

Annex 1: Measurement diagrams 20-1-0170701T08b-C3-A1

Number of pages:	15	Date of Report:	2021-Oct-28
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:	AIRBUS OPERATIONS S.A.S
Product:	Avionics device		
Model:	RMAX		
FCC ID:	2AZDJ-RMAX01	IC:	Contains 2417C-EM75
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, Part 27 Subpart C Part 15, Subpart C, §15.209 RSS-132, Issue 3; RSS-133, Issue 6, RSS-139, Issue 3, RSS-Gen, Issue 5 Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		



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1 Measurement diagrams

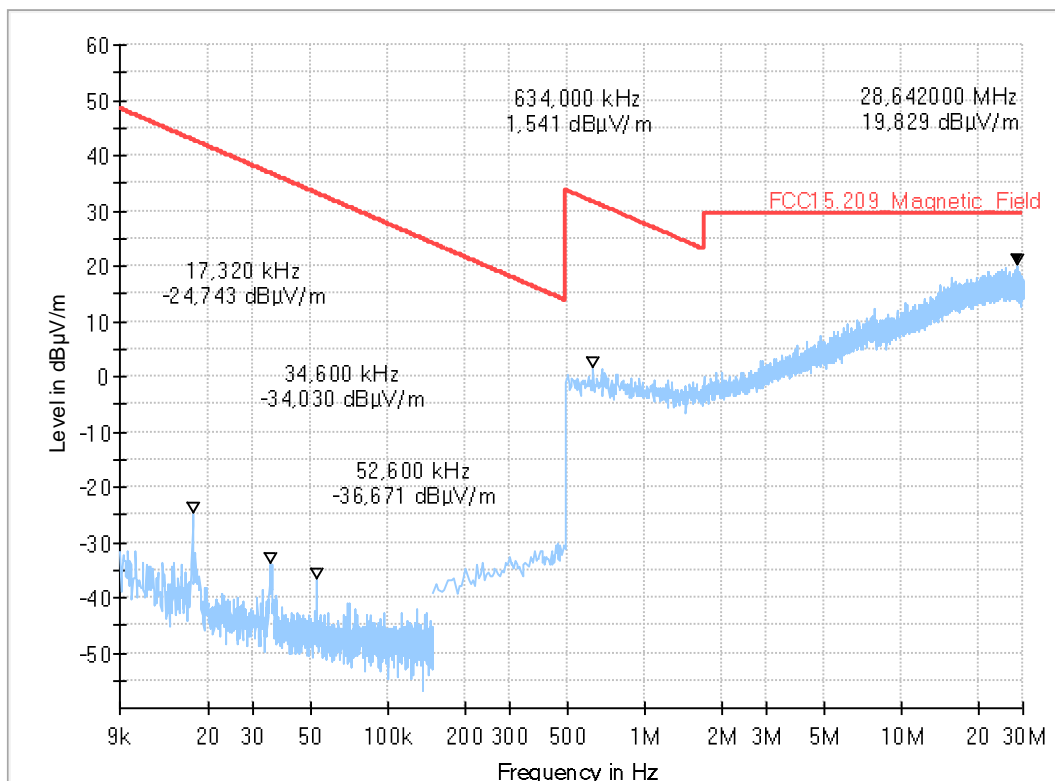
2.01_Magnetic_Emission_EUT_laying

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 distance
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 polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	TFra
Operating Mode:	UMTS FDDII
Environmental Conditions:	Humidity : 40%rH; Temperature: 21°C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-01707S05_C01
	Full Spectrum



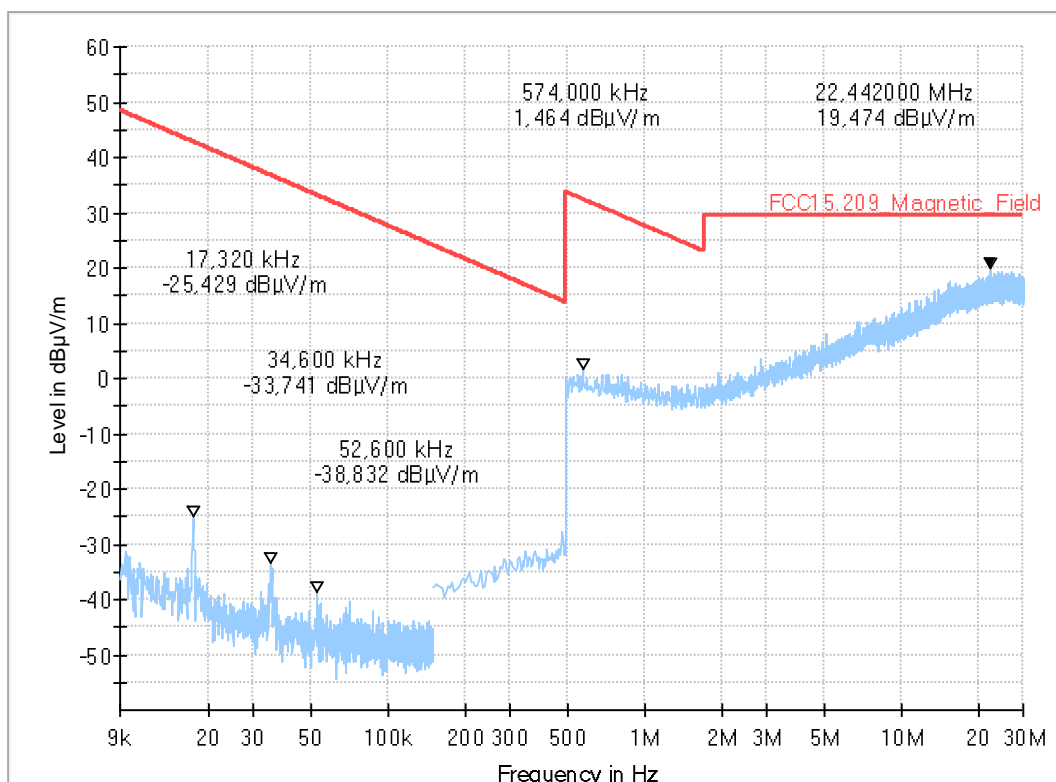
2.02_Magnetic_Emission_EUT_standing

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 distance
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 polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	TFra
Operating Mode:	UMTS FDDII
Environmental Conditions:	Humidity : 38%rH; Temperature: 21°C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-01707S05_C01
	Full Spectrum



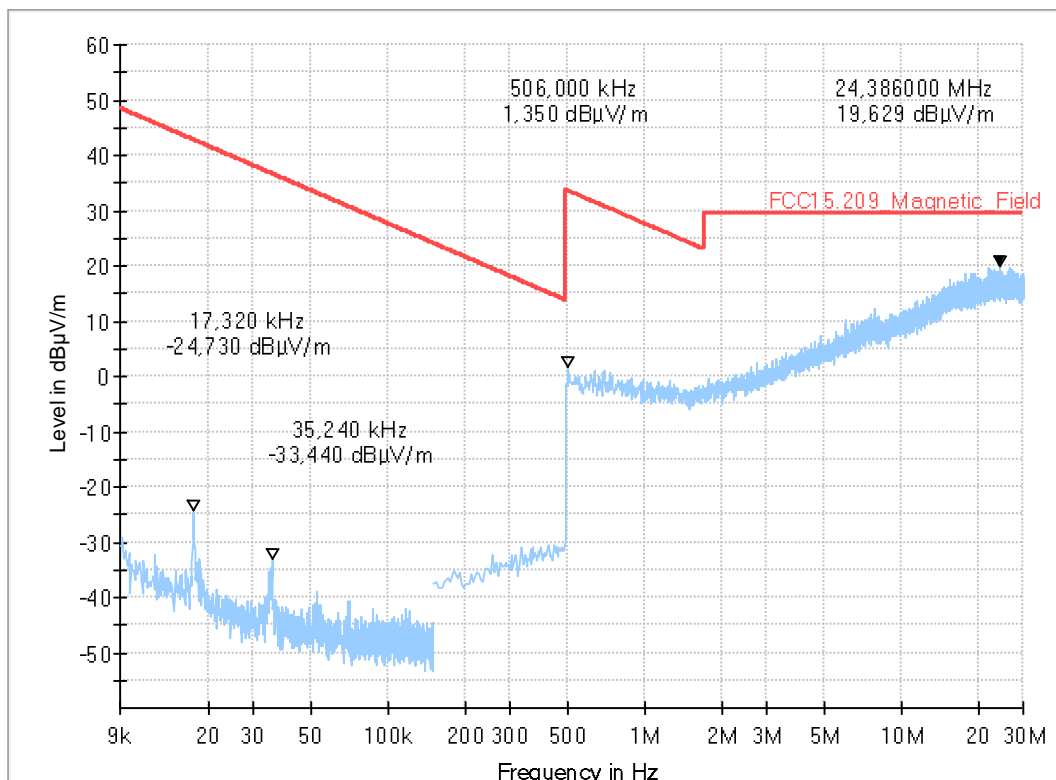
2.03_Magnetic_Emission_EUT_laying

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 distance
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 polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	TFra
Operating Mode:	UMTS FDDIV
Environmental Conditions:	Humidity : 38%rH; Temperature: 20°C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number: 20-1-01707S05_C01
Full Spectrum



Remarks:

- Worst case Position has been found by EUT Laying Position, so the measurement has been carried out EUT Laying Position.

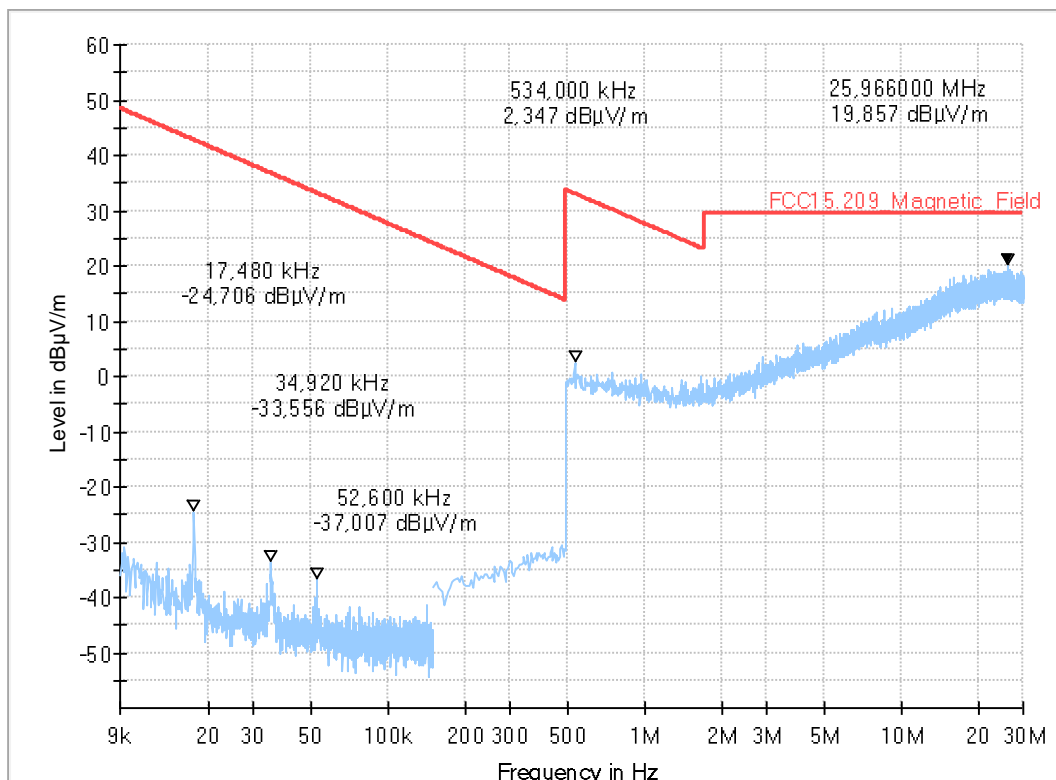
2.04_Magnetic_Emission_EUT_laying

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 distance
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 polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	TFra
Operating Mode:	UMTS FDDV
Environmental Conditions:	Humidity : 38%rH; Temperature: 20°C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-01707S05_C01
	Full Spectrum



Remarks:

- Worst case Position has been found by EUT Laying Position, so the measurement has been carried out EUT Laying Position.

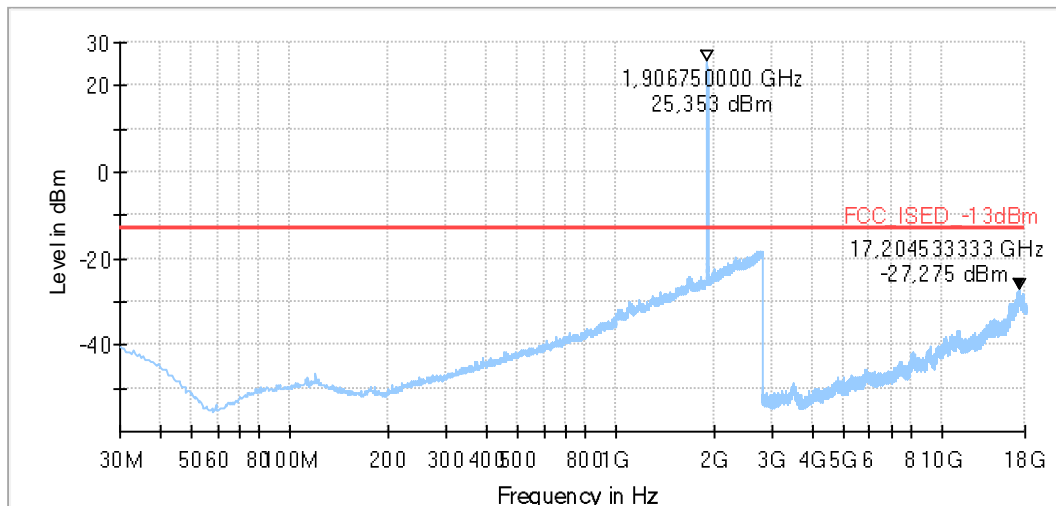
8.01_Traffic_mode_UMTS_Band_2_Channel_9538

Common Information

Test Description:	Radiated Spurious Emission
Test Site:	Fully-Anechoic Chamber
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Measurement software version	EMC32 V10.50.0
Operating Mode:	Traffic_mode_UMTS_Band_2_Channel_9538
Operator:	npe
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-01707S05_C01
	Full Spectrum



Remarks:

- Emission at 1.906750000 GHz is Uplink frequency of UMTS Band 2, not related to results.

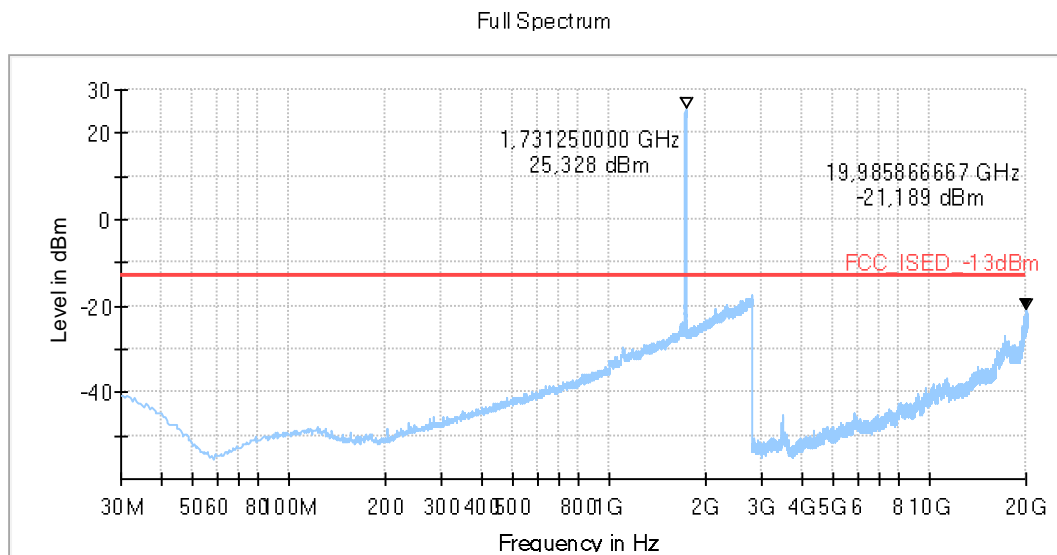
8.02_Traffic_mode_UMTS_Band_4_Channel_1413

Common Information

Test Description:	Radiated Spurious Emission
Test Site:	Fully-Anechoic Chamber
Test Standard:	FCC FCC Part 27.53(h) AWS emission limits / RSS-139, Issue 3
Antenna polarisation:	vertical / horizontal
Measurement software version	EMC32 V10.50.0
Operating Mode:	Traffic_mode_UMTS_Band_4_Channel_1413
Operator:	npe
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-01707S05_C01
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Remarks:

- Emission at 1.731250000 GHz is Uplink frequency of UMTS Band 4, not related to results.

8.03_Traffic_mode_UMTS_Band_5_Channel_4132

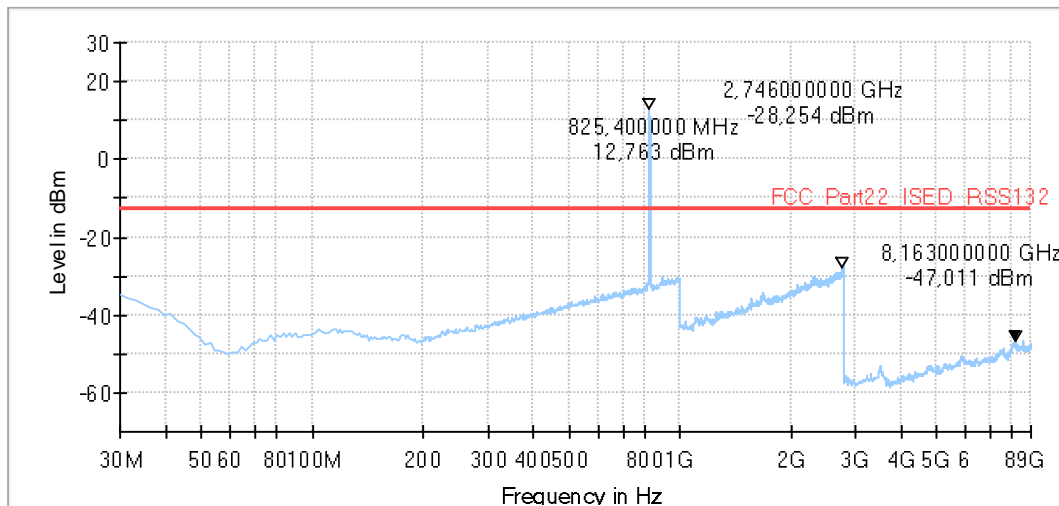
Common Information

Test Description:	Radiated Spurious Emission
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC FCC Part 22
Antenna polarisation:	vertical / horizontal
Operating Mode:	UMTS_Band_5_Channel_4132
Operator:	npe
Environmental Conditions:	Humidity : 44%rH; Temperature: 19°C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number: 20-1-01707S05_C01

Full Spectrum



Remarks:

- Emission at 825.400000 MHz is Uplink frequency of UMTS Band 5, not related to results.

9.201_Band-Edge_low_Channel_9262_UL_1852.4MHz

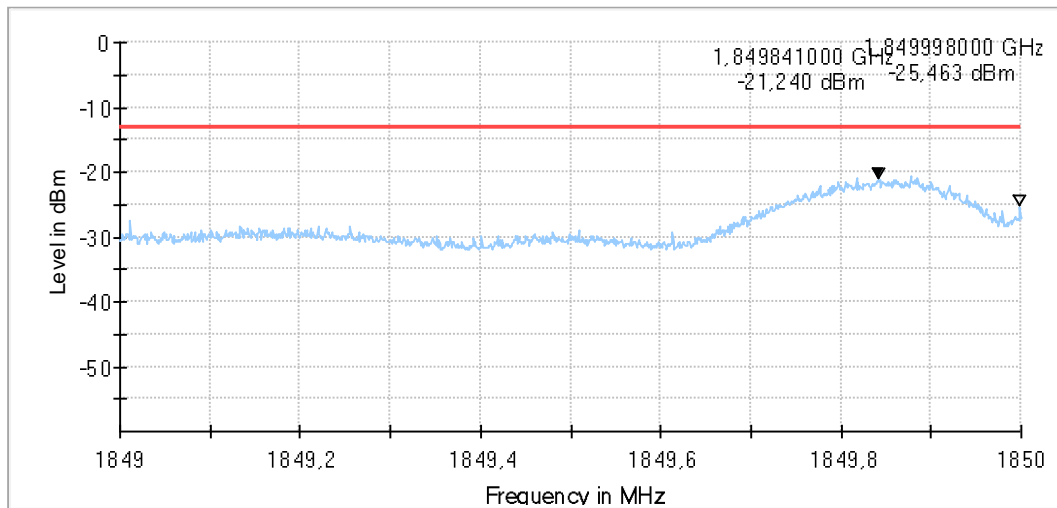
Common Information

Test Description:	Radiated Band Edge
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 24
Test Case:	Band Edge
Operating Mode:	Traffic_mode_UMTS_Band_2_Channel_9262
Environmental Conditions::	Humidity : 44%rH; Temperature: 19°C
Operator:	npe
EUT Setup:	1
Verdict:	PassedComment:

EUT Information

PMT number: 20-1-01707S05_C01

Full Spectrum



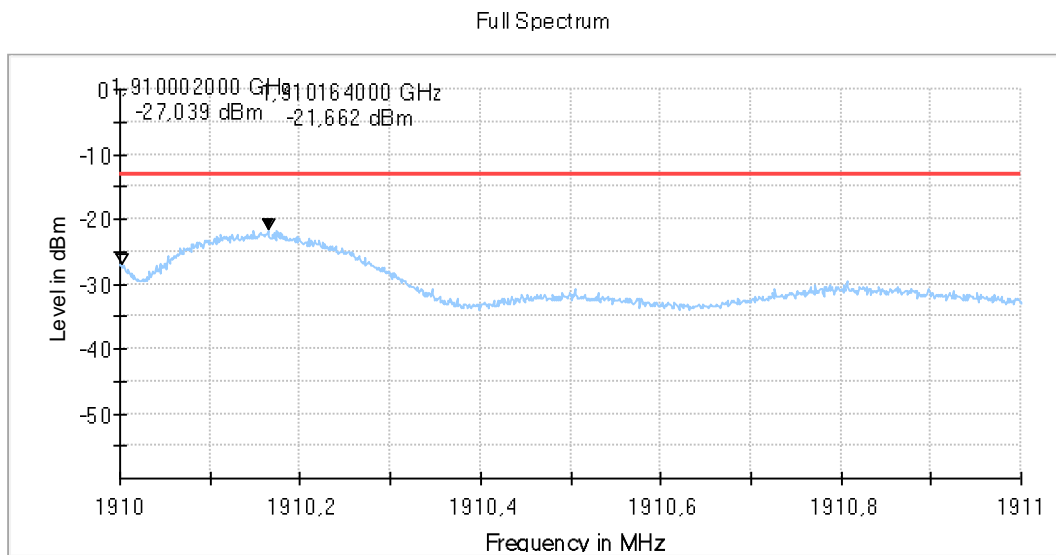
9.202_Band-Edge_high_Channel_9538_UL_1907.6MHz

Common Information

Test Description:	Radiated Band Edge
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 24
Test Case:	Band Edge
Operating Mode:	Traffic_mode_UMTS_Band_2_Channel_9538
Environmental Conditions::	Humidity : 44%rH; Temperature: 19°C
Operator:	npe
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-01707S05_C01
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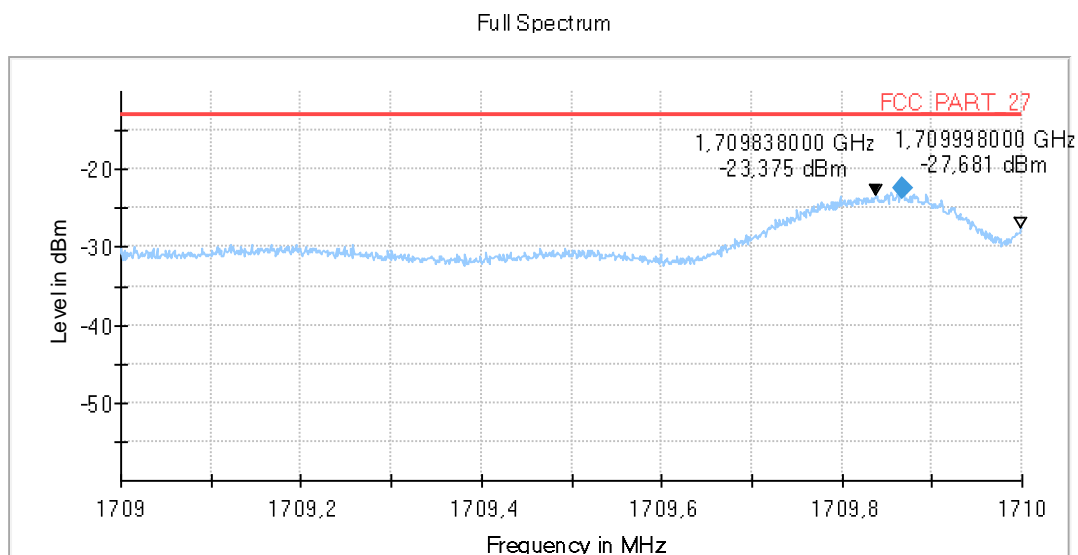
9.401_Band-Edge_low_Channel_1312_UL_1712.6MHz

Common Information

Test Description:	Radiated Band Edge
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 27
Test Case:	Band Edge
Operating Mode:	Traffic_mode_UMTS_Band_4_Channel_1312
Environmental Conditions::	Humidity : 44%rH; Temperature: 19°C
Operator:	npe
EUT Setup:	1
Verdict:	PassedComment:

EUT Information

PMT number: 20-1-01707S05_C01



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1709.867000	-22.49	-13.00	9.49	700.0	50.000	H	108.0	0.0	-63

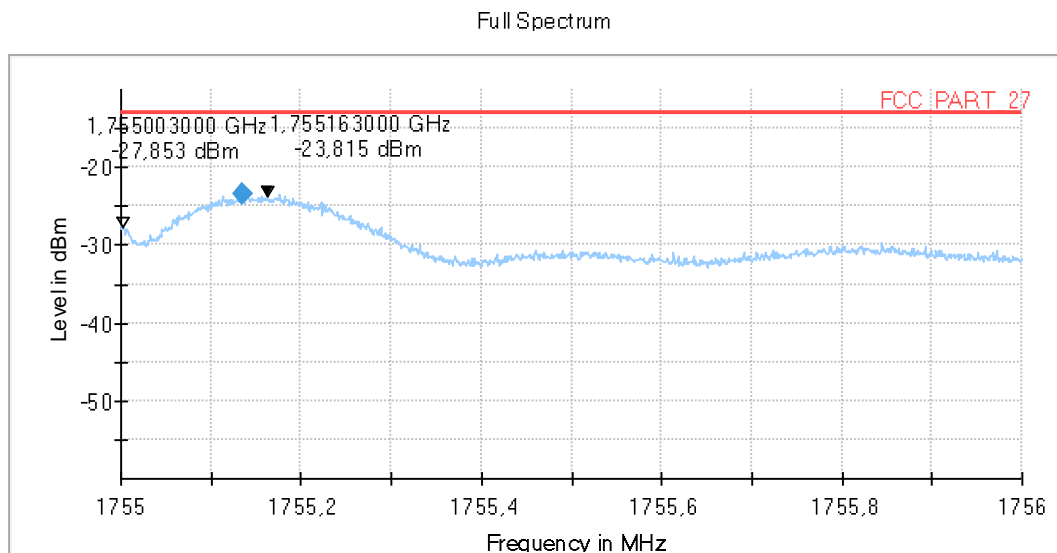
9.402_Band-Edge_high_Channel_1513_UL_1752.4MHz

Common Information

Test Description:	Radiated Band Edge
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 27
Test Case:	Band Edge
Operating Mode:	Traffic_mode_UMTS_Band_4_Channel_1513
Environmental Conditions::	Humidity : 44%rH; Temperature: 19°C
Operator:	npe
EUT Setup:	1
Verdict:	PassedComment:

EUT Information

PMT number: 20-1-01707S05_C01



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1755.134000	-23.41	-13.00	10.41	700.0	50.000	H	114.0	0.0	-63

9.501_Band-Edge_low_Channel_4132_UL_826.4MHz

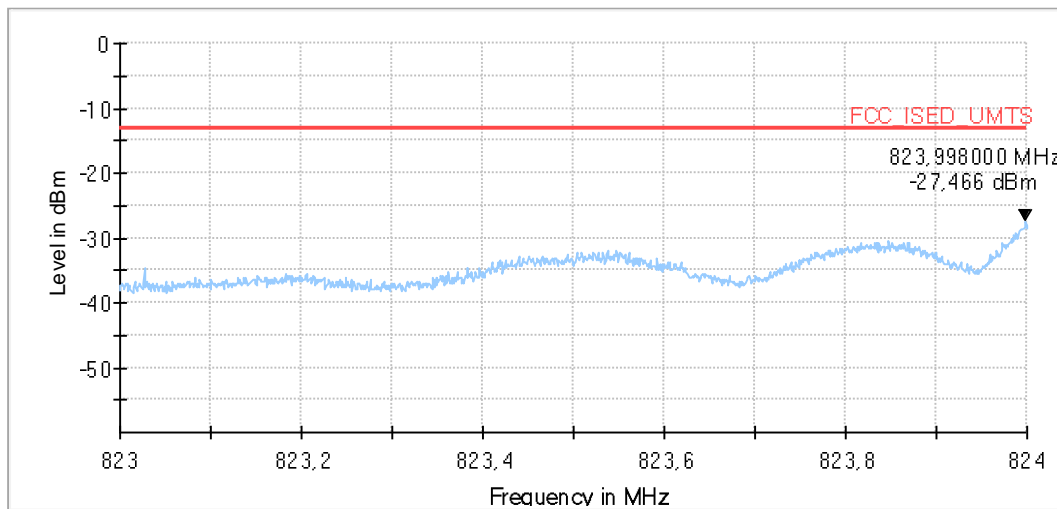
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions UMTS Band 5
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:	UMTS_Band_5_Channel_4132
Environmental Conditions::	Humidity : 44%rH; Temperature: 19°C
Test SW Version:	EMC32 V10.50.0
Operator:	npe
Remarks:	EUT - laying/standing position
EUT Setup:	1
Verdict:	PassedComment:

EUT Information

PMT number: 20-1-01707S05_C01

Full Spectrum



9.502_Band-Edge_high_Channel_4233_UL_846.6MHz

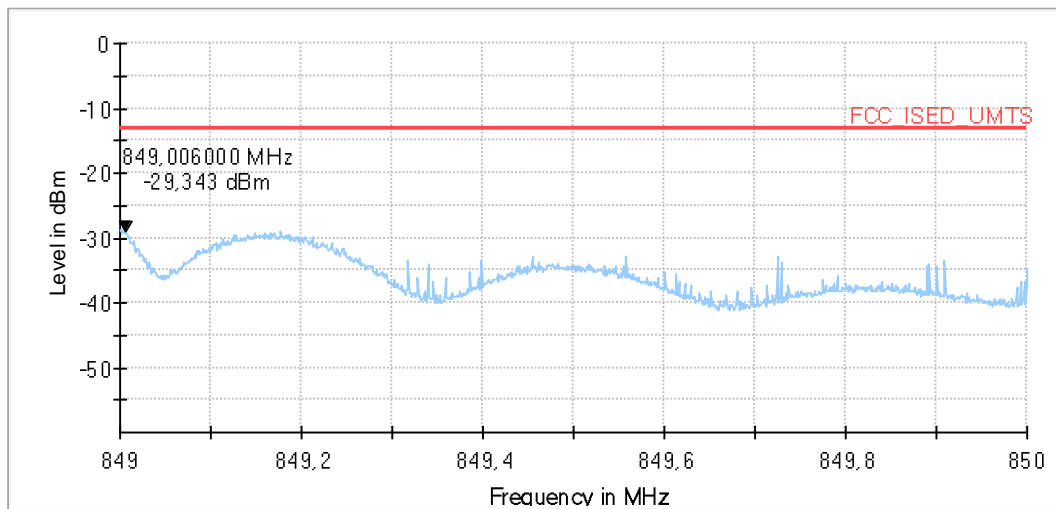
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions UMTS Band 5
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:	UMTS_Band_5_Channel_4233
Environmental Conditions:	Humidity : 44%rH; Temperature: 19°C
Test SW Version:	EMC32 V10.50.0
Operator:	npe
Remarks:	EUT - laying/standing position
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-01707S05_C01
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Full Spectrum



End Of Annex 1