

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

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

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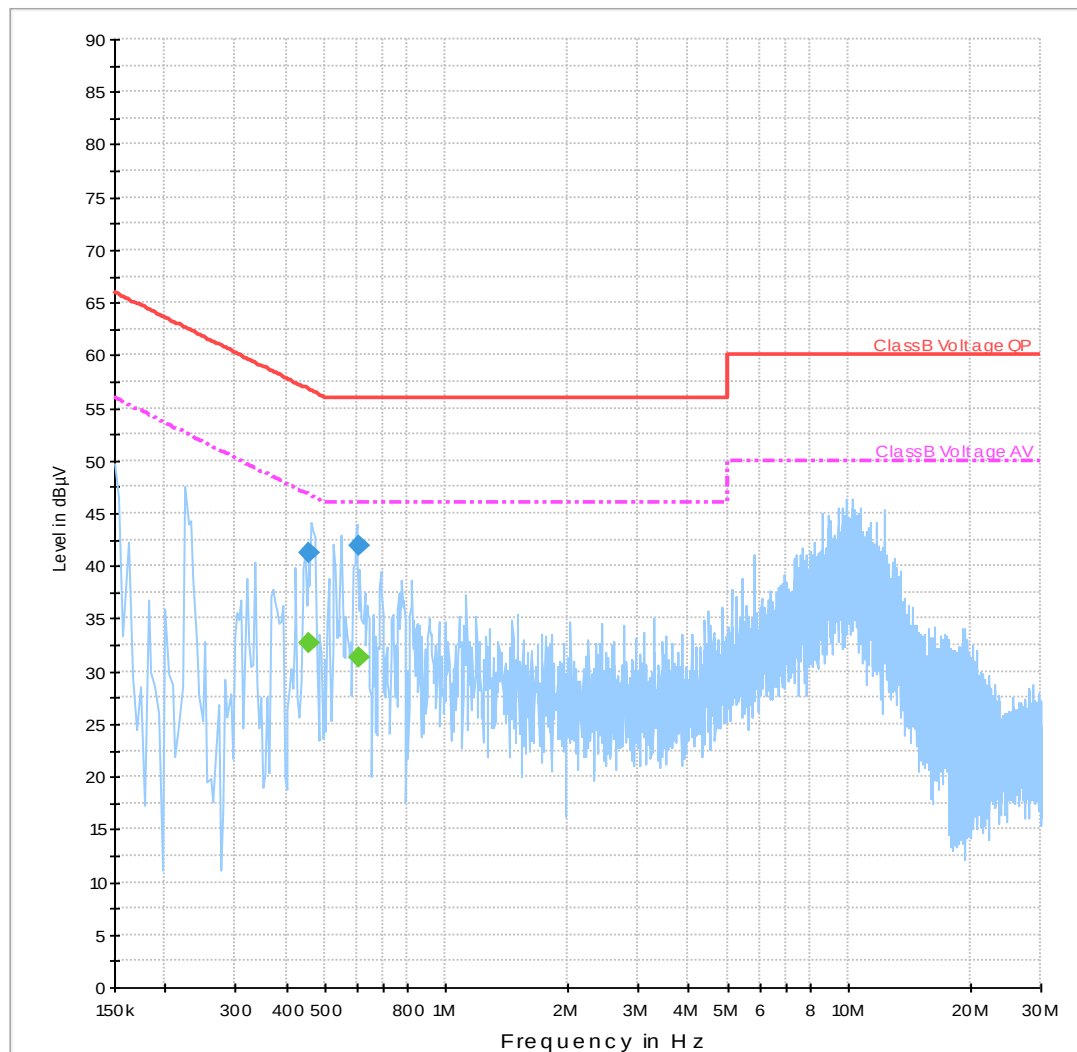
1. Conducted EMI measurements on AC-mains port according 15.207, class B

Diagram No. 1.1_BT

Test Description:	Date: 03.08.2012 Page 1 of 3
Test Description:	Conducted Voltage Measurement Class B
Testspezifikation:	FCC 15.207, RSS-Gen
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.	2-0037-12-1j

EUT:	RFG81UW (sample 4) + HS1 + CH2 + USB1
Manufacturer:	RIM
Operating mode:	BT Tx + charging
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)
0.454000	41.2	15000.0	9.000	GN D	L1	0.0	15.6	56.8
0.605719	41.9	15000.0	9.000	GN D	L1	0.0	14.1	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr (dB)	Margin (dB)	Limit (dBμV)
0.454000	32.6	15000.0	9.000	GN D	L1	0.0	14.2	46.8
0.605719	31.3	15000.0	9.000	GN D	L1	0.0	14.7	46.0

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

Actions:
 Test stop
 Notify: "End of Test"

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

2.1. Channel 0, GFSK-Modulation

Diagram No. 8.01_Ch0_Sweep1

18.06.2012 Page 1 of 2
 Test description: Electric Fieldstrength 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 / RSS-210: Issue 8

Operator: Tas
 Operating conditions: BT- Ch. 0 (UL = 2402.0MHz), GFSK (DH5)

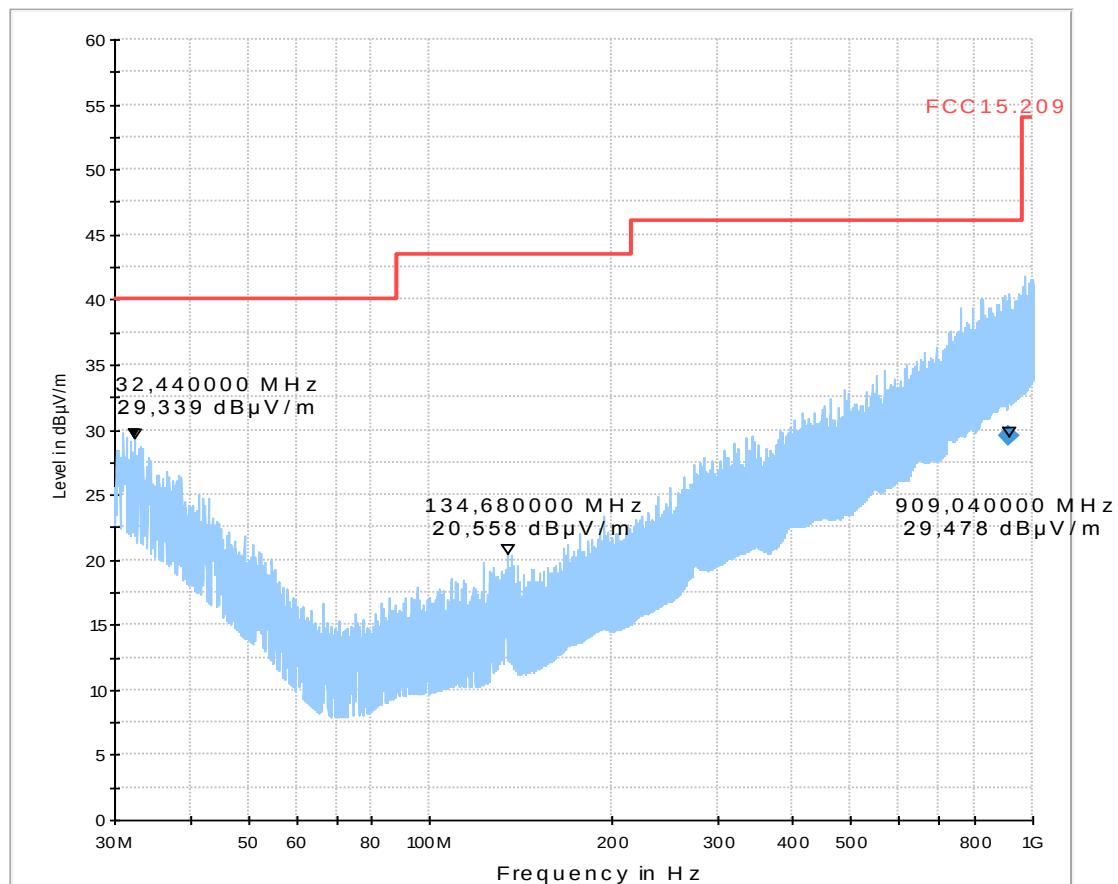
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: 004401138946757
 HW: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 Setup: used Comprion micro Sim-Card, full battery (type: BAT-47277-001), Smartphone

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)
909.040000	29.5	1000.0	120.000	361.0	H	23.0	0.0	26.6	16.50	46.00

01_FCC15.209_hor+vert_kipp



Date: 18.06.2012 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 No.: 8.01_Ch0_Sweep2

Common Information

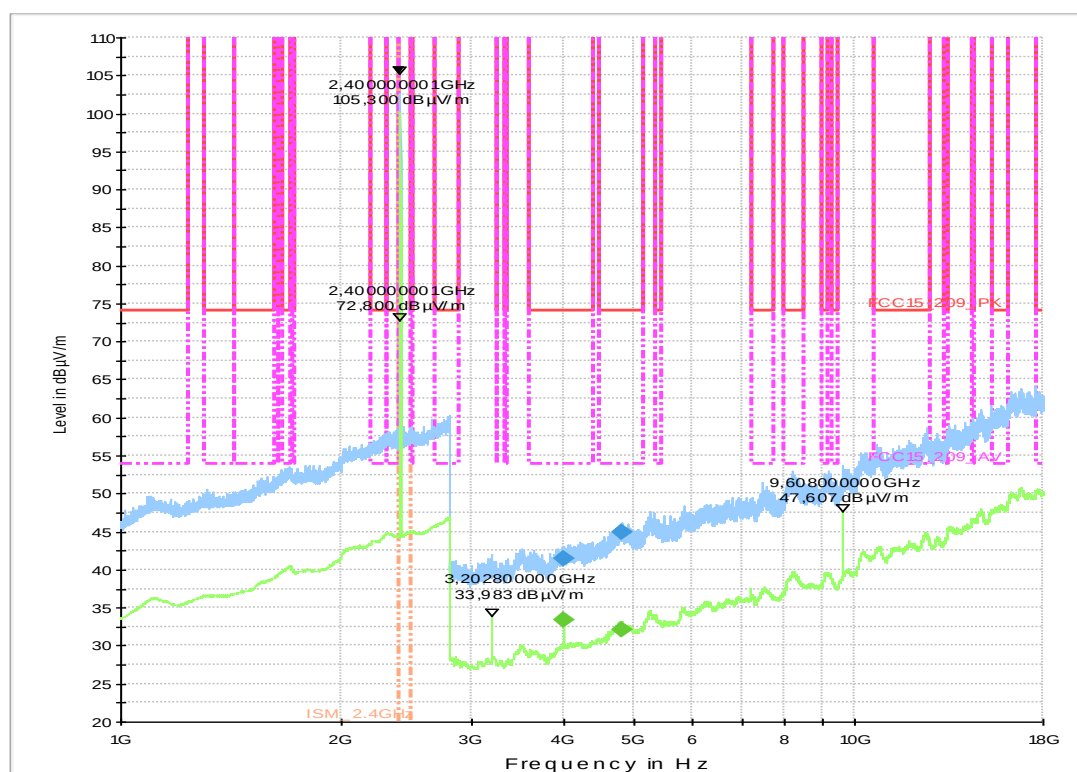
Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: §15.205 & §15.209 Intentional Radiator & RSS-210:Issue 8
 Antenna polarisation: horizontal/vertical

Operator Name:
 Comment: Channel 0 / 2402MHz
 Op. Mode: Bluetooth GFSK Mode

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: 004401138946757
 Hardware Rev: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 SW Rev:
 Comment: used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

00431_SM1_KP1_BT_5ms



Final Result 1

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)
4008.100000	41.4	100.0	1000.000	155.0	H	179.0	0.0	1.7	32.6
4816.500000	45.0	100.0	1000.000	155.0	V	108.0	90.0	4.9	29.0

(continuation of the "Final Result 1" table from column 10 ...)

Frequency (MHz)	Limit (dBµV/m)	Comment
4008.100000	74.0	
4816.500000	74.0	

Final Result 2

Frequency (MHz)	Average (dB μ V/m)	Measurement Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Marginal (dB)
4003.300000	33.3	100.0	1000.000	155.0	H	197.0	0.0	1.7	20.7
4807.300000	32.1	100.0	1000.000	155.0	H	224.0	0.0	4.9	21.9

(continuation of the "Final Result 2" table from column 10 ...)

Frequency (MHz)	Limit (dB μ V/m)	Comment
4003.300000	54.0	
4807.300000	54.0	

EMI Auto Test Template: 00431_SM1_KP1_BT_5ms

Hardware Setup: 00431_FCC_Part15_Unintentional_Radiator_1G-22G_dBuV_ESU
 Measurement Type: E(I)RP
 Frequency Range: 1 GHz - 18 GHz
 Graphics Level Range: 20 dB μ V/m - 110 dB μ V/m

Preview Measurements:
 Scan Test Template: Sweep_1_18GHz_Pre

Data Reduction:
 Limit Line #1: FCC15_209_PK
 Limit Line #2: FCC15_209_AV
 Limit Line #3: ISM_2.4GHz
 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: Sweep_1_18GHz_Zoom

Adjustment:
 Template for Single Meas.: Sweep_1_18GHz_Zoom

Final Measurements:
 Template for Single Meas.: Sweep_1_18GHz_final
 Template for Single Meas.:(>1GHz) Sweep_1_18GHz_final

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

Actions:
 Test start
 Notify: "stelle passenden Kanal ein !"
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"

Diagram No.: 8.01_Ch0_Sweep3

Common Information

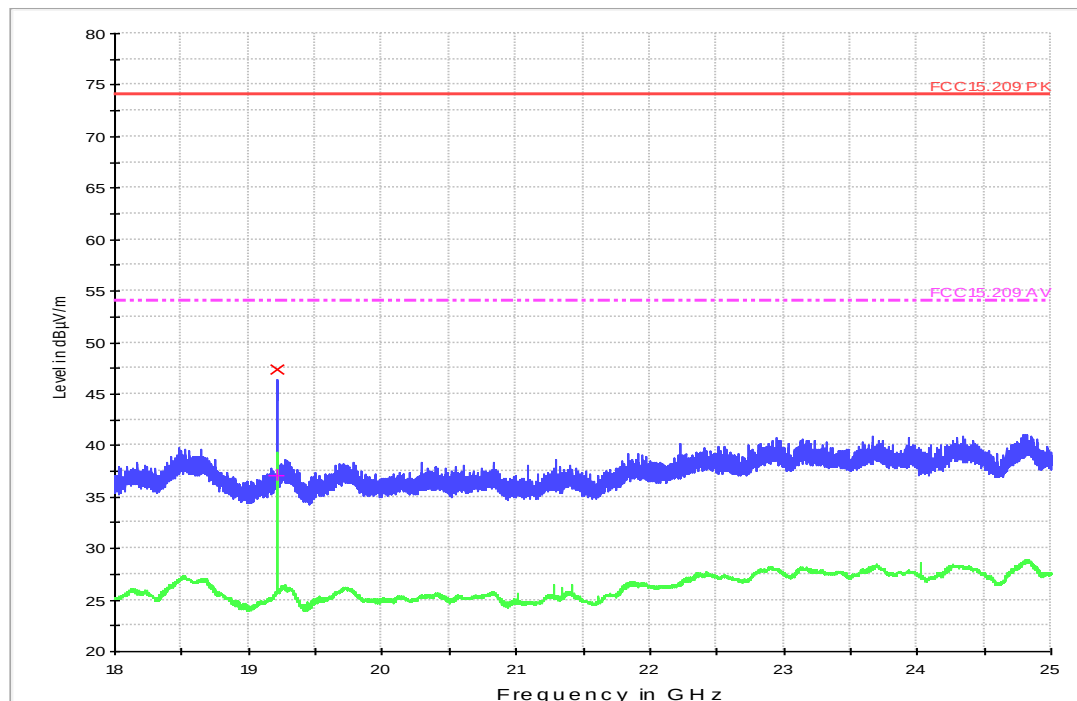
Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: §15.205 & §15.209 Intentional Radiator
 Antenna polarisation: horizontal/vertical

Operator Name:
 Comment: Channel no. low=0
 Op. Mode: Bluetooth

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #004401138946757
 Hardware Rev: --
 Software Rev: --
 Comment: ASY-46297-001

EMI Scan_18_25GHz_Pre_fast



Scan Setup: EMI Scan_18_25GHz_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 - 25 GHz	400 kHz	PK+; RMS	1 MHz	0,003 s	0 dB

2.2. Channel 39, GFSK-Modulation

Diagram No. 8.01_Ch39_Sweep1

Test description: 18.06.2012 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 15.209; RSS-Gen: Issue 3 / RSS-210:Issue 8

Operator: Tas
 Operating conditions: BT- Ch. 39 (UL = 2441.0MHz), GFSK (DH5)

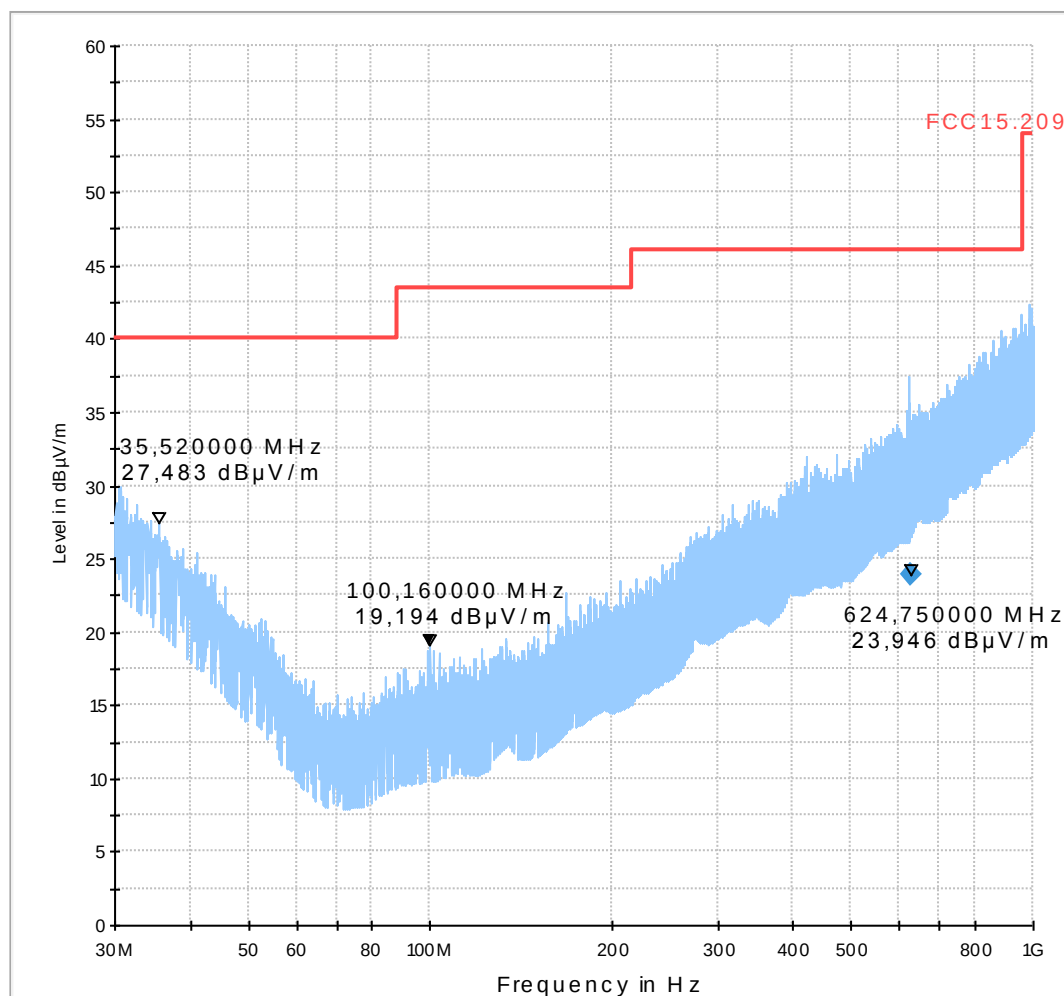
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: 004401138946757
 HW: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 Setup: used Comprion micro Sim-Card, full battery (type: BAT-47277-001), Smartphone

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)
624.750000	23.9	1000.0	120.000	346.0	V	51.0	90.0	22.4	22.10	46.00

01_FCC15.209_hor+vert_kipp



Date: 18.06.2012 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 No.: 8.01_Ch39_Sweep2

Common Information

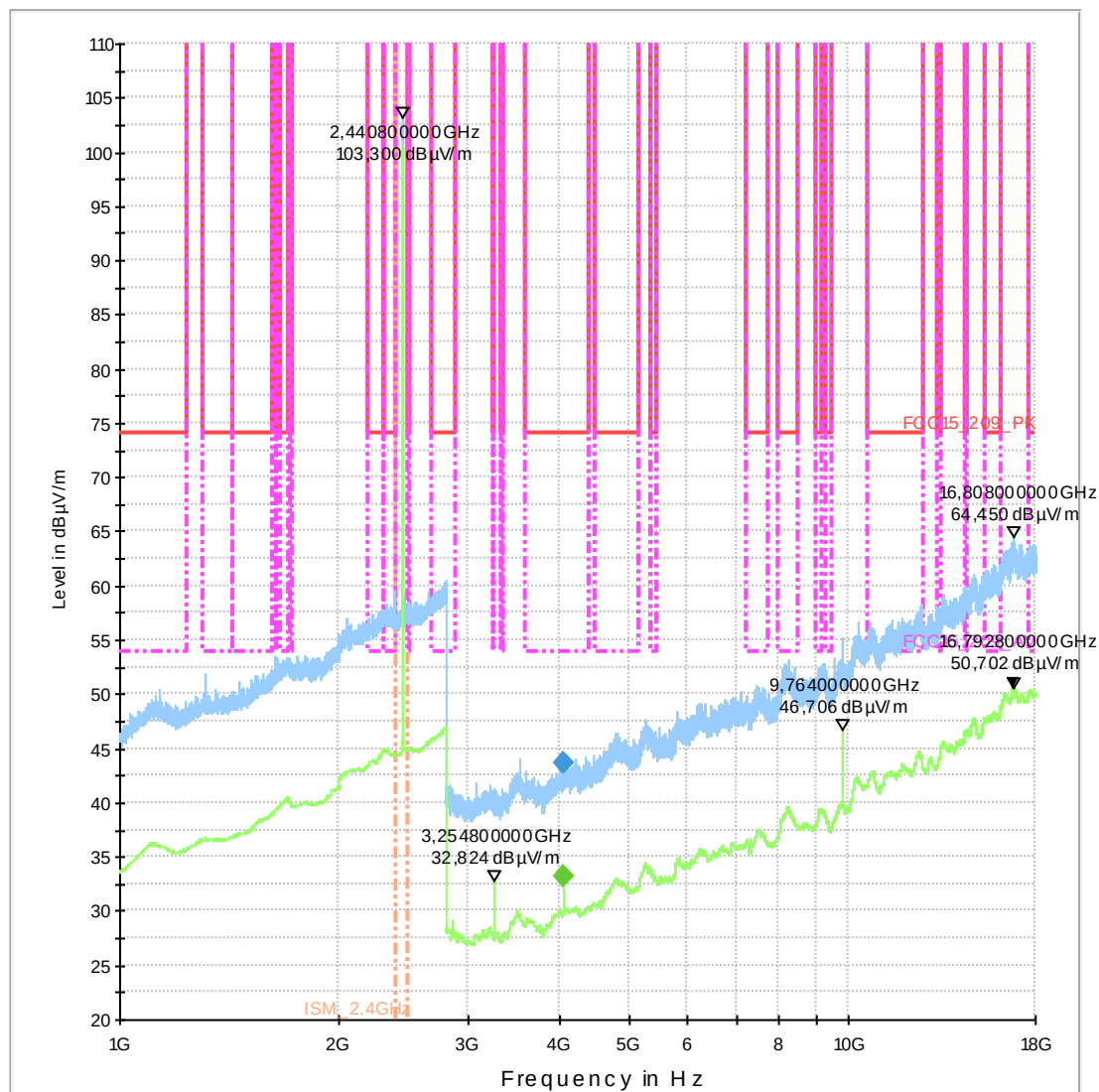
Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: §15.205 & §15.209 Intentional Radiator & RSS-210:Issue 8
 Antenna polarisation: horizontal/vertical

Operator Name: Lor
 Comment: Channel no. middle (Ch=39)
 Op. Mode: Bluetooth GFSK-Modem

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: 004401138946757
 Hardware Rev: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 SW Rev:
 Comment: used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

00431_SM1_KP1_BT_5ms



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
4068.100000	43.7	100.0	1000.000	155.0	H	200.0	0.0	1.8	30.3

(continuation of the "Final Result 1" table from column 10 ...)

Frequency (MHz)	Limit (dBμV/m)	Comment
4068.100000	74.0	

Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
4068.500000	33.3	100.0	1000.000	155.0	H	185.0	0.0	1.8	20.7

(continuation of the "Final Result 2" table from column 10 ...)

Frequency (MHz)	Limit (dBμV/m)	Comment
4068.500000	54.0	

EMI Auto Test Template: 00431_SM1_KP1_BT_5ms

Hardware Setup: 00431_FCC_Part15_Unintentional_Radiator_1G-22G_dBuV_ESU
 Measurement Type: E(I)RP
 Frequency Range: 1 GHz - 18 GHz
 Graphics Level Range: 20 dBμV/m - 110 dBμV/m

Preview Measurements:
 Scan Test Template: Sweep_1_18GHz_Pre

Data Reduction:
 Limit Line #1: FCC15_209_PK
 Limit Line #2: FCC15_209_AV
 Limit Line #3: ISM_2.4GHz
 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: Sweep_1_18GHz_Zoom

Adjustment:
 Template for Single Meas.: Sweep_1_18GHz_Zoom

Final Measurements:
 Template for Single Meas.: Sweep_1_18GHz_final

Template for Single Meas.:(>1GHz) Sweep_1_18GHz_final

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

Actions:
 Test start
 Notify: "stelle passenden Kanal ein !"
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"

Diagram No.: 8.01_Ch39_Sweep3

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. middle=39
 Op. Mode: Bluetooth GFSK Modulation (DH5 packets)

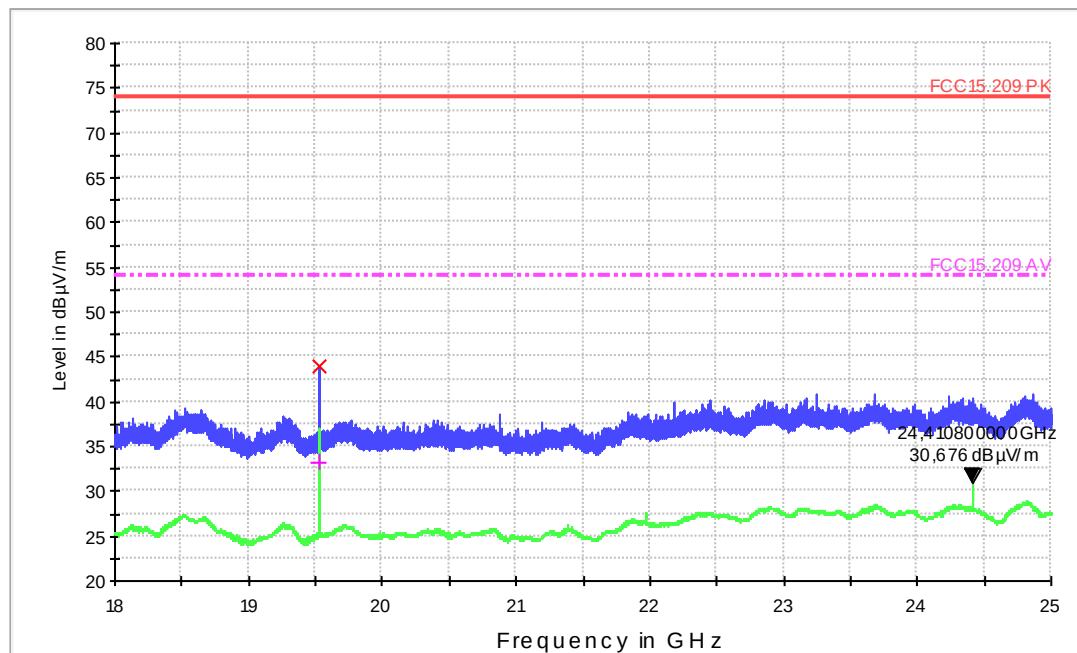
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #004401138946757
 Hardware Rev: --
 Software Rev: --
 Comment: ASY-46297-001

Result Table_Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
19526.800000	44.0	33.2	100.0	1000.000	0.0	H	0.0	-13.6

EMI Scan_18_25GHz_Pre_fast



Scan Setup: EMI Scan_18_25GHz_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 - 25 GHz	400 kHz	PK+; RMS	1 MHz	0,002 s	0 dB

2.3. Channel 78, GFSK-Modulation

Diagram No. 8.01_Ch78_Sweep1

Test description: 18.06.2012 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 15.209; RSS-Gen: Issue 3 / RSS-210:Issue 8

Operator: Lor
 Operating conditions: BT- Ch. 78 (UL = 2480.0MHz), GFSK (DH5)

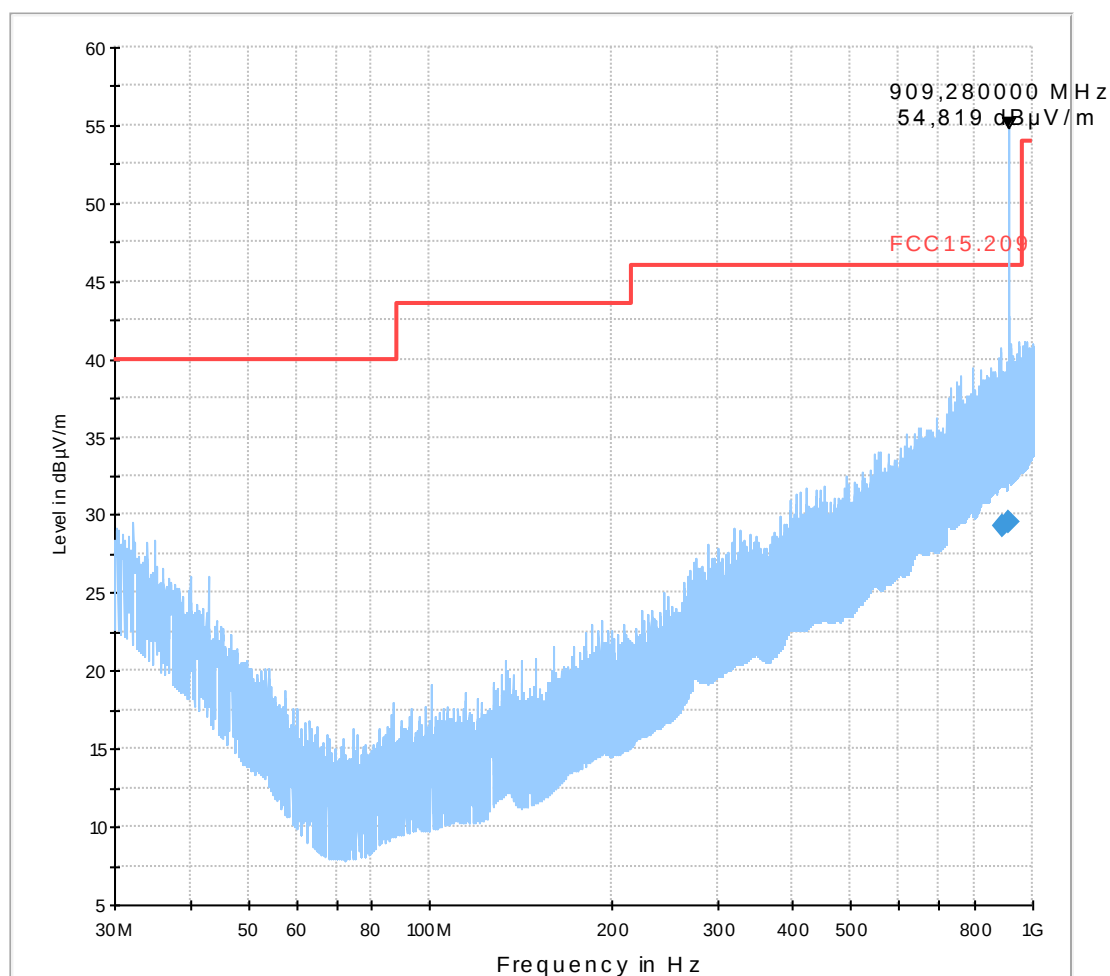
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: 004401138946757
 HW: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 Setup: used Comprion micro Sim-Card, full battery (type: BAT-47277-001), Smartphone

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)
888.530000	29.3	1000.0	120.000	257.0	V	120.0	90.0	26.3	16.70	46.00
909.060000	29.6	1000.0	120.000	306.0	H	333.0	0.0	26.6	16.40	46.00

01_FCC15.209_hor+vert_kipp



Date: 18.06.2012 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 No.: 8.01_Ch78_Sweep2

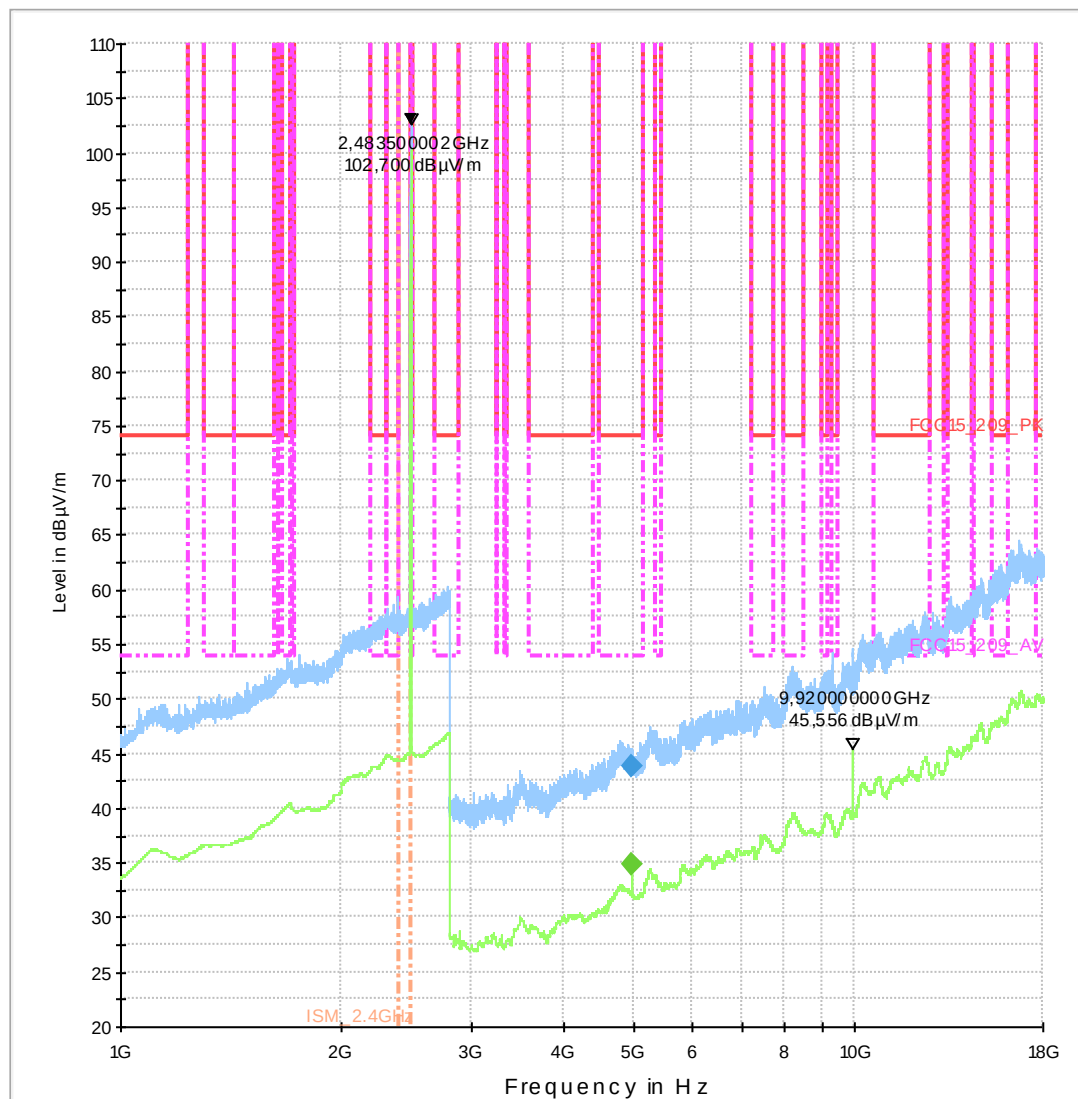
Common Information

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 & RSS-210: Issue 8
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel no. high (Ch=78)
Op. Mode:	Bluetooth GFSK-Modem

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401138946757
Hardware Rev:	CPR 21957
Add. Info:	ASY-46297-001 Rev K
SW Rev:	
Comment:	used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

00431_SM1_KP1_BT_5ms



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
4963.700000	43.9	100.0	1000.000	155.0	H	259.0	90.0	4.2	30.1

Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
4960.100000	34.9	100.0	1000.000	155.0	H	143.0	0.0	4.3	19.1

EMI Auto Test Template: 00431_SM1_KP1_BT_5ms

Hardware Setup: 00431_FCC_Part15_Unintentional_Radiator_1G-22G_dBuV_ESU
 Measurement Type: E(I)RP
 Frequency Range: 1 GHz - 18 GHz
 Graphics Level Range: 20 dBμV/m - 110 dBμV/m

Preview Measurements:
 Scan Test Template: Sweep_1_18GHz_Pre

Data Reduction:
 Limit Line #1: FCC15_209_PK
 Limit Line #2: FCC15_209_AV
 Limit Line #3: ISM_2.4GHz
 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: Sweep_1_18GHz_Zoom

Adjustment:
 Template for Single Meas.: Sweep_1_18GHz_Zoom

Final Measurements:
 Template for Single Meas.: Sweep_1_18GHz_final

Template for Single Meas.:(>1GHz) Sweep_1_18GHz_final

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

Actions:
 Test start
 Notify: "stelle passenden Kanal ein !"
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"

Diagram No.: 8.01_Ch78_Sweep3

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=78
 Op. Mode: Bluetooth GFSK Modulation (DH5 packets)

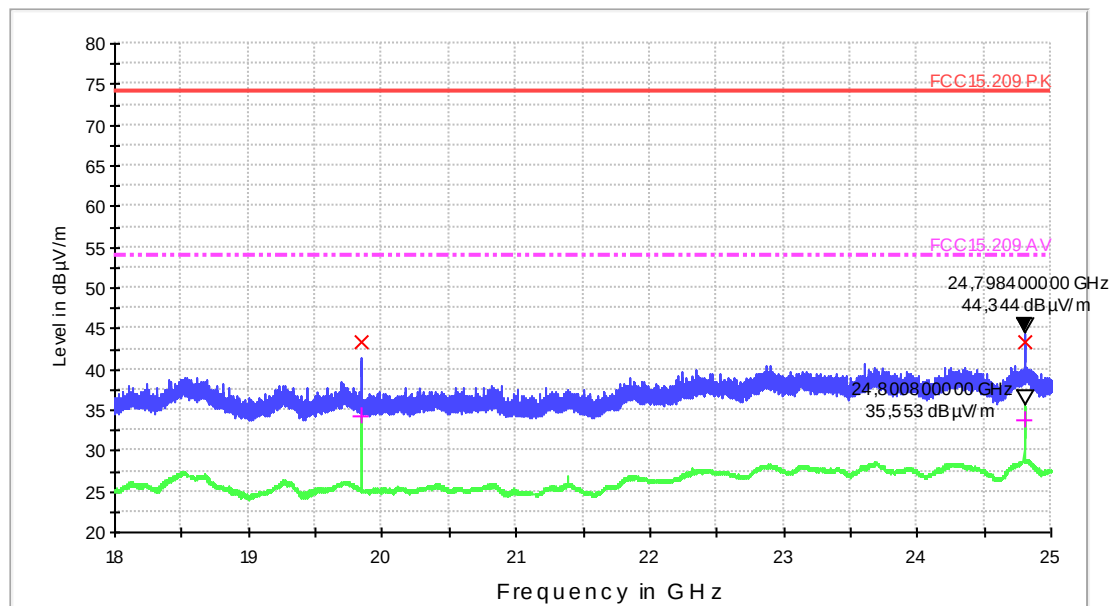
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #004401138946757
 Hardware Rev: --
 Software Rev: --
 Comment: ASY-46297-001

Result Table_Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
19840.800000	43.3	34.4	100.0	1000.000	0.0	H	0.0	-13.7
24798.800000	43.4	33.7	100.0	1000.000	0.0	H	0.0	-13.9

EMI Scan_18_25GHz_Pre_fast



Scan Setup: EMI Scan_18_25GHz_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 - 25 GHz	400 kHz	PK+; RMS	1 MHz	0,002 s	0 dB

2.4. Channel 0, Pi/4-DQPSK-Modulation

Diagram No. 8.02-Ch0-Sweep1

Test description: 18.06.2012 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 15.209; RSS-Gen: Issue 3 / RSS-210: Issue 8
 Operator: Lor
 Operating conditions: BT- Ch. 0 (UL = 2402.0MHz), Pi/4DQPSK (2DH5)

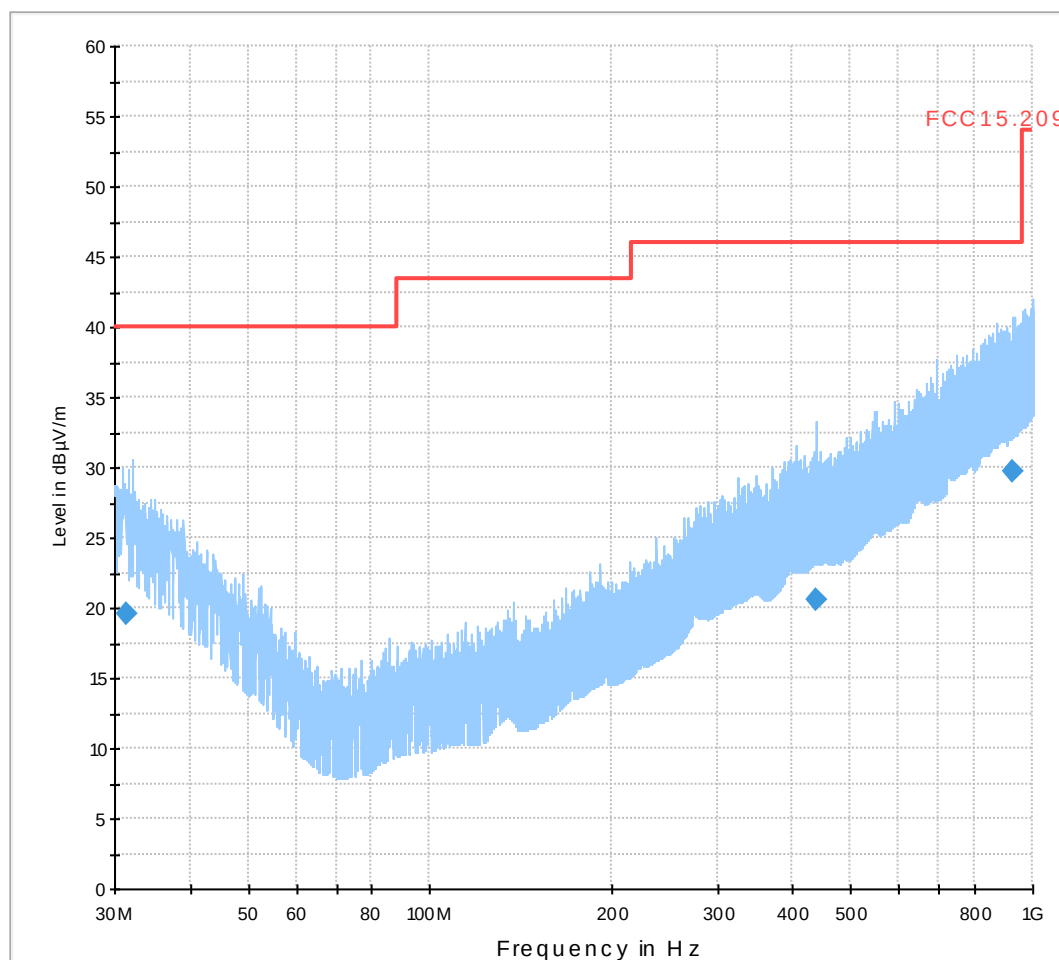
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: 004401138946757
 HW: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 Setup: used Comprion micro Sim-Card, full battery (type: BAT-47277-001), Smartphone

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)
31.420000	19.6	1000.0	120.000	171.0	H	74.0	90.0	21.2	20.40	40.00
436.010000	20.6	1000.0	120.000	262.0	V	213.0	0.0	19.5	25.40	46.00
927.310000	29.7	1000.0	120.000	100.0	H	20.0	0.0	26.5	16.30	46.00

01_FCC15.209_hor+vert_kipp



Date: 18.06.2012 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:

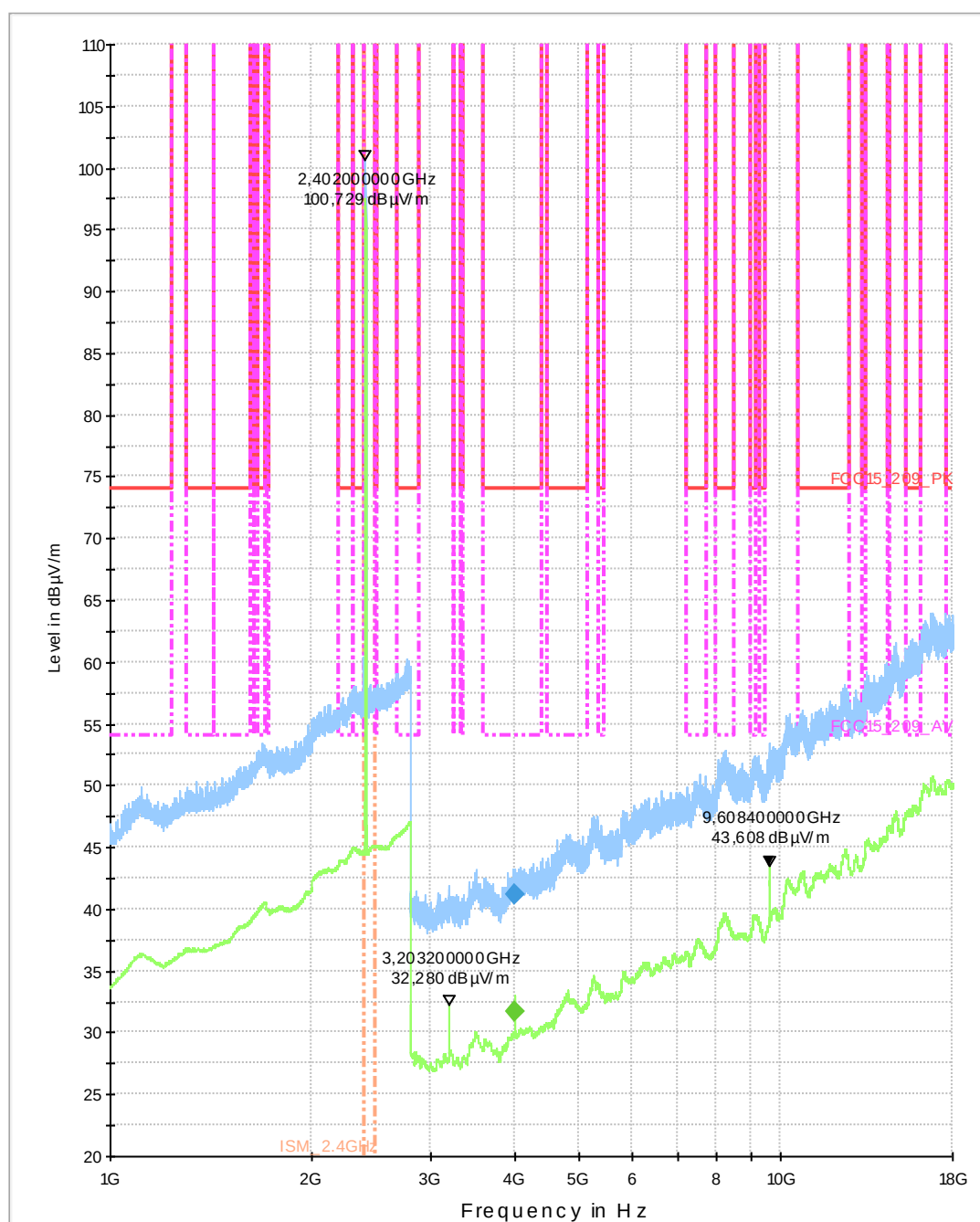
Test start	
Notify:	"EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
Notify:	"bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
Data Reduction: Before	
Notify:	Sound (WAV file) 'tada.wav'
Frequency Zoom 2: Before	
Notify:	"EUT sendet noch ?"
Final Measurements: After	
Notify: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

Diagram No.: 8.02_Ch0_Sweep2

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 & RSS-210: Issue 8
Antenna polarisation:	horizontal/vertical
Operator Name:	Lor
Comment:	Channel low (Ch=0/ 2402MHz)
Op. Mode:	Bluetooth Pi/4 DQPSK Modulation (2DH5)

00431_SM1_KP1_BT_5ms



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
4001.700000	41.2	100.0	1000.000	155.0	H	25.0	90.0	1.7	32.8

(continuation of the "Final Result 1" table from column 10 ...)

Frequency (MHz)	Limit (dBμV/m)	Comment
4001.700000	74.0	

Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Margin (dB)
4004.100000	31.7	100.0	1000.000	155.0	H	197.0	0.0	1.7	22.3

(continuation of the "Final Result 2" table from column 10 ...)

Frequency (MHz)	Limit (dBμV/m)	Comment
4004.100000	54.0	

EMI Auto Test Template: 00431_SM1_KP1_BT_5ms

Hardware Setup: 00431_FCC_Part15_Unintentional_Radiator_1G-22G_dBuV_ESU
 Measurement Type: E(I)RP
 Frequency Range: 1 GHz - 18 GHz
 Graphics Level Range: 20 dBμV/m - 110 dBμV/m

Preview Measurements:
 Scan Test Template: Sweep_1_18GHz_Pre

Data Reduction:
 Limit Line #1: FCC15_209_PK
 Limit Line #2: FCC15_209_AV
 Limit Line #3: ISM_2.4GHz
 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: Sweep_1_18GHz_Zoom

Adjustment:
 Template for Single Meas.: Sweep_1_18GHz_Zoom

Final Measurements:
 Template for Single Meas.: Sweep_1_18GHz_final

Template for Single Meas.:(>1GHz) Sweep_1_18GHz_final

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

Actions:
 Test start
 Notify: "stelle passenden Kanal ein !"
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"

Diagram No.: 8.02_Ch0_Sweep3

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=0
 Op. Mode: Bluetooth Pi/4DQPSK Modulation (2DH5 packets)

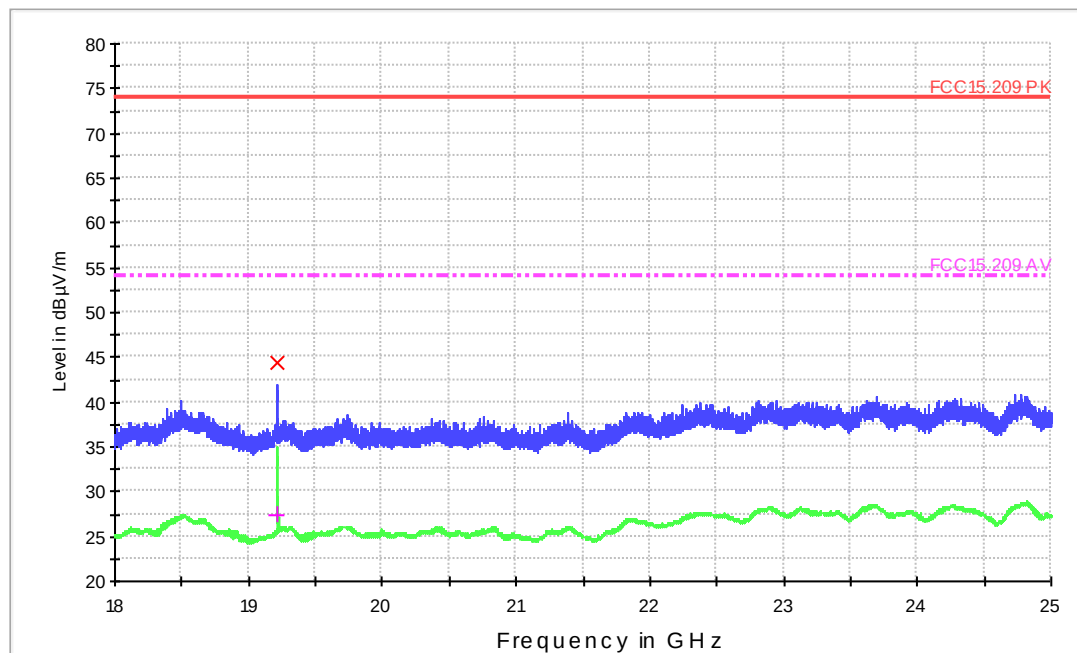
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #004401138946757
 Hardware Rev: --
 Software Rev: --
 Comment: ASY-46297-001

Result Table_Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
19214.800000	44.5	27.3	100.0	1000.000	0.0	H	0.0	-13.5

EMI Scan_18_25GHz_Pre_fast



Scan Setup: EMI Scan_18_25GHz_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 - 25 GHz	400 kHz	PK+; RMS	1 MHz	0,002 s	0 dB

2.5. Channel 39, Pi/4-DQPSK-Modulation

Diagram No. 8.02_Ch39_Sweep1

18.06.2012 Page 1 of 2
 Test description: Electric Fieldstrength 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 / RSS-210:Issue 8

Operator: Lor
 Operating conditions: BT- Ch. 39 (UL = 2441.0MHz), Pi/4DQPSK (2DH5)

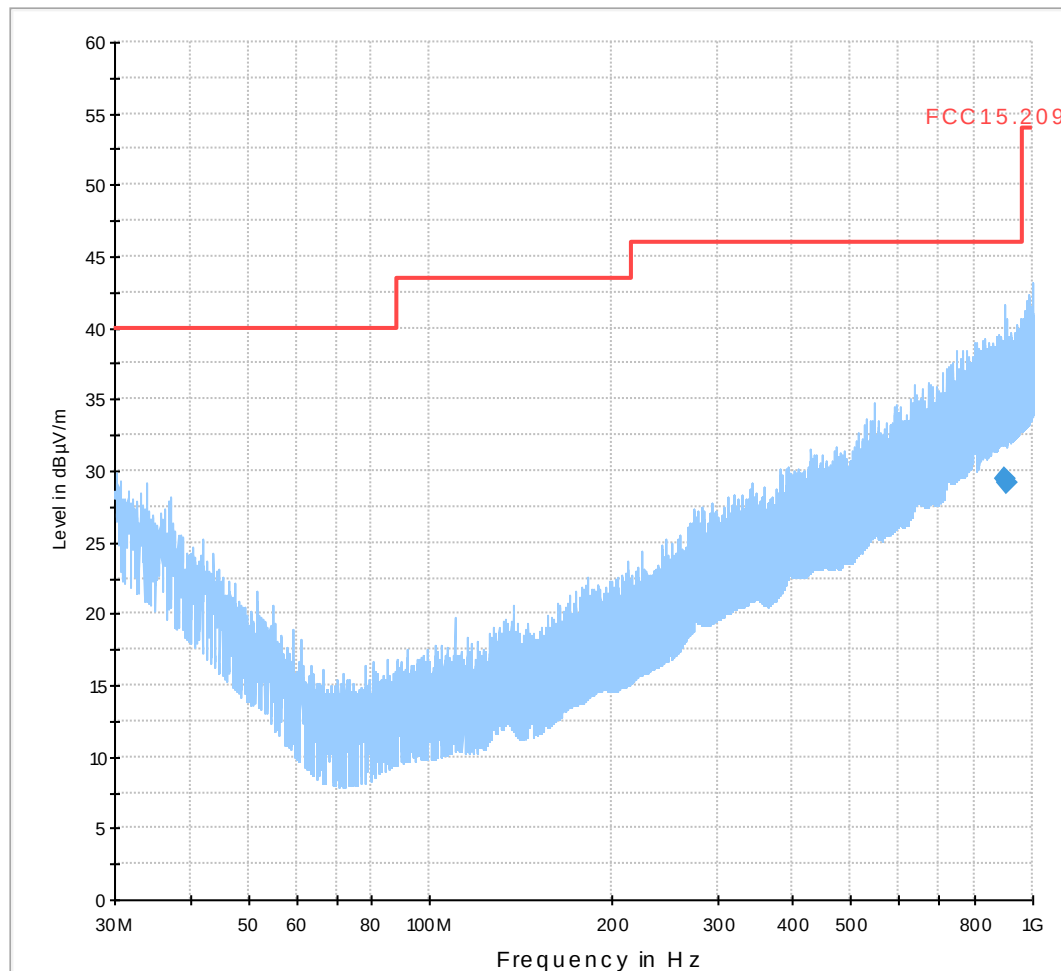
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: 004401138946757
 HW: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 Setup: used Comprion micro Sim-Card, full battery (type: BAT-47277-001), Smartphone

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)
896.700000	29.5	1000.0	120.000	360.0	V	44.0	0.0	26.5	16.50	46.00
906.480000	29.1	1000.0	120.000	237.0	H	63.0	90.0	26.2	16.90	46.00

01_FCC15.209_hor+vert_kipp



Date: 18.06.2012 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:

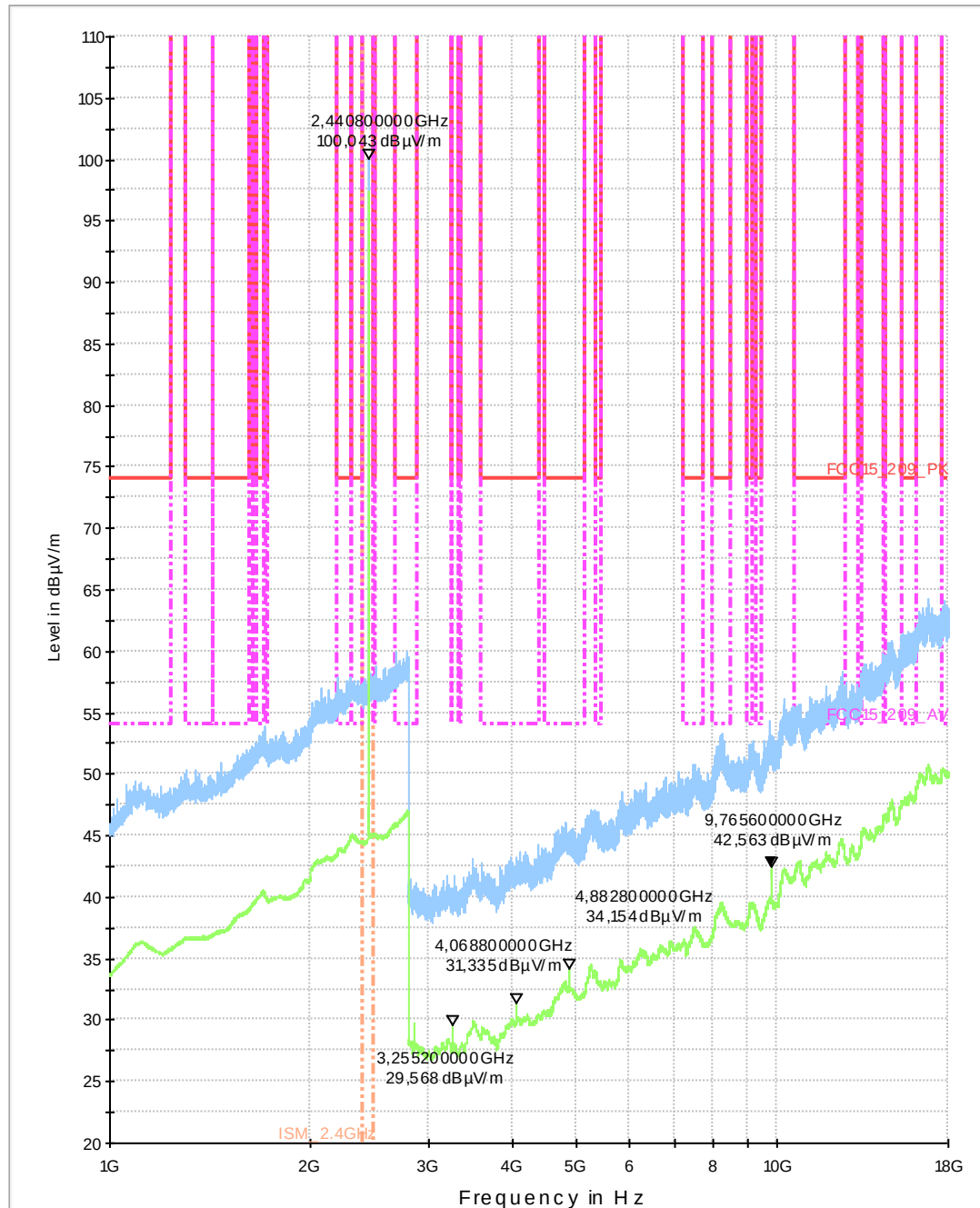
Test start	
Notify:	"EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
Notify:	"bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
Data Reduction: Before	
Notify:	Sound (WAV file) 'tada.wav'
Frequency Zoom 2: Before	
Notify:	"EUT sendet noch ?"
Final Measurements: After	
Notify: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

Diagram No.: 8.02_Ch39_Sweep2

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:	dpa
Comment:	Channel no. middle (Ch39=2441MHz)
Op. Mode:	Bluetooth PI/4 DQPSK Modulation (2DH5)

00431_SM1_KP1_BT_5ms



EMI Auto Test Template: 00431_SM1_KP1_BT_5ms

Hardware Setup: 00431_FCC_Part15_Unintentional_Radiator_1G-22G_dBuV_ESU
Measurement Type: E(I)RP
Frequency Range: 1 GHz - 18 GHz
Graphics Level Range: 20 dBμV/m - 110 dBμV/m

Preview Measurements:
Scan Test Template: Sweep_1_18GHz_Pre

Data Reduction:
Limit Line #1: FCC15_209_PK
Limit Line #2: FCC15_209_AV
Limit Line #3: ISM_2.4GHz
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: Sweep_1_18GHz_Zoom

Adjustment:
Template for Single Meas.: Sweep_1_18GHz_Zoom

Final Measurements:
Template for Single Meas.: Sweep_1_18GHz_final
Template for Single Meas.:(>1GHz) Sweep_1_18GHz_final

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

Actions:
Test start
Notify: "stelle passenden Kanal ein !"
Frequency Zoom 2: Before
Notify: "EUT sendet noch ?"

Diagram No.: 8.02_Ch39_Sweep3

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. middle=39
 Op. Mode: Bluetooth Pi/4DQPSK Modulation (2DH5 packets)

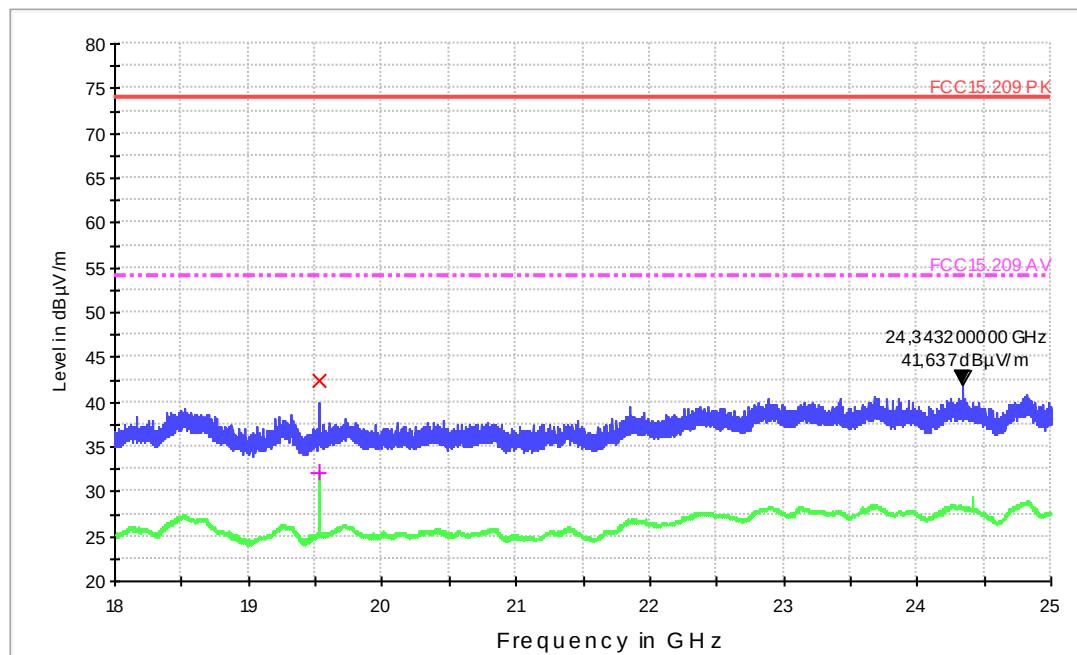
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #004401138946757
 Hardware Rev: --
 Software Rev: --
 Comment: ASY-46297-001

Result Table Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
19529.200000	42.4	32.0	100.0	1000.000	0.0	H	0.0	-13.6

EMI Scan_18_25GHz_Pre_fast



Scan Setup: EMI Scan_18_25GHz_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 - 25 GHz	400 kHz	PK+; RMS	1 MHz	0,002 s	0 dB

2.6. Channel 78, Pi/4-DQPSK-Modulation

Diagram No. 8.02-Ch78-Sweep1

Test description: Electric Fieldstrength 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 / RSS-210:Issue 8
 Operator: Lor
 Operating conditions: BT- Ch. 78 (UL = 2480.0MHz), Pi/4DQPSK (2DH5)

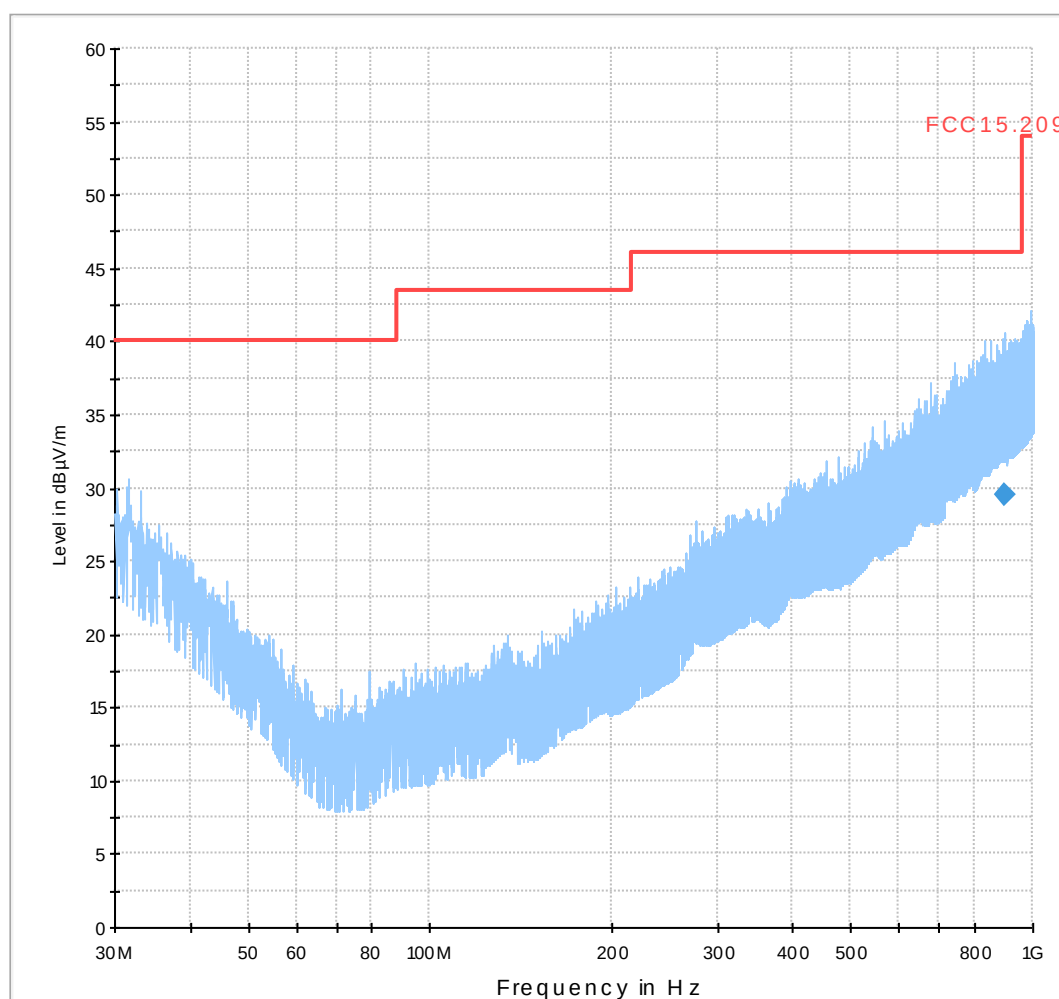
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: 004401138946757
 HW: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 Setup: used Comprion micro Sim-Card, full battery (type: BAT-47277-001), Smartphone

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)
895.170000	29.5	1000.0	120.000	145.0	V	215.0	90.0	26.5	16.50	46.00

01_FCC15.209_hor+vert_kipp



Date: 18.06.2012 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:

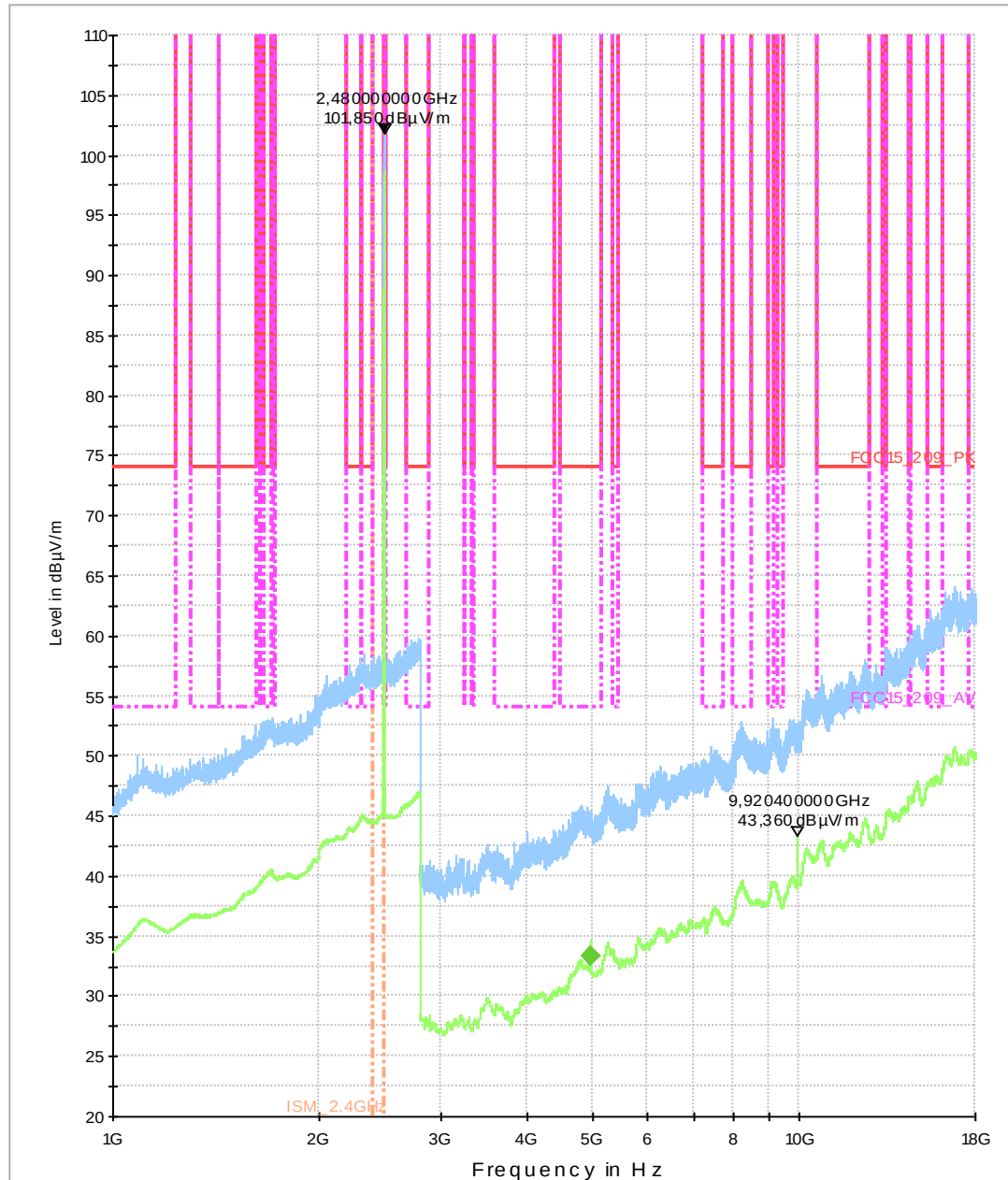
Test start	
Notify:	"EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
Notify:	"bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
Data Reduction: Before	
Notify:	Sound (WAV file) 'tada.wav'
Frequency Zoom 2: Before	
Notify:	"EUT sendet noch ?"
Final Measurements: After	
Notify: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

Diagram No.: 8.02_Ch78_Sweep2

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:	dpa
Comment:	Channel no. high (Ch78=2480MHz)
Op. Mode:	Bluetooth PI/4 DQPSK Modulation (2DH5)

00431_SM1_KP1_BT_5ms



EMI Auto Test Template: 00431_SM1_KP1_BT_5ms

Hardware Setup:	00431_FCC_Part15_Unintentional_Radiator_1G-22G_dBuV_ESU
Measurement Type:	E(I)RP
Frequency Range:	1 GHz - 18 GHz

Graphics Level Range: 20 dB μ V/m - 110 dB μ V/m

Preview Measurements:
Scan Test Template: Sweep_1_18GHz_Pre

Data Reduction:
Limit Line #1: FCC15_209_PK
Limit Line #2: FCC15_209_AV
Limit Line #3: ISM_2.4GHz
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: Sweep_1_18GHz_Zoom

Adjustment:
Template for Single Meas.: Sweep_1_18GHz_Zoom

Final Measurements:
Template for Single Meas.: Sweep_1_18GHz_final
Template for Single Meas.:(>1GHz) Sweep_1_18GHz_final

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

Actions:
Test start
Notify: "stelle passenden Kanal ein !"
Frequency Zoom 2: Before
Notify: "EUT sendet noch ?"

Diagram No.: 8.02_Ch78_Sweep3

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=78
 Op. Mode: Bluetooth Pi/4DQPSK Modulation (2DH5 packets)

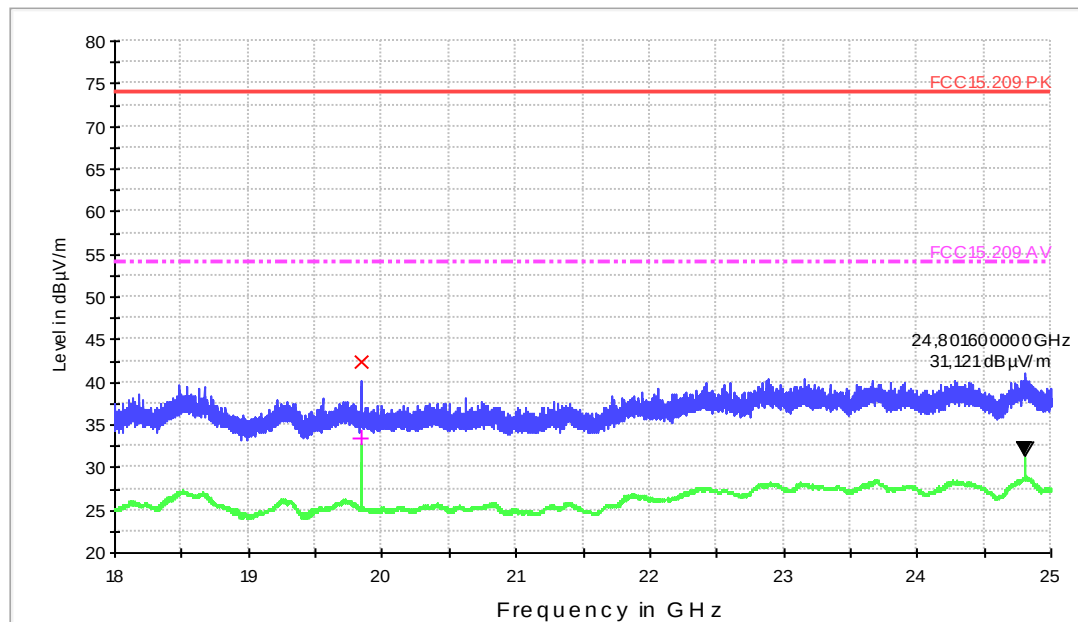
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #004401138946757
 Hardware Rev: --
 Software Rev: --
 Comment: ASY-46297-001

Result Table_Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
19841.000000	42.4	33.3	100.0	1000.000	0.0	H	0.0	-13.7

EMI Scan_18_25GHz_Pre_fast



Scan Setup: EMI Scan_18_25GHz_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 - 25 GHz	400 kHz	PK+; RMS	1 MHz	0,002 s	0 dB

2.7. Channel 0, 8DPSK-Modulation

Diagram No. 8.03_Ch0_Sweep1

Test description: 18.06.2012 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 15.209; RSS-Gen: Issue 3 / RSS-210:Issue 8
 Operator: dpa
 Operating conditions: BT- Ch. 0 (UL = 2402.0MHz), 8DPSK (3-DH5)

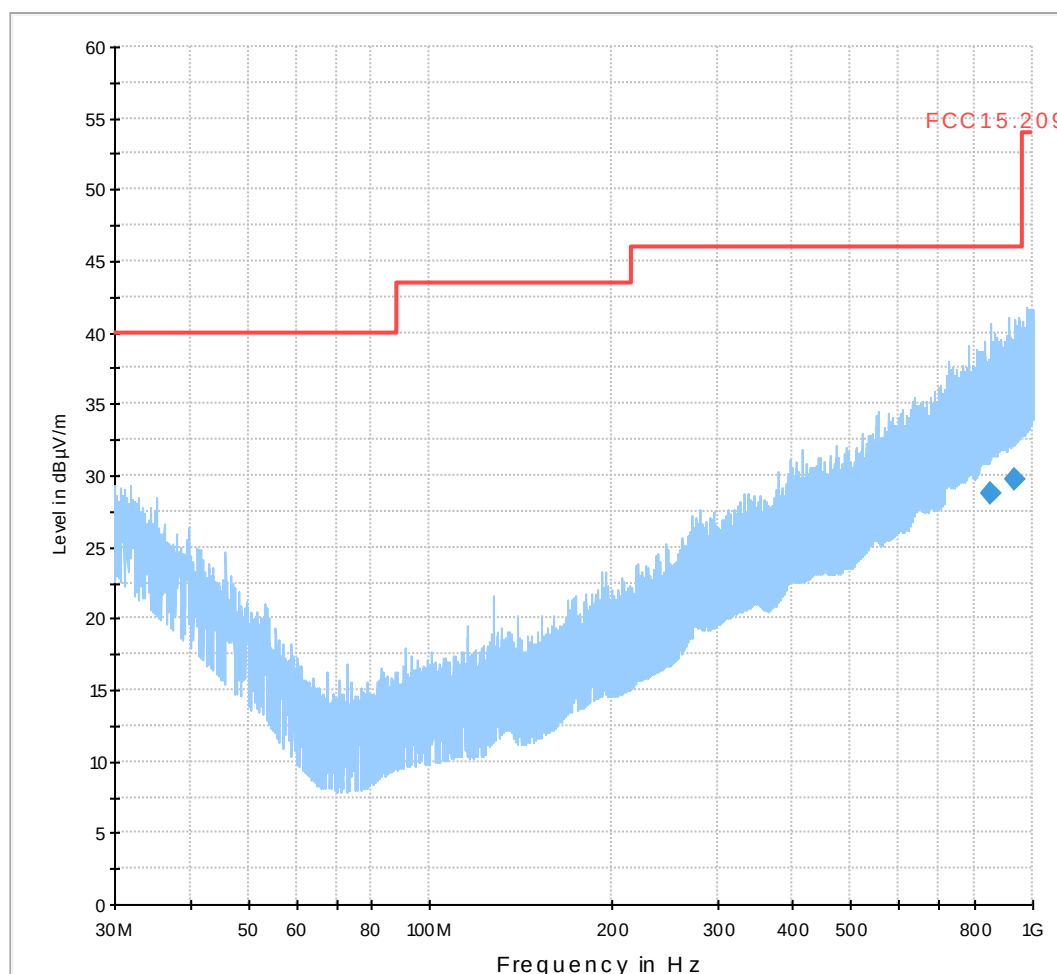
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: 004401138946757
 HW: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 Setup: used Comprion micro Sim-Card, full battery (type: BAT-47277-001), Smartphone

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)
849.250000	28.7	1000.0	120.000	100.0	H	51.0	90.0	25.5	17.30	46.00
931.980000	29.8	1000.0	120.000	295.0	V	307.0	90.0	26.5	16.20	46.00

01_FCC15.209_hor+vert_kipp



Date: 18.06.2012 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

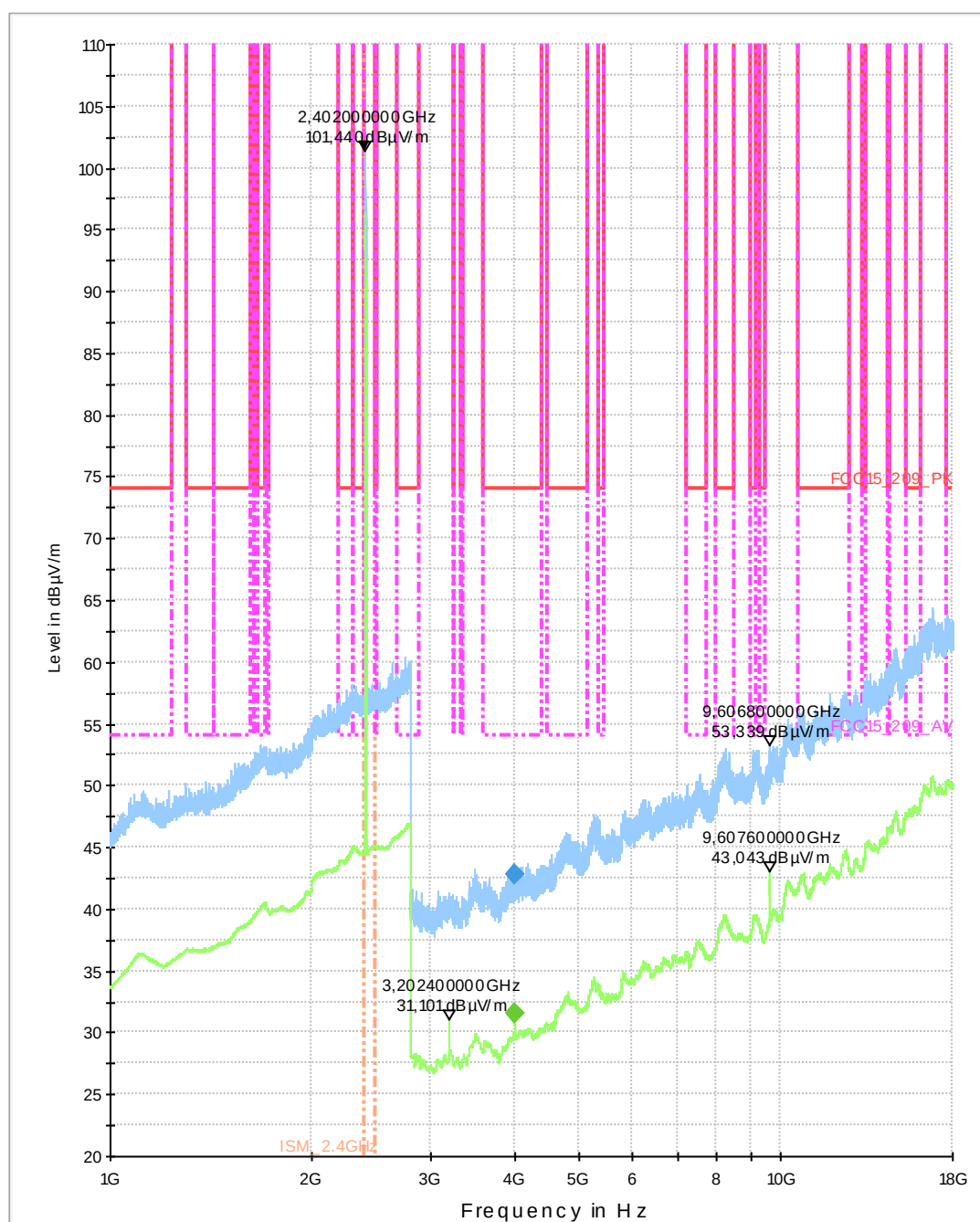
Actions:
 Test start
 Notify: "EUT auf ersten/zweiten/dritten Sendekanal stellen !!!"
 Notify: "bitte beachten: es gibt Frequenzbereiche von strenger Grenzwert gil..."
 Data Reduction: Before
 Notify: Sound (WAV file) 'tada.wav'
 Frequency Zoom 2: Before
 Notify: "EUT sendet noch ?"
 Final Measurements: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

Diagram No.: 8.03

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:	dpa
Comment:	Channel no. low (Ch0=2402MHz)
Op. Mode:	Bluetooth 8 DPSK Modulation (3-DH5)

00431_SM1_KP1_BT_5ms



EMI Auto Test Template: 00431_SM1_KP1_BT_5ms

Hardware Setup: 00431_FCC_Part15_Unintentional_Radiator_1G-22G_dBuV_ESU
Measurement Type: E(I)RP
Frequency Range: 1 GHz - 18 GHz
Graphics Level Range: 20 dB μ V/m - 110 dB μ V/m

Preview Measurements:
Scan Test Template: Sweep_1_18GHz_Pre

Data Reduction:
Limit Line #1: FCC15_209_PK
Limit Line #2: FCC15_209_AV
Limit Line #3: ISM_2.4GHz
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: Sweep_1_18GHz_Zoom

Adjustment:
Template for Single Meas.: Sweep_1_18GHz_Zoom

Final Measurements:
Template for Single Meas.: Sweep_1_18GHz_final
Template for Single Meas.:(>1GHz) Sweep_1_18GHz_final

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

Actions:
Test start
Notify: "stelle passenden Kanal ein !"
Frequency Zoom 2: Before
Notify: "EUT sendet noch ?"

Diagram No.: 8.03_Ch0_Sweep3

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=0
 Op. Mode: Bluetooth 8DPSK Modulation (3DH5 packets)

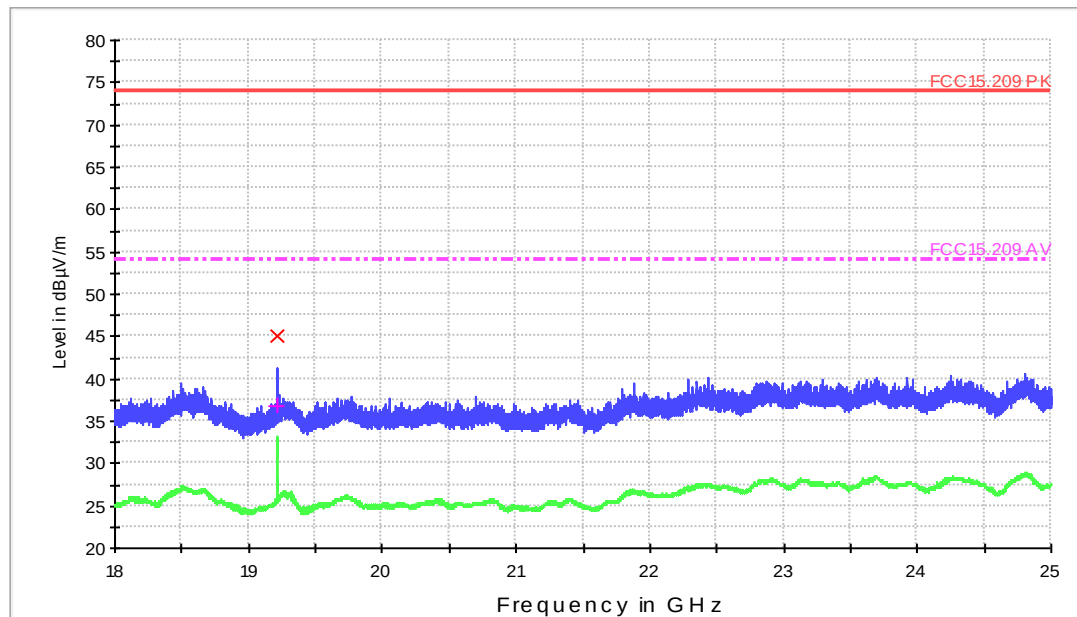
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #004401138946757
 Hardware Rev: --
 Software Rev: --
 Comment: ASY-46297-001

Result Table_Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
19215.200000	45.0	36.8	100.0	1000.000	0.0	H	0.0	-13.5

EMI Scan_18_25GHz_Pre_fast



Scan Setup: EMI Scan_18_25GHz_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 - 25 GHz	400 kHz	PK+; RMS	1 MHz	0,002 s	0 dB

2.8. Channel 39, 8DPSK-Modulation

Diagram No. 8.03_Ch39_Sweep1

Test description: 18.06.2012 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 15.209; RSS-Gen: Issue 3 / RSS-210:Issue 8
 Operator: dpa
 Operating conditions: BT- Ch. 39 (UL = 2441.0MHz), 8DPSK (3-DH5)

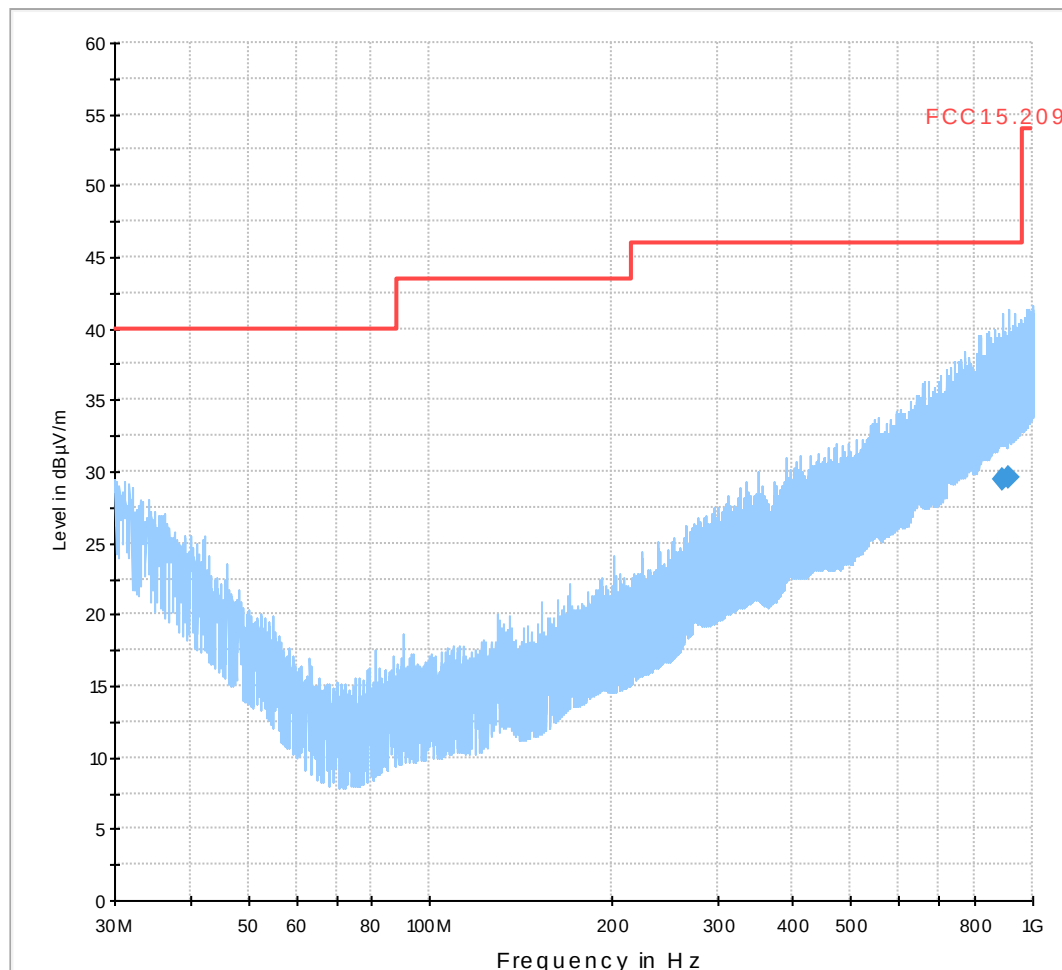
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: 004401138946757
 HW: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 Setup: used Comprion micro Sim-Card, full battery (type: BAT-47277-001), Smartphone

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)
893.750000	29.4	1000.0	120.000	100.0	V	0.0	90.0	26.4	16.60	46.00
909.900000	29.6	1000.0	120.000	287.0	H	90.0	0.0	26.7	16.40	46.00

01_FCC15.209_hor+vert_kipp



Date: 18.06.2012 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 No.: 8.03_Ch39_Sweep2

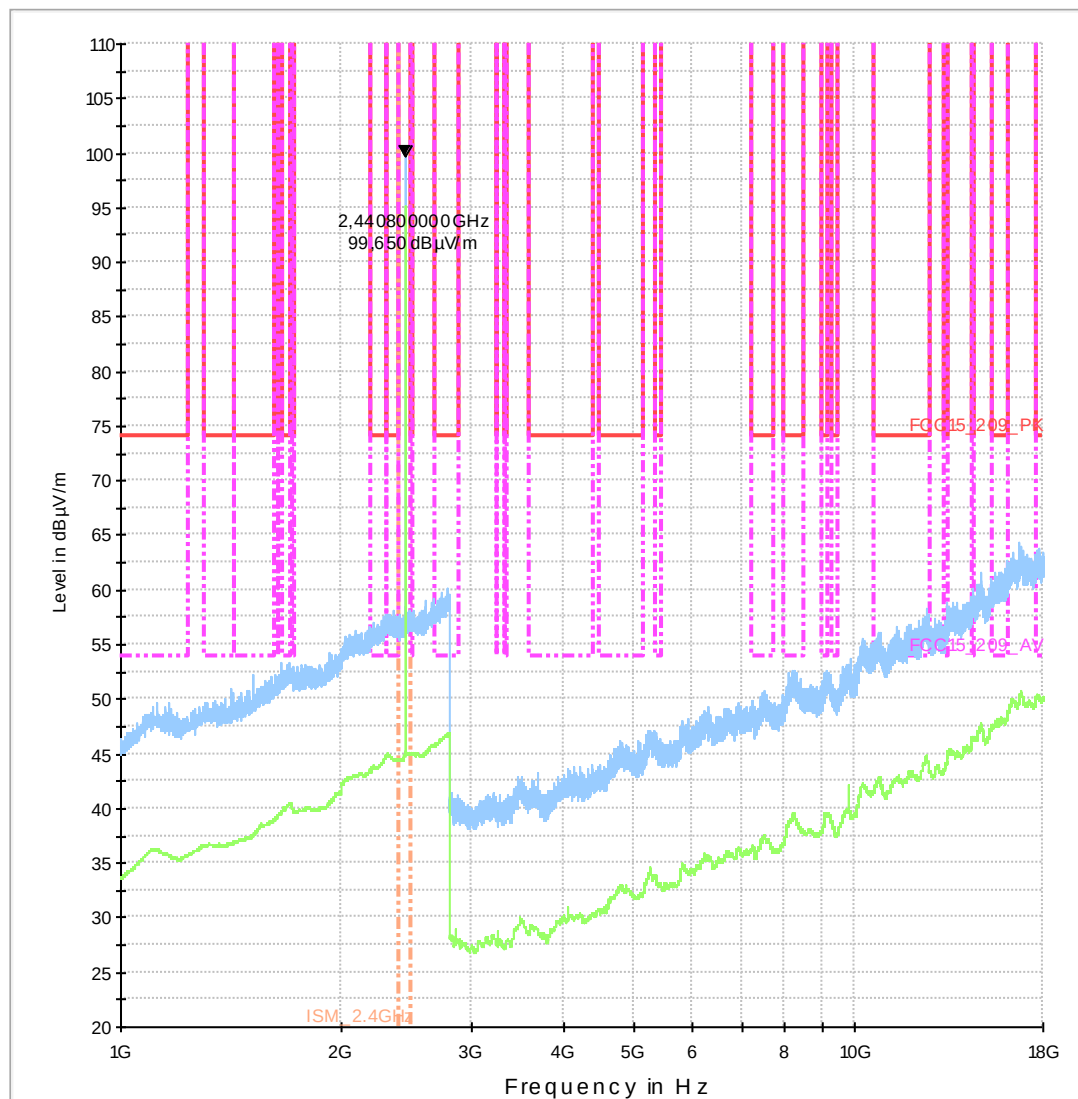
Common Information

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:	YZH
Comment:	Channel 39 Middle
Op. Mode:	Bluetooth

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401138946757
Hardware Rev:	CPR 21957
Add. Info:	ASY-46297-001 Rev K
SW Rev:	
Comment:	used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

00431_SM1_KP1_BT_5ms



EMI Auto Test Template: 00431_SM1_KP1_BT_5ms

Hardware Setup: 00431_FCC_Part15_Unintentional_Radiator_1G-22G_dBuV_ESU
Measurement Type: E(I)RP
Frequency Range: 1 GHz - 18 GHz
Graphics Level Range: 20 dB μ V/m - 110 dB μ V/m

Preview Measurements:
Scan Test Template: Sweep_1_18GHz_Pre

Data Reduction:
Limit Line #1: FCC15_209_PK
Limit Line #2: FCC15_209_AV
Limit Line #3: ISM_2.4GHz
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: Sweep_1_18GHz_Zoom

Adjustment:
Template for Single Meas.: Sweep_1_18GHz_Zoom

Final Measurements:
Template for Single Meas.: Sweep_1_18GHz_final
Template for Single Meas.:(>1GHz) Sweep_1_18GHz_final

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

Actions:
Test start
Notify: "stelle passenden Kanal ein !"
Frequency Zoom 2: Before
Notify: "EUT sendet noch ?"

Diagram No.: 8.03_Ch39_Sweep3

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. middle=39
 Op. Mode: Bluetooth 8DPSK Modulation (3DH5 packets)

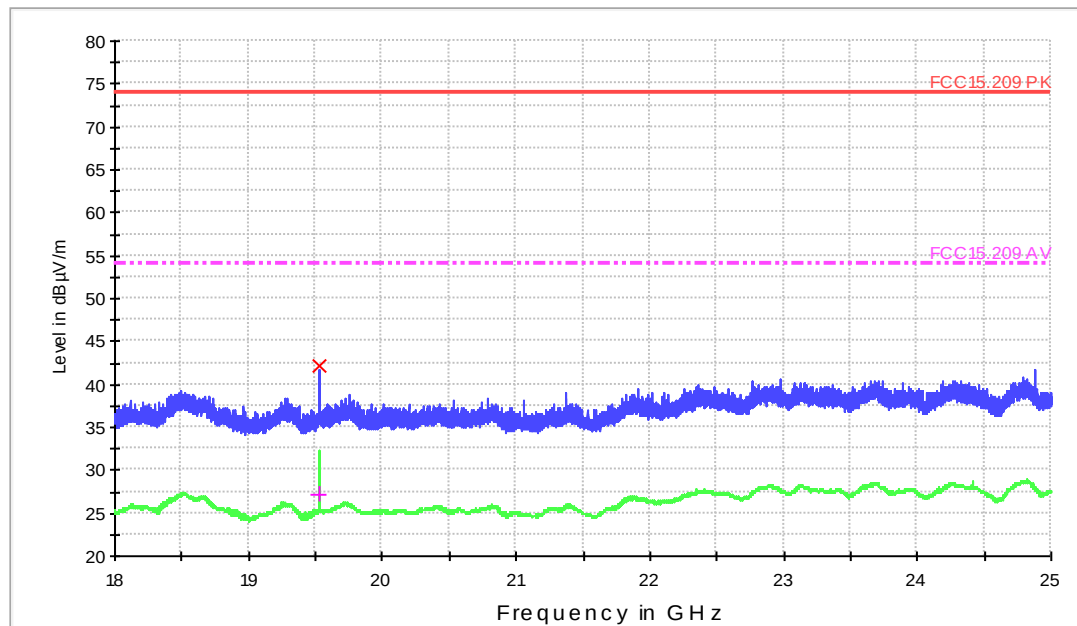
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #004401138946757
 Hardware Rev: --
 Software Rev: --
 Comment: ASY-46297-001

Result Table_Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
19529.200000	42.1	27.1	100.0	1000.000	0.0	H	0.0	-13.6

EMI Scan_18_25GHz_Pre_fast



Scan Setup: EMI Scan_18_25GHz_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 - 25 GHz	400 kHz	PK+; RMS	1 MHz	0,002 s	0 dB

2.9. Channel 78, 8DPSK-Modulation

Diagram No. 8.03_Ch78_Sweep1

Test description: 18.06.2012 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 15.209; RSS-Gen: Issue 3 / RSS-210:Issue 8

Operator: dpa
 Operating conditions: BT- Ch. 78 (UL = 2480.0MHz), Pi/8DPSK (3-DH5)

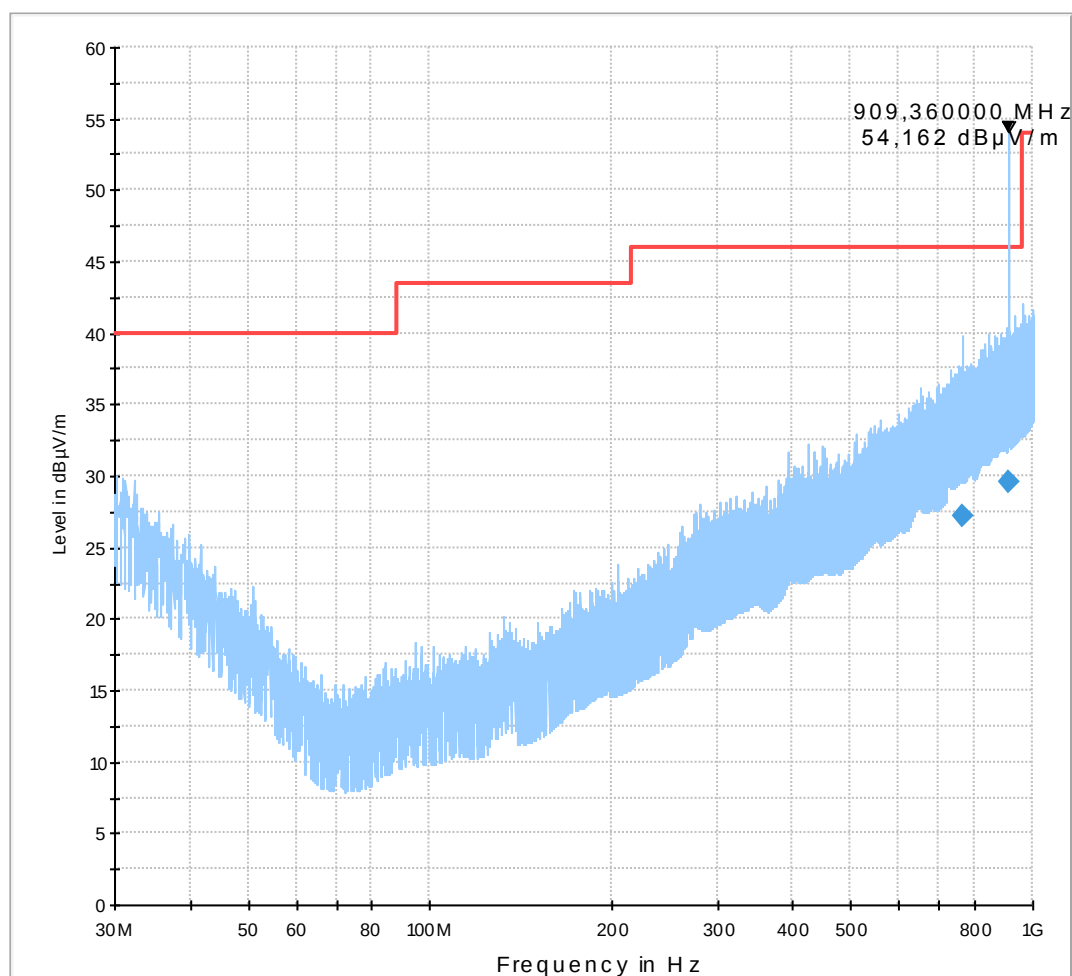
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 IMEI: 004401138946757
 HW: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 Setup: used Comprion micro Sim-Card, full battery (type: BAT-47277-001), Smartphone

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)
765.250000	27.2	1000.0	120.000	303.0	V	216.0	90.0	24.4	18.80	46.00
909.160000	29.6	1000.0	120.000	169.0	V	346.0	90.0	26.6	16.40	46.00

01_FCC15.209_hor+vert_kipp



Date: 18.06.2012 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 No.: 8.03_Ch78_Sweep2

Common Information

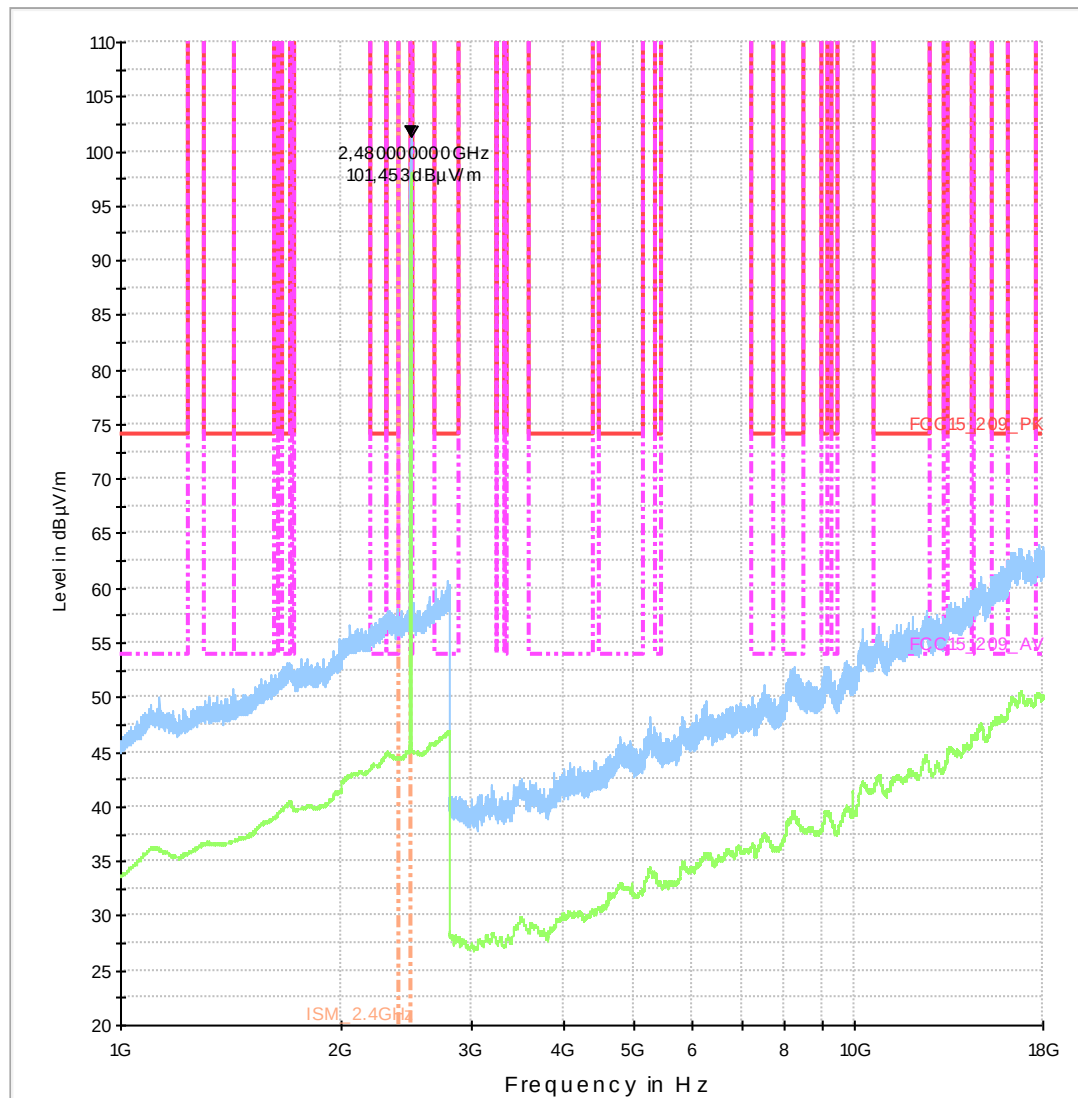
Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: §15.205 & §15.209 Intentional Radiator
 Antenna polarisation: horizontal/vertical

Operator Name: YZH
 Comment: Channel 78 high
 Op. Mode: Bluetooth

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: 004401138946757
 Hardware Rev: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 SW Rev:
 Comment: used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

00431_SM1_KP1_BT_5ms



EMI Auto Test Template: 00431_SM1_KP1_BT_5ms

Hardware Setup: 00431_FCC_Part15_Unintentional_Radiator_1G-22G_dBuV_ESU
Measurement Type: E(I)RP
Frequency Range: 1 GHz - 18 GHz
Graphics Level Range: 20 dB μ V/m - 110 dB μ V/m

Preview Measurements:
Scan Test Template: Sweep_1_18GHz_Pre

Data Reduction:
Limit Line #1: FCC15_209_PK
Limit Line #2: FCC15_209_AV
Limit Line #3: ISM_2.4GHz
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: Sweep_1_18GHz_Zoom

Adjustment:
Template for Single Meas.: Sweep_1_18GHz_Zoom

Final Measurements:
Template for Single Meas.: Sweep_1_18GHz_final
Template for Single Meas.:(>1GHz) Sweep_1_18GHz_final

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

Actions:
Test start
Notify: "stelle passenden Kanal ein !"
Frequency Zoom 2: Before
Notify: "EUT sendet noch ?"

Diagram No.: 8.03_Ch78_Sweep3

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=78
 Op. Mode: Bluetooth 8DPSK Modulation (3DH5 packets)

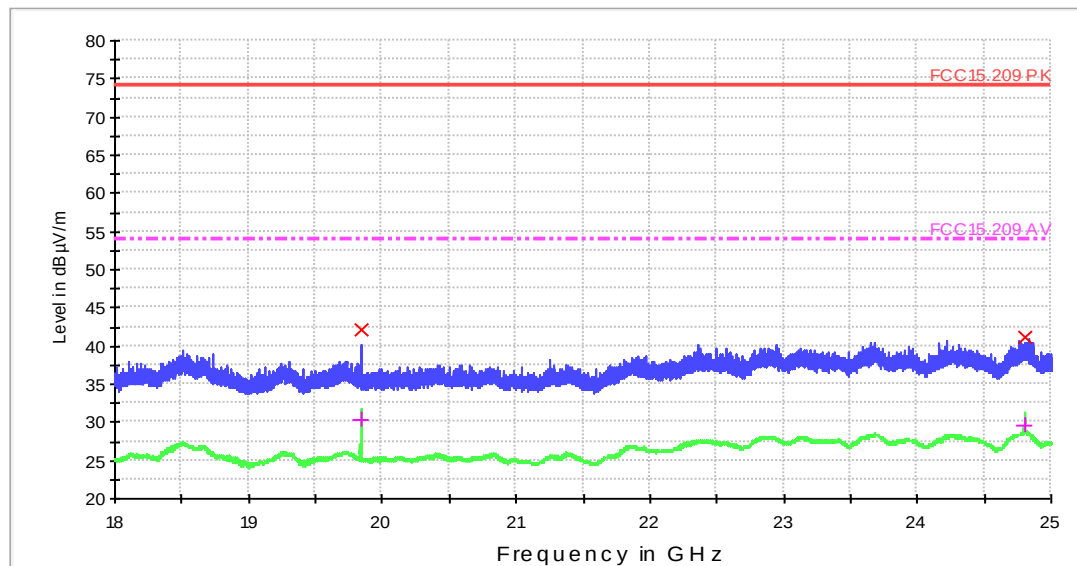
EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: #004401138946757
 Hardware Rev: --
 Software Rev: --
 Comment: ASY-46297-001

Result Table_Single

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)
19840.000000	42.0	30.2	100.0	1000.000	0.0	H	0.0	-13.7
24799.200000	41.2	29.7	100.0	1000.000	0.0	H	0.0	-13.9

EMI Scan_18_25GHz_Pre_fast



Scan Setup: EMI Scan_18_25GHz_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 - 25 GHz	400 kHz	PK+, RMS	1 MHz	0,002 s	0 dB

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

3.1. Channel 0, GFSK-Modulation

Diagram No.: 8.01_Ch0_BE

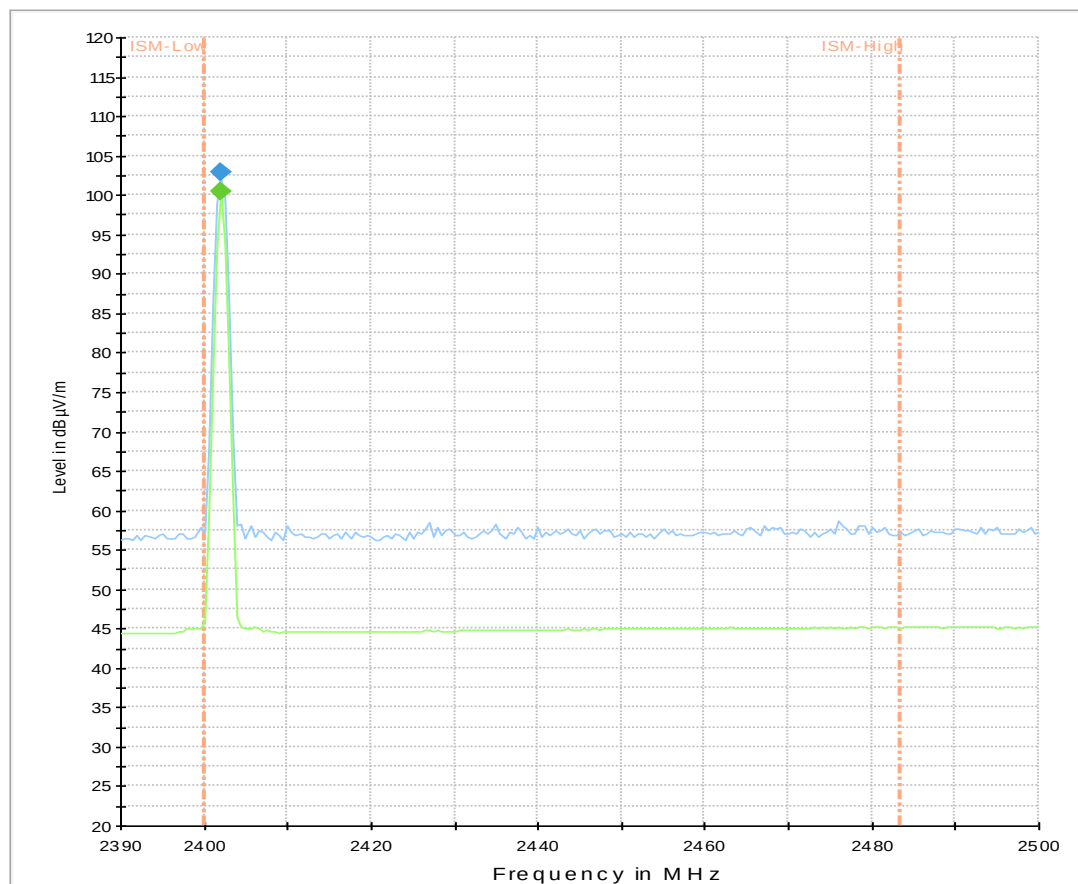
Common Information

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 = 0 (2402MHz)
Op. Mode:	BT GFSK modulation (DH5 packet type)

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401138946757
Hardware Rev:	CPR 21957
Add. Info:	ASY-46297-001 Rev K
SW Rev:	
Comment:	used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

Carrier_measurement_SM1_PA0_KP1_BT



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
2402.000000	103.0	100.0	1000.000	155.0	H	59.0	0.0	35.5	

Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
2402.000000	100.5	100.0	1000.000	155.0	H	61.0	0.0	35.5	

EMI Auto Test Template: Carrier_measurement_SM1_PA0_KP1_BT

Hardware Setup: 549_dBuVm_PA0_TH3_KP1_ESU
 Measurement Type: E(l)RP
 Frequency Range: 2,39 GHz - 2,5 GHz
 Graphics Level Range: 20 dBμV/m - 120 dBμV/m

Preview Measurements:
 Scan Test Template: Sweep1_pre

Data Reduction:
 Limit Line #1: ISM-Low
 Limit Line #2: ISM-High
 Peak Search: 6 dB , Maximum Results: 1
 Subrange Maxima: 0 Subranges , Maxima per Subrange: 1
 Maximum Number of Results: 1

Frequency Zoom:
 Zoom Scan Template: Sweep1_zoom

Adjustment:
 Template for Single Meas.: Sweep1_pre

Final Measurements:
 Template for Single Meas.: Sweep1_fin

Template for Single Meas.:(>1GHz) Sweep1_fin

Report Settings:
 Report Template: Report Setup FCC 15_247
 Create Electronic Report: RTF PDF
 Document Name: E-Field Strength accord. §15.205&15.209

Actions:
 Test start
 Notify: "Matrix richtig geschaltet ?!?"

Diagram No.: 8.01_Ch0_BE

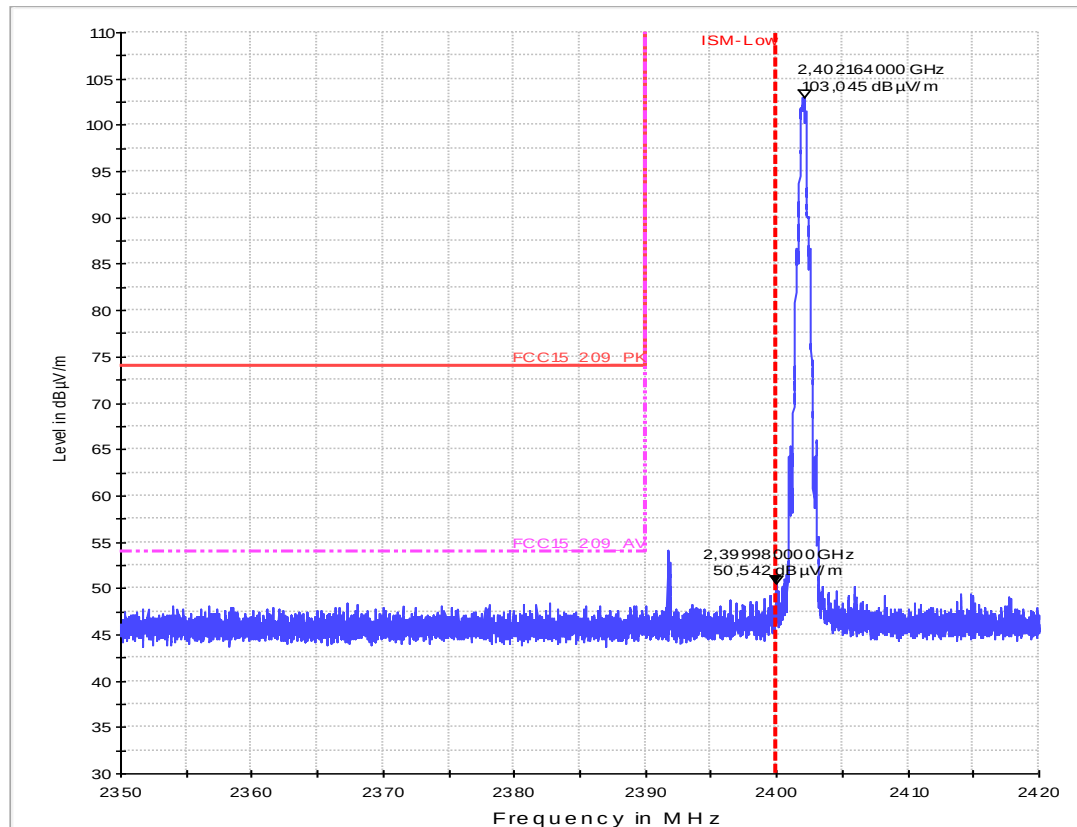
Common Information

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 = 0 (2402MHz)
 Op. Mode: BT GFSK modulation (DH5 packet type)

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: 004401138946757
 Hardware Rev: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 SW Rev:
 Comment: used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

08_ESU_2.4GHz_Low_Band_Edge_PA0



Sweep Setup: 08_ESU_2.4GHz_Low_Band_Edge_PA0 [EMI radiated]

Hardware Setup: 549_dBuVm_PA0_TH3_KP1_ESU
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.35 GHz - 2,42 GHz	7 kHz	PK+	100 kHz	Coupled	20 dB

3.2. Channel 78, GFSK-Modulation

Diagram No.: 8.01_Ch78_BE

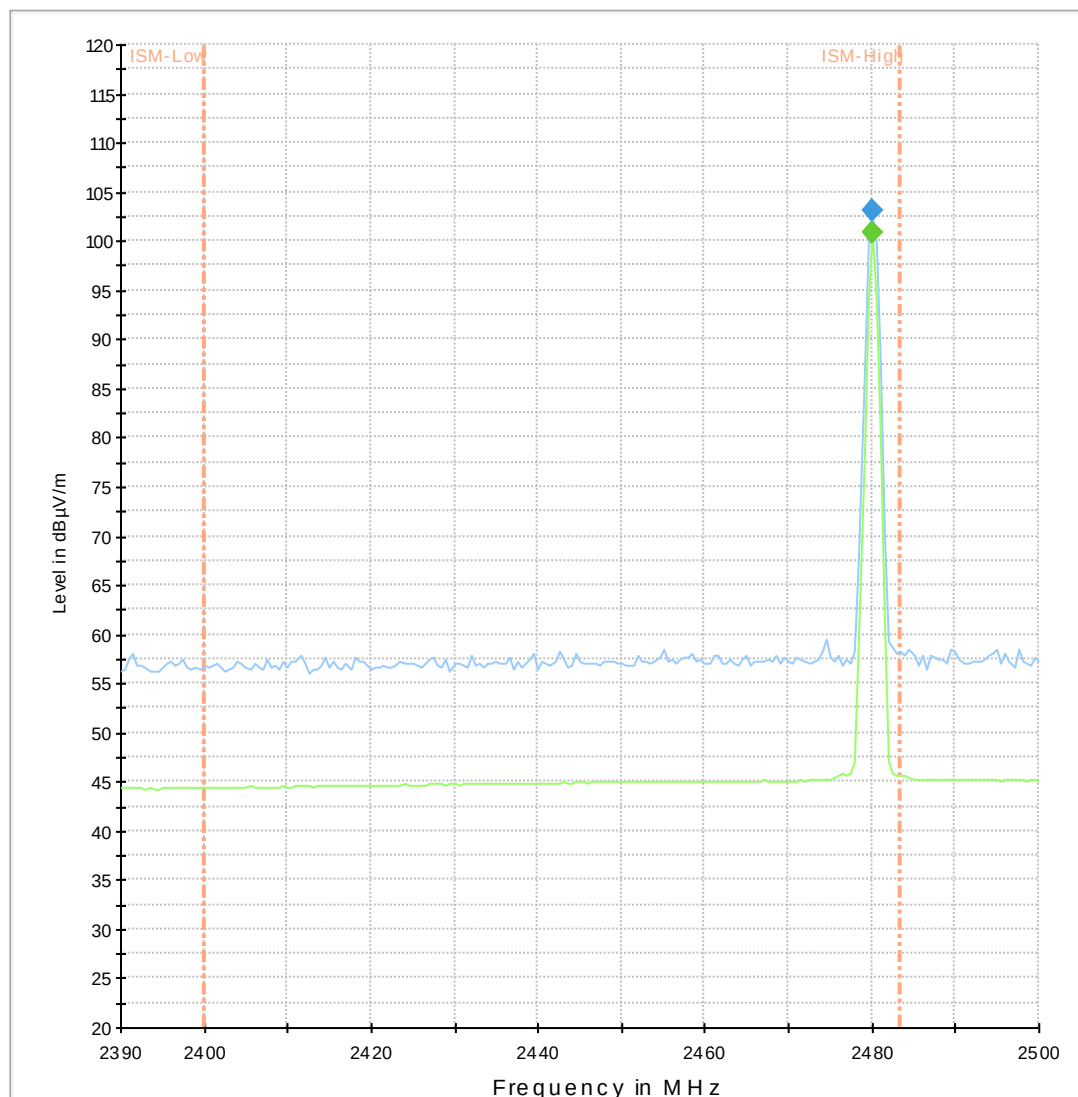
Common Information

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 = 78 / (2482MHz)
Op. Mode:	BT GFSK modulation (DH5 packet type)

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401138946757
Hardware Rev:	CPR 21957
Add. Info:	ASY-46297-001 Rev K
SW Rev:	
Comment:	used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

Carrier_measurement_SM1_PA0_KP1_BT



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
2480.000000	103.2	100.0	1000.000	155.0	H	57.0	0.0	35.7	

Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
2480.000000	100.8	100.0	1000.000	155.0	H	57.0	0.0	35.7	

EMI Auto Test Template: Carrier_measurement_SM1_PA0_KP1_BT

Hardware Setup: 549_dBuVm_PA0_TH3_KP1_ESU
 Measurement Type: E(I)RP
 Frequency Range: 2,39 GHz - 2,5 GHz
 Graphics Level Range: 20 dBμV/m - 120 dBμV/m

Preview Measurements:
 Scan Test Template: Sweep1_pre

Data Reduction:
 Limit Line #1: ISM-Low
 Limit Line #2: ISM-High
 Peak Search: 6 dB , Maximum Results: 1
 Subrange Maxima: 0 Subranges , Maxima per Subrange: 1
 Maximum Number of Results: 1

Frequency Zoom:
 Zoom Scan Template: Sweep1_zoom

Adjustment:
 Template for Single Meas.: Sweep1_pre

Final Measurements:
 Template for Single Meas.: Sweep1_fin
 Template for Single Meas.:(>1GHz) Sweep1_fin

Report Settings:
 Report Template: Report Setup FCC 15_247
 Create Electronic Report: RTF PDF
 Document Name: E-Field Strength accord. §15.205&15.209

Actions:
 Test start
 Notify: "Matrix richtig geschaltet ?!?"

Diagram No.: 8.01_Ch78_BE

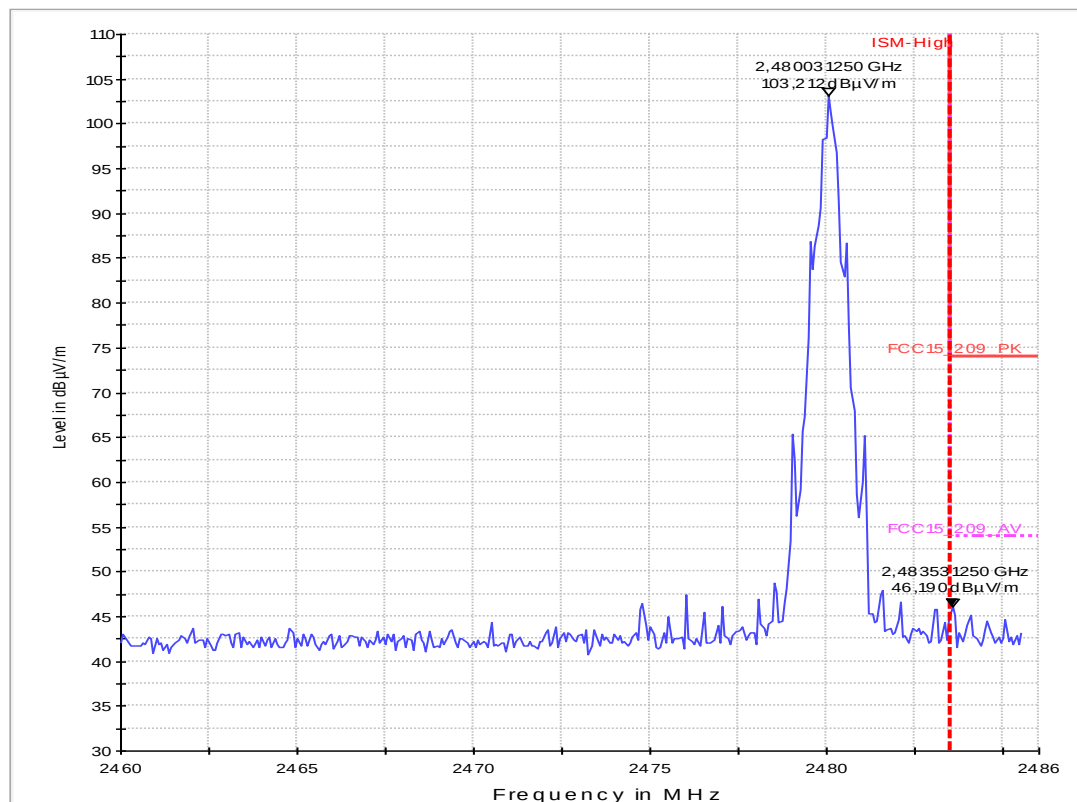
Common Information

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 = 78 / (2482MHz)
 Op. Mode: BT GFSK modulation (DH5 packet type)

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: 004401138946757
 Hardware Rev: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 SW Rev:
 Comment: used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

09_ESU_2.4GHz_High_Band_Edge_PA0



Sweep Setup: 09_ESU_2.4GHz_High_Band_Edge_PA0 [EMI radiated]

Hardware Setup: 549_dBuVm_PA0_TH3_KP1_ESU
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.44 GHz - 2,486 GHz	72,917 kHz	PK+	30 kHz	Coupled	20 dB

3.3. Channel 0, PI/4-DQPSK Modulation

Diagram No.: 8.02_Ch0_BE

Common Information

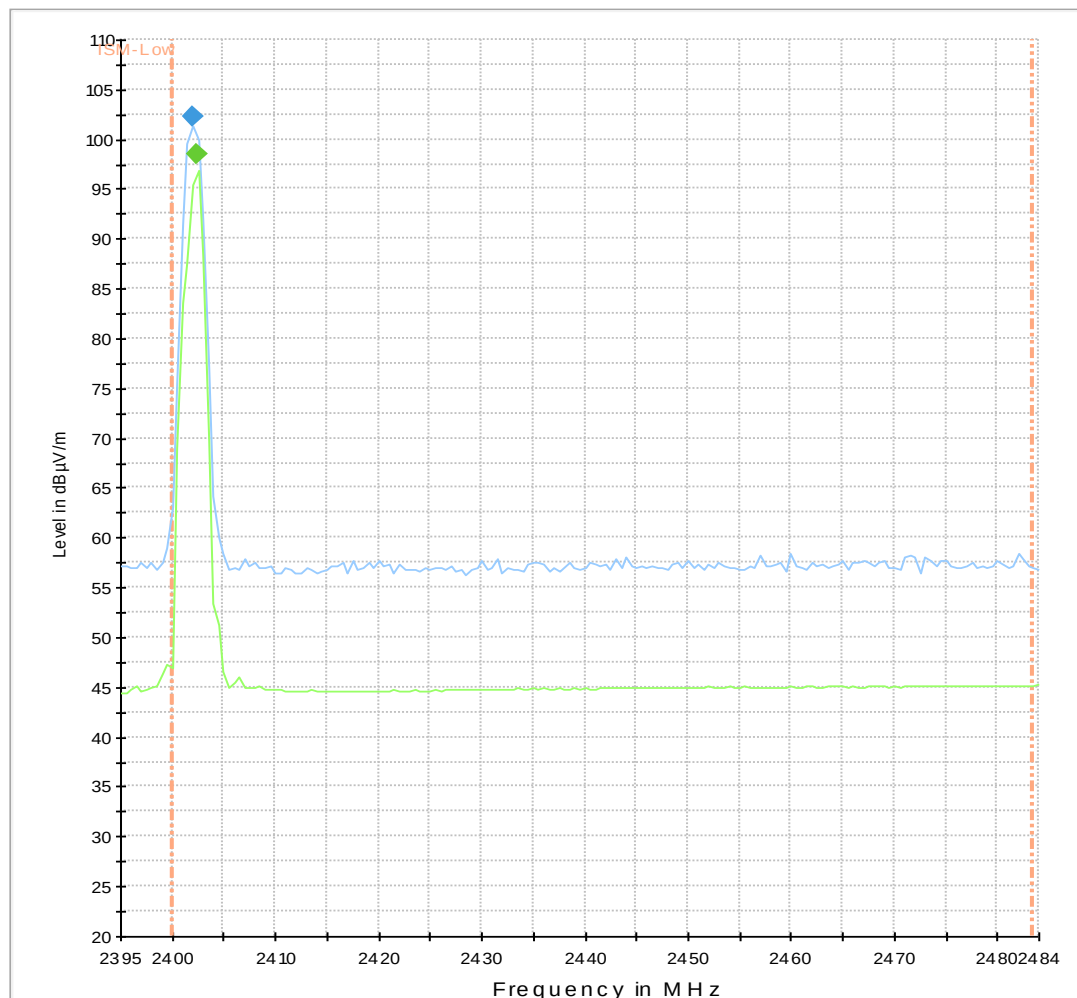
Test Description: Radiated field strength emission accord. §15.247 in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: §15.205 & §15.209 Intentional Radiator
 Antenna polarisation: horizontal/vertical

Operator Name: Lor
 Comment: Channel = 0 (2402MHz)
 Op. Mode: BT Pi/4 DQPSK (2DH5 packet type)

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: 004401138946757
 Hardware Rev: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 SW Rev:
 Comment: used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

Carrier_measurement_SM1_PA0_KP1_BT



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
2402.000000	102.2	100.0	1000.000	155.0	H	61.0	0.0	35.5	

Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
2402.400000	98.5	100.0	1000.000	155.0	H	61.0	0.0	35.5	

EMI Auto Test Template: Carrier_measurement_SM1_PA0_KP1_BT

Hardware Setup: 549_dBuVm_PA0_TH3_KP1_ESU
 Measurement Type: E(l)RP
 Frequency Range: 2,39 GHz - 2,5 GHz
 Graphics Level Range: 20 dBμV/m - 120 dBμV/m

Preview Measurements:
 Scan Test Template: Sweep1_pre

Data Reduction:
 Limit Line #1: ISM-Low
 Limit Line #2: ISM-High
 Peak Search: 6 dB , Maximum Results: 0
 Subrange Maxima: 0 Subranges , Maxima per Subrange: 1
 Maximum Number of Results: 10
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: Sweep1_zoom

Adjustment:
 Template for Single Meas.: Sweep1_pre

Final Measurements:
 Template for Single Meas.: Sweep1_fin

Template for Single Meas.:(>1GHz) Sweep1_fin

Report Settings:
 Report Template: Report Setup FCC 15_247
 Create Electronic Report: RTF PDF
 Document Name: E-Field Strength accord. §15.205&15.209

Actions:
 Test start
 Notify: "Matrix richtig geschaltet !?"

Diagram No.: 8.02_Ch0_BE

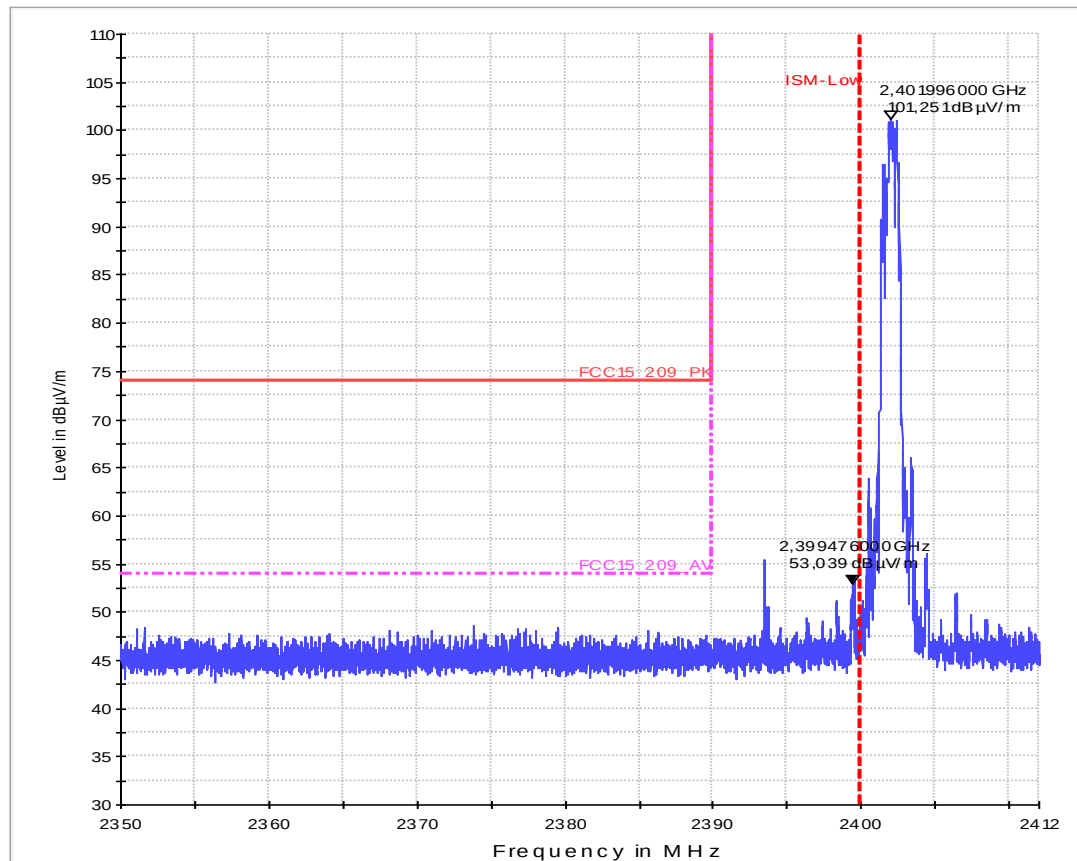
Common Information

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 = 0 (2402MHz)
 Op. Mode: BT Pi/4 DQPSK (2DH5 packet type)

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: 004401138946757
 Hardware Rev: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 SW Rev:
 Comment: used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

08_ESU_2.4GHz_Low_Band_Edge_PA0



Sweep Setup: 08_ESU_2.4GHz_Low_Band_Edge_PA0 [EMI radiated]

Hardware Setup: 549_dBuVm_PA0_TH3_KP1_ESU
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.35 GHz - 2,42 GHz	7 kHz	PK+	100 kHz	Coupled	20 dB

3.4. Channel 78, PI/4-DQPSK -Modulation

Diagram No.: 8.02_Ch78_BE

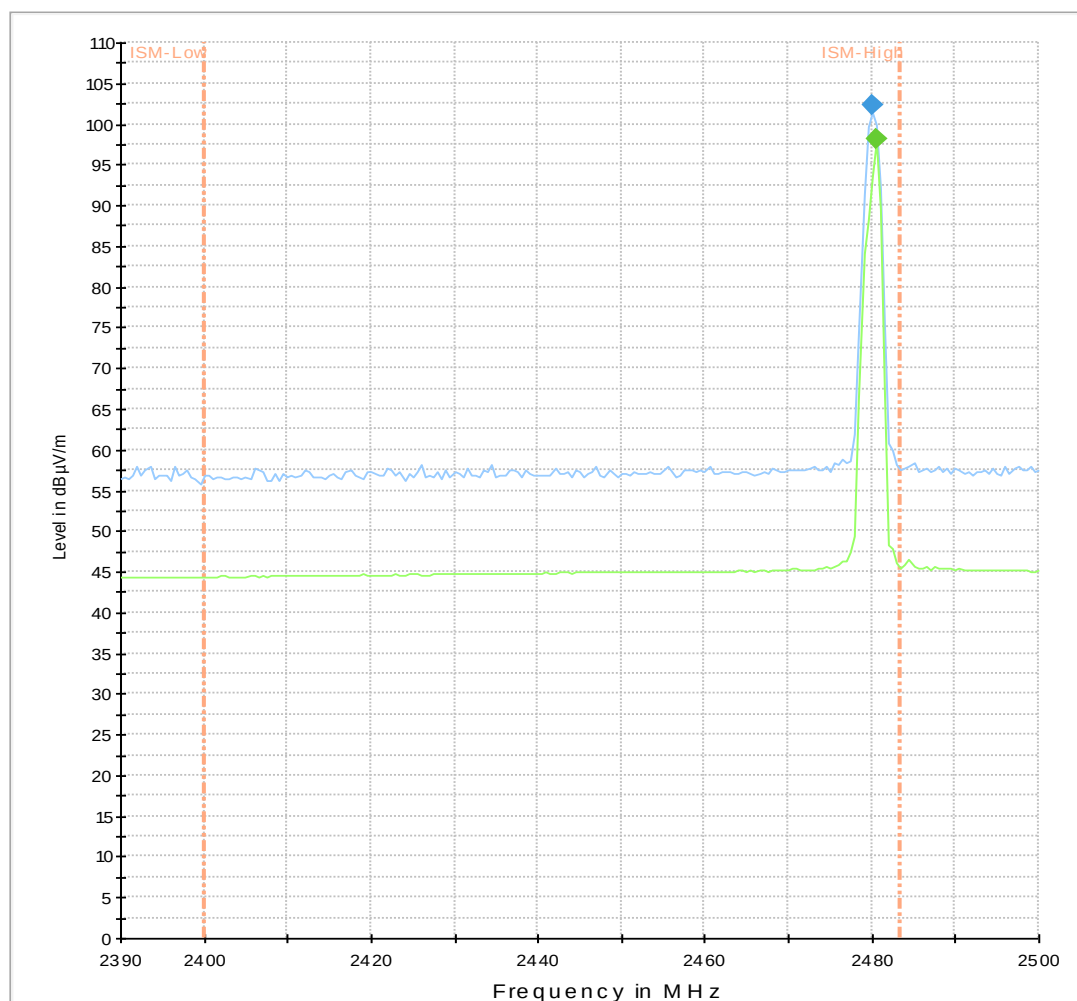
Common Information

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 = 78 / (2482MHz)
Op. Mode:	BT Pi/4 DQPSK (2DH5 packet type)

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401138946757
Hardware Rev:	CPR 21957
Add. Info:	ASY-46297-001 Rev K
SW Rev:	
Comment:	used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

Carrier_measurement_SM1_PA0_KP1_BT



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Comment
2480.000000	102.3	100.0	1000.000	155.0	H	59.0	0.0	35.7	

Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Comment
2480.500000	98.1	100.0	1000.000	155.0	H	58.0	0.0	35.7	

EMI Auto Test Template: Carrier_measurement_SM1_PA0_KP1_BT

Hardware Setup: 549_dBuVm_PA0_TH3_KP1_ESU
 Measurement Type: E(l)RP
 Frequency Range: 2,39 GHz - 2,5 GHz
 Graphics Level Range: 20 dBμV/m - 120 dBμV/m

Preview Measurements:
 Scan Test Template: Sweep1_pre

Data Reduction:
 Limit Line #1: ISM-Low
 Limit Line #2: ISM-High
 Peak Search: 6 dB , Maximum Results: 0
 Subrange Maxima: 0 Subranges , Maxima per Subrange: 1
 Maximum Number of Results: 10
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: Sweep1_zoom

Adjustment:
 Template for Single Meas.: Sweep1_pre

Final Measurements:
 Template for Single Meas.: Sweep1_fin

Template for Single Meas.:(>1GHz) Sweep1_fin

Report Settings:
 Report Template: Report Setup FCC 15_247
 Create Electronic Report: RTF PDF
 Document Name: E-Field Strength accord. §15.205&15.209

Actions:
 Test start
 Notify: "Matrix richtig geschaltet ?!?"

Diagram No.: 8.02_Ch78_BE

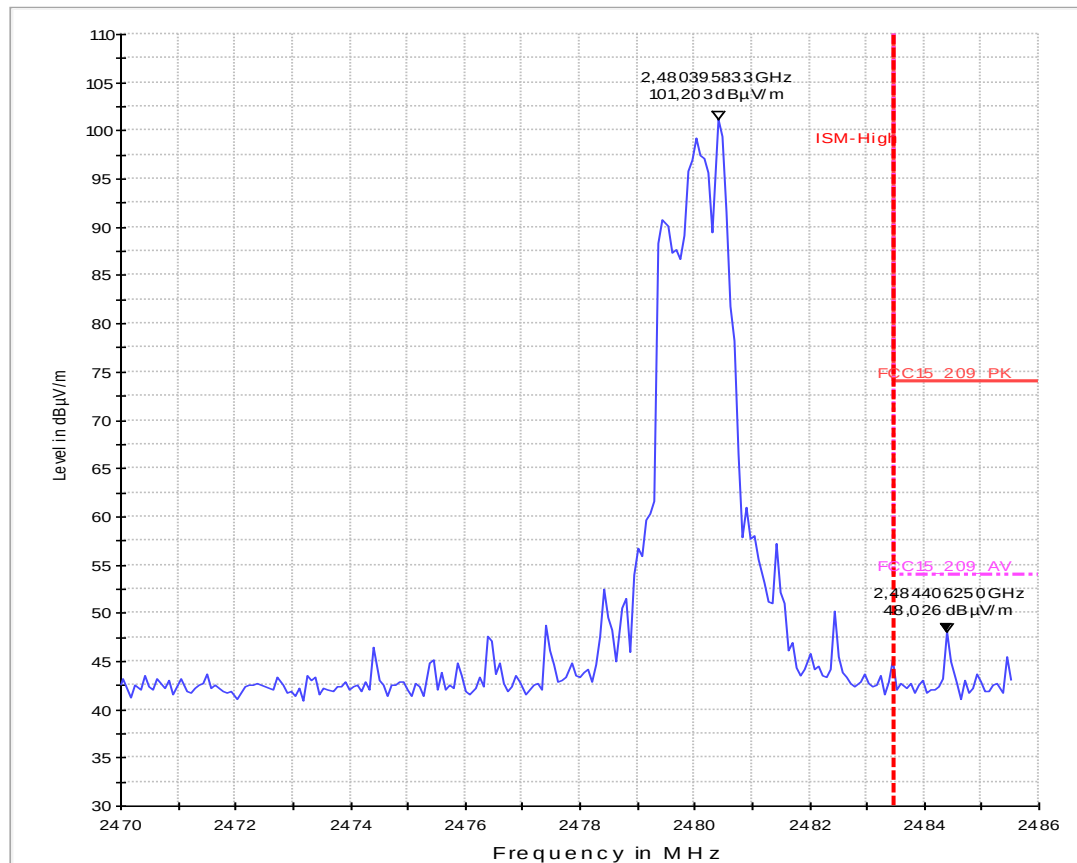
Common Information

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 = 78 / (2482MHz)
 Op. Mode: Bluetooth PI/4 DQPSK Modulation (2DH5)

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: 004401138946757
 Hardware Rev: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 SW Rev:
 Comment: used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

09_ESU_2.4GHz_High_Band_Edge_PA0



Sweep Setup: 09_ESU_2.4GHz_High_Band_Edge_PA0 [EMI radiated]

Hardware Setup: 549_dBuVm_PA0_TH3_KP1_ESU
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamplifier
2.44 GHz - 2,486 GHz	72,917 kHz	PK+	30 kHz	Coupled	20 dB

3.5. Channel 0, 8DPSK-Modulation

Diagram No.: 8.03_Ch0_BE_1

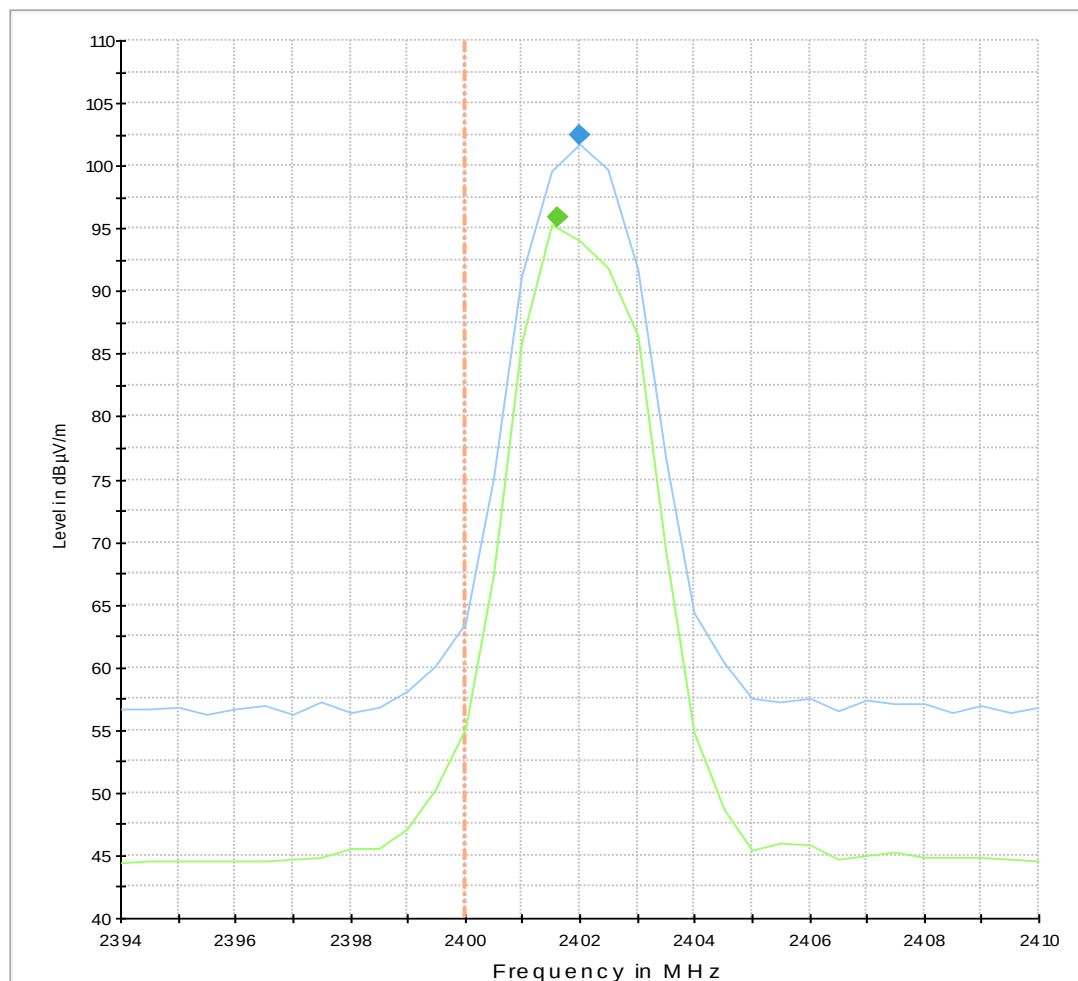
Common Information

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 = 02402MHz)
Op. Mode:	BT 8DPSK (3DH5 packet type)

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401138946757
Hardware Rev:	CPR 21957
Add. Info:	ASY-46297-001 Rev K
SW Rev:	
Comment:	used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

Carrier_measurement_SM1_PA0_KP1_BT



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Comment
2402.000000	102.5	100.0	1000.000	155.0	H	64.0	0.0	35.5	

Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Comment
2401.600000	95.9	100.0	1000.000	155.0	H	62.0	0.0	35.5	

EMI Auto Test Template: Carrier_measurement_SM1_PA0_KP1_BT

Hardware Setup: 549_dBuVm_PA0_TH3_KP1_ESU
 Measurement Type: E(l)RP
 Frequency Range: 2,39 GHz - 2,5 GHz
 Graphics Level Range: 20 dBμV/m - 120 dBμV/m

Preview Measurements:
 Scan Test Template: Sweep1_pre

Data Reduction:
 Limit Line #1: ISM-Low
 Limit Line #2: ISM-High
 Peak Search: 6 dB , Maximum Results: 0
 Subrange Maxima: 0 Subranges , Maxima per Subrange: 1
 Maximum Number of Results: 10
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: Sweep1_zoom

Adjustment:
 Template for Single Meas.: Sweep1_pre

Final Measurements:
 Template for Single Meas.: Sweep1_fin

Template for Single Meas.:(>1GHz) Sweep1_fin

Report Settings:
 Report Template: Report Setup FCC 15_247
 Create Electronic Report: RTF PDF
 Document Name: E-Field Strength accord. §15.205&15.209

Actions:
 Test start
 Notify: "Matrix richtig geschaltet ?!?"

Diagram No.: 8.03_Ch0_Sweep3_BE

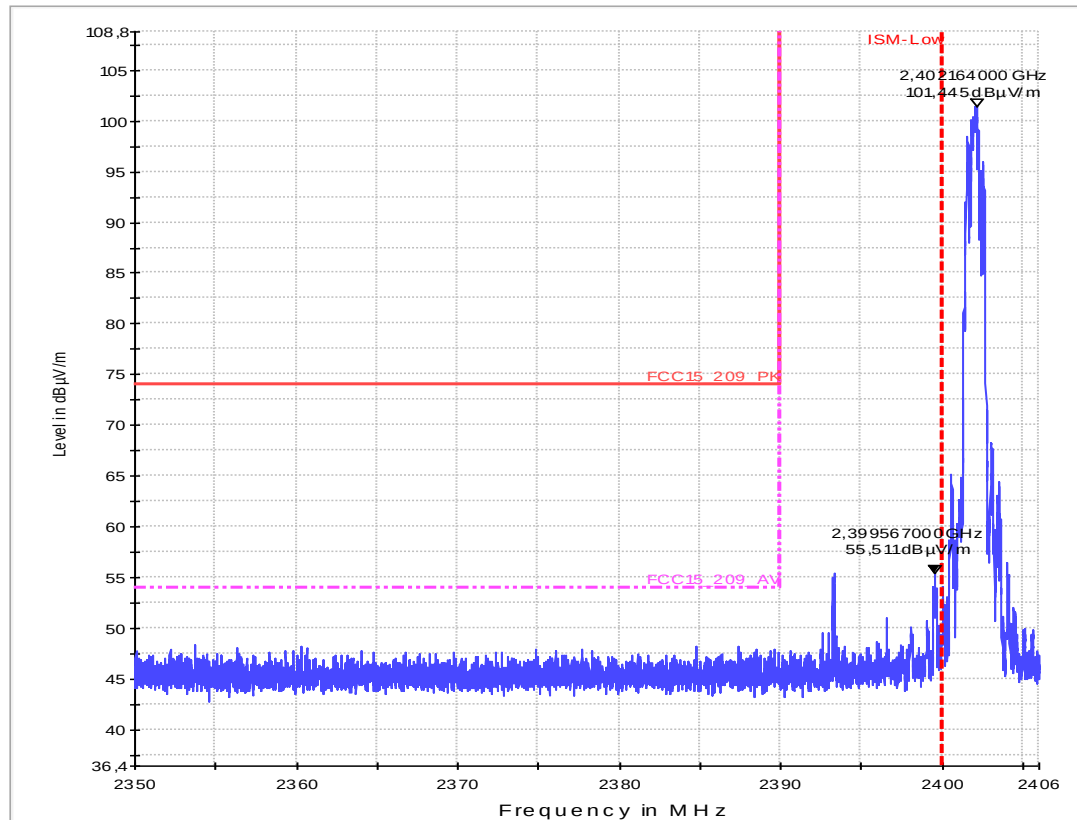
Common Information

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 = 0 (2402MHz)
 Op. Mode: BT 8DPSK (3DH5 packet type)

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: 004401138946757
 Hardware Rev: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 SW Rev:
 Comment: used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

08_ESU_2.4GHz_Low_Band_Edge_PA0



Sweep Setup: 08_ESU_2.4GHz_Low_Band_Edge_PA0 [EMI radiated]

Hardware Setup: 549_dBuVm_PA0_TH3_KP1_ESU
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.35 GHz - 2,42 GHz	7 kHz	PK+	100 kHz	Coupled	20 dB

3.6. Channel 78, 8DPSK -Modulation

Diagram No.: 8.03_Ch78_PWR

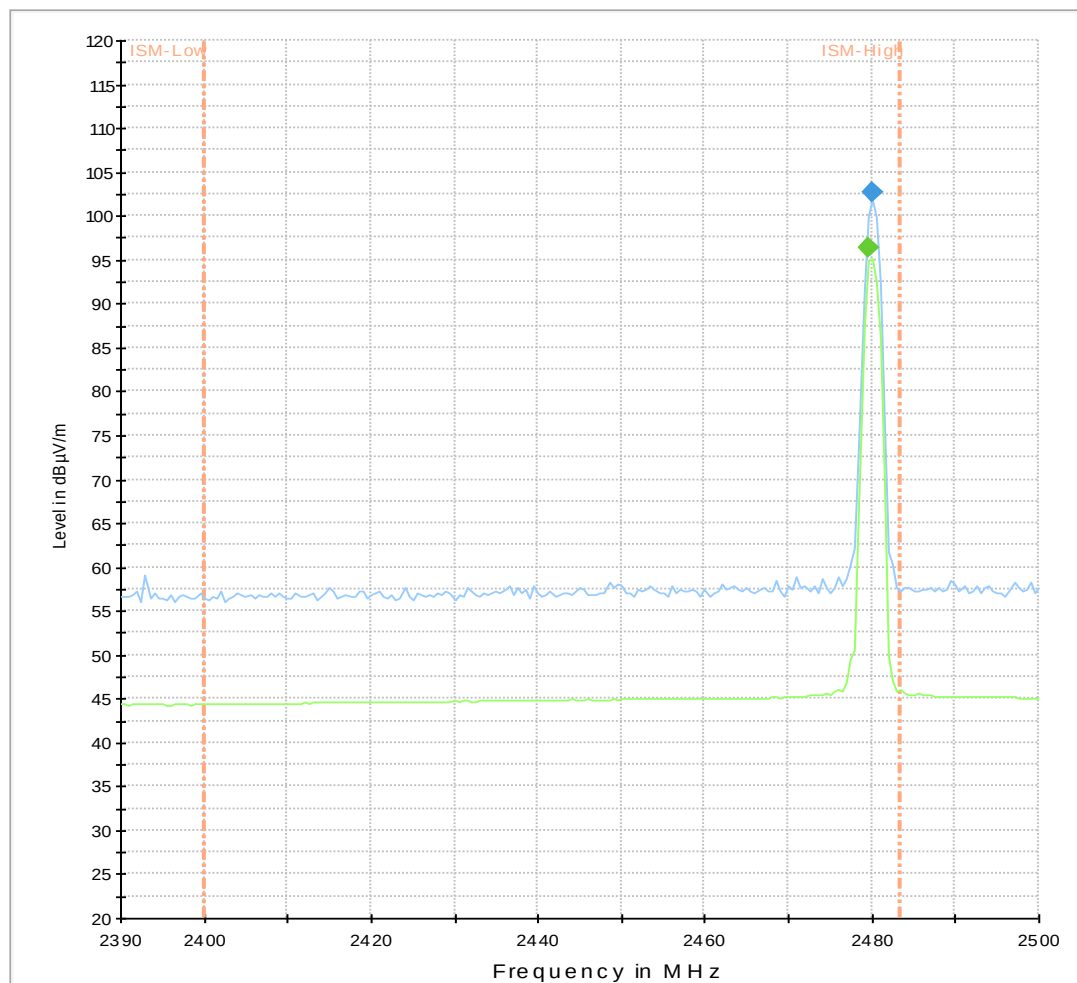
Common Information

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 = 78 / (24820MHz)
Op. Mode:	BT 8DPSK (3DH5 packet type)

EUT Information

EUT Name:	RFG81UW
Manufacturer:	RIM
Serial Number:	004401138946757
Hardware Rev:	CPR 21957
Add. Info:	ASY-46297-001 Rev K
SW Rev:	
Comment:	used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

Carrier_measurement_SM1_PA0_KP1_BT



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Comment
2480.000000	102.8	100.0	1000.000	155.0	H	62.0	0.0	35.7	

Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Correction (dB)	Comment
2479.600000	96.4	100.0	1000.000	155.0	H	58.0	0.0	35.7	

EMI Auto Test Template: Carrier_measurement_SM1_PA0_KP1_BT

Hardware Setup: 549_dBuVm_PA0_TH3_KP1_ESU
 Measurement Type: E(l)RP
 Frequency Range: 2,39 GHz - 2,5 GHz
 Graphics Level Range: 20 dBμV/m - 120 dBμV/m

Preview Measurements:
 Scan Test Template: Sweep1_pre

Data Reduction:
 Limit Line #1: ISM-Low
 Limit Line #2: ISM-High
 Peak Search: 6 dB , Maximum Results: 0
 Subrange Maxima: 0 Subranges , Maxima per Subrange: 1
 Maximum Number of Results: 10
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: Sweep1_zoom

Adjustment:
 Template for Single Meas.: Sweep1_pre

Final Measurements:
 Template for Single Meas.: Sweep1_fin

Template for Single Meas.:(>1GHz) Sweep1_fin

Report Settings:
 Report Template: Report Setup FCC 15_247
 Create Electronic Report: RTF PDF
 Document Name: E-Field Strength accord. §15.205&15.209

Actions:
 Test start
 Notify: "Matrix richtig geschaltet ?!?"

Diagram No.: 8.03_Ch78_BE_2

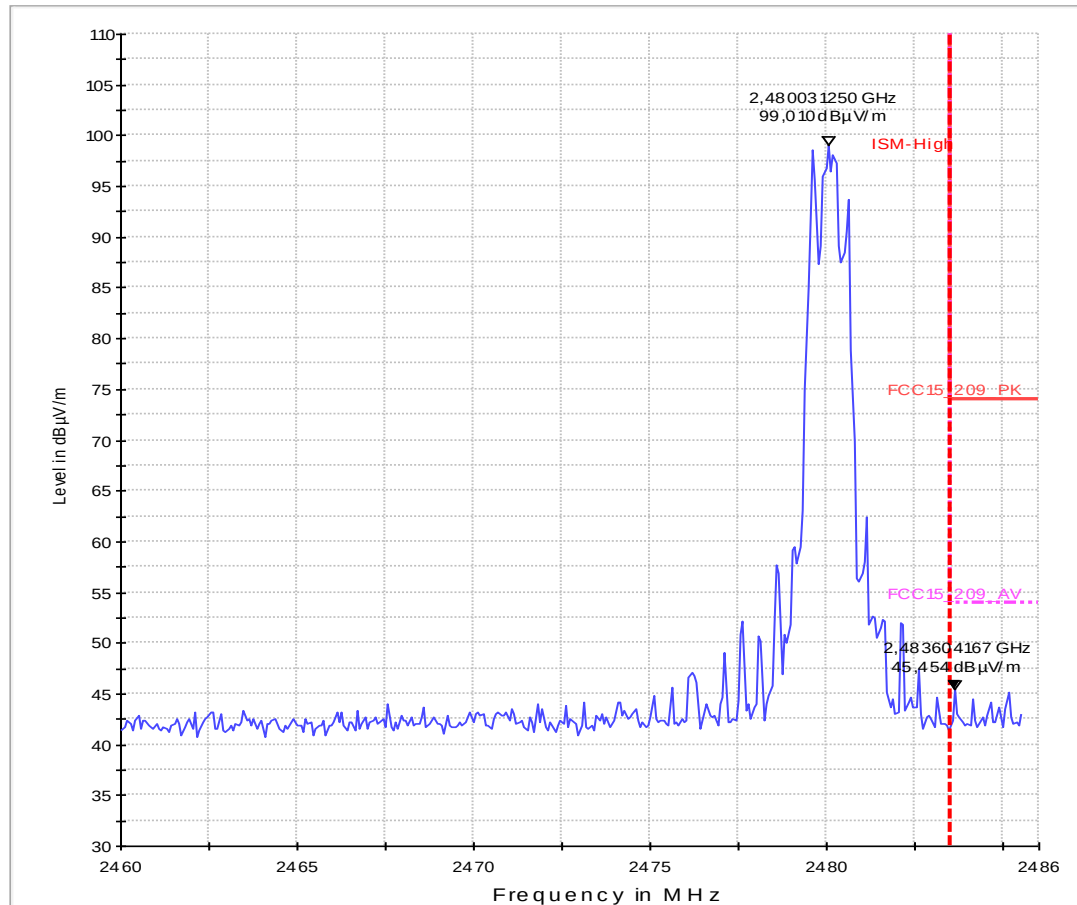
Common Information

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 (Ch78=2480MHz)
 Op. Mode: BT 8DPSK (3DH5 packet type)

EUT Information

EUT Name: RFG81UW
 Manufacturer: RIM
 Serial Number: 004401138946757
 Hardware Rev: CPR 21957
 Add. Info: ASY-46297-001 Rev K
 SW Rev:
 Comment: used ORGA 3G Sim-card, full battery (type: BAT-47277-001), Smartphone

09_ESU_2.4GHz_High_Band_Edge_PA0



Sweep Setup: 09_ESU_2.4GHz_High_Band_Edge_PA0 [EMI radiated]

Hardware Setup: 549_dBuVm_PA0_TH3_KP1_ESU
 Receiver: [ESU 40]
 Level Unit: dBµV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.44 GHz - 2,486 GHz	72,917 kHz	PK+	30 kHz	Coupled	20 dB

4. Radiated EMI measurements accord. §15.109 class B

4.1. Frequency range 30MHz to 1000MHz

Diagram No. 2.01_BT_RX

Test description: Electric Field Strength Measurement
 Test site and distance: Semi Anechoic Room (SAR) with 3m measurement distance
 Distance correction: not used
 Technical Data: Please see page 2 for detailed data of measurement setup
 Used filter: not used
 Test specification: FCC15.109, class B; RSS-Gen.: Issue 3

Operator: Lor
 Operating conditions: RX BT + charging empty battery
 Measured sides of EUT: front, right, rear, left, top, under
 Power during tests: 110V 60Hz

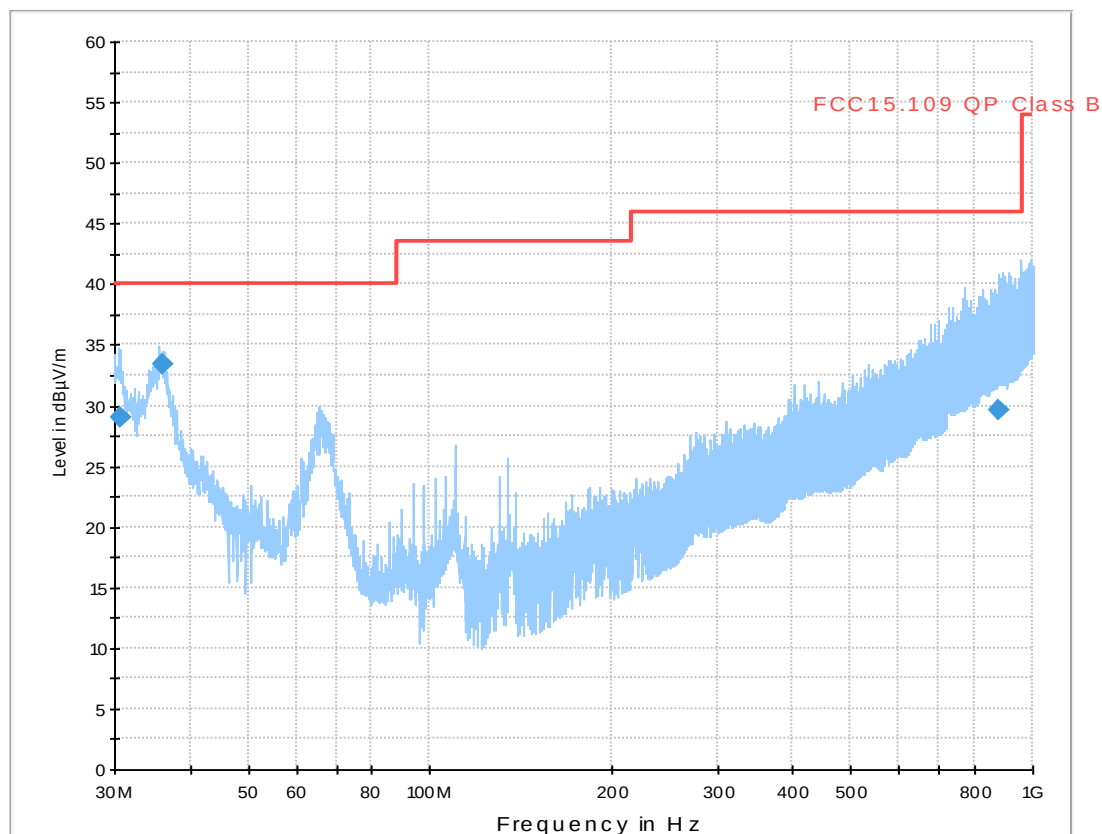
EUT Information

EUT Name: RFG81UW (Ferrit bead no. 2)
 Manufacturer: RIM
 IMEI: 004401138979980
 HW: CPR 21832
 Add. Info: ASY-46297-001
 Setup: +HS1+CH2+USB1

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)
30.580000	28.9	1000.	120.000	187.0	H	59.0	90.0	21.6	11.1	40.0
36.050000	33.4	1000.	120.000	248.0	H	129.0	0.0	19.1	6.6	40.0
880.790000	29.6	1000.	120.000	338.0	H	147.0	90.0	26.4	16.4	46.0

05_FCC15.109_hor+vert_kipp



Date: 29.06.2012 Page 2 of 2

Technical Data of measurement with EMC32 V8.51.1

Hardware Setup: EMI radiated\HW11_FCC_ESCS30_TP1200_EUTkipp - [EMI radiated]

Subrange 1

Frequency Range: 30 MHz - 1 GHz

Receiver: Receiver 1 [ESS]
@ GPIB0 (ADR 19), SN 0, FW 1.21 02.00 02.00

Signal Path: SAR SM TP1200
FW 1.0

Antenna: Frankonia BTA-L_refNr574
Correction Table (vertical): Frankonia BTA-L ref. nr. 574_2010.tdf
Correction Table (horizontal): Frankonia BTA-L ref. nr. 574_2010.tdf
Correction Table (vertical): SAR EMI-Kabelpfad w.c. bis 1GHz
Correction Table (horizontal): SAR EMI-Kabelpfad w.c. bis 1GHz

Antenna Tower: Mast_1 Inn-Co [Inn-Co Antenna Tower]
@ GPIB0 (ADR 7)

Turntable: Inn-Co Turntable [Inn-Co Turntable]
@ GPIB0 (ADR 7)

EMI Auto Test Template: 05_FCC15.109_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 = 4

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: 20

After Data Reduction: Interactive data reduction

Frequency Zoom:

Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

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_109B_vert_hor

Create Electronic Report: RTF PDF

Document Name: EMI Report

Actions:

Data Reduction: Before

Notify: Sound (WAV file) 'tada.wav'

Final Measurements: After

Notify: Sound (WAV file) 'tada.wav'

4.2. Frequency range 1000MHz to 12750MHz

Diagram no. 8.01_BT_RX

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, class B
Section	15.109
Operating Mode:	BT (2,4GHz) Rx + Charging
Equipment Class:	Class B
Environmental Conditions:	Humidity: 48%rH; Temperature: 19,2°C
Operator:	

EUT Information

Manufacturer:	RIM
Model:	GSM/WCDMA/LTE Mobile Terminal
Type:	
EUT:	RFG81UW + HS1 + CH2 + USB 1 cable
EUT additional information:	CER-48928-001 Rev2 17-Jul-12
HW version:	new
SW version:	tbd
Serial number:	004401139037010
Power Supply:	110V/60Hz
Comments:	-

030445_FCC_Part15.109_Unintentional_Radiator_Class_B_1G-20G_FSEK

