Annex 1: Measurement diagrams to PARTIAL T E S T R E P O R T No.: 17-1-0221001T21a-C1

According to:
FCC Regulations
Part 22, Part 24

ISED-Regulations
RSS-132 Issue 3, RSS-133 Issue 6,
RSS-Gen Issue 5

for

Actia Nordic AB

Telematic Device
ACUII-06

FCC ID: 2AGKKACUII-06H2
ISED: 20839-ACUII06H2

Laboratory Accreditation and Listings		
ilac-MRA DAkkS Deutsche Akkreditierungsstelle D-PL-12047-01-01 Accredited EMC-Test Laboratory	Industry Canada Reg. No.: 3462D-1 Reg. No.: 3462D-2 Reg. No.: 3462D-3	VCCI Voluntary Controls for Electromagnetic Emissions Reg. No.: R-4452, C-20009, T-20006, G-20013
Wi Fi ALLIANCE AUTHORIZED RF LABORATORY	ctia Authorized™ Test Lab Lab Code: 20011130-00	FEDERAL COMMUNICATIONS COMMISSION FC USA MRA US-EU 0003
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

Laboratory Accreditation and Listings

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1. Measurement diagrams

1.1. Magnetic field emissions radiated (850 MHz transmitting mode)

External Antenna

Diagram 2.01a

Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC.V9.25.00
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	Aho
Power during tests:	13.8 V DC
Comment 1:	GSM850_GPRS Ch_192
Comment 2:	DUT Standing, External Antenna

EUT Information

Manufacturer:	Actia Nordic AB
Model:	ACUII-06
Type:	Telematic Device
HW version:	H2
SW version:	14
Serial number:	30207090/22726872069718
Power Supply:	13.8VDC

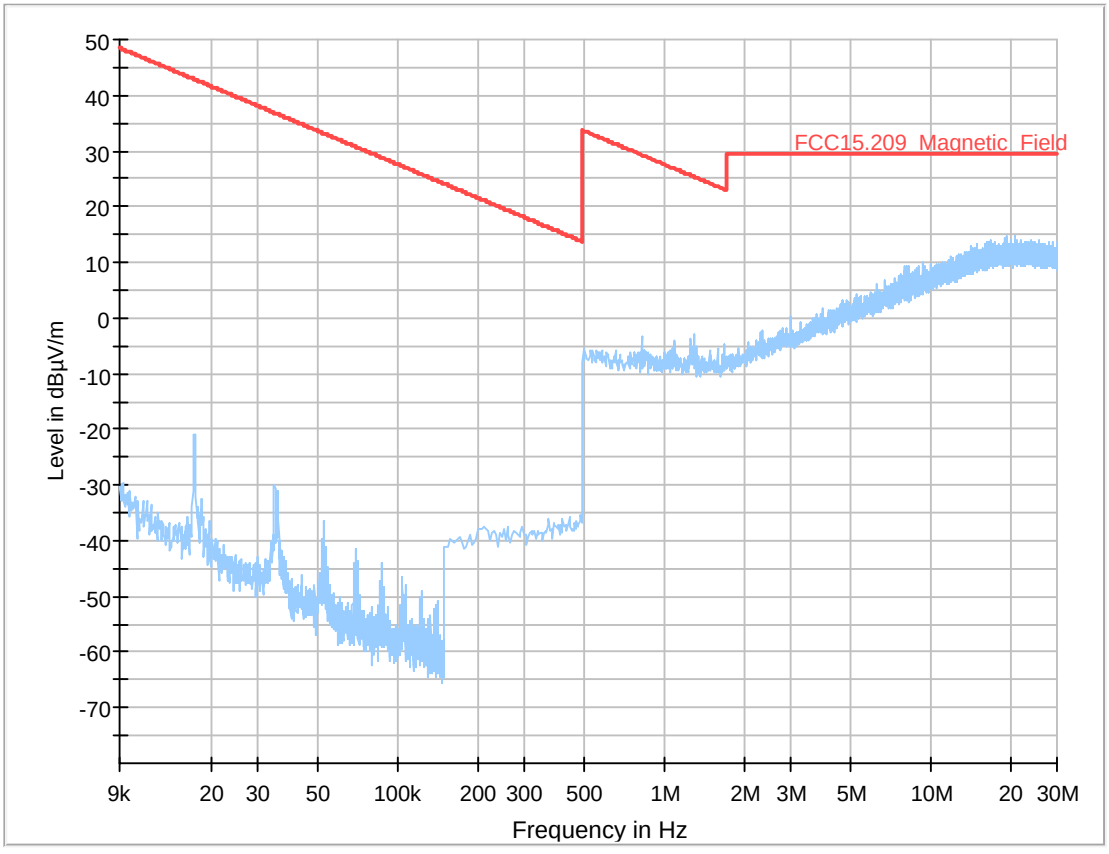
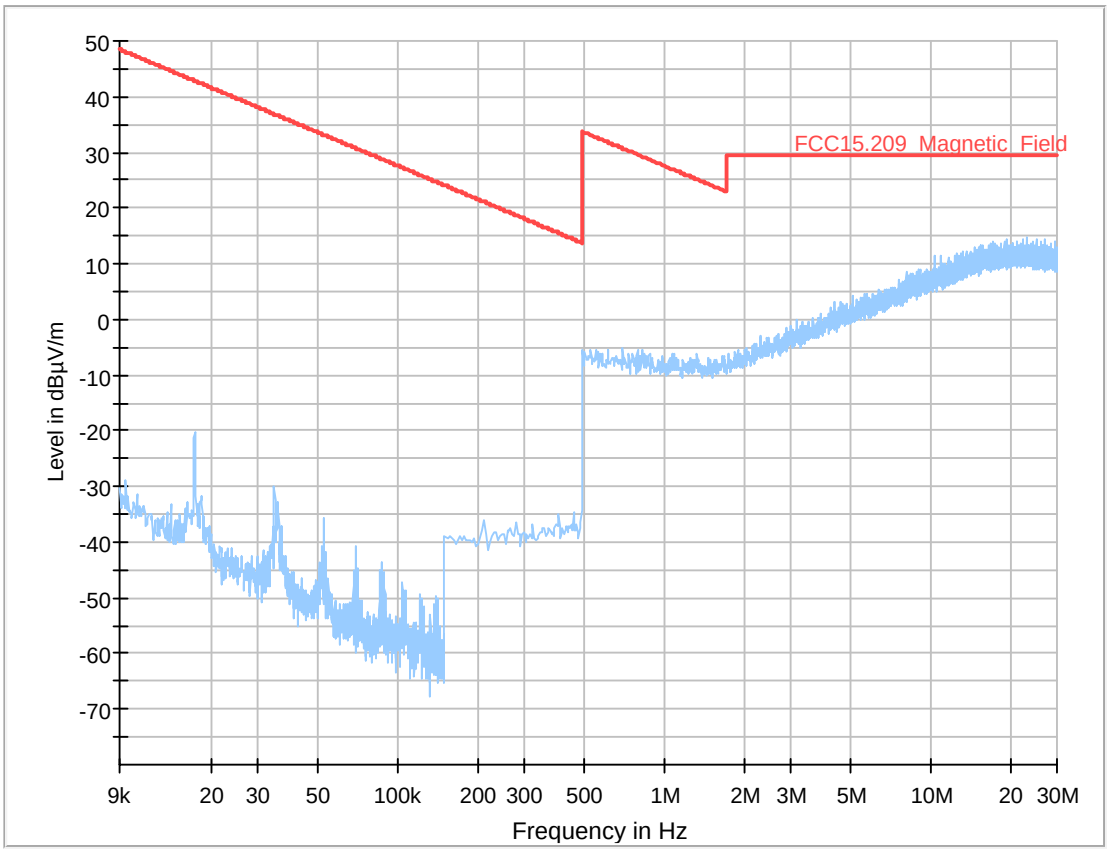


Diagram 2.01b

Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC.V9.25.00
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	SRa
Power during tests:	13.8 V DC
Comment 1:	GSM850_GPRS Ch_192
Comment 2:	DUT Laying, External Antenna

EUT Information **Please see Diagram 2.01a**



Internal Antenna

Diagram 2.03a

Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC.V9.25.00
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	SRa
Power during tests:	13.8 V DC
Comment 1:	GSM850_GPRS Ch_192
Comment 2:	DUT Standing Internal Antenna

EUT Information **Please see Diagram 2.01a**

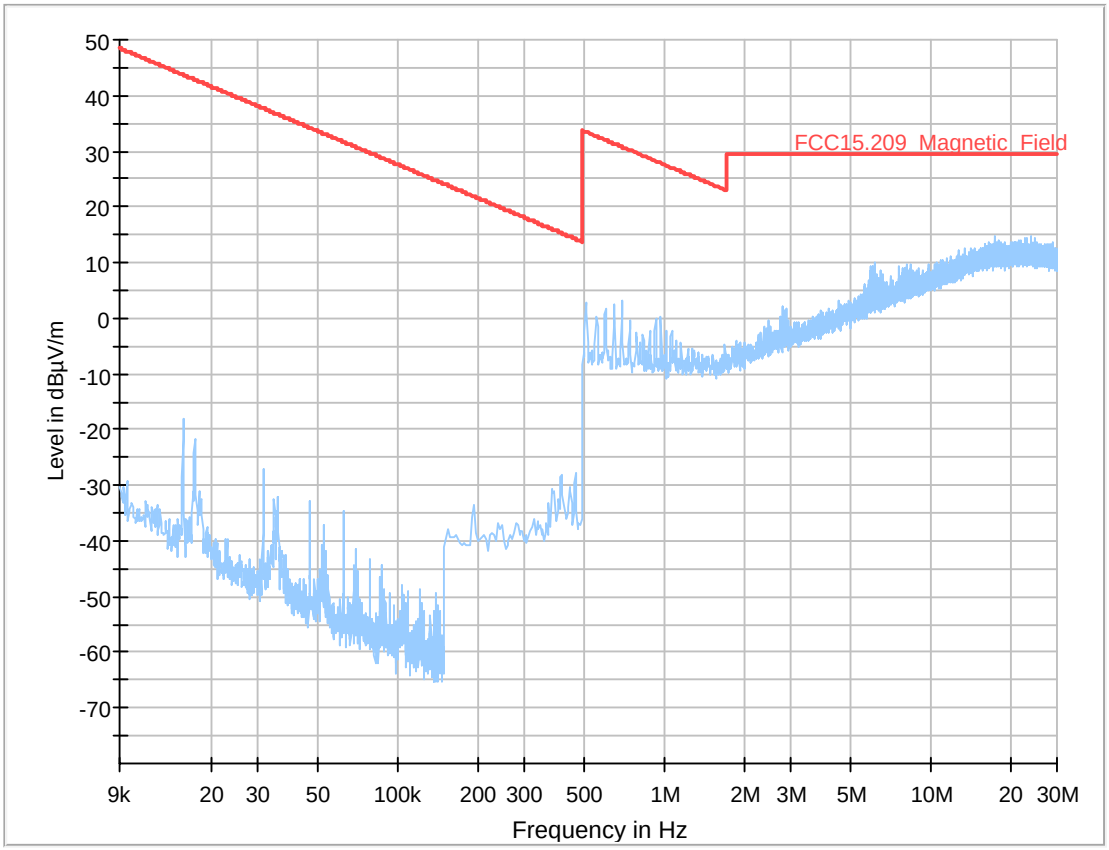
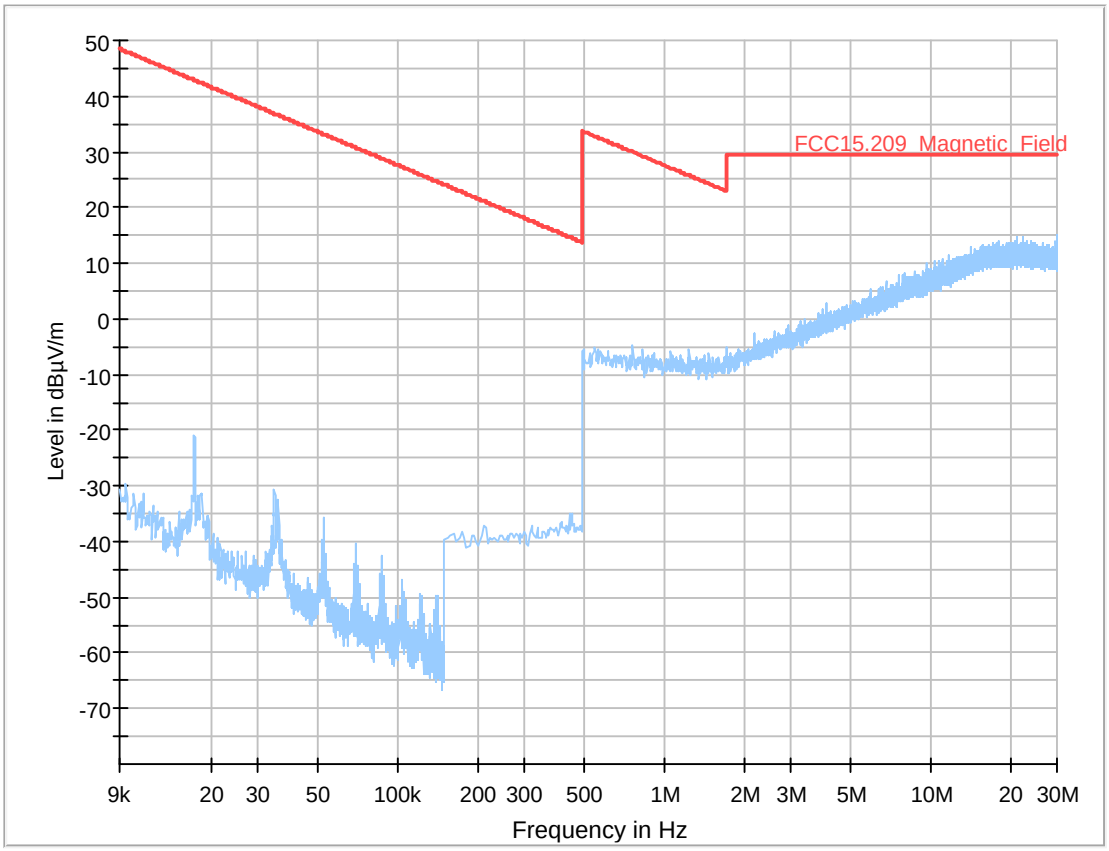


Diagram 2.03b

Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC.V9.25.00
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	SRa
Power during tests:	13.8 V DC
Comment 1:	GSM850_GPRS Ch_192
Comment 2:	DUT Laying, Internal Antenna

EUT Information **Please see Diagram 2.01a**



1.2. Magnetic field emissions radiated (1900 MHz transmitting mode)

External Antenna

Diagram 2.02a

Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC.V9.25.00
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	SRa
Power during tests:	13.8 V DC
Comment 1:	GSM1900_GPRS Ch_661
Comment 2:	DUT Standing, External Antenna

EUT Information **Please see Diagram 2.01a**

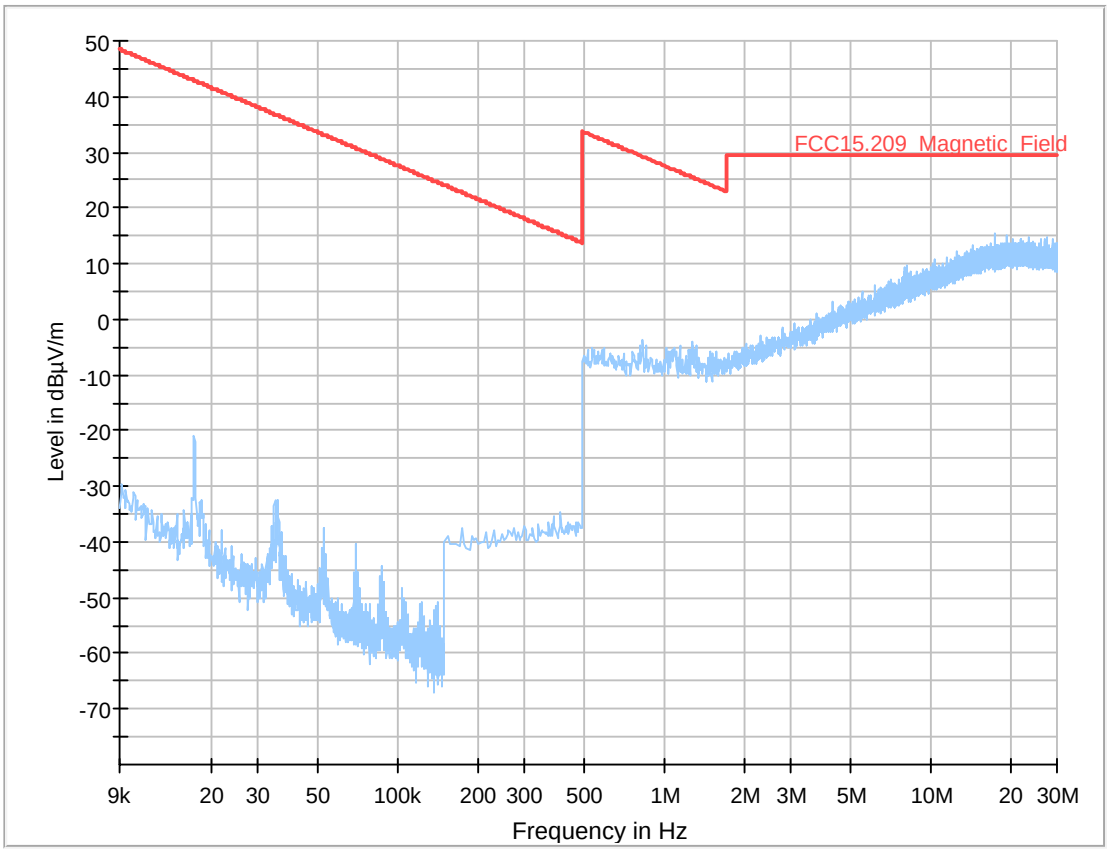
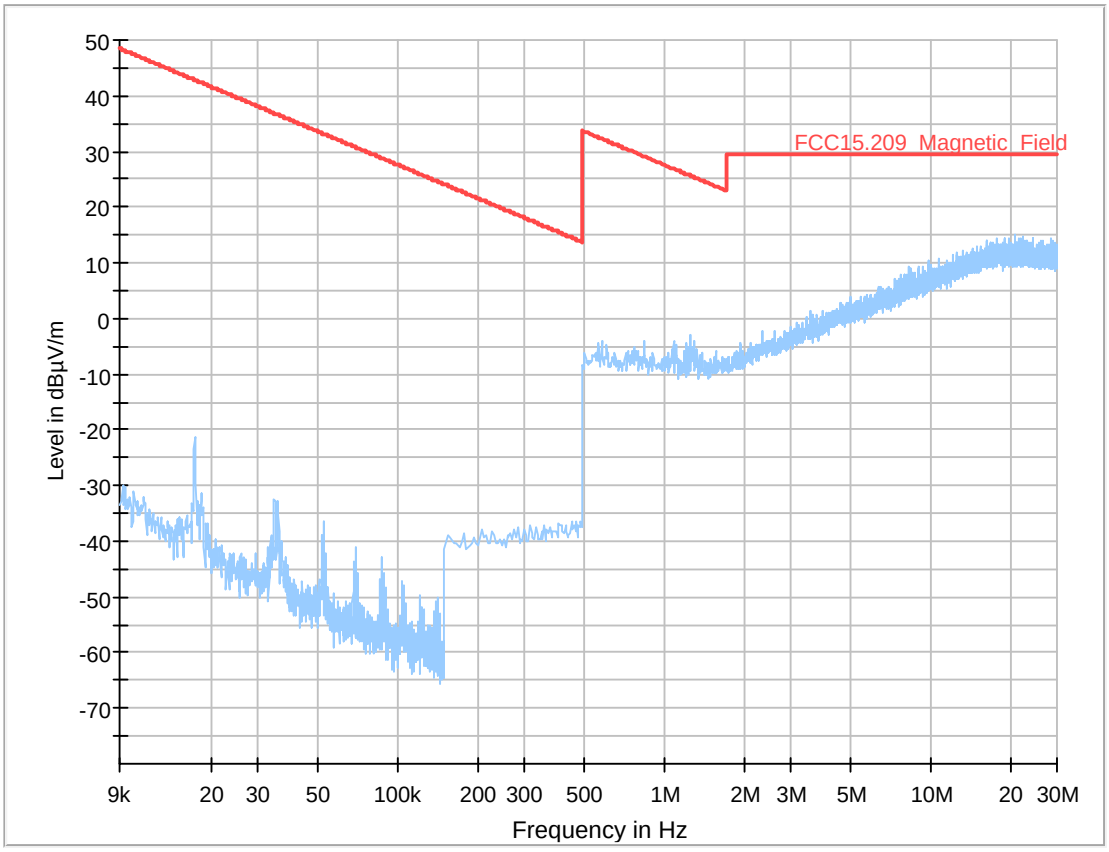


Diagram 2.02b

Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC.V9.25.00
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	SRa
Power during tests:	13.8 V DC
Comment 1:	GSM1900_GPRS Ch_661
Comment 2:	DUT Laying, External Antenna

EUT Information **Please see Diagram 2.01a**



Internal Antenna

Diagram 2.04a

Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC.V9.25.00
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	HEI
Power during tests:	13.8 V DC
Comment 1:	GSM1900_GPRS Ch_661
Comment 2:	DUT Standing, Internal Antenna

EUT Information

Please see Diagram 2.01a

Full Spectrum

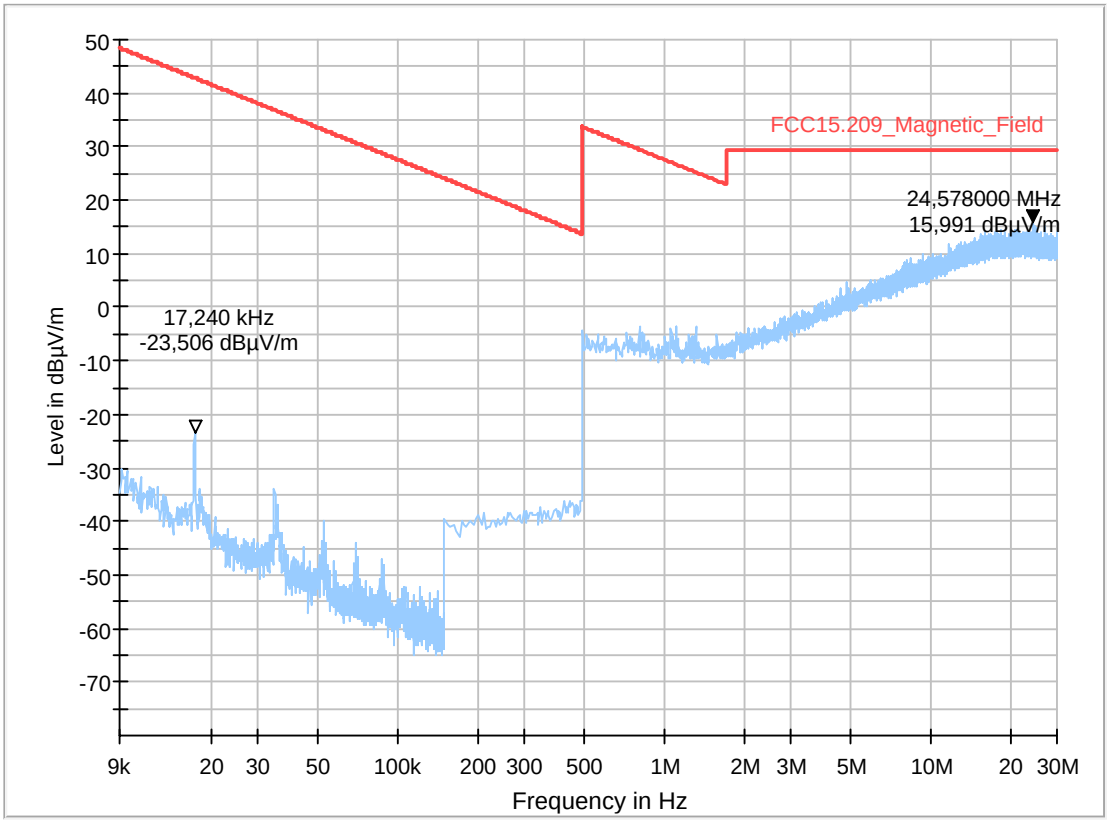
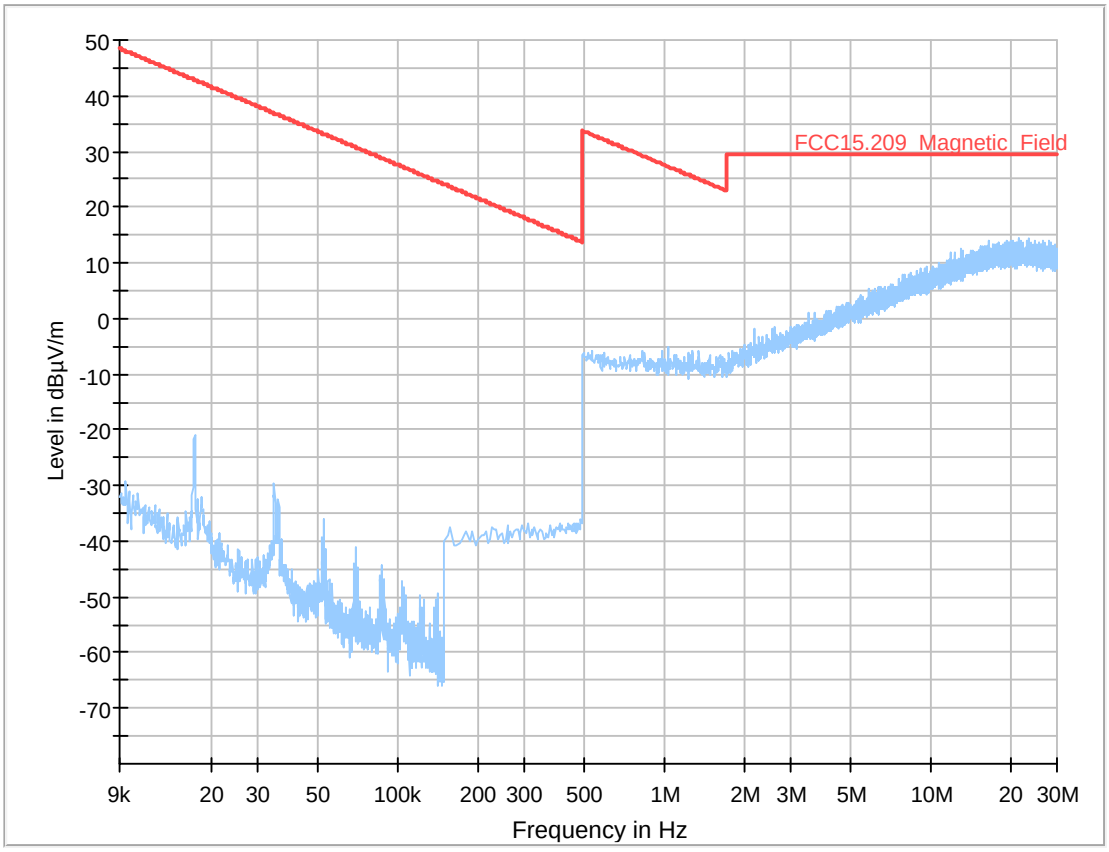


Diagram 2.04b

Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC.V9.25.00
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	SRa
Power during tests:	13.8 V DC
Comment 1:	GSM1900_GPRS Ch_661
Comment 2:	DUT Laying, Internal Antenna

EUT Information **Please see Diagram 2.01a**



1.3. Spurious emissions radiated (850 MHz transmitting mode)
External Antenna

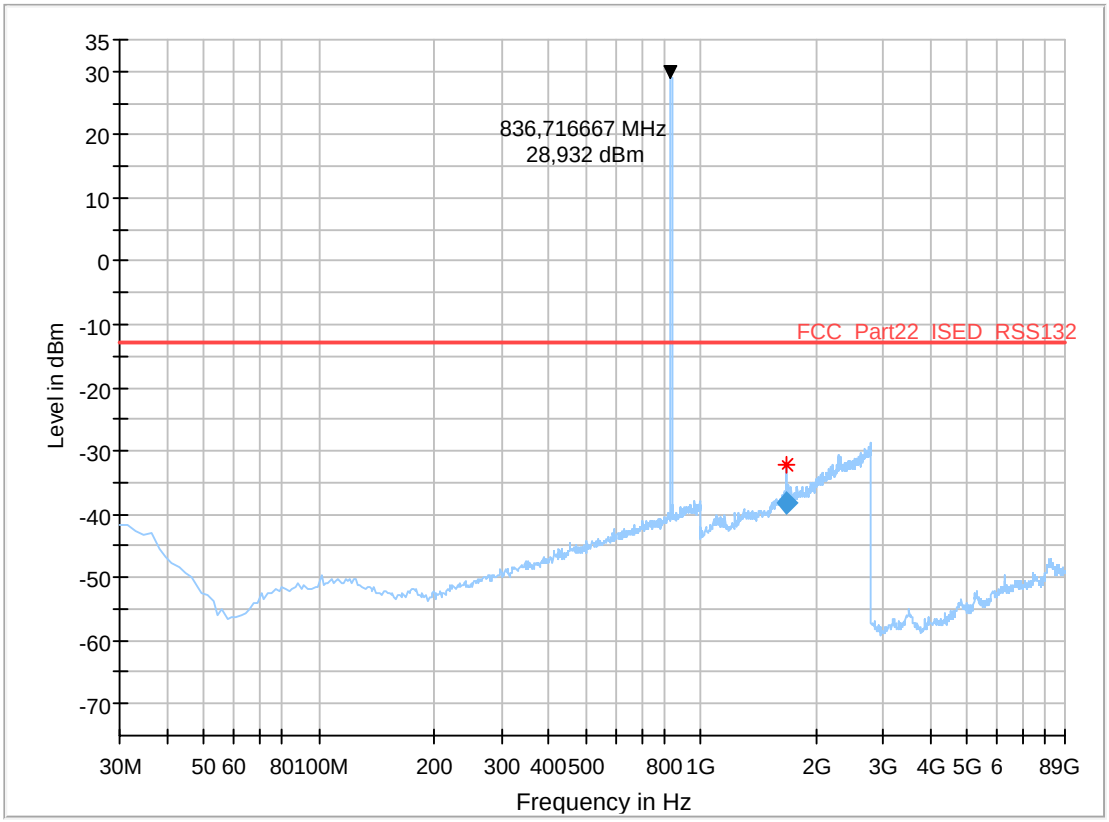
Diagram 8.01a

Common Information

Test Description:	Radiated Spurious Emissions GSM850
Test Site:	Fully-Anechoic Room
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operation mode:	GSM-850, Channel_192
Operator Name:	RIs
Comment:	EUT Standing_External Antenna

EUT Information **Please see Diagram 2.01a**

Full Spectrum



Final_Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Corr. (dB)
1670.683333	-38.12	-13.00	25.12	1000.0	100.000	H	45.0	-63.1

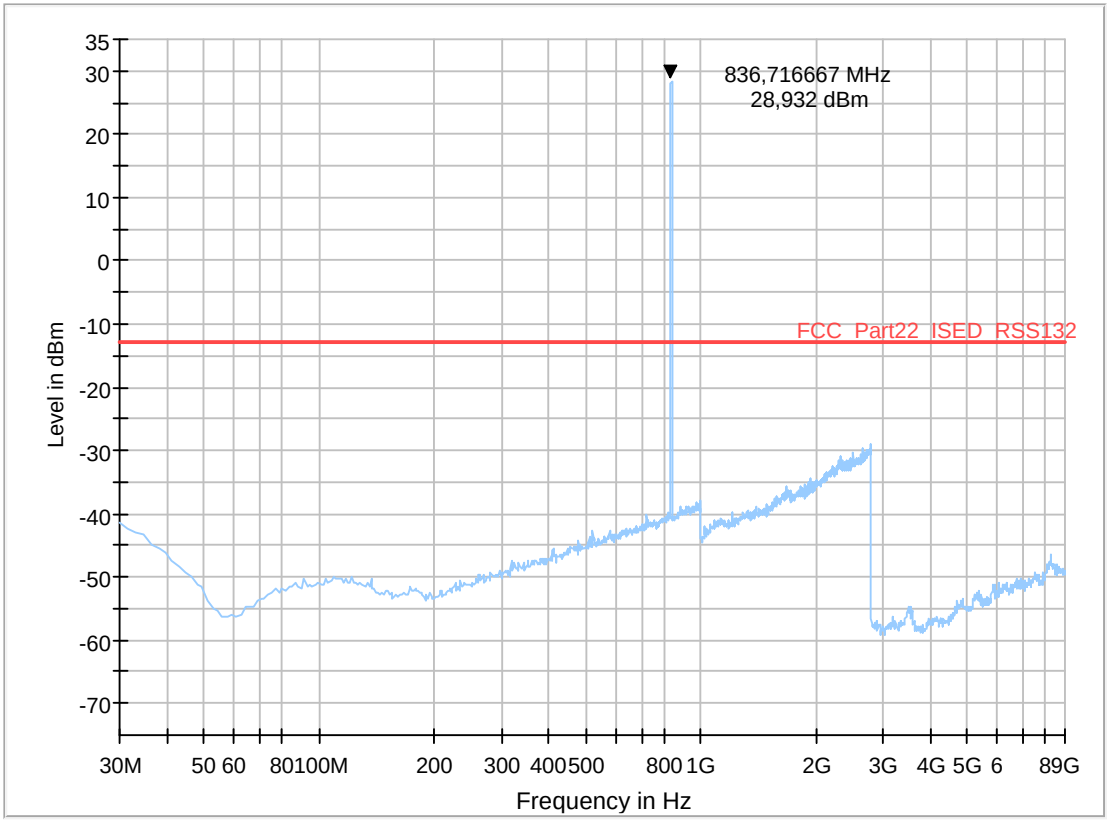
Diagram 8.01b

Common Information

Test Description:	Radiated Spurious Emissions GSM850
Test Site:	Fully-Anechoic Room
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operation mode:	TCH850, CHANNEL192
Operator Name:	HEI
Comment:	EUT Laying _External Antenna

EUT Information **Please see Diagram 2.01a**

Full Spectrum



Internal Antenna

Diagram 8.03a

Common Information

Test Description:	Radiated Spurious Emissions GSM850
Test Site:	Fully-Anechoic Room
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operation mode:	GSM_850, Channel192
Operator Name:	HEI
Comment:	EUT Standing_ Internal Antenna

EUT Information **Please see Diagram 2.01a**

Full Spectrum

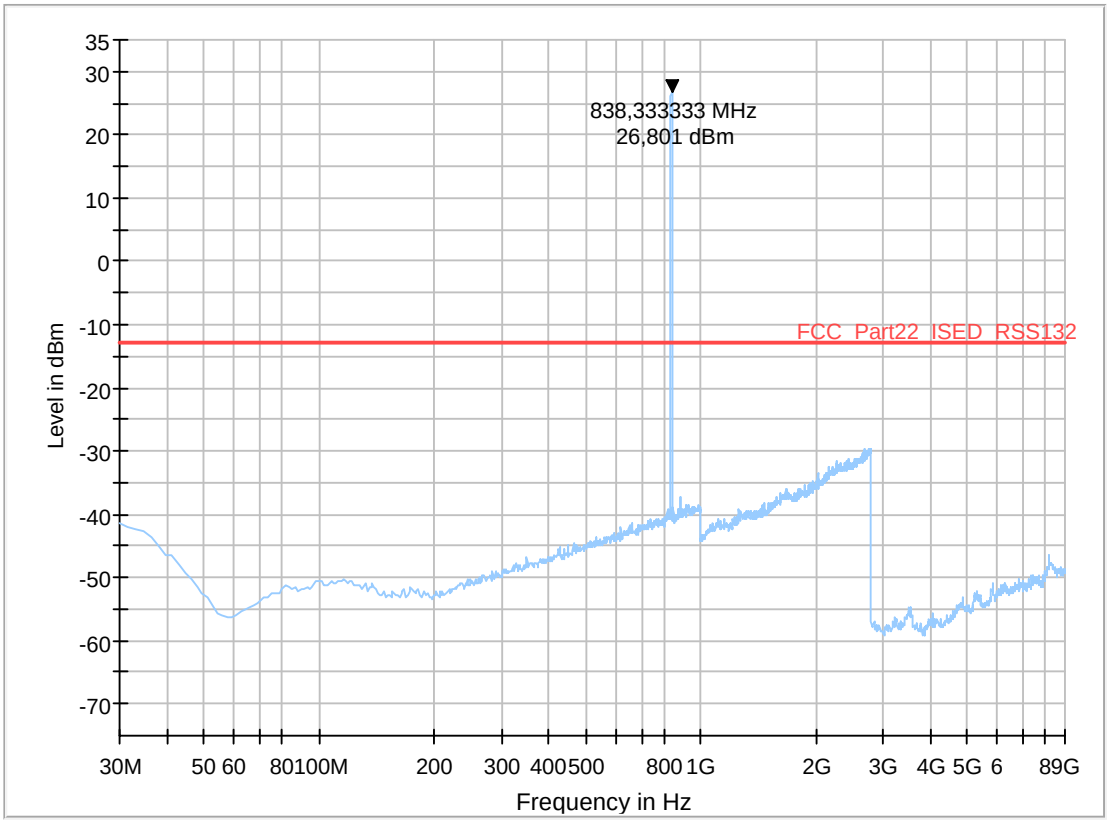
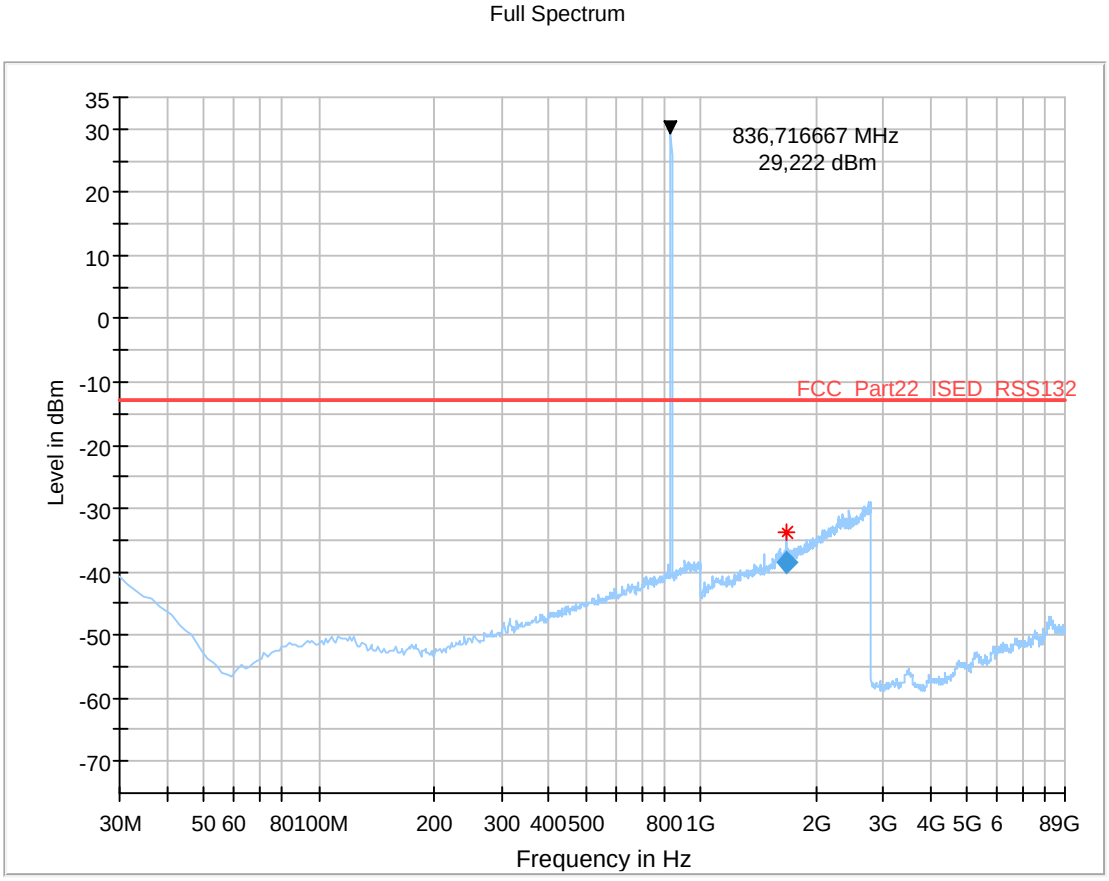


Diagram 8.03b

Common Information

Test Description:	Radiated Spurious Emissions GSM850
Test Site:	Fully-Anechoic Room
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operation mode:	GSM_850, Channel_192
Operator Name:	HEI
Comment:	EUT Laying_ Internal Antenna

EUT Information **Please see Diagram 2.01a**



Final_Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1671.266667	-38.53	-13.00	25.53	1000.0	100.000	154.0	H	0.0	-63.1

1.4. Spurious emissions radiated (1900 MHz transmitting mode)

External Antenna

Diagram 8.02a

Common Information

Test Description:	Radiated emission related to 1m
Test Site:	FAR
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operation mode:	GSM_1900, Channel_661
Operation Condition:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	EUT Standing_External Antenna

EUT Information **Please see Diagram 2.01a**

Full Spectrum

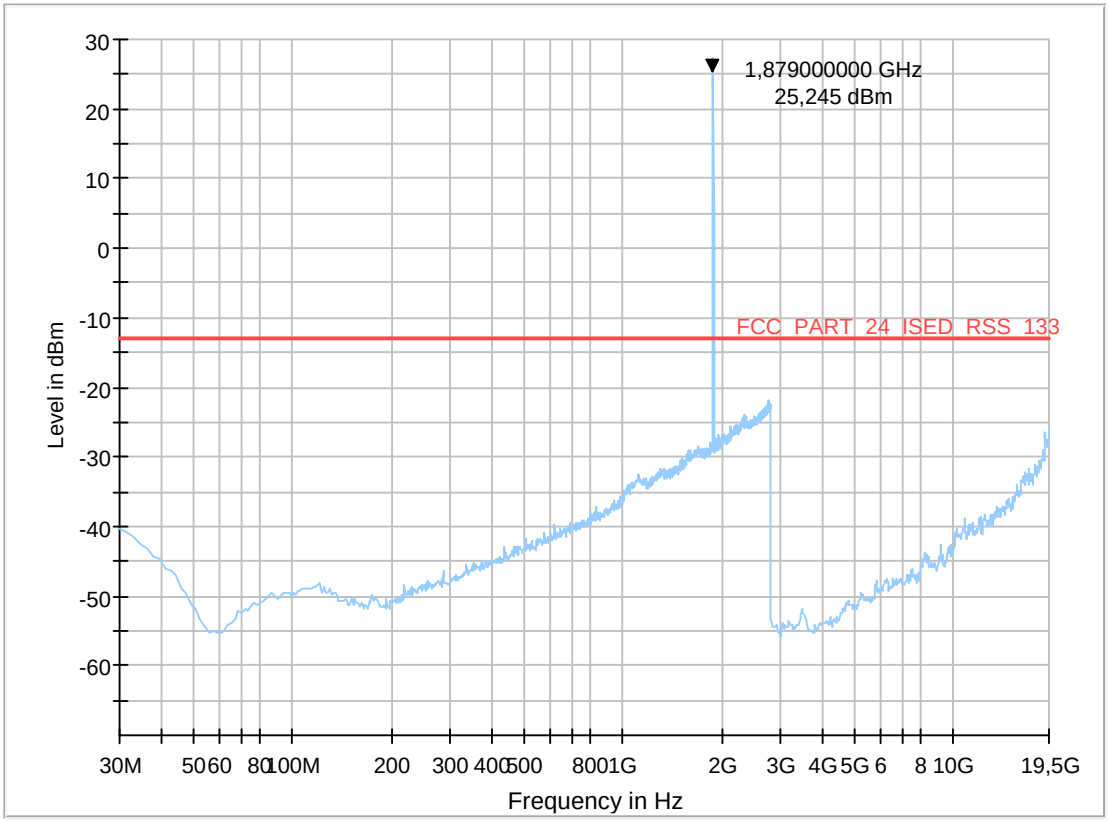


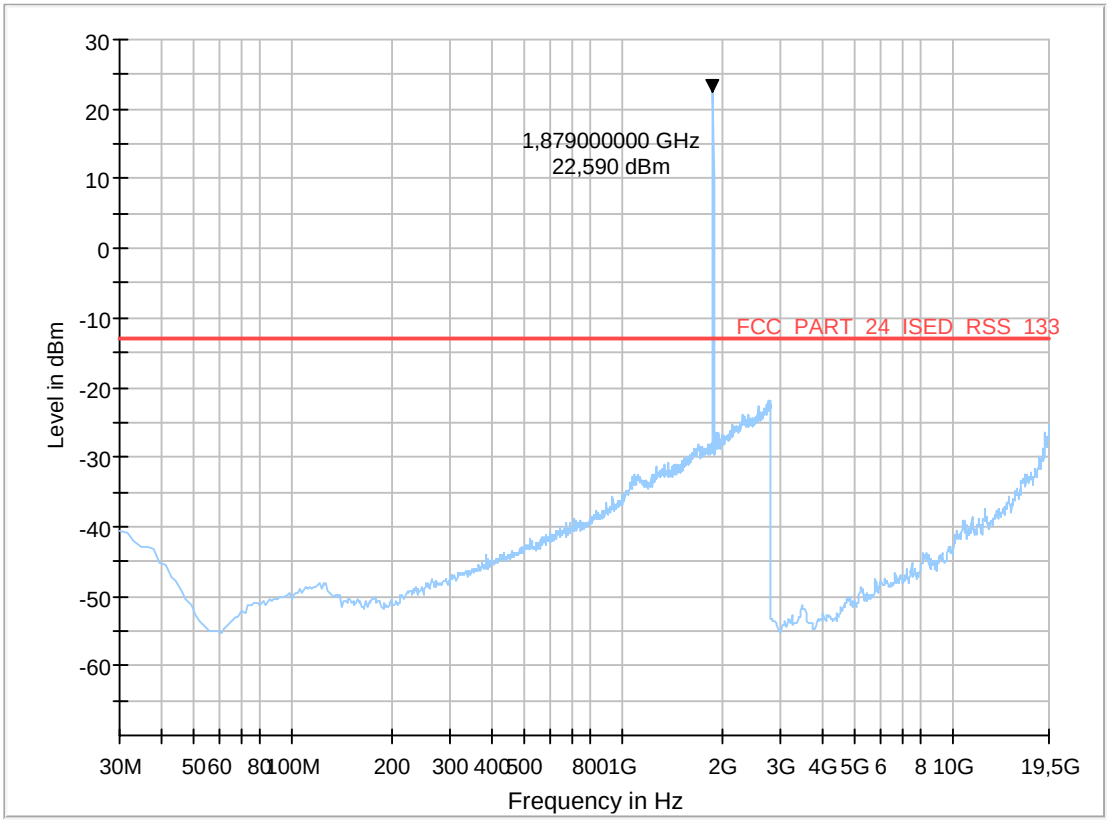
Diagram 8.02b

Common Information

Test Description:	Radiated emission related to 1m
Test Site:	FAR
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operation mode:	GSM_1900, Channel_661
Operation Condition:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	EUT Laying _External Antenna

EUT Information **Please see Diagram 2.01a**

Full Spectrum



Internal Antenna

Diagram 8.04a

Common Information

Test Description:	Radiated emission related to 1m
Test Site:	FAR
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operation mode:	GSM_1900, Channel_661
Operation Condition:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	EUT Standing _Internal Antenna

EUT Information **Please see Diagram 2.01a**

Full Spectrum

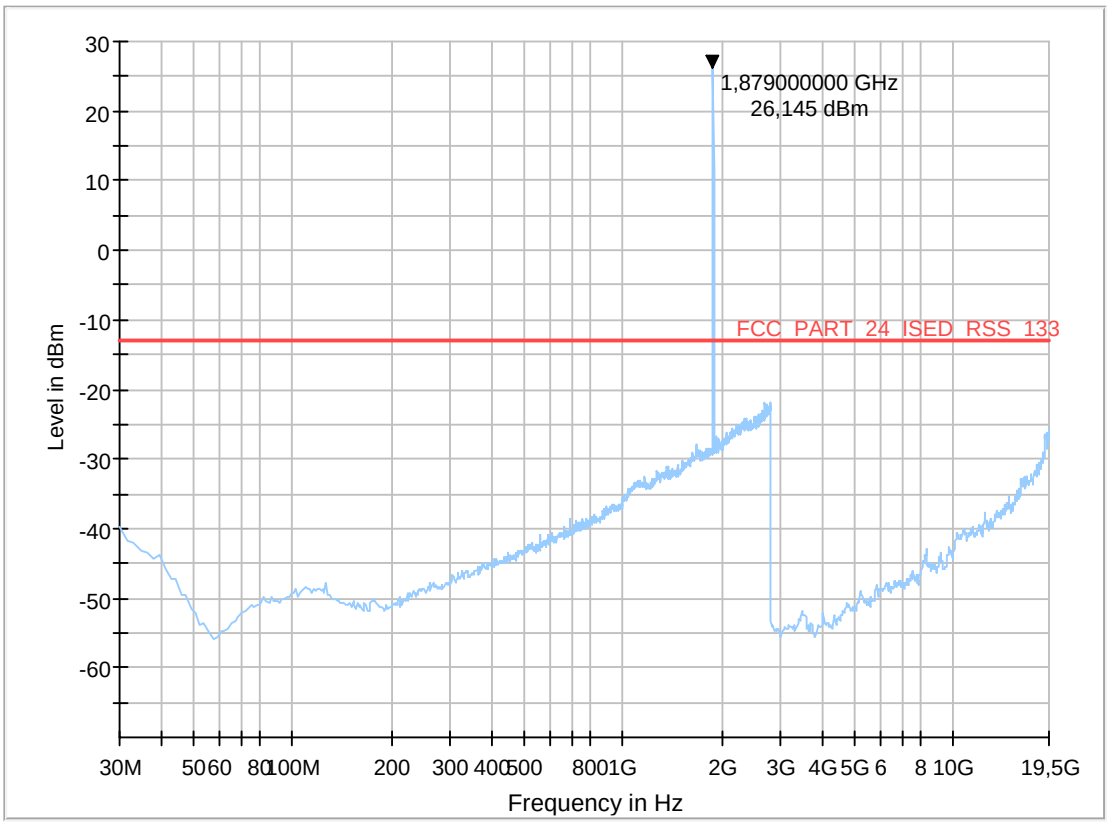


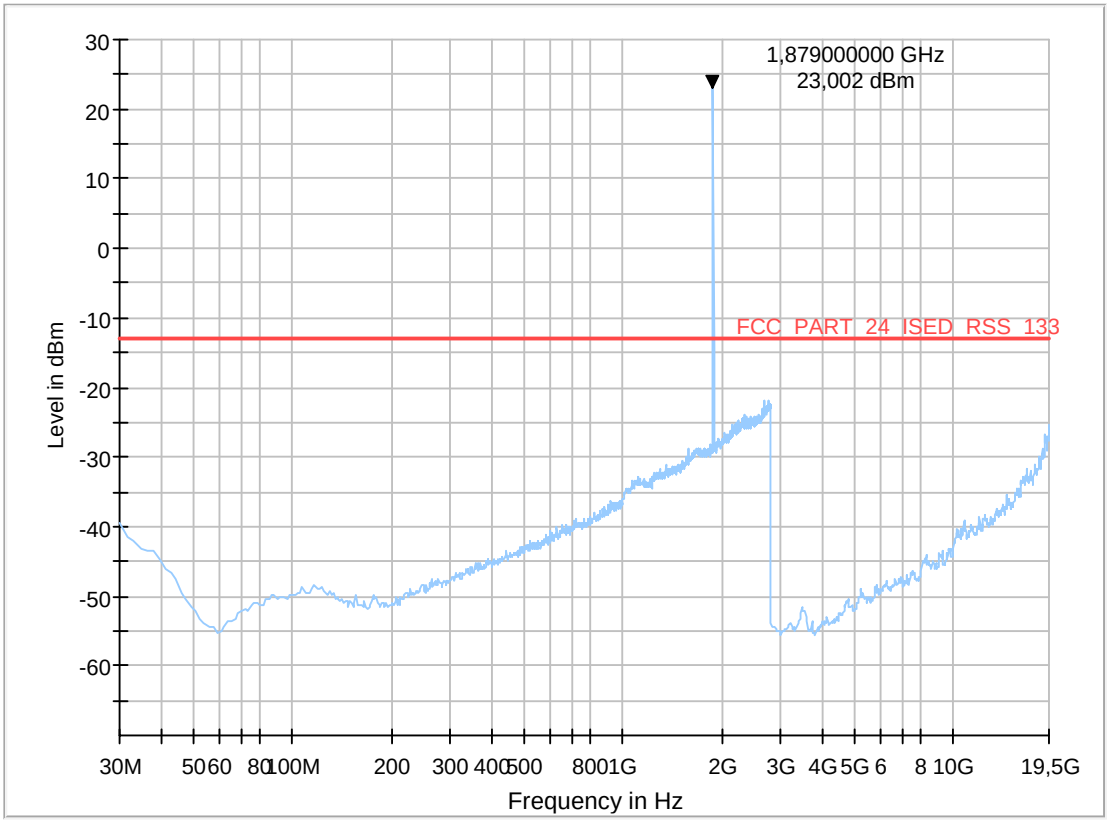
Diagram 8.04b

Common Information

Test Description:	Radiated emission related to 1m
Test Site:	FAR
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operation mode:	GSM_1900, Channel_661
Operation Condition:	Humidity: 40%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	EUT Laying _Internal Antenna

EUT Information **Please see Diagram 2.01a**

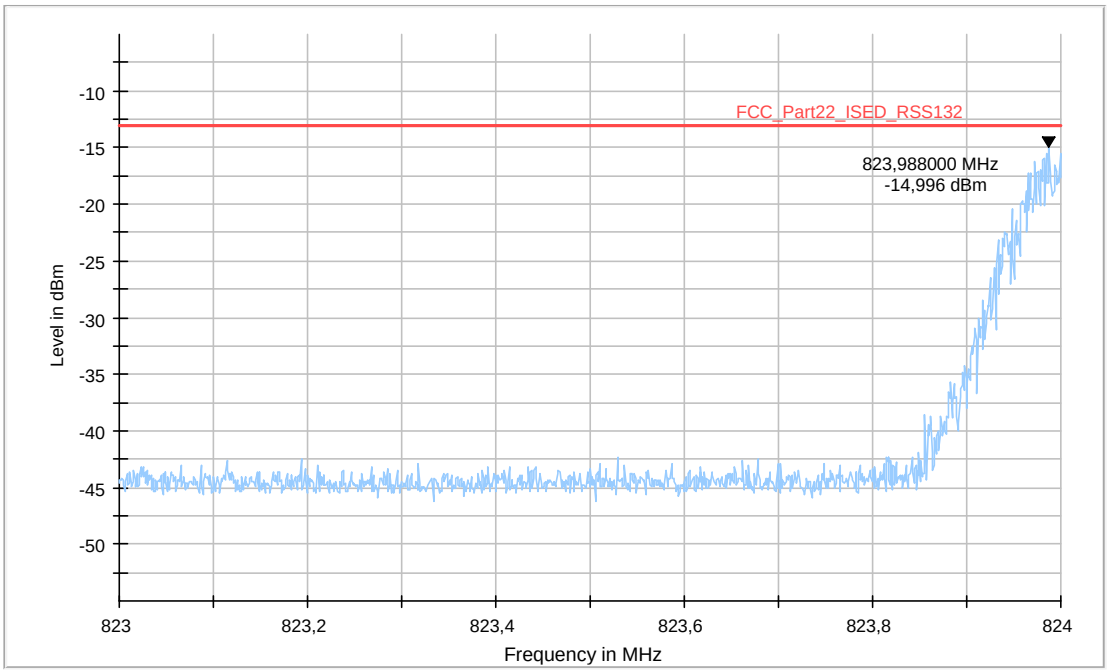
Full Spectrum



1.5. Radiated emissions Band Edge on 850 MHz (transmitting mode)
External Antenna

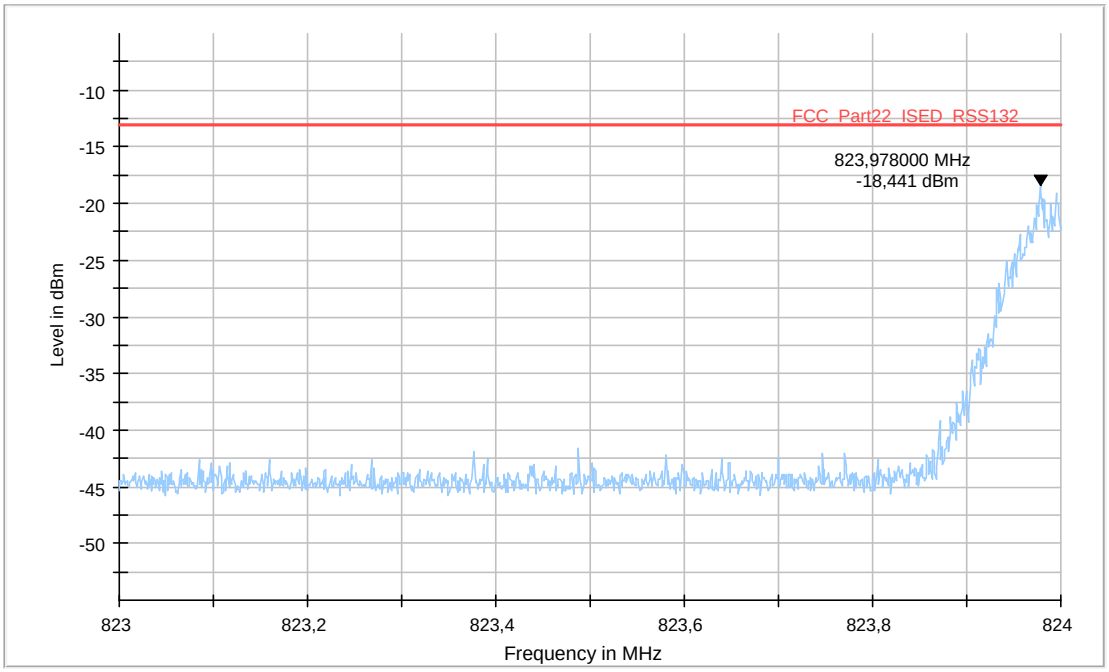
9.01a_RSE_GSM-850_Channel-128_GPRS_EUT_Standing

Full Spectrum



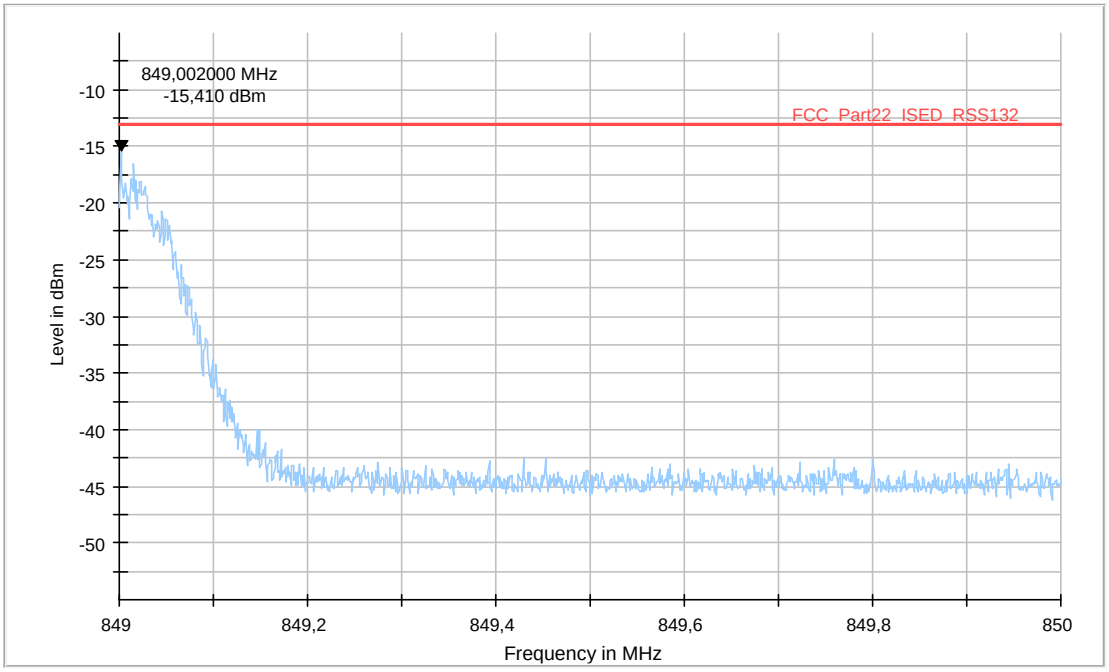
9.01b_RSE_GSM-850_Channel-128_GPRS_EUT_Laying

Full Spectrum



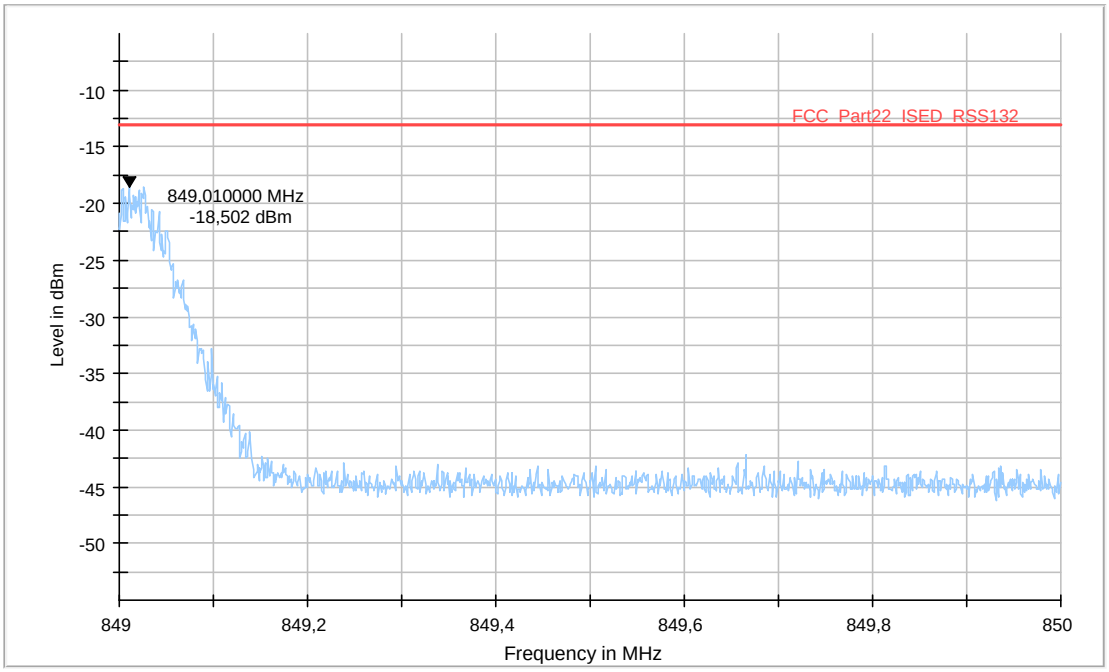
9.02a_RSE_GSM-850_Channel-251_GPRS_EUT_Standing

Full Spectrum



9.02b_RSE_GSM-850_Channel-251_GPRS_EUT_Laying

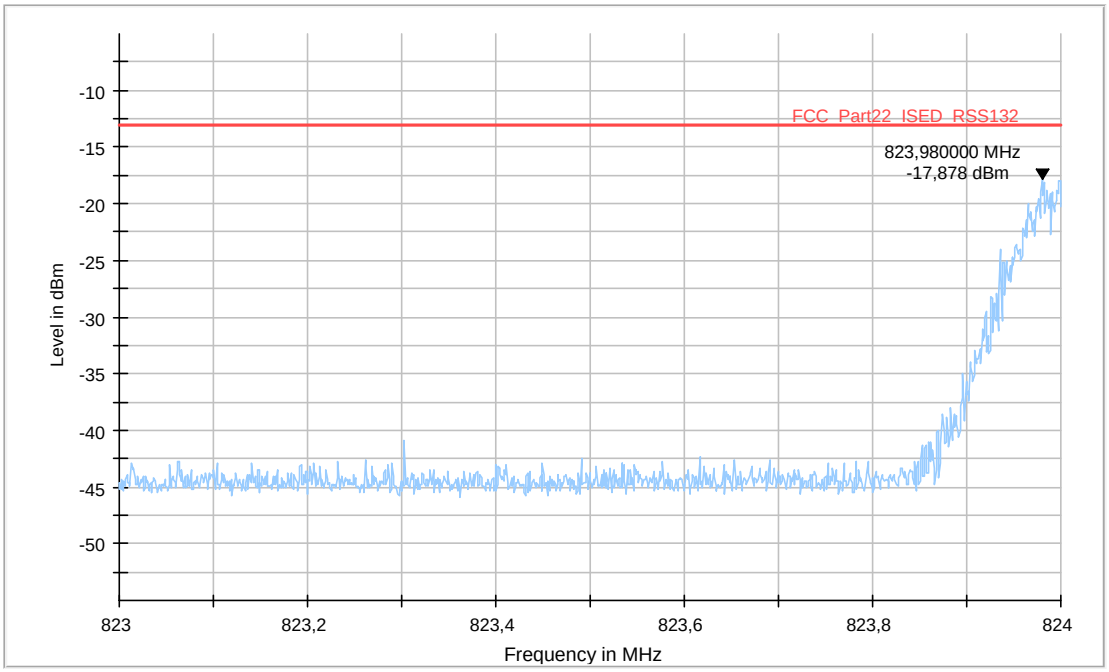
Full Spectrum



Internal Antenna

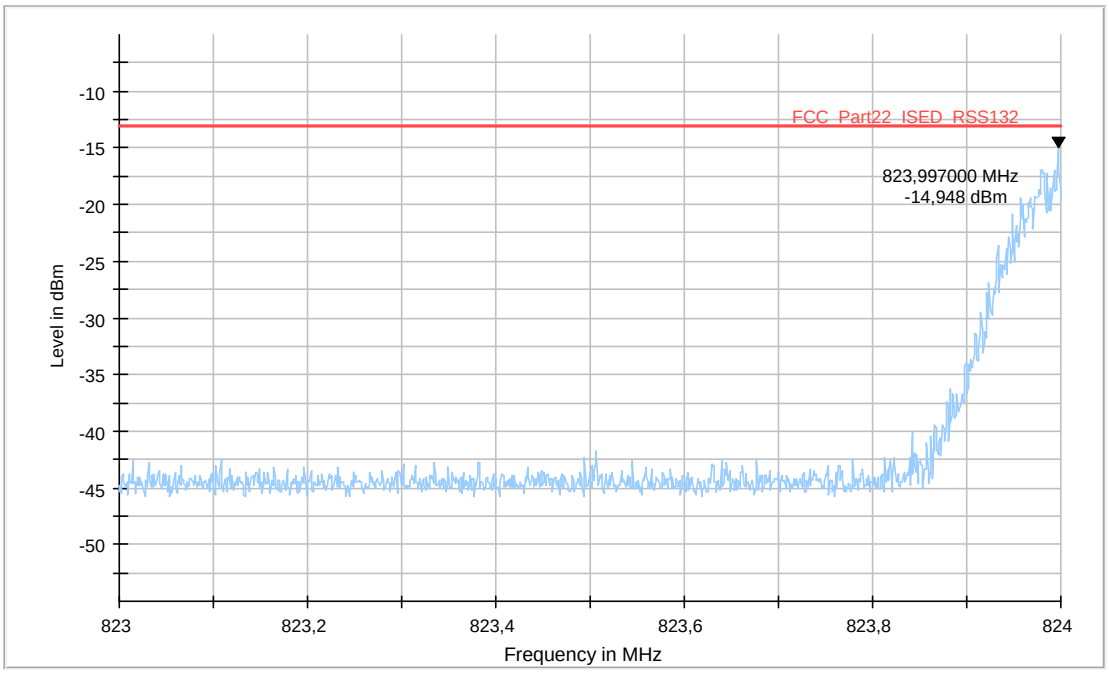
9.05a_RSE_GSM-850_Channel-128_GPRS_EUT_Standing

Full Spectrum

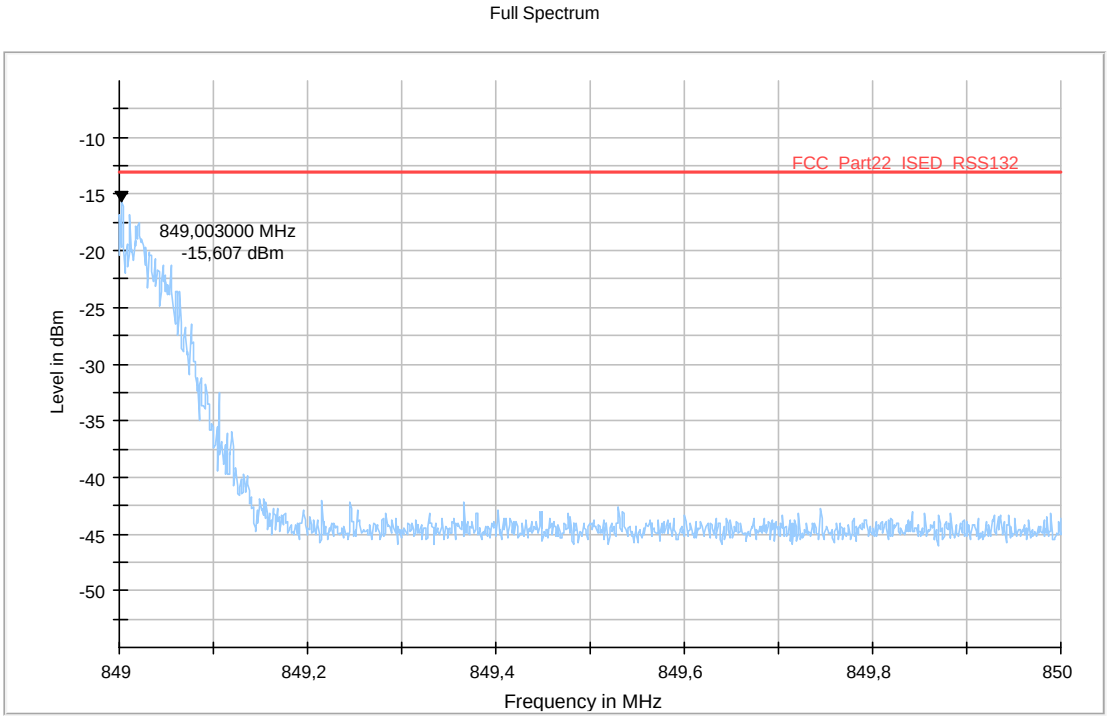


9.05b_RSE_GSM-850_Channel-128_GPRS_EUT_Laying

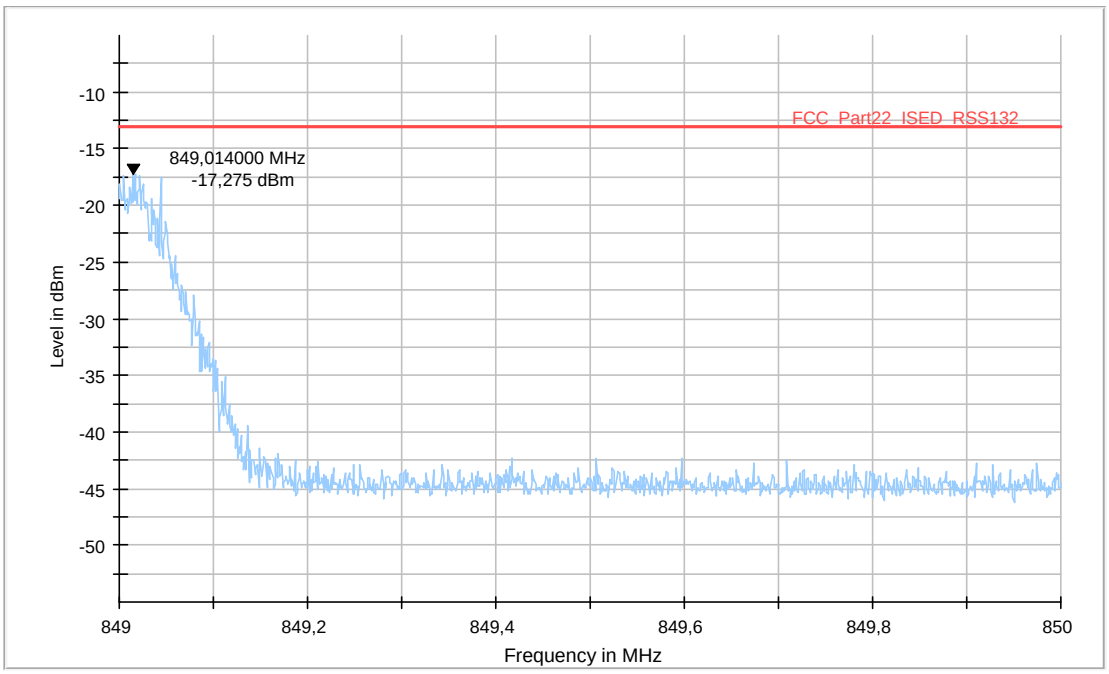
Full Spectrum



9.06a_RSE_GSM-850_Channel-251_GPRS_EUT_Standing

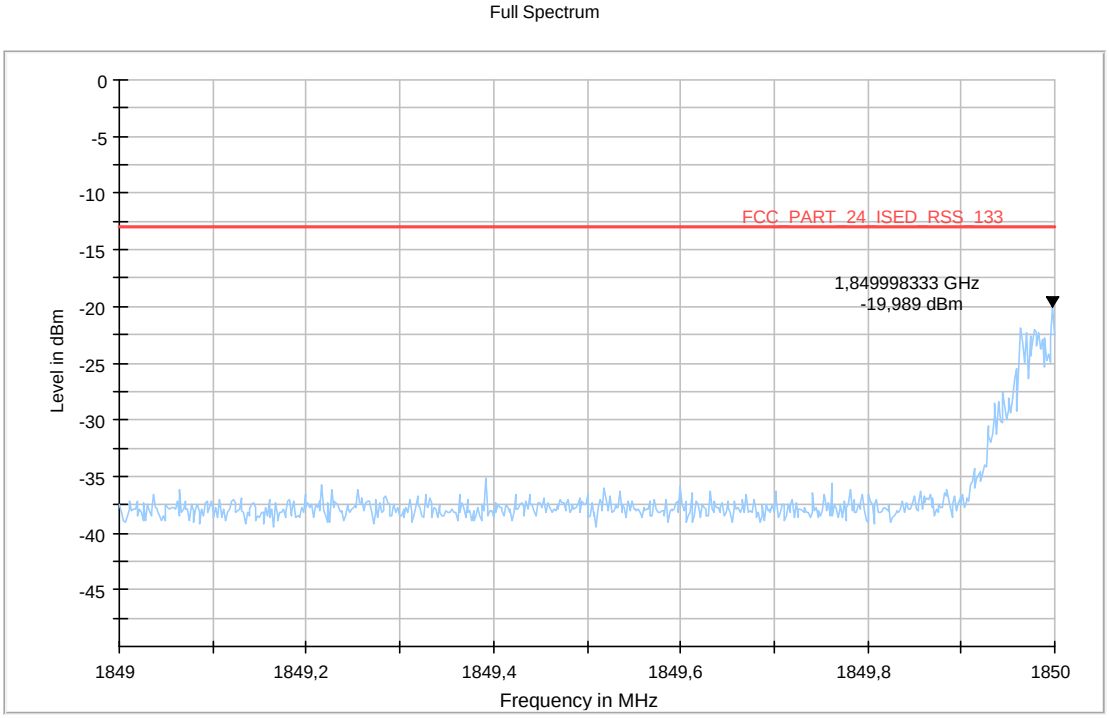


9.06b_RSE_GSM-850_Channel-251_GPRS_EUT_Laying

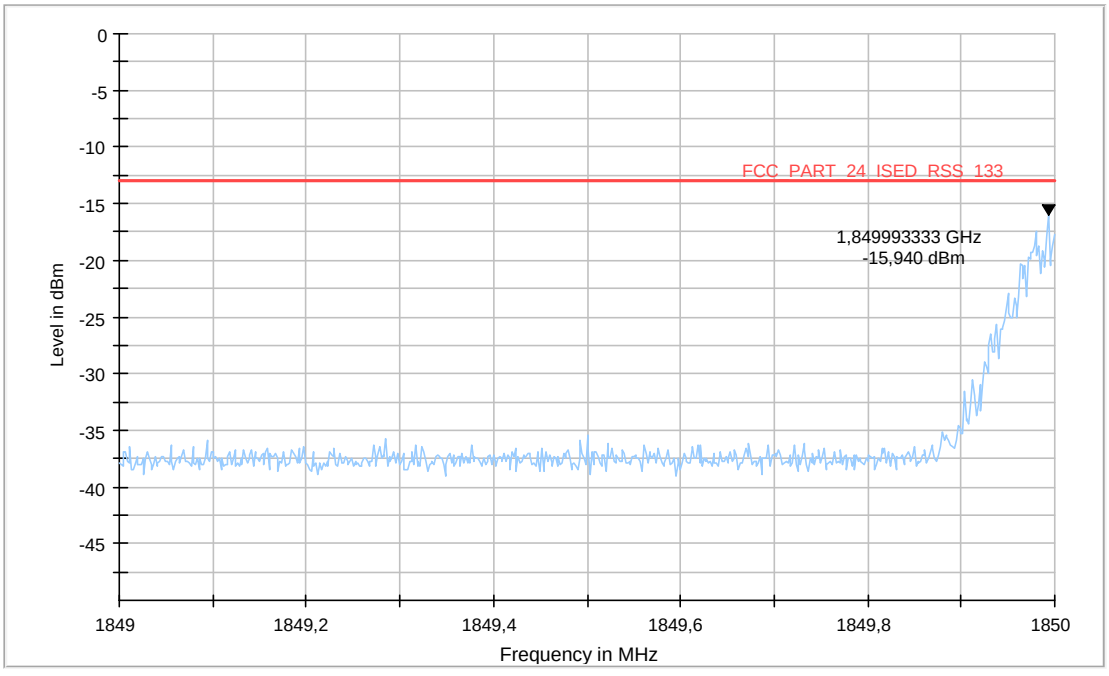


1.6. Radiated emissions Band Edge on 1900 MHz (transmitting mode)
External Antenna

9.03a_RSE_GSM-1900_Channel-512_GPRS_EUT_Standing

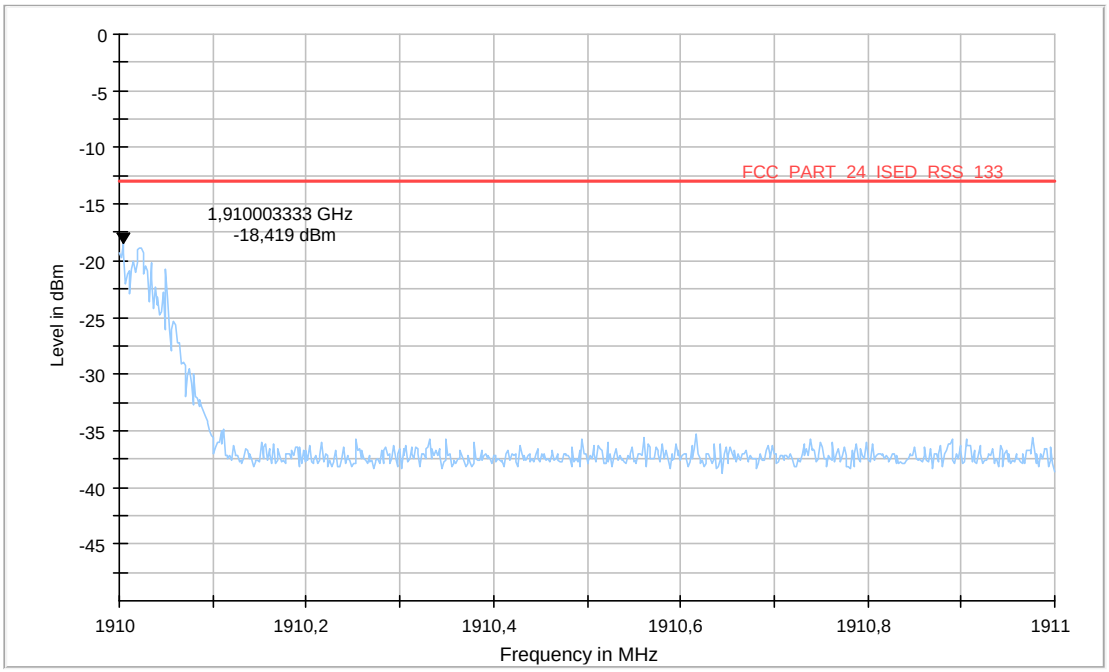


9.03b_RSE_GSM-1900_Channel-512_GPRS_EUT_Laying



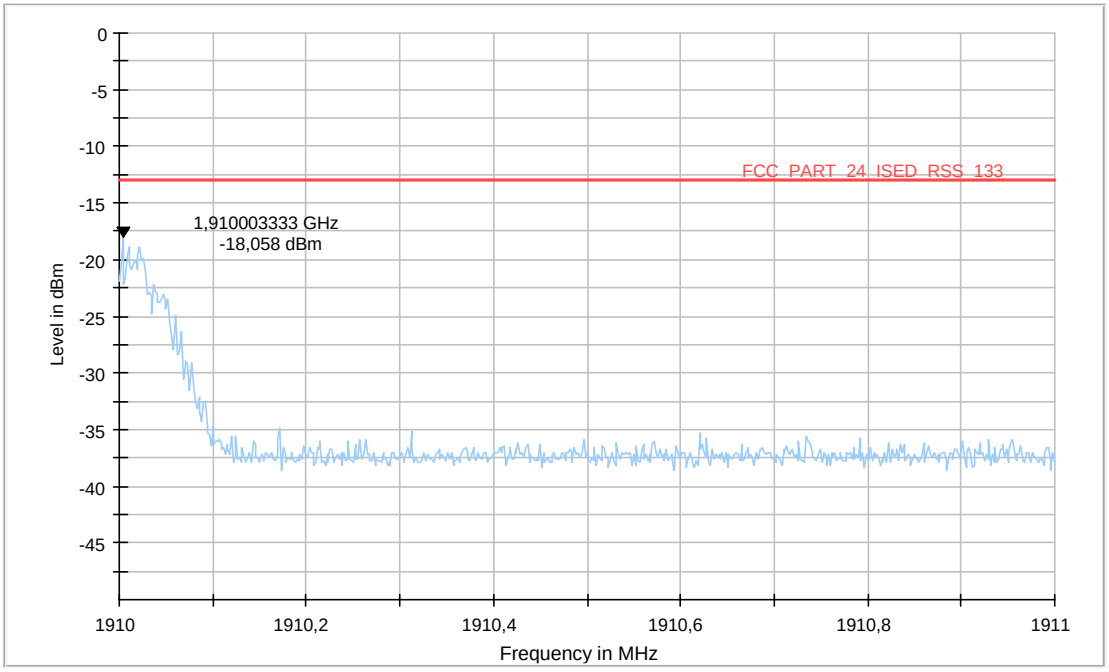
9.04a_RSE_GSM-1900_Channel-810_GPRS_EUT_Standing

Full Spectrum



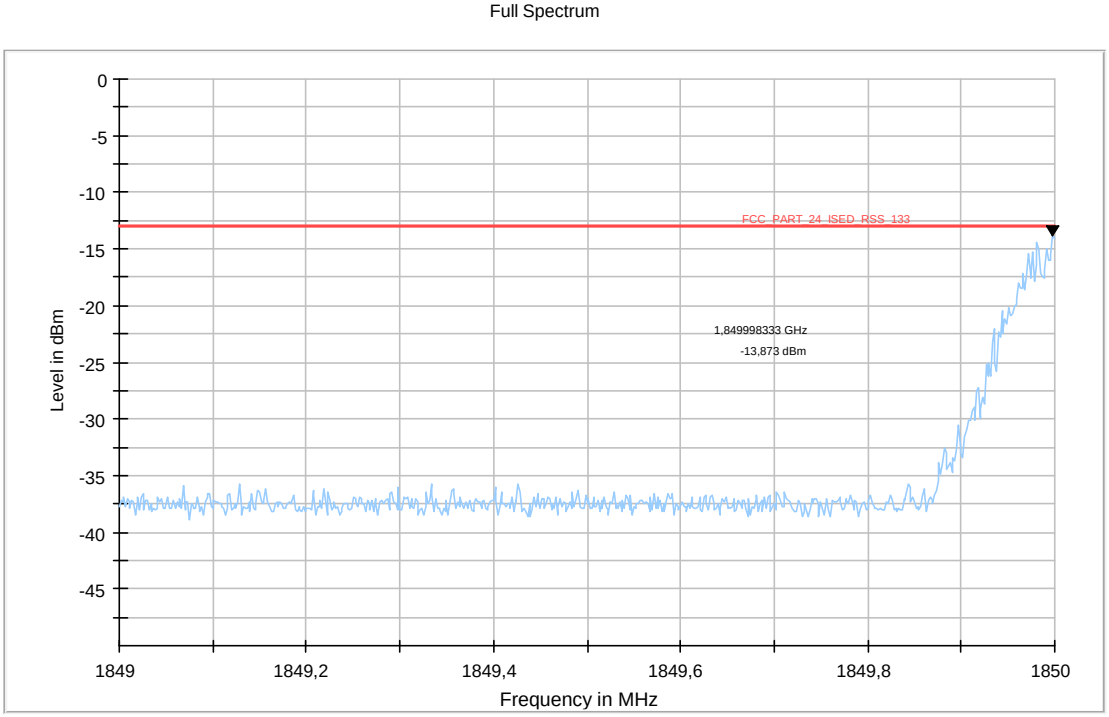
9.04b_RSE_GSM-1900_Channel-810_GPRS_EUT_Laying

Full Spectrum

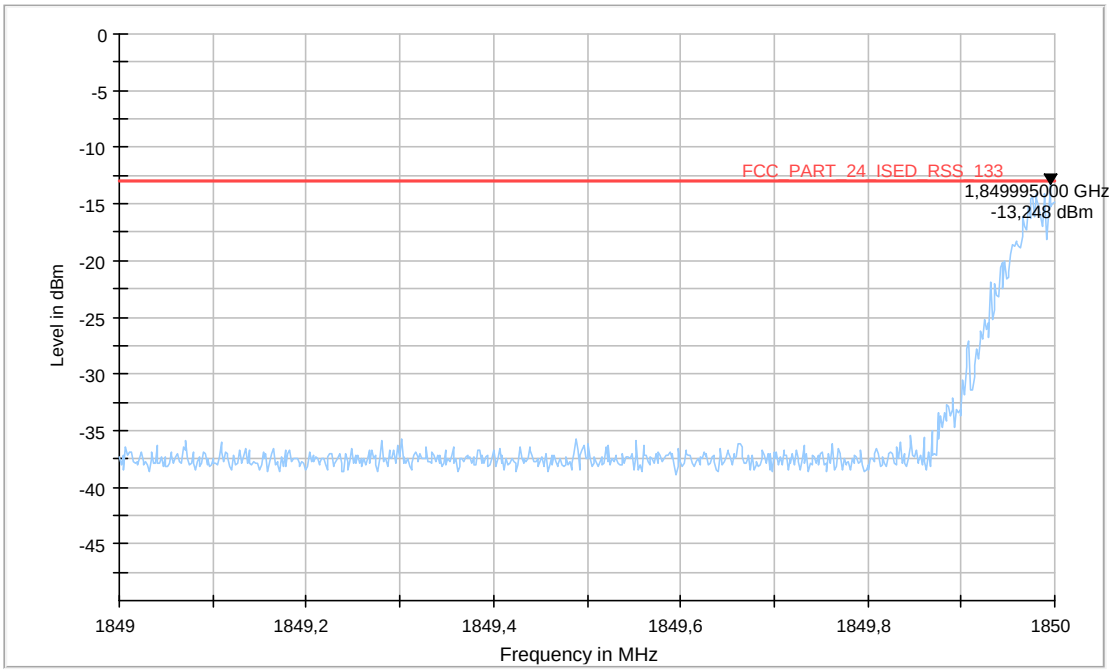


Internal Antenna

9.07a_RSE_GSM-1900_Channel-512_GPRS_EUT_Standing

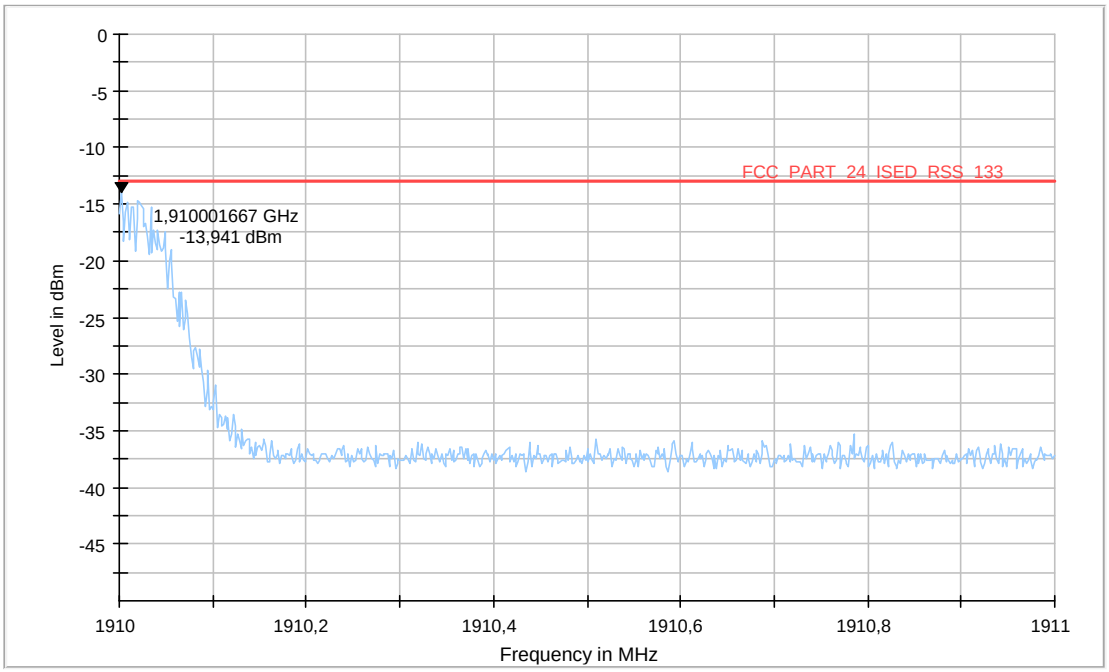


9.07b_RSE_GSM-1900_Channel-512_GPRS_EUT_Laying



9.08a_RSE_GSM-1900_Channel-810_GPRS_EUT_Standing

Full Spectrum



9.08b_RSE_GSM-1900_Channel-810_GPRS_EUT_Laying

Full Spectrum