_Edge_Channel_64_RBW_30kHz [EMI radiated]

Hardware Setup:	549_dBuVm_PA484_TH3_KP1_ESU
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
5.3 GHz - 5,352 GHz	5,2 kHz	PK+	30 kHz	Coupled	0 dB

3.9. Channel 100 n-Mode (left band edge)

Diagram No.: 8.08_Ch100_BE_1_PWR

Common Information

Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: §15.205 & 15.209 Intentional Radiator
 Antenna polarisation: horizontal/vertical

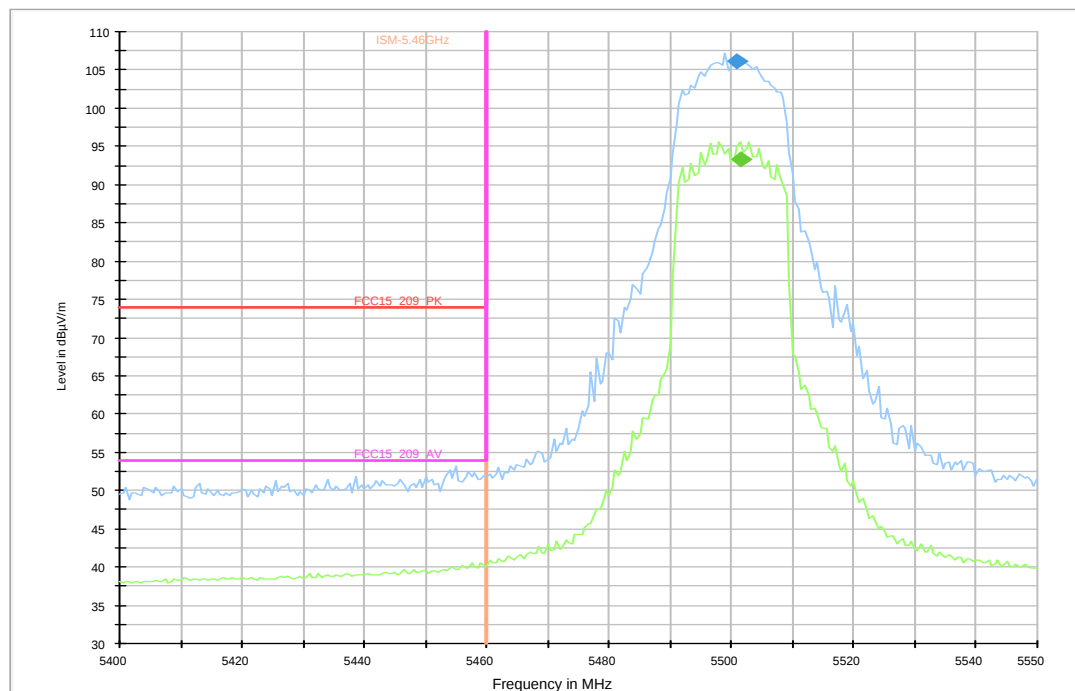
Operator Name: Lor
 Comment: Channel no. low=100
 Op. Mode: TX mode continuous, 5GHZ WLAN, MCS0

EUT Information

Manufacturer: Research In Motion Limited
 Type: GSM/WCDMA/LTE Mobile Terminal

EUT: RFG81UW
 EUT additional information: CER-48928-001 Rev2 17-Jul-12
 HW version: new
 SW version: tbd
 Serial number: 004401139037002
 Power Supply: full internal battery
 Comments: --

BE_5.46GHz_Sweep2_SM1_KP1_WLAN_5GHz



Final Result 1

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)
5501.000000	106.1	100.0	1000.000	155.0	H	135.0	0.0	4.2	43.9

Final Result 2

Frequency (MHz)	Average (dBµV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)
5501.600000	93.4	100.0	1000.000	155.0	H	135.0	0.0	4.2	56.6

EMI Auto Test Template: BE_5.46GHz_Sweep2_SM1_KP1_WLAN_5GHz

Hardware Setup: 549_dBuVm_PA484_TH3_KP1_ESU
Measurement Type: E(I)RP
Frequency Range: 5,4 GHz - 5,55 GHz
Graphics Level Range: 30 dB μ V/m - 110 dB μ V/m

Preview Measurements:
Scan Test Template: Sweep2_pre_5GHz

Data Reduction:
Limit Line #1: FCC15_209_PK
Limit Line #2: FCC15_209_AV
Limit Line #3: ISM-5.46GHz
Peak Search: 6 dB , Maximum Results: 5
Subrange Maxima: 50 Subranges , Maxima per Subrange: 1
Maximum Number of Results: 1
After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Scan Template: Sweep2_zoom

Adjustment:
Template for Single Meas.: Sweep2_zoom

Final Measurements:
Template for Single Meas.: Sweep2_fin

Report Settings:
Report Template: Report Setup FCC 15_247
Create Electronic Report: RTF PDF
Document Name: dummy EMI Report

Actions:
Test start
Notify: "Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"
Notify: "Marker PK und AV auf max. manuell stellen in der Data-Reduktion Tab..."

Diagram No.: 8.08_Ch100_BE_2

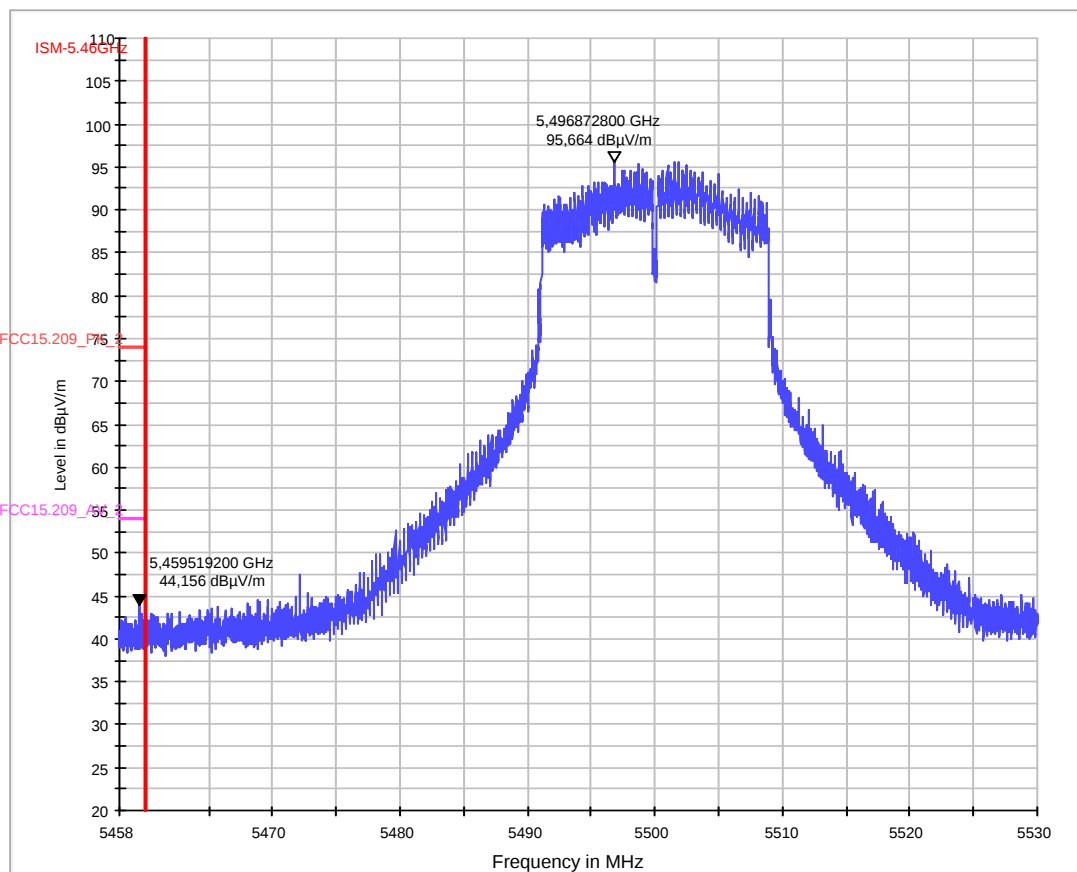
Common Information

Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & §15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no. low=100
Op. Mode:	TX mode continuous, 5GHZ WLAN, MCS0

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

12_ESU_5GHZ_Band_Edge_Channel_100_RBW_30kHz



Sweep Setup: 12_ESU_5GHZ_Band_Edge_Channel_100_RBW_30kHz [EMI radiated]

Hardware Setup:	549_dBuVm_PA484_TH3_KP1_ESU
Receiver:	[ESU 40]
Level Unit:	dBµV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
5.458 GHz - 5.53 GHz	7,2 kHz	PK+	30 kHz	Coupled	0 dB

3.10. Channel 140 n-Mode (right band edge)

Diagram No.: 8.08_Ch140_BE

Common Information

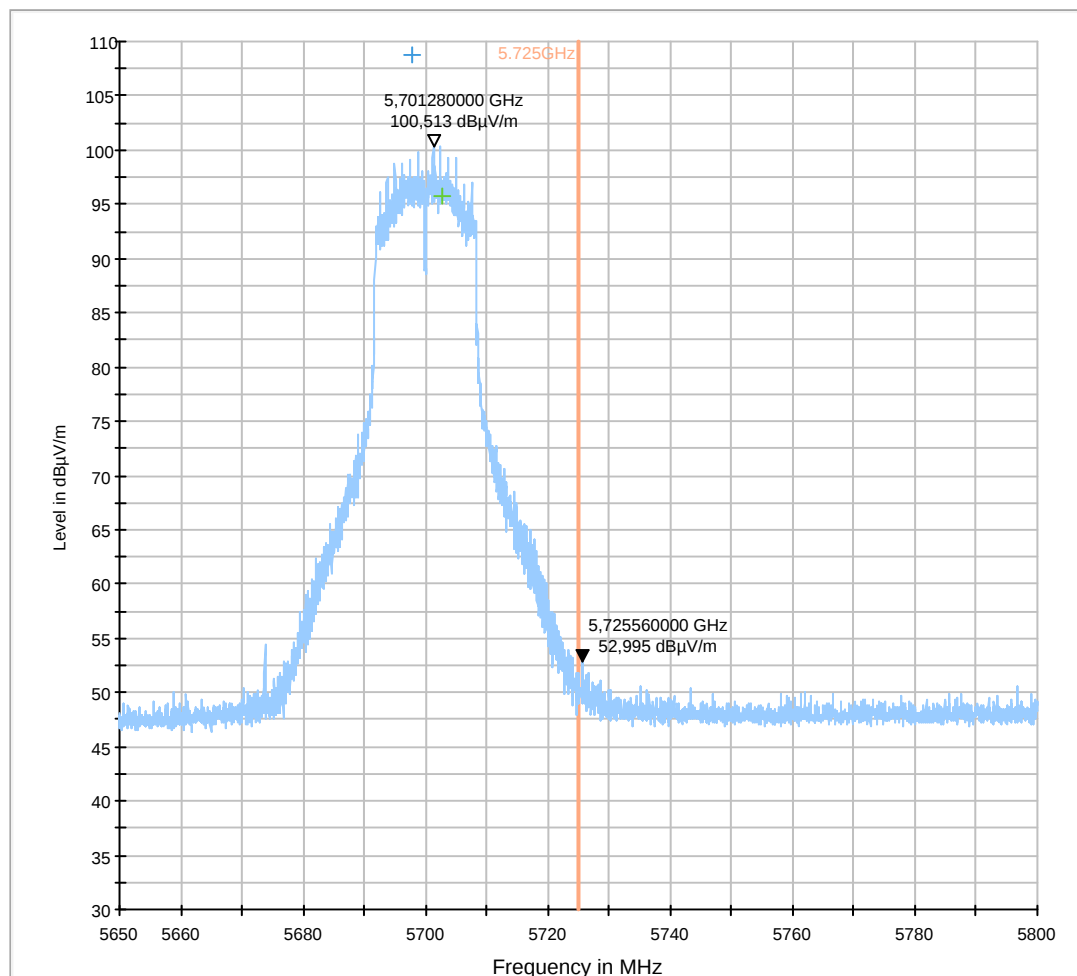
Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & §15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no. high=140
Op. Mode:	TX mode continuous, 5GHZ WLAN, MCS0

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal

EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

BE_5.725GHz_Sweep2_SM1_KP1_WLAN_5GHz



EMI Auto Test Template: BE_5.725GHz_Sweep2_SM1_KP1_WLAN_5GHz

Hardware Setup: 549_dBuVm_PA484_TH3_KP1_ESU
Measurement Type: E(I)RP
Frequency Range: 5,65 GHz - 5,8 GHz
Graphics Level Range: 30 dB μ V/m - 110 dB μ V/m

Preview Measurements:
Scan Test Template: Sweep2_pre_5GHz_BE_100kHz

Data Reduction:
Limit Line #1: FCC15_209_PK
Limit Line #2: FCC15_209_AV
Limit Line #3: 5.725GHz
Peak Search: 6 dB , Maximum Results: 5
Subrange Maxima: 50 Subranges , Maxima per Subrange: 1
Maximum Number of Results: 1

Frequency Zoom:
Zoom Scan Template: Sweep2_zoom_5GHz

Adjustment:
Template for Single Meas.: Sweep2_zoom

Final Measurements:
Template for Single Meas.: Sweep2_fin

Report Settings:
Report Template: Report Setup FCC 15_247
Create Electronic Report: RTF PDF
Document Name: dummy EMI Report

Actions:
Test start
Notify: "Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"
Notify: "Marker PK und AV auf max. manuell stellen in der Data-Reduktion Tab..."

3.11. Channel 149 n-Mode (left band edge)

Diagram No.: 8.08_Ch149_BE

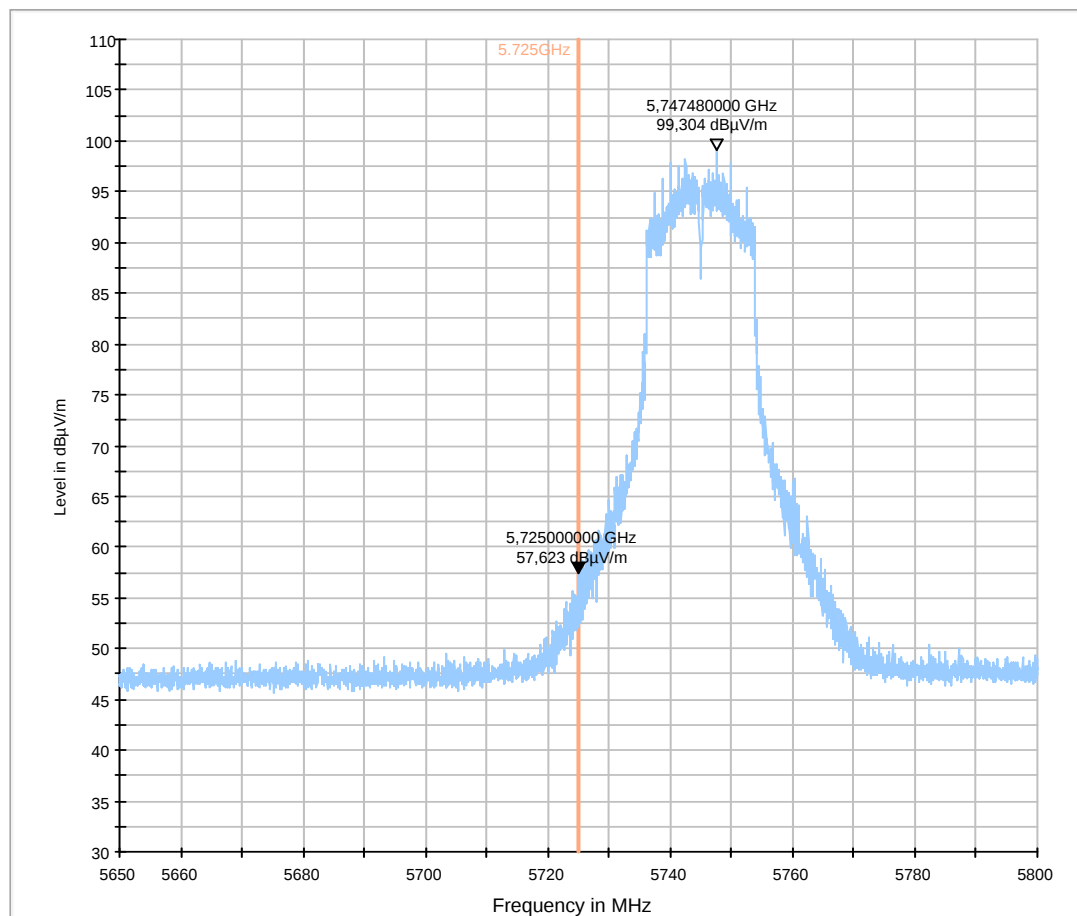
Common Information

Test Description:	Radiated field strength emission accord. §15.247 in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	§15.205 & §15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no.149=5745MHz
Op. Mode:	WLAN, a-Mode, MCS0

EUT Information

Manufacturer:	Research In Motion Limited
Type:	GSM/WCDMA/LTE Mobile Terminal
EUT:	RFG81UW
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037002
Power Supply:	full internal battery
Comments:	--

BE_5.725GHz_Sweep2_SM1_KP1_WLAN_5GHz



EMI Auto Test Template: BE_5.725GHz_Sweep2_SM1_KP1_WLAN_5GHz

Hardware Setup:	549_dBuVm_PA484_TH3_KP1_ESU
Measurement Type:	E(I)RP
Frequency Range:	5,65 GHz - 5,8 GHz
Graphics Level Range:	30 dBµV/m - 110 dBµV/m
Preview Measurements:	
Scan Test Template:	Sweep2_pre_5GHz_BE_100kHz
Data Reduction:	
Limit Line #1:	FCC15_209_PK
Limit Line #2:	FCC15_209_AV
Limit Line #3:	5.725GHz
Peak Search:	6 dB , Maximum Results: 5
Subrange Maxima:	50 Subranges , Maxima per Subrange: 1
Maximum Number of Results:	1
Frequency Zoom:	
Zoom Scan Template:	Sweep2_zoom_5GHz
Adjustment:	
Template for Single Meas.:	Sweep2_zoom
Final Measurements:	
Template for Single Meas.:	Sweep2_fin
Report Settings:	
Report Template:	Report Setup FCC 15_247
Create Electronic Report:	RTF PDF
Document Name:	dummy EMI Report
Actions:	
Test start	
Notify:	"Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"
Notify:	"Marker PK und AV auf max. manuell stellen in der Data-Reduktion Tab..."

3.12. Channel 165 n-Mode (right band edge)

Diagram No.: 8.08_Ch165_BE

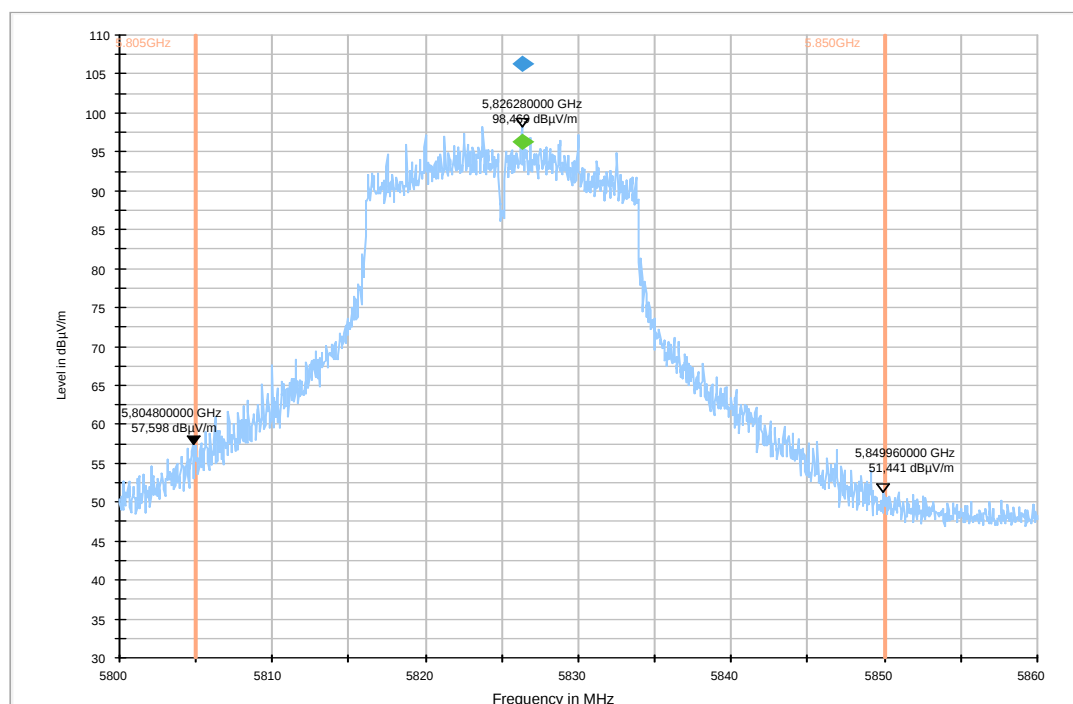
Common Information

Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: §15.205 & 15.209 Intentional Radiator
 Antenna polarisation: horizontal/vertical
 Operator Name: Lor
 Comment: Channel no.165=5825MHz
 Op. Mode: WLAN, a-Mode, MCS0

EUT Information

Manufacturer: Research In Motion Limited
 Type: GSM/WCDMA/LTE Mobile Terminal
 EUT: RFG81UW
 EUT additional information: CER-48928-001 Rev2 17-Jul-12
 HW version: new
 SW version: tbd
 Serial number: 004401139037002
 Power Supply: full internal battery
 Comments: --

BE_5.850GHz_Sweep2_SM1_KP1_WLAN_5GHz



Final Result 1

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Marginal (dB)
5826.280000	106.3	100.0	1000.000	155.0	H	123.0	0.0	5.2	43.7

Final Result 2

Frequency (MHz)	Average (dBµV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Marginal (dB)
5826.280000	96.4	100.0	1000.000	155.0	H	123.0	0.0	5.2	53.6

EMI Auto Test Template: BE_5.850GHz_Sweep2_SM1_KP1_WLAN_5GHz

Hardware Setup: 549_dBuVm_PA484_TH3_KP1_ESU
Measurement Type: E(I)RP
Frequency Range: 5,8 GHz - 5,9 GHz
Graphics Level Range: 30 dBµV/m - 110 dBµV/m

Preview Measurements:
Scan Test Template: Sweep2_pre_5GHz_BE_100kHz

Data Reduction:
Limit Line #1: FCC15_209_PK
Limit Line #2: FCC15_209_AV
Limit Line #3: 5.805GHz
Limit Line #4: 5.850GHz
Peak Search: 6 dB , Maximum Results: 5
Subrange Maxima: 50 Subranges , Maxima per Subrange: 1
Maximum Number of Results: 1

Adjustment:
Template for Single Meas.: Sweep2_zoom

Final Measurements:
Template for Single Meas.: Sweep2_fin

Report Settings:
Report Template: Report Setup FCC 15_247
Create Electronic Report: RTF PDF
Document Name: dummy EMI Report

Actions:
Test start
Notify: "Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"
Notify: "Marker PK und AV auf max. manuell stellen in der Data-Reduktion Tab..."

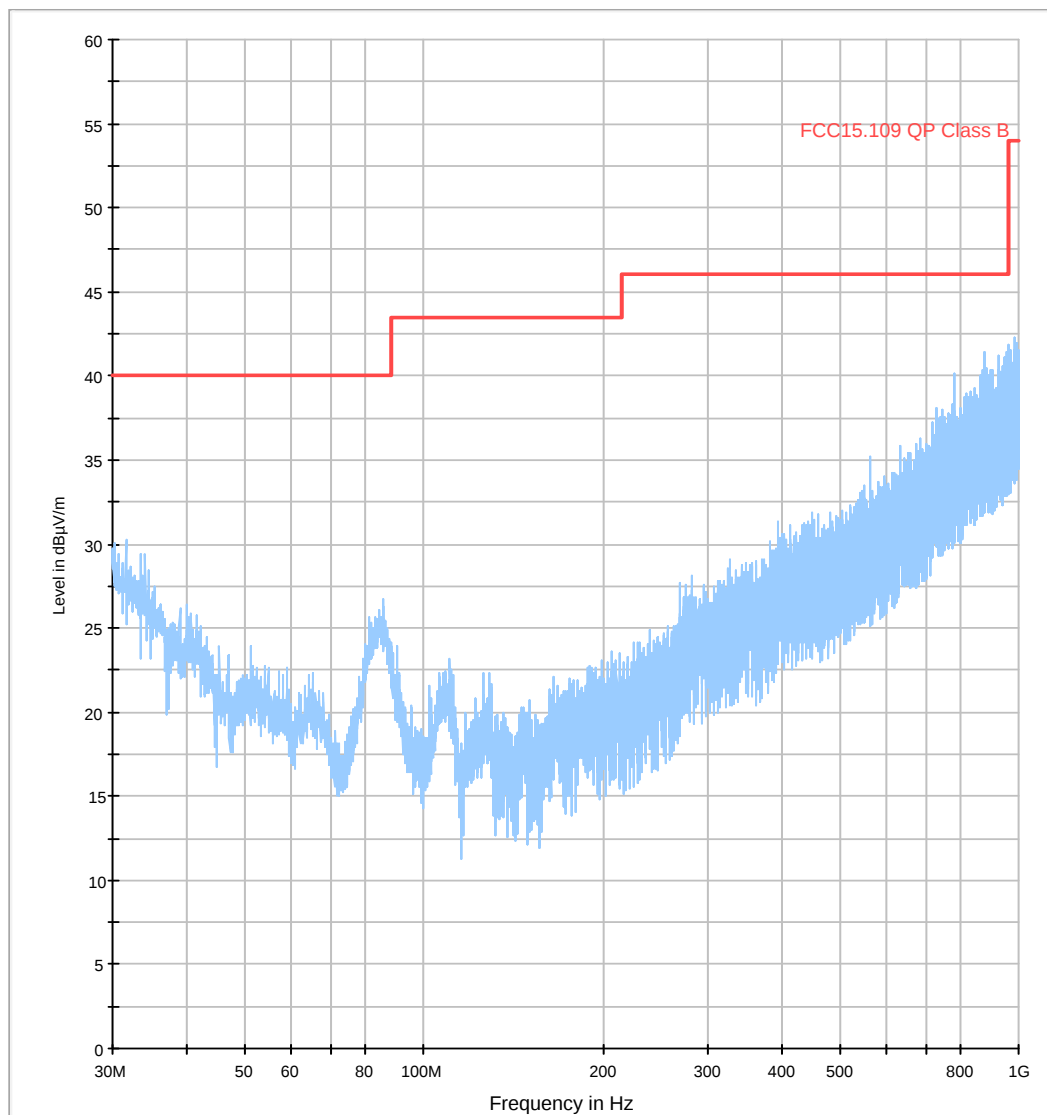
4. Radiated EMI measurements accord. §15.109 class B

4.1. Frequency range 30MHz to 1000MHz

Diagram 2.01

Test description:	14.08.2012 Page 1 of 2
Test site and distance:	Electric Fieldstrength Measurement
Distance correction:	Semi Anechoic Room (SAR) with 3 m measurement distance
Used filter:	not used
Technical Data:	please see page 2 for detailed data of measurement setup
Test specification.:	FCC 15.109 Class B; RSS-Gen
EUT:	Sample 1 + HS1 + CH7 + USB3 + ACC2
Operator:	dpa
Operating conditions:	RX (Ch100, MCS0) + Charging
Power during tests:	230V/50Hz
Comment 1:	

18_FCC15.109_Class B_hor+vert_kipp



EMI Auto Test Template: 18_FCC15.109_Class B_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Positioning Speed = 5
 Polarization: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	0,00005 s	0 dB

Receiver: [ESS]

Data Reduction:
 Limit Line #1: FCC15.109 QP Class B
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 10
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	10 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Adjustment:
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Elevation: Adjustment with full Range , Measuring Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	PK+	120 kHz	0,02 s	0 dB

Receiver: [ESS]

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	100 kHz	QPK	120 kHz	1 s	0 dB

Receiver: [ESS]

Report Settings:
 Report Template: FCC15_109_vert_hor_classB
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Actions:
 Data Reduction: Before
 Notify: Sound (WAV file) 'tada.wav'
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"
 Final Measurements: After
 Notify: Sound (WAV file) 'tada.wav'

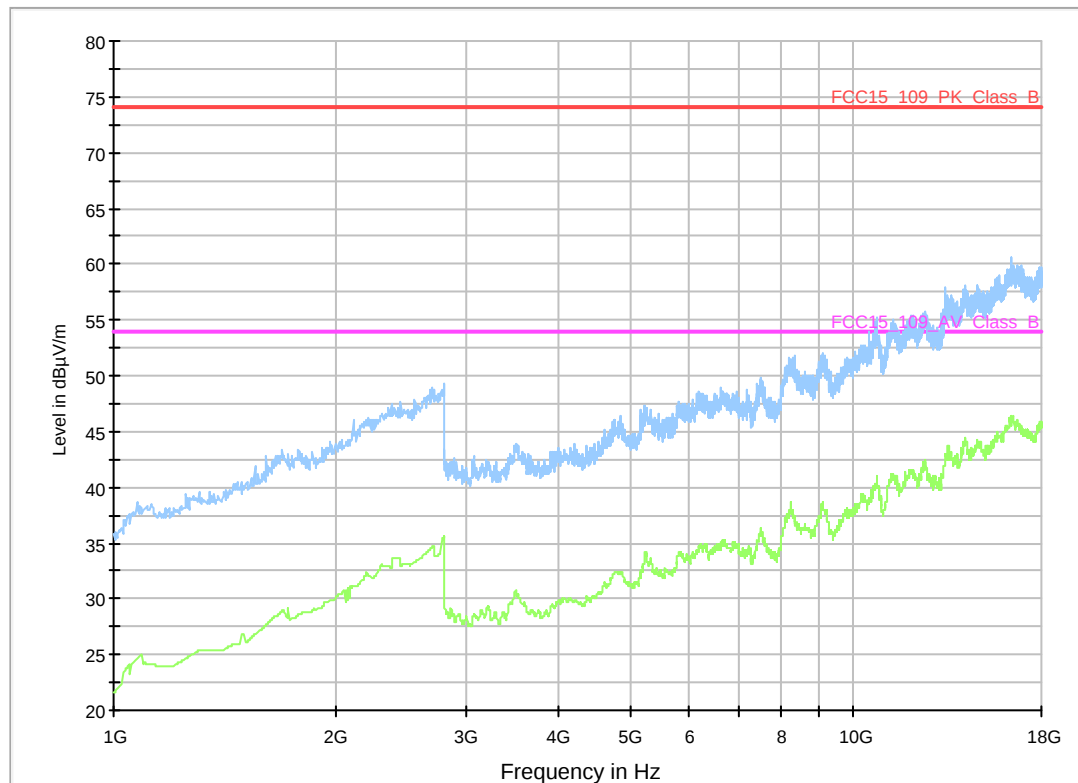
4.2. Frequency range 1000MHz to 18MHz

Diagram 8.03

Common Information

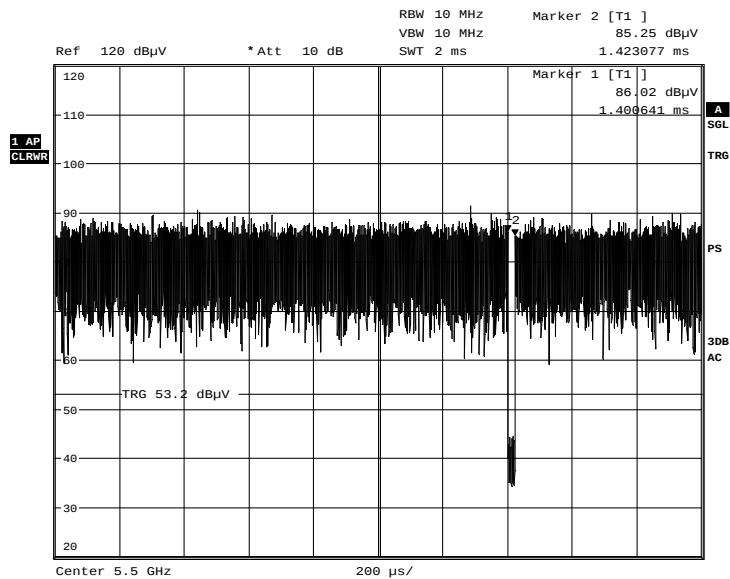
Test Description:	Radiated Field Strength Emission
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.109
Section	15.109
Operating Mode:	WLAN 802.11a-mode, Ch100; MCS0
Equipment Class:	Class B
Environmental Conditions:	Humidity: 49%rH; Temperature: 23°C
Operator:	

030445_FCC_Part15.109_Unint_Rad_Class_B_1G-20G_FSEK



5. Duty-Cycle used for radiated measurements

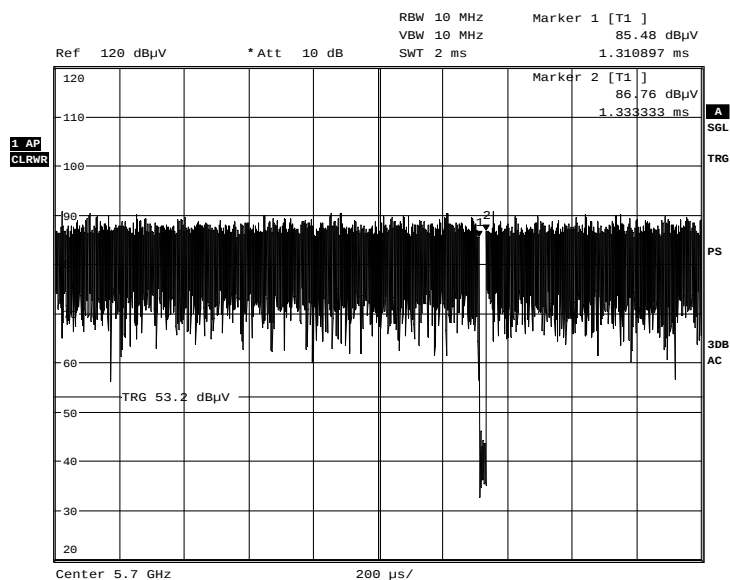
5.1. g-Mode, 6Mbit



Date: 24.SEP.2012 17:26:28

$$\text{Duty-Cycle [\%]} = \text{TX}_{\text{on}} / (\text{TX}_{\text{on}} + \text{TX}_{\text{off}}) [\%] = 1.400641 \text{ms} / 1.423077 * 100\% = 98.42\% > 98\%$$

5.2. n-Mode, MCS0-Mode



Date: 24.SEP.2012 17:29:24

$$\text{Duty-Cycle [\%]} = \text{TX}_{\text{on}} / (\text{TX}_{\text{on}} + \text{TX}_{\text{off}}) [\%] = 1.310897 \text{ms} / 1.333333 * 100\% = 98.31\% > 98\%$$