

Nemko Test Report:

5L0360RUS1

Applicant:

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

**Equipment Under Test:
(E.U.T.)**

2305 – 2360 LMX E

In Accordance With:

FCC PART 27, Subpart C Wireless Communications Systems

Tested By:

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

Authorized By:

A handwritten signature in black ink, appearing to read 'Abe Cox', is written over a thin red vertical line.

**Abe Cox
Key Account Manager**

Date: 11/15/2005

EQUIPMENT: 2305 – 2360 LMX E

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EQUIPMENT: 2305 – 2360 LMX E

Section 1. Summary of Test Results

Manufacturer: Navini Networks

Model No.: 2305 – 2360 LMX E

Serial No.: None

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.



New Submission



Production Unit



Class II Permissive Change



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

See “ Summary of Test Data”.

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This report applies only to the items tested.

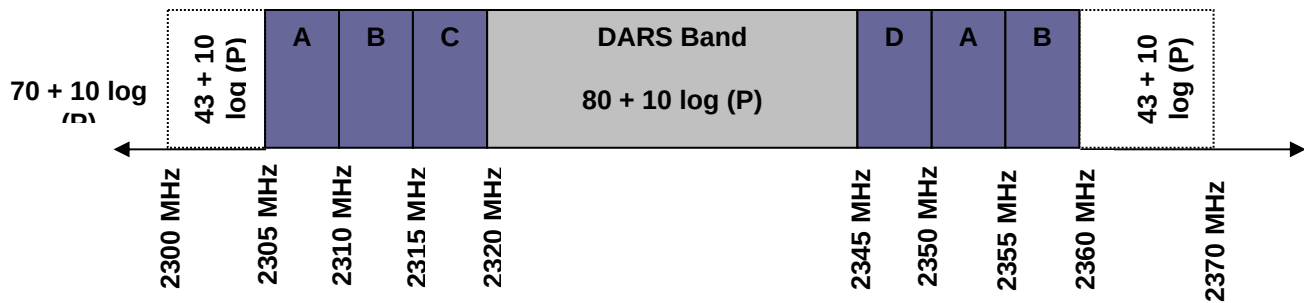
EQUIPMENT: 2305 – 2360 LMX E

Summary Of Test Data

NAME OF TEST	PARA. NO.	PART 27 PARA. NO.	RESULT
RF Power Output	2.1046	27.50	Complies
Occupied Bandwidth	2.1049	27.53(a)	Complies
Spurious Emissions @ Antenna Terminals	2.1051	27.53(a)	Complies
Field Strength of Spurious Radiation	2.1053	27.53(a)	Complies
Frequency Stability	2.1055	27.54	Complies

EQUIPMENT: 2305 – 2360 LMX E**Section 2. General Equipment Specification**

Supply Power:	115 Vac
Frequency Range:	See Fig. 1 below
Type(s) of Modulation:	QPSK
Emission Designator:	500KF9W
Output Impedance:	50 ohms
RF Power Output Rated:	See Section 3
Duty Cycle:	Software controlled 50% TDD
Operator Selection Of Operating Frequency:	Software controlled
Power Output Adjustment Capability:	Software controlled

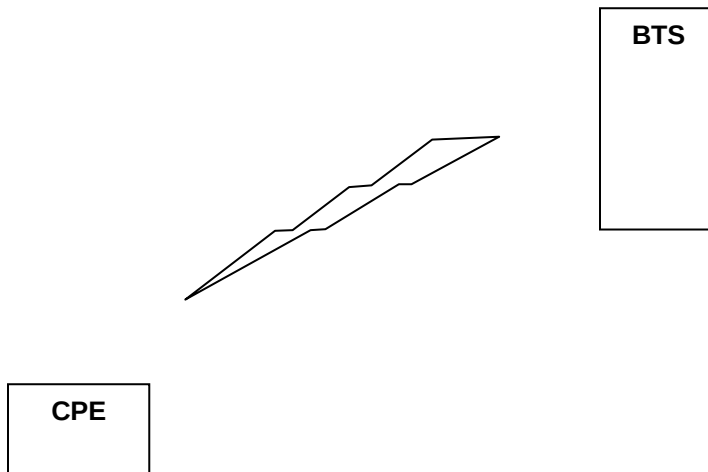
 $70 + 10 \log$

EQUIPMENT: 2305 – 2360 LMX E

Description Of EUT

The equipment tested is a Customer Premise Equipment (CPE) transceiver that functions as a wireless broadband data modem.

System Diagram



EQUIPMENT: 2305 – 2360 LMX E**Section 3. RF Power Output**

NAME OF TEST: RF Power Output	PARA. NO.: 2.1046
TESTED BY: Kevin Rose	DATE: September 12, 2005

Test Results:
Measurement Data:

Complies

Antenna is detachable. The rf power output is measured at the rf output from the transmitter. The measured power is Average with a power meter
Antenna gain: 6 dBi

Navini (SCDMA) Mode

Signal Type	Carrier Position	FCC A or B band Tx Out (dBm)	FCC C or D band TX Out (dBm)
8-Carrier BTS Signal	4 carriers (1 MHz) From DARS		14
	4 carriers (2 MHz) From DARS		23
	4 carriers (3 MHz) From DARS		24
10-Carrier BTS Signal	Outside 4 carriers	24	
	Inside 4 carriers	28	
6-Carrier BTS Signal	Outside 4 Carriers		25
	Inside 4 Carriers		22

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RF Output Power 802.16e Mode

Band	CPE Signal Type	Guard Band	Power (dBm)
A LOW	1.6MHz OFDM	0.1MHz guard band from band edge	24dBm
A LOW	1.6MHz OFDM	1.1MHz or more guard band from band edge	28dBm
A HIGH	1.6MHz OFDM	0.1MHz guard band from band edge	24dBm
A HIGH	1.6MHz OFDM	1.1MHz or more guard band from band edge	28dBm
B LOW	1.6MHz OFDM	0.1MHz guard band from band edge	24dBm
B LOW	1.6MHz OFDM	1.1MHz or more guard band from band edge	28dBm
B HIGH	1.6MHz OFDM	0.1MHz guard band from band edge	24dBm
B HIGH	1.6MHz OFDM	1.1MHz or more guard band from band edge	28dBm
C	1.6MHz OFDM	1MHz guard band from DARS	14dBm
C	1.6MHz OFDM	1.5MHz guard band from DARS	21dBm
C	1.6MHz OFDM	2MHz guard band from DARS	23dBm
C	1.6MHz OFDM	3.3MHz guard band from DARS (0.1MHz guard band from adjacent band edge)	24dBm
D	1.6MHz OFDM	1MHz guard band from DARS	14dBm
D	1.6MHz OFDM	1.5MHz guard band from DARS	21dBm
D	1.6MHz OFDM	2MHz guard band from DARS	23dBm
D	1.6MHz OFDM	3.3MHz guard band from DARS (0.1MHz guard band from adjacent band edge)	24dBm

Test Equipment Used: Agilent Model E4416A s/n GB41290732
Agilent Model E9327A s/n US40440319

Measurement Uncertainty: +/- 0.69 dB

EQUIPMENT: 2305 – 2360 LMX E

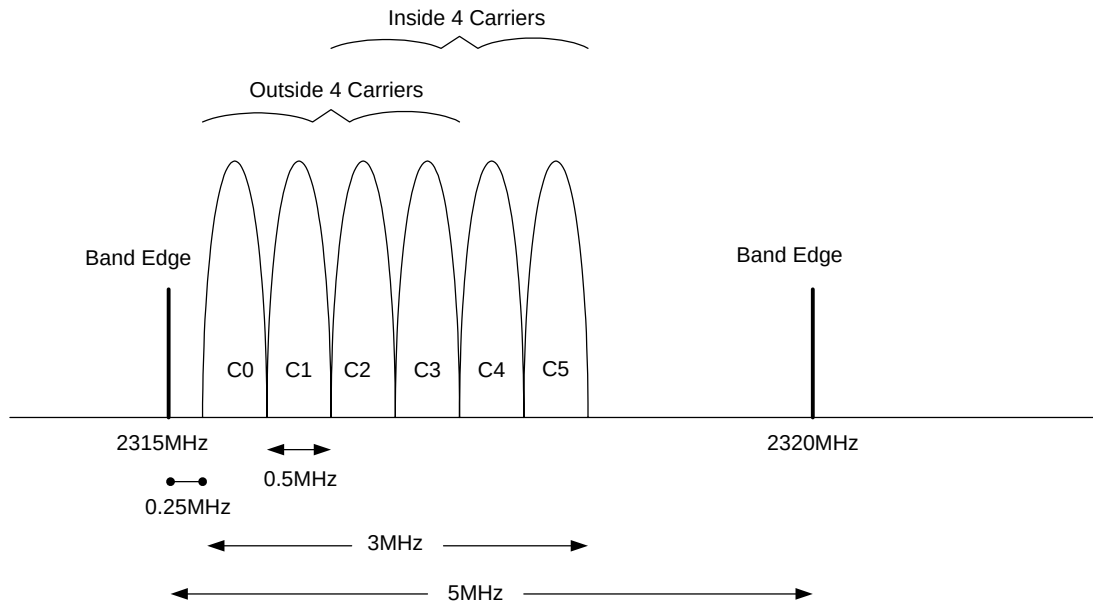


Figure 1. 6-Carrier BTS Signal Operating in WCS C Band

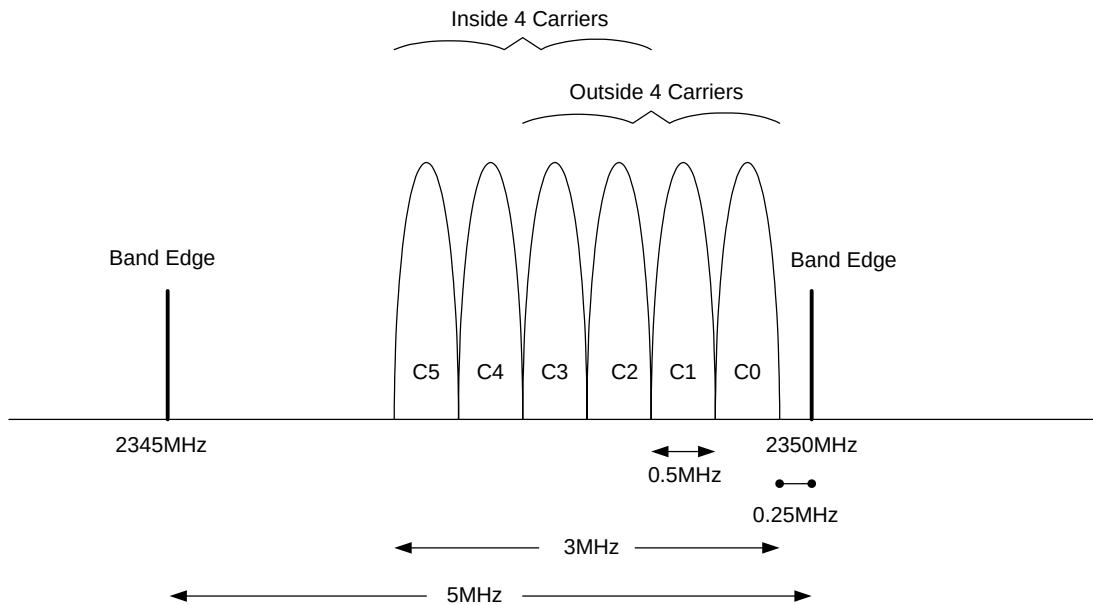


Figure 2. 6-Carrier BTS Signal Operating in WCS D Band

EQUIPMENT: 2305 – 2360 LMX E

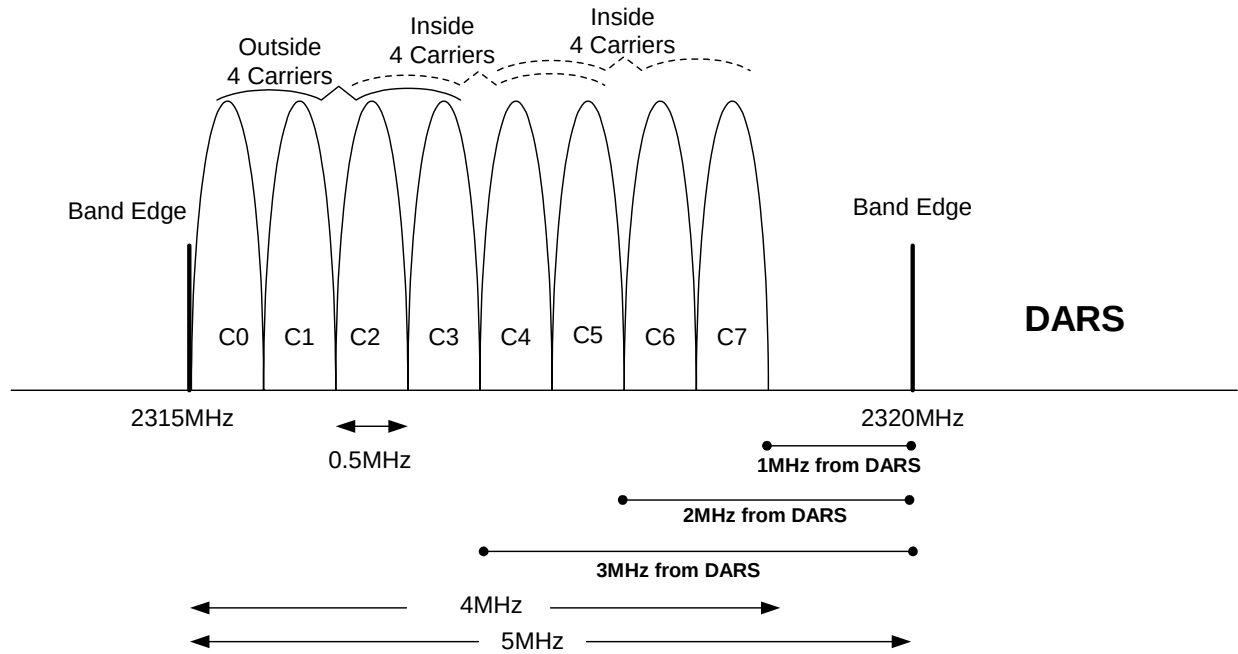
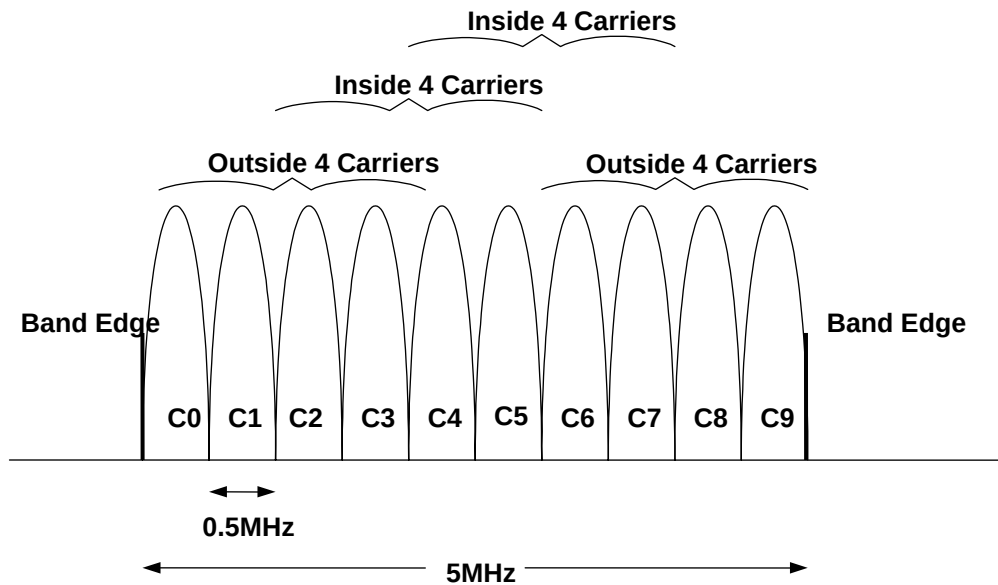
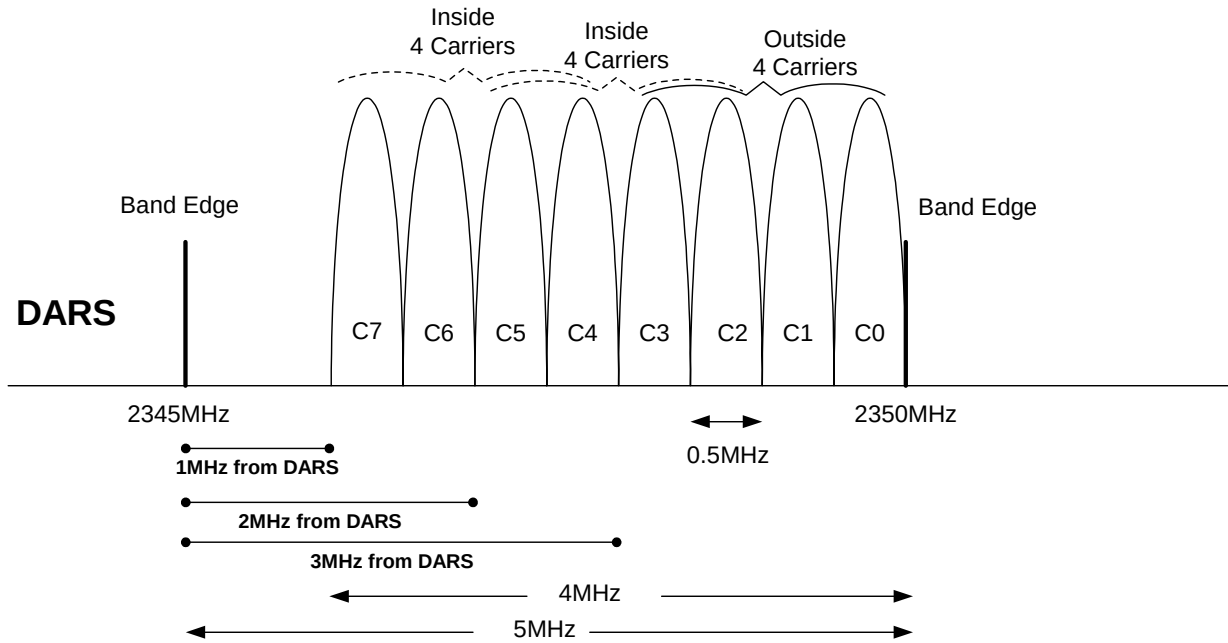


Figure 3. 8-Carrier BTS Signal Operating in WCS C Band

EQUIPMENT: 2305 – 2360 LMX E



EQUIPMENT: 2305 – 2360 LMX E

Section 4. Occupied Bandwidth

NAME OF TEST: Occupied Bandwidth	PARA. NO.: 2.1049
TESTED BY: Kevin Rose	DATE: September 12, 2005

Test Results: Complies

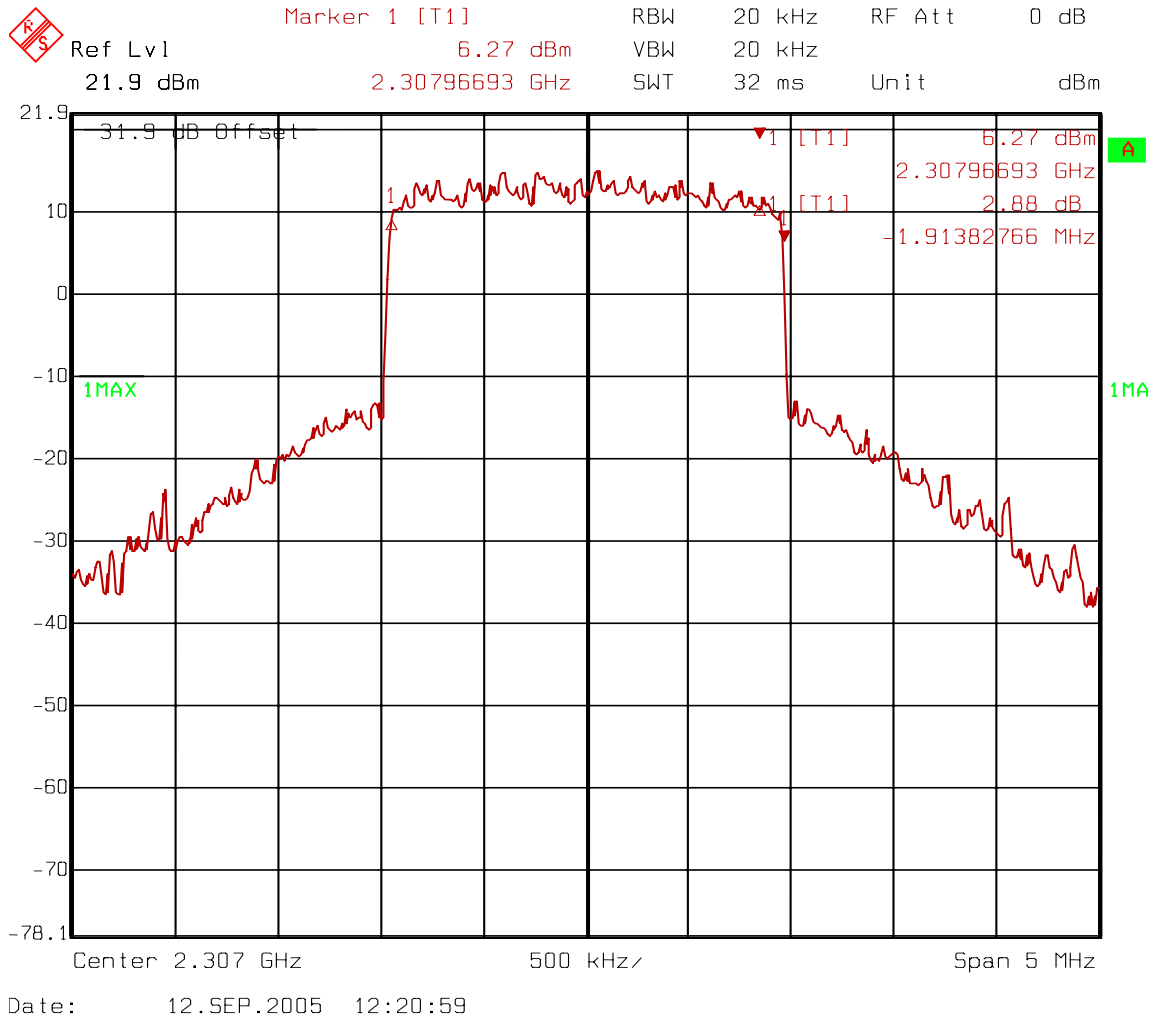
Measurement Data: See attached data sheets.

EQUIPMENT USED 1561, 1562, 1045, 1055, 2072, 2071, 1470,1471,AND 1482.

Mearurement Uncertainty: +/- 1.7 dB

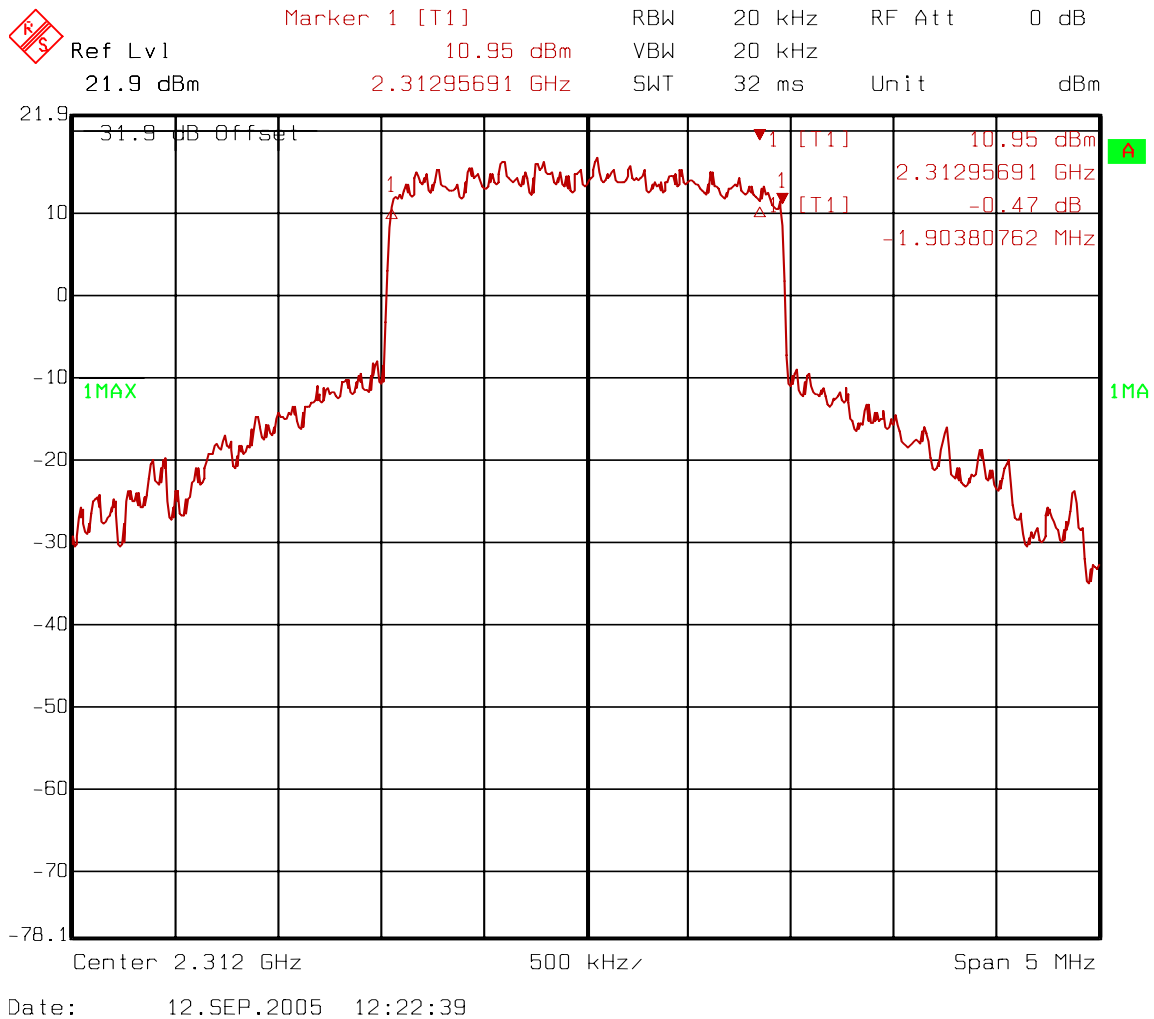
EQUIPMENT: 2305 - 2360 LMX E

A Low 0BW



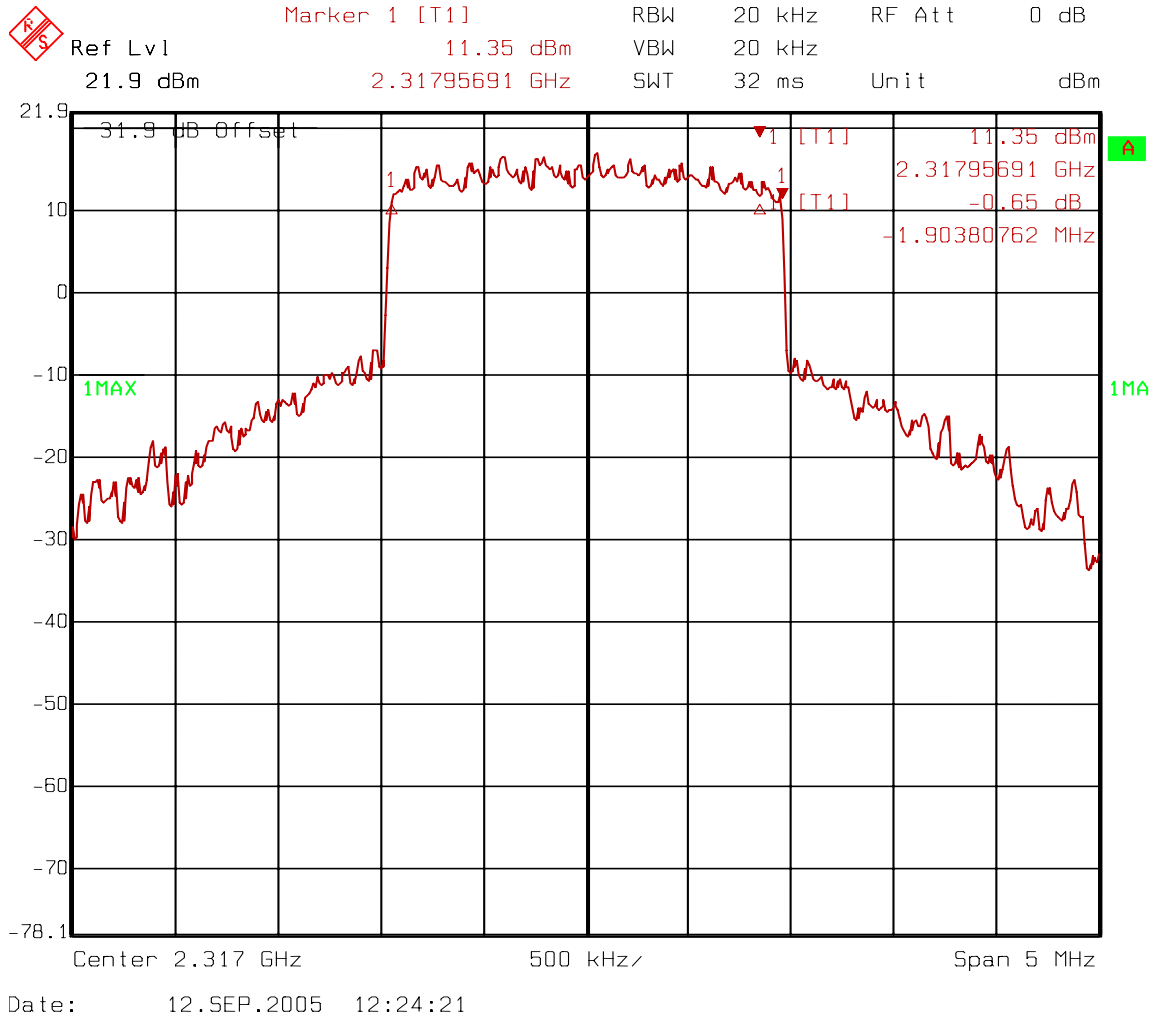
EQUIPMENT: 2305 - 2360 LMX E

B LOW BAND OBW



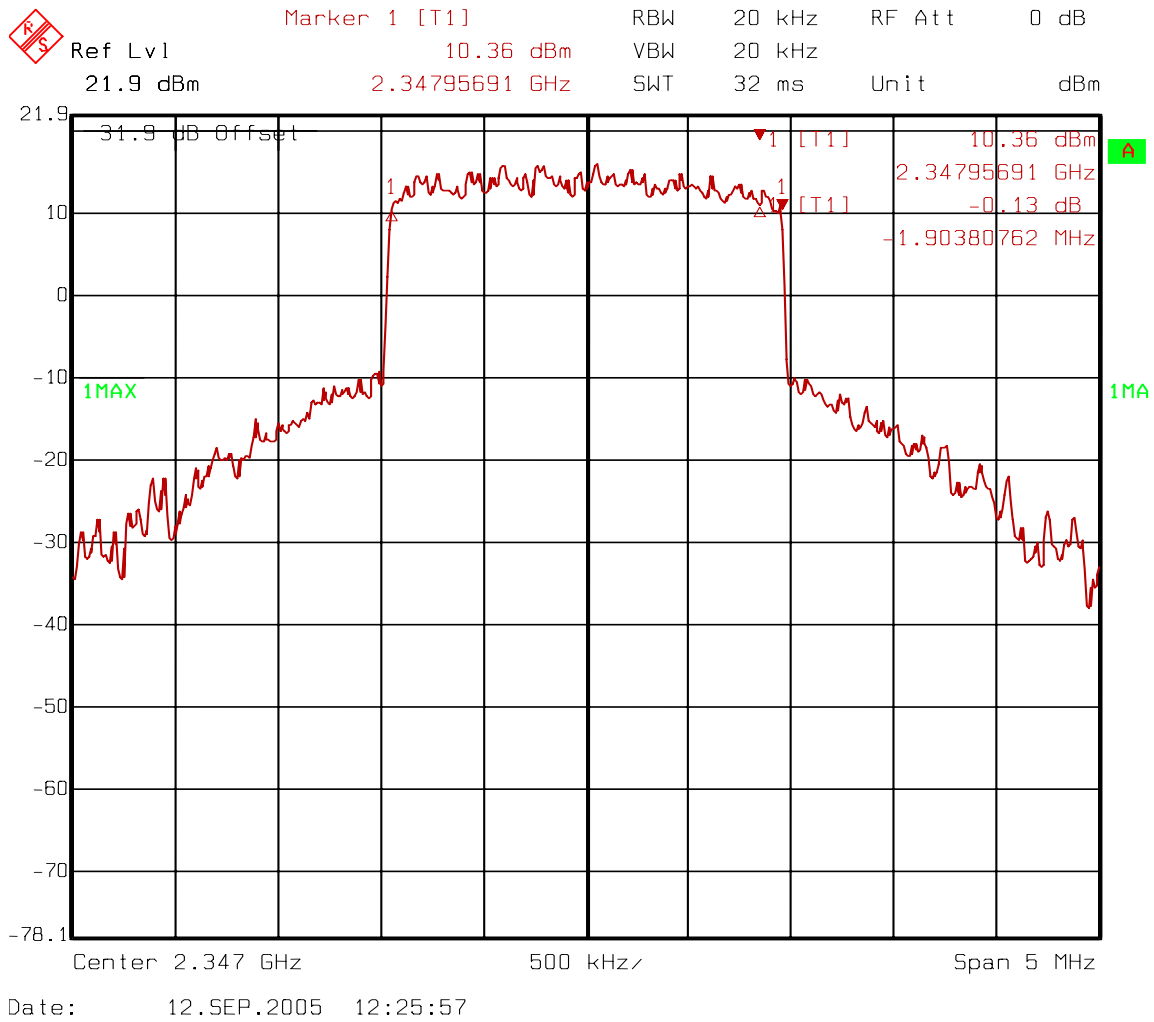
EQUIPMENT: 2305 - 2360 LMX E

C BAND OBW



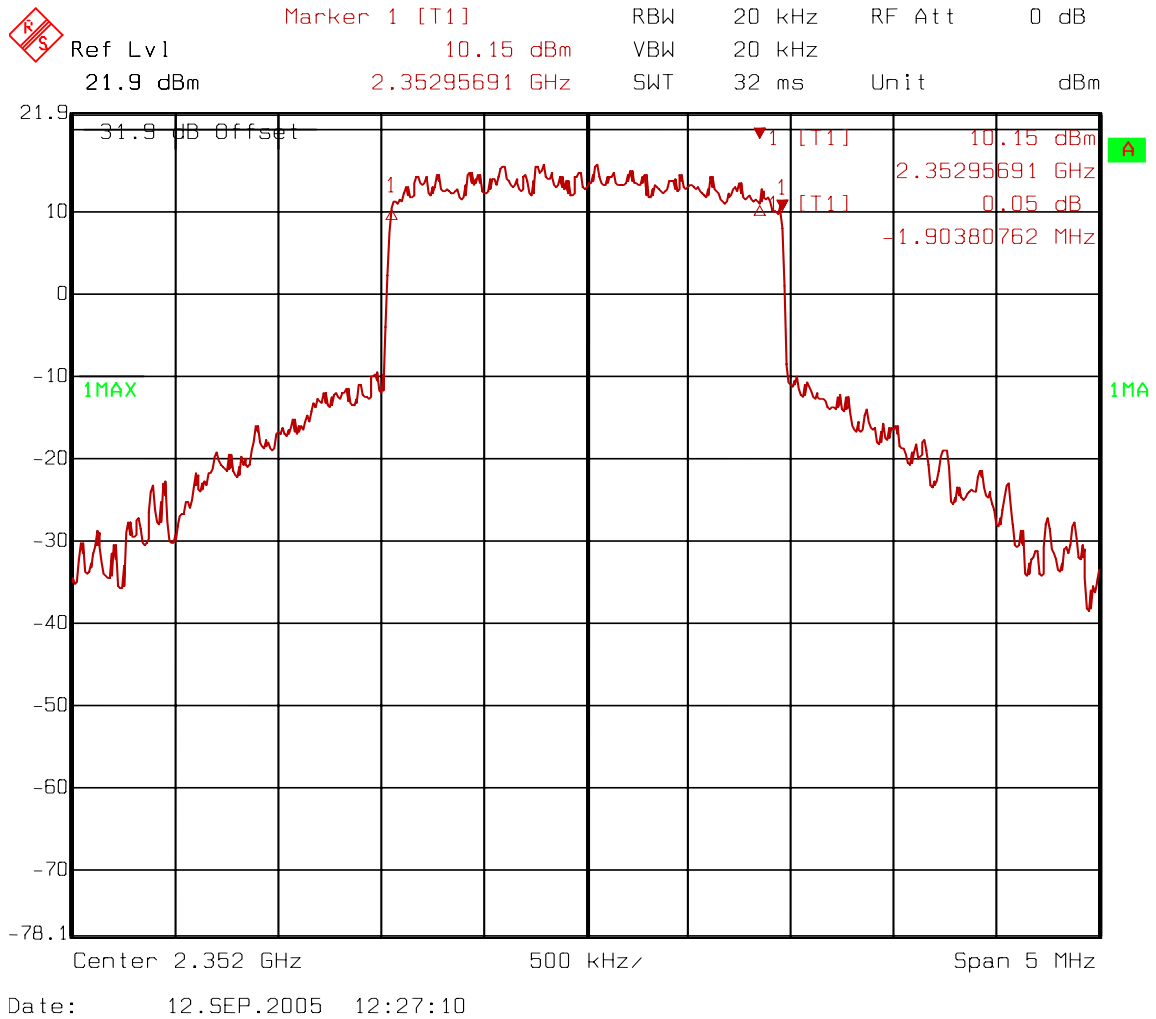
EQUIPMENT: 2305 - 2360 LMX E

D BAND OBW



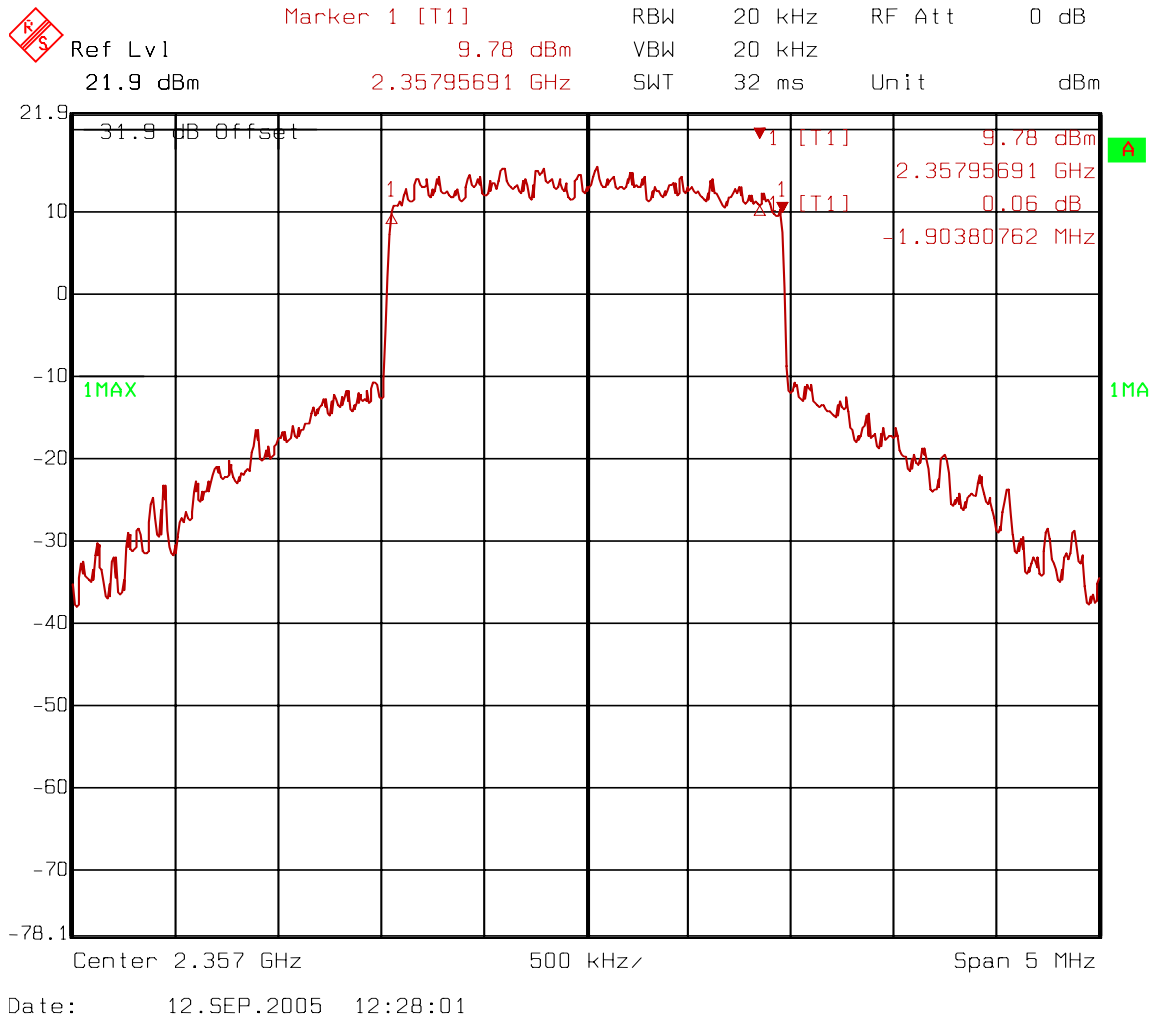
EQUIPMENT: 2305 - 2360 LMX E

A HIGH BAND OBW



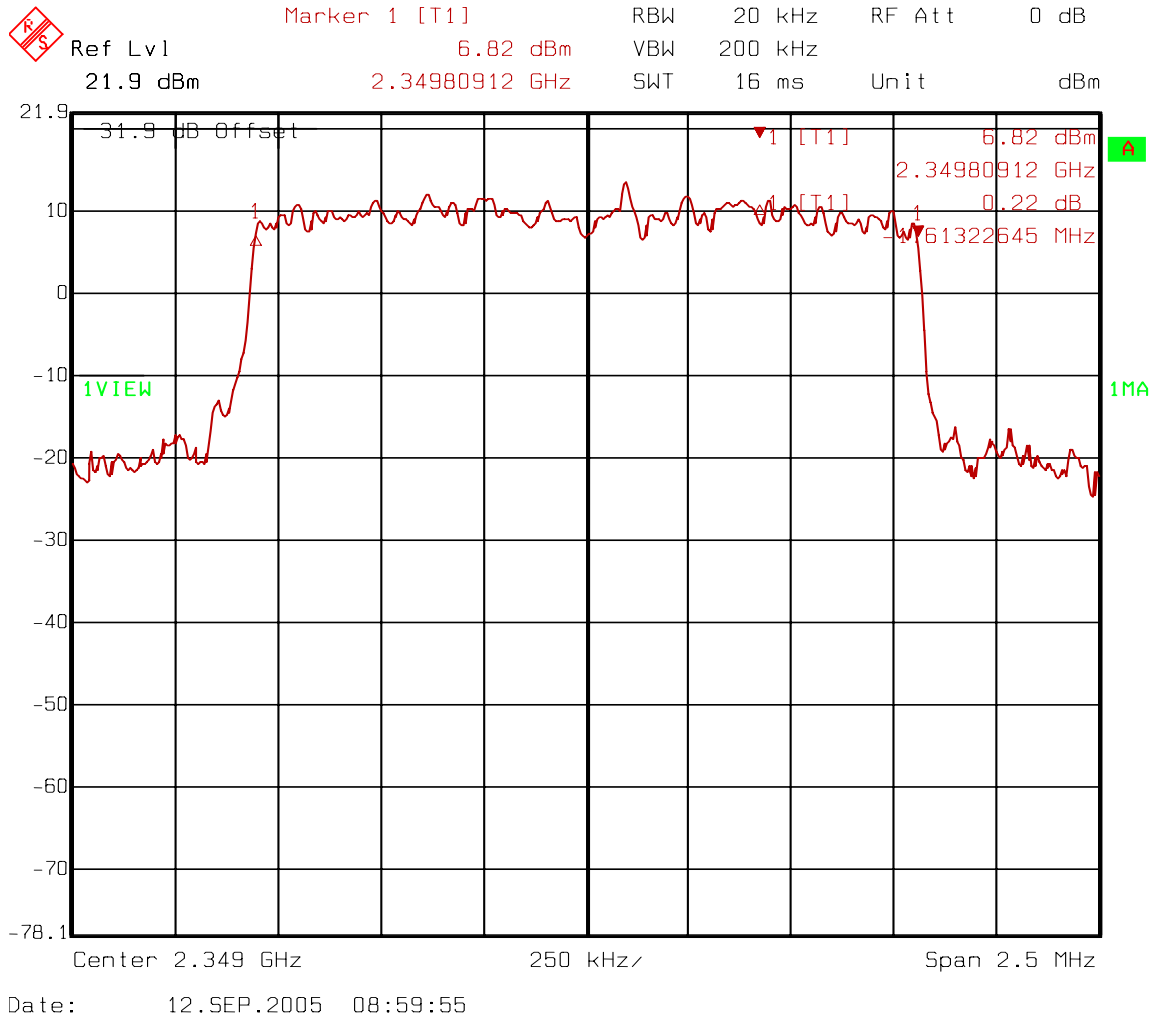
EQUIPMENT: 2305 - 2360 LMX E

B HIGH BAND OBW

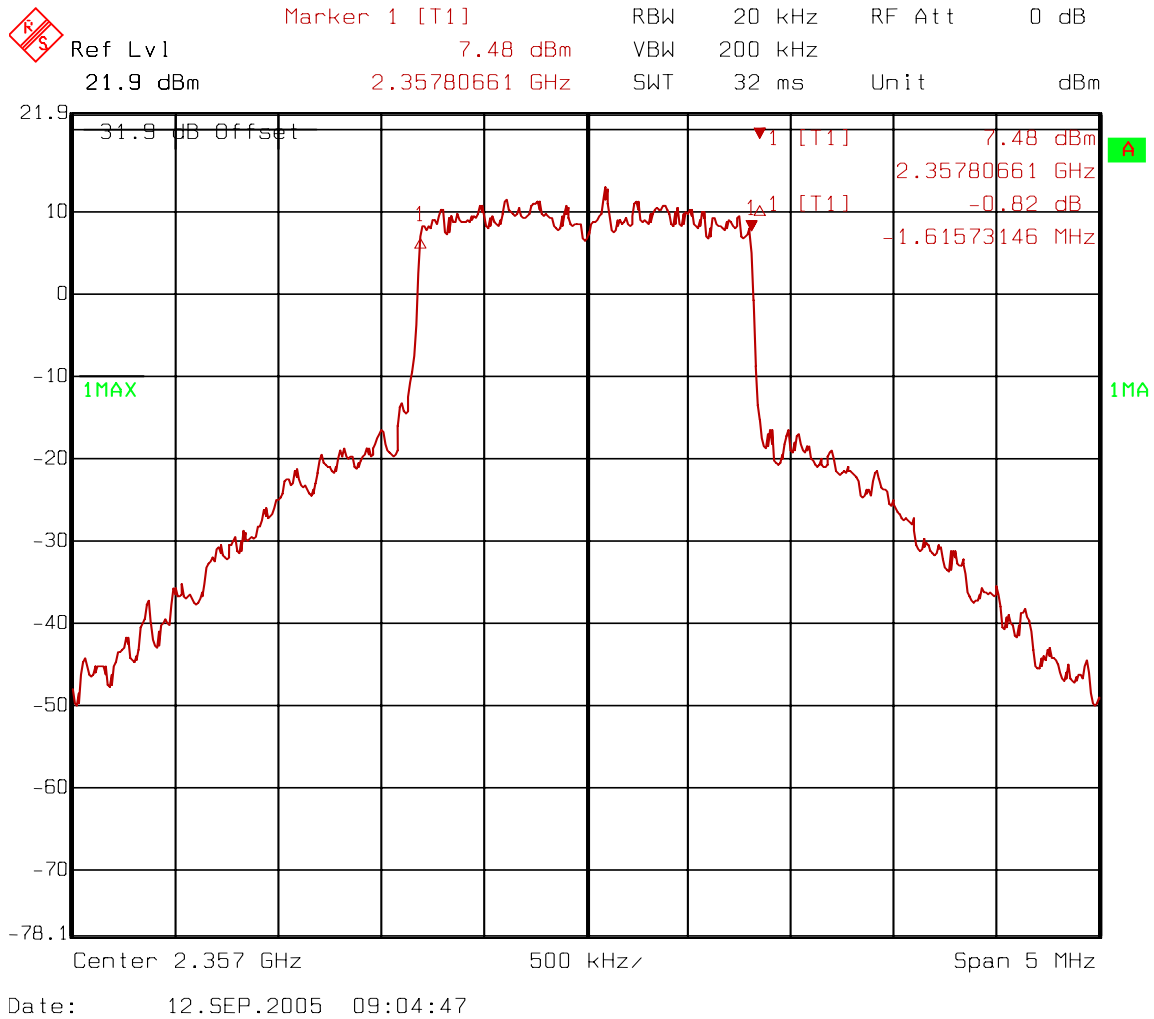


EQUIPMENT: 2305 - 2360 LMX E

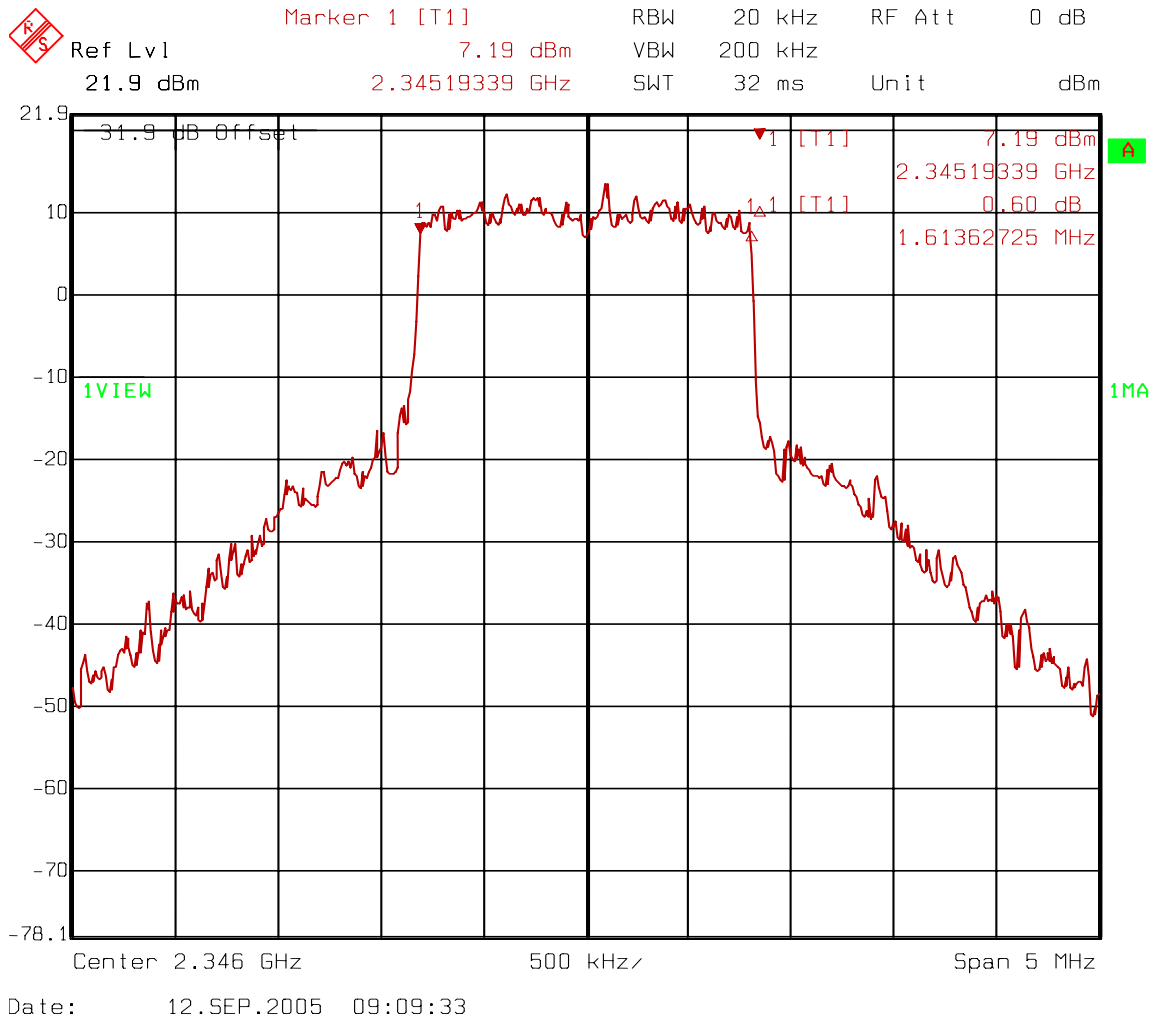
D BAND OBW 6DB POINTS



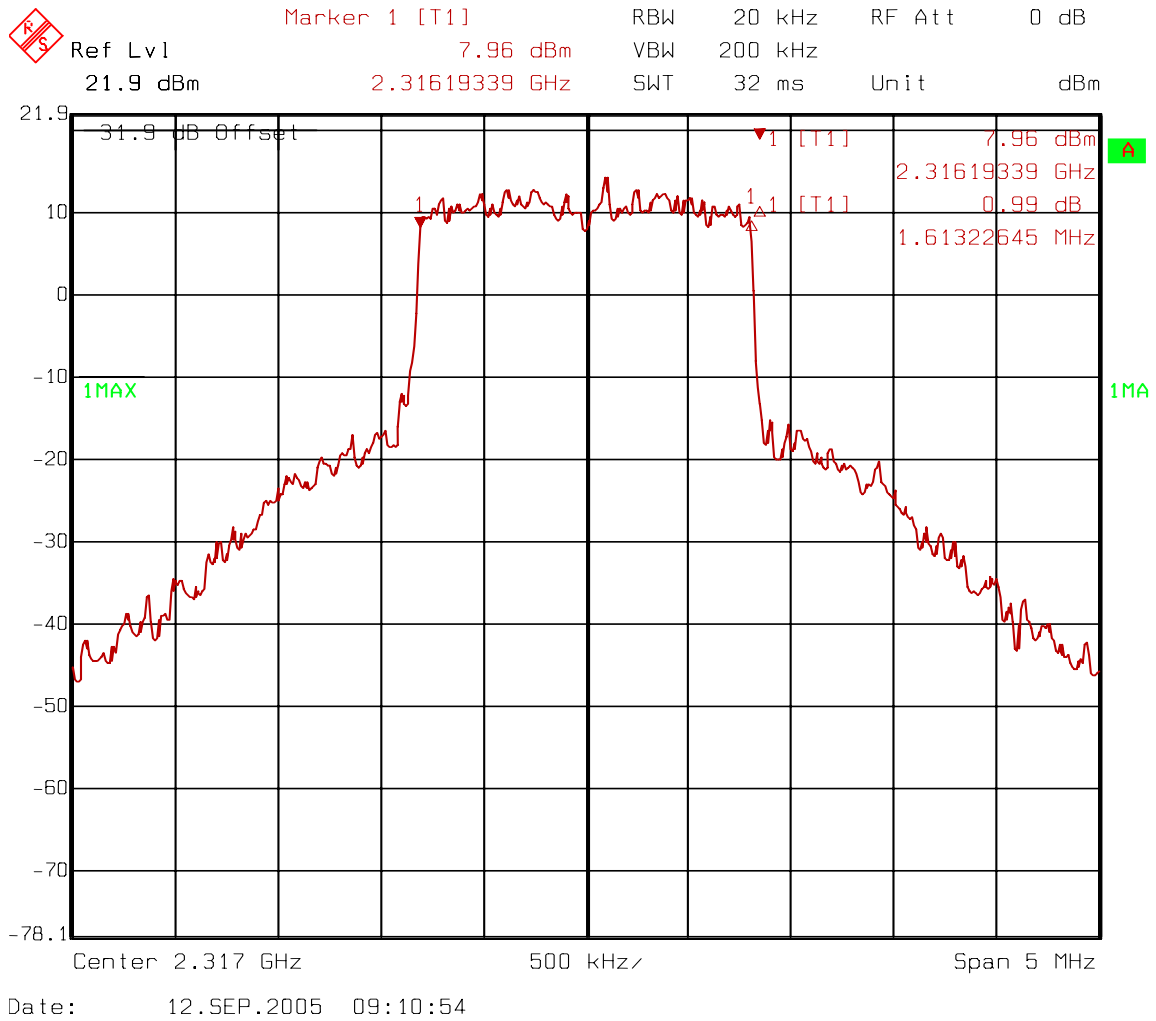
EQUIPMENT: 2305 - 2360 LMX E



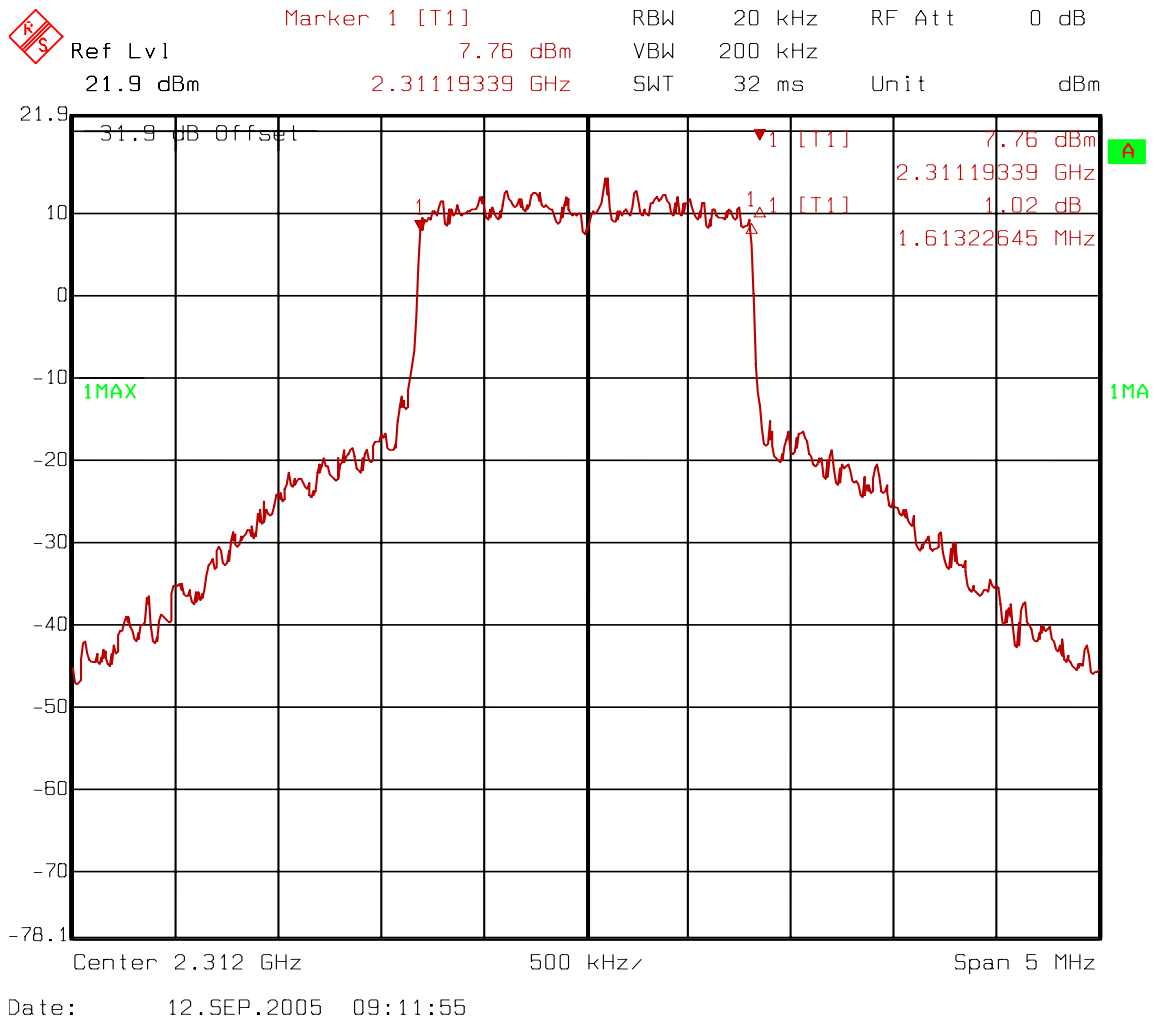
EQUIPMENT: 2305 - 2360 LMX E



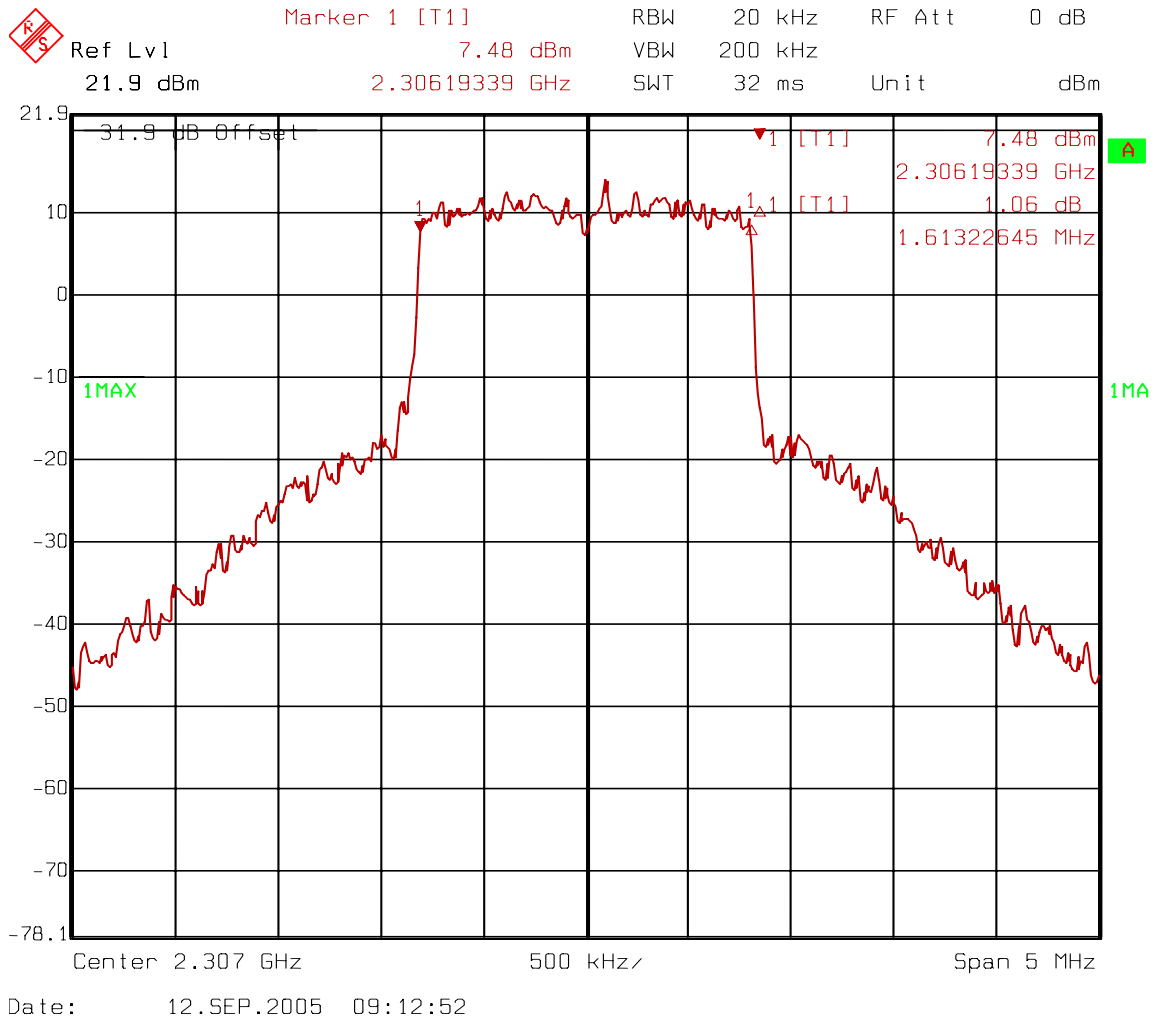
EQUIPMENT: 2305 - 2360 LMX E



EQUIPMENT: 2305 - 2360 LMX E

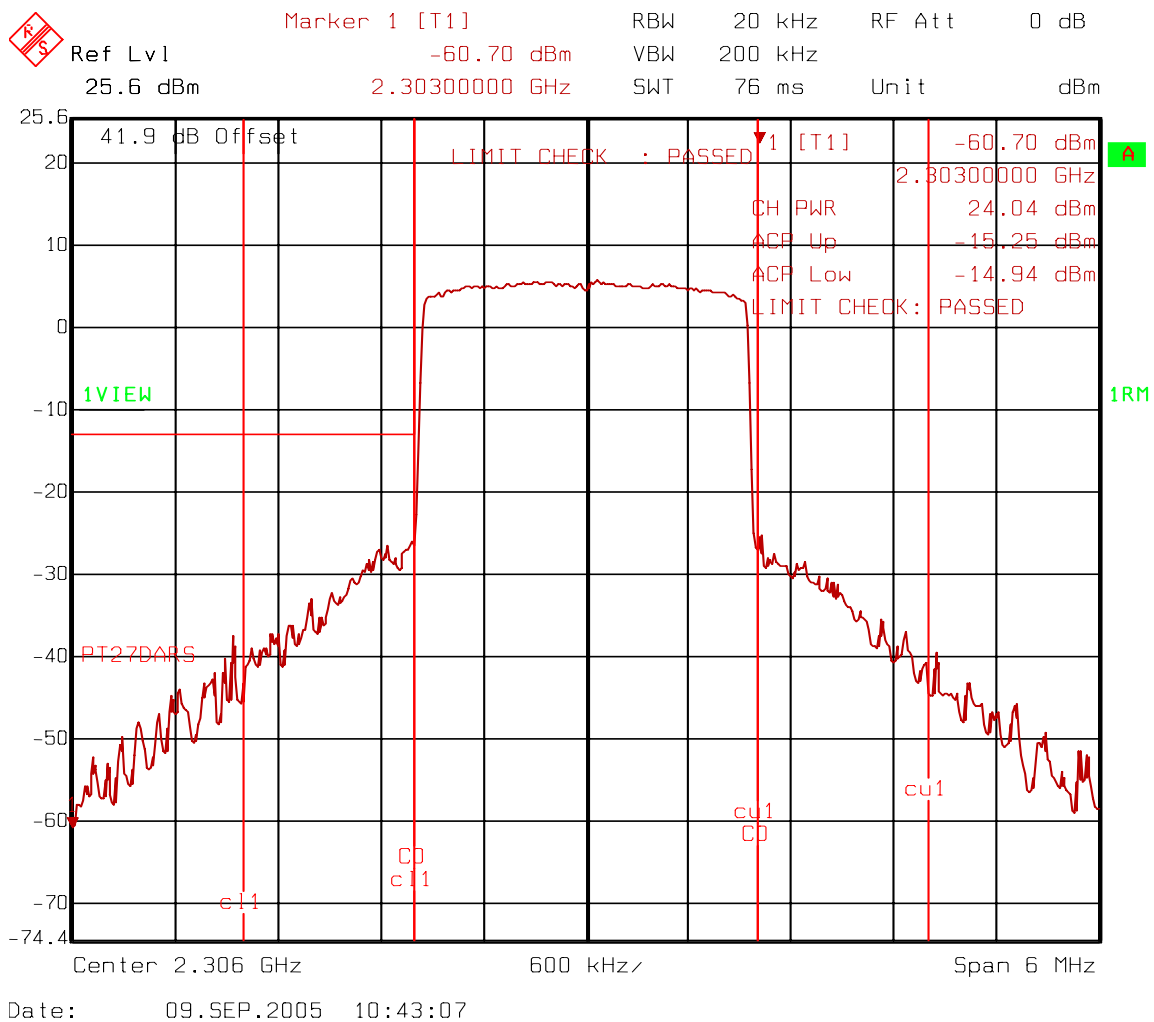


EQUIPMENT: 2305 - 2360 LMX E



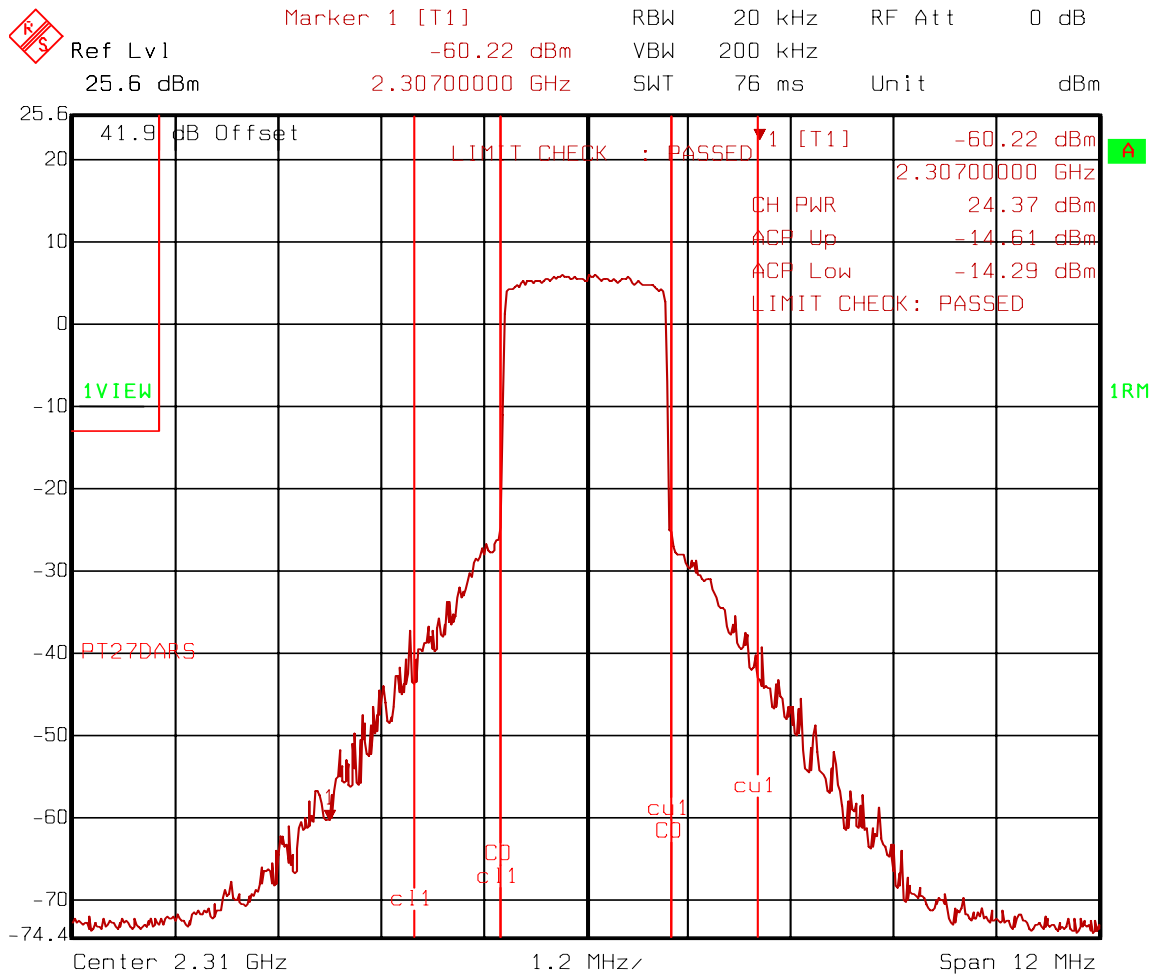
EQUIPMENT: 2305 - 2360 LMX ESeptember 9, 2005
2305 - 2360 LMX E

EQUIPMENT USED 1561, 1562, 1045, 1055, 2072, 2071, 1470,1471,AND 1482.

A & B Bands, Navini Mode, 10-Carrier System24.32dBm
2306MHz, GC=172

EQUIPMENT: 2305 - 2360 LMX E

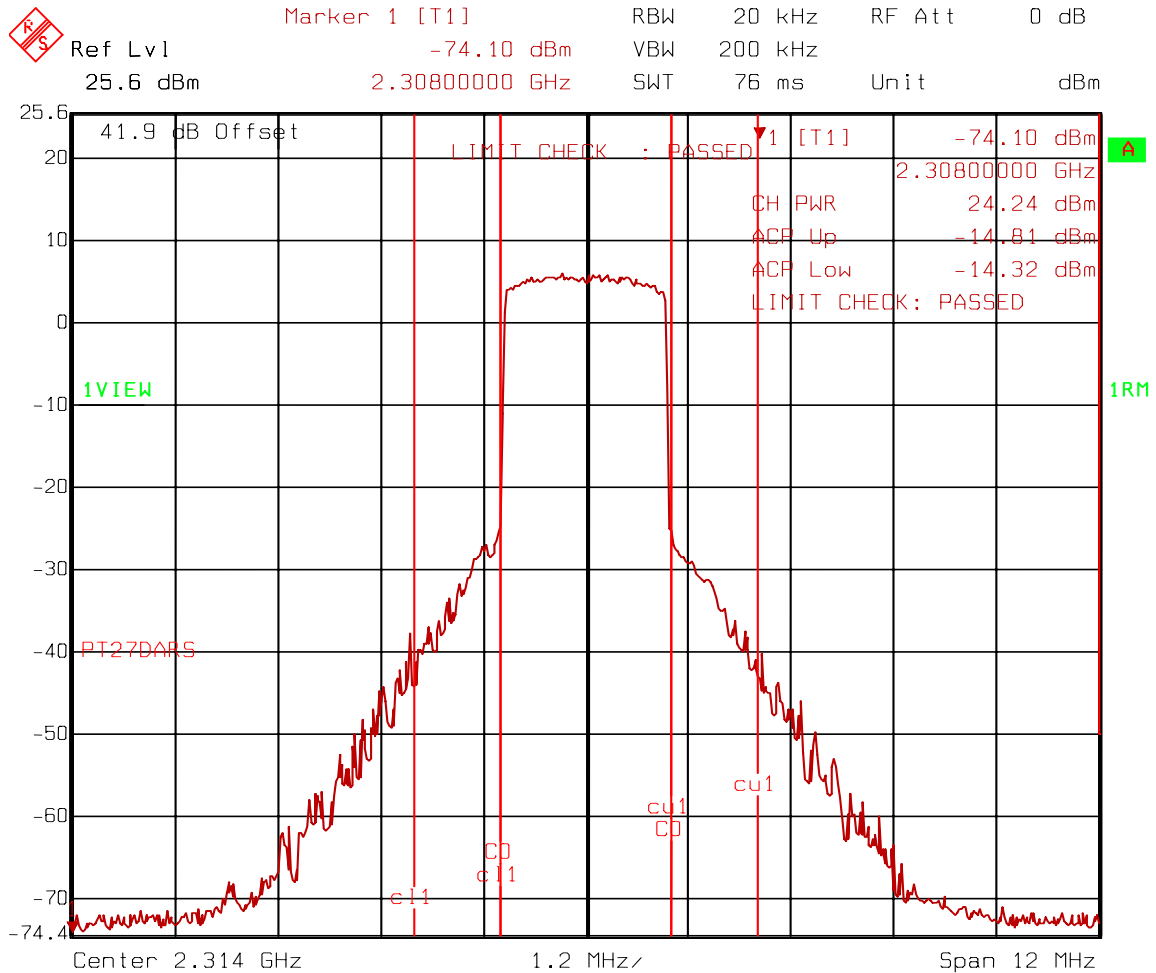
A & B Bands, Navini Mode, 10-Carrier System

24.6dBm
2310MHz, GC=172,

Date: 09.SEP.2005 10:58:02

EQUIPMENT: 2305 - 2360 LMX E

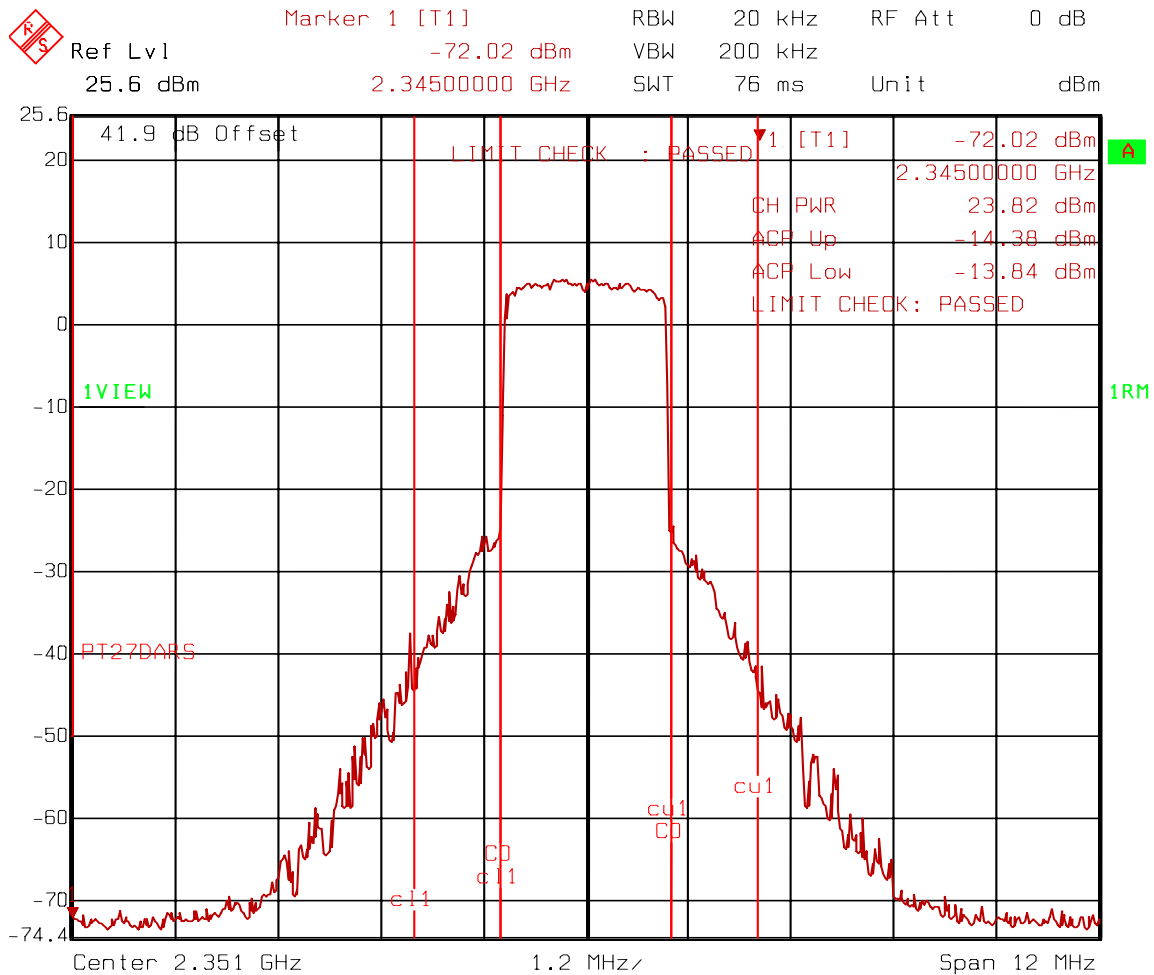
A & B Bands, Navini Mode, 10-Carrier System

24.6dBm
2314MHz, GC=171,

Date: 09.SEP.2005 11:00:02

EQUIPMENT: 2305 - 2360 LMX E

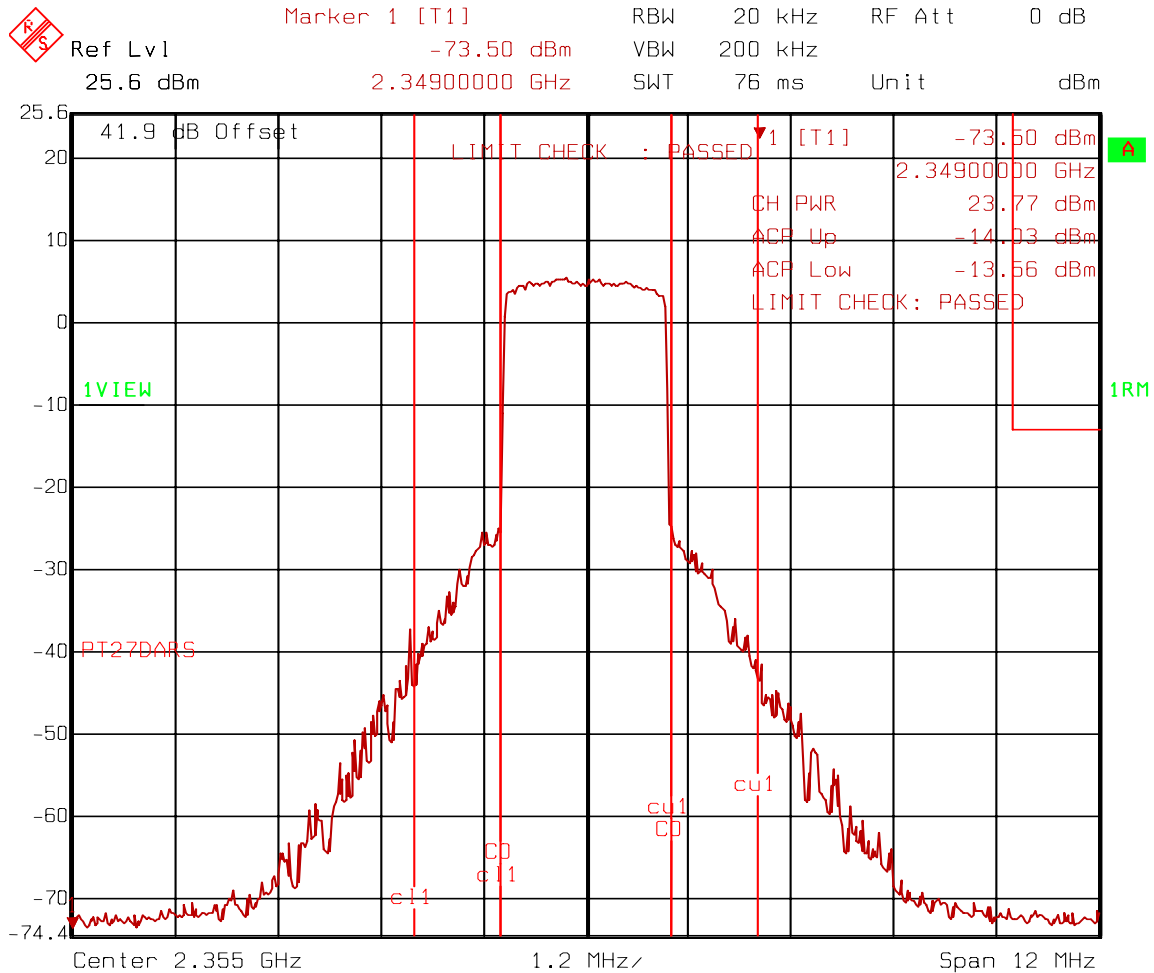
A & B Bands, Navini Mode, 10-Carrier System

24.04dBm
2351MHz, GC=173

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EQUIPMENT: 2305 - 2360 LMX E

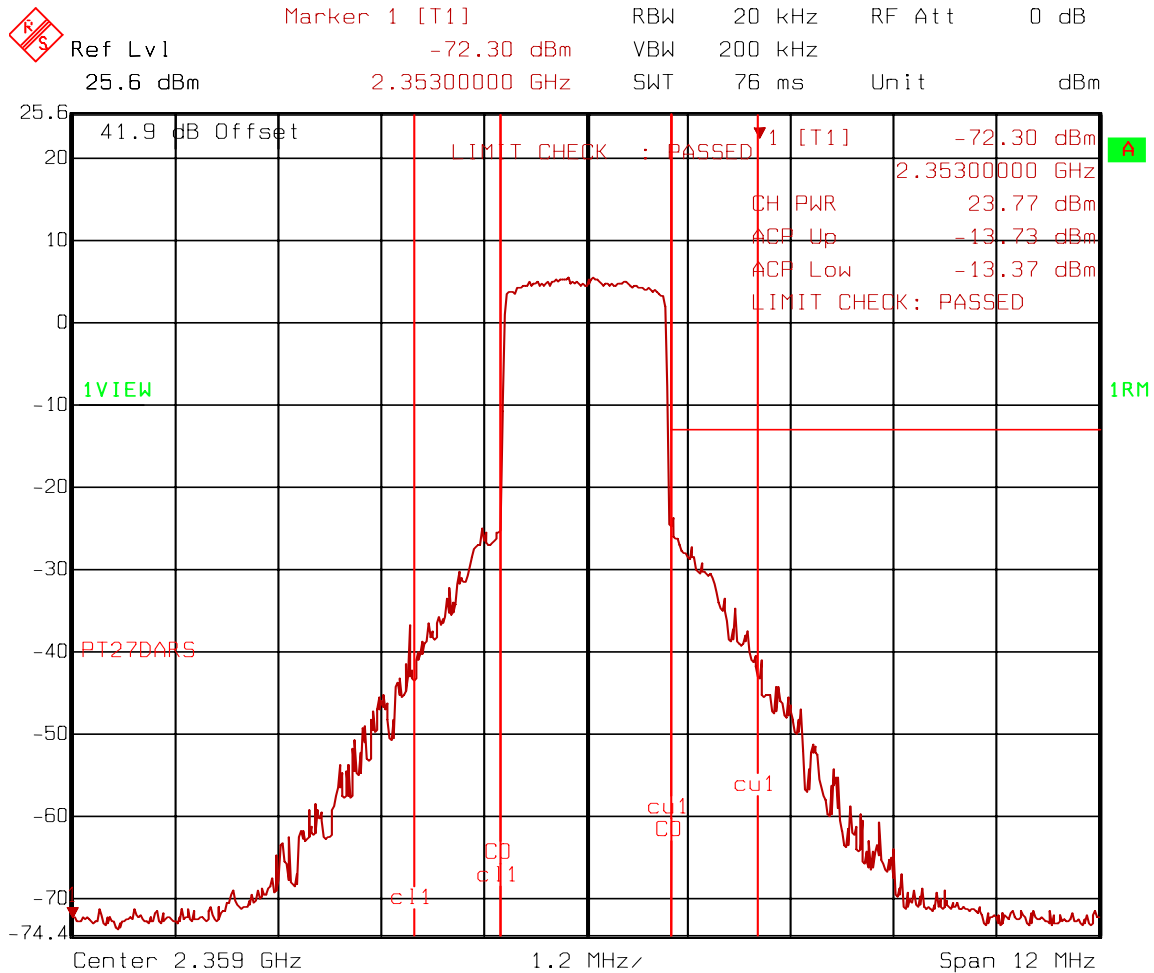
A & B Bands, Navini Mode, 10-Carrier System

24.2dBm
2355MHz, GC=174

Date: 09.SEP.2005 11:09:50

EQUIPMENT: 2305 - 2360 LMX E

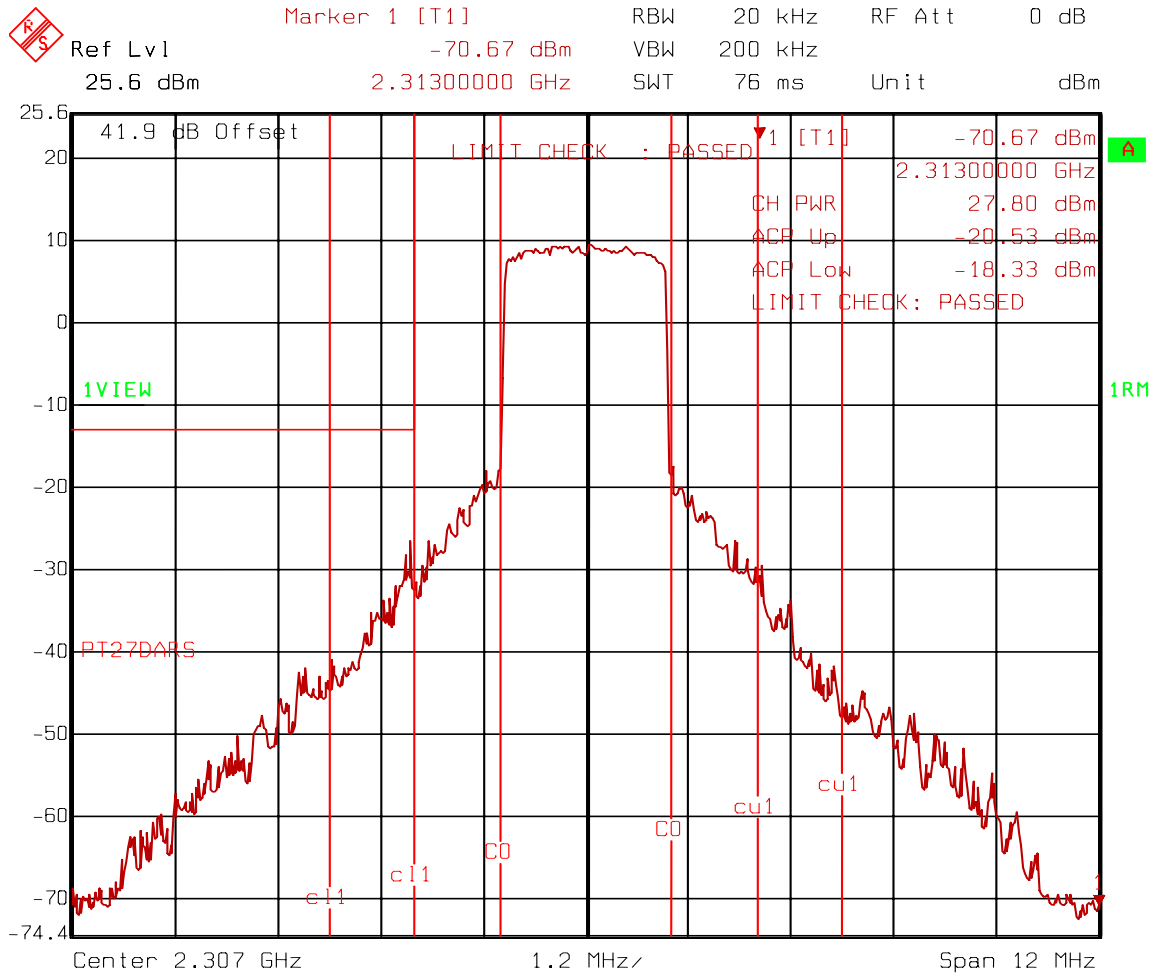
A & B Bands, Navini Mode, 10-Carrier System

24.2dBm
2359MHz, GC=174,

Date: 09.SEP.2005 11:15:26

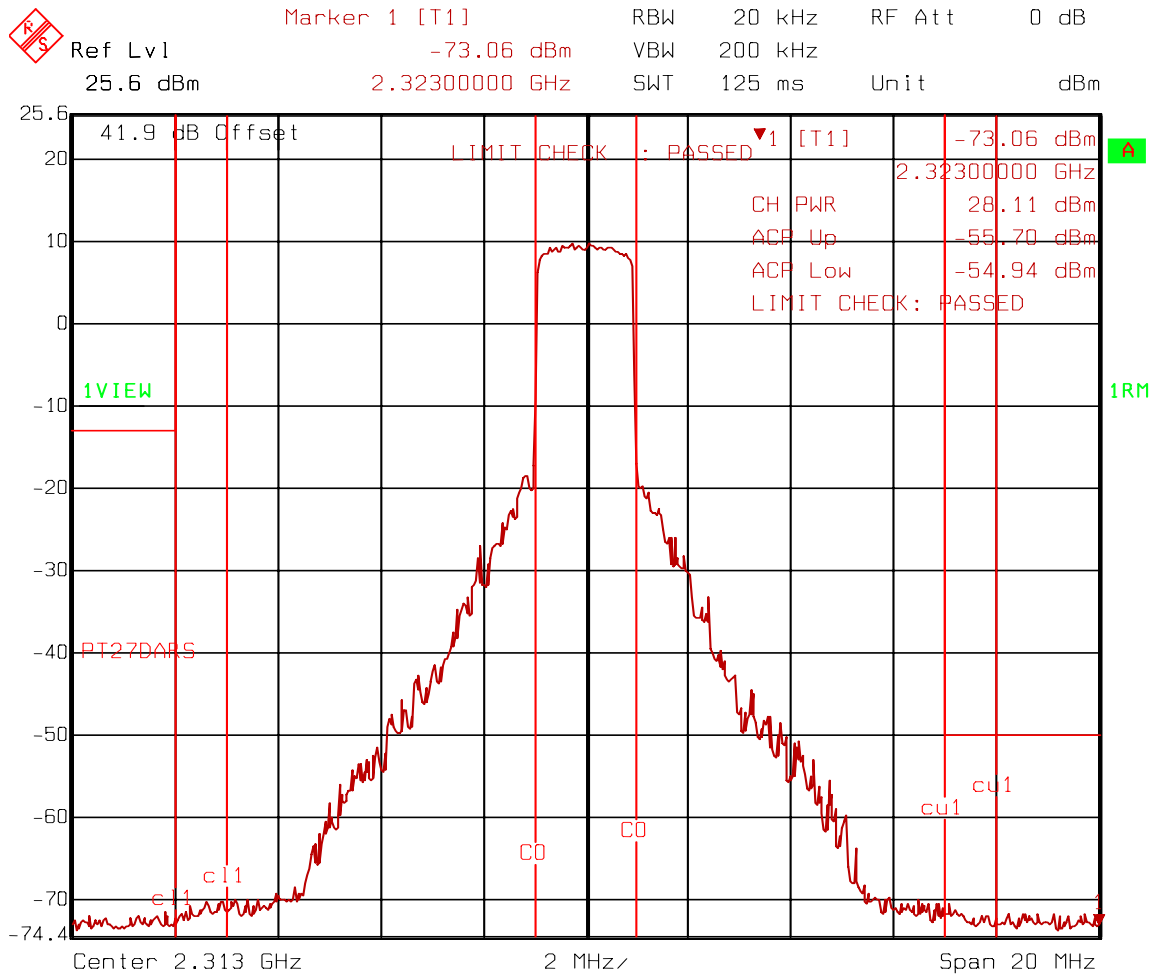
EQUIPMENT: 2305 - 2360 LMX E

A Band Low, Navini Mode, 10-Carrier System

28dBm
2307MHz, GC=191

Date: 09.SEP.2005 11:18:36

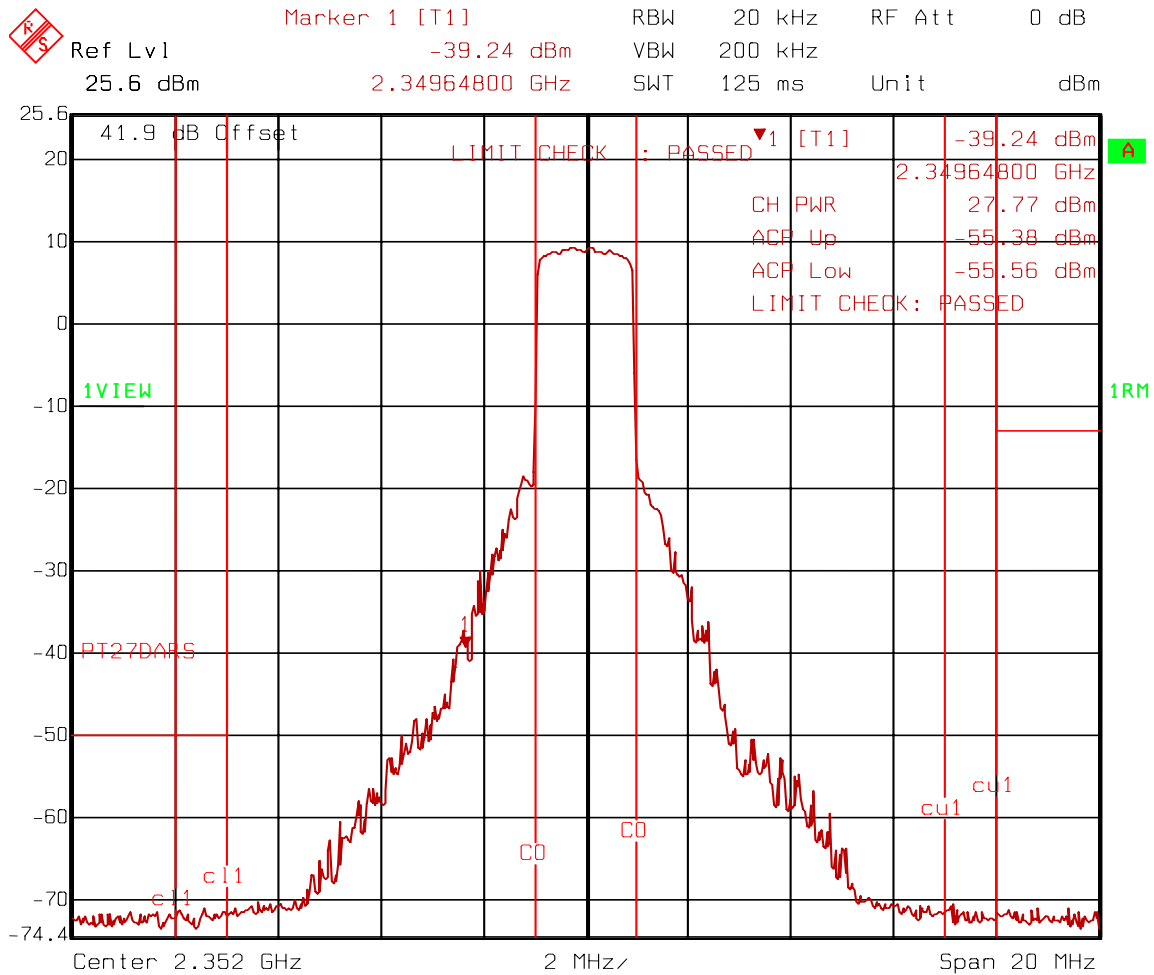
EQUIPMENT: 2305 - 2360 LMX E

B Band Low, Navini Mode, 10-Carrier System28.3dBm
2313MHz, GC=191

Date: 09.SEP.2005 12:32:43

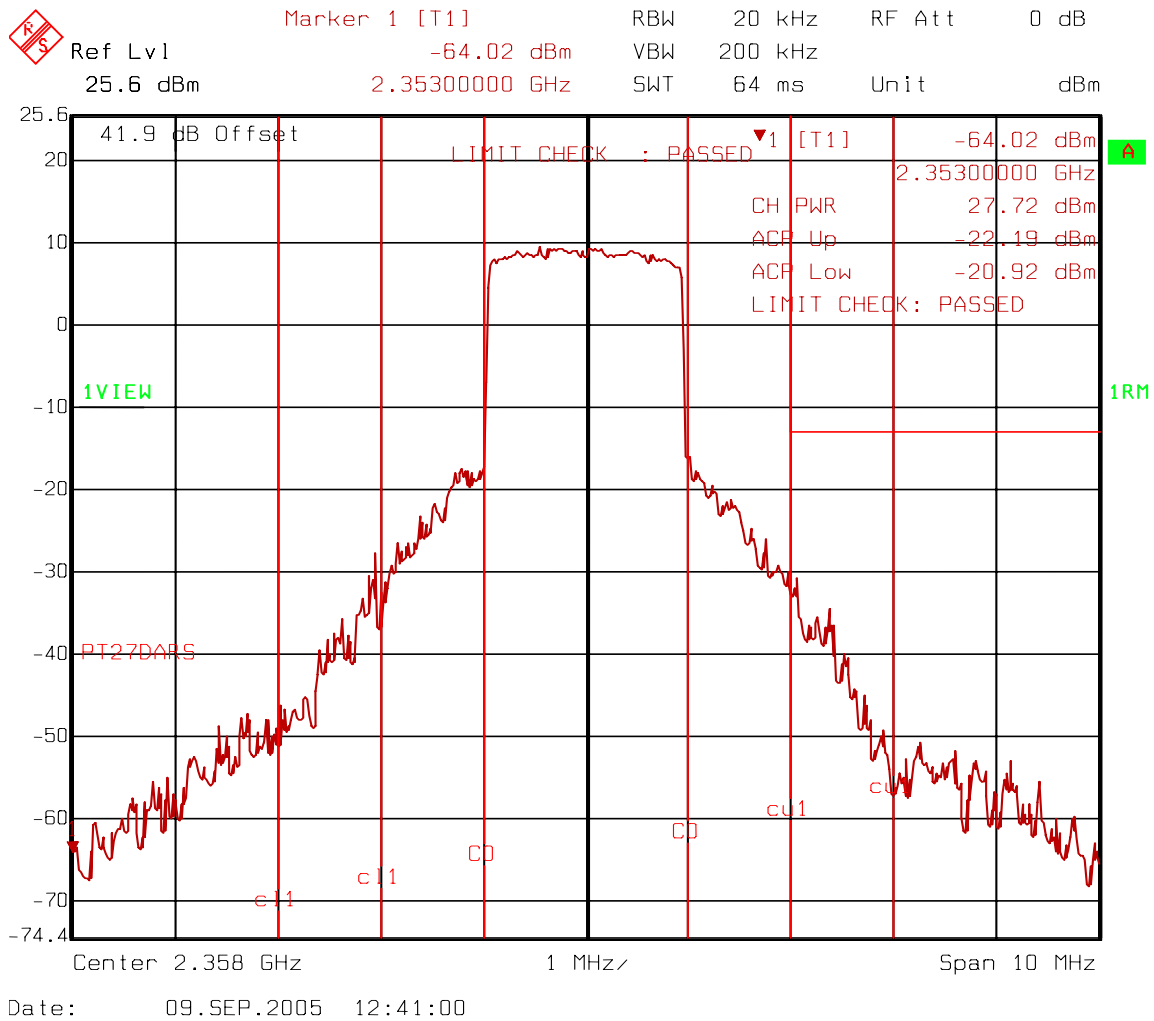
EQUIPMENT: 2305 - 2360 LMX E

A Band High, Navini Mode, 10-Carrier System

28.15dBm
2352MHz, GC=196

Date: 09.SEP.2005 12:37:49

EQUIPMENT: 2305 - 2360 LMX E

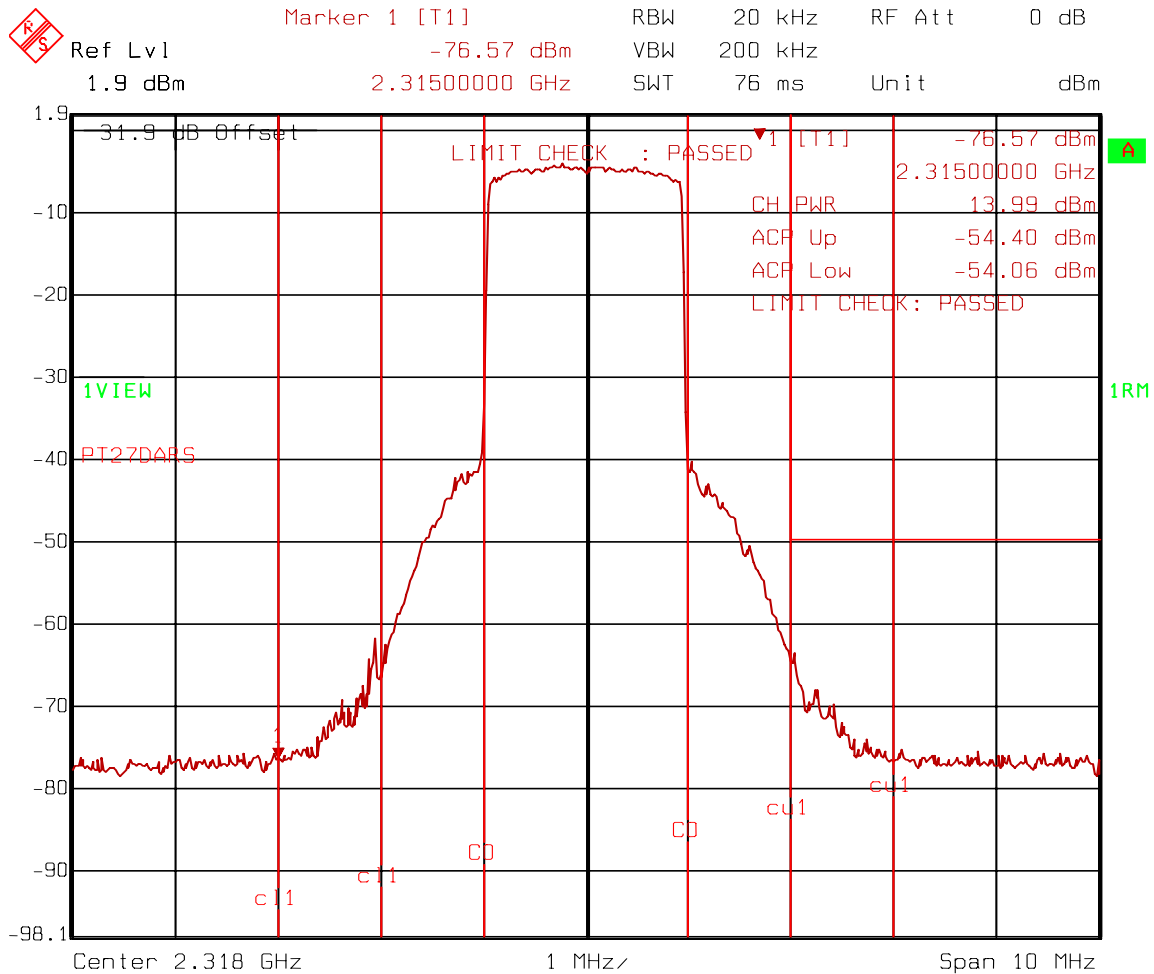
B Band High, Navini Mode, 10-Carrier System28.19dBm
2358MHz, GC=201

EQUIPMENT: 2305 - 2360 LMX E

C Band, Navini Mode, 8-Carrier System

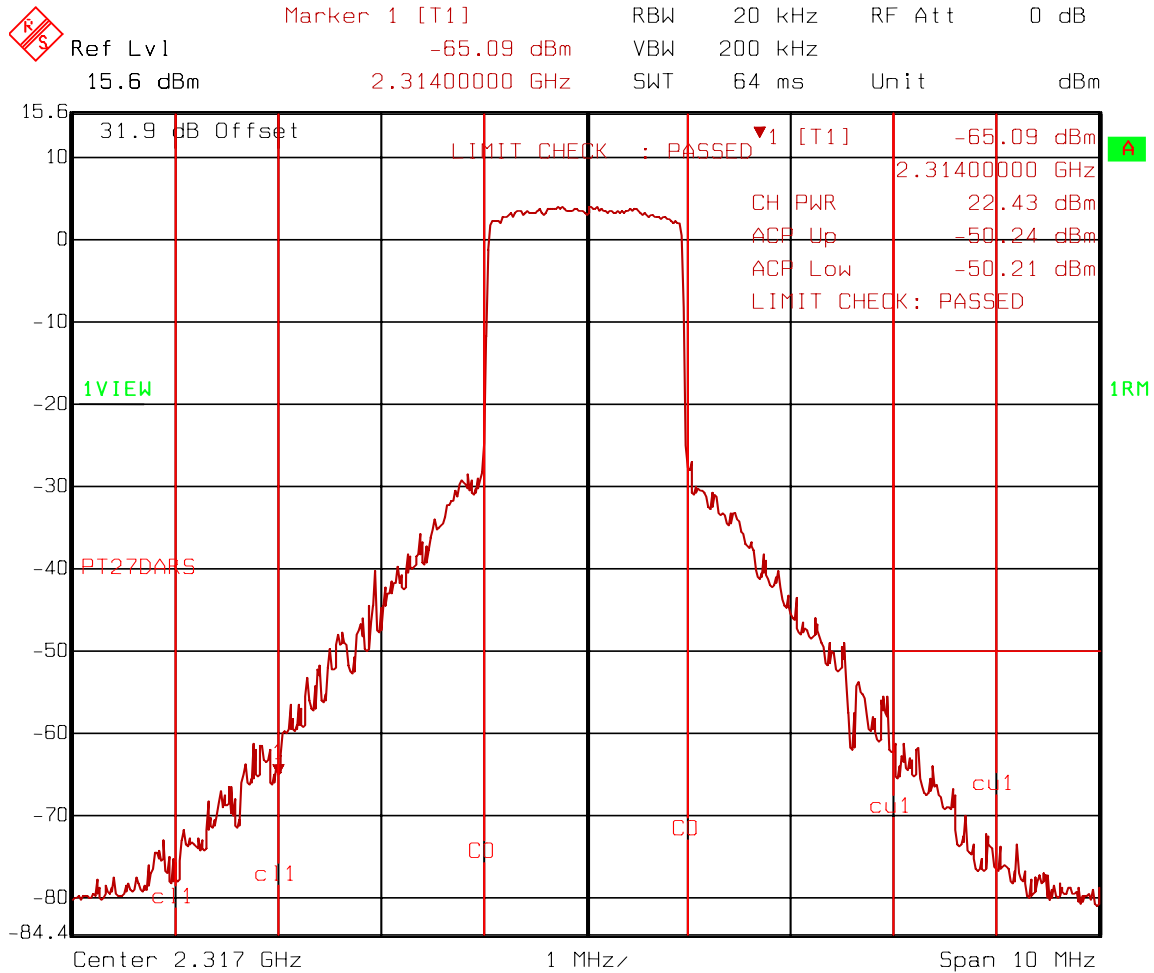
14.3dBm, 1MHz Guard Band from DARS

2318MHz, GC=141



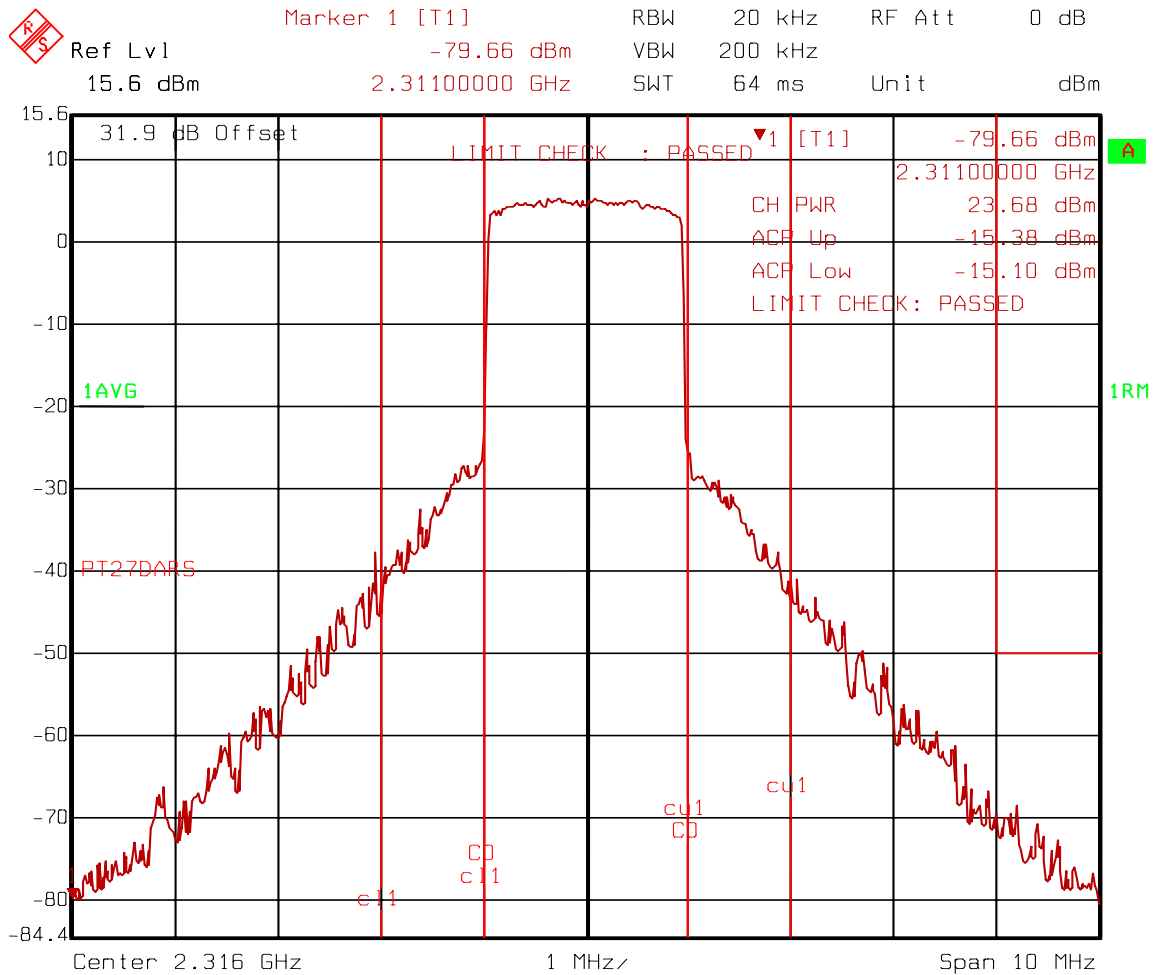
Date: 09.SEP.2005 13:17:46

EQUIPMENT: 2305 - 2360 LMX E

C Band, Navini Mode, 8-Carrier System23.13dBm, 2MHz Guard Band from DARS
2317MHz, GC=166, 62degC, CS=3.5MHz, limit < -50dBm/1MHz

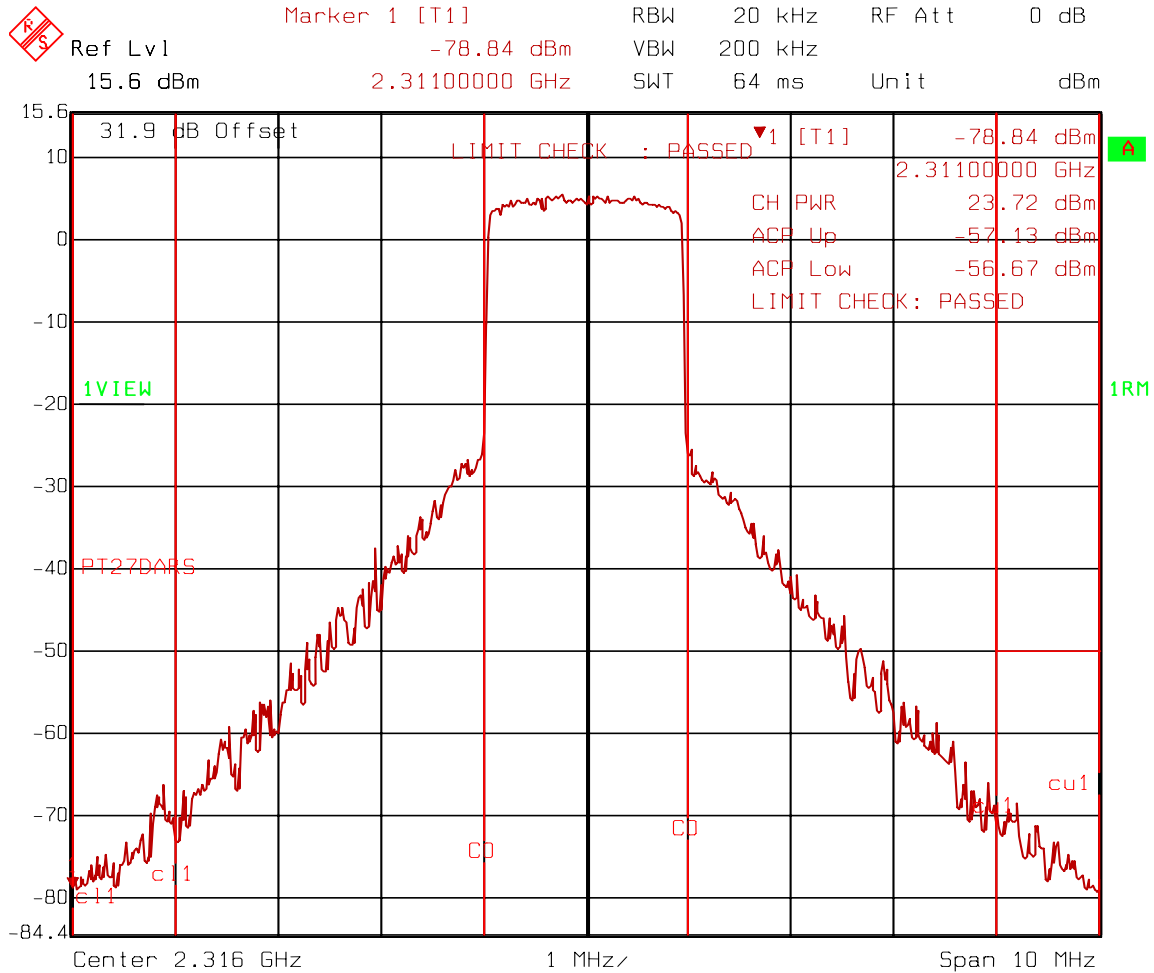
Date: 12.SEP.2005 10:07:24

EQUIPMENT: 2305 - 2360 LMX E

C Band, Navini Mode, 8-Carrier System24.3dBm, 3MHz Guard Band from DARS
2316MHz, GC=170, CS=1.5MHz, limit < -13dBm/1MHz

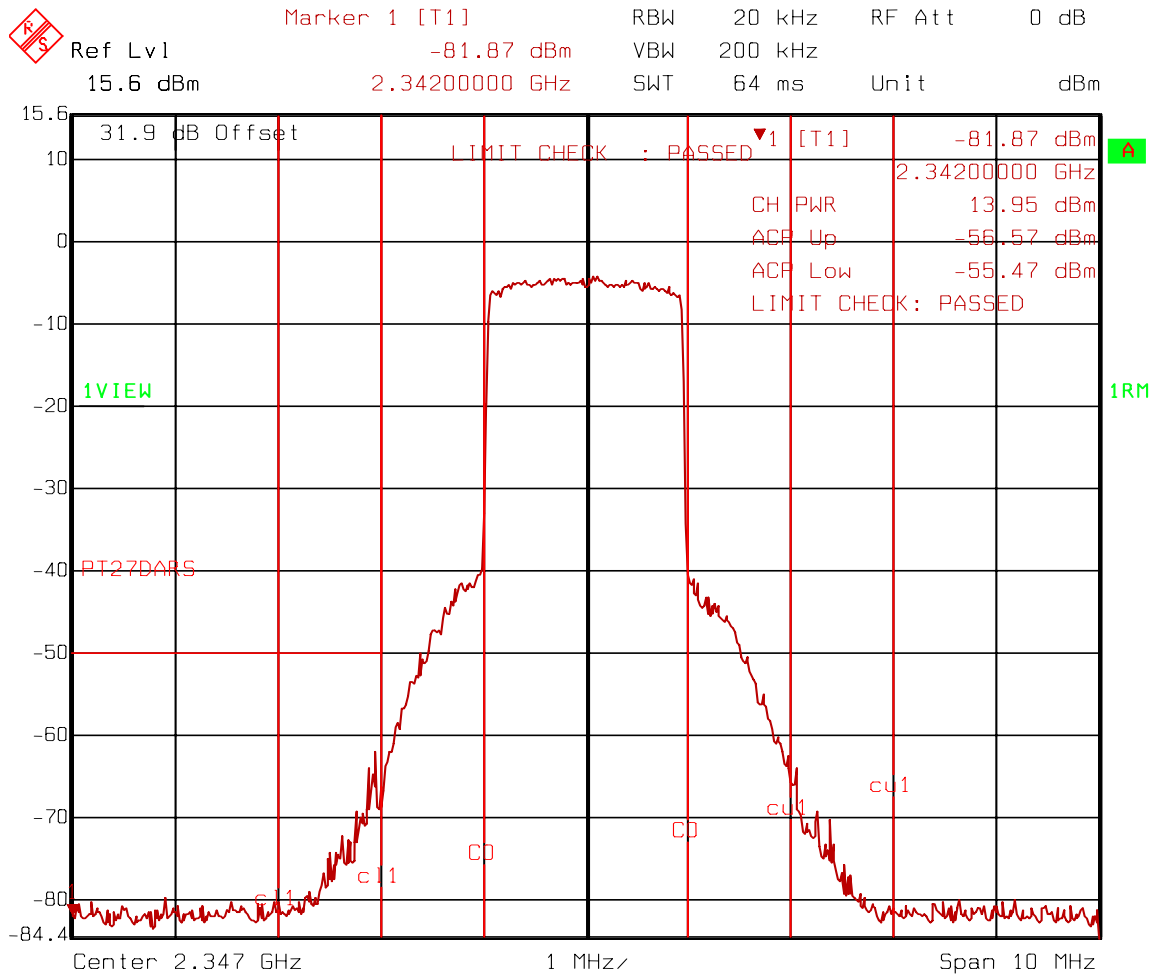
Date: 12.SEP.2005 10:13:08

EQUIPMENT: 2305 - 2360 LMX E

C Band, Navini Mode, 8-Carrier System24dBm, 3MHz Guard Band from DARS
2316MHz, GC=170, CS=4.5MHz, limit < -50dBm/1MHz

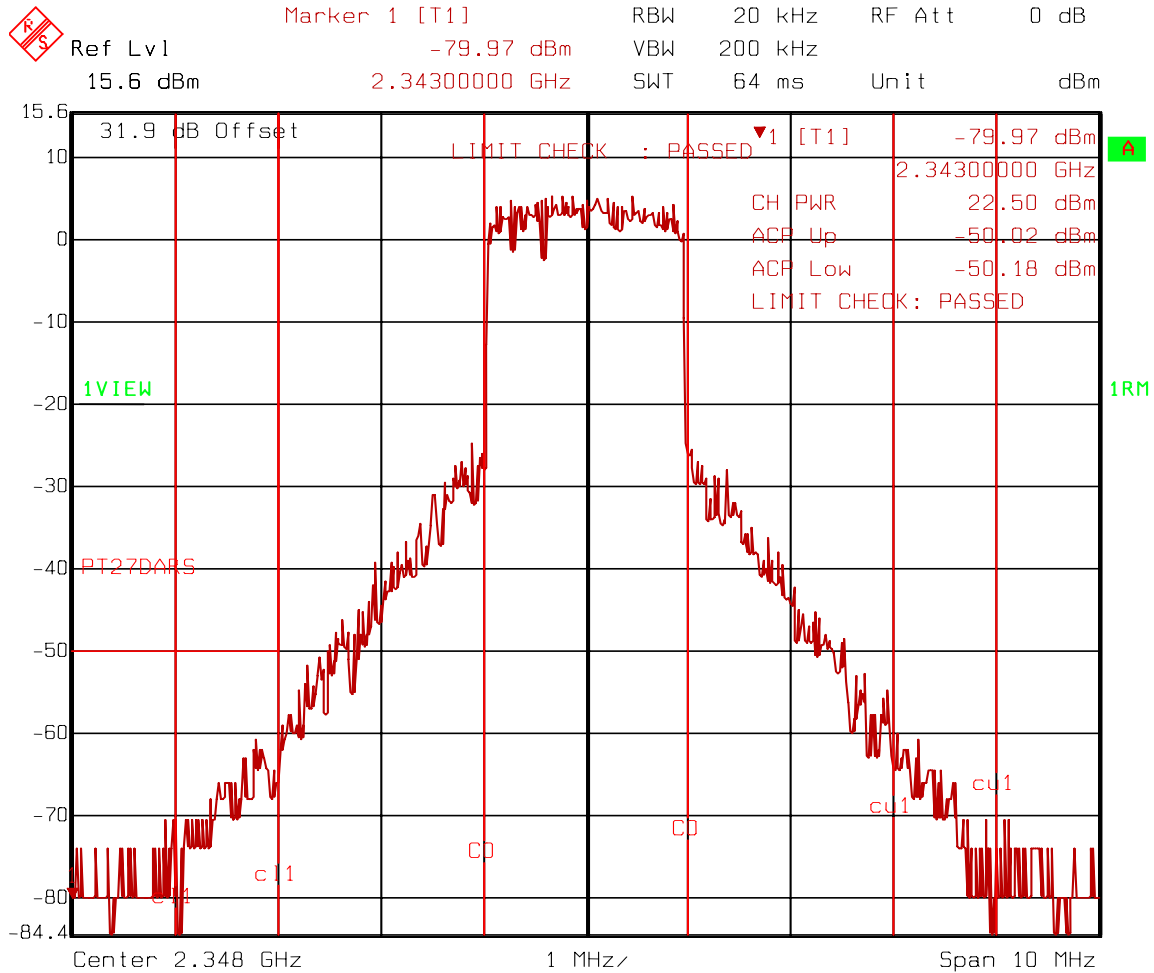
Date: 12.SEP.2005 10:10:31

EQUIPMENT: 2305 - 2360 LMX E

D Band, Navini Mode, 8-Carrier System14dBm, 1MHz Guard Band from DARS
2347MHz, GC=144, CS=2.5MHz, limit < -50dBm/1MHz

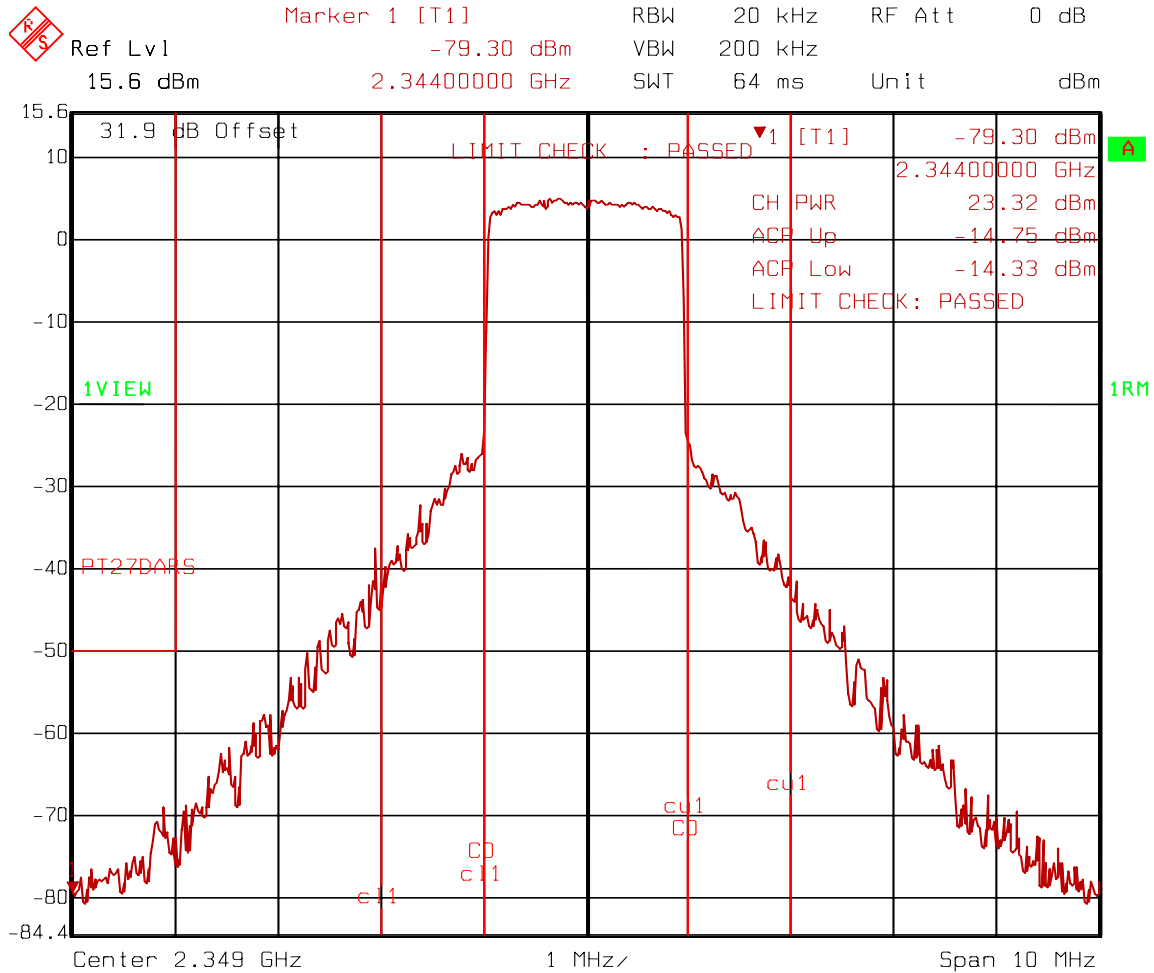
Date: 12.SEP.2005 10:15:45

EQUIPMENT: 2305 - 2360 LMX E

D Band, Navini Mode, 8-Carrier System23.18dBm, 2MHz Guard Band from DARS
2348MHz, GC=170, CS=3.5MHz, limit < -50dBm/1MHz

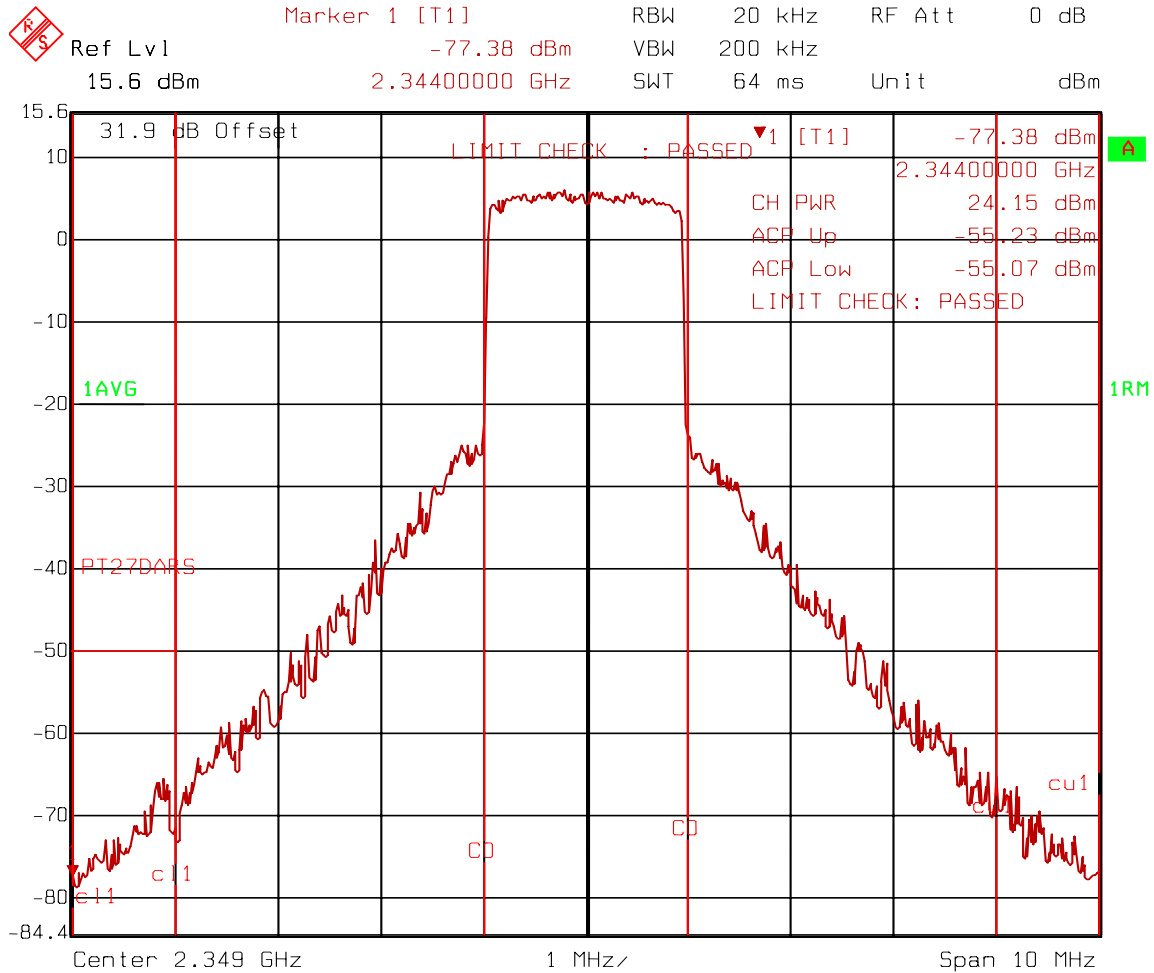
Date: 12.SEP.2005 10:17:39

EQUIPMENT: 2305 - 2360 LMX E

D Band, Navini Mode, 8-Carrier System24dBm, 3MHz Guard Band from DARS
2349MHz, GC=170, CS=1.5MHz, limit < -13dBm/1MHz

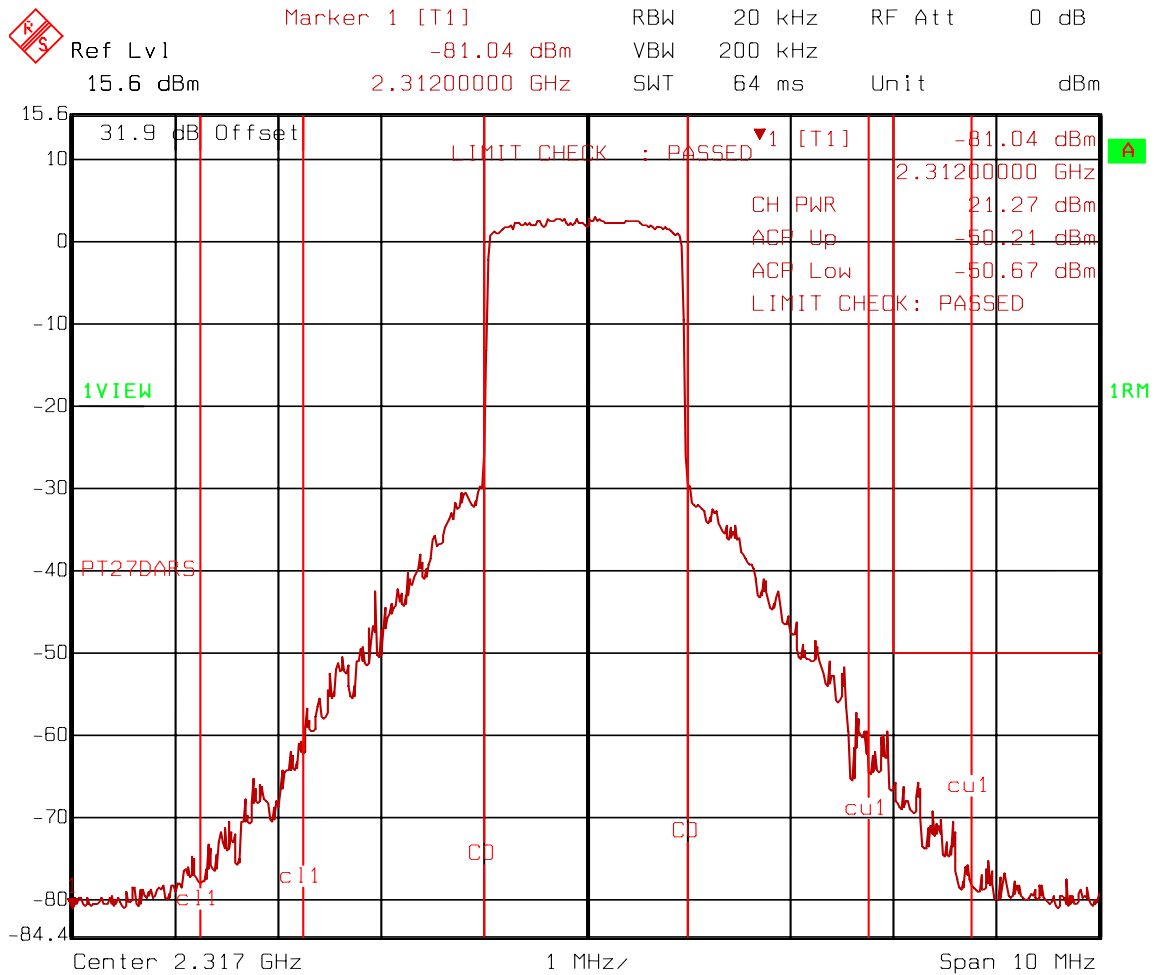
Date: 12.SEP.2005 10:19:40

EQUIPMENT: 2305 - 2360 LMX E

D Band, Navini Mode, 8-Carrier System24.8dBm, 3MHz Guard Band from DARS
2349MHz, GC=177, CS=4.5MHz, limit < -50dBm/1MHz

Date: 12.SEP.2005 10:21:23

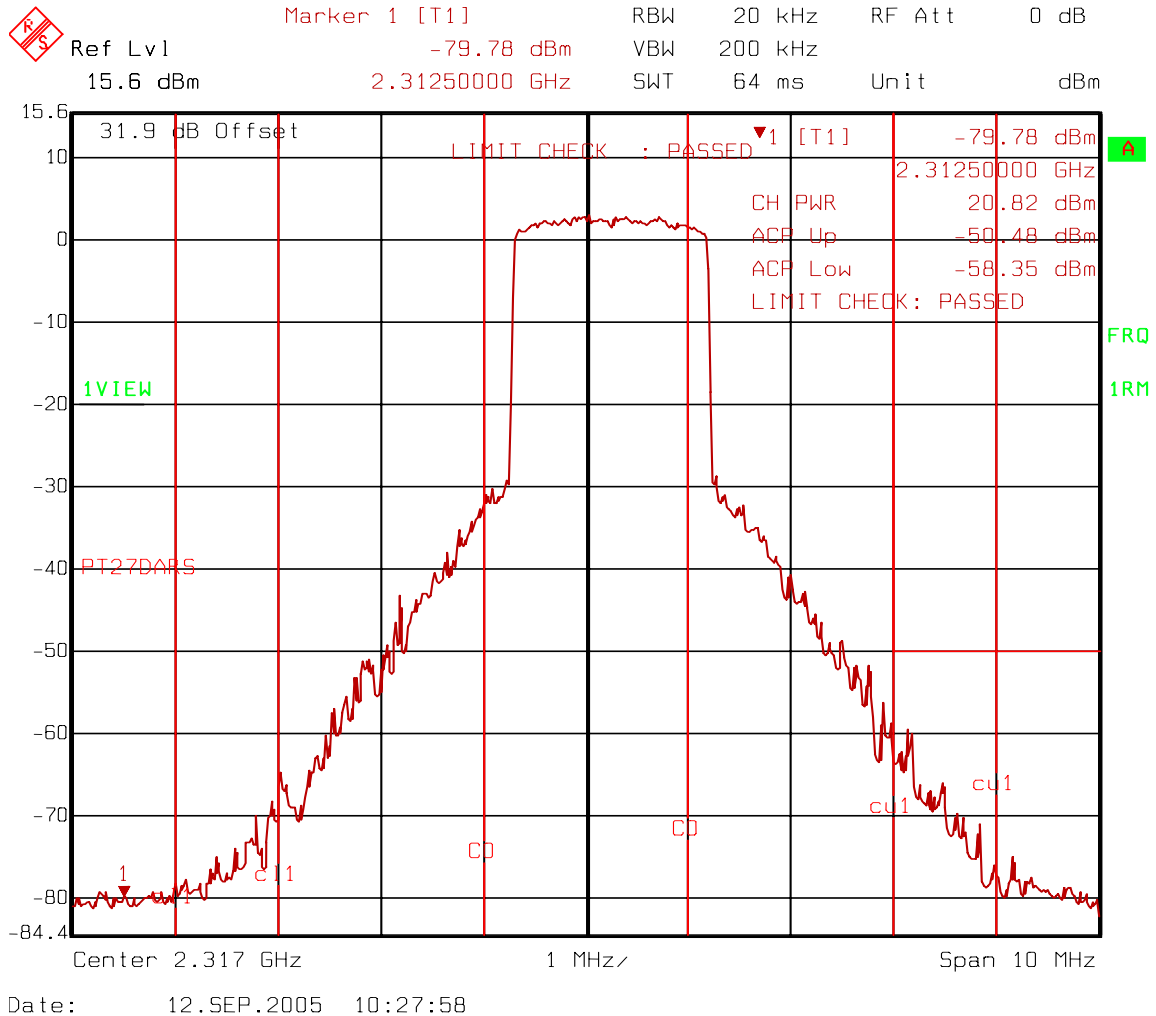
EQUIPMENT: 2305 - 2360 LMX E

C Band, Navini Mode, 6-Carrier System22dBm, 1.75MHz Guard Band from DARS
2317MHz, GC=163, CS=3.25MHz, limit < -50dBm/1MHz

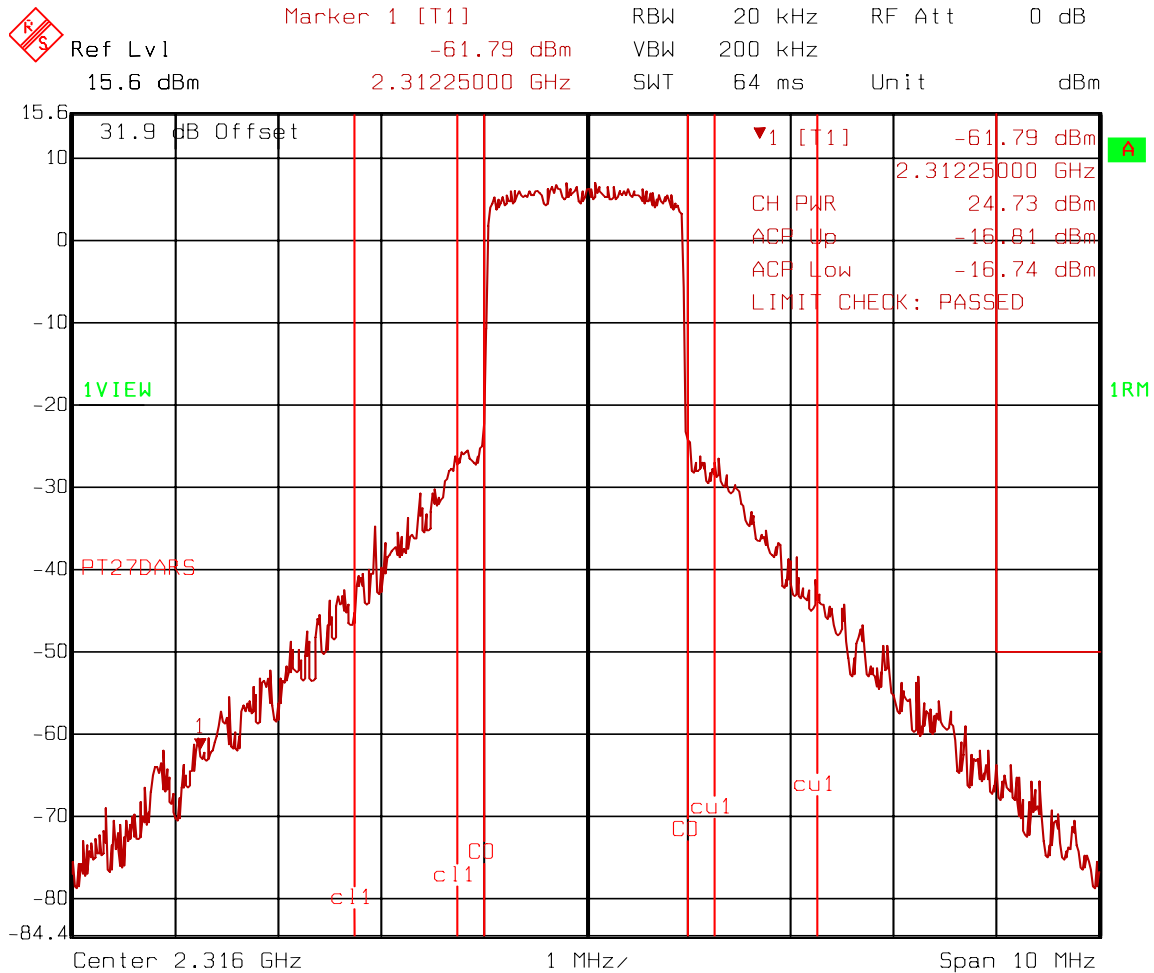
Date: 12.SEP.2005 10:25:23

EQUIPMENT: 2305 - 2360 LMX E

250 KHZ OFFSET

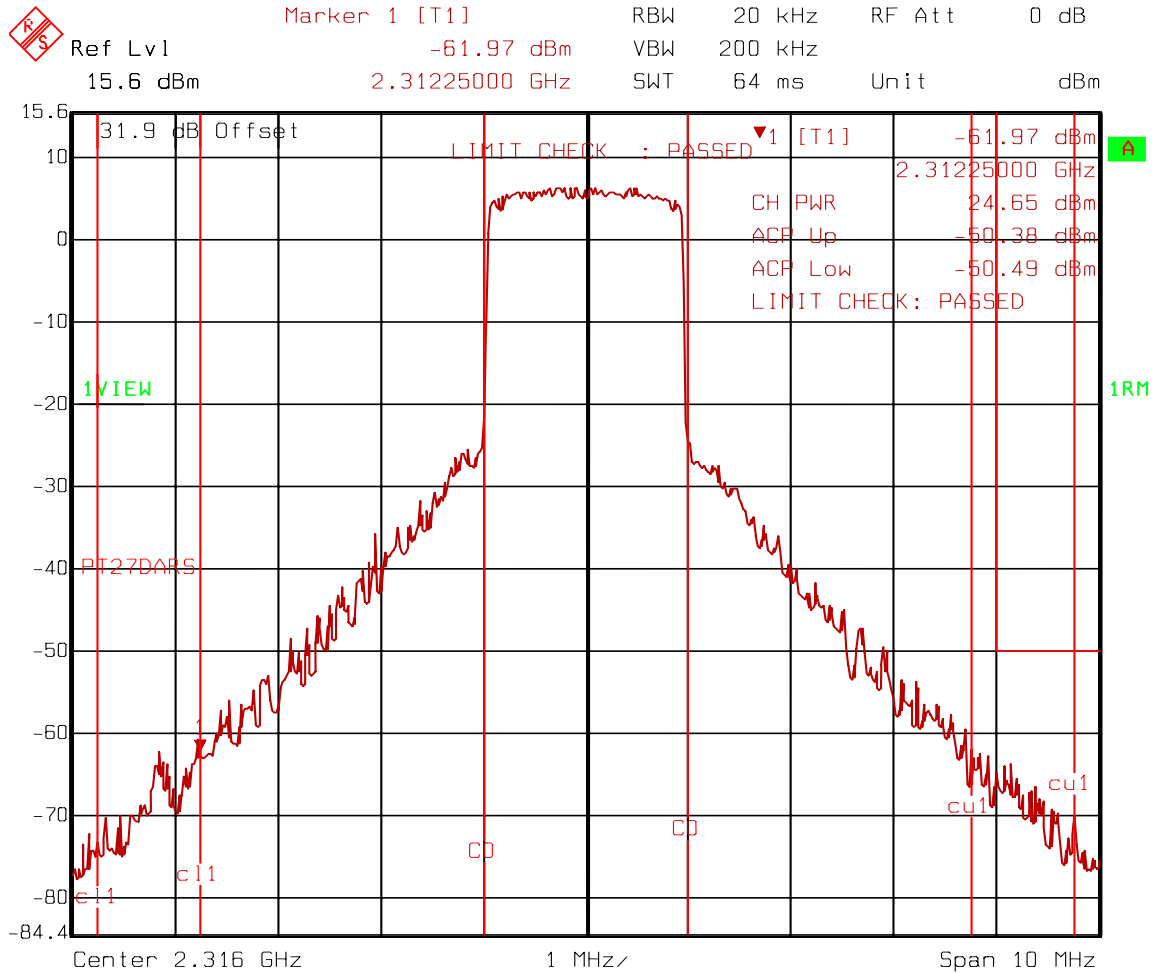


EQUIPMENT: 2305 - 2360 LMX E

C Band, Navini Mode, 6-Carrier System25dBm, 2.75MHz Guard Band from DARS
2316MHz, GC=175, CS=1.75MHz, limit < -13dBm/1MHz

Date: 12.SEP.2005 10:30:35

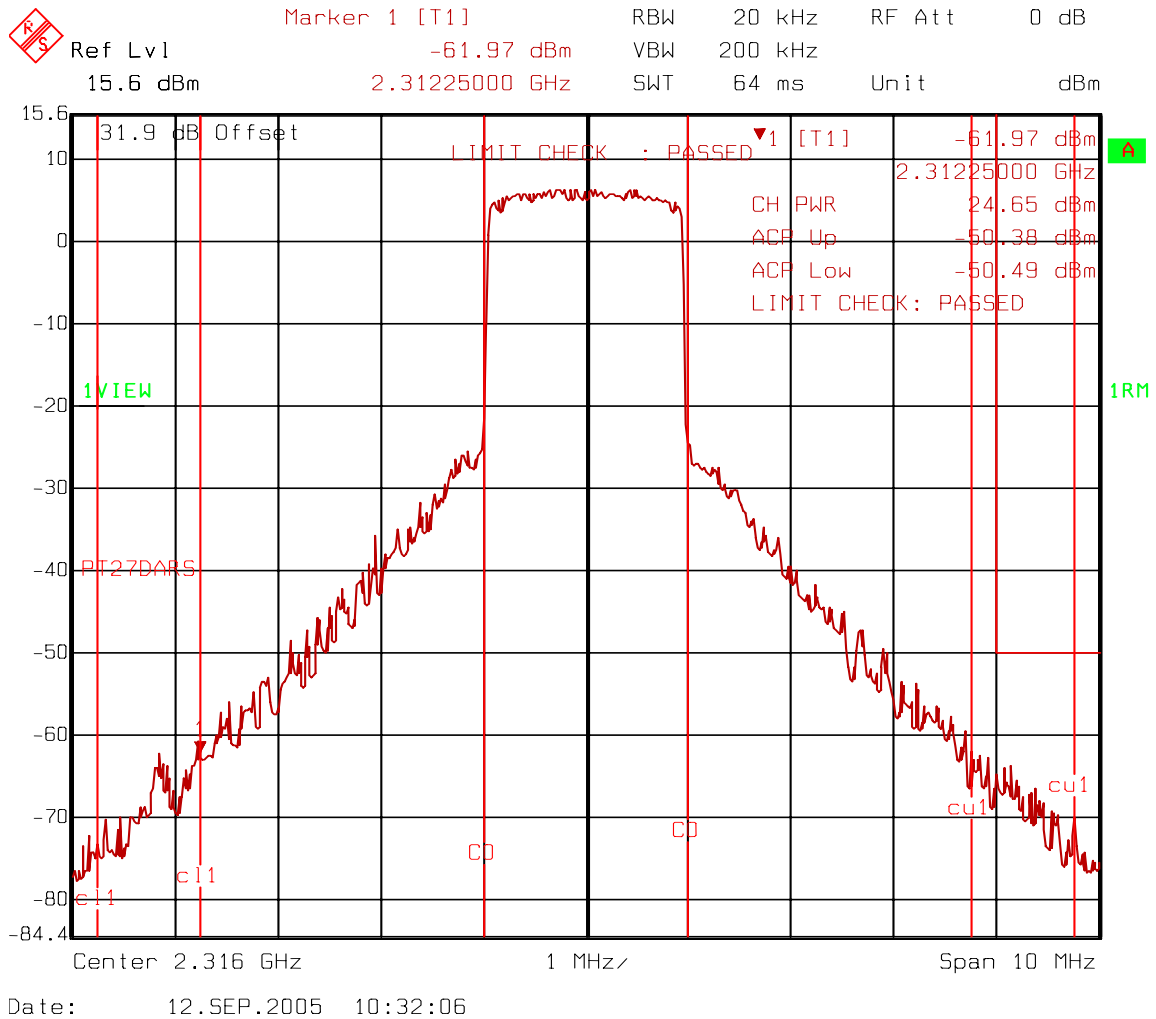
EQUIPMENT: 2305 - 2360 LMX E

C Band, Navini Mode, 6-Carrier System25.2dBm, 2.75MHz Guard Band from DARS
2316MHz, GC=168, 62degC, CS=4.25MHz, limit < -50dBm/1MHz

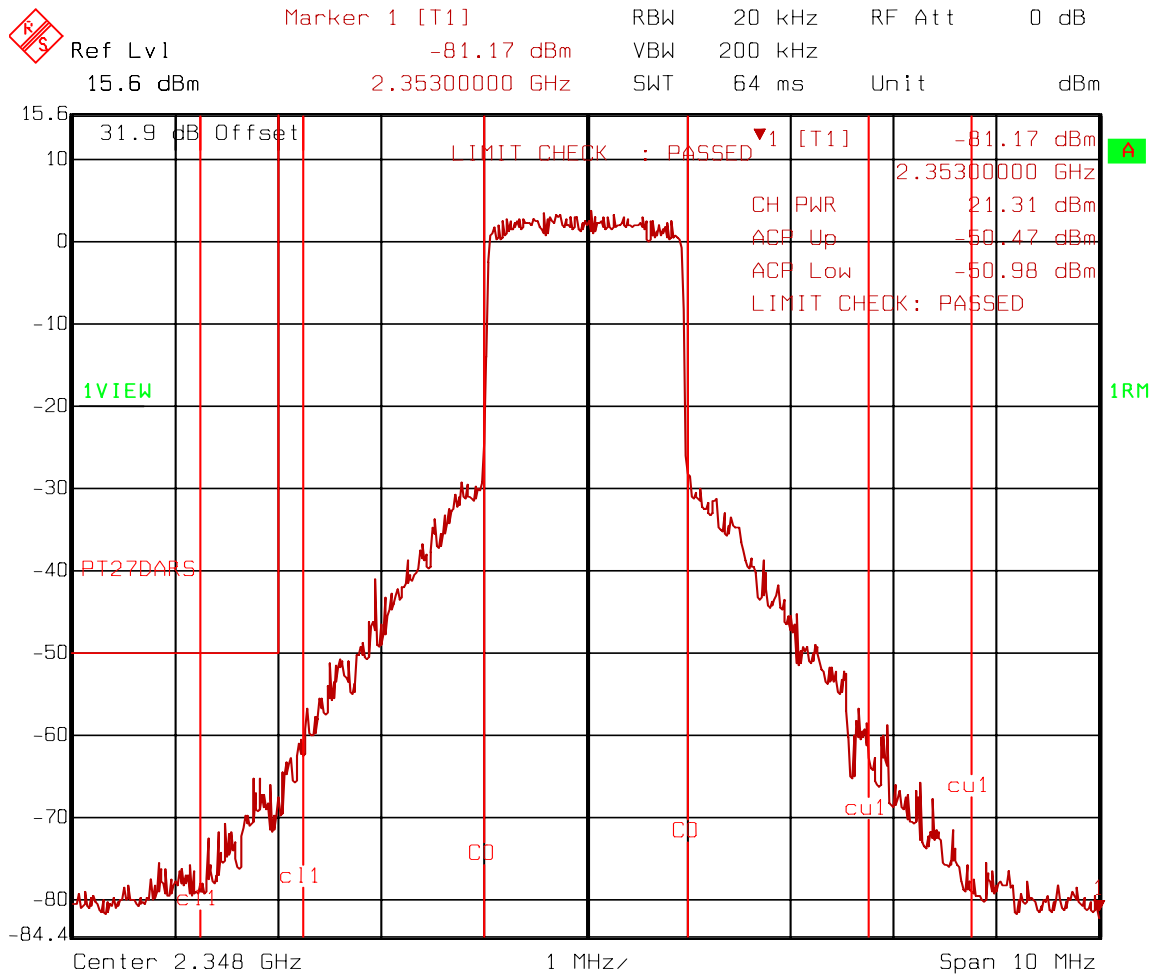
Date: 12.SEP.2005 10:32:06

EQUIPMENT: 2305 - 2360 LMX E

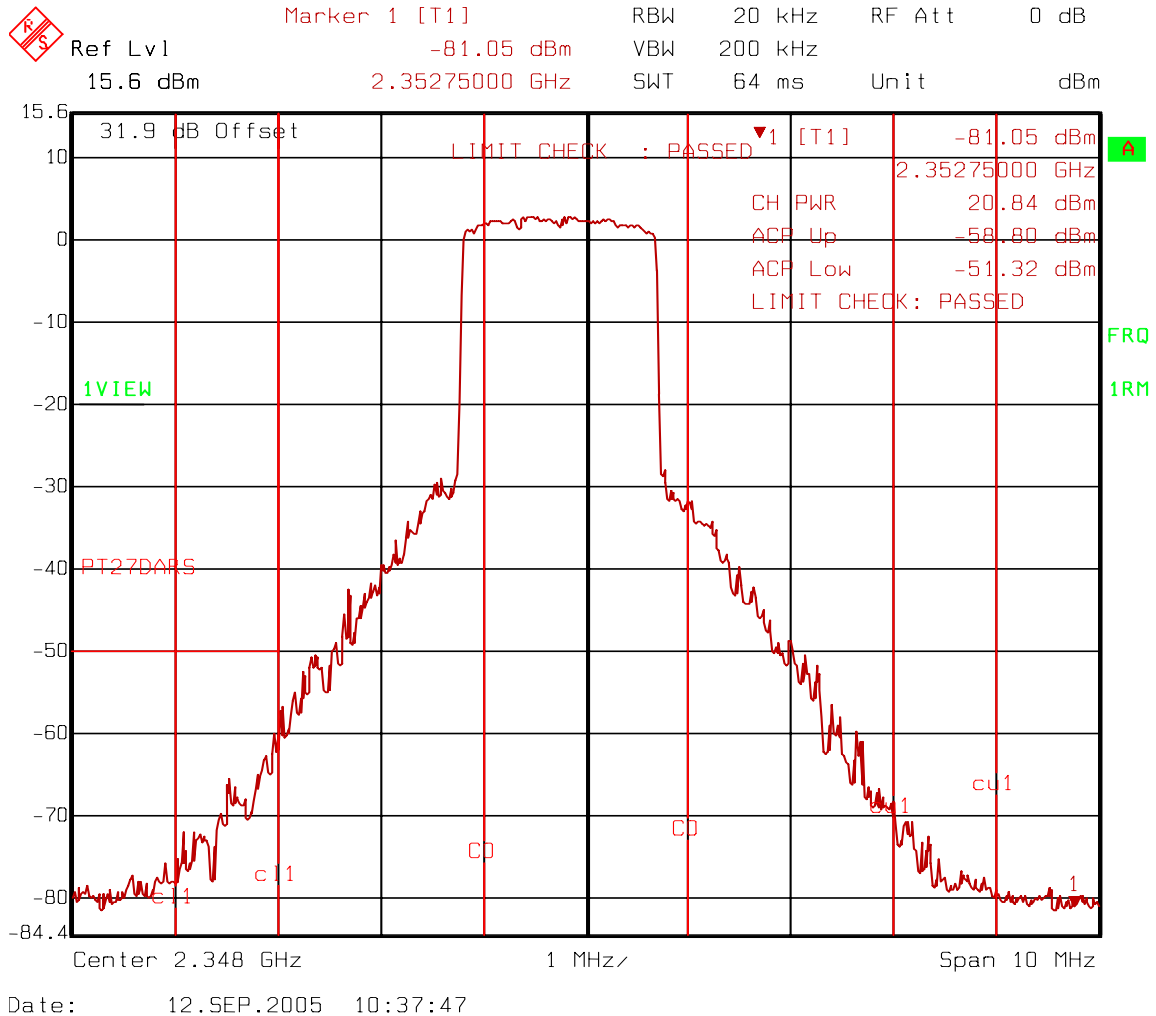
250 KHZ OFFSET



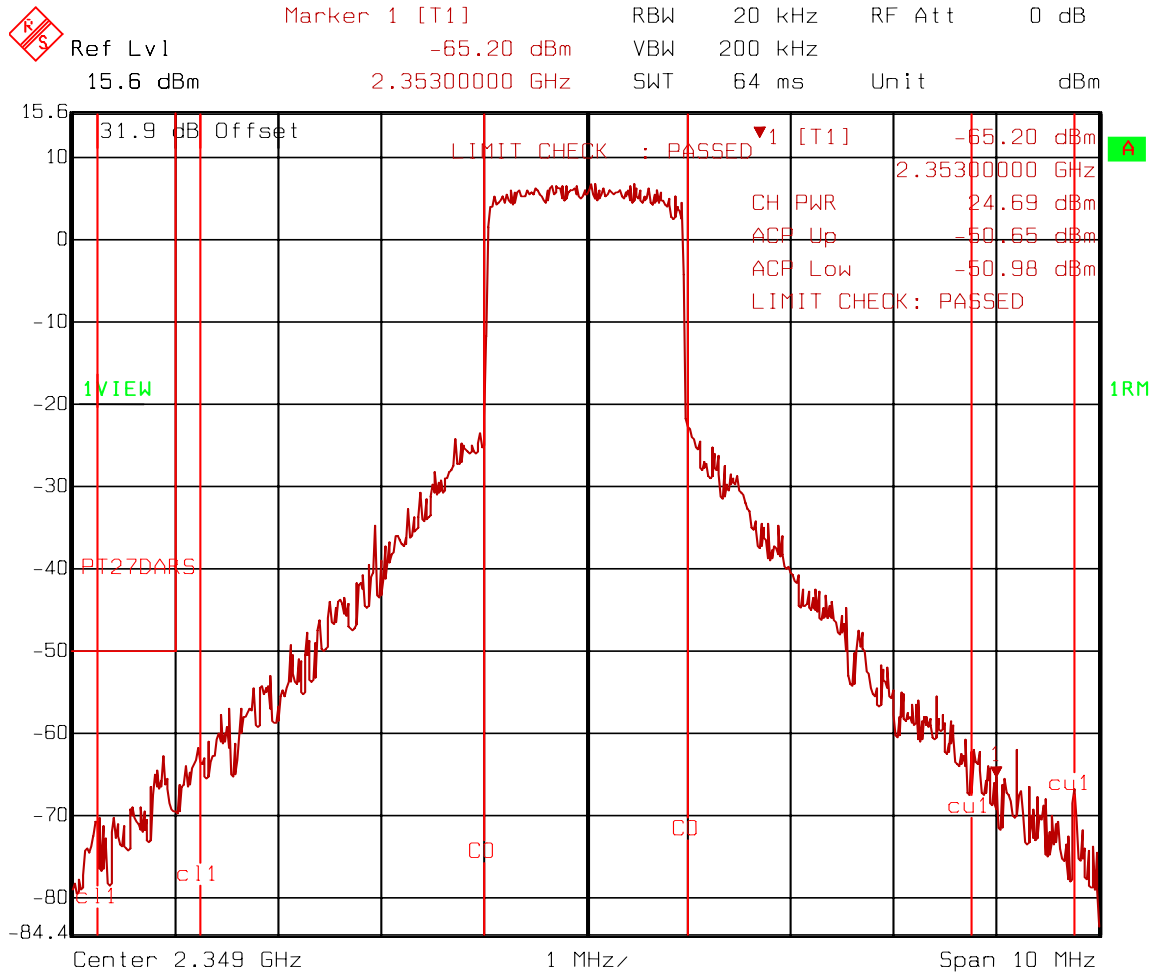
EQUIPMENT: 2305 - 2360 LMX E

D Band, Navini Mode, 6-Carrier System22dBm, 1.75MHz Guard Band from DARS
2348MHz, GC=161, 62degC, CS=3.25MHz, limit < -50dBm/1MHz

Date: 12.SEP.2005 10:36:03



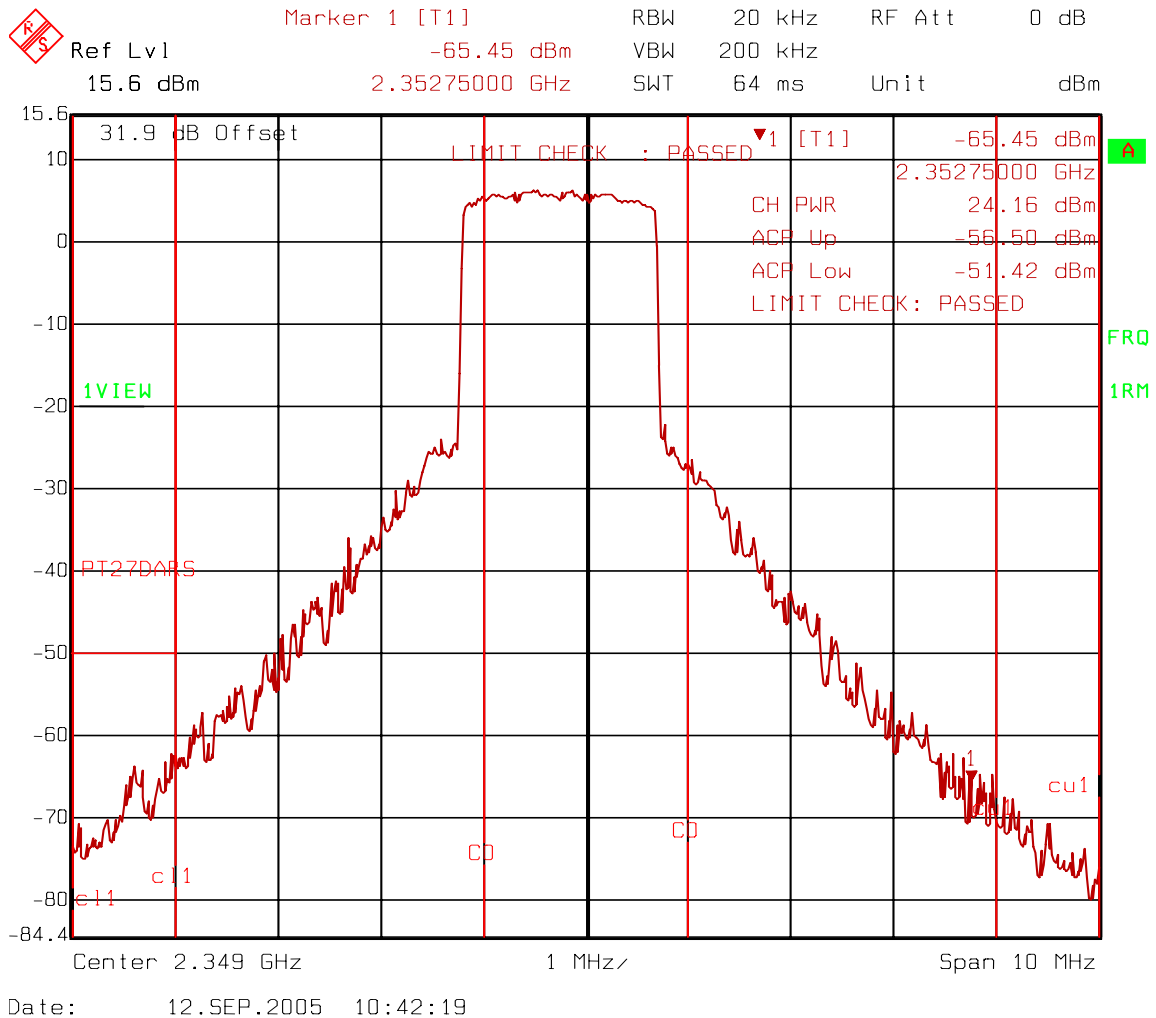
EQUIPMENT: 2305 - 2360 LMX E

D Band, Navini Mode, 6-Carrier System25dBm, 2.75MHz Guard Band from DARS
2349MHz, GC=172, 62degC, CS=4.25MHz, limit < -50dBm/1MHz

Date: 12.SEP.2005 10:40:45

EQUIPMENT: 2305 – 2360 LMX E

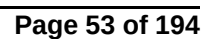
250KHZ FREQ OFFSET



September 9, 2005

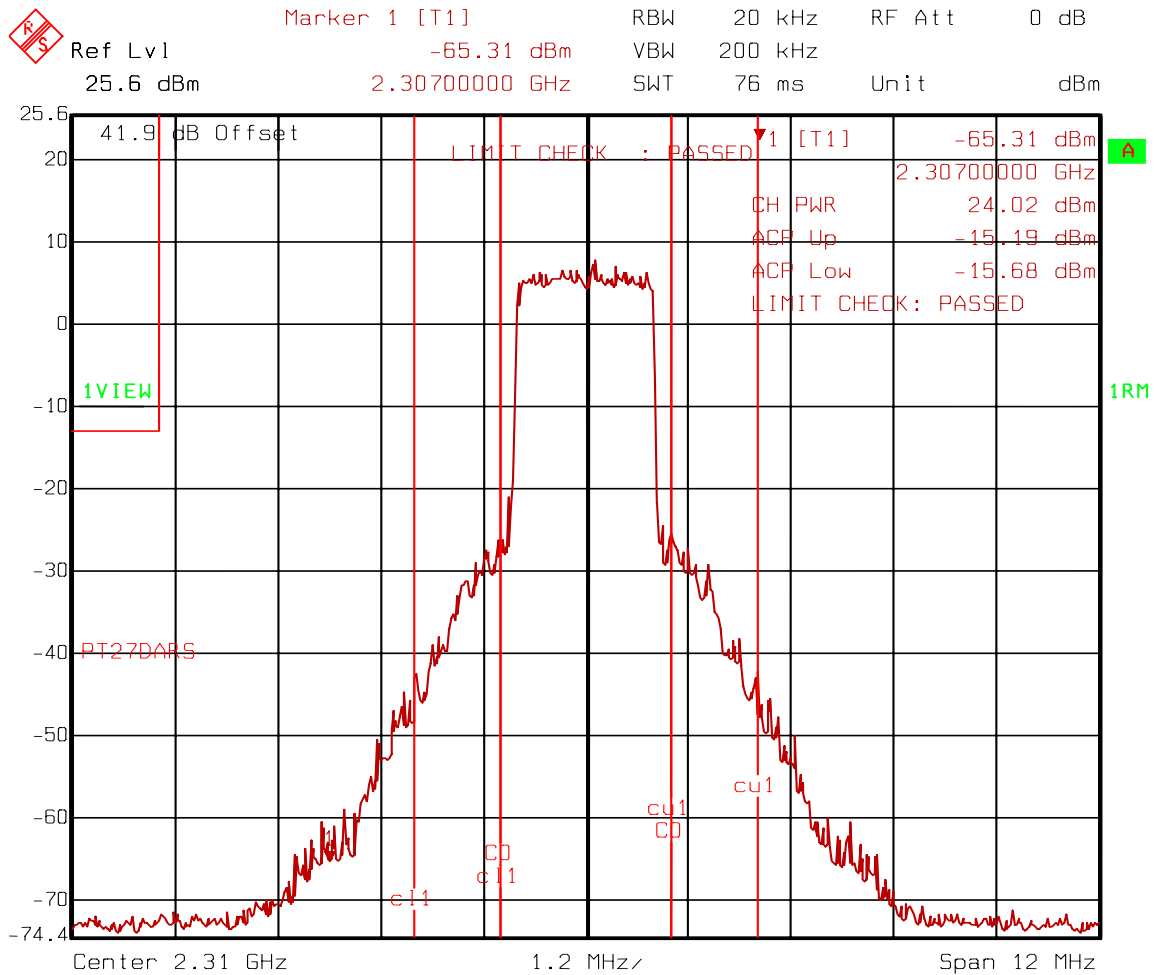
**EQUIPMENT USED 1561, 1562, 1045, 1055, 2072, 2071, 1470,1471,AND
1482.**

24.09dBm
2306MHz, GC=167,



EQUIPMENT: 2305 - 2360 LMX E

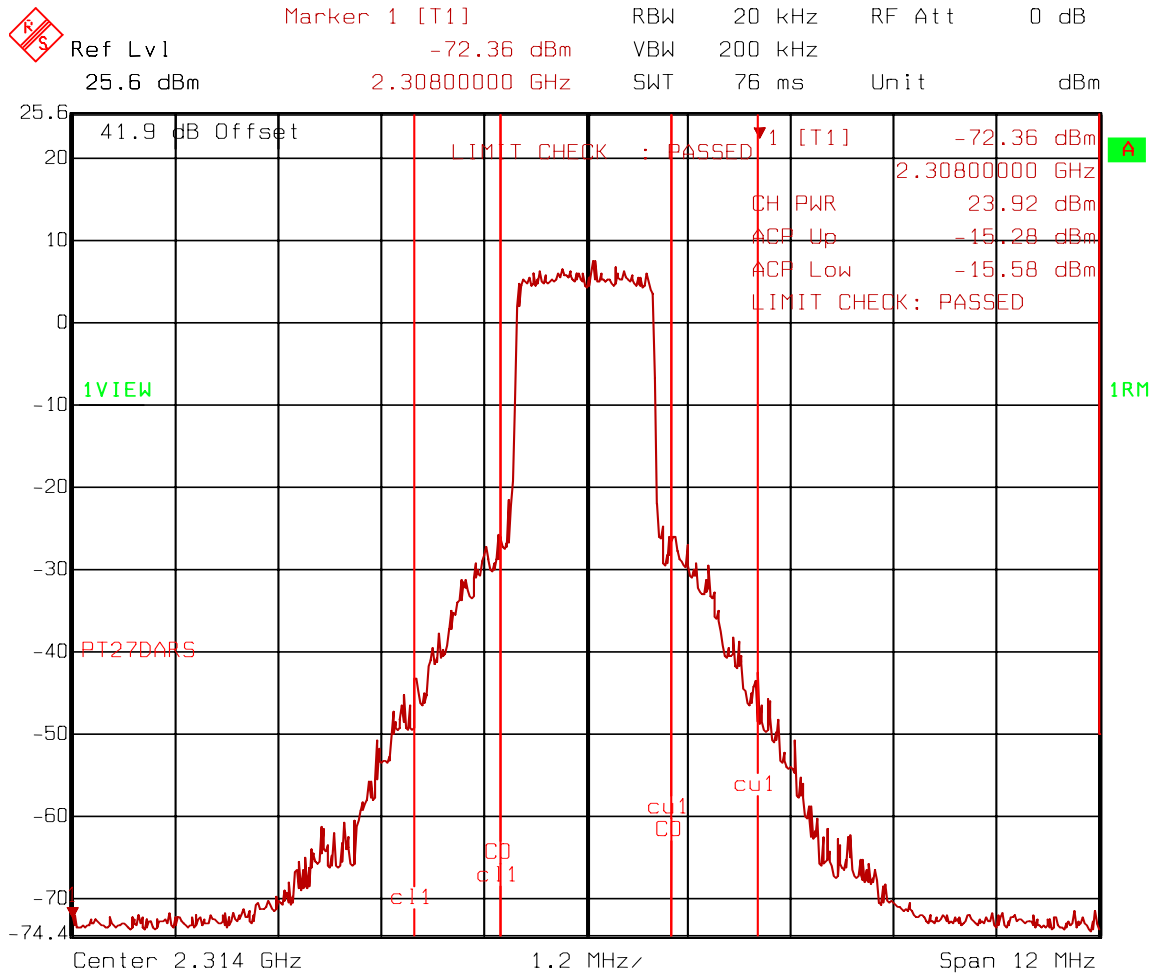
A & B Low Bands, 802.16e Mode

24.2dBm
2310MHz, GC=172

Date: 09.SEP.2005 10:55:52

EQUIPMENT: 2305 - 2360 LMX E

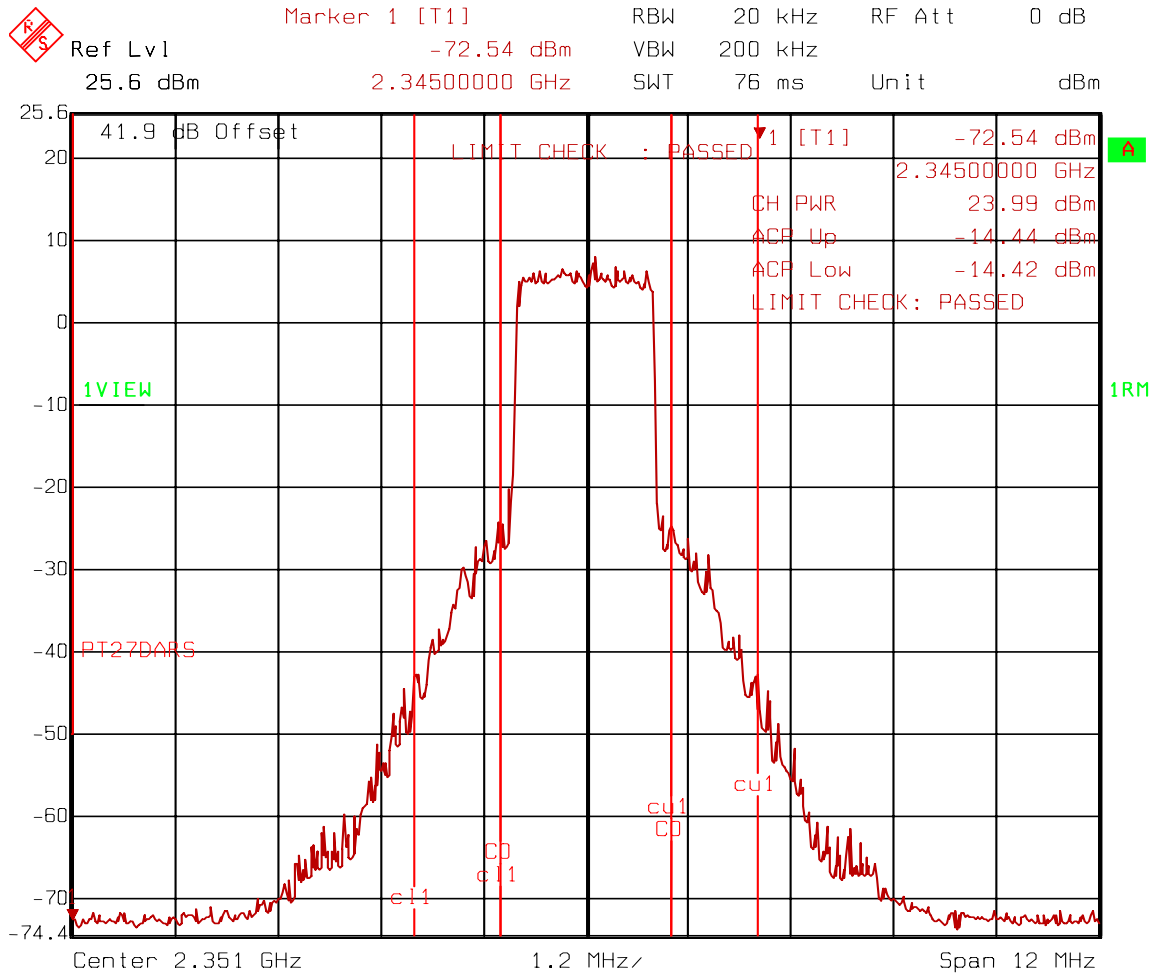
A & B Low Bands, 802.16e Mode

24.16dBm
2314MHz, GC=171

Date: 09.SEP.2005 11:01:40

EQUIPMENT: 2305 - 2360 LMX E

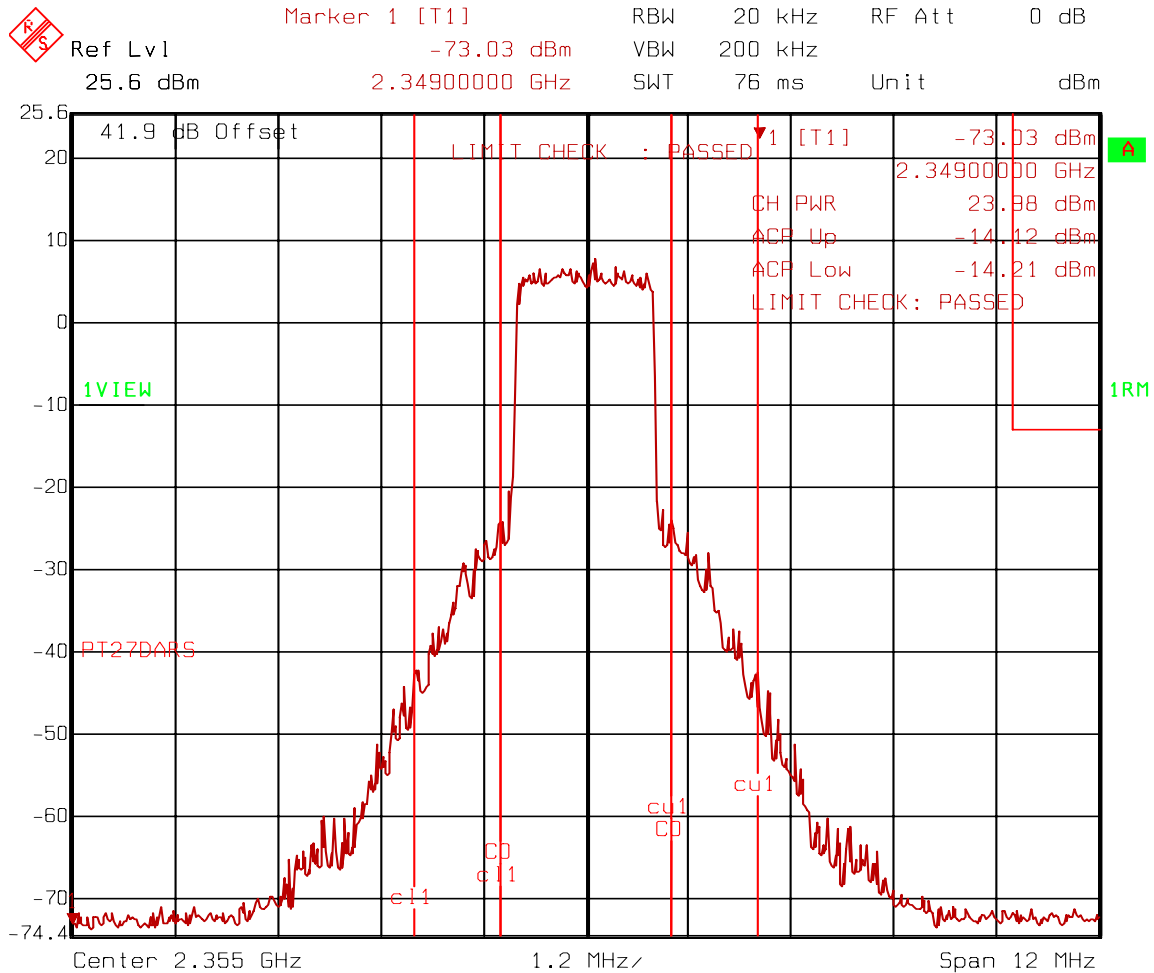
A & B High Bands, 802.16e Mode

24.3dBm
2351MHz, GC=175

Date: 09.SEP.2005 11:04:23

EQUIPMENT: 2305 - 2360 LMX E

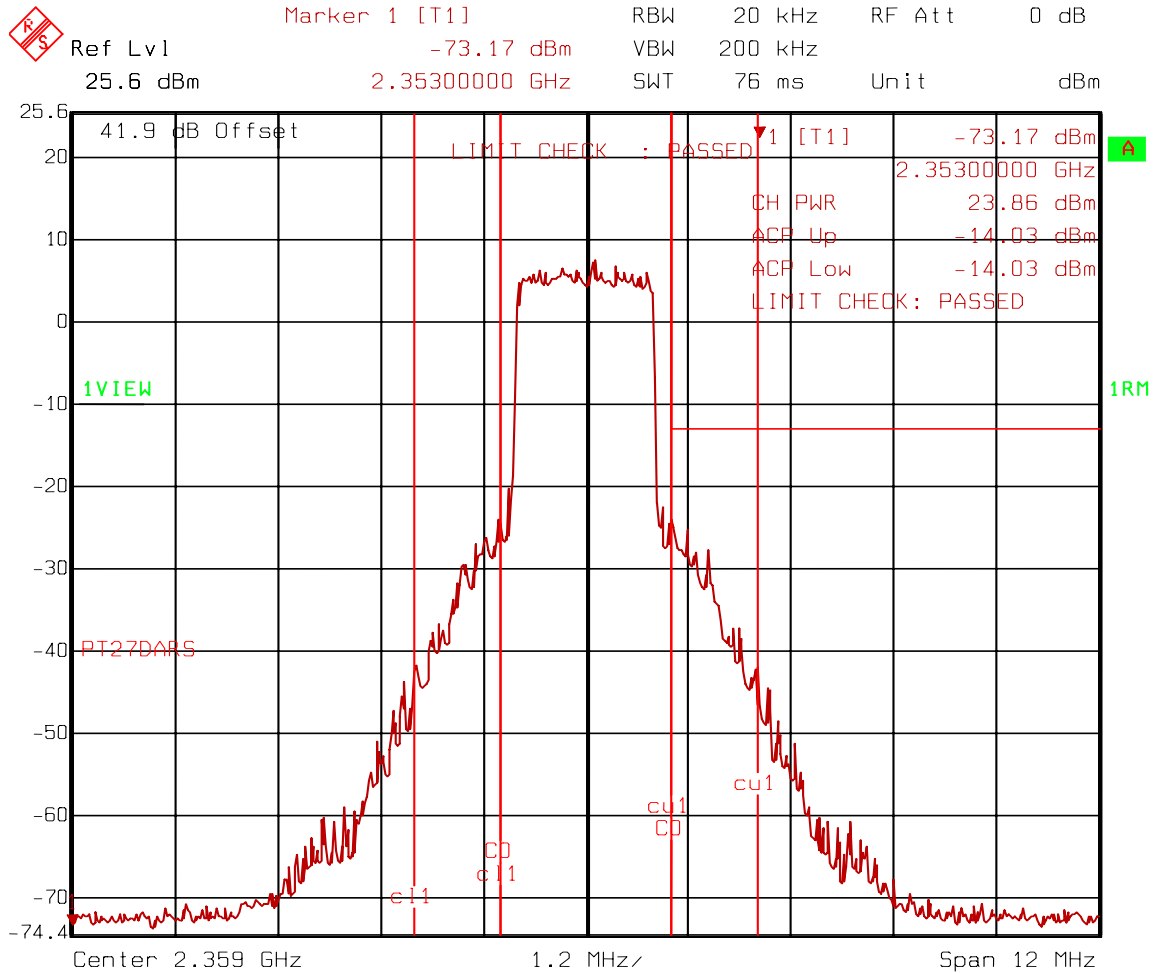
A & B High Bands, 802.16e Mode

24.3dBm
2355MHz, GC=175

Date: 09.SEP.2005 11:11:26

EQUIPMENT: 2305 - 2360 LMX E

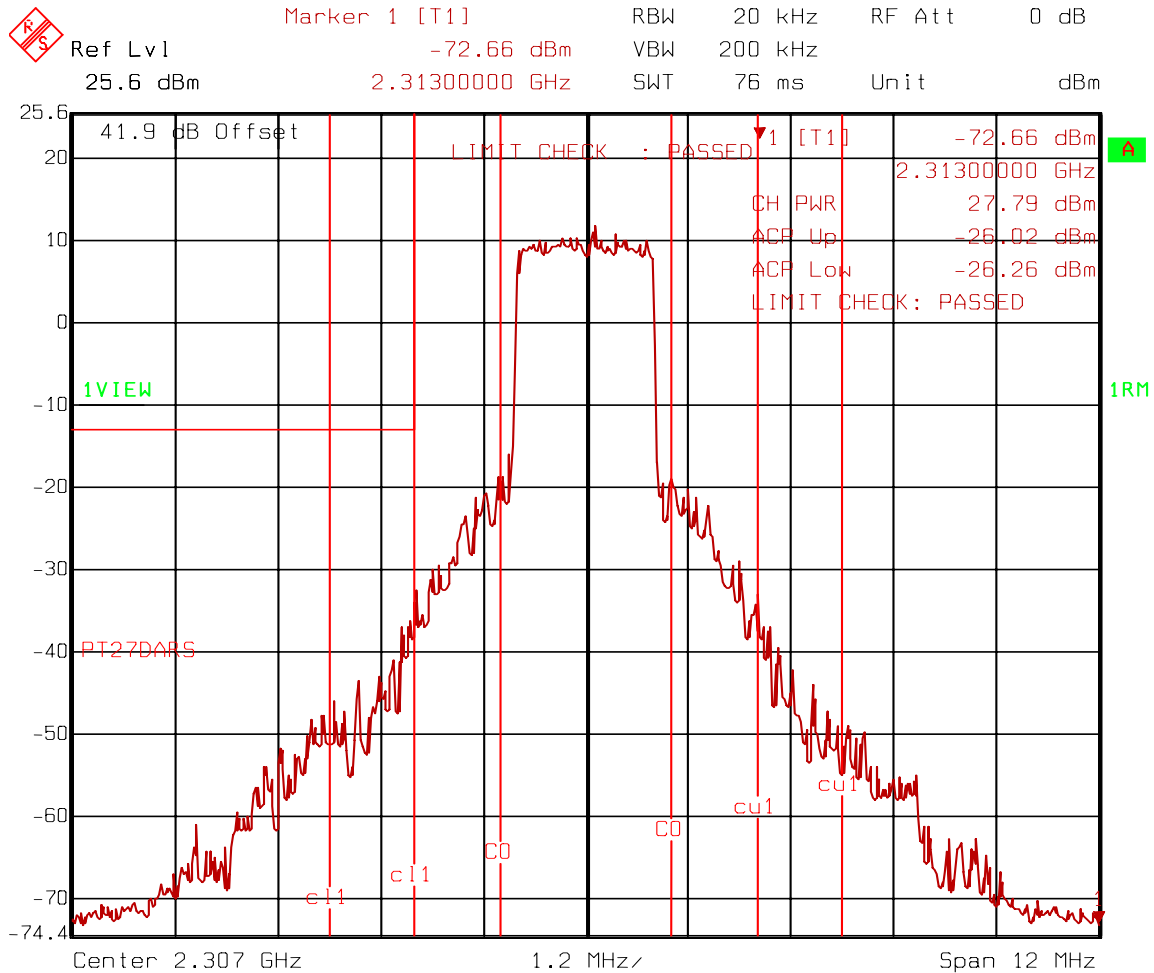
A & B High Bands, 802.16e Mode

24.2dBm
2359MHz, GC=177

Date: 09.SEP.2005 11:13:58

EQUIPMENT: 2305 - 2360 LMX E

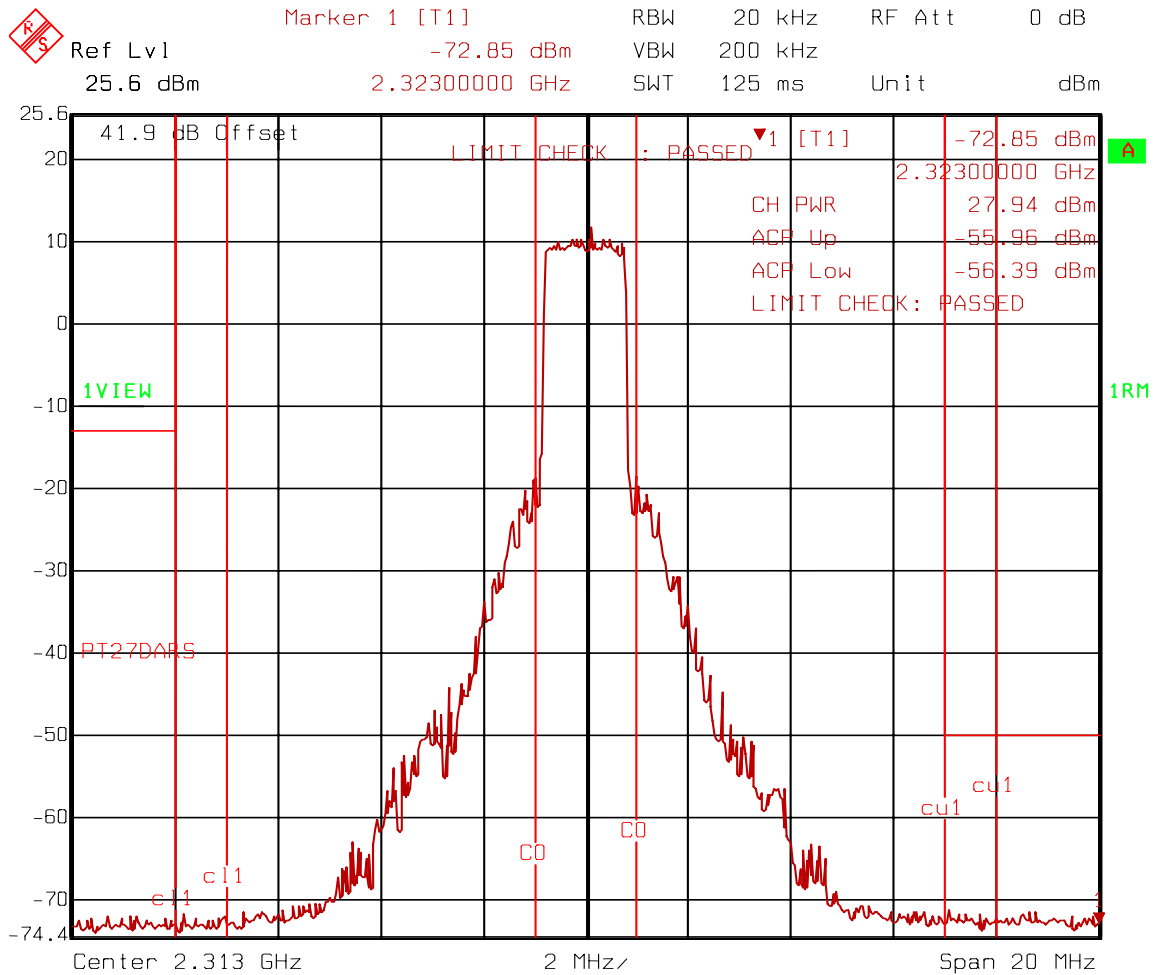
A & B Low Bands, 802.16e Mode

28.05dBm
2307MHz, GC=193

Date: 09.SEP.2005 11:21:13

EQUIPMENT: 2305 - 2360 LMX E

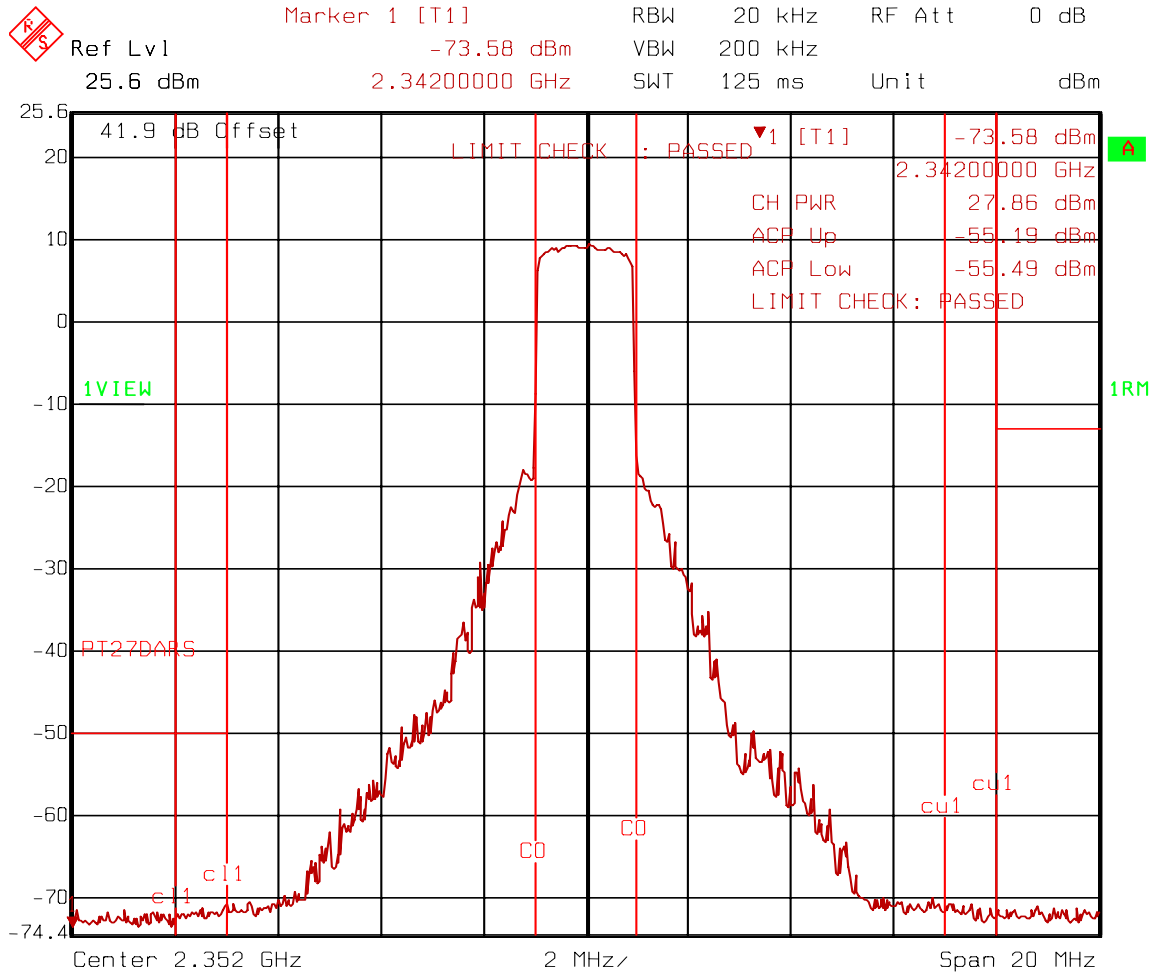
A & B Low Bands, 802.16e Mode

28.18dBm
2313MHz, GC=192

Date: 09.SEP.2005 12:34:18

EQUIPMENT: 2305 - 2360 LMX E

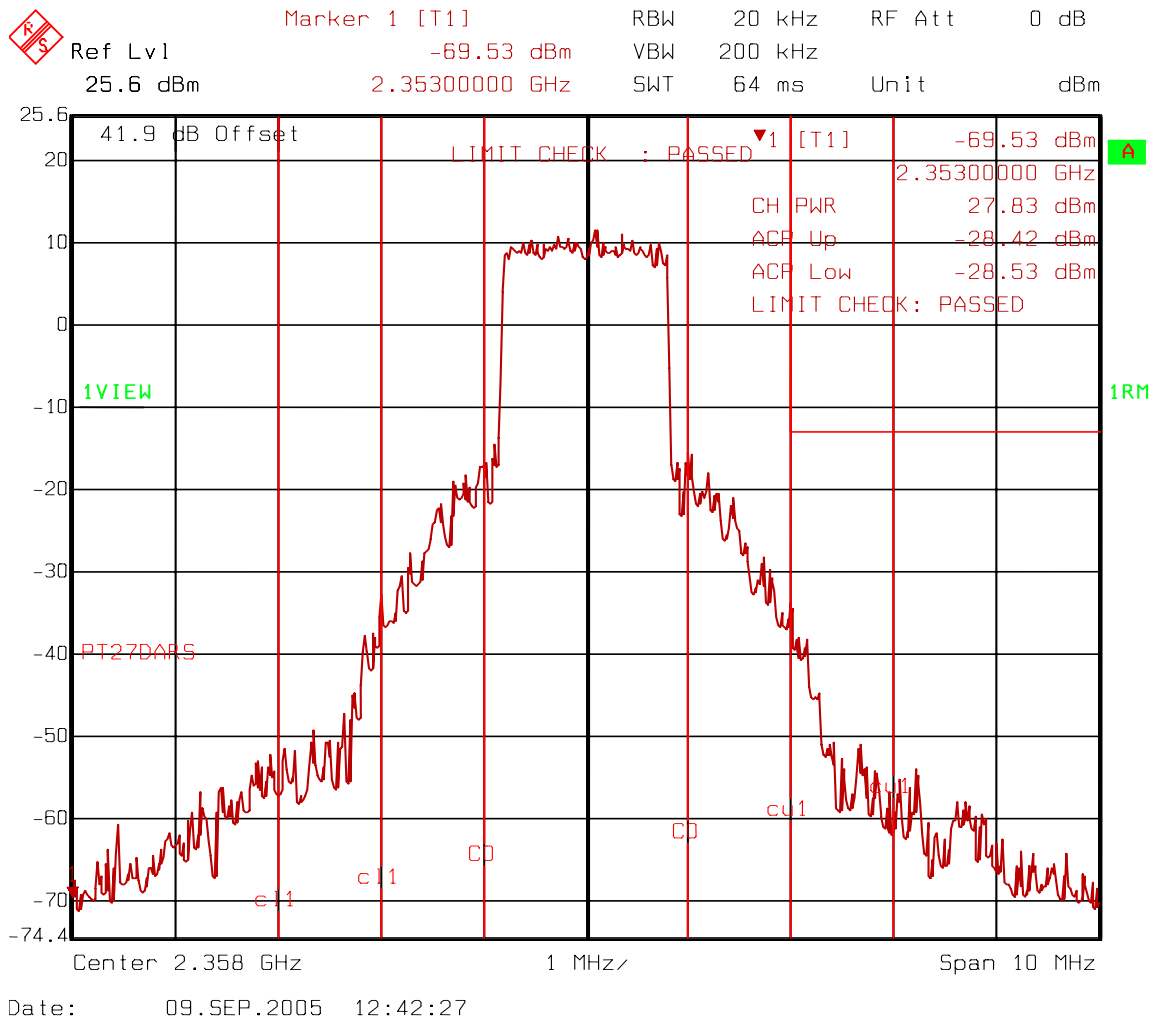
A & B High Bands, 802.16e Mode

28dBm
2352MHz, GC=193

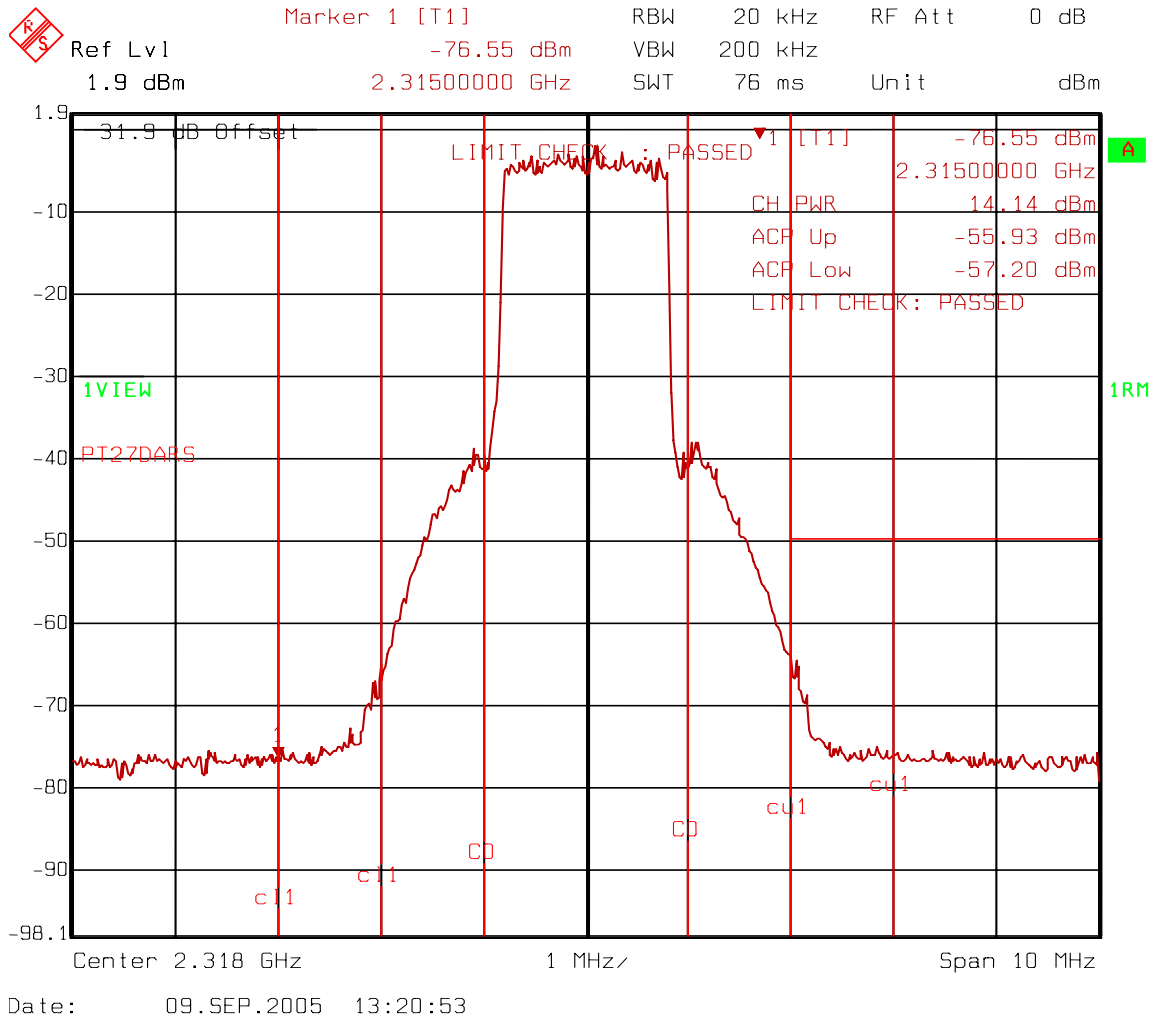
Date: 09.SEP.2005 12:29:35

EQUIPMENT: 2305 - 2360 LMX E

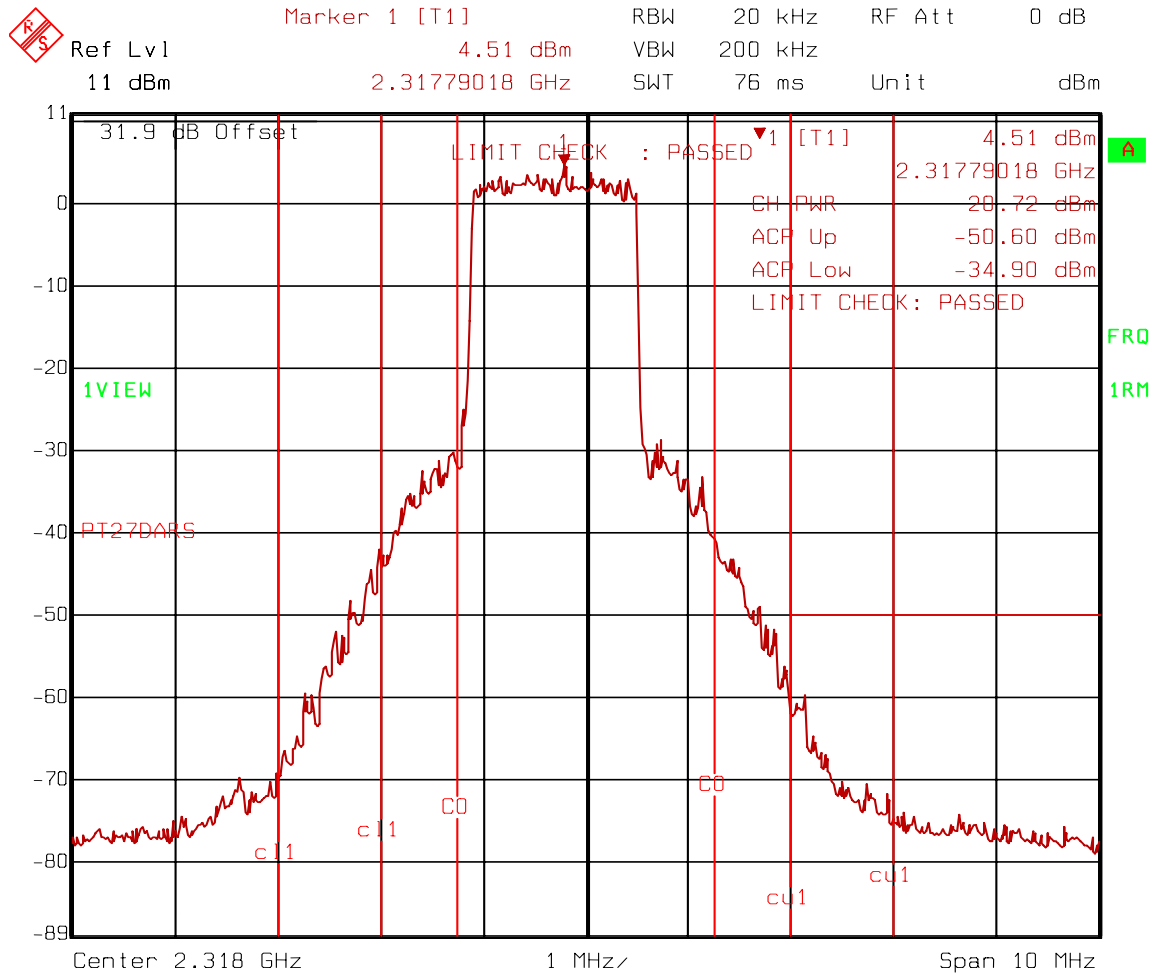
A & B High Bands, 802.16e Mode

28.17dBm
2358MHz, GC=192

EQUIPMENT: 2305 - 2360 LMX E

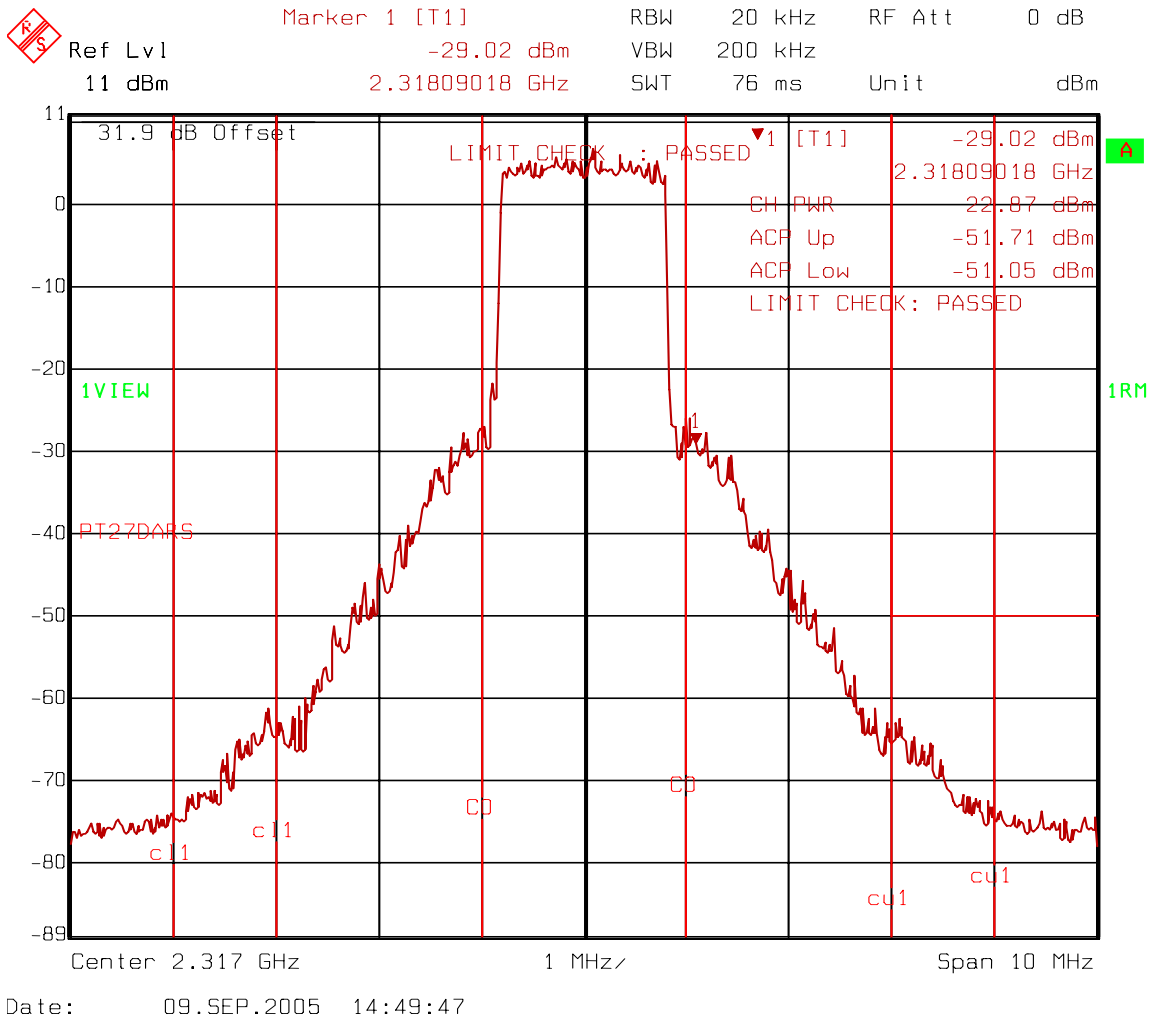
**C Band, 802.16e Mode, 2 x 1.6MHz OFDM + extra 0.7MHz OFDM
System****14.5dBm, 1MHz Guard Band from DARS
2318MHz, GC=143**

EQUIPMENT: 2305 - 2360 LMX E

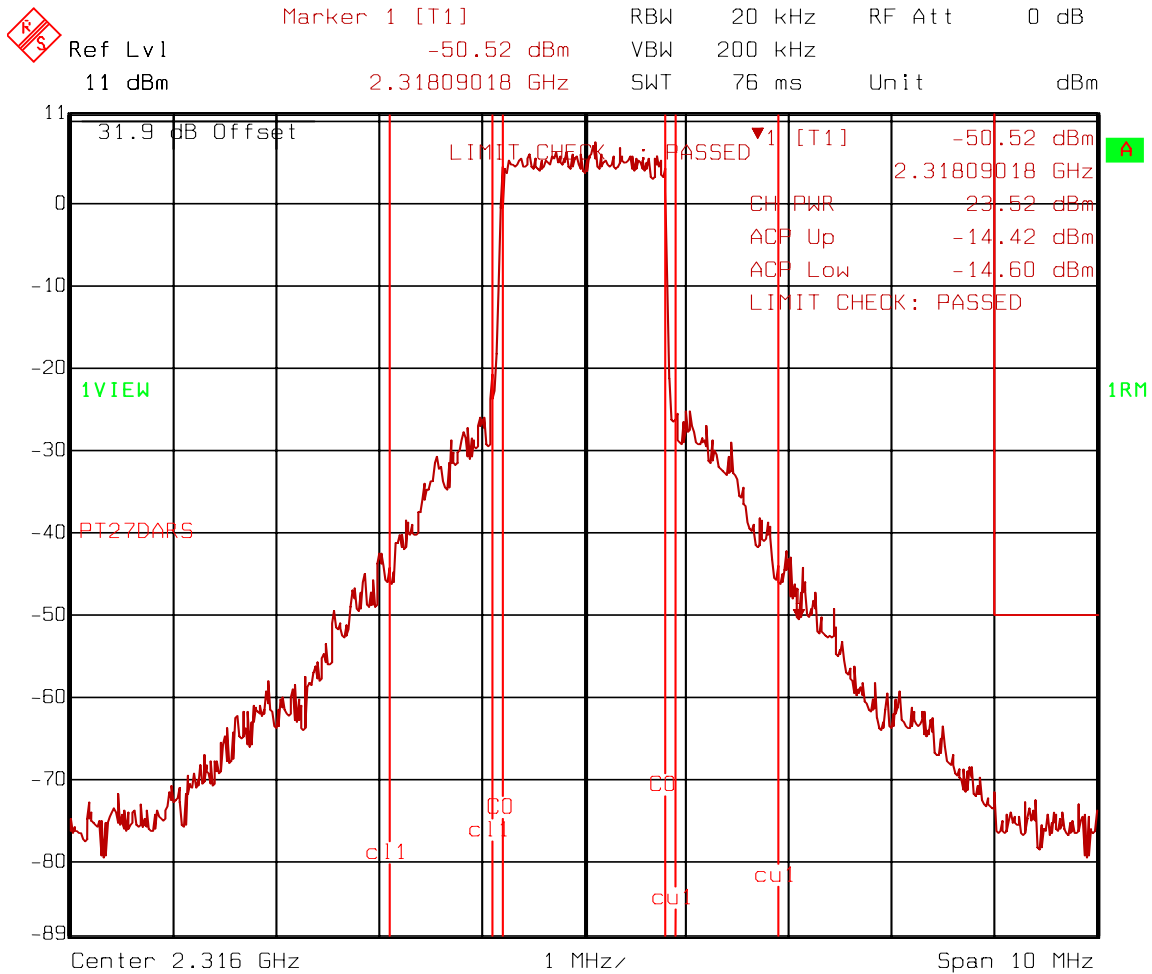
**C Band, 802.16e Mode, 2 x 1.6MHz OFDM + extra 0.7MHz OFDM
System**21.2dBm, 1.5MHz Guard Band from DARS
2318MHz, GC=157, 62degC, CS=2.5MHz, limit < -50dBm/1MHz
300kHz FREQ SHIFT USED

Date: 09.SEP.2005 14:45:36

EQUIPMENT: 2305 - 2360 LMX E

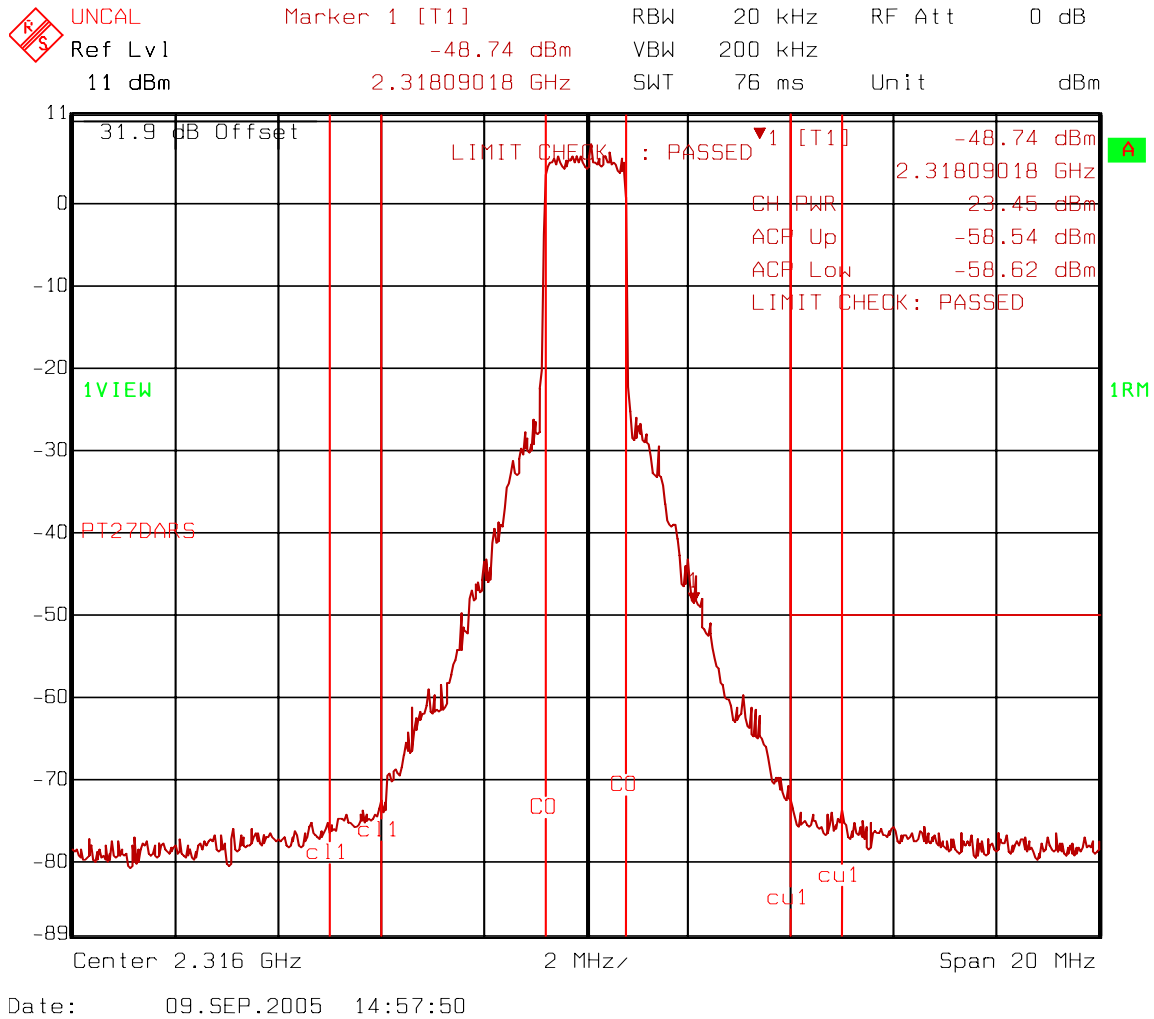
**C Band, 802.16e Mode, 2 x 1.6MHz OFDM + extra 0.7MHz OFDM
System**23.2dBm, 2MHz Guard Band from DARS
2317MHz, GC=168 limit < -50dBm/1MHz

EQUIPMENT: 2305 - 2360 LMX E

**C Band, 802.16e Mode, 2 x 1.6MHz OFDM + extra 0.7MHz OFDM
System****24dBm, 0.1MHz Guard Band from Adjacent Band
(3.3MHz Guard Band from DARS)****2316MHz, GC=166, 62degC, CS=1.4MHz, limit < -13dBm/1MHz**

Date: 09.SEP.2005 14:55:13

EQUIPMENT: 2305 - 2360 LMX E

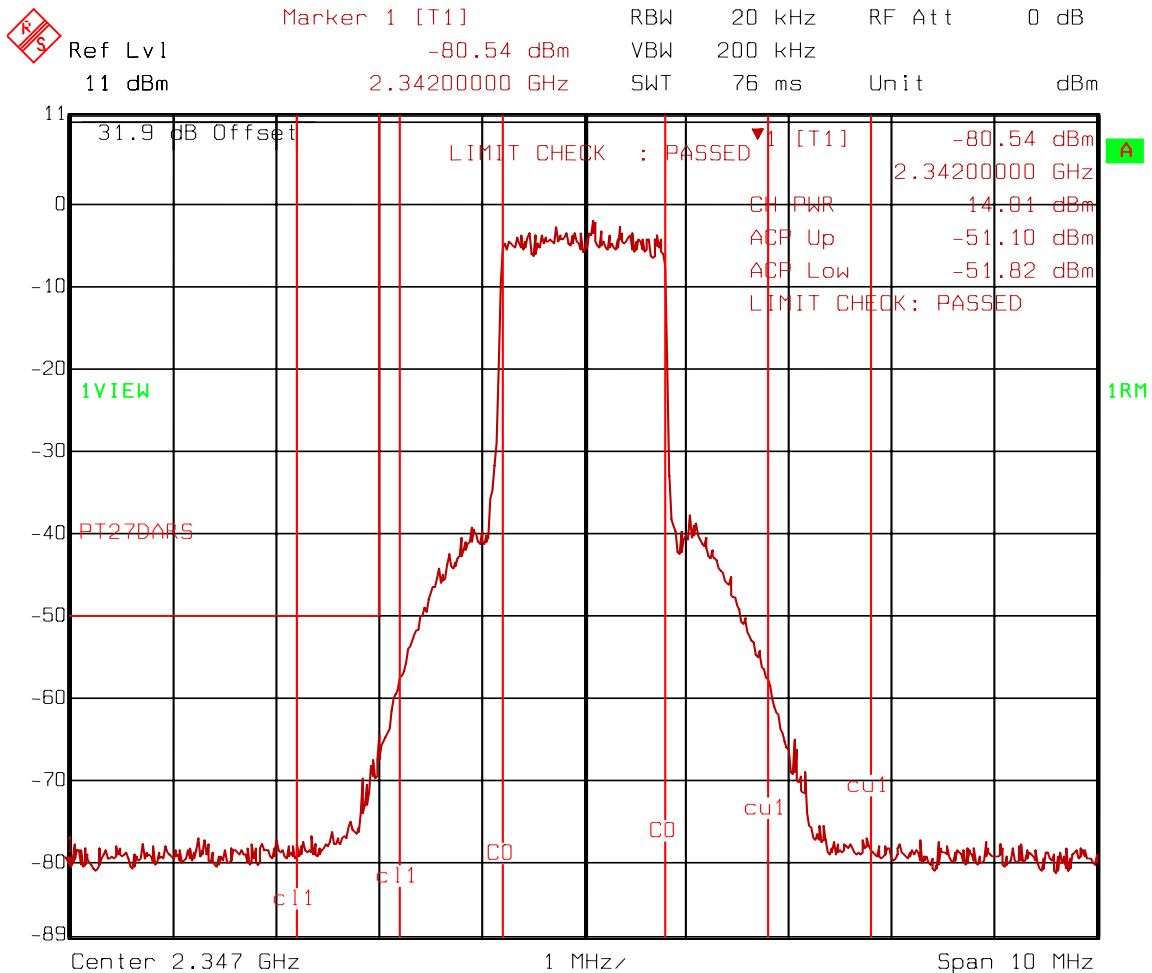
**C Band, 802.16e Mode, 2 x 1.6MHz OFDM + extra 0.7MHz OFDM
System**24dBm, 0.1MHz Guard Band from Adjacent Band
(3.3MHz Guard Band from DARS)
2316MHz, GC=172, limit < -50dBm/1MHz

EQUIPMENT: 2305 - 2360 LMX E

**D Band, 802.16e Mode, 2 x 1.6MHz OFDM + extra 0.7MHz OFDM
System**

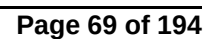
14dBm, 1MHz Guard Band from DARS

2347MHz, GC=138 (Low Current Mode), 62degC, CS=2.3MHz, limit < -50dBm/1MHz

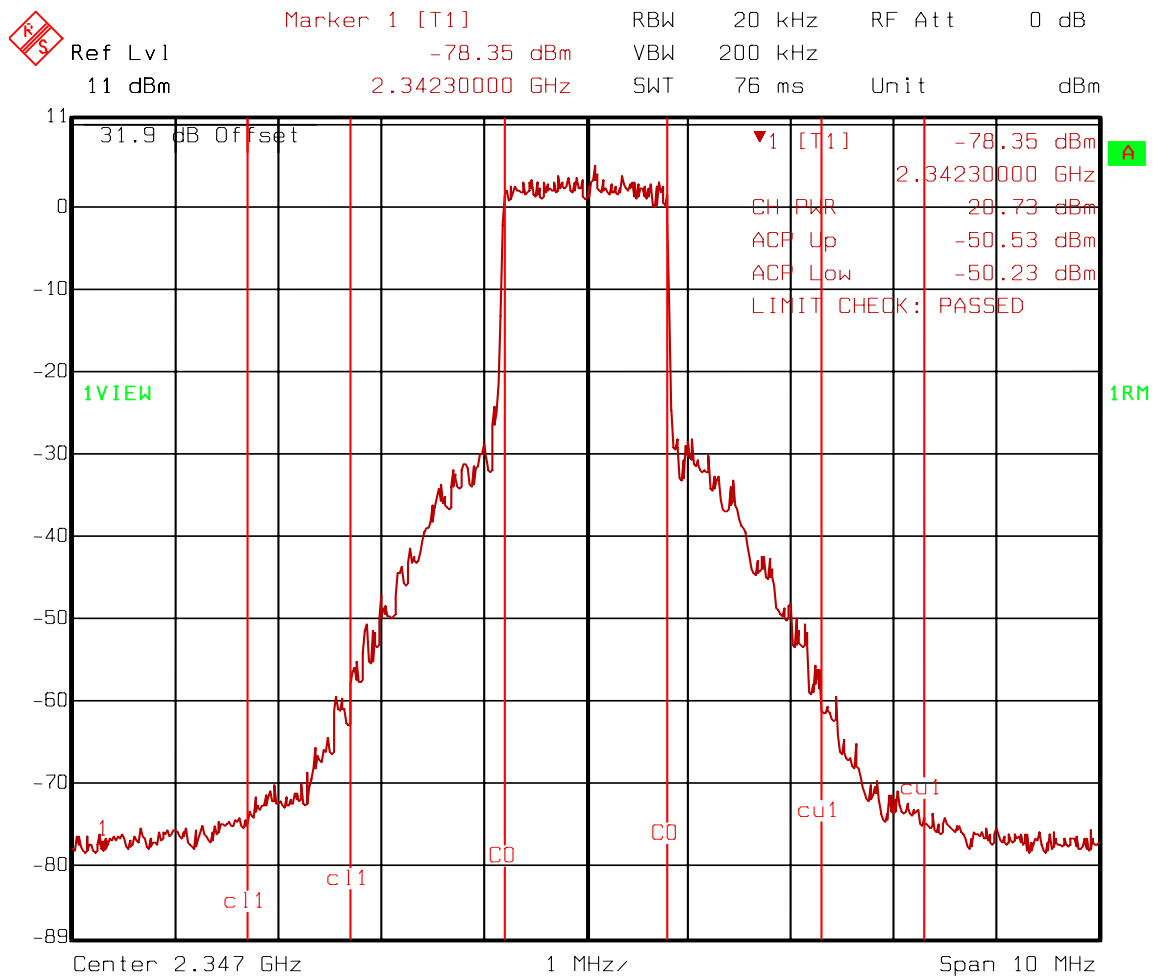


Date: 12.SEP.2005 08:29:50

using a 300khz frq offset

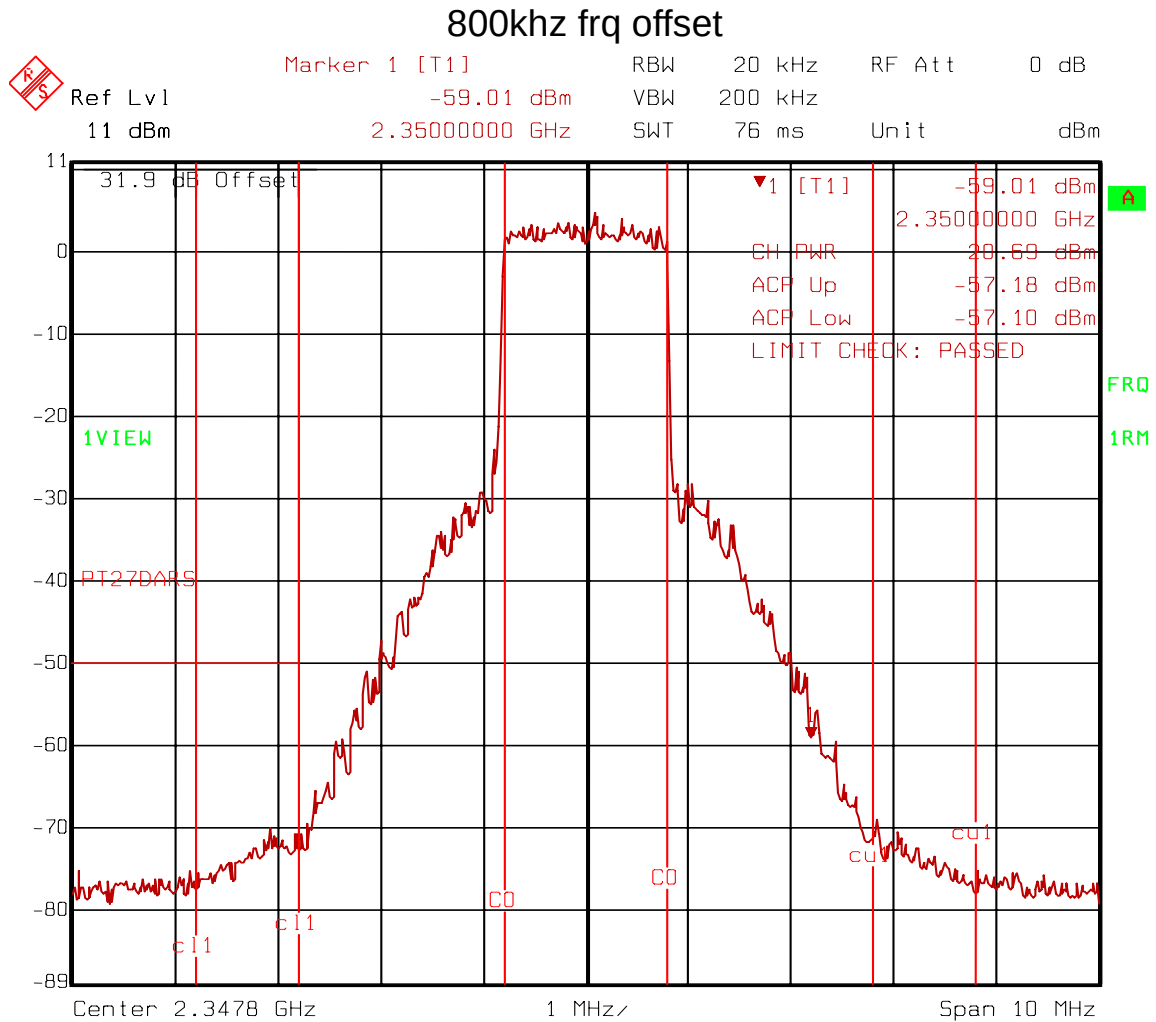


EQUIPMENT: 2305 - 2360 LMX E

**D Band, 802.16e Mode, 2 x 1.6MHz OFDM + extra 0.7MHz OFDM
System**21.4dBm, 1.5MHz Guard Band from DARS
2347MHz, GC=162, CS=2.8MHz, limit < -50dBm/1MHz

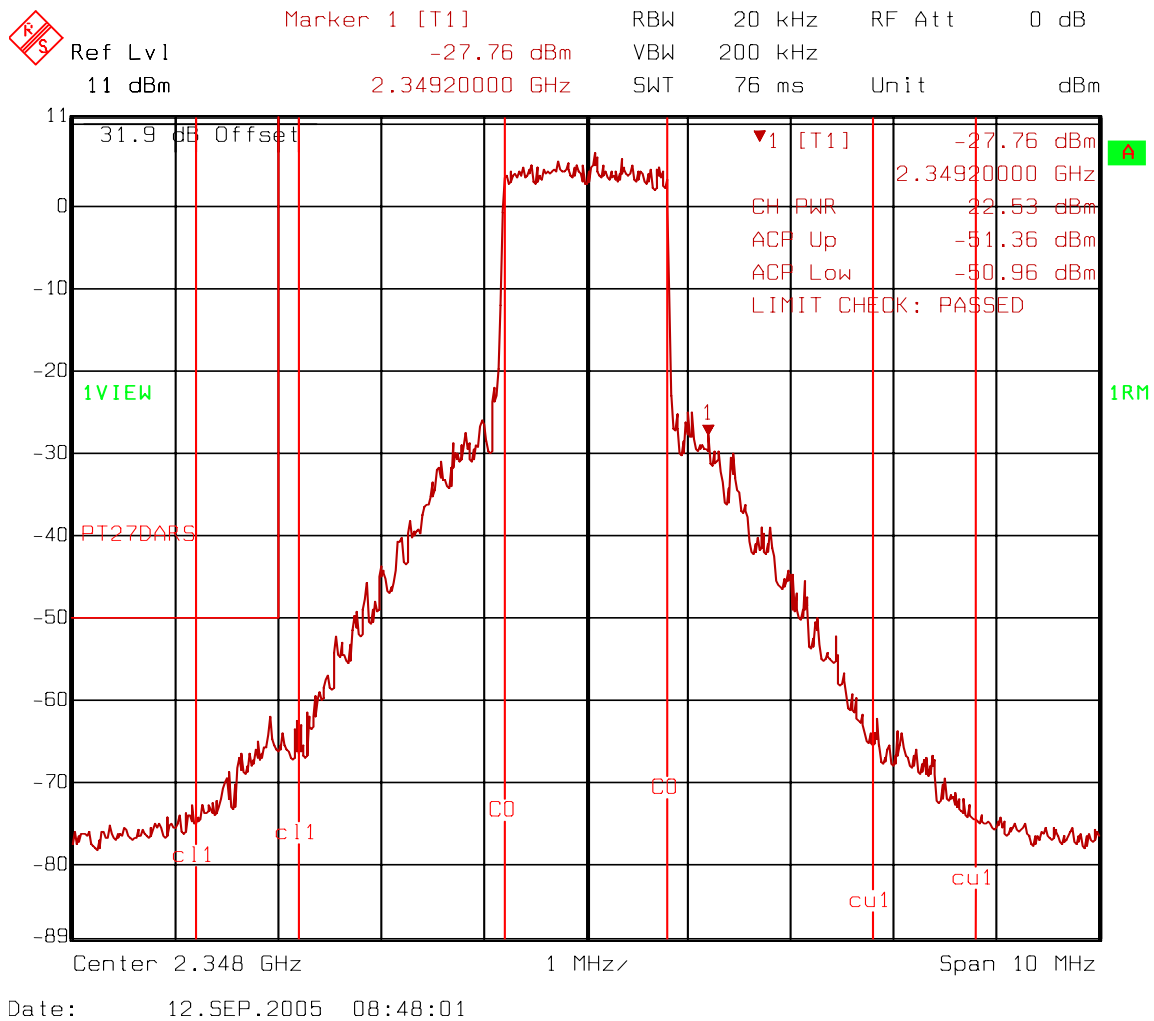
Date: 12.SEP.2005 08:40:21

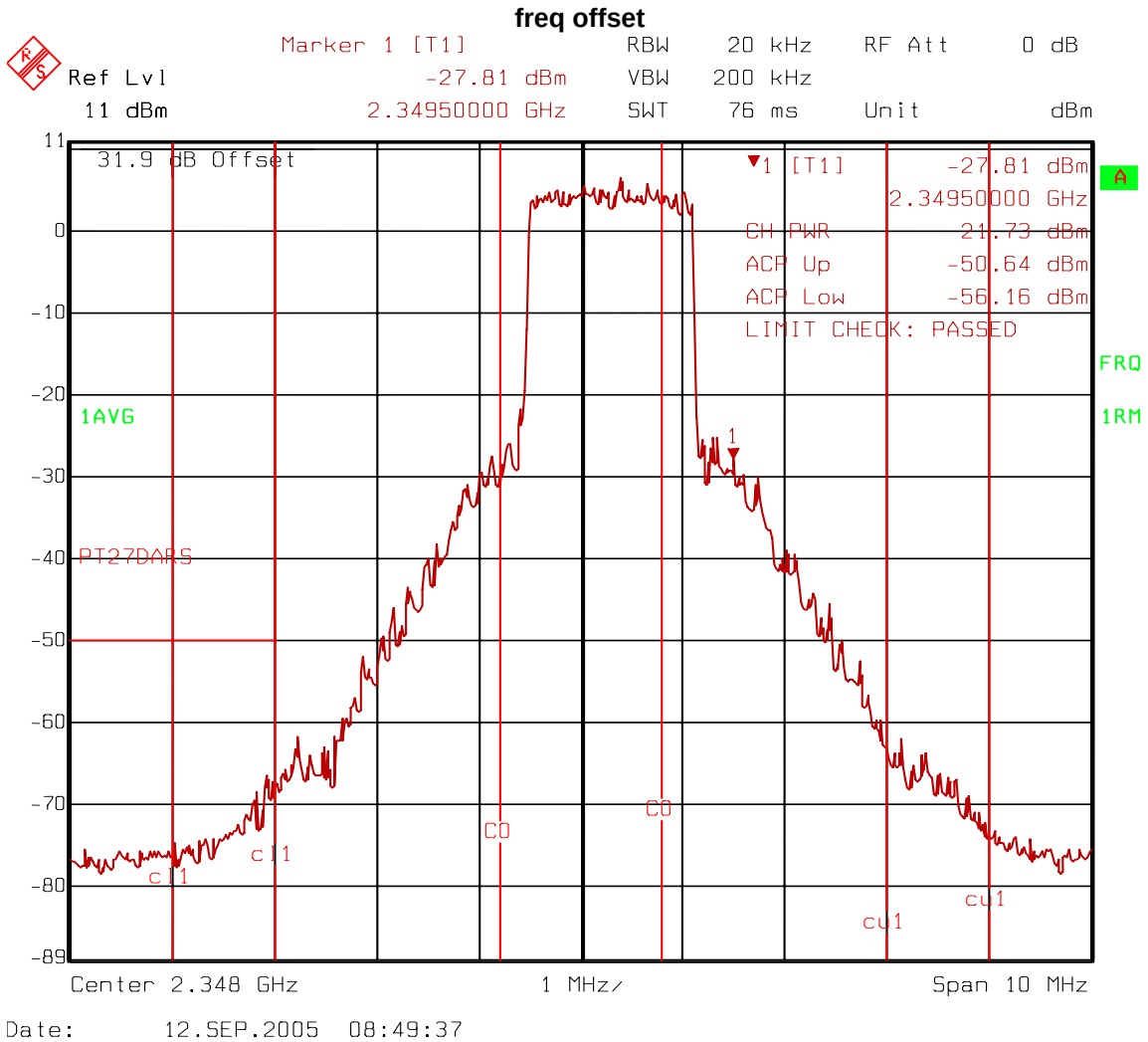
EQUIPMENT: 2305 - 2360 LMX E



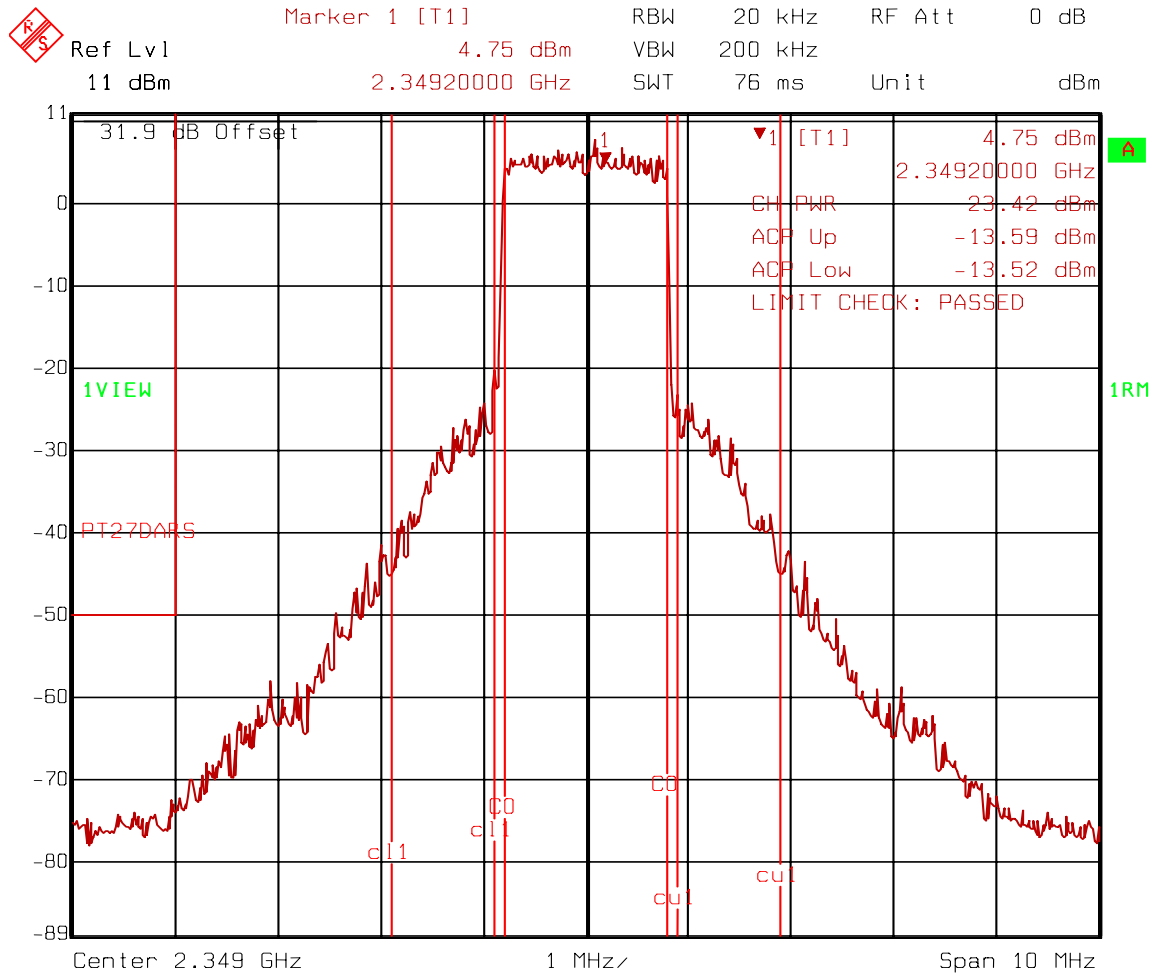
Date: 12.SEP.2005 08:45:16

EQUIPMENT: 2305 - 2360 LMX E

**D Band, 802.16e Mode, 2 x 1.6MHz OFDM + extra 0.7MHz OFDM
System**23dBm, 2MHz Guard Band from DARS
2348MHz, GC=165, 62degC, CS=3.3MHz, limit < -50dBm/1MHz

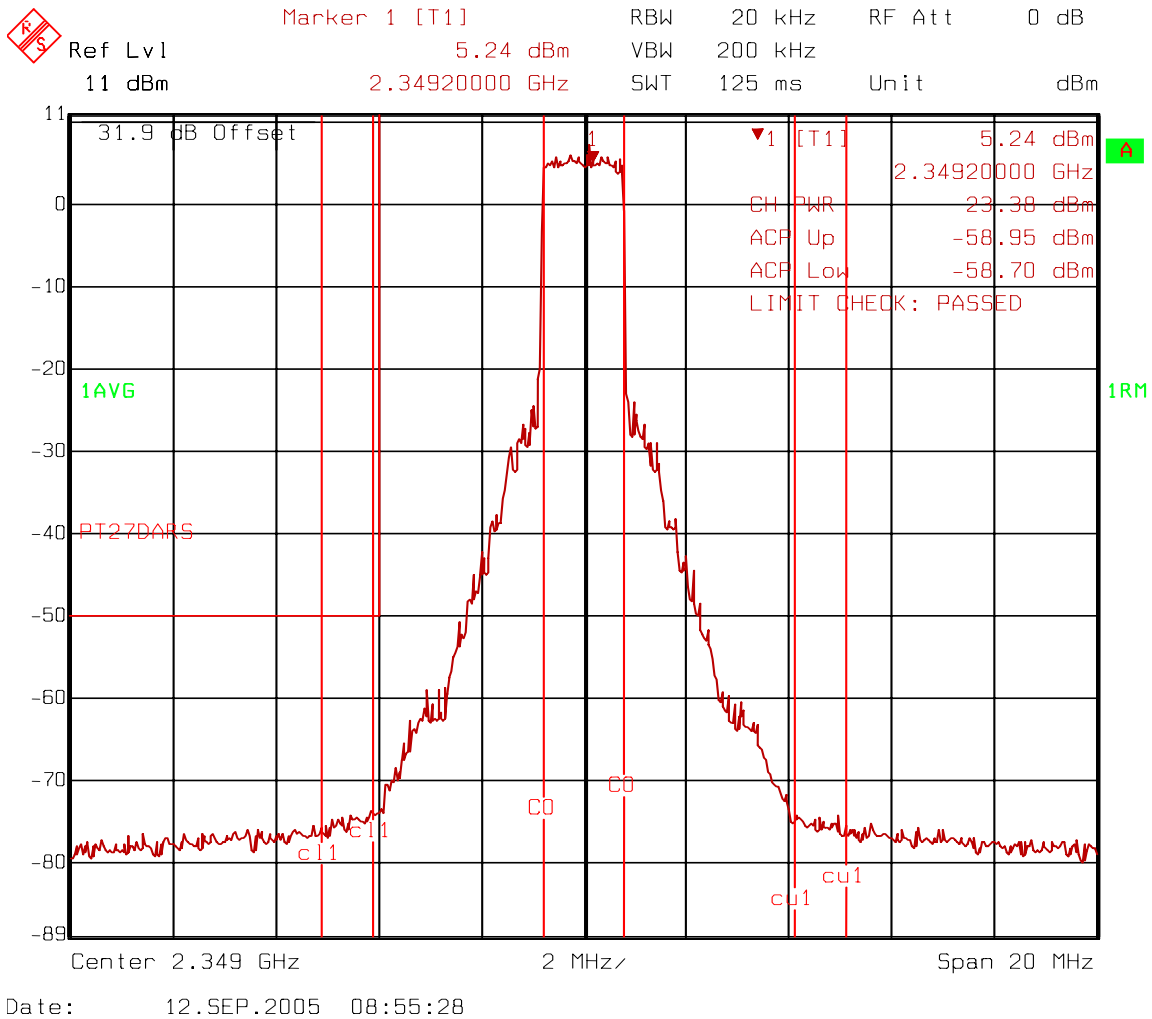
EQUIPMENT: 2305 - 2360 LMX E

EQUIPMENT: 2305 - 2360 LMX E

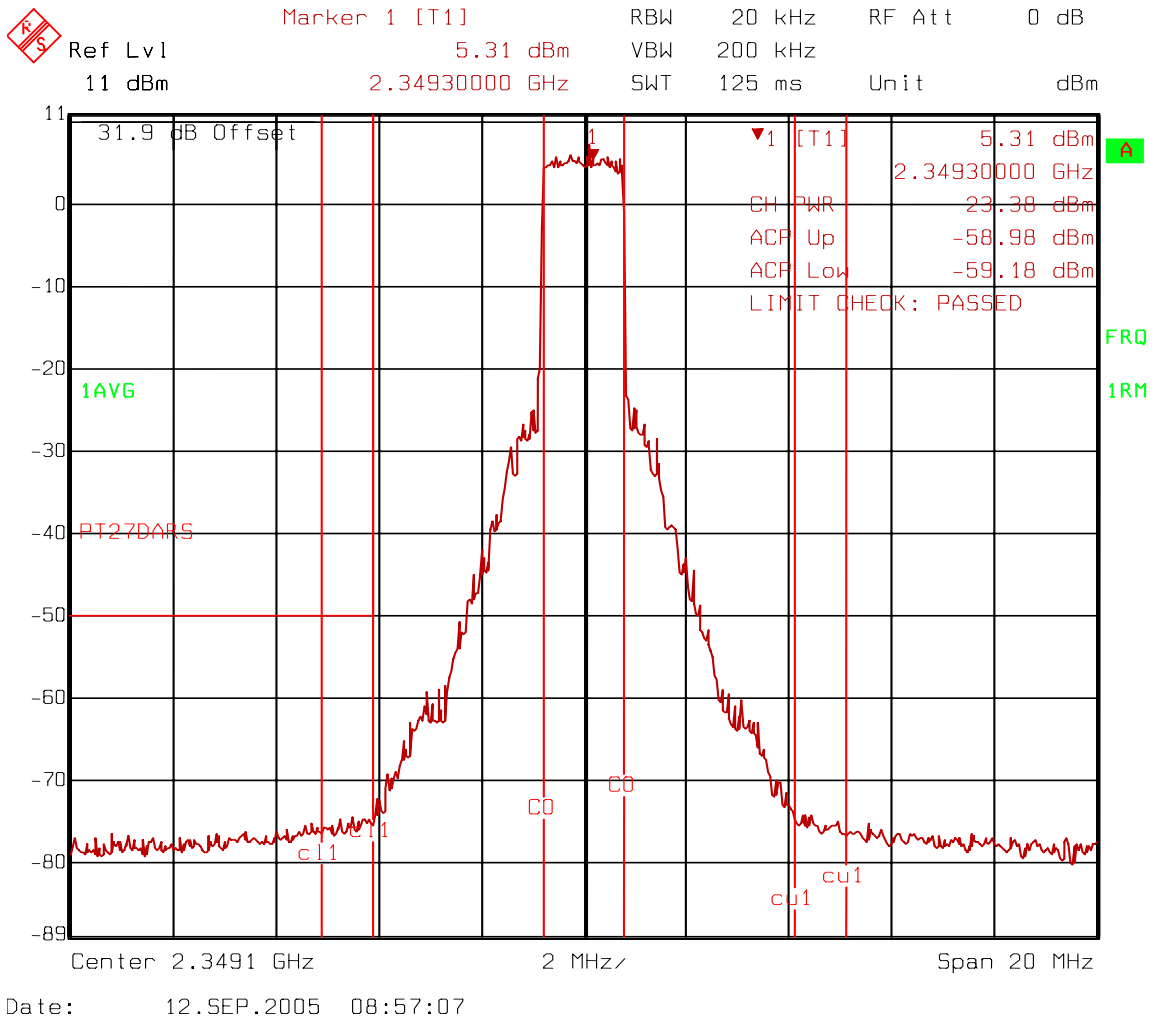
**D Band, 802.16e Mode, 2 x 1.6MHz OFDM + extra 0.7MHz OFDM
System**24.2dBm, 0.1MHz Guard Band from Adjacent Band
(3.3MHz Guard Band from DARS)
2349MHz, GC=169, 62degC, CS=1.4MHz, limit < -13dBm/1MHz

Date: 12.SEP.2005 08:53:23

EQUIPMENT: 2305 - 2360 LMX E

**D Band, 802.16e Mode, 2 x 1.6MHz OFDM + extra 0.7MHz OFDM
System****24dBm, 0.1MHz Guard Band from Adjacent Band
(3.3MHz Guard Band from DARS)
2349MHz, GC=166, 62degC, CS=4.6MHz, limit < -50dBm/1MHz**

EQUIPMENT: 2305 - 2360 LMX E



EQUIPMENT: 2305 – 2360 LMX E

Section 5. Spurious Emissions at Antenna Terminals

NAME OF TEST: Spurious Emissions @ Antenna Terminals	PARA. NO.: 2.1051
TESTED BY: Kevin Rose	DATE: September 12, 2005

Test Results:

Complies

Measurement Data:

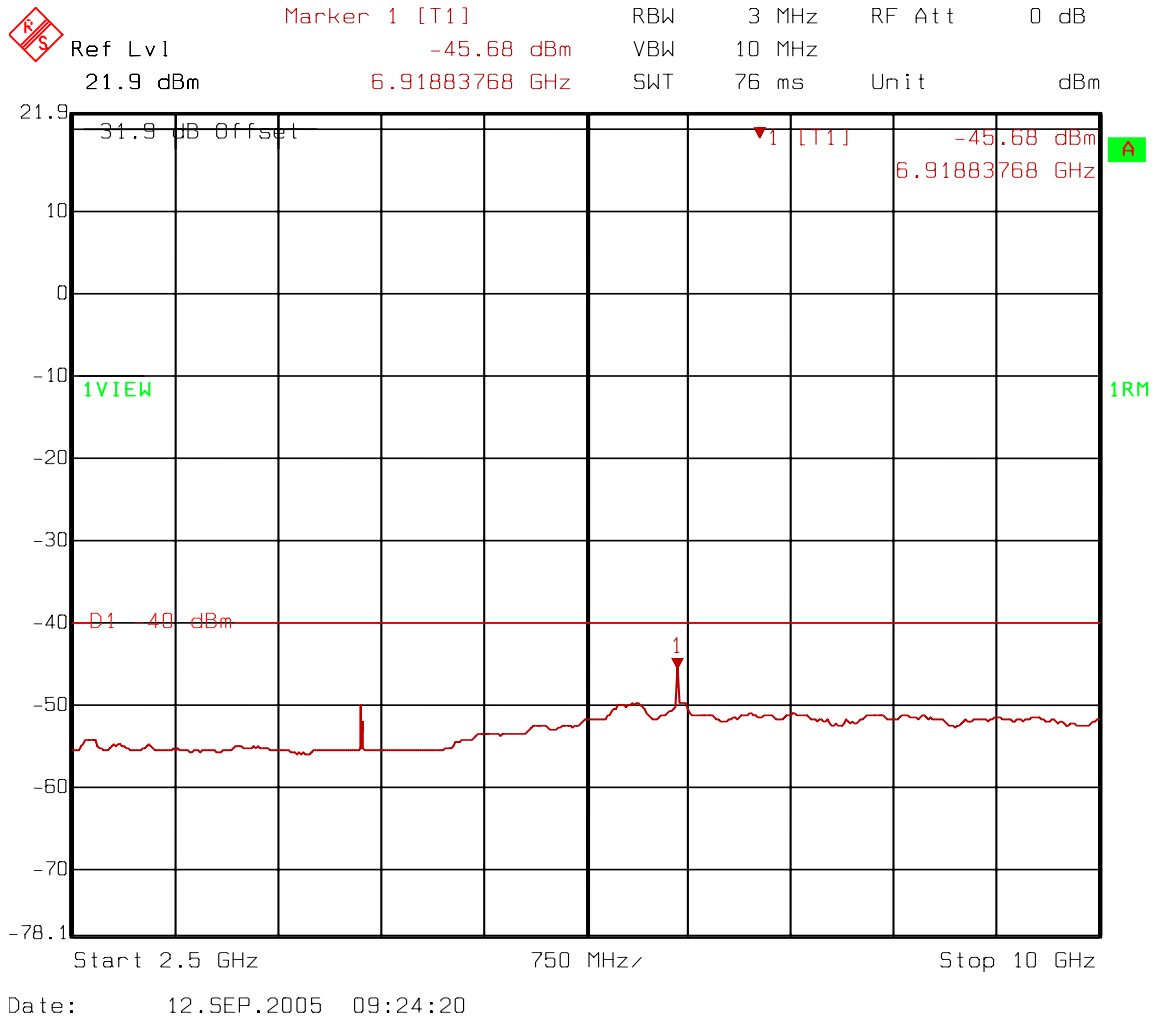
See attached data sheets.

Measurement Uncertainty: +/- 1.7 dB

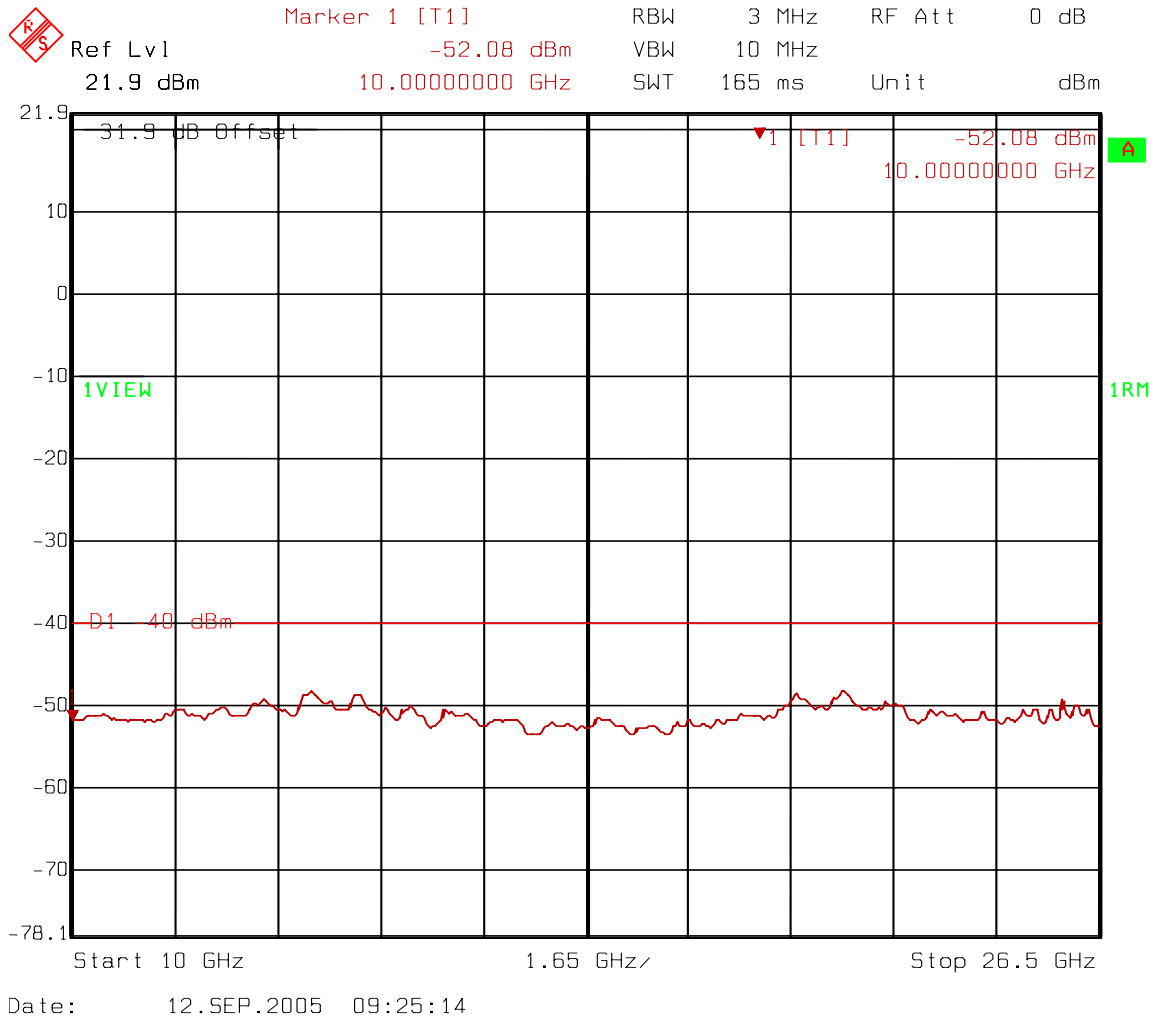
Test Data – Spurious Emissions at Antenna Terminals

Test Data - +22 dBm

EQUIPMENT: 2305 - 2360 LMX E

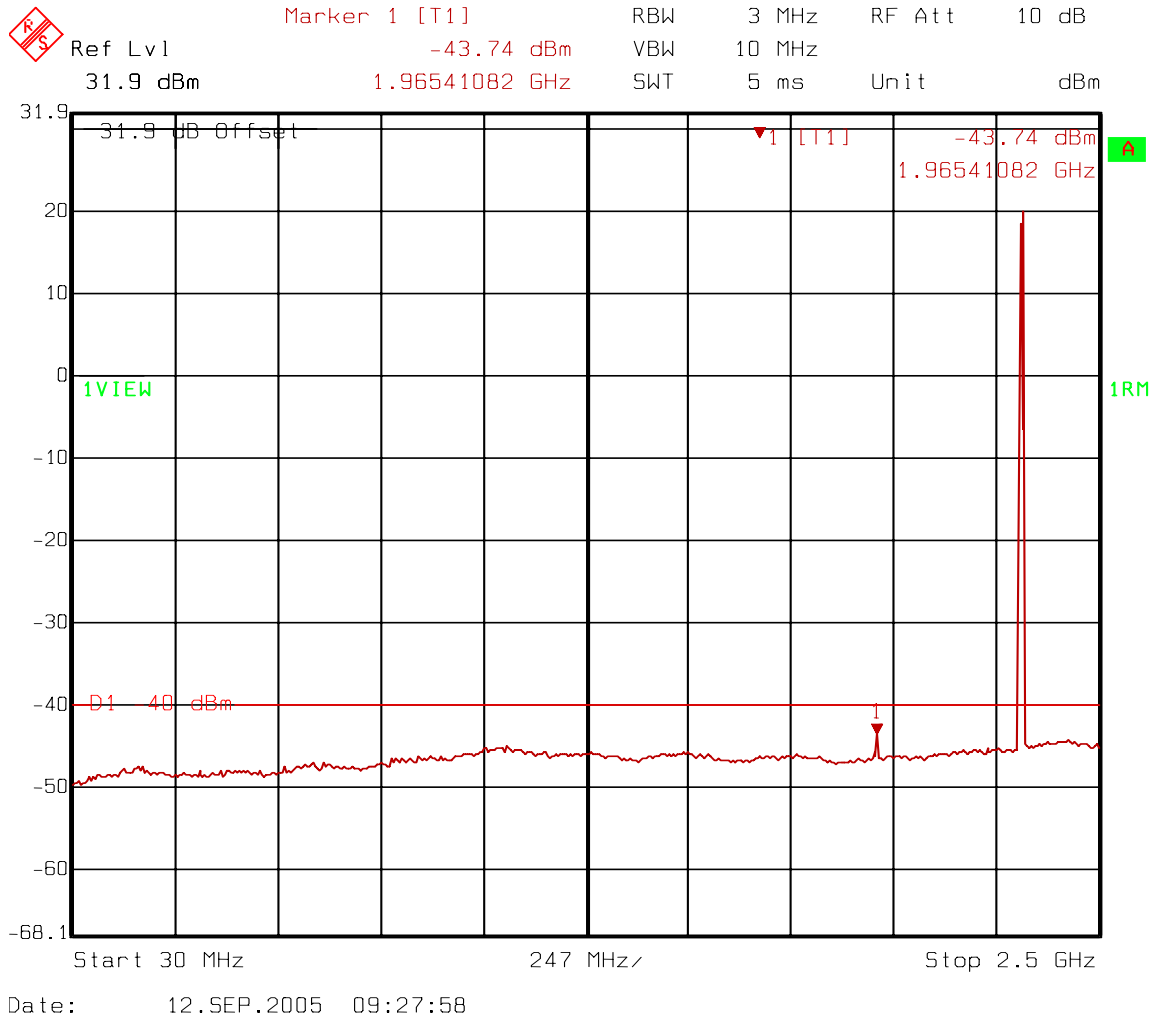


EQUIPMENT: 2305 - 2360 LMX E

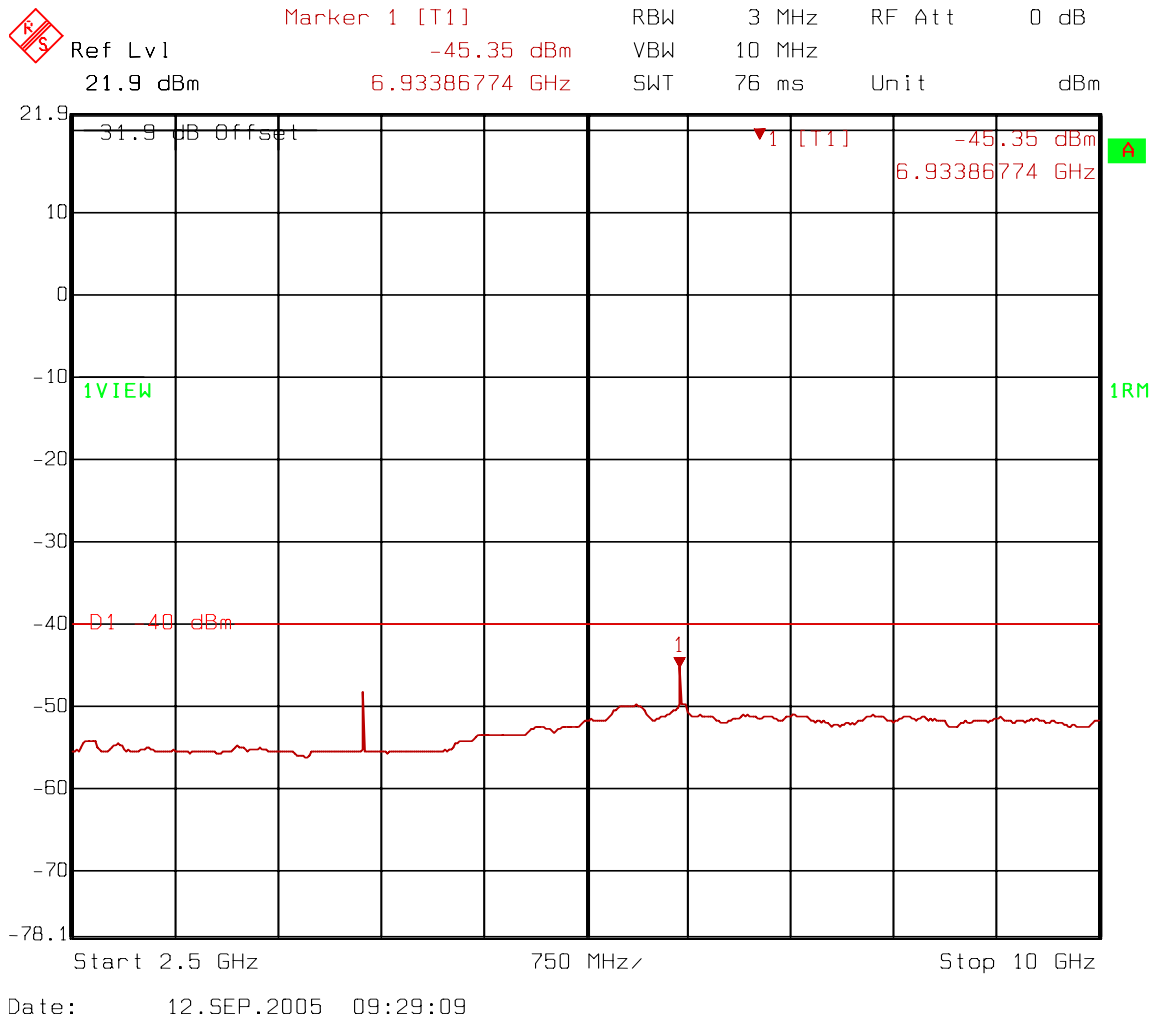


EQUIPMENT: 2305 - 2360 LMX E

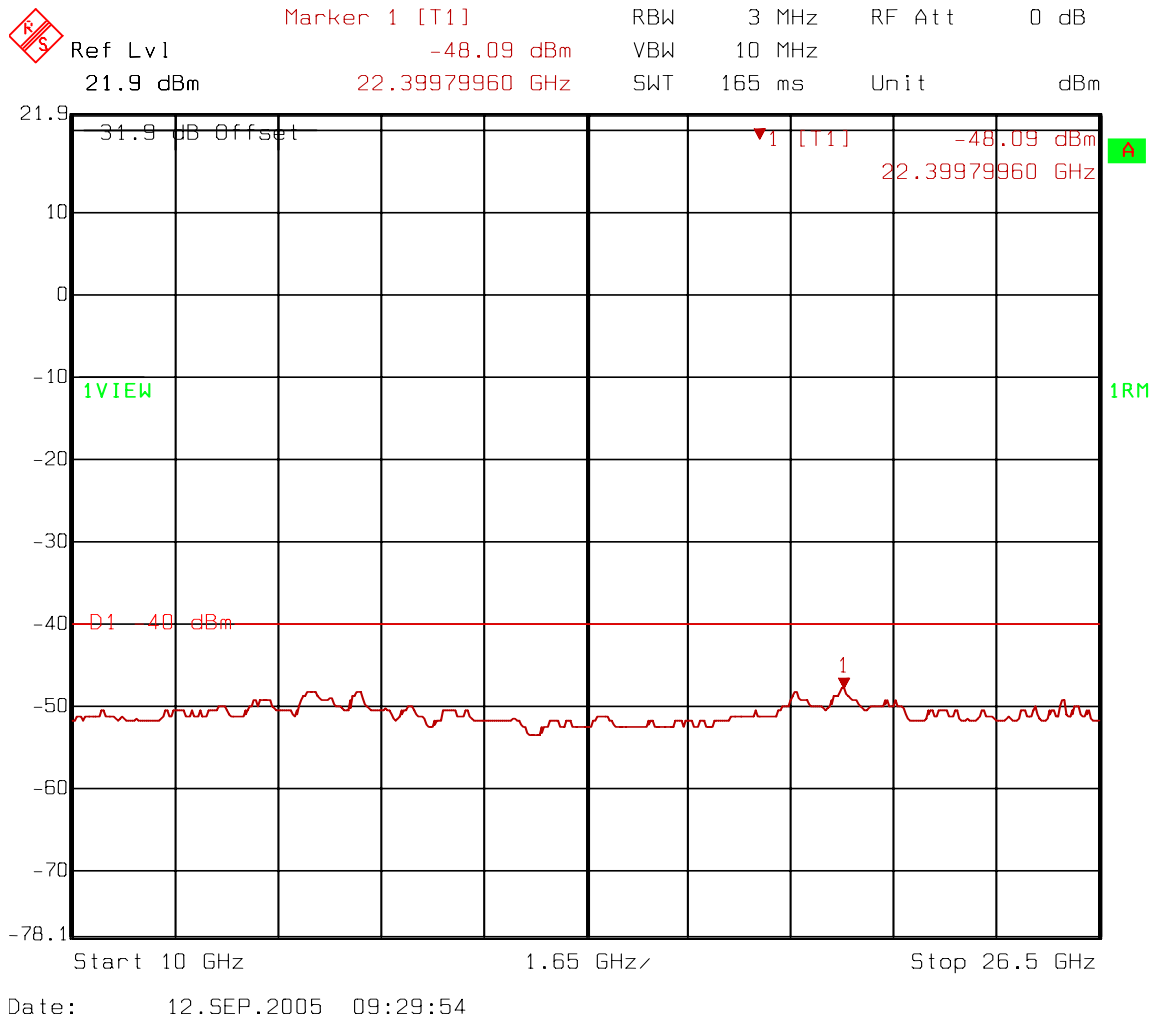
B BAND SPURIOUS



EQUIPMENT: 2305 - 2360 LMX E

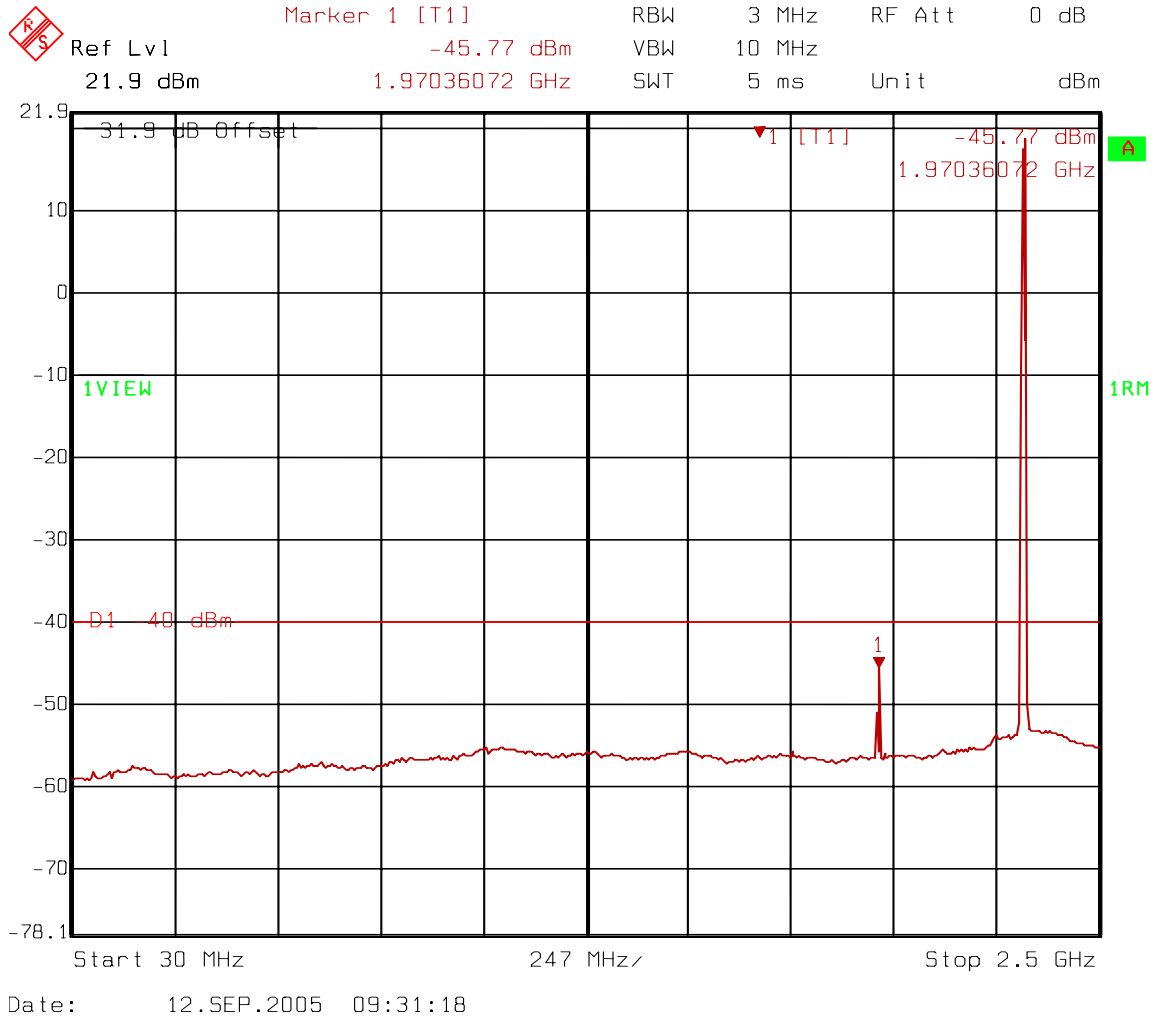


EQUIPMENT: 2305 - 2360 LMX E

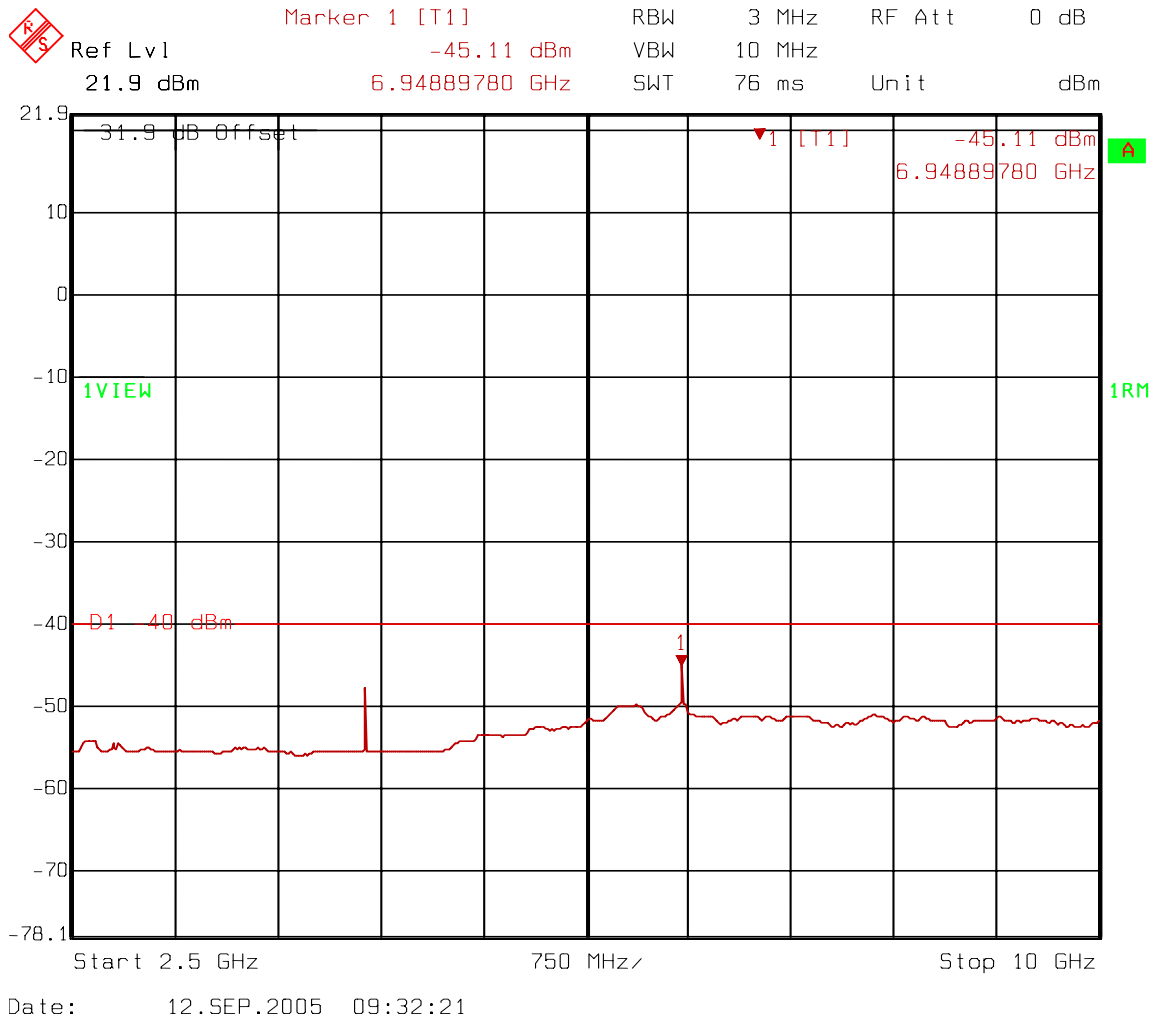


EQUIPMENT: 2305 - 2360 LMX E

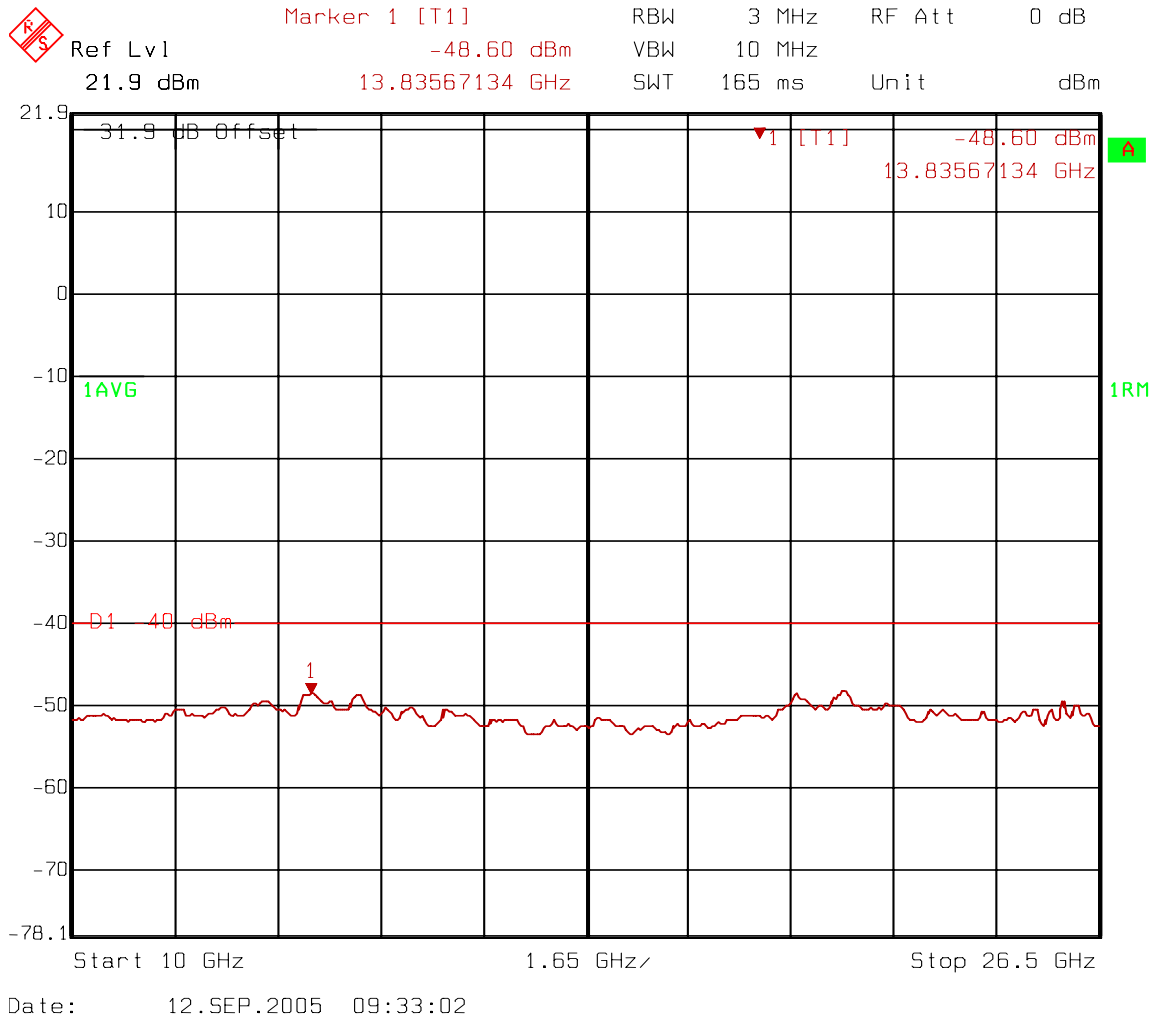
C BAND SPUR



EQUIPMENT: 2305 - 2360 LMX E

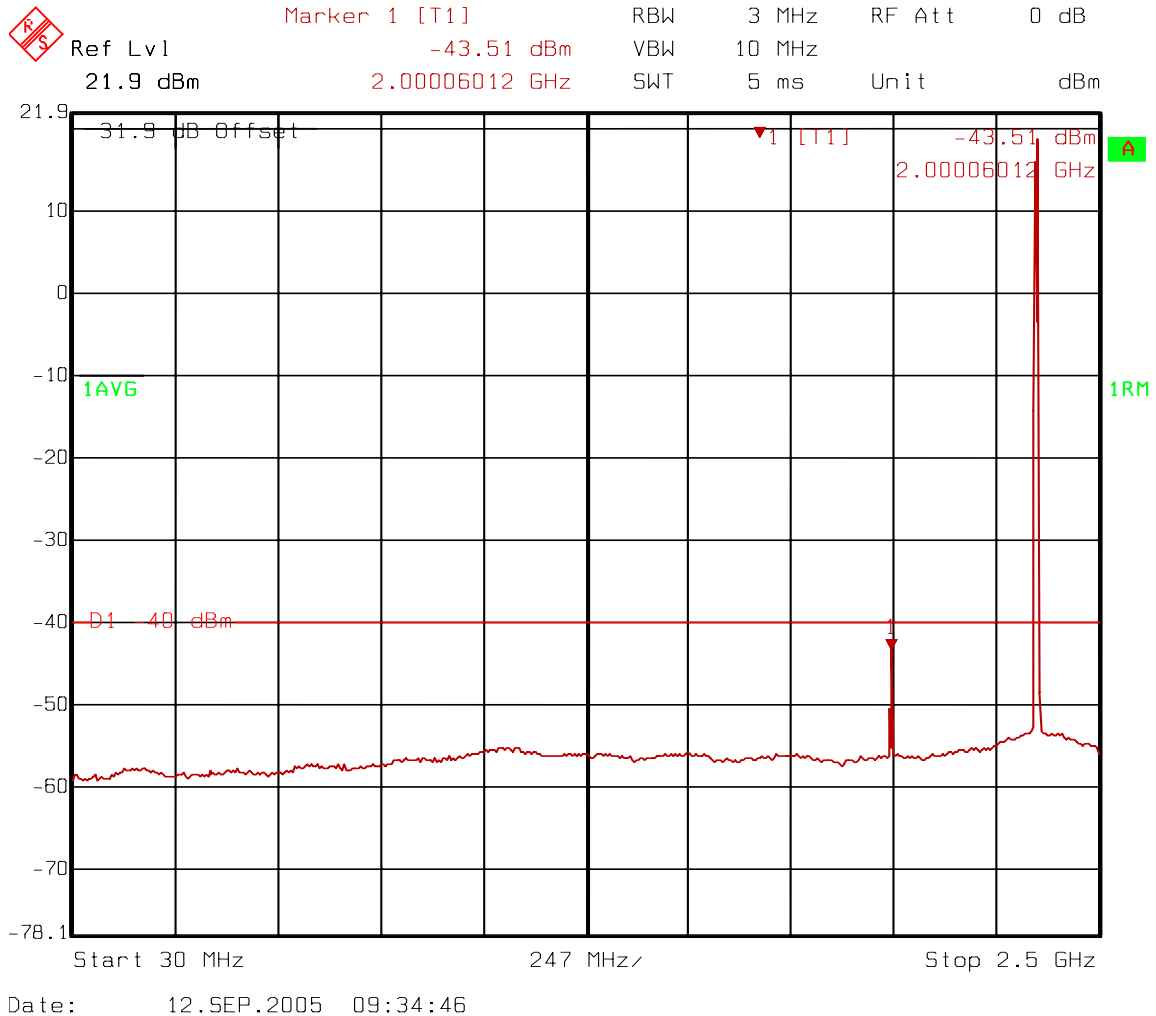


EQUIPMENT: 2305 - 2360 LMX E

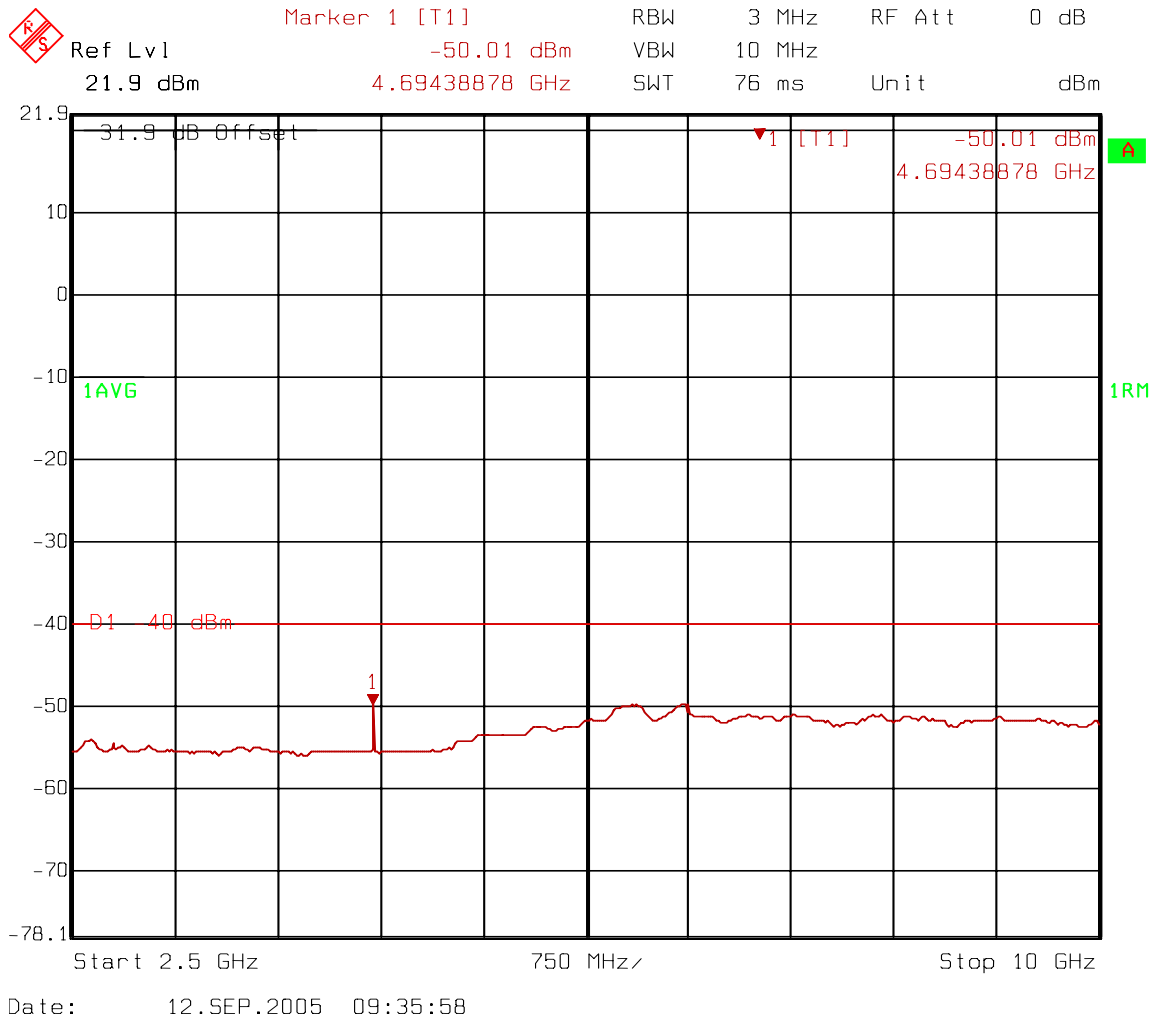


EQUIPMENT: 2305 - 2360 LMX E

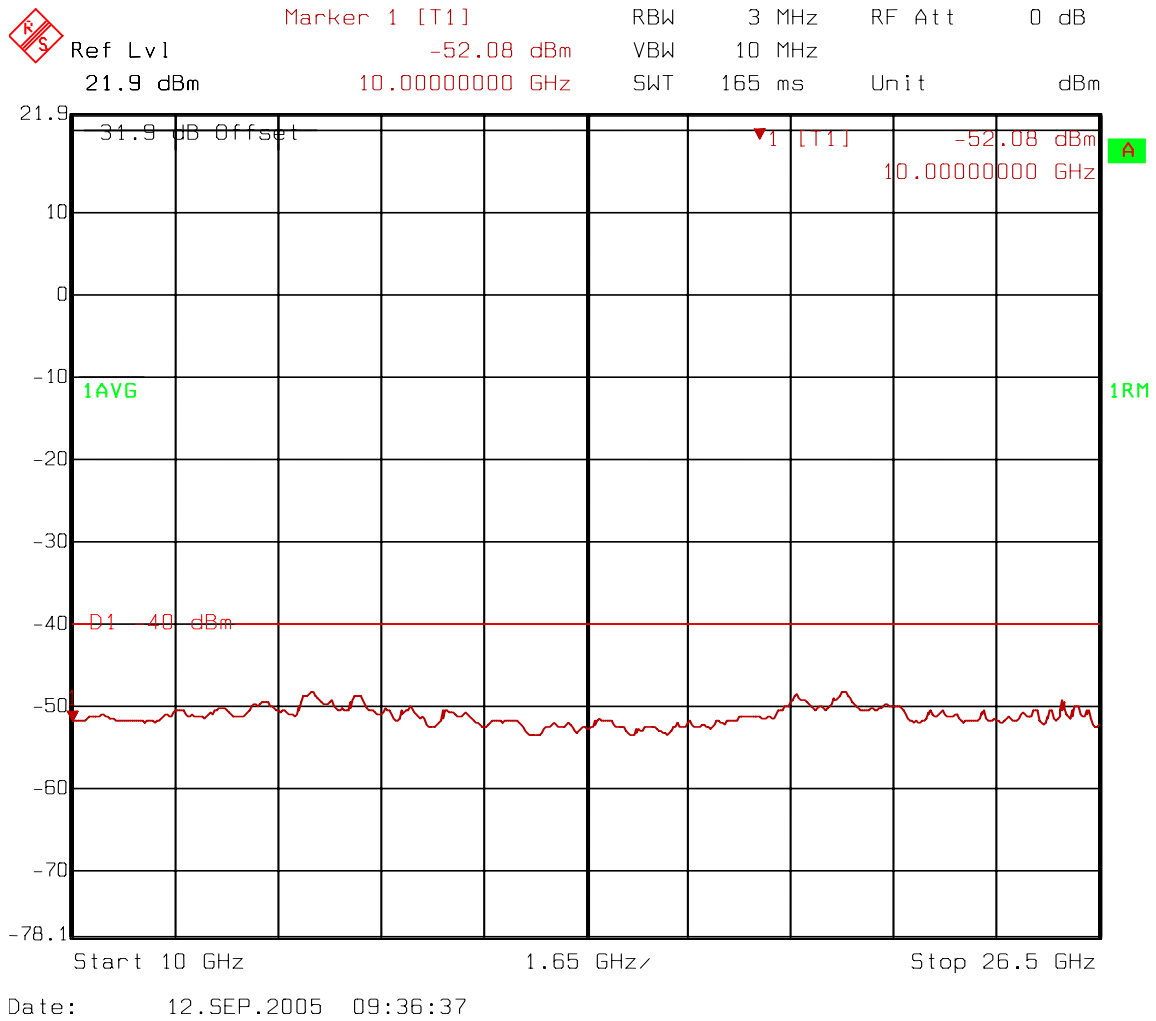
D BAND SPURIOUS



EQUIPMENT: 2305 - 2360 LMX E

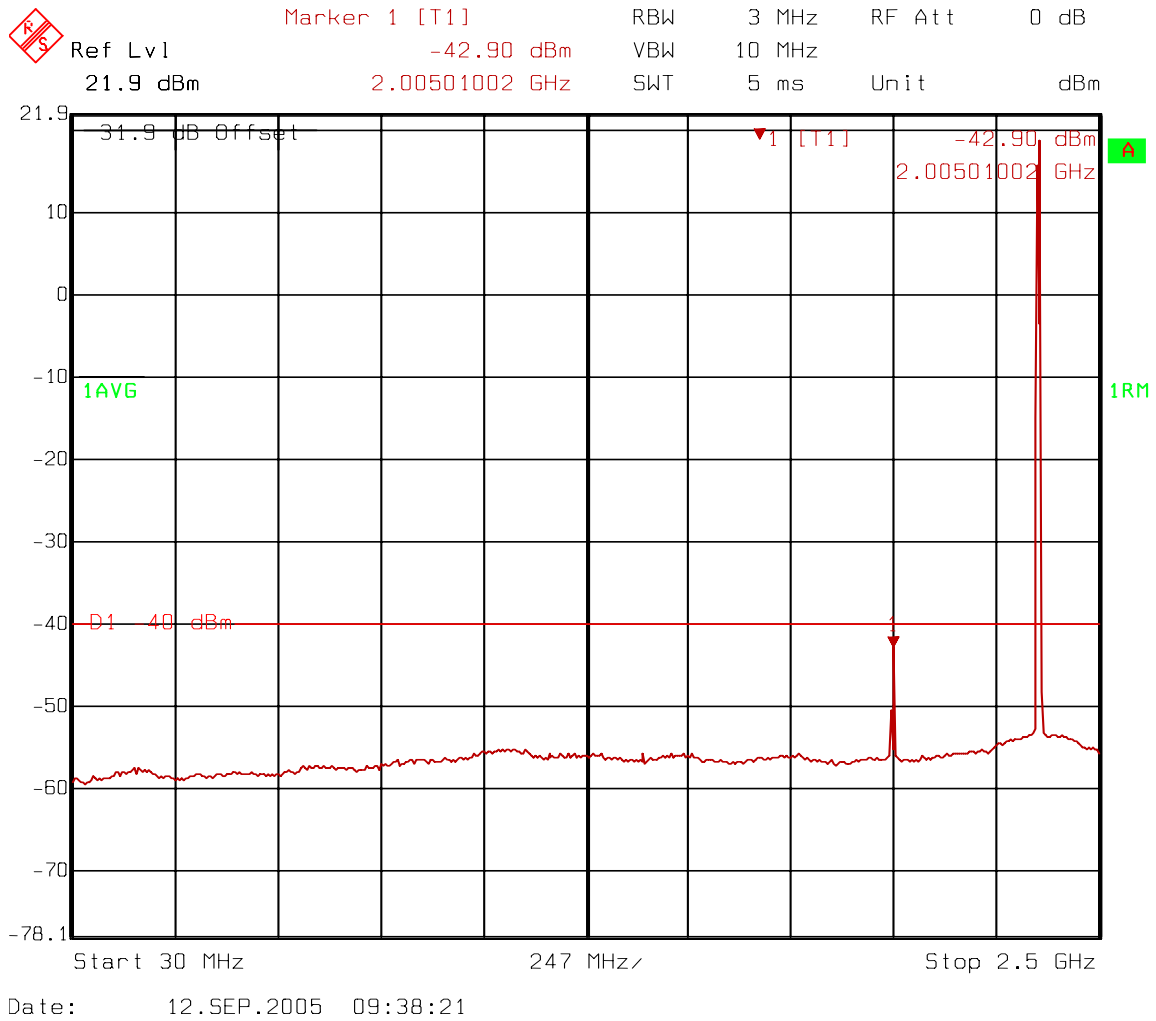


EQUIPMENT: 2305 - 2360 LMX E

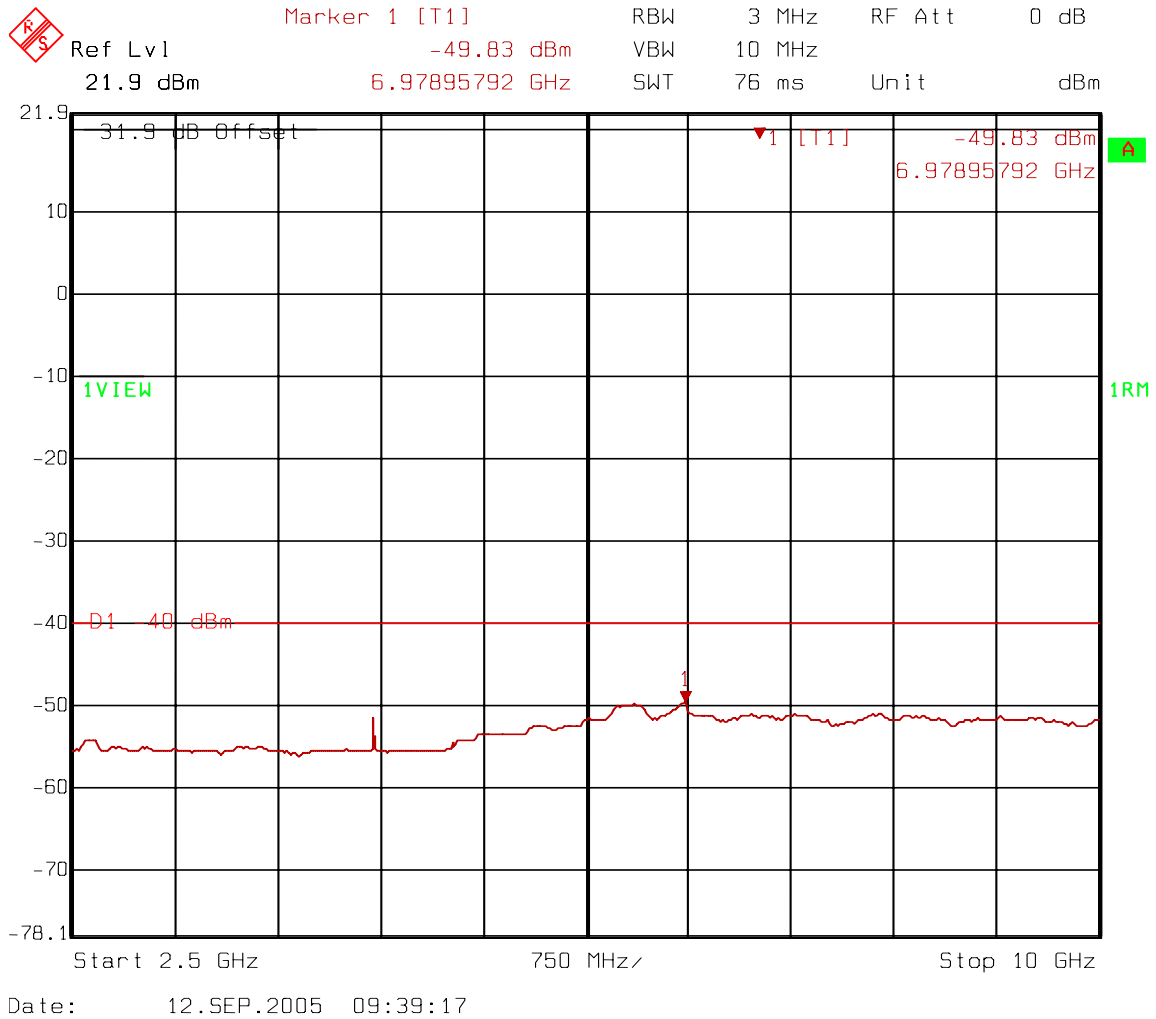


EQUIPMENT: 2305 - 2360 LMX E

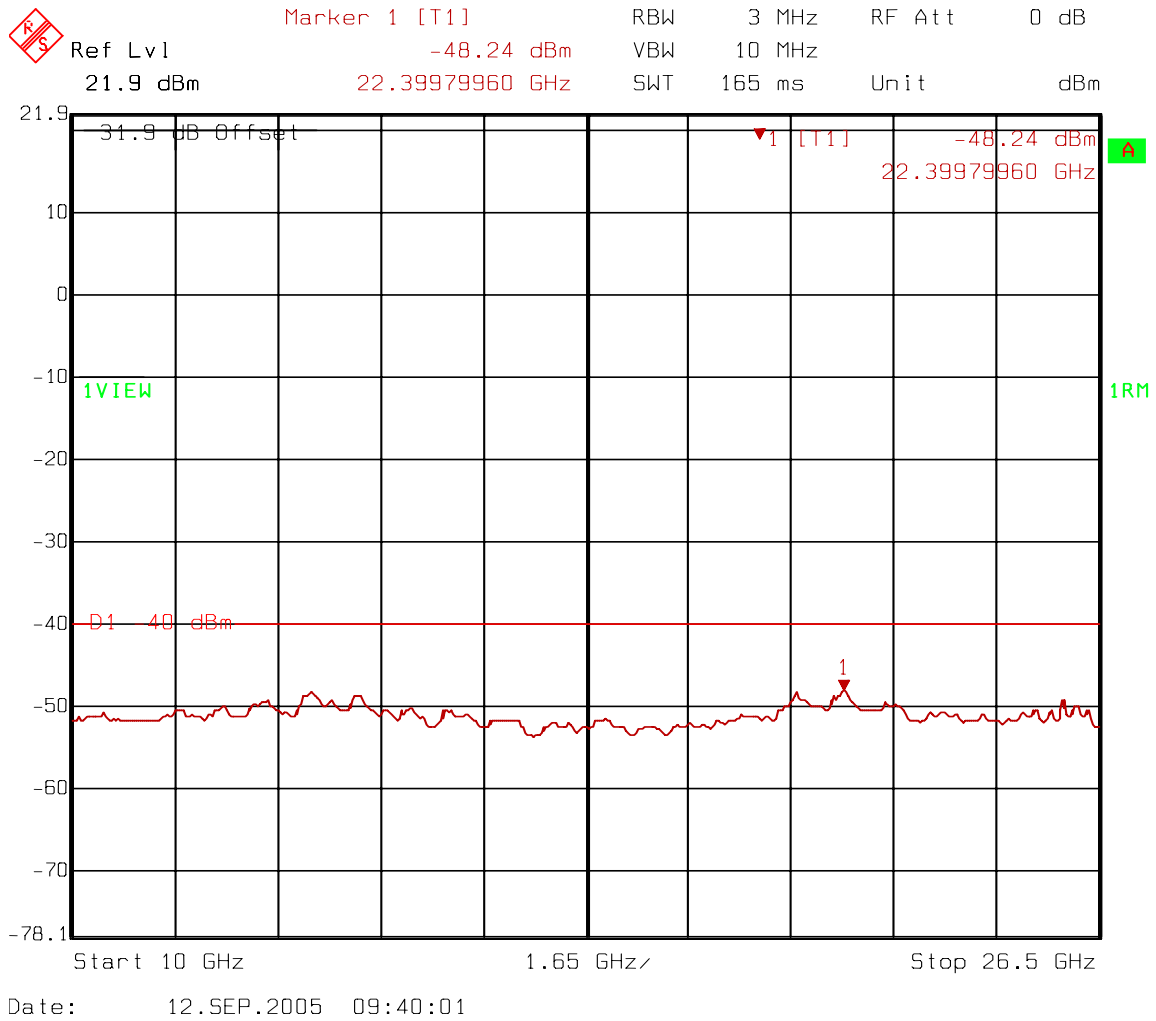
A HIGH BAND SPURIOUS



EQUIPMENT: 2305 - 2360 LMX E

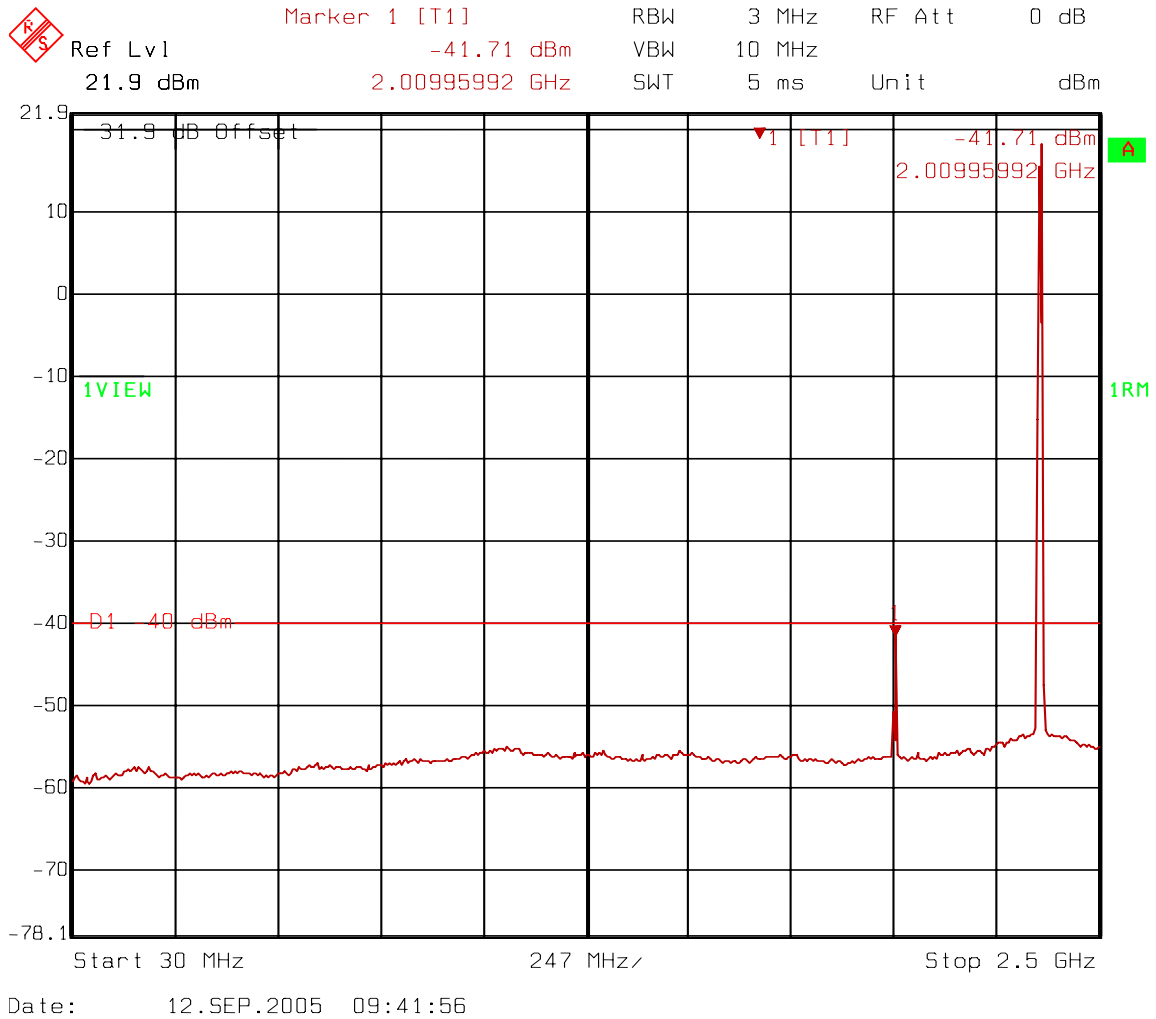


EQUIPMENT: 2305 - 2360 LMX E

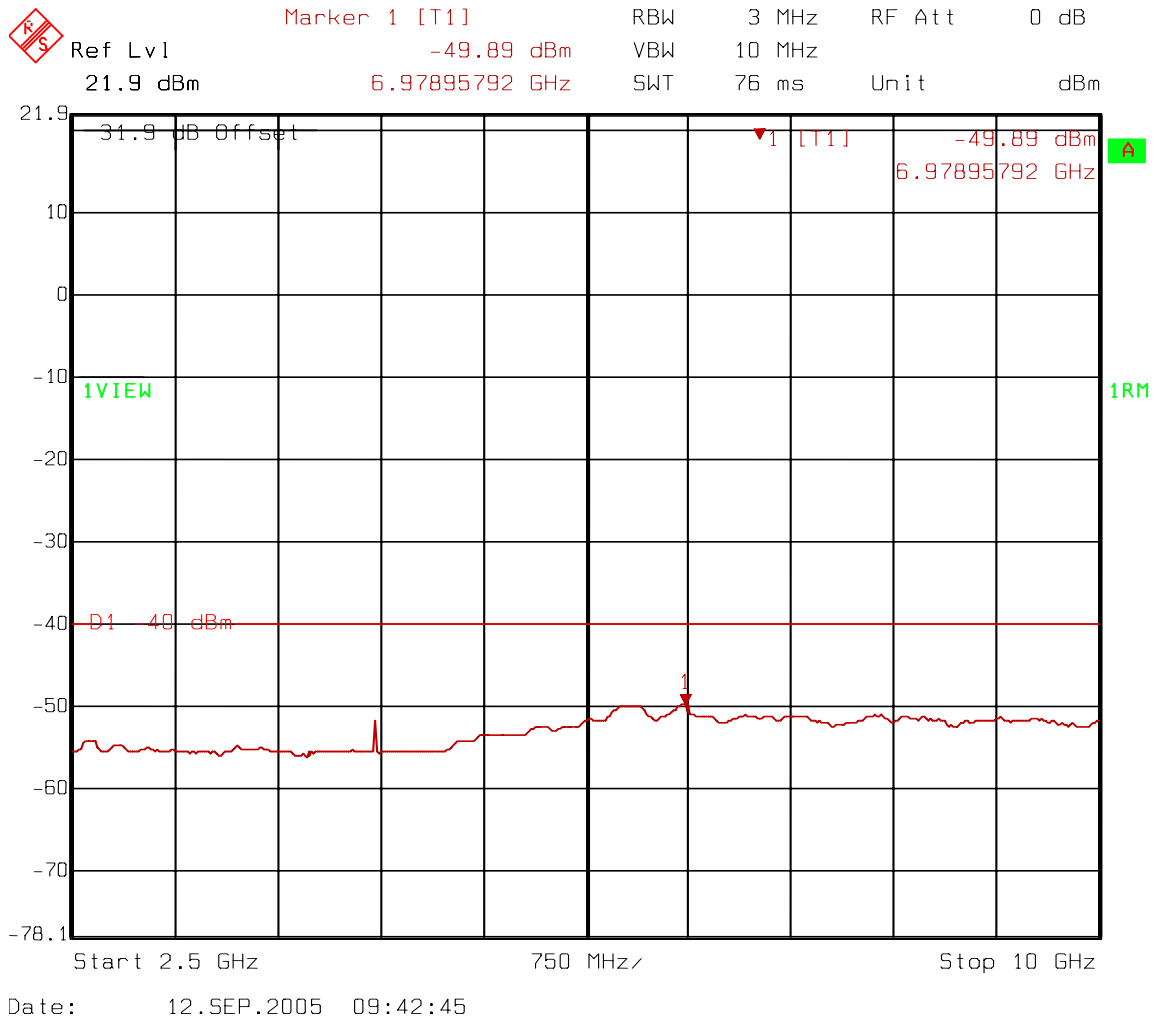


EQUIPMENT: 2305 - 2360 LMX E

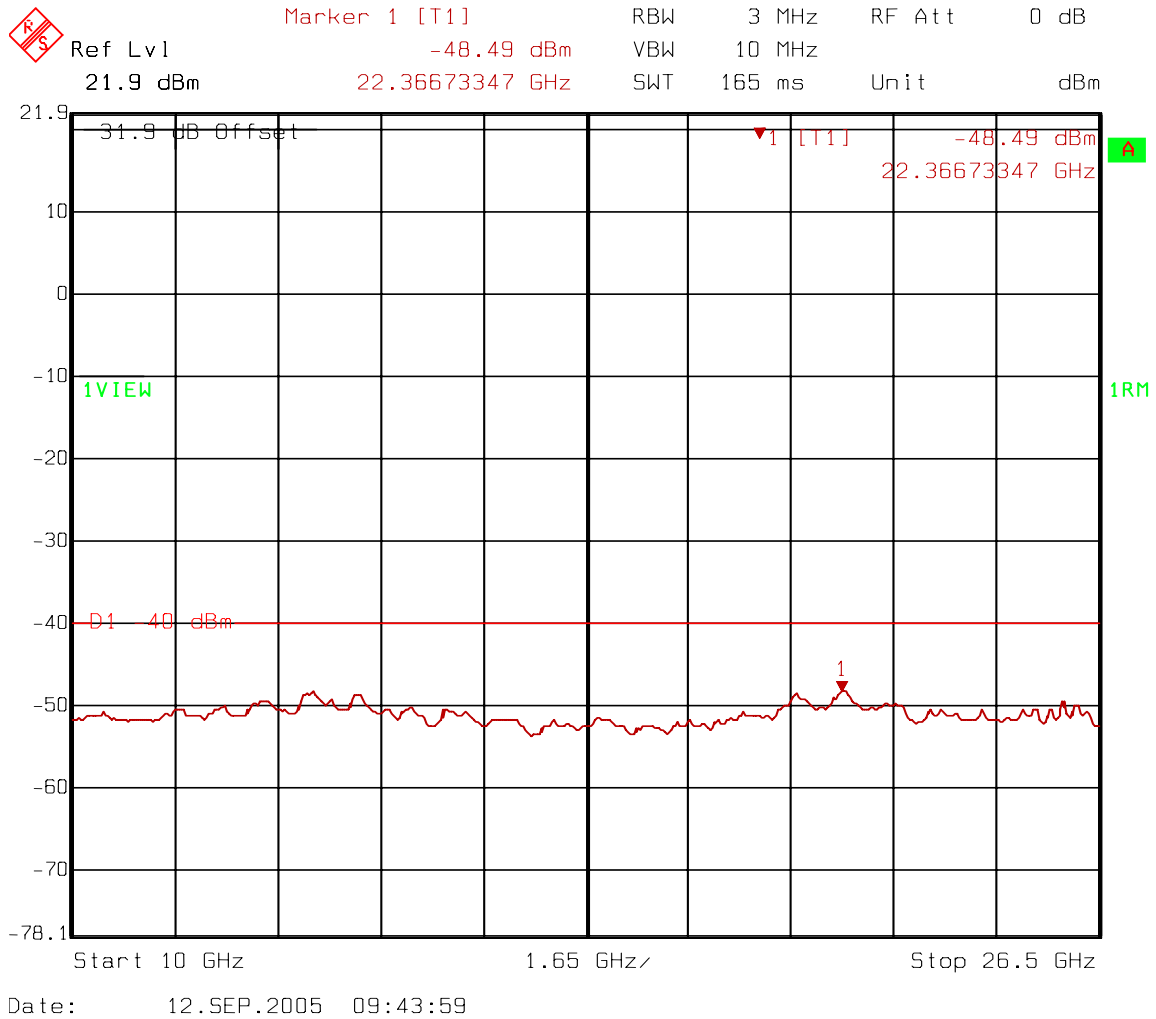
B HIGH BAND SPURIOUS



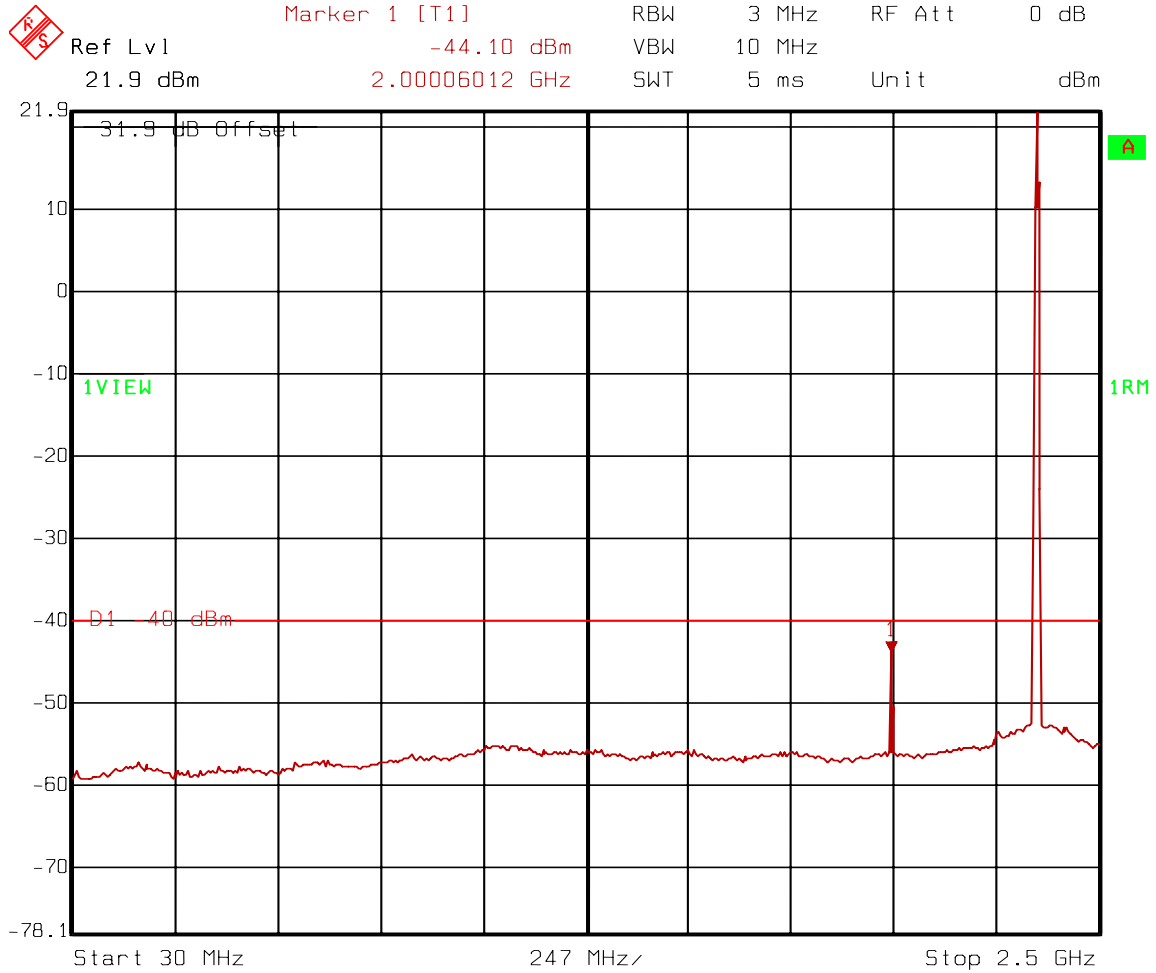
EQUIPMENT: 2305 - 2360 LMX E



EQUIPMENT: 2305 - 2360 LMX E

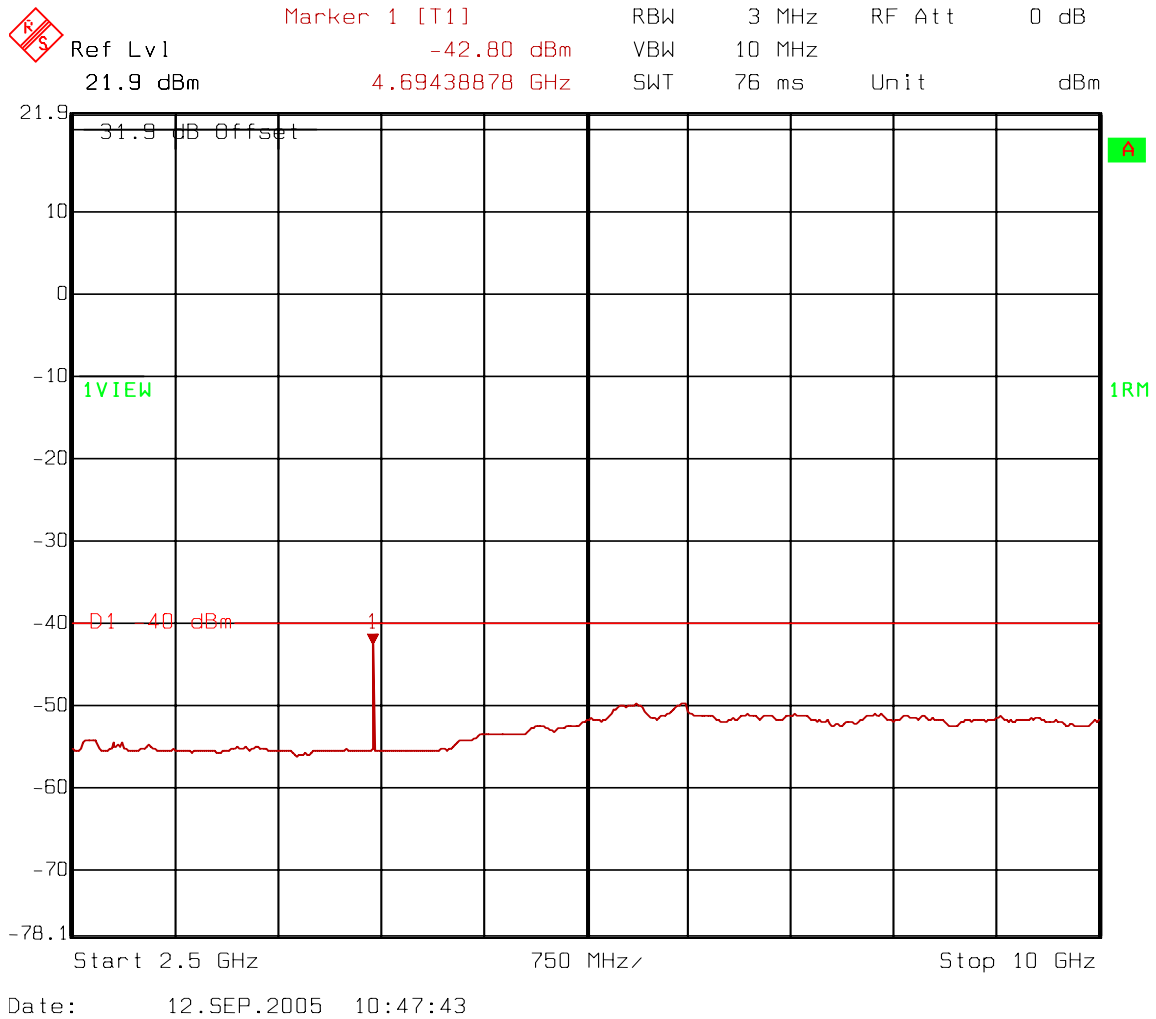


EQUIPMENT: 2305 - 2360 LMX E

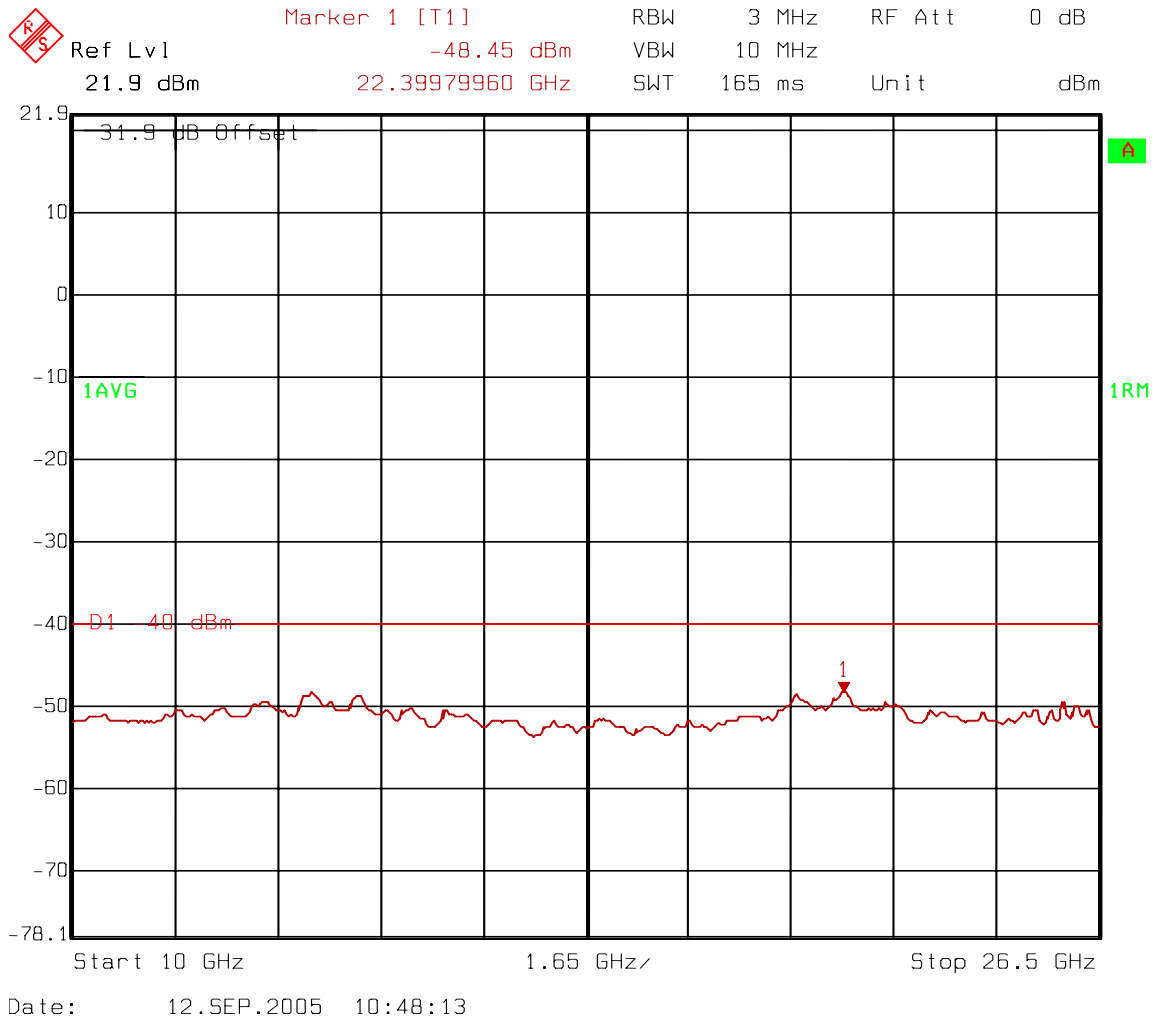


Date: 12.SEP.2005 10:45:58

EQUIPMENT: 2305 - 2360 LMX E

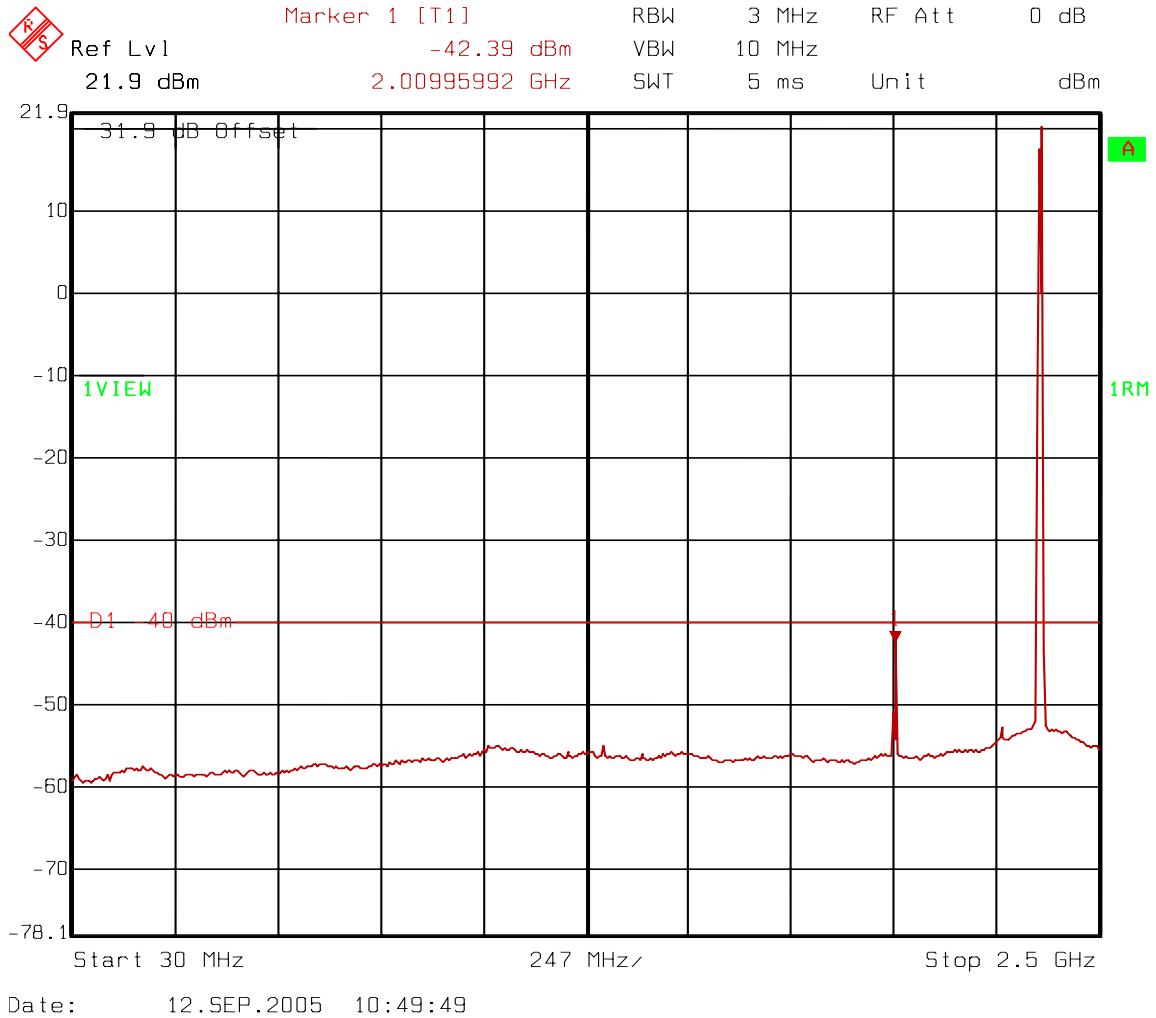


EQUIPMENT: 2305 - 2360 LMX E

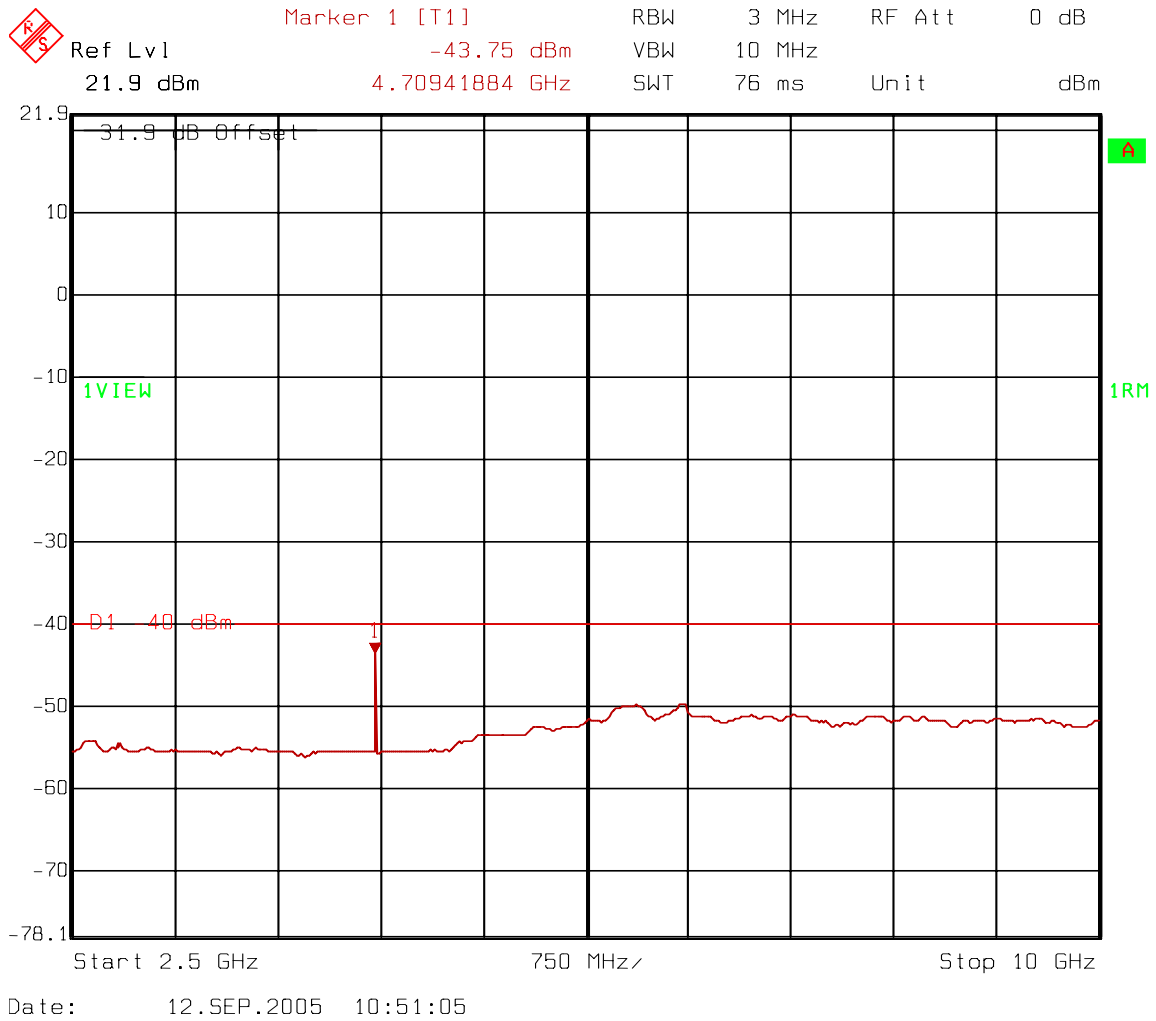


EQUIPMENT: 2305 - 2360 LMX E

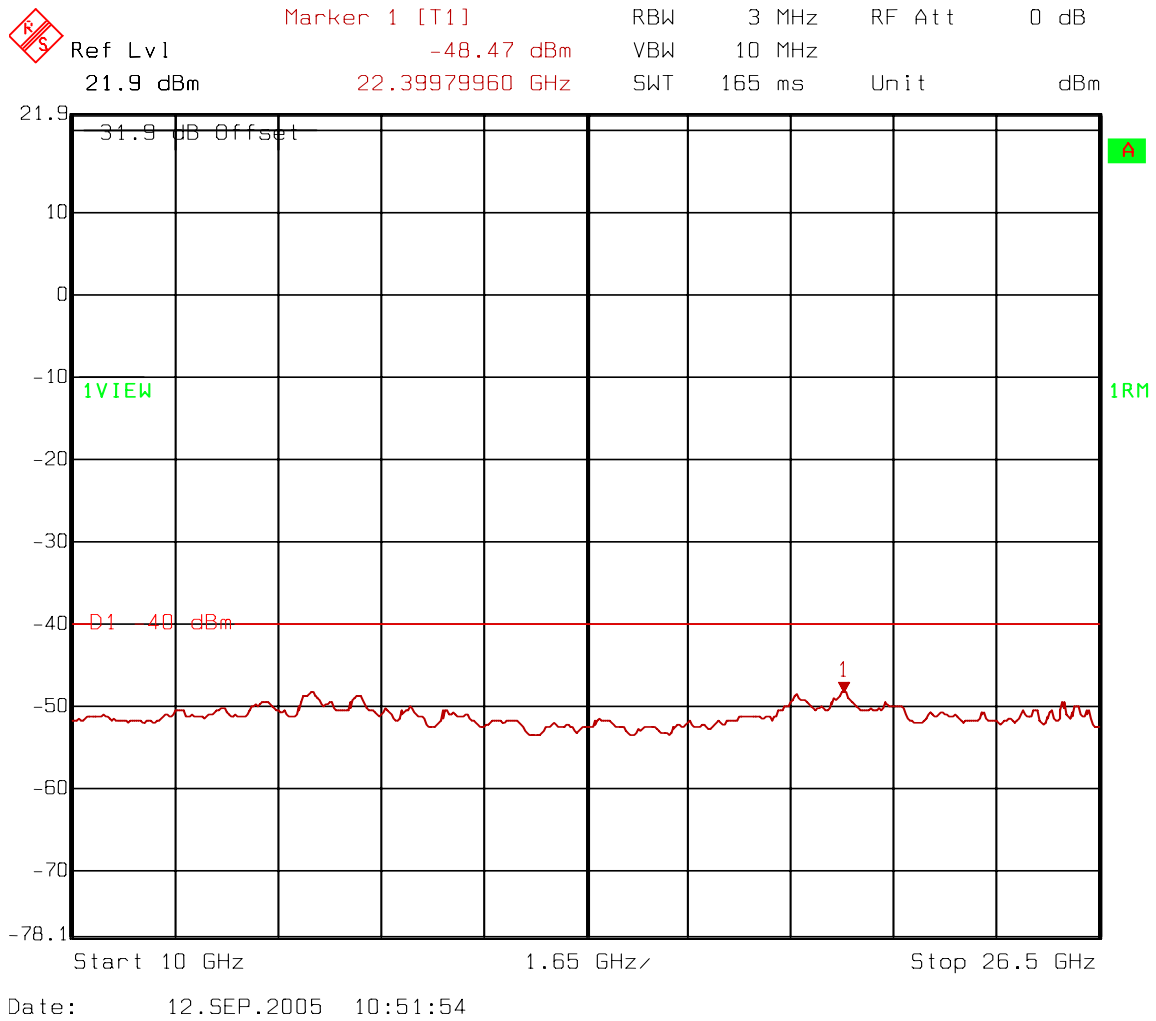
A HIGH BAND



EQUIPMENT: 2305 - 2360 LMX E

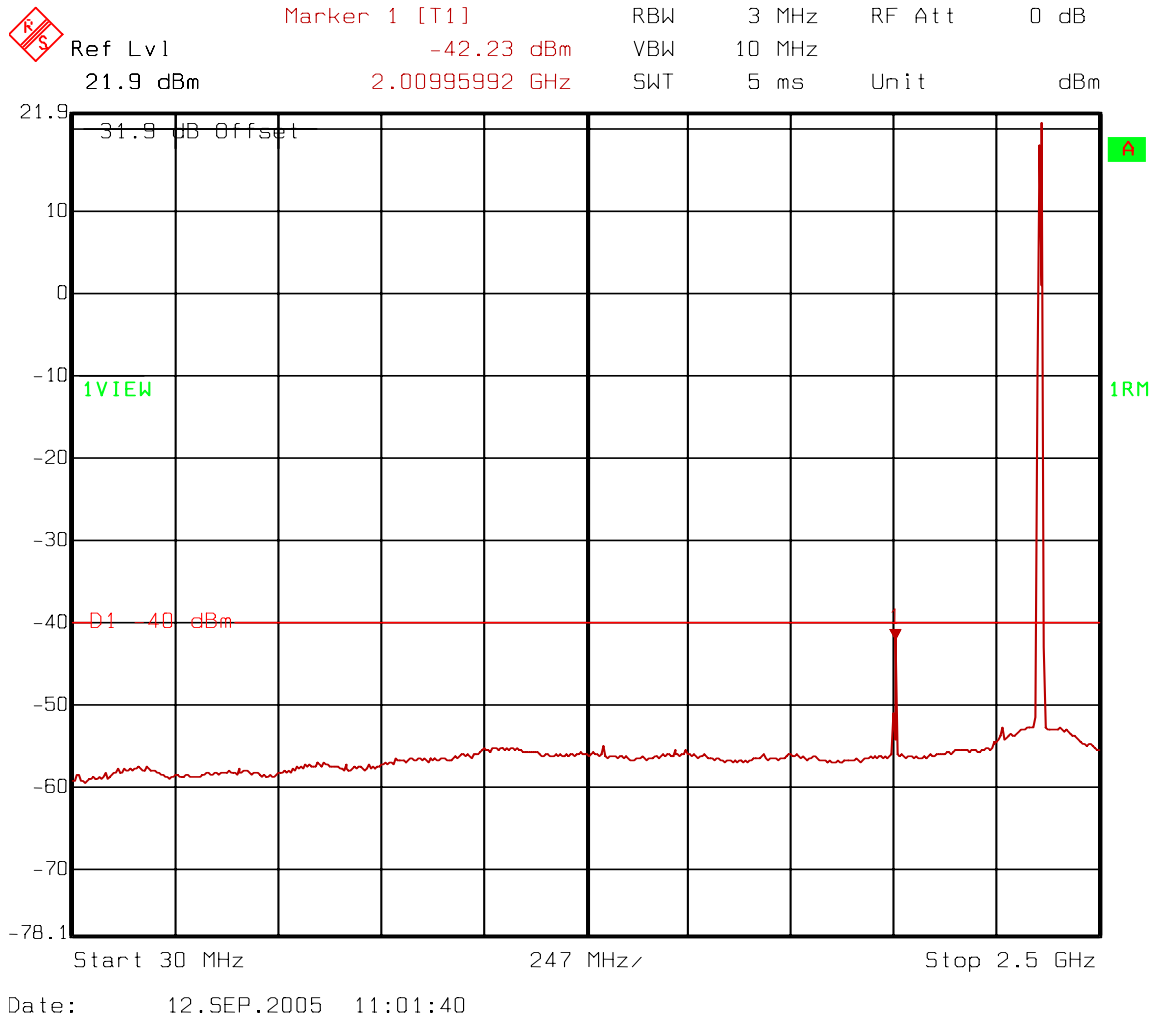


EQUIPMENT: 2305 - 2360 LMX E

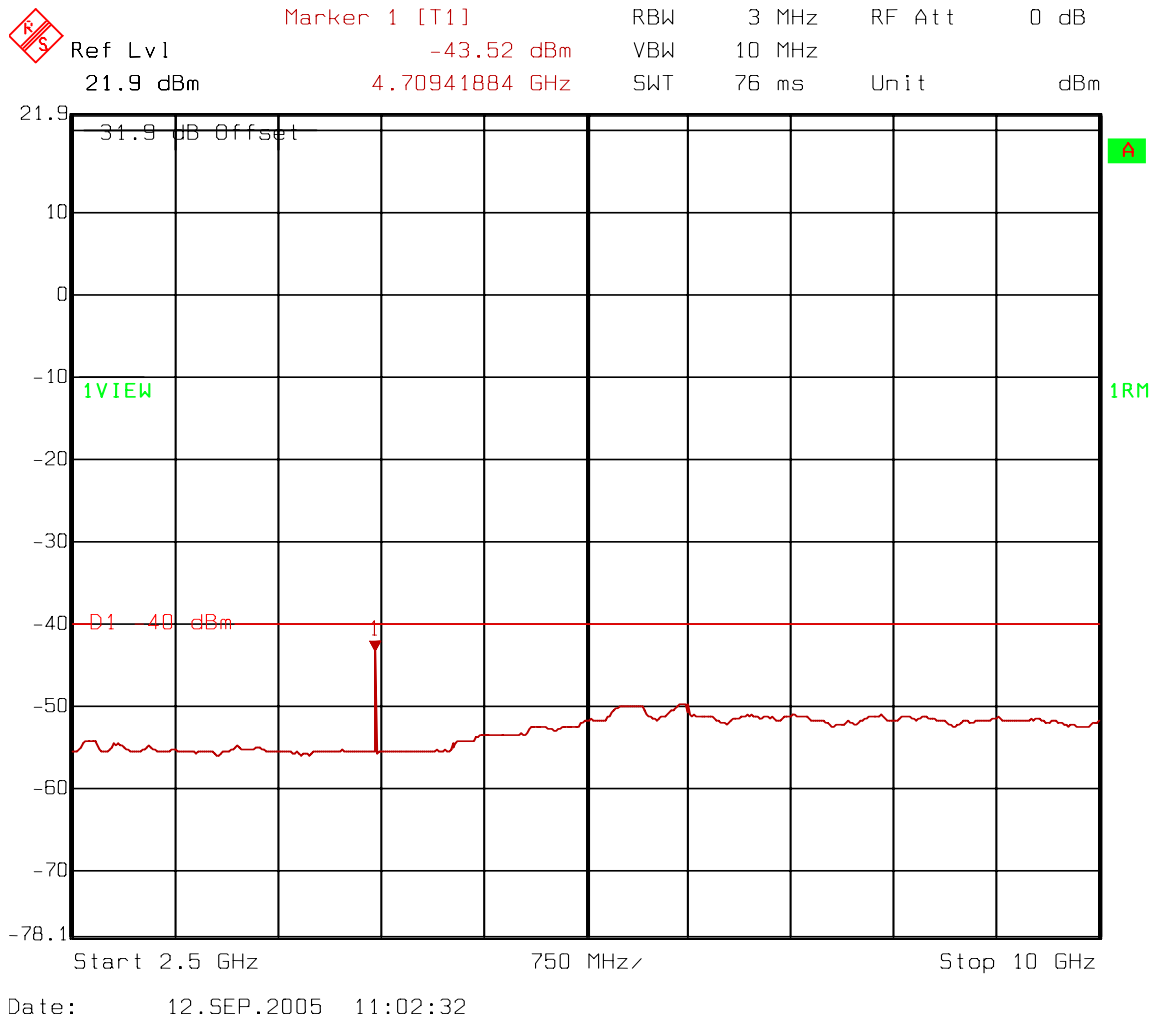


EQUIPMENT: 2305 - 2360 LMX E

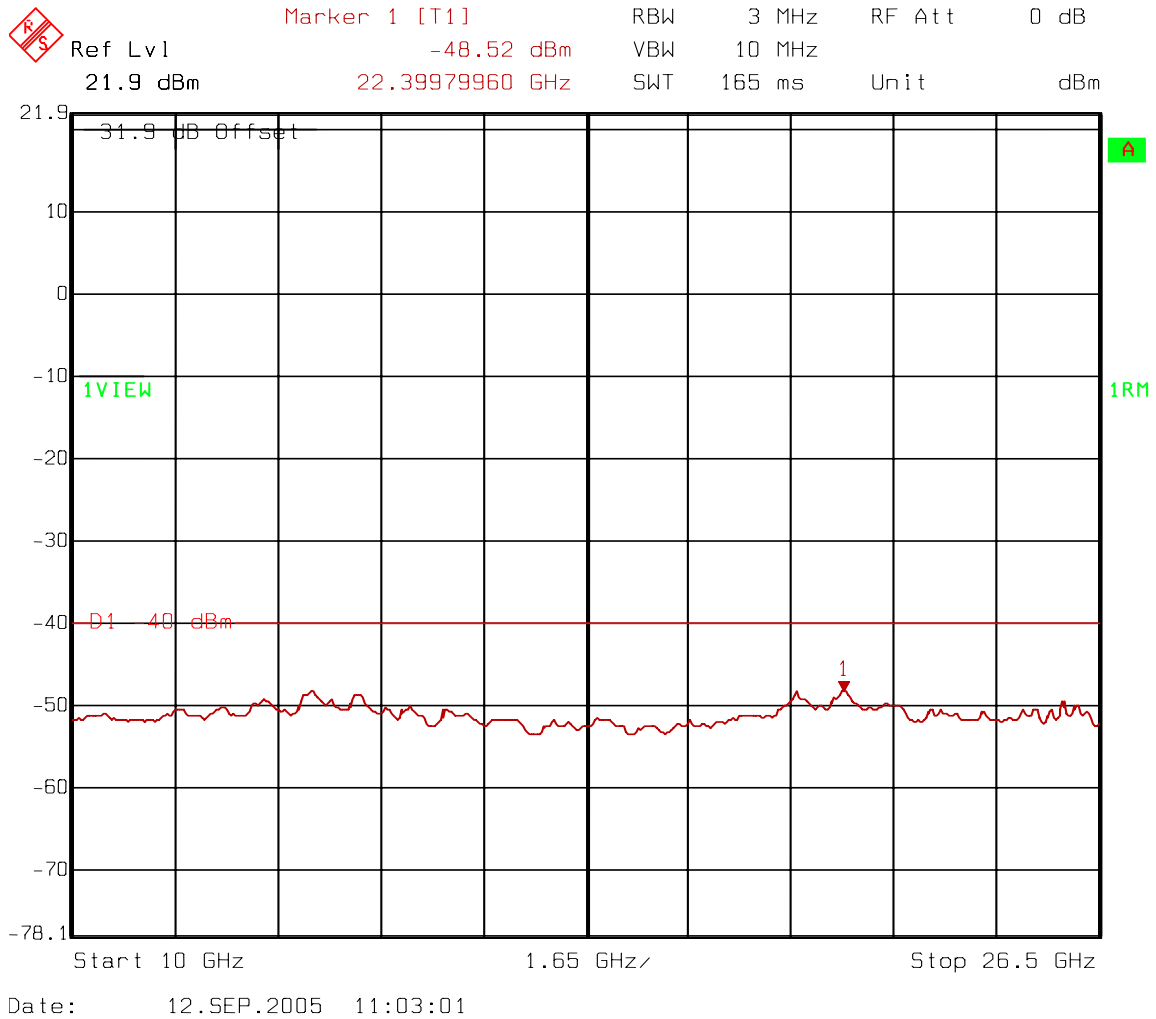
B HIGH BAND SPURIOUS



EQUIPMENT: 2305 - 2360 LMX E

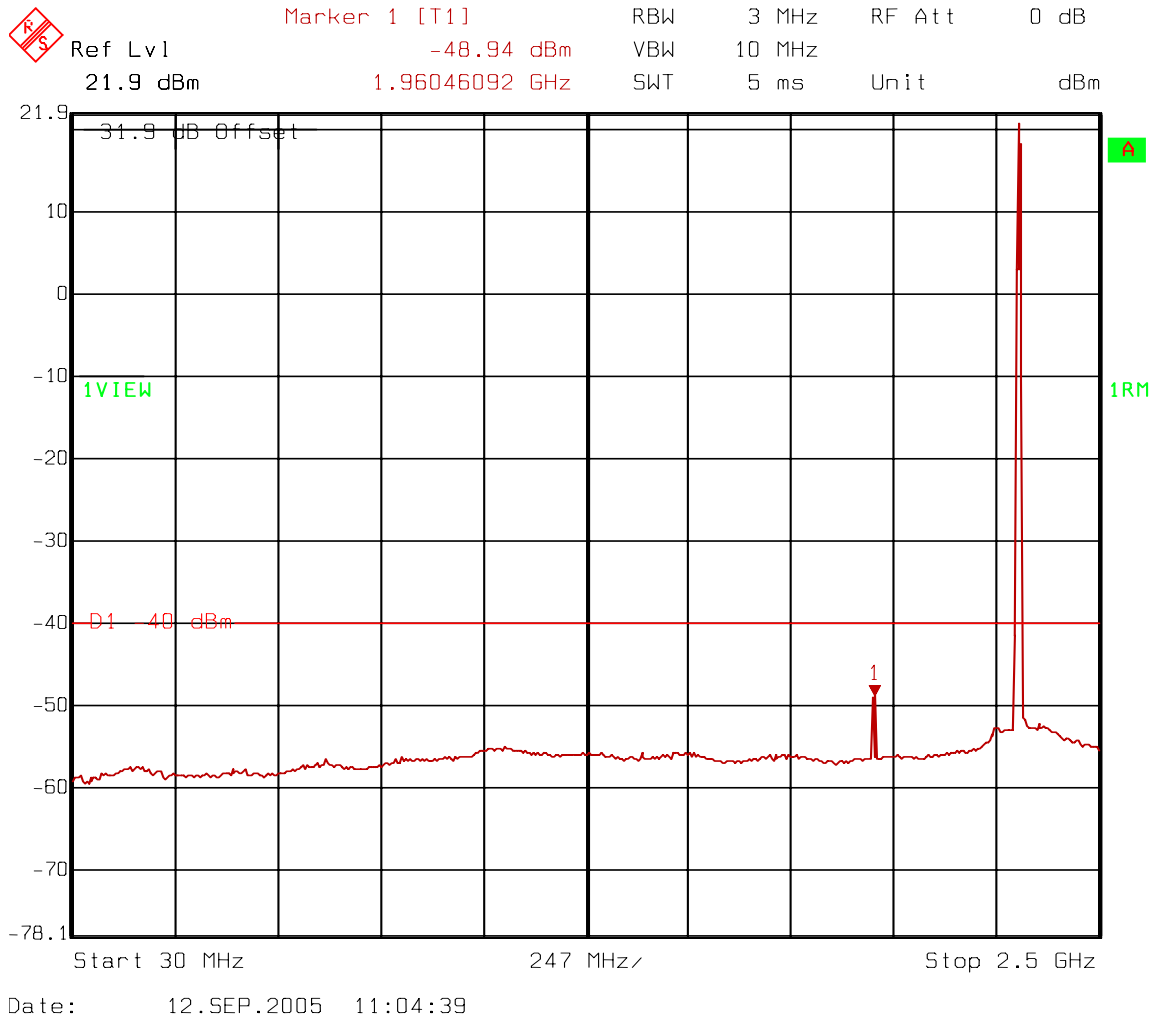


EQUIPMENT: 2305 - 2360 LMX E

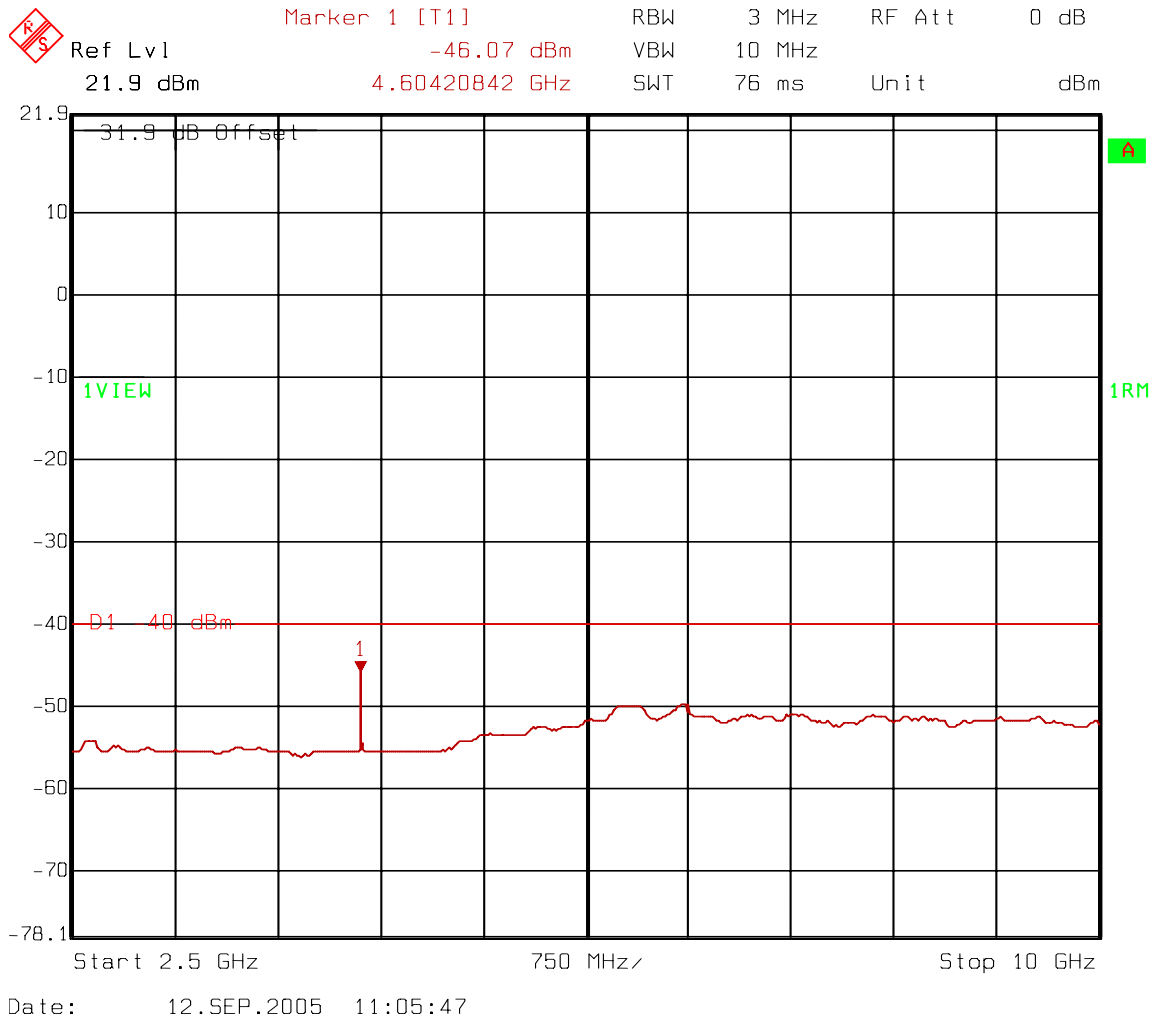


EQUIPMENT: 2305 - 2360 LMX E

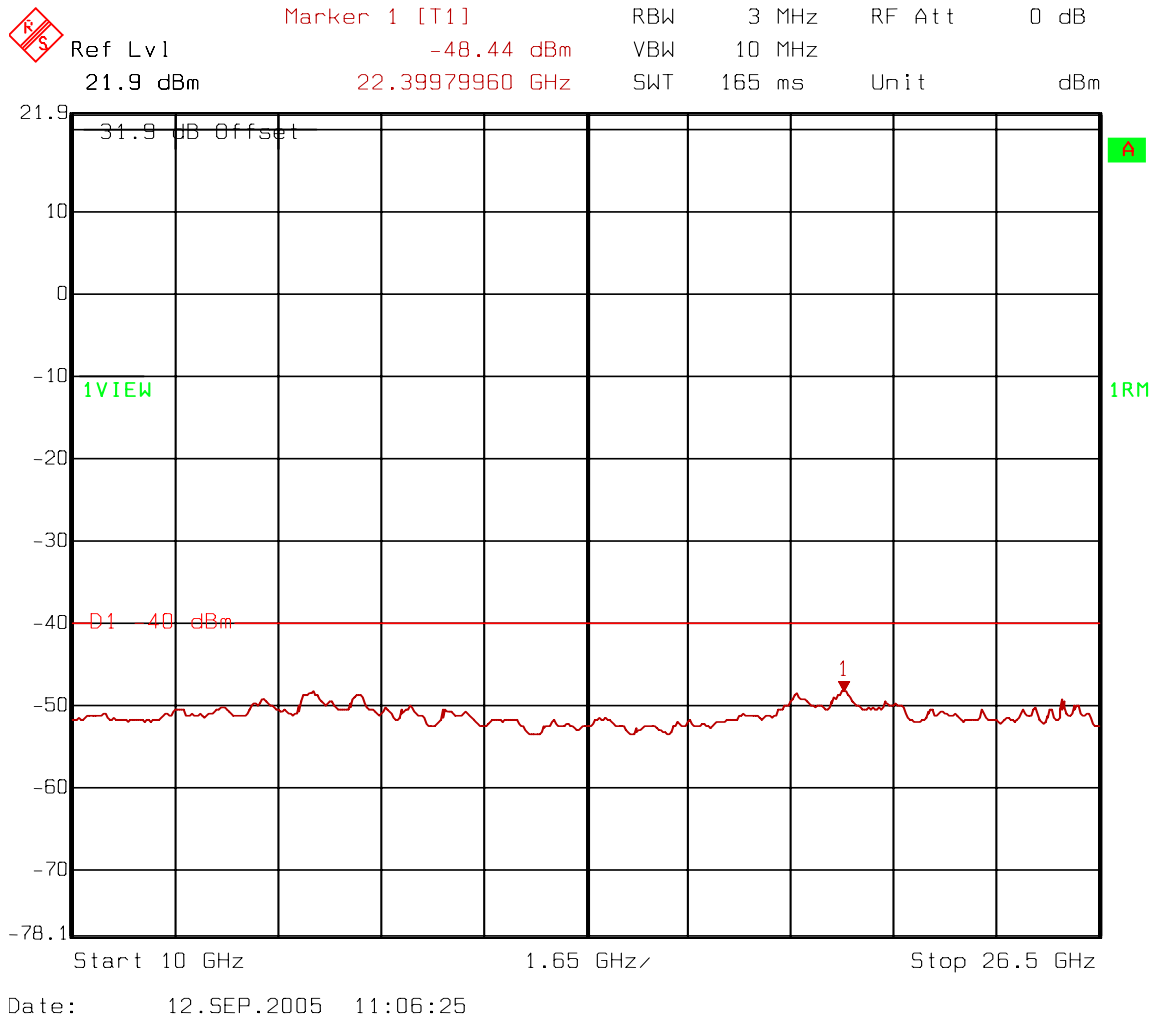
A LOW BAND SPURIOUS



EQUIPMENT: 2305 - 2360 LMX E

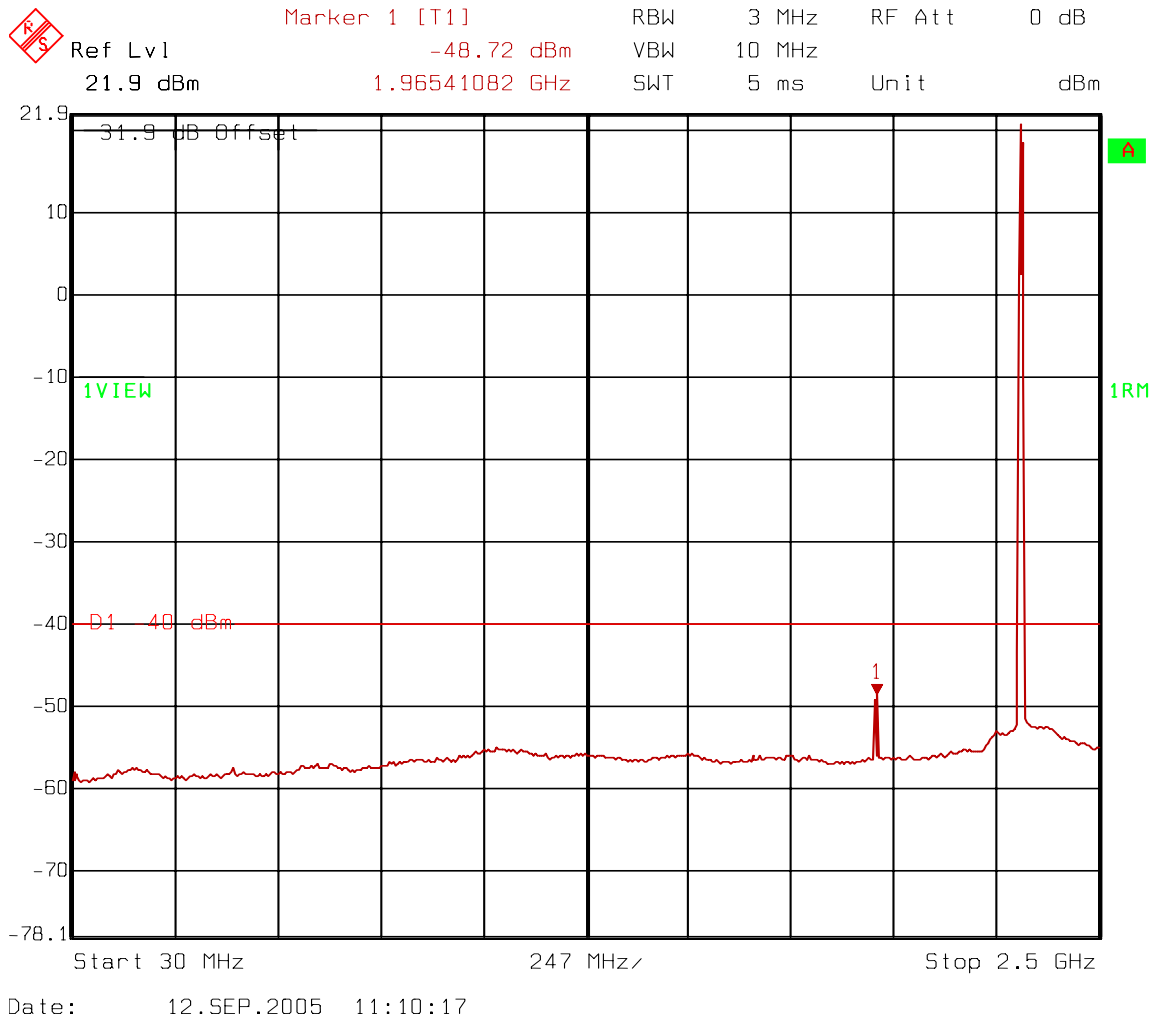


EQUIPMENT: 2305 - 2360 LMX E

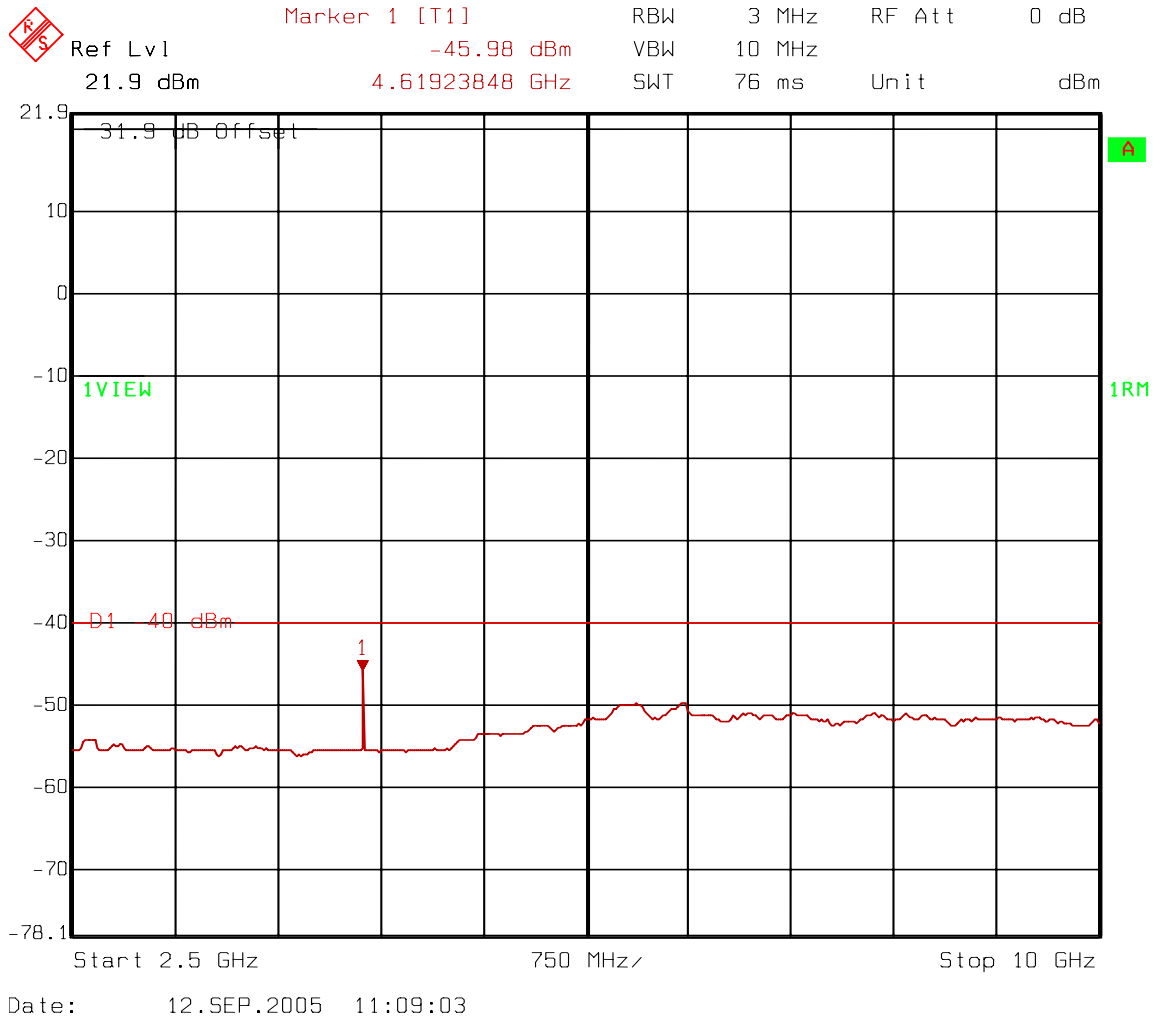


EQUIPMENT: 2305 - 2360 LMX E

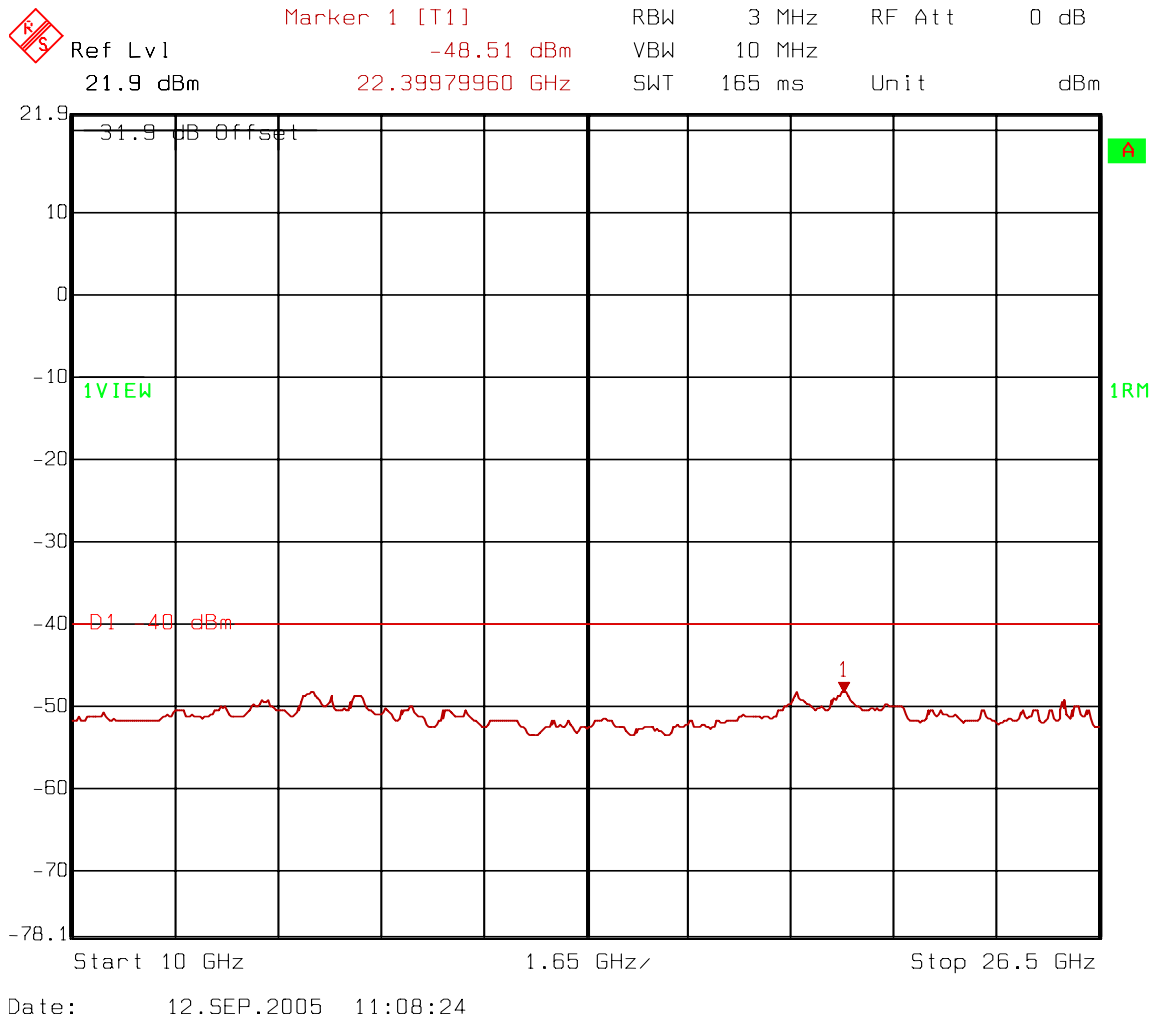
B LOW BAND SPURIOUS



EQUIPMENT: 2305 - 2360 LMX E

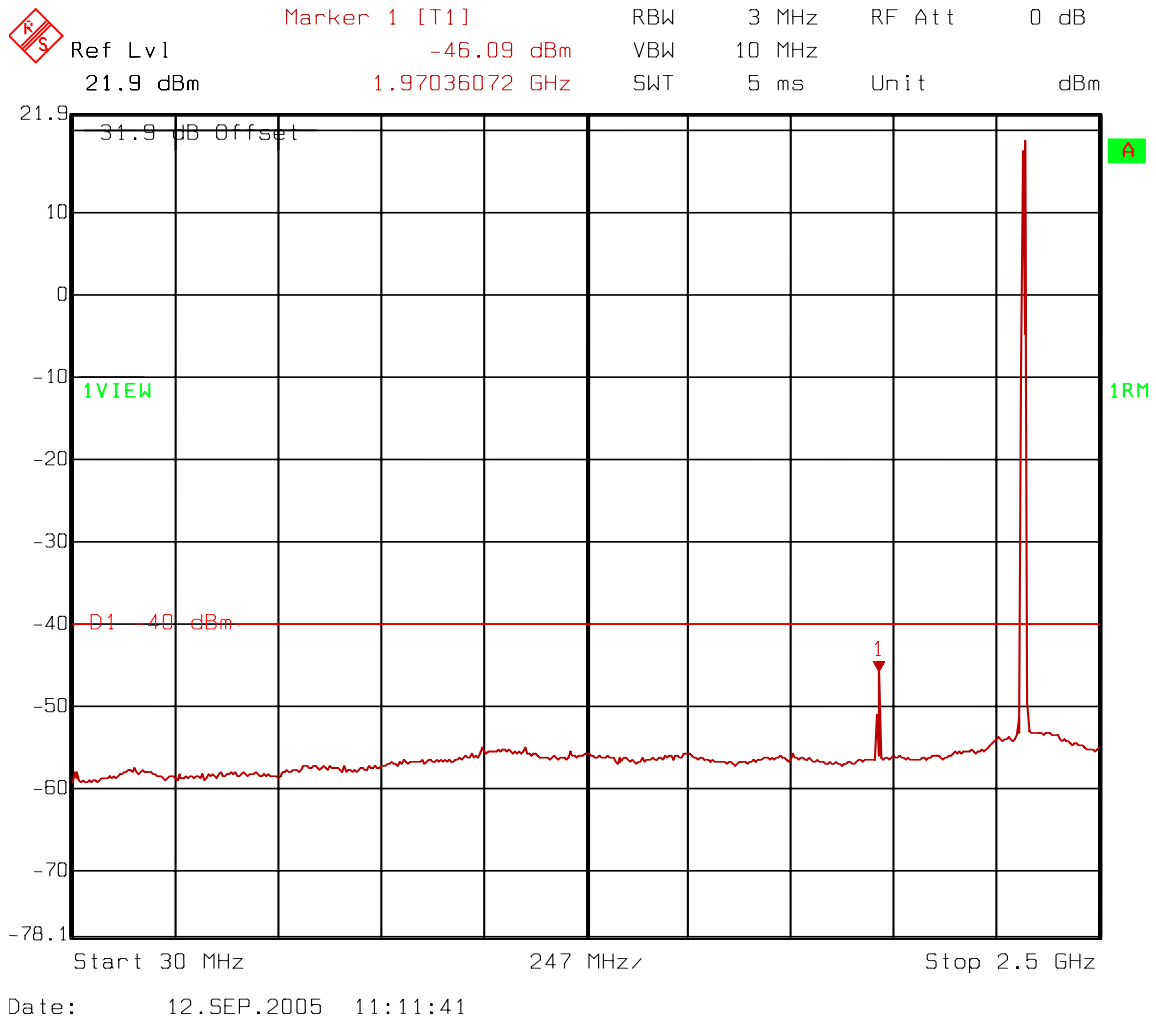


EQUIPMENT: 2305 - 2360 LMX E

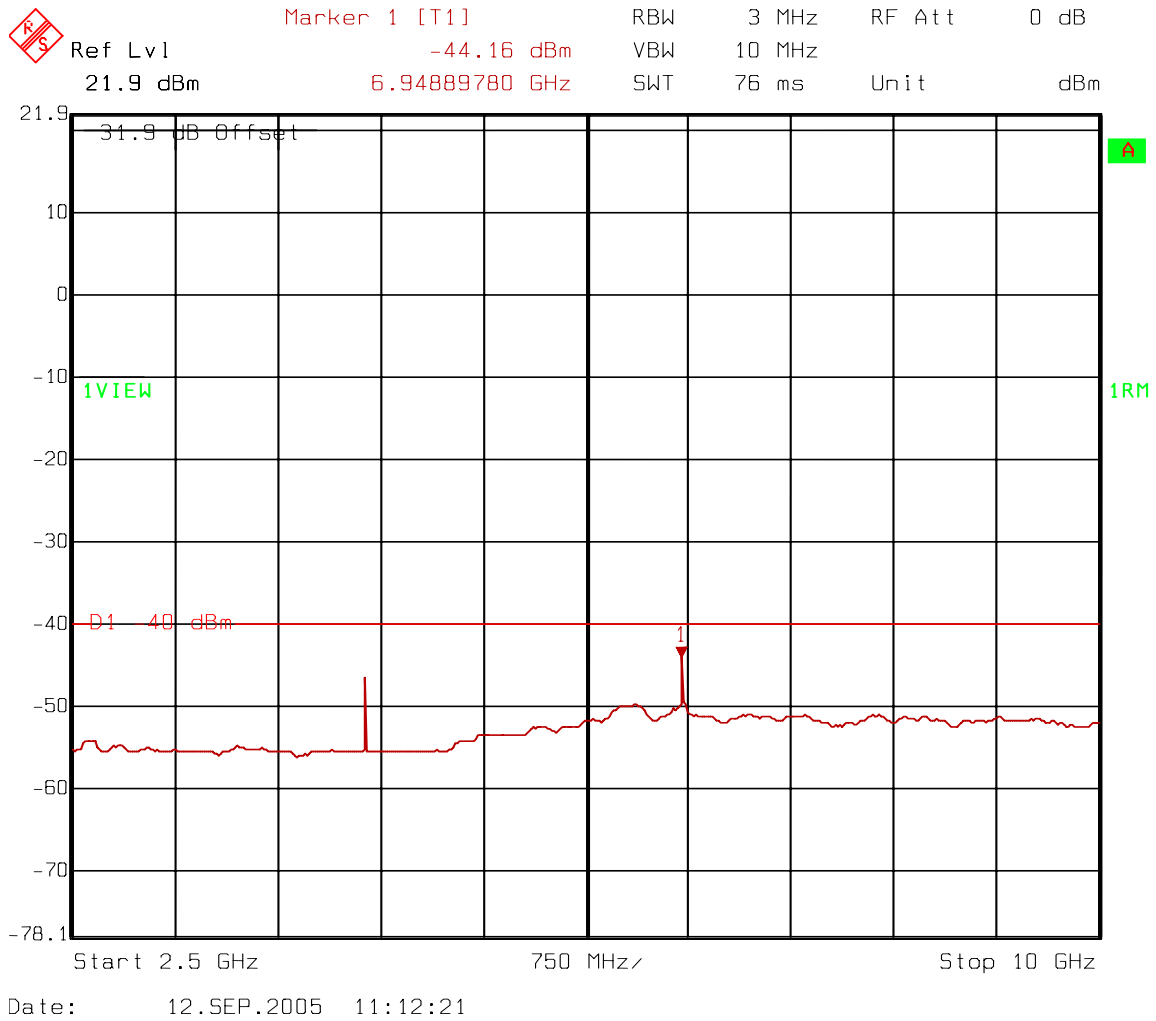


EQUIPMENT: 2305 - 2360 LMX E

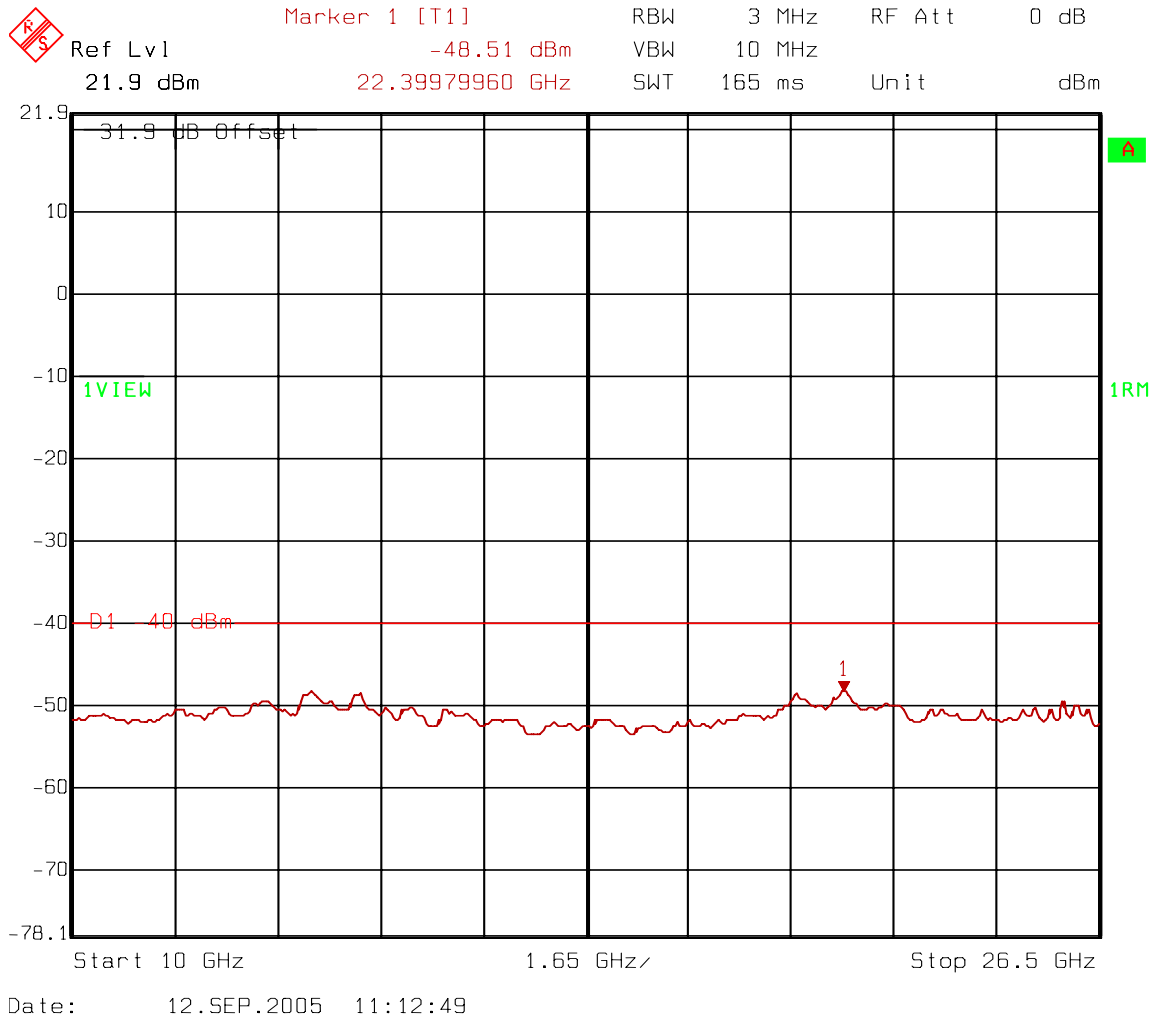
C BAND SPURIOUS



EQUIPMENT: 2305 - 2360 LMX E



EQUIPMENT: 2305 - 2360 LMX E



EQUIPMENT: 2305 – 2360 LMX E

Section 6. Field Strength of Spurious

NAME OF TEST: Field Strength of Spurious Emissions	PARA. NO.: 2.1053
TESTED BY: Kevin rose	DATE: September 12, 2005

Test Results:

Complies

Measurement Data:

See attached table.

Measurement Uncertainty: +/-1.7 dB

EQUIPMENT: 2305 – 2360 LMX E

Test Data - Radiated Emissions

[illegible]

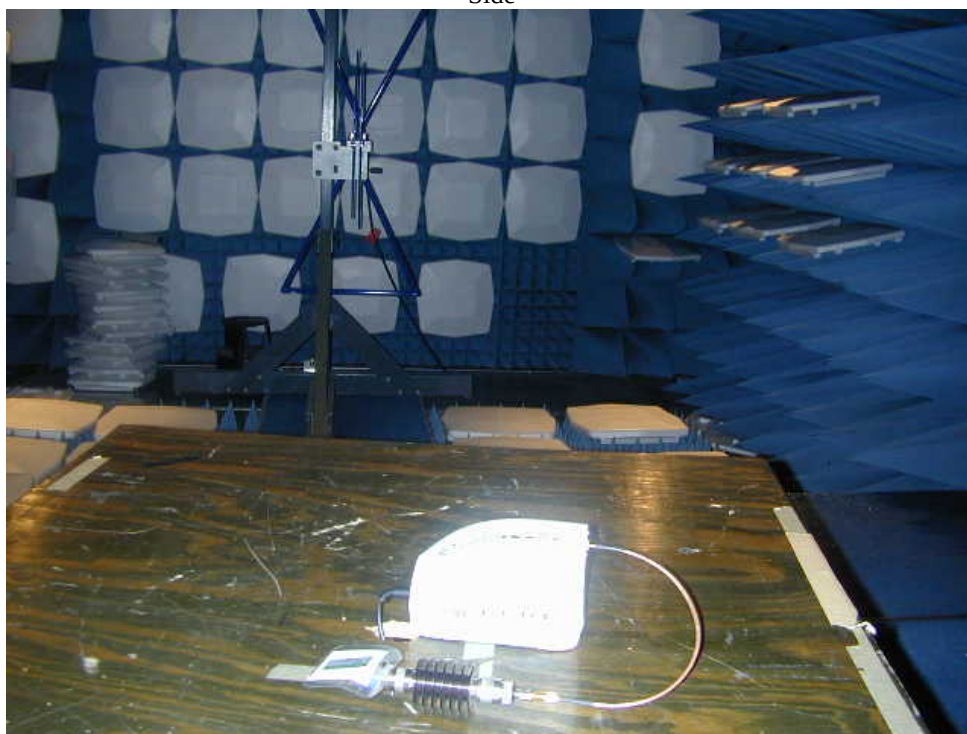
EQUIPMENT: 2305 – 2360 LMX E

Photos – Field Strength of Spurious Emissions

Rear



Side



EQUIPMENT: 2305 – 2360 LMX E**Section 7. Frequency Stability**

NAME OF TEST: Frequency Stability	PARA. NO.: 2.1055
5	
TESTED BY: Kevin Rose	DATE:09/14/05

Test Results:**Complies****Measurement Data:****See attached data sheets.**

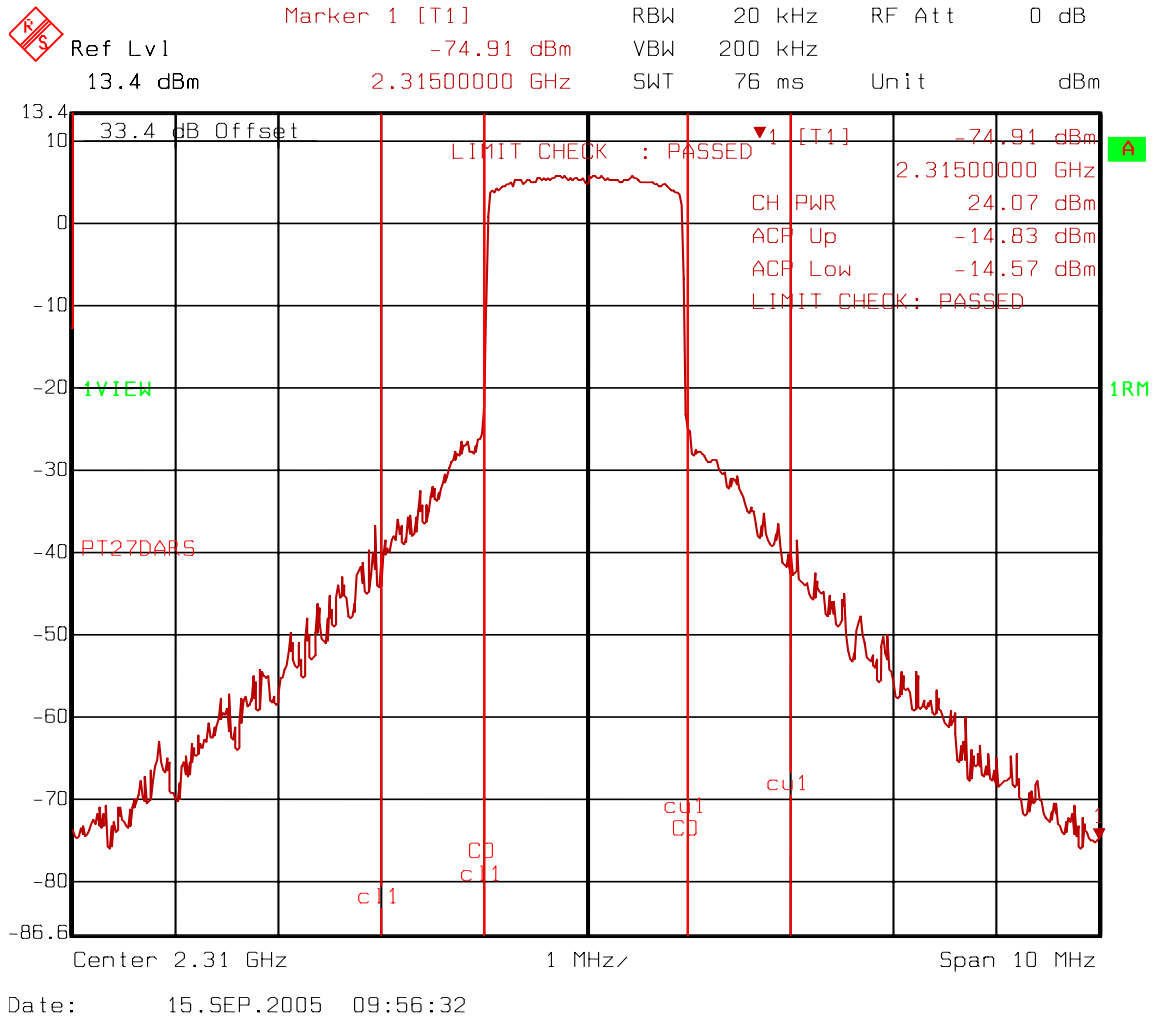
The following plots show that the transmitted signal stays within the required emission limits when the equipment is subjected to temperature and voltage variations.

Measurement Uncertainty: 1×10^{-7} ppm**EQUIPMENT USED 1561, 1562, 1045, 1055, 2072, 2071, 1470,1471, 619, 283, 1629, AND 1482**

EQUIPMENT: 2305 - 2360 LMX E

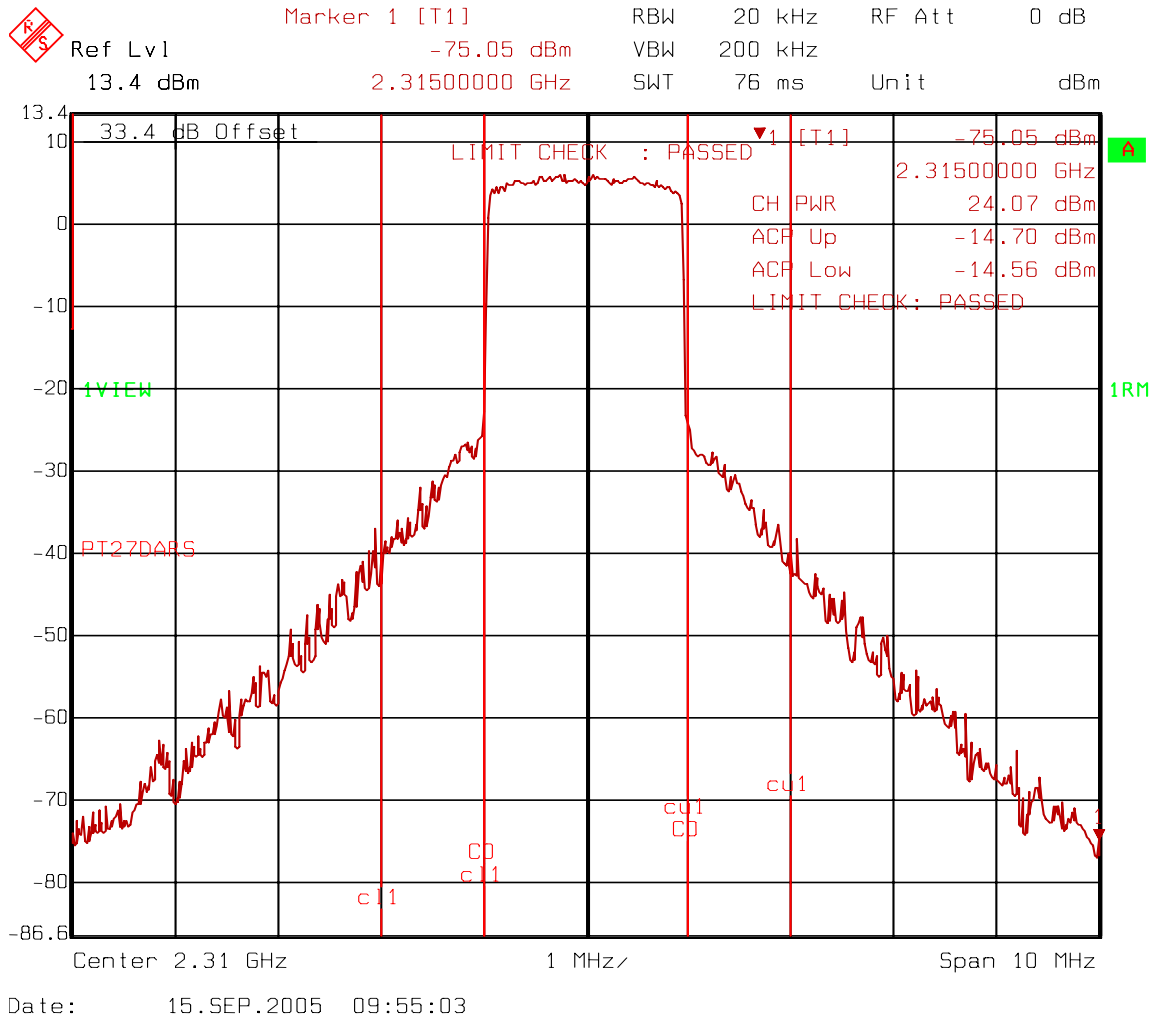
20 DEGREES 115 TNOM

A BAND 24DBM OUTPUT



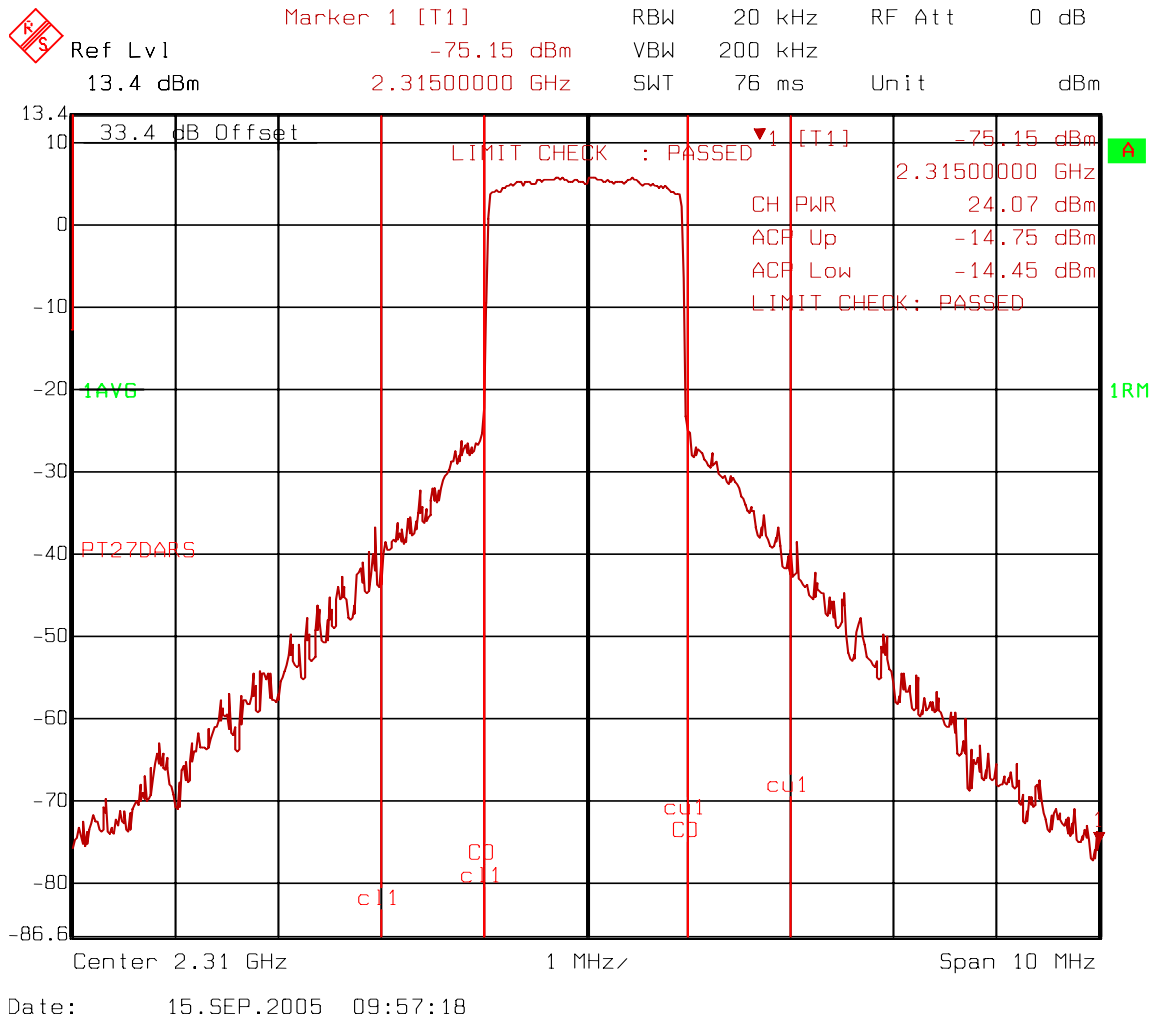
EQUIPMENT: 2305 - 2360 LMX E

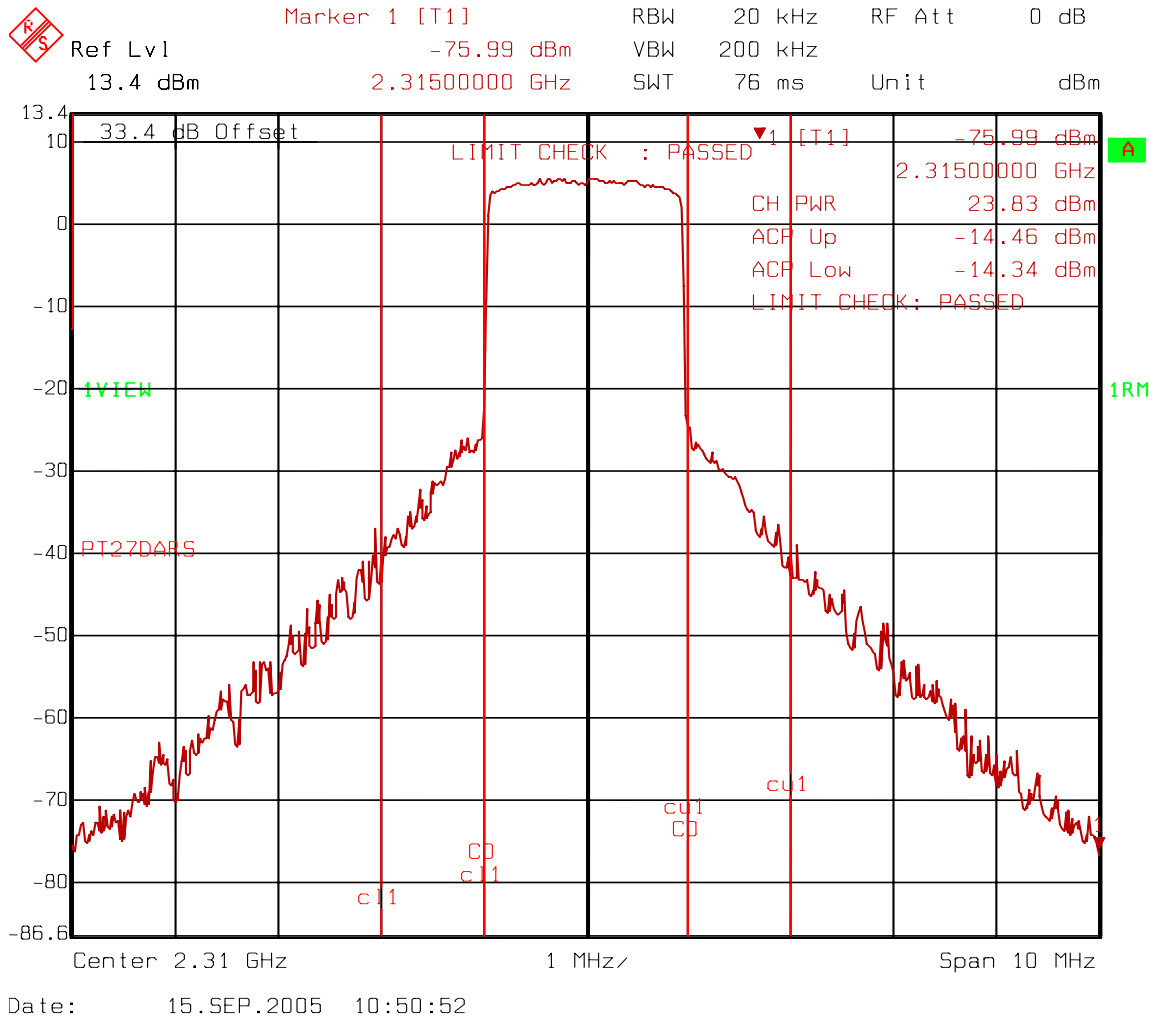
20DEGREES TMIN

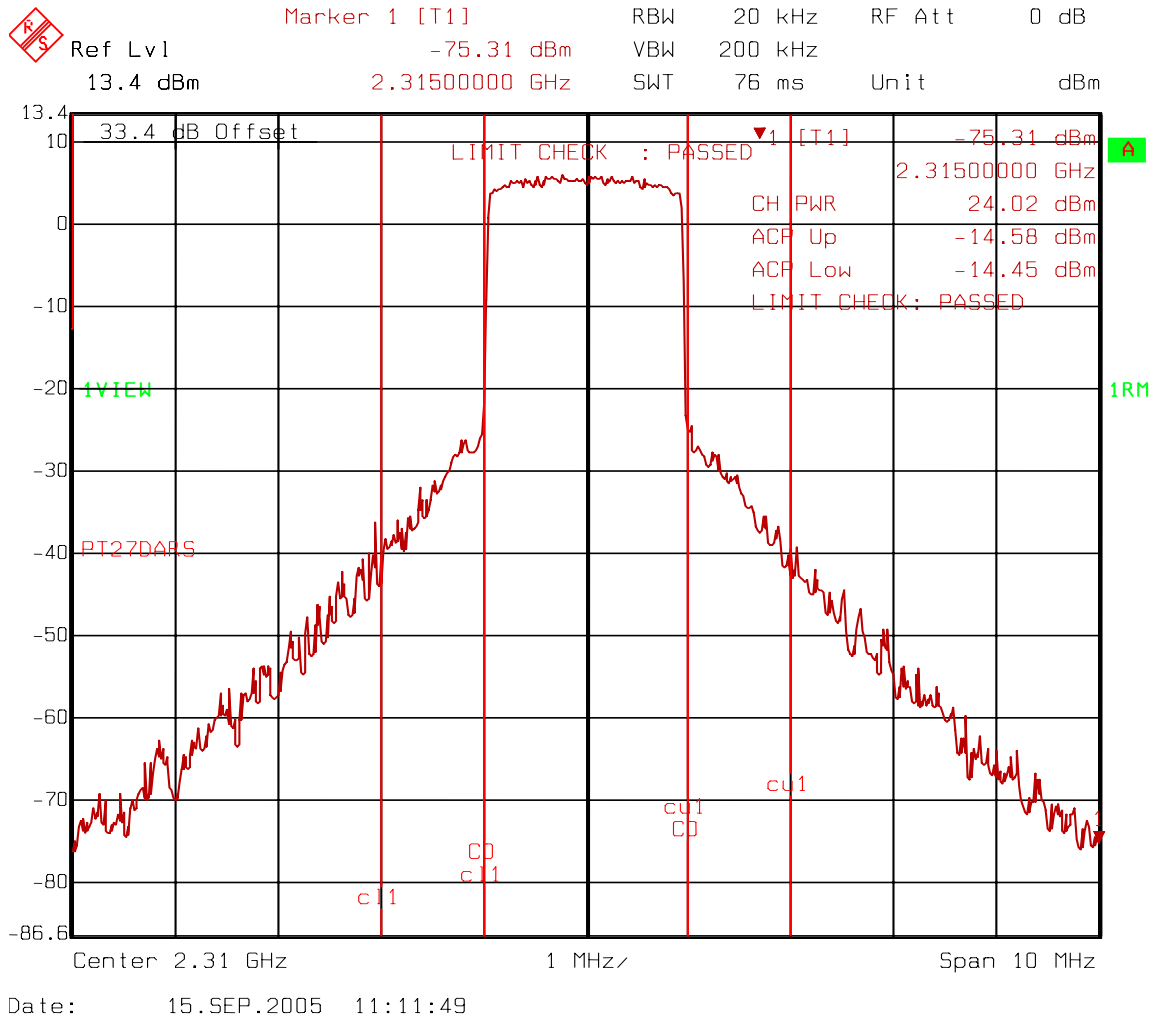


EQUIPMENT: 2305 - 2360 LMX E

20DEGREES T MAX

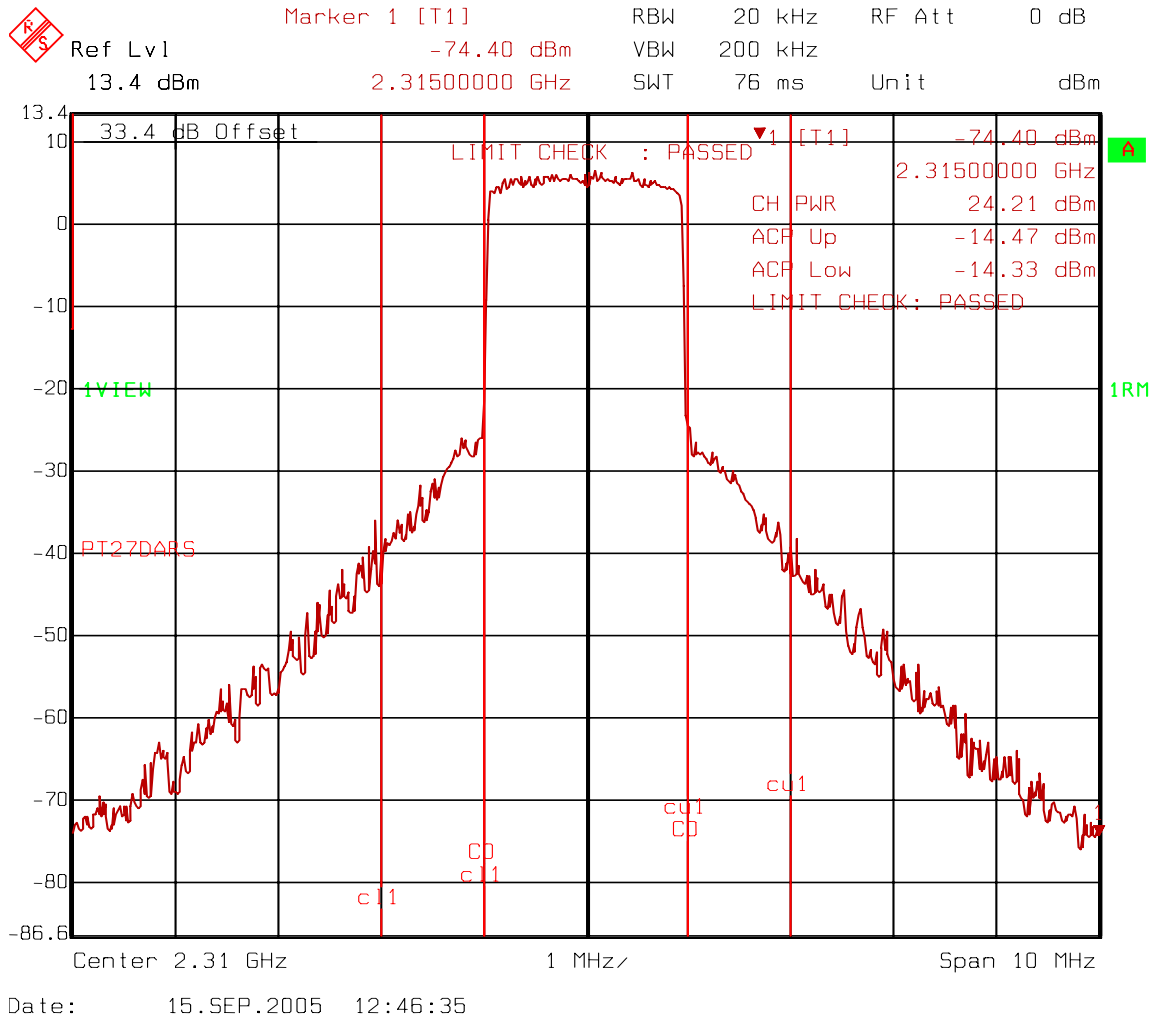






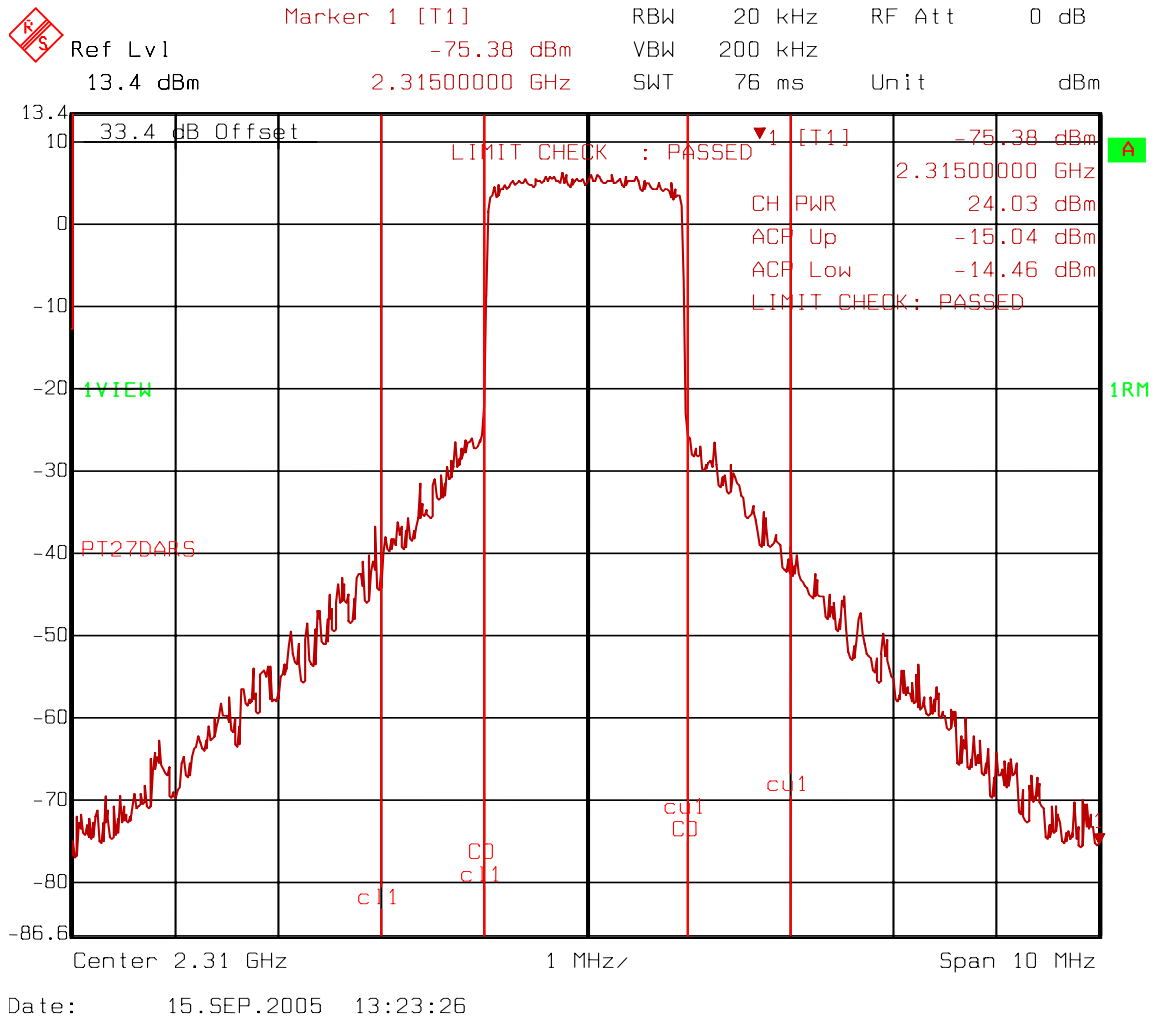
EQUIPMENT: 2305 - 2360 LMX E

30C



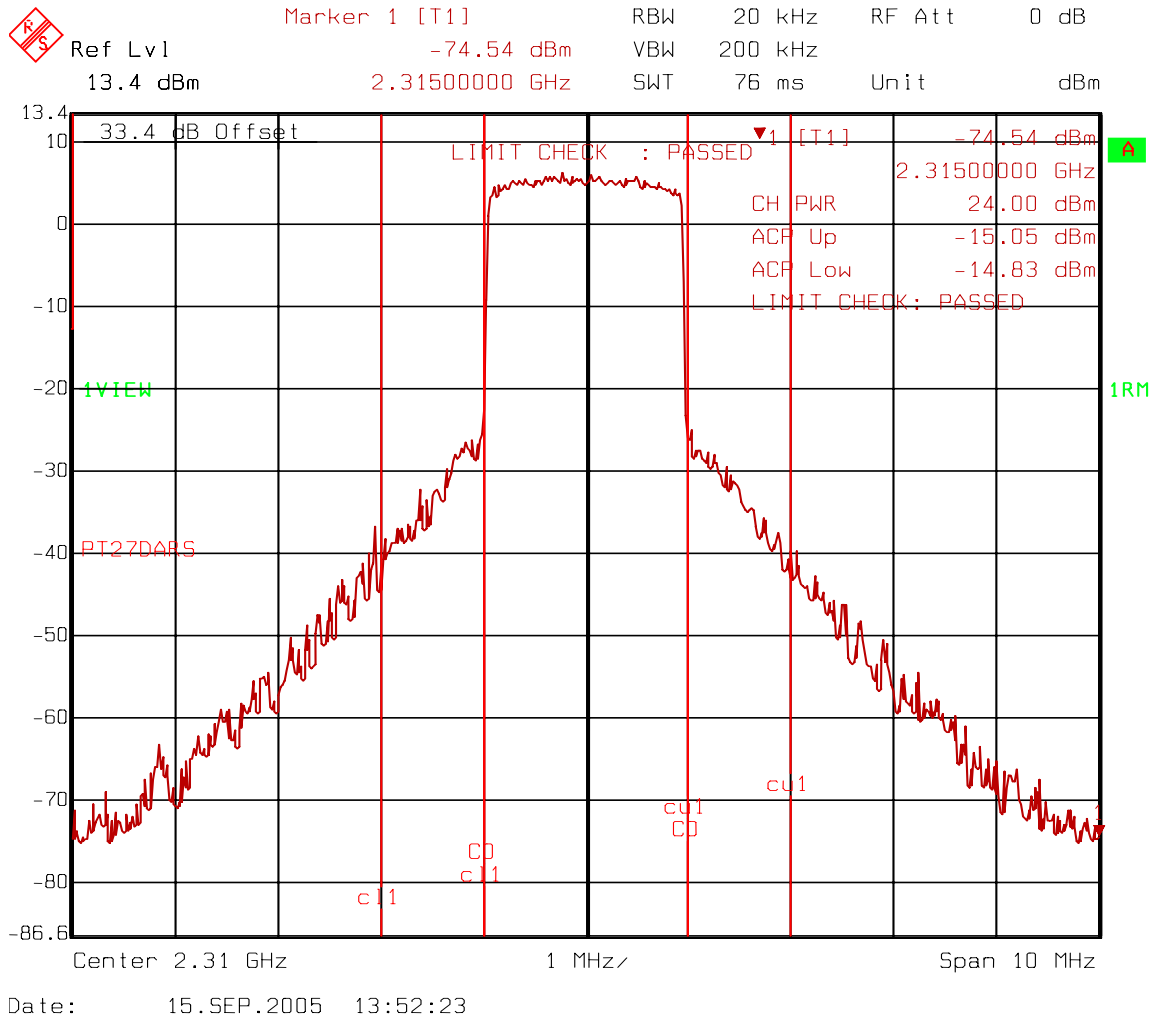
EQUIPMENT: 2305 - 2360 LMX E

10 C



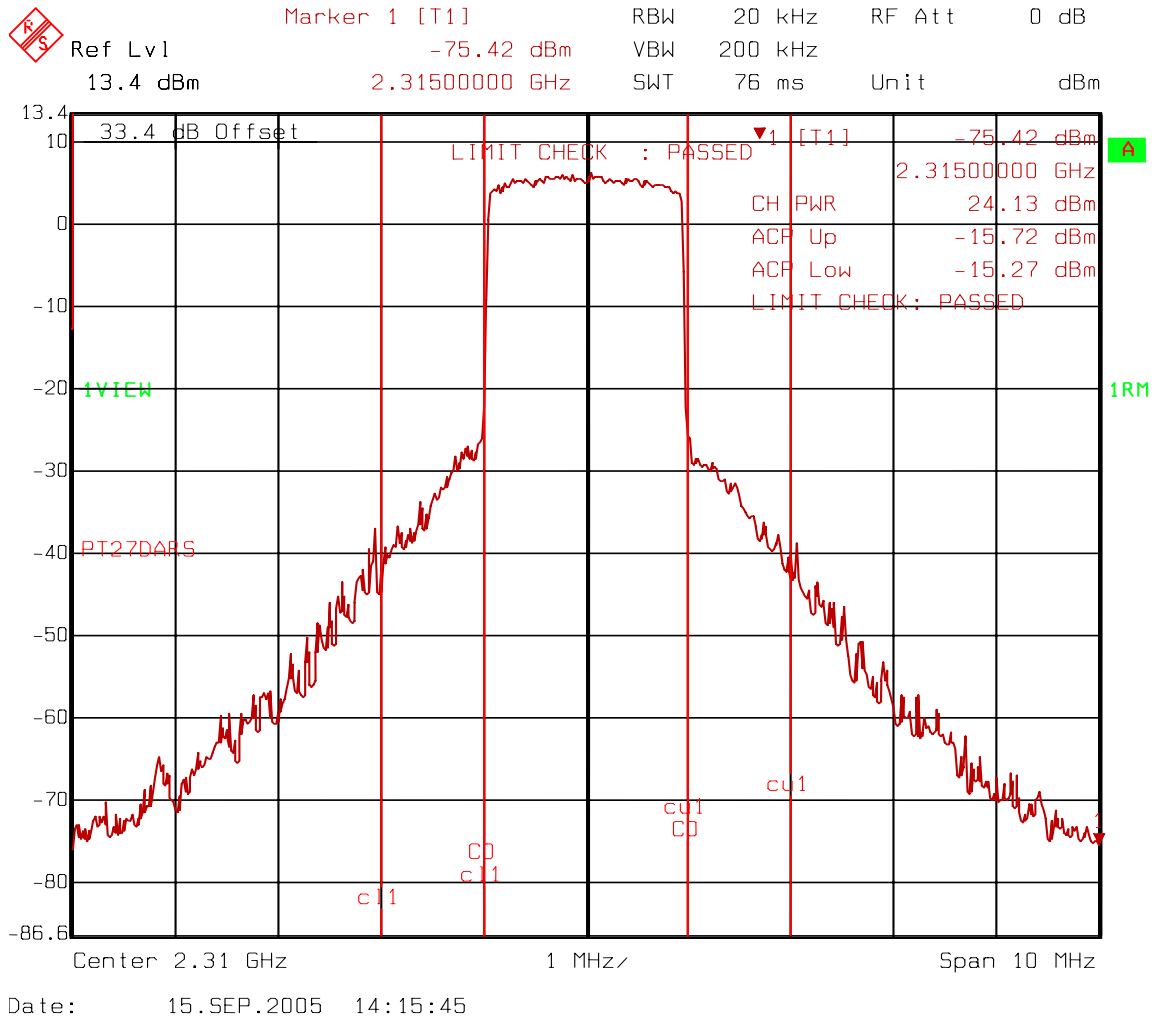
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0 C



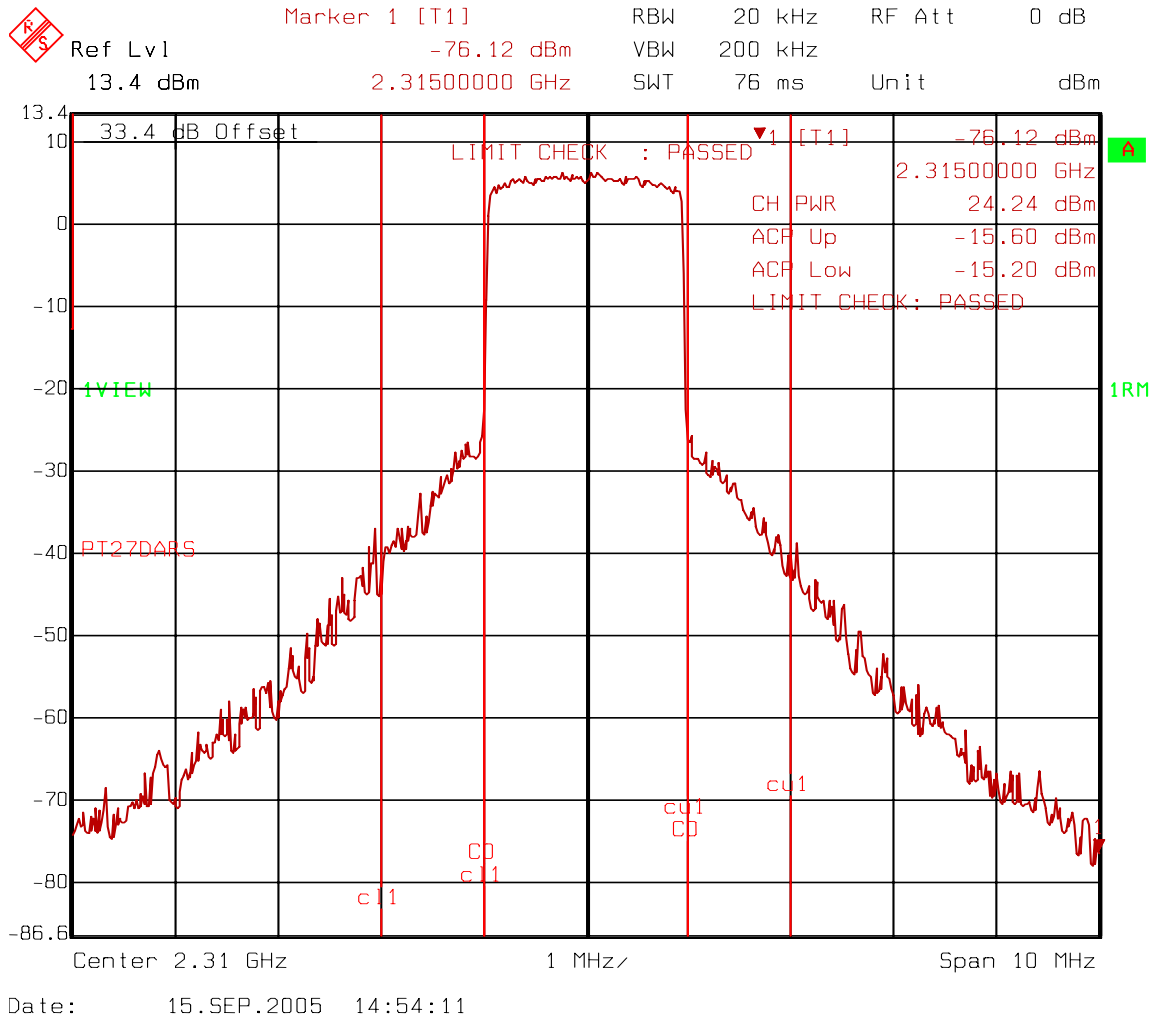
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-10 C



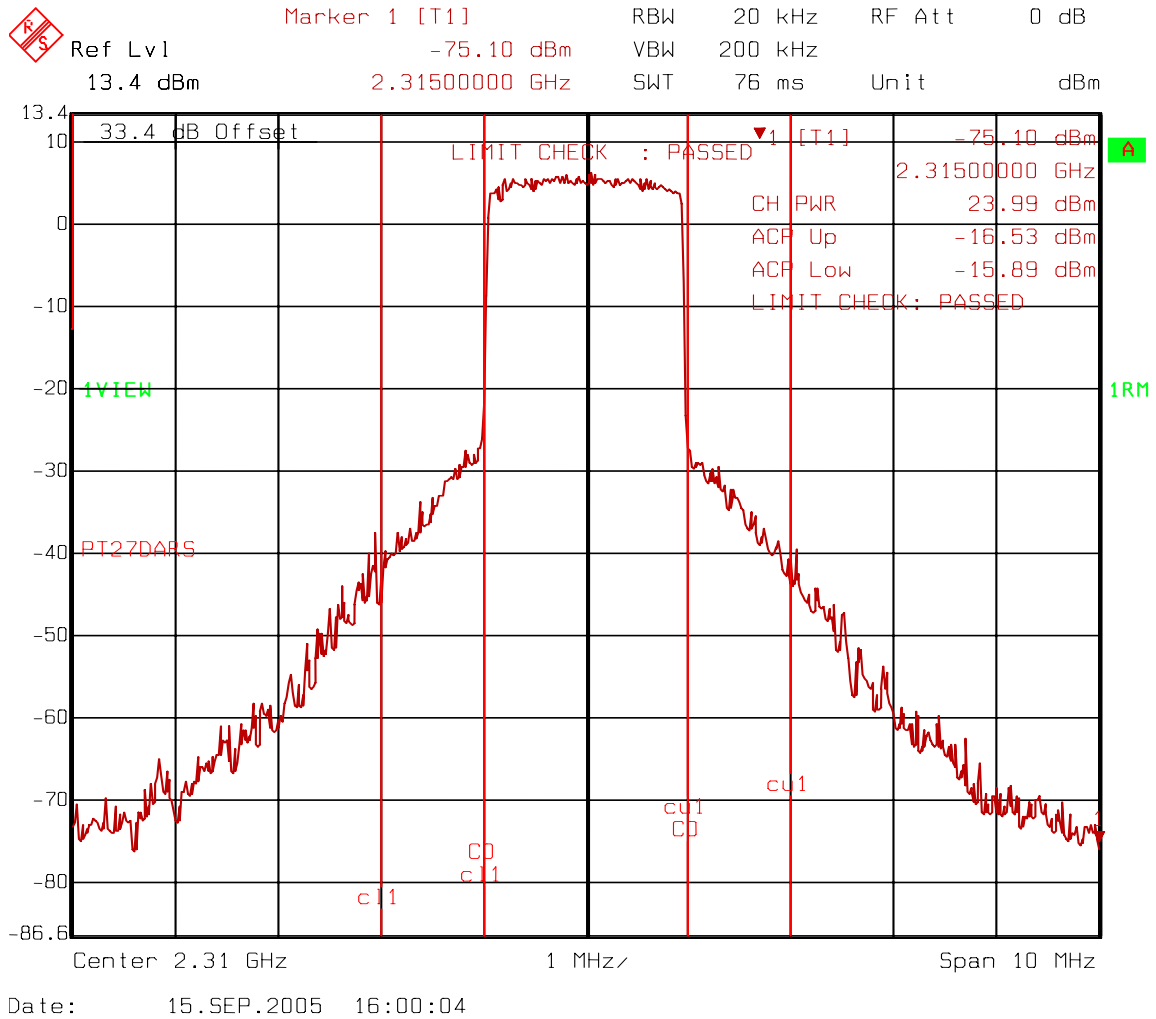
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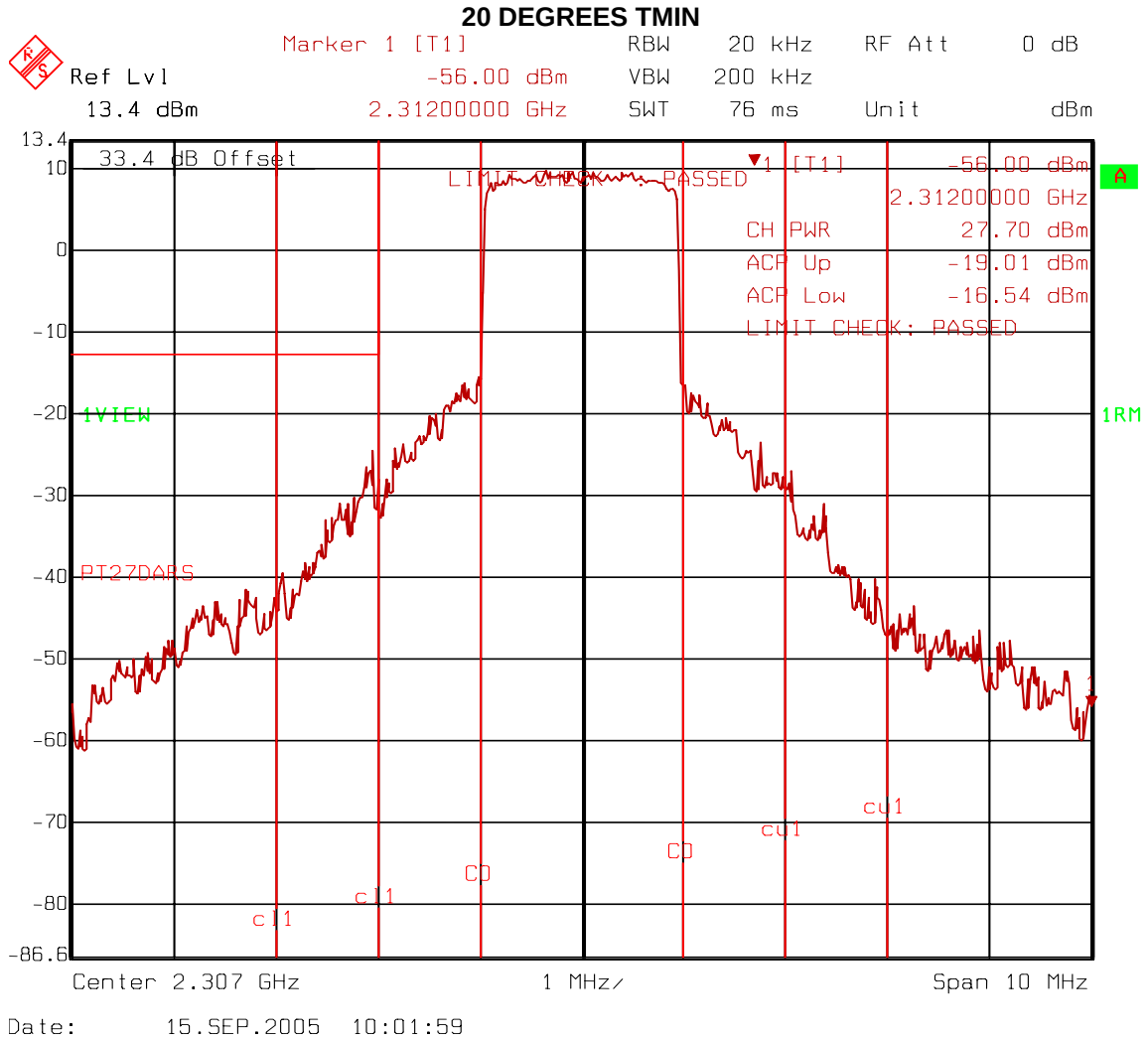


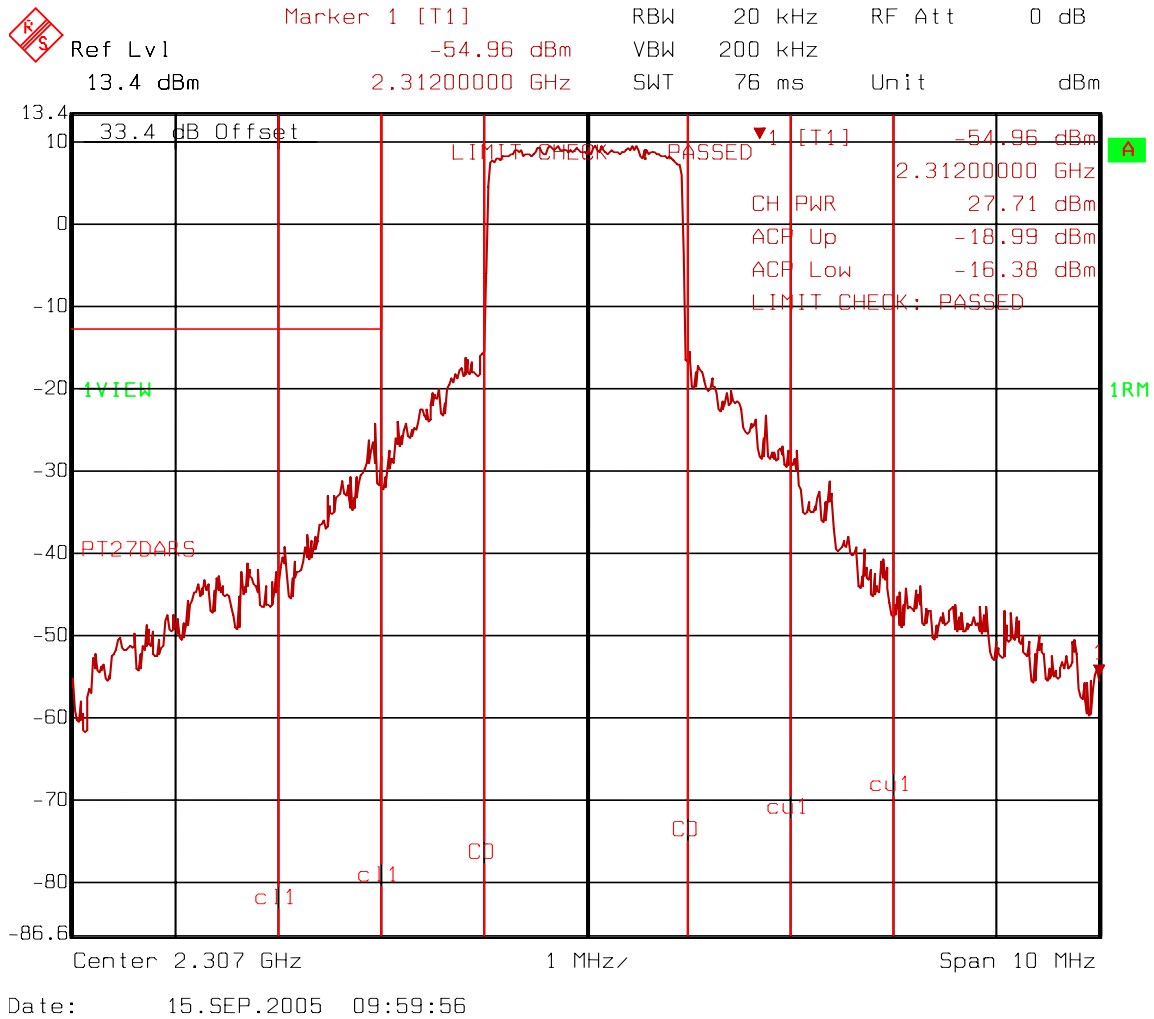
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-30 C



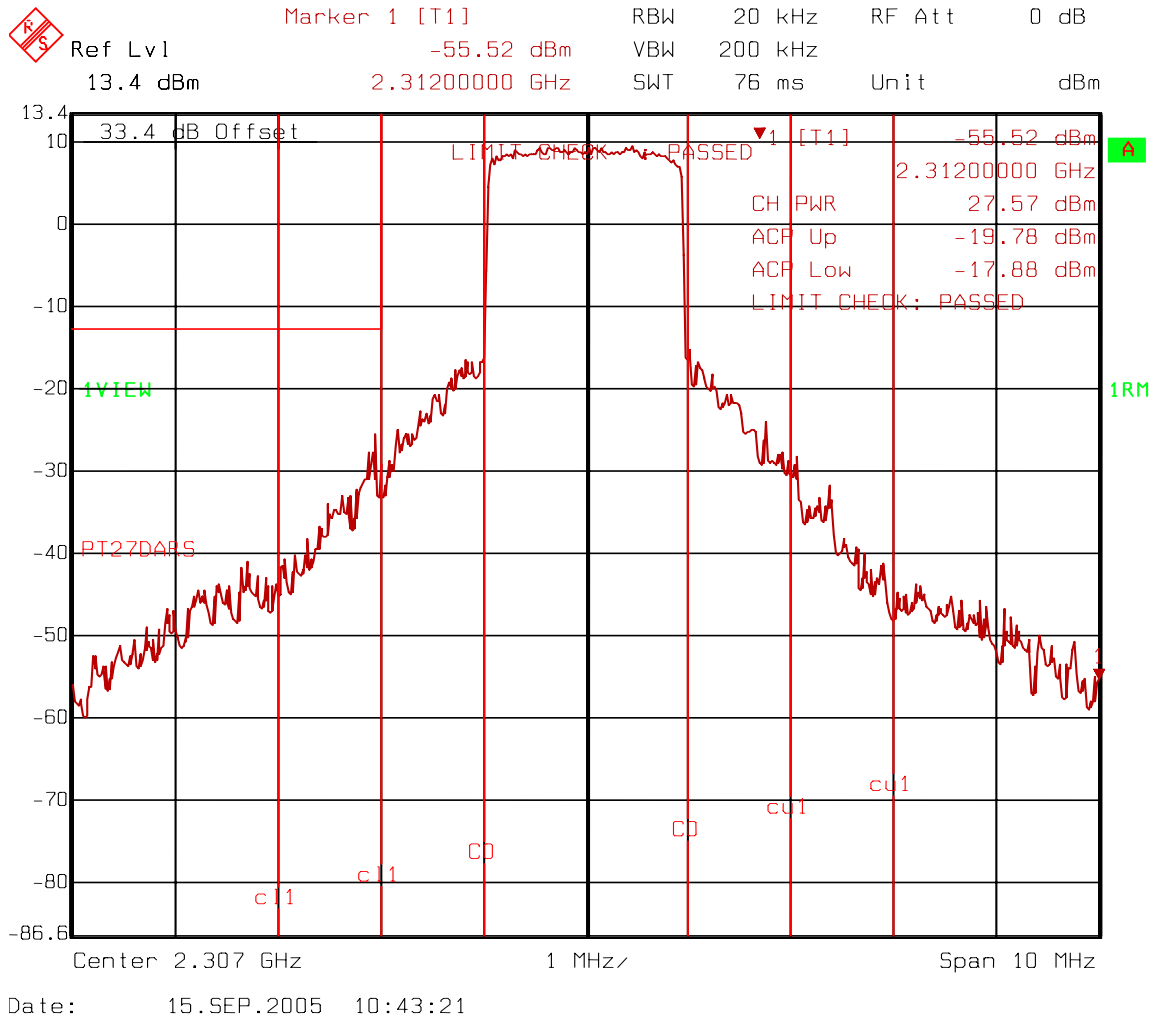
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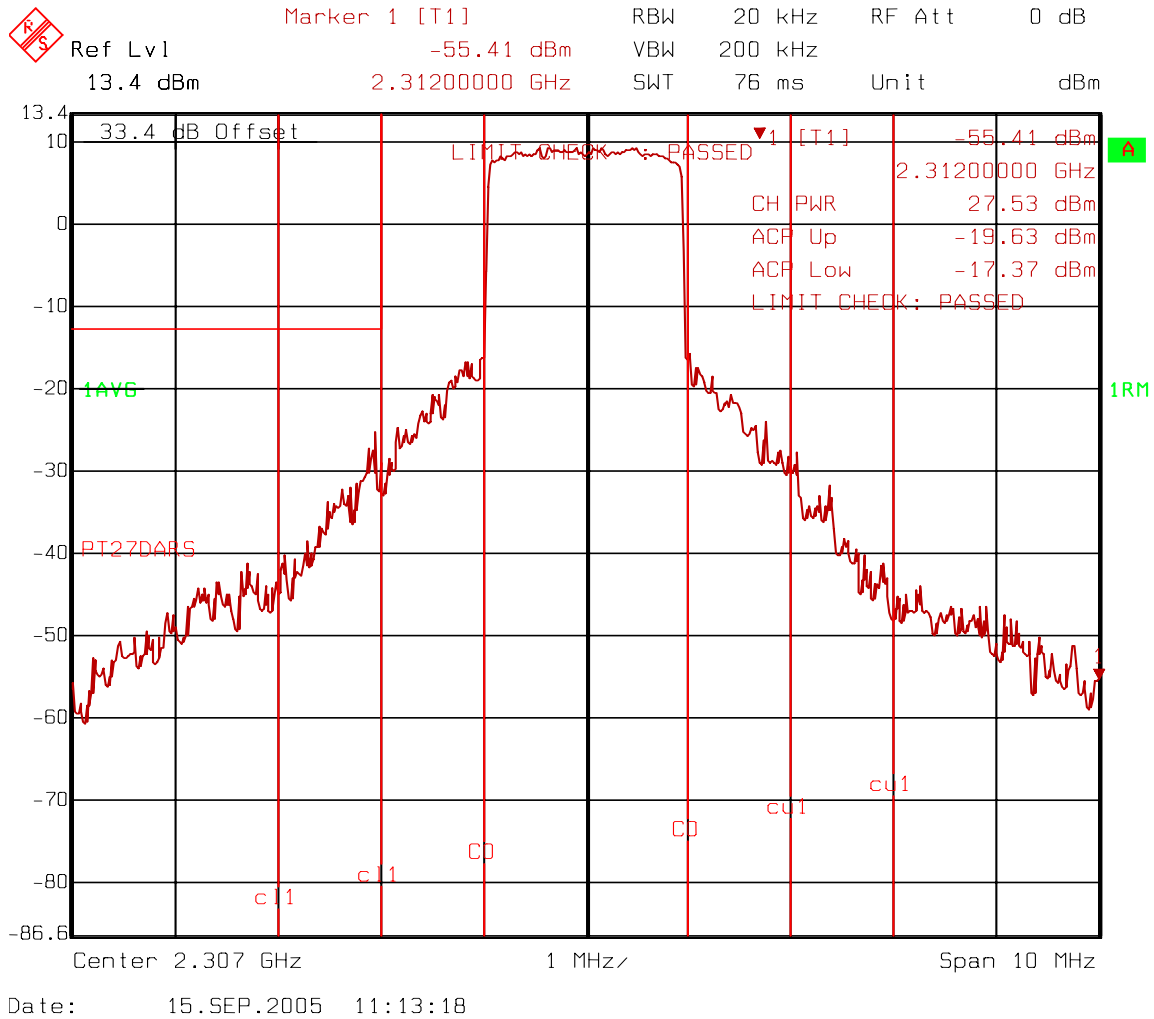


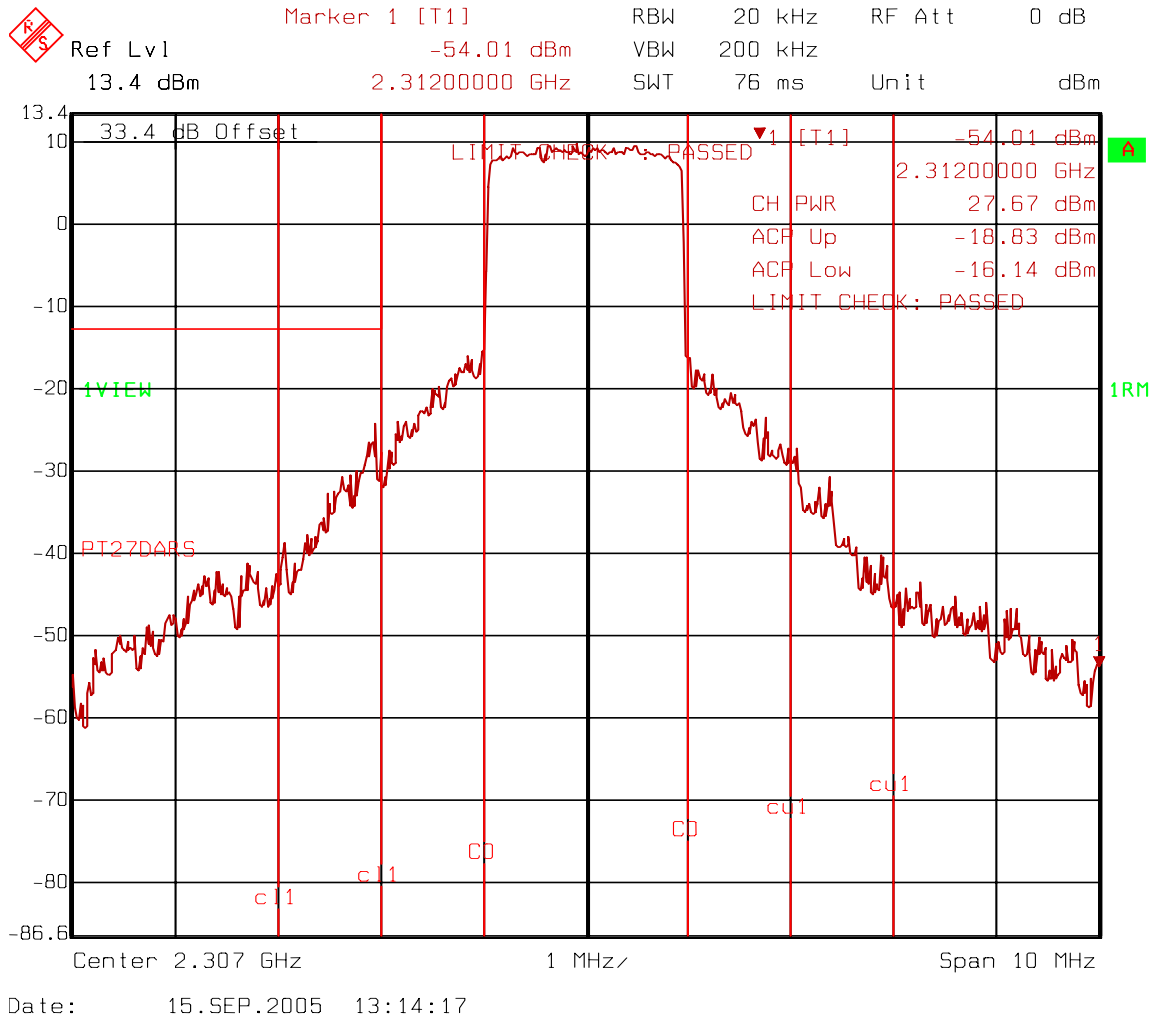


EQUIPMENT: 2305 - 2360 LMX E

50 C

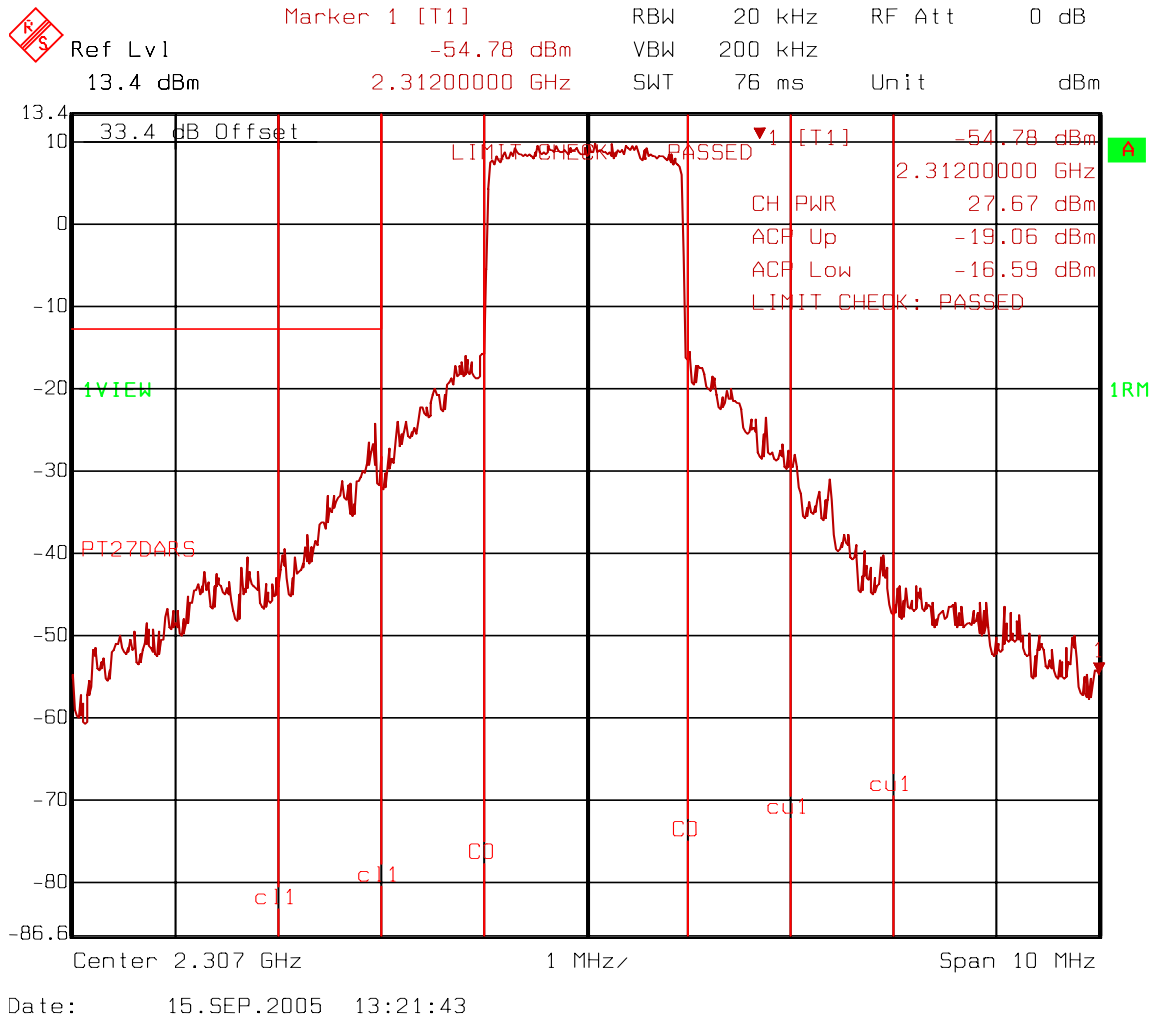


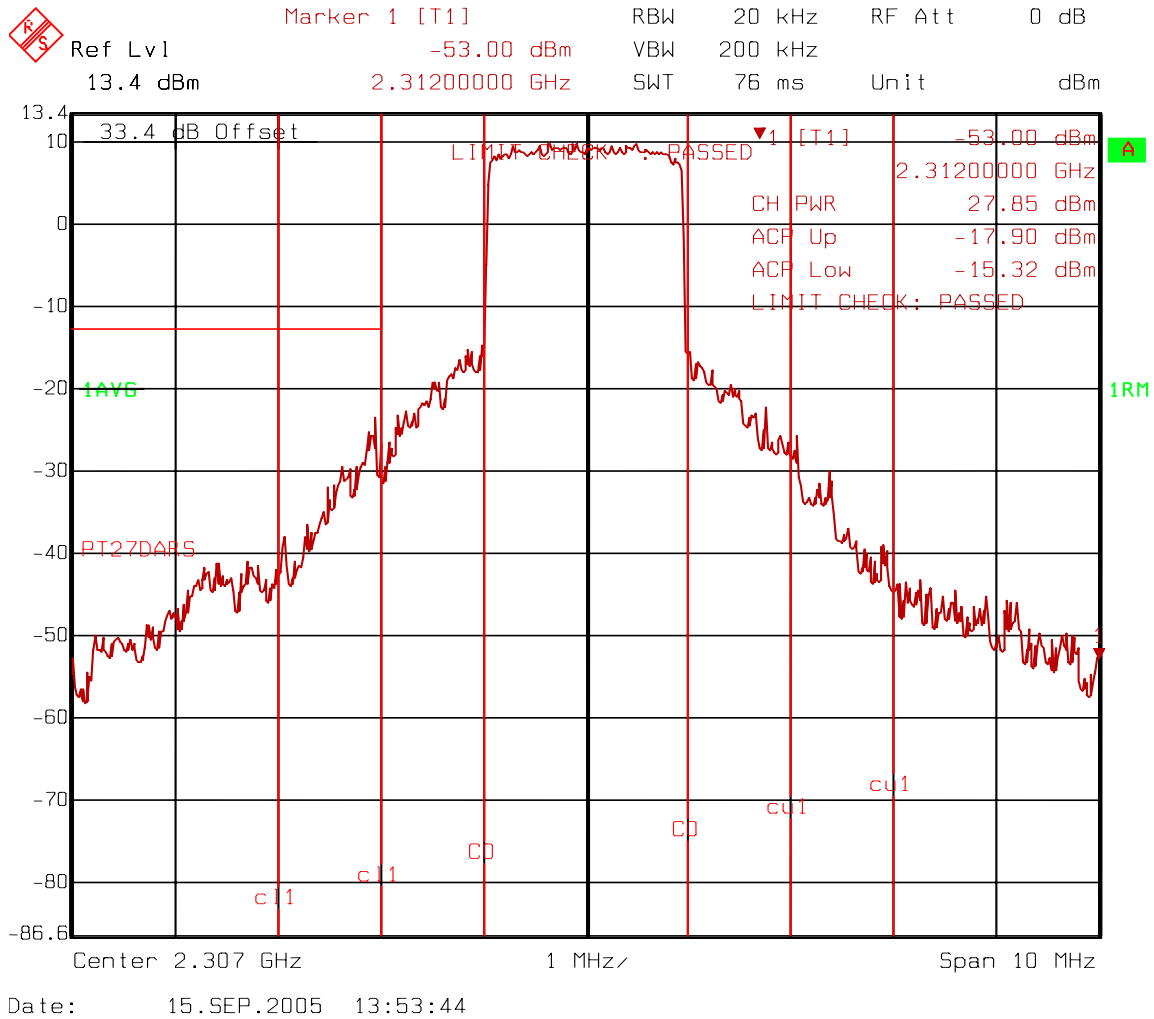


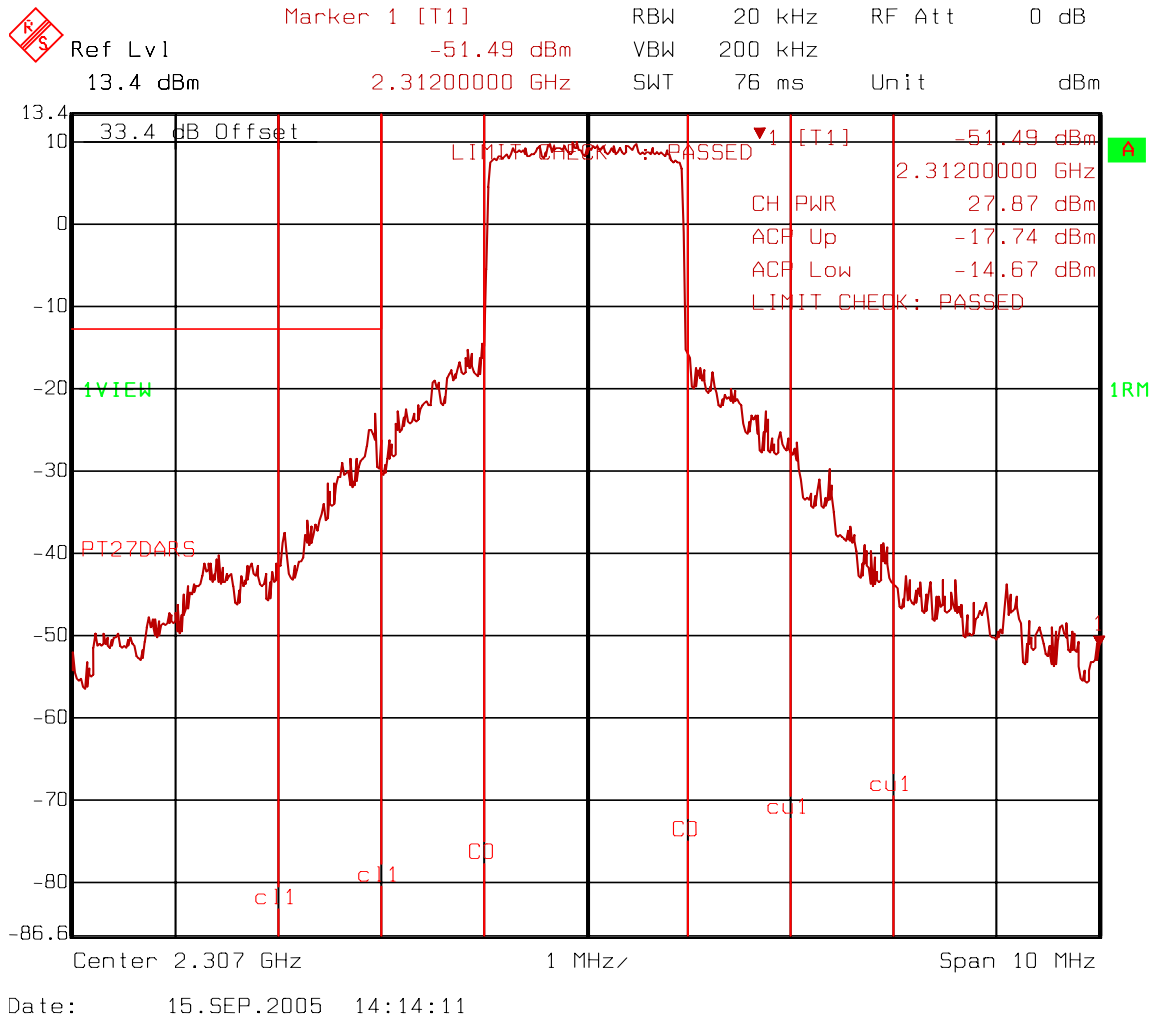


EQUIPMENT: 2305 - 2360 LMX E

10 C

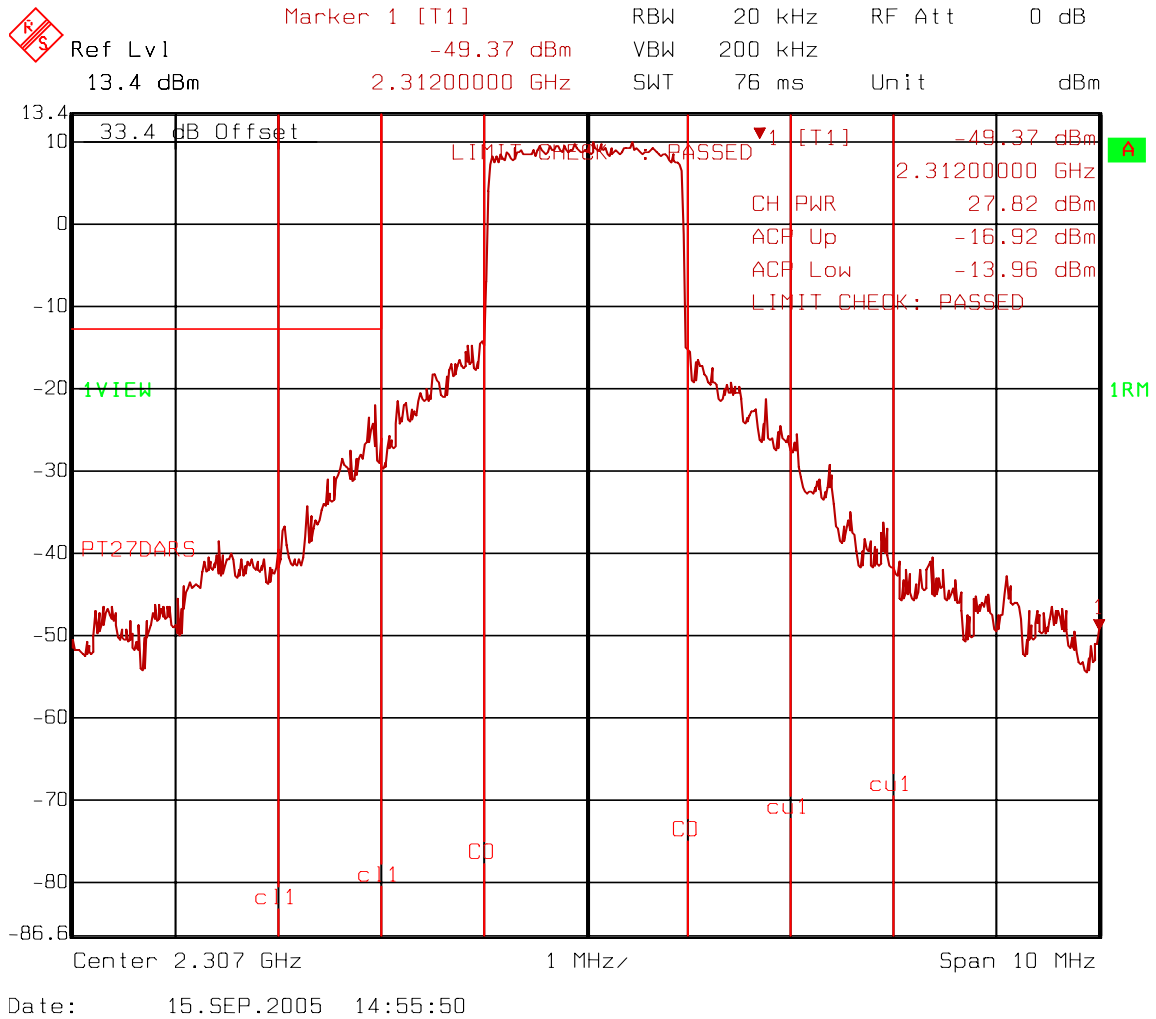






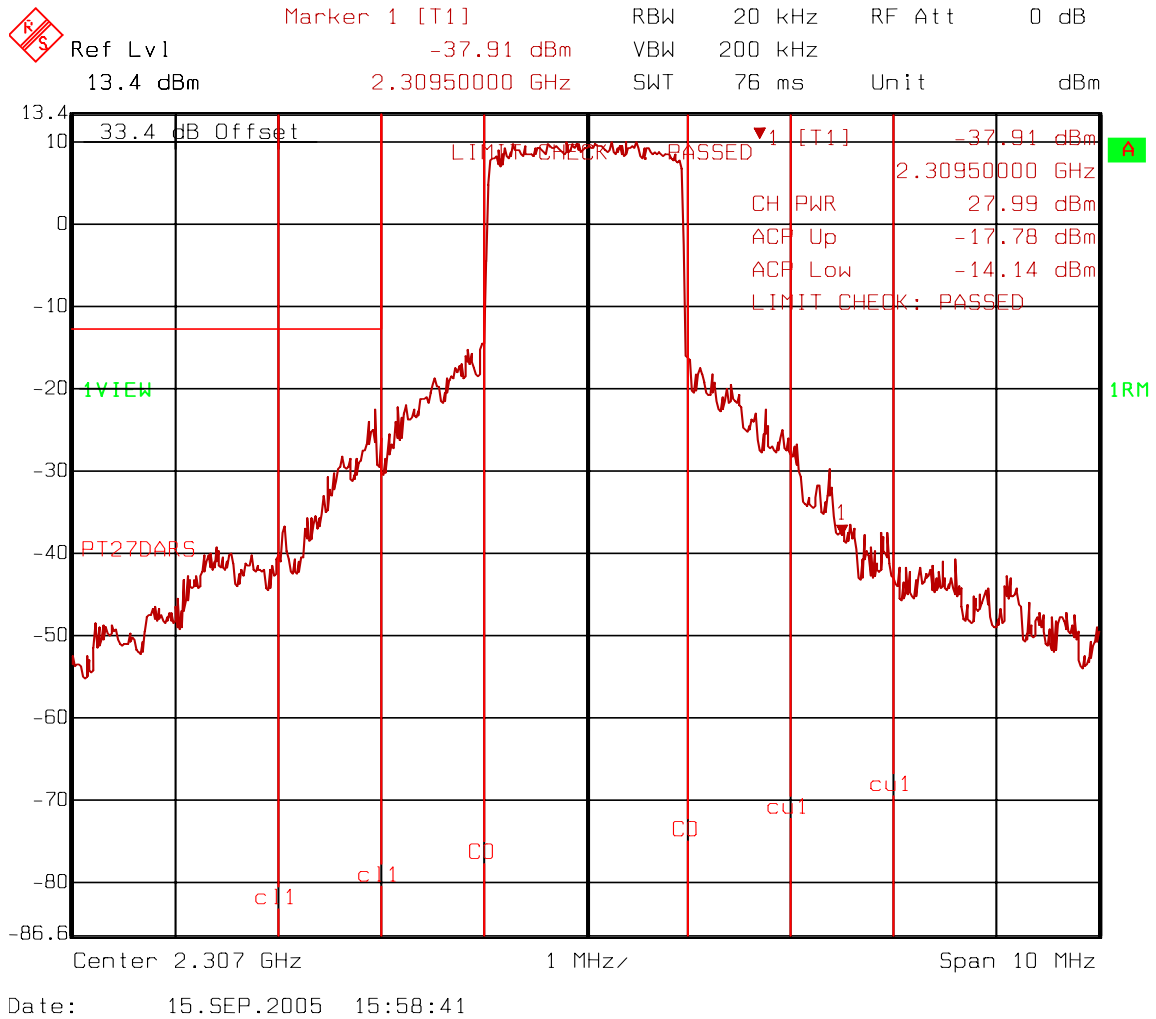
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-20 C



EQUIPMENT: 2305 - 2360 LMX E

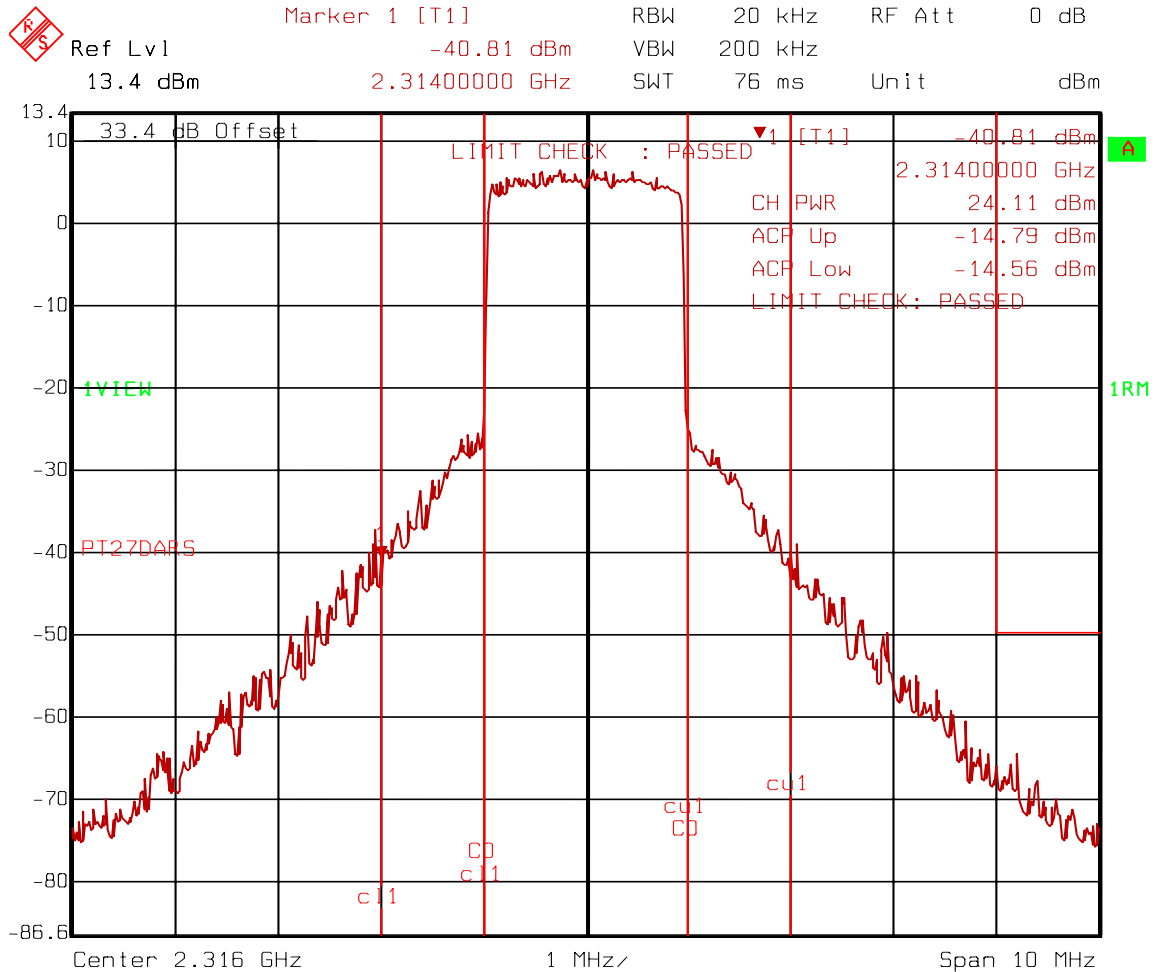
-30 C



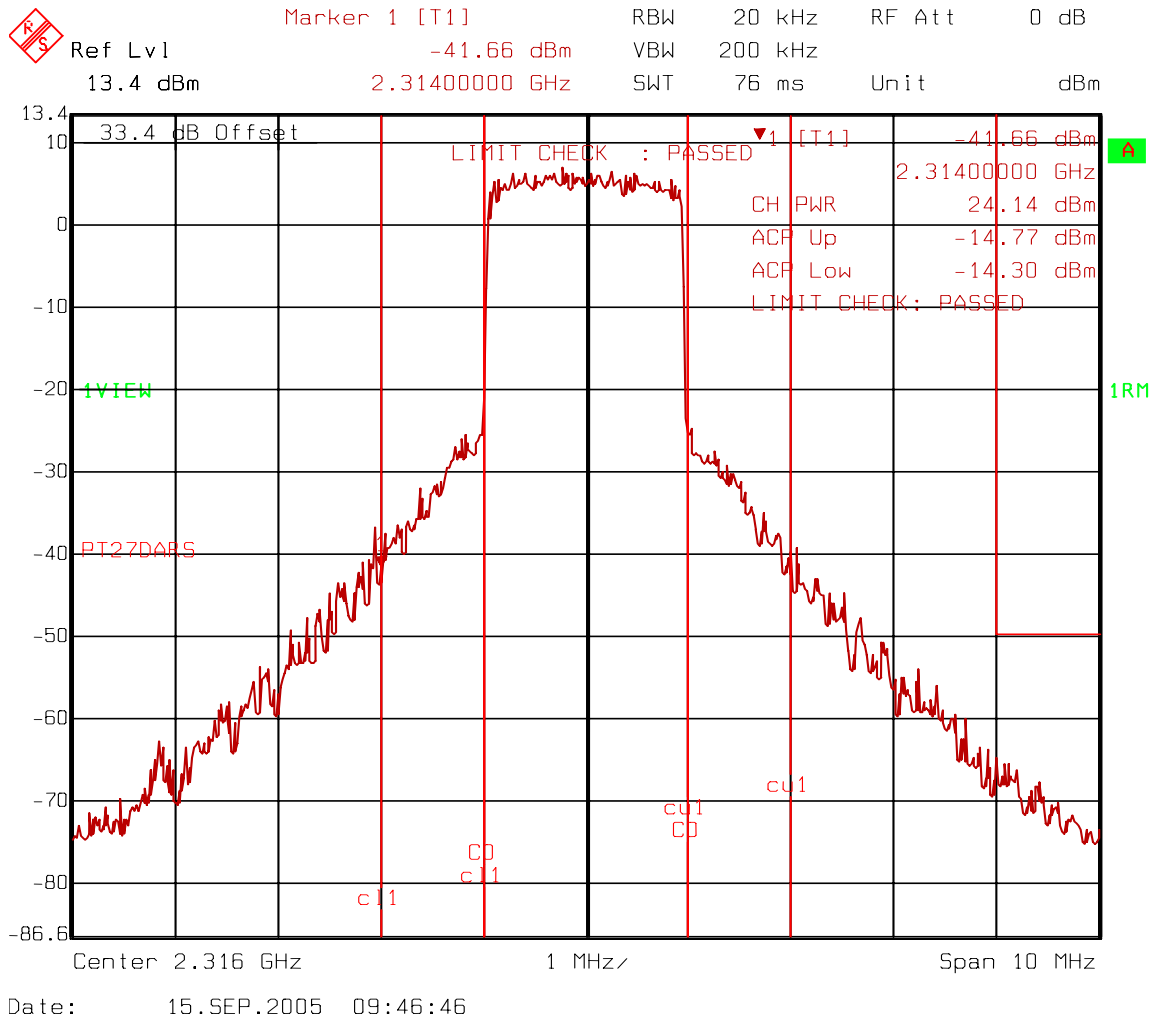
EQUIPMENT: 2305 - 2360 LMX E

20 DEGREES 115 TNOM

C BAND 24DBM OUTPUT

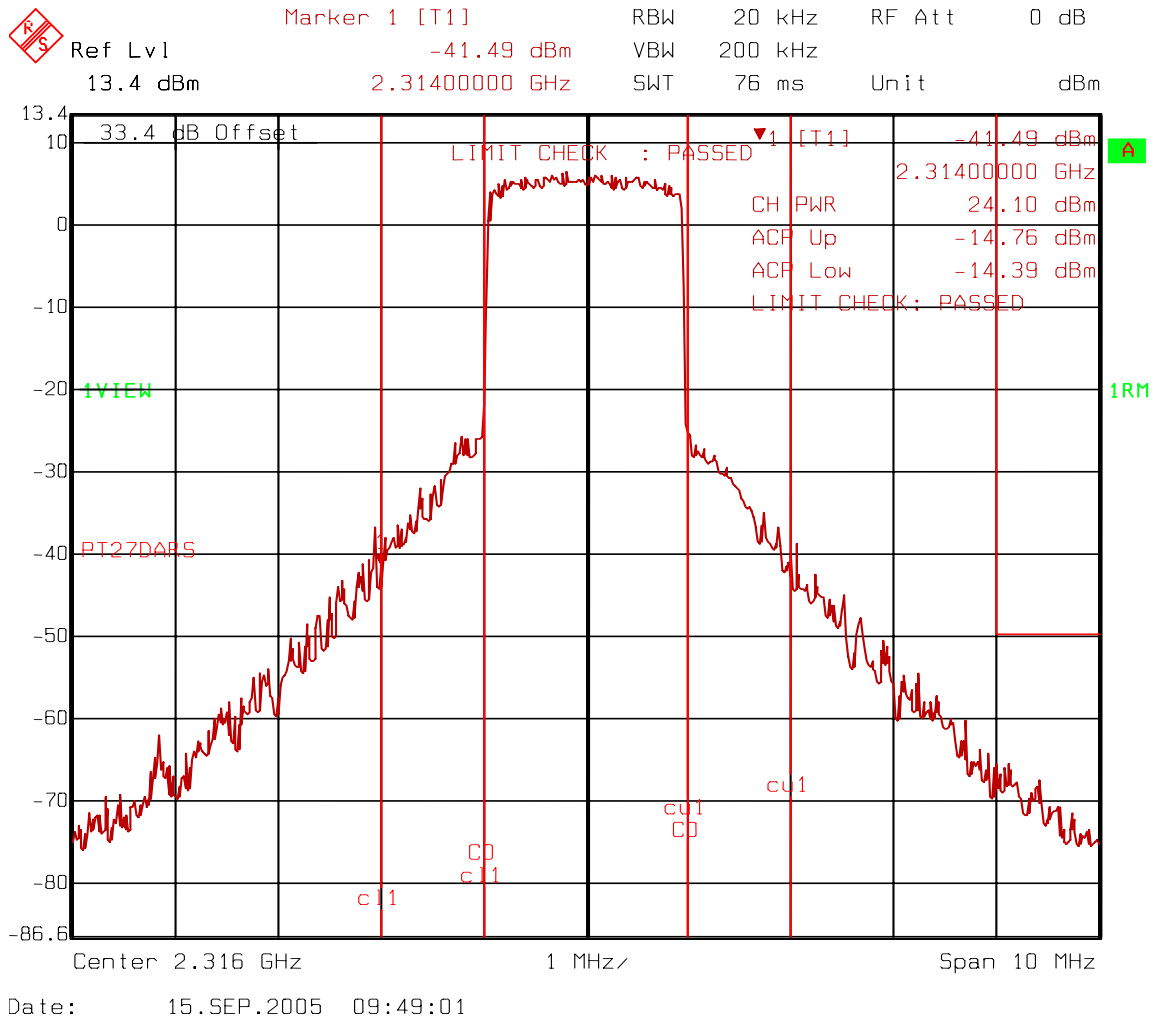


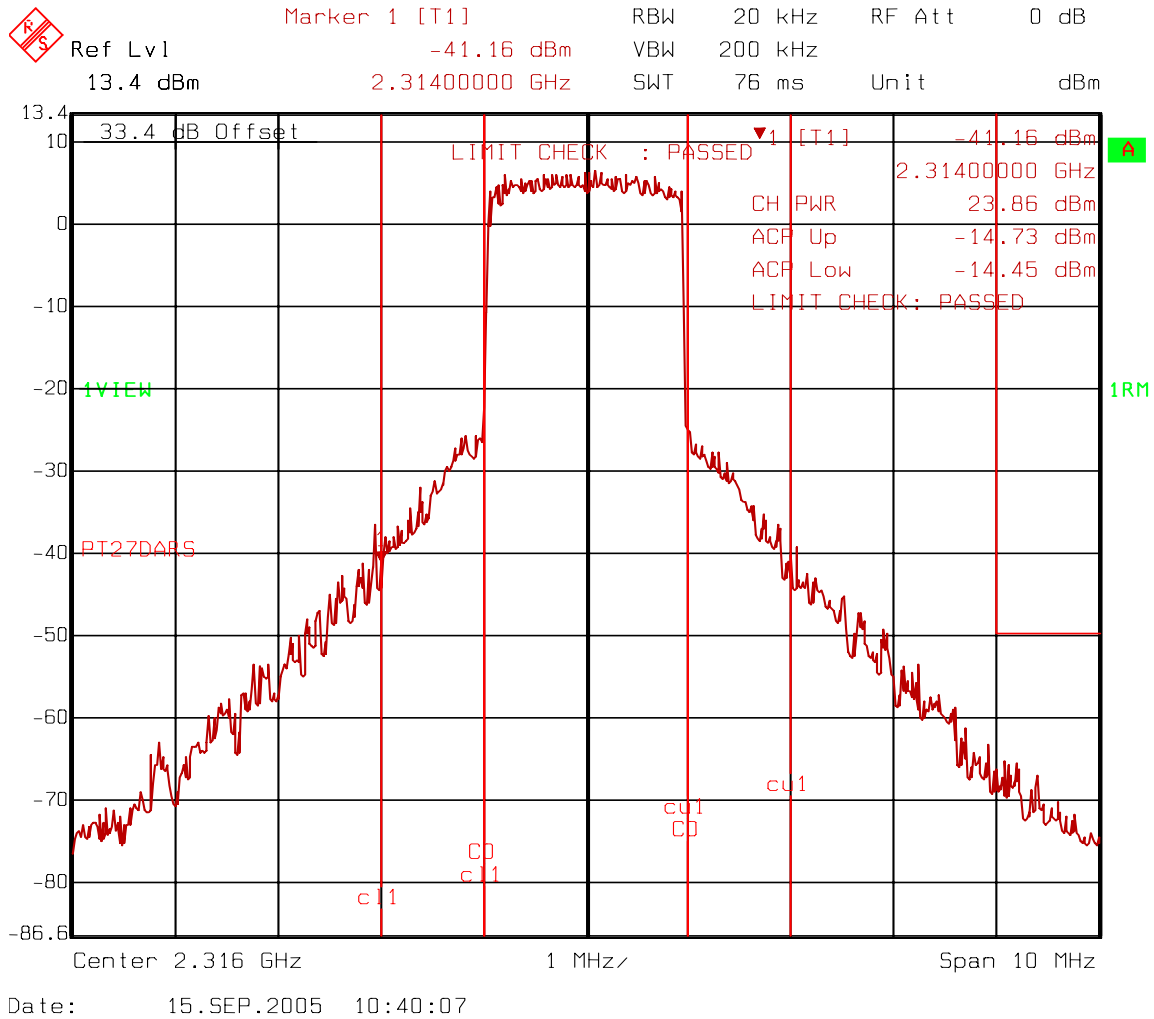
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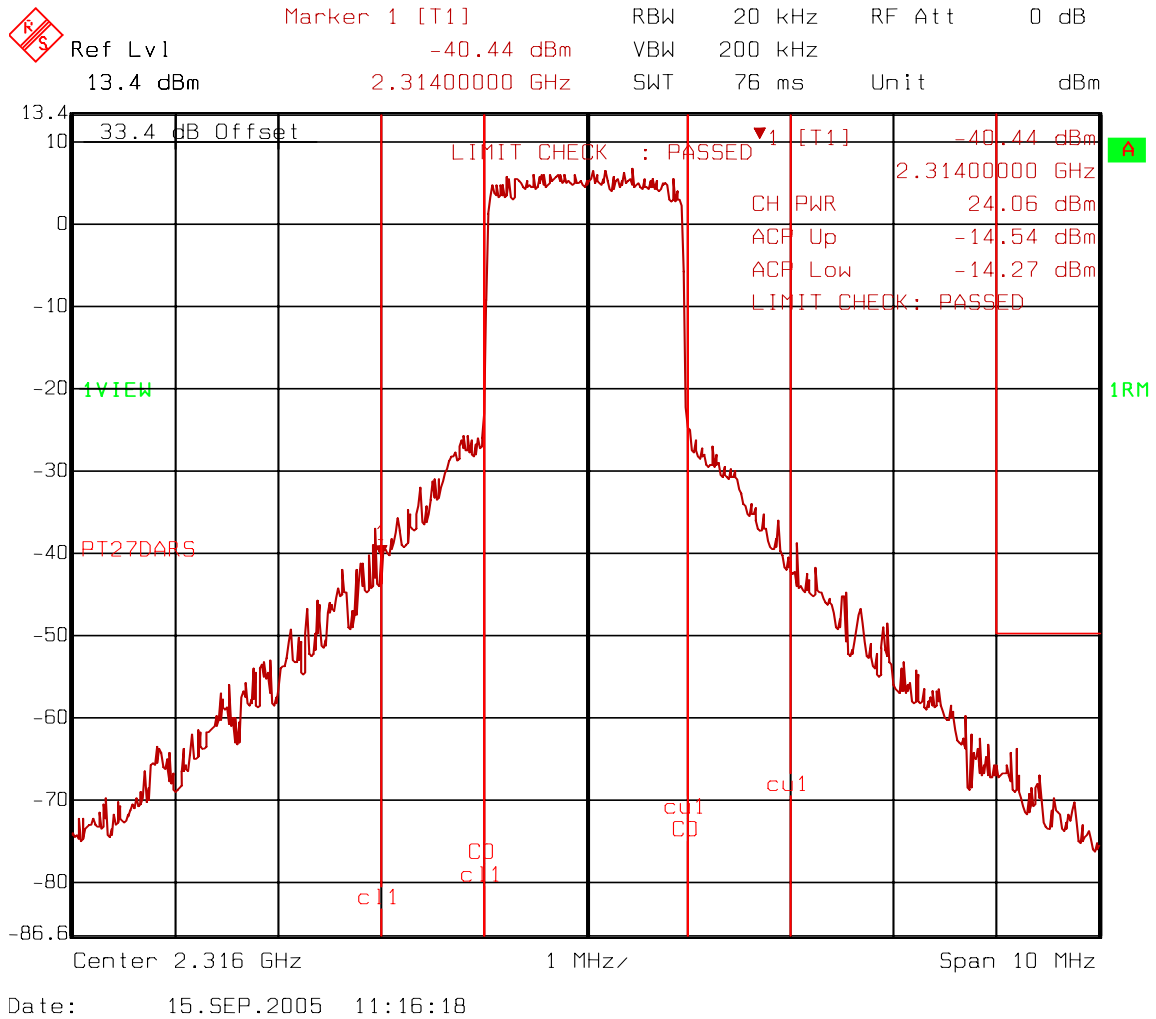


EQUIPMENT: 2305 - 2360 LMX E

20DEGREES TMAX

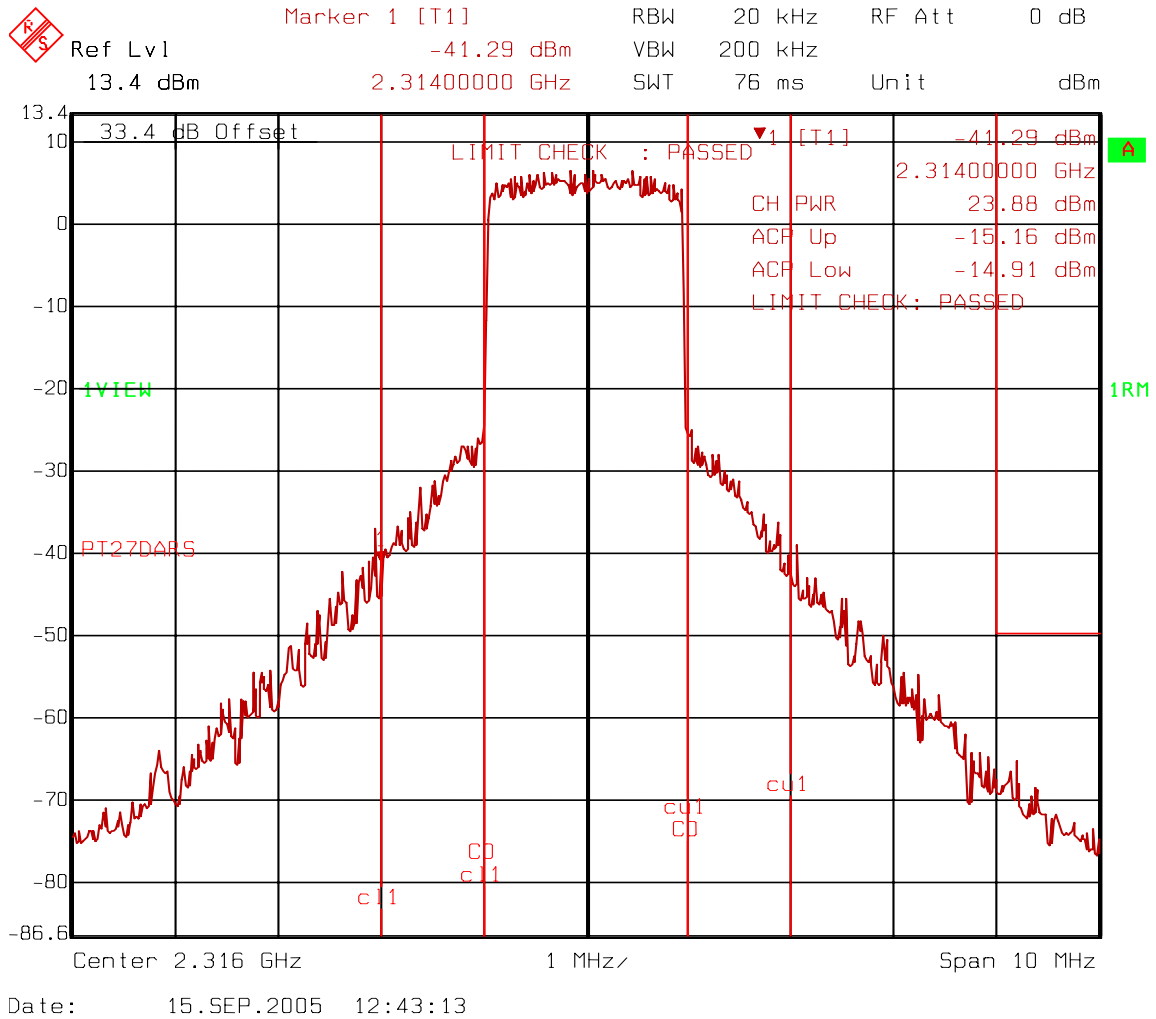




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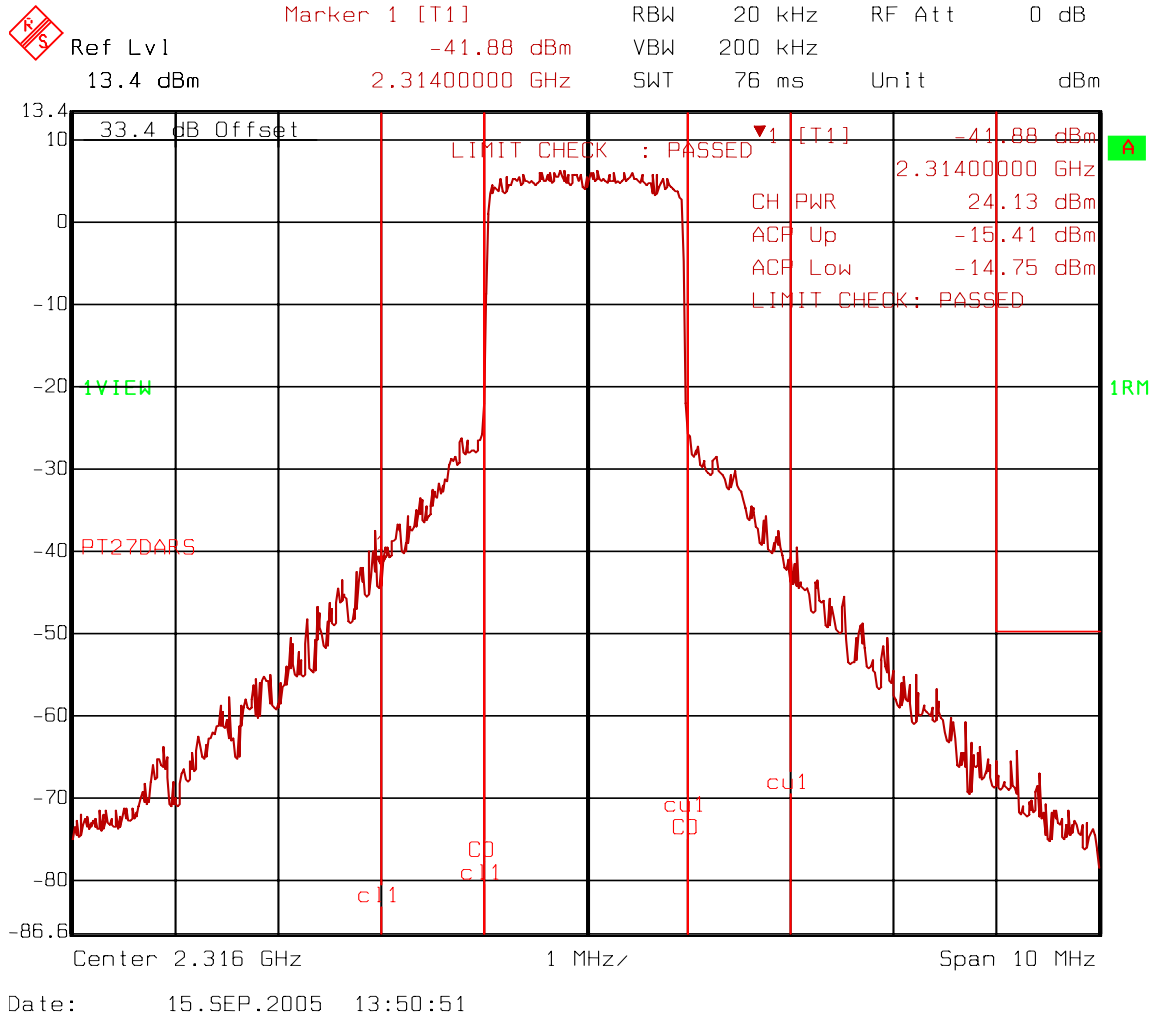
EQUIPMENT: 2305 - 2360 LMX E

30C



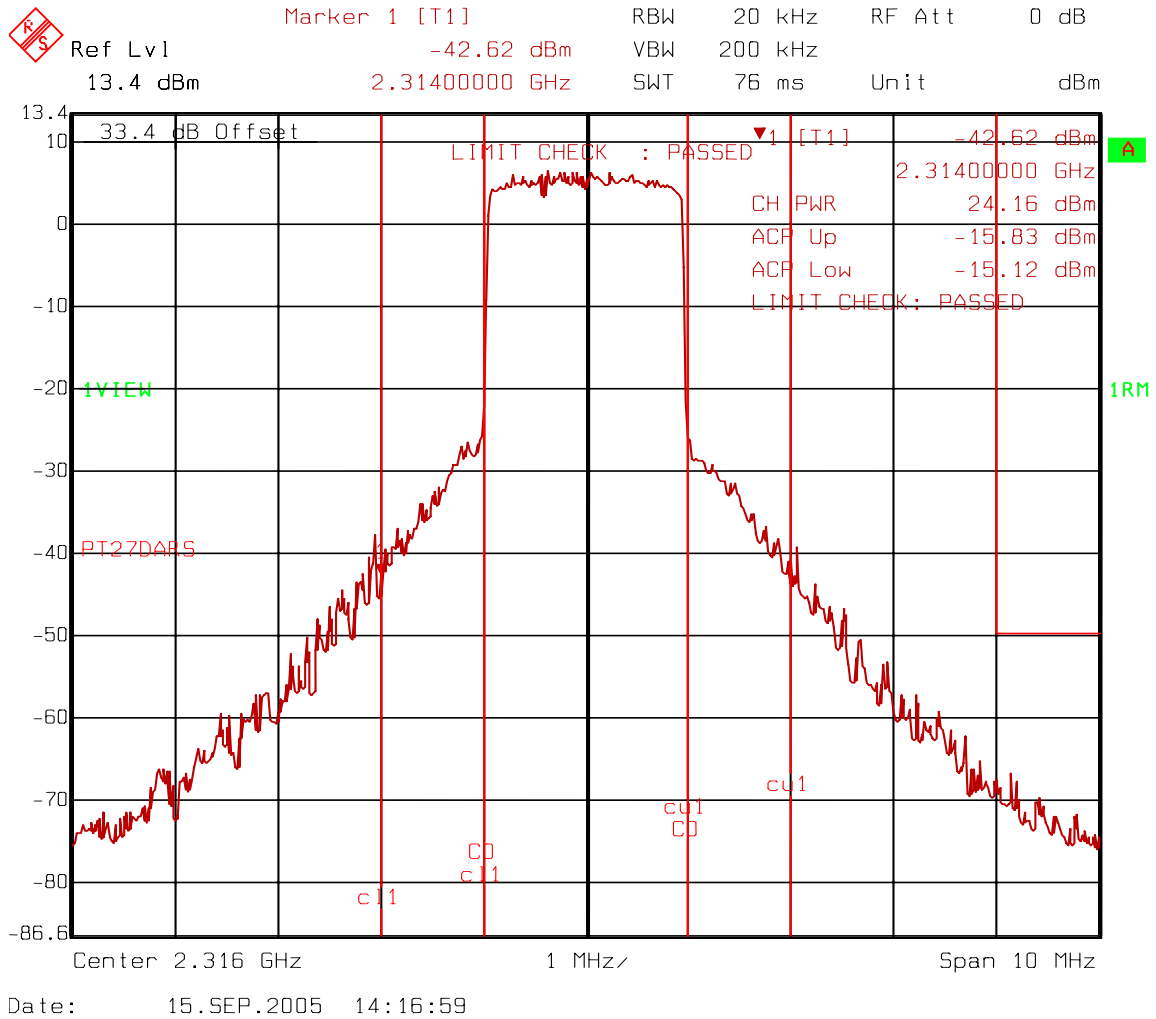
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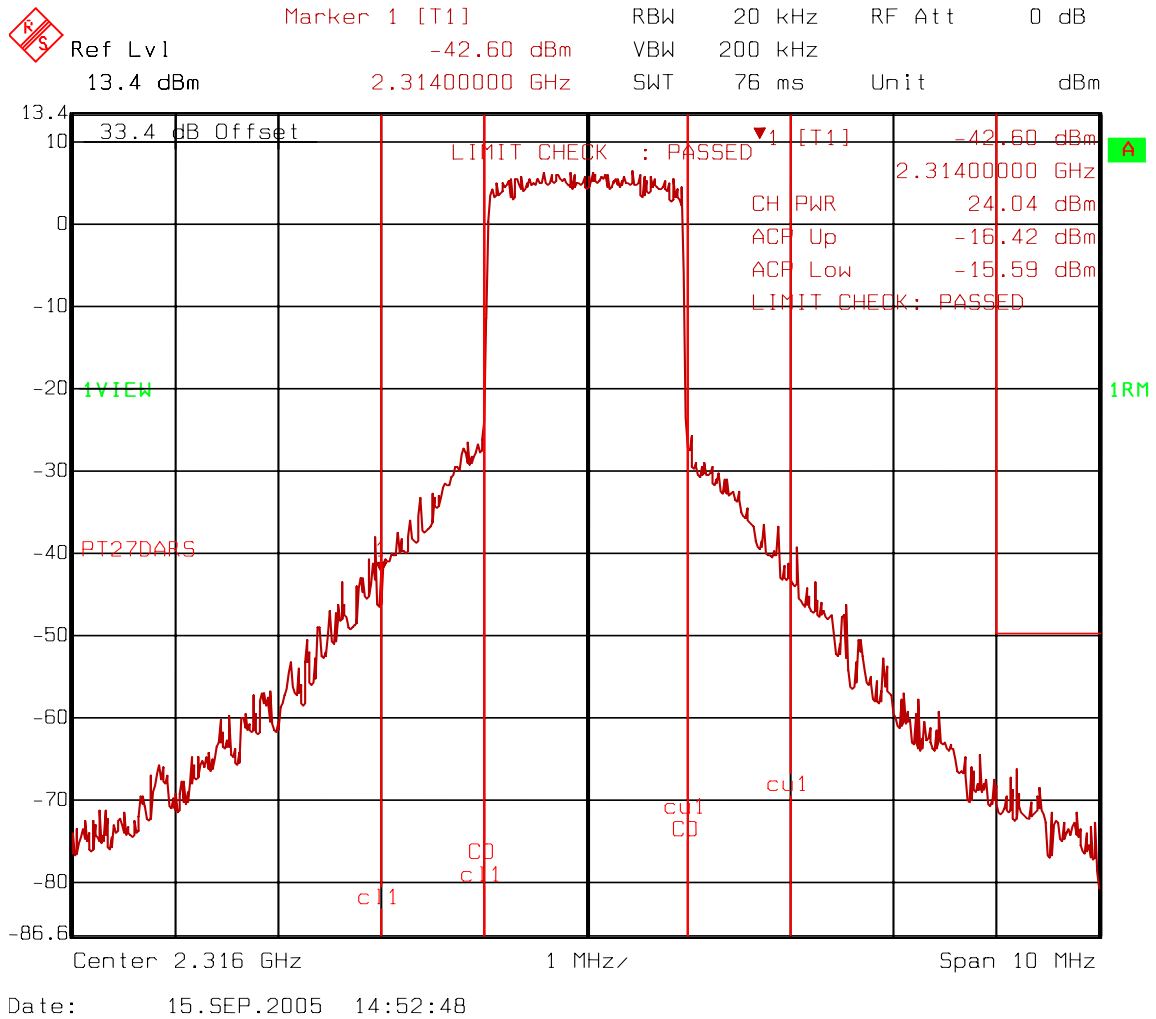
0 C

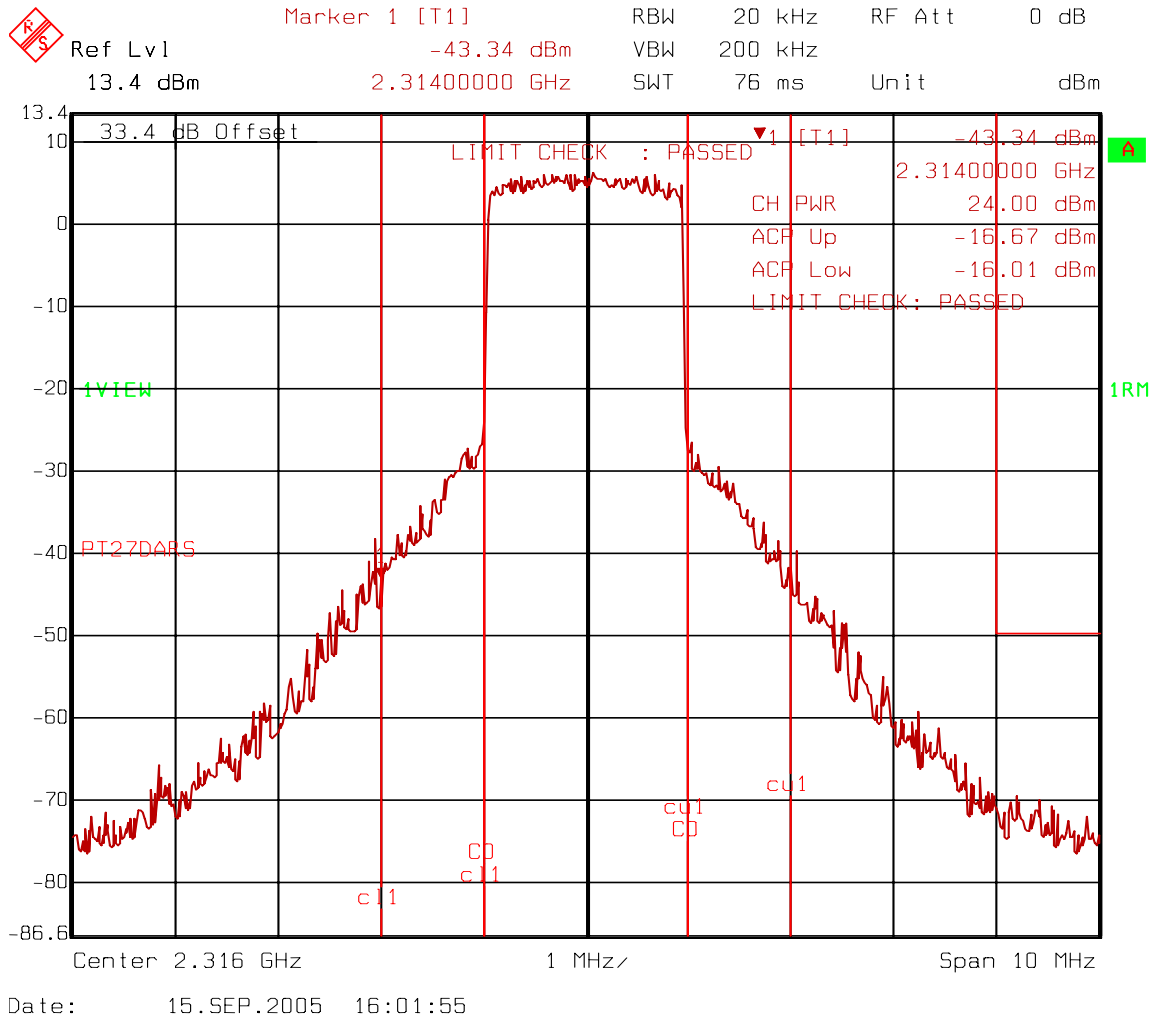


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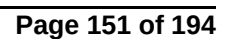
-10 C



EQUIPMENT: 2305 - 2360 LMX E**-20 C**

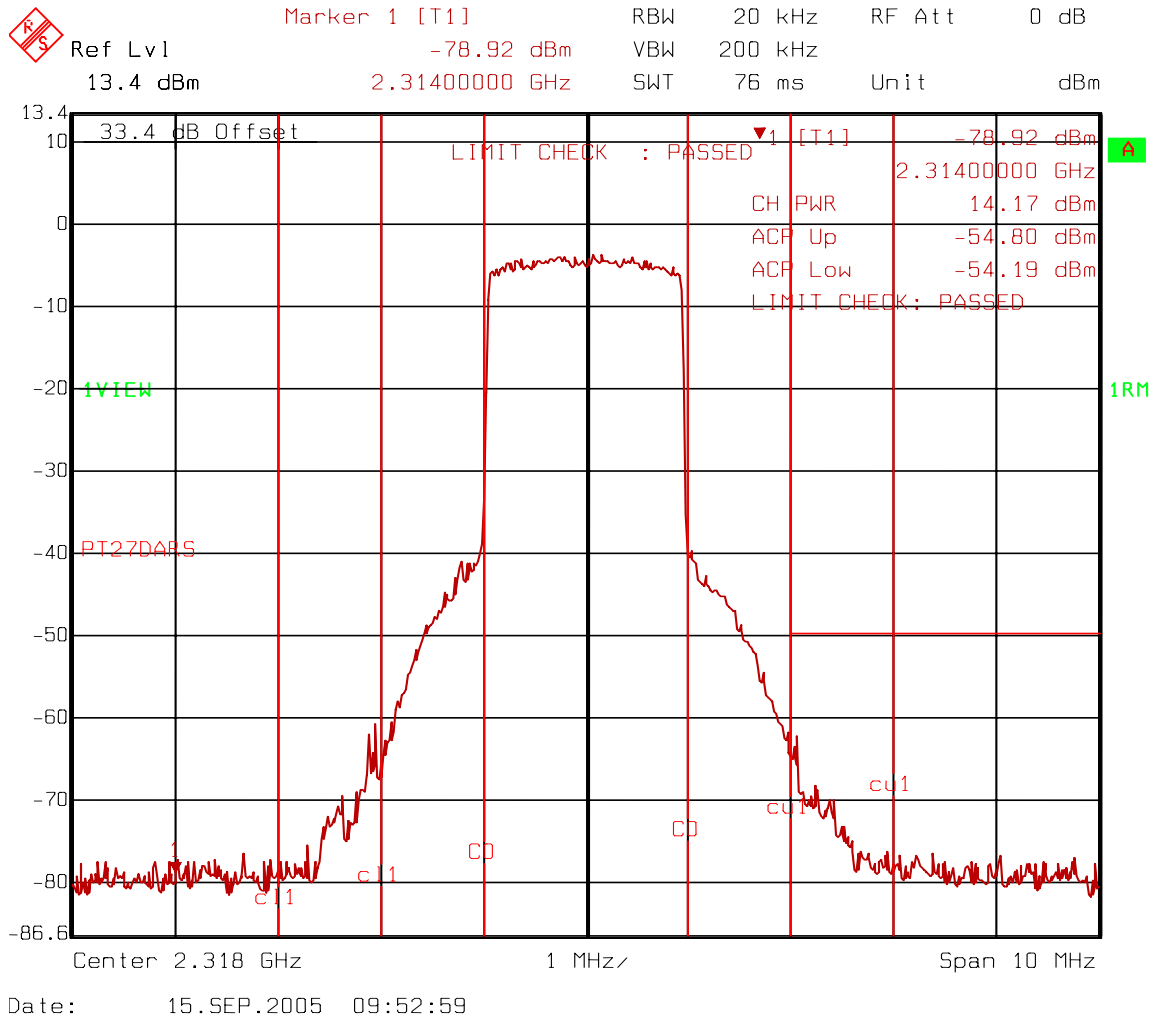


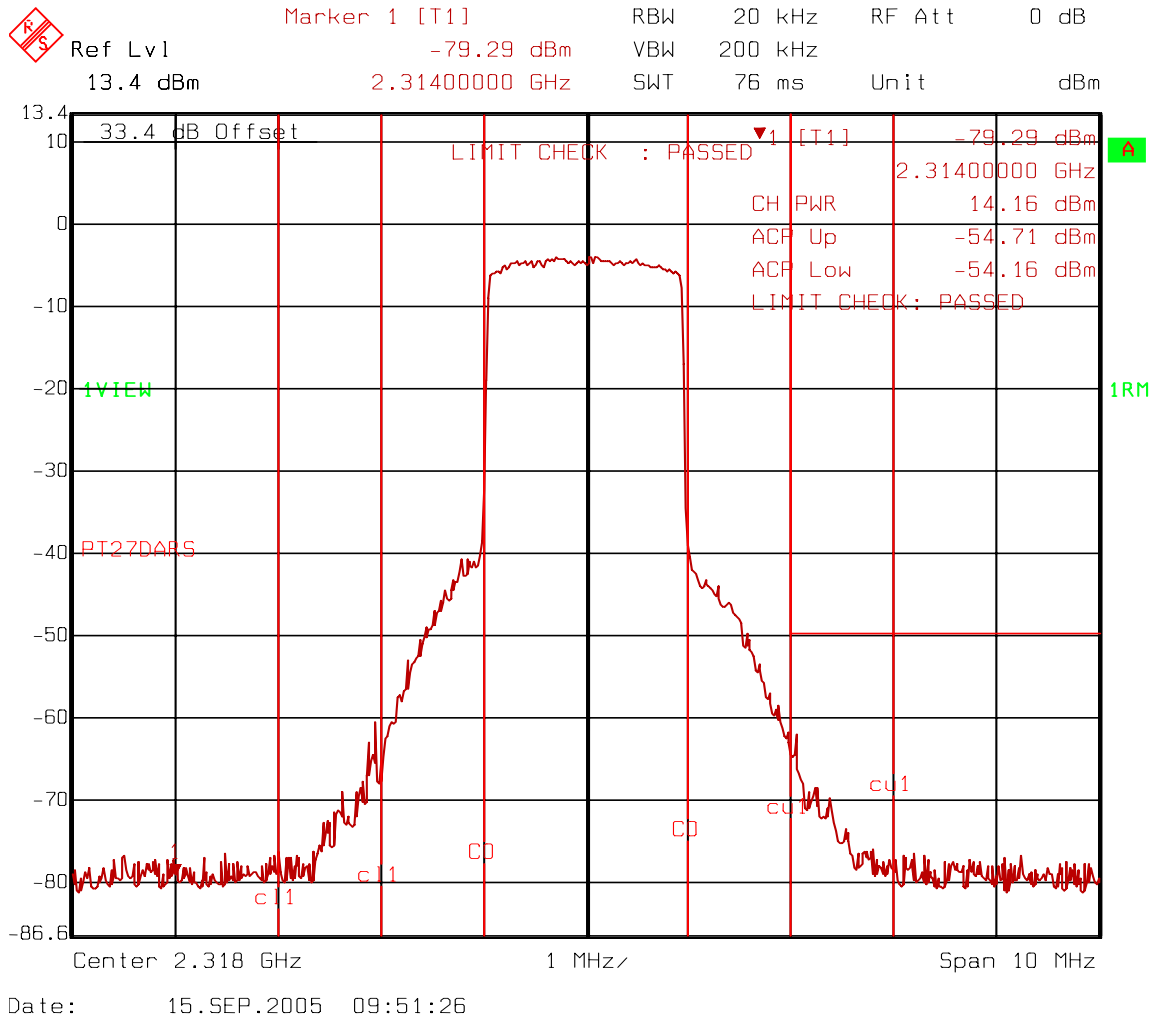
C BAND 14DBM OUTPUT



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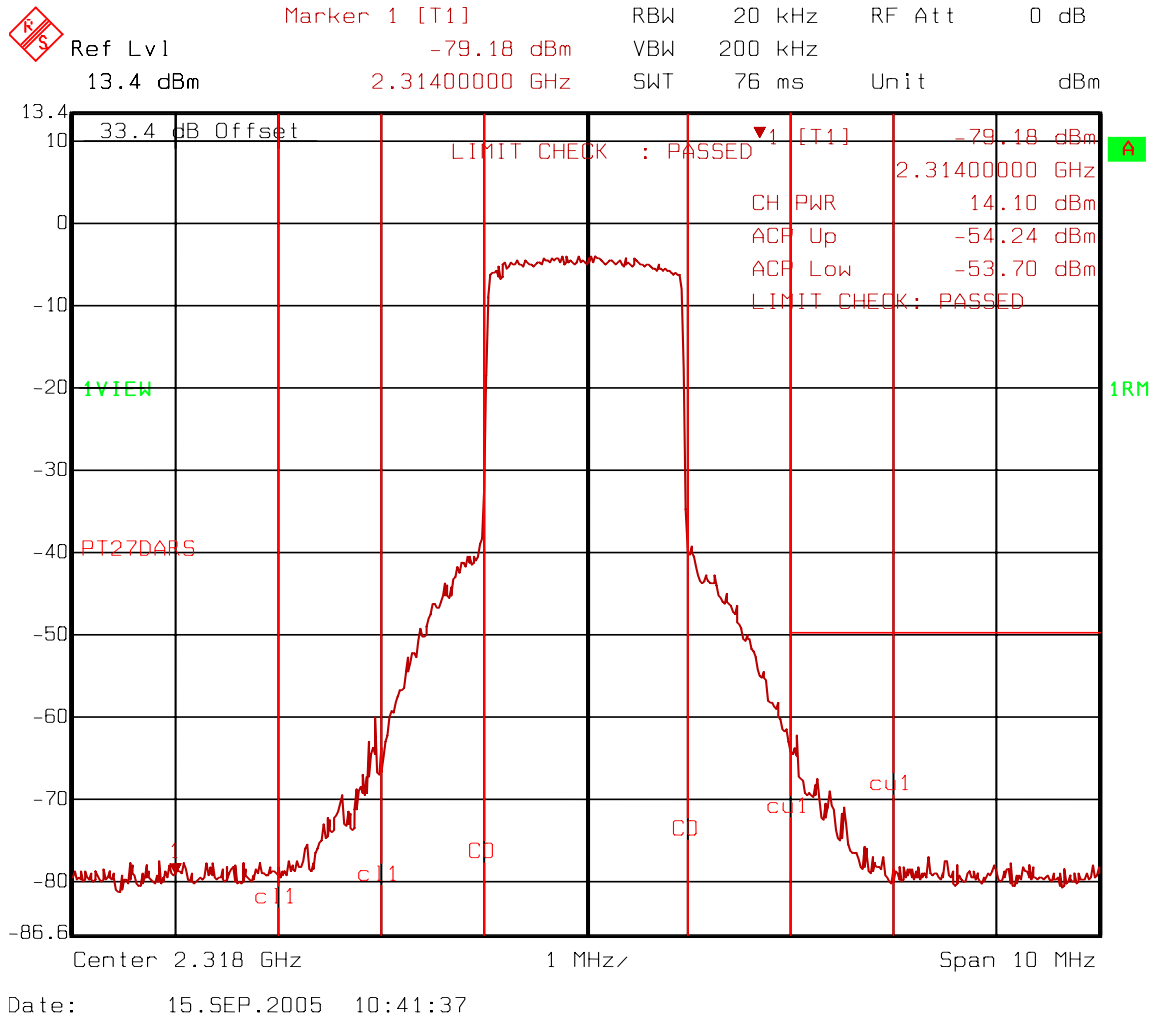
20 DEGREES TMIN

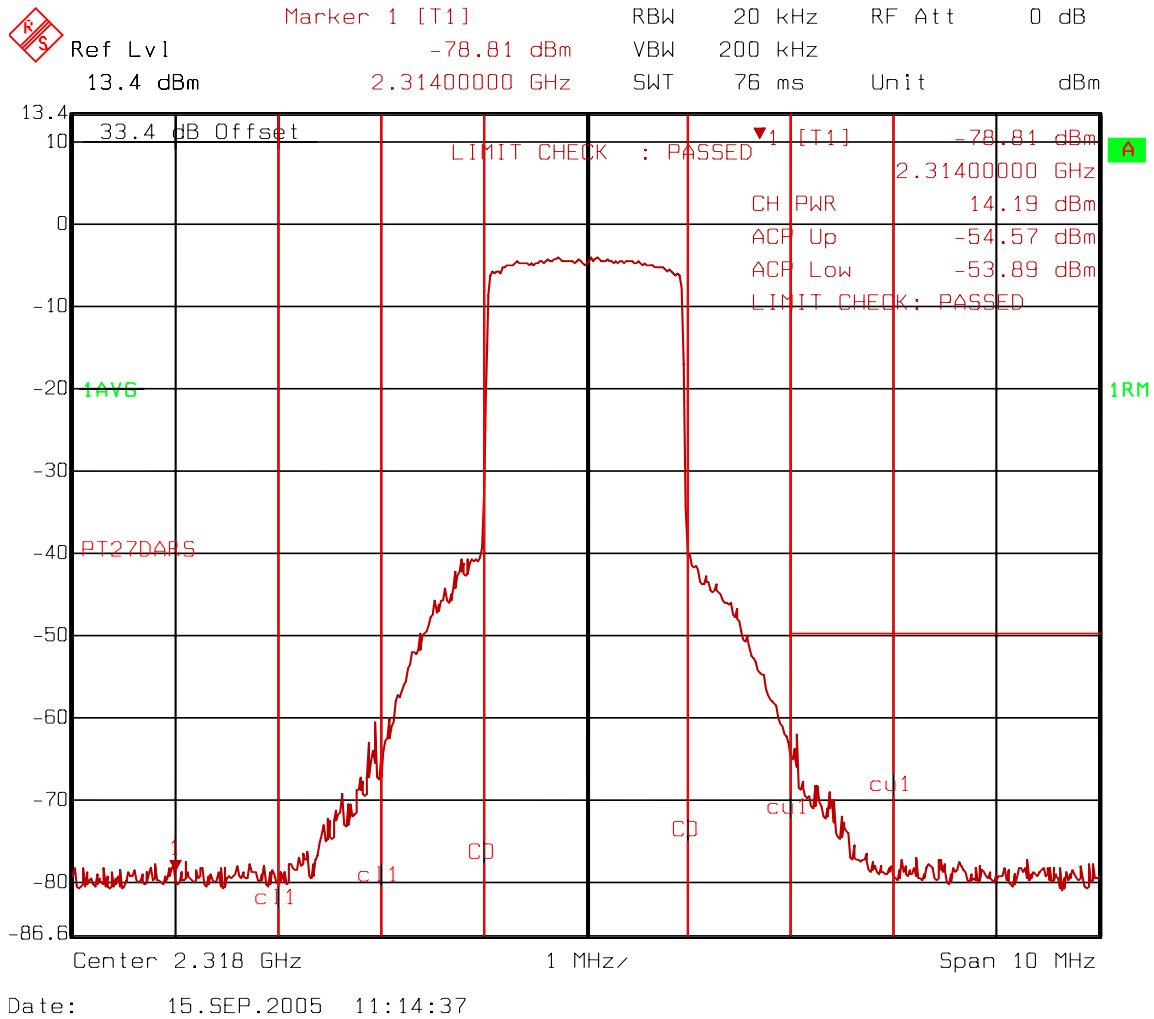


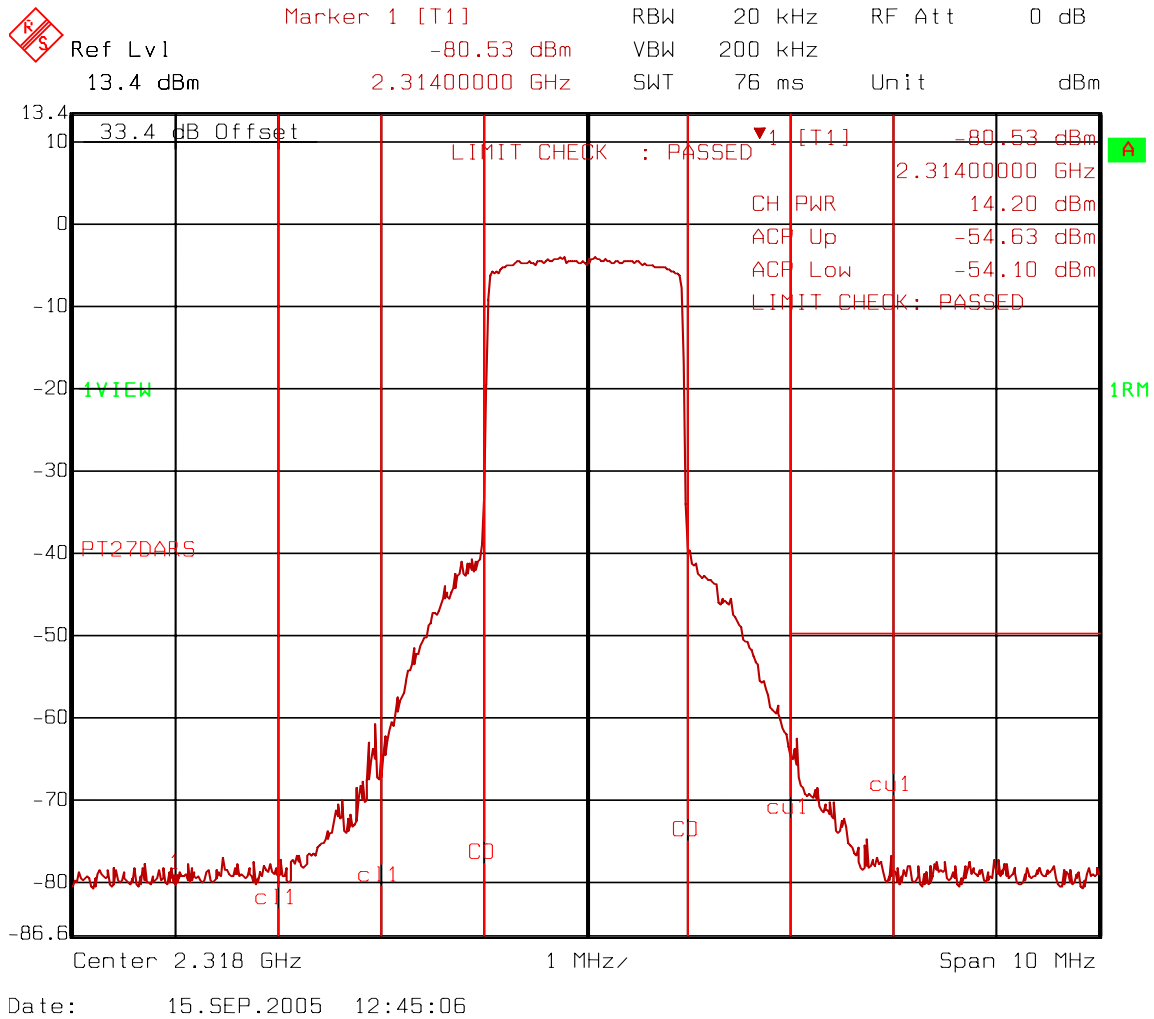


EQUIPMENT: 2305 - 2360 LMX E

50 C

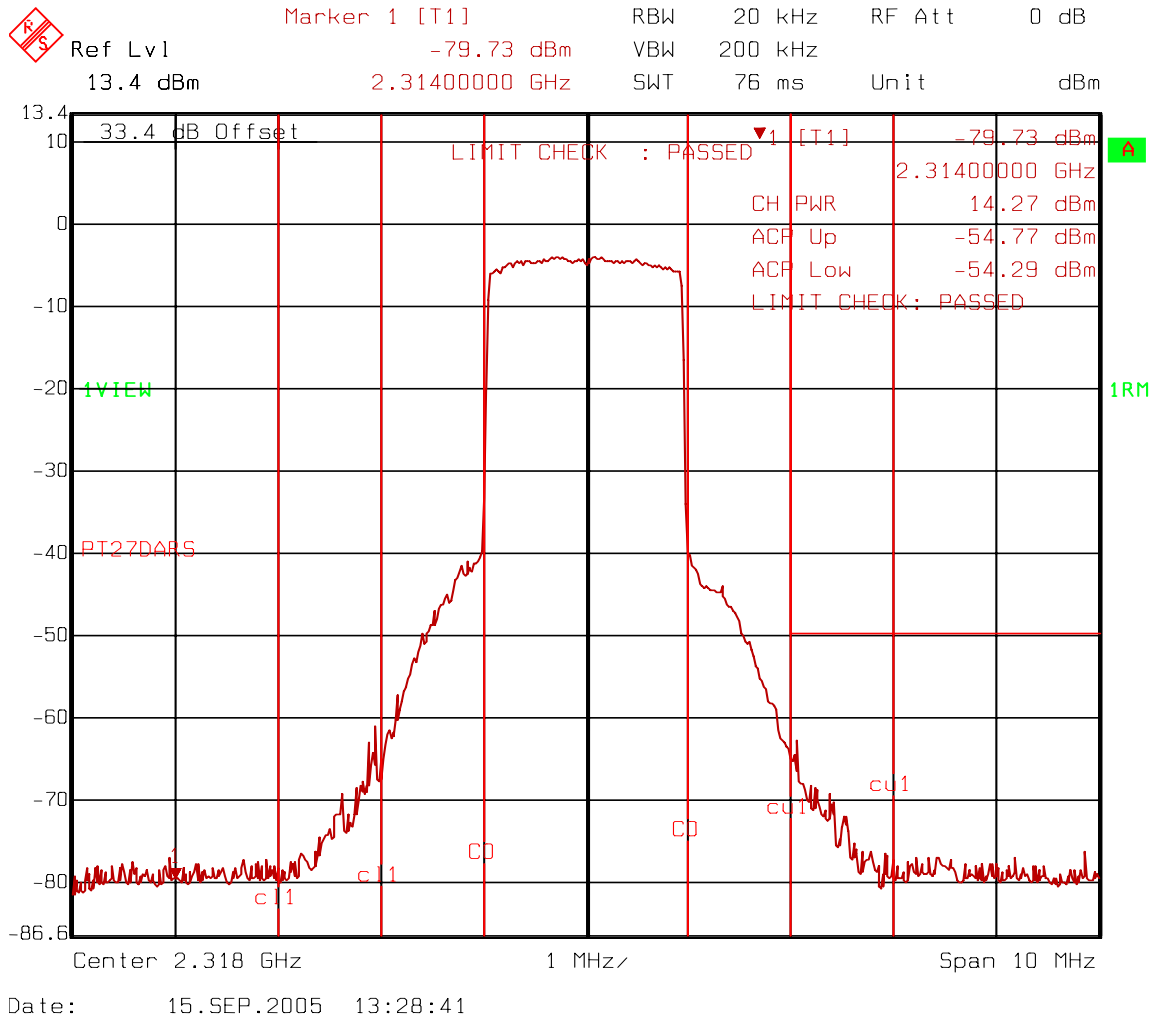






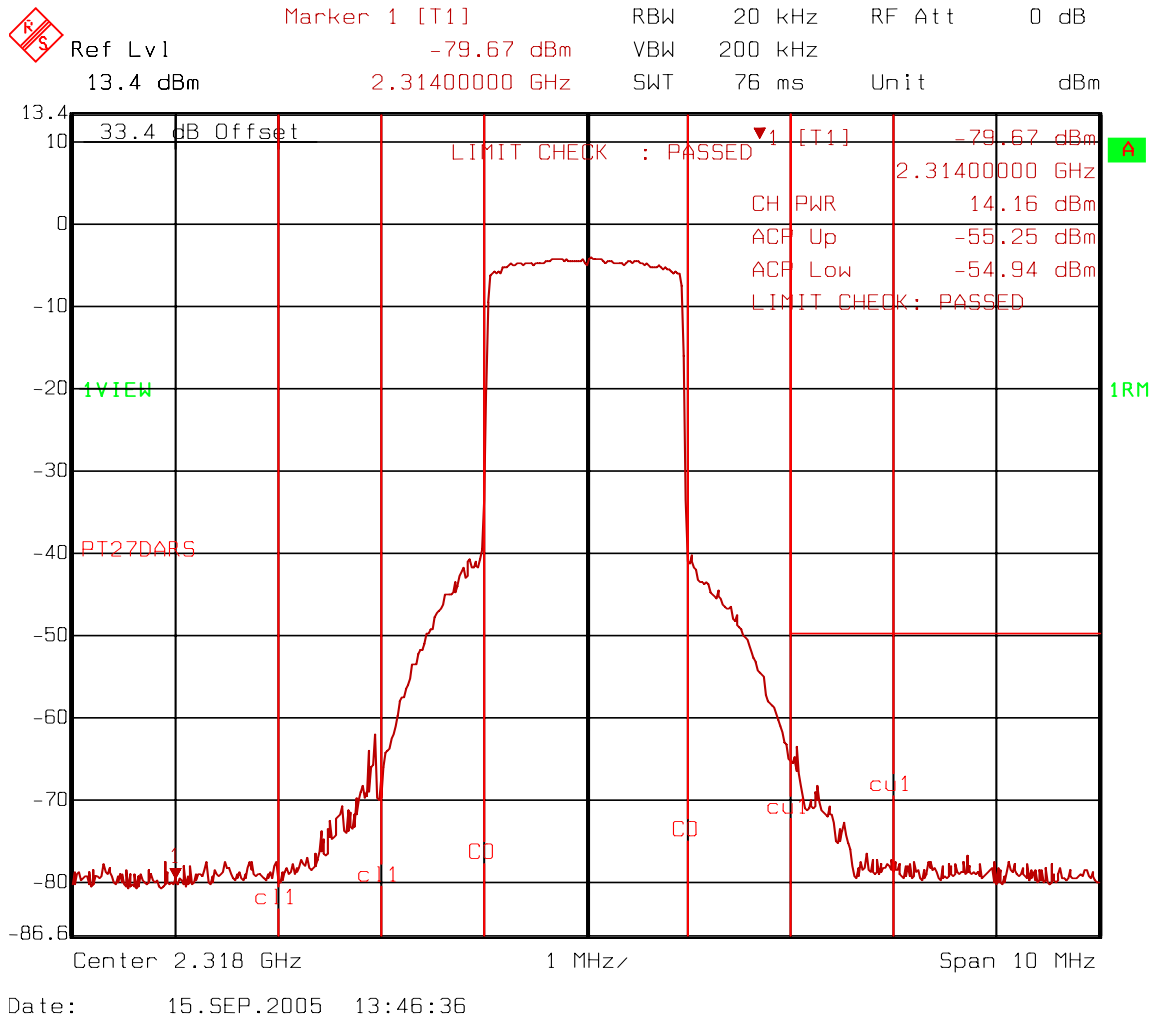
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10 C



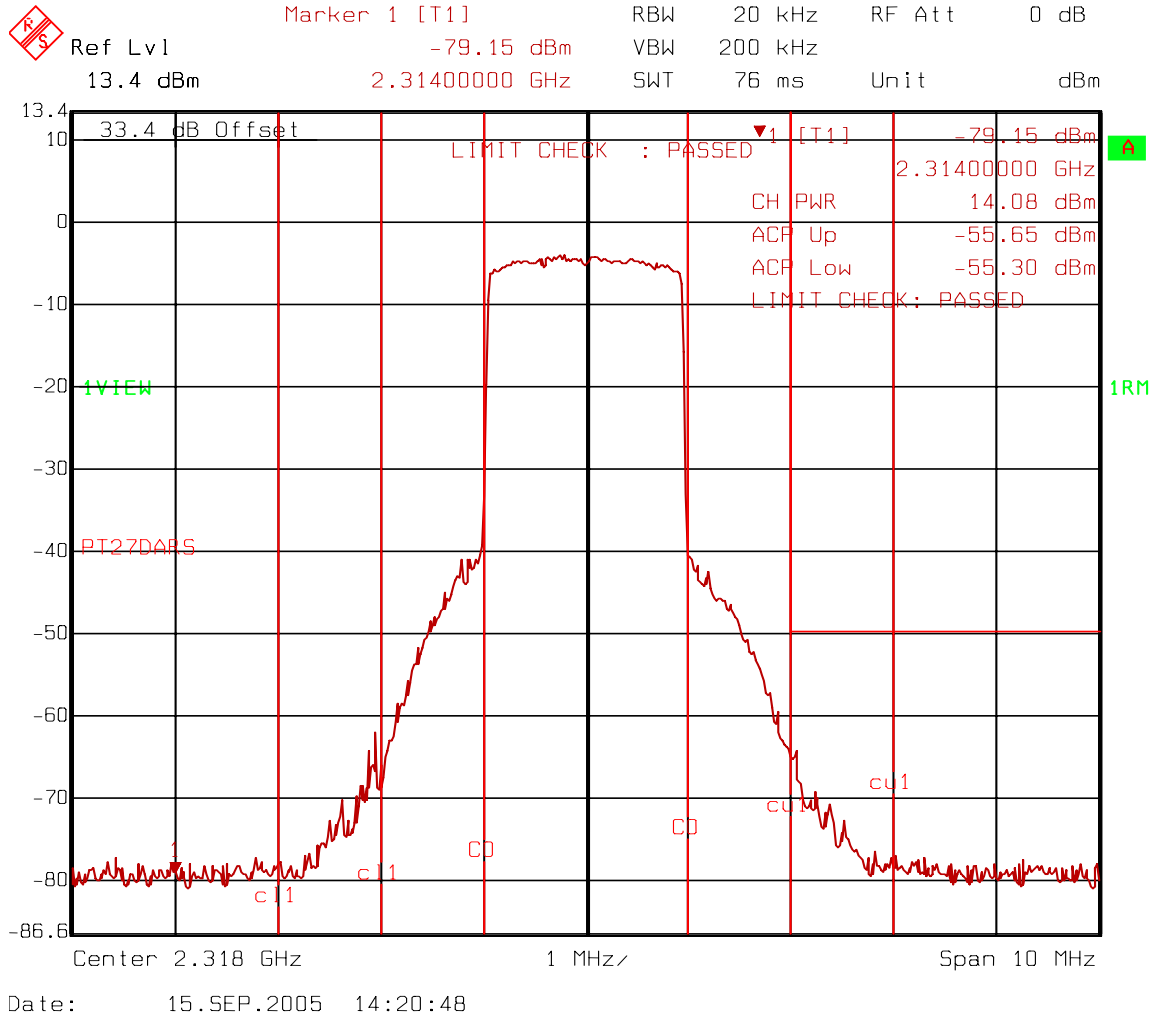
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0 C



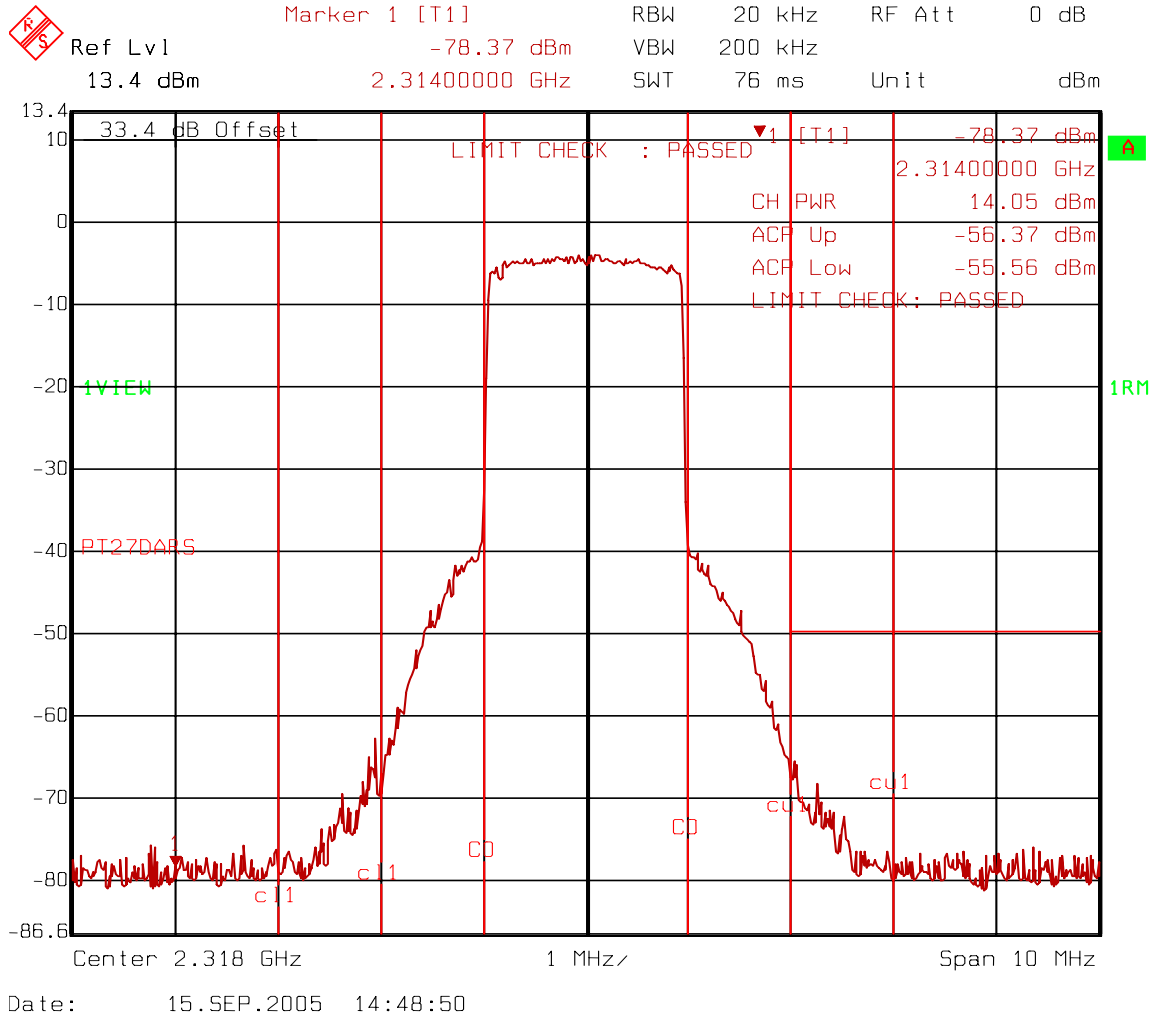
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-10 C



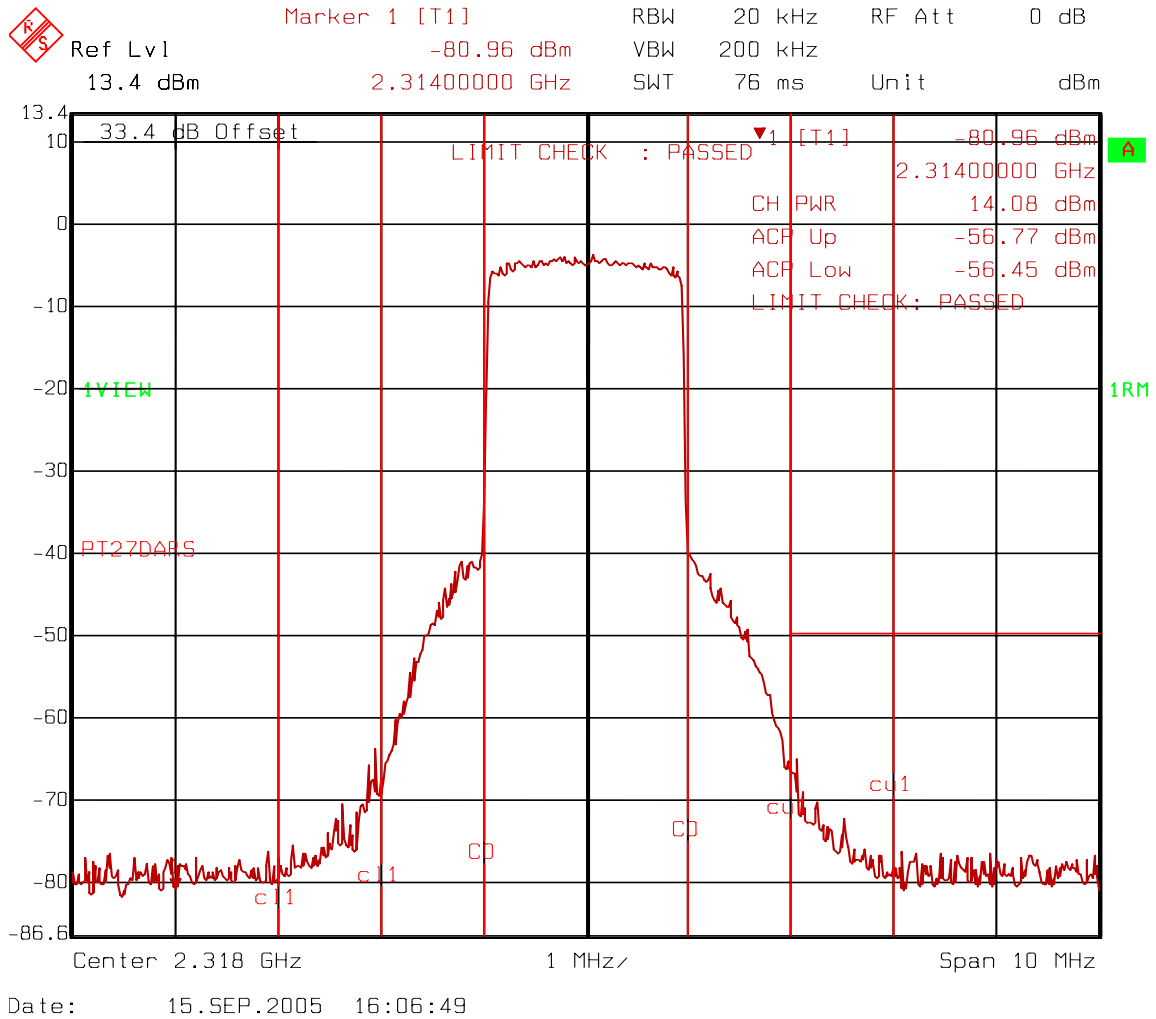
EQUIPMENT: 2305 - 2360 LMX E

-20 C

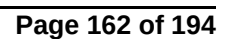


EQUIPMENT: 2305 - 2360 LMX E

-30 C

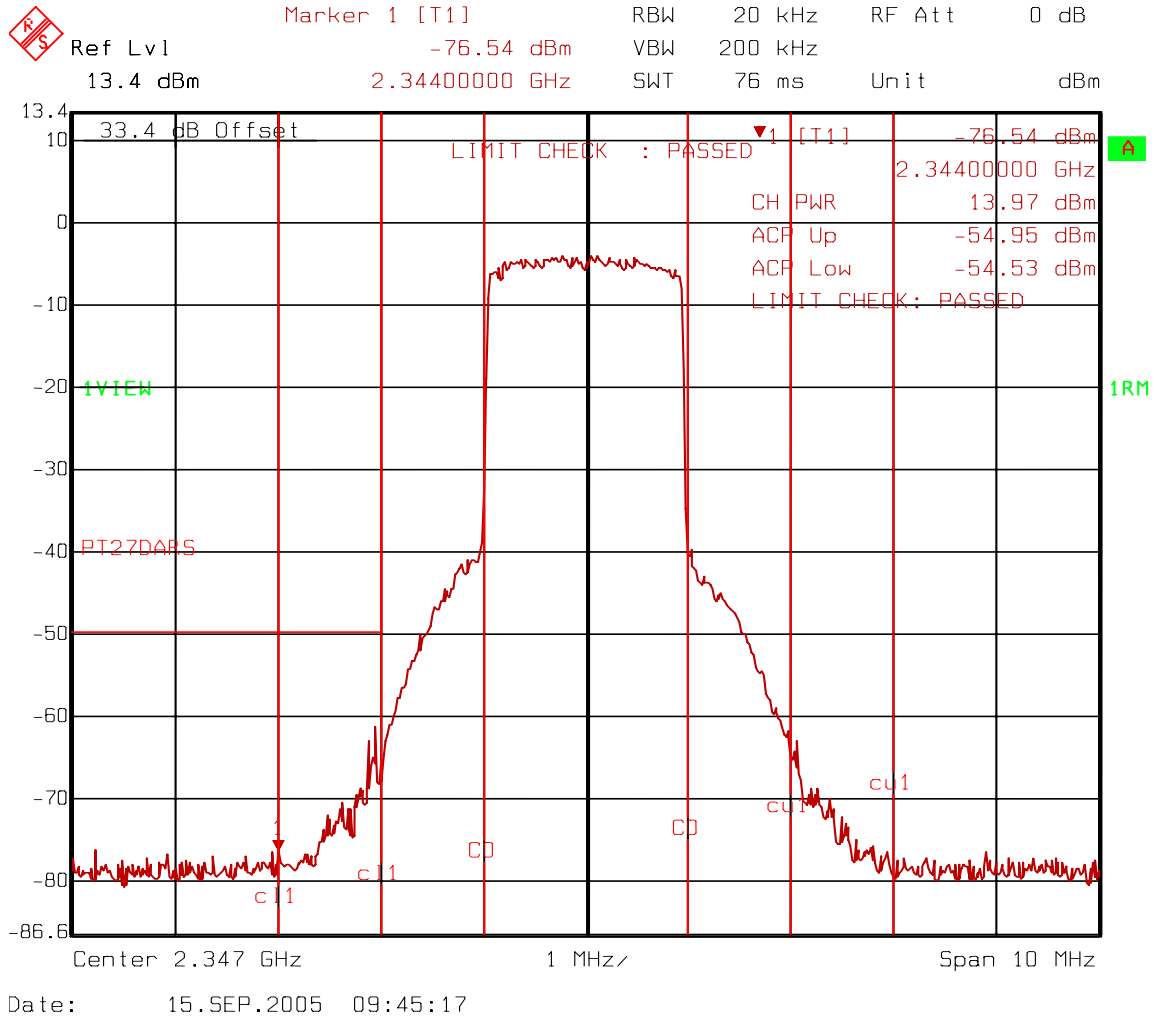


D BAND 14DBM OUTPUT



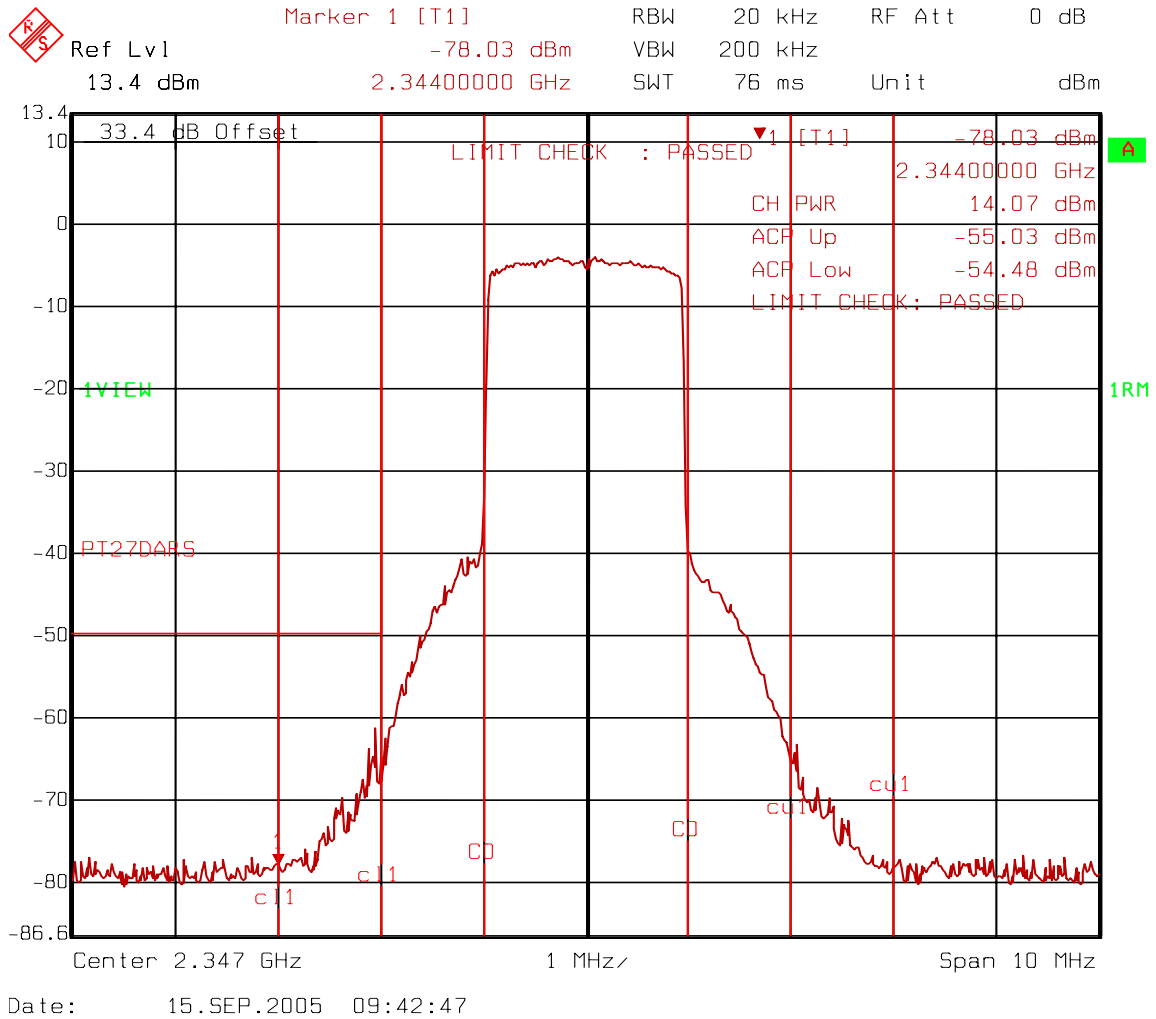
EQUIPMENT: 2305 - 2360 LMX E

20DEGREES TMIN

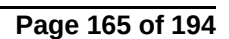


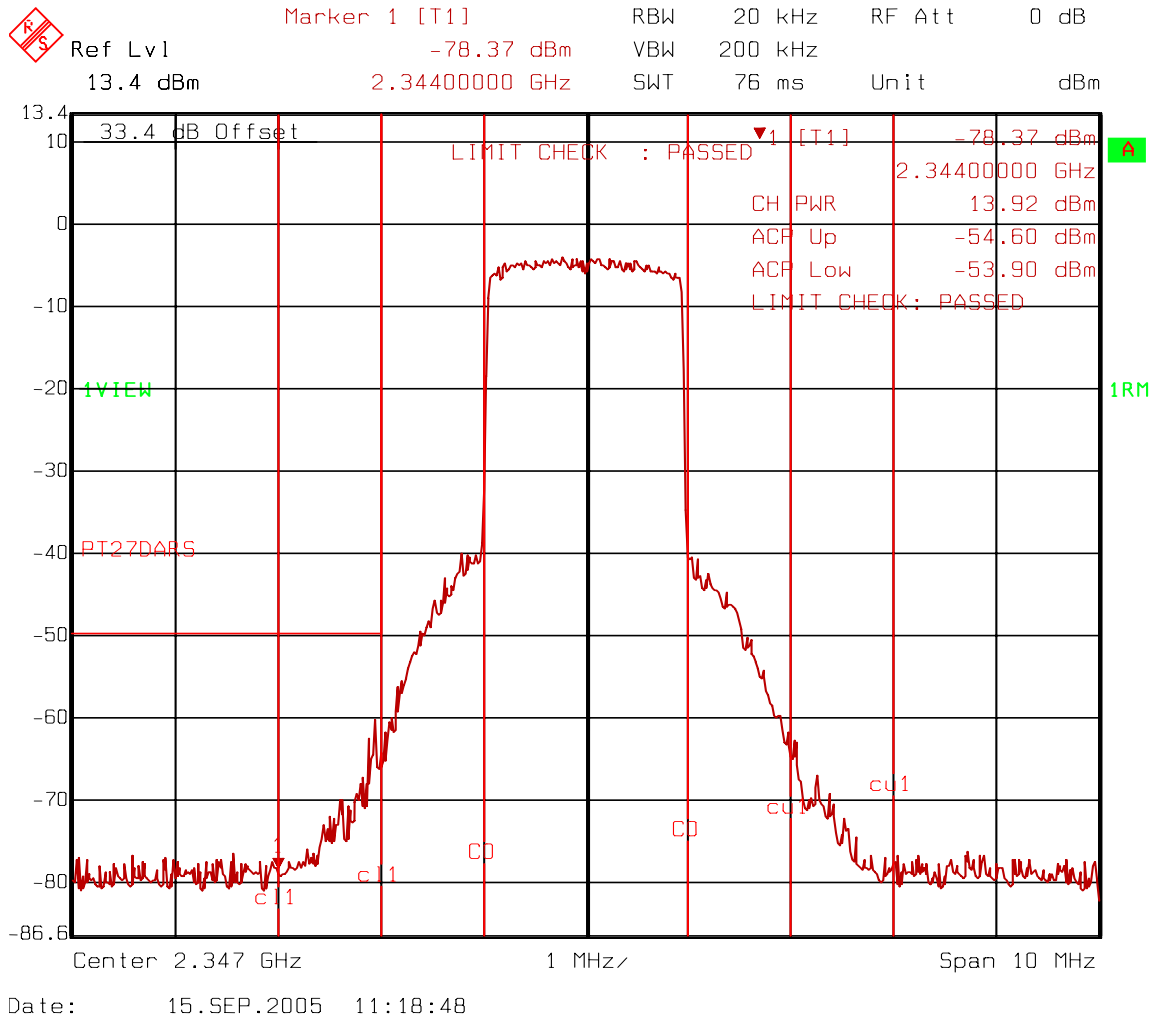
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20DEGREES TMAX



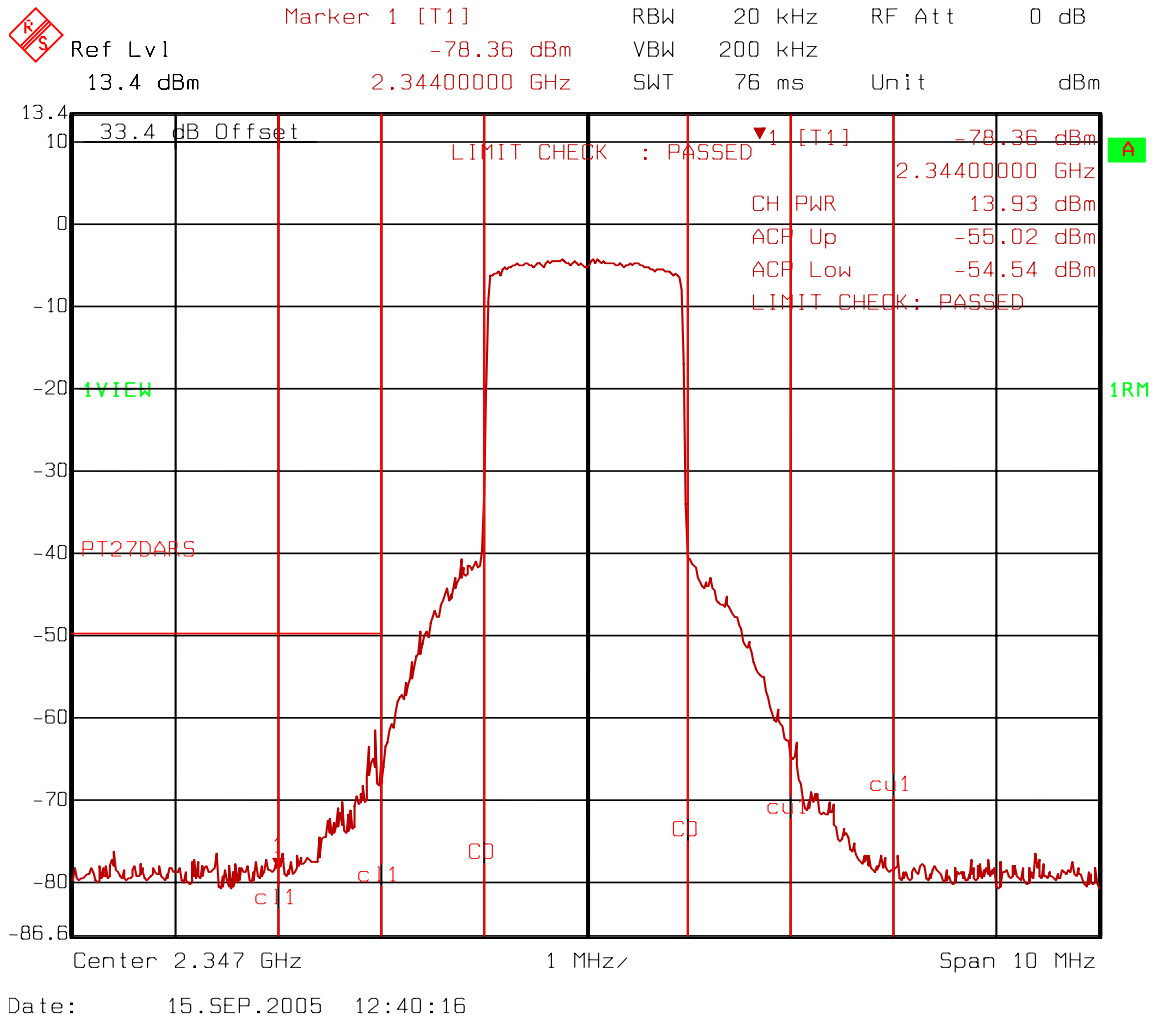
50 C





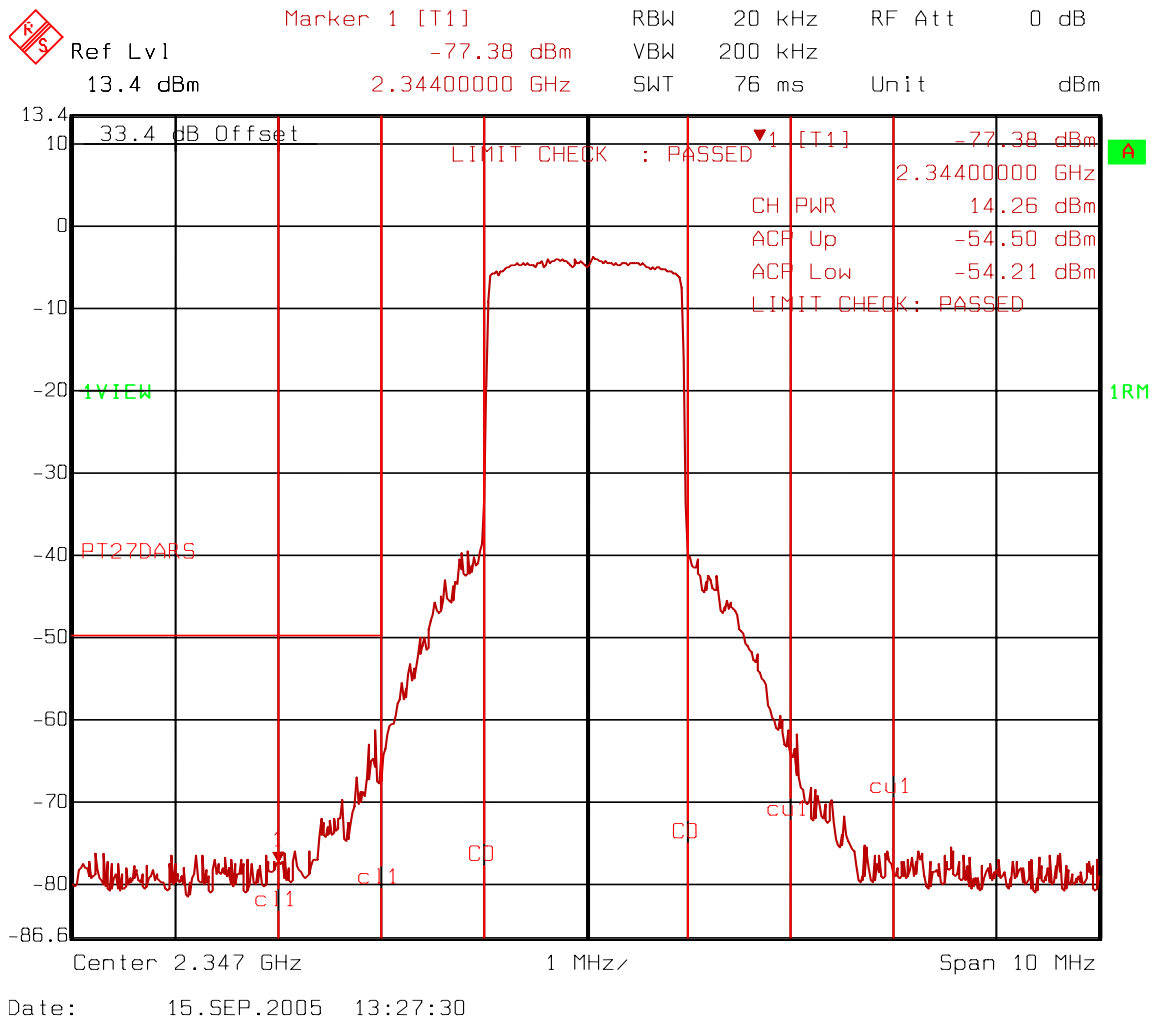
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30 C



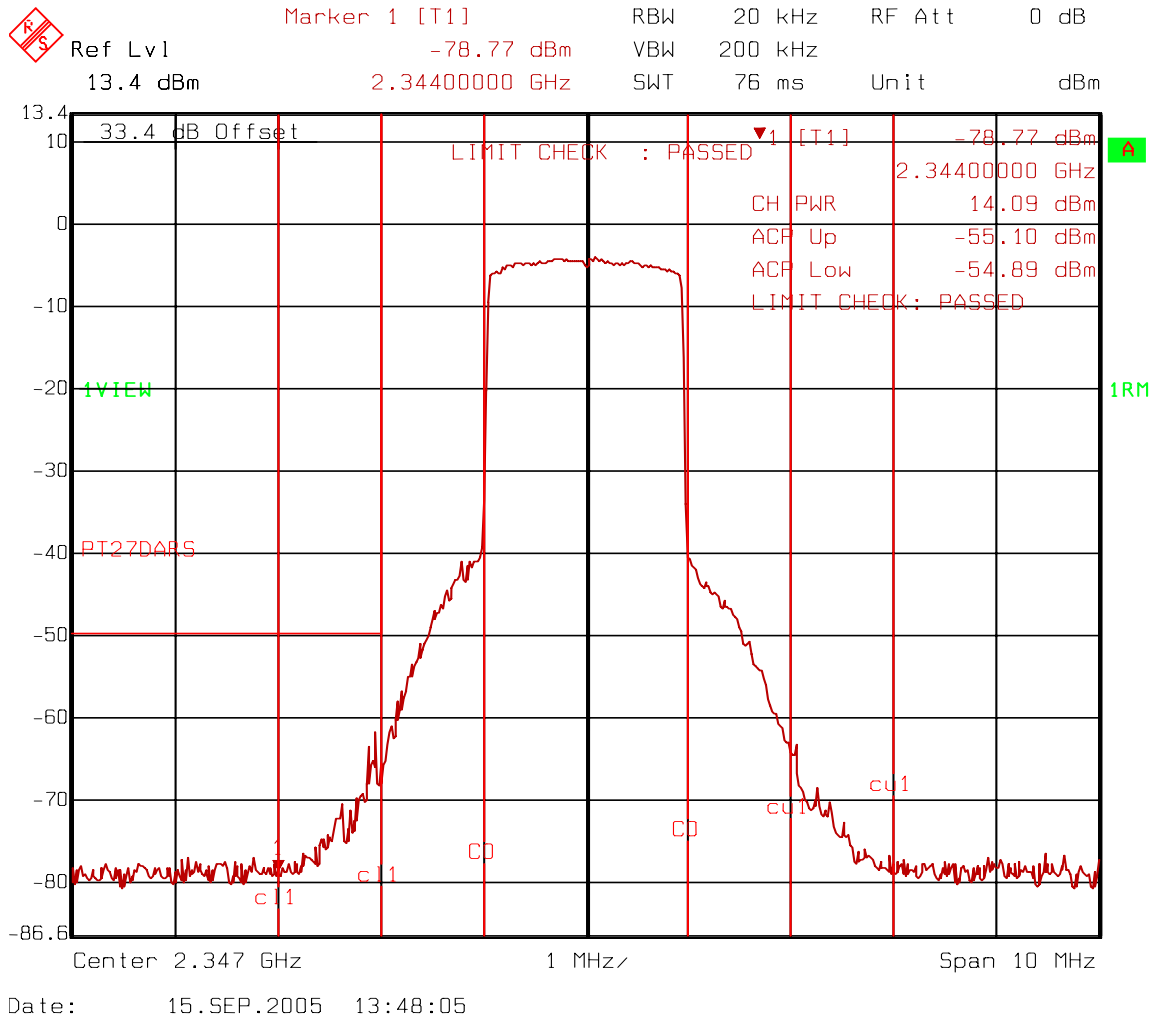
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10 C



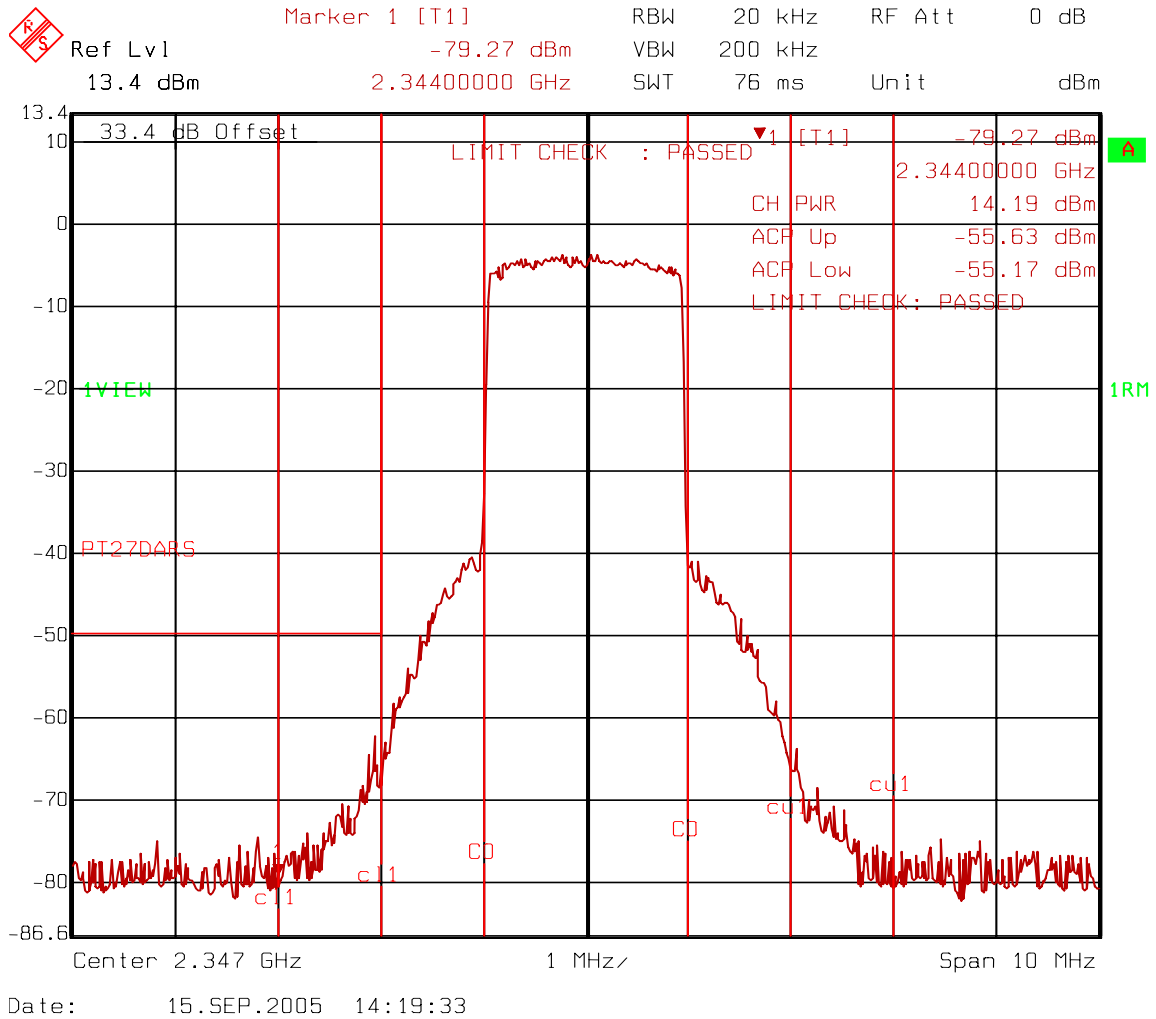
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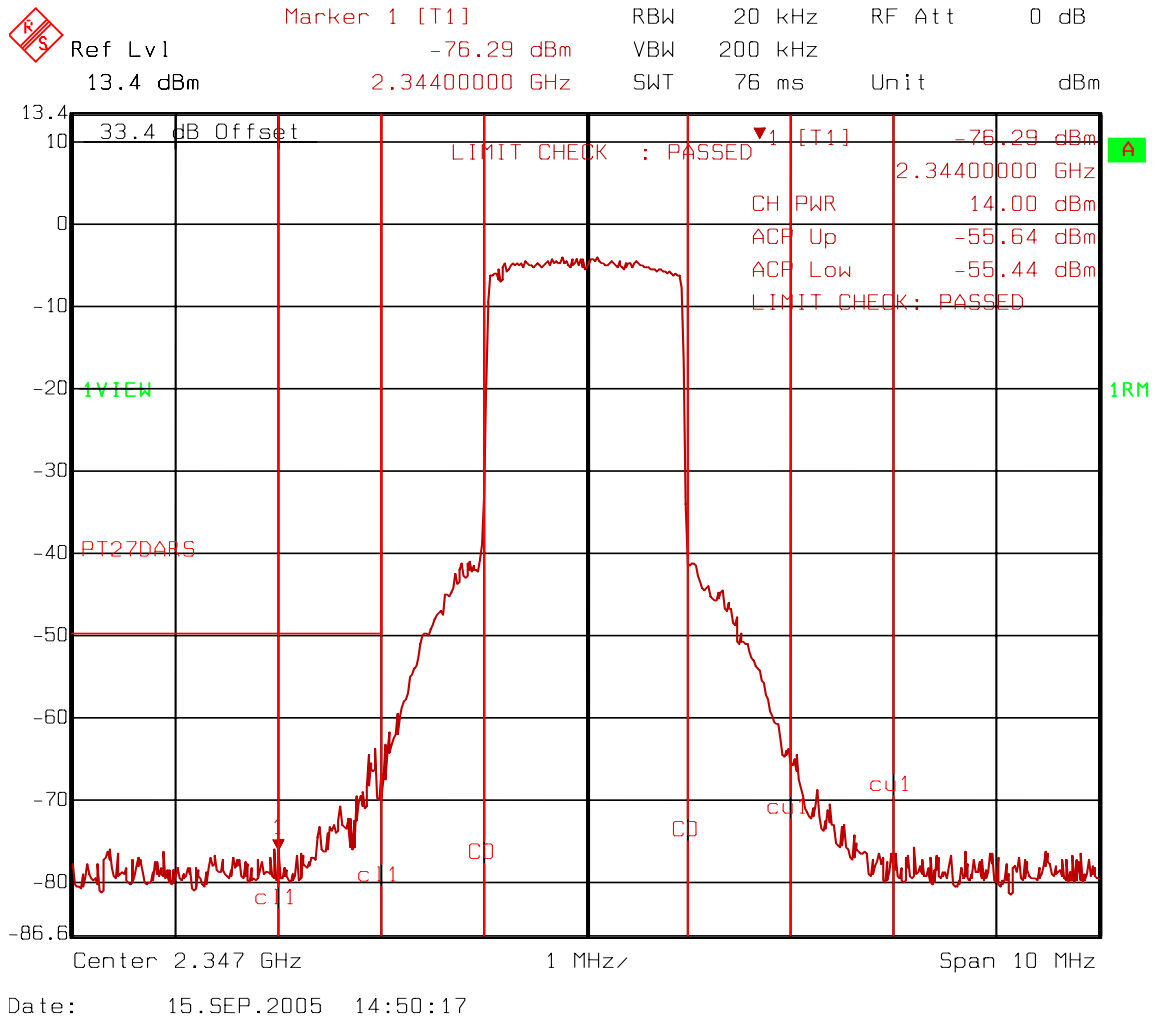
0 C



EQUIPMENT: 2305 - 2360 LMX E

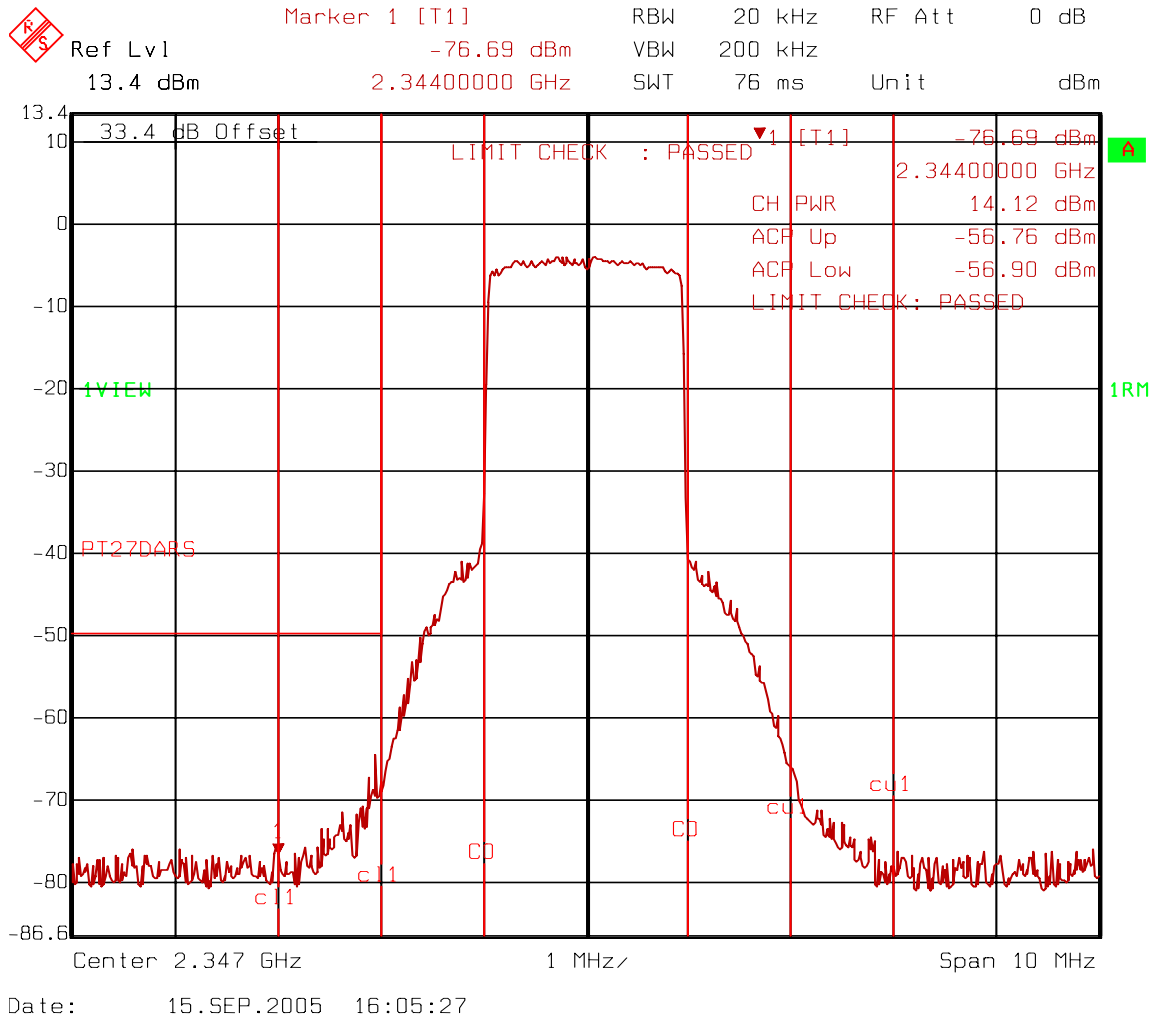
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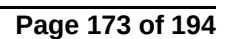
EQUIPMENT: 2305 - 2360 LMX E**-20 C**

EQUIPMENT: 2305 - 2360 LMX E

-30 C

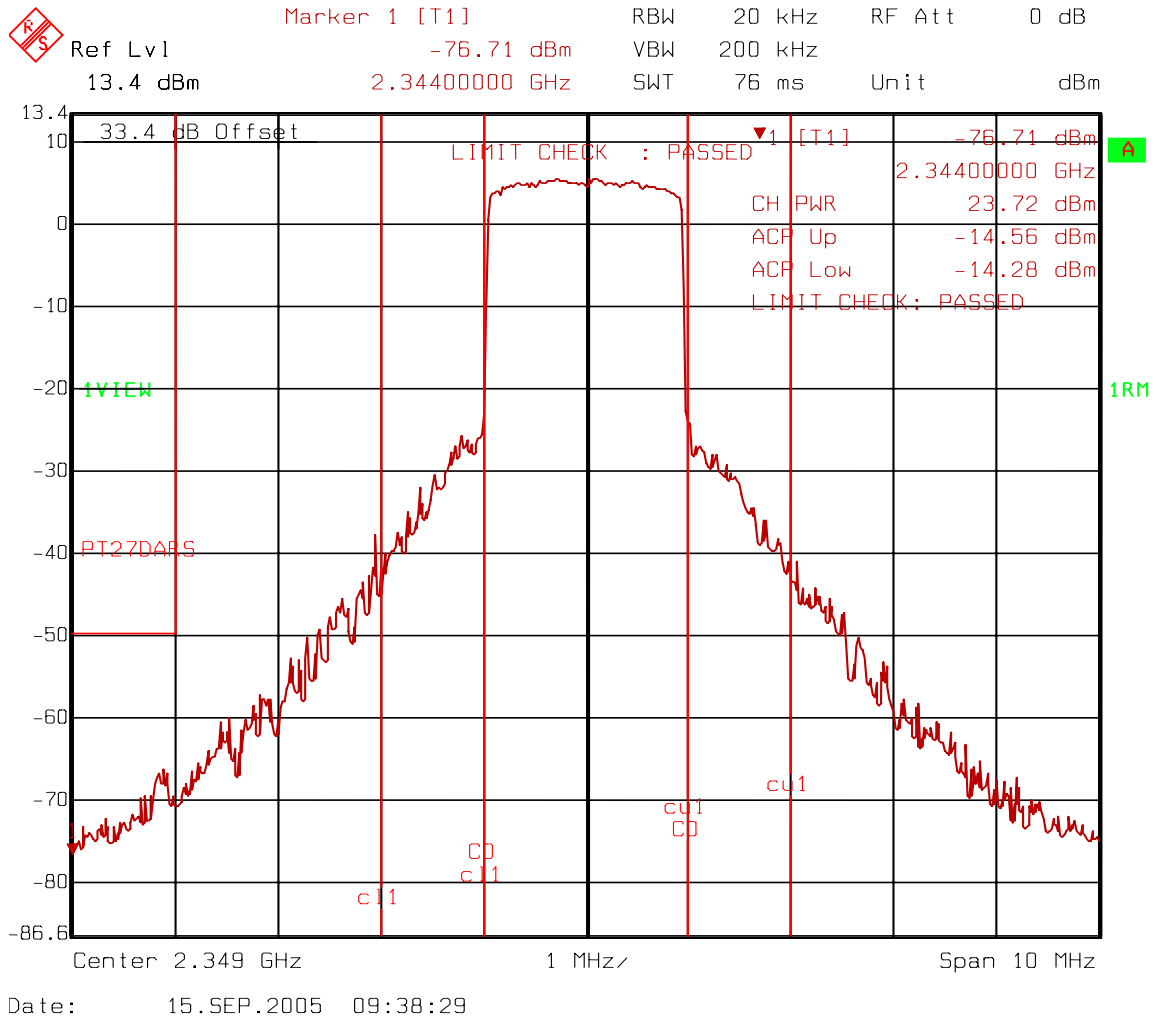


D BAND 24DBM OUTPUT

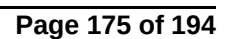


EQUIPMENT: 2305 - 2360 LMX E

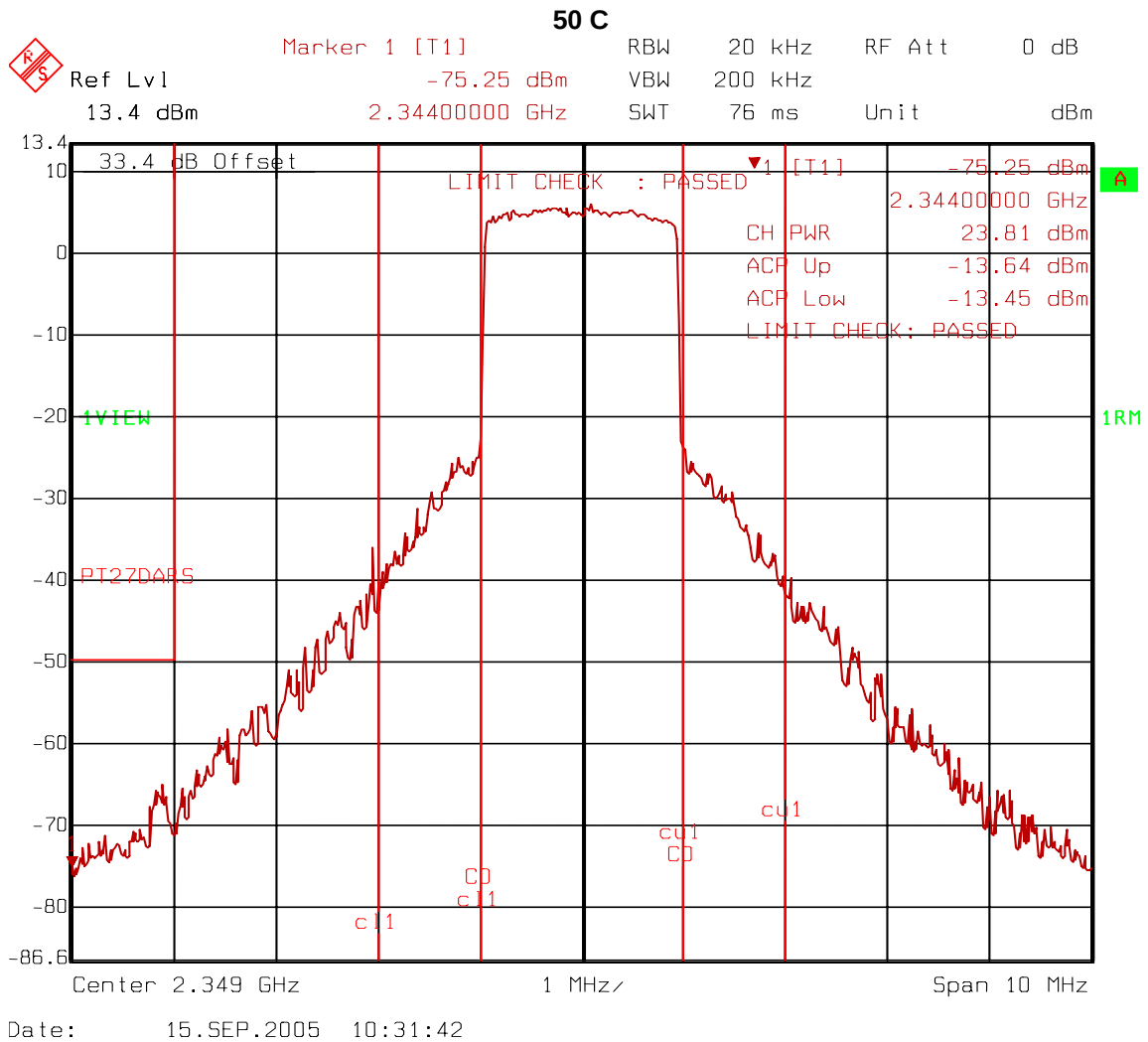
20 DEGREES TMIN

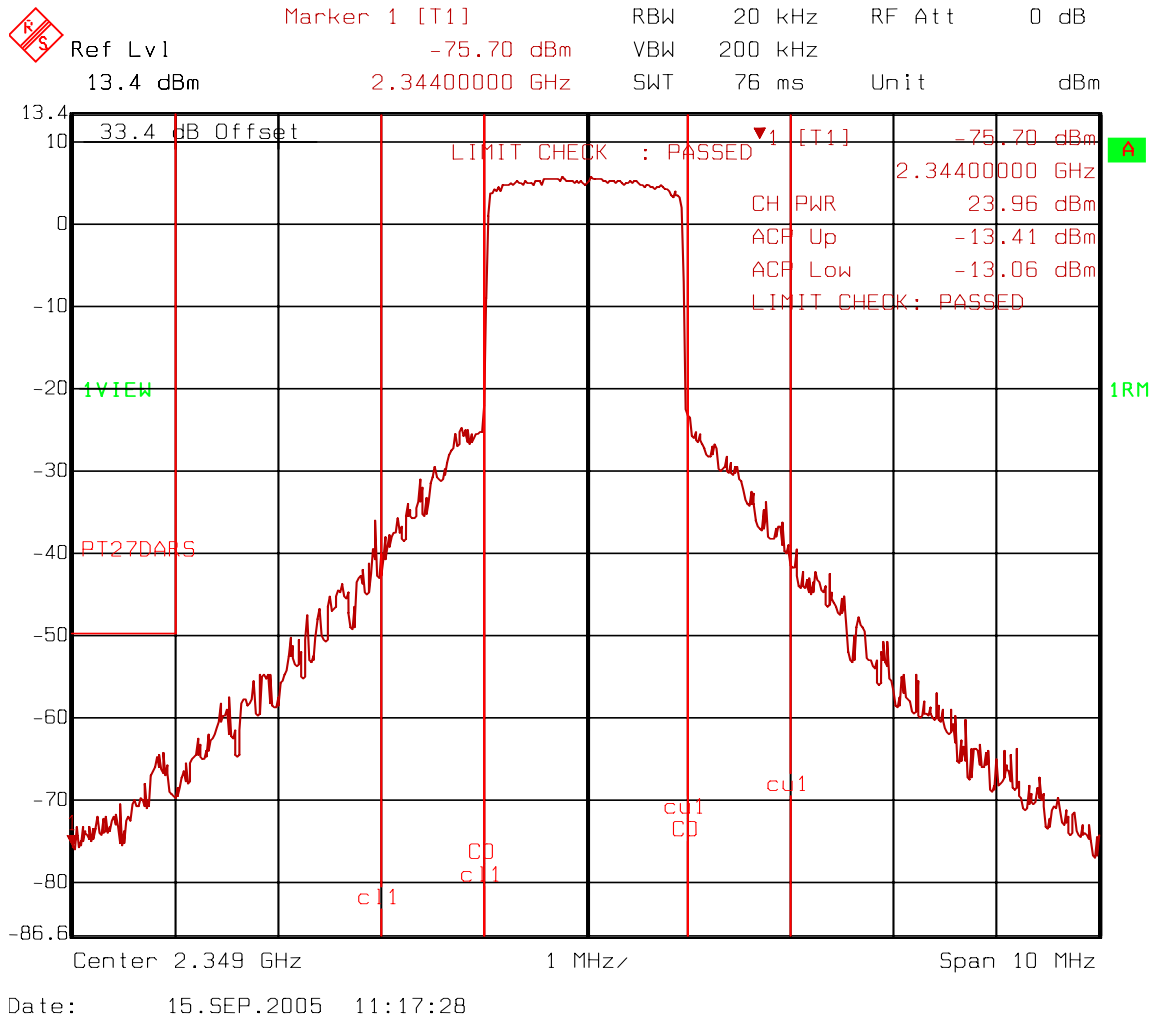


20 DEGREES TMAX



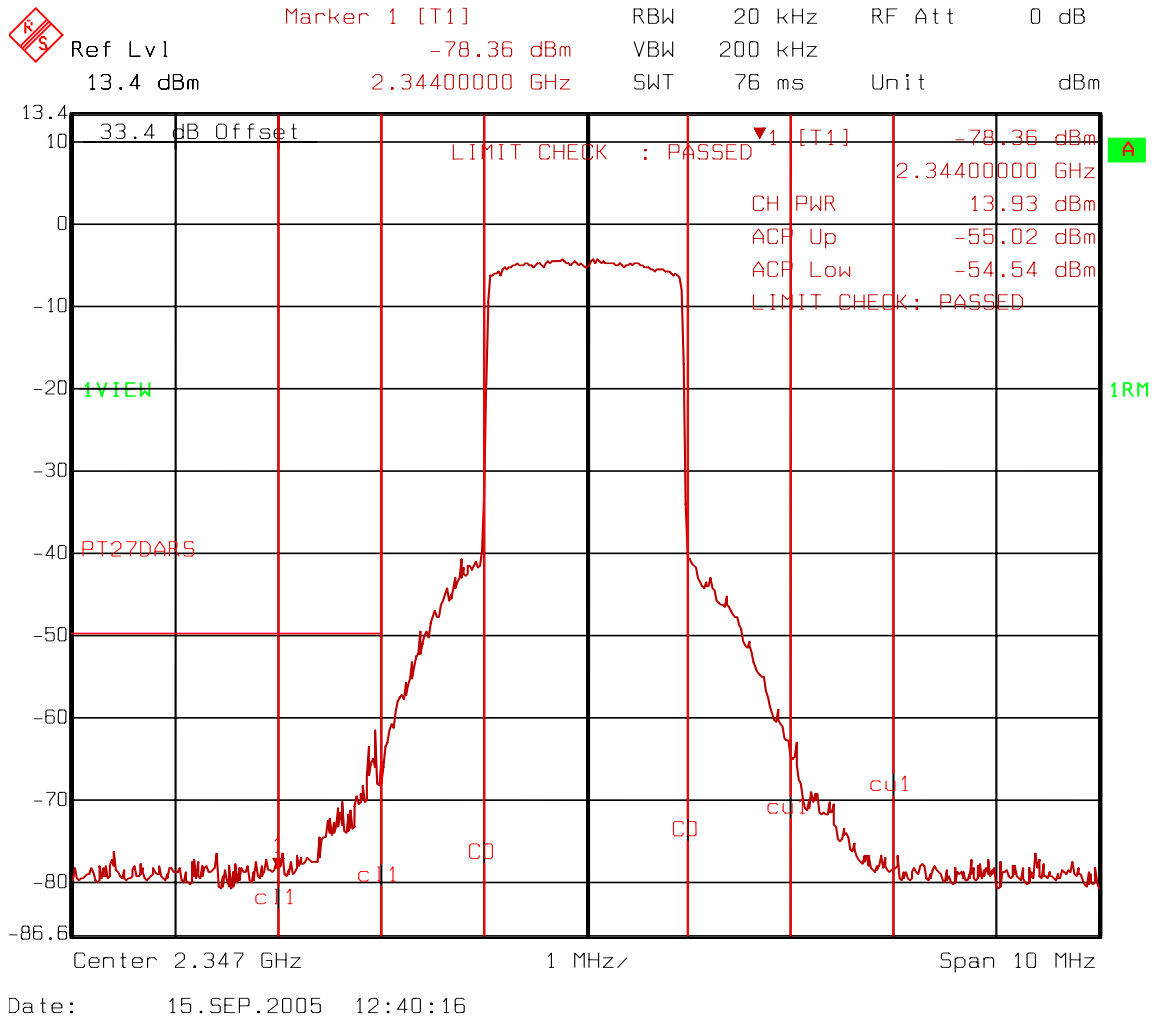
EQUIPMENT: 2305 - 2360 LMX E



EQUIPMENT: 2305 - 2360 LMX E**40 C**

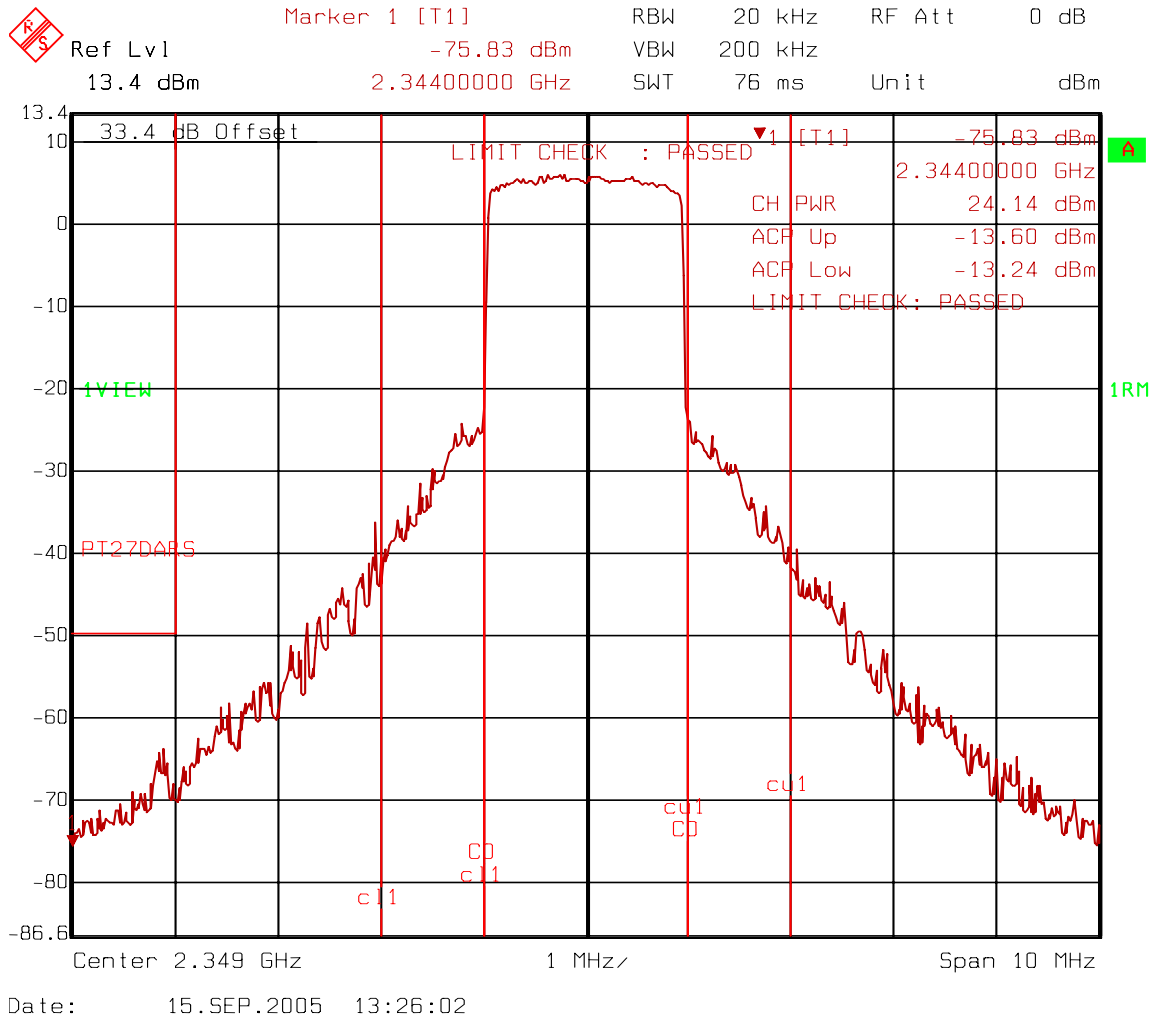
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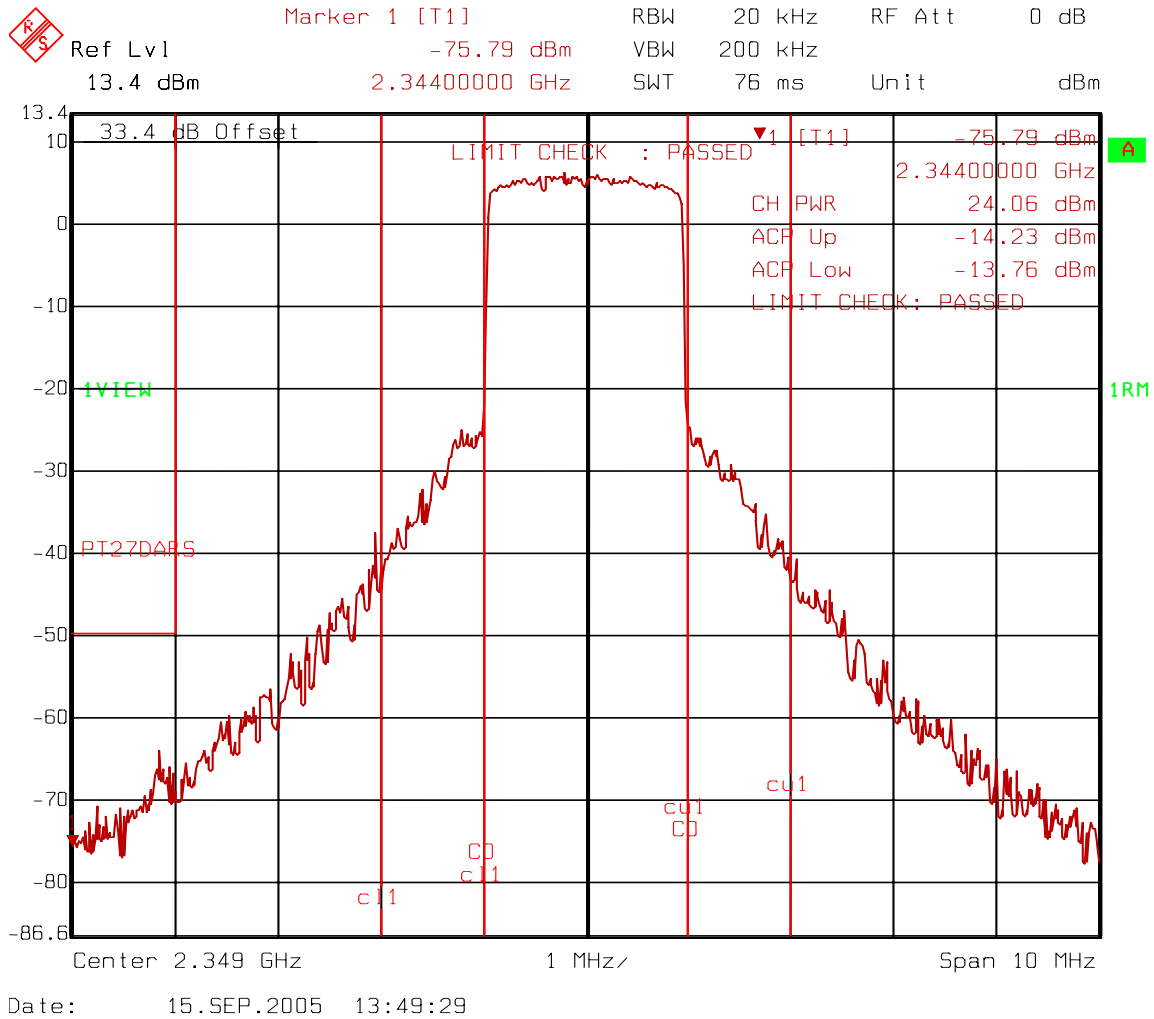
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EQUIPMENT: 2305 - 2360 LMX E

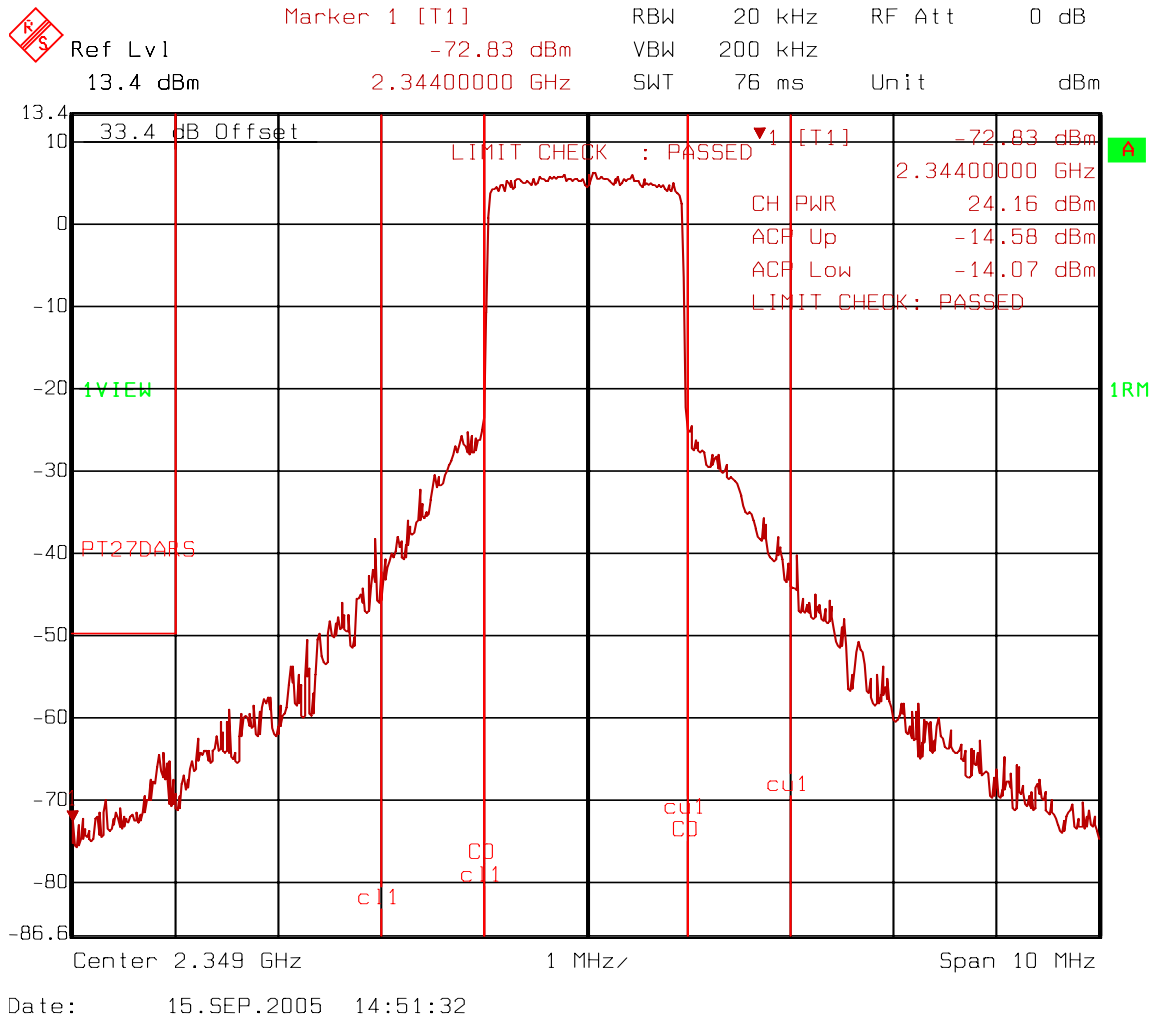
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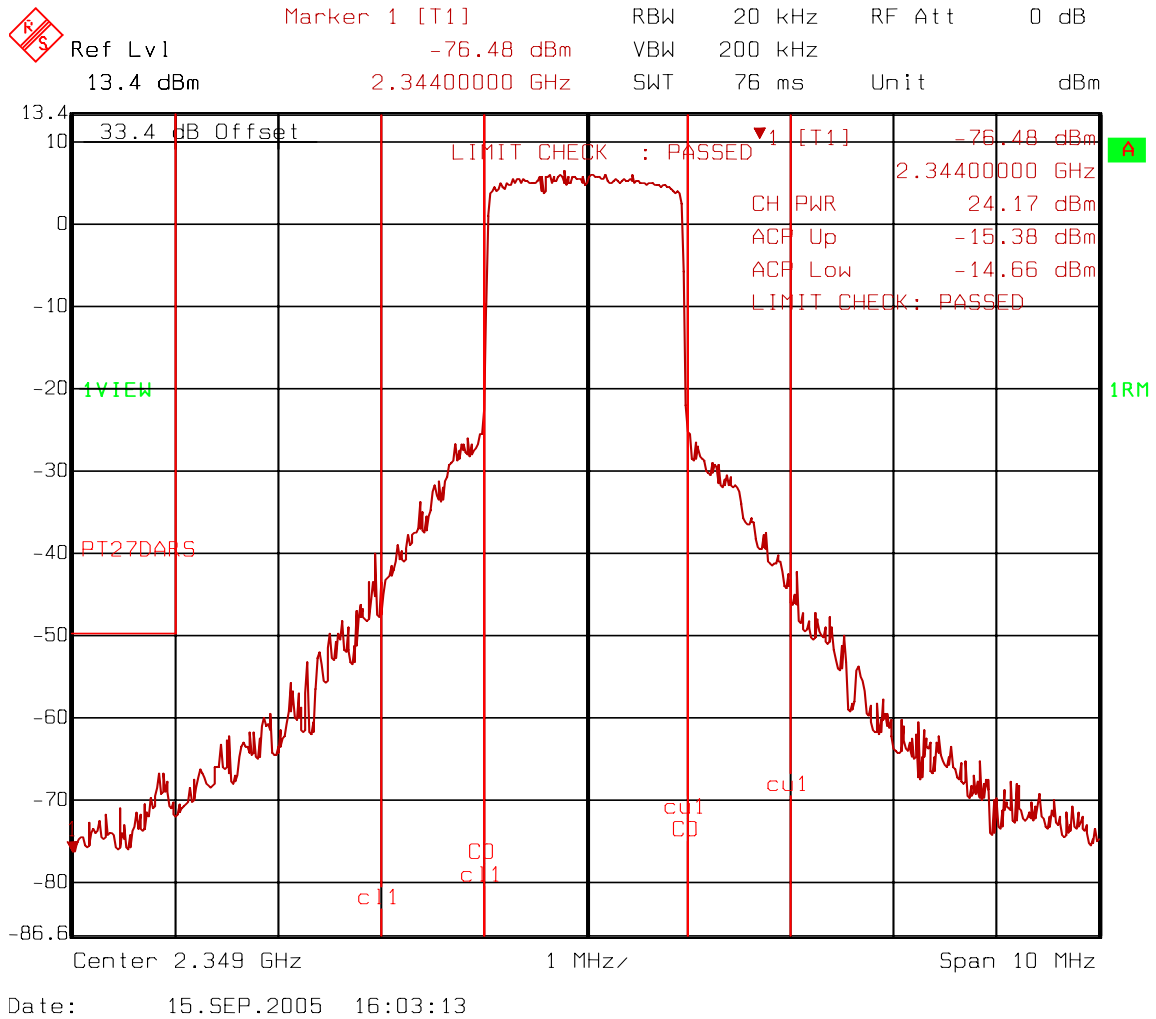
EQUIPMENT: 2305 - 2360 LMX E

-20 C



EQUIPMENT: 2305 - 2360 LMX E

-30 C



EQUIPMENT: 2305 – 2360 LMX E**Section 8. Test Equipment List**

Nemko ID	Description	Manufacturer	Serial Number	Calibration Date	Calibration Due
		Model Number			
1484	Cable 2.0-18.0 Ghz	Storm PR90-010-072	N/A	08/26/04	02/26/06
1485	Cable 2.0-18.0 Ghz	Storm PR90-010-216	N/A	08/02/04	02/26/06
993	Horn antenna	A.H. Systems SAS-200/571	XXX	08/01/05	08/01/07
1480	Bilog Antenna	Schaffner-Chase CBL6111C	2572	CalNotReq	N/A
1081	CABLE 2m	Astrolab 32027-2-29094-72TC	N/A	CBU	NA
1472	20db Attenuator DC 18 Ghz	Omni Spectra 20600-20db	NONE	CBU	N/A
1055	DUAL DIRECTIONAL COUPLER	NARDA 3022	73393	Cal Not Req	N/A
1471	10 db Attenuator DC 18 Ghz	MCL Inc. BW-S10W2 10db-2WDC	NONE	CBU	N/A
1036	SPECTRUM ANALYZER	ROHDE & SCHWARZ FSEK30	830844/006	03/22/04	03/23/06
1464	Spectrum analyzer	Hewlett Packard 8563E	3551A04428	01/14/05	01/15/07
283	Environmental Chamber with controller # 1189006	ENVIROTRONICS SH27 & 2030-22844	129010083	04/22/03	04/21/04
1629	CABLE, 6 ft	MEGAPHASE 10311 1GVT4	N/A	CBU	N/A
1081	CABLE 2m	Astrolab 32027-2-29094-72TC	N/A	CBU	N/A
619	THERMOMETER	FLUKE 51	4520028	09/16/04	09/16/05
2076	Cable	Nemko None	None	04/28/06	04/28/06
1561	Attenuator 10db	Midwest Microwave 392-10	NONE	CBU	N/A
1562	Attenuator 10db	Midwest Microwave 392-11	NONE	CBU	N/A

EQUIPMENT: 2305 – 2360 LMX E

Section 9. Test Details

EQUIPMENT: 2305 – 2360 LMX E

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

Antenna Conducted:

The rms power at antenna terminals is measured using a Power Meter. Power output is measured with the maximum rated rf output level.

E.I.R.P.:

Peak EIRP is calculated based on the following:

RMS rf Output Power at antenna terminals: +28 dBm (nominal)

Peak to Average Ratio of rf waveform: 6 dB

Antenna gain (nominal): 5 dBi

Peak EIRP is:

+28 dBm + 6 dB + 5 dBi = +39 dBm (8 watts)

EQUIPMENT: 2305 – 2360 LMX E

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

Adjacent Band Emissions:

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of at least 1% of the fundamental bandwidth of the transmitted carrier. A carrier is has a bandwidth of 500 kHz, thus the minimum resolution bandwidth used is 5 kHz.

Out-of-Band Emissions:

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of at least 1 MHz.

The limits are expressed as attenuation below carrier level thus the relative ACP function of the spectrum analyzer is used to show compliance.

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

EQUIPMENT: 2305 – 2360 LMX E

NAME OF TEST: Spurious Emission at Antenna Terminals

PARA. NO.: 2.1051

Antenna Conducted:

Method Of Measurement:

Adjacent Band Emissions:

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of at least 1% of the fundamental bandwidth of the transmitted carrier. A carrier is has a bandwidth of 500 kHz, thus the minimum resolution bandwidth used is 5 kHz.

Out-of-Band Emissions:

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of at least 1 MHz.

The limits are expressed as attenuation below carrier level thus the relative ACP function of the spectrum analyzer is used to show compliance.

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

EQUIPMENT: 2305 – 2360 LMX E**NAME OF TEST: Field Strength of Spurious Radiation****PARA. NO.: 2.1053**

The antenna is detachable from the transmitter, thus it is removed and replaced with a 50 ohm load.

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

E. I.R.P.:

If the antenna is detachable from the circuit then the antenna is replaced with a 50 ohm load for this test.. The EIRP is measured using the substitution antenna method of measurement as described in EIA/TIA 603B. The field strength of the emission is measured using a RBW setting on the spectrum analyzer greater than the 20 dB bandwidth of the transmitted waveform. The EUT is then replaced with an antenna with known gain relative to either a dipole or an isotropic radiator. A signal generator is used to feed the substitution antenna until the previously measured field strength level is obtained. The level of signal needed to drive the substitution antenna to obtain the previously measured field strength is the eirp.

EQUIPMENT: 2305 – 2360 LMX E**j****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 spectrum is plotted to determine if the fundamental frequency remains within the specified limits in the authorized band. The procedure is repeated at 85 STV, 100% S.T.V. and 115% S.T.V. with the temperature at 20 degrees Celsius.

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 spectrum is plotted at each temperature.

EQUIPMENT:

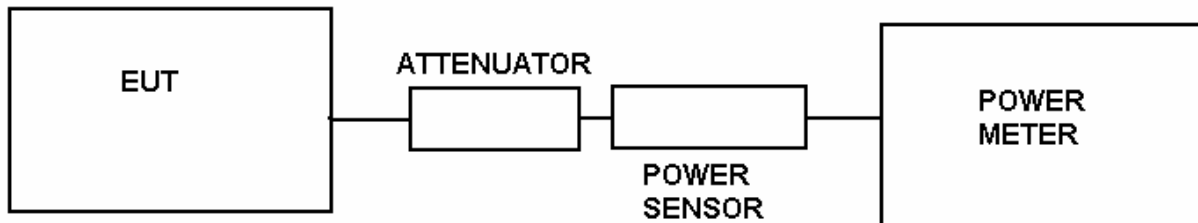
FCC ID:

Section 10. Test Diagrams

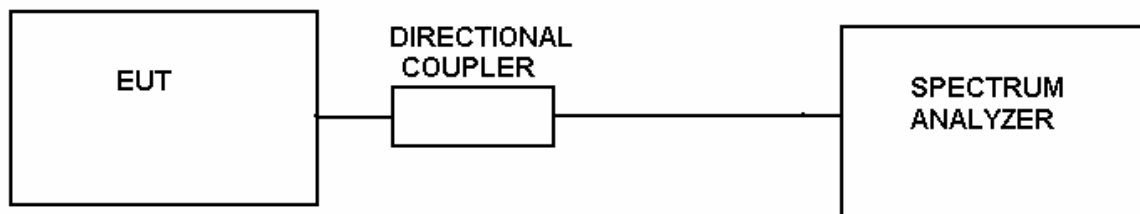
EQUIPMENT:

FCC ID:

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



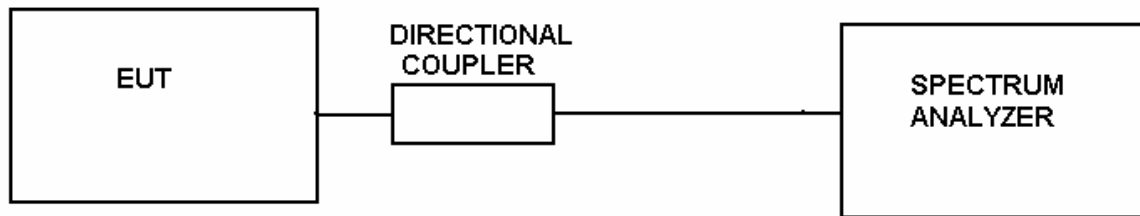
Para. No. 2.1049 - Occupied Bandwidth



EQUIPMENT:

FCC ID: _____

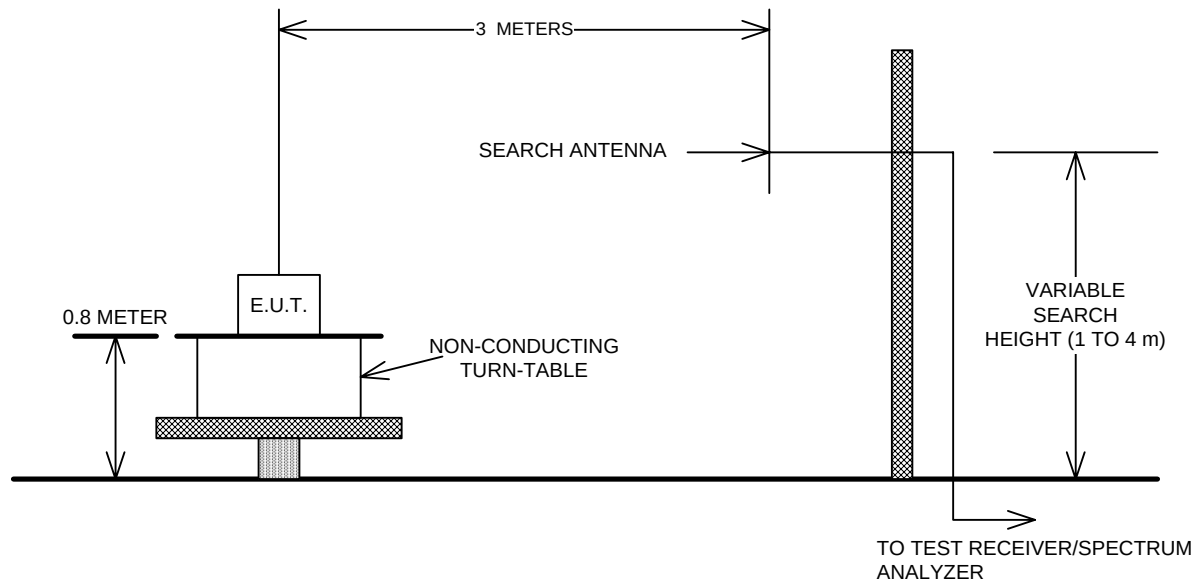
Para. No. 2.1051 - Spurious Emissions at Antenna Terminals



EQUIPMENT:

FCC ID: _____

Para. No. 2.1053 - Field Strength of Radiation



Para. No. 2.1055 - Frequency Stability

