

Annex 1: Measurement diagrams 22-1-0030601T045a-C01-A1

Number of pages:	16	Date of Report:	2023-Mar-31
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:	Continental Automotive Technologies GmbH
Product: Model:	Telematic Control Unit BSRF_EA_RW0		
FCC ID:	KR5-BSRFEARW0	IC:	--
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

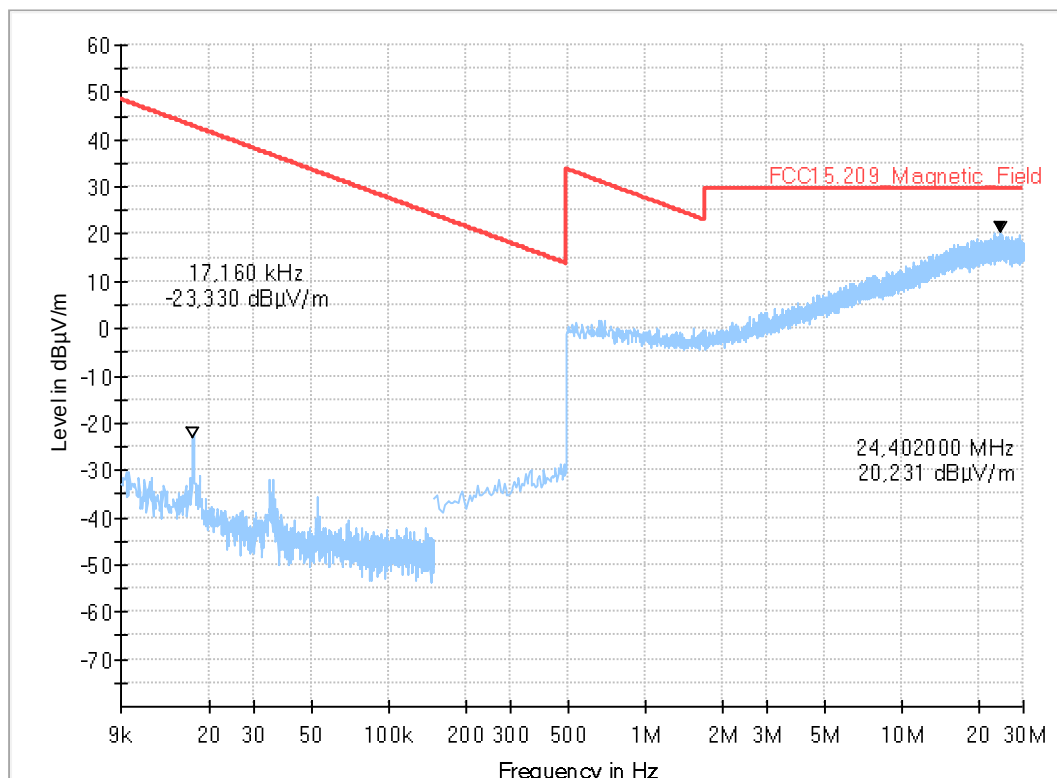
2.1901_H_field_GSM_1900_CH_512

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 5
Operator:	npe
Operating Mode:	GSM 1900, ch512
Power during tests:	12 V DC
Environmental Conditions:	Humidity : 50% rH; Temperature: 21 °C
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT Sample Nr.	22-1-00306S58_C01
	Full Spectrum



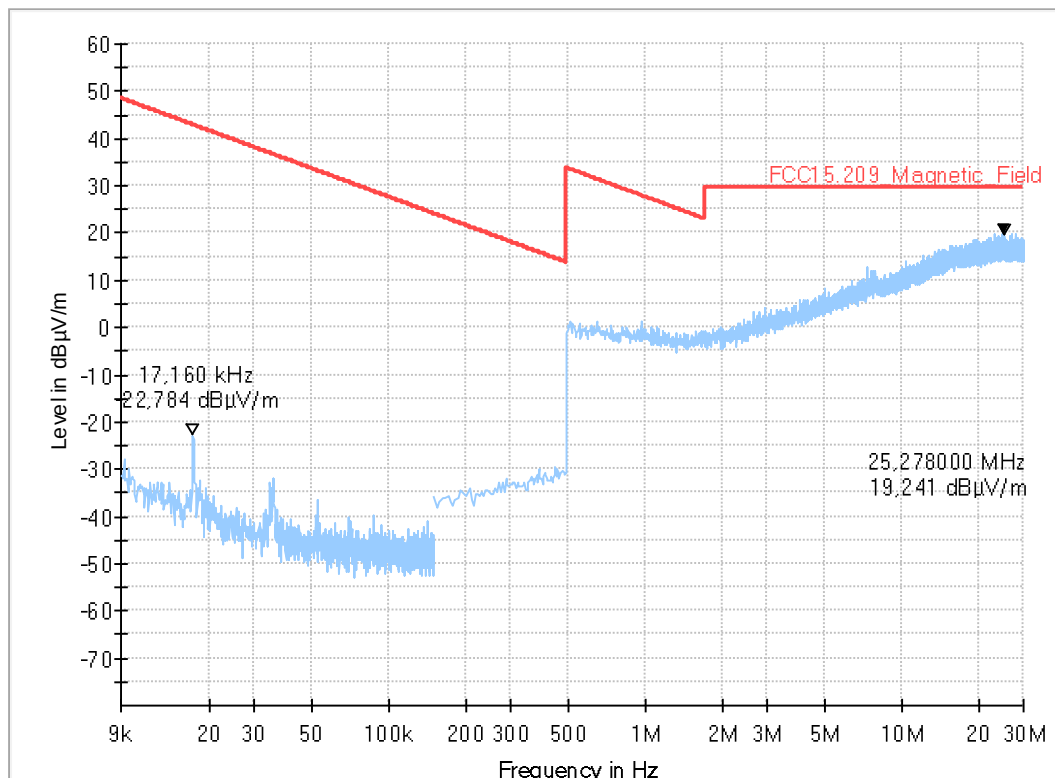
2.850_H_field_GSM_850_CH_128

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 5
Operator:	npe
Operating Mode:	GSM 850, ch128
Power during tests:	12 V DC
Environmental Conditions:	Humidity : 50% rH; Temperature: 21 °C
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number	22-1-00306558_C01
	Full Spectrum



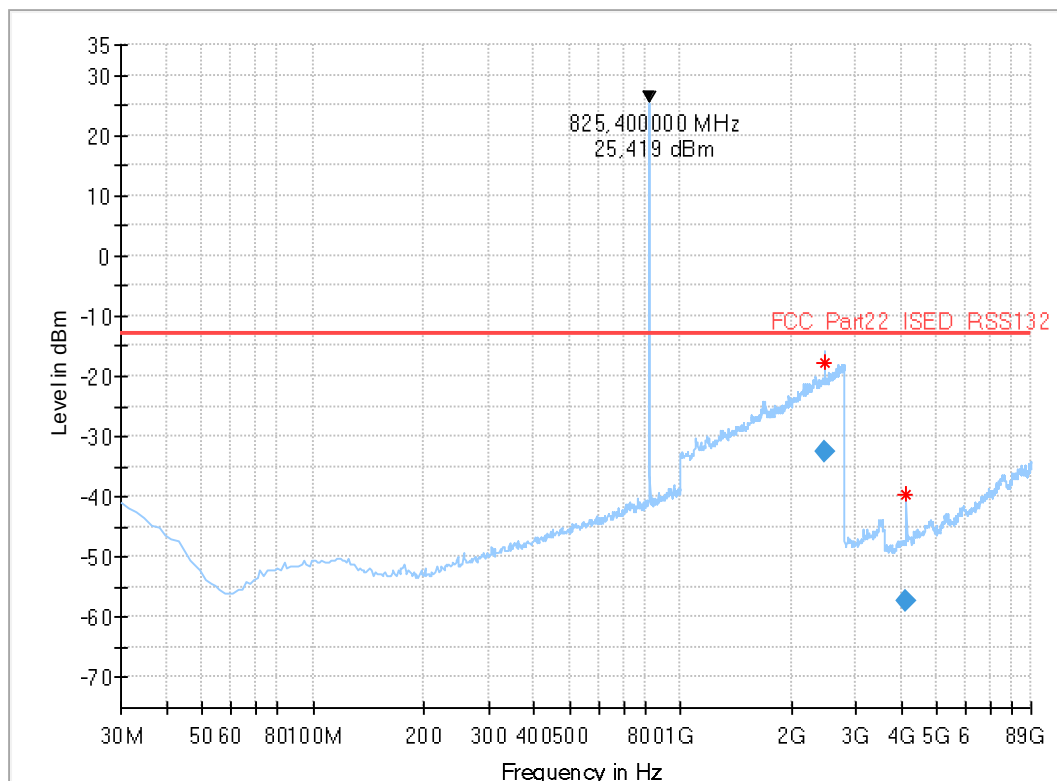
8.01_Traffic_mode_GSM_850_CH_128

Common Information

Test Description: Radiated field strength emission in 3m distance
 Test Site: Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
 Test Standard: FCC FCC Part 24.238 Broadband PCS
 Antenna polarisation: vertical / horizontal
 EUT: S178_C01
 Manufacturer: Continental
 Operating Mode: TCH 850, CHANNEL 128
 Operator: npe
 Comment: main antenna
 Environmental Conditions: Humidity : 48% rH; Temperature: 20 °C
 EUT Setup: 2
 Verdict: Passed

EUT Information

PMT Sample Nr. 22-1-00306S58_C01
 Full Spectrum



Remark: Emission at 825.4 GHz is uplink frequency of GSM 850 and not related to result.

Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
2477.933333	-32.59	-13.00	19.59	1000.0	100.000	H	9.0	0.0	-58
4124.100000	-57.43	-13.00	44.43	1000.0	100.000	H	4.0	0.0	-87

8.02_Traffic_mode_GSM_1900_CH_512

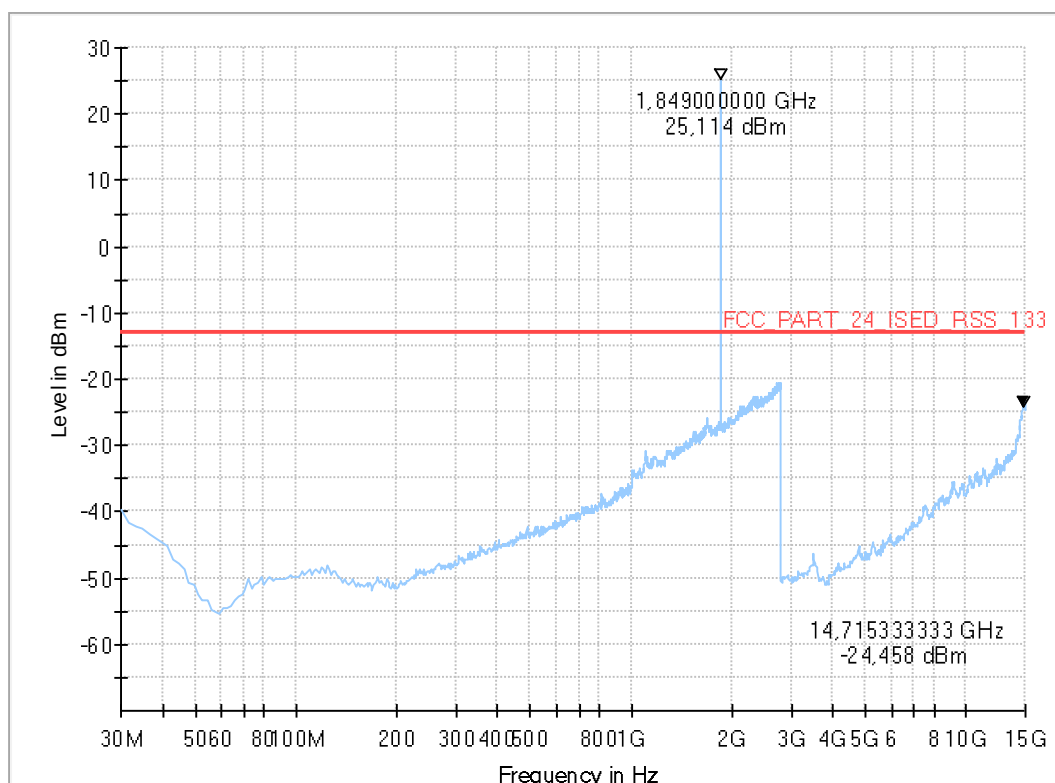
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Manufacturer:	Continental
Operating Mode:	TCH 1900, CHANNEL 512
Operator:	npe
Comment:	main antenna
Environmental Conditions:	Humidity : 48% rH; Temperature: 20 °C
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT Sample Nr.	22-1-00306S58_C01
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Full Spectrum



Remark: Emission at 1.849 GHz is uplink frequency of GSM 1900 and not related to result.

8.03a_Traffic_mode_GSM_1900_CH_512

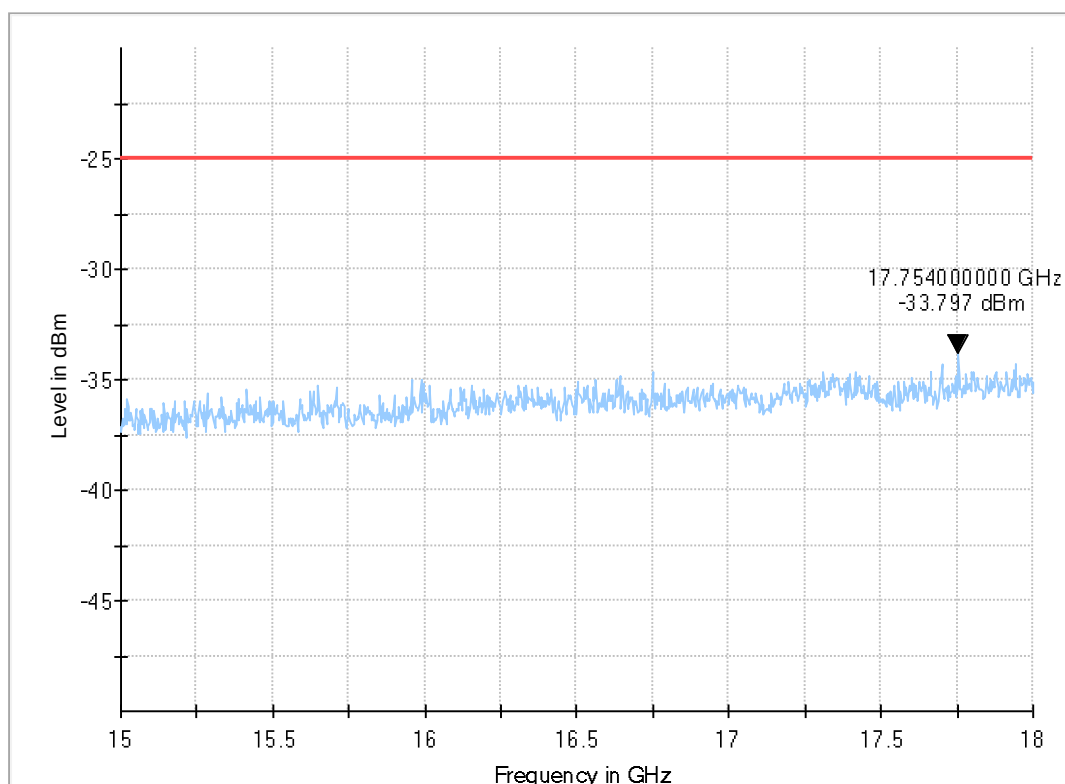
Common Information

Test Description:	Radiated Field Strength Emission
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR2)
Test Standard:	FCC Part 24
Comm. Link:	GSM 1900
Operating Mode:	MS allocated channel 512
Exclusionband:	--
Environmental Conditions:	Humidity: 21% rH; Temperature: 45 °C
Operator:	npe
Set-up:	EUT laying, Ant Hor
Verdict:	Passed

EUT Information

PMT Sample Nr.	22-1-00306S58_C01
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Full Spectrum



8.03b_Traffic_mode_GSM_1900_CH_512

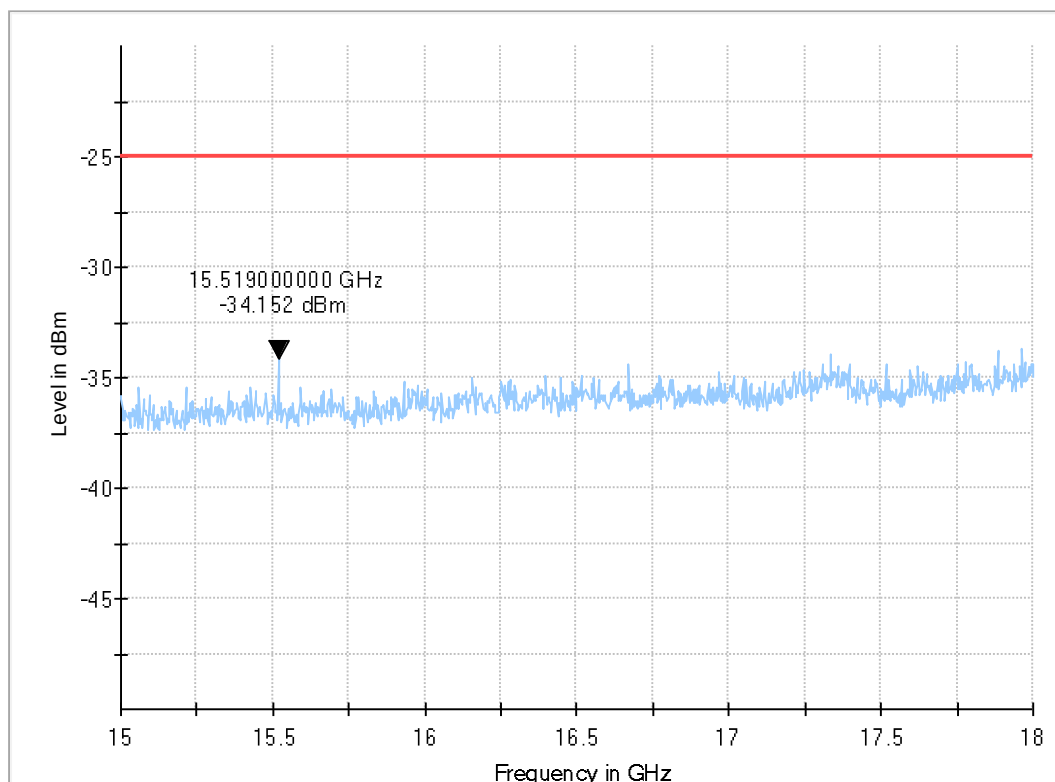
Common Information

Test Description:	Radiated Field Strength Emission
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR2)
Test Standard:	FCC Part 24
Comm. Link:	GSM 1900
Operating Mode:	MS allocated channel 512
Exclusionband:	--
Environmental Conditions:	Humidity: 21% rH; Temperature: 45 °C
Operator:	npe
Set-up:	EUT 2 standing, Ant Hor
Verdict:	Passed

EUT Information

PMT Sample Nr.	22-1-00306S58_C01
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Full Spectrum



8.03c_Traffic_mode_GSM_1900_CH_512

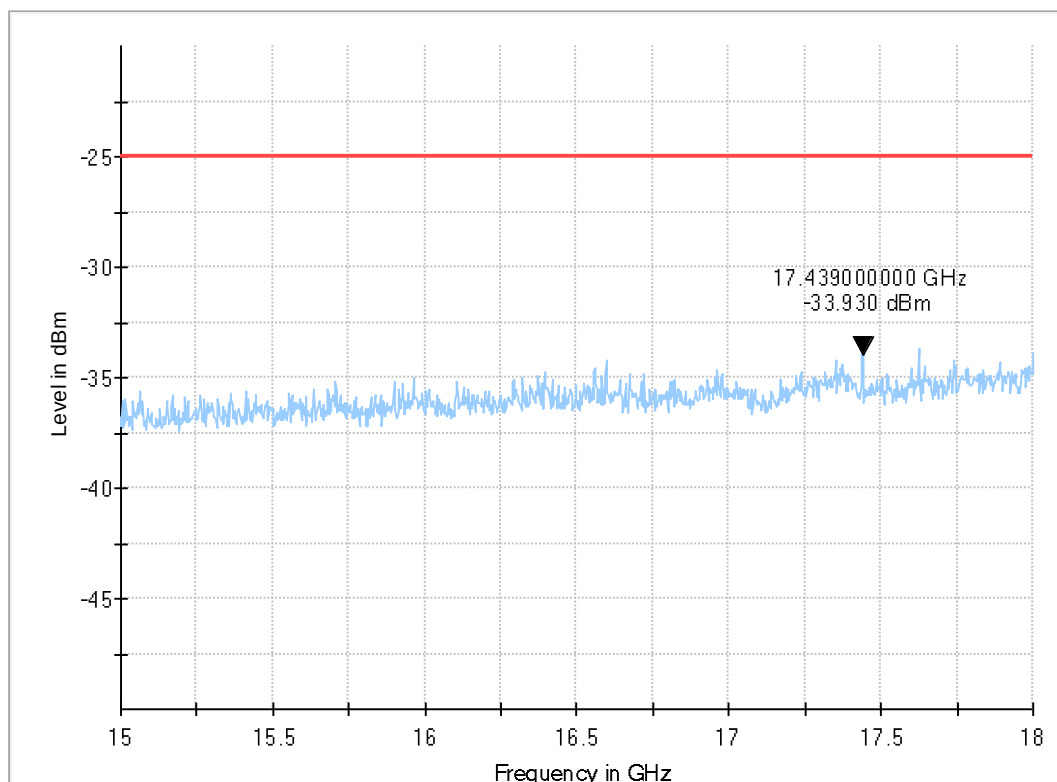
Common Information

Test Description:	Radiated Field Strength Emission
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR2)
Test Standard:	FCC Part 24
Comm. Link:	GSM 1900
Operating Mode:	MS allocated channel 512
Exclusionband:	--
Environmental Conditions:	Humidity: 45% rH; Temperature: 21 °C
Operator:	npe
Set-up:	EUT 2 laying, Ant Ver
Verdict:	Passed

EUT Information

PMT Sample Nr.	22-1-00306S58_C01
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Full Spectrum



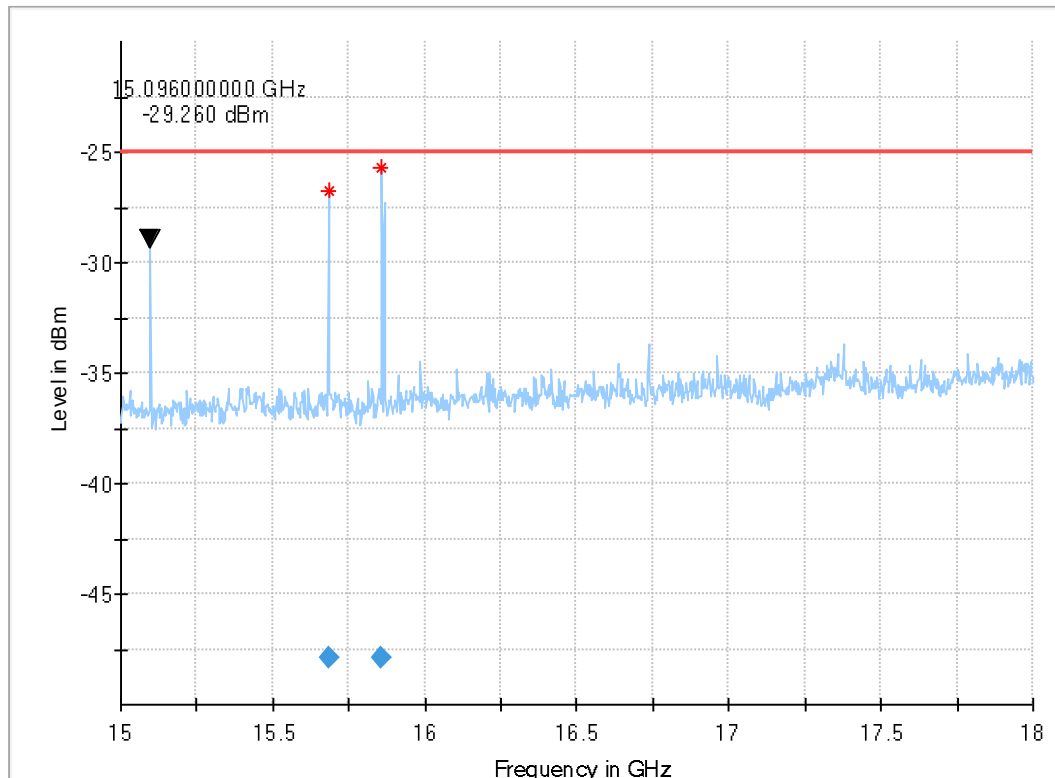
8.03d_Traffic_mode_GSM_1900_CH_512

Common Information

Test Description:	Radiated Field Strength Emission
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR2)
Test Standard:	FCC Part 24
Comm. Link:	GSM 1900
Operating Mode:	MS allocated channel 512
Exclusionband:	--
Environmental Conditions:	Humidity: 45% rH; Temperature: 21 °C
Operator:	npe
Set-up:	EUT 2 standing, Ant Ver
Verdict:	Passed

EUT Information

PMT Sample Nr.	22-1-00306S58_C01
	Full Spectrum



Final Result

Frequency (MHz)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB)
15683.910000	-25.00	22.88	500.0	150.0	V	345.0	-61.9	5.1	62.4	-129.4
15858.082500	-25.00	22.93	500.0	150.0	V	345.0	-62.2	5.1	62.5	-129.8

8.04a_Traffic_mode_GSM_1900_CH_512

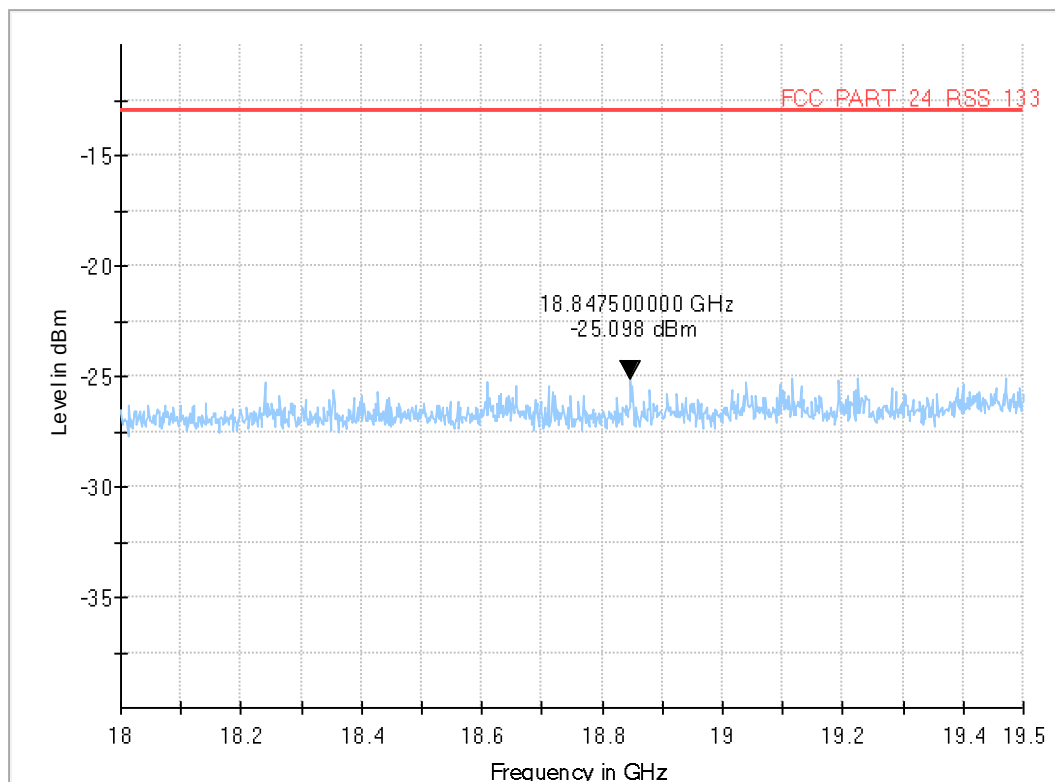
Common Information

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:	GSM1900, Voice/EDGE
Operating Mode:	MS allocated channel 512 (UL = 1850.2MHz), 661 (UL = 1880.0MHz), 810 (UL = 1909.8MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 45% rH; Temperature: 22.1 °C
Operator:	npe
EUT Setup:	EUT 2 laying, Ant Hor+Ver
Verdict:	Passed

EUT Information

PMT Sample Nr. 22-1-00306S58_C01

Full Spectrum



8.04c_Traffic_mode_GSM_1900_CH_512

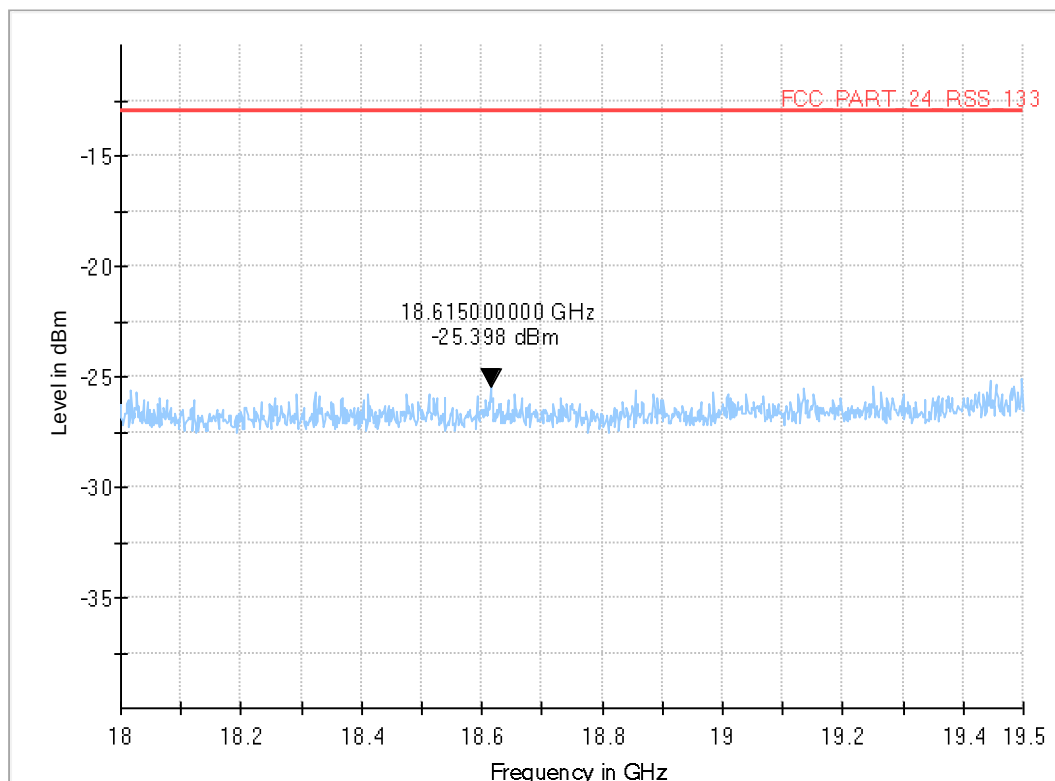
Common Information

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:	GSM1900, Voice/EDGE
Operating Mode:	MS allocated channel 512 (UL = 1850.2MHz), 661 (UL = 1880.0MHz), 810 (UL = 1909.8MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 45% rH; Temperature: 22.1 °C
Operator:	npe
EUT Setup:	EUT 2 standing, Ant hor/ver, main antenna
Verdict:	Passed

EUT Information

PMT Sample Nr.	22-1-00306S58_C01
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Full Spectrum



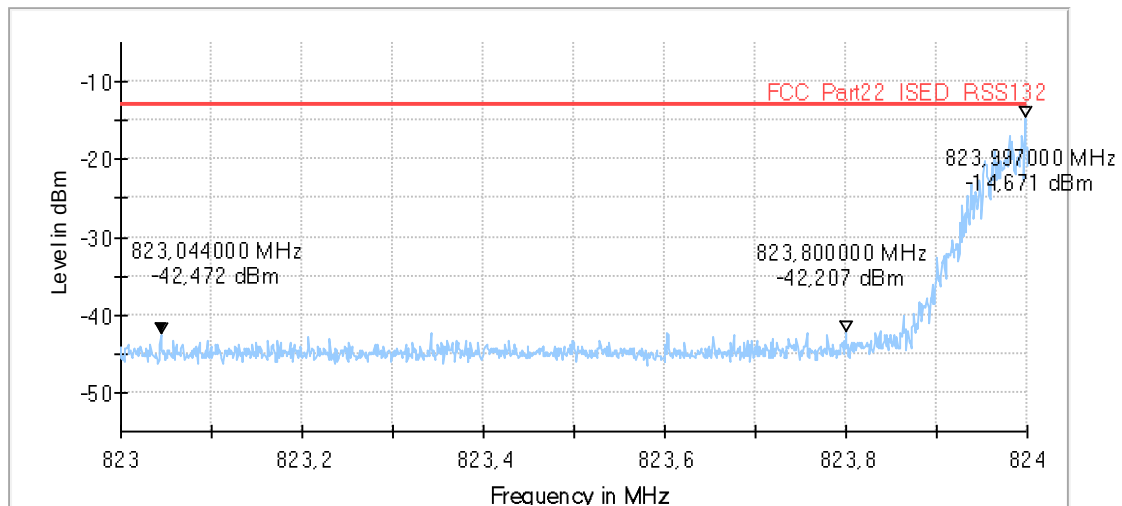
9.850_Bandedge_low_Channel_128_UL_824.2

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:	GSM850 Ch128
Operator:	TFra
Environmental Conditions:	Humidity : 54% rH; Temperature: 20 °C
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	22-1-00306S58_C01
	Full Spectrum



9.851_Bandedge_high_Channel_251_UL_848.8

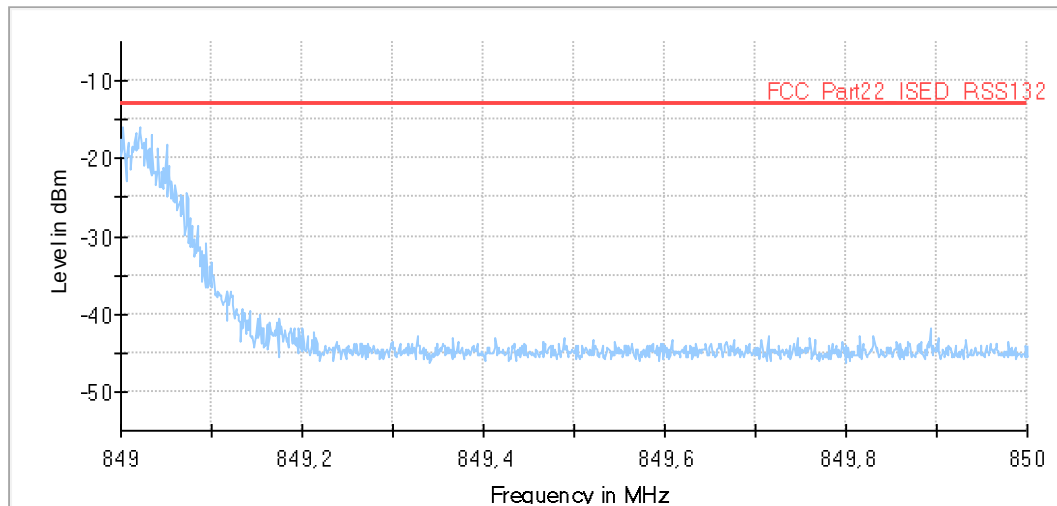
Common Information

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:	GSM850 Ch251
Operator:	TFra
Environmental Conditions:	Humidity : 54% rH; Temperature: 20 °C
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	22-1-00306S58_C01
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Full Spectrum



9.1901_Bandedge_low_Channel_512_UL_1850.2

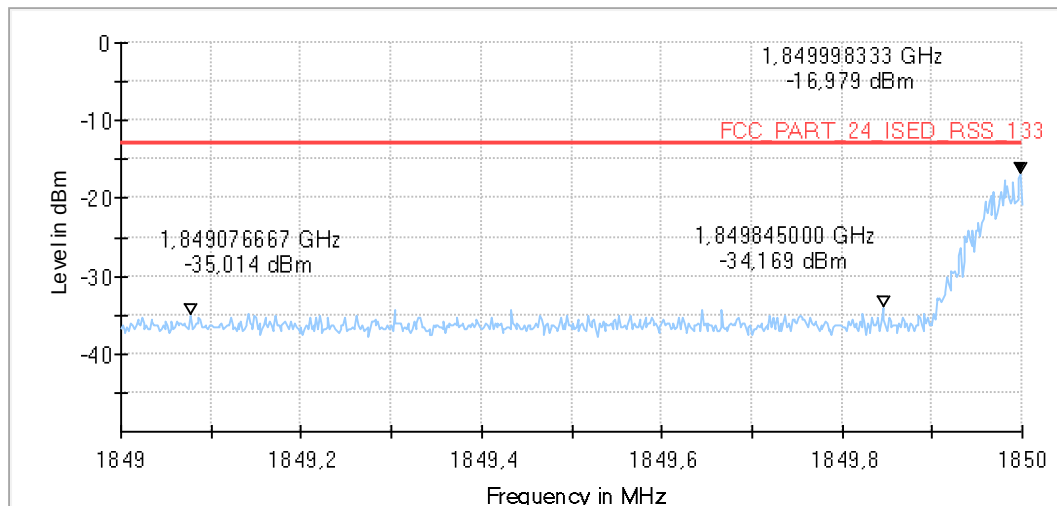
Common Information

Test Description:	-
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	-
Test Case:	-
Operating Mode:	GSM1900 Ch512
Environmental Conditions:	Humidity : 54% rH; Temperature: 20 °C
Operator:	TFra
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT Sample Nr.	22-1-00306S58_C01
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Full Spectrum



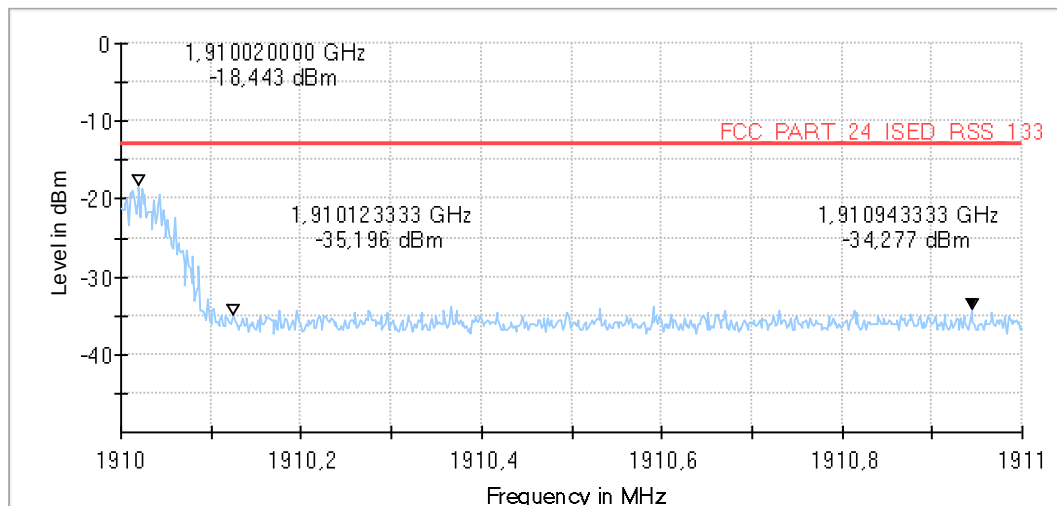
9.1902_Bandedge_high_Channel_810_UL_1909.8

Common Information

Test Description:	-
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	-
Test Case:	-
Operating Mode:	GSM1900 Ch810
Environmental Conditions:	Humidity : 54% rH; Temperature: 20 °C
Operator:	TFra
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	22-1-00306S58_C01
	Full Spectrum



End Of Annex 1