

Test Report

Report Number:

F210808E1

Equipment under Test (EUT):

**Amplifier for amateur radio service
OM4001A**

Applicant:

OM Power, s.r.o.

Manufacturer:

OM Power, s.r.o.



Deutsche
Akkreditierungsstelle
D-PL-17186-01-01
D-PL-17186-01-02
D-PL-17186-01-03

References

[1] FCC CFR 47 Part 97 Amateur Radio Service

Test Result

The requirements of the tests performed as shown in the overview (clause 4) were fulfilled by the equipment under test. The complete test results are presented in the following.

Tested and written
by:



Wolfgang KASALOWSKY
06.09.2022

Signature

Reviewed and
approved by:



Bernd STEINER
06.09.2022

Signature

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1 Identification

1.1 Applicant

Name:	OM Power, s.r.o.
Address:	930 30 Bac 126
Country:	Slovakia
Name for contact purposes:	Jozef LANG
Phone:	+421-905-321-410
eMail address:	om-power@om-power.com
Applicant represented during the test by the following person:	None

1.2 Manufacturer

Name:	OM Power, s.r.o.
Address:	930 30 Bac 126
Country:	Slovakia
Name for contact purposes:	Jozef LANG
Phone:	+421-905-321-410
eMail address:	om-power@om-power.com
Manufacturer represented during the test by the following person:	None

1.3 Test Laboratory

The tests were carried out by: **PHOENIX TESTLAB GmbH**
Königswinkel 10
32825 Blomberg
Germany

Accredited by Deutsche Akkreditierungsstelle GmbH (DAkkS) in compliance with DIN EN ISO/IEC 17025 under Reg. No. D-PL-17186-01-06 and D-PL-17186-01-05, FCC Test Firm Designation Number DE0004, FCC Test Firm Registration Number 469623, CAB Identifier DE0003 and ISED# 3469A.

1.4 EUT (Equipment under Test)

Test object: *	Amplifier for amateur radio service
Model name: *	OM4001A
Model number: *	OM4001A
Order number: *	OM4001A
FCC ID: *	2A3MOOM4001A

	EUT number		
	1	2	3
Serial number: *	2124	-	-
PCB identifier: *	PWR meter V12 RF relay PCB Fuse FU4 SW ON 4001A HV supply Screen board OM2000 Input 2000A BOX 2000A Screen board OM2000 LOG 4001A OUT 2000A Heating control	-	-
Hardware version: *	2021-1	-	-
Software version: *	2.89	-	-

* Declared by the applicant

One EUT was used for all tests.

Note: PHOENIX TESTLAB GmbH does not take samples. The samples used for tests are provided exclusively by the applicant.

1.5 Technical Data of Equipment

General	
Power supply EUT: *	2 x 240V AC 60 Hz
Supply voltage EUT: *	U _{nom} = 240 V
Frequency ranges: *	1.751 MHz – 2.050 MHz 3.451 MHz – 4.000 MHz 6.991 MHz – 7.350 MHz 10.051 MHz – 10.200 MHz 13.991 MHz – 14.400 MHz 18.011 MHz – 18.200 MHz 20.991 MHz – 21.500 MHz 24.801 MHz – 25.000 MHz 28.001 MHz – 29.770 MHz
Temperature range: *	0 °C to +35 °C

Ports / Connectors				
Identification	Connector		Length during test	Shielding (Yes / No)
	EUT	Ancillary		
AC1 240 V / 60 Hz	C19	Schuko plug		No
AC2 240 V / 60 Hz	C19	Schuko plug		No
INPUT	SO239	PL259		Yes
OUTPUT	SO239	PL259		Yes
TCVR	DB 9 male	Not used	-	-
CI-V	3.5 mm mono plug	Not used	-	-
LAN	RJ-45	Not used	-	-
PC	DB 9 female	Not used	-	-
CONTROL	D-sub 15 female	Not used	-	-
KEY IN	RCA connector	RCA plug		Yes
KEY OUT	RCA connector	Not used	-	-
ANT / BPF	D-sub 15 male	Not used	-	-

Equipment used for testing	
SW transceiver *1	Icom IC-7300, S/N 03017399
DC cable with EMC filter *1	Icom OPC-1457R
Switching power supply *1	HAM SPS-1230

*1 Provided by the applicant

*2 Provided by the laboratory

1.6 Dates

Date of receipt of test sample:	02.11.2021
Start of test:	11.11.2021
End of test:	09.12.2021

2 Operational States

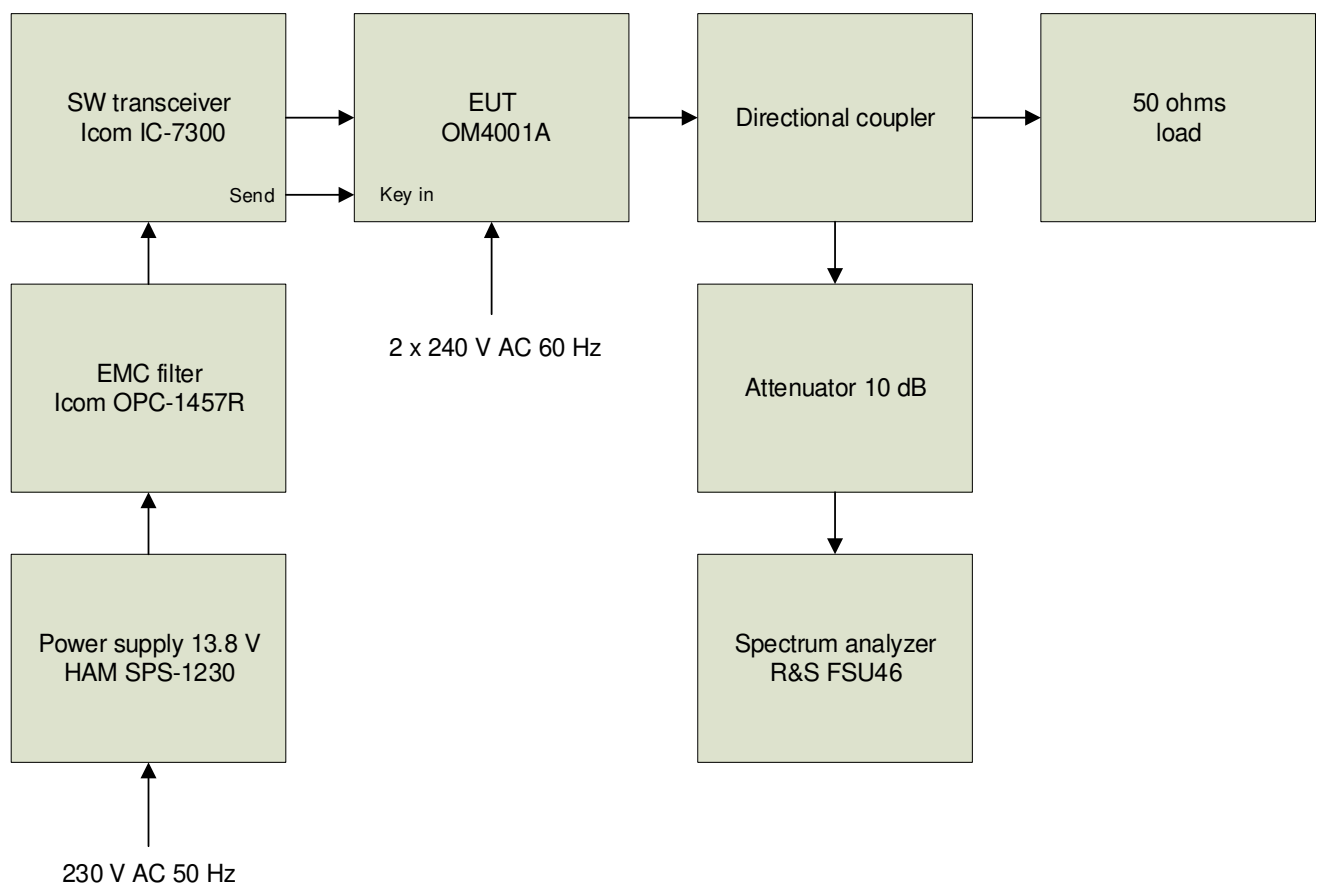
Description of function of the EUT:

The EUT is an amplifier for amateur radio service running in normal operation mode.

The following states were defined as the operating conditions:

The EUT was supplied by two lines 240 V 60 Hz AC during all tests.
 The EUT is operated at the lesser of 1.5 kW PEP or its full output power.
 In a second step the amplifier is operated in "standby".
 Input to the EUT is a CW signal generated by a SW transceiver.
 Frequencies for the tests were chosen in the middle of the band.

The system was setup as follows:



3 Additional Information

The EUT was not labeled as required by FCC.
 The printing above the mains connectors is not correct regarding voltage and frequency.

4 Overview

Application	Frequency range	FCC 47 CFR Part 97 section [1]	Tested EUT	Status
Spurious emissions	Up to 10 th of the fundamental frequency	97.307 (d) 97.317 (a)(1)	1	Passed
Amplifier gain	Fundamental frequency	97.317 (a)(2)	1	Passed
Amplification between 26 MHz and 28 MHz	26 MHz – 28 MHz	97.317 (a)(3)	1	Passed

5 Results

5.1 Amplifier Gain

Ambient temperature:	22 °C
Relative humidity:	36 %

Date:	01.12.2021
Tested by:	W. Kasalowsky

Frequency f ₀ [MHz]	Input power [dBm]	Output power [dBm]	Amplifier gain [dB]	Limit [dB]	Result
1.900	47.4	61.7	14.3	15.0	Passed
3.650	48.0	61.7	13.7	15.0	Passed
7.100	48.3	61.7	13.4	15.0	Passed
10.125	48.6	61.7	13.1	15.0	Passed
14.175	48.4	61.7	13.3	15.0	Passed
18.118	48.8	61.6	12.8	15.0	Passed
21.225	47.0	61.7	14.7	15.0	Passed
24.940	49.8	61.6	11.8	15.0	Passed
28.850	48.7	61.6	12.9	15.0	Passed
Measurement uncertainty: ±2.3 dB					

Ambient temperature:	22 °C
Relative humidity:	26 %

Date:	06.12.2021
Tested by:	W. Kasalowsky

Frequency f_0 [MHz]	Input power [dBm]	Output power [dBm]	Amplifier gain [dB]	Limit [dB]	Result
24.940	49.8	61.6	11.8	15.0	Passed
26.000	48.7	2.0	-46.7	0	Passed
27.000	48.7	2.5	-46.2	0	Passed
28.000	48.7	2.0	-46.7	0	Passed
28.850	48.7	61.6	12.9	15.0	Passed
Measurement uncertainty: ± 2.3 dB					

No gain was measured between 26 MHz and 28 MHz.

Test equipment (please refer to chapter 6 for details)
1 - 7

5.2 Spurious emissions

Ambient temperature:	22 °C
Relative humidity:	36 %

Date:	01.12.2021
Tested by:	W. Kasalowsky

Operating mode:

Frequency f_0 [MHz]	Output power [dBm]	$2 * f_0$ [dBc]	$3 * f_0$ [dBc]	$4 * f_0$ [dBc]	$5 * f_0$ [dBc]	$6 * f_0$ [dBc]	$7 * f_0$ [dBc]	$8 * f_0$ [dBc]	$9 * f_0$ [dBc]	$10 * f_0$ [dBc]	Limit [dBc]	Result
1.900	61.7	52.2	>67.5	>67.5	>67.5	>67.5	>67.5	>67.5	>67.5	>67.5	43	Passed
3.650	61.7	55.4	>66.0	>66.0	>66.0	>66.0	>66.0	>66.0	>66.0	>66.0	43	Passed
7.100	61.7	63.4	>66.0	>66.0	>66.0	>66.0	>66.0	>66.0	>66.0	>66.0	43	Passed
10.125	61.7	56.0	>66.0	>66.0	>66.0	>66.0	>66.0	>66.0	>66.0	>66.0	43	Passed
14.175	61.7	>65.5	>65.5	>65.5	>65.5	>65.5	>65.5	>65.5	>65.5	>65.5	43	Passed
18.118	61.6	>65.5	>65.5	>65.5	>65.5	>65.5	>65.5	>65.5	>65.5	>65.5	43	Passed
21.225	61.7	63.6	>65.5	>65.5	>65.5	>65.5	>65.5	>65.5	>65.5	>65.5	43	Passed
24.940	61.6	56.1	63.5	58.1	62.6	>65.0	>65.0	>65.0	>65.0	>65.0	43	Passed
28.850	61.6	55.2	>66.5	60.7	>66.5	>66.5	>66.5	>66.5	>66.5	>66.5	43	Passed
Measurement uncertainty: ± 2.3 dB												

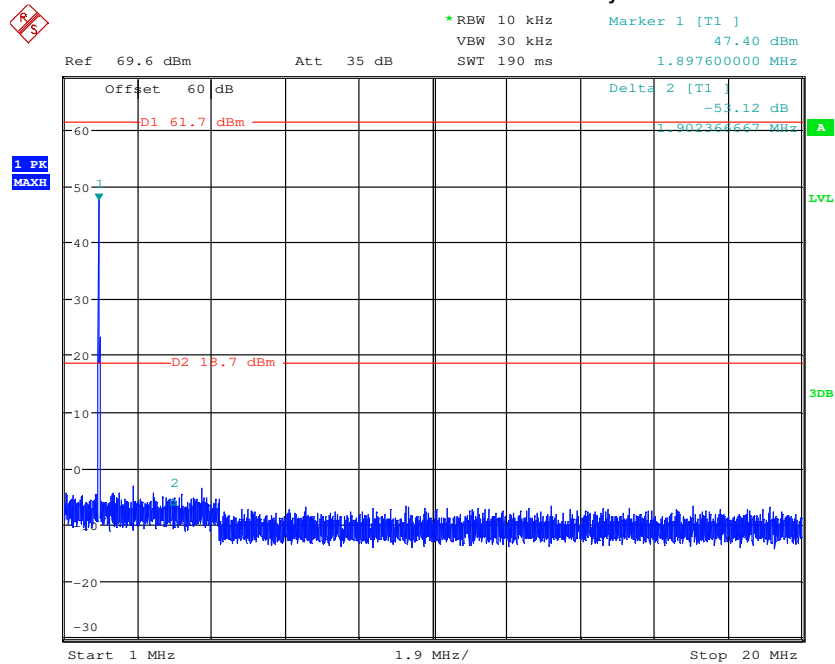
Standby mode:

In standby mode no spurious emissions were found above the noise floor of the measuring system.

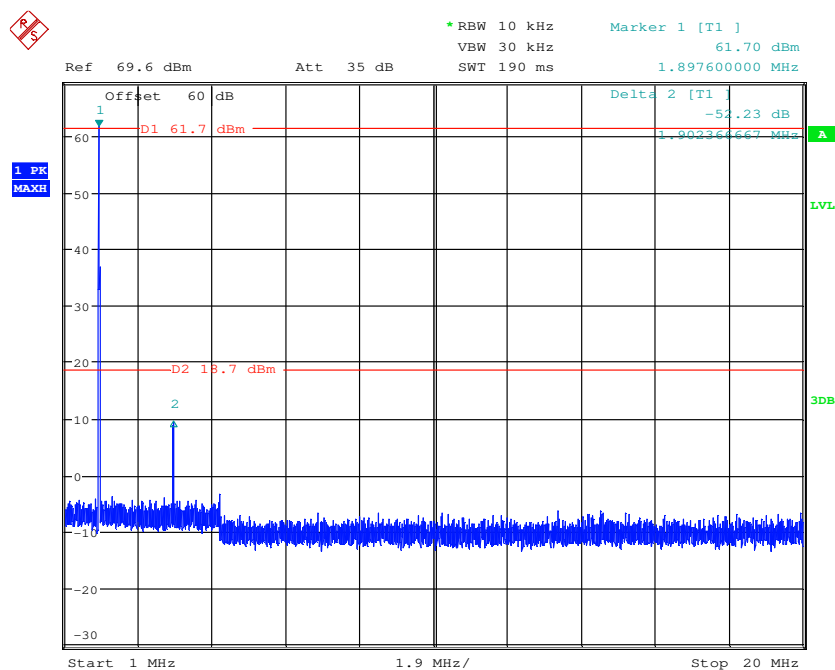
Test equipment (please refer to chapter 6 for details)
1 - 7

5.3 Measurement Plots

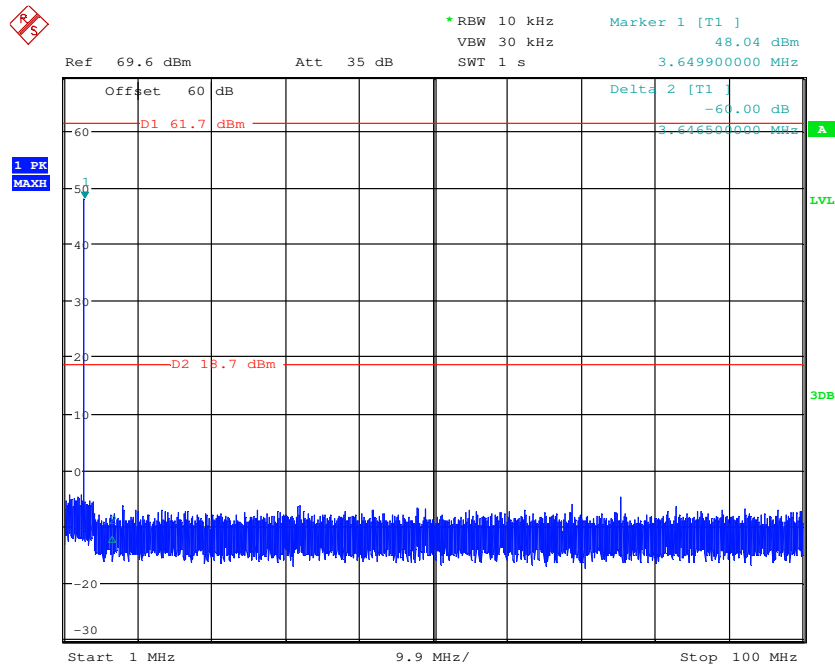
EUT at 1.9 MHz in mode “standby”



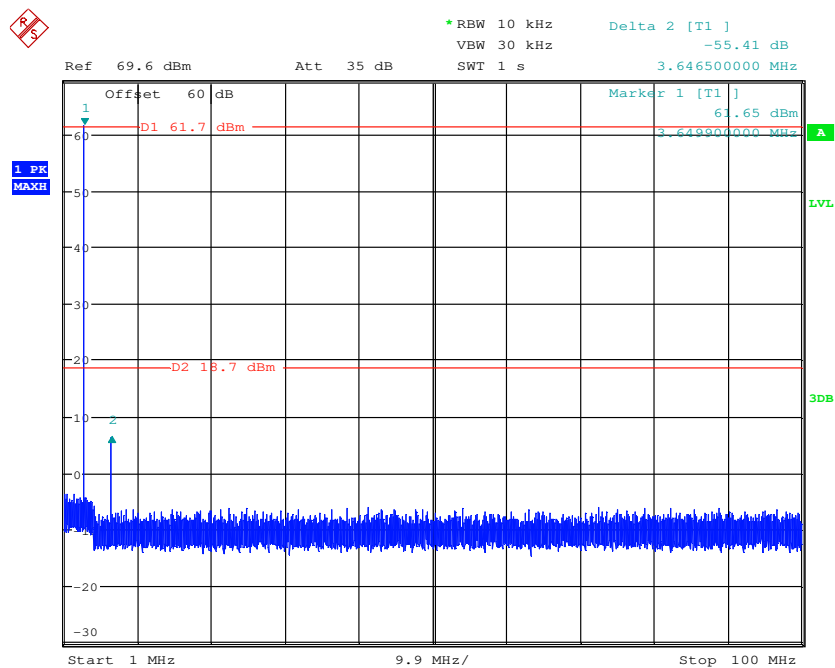
EUT at 1.9 MHz in mode “on”



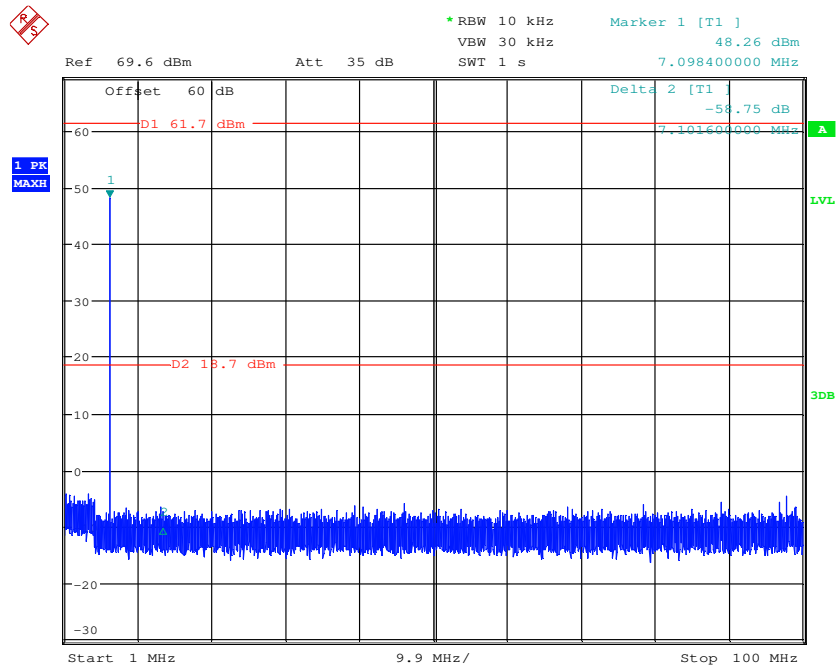
EUT at 3.65 MHz in mode "standby"



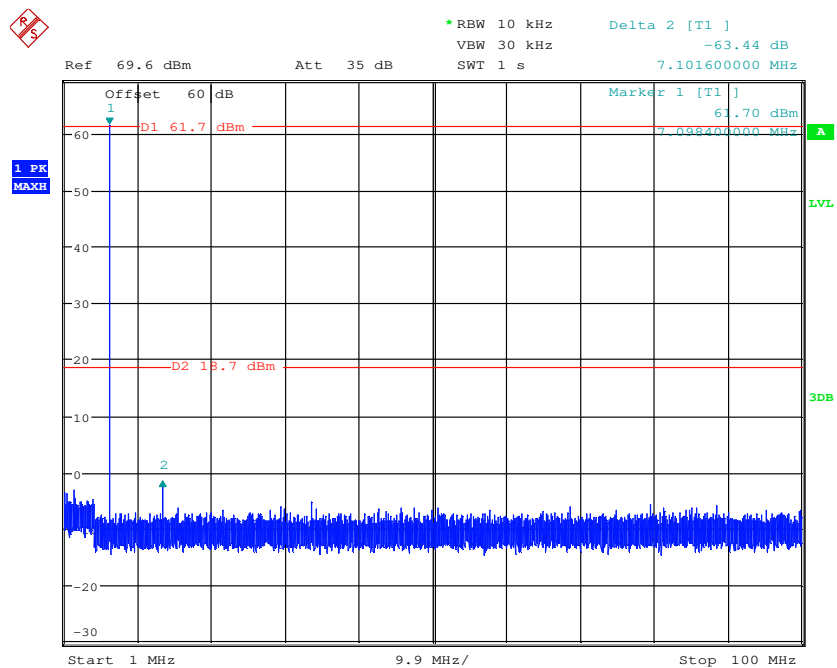
EUT at 3.65 MHz in mode "on"



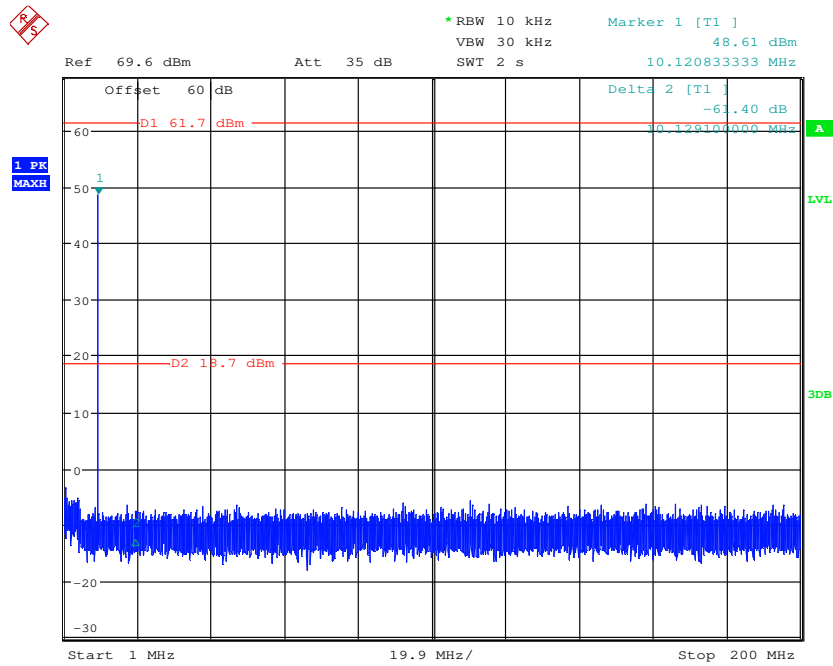
EUT at 7.1 MHz in mode “standby”



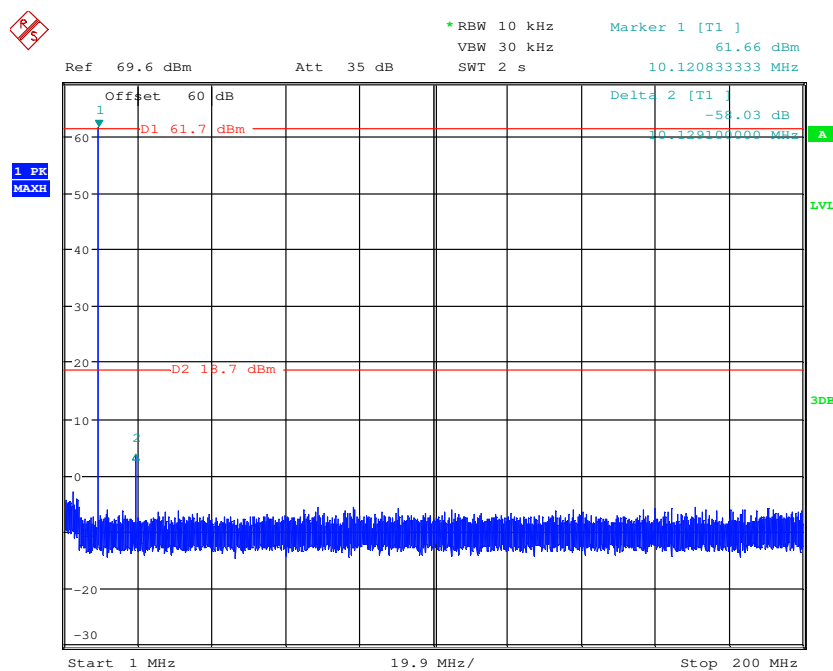
EUT at 7.1 MHz in mode “on”



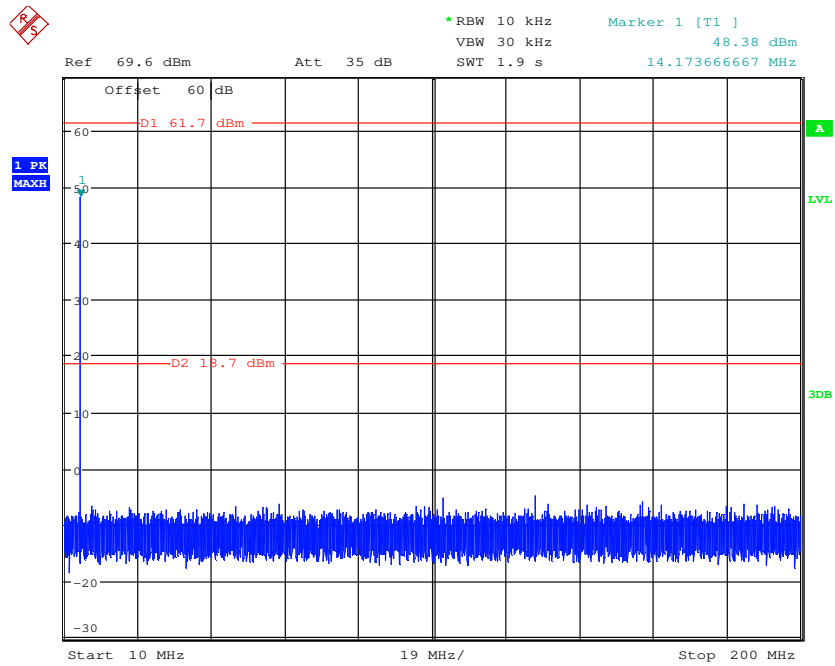
EUT at 10.125 MHz in mode "standby"



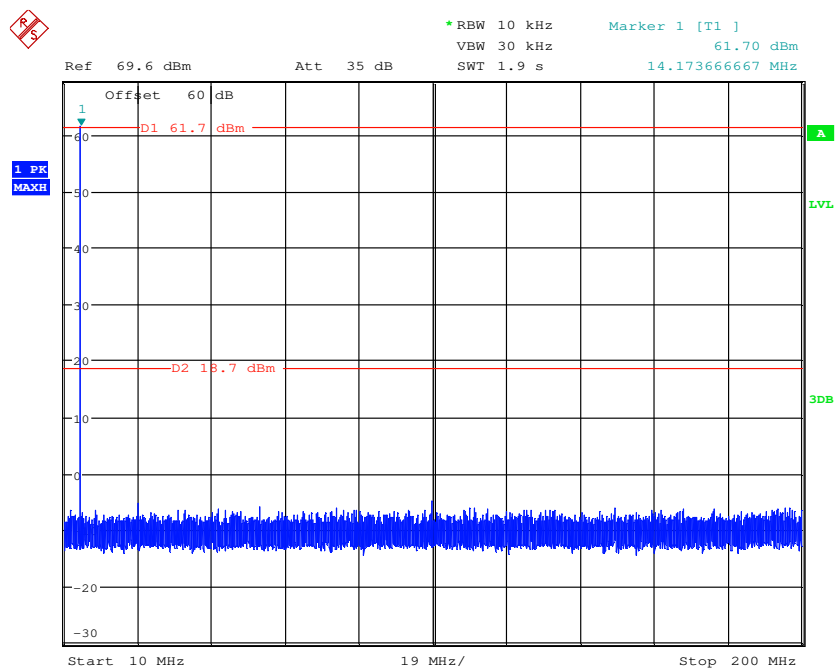
EUT at 10.125 MHz in mode "on"



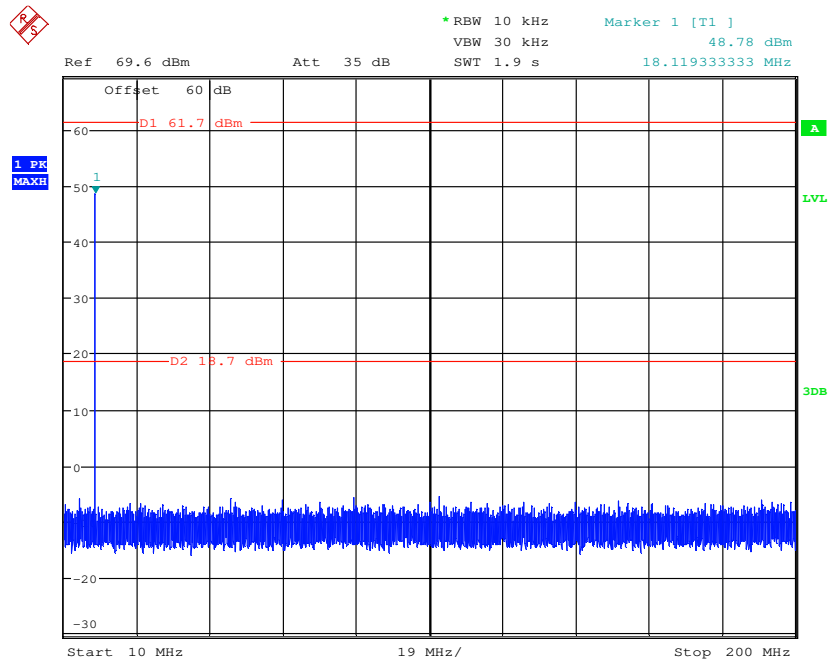
EUT at 14.175 MHz in mode "standby"



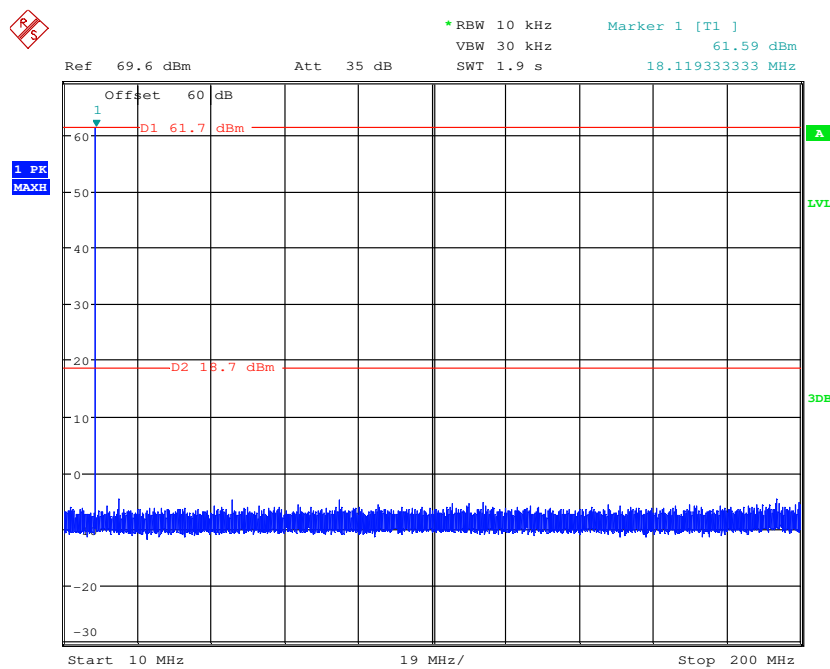
EUT at 14.175 MHz in mode "on"



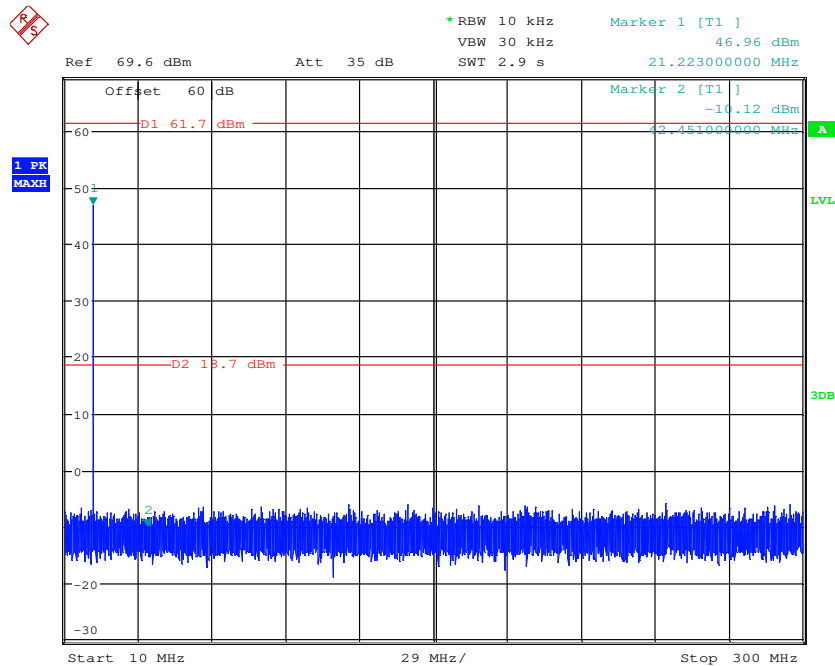
EUT at 18.118 MHz in mode “standby”



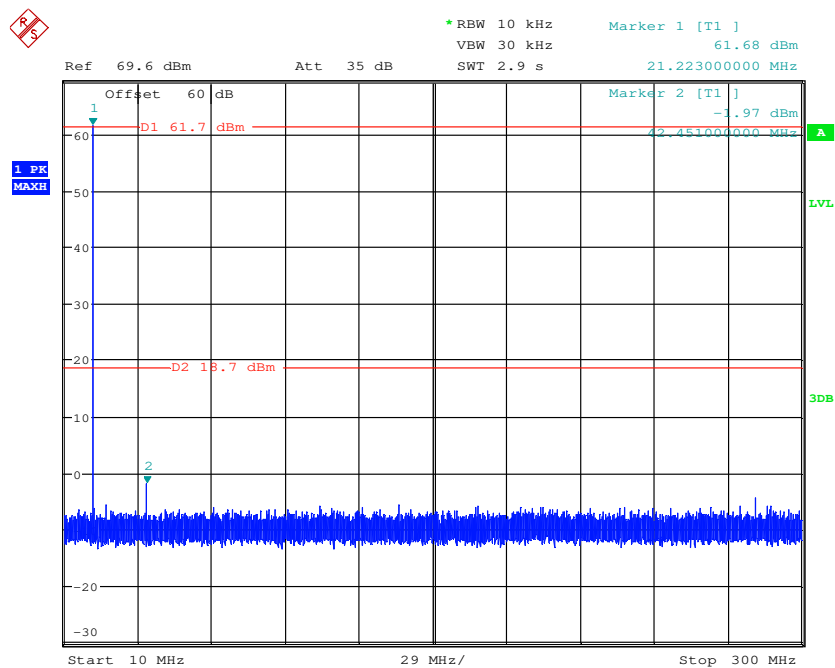
EUT at 18.118 MHz in mode “on”



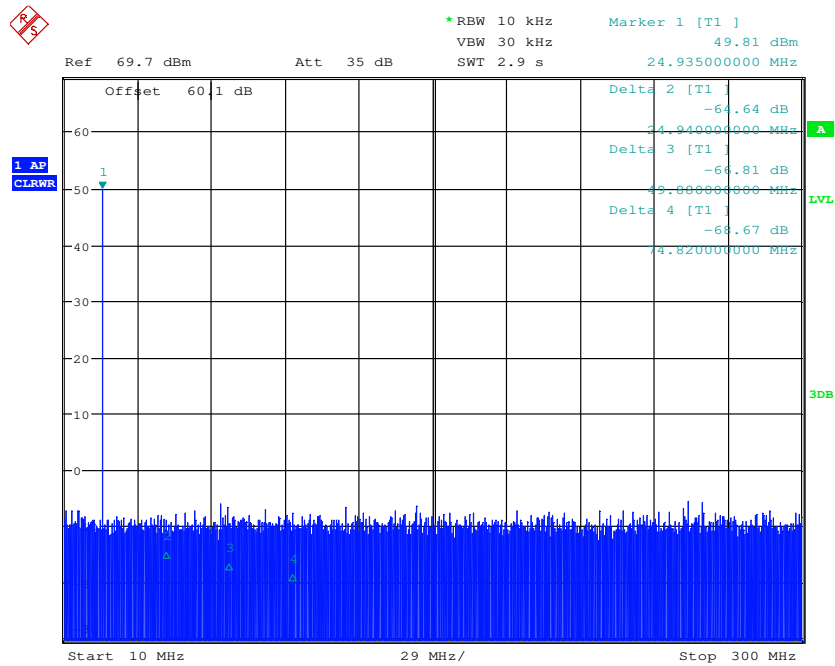
EUT at 21.225 MHz in mode "standby"



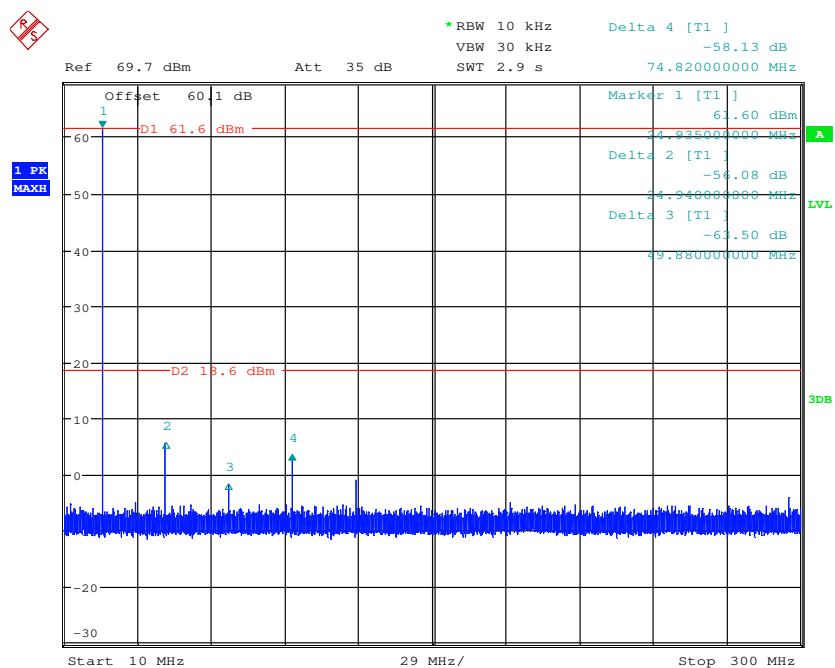
EUT at 21.225 MHz in mode "on"

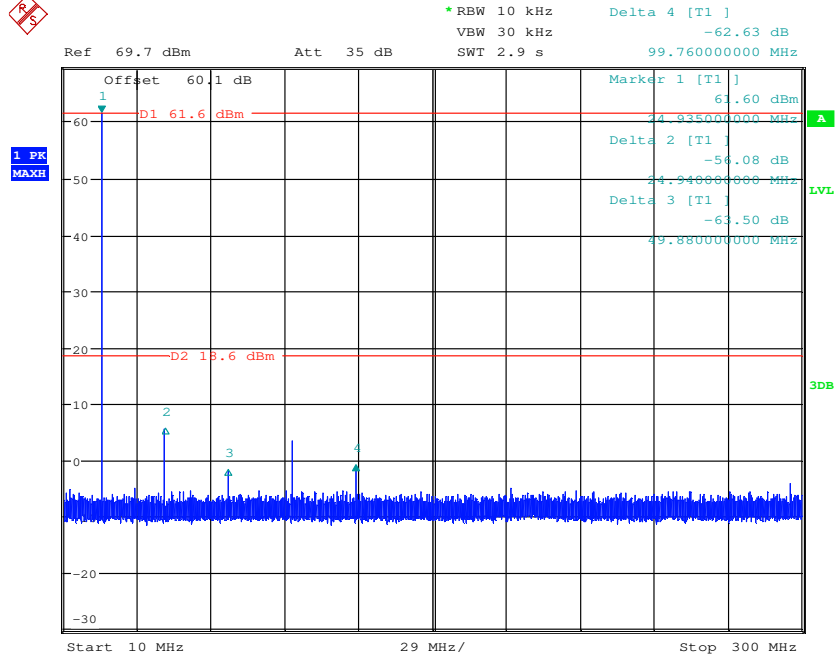


EUT at 24.94MHz in mode “standby”

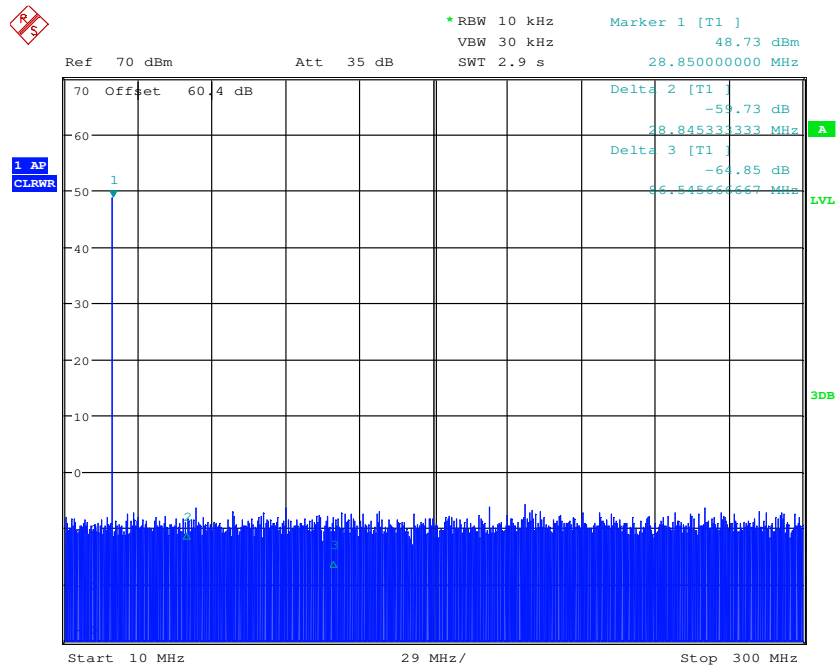


EUT at 24.94 MHz in mode “on”

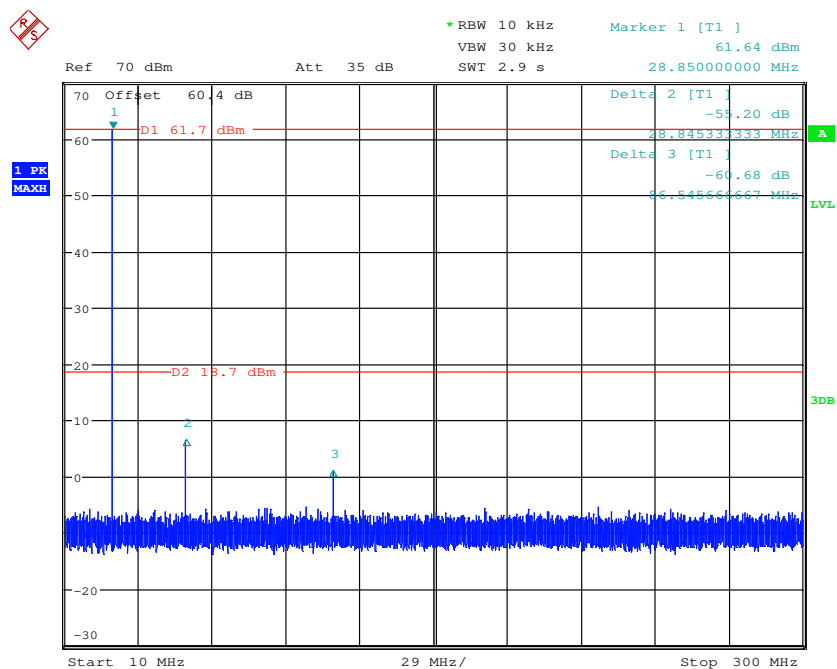




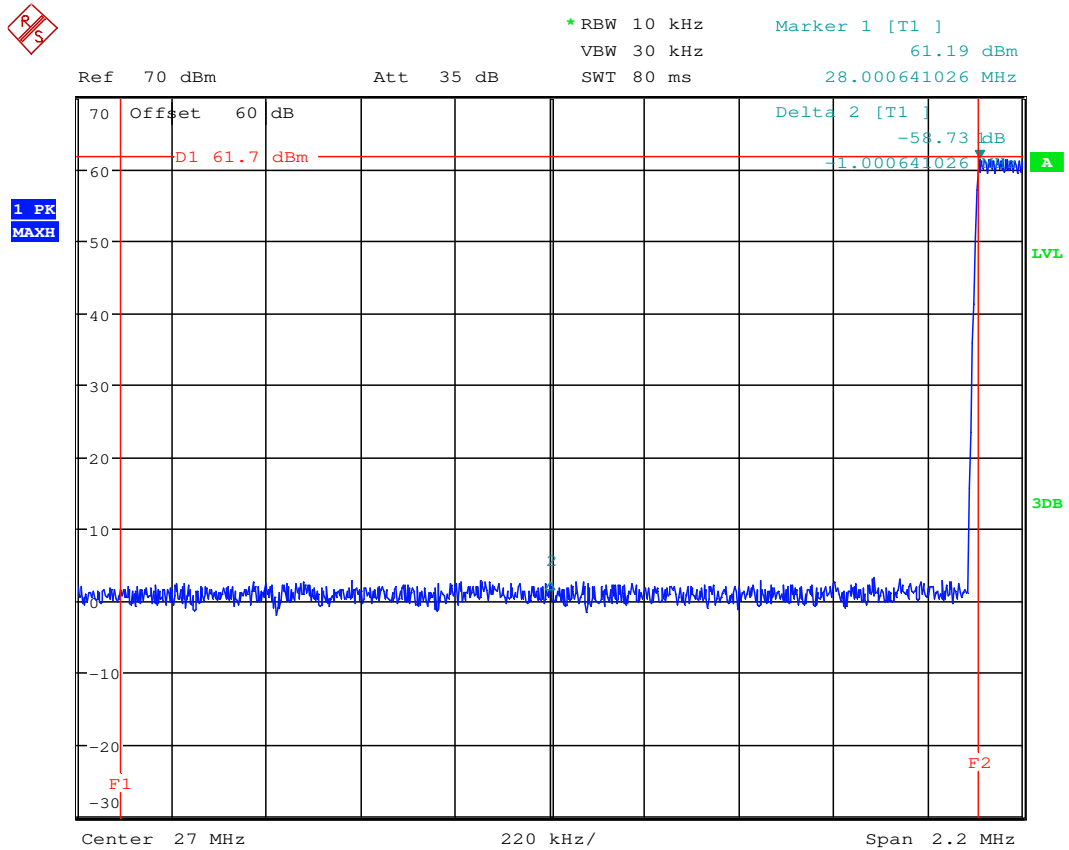
EUT at 28.85 MHz in mode “standby”



EUT at 28.85 MHz in mode “on”



Input swept from 25.9 MHz to 28.1 MHz



6 Test Equipment used for Tests

No.	Test equipment	Type	Manufacturer	Serial No.	PM. No.	Cal. Date	Cal Due
1	Directional coupler	DC2000	Amplifier Research	13084	480105	Calibration not necessary	
2	Load 50Ohm 4kW	17-0755V Forced Air Oil Cooled	Diconex	50897-001	483582	Calibration not necessary	
3	RF attenuator	WA8-10	Weinschel	7538	410112	Calibration not necessary	
4	Spectrum Analyser	FSU46	Rohde & Schwarz	200125	480956	25.02.2021	02.2022
5	Software	Software	Spitzenberger & Spies	Siehe Textzusatz	480114	Calibration not necessary	
6	EMC test system	EMC D 30000 / PAS	Spitzenberger & Spies	A4507 00/1 1110	481301	Calibration not necessary	
7	Contol unit	SyCore 1k4	Spitzenberger & Spies	A4507 12/0 1110	481302	21.09.2020	09.2022

7 Report History

Report Number	Date	Comment
F210808E1	06.09.2022	Initial Test Report
-	-	-
-	-	-

8 List of Annexes

Annex A	Test Setup Photos	4 pages
Annex B	EUT External Photos	5 pages
Annex C	EUT Internal Photos	21 pages