

Annex 1: Diagrams to
TEST REPORT
 No.: 2-20795542c/11

According to:
FCC Regulations
 FCC Part 15B
 &
IC Regulations
 RSS-Gen, Issue 2
 RSS-132, Issue 2
 RSS-133, Issue 5

for

Cinterion Wireless Modules GmbH

Quad-Band GSM/GPRS Module BGS2-W
 FCC-ID: QIPBGS2
 IC: 7830A-BGS2








Laboratory Accreditation and Listings			
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1. Annex 1: Diagrams

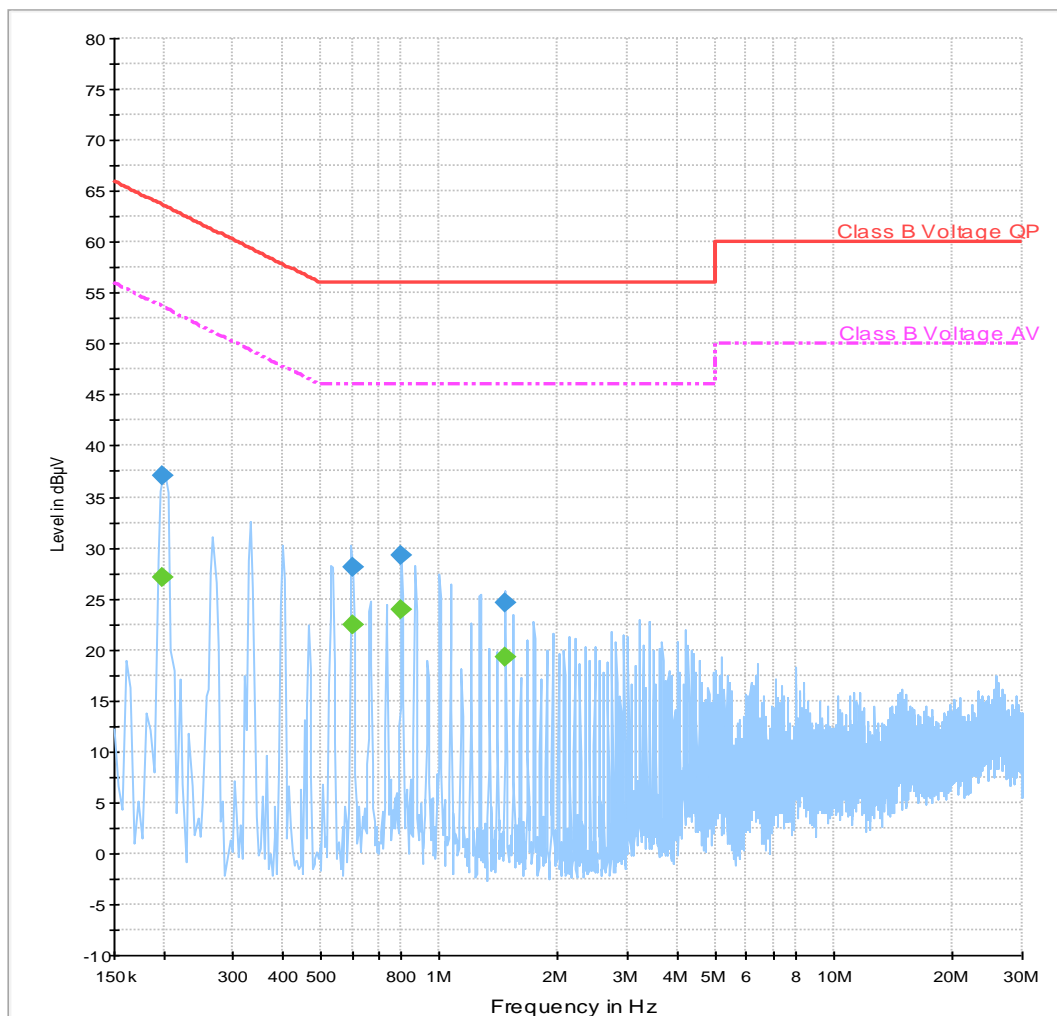
1.1. Conducted emissions on AC-mains

Diagram No. 1.1

Common Information

Test Description:	Conducted Voltage Measurement Class B
Testspecification:	FCC 15.107, class B
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:	MEL
Report.- Nr.	2-20795542a/11
EUT:	BG52-W + AC/DC Adapter DSB45+Handset Votronic + DSB45 + RS232+(Notebook)
Manufacturer:	Cinterion
Operating mode:	GSM 1900 IDLE (Channel RX=651)
Measured on line:	Mains AC L1 and N
Power during test:	110 V AC 60 Hz
Comment 1:	DSB45: DC-9V powered over AC/DC Adapter, GSM Module=4.5V internal voltage

01_Class B_Voltage_PK_QPAV_N_L1



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198281	37.0	15000.0	9.000	GND	N	0.0	26.7	63.7
0.601719	28.2	15000.0	9.000	GND	N	0.0	27.8	56.0
0.800938	29.2	15000.0	9.000	GND	N	0.0	26.8	56.0
1.467812	24.5	15000.0	9.000	GND	N	0.1	31.5	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198281	27.1	15000.0	9.000	GND	N	0.0	26.6	53.7
0.601719	22.5	15000.0	9.000	GND	N	0.0	23.5	46.0
0.800938	23.9	15000.0	9.000	GND	N	0.0	22.1	46.0
1.467812	19.3	15000.0	9.000	GND	N	0.1	26.7	46.0

Technical Data of Measurements with R&S EMC32 V8.40.0**Hardware Setup: EMI conducted\ESH2-Z5 - [EMI conducted]**

Subrange 1

Frequency Range: 150 kHz - 30 MHz

Receiver: Receiver [ESCS 30]
@ GPIB0 (ADR 19), SN Ref.-Nr. 377, FW 2.30 02.01 02.36

Signal Path: ESH2-Z5 Kabeldämpfung
Correction Table: Conducted Voltage ESH2-Z5 cable loss

LISN: ESH2-Z5
Correction Table (Line 0): 4-Line-LISN ESH2-Z5 Line N
Correction Table (Line 1): 4-Line-LISN ESH2-Z5 Line L1
Correction Table (Line 2): 4-Line-LISN ESH2-Z5 Line L2
Correction Table (Line 3): 4-Line-LISN ESH2-Z5 Line L3

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: -10 dBµV - 80 dBµV

Preview Measurements:
Scan Test Template:

02_Class B_pre_PK_fast

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
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: 50 Subranges , Maxima per Subrange: 2
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
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
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"

Diagram No. 1.3

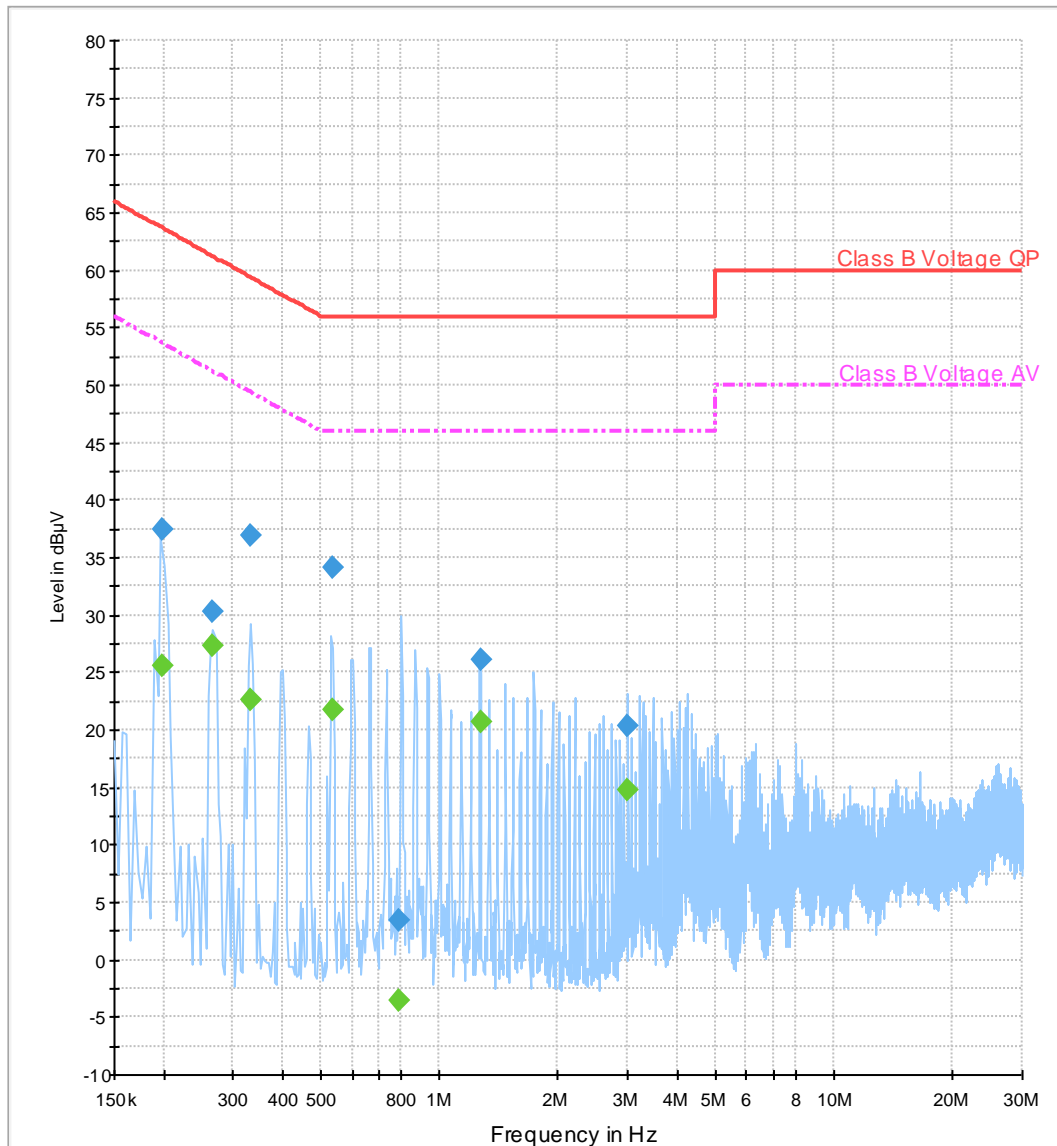
Common Information

Test Description:	Conducted Voltage Measurement Class B
Testspecification:	FCC 15.107 class B
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:	Lor
Operating mode:	IDLE 850 Mode (Channel RX=182)
Measured on line:	Mains AC L1 and N
Power during test:	110 V AC 60 Hz
Remark:	DSB45: DC-9V powered over AC/DC Adapter, GSM Module=4.5V internal voltage

EUT Information

EUT Name:	BGS2-W+AC/DC Adapter+DSB45+Handset Votronic+RS232+USB+(Notebook)
Manufacturer:	Cinerion
Serial Number:	IMEI #8449

01_Class B_Voltage_PK_QPAV_N_L1



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.199375	37.4	15000.0	9.000	GND	L1	0.0	26.2	63.6
0.265781	30.2	15000.0	9.000	GND	N	0.1	31.0	61.2
0.331094	36.9	15000.0	9.000	GND	N	0.0	22.5	59.4
0.534219	34.1	15000.0	9.000	GND	N	0.0	21.9	56.0
0.785938	3.5	15000.0	9.000	GND	N	0.1	52.5	56.0
1.269688	26.0	15000.0	9.000	GND	N	0.1	30.0	56.0
3.002969	20.3	15000.0	9.000	GND	N	0.1	35.7	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.199375	25.6	15000.0	9.000	GND	L1	0.0	28.0	53.6
0.265781	27.3	15000.0	9.000	GND	N	0.1	23.9	51.2
0.331094	22.7	15000.0	9.000	GND	N	0.0	26.7	49.4
0.534219	21.7	15000.0	9.000	GND	N	0.0	24.3	46.0
0.785938	-3.6	15000.0	9.000	GND	N	0.1	49.6	46.0
1.269688	20.8	15000.0	9.000	GND	N	0.1	25.2	46.0
3.002969	14.7	15000.0	9.000	GND	N	0.1	31.3	46.0

Technical Data of Measurements with R&S EMC32 V8.40.0**Hardware Setup: EMI conducted\ESH2-Z5 - [EMI conducted]**

Subrange 1

Frequency Range: 150 kHz - 30 MHz

Receiver: Receiver [ESCS 30]
@ GPIB0 (ADR 19), SN Ref.-Nr. 377, FW 2.30 02.01 02.36

Signal Path: ESH2-Z5 Kabeldämpfung
Correction Table: Conducted Voltage ESH2-Z5 cable loss

LISN: ESH2-Z5
Correction Table (Line 0): 4-Line-LISN ESH2-Z5 Line N
Correction Table (Line 1): 4-Line-LISN ESH2-Z5 Line L1
Correction Table (Line 2): 4-Line-LISN ESH2-Z5 Line L2
Correction Table (Line 3): 4-Line-LISN ESH2-Z5 Line L3

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: -10 dBµV - 80 dBµV

Preview Measurements:

Scan Test Template: 02_Class B_pre_PK_fast

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
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: 50 Subranges, Maxima per Subrange: 2
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
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
150 kHz - 30 MHz	4.5 kHz	QPK; CAV	9 kHz	15 s	0 dB

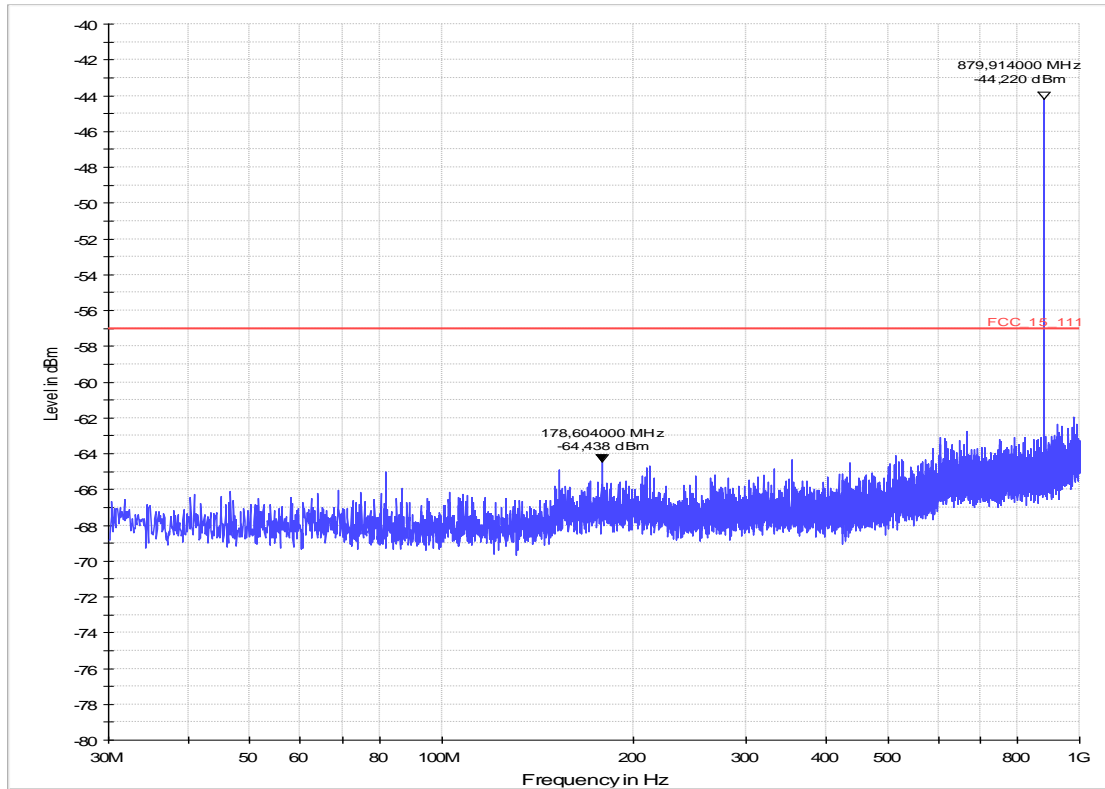
Receiver: [ESCS 30]

Report Settings:

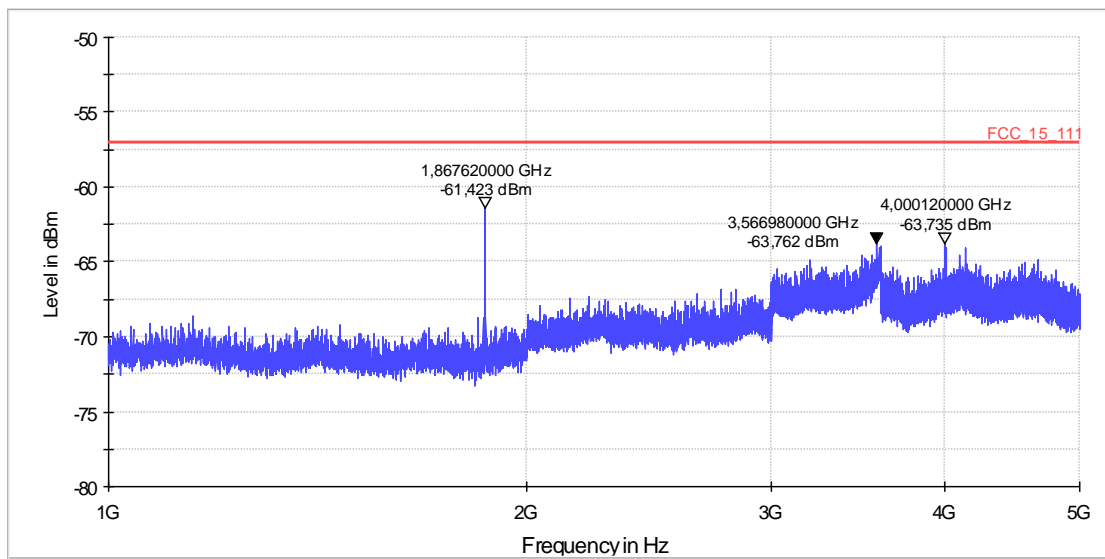
Report Template: Ctc_Standard_class_B
Create Electronic Report: RTF PDF
Document Name: EMI Report

1.2. Spurious emissions conducted – IDLE 850 Mode (RX) accord. FCC15.111 requirement

RX-Channel 182

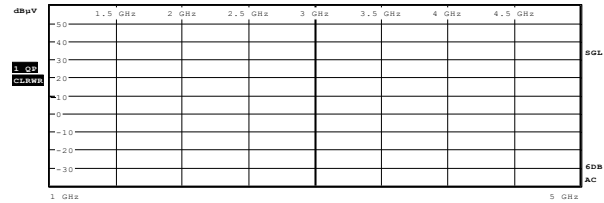
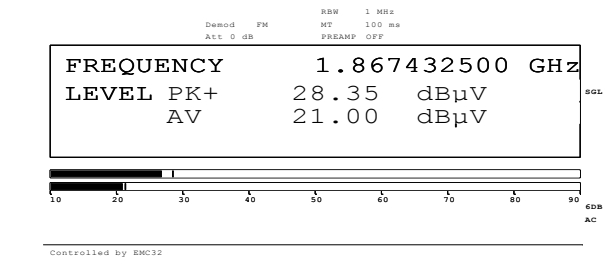


Sweep 14.21

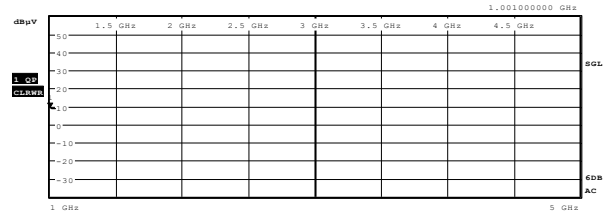
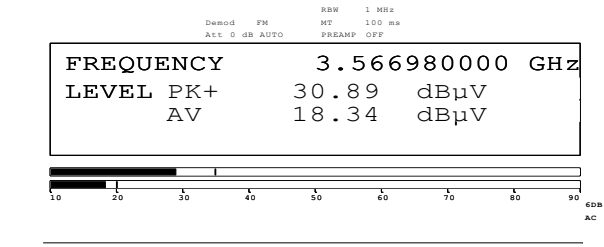


Sweep 14.22 Pre-Test

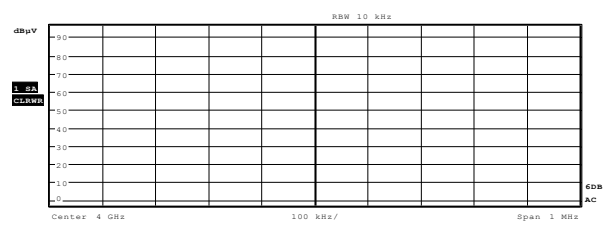
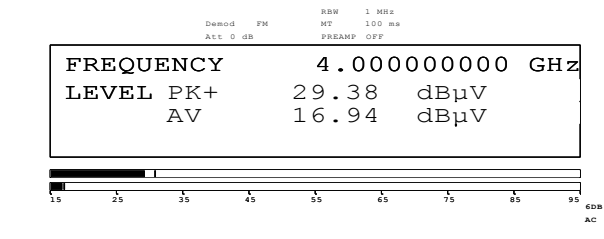
Final measurements to 14.22 – Discrete frequencies



Date: 11.FEB.2011 14:34:32

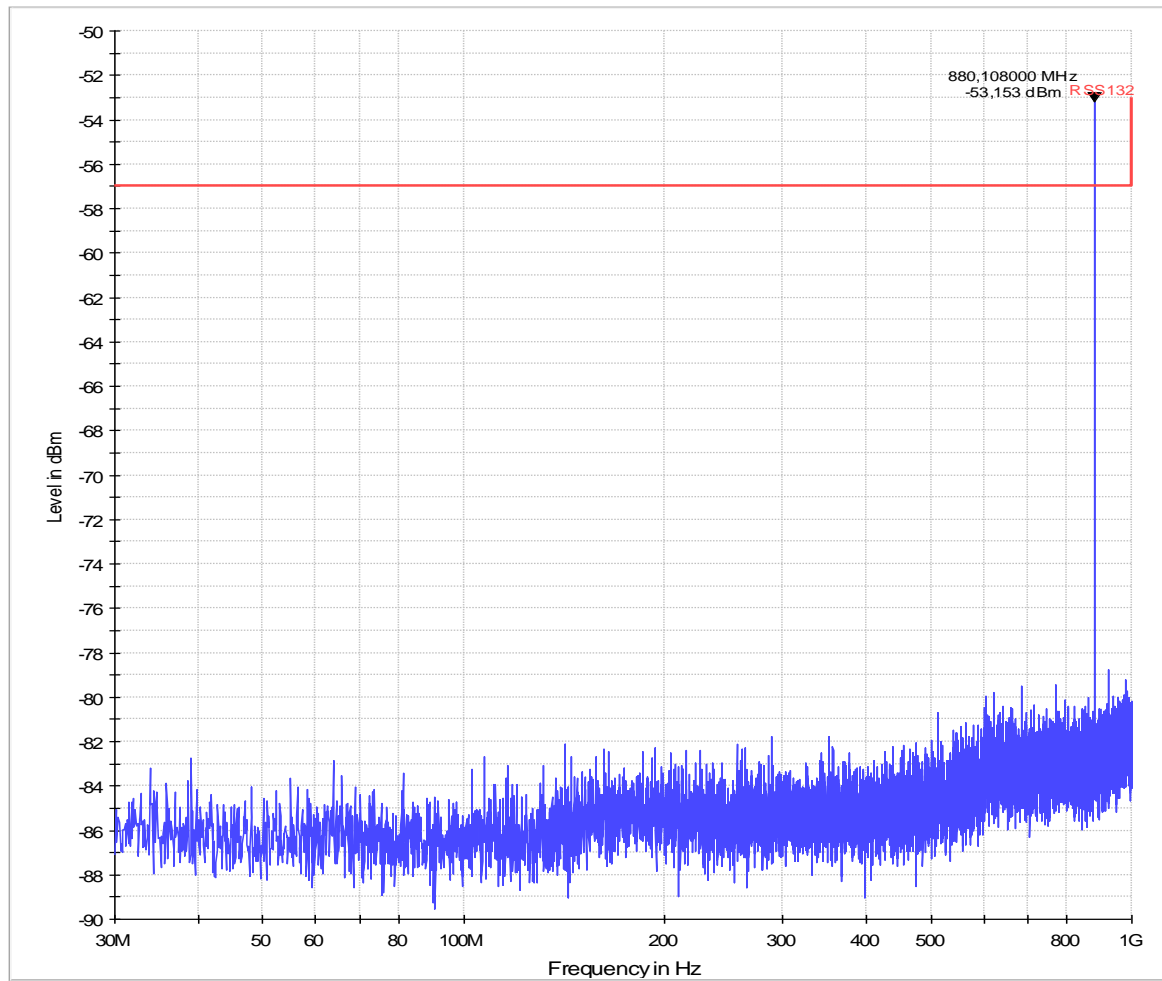


Date: 11.FEB.2011 14:37:16

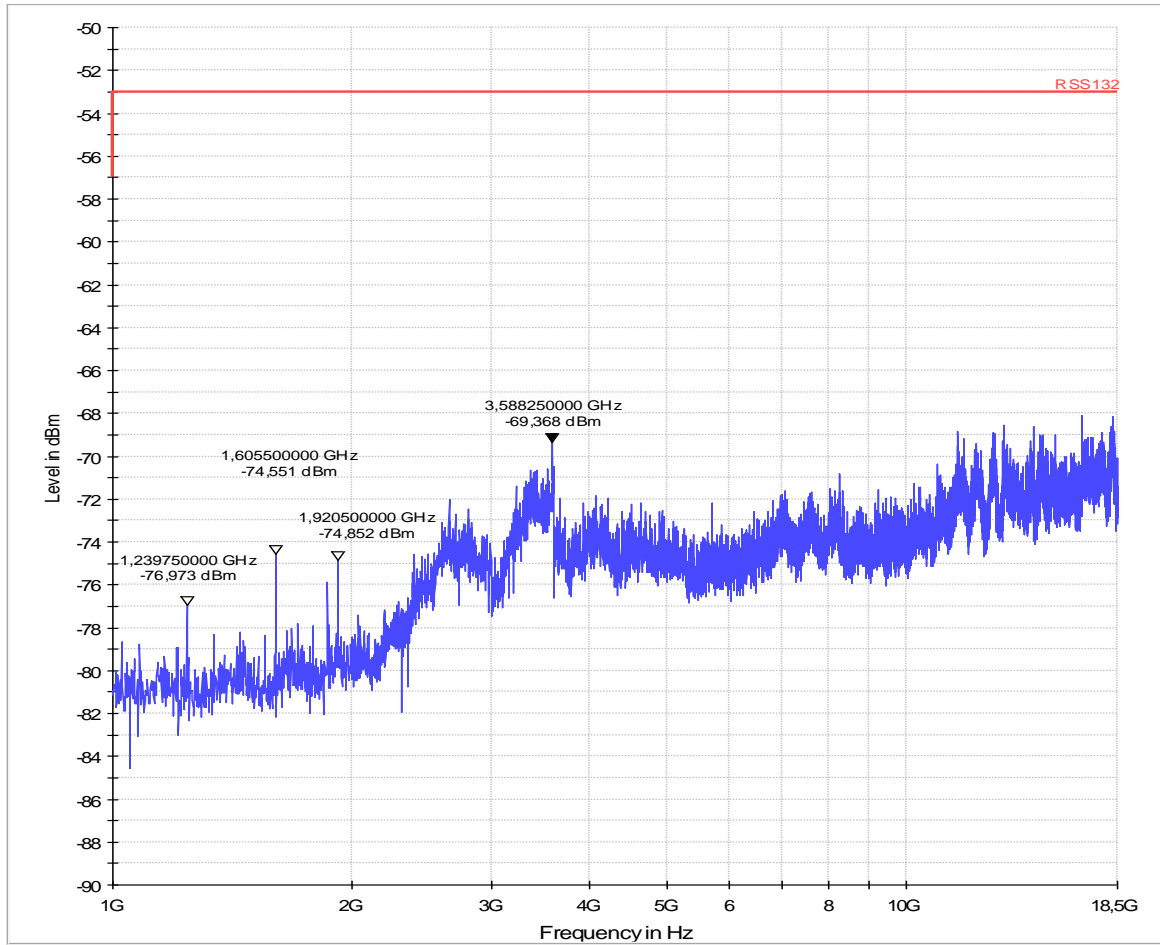


Date: 11.FEB.2011 14:33:06

1.3. Spurious emissions conducted – IDLE 850 Mode (RX) accord. Canada requirement

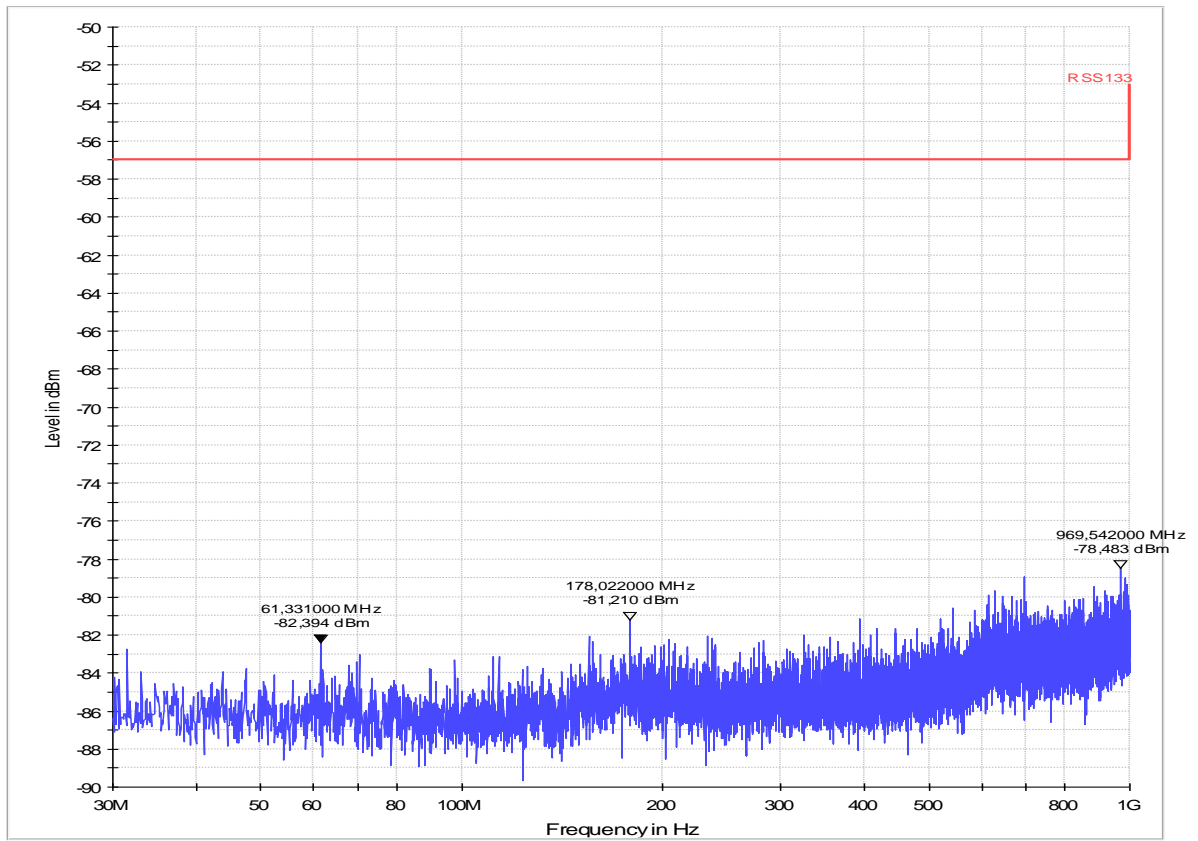


Sweep 14.17

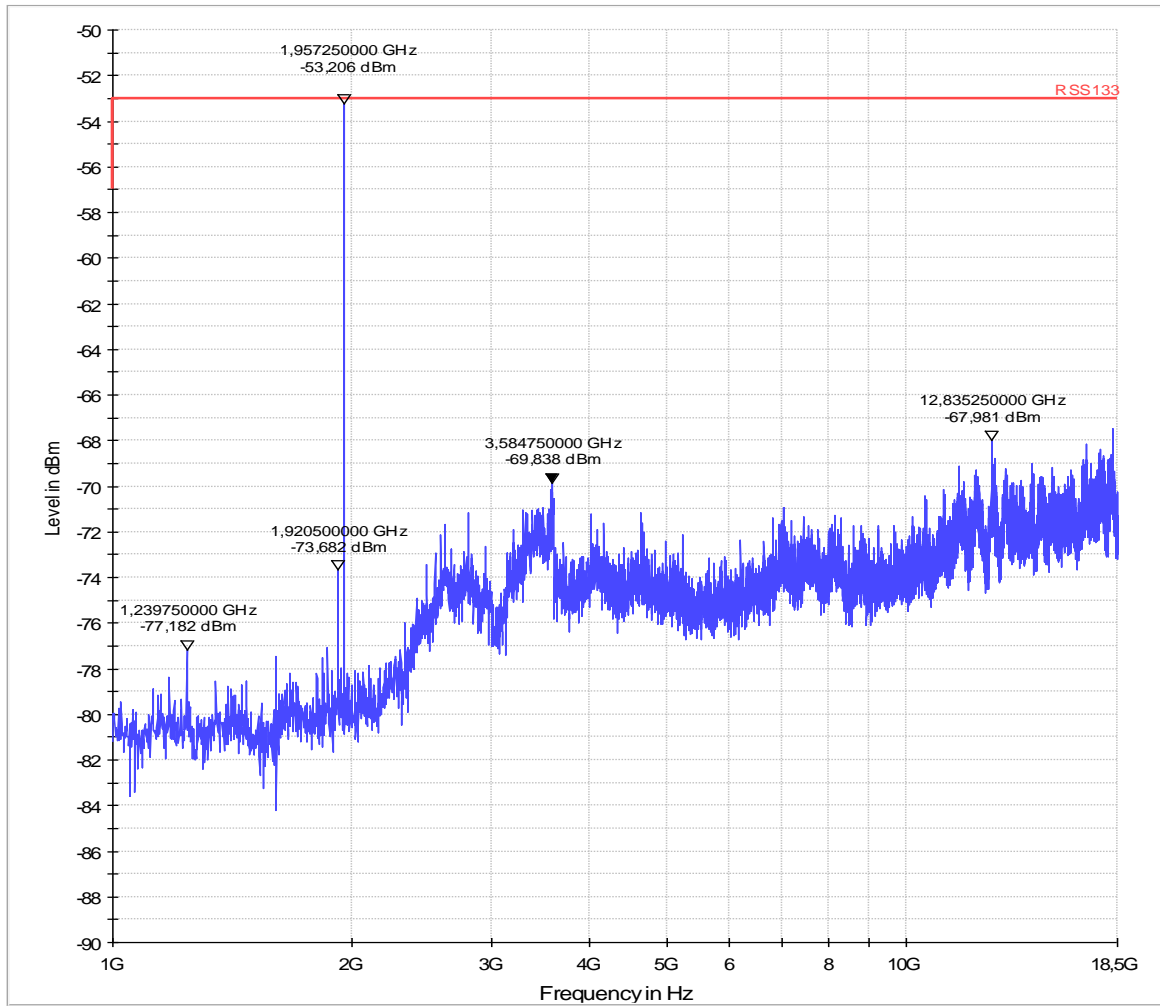


Sweep 14.18

1.4. Spurious emissions conducted – IDLE 1900 Mode (RX) accord. Canada requirement



Sweep 14.19



Sweep 14.20

1.5. Radiated field strength – GSM850 RX-Mode

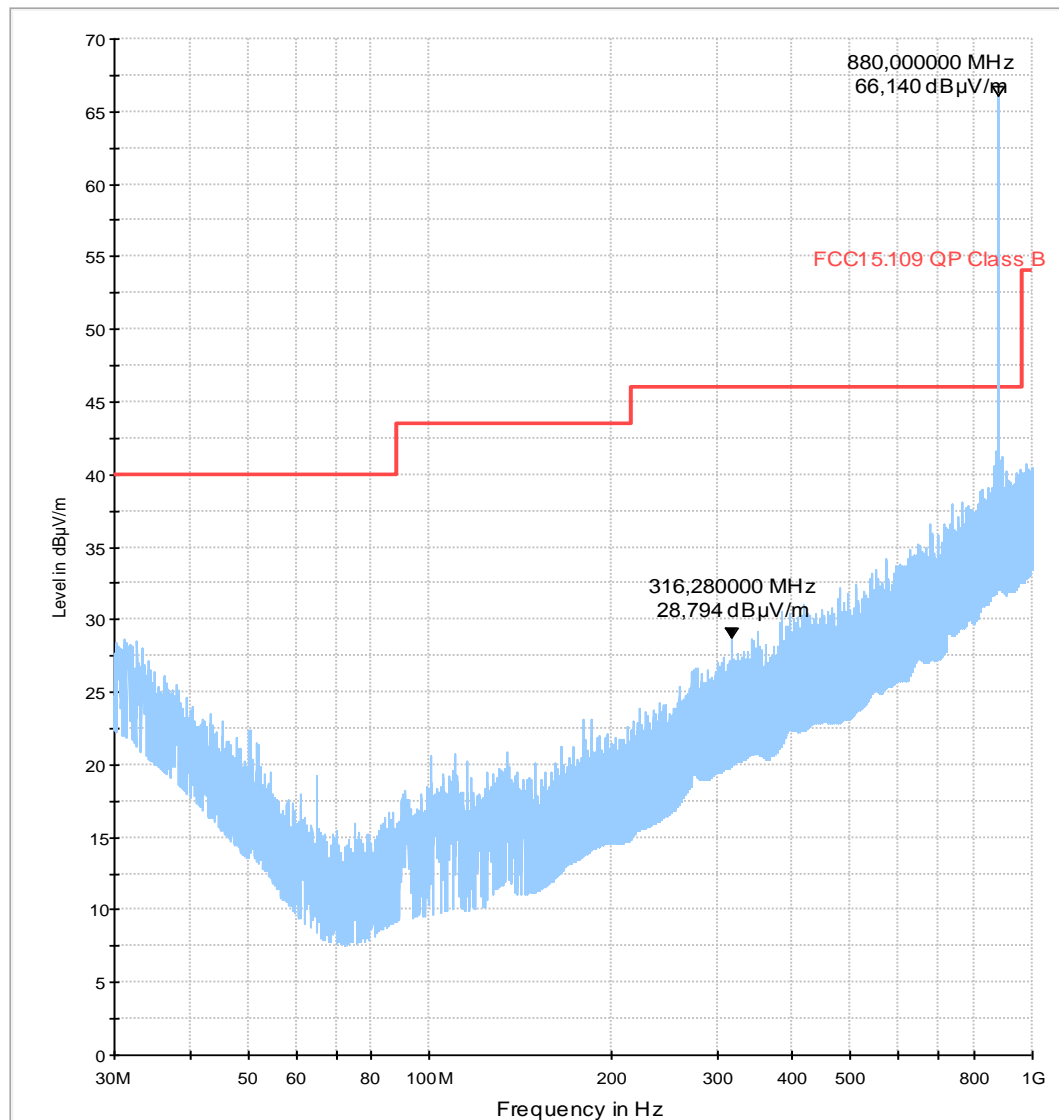
Diagram No. 2.02

Common Information

Test description:	Electric Field strength Measurement
Test site and distance:	Semi Anechoic Room (SAR) with 3 m measurement distance
Measured sides of EUT:	front, right, rear, left
Rec. antenna (pre-scan):	height 1.00 m and 1.82 m, horizontal and vertical polarisation
Rec. antenna (final):	height between 1 m to 4 m, polarisation according to pre-scan results
Turntable step:	90° during pre-scan, continuously turning during final measurement
Used filter:	Low-pass 1200 MHz
Test specification.:	FCC 15.109 class B

Operator:	Tas
Operating conditions:	Idle Mode GSM850 (BCCH 182)
EUT:	BGS2-W (CINTERION); HW B2 (IMEI 00440108048446800)
Add. Equipment:	USB cable, Handset Votronic (v1.1), DSB45 box, RS 232 cable
Voltage	4,5 V DC

FCC15.109_hor+vert





EMI Auto Test Template: FCC15.109_hor+vert

Hardware Setup: HW11_FCC_ESCS30_TP1200
 Measurement Type: Open-Area-Test-Site
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBµV/m - 60 dBµV/m

Preview Measurements:
 Antenna height: 100 - 182 cm , Step Size = 82 cm , Positioning Speed = 8
 Polarization: H + V
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 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_FCC 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:
 Antenna height: Adjustment with full Range , Measuring Speed = 8
 Turntable position: Adjustment with full Range , Measuring Speed = 4
 Template for Single Meas.: EMI Scan 02_20ms_FCC 15_209 B

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
 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'

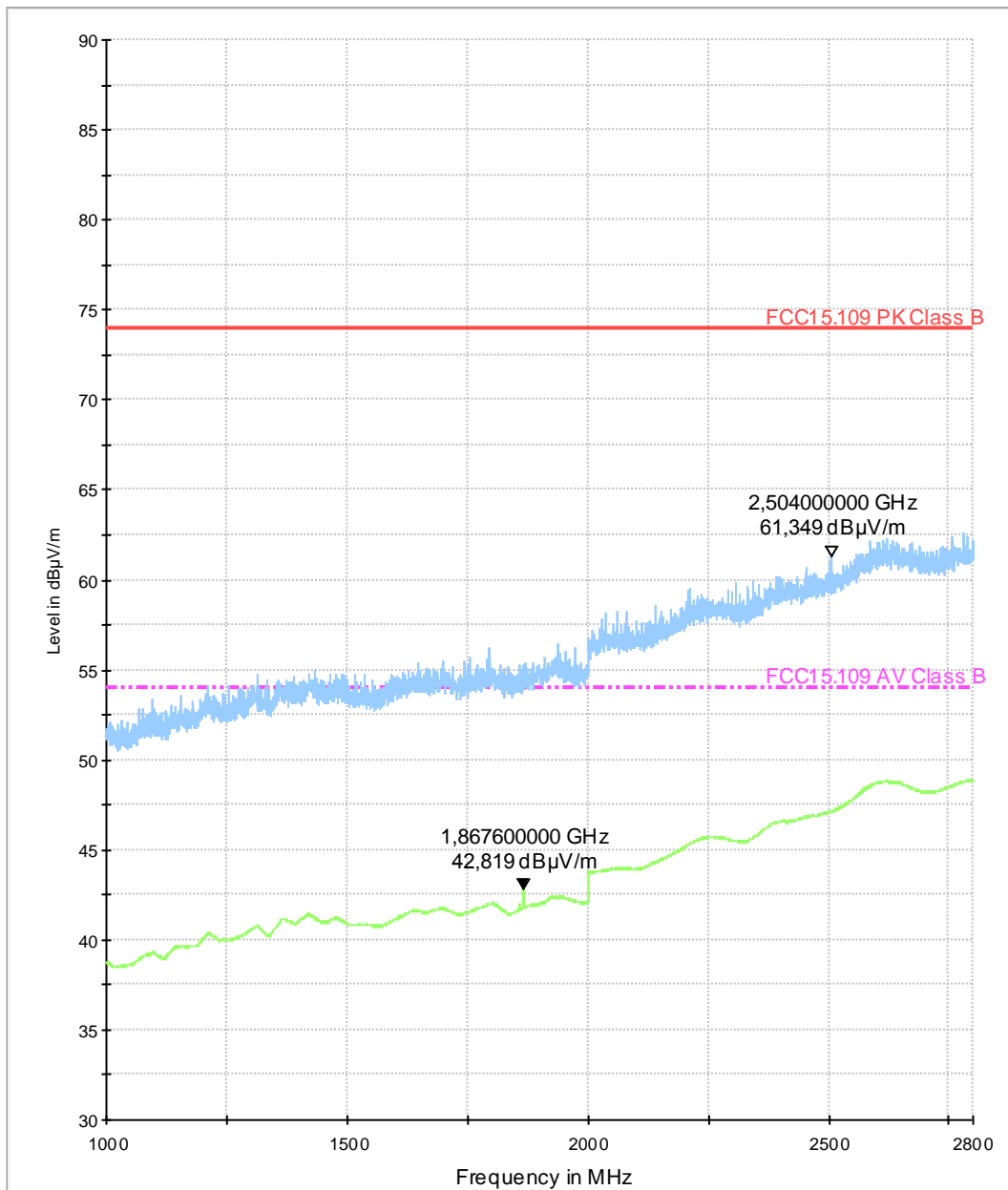
Diagram No. 2.03

Date: 10.02.2011 Page 1 of 3

Test description: Electric Field strength Measurement
 Test site and distance: Semi Anechoic Room (SAR) with 3m measurement distance
 Distance correction: height of receiving antenna h= 1m, horizontal & vertical
 Technical Data: Please see page 2 for detailed data of measurement setup
 Test specification: FCC15 109 B

Operator: Tas
 Operating conditions: Idle Mode GSM 850 (BCCH 182)
 Measured sides of EUT: front, right, rear, left
 EUT: BGS2-W (CINTERION); HW B2 (IMEI 00440108048446800)
 Add. equipment: USB cable, Handset Votronic (v1.1), DSB45 box, RS 232 cable
 Voltage: 4,5 V DC

012_FCC_15_109B_1_to_6_GHz_Hom_BBHA9120_hor_ver



Technical Data of measurement with EMC32 V8.40.2

Hardware Setup: EMI radiated\HW25_ESU40_HP_HornSchwarzbeck_6_GHz - [EMI radiated]

Subrange 1

Frequency Range: 1 GHz - 6 GHz

Receiver: Receiver 2 [ESU 40]
@ GPIB0 (ADR 4), SN 100030/040, FW 4.43

Signal Path: HP wainright -WHK1000-12ST

Antenna: Horn Schwarzbeck bis 6GHz
SN 179
Correction Table (vertical): Schwarzbeck Horn bis 6GHz
Correction Table (horizontal): Schwarzbeck Horn bis 6GHz
Correction Table (vertical): 500_SAR EMI-Kabelpfad Hornantenne bis 18 GHz_mit HP
Correction Table (horizontal): 500_SAR EMI-Kabelpfad Hornantenne bis 18 GHz_mit HP

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

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

EMI Auto Test Template: 012_FCC_15_109B_1_to_6_GHz_Horn_BBHA9120_hor_ver

Hardware Setup: HW25_ESU40_HP_HornSchwarzbeck_6_GHz

Measurement Type: Open-Area-Test-Site

Frequency Range: 1 GHz - 2,8 GHz

Graphics Level Range: 30 dB μ V/m - 90 dB μ V/m

Preview Measurements:

Antenna height: 100 - 100 cm , Step Size = 0 cm , Positioning Speed = 8

Polarization: H + V

Turntable position: 35 - 380 deg , Step Size = 15 deg , Positioning Speed = 8

Scan Test Template: 04_ESU_BBHA_9120_E_6GHz_pre_15109B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
1 GHz - 6 GHz	400 kHz	PK+; AVG	1 MHz	0,01 s	0 dB

Receiver: [ESU 40]

Data Reduction:

Limit Line #1: FCC15.109 PK Class B

Limit Line #2: FCC15.109 AV 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: 35

After Data Reduction: Interactive data reduction

Frequency Zoom:

Zoom Scan Template: 05_ESU_BBHA_9120_E_6GHz_zoom_15109B

Adjustment:

Antenna height: Range = 0 cm , Measuring Speed = 8

Turntable position: Range = 30 deg , Measuring Speed = 3

Template for Single Meas.: 04_ESU_BBHA_9120_E_6GHz_pre_15109B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
1 GHz - 6 GHz	400 kHz	PK+; AVG	1 MHz	0,01 s	0 dB

Receiver: [ESU 40]

Final Measurements:

Template for Single Meas.: 06_ESU_BBHA_9120_E_6GHz_fin_15109B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
1 GHz - 6 GHz	400 kHz	PK+; AVG	1 MHz	0,1 s	0 dB

Receiver: [ESU 40]

Template for Single Meas.:(>1GHz) 06_ESU_BBHA_9120_E_6GHz_fin_15109B

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
1 GHz - 6 GHz	400 kHz	PK+; AVG	1 MHz	0,1 s	0 dB

Receiver: [ESU 40]

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'

Diagram No.: 2.04

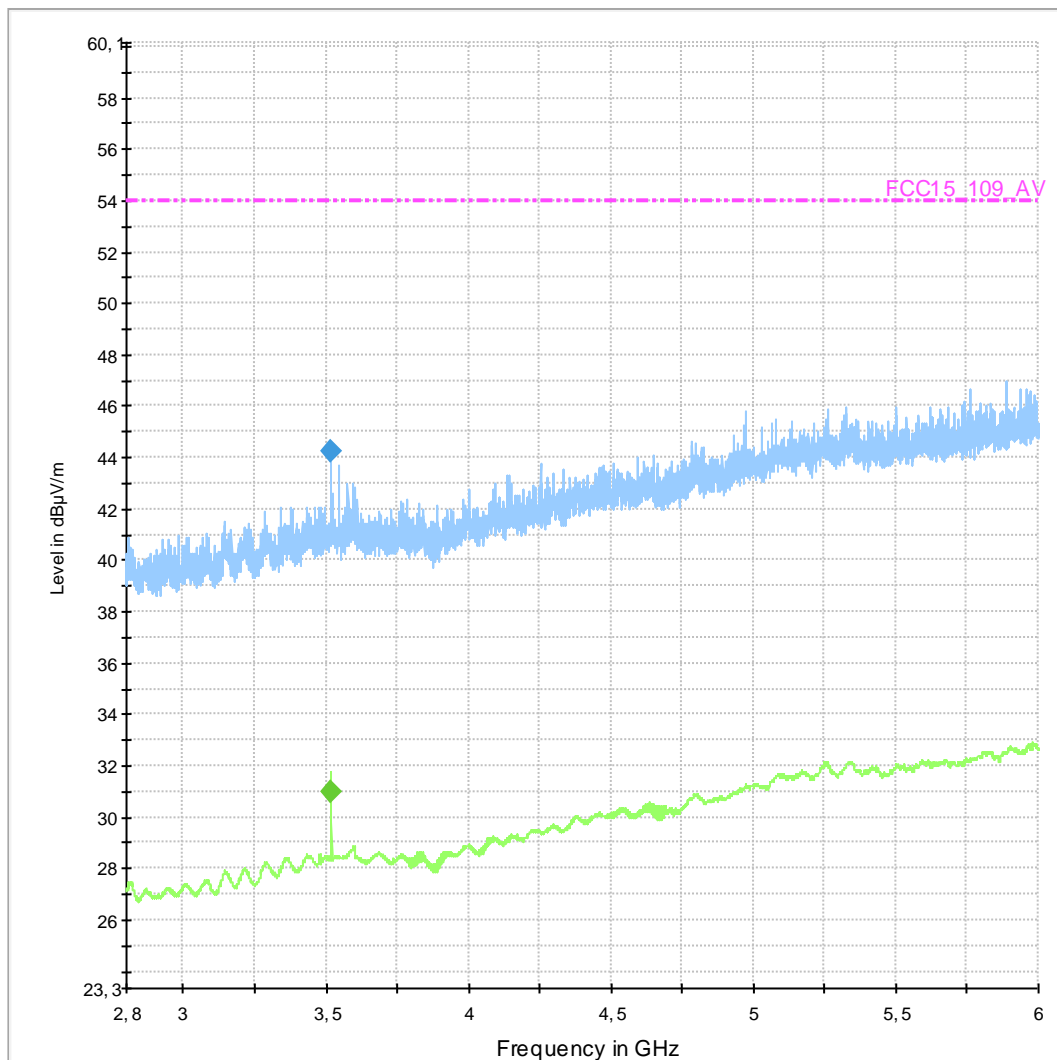
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.109B, Unintentional Radiator
Antenna polarisation:	horizontal/vertical
Operation mode:	IDLE Mode GSM850
Operator Name:	Lor
Comment:	Uplink channel middle: 182

EUT Information

EUT Name:	BGS2-W+DSB45+Handset Votronic+RS232+USB cable+Ext.antenna
Applicant:	Cinterion
Remark:	4.5V nominal internal voltage

Sweep2_SM1_K1



Final Result 1

Frequency (MHz)	MaxPeak (dB μ V/m)	Meas Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr (dB)	Margin (dB)
3519.900000	44.2	100.0	1000.000	155.0	V	8.0	90.0	-0.7	29.8

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

Frequency (MHz)	Limit (dB μ V/m)	Comment
3519.900000	74.0	

Final Result 2

Frequency (MHz)	Average (dB μ V/m)	Meas Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr (dB)	Margin (dB)
3519.900000	31.0	100.0	1000.000	155.0	V	-10.0	90.0	-0.7	23.0

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

Frequency (MHz)	Limit (dB μ V/m)	Comment
3519.900000	54.0	

EMI Auto Test Template: Sweep2_SM1_K1

Hardware Setup: 549_dBuVm_PA484_TH3_KP1_ESU
 Measurement Type: E(I)RP
 Frequency Range: 2,8 GHz - 6 GHz
 Graphics Level Range: 20 dB μ V/m - 80 dB μ V/m

Preview Measurements:
 Scan Test Template: Sweep2_pre

Data Reduction:
 Limit Line #1: FCC15_109_PK
 Limit Line #2: FCC15_109_AV
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 50 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -20 dB
 Maximum Number of Results: 30
 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_109
 Create Electronic Report: PDF
 Document Name: dummy EMI Report

Actions:
 Test start
 Notify: "Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"

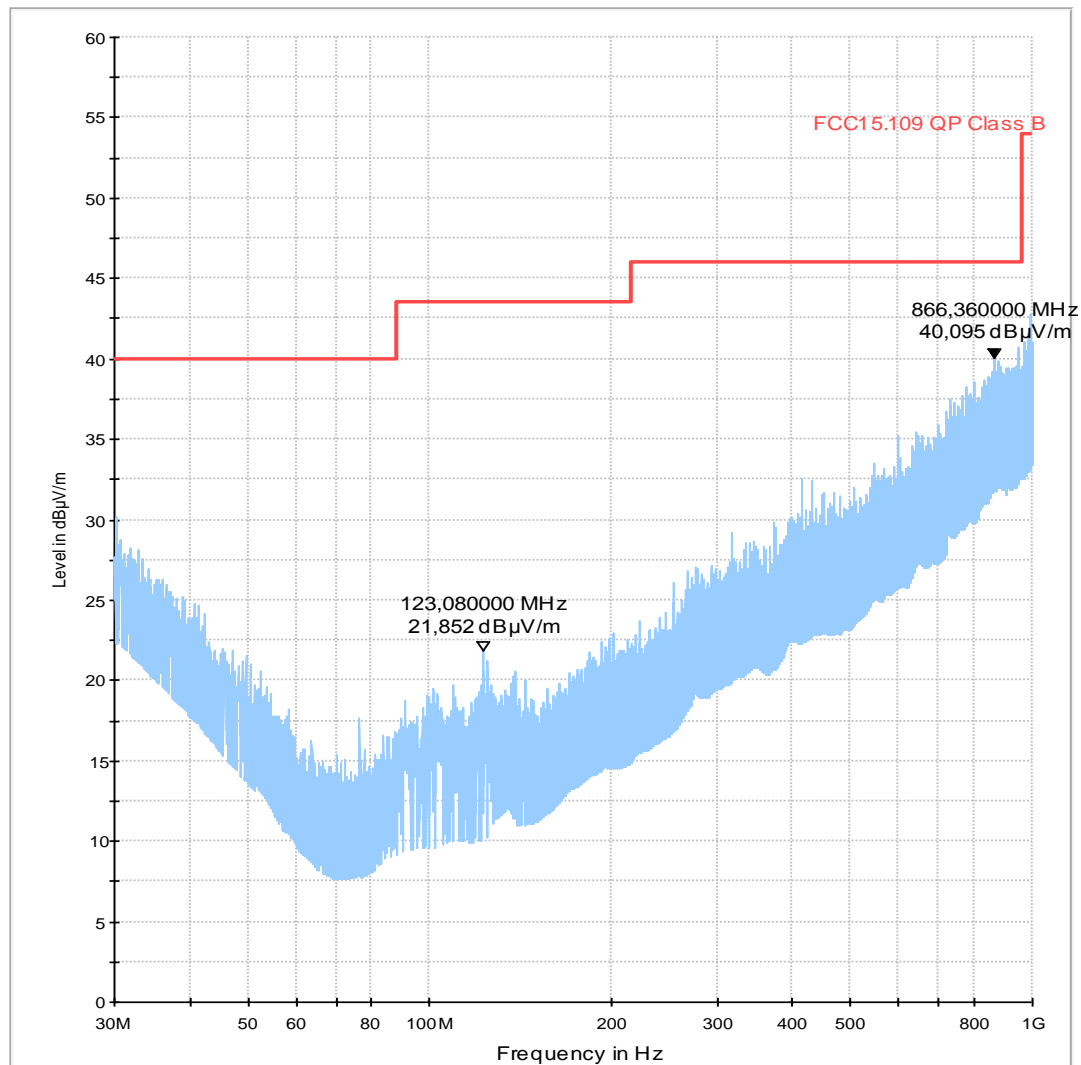
1.6. Radiated field strength – GSM1900 RX-Mode

Diagram No. 2.01

Common Information

Test description:	Electric Field strength Measurement
Test site and distance:	Semi Anechoic Room (SAR) with 3 m measurement distance
Measured sides of EUT:	front, right, rear, left
Rec. antenna (pre-scan):	height 1.00 m and 1.82 m, horizontal and vertical polarisation
Rec. antenna (final):	height between 1 m to 4 m, polarisation according to pre-scan results
Turntable step:	90° during pre-scan, continuously turning during final measurement
Used filter:	Low-pass 1200 MHz
Test specification.:	FCC 15.109
Operator:	Tas
Operating conditions:	Idle Mode GSM850 (BCCH 651)
EUT:	BGS2-W (CINTERION); HW B2 (IMEI 00440108048446800)
Add. Equipment:	USB cable, Handset Votronic (v1.1), DSB45 box, RS 232 cable
Voltage	4,5 V DC

FCC15.109_hor+vert





EMI Auto Test Template: FCC15.109_hor+vert

Hardware Setup: HW11_FCC_ESCS30_TP1200
 Measurement Type: Open-Area-Test-Site
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBµV/m - 60 dBµV/m

Preview Measurements:
 Antenna height: 100 - 182 cm , Step Size = 82 cm , Positioning Speed = 8
 Polarization: H + V
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Positioning Speed = 8
 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_FCC 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:
 Antenna height: Adjustment with full Range , Measuring Speed = 8
 Turntable position: Adjustment with full Range , Measuring Speed = 4
 Template for Single Meas.: EMI Scan 02_20ms_FCC 15_209 B

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
 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'

Diagram No.: 2.05

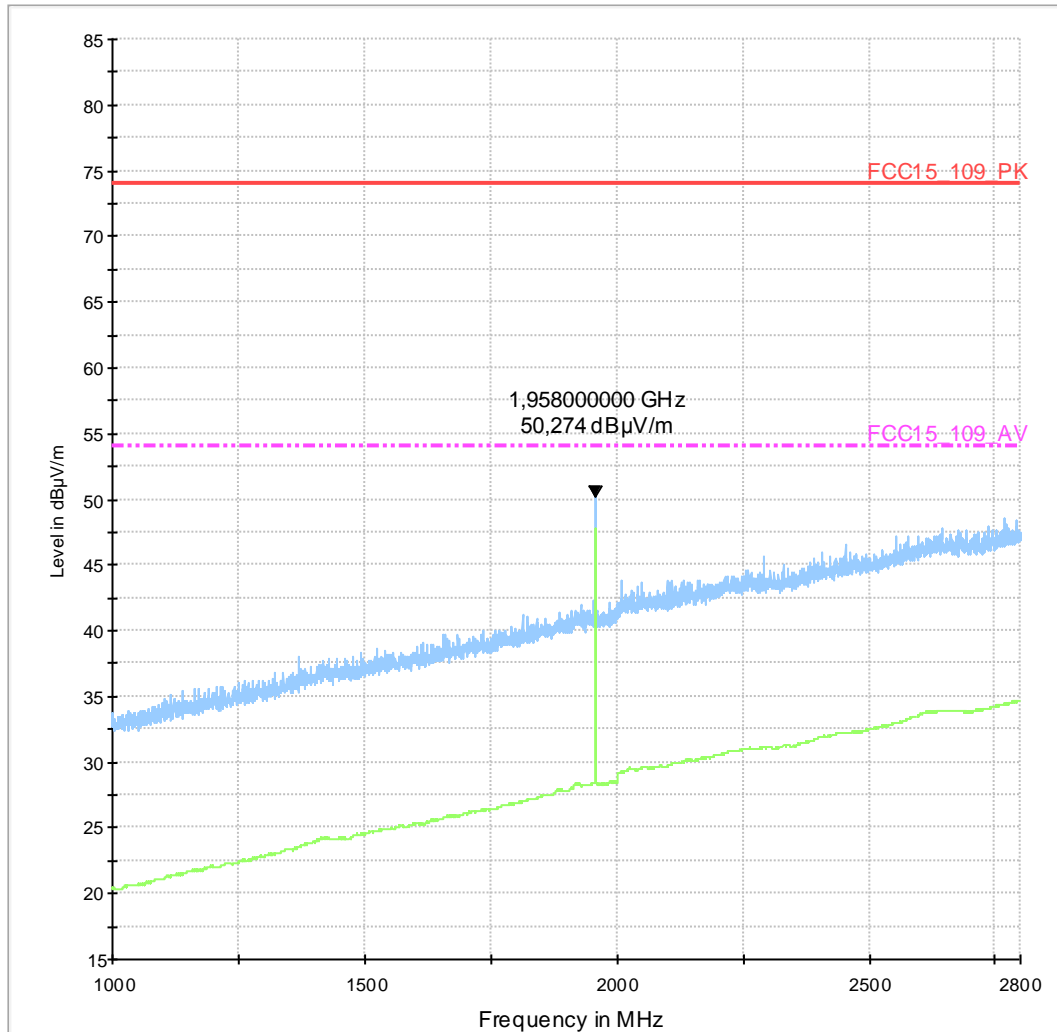
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.109 Unintentional Radiator
Antenna polarisation:	horizontal/vertical
Operation mode:	IDLE Mode GSM1900 (BCCH 651)
Operator Name:	Lor
Comment:	Uplink channel middle: 651
Remark:	BCCH@1958MHz on diagram

EUT Information

EUT Name:	BGS2-W+DSB45+Handset Votronic+RS232+USB cable+Ext.antenna
Applicant:	Cinterion
Remark:	4.5V nominal internal voltage

Sweep1_SM1_K1



EMI Auto Test Template: Sweep1_SM1_K1

Hardware Setup: 549_dBuVm_PA287_TH1_KP1_ESU
Measurement Type: E(I)RP
Frequency Range: 1 GHz - 2,8 GHz
Graphics Level Range: 15 dB μ V/m - 85 dB μ V/m

Preview Measurements:
Scan Test Template: Sweep1_pre

Data Reduction:
Limit Line #1: FCC15_109_PK
Limit Line #2: FCC15_109_AV
Peak Search: 20 dB , Maximum Results: 10
Subrange Maxima: 50 Subranges , Maxima per Subrange: 1
Acceptance Offset: -20 dB
Maximum Number of Results: 30
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_109
Create Electronic Report: RTF PDF
Document Name: dummy FCC Report

Actions:
Test start
Notify: "Matrix richtig geschaltet !?!? Spekki (ESU) angeschlossen ?"

Diagram No.: 2.06

Common Information

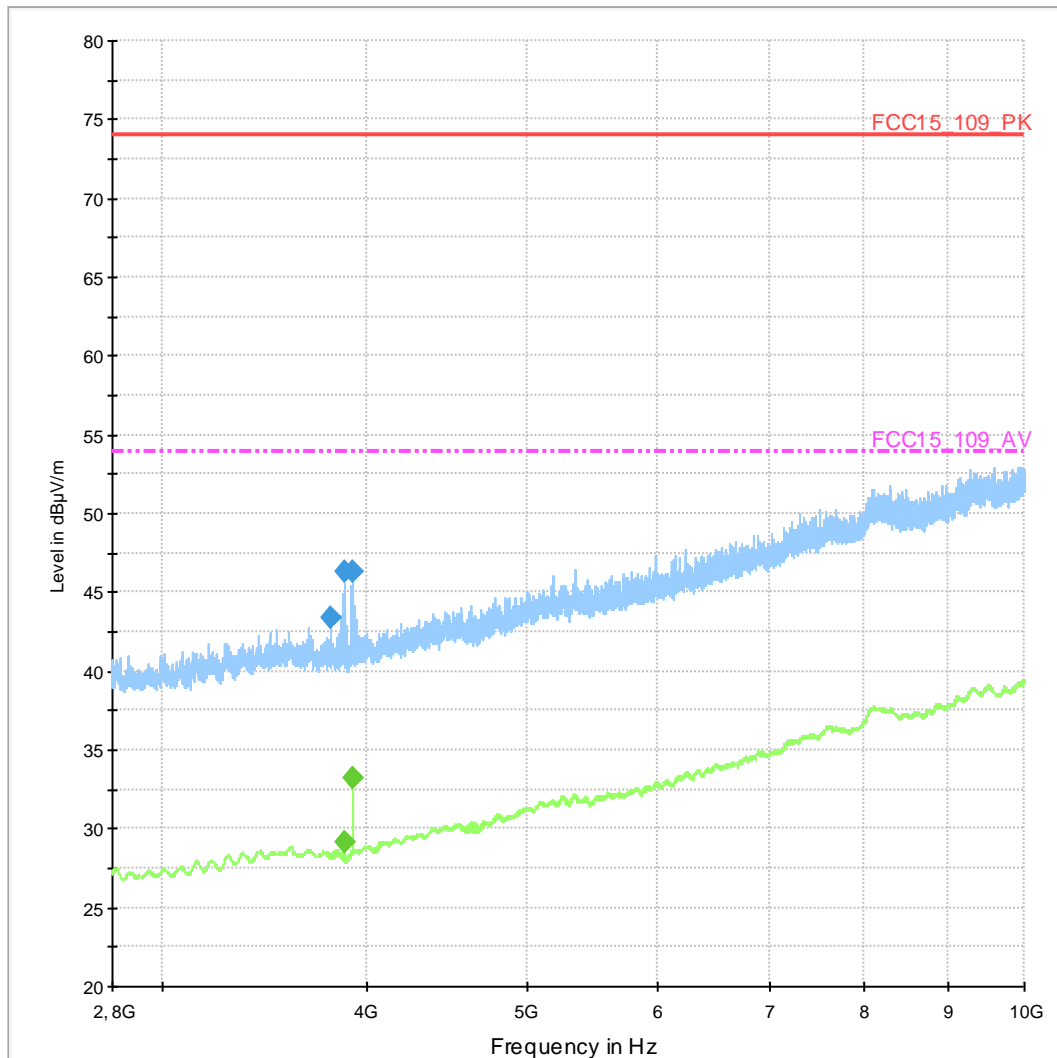
Test Description: Radiated field strength emission in 3m distance
 Test Site: CETECOM GmbH Essen
 Test Standard: FCC 15.109 Unintentional Radiator
 Antenna polarisation: horizontal/vertical

Operation mode: IDLE Mode GSM1900 (BCCH 651)
 Operator Name: Lor
 Comment: Uplink channel middle: 651

EUT Information

EUT Name: BGS2-W+DSB45+Handset Votronic+RS232+USB cable+Ext.antenna
 Applicant: Cinterion
 Remark: 4.5V nominal internal voltage

Sweep2_SM1_K1



Final Result 1

Frequency (MHz)	MaxPeak (dB μ V/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)
3795.300000	43.4	100.0	1000.000	155.0	V	331.0	0.0	-0.1	30.6
3871.800000	46.3	100.0	1000.000	155.0	V	338.0	0.0	0.0	27.7
3915.900000	46.3	100.0	1000.000	155.0	H	316.0	90.0	0.1	27.7

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

Frequency (MHz)	Limit (dB μ V/m)	Comment
3795.300000	74.0	
3871.800000	74.0	
3915.900000	74.0	

Final Result 2

Frequency (MHz)	Average (dB μ V/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)
3871.400000	29.2	100.0	1000.000	155.0	V	343.0	0.0	0.0	24.8
3915.900000	33.2	100.0	1000.000	155.0	H	310.0	90.0	0.1	20.8

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

Frequency (MHz)	Limit (dB μ V/m)	Comment
3871.400000	54.0	
3915.900000	54.0	

EMI Auto Test Template: Sweep2_SM1_K1

Hardware Setup: 549_dBuVm_PA484_TH3_KP1_ESU
 Measurement Type: E(I)RP
 Frequency Range: 2,8 GHz - 10 GHz
 Graphics Level Range: 20 dB μ V/m - 80 dB μ V/m

Preview Measurements:

Scan Test Template: Sweep2_pre

Data Reduction:

Limit Line #1: FCC15_109_PK
 Limit Line #2: FCC15_109_AV
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 50 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -20 dB
 Maximum Number of Results: 30
 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_109
 Create Electronic Report: PDF
 Document Name: dummy EMI Report

Actions:

Test start
 Notify: "Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"