

Annex 1: Measurement diagrams 21-1-0178701T027a-A1

Number of pages:	18	Date of Report:	2023-Feb-09
Testing company:	cetecom advanced GmbH Im Teelbruch 116 45219 Essen Germany Tel. + 49 (0) 20 54 / 95 19-0 Fax: + 49 (0) 20 54 / 95 19-150	Applicant:	Actia Nordic AB
Product:	Telematic Device		
Model:	104760201		
FCC ID:	2AGKK104760201	IC:	20839-104760201
Testing has been carried out in accordance with:	FCC Regulations Title 47 CFR, Chapter I, Subchapter A Part 15, Subpart C Intentional Radiators § 15.209 Radiated emission limits; general requirements Title 47 CFR, Chapter I, Subchapter B Part 22, Subpart H Cellular Radiotelephone Service Part 24, Subpart E Paging and Radiotelephone Service ISED-Regulations Radio Standards Specification RSS-Gen, Issue 5 General Requirements for Compliance of Radio Apparatus RSS-132, Issue 3 Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz RSS-133, Issue 6, Amendment 1 2 GHz Personal Communications Services		

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1 Measurement diagrams

8.01a_Traffic_mode_GSM_850_CH_190_lying

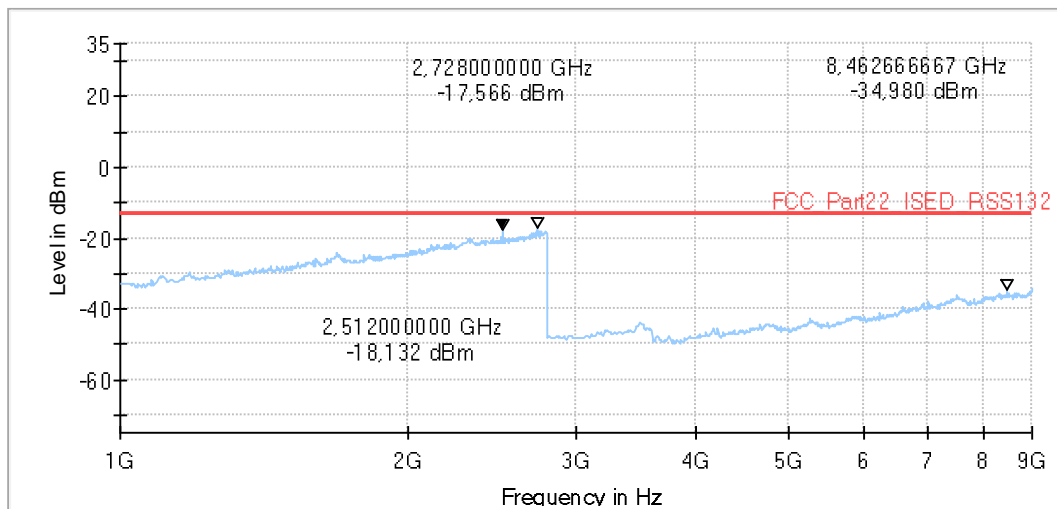
Common Information

Test Description:	Radiated emission related to 1m
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC FCC Part 22.917 / RSS-132
Antenna polarisation:	vertical / horizontal
Operating Mode:	GSM850
Operator:	TFra
Comment:	--
Environmental Conditions:	Humidity : 44% rH; Temperature: 20 °C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	21-1-01787S50_C01
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Full Spectrum



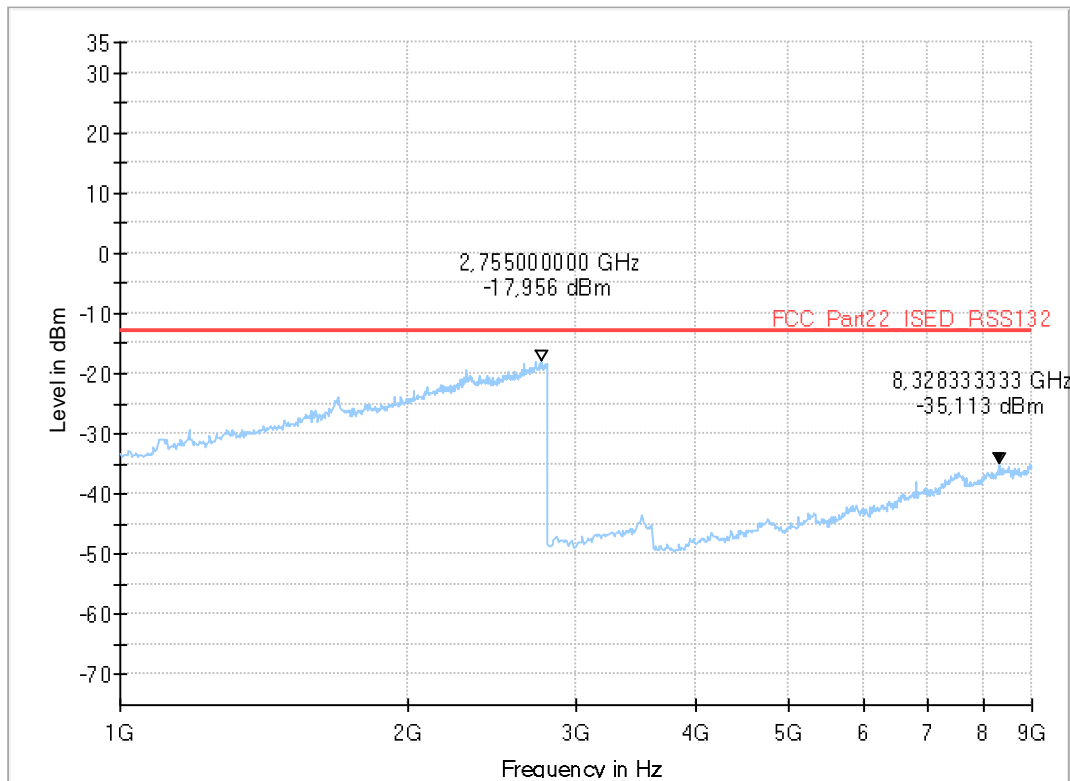
8.01b_Traffic_mode_GSM_850_CH_190_standing

Common Information

Test Description:	Radiated emission related to 3m
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC Part 22.917 / RSS-132
Antenna polarisation:	vertical / horizontal
Operating Mode:	GSM850 CH190 836.6MHz BW0.2MHz
Operator:	KTe
Comment:	--
Environmental Conditions:	Humidity : 49% rH; Temperature: 20 °C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	21-1-01787S50_C01
	Full Spectrum



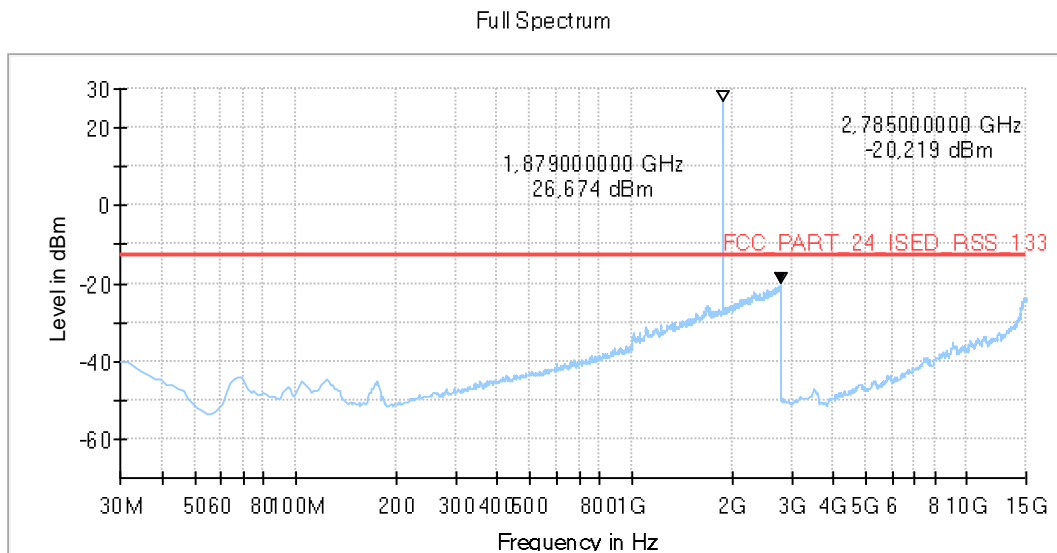
8.02a_RSE_TX_GSM_1900_CH661_lying

Common Information

Test Description:	Radiated emission related to 1m
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operating Mode:	GSM1900
Operator:	TFra
Comment:	--
Environmental Conditions:	Humidity : 44% rH; Temperature: 20 °C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number: 21-1-01787S50_C01



Remark: Emission at 1.879 GHz is uplink frequency of GSM850 and not related to result.

8.02b_RSE_TX_GSM_1900_CH661_standing

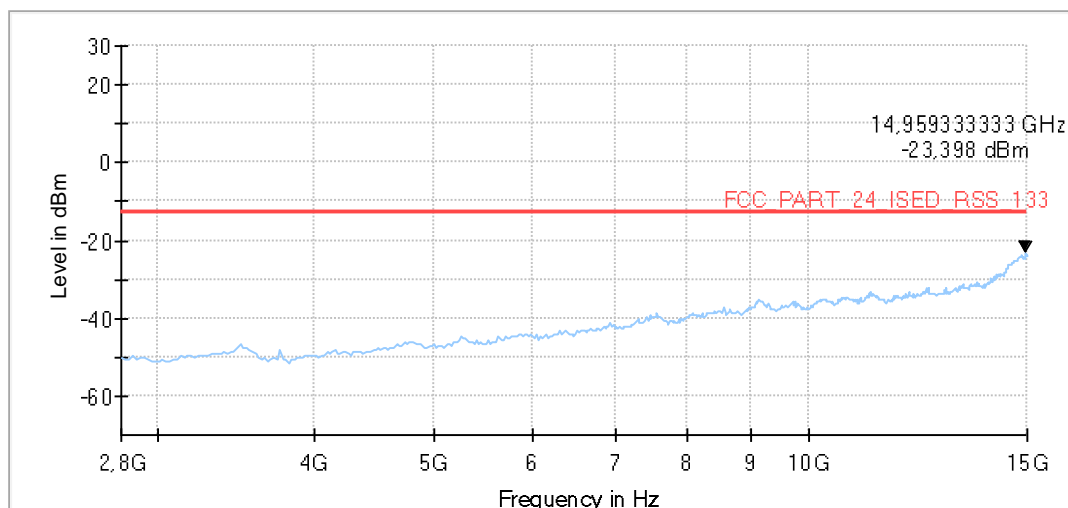
Common Information

Test Description:	Radiated emission related to 1m
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operating Mode:	GSM1900
Operator:	PMa
Comment:	-
Environmental Conditions:	Humidity : 51% rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number: 21-1-01787S50_C01

Full Spectrum



8.02c_RSE_TX_GSM_1900_CH661_lying

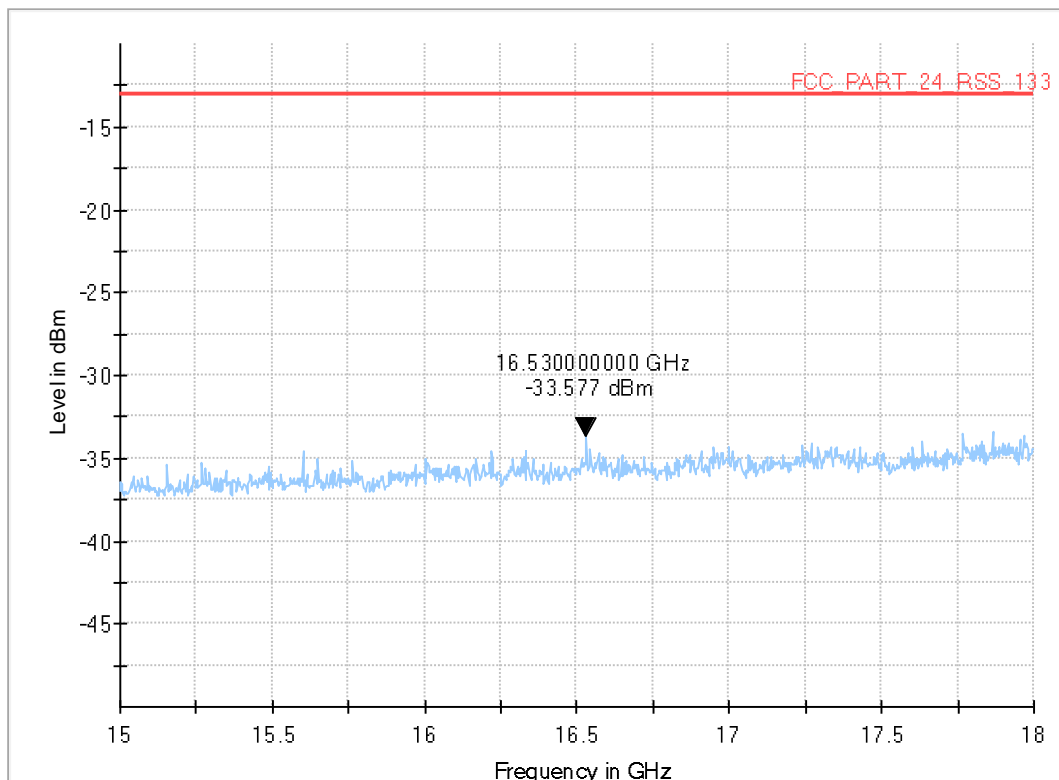
Common Information

Test Description:	Radiated Spurious Emissions GSM1900
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR2)
Test Standard:	FCC Part 24.238 / RSS-133
Comm. Link:	GPRS 1900
Operating Mode:	MS allocated channel 661 (UL = 1880.0MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 34% rH; Temperature: 20.3 °C
Operator:	Lor
EUT Setup:	1 / Set-up laying / Internal antenna
Verdict:	Passed

EUT Information

PMT Sample Nr.	21-1-01787S50_C01
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Full Spectrum



8.02d_RSE_TX_GSM_1900_CH661_standing

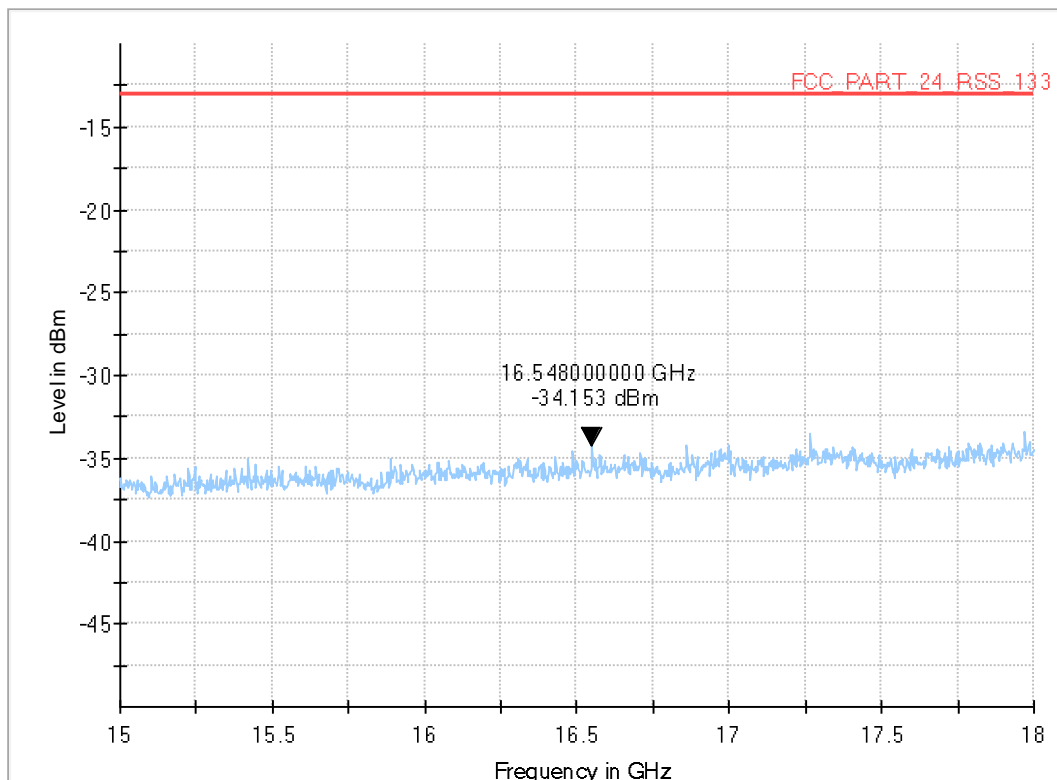
Common Information

Test Description:	Radiated Spurious Emissions GPRS1900
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR2)
Test Standard:	FCC Part 24.238 / RSS-133
Comm. Link:	GPRS 1900
Operating Mode:	MS allocated channel 661 (UL = 1880.0MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 34% rH; Temperature: 20.3 °C
Operator:	Lor
EUT Setup:	1 / Set-up standing/ Internal antenna
Verdict:	Passed

EUT Information

PMT Sample Nr.	21-1-01787S50_C01
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Full Spectrum



8.02e_RSE_TX_GSM_1900_CH661_lying

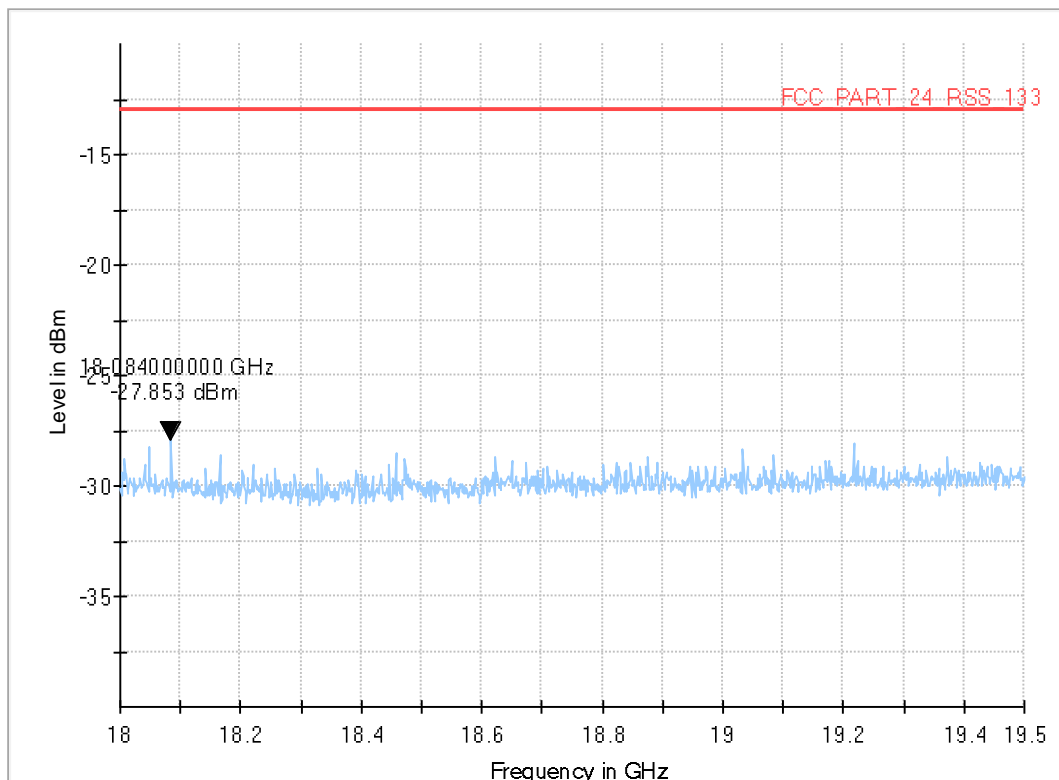
Common Information

Test Description:	Radiated Spurious Emissions GSM1900
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR2)
Test Standard:	FCC Part 24.238 / RSS-133
Comm. Link:	GPRS 1900
Operating Mode:	MS allocated channel 661 (UL = 1880.0MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 34% rH; Temperature: 20.3 °C
Operator:	Lor
EUT Setup:	1 / Set-up laying / Internal antenna
Verdict:	Passed

EUT Information

PMT Sample Nr.	21-1-01787S50_C01
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Full Spectrum



8.02f_RSE_TX_GSM_1900_CH661_standing

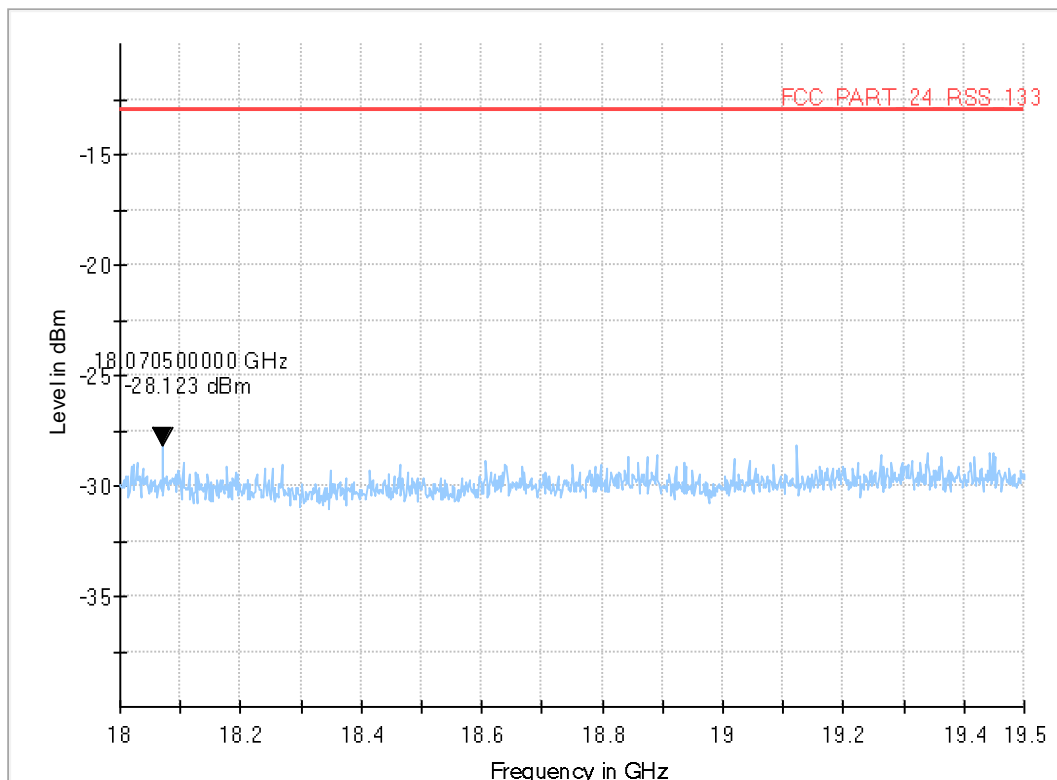
Common Information

Test Description:	Radiated Spurious Emissions GPRS1900
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR2)
Test Standard:	FCC Part 24.238 / RSS-133
Comm. Link:	GPRS 1900
Operating Mode:	MS allocated channel 661 (UL = 1880.0MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 34% rH; Temperature: 20.3 °C
Operator:	Lor
EUT Setup:	1 / Set-up standing/ Internal antenna
Verdict:	Passed

EUT Information

PMT Sample Nr.	21-1-01787S50_C01
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Full Spectrum



9.01a_BE_Ch512_lying

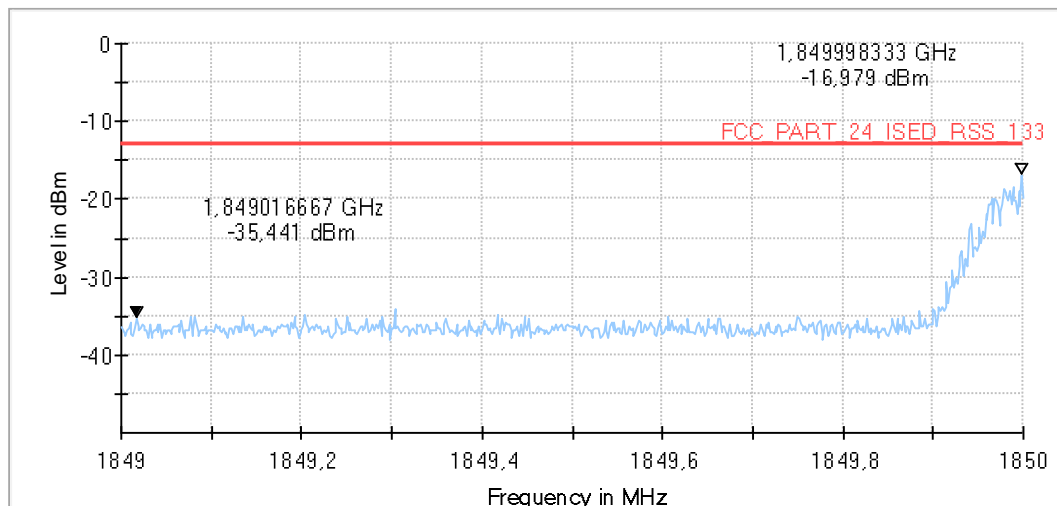
Common Information

Test Description:	-
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC 24.238 / RSS-133
Test Case:	-
Operating Mode:	GSM1900
Environmental Conditions:	Humidity : 44% rH; Temperature: 20 °C
Operator:	TFra
EUT Setup:	1
Verdict:	Passed
Comment:	--

EUT Information

PMT number:	21-1-01787S50_C01
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Full Spectrum



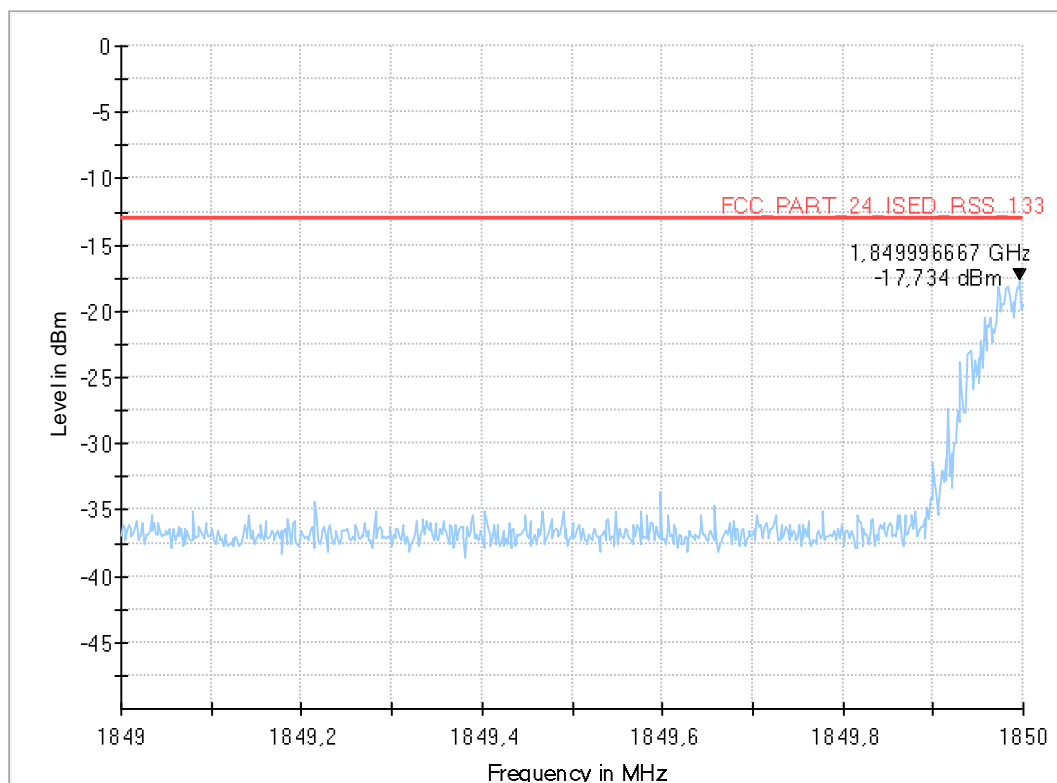
9.01b_BE_Ch512_standing

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC 24.238 / RSS-133
Test Case:	-
Operating Mode:	GSM1900 CH512 1850.2MHz BW0.2MHz
Environmental Conditions::	Humidity : 49% rH; Temperature: 20 °C
Operator:	PMa/KTe
EUT Setup:	1
Verdict:	Passed
Comment:	--

EUT Information

PMT number:	21-1-01787S50_C01
	Full Spectrum



9.02a_BE_Ch810_lying

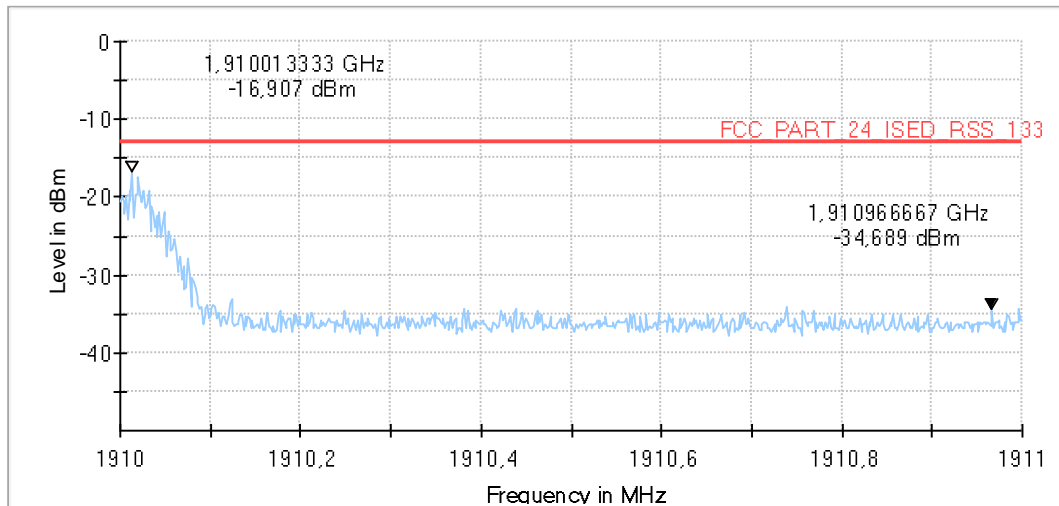
Common Information

Test Description:	-
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC 24.238 / RSS-133
Test Case:	-
Operating Mode:	GSM1900
Environmental Conditions:	Humidity : 44% rH; Temperature: 20 °C
Operator:	TFra
EUT Setup:	1
Verdict:	Passed
Comment:	--

EUT Information

PMT number:	21-1-01787S50_C01
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Full Spectrum



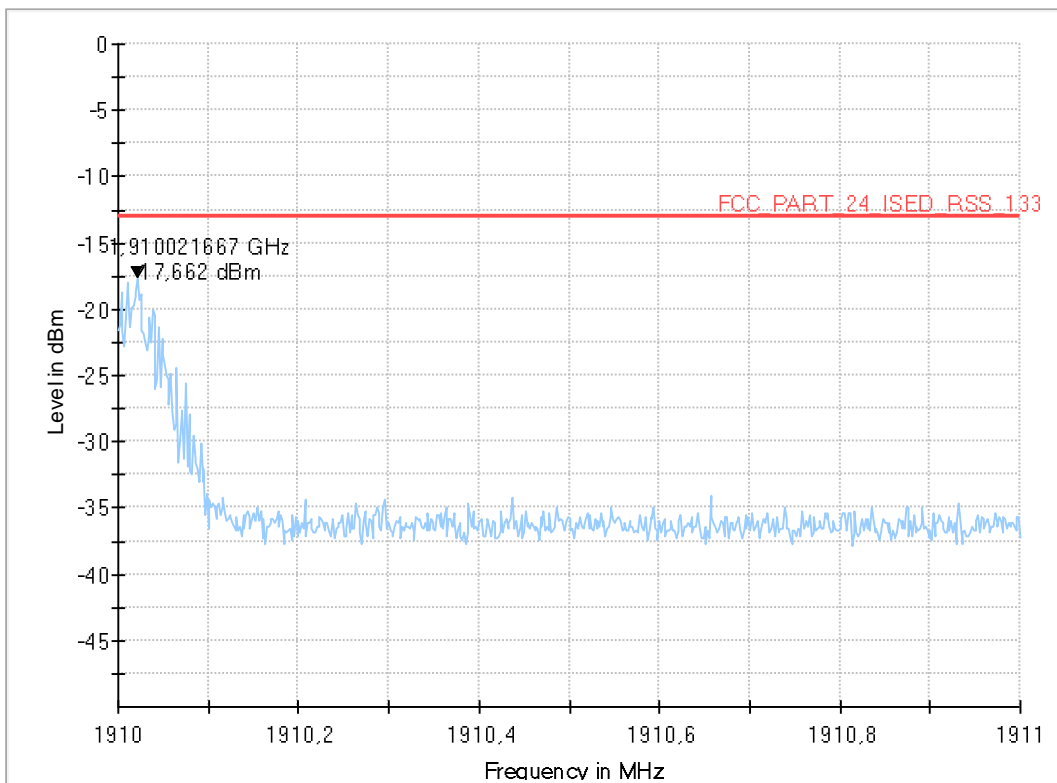
9.02b_BE_Ch810_standing

Common Information

Test Description:	-
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC 24.238 / RSS-133
Test Case:	-
Operating Mode:	GSM1900 CH810 1909.8MHz BW0.2MHz
Environmental Conditions::	Humidity : 49% rH; Temperature: 20 °C
Operator:	KTe
EUT Setup:	1
Verdict:	Passed
Comment:	--

EUT Information

PMT number: 21-1-01787S50_C01
Full Spectrum



9.850a_Bandedge_low_Channel_128_UL_824.2_lying

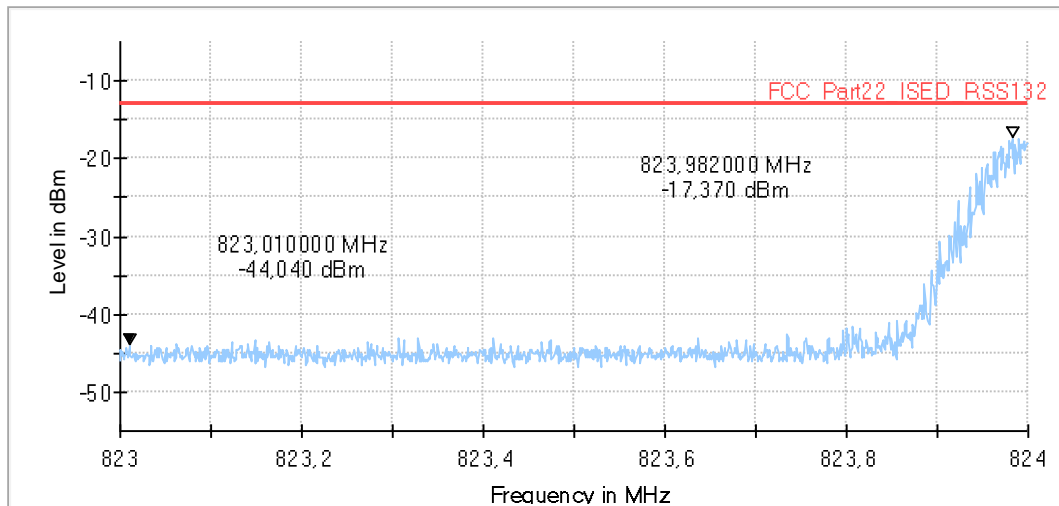
Common Information

Test Description:	Radiated emission related to 1m
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC Part 22.917 / RSS-132
Antenna polarisation:	vertical / horizontal
Operating Mode:	GSM850
Operator:	TFra
Comment:	--
Environmental Conditions:	Humidity : 44% rH; Temperature: 20 °C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	21-1-01787S50_C01
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Full Spectrum



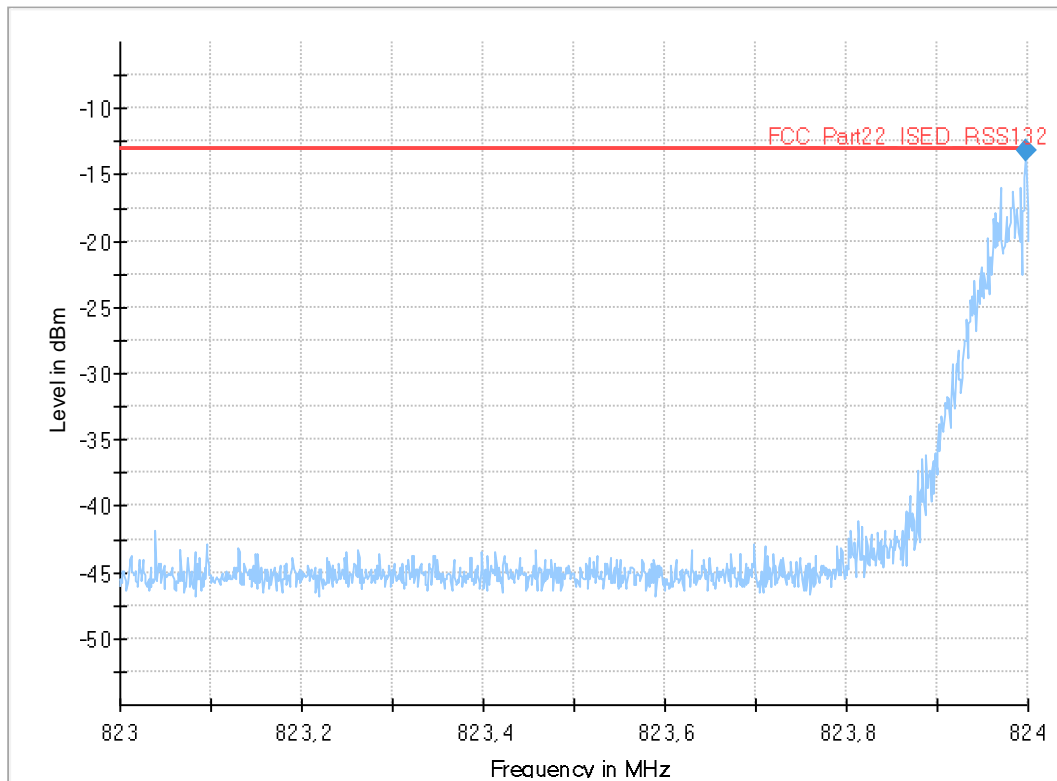
9.850b_Bandedge_low_Channel_128_UL_824.2_standing

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC Part 22.917 / RSS-132
Antenna polarisation:	vertical / horizontal
Operating Mode:	GSM850 CH128 824.2MHz BW0.2MHz
Operator:	KTe
Comment:	--
Environmental Conditions::	Humidity : 49% rH; Temperature: 20 °C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number: 21-1-01787S50_C01
Full Spectrum



Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
823.997000	-13.13	-13.00	0.13	700.0	3.000	H	308.0	0.0	-76

9.851a_Bandedge_high_Channel_251_UL_848.8_lying

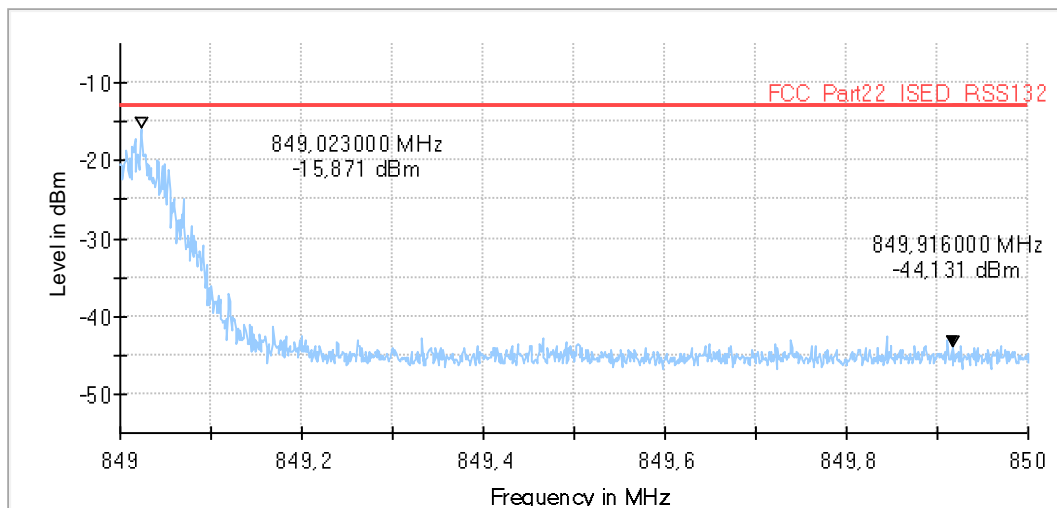
Common Information

Test Description:	Radiated emission related to 1m
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC Part 22.917 / RSS-132
Antenna polarisation:	vertical / horizontal
Operating Mode:	GSM850
Operator:	TFra
Comment:	--
Environmental Conditions:	Humidity : 44% rH; Temperature: 20 °C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	21-1-01787S50_C01
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Full Spectrum



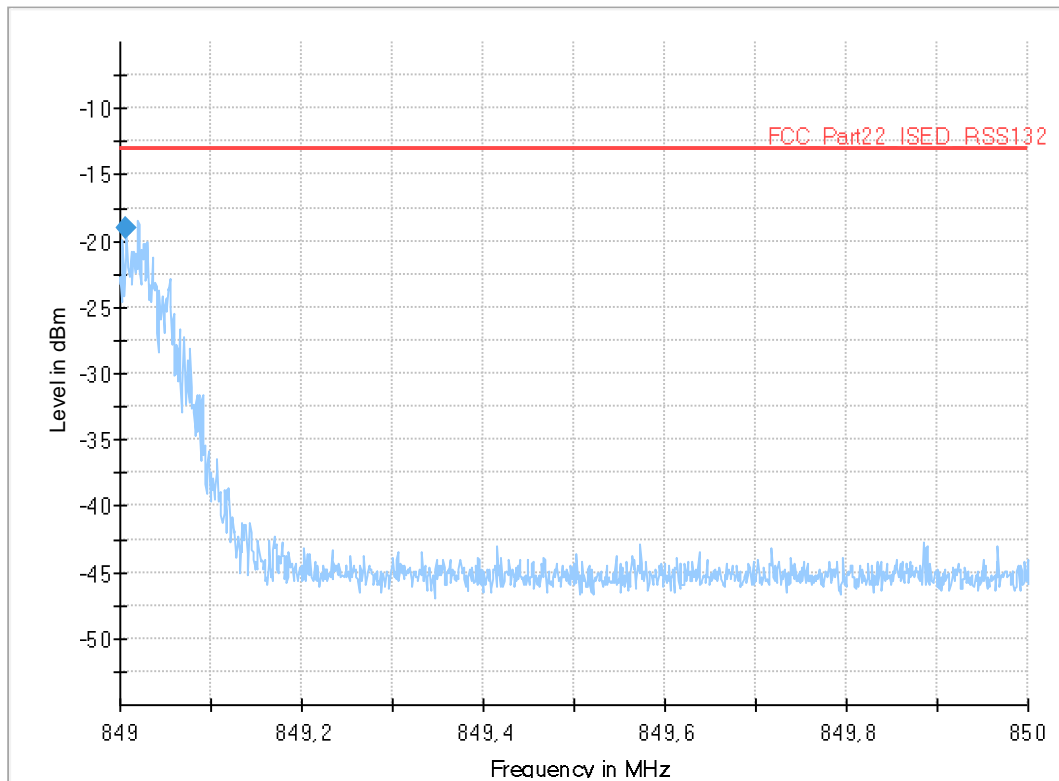
9.851b_Bandedge_high_Channel_251_UL_848.8_standing

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC Part 22.917 / RSS-132
Antenna polarisation:	vertical / horizontal
Operating Mode:	GSM850 CH251 848.8MHz BW0.2MHz
Operator:	KTe
Comment:	--
Environmental Conditions:	Humidity : 49% rH; Temperature: 20 °C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number: 21-1-01787S50_C01
Full Spectrum



Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
849.007000	-19.04	-13.00	6.04	700.0	3.000	H	36.0	0.0	-76

End Of Annex 1