

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

According to:
FCC Regulations
FCC Part 22H/24E
FCC Part 15.207C
FCC Part 15.209C
&
IC Regulations
RSS-132, Issue 2
RSS-133, Issue 5
RSS-Gen, Issue 2

for

Cinterion Wireless Modules GmbH

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







| Laboratory Accreditation and Listings | | | |
|--|---|--|---|
|  D-PL-12047-01-01 |  MRA US-EU 0003 |  Industry Canada Reg. No.: 3462D-1 3462D-2 |  Reg. No.: R-2665, R-2666 C-2914, T-1967 G-301 |
|  LAB CODE 20011130-00 |  | | |
| accredited according to DIN EN ISO/IEC 17025 | | | |
| CETECOM GmbH Laboratory Radio Communications & Electromagnetic Compatibility Im Teelbruch 116 • 45219 Essen • Germany Registered in Essen, Germany, Reg. No.: HRB Essen 8984 Tel.: + 49 (0) 20 54 / 95 19-954 • Fax: + 49 (0) 20 54 / 95 19-964 E-mail: info@cetecom.com • Internet: www.cetecom.com | | | |

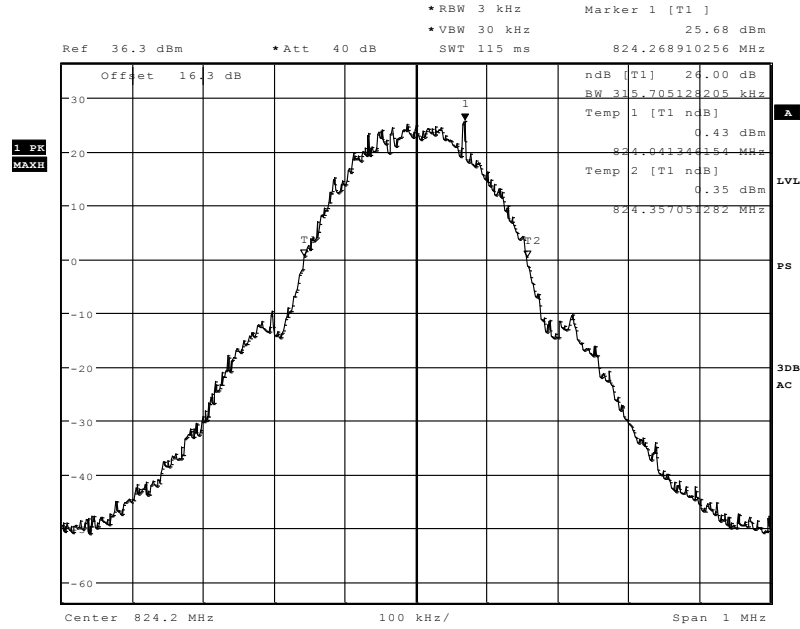
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1. Diagrams

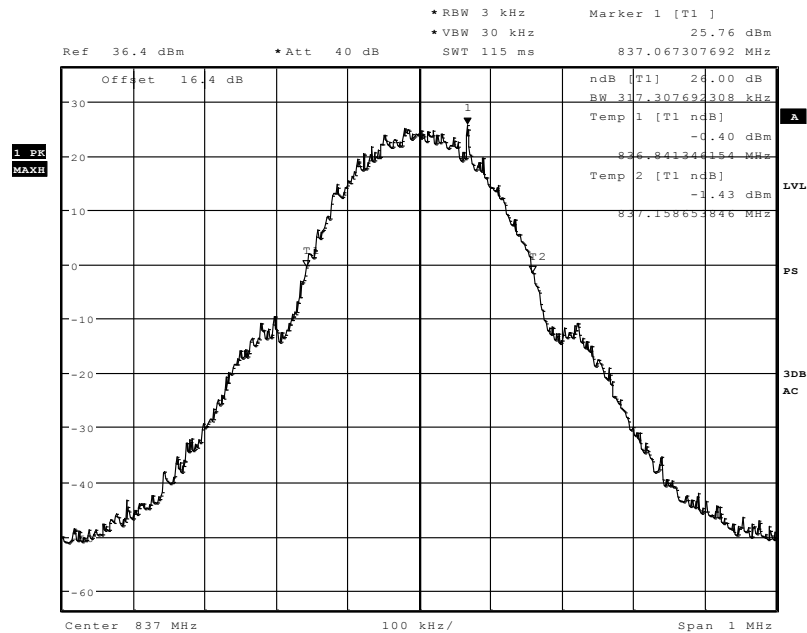
1.1. 26dBc Emission bandwidth

GSM 850



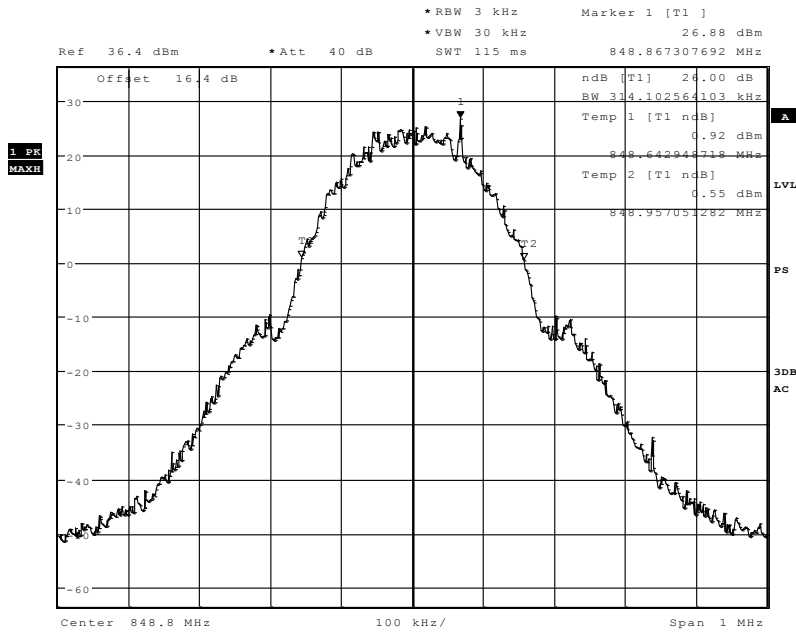
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Channel 128



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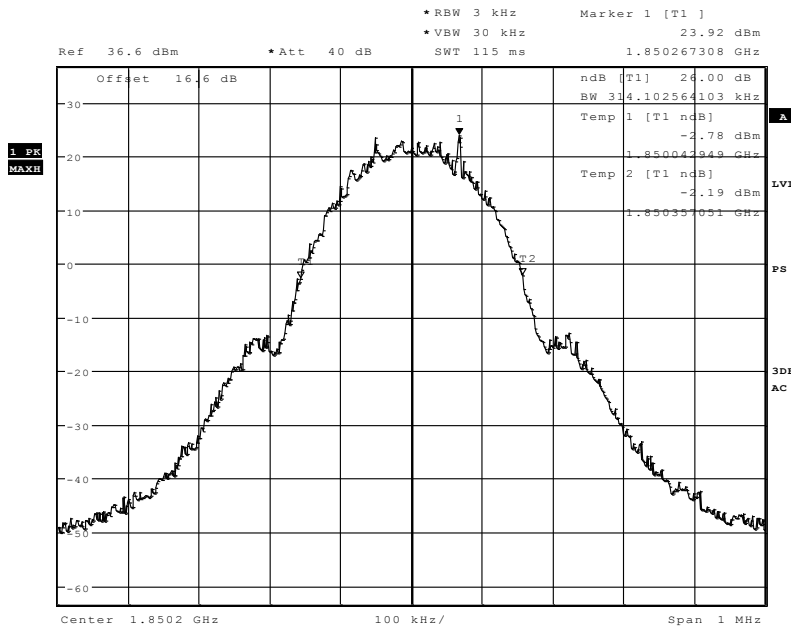
Channel 192



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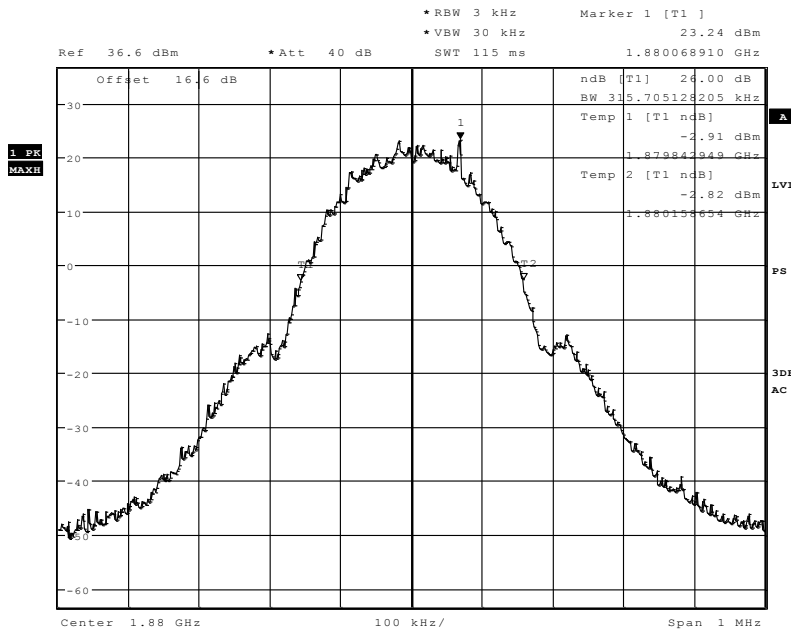
Channel 251

GSM 1900



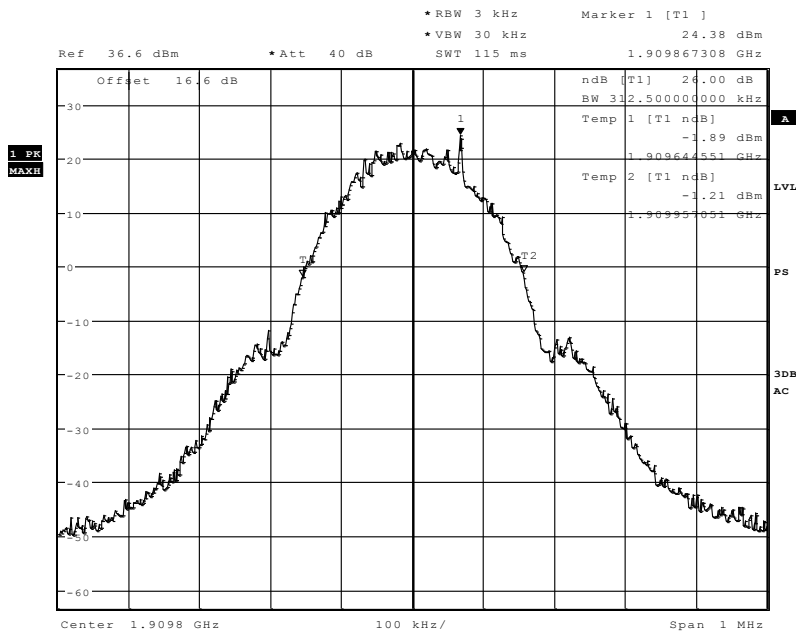
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Channel 512



Date: 9.FEB.2011 11:36:54

Channel 661

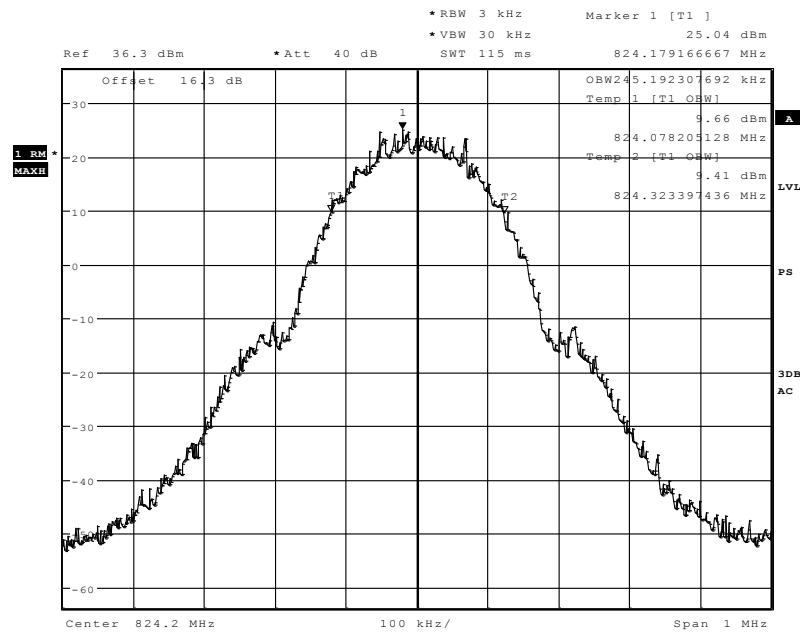


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Channel 810

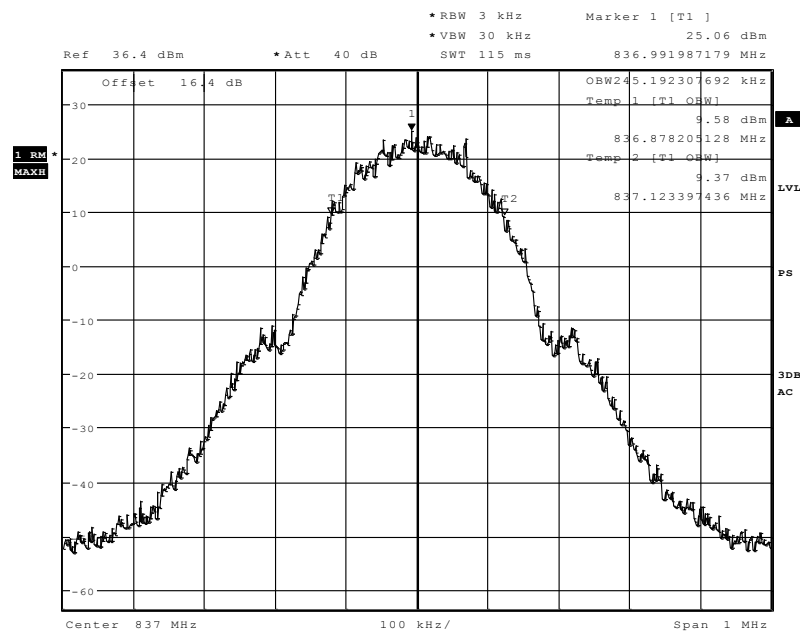
1.2. 99% Occupied bandwidth

GSM 850



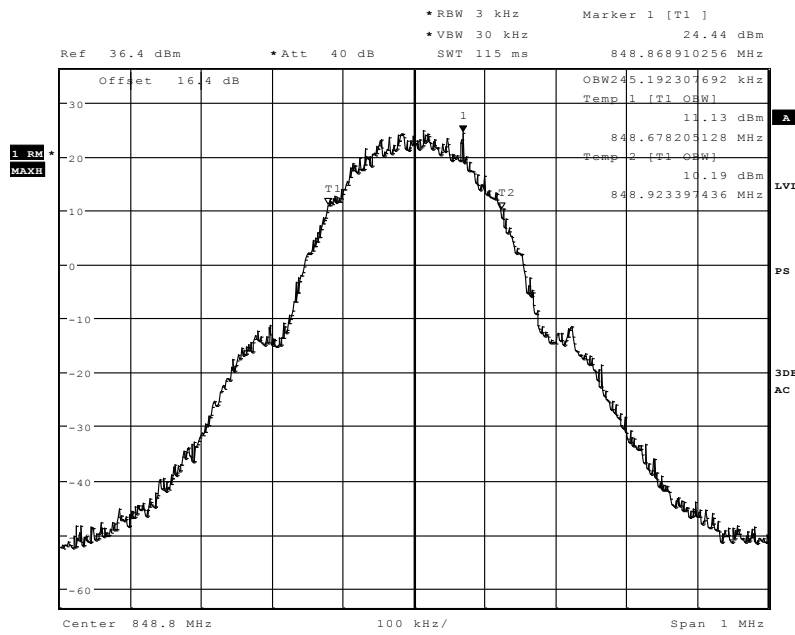
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Channel 128



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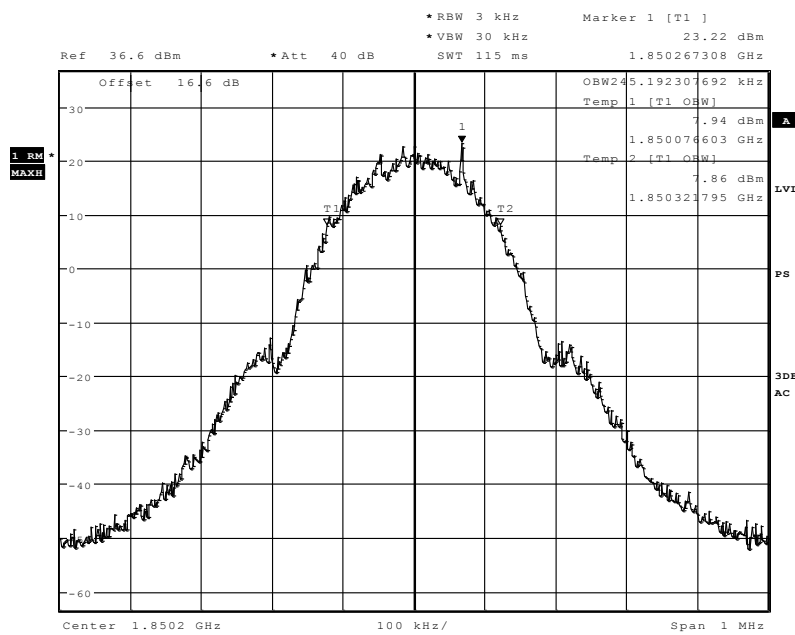
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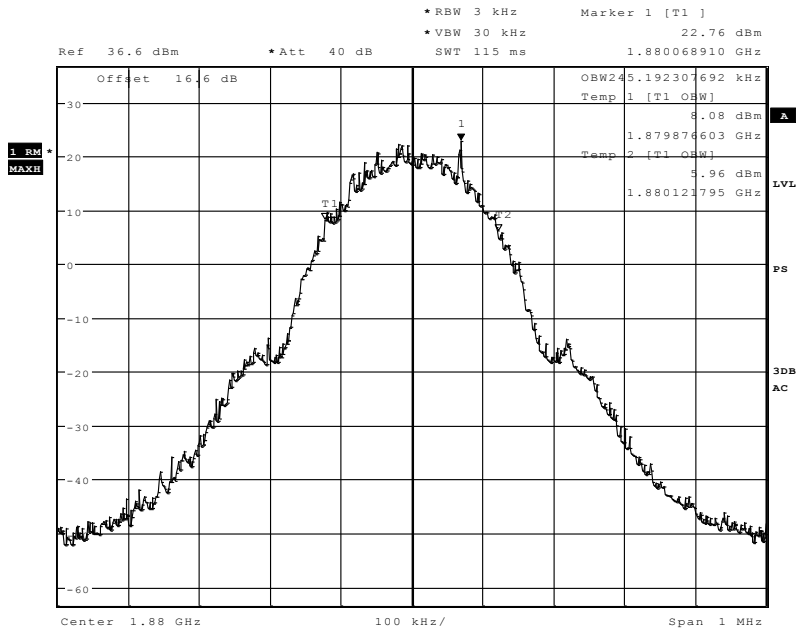
Channel 251

GSM 1900



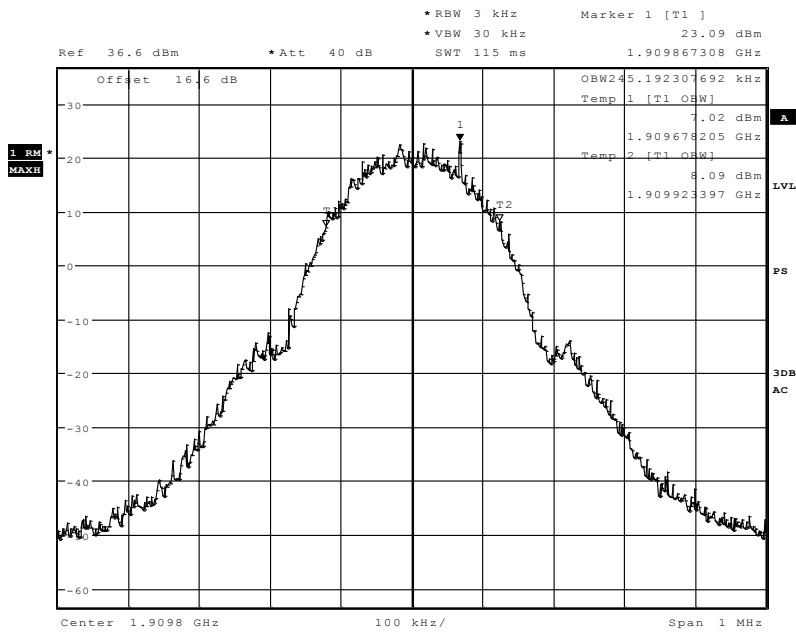
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Channel 512



Date: 9.FEB.2011 11:24:29

Channel 661



Date: 9.FEB.2011 11:27:44

Channel 810

1.3. Spurious emissions conducted – GSM850 Mode (TX-mode)

Diagram No. 14.01 (Channel 128)

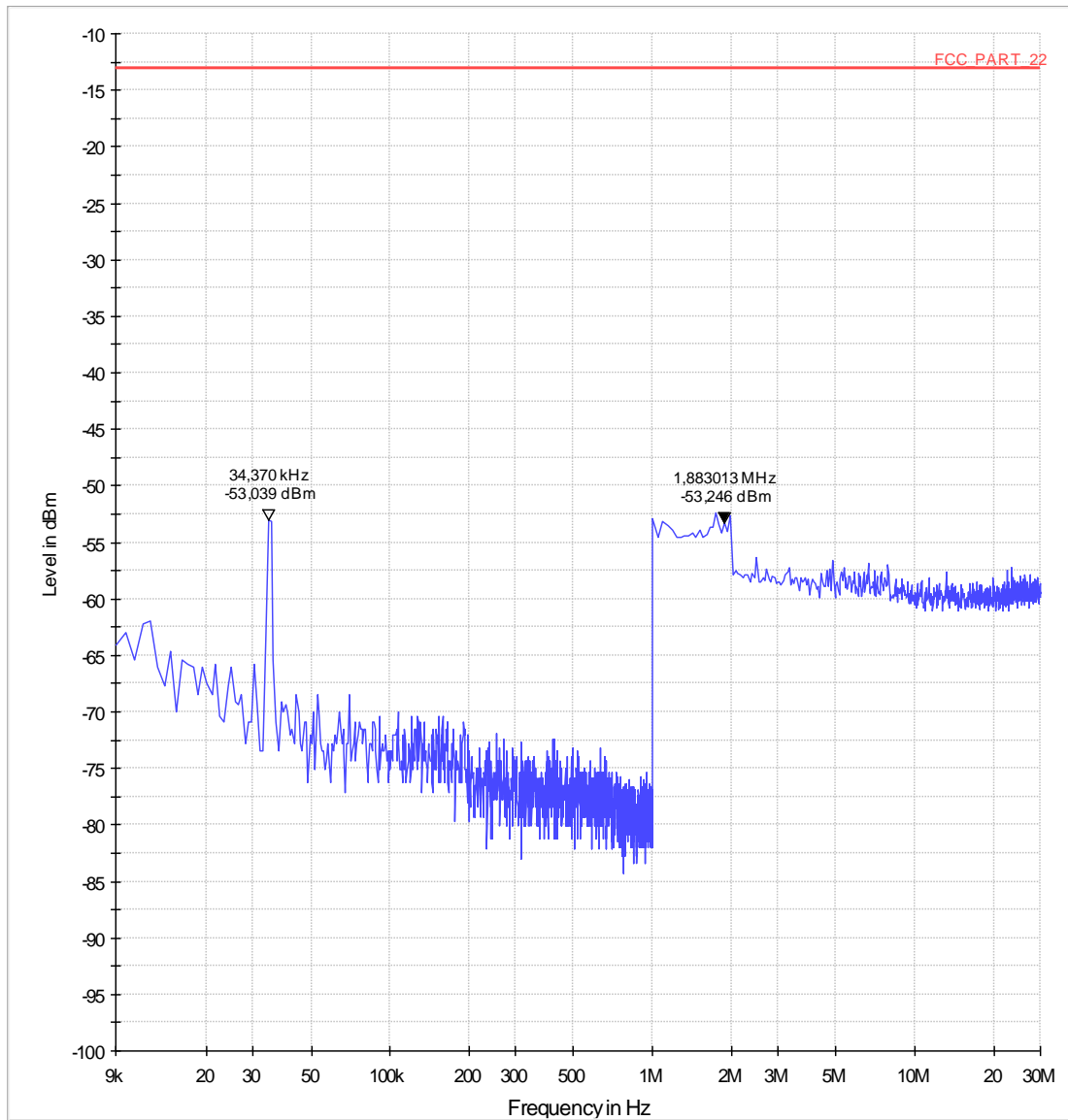


Diagram No. 14.02 (Channel 192)

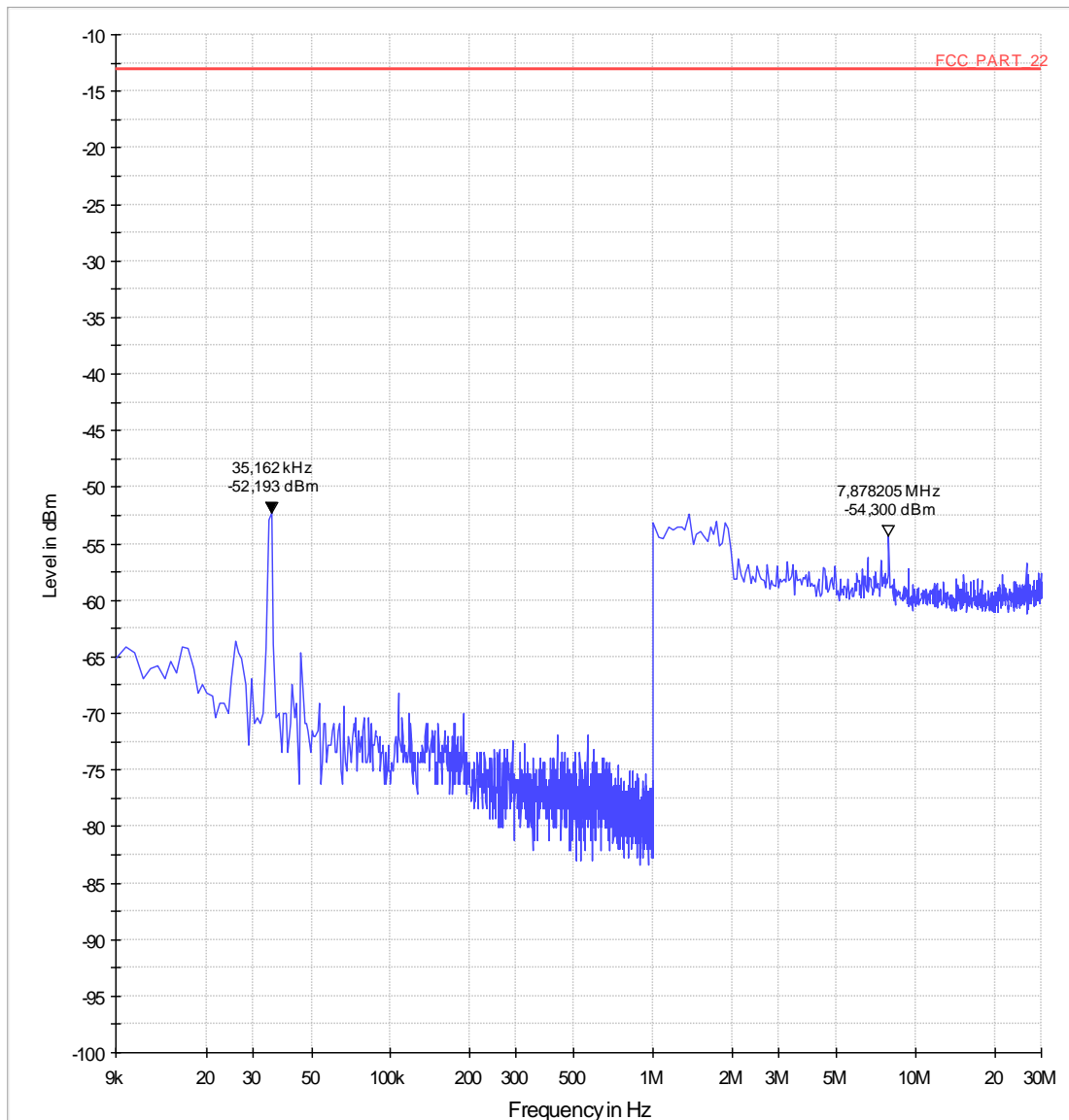


Diagram No. 14.03 (Channel 251)

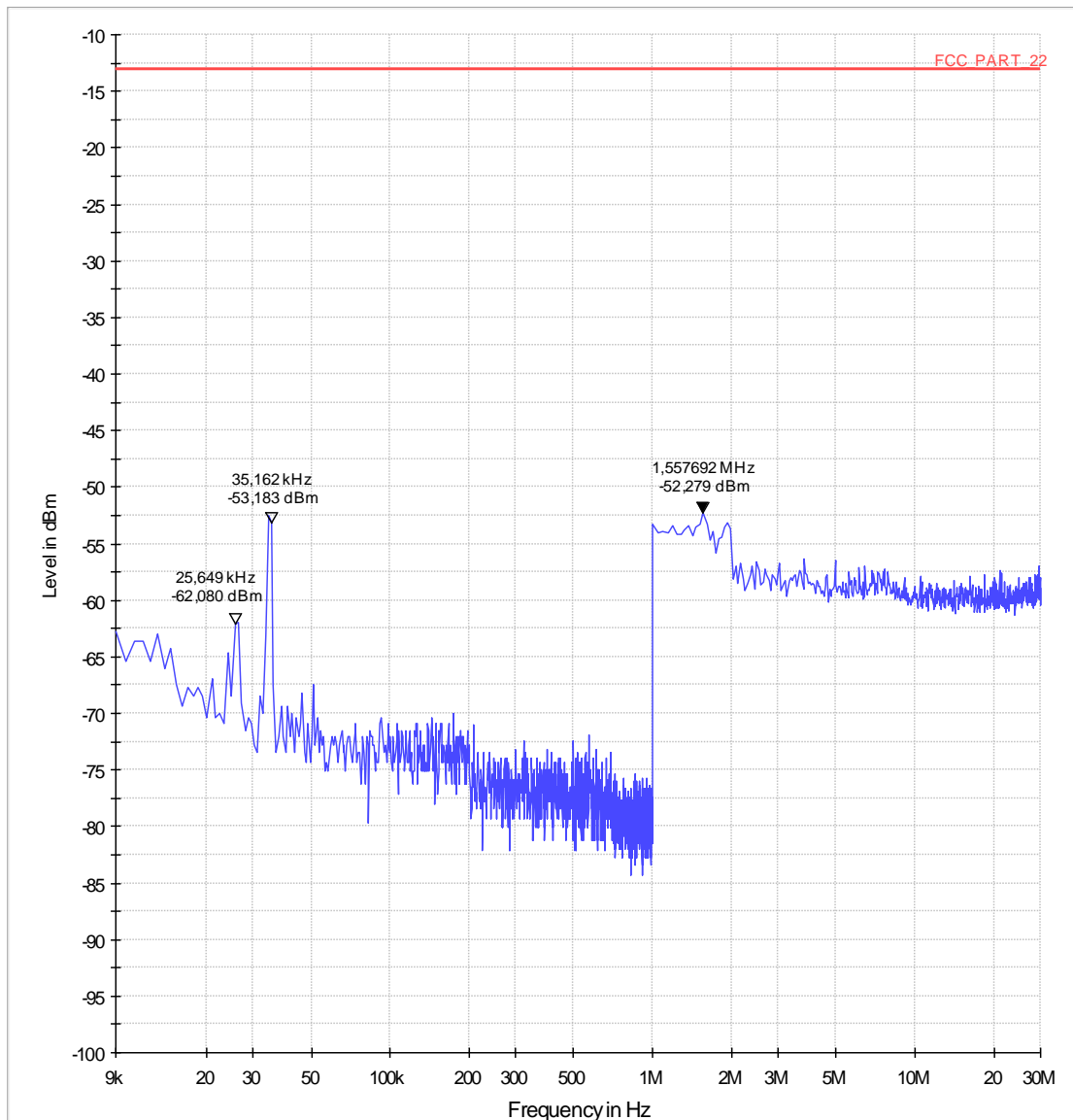


Diagram No. 14.04 (Channel 128)

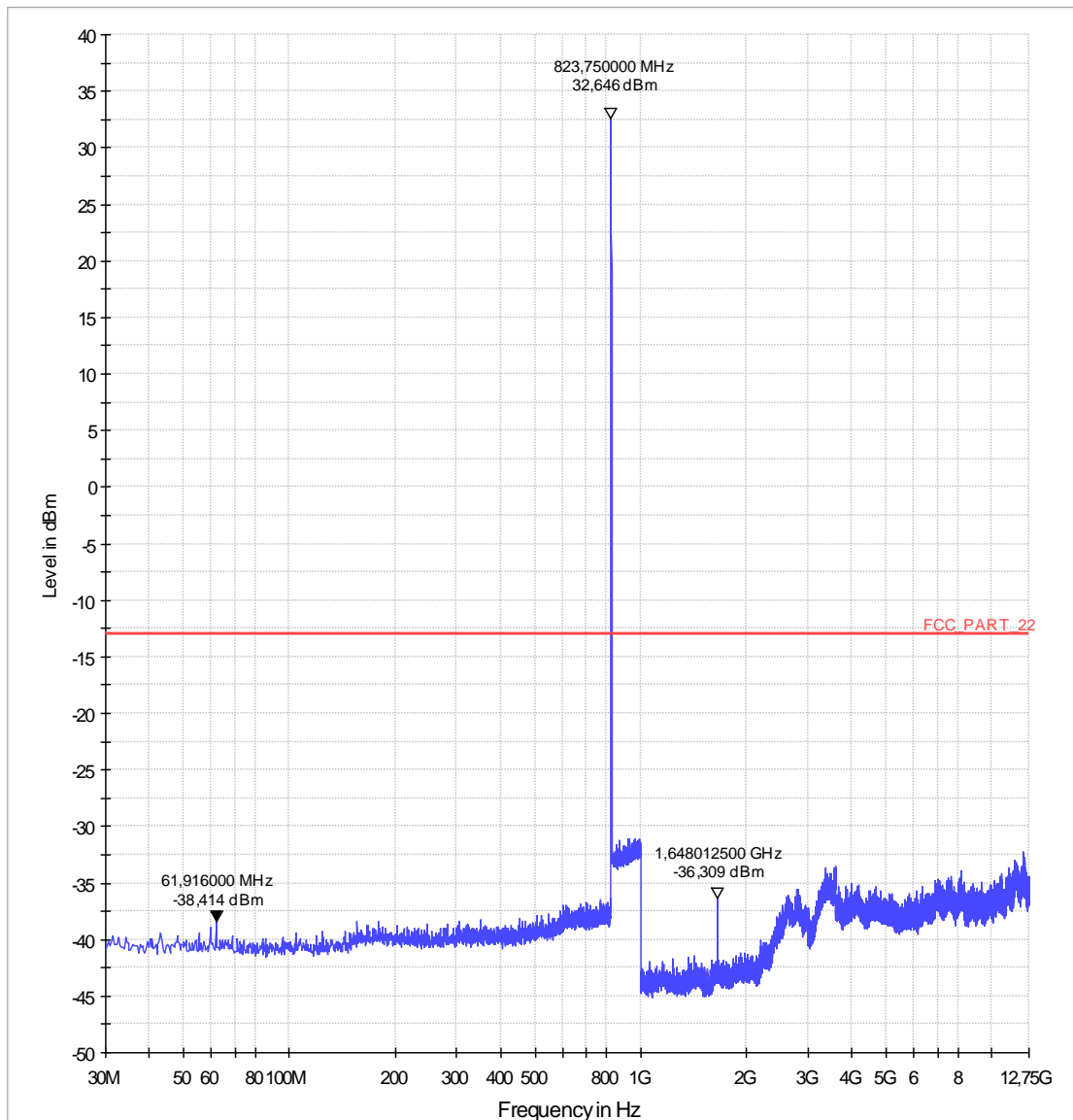


Diagram No. 14.05 (Channel 192)

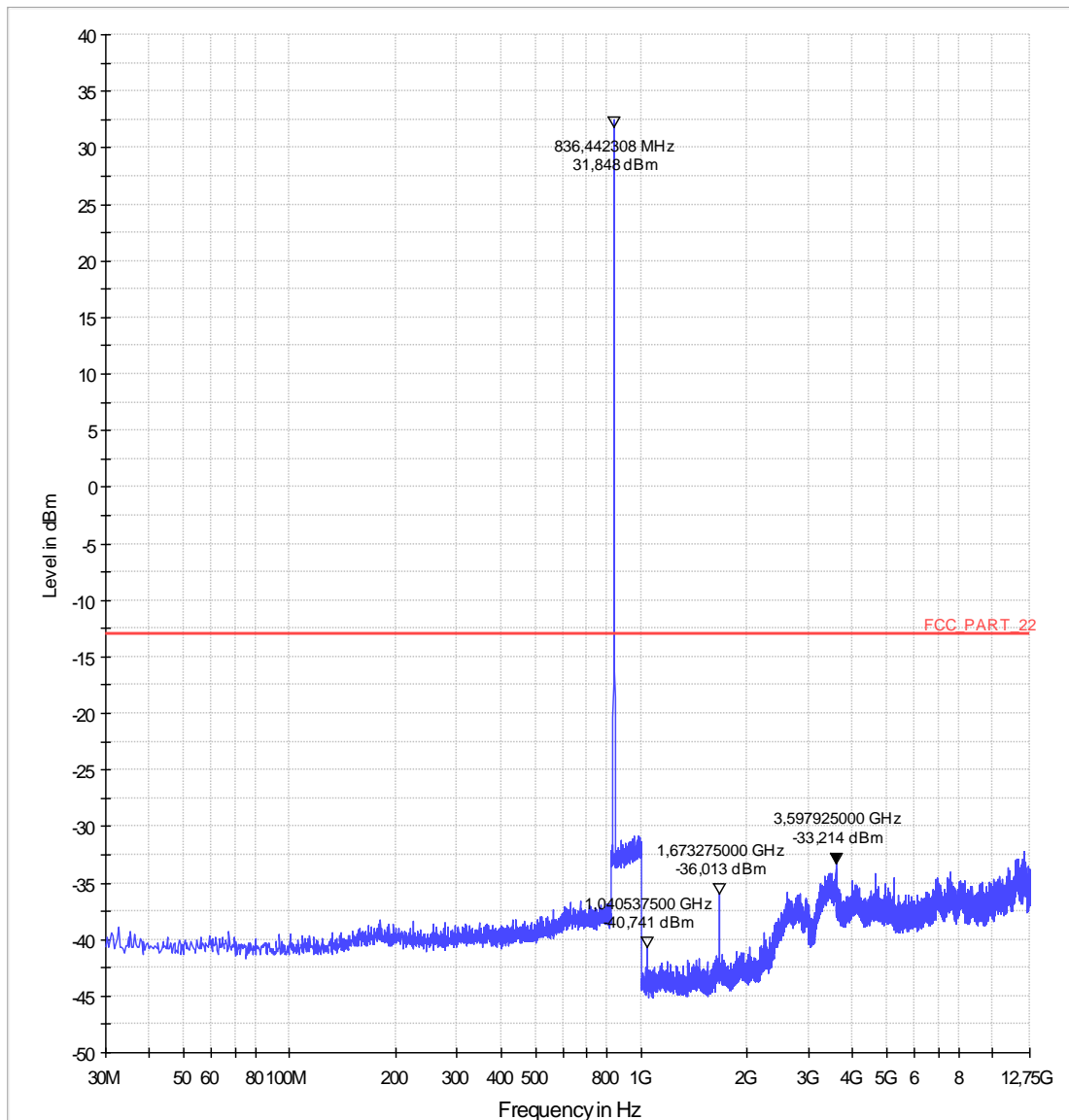


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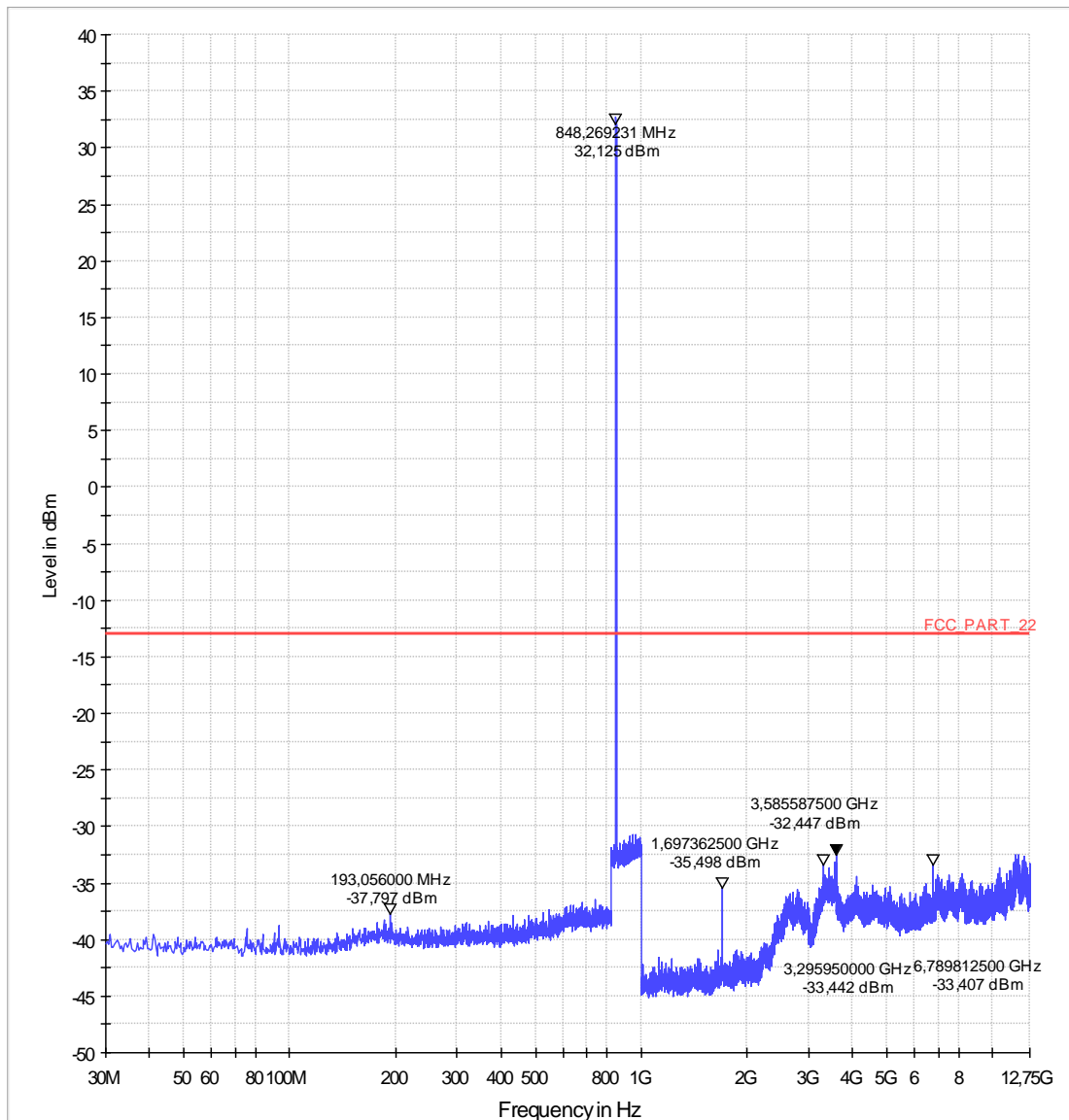


Diagram No. 14.07b (Channel 128)

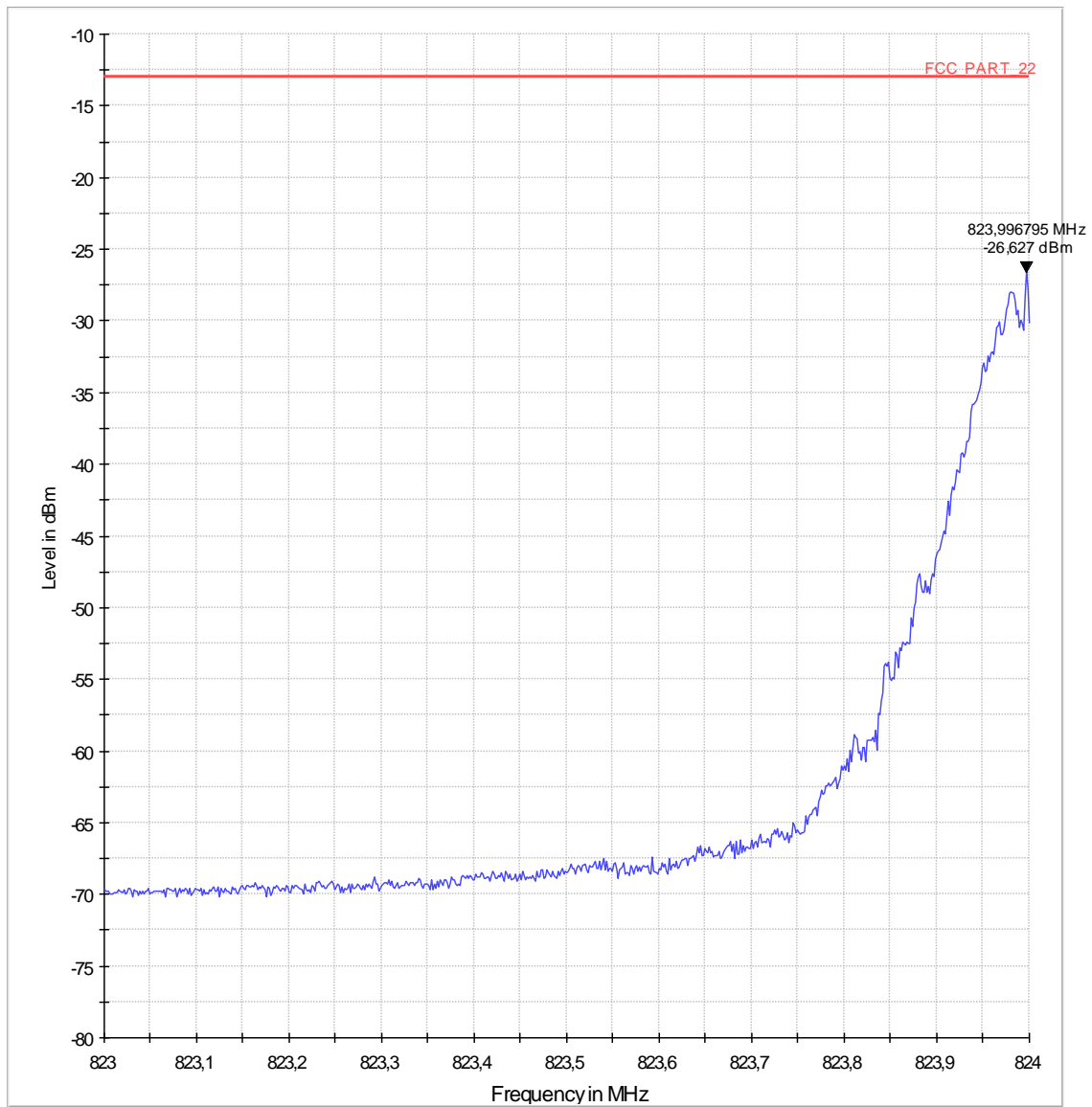
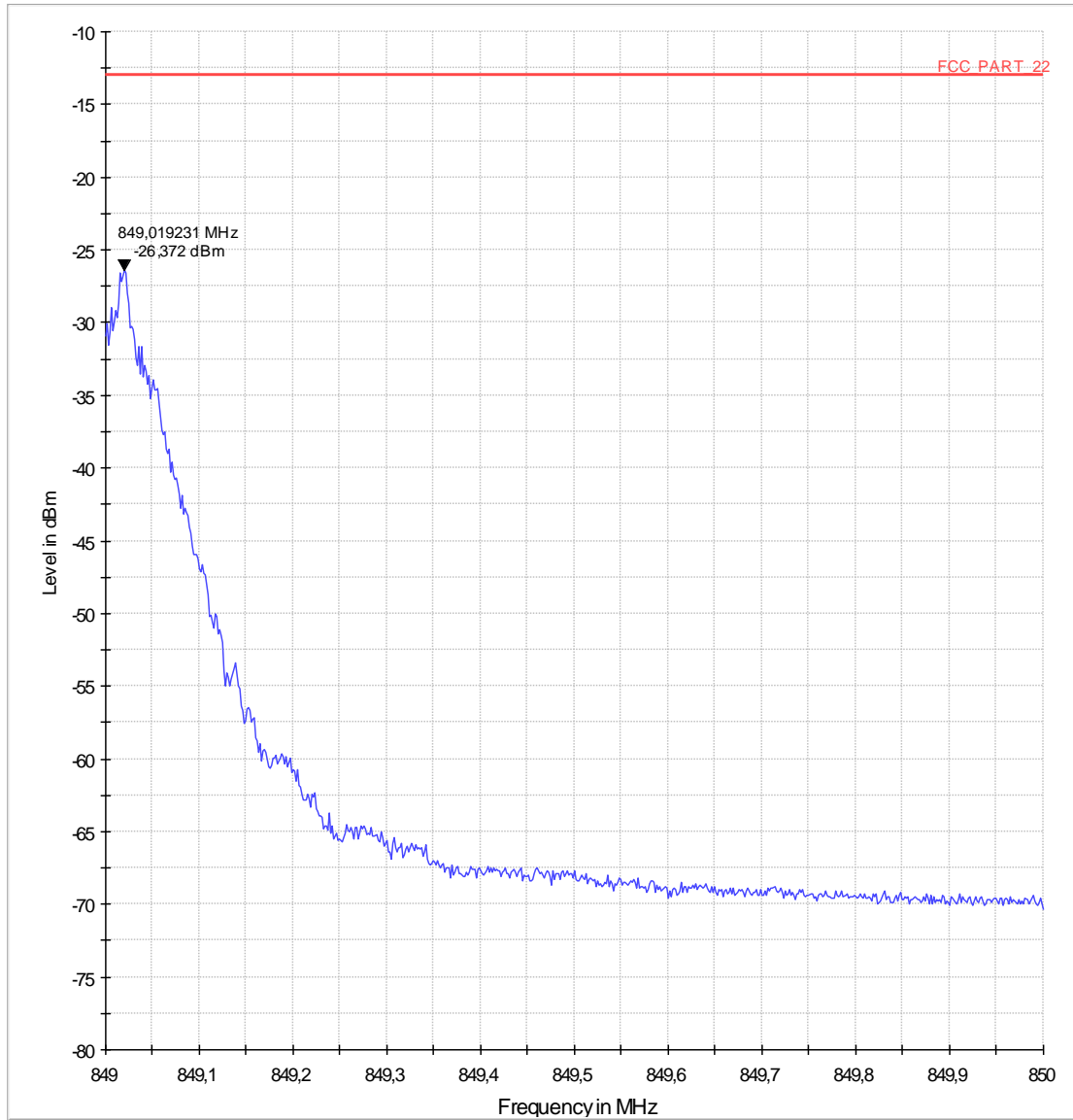


Diagram No. 14.08b (Channel 251)



1.4. Spurious emissions conducted – GSM1900 Mode (TX-mode)

Diagram no. 14.09 (Channel 512)

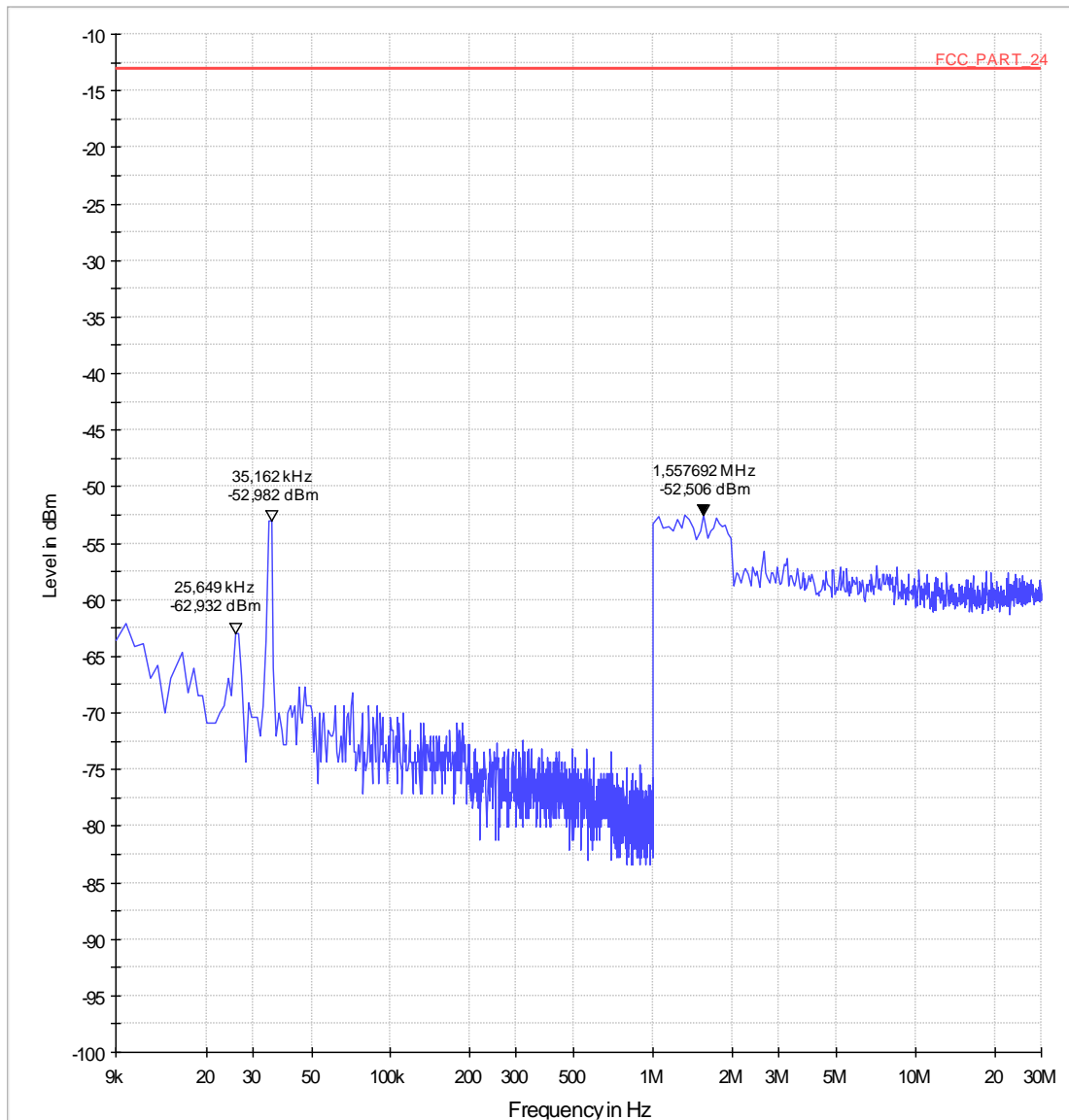


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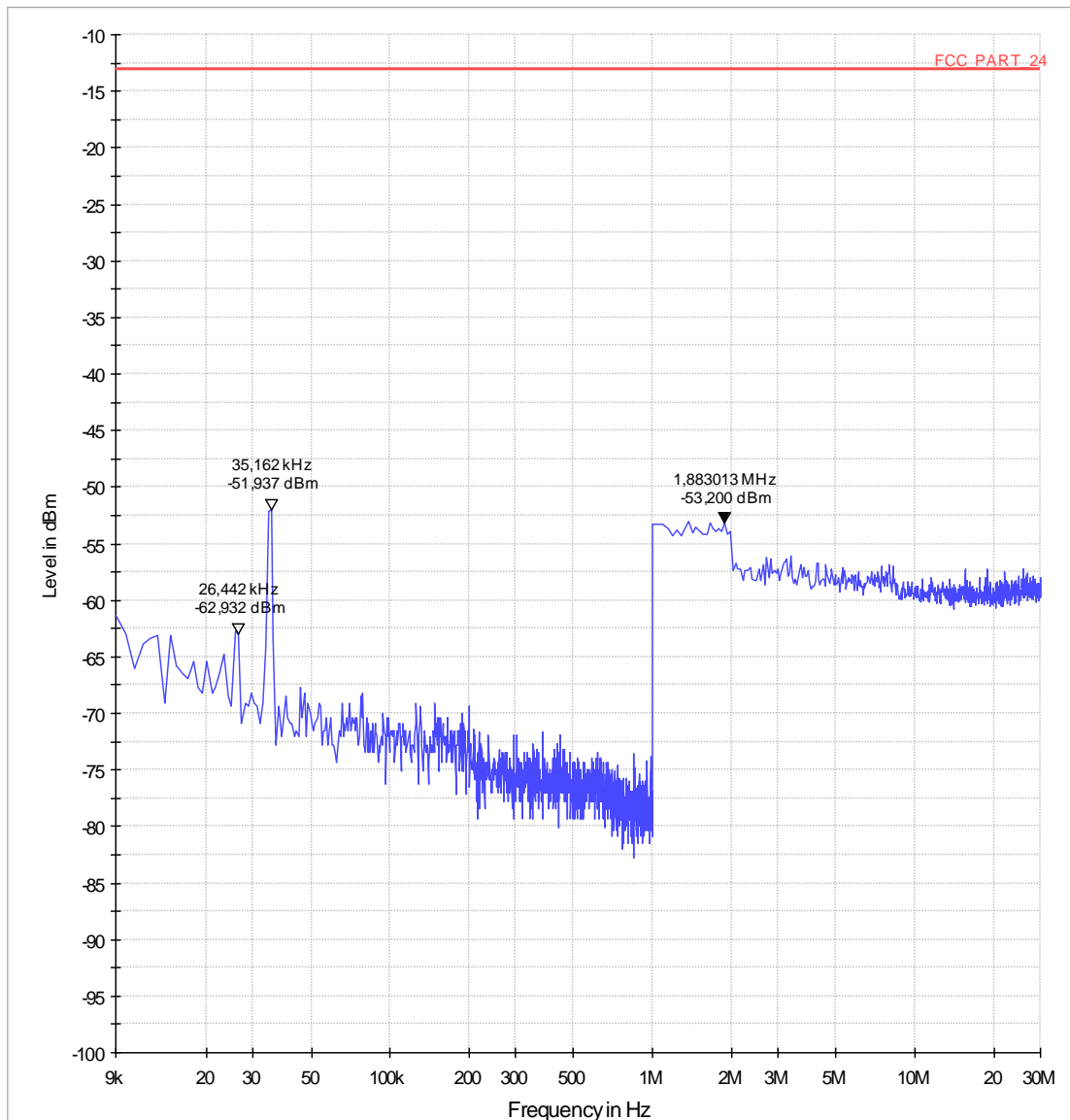


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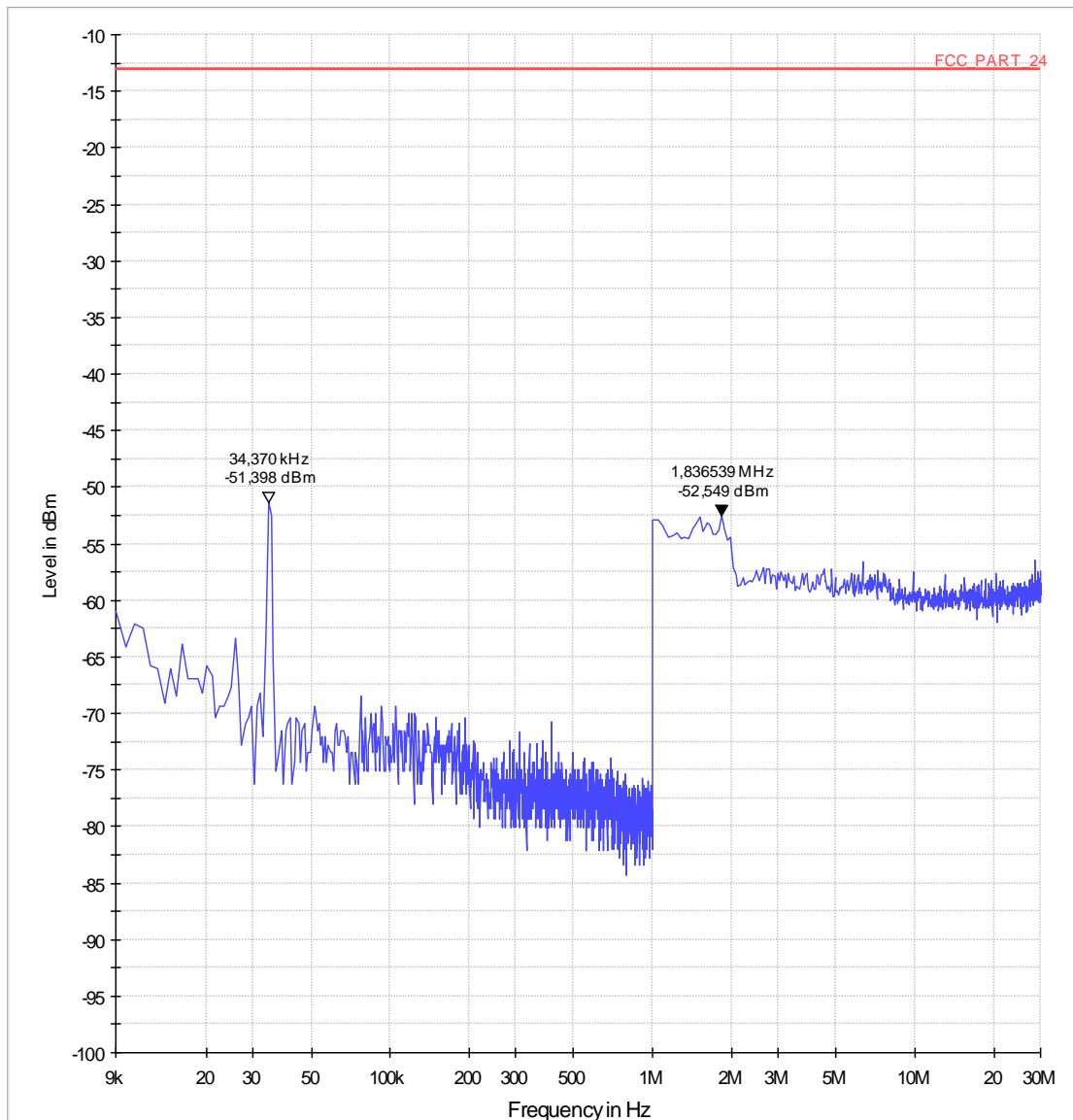


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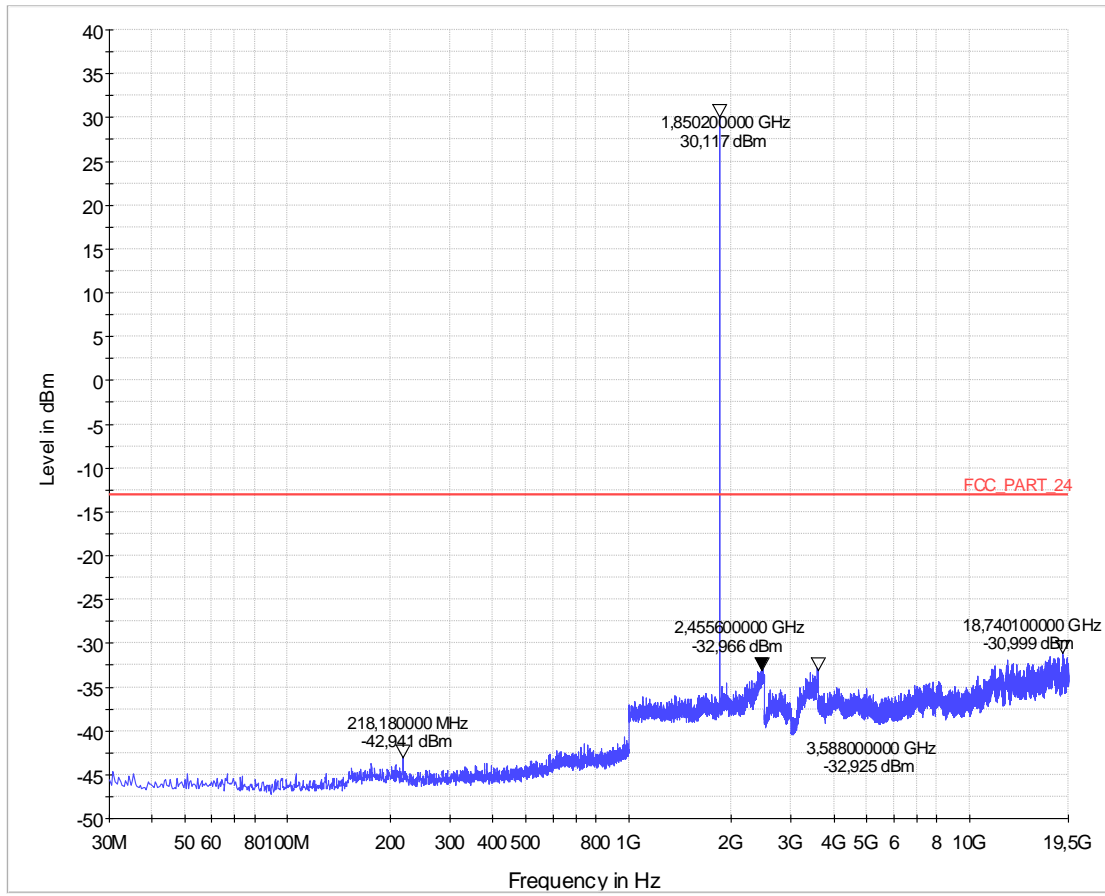


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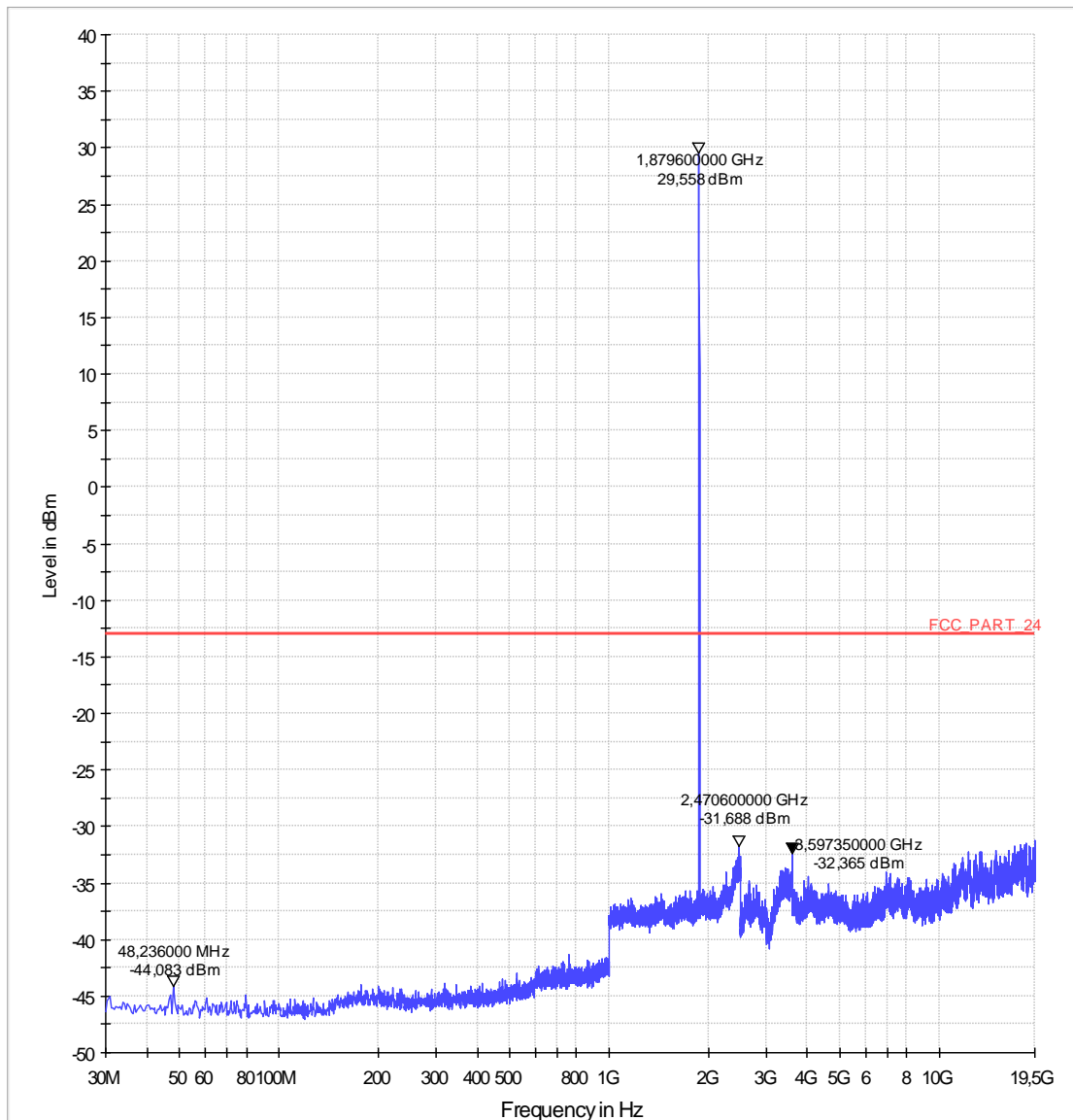


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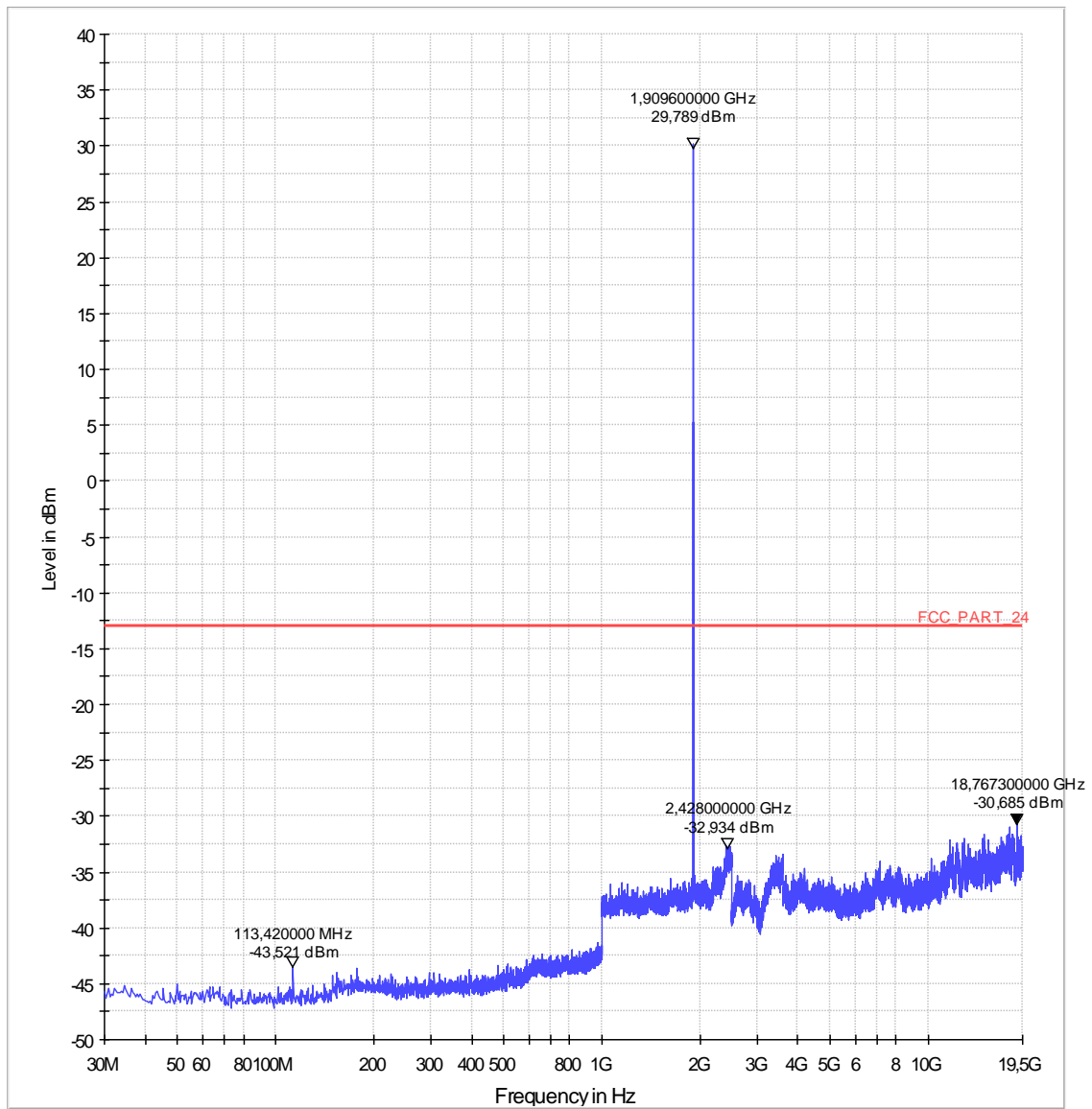


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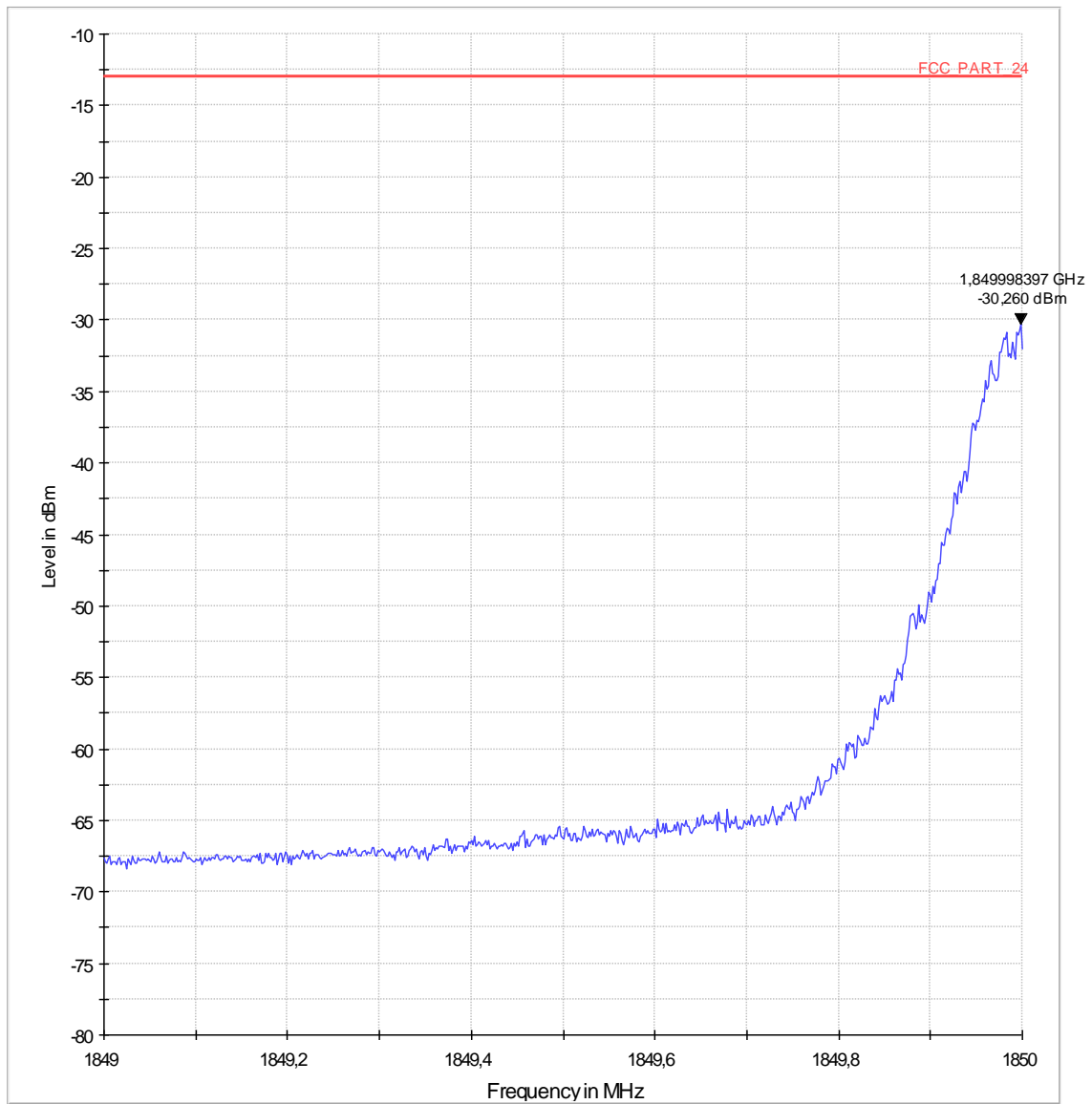
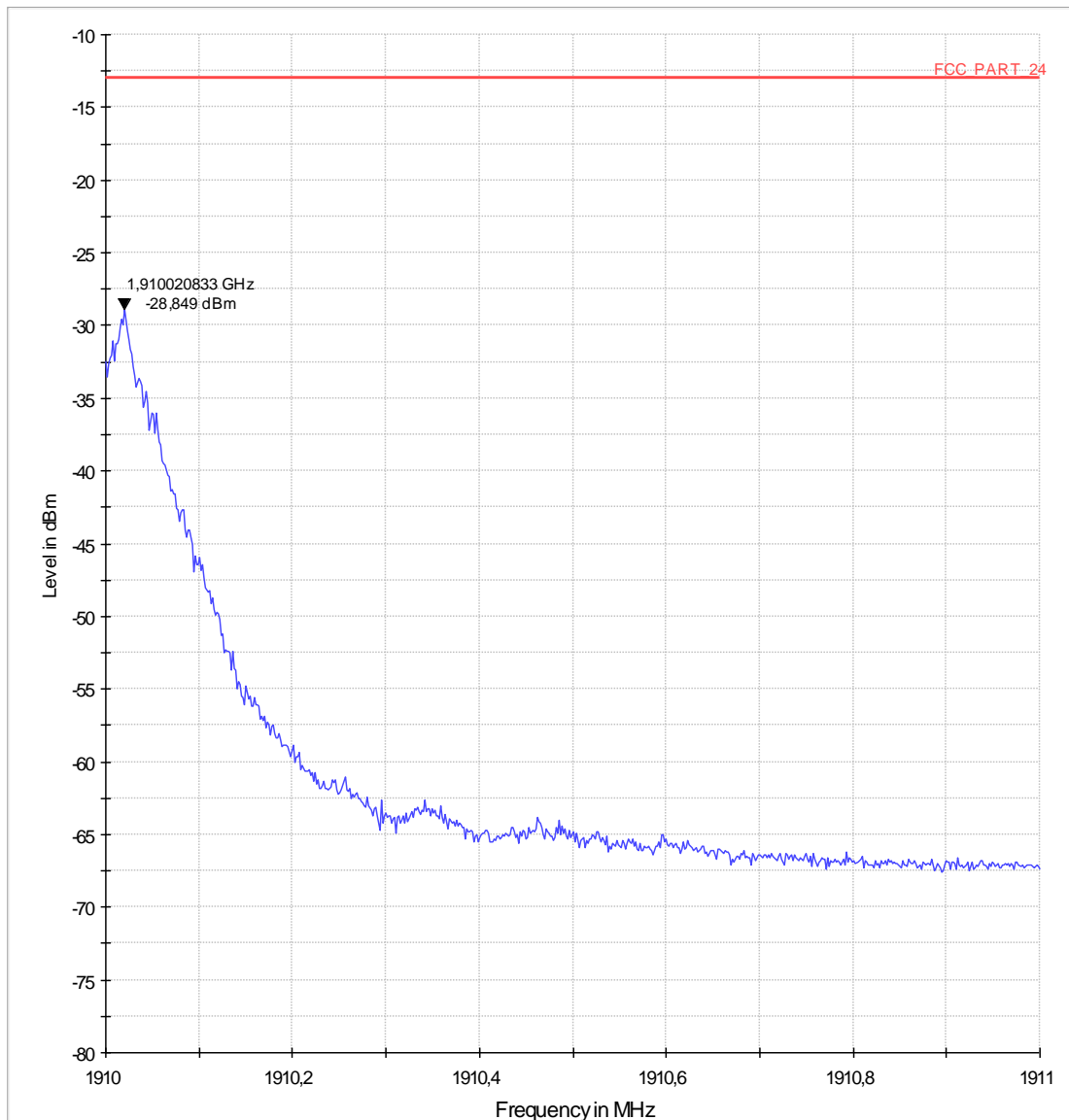
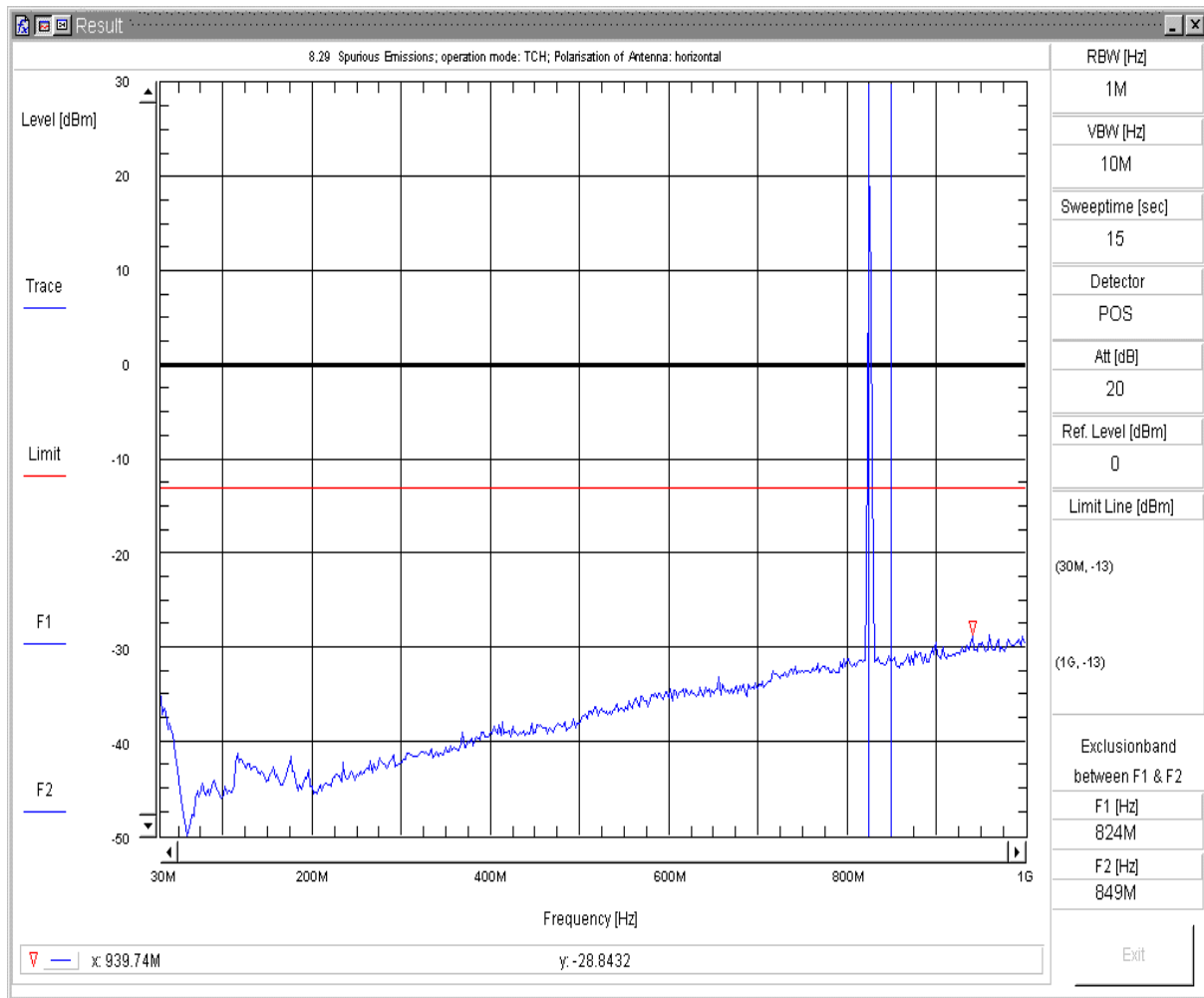


Diagram no. 14.16b (Channel 810)



1.5. Spurious emissions radiated – GSM850 Mode

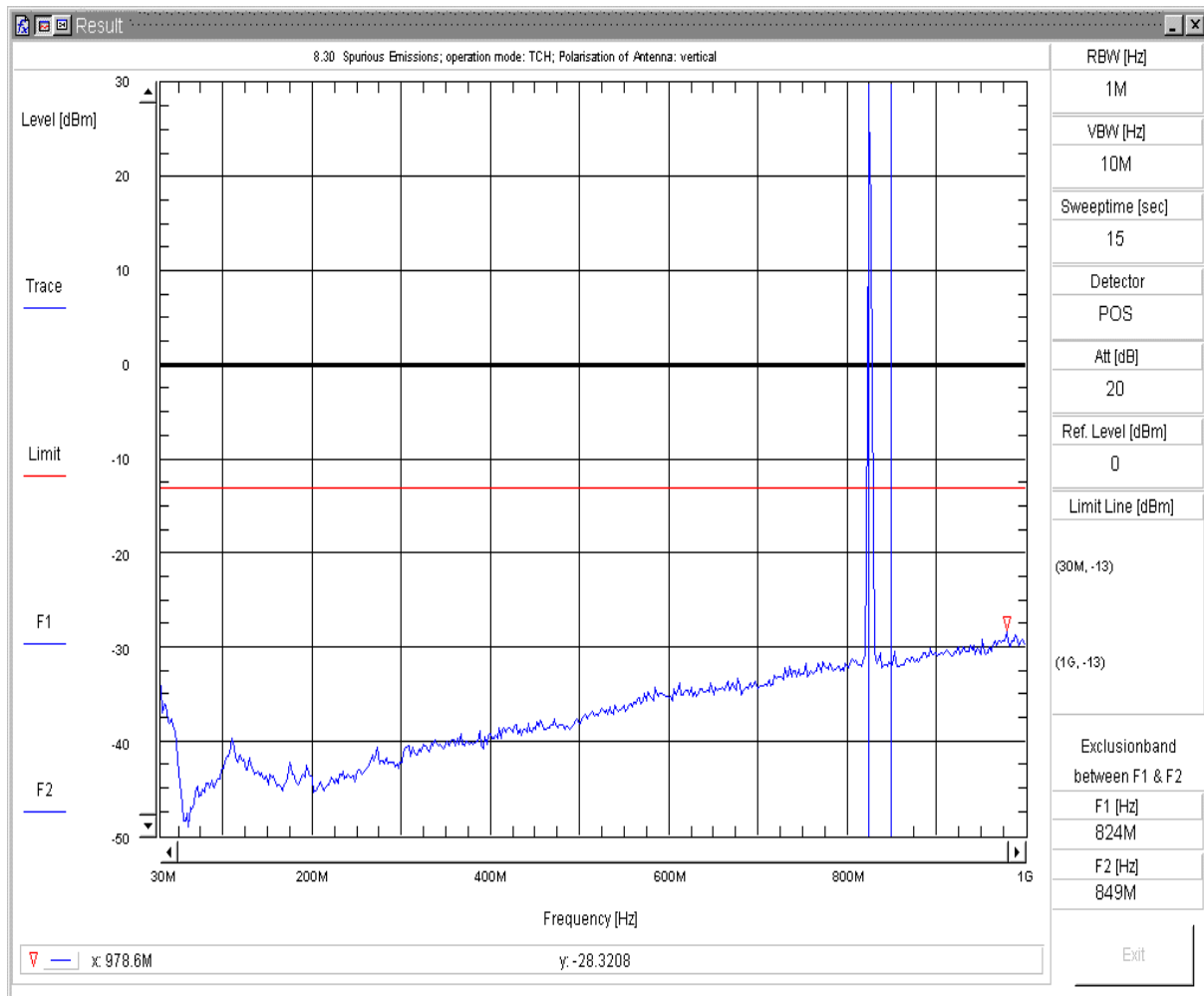


8.29 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_H
 Sweepnr: Sweep1
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 128
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 15:21:47pff

Spurious Emissions V7.2.5

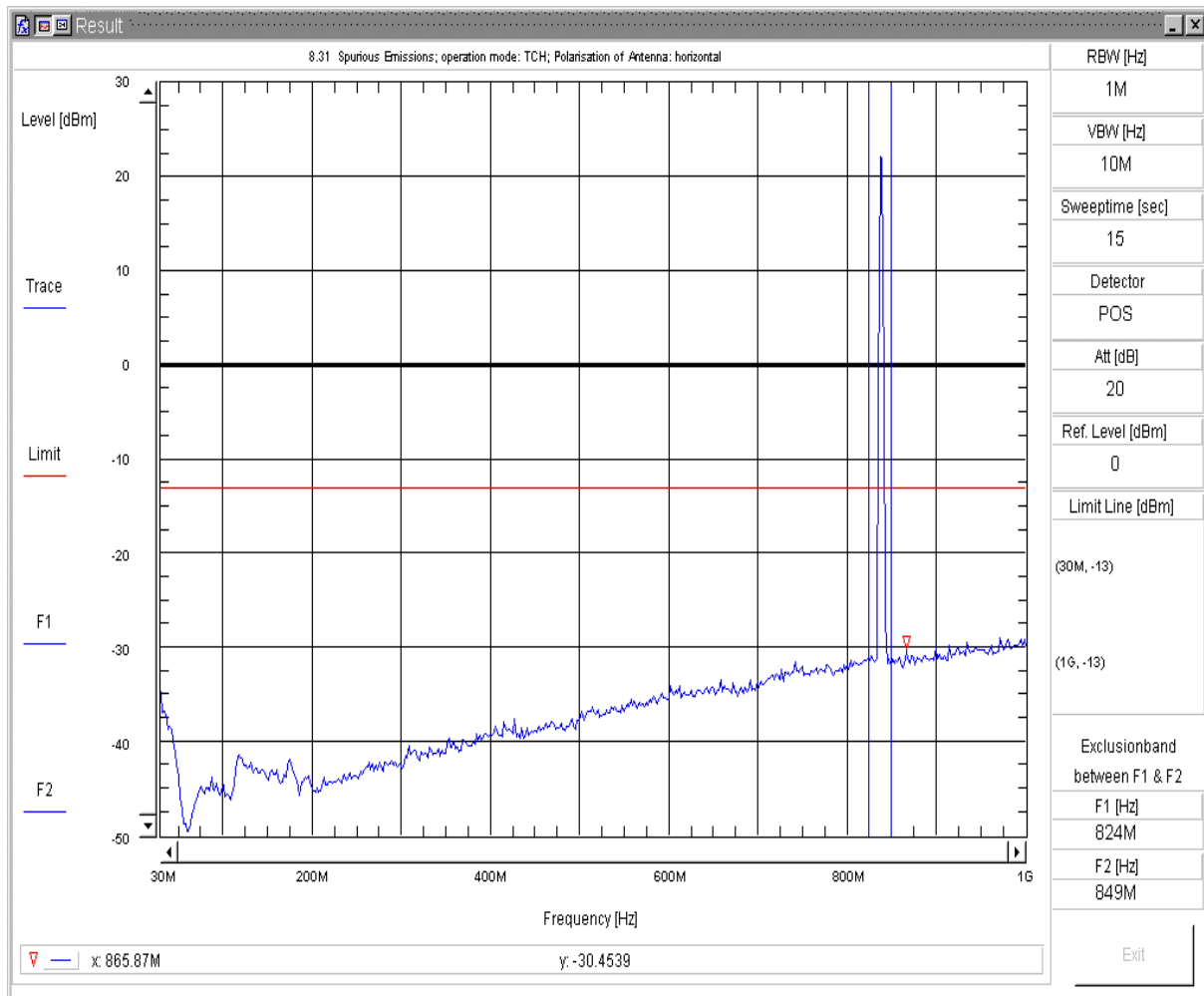


8.30 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_V
 Sweepnr: Sweep1
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 128
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 15:27:09ppf

Spurious Emissions V7.2.5

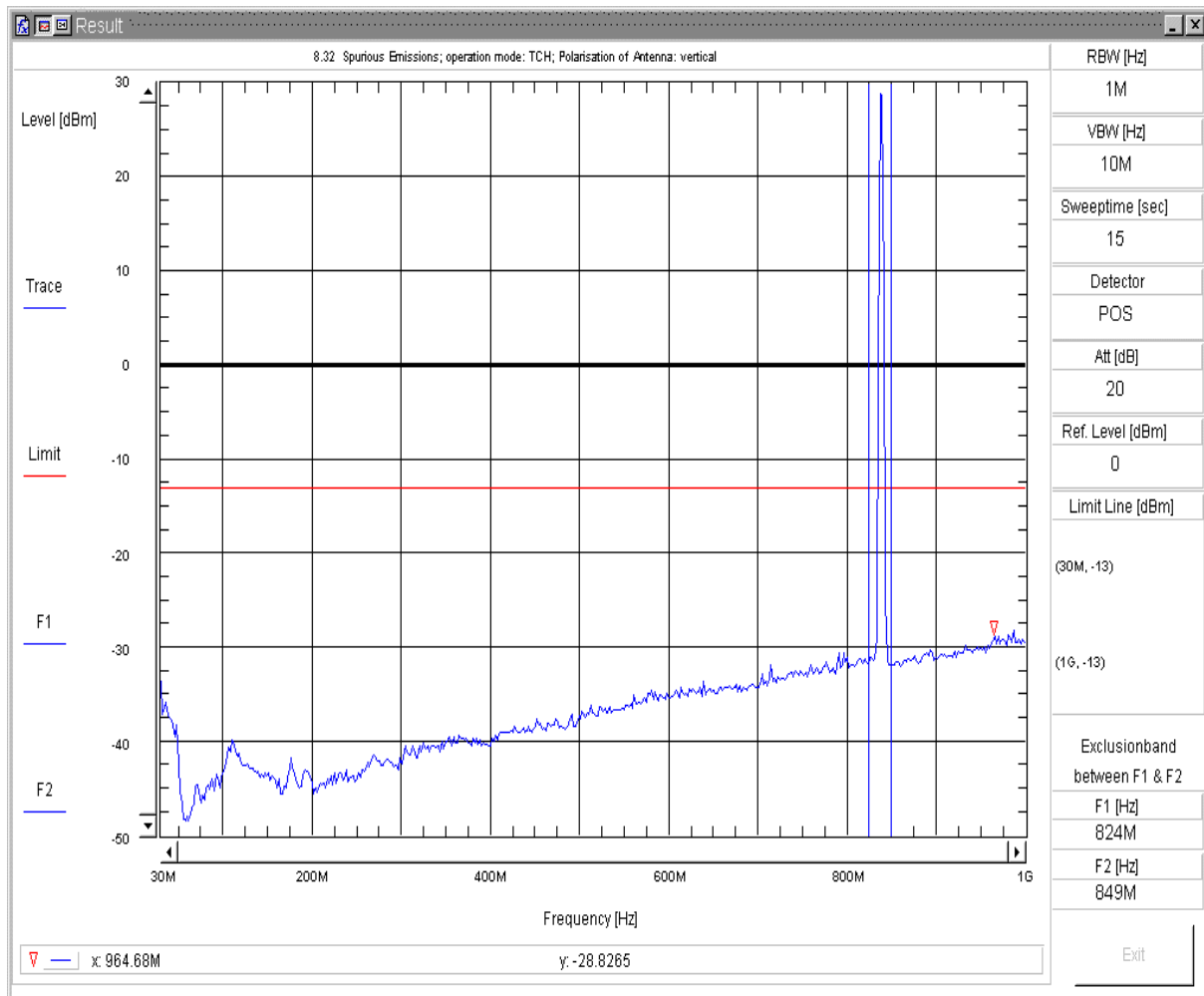


8.31 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_H
 Sweepnr: Sweep1
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 192
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 16:50:41pff

Spurious Emissions V7.2.5

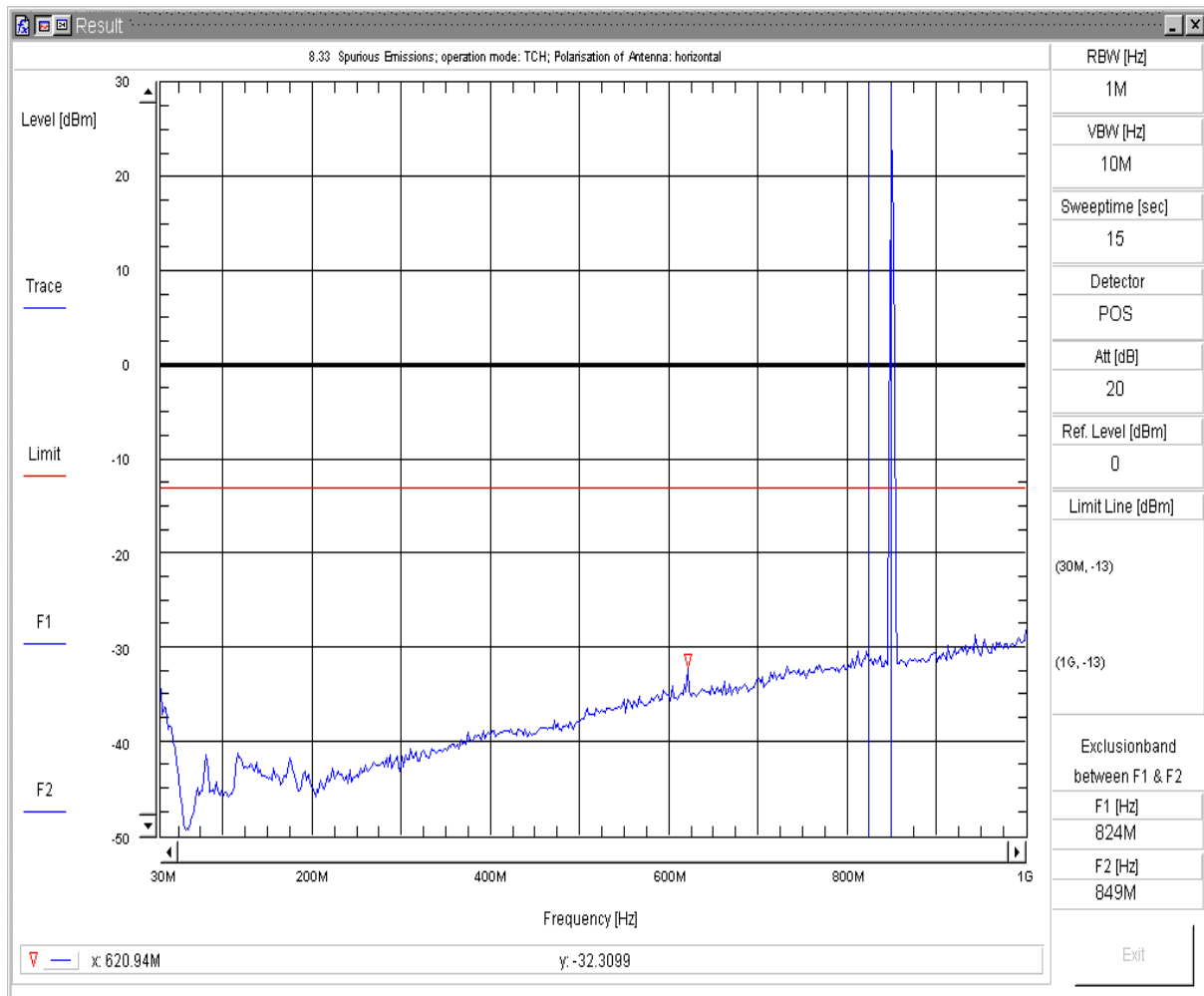


8.32 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_V
 Sweepnr: Sweep1
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 192
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 16:57:37ppf

Spurious Emissions V7.2.5

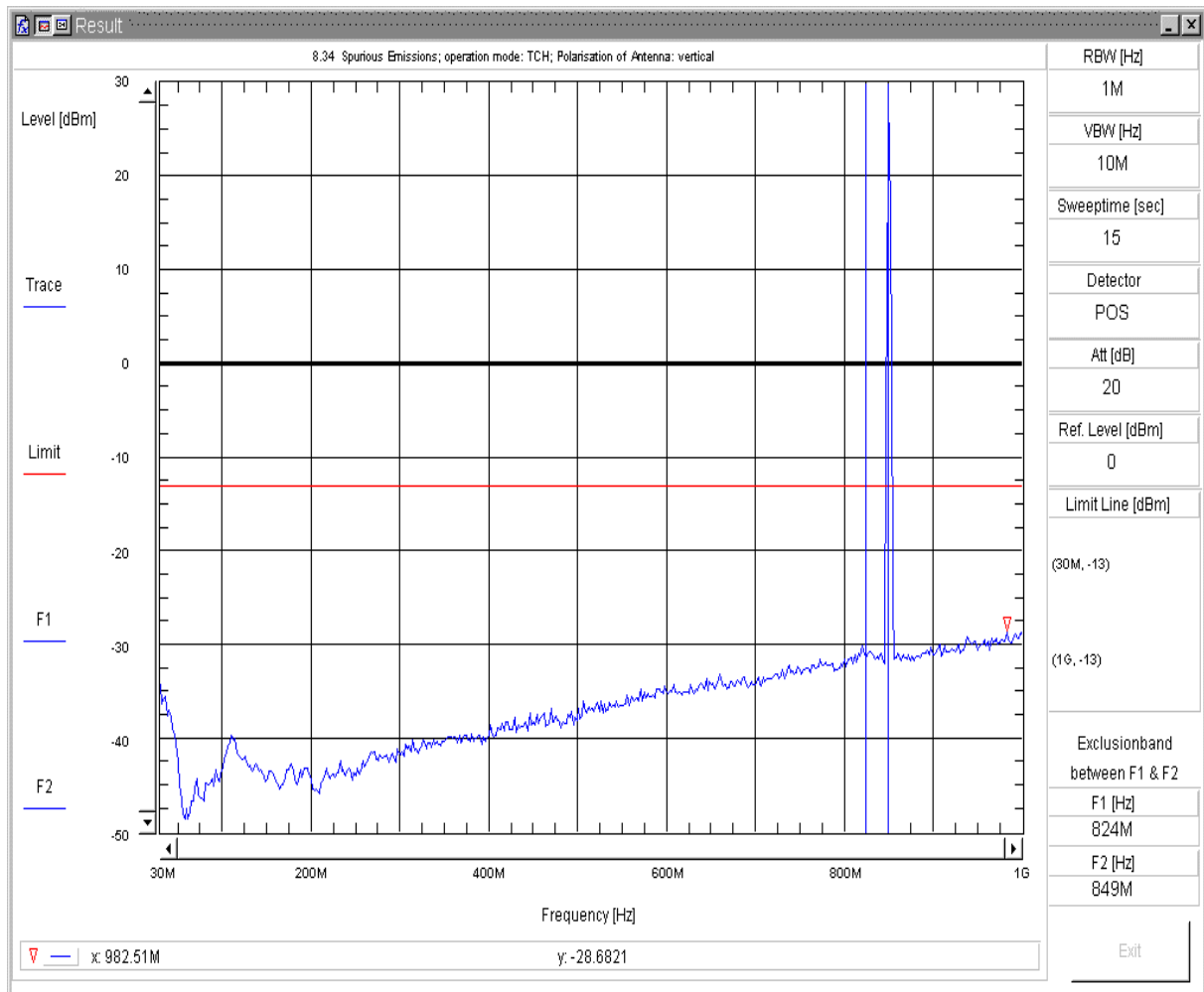


8.33 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_H
 Sweepnr: Sweep1
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 251
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 17:07:36pff

Spurious Emissions V7.2.5

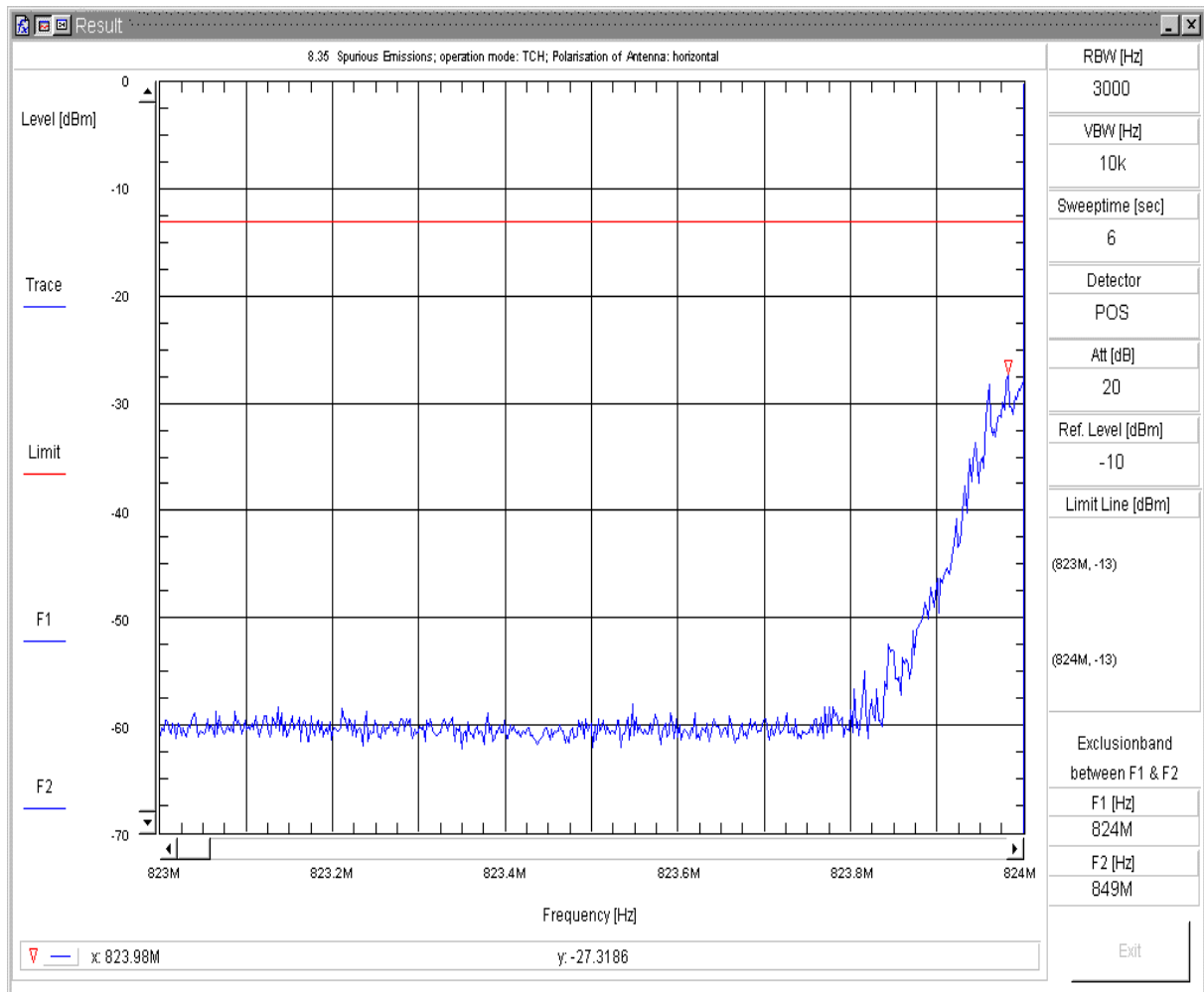


8.34 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_V
 Sweepnr: Sweep1
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 251
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 17:03:23ppf

Spurious Emissions V7.2.5

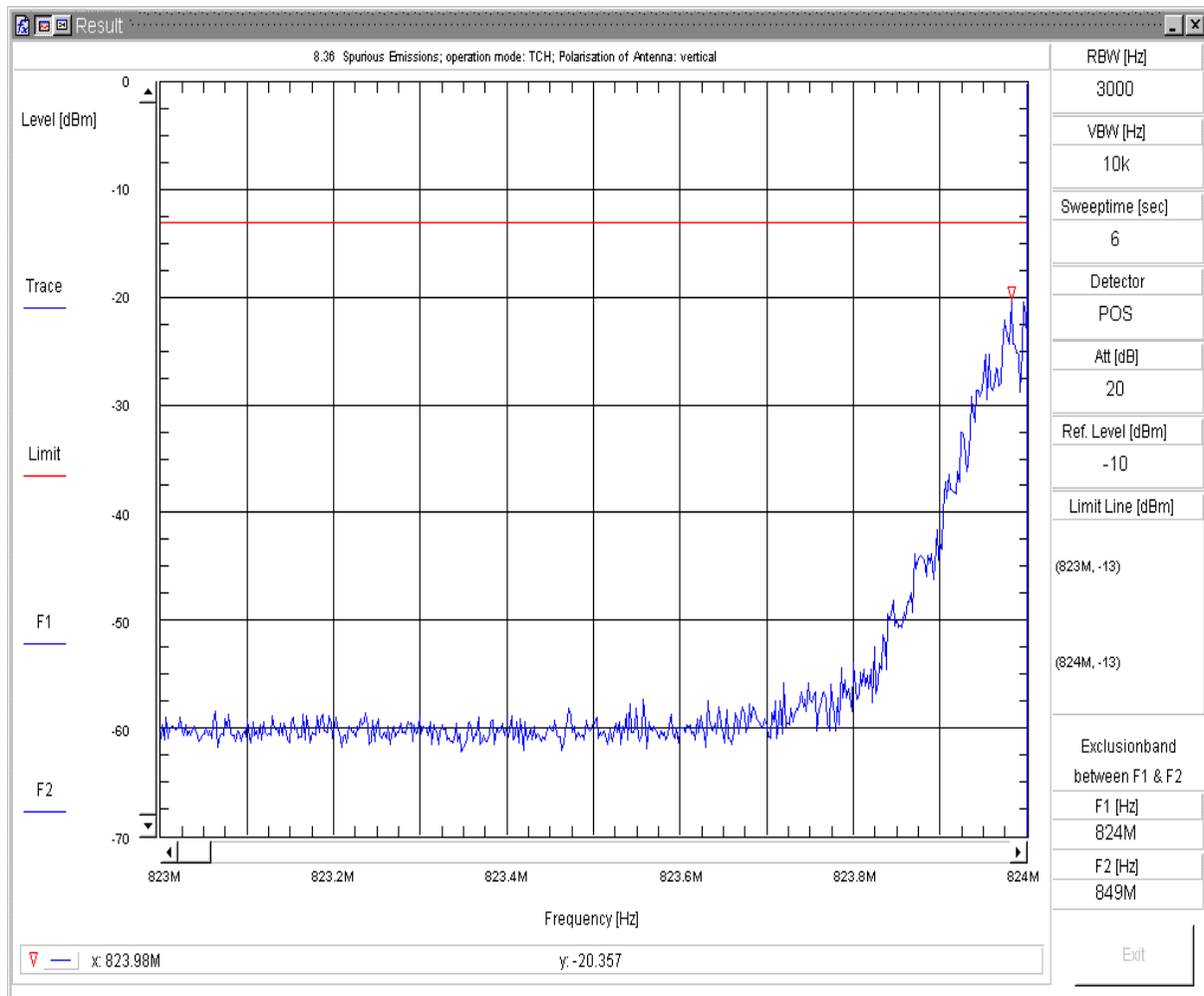


8.35 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_H
 Sweepnr: Sweep2
 Pol. of Antenna: horizontal
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 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 128
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 15:36:05pff

Spurious Emissions V7.2.5

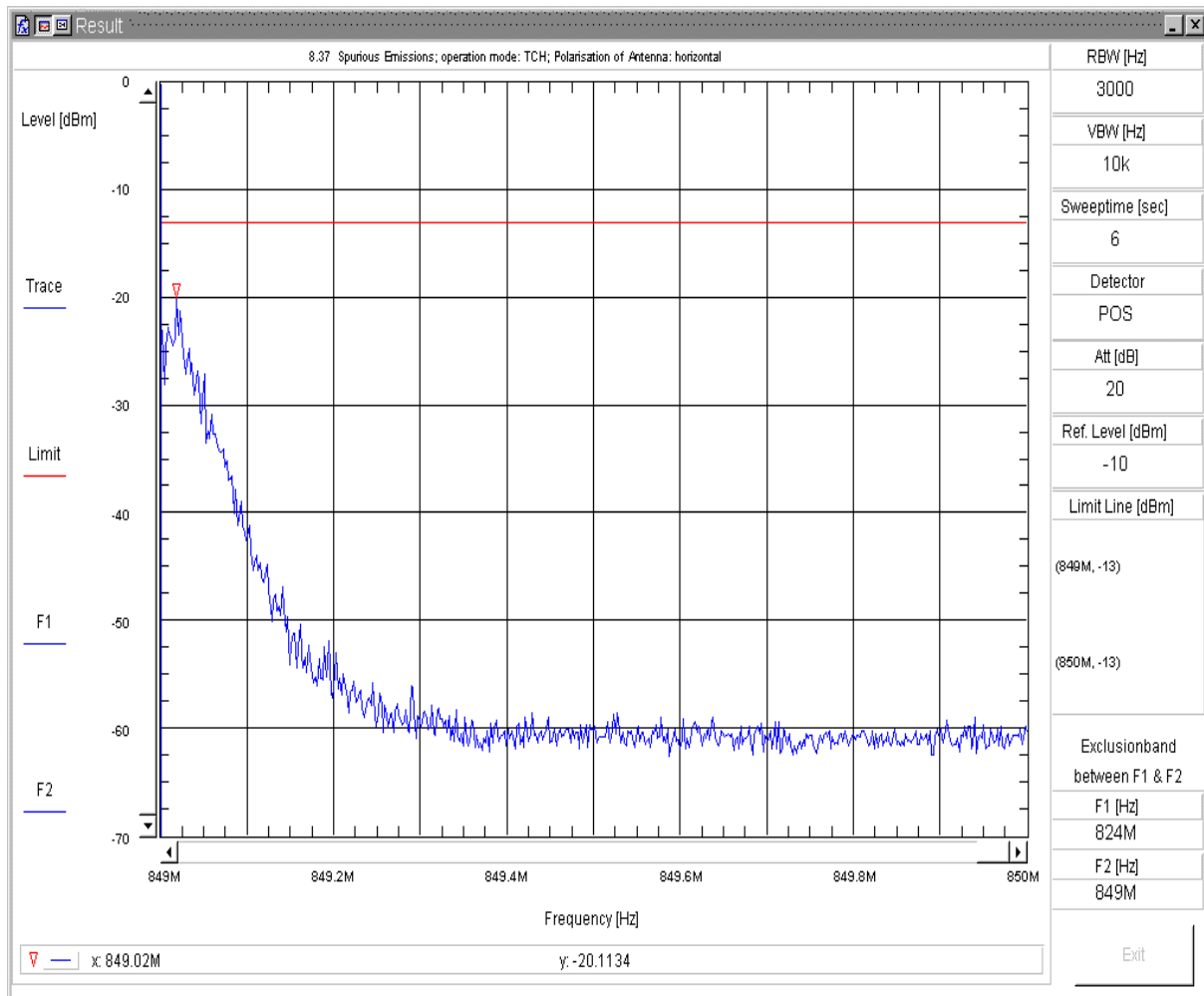


8.36 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_V
 Sweepnr: Sweep2
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 128
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 15:32:23ppf

Spurious Emissions V7.2.5

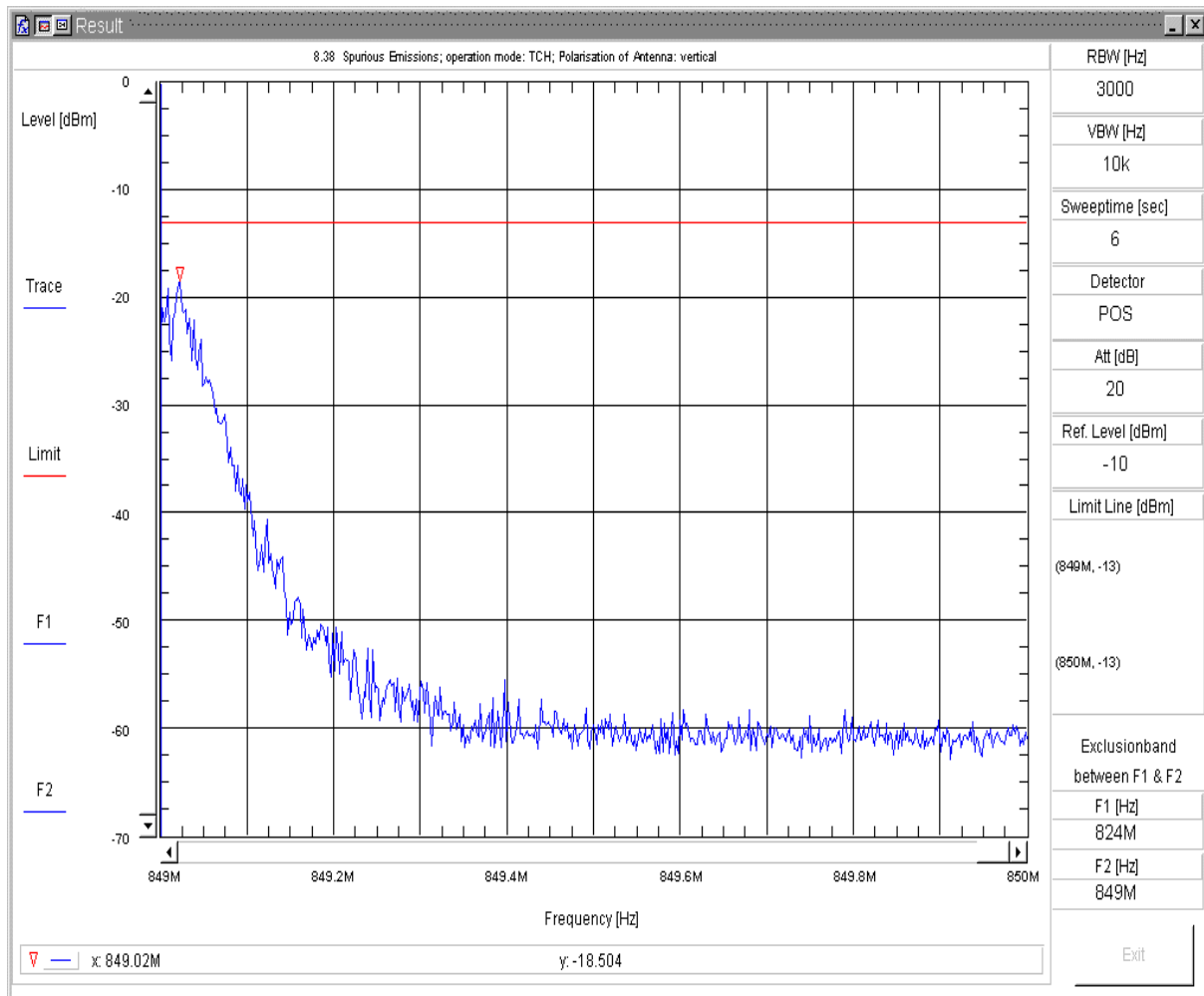


8.37 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_H
 Sweepnr: Sweep3
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 251
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 17:11:56pff

Spurious Emissions V7.2.5

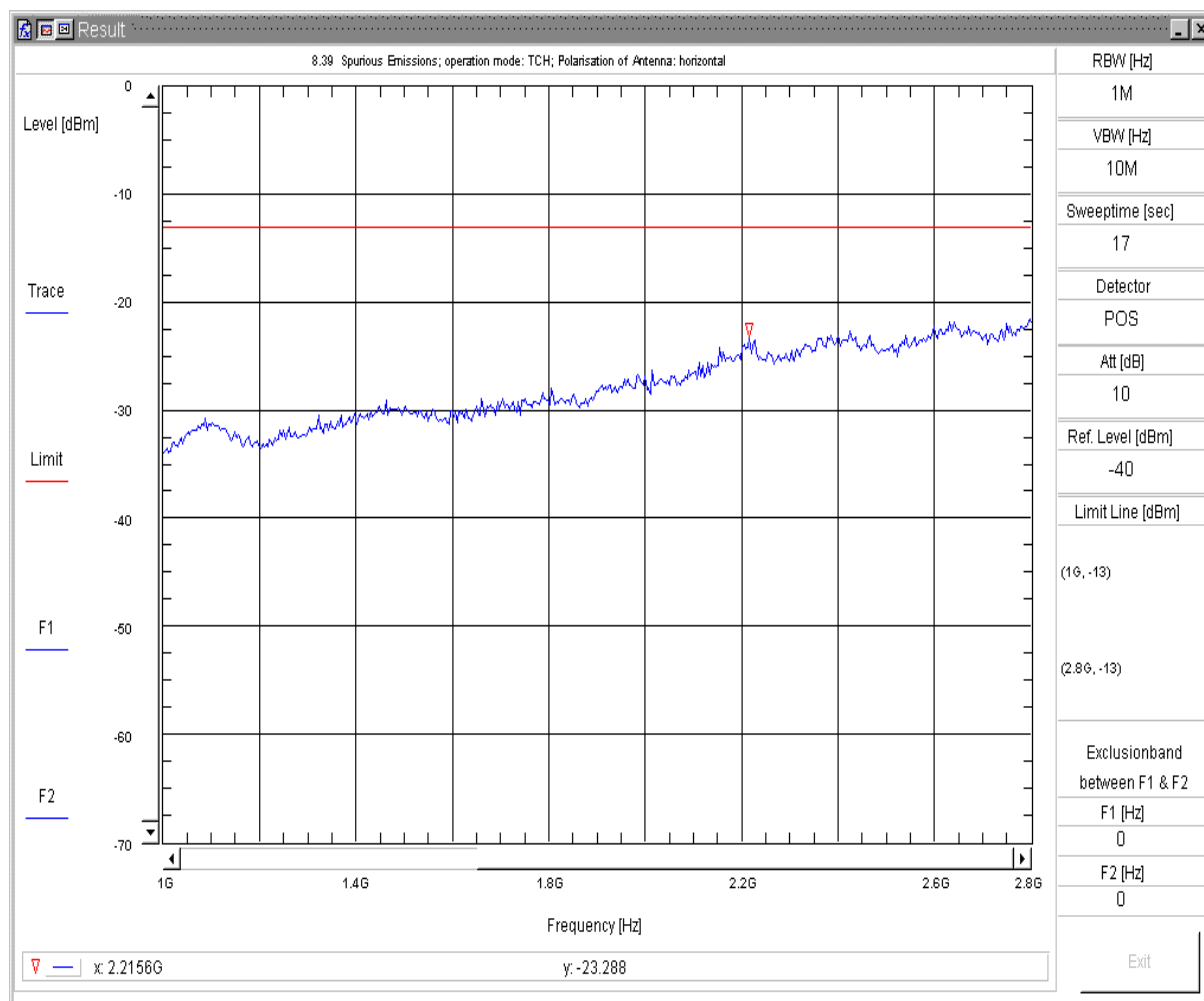


8.38 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_V
 Sweepnr: Sweep3
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 251
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 17:15:06ppf

Spurious Emissions V7.2.5

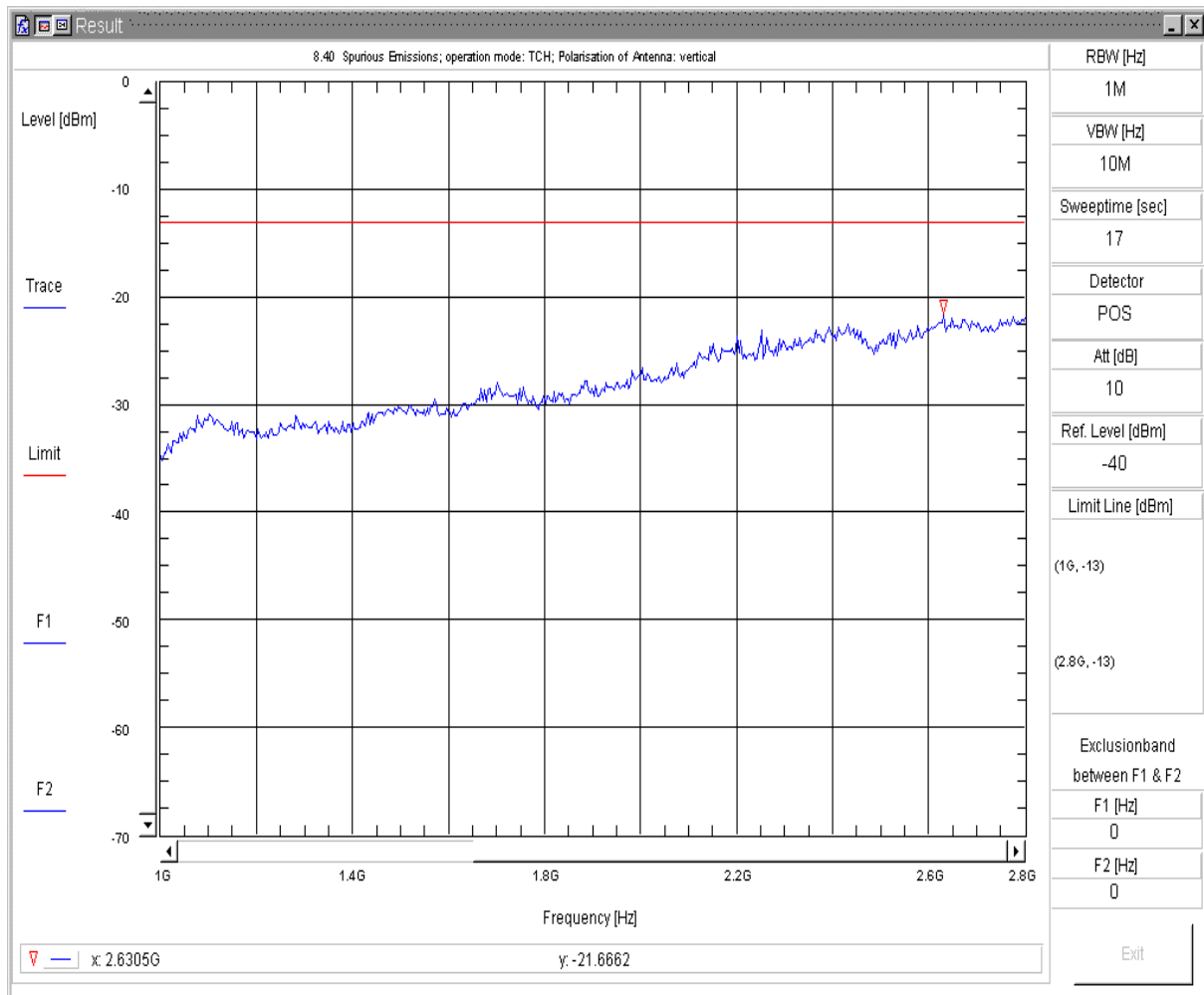


8.39 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_H
 Sweepnr: Sweep4
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 128
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 15:40:23fp

Spurious Emissions V7.2.5

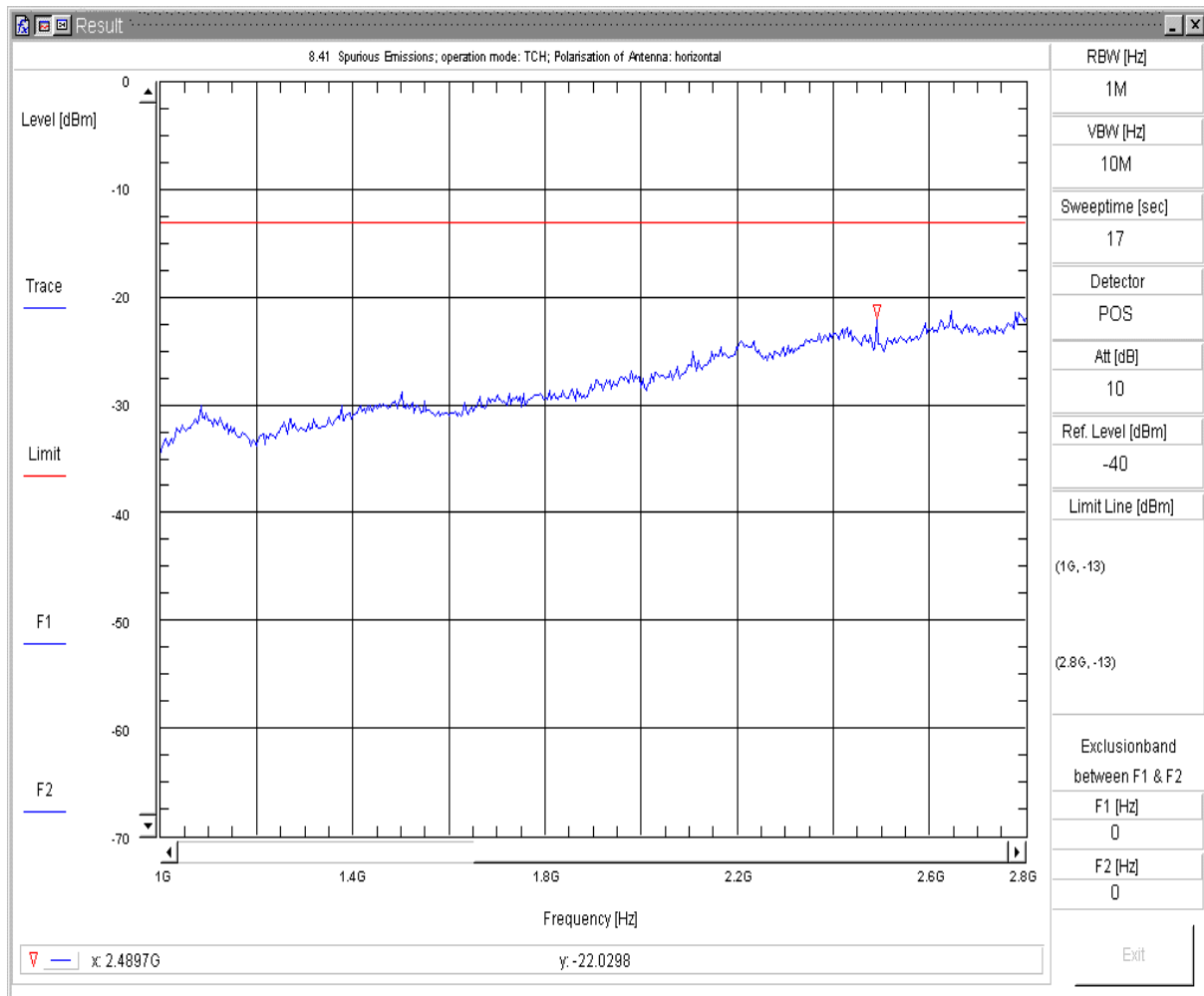


8.40 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_V
 Sweepnr: Sweep4
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 128
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 15:48:00pp

Spurious Emissions V7.2.5

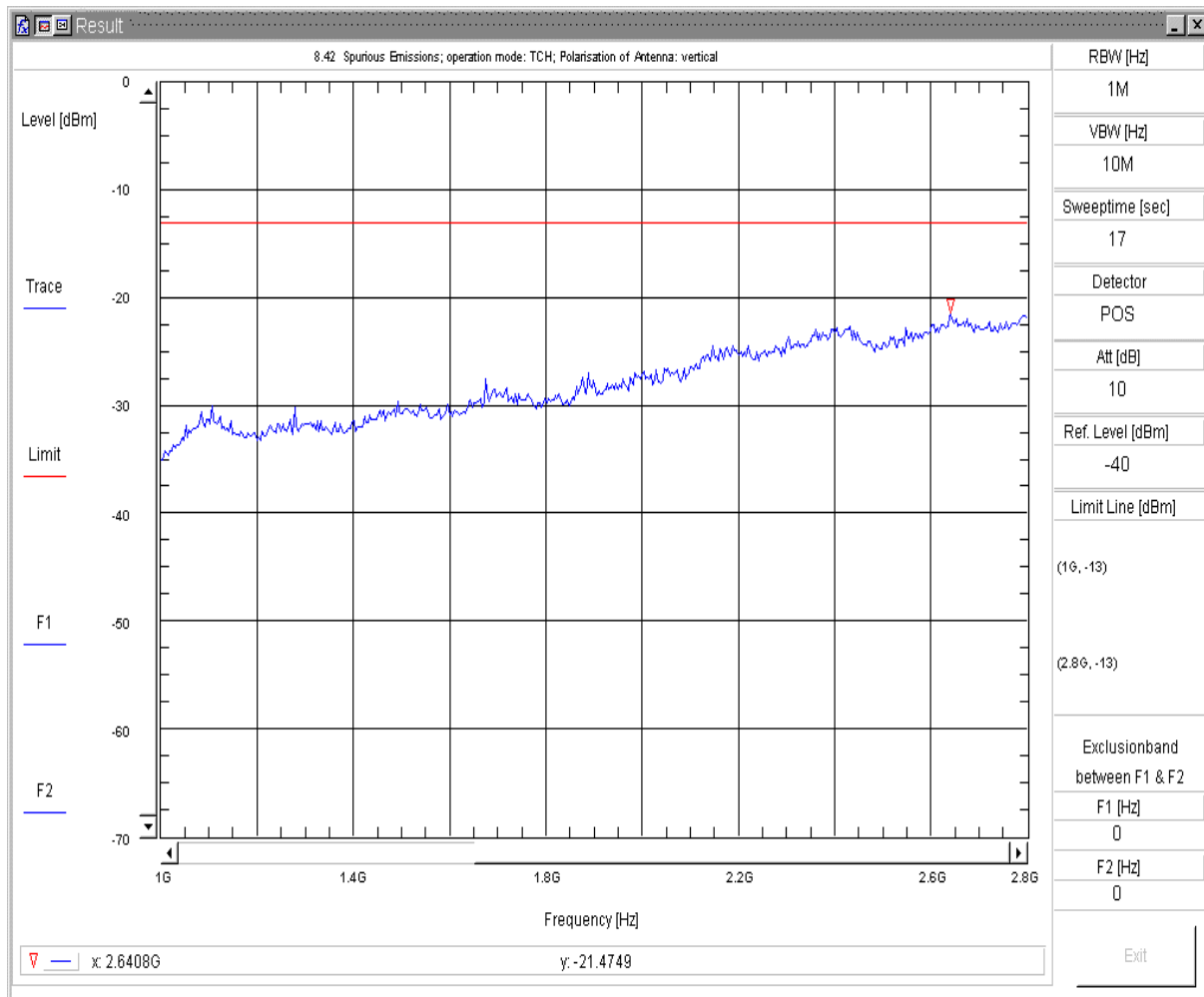


8.41 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_H
 Sweepnr: Sweep4
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 192
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 16:42:52fp

Spurious Emissions V7.2.5

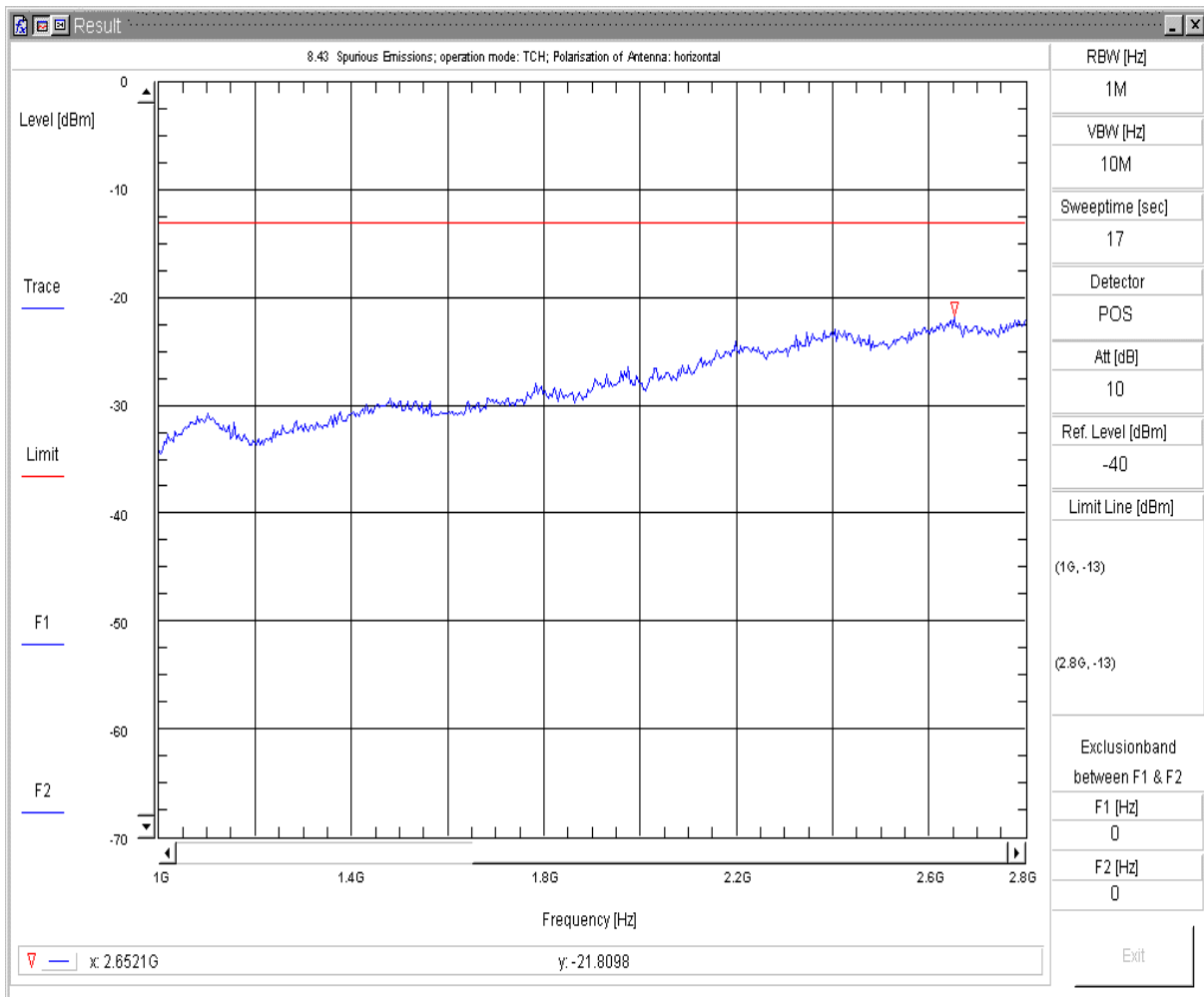


8.42 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_V
 Sweepnr: Sweep4
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 192
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 16:35:46pp

Spurious Emissions V7.2.5

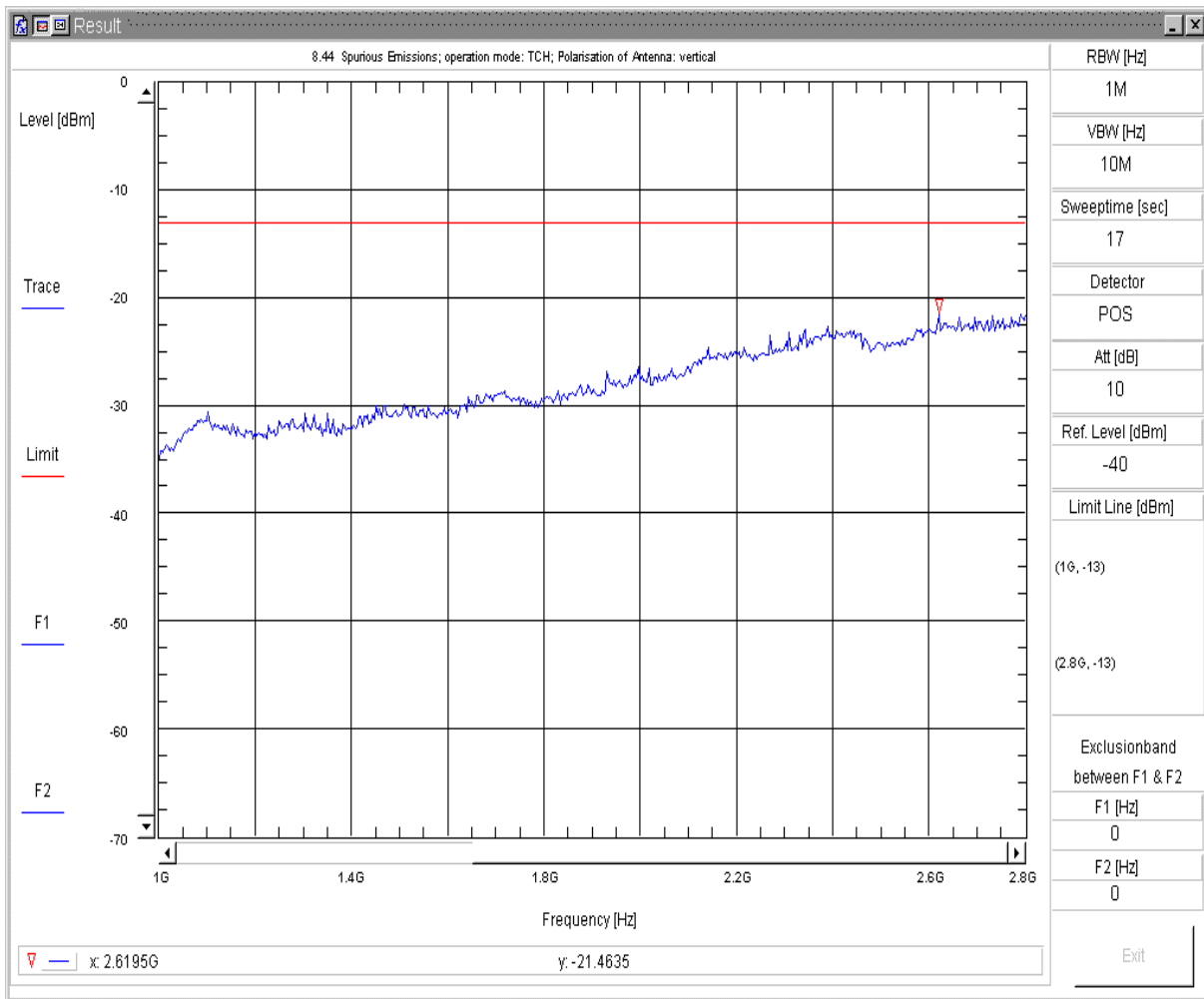


8.43 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_H
 Sweepnr: Sweep4
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 251
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 17:25:13fp

Spurious Emissions V7.2.5

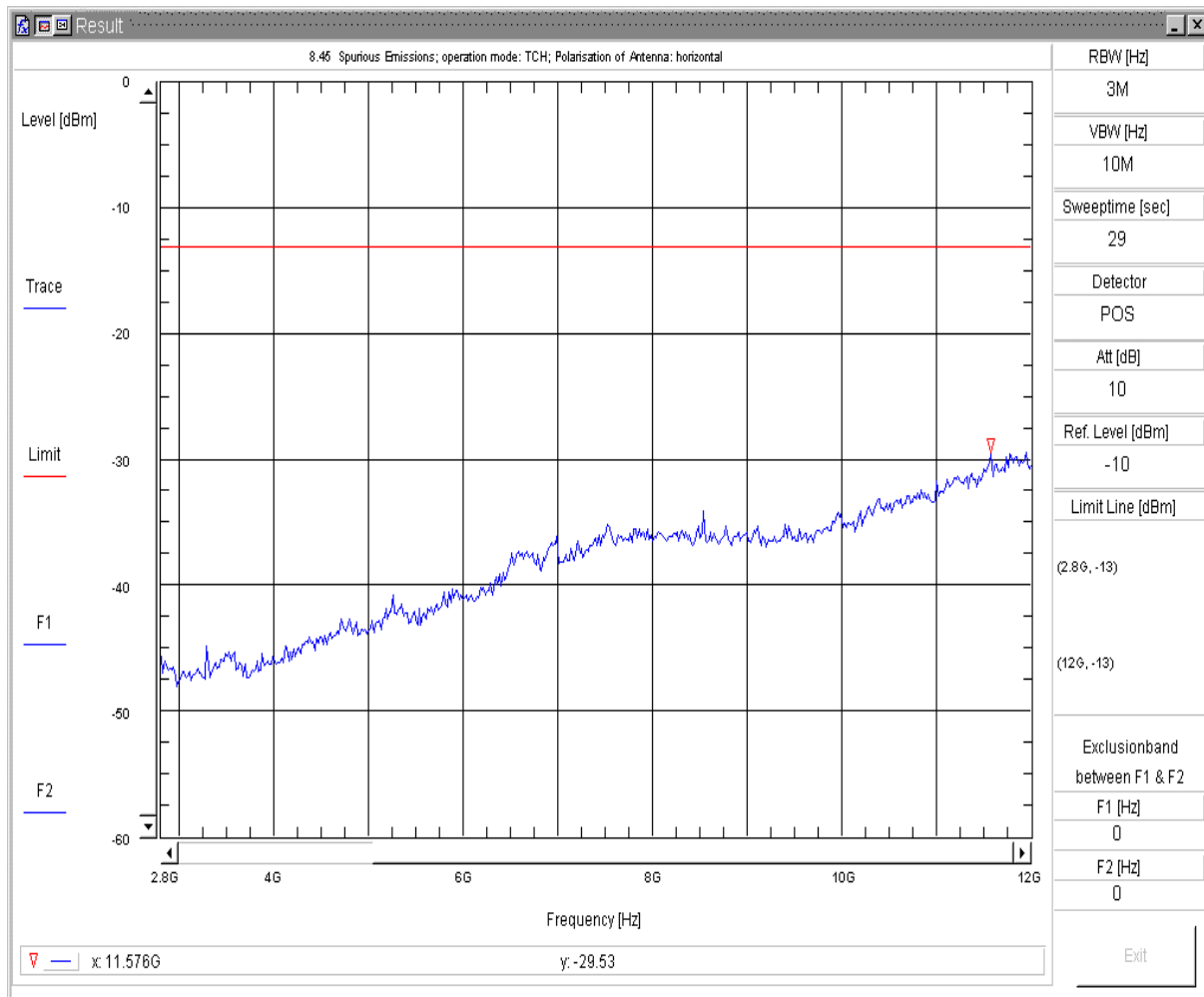


8.44 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_V
 Sweepnr: Sweep4
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 251
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 17:18:24pp

Spurious Emissions V7.2.5

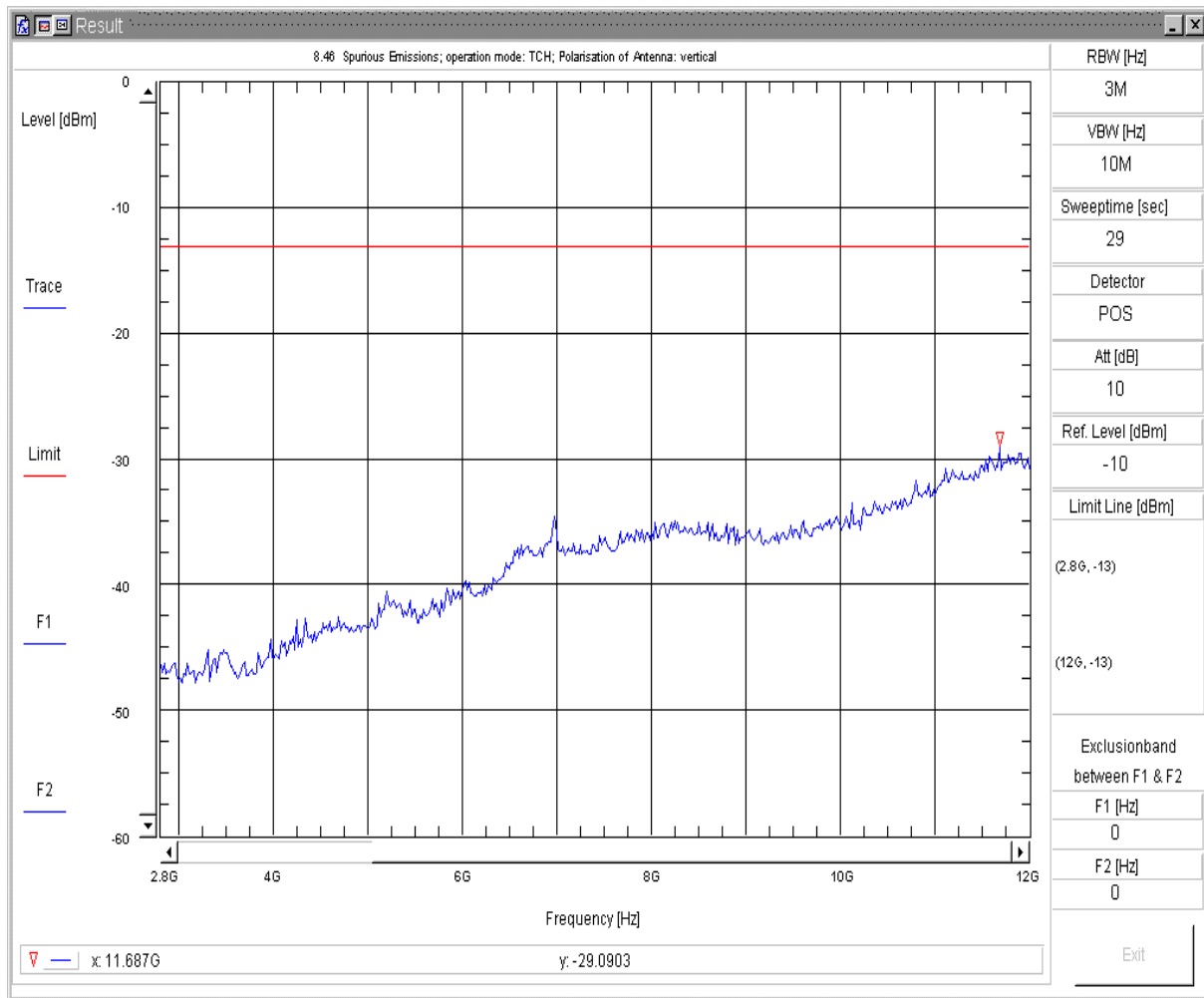


8.45 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_H
 Sweepnr: Sweep5
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 128
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 16:05:15pf

Spurious Emissions V7.2.5

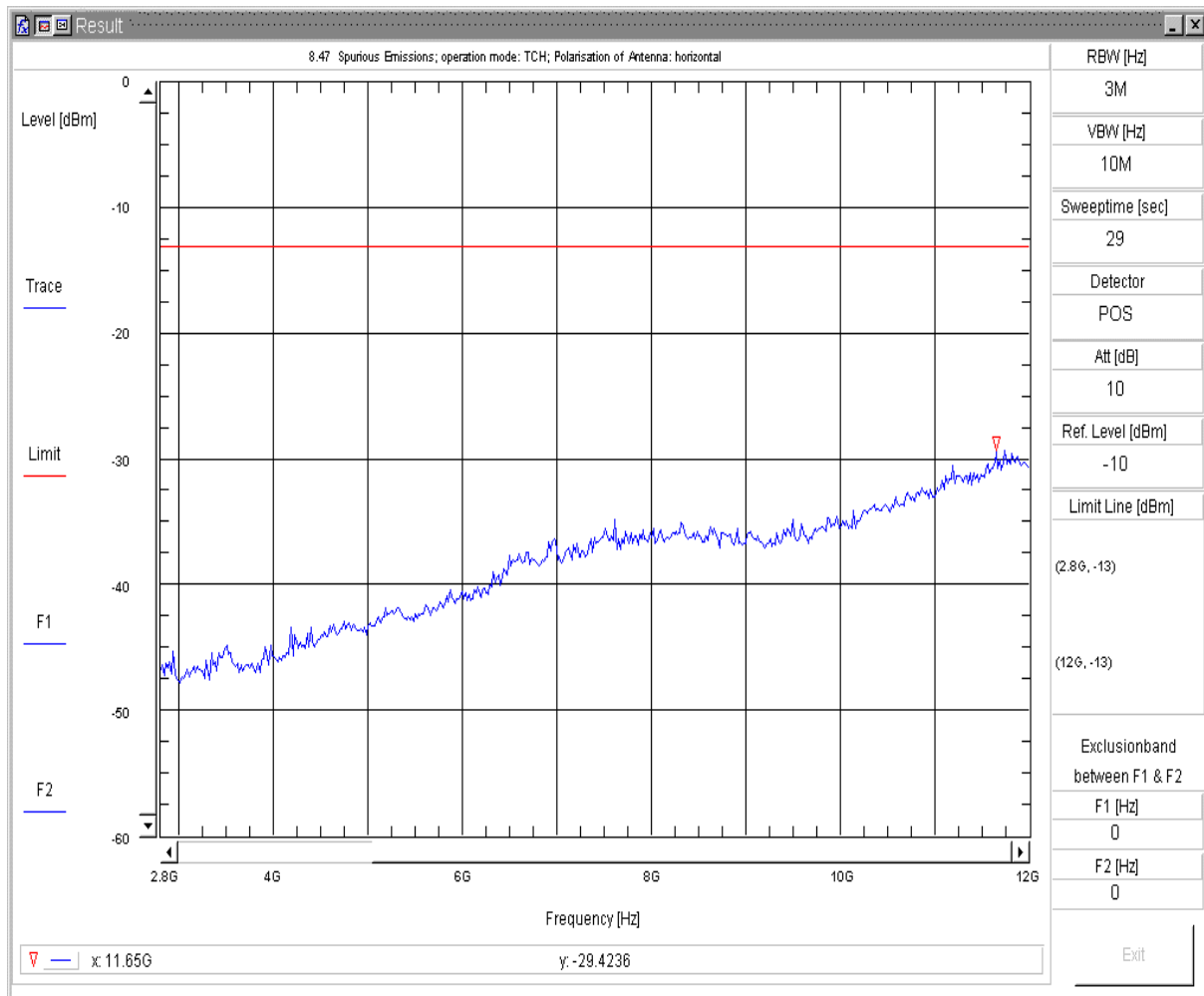


8.46 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_V
 Sweepnr: Sweep5
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 128
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 15:55:25fp

Spurious Emissions V7.2.5

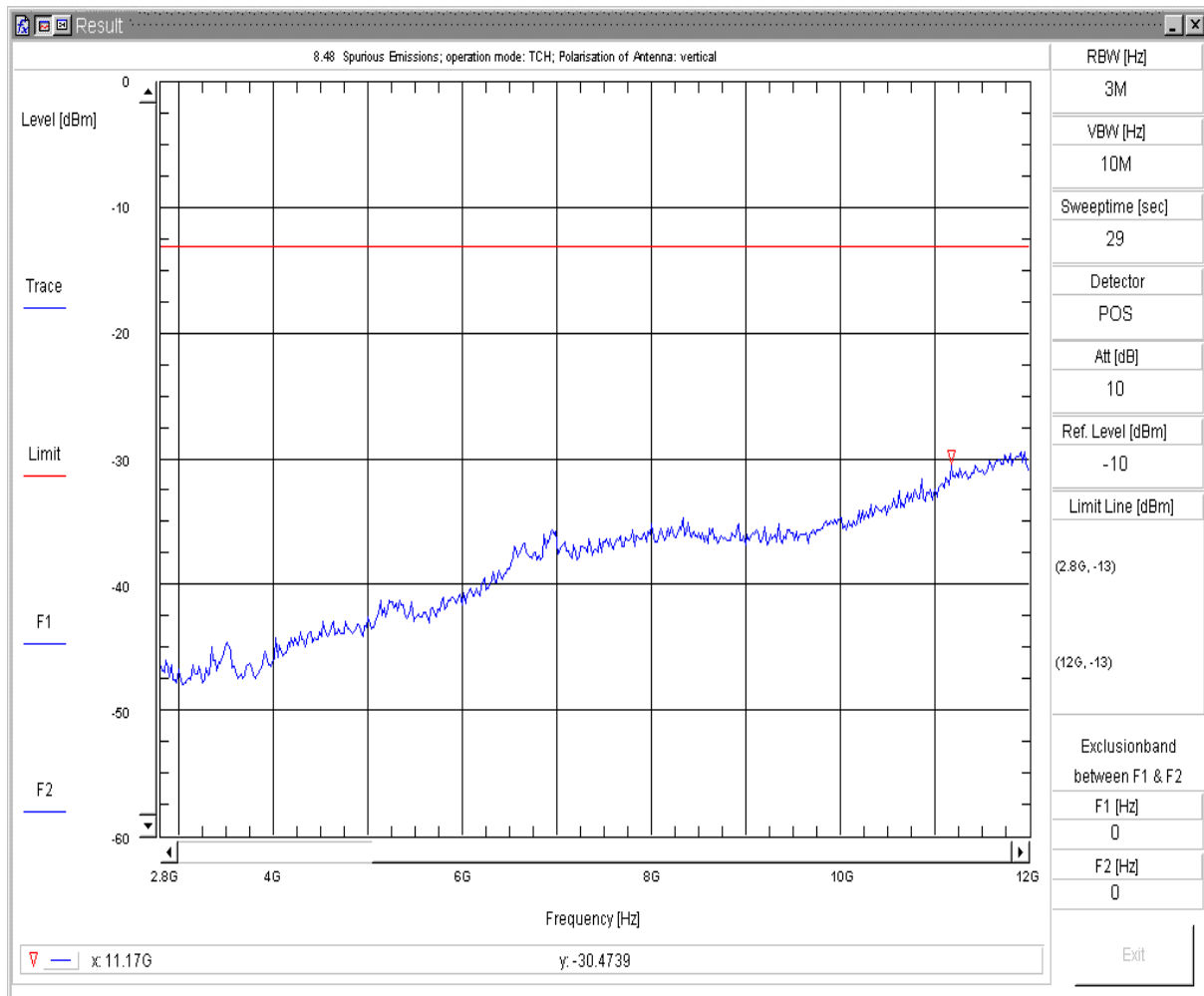


8.47 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_H
 Sweepnr: Sweep5
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 192
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 16:15:56pp

Spurious Emissions V7.2.5

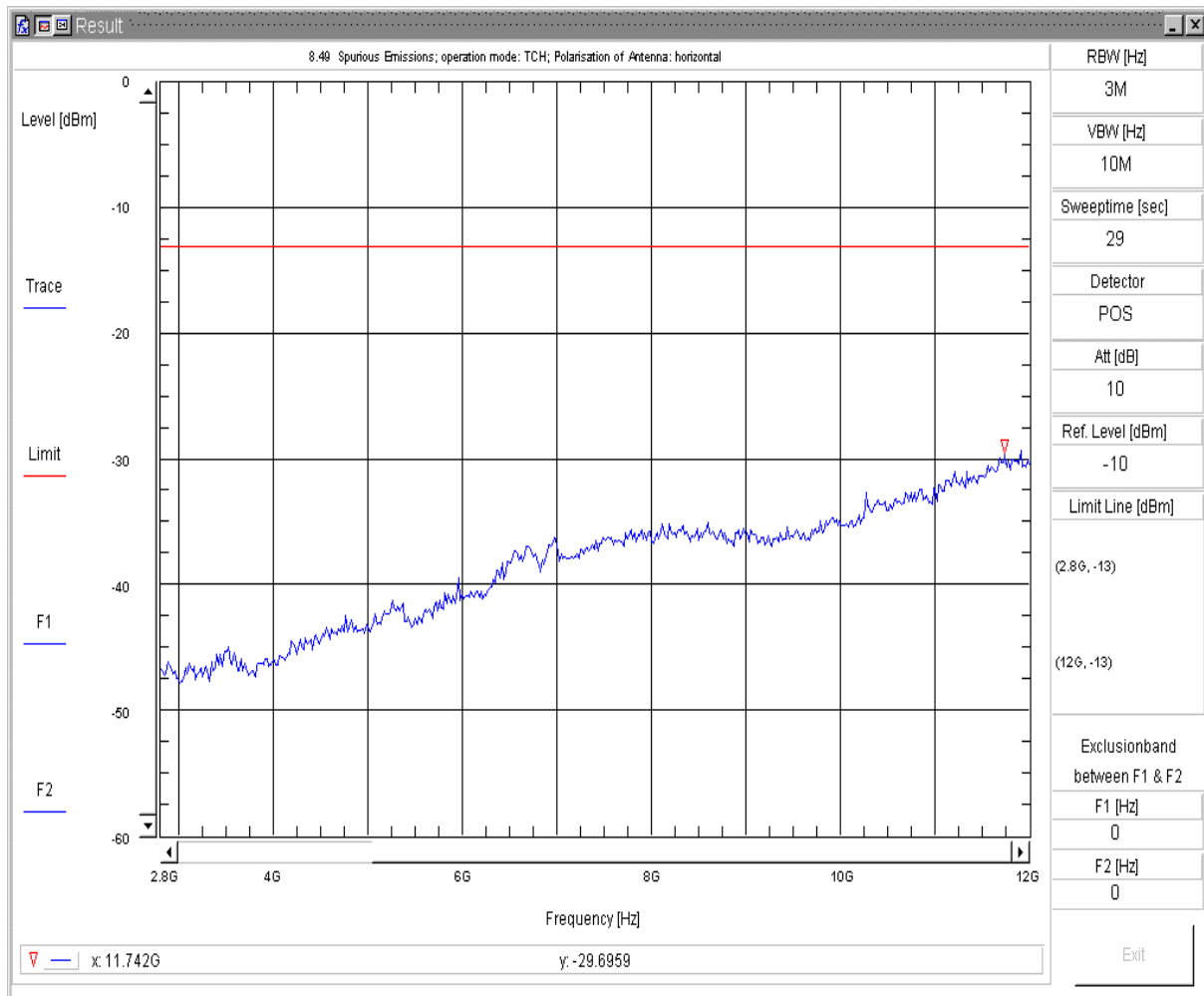


8.48 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_V
 Sweepnr: Sweep5
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 192
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 16:25:32ff

Spurious Emissions V7.2.5

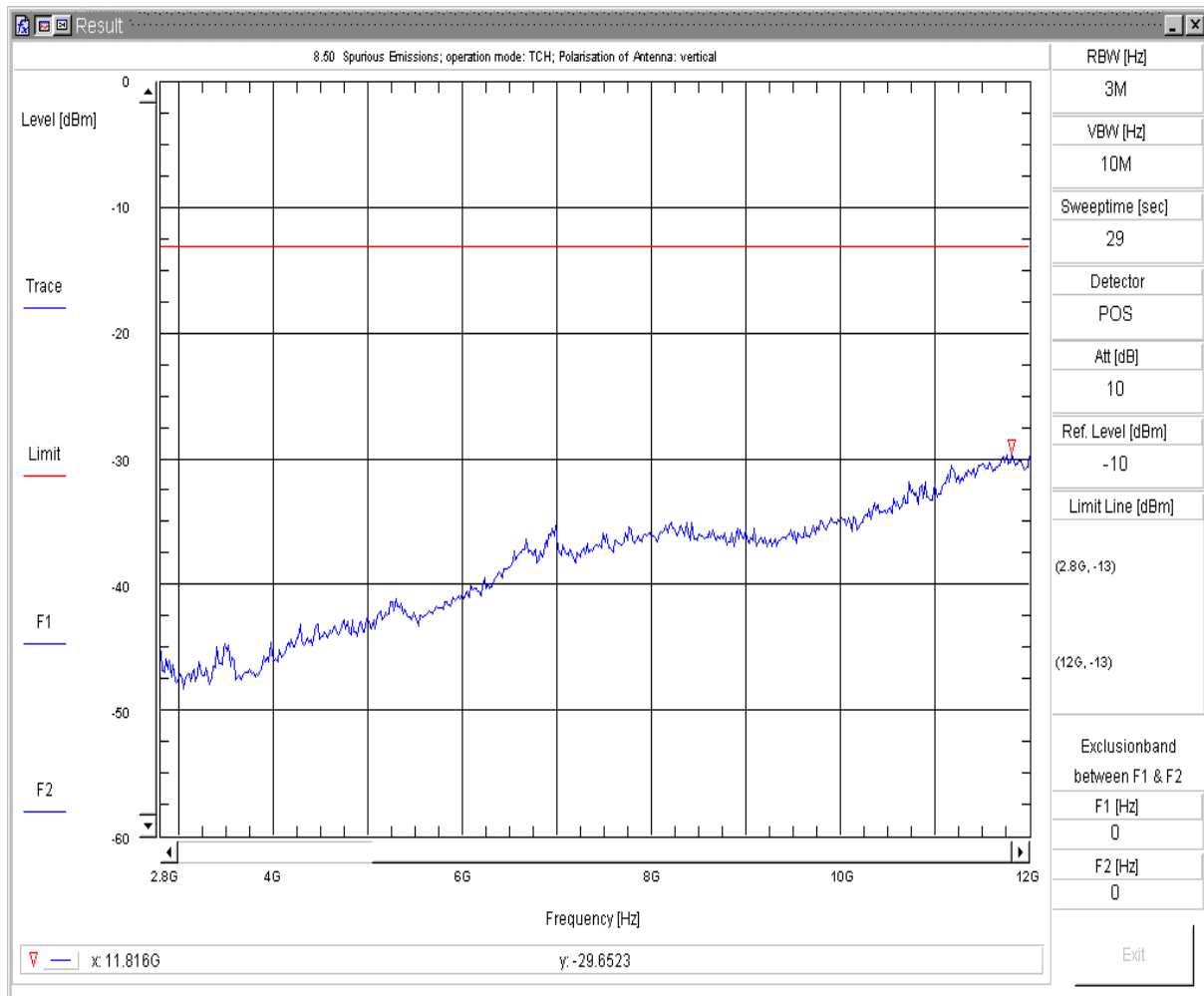


8.49 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_H
 Sweepnr: Sweep5
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 251
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 17:32:48pf

Spurious Emissions V7.2.5



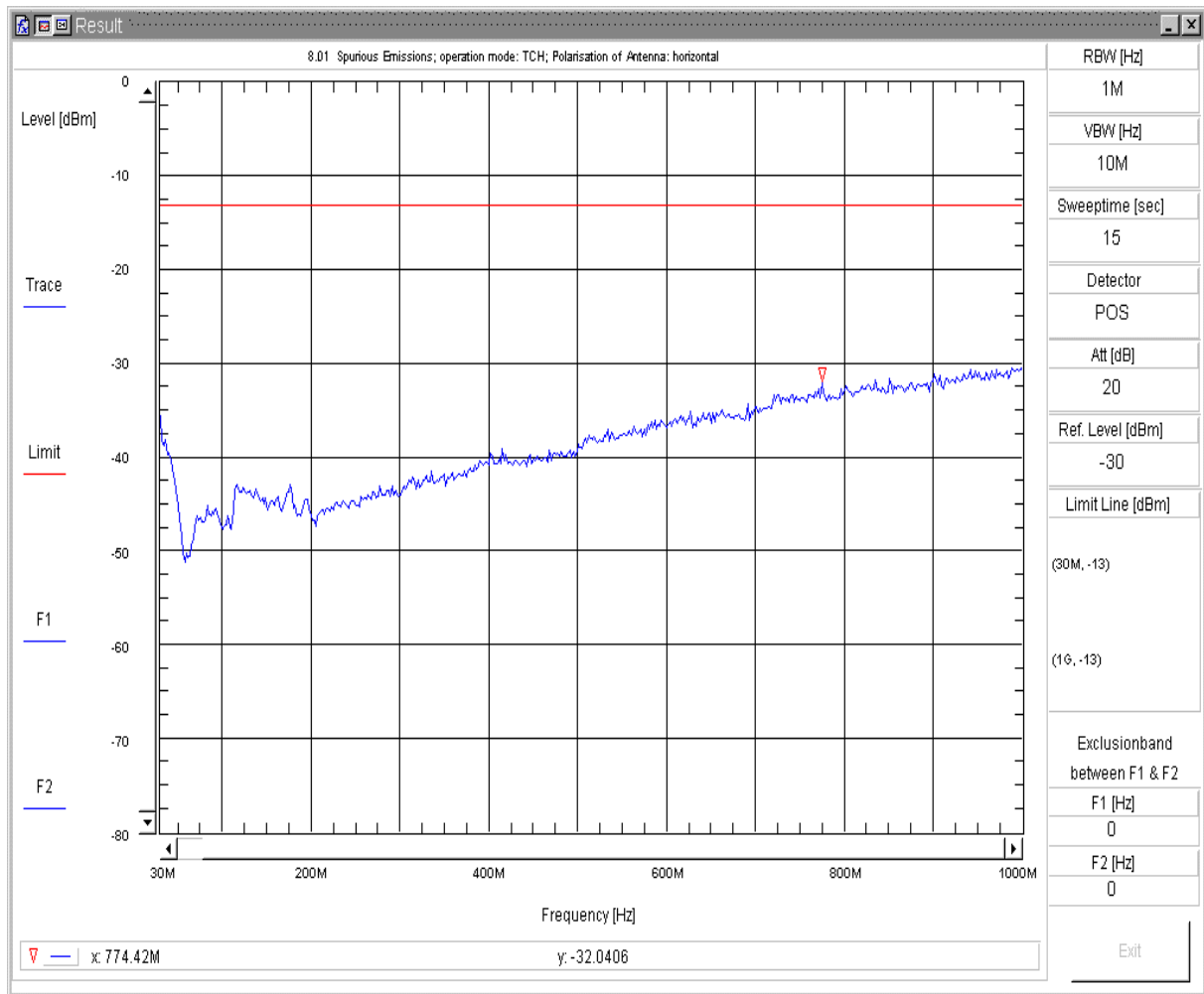
8.50 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_22.917_(GSM_850)\TD_TX_V
 Sweepnr: Sweep5
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_22.917_(GSM_850) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 251
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 17:42:37ff

Spurious Emissions V7.2.5

1.6. Spurious emissions radiated – GSM1900 Mode

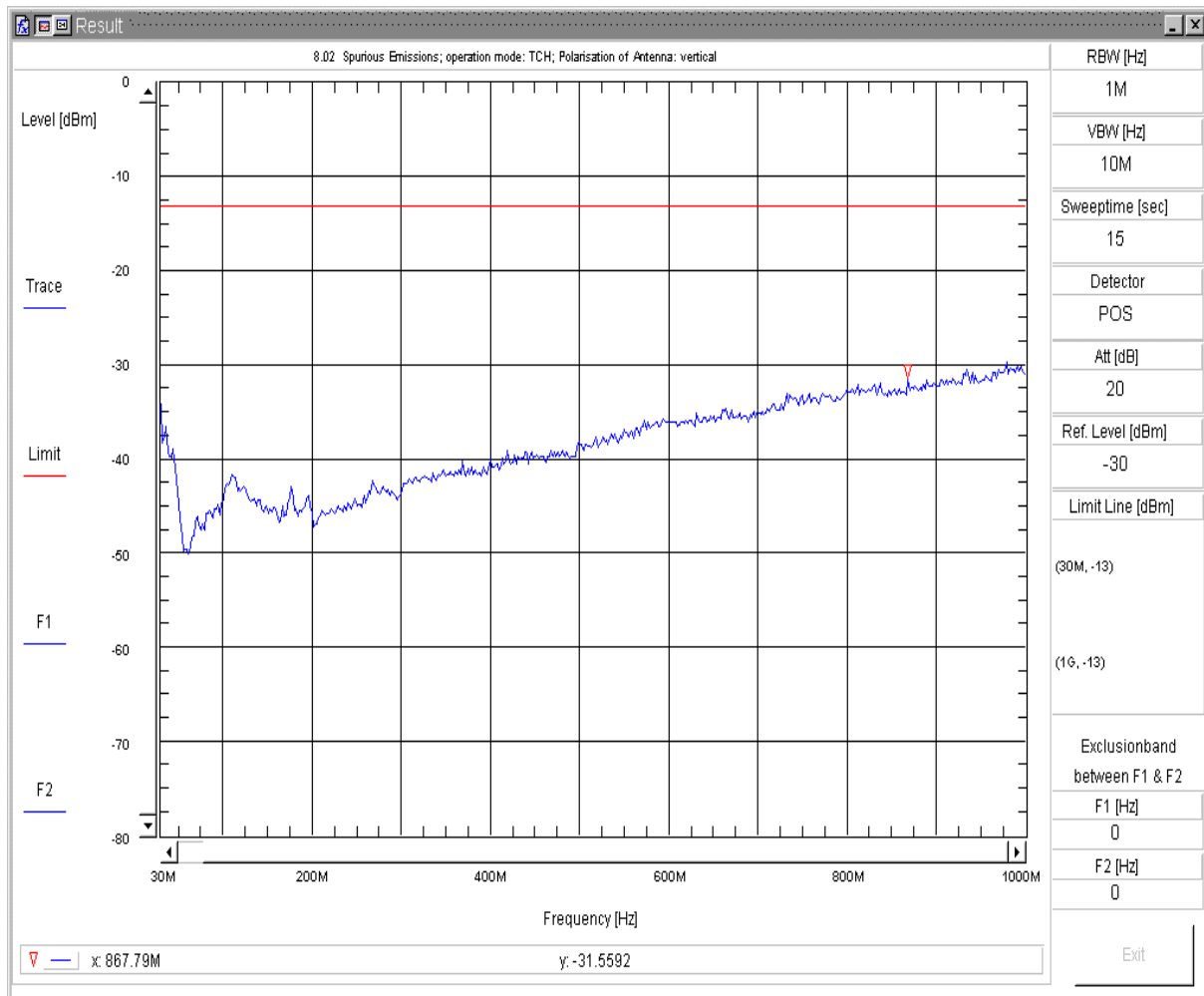


8.01 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep1
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 512
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 09:24:14pff

Spurious Emissions V7.2.5

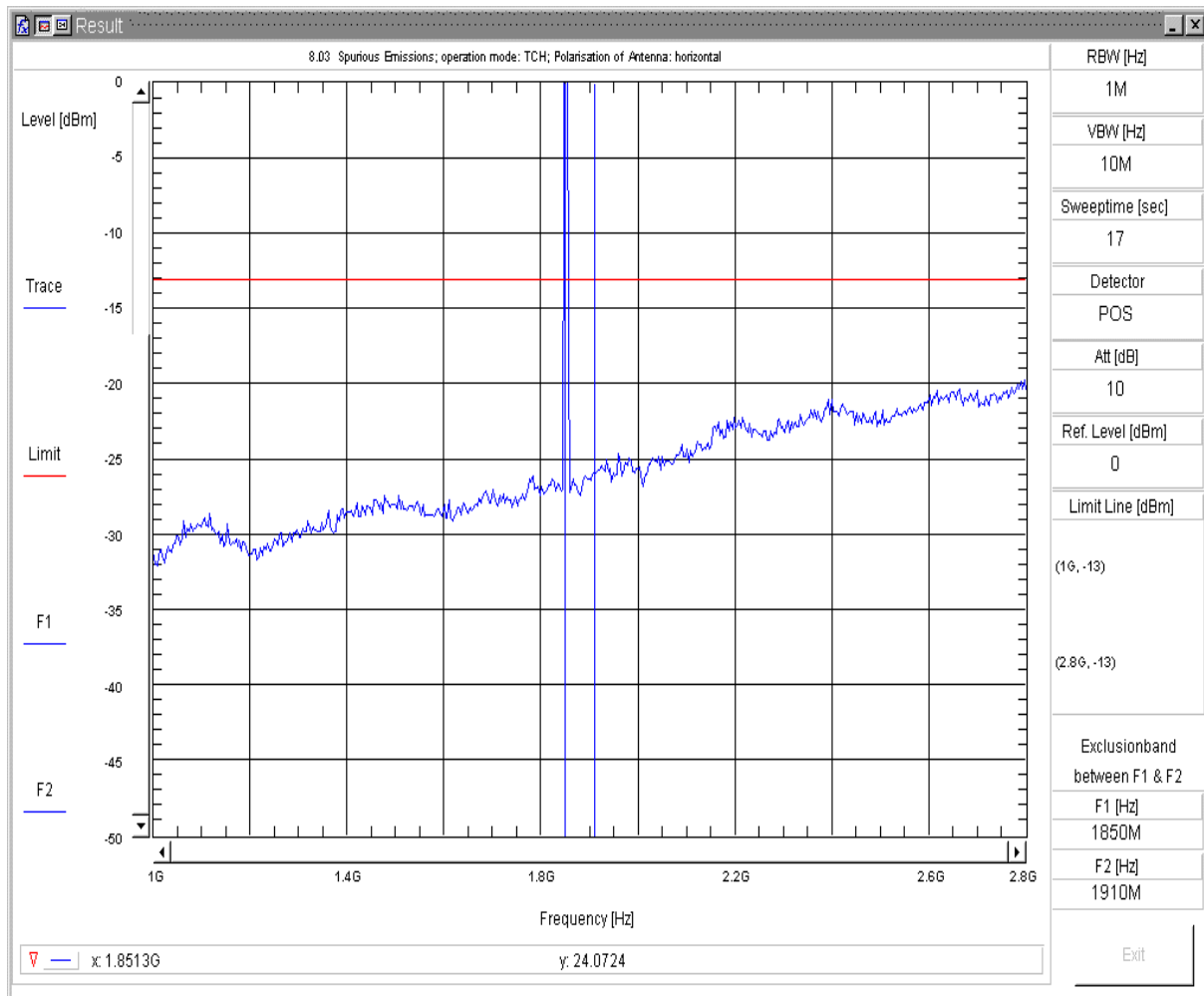


8.02 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep1
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 512
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 09:28:39ppf

Spurious Emissions V7.2.5

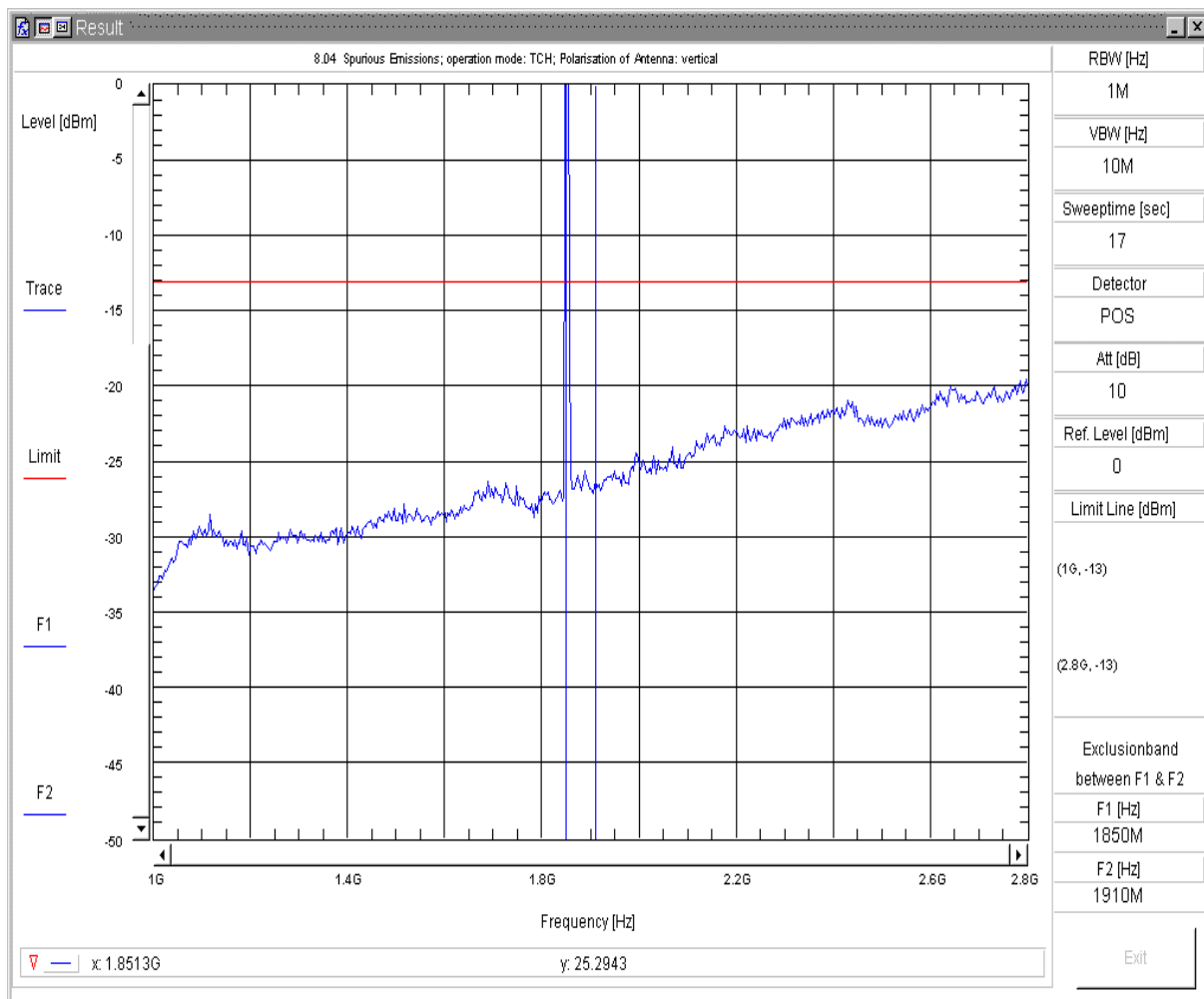


8.03 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep2
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 512
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 09:32:46fp

Spurious Emissions V7.2.5

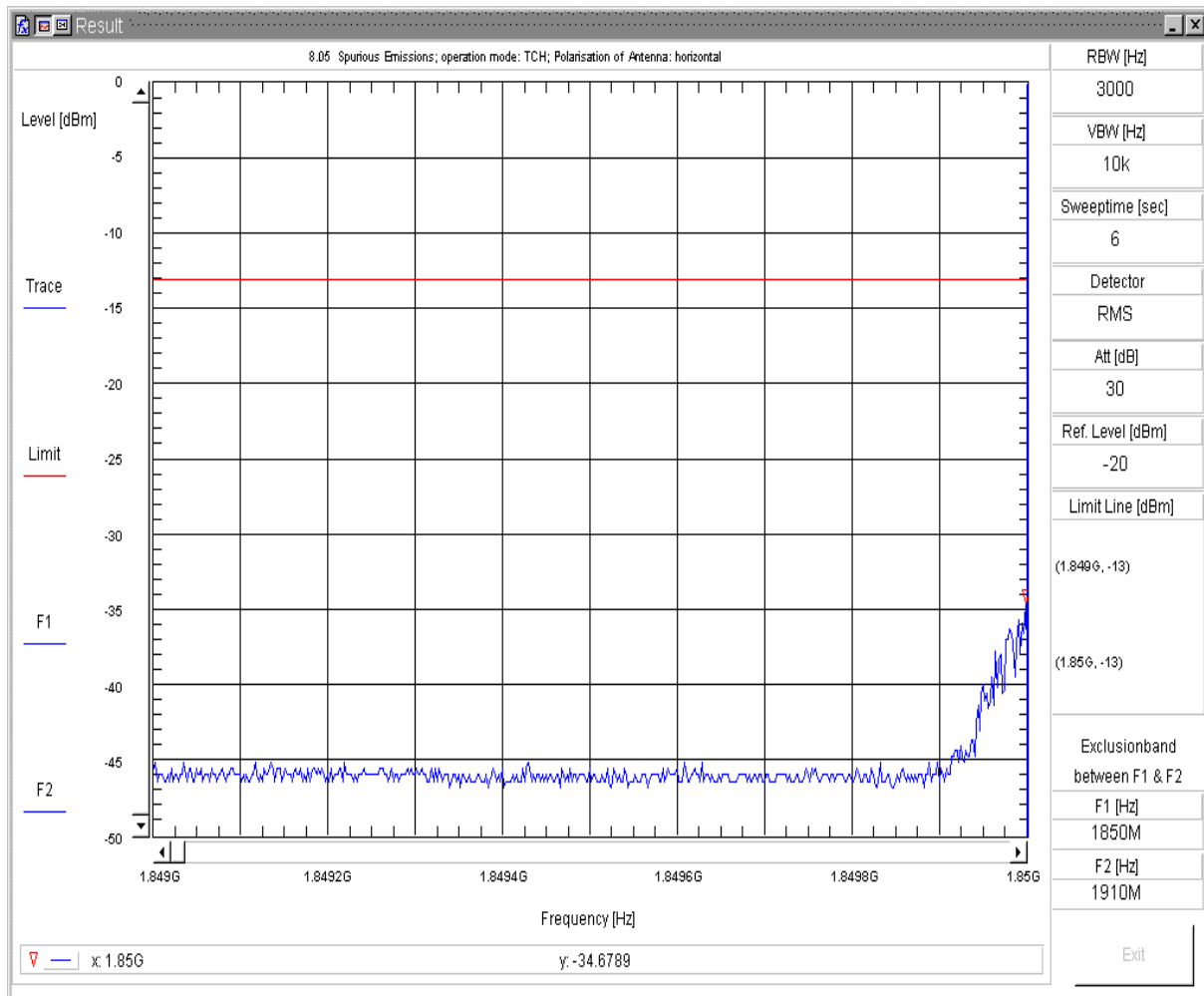


8.04 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep2
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 512
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 09:40:43pf

Spurious Emissions V7.2.5

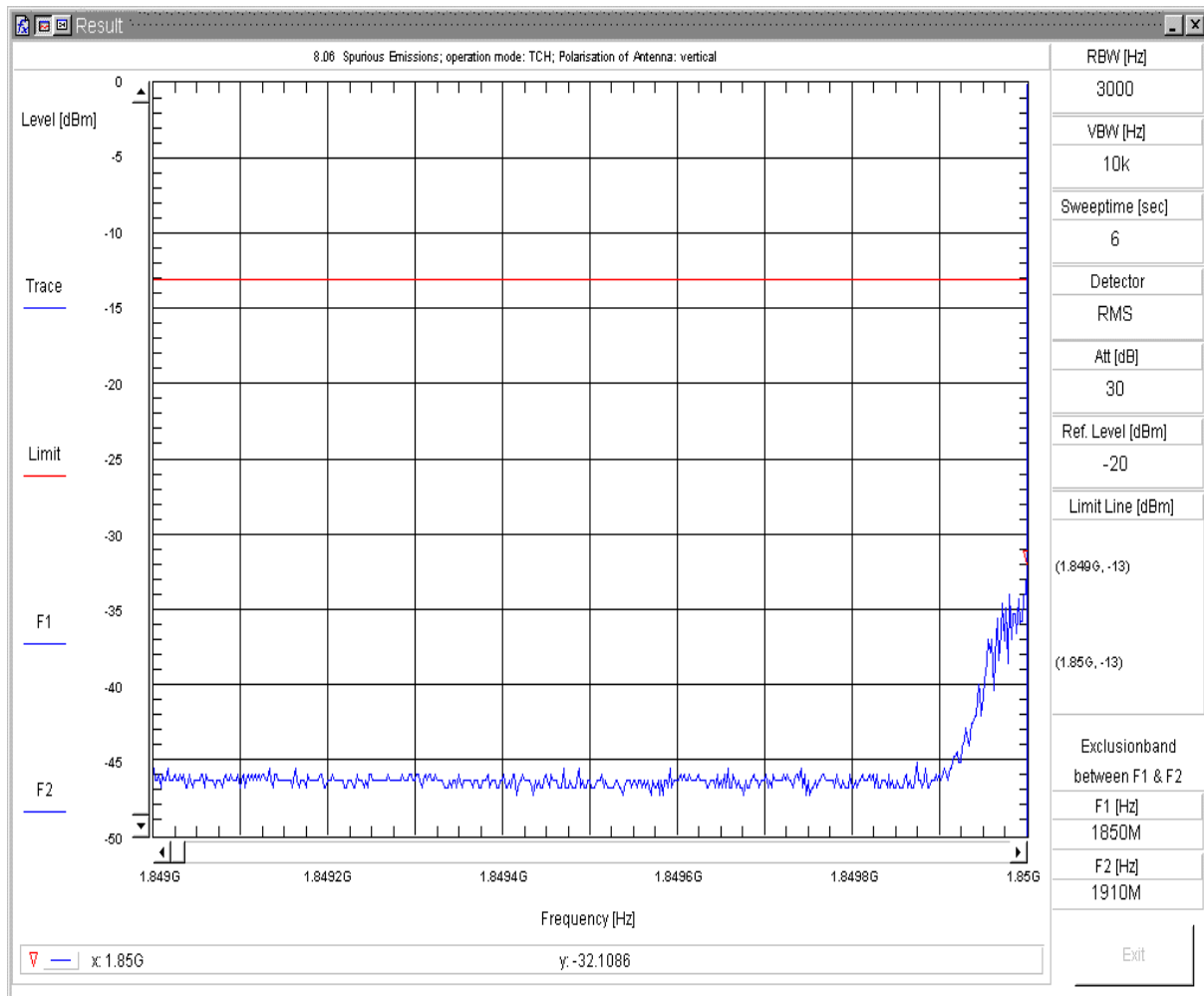


8.05 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep3
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 512
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 09:47:50fp

Spurious Emissions V7.2.5

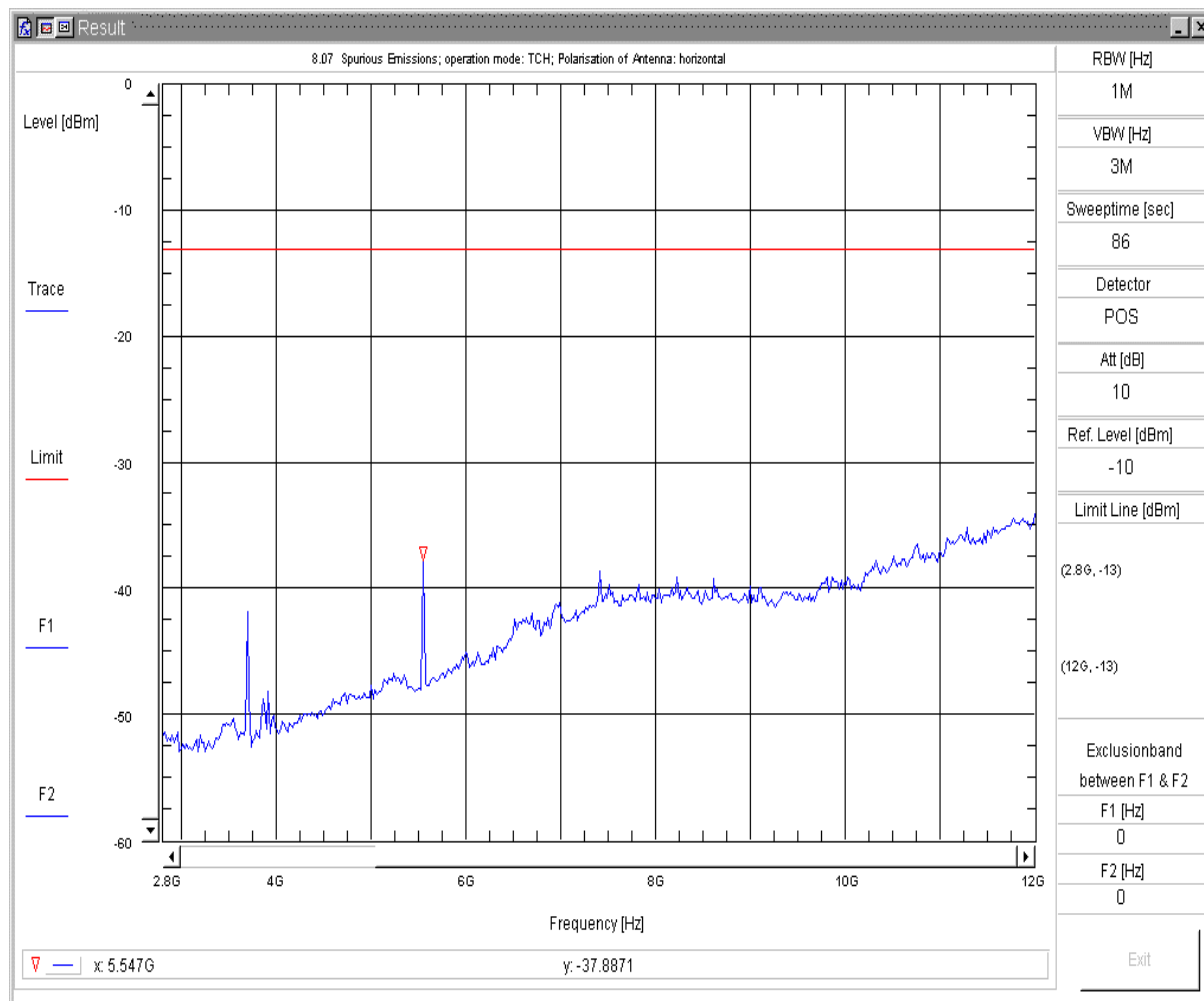


8.06 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep3
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 512
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 09:51:58pf

Spurious Emissions V7.2.5

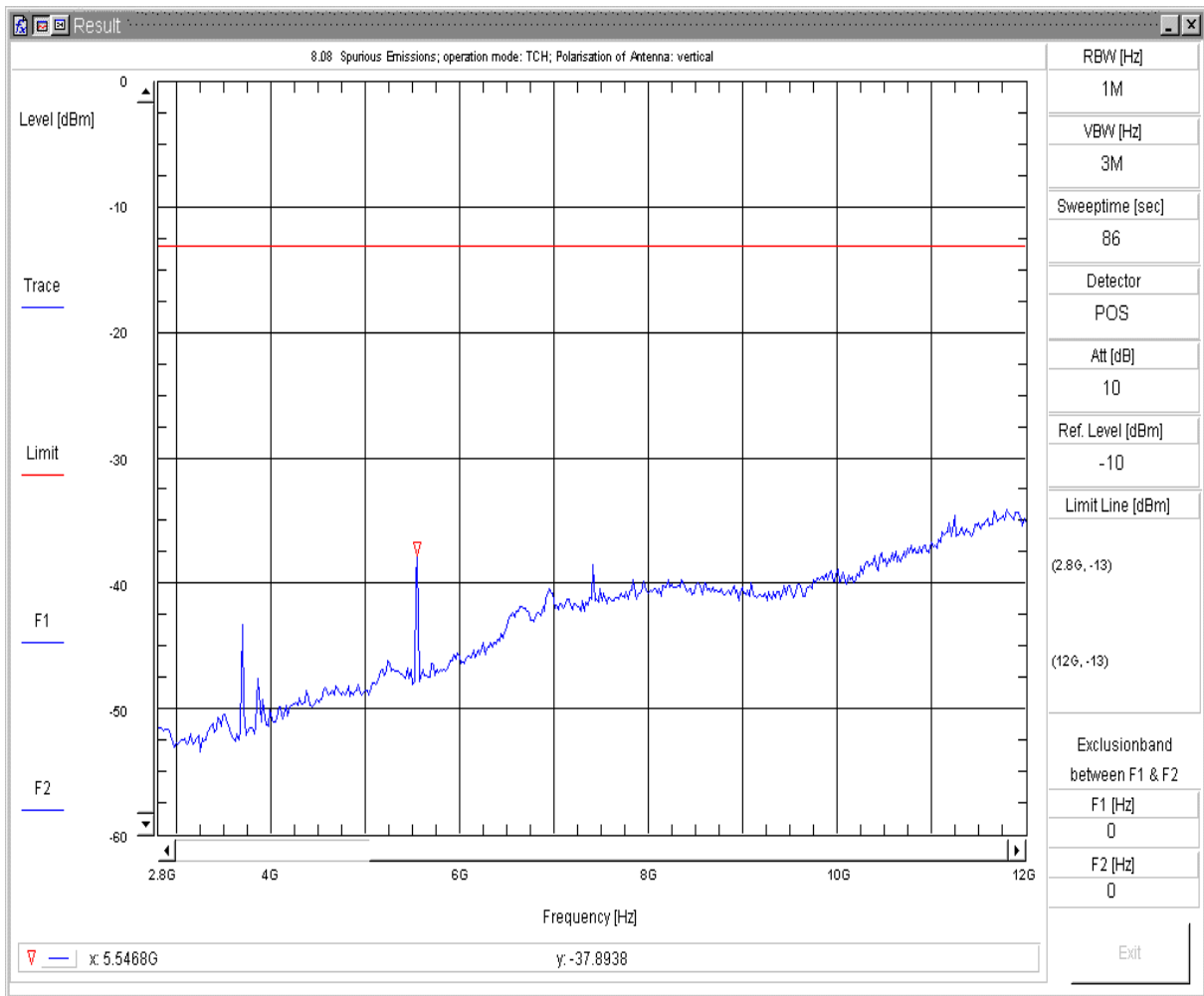


8.07 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep5
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 512
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 09:56:24pp

Spurious Emissions V7.2.5

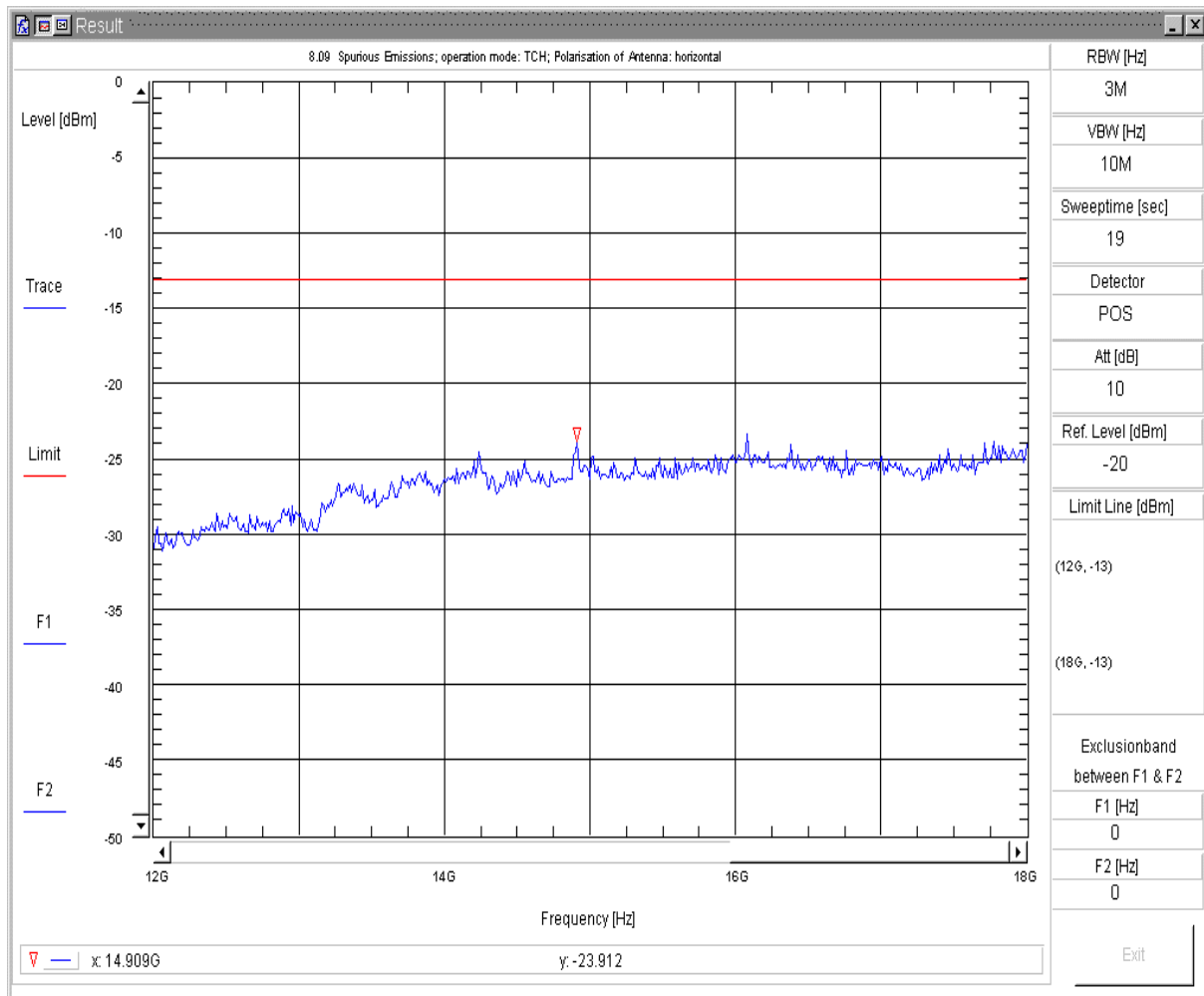


8.08 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep5
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 512
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 10:19:15pp

Spurious Emissions V7.2.5

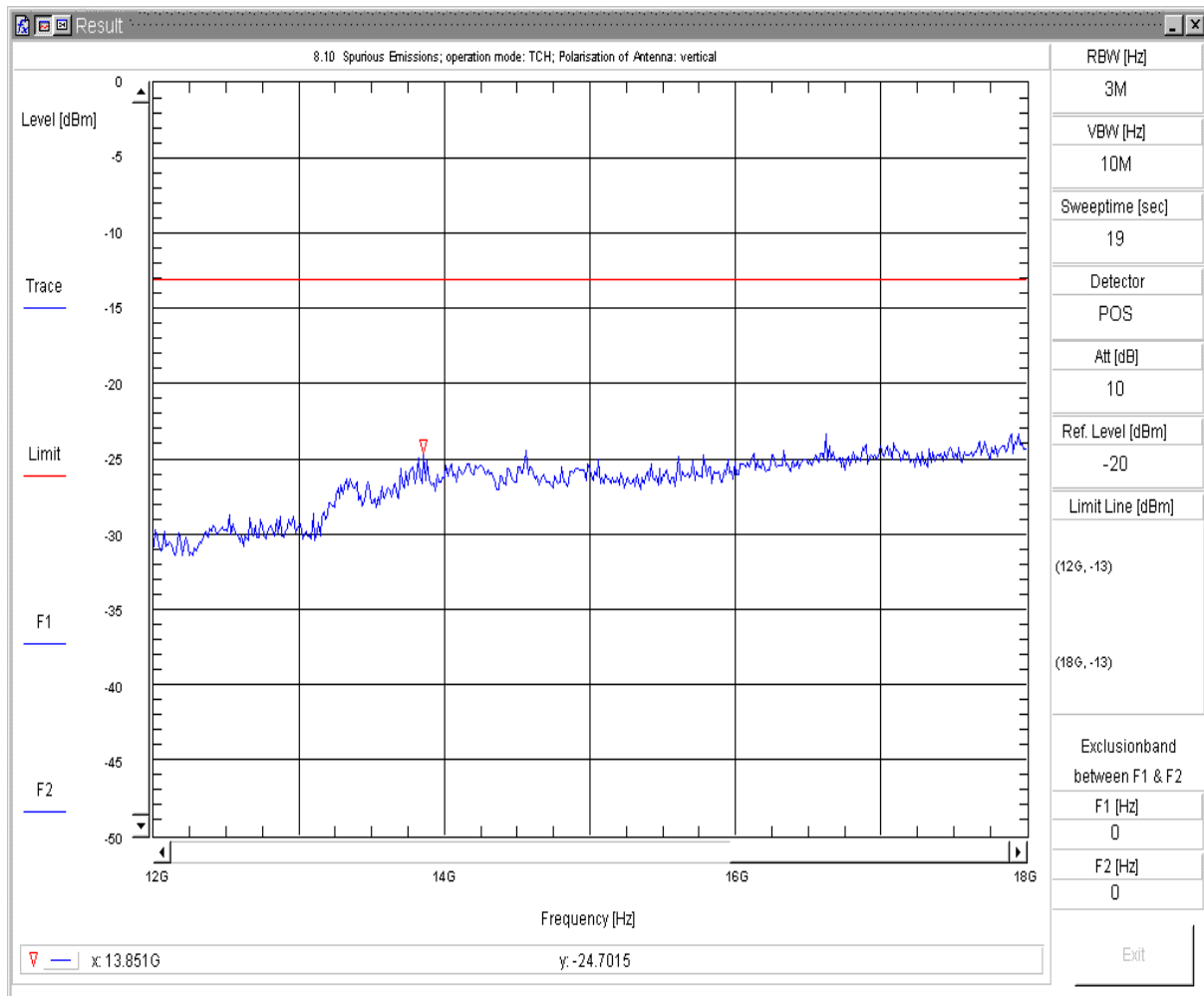


8.09 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep6
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 512
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 10:42:15pp

Spurious Emissions V7.2.5

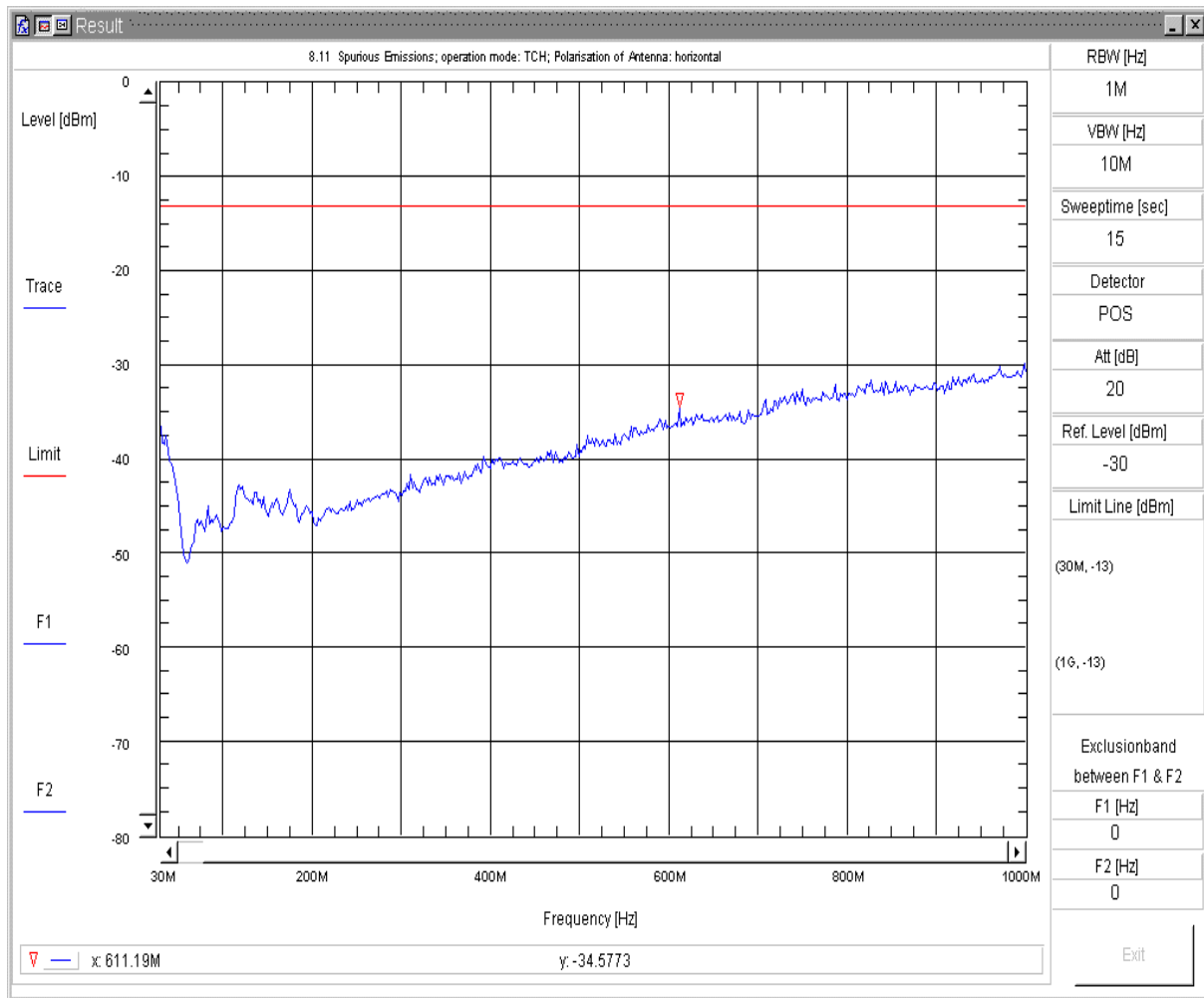


8.10 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep6
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 512
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 10:49:55pp

Spurious Emissions V7.2.5

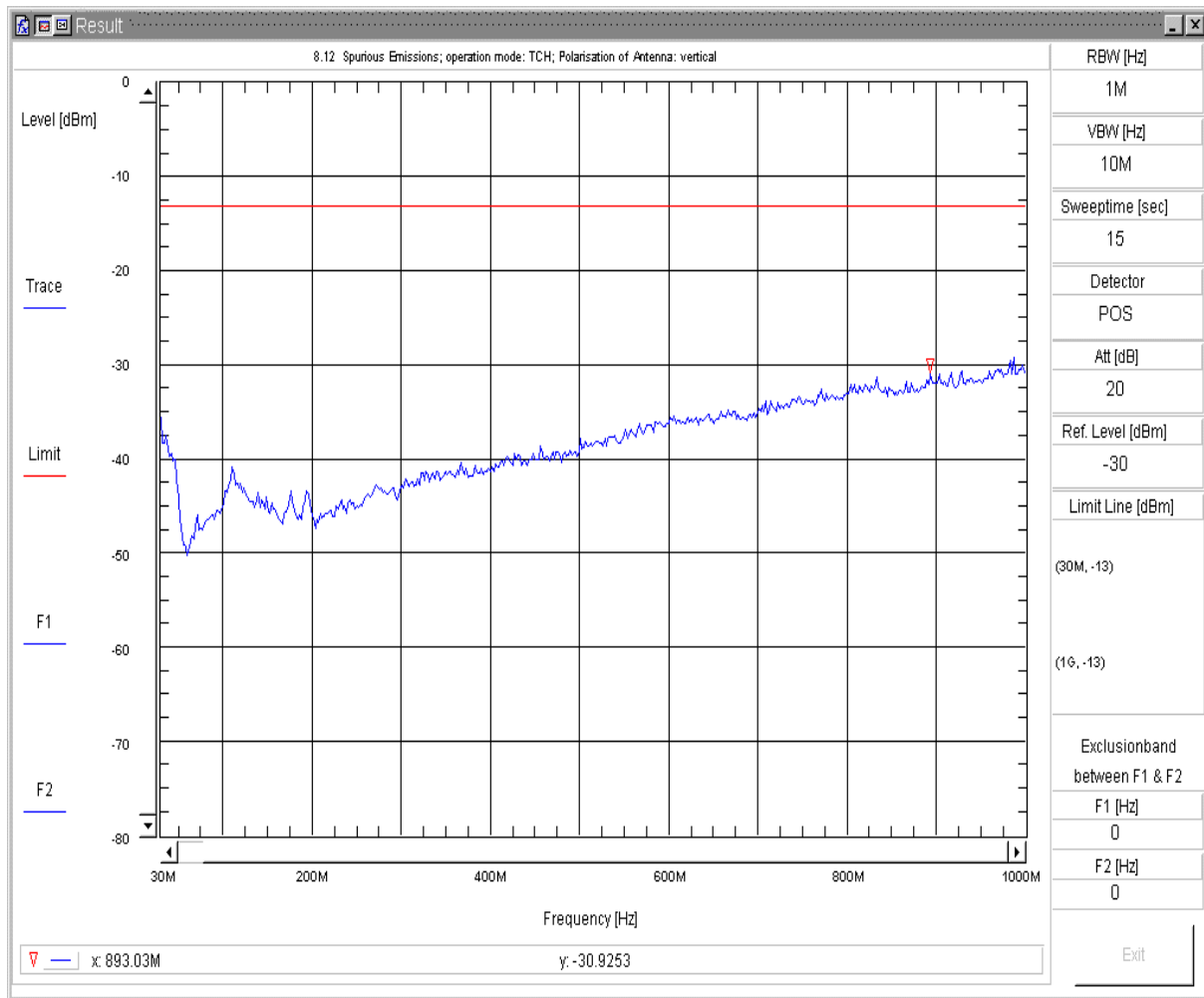


8.11 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep1
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 661
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 10:57:32pfp

Spurious Emissions V7.2.5

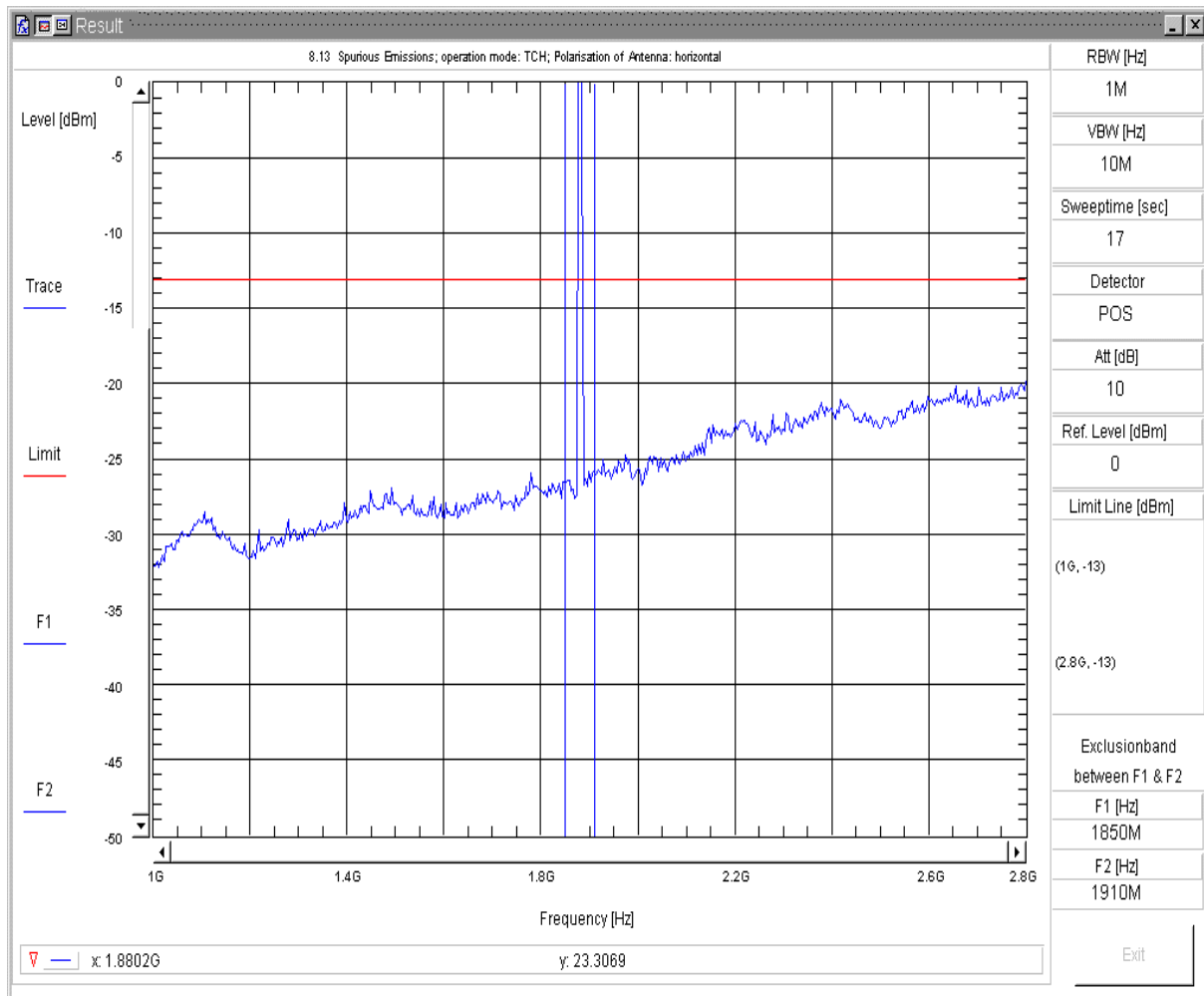


8.12 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep1
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 661
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 11:02:39ppf

Spurious Emissions V7.2.5

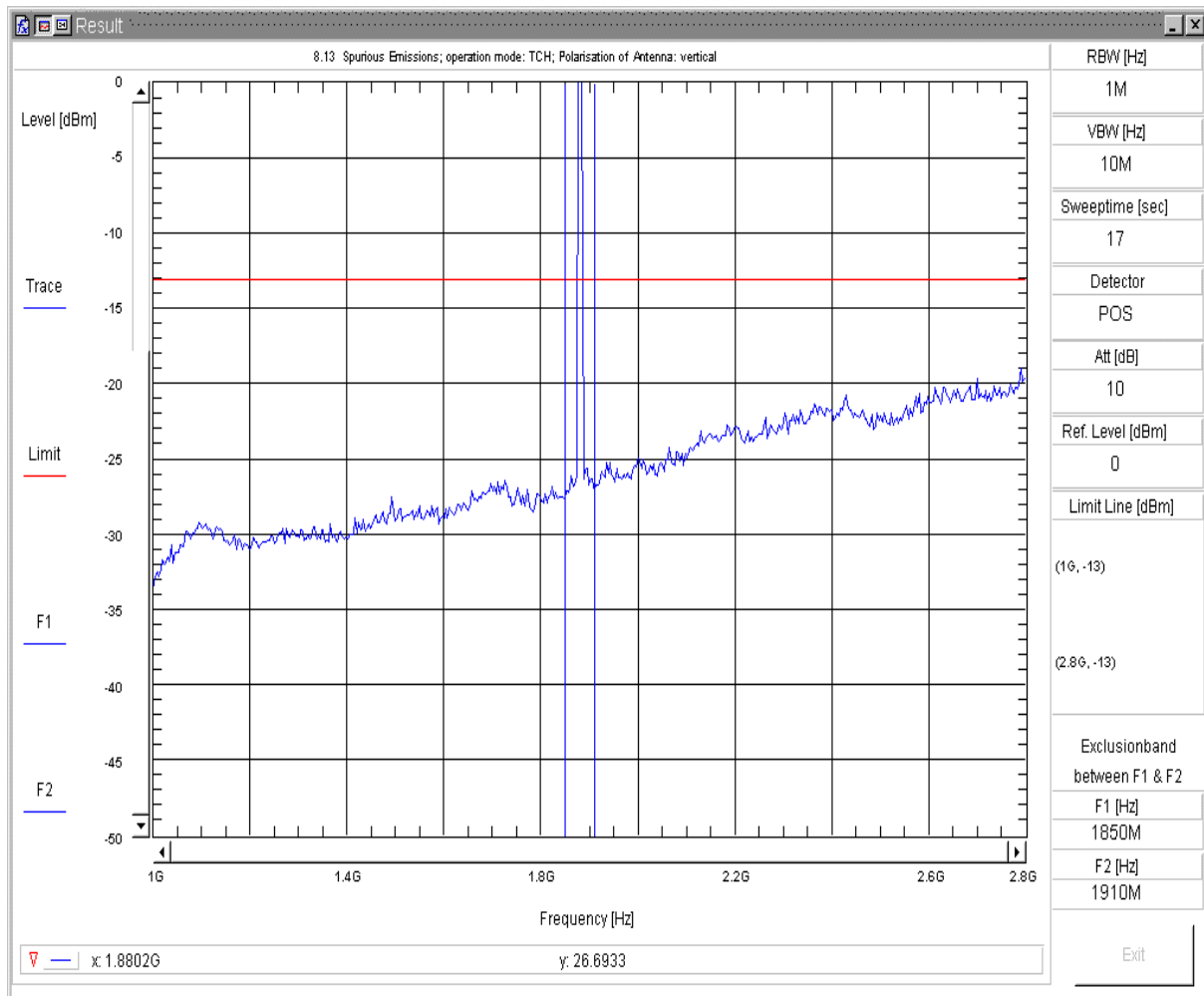


8.13 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep2
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 661
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 11:16:01fp

Spurious Emissions V7.2.5

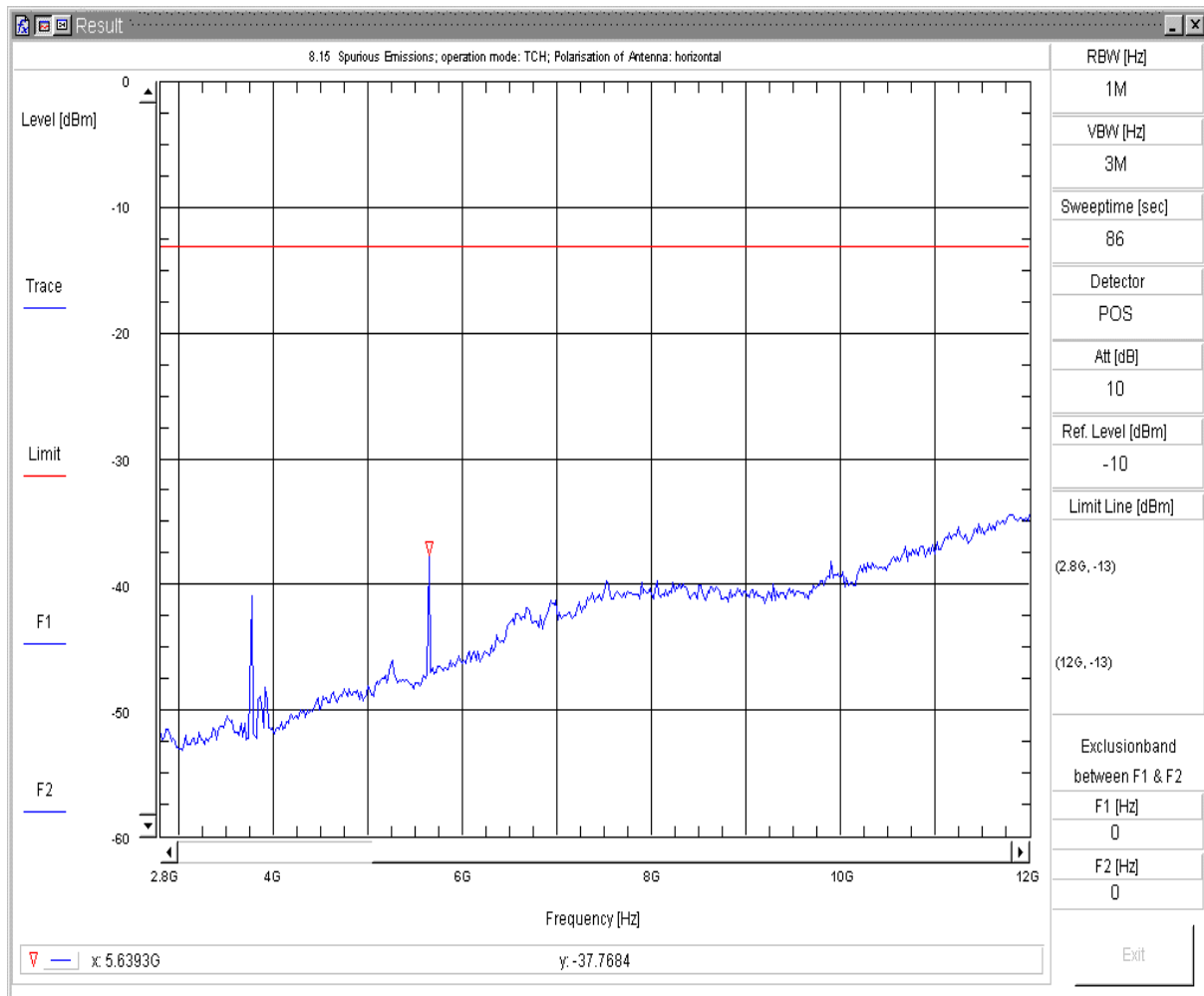


8.14 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep2
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 661
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 11:07:40pf

Spurious Emissions V7.2.5

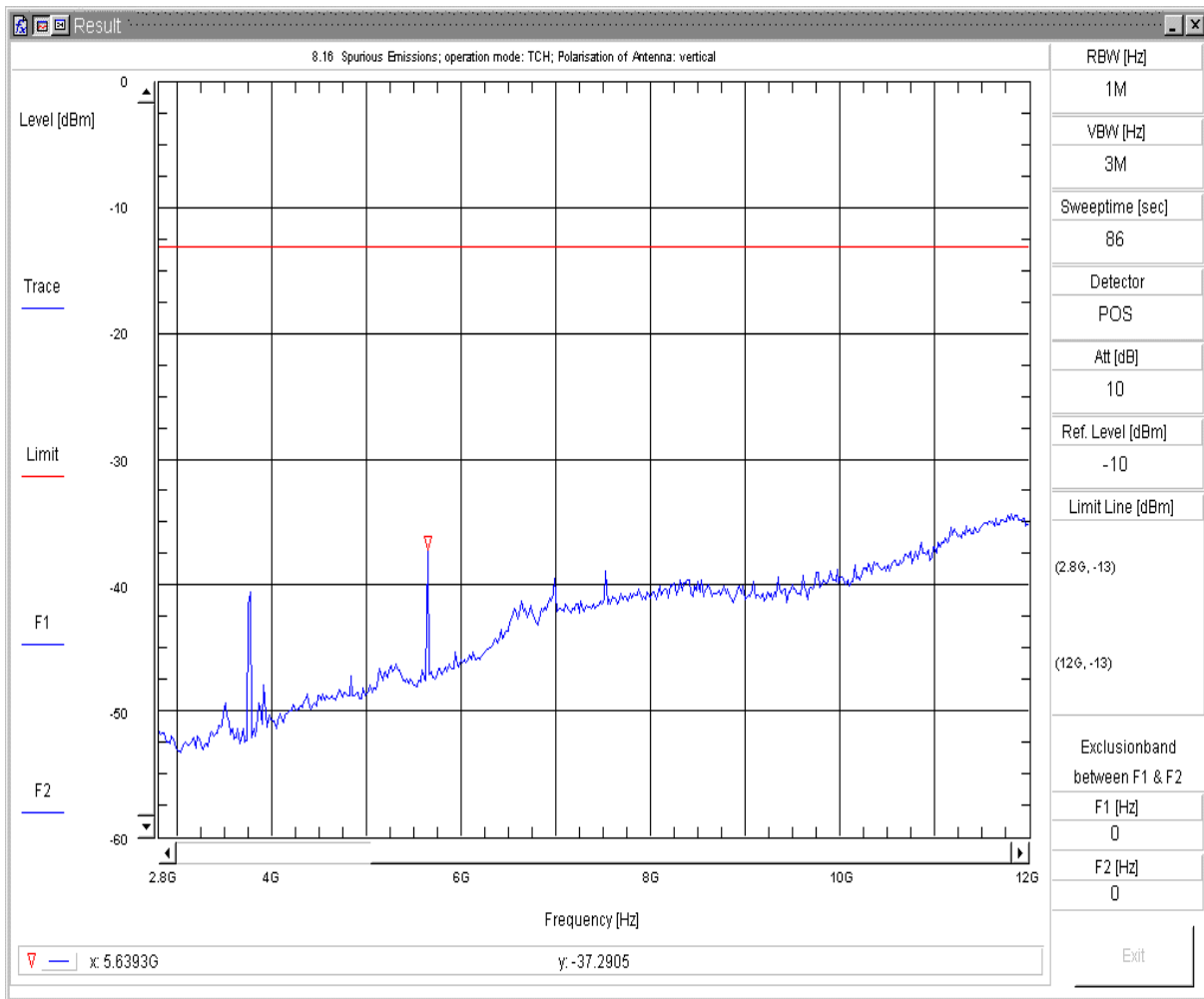


8.15 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep5
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 661
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 11:23:20pp

Spurious Emissions V7.2.5

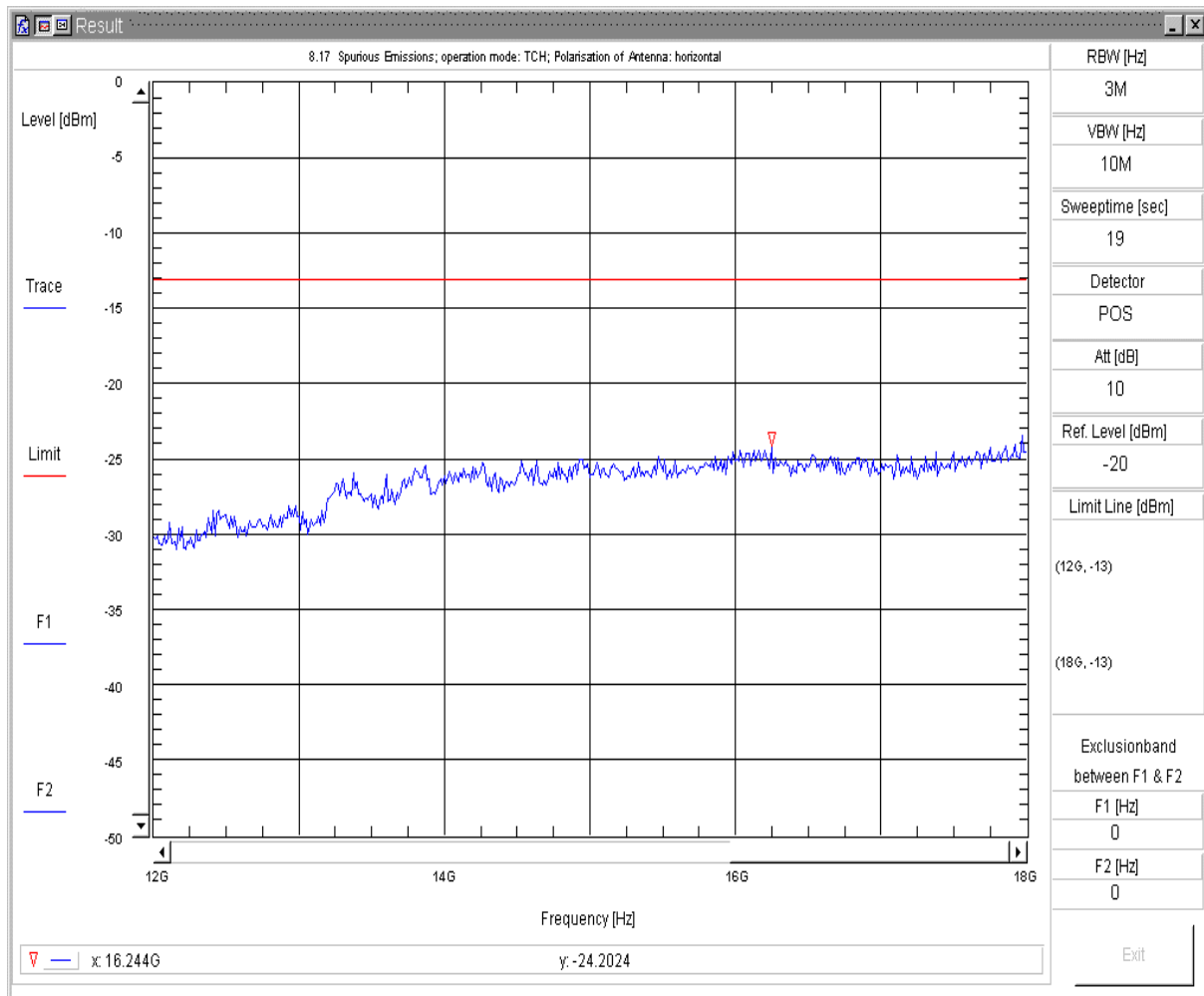


8.16 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep5
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 661
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 11:46:14pp

Spurious Emissions V7.2.5

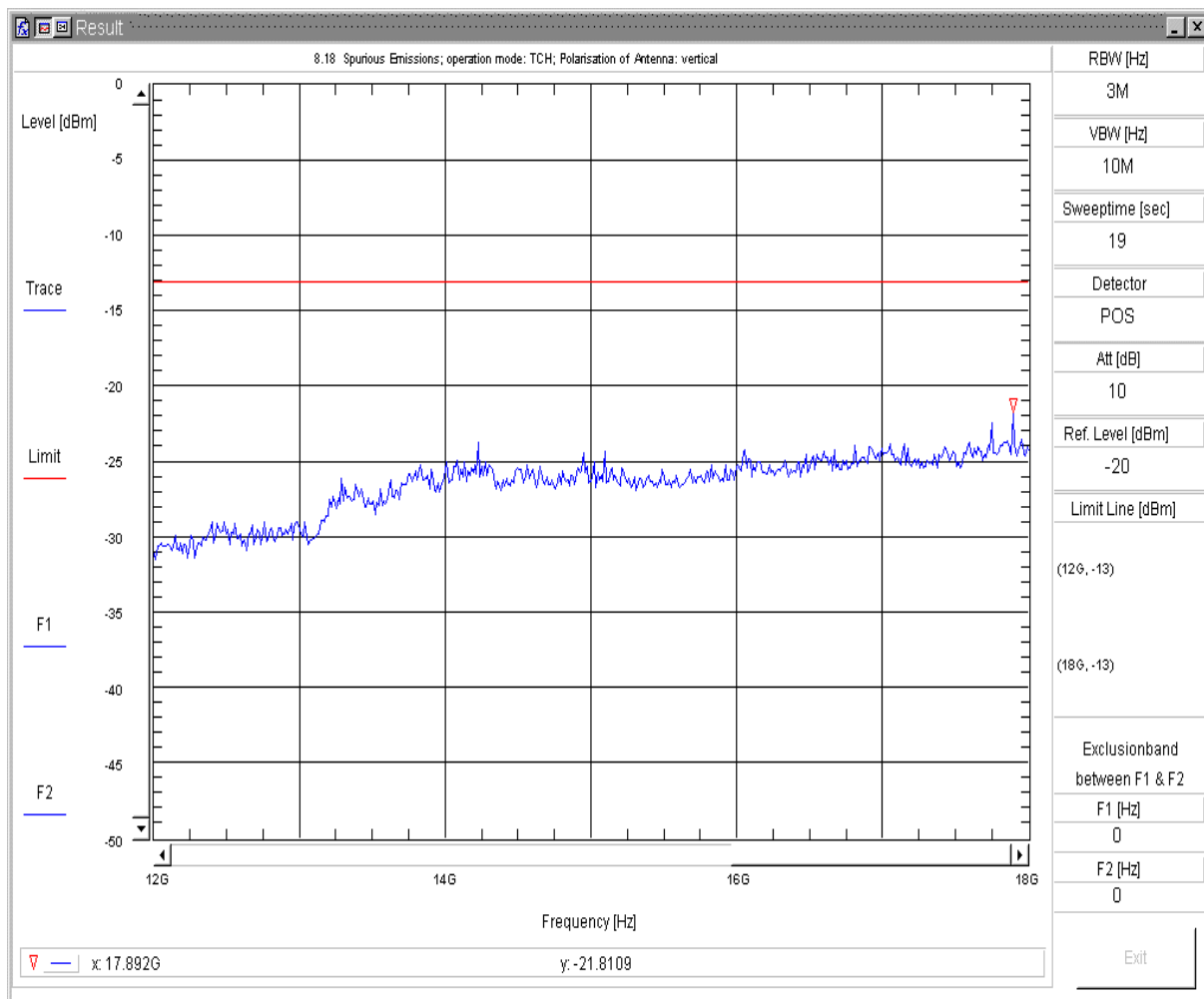


8.17 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep6
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 661
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 12:09:04pp

Spurious Emissions V7.2.5

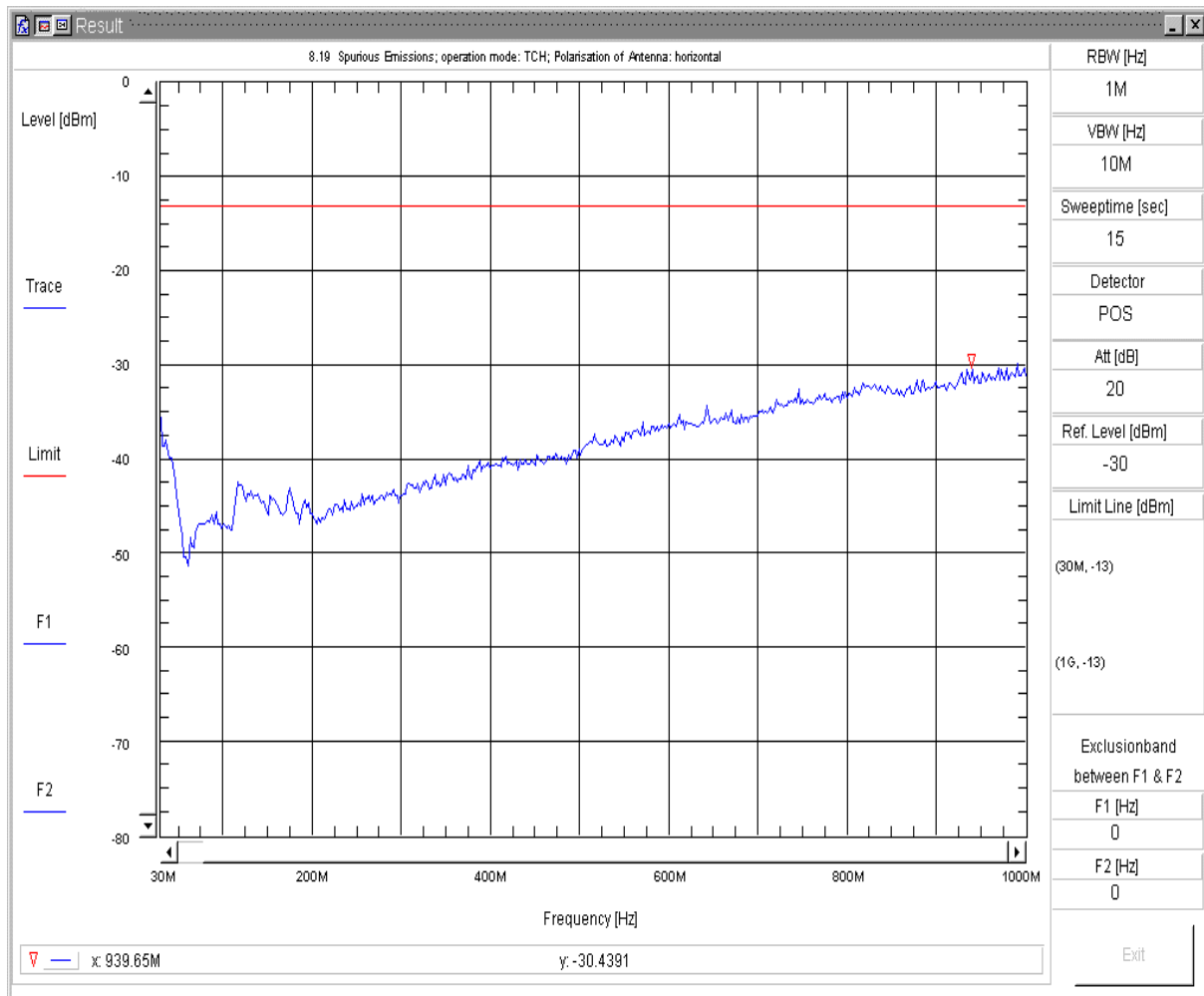


8.18 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep6
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 661
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 12:16:21pp

Spurious Emissions V7.2.5

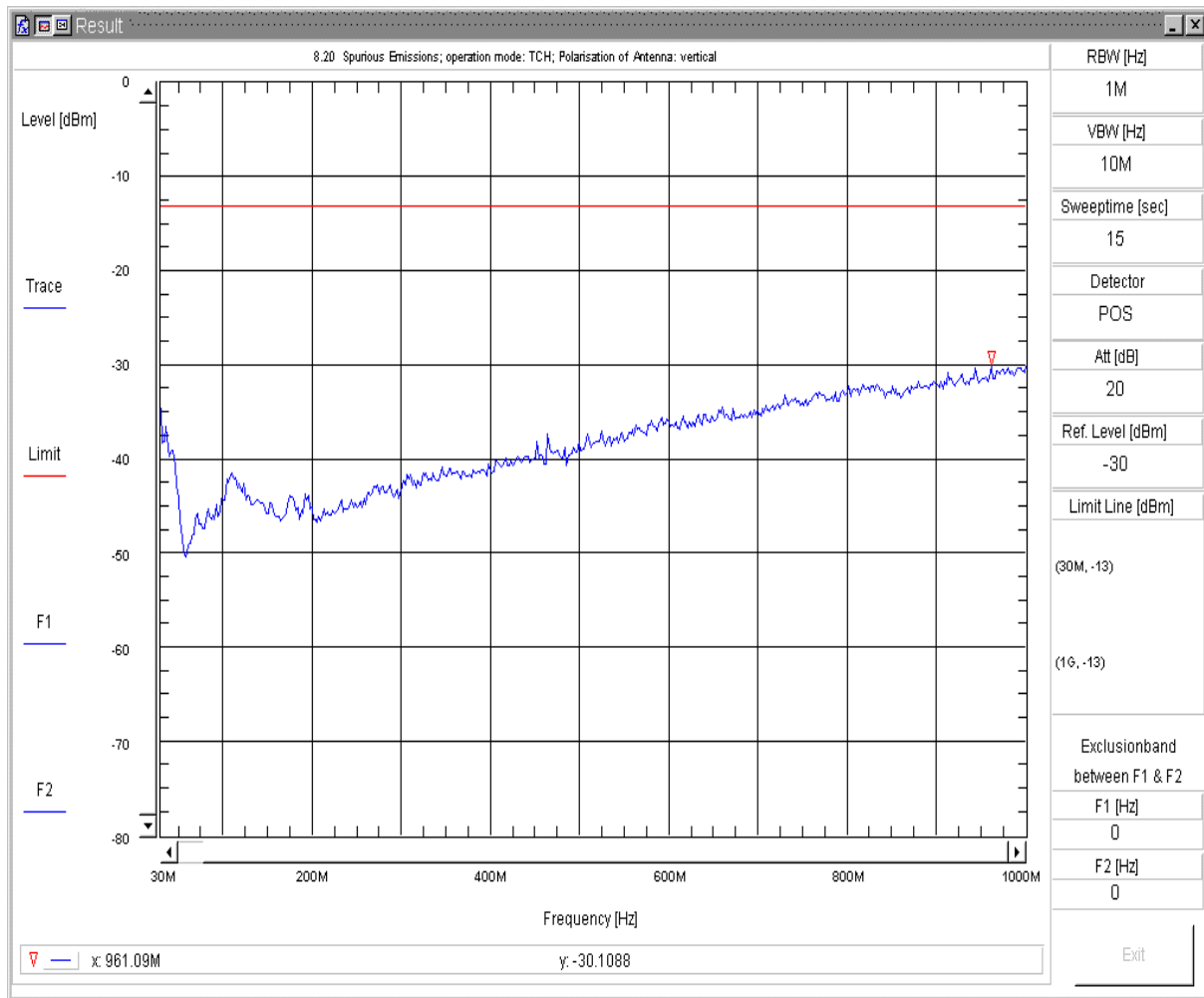


8.19 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep1
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 810
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 12:23:55pfp

Spurious Emissions V7.2.5

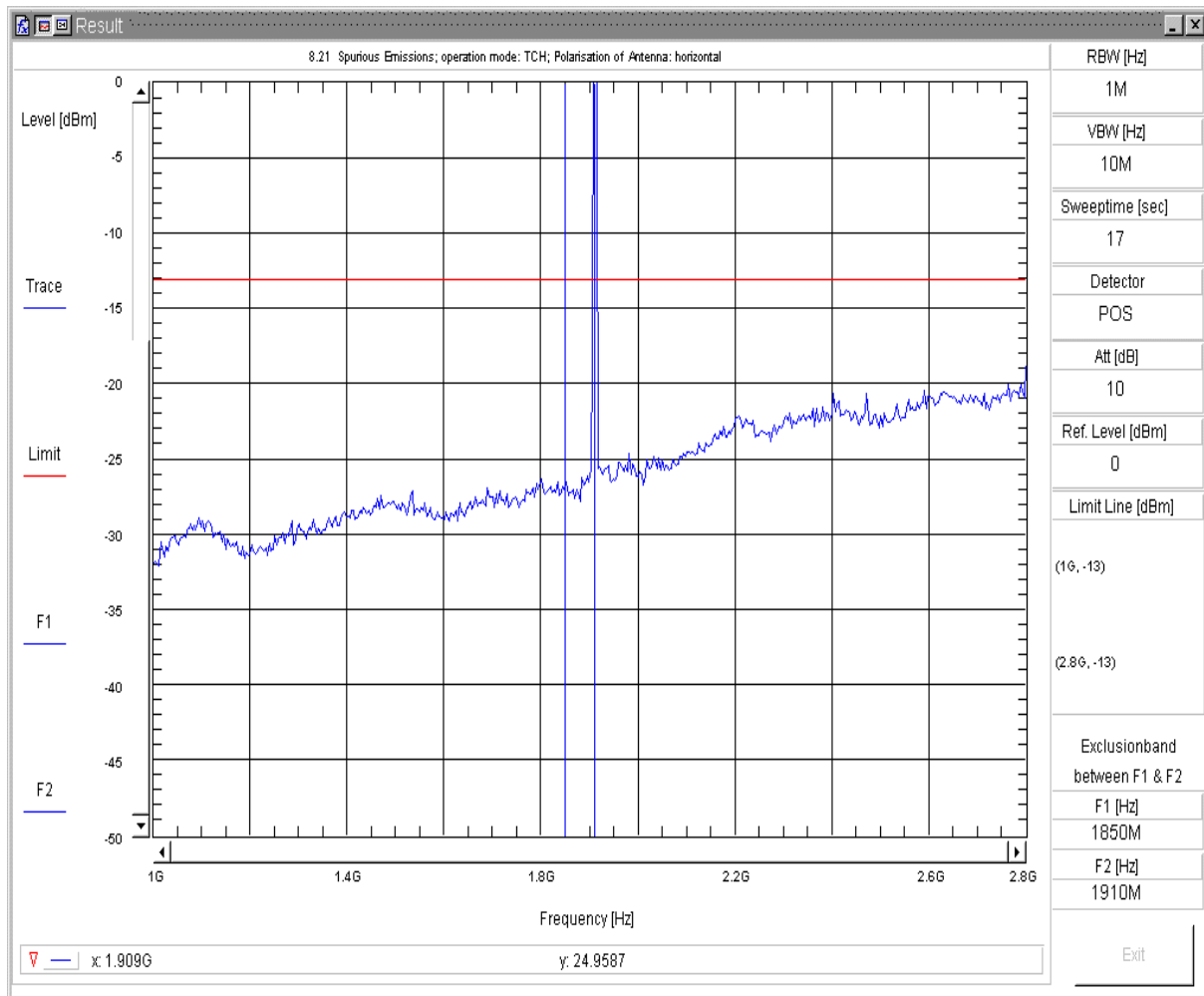


8.20 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep1
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 810
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 12:30:31ppf

Spurious Emissions V7.2.5

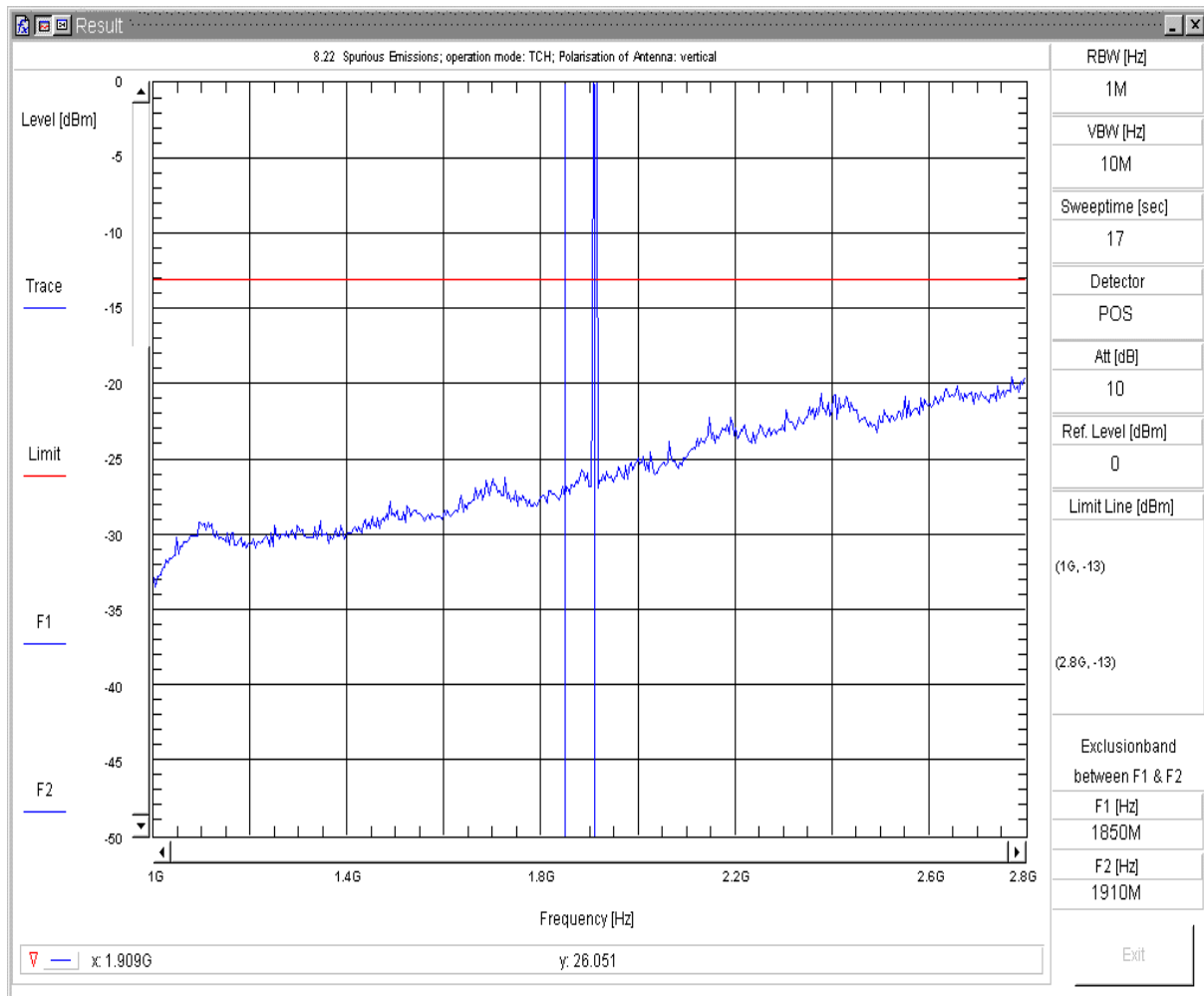


8.21 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep2
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 810
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 12:34:45fp

Spurious Emissions V7.2.5

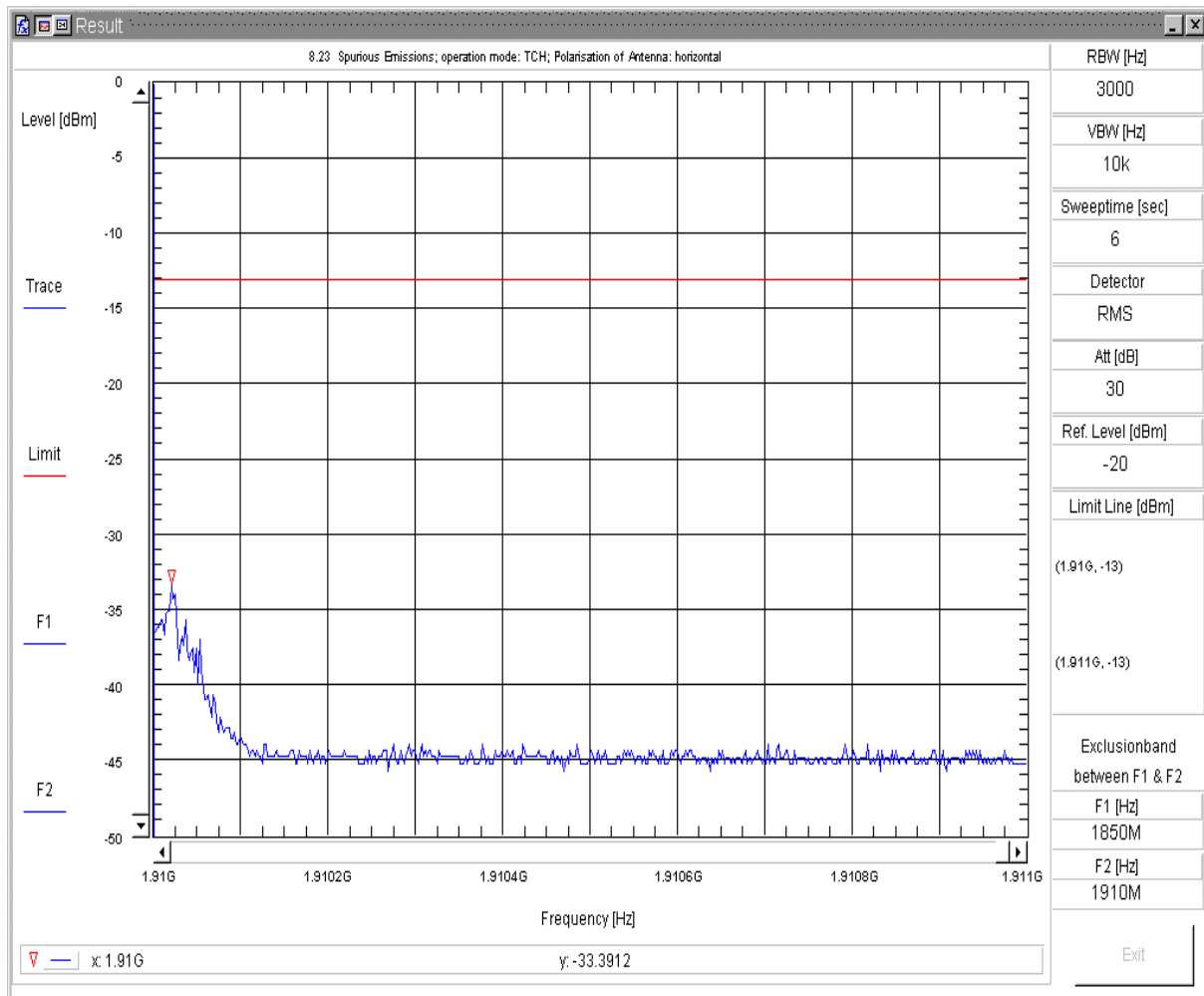


8.22 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep2
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 810
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 12:41:40pf

Spurious Emissions V7.2.5

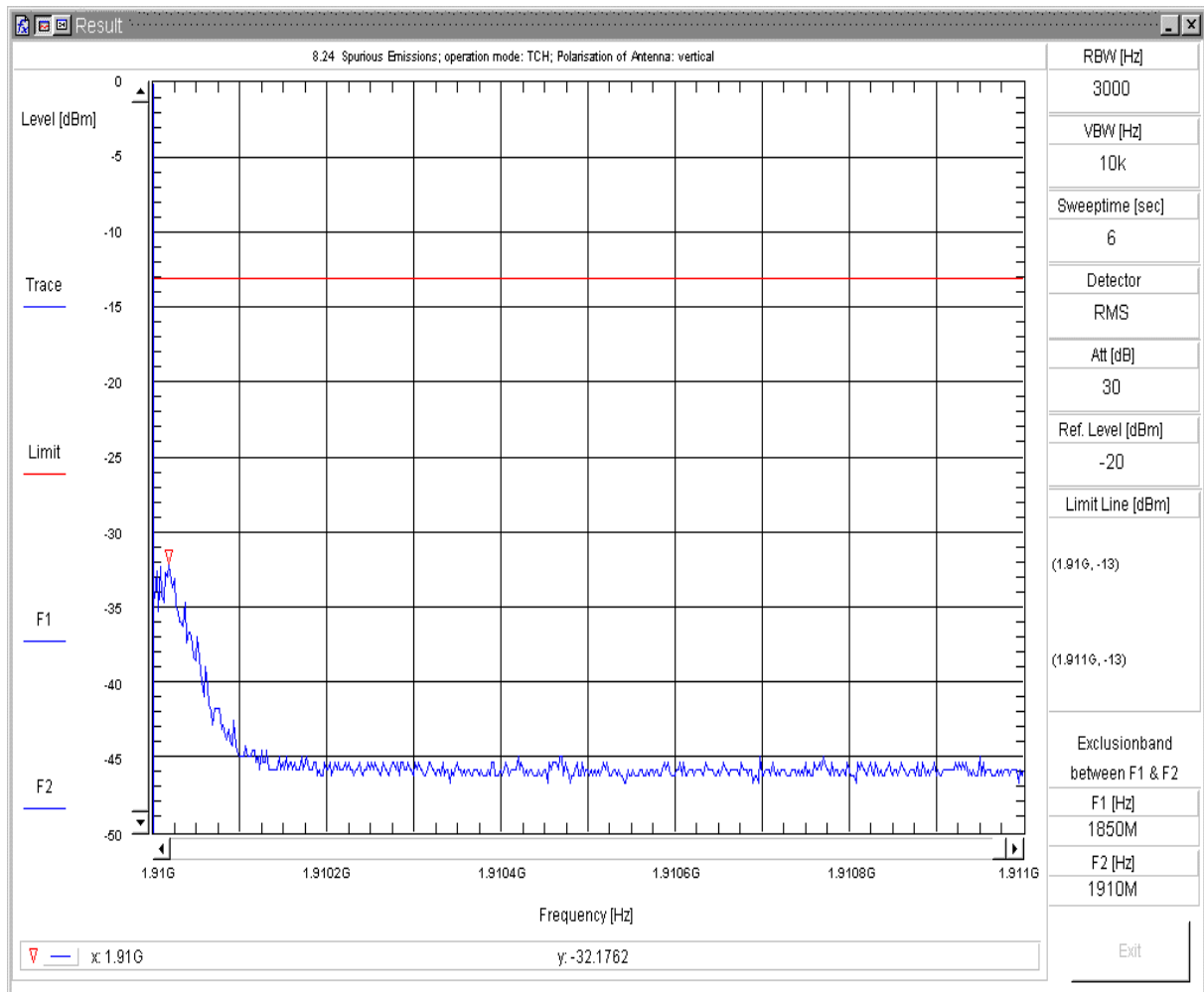


8.23 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep4
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 810
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 12:48:36fp

Spurious Emissions V7.2.5

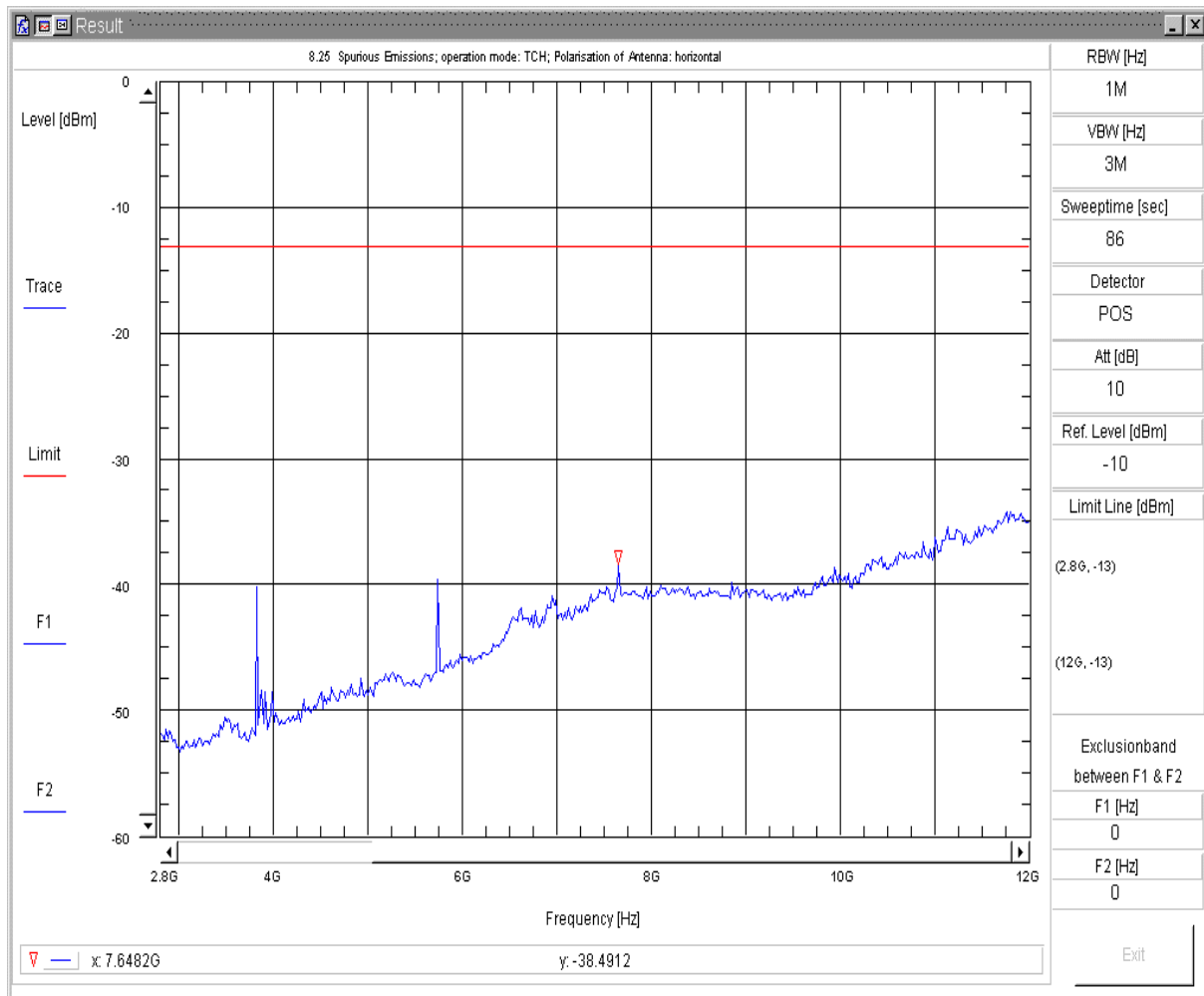


8.24 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep4
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info: DSB45+Adapter Board + Handset Votronic+RS232+USB-cable
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: channel 810
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 12:52:52pf

Spurious Emissions V7.2.5

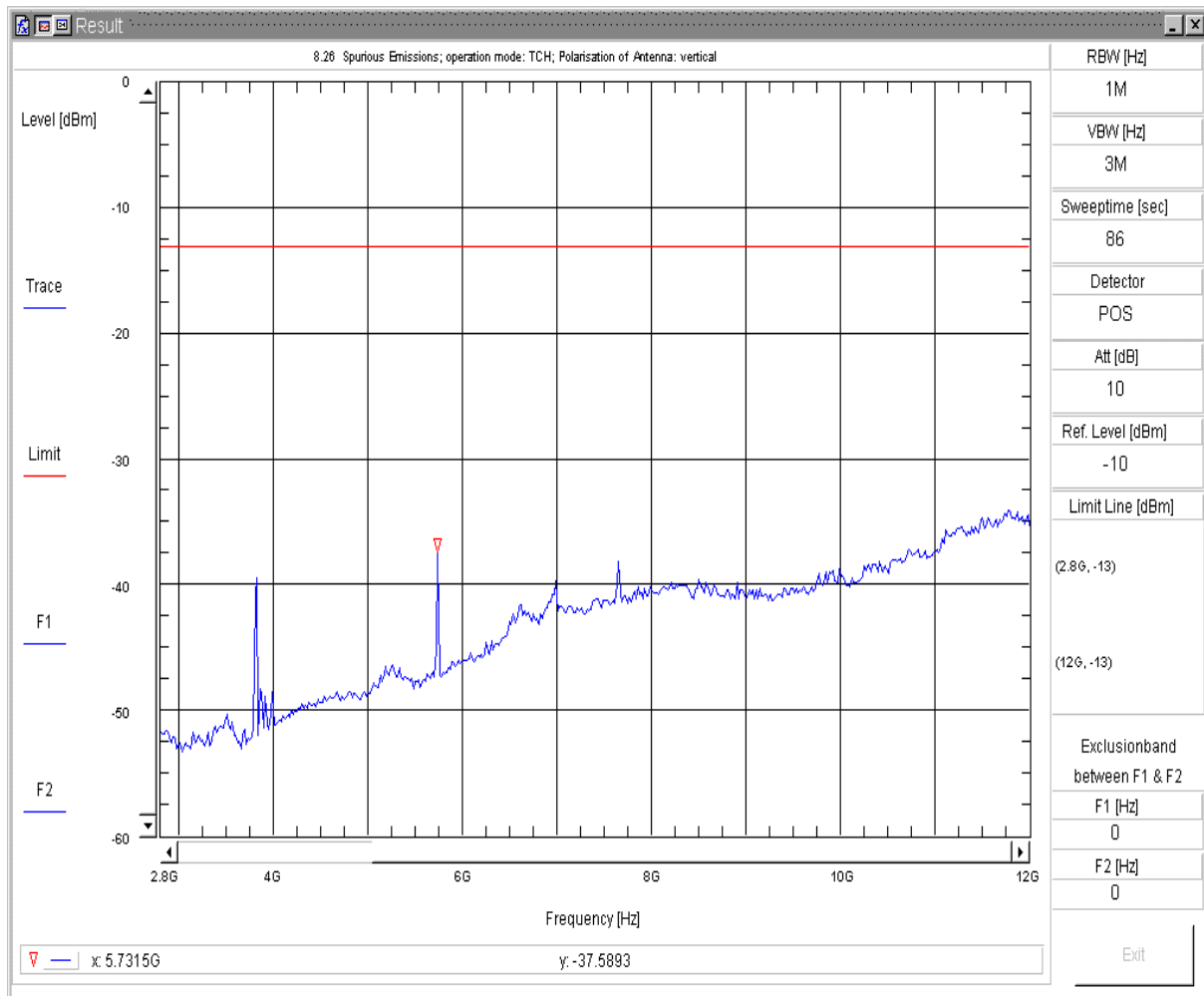


8.25 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep5
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: -ARFCN 810
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 12:57:09fp

Spurious Emissions V7.2.5

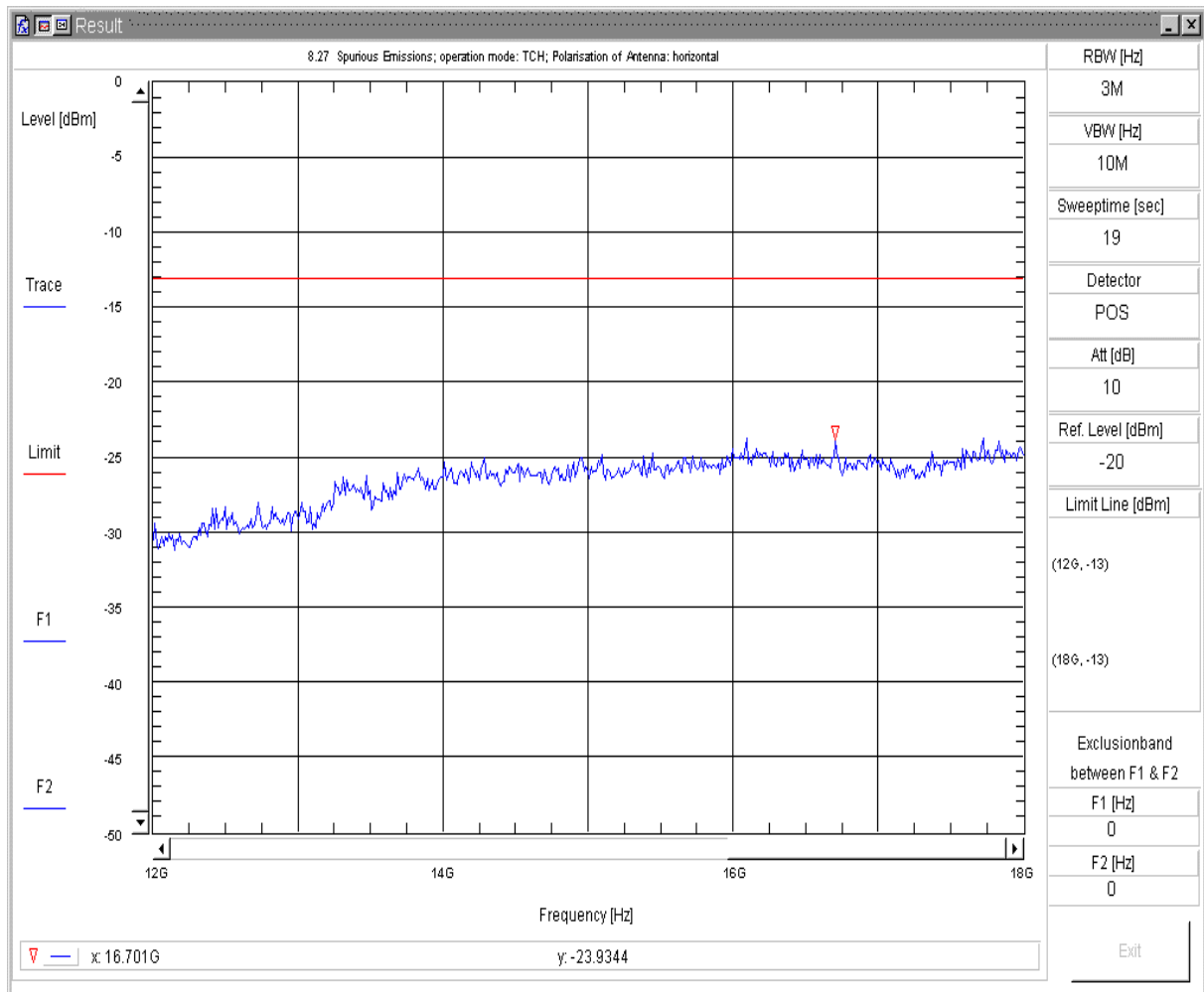


8.26 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep5
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 810
 Operator: Lor
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 13:20:40pp

Spurious Emissions V7.2.5

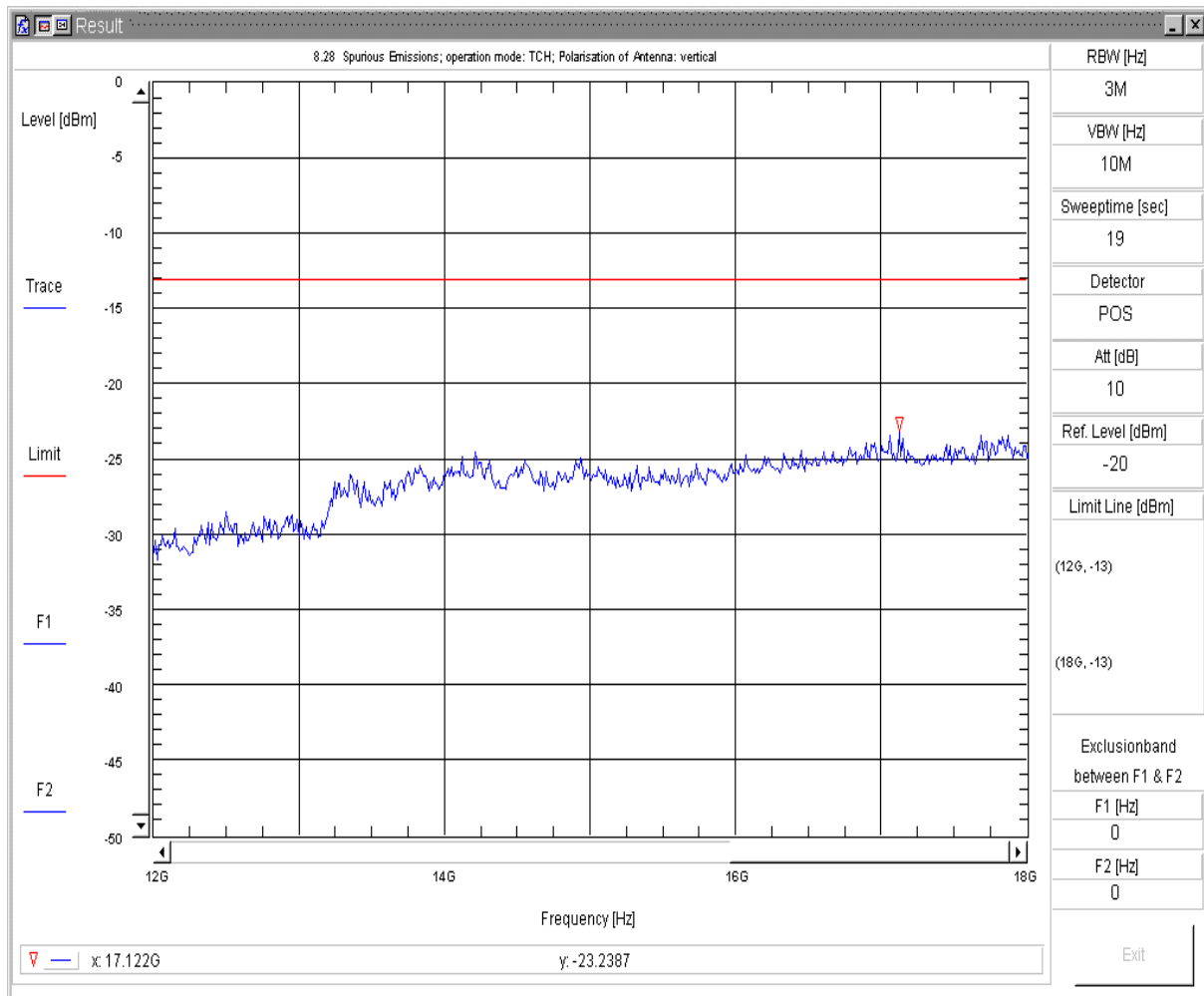


8.27 Radiated Spurious Emission

Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_H
 Sweepnr: Sweep6
 Pol. of Antenna: horizontal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 810
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 13:54:52pp

Spurious Emissions V7.2.5



8.28 Radiated Spurious Emission

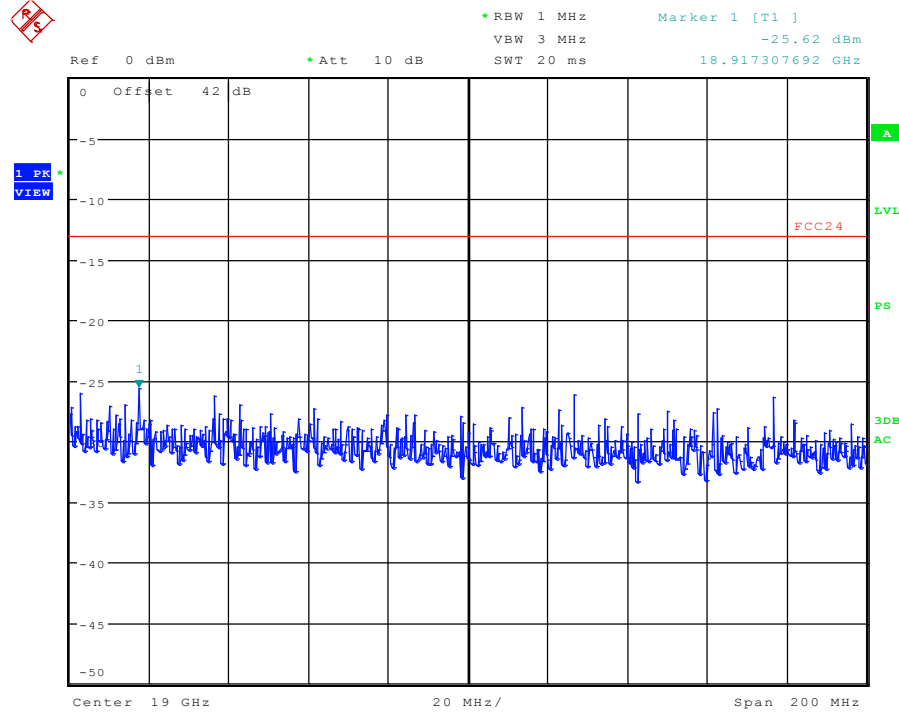
Transducer: c:\vee_user\spuri_V7\FCC_Part_24.238_(GSM_1900)\TD_TX_V
 Sweepnr: Sweep6
 Pol. of Antenna: vertikal
 EUT Position: EUT_vertical+horizontal
 EUT OP Mode: FCC_Part_24.238_(GSM_1900) TCH
 EUT Description: BGS2-W GSM Module
 EUT add. Info:
 EUT Hardware: B2
 EUT Software:
 EUT Config:
 EUT S/N: 00440108048446800
 Battery: Power Supply (external); Maximum Voltage; 4.5 VDC
 Remark: ARFCN 810
 Operator: Tas
 Testing Site: Fully Anechoic Room (FAR); CETECOM Essen

Fri 04/Feb/2011 13:47:27pp

Spurious Emissions V7.2.5

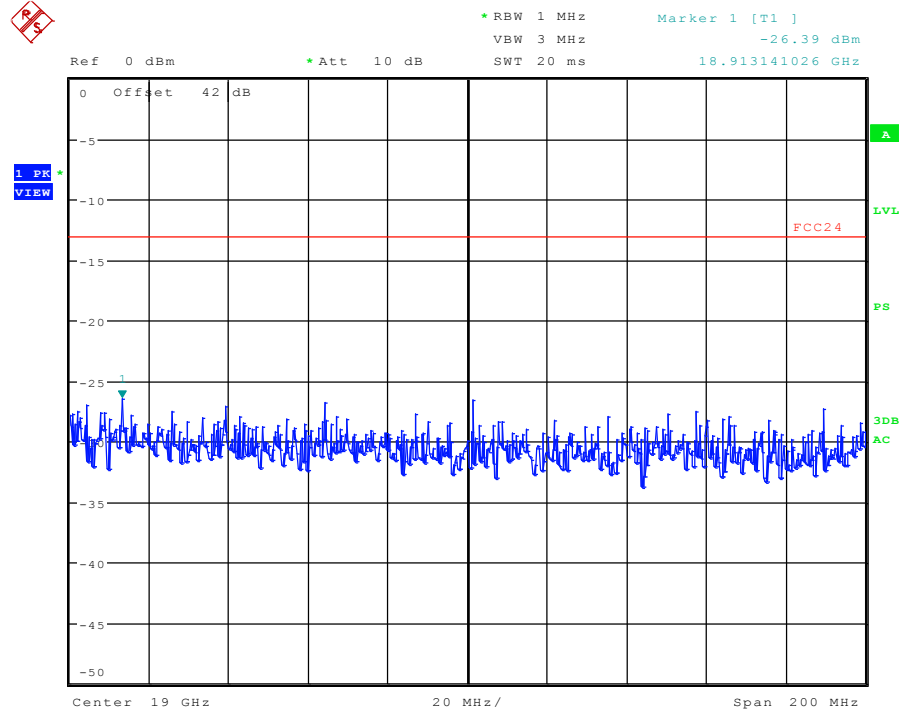
1.7. Radiated emissions in the frequency range above 18GHz – GSM1900 Mode

Diagram 8.51 – Channel 512 (Overview measurement only)



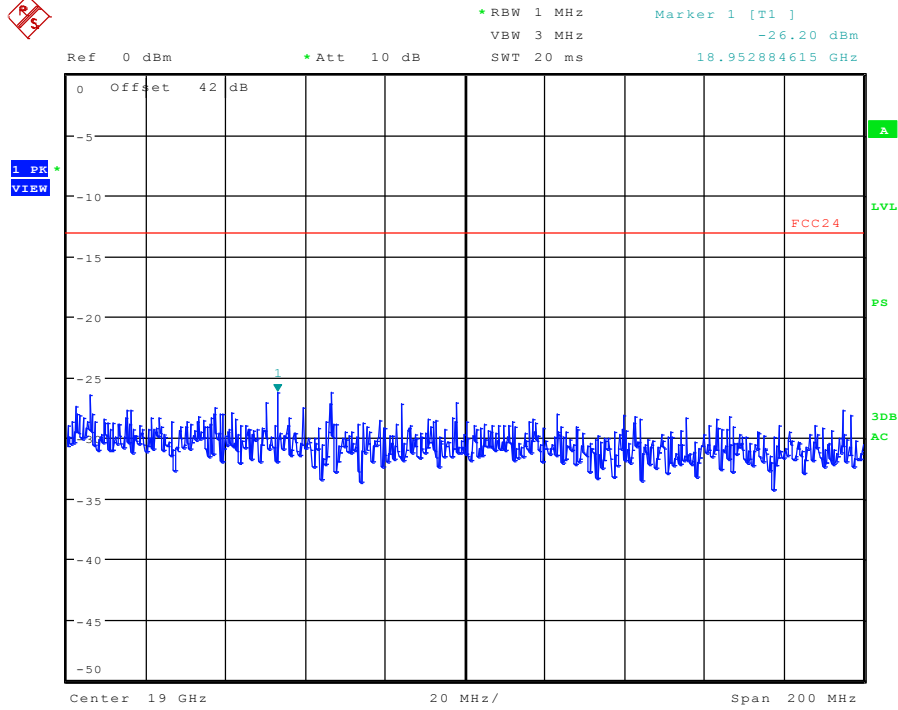
Date: 24.FEB.2011 12:53:02

Diagram 8.52 – Channel 661 (Overview measurement only)



Date: 24.FEB.2011 12:52:01

Diagram 8.53 – Channel 810 (Overview measurement only)



Date: 24.FEB.2011 12:53:50

1.8. Radiated magnetic field strength measurements (f<30MHz)

Diagram No. 03.01

Common Information

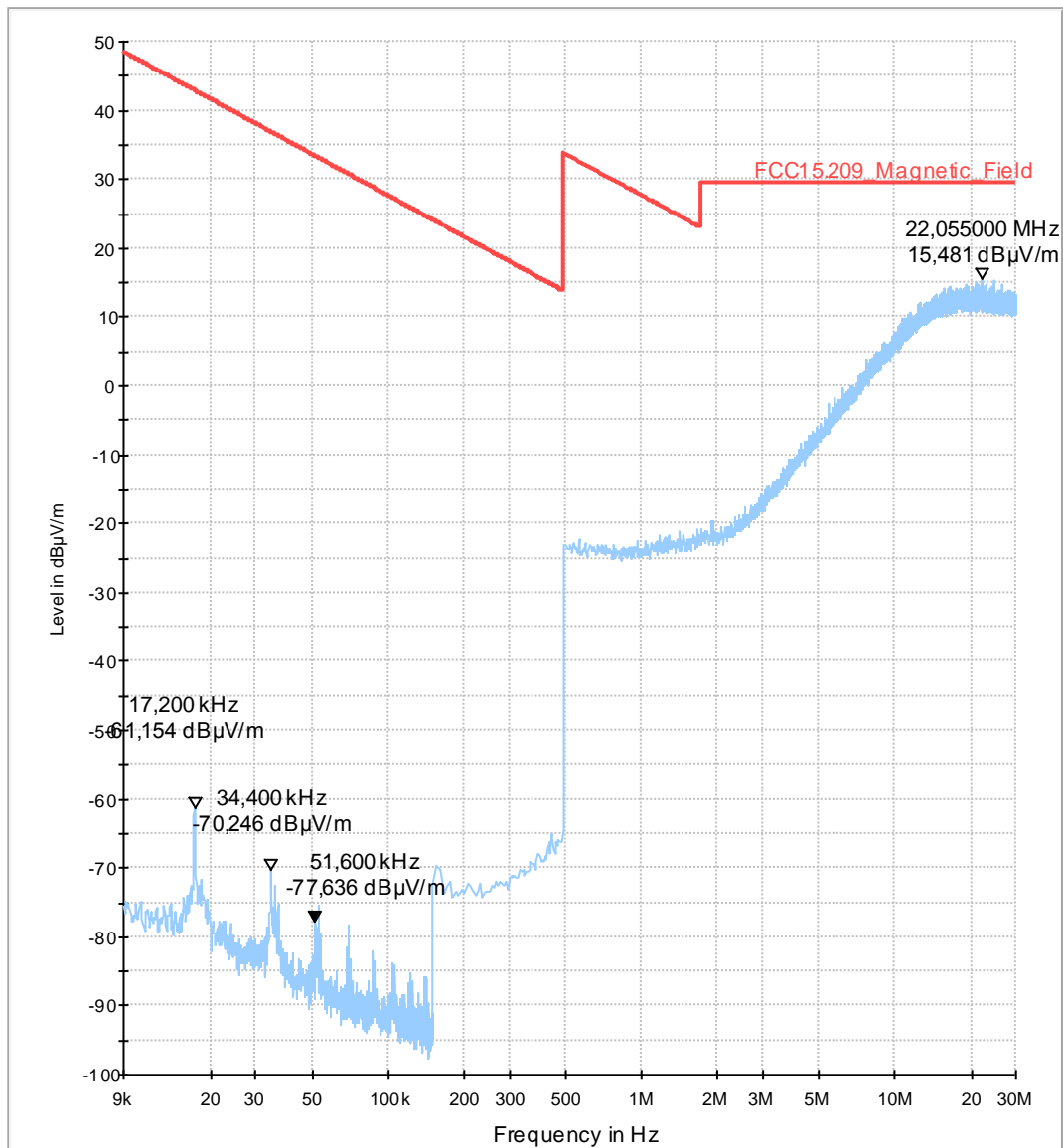
| | |
|--------------------------|--|
| Test description: | Magnetic Fieldstrength Measurement related to 3 m distance |
| Test site and distance: | Semi Anechoic Room (SAR) with 3 m measurement distance |
| Measured sides of EUT: | front, right, rear, left |
| Rec. antenna (pre-scan): | height 1.00 m, parallel and 90° to EUT polarisation |
| Turntable step: | 90° during pre-scan |
| Used filter: | bypass |
| Test specification.: | FCC 15.205 § 15.209 |

| | |
|------------|-----------------|
| Operator: | Lor |
| Comment 1: | Channel low=512 |

EUT Information

| | |
|----------------|---|
| EUT type | BGS2-W+DSB45+Handset Votronic+Ext.Antenna Minimag+RS232+USB cable |
| Manufacturer | Cinterion |
| Operating mode | Audio mode TX 1900 |
| S/N | 004401-08-048449-2 |

FCC15.209_magn hor+vert



EMI Auto Test Template: FCC15.209_magn hor+vert

Hardware Setup: HW25_FCC15109_ESCS_MgFeld_ohne_SAR_MATRIX
 Measurement Type: Open-Area-Test-Site
 Frequency Range: 9 kHz - 30 MHz
 Graphics Level Range: -100 dB μ V/m - 50 dB μ V/m

Preview Measurements:
 Antenna height: 1000 - 1000 cm , Step Size = 0 cm , Positioning Speed = 1
 Polarization: H + V
 Turntable position: 35 - 305 deg , Step Size = 90 deg , Positioning Speed = 8
 Scan Test Template: 01_FCC_MG_FELD_PK_FAST_H&V_EUT

| Subrange | Step Size | Detectors | IF BW | Meas. Time | Preamp |
|------------------|-----------|-----------|--------|------------|--------|
| 9 kHz - 150 kHz | 100 Hz | PK+ | 200 Hz | 0,01 s | 0 dB |
| 150 kHz - 30 MHz | 5 kHz | PK+ | 10 kHz | 0,01 s | 0 dB |

Receiver: [ESS]

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

Adjustment:
 Antenna height: Adjustment with full Range , Measuring Speed = 1
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Template for Single Meas.: 01_FCC_MG_FELD_PK_FAST_H&V_EUT

| Subrange | Step Size | Detectors | IF BW | Meas. Time | Preamp |
|------------------|-----------|-----------|--------|------------|--------|
| 9 kHz - 150 kHz | 100 Hz | PK+ | 200 Hz | 0,01 s | 0 dB |
| 150 kHz - 30 MHz | 5 kHz | PK+ | 10 kHz | 0,01 s | 0 dB |

Receiver: [ESS]

Final Measurements:
 Template for Single Meas.: 02_FCC_MG_FELD_QP_final_H&V_EUT

| Subrange | Step Size | Detectors | IF BW | Meas. Time | Preamp |
|------------------|-----------|-----------|--------|------------|--------|
| 9 kHz - 150 kHz | 100 Hz | QPK | 200 Hz | 1 s | 0 dB |
| 150 kHz - 30 MHz | 5 kHz | QPK | 10 kHz | 1 s | 0 dB |

Receiver: [ESS]

Report Settings:
 Report Template: FCC15_209_magn_vert_hor
 Create Electronic Report: 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. 03.02

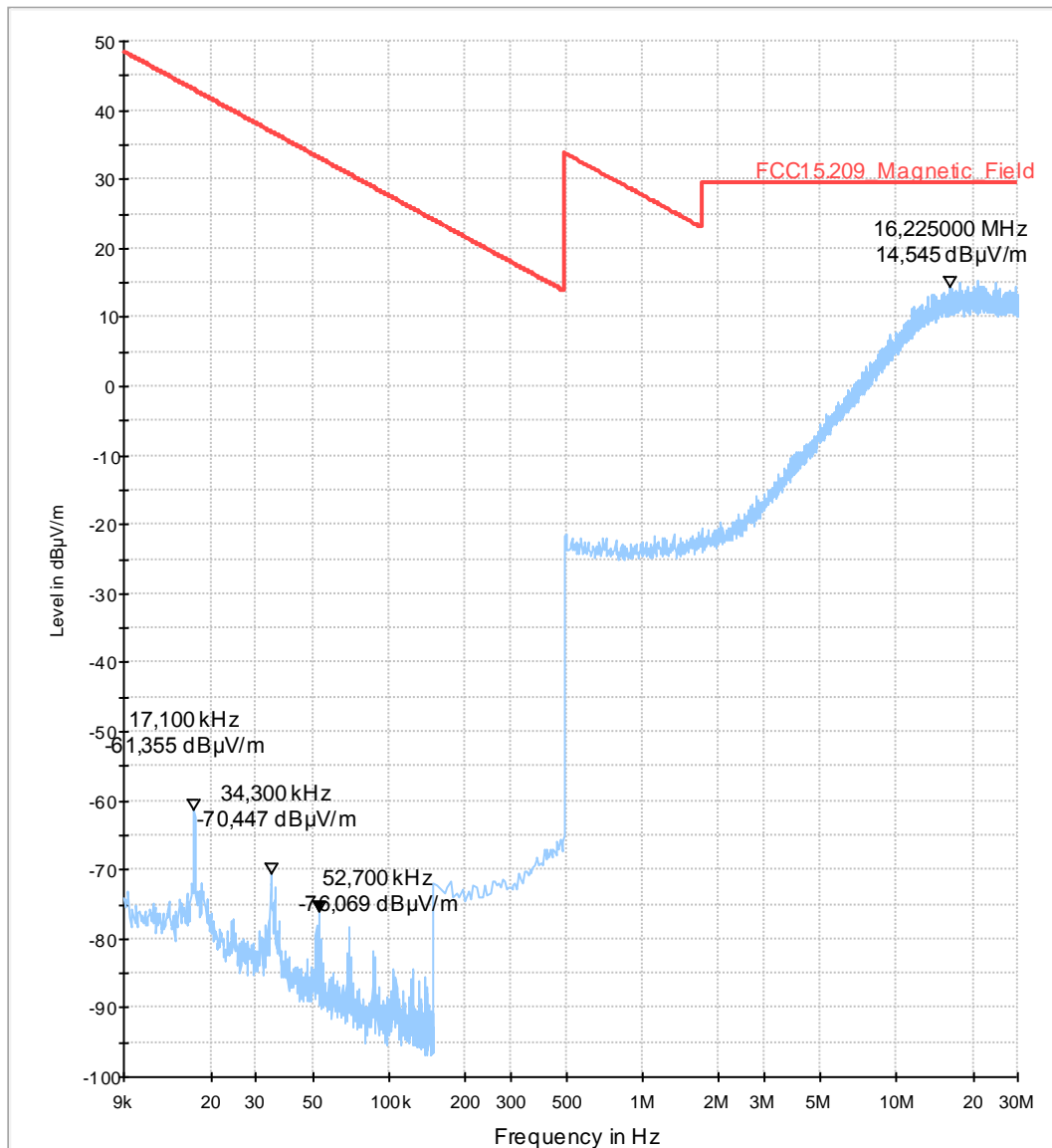
Common Information

| | |
|--------------------------|--|
| Test description: | Magnetic Fieldstrength Measurement related to 3 m distance |
| 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, parallel and 90° to EUT polarisation |
| Turntable step: | 90° during pre-scan |
| Used filter: | bypass |
| Test specification.: | FCC 15.205 § 15.209 |
| Operator: | Lor |
| Comment 1: | Channel middle=661 |

EUT Information

| | |
|----------------|---|
| EUT type | BGS2-W+DSB45+Handset Votronic+Ext.Antenna Minimag+RS232+USB cable |
| Manufacturer | Cinterion |
| Operating mode | Audio mode TX 1900 |
| S/N | 004401-08-048449-2 |

FCC15.209_magn hor+vert





EMI Auto Test Template: FCC15.209_magn hor+vert

Hardware Setup: HW25_FCC15109_ESCS_MgFeld_ohne_SAR_MATRIX
 Measurement Type: Open-Area-Test-Site
 Frequency Range: 9 kHz - 30 MHz
 Graphics Level Range: -100 dBµV/m - 50 dBµV/m

Preview Measurements:
 Antenna height: 1000 - 1000 cm , Step Size = 0 cm , Positioning Speed = 1
 Polarization: H + V
 Turntable position: 35 - 305 deg , Step Size = 90 deg , Positioning Speed = 8
 Scan Test Template: 01_FCC_MG_FELD_PK_FAST_H&V_EUT

| Subrange | Step Size | Detectors | IF BW | Meas. Time | Preamp |
|------------------|-----------|-----------|--------|------------|--------|
| 9 kHz - 150 kHz | 100 Hz | PK+ | 200 Hz | 0,01 s | 0 dB |
| 150 kHz - 30 MHz | 5 kHz | PK+ | 10 kHz | 0,01 s | 0 dB |

Receiver: [ESS]

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

Adjustment:
 Antenna height: Adjustment with full Range , Measuring Speed = 1
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Template for Single Meas.: 01_FCC_MG_FELD_PK_FAST_H&V_EUT

| Subrange | Step Size | Detectors | IF BW | Meas. Time | Preamp |
|------------------|-----------|-----------|--------|------------|--------|
| 9 kHz - 150 kHz | 100 Hz | PK+ | 200 Hz | 0,01 s | 0 dB |
| 150 kHz - 30 MHz | 5 kHz | PK+ | 10 kHz | 0,01 s | 0 dB |

Receiver: [ESS]

Final Measurements:
 Template for Single Meas.: 02_FCC_MG_FELD_QP_final_H&V_EUT

| Subrange | Step Size | Detectors | IF BW | Meas. Time | Preamp |
|------------------|-----------|-----------|--------|------------|--------|
| 9 kHz - 150 kHz | 100 Hz | QPK | 200 Hz | 1 s | 0 dB |
| 150 kHz - 30 MHz | 5 kHz | QPK | 10 kHz | 1 s | 0 dB |

Receiver: [ESS]

Report Settings:
 Report Template: FCC15_209_magn_vert_hor
 Create Electronic Report: 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. 03.03

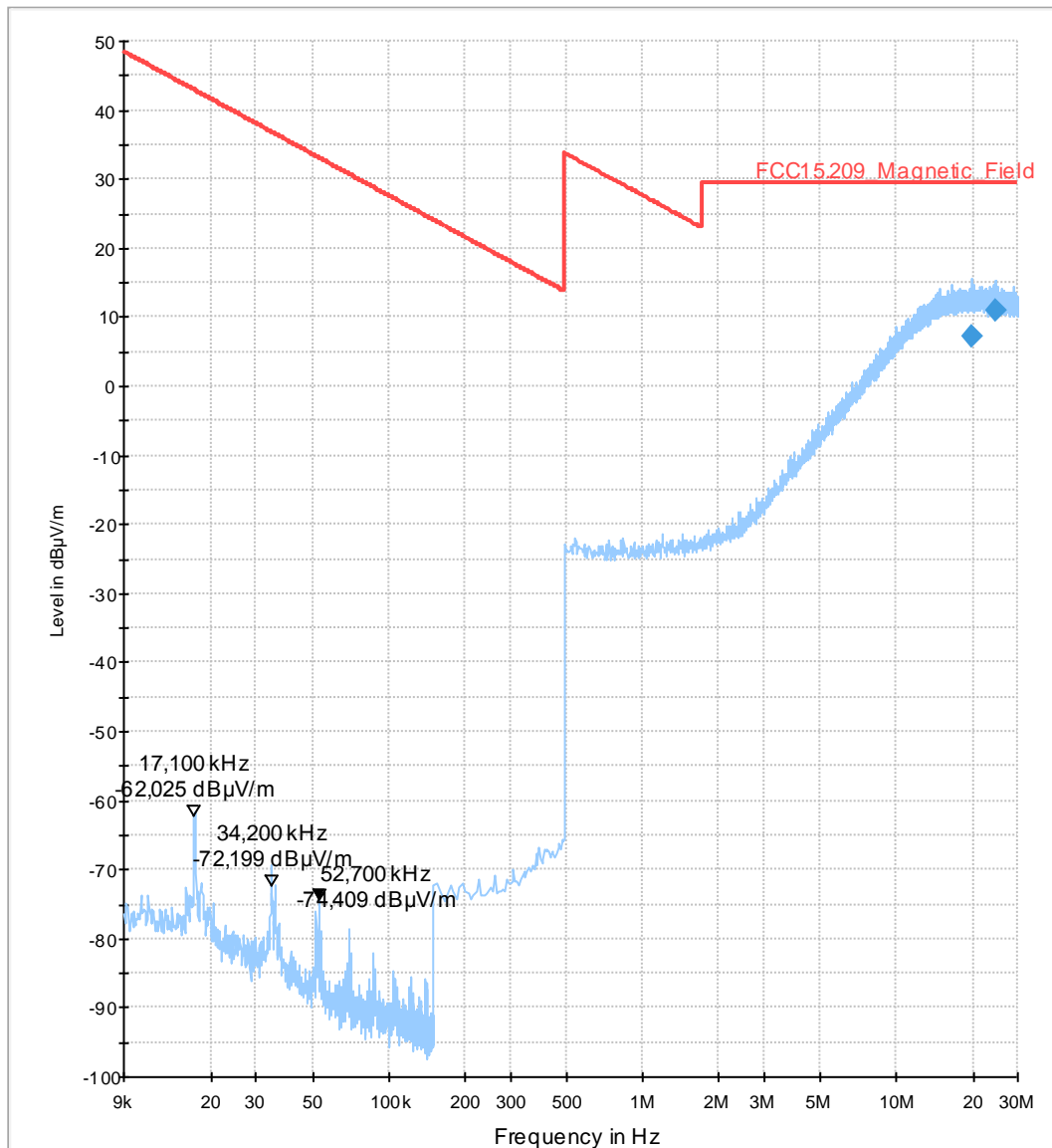
Common Information

| | |
|--------------------------|--|
| Test description: | Magnetic Fieldstrength Measurement related to 3 m distance |
| 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, parallel and 90° to EUT polarisation |
| Turntable step: | 90° during pre-scan |
| Used filter: | bypass |
| Test specification.: | FCC 15.205 § 15.209 |
| Operator: | Lor |
| Comment 1: | Channel high=810 |

EUT Information

| | |
|----------------|---|
| EUT type | BGS2-W+DSB45+Handset Votronic+Ext.Antenna Minimag+RS232+USB cable |
| Manufacturer | Cinterion |
| Operating mode | Audio mode TX 1900 |
| S/N | 004401-08-048449-2 |

FCC15.209_magn hor+vert



Final Result 1

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) | Comment |
|-----------------|--------------------|-----------------|-----------------|--------------|---------------|------------|-------------|----------------|---------|
| 19.690000 | 7.2 | 1000.0 | 10.000 | V | 151.0 | 2.8 | 22.34 | 29.54 | |
| 24.575000 | 11.1 | 1000.0 | 10.000 | H | 124.0 | 2.8 | 18.44 | 29.54 | |

EMI Auto Test Template: FCC15.209_magn hor+vert

Hardware Setup: HW25_FCC15109_ESCS_MgFeld_ohne_SAR_MATRIX
 Measurement Type: Open-Area-Test-Site
 Frequency Range: 9 kHz - 30 MHz
 Graphics Level Range: -100 dBµV/m - 50 dBµV/m

Preview Measurements:
 Antenna height: 1000 - 1000 cm , Step Size = 0 cm , Positioning Speed = 1
 Polarization: H + V
 Turntable position: 35 - 305 deg , Step Size = 90 deg , Positioning Speed = 8
 Scan Test Template: 01_FCC_MG_FELD_PK_FAST_H&V_EUT

| Subrange | Step Size | Detectors | IF BW | Meas. Time | Preamp |
|------------------|-----------|-----------|--------|------------|--------|
| 9 kHz - 150 kHz | 100 Hz | PK+ | 200 Hz | 0,01 s | 0 dB |
| 150 kHz - 30 MHz | 5 kHz | PK+ | 10 kHz | 0,01 s | 0 dB |

Receiver: [ESS]

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

Adjustment:
 Antenna height: Adjustment with full Range , Measuring Speed = 1
 Turntable position: Adjustment with full Range , Measuring Speed = 3
 Template for Single Meas.: 01_FCC_MG_FELD_PK_FAST_H&V_EUT

| Subrange | Step Size | Detectors | IF BW | Meas. Time | Preamp |
|------------------|-----------|-----------|--------|------------|--------|
| 9 kHz - 150 kHz | 100 Hz | PK+ | 200 Hz | 0,01 s | 0 dB |
| 150 kHz - 30 MHz | 5 kHz | PK+ | 10 kHz | 0,01 s | 0 dB |

Receiver: [ESS]

Final Measurements:
 Template for Single Meas.: 02_FCC_MG_FELD_QP_final_H&V_EUT

| Subrange | Step Size | Detectors | IF BW | Meas. Time | Preamp |
|------------------|-----------|-----------|--------|------------|--------|
| 9 kHz - 150 kHz | 100 Hz | QPK | 200 Hz | 1 s | 0 dB |
| 150 kHz - 30 MHz | 5 kHz | QPK | 10 kHz | 1 s | 0 dB |

Receiver: [ESS]

Report Settings:
 Report Template: FCC15_209_magn_vert_hor
 Create Electronic Report: PDF
 Document Name: EMI Report

Actions:
 Data Reduction: Before
 Notify: Sound (WAV file) 'tada.wav'
 Final Measurements: After
 Notify: Sound (WAV file) 'tada.wav'

1.9 Conducted emissions on AC-Power lines

Diagram No. 1.2

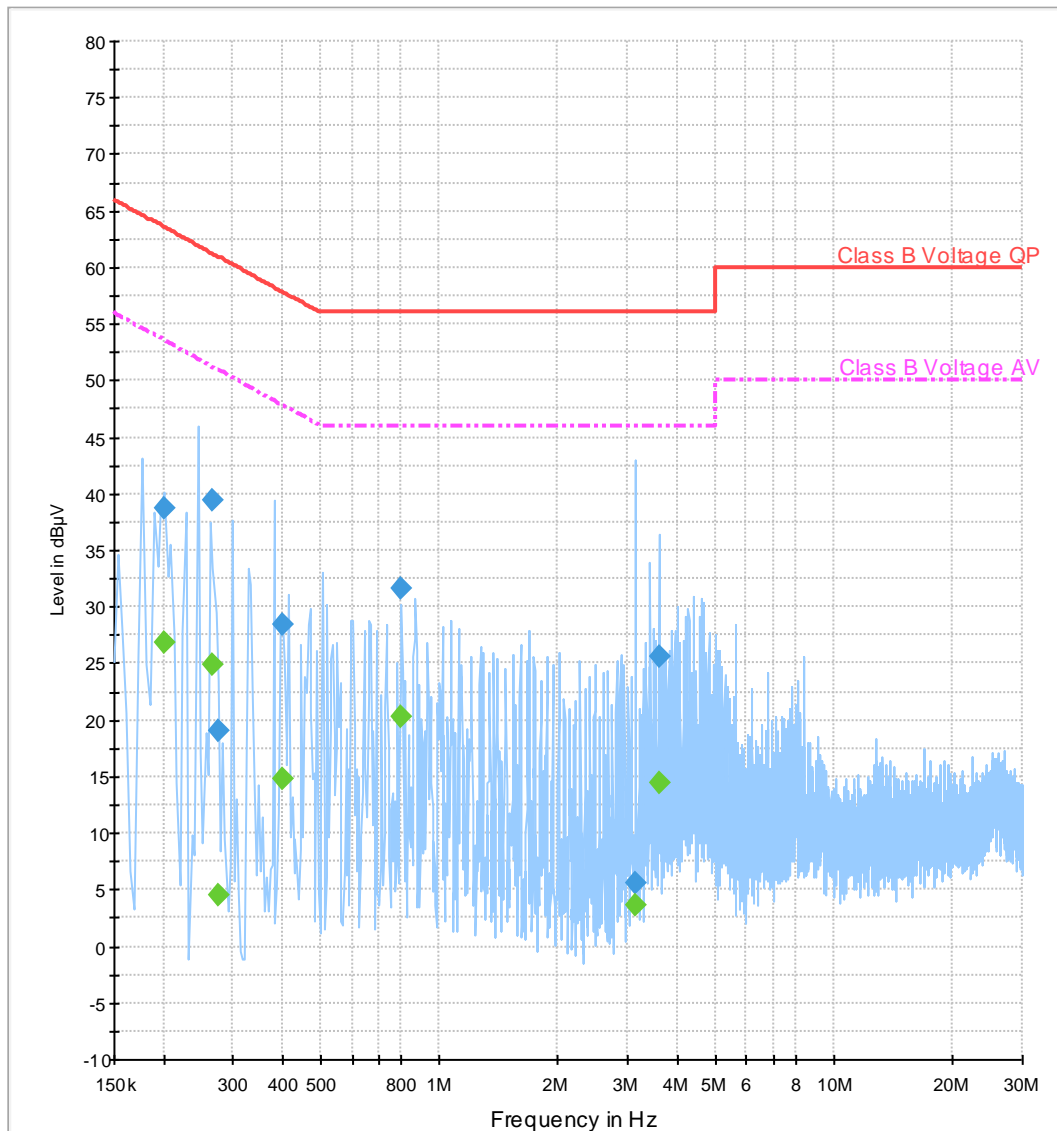
Common Information

| | |
|--------------------|---|
| Test Description: | Conducted Voltage Measurement Class B |
| Testspezifikation: | FCC 15.207 |
| Technical Data: | Please see next page for detailed information |
| Diagram: | Shows the peak values as a sum of measured ports (N+L1) in maxhold mode |
| Operator name: | MEL |
| Report.- Nr. | 2-20795542a/11 |
| Operating mode: | GSM 1900 TX-mode (Ch. 661) |
| Measured on line: | Mains AC L1 and N |
| Power during test: | 110 V AC 60 Hz |
| Comment 1: | |

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) |
|-----------------|------------------|-----------------|-----------------|-----|------|------------|-------------|--------------|
| 0.199844 | 38.6 | 15000.0 | 9.000 | GND | L1 | 0.0 | 25.0 | 63.6 |
| 0.266250 | 39.4 | 15000.0 | 9.000 | GND | L1 | 0.1 | 21.8 | 61.2 |
| 0.275938 | 19.0 | 15000.0 | 9.000 | GND | L1 | 0.0 | 41.9 | 60.9 |
| 0.402969 | 28.4 | 15000.0 | 9.000 | GND | L1 | 0.0 | 29.4 | 57.8 |
| 0.799844 | 31.6 | 15000.0 | 9.000 | GND | N | 0.0 | 24.4 | 56.0 |
| 3.123594 | 5.7 | 15000.0 | 9.000 | GND | L1 | 0.1 | 50.4 | 56.0 |
| 3.608906 | 25.6 | 15000.0 | 9.000 | GND | L1 | 0.0 | 30.4 | 56.0 |

Final Result 2

| Frequency (MHz) | CAverage (dBµV) | Meas. Time (ms) | Bandwidth (kHz) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|-----------------|-----------------|-----------------|-----|------|------------|-------------|--------------|
| 0.199844 | 26.9 | 15000.0 | 9.000 | GND | L1 | 0.0 | 26.7 | 53.6 |
| 0.266250 | 24.9 | 15000.0 | 9.000 | GND | L1 | 0.1 | 26.3 | 51.2 |
| 0.275938 | 4.6 | 15000.0 | 9.000 | GND | L1 | 0.0 | 46.3 | 50.9 |
| 0.402969 | 14.8 | 15000.0 | 9.000 | GND | L1 | 0.0 | 33.0 | 47.8 |
| 0.799844 | 20.3 | 15000.0 | 9.000 | GND | N | 0.0 | 25.7 | 46.0 |
| 3.123594 | 3.7 | 15000.0 | 9.000 | GND | L1 | 0.1 | 42.3 | 46.0 |
| 3.608906 | 14.5 | 15000.0 | 9.000 | GND | L1 | 0.0 | 31.5 | 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]

Diagram No. 1.4

Common Information^{Test}

Testspezifikation:

Technical Data:

Diagram:

Operator name:

Operating mode:

Measured on line:

Power during test:

Comment 1:

Conducted Voltage Measurement

FCC 15.207

Please see next page for detailed information

Shows the peak values as a sum of measured ports (N+L1) in maxhold mode
Lor

GSM850, Channel 192

Mains AC L1 and N

110 V AC 60 Hz

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EUT Information

EUT Name:

Manufacturer:

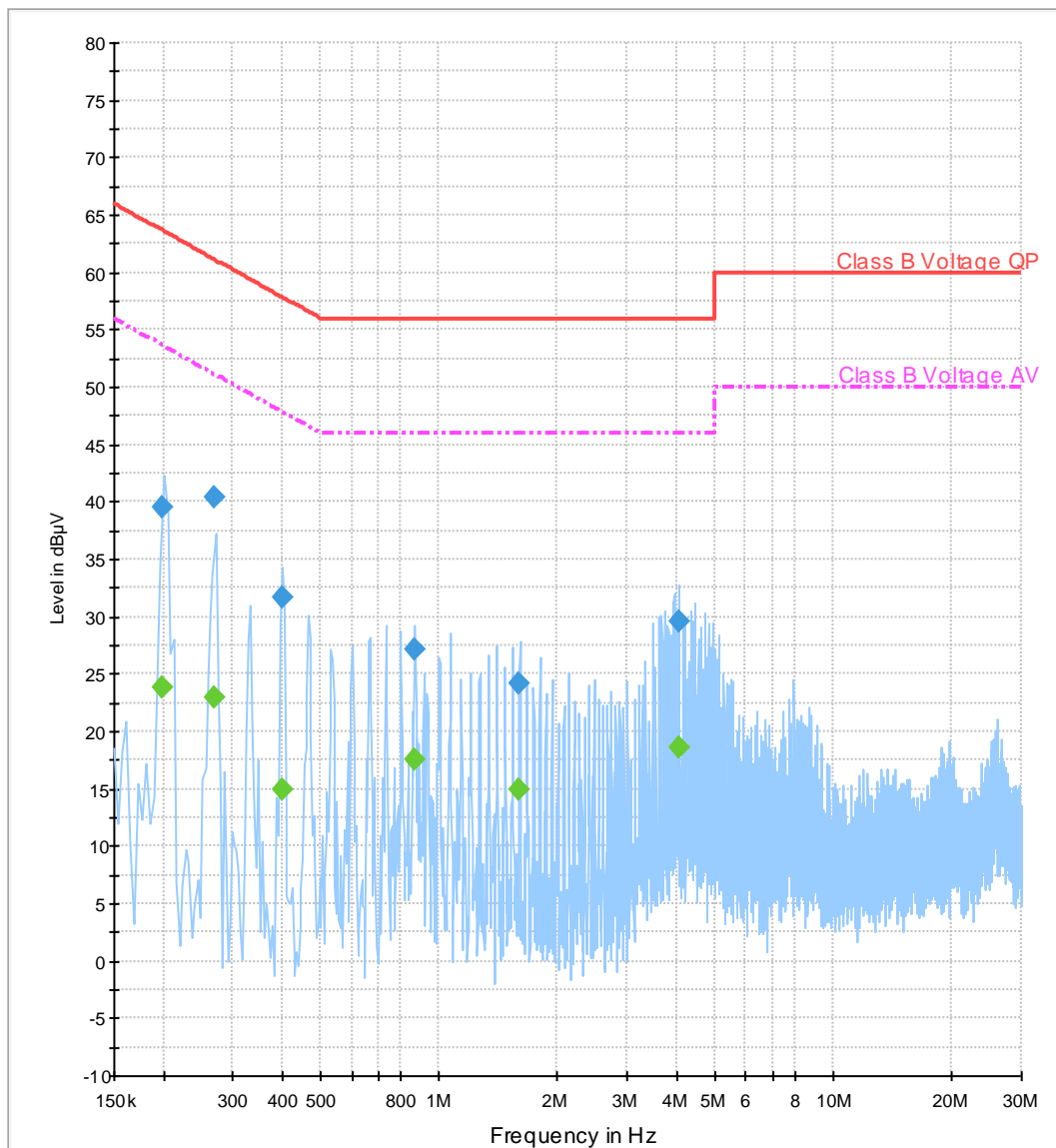
Serial Number:

BGS2-W+AC/DC Adapter+DSB45+Handset Votronic+RS232+USB+(Notebook)

Cinterion

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) |
|-----------------|------------------|-----------------|-----------------|-----|------|------------|-------------|--------------|
| 0.198281 | 39.5 | 15000.0 | 9.000 | GND | N | 0.0 | 24.2 | 63.7 |
| 0.268594 | 40.4 | 15000.0 | 9.000 | GND | L1 | 0.1 | 20.8 | 61.2 |
| 0.402500 | 31.7 | 15000.0 | 9.000 | GND | L1 | 0.0 | 26.1 | 57.8 |
| 0.866250 | 27.2 | 15000.0 | 9.000 | GND | N | 0.1 | 28.8 | 56.0 |
| 1.600625 | 24.3 | 15000.0 | 9.000 | GND | N | 0.1 | 31.7 | 56.0 |
| 4.073281 | 29.5 | 15000.0 | 9.000 | GND | N | 0.1 | 26.5 | 56.0 |

Final Result 2

| Frequency (MHz) | CAverage (dBµV) | Meas. Time (ms) | Bandwidth (kHz) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|-----------------|-----------------|-----------------|-----|------|------------|-------------|--------------|
| 0.198281 | 23.8 | 15000.0 | 9.000 | GND | N | 0.0 | 29.9 | 53.7 |
| 0.268594 | 23.0 | 15000.0 | 9.000 | GND | L1 | 0.1 | 28.2 | 51.2 |
| 0.402500 | 14.9 | 15000.0 | 9.000 | GND | L1 | 0.0 | 32.9 | 47.8 |
| 0.866250 | 17.6 | 15000.0 | 9.000 | GND | N | 0.1 | 28.4 | 46.0 |
| 1.600625 | 15.0 | 15000.0 | 9.000 | GND | N | 0.1 | 31.0 | 46.0 |
| 4.073281 | 18.6 | 15000.0 | 9.000 | GND | N | 0.1 | 27.4 | 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]