

Annex 1: Measurement diagrams to
TEST REPORT
 No.: 15-1-0007501-02a

According to:
FCC Regulations
 Part 22, Part 24

IC-Regulations
 RSS-132 Issue 3, RSS-133 Issue 6,
 RSS-Gen Issue 4

for

peiker acoustic GmbH & Co. KG
 GSM/W-CDMA/LTE Module
 V1140-101-1

FCC-ID: QWY-V1140-101-1
IC: 6588A-V11401011
PMN: V1140-101-1
HVIN: V1140-101-1







Laboratory Accreditation and Listings			
 DAkKS Deutsche Akkreditierungsstelle D-PL-12047-01-01	 FEDERAL COMMUNICATIONS COMMISSION U.S.A. MRA US-EU 0003	 Industry Canada Reg. No.: 3462D-1 Reg. No.: 3462D-2 Reg. No.: 3462D-3	 Voluntary Controls for Electromagnetic Emissions Reg. No.: R-2666 C-2914, T-1967, G-301
 WiFi ALLIANCE AUTHORIZED RF LABORATORY	 CTIA Authorized Test Lab LAB CODE 20011130-00		
accredited according to DIN EN ISO/IEC 17025			
<p align="center">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</p>			

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1. Measurement diagrams

1.1. Spurious emissions radiated (850 MHz transmitting mode)

8.04_RSE_R_CH128_GPRS

Common Information

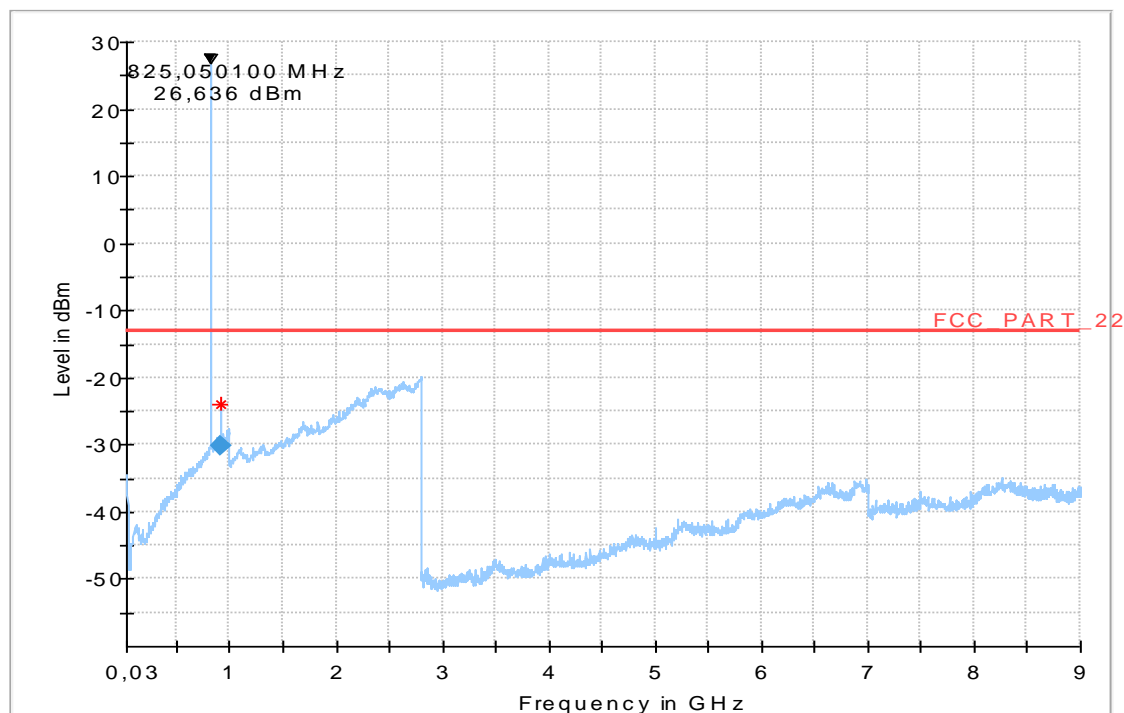
Test Description:	Radiated Emissions GSM850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR) - EMC32 V9.21.0
Test Standard:	FCC Part 22.917 / RSS-132, Issue 3
Test Case:	-
Operating Mode:	MS allocated UL channel 128
Exclusionband:	
Environmental Conditions:	Humidity: 56%rH; Temperature: 21,8°C
Operator:	AHo/KMo

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG
EuT:	PKD0424AB1 (f)
Model:	V1140-101-1

HW Version:	tbd (please refer to test report)
SW Version:	M9615A-CETWTDZM-6.3.1.100087
Serial Number:	NA#1036
IMEI:	353812-07-000002-2
Connected Interfaces:	shark antenna (US version) with ground plane, microphone, loudspeaker, cables
Power Supply:	12 VDC
Comments:	

Full Spectrum



Final Result

Frequency (MHz)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
909.529058	-	17.10	5000.0	H	166.0	90.0	-75.0

1.2. Spurious emissions radiated (1900 MHz transmitting mode)

8.11_RSE_R_GSM1900_CH661

Common Information

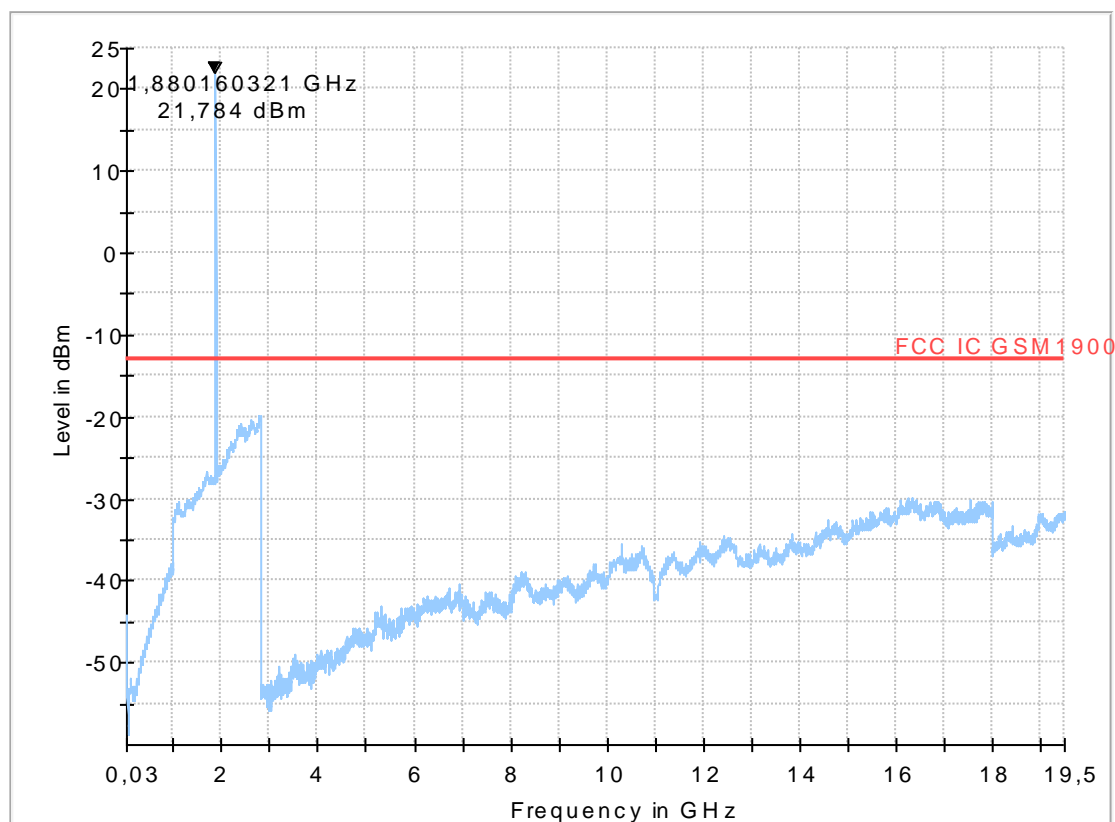
Test Description:	Radiated Spurious Emissions GSM1900
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR) - EMC32 V9.21.0
Test Standard:	FCC Part 24.238 / RSS-133, Issue 6
Comm. Link:	GSM1900, Voice
Operating Mode:	MS allocated channel661(UL = 1880.0MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 56%rH; Temperature: 21,8°C
Operator:	AHo/KMo

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG
EuT:	PKD0424AB1 (f)
Model:	V1140-101-1

HW Version:	tbd (please refer to test report)
SW Version:	M9615A-CETWTDZM-6.3.1.100087
Serial Number:	NA#1036
IMEI:	353812-07-000002-2
Connected Interfaces:	shark antenna (US version) with ground plane, microphone, loudspeaker, cables
Power Supply:	12 VDC
Comments:	

Full Spectrum



1.3. Radiated emissions on 850 MHz transmitting band-edge

9.01_BE_R_Ch128_GSM_850

Common Information

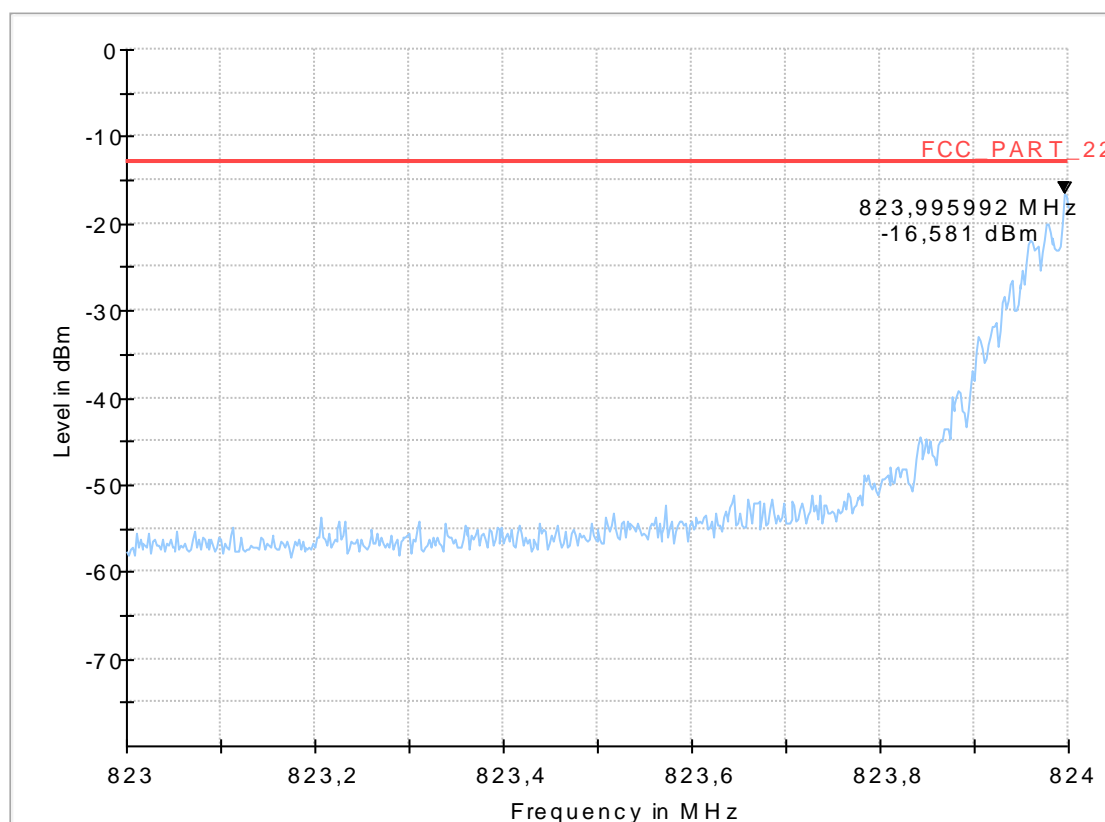
Test Description:	Radiated Band Edge Compliance GSM850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR) - EMC32 V9.21.0
Test Standard:	FCC Part 22.917
Operating Mode:	MS allocated channel 128 (fc = 824.2MHz), Voice, PCL5 (+33dBm)
Exclusionband:	824 - 849MHz
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Operator:	AHo/KMo

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG
EuT:	PKD0424AB1 (f)
Model:	V1140-101-1

HW Version:	tbd (please refer to test report)
SW Version:	M9615A-CETWTDZM-6.3.1.100087
Serial Number:	NA#1036
IMEI:	353812-07-000002-2
Connected Interfaces:	shark antenna (US version) with ground plane, microphone, loudspeaker, cables
Power Supply:	12 VDC
Comments:	

Full Spectrum



9.02_BE_R_GSM850_CH251

Common Information

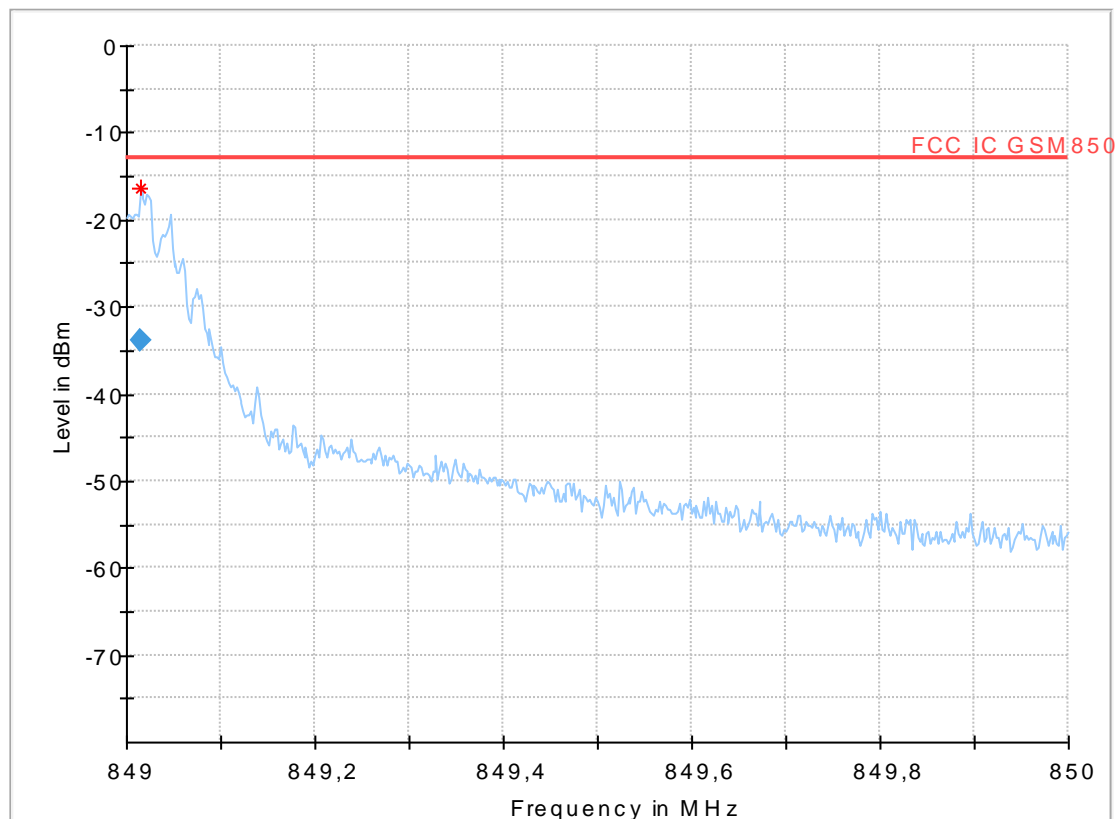
Test Description:	Radiated Band Edge Compliance GSM850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917
Operating Mode:	MS allocated channel 251 (fc = 848.8MHz), Voice, PCL0 (+33dBm)
Exclusionband:	824 - 849MHz
Environmental Conditions:	Humidity: 53%rH; Temperature: 22°C
Operator:	MRA

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG
EuT:	PKD0424AB1 (f)
Model:	V1140-101-1

HW Version:	tbd (please refer to test report)
SW Version:	M9615A-CETWTDZM-6.3.1.100087
Serial Number:	NA#1036
IMEI:	353812-07-000002-2
Connected Interfaces:	shark antenna (US version) with ground plane, microphone, loudspeaker, cables
Power Supply:	12 VDC
Comments:	

Full Spectrum



Final Result

Frequency (MHz)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
849.014028	-13.00	20.91	10000.0	V	349.0	0.0	-76.0

1.4. Radiated emissions on 1900 MHz transmitting band-edge

9.07_BE_R_GSM1900_CH512

Common Information

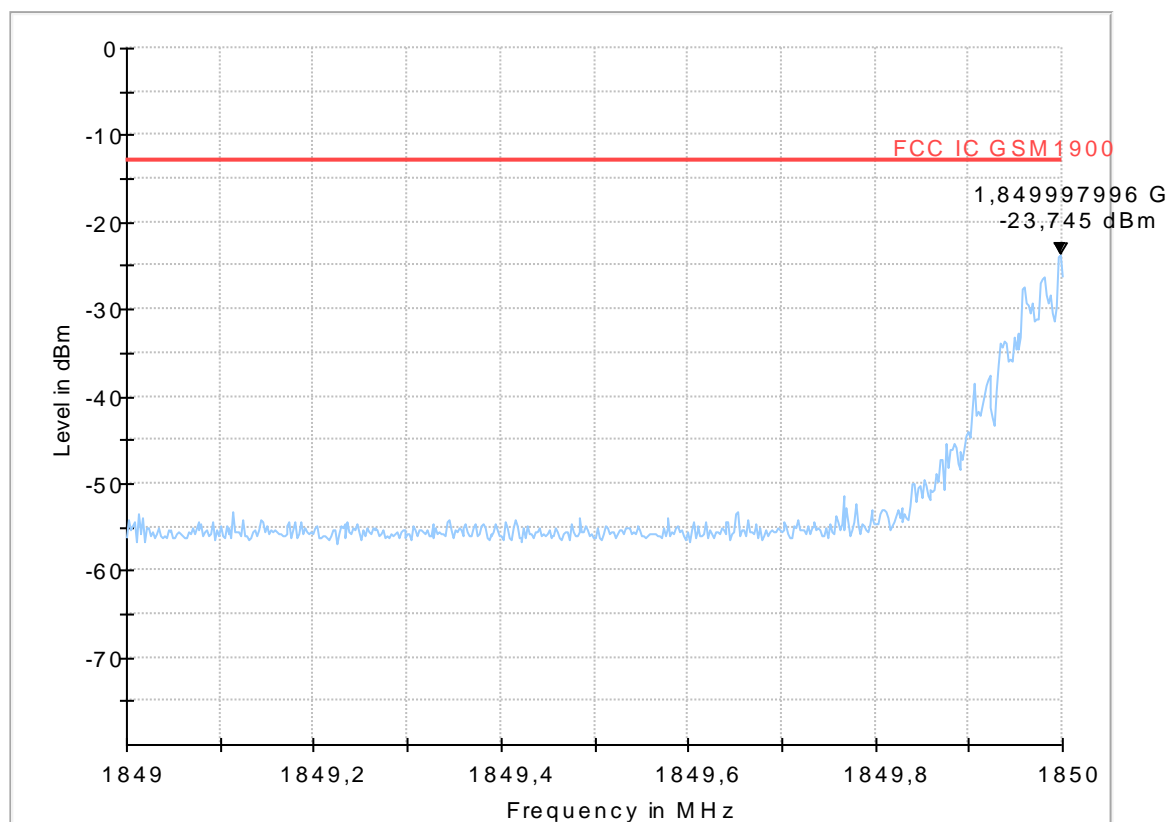
Test Description:	Radiated Spurious Emissions GSM1900
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR) - EMC32 V9.21.0
Test Standard:	FCC Part 24.238
Comm. Link:	GSM1900, Voice/EDGE
Operating Mode:	MS allocated channel 661 (UL = 1880.0MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 56%rH; Temperature: 21,8°C
Operator:	MRA

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG
EuT:	PKD0424AB1 (f)
Model:	V1140-101-1

HW Version:	tbd (please refer to test report)
SW Version:	M9615A-CETWTDZM-6.3.1.100087
Serial Number:	NA#1036
IMEI:	353812-07-000002-2
Connected Interfaces:	shark antenna (US version) with ground plane, microphone, loudspeaker, cables
Power Supply:	12 VDC
Comments:	

Full Spectrum



9.08_BE_R_GSM1900_CH810

Common Information

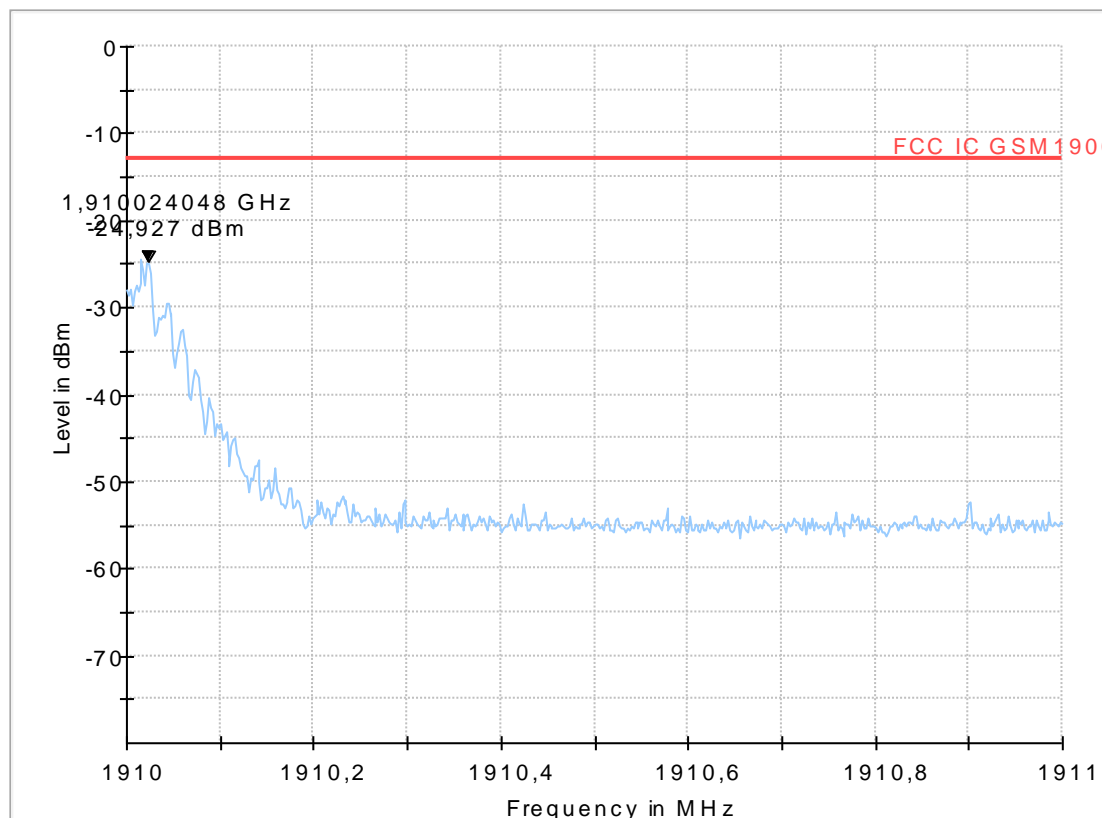
Test Description:	Radiated Spurious Emissions GSM1900
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24.238
Comm. Link:	GSM1900, Voice/EDGE
Operating Mode:	MS allocated channel ,810 (UL = 1909.8MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 64%rH; Temperature: 21,8°C
Operator:	MRA

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG
EuT:	PKD0424AB1 (f)
Model:	V1140-101-1

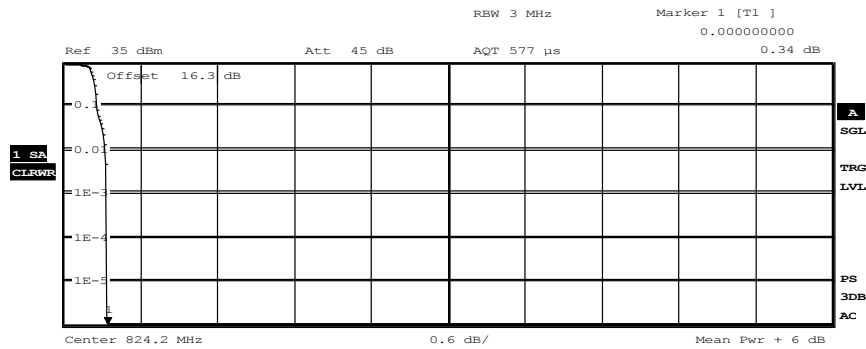
HW Version:	tdb (please refer to test report)
SW Version:	M9615A-CETWTDZM-6.3.1.100087
Serial Number:	NA#1036
IMEI:	353812-07-000002-2
Connected Interfaces:	shark antenna (US version) with ground plane, microphone, loudspeaker, cables
Power Supply:	12 VDC
Comments:	

Full Spectrum



1.5. Power Measurements and PAPR-Value

1.5.1. GSM 850 (GMSK Modulation)

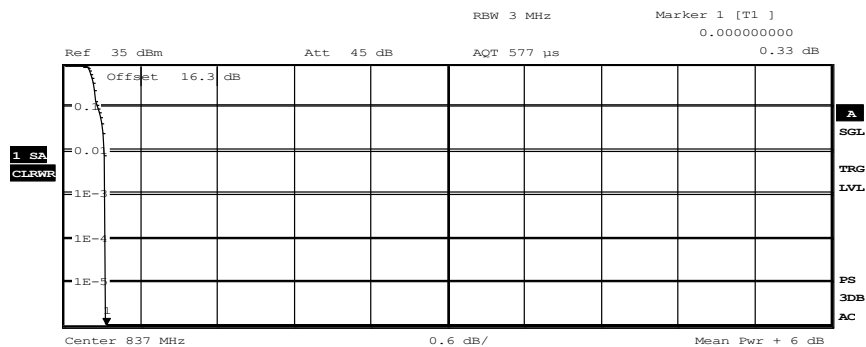


Complementary Cumulative Distribution Function
NOF samples: 2308, Usable BW: 3.5MHz

Trace 1	
Mean	26.60 dBm
Peak	26.93 dBm
Crest	0.33 dB
10 %	0.26 dB
1 %	0.32 dB
.1 %	0.34 dB
.01 %	0.34 dB

Date: 30.SEP.2015 10:30:00

Channel 128

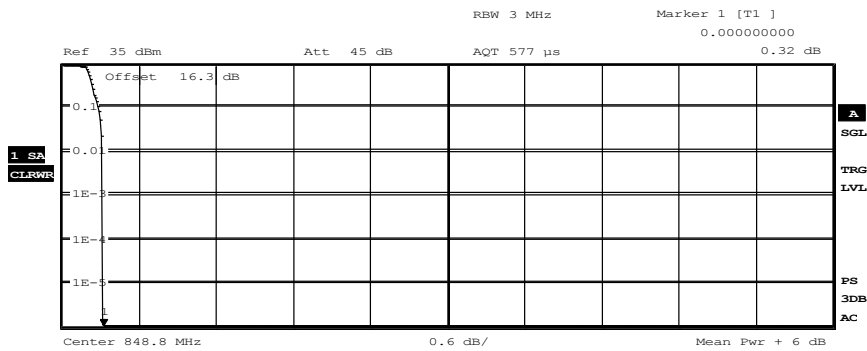


Complementary Cumulative Distribution Function
NOF samples: 2308, Usable BW: 3.5MHz

Trace 1	
Mean	26.82 dBm
Peak	27.14 dBm
Crest	0.32 dB
10 %	0.27 dB
1 %	0.32 dB
.1 %	0.33 dB
.01 %	0.33 dB

Date: 30.SEP.2015 10:28:47

Channel 192



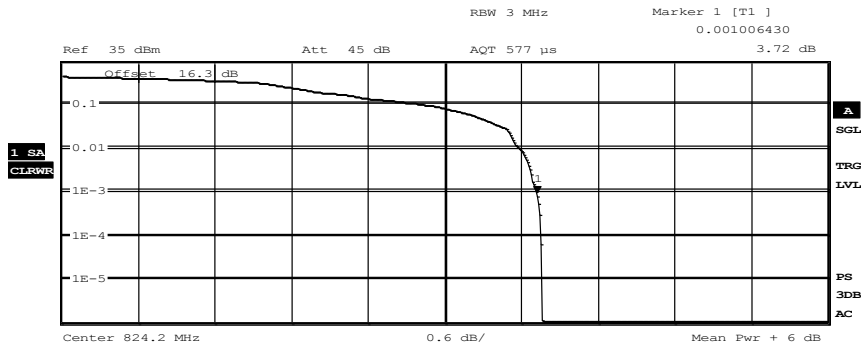
Complementary Cumulative Distribution Function
 NOF samples: 2308, Usable BW: 3.5MHz

Trace 1	
Mean	26.47 dBm
Peak	26.79 dBm
Crest	0.31 dB
10 %	0.28 dB
1 %	0.32 dB
.1 %	0.32 dB
.01 %	0.32 dB

Date: 30.SEP.2015 10:28:16

Channel 251

1.5.2. GSM 850 (8-PSK Modulation)

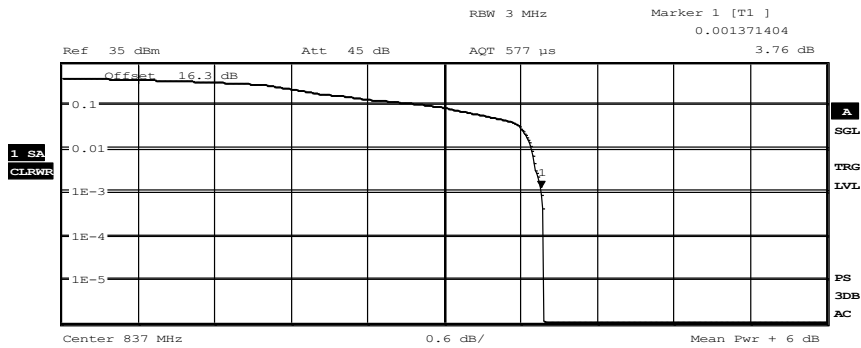


Complementary Cumulative Distribution Function
 NOF samples: 2308, Usable BW: 3.5MHz

Trace 1	
Mean	26.28 dBm
Peak	30.03 dBm
Crest	3.76 dB
10 %	2.87 dB
1 %	3.59 dB
.1 %	3.72 dB
.01 %	3.76 dB

Date: 30.SEP.2015 10:25:10

Channel 128

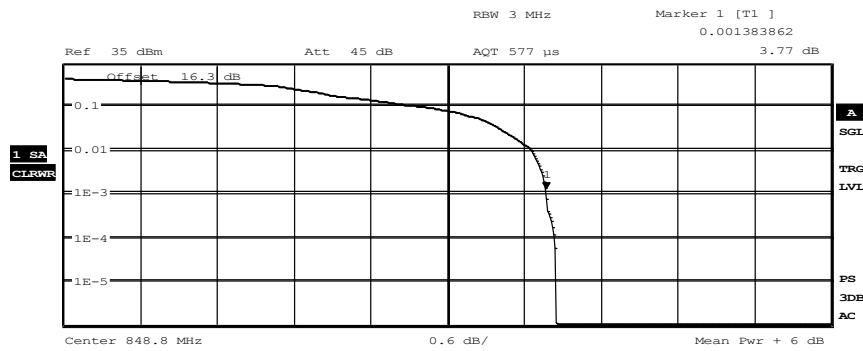


Complementary Cumulative Distribution Function
 NOF samples: 2308, Usable BW: 3.5MHz

Trace 1	
Mean	26.32 dBm
Peak	30.10 dBm
Crest	3.78 dB
10 %	2.94 dB
1 %	3.69 dB
.1 %	3.77 dB
.01 %	3.79 dB

Date: 30.SEP.2015 10:26:10

Channel 192



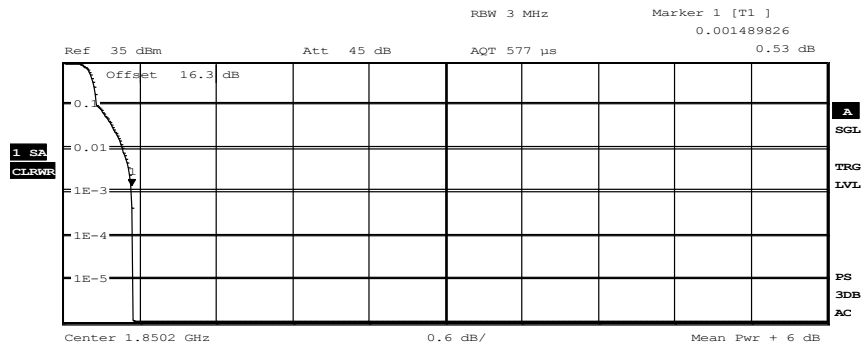
Complementary Cumulative Distribution Function
 NOF samples: 2308, Usable BW: 3.5MHz

Trace 1	
Mean	25.97 dBm
Peak	29.82 dBm
Crest	3.85 dB
10 %	2.86 dB
1 %	3.65 dB
.1 %	3.78 dB
.01 %	3.84 dB

Date: 30.SEP.2015 10:27:06

Channel 251

1.5.3. GSM 1900 (GMSK Modulation)

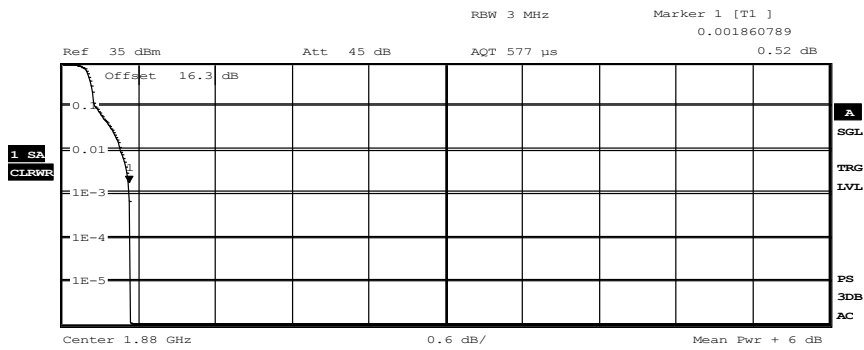


Complementary Cumulative Distribution Function
 NOF samples: 2308, Usable BW: 3.5MHz

Trace 1	
Mean	29.56 dBm
Peak	30.10 dBm
Crest	0.54 dB
10 %	0.26 dB
1 %	0.46 dB
.1 %	0.53 dB
.01 %	0.55 dB

Date: 30.SEP.2015 10:39:11

Channel 512

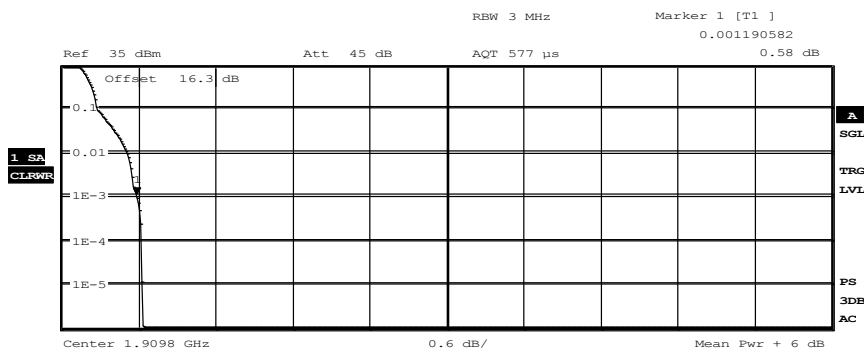


Complementary Cumulative Distribution Function
 NOF samples: 2308, Usable BW: 3.5MHz

Trace 1	
Mean	29.22 dBm
Peak	29.75 dBm
Crest	0.53 dB
10 %	0.26 dB
1 %	0.46 dB
.1 %	0.53 dB
.01 %	0.54 dB

Date: 30.SEP.2015 10:38:24

Channel 661



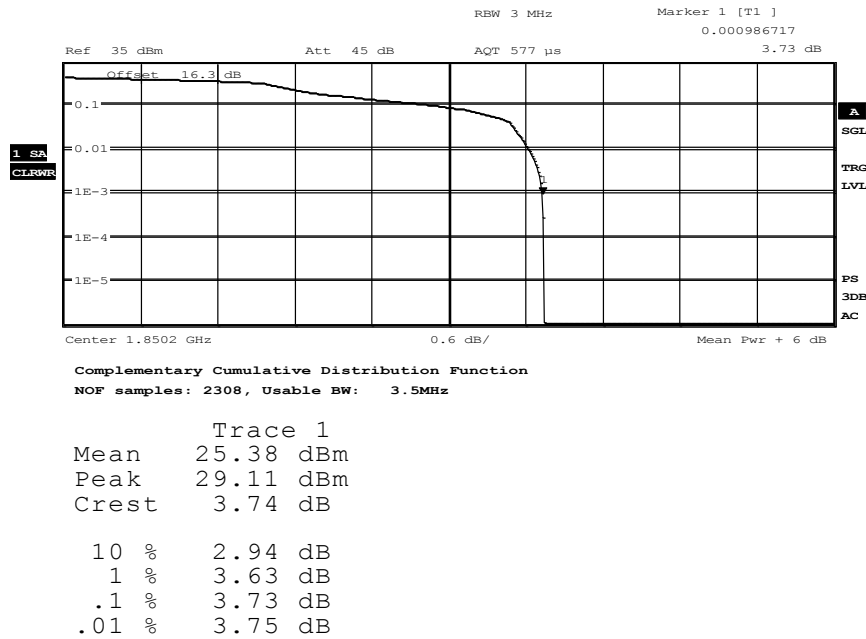
Complementary Cumulative Distribution Function
 NOF samples: 2308, Usable BW: 3.5MHz

Trace 1	
Mean	28.84 dBm
Peak	29.47 dBm
Crest	0.62 dB
10 %	0.28 dB
1 %	0.51 dB
.1 %	0.59 dB
.01 %	0.63 dB

Date: 30.SEP.2015 10:37:44

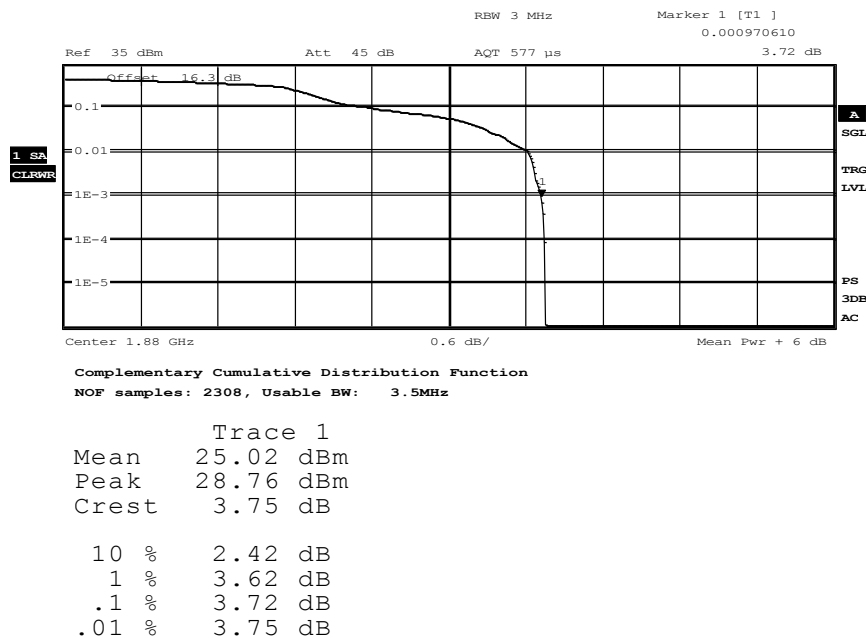
Channel 810

1.5.4. GSM 1900 (8-PSK Modulation)



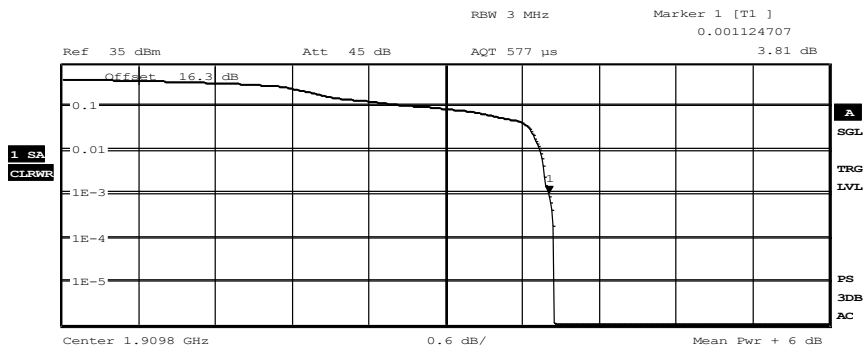
Date: 30.SEP.2015 10:35:26

Channel 512



Date: 30.SEP.2015 10:36:09

Channel 661



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

Trace 1	
Mean	24.49 dBm
Peak	28.34 dBm
Crest	3.85 dB
10 %	2.91 dB
1 %	3.74 dB
.1 %	3.82 dB
.01 %	3.85 dB

Date: 30.SEP.2015 10:36:50

Channel 810