



# Appendix A: Transmitter Output Power

## 1 Result Table

### 1.1 Channel Power, Total

NOTE: If applicable, the EIRP [W] =  $10^{((\text{Channel Power [dBm]} + \text{Antenna Gain [dBi]} + 10 \log_{10}(\text{N})) / 10 - 3)}$ , and the ERP [W] = EIRP [W] / 1.64. N is the number of transmitter output port.

EUT Conf.	Channel Power per Port [dBm]	Channel Power per Port [W]	Verdict
1M4_B	45.59	36.14	--
1M4_M	45.92	39.00	--
1M4_T	45.58	36.06	--
3M_B	45.55	35.81	--
3M_M	45.83	38.20	--
3M_T	45.69	36.99	--
5M_B	45.82	38.11	--
5M_T	45.79	37.85	--
10M_M	45.72	37.24	--

### 1.2 Power Spectral Density

NOTE: If applicable, the EIRP [W/MHz] =  $10^{((\text{Power Spectral Density [dBm/MHz]} + \text{Antenna Gain [dBi]} + 10 \log_{10}(\text{N})) / 10 - 3)}$ , and the ERP [W/MHz] = EIRP [W/MHz] / 1.64. N is the number of transmitter output port.

The maximum Gain is calculated as follow:

The Maximum Gain (dBi) =  $60 \text{ (dBm/MHz)} - (45.06 \text{ (dBm/MHz)} + 3 \text{ (dB)}) - 10 \lg_{10}(2) + 2.15 \text{ (dB)} = 11.09 \text{ (dBi)}$

EUT Conf.	Power Spectral Density [dBm/MHz]	Power Spectral Density [W/MHz]	Verdict
1M4_B	44.15	29.72	--
1M4_M	45.06	32.06	--
1M4_T	44.73	29.72	--

### 1.3 Peak-to-Average Ratio

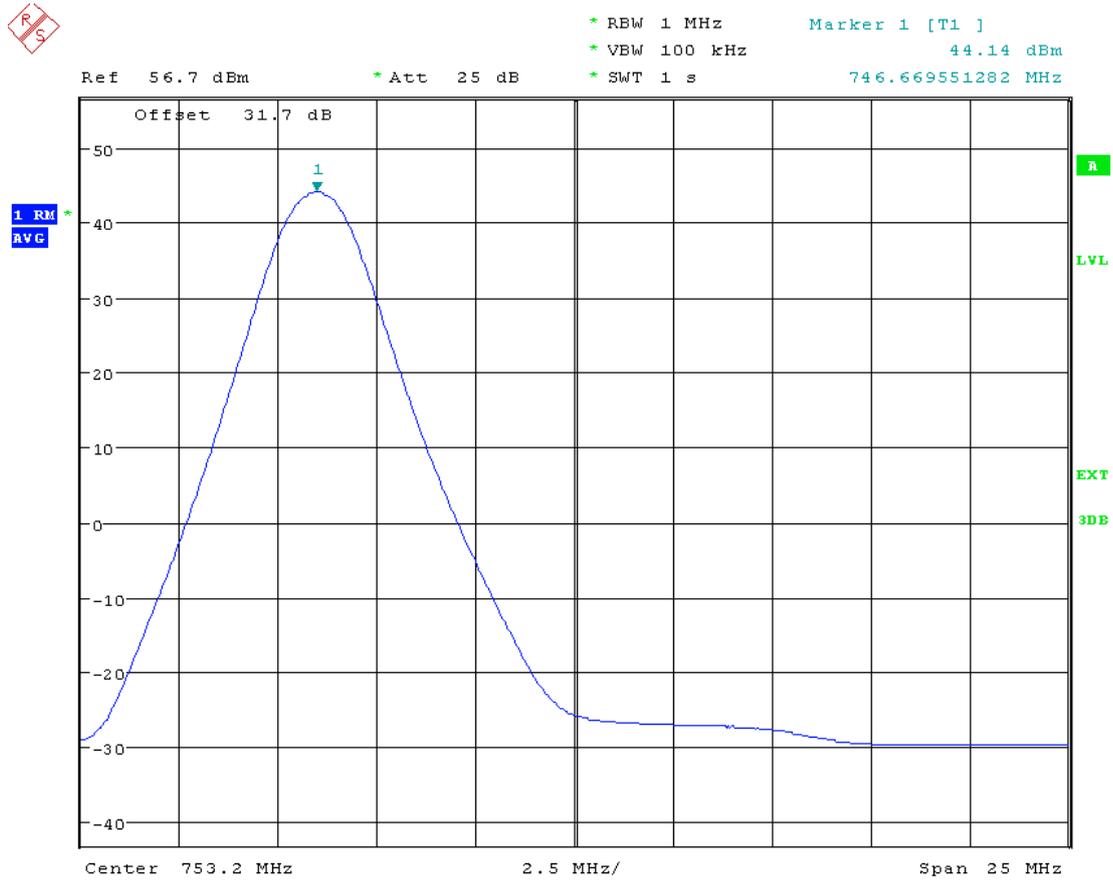
EUT Conf.	Peak-to-Average Ratio [dB]	Verdict
1M4_B	6.06	Pass
1M4_M	6.06	Pass
1M4_T	6.06	Pass

## 2 Test Plot

NOTE: Only the test plots for the measurements of Spectral Density and Peak-to-Average Ratio are supplied.

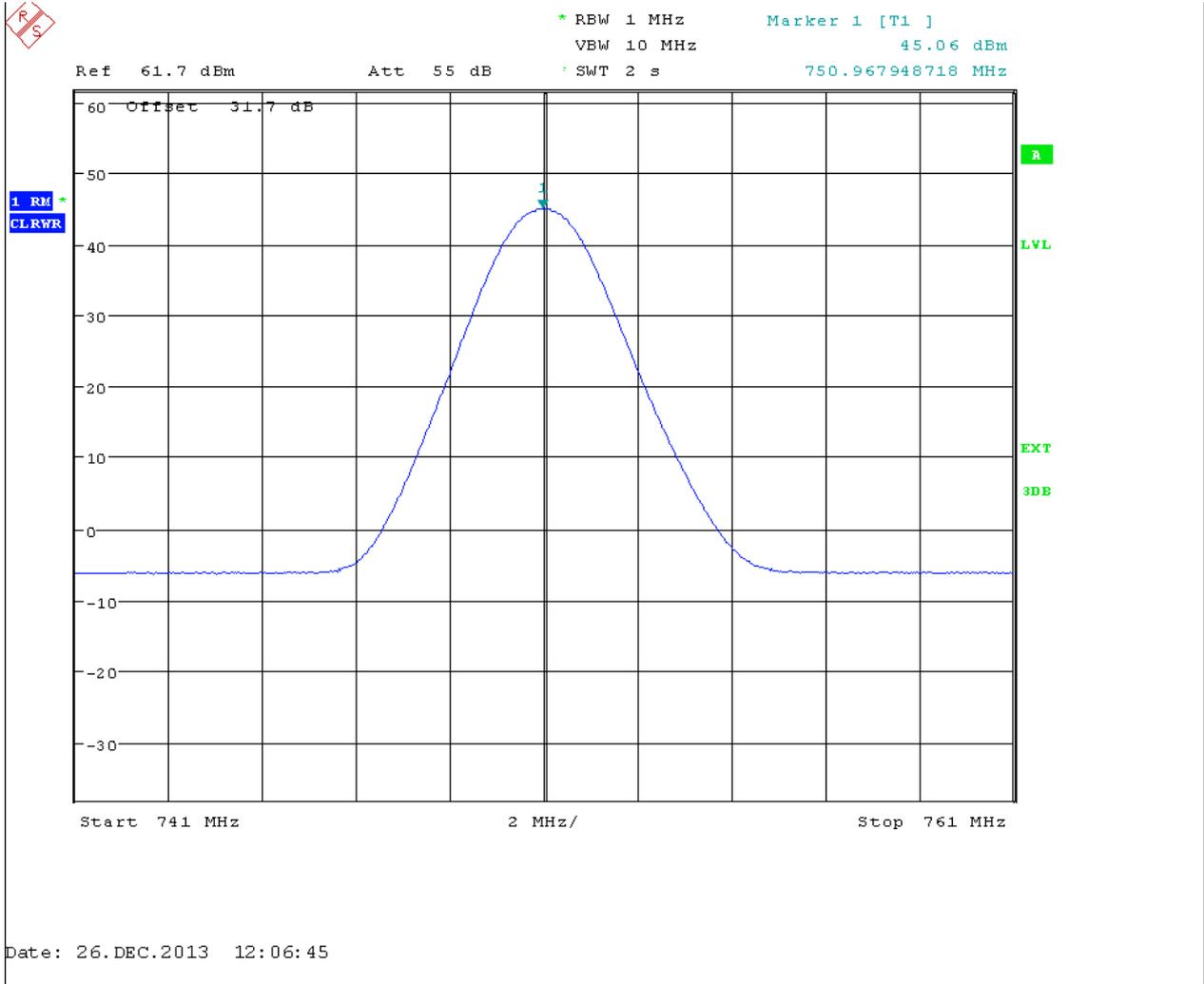
### 2.1 Power Spectral Density

#### 2.1.1 1M4\_B

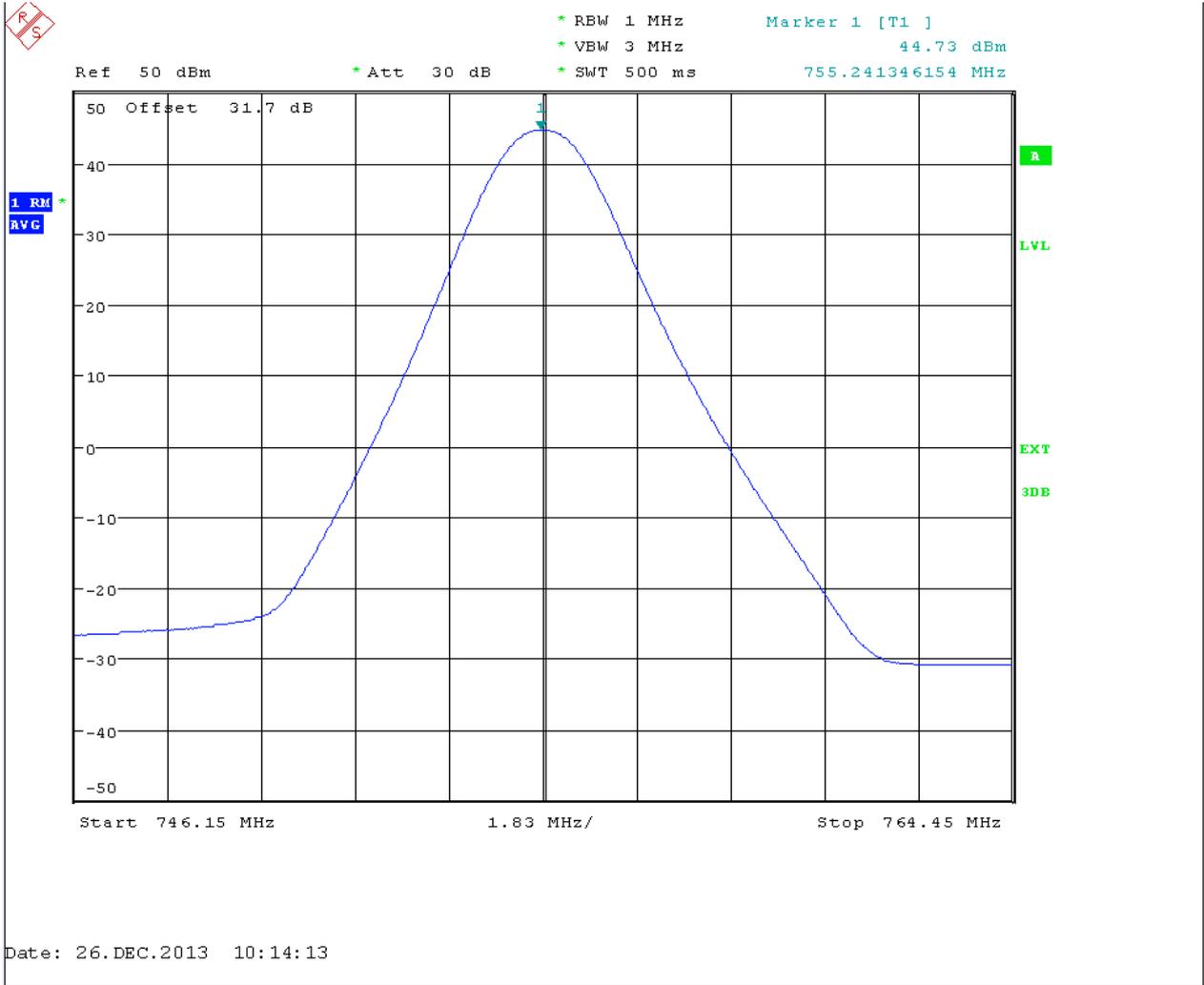


Date: 26.DEC.2013 12:01:37

### 2.1.2 1M4\_M

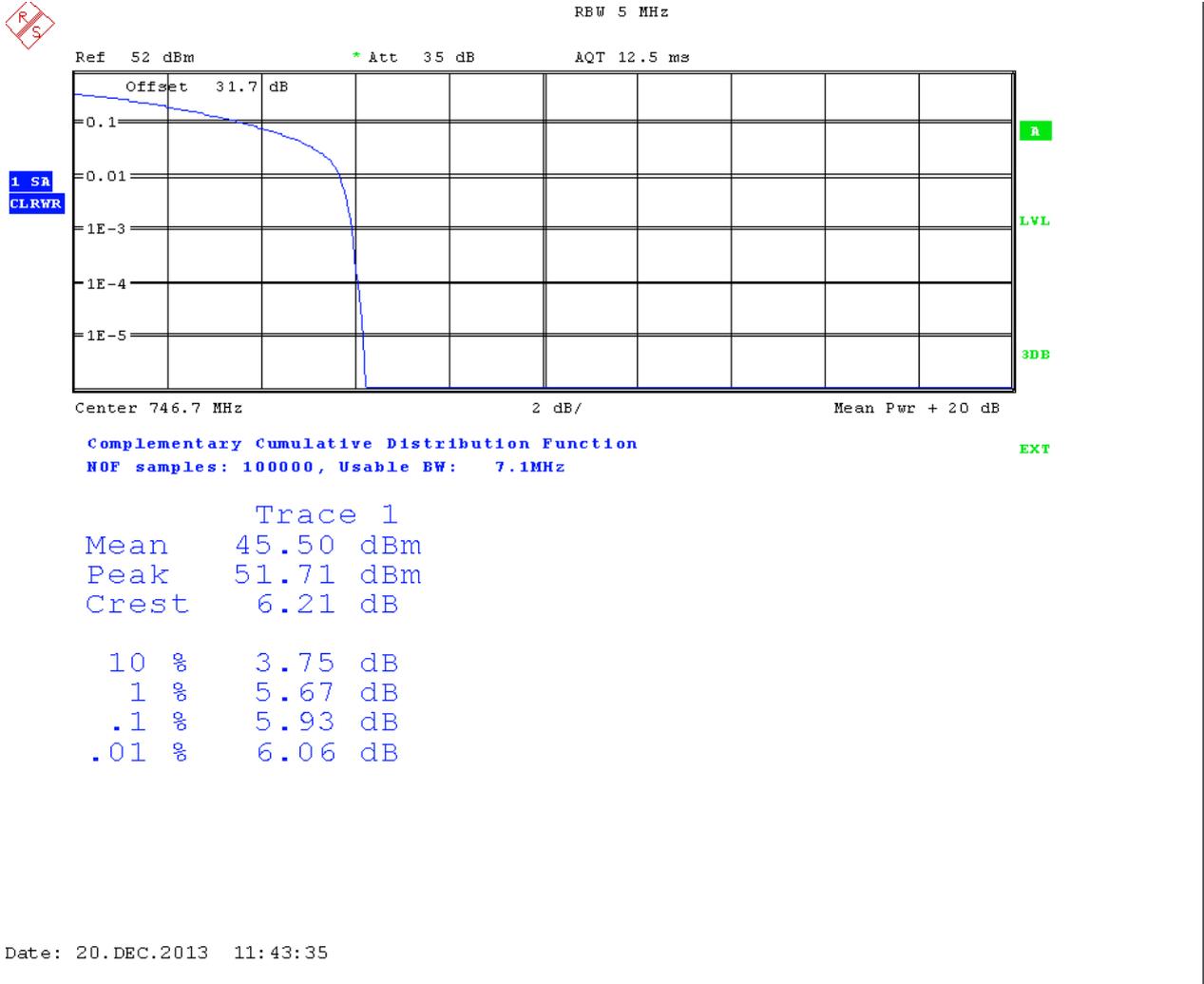


### 2.1.3 1M4\_T

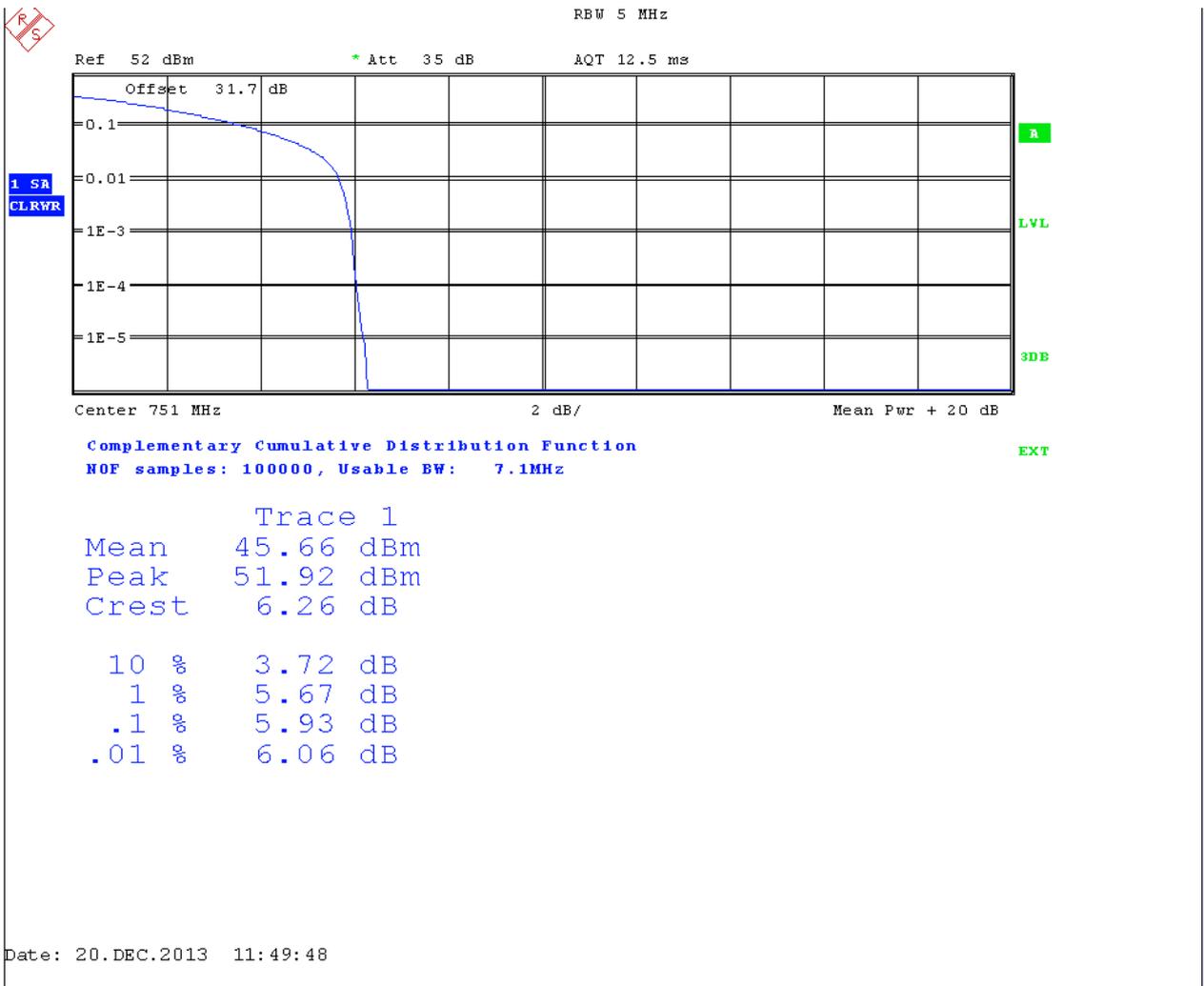


## 2.2 Peak-to-Average Ratio

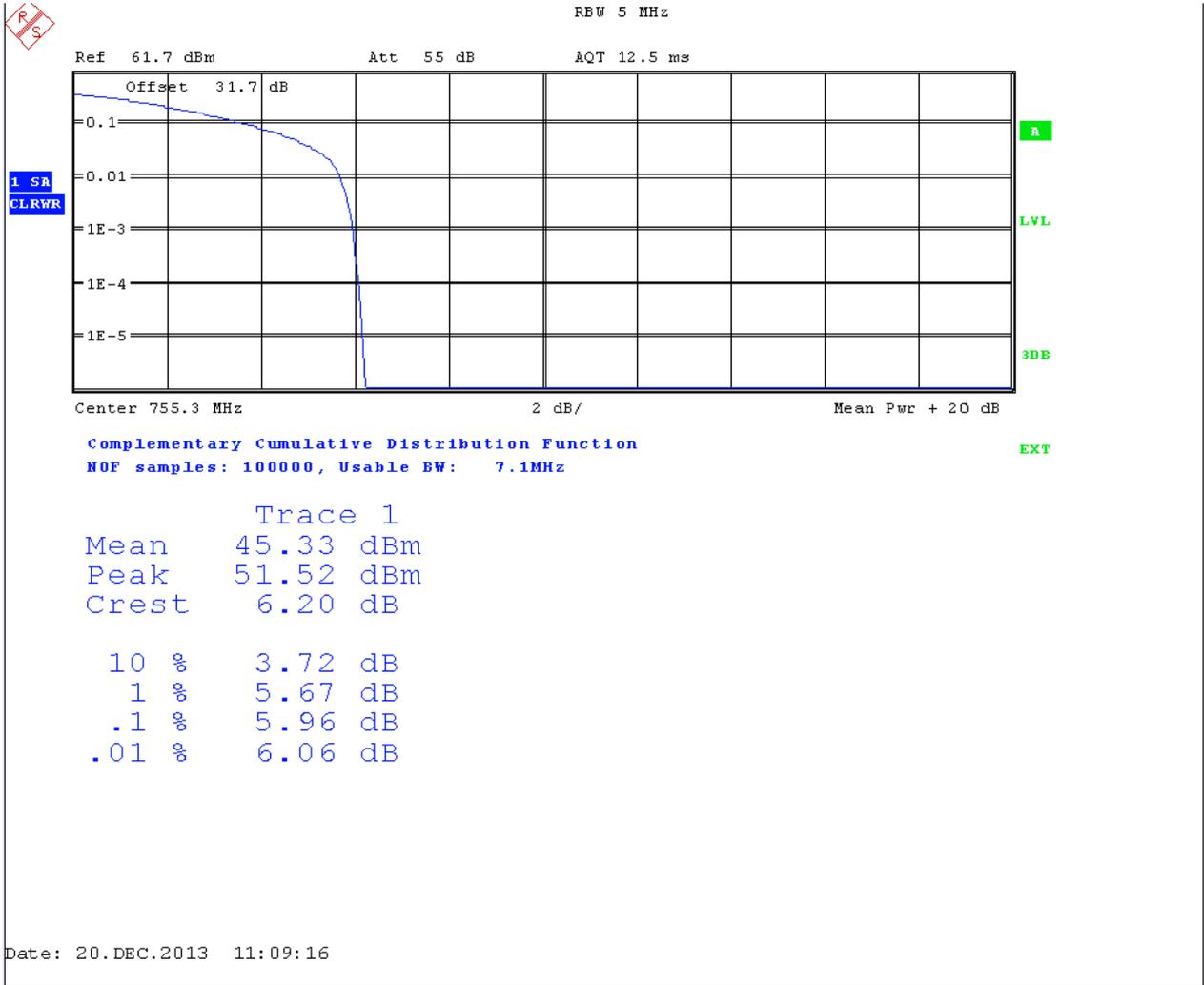
### 2.2.1 1M4\_B



2.2.2 1M4\_M



### 2.2.3 1M4\_T





# Appendix B: Bandwidth



## 1 Result Table

### 1.1 Occupied Bandwidth

EUT Conf.	Occupied Bandwidth [MHz]	Verdict
1M4_B	1.166	---
1M4_M	1.166	---
1M4_T	1.162	---
3M_B	2.730	---
3M_M	2.730	---
3M_T	2.740	---
5M_B	4.503	---
5M_T	4.503	---
10M_M	8.974	---

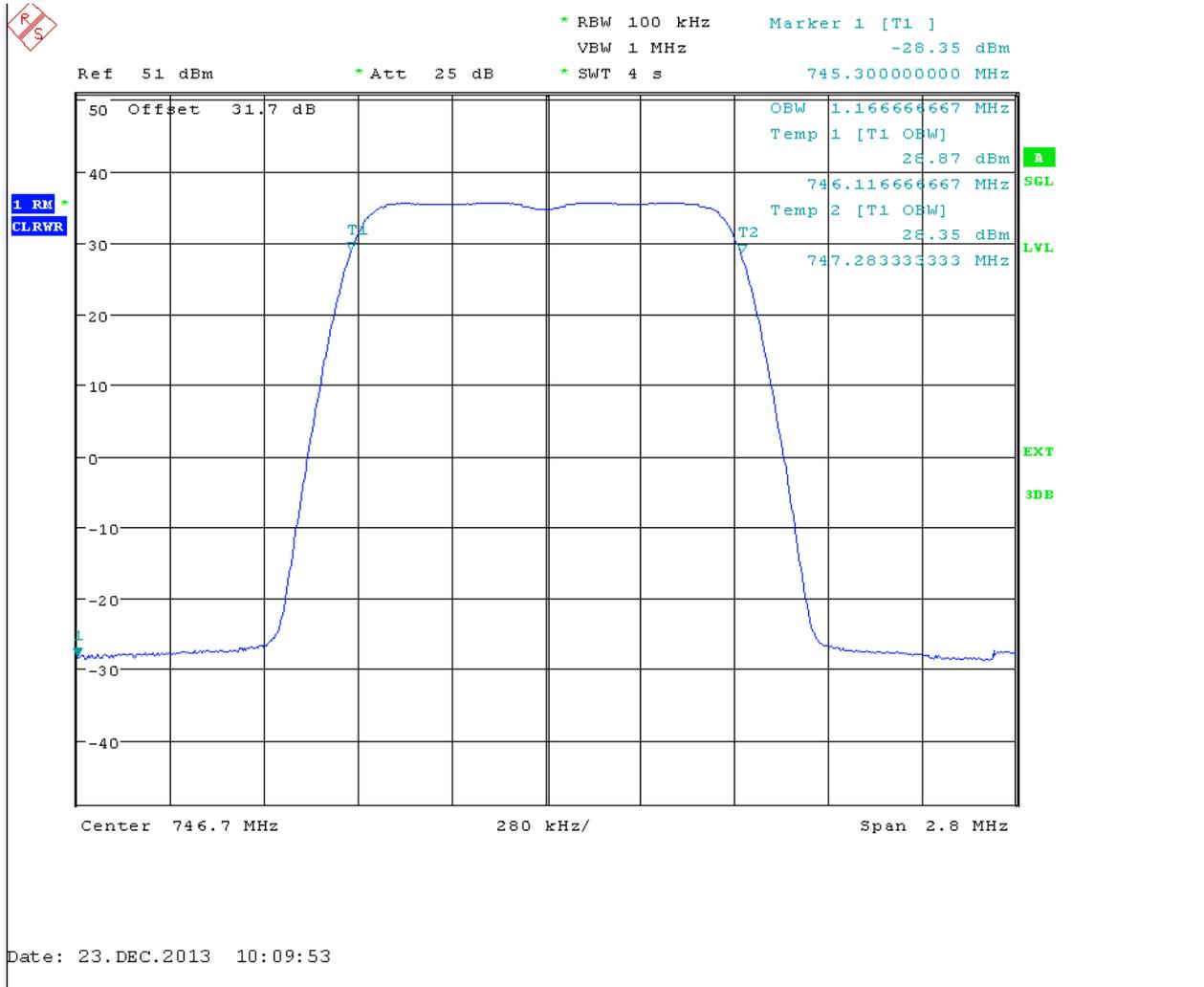
### 1.2 Emission Bandwidth

EUT Conf.	Emission Bandwidth, -26 dBc [MHz]	Emission Bandwidth, -26 dBc [MHz]	Verdict
1M4_B	1.363	---	---
1M4_M	1.363	---	---
1M4_T	1.358	---	---
3M_B	2.980	---	---
3M_M	2.980	---	---
3M_T	2.980	---	---
5M_B	4.816	---	---
5M_T	4.820	---	---
10M_M	9.370	---	---

## 2 Test Plot

### 2.1 Occupied Bandwidth

#### 2.1.1 1M4\_B





### 2.1.3 1M4\_T



### 2.1.4 3M\_B





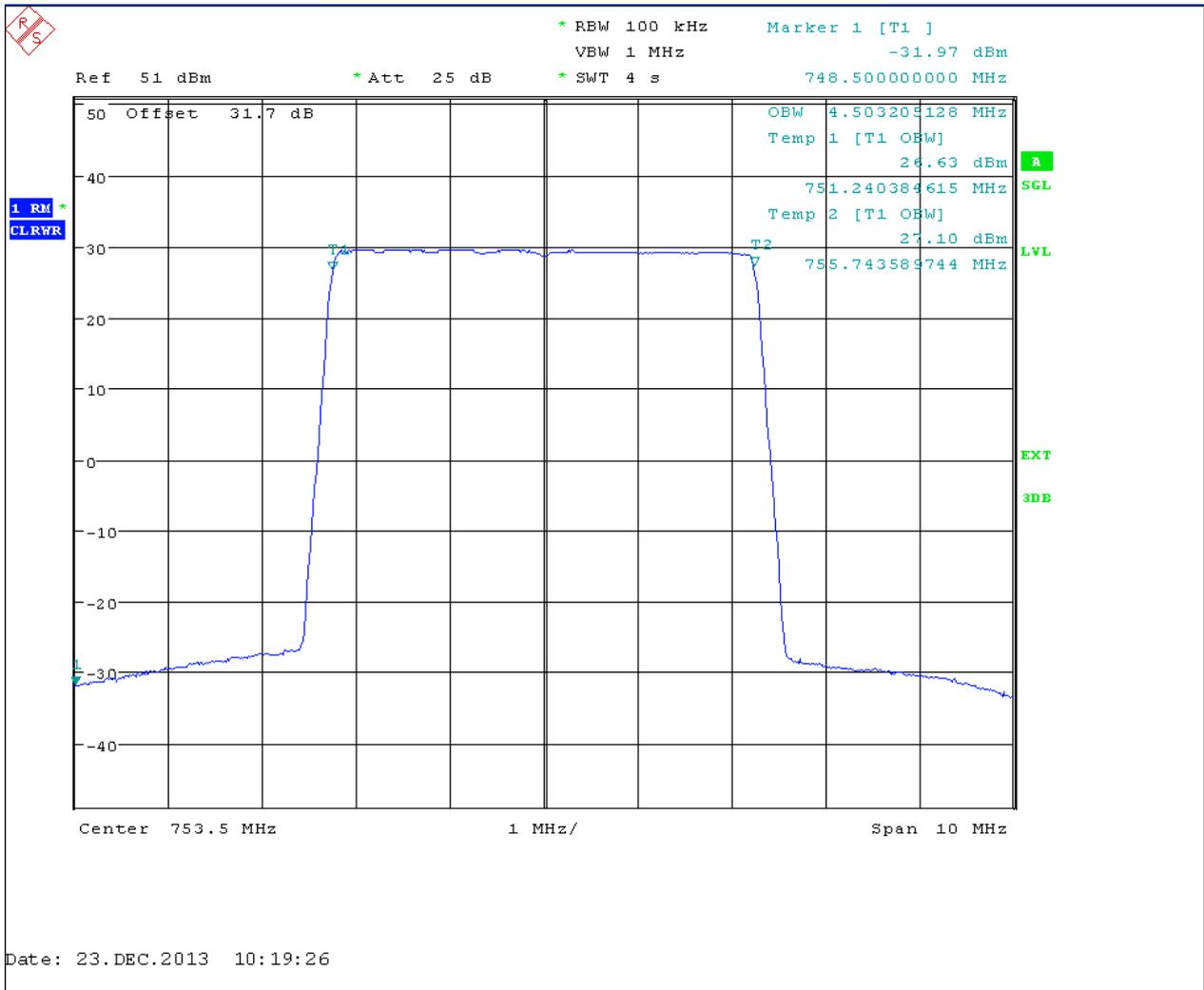
2.1.5 3M\_M







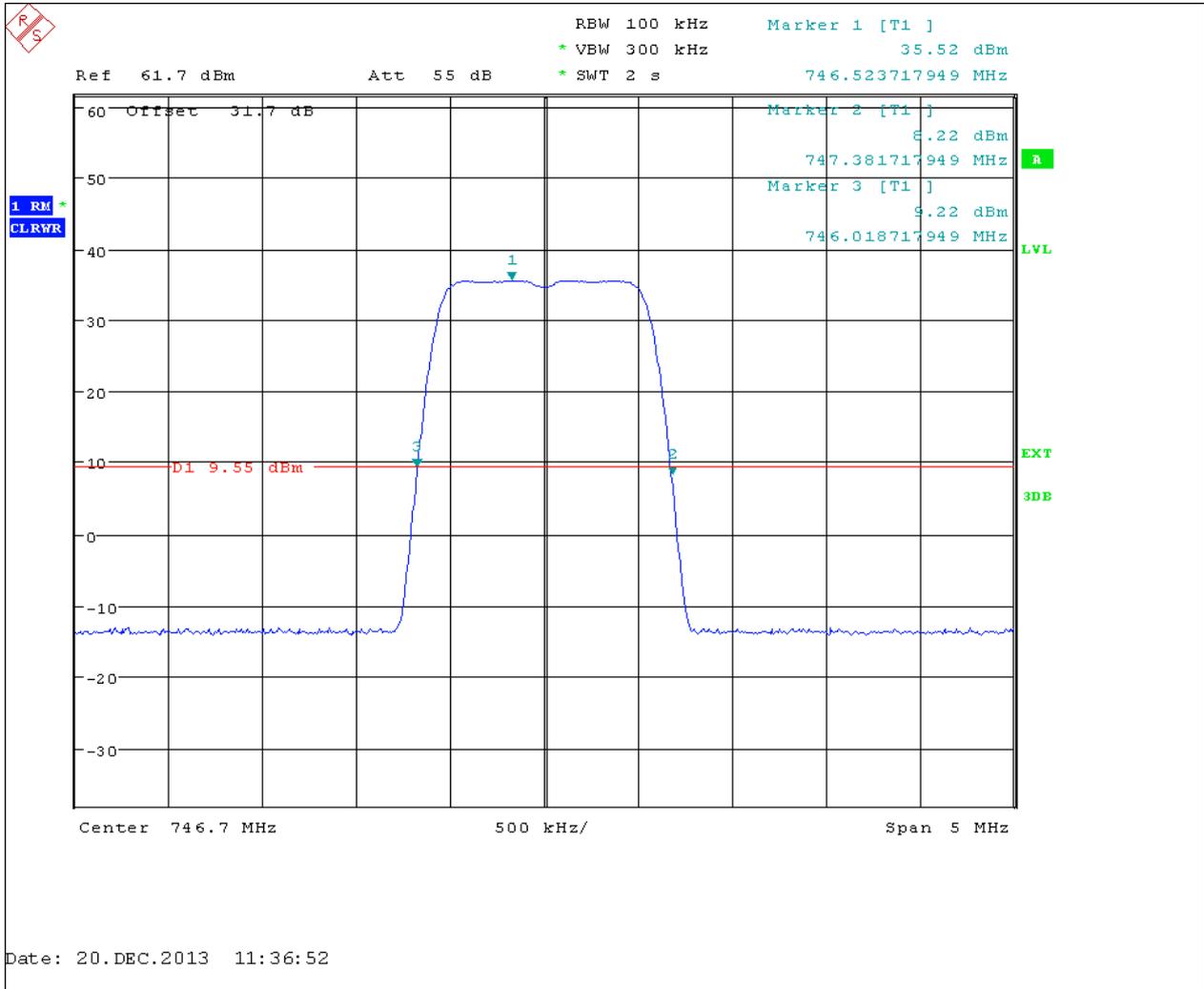
2.1.8 5M\_T



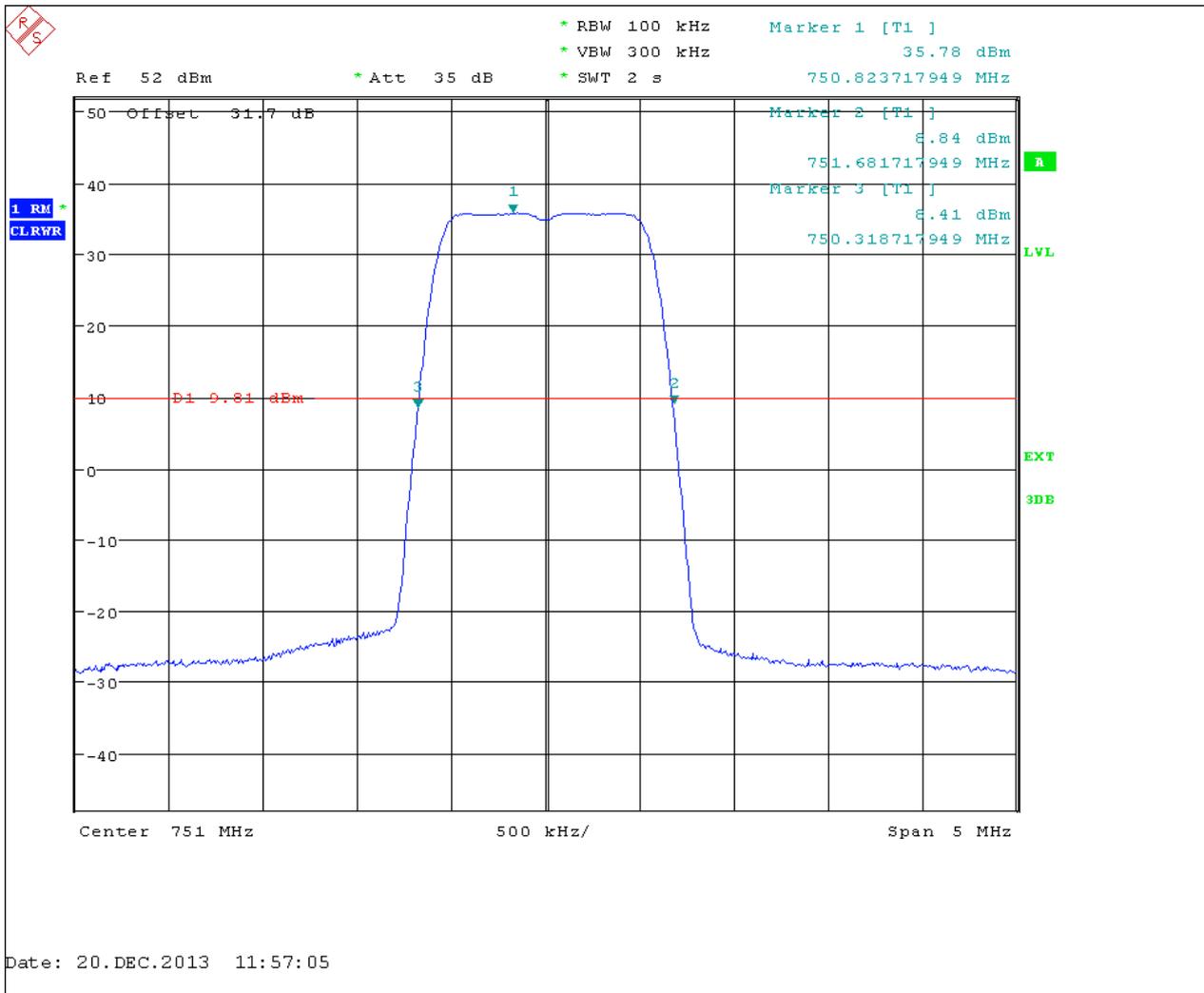


## 2.2 Emission Bandwidth

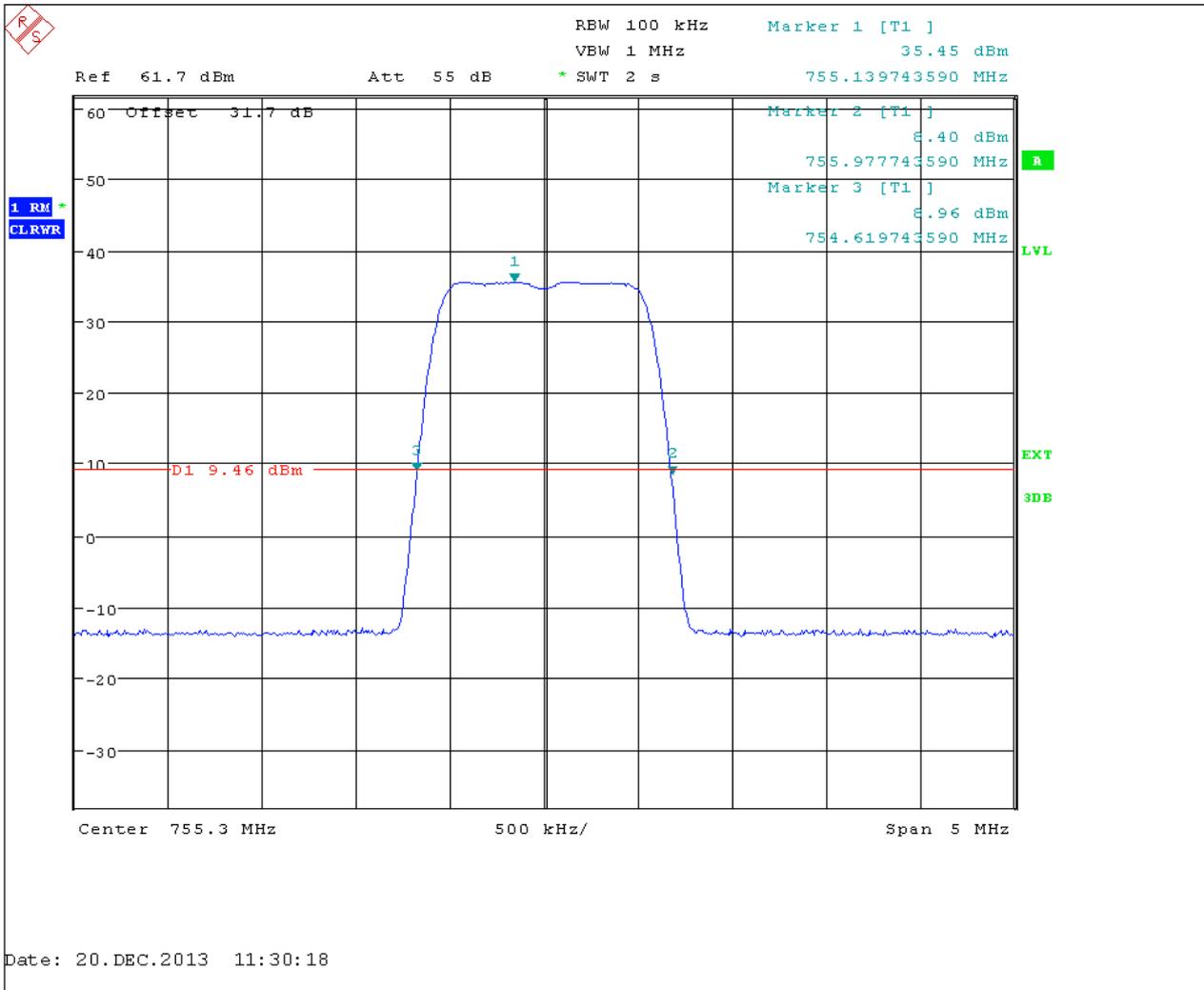
### 2.2.1 1M4\_B



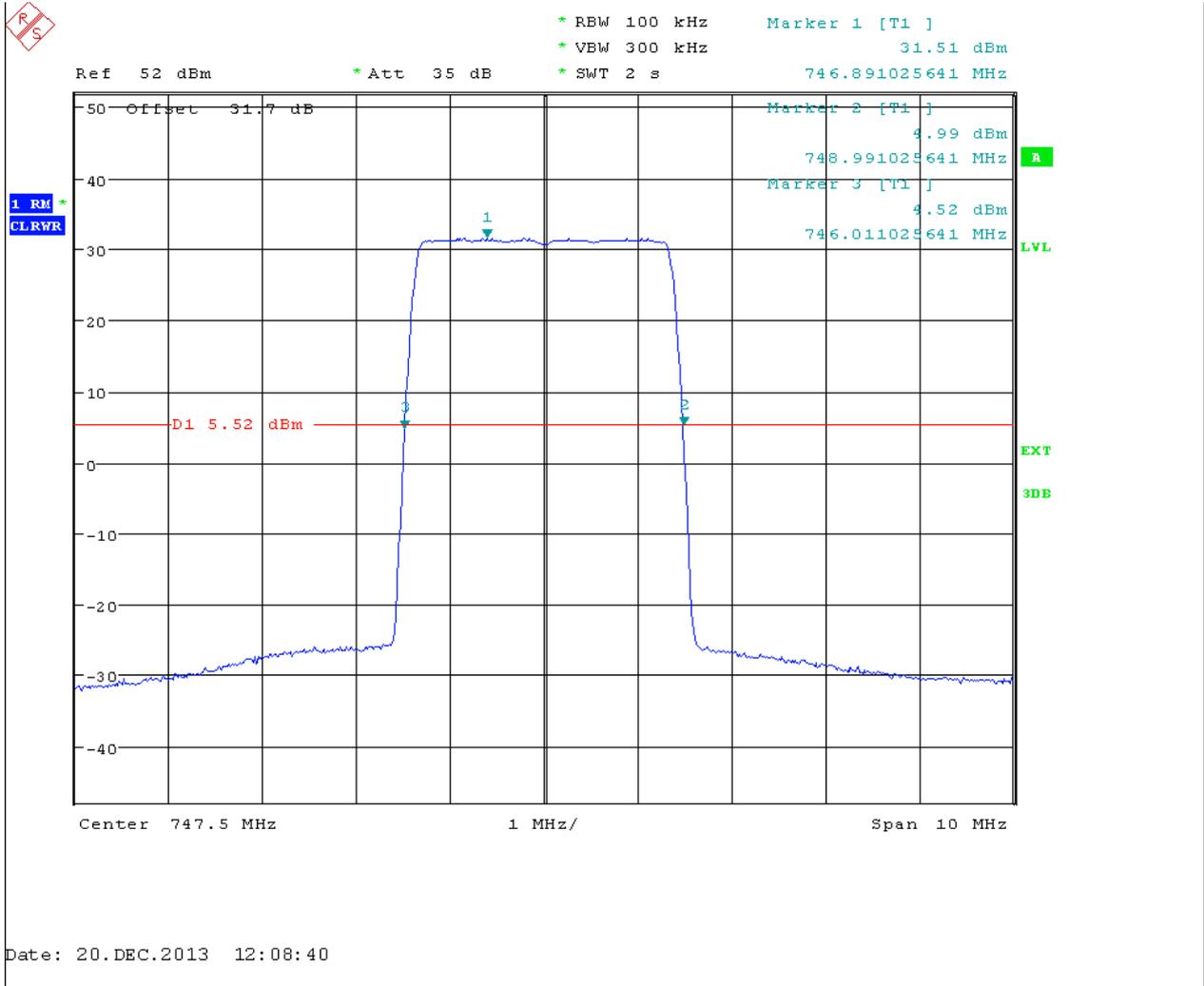
2.2.2 1M4\_M



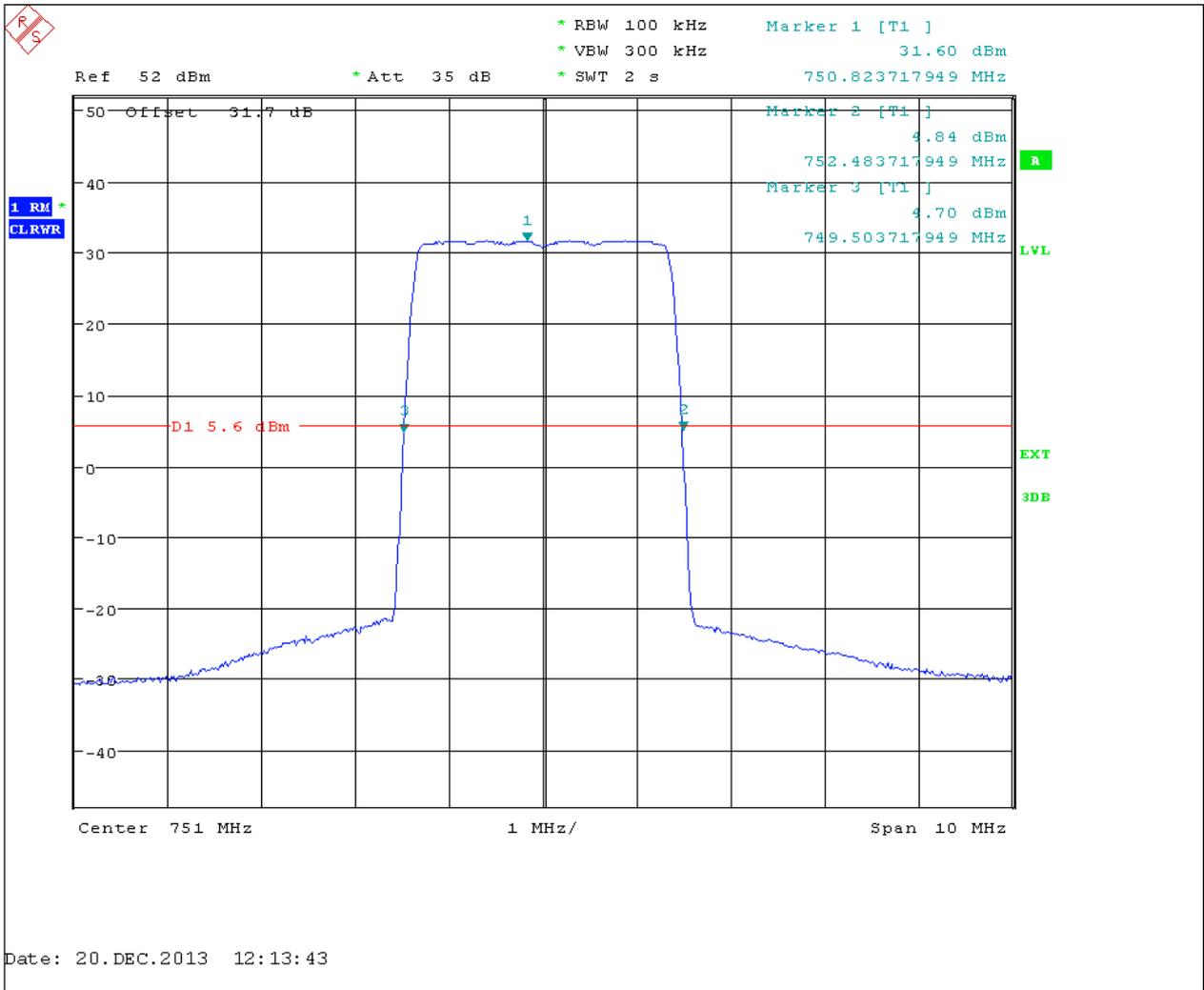
### 2.2.3 1M4\_T



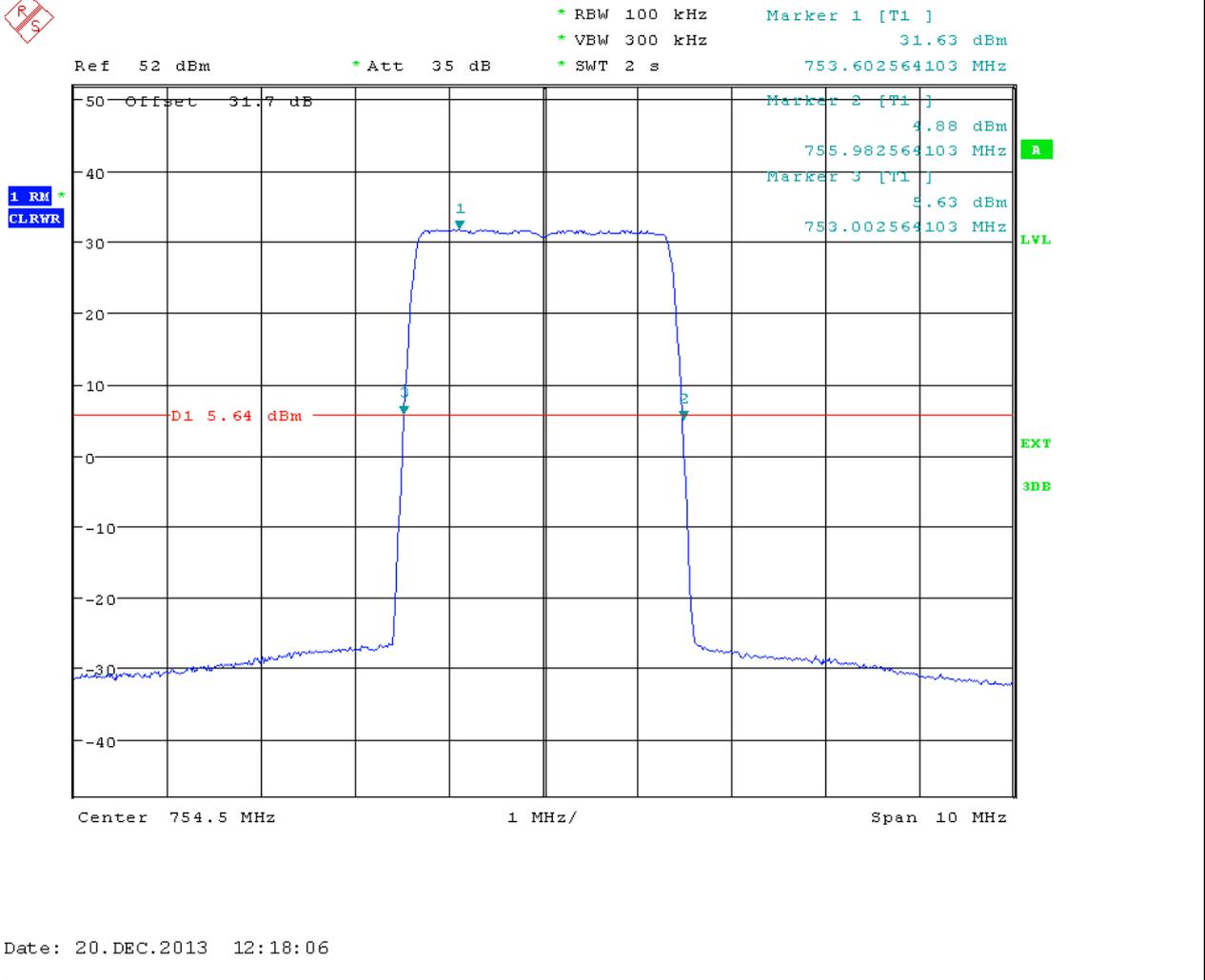
### 2.2.4 3M\_B



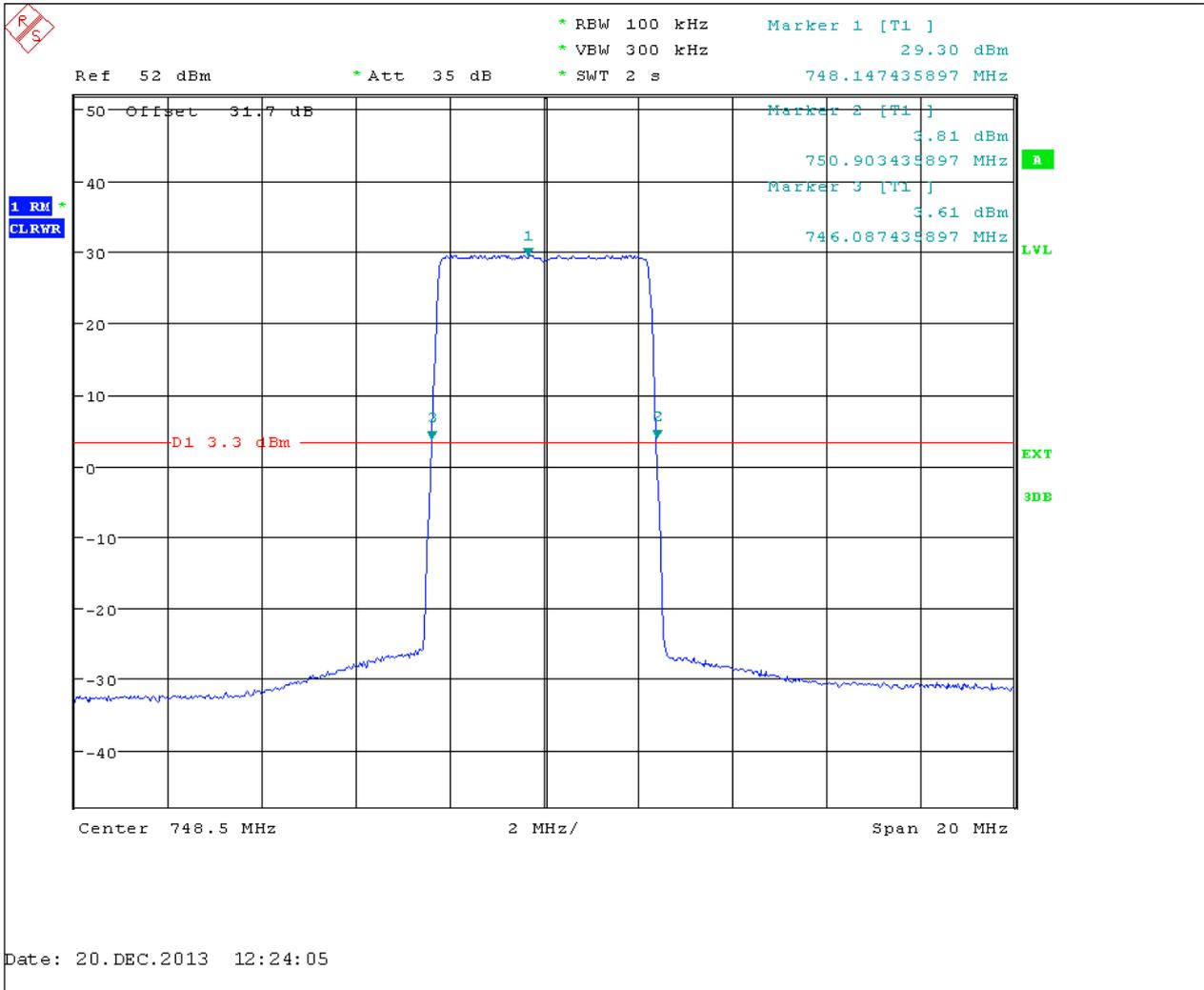
### 2.2.5 3M\_M



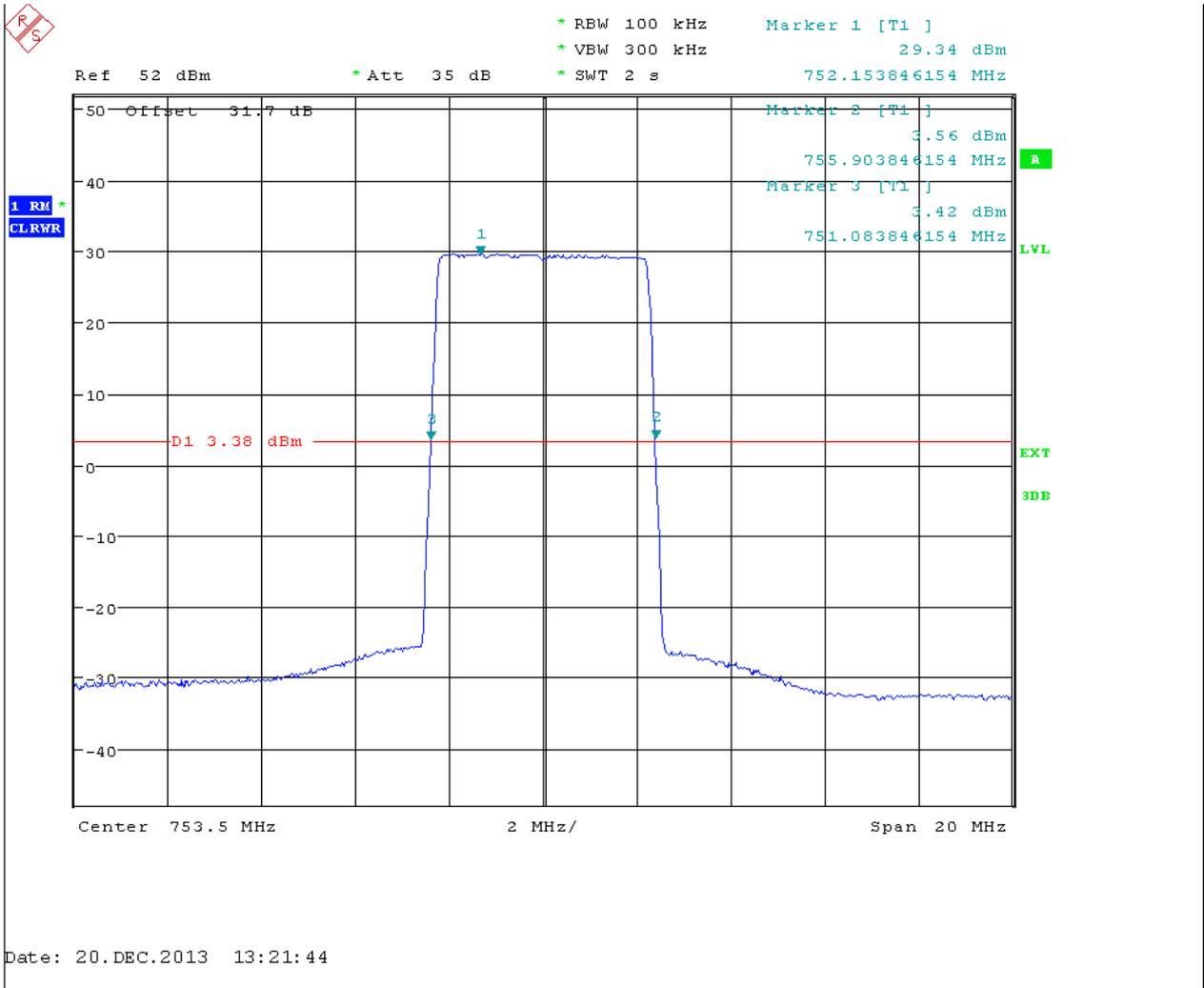
### 2.2.6 3M\_T



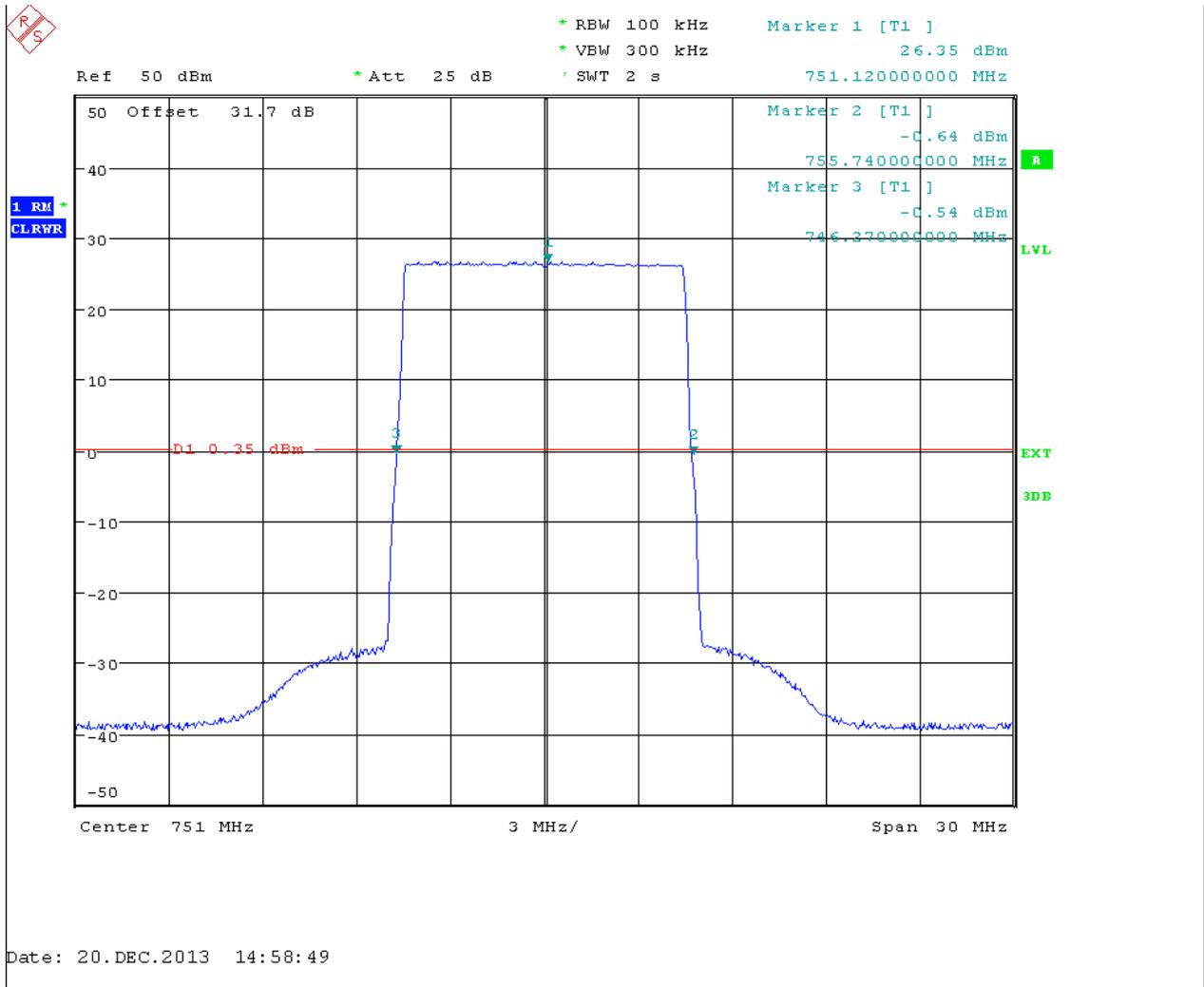
### 2.2.7 5M\_B



### 2.2.8 5M\_T



### 2.2.9 10M\_M





# Appendix C: Band Edges Compliance



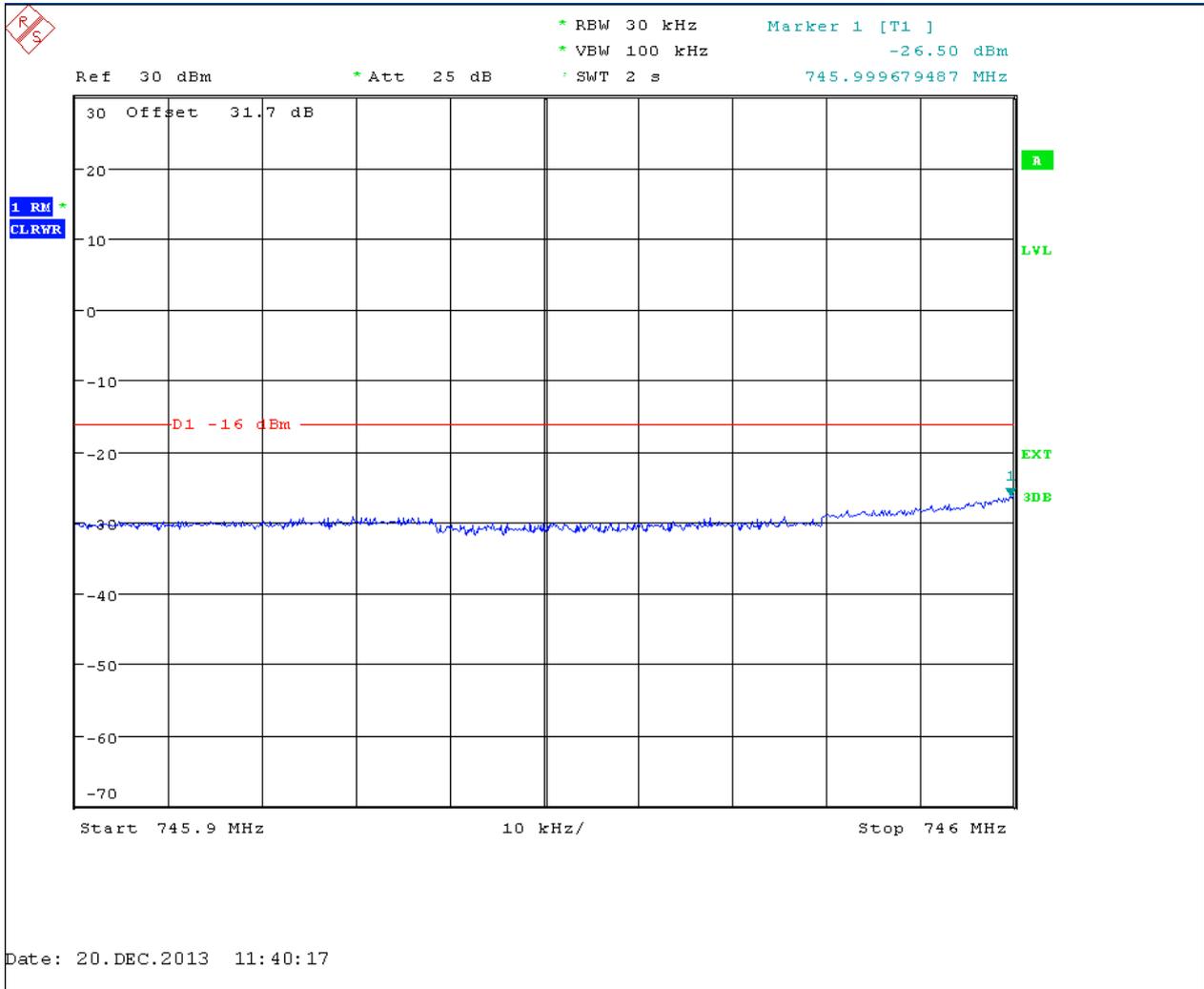
## 1 Result Table

NOTE: The offset of measurement filter -3dB point may be considered when identifying the maximum emission for e.g. the CDMA, WCDMA, WiMAX, LTE systems.

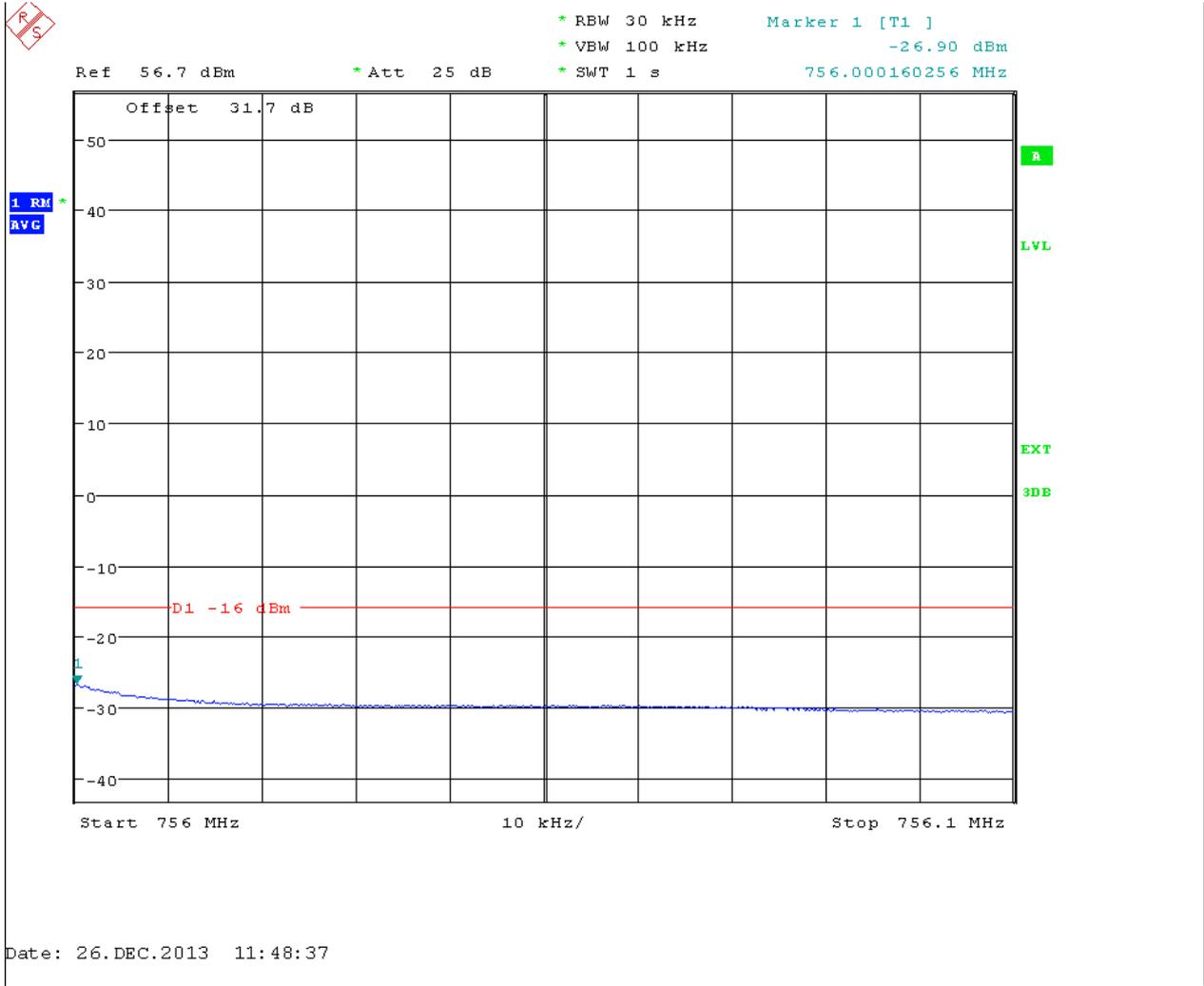
EUT Conf.	Maximum Emission [dBm]	Verdict
1M4_B	<-16	Pass
1M4_T	<-16	Pass
10M_M	<-16	Pass

## 2 Test Plot

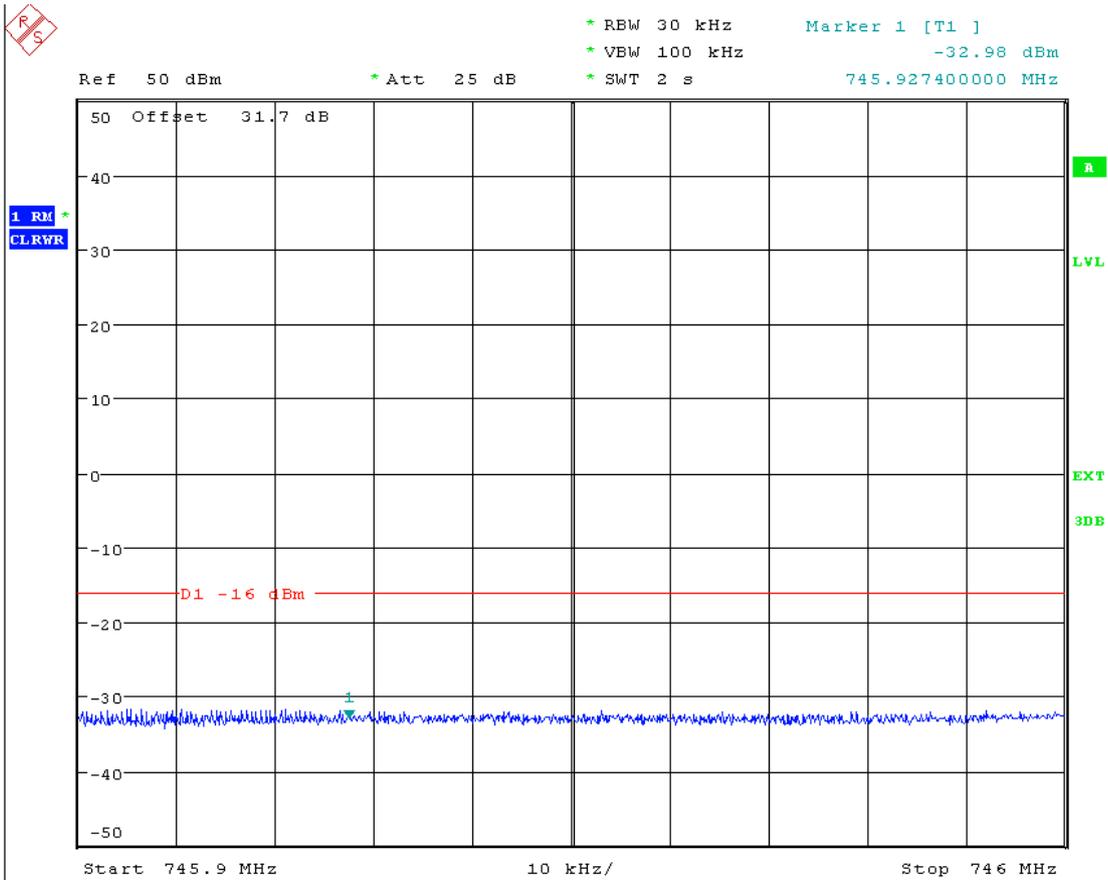
### 2.1 1M4\_B



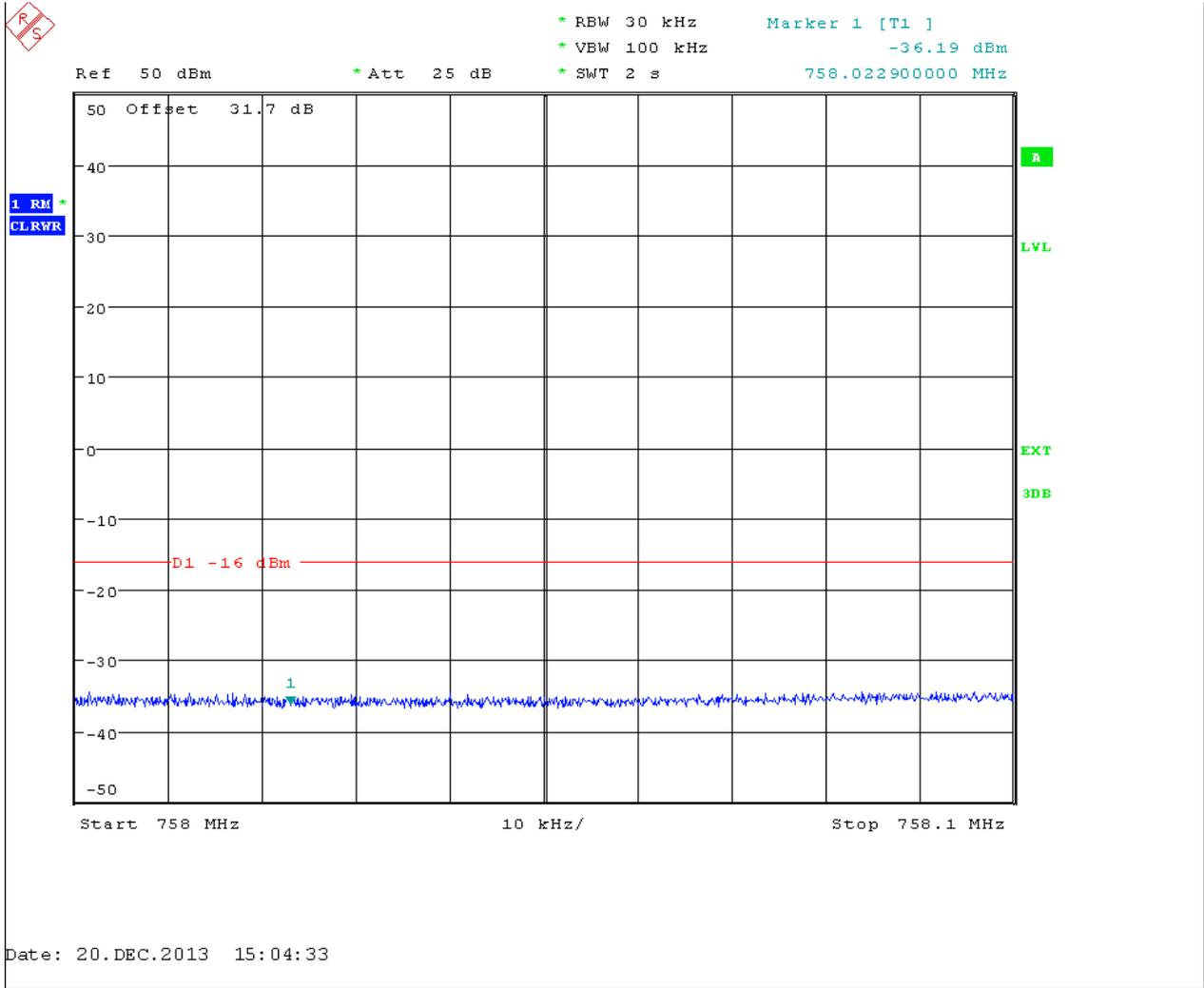


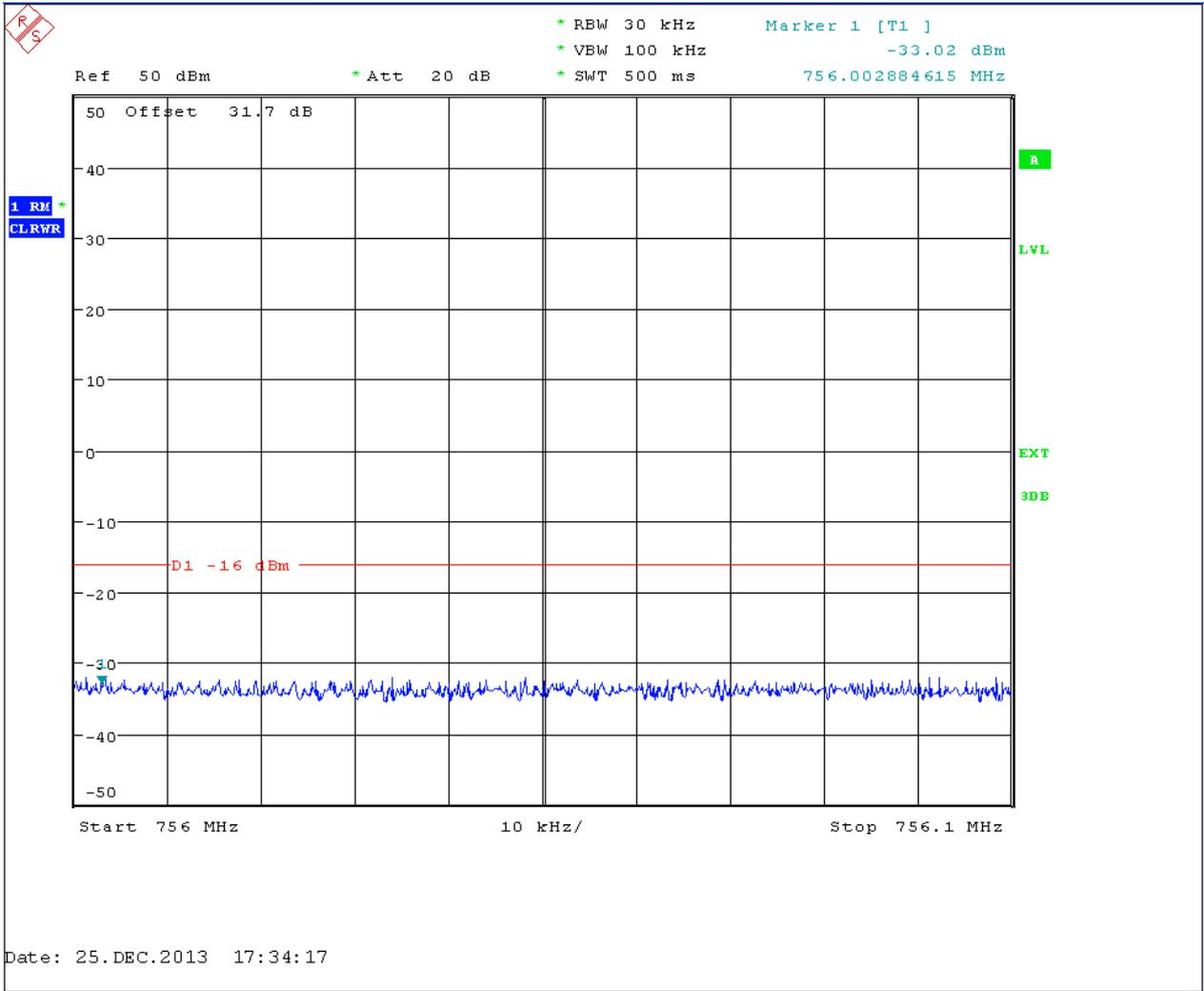


### 2.3 10M\_M



Date: 20.DEC.2013 15:03:09







# Appendix D: Spurious Emission at Antenna Terminals

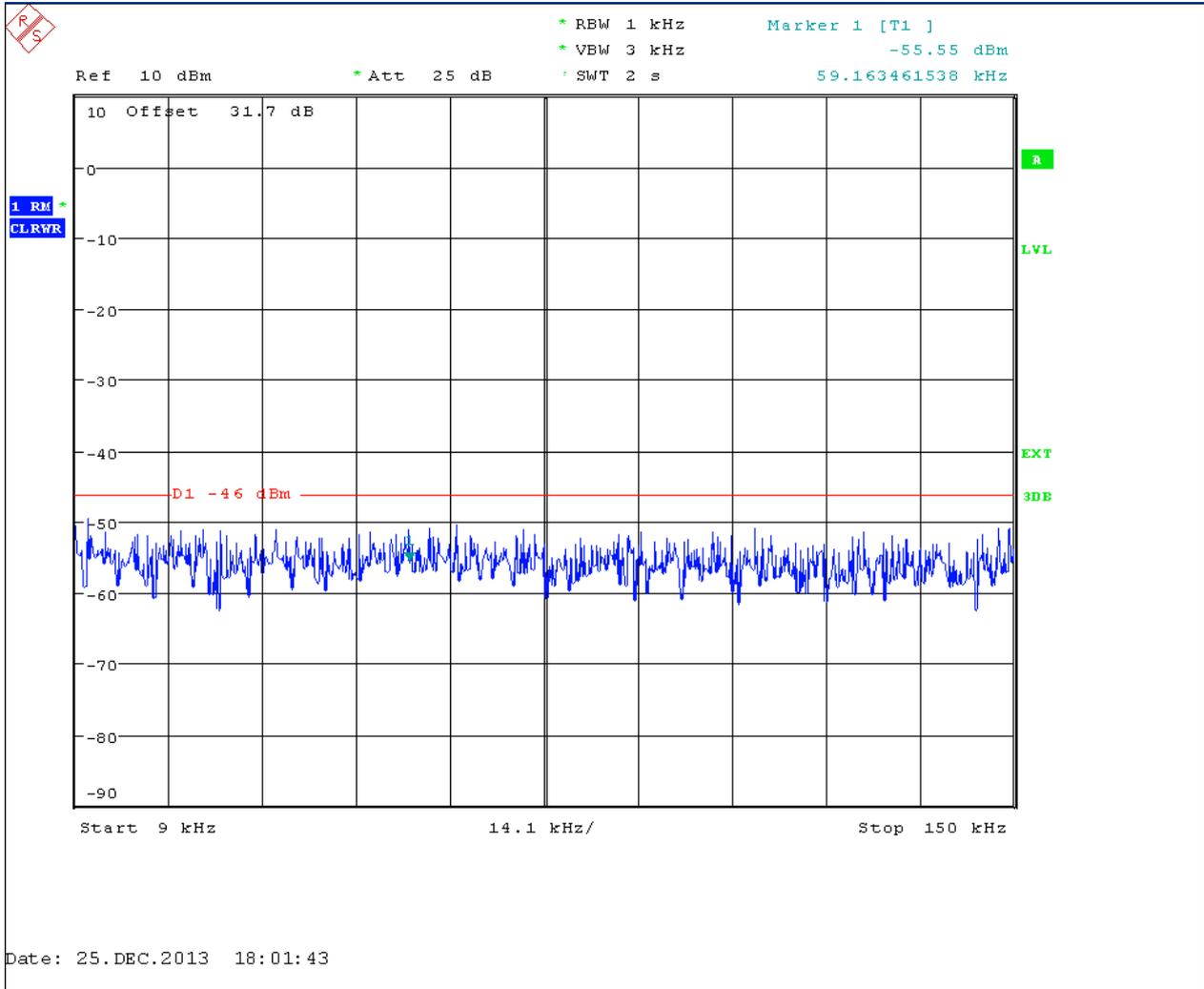


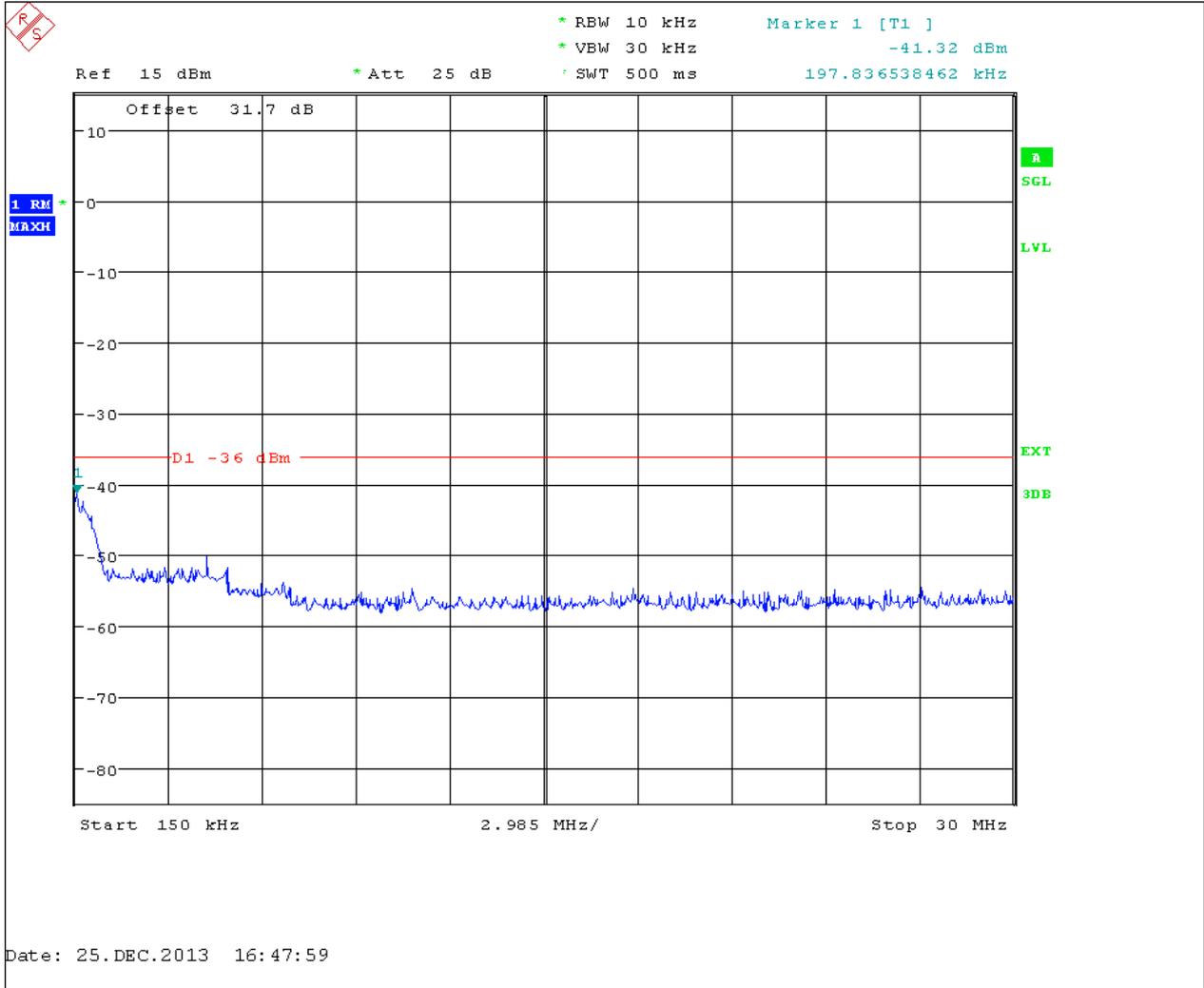
## 1 Result Table

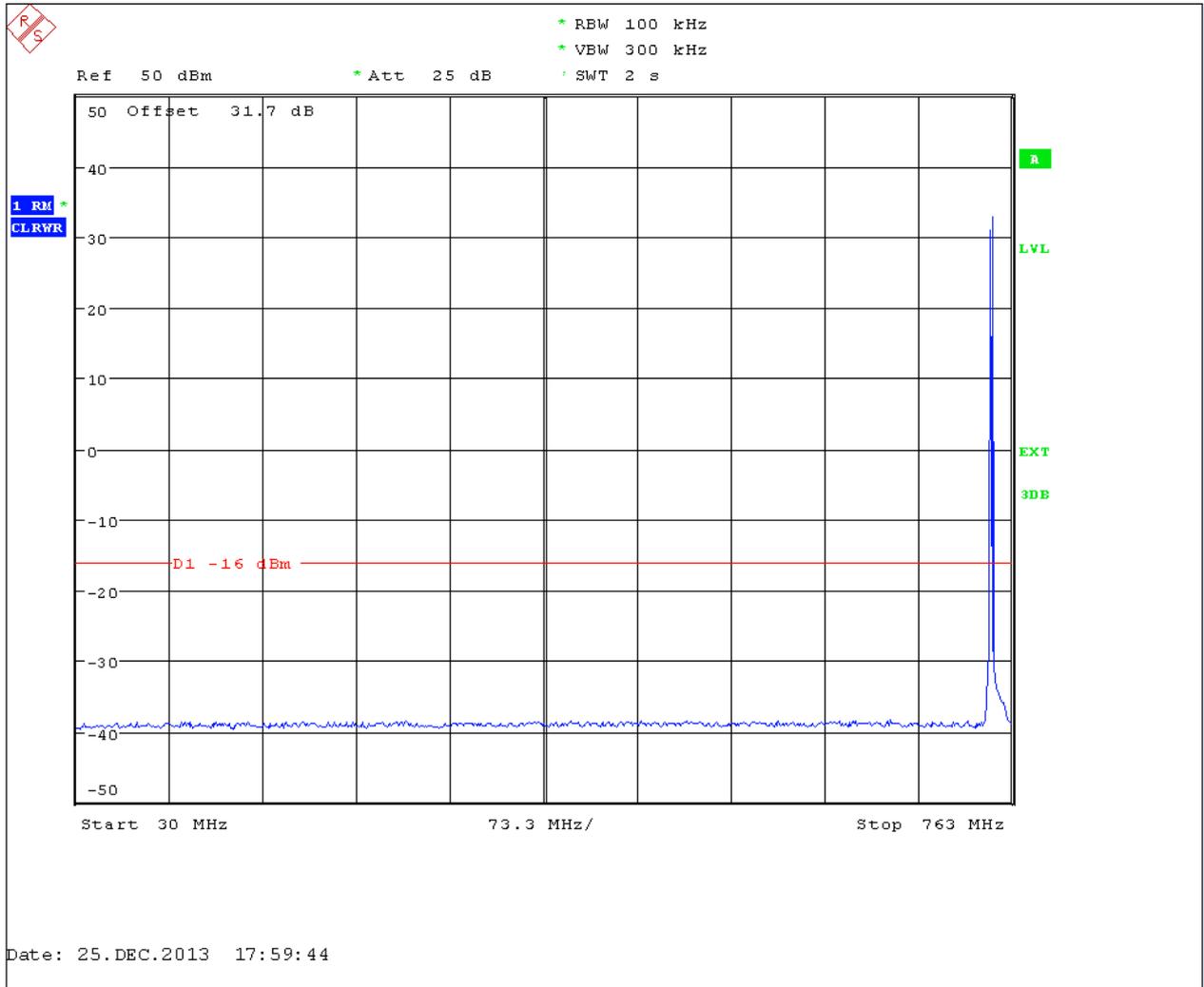
EUT Conf.	Maximum Emission [dBm]	Verdict
1M4_B	<-16	Pass
1M4_T	<-16	Pass
10M_M	<-16	Pass

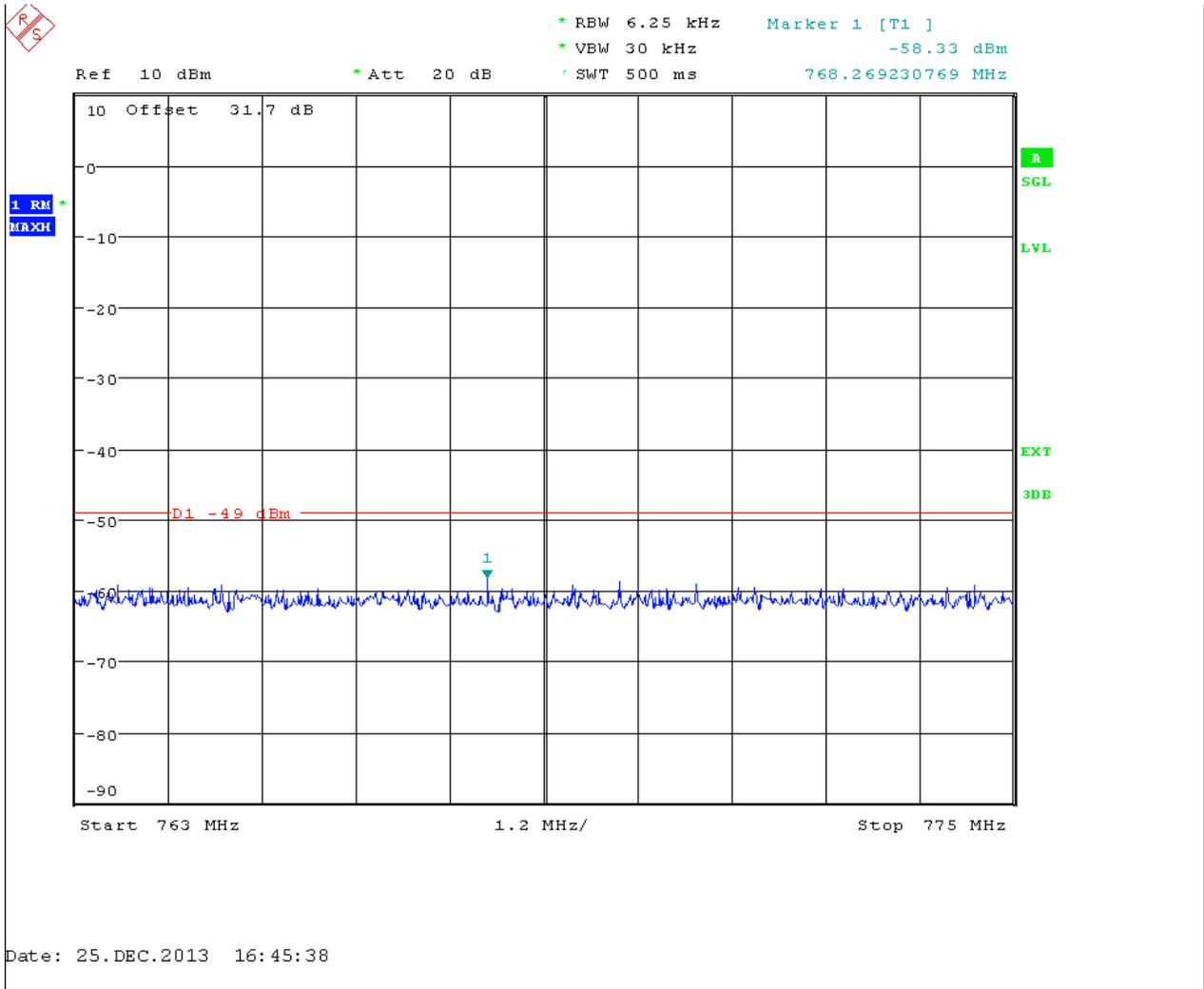
## 2 Test Plot

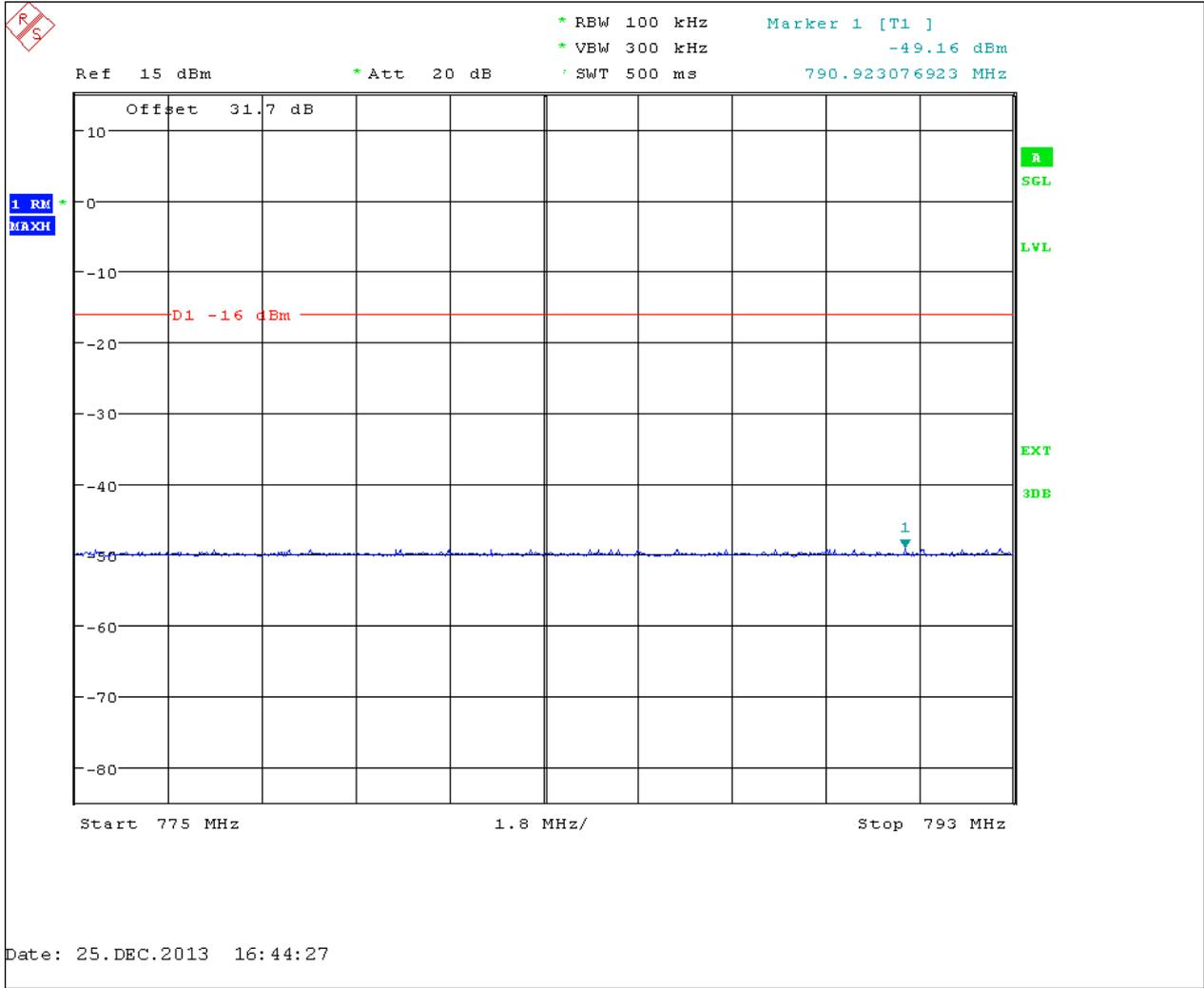
### 2.1 1M4\_B

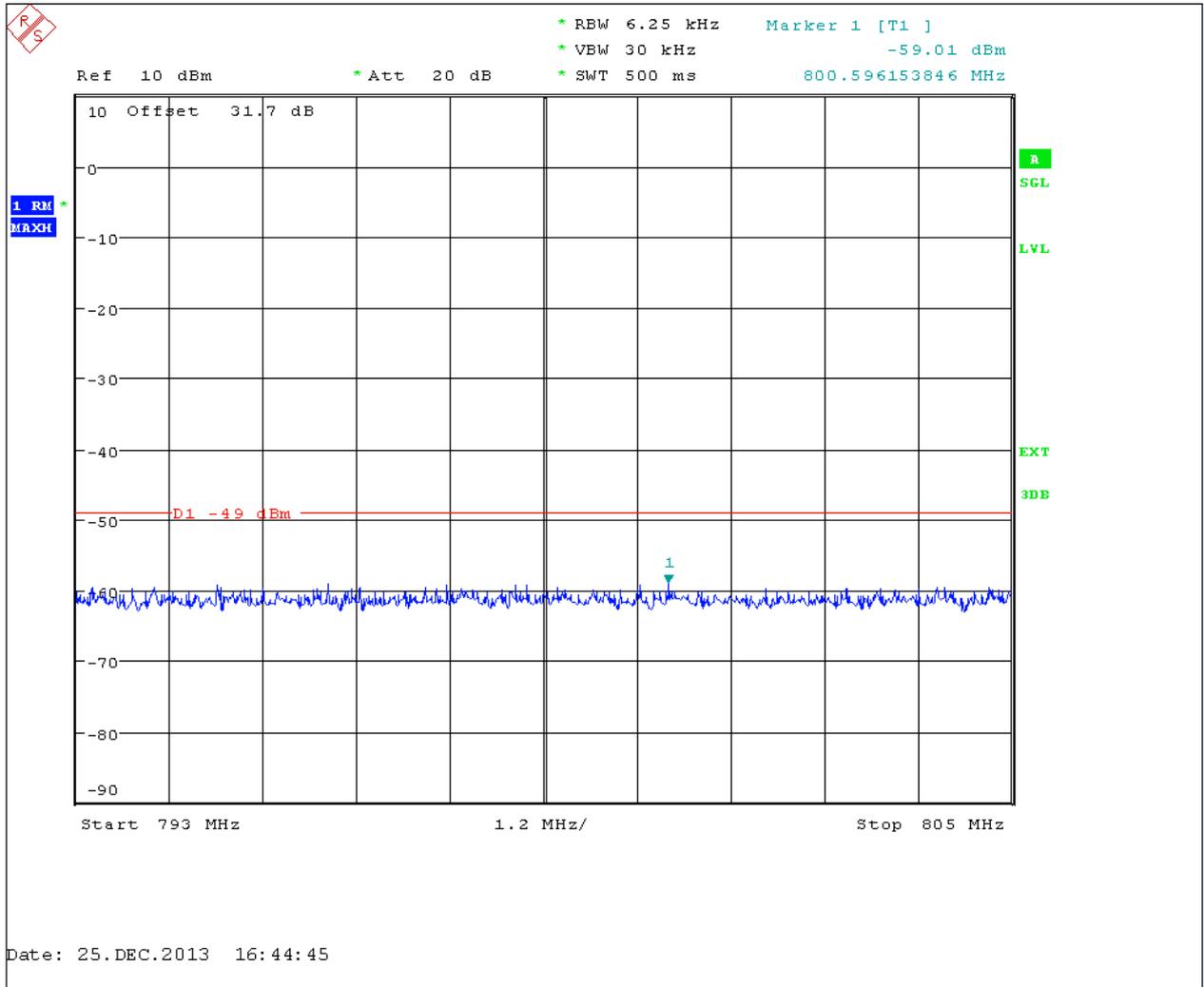


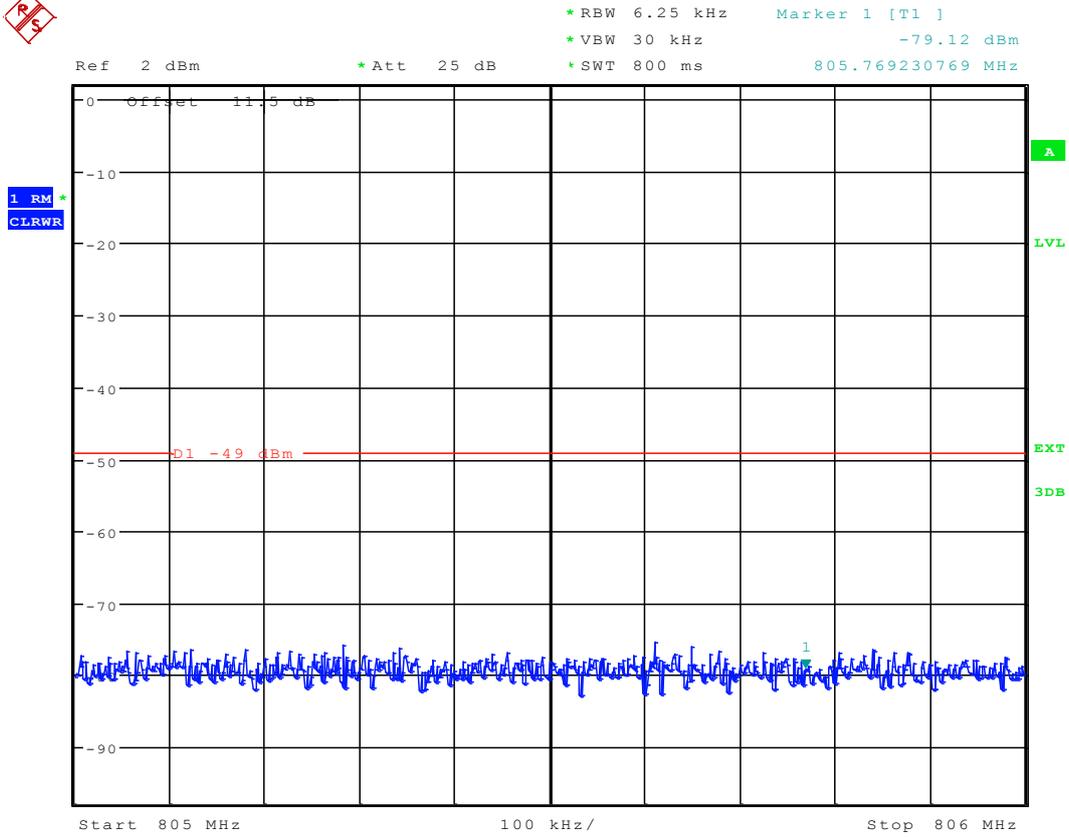




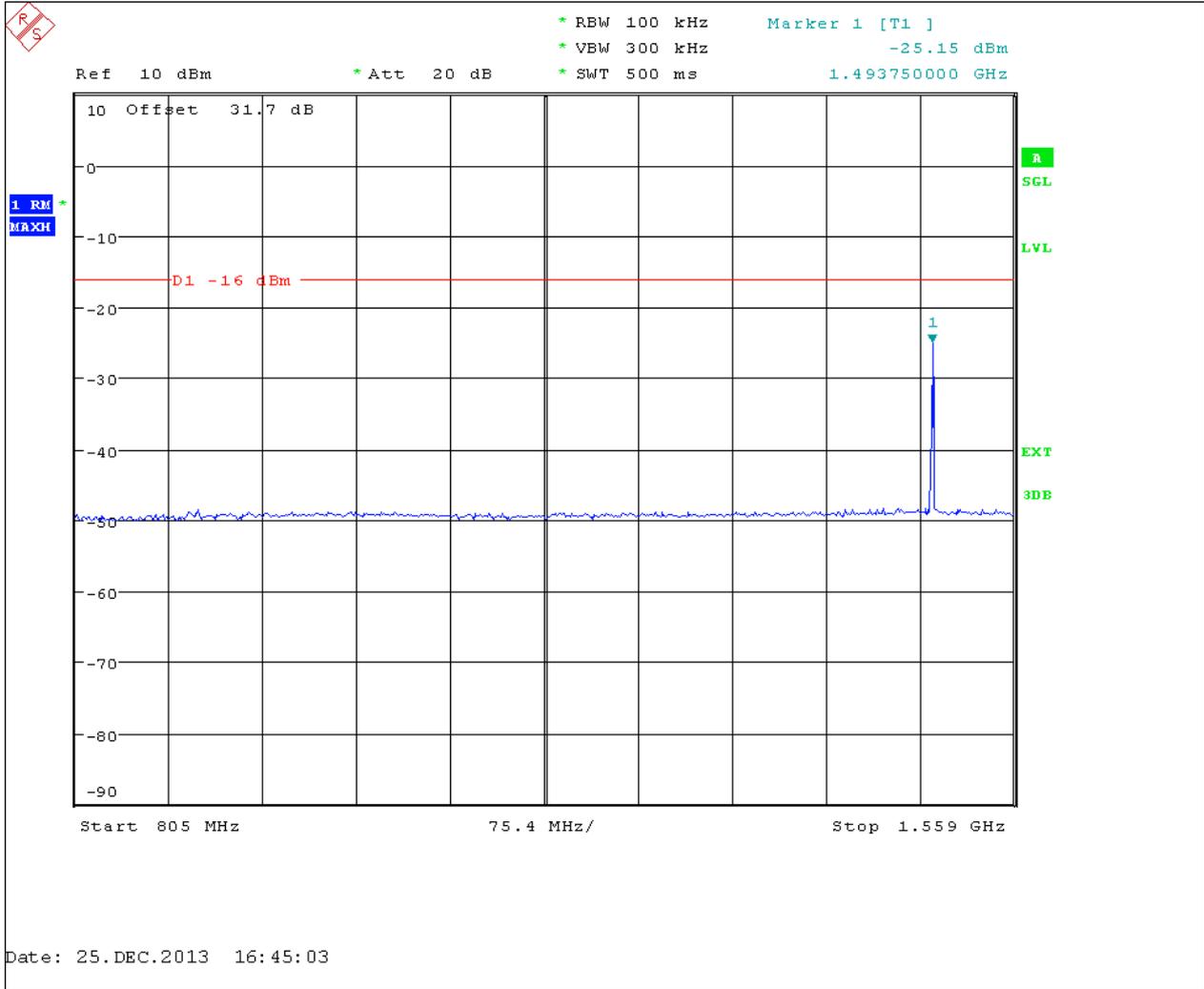


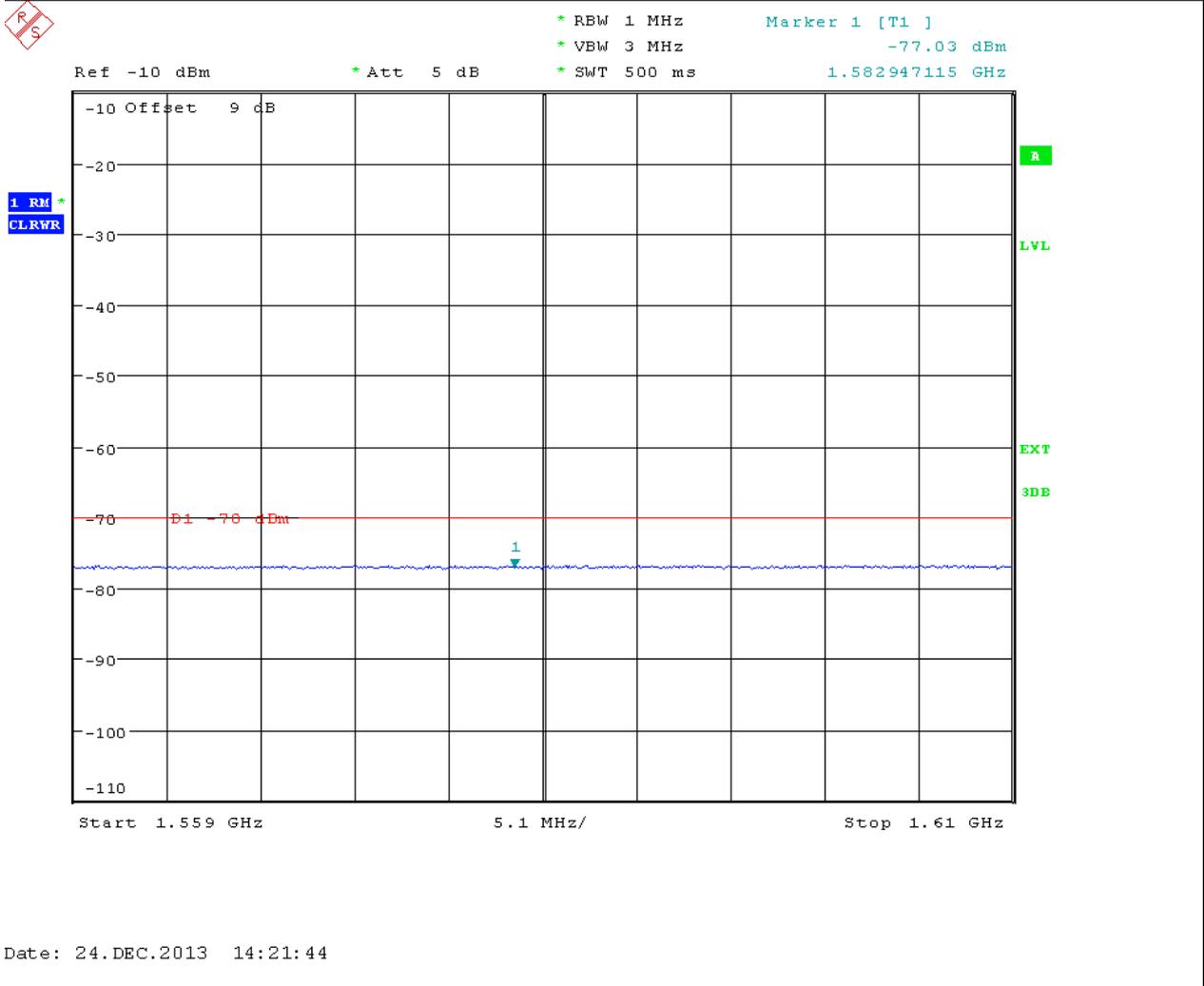




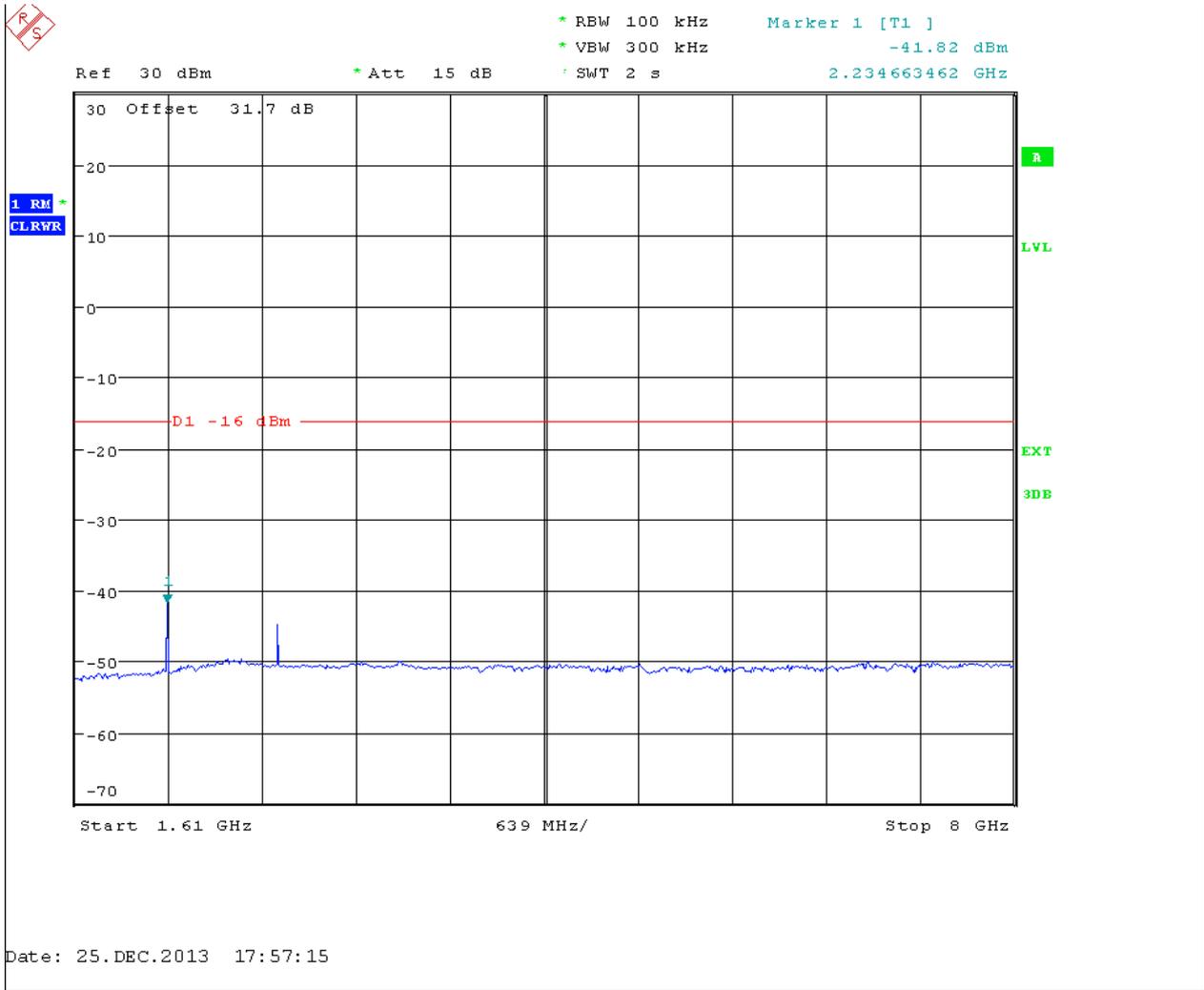


Date: 30.DEC.2013 20:15:08

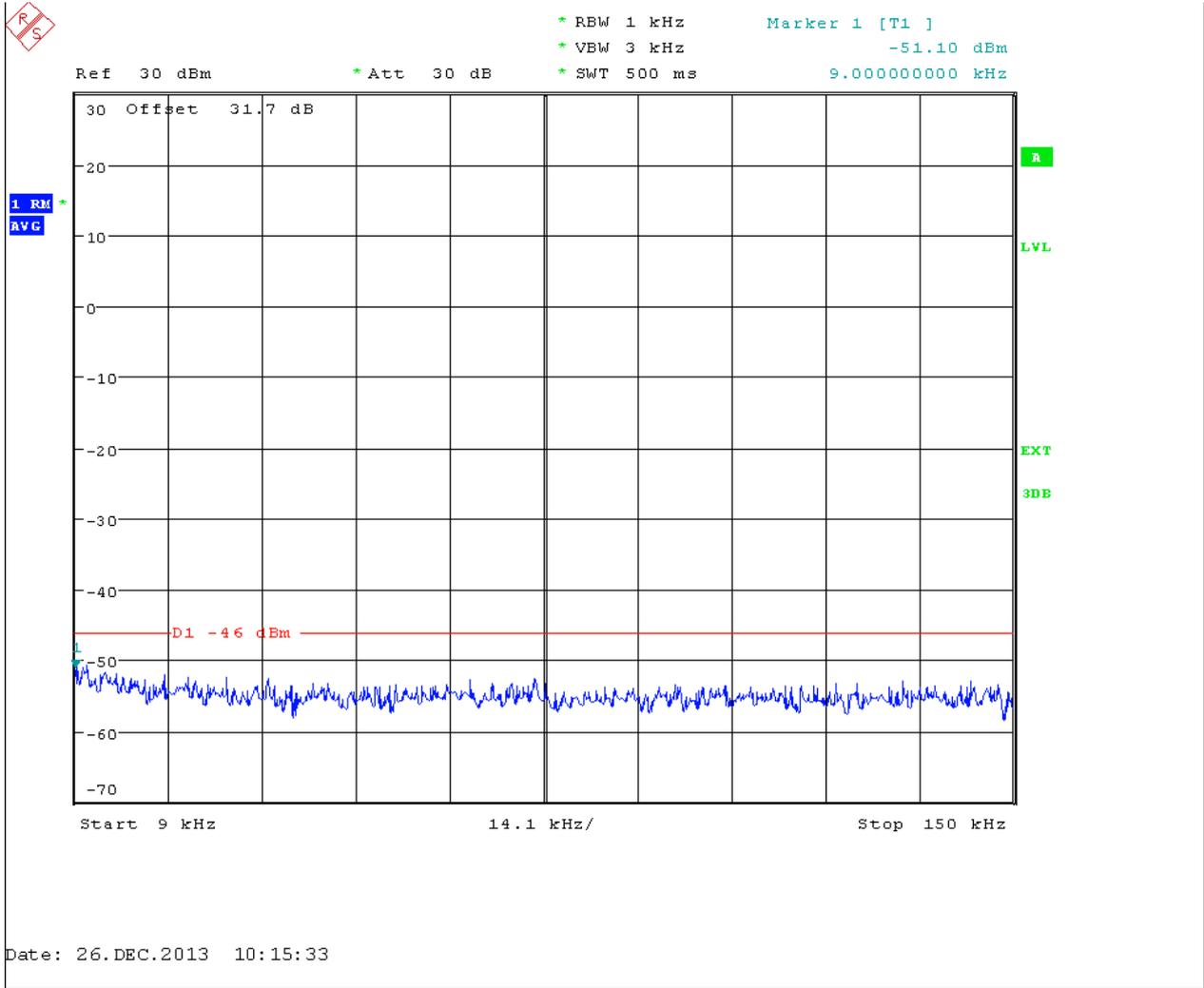


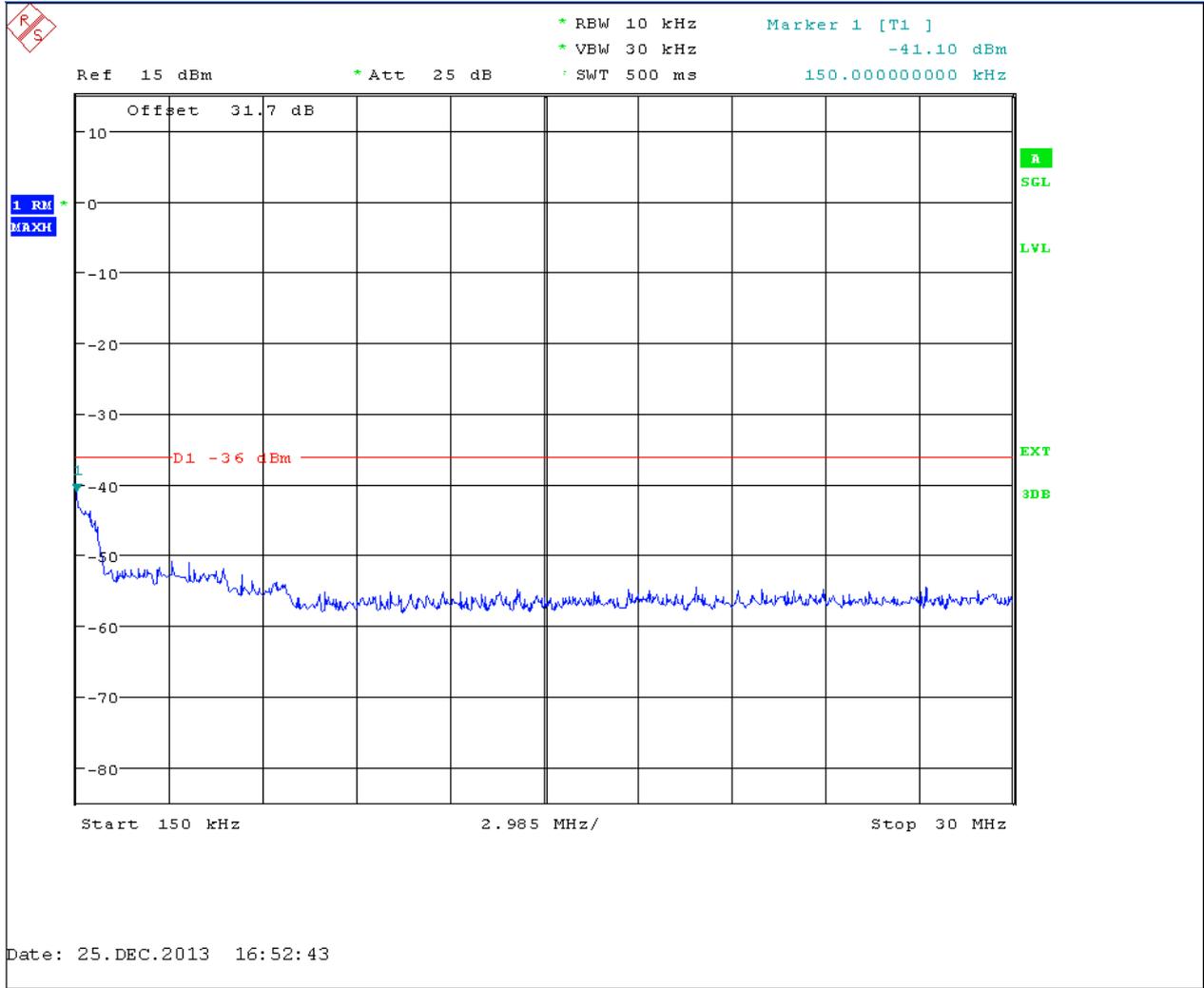


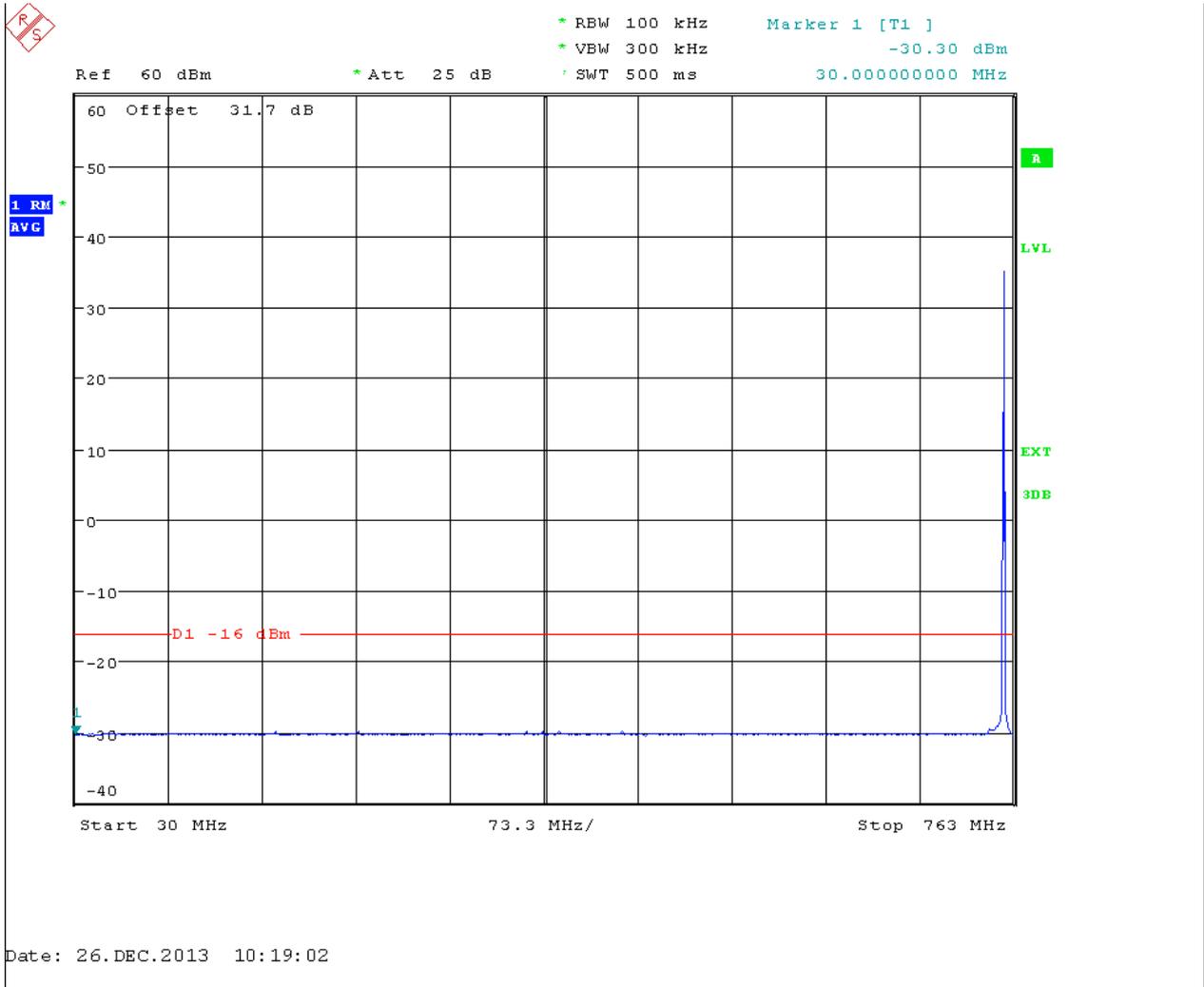
Date: 24.DEC.2013 14:21:44

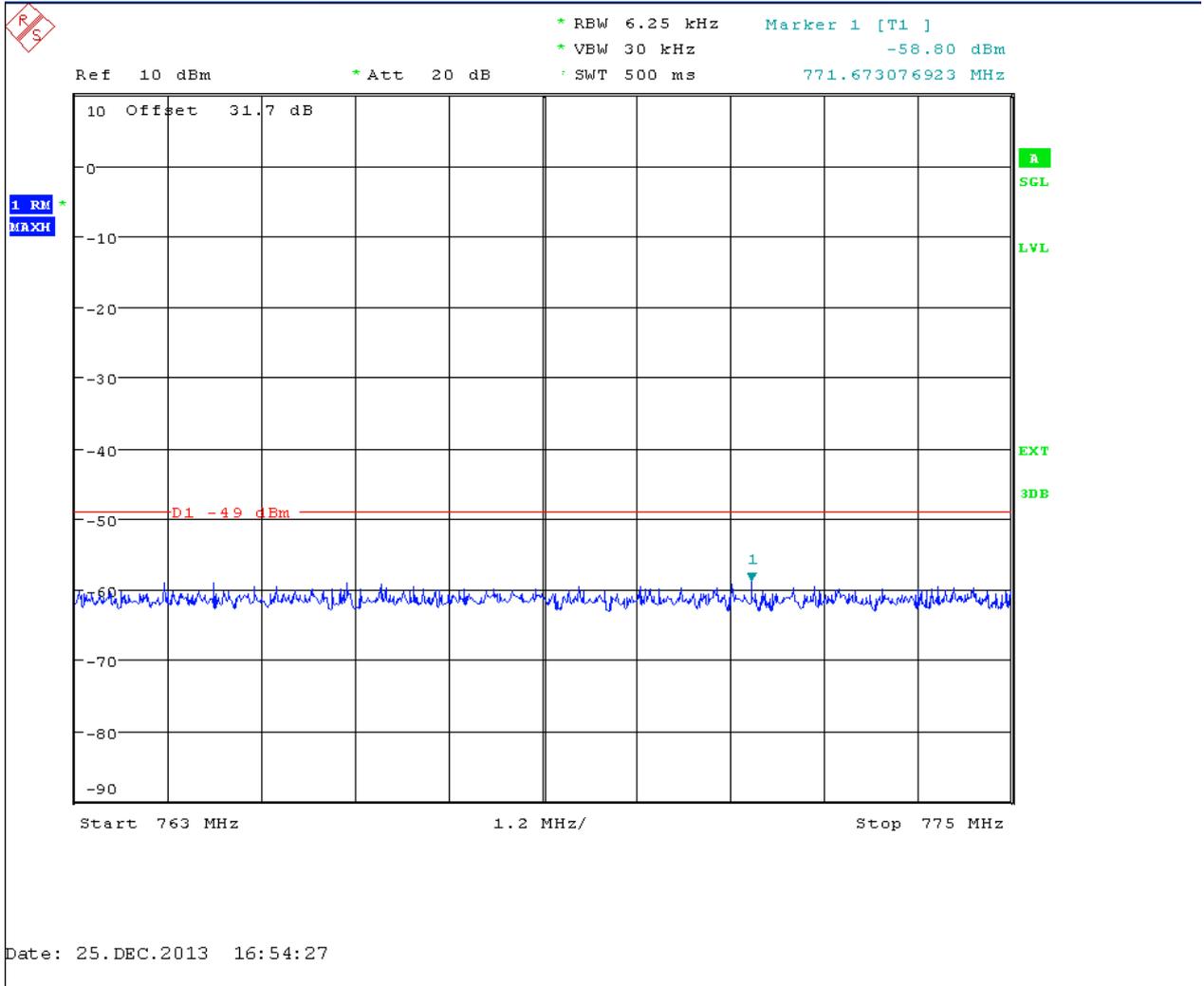


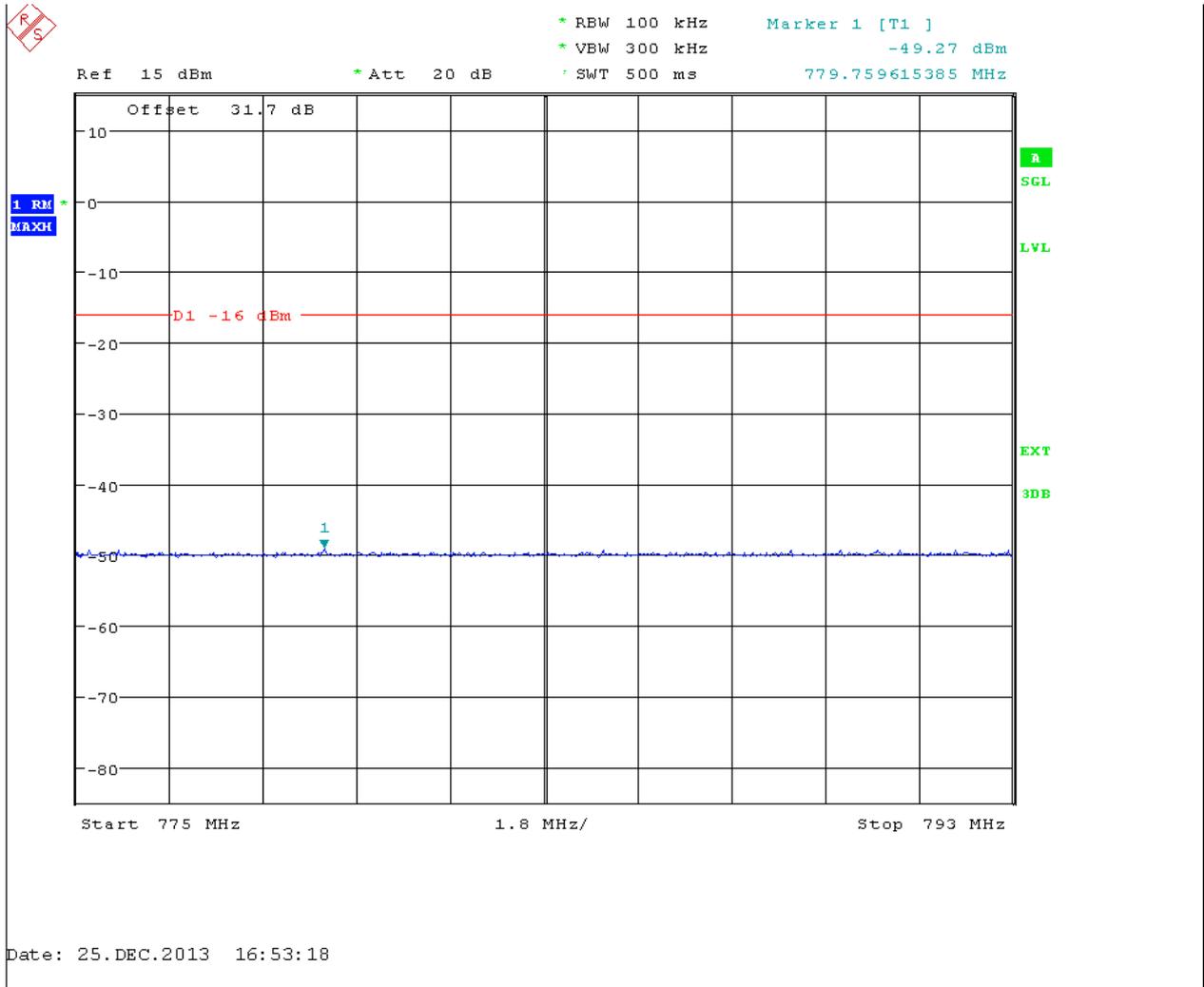
## 2.2 1M4\_T

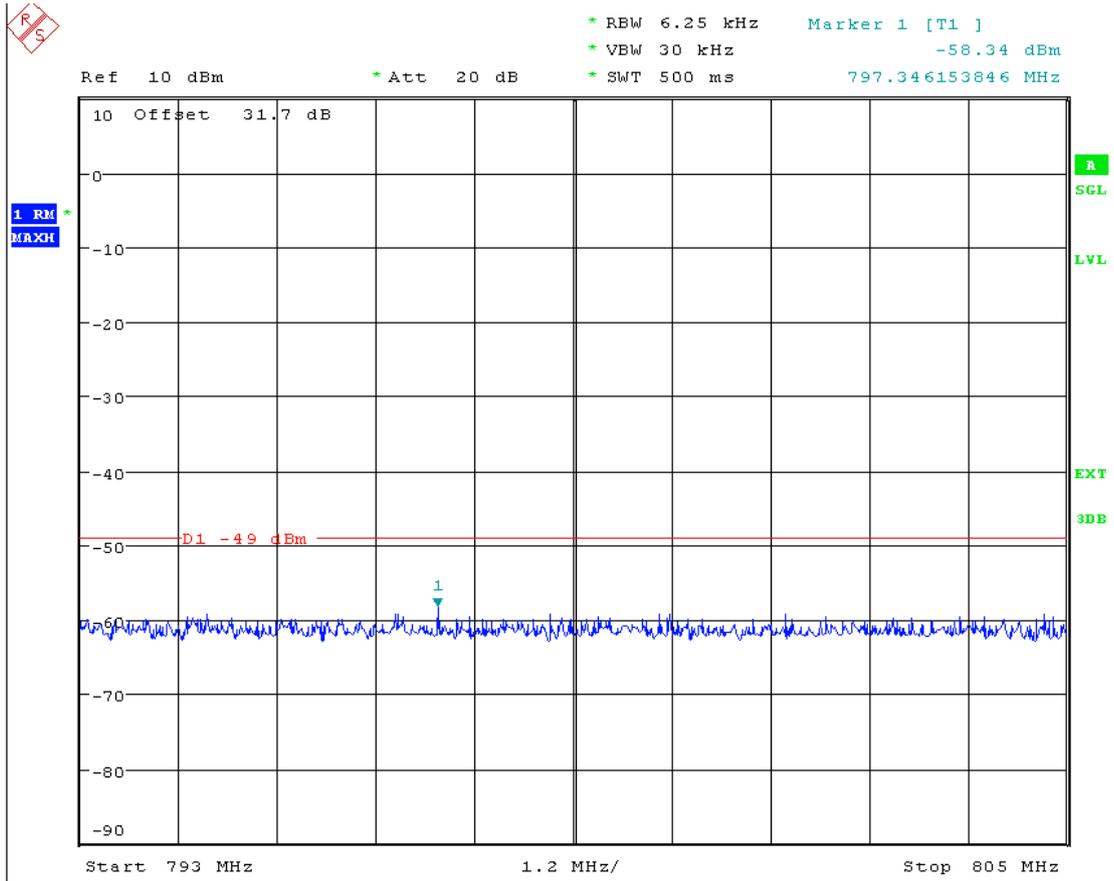




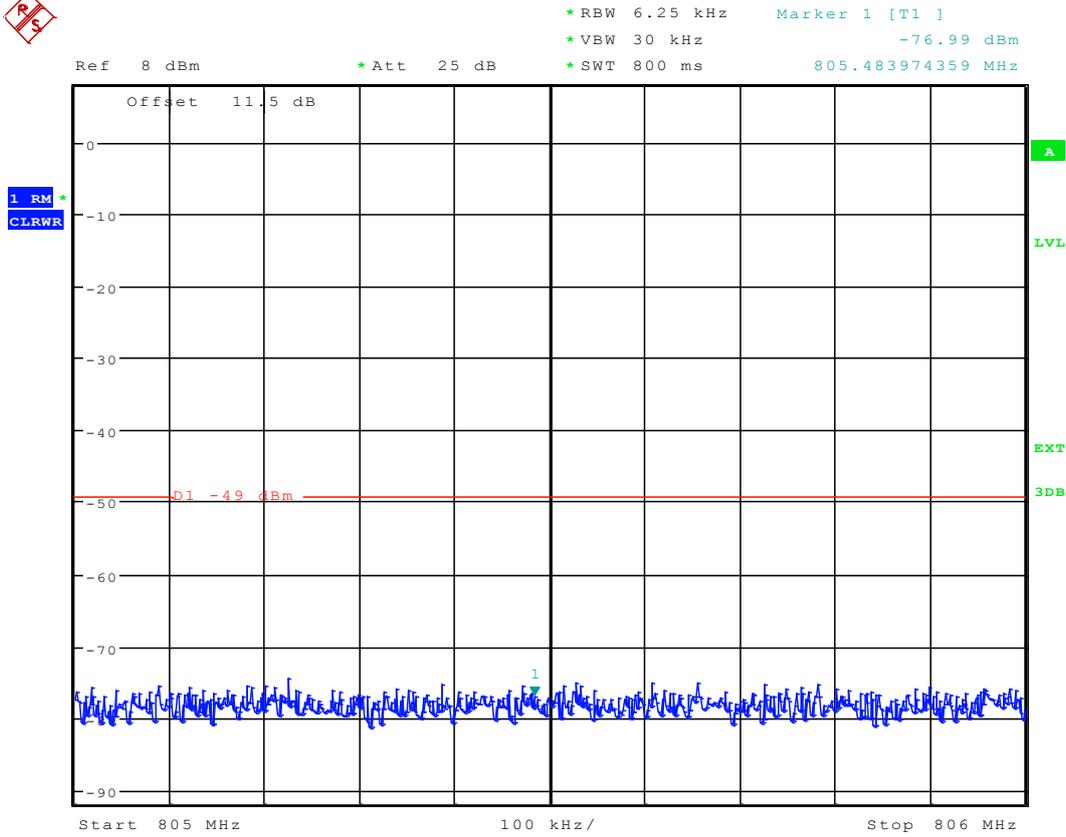




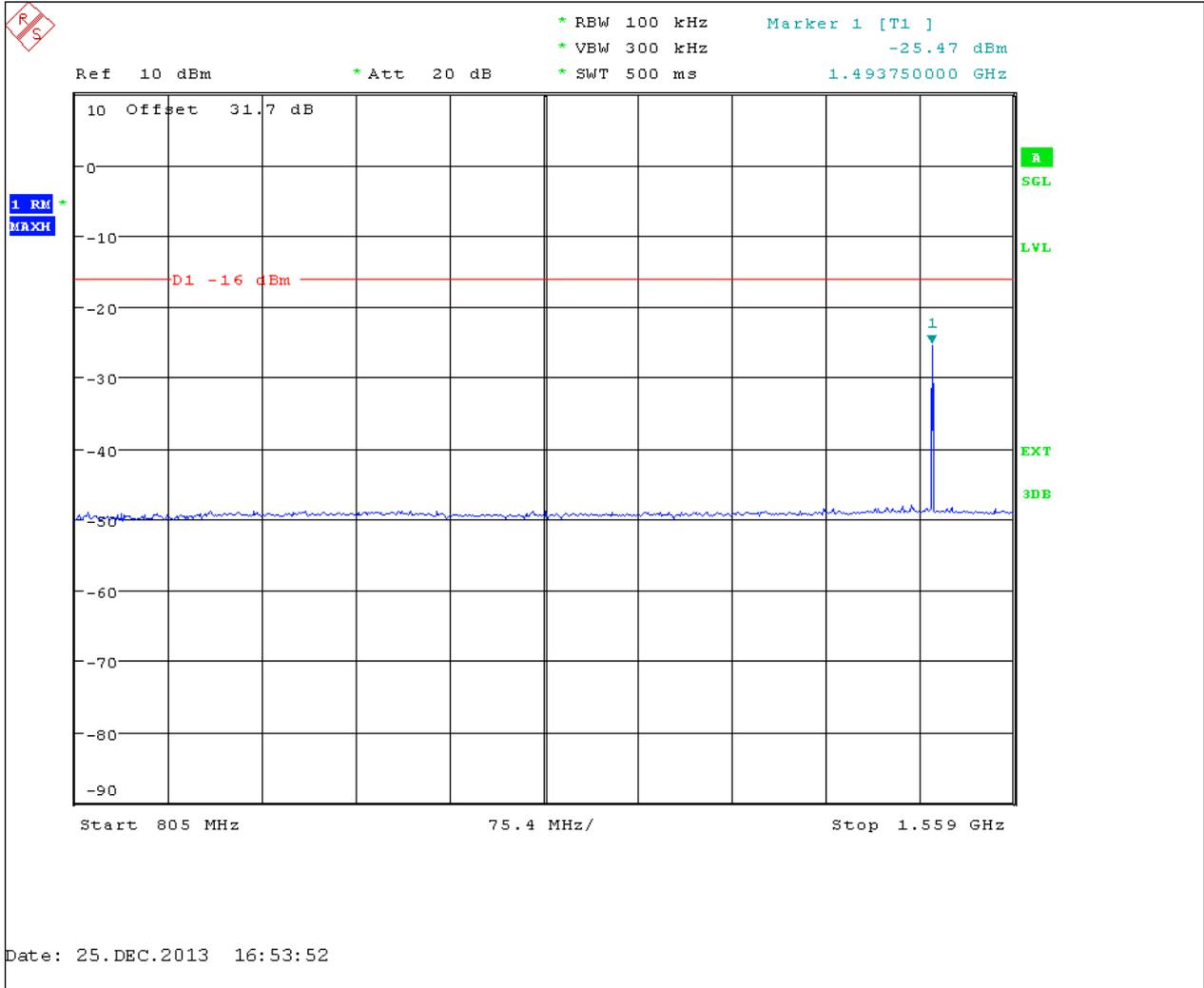


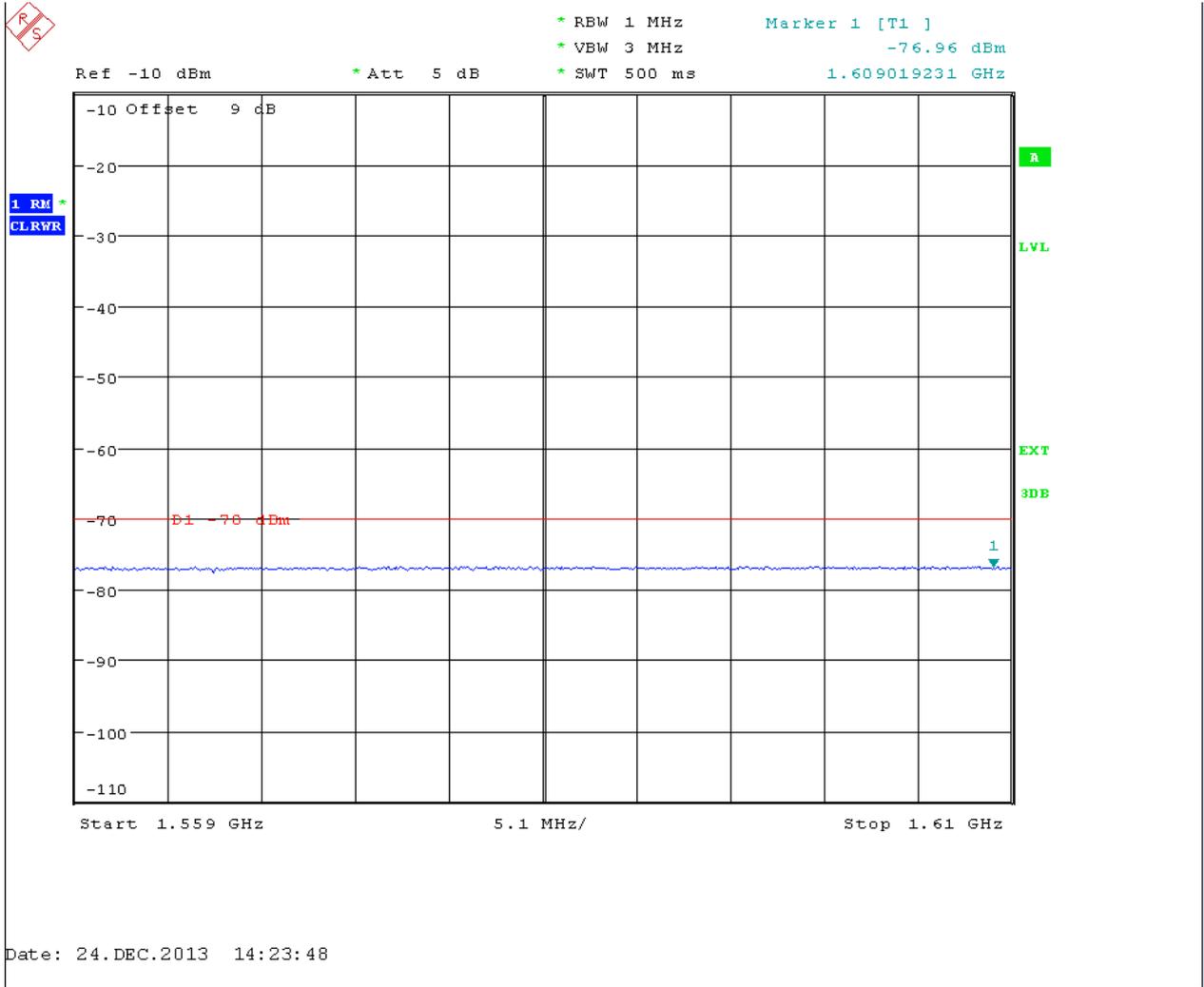


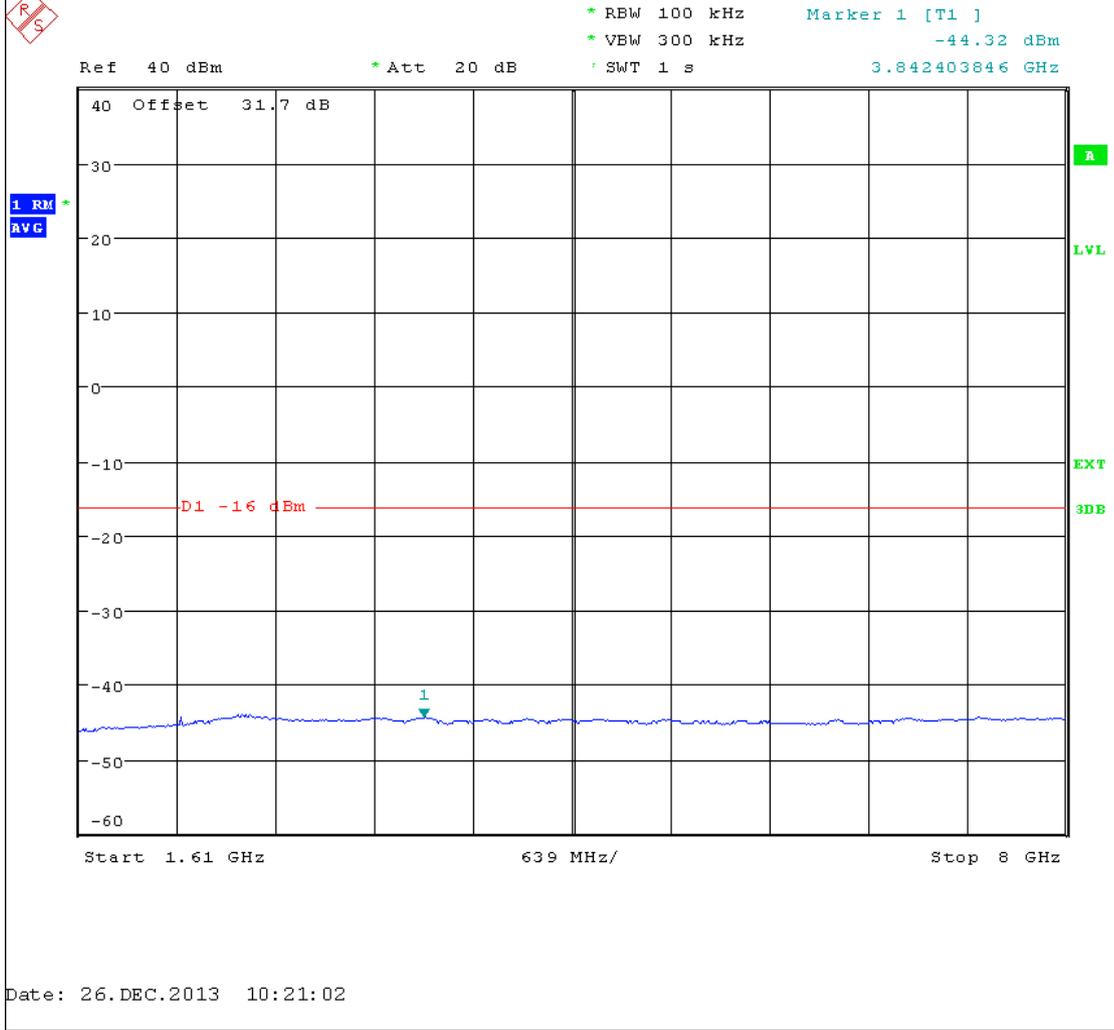
Date: 25.DEC.2013 16:53:35



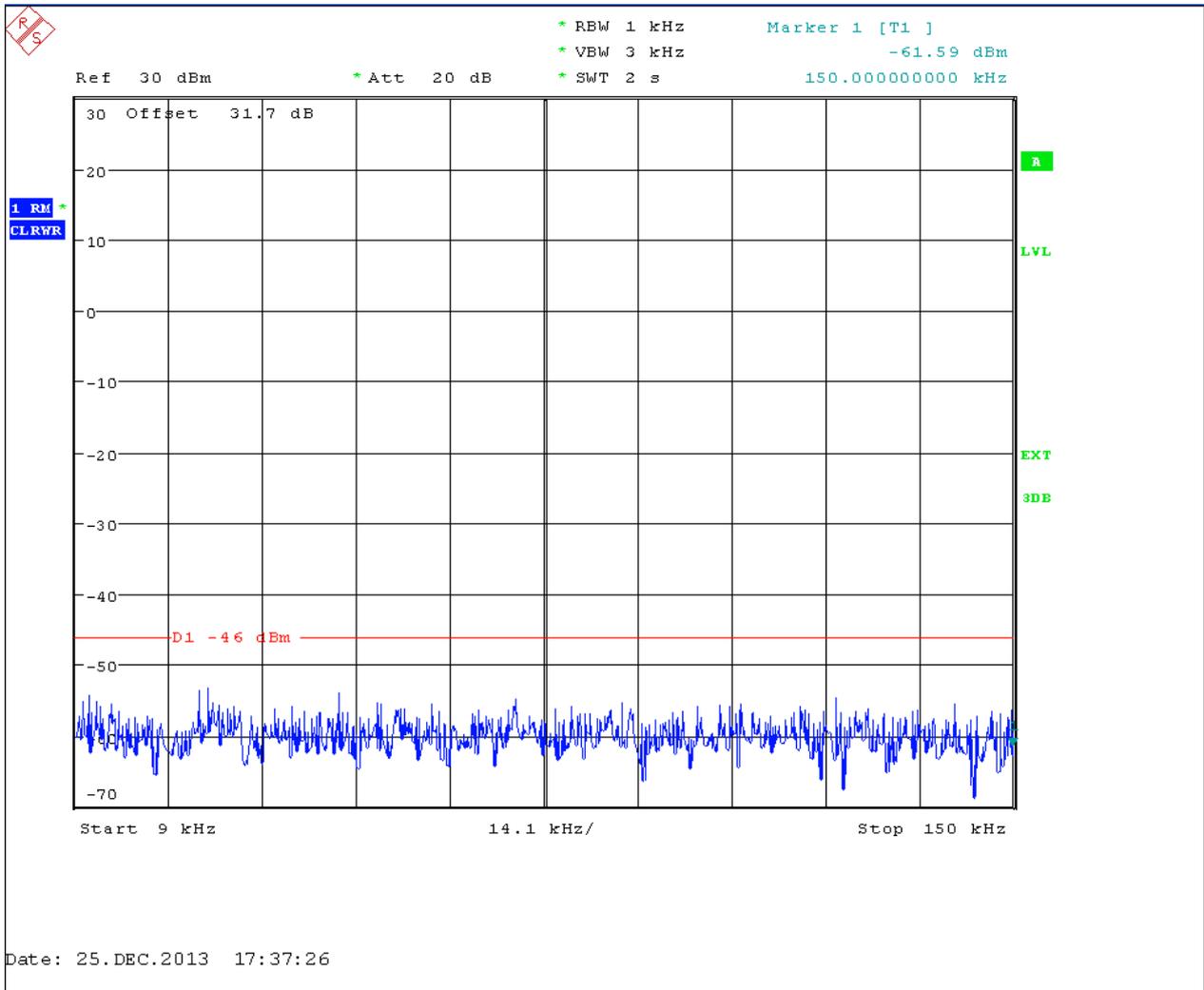
Date: 30.DEC.2013 20:16:29

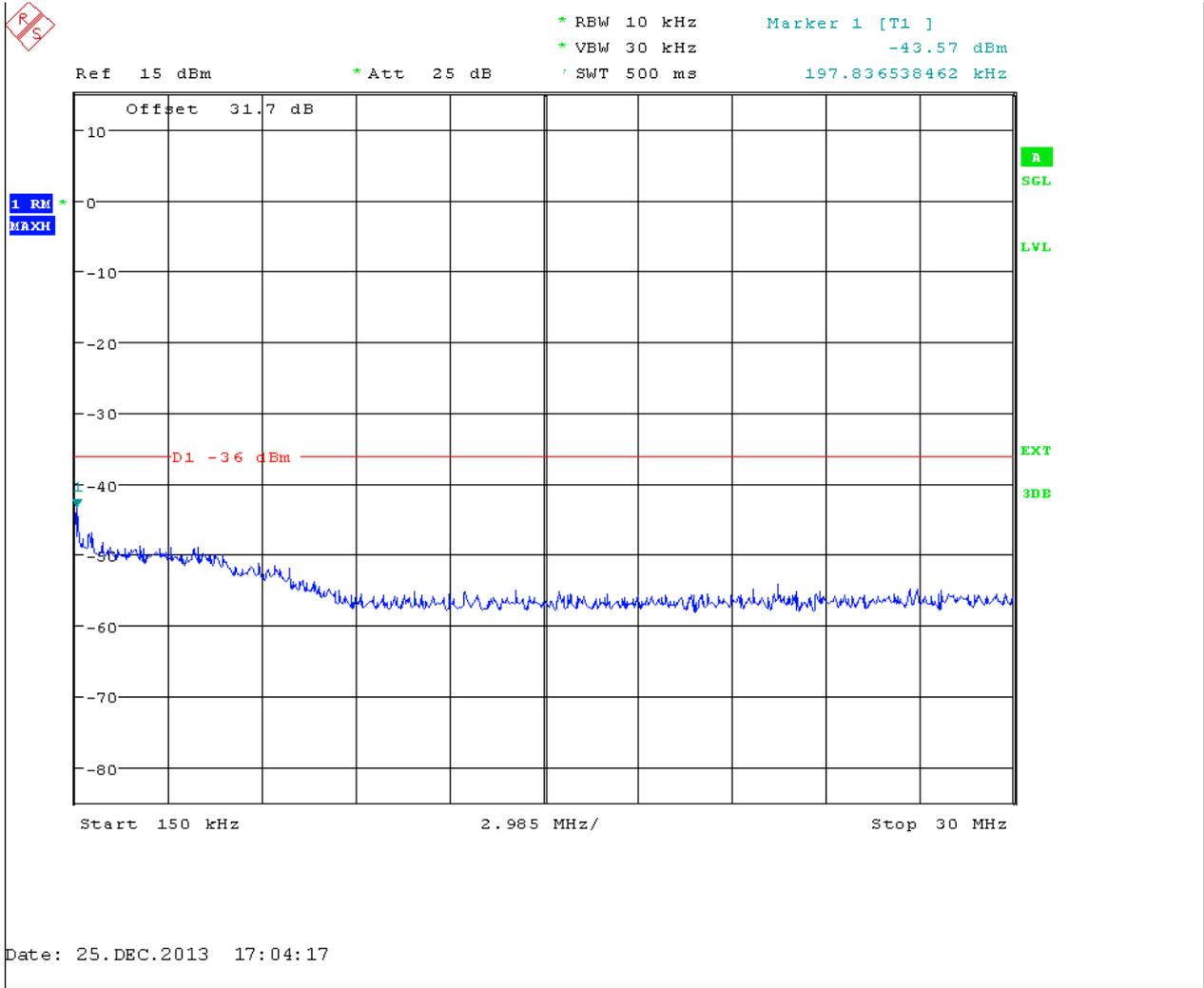


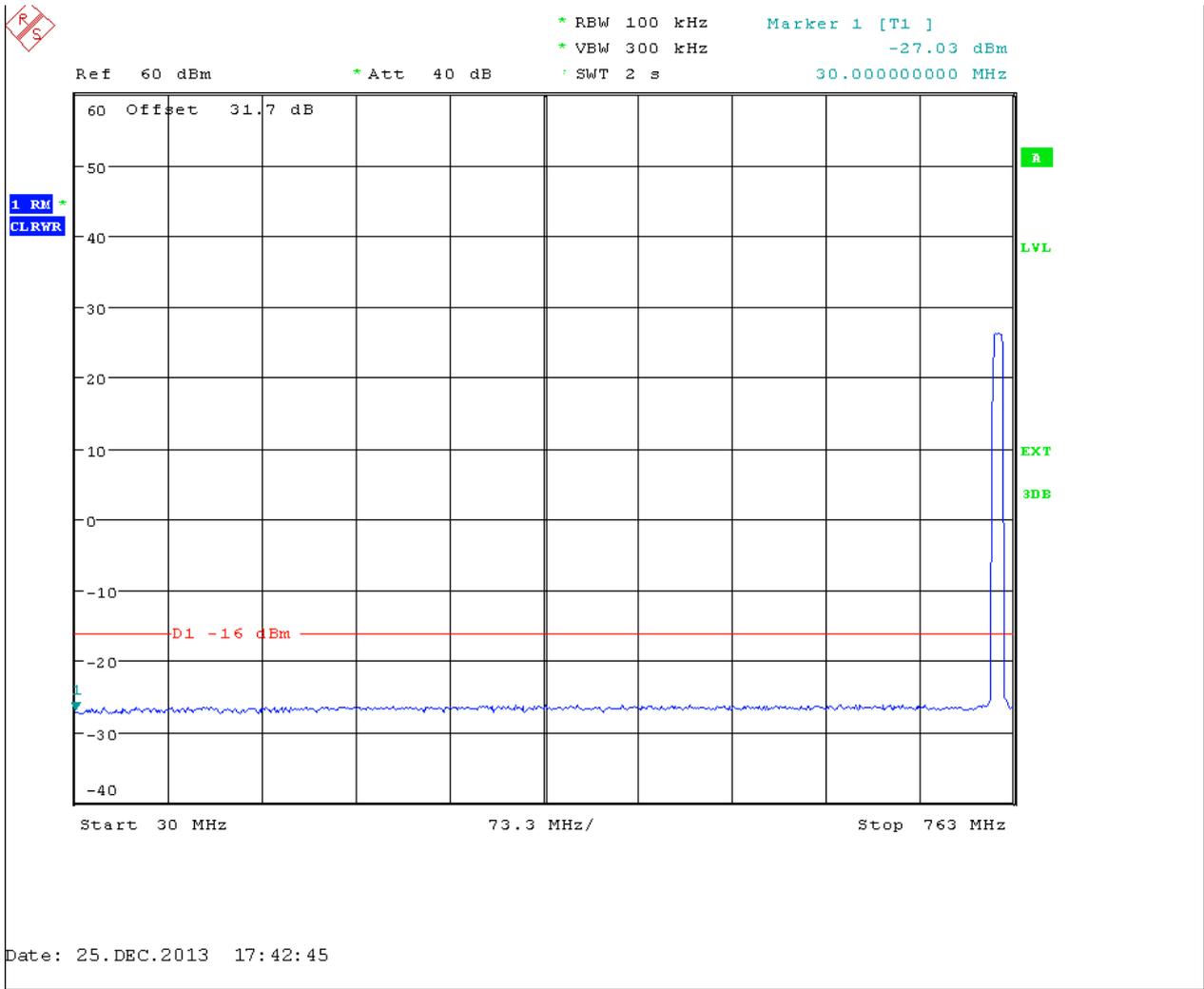




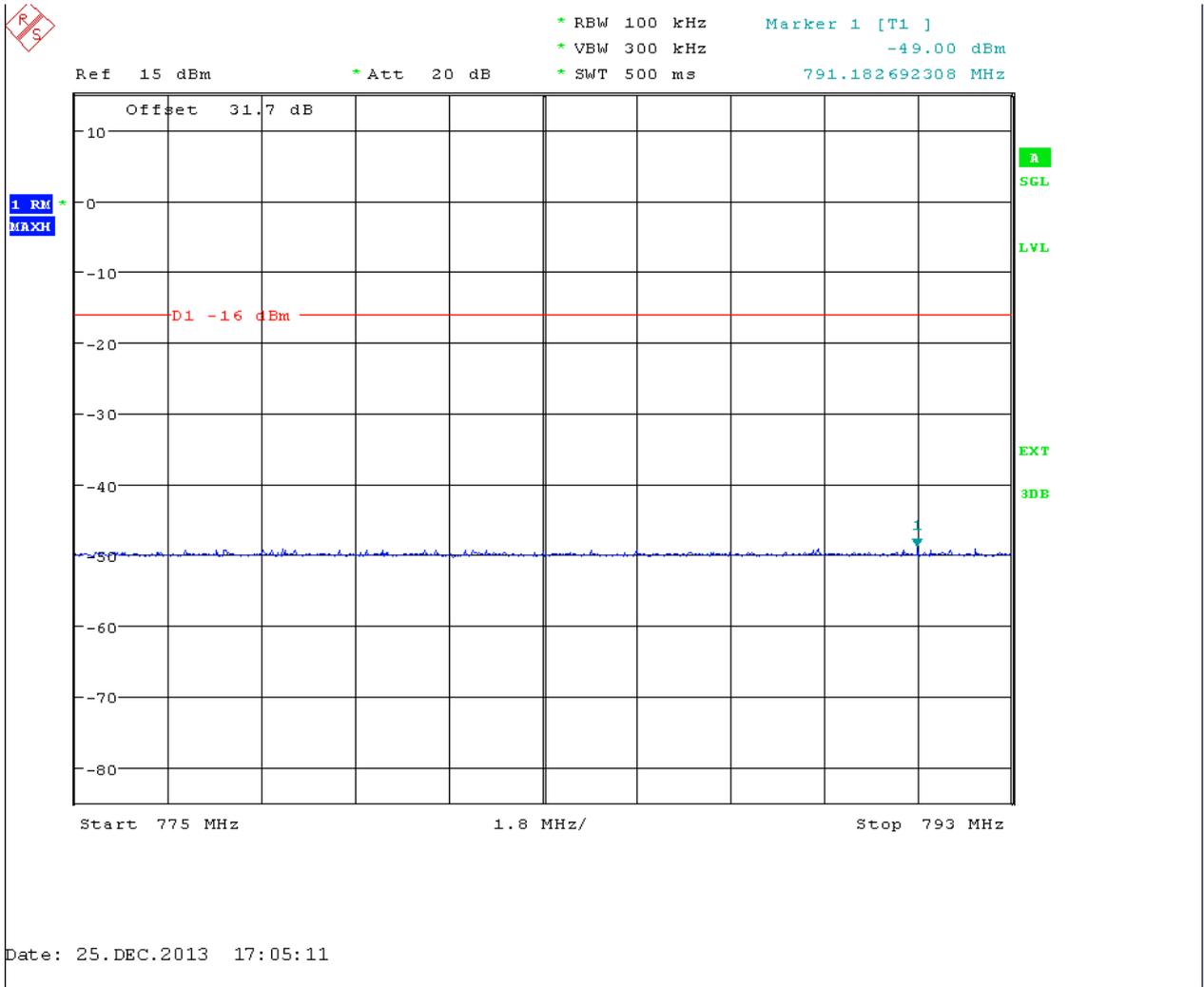
### 2.3 10M\_M

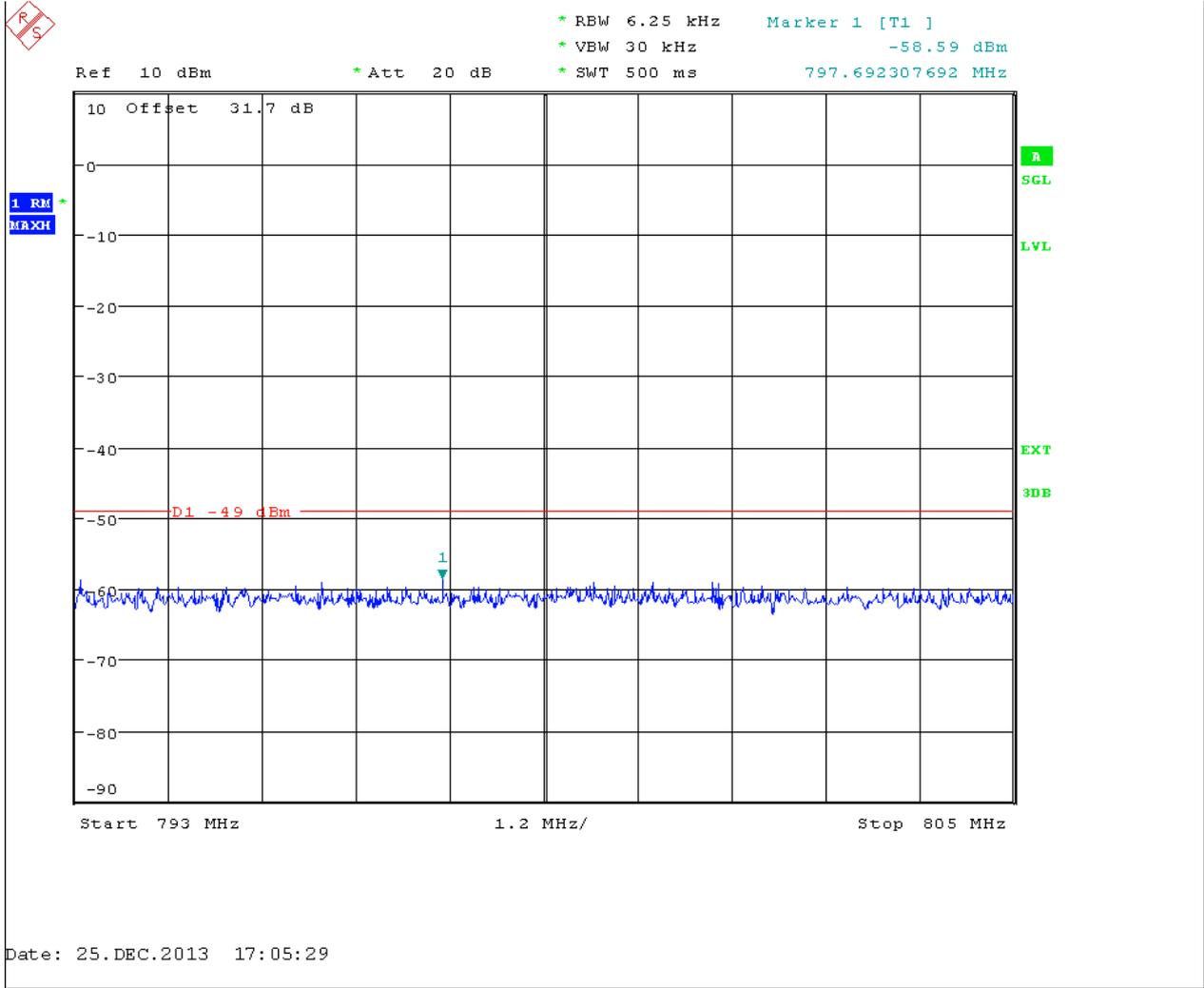


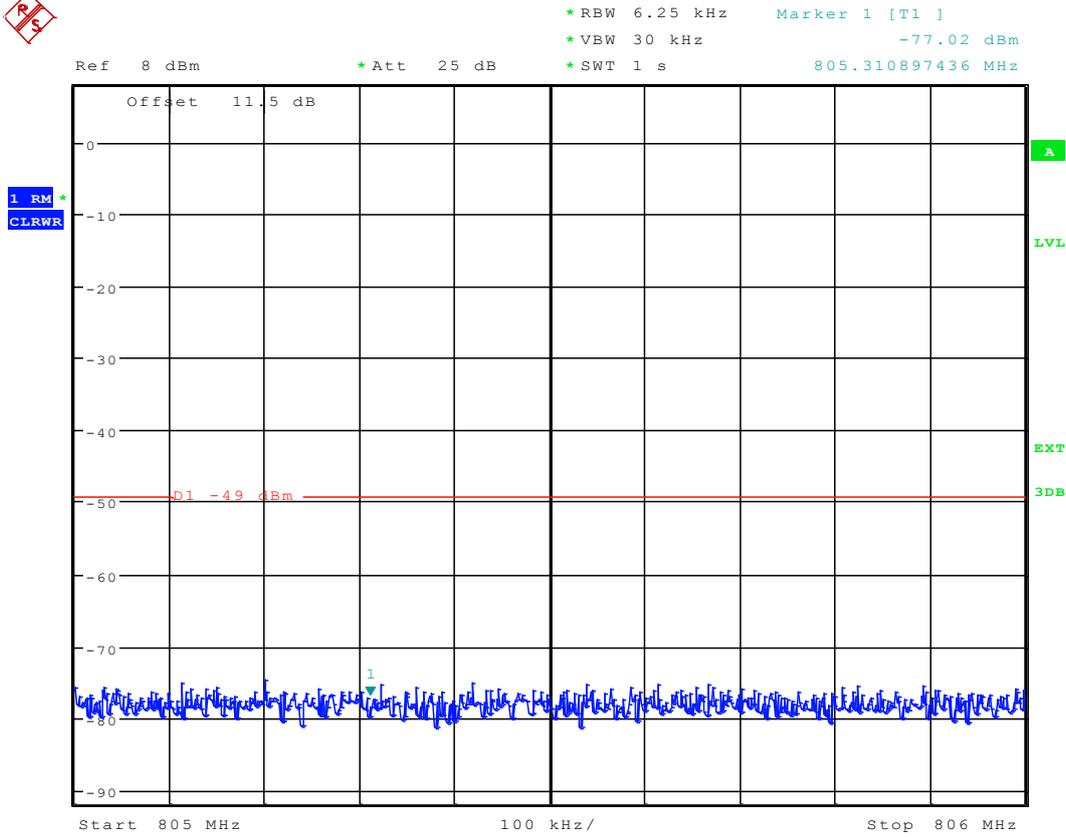




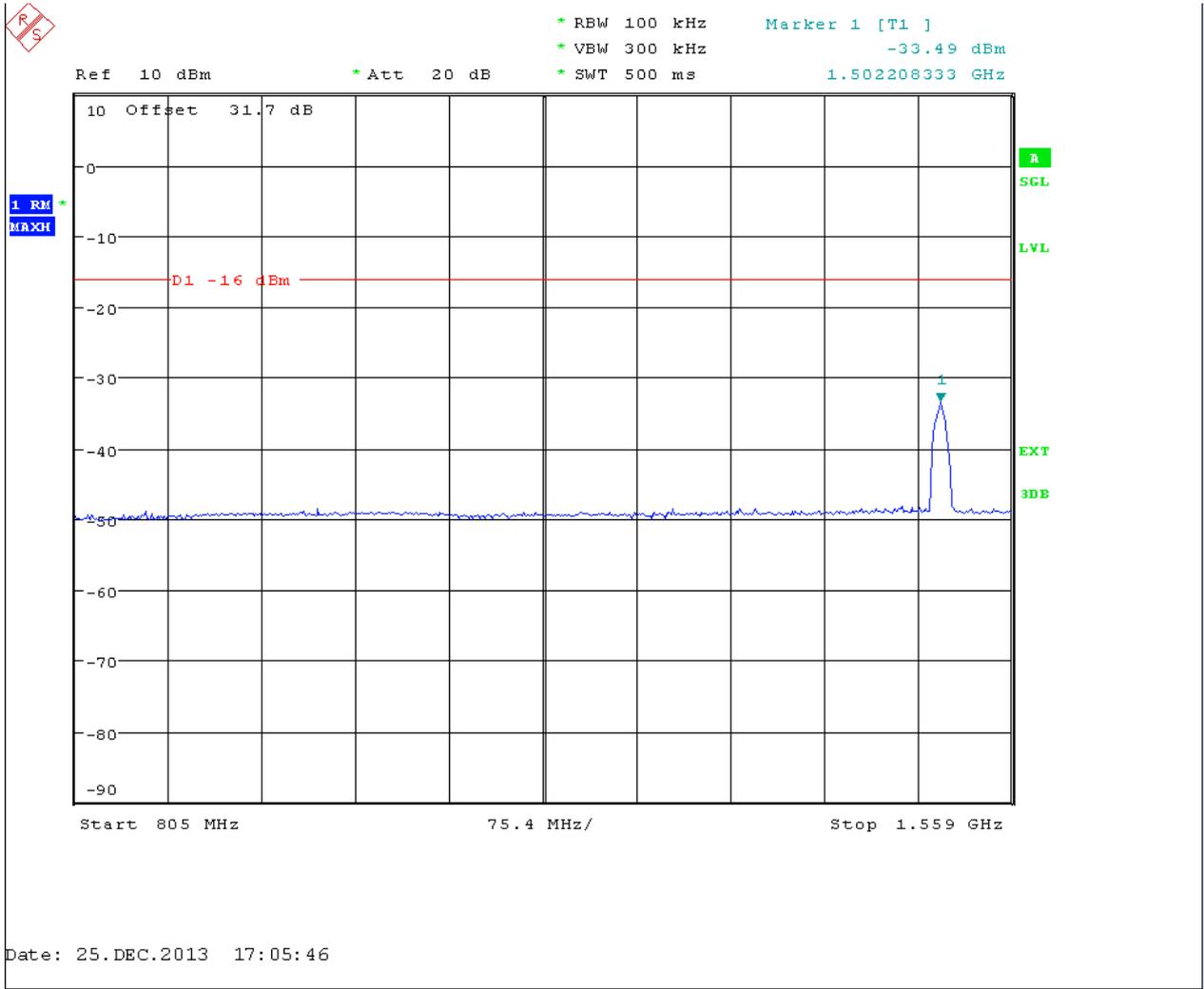


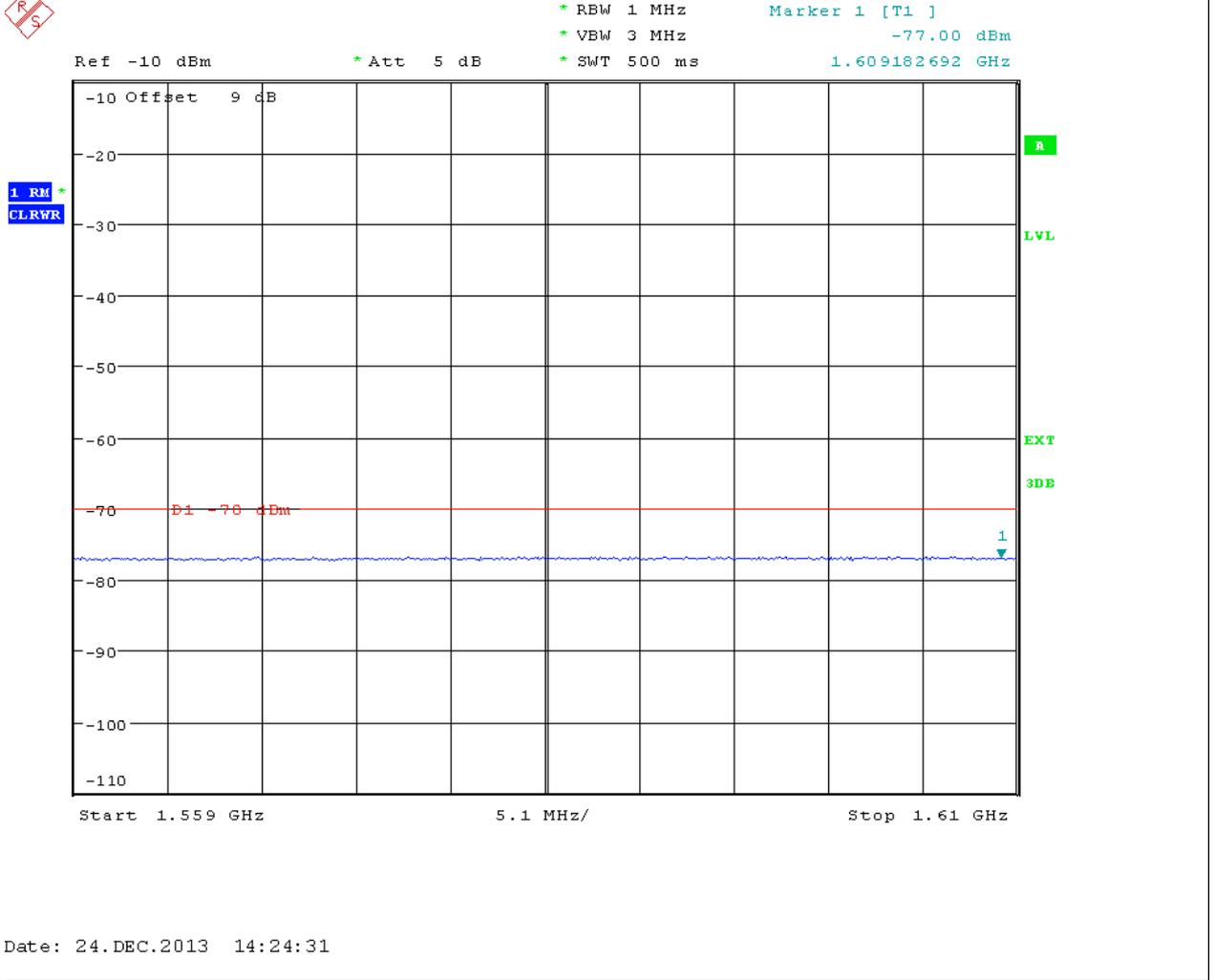


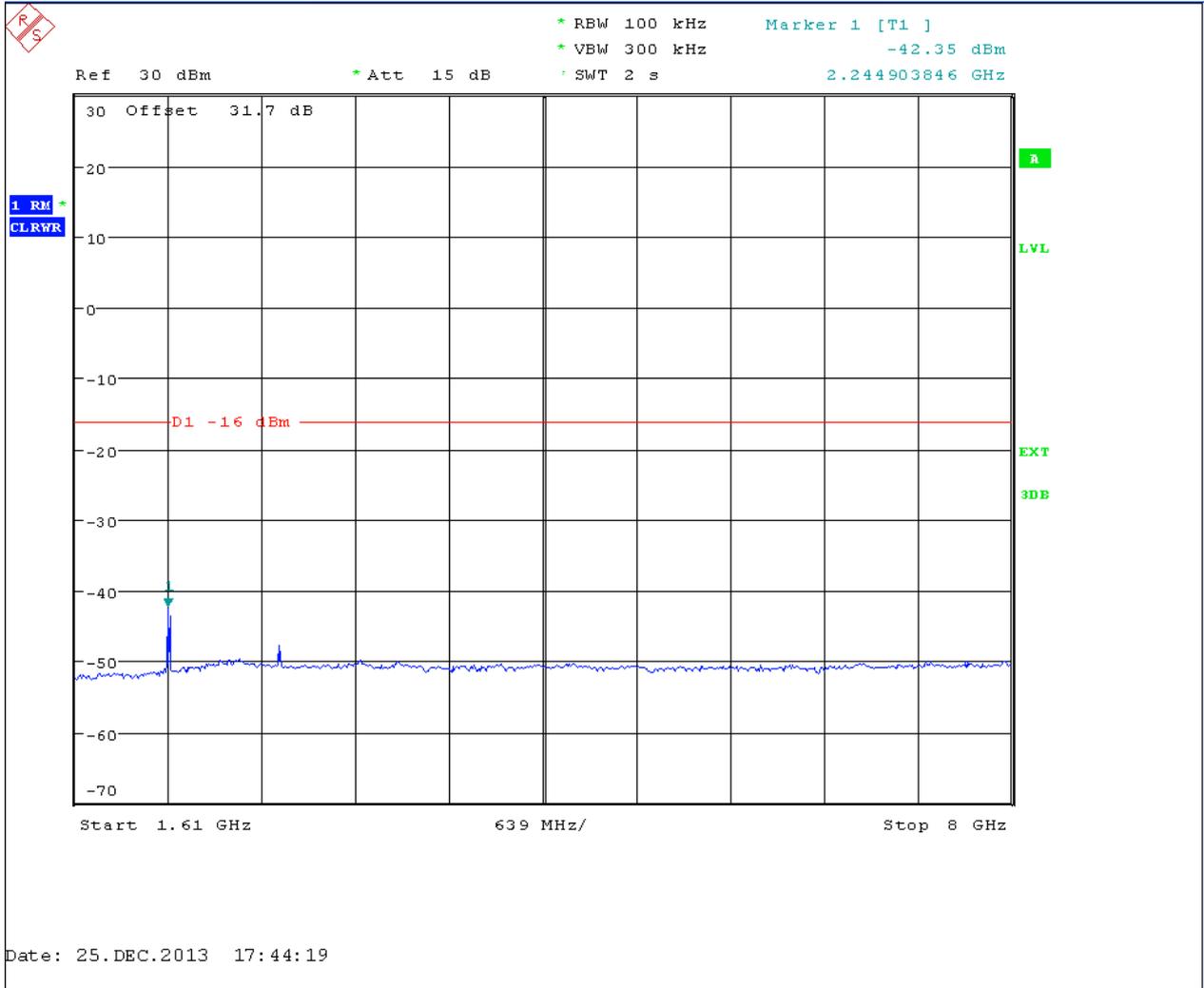




Date: 30.DEC.2013 20:17:49









# Appendix E: Field Strength of Spurious Radiation



## 1 Result Table

EUT Conf.	Maximum Emission [dBm]	Verdict
10M_M	<-13	Pass

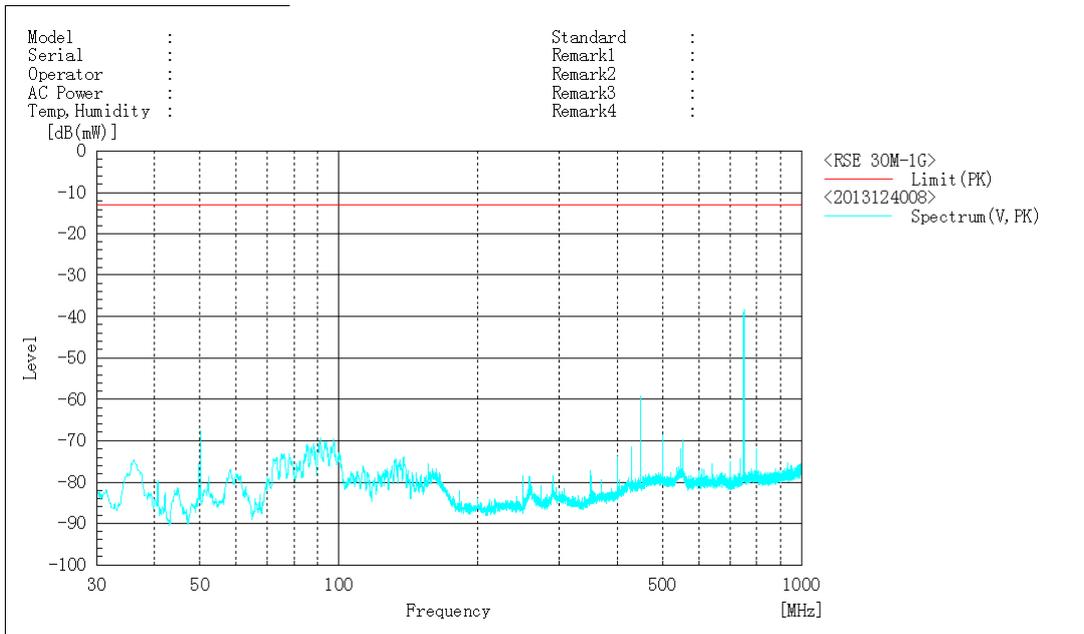


## 2 Test Plot

### 2.1 10M\_M

#### 2.1.1 30MHz-1GHz

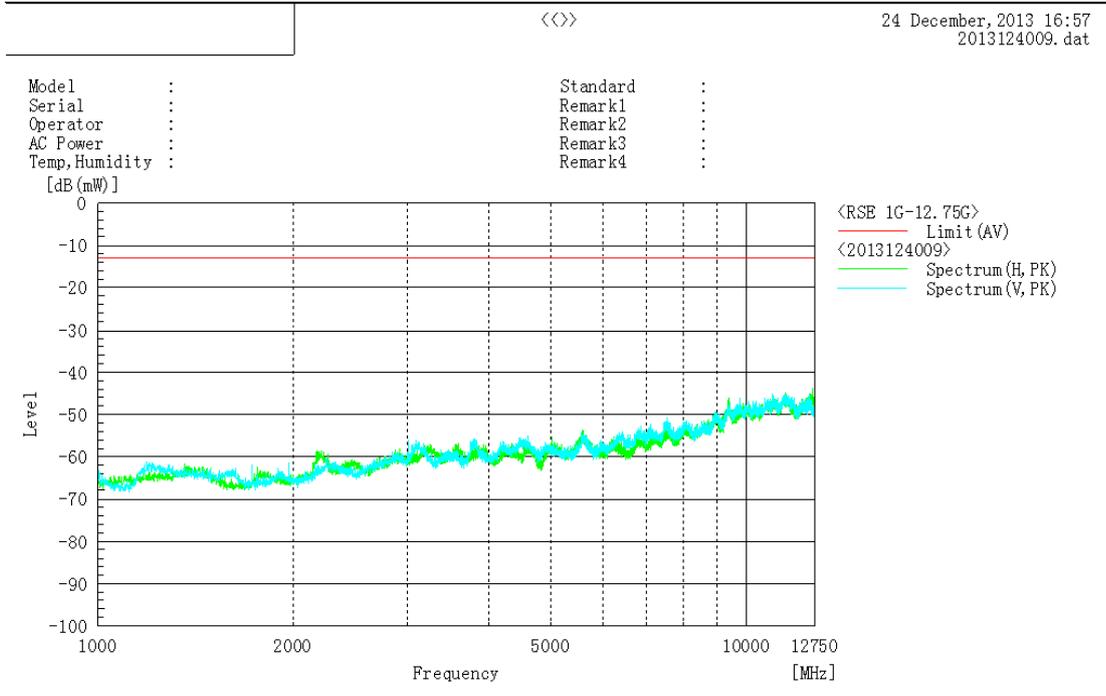
Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict
30	1000	0.1	Peak	---	<-13	-13	Pass





2.1.2 1GHz-12.75GHz

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict
1000	12750	1	Peak	---	<-13	-13	Pass





# Appendix F: Frequency Stability



## 1 Result Table

### 1.1 Frequency Error

Note: A representative EUT configuration was selected since the un-modulation carrier configuration was required by the standards/rules.

(1) Frequency Error vs. Temperature:

EUT Conf.	Voltage	Temperature	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Verdict
10M_M	100%	-30 °C	-2.04	-0.0027164	-0.0007856	---
		-20 °C	-2.24	-0.0029827	-0.0010519	---
		-10 °C	-2.62	-0.0034887	-0.0015579	---
		0 °C	-2.35	-0.0031292	-0.0011984	---
		+10 °C	-2.82	-0.003755	-0.0018242	---
		+20 °C	-1.45	-0.0019308	0	---
		+30 °C	-2.57	-0.0034221	-0.0014913	---
		+40 °C	-1.97	-0.0026232	-0.0006924	---
		+50 °C	-2.80	-0.0037284	-0.0017976	---

(2) Frequency Error vs. Voltage:

EUT Conf.	Temperature	Voltage	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Verdict
10M_M	+20 °C	85 %	-2.66	-0.0035419	-0.0016112	---
		100 %	-1.45	-0.0019308	0	---
		115 %	-2.00	-0.0026631	-0.0007324	---

### 1.2 Frequency Range

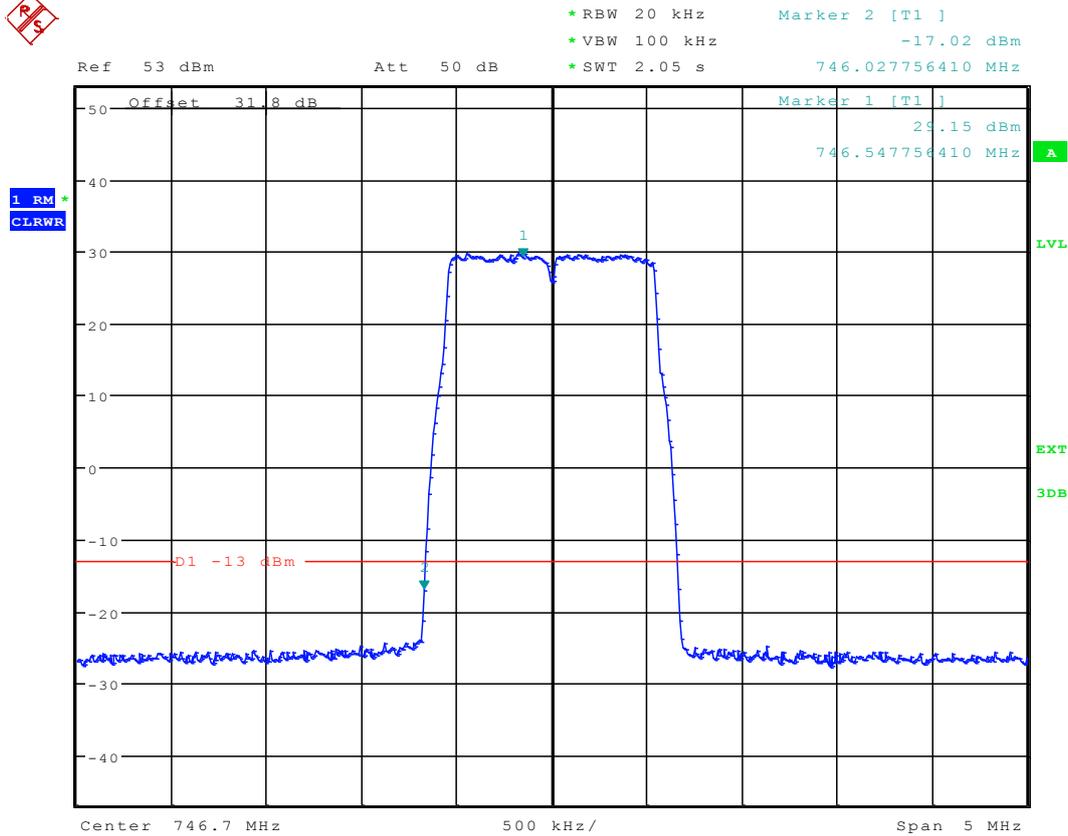
EUT Conf.	Reference Point, fL/fH [MHz]	Frequency Range [MHz]	Verdict
1M4_B	746.027756410	746.027754960	Pass
1M4_T	755.969743590	755.969745040	Pass
3M_B	746.011025641	746.011024191	Pass
3M_T	755.987051282	755.987052732	Pass
5M_B	746.033461538	746.033460088	Pass
5M_T	755.977884615	755.977886065	Pass
10M_M	746.058333333	746.058331883	Pass
10M_M	755.974358974	755.974360424	Pass

## 2 Test Plot

NOTE: Only the test plots for the measurements of Frequency Range are supplied.

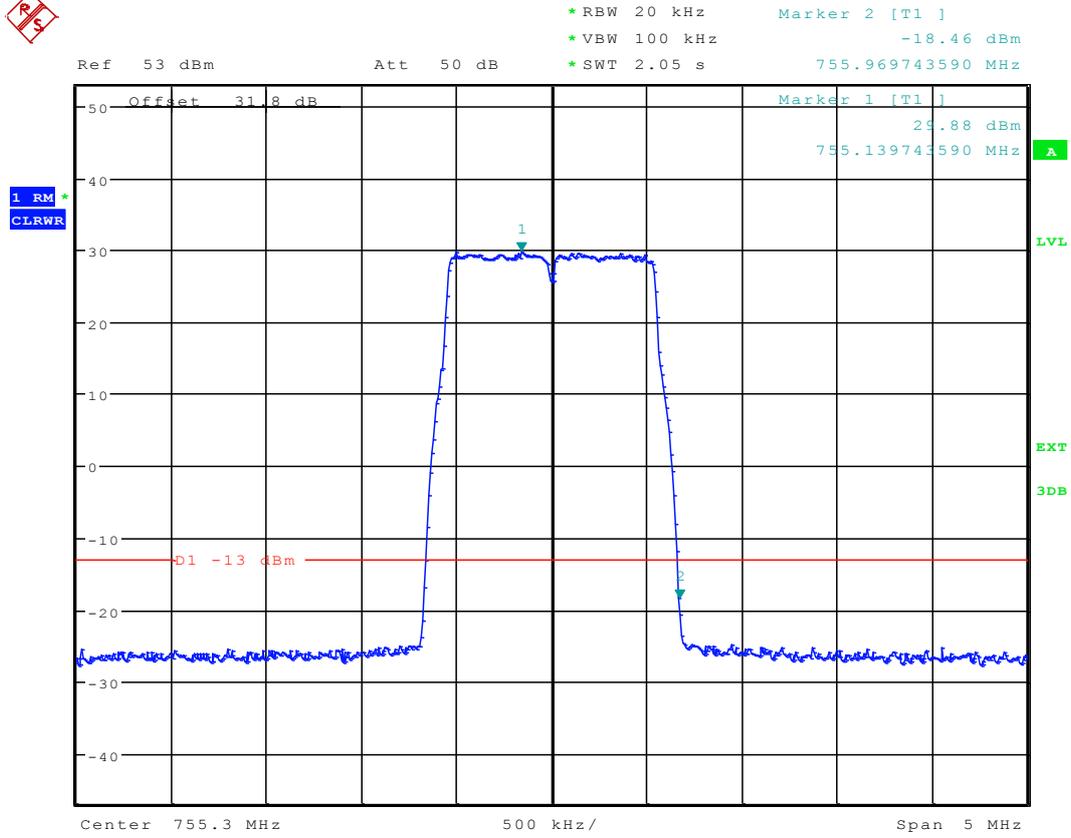
### 2.1 Frequency Rang

#### 2.1.1 1M4\_B



Date: 16.FEB.2014 12:25:47

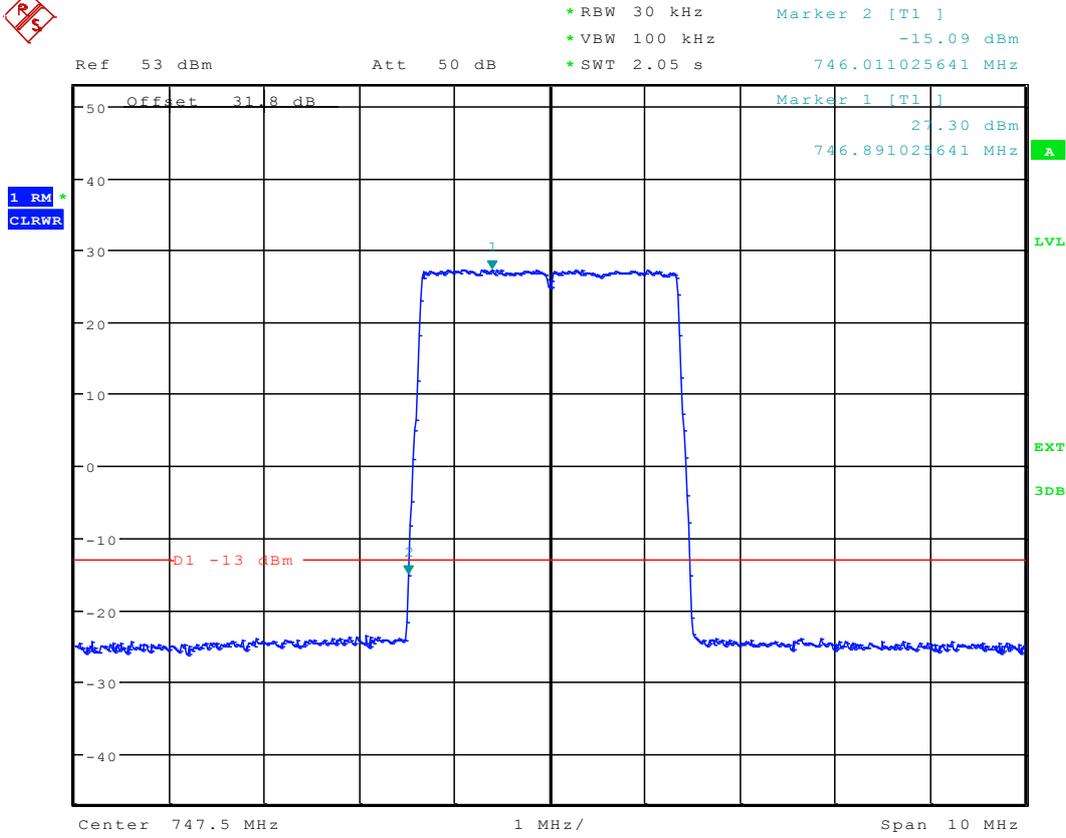
### 2.1.2 1M4\_T



Date: 16.FEB.2014 12:28:34



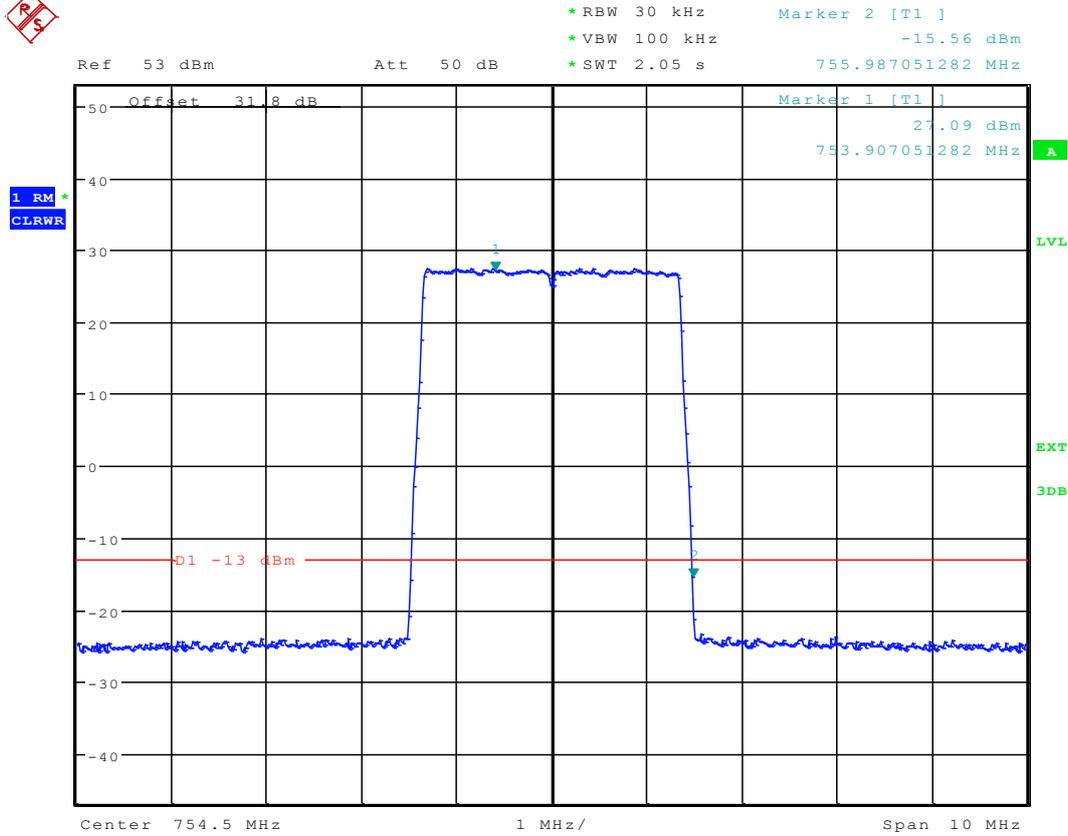
2.1.3 3M\_B



Date: 16.FEB.2014 12:20:04



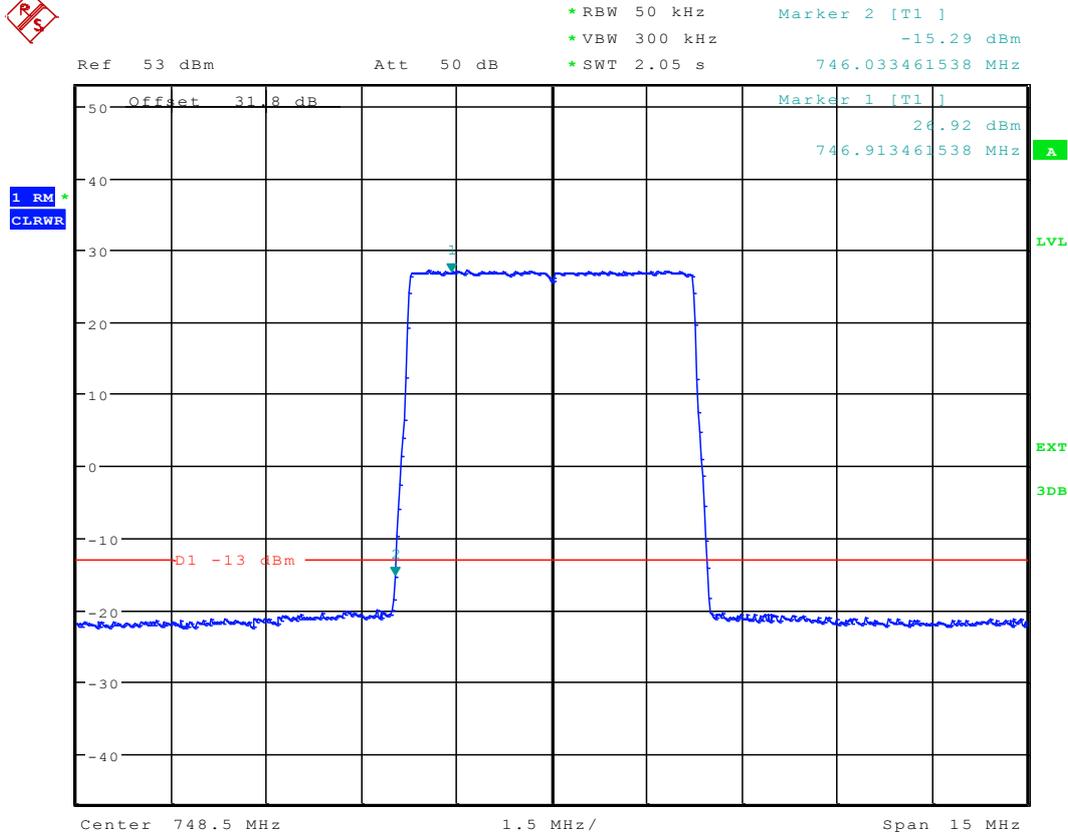
2.1.4 3M\_T



Date: 16.FEB.2014 12:47:38



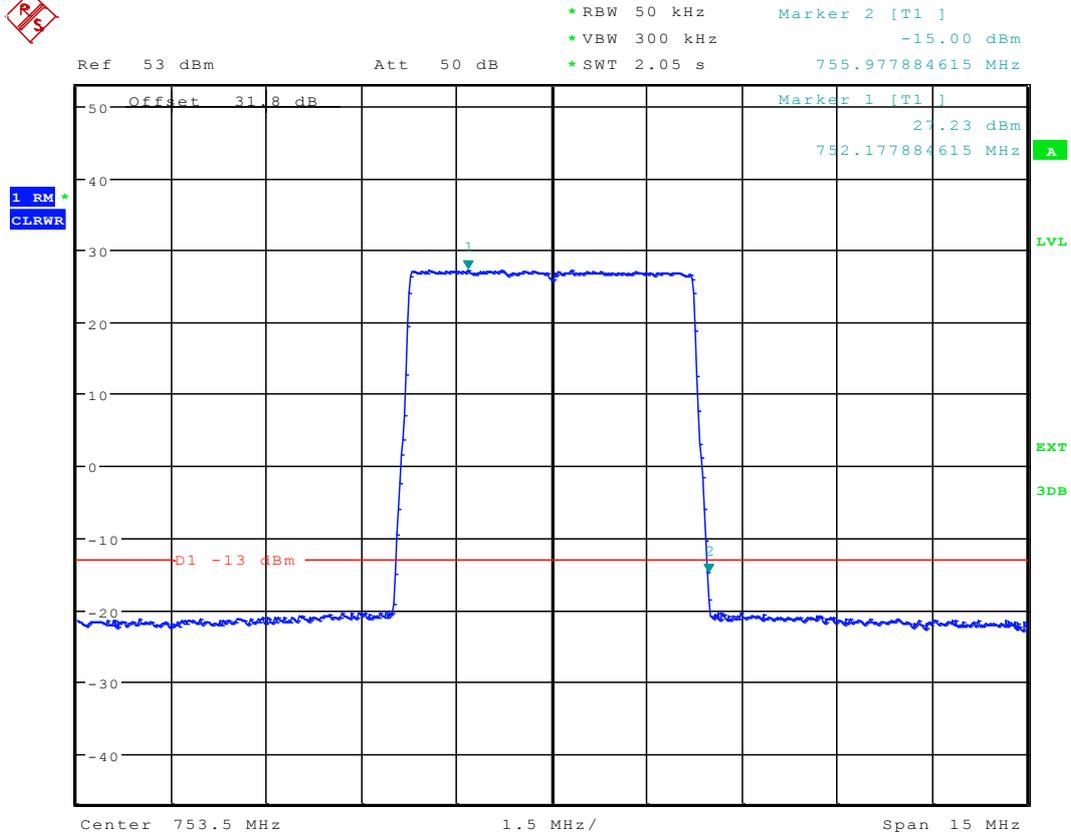
2.1.5 5M\_B



Date: 16.FEB.2014 12:32:40



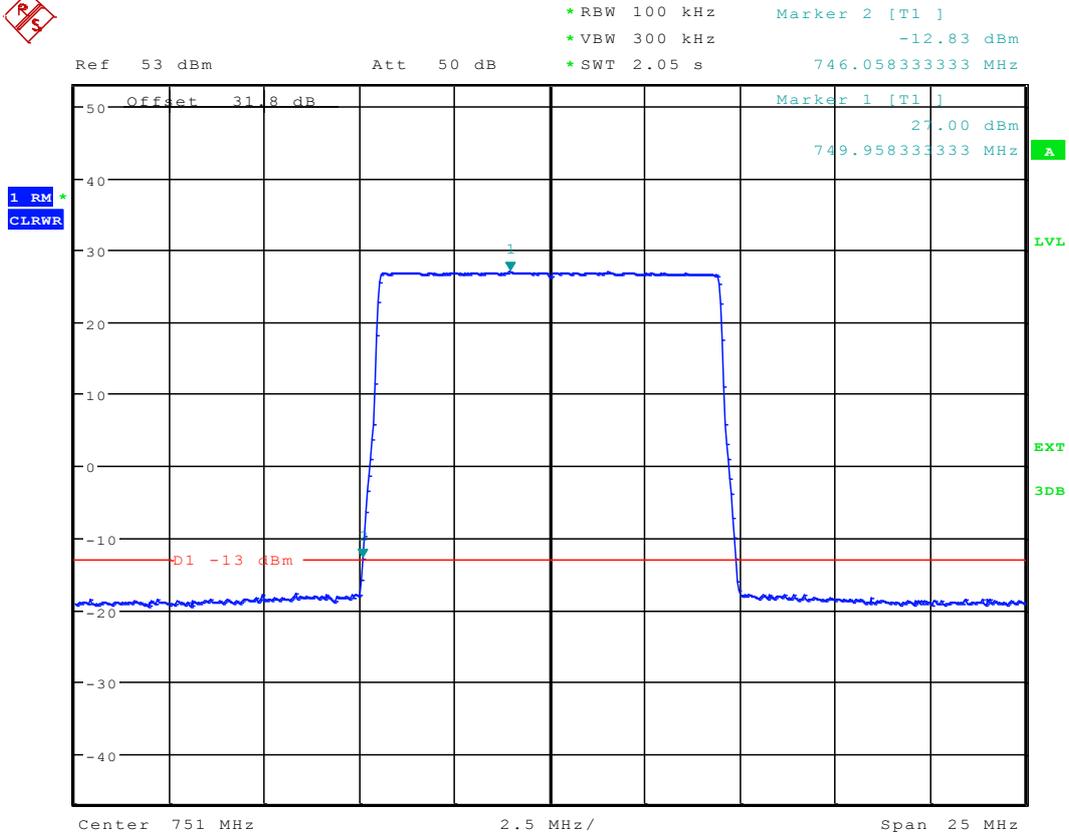
2.1.6 5M\_T



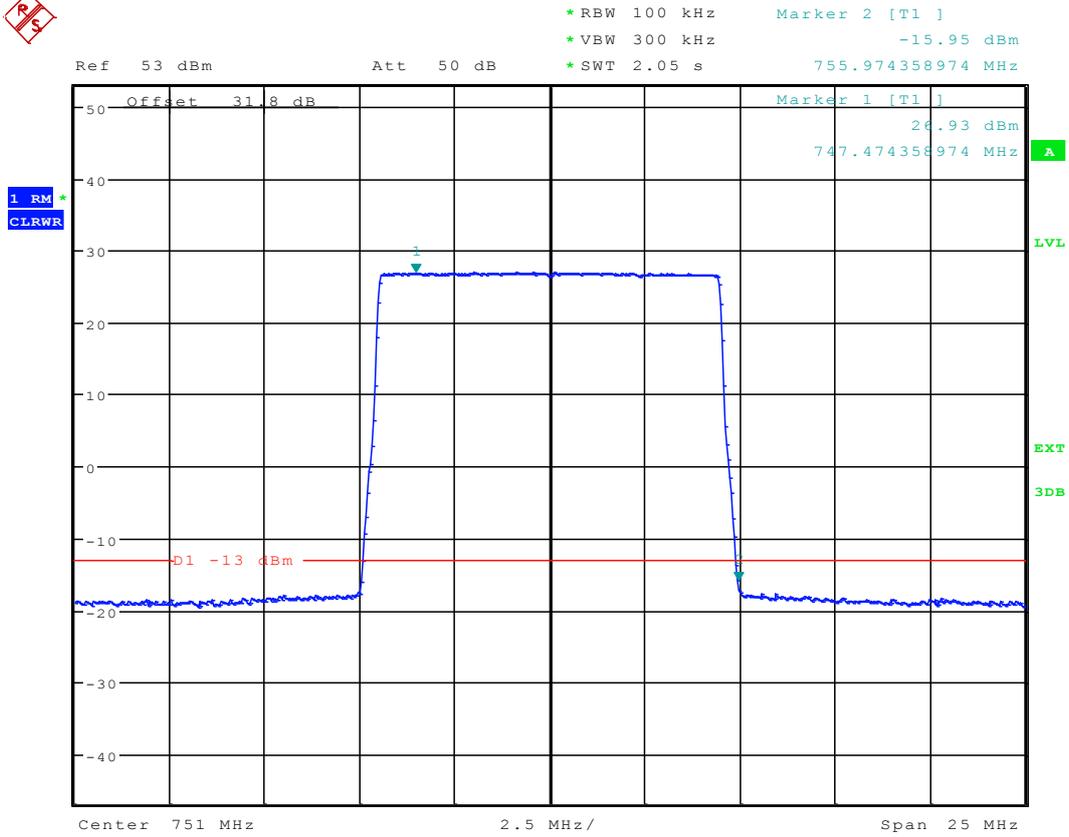
Date: 16.FEB.2014 12:35:06



2.1.7 10M\_M



Date: 16.FEB.2014 12:37:47



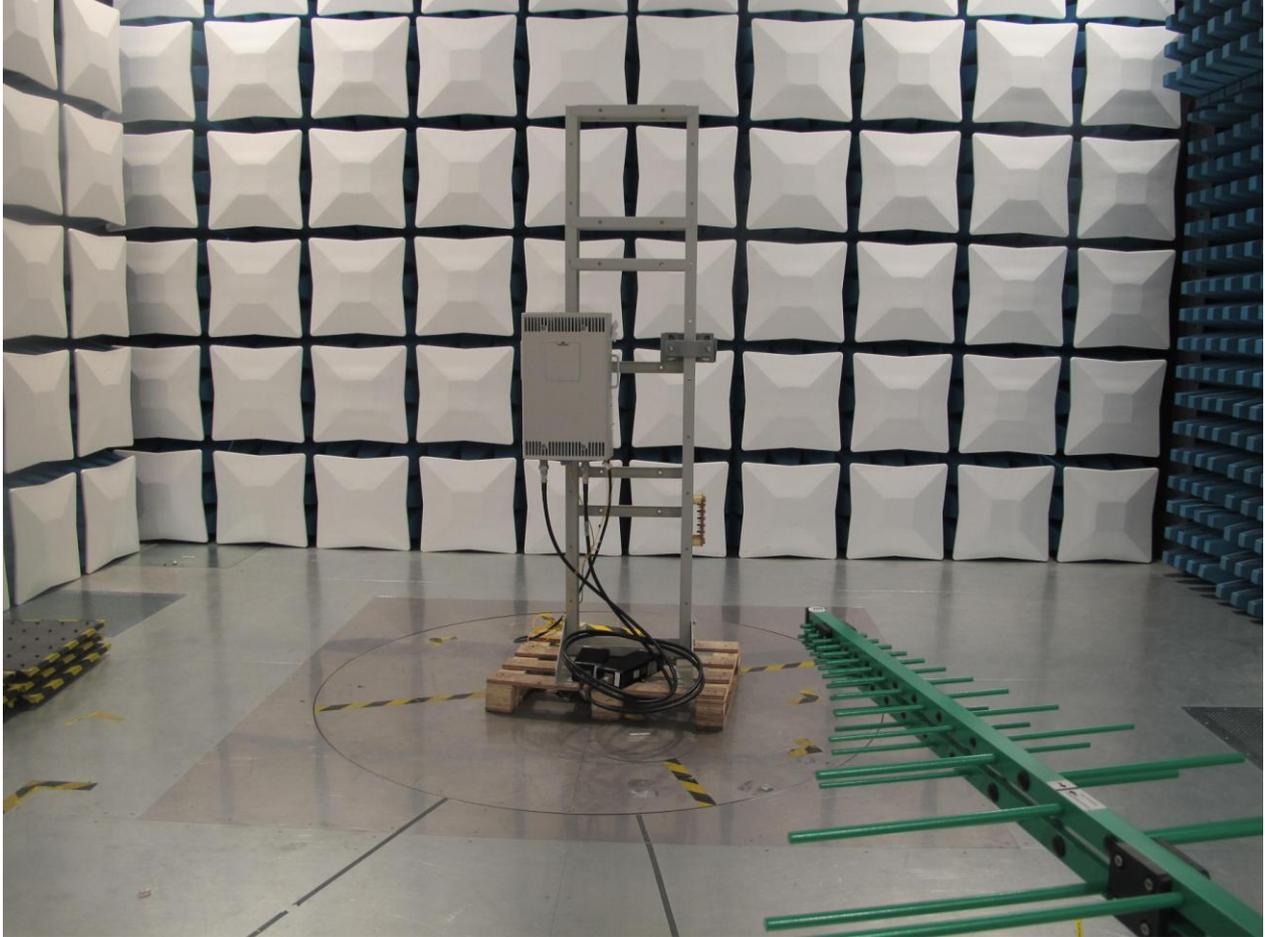
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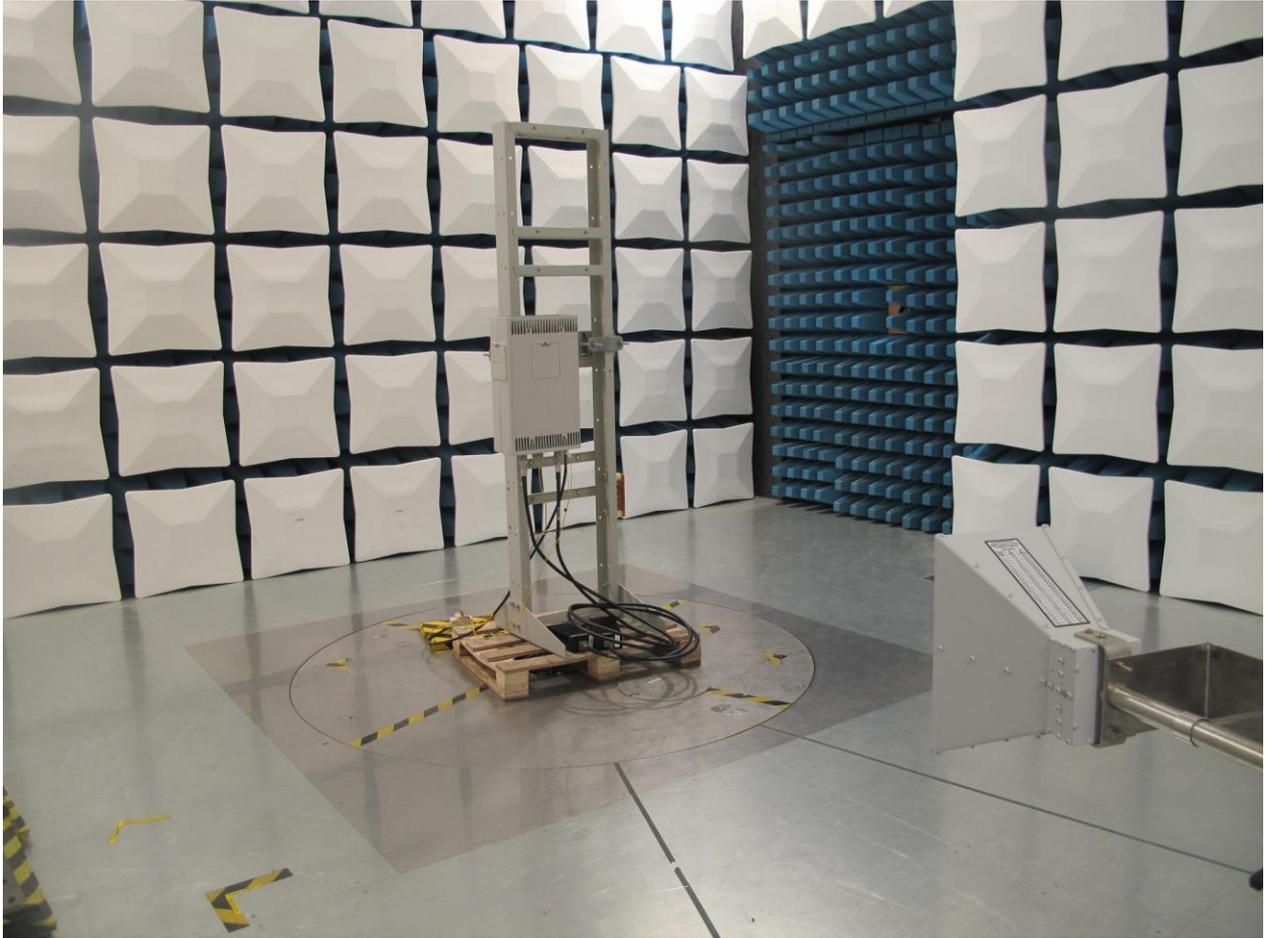
# Appendix H: Photos of Test Setups

## 1 Test Setup 3

### 1.1 Frequency range below 1 GHz



## 1.2 Frequency range above 1 GHz



END