

Annex 1: Measurement diagrams to
TEST REPORT
 No.: 17-1-0227101T02a-C1

According to:
FCC Regulations
 Part 22, Part 24

for

Daimler Trucks

A 000 446 5860
 CTPMID

FCC: 2AMIOCTP4465860

Laboratory Accreditation and Listings			
 Deutsche Akkreditierungsstelle D-PL-12047-01-01 Accredited EMC-Test Laboratory	 FEDERAL COMMUNICATIONS COMMISSION U.S.A. MRA US-EU 0003	 Industry Canada Reg. No.: 3462D-2 Reg. No.: 3462D-3	 Voluntary Controls for Electromagnetic Emissions Reg. No.: R-2666 C-2914, T-1967, G-301
 AUTHORIZED RF LABORATORY	 AuthorizedTM Test Lab Lab Code: 20011130-00		
accredited according to DIN EN ISO/IEC 17025			
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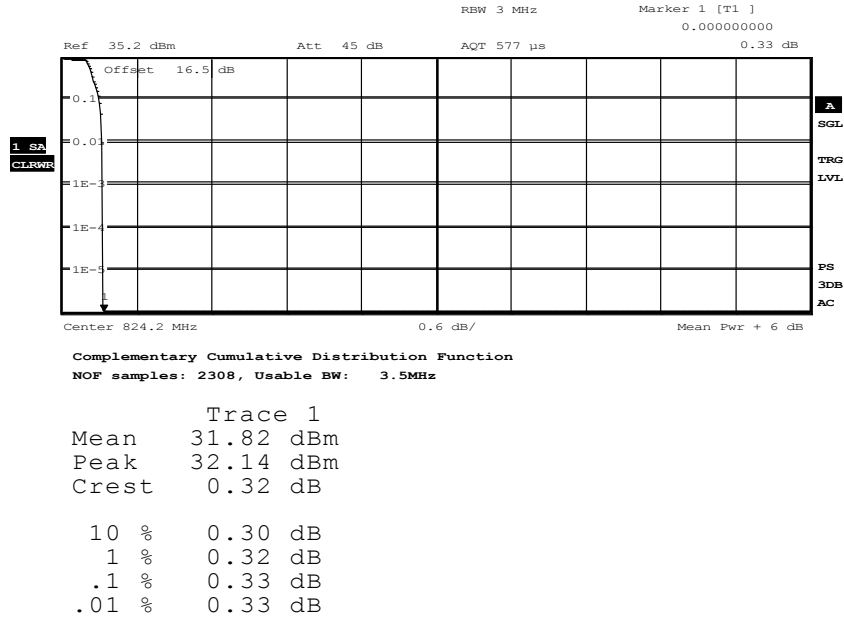
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1. Measurement diagrams

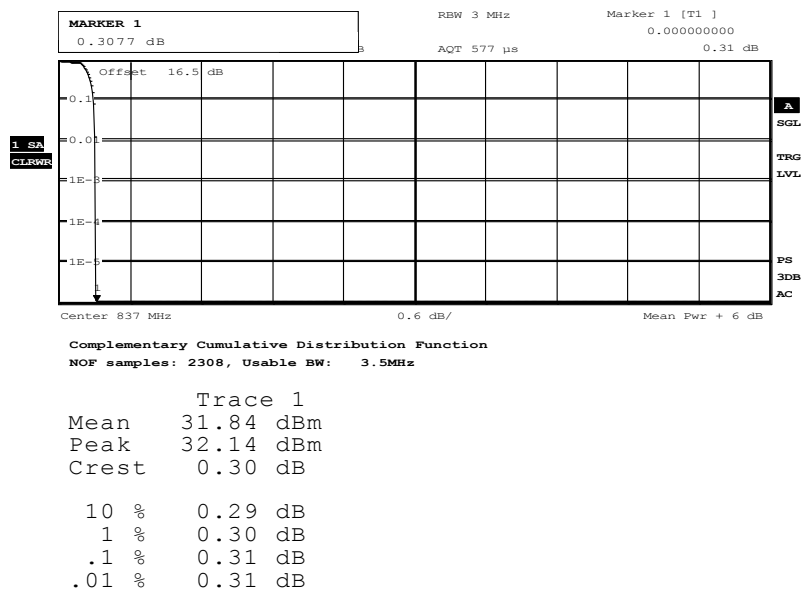
1.1. Power Measurements and PAPR-Value

1.1.1. GSM 850 (GMSK Modulation)



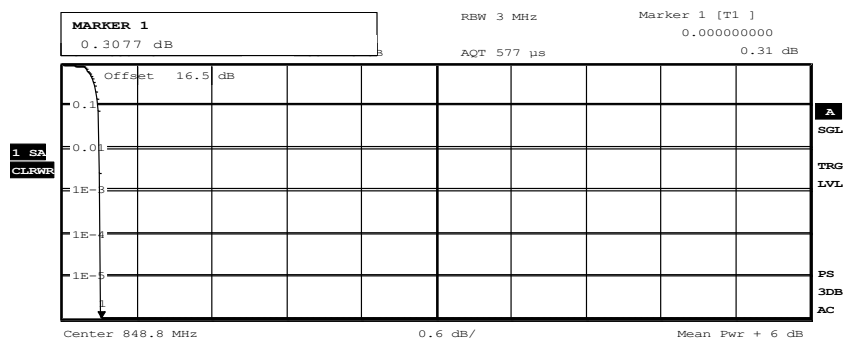
Date: 16.JAN.2018 11:15:08

Diagram CCDF_128_GMSK



Date: 16.JAN.2018 11:17:27

CCDF_192_GMSK



Complementary Cumulative Distribution Function
NOF samples: 2308, Usable BW: 3.5MHz

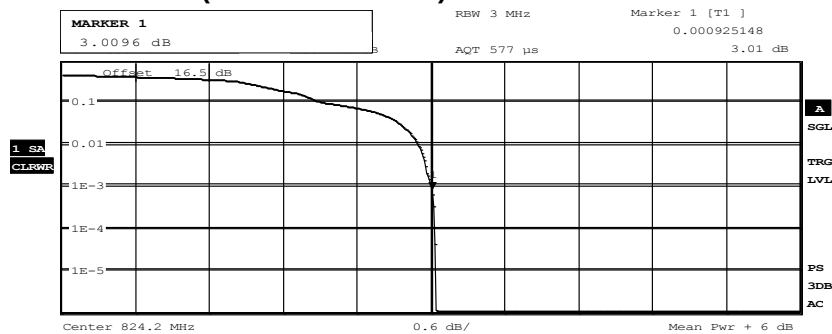
Trace 1
Mean 31.84 dBm
Peak 32.14 dBm
Crest 0.30 dB

10 % 0.29 dB
1 % 0.30 dB
.1 % 0.31 dB
.01 % 0.31 dB

Date: 16.JAN.2018 11:18:02

Diagram CCDF_251_GMSK

1.1.2. GSM 850 (8-PSK Modulation)



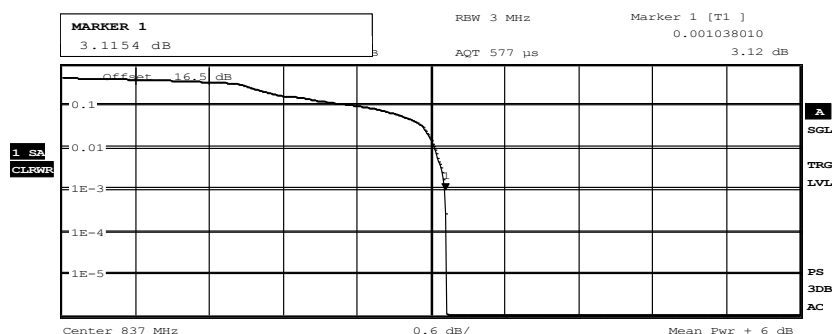
Complementary Cumulative Distribution Function
NOF samples: 2308, Usable BW: 3.5MHz

Trace 1
Mean 25.93 dBm
Peak 28.96 dBm
Crest 3.03 dB

10 % 2.16 dB
1 % 2.89 dB
.1 % 3.01 dB
.01 % 3.04 dB

Date: 16.JAN.2018 11:20:51

Diagram CCDF_128_8PSK



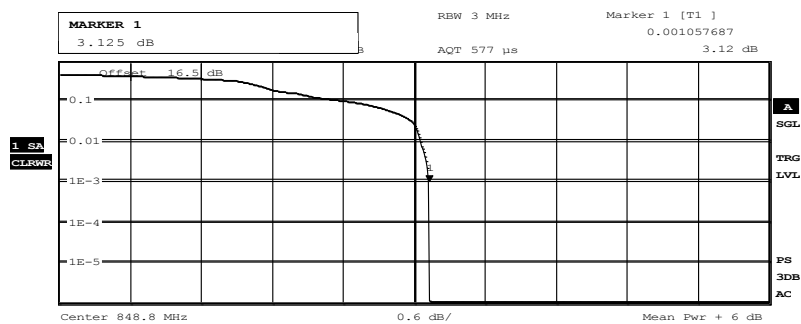
Complementary Cumulative Distribution Function
NOF samples: 2308, Usable BW: 3.5MHz

Trace 1
Mean 25.98 dBm
Peak 29.11 dBm
Crest 3.12 dB

10 % 2.45 dB
1 % 3.04 dB
.1 % 3.12 dB
.01 % 3.13 dB

Date: 16.JAN.2018 11:20:20

Diagram CCDF_192_8PSK



Complementary Cumulative Distribution Function
NOF samples: 2308, Usable BW: 3.5MHz

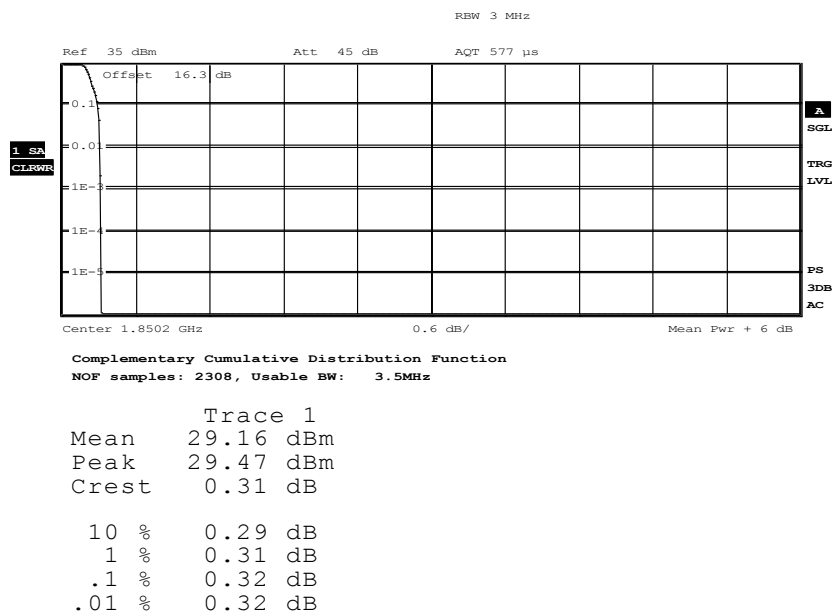
Trace 1
Mean 25.91 dBm
Peak 29.03 dBm
Crest 3.13 dB

10 % 2.46 dB
1 % 3.06 dB
.1 % 3.13 dB
.01 % 3.13 dB

Date: 16.JAN.2018 11:19:38

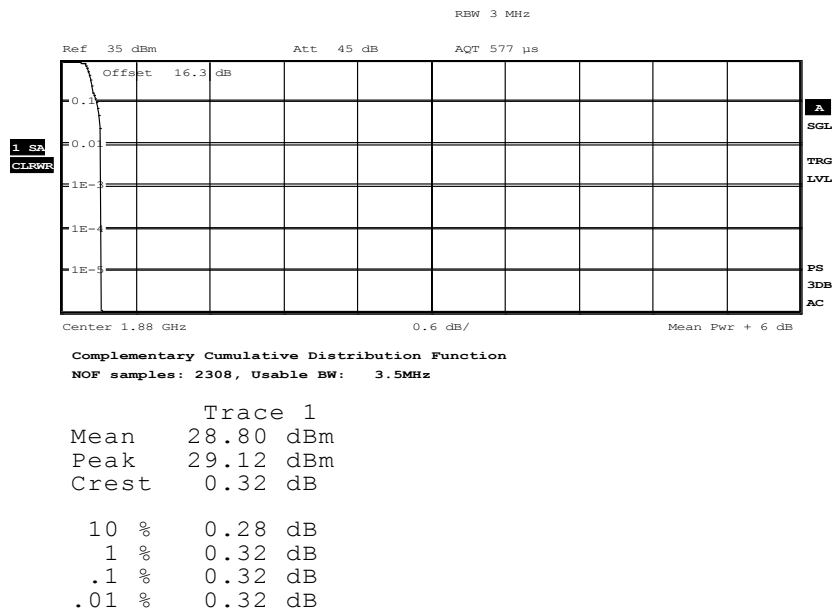
Diagram CCDF_251_8PSK

1.1.3. GSM 1900 (GMSK Modulation)



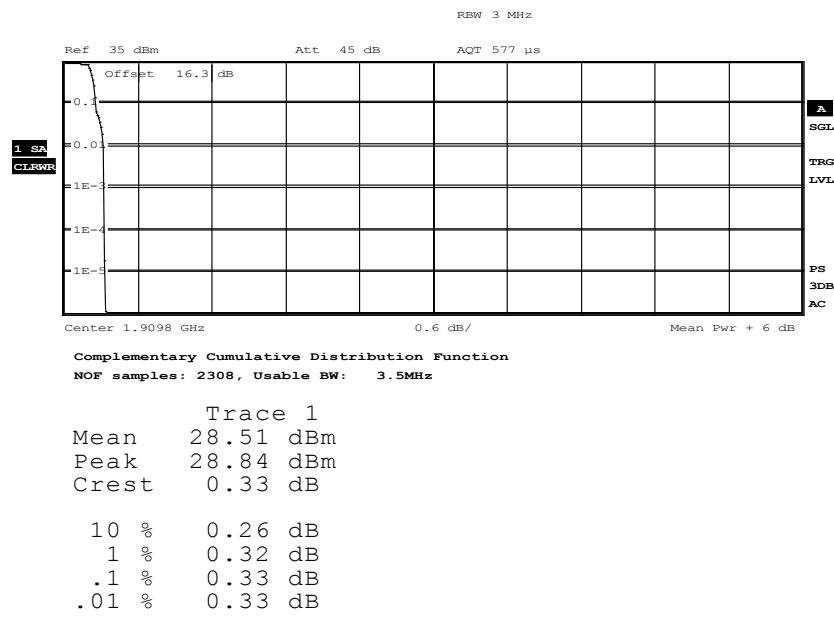
Date: 17.JAN.2018 15:38:37

Diagram CCDF_512_GMSK



Date: 17.JAN.2018 15:39:24

Diagram CCDF_661_GMSK



Date: 17.JAN.2018 15:39:59

Diagram CCDF_810_GMSK

1.1.4. GSM 1900 (8-PSK Modulation)

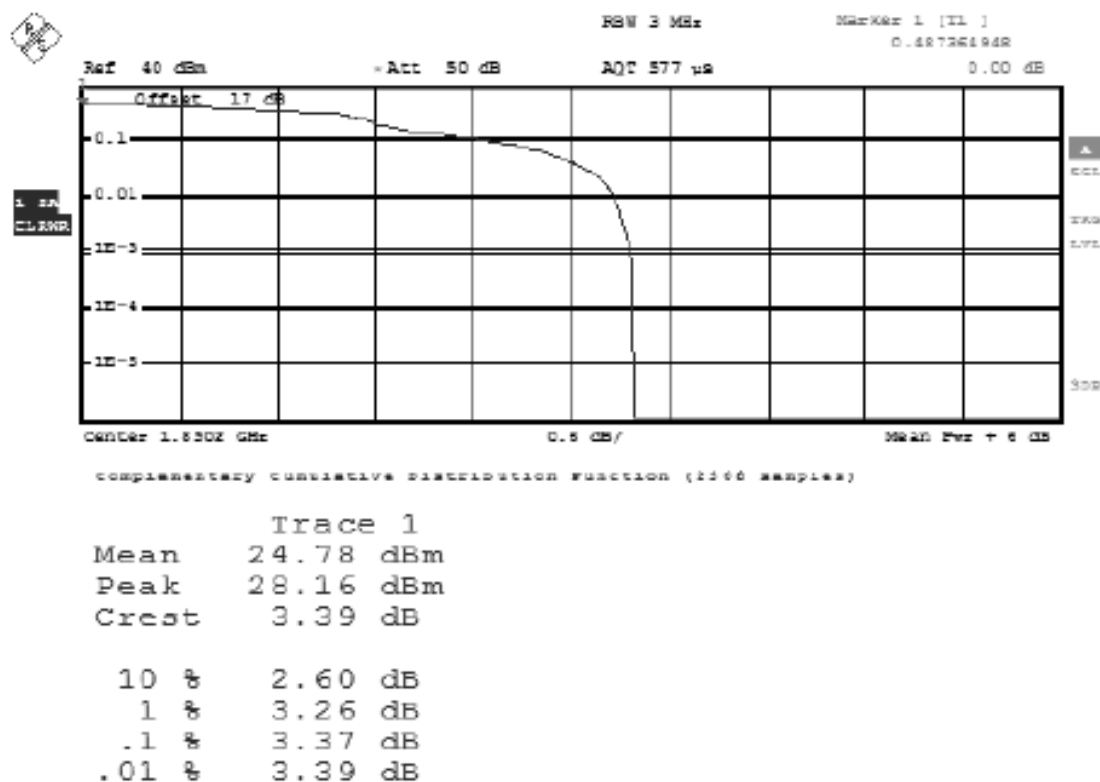


Diagram CCDF_512_8PSK

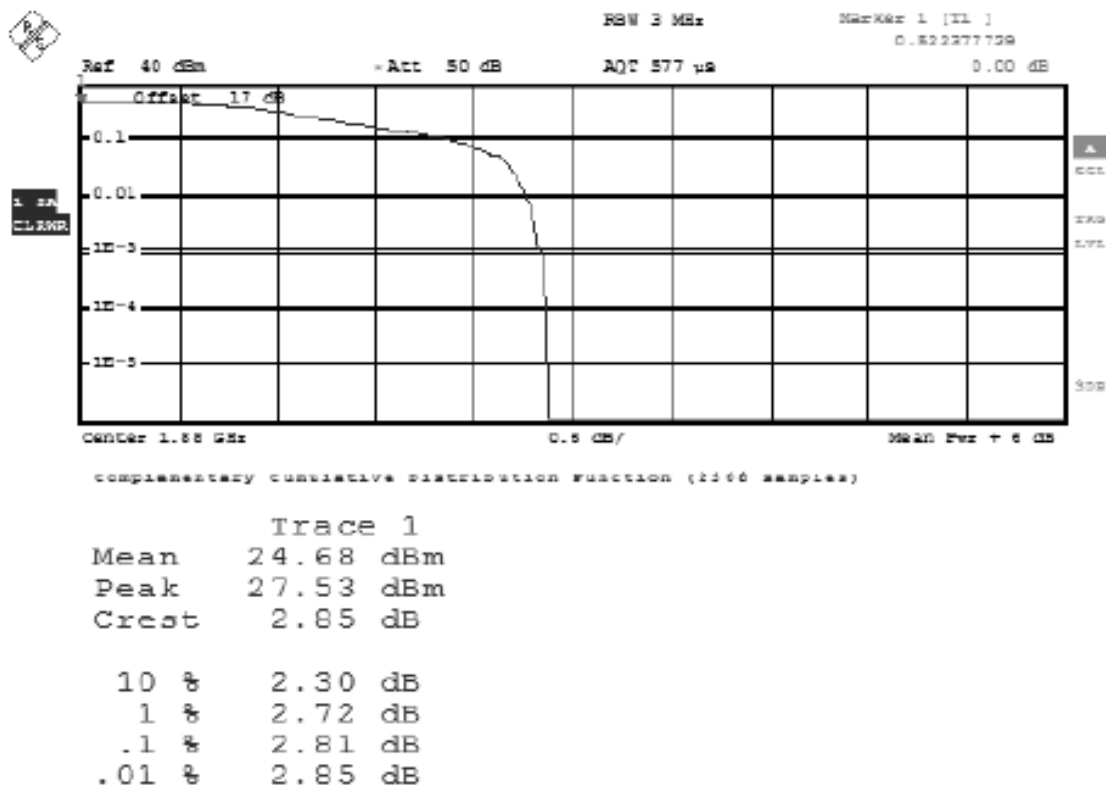


Diagram CCDF_661_8PSK

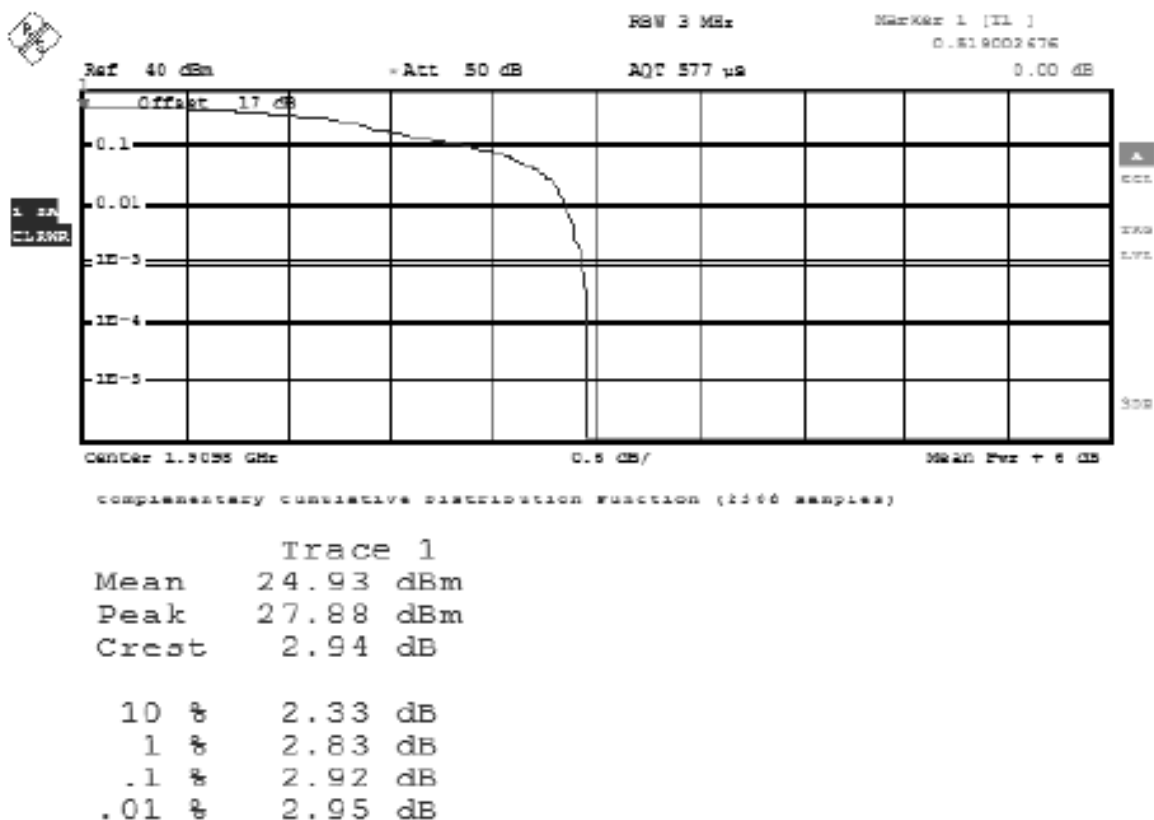


Diagram CCDF_810_8PSK

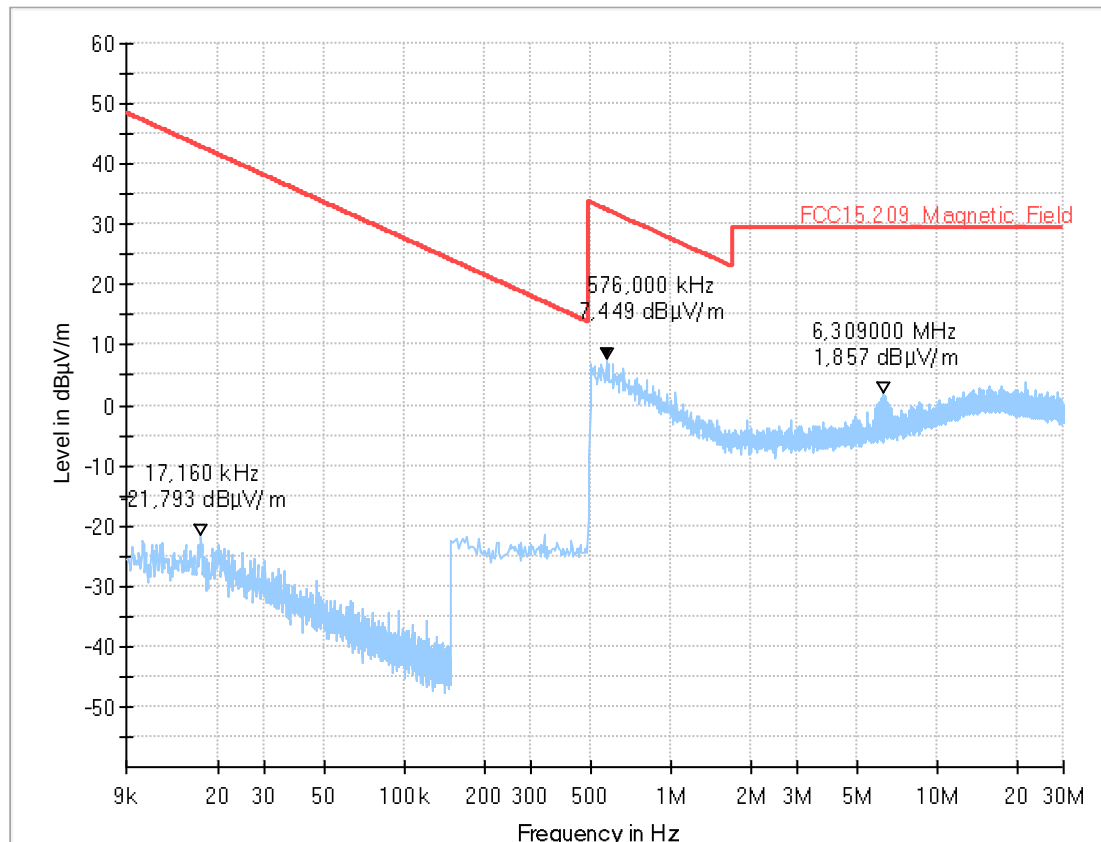
1.2. Magnetic field emissions radiated (850 MHz transmitting mode)

2.01_RSE_R_Ch128_GPRS

Test description:	Date: 09.12.2017 Page 1 of 1
Test site and distance:	Magnetic Field Strength Measurement related to 30/300 m distance
Version of Testsoftware:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Distance correction:	EMC32 V9.25.0
Technical Data:	used accord. table, pls. see test report
Rec. antenna (pre-scan):	Please see page 2 for detailed data of measurement setup
Used filter:	height 1.00 m, parallel and 90° to EUT polarisation
Test specification:	bypass
	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	Klv
Operating conditions:	TX-on
Power during tests:	24 V DC
Comment 1:	GPRS850 Channel: 128

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60
HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC



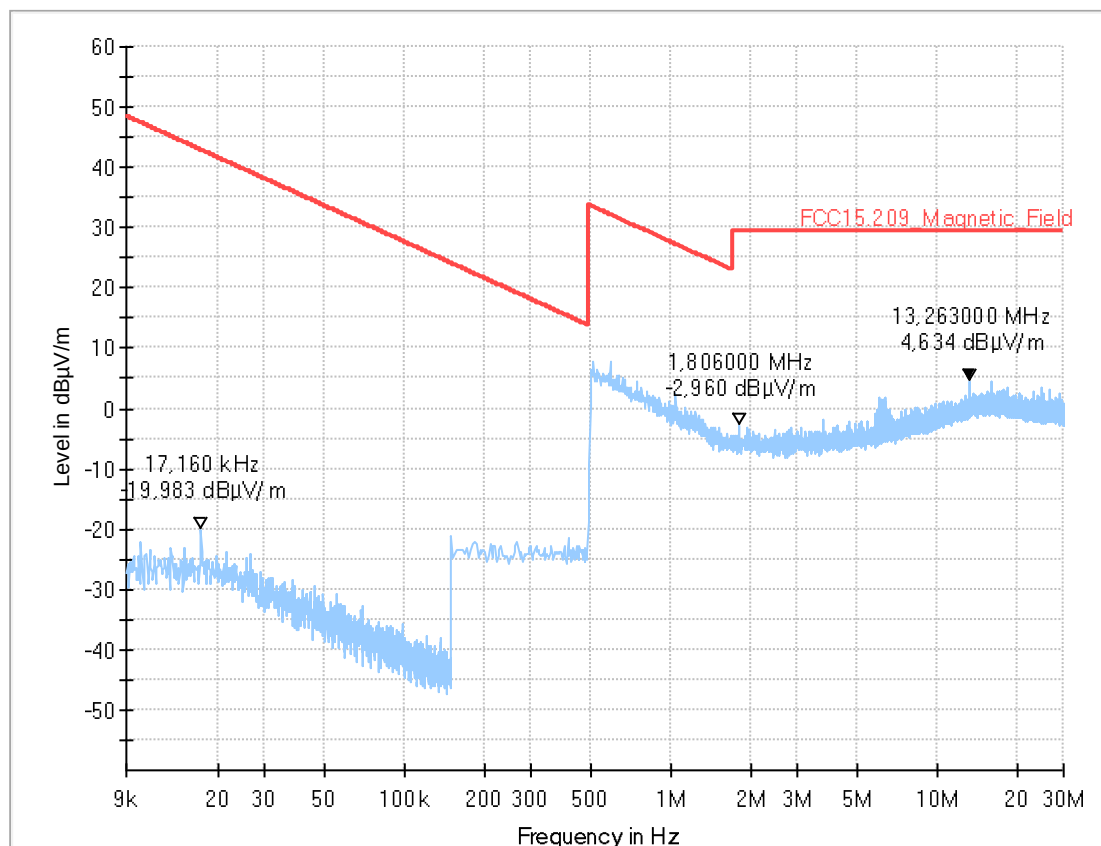
2.02_RSE_R_Ch192_GPRS

Date:	09.12.2017	Page 1 of 1
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:	EMC32 V9.25.0	
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 specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4	
Operator:	Klv	
Operating conditions:	TX-on	
Power during tests:	24 V DC	
Comment 1:	GPRS850 Channel: 192	

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60

HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC

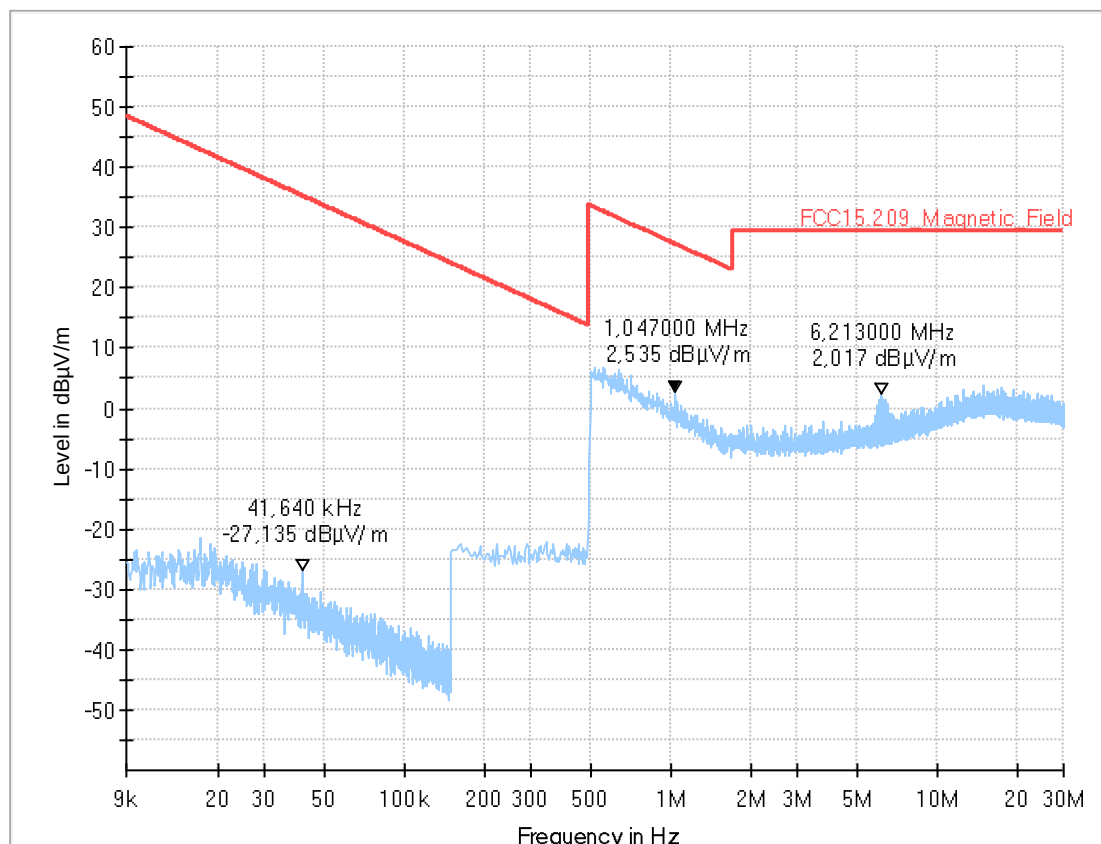


2.03_RSE_R_Ch251_GPRS

Date: 09.12.2017	Page 1 of 1
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:	EMC32 V9.25.0
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 specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	Klv
Operating conditions:	TX-on
Power during tests:	24 V DC
Comment 1:	GPRS850 Channel: 251

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60
HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC



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

2.10_RSE_R_Ch512_GPRS

Test description:
Test site and distance:
Version of Testsoftware:
Distance correction:
Technical Data:
Rec. antenna (pre-scan):
Used filter:
Test specification:

Date: 09.12.2017 Page 1 of 1
Magnetic Field Strength Measurement related to 30/300 m distance
Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
EMC32 V9.25.0
used accord. table, pls. see test report
Please see page 2 for detailed data of measurement setup
height 1.00 m, parallel and 90° to EUT polarisation
bypass
FCC 15.205 § 15.209; RSS-Gen: Issue 4

Operator:
Operating conditions:
Power during tests:
Comment 1:

Klv
TX-on
24 V DC
GPRS1900 Channel: 512

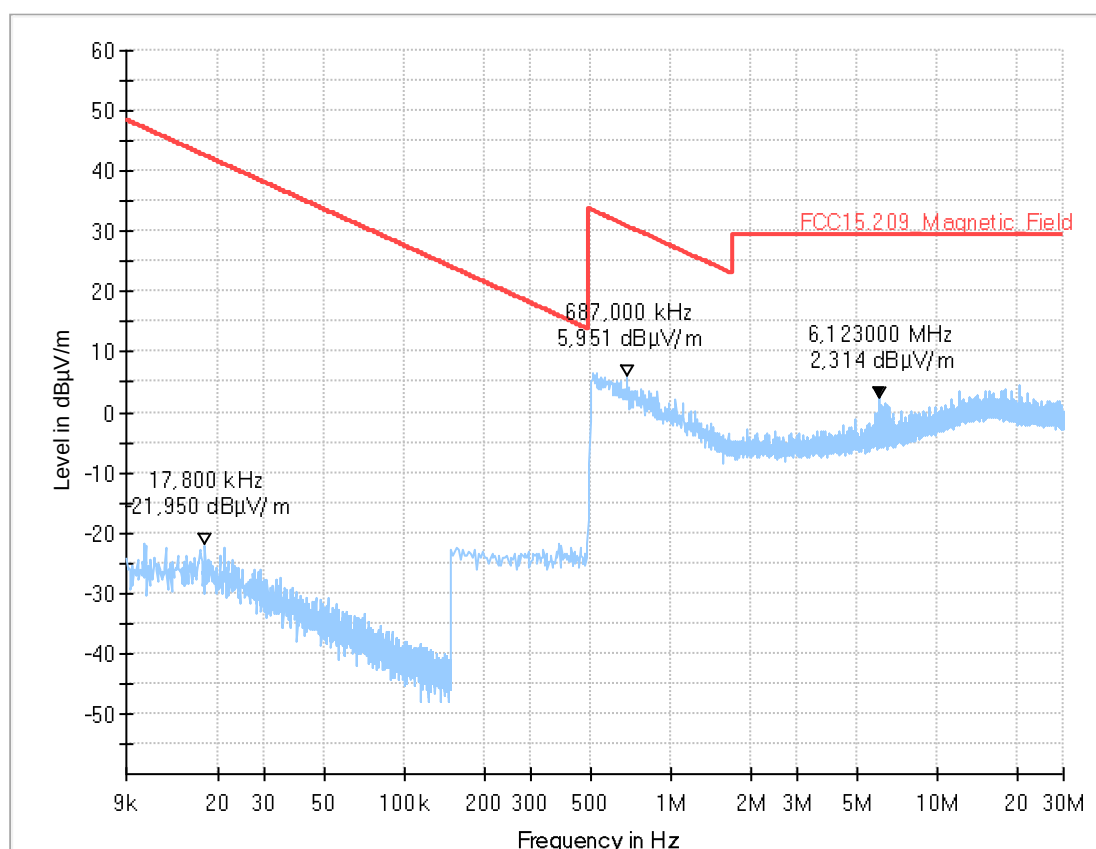
EUT Information

Manufacturer:
EuT:

Daimler AG
CTPMID/ A 000 446 58 60

HW Version:
SW Version:
Serial Number:
Connected Interfaces:
Power Supply:

0342G05
tbd
3600003042
Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
24 V DC



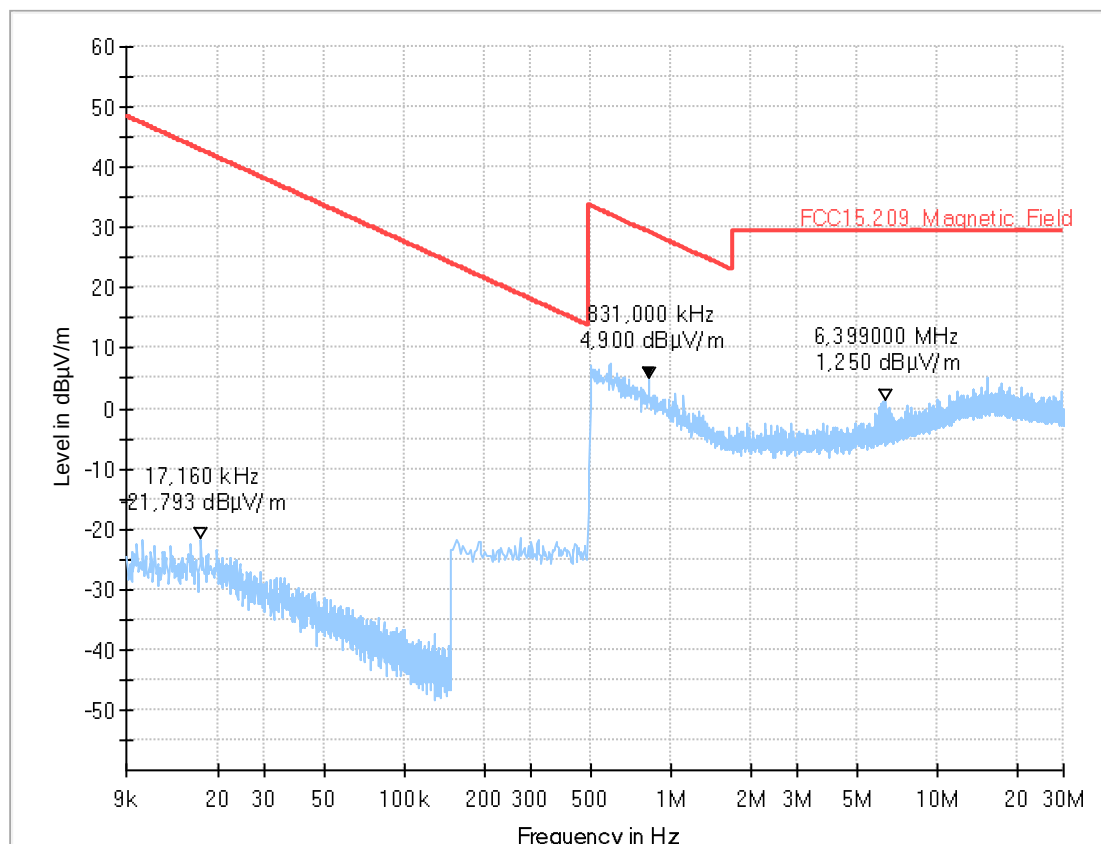
2.11_RSE_R_Ch661_GPRS

Test description:	Date: 09.12.2017 Page 1 of 1
Test site and distance:	Magnetic Field Strength Measurement related to 30/300 m distance
Version of Testsoftware:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Distance correction:	EMC32 V9.25.0
Technical Data:	used accord. table, pls. see test report
Rec. antenna (pre-scan):	Please see page 2 for detailed data of measurement setup
Used filter:	height 1.00 m, parallel and 90° to EUT polarisation
Test specification:	bypass
	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	Klv
Operating conditions:	TX-on
Power during tests:	24 V DC
Comment 1:	GPRS1900 Channel: 661

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60

HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC



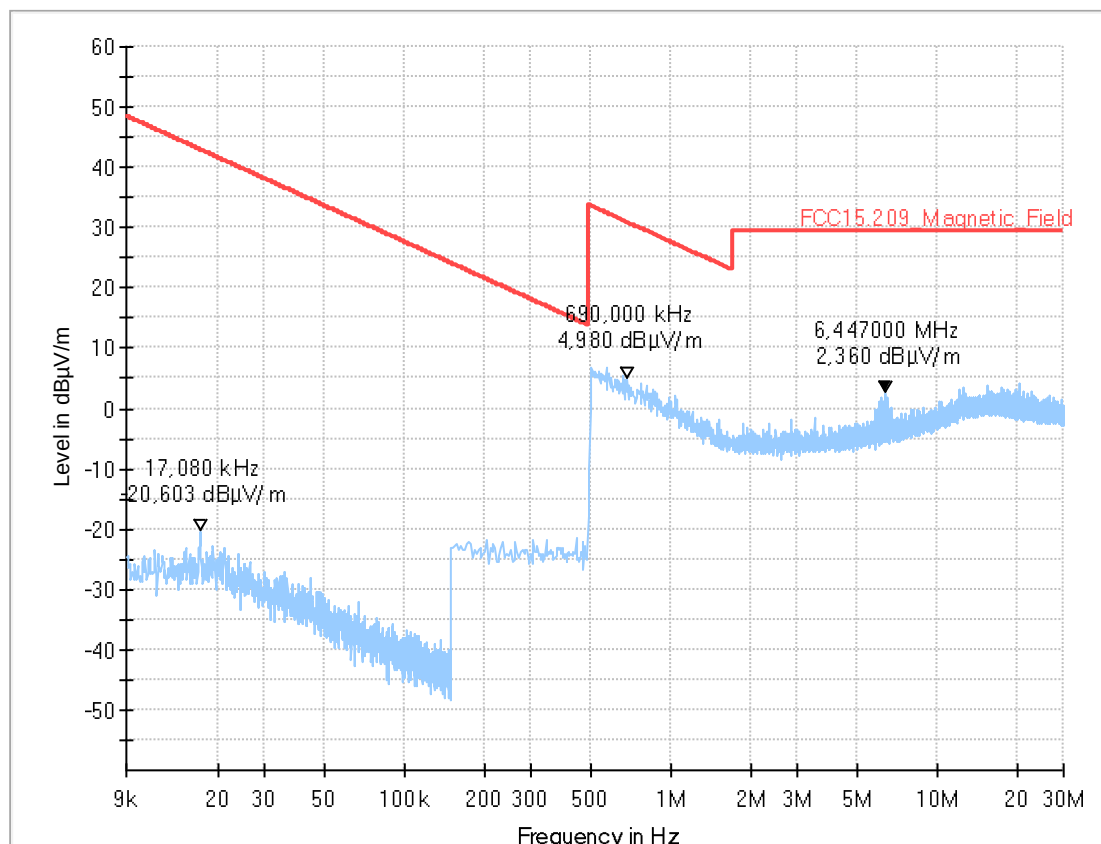
2.12_RSE_R_Ch810_GPRS

Date:	09.12.2017	Page 1 of 1
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:	EMC32 V9.25.0	
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 specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4	
Operator:	Klv	
Operating conditions:	TX-on	
Power during tests:	24 V DC	
Comment 1:	GPRS1900 Channel: 810	

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60

HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC



1.4. Spurious emissions radiated (850 MHz transmitting mode)

8.01_RSE_R_Ch128_GPRS

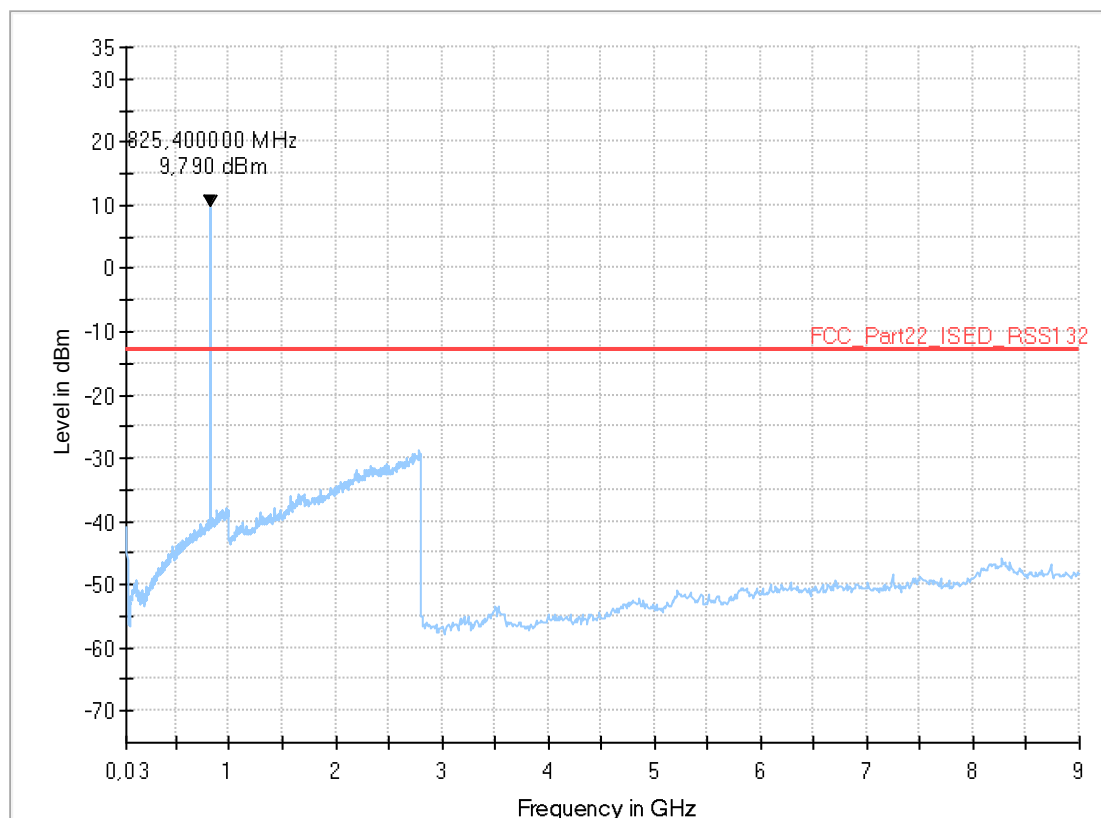
Common Information

Test Description:	EIRP Measurement GPRS 850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22
Operating Mode:	GPRS850, Channel: 128
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Operator:	Klv

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60
HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC

Full Spectrum



8.02_RSE_R_Ch192_GPRS

Common Information

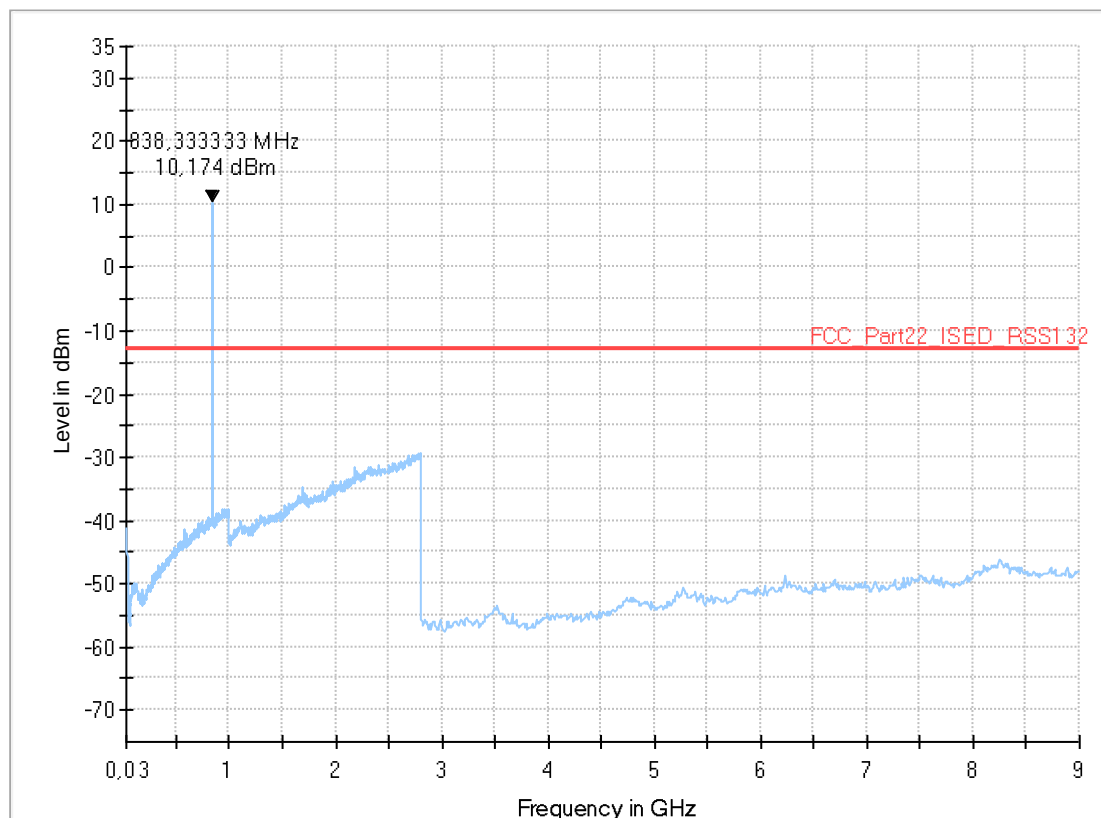
Test Description:	EIRP Measurement GPRS 850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22
Operating Mode:	GPRS850, Channel: 192
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Operator:	Klv

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60

HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC

Full Spectrum



8.03_RSE_R_Ch251_GPRS

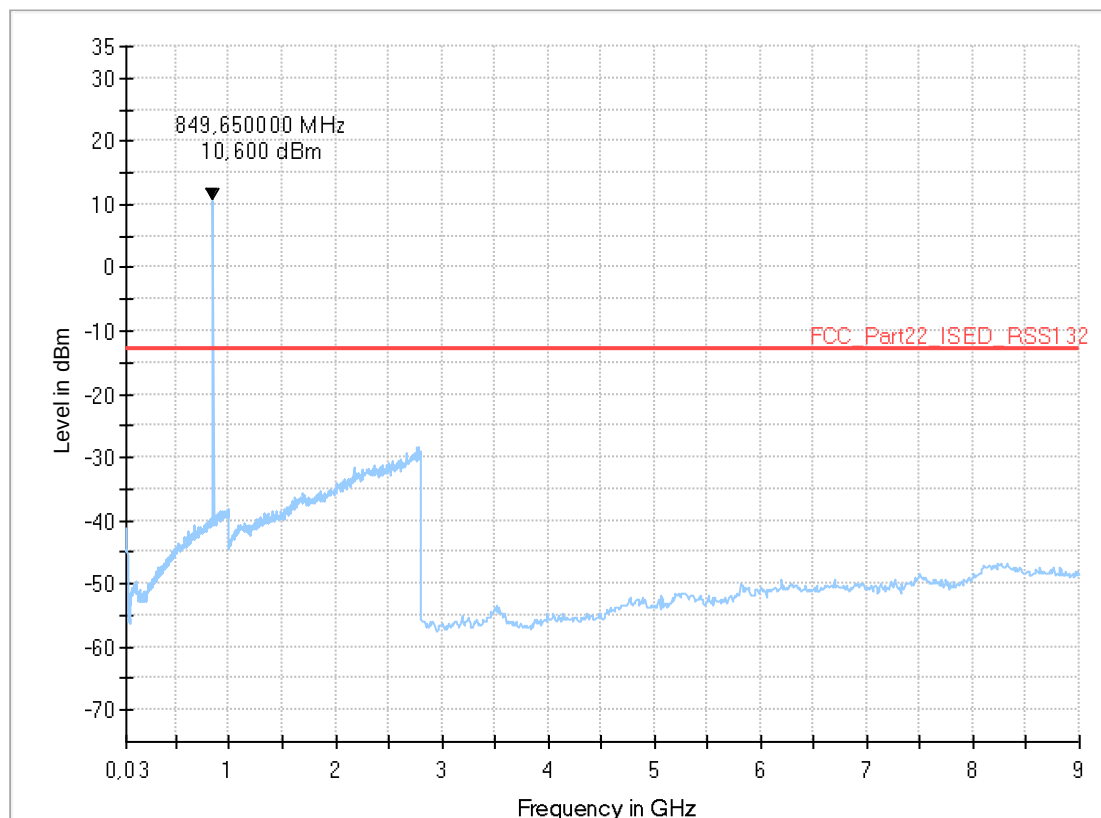
Common Information

Test Description:	EIRP Measurement GPRS 850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22
Operating Mode:	GPRS850, Channel: 251
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Operator:	Klv

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60
HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC

Full Spectrum



1.5. Spurious emissions radiated (1900 MHz transmitting mode)

8.10_RSE_R_Ch512_GPRS

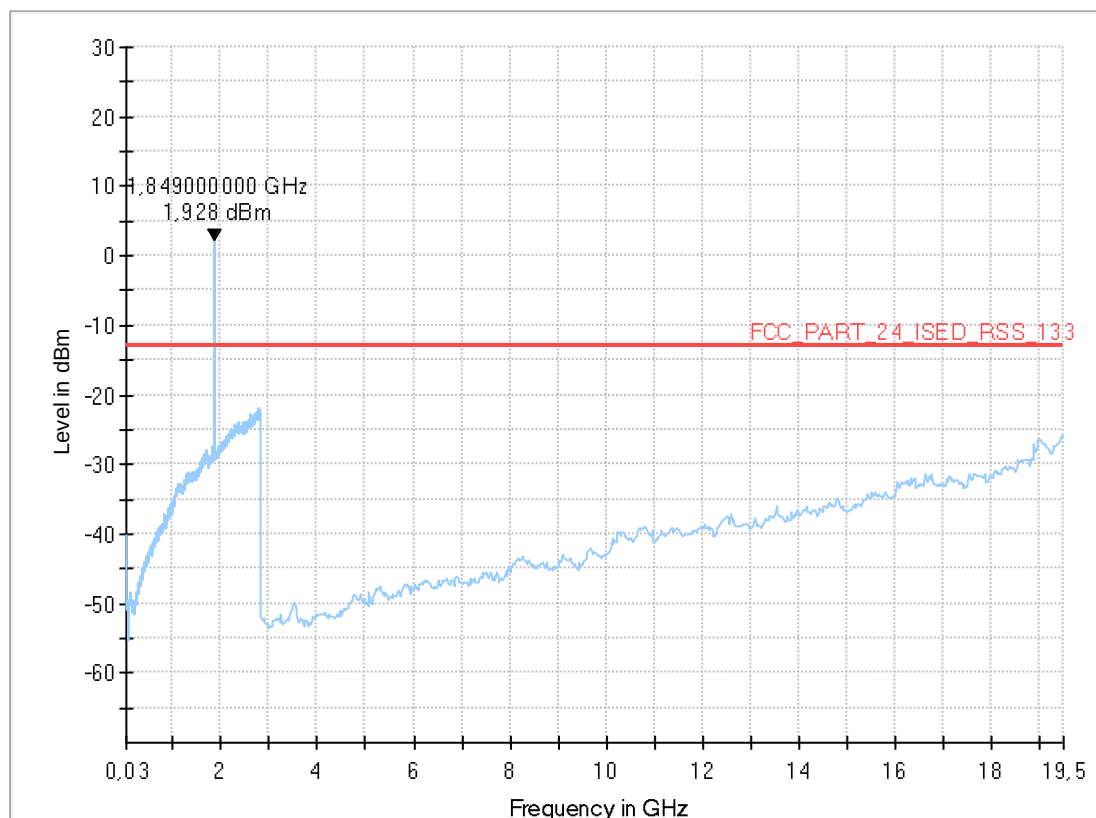
Common Information

Test Description:	EIRP Measurement GPRS 850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22
Operating Mode:	GPRS1900, Channel: 512
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Operator:	Klv

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60
HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC

Full Spectrum



8.11_RSE_R_Ch661_GPRS

Common Information

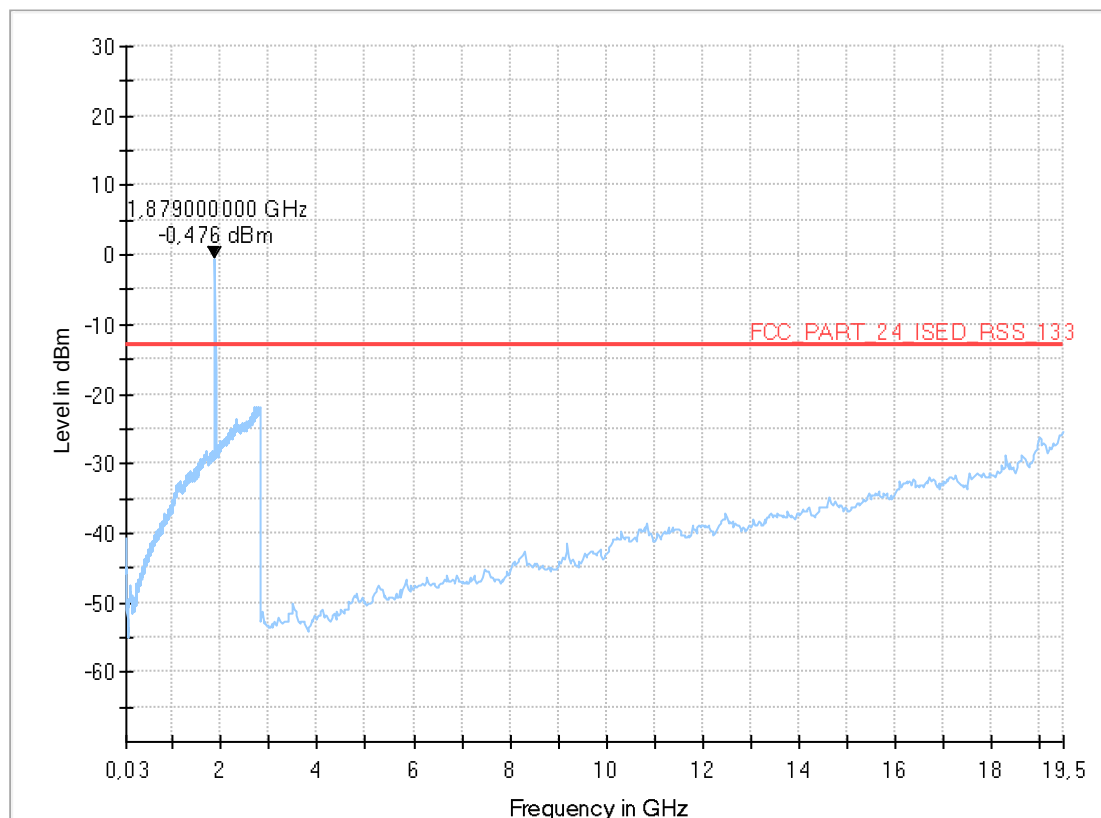
Test Description:	EIRP Measurement GPRS 850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22
Operating Mode:	GPRS1900, Channel: 661
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Operator:	Klv

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60

HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC

Full Spectrum



8.12_RSE_R_Ch810_GPRS

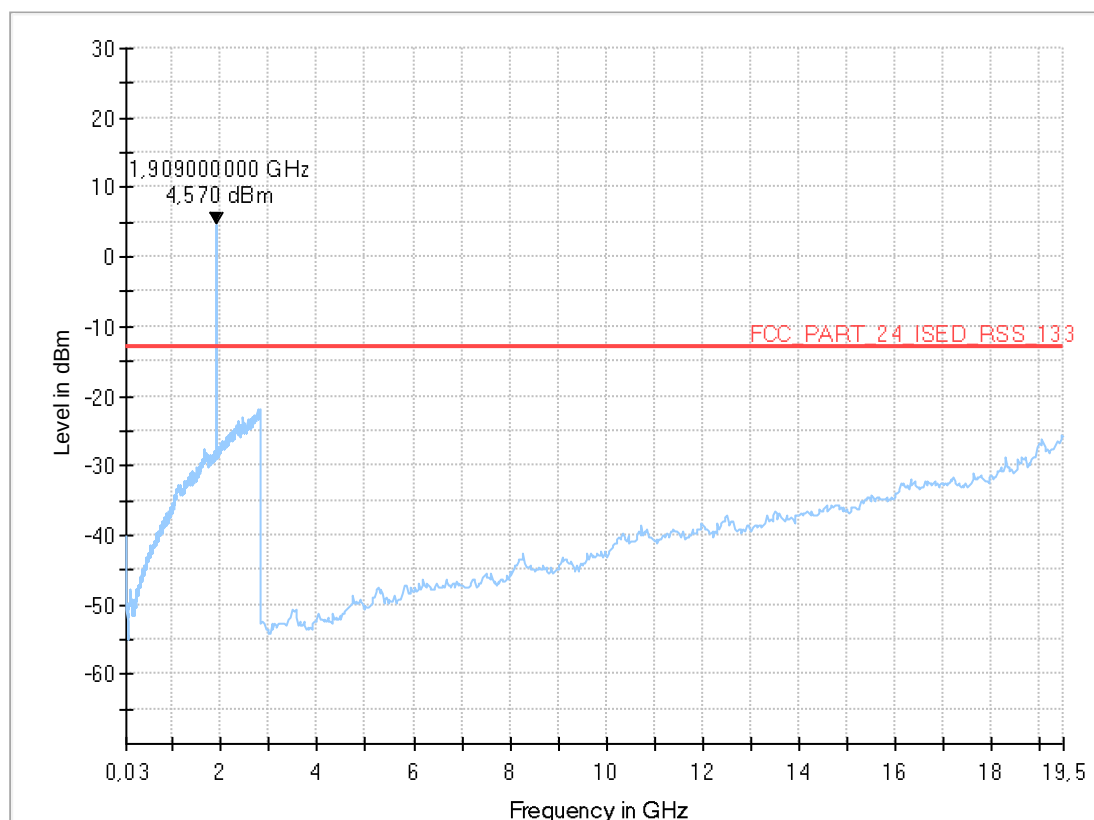
Common Information

Test Description:	EIRP Measurement GPRS 850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22
Operating Mode:	GPRS1900, Channel: 810
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Operator:	Klv

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60
HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC

Full Spectrum



1.6. Radiated emissions on 850 MHz transmitting band-edge

9.01_BE_R_Ch128_GPRS

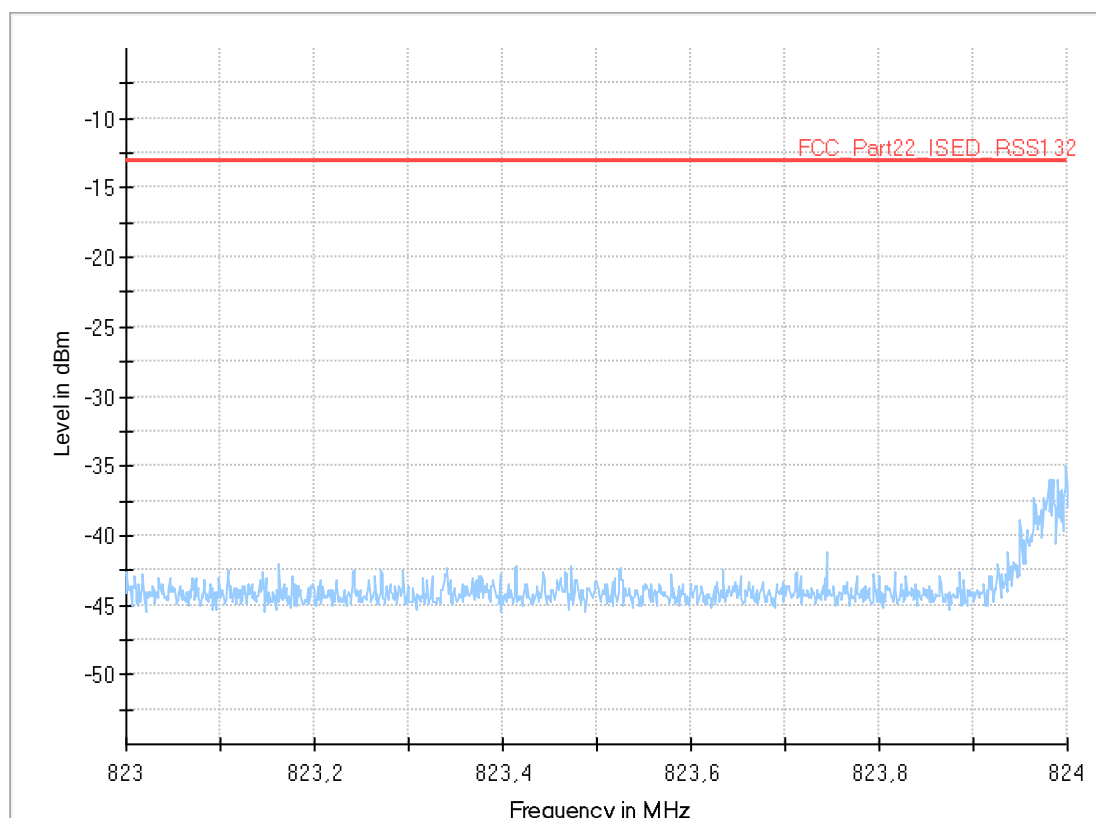
Common Information

Test Description:	Radiated emission related to 1m
Test Site:	FAR
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
EUT:	CTP MID
Conditions:	Humidity: 30%rH; Temperature: 20°C
Operation mode:	TCH 850 CH128
Operator Name:	Klv
Comment:	

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60
HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC

Full Spectrum



9.02_BE_R_Ch251_GPRS

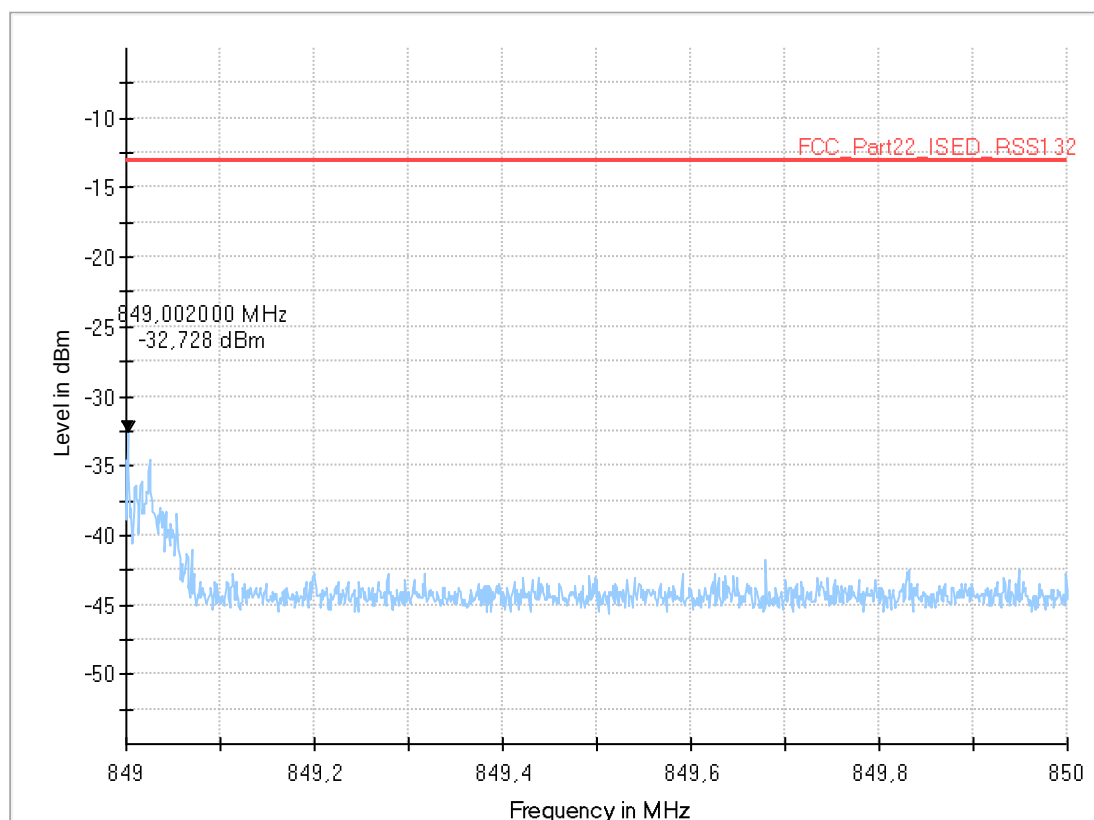
Common Information

Test Description:	Radiated Band Edge Compliance GSM850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917
Operating Mode:	MS allocated channel 251 (fc = 848.8MHz), Voice, PCL0 (+33dBm)
Exclusionband:	824 - 849MHz
Environmental Conditions:	Humidity: 30%rH; Temperature: 20°C
Operator:	Klv

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60
HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC

Full Spectrum



1.7. Radiated emissions on 1900 MHz transmitting band-edge 9.07_BE_R_Ch512_GPRS

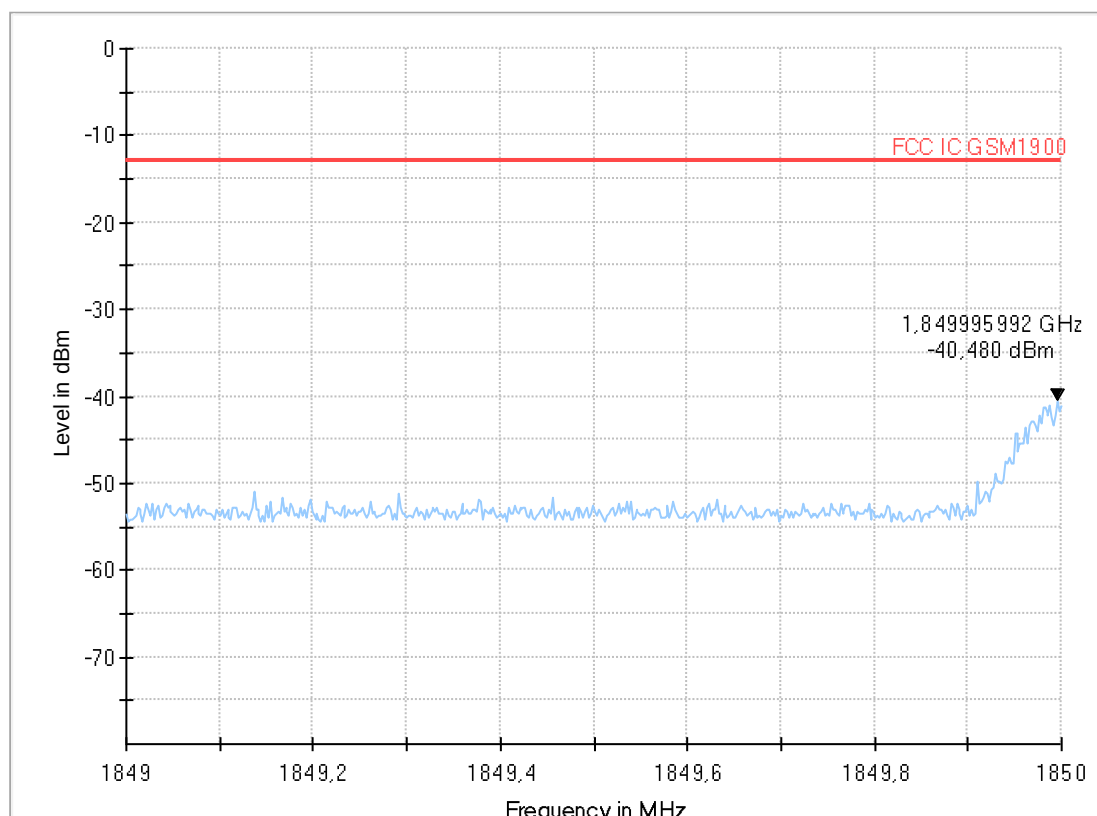
Common Information

Test Description:	Radiated Spurious Emissions GSM1900
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24.238
Comm. Link:	GSM1900, Voice/EDGE
Operating Mode:	MS allocated channel 512 (UL = 1850.2MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator:	Klv

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60
HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC

Full Spectrum



9.08_BE_R_Ch810_GPRS

Common Information

Test Description:	Radiated Spurious Emissions GSM1900
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24.238
Comm. Link:	GSM1900, Voice/EDGE
Operating Mode:	MS allocated channel 810 (UL = 1909.8MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 40%rH; Temperature: 20°C
Operator:	Klv

EUT Information

Manufacturer:	Daimler AG
EuT:	CTPMID/ A 000 446 58 60
HW Version:	0342G05
SW Version:	tbd
Serial Number:	3600003042
Connected Interfaces:	Main wiring + Antenna A005 820 30 75 + Splitter A005 820 43 75
Power Supply:	24 V DC

Full Spectrum

