

Annex 1: Measurement diagrams to Test Report 20-1-0060701T50a-A1

Number of pages:	11	Date of Report:	2021-May-19
Testing company:	CETECOM GmbH Im Teelbruch 116 45219 Essen Germany Tel. + 49 (0) 20 54 / 95 19-0 Fax: + 49 (0) 20 54 / 95 19-150	Applicant:	VALEO Telematik und Akustik GmbH
Product:	Telematic Device		
Model:	ATM-02-ROW-R1		
FCC ID:	QWY-ATM2-R-13	IC:	--
Testing has been carried out in accordance with:	Title 47 CFR, Chapter I FCC Regulations, Subchapter B Part 22 Subpart H, Part 24 Subpart E Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		

Table of Contents

1	Measurement diagrams	3
1.1	8.01_Traffic_mode_UMTS_Band_2_Channel_9262	3
1.2	8.02_Traffic_mode_UMTS_Band_5_Channel_4132	5
1.3	9.201_Band-Edge_low_Channel_9262_UL_1852.4MHz	6
1.4	9.202_Band-Edge_high_Channel_9538_UL_1907.6MHz	7
1.5	9.501_Band-Edge_low_Channel_4132_UL_826.4MHz.....	8
1.6	9.502_Band-Edge_high_Channel_4233_UL_846.6MHz	9
1.7	2.01_Magnetic_field_Emission_UMTS_Band_II_EUT_laying_ROW	10
1.8	2.02_Magnetic_field_Emission_UMTS_Band_V_EUT_laying_ROW	11

1 Measurement diagrams

1.1 8.01_Traffic_mode_UMTS_Band_2_Channel_9262

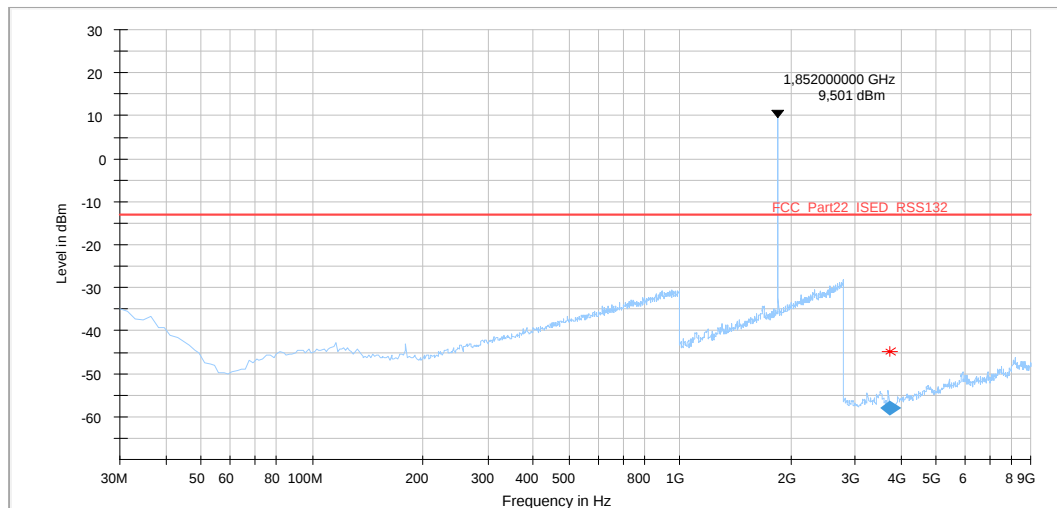
Common Information

Test Description:	Radiated emission related to 1m
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 24.238 Broadband PCS / RSS-133
Antenna polarization:	vertical / horizontal
Operating Mode:	WCDMA FDDII ch 9262
Operator:	npe
Comment:	--
Environmental Conditions:	Humidity : 41% rH; Temperature: 19 °C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S223_C01
Power Supply:	12 VDC
Comments:	Peak at 1852 MHz due wanted traffic channel of W-CDMA II

Full Spectrum



Final_Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
3703.325000	-58.04	-13.00	45.04	100.0	100.000	155.0	H	216.0	90.0	-94

1.2 8.01b_Traffic_mode_UMTS_Band_2_Channel_9262

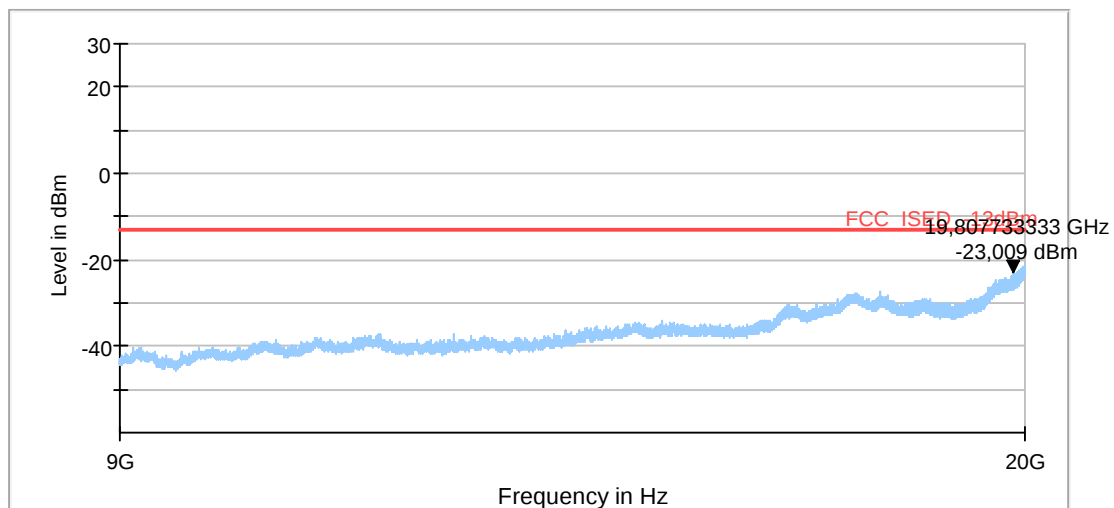
Common Information

Test Description:	Radiated emission related to 1m
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 24.238 Broadband PCS / RSS-133
Antenna polarization:	vertical / horizontal
Operating Mode:	WCDMA FDDII ch 9262
Operator:	TFra
Comment:	--
Environmental Conditions::	Humidity : 41% rH; Temperature: 19 °C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S223_C01
Power Supply:	12 VDC
Comments:	

Full Spectrum



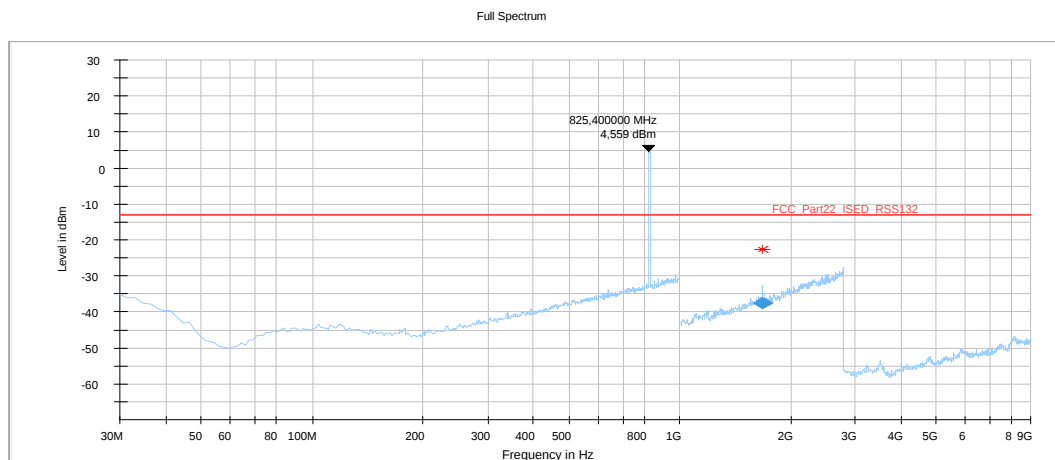
1.3 8.02_Traffic_mode_UMTS_Band_5_Channel_4132

Common Information

Test Description: Radiated emission related to 1m
 Test Site: Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
 Test Standard: FCC FCC Part 24.238 Broadband PCS / RSS-132
 Antenna polarization: vertical / horizontal
 Operating Mode: WCDMA FDDV ch 4132
 Operator: HEI
 Comment: --
 Environmental Conditions: Humidity : 42% rH; Temperature: 18 °C
 EUT Setup: 1
 Verdict: Passed

EUT Information

PMT number: 20-1-00607S223_C01
 Power Supply: 12 VDC
 Comments: Peak at 825.4 MHz due wanted traffic channel of W-CDMA V



Final_Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
1675.025000	-37.41	13.00	24.41	100.0	100.000	155.0	V	88.0	0.0	-61	21:31:31 - 16.03.2021

1.4 9.201_Band-Edge_low_Channel_9262_UL_1852.4MHz

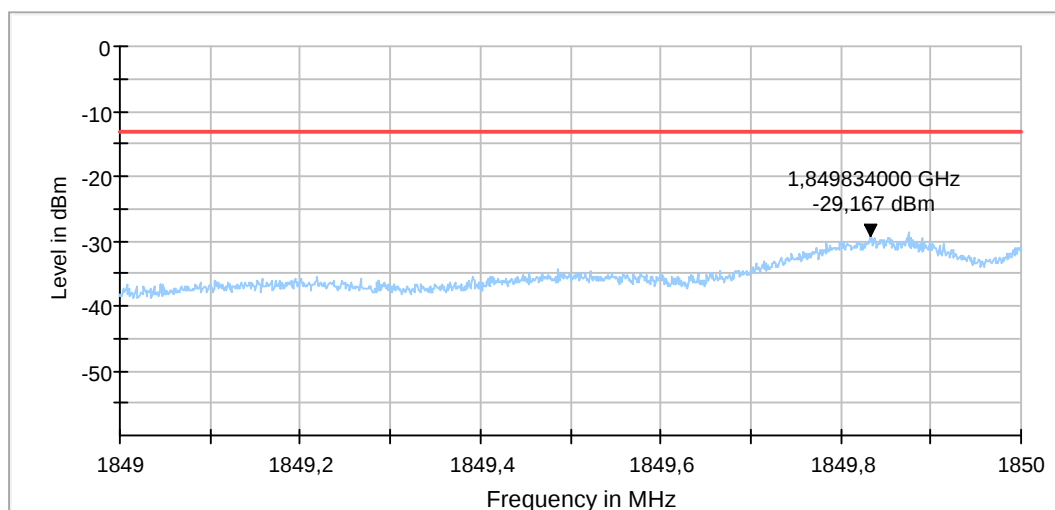
Common Information

Test Description: Radiated field strength emission in 3m distance
 Test Site Location: CETECOM GmbH Essen
 Test Site: Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
 Test Standard: FCC Part 24 / RSS -133
 Test Case: Band Edge Compliance
 Operating Mode: WCDMA FDDII ch 9262
 Environmental Conditions: Humidity : 41% rH; Temperature: 19 °C
 Operator: npe
 EUT Setup: 1
 Verdict: Passed

EUT Information

PMT number: 20-1-00607S223_C01
 Power Supply: 12 V DC
 Comments: --

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
---	---	---	---	---	---		---	---	---

1.5 9.202_Band-Edge_high_Channel_9538_UL_1907.6MHz

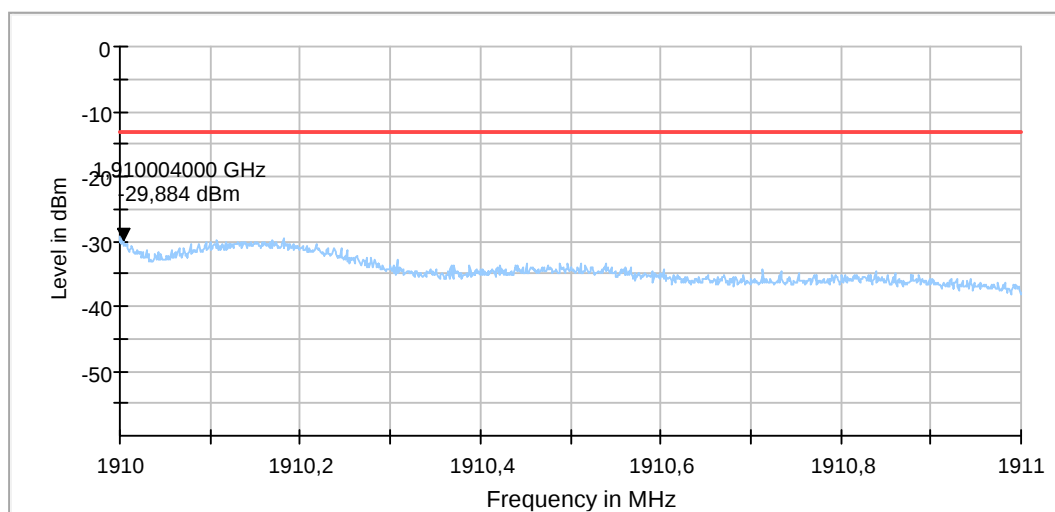
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 24 / RSS-133
Test Case:	Band Edge Compliance
Operating Mode:	WCDMA FDDII ch 9538
Environmental Conditions:	Humidity : 41% rH; Temperature: 19 °C
Operator:	npe
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S223_C01
Power Supply:	12 V DC
Comments:	--

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
---	---	---	---	---	---		---	---	---

1.6 9.501_Band-Edge_low_Channel_4132_UL_826.4MHz

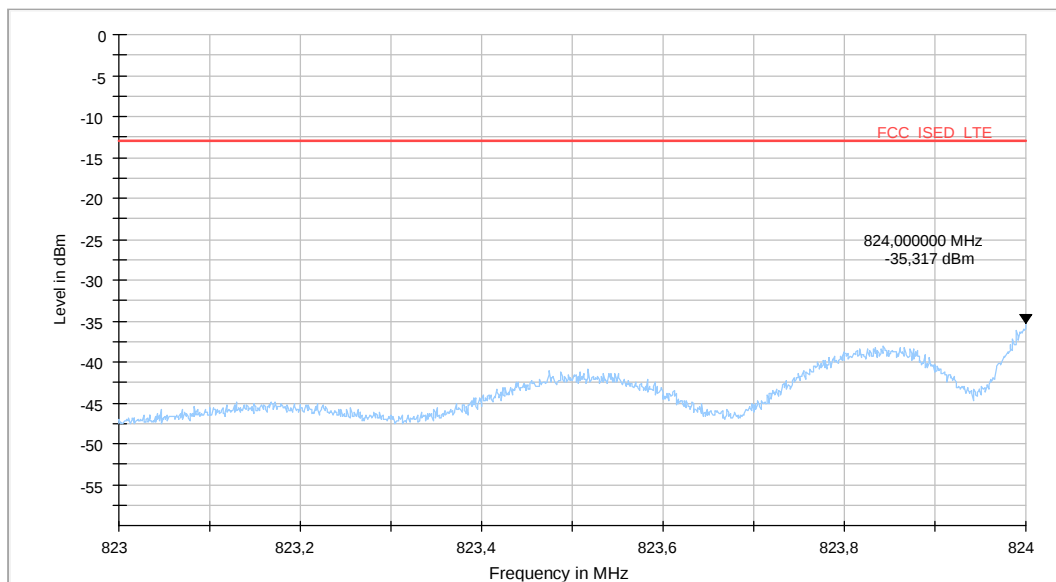
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band V
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 22.917(a) / RSS-132
Operating Mode:	WCDMA FDDV ch 4132
Environmental Conditions:	Humidity : 42% rH; Temperature: 17 °C
Test SW Version:	EMC32 V10.50.0
Operator:	HEI
Remarks:	EUT - laying/standing position
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S223_C01
Power Supply:	12 V DC
Comments:	--

Full Spectrum



1.7 9.502_Band-Edge_high_Channel_4233_UL_846.6MHz

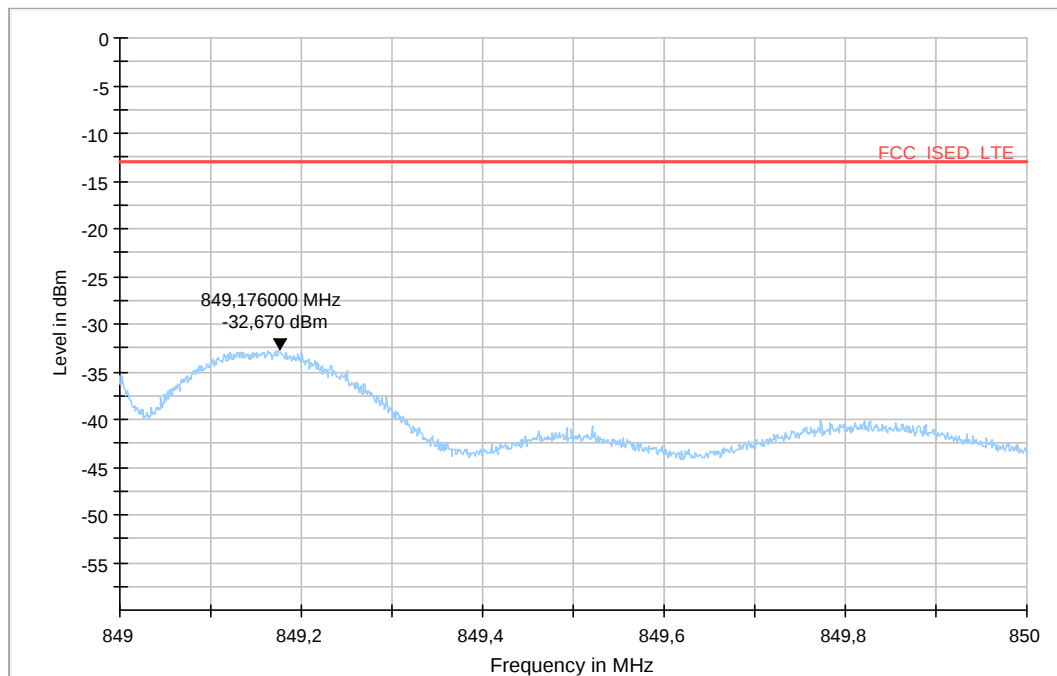
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band V
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 22.917(a) / RSS-132
Operating Mode:	WCDMA FDDV ch 4233
Environmental Conditions:	Humidity : 40% rH; Temperature: 18 °C
Test SW Version:	EMC32 V10.50.0
Operator:	HEI
Remarks:	EUT - laying/standing position
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S223_C01
Power Supply:	12 V DC
Comments:	--

Full Spectrum



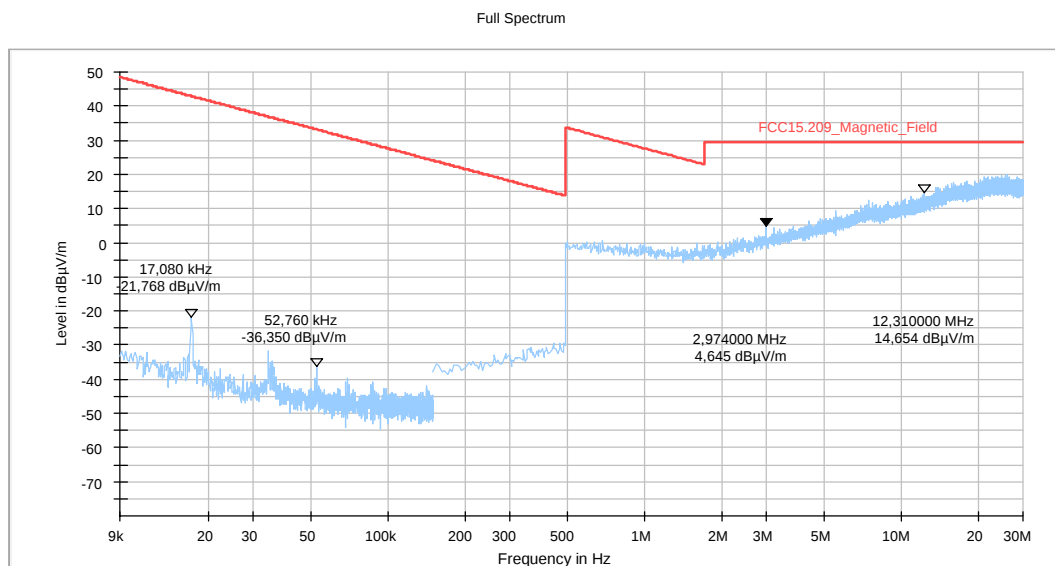
1.8 2.01_Magnetic_field_Emission_UMTS_Band_II_EUT_laying_ROW

Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement
Version of Testsoftware:	EMC32 V10.50.0
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 polarization
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	aho
Operating Mode:	Operation mode 1
Environmental Conditions::	Humidity : 45% rH; Temperature: 20 °C
EUT Setup:	1
Verdict:	Passed
EUT Position	top, bottom, left, right
Comment	worst case has been found by EUT Laying position

EUT Information

PMT number:	20-1-00607S223_C01
Power Supply:	12 V DC + Battery inside
Comments:	--



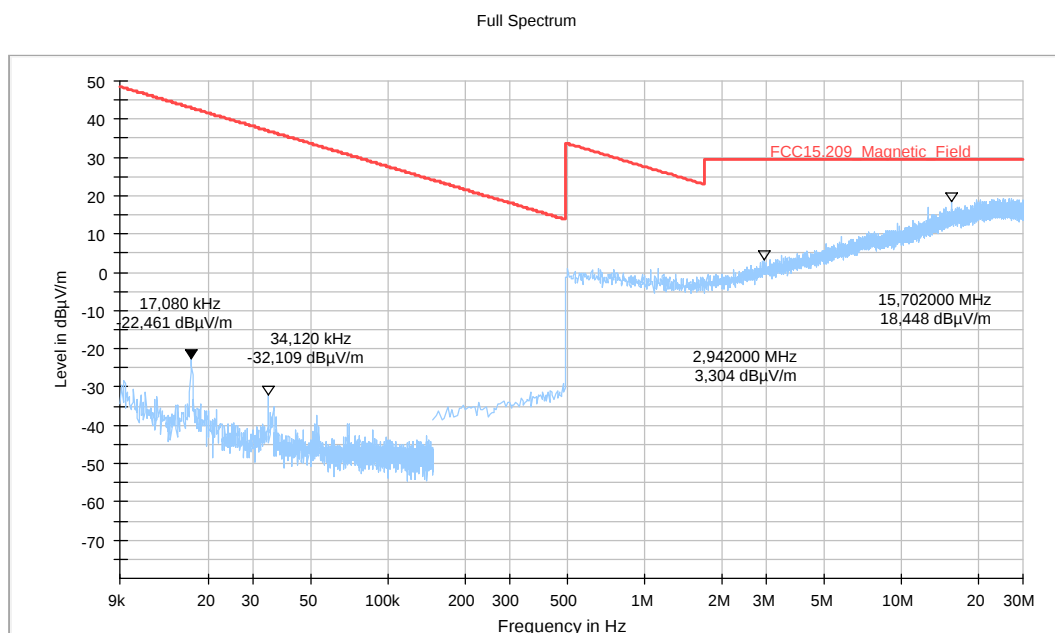
1.9 2.02_Magnetic_field_Emission_UMTS_Band_V_EUT_laying_ROW

Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement
Version of Testsoftware:	EMC32 V10.50.0
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 polarization
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	aho
Operating Mode:	Operation mode 2
Environmental Conditions::	Humidity : 45% rH; Temperature: 20 °C
EUT Setup:	1
Verdict:	Passed
EUT Position	top, bottom, left, right
Comment	worst case has been found by EUT Laying position

EUT Information

PMT number:	20-1-00607S223_C01
Power Supply:	12 V DC + Battery inside
Comments:	--



End Of Annex 1