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Class II permissive change on AIR B2A B4P 1900 MHz radio equipment with FCC ID: TA8AKRC118023-1 and IC: 287AB-AS1180231 (6 appendices)

Test object

Product name: AIR 21 B2A B4P
Product number: KRC 118 023/1, R4B

Summary

See appendix 1 for general information and appendix 6 for external photos.

Standard	Compliant	Appendix
FCC CFR 47 / IC RSS-133 Issue 6		
2.1046 / RSS-133 6.4 RF power output	Yes	2
2.1049 / RSS-Gen 4.6.1 Occupied bandwidth	Yes	3
2.1051 / RSS-133 6.5 Band edge	Yes	4
2.1051 / RSS-133 6.5 Spurious emission at antenna terminals	Yes	5

Note: Above RSS-133 items are given as cross-reference only. Measurements were performed according to ANSI procedures referenced by FCC and covered by SP's accreditation.

SP Technical Research Institute of Sweden

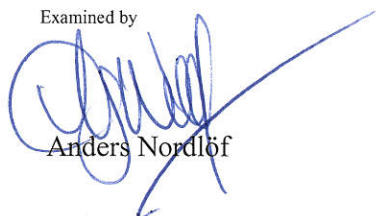
Electronics – EMC

Performed by



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Appendix 1

Description of the test object

Equipment:	Product name: AIR 21 B2A B4P Product number KRC 118 023/1 FCC ID: TA8AKRC118023-1 IC: 287AB-AS1180231 IC MODEL NO: AS1180231
Tested configuration:	GSM single RAT
Frequency range:	TX: 1930 – 1990 MHz RX: 1850 – 1910 MHz
Antenna ports:	2 TX/RX ports, (internally connected to integrated Cross-Polarized antenna elements).
RF configuration:	Single and multi carrier
Nominal RF output power per antenna port:	Single carrier: 1x 44.8 dBm (1x 30W) Multi carrier: 2x 41.8 dBm (2x 15W) 4x 38.8 dBm (4x 7.5W)
Antenna type:	Cross- polarized antenna
Antenna gain:	18 dBi
Modulations:	GMSK, 8-PSK, 16QAM, 32QAM and AQPSK.
Nominal supply voltage:	-48 VDC

Appendix 1

Operation mode during measurements

Measurements were performed with the test object transmitting following modulations: GMSK, AQPSK, 8-PSK, 16QAM and 32QAM.

Unless otherwise stated, all measurements were performed with the test object transmitting pseudorandom data in all timeslots and settings for maximum transmitter output power applicable for each configuration. For AQPSK modulation the SCPIR is 0 dB.

The settings below were deemed representative for all traffic scenarios when settings with different modulations, channel bandwidths, number of carriers and RF configurations has been tested to find the worst case setting. The settings below were used for all measurements if not otherwise noted.

Single carrier, GMSK modulation.

Multi carrier, GMSK modulation.

Conducted measurements

The conducted measurements were performed on AIR 21 B2A B12P B8P with product number KRC 118 055/1 including the radio unit ARUS B2 1/KRC 118 054 which according to client documentation is representative regarding conducted TX performance measurements for AIR 21 B2A B4P with product number KRC 118 023/1 including the radio unit ARUS B2 1/KRC 118 023.

The test object was pole mounted and powered with -48 VDC by an external power supply, unless noted otherwise. All TX parameters were measured at port RF A with port RF B terminated into 50 ohm. Complete measurements were made on RF A with additional measurements on RF B to verify that the ports are identical.

Purpose of test

The purpose of test is to justify a Class II Permissive Change of the test object with hardware update by verifying compliance to the performance characteristics specified in applicable parts of FCC CFR 47, IC RSS-133 and IC RSS-Gen.

References

Measurements were done according to relevant parts of the following standards:

ANSI C63.4-2009

ANSI/TIA/EIA-603-C-2004

3GPP TS 36.141, version 11.4.0

CFR 47 part 2, October 1st, 2012

CFR 47 part 24 Subpart E, October 1st, 2012

RSS-Gen Issue 3

RSS-133 Issue 6

Appendix 1

Uncertainties

Measurement and test instrument uncertainties are described in the quality assurance documentation "SP-QD 10885". The uncertainties are calculated with a coverage factor $k=2$ (95% level of confidence).

Compliance evaluation is based on a shared risk principle with respect to the measurement uncertainty.

Reservation

The test results in this report apply only to the particular test object as declared in the report.

Delivery of test object

The test object was delivered 2013-10-18.

Manufacturer's representative

Christer Gustavsson, Ericsson AB.

Test engineers

Andreas Johnson , Hyder Khalaf, Kexin Chen, Tomas Lennhager, Tomas Isbring and Jörgen Wassholm, SP.

Test participant

None.

Appendix 1

Measurement equipment

	Calibration Due	SP number
Test site Tesla	2014-01	503 881
R&S FSIQ 40	2014-07	503 738
R&S ESU 26	2014-05	901 553
R&S FSQ 40	2014-03	504 143
Control computer with R&S software EMC32 version 8.52.0	-	503 899
High pass filter	2014-07	901 501
High pass filter	2014-07	901 502
High pass filter	2014-07	504 199
High pass filter	2014-09	901 373
High pass filter	2014-09	503 739
High pass filter	2014-07	503 740
RF attenuator	2014-07	504 159
RF attenuator	2014-07	900 233
RF attenuator	2014-07	900 691
RF attenuator	2014-07	901 384
RF attenuator	2013-12	901 508
Chase Bilog Antenna CBL 6111A	2014-10	503 182
EMCO Horn Antenna 3115	2015-09	502 175
Std.gain horn FLANN model 20240-20	-	503 674
µComp Nordic, Low Noise Amplifier	2014-04	901 545
Miteq Low Noise Amplifier	2014-09	503 285
Schwartzbeck preamplifier BBV 9742	2014-14	504 085
Temperature and humidity meter, Testo 635	2014-06	504 203
Temperature and humidity meter, Testo 625	2014-06	504 188
Temperature Chamber	2013-11	501 031
Multimeter Fluke 87	2014-08	502 190

Appendix 1

Test frequencies used for conducted measurements

1 – Carrier:

Port A + B ARFCN (Frequency) Downlink	Symbolic name
513 (1930.4 MHz)	B
661 (1960.0 MHz)	M
809 (1989.6 MHz)	T

2 – Carrier:

Port A + B ARFCN (Frequency) Downlink	Symbolic name
513 (1930.4 MHz)	B2im1
522 (1932.2 MHz)	
561 (1940 MHz)	B2im2
617 (1951.2 MHz)	
659 (1959.6 MHz)	M2
664 (1960.6 MHz)	
809 (1989.6 MHz)	T2im1
800 (1987.8 MHz)	
761 (1980.0 MHz)	T2im2
705 (1968.8 MHz)	

Appendix 1

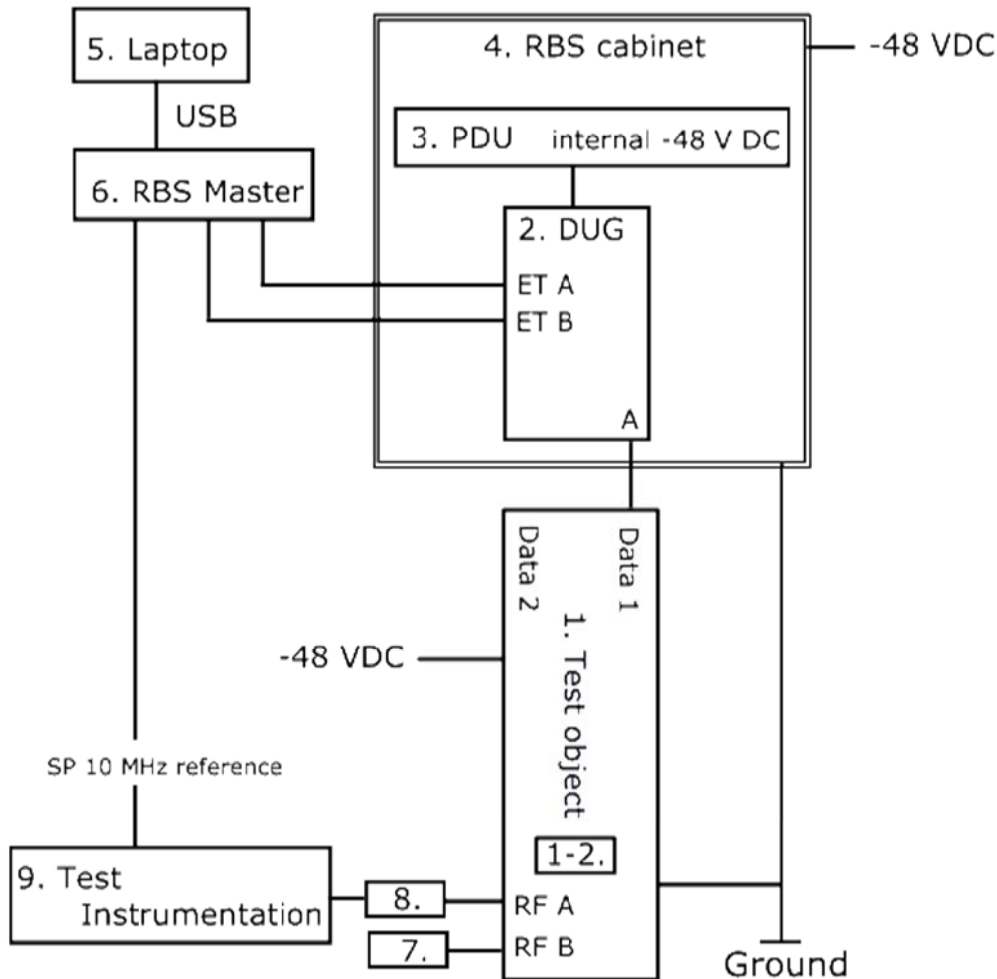
4 – Carrier:

Port A + B ARFCN (Frequency) Downlink	Symbolic name
513 (1930.4 MHz)	B4
522 (1932.2 MHz)	
531 (1934.0 MHz)	
540 (1935.8 MHz)	
809 (1989.6 MHz)	T4
800 (1987.8 MHz)	
791 (1986.0 MHz)	
782 (1984.2 MHz)	

All RX frequencies were configured 80 MHz below the corresponding TX frequency according to the applicable duplex offset for the operating band.

Appendix 1

Test set-up conducted measurements GSM



Test object:

1.	AIR 21 B2A B12P B8P, KRC 118 055/1, revision R1A, s/n: TM30003022 with software (PIS): CXP 901 7316/1 rev. R49FF
1-2.	Transceiver, ARUS B2, 1/KRC 118 054, revision R1A

Functional test equipment

2.	DUG 20 01 KDU 137 569/1, R3A, s/n: C826374728
3.	PDU 02 01, BMG 980 336/4, rev: R2A, s/n: BJ31528316
4.	RBS 6201 cabinet, BAMS – 1000778792
5.	Controlling laptop HP EliteBook 8560w, BAMS – 1001236856
6.	RBS master 2E, LPY 107 1007/3, BAMS – 1001195171
7.	Terminator, 50 ohm
8.	Attenuator, according respective appendix
9.	SP Test Instrumentation according to measurement equipment list

Appendix 1

Interfaces:
Type of port:

Power: -48 VDC	DC Power
Antenna port (A), (passive antenna), 7/16-connector	Antenna
Antenna port (B), (passive antenna), 7/16-connector	Antenna
Data 1, Optical Interface Link, single mode opto fibre	Signal
Data 2, Optical Interface Link, single mode opto fibre, not in use	Signal
Ground wire	Ground

RBS software:

Software	Revision
DXPR73LZ	R50B

Appendix 2

RF power output measurements according to CFR 47 §24.232 / IC RSS-133 6.4

Date	Temperature	Humidity
2013-10-21	23 °C ± 3 °C	28 % ± 5 %
2013-10-22	23 °C ± 3 °C	39 % ± 5 %
2013-10-23	23 °C ± 3 °C	46 % ± 5 %
2013-11-03	27 °C ± 3 °C	33 % ± 5 %
2013-11-14	22 °C ± 3 °C	30 % ± 5 %

Test set-up and procedure

The test object was connected to a signal analyzer measuring peak and RMS output power in CDF mode. A resolution bandwidth of 50 MHz was used.

Measurement equipment	SP number
R&S FSQ 40	504 143
RF attenuator	901 508
Testo 635, temperature and humidity meter	504 203

Measurement uncertainty: 1.1 dB

Results

Single carrier

Rated output power 1x 44.8 dBm per RF port.

Tested configuration	[RMS dBm/ PAR dB]	
Modulation and symbolic name	Port RF A	Port RF B
GMSK, B	44.81/ 0.91	44.77/ 0.91
GMSK, M	44.88/ 0.89	44.87/ 0.89
8PSK, M	44.87/ 3.58	44.86/ 3.61
16QAM, M	44.81/ 4.78	44.80/ 4.83
32QAM, M	44.74/ 4.86	44.75/ 4.83
AQPSK, M	44.42/ 4.01	44.19/ 3.99
GMSK, T	44.85/ 0.91	44.75/ 0.91

Note: The PAR value is the 0.1 % Peak to Average Ratio.

Appendix 2

Multi Carrier

Rated output power 2x 41.8 dBm per RF port.

Tested configuration	Transmitter power RMS (dBm)
Modulation and symbolic name	Port RF A
GMSK, B2im1	44.79/ 3.61
GMSK M2	44.84/ 3.61
8 PSK, M2	44.82/ 6.08
16 QAM, M2	44.54/ 7.45
GMSK, T2im1	44.79/ 3.61

Rated output power 4 x 38.8 dBm per RF port.

Tested configuration	Transmitter power RMS (dBm)
Modulation and symbolic name	Port RF A
GMSK, B4	44.80/ 6.18
GMSK, T4	44.89/ 6.20

Single carrier

Measured output power per 1 MHz.

Tested configuration	[RMS dBm]	
Modulation and symbolic name	Port RF A	Port RF B
GMSK, B	44.78	44.47
GMSK, M	44.84	44.91
8PSK, M	45.03	45.03
16QAM, M	45.15	45.00
32QAM, M	45.30	45.15
AQPSK, M	44.33	44.33
GMSK, T	44.83	44.96

Appendix 2

Limits

§24.232 The maximum output power may not exceed 3280 W/MHz (EIRP).
The Peak to Average Ratio (PAR) may not exceed 13 dB.

RSS-133: The average equivalent isotropically radiated power (e.i.r.p.) for transmitters shall not exceed the limits given in SRSP-510. Moreover, base station transmitters operating in the band 1930-1995 MHz shall not have output power exceeding 100 watts.

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

Complies?	Yes
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Appendix 3

Occupied bandwidth measurements according to 47 CFR 2.1049 / IC RSS-Gen 4.6.1

Date	Temperature	Humidity
2013-10-21	23 °C ± 3 °C	28 % ± 5 %
2013-11-14	22 °C ± 3 °C	30 % ± 5 %

Test set-up and procedure

The measurements were made per definition in RSS-Gen 4.6.1. The output was connected to a signal analyzer with the RMS detector activated. The signal analyzer was connected to an external 10 MHz reference standard during the measurements.

Measurement equipment	SP number
R&S FSQ	504 143
RF attenuator	901 508
Testo 635, temperature and humidity meter	504 203

Measurement uncertainty: 3.7 dB

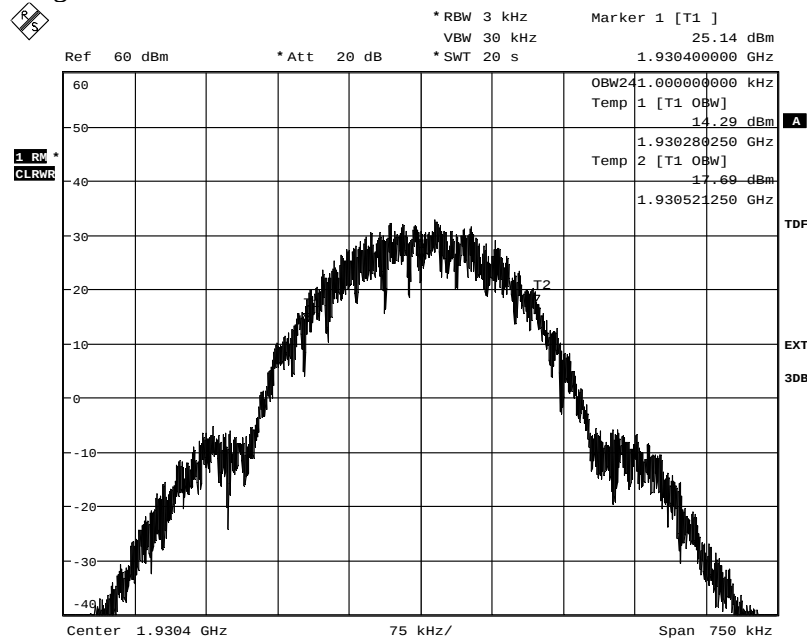
Results

Single carrier

Diagram	Modulation	Symbolic name	Tested Port	Occupied BW (99%) [kHz]
1	GMSK	B	RF A	241
2	GMSK	M	RF A	241
3	GMSK	M	RF B	241
4	8PSK	M	RF A	238
5	16QAM	M	RF A	241
6	32QAM	M	RF A	241
7	AQPSK	M	RF A	242
8	GMSK	T	RF A	241

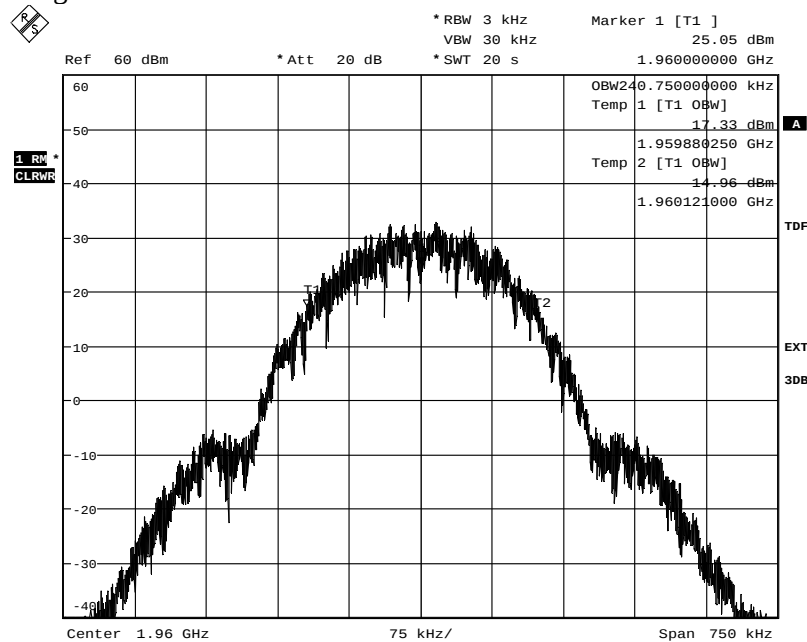
Appendix 3

Diagram 1:



Date: 21.OCT.2013 14:15:25

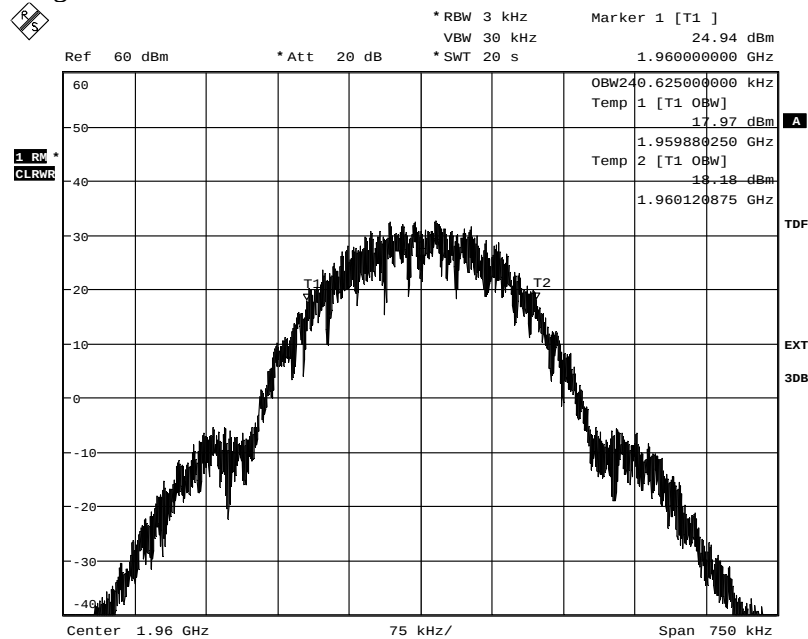
Diagram 2:



Date: 21.OCT.2013 14:10:22

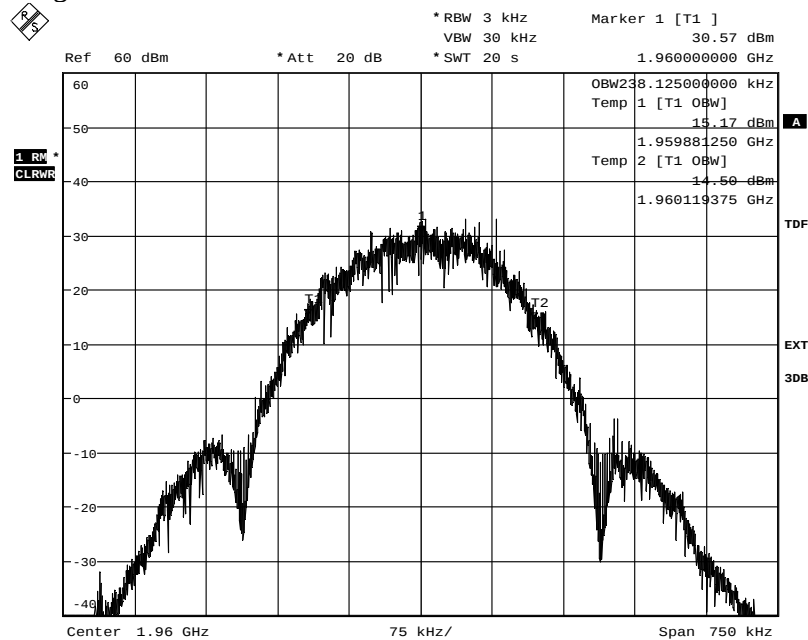
Appendix 3

Diagram 3:



Date: 21.OCT.2013 14:28:17

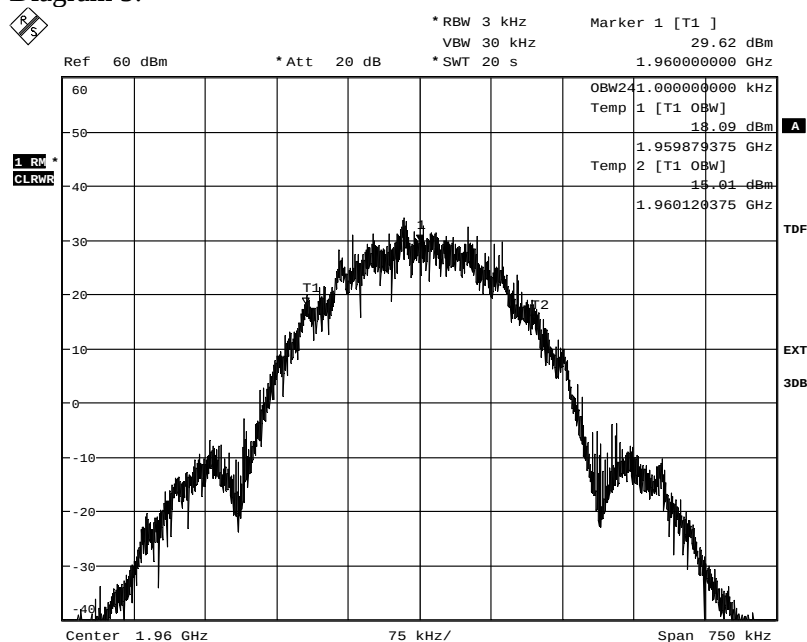
Diagram 4:



Date: 21.OCT.2013 14:05:45

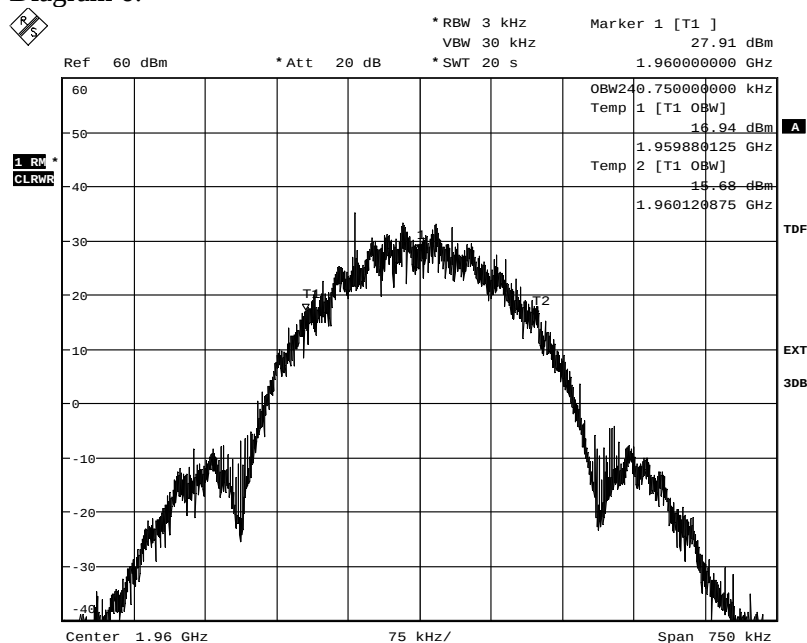
Appendix 3

Diagram 5:



Date: 21.OCT.2013 14:02:23

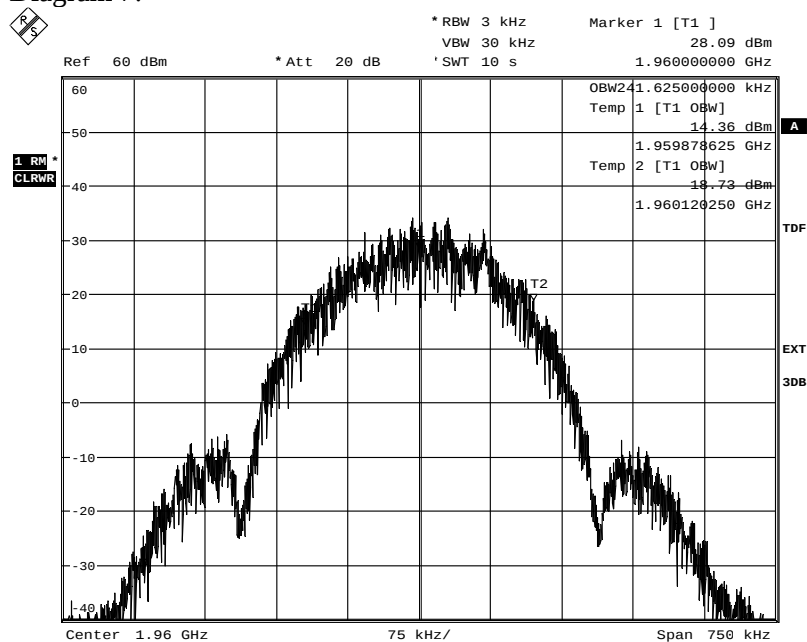
Diagram 6:



Date: 21.OCT.2013 13:59:41

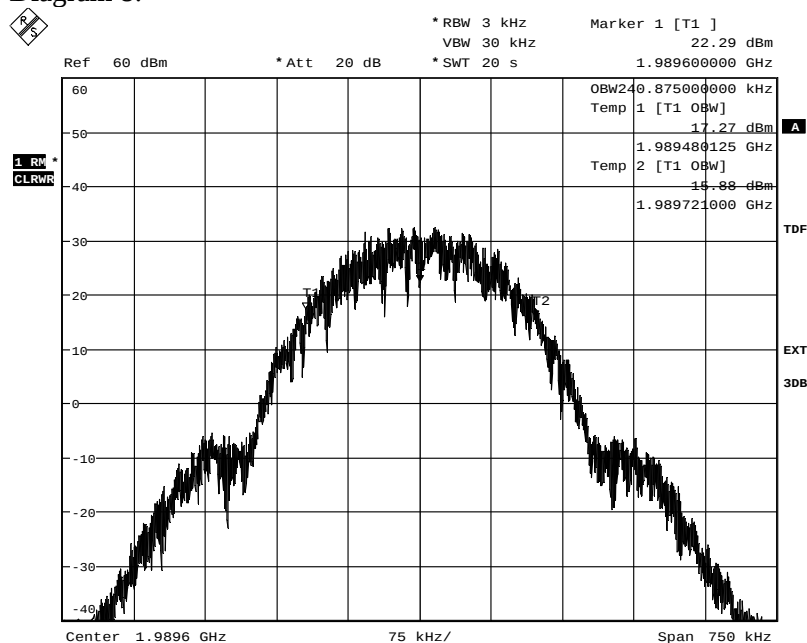
Appendix 3

Diagram 7:



Date: 14.NOV.2013 15:39:17

Diagram 8:



Date: 21.OCT.2013 14:19:35

Appendix 4

Band edge measurements according to CFR 47 §24.238 / IC RSS-133 6.5

Date	Temperature	Humidity
2013-10-21	23 °C ± 3 °C	28 % ± 5 %
2013-10-22	23 °C ± 3 °C	39 % ± 5 %
2013-10-23	23 °C ± 3 °C	46 % ± 5 %

Test set-up and procedure

The measurements were made per definition in §24.238. The output was connected to a spectrum analyzer with the RMS detector activated. The spectrum analyzer was connected to an external 10 MHz reference standard during the measurements. A RBW of 3 kHz (>1% of EBW) was used up to 1 MHz away from the band edges, from 1 MHz to 6 MHz away from the band edges a RBW of 50 kHz and 200kHz was used. To compensate for the reduced RBW the limit was adjusted by 13 dB to -26 dBm and -20dBm in this frequency range.

From 1 MHz to 6 MHz away from the band edges a RBW of 200 kHz was used. To compensate for the reduced RBW the limit was adjusted by 13 dB to -26 dBm in this frequency range. A RBW of 1 MHz was used from 6 to 15 MHz away from the band edges.

Measurement equipment	SP number
R&S FSQ 40	504 143
RF attenuator	901 508
Testo 635, temperature and humidity meter	504 203

Measurement uncertainty: 3.7 dB

Appendix 4

Results

Single carrier

Diagram	Modulation	Symbolic name	Tested Port
1 a-c	GMSK	B	RF A
2 a-c	GMSK	B	RF B
3 a-c	16QAM	B	RF A
4 a-c	GMSK	T	RF A
5 a-c	GMSK	T	RF B
6 a-c	16QAM	T	RF A

Multi carrier

Diagram	Modulation	Symbolic name	Tested Port
7 a-c	GMSK	B2im1	RF A
8 a-c	GMSK	T2im1	RF A

Remark

The channel adjacent to the lower and higher band edge cannot be used. The lowest usable channel is 513 (1930.4 MHz) and the highest usable channel is 809 (1989.6 MHz).

Limits

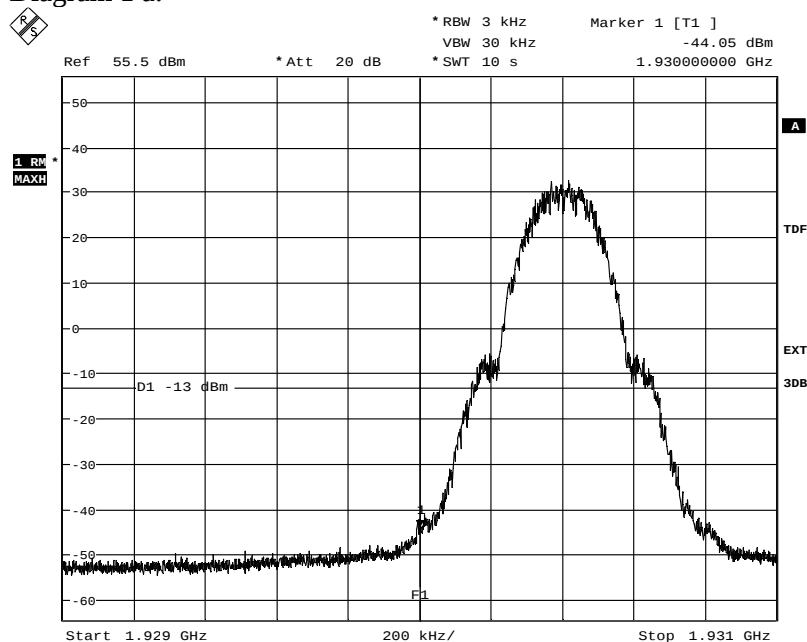
CFR 47 §24.238 and RSS-133 6.5

Outside a licensee's frequency band(s) of operation the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dB, resulting in a limit of -13 dBm.

Complies?	Yes
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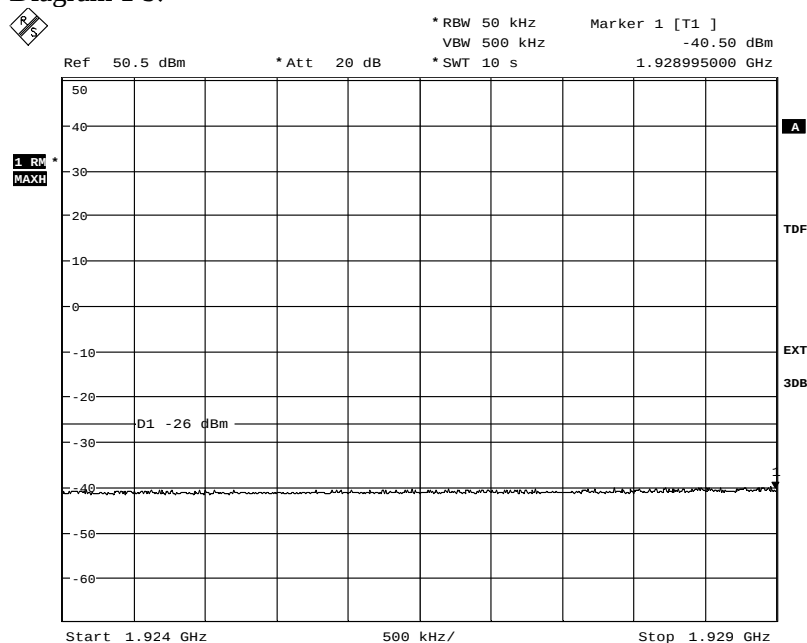
Appendix 4

Diagram 1 a:



Date: 21.OCT.2013 15:14:52

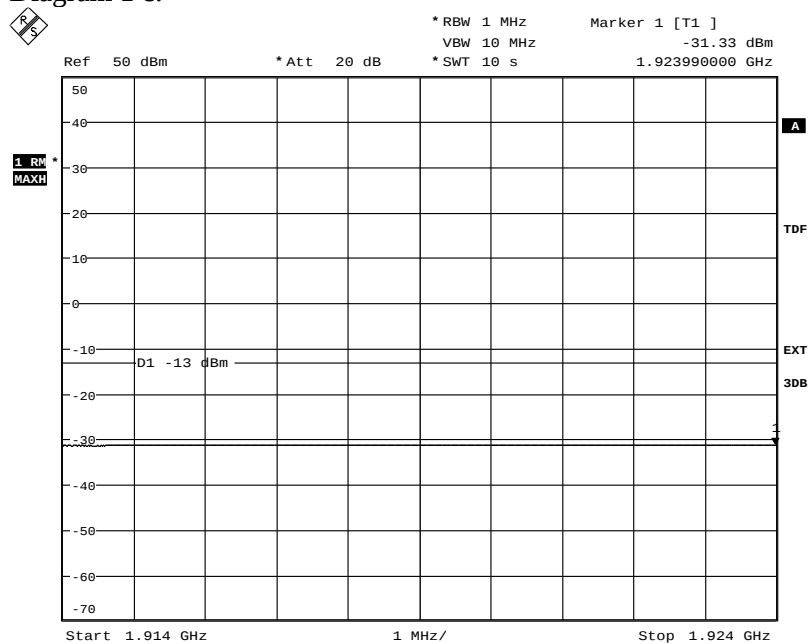
Diagram 1 b:



Date: 21.OCT.2013 15:20:34

Appendix 4

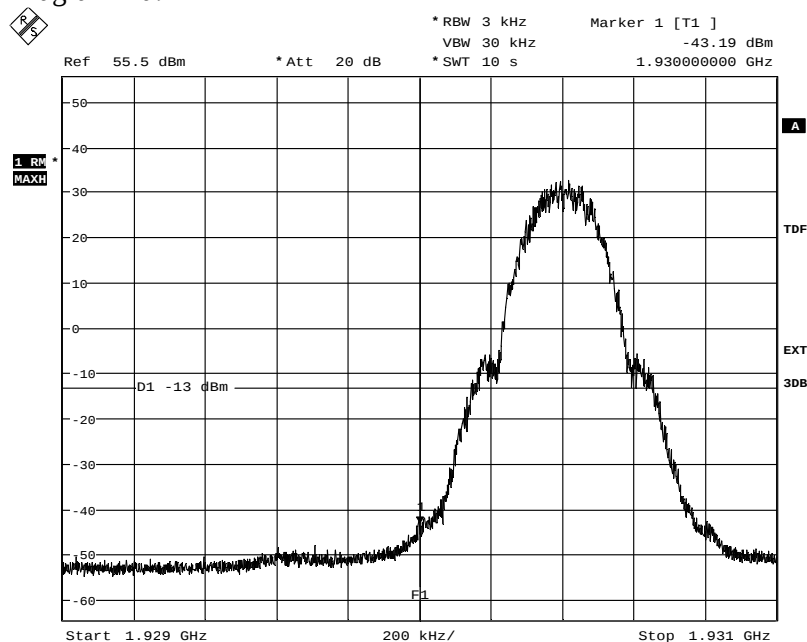
Diagram 1 c:



Date: 21.OCT.2013 15:21:44

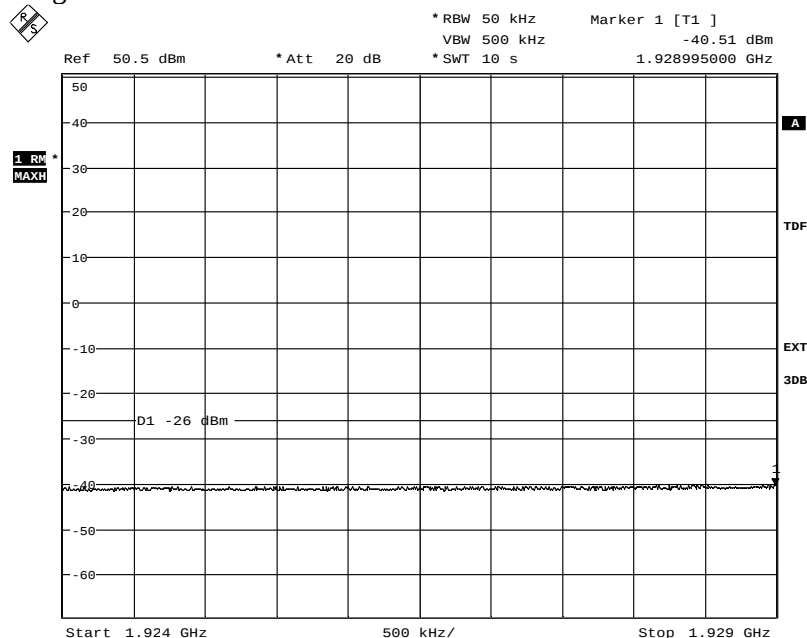
Appendix 4

Diagram 2 a:



Date: 21.OCT.2013 14:38:39

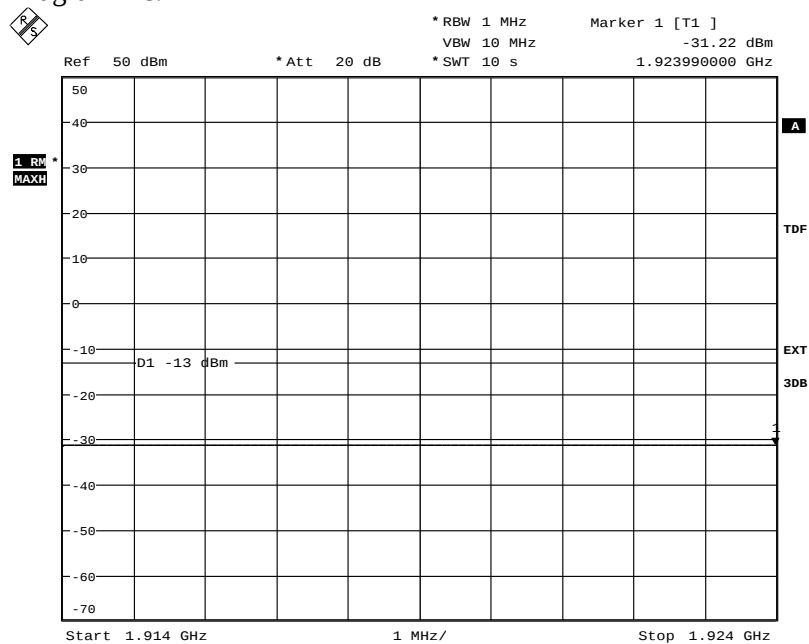
Diagram 2 b:



Date: 21.OCT.2013 15:01:16

Appendix 4

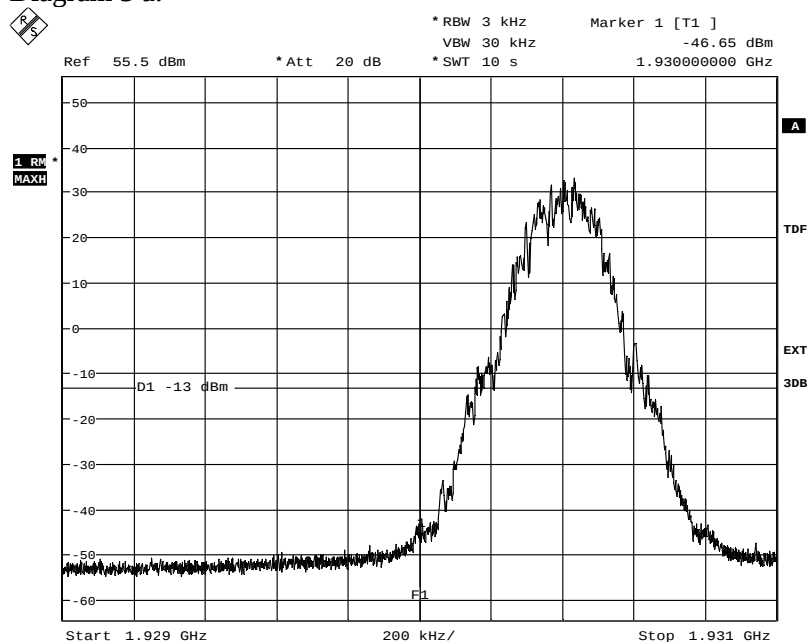
Diagram 2 c:



Date: 21.OCT.2013 14:48:29

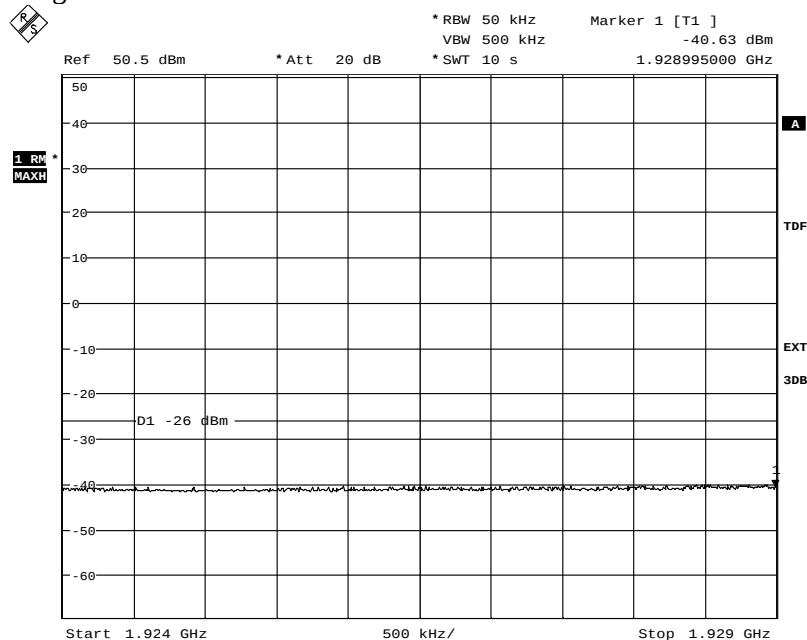
Appendix 4

Diagram 3 a:



Date: 21.OCT.2013 15:18:14

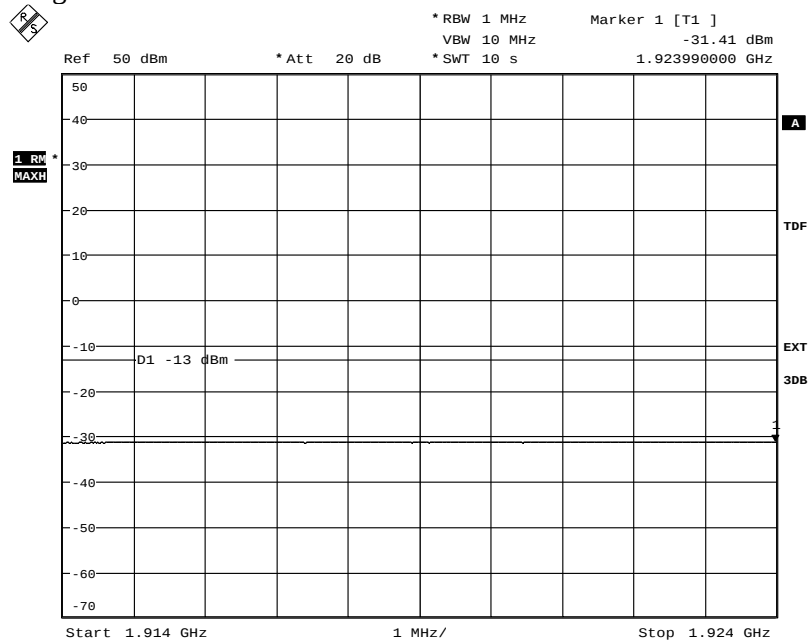
Diagram 3 b:



Date: 21.OCT.2013 15:19:15

Appendix 4

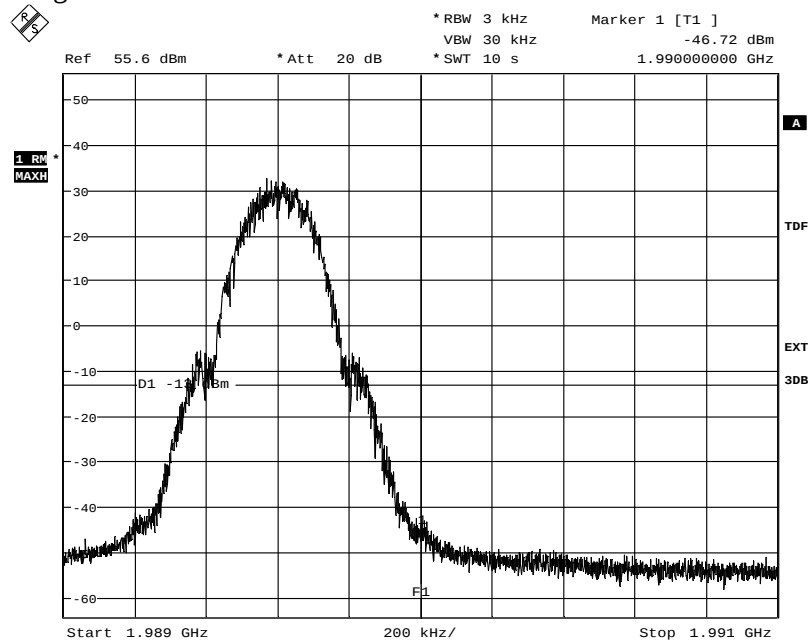
Diagram 3 c:



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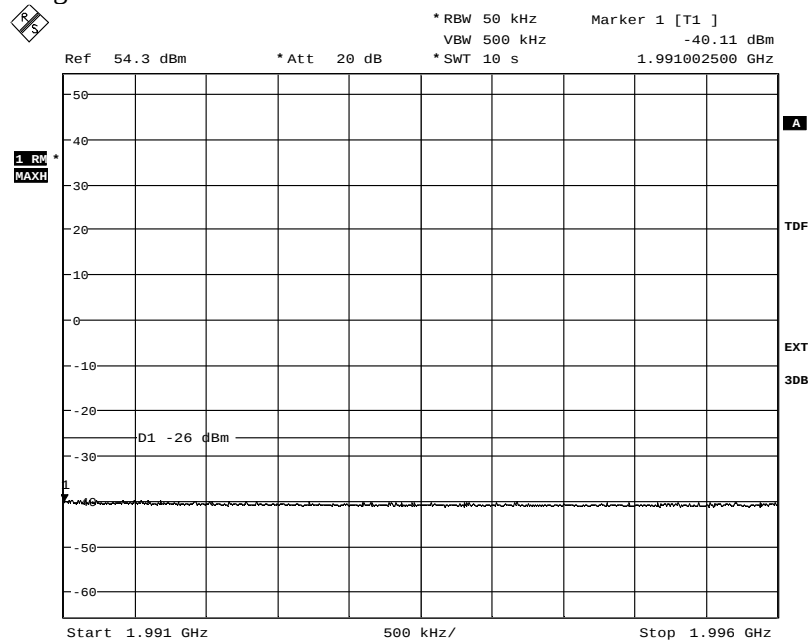
Appendix 4

Diagram 4 a:



Date: 21.OCT.2013 15:27:27

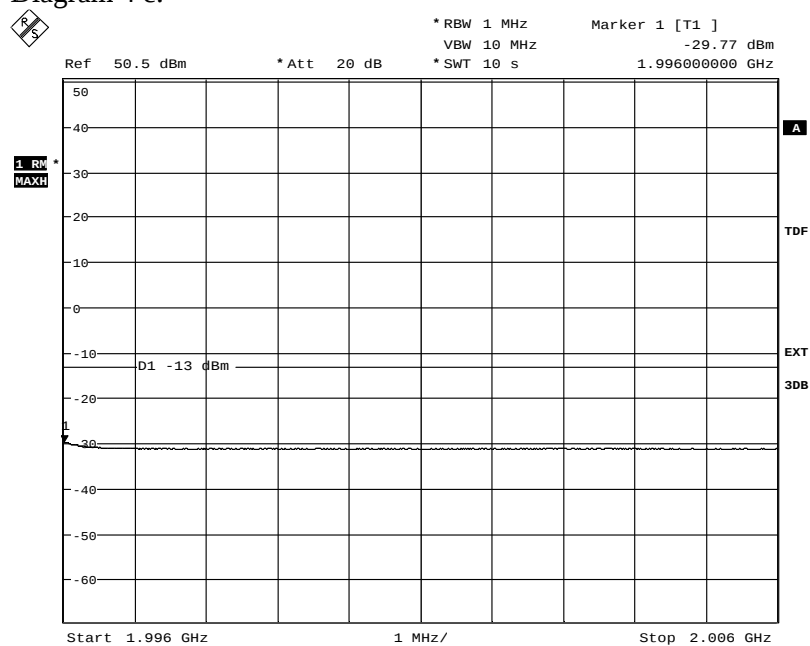
Diagram 4 b:



Date: 21.OCT.2013 15:28:48

Appendix 4

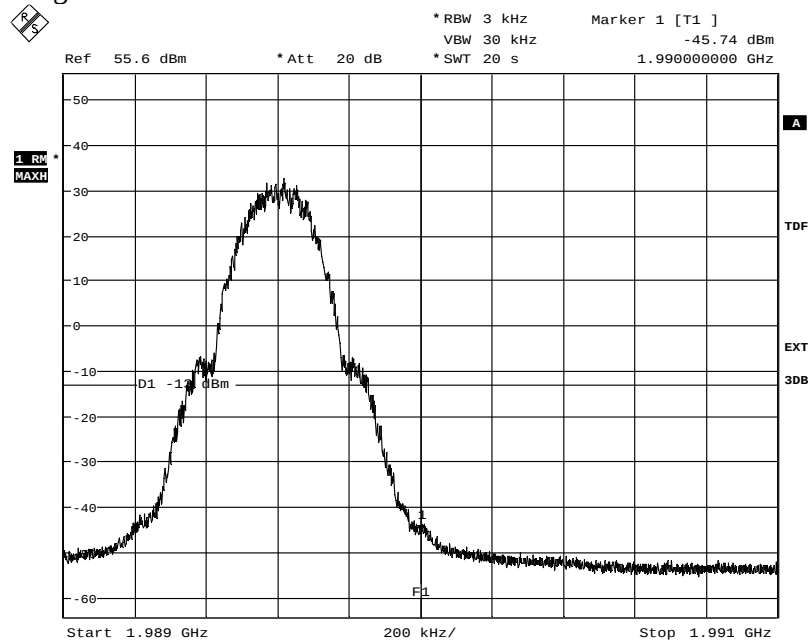
Diagram 4 c:



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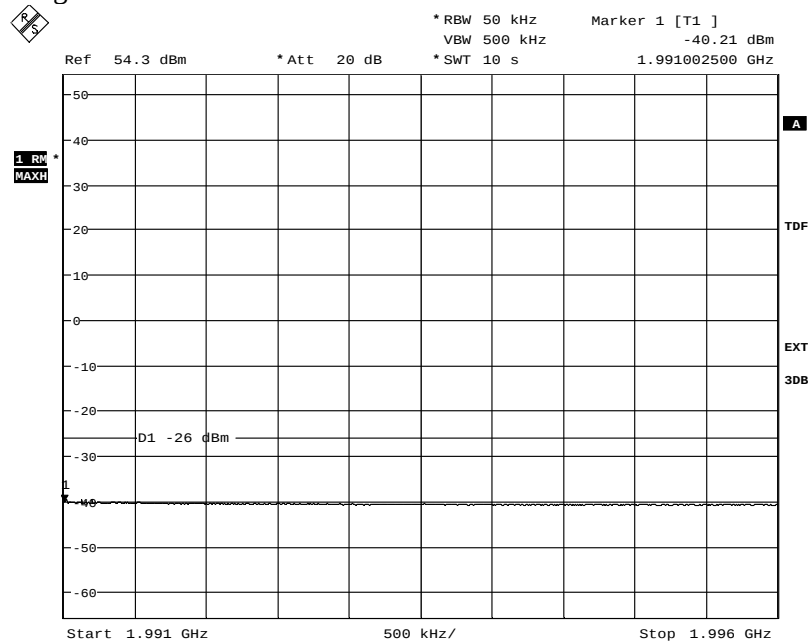
Appendix 4

Diagram 5 a:



Date: 21.OCT.2013 14:53:27

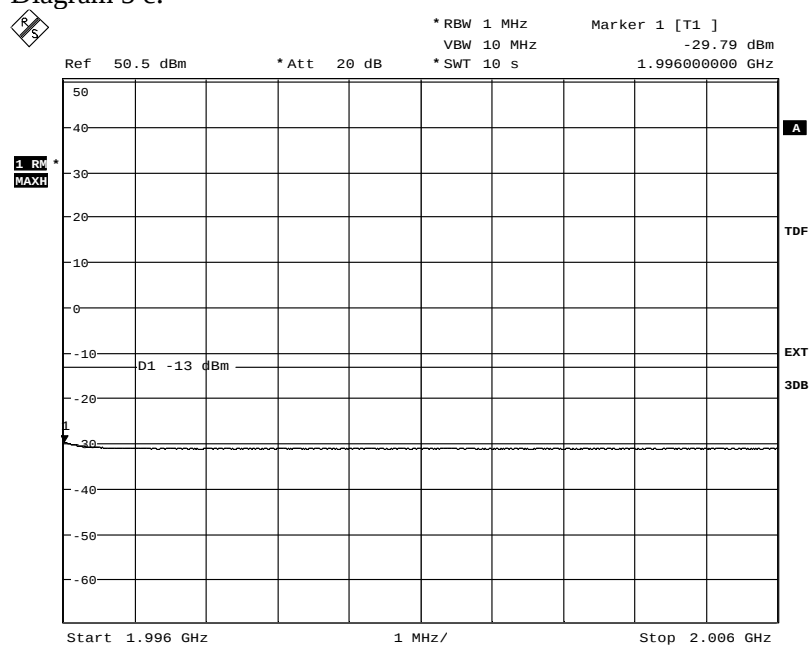
Diagram 5 b:



Date: 21.OCT.2013 14:57:35

Appendix 4

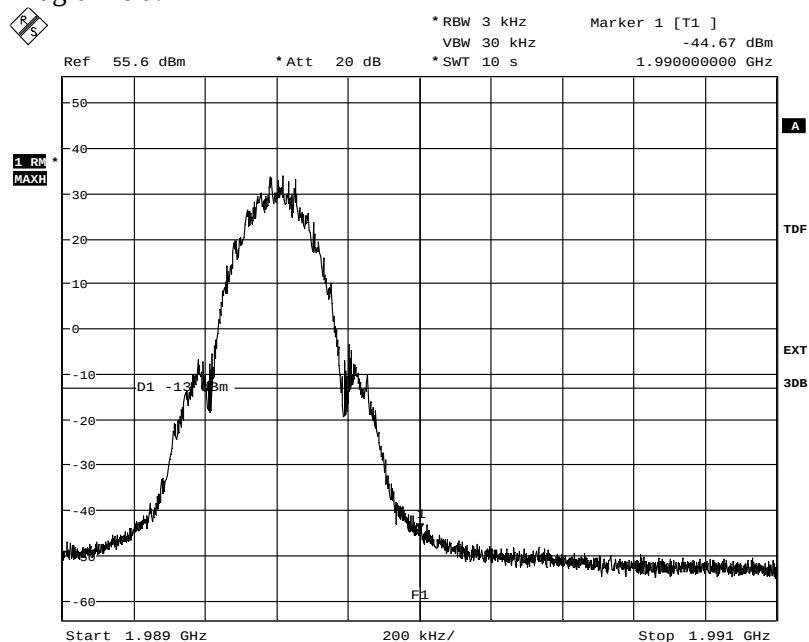
Diagram 5 c:



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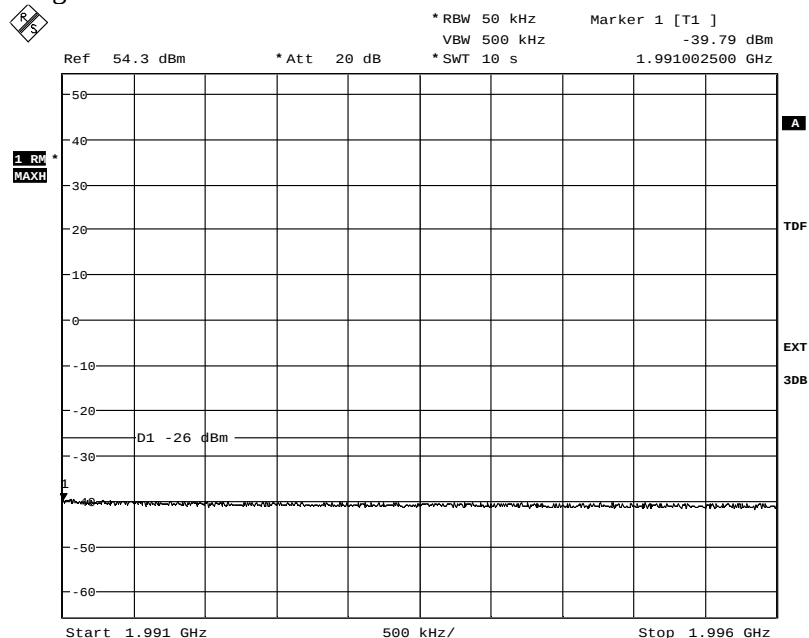
Appendix 4

Diagram 6 a:



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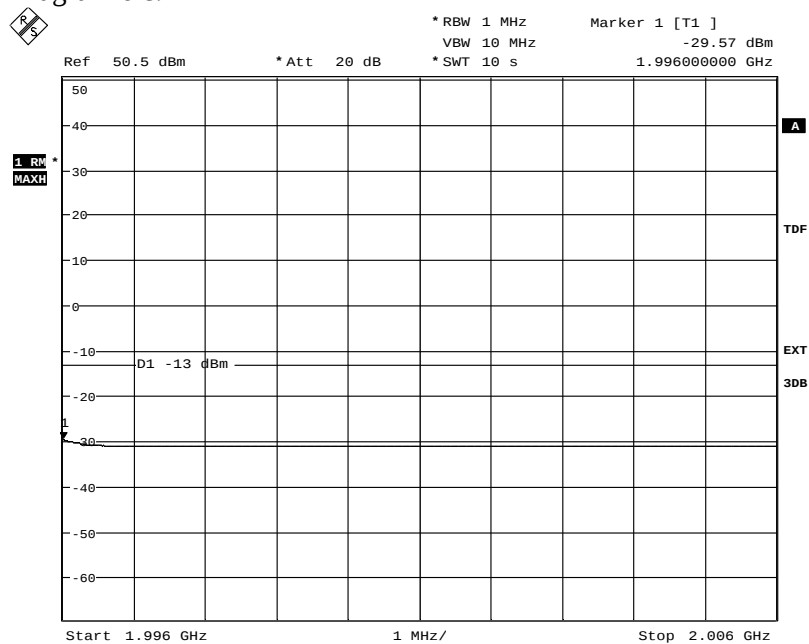
Diagram 6 b:



Date: 21.OCT.2013 15:30:05

Appendix 4

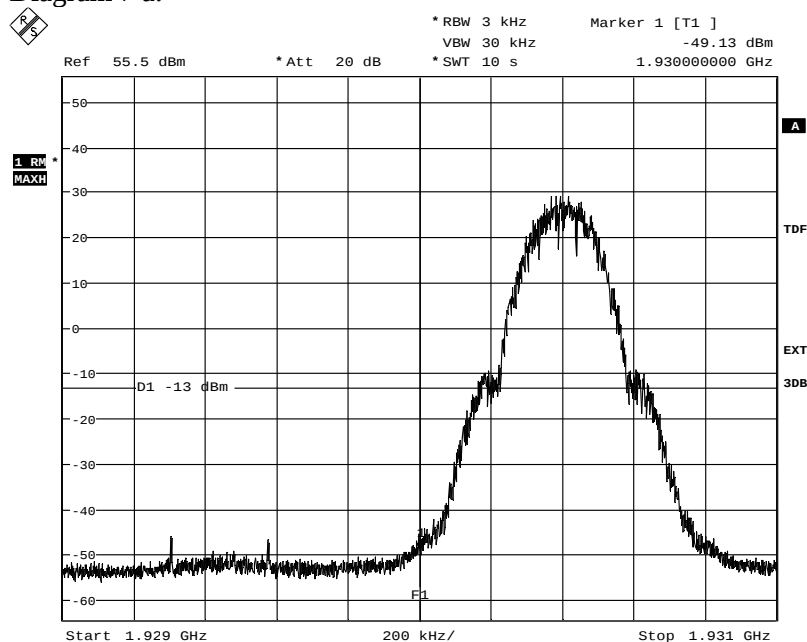
Diagram 6 c:



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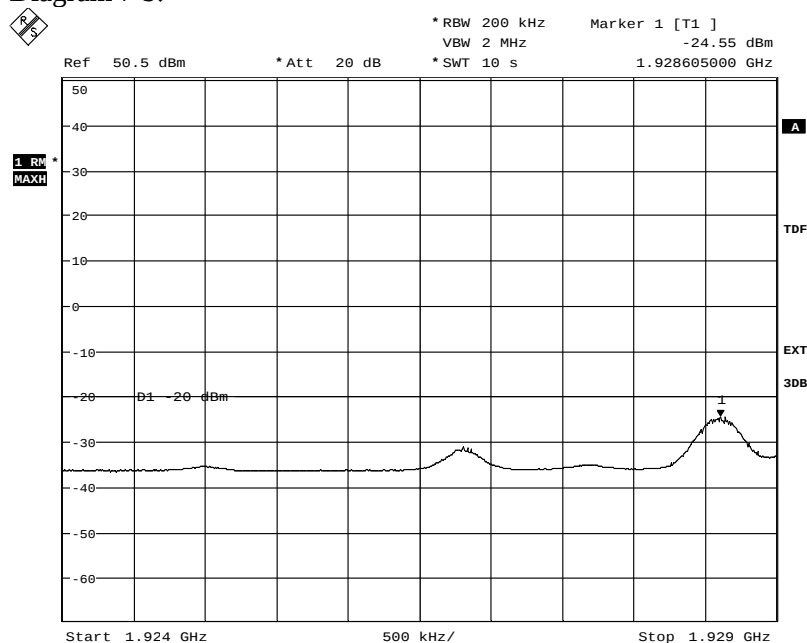
Appendix 4

Diagram 7 a:



Date: 22.OCT.2013 13:11:52

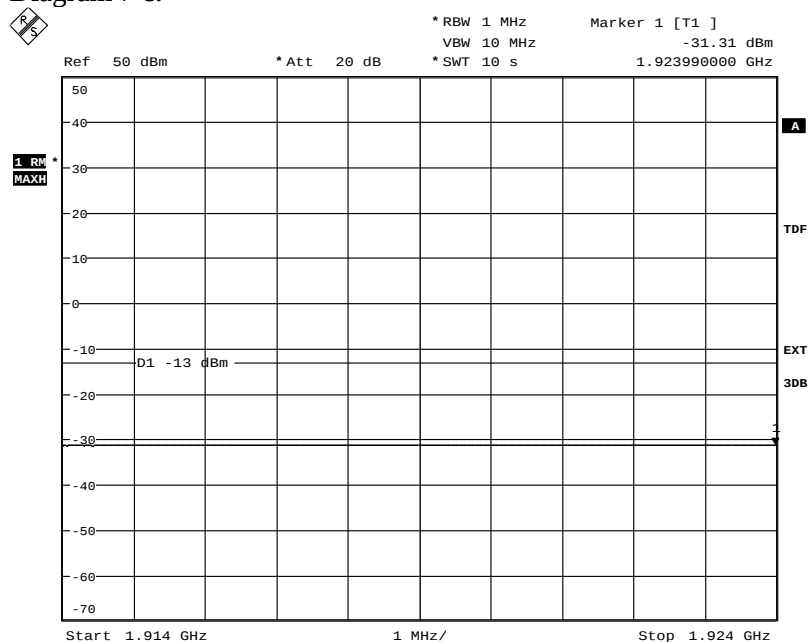
Diagram 7 b:



Date: 22.OCT.2013 13:13:01

Appendix 4

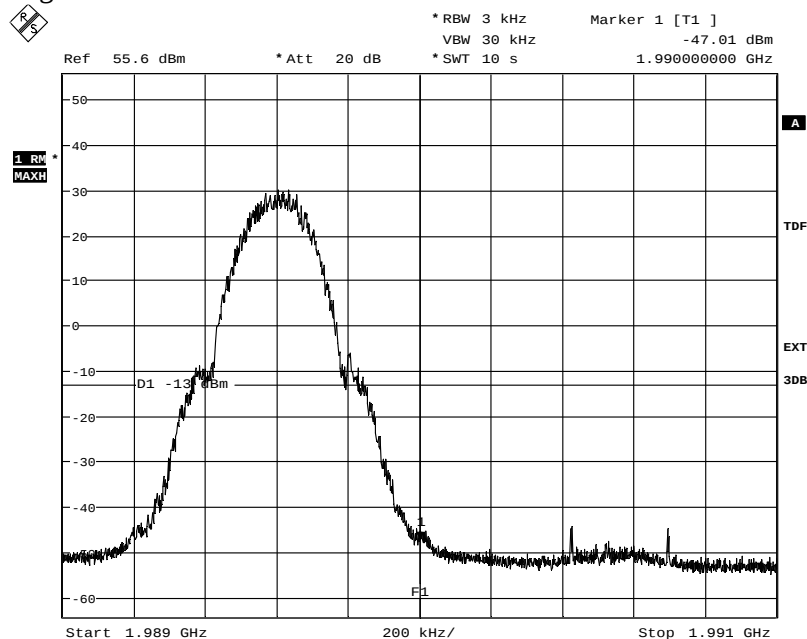
Diagram 7 c:



Date: 22.OCT.2013 13:14:12

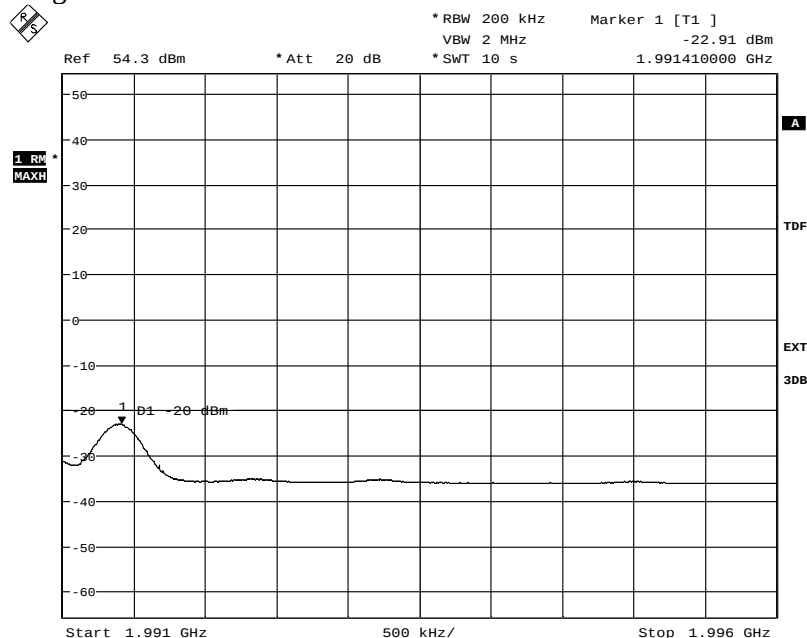
Appendix 4

Diagram 8 a:



Date: 22.OCT.2013 13:18:31

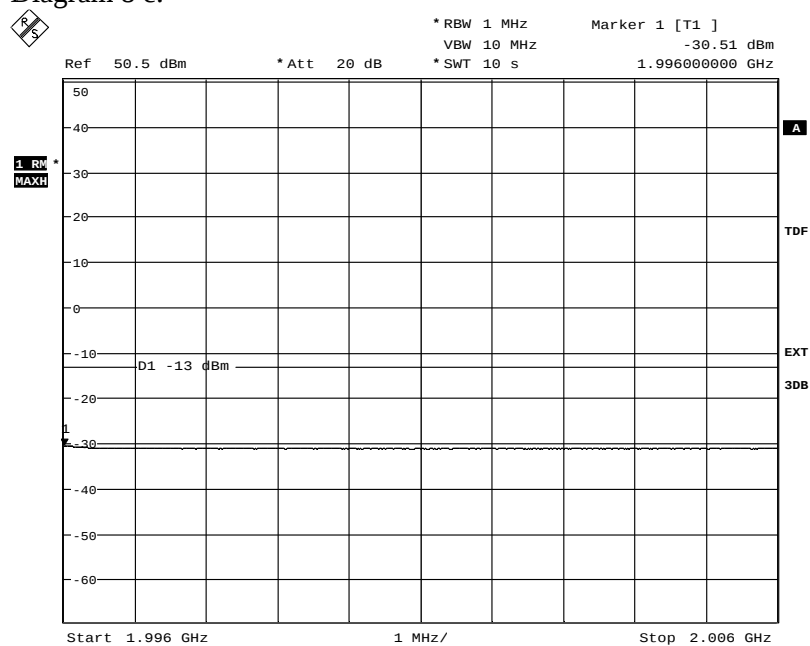
Diagram 8 b:



Date: 22.OCT.2013 13:00:04

Appendix 4

Diagram 8 c:



Date: 22.OCT.2013 13:01:34

Appendix 5

Conducted spurious emission measurements according to CFR 47 §24.238 / IC RSS-133 6.5

Date	Temperature	Humidity
2013-10-21	23 °C ± 3 °C	28 % ± 5 %
2013-10-22	23 °C ± 3 °C	39 % ± 5 %
2013-10-23	23 °C ± 3 °C	46 % ± 5 %

Test set-up and procedure

The measurements were made per definition in §24.238. The output was connected to a spectrum analyzer with a RBW setting of 1 MHz and RMS detector activated. The spectrum analyzer was connected to an external 10 MHz reference standard during the measurements

Measurement equipment	SP number
R&S FSQ 40	504 143
RF attenuator	901 508
HP filter	901 502
Testo 635, temperature and humidity meter	504 203

Measurement uncertainty: 3.7 dB

Results

Single carrier

Diagram	Modulation	Symbolic name	Tested Port
1 a+b+c+d	GMSK	B	RF A
2 a+b+c+d	GMSK	M	RF A
3 a+b+c+d	GMSK	M	RF B
4 a+b+c+d	GMSK	T	RF A

Appendix 5

Multi carrier

Diagram	Modulation	Symbolic name	Tested Port
5 a+b+c+d+e	GMSK	B2im1	RF A
6 a+b+c+d+e	GMSK	B2im2	RF A
7 a+b+c+d+e	GMSK	T2im1	RF A
8 a+b+c+d+e	GMSK	T2im2	RF A
9 a+b+c+d+e	GMSK	B4	RF A
10 a+b+c+d+e	GMSK	T4	RF A

Note: Measurements were limited to port RF A due to the measurement result in single carrier mode that shows that the ports are electrical identical as declared by the client.

Remark

The emission at 9 kHz on the plots was not generated by the test object. A complementary measurement with a smaller RBW showed that it was related to the LO feed-through.

The highest internal frequency as declared by the client was 1990 GHz, thus the choice of the upper frequency boundary was set to $10 \times 2 \text{ GHz} = 20 \text{ GHz}$ for emission measurements.

Limits

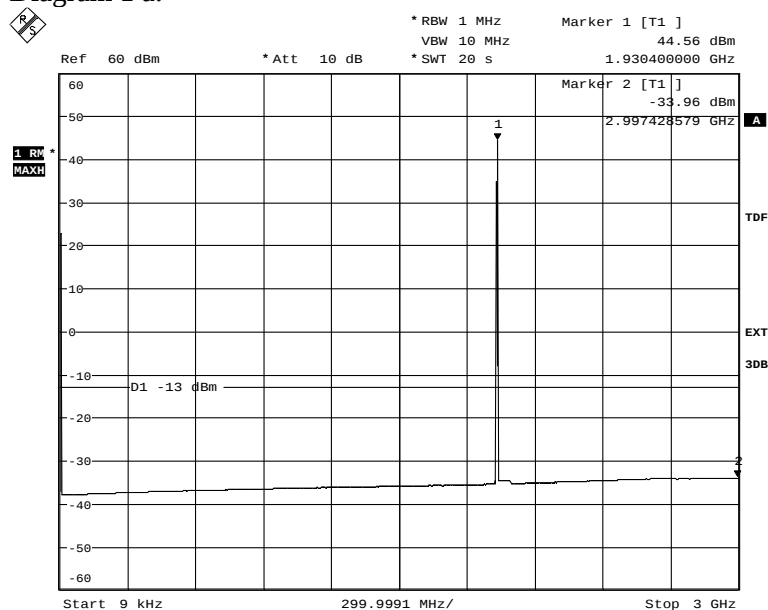
§24.238 and RSS-133 6.5

Outside a licensee's frequency band(s) of operation the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P) \text{ dB}$, resulting in a limit of -13 dBm per 1 MHz RBW.

Complies?	Yes
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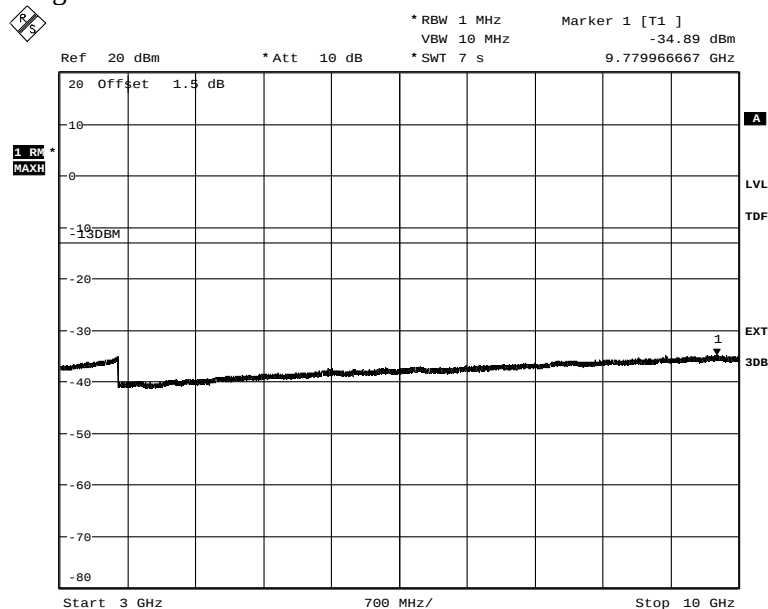
Appendix 5

Diagram 1 a:



Date: 21.OCT.2013 15:57:53

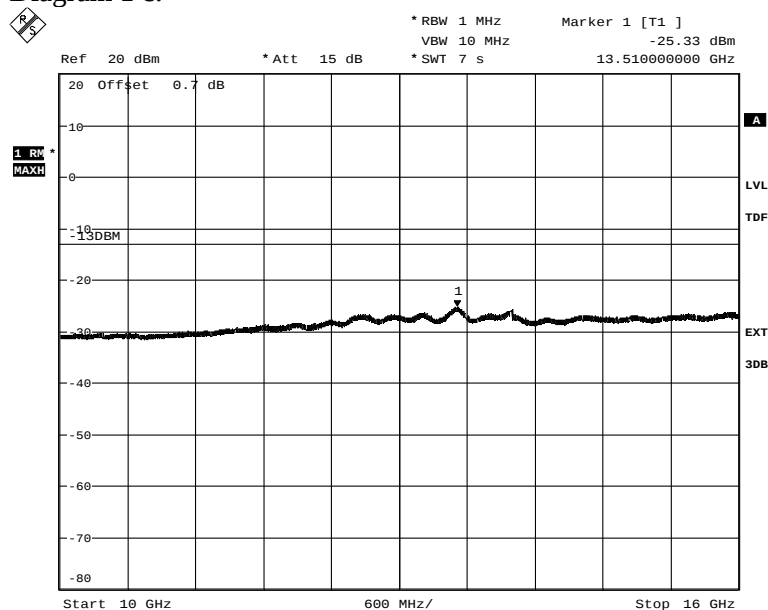
Diagram 1 b:



Date: 21.OCT.2013 15:56:18

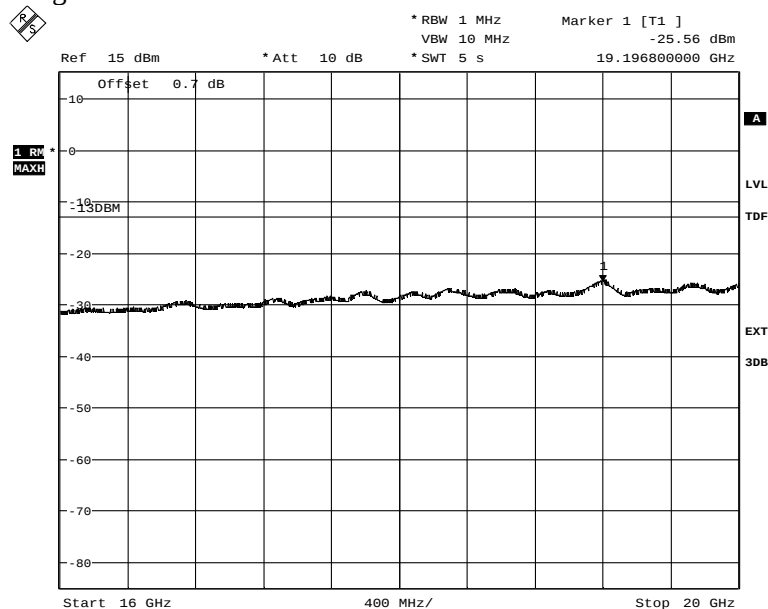
Appendix 5

Diagram 1 c:



Date: 21.OCT.2013 15:55:24

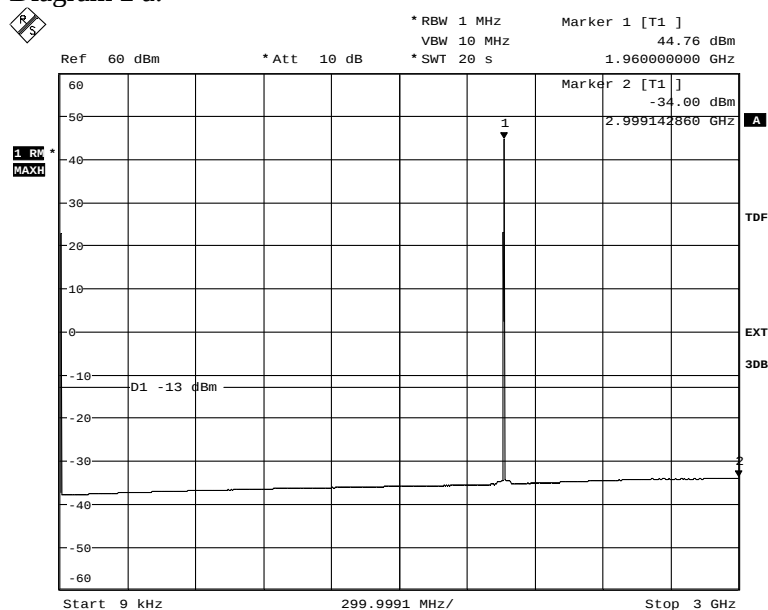
Diagram 1 d:



Date: 21.OCT.2013 15:54:19

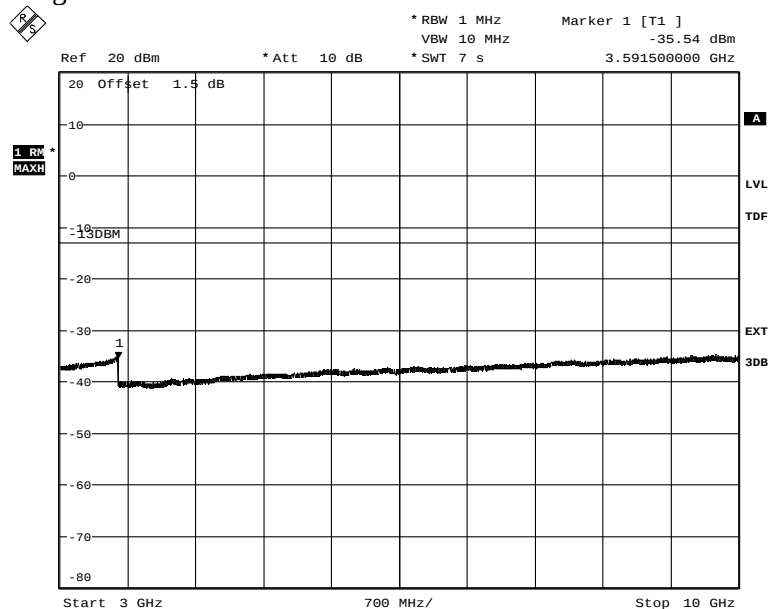
Appendix 5

Diagram 2 a:



Date: 21.OCT.2013 16:00:47

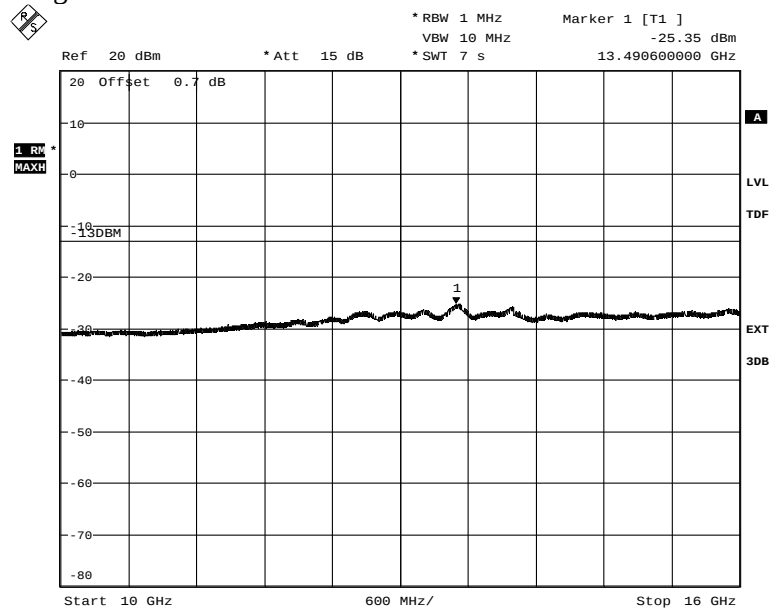
Diagram 2 b:



Date: 21.OCT.2013 16:02:21

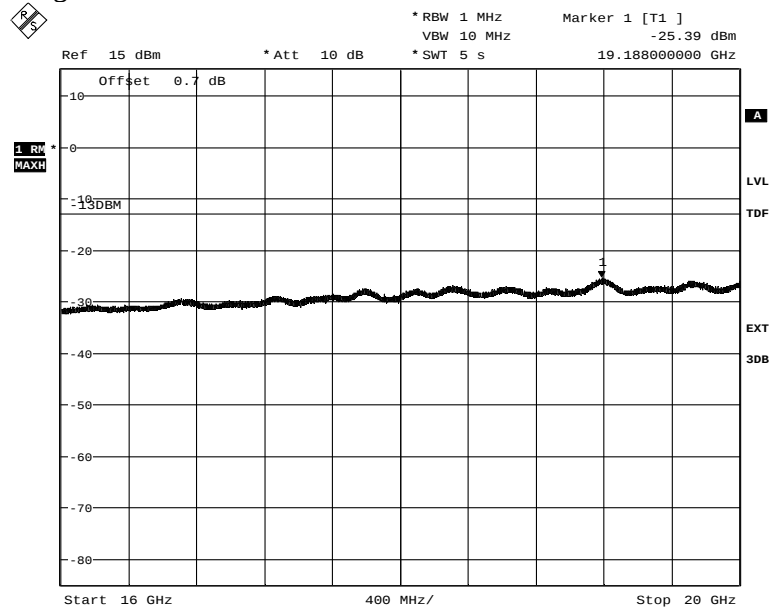
Appendix 5

Diagram 2 c:



Date: 21.OCT.2013 16:03:15

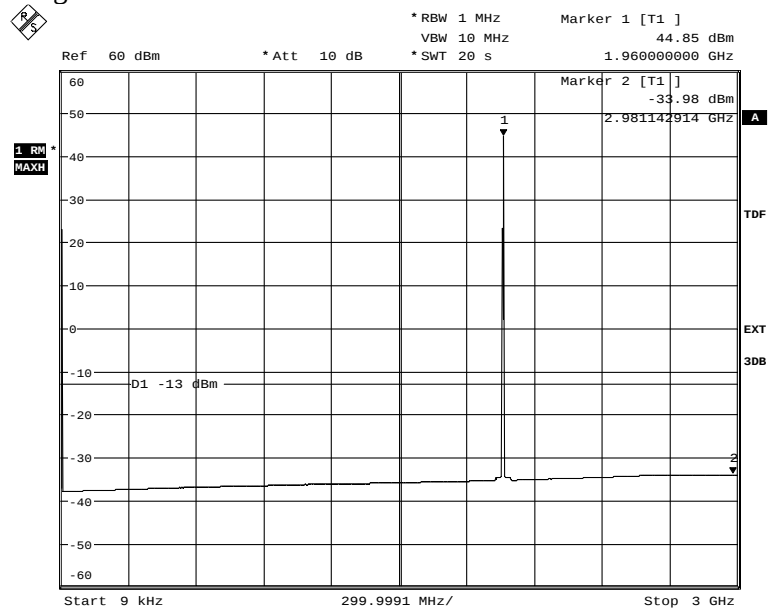
Diagram 2 d:



Date: 21.OCT.2013 16:04:20

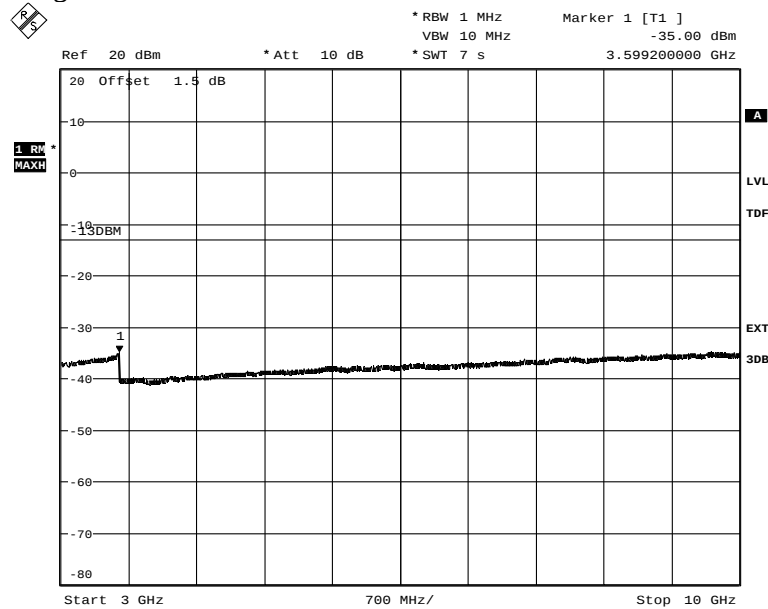
Appendix 5

Diagram 3 a:



Date: 21.OCT.2013 16:15:46

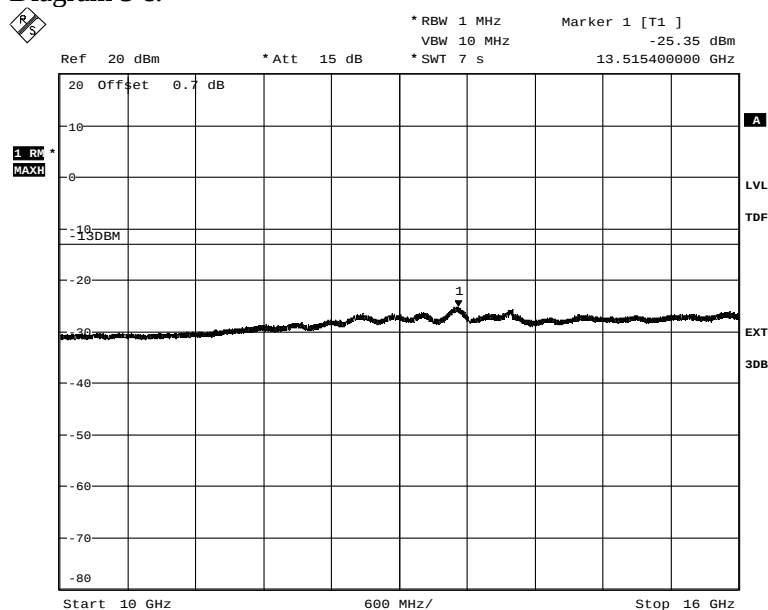
Diagram 3 b:



Date: 21.OCT.2013 16:11:40

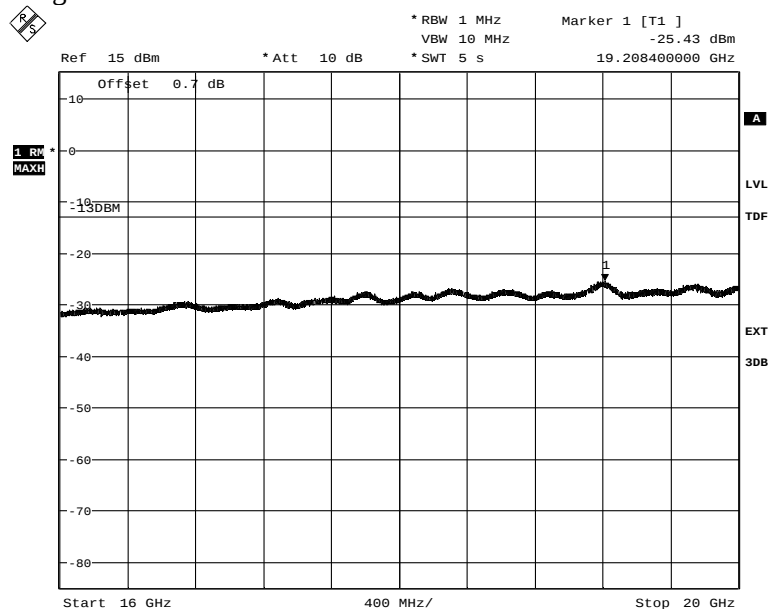
Appendix 5

Diagram 3 c:



Date: 21.OCT.2013 16:09:53

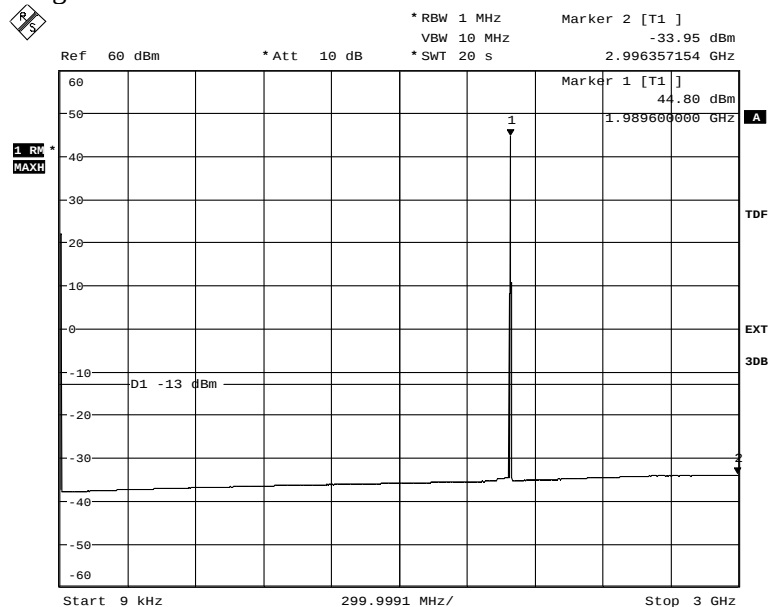
Diagram 3 d:



Date: 21.OCT.2013 16:08:57

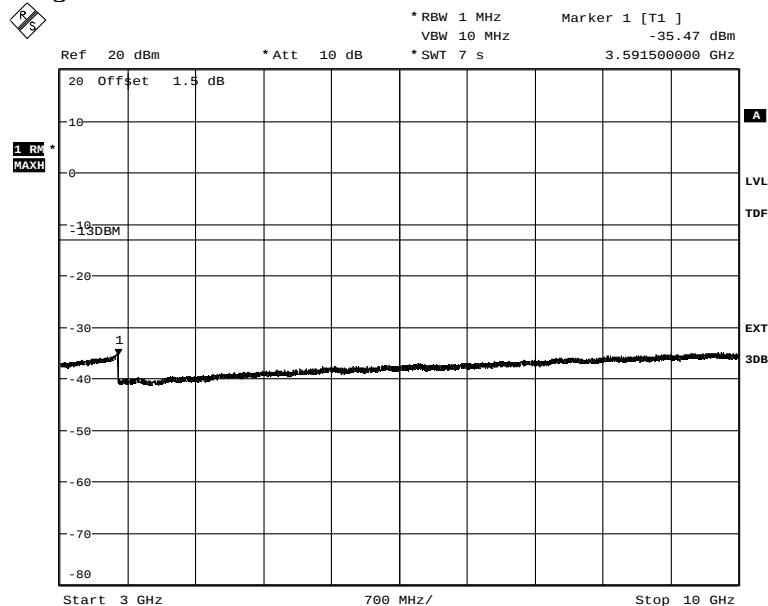
Appendix 5

Diagram 4 a:



Date: 21.OCT.2013 15:45:25

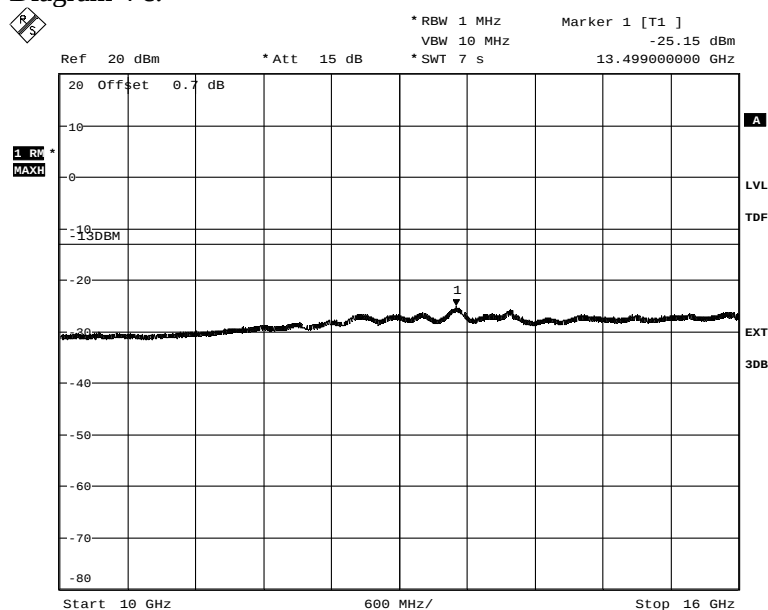
Diagram 4 b:



Date: 21.OCT.2013 15:47:17

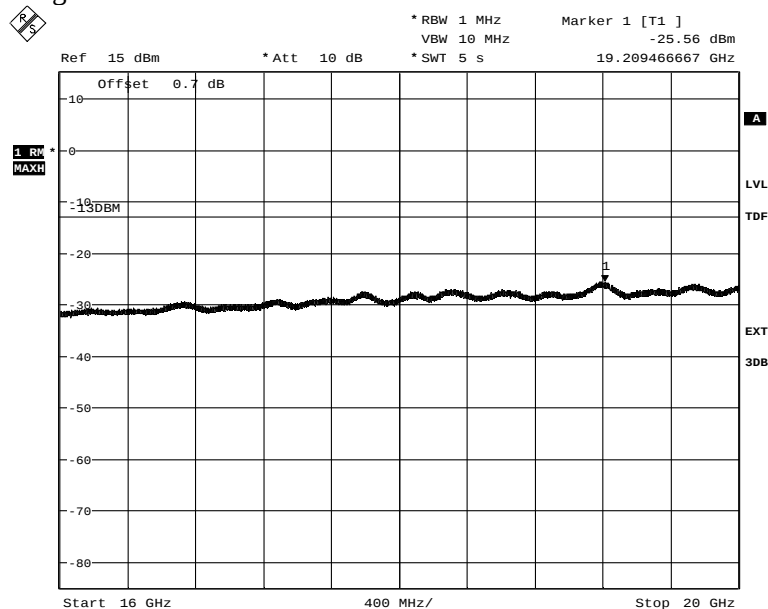
Appendix 5

Diagram 4 c:



Date: 21.OCT.2013 15:48:59

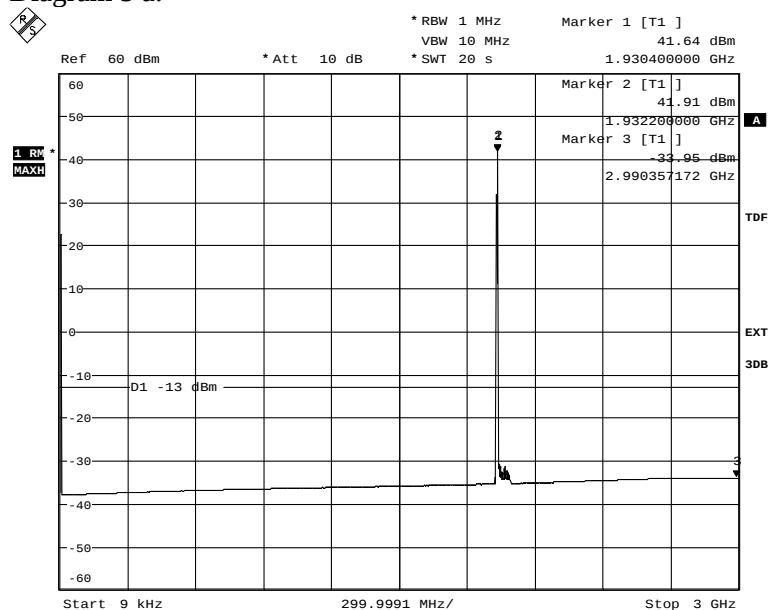
Diagram 4 d:



Date: 21.OCT.2013 15:49:50

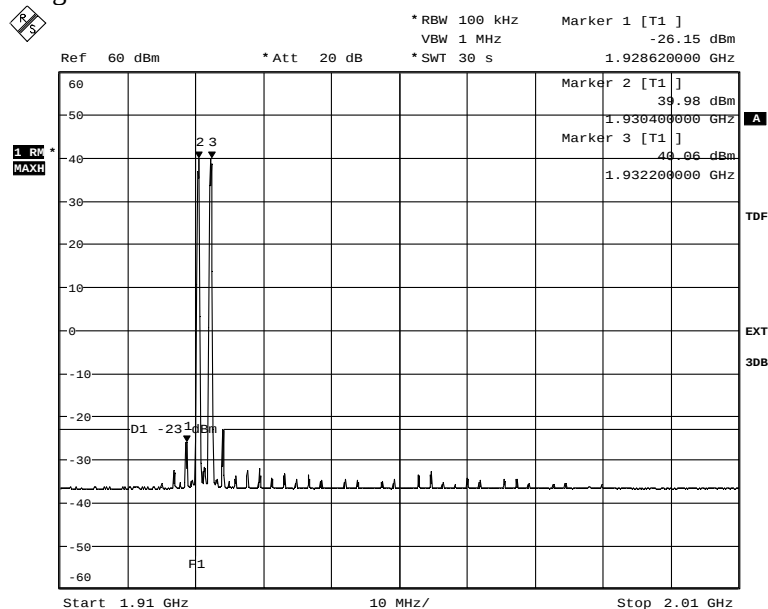
Appendix 5

Diagram 5 a:



Date: 22.OCT.2013 15:12:40

Diagram 5 b:

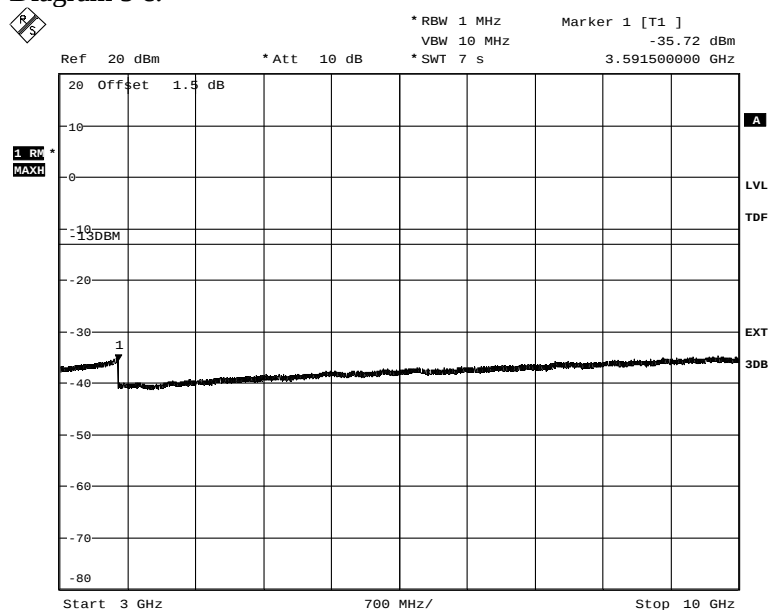


Date: 18.NOV.2013 13:33:39

The emission at 1928.62 MHz was -23.38 dBm measured with the channel power method with 1 MHz channel bandwidth.

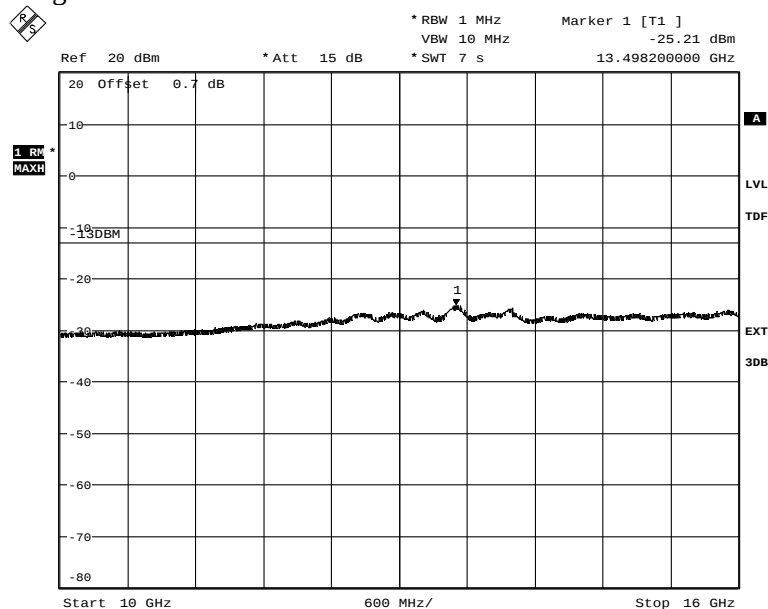
Appendix 5

Diagram 5 c:



Date: 22.OCT.2013 14:12:41

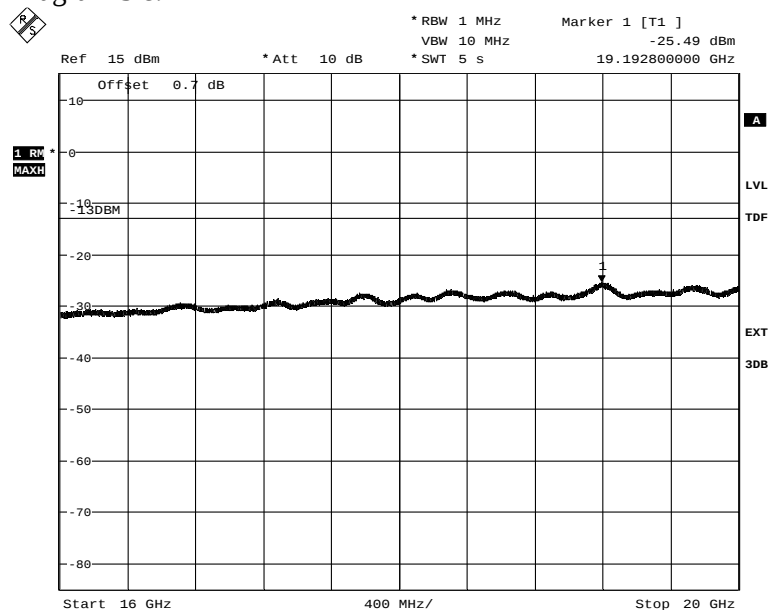
Diagram 5 d:



Date: 22.OCT.2013 14:11:42

Appendix 5

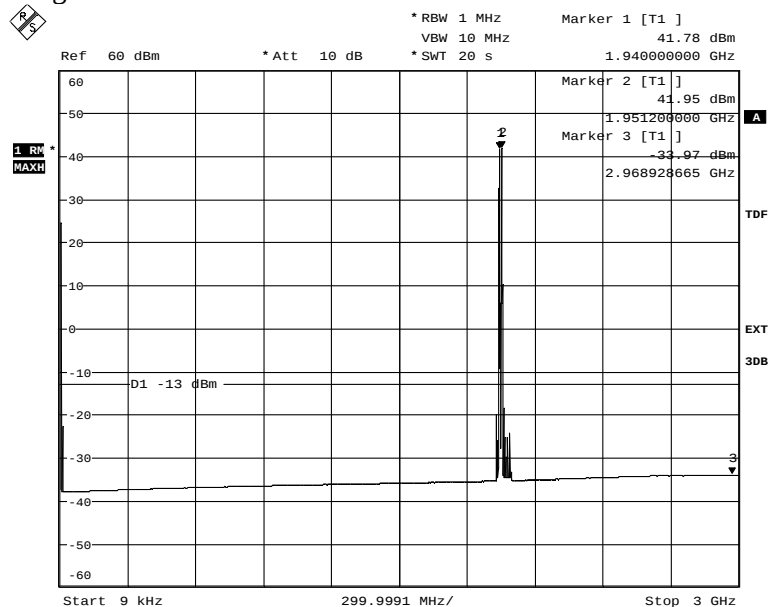
Diagram 5 e:



Date: 22.OCT.2013 14:00:07

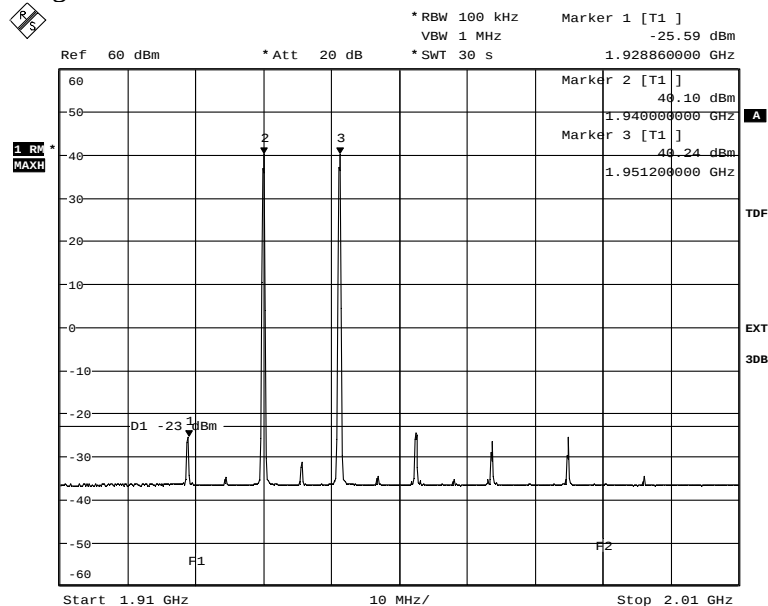
Appendix 5

Diagram 6 a:



Date: 23.OCT.2013 09:26:44

Diagram 6 b:

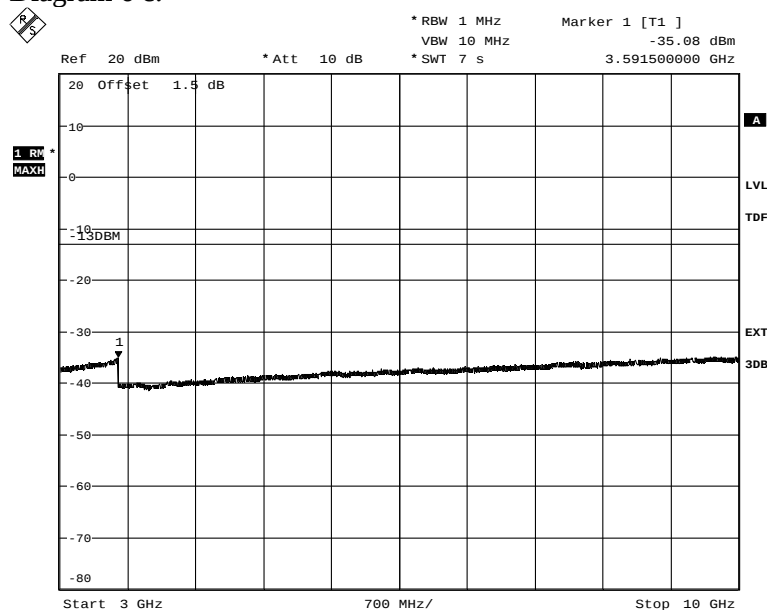


Date: 18.NOV.2013 13:20:04

The emission at 1928.86 MHz was -22.06 dBm measured with the channel power method with 1 MHz channel bandwidth.

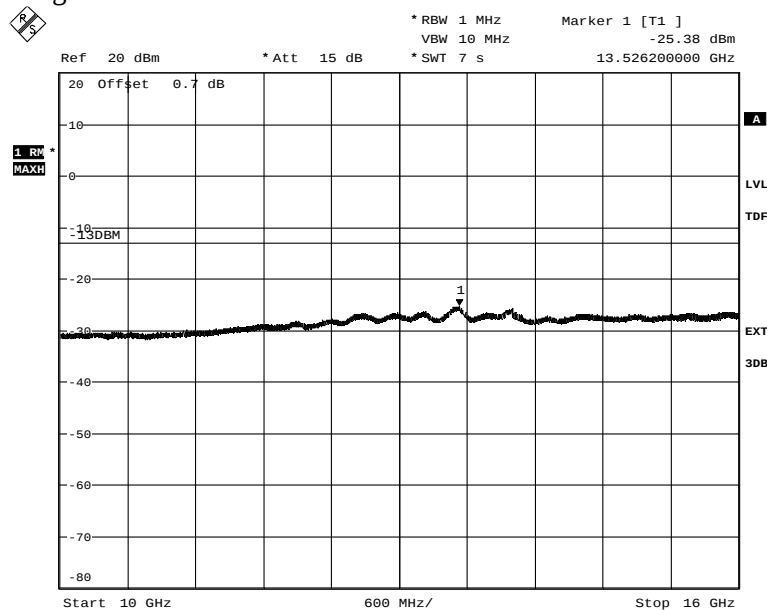
Appendix 5

Diagram 6 c:



Date: 23.OCT.2013 09:22:26

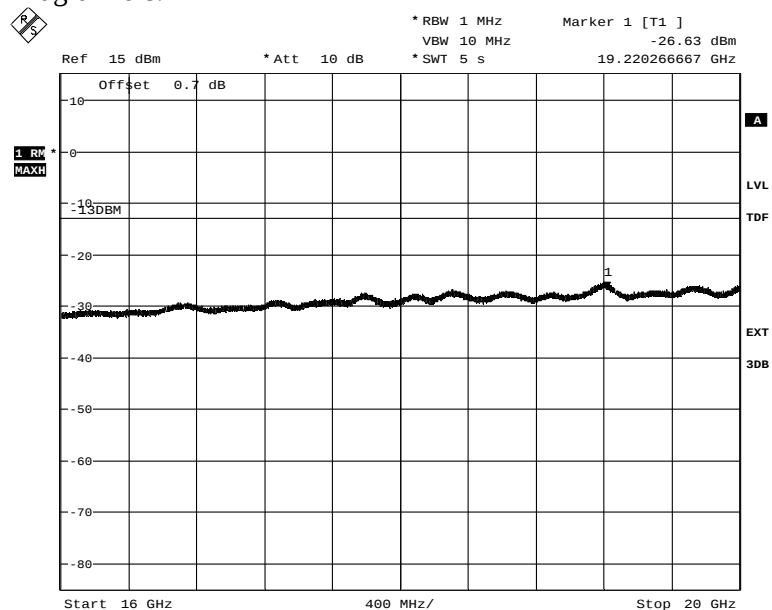
Diagram 6 d:



Date: 23.OCT.2013 09:21:29

Appendix 5

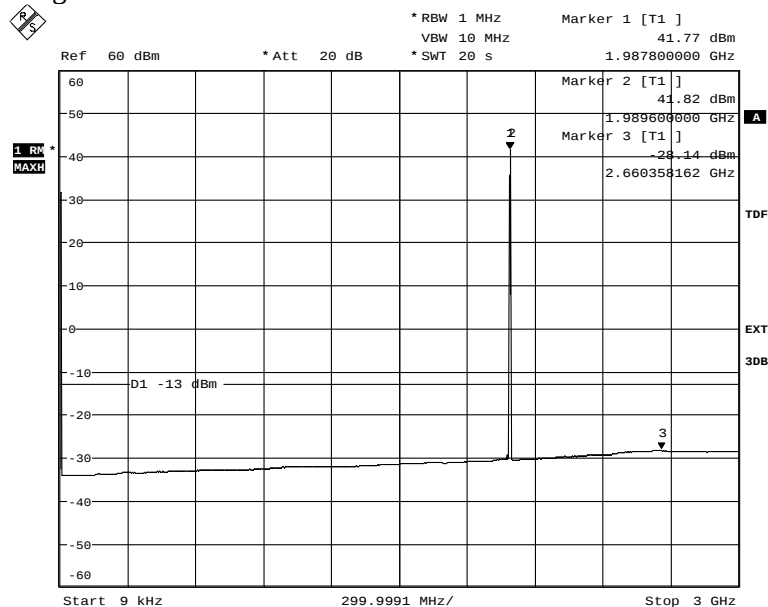
Diagram 6 e:



Date: 23.OCT.2013 09:20:30

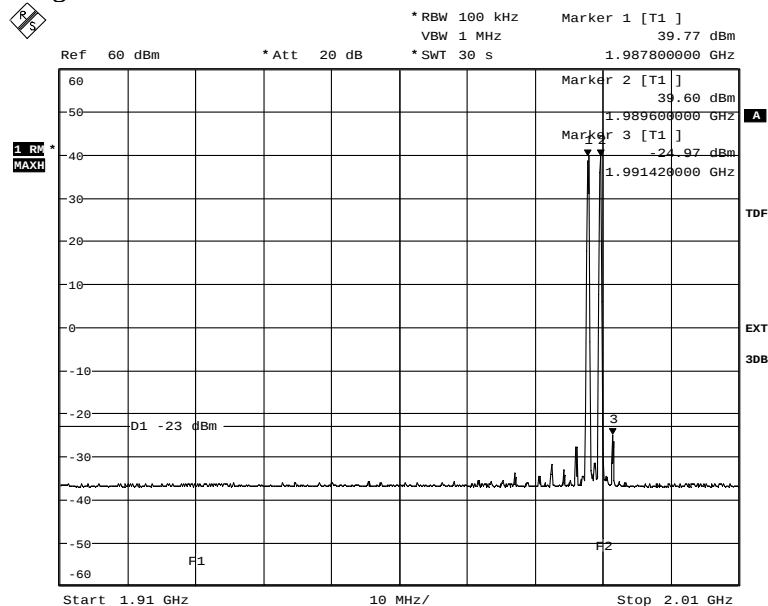
Appendix 5

Diagram 7 a:



Date: 22.OCT.2013 13:39:43

Diagram 7 b:

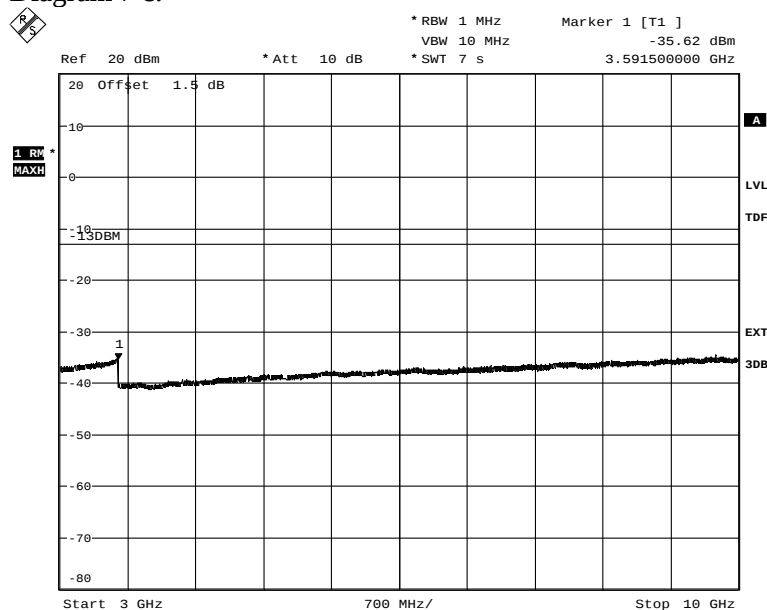


Date: 18.NOV.2013 13:03:08

The emission at 1991.42 MHz was -23.29 dBm measured with the channel power method with 1 MHz channel bandwidth.

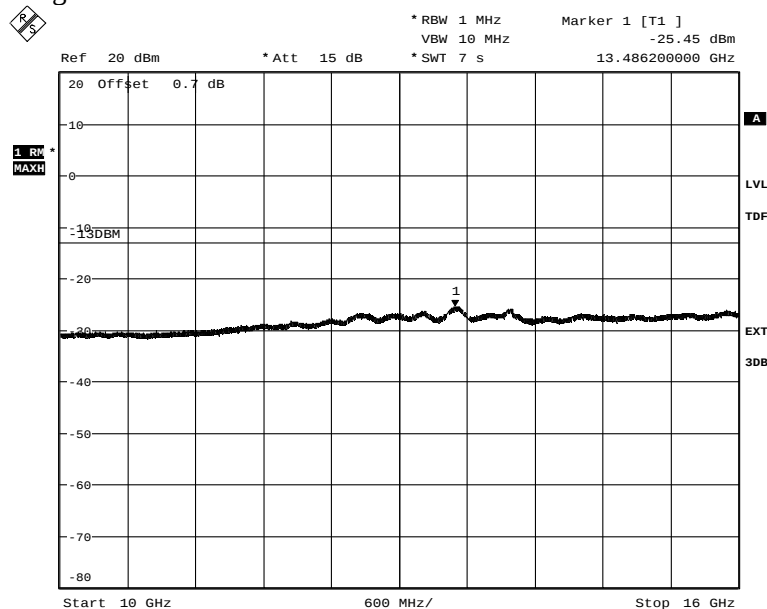
Appendix 5

Diagram 7 c:



Date: 22.OCT.2013 13:54:31

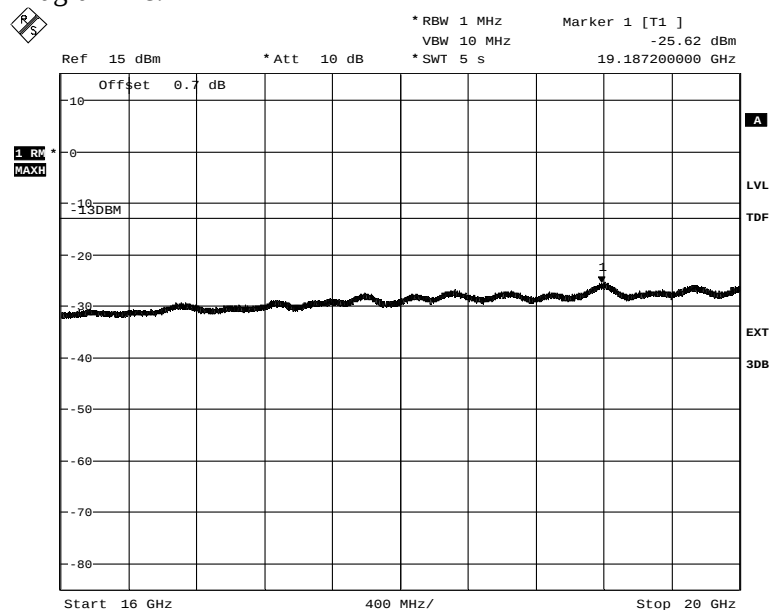
Diagram 7 d:



Date: 22.OCT.2013 13:55:39

Appendix 5

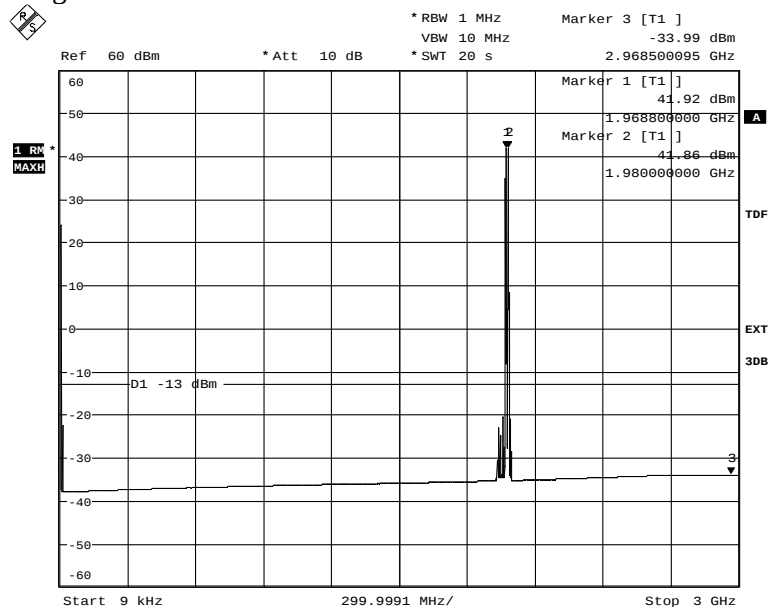
Diagram 7 e:



Date: 22.OCT.2013 13:56:35

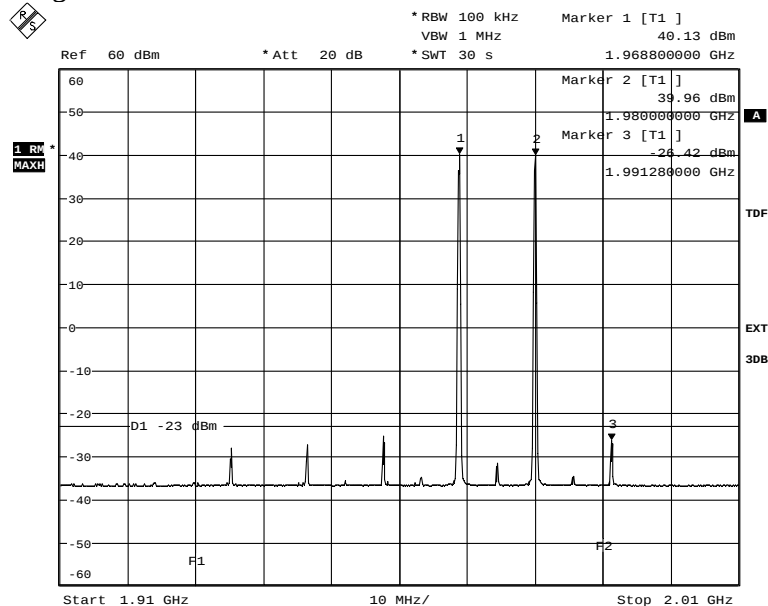
Appendix 5

Diagram 8 a:



Date: 23.OCT.2013 09:12:08

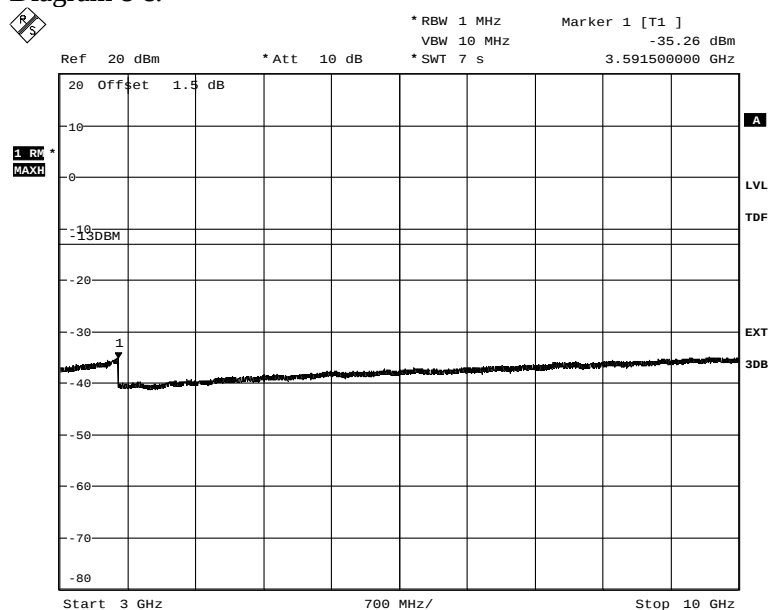
Diagram 8 b:



Date: 18.NOV.2013 13:56:55

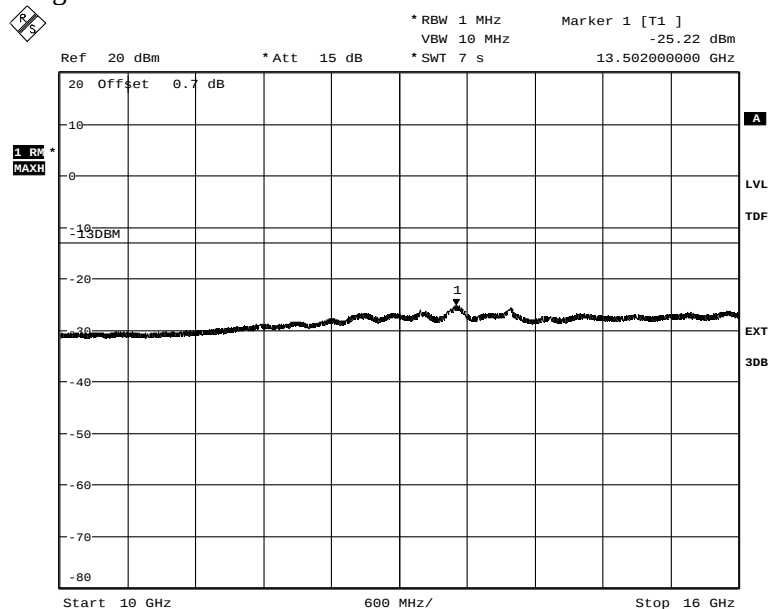
Appendix 5

Diagram 8 c:



Date: 23.OCT.2013 09:13:46

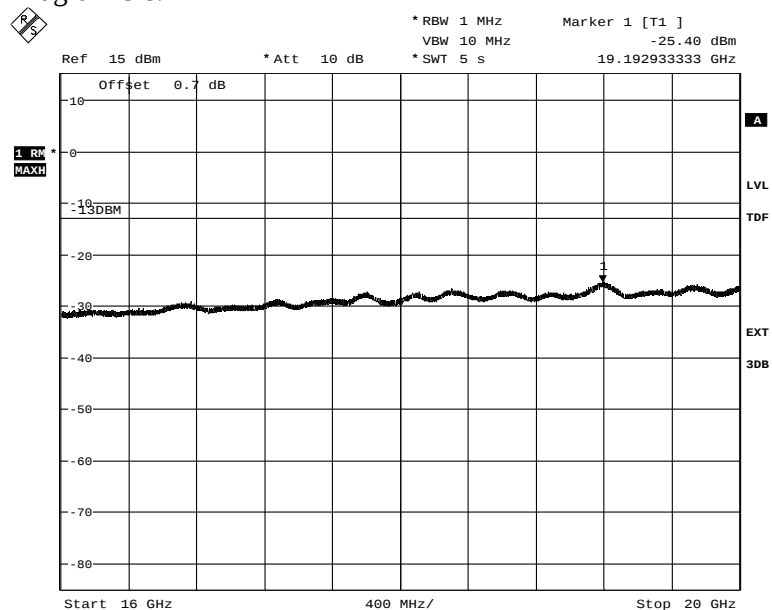
Diagram 8 d:



Date: 23.OCT.2013 09:14:53

Appendix 5

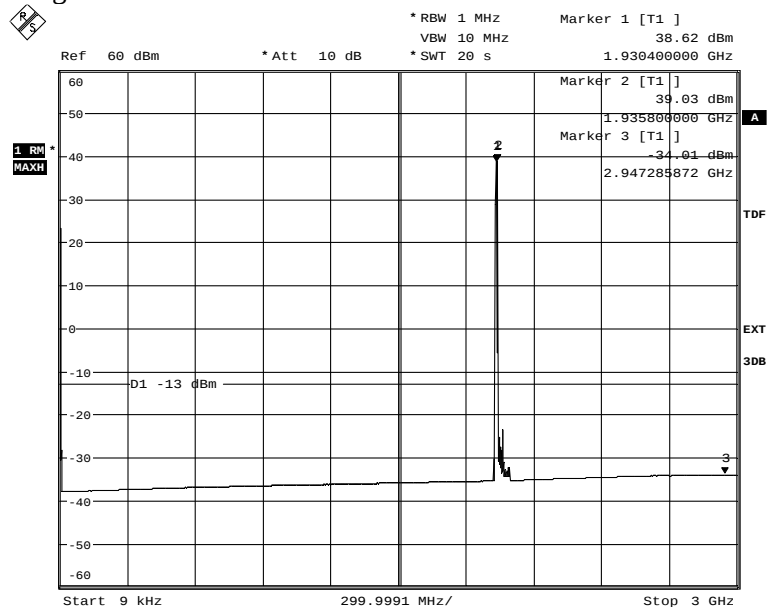
Diagram 8 e:



Date: 23.OCT.2013 09:16:00

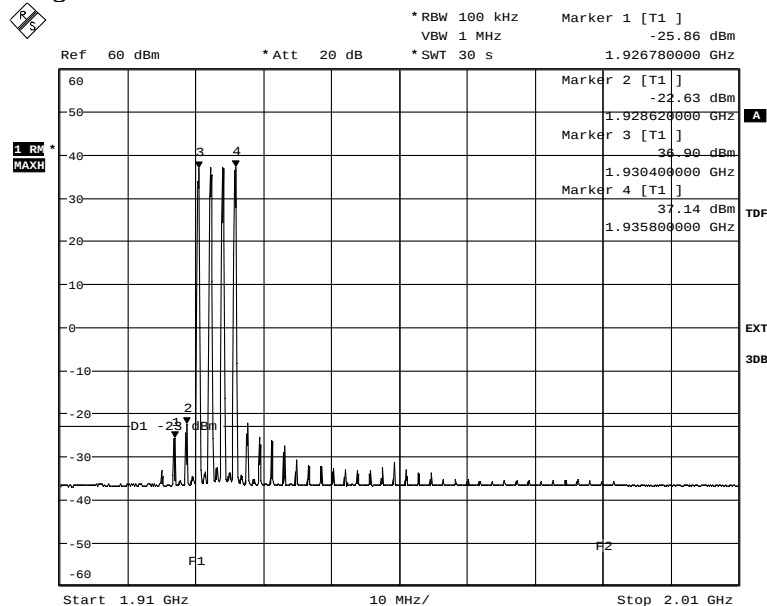
Appendix 5

Diagram 9 a:



Date: 18.NOV.2013 14:01:21

Diagram 9 b:

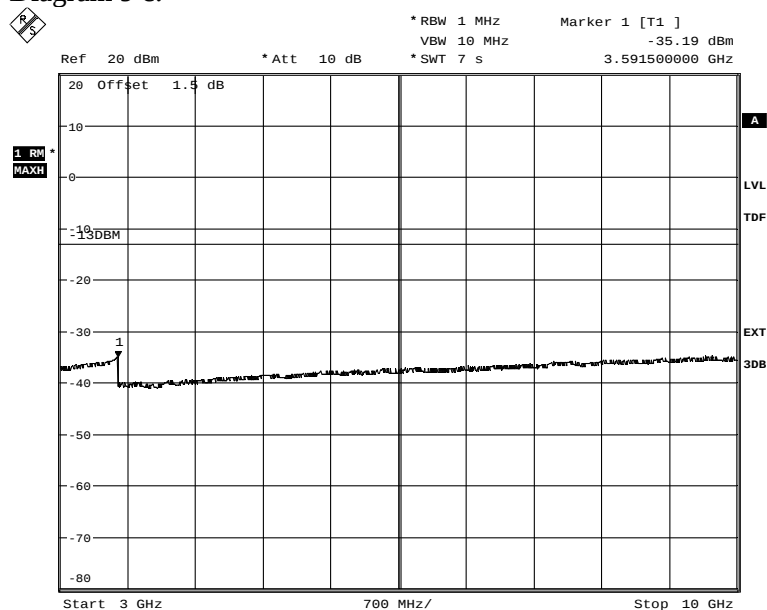


Date: 18.NOV.2013 12:40:20

The emission at 1926.78 MHz was -24.34 dBm and at 1928.62 was -21.64 dBm, measured with the channel power method with 1 MHz channel bandwidth.

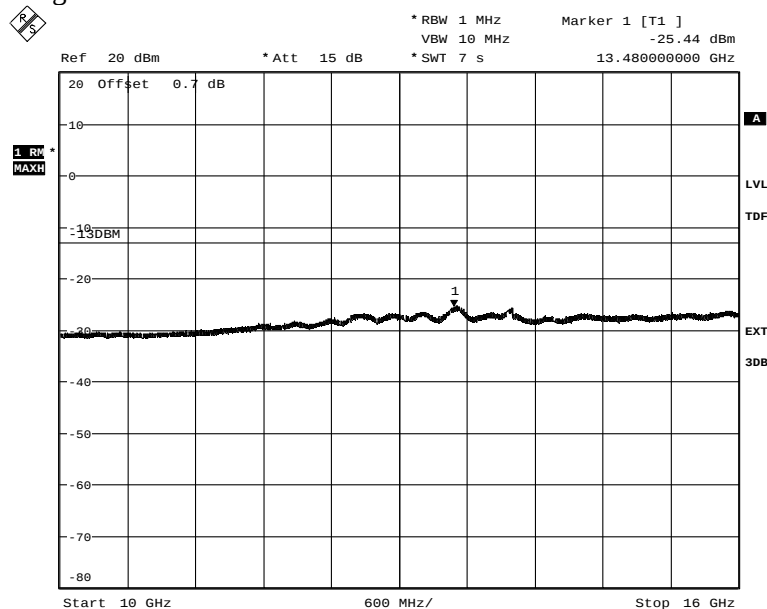
Appendix 5

Diagram 9 c:



Date: 23.OCT.2013 11:17:06

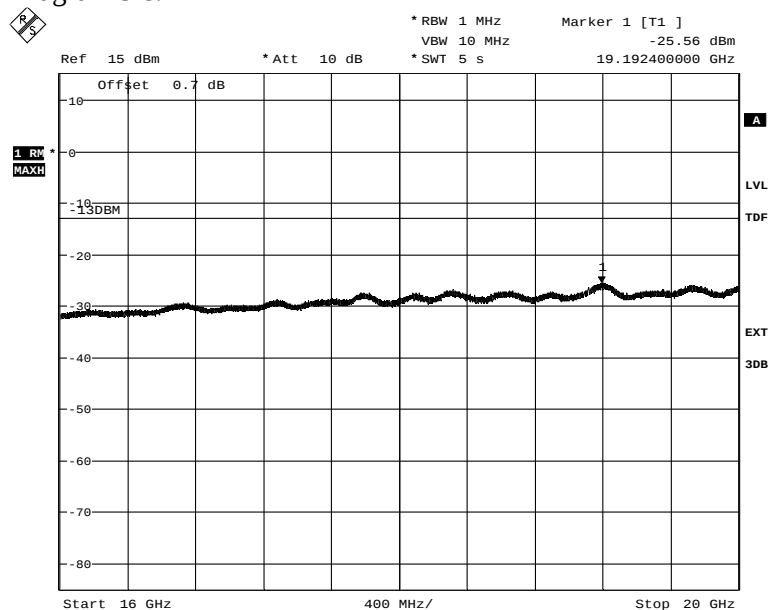
Diagram 9 d:



Date: 23.OCT.2013 11:18:10

Appendix 5

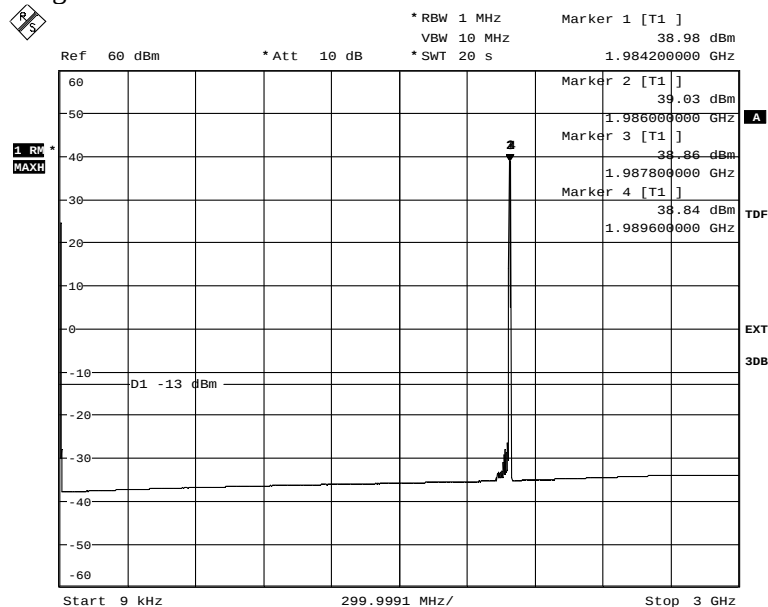
Diagram 9 e:



Date: 23.OCT.2013 11:19:01

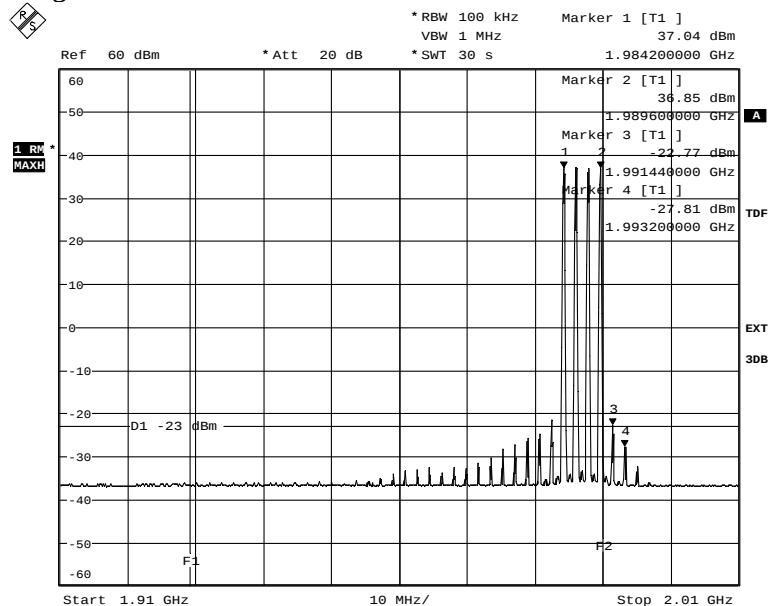
Appendix 5

Diagram 10 a:



Date: 23.OCT.2013 09:55:29

Diagram 10 b:

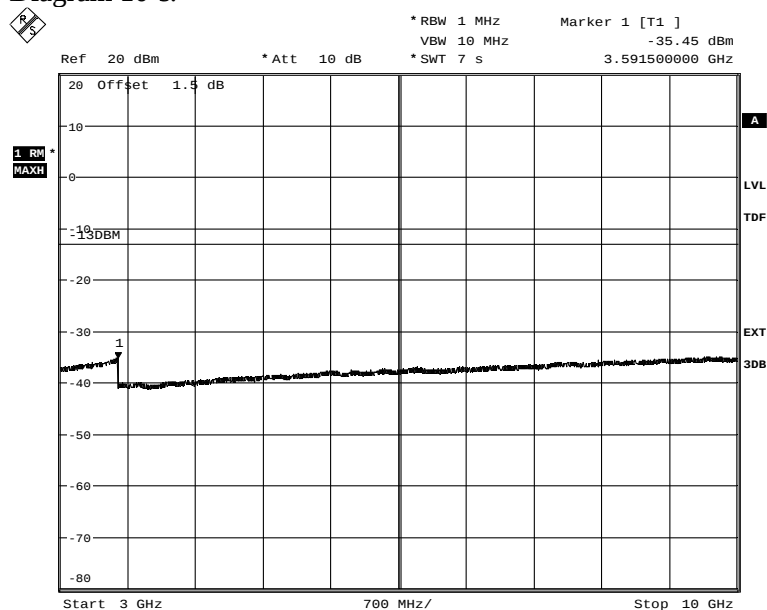


Date: 18.NOV.2013 12:50:35

The emission at 1991.44 MHz was –22.22 dBm measured with the channel power method with 1 MHz channel bandwidth.

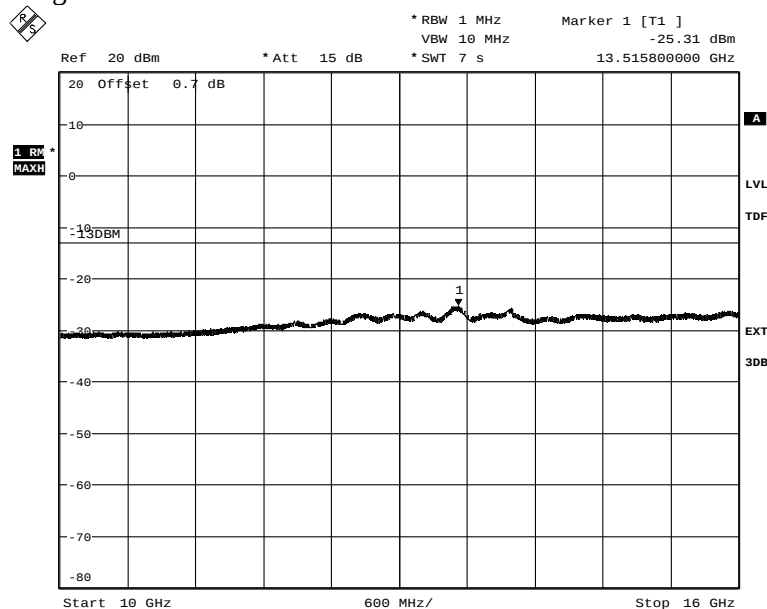
Appendix 5

Diagram 10 c:



Date: 23.OCT.2013 10:17:35

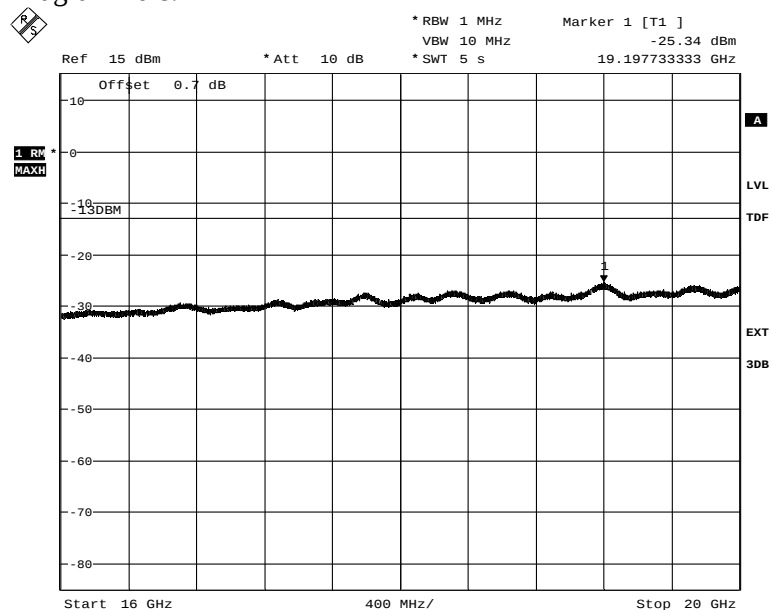
Diagram 10 d:



Date: 23.OCT.2013 10:18:30

Appendix 5

Diagram 10 e:

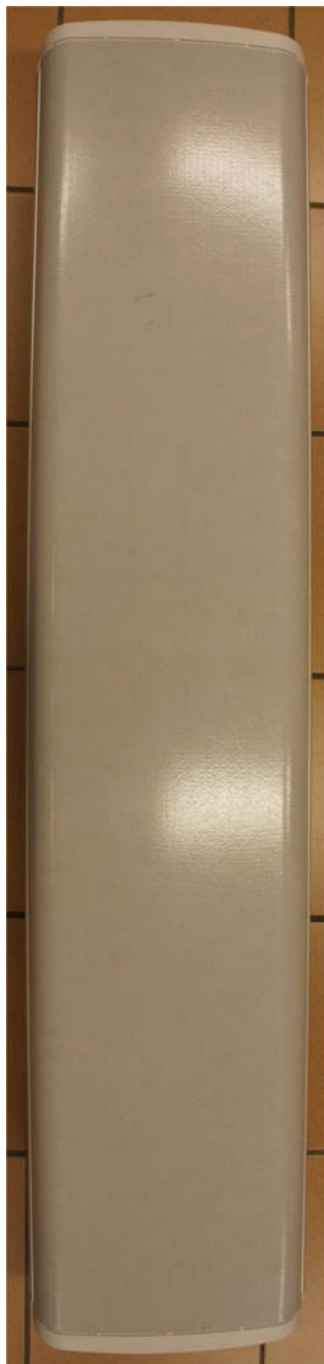


Date: 23.OCT.2013 10:19:28

Appendix 6

External photos

Front side



Rear side



Appendix 6

Left side



Right side



Appendix 6

Top side



Bottom side

