



**Nemko Test Report:** 6L0169RUS1

**Applicant:** Navini Networks  
2240 Campbell Creek Blvd. Suite 110  
Richardson, TX 75082

**Equipment Under Test:** 2.3-BTS3A-R1 (AC unit)  
2.3-BTS3T-R1 (24 VDC unit)  
2.3-BTS3F-R1 (-48 VDC unit)

**In Accordance With:** FCC PART 27, Subpart C/D  
Wireless Communication  
Services (WCS)

**Tested By:** Nemko Dallas Inc.  
802 N. Kealy  
Lewisville, Texas 75057-3136

A handwritten signature in black ink, appearing to read 'Abe Cox', is placed above a vertical red line.

Abe Cox, Key Account Manager

**Date:** September 25, 2006

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**Section 1. Summary of Test Results**

Manufacturer: Navini Networks

Model No.: 2.3-BTS3A-R1 (AC unit)  
2.3-BTS3T-R1 (24 VDC unit)  
2.3-BTS3F-R1 (-48 VDC unit)

Serial No.: 1

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 27, Subpart C.

<input checked="" type="checkbox"/> New Submission	<input checked="" type="checkbox"/> Production Unit
<input type="checkbox"/> Class II Permissive Change	<input type="checkbox"/> Pre-Production Unit

**THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.**

**THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE. NONE**

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This report applies only to the items tested.

**Summary Of Test Data**

NAME OF TEST	PARA. NO.	SPEC. LIMIT	RESULT
RF Power Output	2.1046	33 dBW	Complies
Occupied Bandwidth	2.1049	5.5 MHz	Complies
Spurious Emissions @ Antenna Terminals	2.1051	-13 dBm	Complies
Field Strength of Spurious Radiation	2.1053	-13 dBm	Complies
Frequency Stability	2.1055	Must remain within authorized bandwidth	Complies Note 1

**Footnotes:**

Note 1 During Frequency Stability the BTS has Software control at -15 degrees C ambient the EUT ceases operation.

**Section 2. General Equipment Specification**

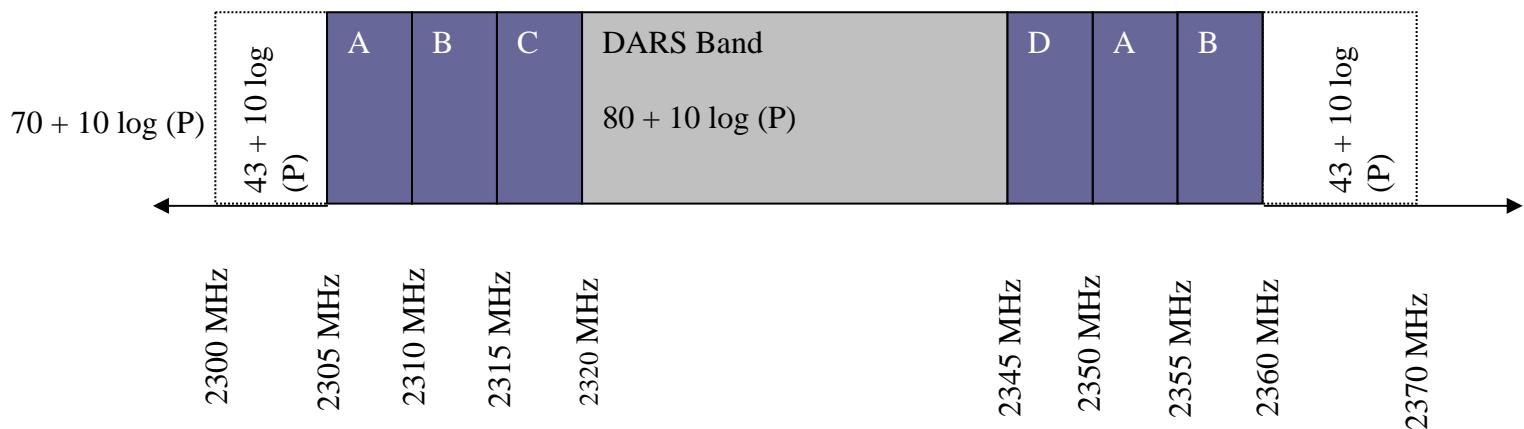
<b>Power Supply</b>	-48 Vdc				
<b>Frequency Range (See note below):</b>	2305-2320 MHz 2345-2360 MHz				
<b>Type(s) of Modulation:</b>	<b>F3E (Voice)</b>	<b>F1D</b>	<b>W7D</b>	<b>D7W (QAM)</b>	<b>F9W</b>
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Emission Designator:</b>	5M00F9W 5M00W7D				
<b>Output Impedance:</b>	50 ohms				
<b>RF Power Output:</b>	Reference Section 3				
<b>Duty Cycle:</b>	50% TDD				
<b>Selection Of Operating Frequency:</b>	Not selectable by operator				
<b>Power Output Adjustment Capability:</b>	Not selectable by operator				

**Description of EUT**

Base Station

**System Diagram**

Refer to separate exhibit.



### Section 3. RF Power Output

NAME OF TEST: RF Power Output	PARA. NO.: 2.1046
TESTED BY: Kevin Rose	DATE: 6/23/2006

**Test Results:** Complies

**Measurement Data:** See Tables.

**Test Equipment:** 1036,1627,2071,2072,1055.1479,1478  
 10MHz RBW/VBW was used for the peak measurements.  
 A avg power meter was used for the average power.

#### MAX RF POWER CONDUCTED OUTPUT Navini Mode

Freq	Power (dBm) avg	Power (dBm) peak
A Low	31.6	43.2
A High	31.6	43.1
B Low	31.6	43.2
B High	31.6	43.1
C	30.8	42.9
D	31.6	43.1

#### MAX RF POWER CONDUCTED OUTPUT OFDM Mode

Freq	Power (dBm) avg	Power (dBm) peak
A Low	31.6	42.8
A High	31.6	42.8
B Low	31.6	42.8
B High	31.7	42.9
C 24 SUB CARRIERS	28	40.1
D 24 SUB CARRIERS	28.6	40.6
C 22 SUB CARRIERS	30.6	40.8
D 22 SUB CARRIERS	30.7	40.9

**Nemko USA**

FCC PART 27, SUBPART C/D

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## **Section 4. Spurious Emissions at Antenna Terminals**

NAME OF TEST: Spurious Emissions @ Antenna Terminals	PARA. NO.: 2.1051
TESTED BY: Kevin Rose	DATE: 6/23/2006

**Test Results:** Complies

**Measurement Data:** See attached plots.

**Test Equipment:** 1036, 1470, 1045, 1083, 1482, 1064

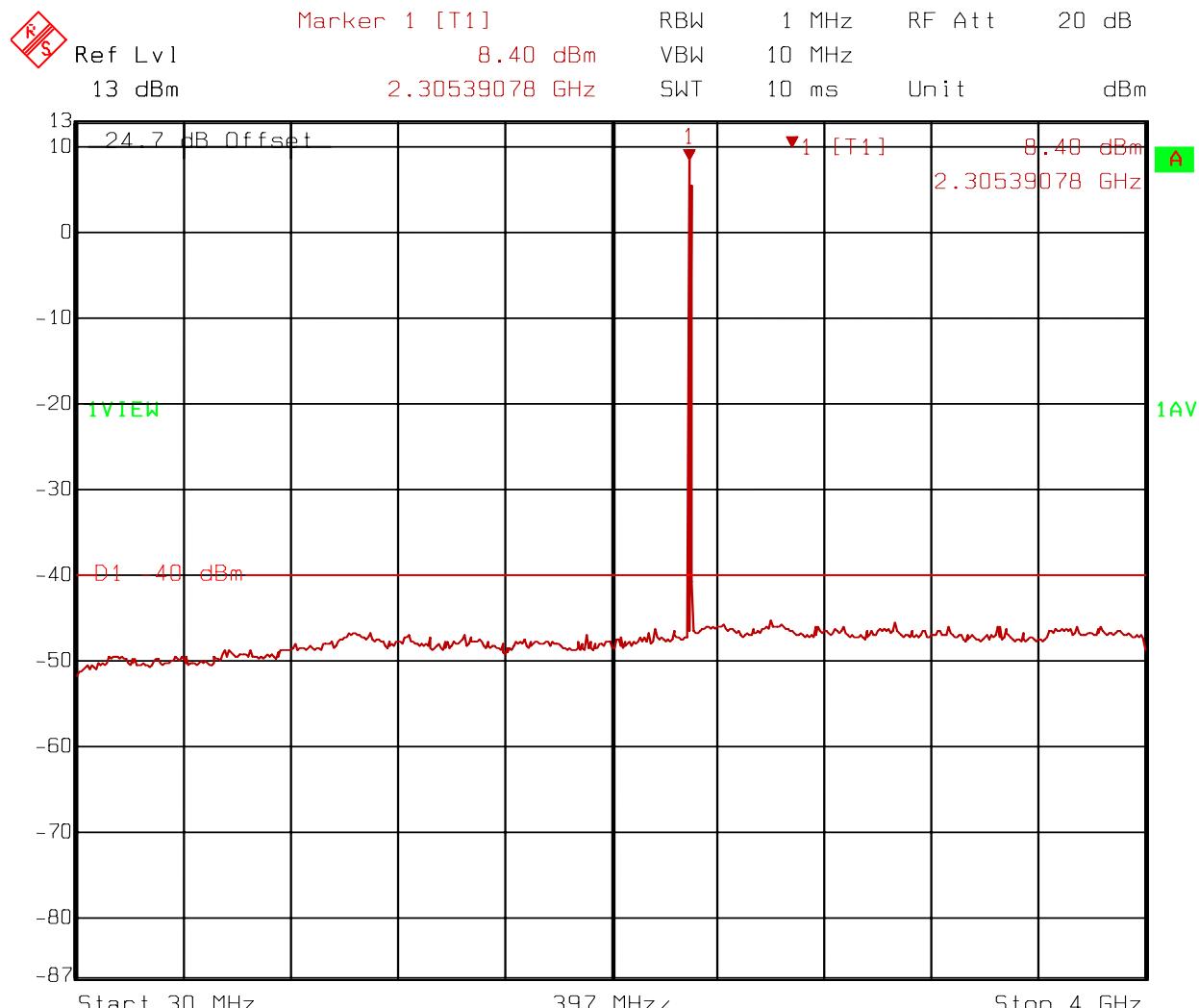
Notes. Frequency Range scanned from 9kHz to 24GHz.

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

EQUIPMENT USED 1036, 1470, 1045, 1083, 1482, 1064.

A LOW BAND 1 of 3

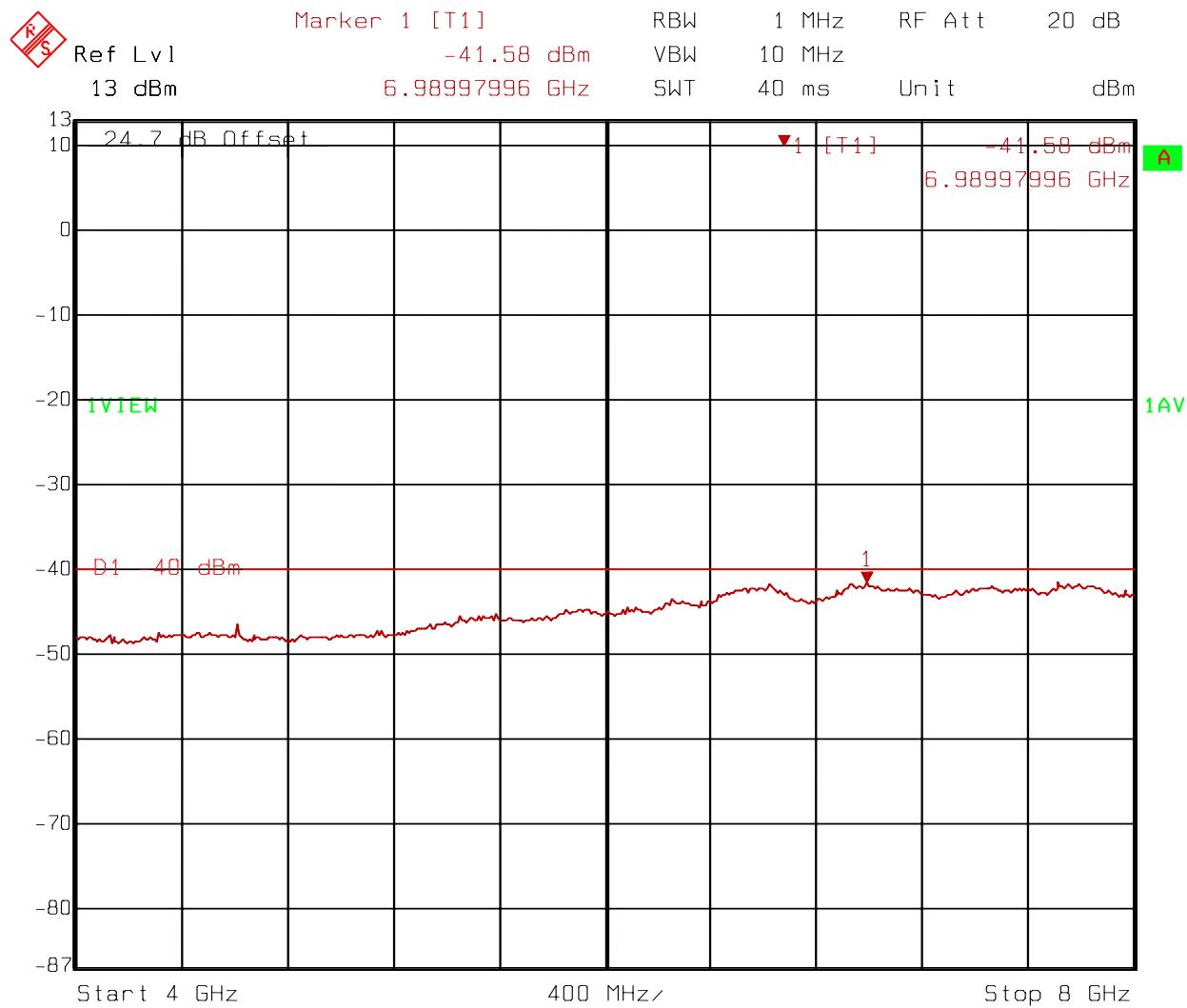


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EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

A LOW BAND 2 of 3

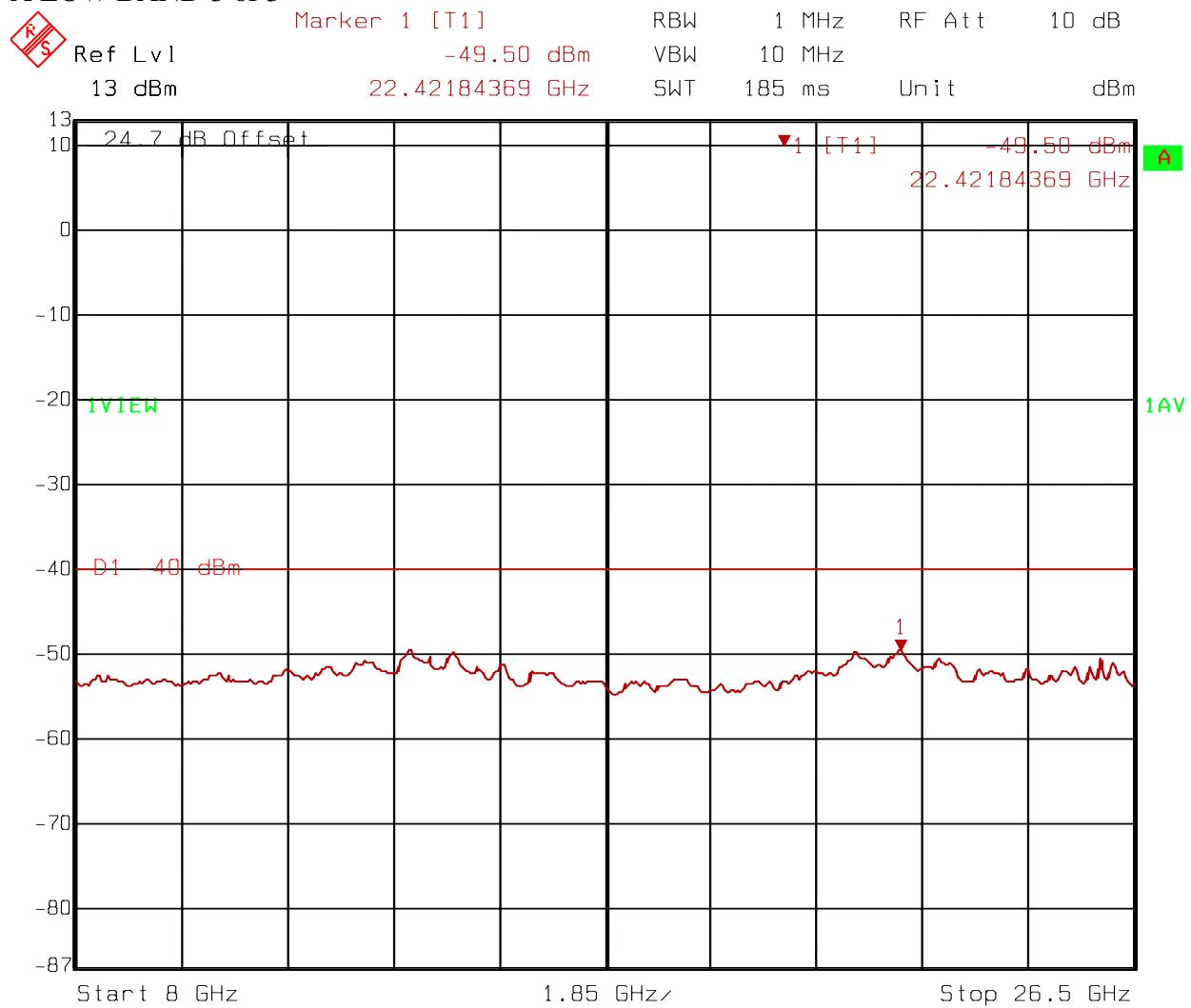


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PROJECT NO.:6L0169RUS1

A LOW BAND 3 of 3

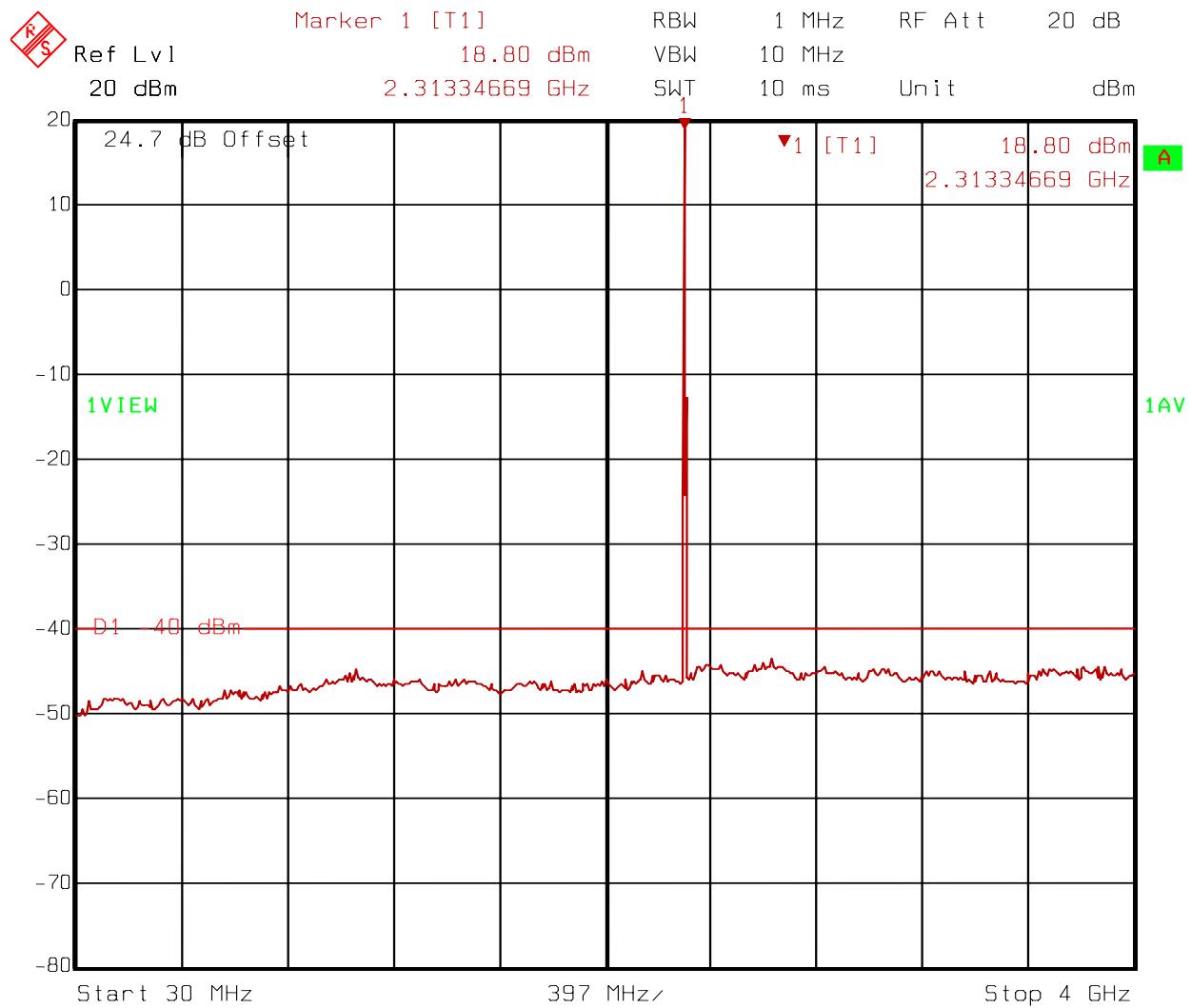


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EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

B LOW BAND 1 of 3

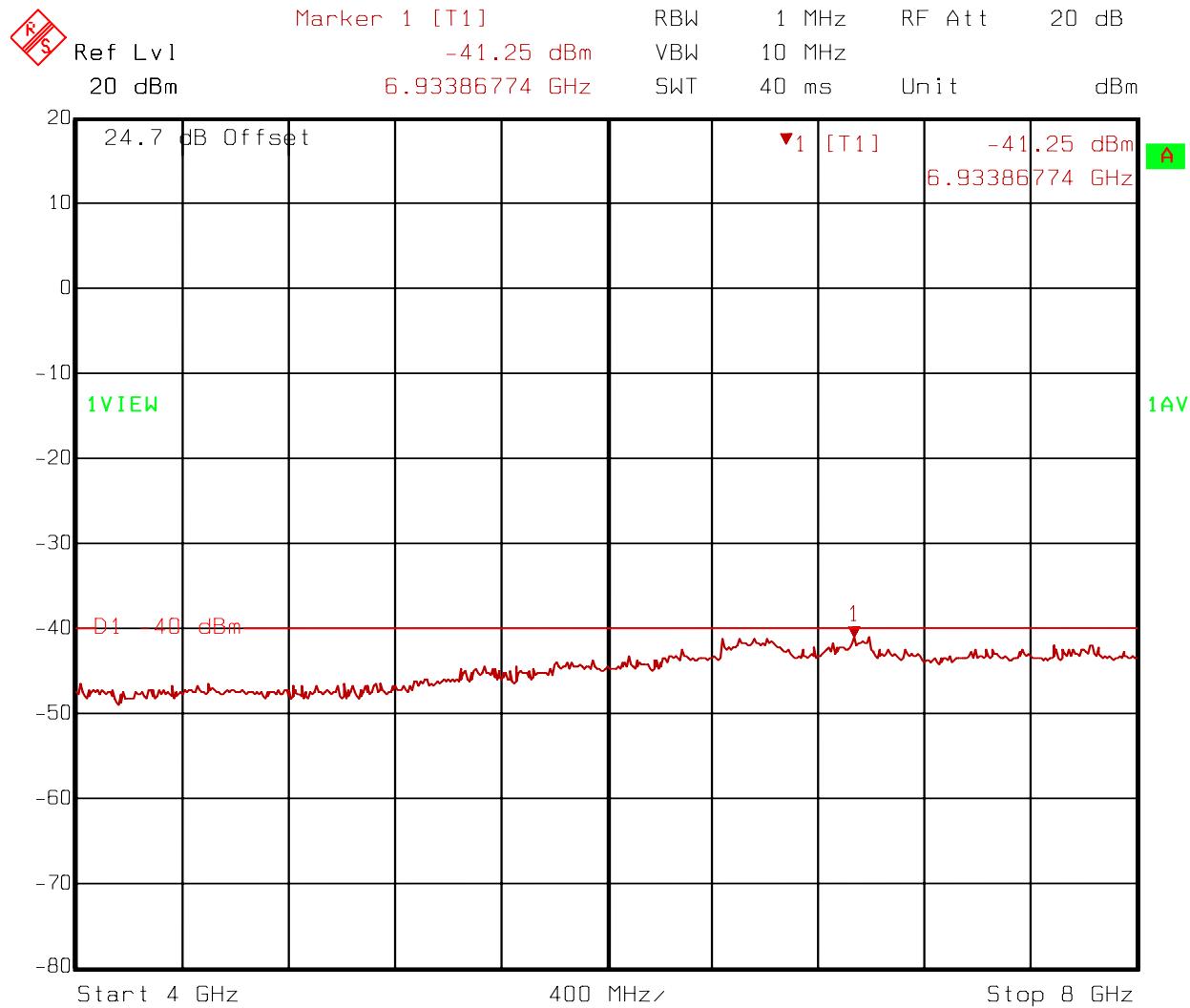


Date: 23.JUN.2006 14:28:54

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PROJECT NO.:6L0169RUS1

## B LOW BAND 2 of 3

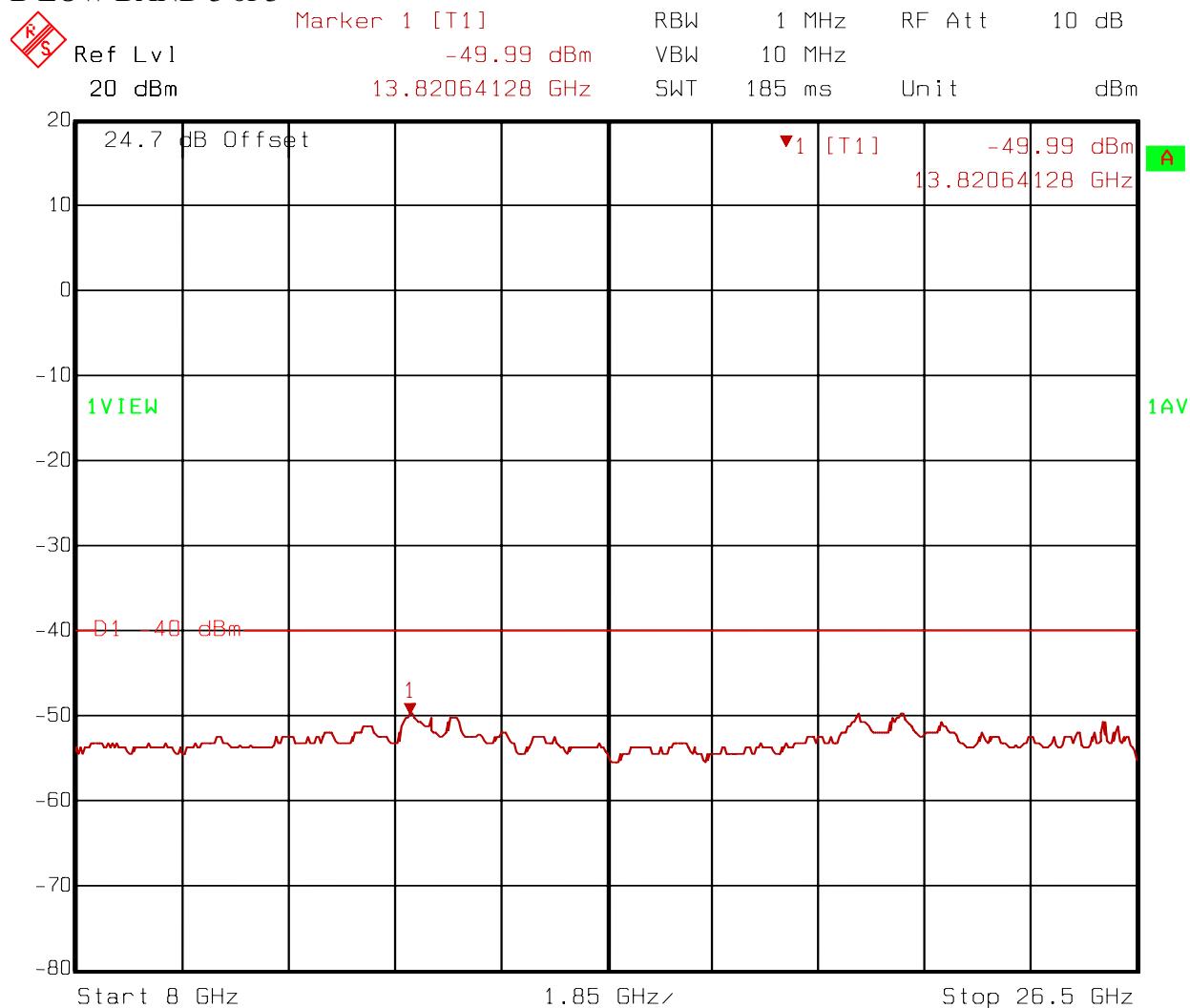


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PROJECT NO.:6L0169RUS1

## B LOW BAND 3 of 3

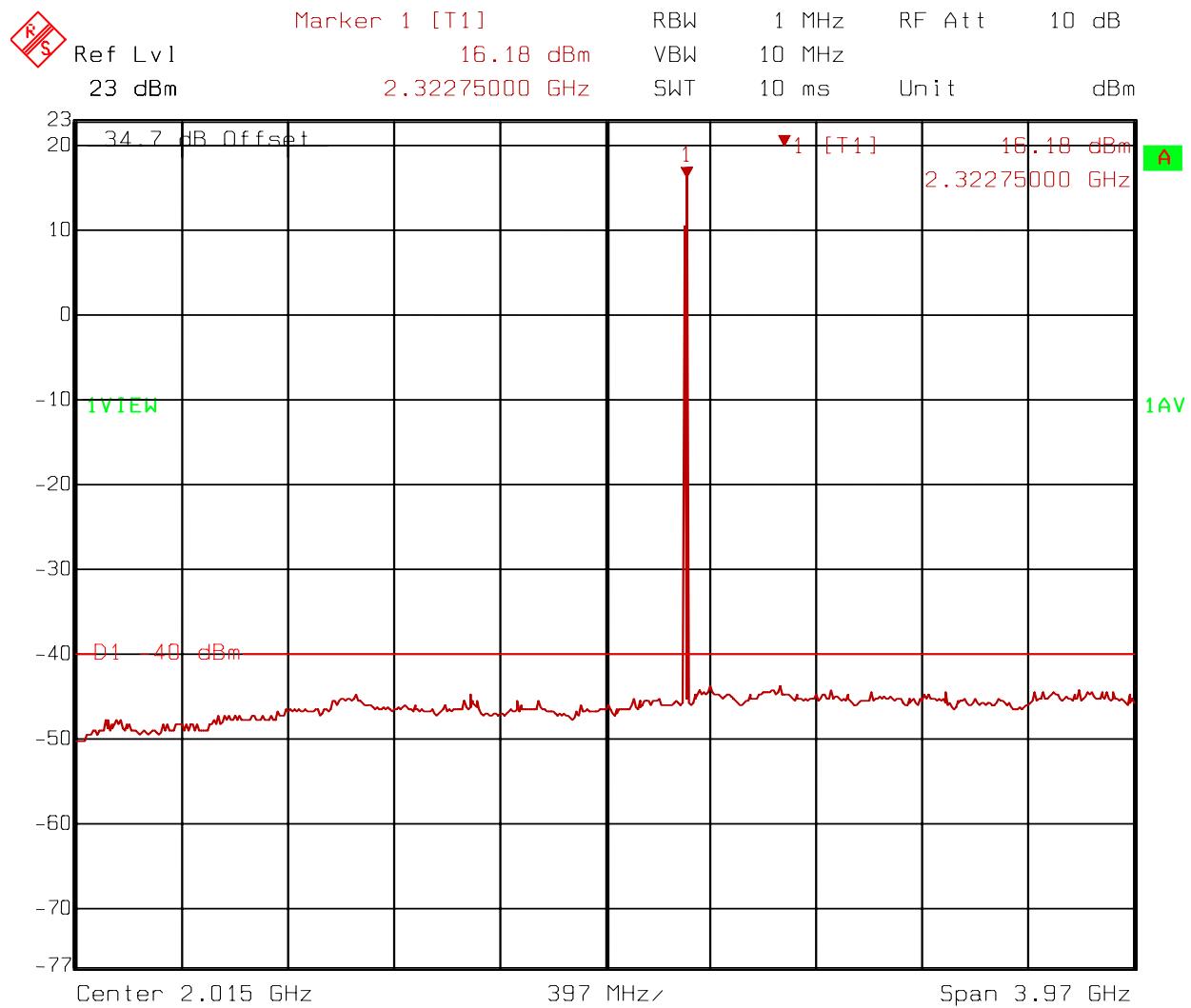


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PROJECT NO.:6L0169RUS1

C BAND 1 of 3

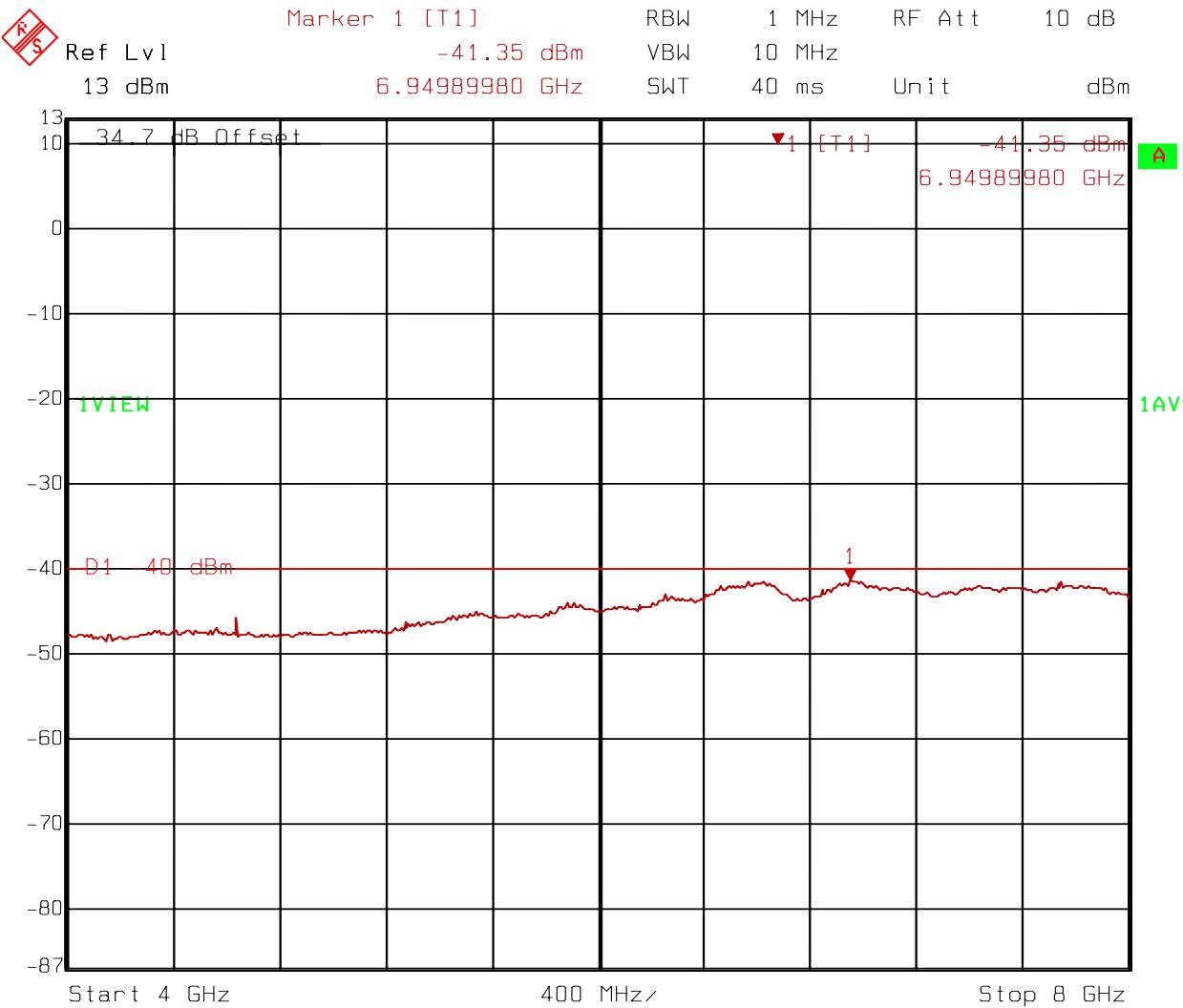


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PROJECT NO.:6L0169RUS1

## C BAND 2 of 3

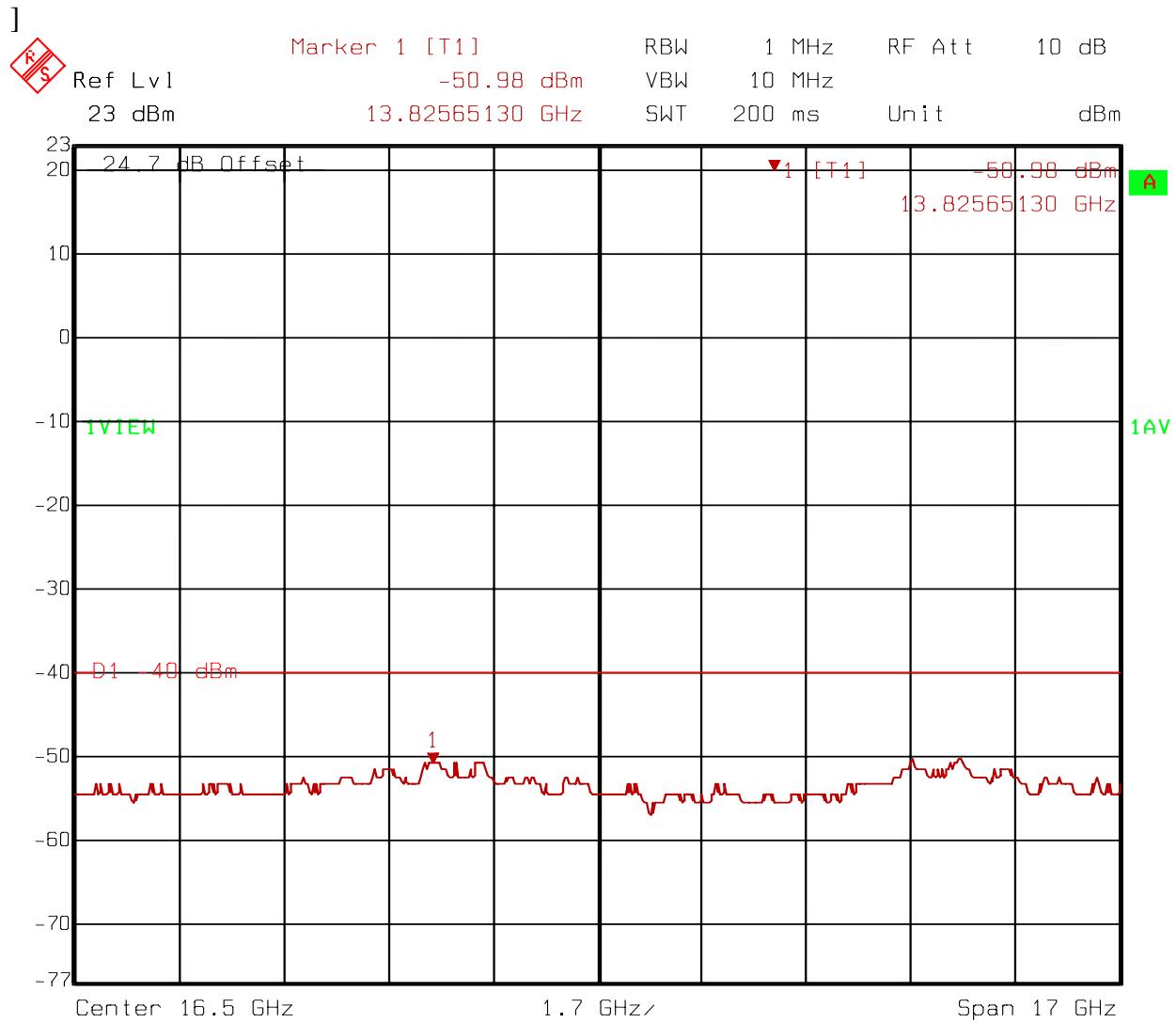


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PROJECT NO.:6L0169RUS1

C BAND 3 of 3

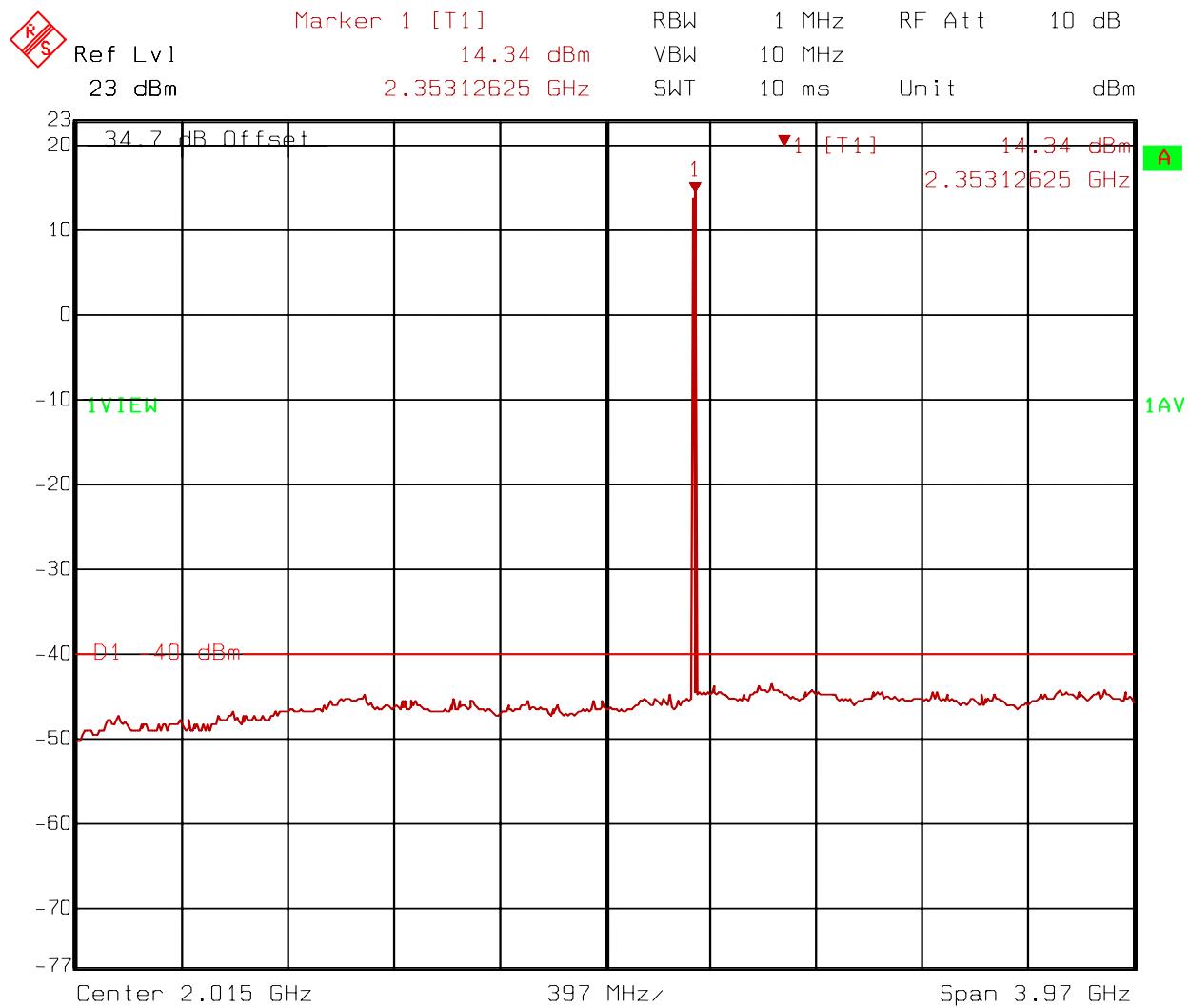


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PROJECT NO.:6L0169RUS1

D BAND 1 of 3

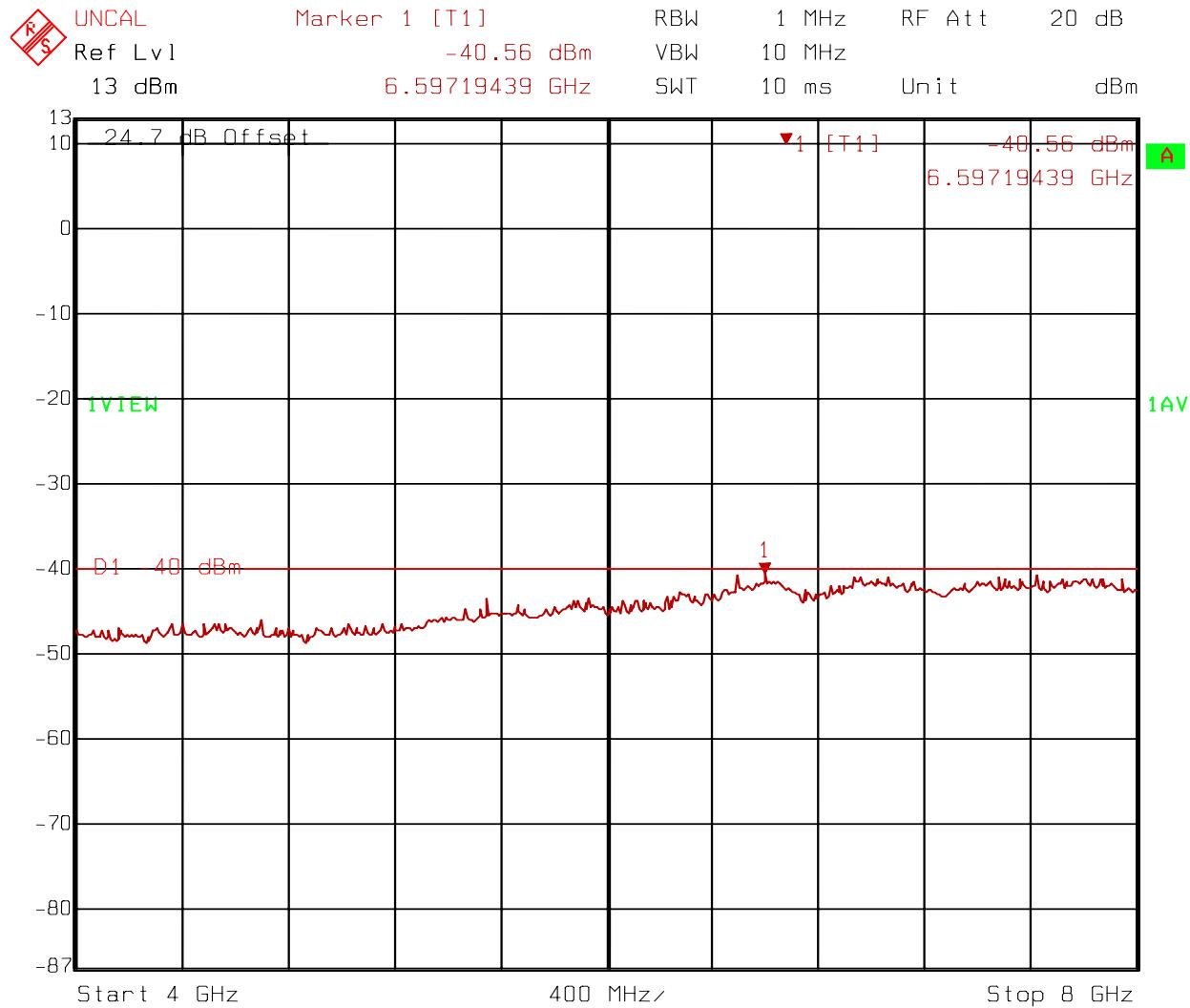


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PROJECT NO.:6L0169RUS1

## D BAND 2 of 3

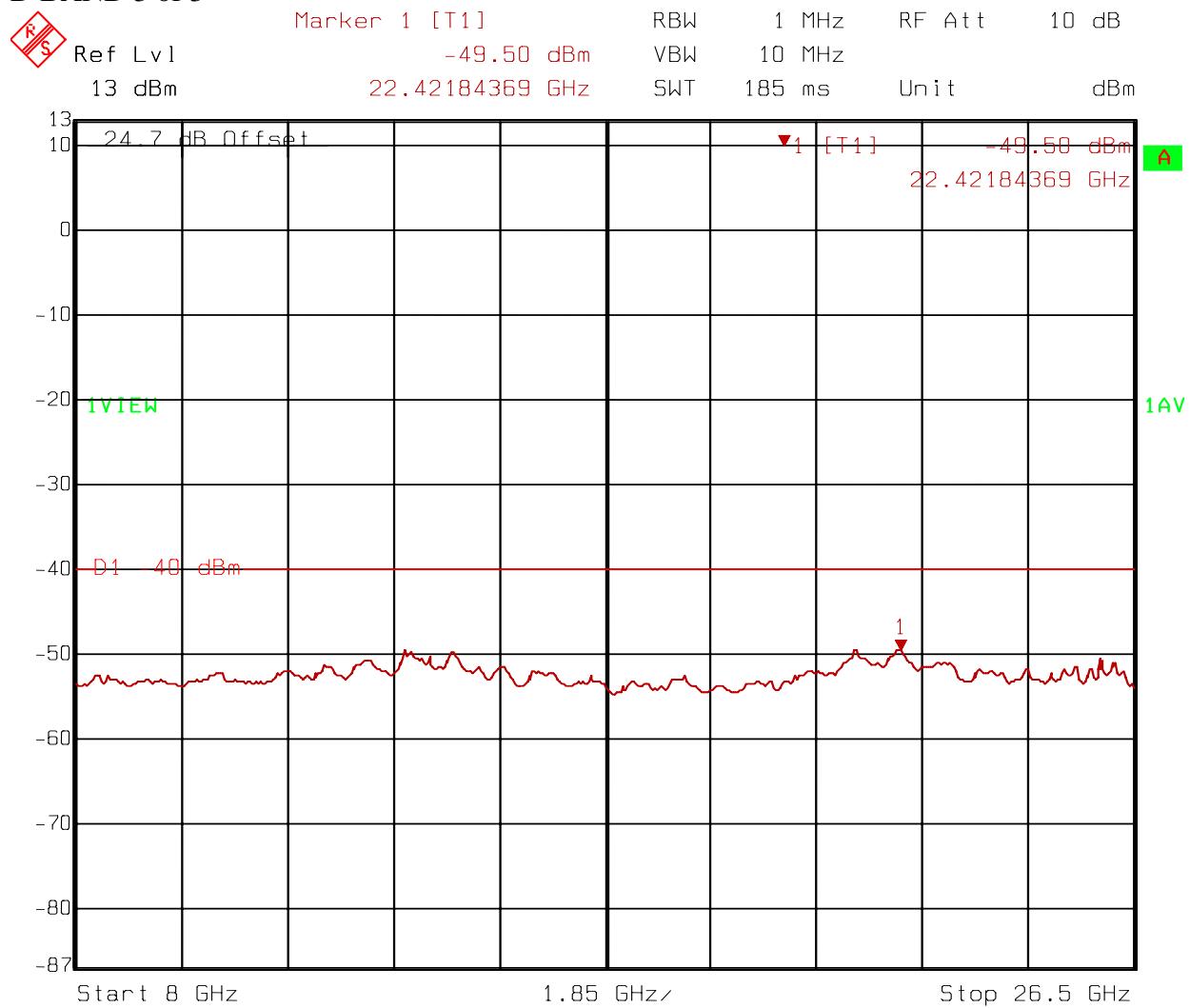


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PROJECT NO.:6L0169RUS1

## D BAND 3 of 3

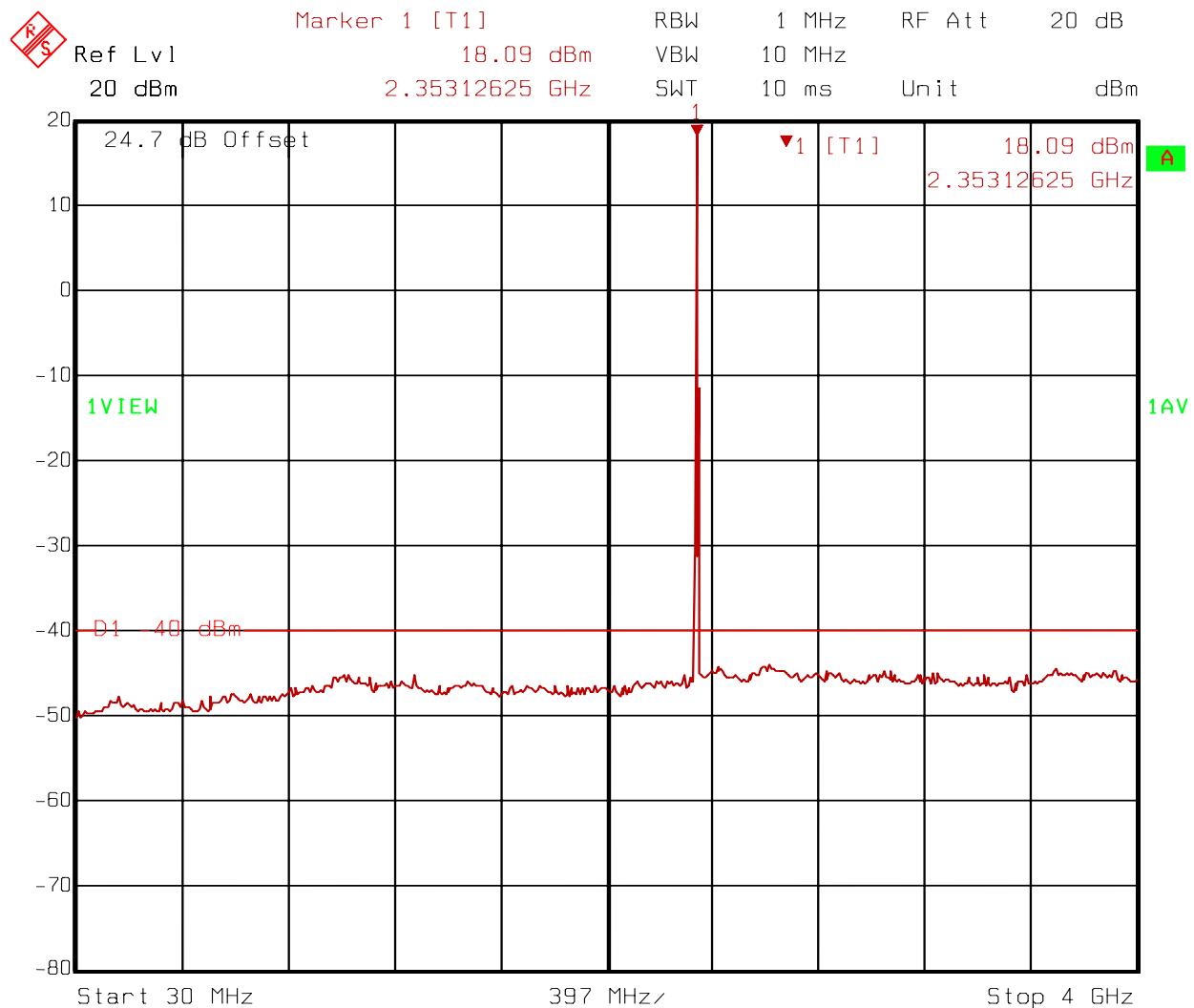


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PROJECT NO.:6L0169RUS1

A HIGH BAND 1 of 3

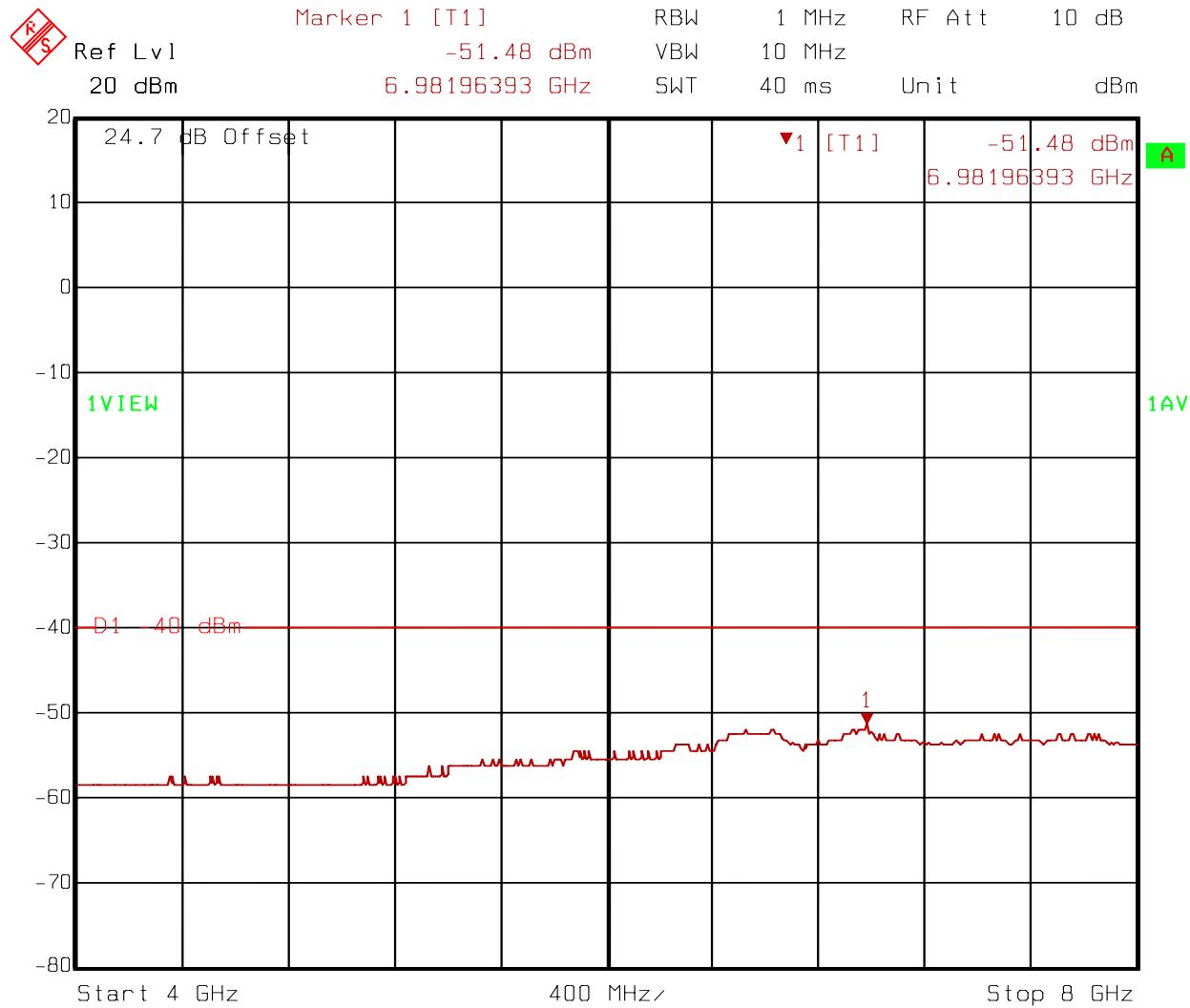


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PROJECT NO.:6L0169RUS1

## A HIGH BAND 2 of 3

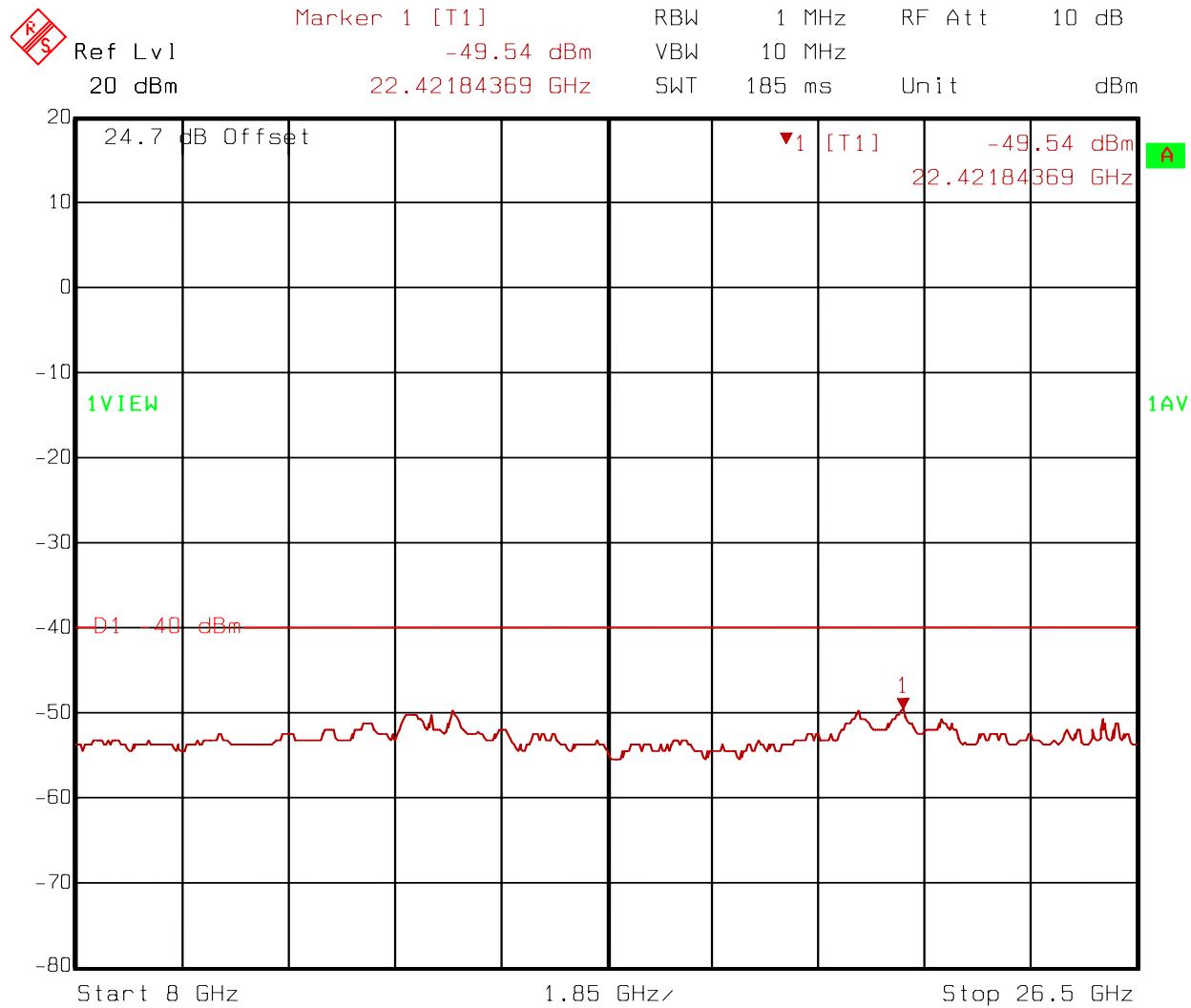


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PROJECT NO.:6L0169RUS1

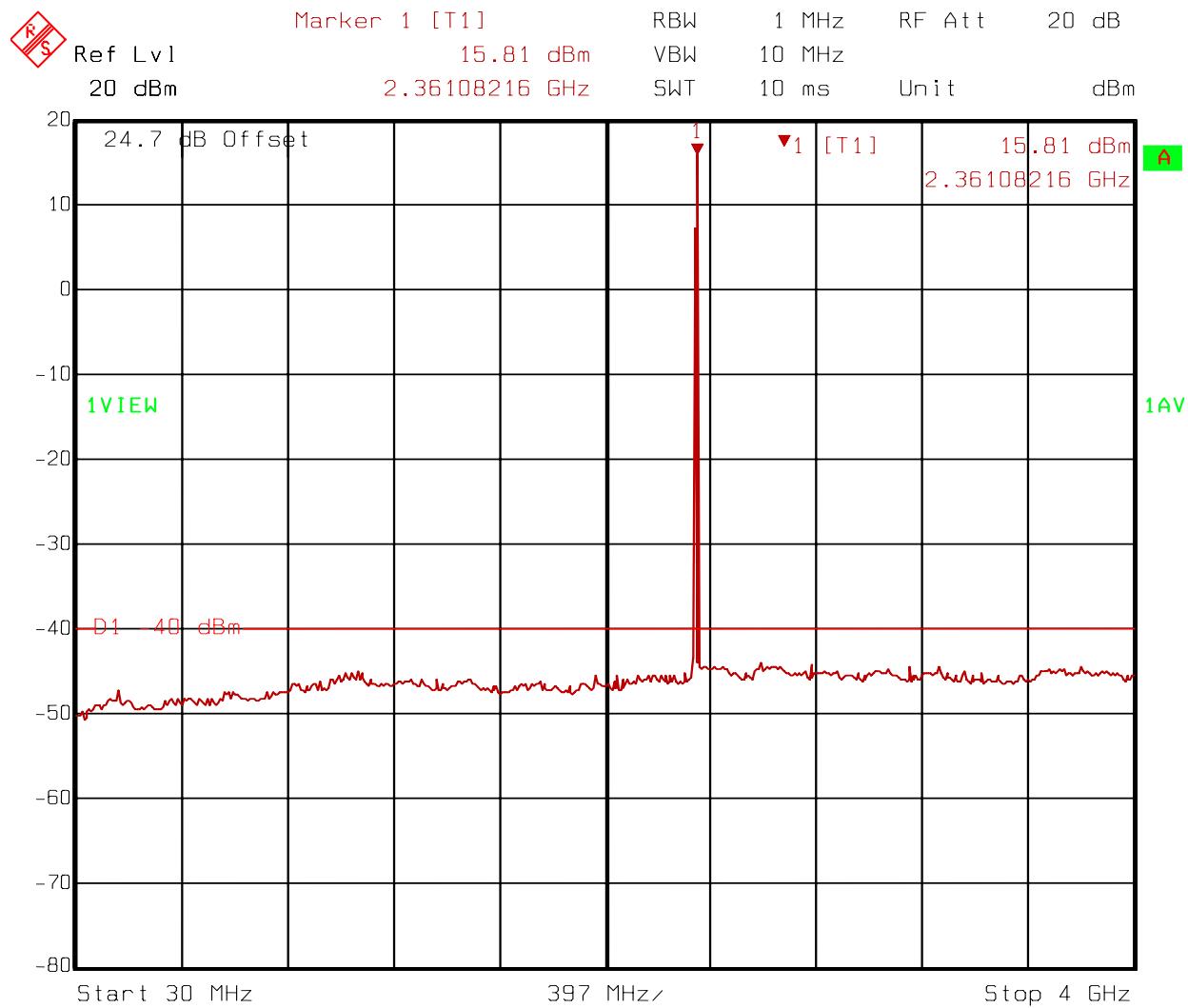
## A HIGH BAND 3 of 3



EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## B HIGH BAND 1 of 3

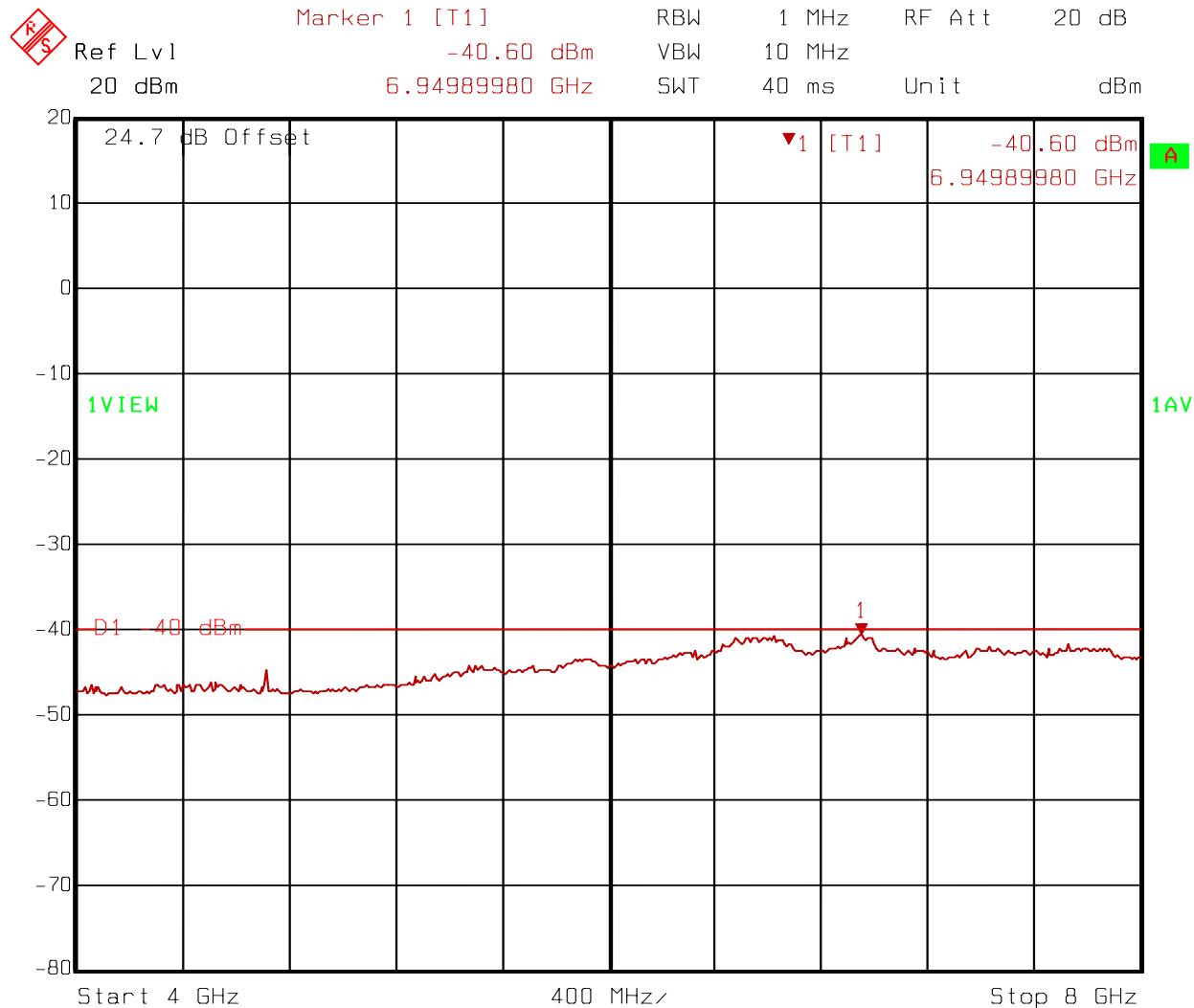


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PROJECT NO.:6L0169RUS1

## B HIGH BAND 2 of 3

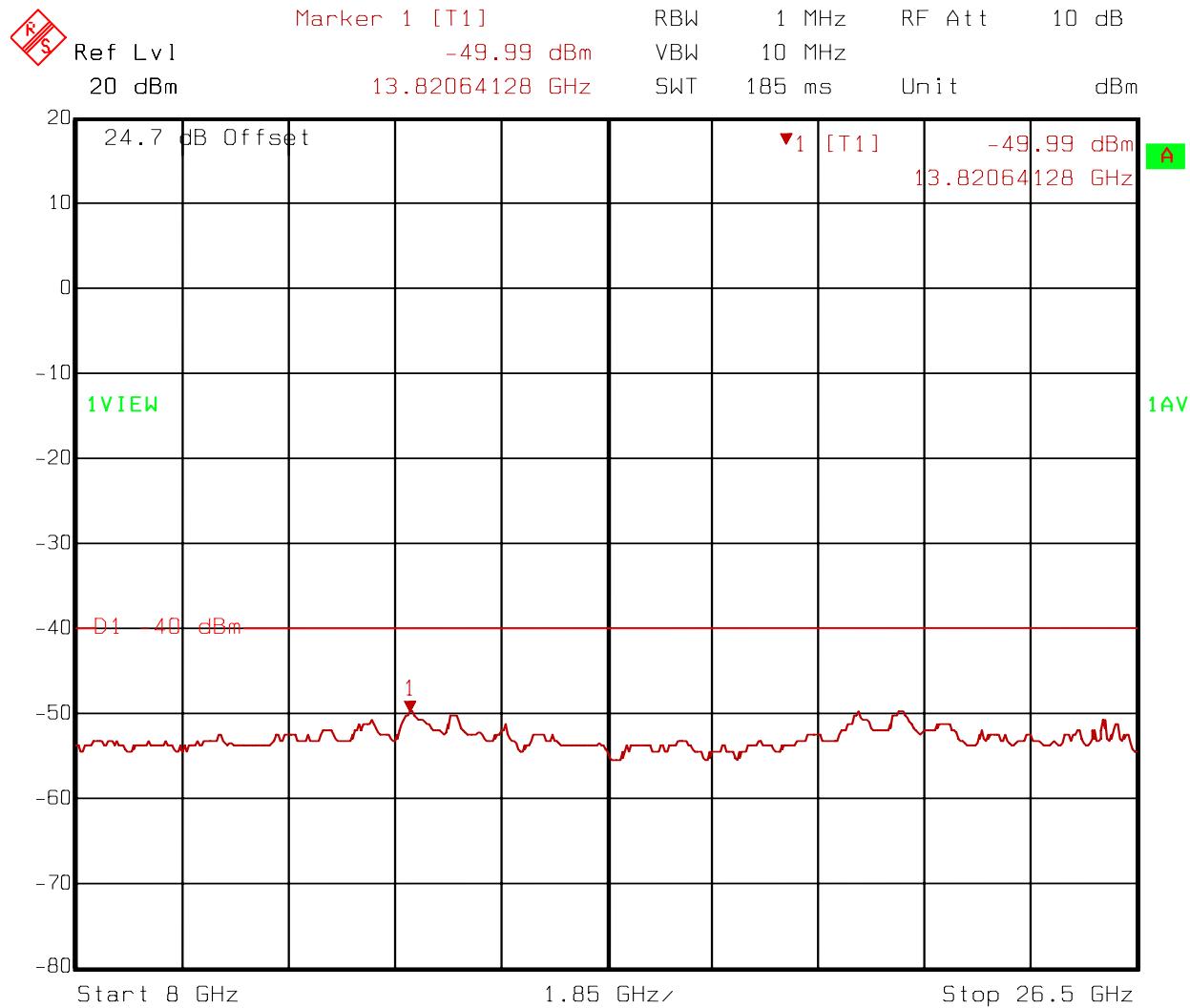


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PROJECT NO.:6L0169RUS1

## B HIGH BAND 3 of 3

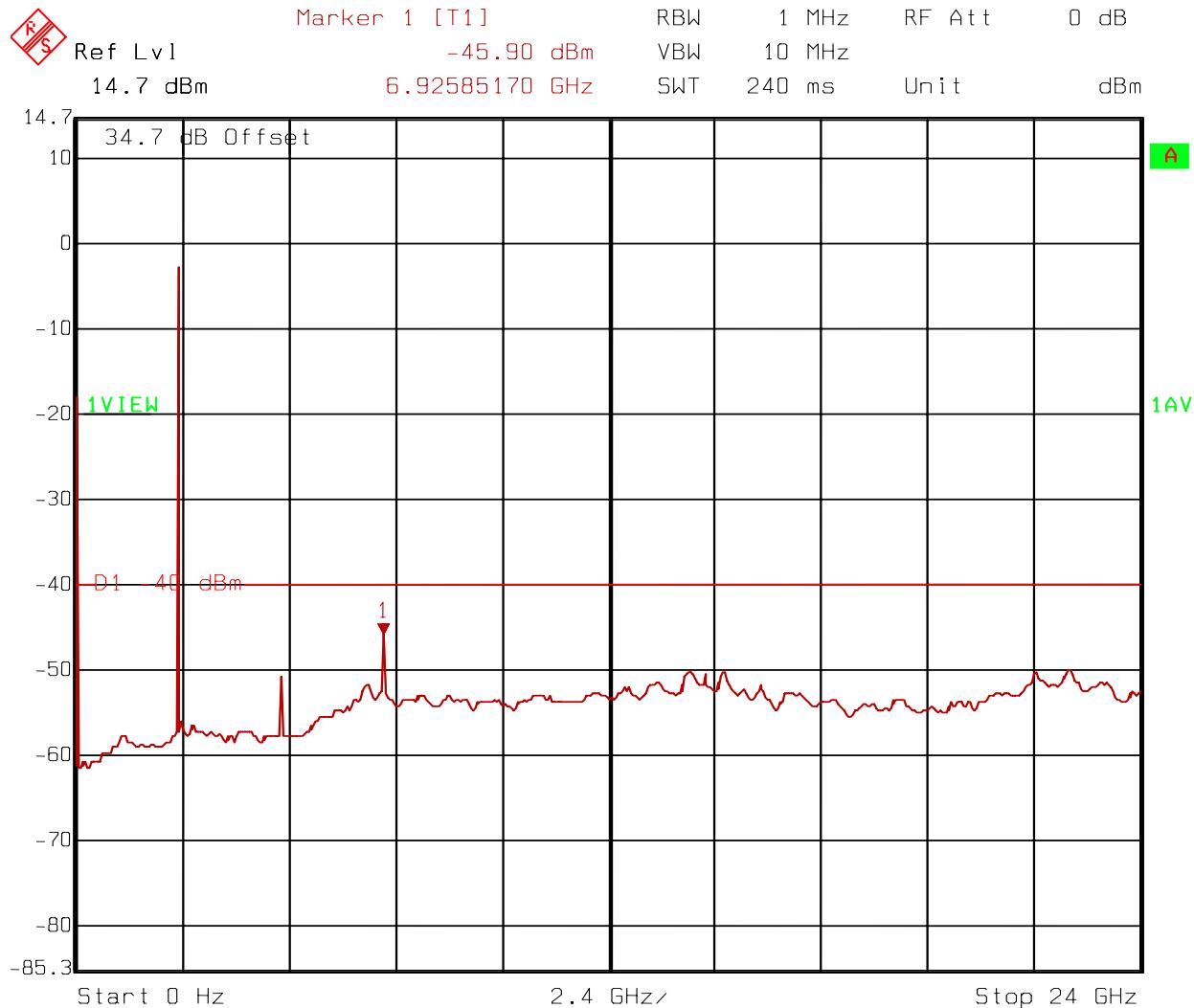


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EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## C BAND OFDM MODE 22 SUB CARRIERS SPURIOUS AT ANTENNA PORT

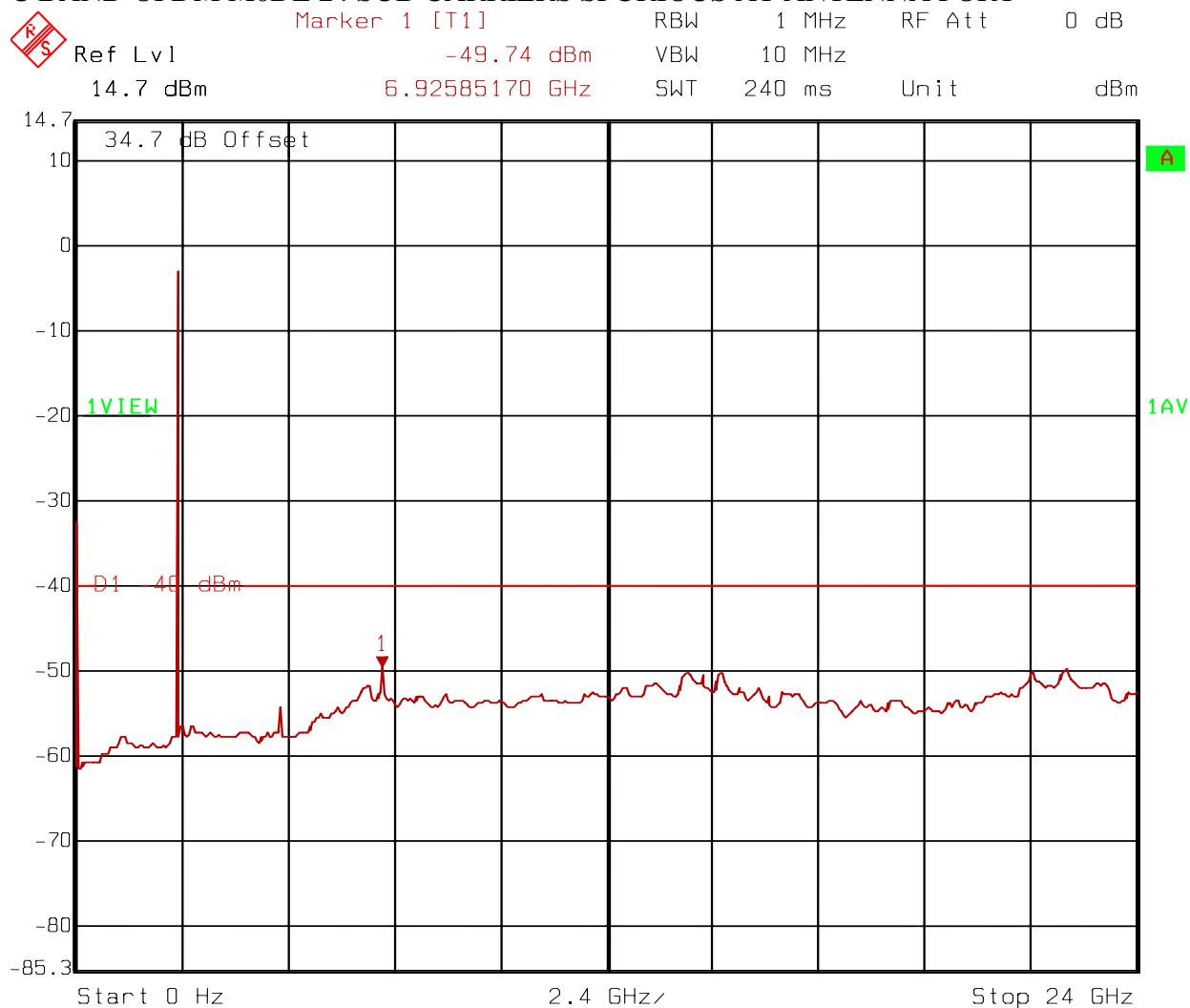


Date: 26.JUN.2006 09:28:33

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## C BAND OFDM MODE 24 SUB CARRIERS SPURIOUS AT ANTENNA PORT

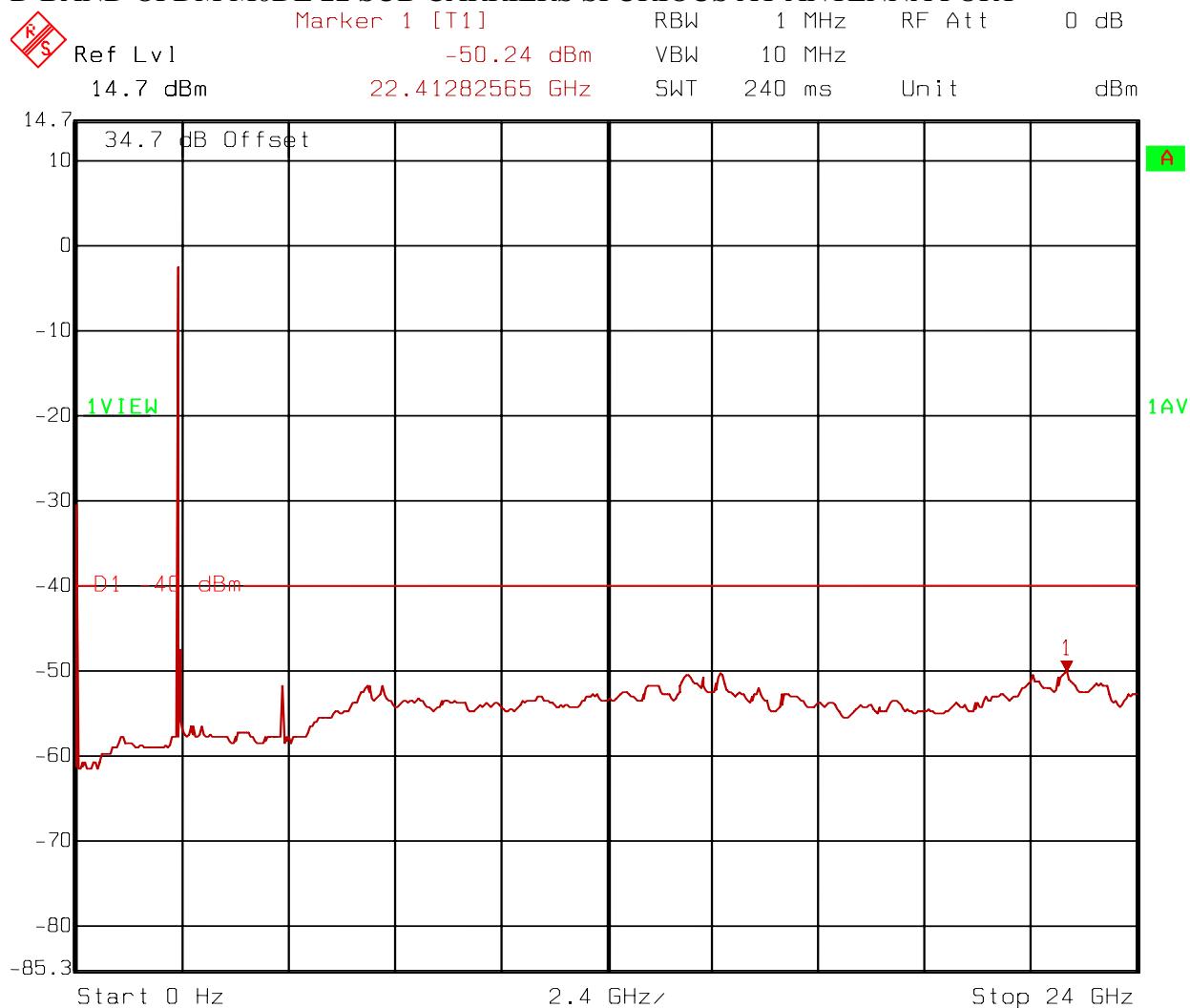


Date: 26.JUN.2006 09:32:20

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## D BAND OFDM MODE 22 SUB CARRIERS SPURIOUS AT ANTENNA PORT

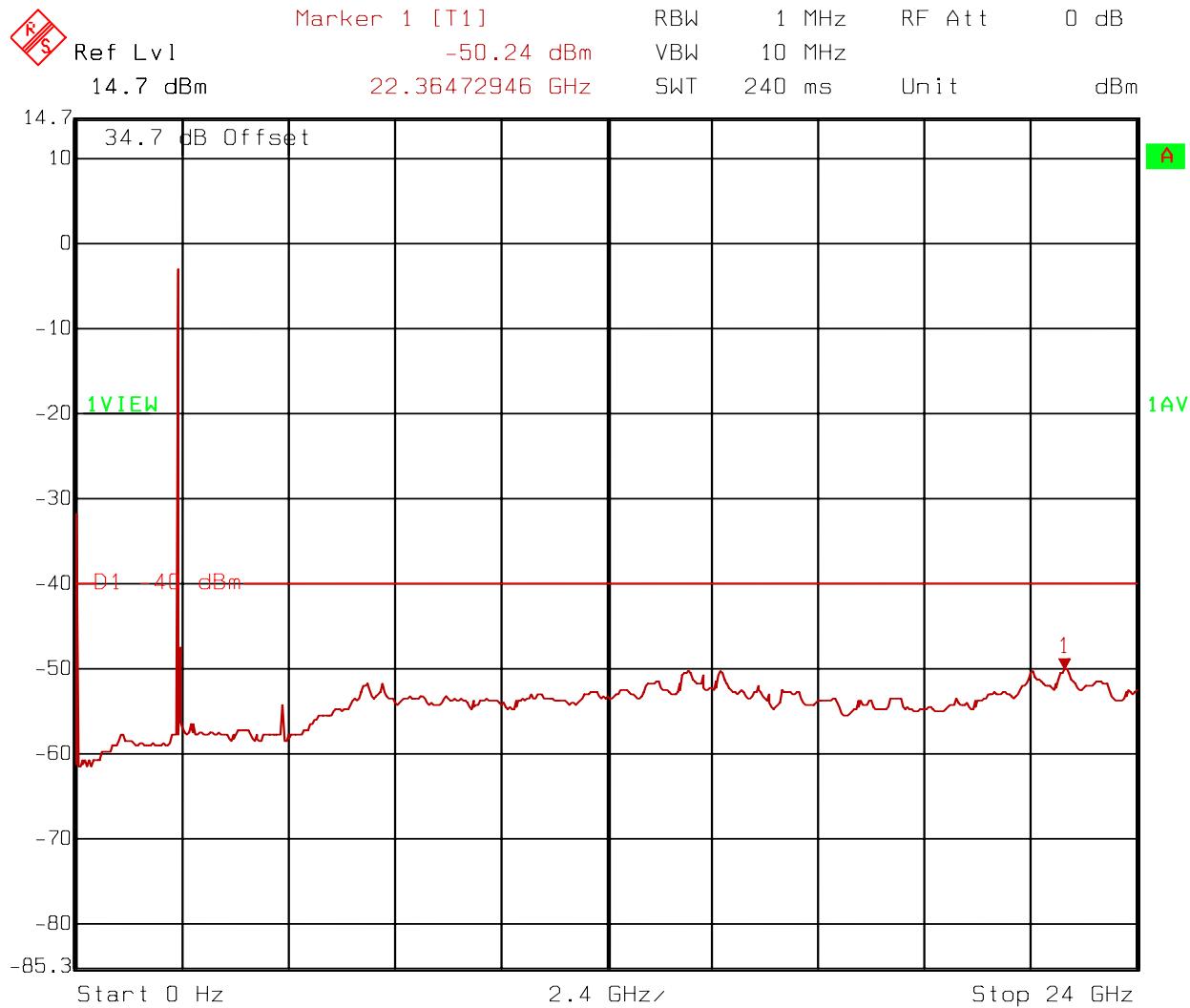


Date: 26.JUN.2006 09:35:37

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## D BAND OFDM MODE 24 SUB CARRIERS SPURIOUS AT ANTENNA PORT

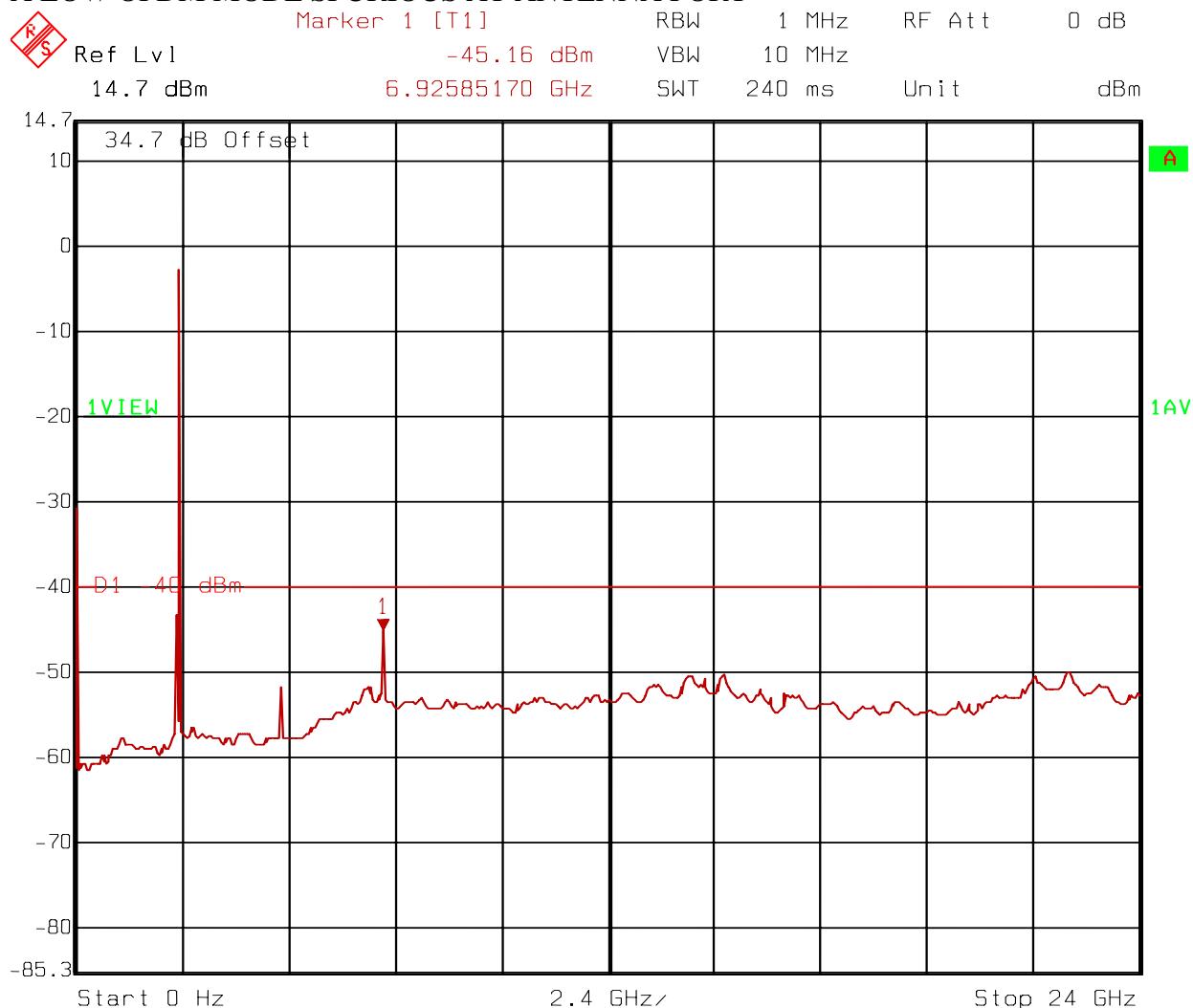


Date: 26.JUN.2006 09:34:37

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## A LOW OFDM MODE SPURIOUS AT ANTENNA PORT

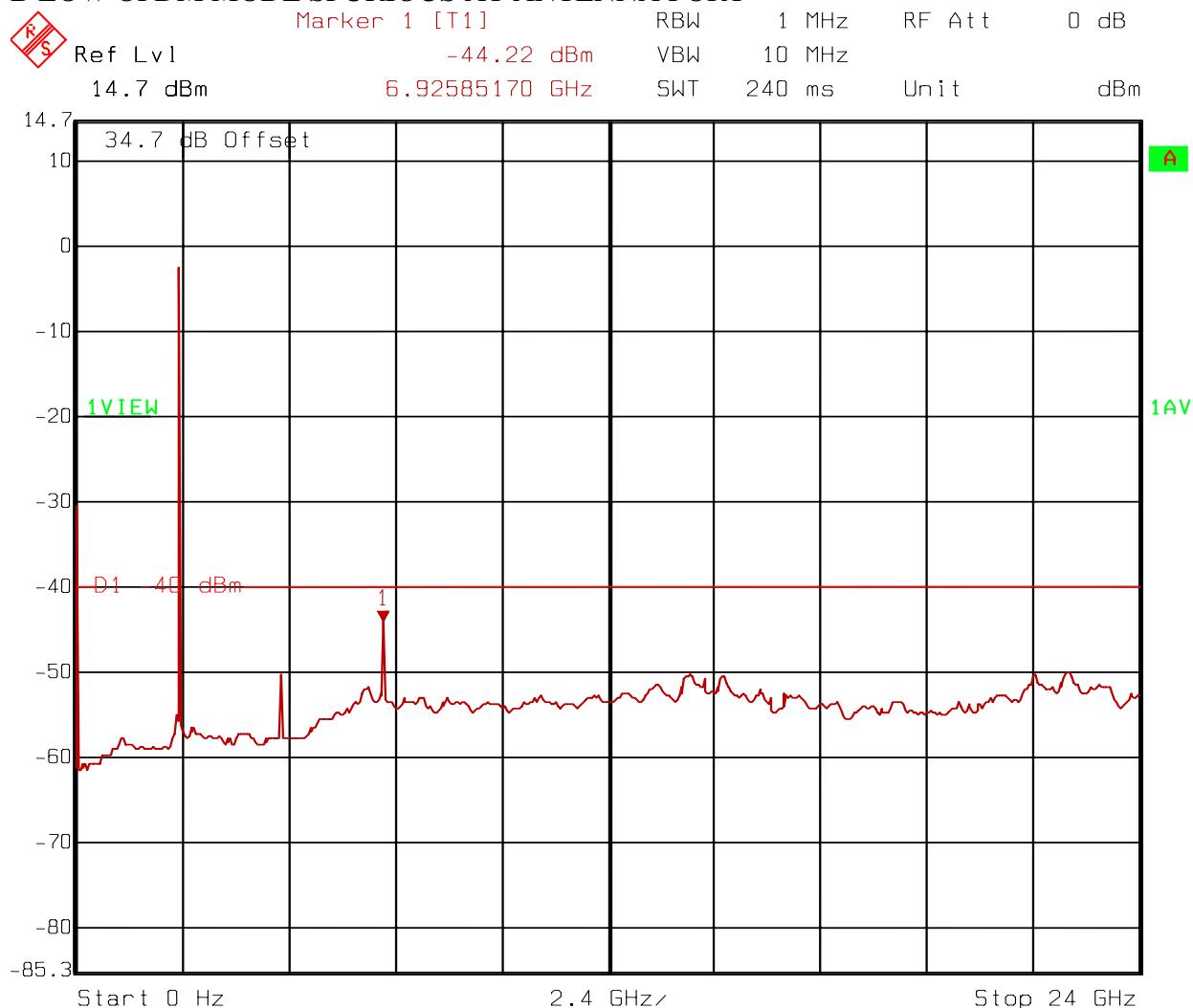


Date: 26.JUN.2006 09:39:28

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## B LOW OFDM MODE SPURIOUS AT ANTENNA PORT

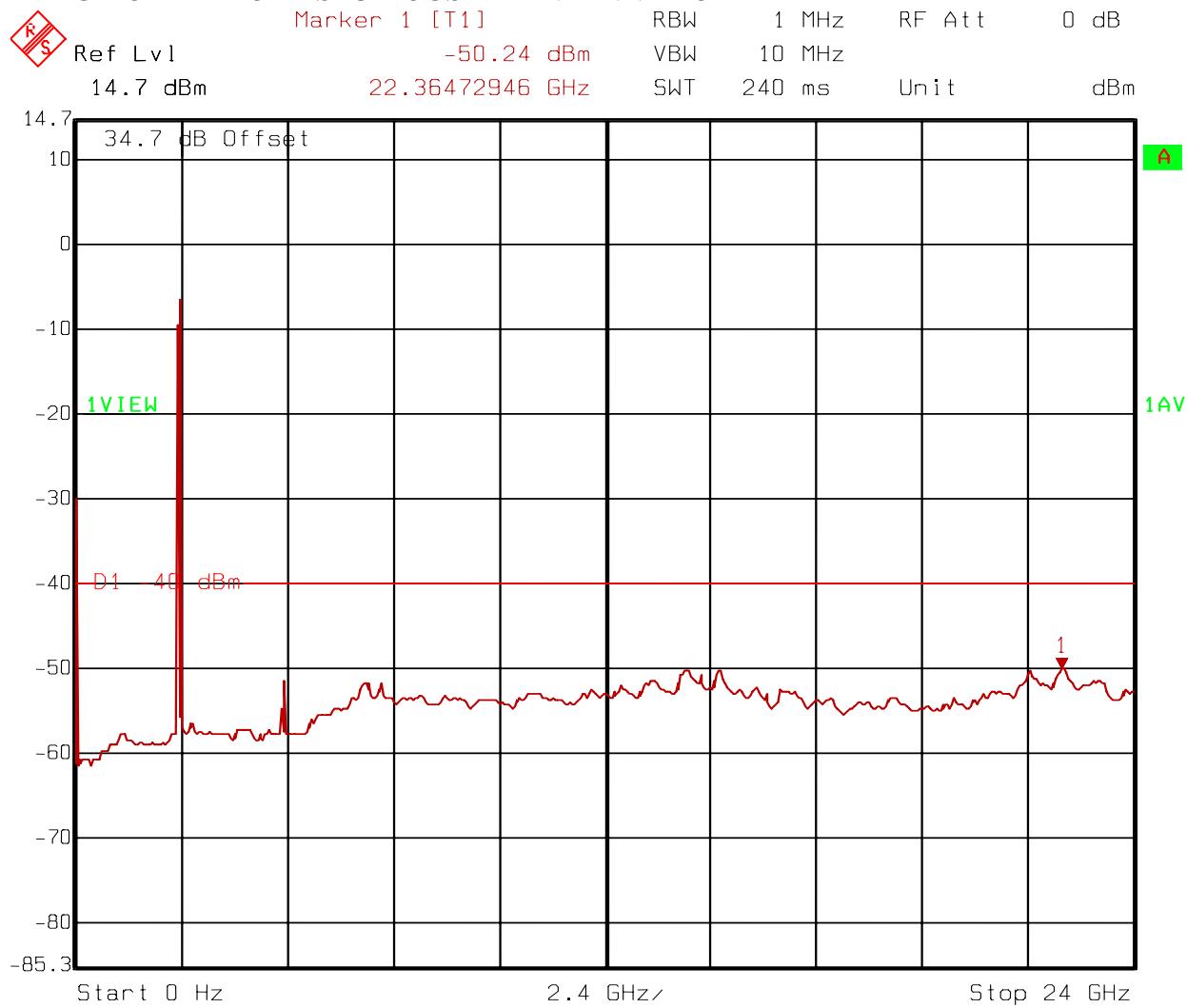


Date: 26.JUN.2006 09:42:07

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PROJECT NO.:6L0169RUS1

## A HIGH OFDM MODE SPURIOUS AT ANTENNA PORT

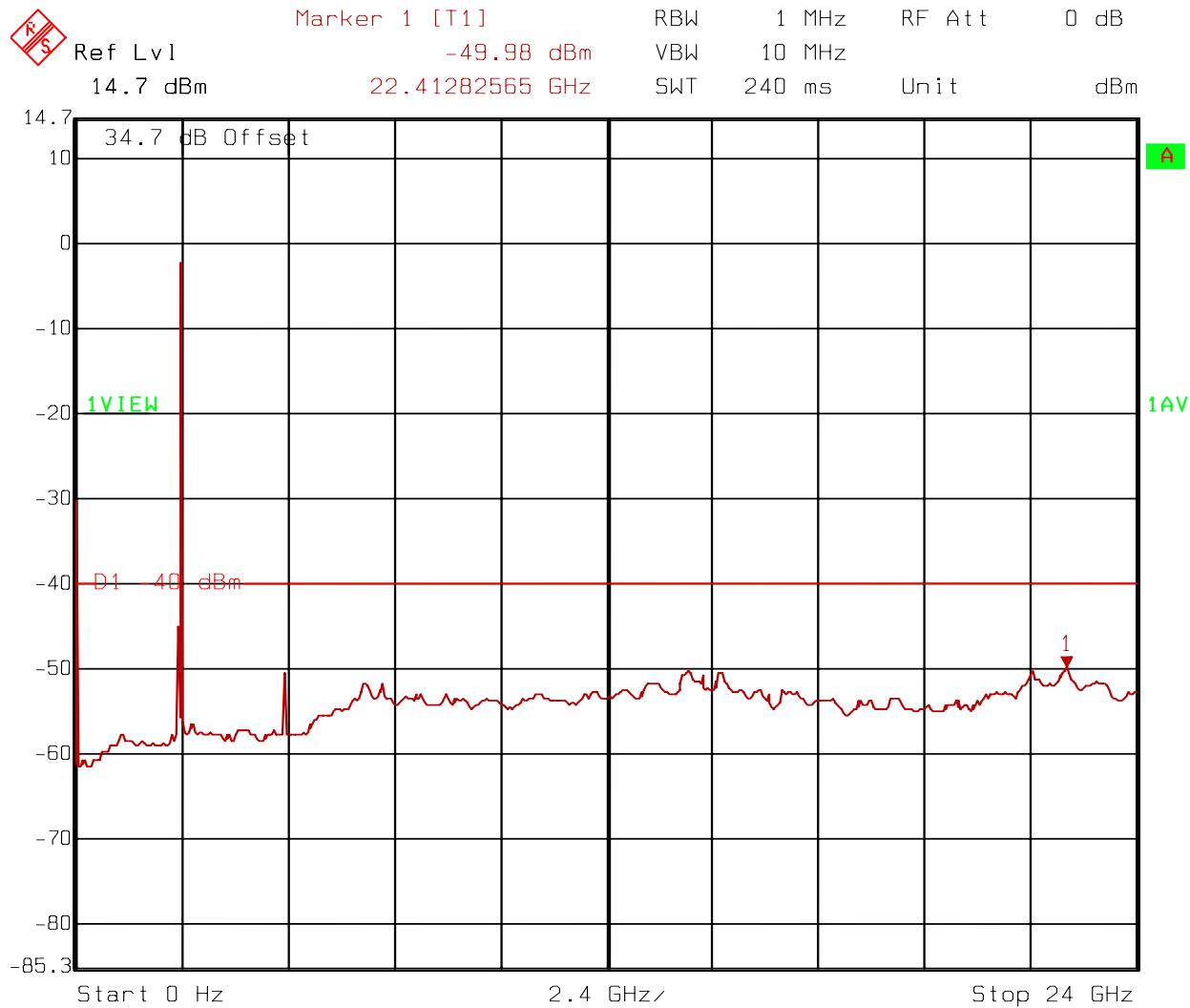


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PROJECT NO.:6L0169RUS1

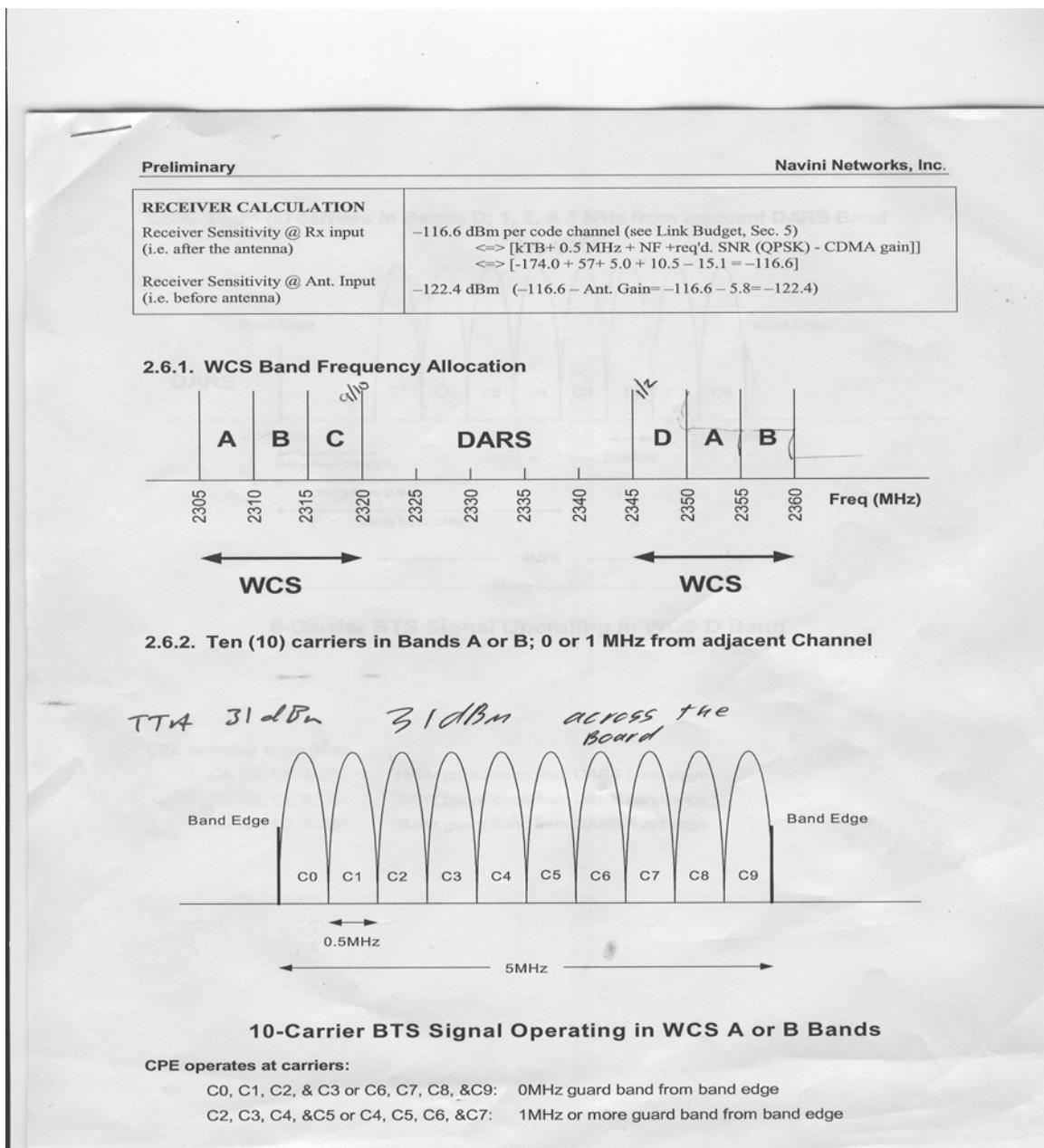
## B HIGH OFDM MODE SPURIOUS AT ANTENNA PORT



Date: 26.JUN.2006 09:47:08

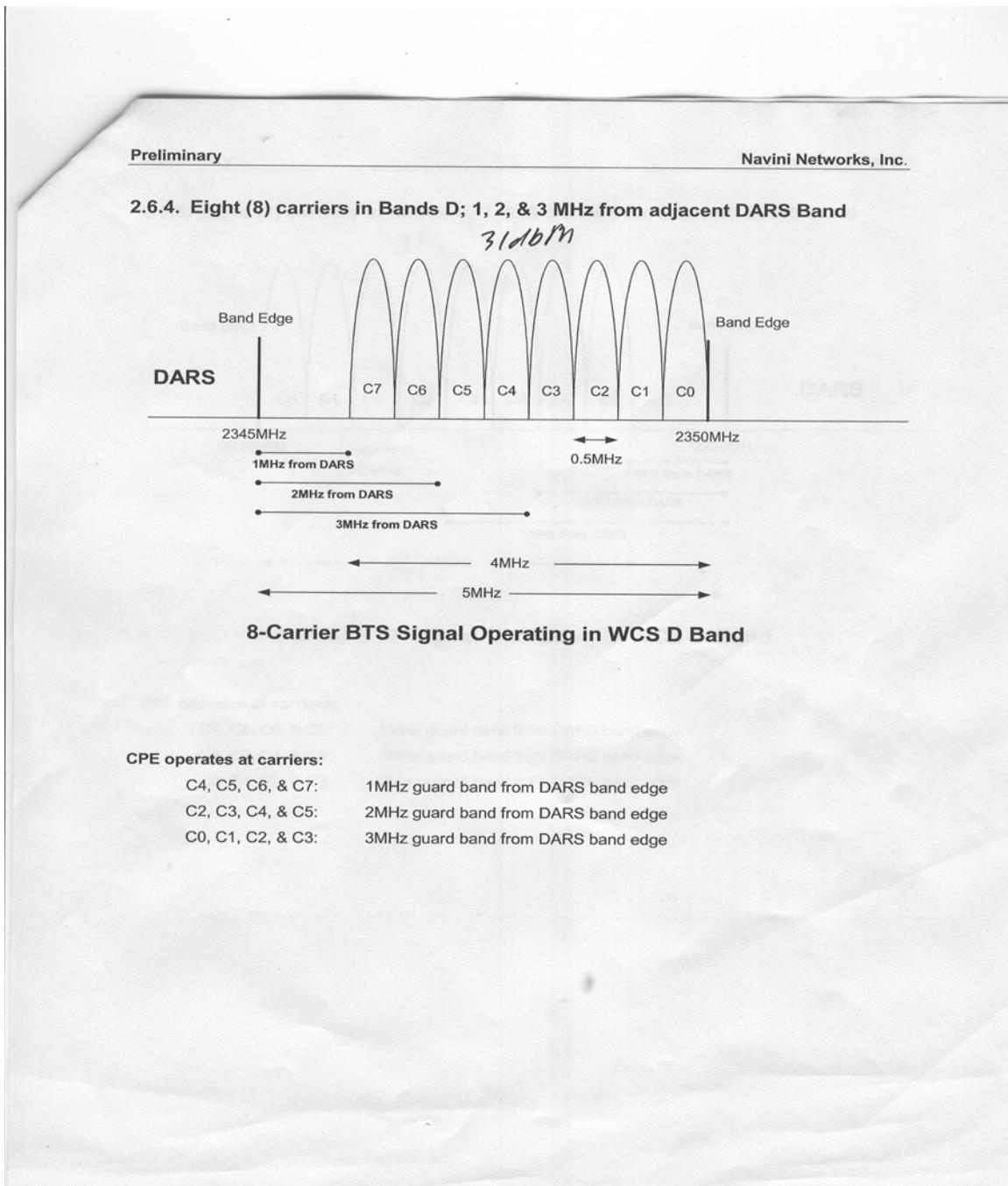
EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

**Test Data – Spurious Emissions at Antenna Terminals - Emissions Mask**

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

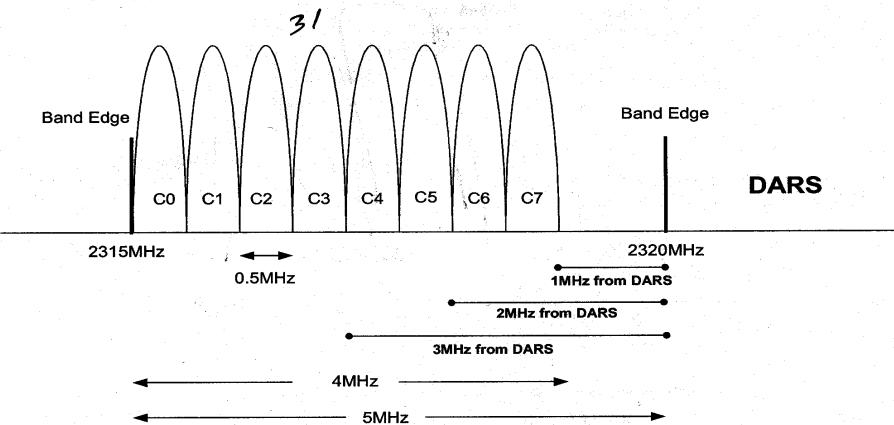


EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

Preliminary

Navini Networks, Inc.

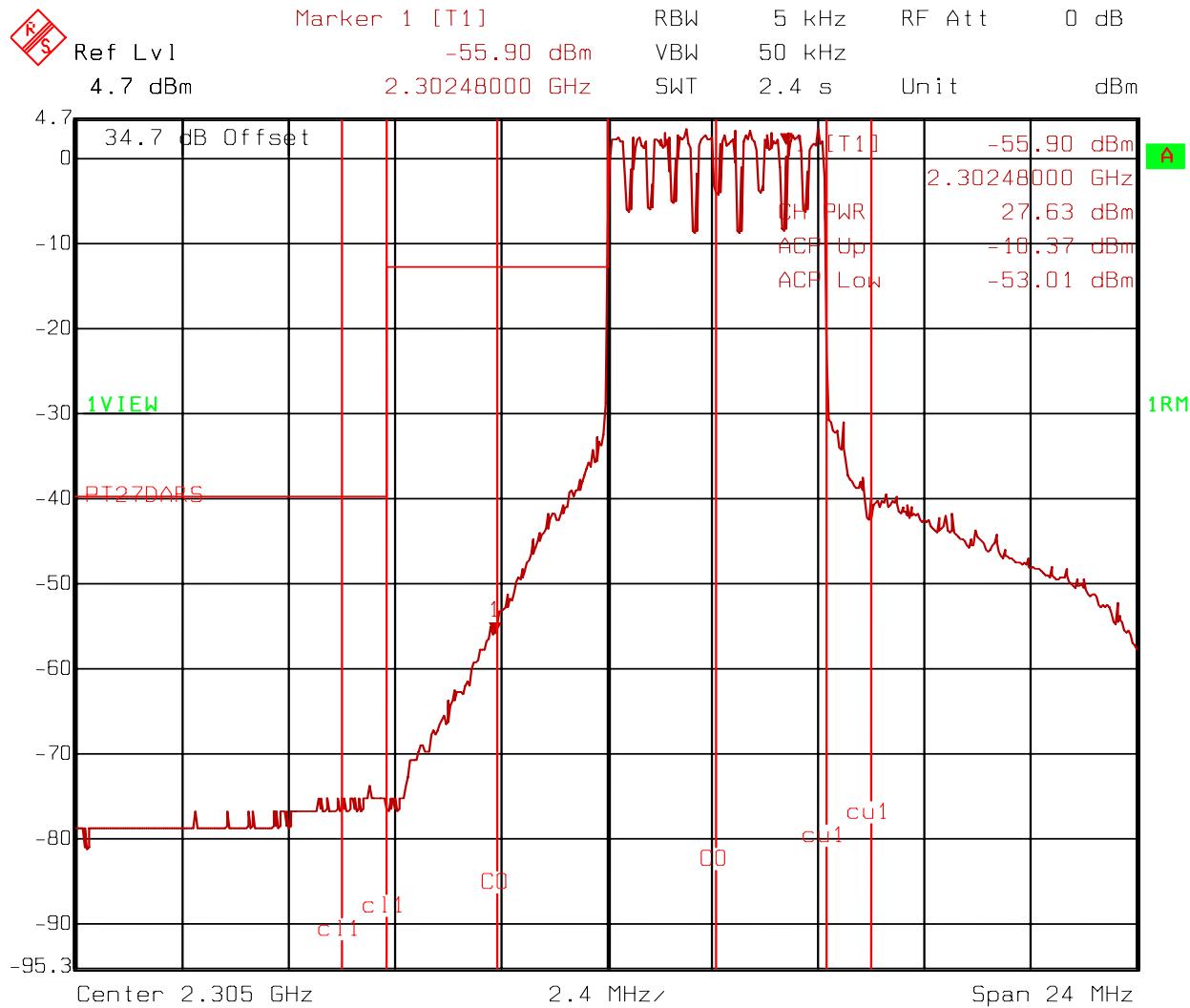
**2.6.3. Eight (8) carriers in Bands C; 1, 2, & 3 MHz from adjacent DARS Band****8-Carrier BTS Signal Operating in WCS C Band****CPE operates at carriers:**

- C4, C5, C6, & C7: 1MHz guard band from DARS band edge
- C2, C3, C4, & C5: 2MHz guard band from DARS band edge
- C0, C1, C2, & C3: 3MHz guard band from DARS band edge

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## A LOW BAND BAND EDGE Navini mode

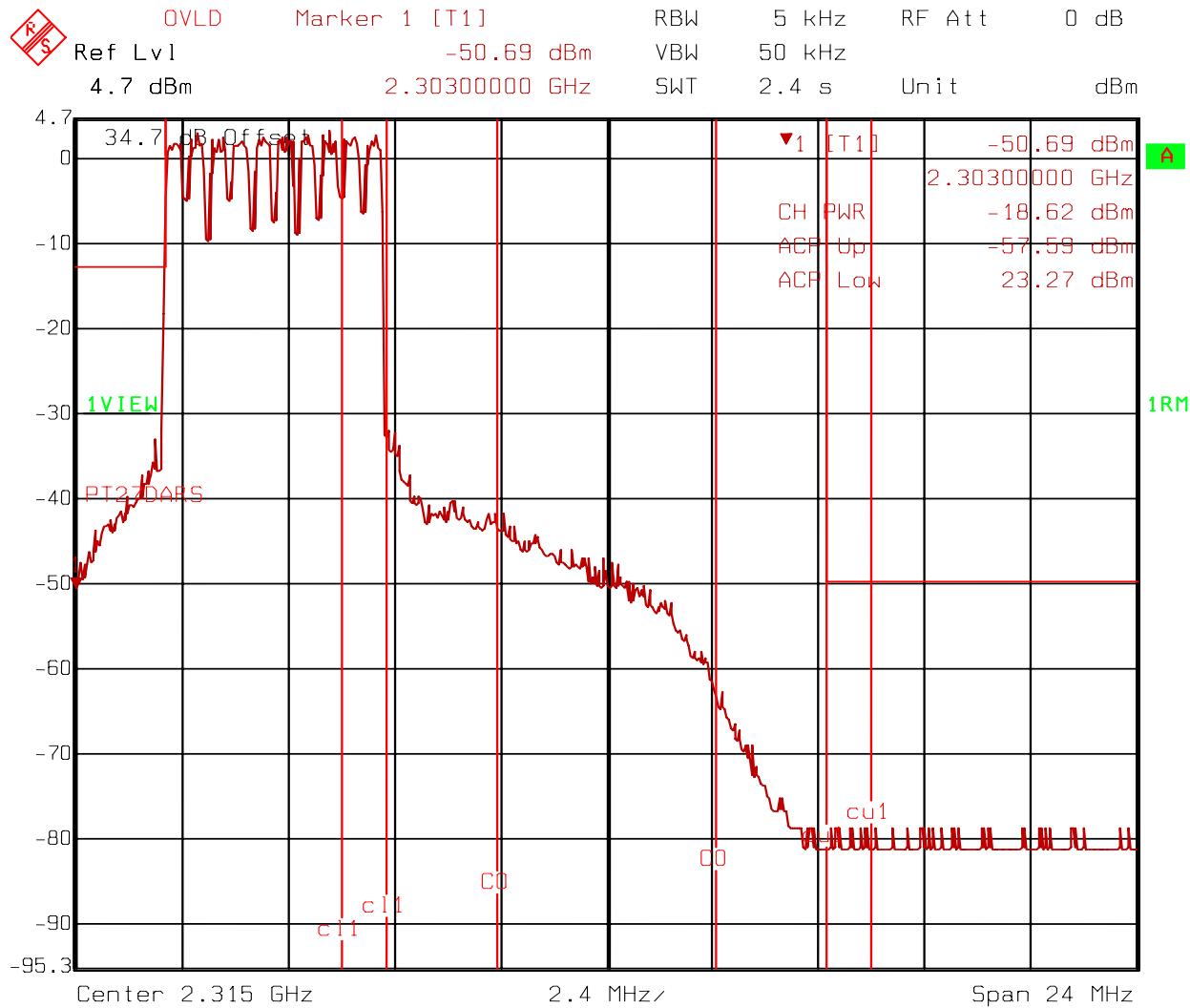


Date: 23.JUN.2006 10:38:10

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## A LOW BAND DARS Navini Mode

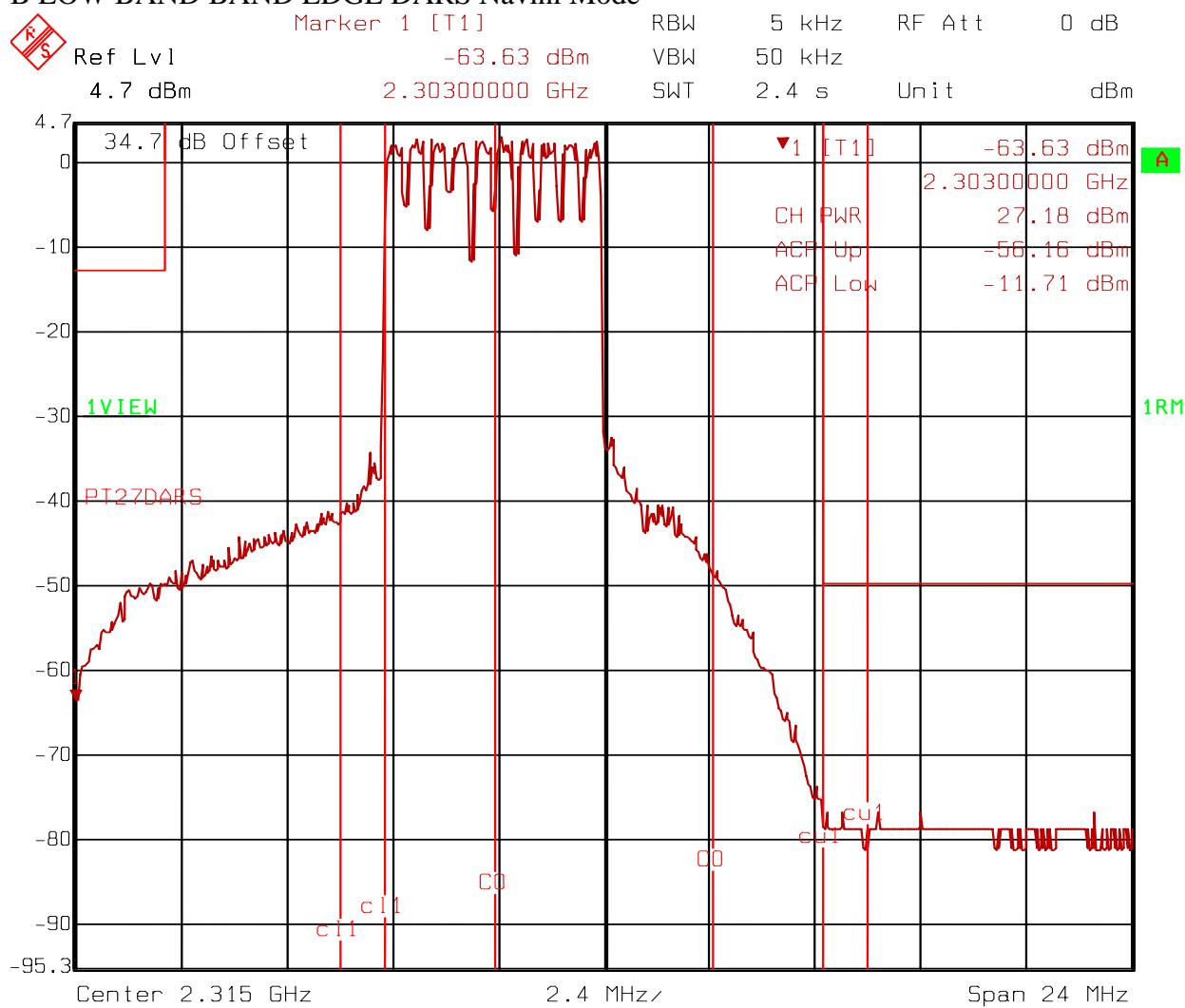


Date: 23.JUN.2006 10:41:27

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## B LOW BAND BAND EDGE DARS Navini Mode

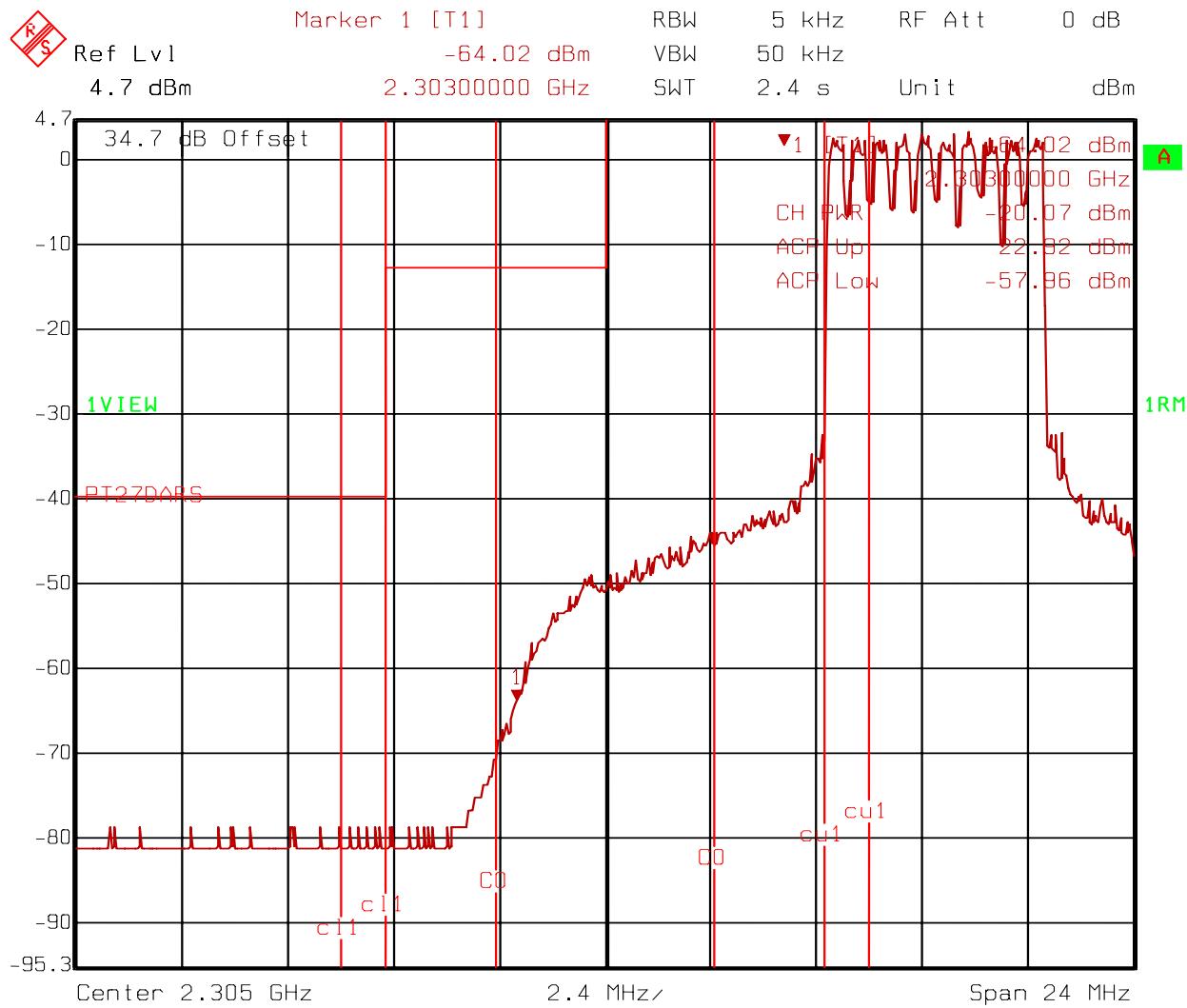


Date: 23.JUN.2006 10:45:34

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

A LOW BAND BAND EDGE Navini mode

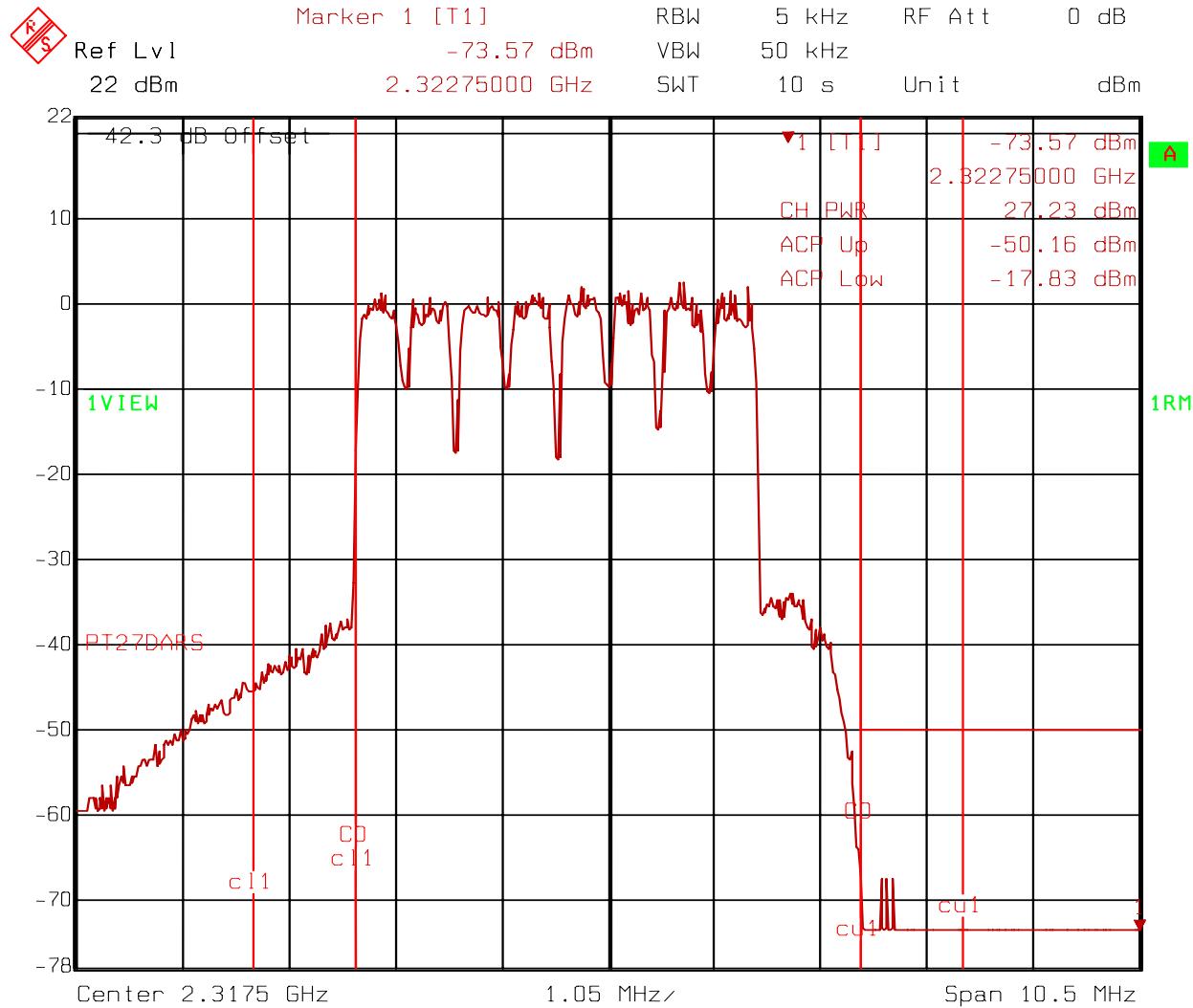


Date: 23.JUN.2006 10:47:33

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## C BAND DARS

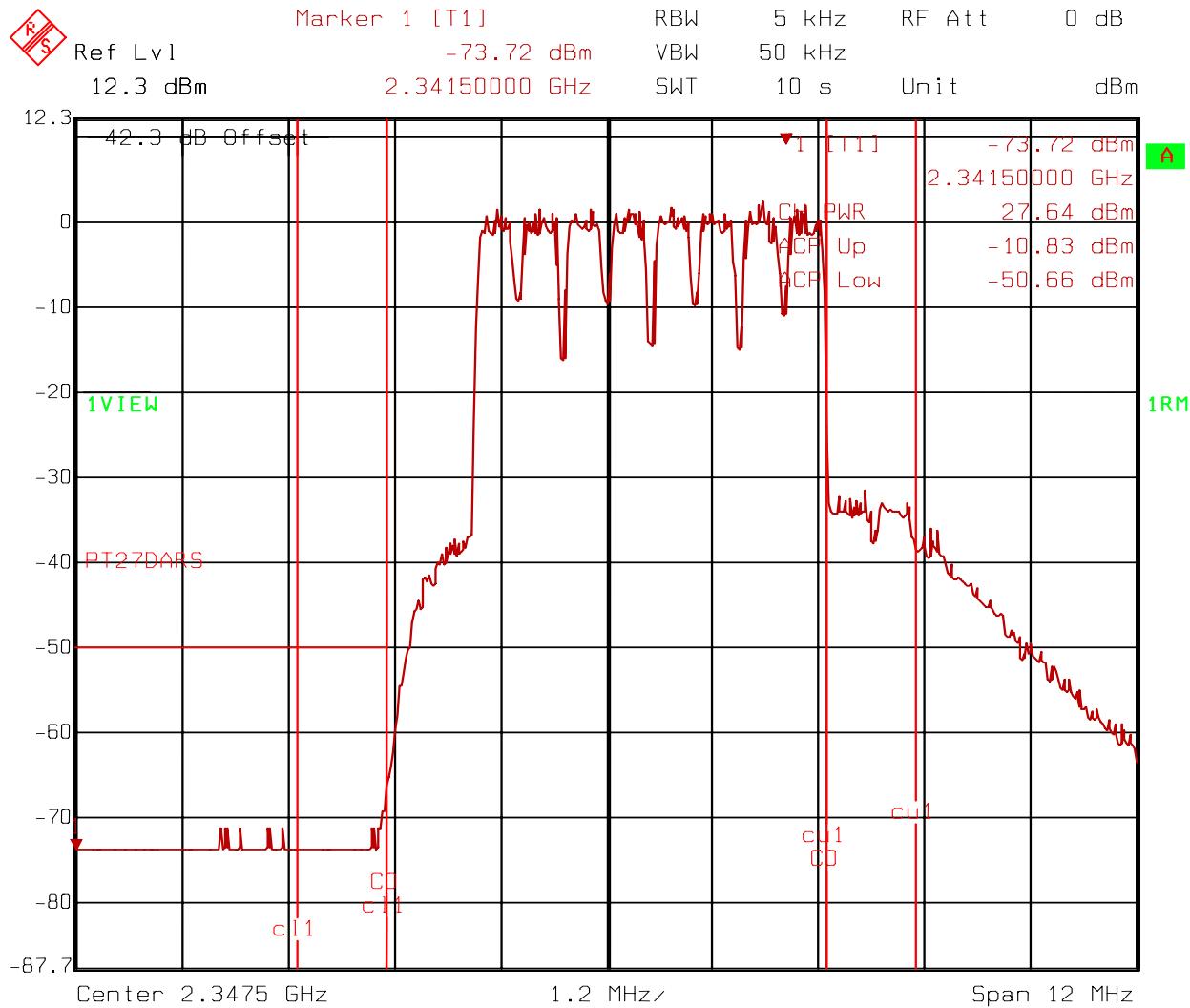


Date: 23.JUN.2006 13:26:39

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## D BAND DARS

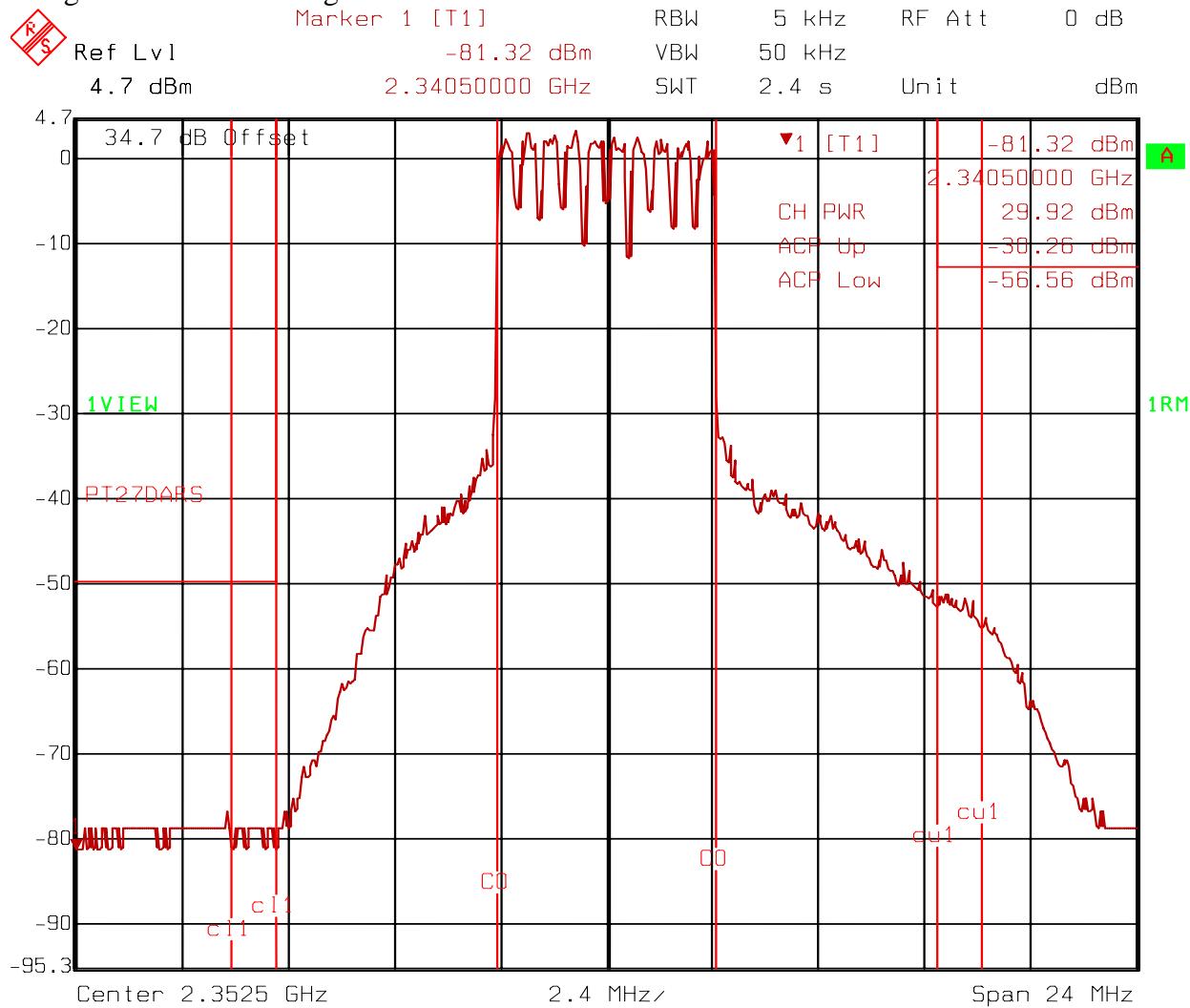


Date: 23.JUN.2006 11:56:02

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## A high band dars band edge Navini Mode

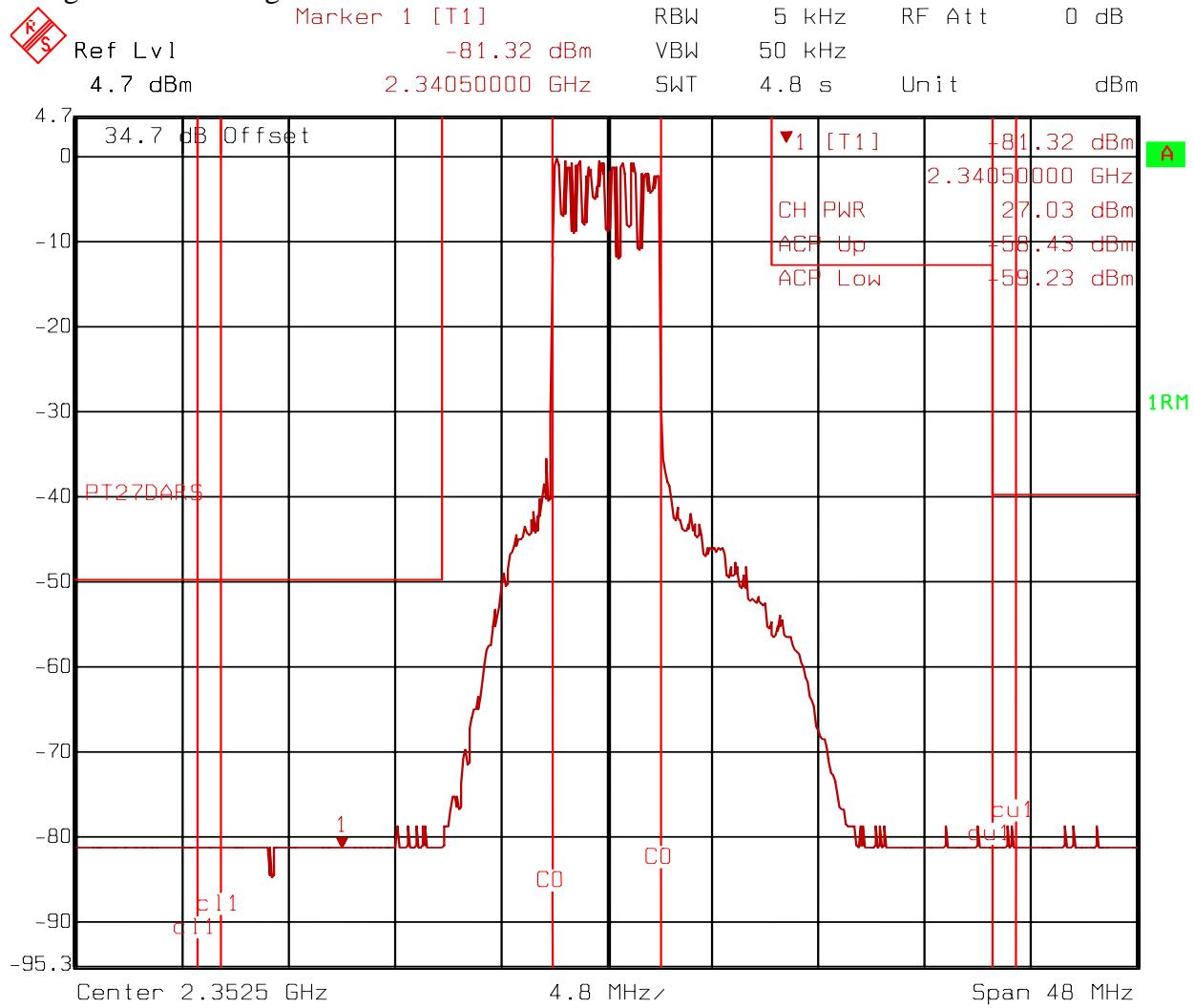


Date: 23.JUN.2006 11:04:07

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## A high band band edge Navini Mode

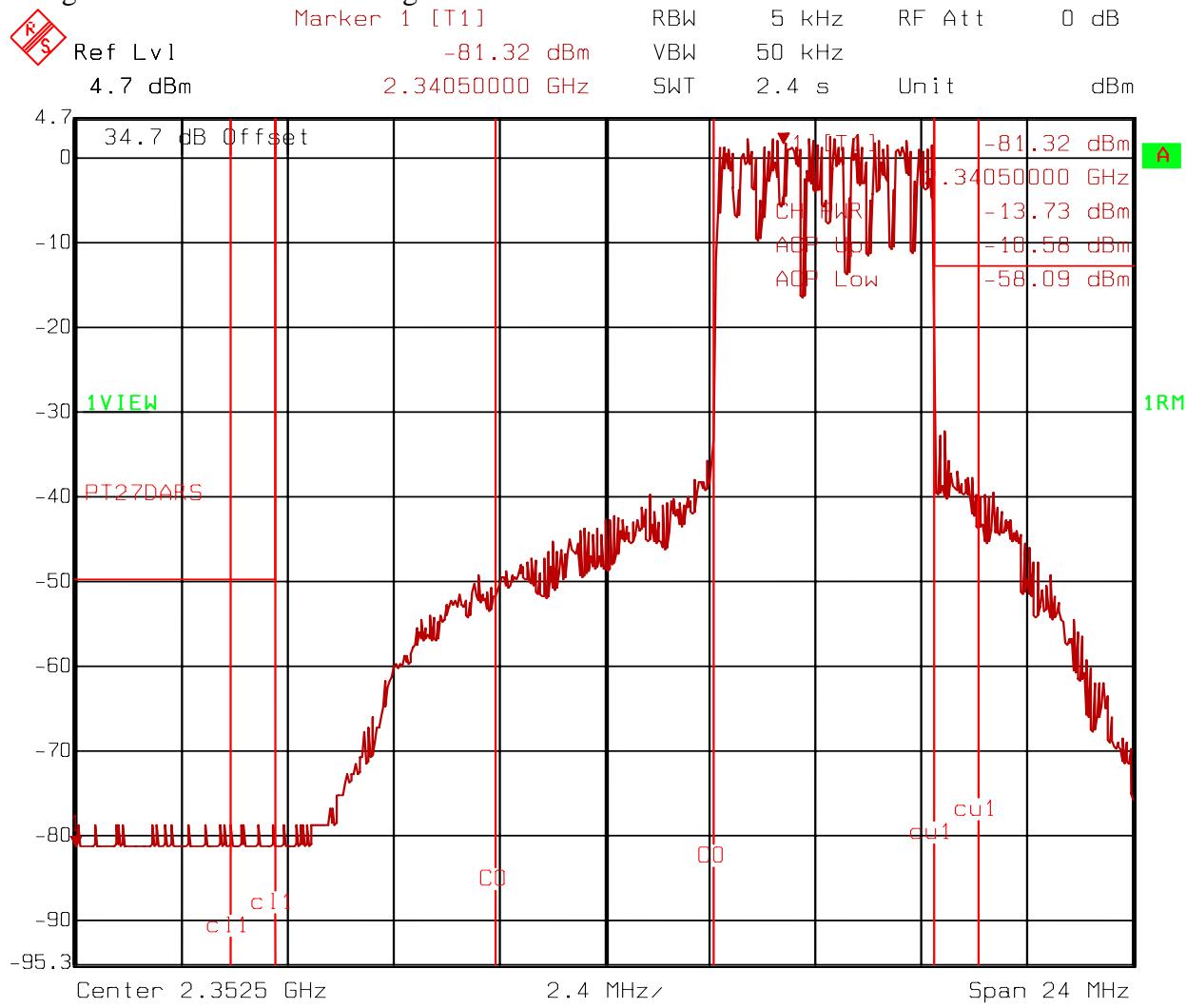


Date: 23.JUN.2006 11:06:02

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PROJECT NO.:6L0169RUS1

## B high band DARS and band edge

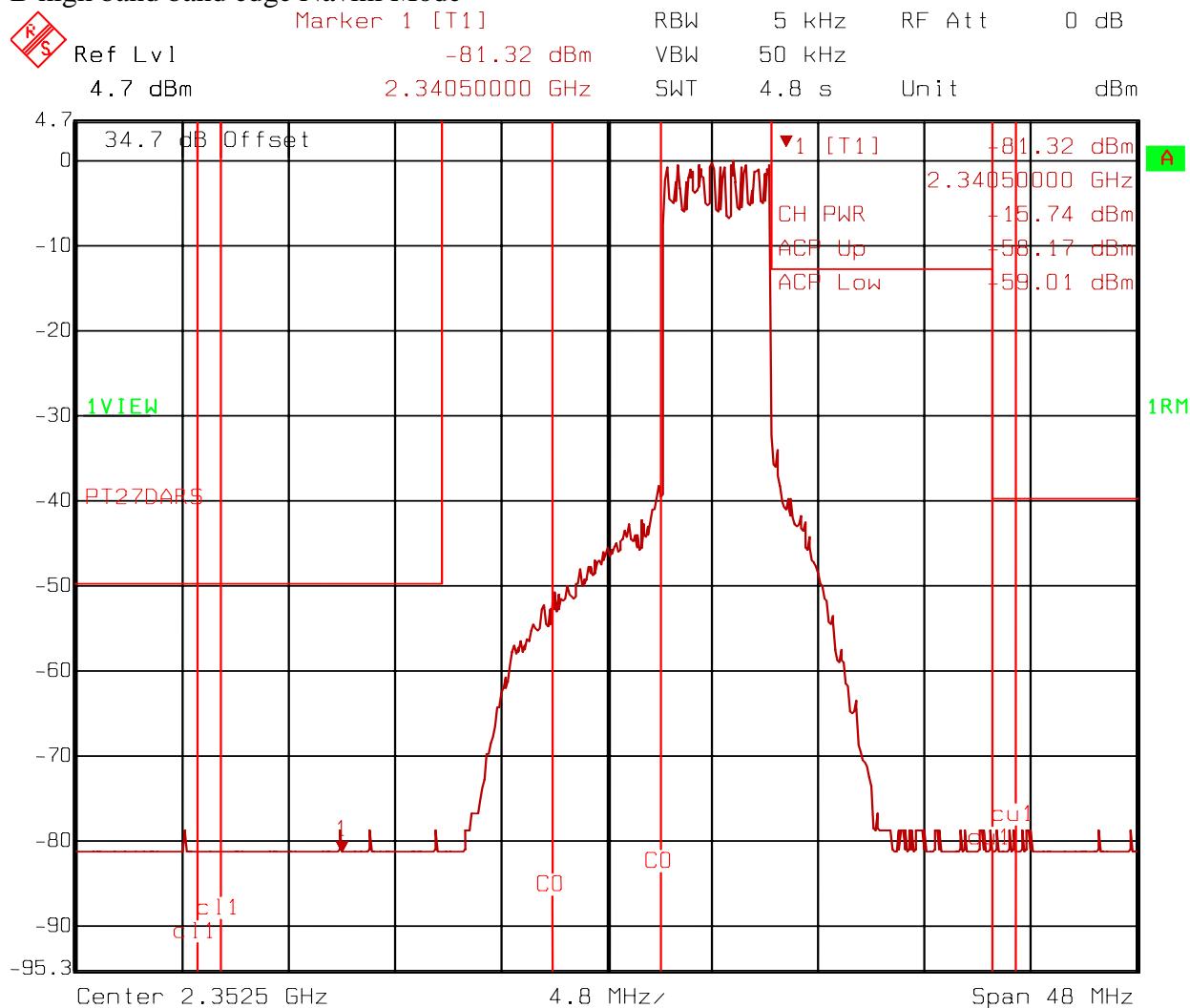


Date: 23.JUN.2006 11:13:00

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## B high band band edge Navini Mode

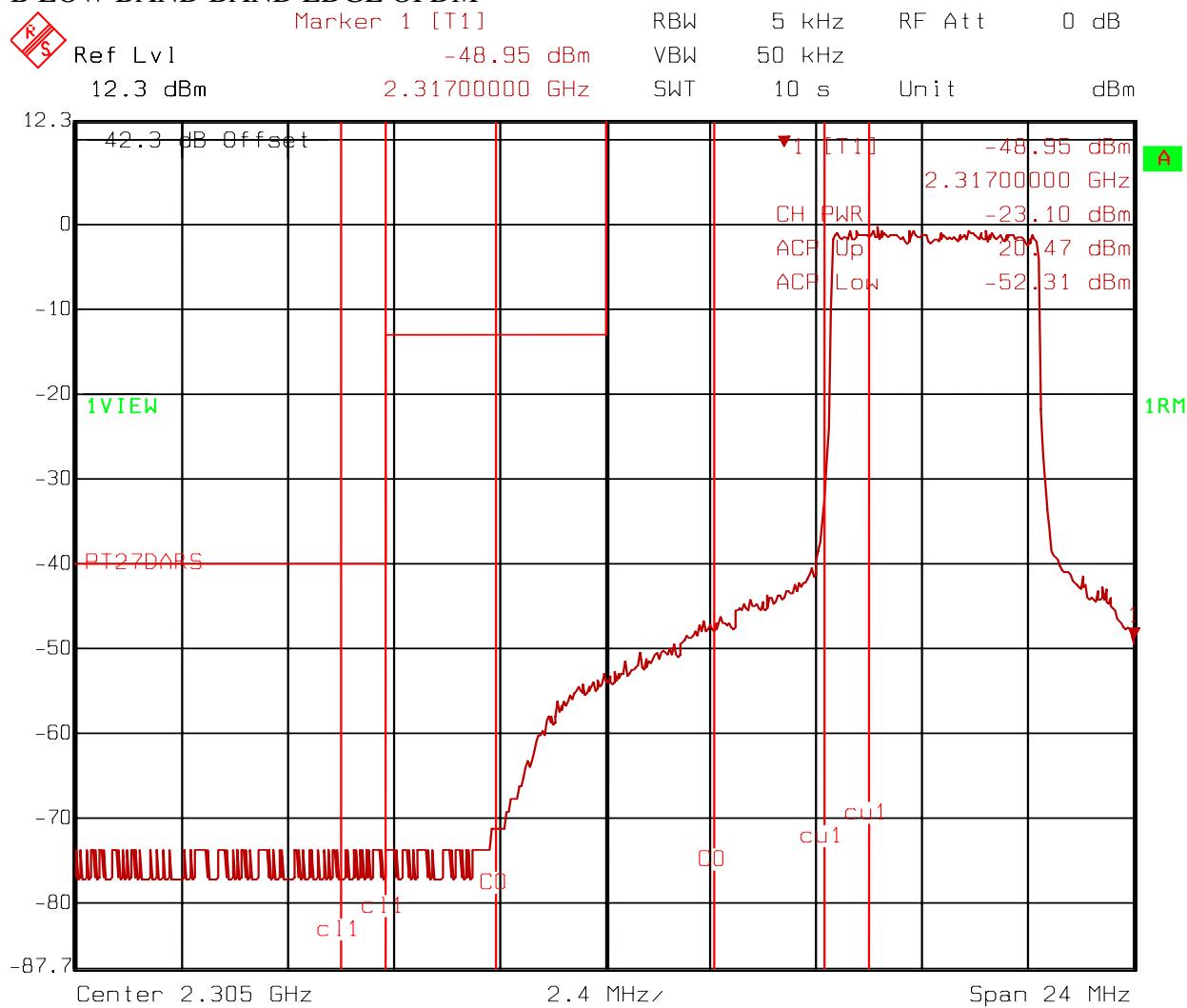


Date: 23.JUN.2006 11:08:37

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## B LOW BAND BAND EDGE OFDM

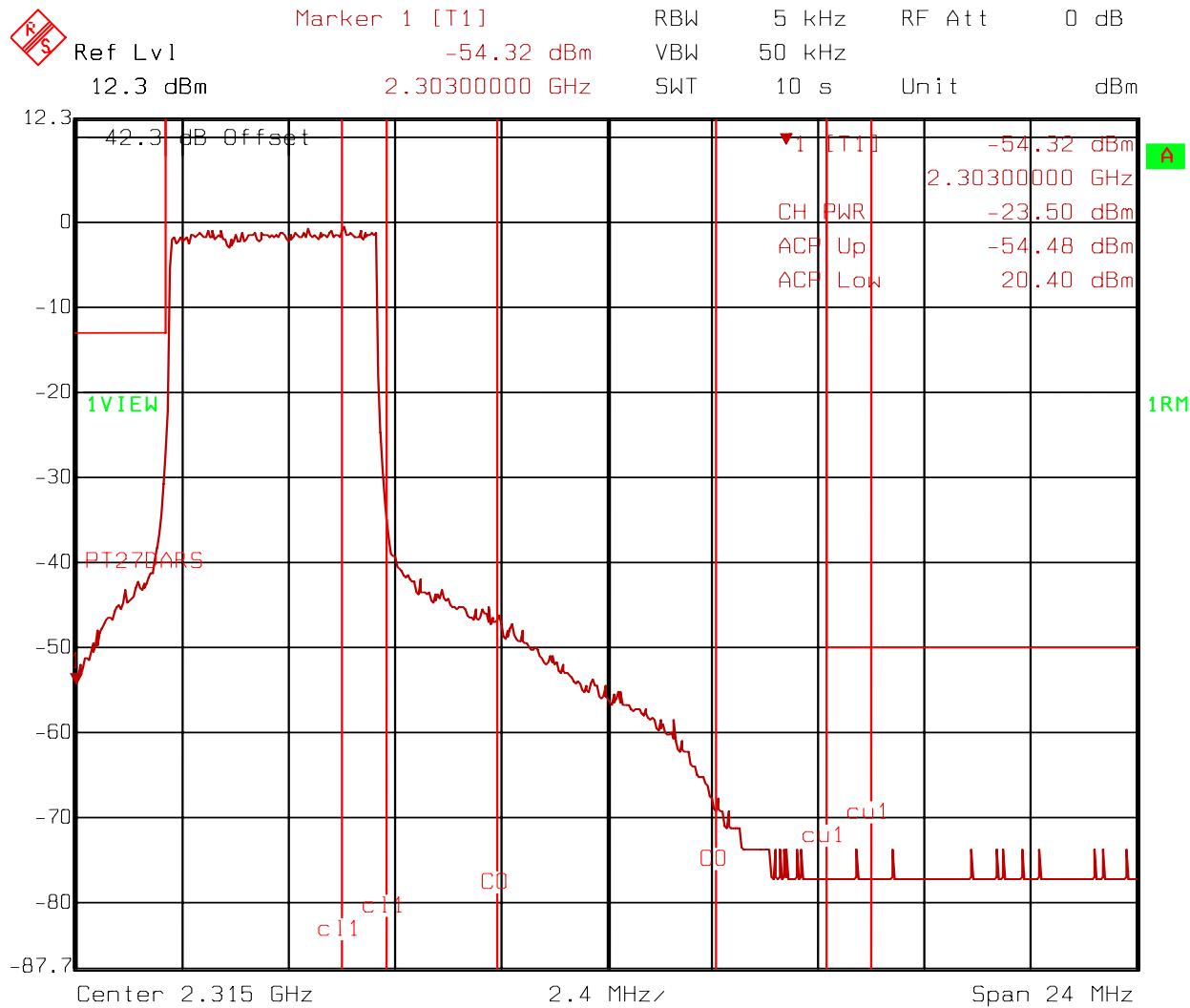


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PROJECT NO.:6L0169RUS1

## A LOW BAND DARS OFDM

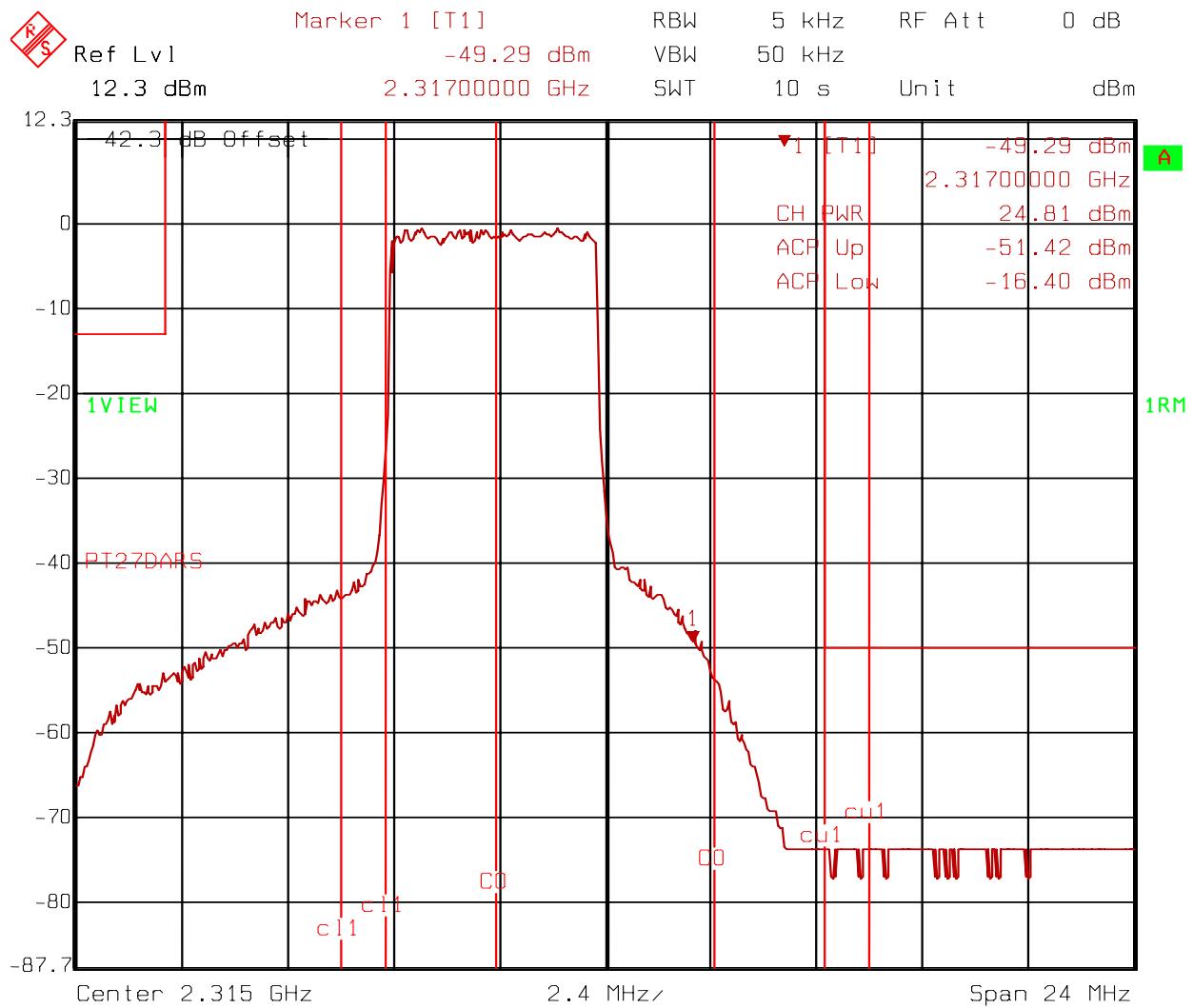


Date: 26.JUN.2006 09:05:14

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## B LOW BAND BAND EDGE DARS OFDM

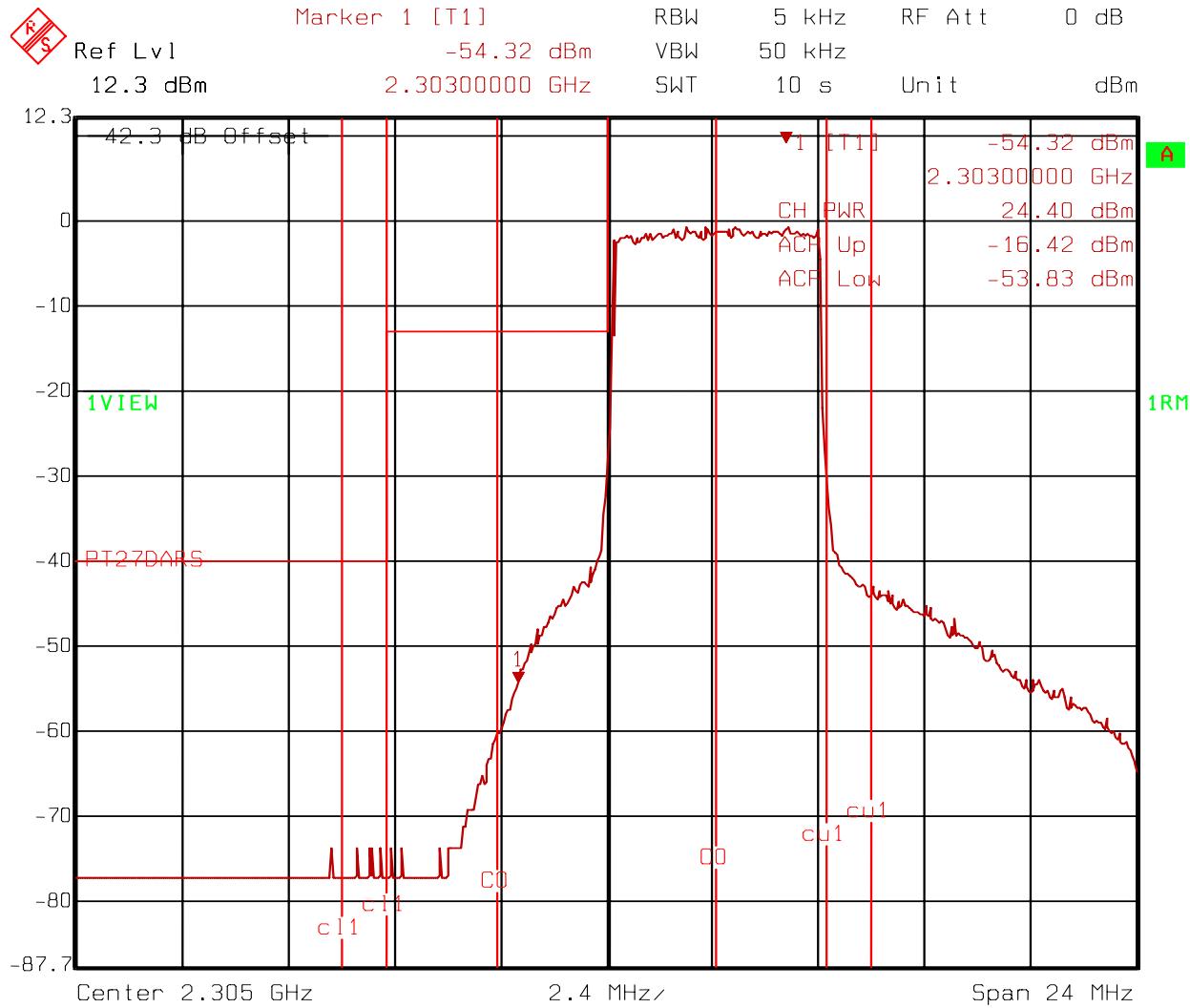


Date: 23.JUN.2006 16:09:56

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## A LOW BAND BAND EDGE OFDM

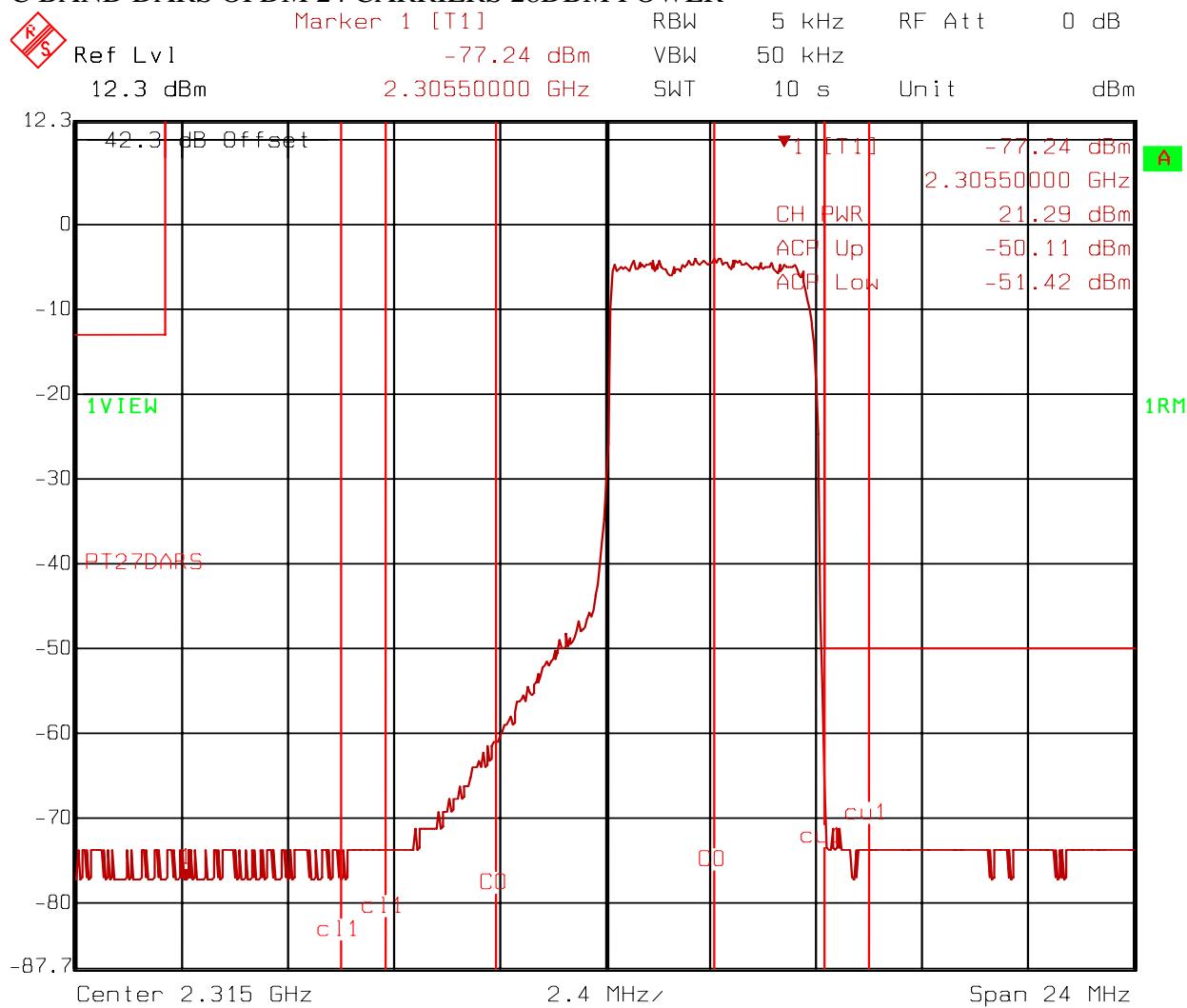


Date: 26.JUN.2006 09:06:32

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## C BAND DARS OFDM 24 CARRIERS 28DBM POWER

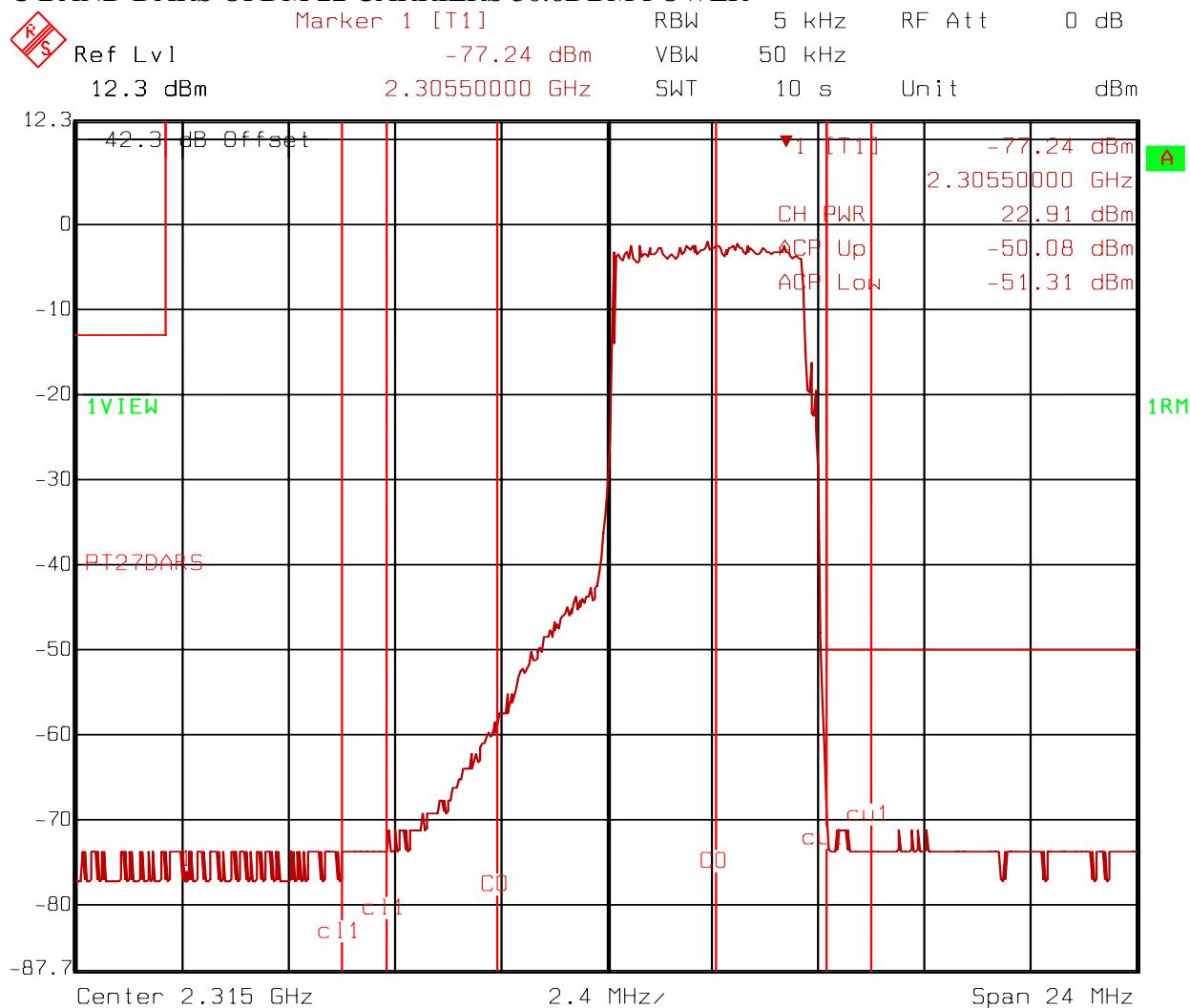


Date: 23.JUN.2006 15:40:13

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## C BAND DARS OFDM 22 CARRIERS 30.6DBM POWER

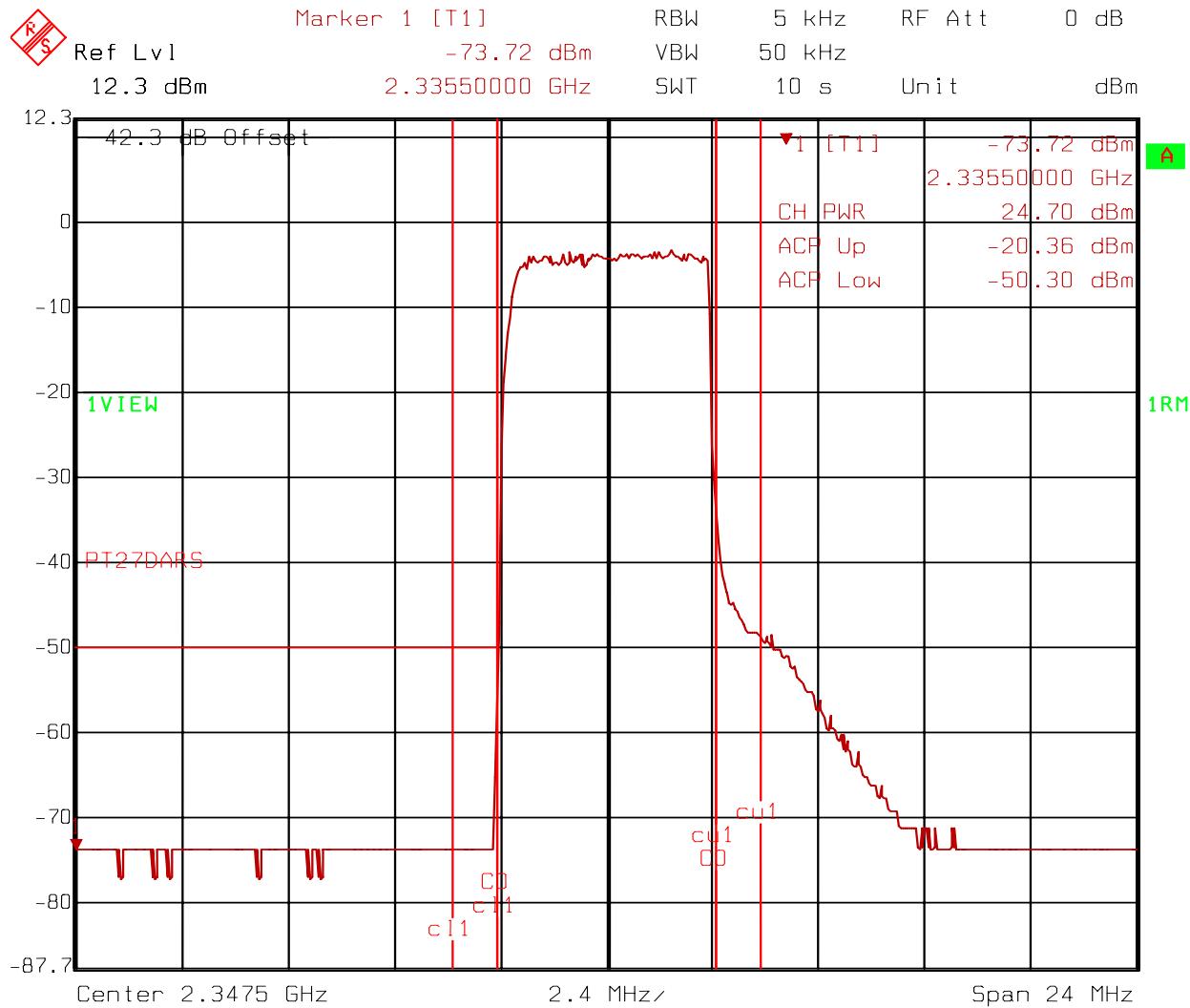


Date: 23.JUN.2006 15:52:19

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## D BAND DARS OFDM 24 SUB CARRIERS 28.6 DBM

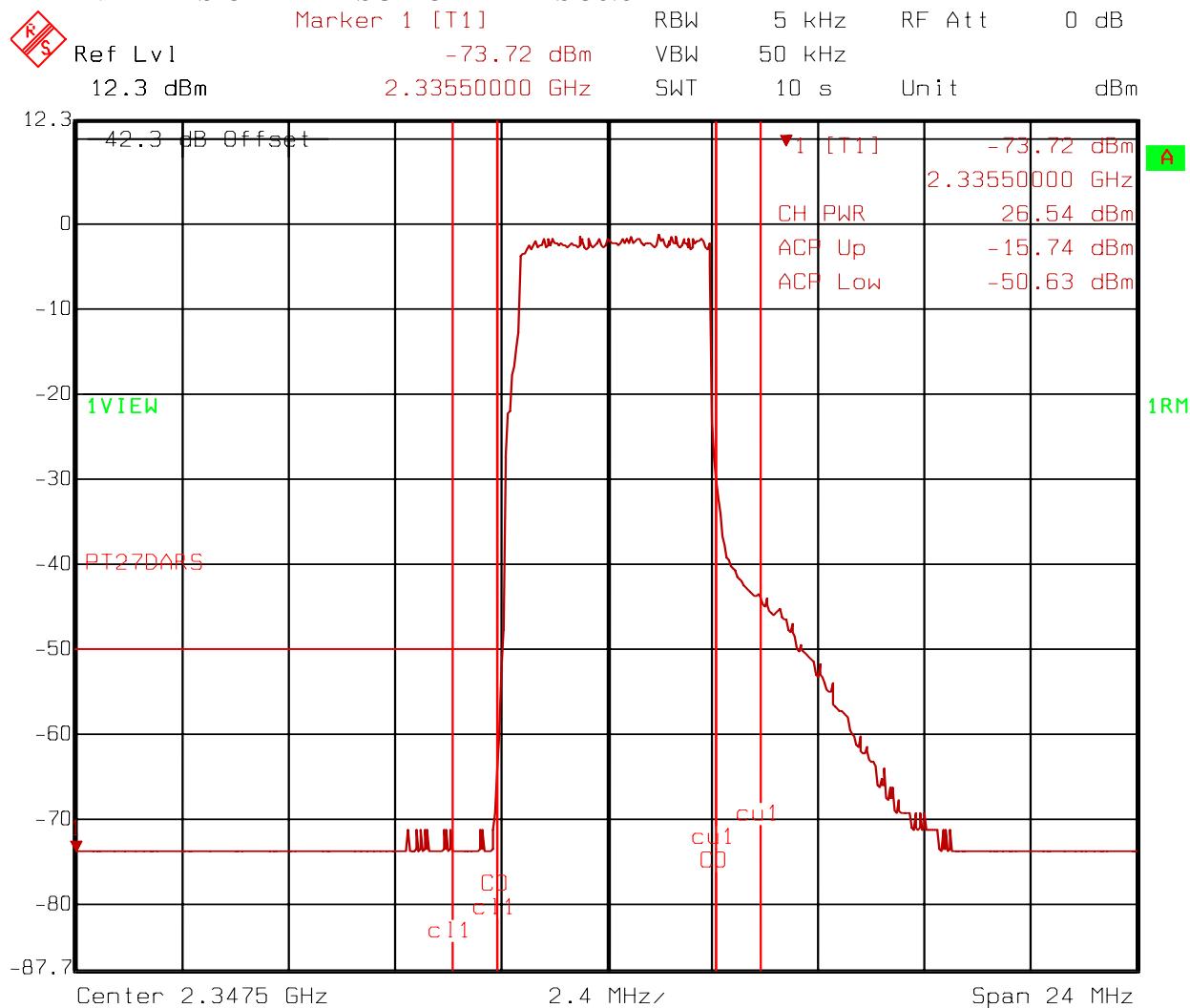


Date: 23.JUN.2006 15:59:58

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## D BAND DARS OFDM 22 SUB CARRIERS 30.6 DBM

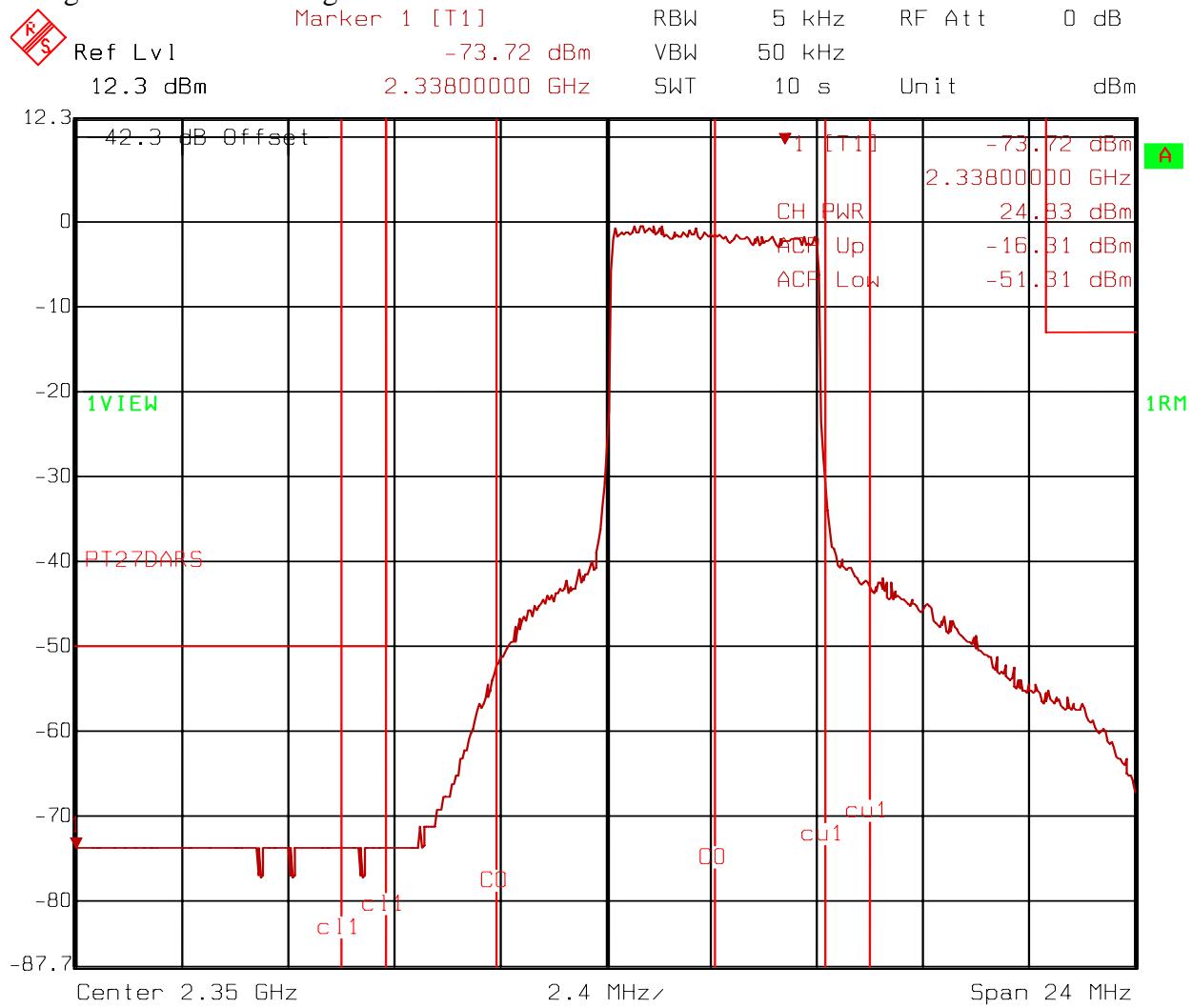


Date: 23.JUN.2006 15:58:15

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## A high band dars band edge OFDM

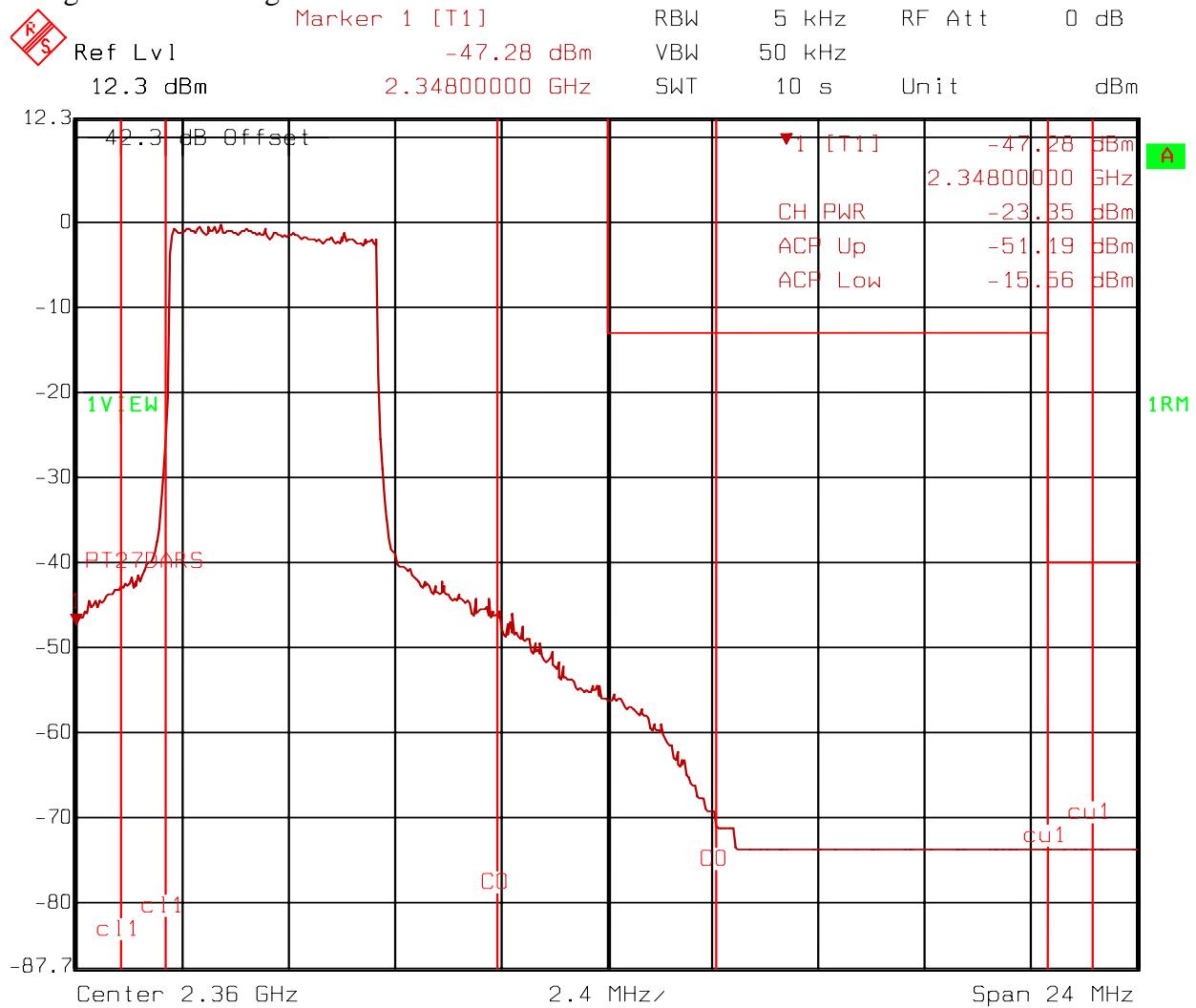


Date: 23.JUN.2006 16:16:57

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## A high band band edge OFDM

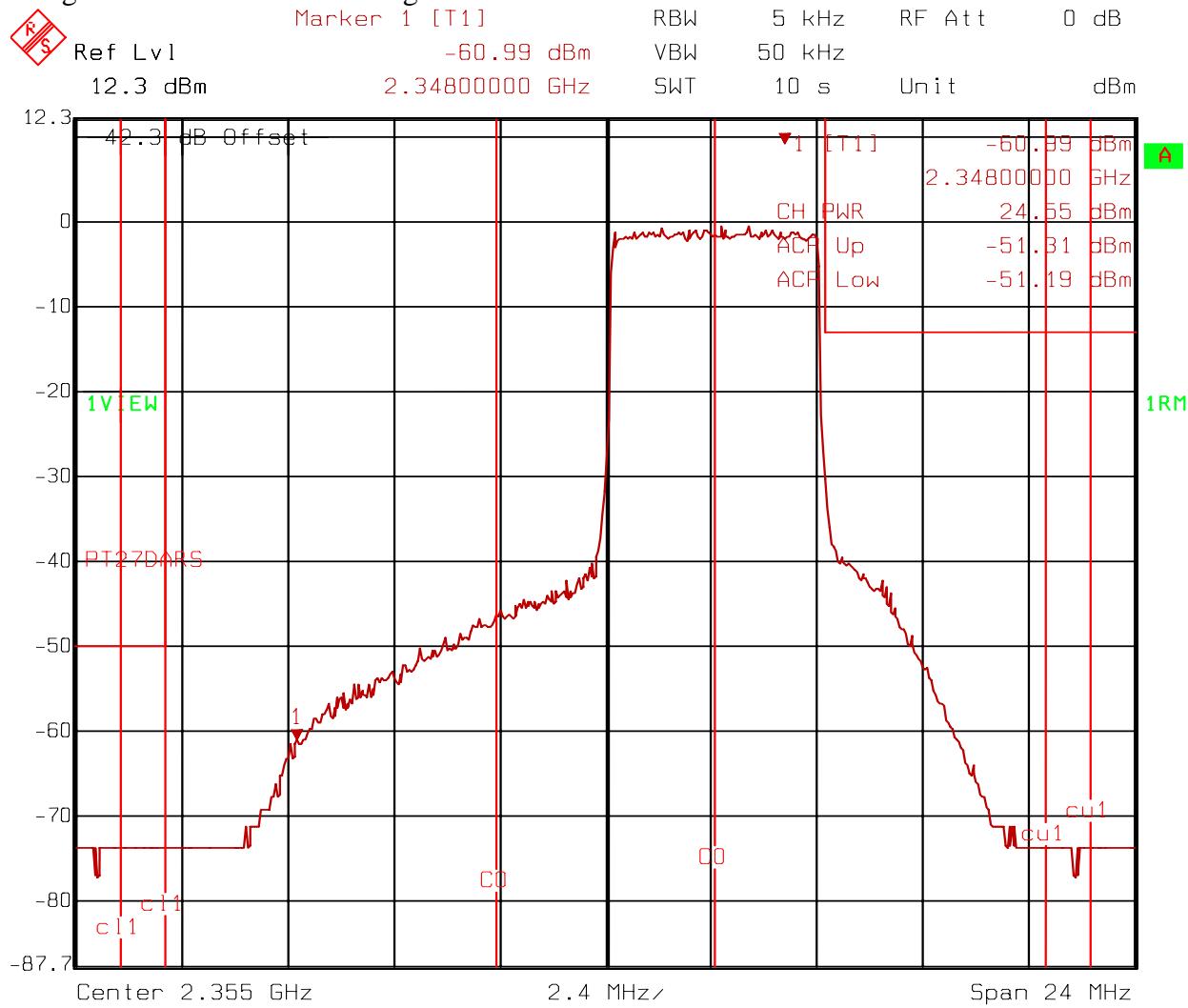


Date: 23.JUN.2006 16:19:53

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## B high band DARS and band edge OFDM

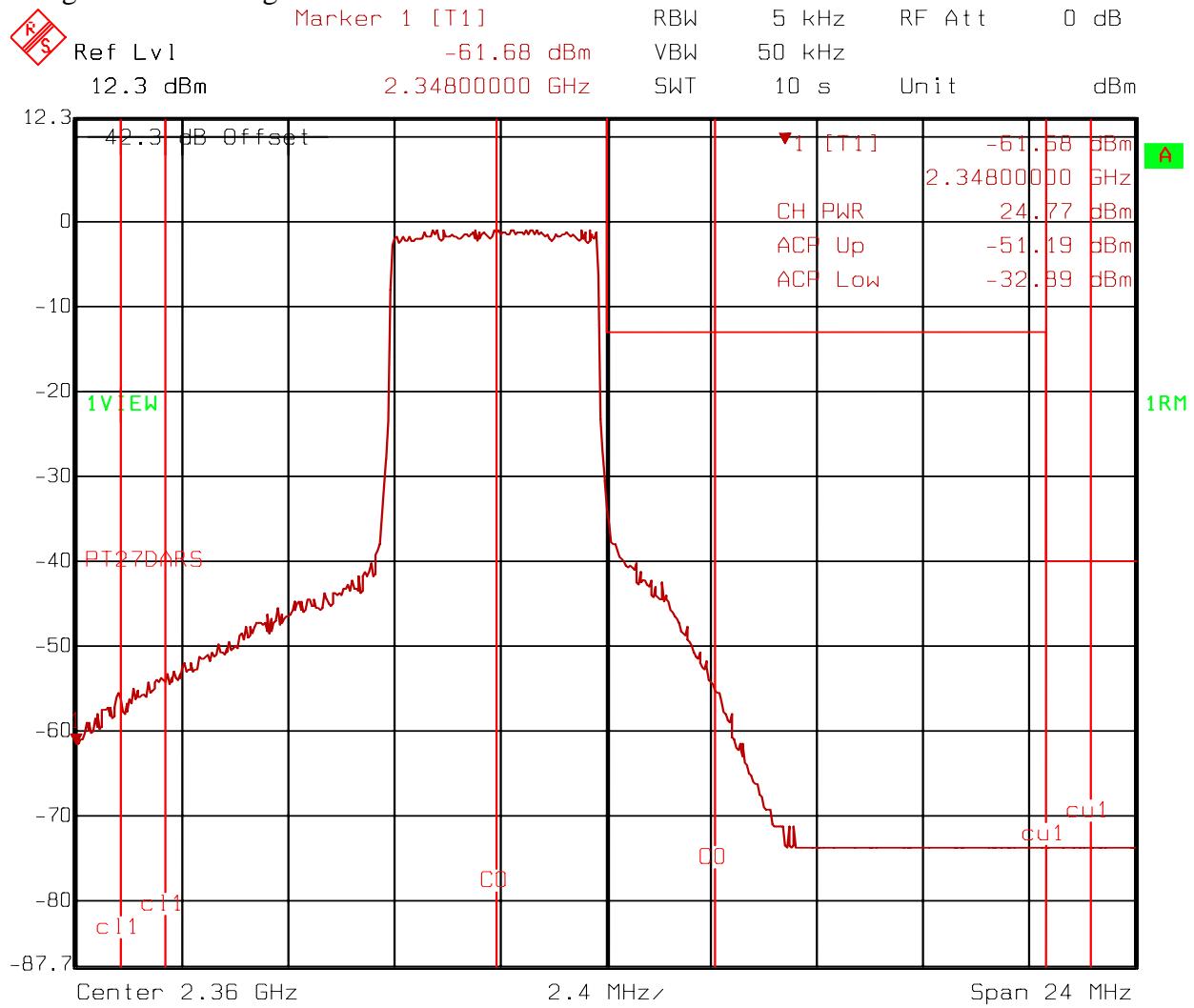


Date: 23.JUN.2006 16:23:06

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## B high band band edge OFDM



Date: 23.JUN.2006 16:21:27

**Nemko USA**

FCC PART 27, SUBPART C/D

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## **Section 5. Field Strength of Spurious**

NAME OF TEST: Field Strength of Spurious Emissions	PARA. NO.: 2.1053
TESTED BY: Kevin Rose	DATE: 06/23/2005

**Test Results:** Complies

**Measurement Data:** See attached table.

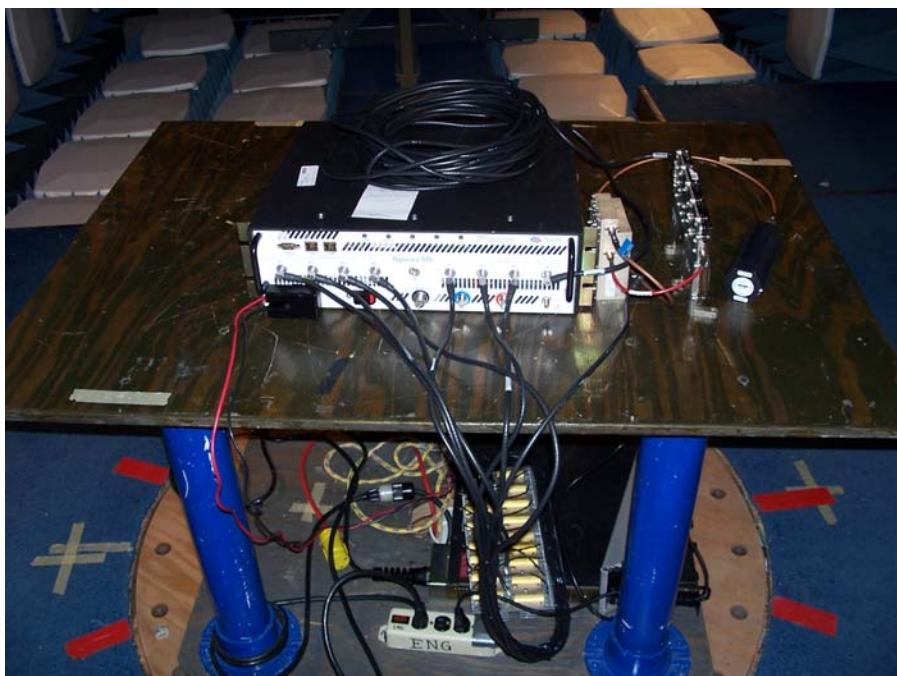
EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## Test Data - Radiated Emissions

The spectrum was searched from 30 MHz to the 10<sup>th</sup> harmonic of the carrier. No other transmitter related spurious detected.

**Photos – Radiated Emissions**



**Nemko USA**

FCC PART 27, SUBPART C/D

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## **Section 6.        Occupied Bandwidth**

NAME OF TEST: Occupied Bandwidth	PARA. NO.: 2.1049
TESTED BY: Kevin Rose	DATE: 06/23/2006

**Test Results:**        Complies

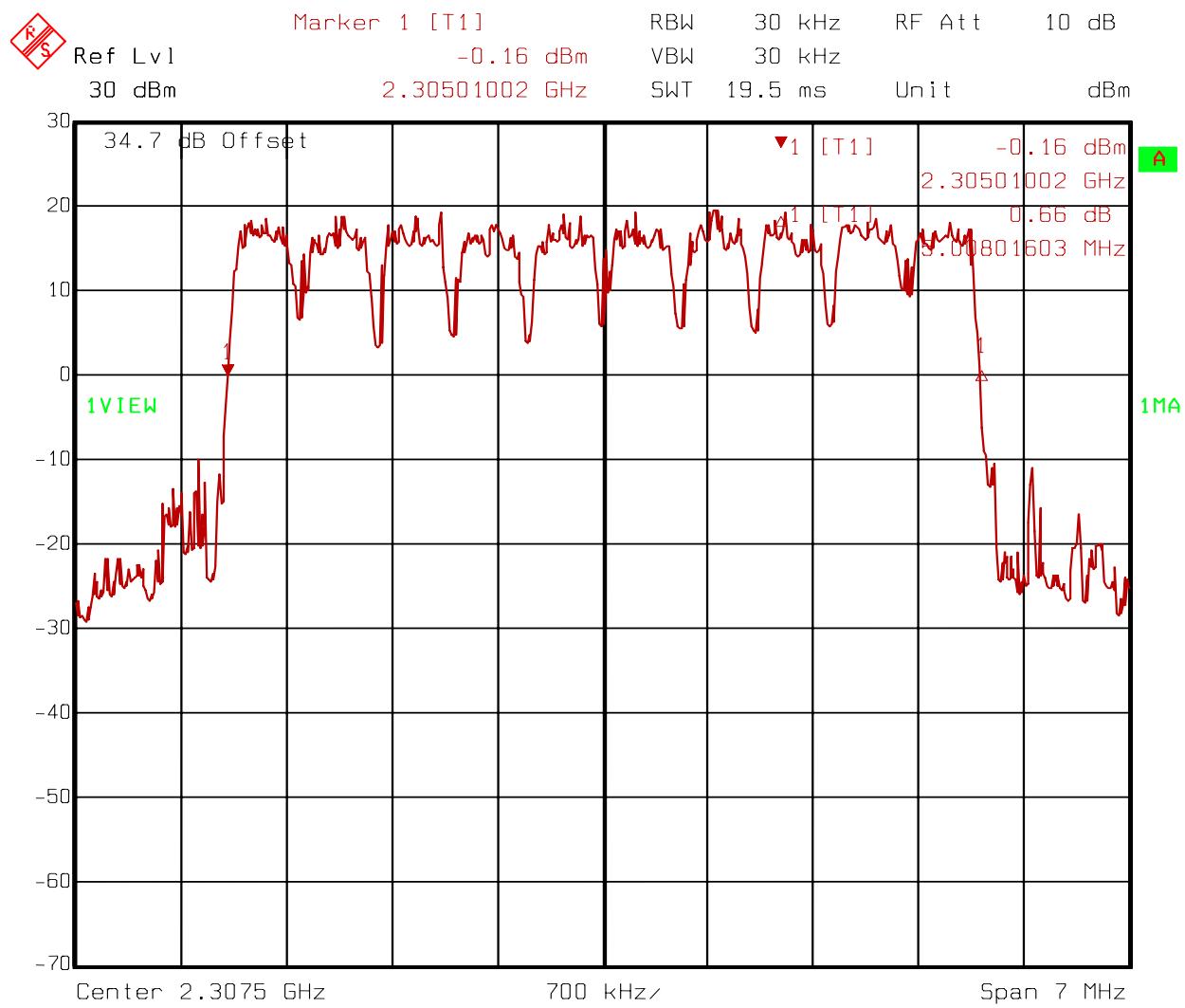
**Measurement Data:**        See attached plots.

**Test Equipment:**        1036, 1470, 1045, 1083, 1482, 1064

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

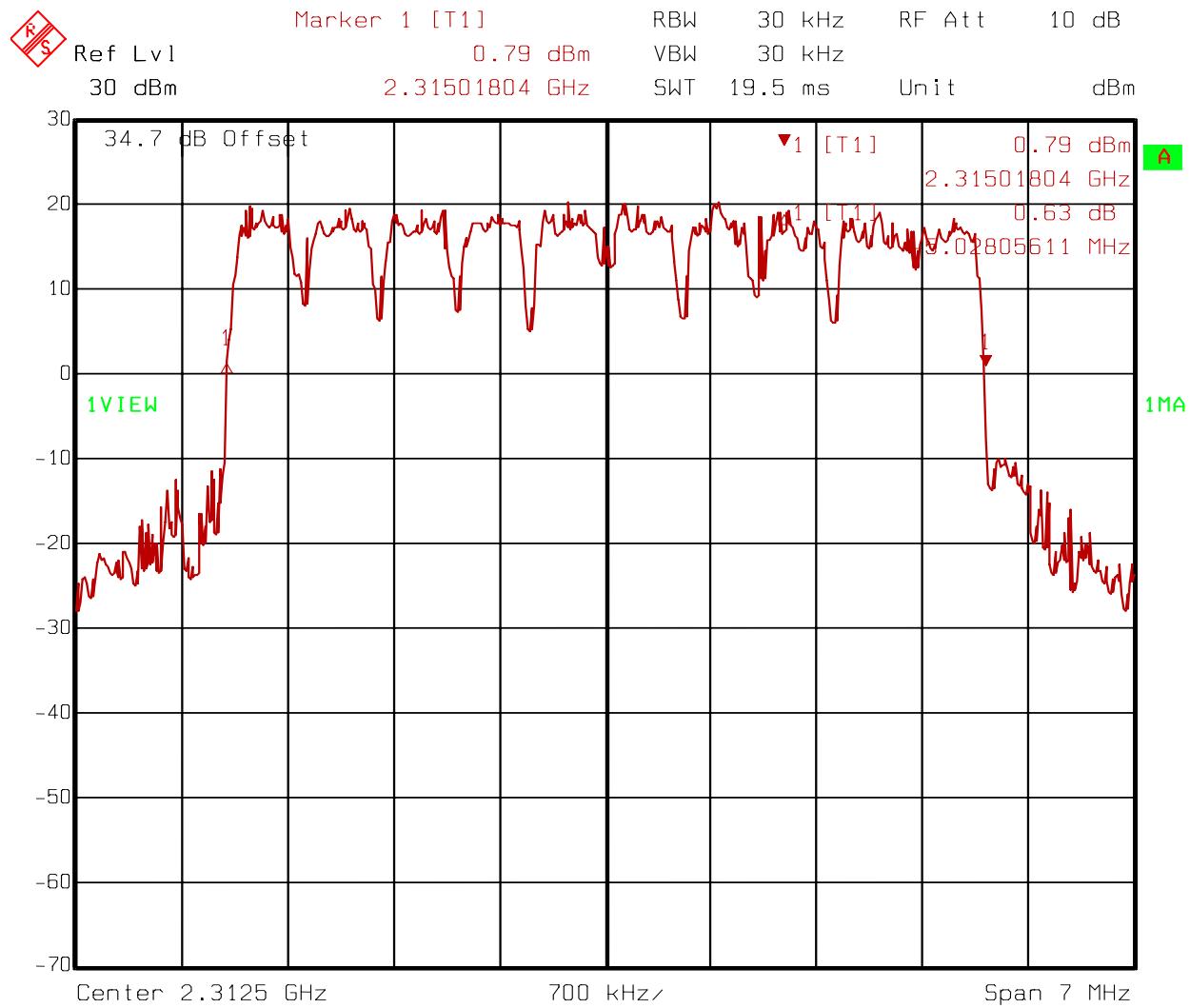
## OBW A LOW BAND



EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## OBW B LOW BAND

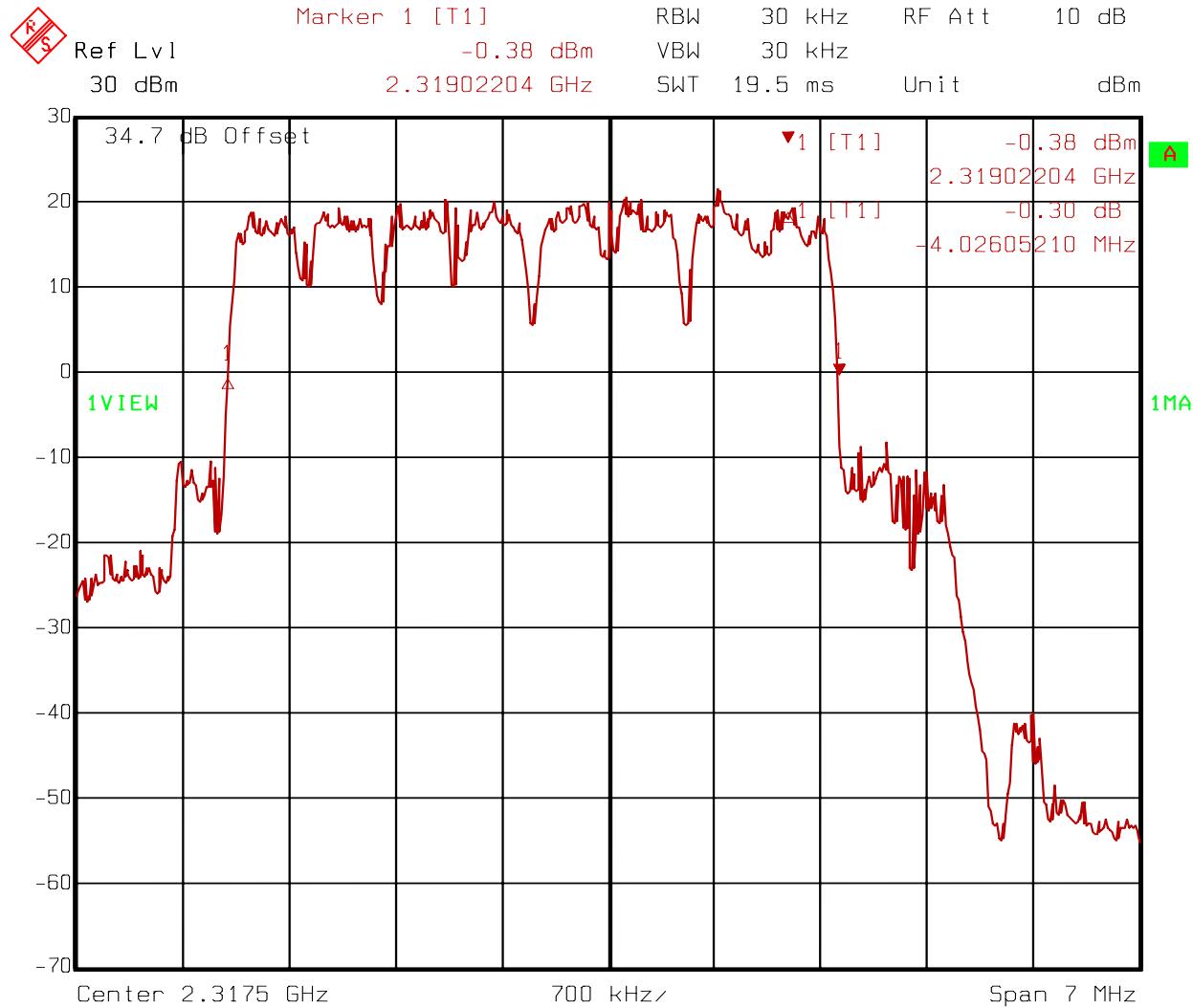


Date: 23.JUN.2006 14:59:38

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## OBW C BAND

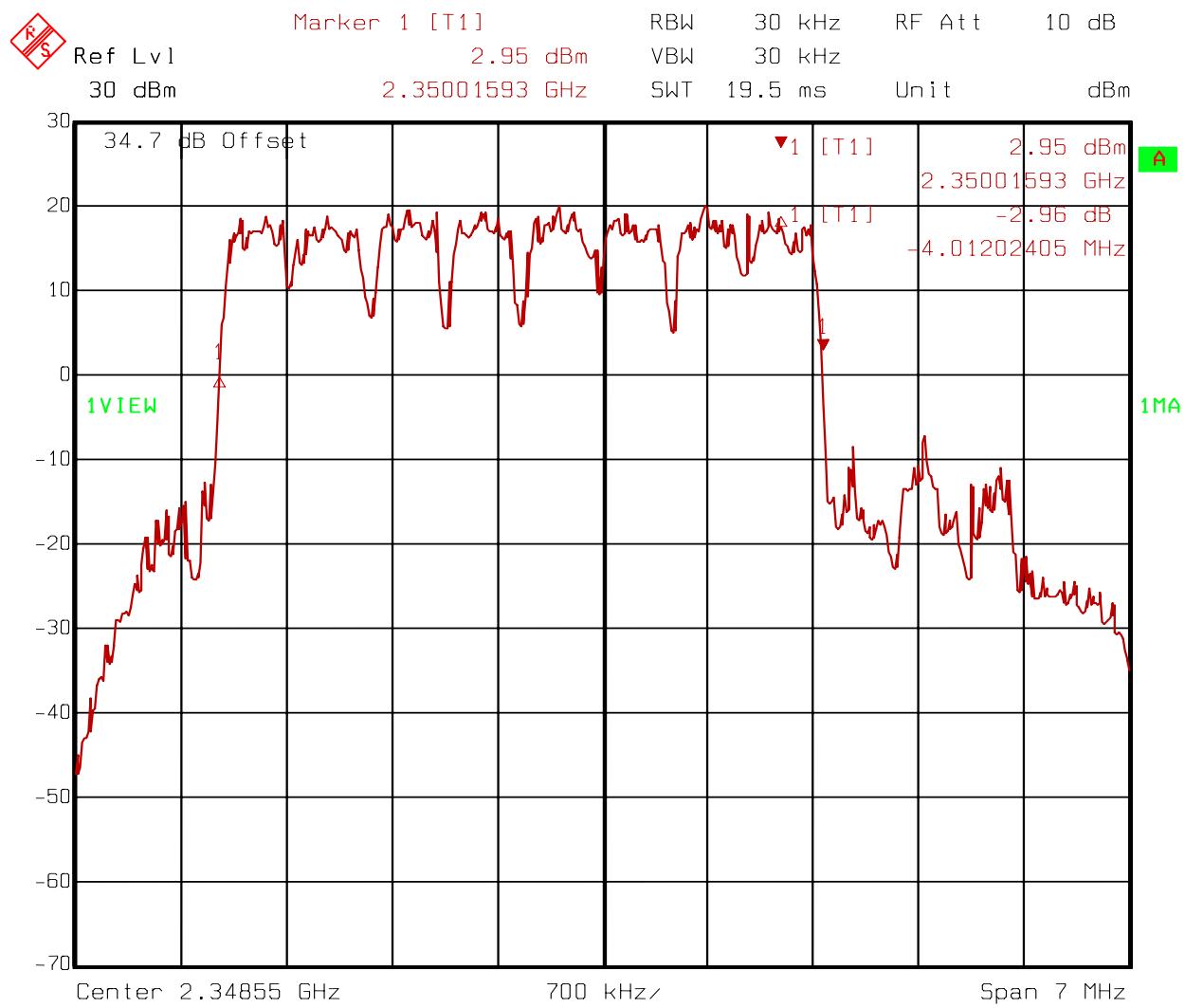


Date: 23.JUN.2006 15:01:03

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## OBW D BAND

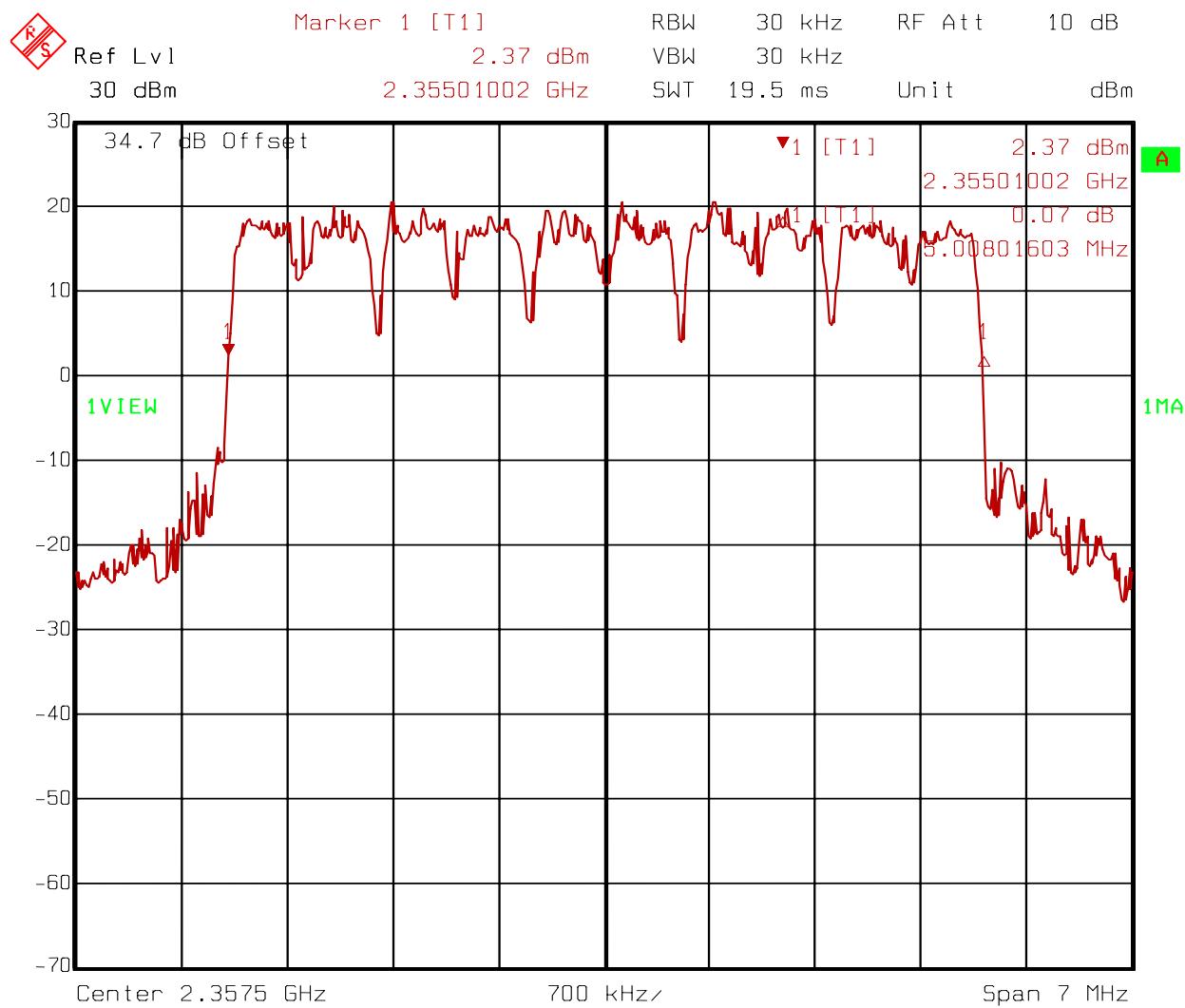


Date: 23.JUN.2006 15:03:08

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

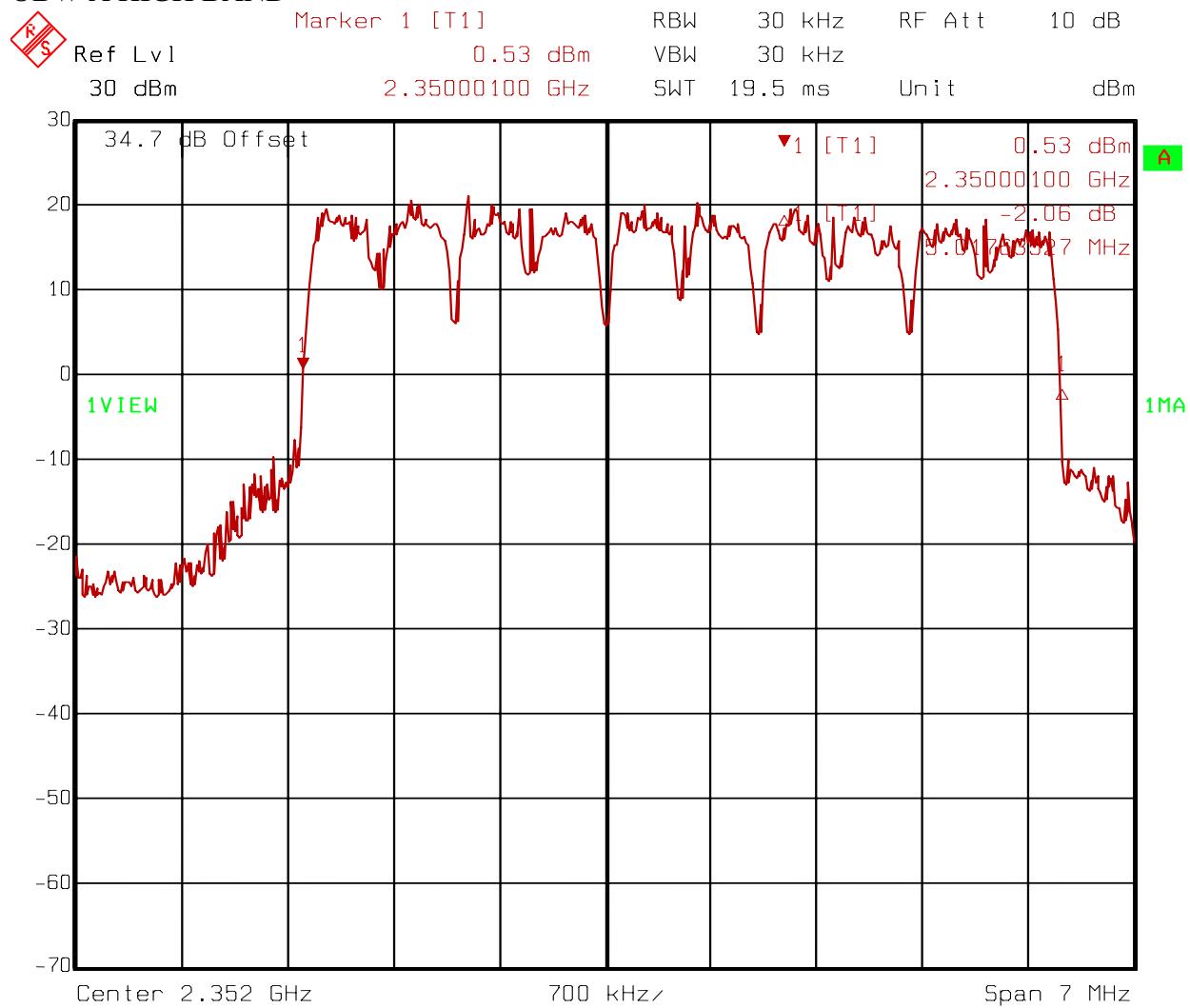
## OBW B HIGH BAND



EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## OBW A HIGH BAND

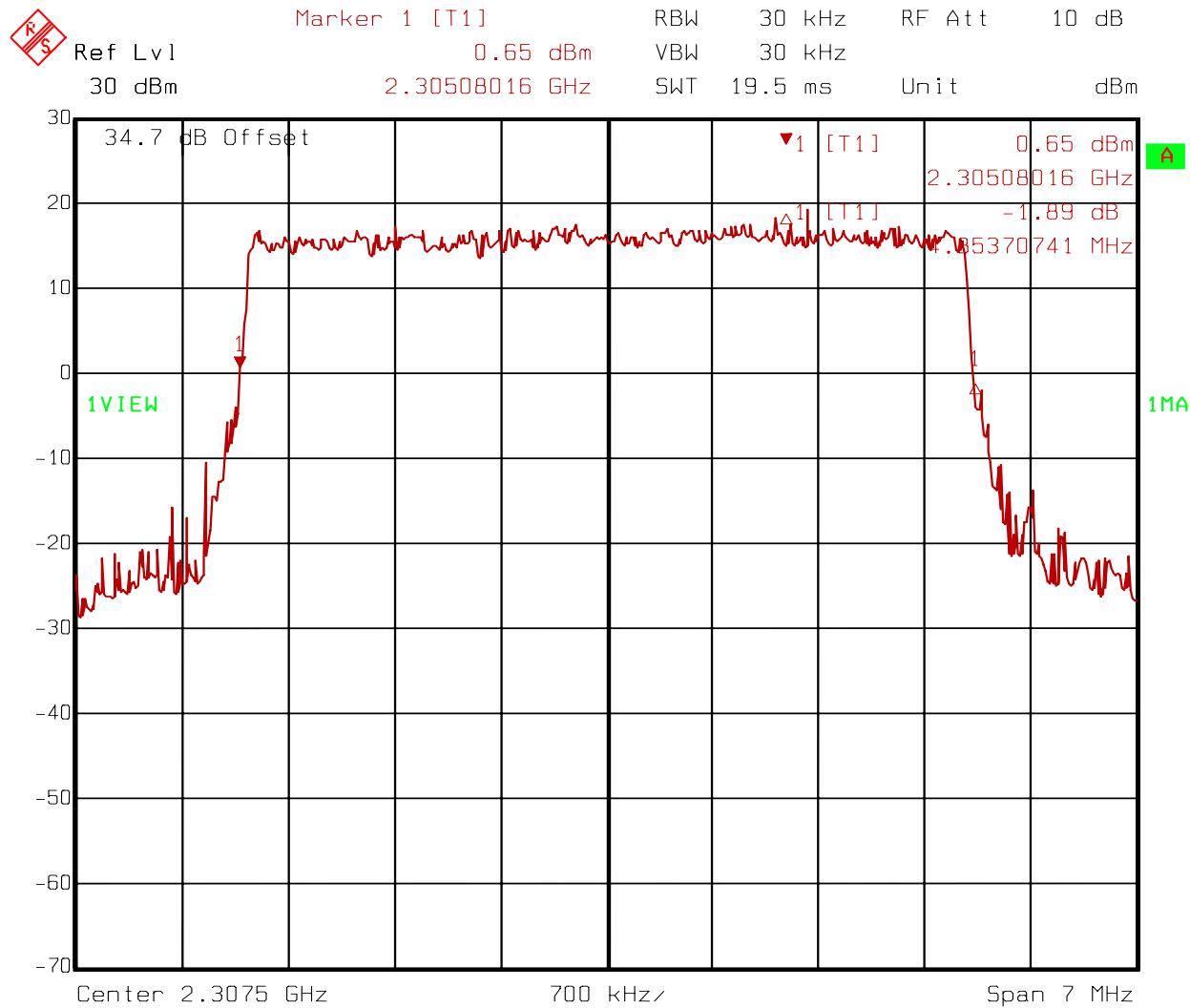


Date: 23.JUN.2006 14:57:07

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## OBW A LOW BAND OFDM

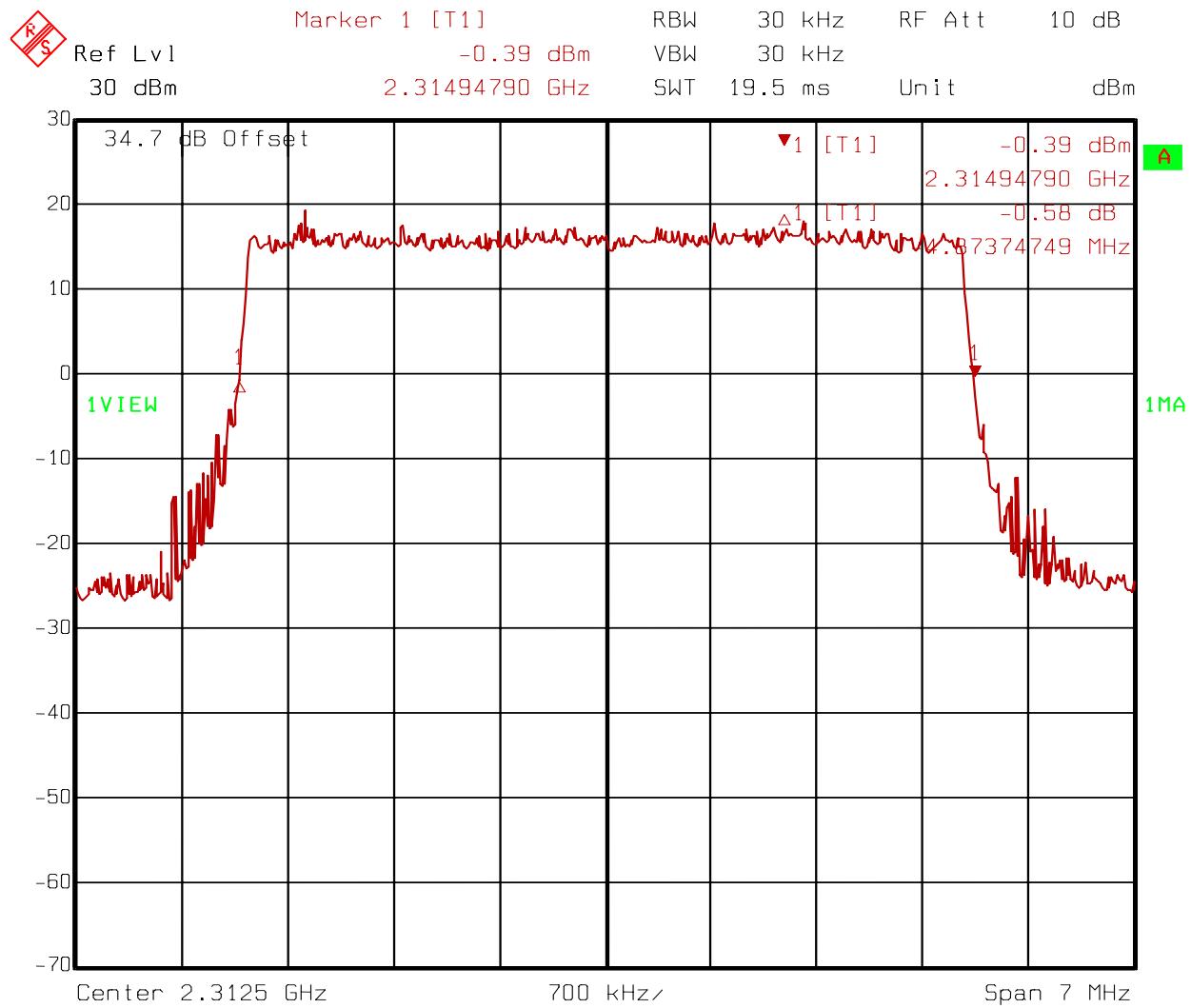


Date: 23.JUN.2006 15:23:45

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## OBW B LOW BAND OFDM

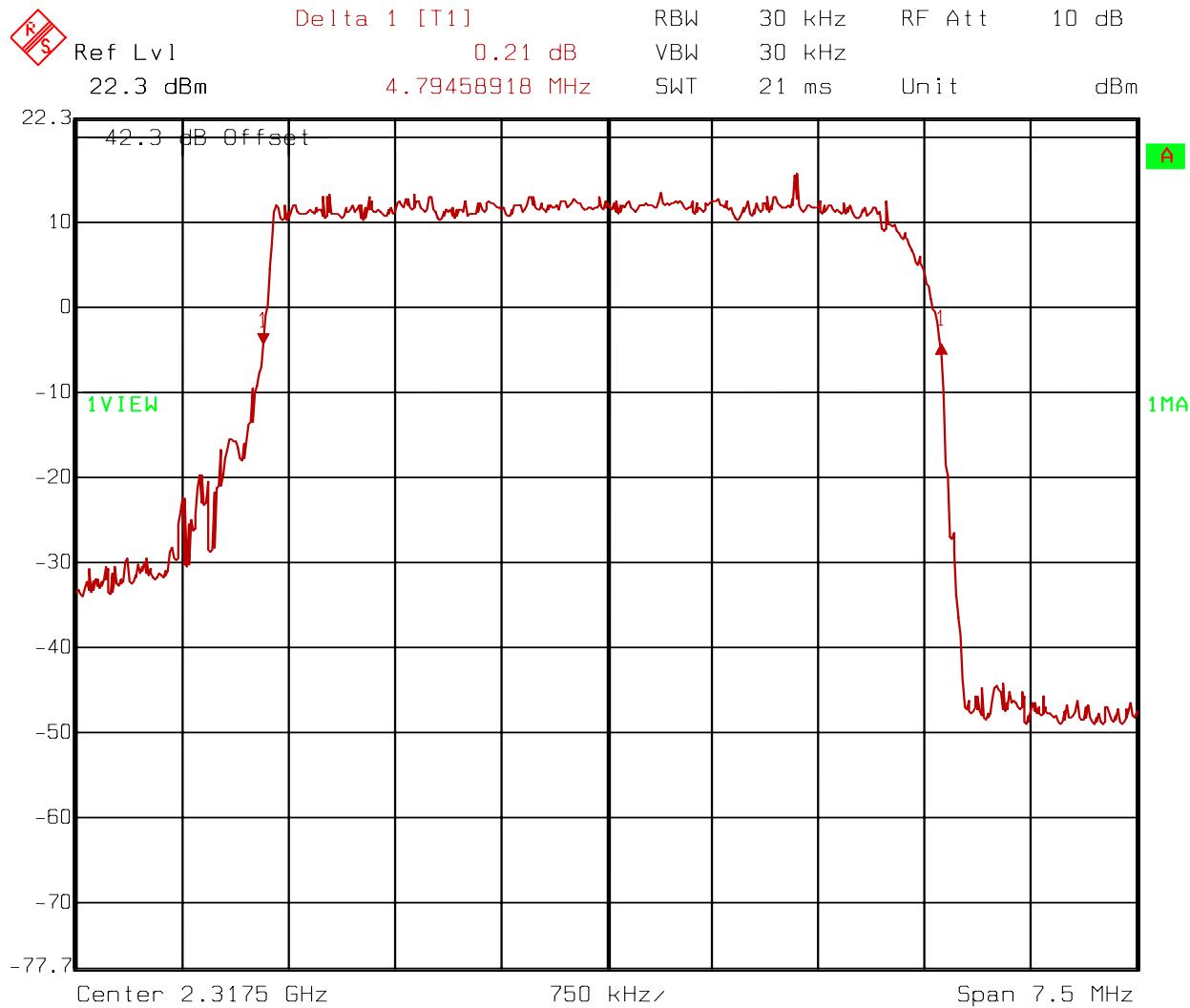


Date: 23.JUN.2006 15:25:14

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## OBW C BAND OFDM 24 CARRIERS

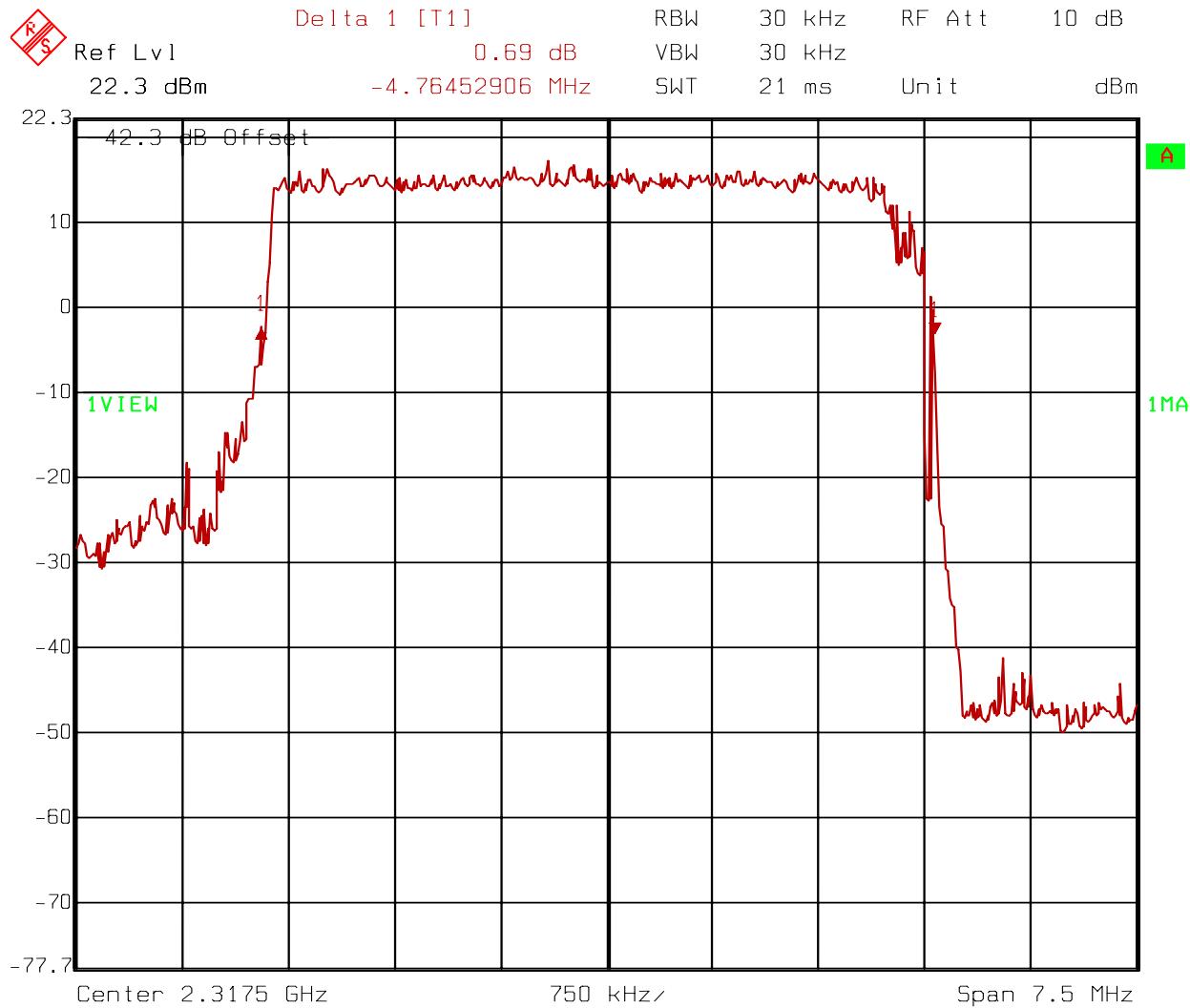


Date: 26.JUN.2006 09:12:30

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## OBW C BAND OFDM 22 CARRIERS

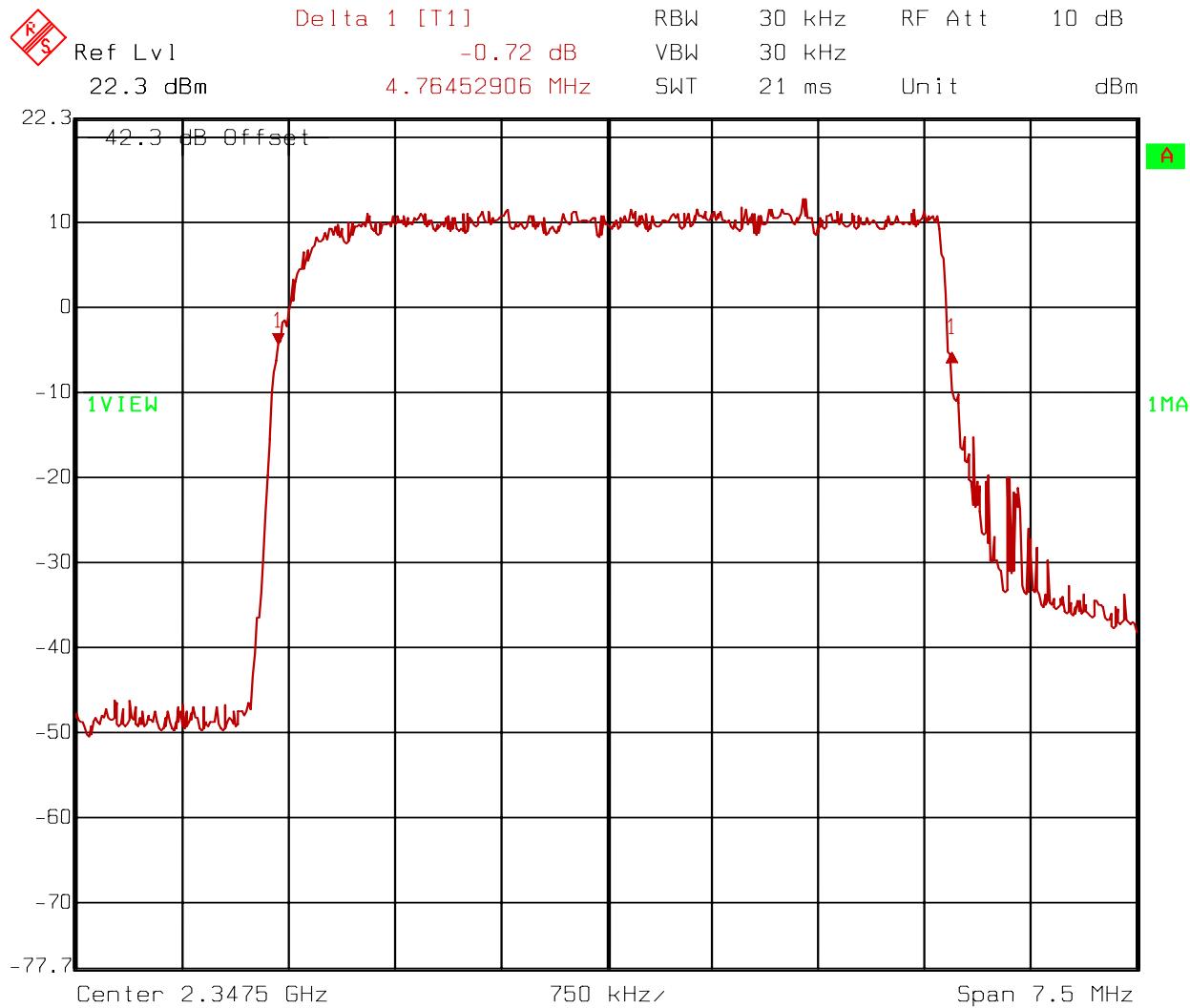


Date: 26.JUN.2006 09:20:03

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## OBW D BAND OFDM 24 CARRIERS

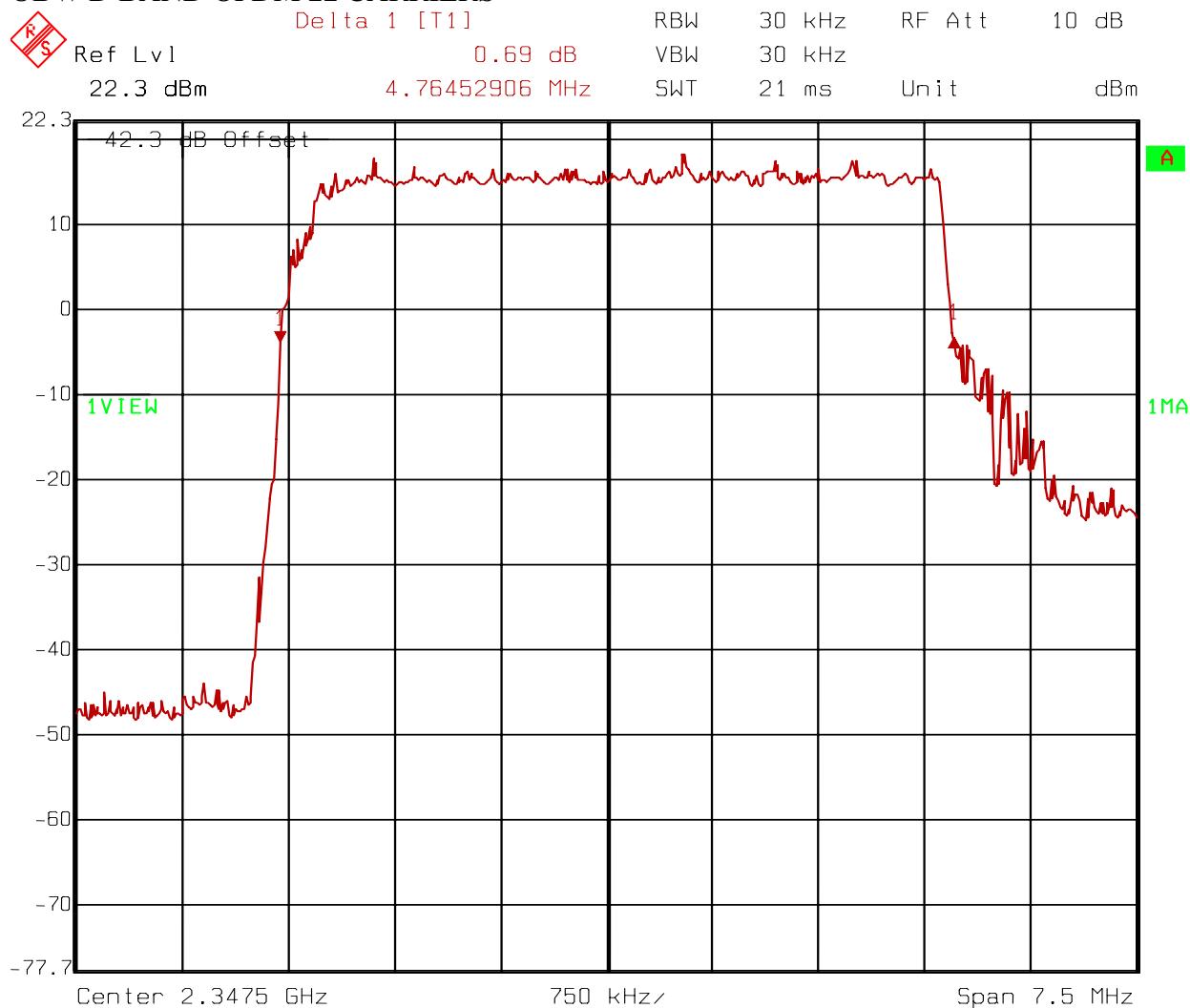


Date: 26.JUN.2006 09:14:04

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## OBW D BAND OFDM 22 CARRIERS

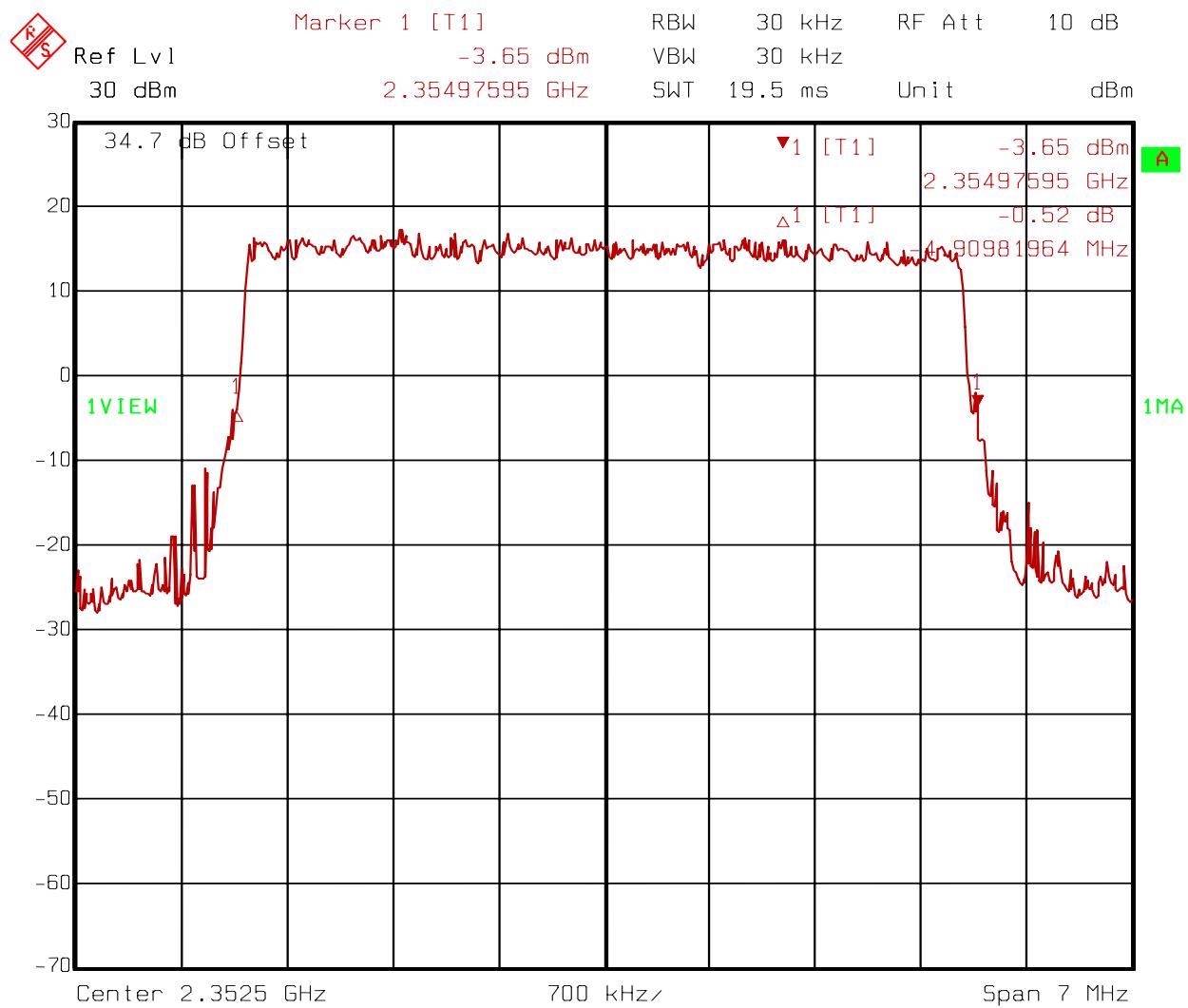


Date: 26.JUN.2006 09:16:38

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## OBW B HIGH BAND OFDM

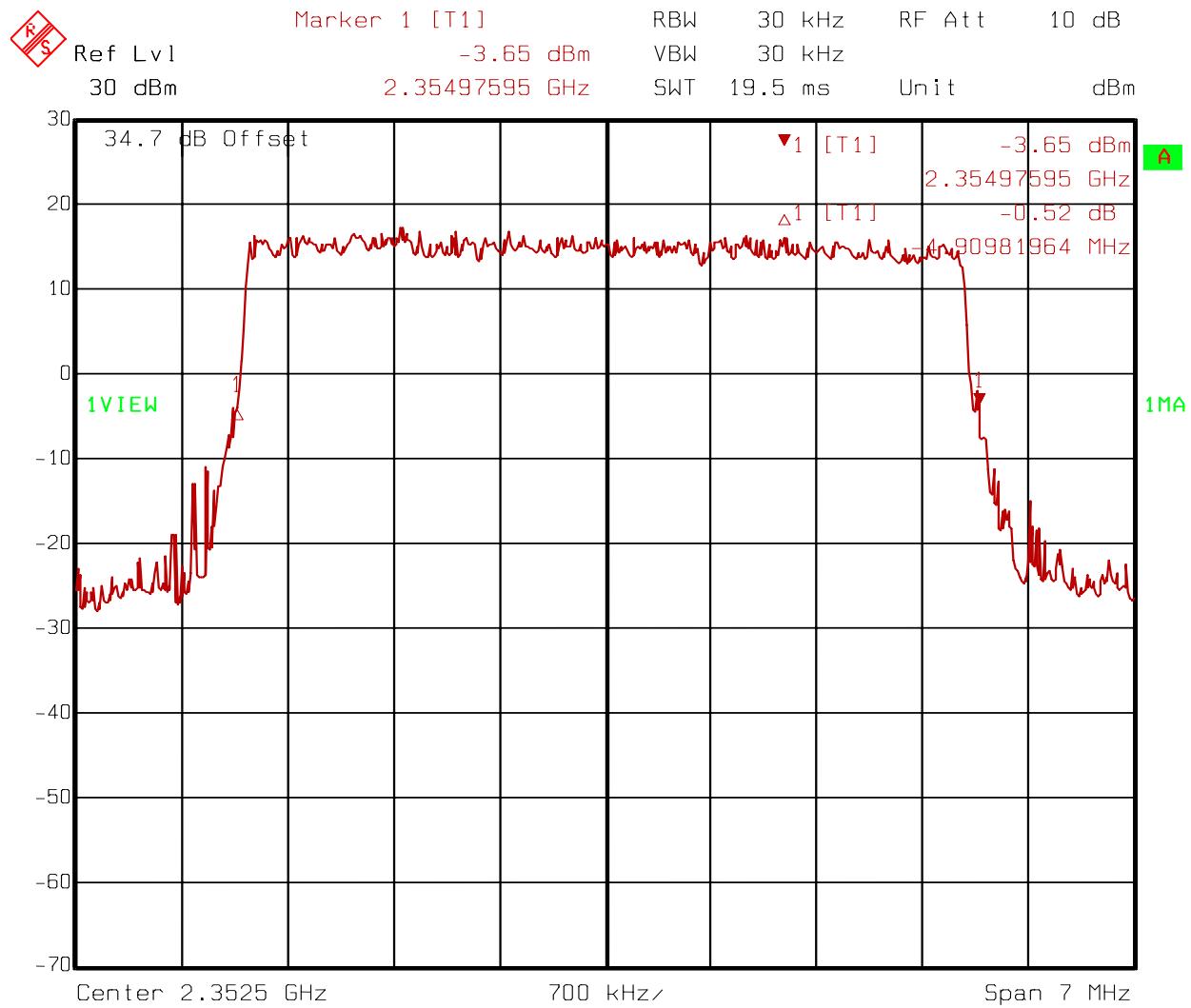


Date: 23.JUN.2006 15:27:06

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

## OBW A HIGH BAND OFDM



Date: 23.JUN.2006 15:27:06

**Section 7. Frequency Stability**

NAME OF TEST: Frequency Stability	PARA. NO.: 2.1055
TESTED BY: Kevin Rose	DATE: 6/27/2005

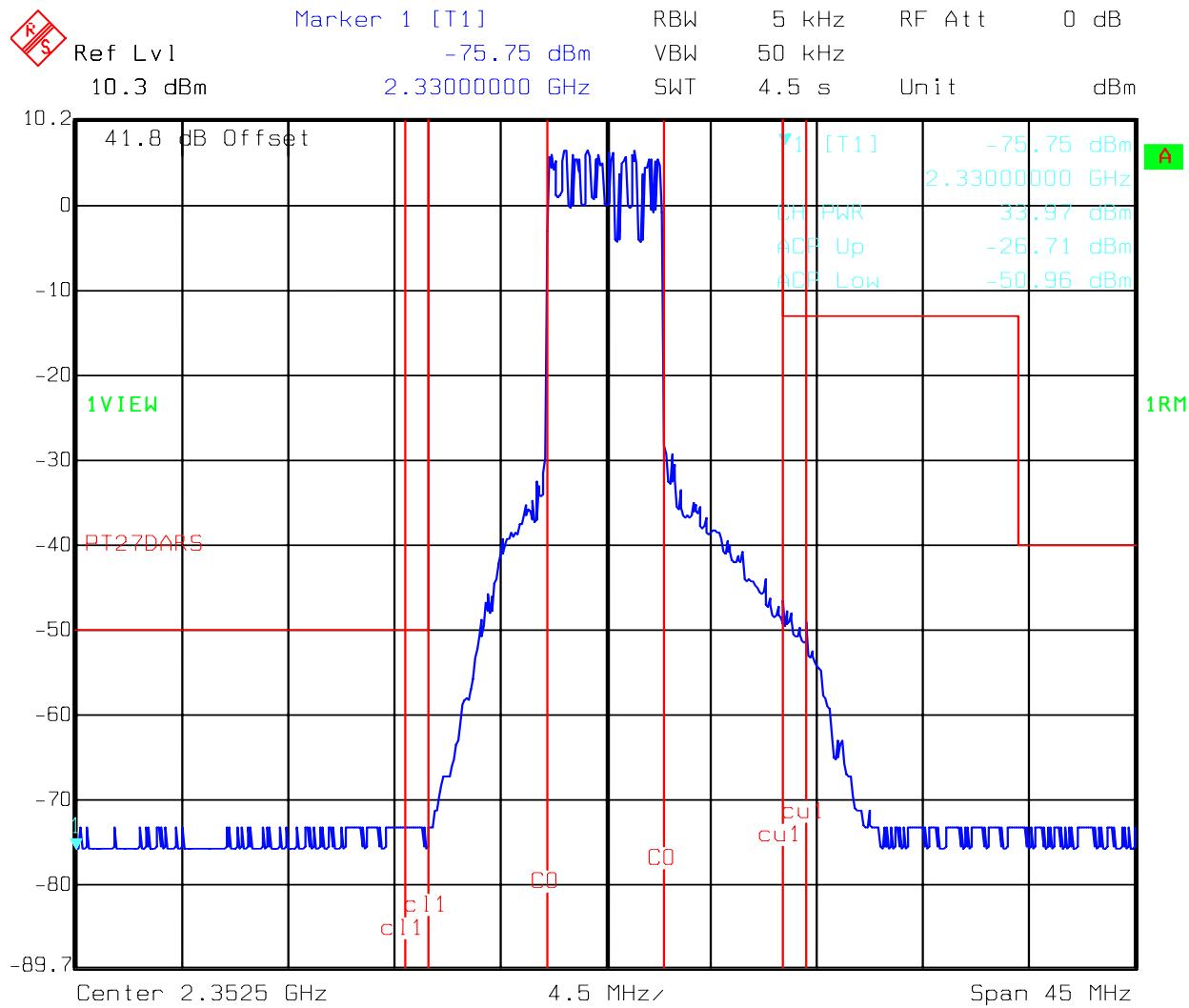
**Test Results:** Complies**Measurement Data:** See attached plots.**Test Equipment:** 1036 , 1083, 1482, 1064, 283**Standard Supply Voltage:** -48 Vdc**Environmental Conditions:** 20 °Celsius  
50 % RH

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

**Test Data – Frequency Stability**

20C/-48 Vdc

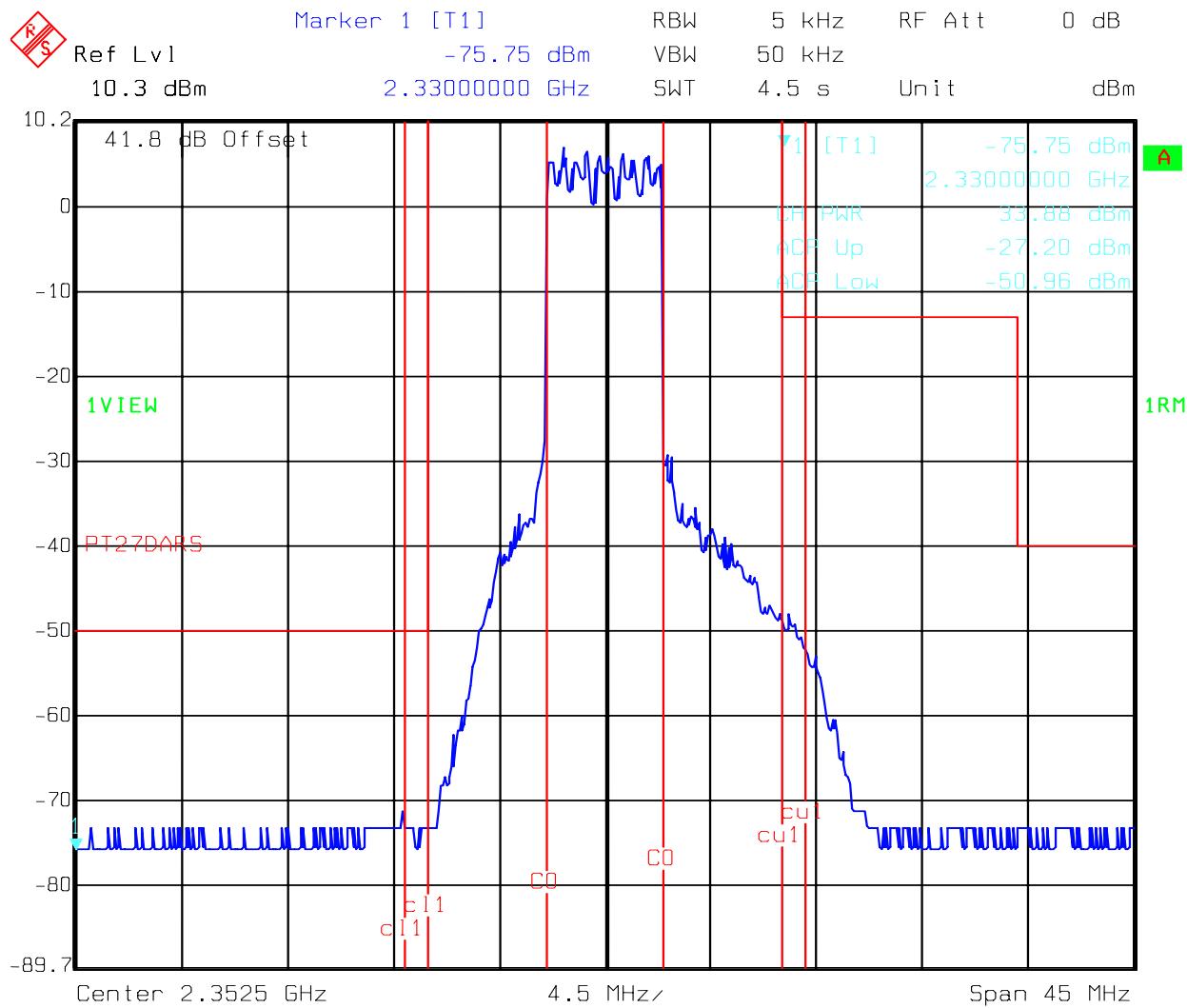


Date: 27.JUN.2006 09:52:22

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

20C/-40.8Vdc

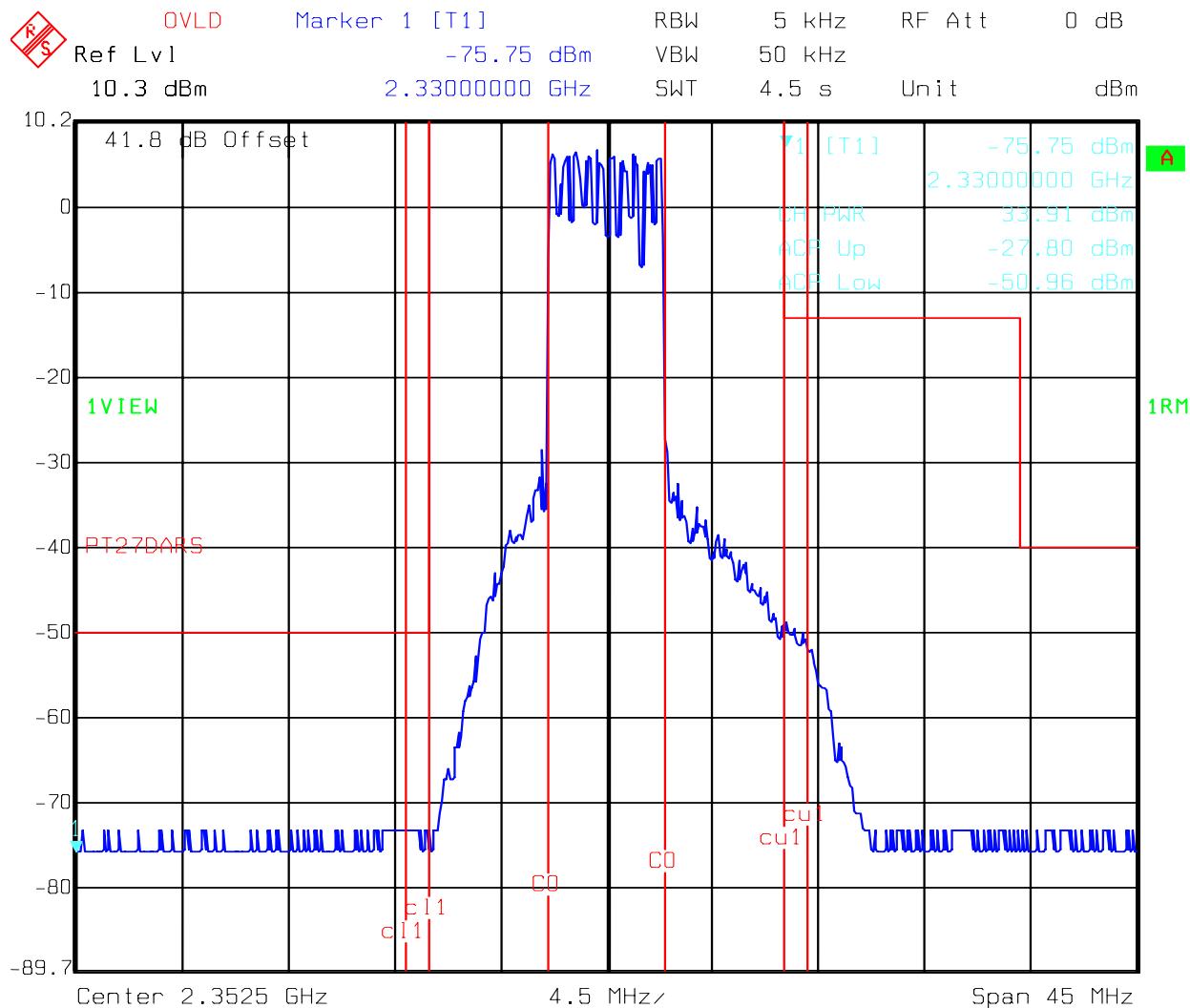


Date: 27.JUN.2006 09:53:24

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

20C/-55.2 Vdc

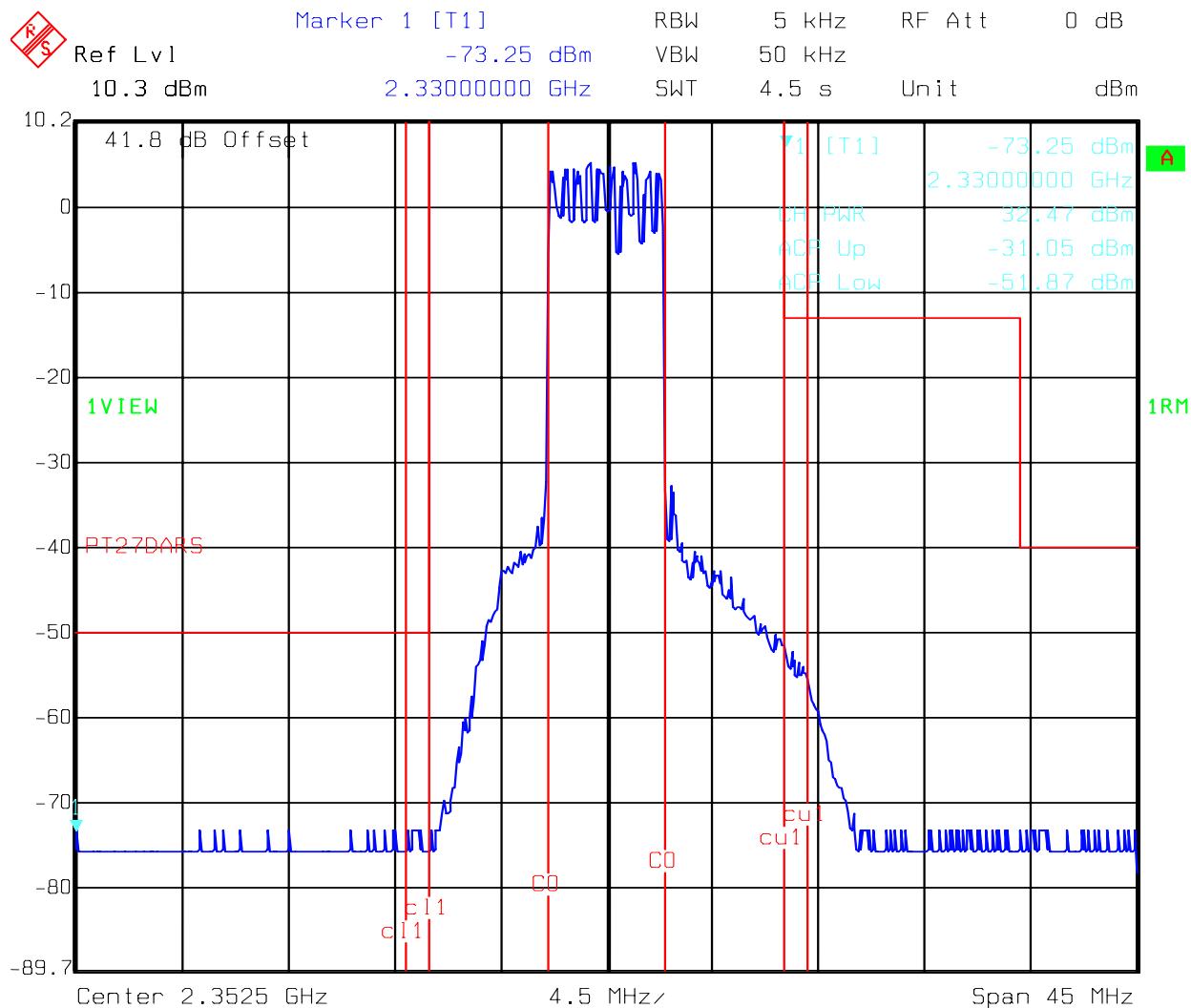


Date: 27.JUN.2006 09:54:11

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

50C

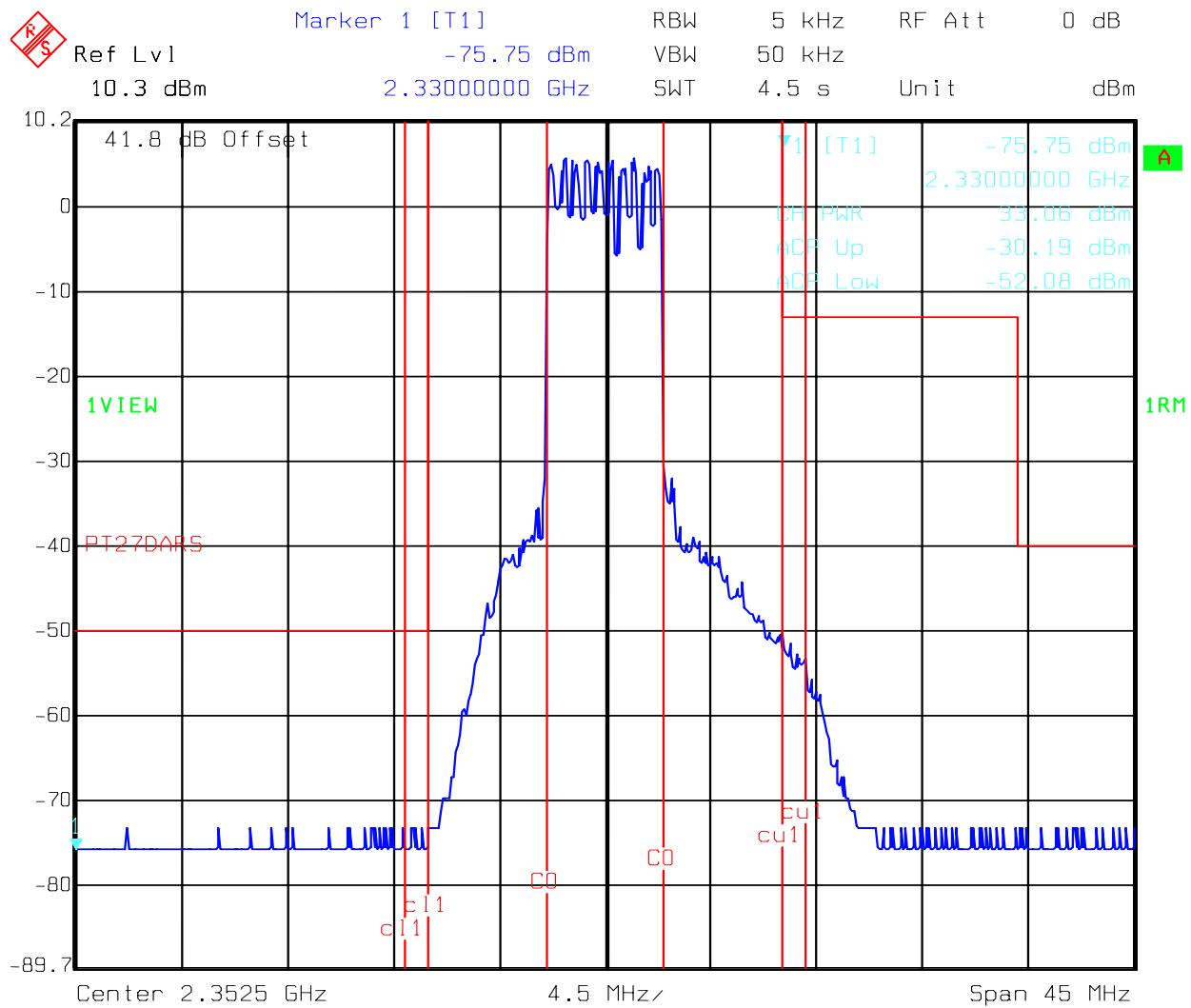


Date: 27.JUN.2006 10:35:28

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

40C

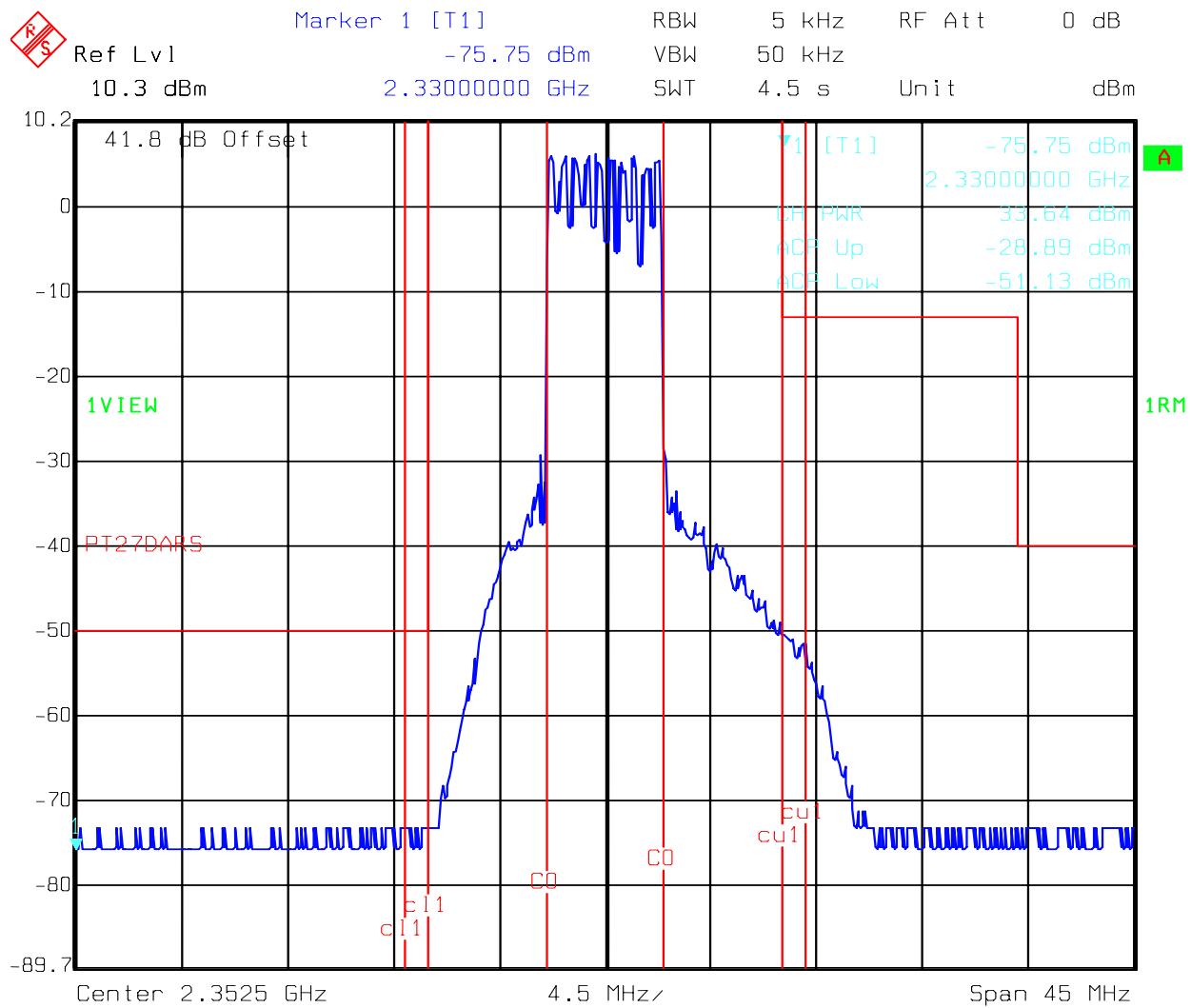


Date: 27.JUN.2006 11:11:57

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

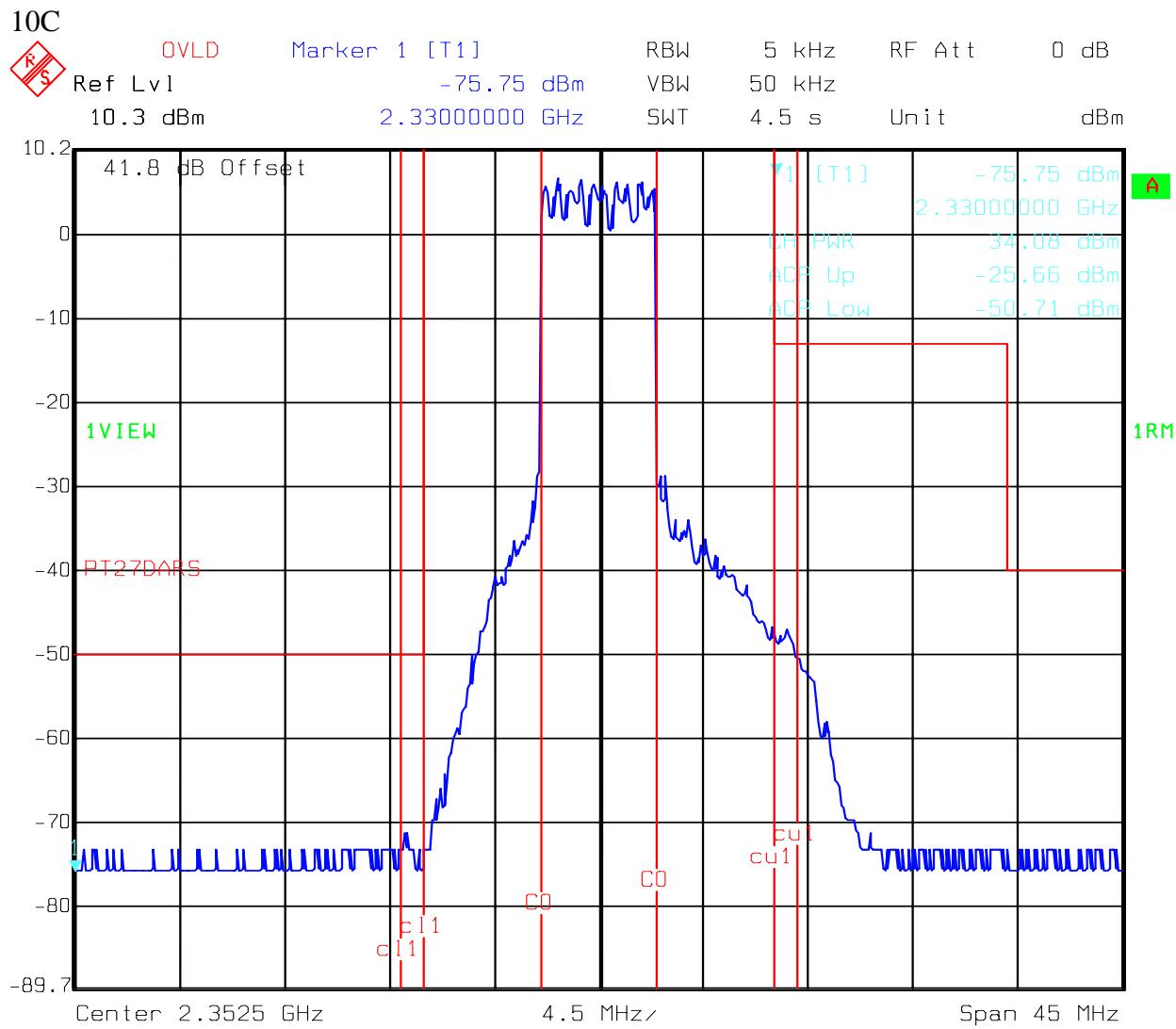
30C



Date: 27.JUN.2006 11:34:14

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

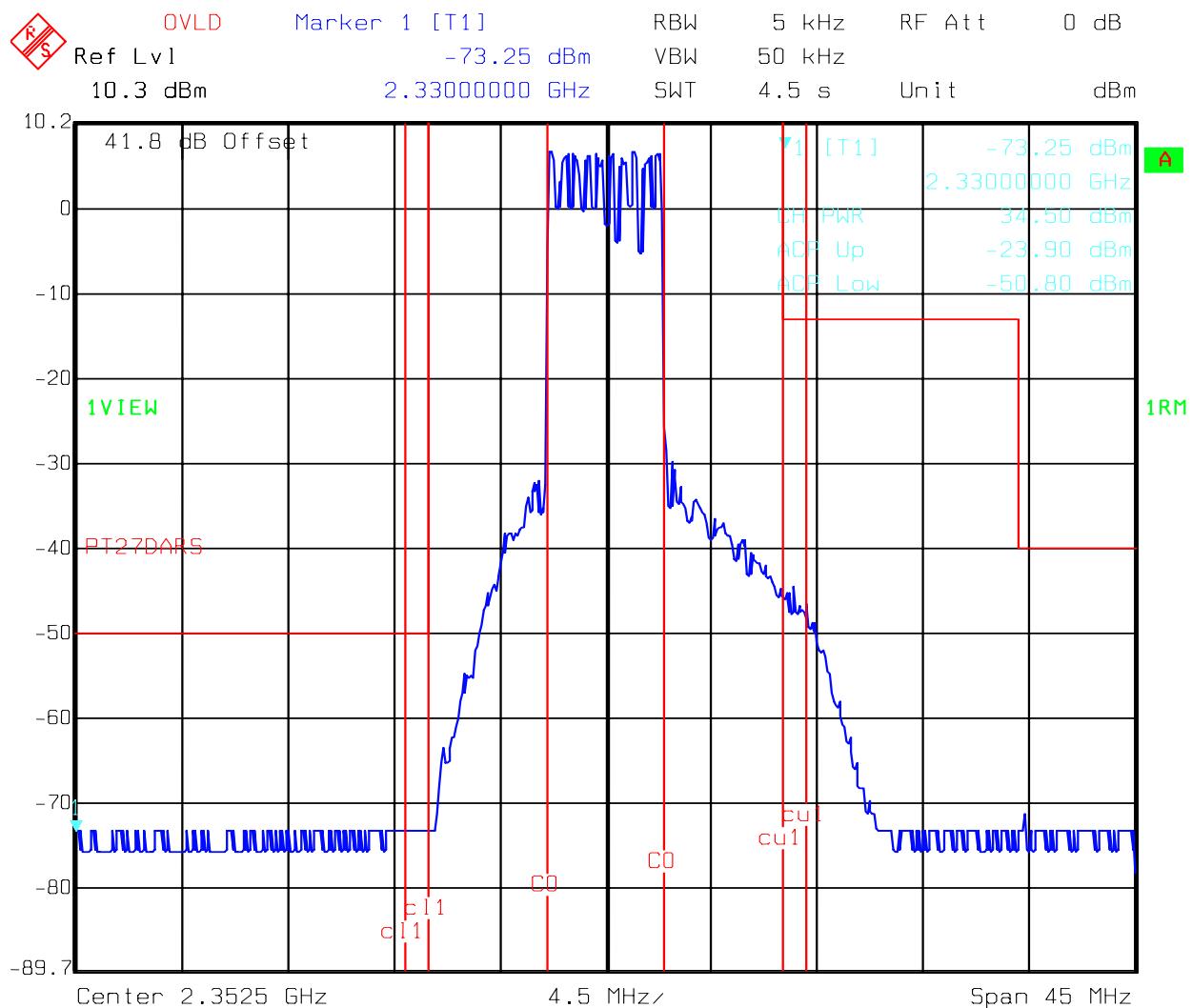


Date: 27.JUN.2006 13:20:42

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

0C



Date: 27.JUN.2006 14:21:09

## Section 8. Test Equipment List

Nemko ID	Description	Manufacturer Model Number	Serial Number	Calibration Date	Calibration Due
1036	SPECTRUM ANALYZER	ROHDE & SCHWARZ FSEK30	830844/006	05/26/06	05/26/08
1083	Cable 2m	Astrolab 32027-2-29094-72TC	N/A	08/04/06	08/04/07
1482	Band Pass Filter	K & L 11SH10-4000/T12000-0/0	2	Cal B4 Use	N/A
1064	ATTENUATOR	NARDA 776B-20	NONE	CBU	N/A
283	Environmental Chamber with controller # 1189006	ENVIROTRONICS SH27 & 2030-22844	129010083	06/19/06	06/19/07
993	Horn antenna	A.H. Systems SAS-200/571	XXX	08/01/05	08/02/07
1016	Pre-Amp	HEWLETT PACKARD 8449A	2749A00159	04/20/06	04/20/07
1484	Cable	Storm PR90-010-072	N/A	08/26/05	08/26/06
1485	Cable	Storm PR90-010-216	N/A	08/26/05	08/26/06
1464	Spectrum analyzer	Hewlett Packard 8563E	3551A04428	01/14/05	01/15/07
2071	Power Sensor	Agilent E9304A	MY41495174	09/30/05	09/30/06
2072	Power Meter	HP E4418B	GB39401848	09/30/05	09/30/06
1470	10 db Attenuator DC 18 Ghz	MCL Inc. BW-S10W2 10db-2WDC	NONE	CBU	N/A
1482	Band Pass Filter	K & L 11SH10-4000/T12000-0/0	2	Cal B4 Use	N/A
1064	ATTENUATOR	NARDA 776B-20	NONE	CBU	N/A
1470	10 db Attenuator DC 18 Ghz	MCL Inc. BW-S10W2 10db-2WDC	NONE	CBU	N/A
1045	CABLE 2m	Astrolab Inc. 32027-2-29094-72TC	N/A	CBU	N/A

**Nemko USA**

FCC PART 27, SUBPART C/D

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

PROJECT NO.:6L0169RUS1

**ANNEX A - TEST DETAILS**

**NAME OF TEST: RF Power Output****PARA. NO.: 2.1046****Method Of Measurement:****Antenna Conducted:**

The peak power at antenna terminals is measured using a Spectrum Analyzer or Power Meter. Power output is measured with the maximum rated input level.

**E.I.R.P.:****Test Method:**

**The maximum field strength of the spurious emission is measured at a distance of 3 meters. The device under test is then replaced with a substitution antenna of known gain with respect to a 1/4 wave dipole antenna. A calibrated signal source is used to feed the substitution antenna. The rf level to the substitution antenna is adjusted to repeat the previously measured field strength. The rf input level to the substitution antenna is the effective radiated power of the spurious emission after any correction for substitution antenna gain against a 1/4 wave dipole.**

**NAME OF TEST: Occupied Bandwidth****PARA. NO.: 2.1049****Method Of Measurement:**

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of at least 1% of the bandwidth of the transmitted signal. The resolution bandwidth is chosen so as not to reduce the peak level of the measured waveform.

The appropriate bandwidth mask is applied to the output waveform to verify compliance.

<b>NAME OF TEST: Spurious Emission at Antenna Terminals</b>	<b>PARA. NO.: 2.1051</b>
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**Antenna Conducted:**

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of 1 MHz for emissions above 1 GHz. Below 1 GHz the resolution bandwidth is chosen so as not to reduce the peak level of the measured waveform.

The appropriate limit line is applied to the output waveform to verify compliance.

<b>NAME OF TEST: Field Strength of Spurious Radiation</b>	<b>PARA. NO.: 2.1053</b>
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If the antenna is detachable from the transmitter, it is removed and replaced with a 50 ohm load.

Emissions are measured up to the 10<sup>th</sup> harmonic of the highest transmit frequency that the transmitter is capable of producing.

If the antenna is not detachable from the transmitter, emissions are measured radiated only at a distance of 3 meters.

**Test Method:**

The maximum field strength of the spurious emission is measured at a distance of 3 meters. The device under test is then replaced with a substitution antenna of known gain with respect to a 1/4 wave dipole antenna. A calibrated signal source is used to feed the substitution antenna. The rf level to the substitution antenna is adjusted to repeat the previously measured field strength. The rf input level to the substitution antenna is the effective radiated power of the spurious emission after any correction for substitution antenna gain against a 1/4 wave dipole.

**NAME OF TEST: Frequency Stability****2.1055****Method Of Measurement:****Frequency Stability With Voltage Variation:**

The E.U.T. is placed in an environmental chamber and allowed to stabilize at +20 degrees Celsius for at least 15 minutes. The frequency counter and signal generator are phase locked with the same 10 MHz reference frequency by connecting the 10 MHz ref. out of the counter to the 10 MHz ref. in of the signal generator. With the voltage input to the E.U.T. set to 85% S.T.V., the frequency is measured in 30 second intervals for a period of 5 minutes. This procedure is repeated at 100% S.T.V. and 115% S.T.V.

**Frequency Stability With Temperature Variation:**

The input voltage to the E.U.T. is set to S.T.V. and the temperature of the environmental chamber is varied in 10 degree steps from -30 degrees C to +50 degrees C. The E.U.T. is allowed to stabilize at each temperature and the frequency is measured in 30 second intervals for a period of 5 minutes.

**Nemko USA**

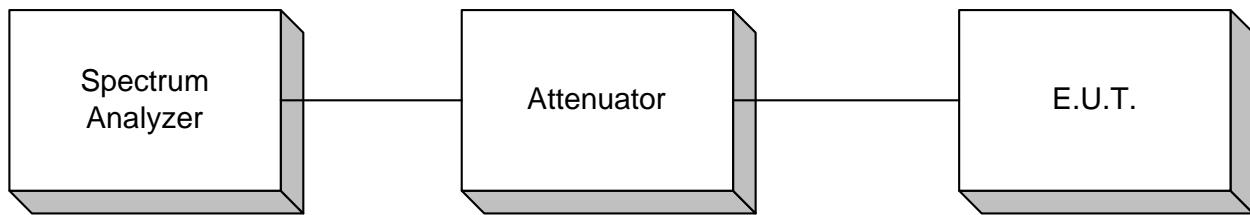
FCC PART 27, SUBPART C/D

EQUIPMENT: 2.3-BTS3F-R1 (-48 VDC unit)

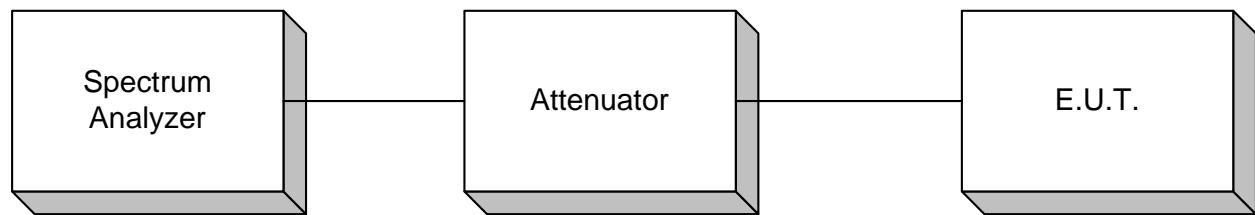
PROJECT NO.:6L0169RUS1

**ANNEX B - TEST DIAGRAMS**

**Para. No. 2.1046 - R.F. Power Output**



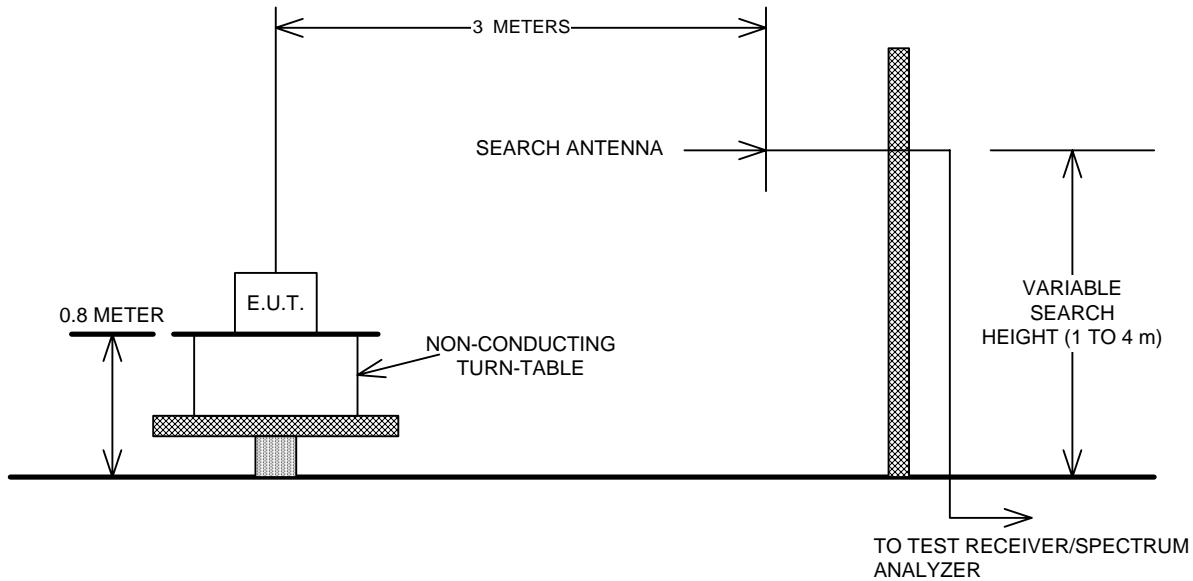
**Para. No. 2.1049 - Occupied Bandwidth**



**Para. No. 2.1051 - Spurious Emissions at Antenna Terminals**

A band pass filter is used in order to not saturate the SA from 2<sup>nd</sup> to 10<sup>th</sup> harmonic



**Para. No. 2.1053 - Field Strength of Radiation****Para. No. 2.1055 - Frequency Stability**