

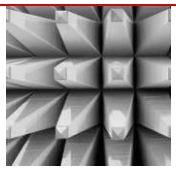

CETECOM™
CETECOM ICT Services
consulting - testing - certification

TEST REPORT

Test report no.: 1-9177/15-28-03-B

ilac-MRA DAkkS Deutsche Akkreditierungsstelle D-PL-12076-01-00

Testing laboratory

CETECOM ICT Services GmbH
Untertuerkheimer Strasse 6 – 10
66117 Saarbruecken / Germany
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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-12076-01-00

Applicant

FURUKAWA AUTOMOTIVE SYSTEMS INC.
1000 Amago, Koura-cho, Inukami-gun
522-0242 Shiga / Japan
Phone: +81(0)463-24-8496
Contact: Mr. Noritaka Murofushi
e-mail: murofushi.noritaka@furukawa.co.jp
Phone: +81(0)463-24-8496

Manufacturer

FURUKAWA AUTOMOTIVE SYSTEMS INC.
1000 Amago, Koura-cho, Inukami-gunxxx
522-0242 Shiga / Japan

Test standard/s

FCC 47 CFR Part 15	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio Frequency Devices
RSS-310	Spectrum Management and Telecommunications - Radio Standards Specification Licence-exempt Radio Apparatus (all frequency bands): Category II Equipment

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

Test Item

Kind of test item:	**24GHz Pulse Radar**
Model name:	**24GMMR1A**
FCC ID:	**2AHE9-24GMMR1A**
Frequency:	**24.05 - 24.25 GHz**
Antenna:	**Planar Patch**
Power Supply:	**12 V DC from power supply**
Temperature Range:	**-40 °C to +85 °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 authorized:

DN: cn=Karsten Geraldy, o=CETECOM ICT Services GmbH, ou=GER-151201, email=karsten.geraldy@cetecom.com, c=DE
Datum: 2016.03.23 10:17:44 +01'00'

Karsten Geraldy
Lab Manager
Radio Communications & EMC

Test performed:

p.o. cn=Meheza Walla, o=CETECOM ICT Services GmbH, ou=WAL-151005, email=Meheza.Walla@cetecom.com, c=DE
2016.03.23 10:05:04 +01'00'

Benedikt Gerber
Testing Manager
Radio Communications & EMC

1 Table of contents

2 General information

2.1 Notes and disclaimer

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This test report replaces the test report with the number 1-9177/15-28-03-A and dated 2016-03-02!

2.2 Application details

Date of receipt of order:	2015-09-29
Date of receipt of test item:	2016-01-25
Start of test:	2016-02-10
End of test:	2016-02-22
Person(s) present during the test:	-/-

3 Test standard/s

Test standard	Date	Test standard description
FCC 47 CFR Part 15	2014-10	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio Frequency Devices
RSS-310	2010-12	Spectrum Management and Telecommunications - Radio Standards Specification Licence-exempt Radio Apparatus (all frequency bands): Category II Equipment

4 Test environment

Temperature:	T_{nom}	+22	°C during room temperature tests
	T_{max}	-/-	°C during high temperature tests
	T_{min}	-/-	°C during low temperature tests
Relative humidity:		45 %	
Barometric pressure:		not relevant for this kind of testing	
Power supply:	V_{nom}	12.0	V DC from power supply
	V_{max}	16.0	V DC
	V_{min}	8.0	V DC

5 Test item

Kind of test item	**:**	**24GHz Pulse Radar**
Type identification	**:**	**24GMMR1A**
HMN	**:**	NA
PMN	**:**	24GMMR1A
HVIN	**:**	24GMMR1A
FVIN	**:**	NA
S/N serial number	**:**	0010160511060091 0010160511060083
Frequency band	**:**	24.05 - 24.25 GHz
Number of channels	**:**	1
Antenna	**:**	Planar Patch
Power supply	**:**	12 V DC from external power supply
Temperature range	**:**	-40 °C to +85 °C

5.1 Additional comments

Test setup- and EUT-photos are included in test report: 1-9177/15-28-01_AnnexA
1-9177/15-28-01_AnnexB

6 Test laboratories sub-contracted

None

7 Description of the test setup

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 signaling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

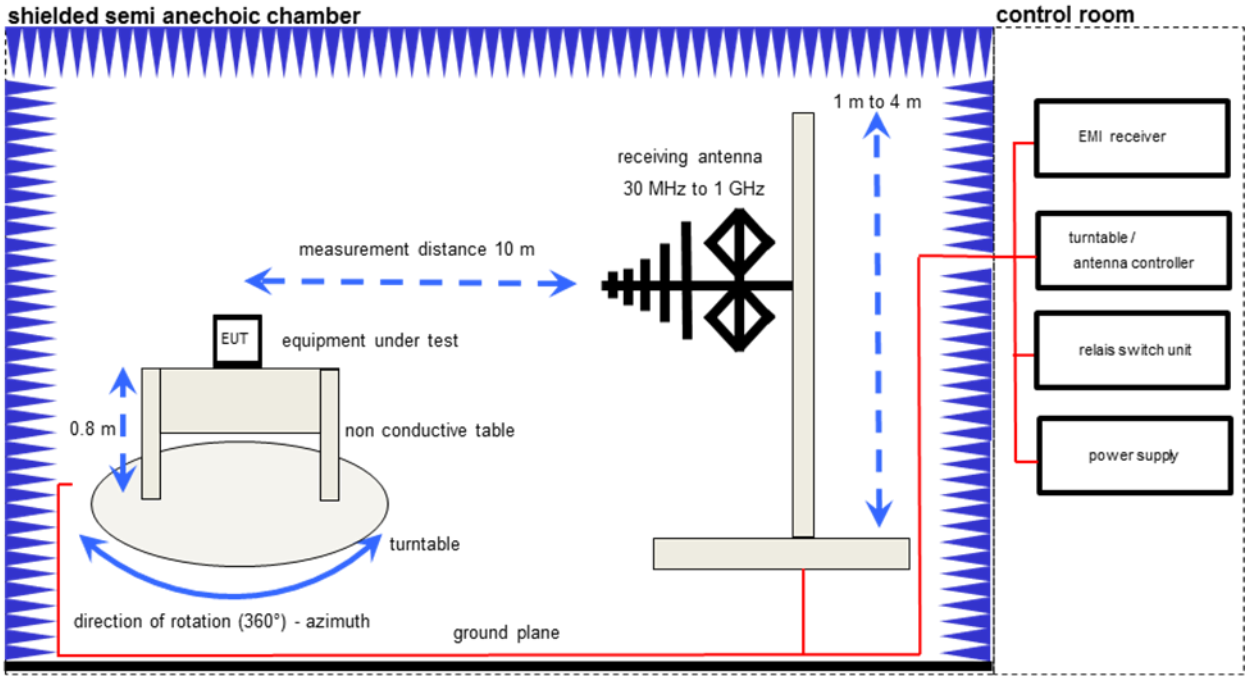
In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Lab/Item).

Agenda: Kind of Calibration

k	calibration / calibrated		EK	limited calibration
ne	not required (k, ev, izw, zw not required)		zw	cyclical maintenance (external cyclical maintenance)
ev	periodic self verification		izw	internal cyclical maintenance
Ve	long-term stability recognized		g	blocked for accredited testing
vlkl!	Attention: extended calibration interval			
NK!	Attention: not calibrated		*)	next calibration ordered / currently in progress

7.1 Radiated measurements chamber F

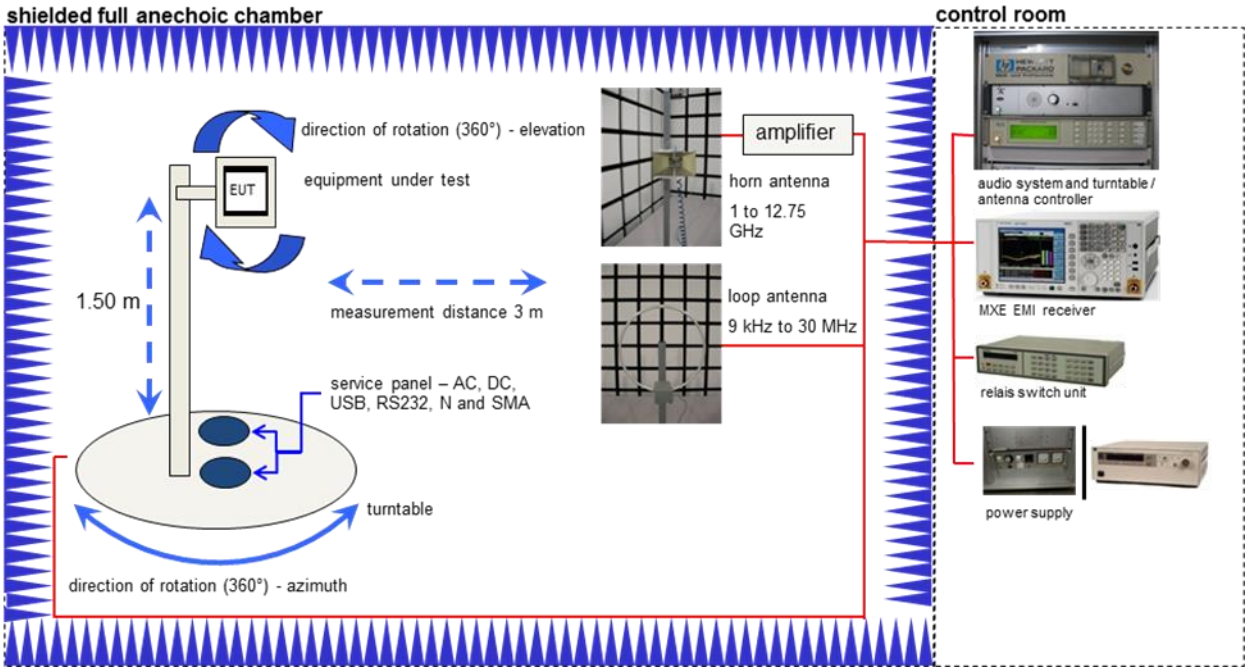
The radiated measurements are performed in vertical and horizontal plane in the frequency range from 9 kHz to 1 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber. The receiving antennas are confirmed with specifications ANSI C63. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test setups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received. The wanted and unwanted emissions are received by spectrum analysers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63.



Equipment table:

No.	Lab / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1		EMI Test Receiver	ESCI 3	R&S	100083	300003312	k	27.01.2016	26.01.2017
2		Antenna Tower	Model 2175	ETS-Lindgren	64762	300003745	izw	-/-	-/-
3		Positioning Controller	Model 2090	ETS-Lindgren	64672	300003746	izw	-/-	-/-
4		Turntable Interface-Box	Model 105637	ETS-Lindgren	44583	300003747	izw	-/-	-/-
5		TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	295	300003787	k	22.04.2014	22.04.2016

7.2 Radiated measurements chamber A

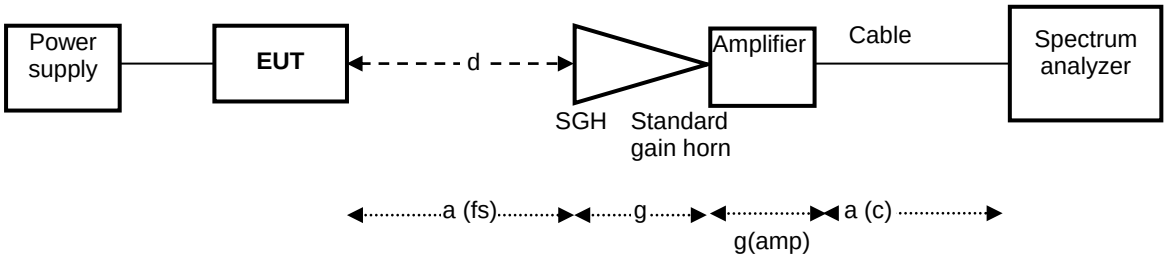


Equipment table:

No.	Lab / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	n. a.	Power Supply 0-20V	6632A	HP	2851A01814	300000924	ne	09.11.2005	-/-
2	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	9709-5290	300000212	k	13.08.2015	13.08.2017
3	n. a.	Software Option für CMU 200	CMU-Kxx	R&S	9709-5290	300003345	ne	-/-	-/-
4	n. a.	EMI Test Receiver 9kHz-26,5GHz	ESR26	R&S	101376	300005063	k	04.09.2015	04.09.2016
5	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	318	300003696	k	22.04.2014	22.04.2017
6	n. a.	Broadband Amplifier 0.5-18 GHz	CBLU5184540	CERNEX	22050	300004482	ev	-/-	-/-
7	n. a.	4U RF Switch Platform	L4491A	Agilent Technologies	MY50000032	300004510	ne	-/-	-/-
8	n. a.	Messrechner und Monitor	Intel Core i3 3220/3,3 GHz, Prozessor	Agilent Technologies	2V2403033A5421	300004591	ne	-/-	-/-
9	n. a.	NEXIO EMV-Software	BAT EMC	EMCO	2V2403033A5421	300004682	ne	-/-	-/-

7.3 Radiated measurements 12 GHz to 50 GHz

Test set-up for the measurement of spurious radiation in the frequency range 12 GHz to 50 GHz:

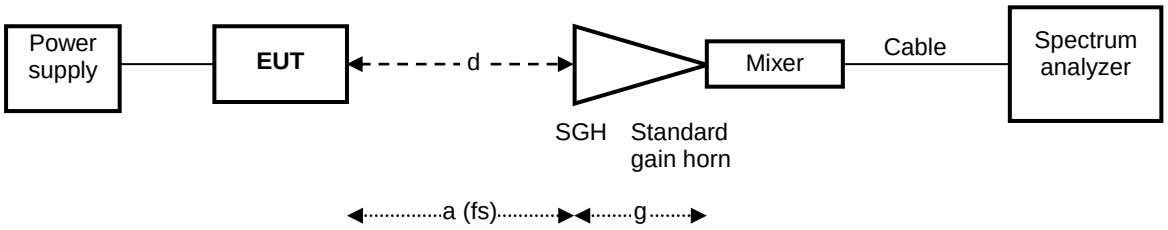


Equipment table:

No.	Lab / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	CR 79	Std. Gain Horn Antenna 26.5-40.0 GHz	V637	Narda	7911	300001751	ne	-/-	-/-
2	A023	Std. Gain Horn Antenna 39.3-59.7 GHz	2424-20	Flann	75	300001979	ne	-/-	-/-
3	A023	Temperature and Climatic Test Chamber	VUK04/500	Heraeus Voetsch	32678	300000297	ev	03.09.2015	03.09.2017
4	A026	Std. Gain Horn Antenna 12.4 to 18.0 GHz	639	Narda	8402	300000787	k	14.08.2015	14.08.2017
5	A029	Std. Gain Horn Antenna 18.0 to 26.5 GHz	638	Narda	8205	300002442	NK!	19.07.2013	-/-
6	A029	Power Supply	LA30/5GA	Zentro	2046	300000711	NK!	-/-	-/-
7	A029	Spectrum Analyzer 20 Hz - 50 GHz	FSU50	R&S	200012	300003443	Ve	02.10.2014	02.10.2016
8	A029	Broadband LNA 18-50 GHz	CBL18503070PN	CERNEX	25240	300004948	ev	-/-	-/-

7.4 Radiated measurements above 50 GHz

Test set-up for the measurement of spurious radiation and EIRP in the frequency range 50 GHz to 325 GHz:



Equipment table:

No.	Lab / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	A025	Std. Gain Horn Antenna 49.9-75.8 GHz	2524-20	Flann	*	300001983	ne	-/-	-/-
2	A028	Std. Gain Horn Antenna 73.8-112 GHz	2724-20	Flann	*	300001991	ne	-/-	-/-
3	A028	Harmonic Mixer 2-Port, 50-75 GHz	FS-Z75	R&S	100099	300003949	k	06.03.2015	06.03.2016
4	A028	Harmonic Mixer 3-Port, 75-110 GHz	FS-Z110	R&S	101411	300004959	k	04.05.2015	04.05.2016

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 Part 15 RSS-310	see below	2016-03-21	-/-

Test specification clause	Test case	Temperature conditions	Power supply	Pass	Fail	NA	NP	Results (max.)
§15.203 RSS-Gen 7.1.4	Antenna Requirement	Nominal	Nominal	☒	☐	☐	☐	complies
§15.249(a), (c) RSS-310, 3.10	Field strength of emissions (wanted signal)	Nominal	Nominal	☒	☐	☐	☐	PK: 93.7 dBµV/m AVG: 93.0 dBµV/m @ 3m
ANSI C63.4 § 13.1.7 RSS-GEN 4.6.1	Occupied bandwidth (26dB Bandwidth and 99% Bandwidth)	Nominal	Nominal	☒	☐	☐	☐	26dB: 72.25 MHz 99%: 97.25 MHz
§15.249(a), (d) §15.209 RSS-GEN 4.9	Field strength of emissions (spurious & harmonics)	Nominal	Nominal	☒	☐	☐	☐	complies
§1.1310 §2.1091 FCC OET Bulletin 65 §15.319 (i) RSS-GEN 5.5 RSS 102	MPE Calculation	Nominal	Nominal	☒	☐	☐	☐	0.00013 mW/cm^2
§15.249 (b) (2)	Frequency Stability	Nominal and Extreme	Nominal and Extreme	☒	☐	☐	☐	complies

Note: NA = Not Applicable; NP = Not Performed

9 Measurement results

9.1 Antenna Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

Limits:

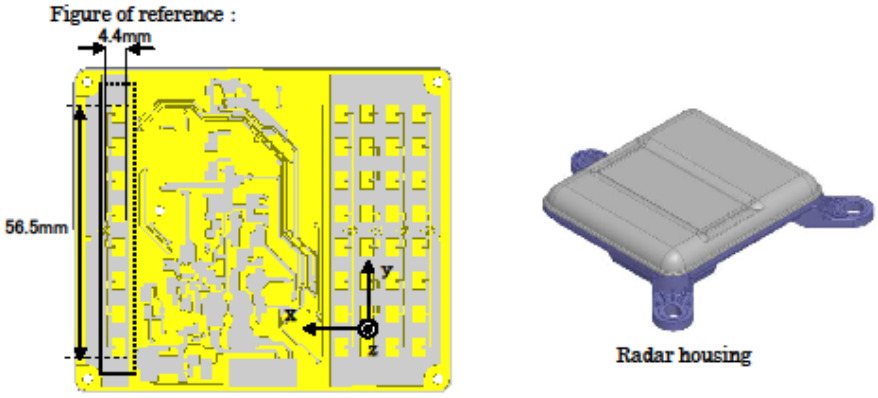
FCC / IC
47 CFR Part 15.203 / RSS-GEN 7.1.4

○Antenna specifications

Model : 24GMMR1A-ANT

kind : Patch array antenna

Figure of reference :

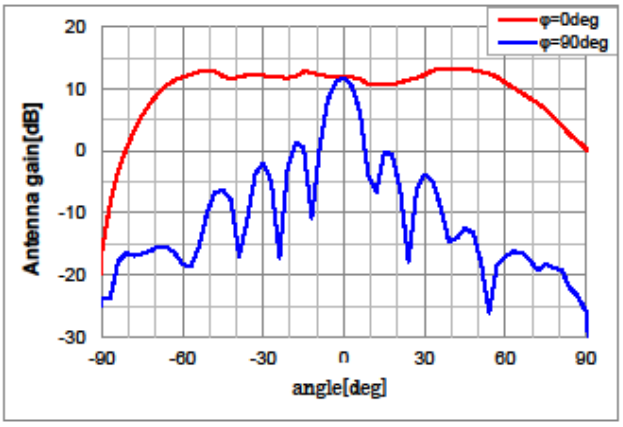


Board(Antenna Surface) A dotted line part: Transmitting antenna

An antenna peak gain: The upper lower limit, central frequency

24.05GHz : 13.2dBi 24.15GHz : 13.4dBi 24.25GHz : 13.5dBi

An antenna pattern: θ direction pattern @ 24.15GHz



Areference) antenna gain (@48.3GHz): 7.8dBi (@θ=0 deg,φ=60deg)

Result: **The measurement is passed.**

9.2 Field strength of emissions (wanted signal)

Description:

Measurement of the maximum radiated field strength of the wanted signal.

Measurement:

Measurement parameter	
Detector:	Pos-Peak / Average
Sweep time:	5 s
Video bandwidth:	3 MHz
Resolution bandwidth:	1 MHz (6 dB Bandwidth)
Span:	300 MHz
Trace-Mode:	Max Hold

Limits:

FCC / IC		
47 CFR Part 15.249(a), (c) / RSS-310, 3.10		
Field strength of emissions		
The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:		
Frequency [GHz]	Field Strength [dBµV/m]	Measurement distance
24.00 – 24.25	108	3

(e) As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

Measurement results:

Peak-Measurement:

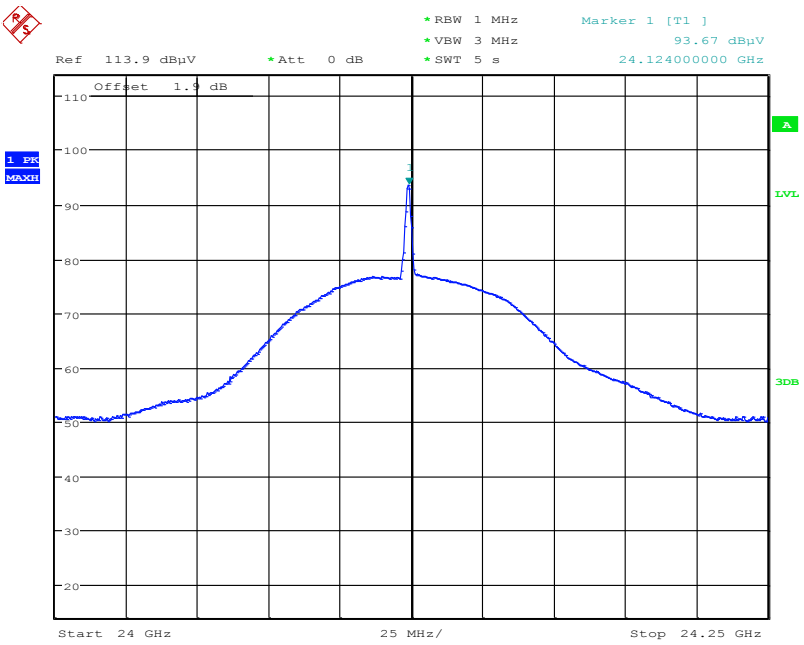
Test condition T_{nom} / V_{nom}	**Frequency** [GHz]	**Maximum field strength (Peak)** measured values [dBµV/m] @ 3 m
normal operation mode	24.124	93.7
Measurement uncertainty	± 3 dB	

Average-Measurement:

Test condition T_{nom} / V_{nom}	**Frequency** [GHz]	**Maximum field strength (AVG)** measured values [dBµV/m] @ 3 m
normal operation mode	24.124	93.0
Measurement uncertainty	3 dB	

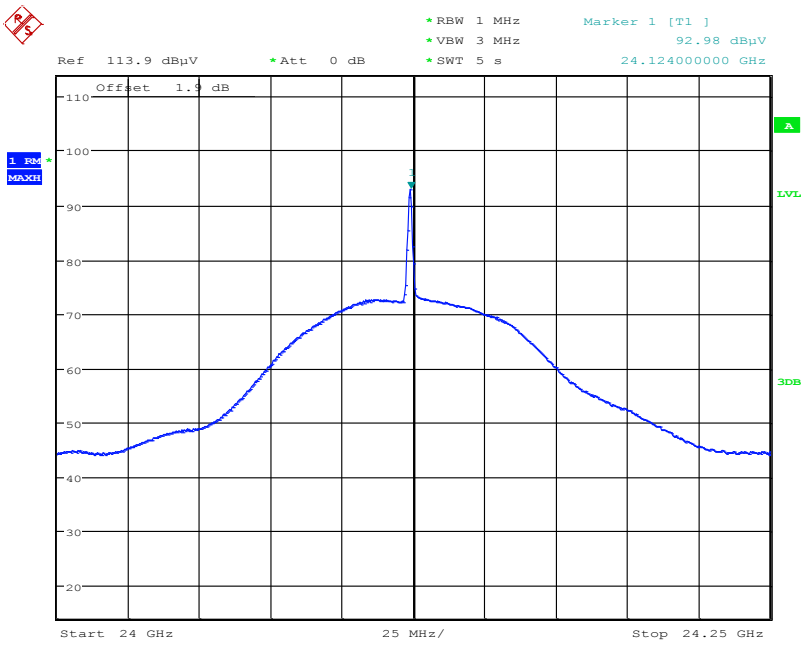
Result: **The measurement is passed.**

Plot No. 1: Peak measurement, normal operation mode



Date: 12.FEB.2016 12:11:49

Plot No. 2: Average measurement, normal operation mode



Date: 12.FEB.2016 12:12:14

9.3 Occupied bandwidth (26 dB bandwidth and 99% bandwidth)

Description:

99% bandwidth:
When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is the 99% emissions bandwidth, as calculated or measured.

26 dB bandwidth:
The occupied bandwidth measurements on an intentional radiator shall be made in accordance with the requirements outlined in ANSI C63.4-2009, Section 13.7. If no bandwidth requirement is specified by the procuring or regulatory agency, measure the bandwidth at –26 dB with respect to the reference level. The resolution bandwidth was set according to Table 5 in section 13.7 of ANSI C63.4-2009.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	5 s
Video bandwidth:	1 MHz
Resolution bandwidth:	3 MHz
Span:	250 MHz
Trace-Mode:	Max Hold

Limits:

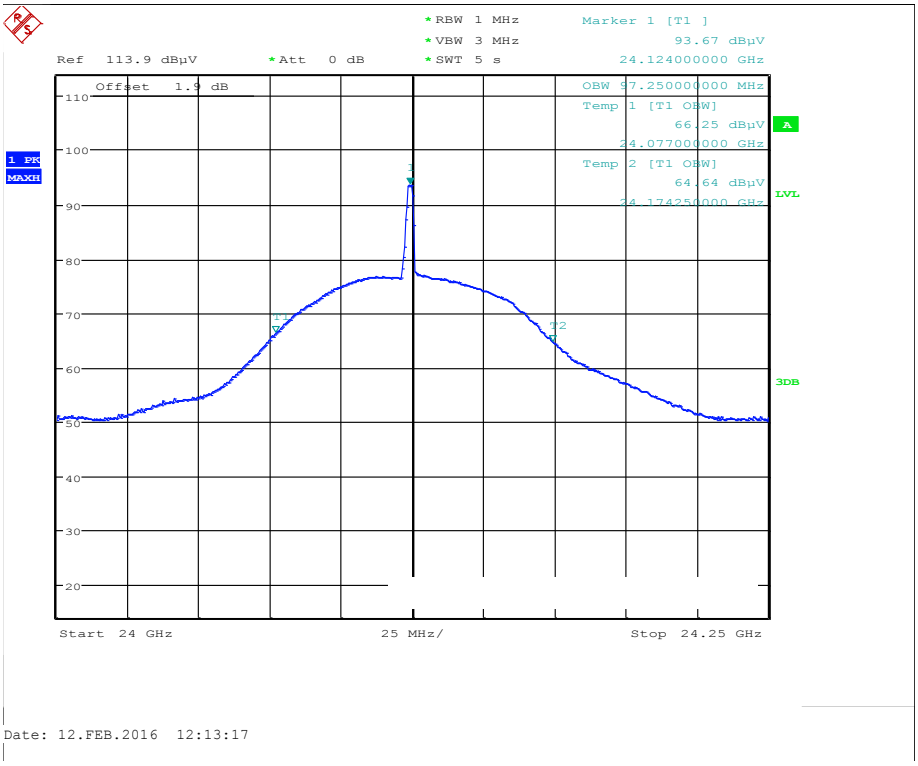
FCC / IC
ANSI C63.10 § 6.9 / RSS-GEN 4.6.1

Measurement results:

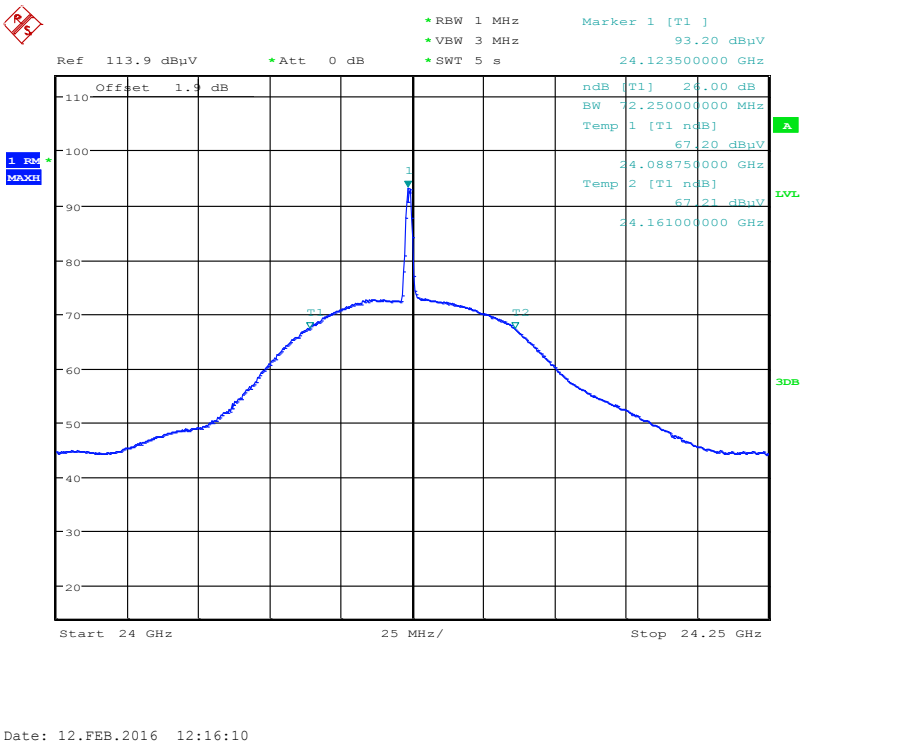
Test condition T_{nom} / V_{nom}	**26 dB bandwidth** [MHz]	**99% bandwidth** [MHz]
normal operation mode [24.15 GHz]	72.25	97.25
Measurement uncertainty	± span/1000	

Result: **The measurement is passed.**

Plot No. 3: Peak measurement, 99%



Plot No. 4: Peak measurement, 26 dB down



9.4 Field strength of emissions (radiated spurious and harmonics)

Description:

Measurement of the radiated spurious emissions in transmit mode.

Measurement:

Measurement parameter	
Detector:	F < 1 GHz: Quasi Peak F > 1 GHz: Average
Sweep time:	Auto
Video bandwidth:	Auto
Resolution bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: 1 MHz
Frequency range:	30 MHz to 100 GHz
Trace-Mode:	Max Hold

Limits:

FCC / IC		
CFR Part 15.249 (a), (d); CFR Part 15.209 / RSS-GEN 4.9		
Field Strength of harmonics shall not exceed 68 dBµV/m		
Radiated Spurious Emissions		
Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.		
Frequency (MHz)	Field Strength (dBµV/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
30 88	30.0	10
88 – 216	33.5	10
216 – 960	36.0	10
Above 960	54.0	3

Measurement results:

< 1 GHz:

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
44.478450	10.63	30.00	19.37	1000.0	120.000	101.0	V	195.0	13.9
139.080750	14.92	33.50	18.58	1000.0	120.000	98.0	V	245.0	8.8
145.722750	14.98	33.50	18.52	1000.0	120.000	101.0	V	320.0	8.8
528.912900	16.21	36.00	19.79	1000.0	120.000	170.0	V	187.0	19.1
655.572900	18.56	36.00	17.44	1000.0	120.000	98.0	H	352.0	21.2
919.999050	21.54	36.00	14.46	1000.0	120.000	170.0	V	168.0	24.2

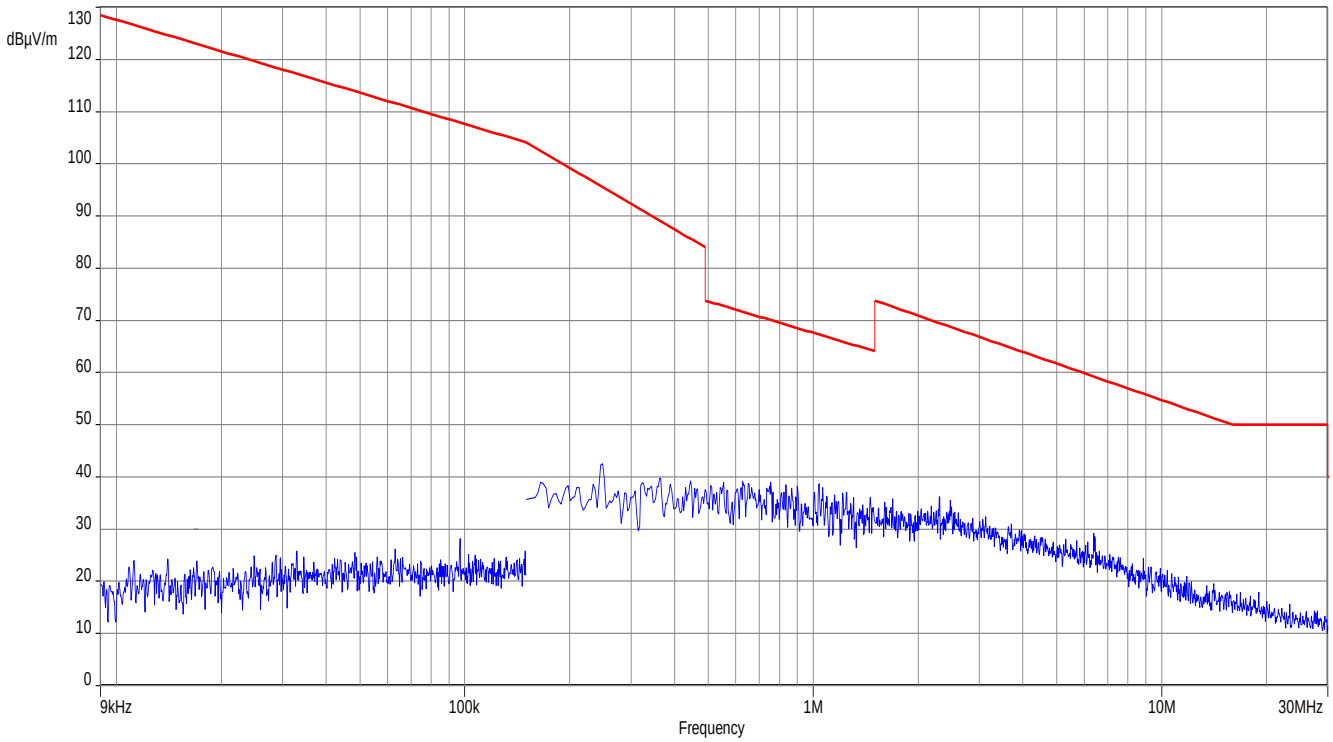
>1 GHz

TX Spurious Emissions Radiated [dBµV/m]								
-/-			Middle			-/-		
F [GHz]	Detector	Level [dBµV/m]	F [GHz]	Detector	Level [dBµV/m]	F [GHz]	Detector	Level [dBµV/m]
			12.53050	peak	29.0			
			24.00000	peak	41.8			
			24.25000	peak	44.6			
			48.25000	peak	61.1*			
Measurement uncertainty			± 3 dB					
Note: Peak detector is used for detection of spurious >1GHz, only critical peaks are remeasured with average detector.								

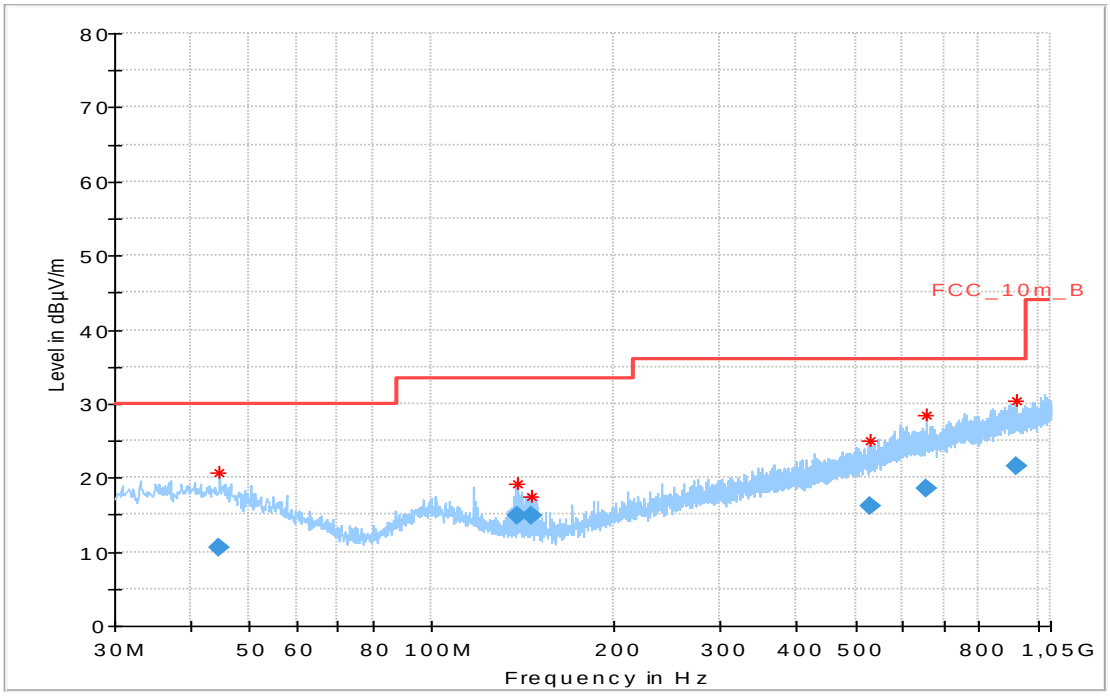
*marker shows 2nd harmonic of carrier // Limit: 68 dBµV/m

Result: **The measurement is passed.**

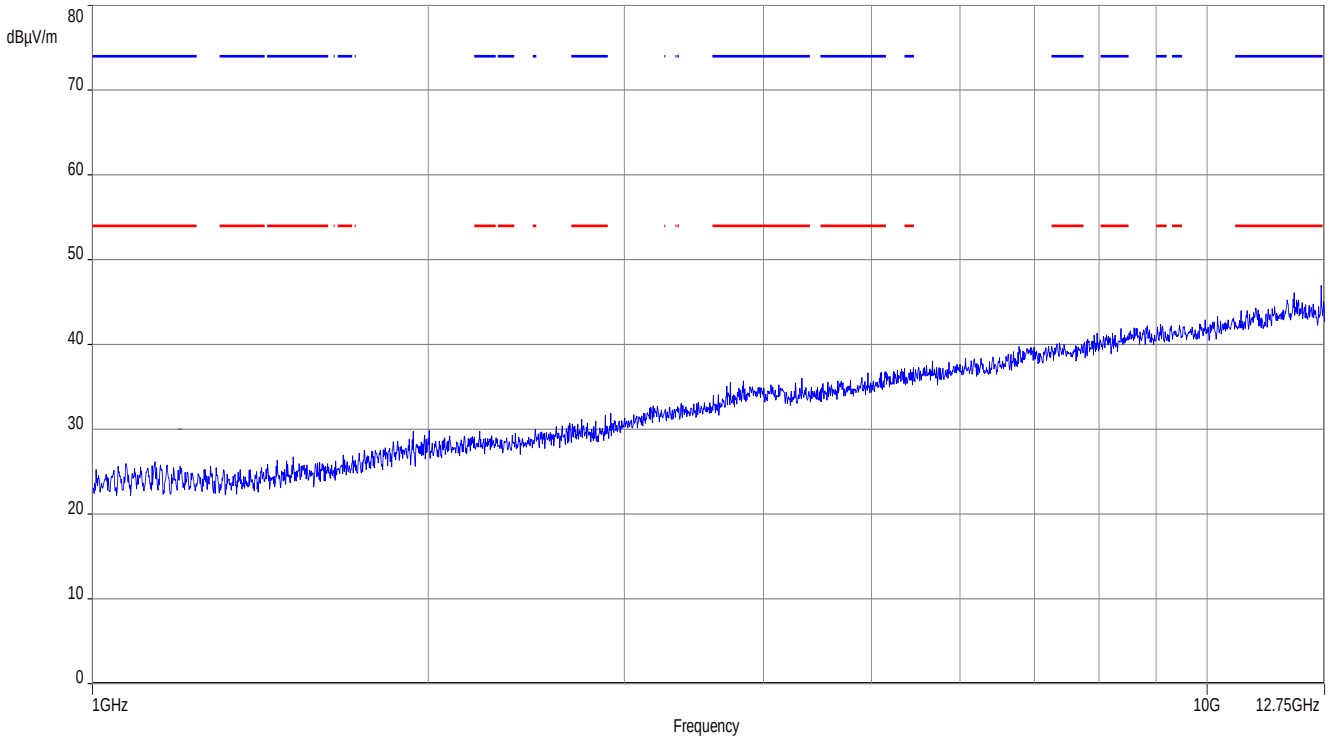
Plot No. 5: 9 kHz – 30 MHz, magnetic loop antenna, low/mid/high frequency



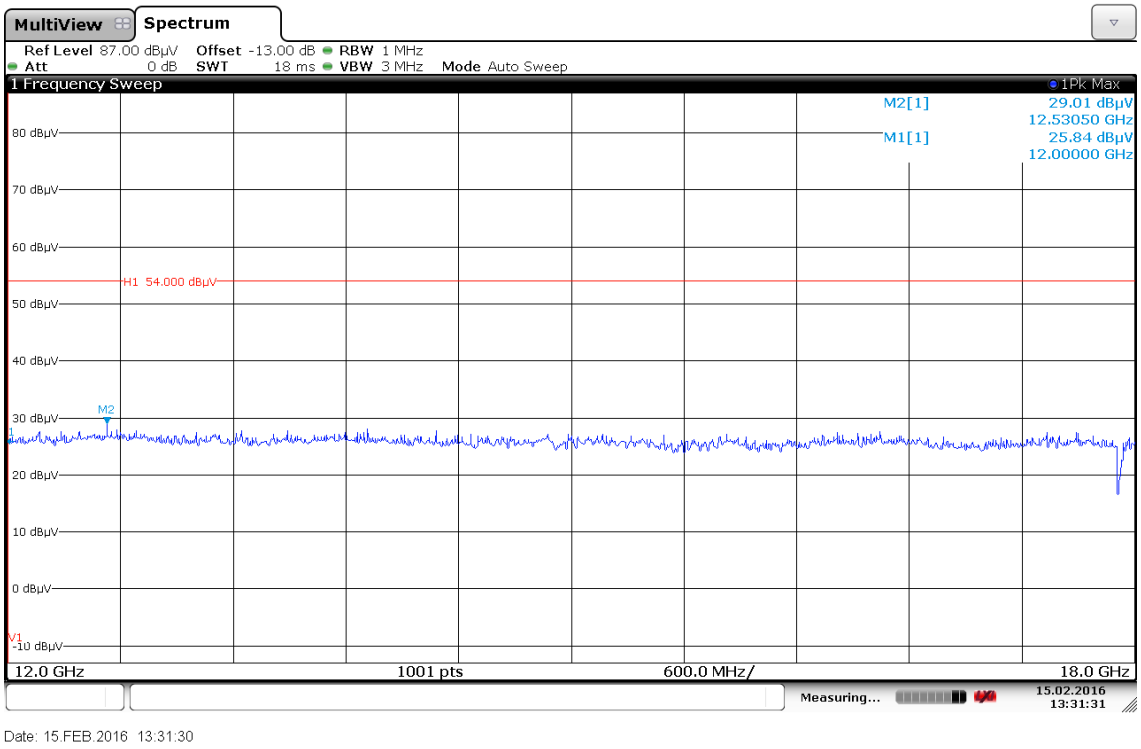
Plot No. 6: 30 MHz to 1 GHz, horizontal/vertical polarization



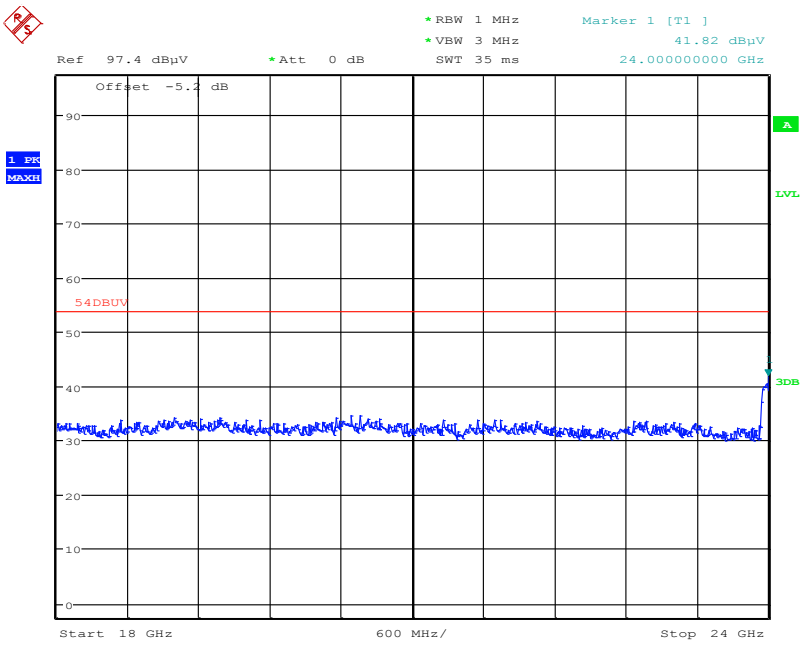
Plot No. 7: 1 GHz to 12 GHz, horizontal/vertical polarization



Plot No. 8: 12 GHz to 18 GHz, horizontal/vertical polarization

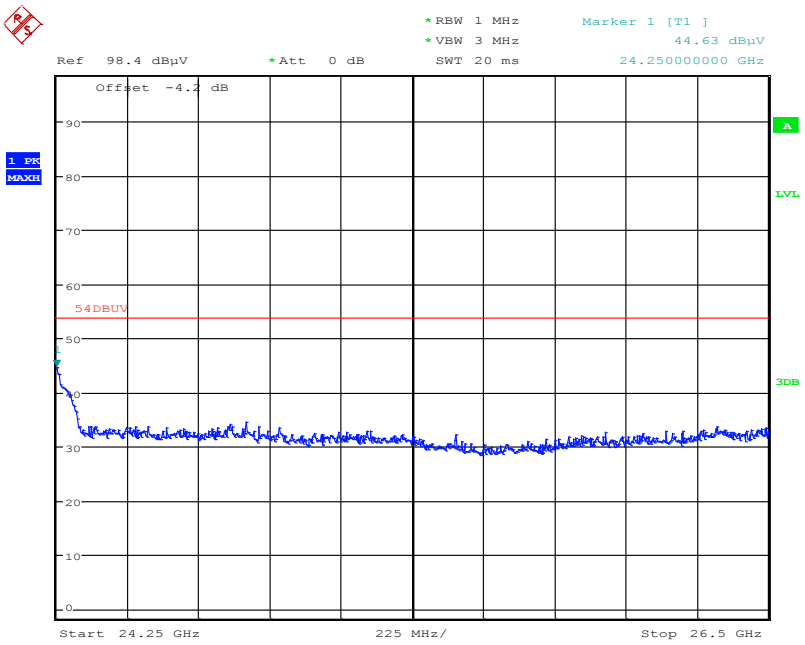


Plot No. 9: 18 GHz to 24.05 GHz, horizontal / vertical polarization



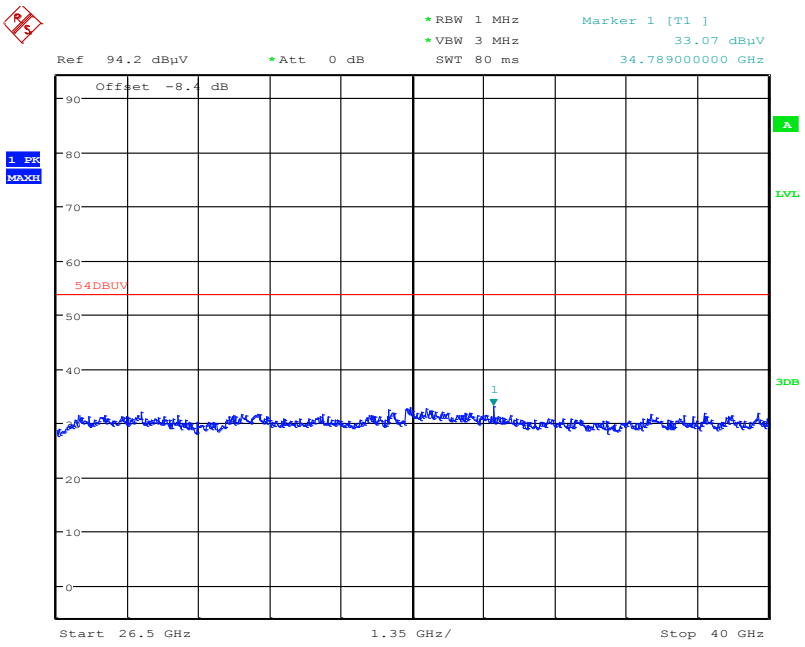
Date: 15.FEB.2016 13:30:06

Plot No. 10: 24.25 GHz to 26 GHz, horizontal / vertical polarization



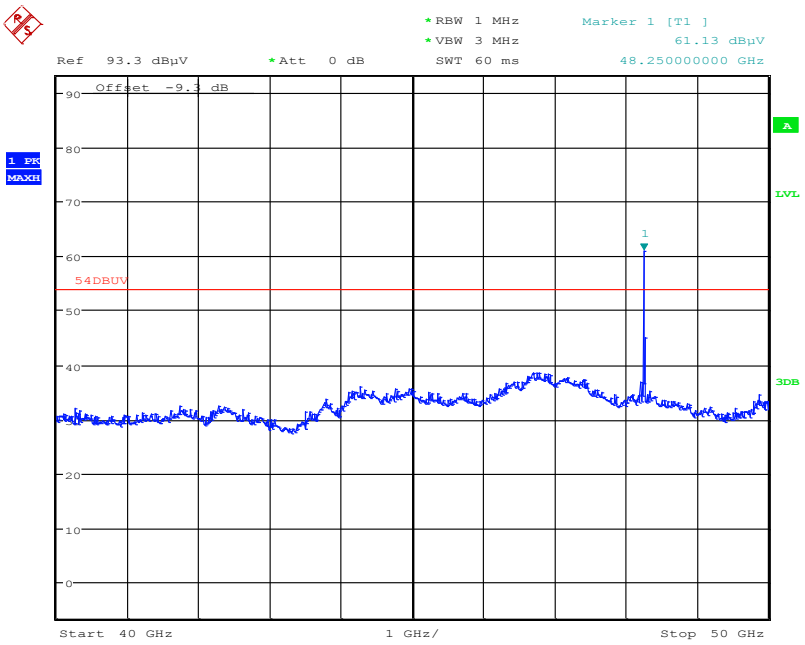
Date: 15.FEB.2016 13:28:48

Plot No. 11: 26 GHz to 40 GHz, horizontal / vertical polarization



Date: 15.FEB.2016 13:24:16

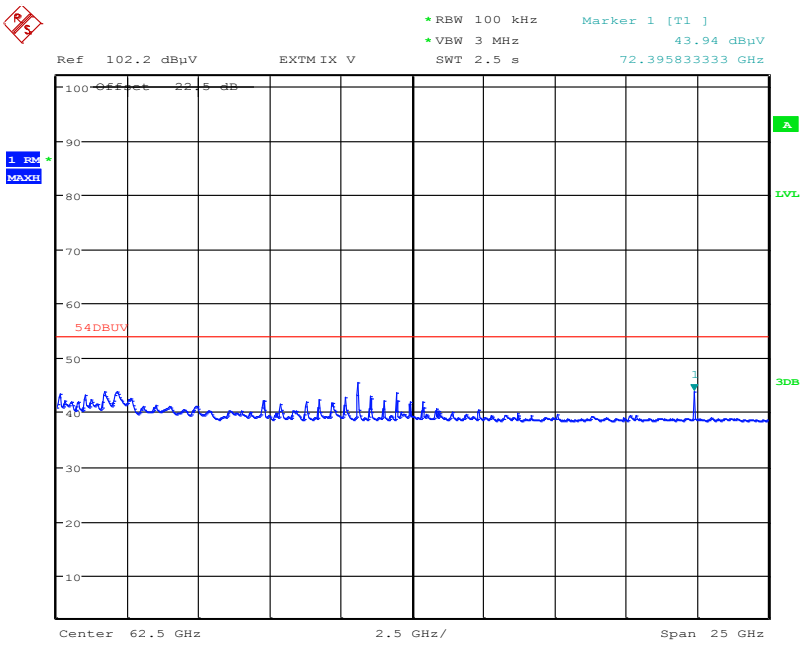
Plot No. 12: 40 GHz to 50 GHz, horizontal / vertical polarization



Date: 15.FEB.2016 13:21:44

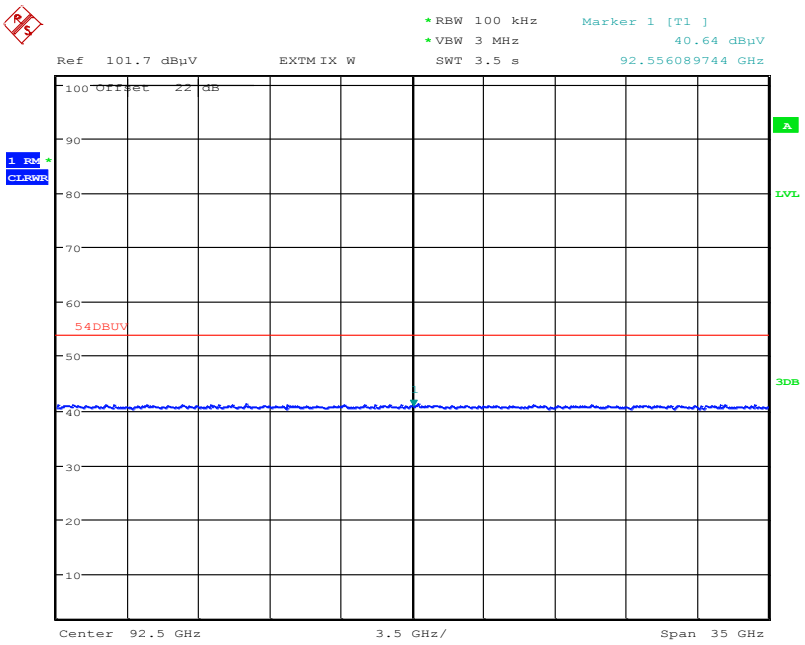
Note: Limit for harmonics: 68 dBµV/m

Plot No. 13: 50 GHz to 75 GHz, horizontal / vertical polarization



Date: 22.FEB.2016 18:02:12

Plot No. 14: 75 GHz to 110 GHz, horizontal / vertical polarization



Date: 22.FEB.2016 18:06:21

10 Maximum Permissible Exposure (MPE)

MPE Calculation:

$$PD = \frac{OP + AG}{(4 \times \pi \times d^2)}$$

PD = Power Density (mW/cm2)
OP = DUT Output Power (dBm)
AG = DUT Antenna Gain (dBi)
d = MPE Distance (cm)

Note: OP [mW], AG as lin.factor

§ 1.1310 Radiofrequency radiation exposure limits.

The criteria listed in table 1 shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in § 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of § 2.1093 of this chapter. Further information on evaluating compliance with these limits can be found in the FCC's OST/OET Bulletin Number 65, ''Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation.''

NOTE TO INTRODUCTORY PARAGRAPH: These limits are generally based on recommended exposure guidelines published by the National Council on Radiation Protection and Measurements (NCRP) in ''Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields,'' NCRP Report No. 86, Sections 17.4.1, 17.4.1.1, 17.4.2 and 17.4.3.
Copyright NCRP, 1986, Bethesda, Maryland 20814. In the frequency range from 100 MHz to 1500 MHz, exposure limits for field strength and power density are also generally based on guidelines recommended by the American National Standards Institute (ANSI) in Section 4.1 of ''IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz,'' ANSI/IEEE C95.1–1992, Copyright 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*($900/f^2$)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*($180/f^2$)	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density
NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.
NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

[61 FR 41016, Aug. 7, 1996]

Results:

Refer to 5.2, the maximum peak field strength is 93.7 dBµV/m ≙ -1.7 dBm ≙ 0.68 mW

d = 20 cm

➔ PD = 0.00013 mW/cm^2

Limits: **FCC §1.1310 (B) / RSS-GEN 5.5; RSS 102**

Frequency [GHz]	Power Density [mW/cm^2]
1.500 GHz – 100.000 GHz	1 mW / cm^2

Result: **The measurement is passed.**

Annex A Document history

Version	Applied changes	Date of release
1.0	Initial release	2016-02-24
-A	Frequencies corrected from 24.138 GHz to 24.124 GHz Value for span corrected from 300 MHz to 250 MHz (p. 15)	2016-03-02
-B	IC ID removed, note for 2nd harmonic added	2016-03-21

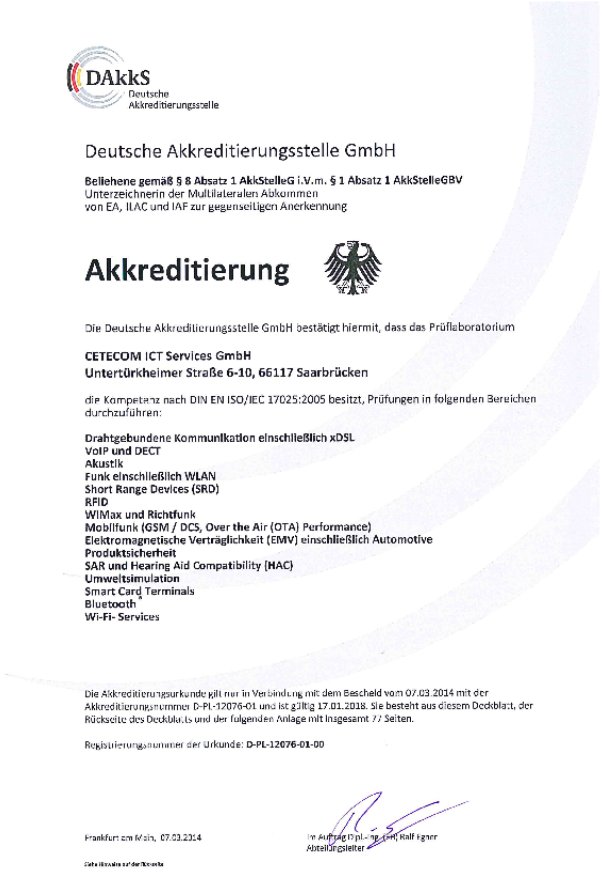
Annex B Further information

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



DAkkS
Deutsche
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Deutsche Akkreditierungsstelle GmbH

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

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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
WiMax 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

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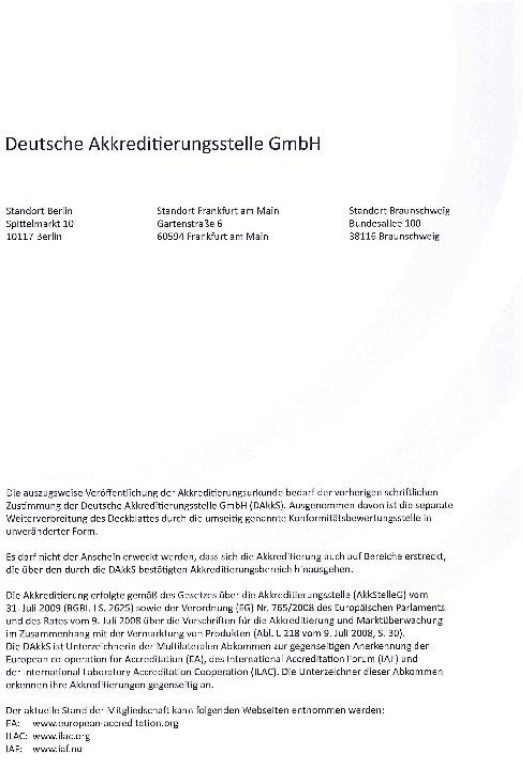
Registrierungsnummer der Urkunde: **D-PL-12076-01-00**

Frankfurt am Main, 07.03.2014

Im Auftrag Dipl.-Ing. (FH) Ralf Egner
Abteilungsleiter

Back side of certificate



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IAF: www.iaf.nu

Note:

The current certificate including may be received from CETECOM ICT Services on request.