

# FCC TEST REPORT

**Applicant:** Signalwing Corporation

**Address of Applicant:** Block B, 8th Floor, Yongde Industrial Center, Fuyong Town, Bao'an District, Shenzhen, China

## Equipment Under Test (EUT)

**Product Name:** Mobile Signal Booster

**Model No.:** J4I-LTE-37, J4I-LTE-33, J4I-LTE-30

**FCC ID:** 2ACVLJ4ILTE

**Trade mark:** Signalwing

**Applicable standards:** FCC CFR Title 47 Part 27  
FCC CFR Title 47 Part 2

**Date of sample receipt:** 01 Aug., 2014

**Date of Test:** 01 Aug., to 22 Aug., 2014

**Date of report issued:** 22 Aug., 2014

**Test Result:** PASS\*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang  
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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**2 Version**

Version No.	Date	Description
00	22 Aug., 2014	Original

**Prepared By:****Date:**

22 Aug., 2014

**Report Clerk****Check By:****Date:**

22 Aug., 2014

**Project Engineer**

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## 4 Test Summary

Test Item	Section	Result
Maximum Permissible exposure(MPE)	§1.1307(b)(1), §2.1091	PASS* (Please refer to MPE Report)
RF Output Power	§2.1046(a), §27.50	PASS
Occupied Bandwidth	§2.1049	PASS
Spurious Emissions at Antenna Terminal	§2.1051, §27.53	PASS
Inter-modulation	§2.1051, §27.53	PASS
Field Strength of Spurious Radiation	§ 2.1053, §27.53	PASS
Out of band emission, Band Edge	§27.53	PASS
Frequency stability vs. temperature Frequency stability vs. voltage	§ 2.1055, § 27.54	N/A*

Remark:

N/A\*: Not application for booster.

## 5 General Information

### 5.1 Client Information

Applicant:	Signalwing Corporation
Address of Applicant:	Block B, 8th Floor, Yongde Industrial Center, Fuyong Town, Bao'an District, Shenzhen, China
Manufacturer/Factory:	Signalwing Corporation
Address of Manufacturer/Factory :	Block B, 8th Floor, Yongde Industrial Center, Fuyong Town, Bao'an District, Shenzhen, China

### 5.2 General Description of E.U.T.

Product Name:	Mobile Signal Booster
Model No.:	J4I-LTE-37, J4I-LTE-33, J4I-LTE-30
Power supply:	Model No.: GPAD201M27~3B Input: 220/85-300VAC, 50/60Hz Output: Vo1: 27V MAX /0-5A Vo2: 9V MAX /0-8A
Operating Temperature:	Remote Unit: -25°C to + 55°C
Operating Humidity:	5%~95%

#### Technical Parameter:

Frequency Range	700MHz Lower ABC Band	Lower A	Downlink	728 MHz~734 MHz	
			Uplink	698 MHz~704 MHz	
		Lower B	Downlink	734 MHz~740 MHz	
			Uplink	704 MHz~710 MHz	
		Lower C	Downlink	740 MHz~746 MHz	
			Uplink	710 MHz~716 MHz	
		Lower Full Band	Downlink	728 MHz~746 MHz	
			Uplink	698 MHz~716 MHz	
	700MHz Upper C Band	Downlink		746 MHz~757 MHz	
		Uplink		776 MHz~787 MHz	
Maximum Output Power		Downlink≤38dBm, Uplink≤26dBm			
Max Gain		Downlink≤90dB , Uplink≤85dB			
Modulation and Designator		LTE;G7D			
Antenna Type		External antenna			
Antenna Gain		Donor Antenna: 19 dBi, Service Antenna: 7 dBi			
Remark		The model No. J4I-LTE-37, J4I-LTE-33, J4I-LTE-30 were identical inside, the electrical circuit design, layout, components used and internal wiring, They named differently just due to different output power levels and gains achieved by adjusting the potentiometer, or different shell or different MGC function (different DIP switch), Base on the differences between them, we selected the model J4I-LTE-37 for full Test.			

### 5.3 Related Submittal(s) / Grant (s)

No related submittal(s)

### 5.4 Test Methodology

ANSI C63.4: 2003	Methods of Measurement of Radio-Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI/TIA-603-C 2004	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
KDB 935210 D02 v02r01	Signal Boosters Certification

### 5.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Registration No.: 817957**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 817957, February 27, 2012.

● **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

### 5.6 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,  
Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755-23118282

Fax: +86-755-23116366

**5.7 Test Instruments list**

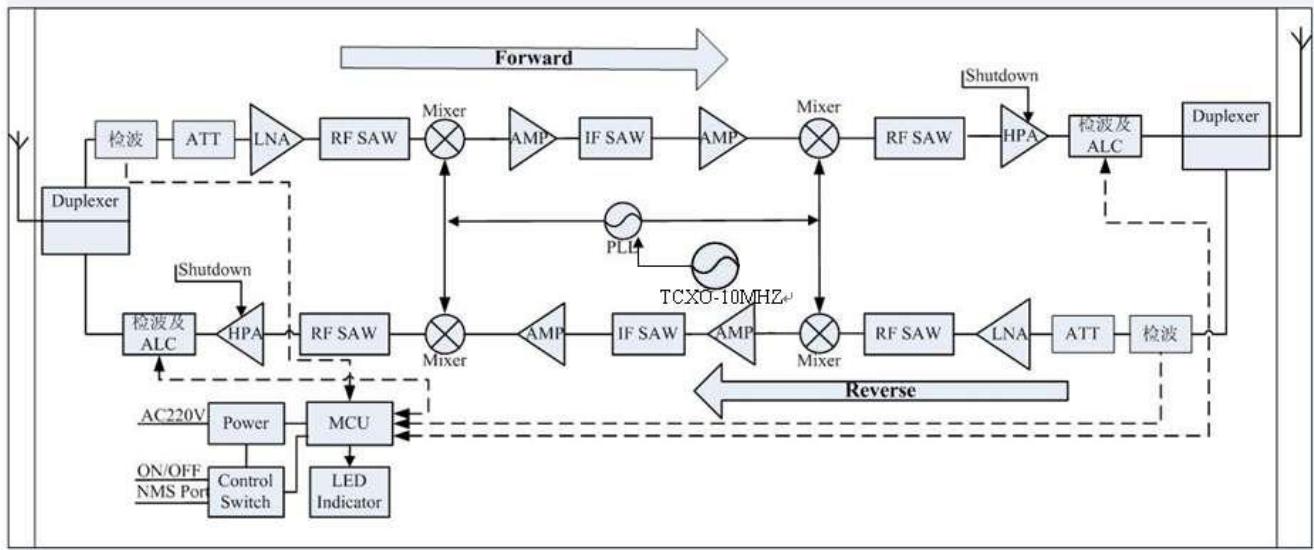
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	3m SAC	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	June 09 2014	June 08 2015
2	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	CCIS0005	June 04 2014	June 03 2015
3	Double - ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	May 28 2014	May 27 2015
4	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
5	Amplifier (10kHz-1.3GHz)	HP	8447D	CCIS0003	Apr. 01 2014	Mar. 31 2015
6	Amplifier (1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	June. 09 2014	June. 08 2015
7	Positioning Controller	UC	UC3000	CCIS0015	N/A	N/A
8	Power Meter	Agilent	E4418B	GB42421076	Apr. 15 2014	Apr. 14 2015
9	Power Sensor	HP	8481A	US37293152	Apr. 15 2014	Apr. 14 2015
10	Signal Generator	Aero flex	IFR3413	341006/286	Apr. 15 2014	Apr. 14 2015
11	Signal Generator	Aero flex	IFR2026Q	112282/081	May. 10 2014	May. 9 2015
12	Vector Signal Generator	Agilent	E4438C	MY45093111	May. 10 2014	May. 9 2015
13	Network analyzer	HP	8753D	3410A08987	May. 10 2014	May. 9 2015
14	Spectrum Analyzer	Rohde & Schwarz	FSP30	CCIS0023	May.10.2014	May. 9.2015
15	Universal radio communication tester	Rohde & Schwarz	CMU200	CCIS0069	May.10.2014	May. 9 2015

## 6 TEST CONFIGURATION AND CONDITIONS

### 6.1 EUT Configuration

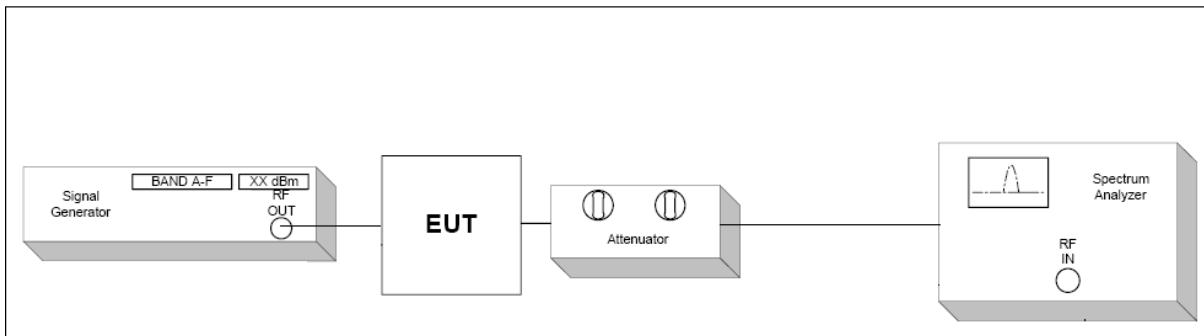
J4I-LTE is basically a bi-directional booster, the downlink signals are received by the booster from BTS by the donor antenna, filtered by its combiner, internal duplexers and FC unit, amplified by low noise amplifier (LNA) and downlink PA unit, and then sent via the server antenna to the coverage area. The bandwidth is wide band frequency.

The uplink signal of mobile terminal from the coverage area is input via the server antenna, then filtered by combiner, duplexers and FC unit, amplified by the uplink low noise amplifier (LNA) and the uplink PA unit and finally sent via the donor antenna to the BTS.

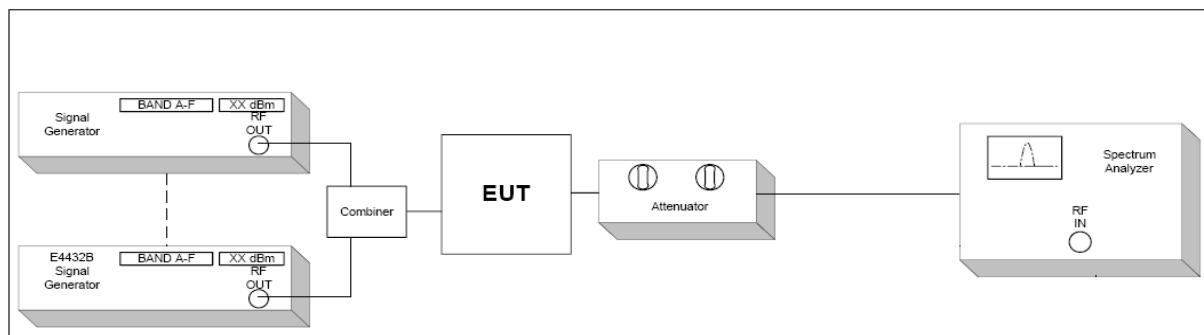


## 6.2 Configuration of Tested System

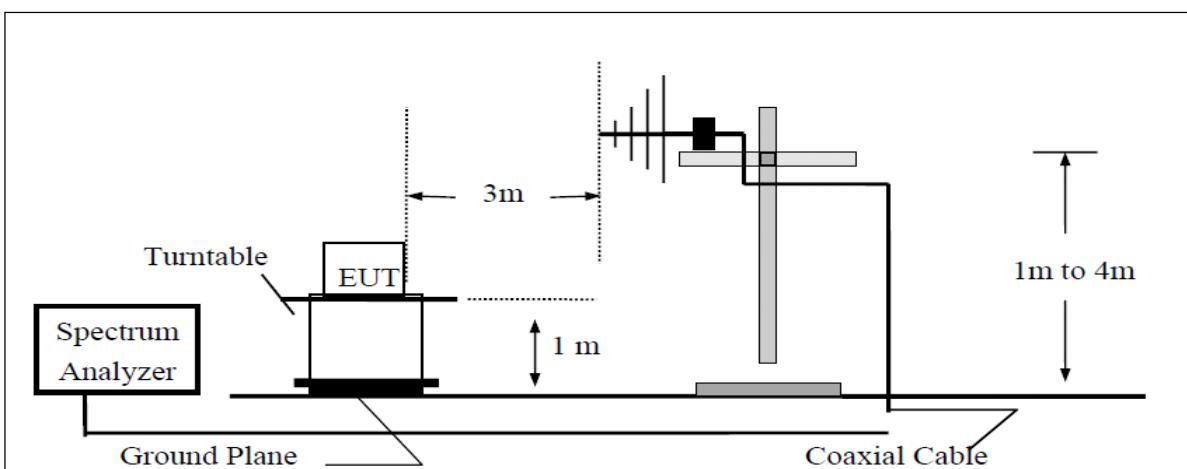
(A) RF Output Power, Occupied Bandwidth, Spurious Emissions at Antenna Terminal, Band Edge, Test Setup



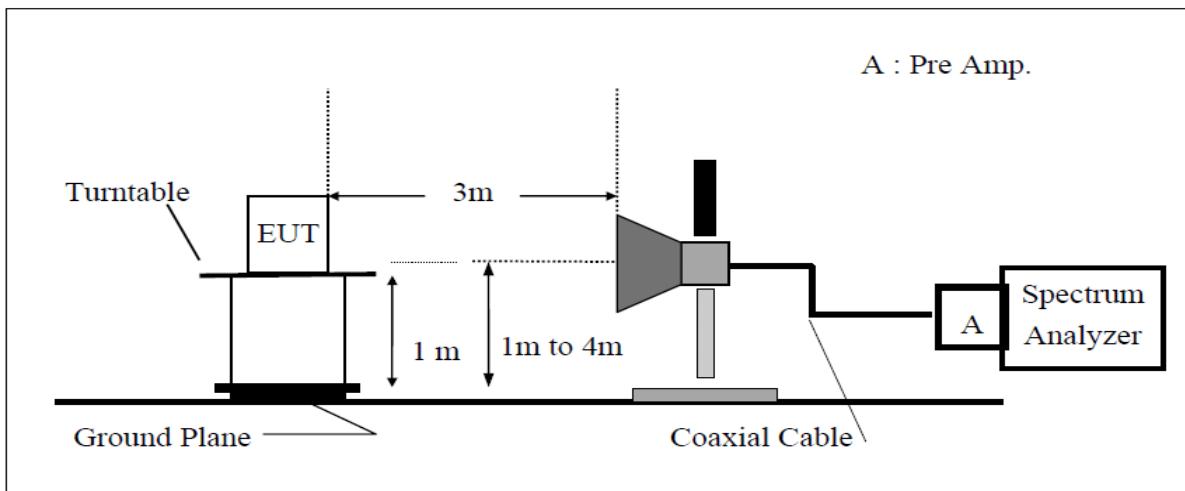
(B) Inter-modulation Test Setup



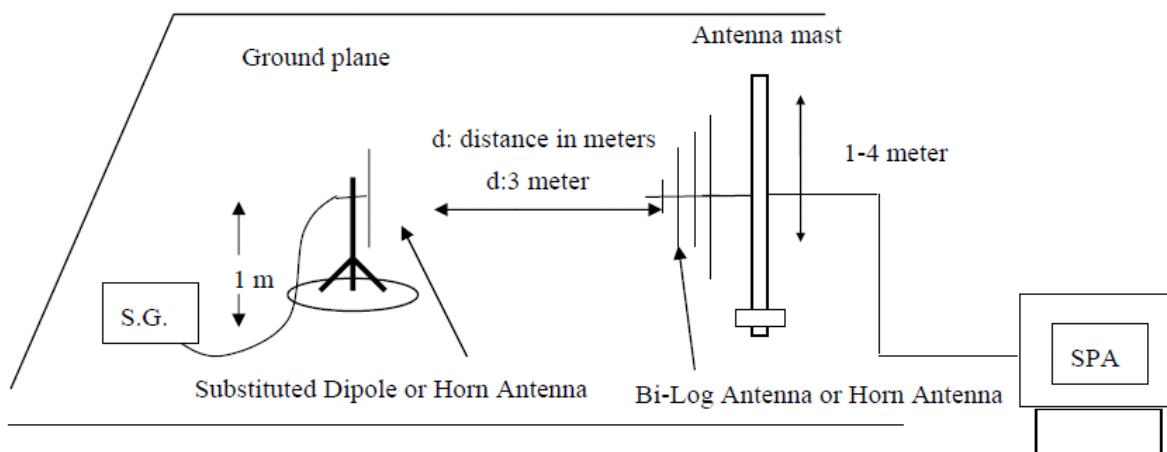
(C) Radiated Emission Test Setup, Frequency below 1000MHz



(D) Radiated Emission Test Setup Frequency over 1 GHz



(E) Substituted Method Test Setup



### 6.3 Test Environments

Condition	Minimum value	Maximum value
Barometric pressure	86 kPa	106 kPa
Temperature	15°C	30°C
Relative Humidity	25 %	75 %
Power supply range	±5% of rated voltages	
Normal Test Condition	(1).Temperature: +15°C to +30°C; (2).Voltage is AC 120V	
Extreme Test Conditions	(1). Temperatures: -25°C to +55°C. (2). Voltages: AC 102V to AC138V.	

## 6.4 Test Configurations

Operating Mode	Bandwidth	Direction	Channels frequency (MHz)		
			Low Ch.	Mid Ch.	High Ch.
Lower A	1.4 MHz	Downlink	728.7	731	733.3
		Uplink	698.7	701	703.3
	3 MHz	Downlink	729.5	731	732.5
		Uplink	699.5	701	702.5
	5 MHz	Downlink	730.5	731	731.5
		Uplink	700.5	701	701.5
Lower B	1.4 MHz	Downlink	734.7	737	739.3
		Uplink	704.7	707	709.3
	3 MHz	Downlink	735.5	737	738.5
		Uplink	705.5	707	708.5
	5 MHz	Downlink	736.5	737	737.5
		Uplink	706.5	707	707.5
Lower C	1.4 MHz	Downlink	740.7	743	745.3
		Uplink	710.7	713	715.3
	3 MHz	Downlink	741.5	743	744.5
		Uplink	711.5	713	714.5
	5 MHz	Downlink	742.5	743	743.5
		Uplink	712.5	713	713.5
Lower ABC	10 MHz	Downlink	733	737	741
		Uplink	703	707	711
	15 MHz	Downlink	735.5	737	738.5
		Uplink	705.5	707	708.5
Full Band	1.4 MHz	Downlink	746.7	751.5	756.3
		Uplink	776.7	781.5	786.3
	3 MHz	Downlink	747.5	751.5	755.5
		Uplink	777.5	781.5	785.5
	5 MHz	Downlink	748.5	751.5	754.5
		Uplink	778.5	781.5	784.5
	10 MHz	Downlink	751	751.5	752
		Uplink	781	781.5	782

## 6.5 Description of test modes

Test mode	Detail description of the test mode
LTE mode	LTE modulation described in TS 36.143 Annex D

## 6.6 Test Conditions

Test case	Test Conditions	
RF Output Power	RF channels	L,M,H
Occupied Bandwidth	RF channels	L,M,H
Spurious emission at antenna terminals	RF channels	L,M,H
Inter-modulation	RF channels	L,H
Band edge	RF channels	L,H
Filed Strength of spurious emissions	RF channels	L,M,H

## 7 RF Output power and gain

### 7.1 Standard Applicable

According to §2.1046(a), §27.50.

### 7.2 Test setup

Please refer the section 6.2 Configuration of Tested System.

### 7.3 Test Procedure

1. The output from the EUT antenna connector was connected to the signal generator.
2. The level of RF input signal shall be increased, until the maximum output power per channel, declared by client, is reached, and ensure the AGC function not activated.
3. When the maximum output power declared by manufacturer is reached, still increased the input signal level until the AGC function activated.
4. The RF output power was measured at low, middle and high channel of each type of modulation and each type of carrier.
5. Repeat step 1 to step 4 for uplink and downlink respectively.

## 7.4 Test Result

### Lower A BAND

#### Uplink

Bandwidth	Frequency(MHz)	Input power (dBm)	Output power (dBm)	Gain(dB)	Result
1.4 MHz	698.7	-57.48	24.39	81.87	Compliant
		Increased 10 dB	25.31	72.79	
	701.0	-57.49	24.19	81.68	Compliant
		Increased 10 dB	25.23	72.72	
	703.3	-58.26	24.56	82.82	Compliant
		Increased 10 dB	25.43	73.69	
3 MHz	699.5	-58.61	24.56	83.17	Compliant
		Increased 10 dB	25.17	73.78	
	701.0	-57.15	24.60	81.75	Compliant
		Increased 10 dB	25.07	72.22	
	702.5	-58.81	24.60	83.41	Compliant
		Increased 10 dB	25.12	73.93	
5 MHz	700.5	-57.49	24.51	82.00	Compliant
		Increased 10 dB	25.03	72.52	
	701.0	-57.31	24.45	81.76	Compliant
		Increased 10 dB	25.55	72.86	
	701.5	-57.33	24.47	81.80	Compliant
		Increased 10 dB	25.61	72.94	

## Downlink

Bandwidth	Frequency(MHz)	Input power (dBm)	Output power (dBm)	Gain(dB)	Result
1.4 MHz	728.7	-47.19	36.02	83.21	Compliant
		Increased 10 dB	37.35	74.54	
	731.0	-47.47	36.40	83.87	Compliant
		Increased 10 dB	37.36	74.83	
	733.3	-47.39	36.68	84.07	Compliant
		Increased 10 dB	37.27	74.76	
3 MHz	729.5	-47.13	36.43	83.56	Compliant
		Increased 10 dB	37.45	74.58	
	731.0	-47.35	36.44	83.79	Compliant
		Increased 10 dB	37.51	74.86	
	732.5	-47.24	36.66	83.90	Compliant
		Increased 10 dB	37.31	74.55	
5 MHz	730.5	-47.69	36.25	83.94	Compliant
		Increased 10 dB	37.36	75.05	
	731.0	-47.69	36.18	83.87	Compliant
		Increased 10 dB	37.28	74.97	
	731.5	-47.71	36.41	84.12	Compliant
		Increased 10 dB	37.27	74.98	

**Lower B BAND**

## Uplink

<b>Bandwidth</b>	<b>Frequency(MHz)</b>	<b>Input power (dBm)</b>	<b>Output power (dBm)</b>	<b>Gain(dB)</b>	<b>Result</b>
1.4 MHz	704.7	-59.10	24.34	83.44	Compliant
		Increased 10 dB	25.31	74.41	
	707.0	-59.48	24.16	83.64	Compliant
		Increased 10 dB	25.45	74.64	
	709.3	-58.72	24.51	83.23	Compliant
		Increased 10 dB	25.54	74.26	
3 MHz	705.5	-57.69	24.66	82.35	Compliant
		Increased 10 dB	25.55	73.24	
	707.0	-59.00	24.72	83.72	Compliant
		Increased 10 dB	25.36	74.36	
	708.5	-57.81	24.98	82.79	Compliant
		Increased 10 dB	25.52	73.33	
5 MHz	706.5	-58.50	24.80	83.30	Compliant
		Increased 10 dB	25.18	73.68	
	707.0	-59.02	24.52	83.54	Compliant
		Increased 10 dB	25.09	74.11	
	707.5	-58.89	24.67	83.56	Compliant
		Increased 10 dB	25.33	74.22	

## Downlink

Bandwidth	Frequency(MHz)	Input power (dBm)	Output power (dBm)	Gain(dB)	Result
1.4 MHz	734.7	-48.39	36.07	84.46	Compliant
		Increased 10 dB	37.64	76.03	
	737.0	-48.28	36.21	84.49	Compliant
		Increased 10 dB	37.57	75.85	
	739.3	-48.52	36.48	85.00	Compliant
		Increased 10 dB	37.45	75.97	
3 MHz	735.5	-48.34	36.22	84.56	Compliant
		Increased 10 dB	37.24	75.58	
	737.0	-48.11	36.34	84.45	Compliant
		Increased 10 dB	37.42	75.53	
	738.5	-48.39	36.38	84.77	Compliant
		Increased 10 dB	37.35	75.74	
5 MHz	736.5	-48.19	36.14	84.33	Compliant
		Increased 10 dB	37.14	75.33	
	737.0	-48.06	36.15	84.21	Compliant
		Increased 10 dB	37.47	75.53	
	737.5	-48.33	36.17	84.50	Compliant
		Increased 10 dB	37.26	75.59	

## Lower C BAND

### Uplink

Bandwidth	Frequency(MHz)	Input power (dBm)	Output power (dBm)	Gain(dB)	Result
1.4 MHz	710.7	-58.72	24.46	83.18	Compliant
		Increased 10 dB	25.51	74.23	
	713.0	-57.71	24.18	81.89	Compliant
		Increased 10 dB	25.34	73.05	
	715.3	-56.95	24.14	81.09	Compliant
		Increased 10 dB	25.45	72.40	
3 MHz	711.5	-58.57	24.76	83.33	Compliant
		Increased 10 dB	25.66	74.23	
	713.0	-57.30	24.50	81.80	Compliant
		Increased 10 dB	25.41	72.71	
	714.5	-58.51	24.10	82.61	Compliant
		Increased 10 dB	25.27	73.78	
5 MHz	712.5	-57.34	24.51	81.85	Compliant
		Increased 10 dB	25.85	73.19	
	713.0	-57.39	24.35	81.74	Compliant
		Increased 10 dB	24.96	72.35	
	713.5	-58.20	24.24	82.44	Compliant
		Increased 10 dB	24.90	73.10	

## Downlink

Bandwidth	Frequency(MHz)	Input power (dBm)	Output power (dBm)	Gain(dB)	Result
1.4 MHz	740.7	-49.00	36.13	85.13	Compliant
		Increased 10 dB	37.58	76.58	
	743.0	-48.75	36.05	84.80	Compliant
		Increased 10 dB	37.47	76.22	
	745.3	-48.80	36.03	84.83	Compliant
		Increased 10 dB	37.30	76.10	
3 MHz	741.5	-48.68	36.37	85.05	Compliant
		Increased 10 dB	37.38	76.06	
	743.0	-48.69	36.18	84.87	Compliant
		Increased 10 dB	37.24	75.93	
	744.5	-48.83	36.12	84.95	Compliant
		Increased 10 dB	37.15	75.98	
5 MHz	742.5	-48.44	36.42	84.86	Compliant
		Increased 10 dB	37.20	75.64	
	743.0	-48.72	36.16	84.88	Compliant
		Increased 10 dB	37.19	75.91	
	743.5	-48.36	36.44	84.80	Compliant
		Increased 10 dB	37.13	75.49	

## Lower ABC Full BAND

### Uplink

Bandwidth	Frequency(MHz)	Input power (dBm)	Output power (dBm)	Gain(dB)	Result
10 MHz	703.0	-59.05	24.53	83.58	Compliant
		Increased 10 dB	25.23	74.28	
	707.0	-59.24	24.47	83.71	Compliant
		Increased 10 dB	25.06	74.30	
	711.0	-59.74	24.37	84.11	Compliant
		Increased 10 dB	25.46	75.20	
15 MHz	705.5	-58.08	24.26	82.34	Compliant
		Increased 10 dB	25.23	73.31	
	707.0	-59.17	24.43	83.60	Compliant
		Increased 10 dB	25.18	74.35	
	708.5	-58.28	24.25	82.53	Compliant
		Increased 10 dB	25.55	73.83	

### Downlink

Bandwidth	Frequency(MHz)	Input power (dBm)	Output power (dBm)	Gain(dB)	Result
10 MHz	733	-47.87	36.31	84.18	Compliant
		Increased 10 dB	37.31	75.18	
	737	-48.10	36.55	84.65	Compliant
		Increased 10 dB	37.15	75.25	
	741	-48.52	36.52	85.04	Compliant
		Increased 10 dB	37.18	75.70	
15 MHz	735.5	-48.34	36.15	84.49	Compliant
		Increased 10 dB	37.35	75.69	
	737	-48.52	36.17	84.69	Compliant
		Increased 10 dB	37.04	75.56	
	738.5	-48.65	36.20	84.85	Compliant
		Increased 10 dB	37.39	76.04	

**Upper C BAND**

## Uplink

<b>Bandwidth</b>	<b>Frequency(MHz)</b>	<b>Input power (dBm)</b>	<b>Output power (dBm)</b>	<b>Gain(dB)</b>	<b>Result</b>
1.4 MHz	776.7	-57.00	24.78	81.78	Compliant
		Increased 10 dB	25.67	72.67	
	781.5	-56.98	24.12	81.10	Compliant
		Increased 10 dB	25.59	72.57	
	786.3	-57.90	24.44	82.34	Compliant
		Increased 10 dB	25.46	73.36	
3 MHz	777.5	-57.76	24.20	81.96	Compliant
		Increased 10 dB	25.23	72.99	
	781.5	-56.33	24.82	81.15	Compliant
		Increased 10 dB	25.14	71.47	
	785.5	-57.15	24.70	81.85	Compliant
		Increased 10 dB	25.26	72.41	
5 MHz	778.5	-57.49	24.13	81.62	Compliant
		Increased 10 dB	25.36	72.85	
	781.5	-56.49	24.60	81.09	Compliant
		Increased 10 dB	25.19	71.68	
	784.5	-56.34	24.38	80.72	Compliant
		Increased 10 dB	25.38	71.72	
10MHz	781.0	-56.58	24.38	80.96	Compliant
		Increased 10 dB	25.09	71.67	
	781.5	-56.58	24.43	81.01	Compliant
		Increased 10 dB	24.84	71.42	
	782.0	-56.54	24.41	80.95	Compliant
		Increased 10 dB	24.93	71.47	

## Downlink

Bandwidth	Frequency(MHz)	Input power (dBm)	Output power (dBm)	Gain(dB)	Result
1.4 MHz	746.7	-48.46	36.40	84.86	Compliant
		Increased 10 dB	37.53	75.99	
	751.5	-47.22	36.35	83.57	Compliant
		Increased 10 dB	37.02	74.24	
	756.3	-47.51	36.21	83.72	Compliant
		Increased 10 dB	36.78	74.29	
3 MHz	747.5	-48.03	36.58	84.61	Compliant
		Increased 10 dB	37.22	75.25	
	751.5	-47.38	36.16	83.54	Compliant
		Increased 10 dB	37.19	74.57	
	755.5	-47.52	36.12	83.64	Compliant
		Increased 10 dB	37.04	74.56	
5 MHz	748.5	-47.90	36.22	84.12	Compliant
		Increased 10 dB	36.99	74.89	
	751.5	-47.45	36.17	83.62	Compliant
		Increased 10 dB	36.53	73.98	
	754.5	-47.65	36.02	83.67	Compliant
		Increased 10 dB	36.34	73.99	
10 MHz	751.0	-47.40	36.21	83.61	Compliant
		Increased 10 dB	37.28	74.68	
	751.5	-47.34	36.08	83.42	Compliant
		Increased 10 dB	37.08	74.42	
	752.0	-47.59	36.21	83.80	Compliant
		Increased 10 dB	37.15	74.74	

## 8 Occupied Bandwidth

### 8.1 Standard Applicable

According to §2.1049.

### 8.2 Test setup

Please refer the section 6.2 Configuration of Tested System.

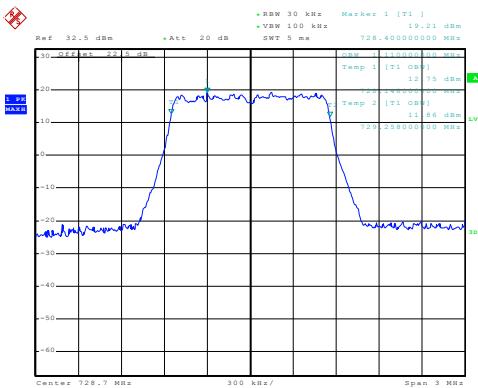
### 8.3 Test Procedure

1. The EUT RF output port was connected to spectrum analyzer.
2. The level of RF input signal shall be increased, until the maximum output power per channel, declared by client, is reached.
3. The spectrum analyzer was setup to measure the Occupied Bandwidth (defined as the 99% Power Bandwidth) & 20 dB bandwidth.
4. The pass band gain was tested by spectrum analyzer.

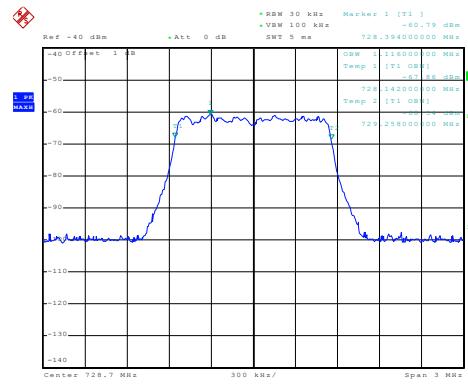
## 8.4 Test Result

### Input/output Bandwidth Comparison for 99% occupied bandwidth Downlink mode Lower A Band - 1.4 MHz

Output



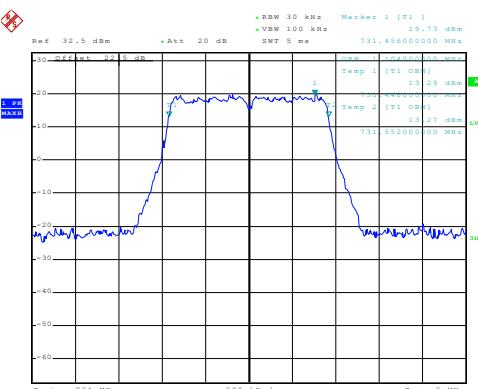
Input



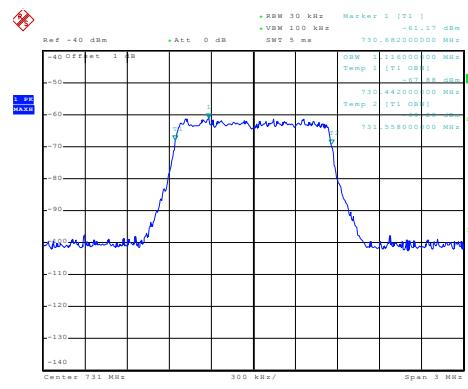
Date: 16.AUG.2014 14:09:50

Low Channel

Output



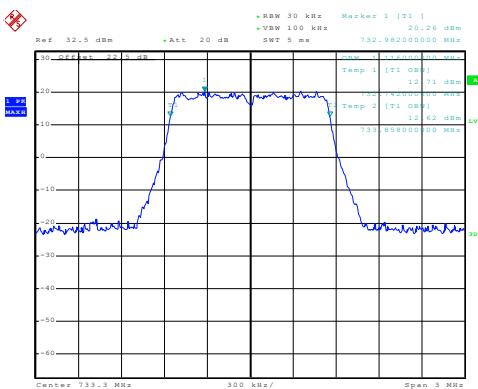
Input



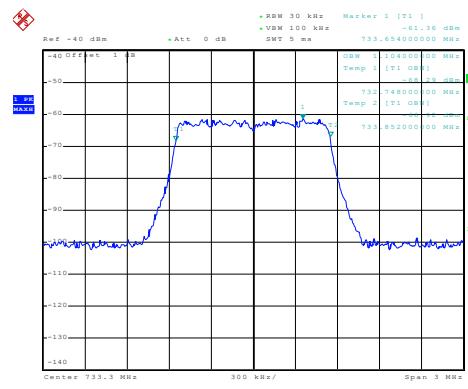
Date: 16.AUG.2014 14:10:11

Middle Channel

Output



Input

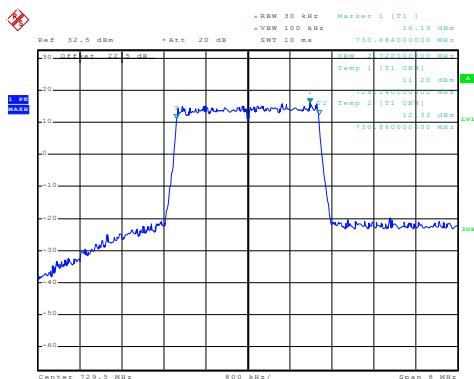


Date: 16.AUG.2014 14:10:34

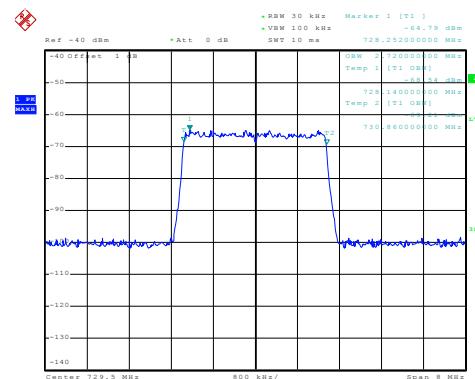
High Channel

## 3 MHz

### Output



### Input

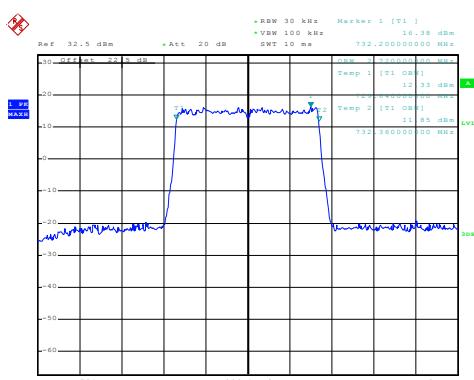


Date: 16.AUG.2014 14:38:46

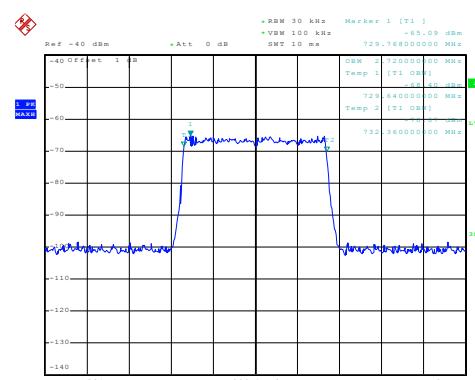
Date: 16.AUG.2014 14:15:24

### Low Channel

#### Output



#### Input

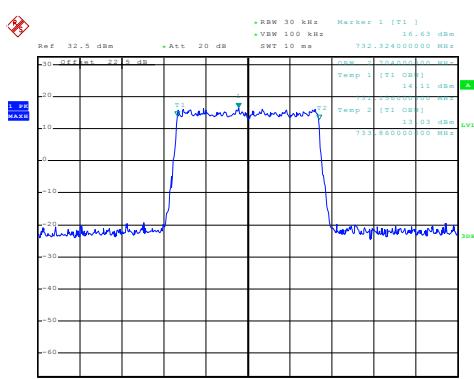


Date: 16.AUG.2014 14:39:26

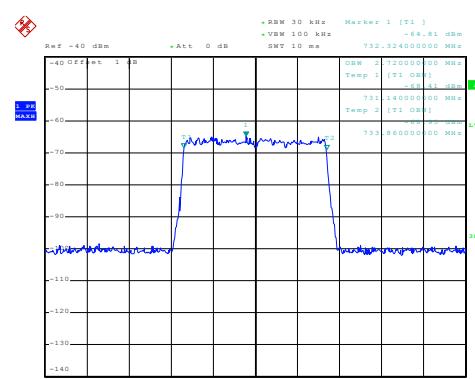
Date: 16.AUG.2014 14:15:45

### Middle Channel

#### Output



#### Input



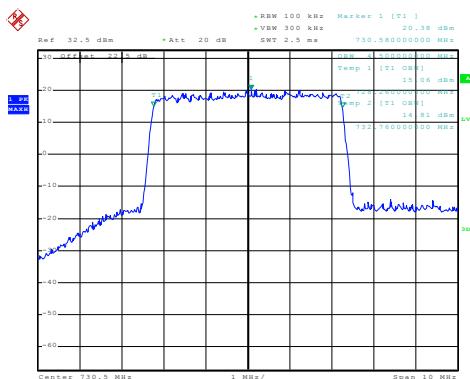
Date: 16.AUG.2014 14:39:53

Date: 16.AUG.2014 14:16:11

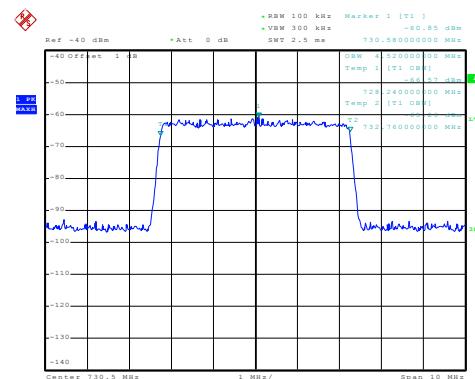
### High Channel

## 5 MHz

### Output



### Input

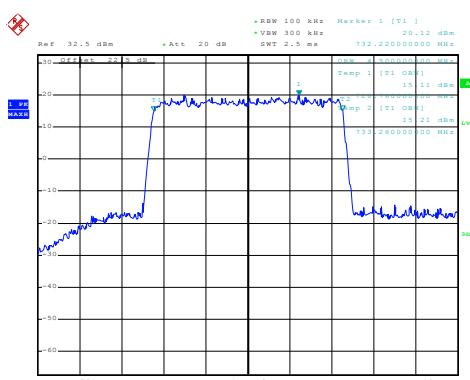


Date: 16.AUG.2014 14:44:35

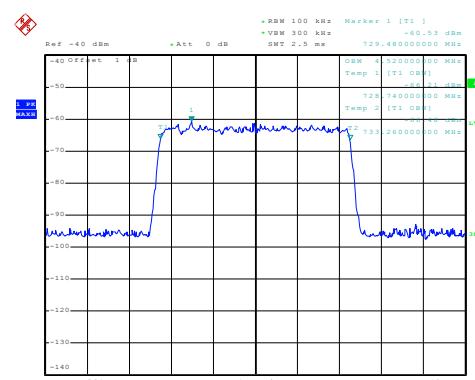
Date: 16.AUG.2014 14:40:50

### Low Channel

### Output



### Input

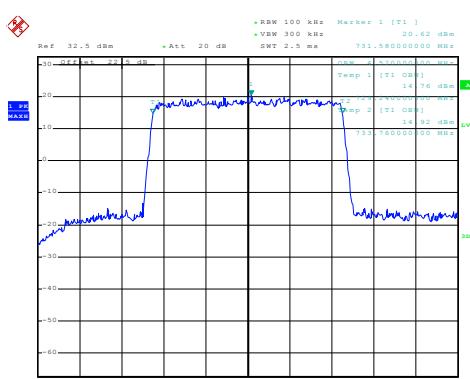


Date: 16.AUG.2014 14:44:58

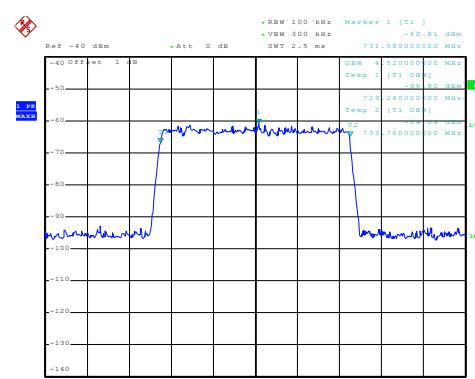
Date: 16.AUG.2014 14:21:11

### Middle Channel

### Output



### Input



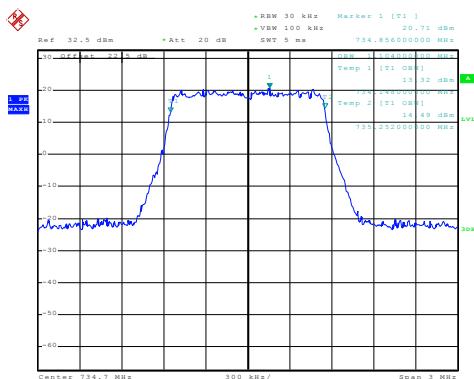
Date: 16.AUG.2014 14:45:20

Date: 16.AUG.2014 14:21:34

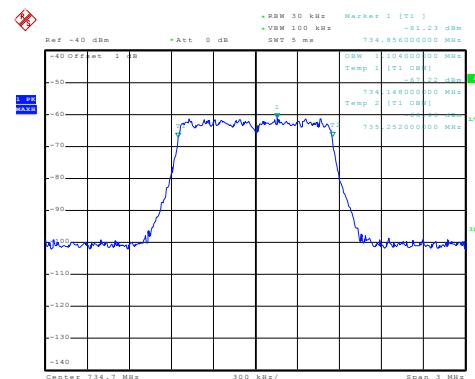
### High Channel

## Lower B Band - 1.4 MHz

### Output

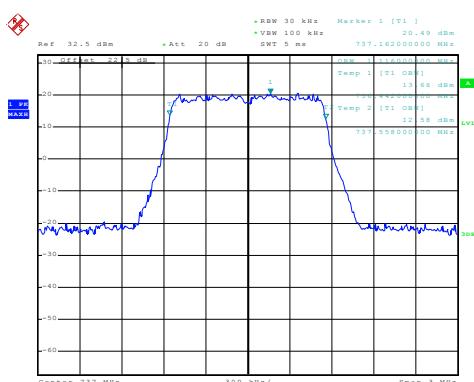


### Input

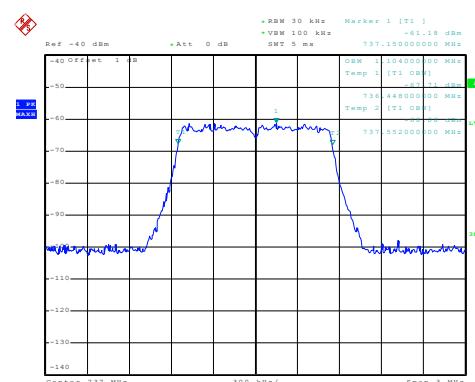


## Low Channel

### Output

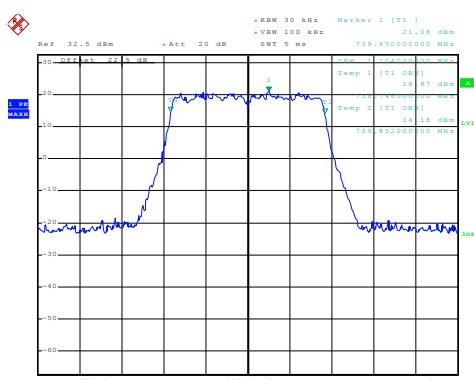


### Input

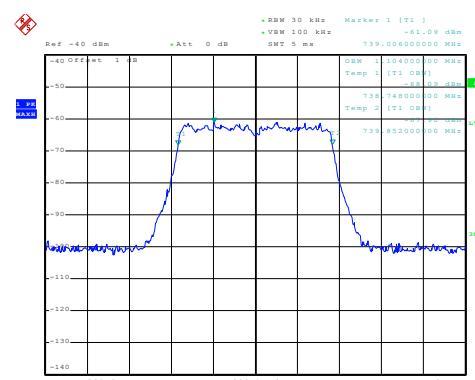


## Middle Channel

### Output



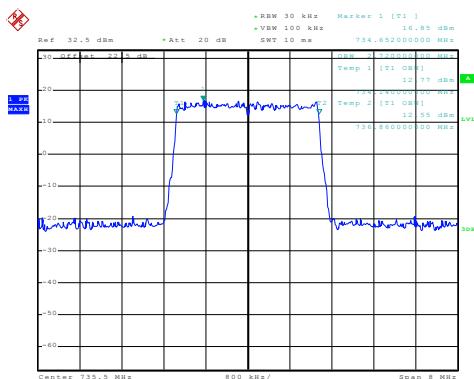
### Input



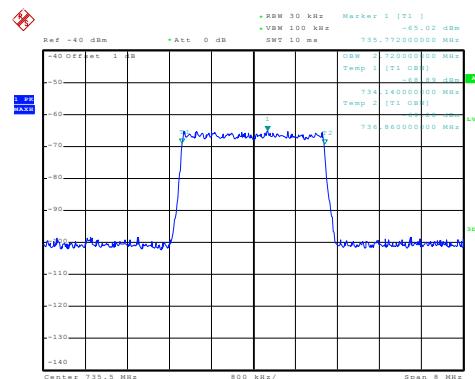
## High Channel

## 3 MHz

### Output



### Input

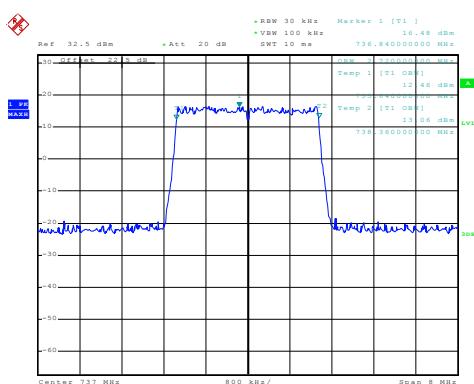


Date: 16.AUG.2014 14:40:20

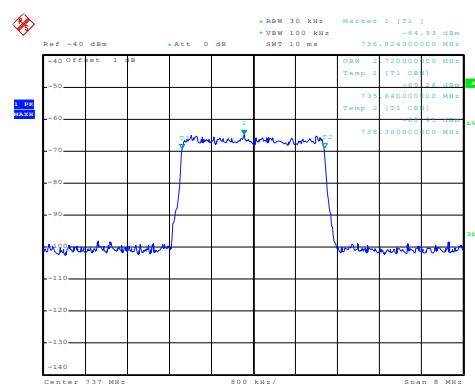
Date: 16.AUG.2014 14:16:34

### Low Channel

### Output



### Input

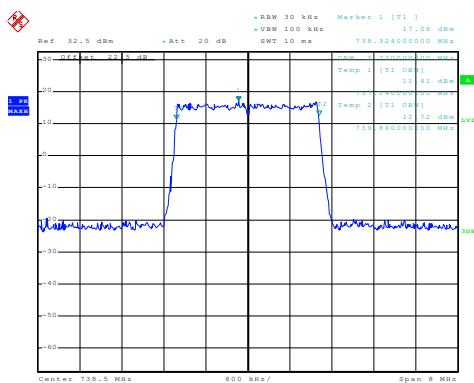


Date: 16.AUG.2014 14:40:41

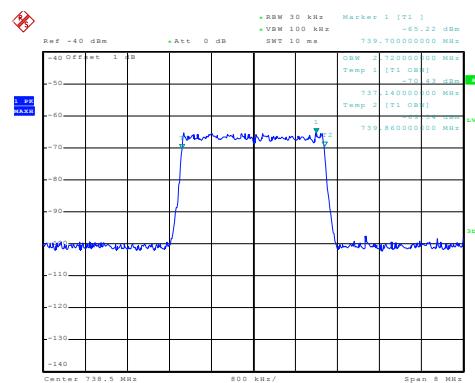
Date: 16.AUG.2014 14:16:55

### Middle Channel

### Output



### Input



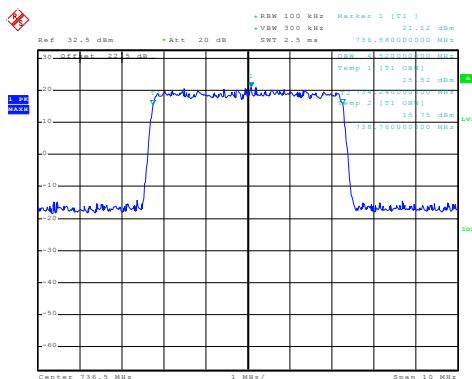
Date: 16.AUG.2014 14:41:03

Date: 16.AUG.2014 14:17:19

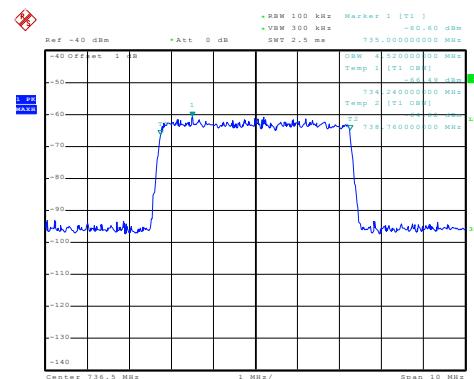
### High Channel

## 5 MHz

### Output



### Input

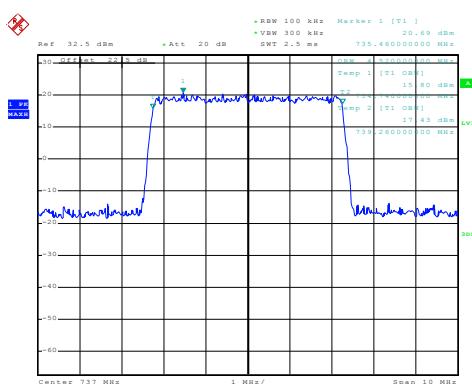


Date: 16.AUG.2014 14:45:43

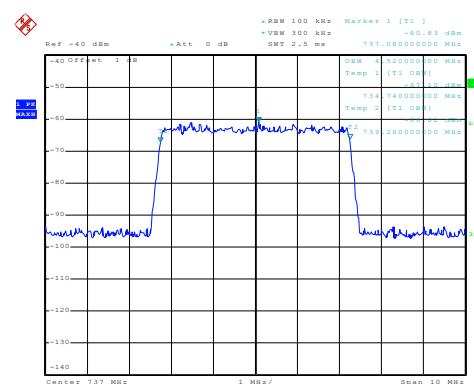
Date: 16.AUG.2014 14:21:57

### Low Channel

#### Output



#### Input

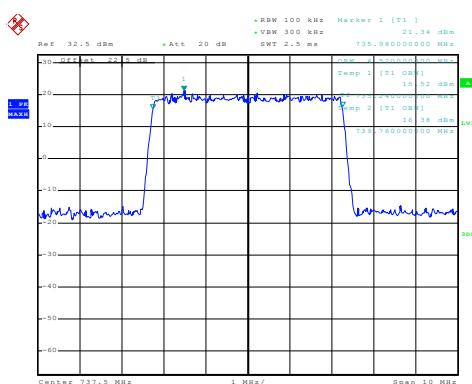


Date: 16.AUG.2014 14:46:04

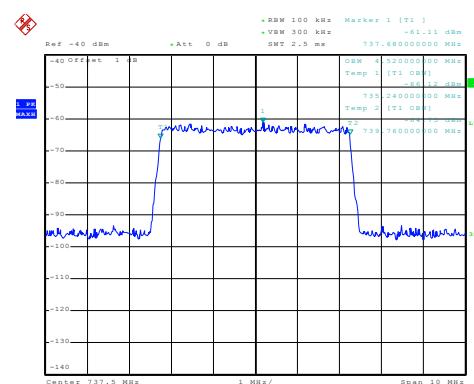
Date: 16.AUG.2014 14:22:17

### Middle Channel

#### Output



#### Input



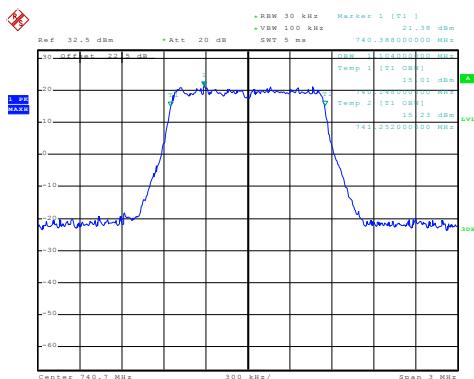
Date: 16.AUG.2014 14:46:38

Date: 16.AUG.2014 14:22:37

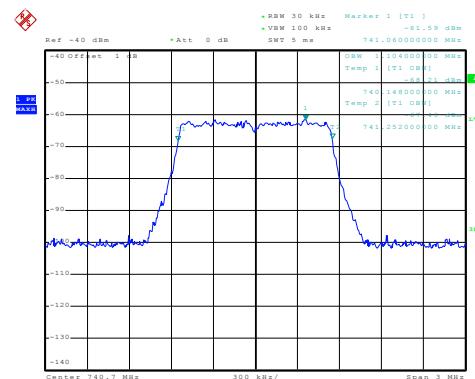
### High Channel

## Lower C Band - 1.4 MHz

### Output



### Input

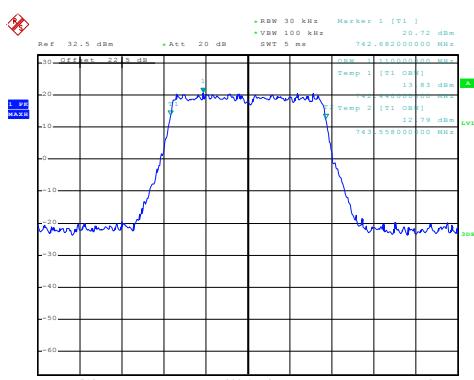


Date: 16.AUG.2014 14:35:00

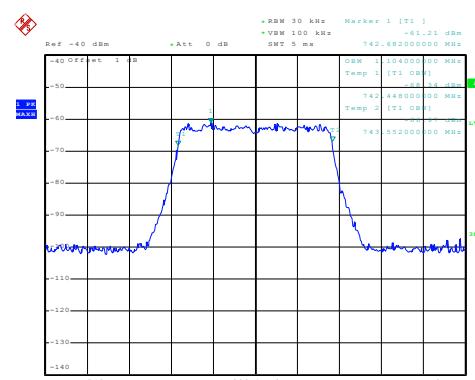
Date: 16.AUG.2014 14:12:09

## Low Channel

### Output



### Input

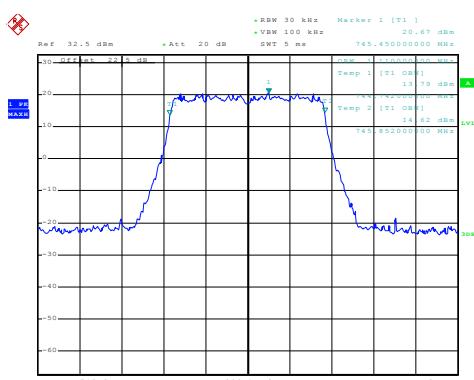


Date: 16.AUG.2014 14:35:19

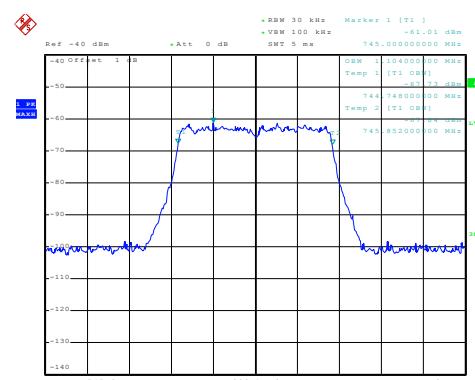
Date: 16.AUG.2014 14:12:30

## Middle Channel

### Output



### Input



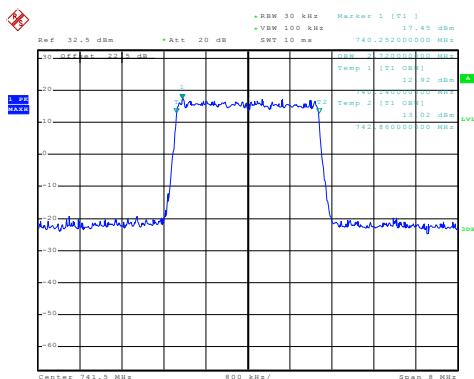
Date: 16.AUG.2014 14:35:43

Date: 16.AUG.2014 14:12:55

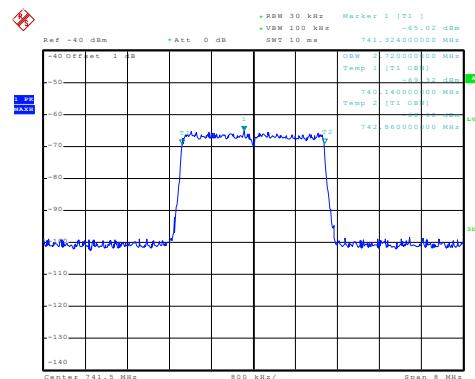
## High Channel

## 3 MHz

### Output



### Input

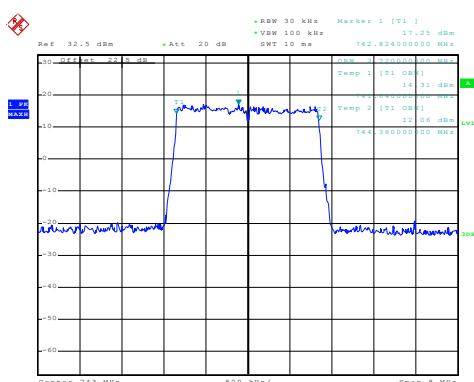


Date: 16.AUG.2014 14:41:30

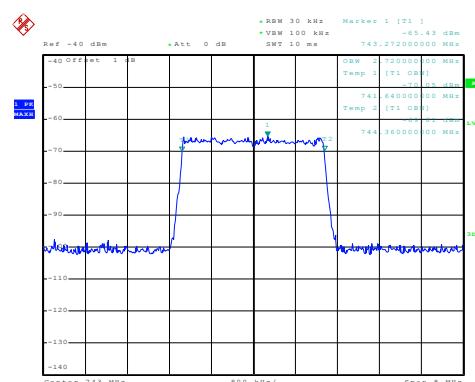
Date: 16.AUG.2014 14:41:30

### Low Channel

#### Output



#### Input

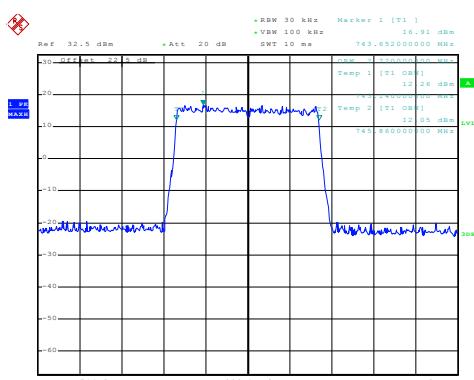


Date: 16.AUG.2014 14:41:52

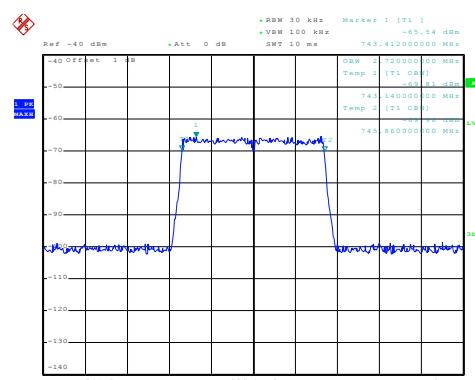
Date: 16.AUG.2014 14:41:52

### Middle Channel

#### Output



#### Input



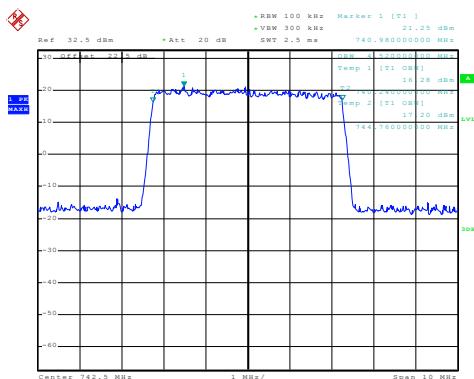
Date: 16.AUG.2014 14:42:13

Date: 16.AUG.2014 14:42:13

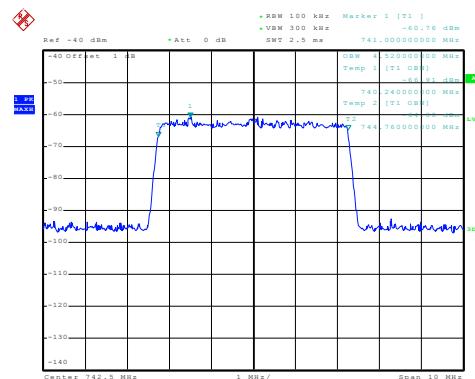
### High Channel

## 5 MHz

### Output



### Input

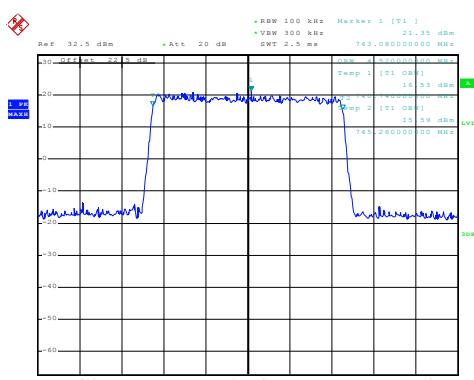


Date: 16.AUG.2014 14:47:01

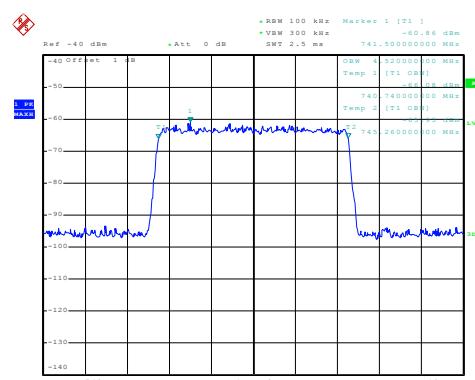
Date: 16.AUG.2014 14:47:07

### Low Channel

### Output



### Input

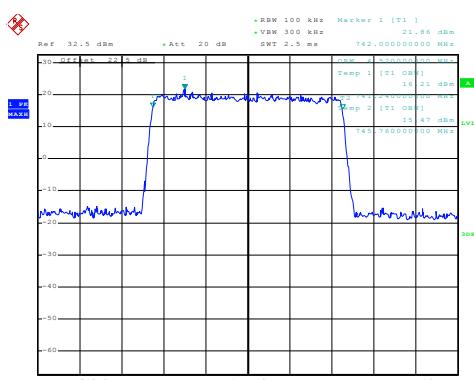


Date: 16.AUG.2014 14:47:21

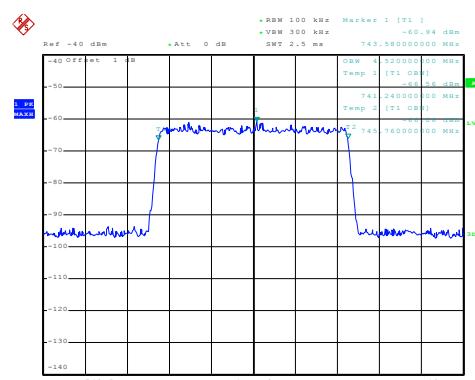
Date: 16.AUG.2014 14:23:24

### Middle Channel

### Output



### Input



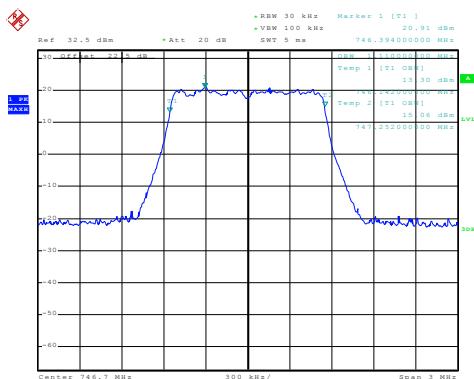
Date: 16.AUG.2014 14:47:50

Date: 16.AUG.2014 14:23:46

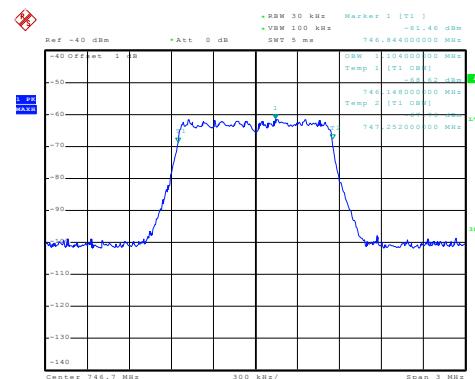
### High Channel

## Upper C Band - 1.4 MHz

### Output



### Input

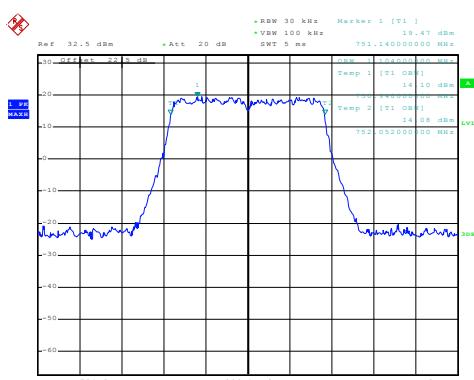


Date: 16.AUG.2014 14:37:05

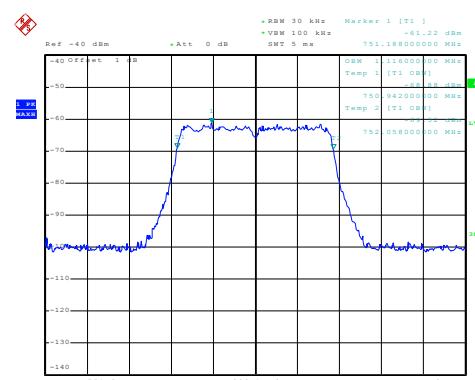
Date: 16.AUG.2014 14:13:23

### Low Channel

### Output



### Input

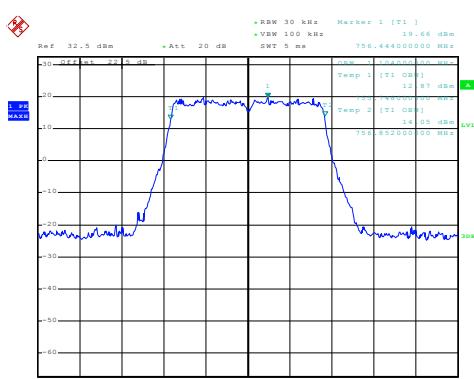


Date: 16.AUG.2014 14:37:27

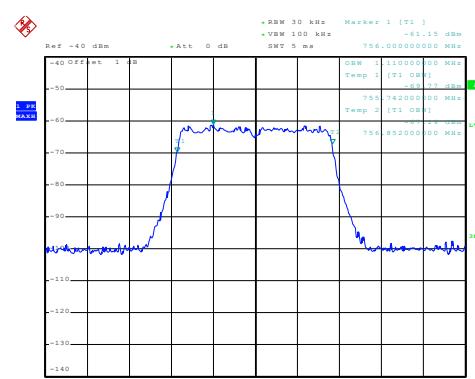
Date: 16.AUG.2014 14:13:52

### Middle Channel

### Output



### Input



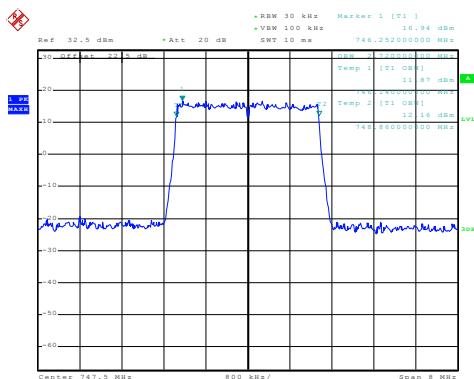
Date: 16.AUG.2014 14:37:51

Date: 16.AUG.2014 14:14:24

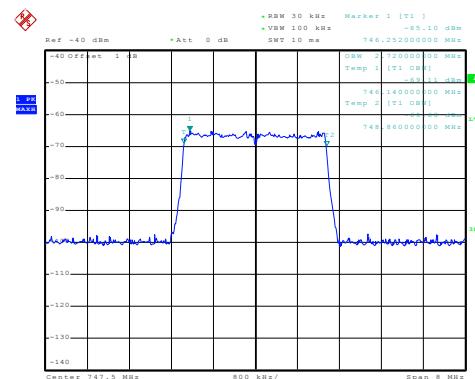
### High Channel

## 3 MHz

### Output



### Input

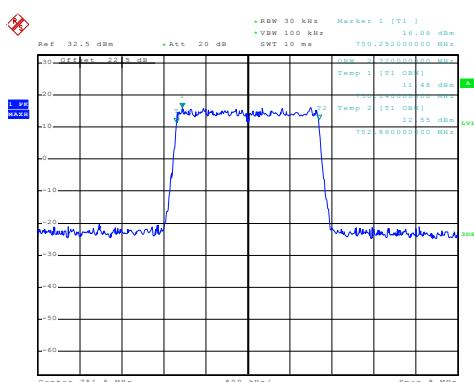


Date: 16.AUG.2014 14:42:52

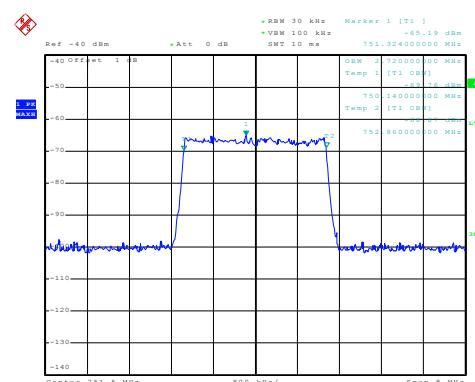
Date: 16.AUG.2014 15:26:03

### Low Channel

#### Output



#### Input

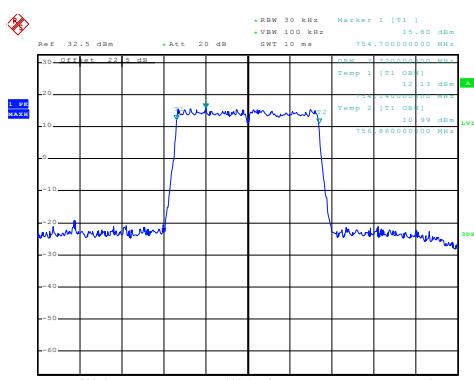


Date: 16.AUG.2014 14:43:16

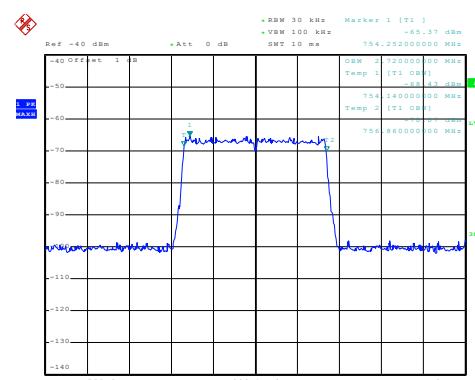
Date: 16.AUG.2014 15:26:34

### Middle Channel

#### Output



#### Input



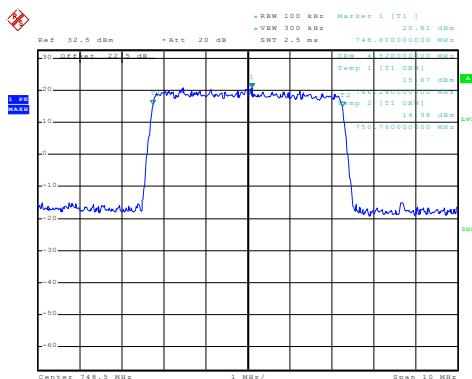
Date: 16.AUG.2014 14:43:41

Date: 16.AUG.2014 15:27:04

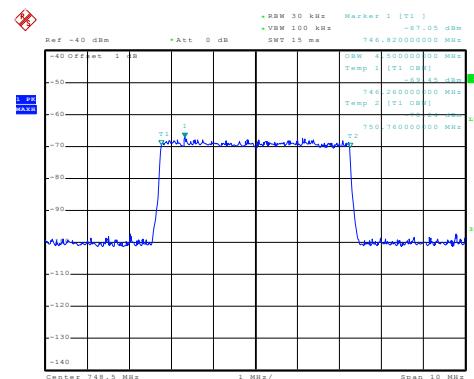
### High Channel

## 5 MHz

### Output



### Input

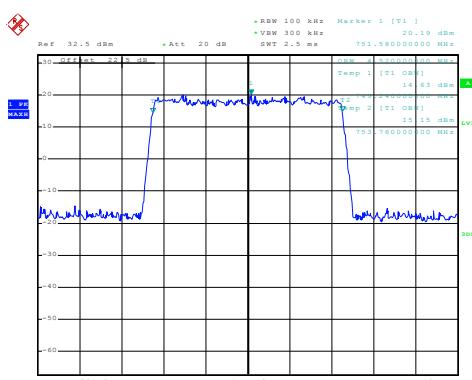


Date: 16.AUG.2014 14:48:42

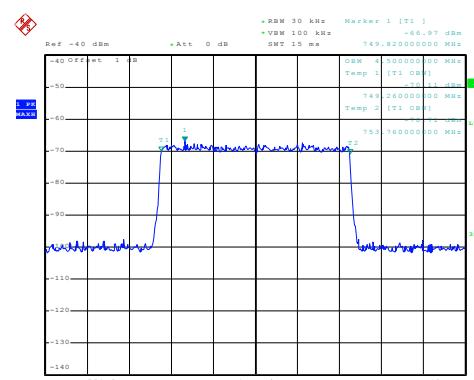
Date: 16.AUG.2014 15:27:52

### Low Channel

### Output



### Input

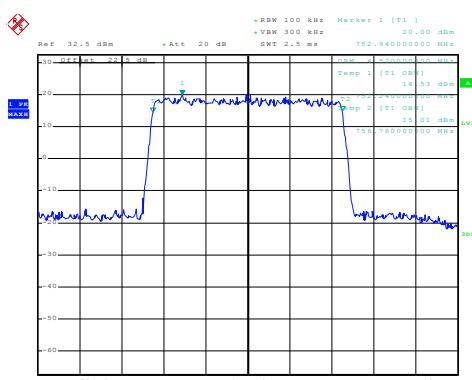


Date: 16.AUG.2014 14:49:01

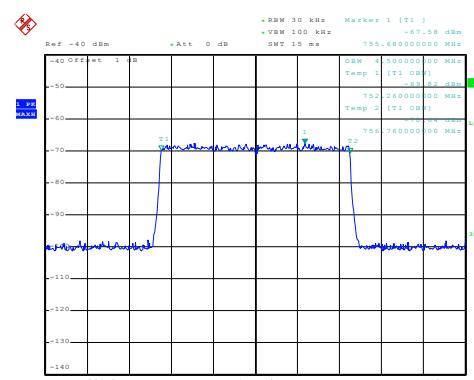
Date: 16.AUG.2014 15:28:19

### Middle Channel

### Output



### Input



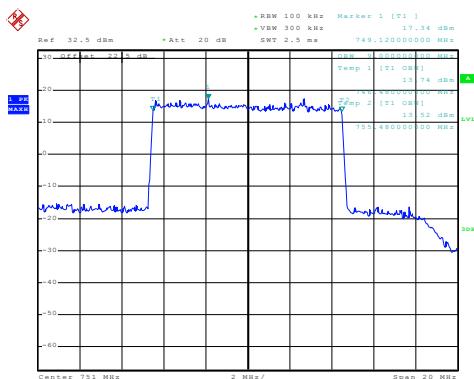
Date: 16.AUG.2014 14:49:29

Date: 16.AUG.2014 15:28:52

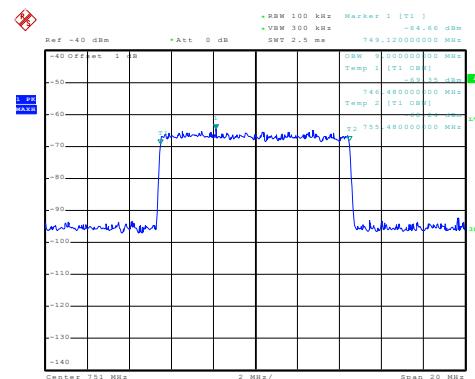
### High Channel

## 10 MHz

### Output



### Input

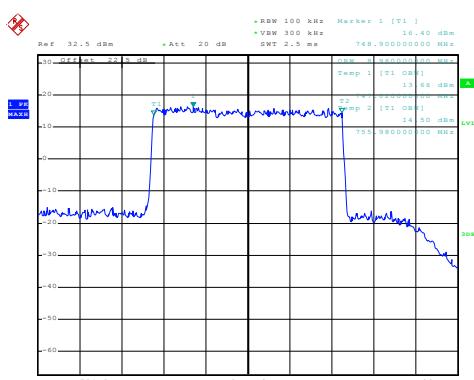


Date: 16.AUG.2014 14:51:30

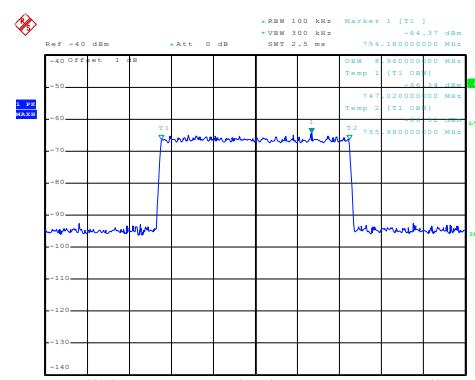
Date: 16.AUG.2014 15:29:42

### Low Channel

### Output



### Input

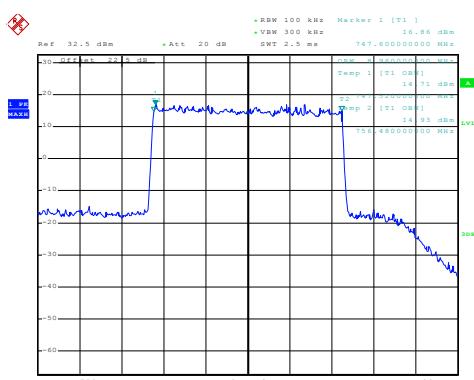


Date: 16.AUG.2014 15:13:00

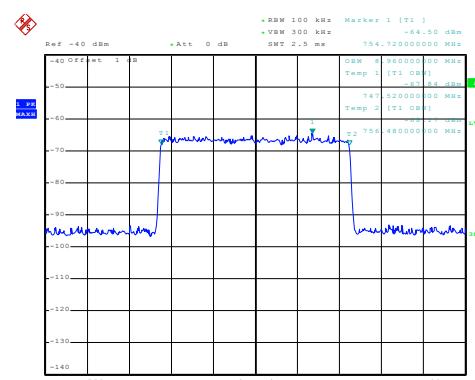
Date: 16.AUG.2014 15:30:25

### Middle Channel

### Output



### Input



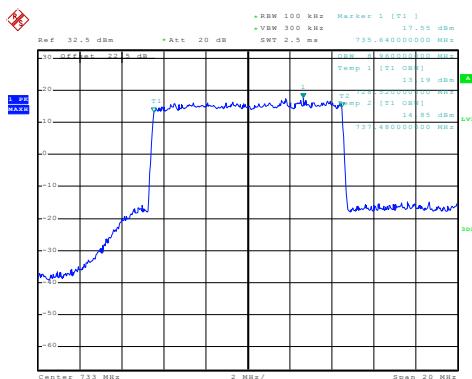
Date: 16.AUG.2014 15:13:32

Date: 16.AUG.2014 15:30:55

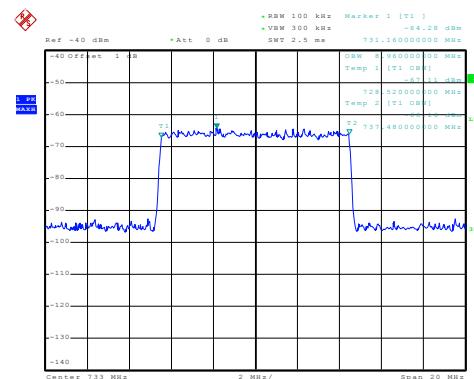
### High Channel

## Lower ABC Full Band - 10 MHz

### Output



### Input

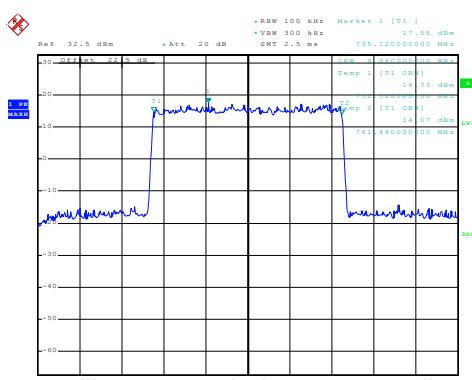


Date: 16.AUG.2014 14:50:26

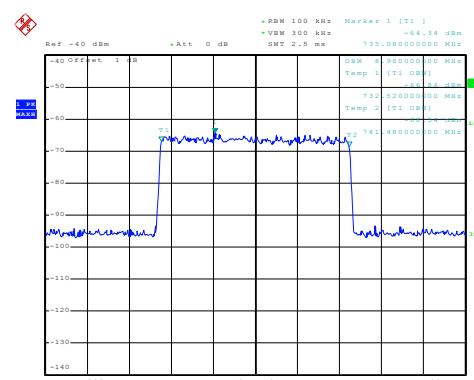
Date: 16.AUG.2014 14:26:05

## Low Channel

### Output



### Input

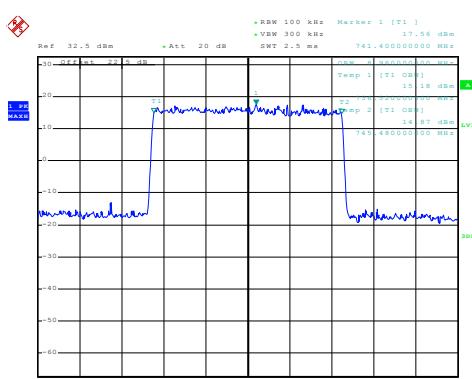


Date: 16.AUG.2014 14:50:47

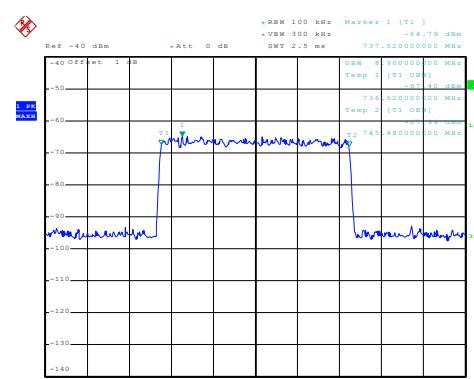
Date: 16.AUG.2014 14:26:28

## Middle Channel

### Output



### Input



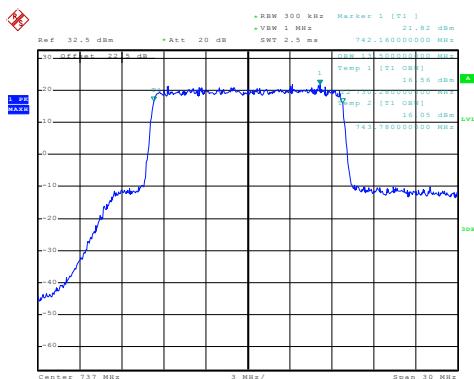
Date: 16.AUG.2014 14:51:06

Date: 16.AUG.2014 14:26:47

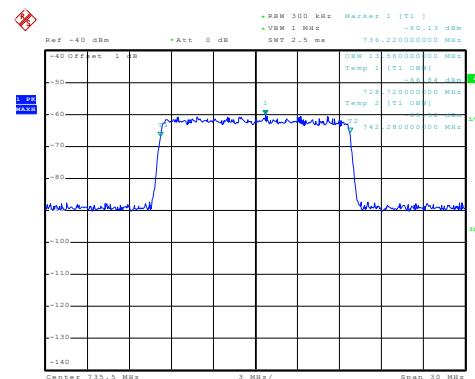
## High Channel

## 15 MHz

### Output



### Input

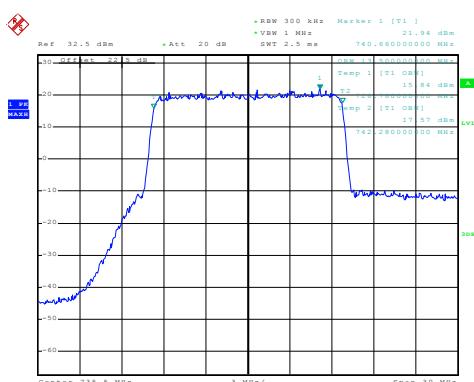


Date: 16.AUG.2014 15:15:24

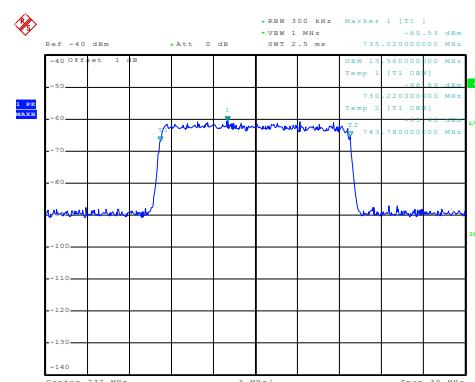
Date: 16.AUG.2014 14:28:51

### Low Channel

### Output



### Input

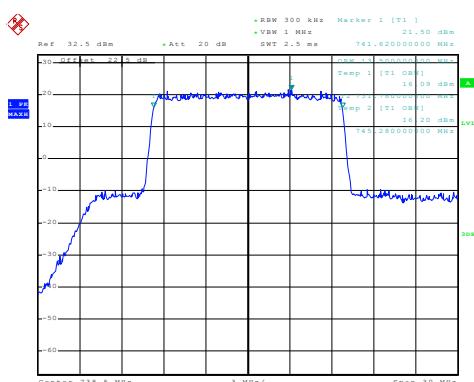


Date: 16.AUG.2014 15:14:54

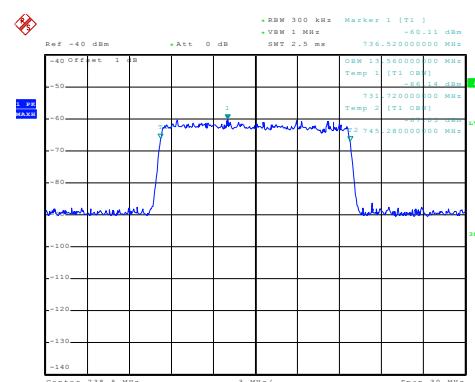
Date: 16.AUG.2014 14:29:14

### Middle Channel

### Output



### Input



Date: 16.AUG.2014 15:15:51

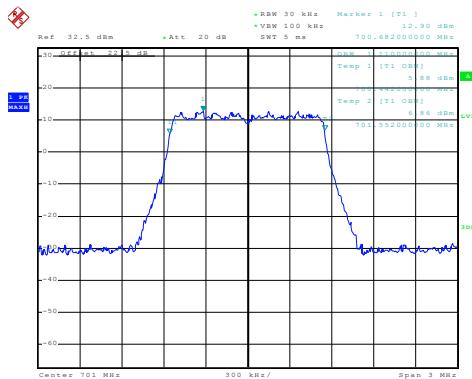
Date: 16.AUG.2014 14:29:37

### High Channel

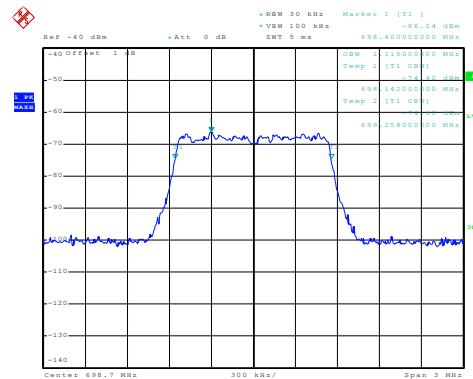
## Uplink mode

### Lower A Band - 1.4 MHz

#### Output



#### Input

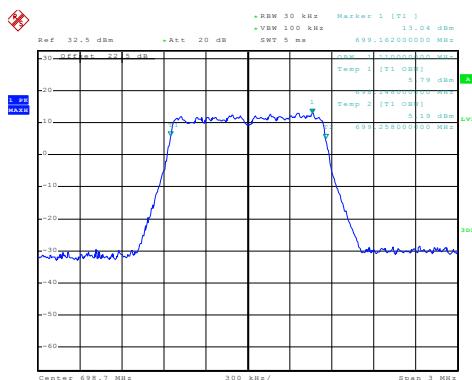


Date: 16.AUG.2014 13:17:35

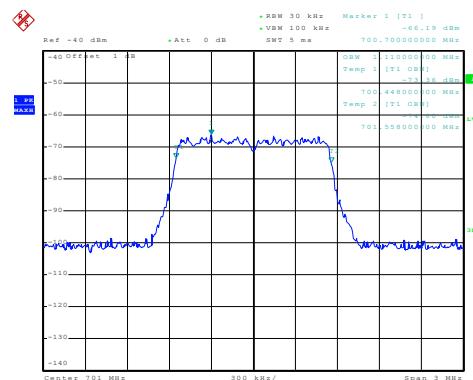
Date: 16.AUG.2014 13:46:49

### Low Channel

#### Output



#### Input

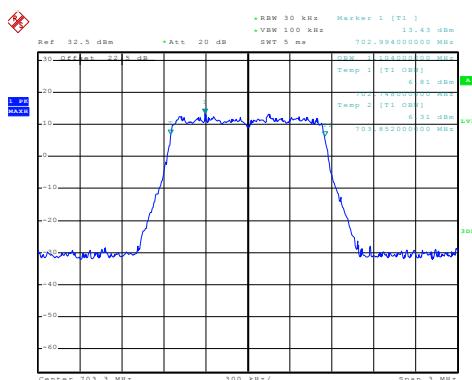


Date: 16.AUG.2014 13:17:12

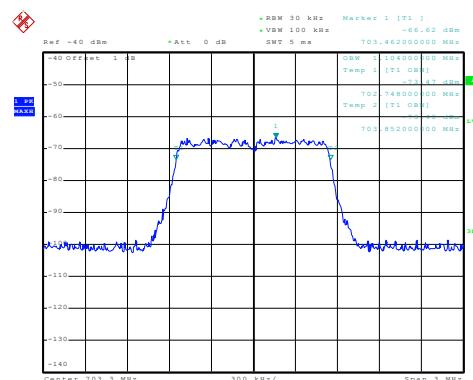
Date: 16.AUG.2014 13:47:09

### Middle Channel

#### Output



#### Input



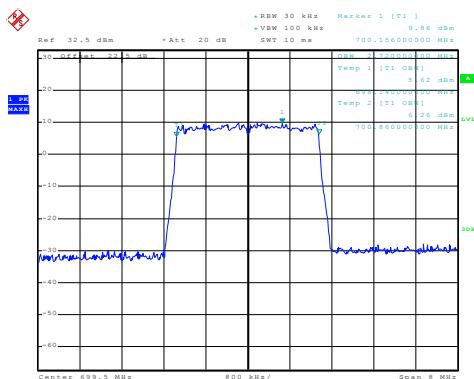
Date: 16 AUG 2014 13:17:57

Date: 16 AUG 2014 13:47:32

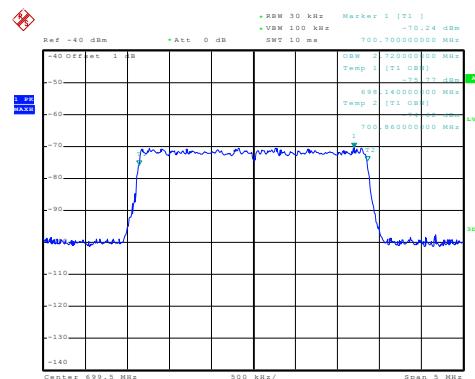
### High Channel

## 3 MHz

### Output



### Input

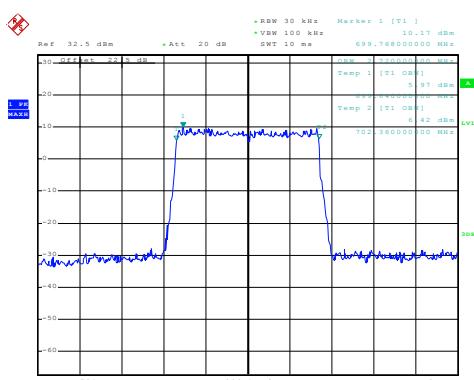


Date: 16.AUG.2014 13:23:15

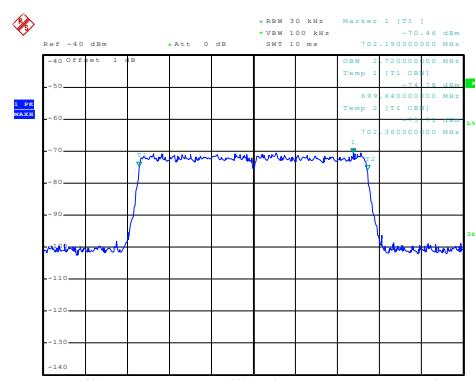
Date: 16.AUG.2014 13:52:00

### Low Channel

### Output



### Input

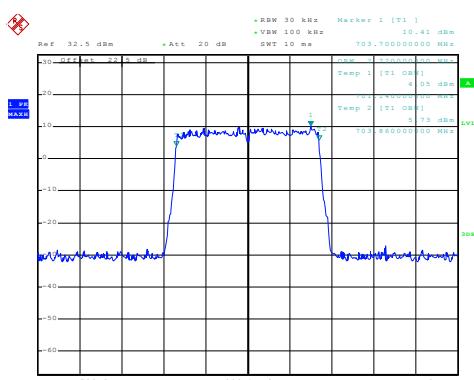


Date: 16.AUG.2014 13:23:38

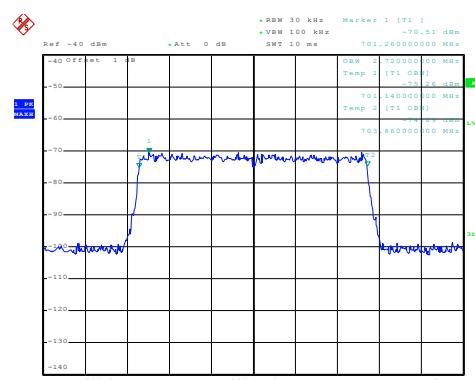
Date: 16.AUG.2014 13:52:22

### Middle Channel

### Output



### Input



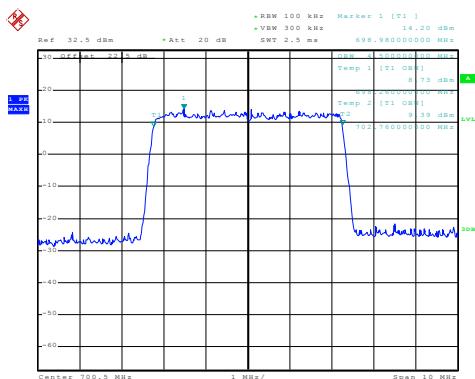
Date: 16.AUG.2014 13:24:02

Date: 16.AUG.2014 13:52:42

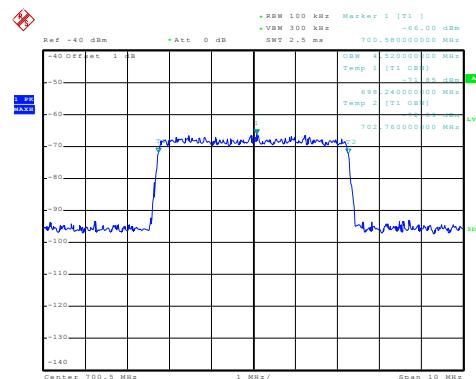
### High Channel

## 5 MHz

### Output



### Input

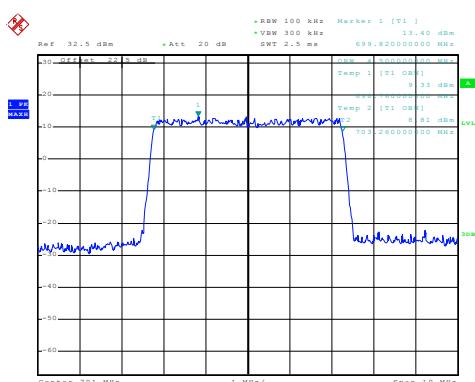


Date: 16.AUG.2014 13:29:16

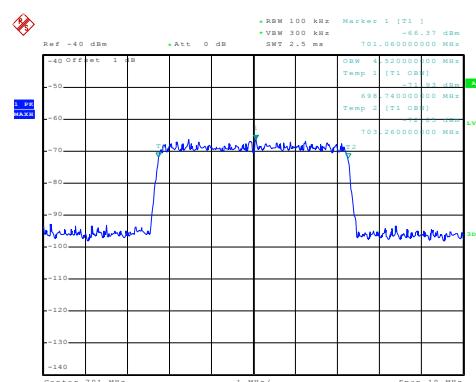
Date: 16.AUG.2014 13:58:00

### Low Channel

### Output



### Input

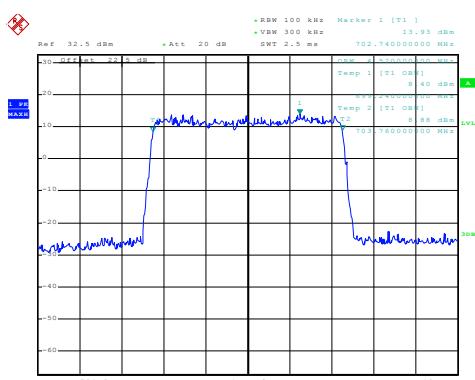


Date: 16.AUG.2014 13:29:36

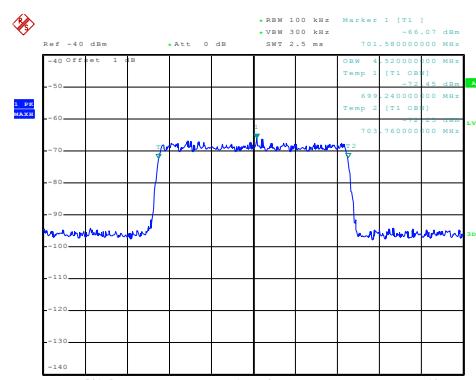
Date: 16.AUG.2014 13:58:20

### Middle Channel

### Output



### Input



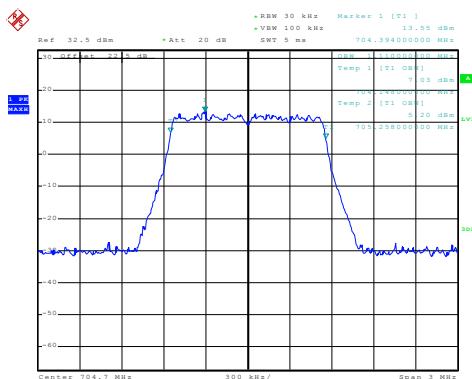
Date: 16.AUG.2014 13:29:55

Date: 16.AUG.2014 13:58:45

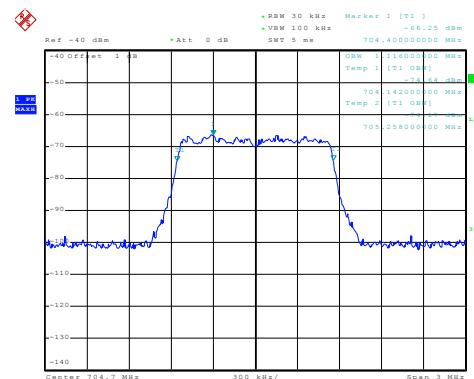
### High Channel

## Lower B Band - 1.4 MHz

### Output



### Input

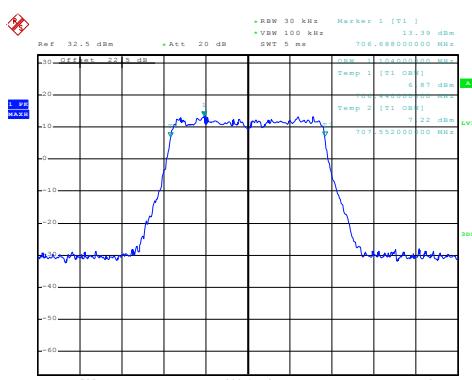


Date: 16.AUG.2014 13:18:22

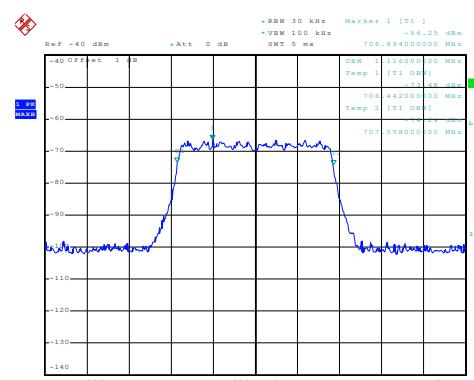
Date: 16.AUG.2014 13:47:56

## Low Channel

### Output



### Input

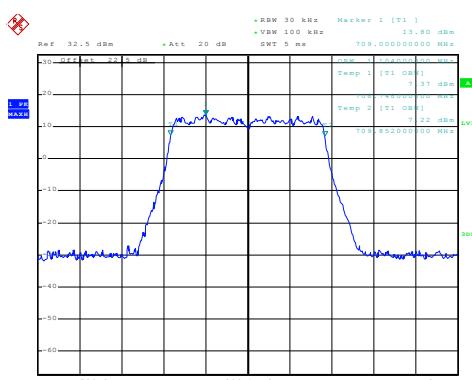


Date: 16.AUG.2014 13:18:42

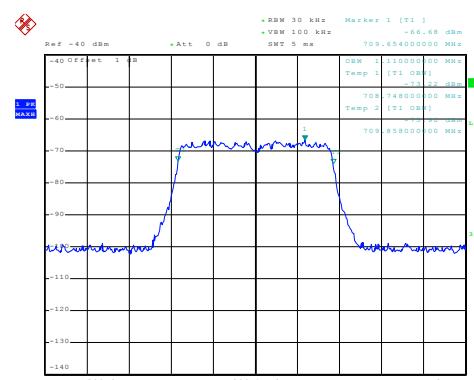
Date: 16.AUG.2014 13:48:16

## Middle Channel

### Output



### Input



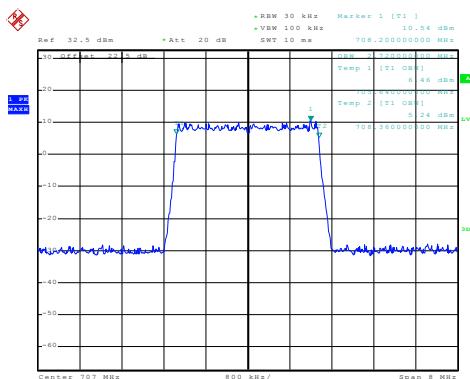
Date: 16.AUG.2014 13:19:05

Date: 16.AUG.2014 13:48:39

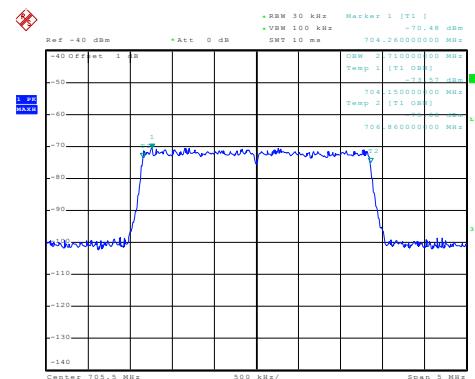
## High Channel

## 3 MHz

### Output



### Input

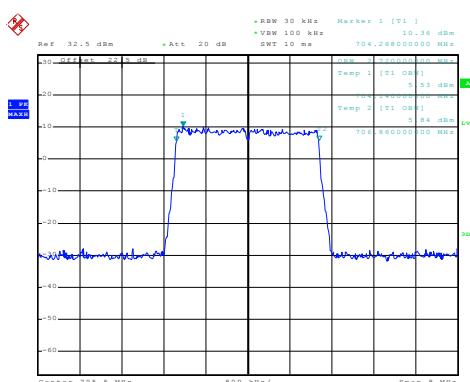


Date: 16.AUG.2014 13:24:47

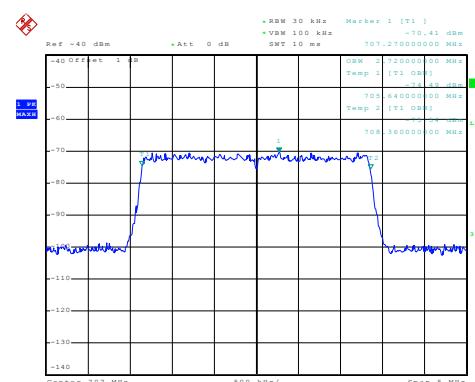
Date: 16.AUG.2014 13:53:05

### Low Channel

### Output



### Input

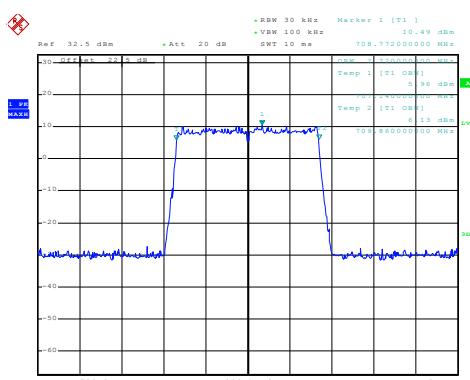


Date: 16.AUG.2014 13:24:26

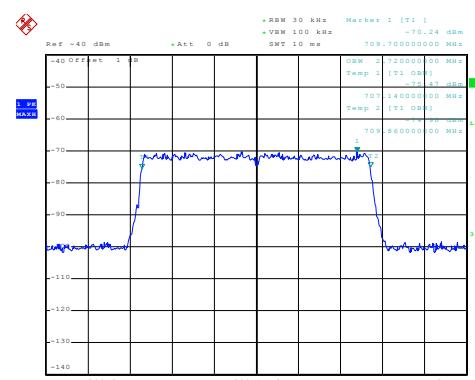
Date: 16.AUG.2014 13:53:25

### Middle Channel

### Output



### Input



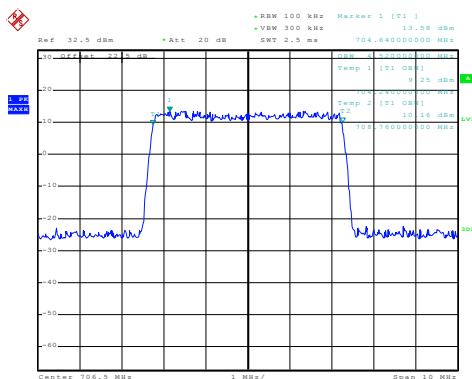
Date: 16.AUG.2014 13:25:09

Date: 16.AUG.2014 13:53:47

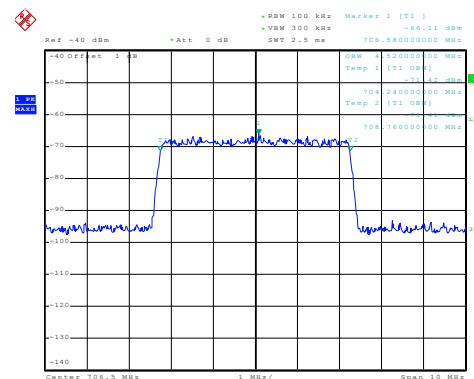
### High Channel

## 5 MHz

### Output



### Input

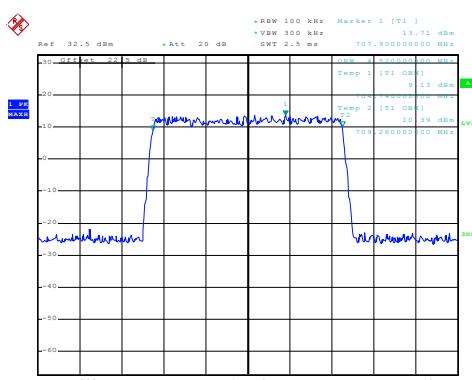


Date: 16.AUG.2014 13:30:19

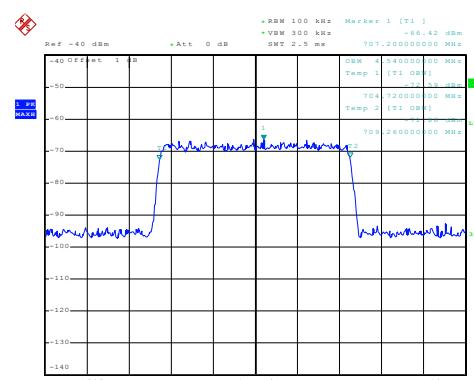
Date: 16.AUG.2014 13:30:19

### Low Channel

#### Output



#### Input

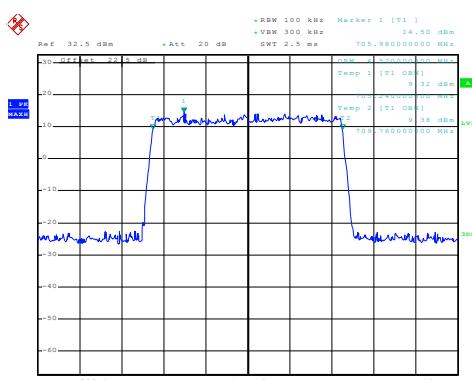


Date: 16.AUG.2014 13:30:42

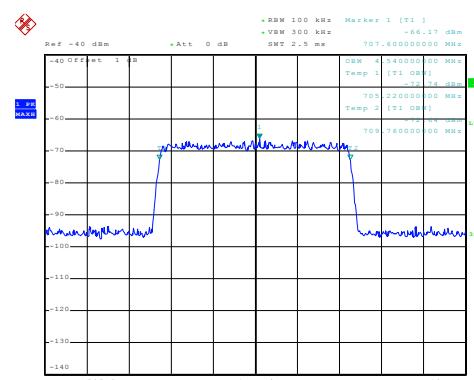
Date: 16.AUG.2014 13:30:42

### Middle Channel

#### Output



#### Input



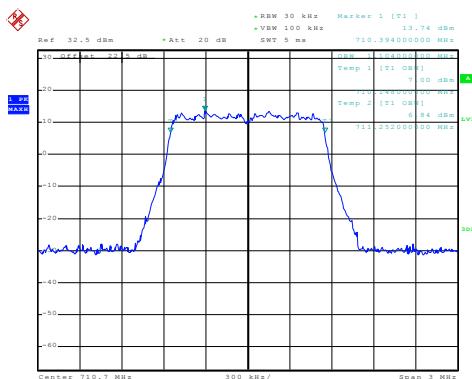
Date: 16.AUG.2014 13:31:10

Date: 16.AUG.2014 13:31:10

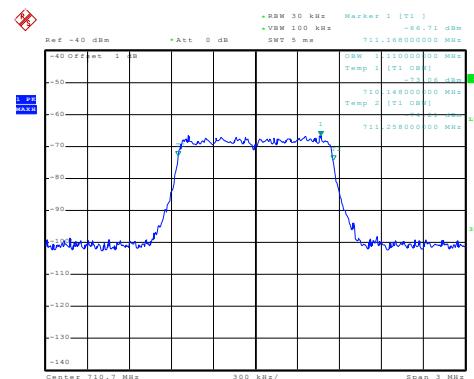
### High Channel

## Lower C Band - 1.4 MHz

### Output



### Input

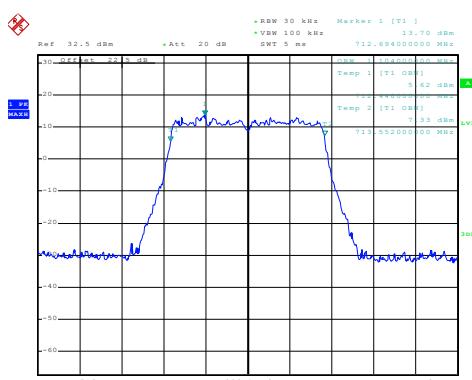


Date: 16.AUG.2014 13:19:34

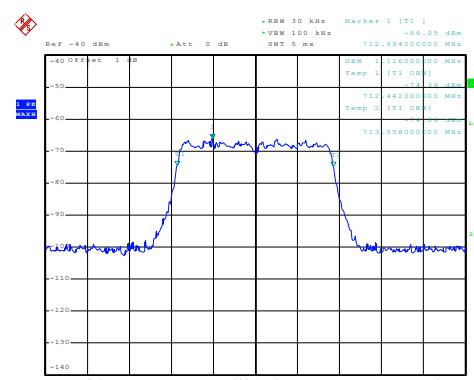
Date: 16.AUG.2014 13:49:01

## Low Channel

### Output



### Input

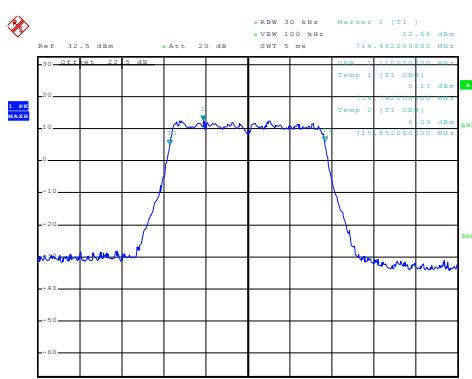


Date: 16.AUG.2014 13:19:55

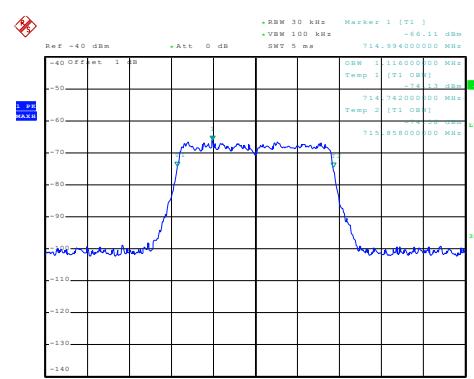
Date: 16.AUG.2014 13:49:21

## Middle Channel

### Output



### Input



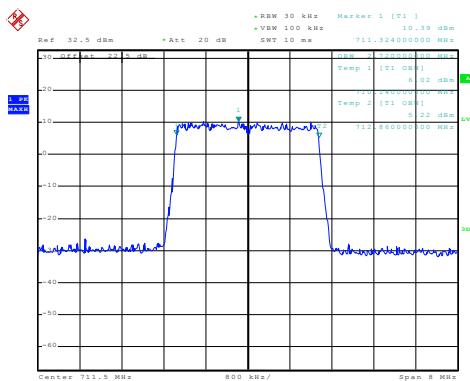
Date: 16.AUG.2014 13:20:26

Date: 16.AUG.2014 13:49:44

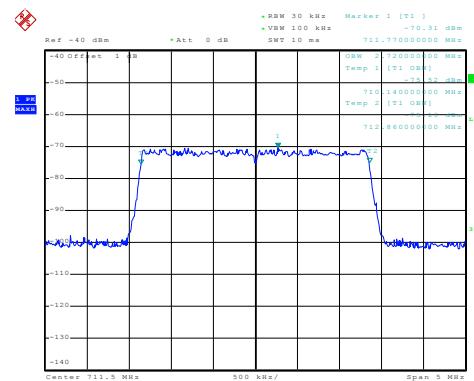
## High Channel

## 3 MHz

### Output



### Input

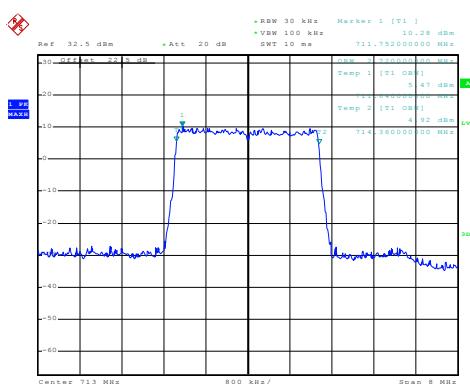


Date: 16.AUG.2014 13:26:33

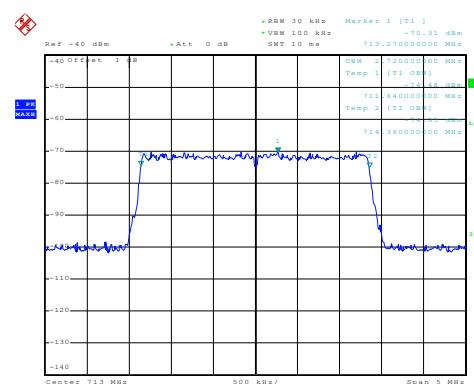
Date: 16.AUG.2014 13:54:14

### Low Channel

### Output



### Input

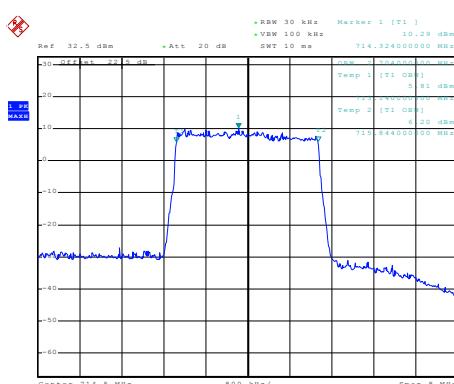


Date: 16.AUG.2014 13:25:57

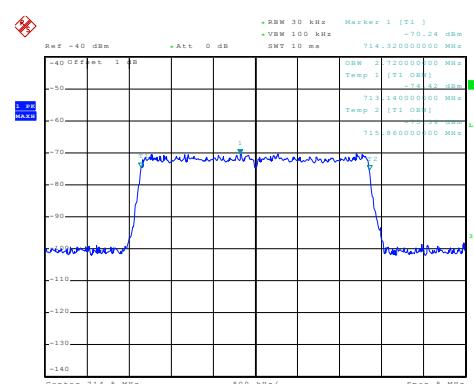
Date: 16.AUG.2014 13:54:39

### Middle Channel

### Output



### Input



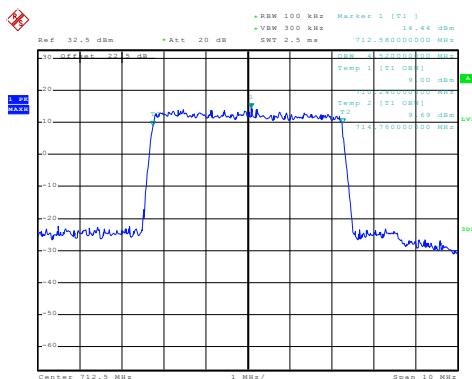
Date: 16.AUG.2014 13:26:23

Date: 16.AUG.2014 13:55:00

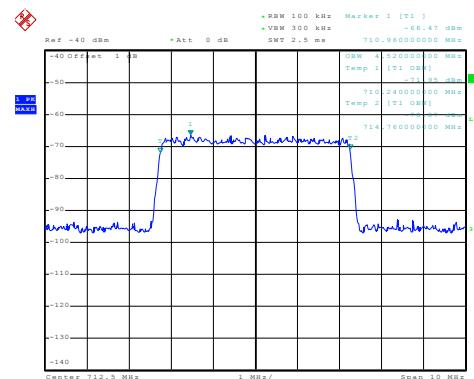
### High Channel

## 5 MHz

### Output



### Input

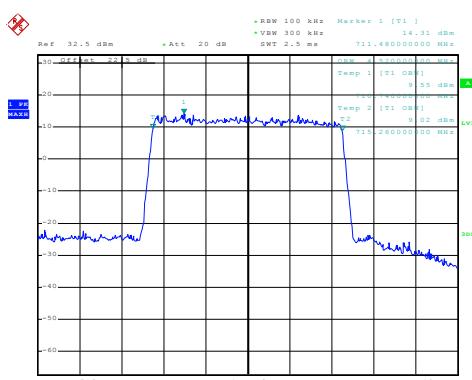


Date: 16.AUG.2014 13:31:42

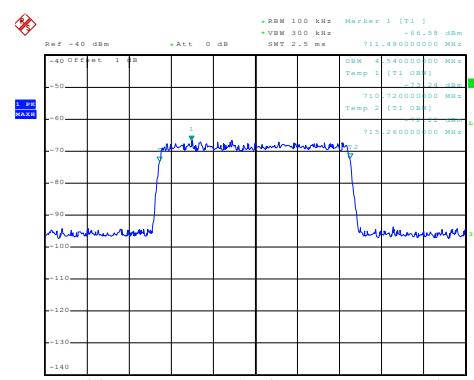
Date: 16.AUG.2014 14:00:15

### Low Channel

#### Output



#### Input

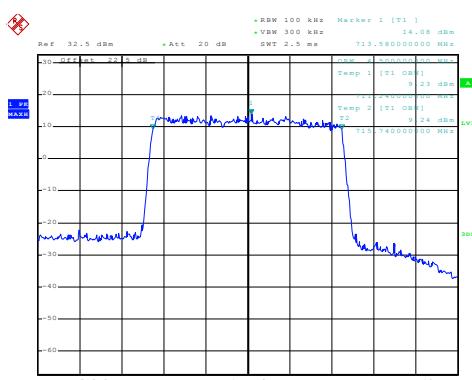


Date: 16.AUG.2014 13:32:06

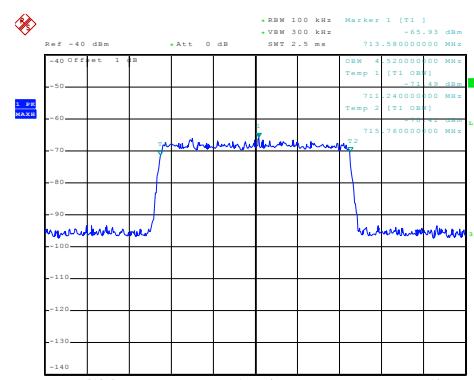
Date: 16.AUG.2014 14:00:35

### Middle Channel

#### Output



#### Input



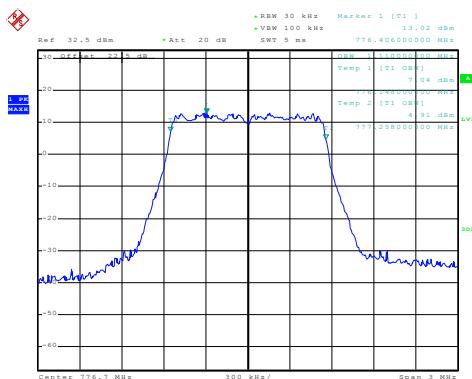
Date: 16.AUG.2014 13:32:33

Date: 16.AUG.2014 14:00:57

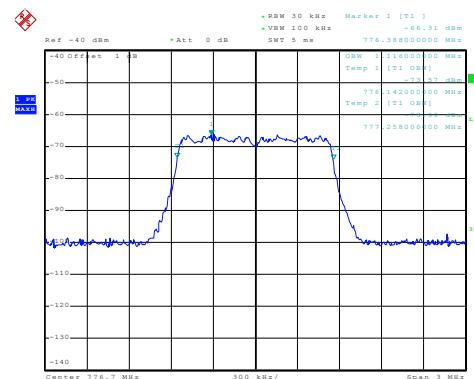
### High Channel

## Upper C Band - 1.4 MHz

### Output



### Input

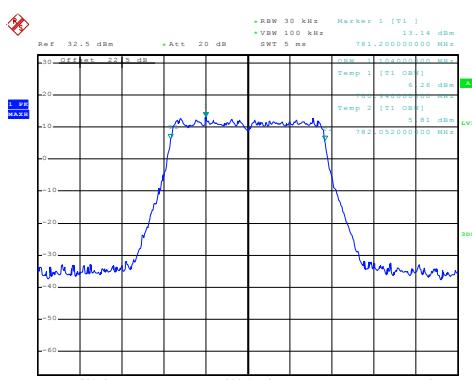


Date: 16.AUG.2014 13:21:07

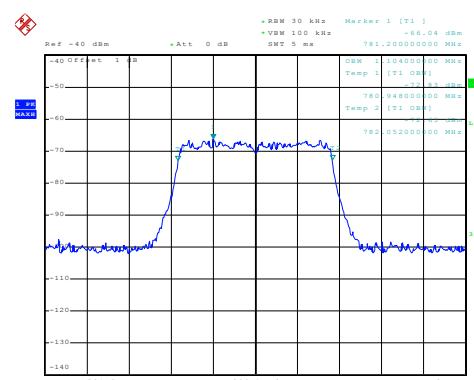
Date: 16.AUG.2014 13:50:15

### Low Channel

### Output



### Input

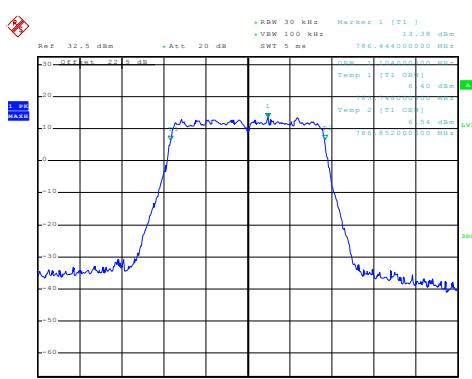


Date: 16.AUG.2014 13:21:32

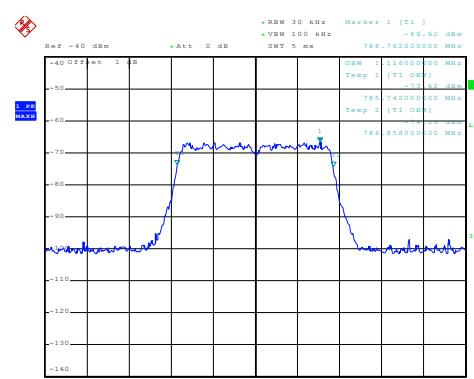
Date: 16.AUG.2014 13:50:37

### Middle Channel

### Output



### Input



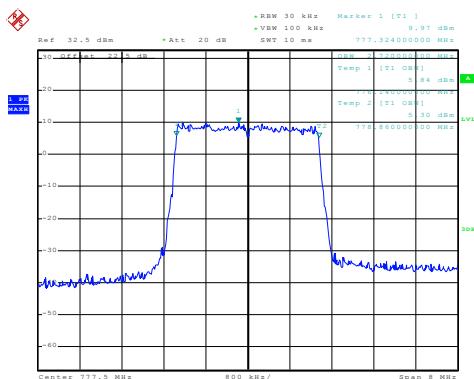
Date: 16.AUG.2014 13:21:57

Date: 16.AUG.2014 13:50:57

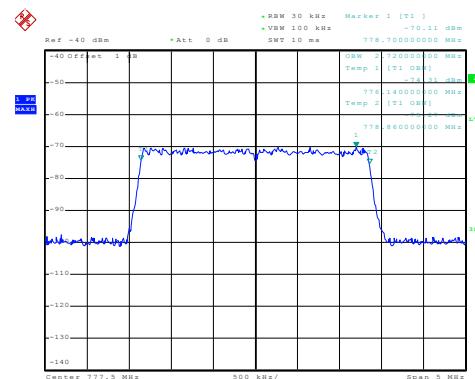
### High Channel

## 3 MHz

### Output



### Input

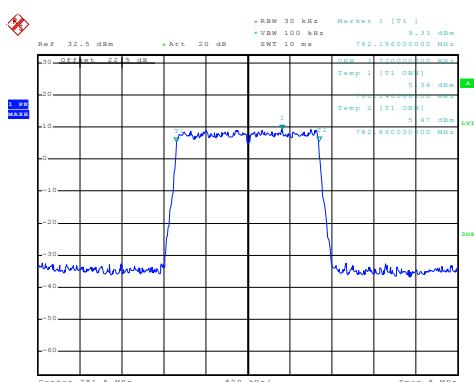


Date: 16.AUG.2014 13:26:58

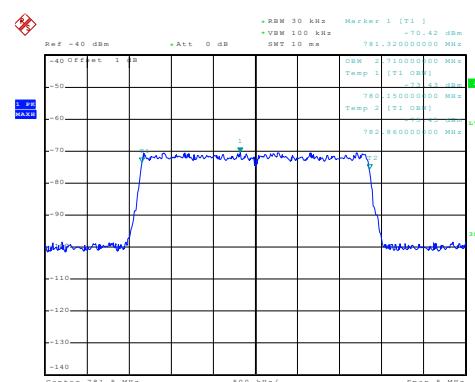
Date: 16.AUG.2014 13:55:30

### Low Channel

### Output



### Input

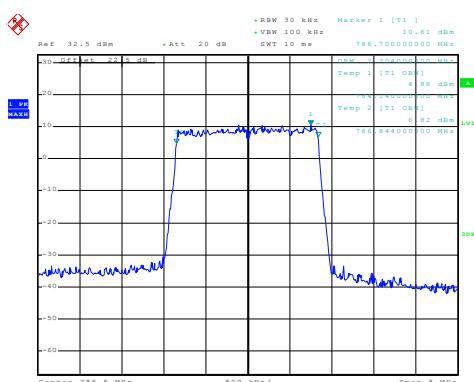


Date: 16.AUG.2014 13:27:20

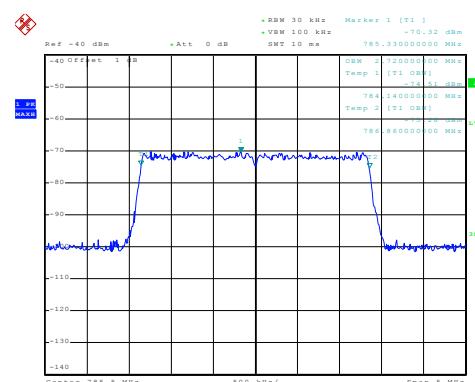
Date: 16.AUG.2014 13:55:55

### Middle Channel

### Output



### Input



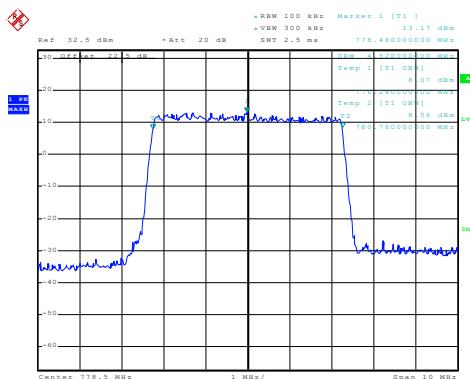
Date: 16.AUG.2014 13:27:46

Date: 16.AUG.2014 13:56:21

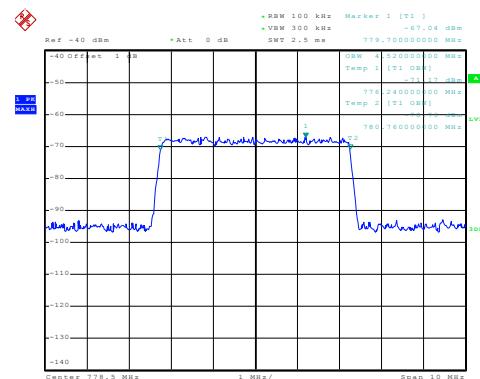
### High Channel

## 5 MHz

### Output



### Input

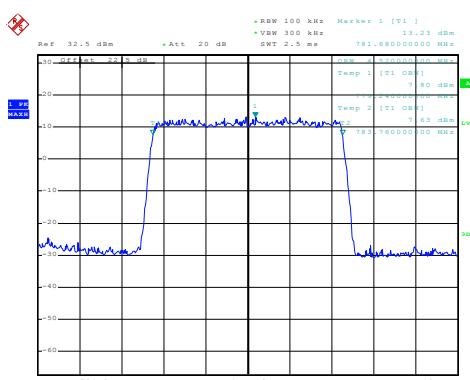


Date: 16.AUG.2014 13:33:05

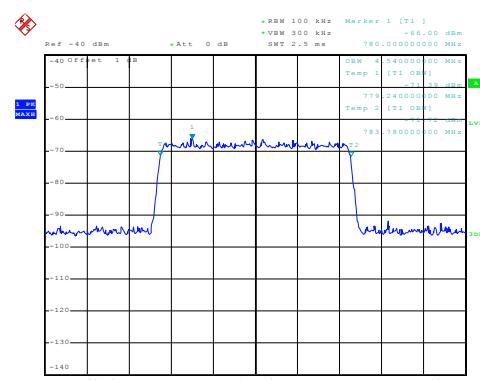
Date: 16.AUG.2014 14:01:24

### Low Channel

#### Output



#### Input

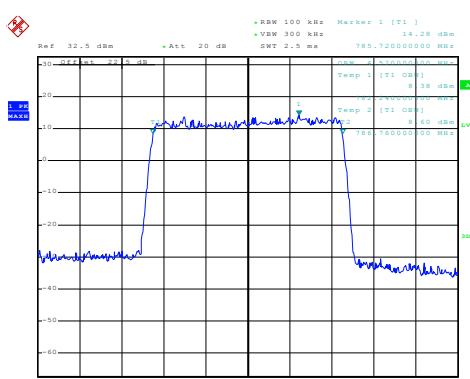


Date: 16.AUG.2014 13:33:30

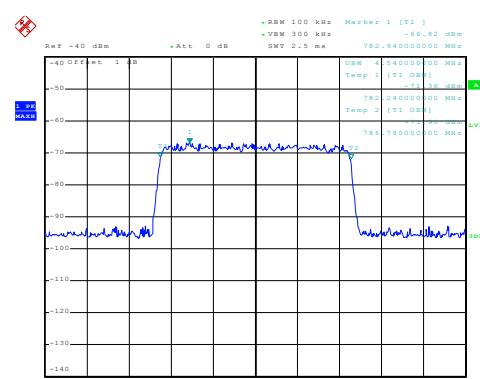
Date: 16.AUG.2014 14:01:51

### Middle Channel

#### Output



#### Input



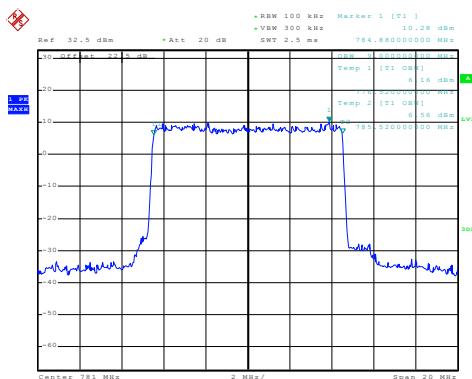
Date: 16.AUG.2014 13:33:51

Date: 16.AUG.2014 14:02:16

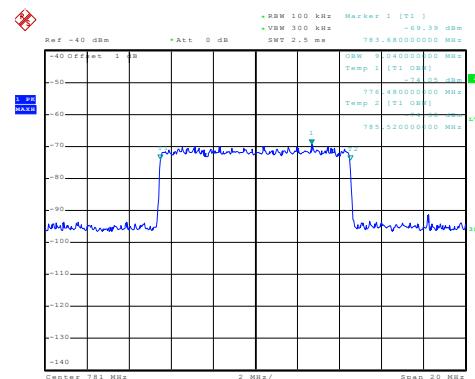
### High Channel

## 10 MHz

### Output



### Input

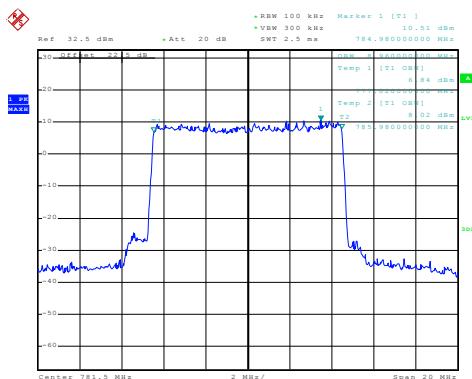


Date: 16.AUG.2014 13:36:51

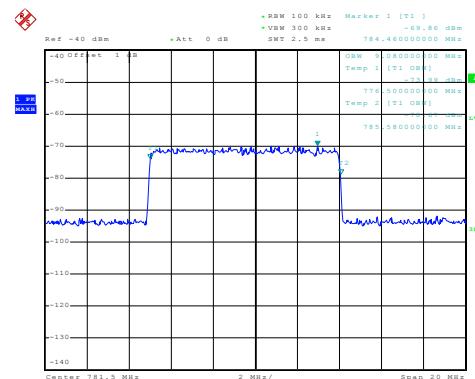
Date: 16.AUG.2014 14:04:31

### Low Channel

### Output



### Input

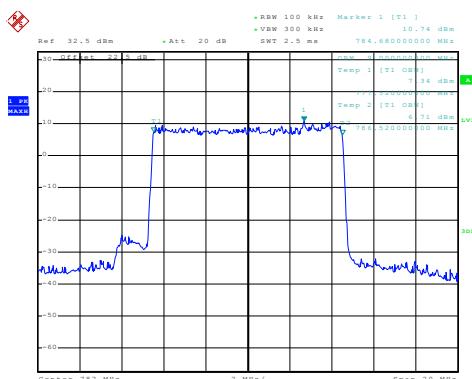


Date: 16.AUG.2014 13:36:18

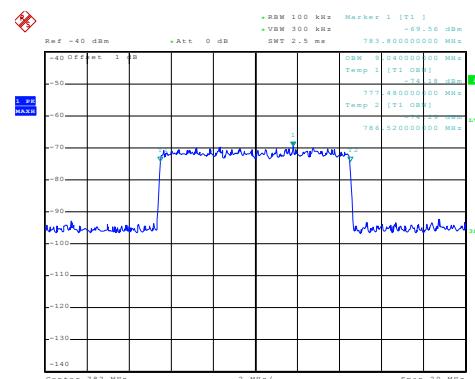
Date: 16.AUG.2014 14:06:52

### Middle Channel

### Output



### Input



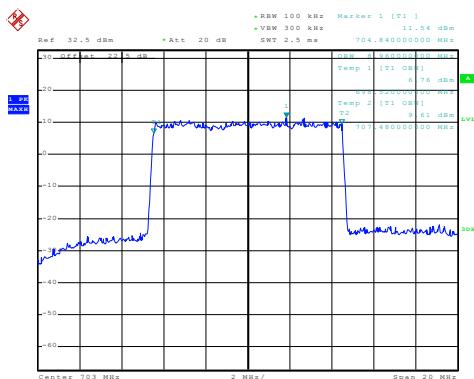
Date: 16.AUG.2014 13:36:37

Date: 16.AUG.2014 14:07:13

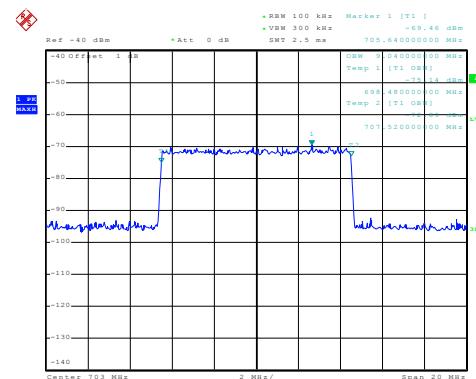
### High Channel

## Lower ABC Full Band - 10 MHz

### Output



### Input

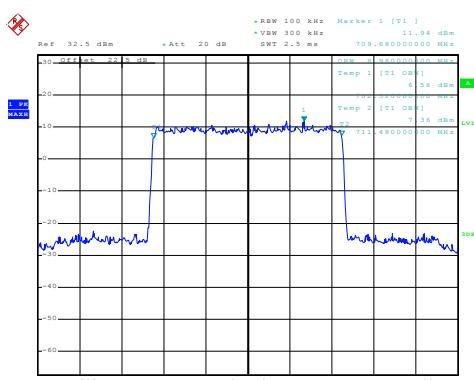


Date: 16.AUG.2014 13:34:47

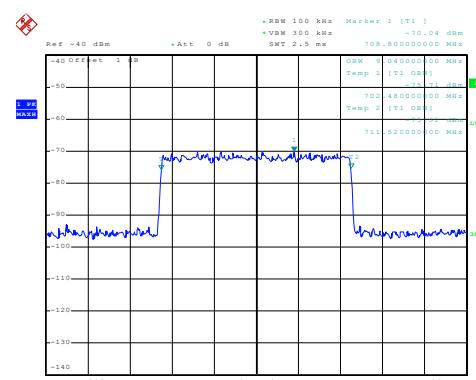
Date: 16.AUG.2014 14:03:21

## Low Channel

### Output



### Input

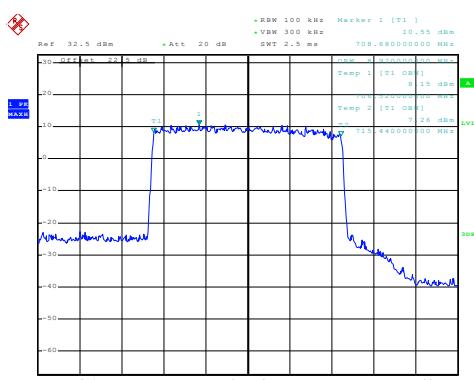


Date: 16.AUG.2014 13:35:07

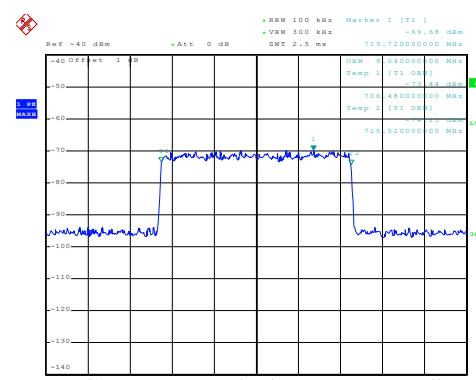
Date: 16.AUG.2014 14:03:42

## Middle Channel

### Output



### Input



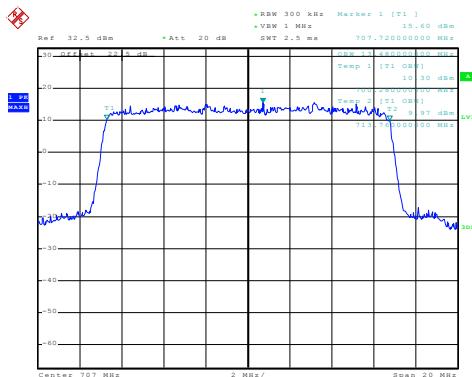
Date: 16.AUG.2014 13:35:29

Date: 16.AUG.2014 14:04:04

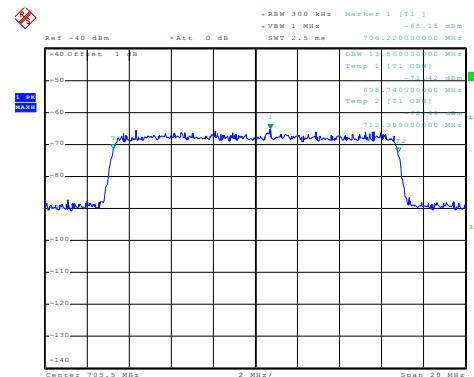
## High Channel

## 15 MHz

### Output



### Input

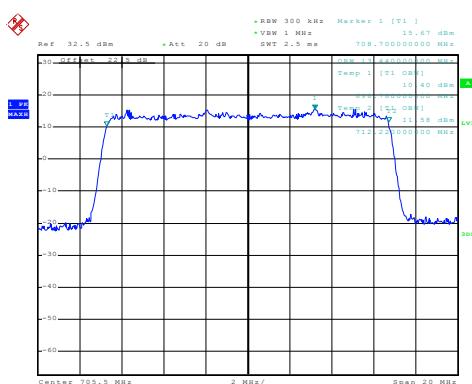


Date: 16.AUG.2014 13:38:22

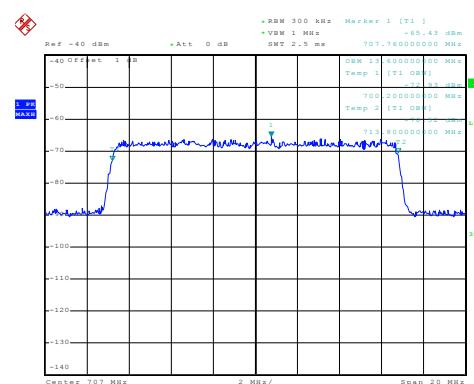
Date: 16.AUG.2014 13:45:20

### Low Channel

### Output



### Input

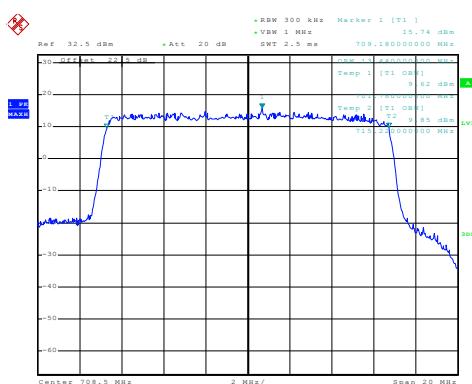


Date: 16.AUG.2014 13:38:00

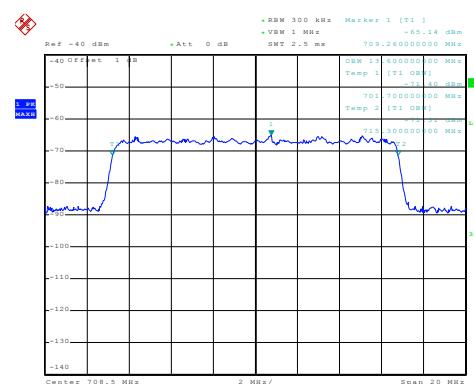
Date: 16.AUG.2014 13:44:59

### Middle Channel

### Output



### Input



Date: 16.AUG.2014 13:38:45

Date: 16.AUG.2014 13:44:30

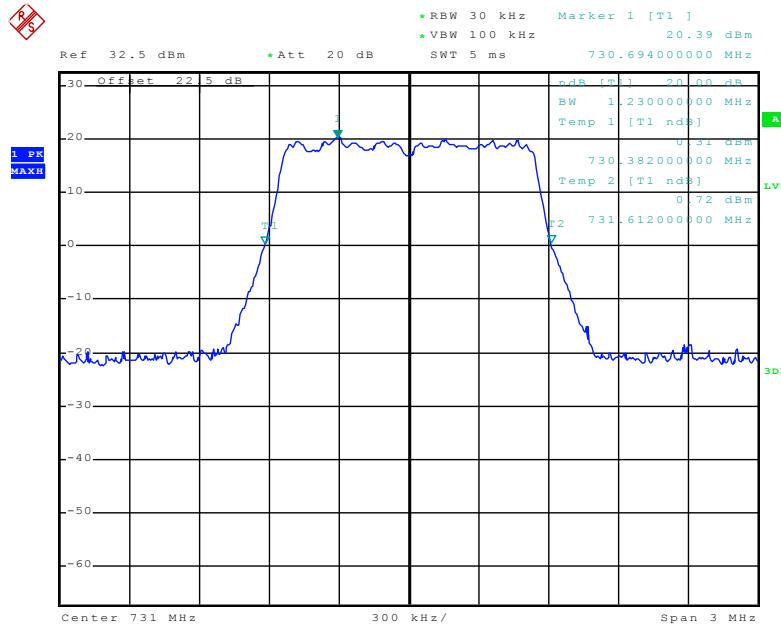
### High Channel

**20 dB bandwidth for midband**

**Downlink mode**

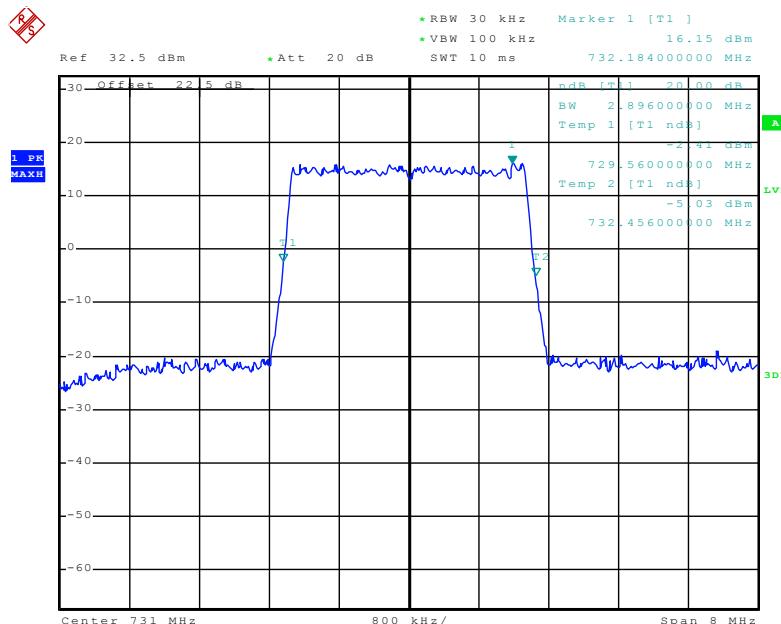
**Lower A Band**

**1.4 MHz**



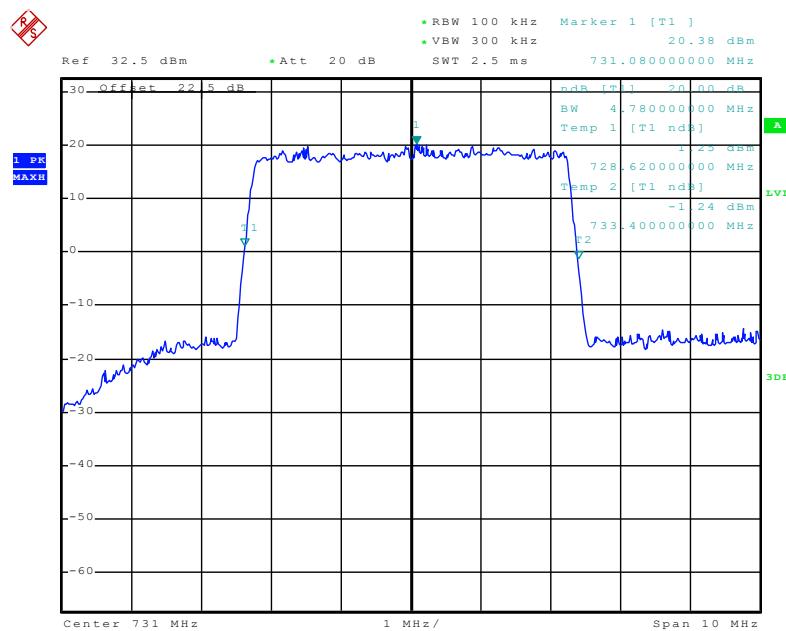
Date: 16.AUG.2014 15:35:13

**3 MHz**



Date: 16.AUG.2014 15:37:43

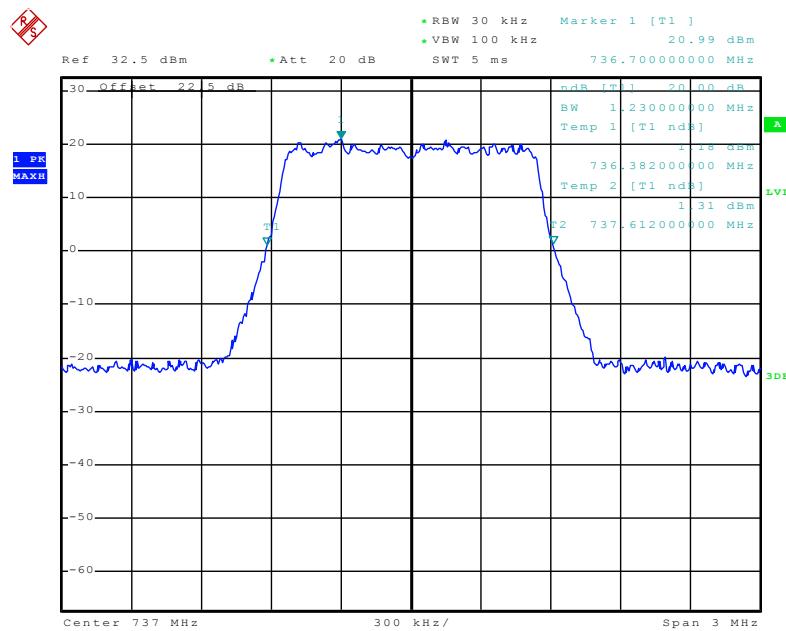
## 5 MHz



Date: 16.AUG.2014 15:40:11

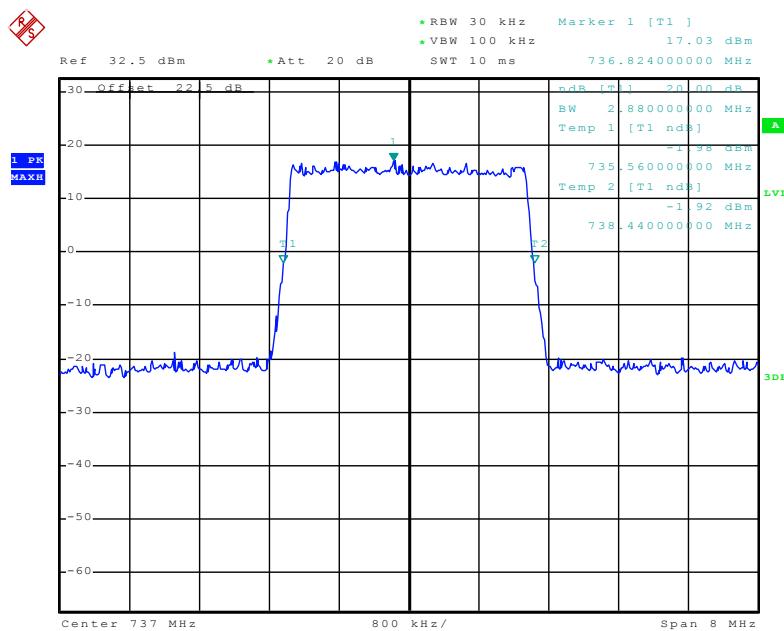
## Lower B Band

### 1.4 MHz



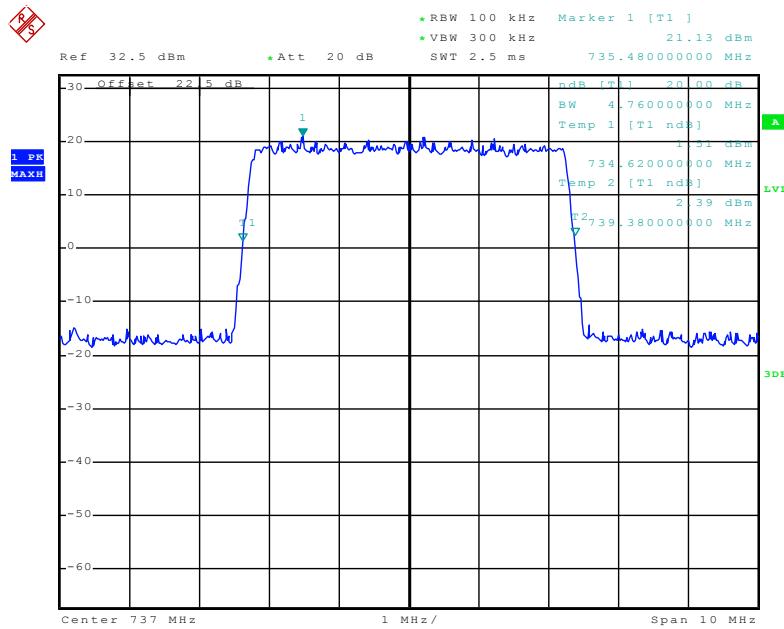
Date: 16.AUG.2014 15:35:42

## 3 MHz



Date: 16.AUG.2014 15:38:14

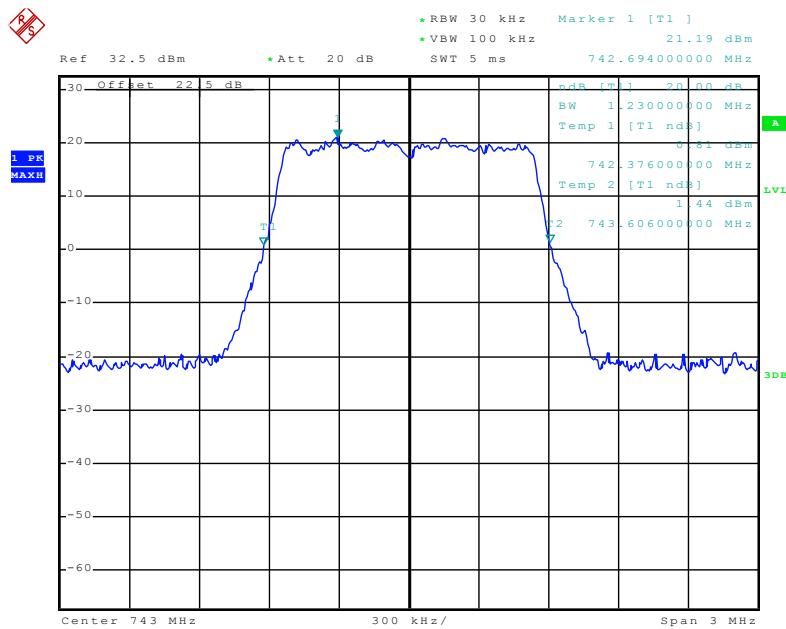
## 5 MHz



Date: 16.AUG.2014 15:40:33

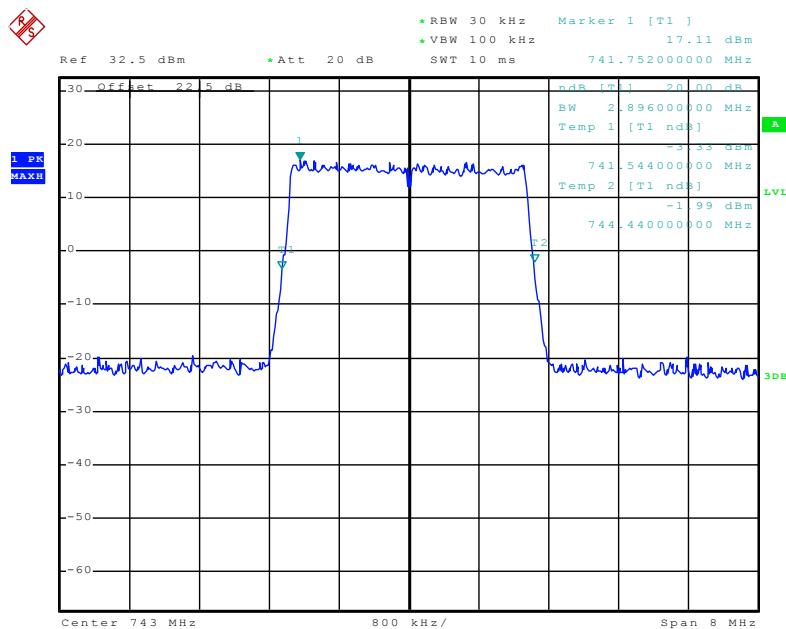
## Lower C Band

1.4 MHz



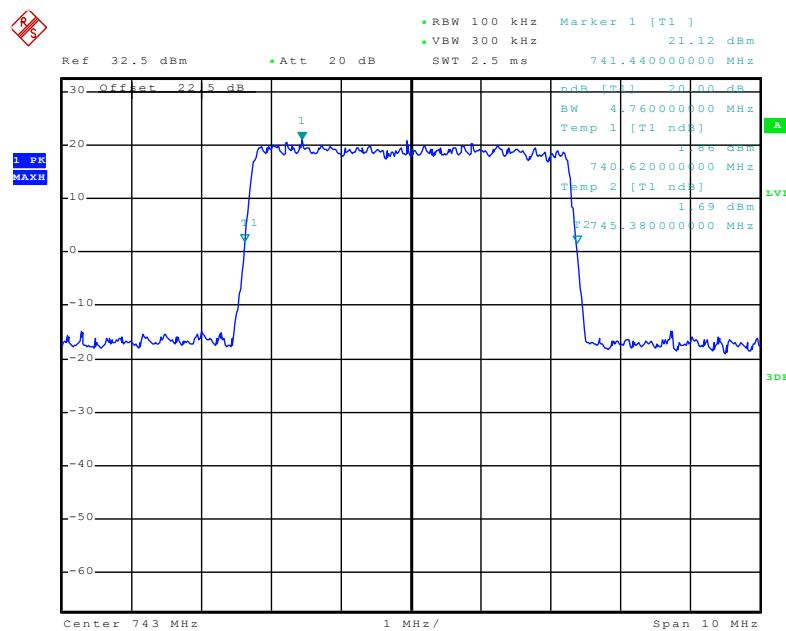
Date: 16.AUG.2014 15:36:14

3 MHz



Date: 16.AUG.2014 15:38:41

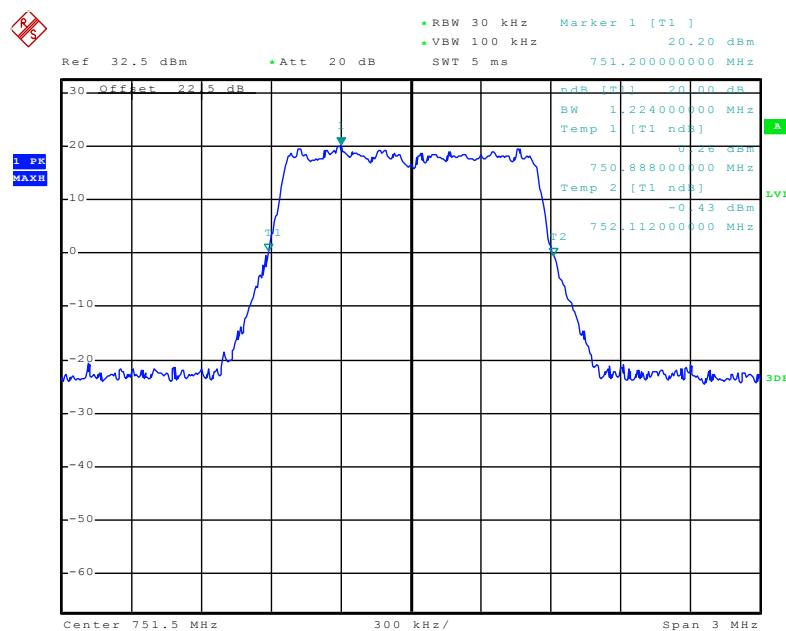
## 5 MHz



Date: 16.AUG.2014 15:40:56

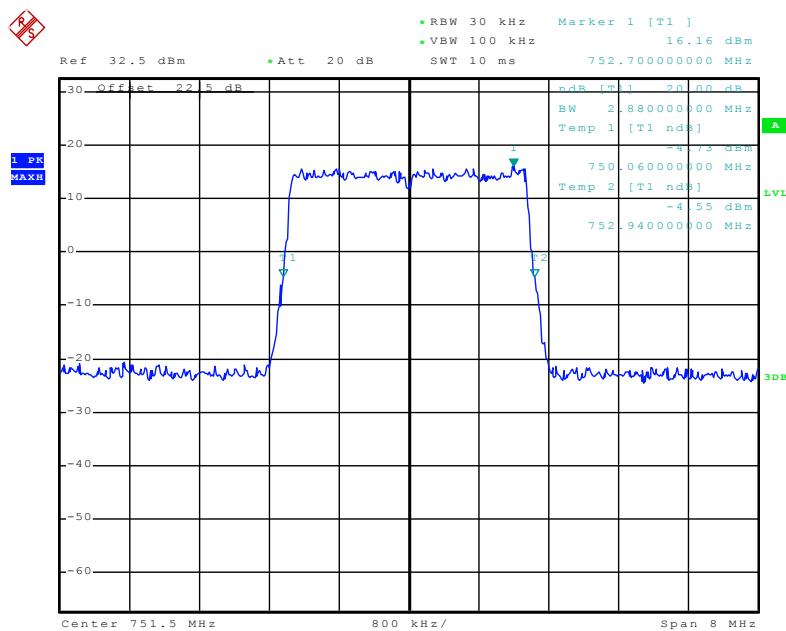
## Upper C Band

### 1.4 MHz



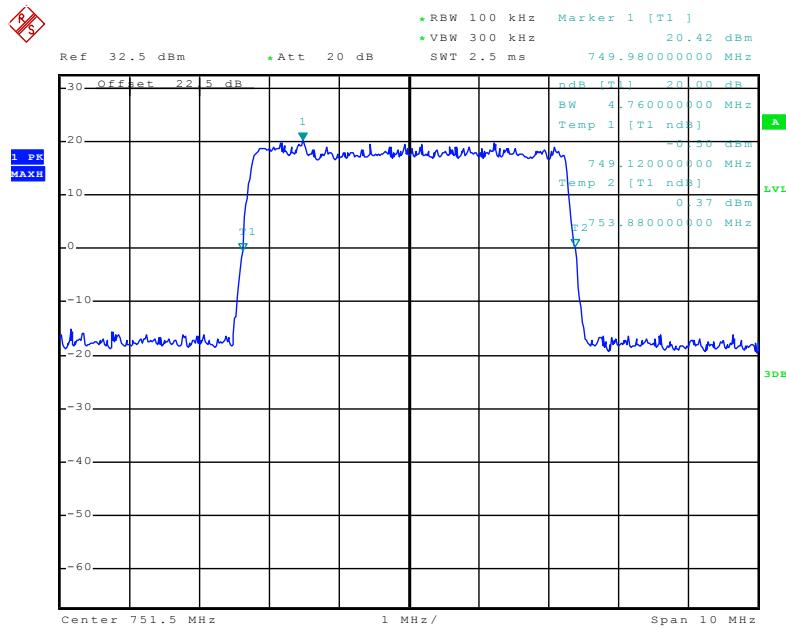
Date: 16.AUG.2014 15:36:48

## 3 MHz



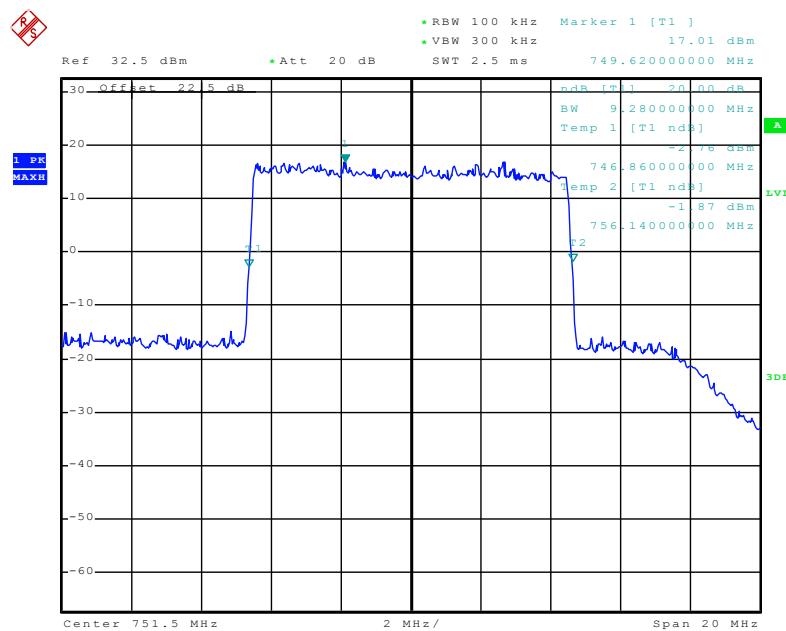
Date: 16.AUG.2014 15:39:15

## 5 MHz



Date: 16.AUG.2014 15:41:26

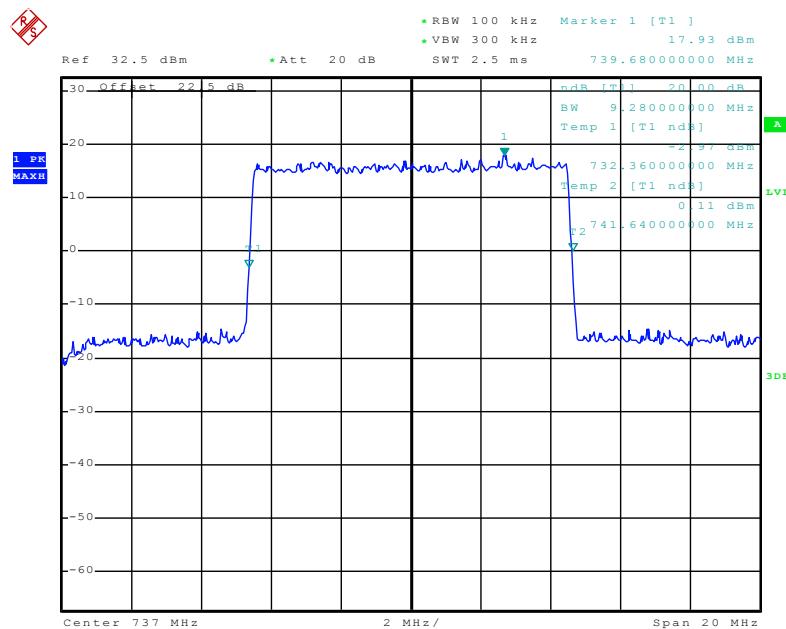
## 10 MHz



Date: 16.AUG.2014 15:43:10

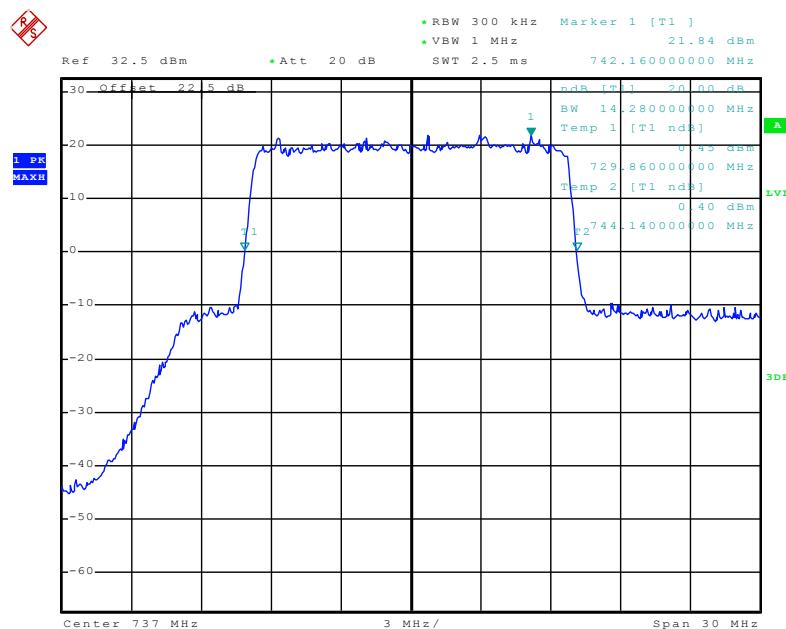
## Lower ABC Full Band

## 10 MHz



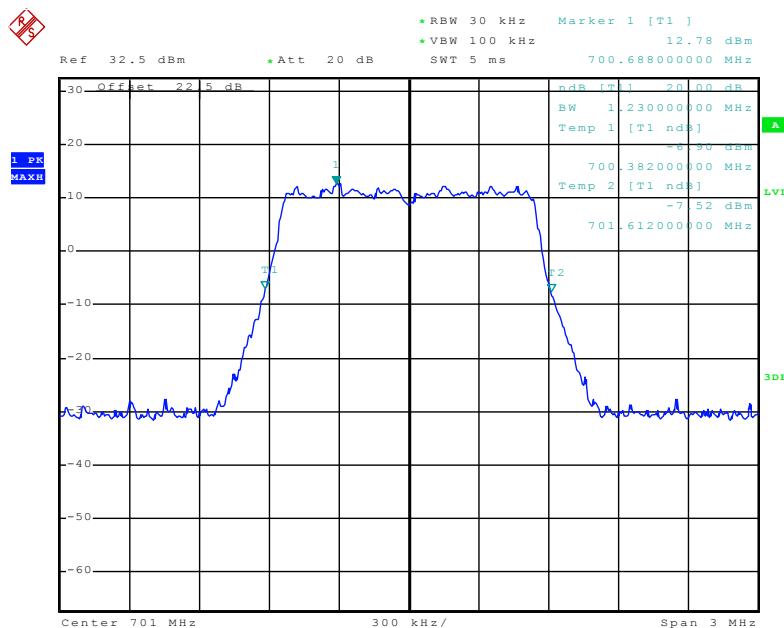
Date: 16.AUG.2014 15:42:32

## 15 MHz



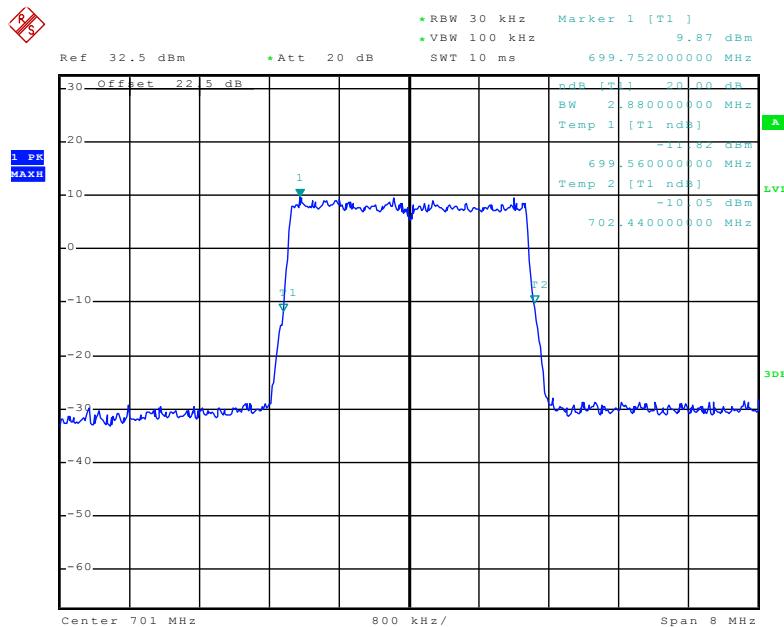
Date: 16.AUG.2014 15:44:07

**Uplink mode  
Lower A Band  
1.4 MHz**



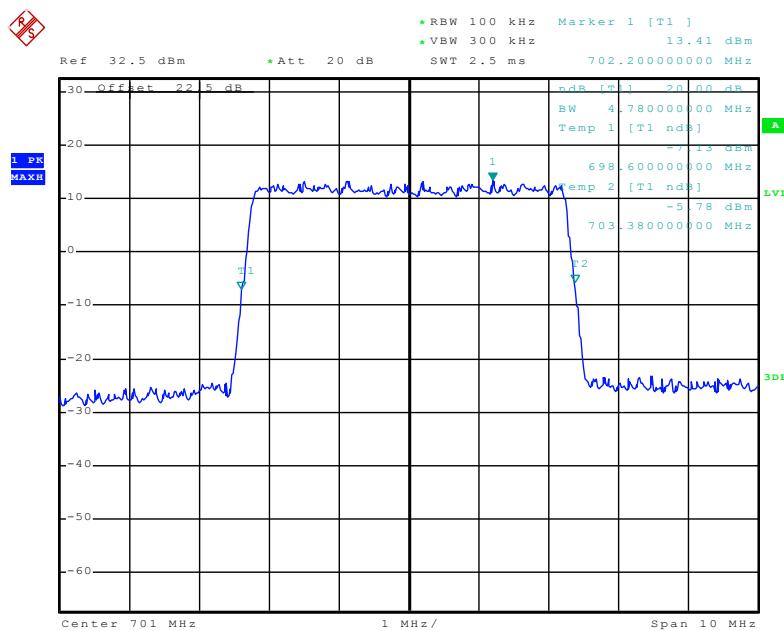
Date: 16.AUG.2014 15:59:51

**3 MHz**



Date: 16.AUG.2014 16:02:00

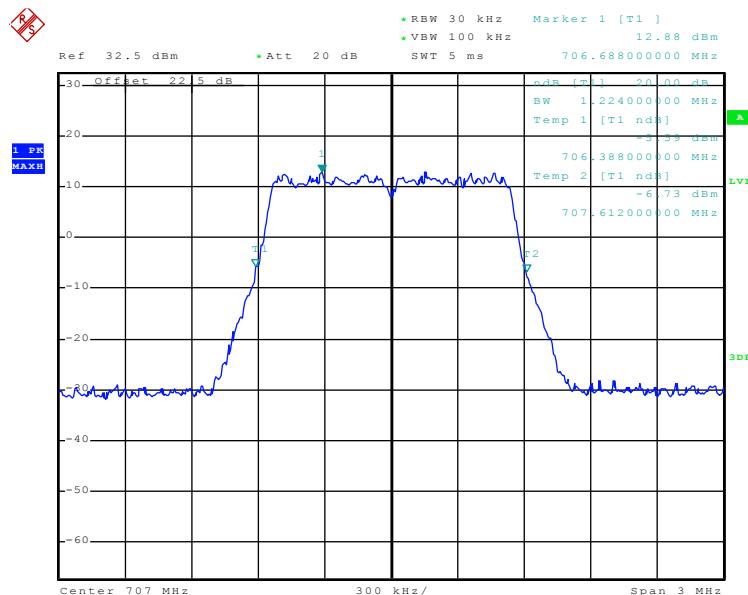
## 5 MHz



Date: 16.AUG.2014 16:04:14

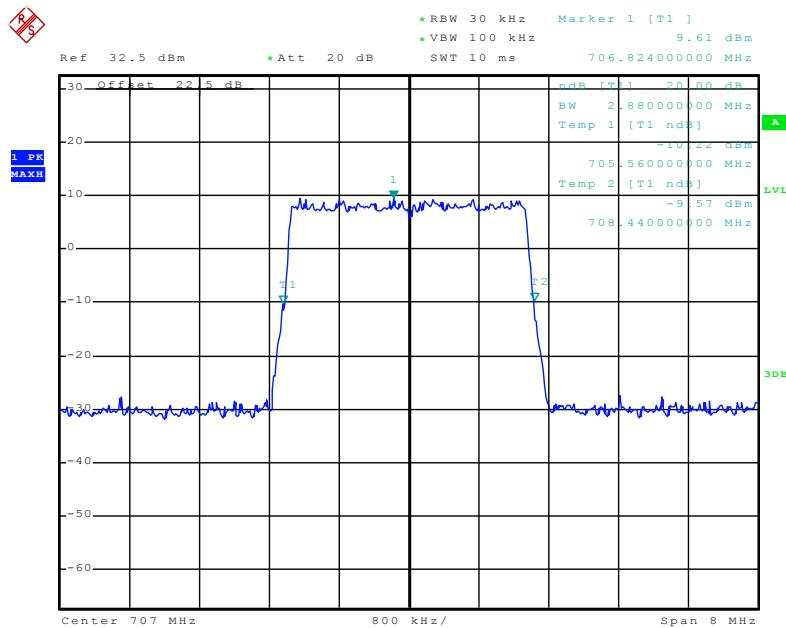
## Lower B Band

### 1.4 MHz



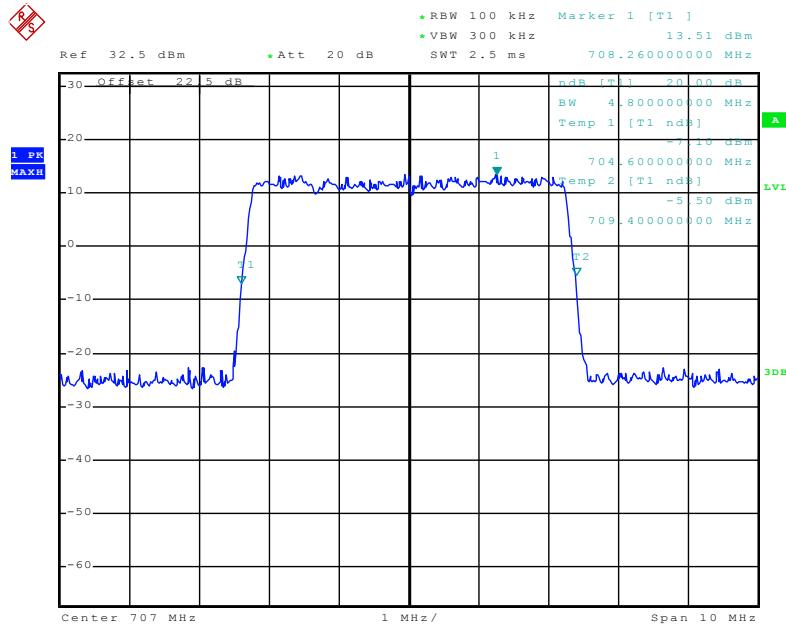
Date: 16.AUG.2014 16:00:17

## 3 MHz



Date: 16.AUG.2014 16:02:24

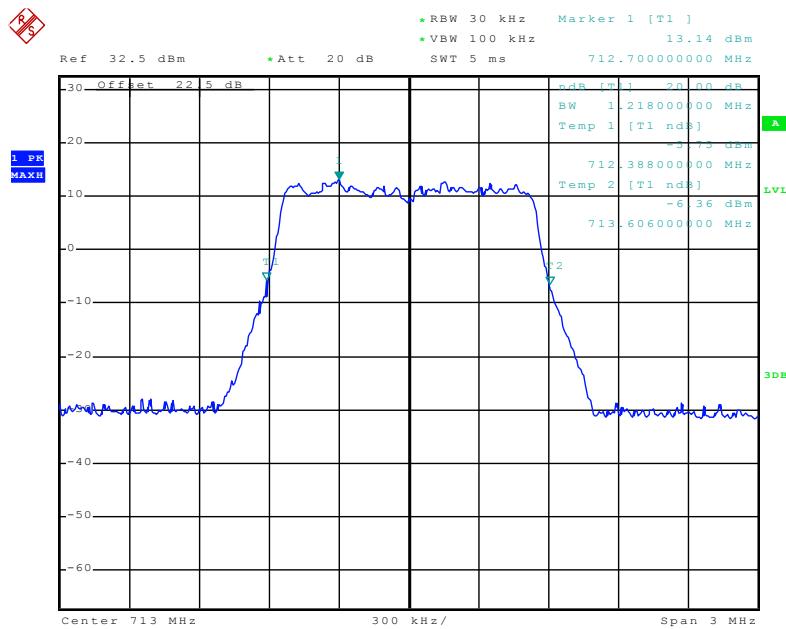
## 5 MHz



Date: 16.AUG.2014 16:04:40

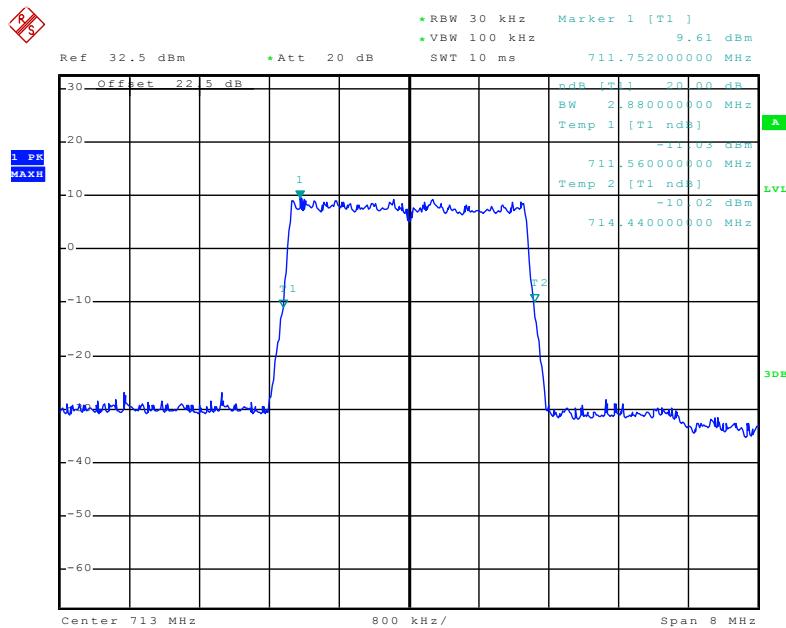
## Lower C Band

1.4 MHz



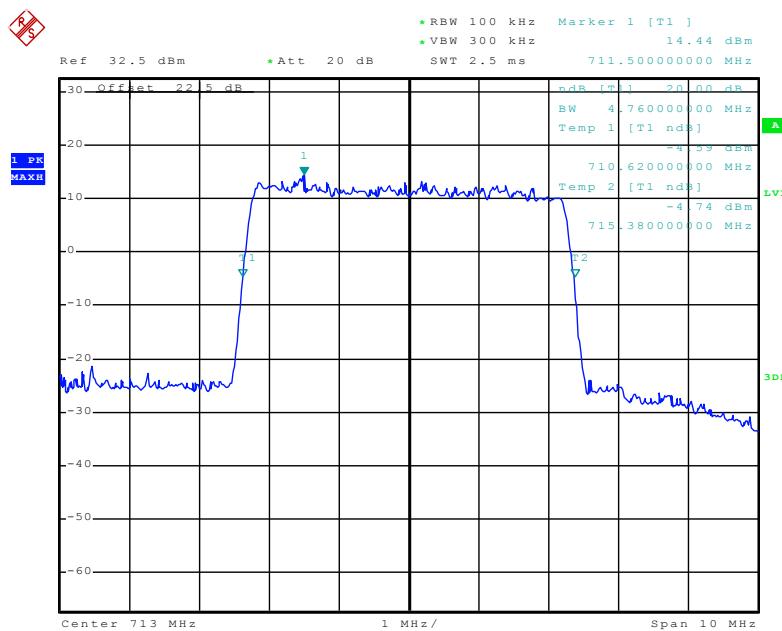
Date: 16.AUG.2014 16:00:43

3 MHz



Date: 16.AUG.2014 16:02:50

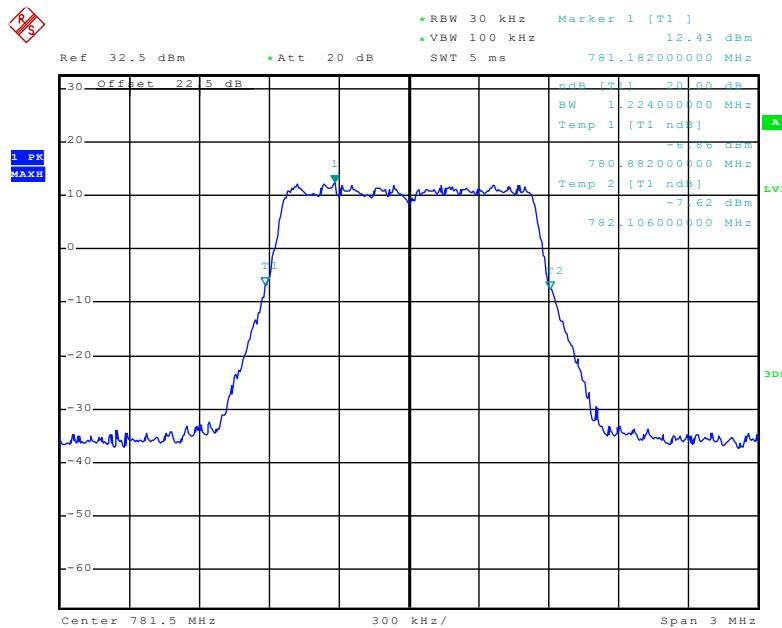
## 5 MHz



Date: 16.AUG.2014 16:05:02

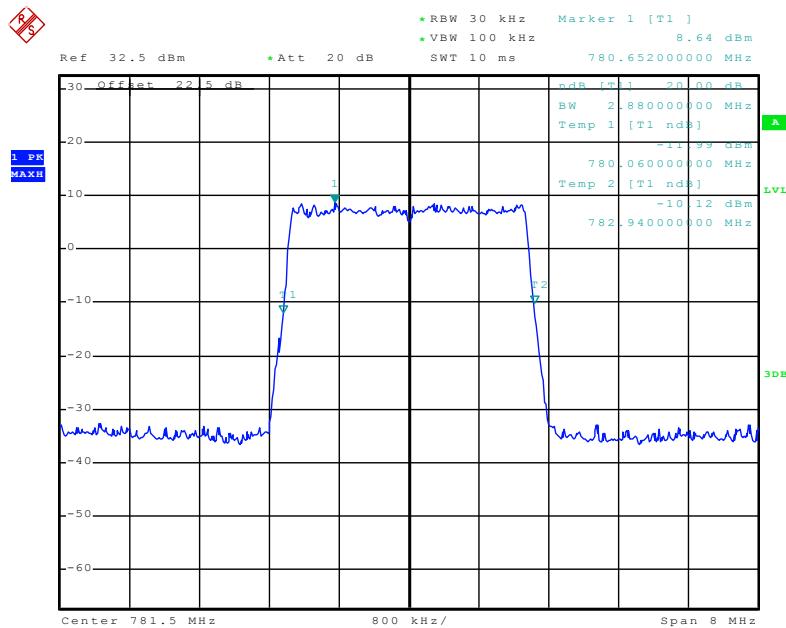
## Upper C Band

### 1.4 MHz



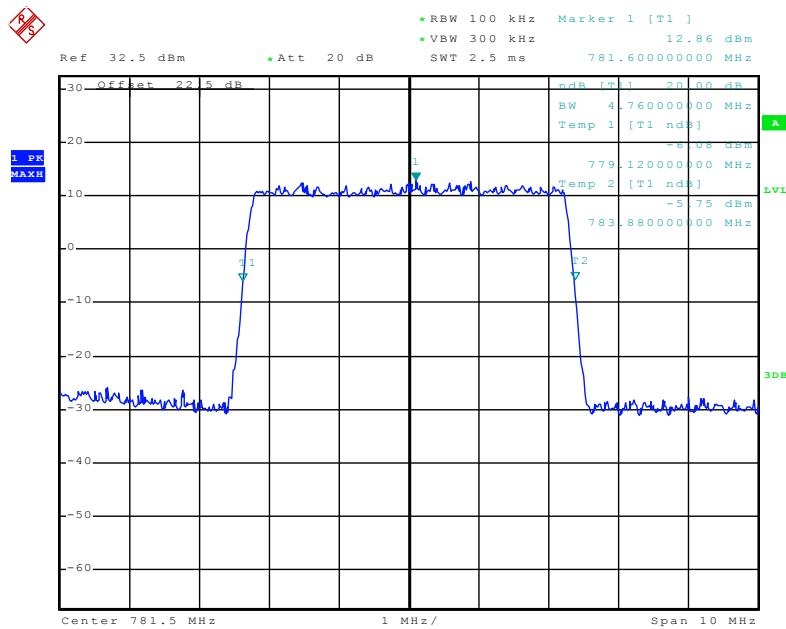
Date: 16.AUG.2014 16:01:07

## 3 MHz



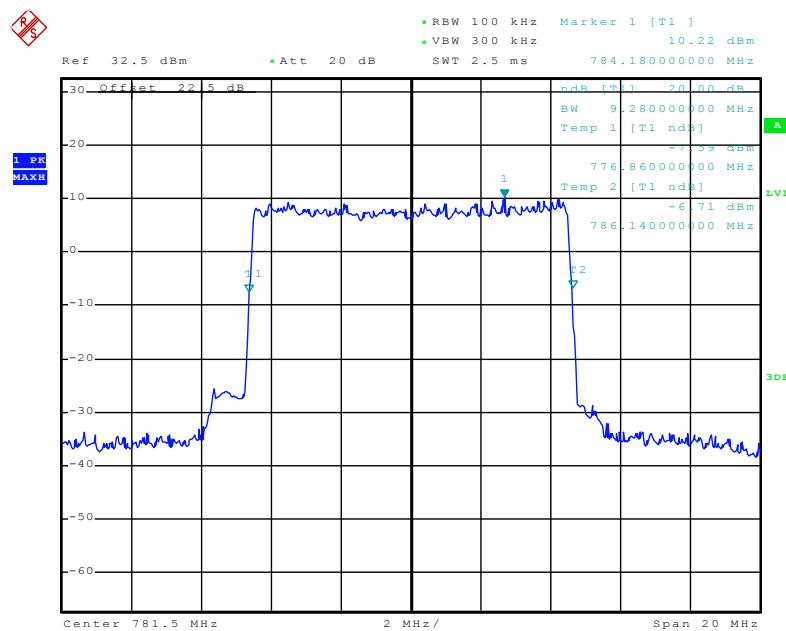
Date: 16.AUG.2014 16:03:18

## 5 MHz



Date: 16.AUG.2014 16:05:33

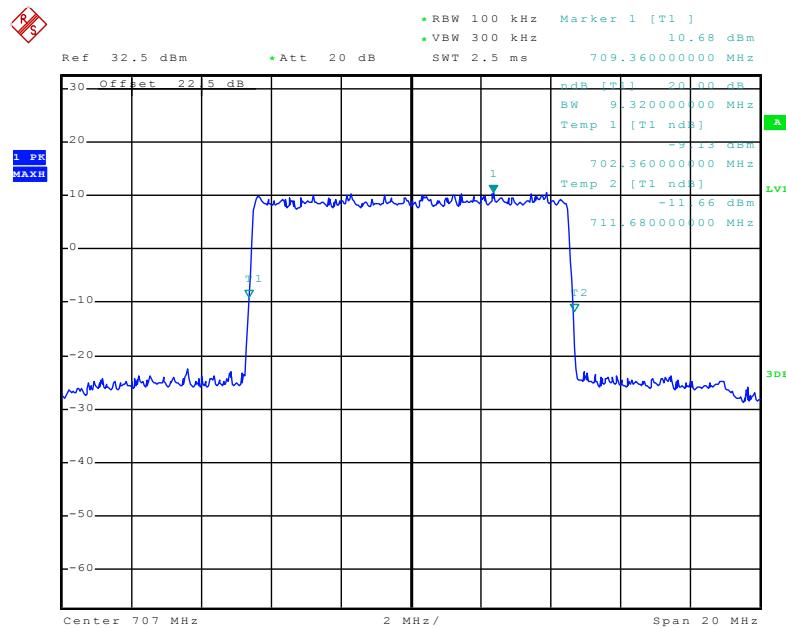
## 10 MHz



Date: 16.AUG.2014 16:06:53

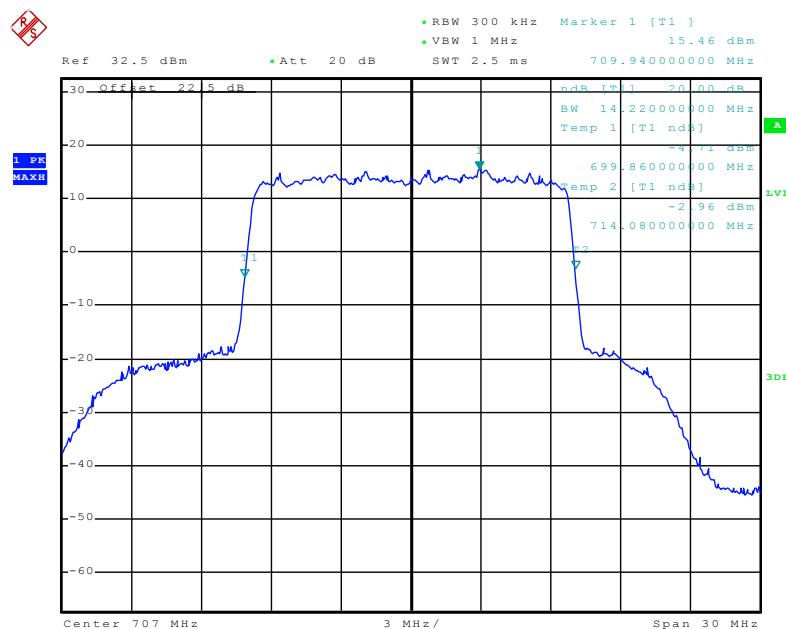
## Lower ABC Full Band

## 10 MHz



Date: 16.AUG.2014 16:06:25

## 15 MHz



Date: 16.AUG.2014 16:08:36

## 9 Spurious emission at antenna terminals and intermodulation

### 9.1 Standard Applicable

According to §2.1051, §27.53.

### 9.2 Test setup

Please refer the section 6.2 Configuration of tested System.

### 9.3 Test Procedure

#### For Spurious emissions at antenna terminals test procedure

The spurious emissions were measured directly from the EUT antenna output with a spectrum analyzer from 30 MHz to the 5th harmonic of the highest carrier frequency.

Band edge compliance is demonstrated using a LTE signal at the upper and lower limits of the band.

1. The EUT RF output port was connected to spectrum analyzer.
2. The level of RF input signal shall be increased, until the maximum output power per channel, declared by client, is reached.
3. The spurious emissions at antenna were measured at the RF output port of the EUT at low, middle, high channels.

#### For inter modulation test procedure

1. The EUT RF output port was connected to spectrum analyzer. The EUT shall be set to maximum gain and maximum rated output power per channel.

2. Two continuous sinusoidal RF signals shall be fed to the input antenna port of the booster using a combining device. The two channels near each other should be separated by at least one operating channel width.
3. The spurious emissions at antenna were measured at the RF output port of the EUT.

4. Spectrum analyzer settings:

Detector: Peak

RBW: 1%-3% of bandwidth

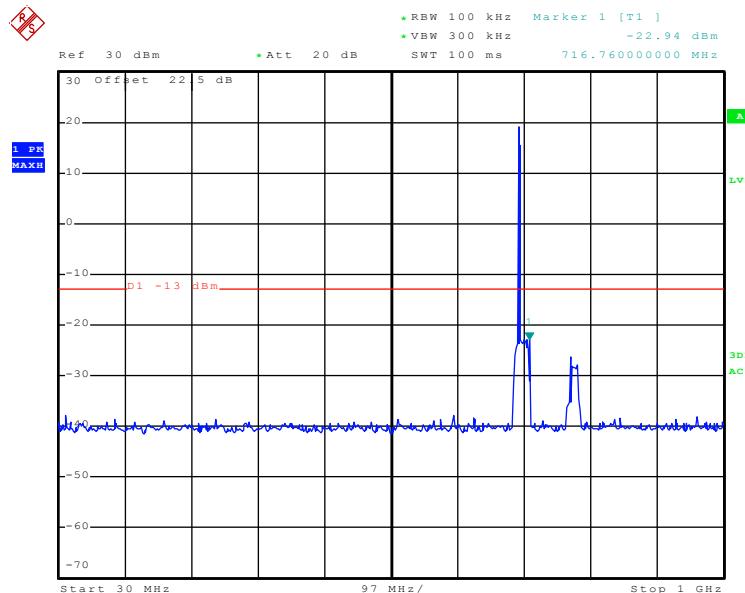
## 9.4 Test Result

### Spurious emission at antenna terminals

#### Lower A Uplink mode

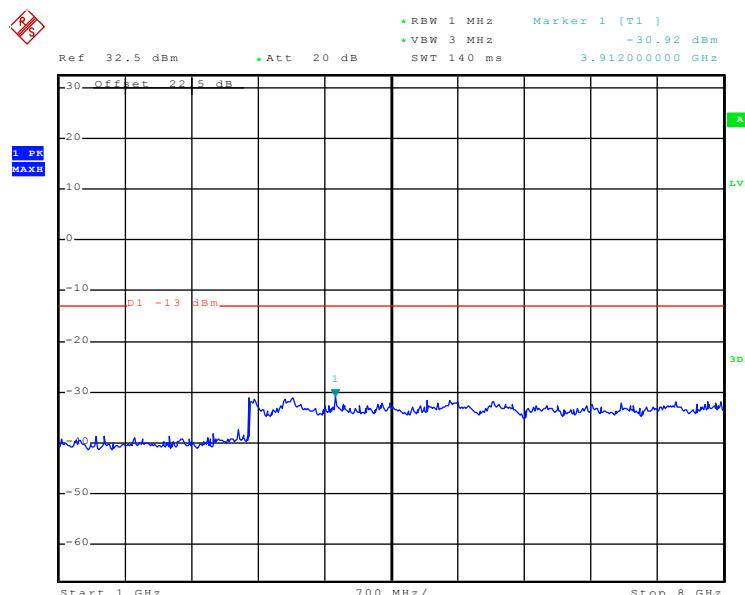
1.4 MHz

Low Channel



Date: 15.AUG.2014 22:41:16

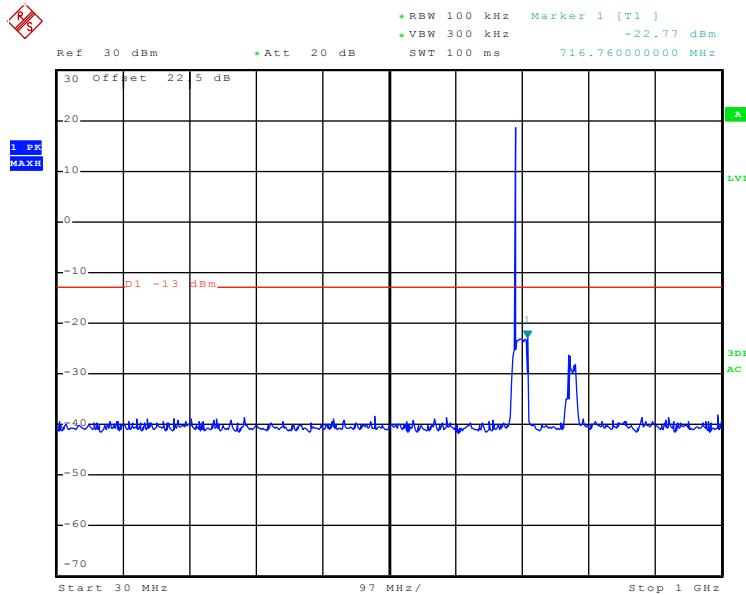
30MHz~1GHz



Date: 16.AUG.2014 12:34:23

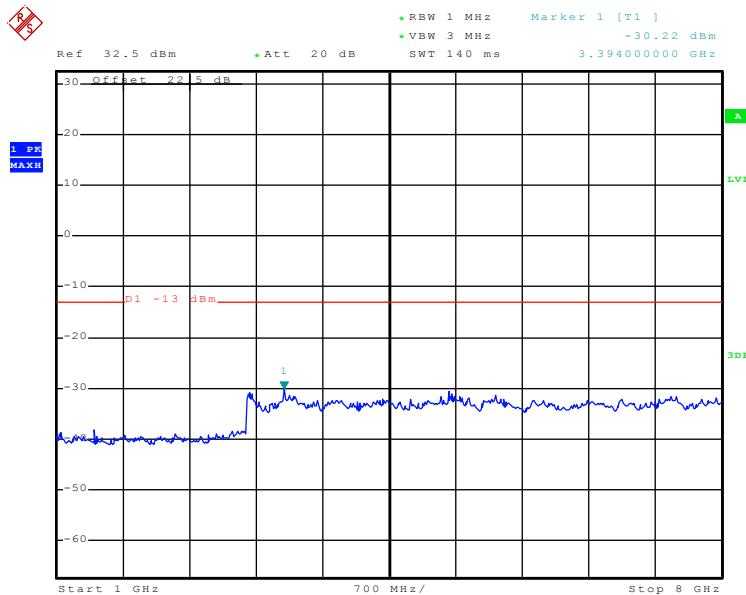
1GHz~8GHz

## Middle channel



Date: 15.AUG.2014 22:40:38

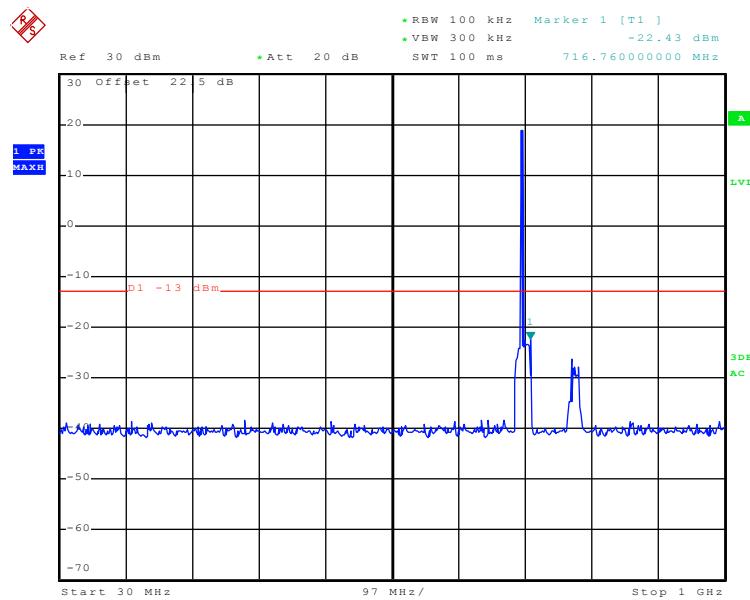
## 30MHz~1GHz



Date: 16.AUG.2014 12:34:03

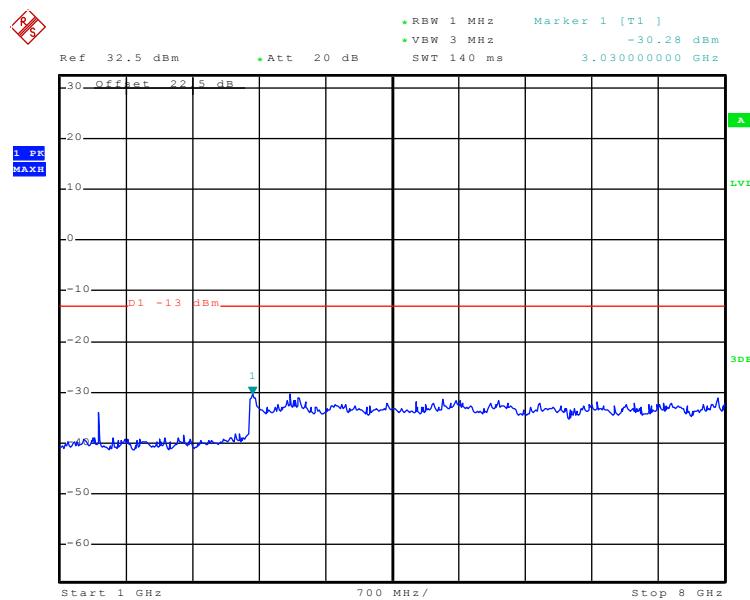
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 22:41:41

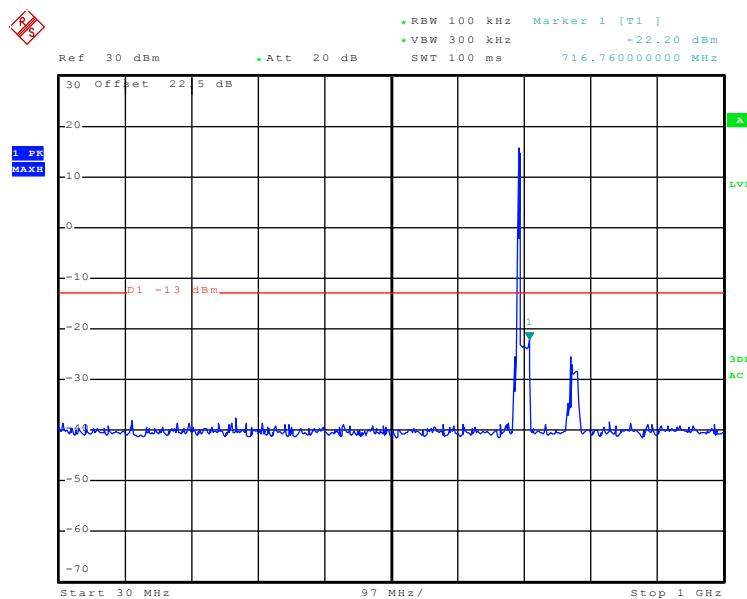
## 30MHz~1GHz



Date: 16.AUG.2014 12:34:47

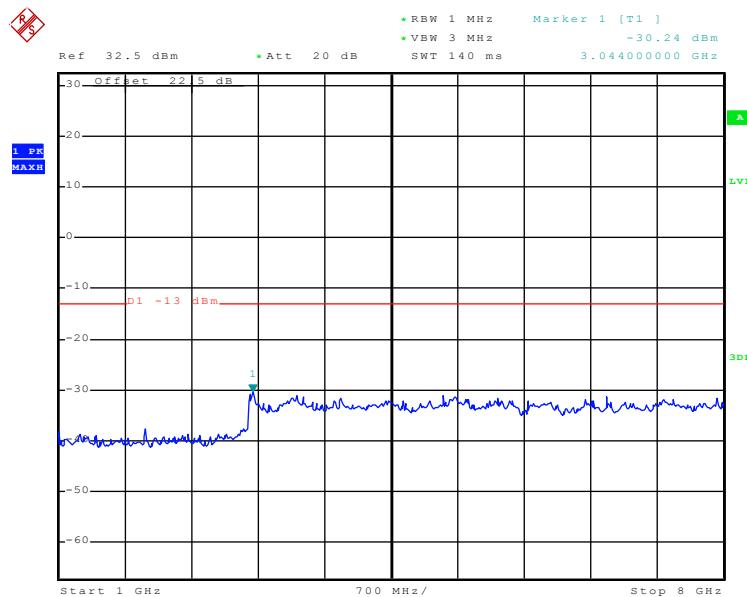
## 1GHz~8GHz

**3 MHz**  
Low Channel



Date: 15.AUG.2014 22:53:33

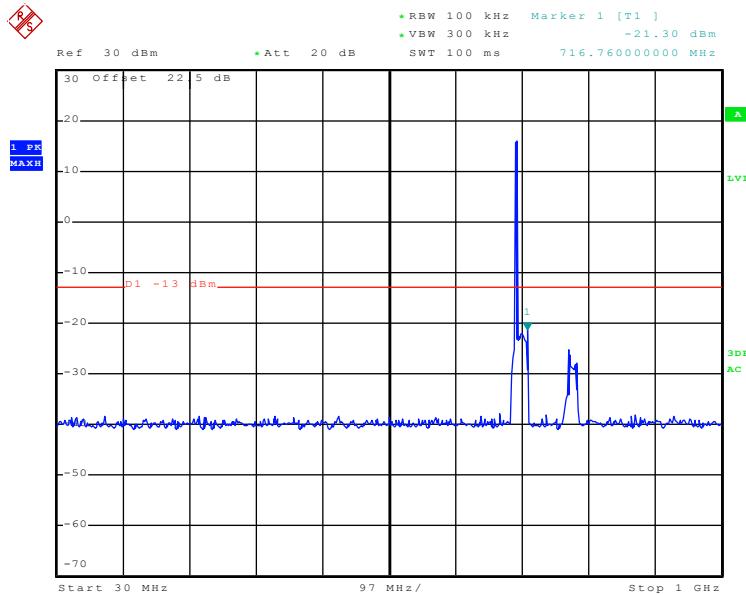
**30MHz~1GHz**



Date: 16.AUG.2014 12:39:53

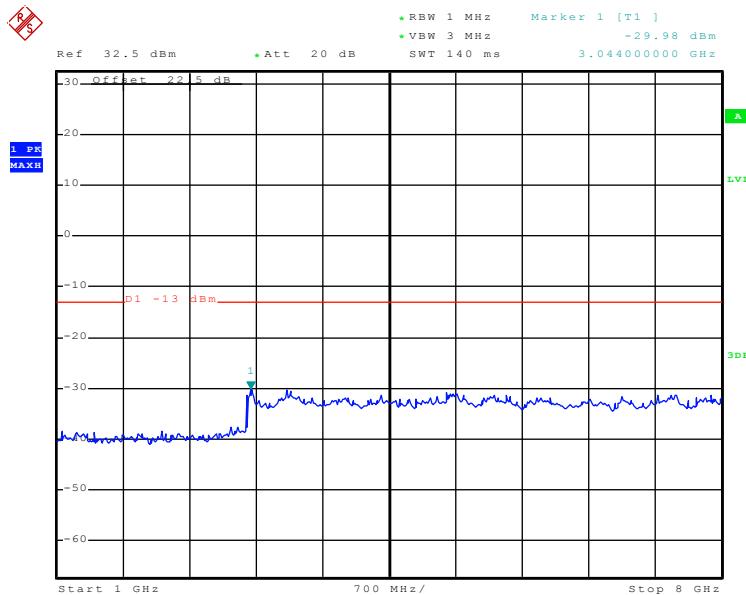
**1GHz~8GHz**

## Middle channel



Date: 15.AUG.2014 22:53:01

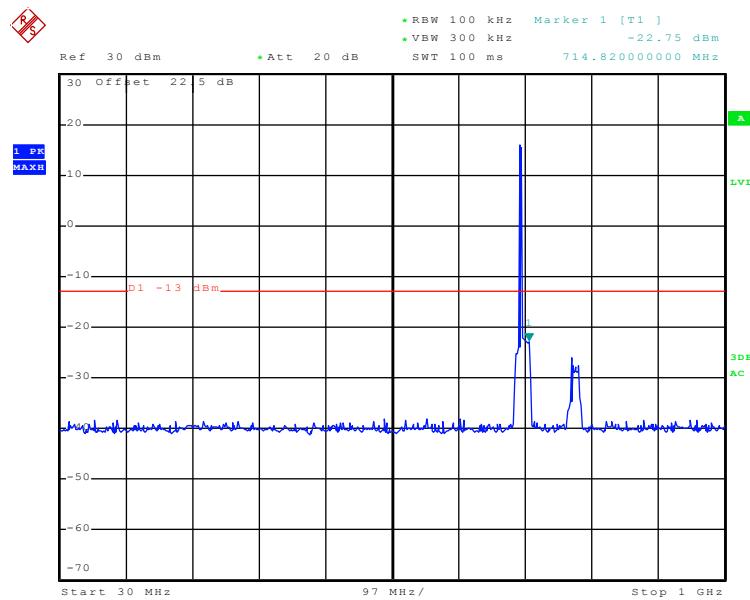
## 30MHz~1GHz



Date: 16.AUG.2014 12:39:31

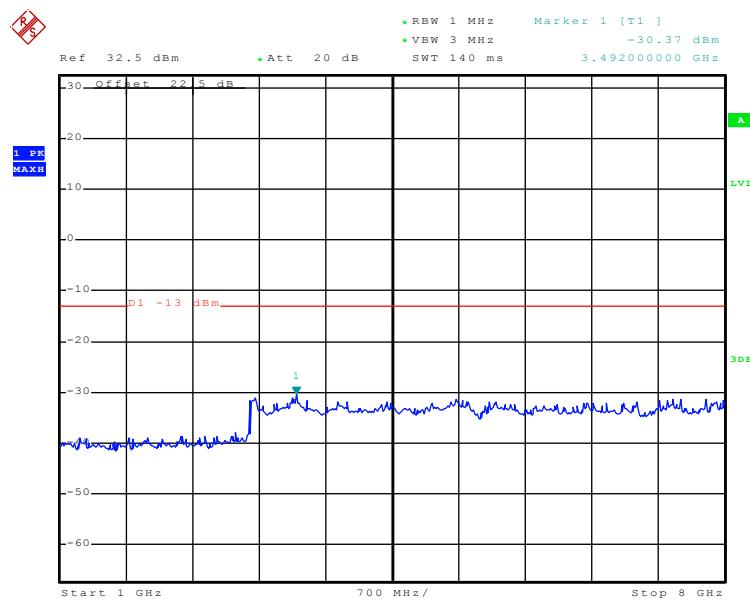
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 22:54:19

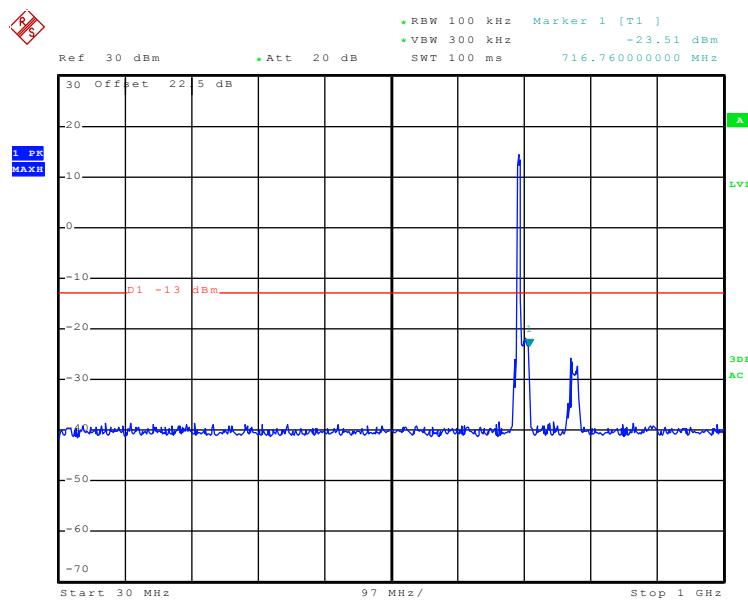
## 30MHz~1GHz



Date: 16.AUG.2014 12:40:13

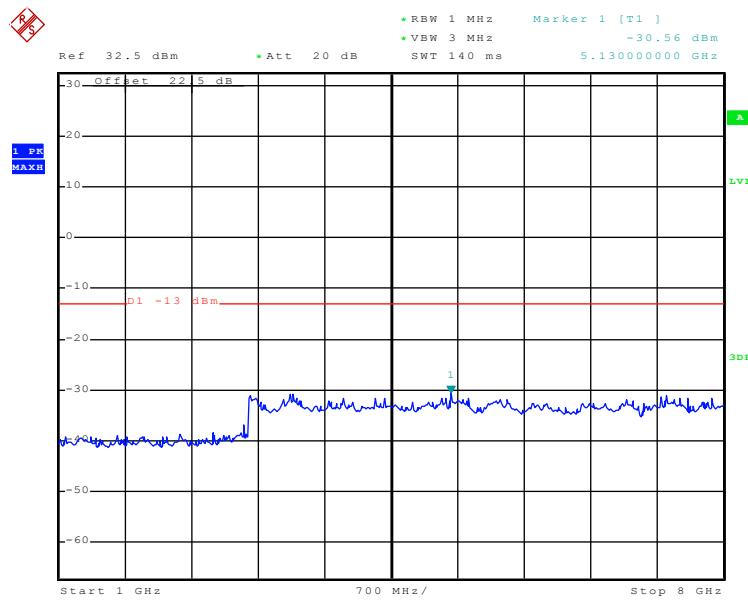
## 1GHz~8GHz

**5 MHz**  
Low Channel



Date: 15.AUG.2014 23:01:41

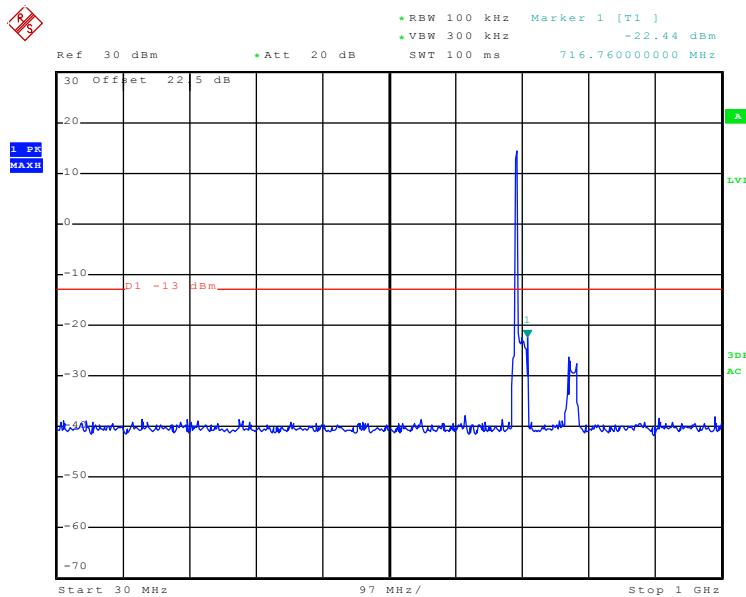
**30MHz~1GHz**



Date: 16.AUG.2014 12:45:49

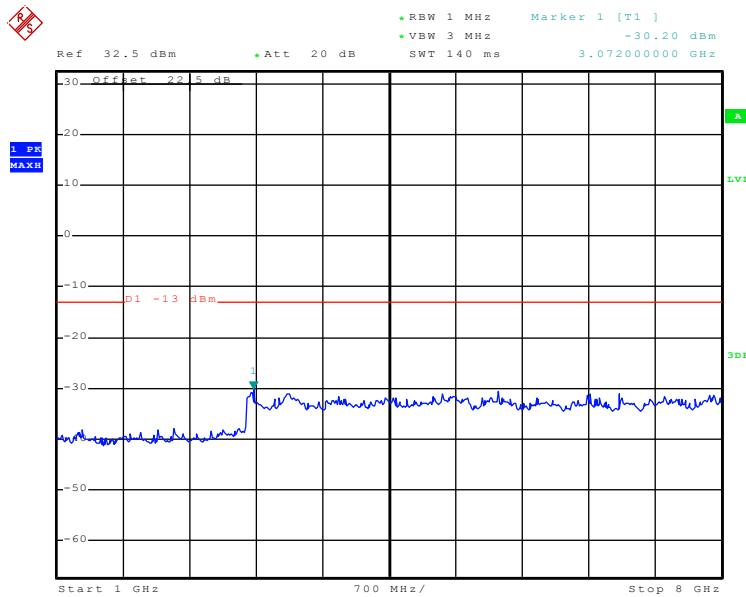
**1GHz~8GHz**

## Middle channel



Date: 15.AUG.2014 23:01:06

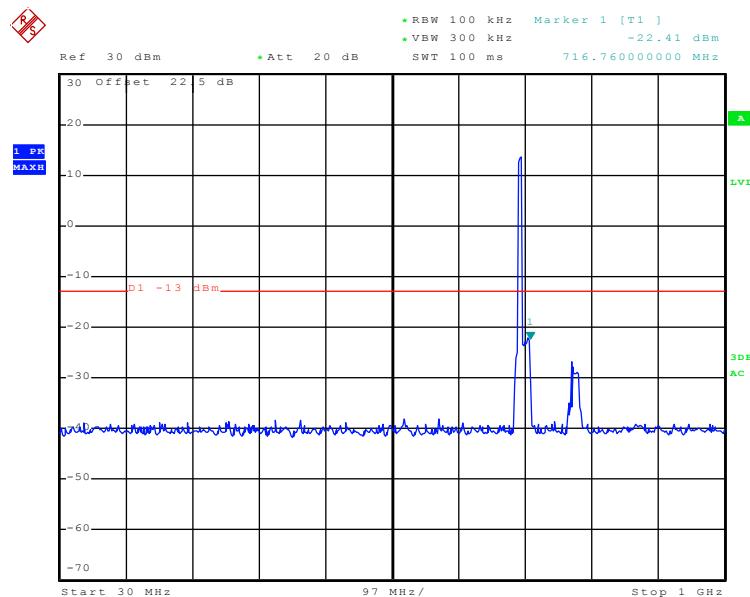
## 30MHz~1GHz



Date: 16.AUG.2014 12:45:28

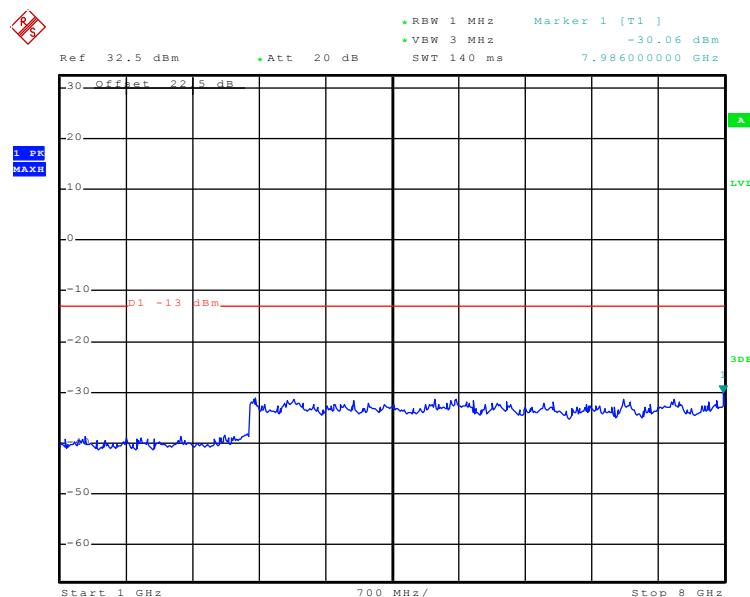
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 23:02:17

## 30MHz~1GHz



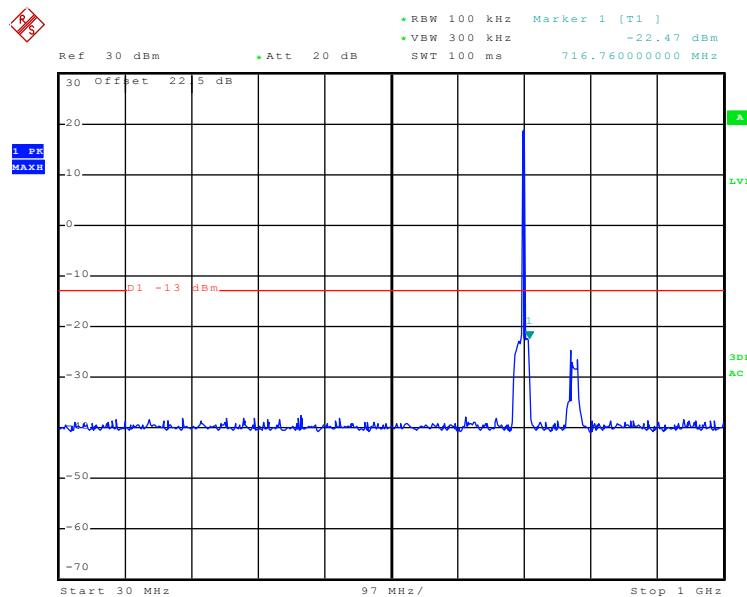
Date: 16.AUG.2014 12:46:09

## 1GHz~8GHz

**Lower B Uplink mode**

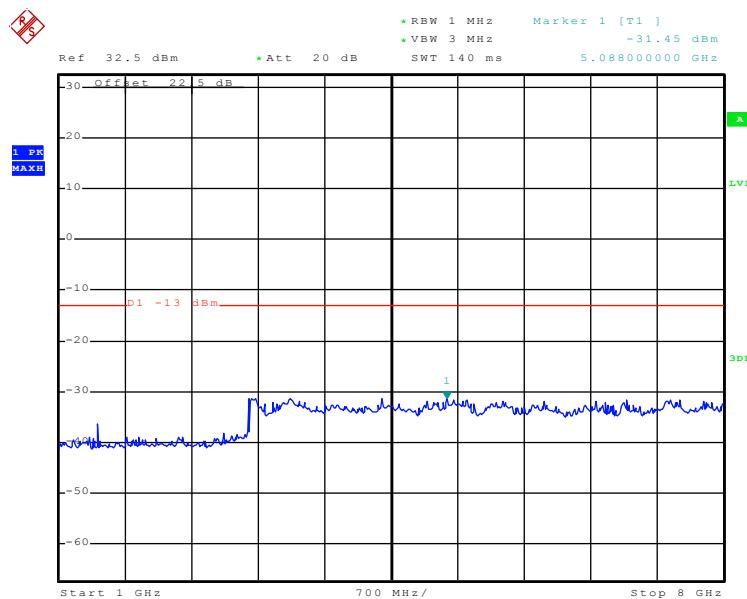
**1.4 MHz**

**Low Channel**



Date: 15.AUG.2014 22:43:18

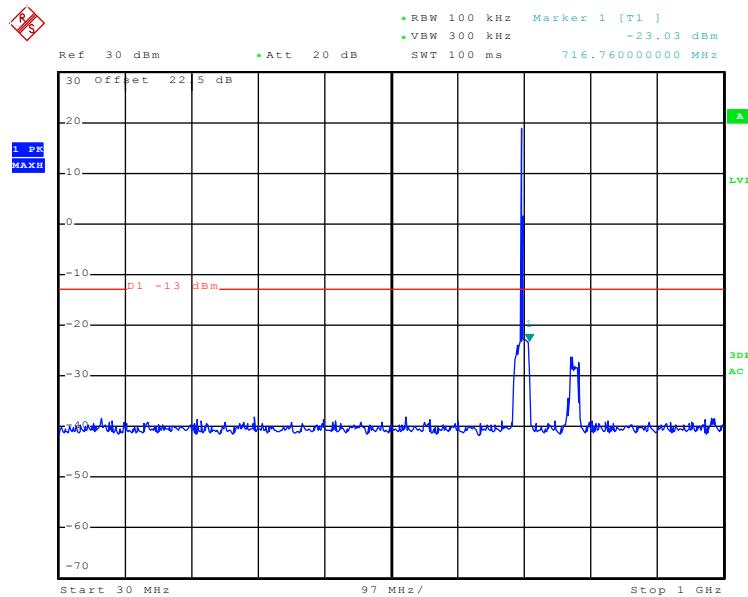
**30MHz-1GHz**



Date: 16.AUG.2014 12:35:31

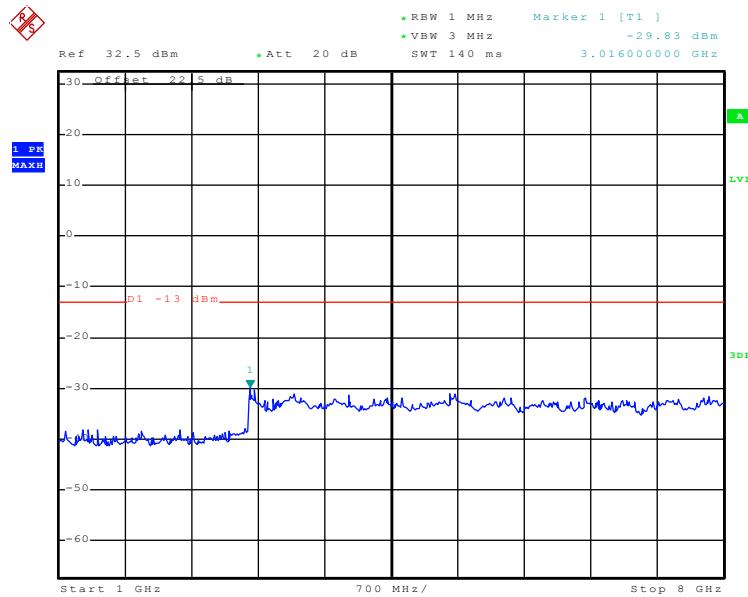
**1GHz~8GHz**

## Middle channel



Date: 15.AUG.2014 22:42:10

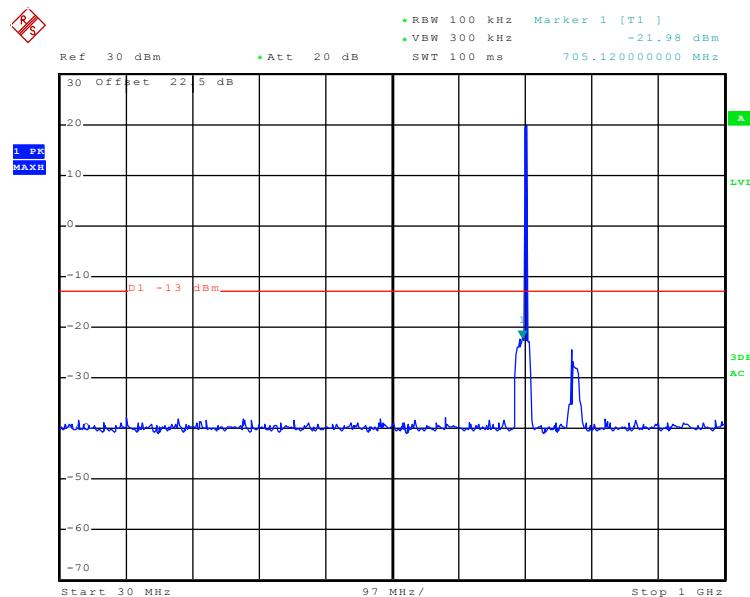
## 30MHz~1GHz



Date: 16.AUG.2014 12:35:11

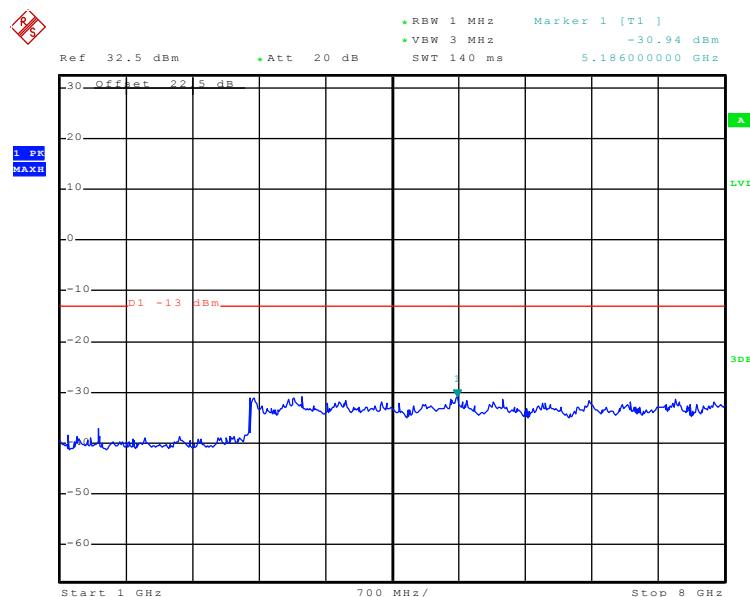
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 22:44:27

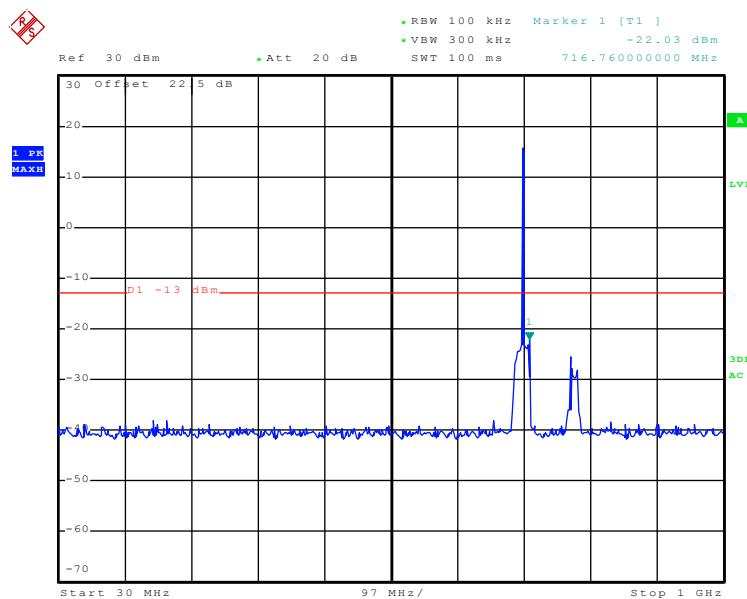
## 30MHz~1GHz



Date: 16.AUG.2014 12:35:54

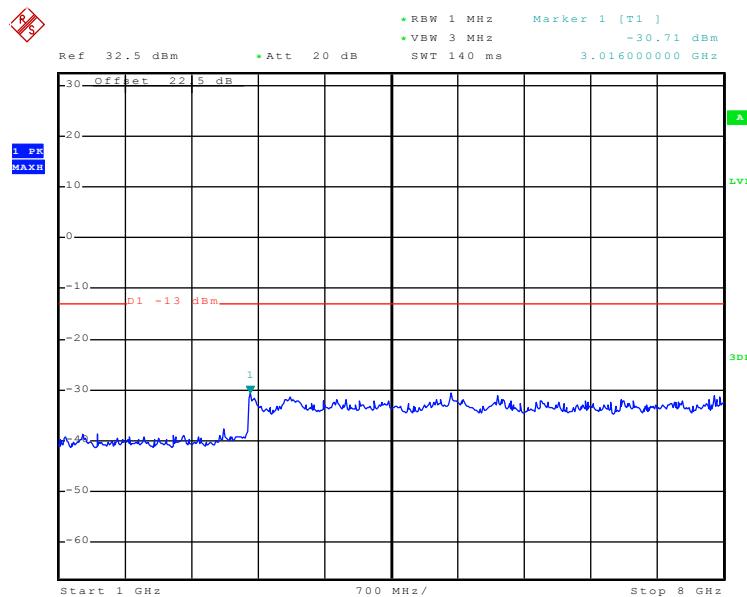
## 1GHz~8GHz

**3 MHz**  
Low Channel



Date: 15.AUG.2014 22:55:29

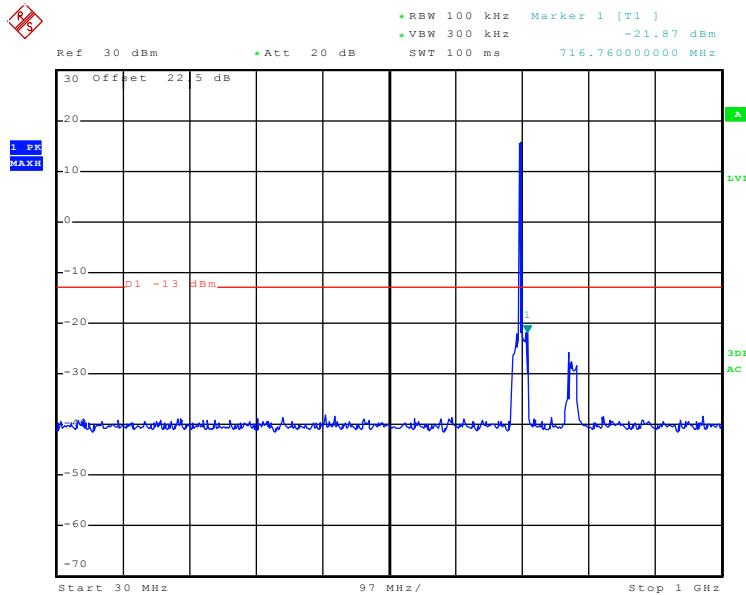
**30MHz~1GHz**



Date: 16.AUG.2014 12:40:56

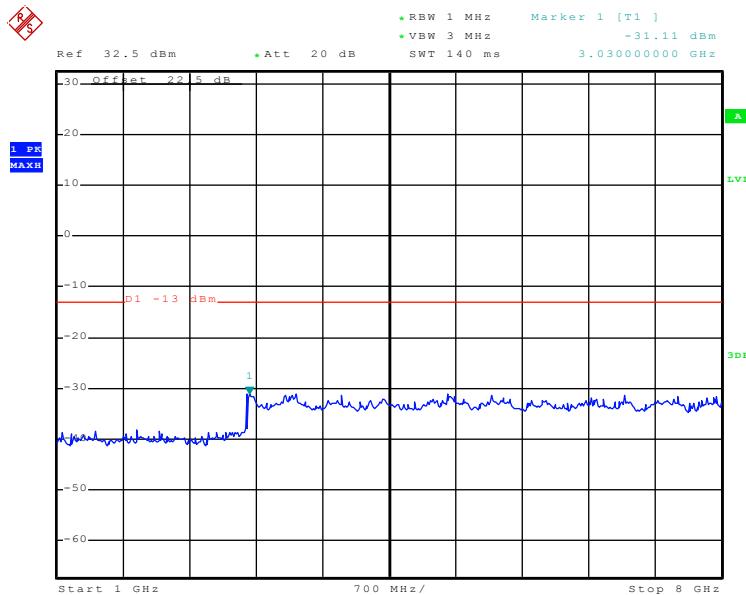
**1GHz~8GHz**

## Middle channel



Date: 15.AUG.2014 22:55:01

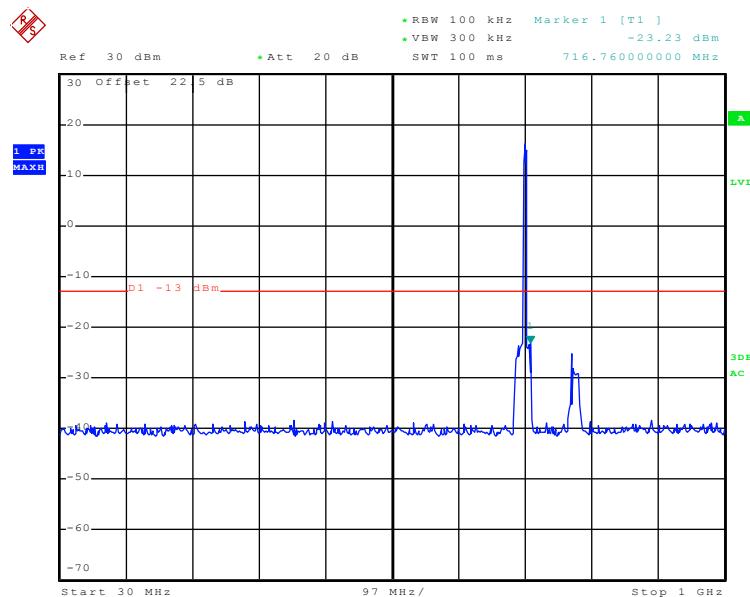
## 30MHz~1GHz



Date: 16.AUG.2014 12:40:38

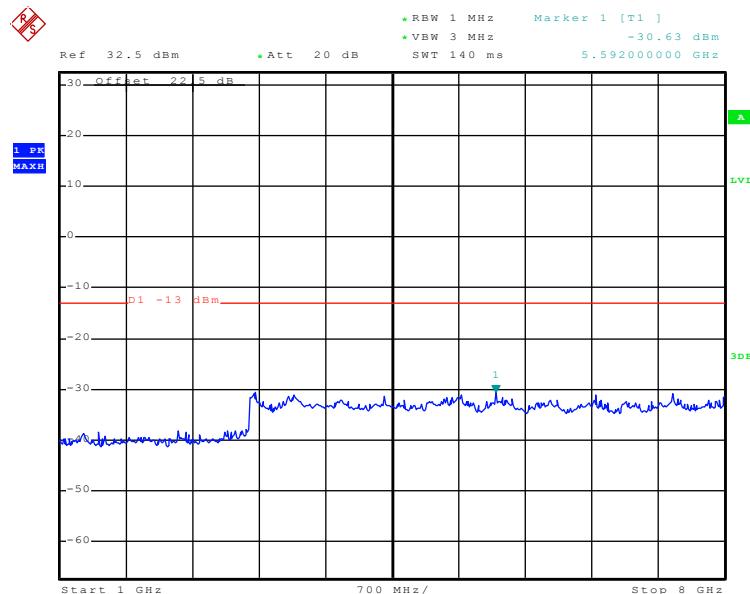
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 22:56:00

## 30MHz~1GHz

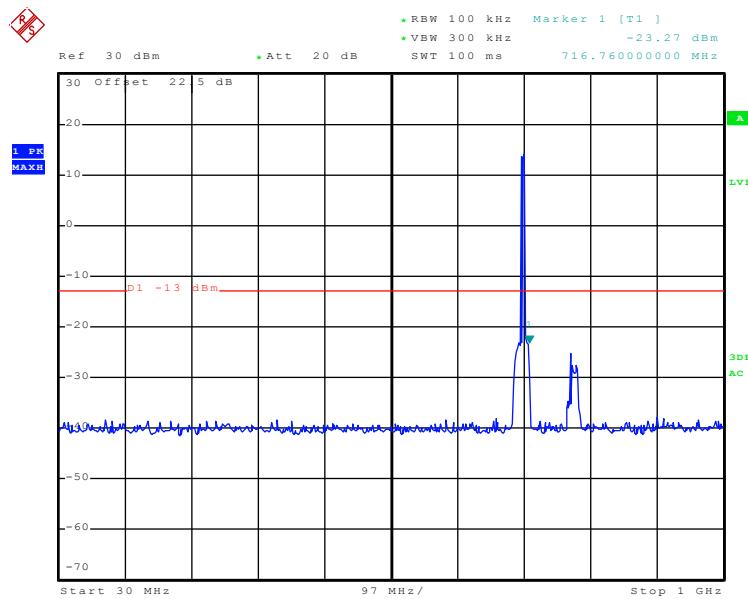


Date: 16.AUG.2014 12:42:14

## 1GHz~8GHz

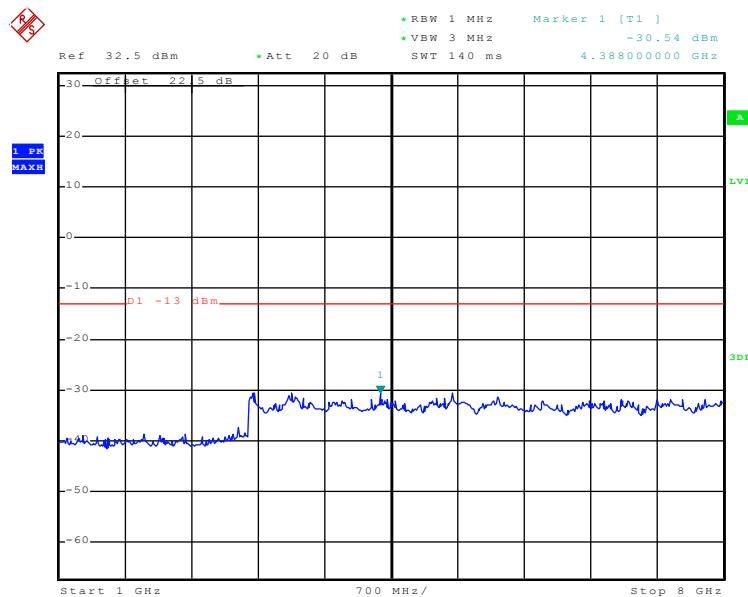
## 5 MHz

### Low Channel



Date: 15.AUG.2014 23:03:34

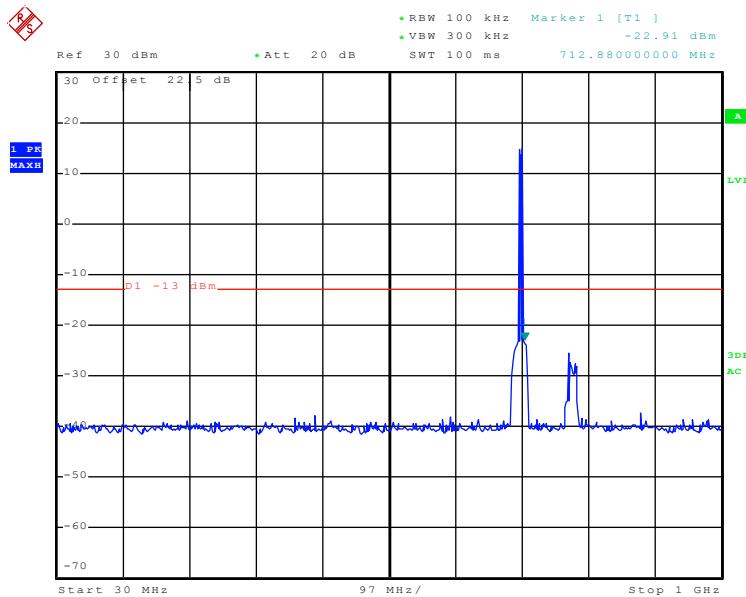
### 30MHz~1GHz



Date: 16.AUG.2014 12:46:53

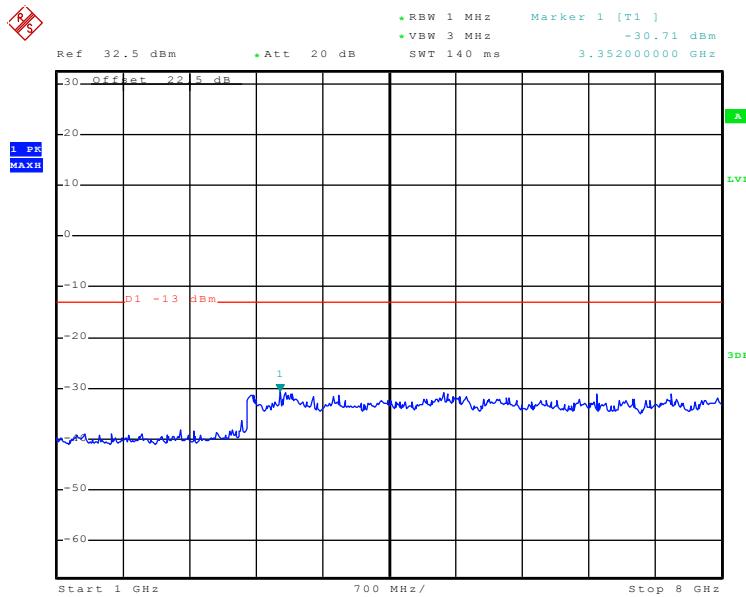
### 1GHz~8GHz

## Middle channel



Date: 15.AUG.2014 23:02:50

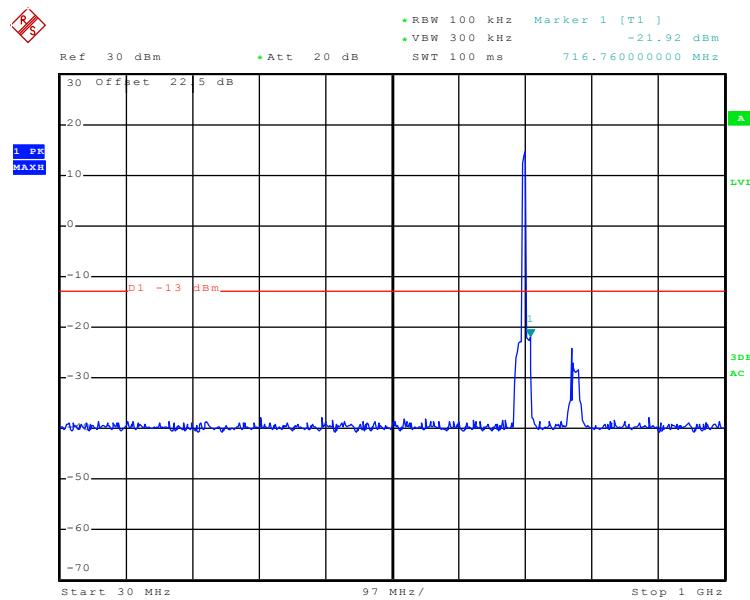
## 30MHz~1GHz



Date: 16.AUG.2014 12:46:33

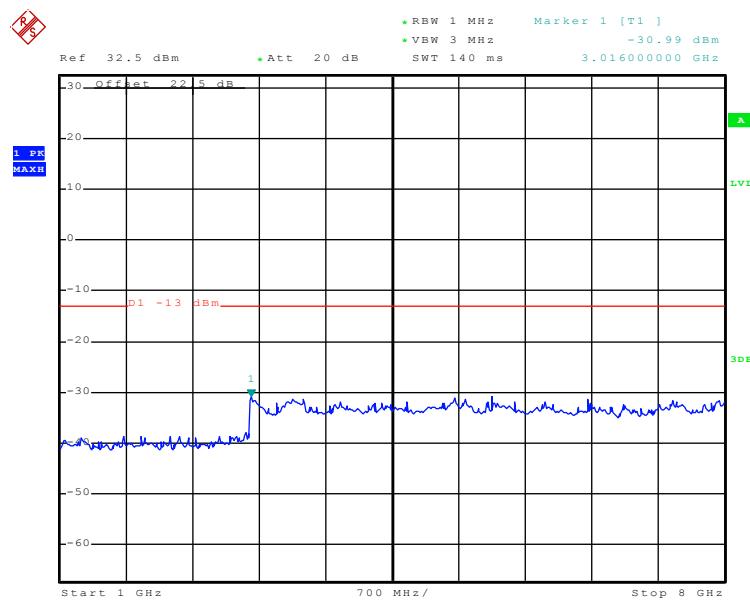
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 23:04:54

## 30MHz~1GHz



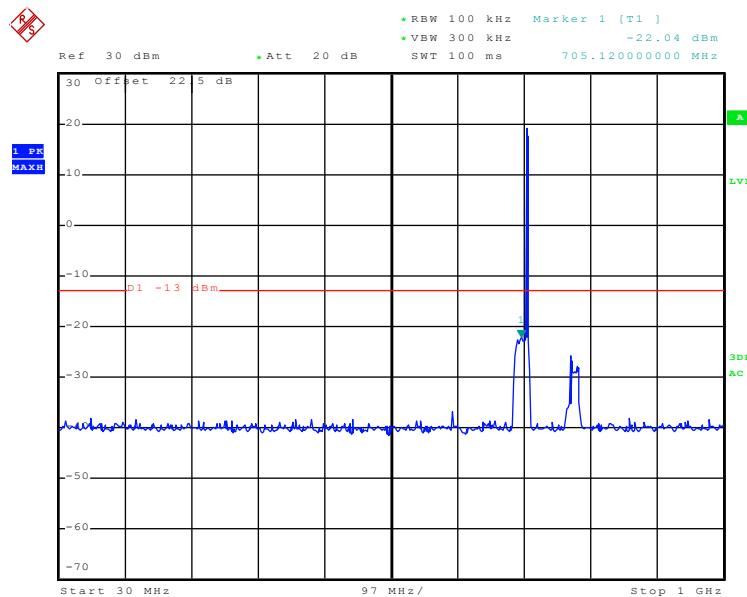
Date: 16.AUG.2014 12:47:18

## 1GHz~8GHz

**Lower C Uplink mode**

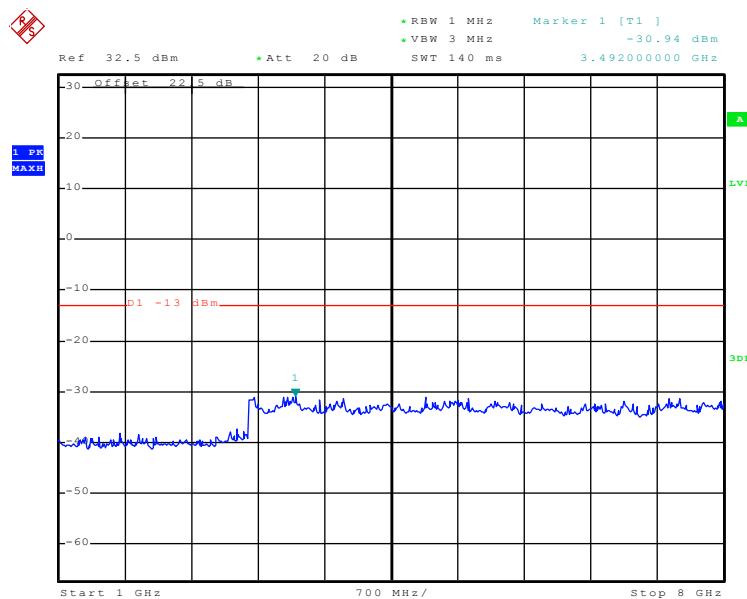
**1.4 MHz**

**Low Channel**



Date: 15.AUG.2014 22:46:08

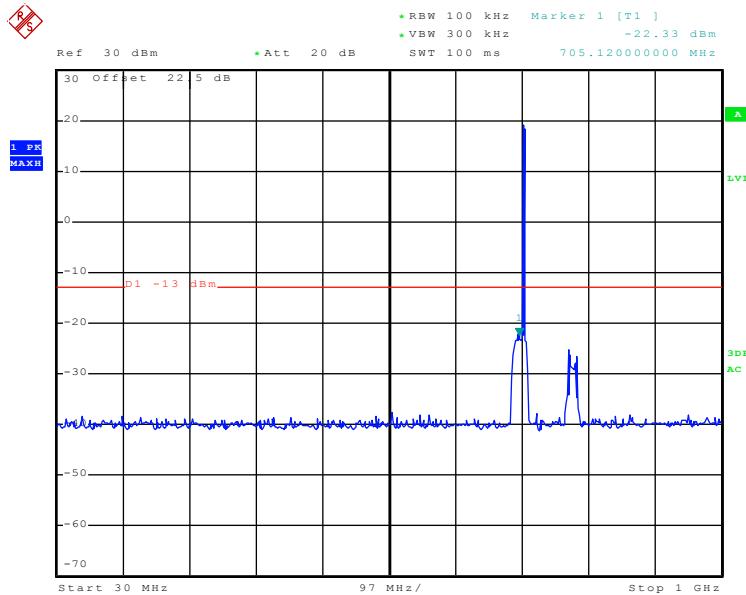
**30MHz-1GHz**



Date: 16.AUG.2014 12:36:42

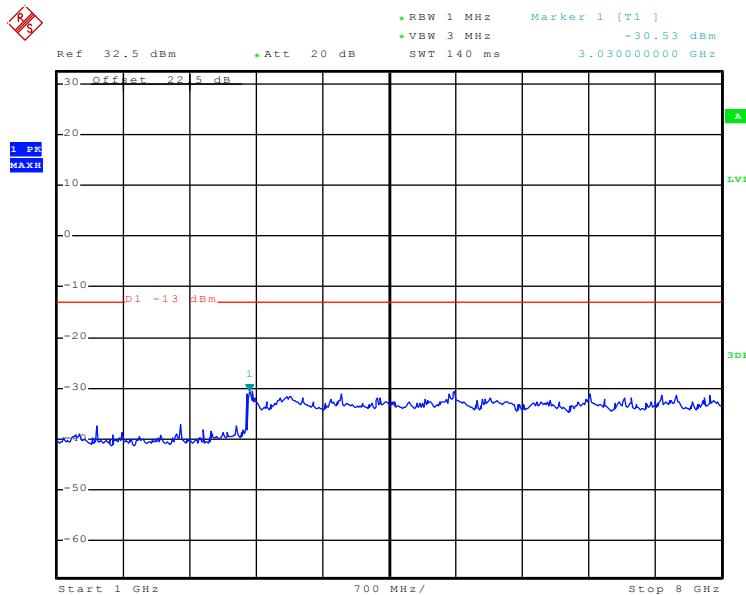
**1GHz~8GHz**

## Middle channel



Date: 15.AUG.2014 22:45:21

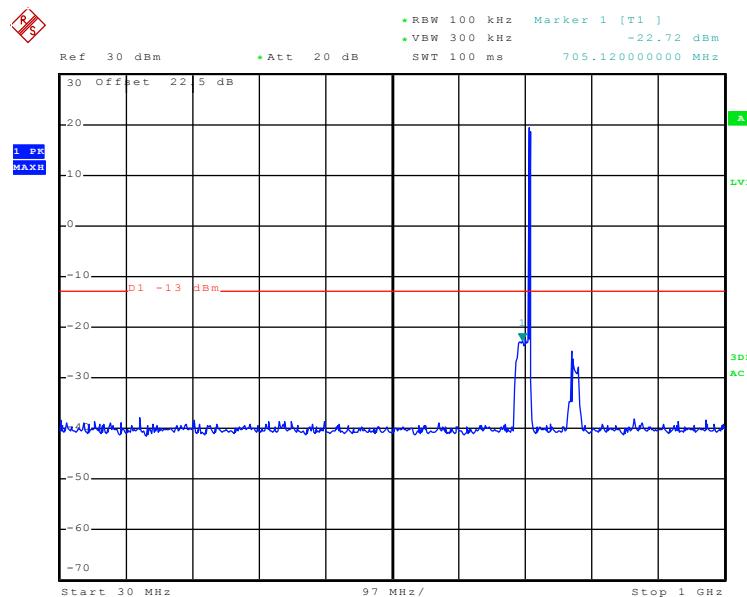
## 30MHz~1GHz



Date: 16.AUG.2014 12:36:21

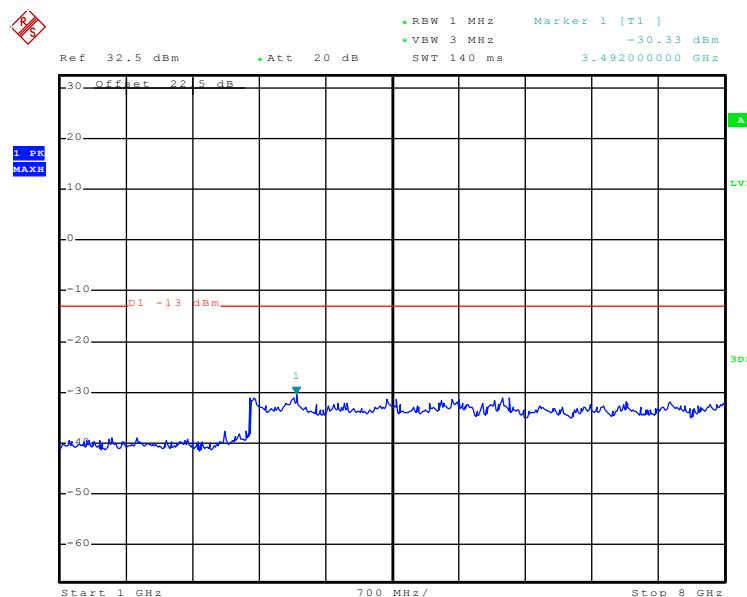
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 22:46:46

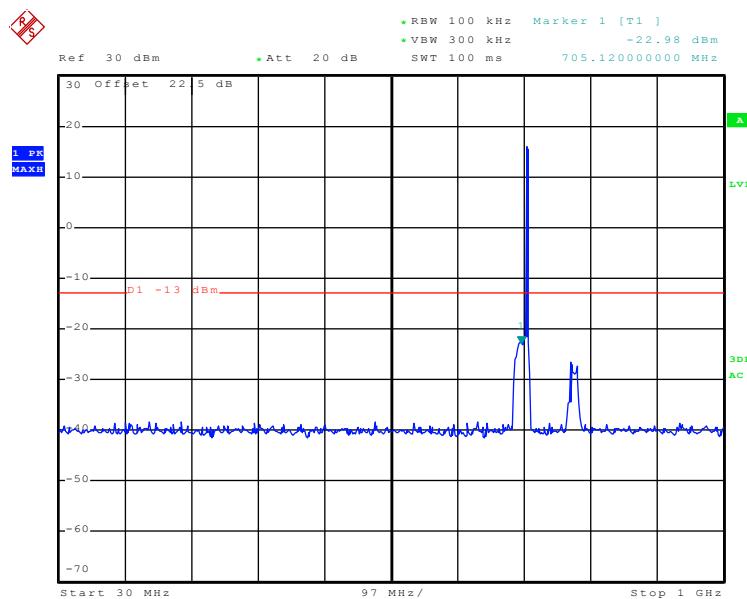
## 30MHz~1GHz



Date: 16.AUG.2014 12:37:03

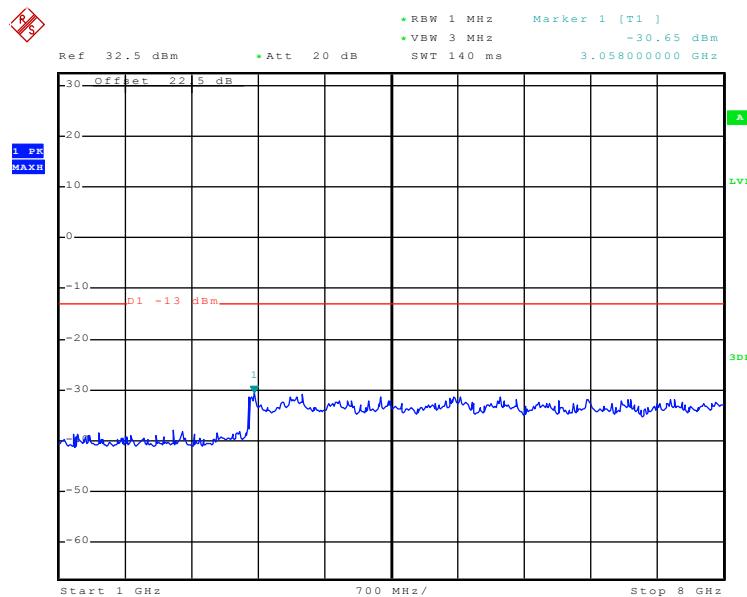
## 1GHz~8GHz

**3 MHz**  
Low Channel



Date: 15.AUG.2014 22:57:34

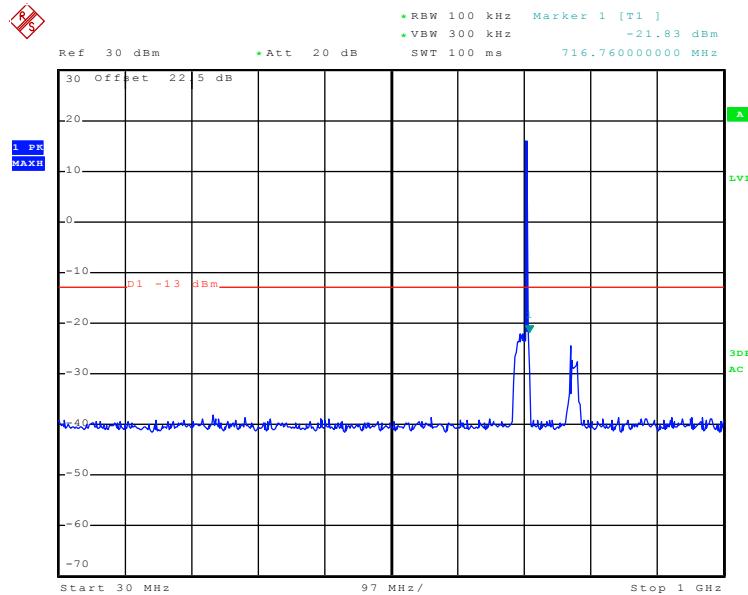
**30MHz~1GHz**



Date: 16.AUG.2014 12:42:58

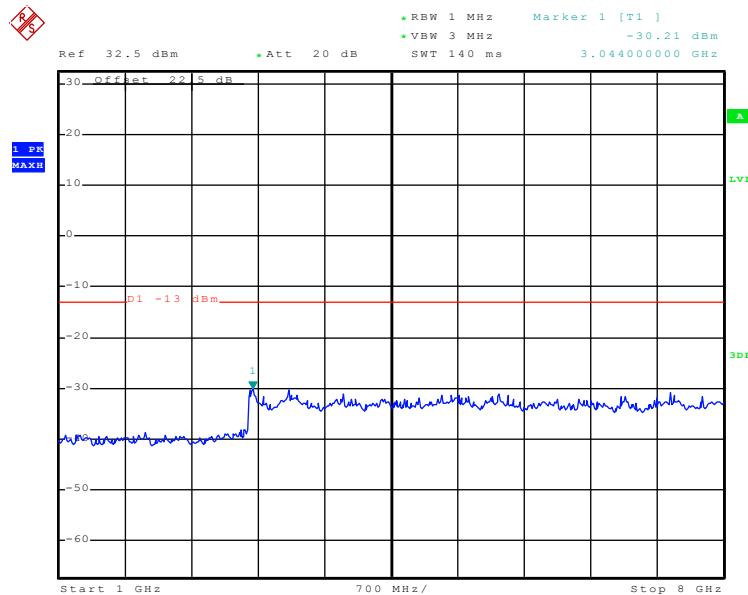
**1GHz~8GHz**

## Middle channel



Date: 15.AUG.2014 22:56:51

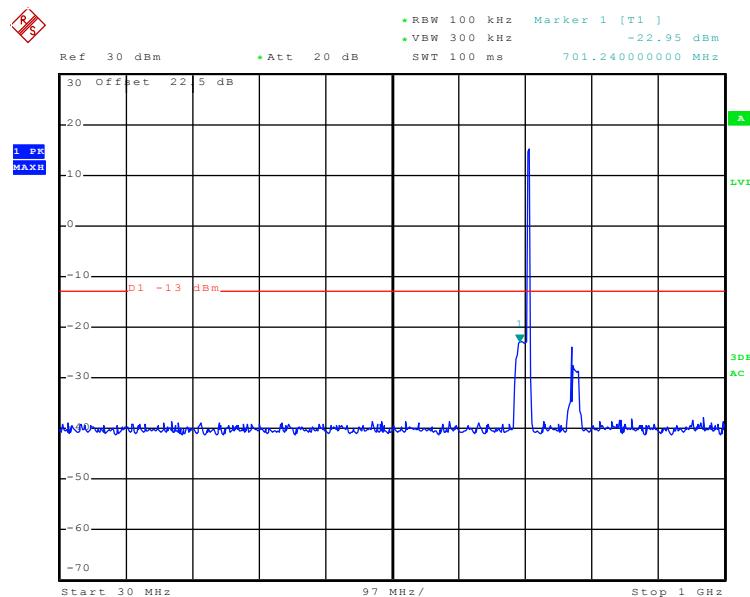
## 30MHz~1GHz



Date: 16.AUG.2014 12:42:39

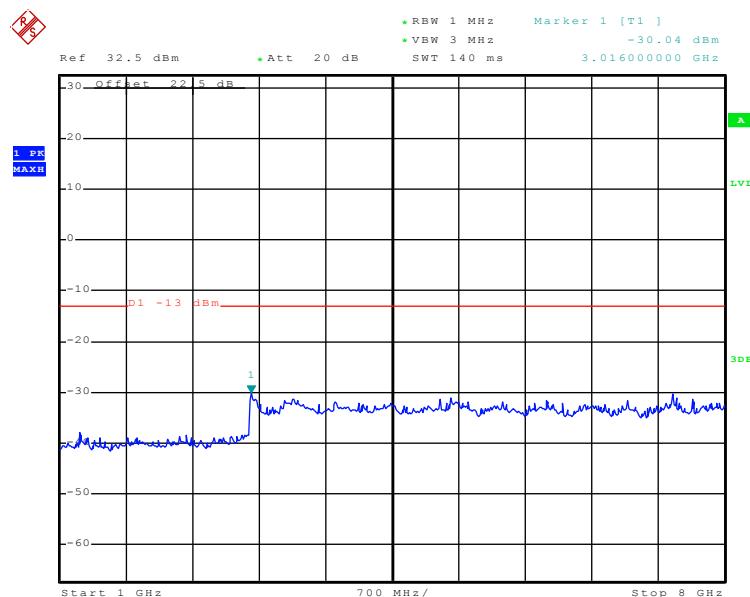
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 22:58:11

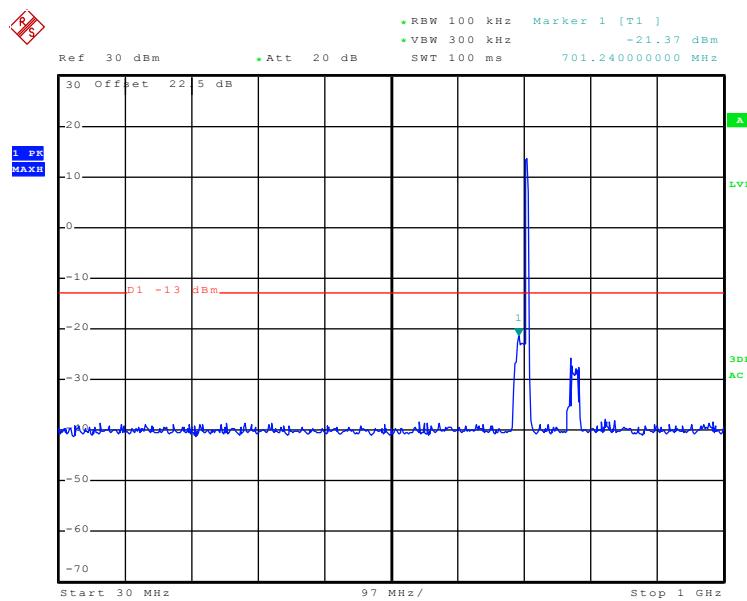
## 30MHz~1GHz



Date: 16.AUG.2014 12:43:17

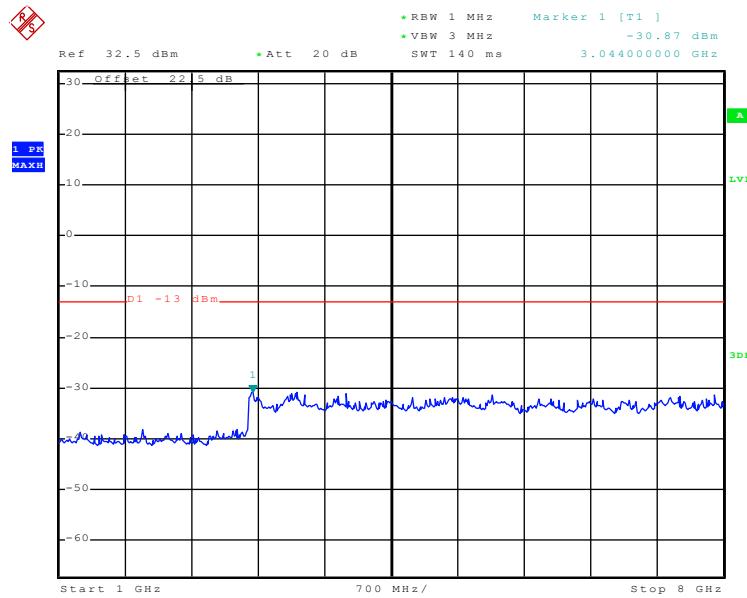
## 1GHz~8GHz

**5 MHz**  
Low Channel



Date: 15.AUG.2014 23:06:42

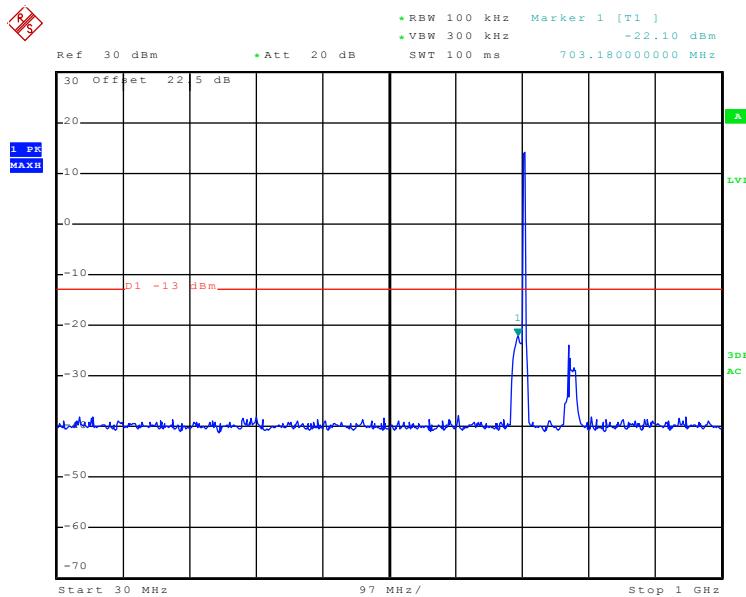
**30MHz~1GHz**



Date: 16.AUG.2014 12:48:01

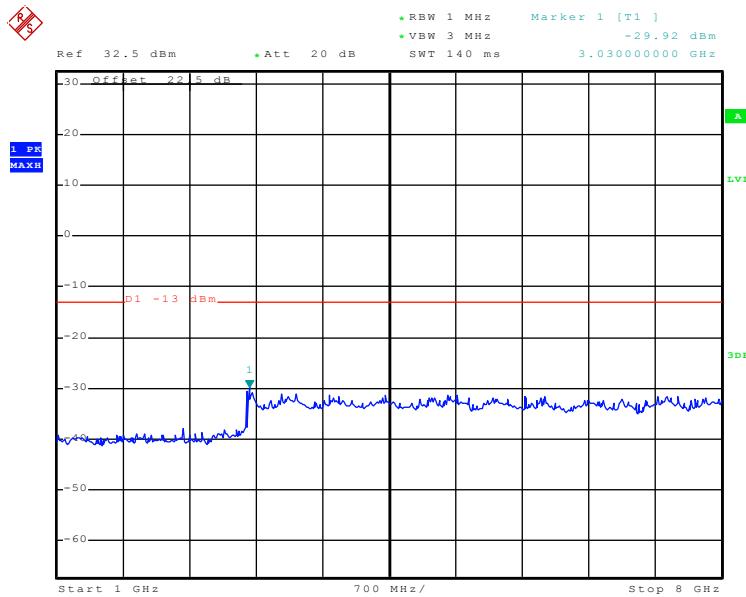
**1GHz~8GHz**

## Middle channel



Date: 15.AUG.2014 23:05:57

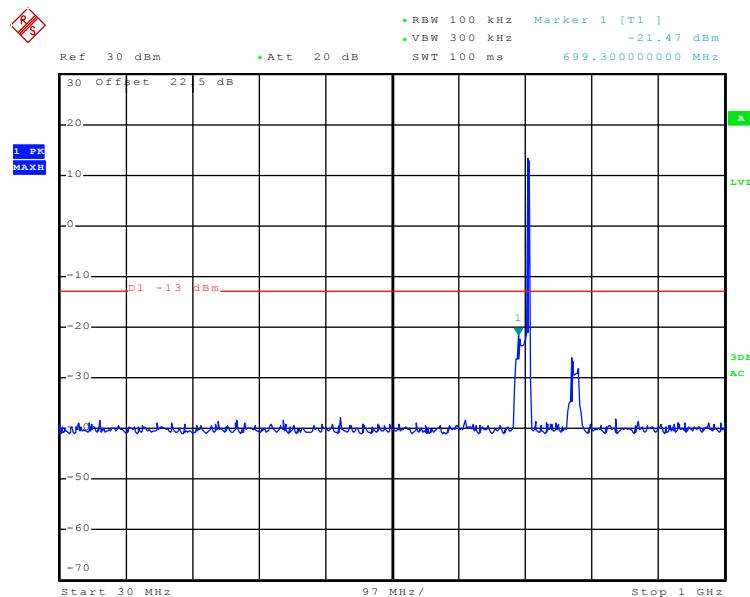
## 30MHz~1GHz



Date: 16.AUG.2014 12:47:43

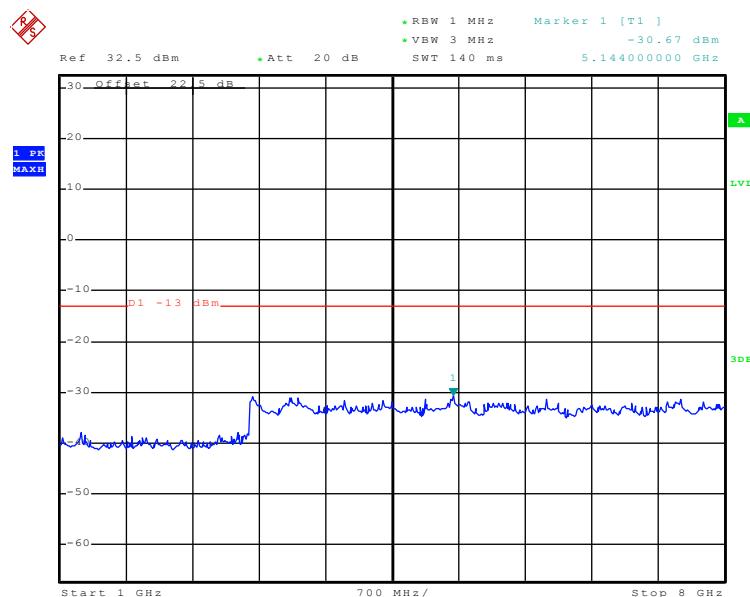
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 23:08:16

## 30MHz~1GHz



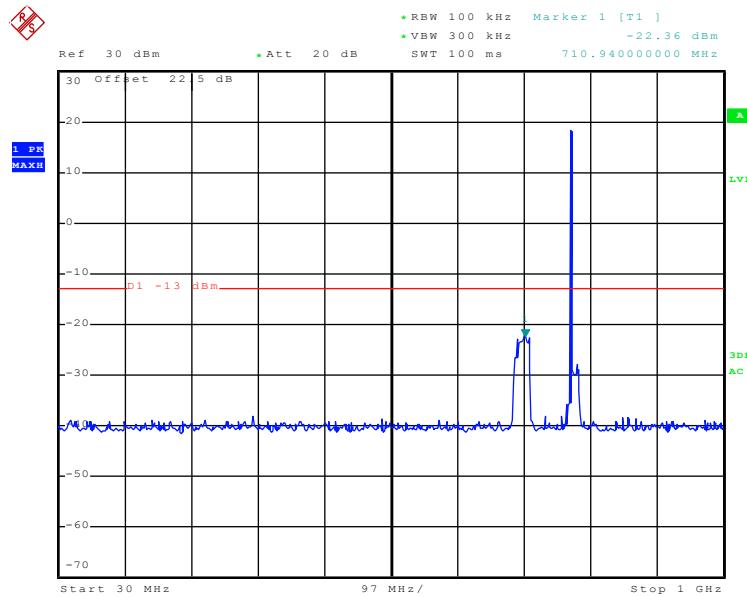
Date: 16.AUG.2014 12:48:22

## 1GHz~8GHz

## Upper C Band Uplink mode

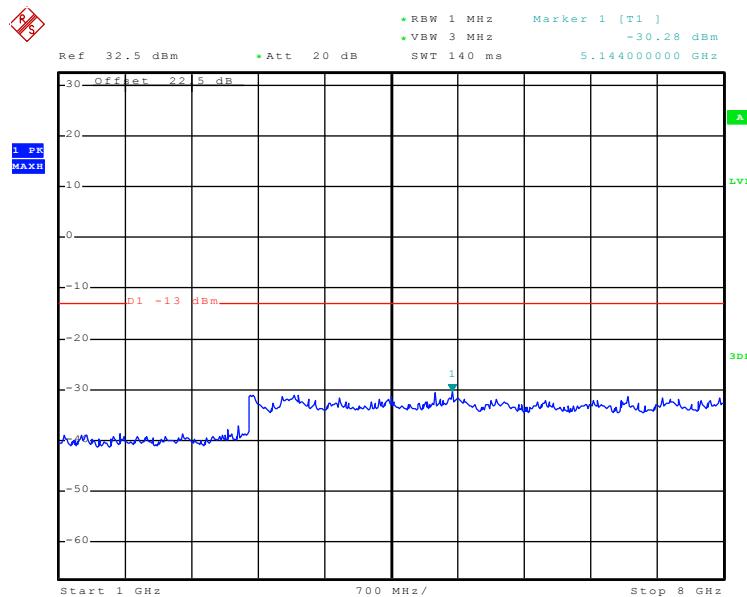
1.4 MHz

Low Channel



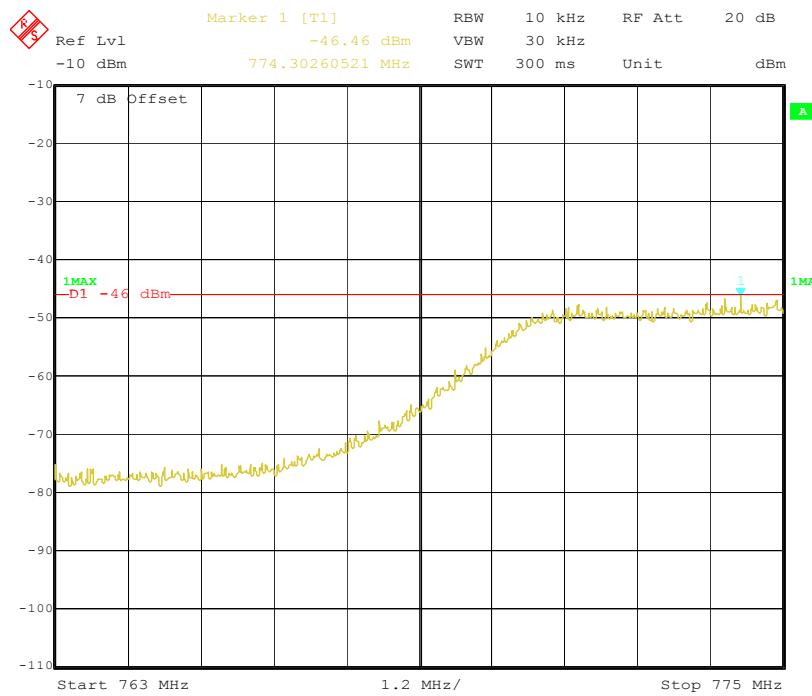
Date: 15.AUG.2014 22:47:30

30MHz-1GHz

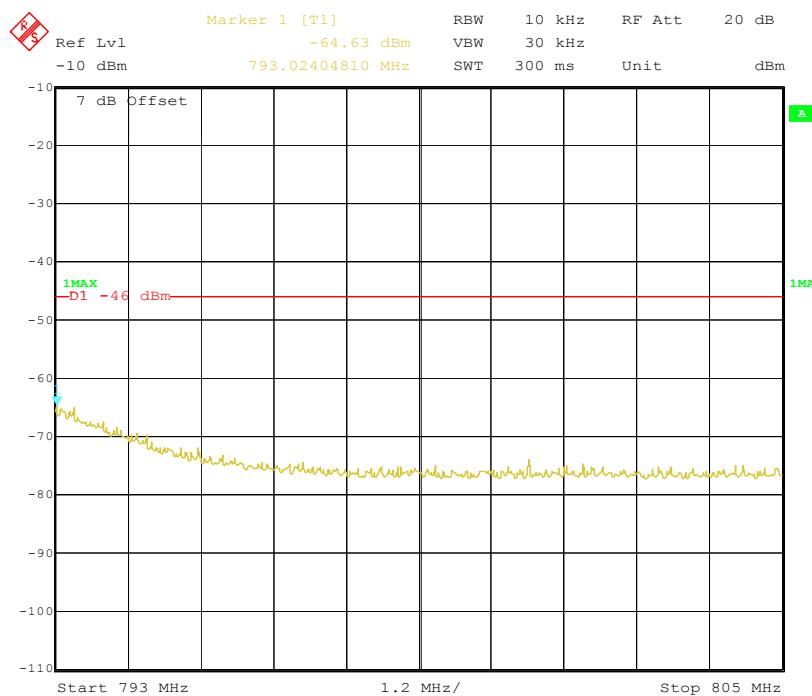


Date: 16.AUG.2014 12:37:42

1GHz~8GHz

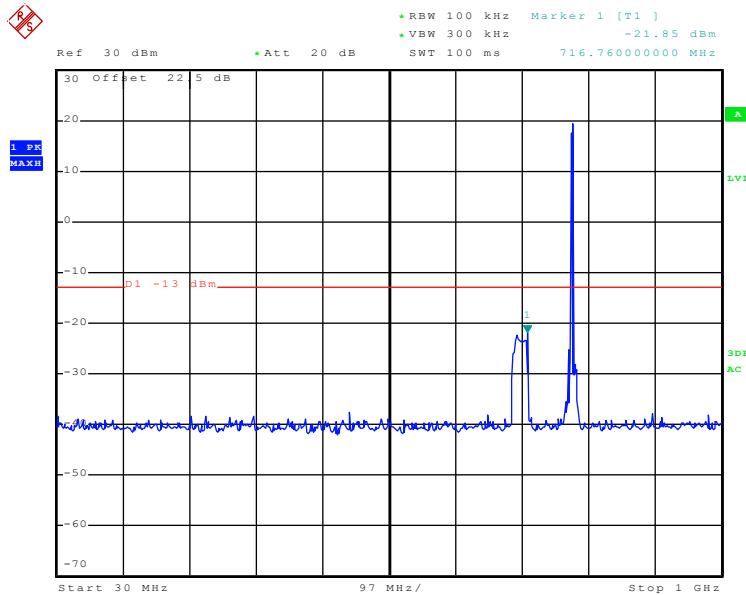


### 763 MHz -775MHz



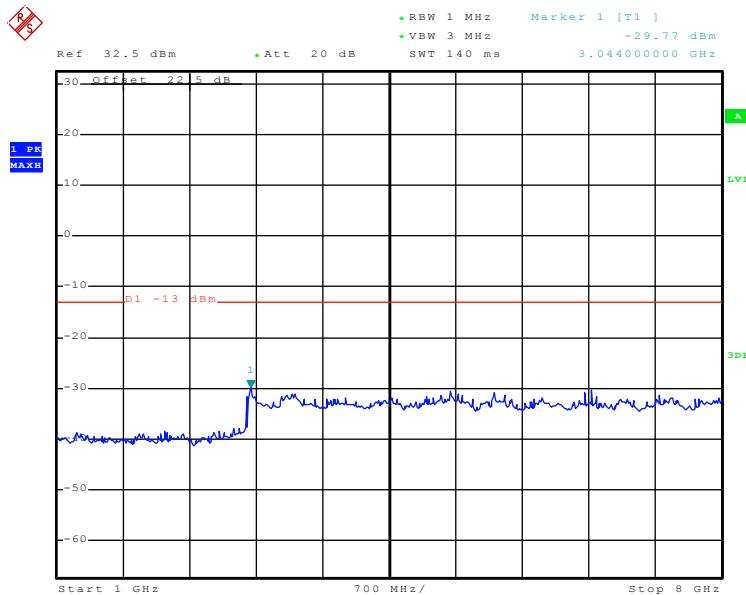
### 793MHz – 805MHz

### Middle channel



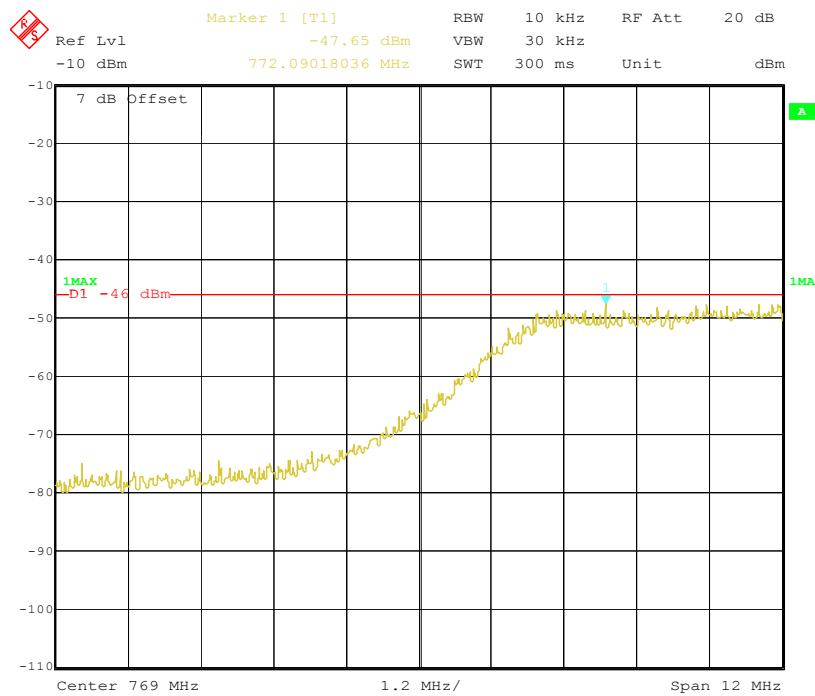
Date: 15.AUG.2014 22:49:51

### 30MHz~1GHz

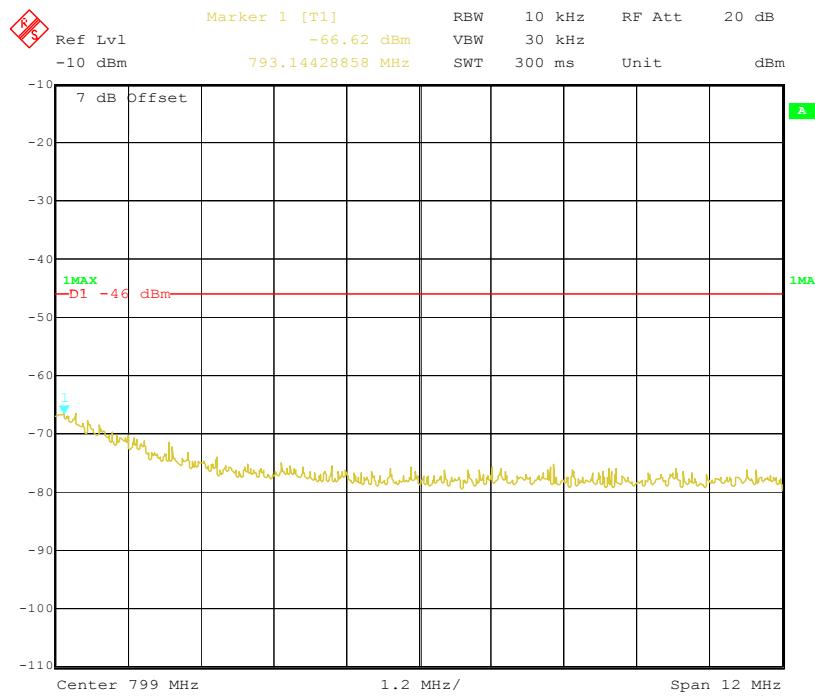


Date: 16.AUG.2014 12:38:11

### 1GHz~8GHz

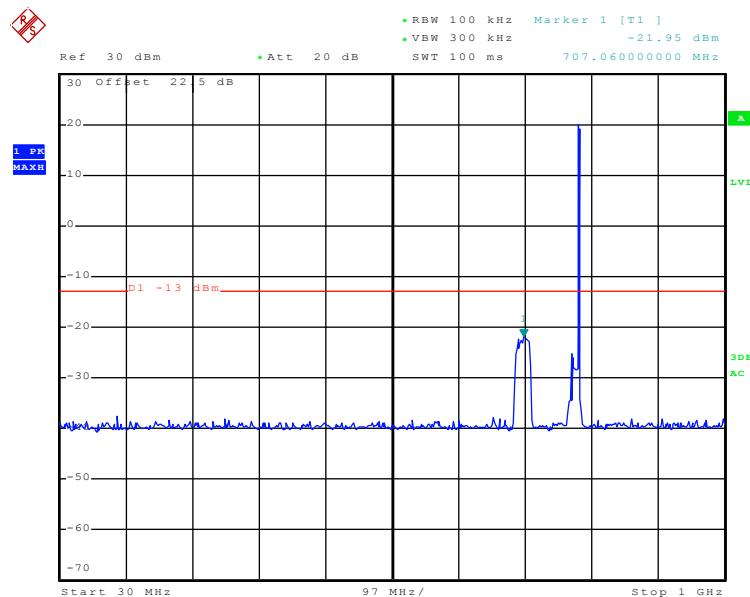


### 763 MHz -775MHz



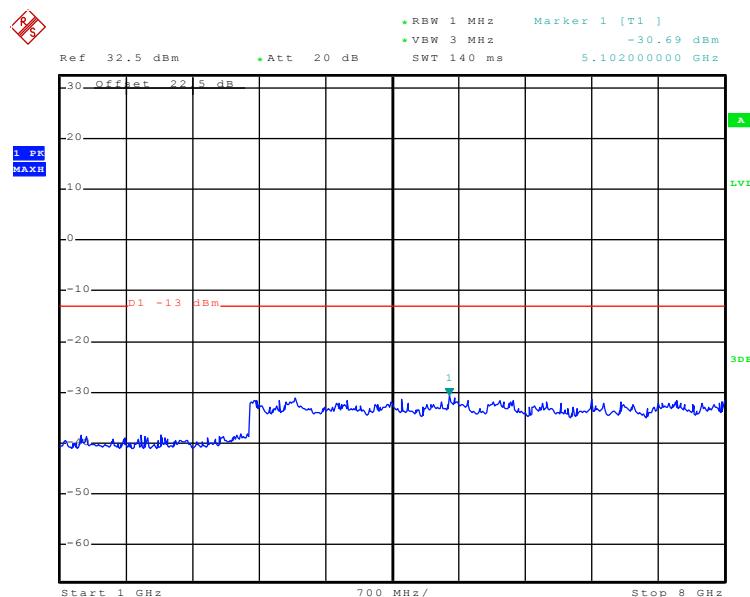
### 793MHz – 805MHz

## High Channel



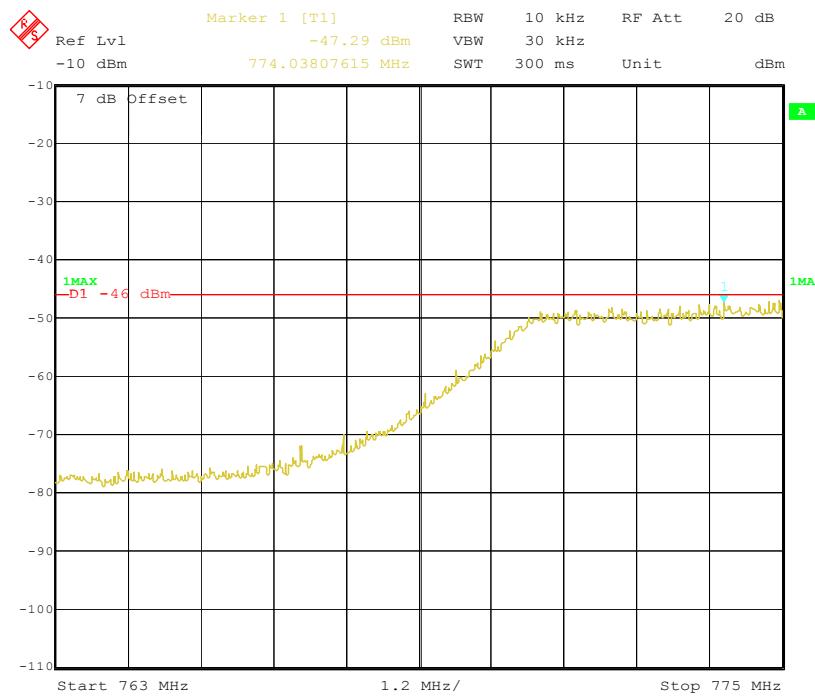
Date: 15.AUG.2014 22:51:41

## 30MHz~1GHz

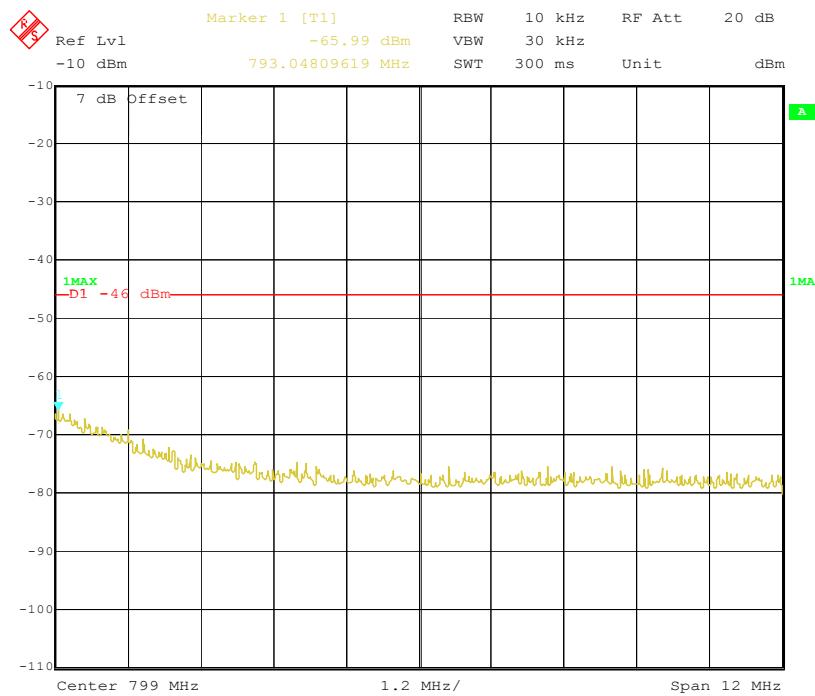


Date: 16.AUG.2014 12:38:35

## 1GHz~8GHz

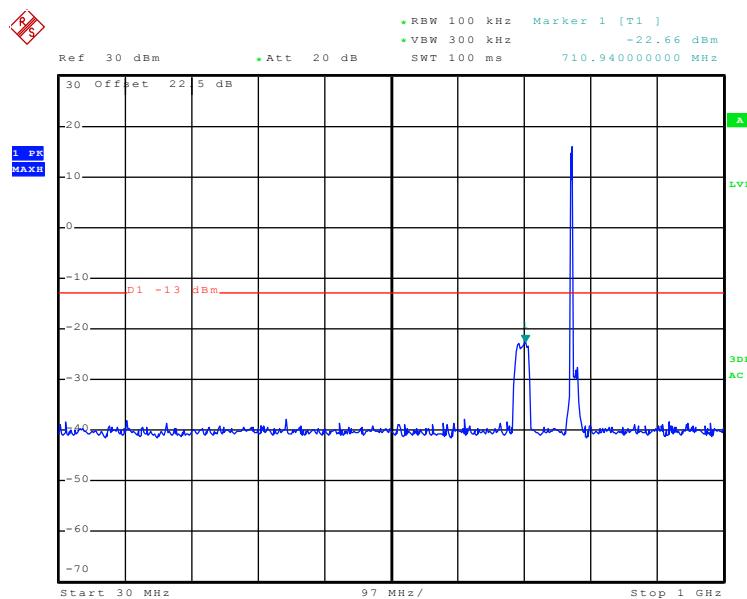


### 763 MHz -775MHz



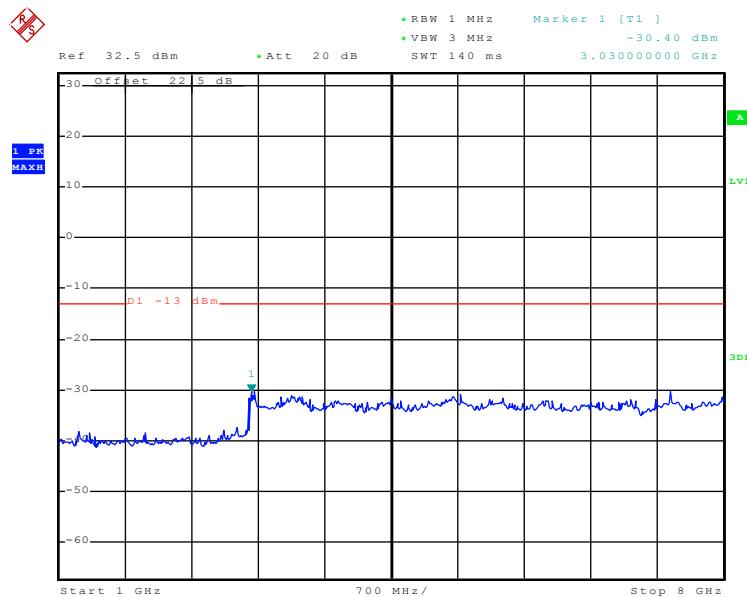
### 793MHz – 805MHz

## 3 MHz Low Channel



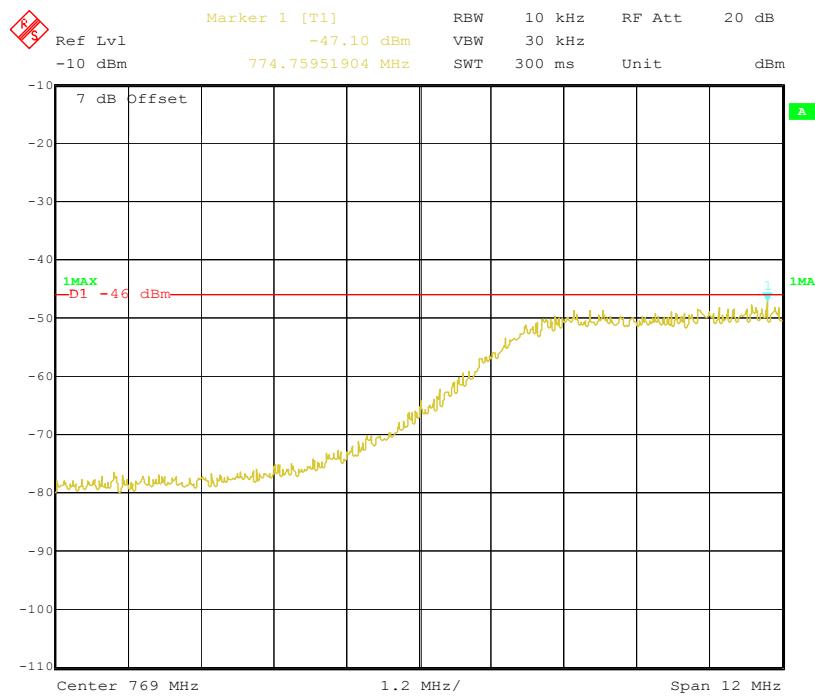
Date: 15.AUG.2014 22:59:15

## 30MHz~1GHz

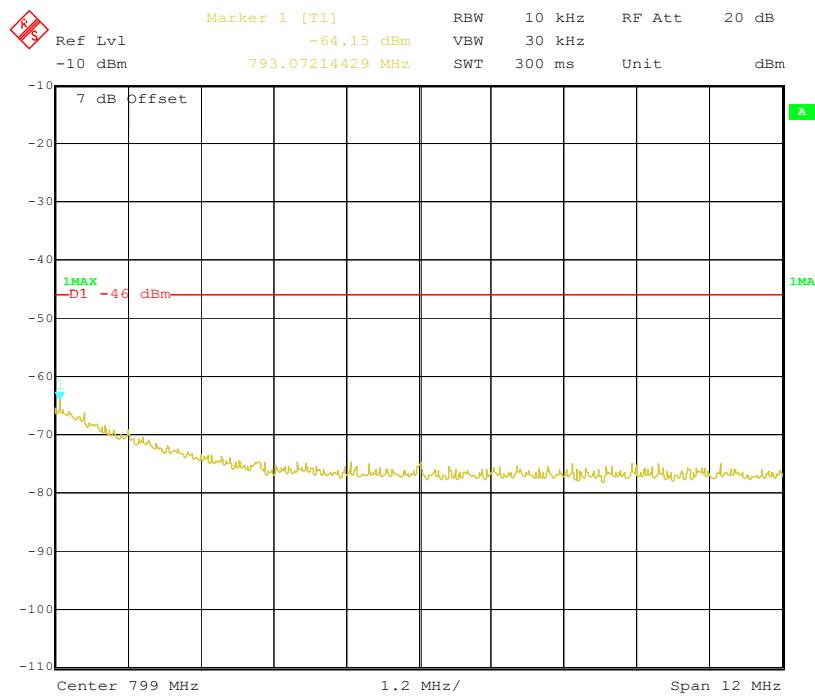


Date: 16.AUG.2014 12:43:45

## 1GHz~8GHz

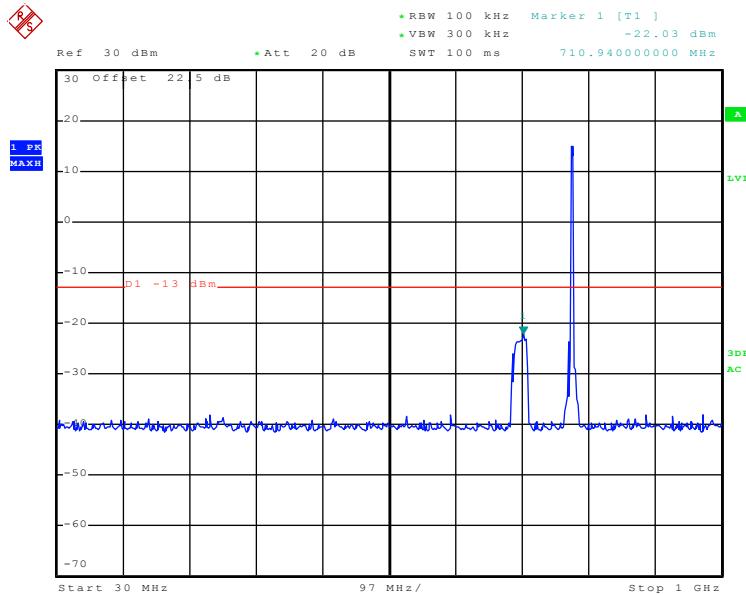


### 763 MHz -775MHz



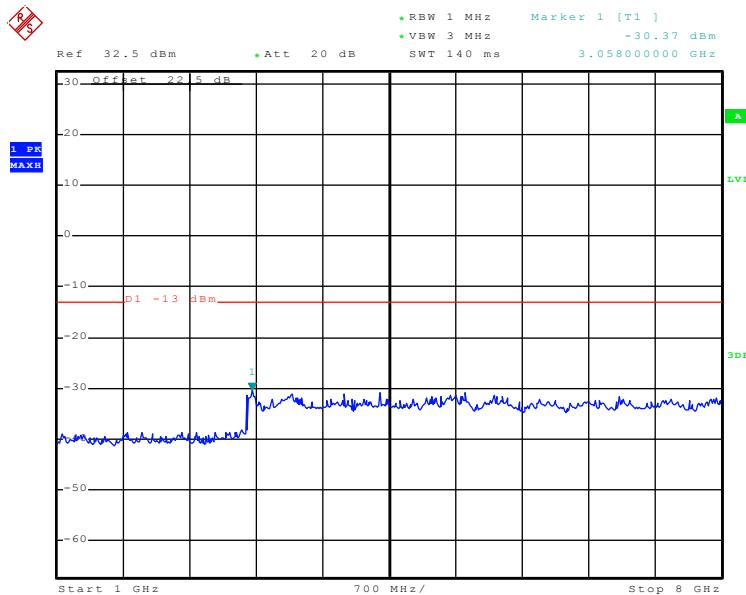
### 793MHz – 805MHz

## Middle channel



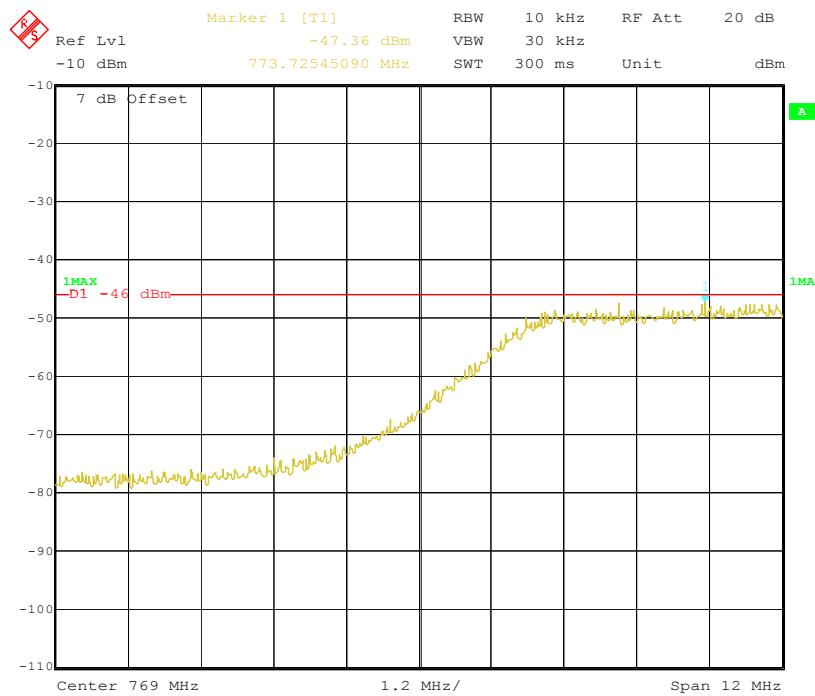
Date: 15.AUG.2014 22:59:44

## 30MHz~1GHz

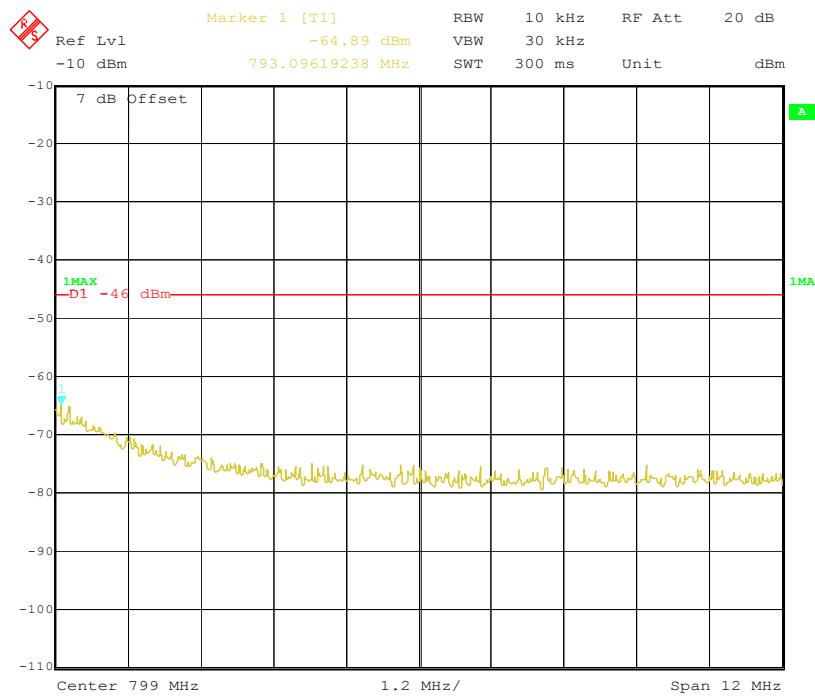


Date: 16.AUG.2014 12:44:13

## 1GHz~8GHz

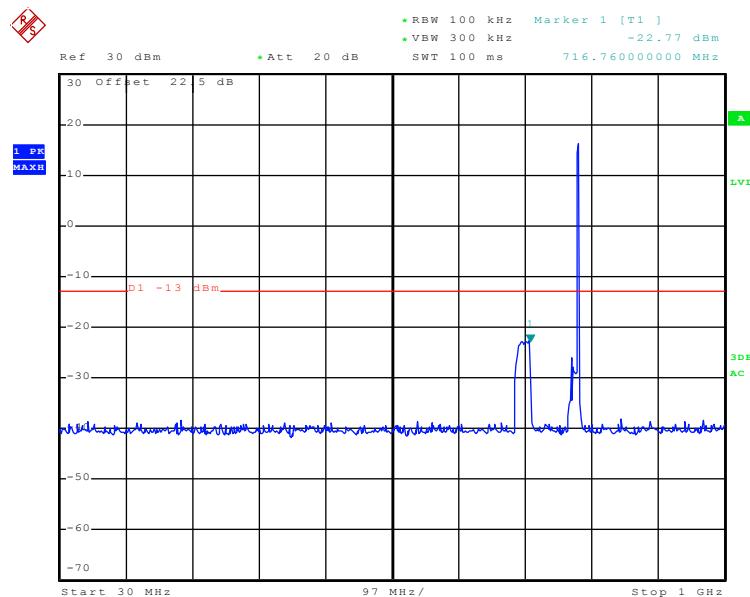


### 763 MHz -775MHz



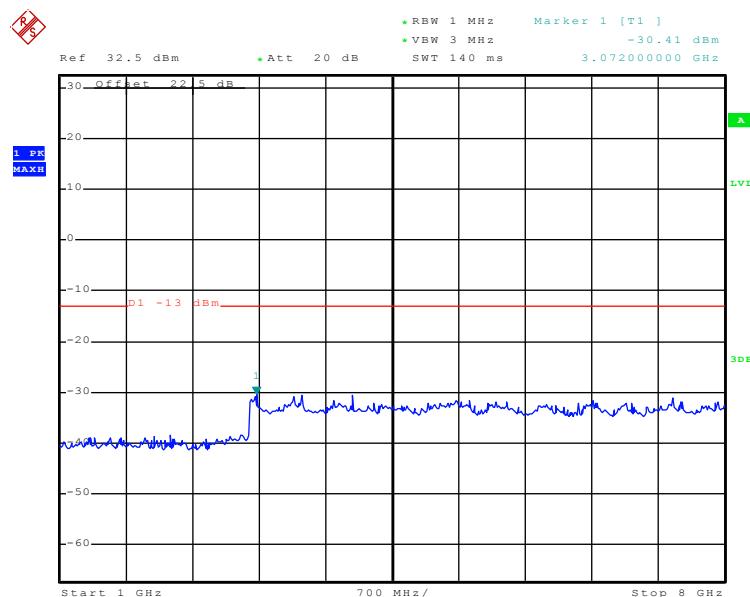
### 793MHz – 805MHz

## High Channel



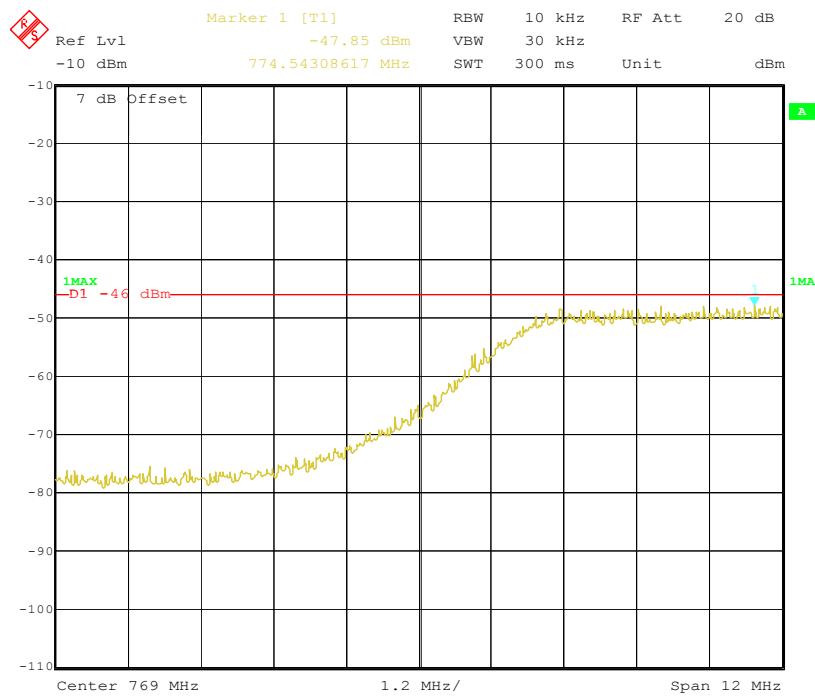
Date: 15.AUG.2014 23:00:19

## 30MHz~1GHz

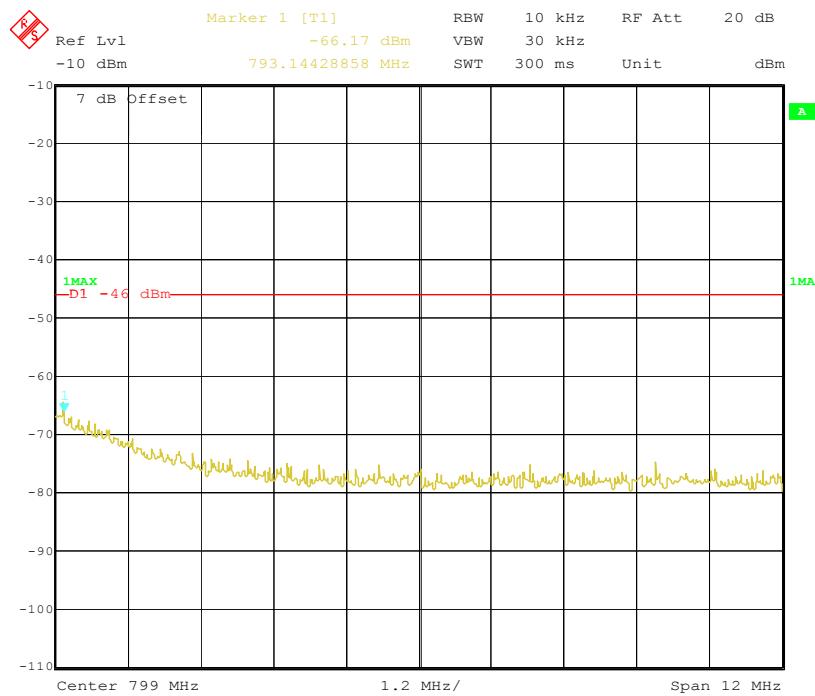


Date: 16.AUG.2014 12:44:37

## 1GHz~8GHz

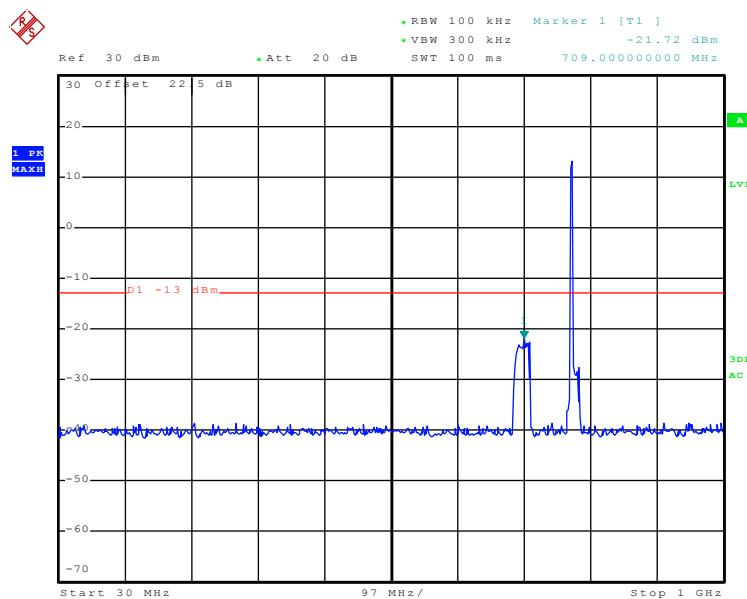


### 763 MHz -775MHz



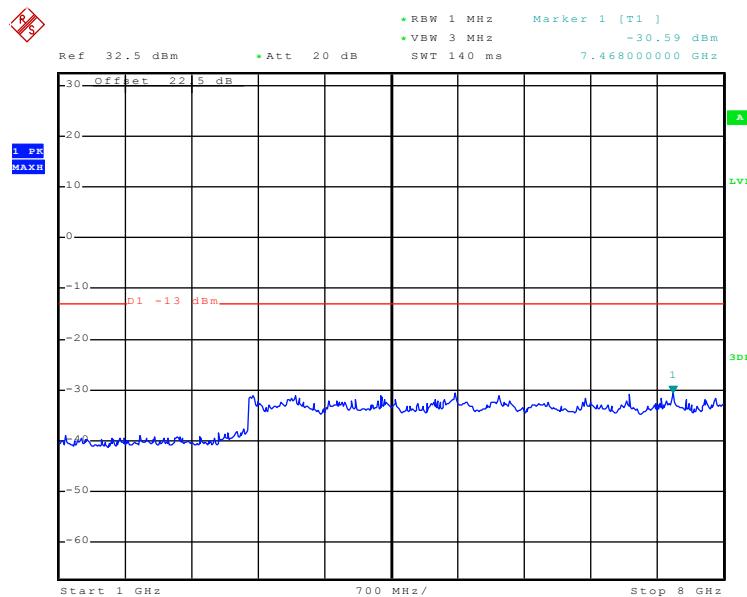
### 793MHz – 805MHz

**5 MHz**  
Low Channel



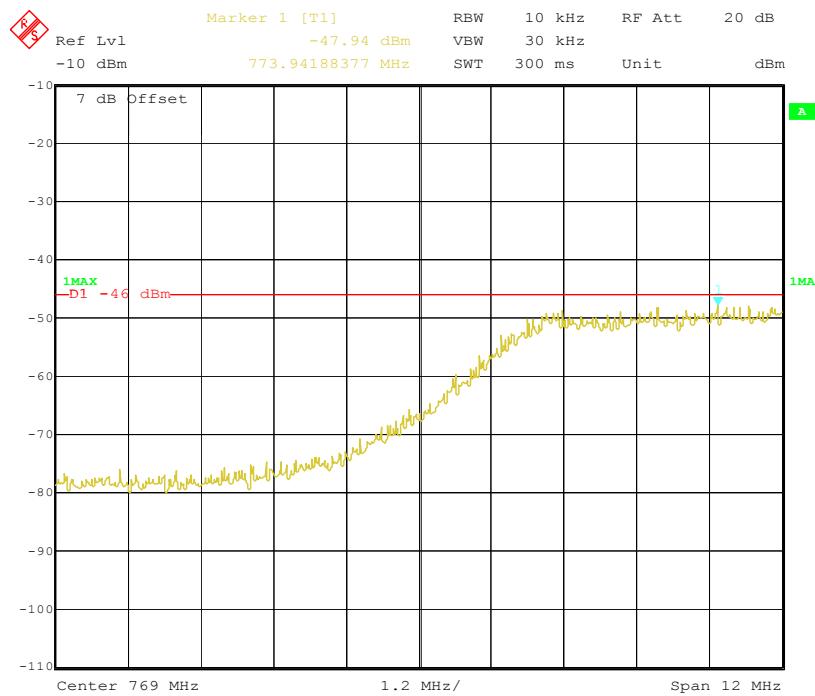
Date: 15.AUG.2014 23:09:05

**30MHz~1GHz**

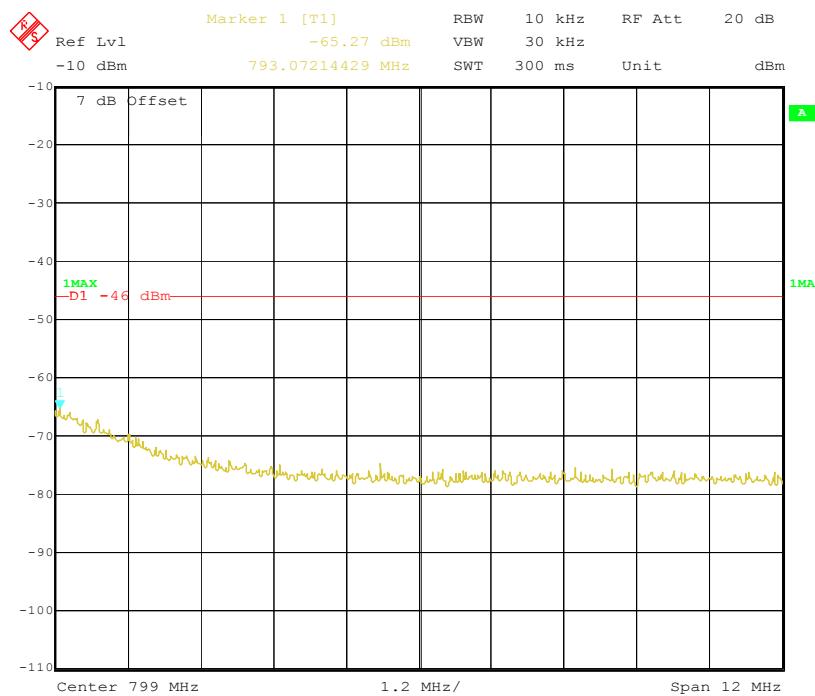


Date: 16.AUG.2014 12:48:50

**1GHz~8GHz**

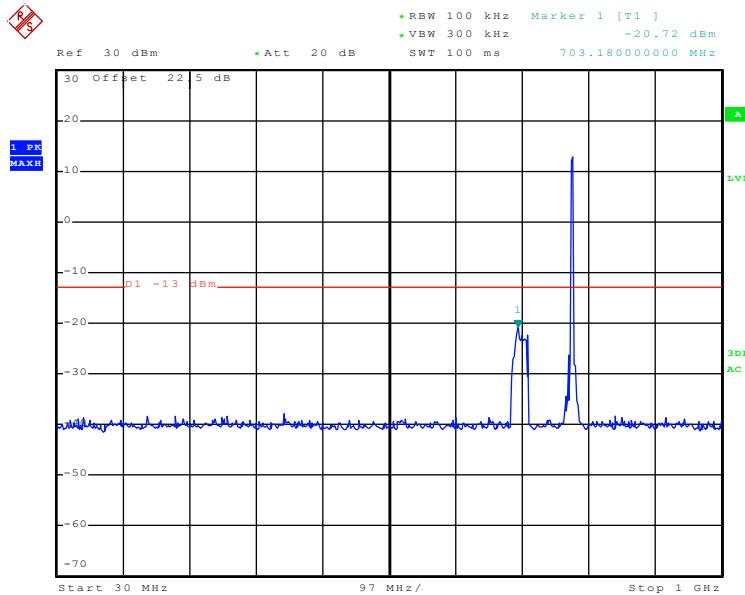


### 763 MHz -775MHz



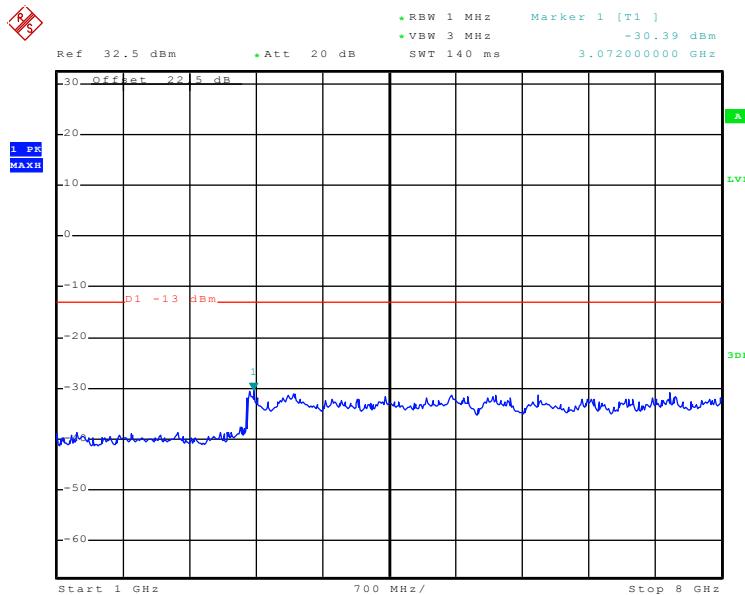
### 793MHz – 805MHz

## Middle channel



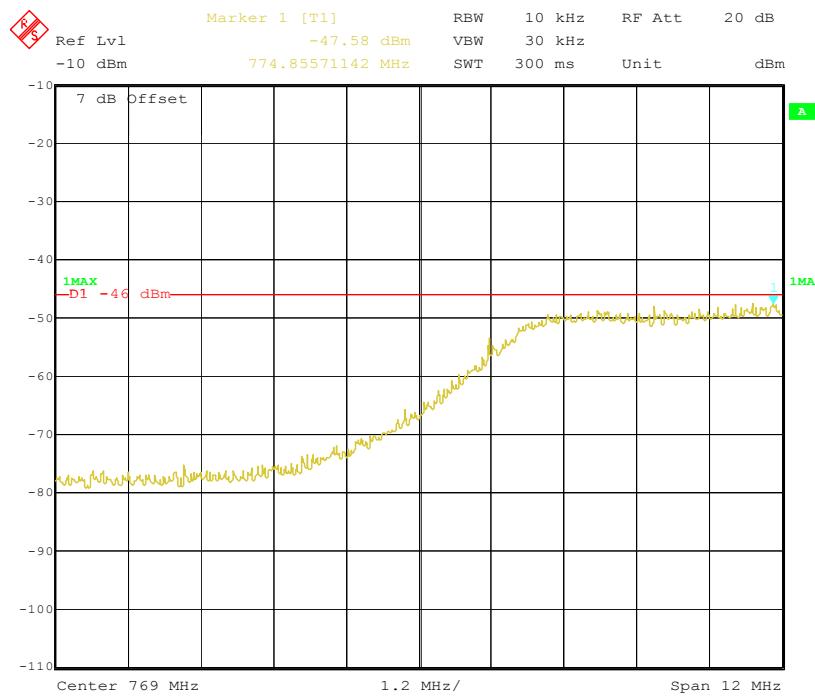
Date: 15.AUG.2014 23:10:12

## 30MHz~1GHz

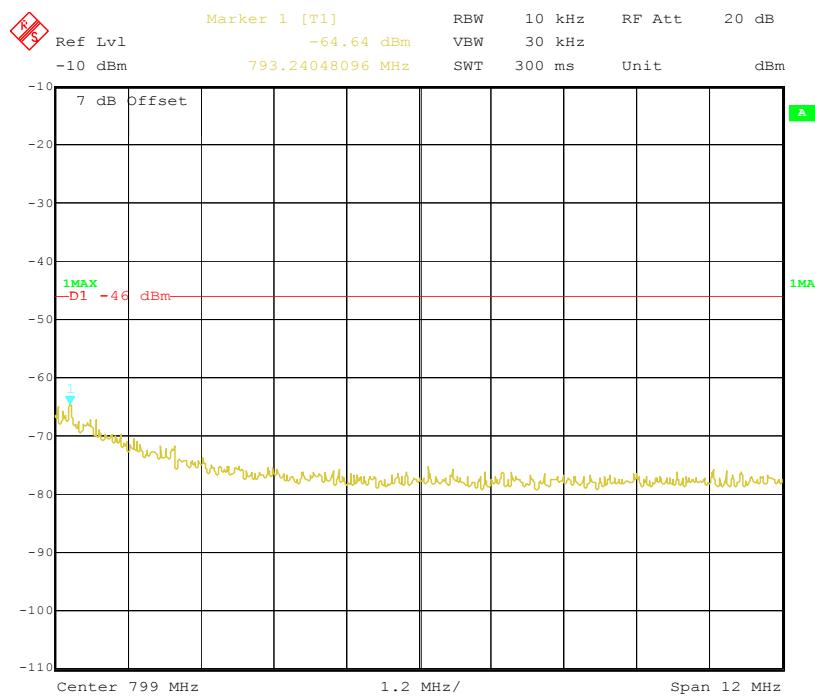


Date: 16.AUG.2014 12:49:13

## 1GHz~8GHz

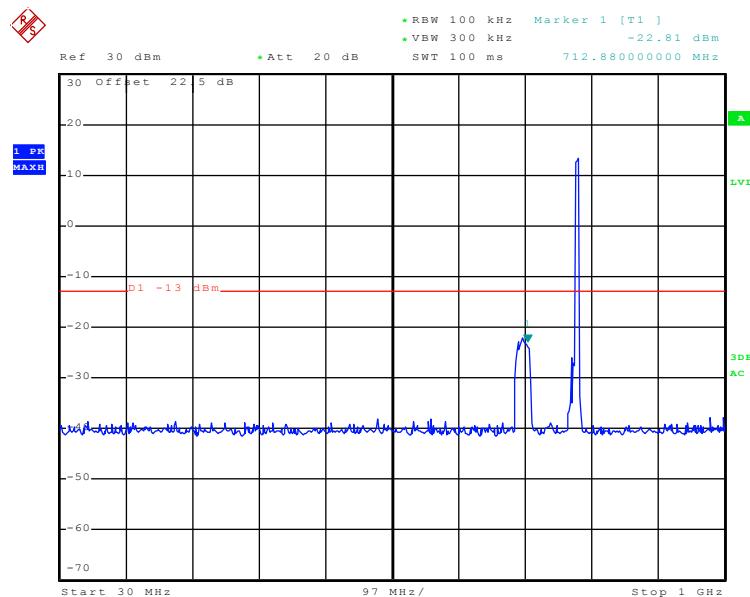


### 763 MHz -775MHz



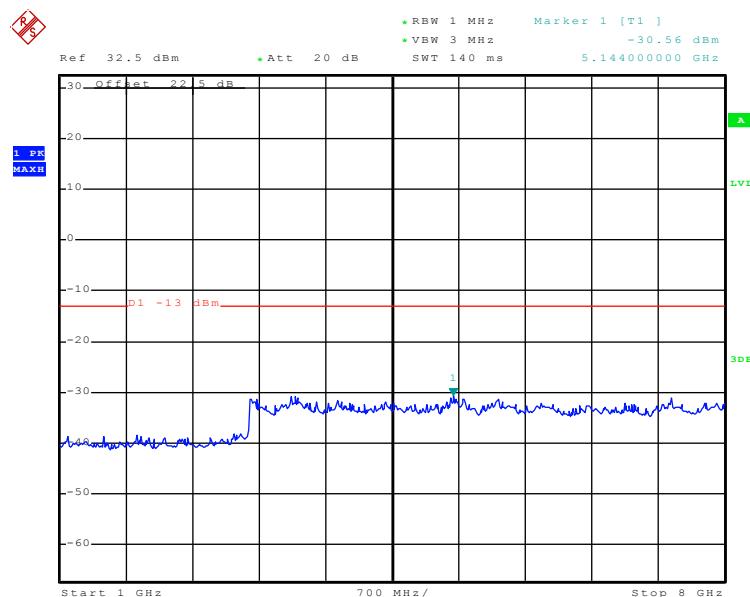
### 793MHz – 805MHz

## High Channel



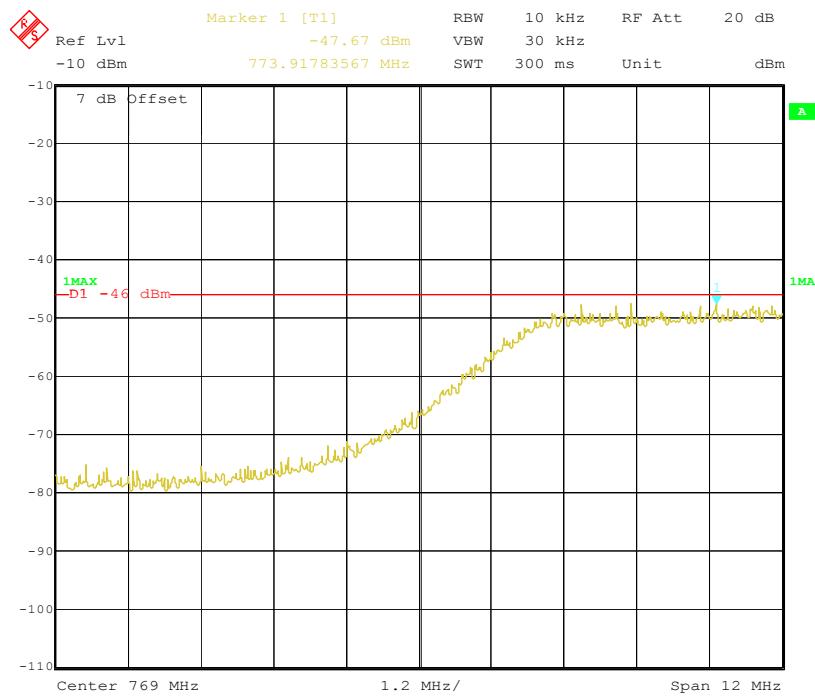
Date: 15.AUG.2014 23:10:39

## 30MHz~1GHz

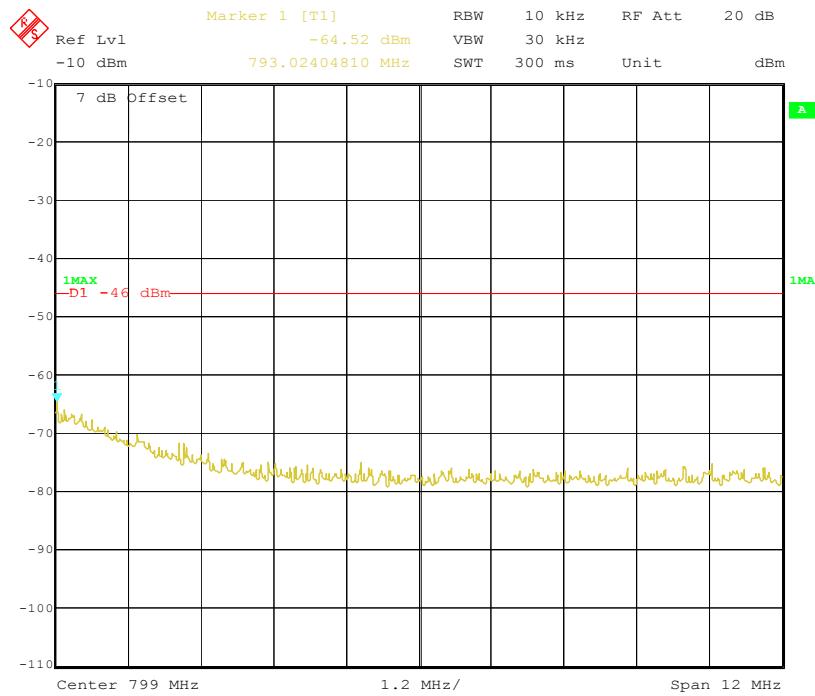


Date: 16.AUG.2014 12:49:35

## 1GHz~8GHz



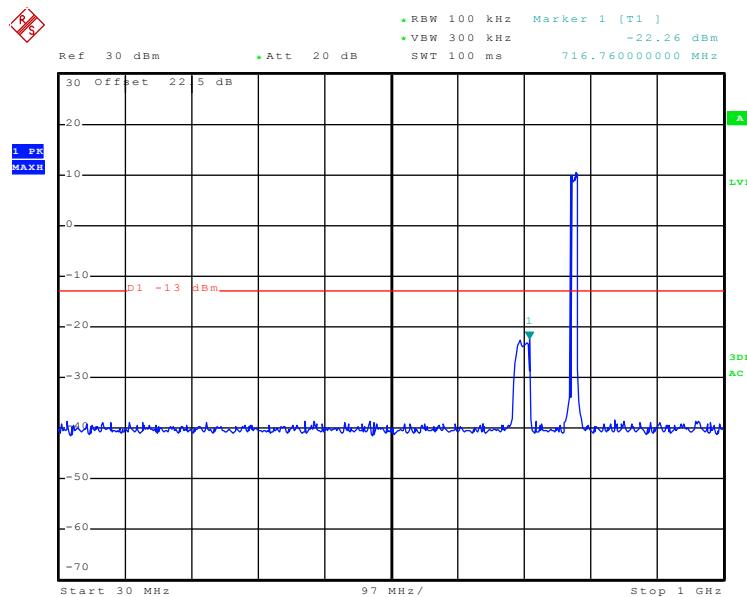
### 763 MHz -775MHz



### 793MHz – 805MHz

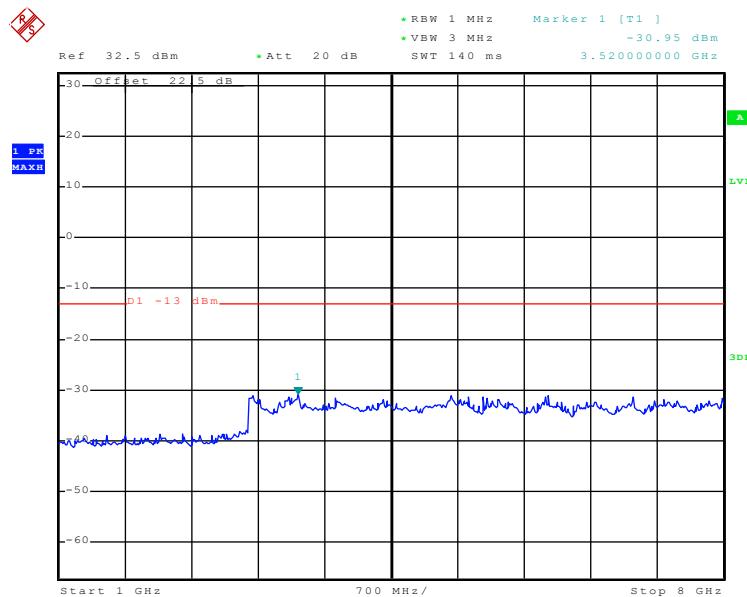
## 10 MHz

### Low Channel



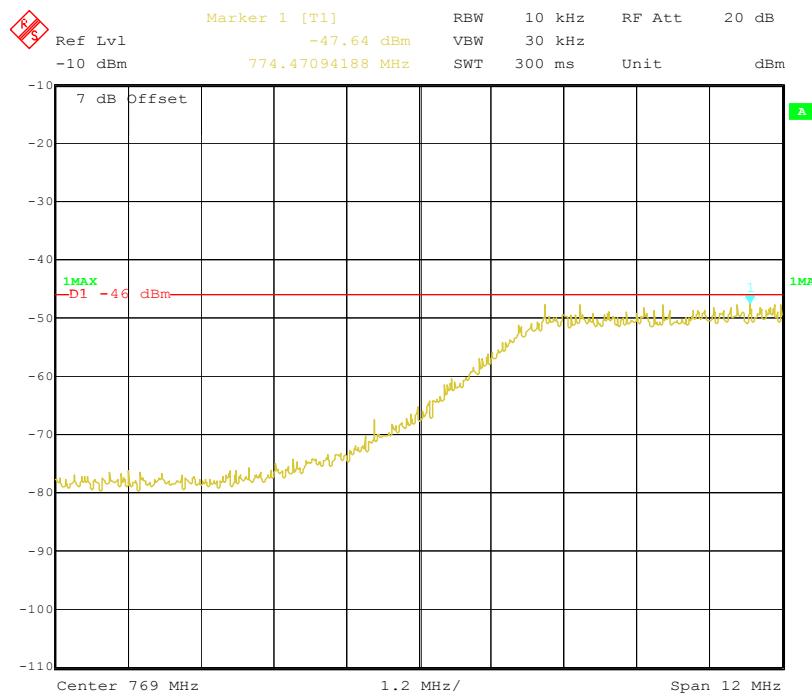
Date: 15.AUG.2014 23:14:02

## 30MHz~1GHz

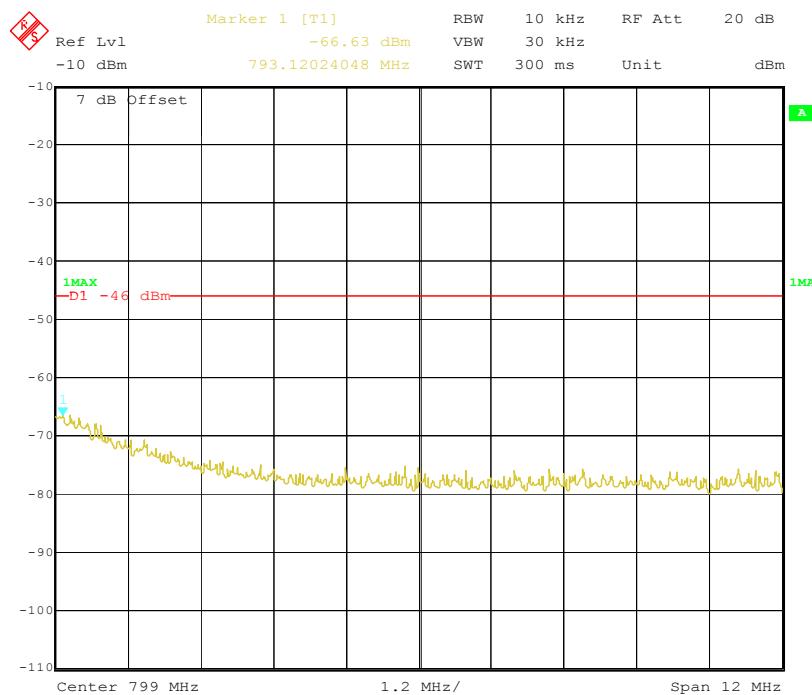


Date: 16.AUG.2014 12:51:30

## 1GHz~8GHz

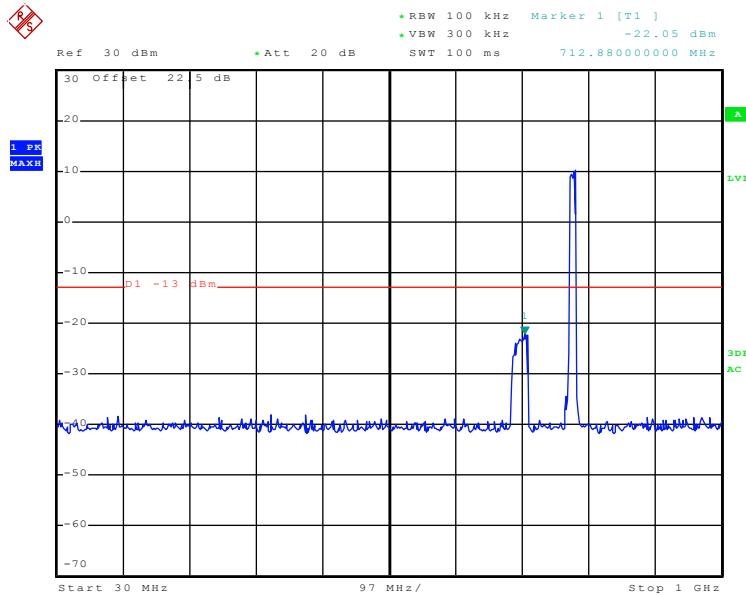


### 763 MHz -775MHz



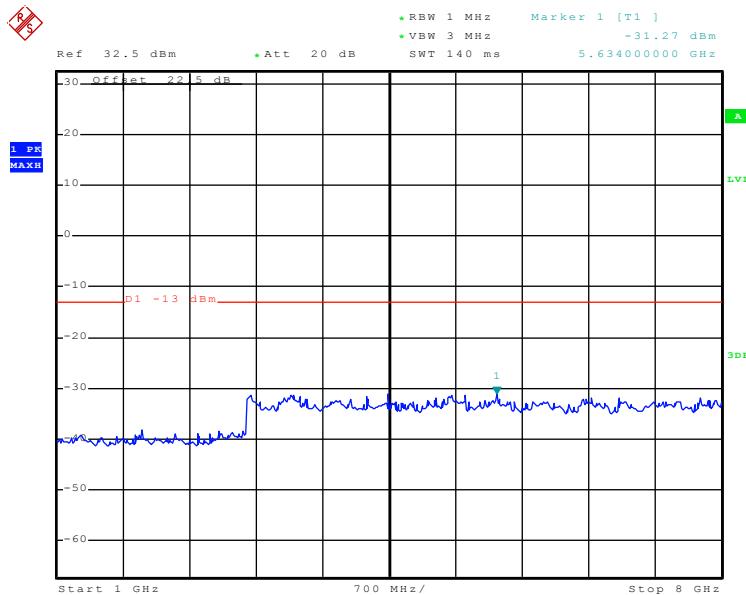
### 793MHz – 805MHz

## Middle channel



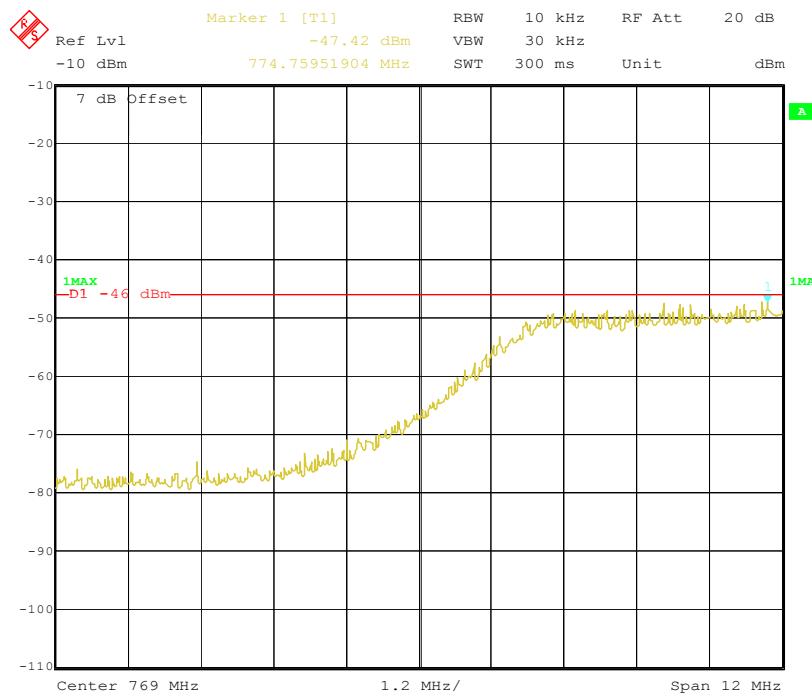
Date: 15.AUG.2014 23:15:00

## 30MHz~1GHz

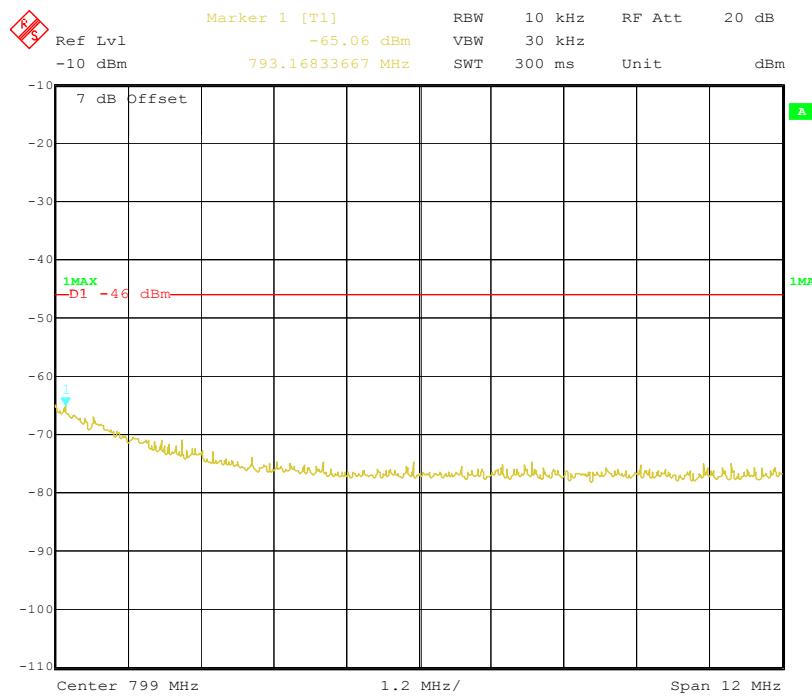


Date: 16.AUG.2014 12:52:12

## 1GHz~8GHz

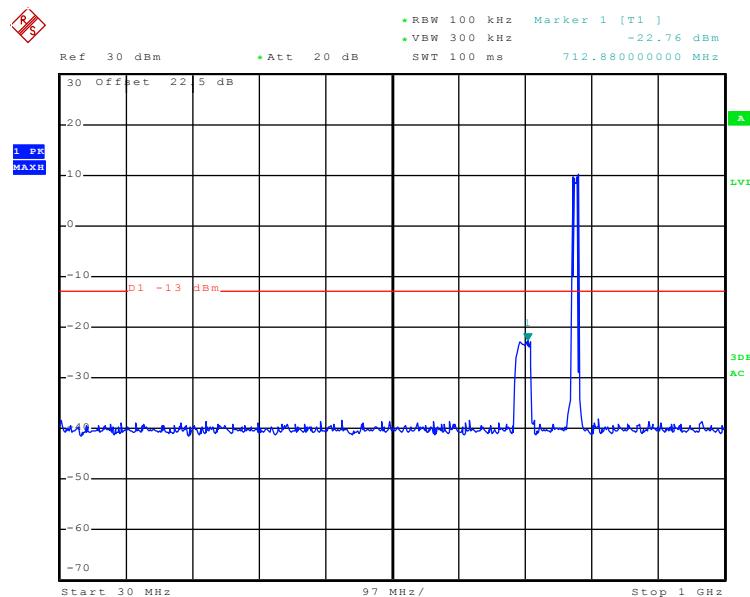


### 763 MHz -775MHz



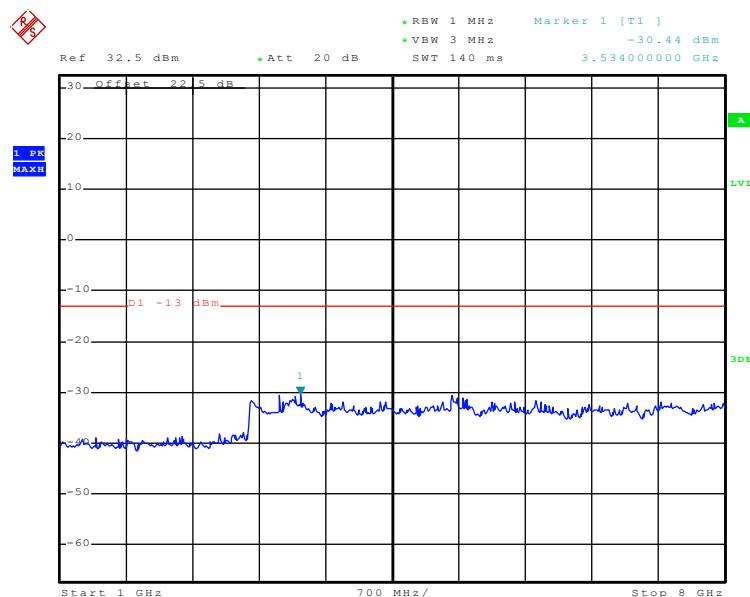
### 793MHz – 805MHz

## High Channel



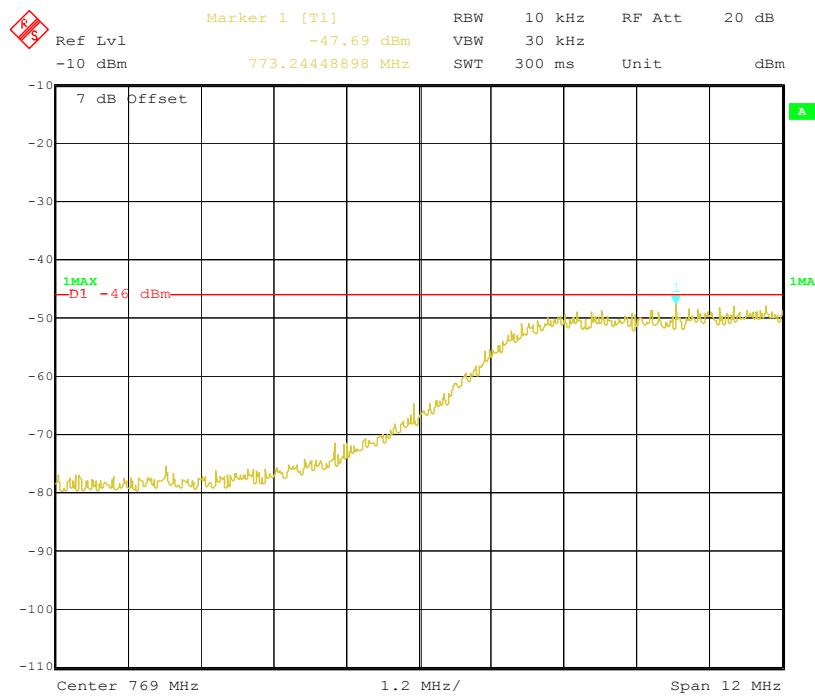
Date: 15.AUG.2014 23:14:35

## 30MHz~1GHz

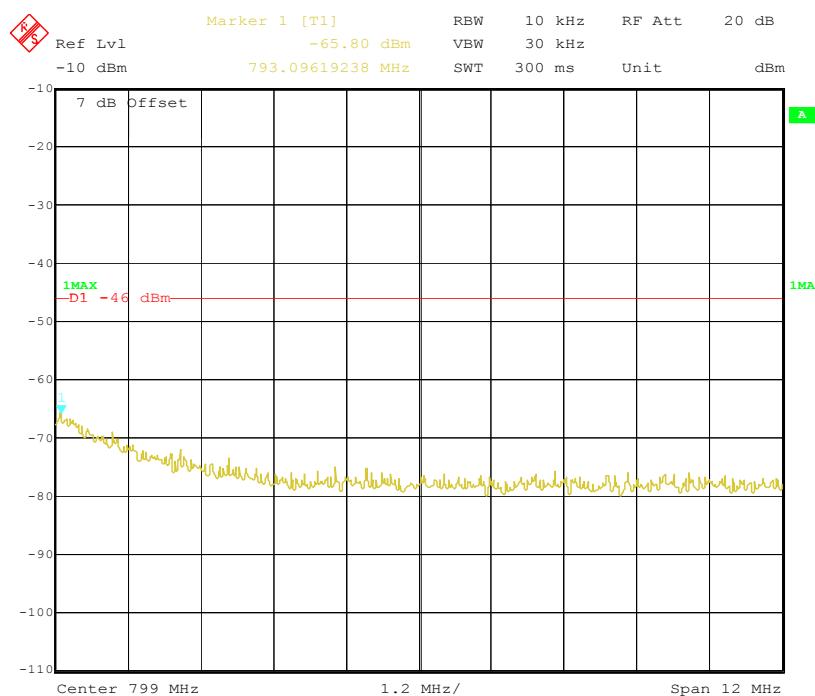


Date: 16.AUG.2014 12:51:50

## 1GHz~8GHz



### 763 MHz -775MHz

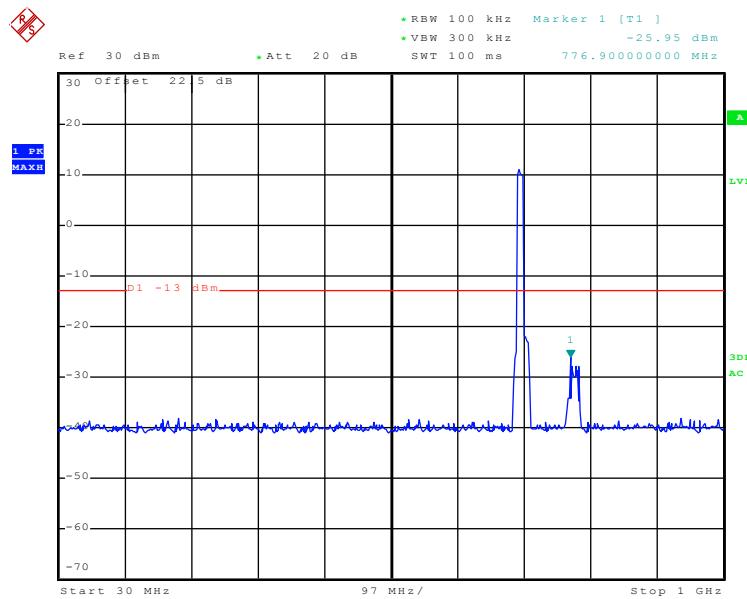


### 793MHz – 805MHz

## Lower ABC Full Band Uplink

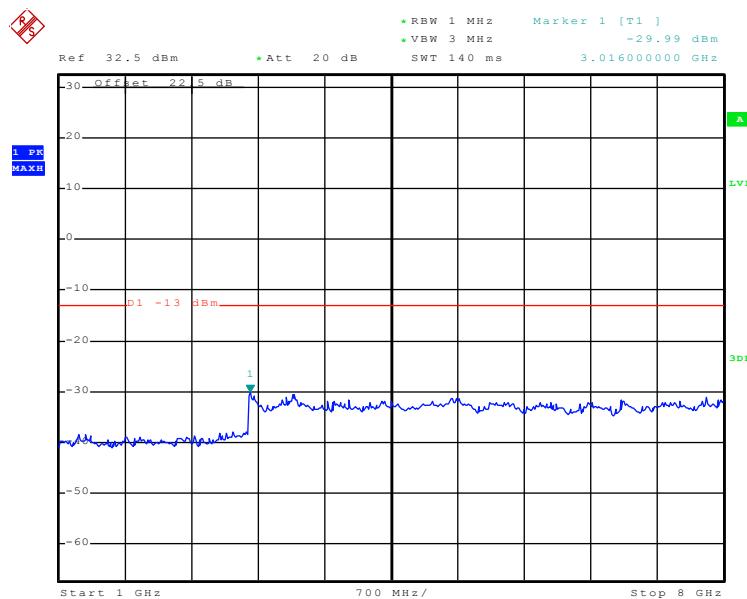
10 MHz

Low Channel



Date: 15.AUG.2014 23:11:55

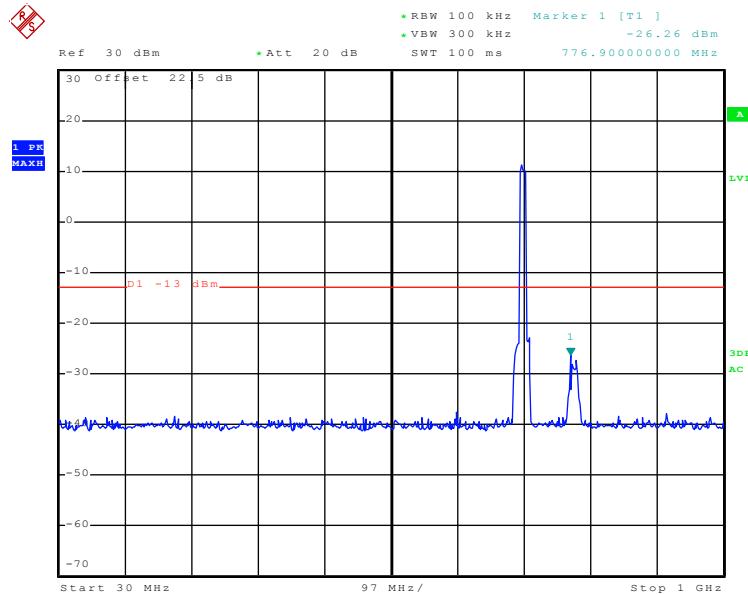
30MHz-1GHz



Date: 16.AUG.2014 12:50:26

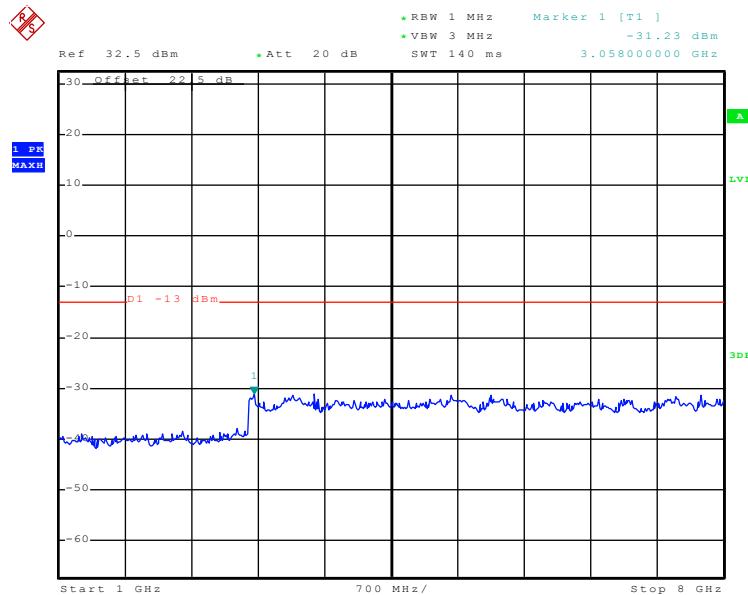
1GHz~8GHz

## Middle channel



Date: 15.AUG.2014 23:12:30

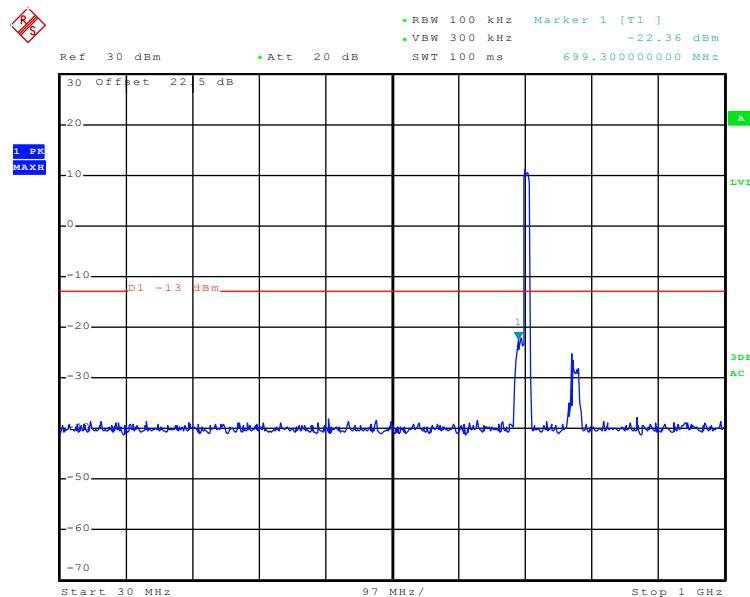
## 30MHz~1GHz



Date: 16.AUG.2014 12:50:48

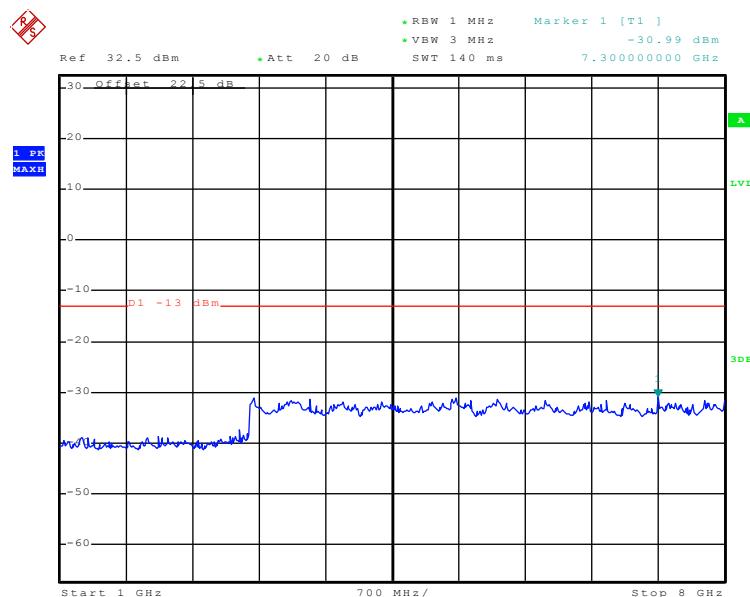
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 23:13:17

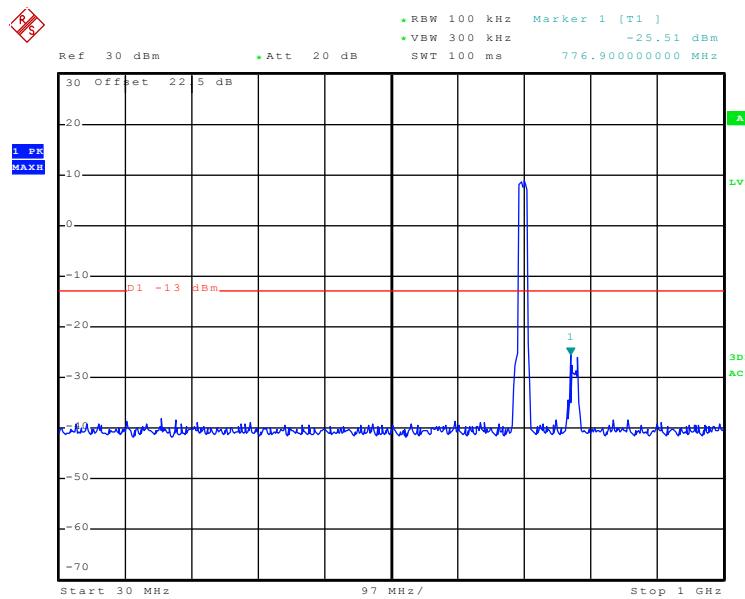
## 30MHz~1GHz



Date: 16.AUG.2014 12:51:06

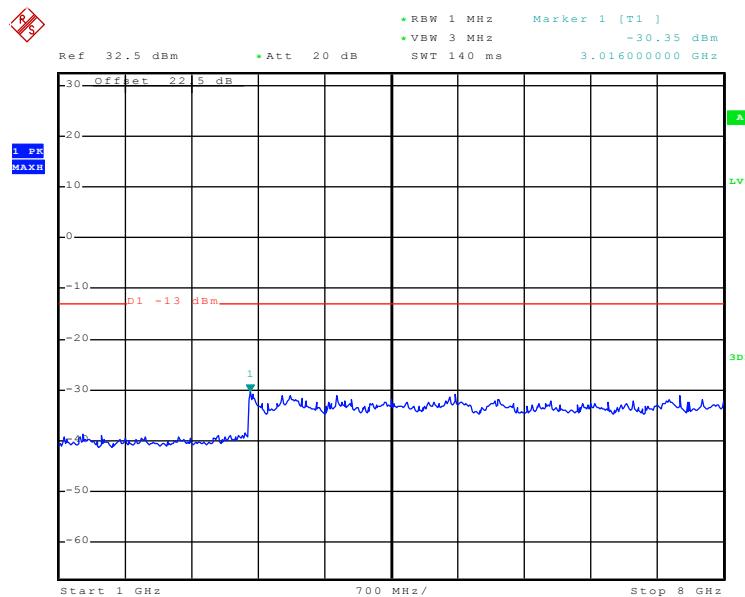
## 1GHz~8GHz

**15 MHz**  
Low Channel



Date: 15.AUG.2014 23:16:31

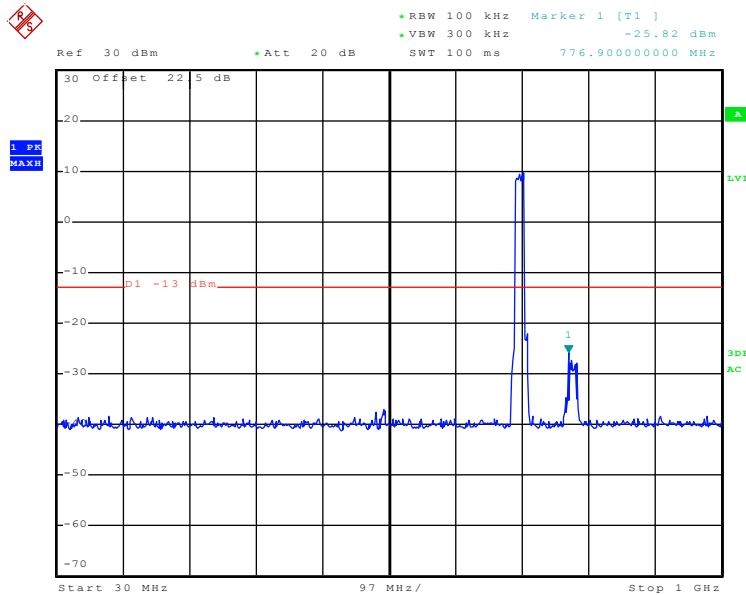
**30MHz~1GHz**



Date: 16.AUG.2014 12:53:08

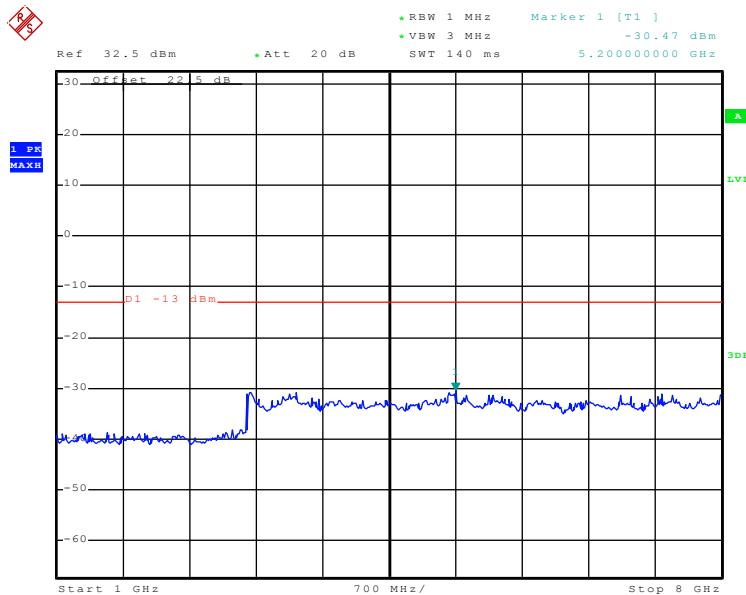
**1GHz~8GHz**

## Middle channel



Date: 15.AUG.2014 23:16:05

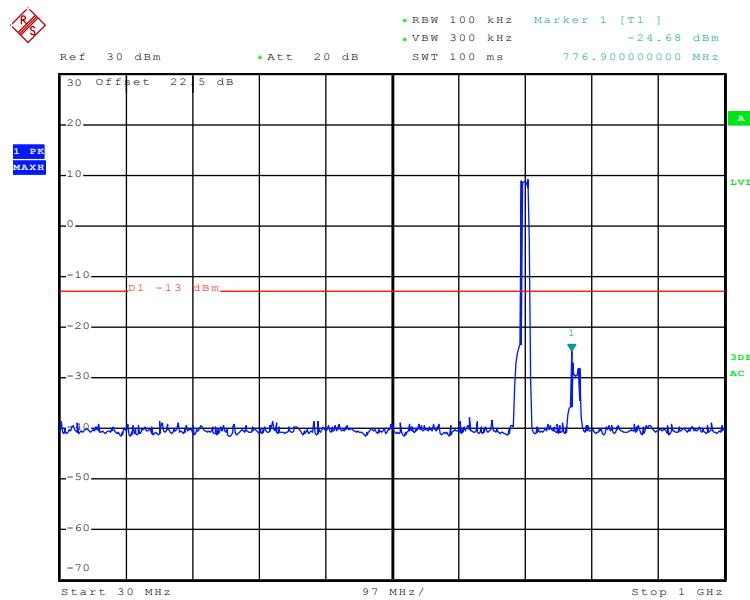
## 30MHz~1GHz



Date: 16.AUG.2014 12:52:49

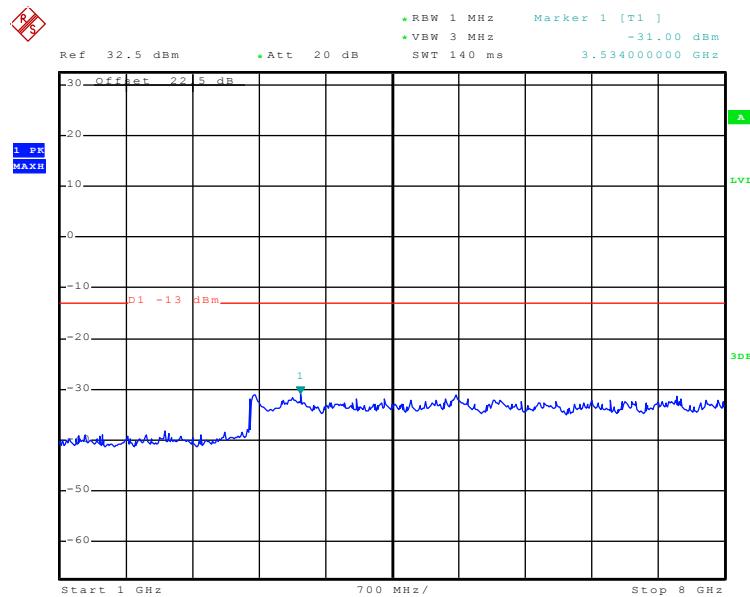
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 23:17:00

## 30MHz~1GHz



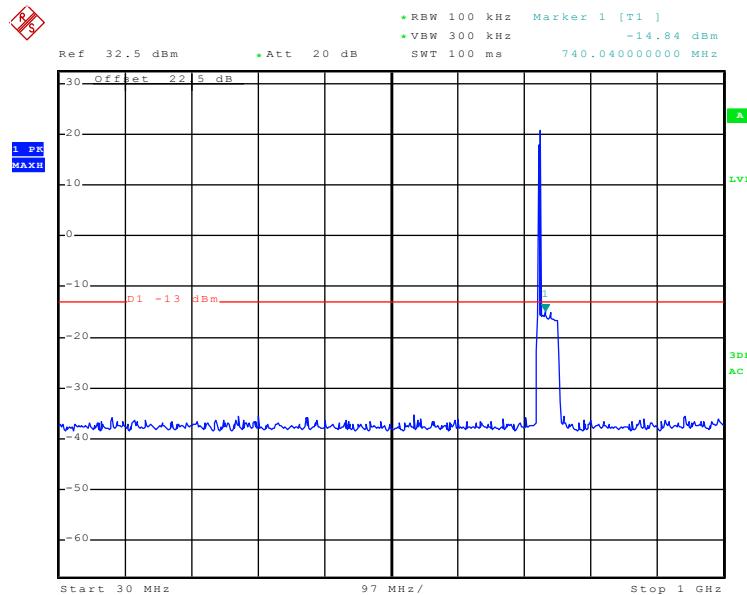
Date: 16.AUG.2014 12:53:28

## 1GHz~8GHz

## Lower A downlink mode

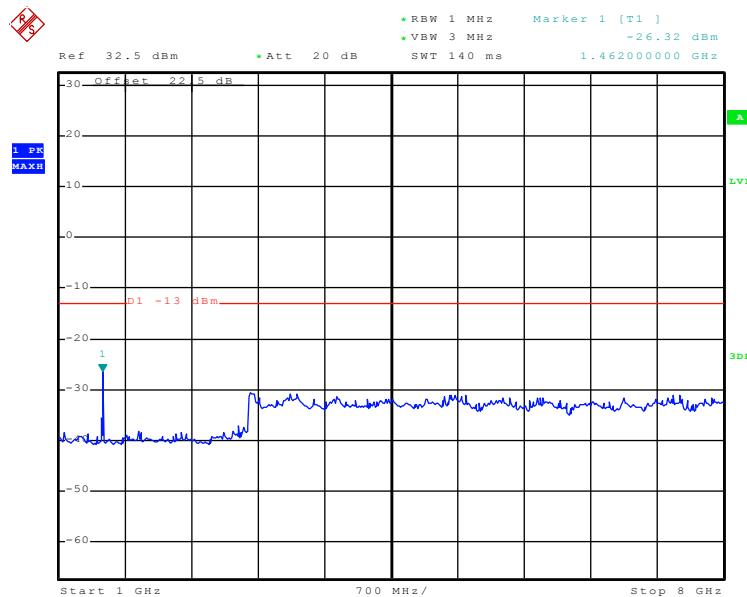
1.4 MHz

Low Channel



Date: 14.AUG.2014 23:30:50

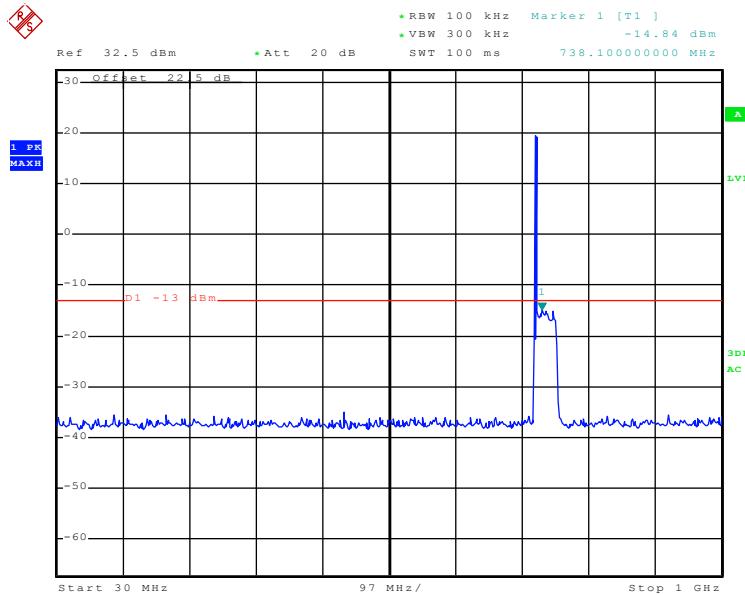
30MHz-1GHz



Date: 16.AUG.2014 12:08:04

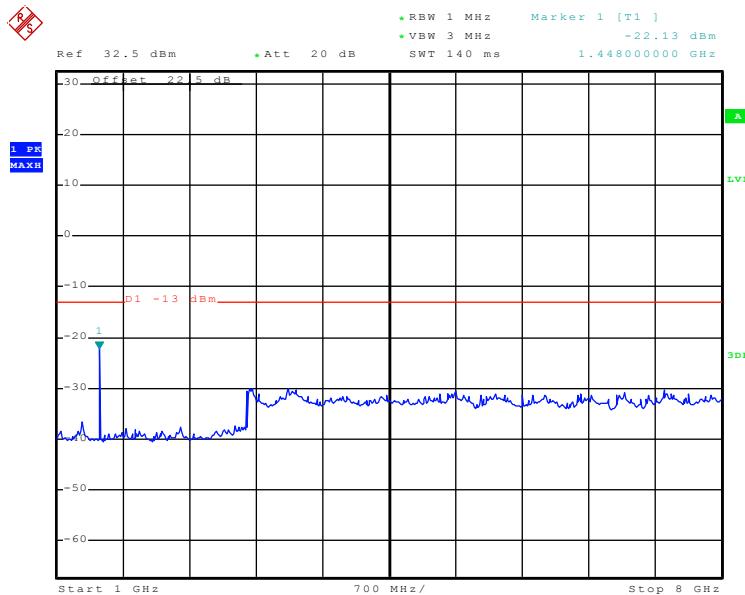
1GHz~8GHz

## Middle channel



Date: 14.AUG.2014 23:29:57

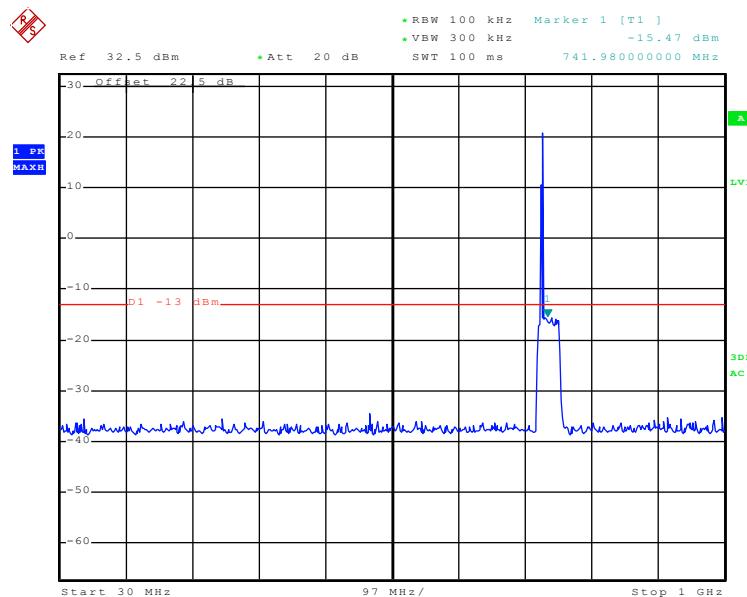
## 30MHz~1GHz



Date: 16.AUG.2014 12:07:35

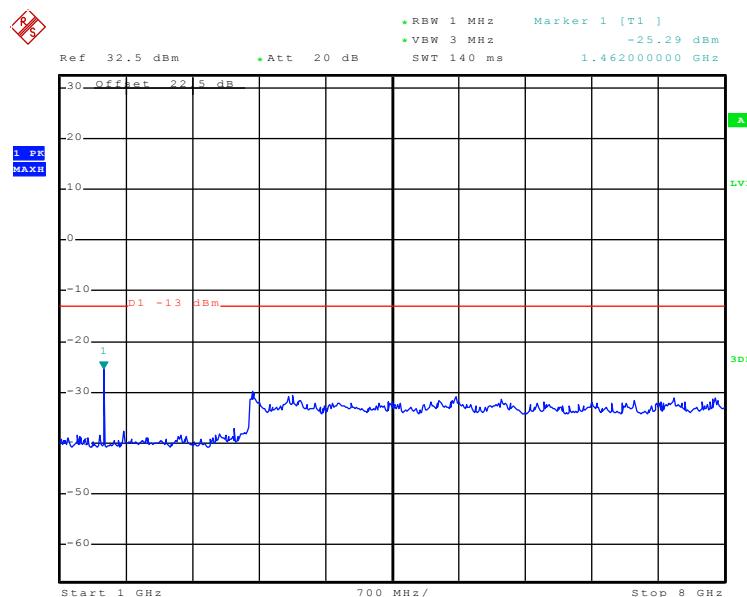
## 1GHz~8GHz

## High Channel



Date: 14.AUG.2014 23:31:38

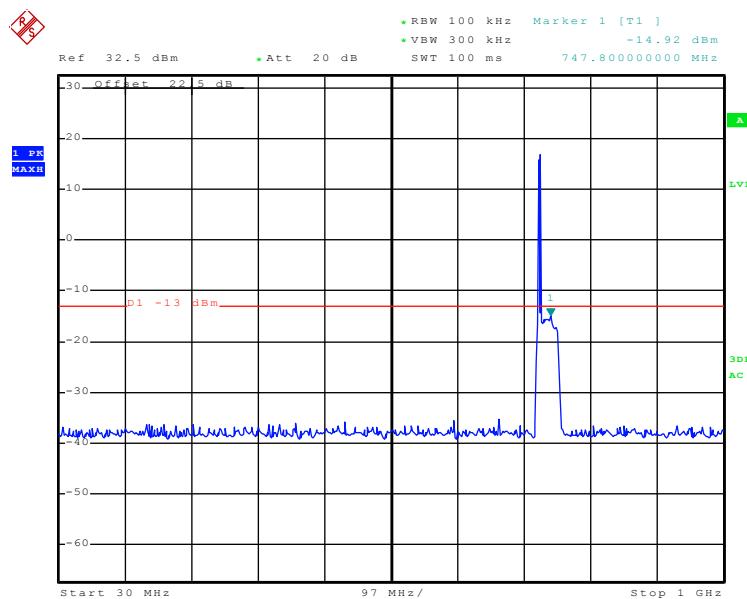
## 30MHz~1GHz



Date: 16.AUG.2014 12:08:30

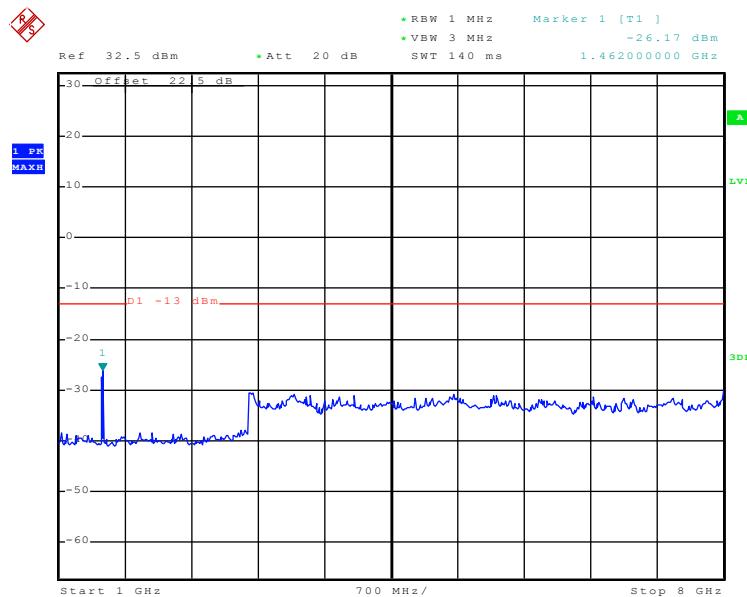
## 1GHz~8GHz

## 3 MHz Low Channel



Date: 14.AUG.2014 23:41:16

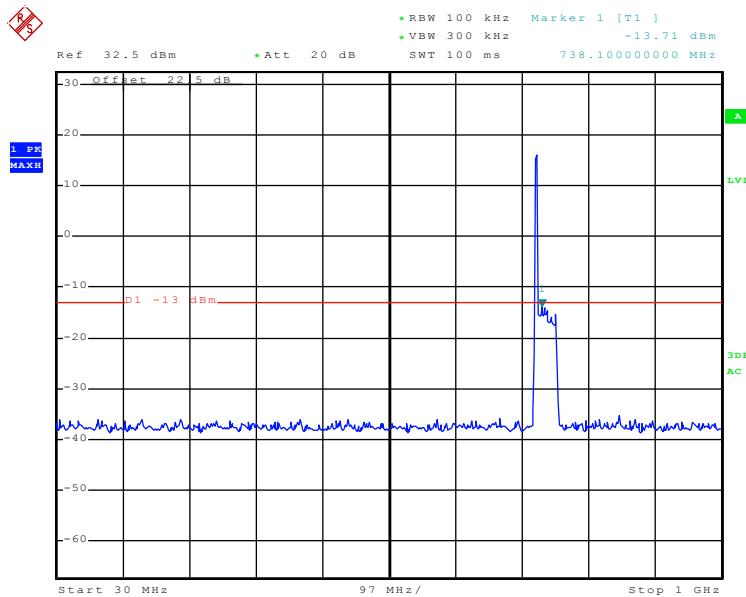
## 30MHz~1GHz



Date: 16.AUG.2014 12:14:25

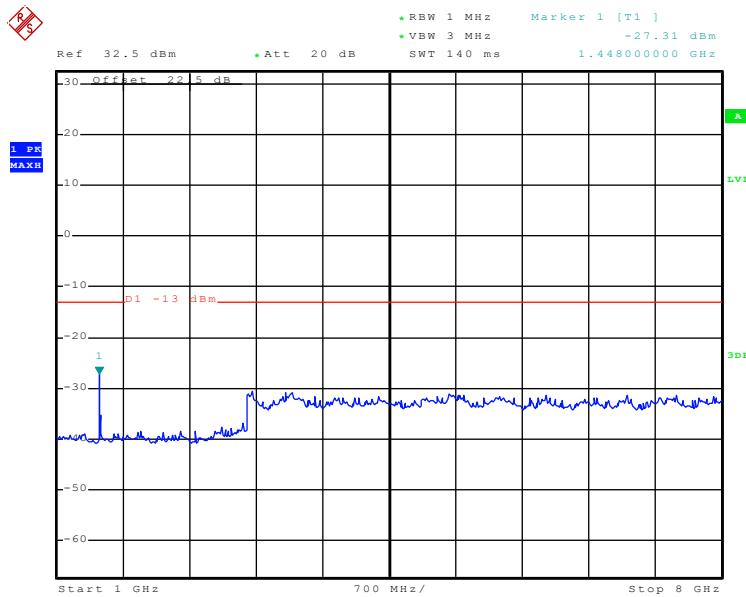
## 1GHz~8GHz

## Middle channel



Date: 14.AUG.2014 23:40:44

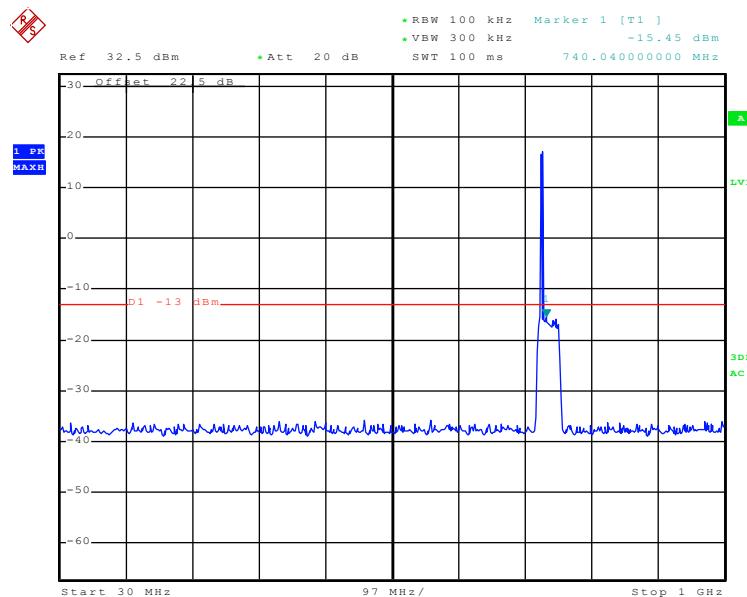
## 30MHz~1GHz



Date: 16.AUG.2014 12:14:01

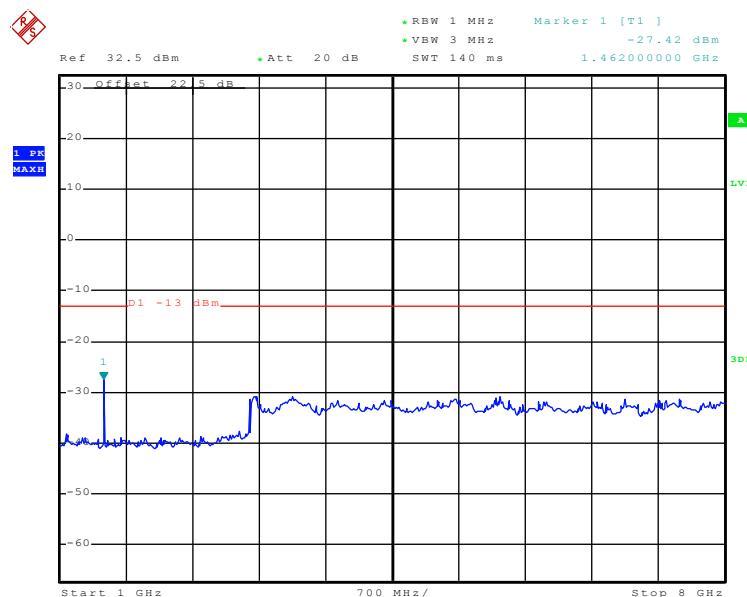
## 1GHz~8GHz

## High Channel



Date: 14.AUG.2014 23:41:55

## 30MHz~1GHz

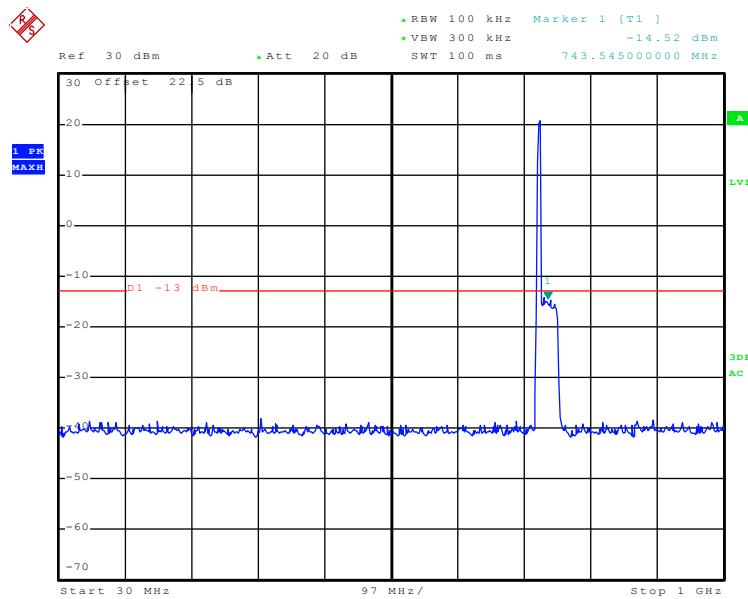


Date: 16.AUG.2014 12:14:50

## 1GHz~8GHz

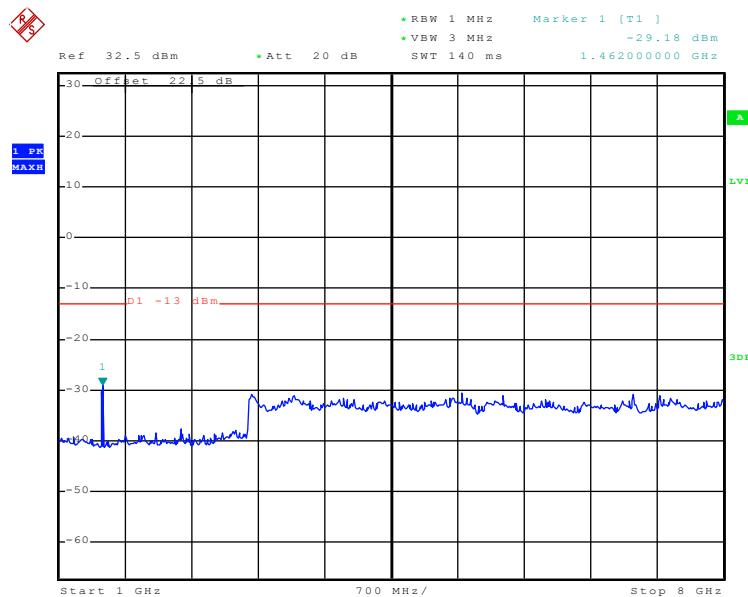
## 5 MHz

### Low Channel



Date: 15.AUG.2014 22:04:53

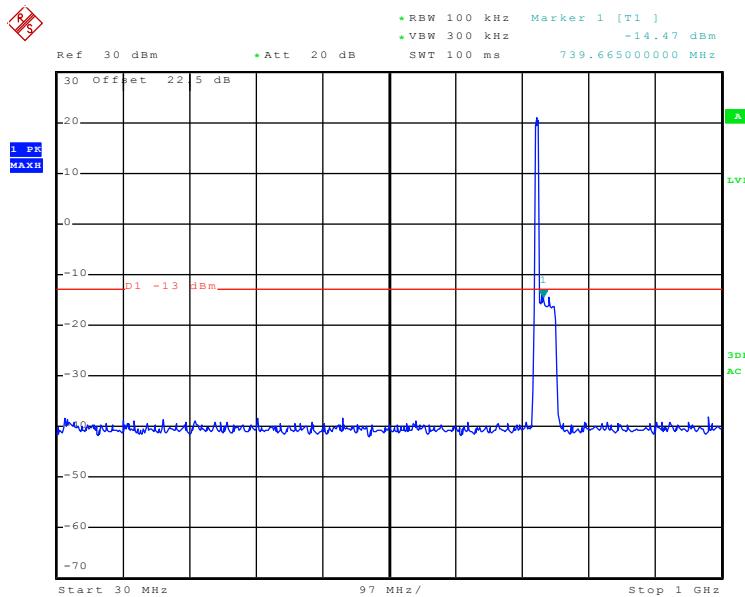
### 30MHz~1GHz



Date: 16.AUG.2014 12:21:26

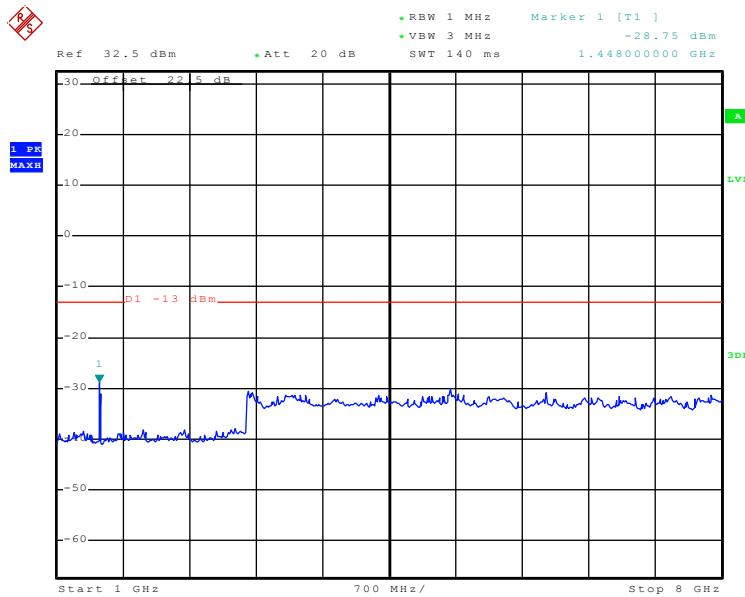
### 1GHz~8GHz

## Middle channel



Date: 15.AUG.2014 22:04:26

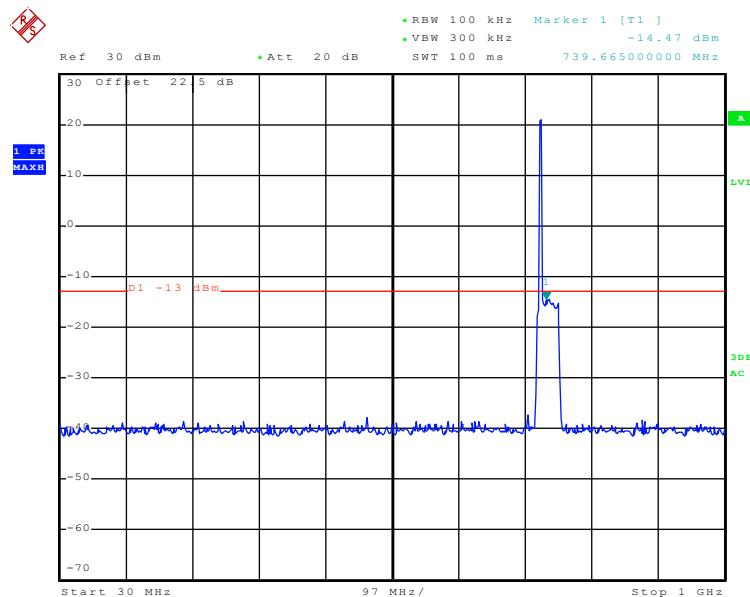
## 30MHz~1GHz



Date: 16.AUG.2014 12:21:01

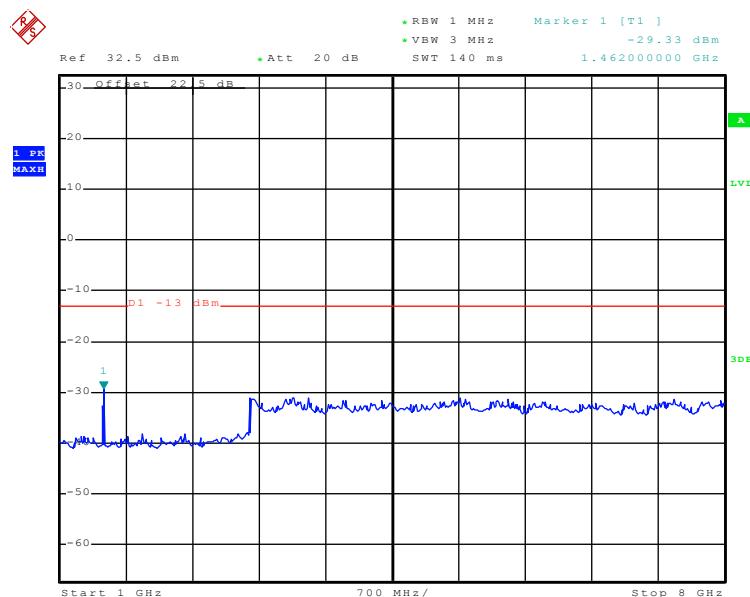
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 22:05:25

## 30MHz~1GHz



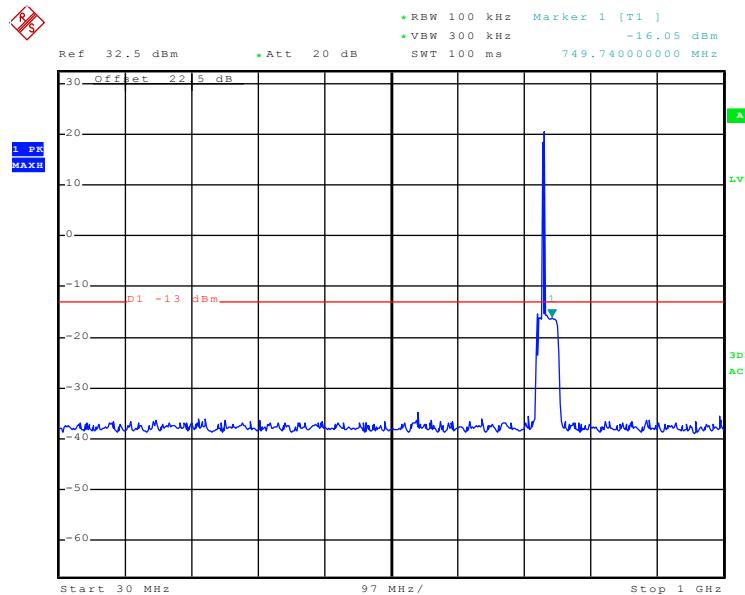
Date: 16.AUG.2014 12:21:55

## 1GHz~8GHz

## Lower B downlink

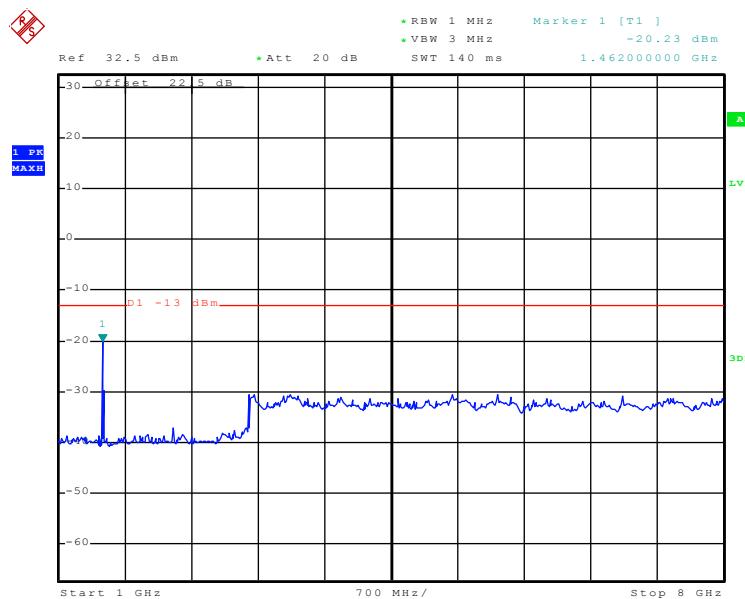
1.4 MHz

Low Channel



Date: 14.AUG.2014 23:33:14

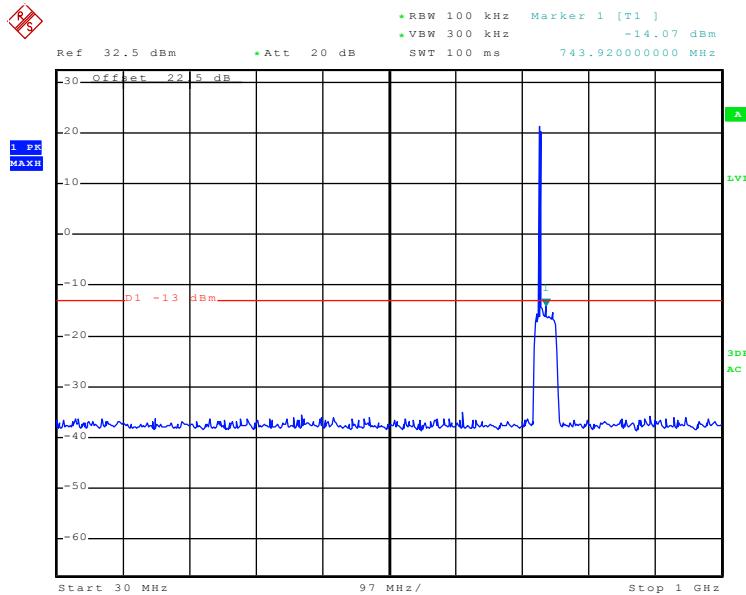
30MHz-1GHz



Date: 16.AUG.2014 12:09:44

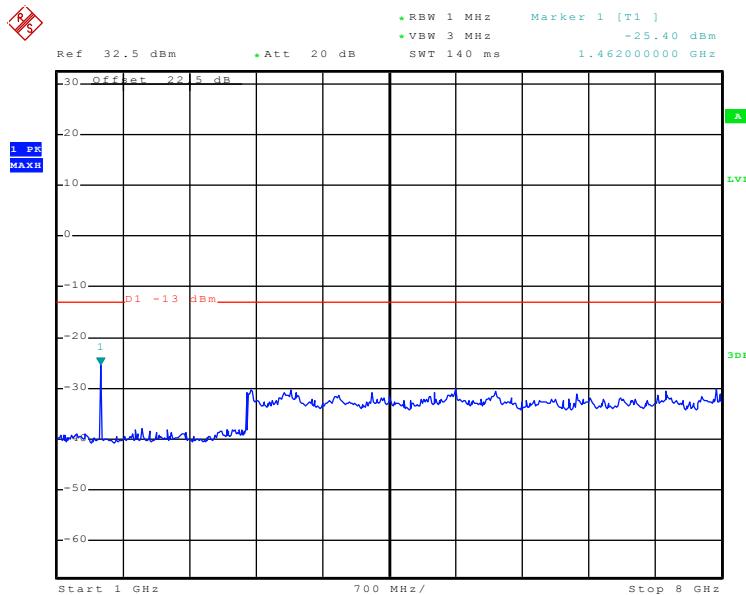
1GHz~8GHz

## Middle channel



Date: 14.AUG.2014 23:32:34

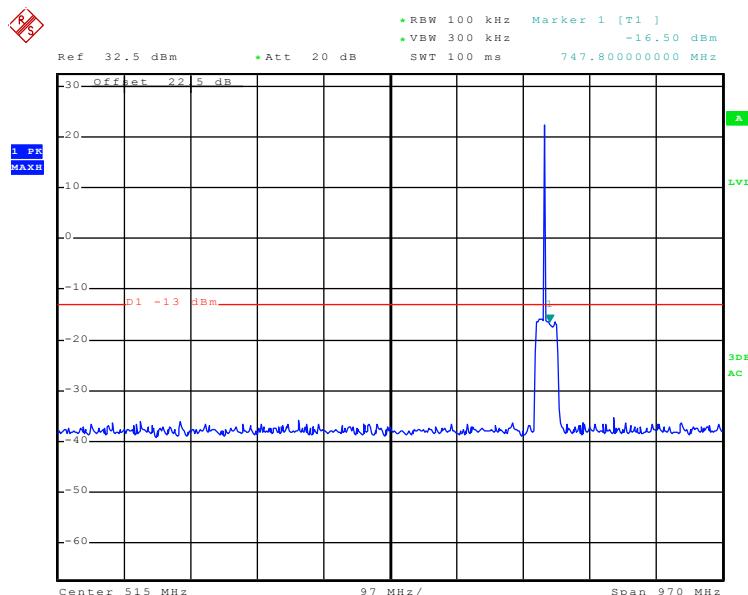
## 30MHz~1GHz



Date: 16.AUG.2014 12:09:03

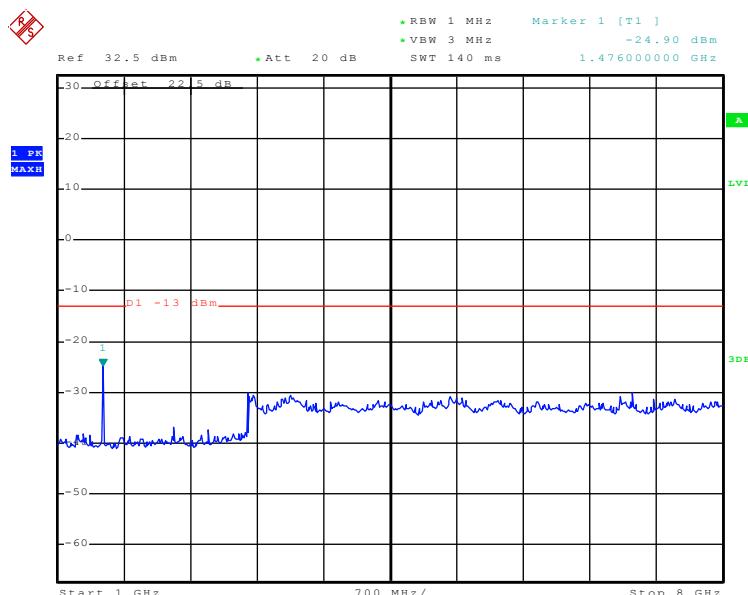
## 1GHz~8GHz

## High Channel



Date: 14.AUG.2014 23:35:11

## 30MHz~1GHz

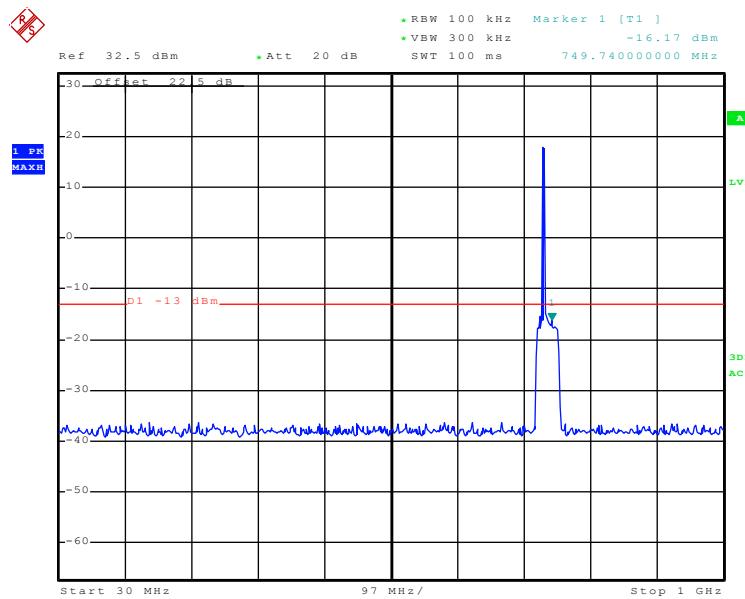


Date: 16.AUG.2014 12:10:12

## 1GHz~8GHz

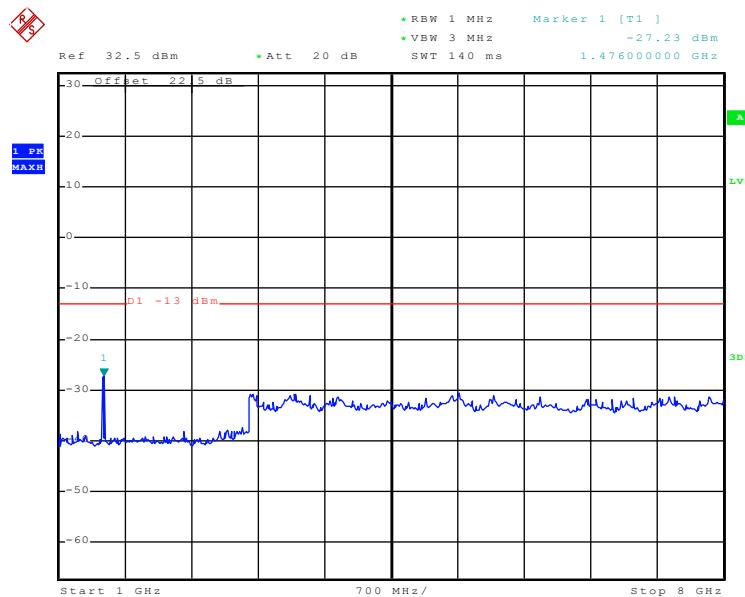
## 3 MHz

### Low Channel



Date: 14.AUG.2014 23:43:19

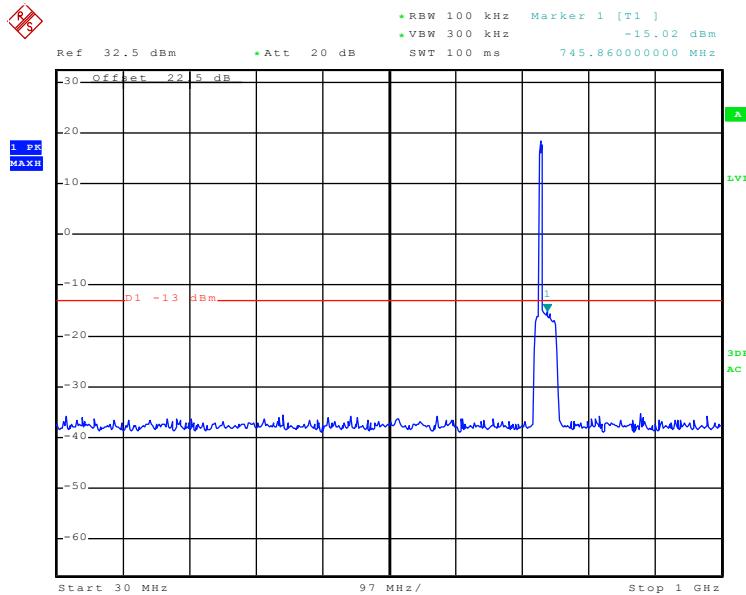
### 30MHz~1GHz



Date: 16.AUG.2014 12:15:46

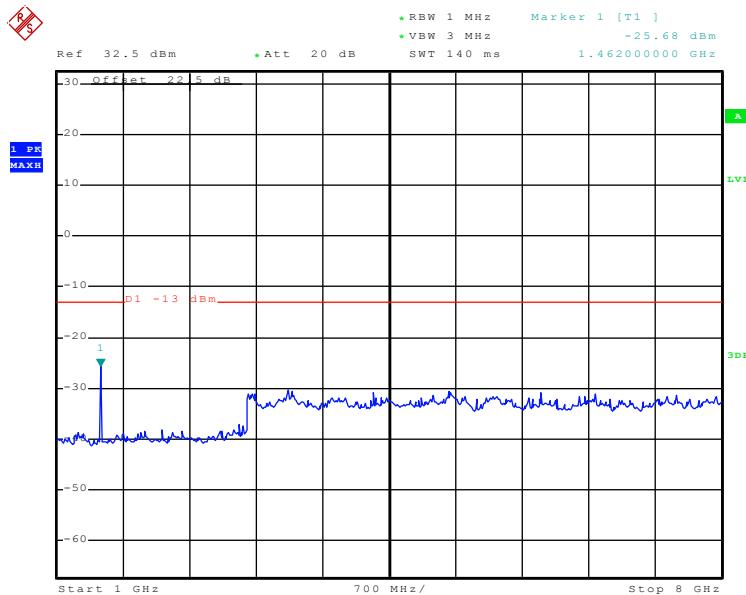
### 1GHz~8GHz

## Middle channel



Date: 14.AUG.2014 23:42:41

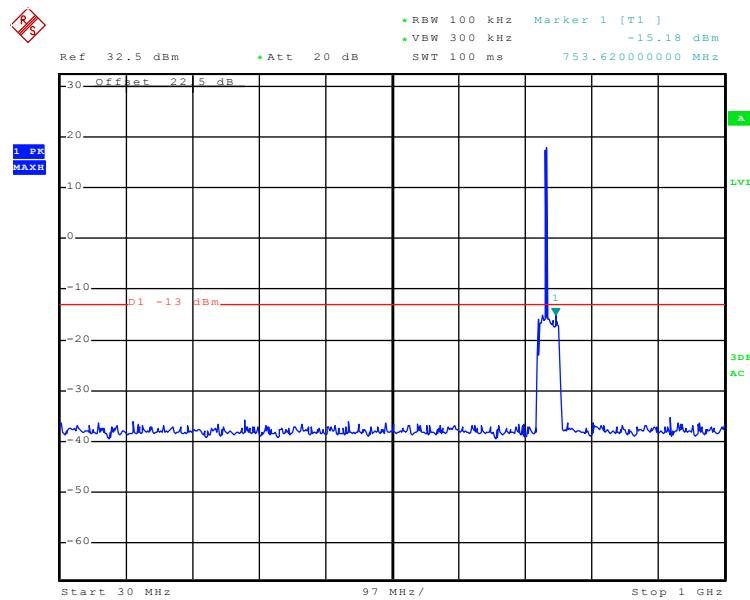
## 30MHz~1GHz



Date: 16.AUG.2014 12:15:20

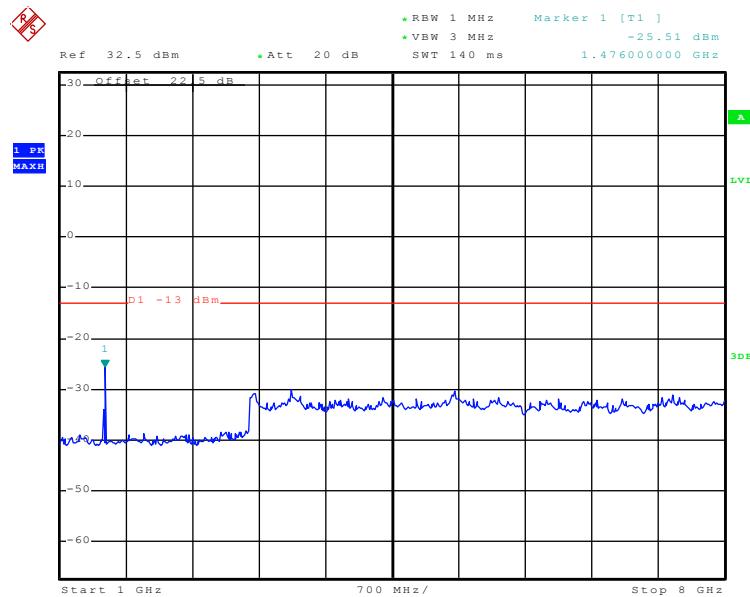
## 1GHz~8GHz

## High Channel



Date: 14.AUG.2014 23:43:50

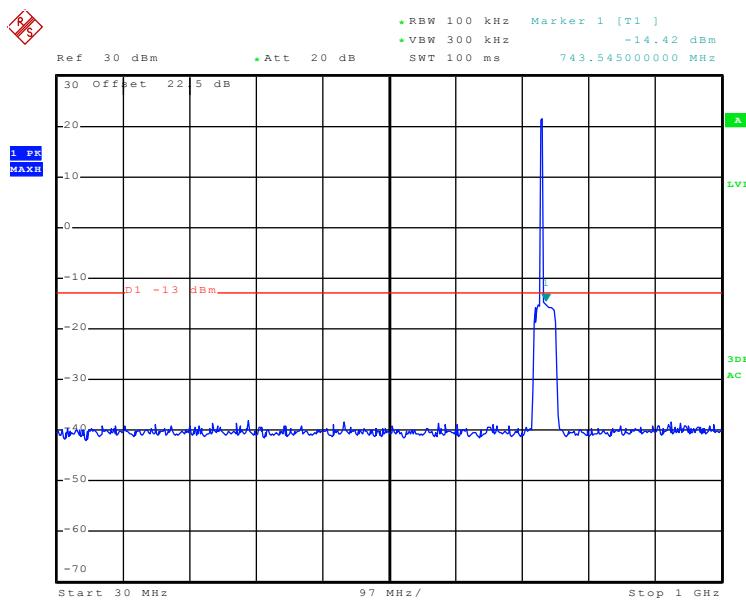
## 30MHz~1GHz



Date: 16.AUG.2014 12:16:06

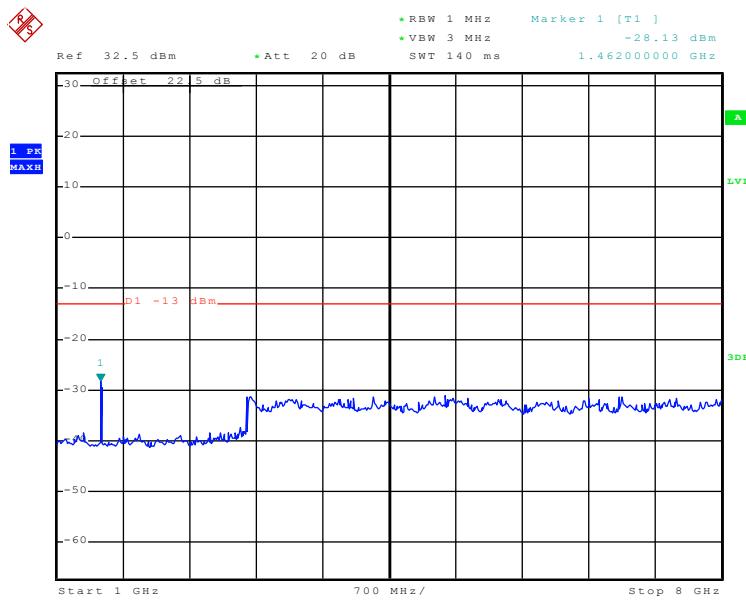
## 1GHz~8GHz

**5 MHz**  
Low Channel



Date: 15.AUG.2014 22:06:39

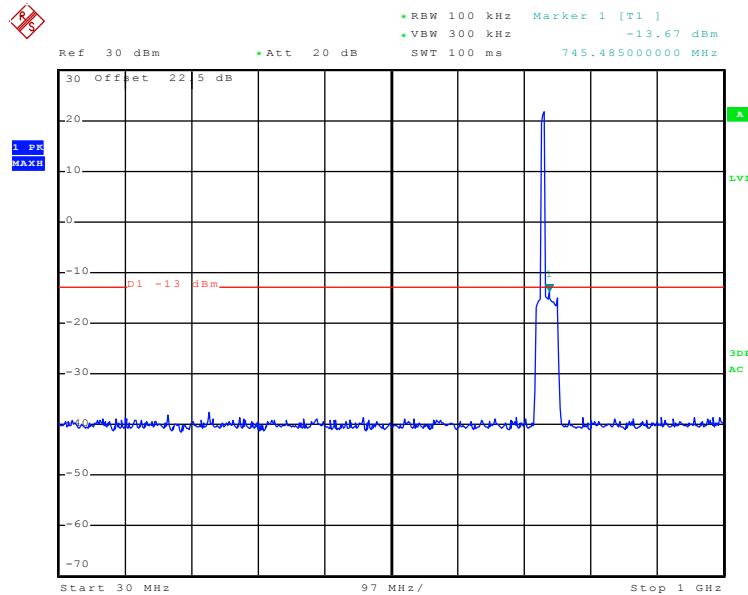
**30MHz~1GHz**



Date: 16.AUG.2014 12:22:47

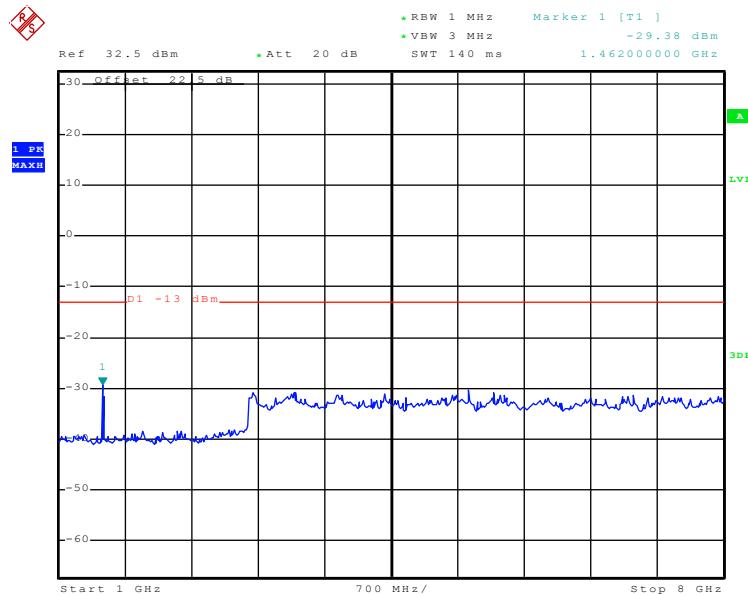
**1GHz~8GHz**

## Middle channel



Date: 15.AUG.2014 22:06:07

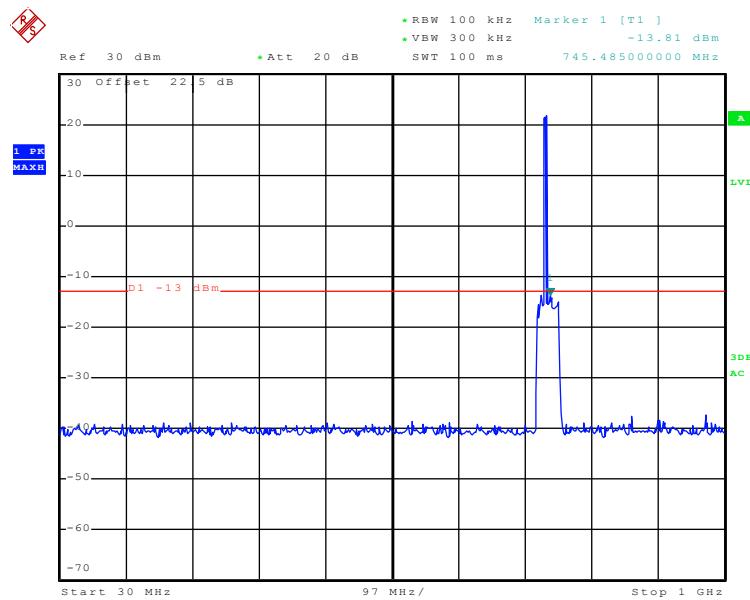
## 30MHz~1GHz



Date: 16.AUG.2014 12:22:24

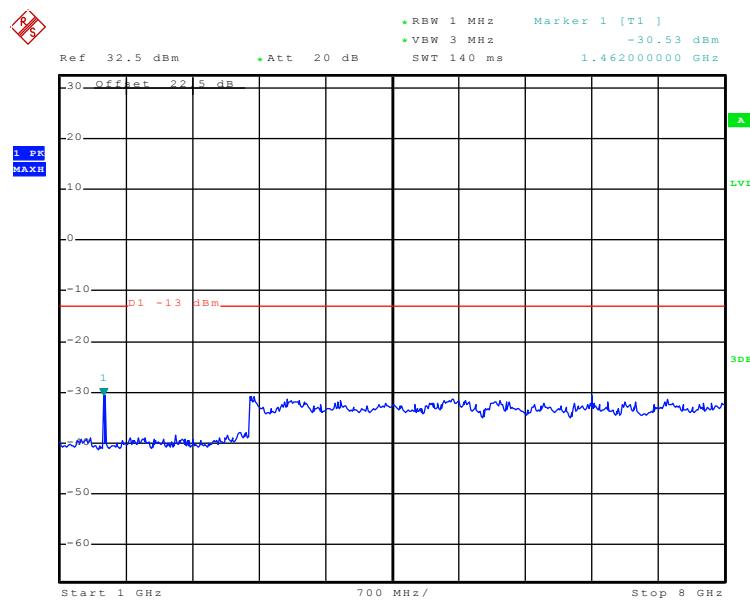
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 22:07:10

## 30MHz~1GHz



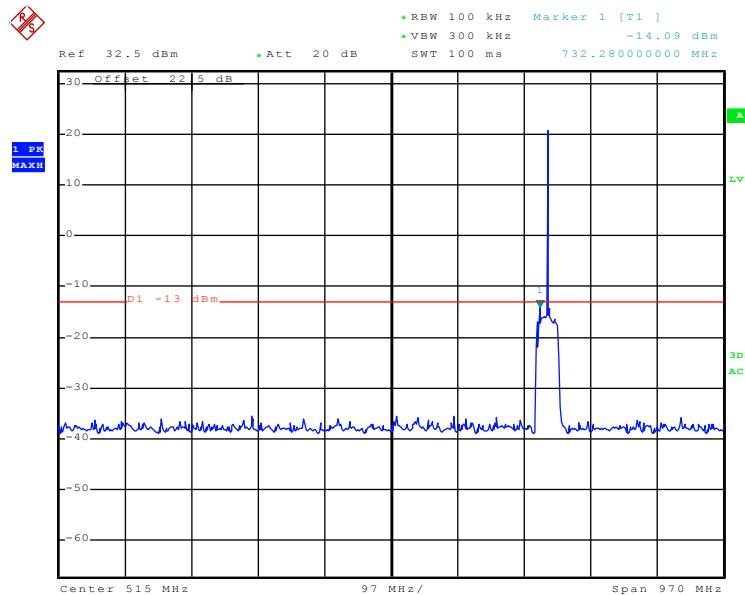
Date: 16.AUG.2014 12:23:12

## 1GHz~8GHz

## Lower C downlink

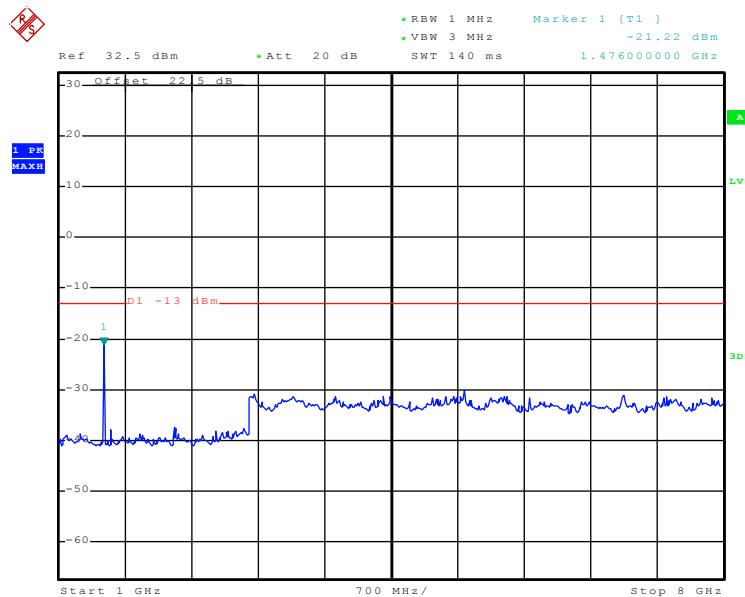
1.4 MHz

Low Channel



Date: 14.AUG.2014 23:36:25

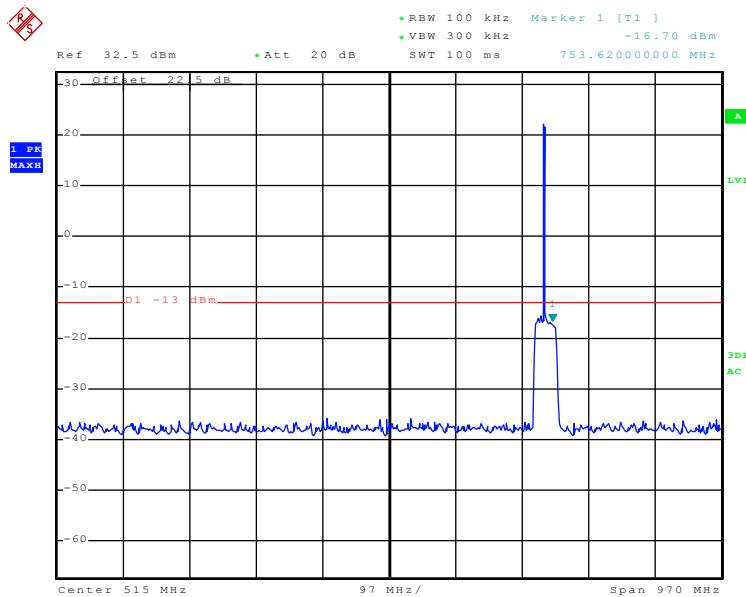
## 30MHz-1GHz



Date: 16.AUG.2014 12:11:02

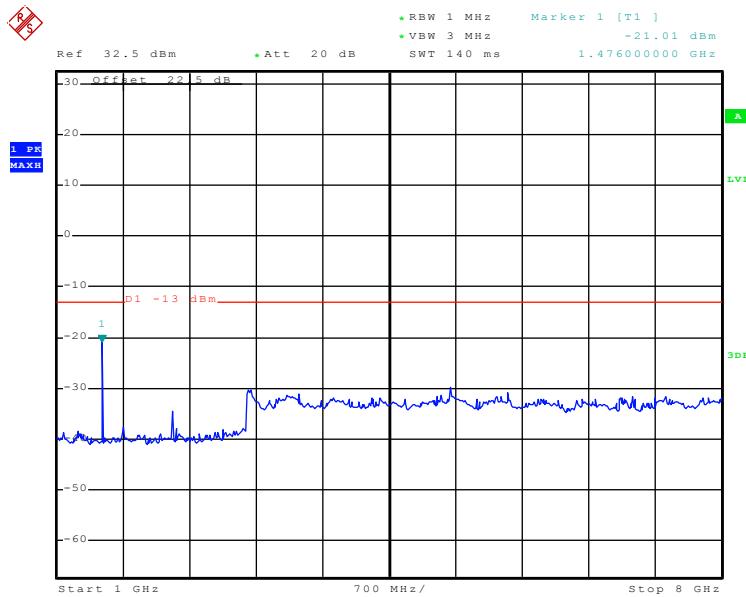
## 1GHz~8GHz

## Middle channel



Date: 14.AUG.2014 23:35:51

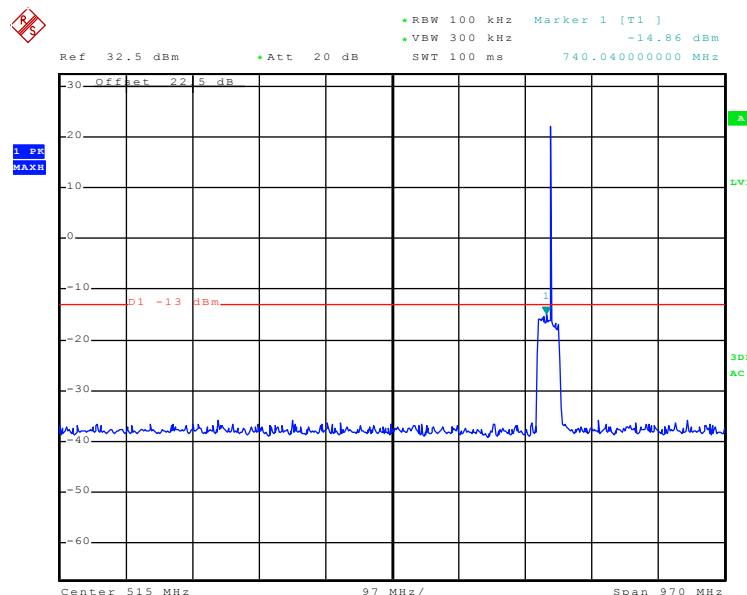
## 30MHz~1GHz



Date: 16.AUG.2014 12:10:40

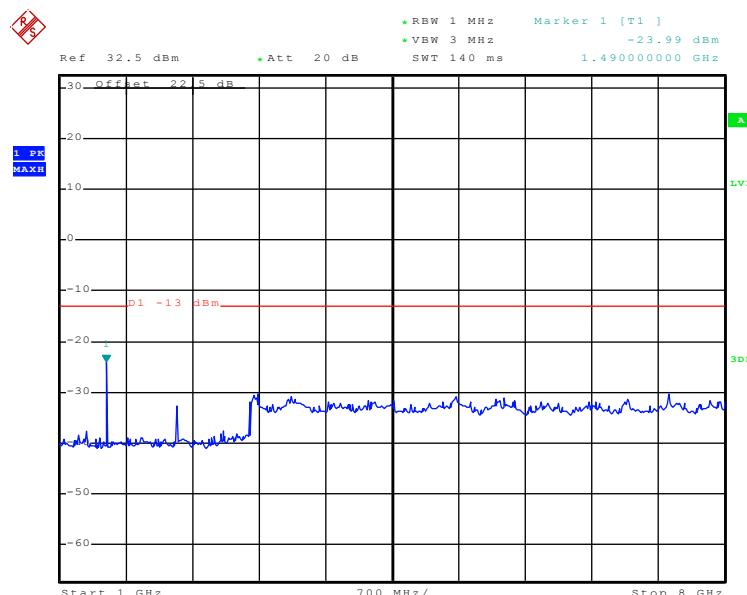
## 1GHz~8GHz

## High Channel



Date: 14.AUG.2014 23:37:01

## 30MHz~1GHz

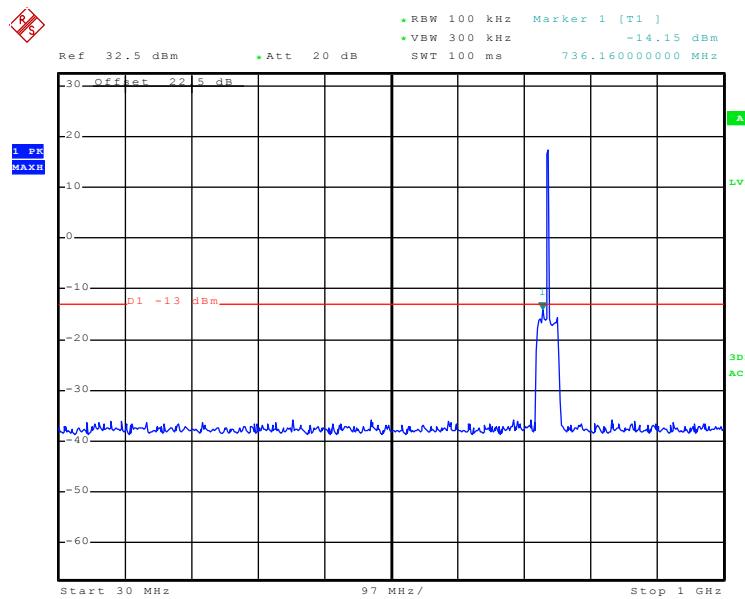


Date: 16.AUG.2014 12:11:30

## 1GHz~8GHz

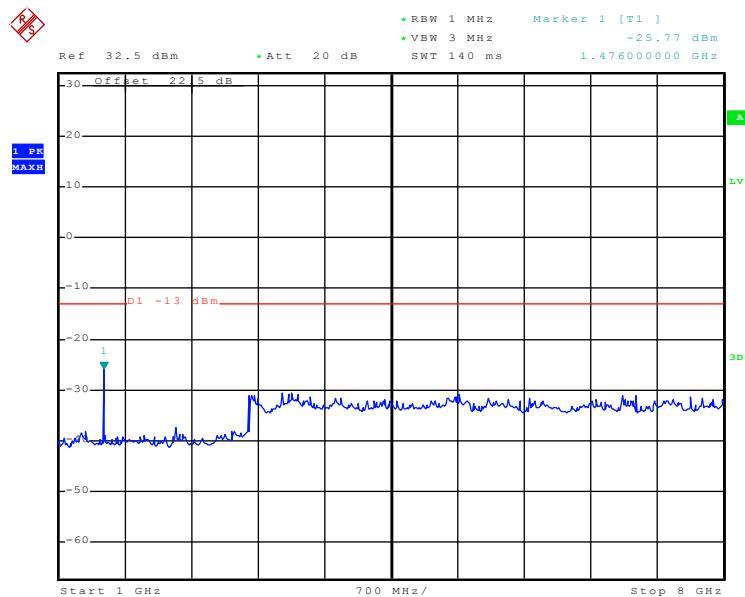
## 3 MHz

### Low Channel



Date: 14.AUG.2014 23:45:13

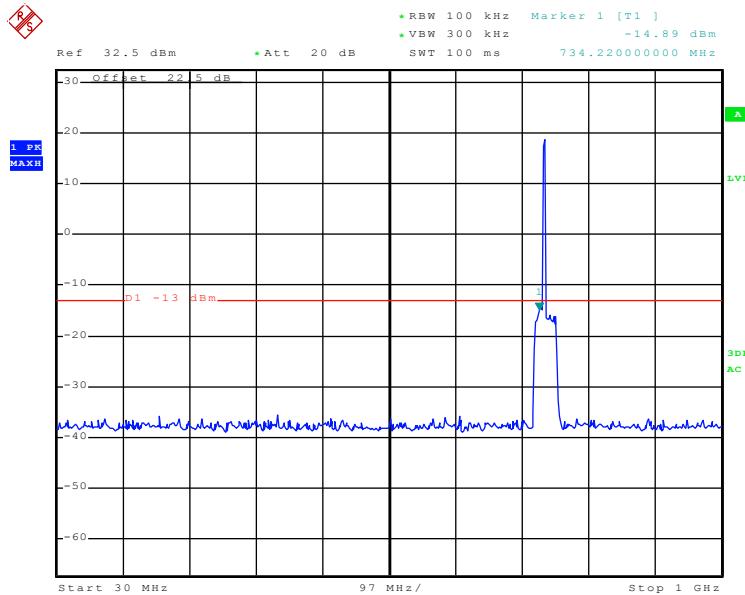
### 30MHz~1GHz



Date: 16.AUG.2014 12:16:58

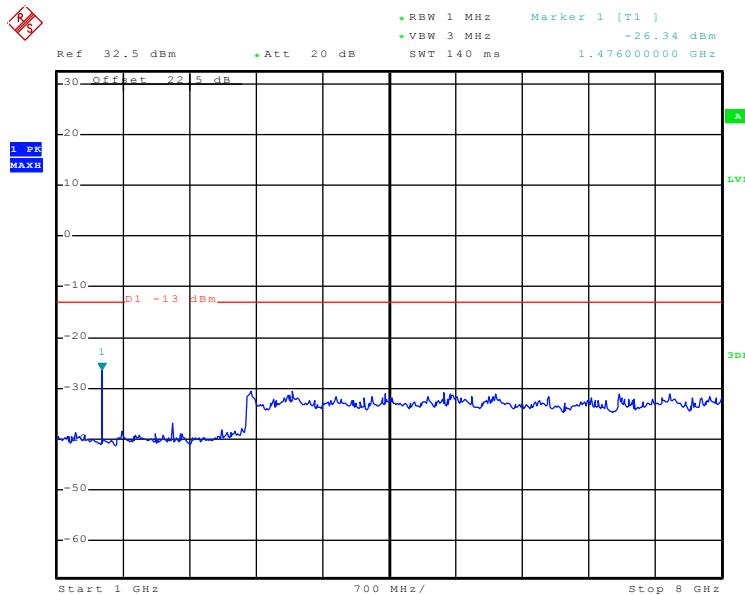
### 1GHz~8GHz

## Middle channel



Date: 14.AUG.2014 23:44:28

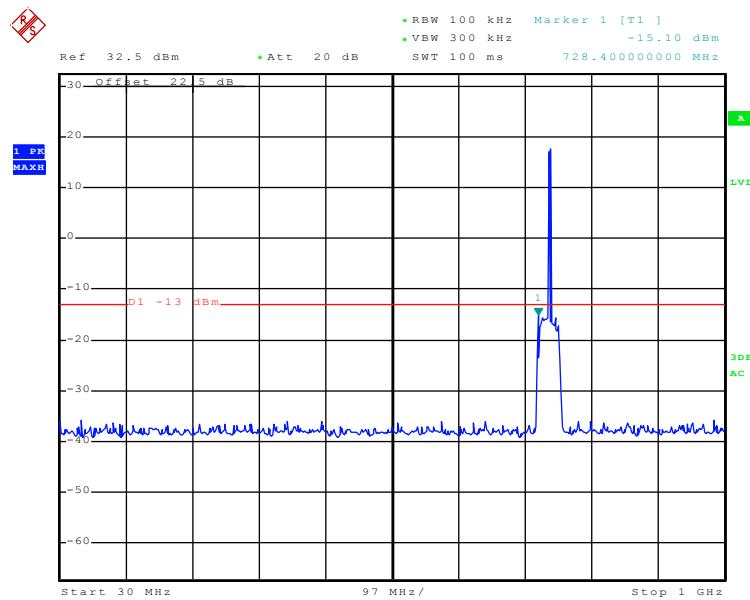
## 30MHz~1GHz



Date: 16.AUG.2014 12:16:32

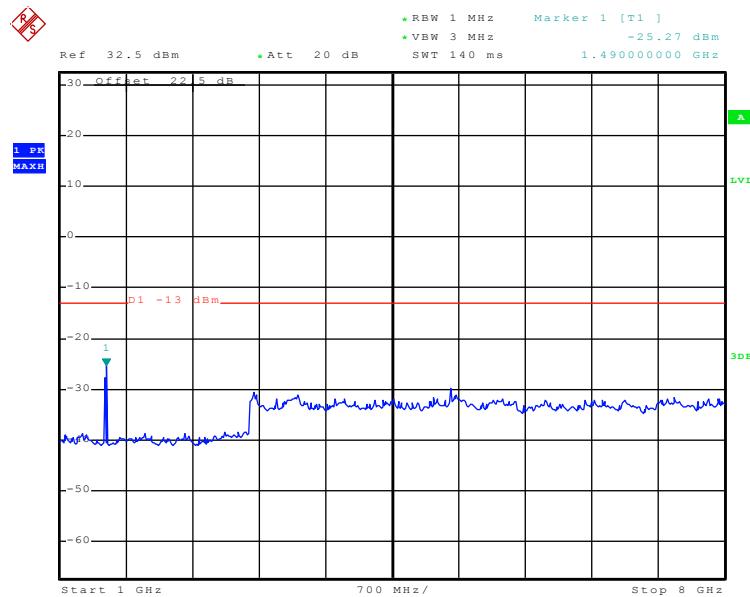
## 1GHz~8GHz

## High Channel



Date: 14.AUG.2014 23:45:45

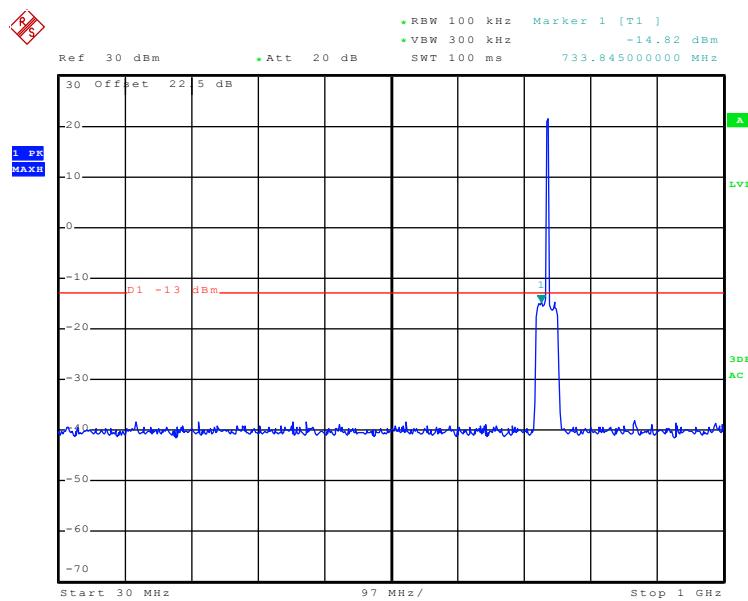
## 30MHz~1GHz



Date: 16.AUG.2014 12:17:27

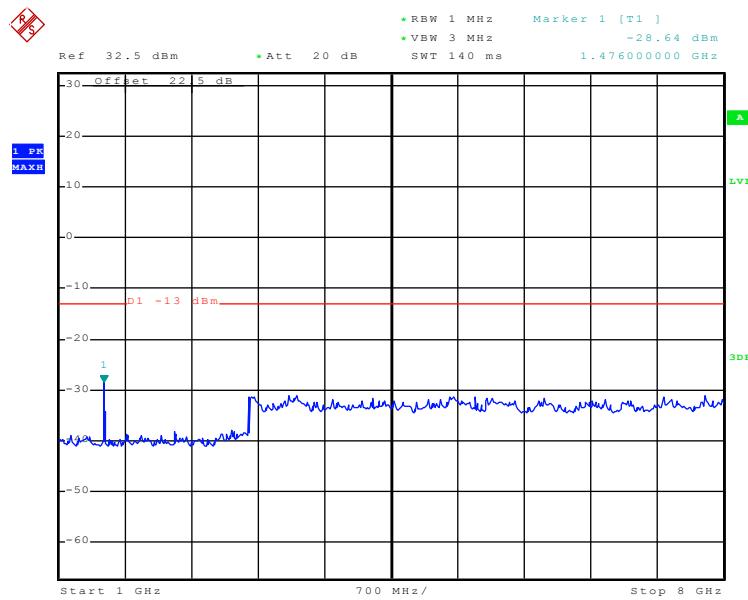
## 1GHz~8GHz

**5 MHz**  
Low Channel



Date: 15.AUG.2014 22:08:39

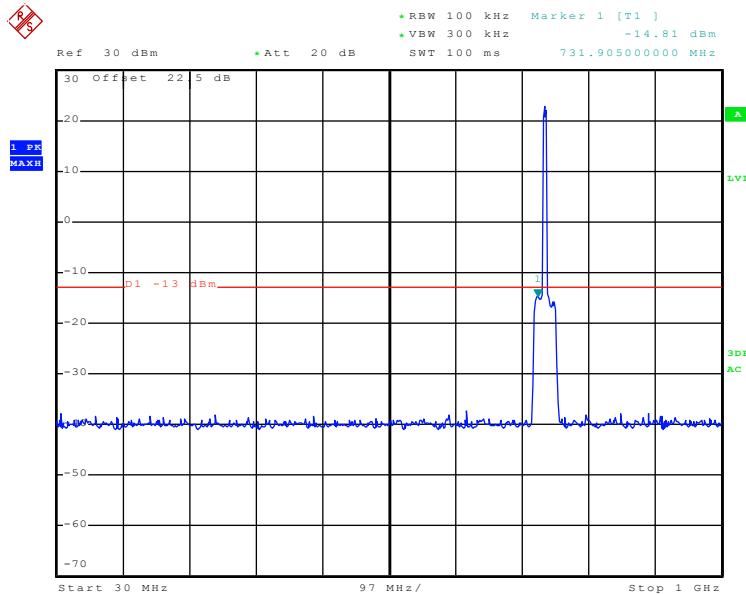
**30MHz~1GHz**



Date: 16.AUG.2014 12:24:04

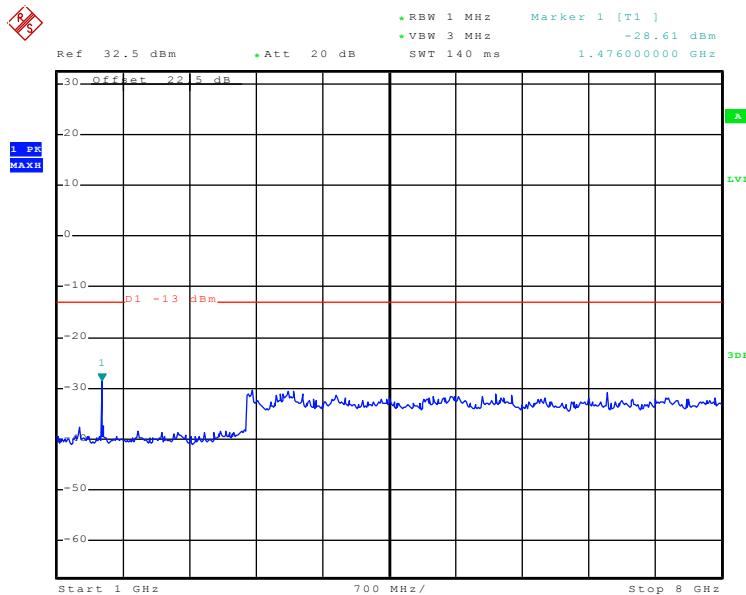
**1GHz~8GHz**

## Middle channel



Date: 15.AUG.2014 22:08:03

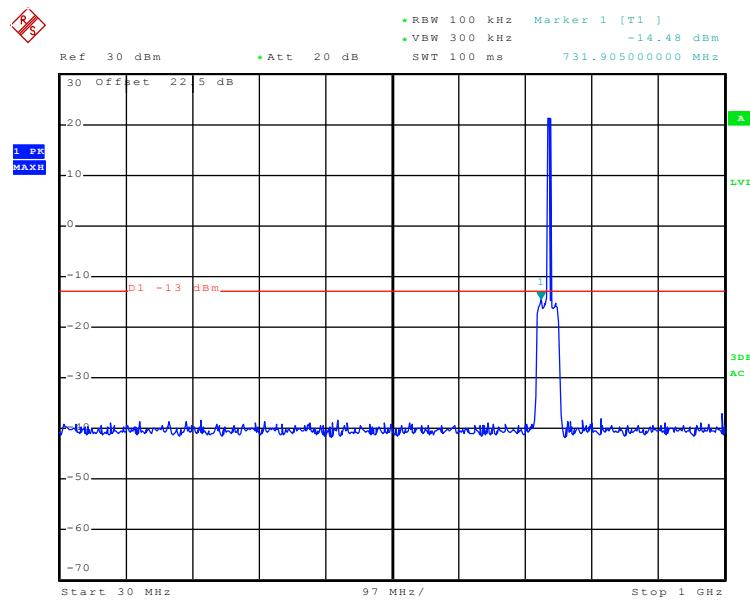
## 30MHz~1GHz



Date: 16.AUG.2014 12:23:37

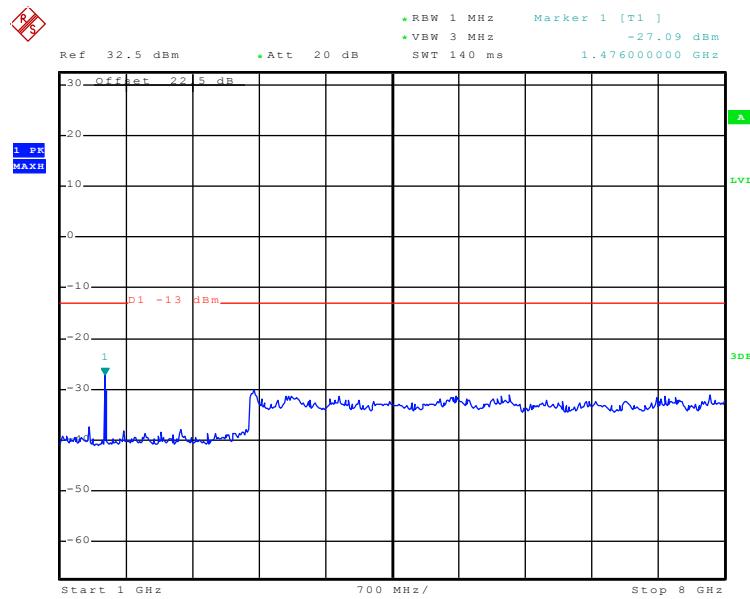
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 22:09:07

## 30MHz~1GHz



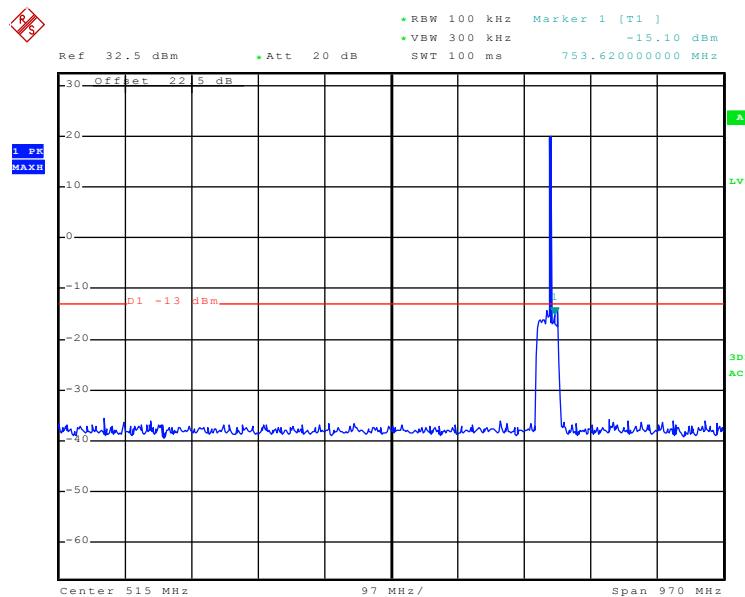
Date: 16.AUG.2014 12:24:31

## 1GHz~8GHz

## Upper C Band downlink

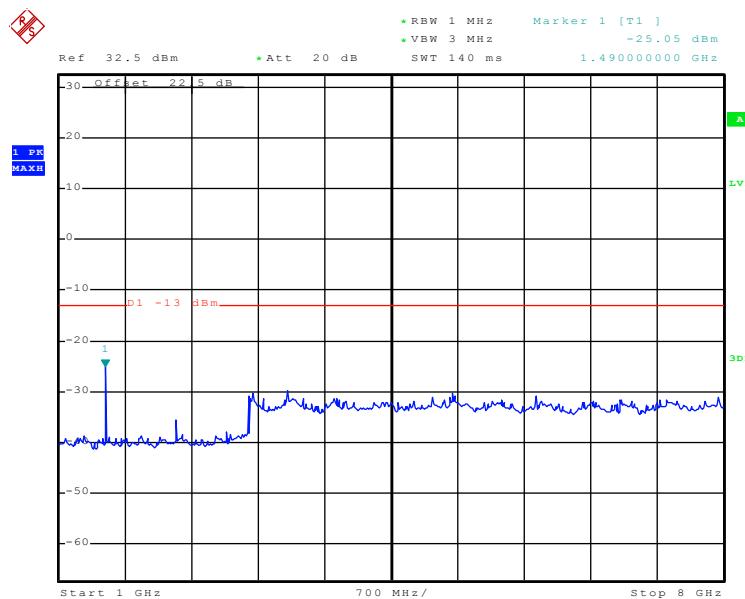
1.4 MHz

Low Channel



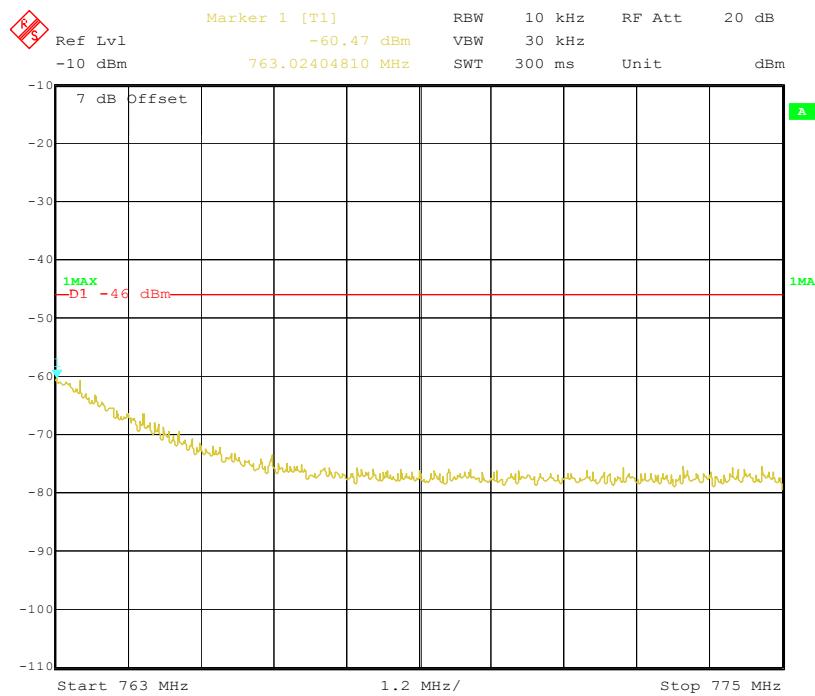
Date: 14.AUG.2014 23:37:47

30MHz-1GHz

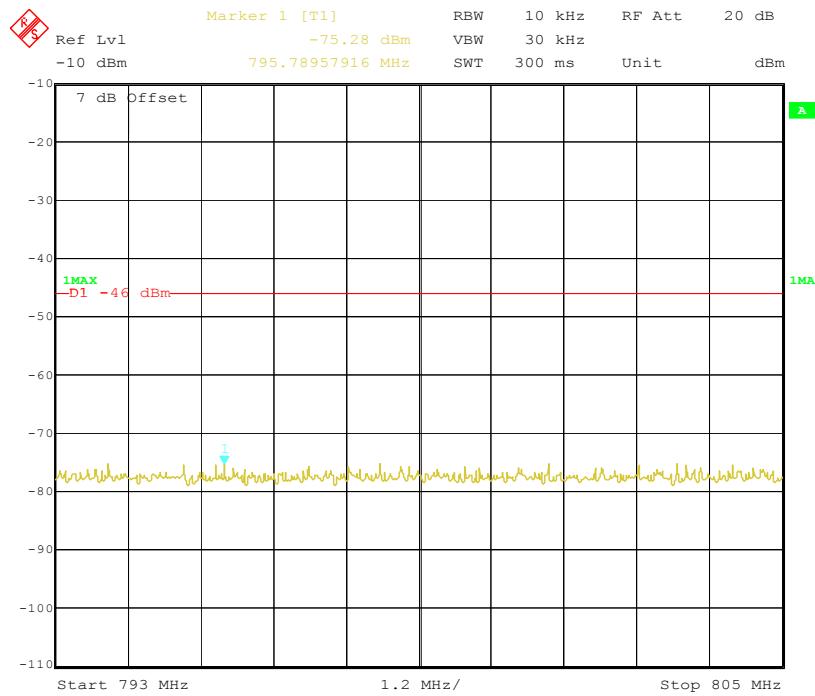


Date: 16.AUG.2014 12:12:06

1GHz~10GHz

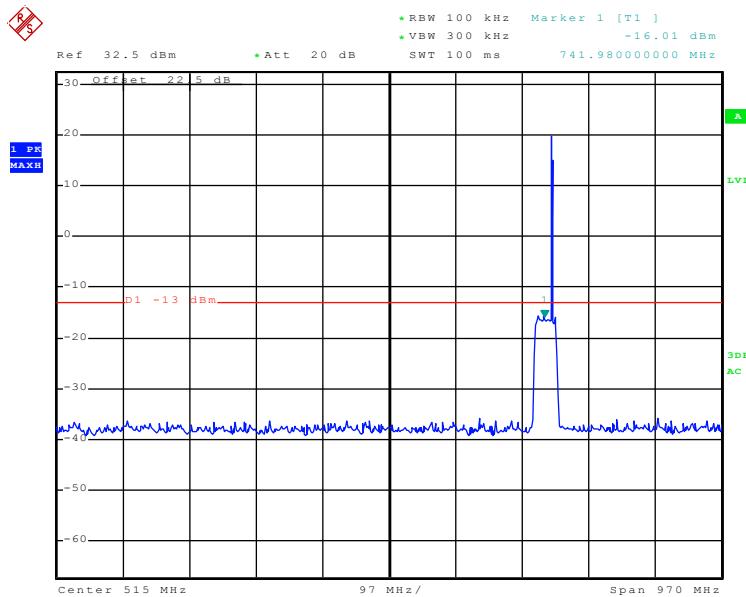


### 763 MHz -775MHz



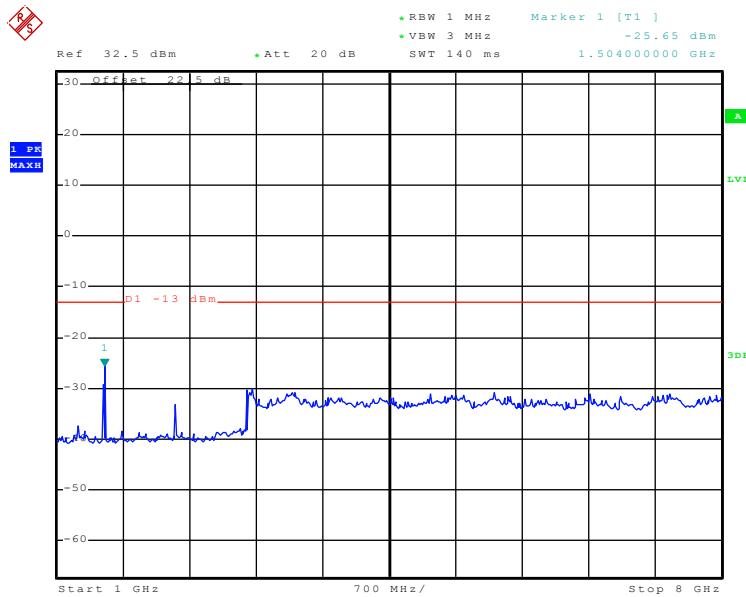
### 793MHz – 805MHz

## Middle channel



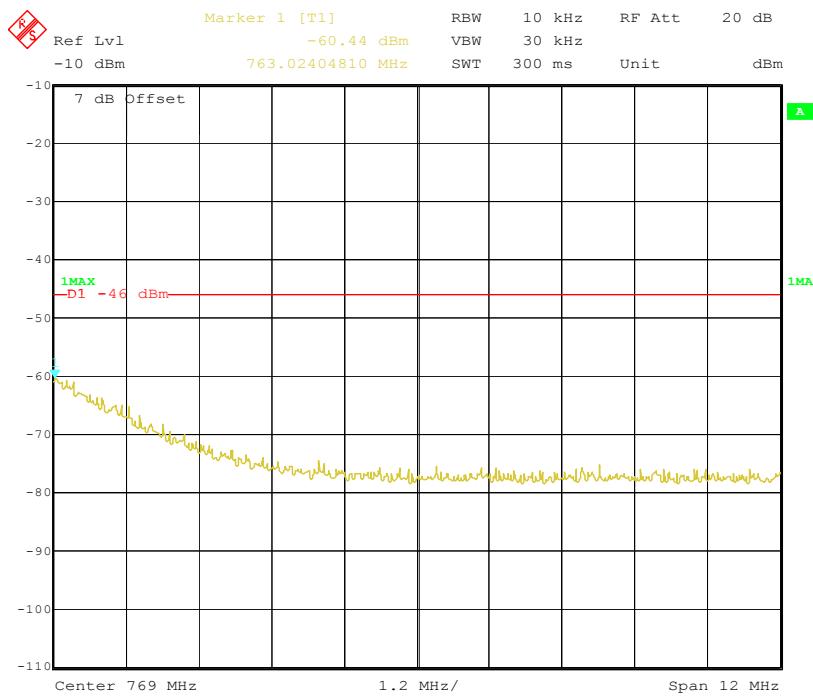
Date: 14.AUG.2014 23:38:24

## 30MHz~1GHz

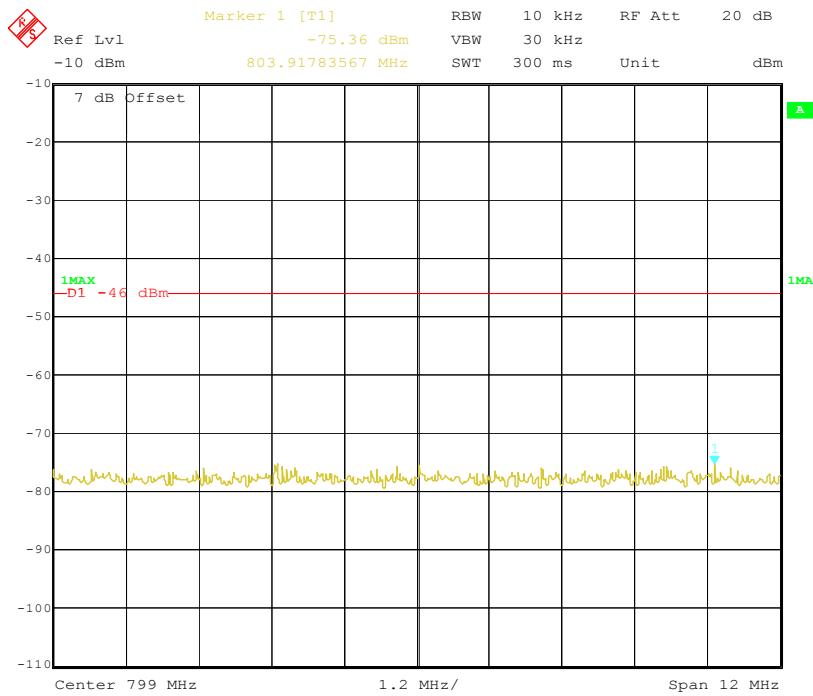


Date: 16.AUG.2014 12:12:38

## 1GHz~8GHz

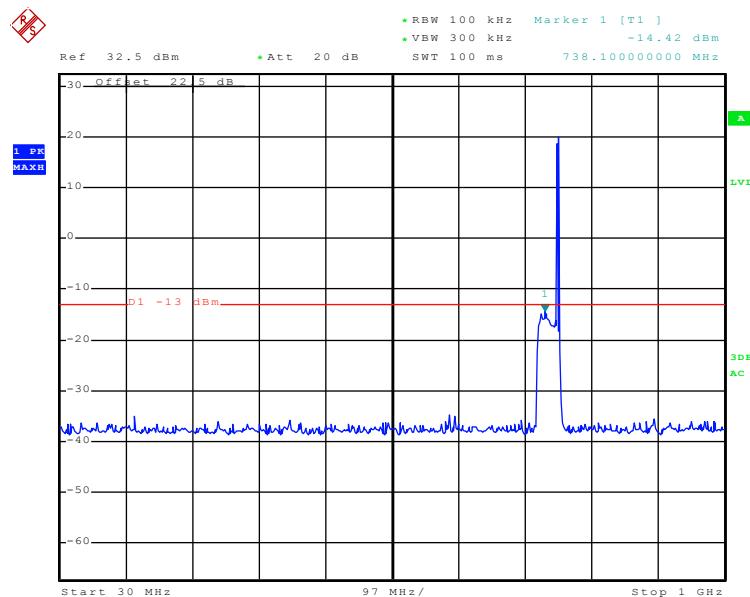


### 763 MHz -775MHz



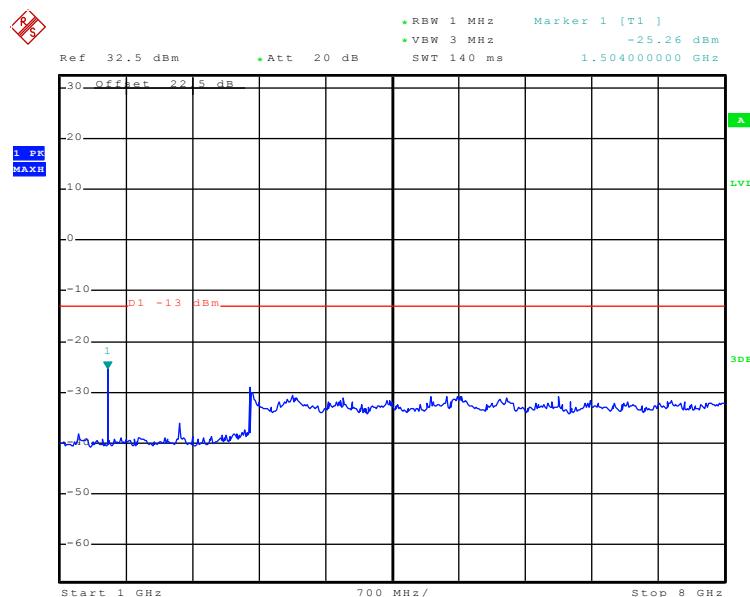
### 793MHz – 805MHz

## High Channel



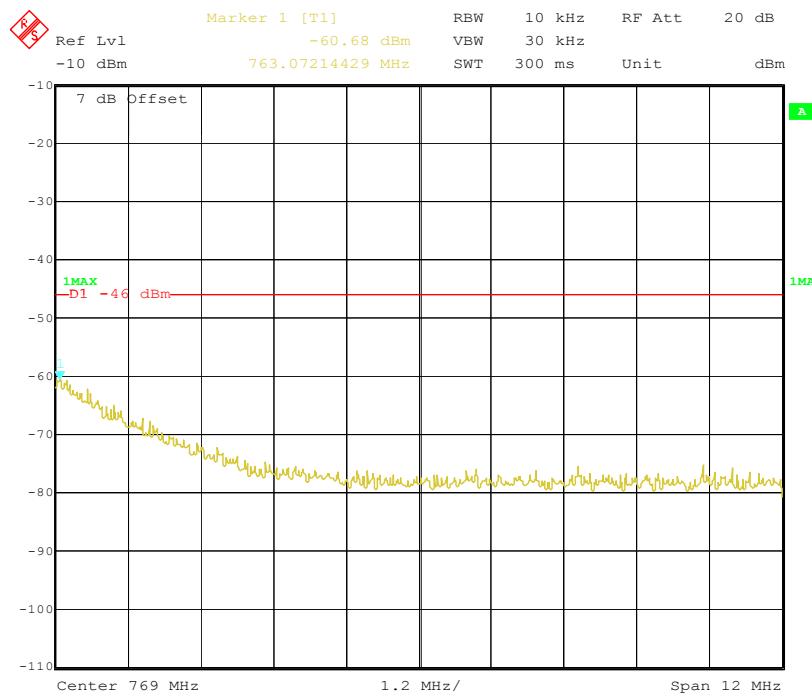
Date: 14.AUG.2014 23:39:08

## 30MHz~1GHz

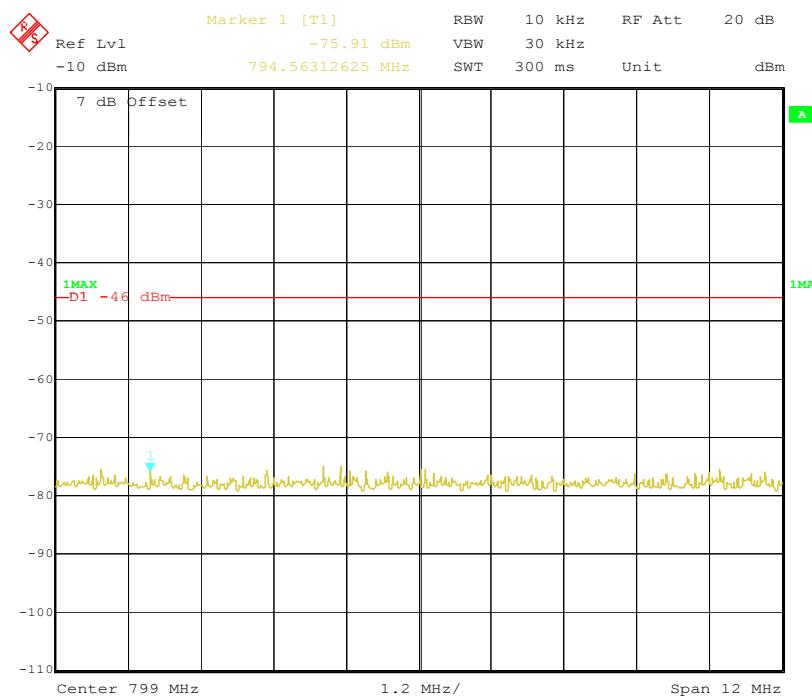


Date: 16.AUG.2014 12:13:13

## 1GHz~8GHz

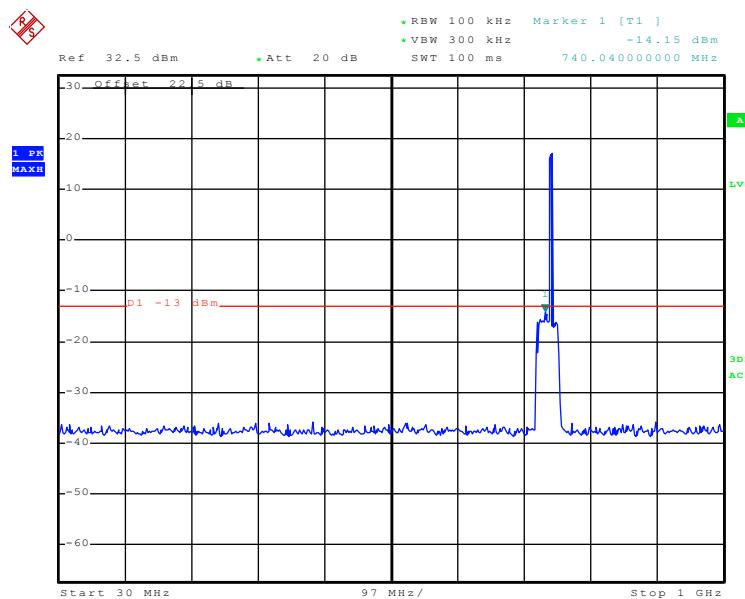


### 763 MHz -775MHz



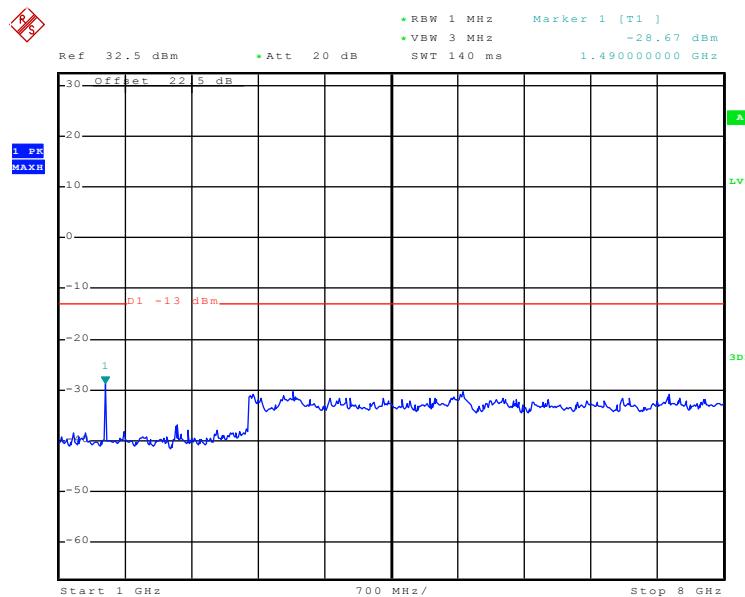
### 793MHz – 805MHz

**3 MHz**  
Low Channel



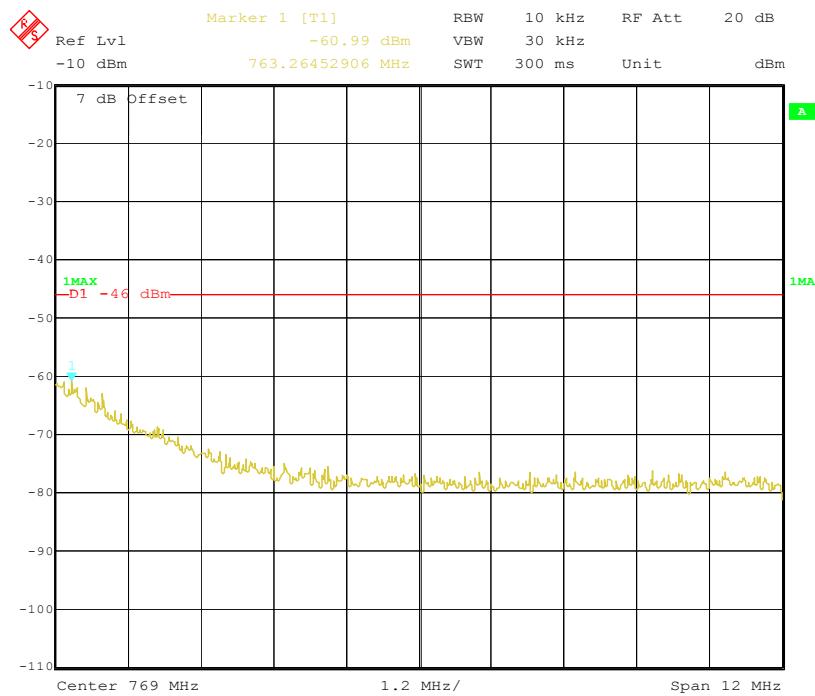
Date: 14.AUG.2014 23:46:47

**30MHz~1GHz**

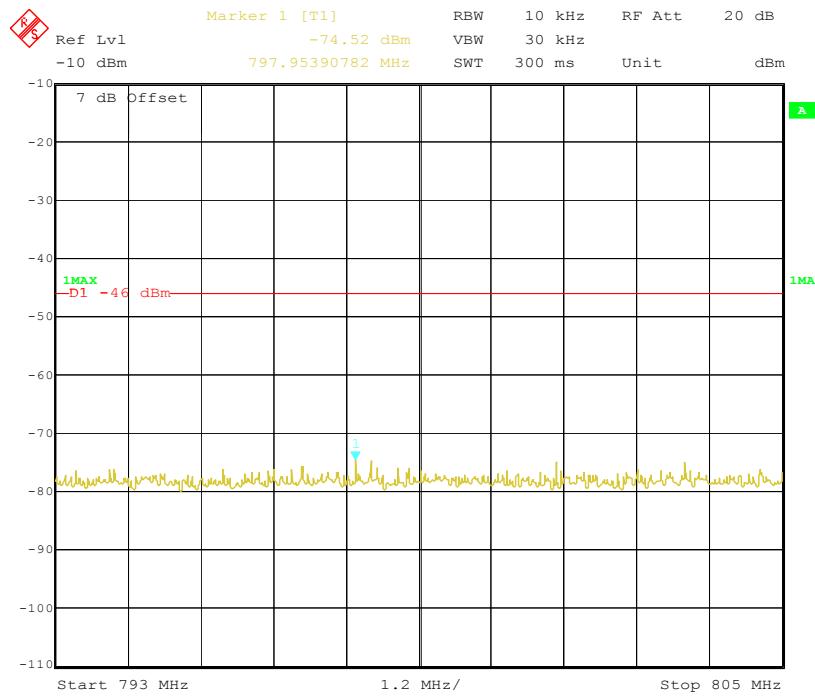


Date: 16.AUG.2014 12:18:07

**1GHz~8GHz**

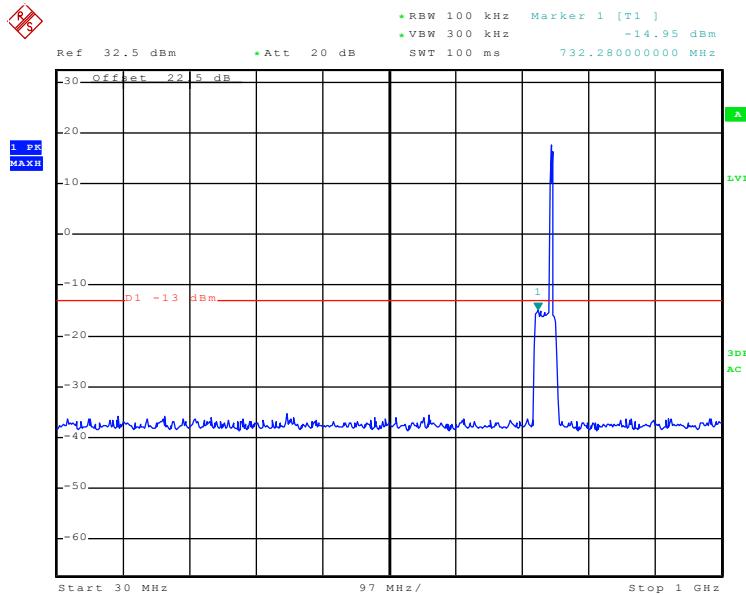


### 763 MHz -775MHz



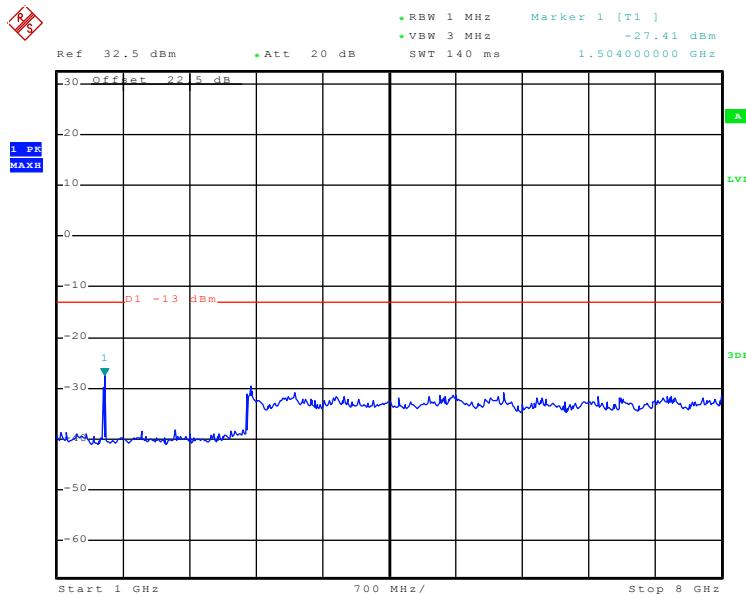
### 793MHz – 805MHz

## Middle channel



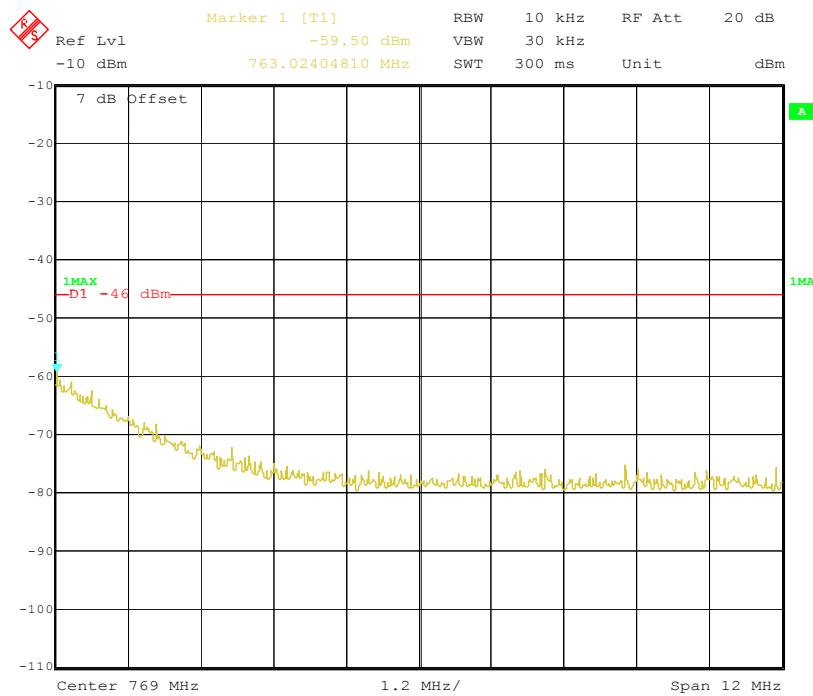
Date: 14.AUG.2014 23:47:37

## 30MHz~1GHz

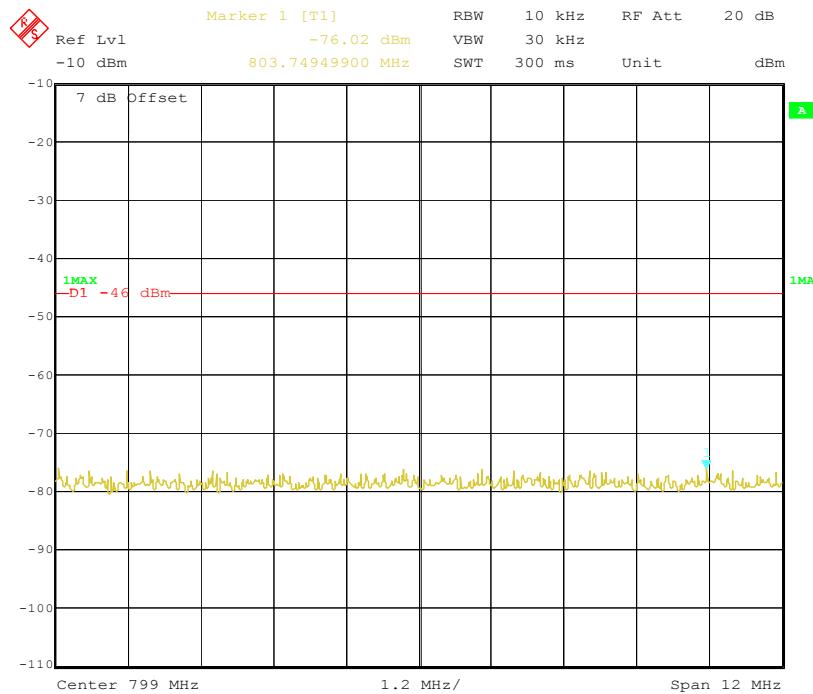


Date: 16.AUG.2014 12:18:33

## 1GHz~8GHz

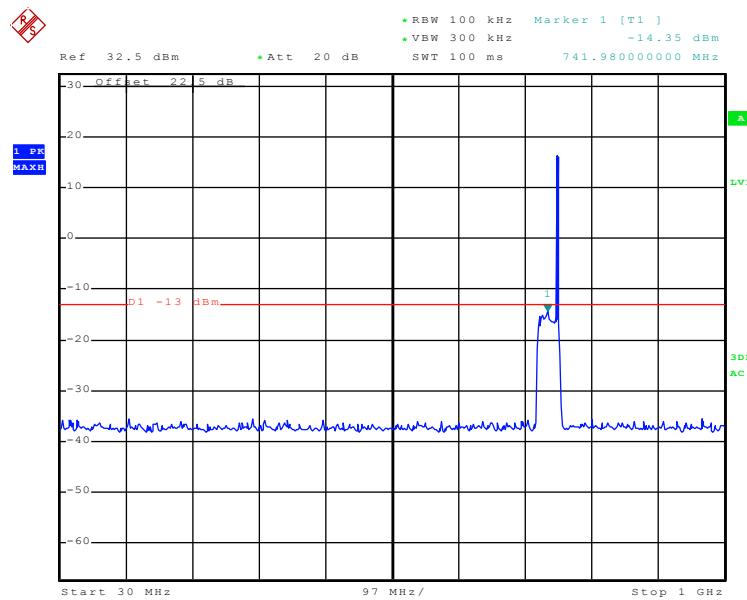


### 763 MHz -775MHz



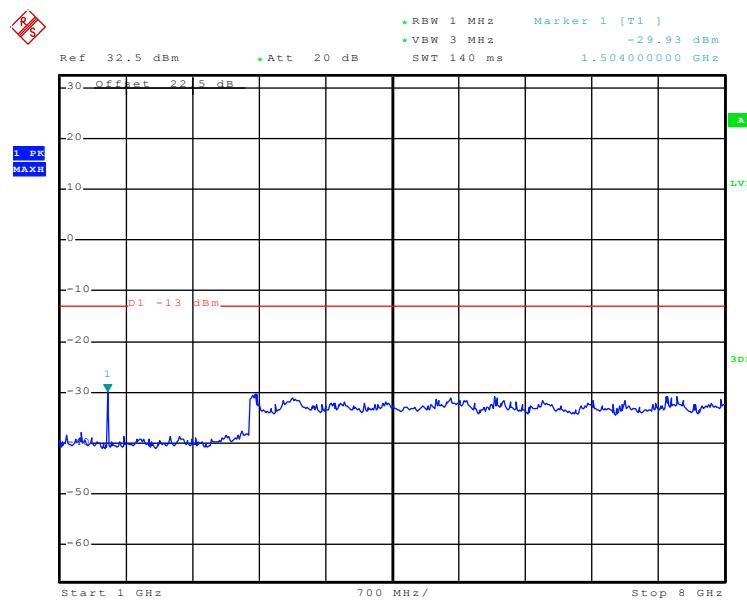
### 793MHz – 805MHz

## High Channel



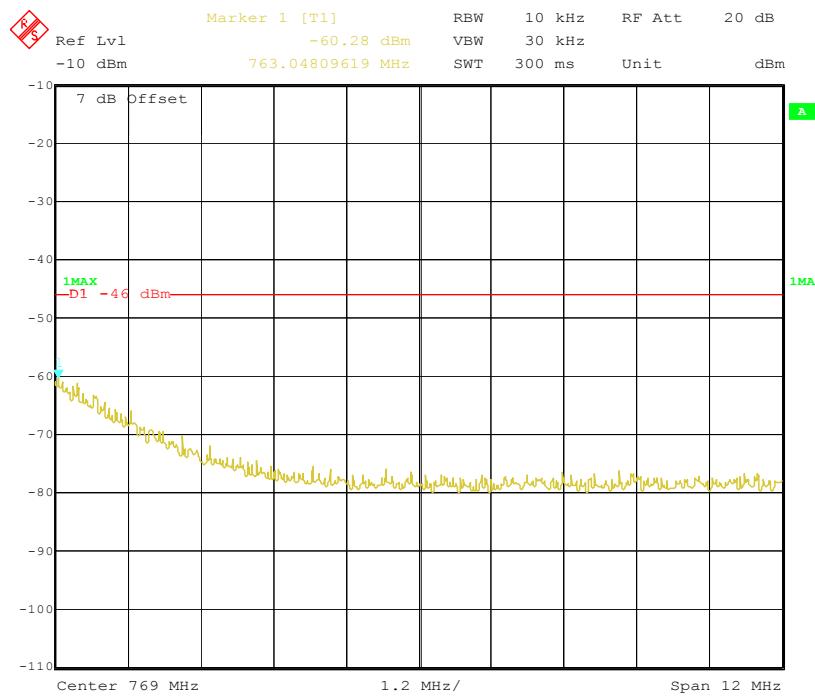
Date: 14.AUG.2014 23:49:02

## 30MHz~1GHz

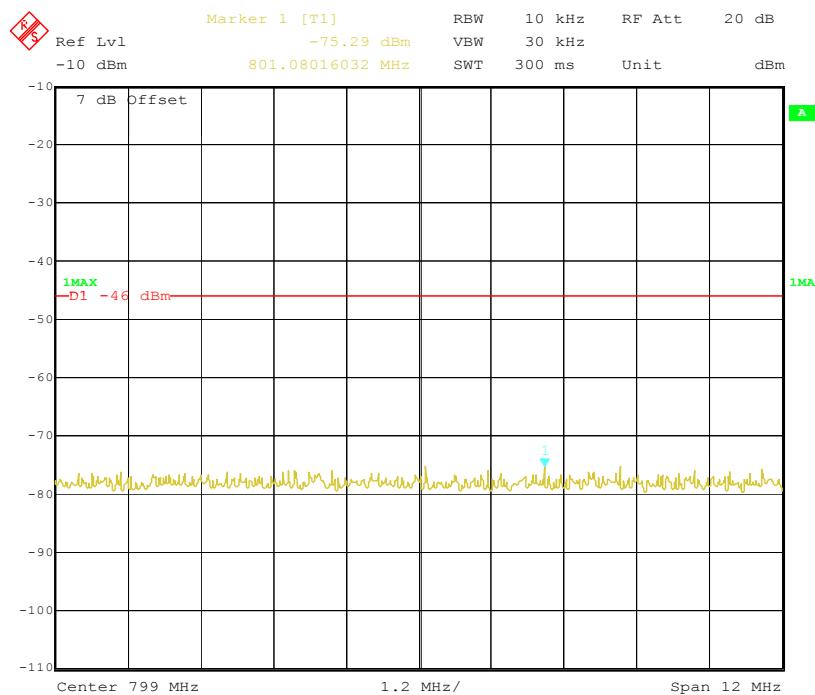


Date: 16.AUG.2014 12:20:05

## 1GHz~8GHz

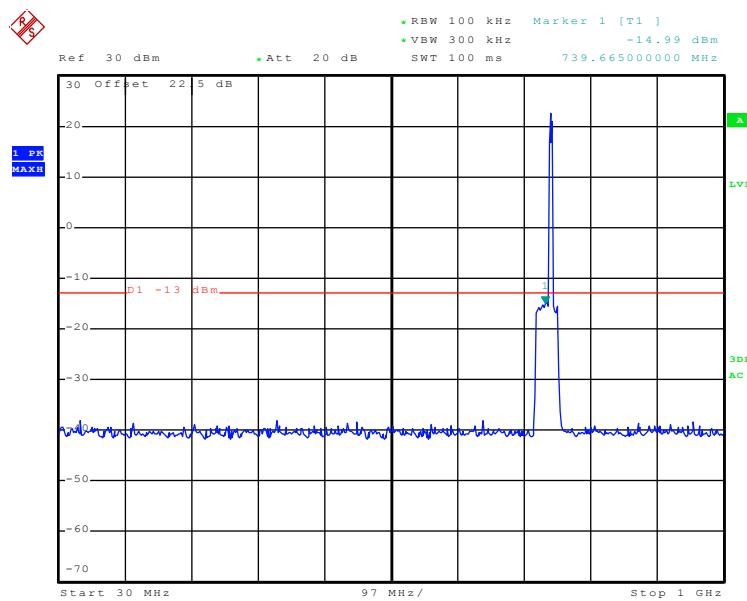


### 763 MHz -775MHz



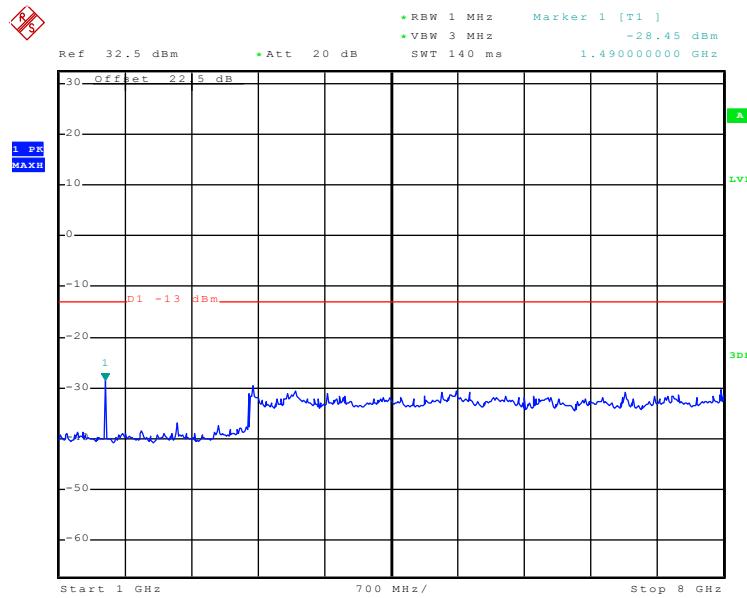
### 793MHz – 805MHz

**5 MHz**  
Low Channel



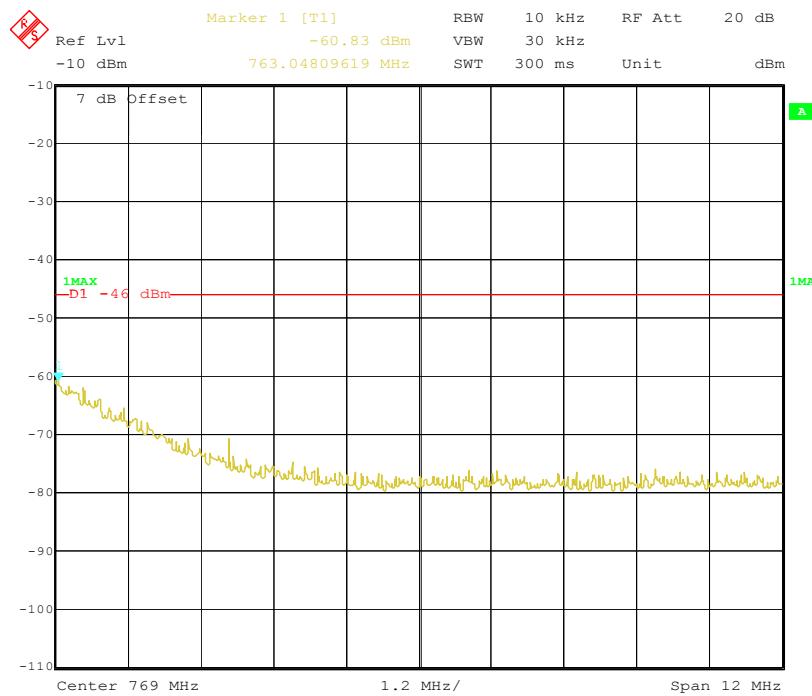
Date: 15.AUG.2014 22:09:44

**30MHz~1GHz**

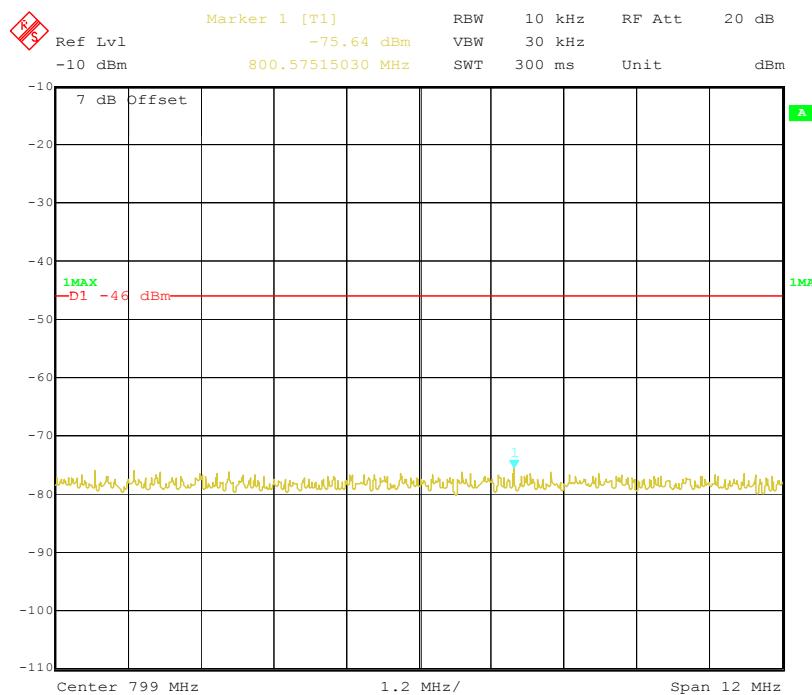


Date: 16.AUG.2014 12:25:25

**1GHz~8GHz**

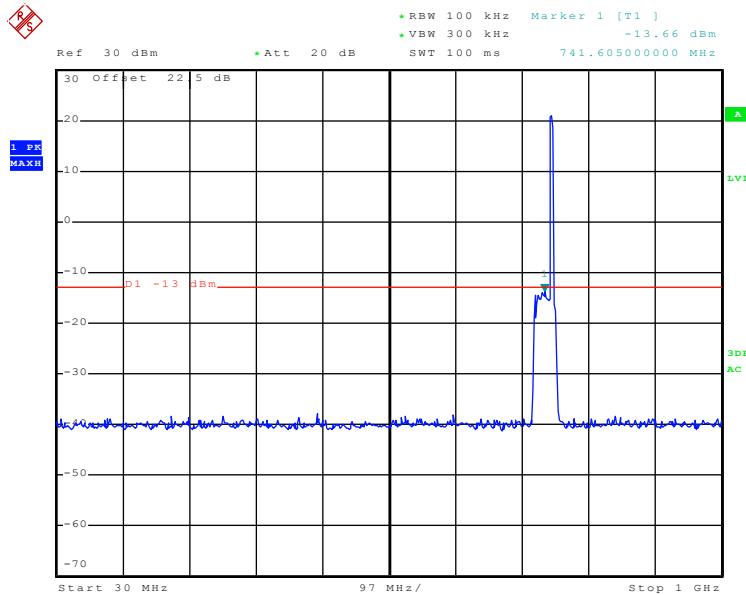


### 763 MHz -775MHz



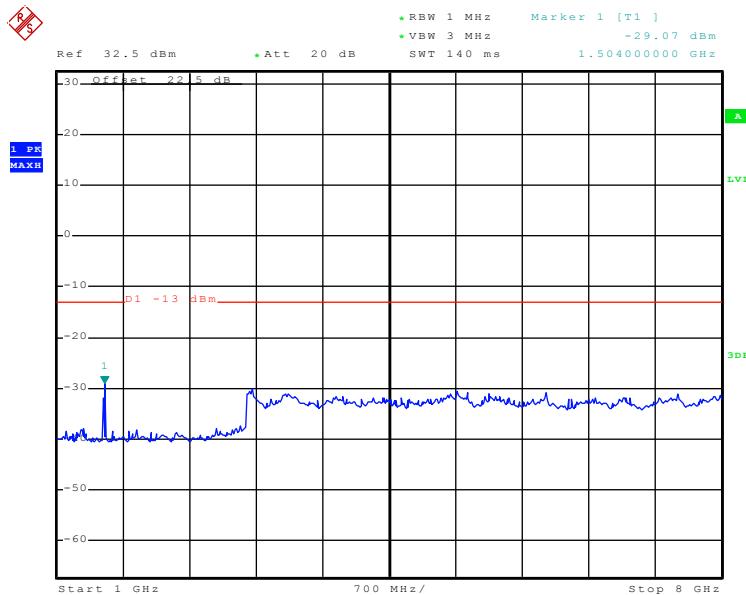
### 793MHz – 805MHz

## Middle channel



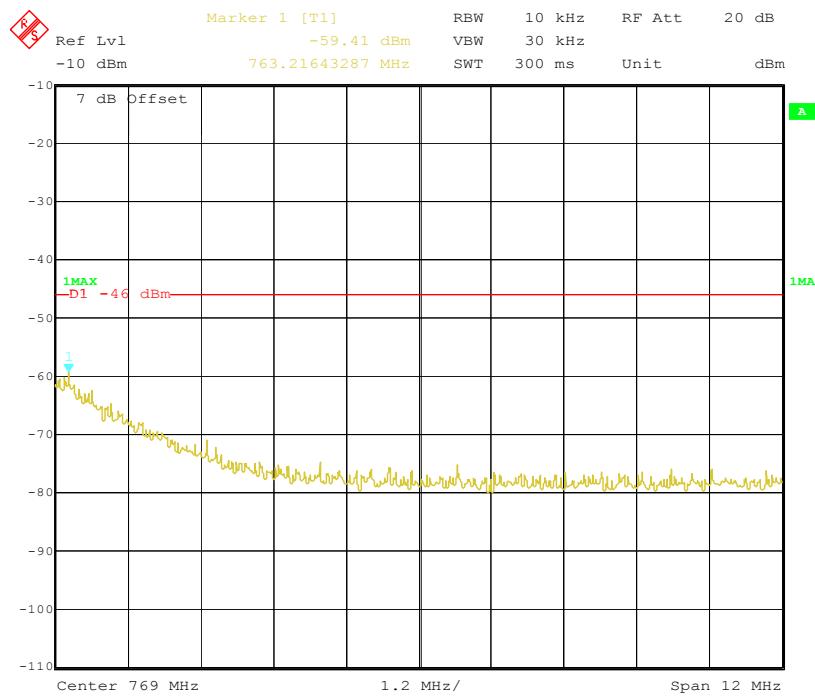
Date: 15.AUG.2014 22:10:42

## 30MHz~1GHz

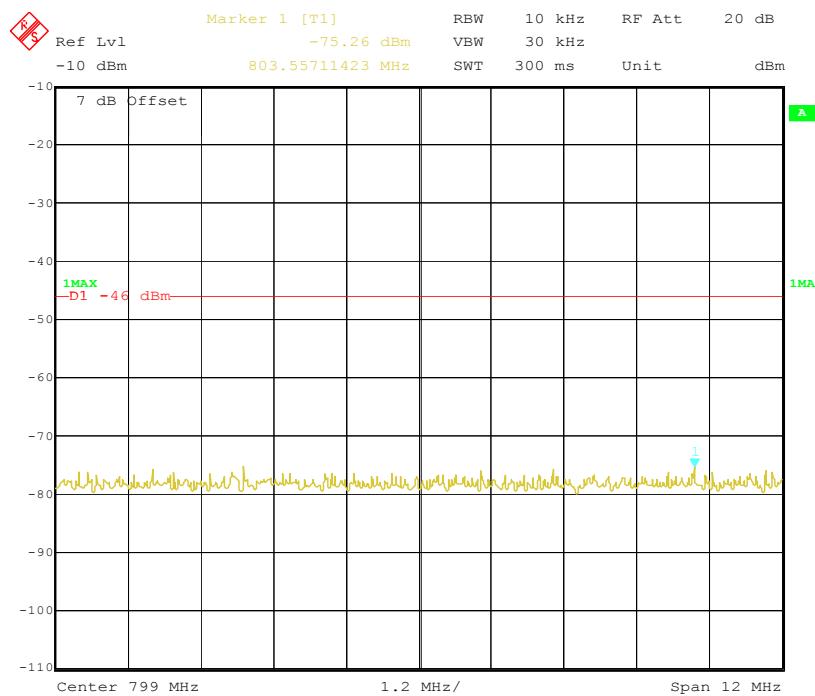


Date: 16.AUG.2014 12:26:08

## 1GHz~8GHz

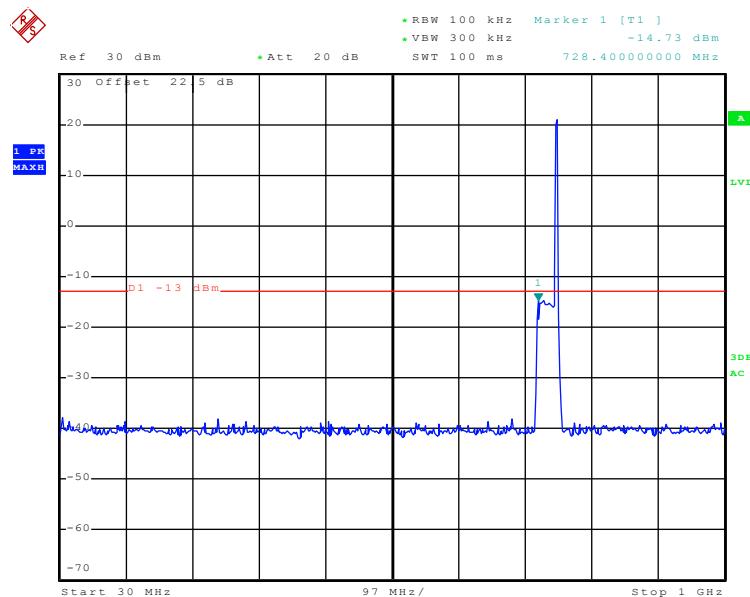


### 763 MHz -775MHz



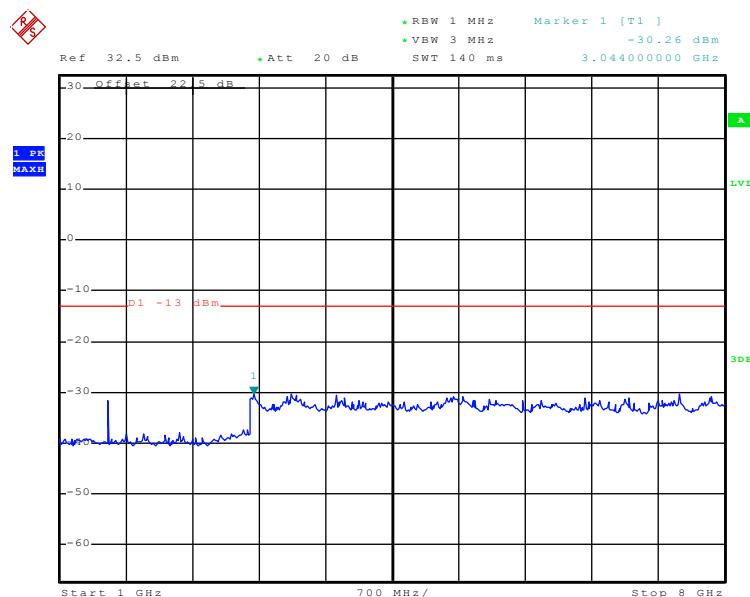
### 793MHz – 805MHz

## High Channel



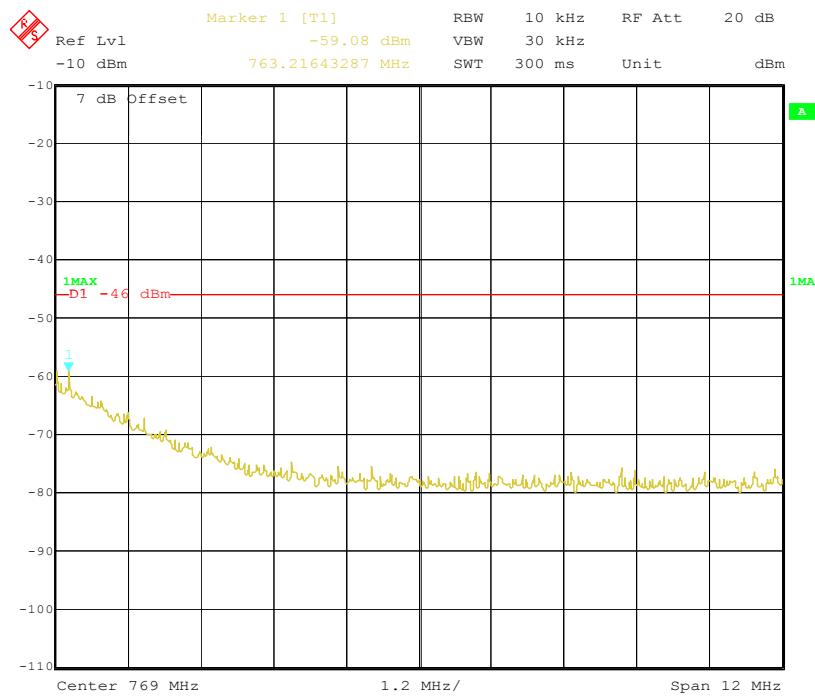
Date: 15.AUG.2014 22:12:04

## 30MHz~1GHz

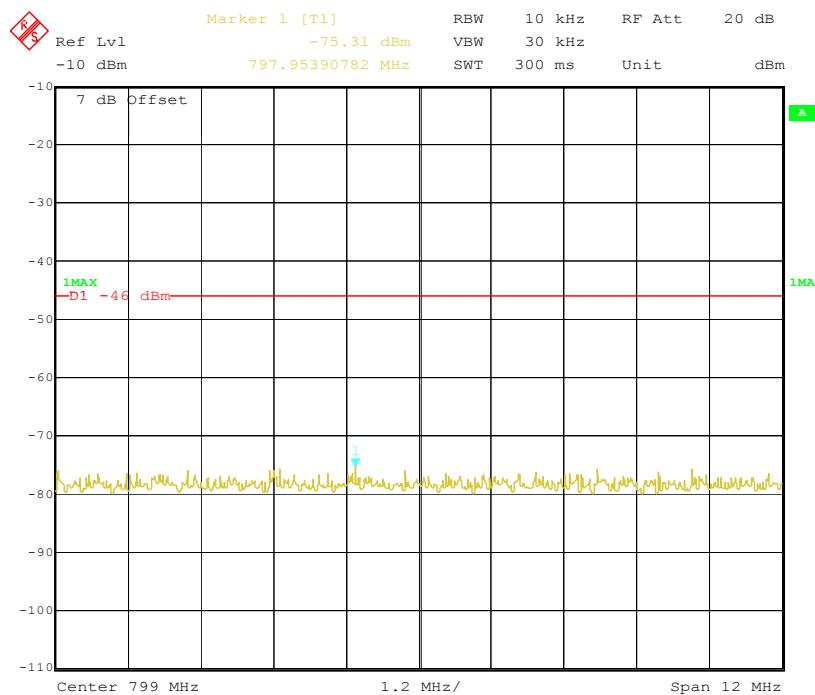


Date: 16.AUG.2014 12:26:55

## 1GHz~8GHz

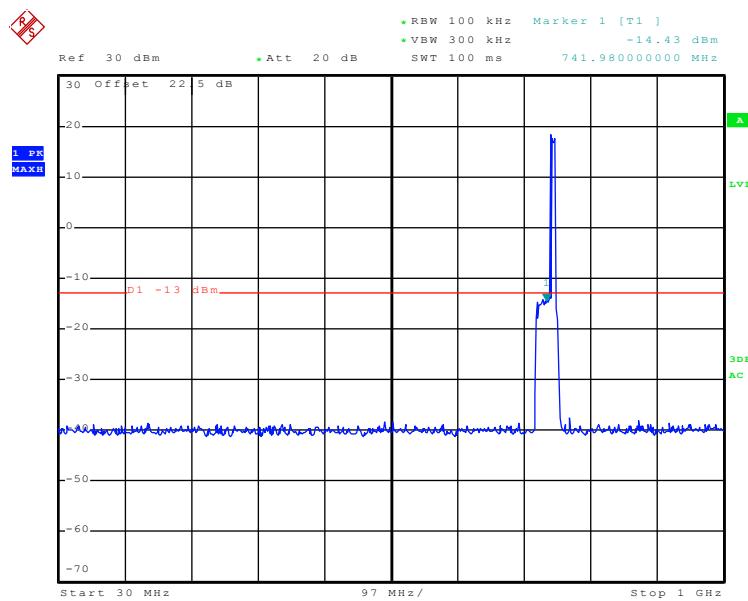


### 763 MHz -775MHz



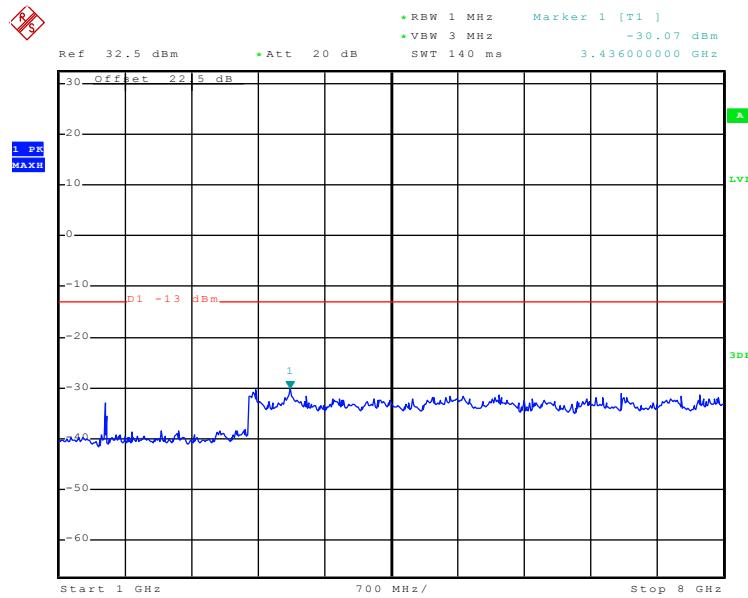
### 793MHz – 805MHz

**10 MHz**  
Low Channel



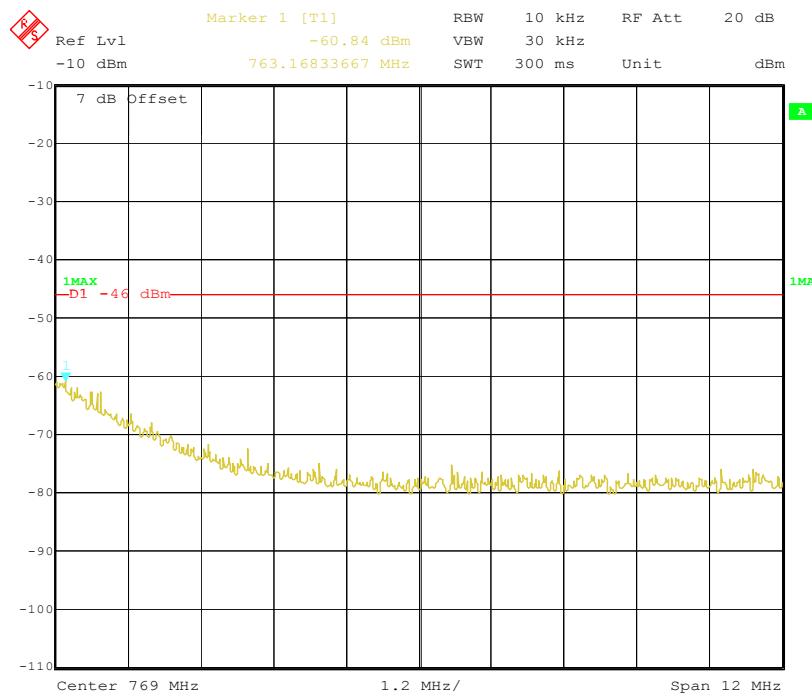
Date: 15.AUG.2014 22:16:00

**30MHz~1GHz**

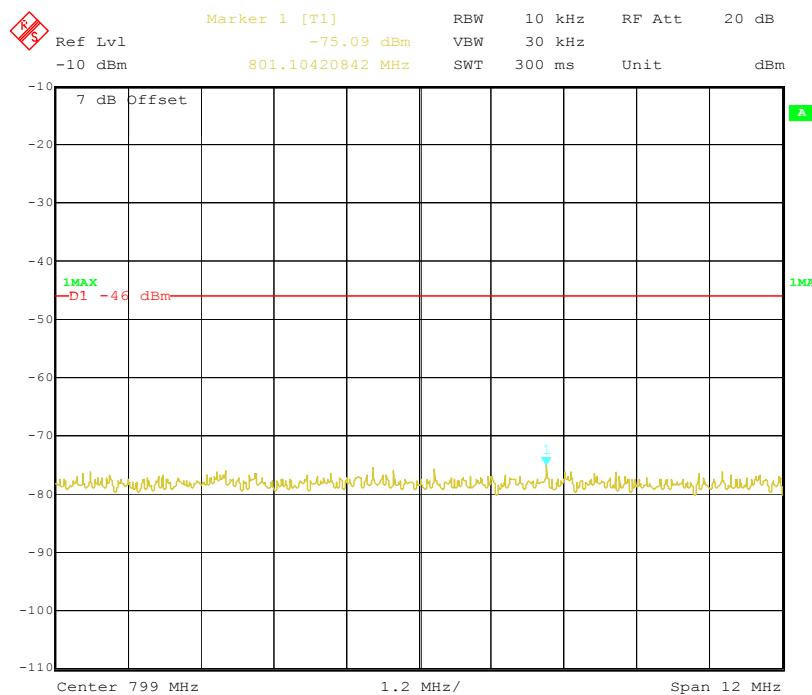


Date: 16.AUG.2014 12:28:55

**1GHz~8GHz**

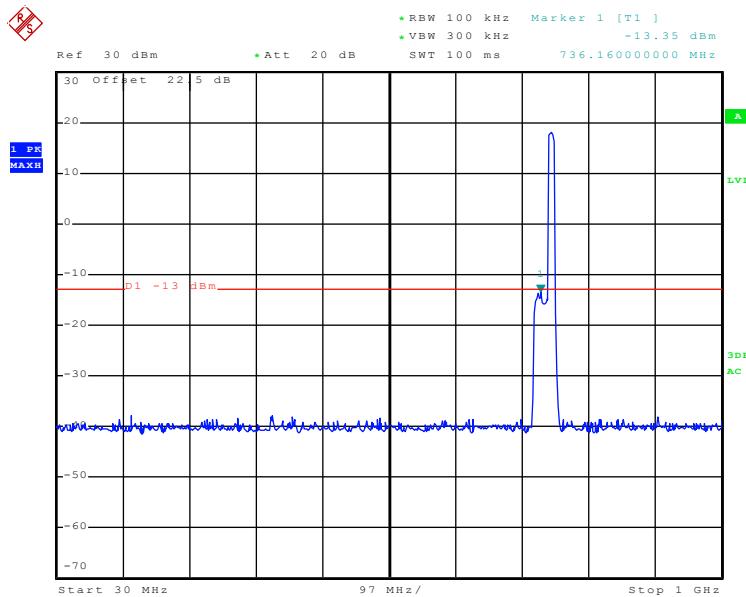


### 763 MHz -775MHz



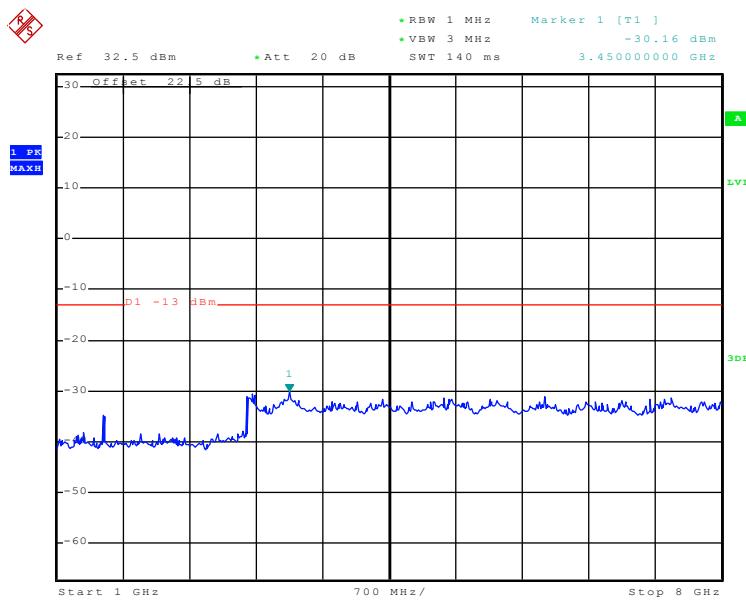
### 793MHz – 805MHz

## Middle channel



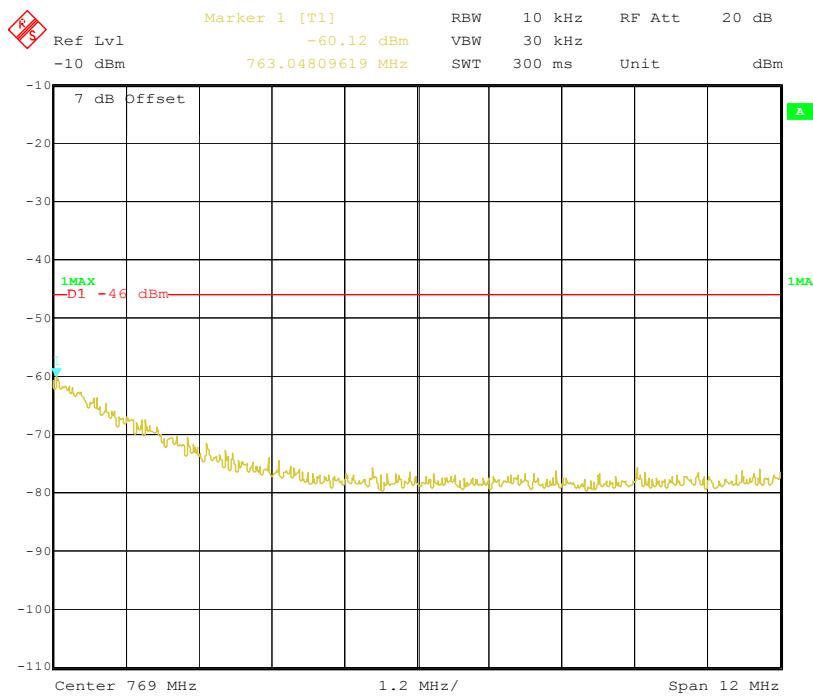
Date: 15.AUG.2014 22:17:23

30MHz~1GHz

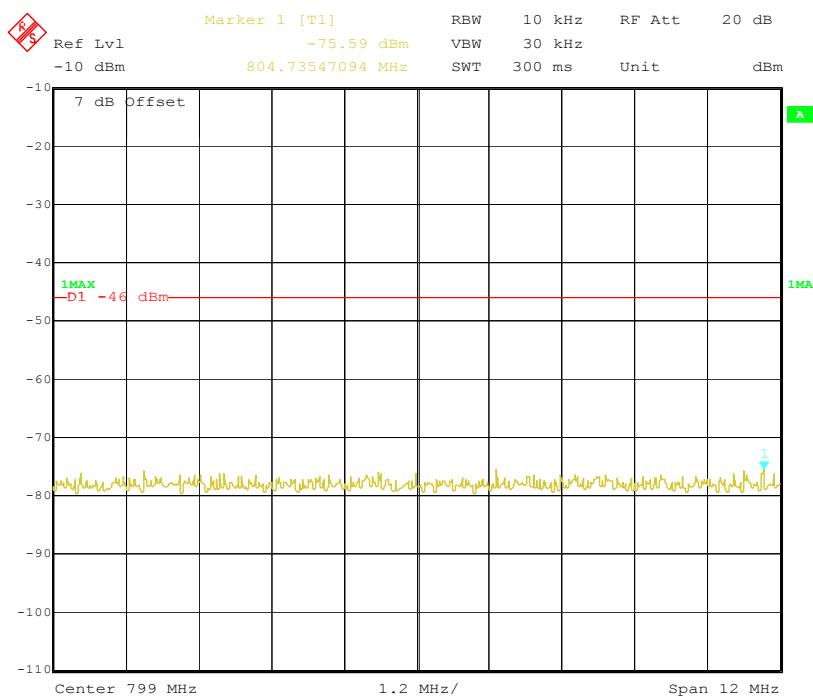


Date: 16.AUG.2014 12:29:33

1GHz~10GHz

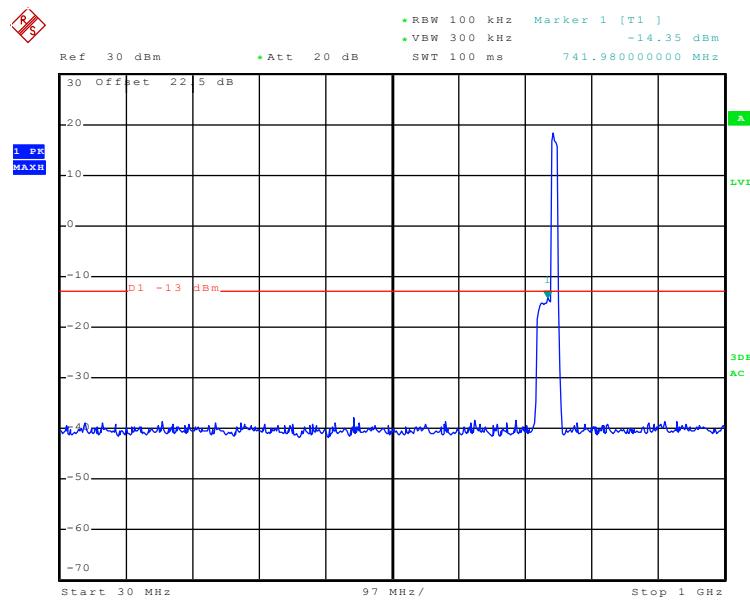


### 763 MHz -775MHz



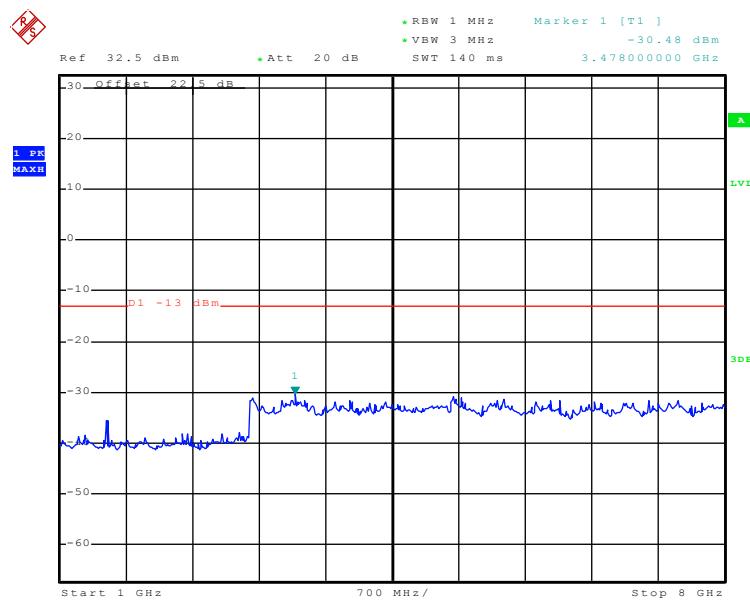
### 793MHz – 805MHz

## High Channel



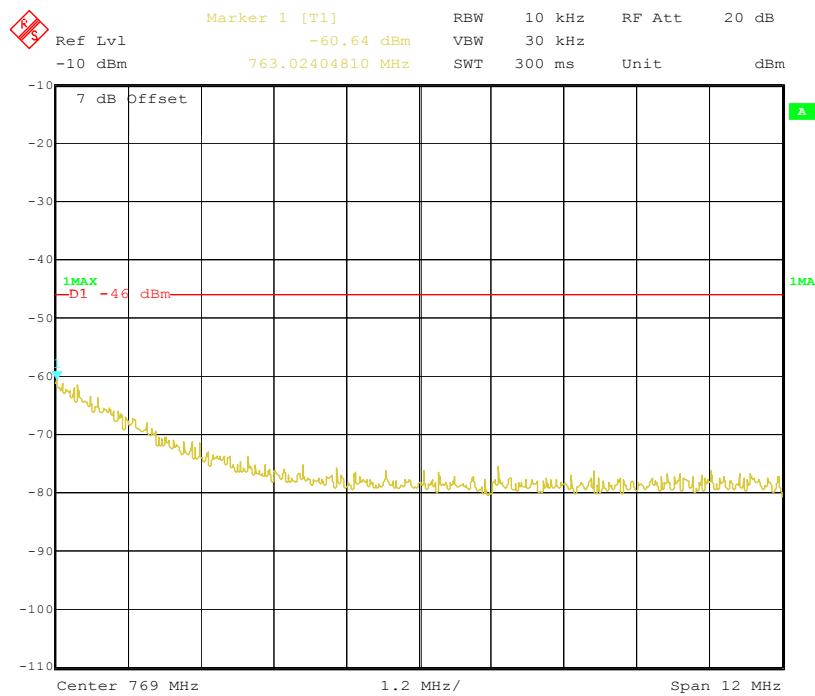
Date: 15.AUG.2014 22:16:45

## 30MHz~1GHz

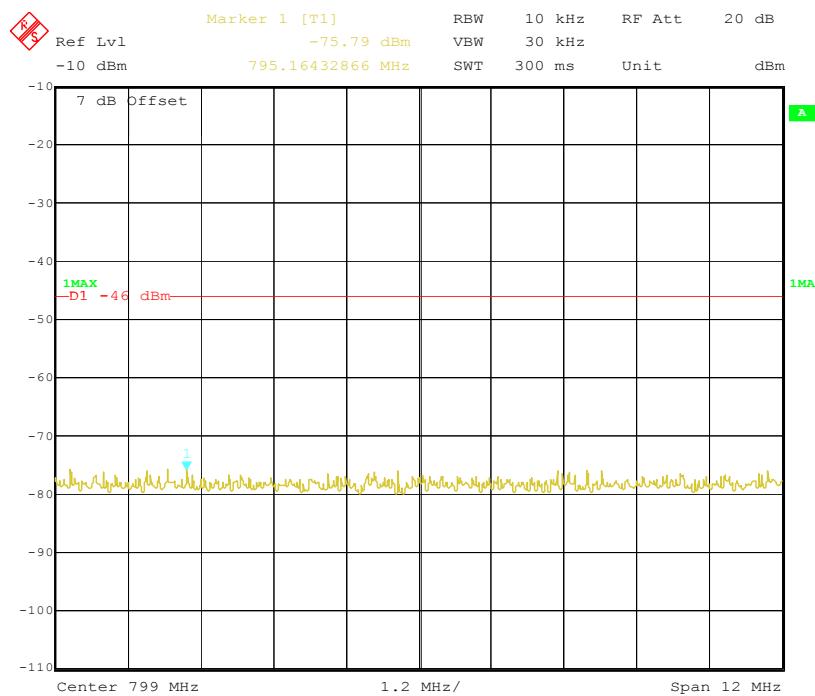


Date: 16.AUG.2014 12:29:15

## 1GHz~8GHz



### 763 MHz -775MHz

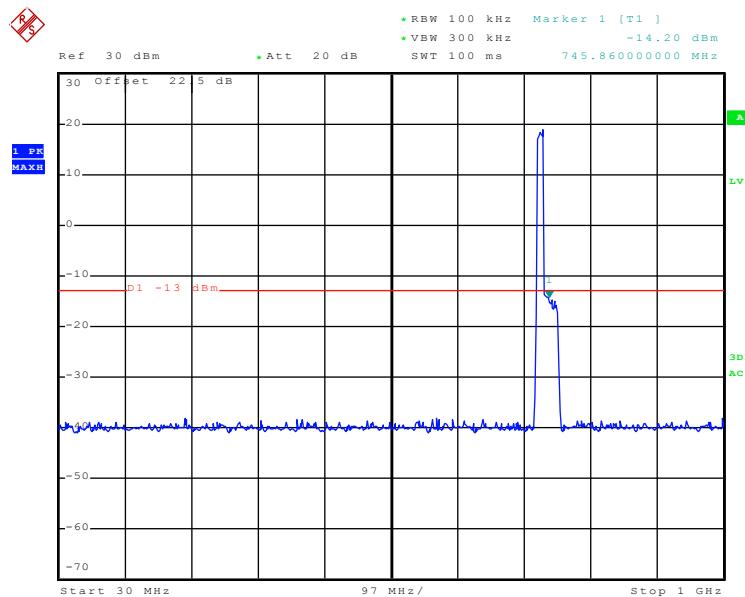


### 793MHz – 805MHz

## Lower ABC Full Band downlink

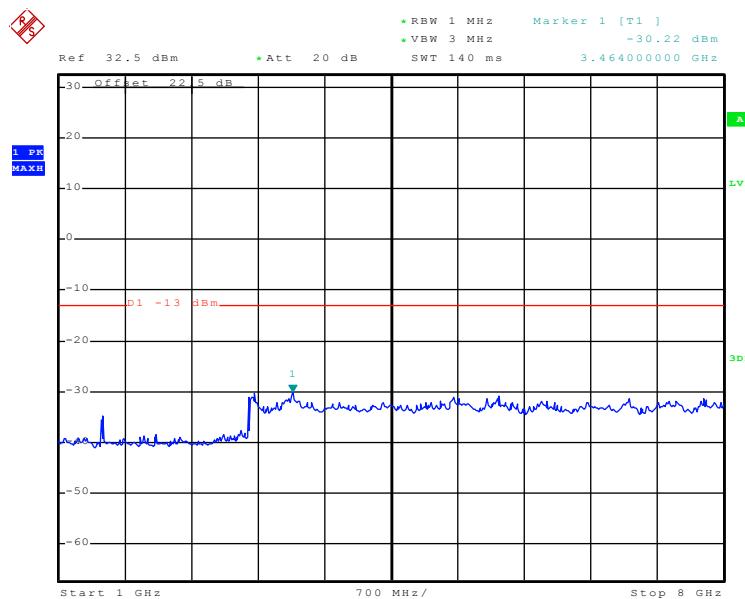
10 MHz

Low Channel



Date: 15.AUG.2014 22:13:41

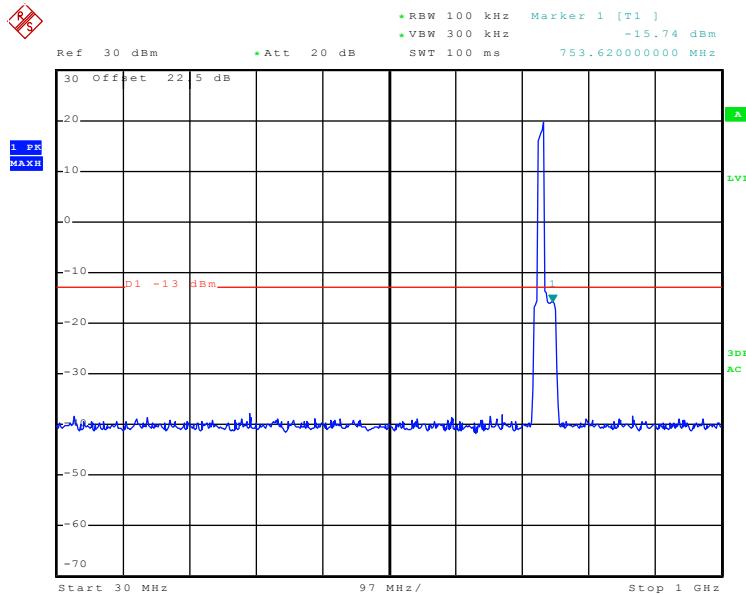
30MHz-1GHz



Date: 16.AUG.2014 12:27:41

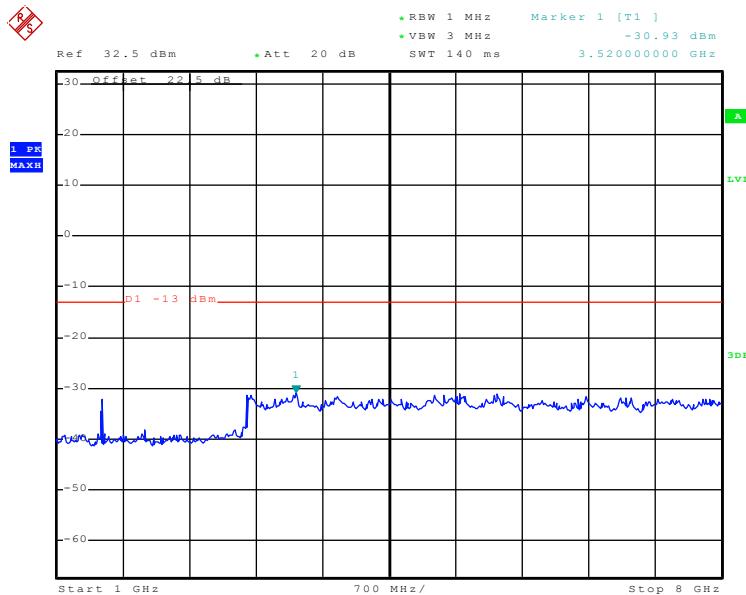
1GHz~8GHz

## Middle channel



Date: 15.AUG.2014 22:14:14

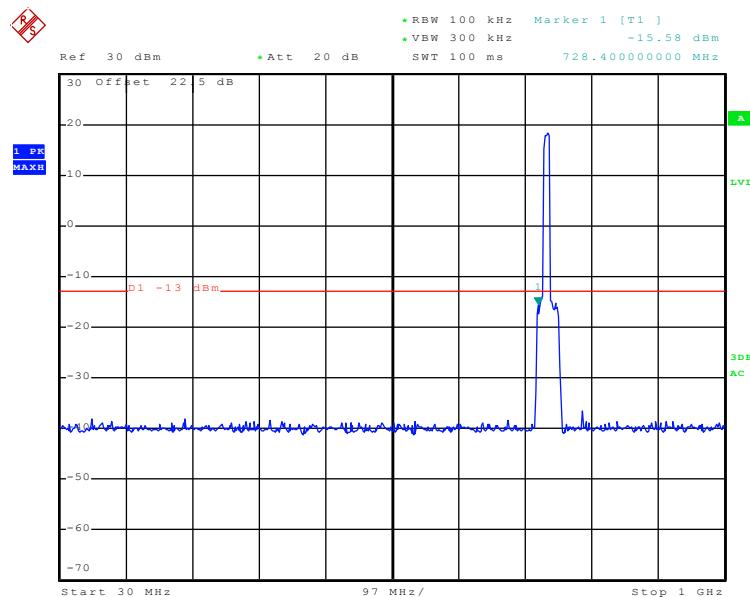
## 30MHz~1GHz



Date: 16.AUG.2014 12:28:03

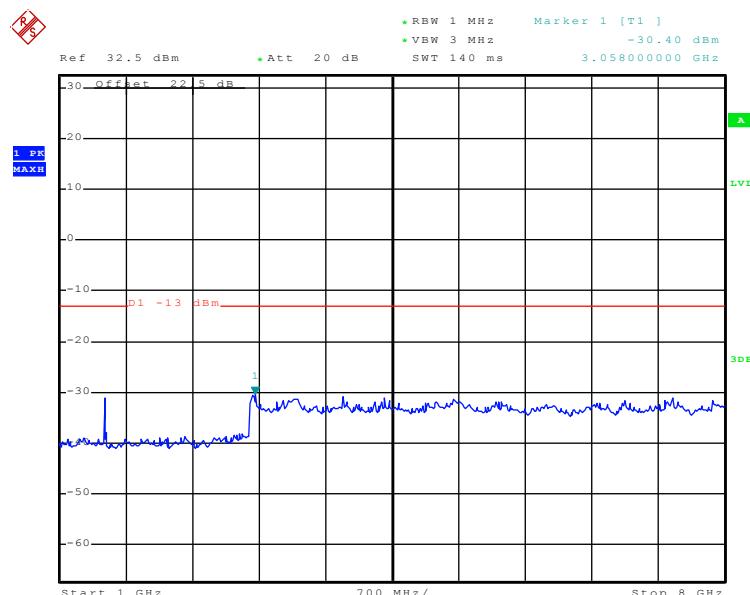
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 22:15:14

## 30MHz~1GHz

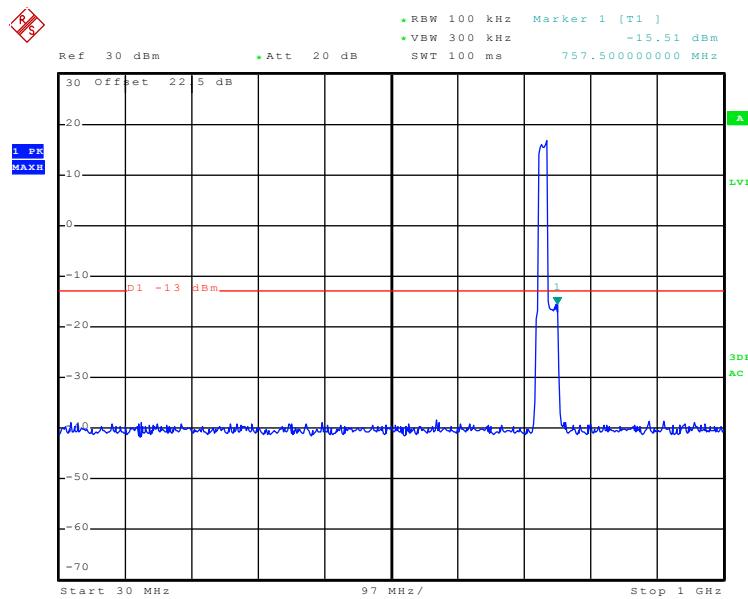


Date: 16.AUG.2014 12:28:25

## 1GHz~8GHz

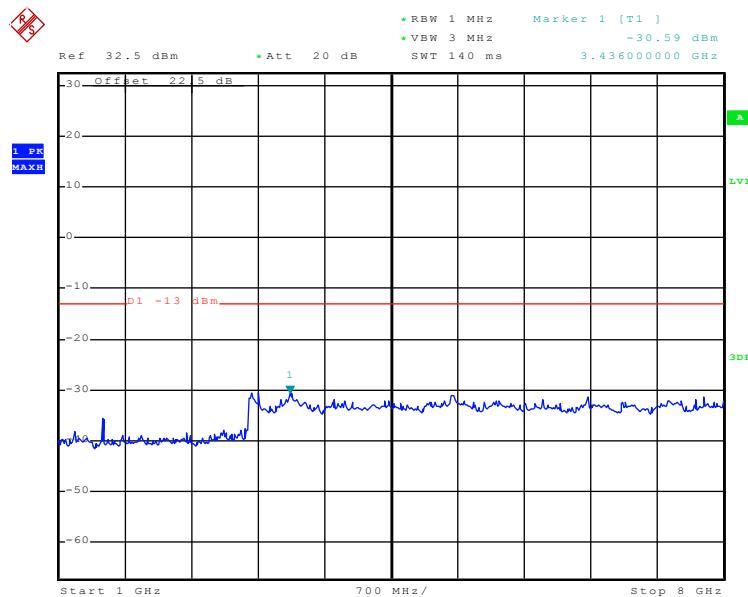
## 15 MHz

### Low Channel



Date: 15.AUG.2014 22:19:05

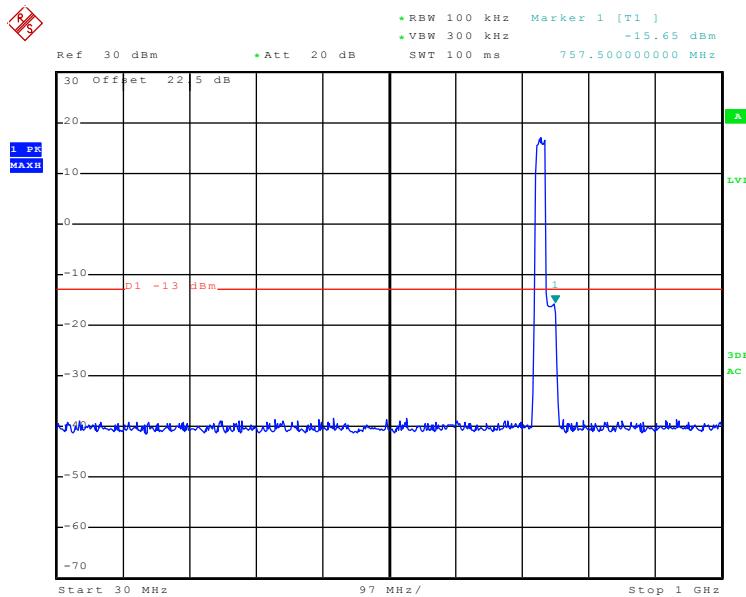
## 30MHz~1GHz



Date: 16.AUG.2014 12:30:34

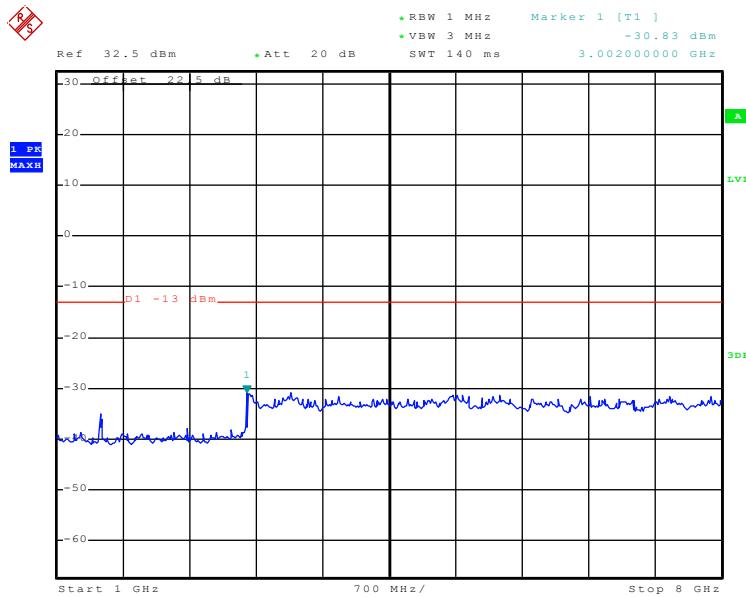
## 1GHz~8GHz

## Middle channel



Date: 15.AUG.2014 22:18:36

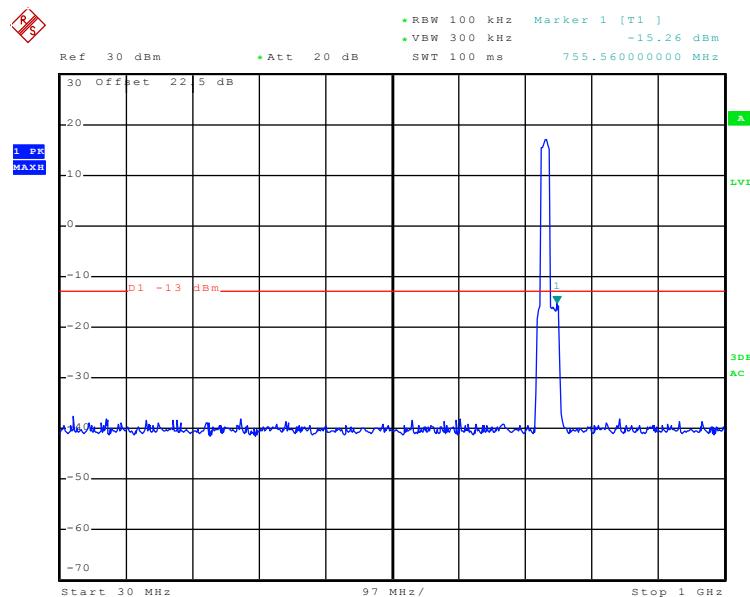
## 30MHz~1GHz



Date: 16.AUG.2014 12:30:15

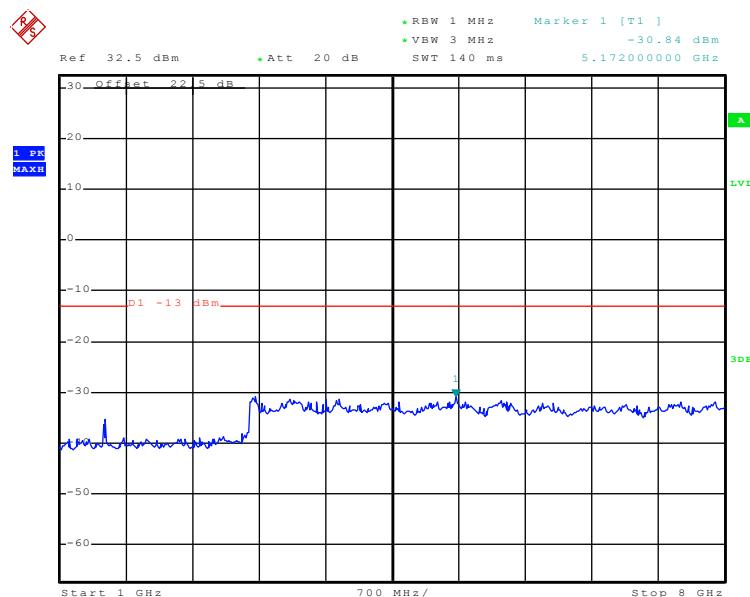
## 1GHz~8GHz

## High Channel



Date: 15.AUG.2014 22:19:39

## 30MHz~1GHz



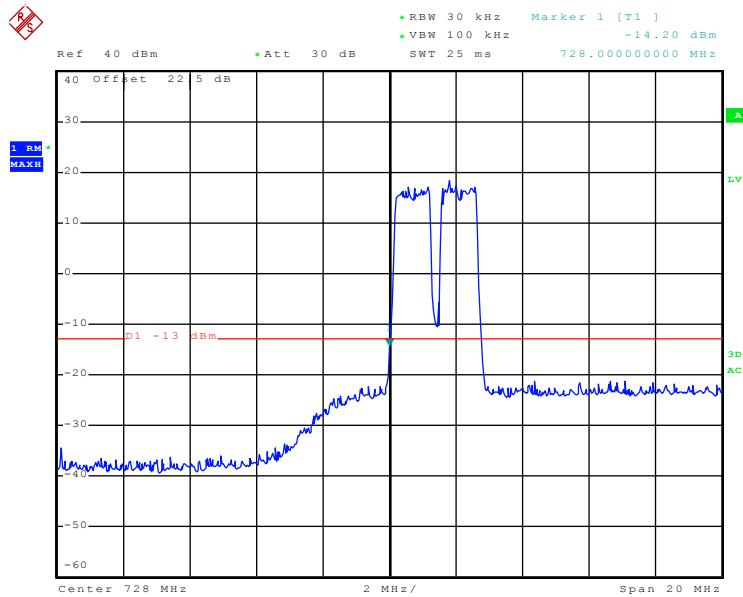
Date: 16.AUG.2014 12:30:56

## 1GHz~8GHz

Inter-modulation(Pre-test all bandwidths and only the worst case 1.4 MHz were shown in the report)

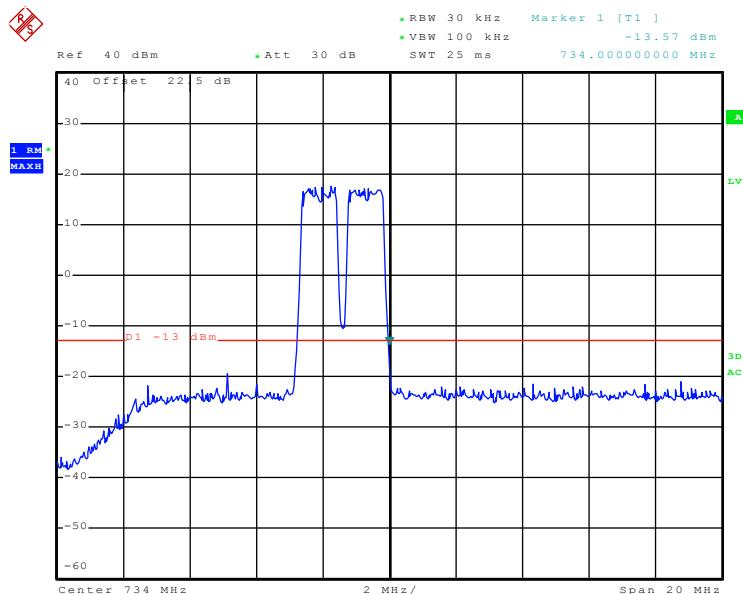
### Downlink mode

#### Lower A



Date: 19.AUG.2014 21:32:11

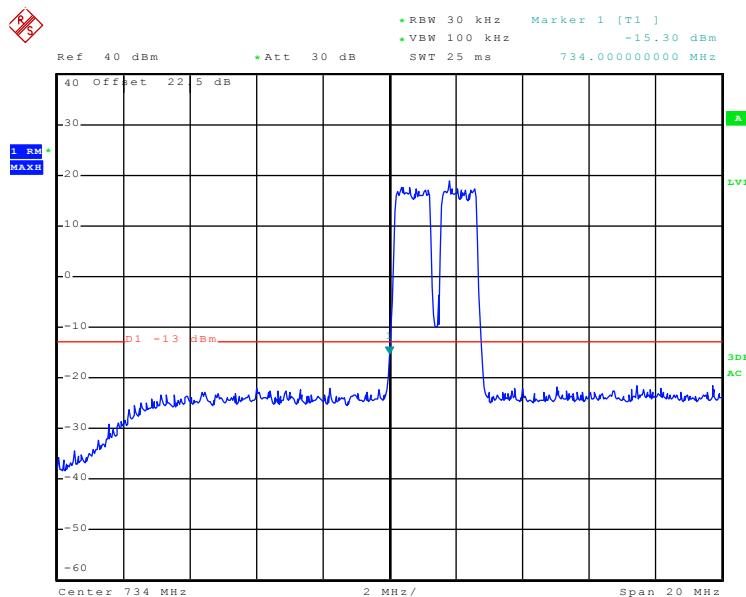
#### Low channel



Date: 19.AUG.2014 21:35:08

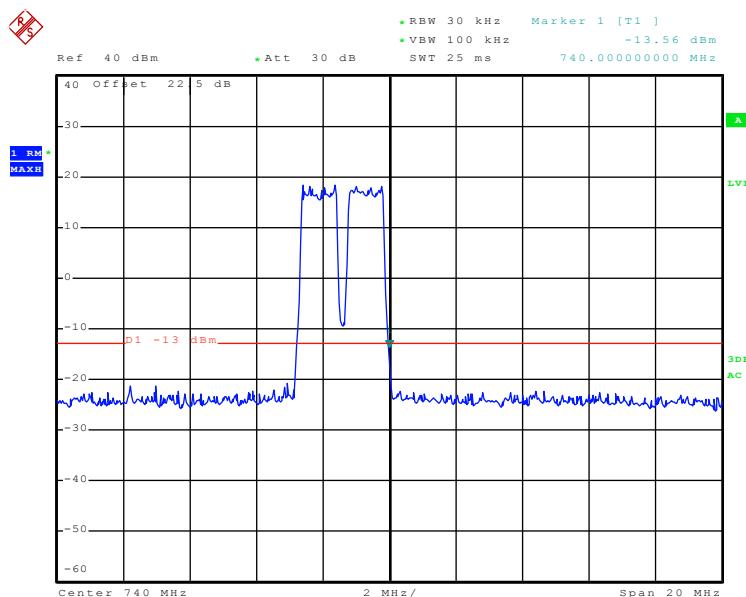
#### High channel

## Lower B



Date: 19.AUG.2014 21:36:57

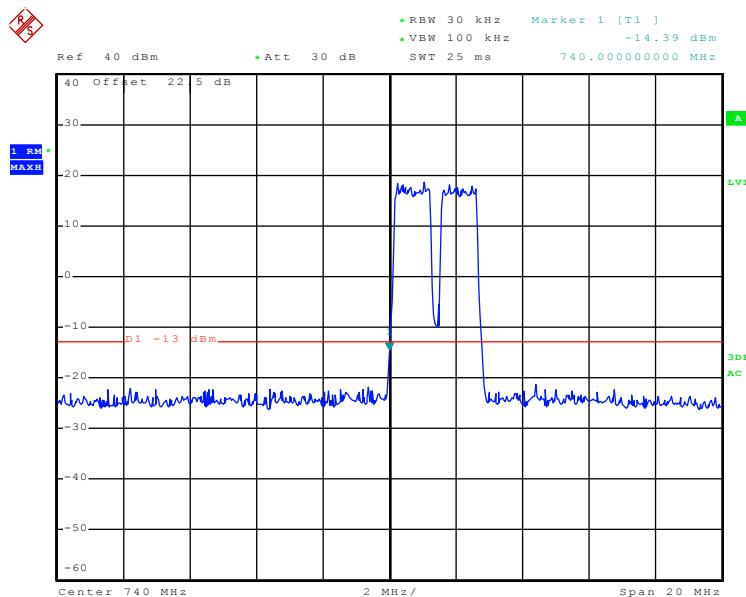
## Low channel



Date: 19.AUG.2014 21:37:56

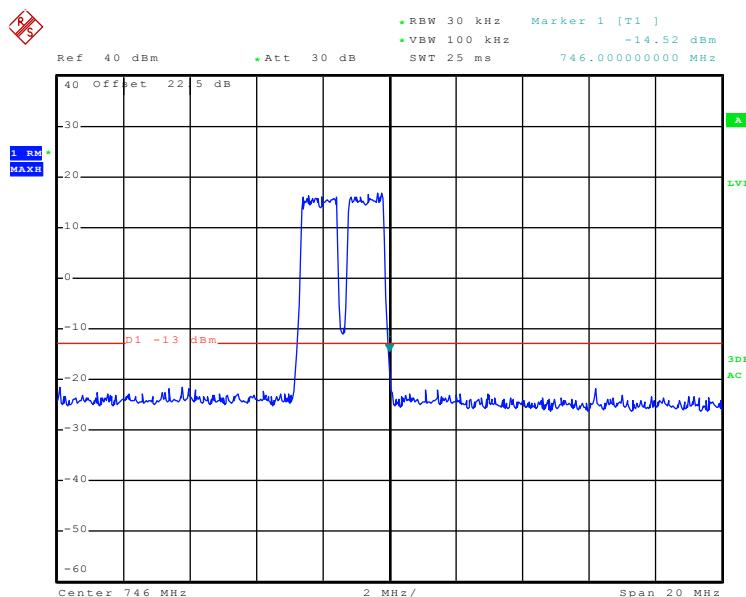
## High channel

## Lower C



Date: 19.AUG.2014 21:39:00

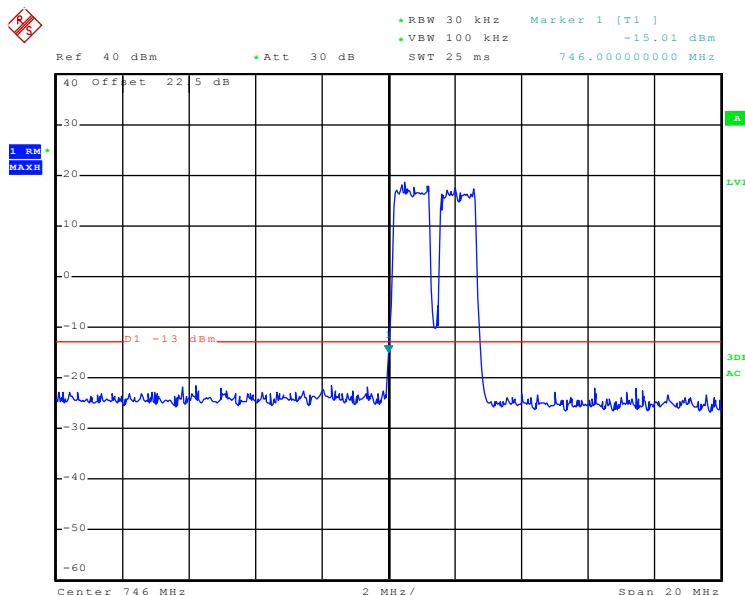
## Low channel



Date: 19.AUG.2014 21:40:48

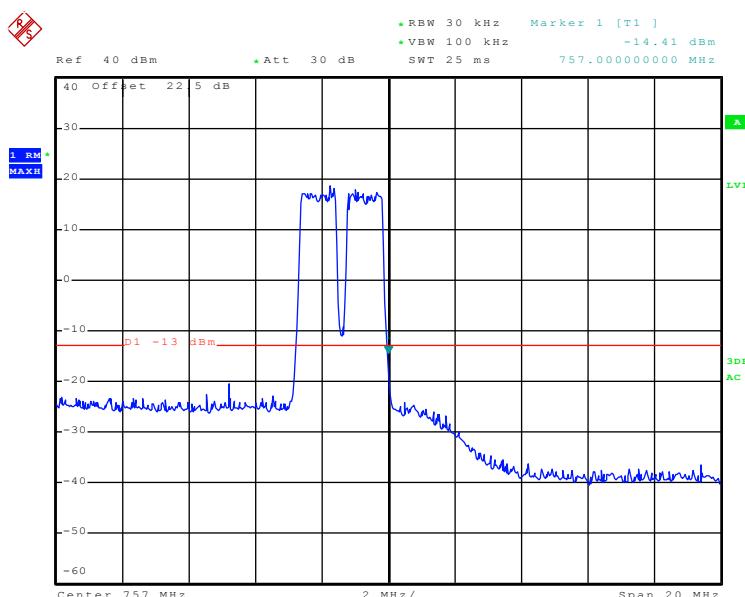
## High channel

## Upper C Band



Date: 19.AUG.2014 21:43:05

## Low channel

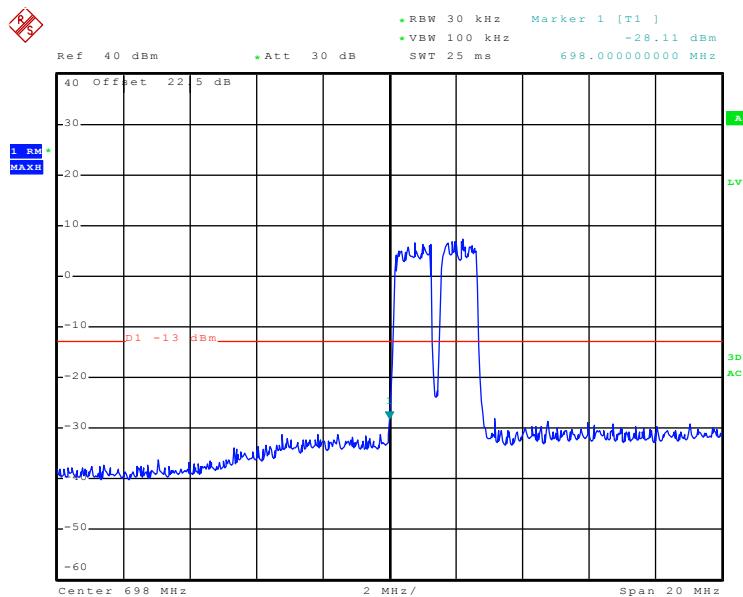


Date: 19.AUG.2014 21:44:17

## High channel

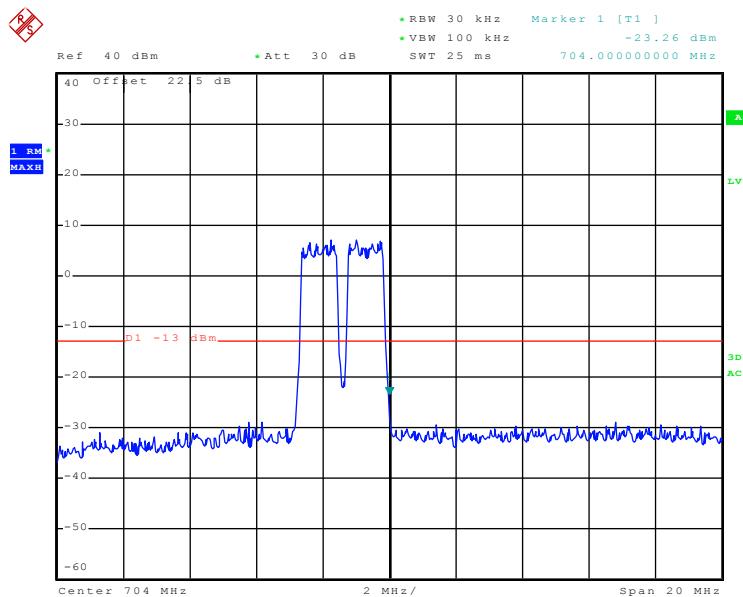
## Uplink mode

Lower A



Date: 19.AUG.2014 21:49:01

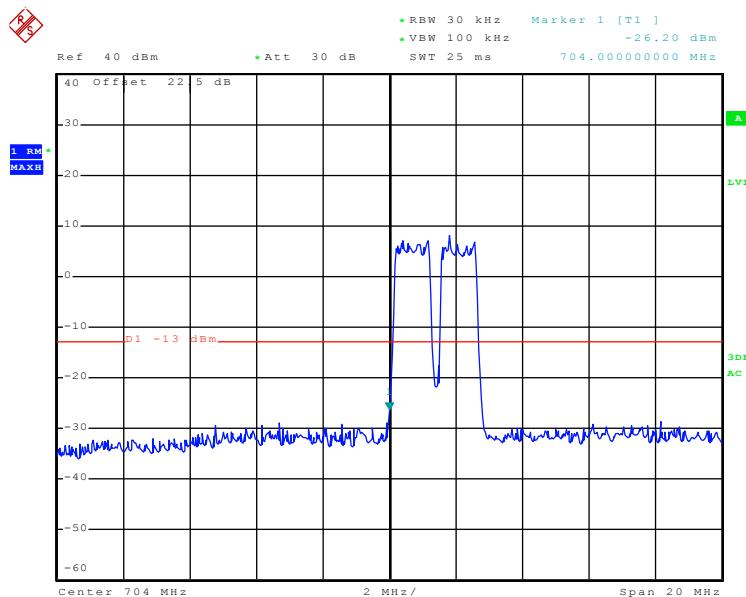
Low channel



Date: 19.AUG.2014 21:49:51

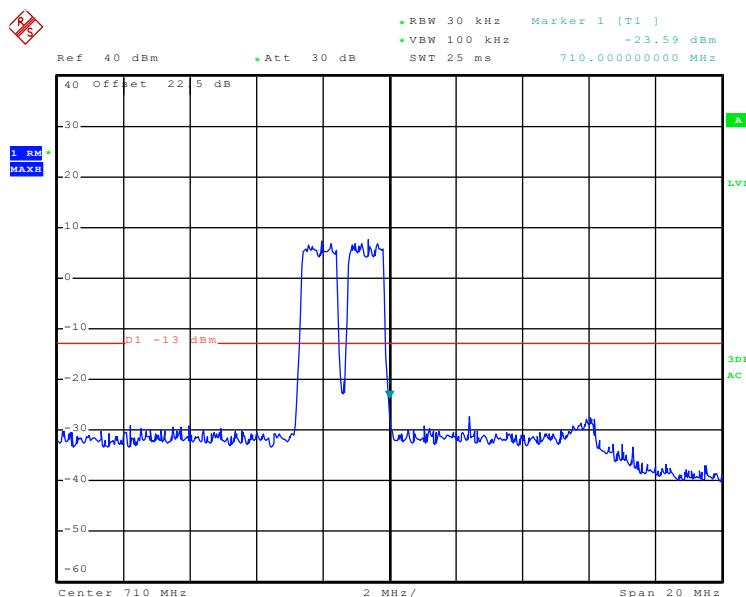
High channel

## Lower B



Date: 19.AUG.2014 21:50:32

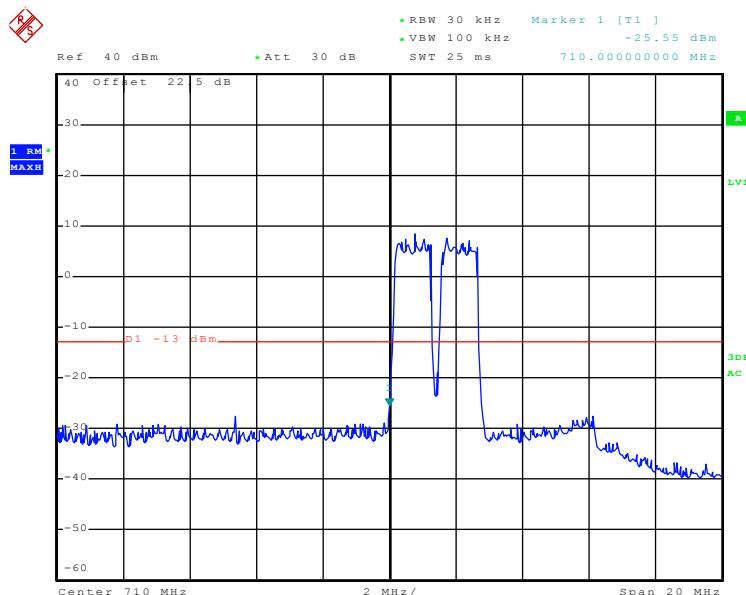
## Low channel



Date: 19.AUG.2014 21:51:20

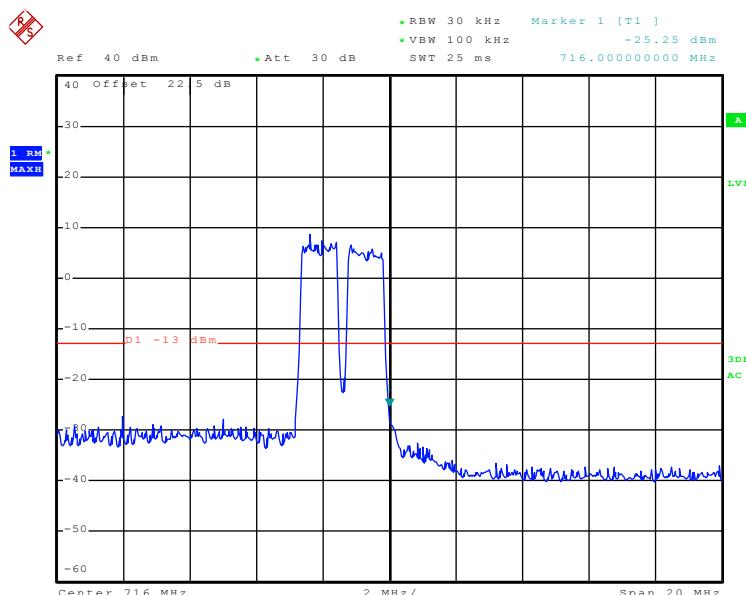
## High channel

## Lower C



Date: 19.AUG.2014 21:52:10

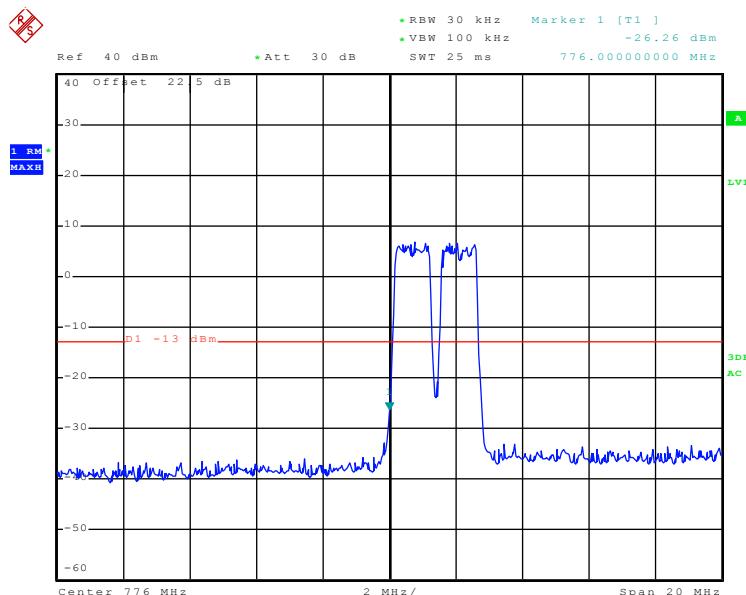
## Low channel



Date: 19.AUG.2014 21:53:08

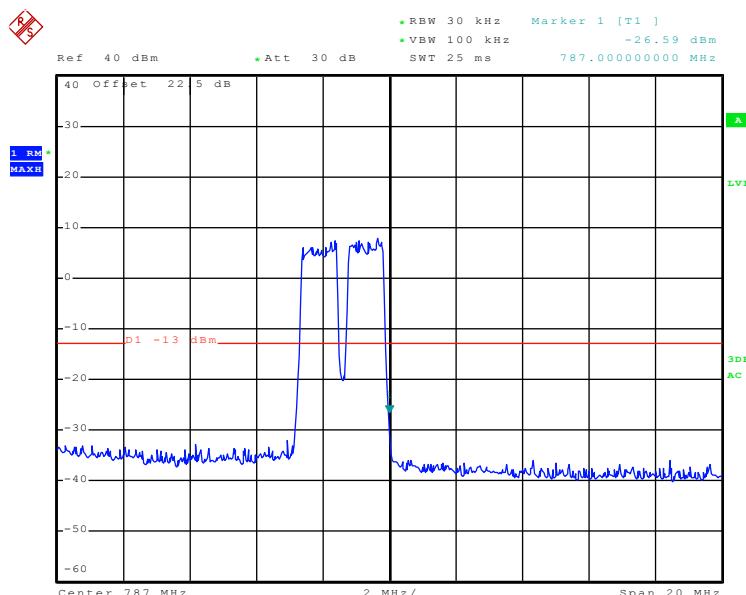
## High channel

## Upper C Band



Date: 19.AUG.2014 21:54:14

## Low channel



Date: 19.AUG.2014 21:55:06

## High channel

## 10 Band edge

### 10.1 Standard Applicable

According to §27.53.

### 10.2 Test setup

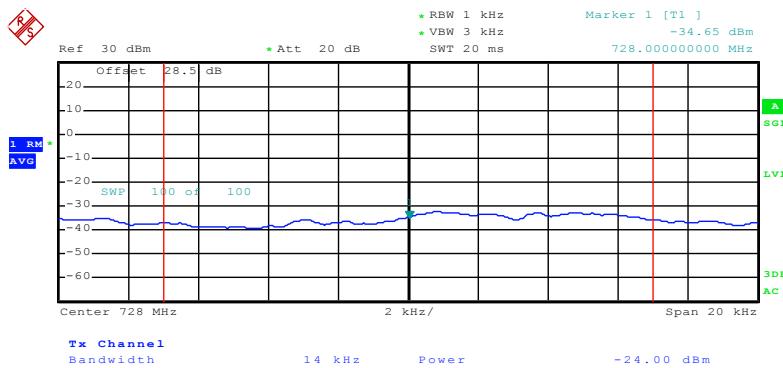
Please refer the section 6.2 Configuration of tested System.

### 10.3 Test Procedure

1. The EUT RF output port was connected to spectrum analyzer. The EUT shall be set to maximum gain and maximum rated output power per channel.
2. The modulation RF signals shall be fed to the input antenna port of the booster.
3. The band edge was measured at the RF output port of the EUT.
4. Spectrum analyzer settings:  
Detector: RMS.  
RBW: 1%-3% of bandwidth

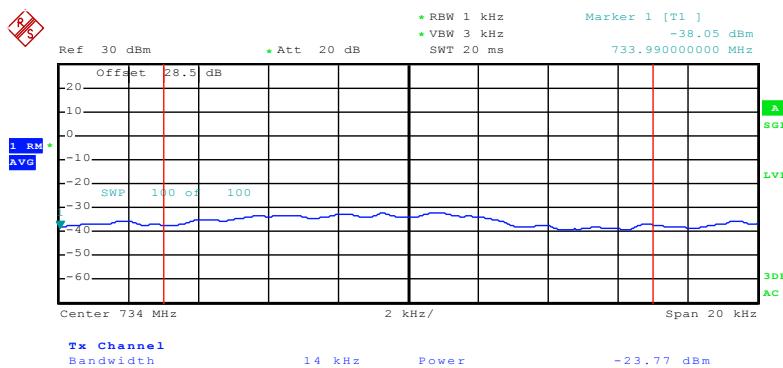
## 10.4 Test Result

**Band edge**  
**Downlink mode**  
**Lower A Band - 1.4 MHz**



Date: 14.AUG.2014 22:46:47

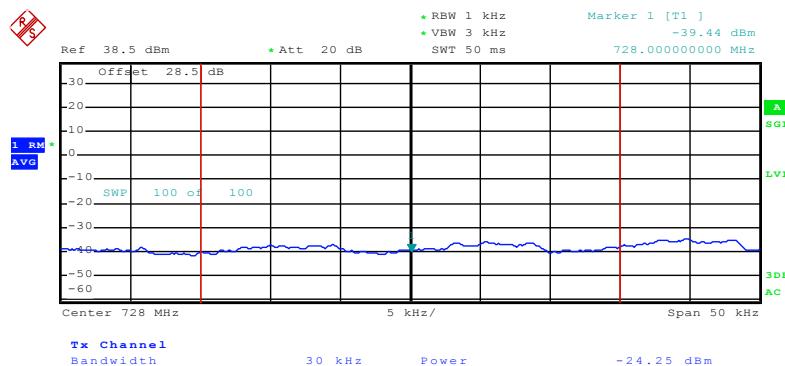
### Left edge of band



Date: 14.AUG.2014 22:47:29

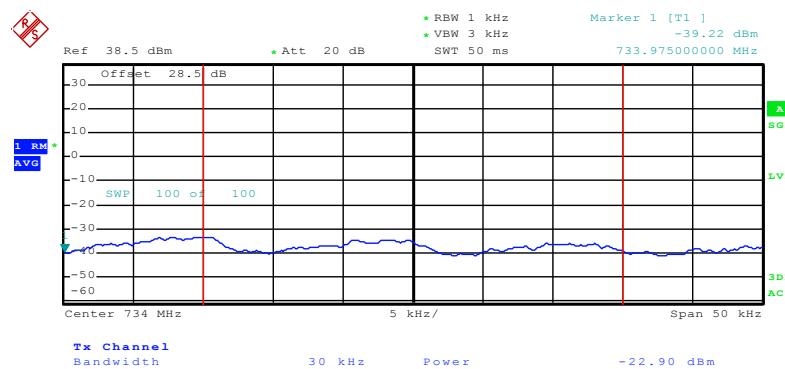
### Right edge of band

## 3 MHz



Date: 15.AUG.2014 21:47:59

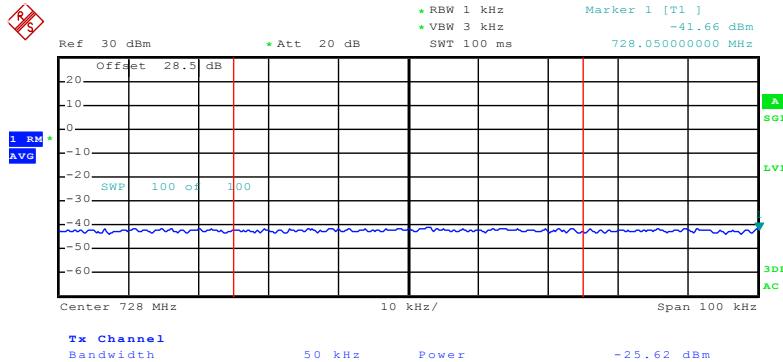
### Left edge of band



Date: 15.AUG.2014 21:48:53

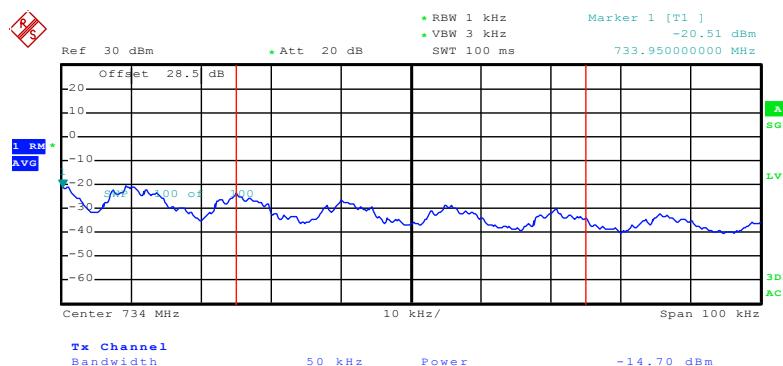
### Right edge of band

## 5 MHz



Date: 14.AUG.2014 22:14:38

### Left edge of band

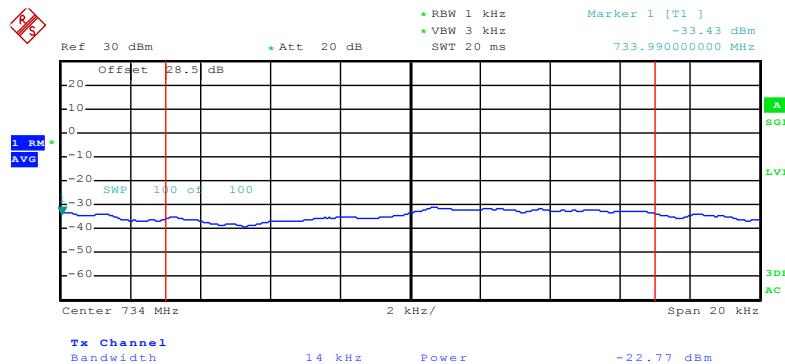


Date: 14.AUG.2014 22:15:32

### Right edge of band

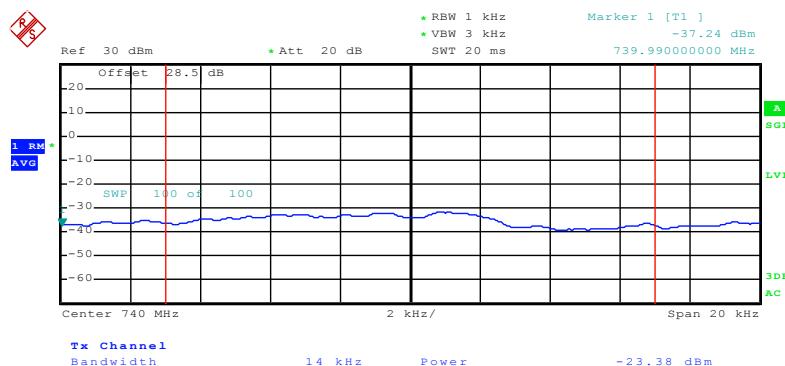
## Lower B Band

1.4 MHz



Date: 14.AUG.2014 22:48:00

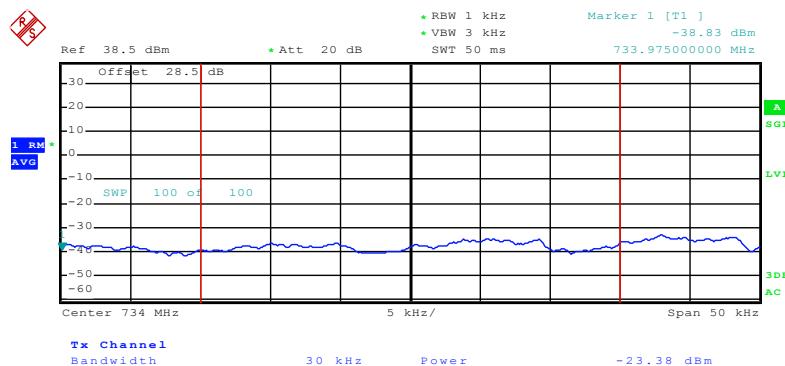
## Left edge of band



Date: 14.AUG.2014 22:48:46

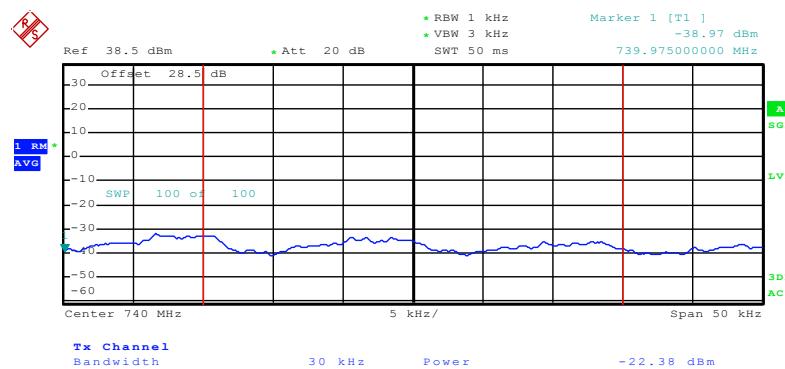
## Right edge of band

## 3 MHz



Date: 15.AUG.2014 21:49:27

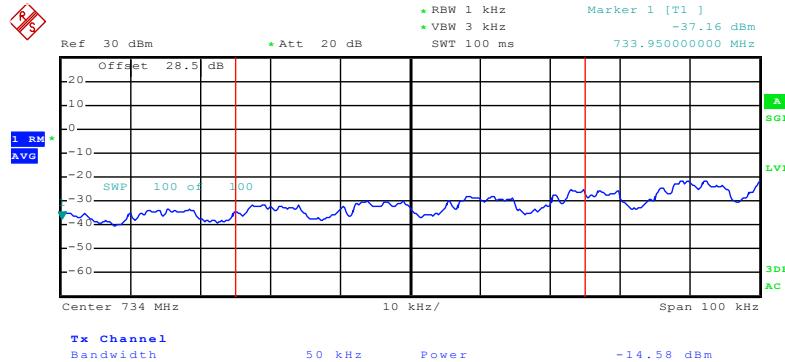
### Left edge of band



Date: 15.AUG.2014 21:50:01

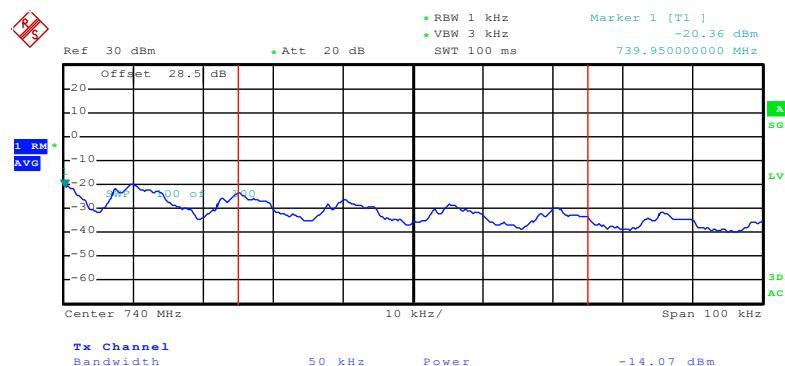
### Right edge of band

## 5 MHz



Date: 14.AUG.2014 22:17:17

### Left edge of band

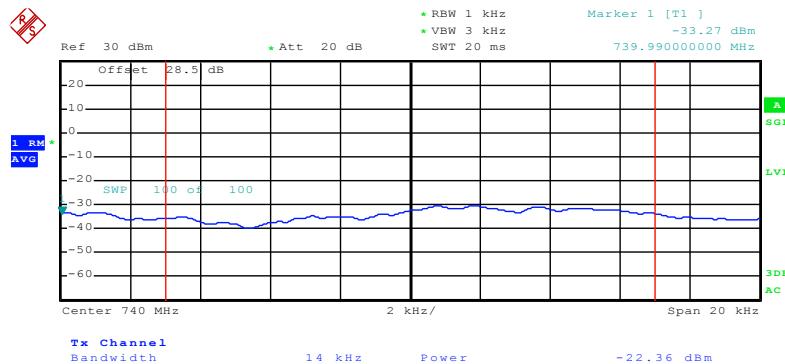


Date: 14.AUG.2014 22:17:57

### Right edge of band

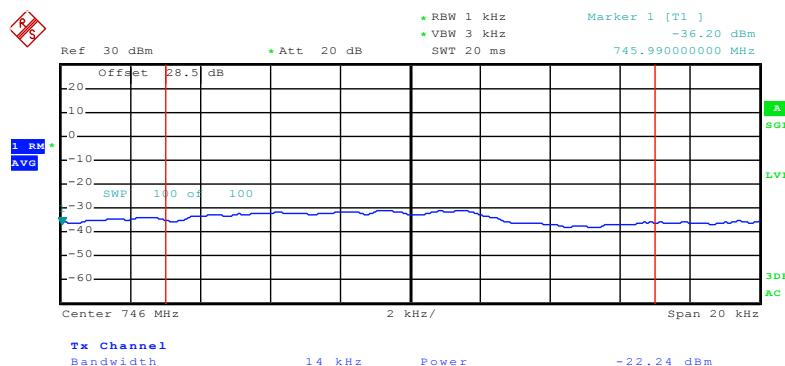
## Lower C Band

1.4 MHz



Date: 14.AUG.2014 22:49:18

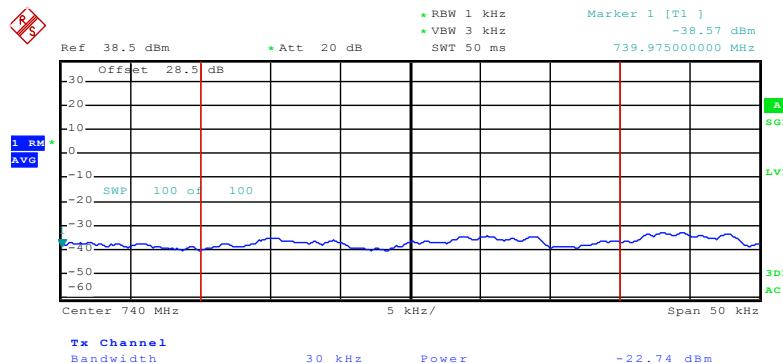
## Left edge of band



Date: 14.AUG.2014 22:49:55

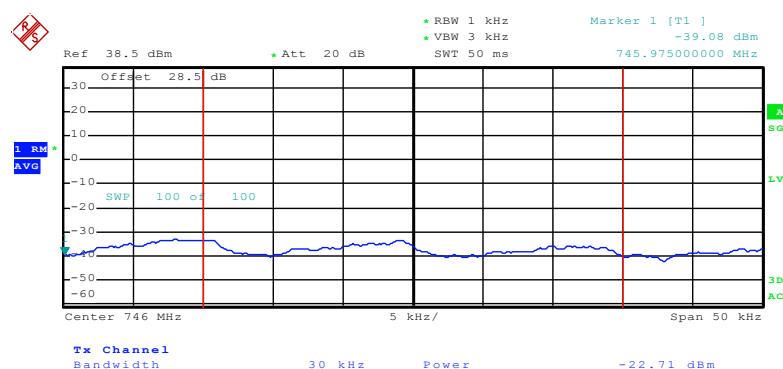
## Right edge of band

## 3 MHz



Date: 15.AUG.2014 21:50:32

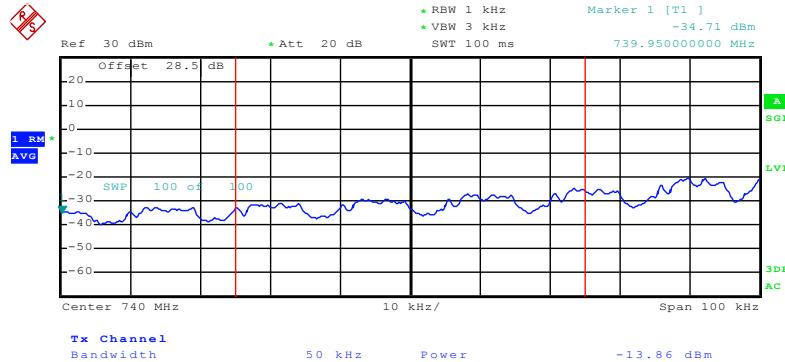
### Left edge of band



Date: 15.AUG.2014 21:51:03

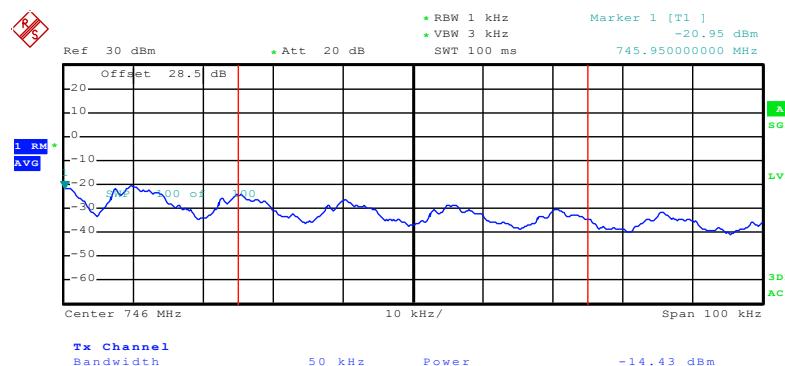
### Right edge of band

## 5 MHz



Date: 14.AUG.2014 22:18:41

### Left edge of band

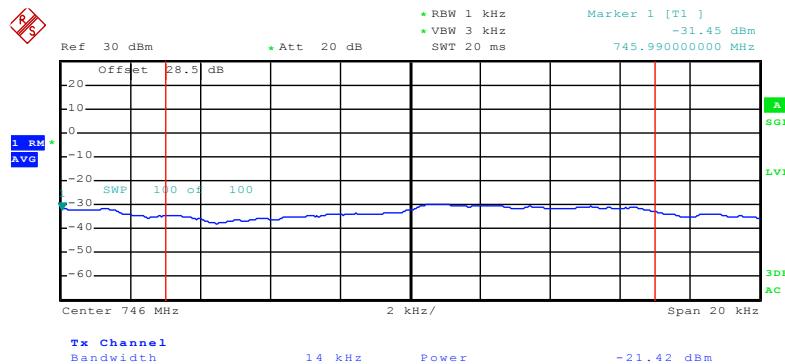


Date: 14.AUG.2014 22:19:21

### Right edge of band

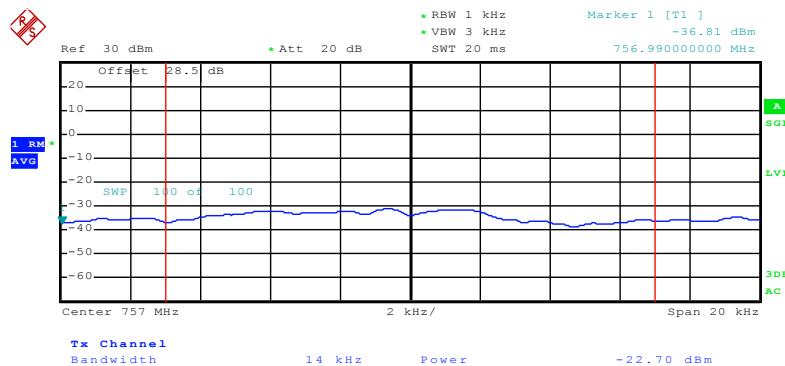
## Upper C Band

1.4 MHz



Date: 14.AUG.2014 22:50:36

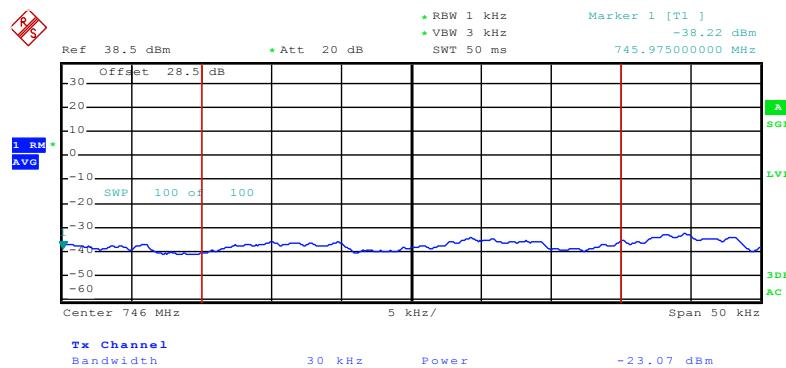
## Left edge of band



Date: 14.AUG.2014 22:51:37

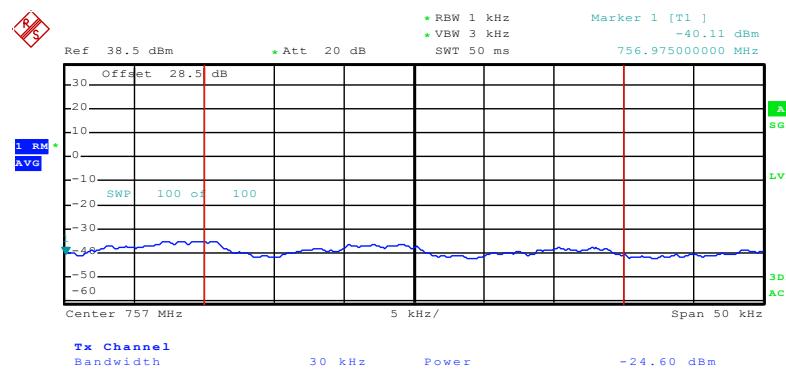
## Right edge of band

## 3 MHz



Date: 15.AUG.2014 21:51:47

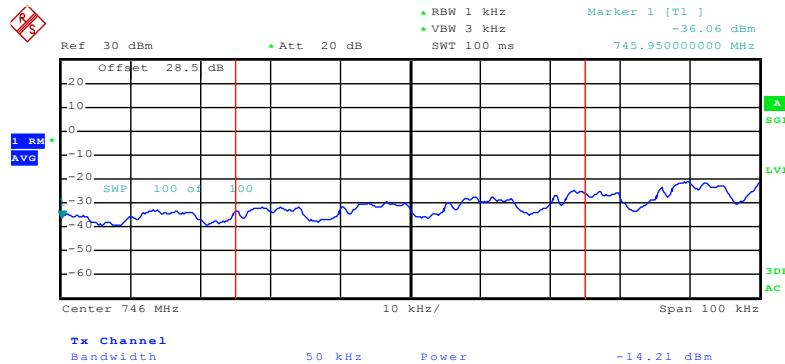
### Left edge of band



Date: 15.AUG.2014 21:52:23

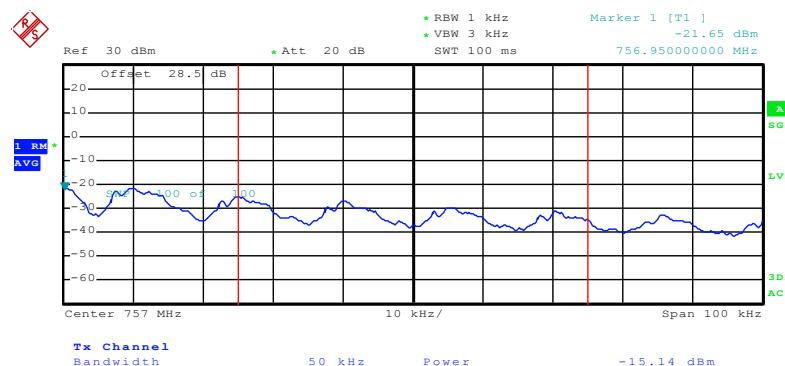
### Right edge of band

5 MHz



Date: 14.AUG.2014 22:20:08

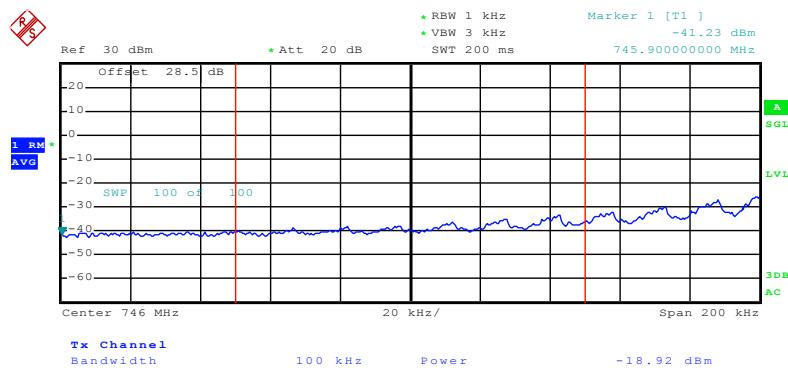
Left edge of band



Date: 14.AUG.2014 22:20:53

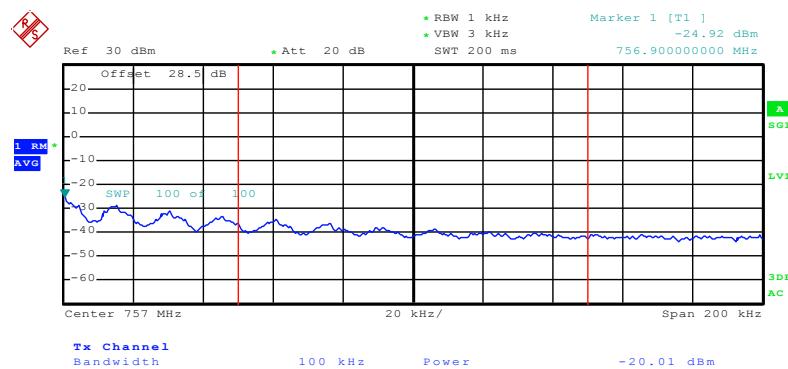
Right edge of band

10 MHz



Date: 14.AUG.2014 22:09:40

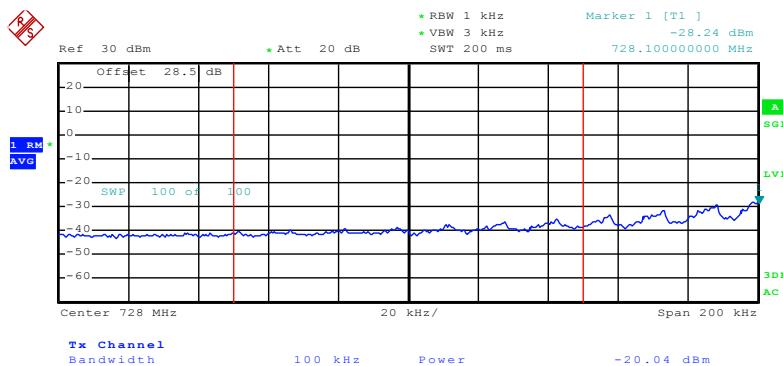
Left edge of band



Date: 14.AUG.2014 22:10:33

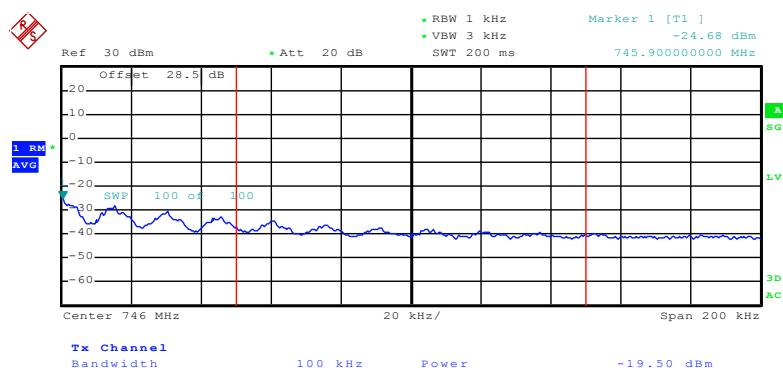
Right edge of band

**Lower ABC Full Band  
10 MHz**



Date: 14.AUG.2014 22:07:41

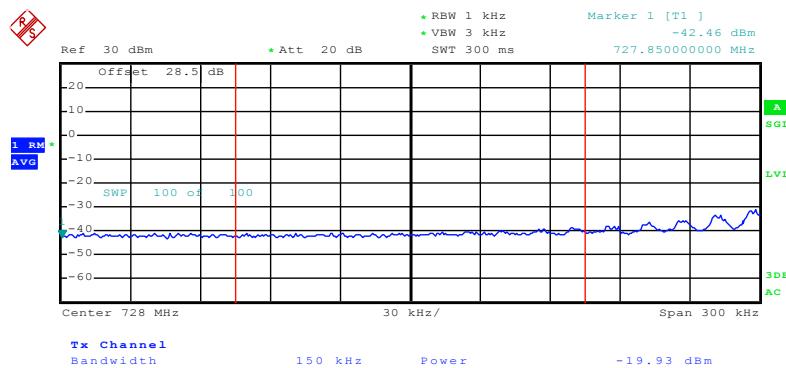
**Left edge of band**



Date: 14.AUG.2014 22:08:34

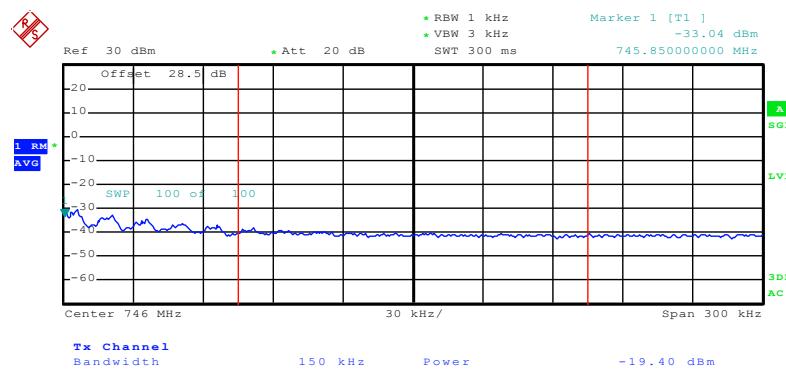
**Right edge of band**

## 15 MHz



Date: 14.AUG.2014 22:04:13

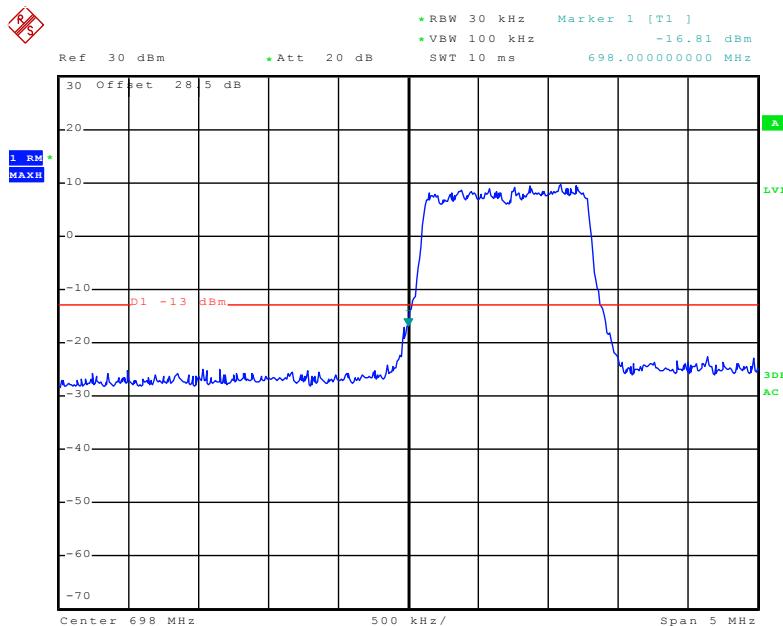
### Left edge of band



Date: 14.AUG.2014 22:05:54

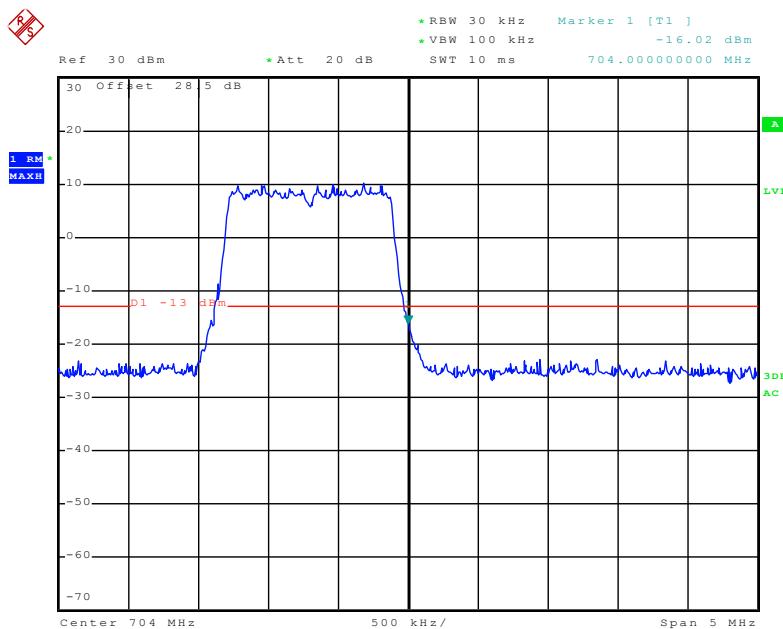
### Right edge of band

**Uplink mode  
Band edge  
Lower A Band - 1.4 MHz**



Date: 14.AUG.2014 21:09:20

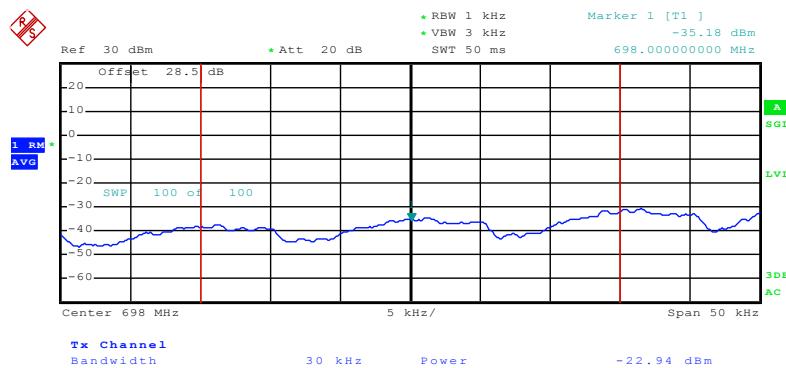
**Left edge of band**



Date: 14.AUG.2014 21:10:24

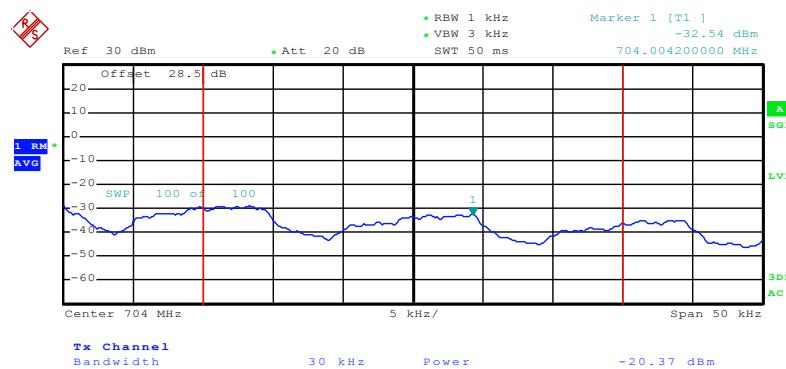
**Right edge of band**

3 MHz



Date: 14.AUG.2014 21:21:25

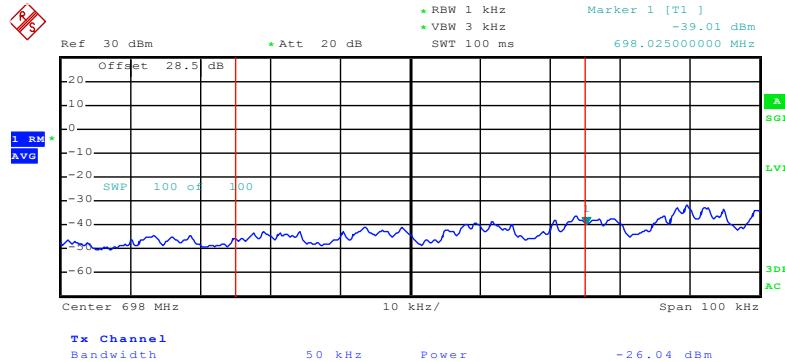
Left edge of band



Date: 14.AUG.2014 21:22:38

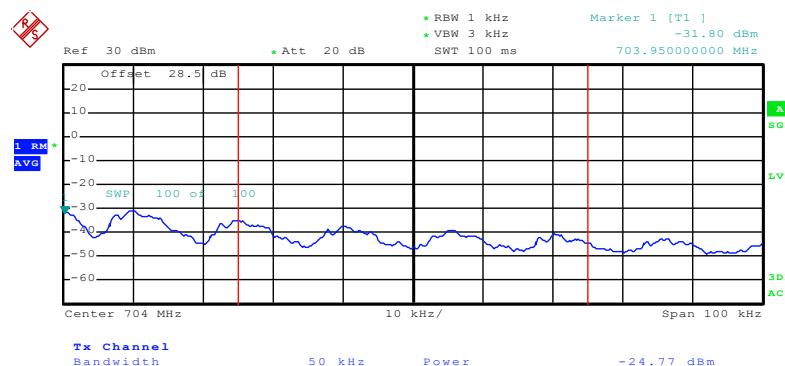
Right edge of band

5 MHz



Date: 14.AUG.2014 21:38:11

Left edge of band

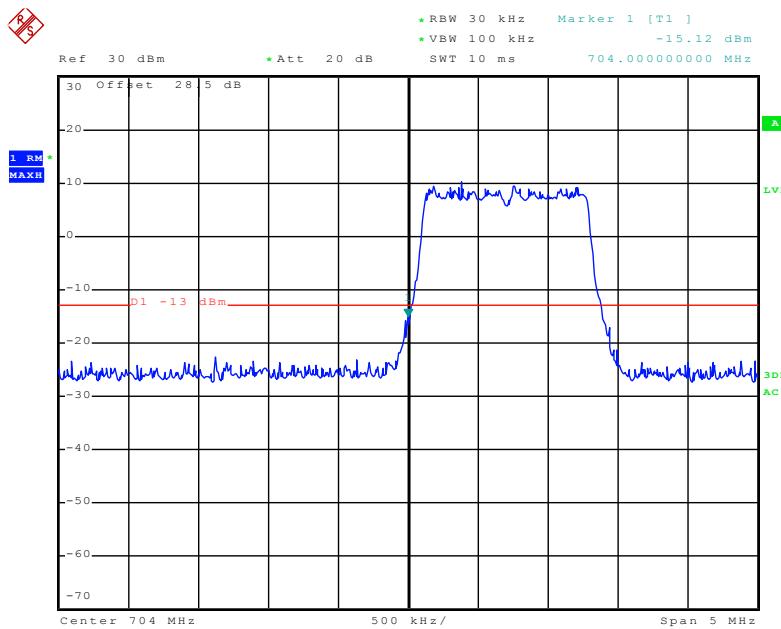


Date: 14.AUG.2014 21:39:32

Right edge of band

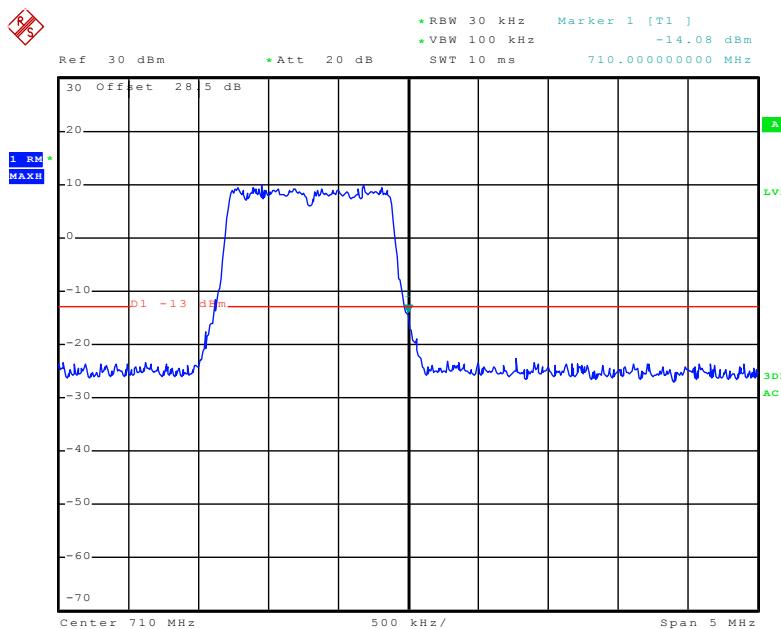
## Lower B Band

1.4 MHz



Date: 14.AUG.2014 21:11:54

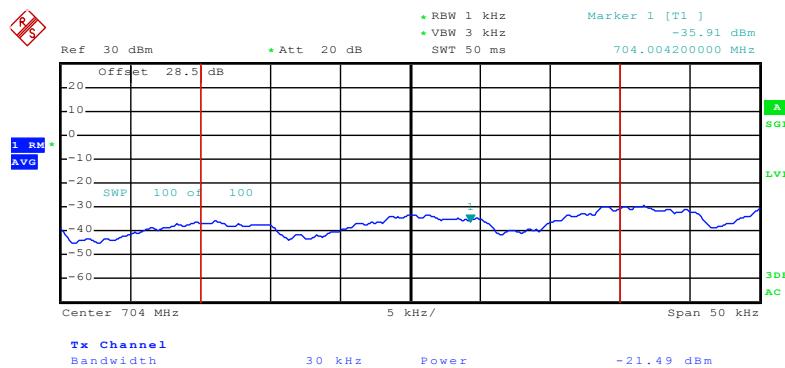
## Left edge of band



Date: 14.AUG.2014 21:14:19

## Right edge of band

## 3 MHz



Date: 14.AUG.2014 21:23:15

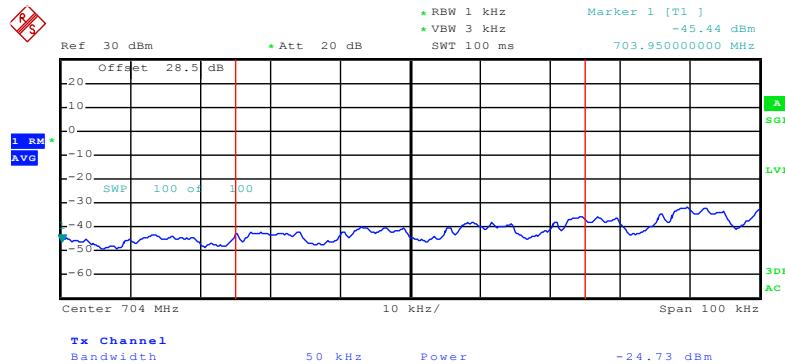
### Left edge of band



Date: 14.AUG.2014 21:24:02

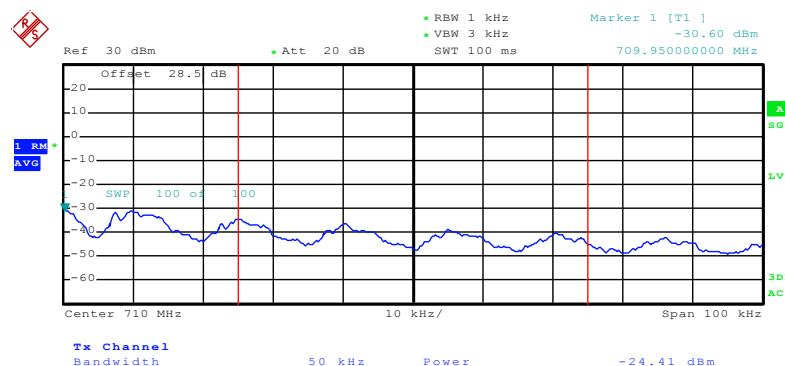
### Right edge of band

5 MHz



Date: 14.AUG.2014 21:40:11

Left edge of band

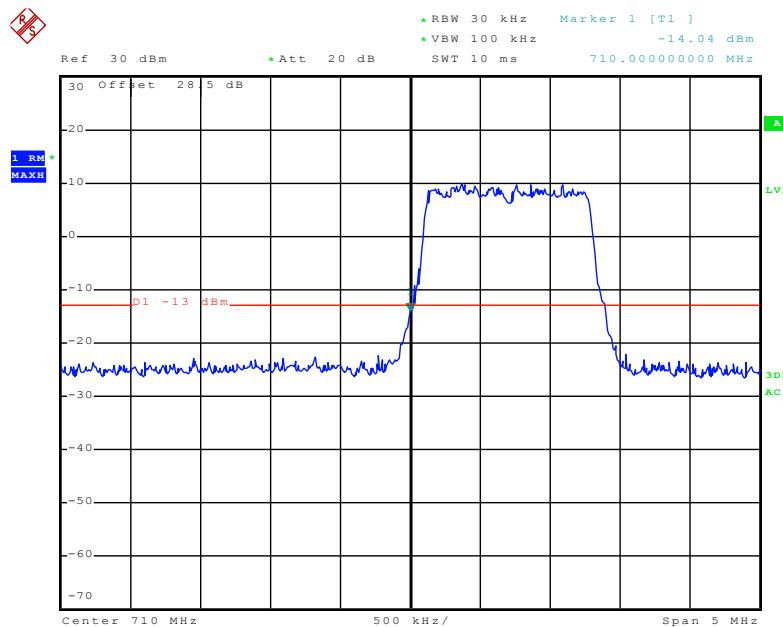


Date: 14.AUG.2014 21:41:58

Right edge of band

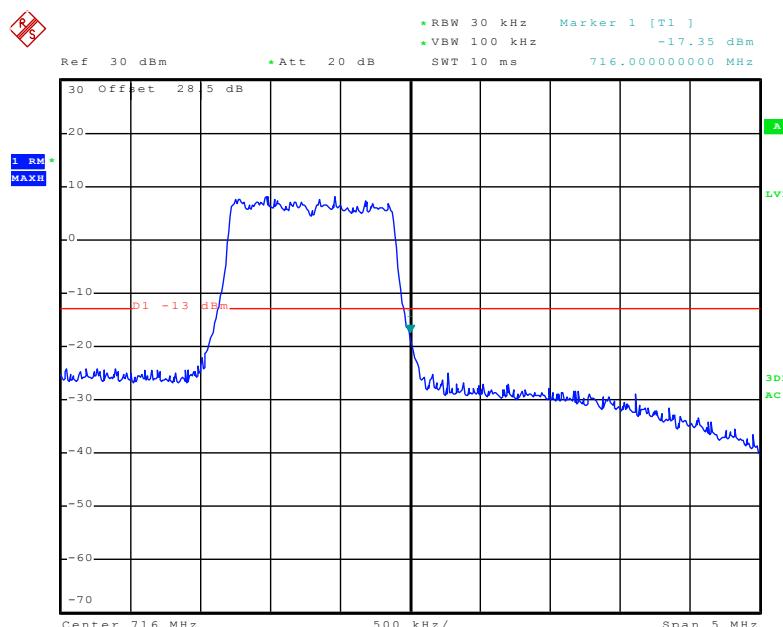
## Lower C Band

1.4 MHz



Date: 14.AUG.2014 21:15:00

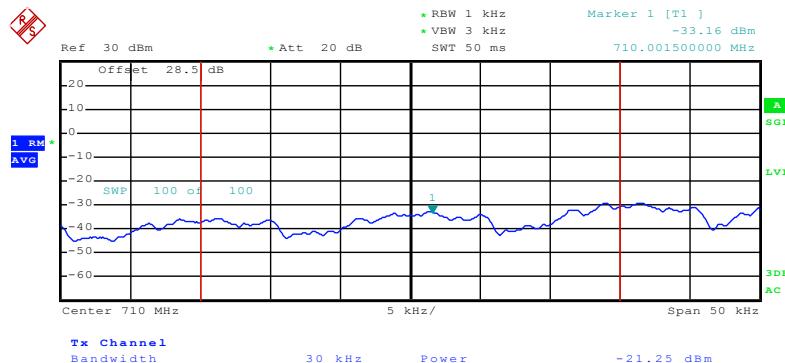
## Left edge of band



Date: 14.AUG.2014 21:15:41

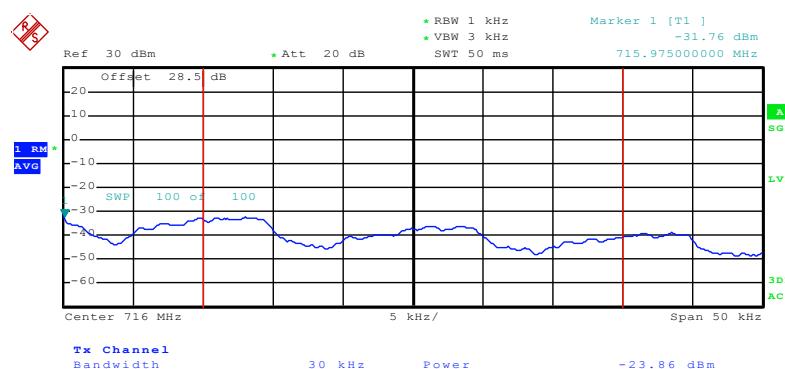
## Right edge of band

## 3 MHz



Date: 14.AUG.2014 21:24:43

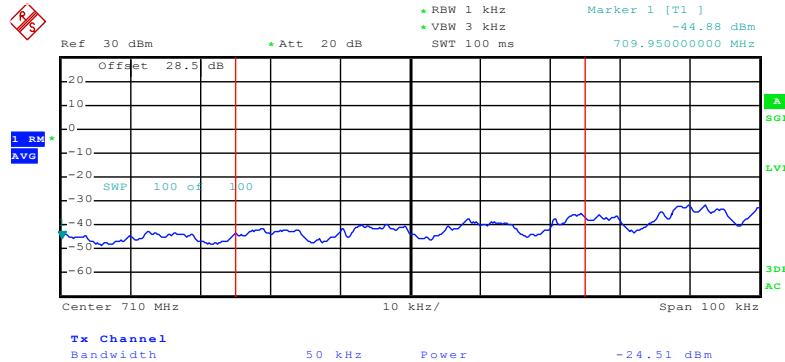
### Left edge of band



Date: 14.AUG.2014 21:25:31

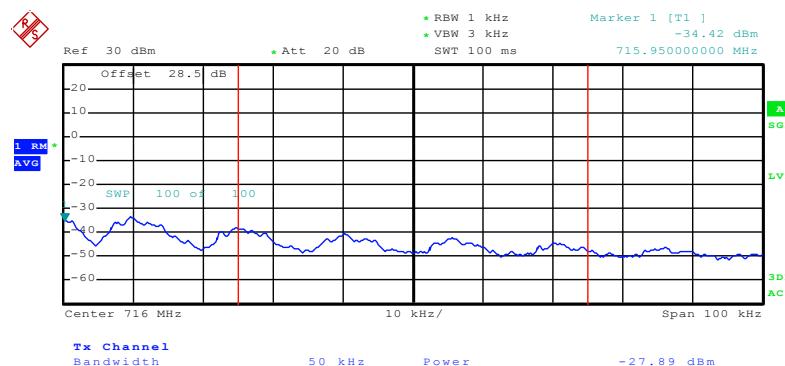
### Right edge of band

## 5 MHz



Date: 14.AUG.2014 21:43:34

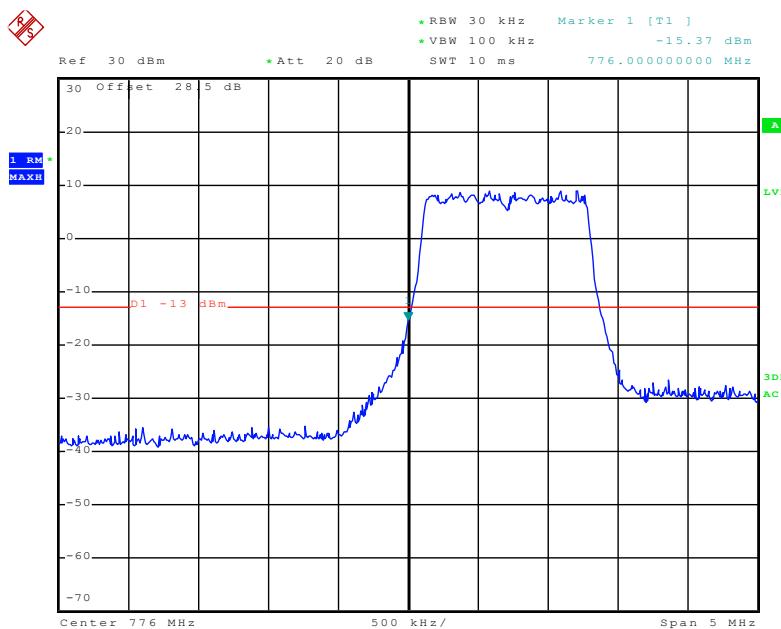
### Left edge of band



Date: 14.AUG.2014 21:44:40

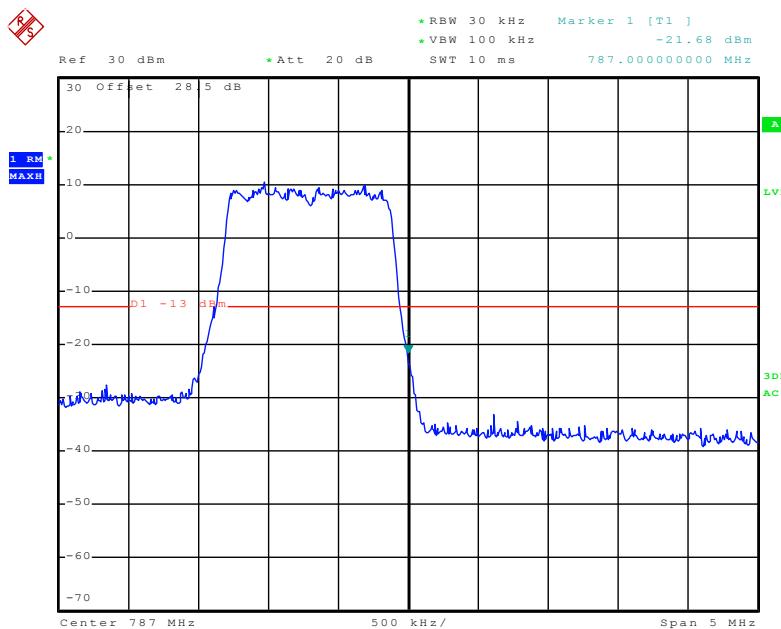
### Right edge of band

**Upper C Band  
1.4 MHz**



Date: 14.AUG.2014 21:16:44

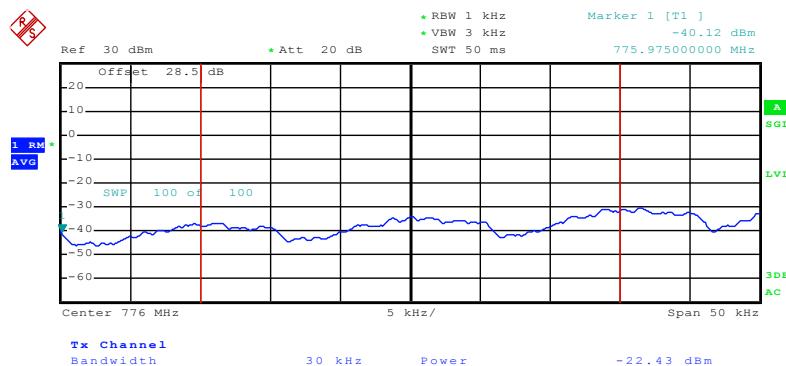
**Left edge of band**



Date: 14.AUG.2014 21:17:26

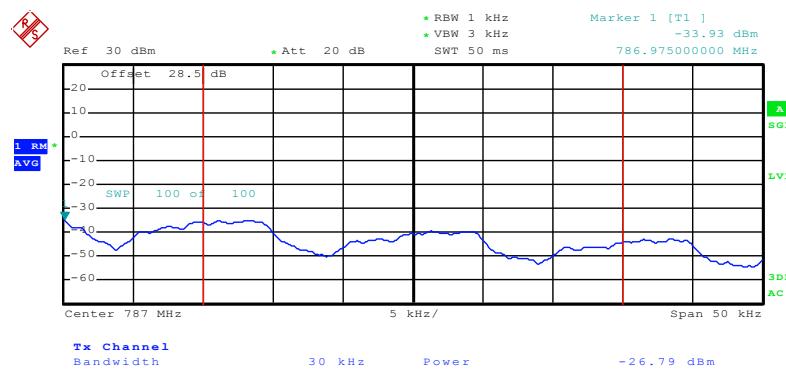
**Right edge of band**

## 3 MHz



Date: 14.AUG.2014 21:26:18

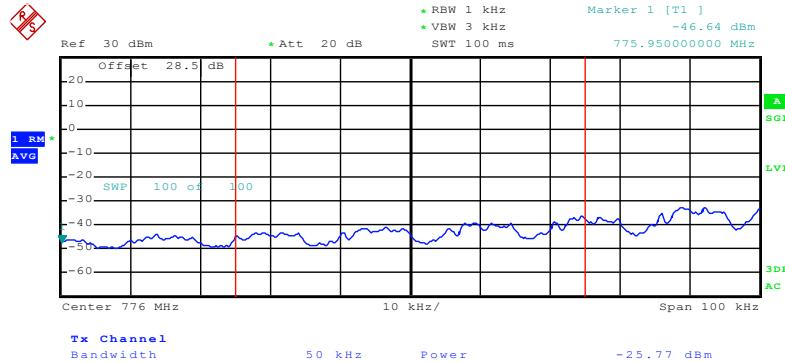
### Left edge of band



Date: 14.AUG.2014 21:27:46

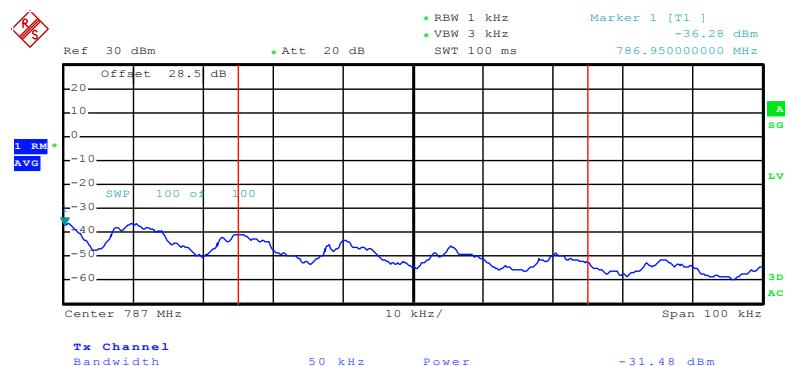
### Right edge of band

## 5 MHz



Date: 14.AUG.2014 21:45:25

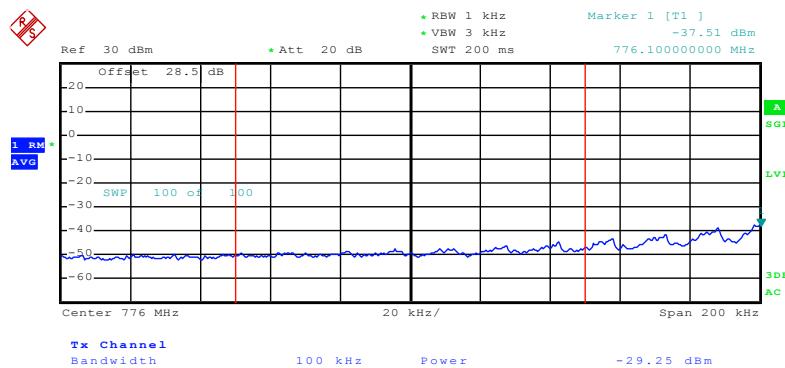
### Left edge of band



Date: 14.AUG.2014 21:46:21

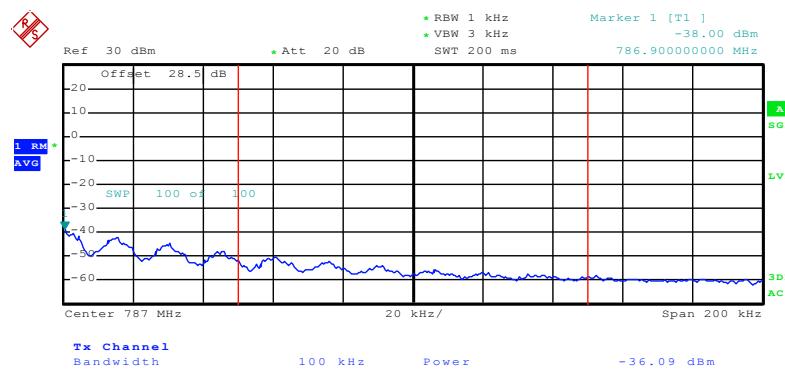
### Right edge of band

## 10 MHz



Date: 14.AUG.2014 21:49:54

### Left edge of band

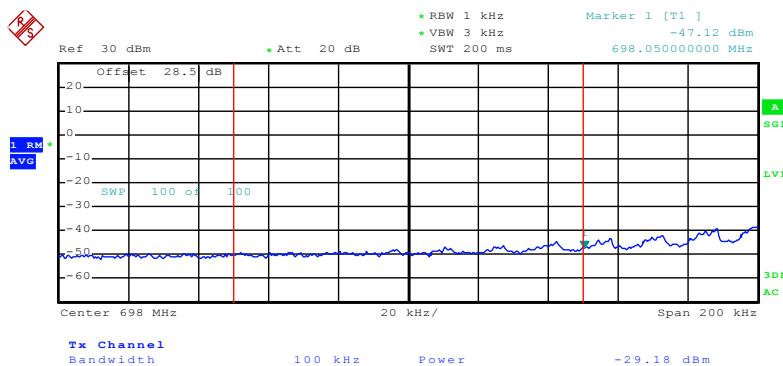


Date: 14.AUG.2014 21:53:40

### Right edge of band

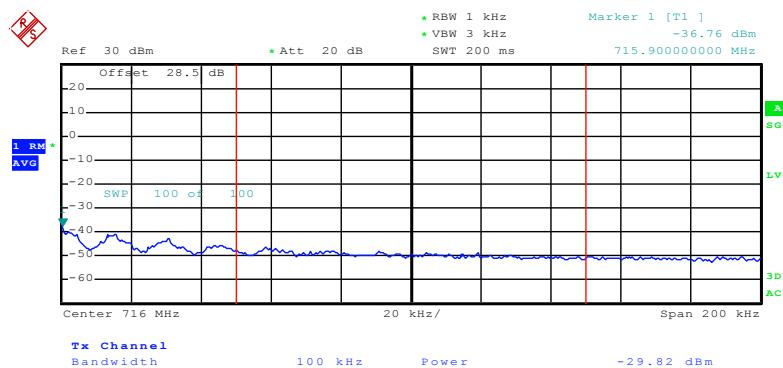
## Lower ABC Full Band

10 MHz



Date: 14.AUG.2014 21:48:04

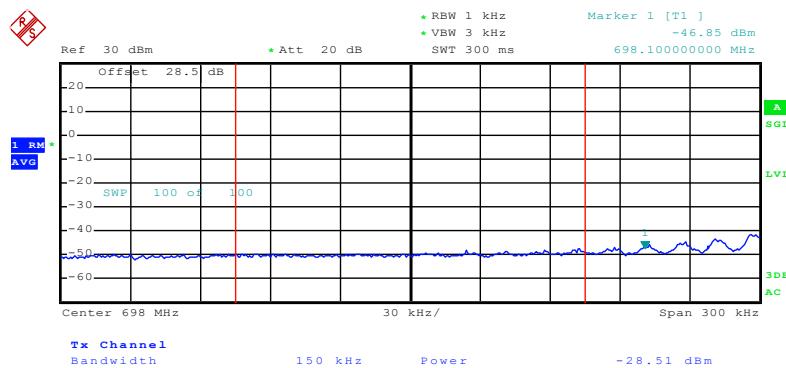
Left edge of band



Date: 14.AUG.2014 21:48:51

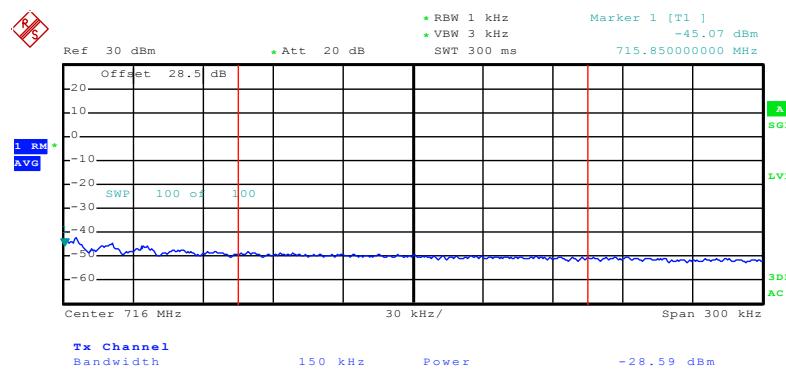
Right edge of band

## 15 MHz



Date: 14.AUG.2014 21:55:36

### Left edge of band



Date: 14.AUG.2014 21:56:48

### Right edge of band

## 11 Field strength of spurious radiation measurement

### 11.1 Standard Applicable

According to § 2.1053, §27.53.

### 11.2 Test Setup

Please refer the section 6.2 Configuration of Tested System.

### 11.3 Test Procedure

1. The EUT RF output port was connected to 50 ohm RF load.
2. The EUT input port was connected to signal generator and was setup to transmit maximum power.
3. The measurement antenna was placed at a distance of 3 meters from the EUT.
4. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from EUT.
5. The frequency range up to 5-th harmonic of each of the three fundamental frequencies (low, middle and high channels) was investigated. The worst case of emissions was reported.
6. For spurious emissions attenuation, the substitution method was used.
7. The EUT was substituted by a reference antenna (half-wave dipole - below 1 GHz, or Horn antenna - above 1 GHz), connected to a signal generator.  
$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}$$
$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}$$
8. The signal generator output level was adjusted to obtain the same reading as from EUT. The EIRP at the spurious emissions frequency was calculated as follows:
9. The antenna substitution method is used to determine the equivalent radiated power at spurious frequencies. The spurious emissions are measured at a distance of 3 meters. The EUT is then replaced with a reference substitution antenna with a known gain referenced to a dipole. This antenna is fed with a signal at the spurious frequency. The level of the signal is adjusted to repeat the previously measured level. The resulting eirp is the signal level fed to the reference antenna corrected for gain referenced to an isotropic dipole
10. Radiated spurs (enclosure) - Use of CW signal is acceptable rather than all modulations.
11. The maximum RFI field strength was determined during the measurement by rotating the turntable ( $\pm 180$  degrees) and varying the height of the receive antenna ( $h = 1 \dots 4$  m) as like defined in ANSI C63.4. A measurement receiver has been used with a RBW 120 kHz up to 1 GHz and 1 MHz above 1 GHz. Steps with during pre measurement was half the RBW.
12. Both, the Fully Anechoic Chamber (FAC) and the Semi Anechoic Chamber (SAC) fulfil the requirements of ANSI C63.4 and CISPR 16-1-4 with regards to NSA and SVSWR.

## 11.4 Test Result

Test mode:	LTE 700 - Uplink		Test channel:	Low
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
78.69	Vertical	-52.13	-13	Pass
154.82	V	-45.95		
1397.40	V	-64.21		
2096.10	V	-61.37		
327.89	Horizontal	-51.88		
701.76	H	-48.46		
1397.40	H	-63.82		
2096.10	H	-60.63		
Test mode:	LTE 700 - Uplink		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
78.69	Vertical	-52.17	-13	Pass
154.82	V	-45.97		
1402.00	V	-64.09		
2103.00	V	-61.59		
327.89	Horizontal	-51.96		
701.76	H	-48.81		
1402.00	H	-63.94		
2103.00	H	-60.49		
Test mode:	LTE 700 - Uplink		Test channel:	High
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
78.69	Vertical	-52.23	-13	Pass
154.82	V	-45.66		
1406.60	V	-64.74		
2109.90	V	-61.39		
327.89	Horizontal	-51.44		
701.76	H	-48.56		
1406.60	H	-63.67		
2109.90	H	-60.39		

Test mode:	LTE 700 - Downlink		Test channel:	Low
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
157.56	Vertical	-50.56	-13	Pass
731.92	V	-38.27		
1457.40	V	-62.53		
2186.10	V	-61.38		
327.89	Horizontal	-52.64		
731.92	H	-33.29		
1457.40	H	-63.37		
2186.10	H	-61.55		
Test mode:	LTE 700 - Downlink		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
157.56	Vertical	-50.80	-13	Pass
731.92	V	-38.61		
1462.00	V	-62.62		
2193.00	V	-61.20		
327.89	Horizontal	-52.42		
731.92	H	-33.91		
1462.00	H	-63.68		
2193.00	H	-61.72		
Test mode:	LTE 700 - Downlink		Test channel:	High
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
157.56	Vertical	-50.54	-13	Pass
731.92	V	-38.32		
1466.60	V	-62.45		
2199.90	V	-61.76		
327.89	Horizontal	-52.58		
731.92	H	-33.37		
1466.60	H	-63.54		
2199.90	H	-61.69		

Remark: Pretest all bandwidths and sub-bands, only the worst case (Lower A Band) were shown in the report. The test data blew 30 MHz is too lower than the limit, so not show in this report.