

TEST REPORT

Test report no.: 1-5822/13-01-06



Testing laboratory

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Accredited Testing Laboratory:

The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2005) by the Deutsche Akkreditierungsstelle GmbH (DAkkS)
 The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with the registration number: D-PL-12076-01-01
 Area of Testing:
 Radio Communications & EMC (RCE)

Applicant

beyerdynamic GmbH & Co. KG
 Theresienstraße 8
 74072 Heilbronn / GERMANY
 Phone: +49 7131 617-0
 Fax: +49 7131 617-215
 Contact: Ulrich Roth
 e-mail: roth@beyerdynamic.de
 Phone: +49 7131 617-155

Manufacturer

beyerdynamic GmbH & Co. KG
 Theresienstraße 8
 74072 Heilbronn / GERMANY

Test standard/s

47 CFR Part 74	Title 47 of the Code of Federal Regulations; Chapter I Part 74 - Experimental radio, auxiliary. special broadcast and other program distribution services
RSS – 123 Issue 2	Spectrum Management and Telecommunications Policy - Radio Standards Specification Low Power Licensed Radiocommunication Devices

For further applied test standards please refer to section 3 of this test report.

Test Item

Kind of test item: Wireless Microphone System
Model name: TG 100B
FCC ID: 3628A-TG100B
IC: OSDTG100B
 Frequency: 174-184 MHz, 194-204 MHz
 Technology tested: Modulated carrier
 Antenna: Integrated antenna
 Power supply: +3.0V DC by Battery
 Temperature range: -10°C to +55°C



This test report is electronically signed and valid without handwriting signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Test report authorised:

Michael Berg
 Senior Testing Manager

Test performed:

David Lang
 Testing Manager

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2 General information

2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

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2.2 Application details

Date of receipt of order:	2013-02-26
Date of receipt of test item:	2014-01-16
Start of test:	2014-01-17
End of test:	2014-01-22
Person(s) present during the test:	-/-

3 Test standard/s

Test standard	Date	Test standard description
47 CFR Part 74	2010-10	Title 47 of the Code of Federal Regulations; Chapter I Part 74 - Experimental radio, auxiliary. special broadcast and other program distribution services
RSS - 123 Issue 2.	2011-02	Spectrum Management and Telecommunications Policy - Radio Standards Specification Low Power Licensed Radiocommunication Devices

4 Test environment

Temperature:	T_{nom}	+22 °C during room temperature tests
	T_{max}	+55 °C during high temperature tests
	T_{min}	-10 °C during low temperature tests
Relative humidity content:		55 %
Barometric pressure:		not relevant for this kind of testing
Power supply:	V_{nom}	+3.0 V DC by Battery
	V_{max}	+3.2 V
	V_{min}	+2.0 V

5 Test item

Kind of test item	:	Wireless Microphone System
Type identification	:	TG 100B
S/N serial number	:	<u>174-184MHz:</u> TG 100B: 10231 <u>194-204MHz:</u> TG 100B: 10233
HW hardware status	:	Not available
SW software status	:	Not available
Frequency band [MHz]	:	174-184 MHz, 194-204 MHz
Type of radio transmission	:	Modulated carrier
Use of frequency spectrum	:	
Type of modulation	:	FM
Number of channels	:	8
Antenna	:	Integrated antenna
Power supply	:	+3.0 V DC by Battery
Temperature range	:	-10°C to +55 °C

5.1 Additional information

Test setup- and EUT-photos are included in test report:

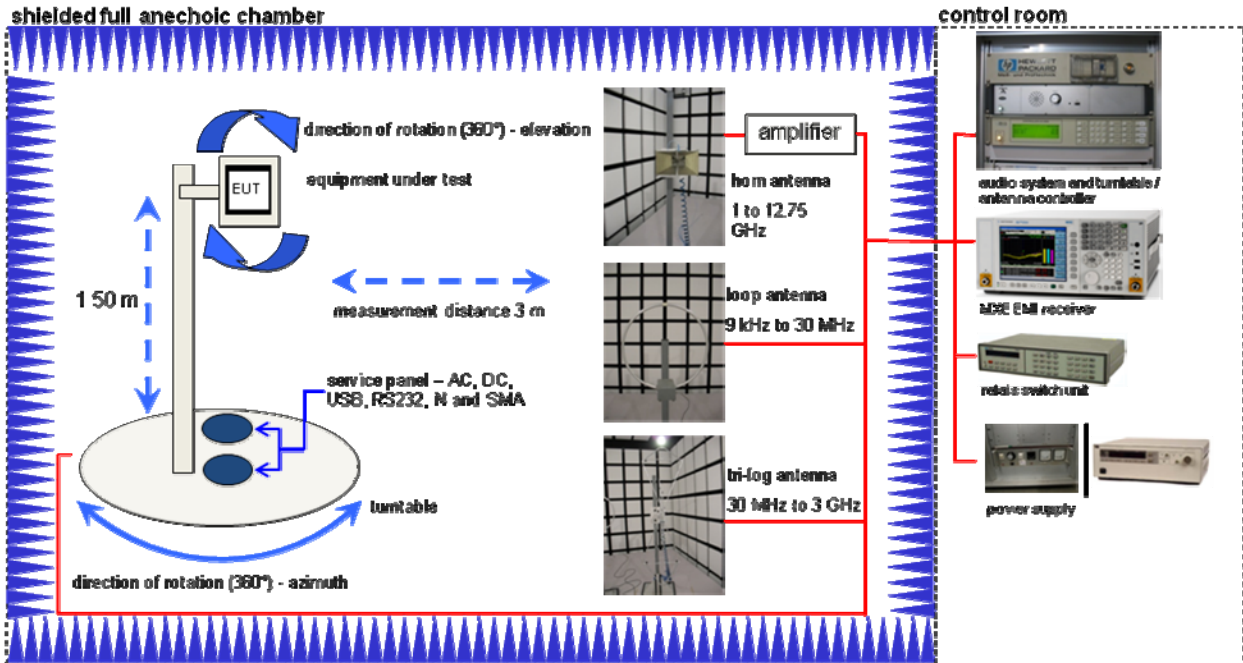
- 1-5822/13-01-06_AnnexA
- 1-5822/13-01-06_AnnexB
- 1-5822/13-01-06_AnnexC

6 Test laboratories sub-contracted

None

7 Description of the test setup

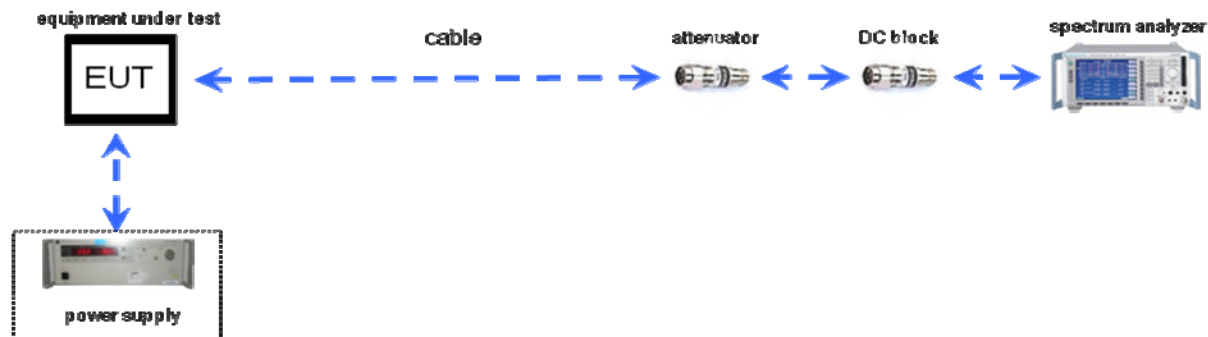
7.1 Radiated measurements chamber C



Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405
TRIOLOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	371	300003854
Band Reject filter	WRCG2400/2483-2375/2505-50/10SS	Wainwright	11	300003351
Highpass Filter	WHKX7.0/18G-8SS	Wainwright	18	300003789
Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032
Active Loop Antenna	6502	EMCO	8905-2342	300000256
Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996
Switch / Control Unit	3488A	HP Meßtechnik	*	300000199
Switch / Control Unit	3488A	HP Meßtechnik	2719A15013	300001156
Isolating Transformer	MPL IEC625 Bus Regeltrenntravo	Erfi	91350	300001155
Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997
Amplifier	js42-00502650-28-5a	Parzich GMBH	928979	300003143

7.2 Conducted measurements



Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
Signal Analyzer 40 GHz	FSV40	R&S	101042	300004517
Radiocom. Analyzer	CMTA 54	R&S	894043/010	300001175
Audio Analyzer 2Hz - 300 kHz	UPD	R&S	841074/009	300001236
Signal Analyzer 20Hz- 26,5GHz-150 to + 30 DBM	FSIQ26	R&S	835111/0004	300002678
DC Power Supply 0 – 32V	1108-32	Heiden	001802	300001383
Temperature Test Chamber	VT 4002	Heraeus Voetsch	521/83761	300002326
Spectrum Analyzer 9kHz to 30GHz - 140..+30dBm	FSP30	R&S	100886	300003575

8 Summary of measurement results

- No deviations from the technical specifications were ascertained
- There were deviations from the technical specifications ascertained

TC Identifier	Description	Verdict	Date	Remark
RF-Testing	FCC 47 CFR § 74.861 RSS-123 Issue 2		2014-01-28	-/-

Test Specification Clause	Test Case	Temperature Conditions	Power Source Voltages	Pass	Fail	NA	NP	Results (max.)
FCC 47 CFR § 74.861 (e)(1)(ii) RSS-123 §6.2 Issue 2	Output power (radiated)	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
FCC 47 CFR § 74.861 RSS-123 §7 Issue 2	Frequency stability	Nominal	Extreme	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
		Extreme	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FCC 47 CFR § 2.1049 § 74.861	Modulation characteristics	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
FCC 47 CFR § 2.1049 § 74.861 RSS-123 §6 Issue 2	Occupied bandwidth	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
FCC 47 CFR § 74.861	Unwanted radiation (spectrum mask)	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
FCC 47 CFR § 74 RSS-123 Issue 2	Field strength of spurious radiation Transmitter unwanted emissions	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
FCC 47 CFR § 15.209 RSS-123 Issue 2	Receiver spurious emissions (radiated)	Nominal	Nominal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	complies

Note: NA = Not Applicable; NP = Not Performed

8.1 RSP100 test report cover sheet / performance test data

Test Report Number	:	1-5822/13-01-06
Equipment Model Number	:	TG 100B
Certification Number	:	3628A-TG100B
Manufacturer (complete Address)	:	beyerdynamic GmbH & Co. KG Theresienstraße 8 74072 Heilbronn / GERMANY
Tested to radio standards specification no.	:	RSS-123 Issue 2
Open Area Test Site IC No.	:	IC 3462C-1
Frequency Range or fixed frequency	:	174MHz – 184MHz, 194MHz – 204MHz
RF-power [dBm] (max.)	:	ERP _{max} = 2.8
Occupied bandwidth (99%-BW) [kHz]	:	114.6
Type of modulation	:	FM
Emission Designator (TRC-43)	:	115KF3E
Antenna Information	:	Integrated antenna
Transmitter Spurious (worst case) [dBm @ 3m]:	:	<-40 dBm @ (noise floor)

ATTESTATION:

DECLARATION OF COMPLIANCE:

I attest that the testing was performed or supervised by me; that the test measurements were made in accordance with the above-mentioned Industry Canada standard(s); and that the equipment identified in this application has been subjected to all the applicable test conditions specified in the Industry Canada standards and all of the requirements of the standard have been met.

Laboratory Manager:

2014-01-28

Date

David Lang

Name

Signature

9 Measurement results

9.1 Output power (radiated)

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	100 kHz
Video bandwidth:	300 kHz
Span:	2 MHz
Trace-Mode:	Max. hold

Limits:

FCC	IC
47 CFR § 74.861 (e)(1)(ii)	RSS-123 §6.2 Issue 2
Maximum transmitter power	
174-184 MHz, 194-204 MHz bands - 50mW (17 dBm)	

Result:

TG 100B 174-184MHz band

Frequency (channel)	Radiated output power
174 MHz (lowest channel)	-3.6 dBm
184 MHz (highest channel)	-3.5 dBm

TG 100B 194-204 band

Frequency (channel)	Radiated output power
194 MHz (lowest channel)	1.7 dBm
204 MHz (highest channel)	2.8 dBm

Result: **Pass.**

9.2 Frequency stability

9.2.1 Frequency error vs. temperature

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	100 Hz
Video bandwidth:	100 Hz
Span:	1 kHz
Trace-Mode:	Max. hold
Voltage (nominal):	3 V

Limits:

FCC	IC
47 CFR § 74.861	RSS-123 §7 Issue 2
The frequency tolerance of the transmitter shall be 0.005 percent (50ppm)	

Results:

TG 100B – 174 MHz

Temperature	Frequency (MHz)	Deviation (kHz / ppm)
-10 °C	174.0261100	-1.1 / 6.4
0 °C	174.0259800	-1.0 / 5.6
10 °C	174.0255400	-0.5 / 3.1
20 °C	174.0248200	0.2 / 1.0
30 °C	174.0239900	1.0 / 5.8
40 °C	174.0231400	1.9 / 10.7
50 °C	174.0223900	2.6 / 15.0

TG 100B – 204 MHz

Temperature	Frequency (MHz)	Deviation (kHz / ppm)
-10 °C	203.97684	-1.8 / 9.0
0 °C	203.97684	-1.8 / 9.0
10 °C	203.97646	-1.5 / 7.2
20 °C	203.97584	-0.8 / 4.1
30 °C	203.97508	-0.1 / 0.4
40 °C	203.97440	0.6 / 2.9
50 °C	203.97406	0.9 / 4.6

Result: Pass.

9.2.2 Frequency error vs. voltage

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	100 Hz
Video bandwidth:	100 Hz
Span:	1 kHz
Trace-Mode:	Max. hold
Temperature:	21 °C

Limits:

FCC	IC
47 CFR § 74.861	RSS-123 §7 Issue 2
The frequency tolerance of the transmitter shall be 0.005 percent (50ppm)	

Results:

TG 100B – 174 MHz

Voltage	Frequency (MHz)	Deviation (kHz / ppm)
2.0 V	174.024680	-0.3 / 1.7
2.2 V	174.024680	-0.3 / 1.7
2.4 V	174.024680	-0.3 / 1.7
2.6 V	174.024720	-0.3 / 1.7
2.8 V	174.024720	-0.3 / 1.7
3.0 V	174.024800	-0.2 / 1.1
3.2 V	174.024800	-0.2 / 1.1

TG 100B – 204 MHz

Voltage	Frequency (MHz)	Deviation (kHz / ppm)
2.0 V	194.000660	0.6 / 3.4
2.2 V	194.000660	0.6 / 3.4
2.4 V	194.000680	0.7 / 3.5
2.6 V	194.000680	0.7 / 3.5
2.8 V	194.000730	0.7 / 3.8
3.0 V	194.000730	0.7 / 3.8
3.2 V	194.000730	0.7 / 3.8

Result: Pass.

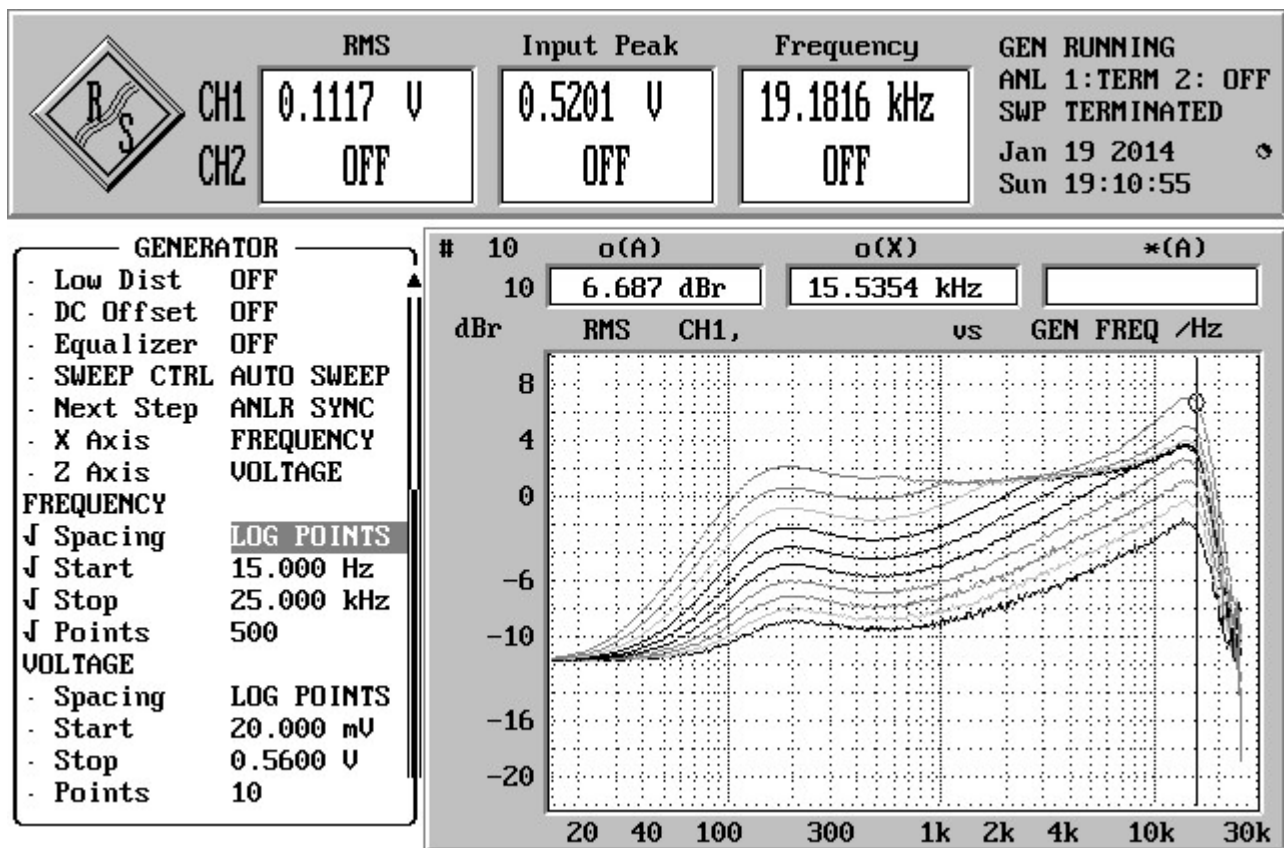
9.3 Modulation characteristics

Measurement:

FCC	IC
47 CFR § 2.1047 47 CFR § 74.861	-/-

Method of measurement:

The audio frequency responds was measured in accordance with EIA/TIA 603. The plots shows 10 curves with different modulation levels, the frequency is varied from 15 Hz to 20 kHz.



Result: Pass.

9.4 Occupied bandwidth

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	3 kHz
Video bandwidth:	3 kHz
Span:	See plots!
Trace-Mode:	Max. hold

Limits:

FCC	IC
47 CFR § 74.861	RSS-123 §6 Issue 2
Occupied bandwidth 99%. Other than single sideband or independent sideband transmitters - when modulated by a 2500 Hz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation. The input level shall be established at the frequency of maximum response of the audio modulating circuit.	
The operating bandwidth shall not exceed 200 kHz	

Result:

TG 100B – 174 -184 MHz band

Frequency (channel)	99%dB Bandwidth
MHz (174.025)	97.7 kHz
MHz (183.925)	110.8 kHz

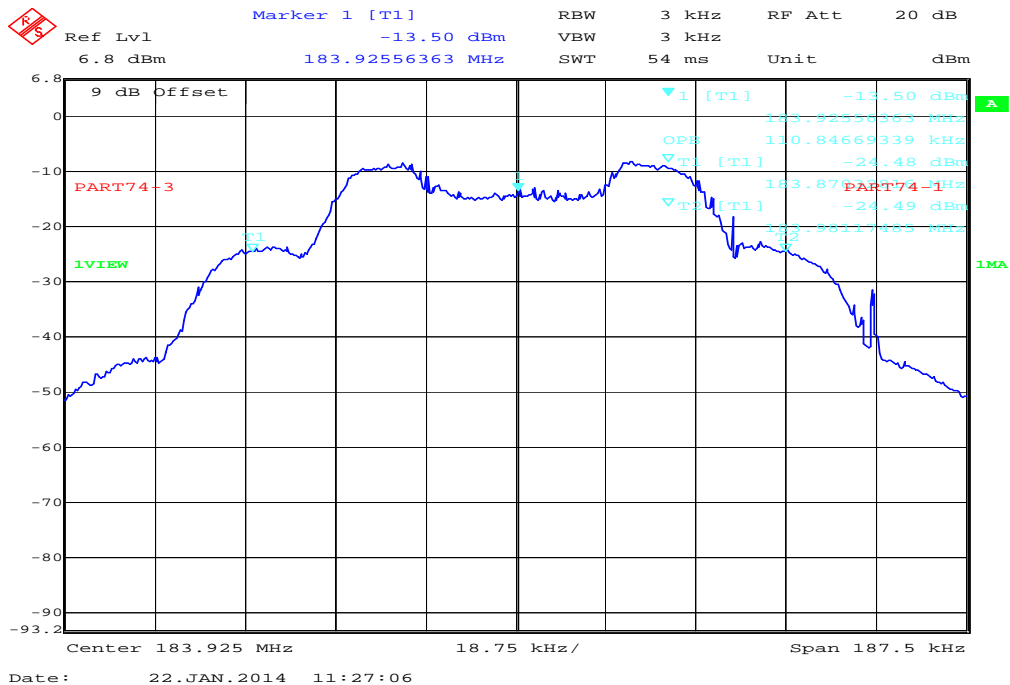
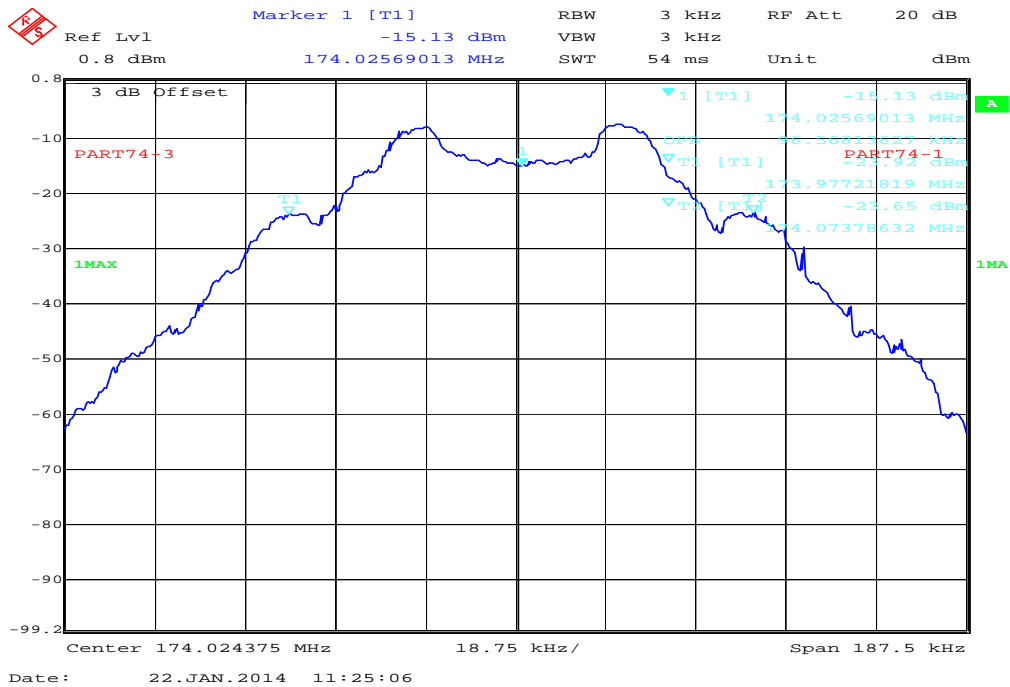
TG 100B – 194 -204 MHz band

Frequency (channel)	99%dB Bandwidth
MHz (194.000)	101.8 kHz
MHz (203.975)	114.6kHz

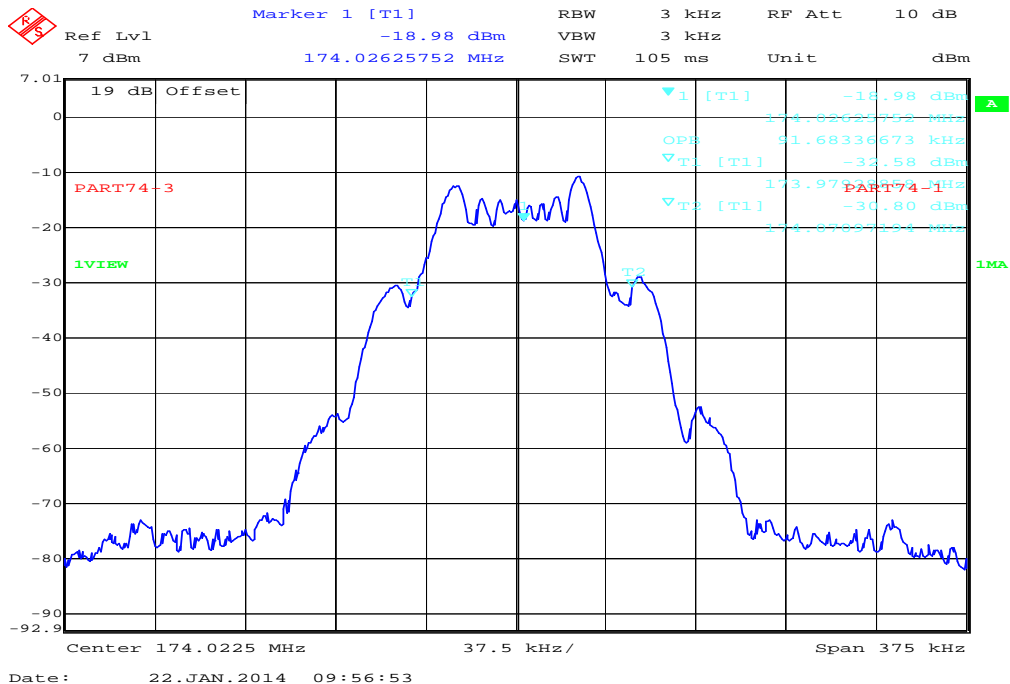
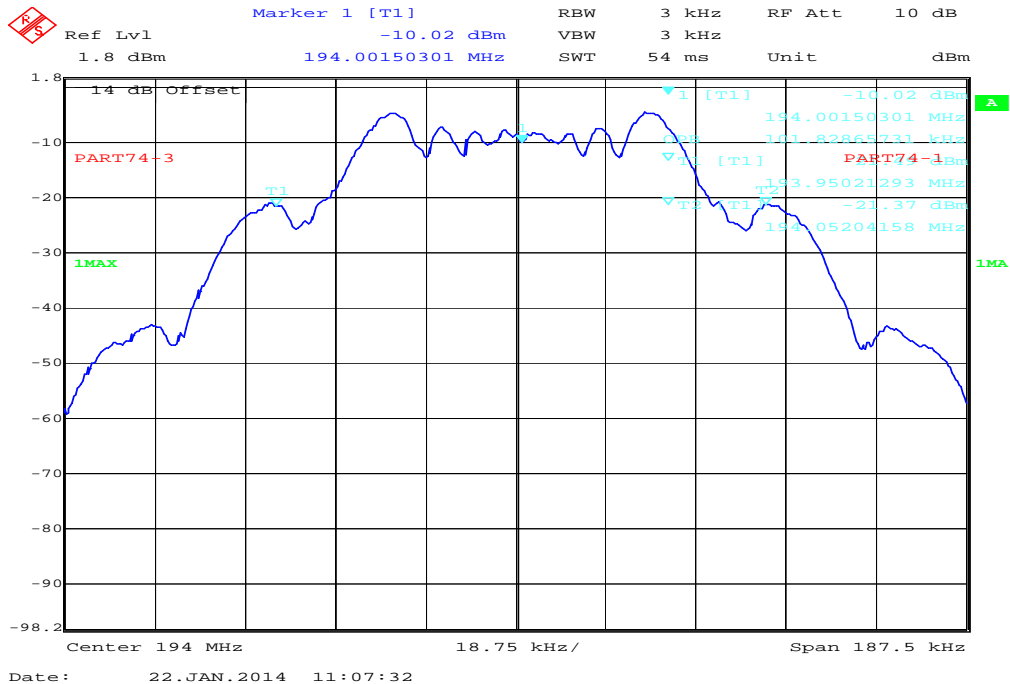
Result: **Pass.**

Plots of the measurements

TG 100B – 174 -184 MHz band



TG 100B – 194 -204 MHz band



9.5 Unwanted radiation (spectrum mask)

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	3 kHz
Video bandwidth:	3 kHz
Span:	See plots!
Trace-Mode:	Max. hold

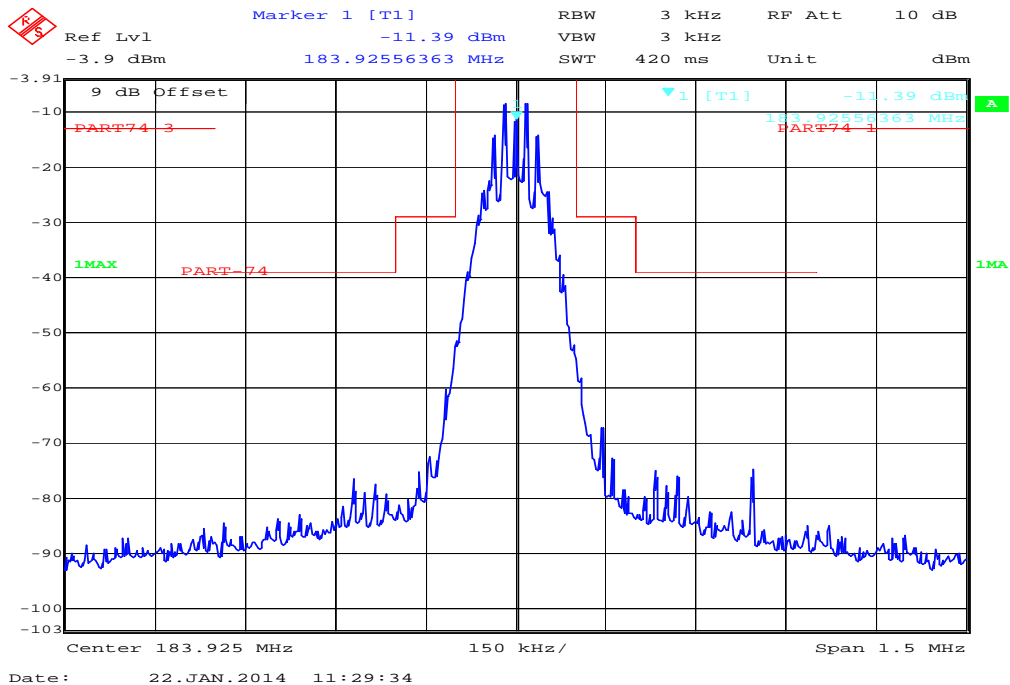
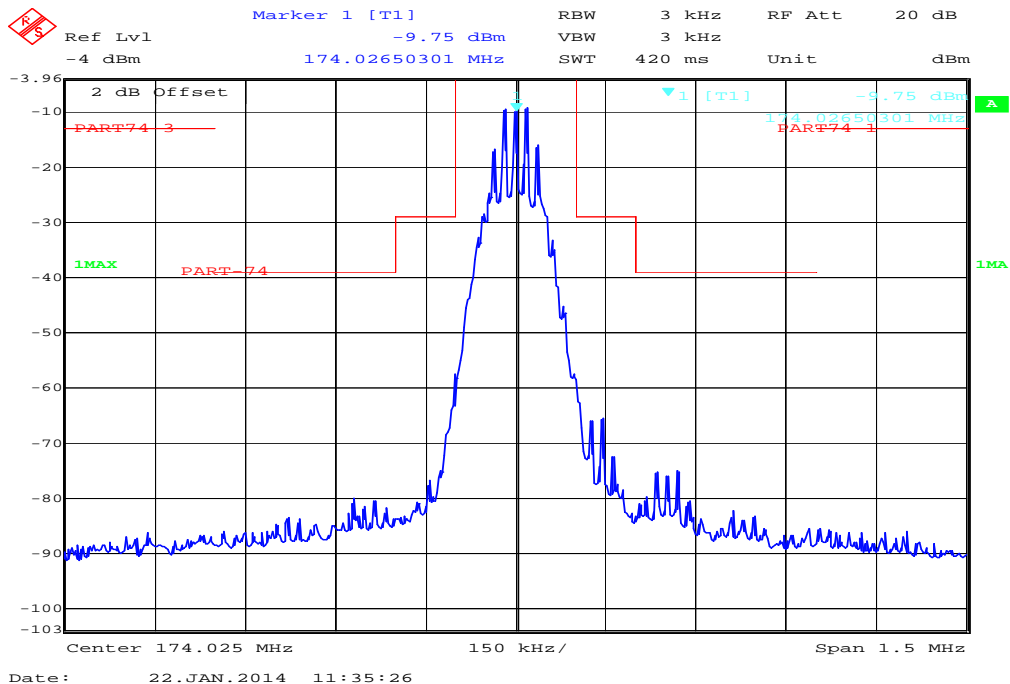
Limits:

FCC	IC
47 CFR § 74.861	RSS-123 §5.5 Issue 2
<p>The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:</p> <ul style="list-style-type: none"> (i) On any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB; (ii) On any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB; (iii) On any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth: at least $43+10\log_{10}$ (mean output power in watts) dB. 	

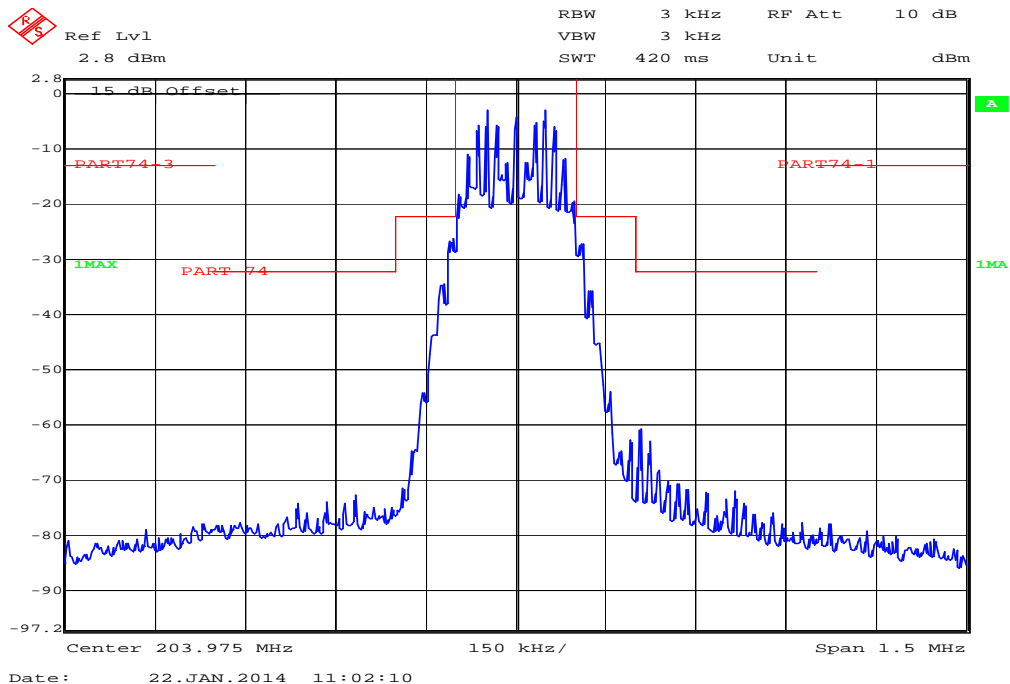
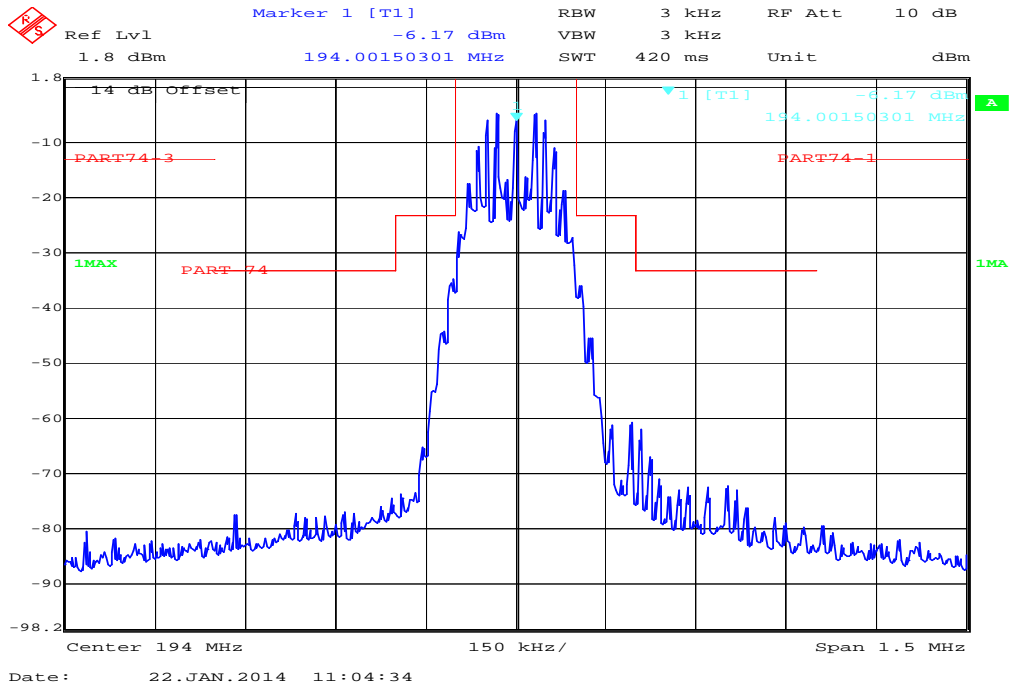
Result: **Pass.**

Plots of the measurements

TG 100B – 174 -184 MHz band



TG 100B – 194 -204 MHz band



9.6 Spurious emissions radiated < 30 MHz

Description:

Measurement of the radiated spurious emissions in transmit mode below 30 MHz. The EUT is set to channel 6. This measurement is representative for all channels and modes. If peaks are found channel 1 and channel 11 will be measured too. The measurement is performed with the data rate producing the highest output power. The limits are recalculated to a measurement distance of 3 m with 40 dB/decade according CFR Part 2.

Measurement:

Measurement parameter	
Detector:	Peak / Quasi Peak
Sweep time:	Auto
Video bandwidth:	F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz
Resolution bandwidth:	F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz
Span:	9 kHz to 30 MHz
Trace-Mode:	Max Hold

Limits:

FCC		IC
TX Spurious Emissions Radiated < 30 MHz		
Frequency (MHz)	Field Strength (dB μ V/m)	Measurement distance
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

Results:

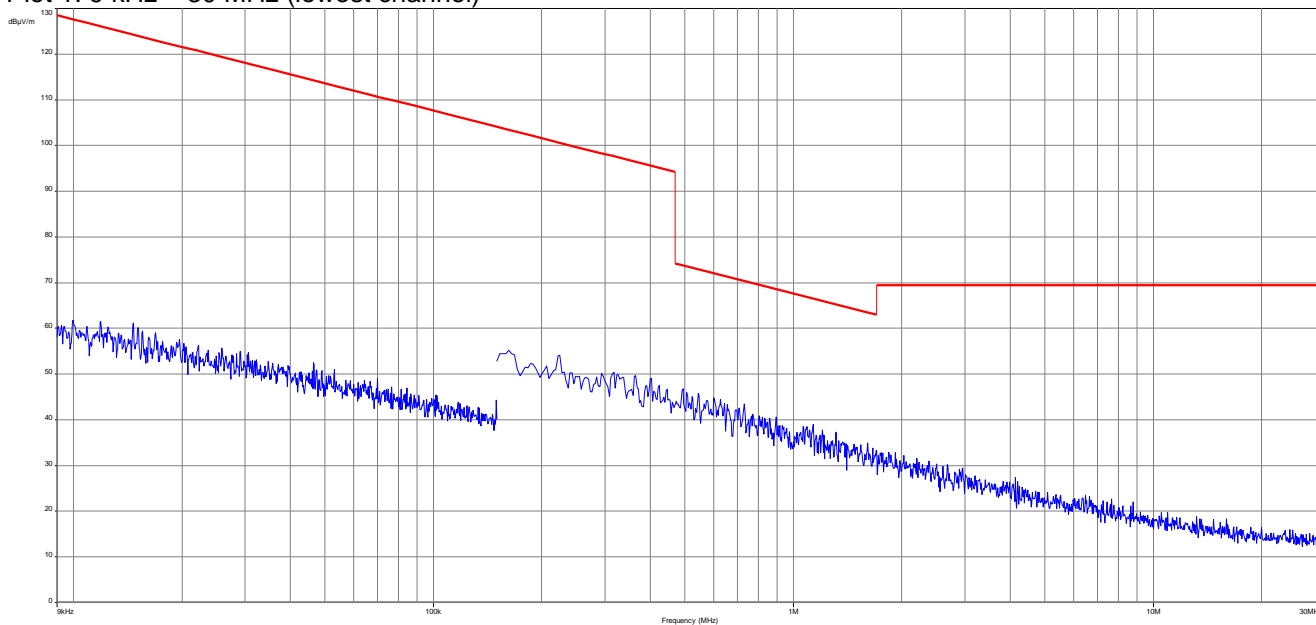
TX Spurious Emissions Radiated < 30 MHz [dB μ V/m]		
F [MHz]	Detector	Level [dB μ V/m]
No peaks found.		
Measurement uncertainty	± 3 dB	

Result: Passed

Plots of the measurements

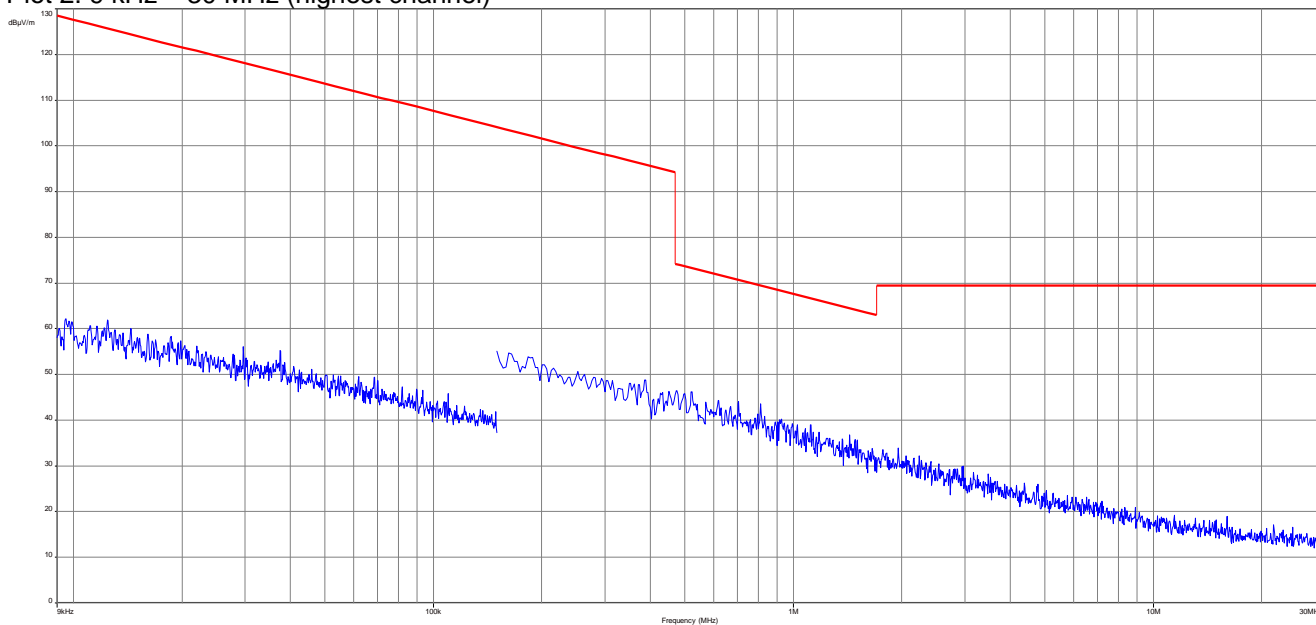
TG 100B – 174-184MHz band

Plot 1: 9 kHz – 30 MHz (lowest channel)



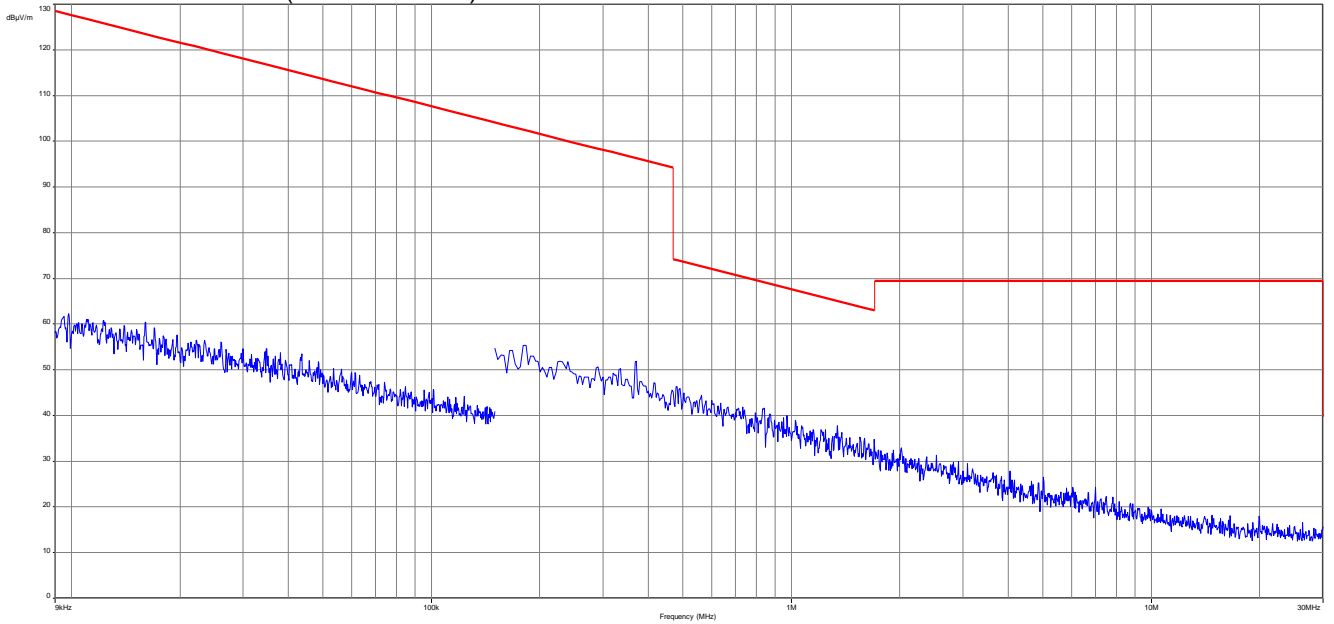
TG 100B – 174-184MHz band

Plot 2: 9 kHz – 30 MHz (highest channel)



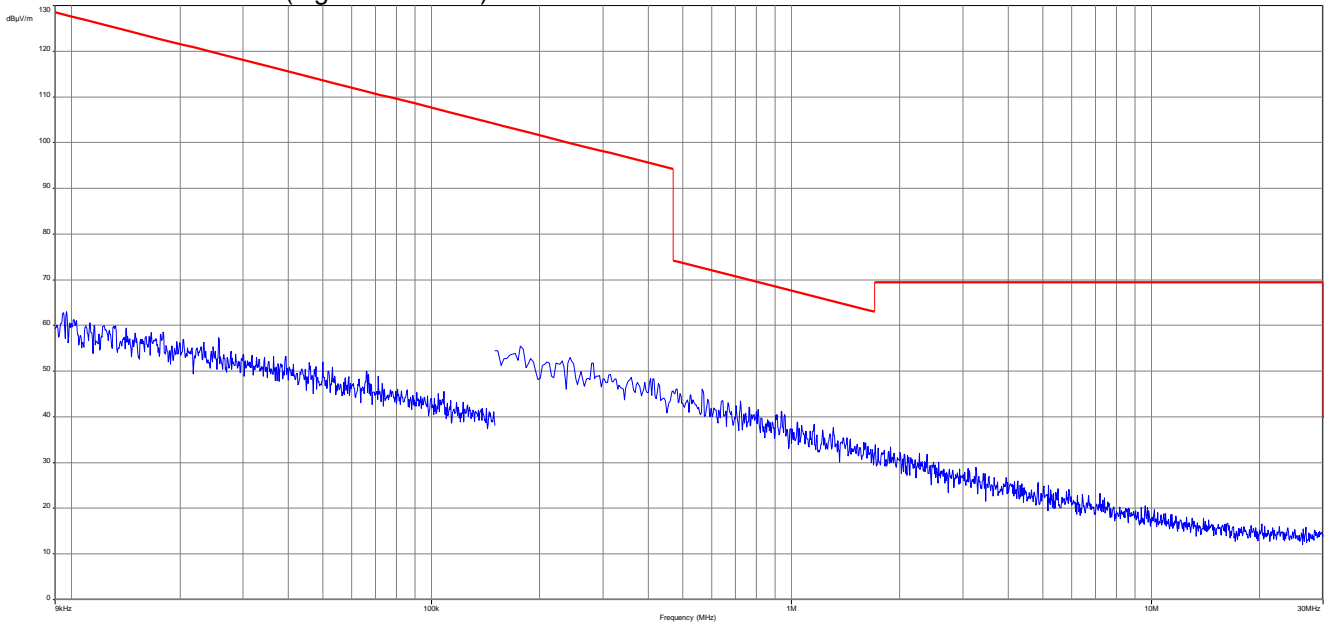
TG 100B – 184-194MHz band

Plot 1: 9 kHz – 30 MHz (lowest channel)



TG 100B – 184-194MHz band

Plot 2: 9 kHz – 30 MHz (highest channel)



9.7 Field strength of spurious radiation.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	f < 1 GHz : 100 kHz f ≥ 1GHz : 1 MHz
Video bandwidth:	f < 1 GHz : 100 kHz f ≥ 1GHz : 1 MHz
Span:	-/-
Trace-Mode:	Max. hold

Limits:

FCC	IC
Emissions for LPRS transmitters operating on standard band channels (25 kHz) shall be attenuated below the unmodulated carrier in accordance with the following: Emissions 12.5 kHz to 22.5 kHz away from the channel center frequency: at least 30 dB; and emissions more than 22.5 kHz away from the channel center frequency: FCC: at least 43 + 10log(carrier power in watts) dB IC: at least 55 + 10log(carrier power in watts) dB.	

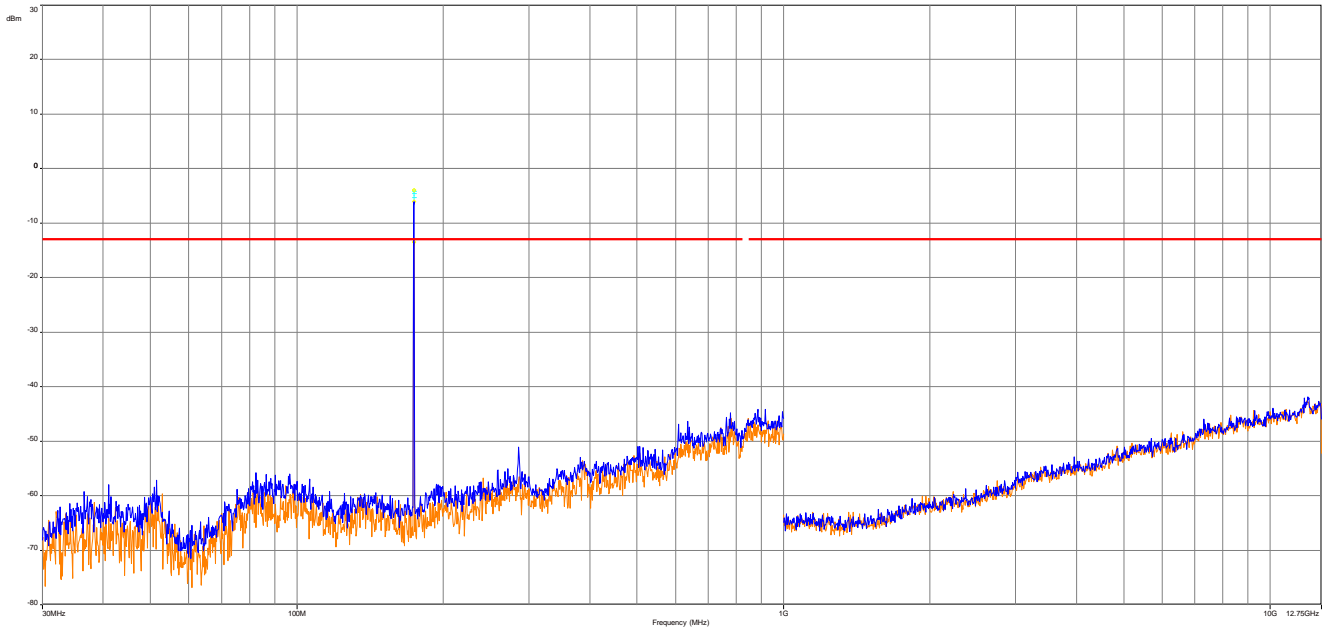
SPURIOUS EMISSIONS LEVEL (dBm)								
Lowest channel			Middle channel			Highest channel		
Frequency	Detector	Level	Frequency	Detector	Level	Frequency	Detector	Level
No peaks except the fundamental observed.								
Measurement uncertainty ± 3 dB								

Result: Pass.

Plots of the measurements

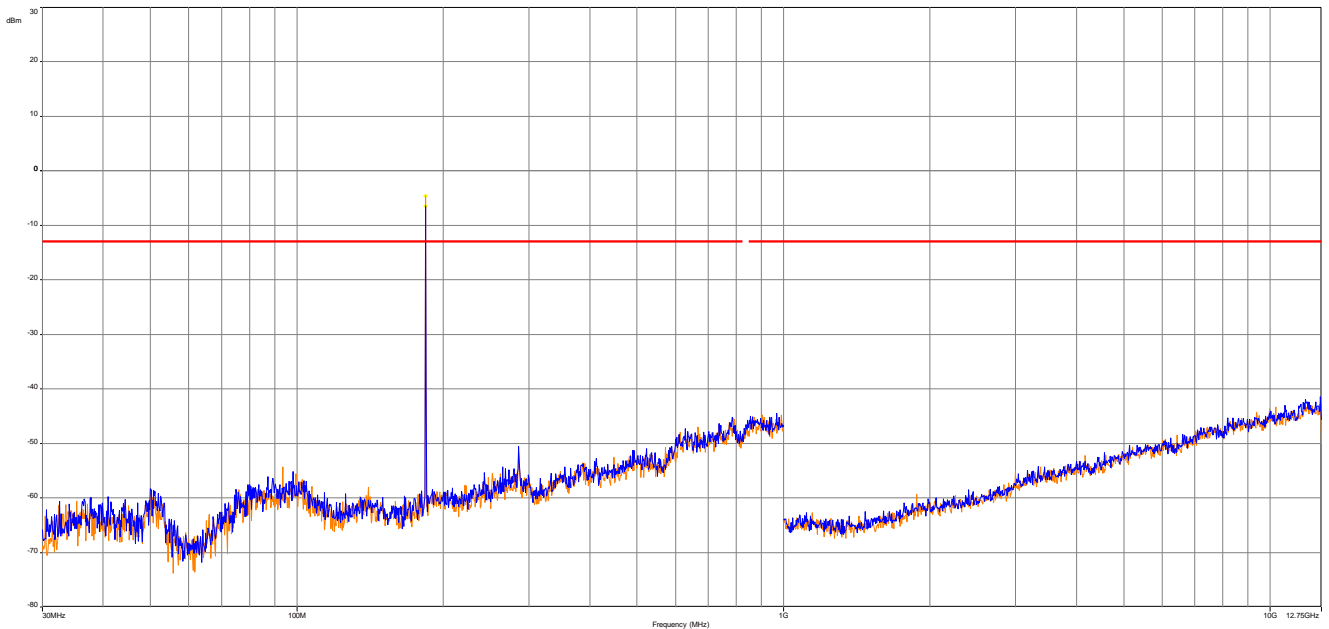
TG 100B – 174-184MHz band

Plot 1: 30 MHz – 12.75 GHz (lowest channel)



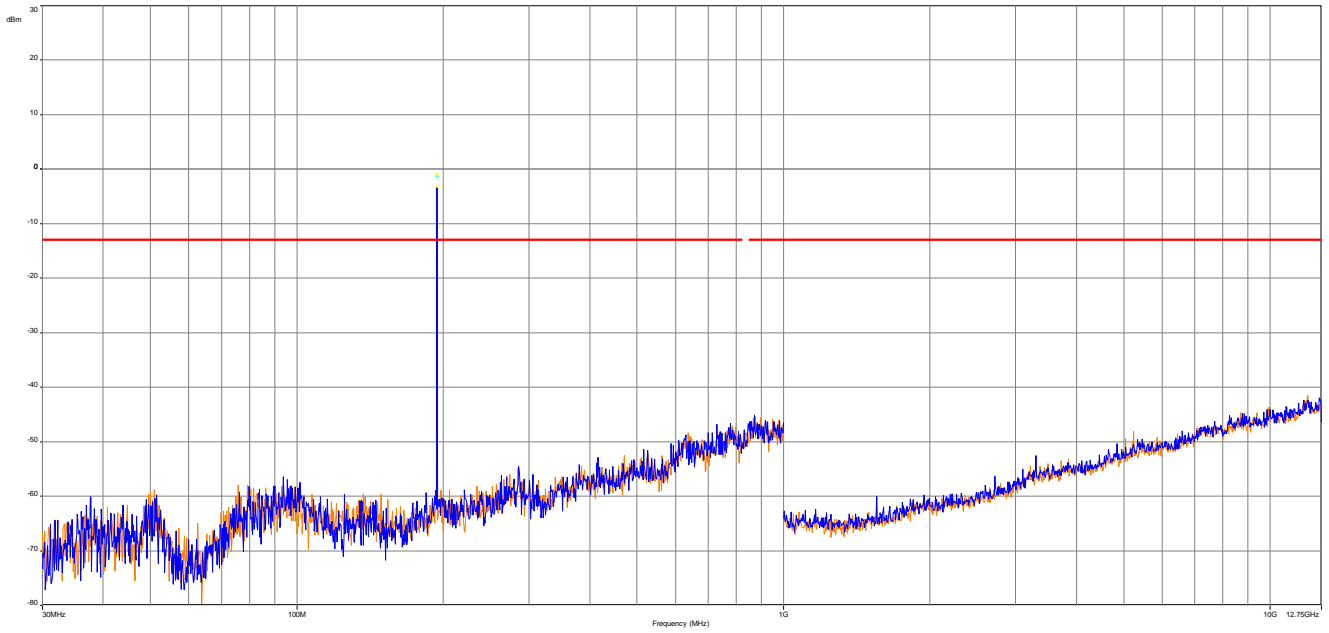
TG 100B – 174-184MHz band

Plot 2: 30 MHz – 12.75 GHz (highest channel)



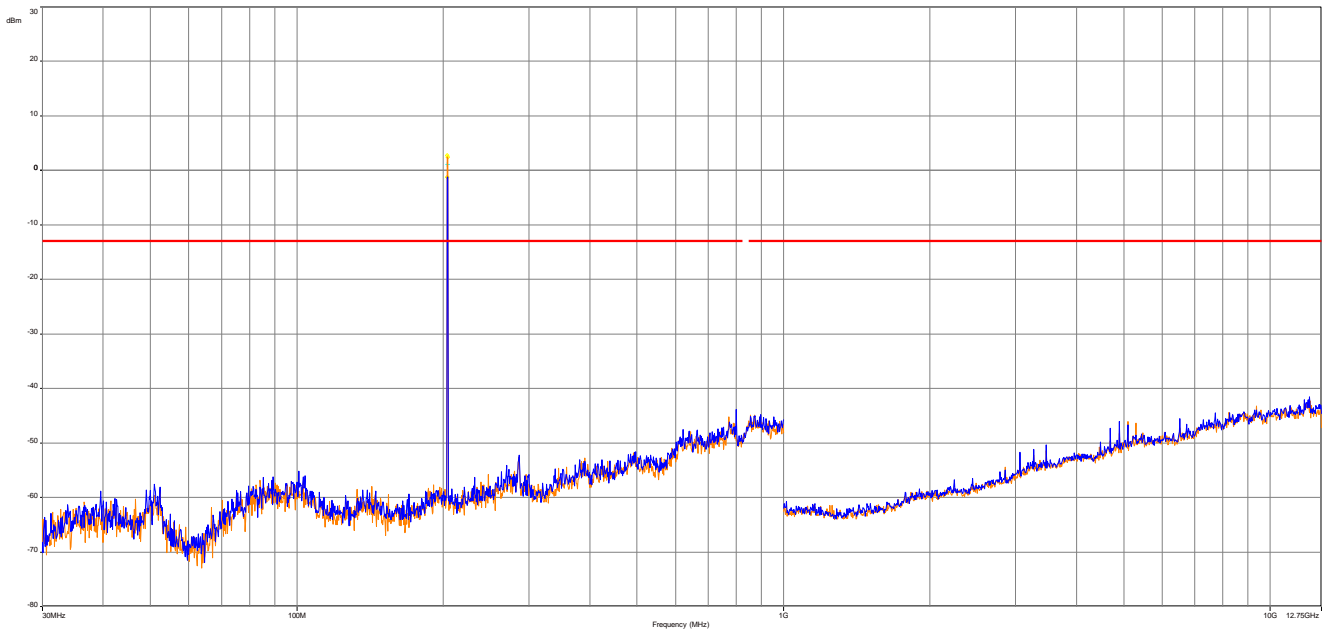
TG 100B – 194-204MHz band

Plot 1: 30 MHz – 12.75 GHz (lowest channel)



TG 100B – 194-204MHz

Plot 2: 30 MHz – 12.75 GHz (highest channel)



10 Test equipment and ancillaries used for tests

Typically, the calibrations of the test apparatus are commissioned to and performed by an accredited calibration laboratory. The calibration intervals are determined in accordance with the DIN EN ISO/IEC 17025. In addition to the external calibrations, the laboratory executes comparison measurements with other calibrated test systems or effective verifications. Weekly chamber inspections and range calibrations are performed. Where possible, rf-generating and signalling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Labor/Item).

No.	Lab / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	4	Radiocom. Analyzer	CMTA 54	R&S	894043/010	300001175	NK!	06.06.2007	
2	n. a.	Audio Analyzer 2Hz - 300 kHz	UPD	R&S	841074/009	300001236	k	11.01.2012	
3	n. a.	Signal Analyzer 20Hz-26,5GHz- 150 to + 30 DBM	FSiQ26	R&S	835111/0004	300002678	Ve	15.01.2013	15.01.2015
4	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032	vIKI!	08.05.2013	08.05.2015
5	n. a.	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996	ev		
6	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	*	300000199	ne		
7	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	2719A15013	300001156	ne		
8	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997	ne		
9	90	Active Loop Antenna 10 kHz to 30 MHz	6502	Kontron Psychotech	8905-2342	300000256	k	13.06.2013	13.06.2015
10	n. a.	Amplifier	js42- 00502650- 28-5a	Parzich GMBH	928979	300003143	ne		
11	n. a.	Highpass Filter	WHKX7.0/1 8G-8SS	Wainwright	18	300003789	ne		
12	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbe ck	371	300003854	vIKI!	14.10.2011	14.10.2014
13	n. a.	MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologi es	MY51210197	300004405	k	21.02.2013	21.02.2014
14	n. a.	DC Power Supply 0 – 32V	1108-32	Heiden	001802	300001383	Ve	23.06.2010	
15	n. a.	Temperature Test Chamber	VT 4002	Heraeus Voetsch	521/83761	300002326	Ve	26.09.2013	26.09.2015
16	n. a.	Spectrum Analyzer 9kHz to 30GHz - 140..+30dBm	FSP30	R&S	100886	300003575	k	22.08.2012	22.08.2014

Agenda: Kind of Calibration

k calibration / calibrated
 ne not required (k, ev, izw, zw not required)
 ev periodic self verification
 Ve long-term stability recognized
 vIKI! Attention: extended calibration interval
 NK! Attention: not calibrated

EK limited calibration
 zw cyclical maintenance (external cyclical maintenance)
 izw internal cyclical maintenance
 g blocked for accredited testing
 *) next calibration ordered / currently in progress

11 Observations

No observations exceeding those reported with the single test cases have been made.

Annex A Document history

Version	Applied changes	Date of release
	Initial release	2014-01-28

Annex B Further information**Glossary**

AVG	-	Average
DUT	-	Device under test
EMC	-	Electromagnetic Compatibility
EN	-	European Standard
EUT	-	Equipment under test
ETSI	-	European Telecommunications Standard Institute
FCC	-	Federal Communication Commission
FCC ID	-	Company Identifier at FCC
HW	-	Hardware
IC	-	Industry Canada
Inv. No.	-	Inventory number
N/A	-	Not applicable
PP	-	Positive peak
QP	-	Quasi peak
S/N	-	Serial number
SW	-	Software

Annex C Accreditation Certificate

Front side of certificate



Deutsche Akkreditierungsstelle GmbH

Befehlense gemäß § 8 Absatz 1 AkkStelleG i.V.m. § 1 Absatz 1 AkkStelleGBV
 Unterzeichnerin der Multilateralen Abkommen
 von EA, ILAC und IAF zur gegenseitigen Anerkennung

Akkreditierung



Die Deutsche Akkreditierungsstelle GmbH bestätigt hiermit, dass das Prüflaboratorium

CETECOM ICT Services GmbH
 Untertürkheimer Straße 6-10, 66117 Saarbrücken

die Kompetenz nach DIN EN ISO/IEC 17025:2005 besitzt, Prüfungen in folgenden Bereichen durchzuführen:

- Drahtgebundene Kommunikation einschließlich xDSL
- VoIP und DECT
- Akustik
- Funk einschließlich WLAN
- Short Range Devices (SRD)
- RFID
- WiFiMax und Richtfunk
- Mobilfunk (GSM / DCS, Over the Air (OTA) Performance)
- Elektromagnetische Verträglichkeit (EMV) einschließlich Automotive
- Produktsicherheit
- SAR und Hearing Aid Compatibility (HAC)
- Umweltsimulation
- Smart Card Terminals
- Bluetooth
- Wi-Fi-Services

Die Akkreditierungskunde gilt nur in Verbindung mit dem Bescheid vom 18.01.2013 mit der Akkreditierungsnummer D-PL-12076-01 und ist gültig 17.01.2018. Sie besteht aus diesem Deckblatt, der Rückseite des Deckblatts und der folgenden Anlage mit insgesamt 80 Seiten.

Registrierungsnummer der Urkunde: D-PL-12076-01-01

Frankfurt am Main, 18.01.2013
 Seite 1/1 von 1 auf der Rückseite

[Signature]
 Im Auftrag
 Dr. Ingrid Pfeiffer
 Abteilungsleiterin

Back side of certificate

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Die auszugsweise Veröffentlichung der Akkreditierungskunde bedarf der vorherigen schriftlichen Zustimmung der Deutsche Akkreditierungsstelle GmbH (DAKKS). Ausgenommen davon ist die separate Weiterverbreitung des Deckblatts durch die umseitig genannte Konformitätsbewertungsstelle in unveränderter Form.

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Die Akkreditierung erfolgte gemäß des Gesetzes über die Akkreditierungsstelle (AkkStelleG) vom 31. Juli 2009 (BGBl. I S. 2625) sowie der Verordnung (EG) Nr. 765/2008 des Europäischen Parlaments und des Rates vom 9. Juli 2008 über die Vorschriften für die Akkreditierung und Marktüberwachung im Zusammenhang mit der Vermarktung von Produkten (Abl. L 218 vom 9. Juli 2008, S. 30). Die DAKKS ist Unterzeichnerin der Multilateralen Abkommen zur gegenseitigen Anerkennung der European co-operation for Accreditation (EA), des International Accreditation Forum (IAF) und der International Laboratory Accreditation Cooperation (ILAC). Die Unterzeichner dieser Abkommen erkennen ihre Akkreditierungen gegenseitig an.

Der aktuelle Stand der Mitgliedschaft kann folgenden Webseiten entnommen werden:
 EA: www.european-accrreditation.org
 ILAC: www.ilac.org
 IAF: www.iaf.nu

Note:

The current certificate including annex is published on our website (see link below) or may be received from CETECOM ICT Services on request.

<http://www.cetecom.com/eu/de/cetecom-group/europa/deutschland-saarbruecken/akkreditierungen.html>