FCC PART 22 TYPE APPROVAL

EMI MEASUREMENT AND TEST REPORT

For

ZTE Corporation

ZTE Plaza, Hi-tech Park, Nanshan District, Shenzhen, Guangdong, China

FCC ID: Q78-BTSBI18A

October 31, 2005

This Report Concerns:	**Equipment Type:**
☒ Original Report	CDMA2000 Base Transceiver Station-I1

Test Engineer:	Sam Lin
Report No.:	RSZ05091602
Test Date:	September 22-30, 2005
Reviewed By:	Chris Zeng
Prepared By:	Bay Area Compliance Lab Corp. (ShenZhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China Tel: +86-755-33320018 Fax: +86-755-33320008

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *ZTE Corporation*'s product, model number: ZXC10 BTSB I18A or the "EUT" as referred to in this report is a CDMA2000 Base Transceiver Station-I1. The EUT is measured approximately 70.0 cm L x 80.0cmW x 160.0cmH, rated input voltage: DC -48 V.

** The test data gathered are from production sample, serial number: 051015705020004, provided by the manufacture, we receive the EUT on 2005-9-16.*

Objective

This Type approval report is prepared on behalf of ZTE Corporation in accordance with Part 2, Subpart J and Part 22 Subpart H of the Federal Communication Commissions rules.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of federal Regulations Title 47 Part 2,Sub-part J as well as the following parts:

Part 22 Subpart H - Public Mobile Services

Applicable Standards: TIA EIA 137-A, TIA EIA 97-D, TIA/EIA 603-C, Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

Test Facility

The Test site used by Bay Area Compliance Lab Corp. (ShenZhen) to collect test data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China.

Test site at Bay Area Compliance Lab Corp. (ShenZhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 04, 2004. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Lab Corp. (ShenZhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0). The current scope of accreditations can be found at http://ts.nist.gov/ts/htdocs/210/214/scopes/2007070.htm

External I/O Cable

Cable Description	Length (M)	From/Port	To
Unshielded Detachable DC Power Cable	3.0	EUT	DC Power Supply

SYSTEM TEST CONFIGURATION

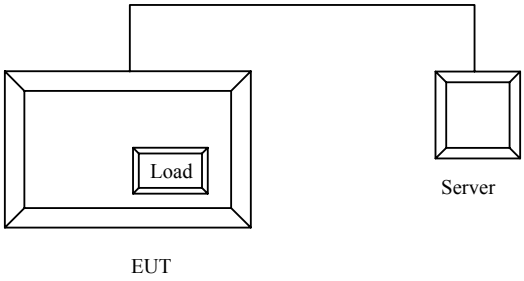
Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user).

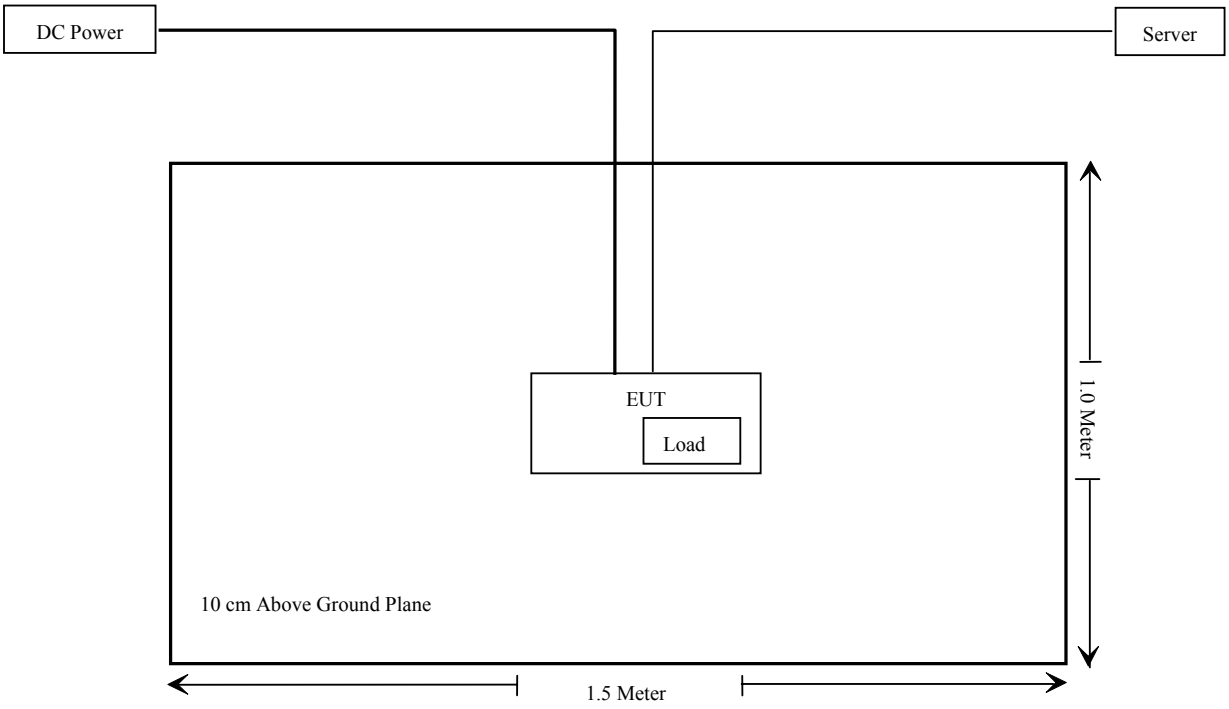
Equipment Modifications

Bay Area Compliance Lab Corp. (ShenZhen) has not done any modification on the EUT.

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§2.1046, §22.913(a)	Effective radiated power	Compliant
§ 2.1091	RF Exposure	Compliant
§2.1047	Modulation characteristic	Compliant
§15.109(a)	Radiation Emission	Compliant
§2.1053	Spurious Radiated Emissions	Compliant
§2.1051, §22.917	Spurious Emissions AT Antenna Terminals	Compliant
§22.1049 §22.917 §22.905	Occupied Bandwidth	Compliant
§22.917	Band Edge	Compliant
§ 2.1055 (a) § 2.1055 (d) § 22.355	Frequency stability	Compliant

§2.1091 - RF EXPOSURE

Limit

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1093 RF exposure is calculated.

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f\2\)	6
30-300.	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6

f = frequency in MHz
* = Plane-wave equivalent power density

Test Data

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$S = PG/4\pi R^2$

Where: S = power density
P = power input to antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

Maximum peak output power at antenna input terminal: 46.80 (dBm)
Maximum peak output power at antenna input terminal: 47.86 (W)
Prediction distance: 300 (cm)
Predication frequency: 869.70 (MHz)
Antenna Gain (typical): 17 (dBi)
Power density at predication frequency at 300 cm: 0.720 (mW/cm^2)
MPE limit for uncontrolled exposure at prediction frequency: 2.899 (mW/cm^2)

Test Result: Pass

§2.1046, §22.913(a) - EFFECTIVE RADIATED POWER

Applicable Standard

According to FCC §2.1046 and §22.913 (a), the ERP of transmitters and cellular repeaters must not exceed 500 Watts.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2005-6-3	2006-6-3

*** Statement of Tractability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

Test Data

Environmental Conditions

Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

The testing was performed by Sam Lin on 2005-9-28.

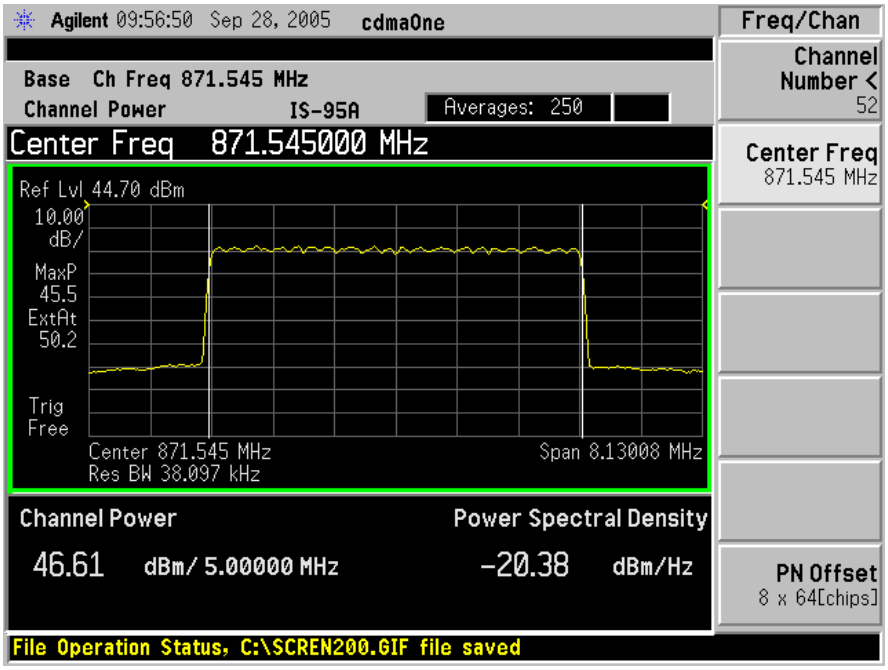
Test Result: Pass

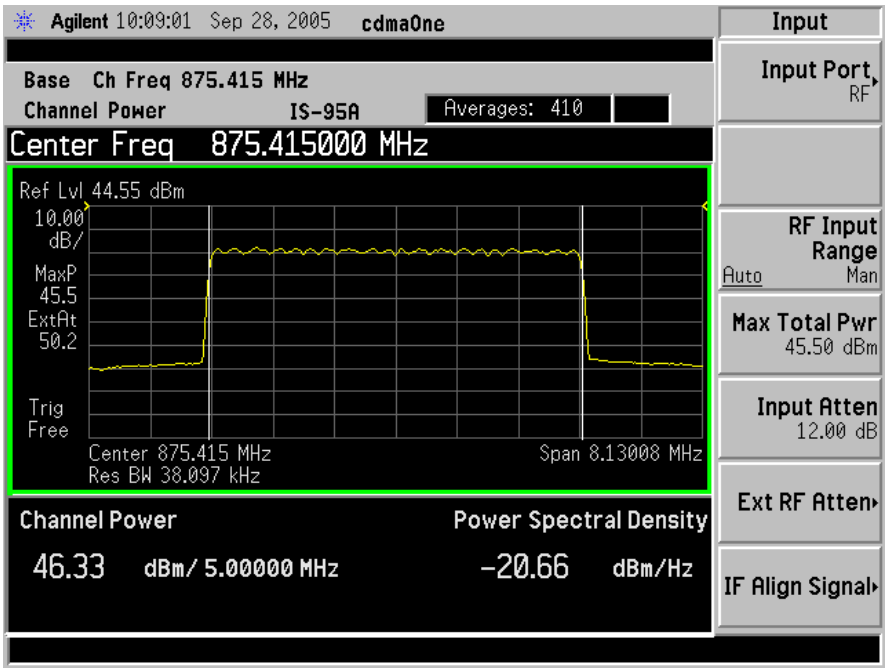
Test Mode: Transmitting

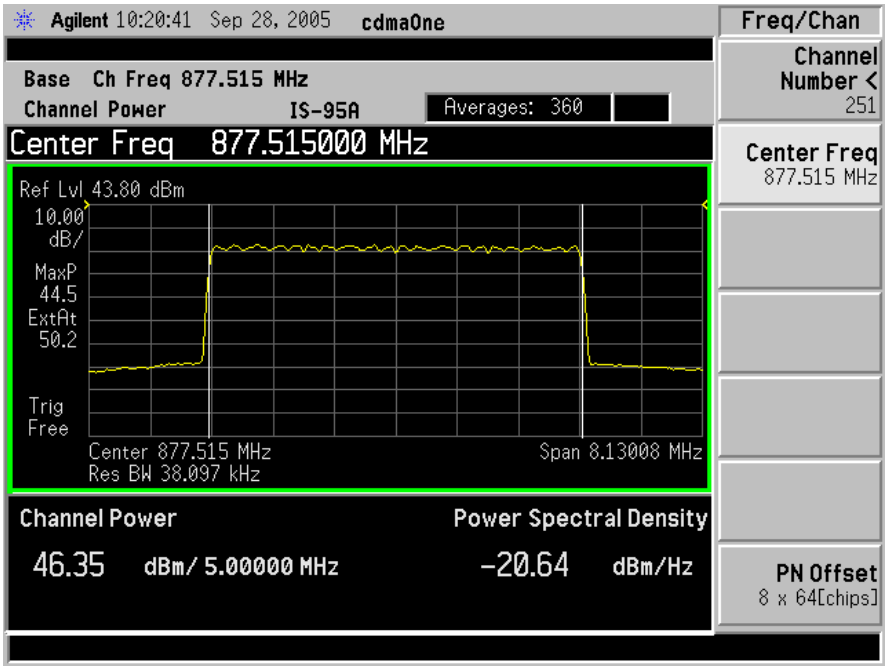
Digital Pre-Distortion Transceiver and Receiver Module DPA

4 Carrier

Channel	Frequency (MHz)	Total Power in dBm	Total Power in W	Limit in W
Channel 1013, 31, 72, 113	869.70	46.61	45.81	500
Channel 119, 160, 201, 242	873.57	46.33	42.95	500
Channel 189, 230, 271, 312	879.36	46.35	43.15	500

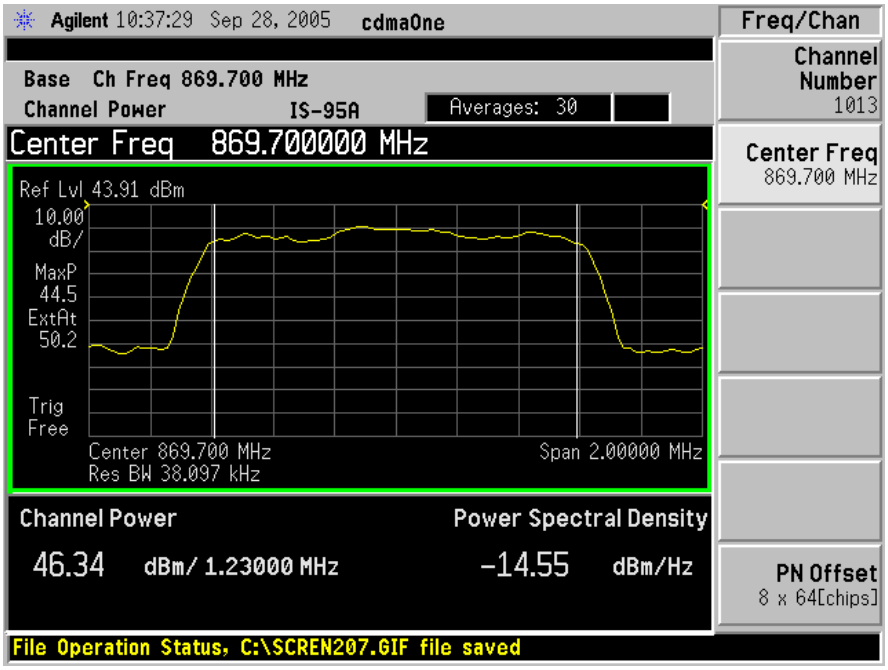


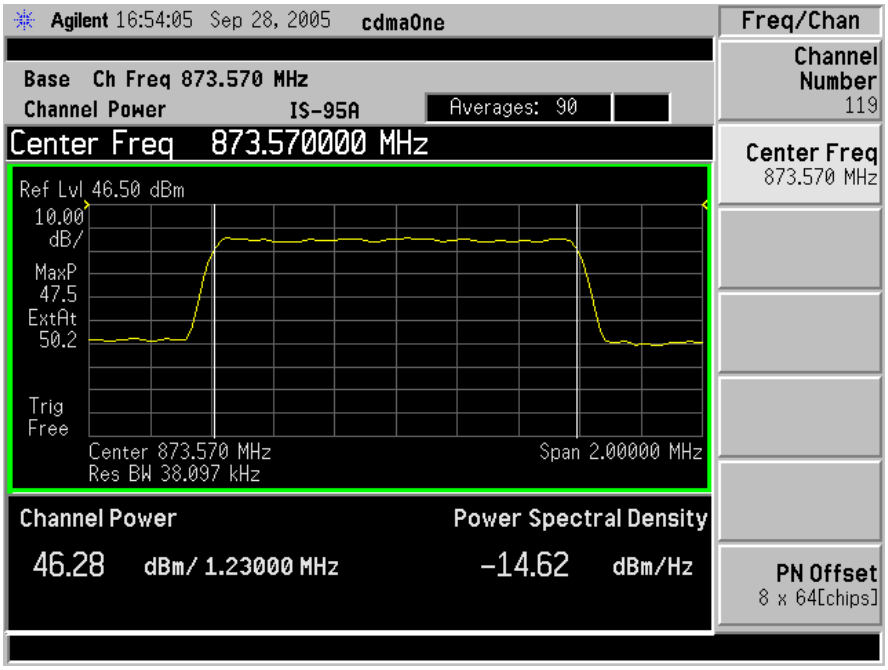




1 Carrier

Channel	Frequency (MHz)	Total Power in dBm	Total Power in W	Limit in W
Channel 1013	869.70	46.34	43.05	500
Channel 119	873.57	46.28	42.46	500
Channel 312	879.36	46.66	46.34	500

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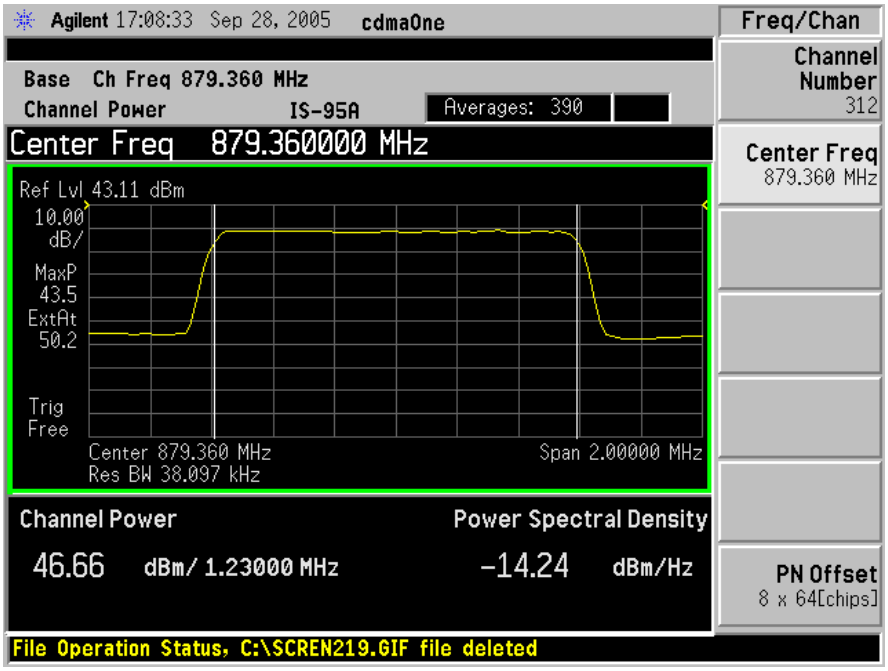
Freq/Chan
Base Ch Freq 873.570 MHz
Channel Power IS-95A
Averages: 90
Channel Number 119
Center Freq 873.570000 MHz
Center Freq 873.570 MHz
Ref Lvl 46.50 dBm
10.00 dB/
MaxP 47.5
ExtAt 50.2
Trig Free
Center 873.570 MHz
Res BW 38.097 kHz
Span 2.00000 MHz
Channel Power
Power Spectral Density
46.28 dBm/ 1.23000 MHz
-14.62 dBm/Hz
PN Offset 8 x 64[chips]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Freq/Chan
Base Ch Freq 879.360 MHz
Channel Power IS-95A
Averages: 390
Channel Number 312
Center Freq 879.360000 MHz
Center Freq 879.360 MHz
Ref Lvl 43.11 dBm
10.00 dB/
MaxP 43.5
ExtAt 50.2
Trig Free
Center 879.360 MHz
Res BW 38.097 kHz
Span 2.00000 MHz
Channel Power
Power Spectral Density
46.66 dBm/ 1.23000 MHz
-14.24 dBm/Hz
PN Offset 8 x 64[chips]
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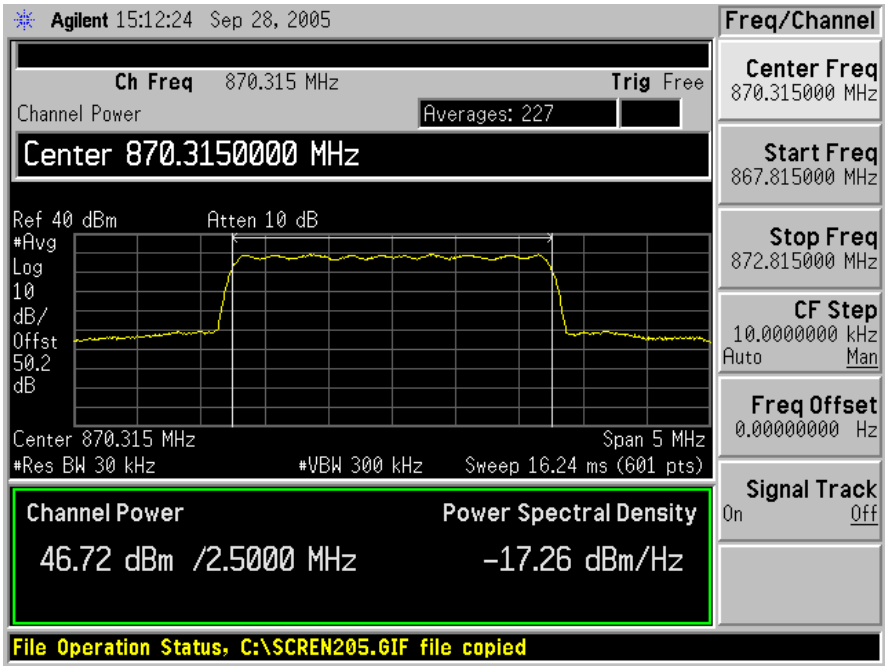
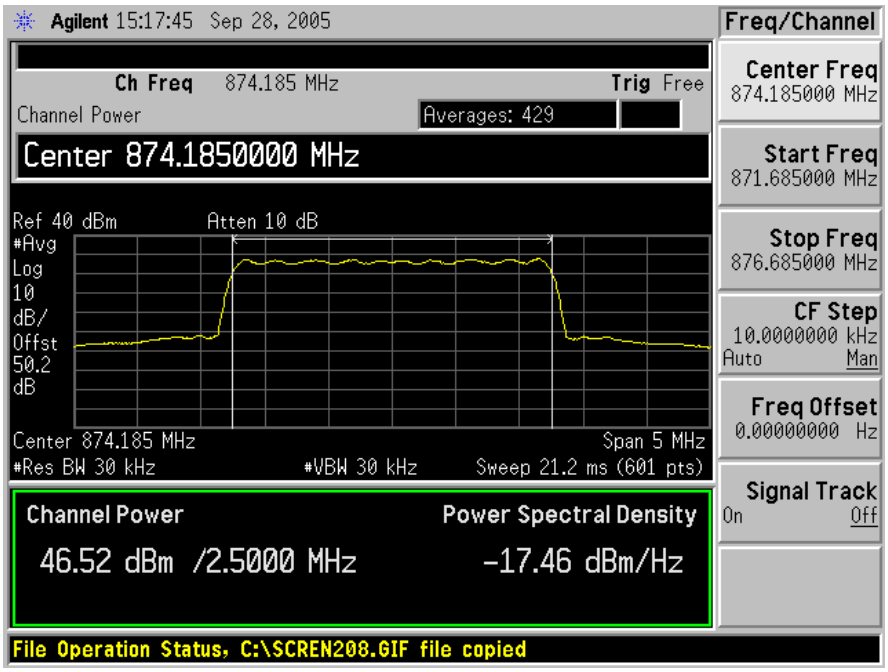
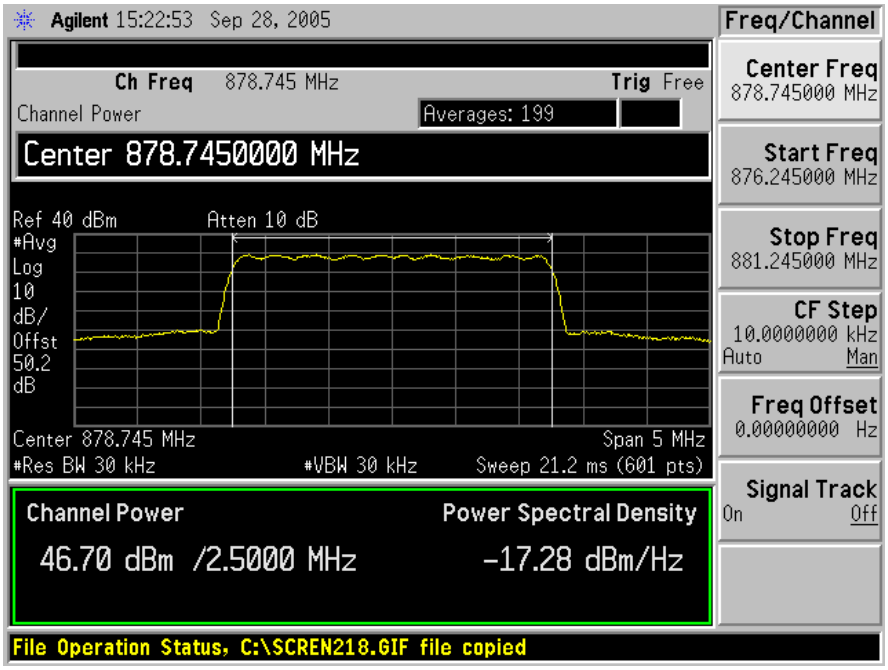
Transceiver and Receiver Module DPA

2 Carrier

Channel	Frequency (MHz)	Total Power in dBm	Total Power in W	Limit in W
Channel 1013, 31	869.70	46.72	46.99	500
Channel 119, 160	873.57	46.52	44.87	500
Channel 271, 312	879.36	46.70	46.77	500

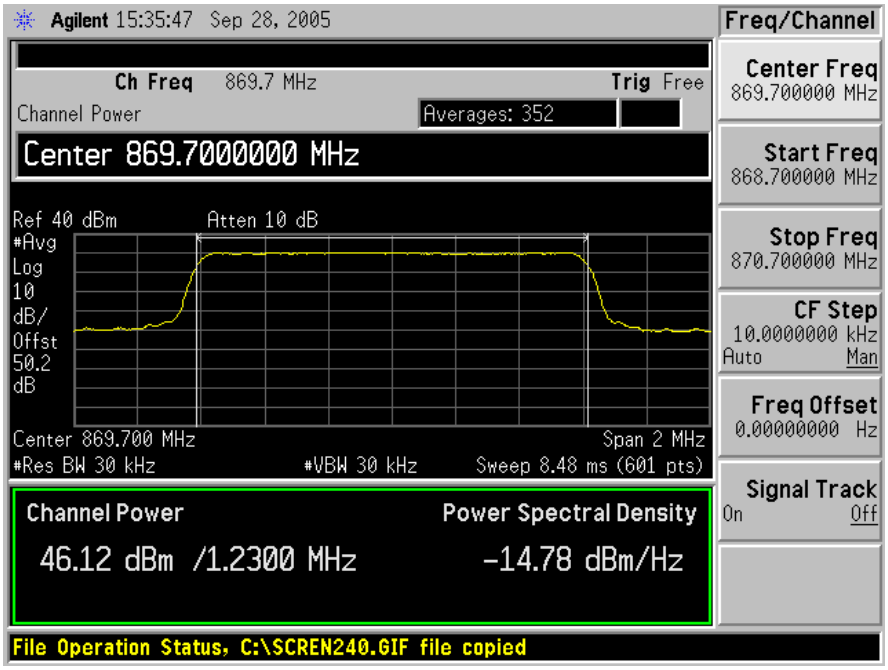


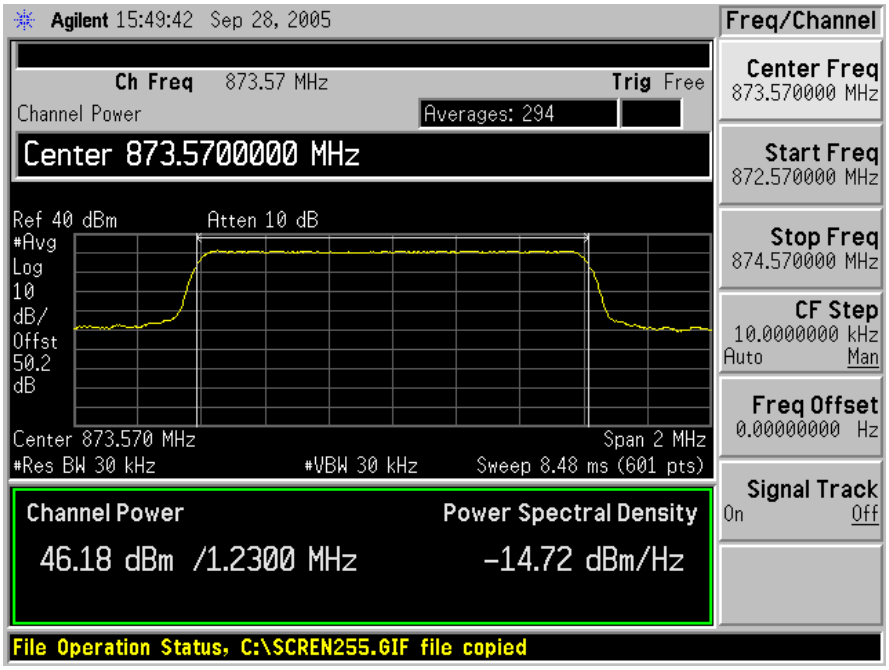




1 Carrier

Channel	Frequency (MHz)	Total Power in dBm	Total Power in W	Limit in W
Channel 1013	869.70	46.12	40.93	500
Channel 119	873.57	46.18	41.50	500
Channel 312	879.36	46.42	43.85	500

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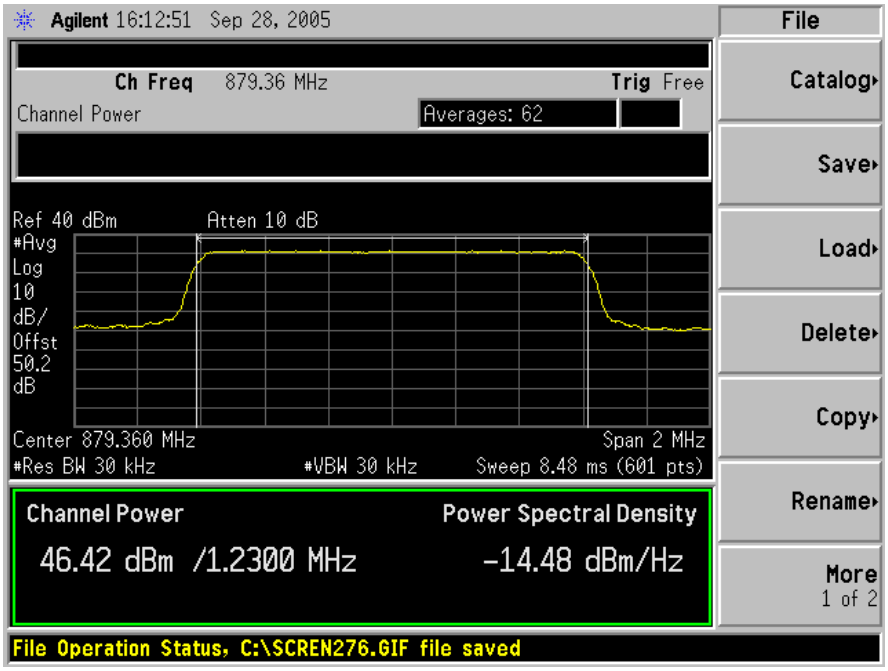
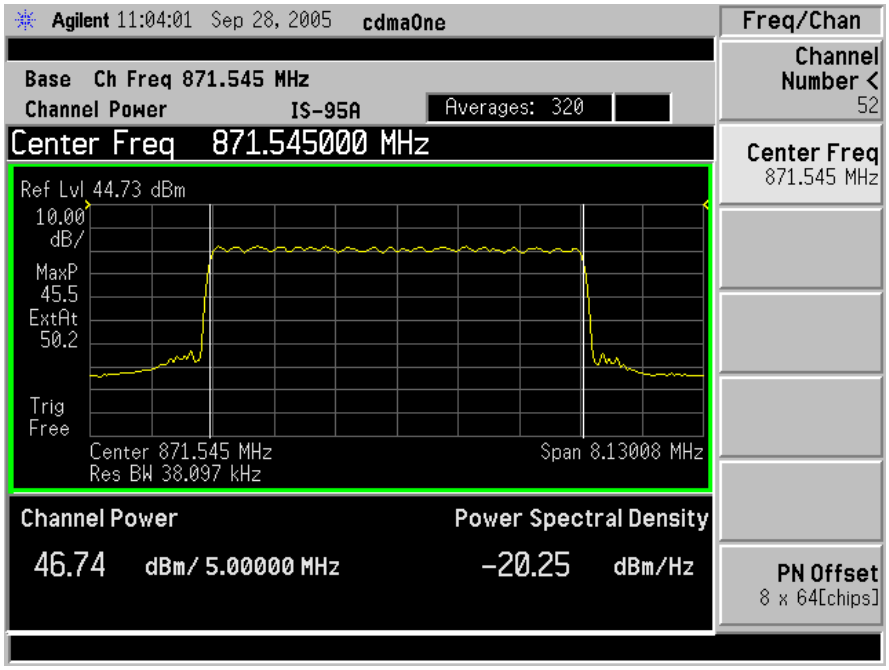
Freq/Channel
Ch Freq 873.57 MHz
Trig Free
Channel Power
Averages: 294
Center 873.5700000 MHz
Ref 40 dBm
Atten 10 dB
#Avg
Log
10
dB/
Offst
50.2
dB
Center 873.570 MHz
Span 2 MHz
#Res BW 30 kHz
#VBW 30 kHz
Sweep 8.48 ms (601 pts)
Channel Power
46.18 dBm /1.2300 MHz
Power Spectral Density
-14.72 dBm/Hz
File Operation Status, C:\SCREN255.GIF file copied
Center Freq
873.570000 MHz
Start Freq
872.570000 MHz
Stop Freq
874.570000 MHz
CF Step
10.0000000 kHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off

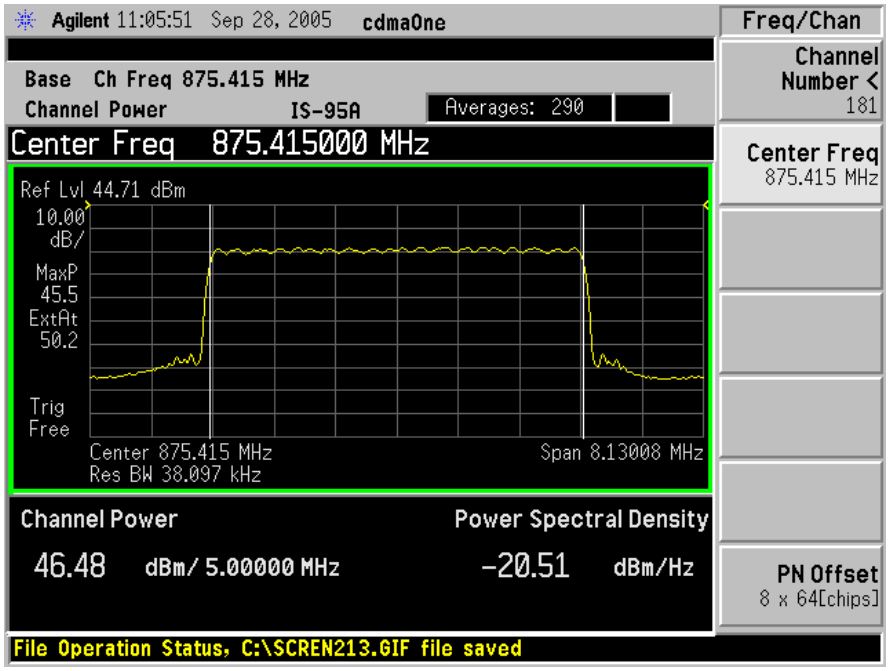

Agilent 16:12:51 Sep 28, 2005
File
Ch Freq 879.36 MHz
Trig Free
Channel Power
Averages: 62
Ref 40 dBm
Atten 10 dB
#Avg
Log
10
dB/
Offst
50.2
dB
Center 879.360 MHz
Span 2 MHz
#Res BW 30 kHz
#VBW 30 kHz
Sweep 8.48 ms (601 pts)
Channel Power
46.42 dBm /1.2300 MHz
Power Spectral Density
-14.48 dBm/Hz
File Operation Status, C:\SCREN276.GIF file saved
Catalog
Save
Load
Delete
Copy
Rename
More
1 of 2

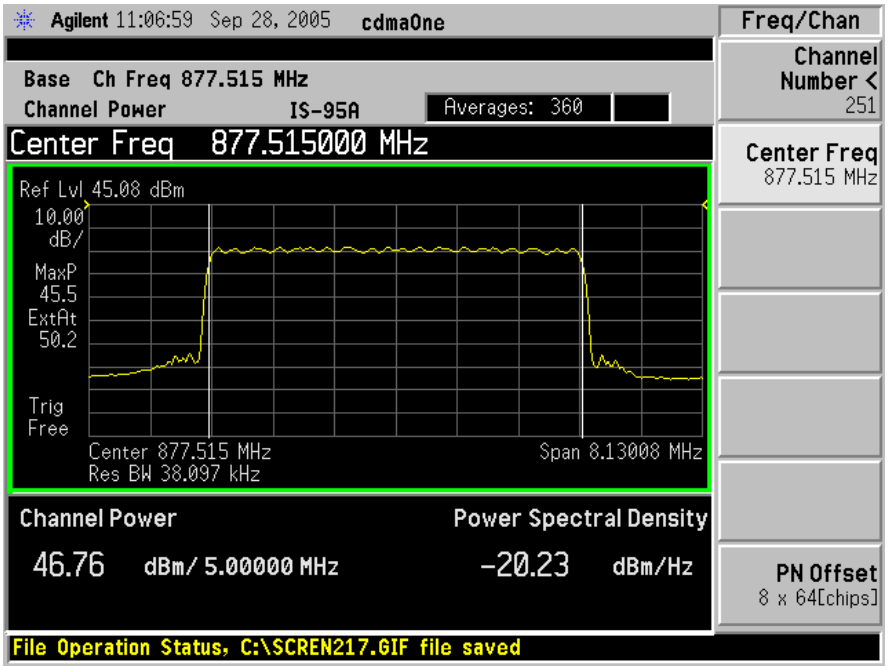
Transceiver and Receiver Module LPA1+RFE

4 Carrier

Channel	Frequency (MHz)	Total Power in dBm	Total Power in W	Limit in W
Channel 1013, 31, 72, 113	869.70	46.74	47.21	500
Channel 119, 160, 201, 242	873.57	46.48	44.46	500
Channel 189, 230, 271, 312	879.36	46.76	47.42	500

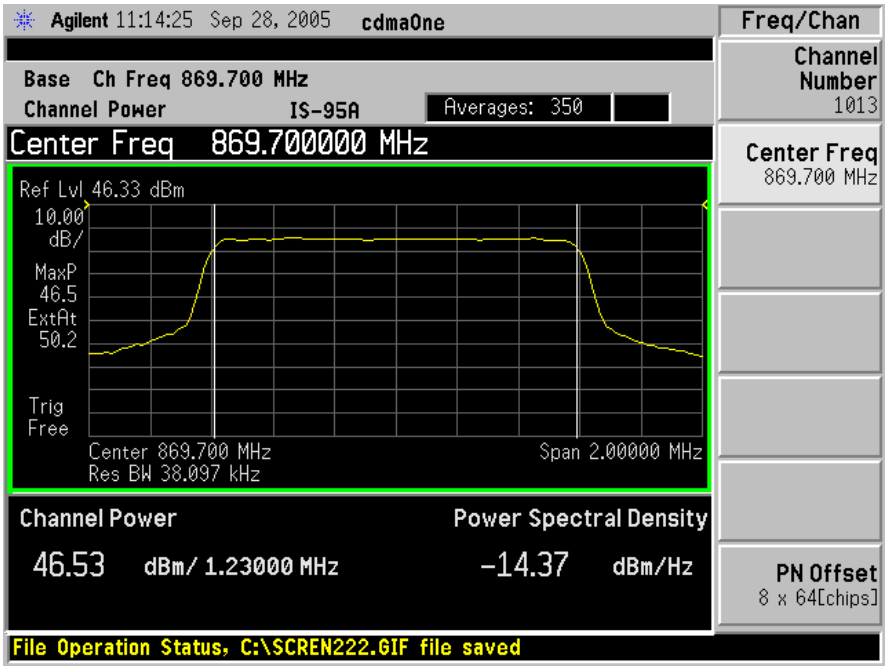


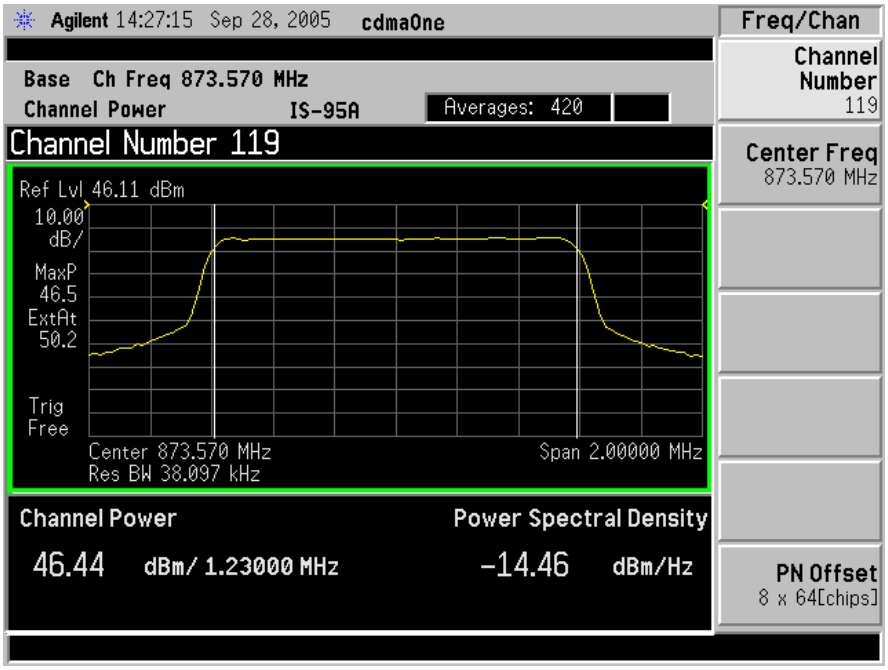




1 Carrier

Channel	Frequency (MHz)	Total Power in dBm	Total Power in W	Limit in W
Channel 1013	869.70	46.53	44.98	500
Channel 119	873.57	46.44	44.06	500
Channel 312	879.36	46.15	41.21	500

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cdmaOne
Freq/Chan
Base Ch Freq 873.570 MHz
Channel Power
IS-95A
Averages: 420
Channel Number 119
Channel Number
119
Center Freq
873.570 MHz
Ref Lvl 46.11 dBm
10.00
dB/
MaxP
46.5
ExtAt
50.2
Trig
Free
Center 873.570 MHz
Res BW 38.097 kHz
Span 2.00000 MHz
Channel Power
Power Spectral Density
46.44 dBm/ 1.23000 MHz
-14.46 dBm/Hz
PN Offset
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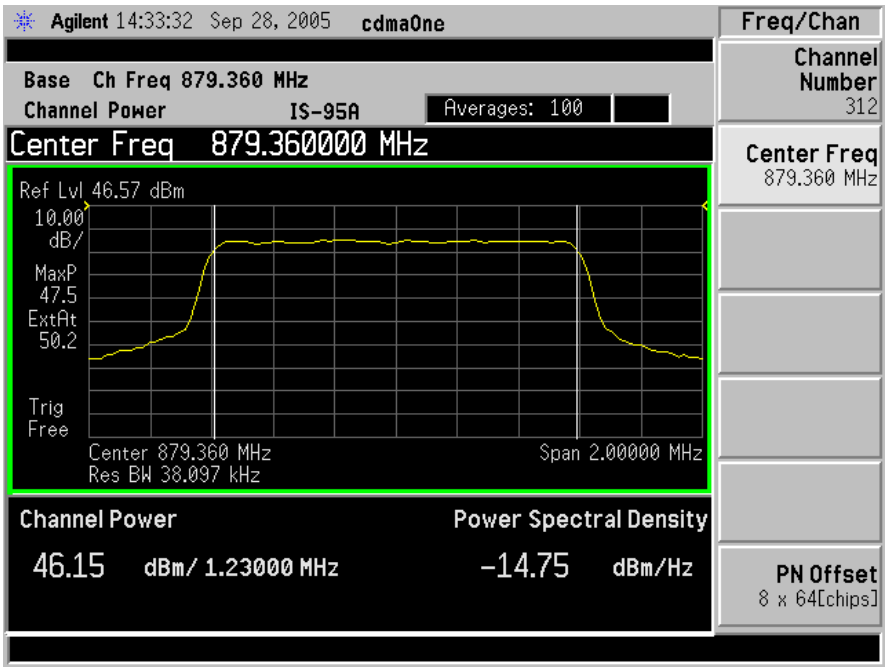
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cdmaOne
Freq/Chan
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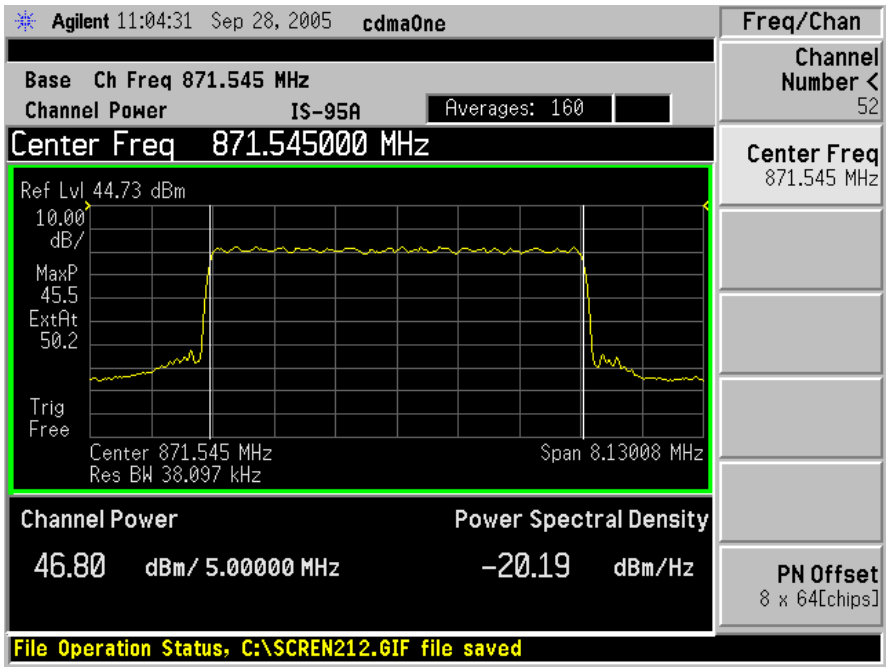
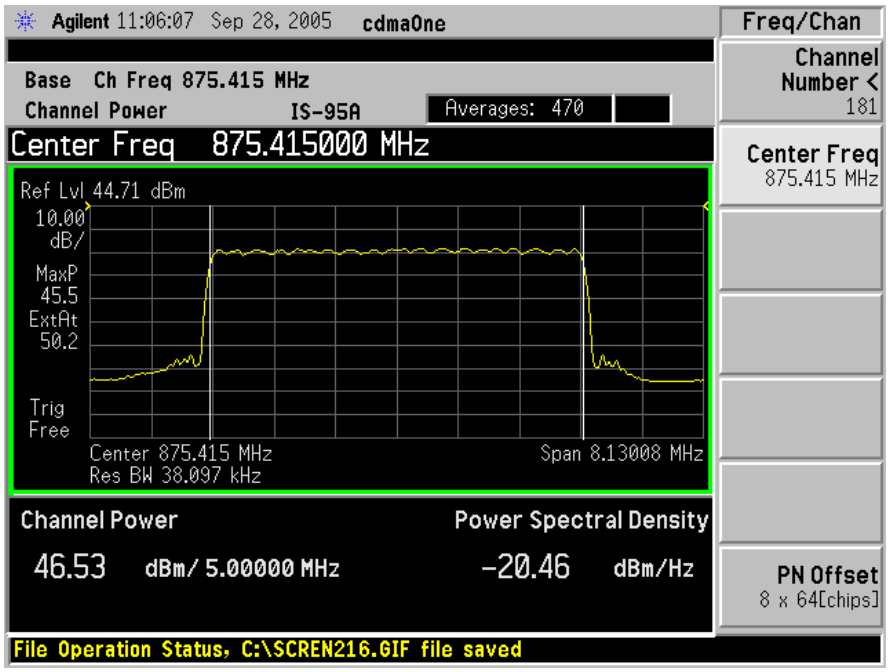
Channel Power
IS-95A
Averages: 100
Center Freq 879.360000 MHz
Channel Number
312
Center Freq
879.360 MHz
Ref Lvl 46.57 dBm
10.00
dB/
MaxP
47.5
ExtAt
50.2
Trig
Free
Center 879.360 MHz
Res BW 38.097 kHz
Span 2.00000 MHz
Channel Power
Power Spectral Density
46.15 dBm/ 1.23000 MHz
-14.75 dBm/Hz
PN Offset
8 x 64[chips]

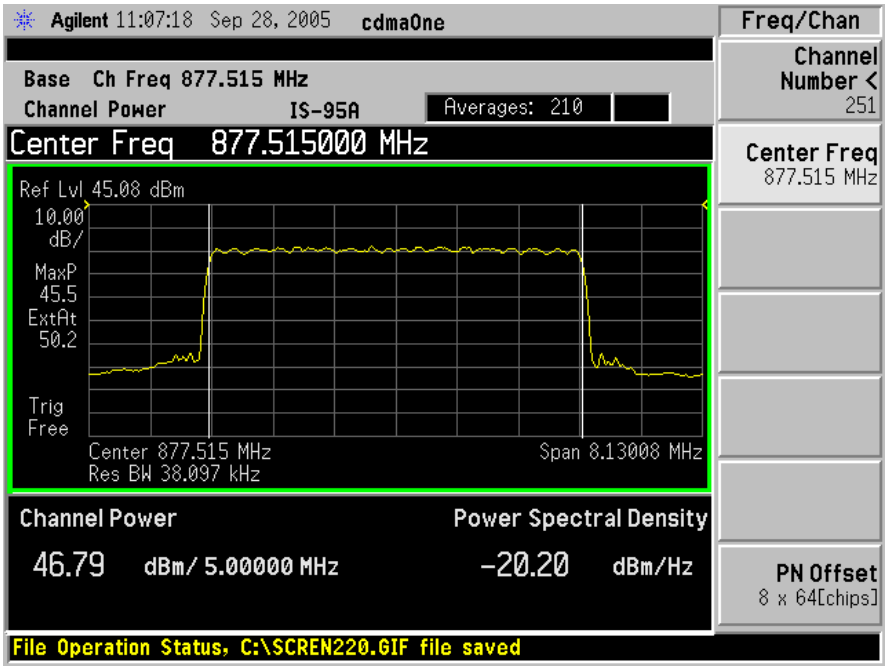
Transceiver and Receiver Module LPA2+RFE

4 Carrier

Channel	Frequency (MHz)	Total Power in dBm	Total Power in W	Limit in W
Channel 1013, 31, 72, 113	869.70	46.80	47.86	500
Channel 119, 160, 201, 242	873.57	46.53	44.98	500
Channel 189, 230, 271, 312	879.36	46.79	47.75	500

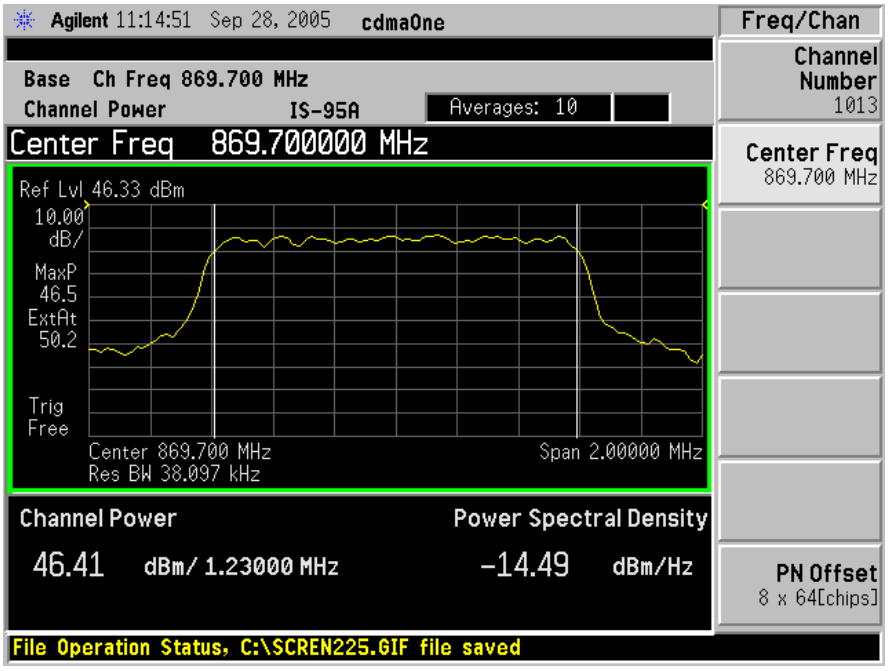


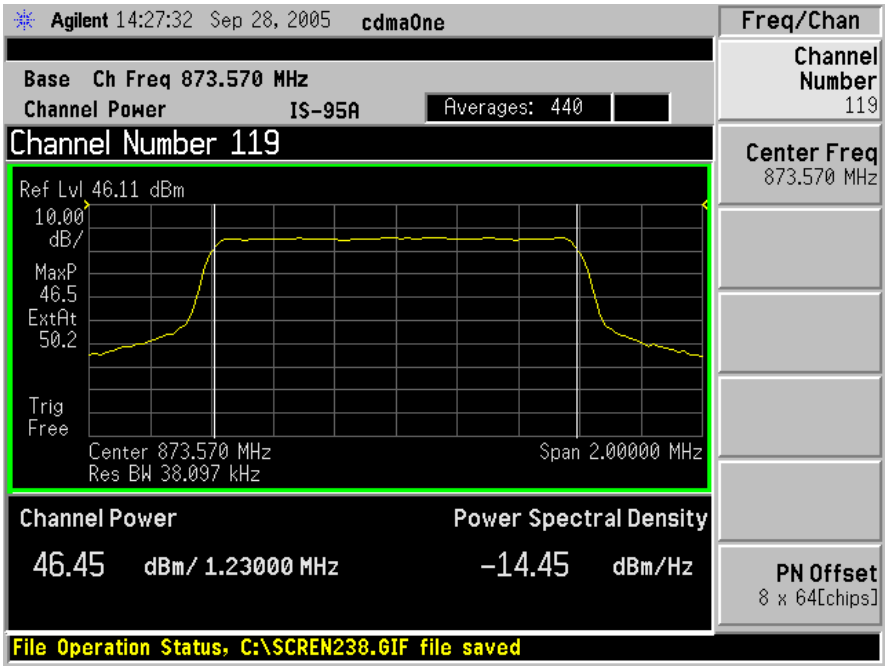




1 Carrier

Channel	Frequency (MHz)	Total Power in dBm	Total Power in W	Limit in W
Channel 1013	869.70	46.41	43.75	500
Channel 119	873.57	46.45	44.16	500
Channel 312	879.36	46.04	40.18	500




Agilent 14:27:32 Sep 28, 2005 cdmaOne
Freq/Chan
Base Ch Freq 873.570 MHz
Channel Power IS-95A
Averages: 440
Channel Number 119
Channel Number 119
Center Freq 873.570 MHz
Ref Lvl 46.11 dBm
10.00 dB/
MaxP 46.5
ExtAt 50.2
Trig Free
Center 873.570 MHz
Res BW 38.097 kHz
Span 2.00000 MHz
Channel Power
46.45 dBm/ 1.23000 MHz
Power Spectral Density
-14.45 dBm/Hz
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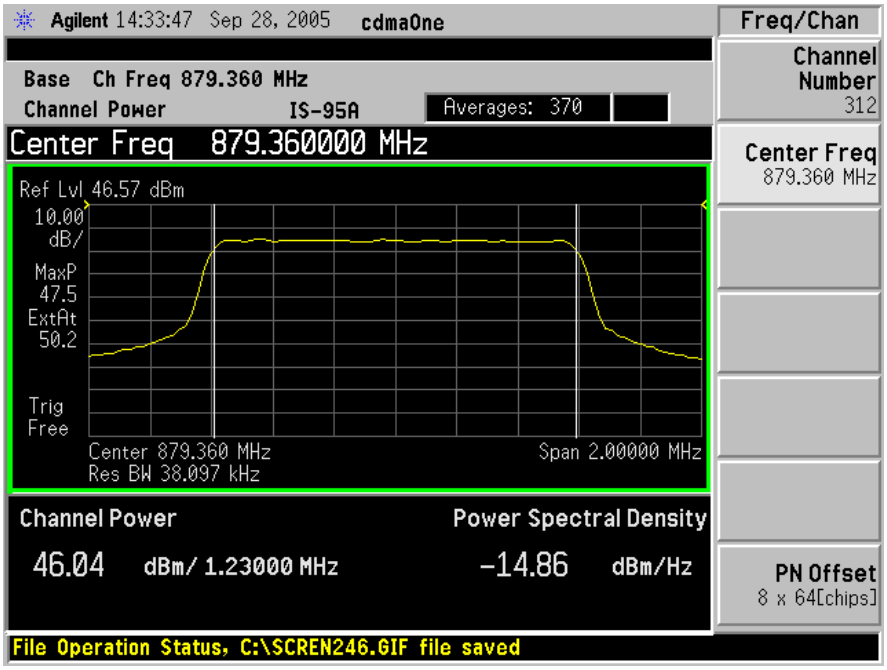
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Freq/Chan
Base Ch Freq 879.360 MHz
Channel Power IS-95A
Averages: 370
Channel Number 312
Center Freq 879.360000 MHz
Center Freq 879.360 MHz
Ref Lvl 46.57 dBm
10.00 dB/
MaxP 47.5
ExtAt 50.2
Trig Free
Center 879.360 MHz
Res BW 38.097 kHz
Span 2.00000 MHz
Channel Power
46.04 dBm/ 1.23000 MHz
Power Spectral Density
-14.86 dBm/Hz
PN Offset 8 x 64[chips]
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§2.1047- MODULATION CHARACTERISTIC

Applicable Standard

Requirement: §2.1047.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2005-6-3	2006-6-3

*** Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Test Procedure

CDMA digital mode is used by EUT.

Test Data

Environmental Conditions

Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

The testing was performed by Sam Lin on 2005-9-28, 2005-9-29, 2005-9-30.

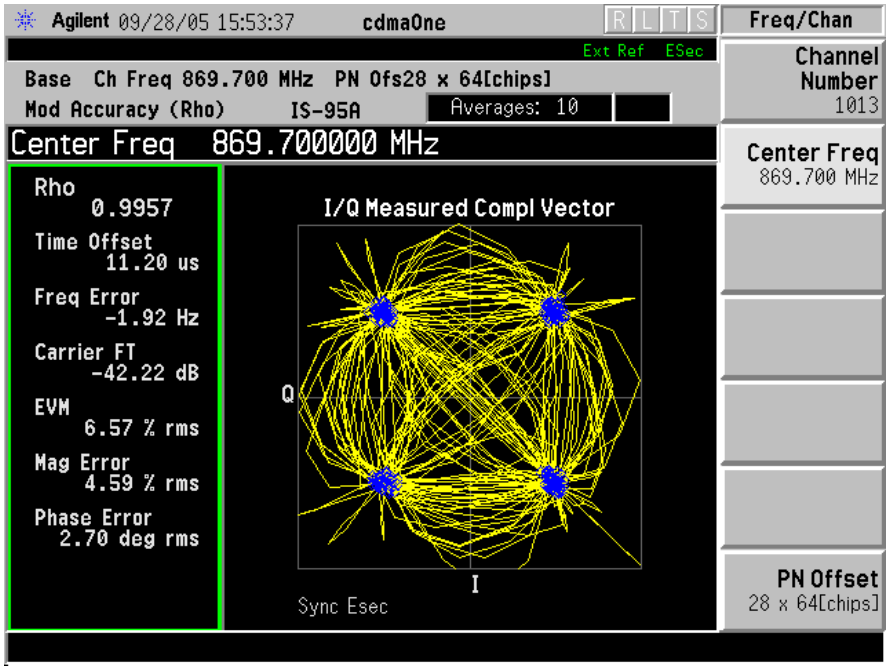
Test Result: Pass

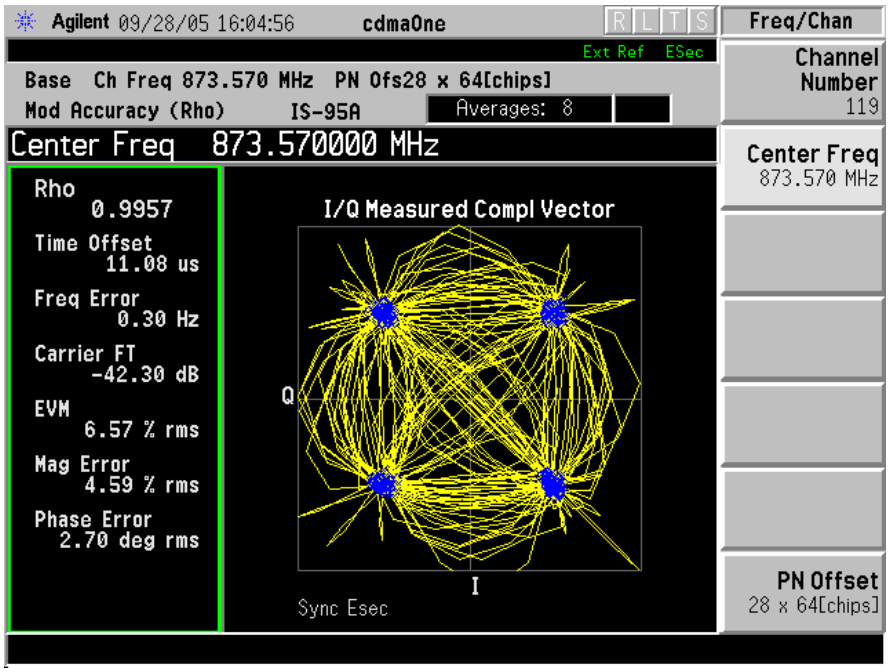
Test Mode: Transmitting

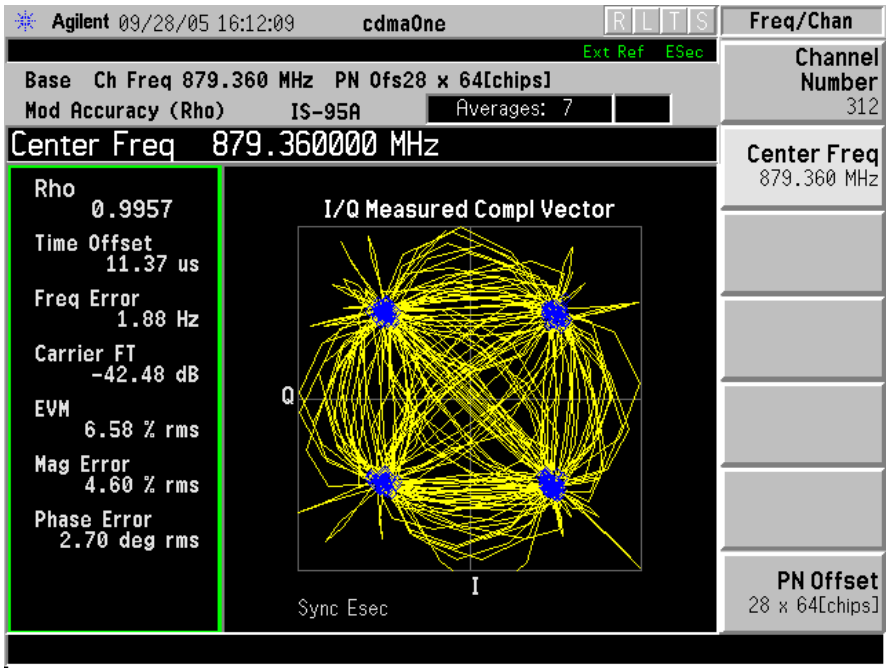
Digital Pre-Distortion Transceiver and Receiver Module DPA

1 Carrier

Channel	Frequency (MHz)	Rho
Channel 1013	869.70	0.9957
Channel 119	873.57	0.9957
Channel 312	879.36	0.9957

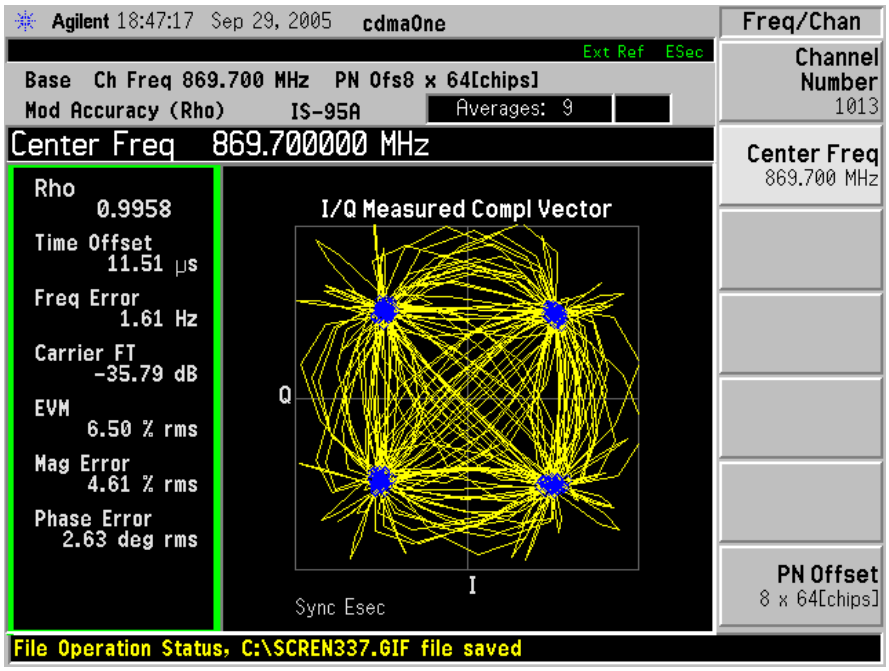


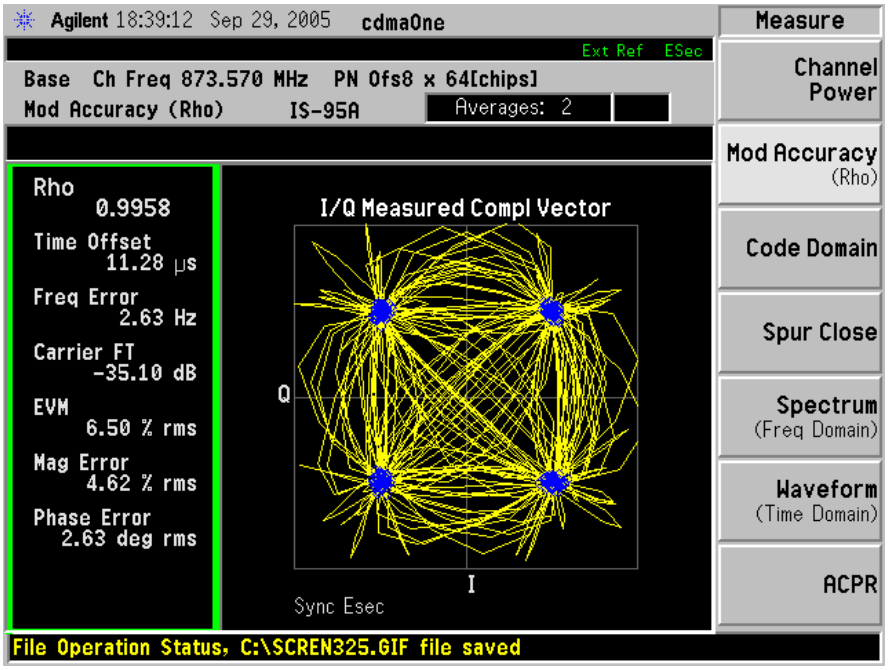


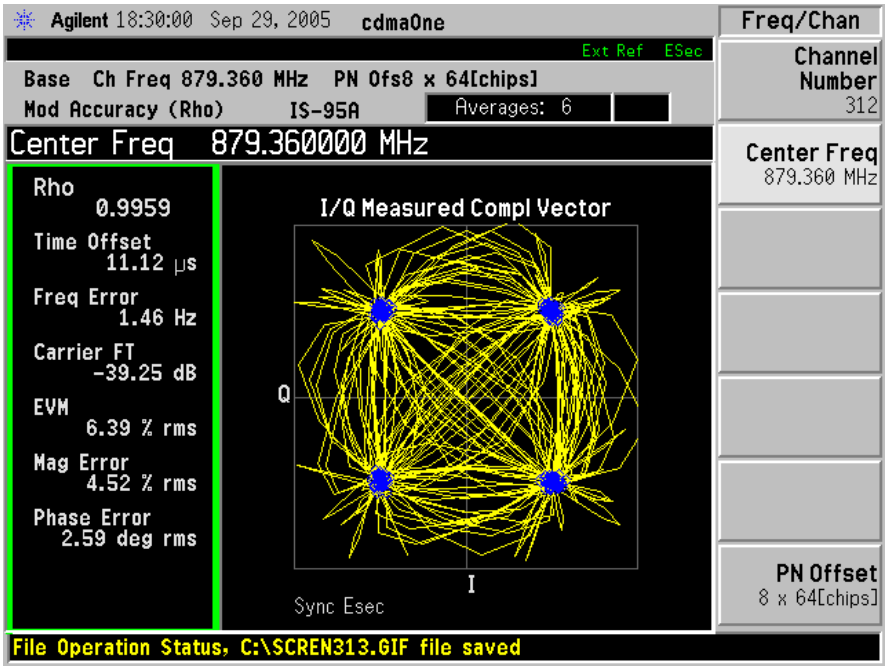


4 Carrier

Channel	Frequency (MHz)	Rho
Channel 1013, 31, 72, 113	869.70	0.9958
Channel 119, 160, 201, 242	873.57	0.9958
Channel 189, 230, 271, 312	879.36	0.9959



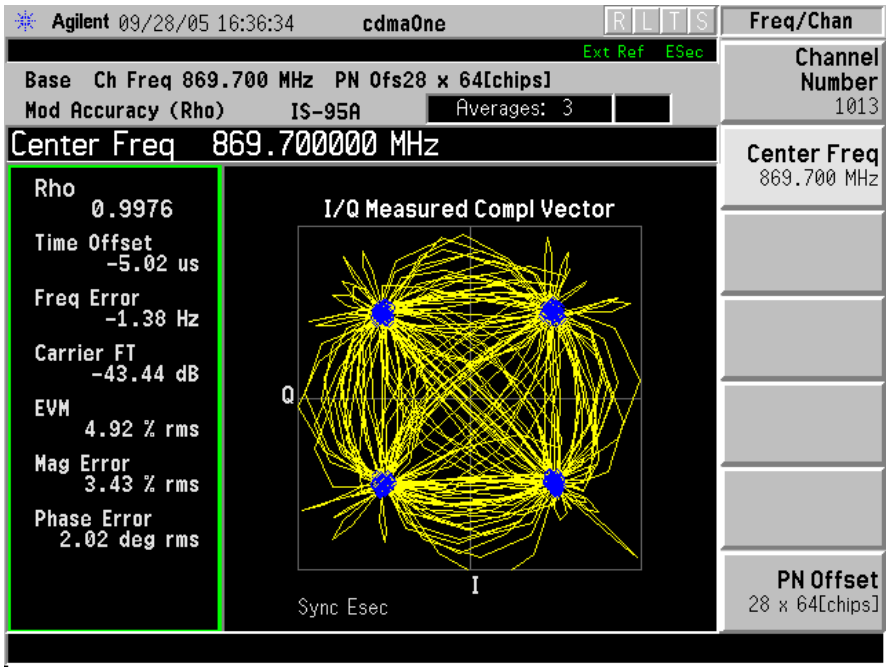

Agilent 18:39:12 Sep 29, 2005 cdmaOne
Ext Ref ESec
Base Ch Freq 873.570 MHz PN Ofs8 x 64[chips]
Mod Accuracy (Rho) IS-95A
Averages: 2
Rho 0.9958
Time Offset 11.28 µs
Freq Error 2.63 Hz
Carrier FT -35.10 dB
EVM 6.50 % rms
Mag Error 4.62 % rms
Phase Error 2.63 deg rms
I/Q Measured Compl Vector
Q
I
Sync Esec
Measure
Channel Power
Mod Accuracy (Rho)
Code Domain
Spur Close
Spectrum (Freq Domain)
Waveform (Time Domain)
ACPR
File Operation Status, C:\SCREN325.GIF file saved

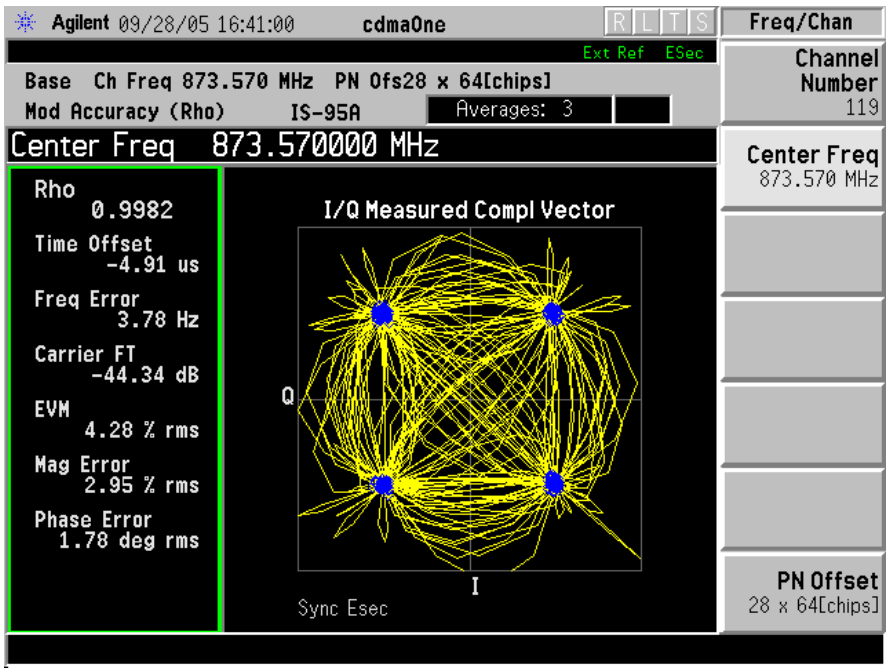

Agilent 18:30:00 Sep 29, 2005 cdmaOne
Ext Ref ESec
Base Ch Freq 879.360 MHz PN Ofs8 x 64[chips]
Mod Accuracy (Rho) IS-95A
Averages: 6
Center Freq 879.360000 MHz
Rho 0.9959
Time Offset 11.12 µs
Freq Error 1.46 Hz
Carrier FT -39.25 dB
EVM 6.39 % rms
Mag Error 4.52 % rms
Phase Error 2.59 deg rms
I/Q Measured Compl Vector
Q
I
Sync Esec
Freq/Chan
Channel Number 312
Center Freq 879.360 MHz
PN Offset 8 x 64[chips]
File Operation Status, C:\SCREN313.GIF file saved

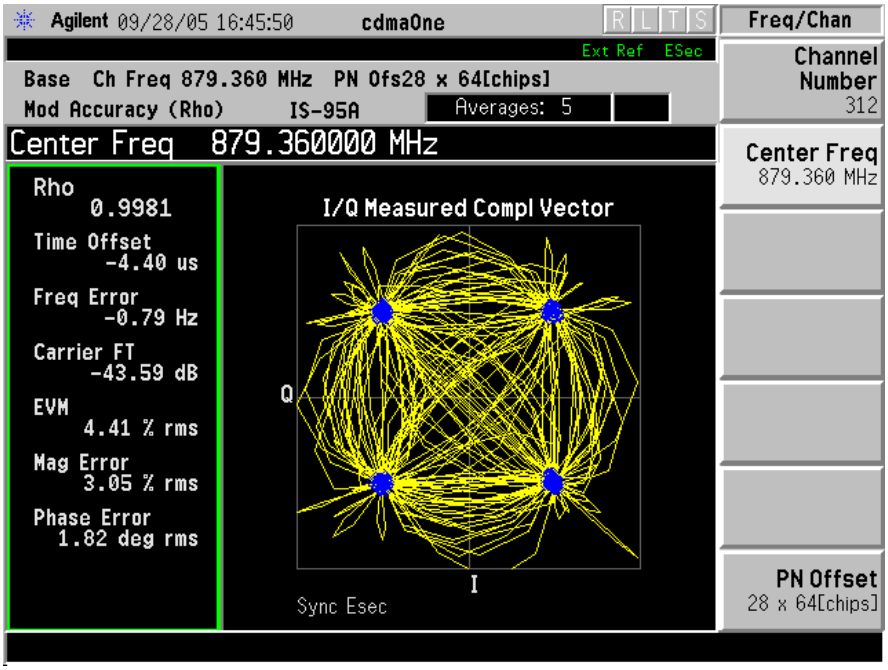
Transceiver and Receiver Module DPA

1 Carrier

Channel	Frequency (MHz)	Rho
Channel 1013	869.70	0.9976
Channel 119	873.57	0.9982
Channel 312	879.36	0.9981

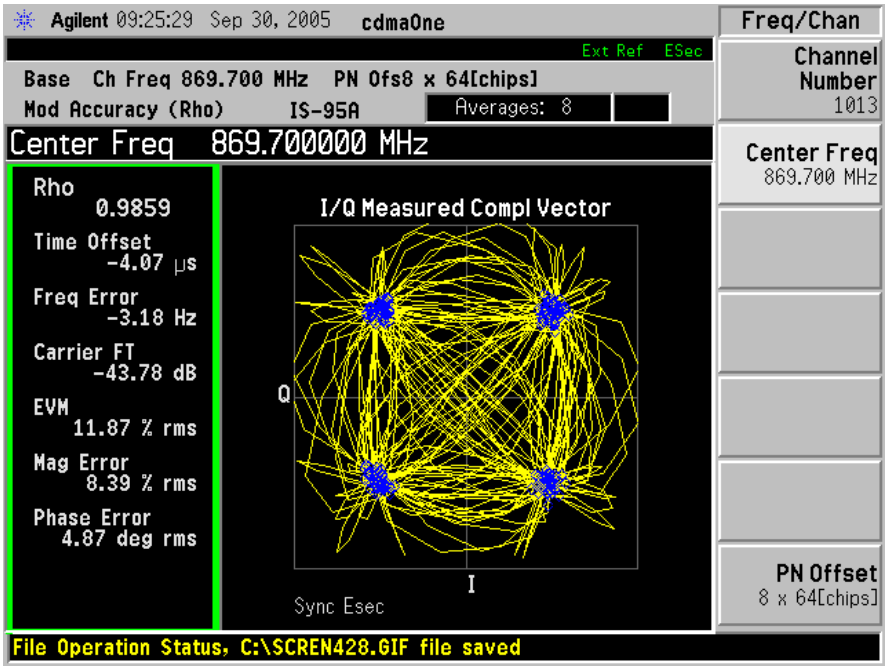


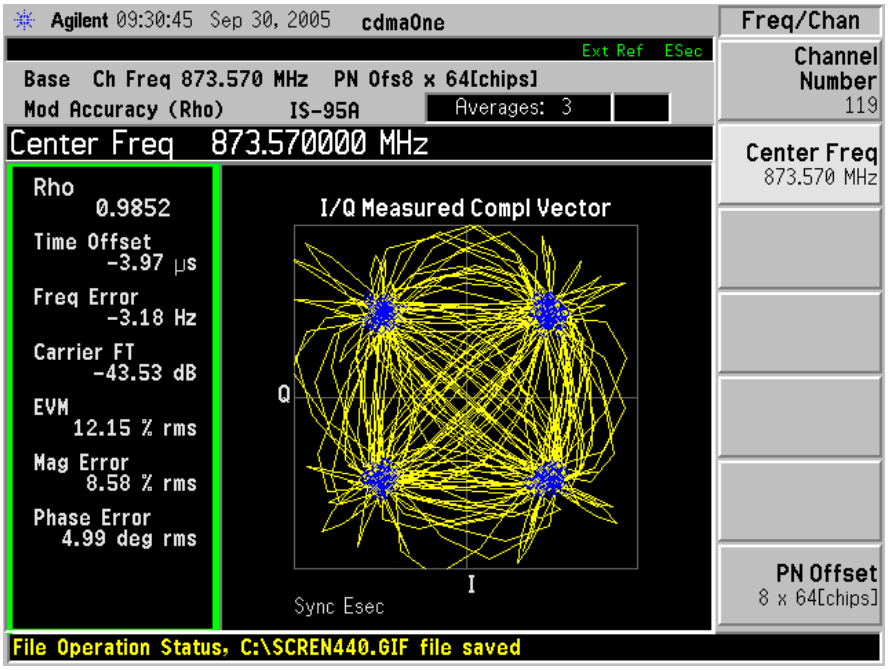


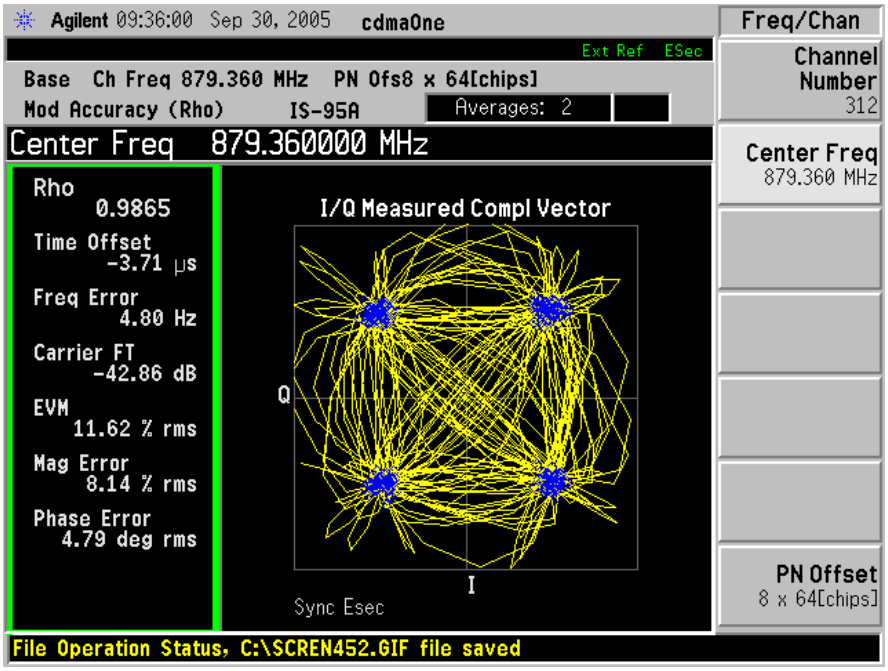


2 Carrier

Channel	Frequency (MHz)	Rho
Channel 1013, 31	869.70	0.9859
Channel 119, 160	873.57	0.9852
Channel 271, 312	879.36	0.9865



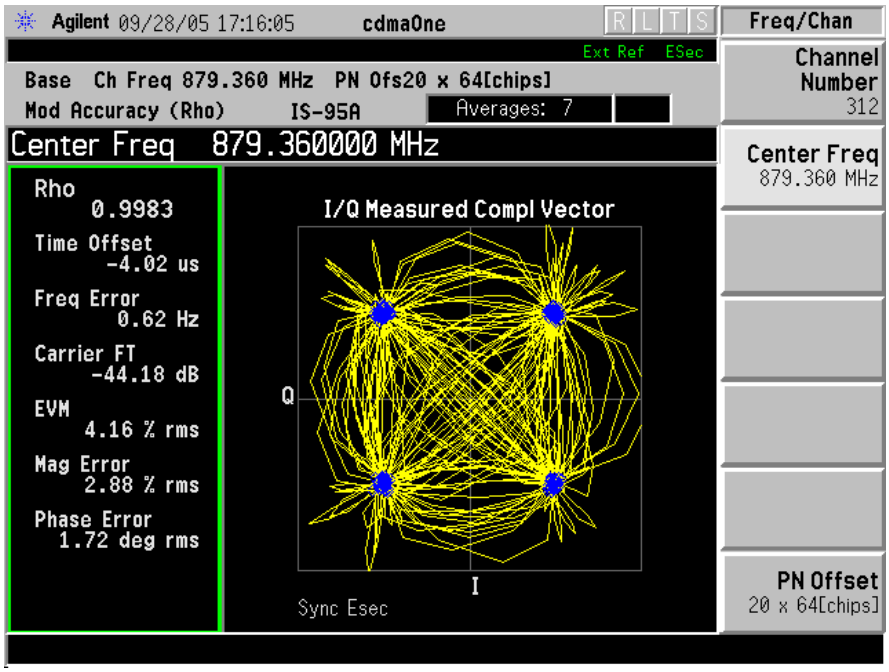

Agilent 09:30:45 Sep 30, 2005 cdmaOne
Freq/Chan
Ext Ref ESec
Base Ch Freq 873.570 MHz PN Ofs8 x 64[chips]
Mod Accuracy (Rho) IS-95A
Averages: 3
Center Freq 873.570000 MHz
Rho 0.9852
Time Offset -3.97 µs
Freq Error -3.18 Hz
Carrier FT -43.53 dB
EVM 12.15 % rms
Mag Error 8.58 % rms
Phase Error 4.99 deg rms
I/Q Measured Compl Vector
Q
I
Sync Esec
Channel Number 119
Center Freq 873.570 MHz
PN Offset 8 x 64[chips]
File Operation Status, C:\SCREN440.GIF file saved

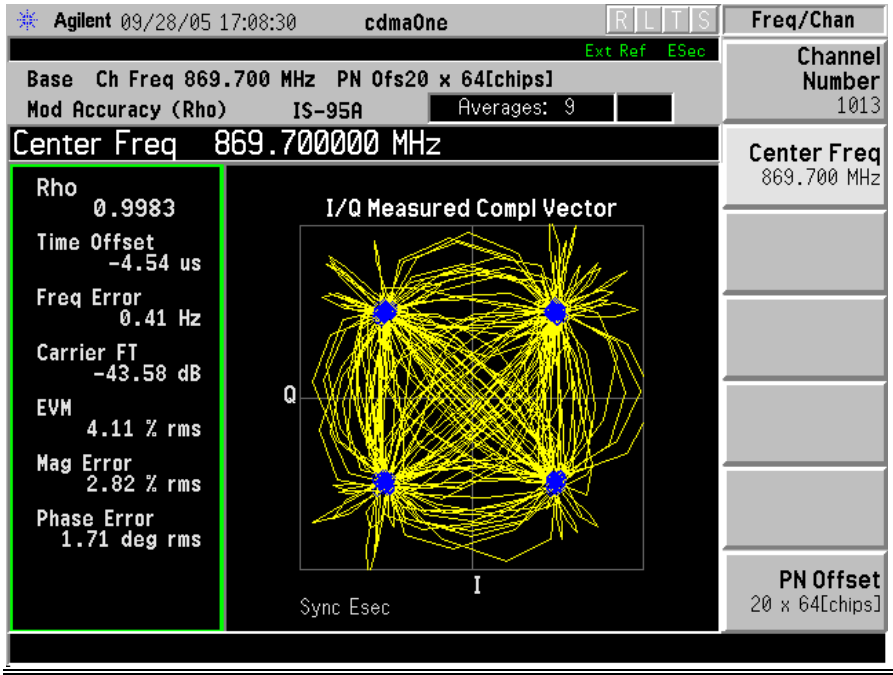

Agilent 09:36:00 Sep 30, 2005 cdmaOne
Freq/Chan
Ext Ref ESec
Base Ch Freq 879.360 MHz PN Ofs8 x 64[chips]
Mod Accuracy (Rho) IS-95A
Averages: 2
Center Freq 879.360000 MHz
Rho 0.9865
Time Offset -3.71 µs
Freq Error 4.80 Hz
Carrier FT -42.86 dB
EVM 11.62 % rms
Mag Error 8.14 % rms
Phase Error 4.79 deg rms
I/Q Measured Compl Vector
Q
I
Sync Esec
Channel Number 312
Center Freq 879.360 MHz
PN Offset 8 x 64[chips]
File Operation Status, C:\SCREN452.GIF file saved

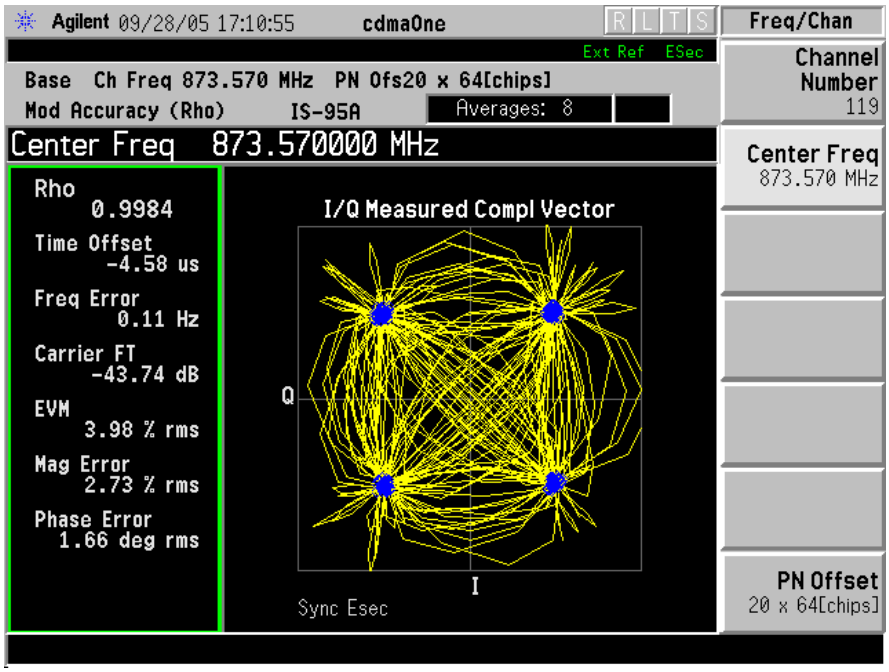
Transceiver and Receiver Module LPA1+RFE

1 Carrier

Channel	Frequency (MHz)	Rho
Channel 1013	869.70	0.9983
Channel 119	873.57	0.9983
Channel 312	879.36	0.9984

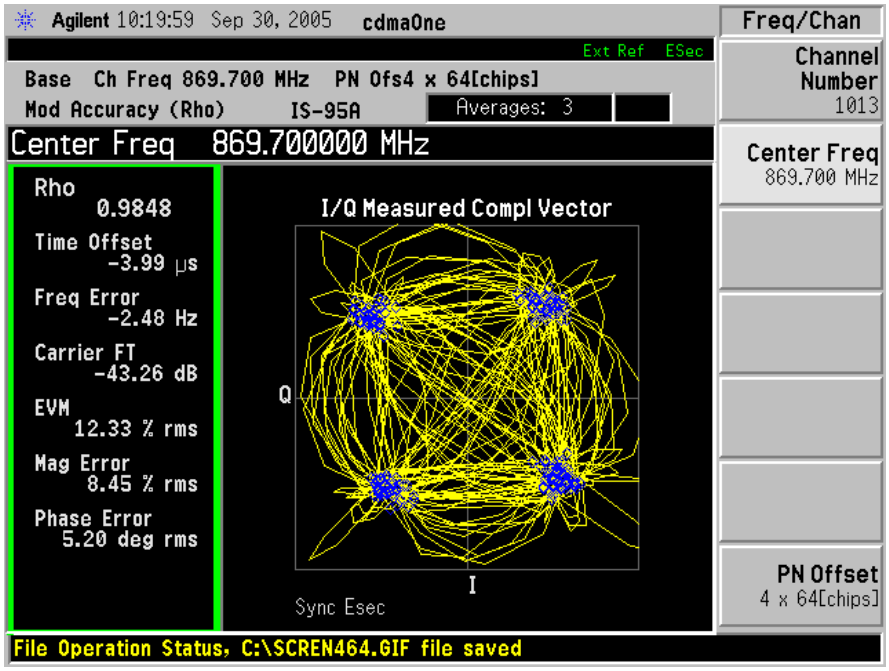


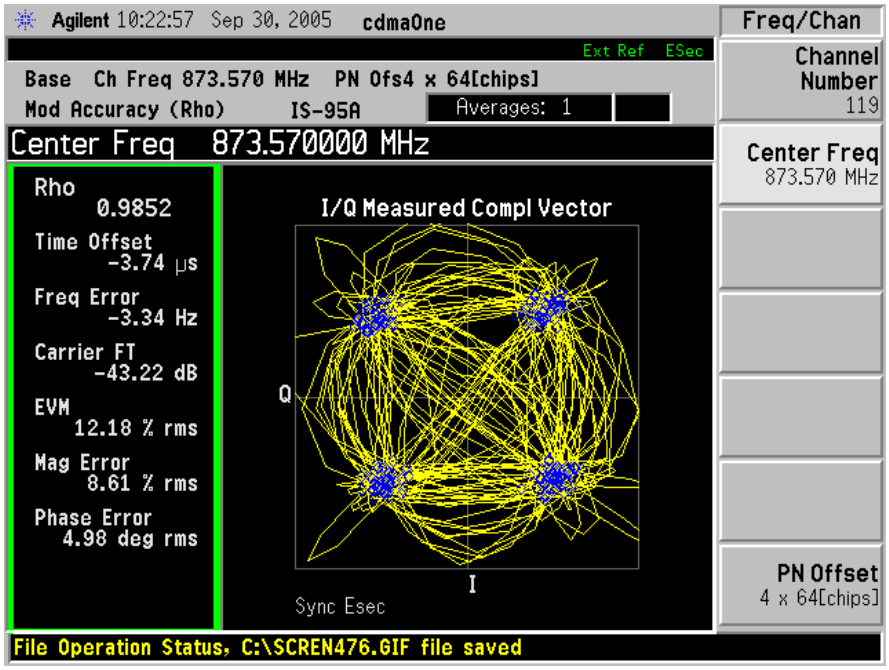


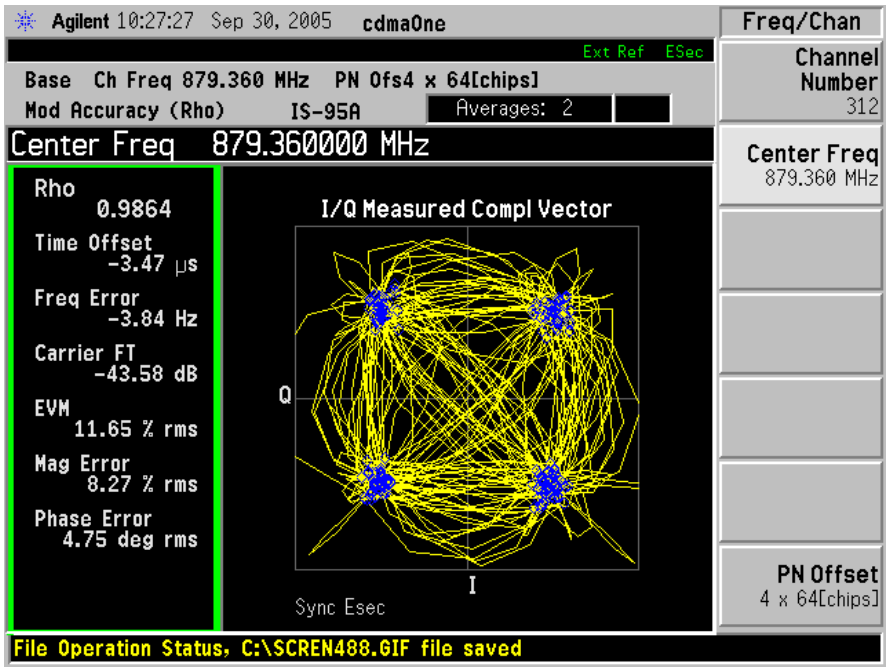


4 Carrier

Channel	Frequency (MHz)	Rho
Channel 1013, 31, 72, 113	869.70	0.9848
Channel 119, 160, 201, 242	873.57	0.9852
Channel 189, 230, 271, 312	879.36	0.9864



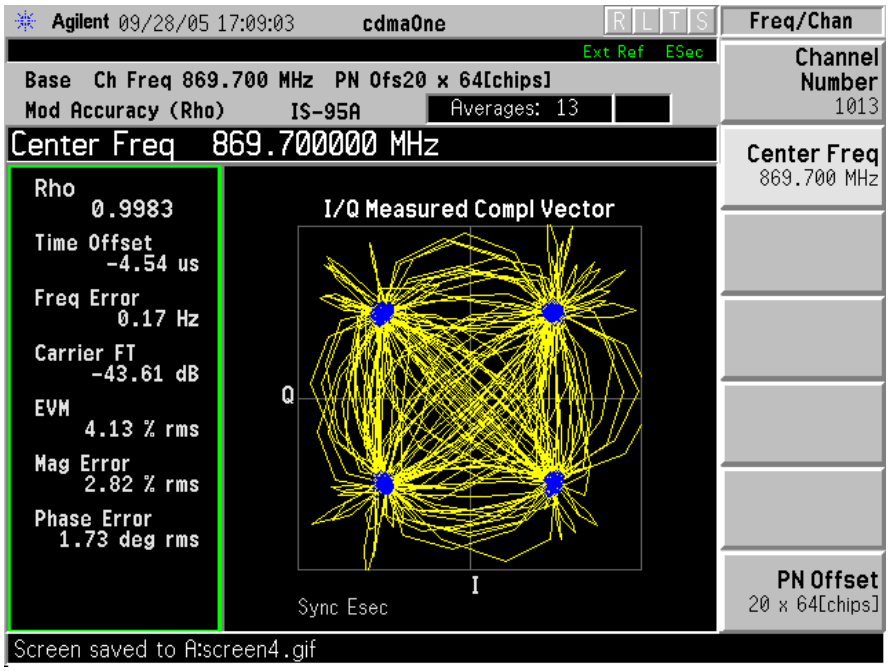

Agilent 10:22:57 Sep 30, 2005 cdmaOne
Freq/Chan
Ext Ref ESec
Base Ch Freq 873.570 MHz PN Ofs4 x 64[chips]
Mod Accuracy (Rho) IS-95A
Averages: 1
Channel Number 119
Center Freq 873.570000 MHz
Center Freq 873.570 MHz
Rho 0.9852
Time Offset -3.74 µs
Freq Error -3.34 Hz
Carrier FT -43.22 dB
EVM 12.18 % rms
Mag Error 8.61 % rms
Phase Error 4.98 deg rms
I/Q Measured Compl Vector
Q
I
Sync Esec
PN Offset 4 x 64[chips]
File Operation Status, C:\SCREN476.GIF file saved

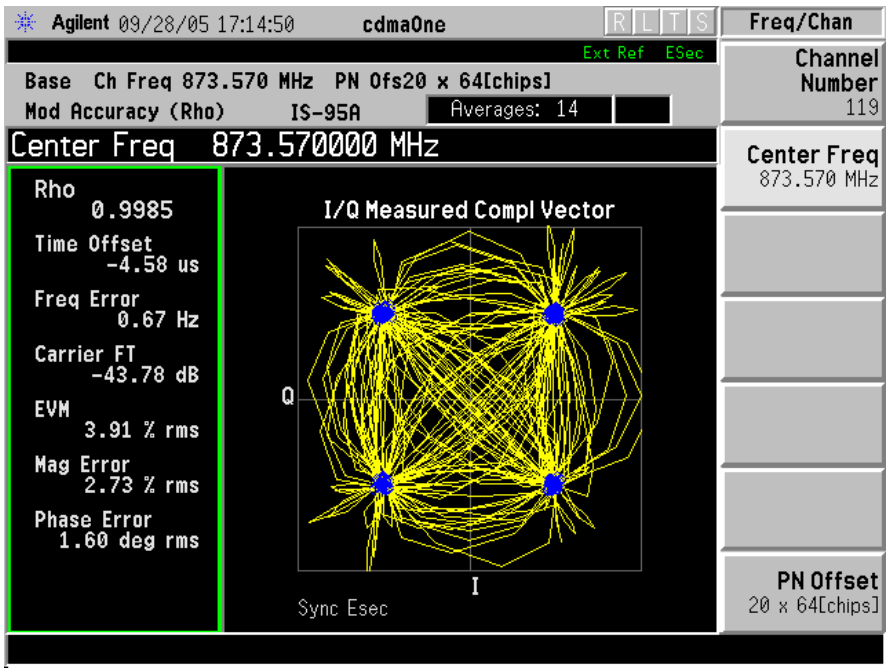

Agilent 10:27:27 Sep 30, 2005 cdmaOne
Freq/Chan
Ext Ref ESec
Base Ch Freq 879.360 MHz PN Ofs4 x 64[chips]
Mod Accuracy (Rho) IS-95A
Averages: 2
Channel Number 312
Center Freq 879.360000 MHz
Center Freq 879.360 MHz
Rho 0.9864
Time Offset -3.47 µs
Freq Error -3.84 Hz
Carrier FT -43.58 dB
EVM 11.65 % rms
Mag Error 8.27 % rms
Phase Error 4.75 deg rms
I/Q Measured Compl Vector
Q
I
Sync Esec
PN Offset 4 x 64[chips]
File Operation Status, C:\SCREN488.GIF file saved

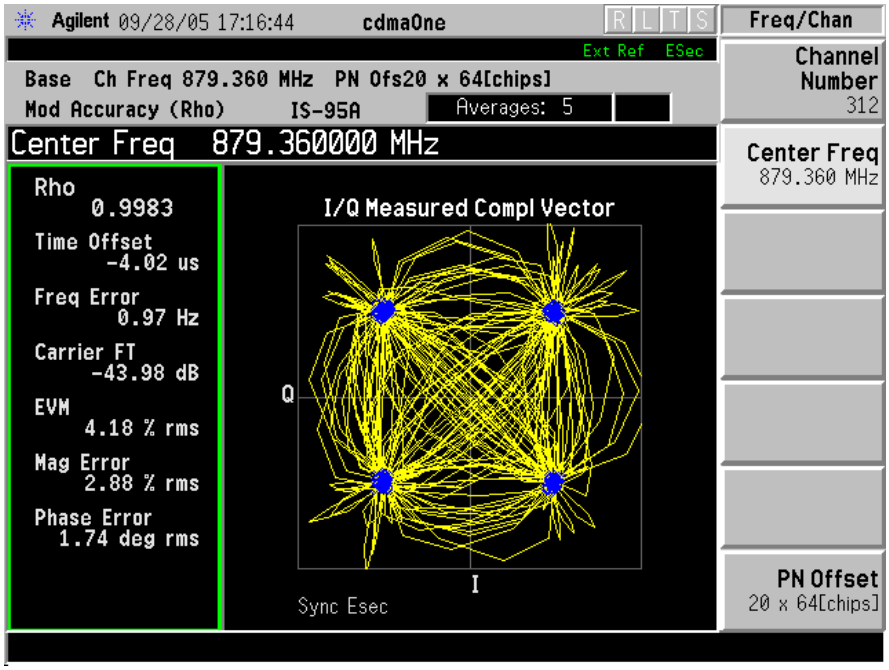
Transceiver and Receiver Module LPA2+RFE

1 Carrier

Channel	Frequency (MHz)	Rho
Channel 1013	869.70	0.9983
Channel 119	873.57	0.9985
Channel 312	879.36	0.9983

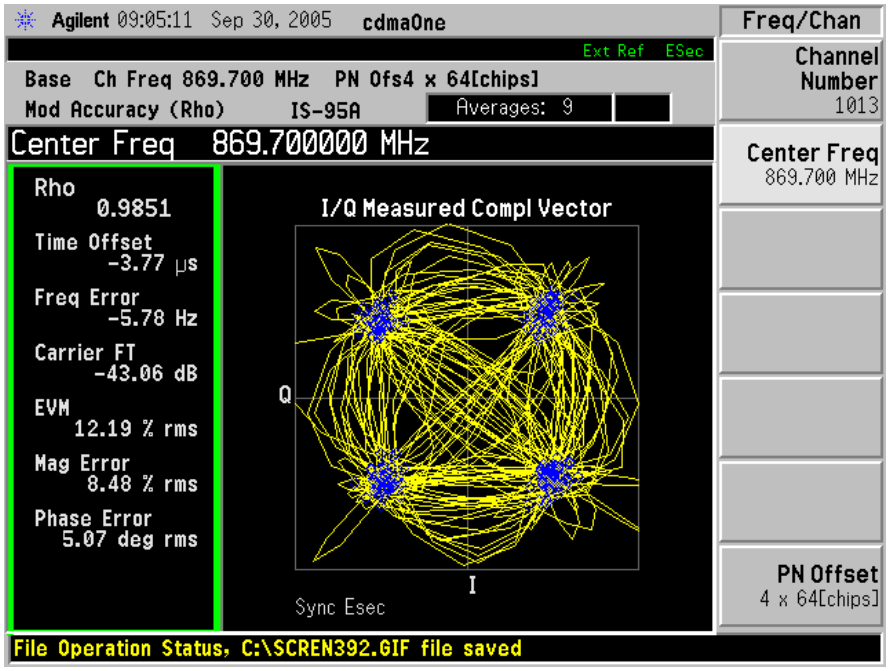


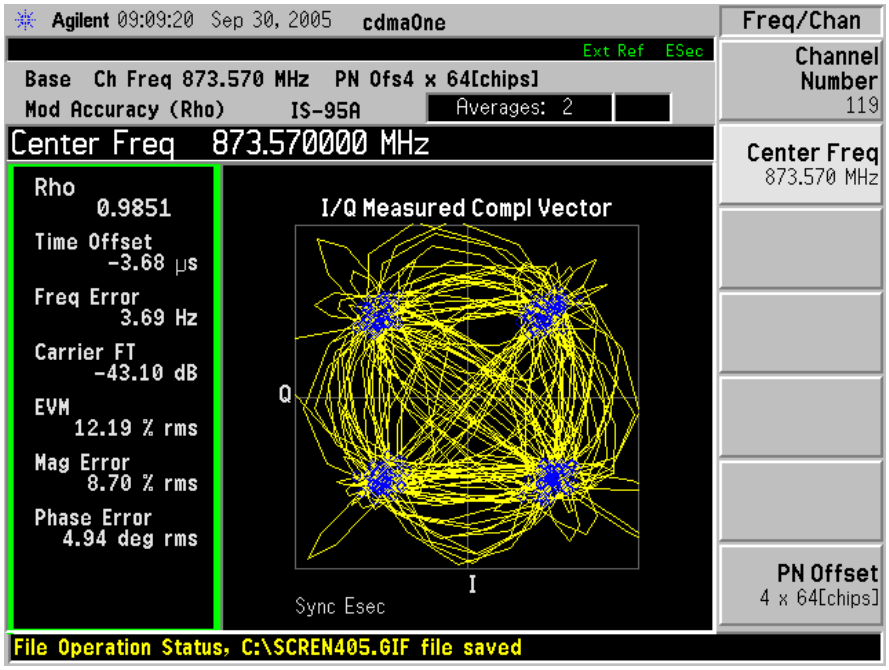


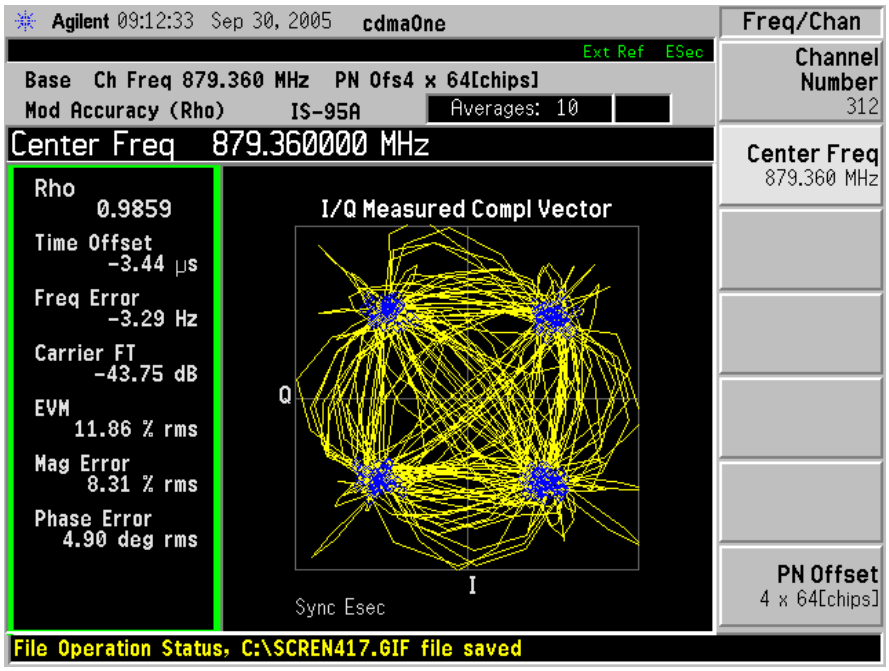


4 Carrier

Channel	Frequency (MHz)	Rho
Channel 1013, 31, 72, 113	869.70	0.9851
Channel 119, 160, 201, 242	873.57	0.9851
Channel 189, 230, 271, 312	879.36	0.9857




Agilent 09:09:20 Sep 30, 2005 cdmaOne
Freq/Chan
Ext Ref ESec
Base Ch Freq 873.570 MHz PN Ofs4 x 64[chips]
Mod Accuracy (Rho) IS-95A
Averages: 2
Channel Number 119
Center Freq 873.570000 MHz
Center Freq 873.570 MHz
Rho 0.9851
Time Offset -3.68 µs
Freq Error 3.69 Hz
Carrier FT -43.10 dB
EVM 12.19 % rms
Mag Error 8.70 % rms
Phase Error 4.94 deg rms
I/Q Measured Compl Vector
Q
I
Sync Esec
PN Offset 4 x 64[chips]
File Operation Status, C:\SCREN405.GIF file saved


Agilent 09:12:33 Sep 30, 2005 cdmaOne
Freq/Chan
Ext Ref ESec
Base Ch Freq 879.360 MHz PN Ofs4 x 64[chips]
Mod Accuracy (Rho) IS-95A
Averages: 10
Channel Number 312
Center Freq 879.360000 MHz
Center Freq 879.360 MHz
Rho 0.9859
Time Offset -3.44 µs
Freq Error -3.29 Hz
Carrier FT -43.75 dB
EVM 11.86 % rms
Mag Error 8.31 % rms
Phase Error 4.90 deg rms
I/Q Measured Compl Vector
Q
I
Sync Esec
PN Offset 4 x 64[chips]
File Operation Status, C:\SCREN417.GIF file saved

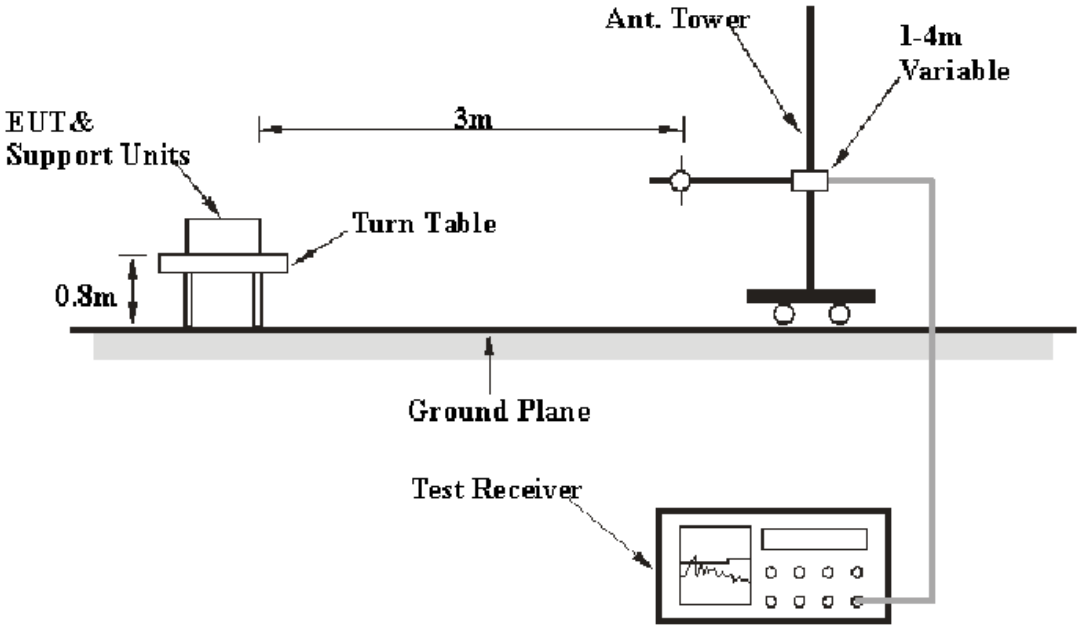
§15.109(a)- UNINTENTIONAL RADIATED EMISSION

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Lab Corp. (ShenZhen) is ±4.0 dB.

EUT Setup



The radiated emission tests were performed in the 3-meter Chamber B, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15.109(a) limits.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 1000 MHz.

During the radiated emission test, the EMI Test Receiver was set with the following configurations:

Frequency Range	*RBW*	*Video B/W*	*IF B/W*
30 – 1000 MHz	100 kHz	300 kHz	120kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447D	2944A09795	2005-8-17	2006-8-17
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2005-8-17	2006-8-17
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2005-4-28	2006-4-28

*** Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the PK detection mode.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter reading. The basic equation is as follows:

Corr. Ampl. =Meter Reading + Antenna Loss+ Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Corr. Ampl. –Limit

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.109(a), with the worst margin reading of:

Digital Pre-Distortion Transceiver and Receiver Module DPA **:-5.6 dB** at **513.63 MHz** in the **Horizontal** polarization.
Transceiver and Receiver Module DPA **:-7.6 dB** at **595.13 MHz** in the **Horizontal** polarization.
Transceiver and Receiver Module LPA1+RFE **:-8.0 dB** at **192.42 MHz** in the **Vertical** polarization.
Transceiver and Receiver Module LPA2+RFE **:-5.5 dB** at **793.39 MHz** in the **Horizontal** polarization.

Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	47 %
ATM Pressure:	1009 mbar

The testing was performed by Sam Lin on 2005-9-21, and the data were only for unintentional radiator and be subjected to verification.

Test Mode: Transmitting

Digital Pre-Distortion Transceiver and Receiver Module DPA

INDICATED		TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC Part 15.109(a)	
Frequency	Meter Reading	Angle	Height	Polar	Antenna Loss	Cable Loss	Amplifier Gain	Corr. Ampl.	Limit	Margin
MHz	dBμV/m	Degree	Meter	H/ V	dB	dB	dB	dBμV/m	dBμV/m	dB
513.63	55.3	45	1.0	H	18.0	4.6	27.1	50.8	56.4	-5.60
595.13	50.8	90	1.2	H	19.3	5.0	27.1	48.0	56.4	-8.40
210.78	54.4	60	1.2	H	11.4	2.6	26.0	42.4	53.5	-11.10
78.41	54.2	289	1.0	V	8.6	1.8	26.8	37.7	49.1	-11.40
78.41	54.1	35	3.8	H	8.6	1.8	26.8	37.7	49.1	-11.40
90.22	59.1	35	3.8	H	7.7	1.9	26.8	41.9	53.5	-11.60
330.19	48.1	45	1.2	H	14.6	3.4	25.8	40.2	56.4	-16.20
495.93	43.6	289	1.0	V	18.2	4.6	26.5	39.9	56.4	-16.50
595.13	41.9	45	1.0	V	19.3	5.0	27.1	39.1	56.4	-17.30
90.22	51.6	45	1.2	V	7.7	1.9	26.8	34.4	53.5	-19.10
393.47	42.4	60	1.0	V	16.0	3.8	25.8	36.4	56.4	-20.00
271.32	45.8	180	1.2	V	12.6	3.2	26.0	35.6	56.4	-20.80

Transceiver and Receiver Module DPA

INDICATED		TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC Part 15.109(a)	
Frequency MHz	Meter Reading dBμV/m	Angle Degree	Height Meter	Polar H/ V	Antenna Loss dB	Cable Loss dB	Amplifier Gain dB	Corr. Ampl. dBμV/m	Limit dBμV/m	Margin dB
595.13	51.6	45	1.0	H	19.3	5.0	27.1	48.8	56.4	-7.60
90.22	62.8	35	3.8	H	7.7	1.9	26.8	45.6	53.5	-7.90
528.25	51.4	60	1.2	H	18.3	4.7	27.1	47.3	56.4	-9.10
78.41	55.2	90	1.2	H	8.6	1.8	26.8	38.8	49.1	-10.30
210.79	54.4	45	1.2	H	11.4	2.6	26	42.4	53.5	-11.10
271.32	55.1	35	3.8	H	12.6	3.2	26	44.8	56.4	-11.60
271.32	53.8	60	1.0	V	12.6	3.2	26	43.5	56.4	-12.90
90.22	56.1	289	1.0	V	7.7	1.9	26.8	38.9	53.5	-14.60
78.41	50.4	289	1.0	V	8.6	1.8	26.8	33.9	49.1	-15.20
42.30	43.7	45	1.0	V	14.3	1.3	26.8	32.5	49.1	-16.60
106.01	48.5	45	1.2	V	11.0	2.0	26.6	35.0	53.5	-18.50
120.27	43.4	180	1.2	V	14.0	2.3	26.6	33.1	53.5	-20.40

Transceiver and Receiver Module LPA1+RFE

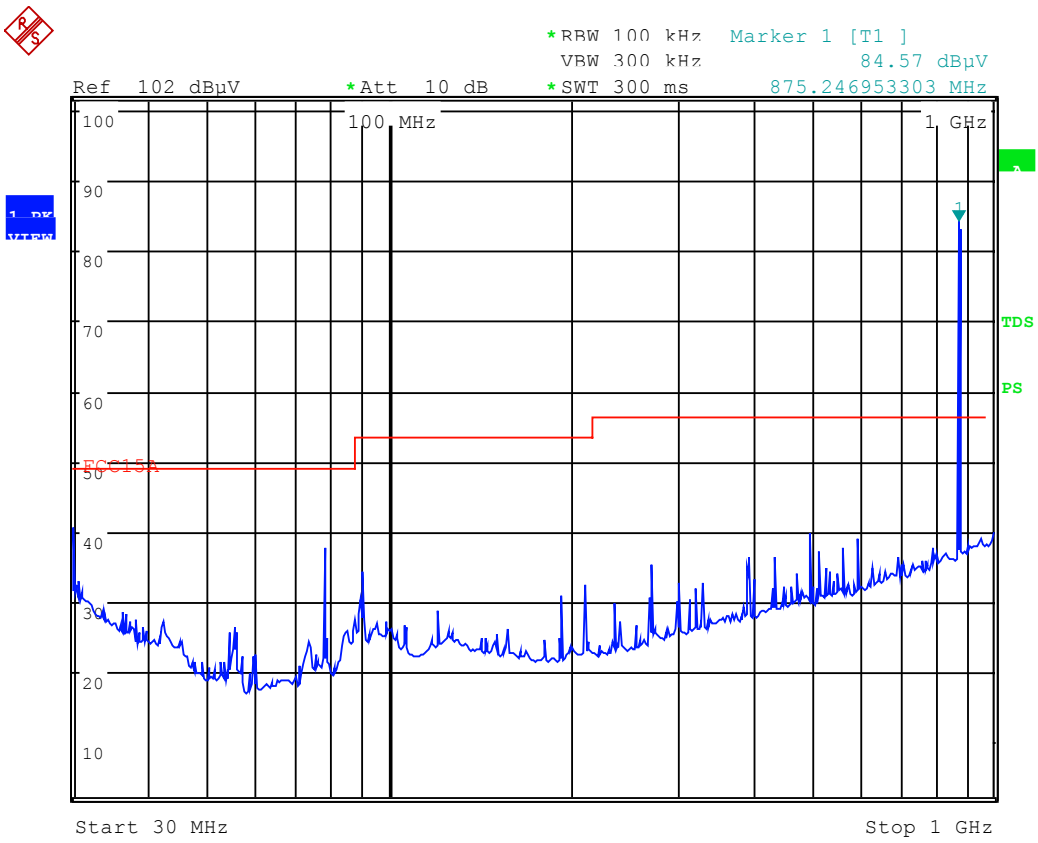
INDICATED		TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC Part 15.109(a)	
Frequency MHz	Meter Reading dBμV/m	Angle Degree	Height Meter	Polar H/ V	Antenna Loss dB	Cable Loss dB	Amplifier Gain dB	Corr. Ampl. dBμV/m	Limit dBμV/m	Margin dB
192.42	58.0	289	1.0	V	11.8	2.4	26.6	45.5	53.5	-8.00
192.41	57.7	35	3.8	H	11.8	2.4	26.6	45.3	53.5	-8.20
528.24	51.7	45	1.0	H	18.3	4.7	27.1	47.6	56.4	-8.80
90.22	61.7	35	3.8	H	7.7	1.9	26.8	44.6	53.5	-8.90
513.63	51.8	60	1.2	H	18.0	4.6	27.1	47.3	56.4	-9.10
78.41	56.4	90	1.2	H	8.6	1.8	26.8	39.9	49.1	-9.20
78.41	55.0	180	1.2	V	8.6	1.8	26.8	38.6	49.1	-10.50
271.32	53.8	45	1.2	H	12.6	3.2	26	43.6	56.4	-12.80
90.22	55.8	45	1.2	V	7.7	1.9	26.8	38.7	53.5	-14.80
271.32	51.5	289	1.0	V	12.6	3.2	26	41.3	56.4	-15.10
495.93	43.5	60	1.0	V	18.2	4.6	26.5	39.8	56.4	-16.60
595.13	41.8	45	1.0	V	19.3	5.0	27.1	39.0	56.4	-17.40

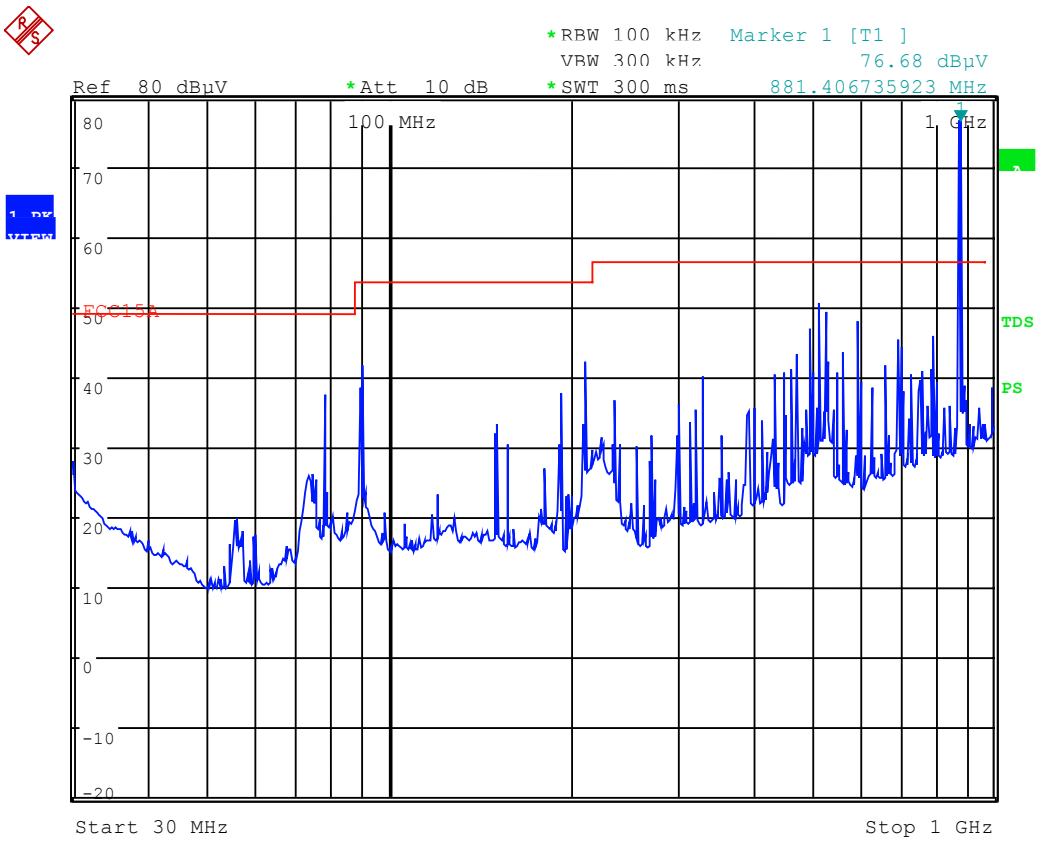
Transceiver and Receiver Module LPA2+RFE

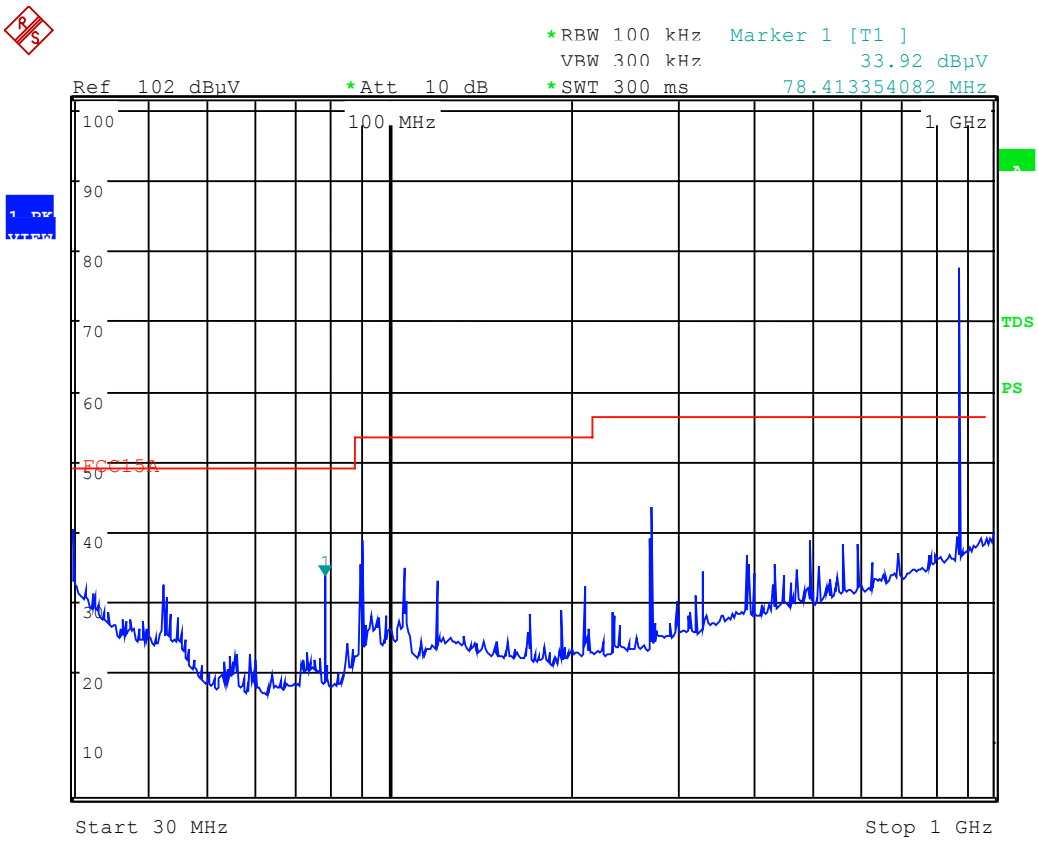
INDICATED		TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC Part 15.109(a)	
Frequency MHz	Meter Reading dBμV/m	Angle Degree	Height Meter	Polar H/ V	Antenna Loss dB	Cable Loss dB	Amplifier Gain dB	Corr. Ampl. dBμV/m	Limit dBμV/m	Margin dB
793.39	49.9	45	1.0	H	21.9	6.0	26.9	50.9	56.4	-5.50
396.24	51.9	45	1.2	H	16.0	3.8	25.8	45.9	56.4	-10.50
495.93	49.0	35	3.8	H	18.2	4.6	26.5	45.2	56.4	-11.20
562.66	47.5	35	3.8	H	19.0	4.9	27.1	44.3	56.4	-12.10
629.47	46.7	60	1.2	H	19.3	5.2	27.1	44.1	56.4	-12.30
396.24	42.1	45	1.2	V	16.0	3.8	25.8	36.1	56.4	-20.30
240.83	46.8	90	1.2	H	12.3	2.9	26	36.0	56.4	-20.40
157.00	44.7	289	1.0	V	12.8	2.1	26.6	33.0	53.5	-20.50
180.65	43.6	180	1.2	V	11.8	2.3	26.6	31.1	53.5	-22.40
78.41	42.0	289	1.0	V	8.6	1.8	26.8	25.6	49.1	-23.50
240.83	42.9	60	1.0	V	12.3	2.9	26	32.1	56.4	-24.30
90.22	40.9	45	1.0	V	7.7	1.9	26.8	23.7	53.5	-29.80

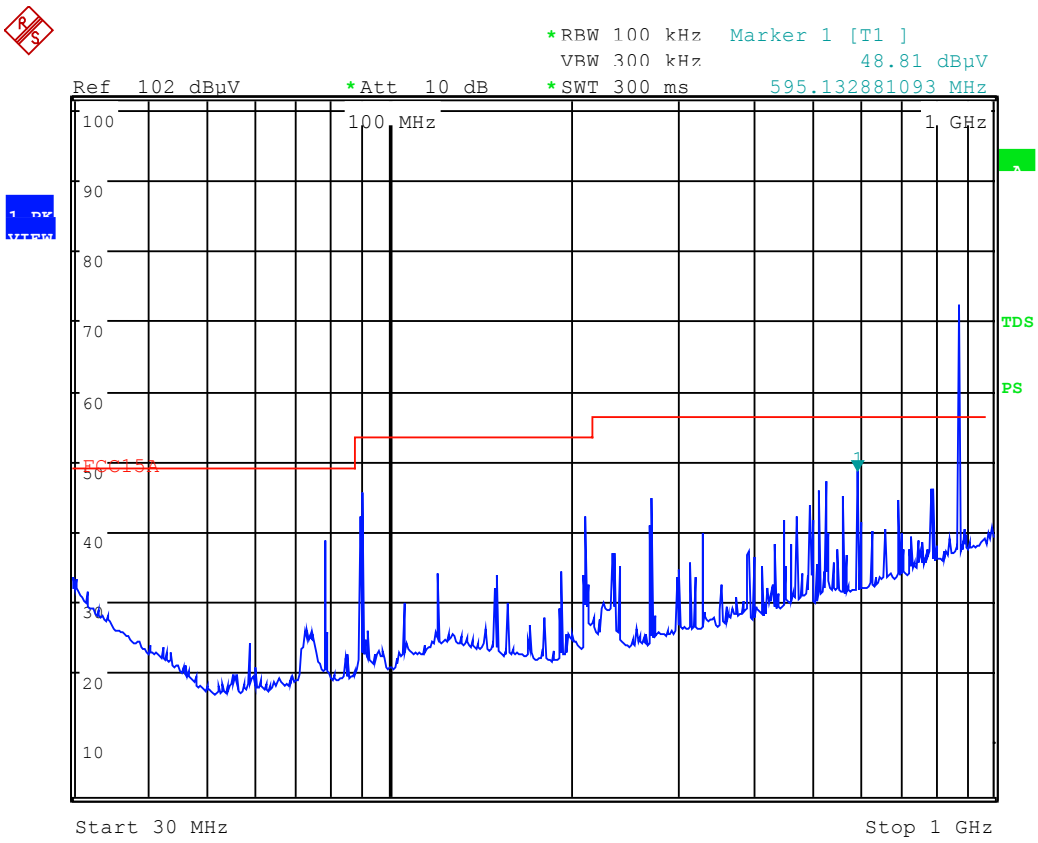
Plot(s) of Test Data

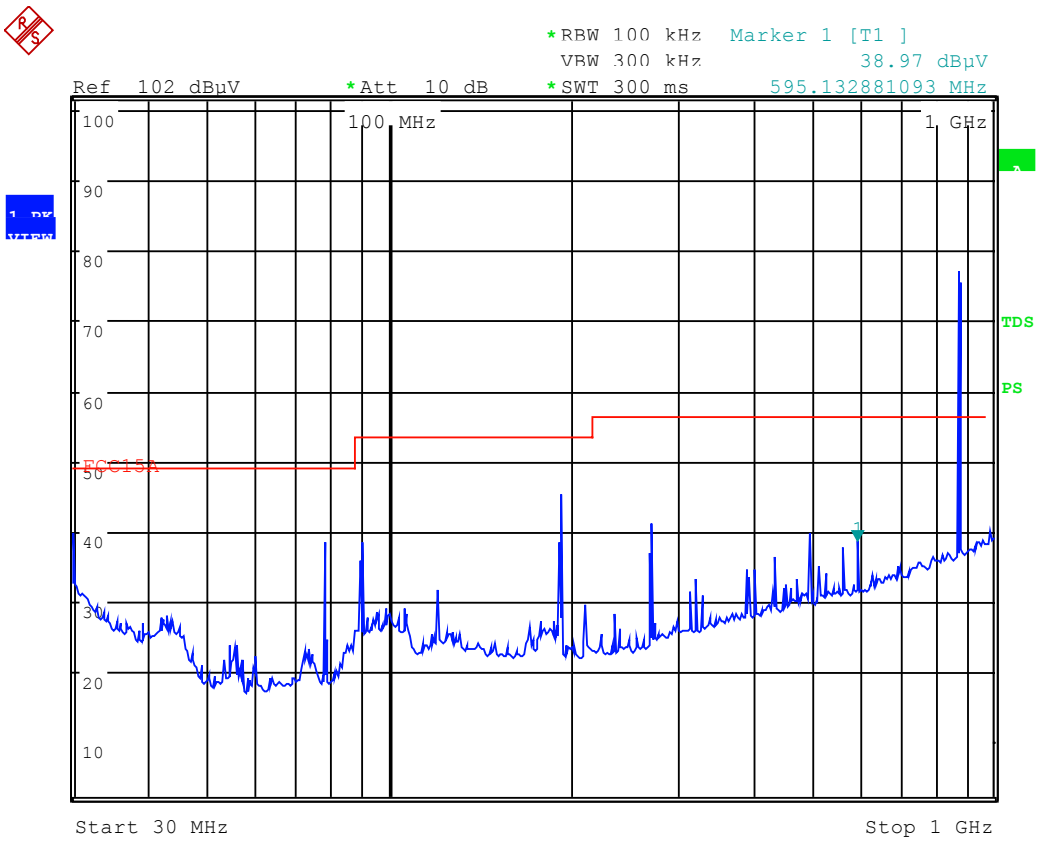
Plot(s) of Test Data is presented hereinafter as reference.

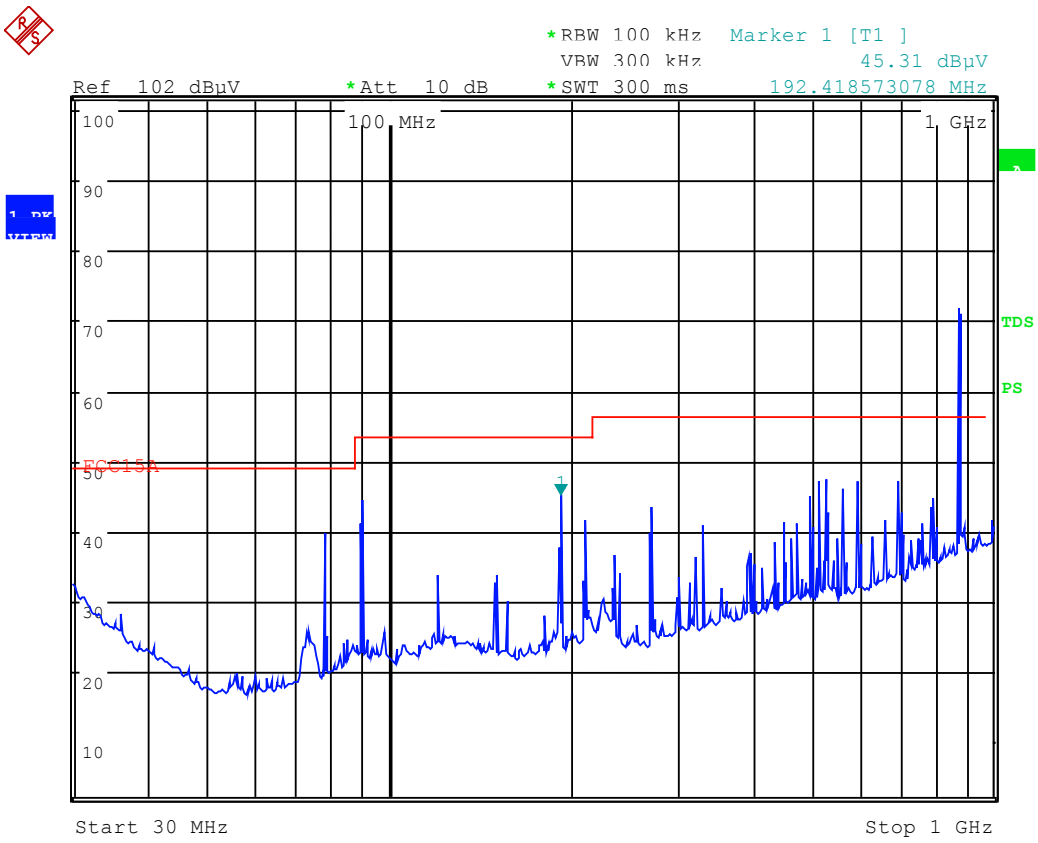

*RBW 100 kHz
VBW 300 kHz
Marker 1 [T1]
84.57 dBµV
Ref 102 dBµV
*Att 10 dB
*SWT 300 ms
875.246953303 MHz
100
90
80
70
60
50
40
30
20
10
100 MHz
1 GHz
TDS
PS
Start 30 MHz
Stop 1 GHz

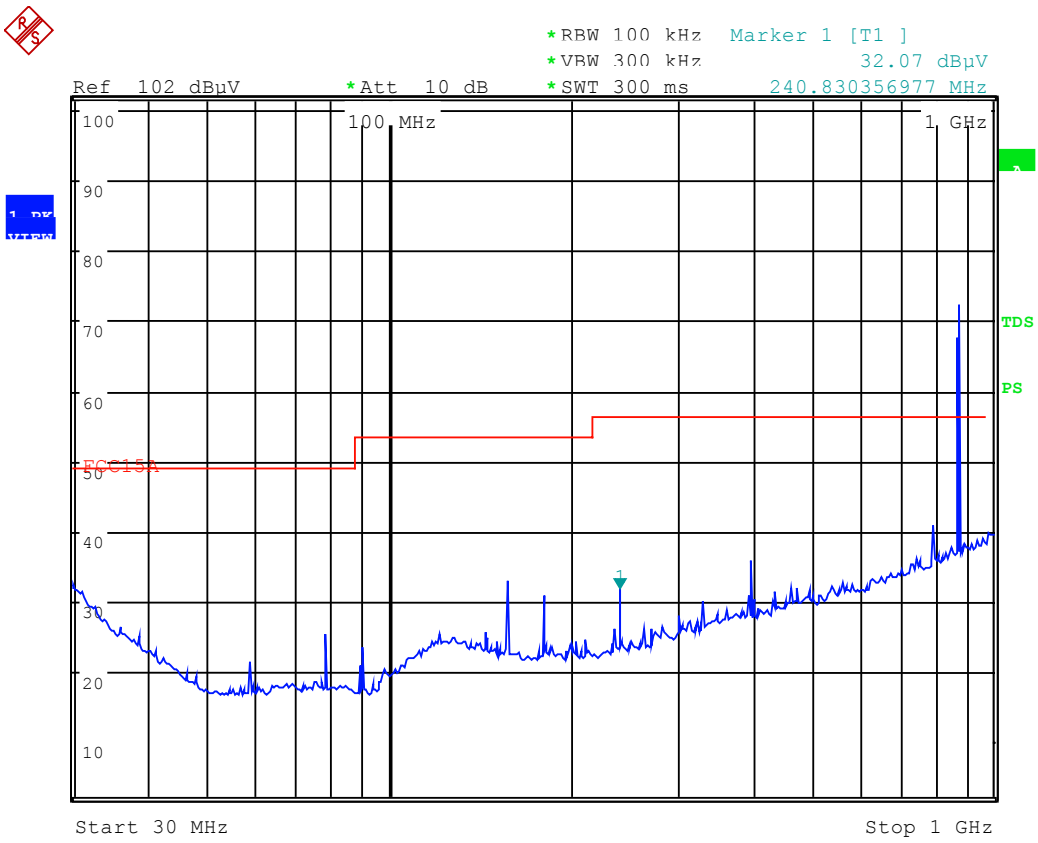

*RBW 100 kHz
Marker 1 [T1]
VBW 300 kHz
76.68 dBµV
Ref 80 dBµV
*Att 10 dB
*SWT 300 ms
881.406735923 MHz
100 MHz
1 GHz
80
70
60
50
40
30
20
10
0
-10
-20
FCC15A
TDS
PS
Start 30 MHz
Stop 1 GHz

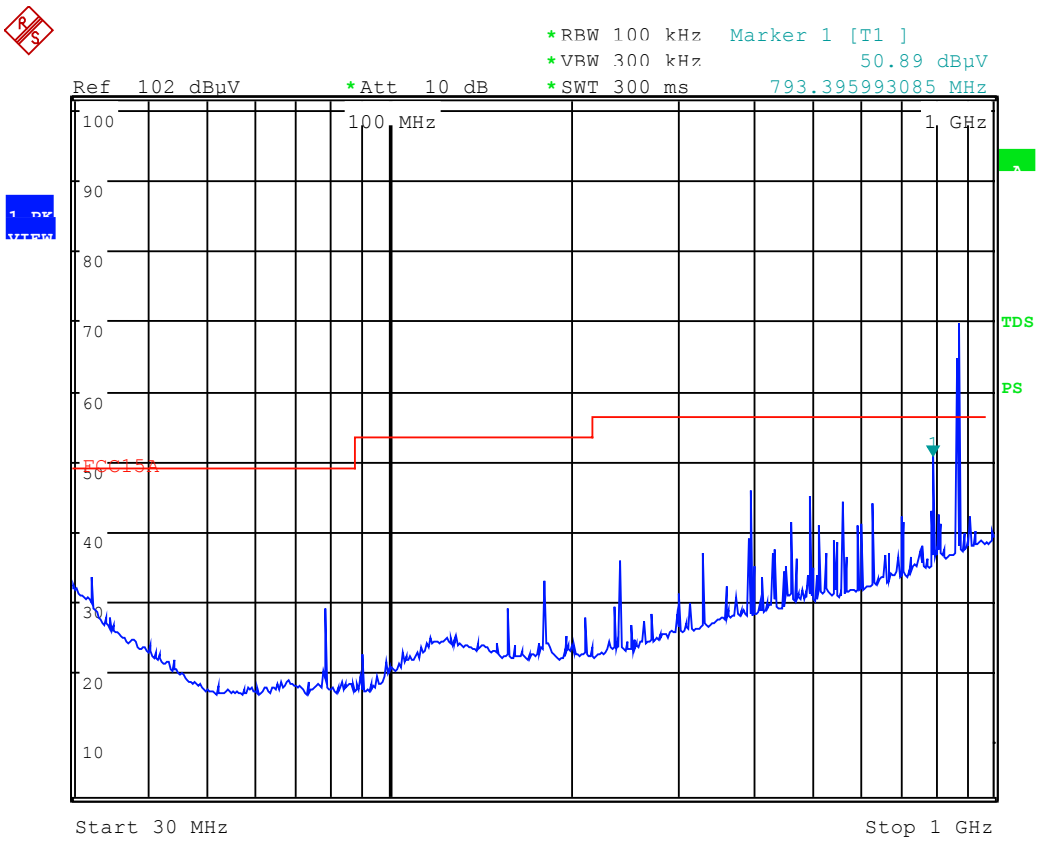

*RBW 100 kHz
VBW 300 kHz
Marker 1 [T1]
33.92 dBµV
Ref 102 dBµV
*Att 10 dB
*SWT 300 ms
78.413354082 MHz
100
90
80
70
60
50
40
30
20
10
100 MHz
1 GHz
TDS
PS
FCC15A
Start 30 MHz
Stop 1 GHz


*RBW 100 kHz
Marker 1 [T1]
VBW 300 kHz
48.81 dBµV
Ref 102 dBµV
*Att 10 dB
*SWT 300 ms
595.132881093 MHz
100
90
80
70
60
50
40
30
20
10
100 MHz
1 GHz
TDS
PS
FCC15A
Start 30 MHz
Stop 1 GHz


*RBW 100 kHz
Marker 1 [T1]
VBW 300 kHz
38.97 dBµV
Ref 102 dBµV
*Att 10 dB
*SWT 300 ms
595.132881093 MHz
100
90
80
70
60
50
40
30
20
10
100 MHz
1 GHz
TDS
PS
FCC15A
Start 30 MHz
Stop 1 GHz


*RBW 100 kHz
VBW 300 kHz
Marker 1 [T1]
45.31 dBµV
Ref 102 dBµV
*Att 10 dB
*SWT 300 ms
192.418573078 MHz
100
90
80
70
60
50
40
30
20
10
100 MHz
1 GHz
TDS
PS
FCC15A
Start 30 MHz
Stop 1 GHz


*RBW 100 kHz
Marker 1 [T1]
*VBW 300 kHz
32.07 dBµV
Ref 102 dBµV
*Att 10 dB
*SWT 300 ms
240.830356977 MHz
100
90
80
70
60
50
40
30
20
10
100 MHz
1 GHz
TDS
PS
FCC15A
Start 30 MHz
Stop 1 GHz


*RBW 100 kHz
*VBW 300 kHz
*SWT 300 ms
Marker 1 [T1]
50.89 dBµV
793.395993085 MHz
Ref 102 dBµV
*Att 10 dB
100 MHz
1 GHz
100
90
80
70
60
50
40
30
20
10
TDS
PS
FCC15A
Start 30 MHz
Stop 1 GHz

§2.1053- SPURIOUS RADIATED EMISSIONS

Applicable Standard

Requirements: CFR 47, §2.1053

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
A.H. System	Horn Antenna	SAS-200/571	135	2005-4-28	2006-4-28
Giga-tronics	Signal Generator	1026	270801	2005-2-28	2006-2-28
HP	Preamplifier	8449B	3008A00277	2005-8-17	2006-8-17
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2004-11-10	2005-11-10
SUNOL SCIENCES	Horn Antenna	DRH-118	A052604	2005-7-20	2006-7-20

*** Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT .The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to teeth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB =10 1g (TXpwr in Watts/0.001)-the absolute level

Spurious attenuation limit in dB =43+10 Log_{10} (power out in Watts)

Test Results Summary

Digital Pre-Distortion Transceiver and Receiver Module DPA

Channel 1013: -30.57 dB at 1072.14 MHz
Channel 119: -32.99 dB at 1747.14 MHz
Channel 312: -32.37 dB at 1132.26 MHz

Transceiver and Receiver Module DPA

Channel 1013: -31.30 dB at 1739.4 MHz
Channel 119: -33.24 dB at 5241.42MHz
Channel 312: -33.30 dB at 1132.26 MHz

Transceiver and Receiver Module LPA1+RFE

Channel 1013: -32.28 dB at 1132.26 MHz
Channel 119: -32.34 dB at 1747.14 MHz
Channel 312: -32.84 dB at 1072.14 MHz

Transceiver and Receiver Module LPA2+RFE

Channel 1013: -33.05 dB at 1072.26 MHz
Channel 119: -38.72 dB at 1072.14MHz
Channel 312: -39.94 dB at 1758.72 MHz

Test Data

Environmental Conditions

Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

The testing was performed by Sam Lin on 2005-9-22.

Test Mode: Transmitting

Digital Pre-Distortion Transceiver and Receiver Module DPA

Indicated		Table	Test Antenna		Substituted			Antenna Gain	Cable	Absolute		
Frequency MHz	Meter Reading dBuV/m	Angle Degree	Height Meter	Polar H/V	Frequency MHz	Level dBm	Polar H/V	Correction dBi	Loss dB	Level dBm	Limit dBm	Margin dB
Channel 1013 f=869.70MHz												
1072.14	47.54	79	1.0	V	1072.14	-51.06	V	8.0	0.51	-43.57	-13.00	-30.57
1060.12	46.06	150	1.0	H	1060.12	-52.64	H	8.0	0.51	-45.15	-13.00	-32.15
5218.20	44.18	270	1.0	H	5218.20	-54.22	H	8.0	0.92	-47.14	-13.00	-34.14
2609.10	44.69	48	1.0	V	2609.10	-53.51	V	7.0	0.7	-47.21	-13.00	-34.21
5218.20	44.36	180	1.2	V	5218.20	-54.74	V	8.0	0.92	-47.66	-13.00	-34.66
3478.80	44.09	180	1.2	H	3478.80	-53.51	H	6.7	1.01	-47.82	-13.00	-34.82
2609.10	44.27	95	1.0	H	2609.10	-54.13	H	7.0	0.7	-47.83	-13.00	-34.83
1739.40	45.02	256	1.2	H	1739.40	-53.58	H	6.1	0.56	-48.04	-13.00	-35.04
4348.49	44.05	131	1.0	H	4348.49	-55.45	H	8.1	0.95	-48.30	-13.00	-35.30
4348.51	43.86	90	1.2	V	4348.51	-55.74	V	8.1	0.95	-48.59	-13.00	-35.59
1739.40	45.26	283	1.0	V	1739.40	-54.24	V	6.1	0.56	-48.70	-13.00	-35.70
3478.80	43.91	330	1.2	V	3478.80	-54.39	V	6.7	1.01	-48.70	-13.00	-35.70

Continues

Indicated		Table	Test Antenna		Substituted			Antenna Gain	Cable	Absolute		
Frequency MHz	Meter Reading dBuV/m	Angle Degree	Height Meter	Polar H/V	Frequency MHz	Level dBm	Polar H/V	Correction dBi	Loss dB	Level dBm	Limit dBm	Margin dB
Channel 119 f=873.57MHz												
1747.14	46.27	202	1.0	H	1747.14	-51.53	H	6.1	0.56	-45.99	-13.00	-32.99
2620.17	44.18	248	1.0	V	2620.17	-53.92	V	7.0	0.7	-47.62	-13.00	-34.62
4367.85	43.75	1.80	1.2	H	4367.85	-54.85	H	8.1	0.95	-47.70	-13.00	-34.70
4367.85	43.17	134	1.0	V	4367.85	-55.23	V	8.1	0.95	-48.08	-13.00	-35.08
1132.26	44.23	270	1.2	H	1132.26	-53.37	H	5.7	0.51	-48.18	-13.00	-35.18
2620.17	44.00	272	1.2	H	2620.17	-54.60	H	7.0	0.7	-48.30	-13.00	-35.30
5241.42	43.26	187	1.0	H	5241.42	-55.54	H	8.0	0.92	-48.46	-13.00	-35.46
5241.42	43.12	112	1.0	V	5241.42	-55.58	V	8.0	0.92	-48.50	-13.00	-35.50
1360.72	45.61	100	1.0	V	1360.72	-53.69	V	5.7	0.51	-48.50	-13.00	-35.50
3494.28	43.95	120	1.0	H	3494.28	-54.45	H	6.7	1.01	-48.76	-13.00	-35.76
3494.28	43.96	184	1.2	V	3494.28	-54.64	V	6.7	1.01	-48.95	-13.00	-35.95
1747.14	44.30	247	1.0	V	1747.14	-54.80	V	6.1	0.56	-49.26	-13.00	-36.26
Channel 312 f=879.36MHz												
1132.26	48.04	180	1.2	H	1132.26	-51.06	H	6.2	0.51	-45.37	-13.00	-32.37
1120.24	46.06	300	1.0	V	1120.24	-52.34	V	5.7	0.51	-47.15	-13.00	-34.15
4396.80	44.26	270	1.2	H	4396.80	-54.34	H	8.1	0.95	-47.19	-13.00	-34.19
2638.08	45.02	90	1.2	V	2638.08	-53.58	V	7.0	0.70	-47.28	-13.00	-34.28
5276.16	43.81	180	1.0	H	5276.16	-54.39	H	8.0	0.92	-47.31	-13.00	-34.31
2638.08	45.02	330	1.0	H	2638.08	-53.88	H	7.0	0.70	-47.58	-13.00	-34.58
1758.72	45.57	180	1.2	V	1758.72	-53.33	V	6.1	0.56	-47.79	-13.00	-34.79
1758.72	45.57	180	1.0	H	1758.72	-53.43	H	6.1	0.56	-47.89	-13.00	-34.89
3517.44	44.38	180	1.2	H	3517.44	-54.32	H	7.2	1.01	-48.13	-13.00	-35.13
4396.80	43.14	240	1.0	V	4396.80	-55.56	V	8.1	0.95	-48.41	-13.00	-35.41
3517.44	43.66	175	1.0	V	3517.44	-54.64	V	7.2	1.01	-48.45	-13.00	-35.45
5276.16	43.80	220	1.2	V	5276.16	-55.80	V	8.0	0.92	-48.72	-13.00	-35.72

Transceiver and Receiver Module *DPA*

Indicated		Table	Test Antenna		Substituted			Antenna	Cable	Absolute	Limit	Margin
Frequency	Meter Reading	Angle	Height	Polar	Frequency	Level	Polar	Gain Correction	Loss	Level		
MHz	dBuV/m	Degree	Meter	H/V	MHz	dBm	H/V	dBi	dB	dBm	dBm	dB
Channel 1013 f=869.70MHz												
1739.40	48.66	180	1.2	H	1739.40	-49.84	H	6.1	0.56	-44.30	-13.00	-31.30
1132.26	48.56	270	1.0	V	1132.26	-50.04	V	6.2	0.51	-44.35	-13.00	-31.35
2609.10	47.39	45	1.2	H	2609.10	-51.21	H	7.0	0.70	-44.91	-13.00	-31.91
1739.40	46.55	45	1.0	V	1739.40	-52.15	V	6.1	0.56	-46.61	-13.00	-33.61
4348.51	45.65	90	1.2	H	4348.51	-53.95	H	8.1	0.95	-46.80	-13.00	-33.80
2609.10	44.79	60	1.2	V	2609.10	-53.51	V	7.0	0.70	-47.21	-13.00	-34.21
5218.20	44.9	90	1.2	V	5218.20	-54.50	V	8.0	0.92	-47.42	-13.00	-34.42
4348.49	43.89	270	1.0	V	4348.49	-54.71	V	8.1	0.95	-47.56	-13.00	-34.56
5218.20	44.23	270	1.2	H	5218.20	-55.07	H	8.0	0.92	-47.99	-13.00	-34.99
1024.04	45.43	270	1.2	H	1024.04	-53.37	H	5.7	0.51	-48.18	-13.00	-35.18
3478.80	44.33	180	1.2	V	3478.80	-54.37	V	6.7	1.01	-48.68	-13.00	-35.68
3478.80	44.62	45	1.0	H	3478.80	-54.58	H	6.7	1.01	-48.89	-13.00	-35.89
Channel 119 f=873.57MHz												
5241.42	44.98	90	1.2	V	5241.42	-53.32	V	8.0	0.92	-46.24	-13.00	-33.24
1747.14	46.59	270	1.0	H	1747.14	-51.91	H	6.1	0.56	-46.37	-13.00	-33.37
1072.14	46.98	90	1.2	H	1072.14	-51.62	H	5.7	0.51	-46.43	-13.00	-33.43
2620.17	45.37	45	1.2	H	2620.17	-53.03	H	7.0	0.70	-46.73	-13.00	-33.73
1036.07	46.76	180	1.0	V	1036.07	-51.94	V	5.7	0.51	-46.75	-13.00	-33.75
2620.17	45.70	180	1.2	V	2620.17	-53.70	V	7.0	0.70	-47.40	-13.00	-34.40
4367.85	43.61	45	1.0	V	4367.85	-54.99	V	8.1	0.95	-47.84	-13.00	-34.84
4367.85	44.30	180	1.0	H	4367.85	-55.10	H	8.1	0.95	-47.95	-13.00	-34.95
1747.14	45.53	270	1.0	V	1747.14	-53.57	V	6.1	0.56	-48.03	-13.00	-35.03
5241.42	44.48	180	1.2	H	5241.42	-55.12	H	8.0	0.92	-48.04	-13.00	-35.04
3494.28	44.35	270	1.0	V	3494.28	-54.15	V	6.7	1.01	-48.46	-13.00	-35.46
3494.28	44.12	270	1.2	H	3494.28	-55.18	H	6.7	1.01	-49.49	-13.00	-36.49
Channel 312 f=879.36MHz												
1132.26	47.01	90	1.0	H	1132.26	-51.99	H	6.2	0.51	-46.30	-13.00	-33.30
2638.08	44.88	360	1.0	H	2638.08	-53.72	H	7.0	0.7	-47.42	-13.00	-34.42
5276.16	44.25	90	1.0	H	5276.16	-54.75	H	8.0	0.92	-47.67	-13.00	-34.67
1758.72	45.88	180	1.2	H	1758.72	-53.22	H	6.1	0.56	-47.68	-13.00	-34.68
1758.72	45.29	45	1.2	V	1758.72	-53.31	V	6.1	0.56	-47.77	-13.00	-34.77
4396.80	43.75	45	1.2	H	4396.80	-54.95	H	8.1	0.95	-47.80	-13.00	-34.80
2638.08	44.14	90	1.0	V	2638.08	-54.26	V	7.0	0.7	-47.96	-13.00	-34.96
4396.80	43.32	270	1.0	V	4396.80	-55.38	V	8.1	0.95	-48.23	-13.00	-35.23
1036.07	45.42	270	1.2	V	1036.07	-53.48	V	5.7	0.51	-48.29	-13.00	-35.29
5276.16	43.81	270	1.2	V	5276.16	-55.39	V	8.0	0.92	-48.31	-13.00	-35.31
3517.44	43.65	180	1.2	V	3517.44	-54.65	V	7.2	1.01	-48.46	-13.00	-35.46
3517.44	43.88	270	1.0	H	3517.44	-54.72	H	7.2	1.01	-48.53	-13.00	-35.53

Transceiver and Receiver Module *LPA1+RFE*

Indicated		Table	Test Antenna		Substituted			Antenna Gain Correction	Cable	Absolute		
Frequency MHz	Meter Reading dBuV/m	Angle Degree	Height Meter	Polar H/V	Frequency MHz	Level dBm	Polar H/V	dBi	Loss dB	Level dBm	Limit dBm	Margin dB
Channel 1013 f=869.70MHz												
1132.26	48.33	270	1.2	H	1132.26	-50.97	V	6.2	0.51	-45.28	-13.00	-32.28
2609.10	45.87	90	1.0	H	2609.10	-52.83	H	8.0	0.92	-45.75	-13.00	-32.75
1739.40	46.69	180	1.2	H	1739.40	-51.91	H	6.1	0.56	-46.37	-13.00	-33.37
5218.20	44.62	270	1.0	V	5218.20	-53.58	V	8.1	0.95	-46.43	-13.00	-33.43
4348.49	44.63	180	1.2	V	4348.49	-53.67	V	8.0	0.92	-46.59	-13.00	-33.59
1739.40	46.60	45	1.0	V	1739.40	-52.30	V	6.1	0.56	-46.76	-13.00	-33.76
2609.10	45.64	180	1.2	V	2609.10	-53.06	V	7.0	0.70	-46.76	-13.00	-33.76
1168.33	46.79	150	1.2	V	1024.04	-52.31	H	5.7	0.51	-47.12	-13.00	-34.12
5218.20	44.12	180	1.2	H	5218.20	-53.98	H	7.0	0.70	-47.68	-13.00	-34.68
4348.51	43.76	270	1.2	H	4348.51	-55.64	H	8.1	0.95	-48.49	-13.00	-35.49
3478.80	44.61	60	1.0	H	3478.80	-54.99	H	6.7	1.01	-49.30	-13.00	-36.30
3478.80	44.35	330	1.0	V	3478.80	-55.15	V	6.7	1.01	-49.46	-13.00	-36.46
Channel 119 f=873.57MHz												
1747.14	48.22	270	1.0	H	1747.14	-50.88	H	6.1	0.56	-45.34	-13.00	-32.34
1132.26	48.18	90	1.2	H	1132.26	-51.12	H	5.7	0.51	-45.93	-13.00	-32.93
2620.17	45.19	45	1.2	H	2620.17	-53.51	H	7.0	0.70	-47.21	-13.00	-34.21
4367.85	43.90	180	1.0	V	4367.85	-54.40	V	8.1	0.95	-47.25	-13.00	-34.25
5241.42	44.27	270	1.0	H	5241.42	-54.33	H	8.0	0.92	-47.25	-13.00	-34.25
1747.14	45.29	270	1.2	V	1747.14	-52.91	V	6.1	0.56	-47.37	-13.00	-34.37
2620.17	44.78	45	1.0	V	2620.17	-53.82	V	7.0	0.7	-47.52	-13.00	-34.52
5241.42	43.87	270	1.2	V	5241.42	-54.63	V	8.0	0.92	-47.55	-13.00	-34.55
3494.28	44.88	90	1.0	H	3494.28	-53.32	H	6.7	1.01	-47.63	-13.00	-34.63
4367.85	43.67	180	1.2	H	4367.85	-54.93	H	8.1	0.95	-47.78	-13.00	-34.78
1108.21	46.18	45	1.0	V	1108.21	-53.02	V	5.7	0.51	-47.83	-13.00	-34.83
3494.28	44.02	90	1.2	V	3494.28	-54.18	V	6.7	1.01	-48.49	-13.00	-35.49
Channel 312 f=879.36MHz												
1072.14	47.07	300	1.2	V	1036.07	-51.03	V	5.7	0.51	-45.84	-13.00	-32.84
1132.26	47.48	270	1.0	H	1132.26	-52.12	H	6.2	0.51	-46.43	-13.00	-33.43
5276.16	44.30	280	1.2	H	5276.16	-54.00	H	8.0	0.92	-46.92	-13.00	-33.92
2638.08	44.87	270	1.2	V	2638.08	-53.53	V	7.0	0.70	-47.23	-13.00	-34.23
4396.80	43.94	180	1.2	H	4396.80	-54.46	H	8.1	0.95	-47.31	-13.00	-34.31
2638.08	44.88	45	1.2	H	2638.08	-53.72	H	7.0	0.70	-47.42	-13.00	-34.42
1758.72	45.32	180	1.0	V	1758.72	-52.98	V	6.1	0.56	-47.44	-13.00	-34.44
3517.44	44.85	45	1.0	V	3517.44	-53.75	V	7.2	1.01	-47.56	-13.00	-34.56
5276.16	44.33	180	1.2	V	5276.16	-54.97	H	8.0	0.92	-47.89	-13.00	-34.89
4396.80	43.50	90	1.2	V	4396.80	-55.20	V	8.1	0.95	-48.05	-13.00	-35.05
1758.72	44.95	270	1.2	H	1758.72	-53.75	H	6.1	0.56	-48.21	-13.00	-35.21
3517.44	44.16	90	1.0	H	3517.44	-54.54	H	7.2	1.01	-48.35	-13.00	-35.35

Transceiver and Receiver Module *LPA2+RFE*

Indicated		Table	Test Antenna		Substituted			Antenna Gain Correction	Cable	Absolute		
Frequency MHz	Meter Reading dBuV/m	Angle Degree	Height Meter	Polar H/V	Frequency MHz	Level dBm	Polar H/V	dBi	Loss dB	Level dBm	Limit dBm	Margin dB
Channel 1013 f=869.70MHz												
1072.26	46.56	270	1.0	V	1132.26	-51.74	V	6.2	0.51	-46.05	-13.00	-33.05
1739.40	46.21	270	1.0	V	1739.40	-51.69	V	6.1	0.56	-46.15	-13.00	-33.15
1739.40	45.75	60	1.2	H	1739.40	-51.85	H	6.1	0.56	-46.31	-13.00	-33.31
2609.10	45.22	180	1.2	V	2609.10	-52.98	V	7.0	0.70	-46.68	-13.00	-33.68
4348.49	45.10	270	1.0	V	4348.49	-53.80	V	8.0	0.92	-46.72	-13.00	-33.72
5218.20	44.67	90	1.0	V	5218.20	-53.93	V	8.1	0.95	-46.78	-13.00	-33.78
4348.51	44.38	270	1.0	H	4348.51	-54.22	H	8.1	0.95	-47.07	-13.00	-34.07
3478.80	45.26	175	1.2	V	3478.80	-53.44	V	6.7	1.01	-47.75	-13.00	-34.75
2609.10	44.26	330	1.2	H	2609.10	-54.94	H	8.0	0.92	-47.86	-13.00	-34.86
5218.20	44.27	195	1.2	H	5218.20	-54.43	H	7.0	0.70	-48.13	-13.00	-35.13
3478.80	44.68	60	1.0	H	3478.80	-54.92	H	6.7	1.01	-49.23	-13.00	-36.23
1060.04	45.12	150	1.2	H	1024.04	-54.68	H	5.7	0.51	-49.49	-13.00	-36.49
Channel 119 f=873.57MHz												
1072.14	46.88	270	1.2	H	1072.14	-51.72	H	5.7	0.51	-46.53	-13.00	-38.72
1747.14	47.26	202	1.0	H	1747.14	-51.74	H	6.1	0.56	-46.20	-13.00	-38.74
1108.21	45.78	270	1.0	V	1108.21	-52.72	V	5.7	0.51	-47.53	-13.00	-39.72
1747.14	45.29	250	1.0	V	1747.14	-53.31	V	6.1	0.56	-47.77	-13.00	-40.31
3494.28	44.12	180	1.0	V	3494.28	-53.48	V	6.7	1.01	-47.79	-13.00	-40.48
2620.17	44.51	270	1.2	V	2620.17	-53.69	V	7.0	0.70	-47.39	-13.00	-40.69
4367.85	43.68	90	1.0	V	4367.85	-54.22	V	8.1	0.95	-47.07	-13.00	-41.22
5241.42	43.98	195	1.2	V	5241.42	-54.32	V	8.0	0.92	-47.24	-13.00	-41.32
2620.17	43.68	195	1.2	H	2620.17	-55.42	H	7.0	0.70	-49.12	-13.00	-42.42
3494.28	44.15	270	1.0	H	3494.28	-55.85	H	6.7	1.01	-50.16	-13.00	-42.85
5241.42	43.78	187	1.0	H	5241.42	-56.02	H	8.0	0.92	-48.94	-13.00	-43.02
4367.85	44.29	180	1.2	H	4367.85	-57.01	H	8.1	0.95	-49.86	-13.00	-44.01
Channel 312 f=879.36MHz												
1758.72	44.76	270	1.2	H	1758.72	-52.94	H	6.1	0.56	-47.40	-13.00	-39.94
1758.72	45.98	180	1.0	V	1758.72	-53.32	V	6.1	0.56	-47.78	-13.00	-40.32
1132.26	45.41	195	1.0	H	1132.26	-53.39	H	6.2	0.51	-47.70	-13.00	-40.39
2638.08	44.38	330	1.0	H	2638.08	-53.92	H	7.0	0.70	-47.62	-13.00	-40.92
3517.44	44.57	175	1.2	V	3517.44	-54.03	V	7.2	1.01	-47.84	-13.00	-41.03
2638.08	45.02	97	1.0	V	2638.08	-54.38	V	7.0	0.70	-48.08	-13.00	-41.38
4396.80	44.23	241	1.0	V	4396.80	-54.47	V	8.1	0.95	-47.32	-13.00	-41.47
5276.16	44.03	220	1.2	V	5276.16	-54.57	H	8.0	0.92	-47.49	-13.00	-41.57
1036.07	44.84	300	1.0	V	1036.07	-54.76	V	5.7	0.51	-49.57	-13.00	-41.76
5276.16	43.76	280	1.2	H	5276.16	-54.84	H	8.0	0.92	-47.76	-13.00	-41.84
4396.80	44.02	180	1.0	H	4396.80	-55.38	H	8.1	0.95	-48.23	-13.00	-42.38
3517.44	43.27	90	1.0	H	3517.44	-56.33	H	7.2	1.01	-50.14	-13.00	-43.33

§2.1051, §22.917(a)- SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Applicable Standard

Requirements: CFR 47§ 2.1051. §22.917(a)

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in §2.1057

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2004-11-10	2005-11-10

*** Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.

Test Data

Environmental Conditions

Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

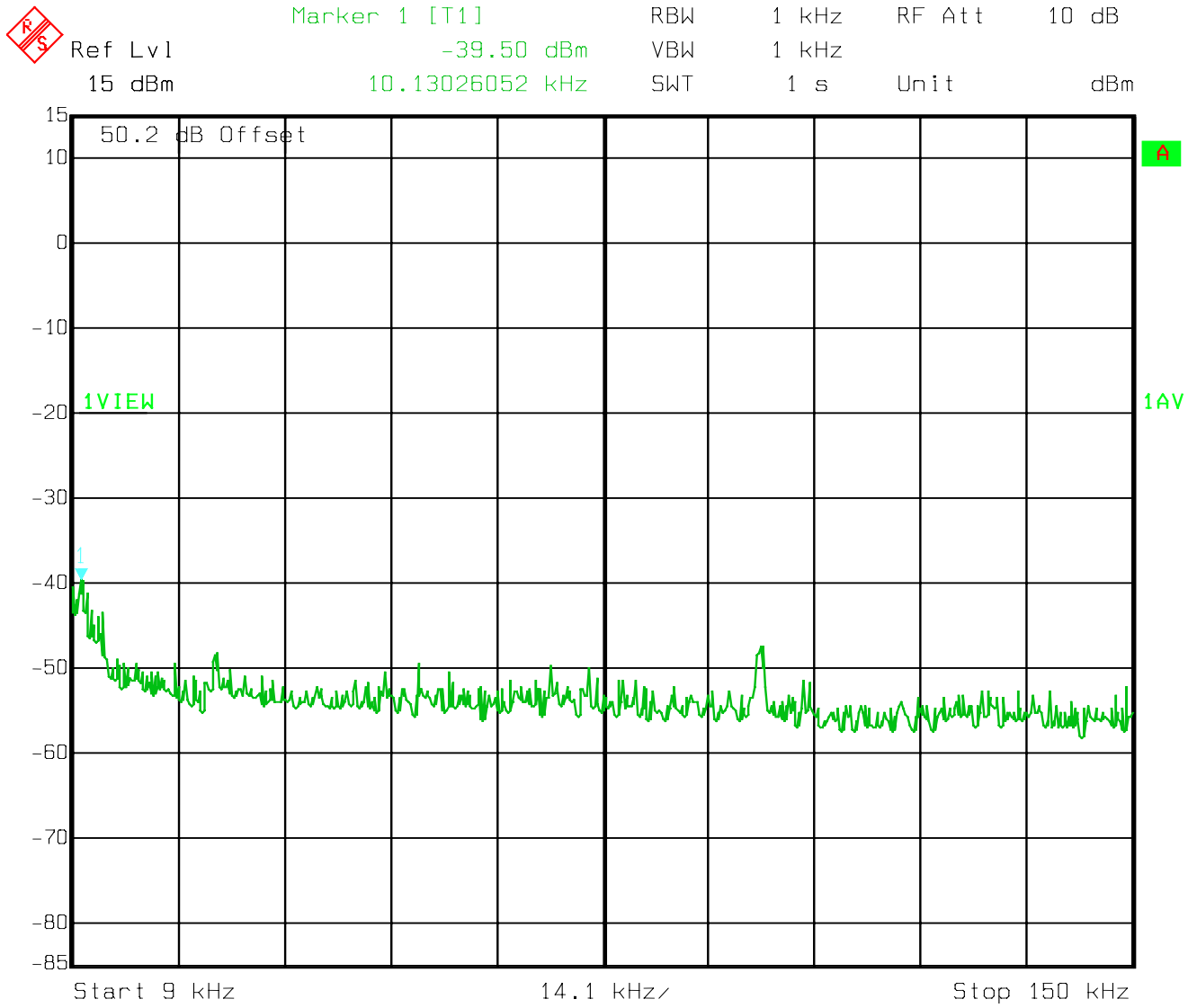
The testing was performed by Sam Lin on 2005-9-23

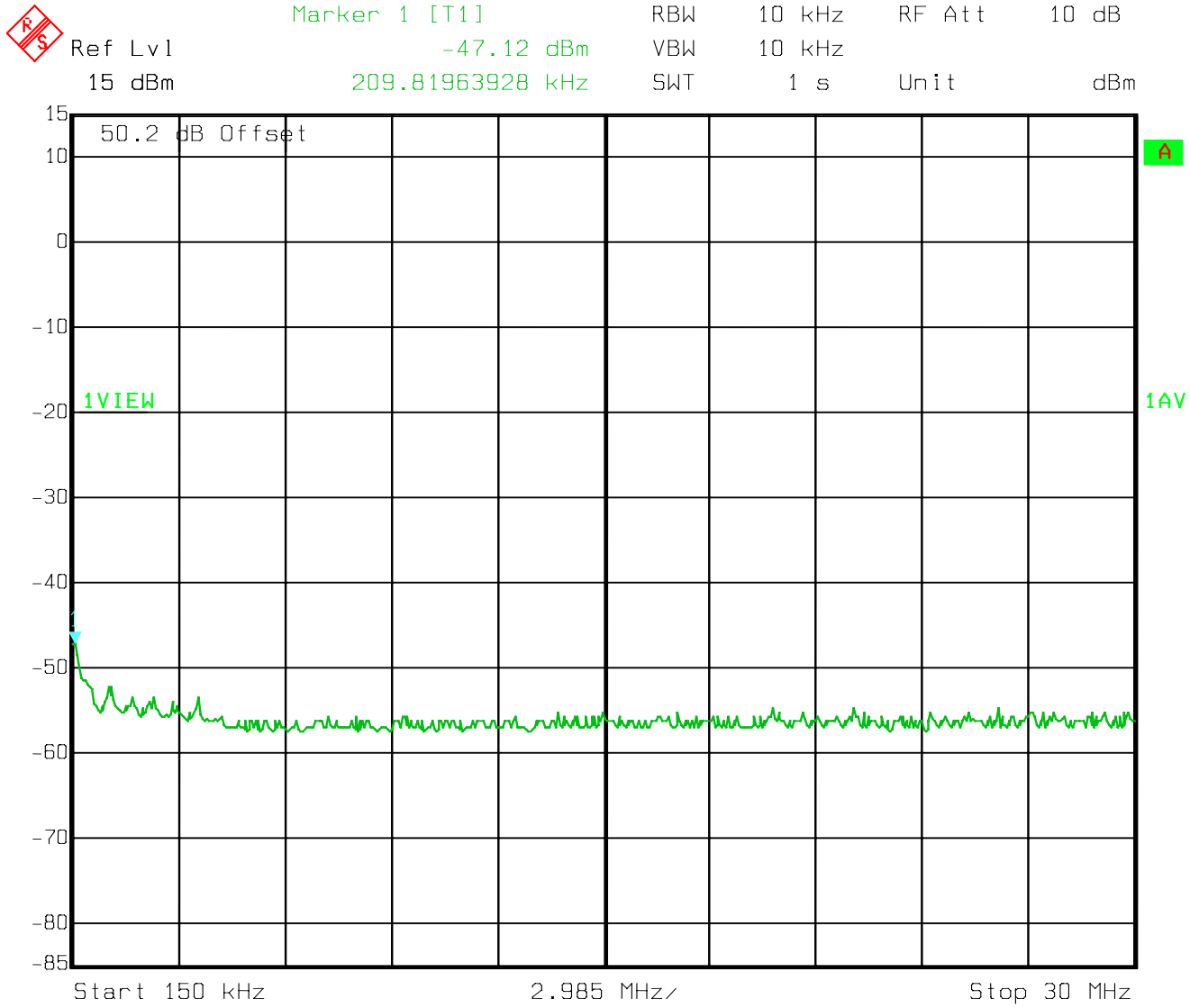
Test Result: Pass

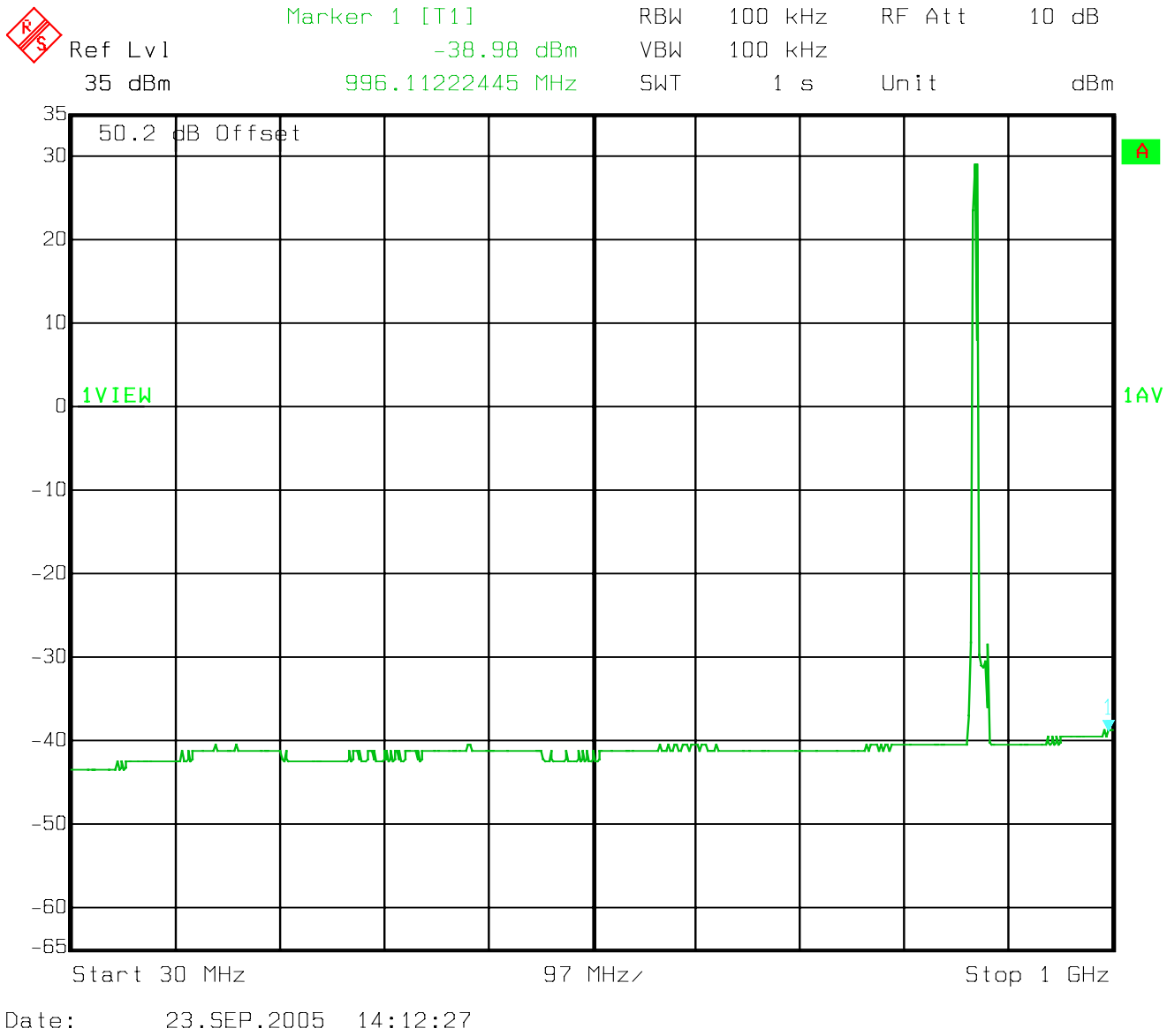
Test Mode: Transmitting

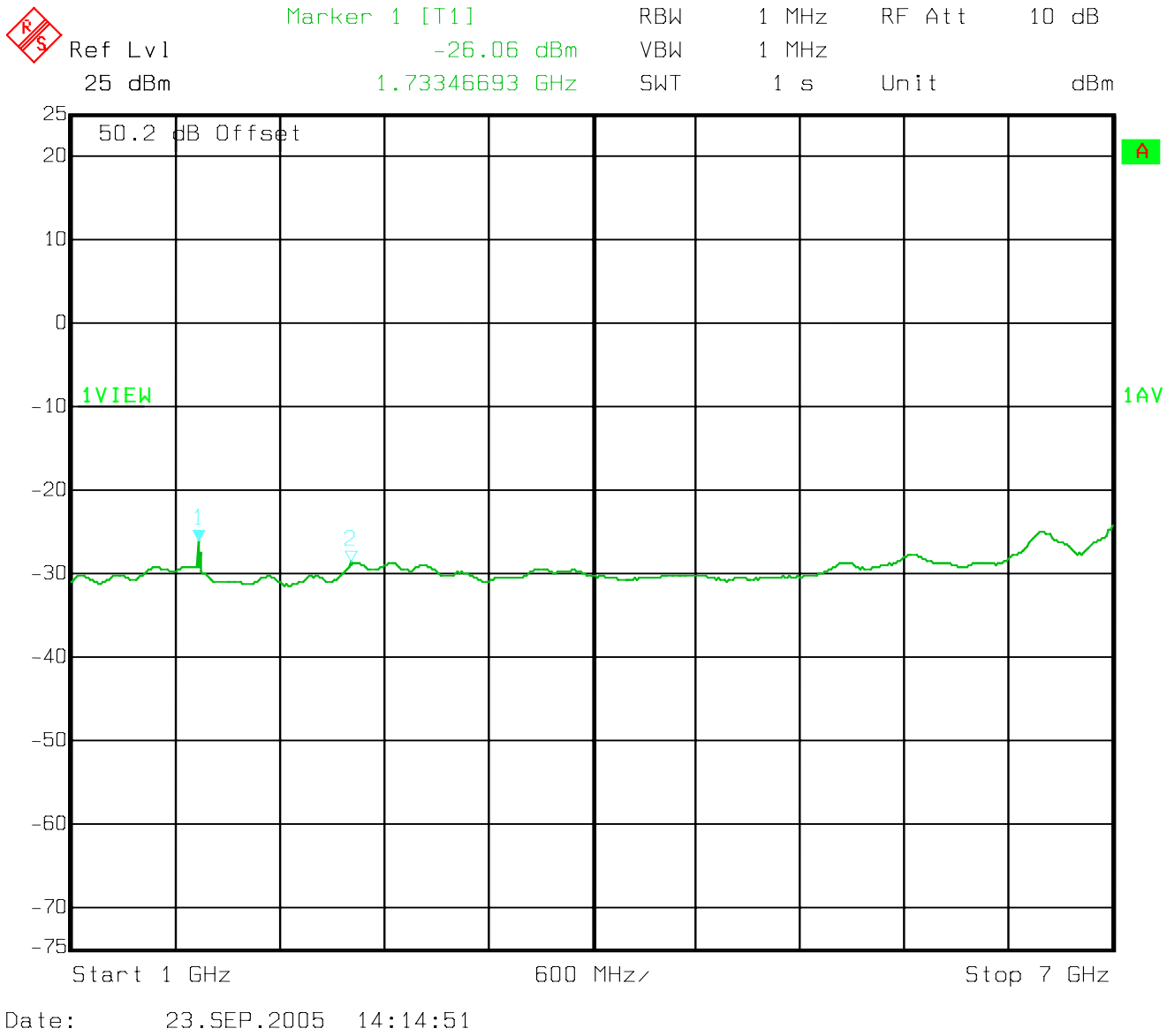
Digital Pre-Distortion Transceiver and Receiver Module DPA

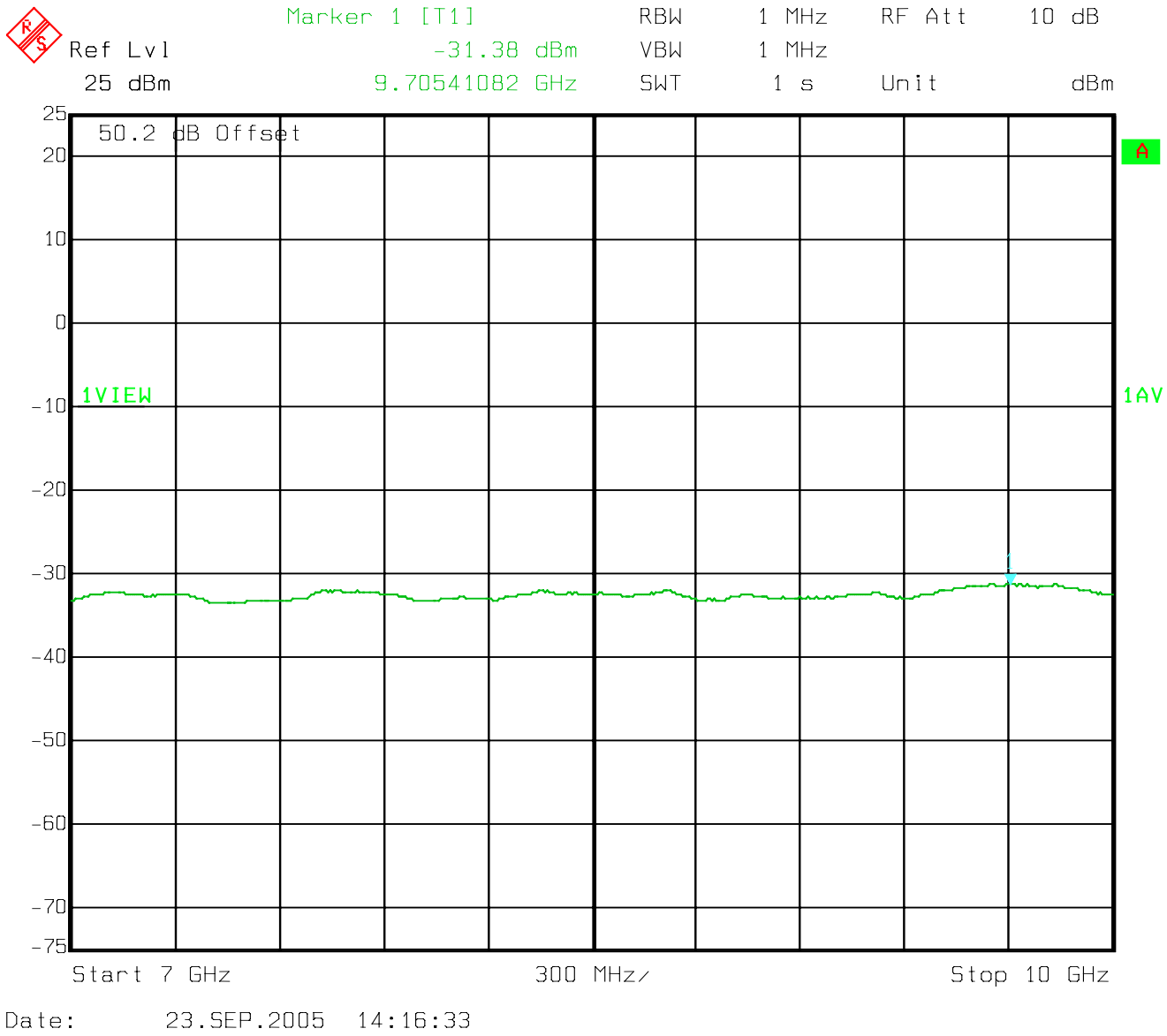
Channel 1013



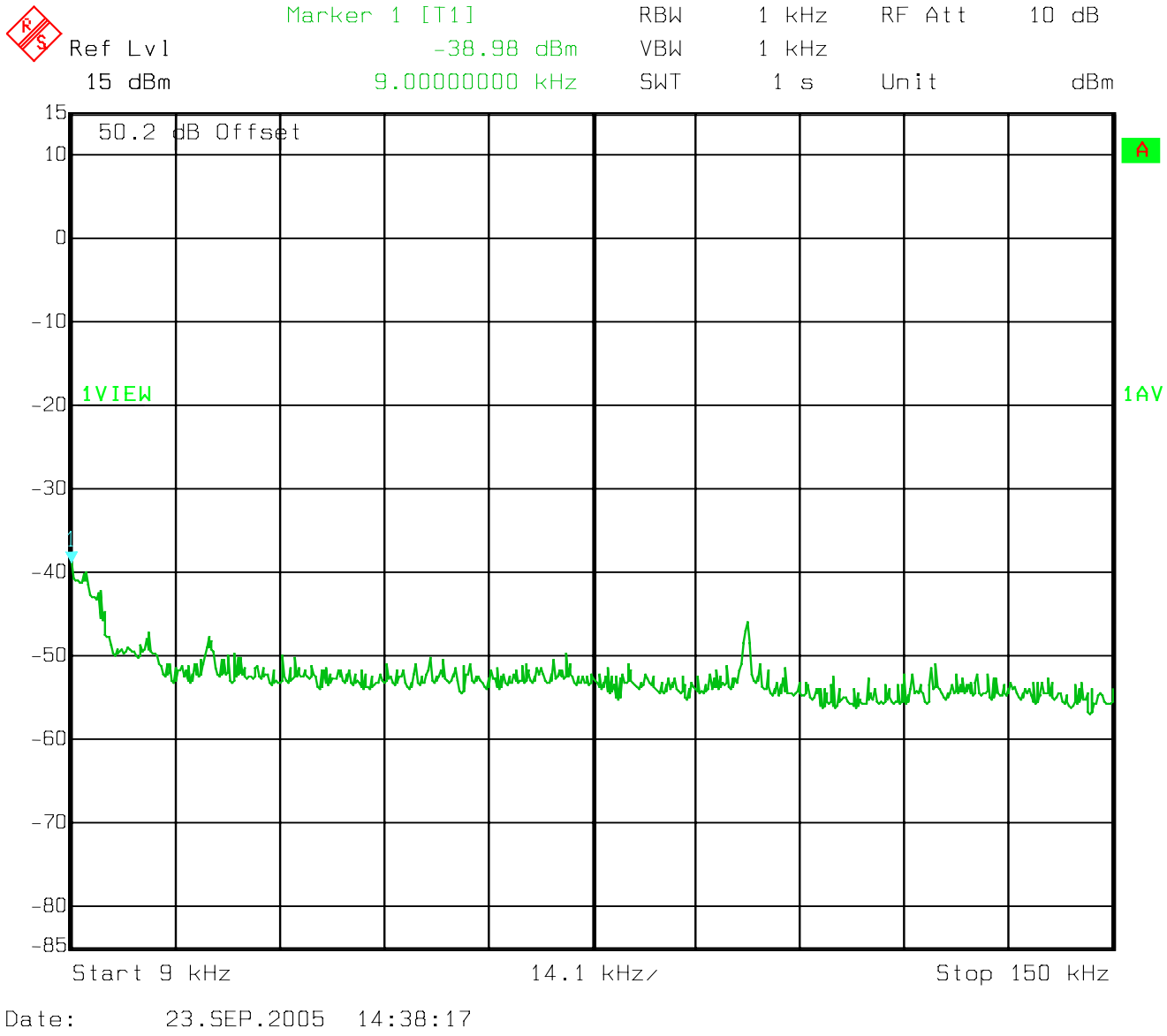

Marker 1 [T1]
-47.12 dBm
209.81963928 kHz
RBW 10 kHz
VBW 10 kHz
SWT 1 s
RF Att 10 dB
Unit dBm
Ref Lvl
15 dBm
50.2 dB Offset
1VIEW
1AV
A
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 23.SEP.2005 14:10:31

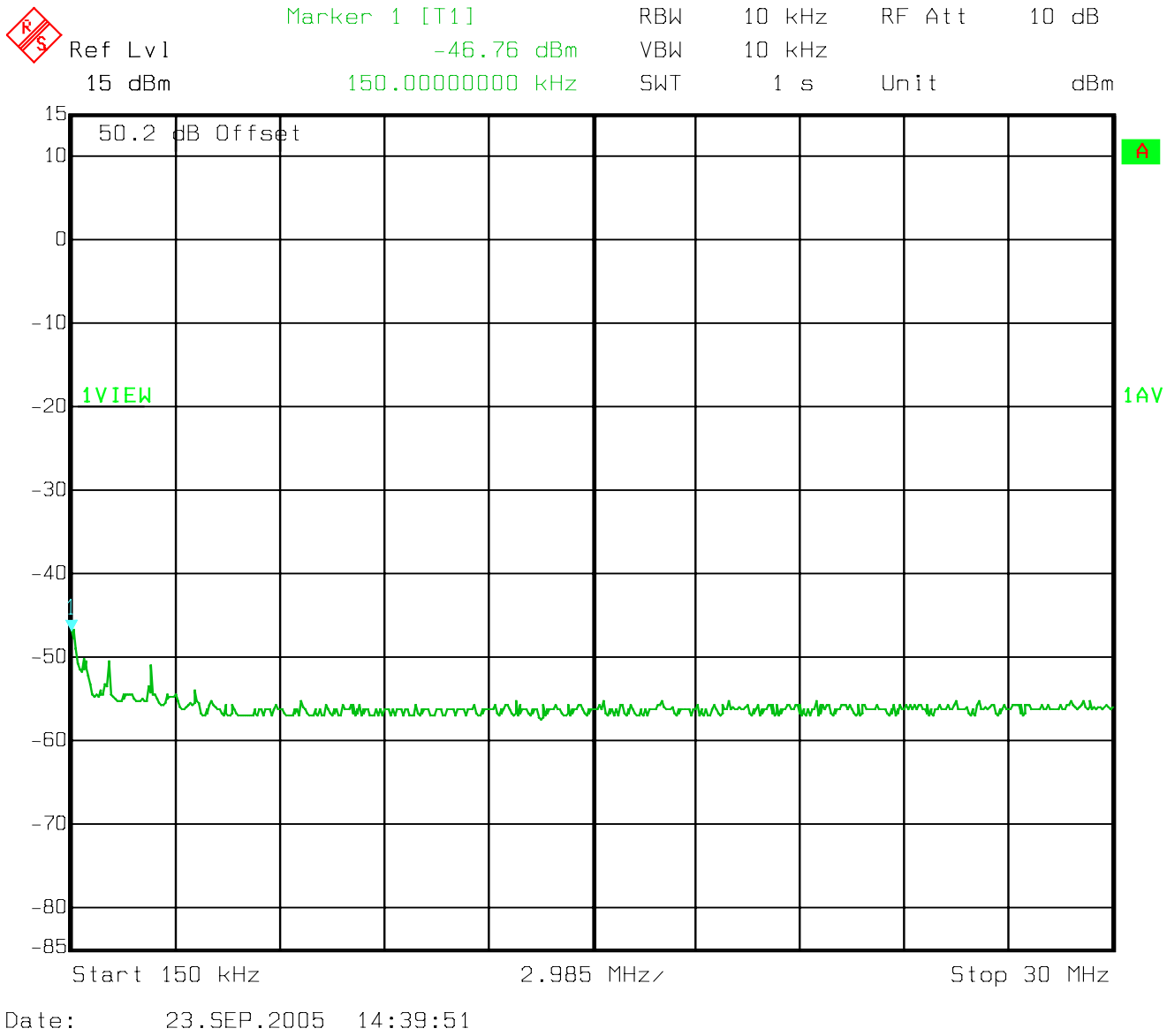

Marker 1 [T1]
Ref Lvl
35 dBm
-38.98 dBm
996.11222445 MHz
RBW 100 kHz
VBW 100 kHz
SWT 1 s
RF Att 10 dB
Unit dBm
50.2 dB Offset
1VIEW
1AV
A
35
30
20
10
0
-10
-20
-30
-40
-50
-60
-65
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 23.SEP.2005 14:12:27

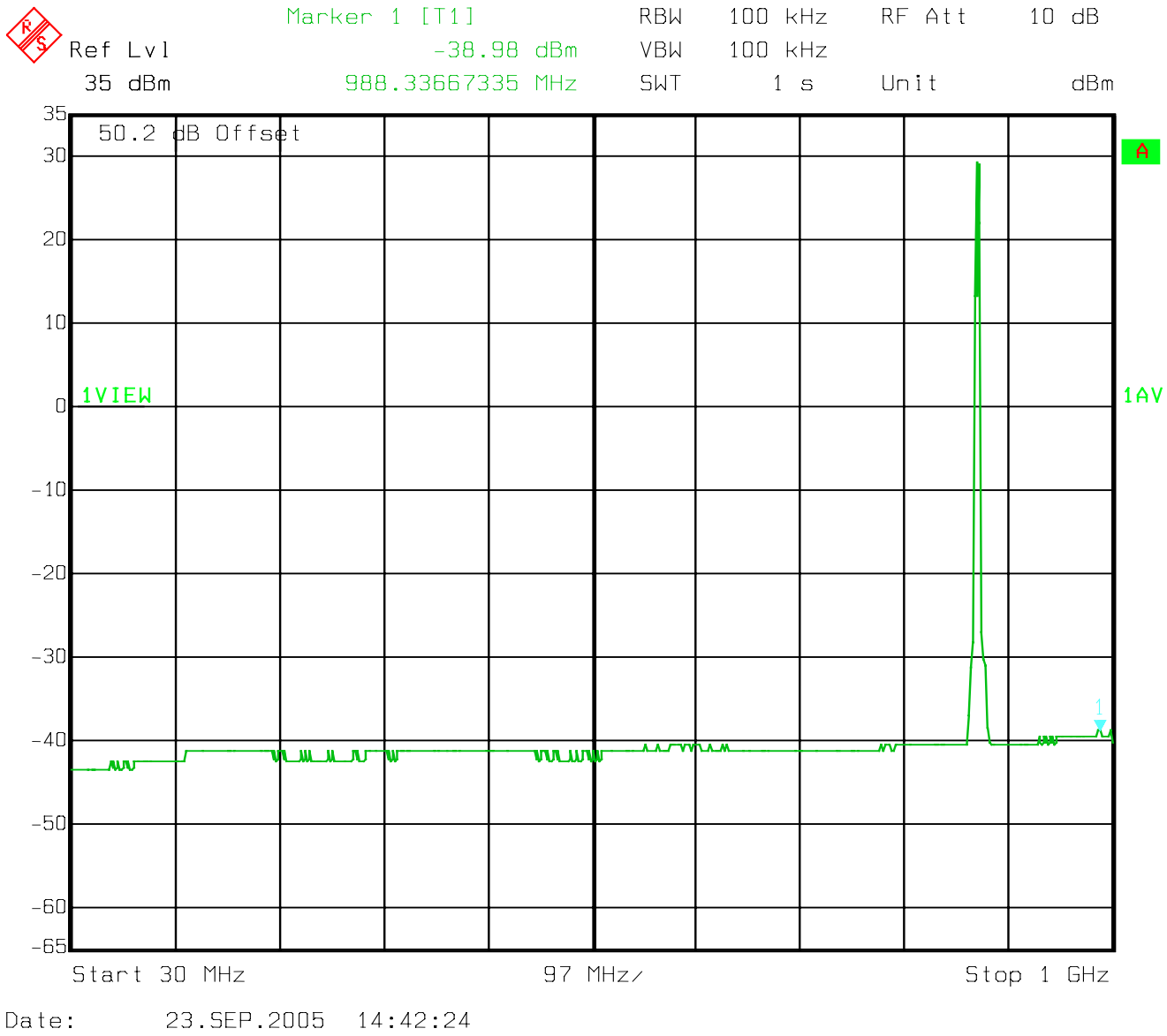

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-26.06 dBm
VBW 1 MHz
25 dBm
1.73346693 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 23.SEP.2005 14:14:51

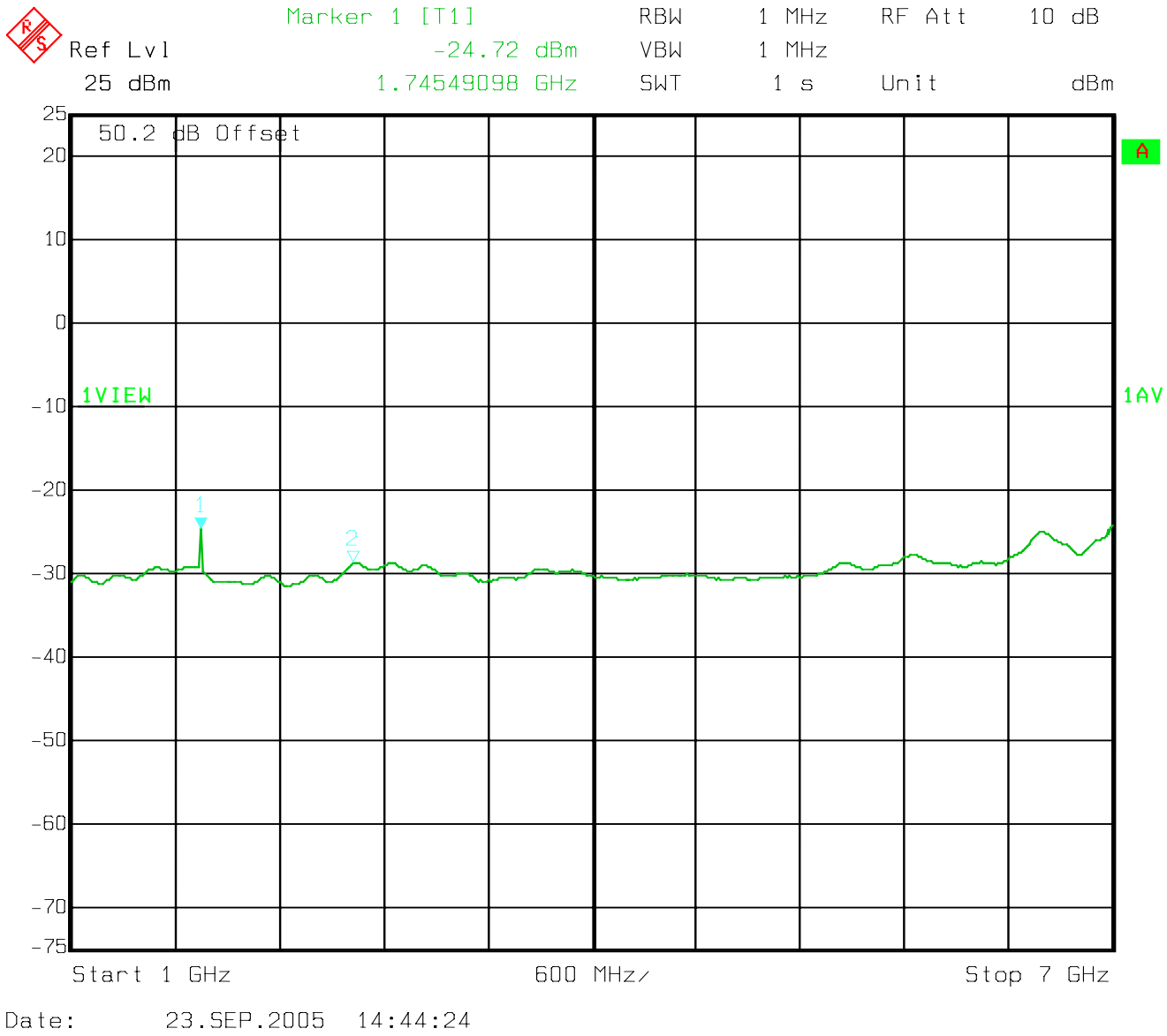

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-31.38 dBm
VBW 1 MHz
25 dBm
9.70541082 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 23.SEP.2005 14:16:33

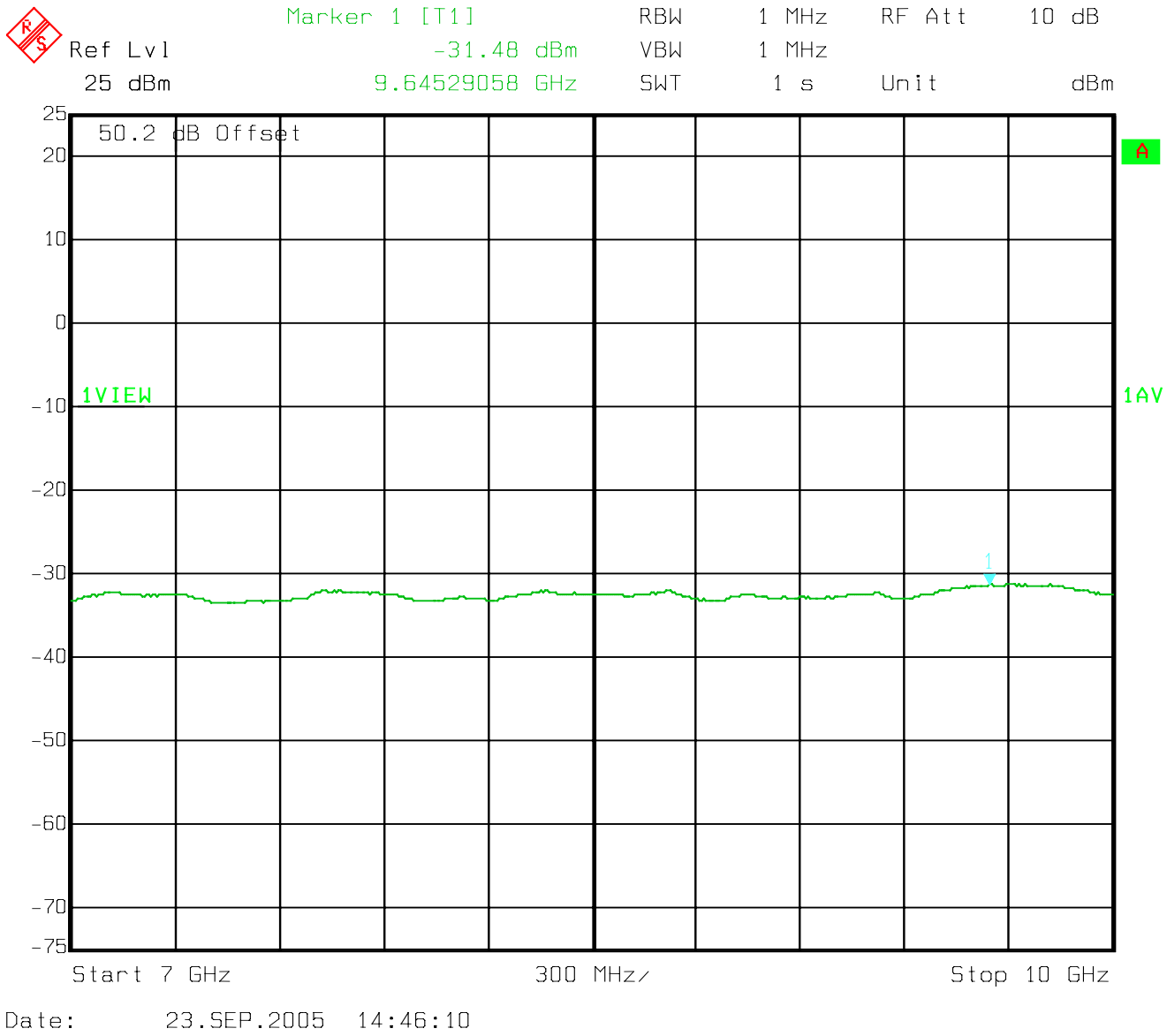
Channel 119


Marker 1 [T1]
RBW 1 kHz
RF Att 10 dB
Ref Lvl
-38.98 dBm
VBW 1 kHz
15 dBm
9.00000000 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 9 kHz
14.1 kHz/
Stop 150 kHz
Date: 23.SEP.2005 14:38:17

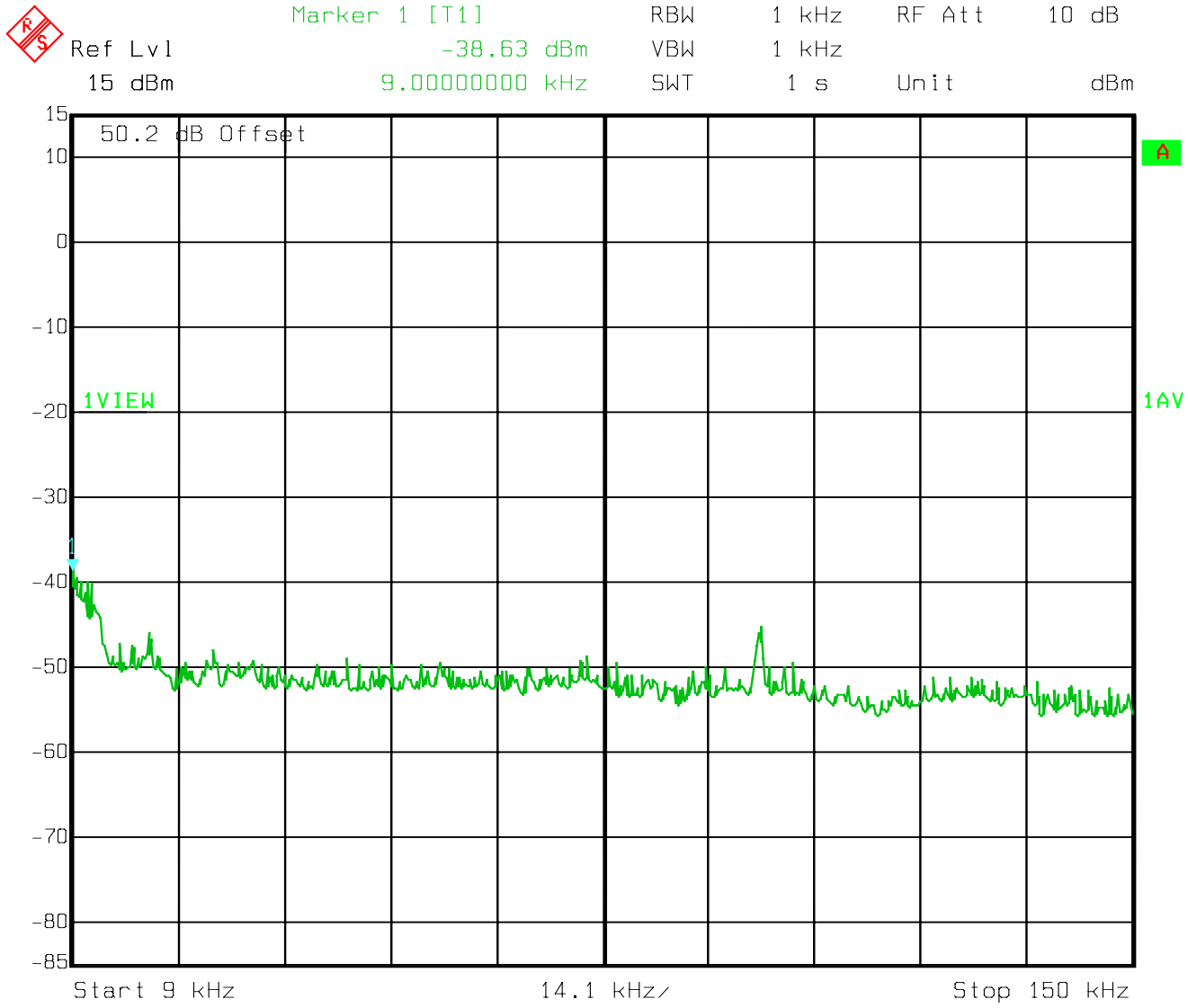

Marker 1 [T1]
RBW 10 kHz
RF Att 10 dB
Ref Lvl
-46.76 dBm
VBW 10 kHz
15 dBm
150.00000000 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 23.SEP.2005 14:39:51

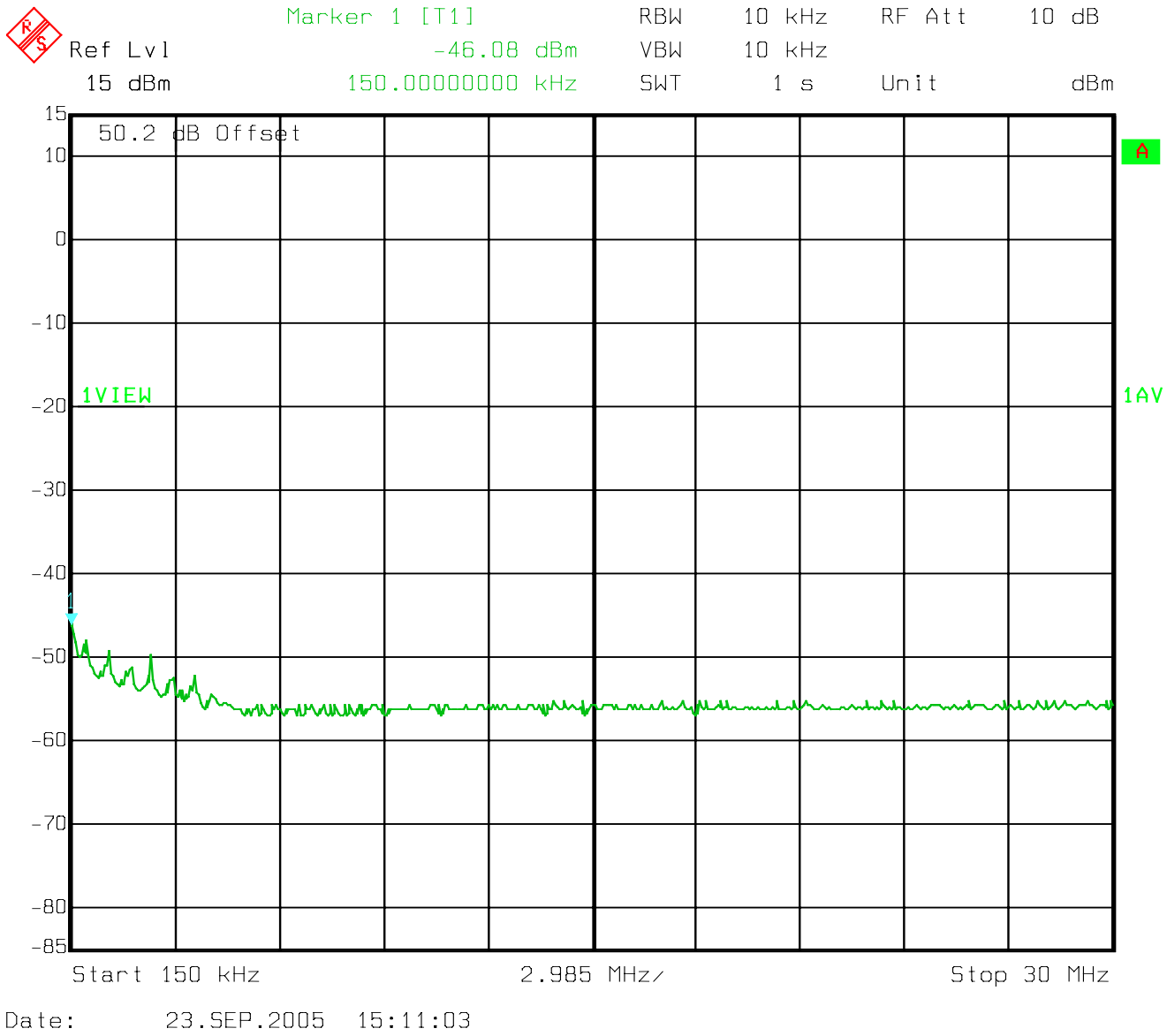

Marker 1 [T1]
Ref Lvl
35 dBm
-38.98 dBm
988.33667335 MHz
RBW 100 kHz
VBW 100 kHz
SWT 1 s
RF Att 10 dB
Unit dBm
50.2 dB Offset
1VIEW
1AV
A
35
30
20
10
0
-10
-20
-30
-40
-50
-60
-65
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 23.SEP.2005 14:42:24

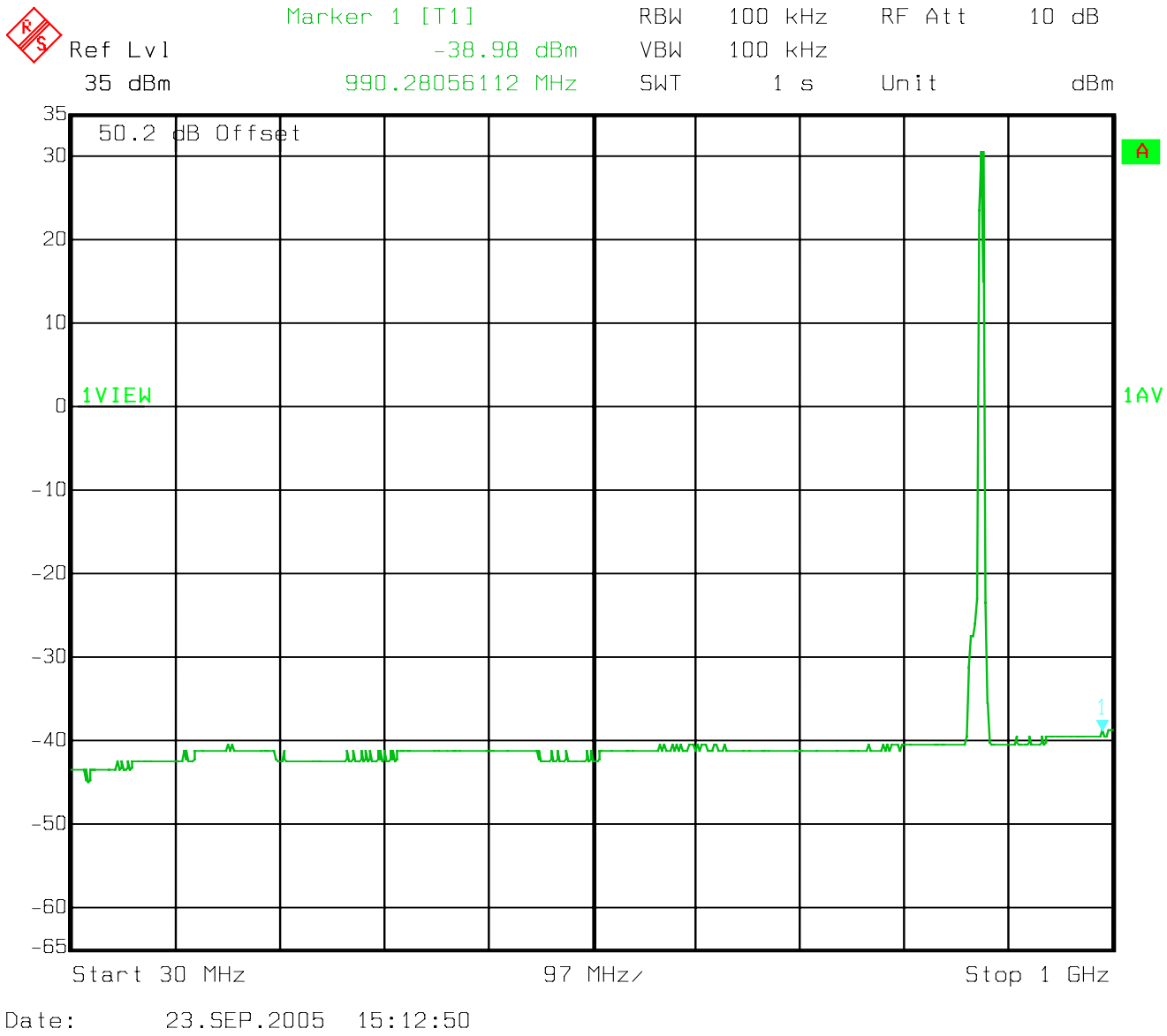

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-24.72 dBm
VBW 1 MHz
25 dBm
1.74549098 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 23.SEP.2005 14:44:24

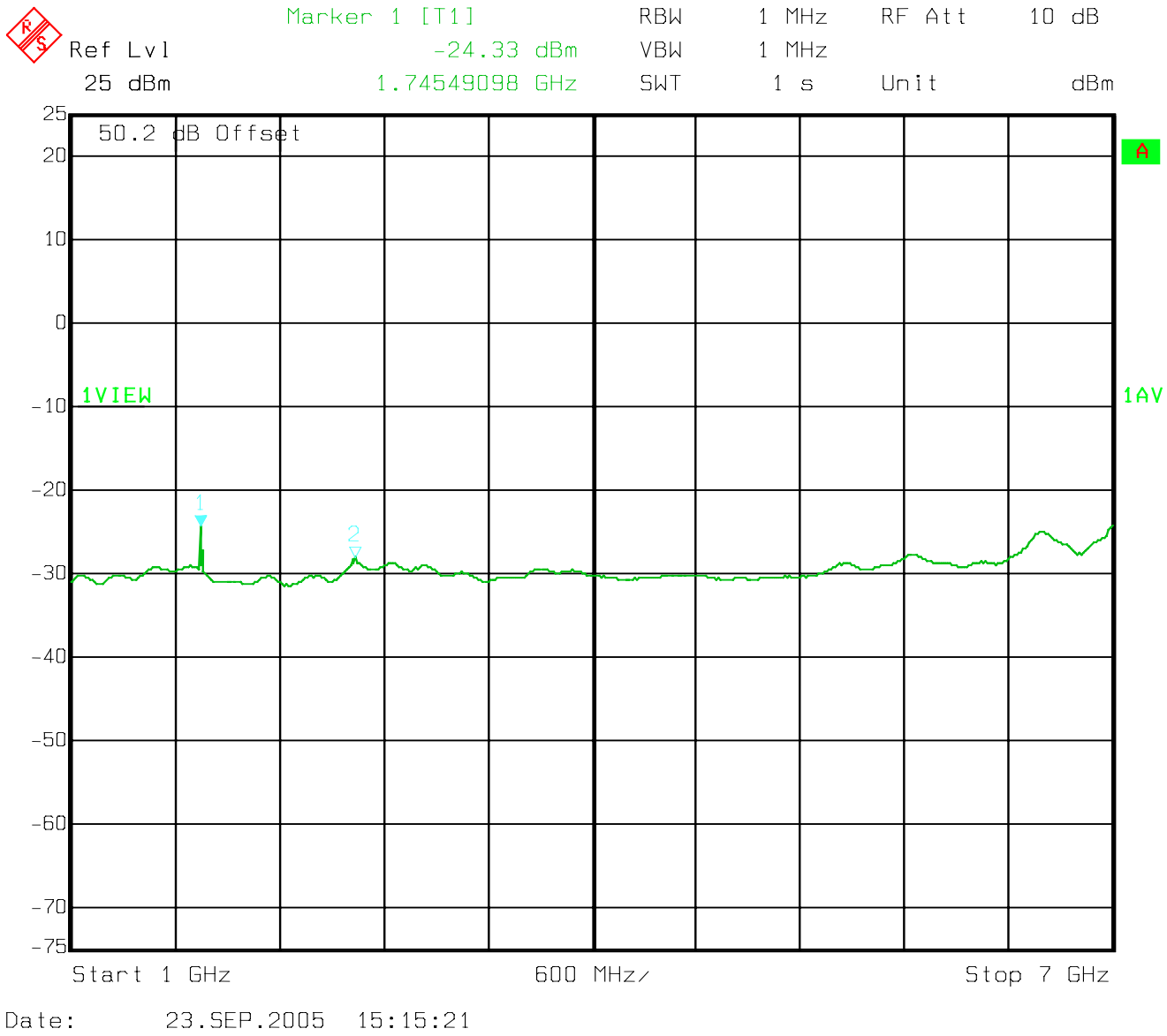

Marker 1 [T1]
Ref Lvl
25 dBm
-31.48 dBm
9.64529058 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 10 dB
Unit dBm
50.2 dB Offset
1VIEW
1AV
A
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 23.SEP.2005 14:46:10

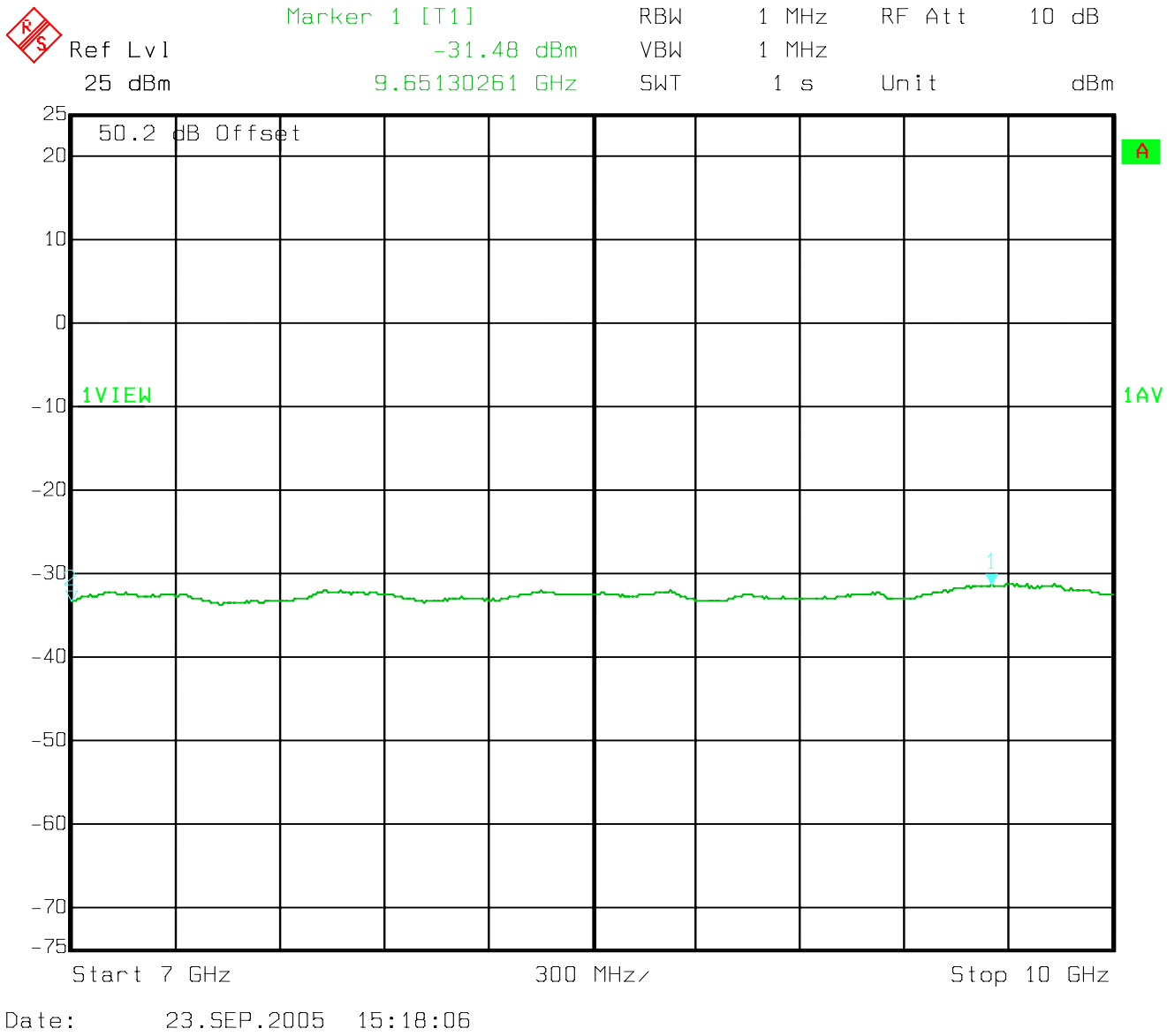
Channel 312


Marker 1 [T1]
-38.63 dBm
9.00000000 kHz
RBW 1 kHz
VBW 1 kHz
SWT 1 s
RF Att 10 dB
Unit dBm
Ref Lvl
15 dBm
50.2 dB Offset
1VIEW
1AV
A
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 9 kHz
14.1 kHz/
Stop 150 kHz
Date: 23.SEP.2005 15:09:05


Marker 1 [T1]
RBW 10 kHz
RF Att 10 dB
Ref Lvl
-46.08 dBm
VBW 10 kHz
15 dBm
150.00000000 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 23.SEP.2005 15:11:03

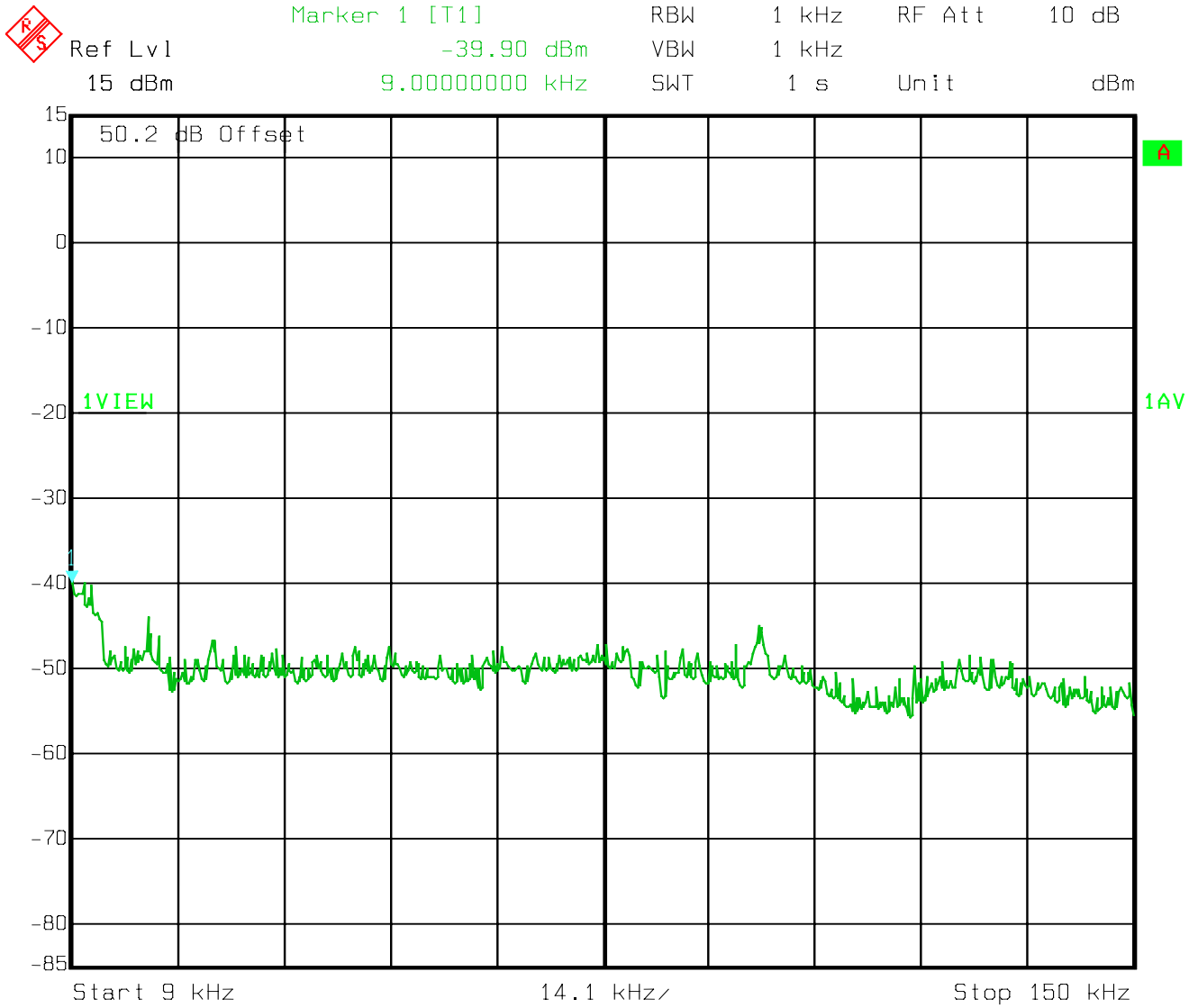

Marker 1 [T1]
RBW 100 kHz
RF Att 10 dB
Ref Lvl
-38.98 dBm
VBW 100 kHz
35 dBm
990.28056112 MHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
35
30
20
10
0
-10
-20
-30
-40
-50
-60
-65
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 23.SEP.2005 15:12:50

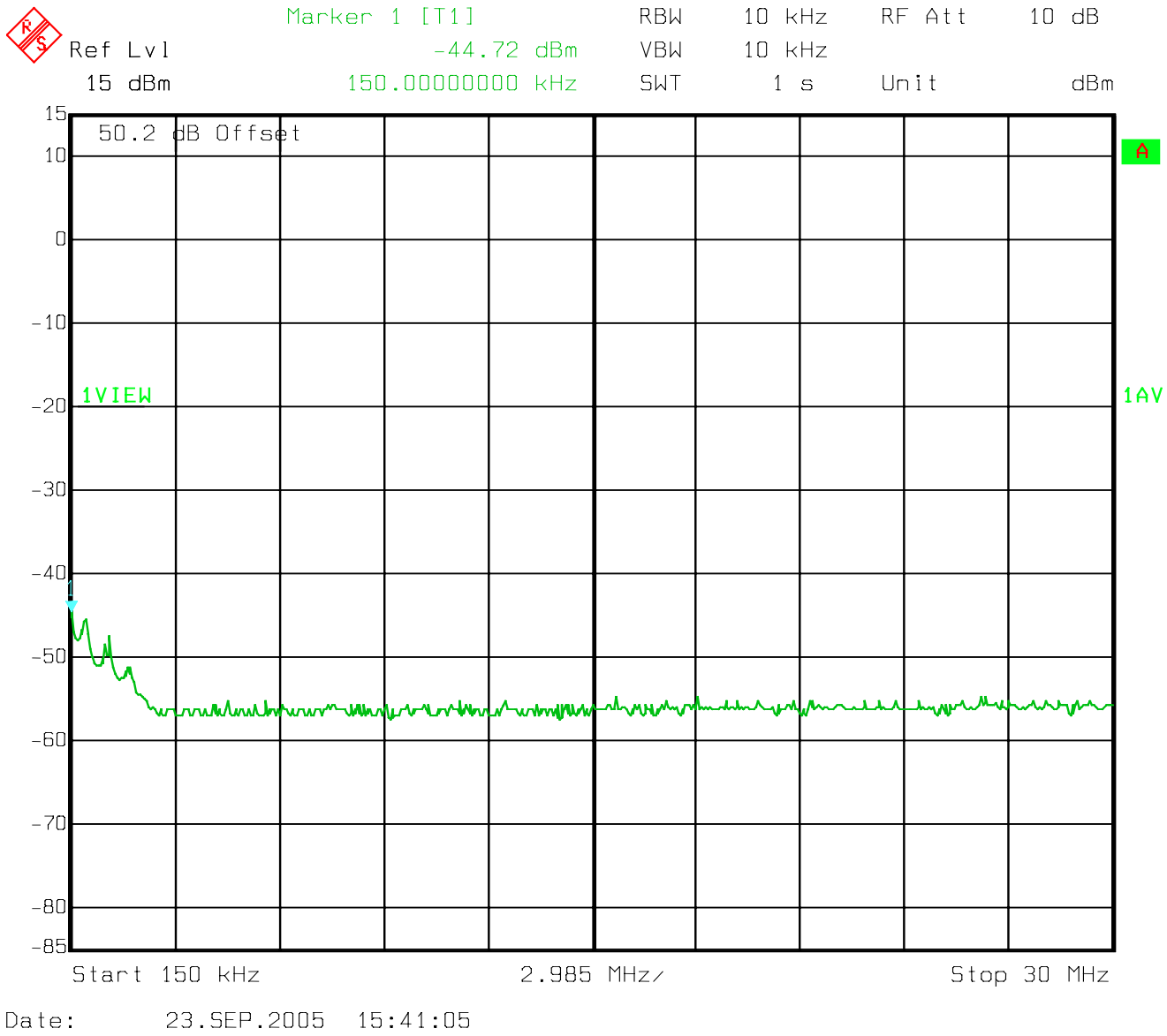

Marker 1 [T1]
Ref Lvl
25 dBm
-24.33 dBm
1.74549098 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 10 dB
Unit dBm
50.2 dB Offset
1VIEW
1AV
A
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 23.SEP.2005 15:15:21

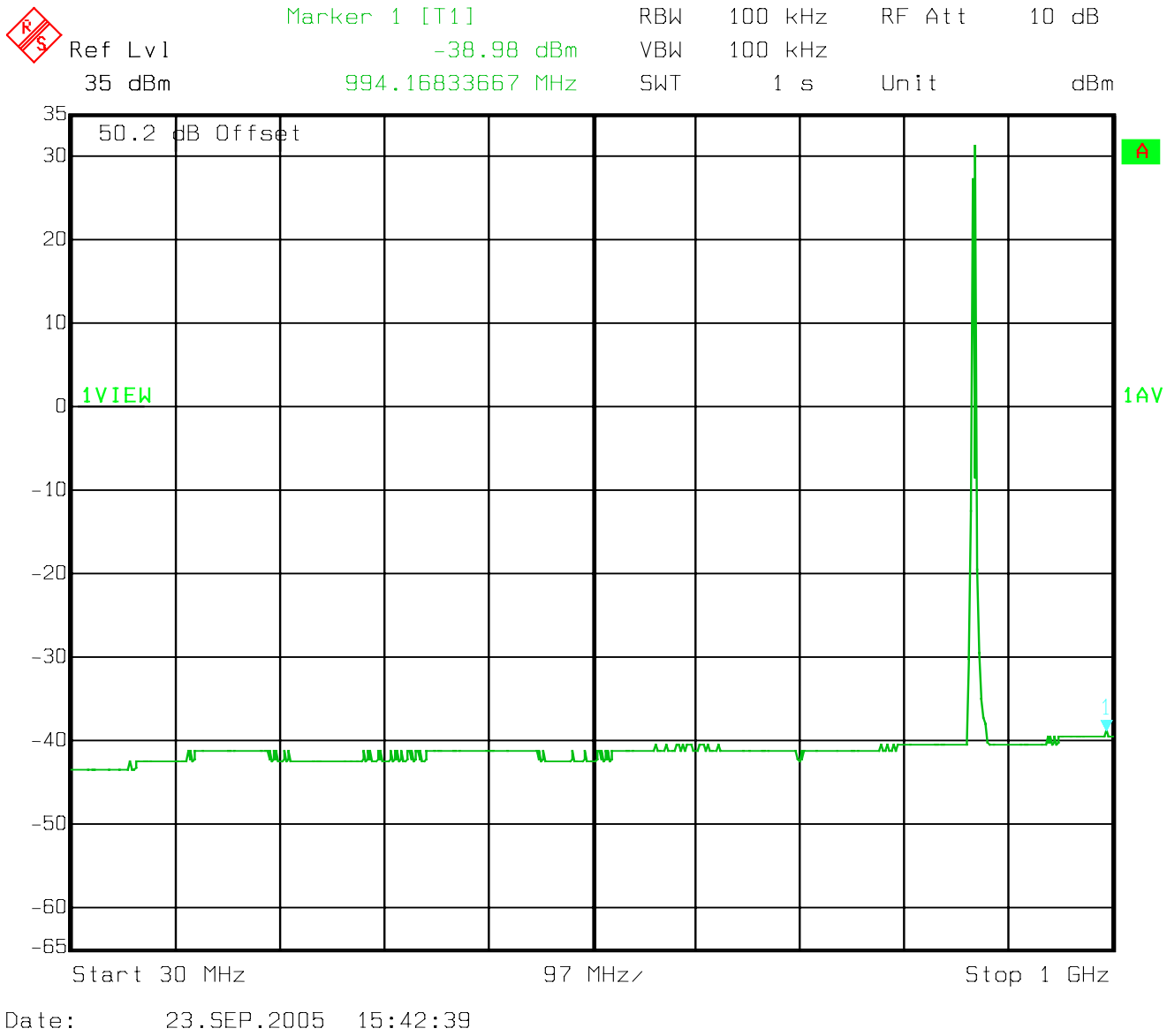

Marker 1 [T1]
Ref Lvl
25 dBm
-31.48 dBm
9.65130261 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 10 dB
Unit dBm
50.2 dB Offset
1VIEW
1AV
A
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 23.SEP.2005 15:18:06

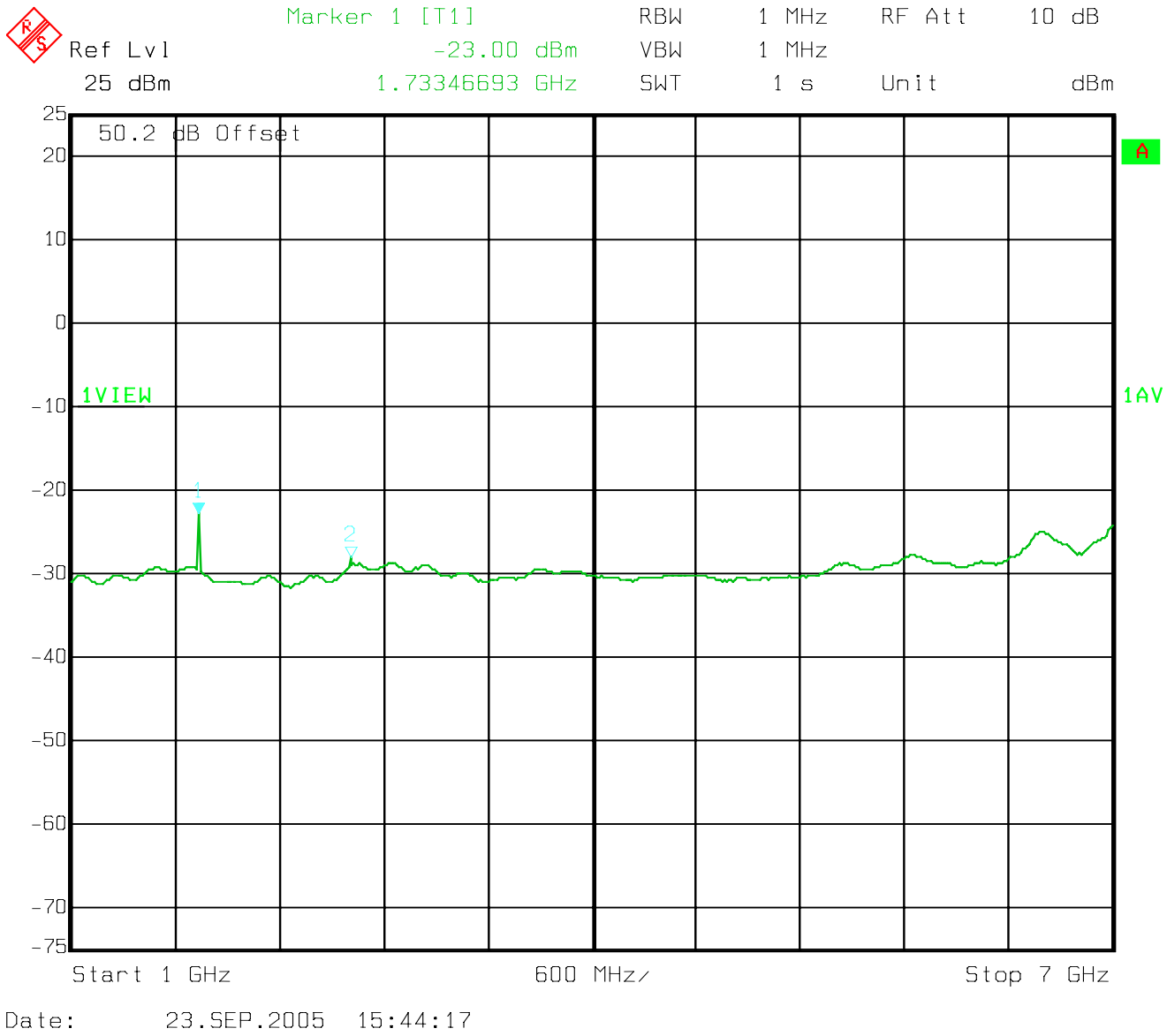
Transceiver and Receiver Module *DPA*

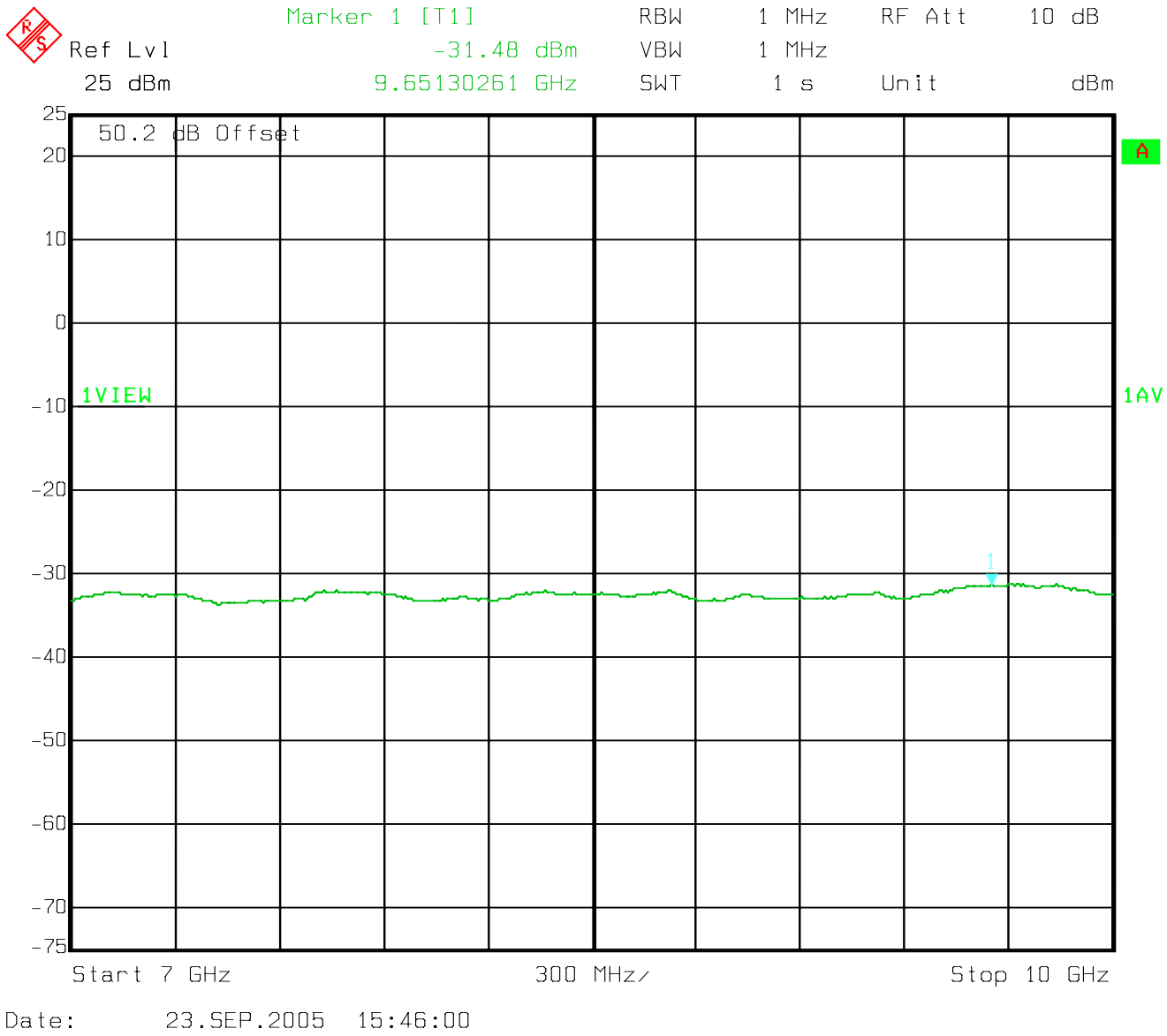
Channel 1013



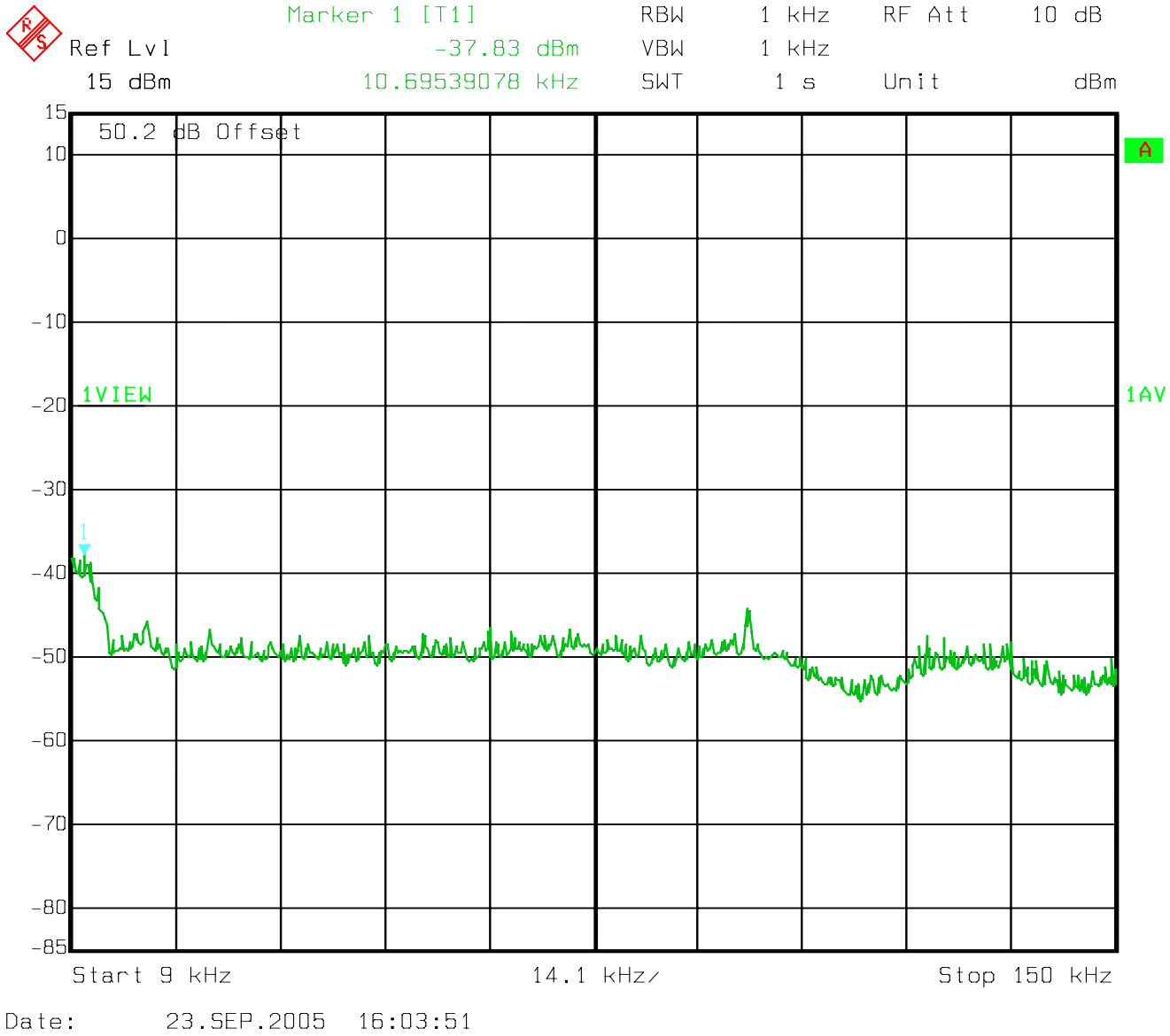

Marker 1 [T1]
RBW 10 kHz
RF Att 10 dB
Ref Lvl
-44.72 dBm
VBW 10 kHz
15 dBm
150.00000000 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 23.SEP.2005 15:41:05

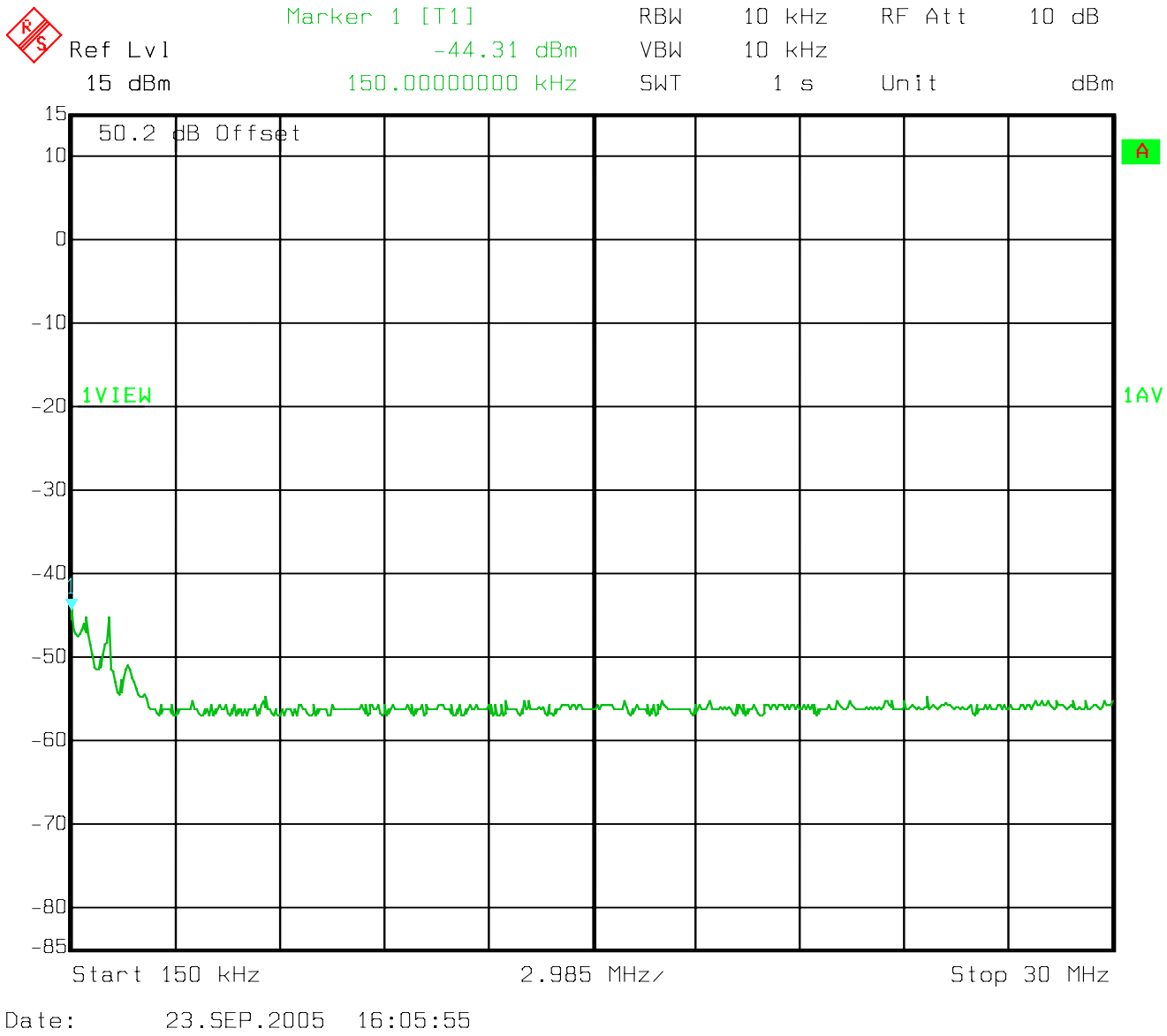

Marker 1 [T1]
RBW 100 kHz
RF Att 10 dB
Ref Lvl
-38.98 dBm
VBW 100 kHz
35 dBm
994.16833667 MHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
35
30
20
10
0
-10
-20
-30
-40
-50
-60
-65
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 23.SEP.2005 15:42:39

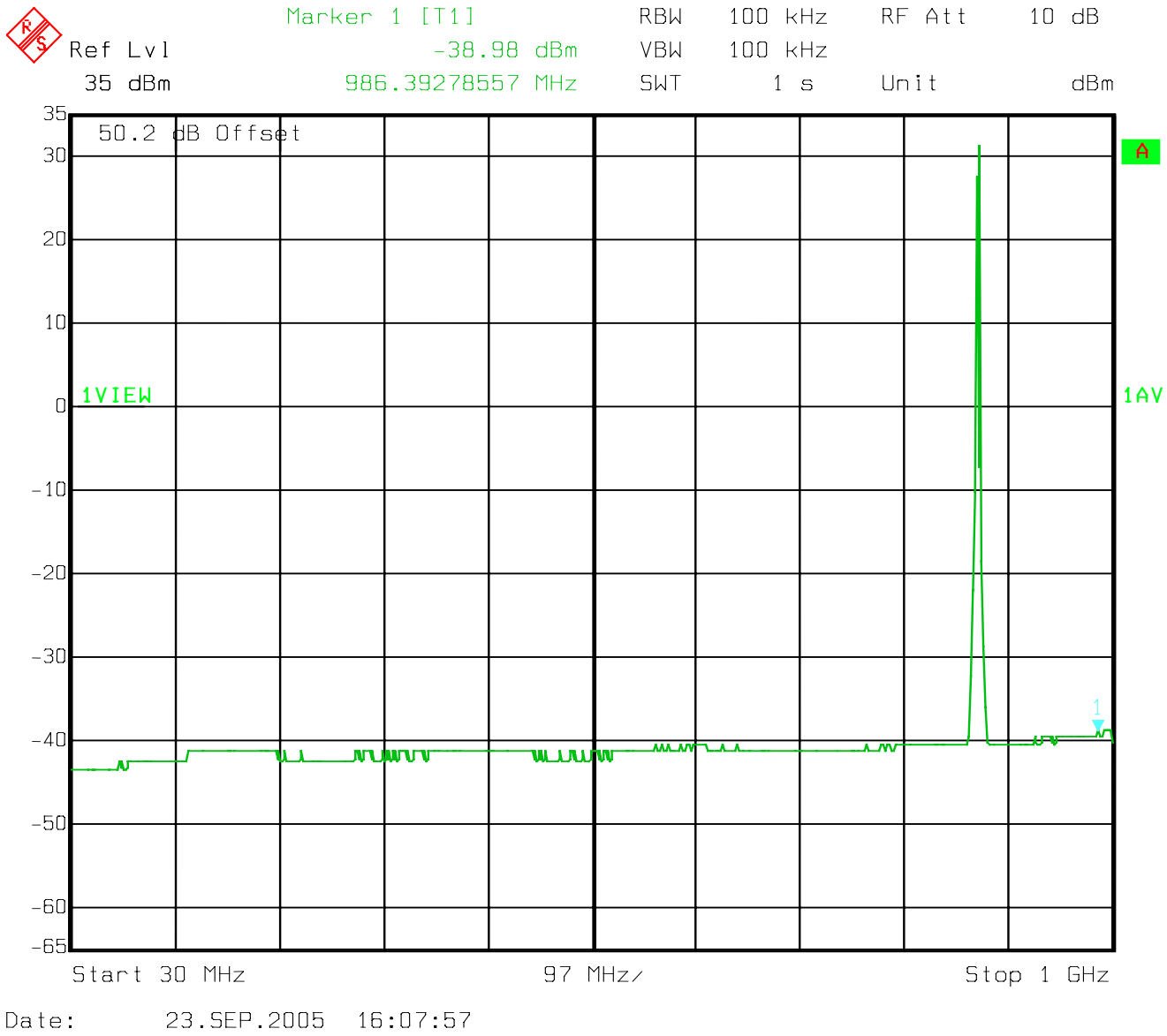

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-23.00 dBm
VBW 1 MHz
25 dBm
1.73346693 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 23.SEP.2005 15:44:17

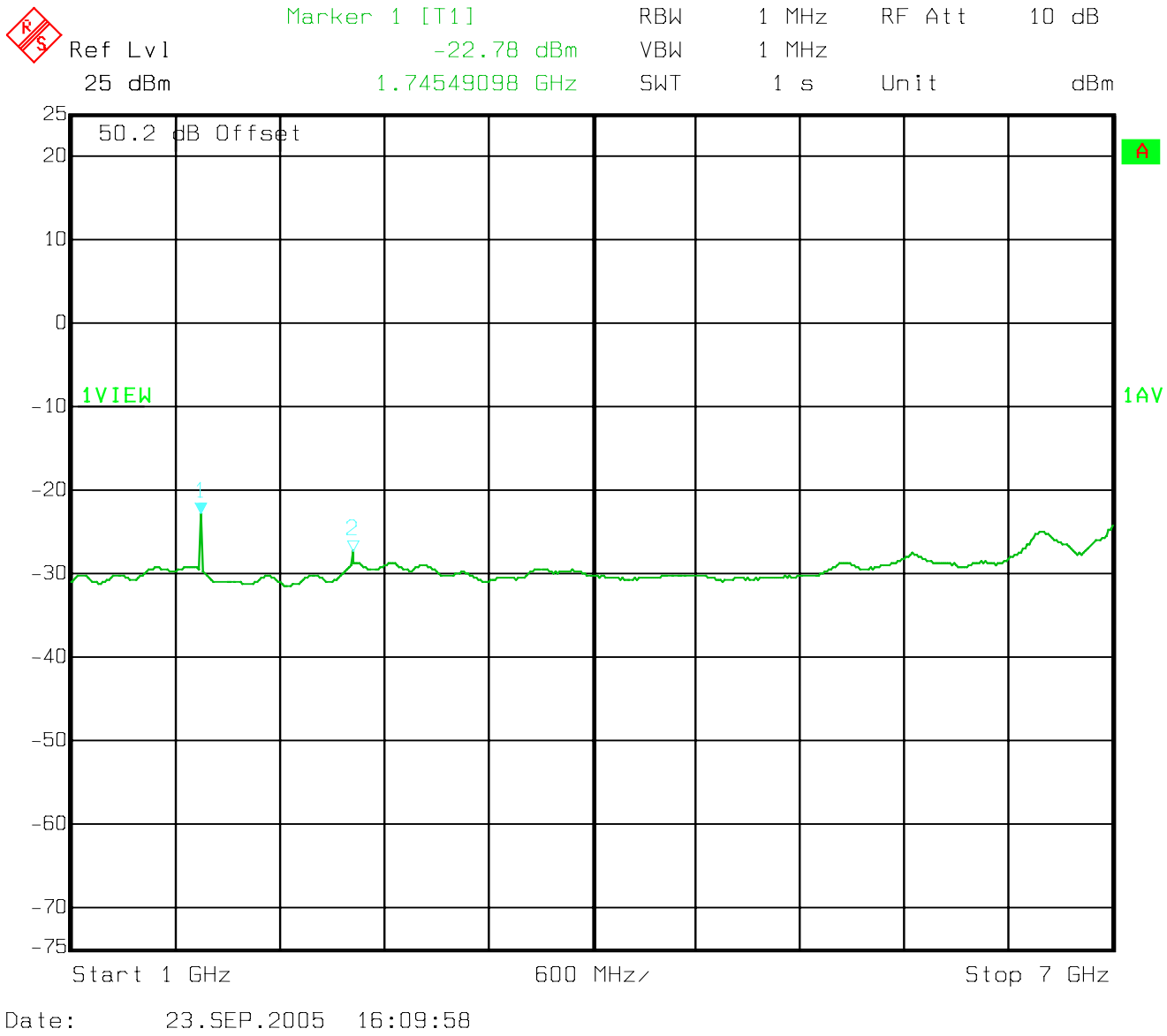

Marker 1 [T1]
Ref Lvl
25 dBm
-31.48 dBm
9.65130261 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 10 dB
Unit dBm
50.2 dB Offset
1VIEW
1AV
A
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 23.SEP.2005 15:46:00

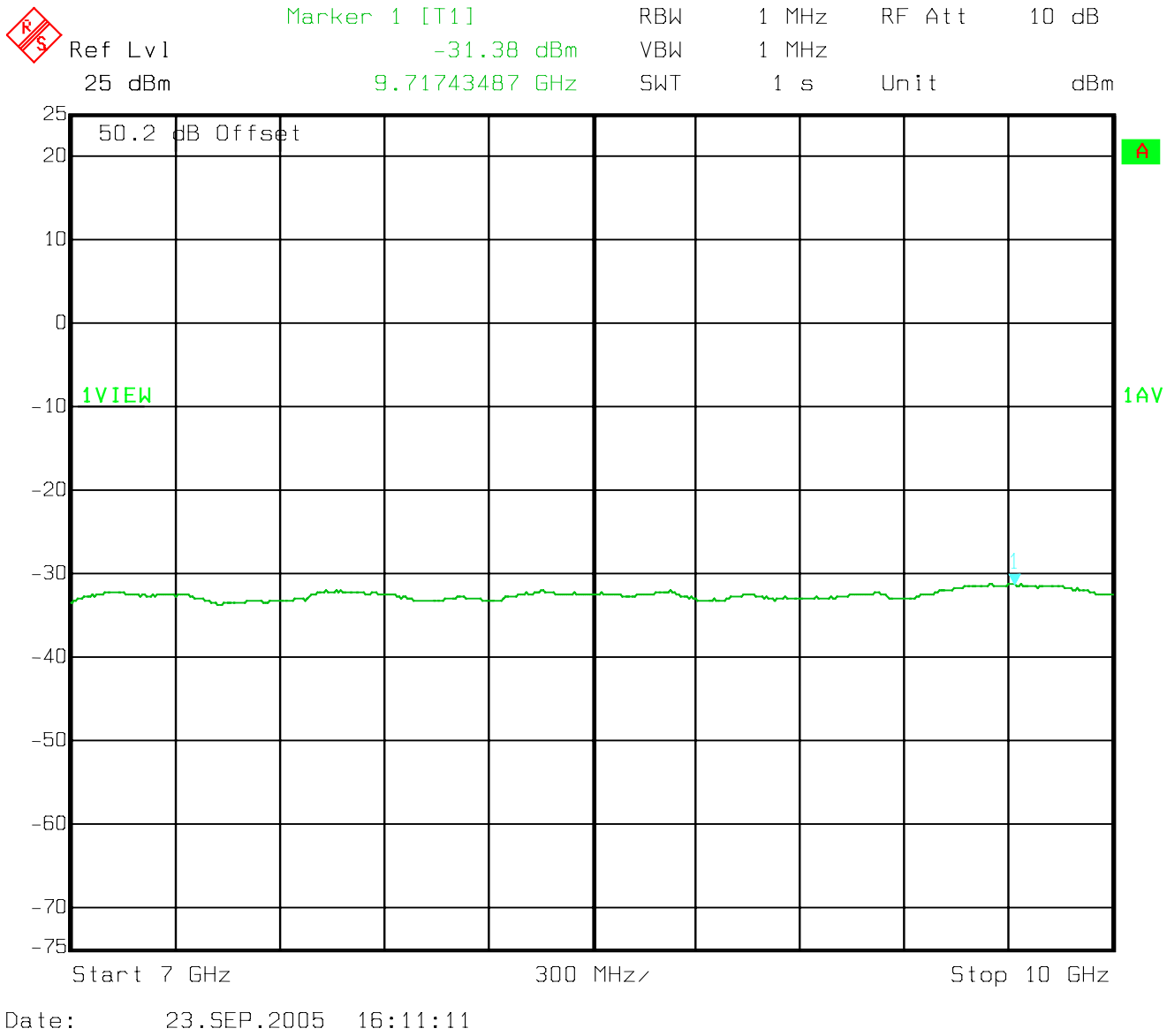
Channel 119


Marker 1 [T1]
Ref Lvl
15 dBm
-37.83 dBm
10.69539078 kHz
RBW 1 kHz
VBW 1 kHz
SWT 1 s
RF Att 10 dB
Unit dBm
50.2 dB Offset
1VIEW
1AV
A
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 9 kHz
14.1 kHz/
Stop 150 kHz
Date: 23.SEP.2005 16:03:51

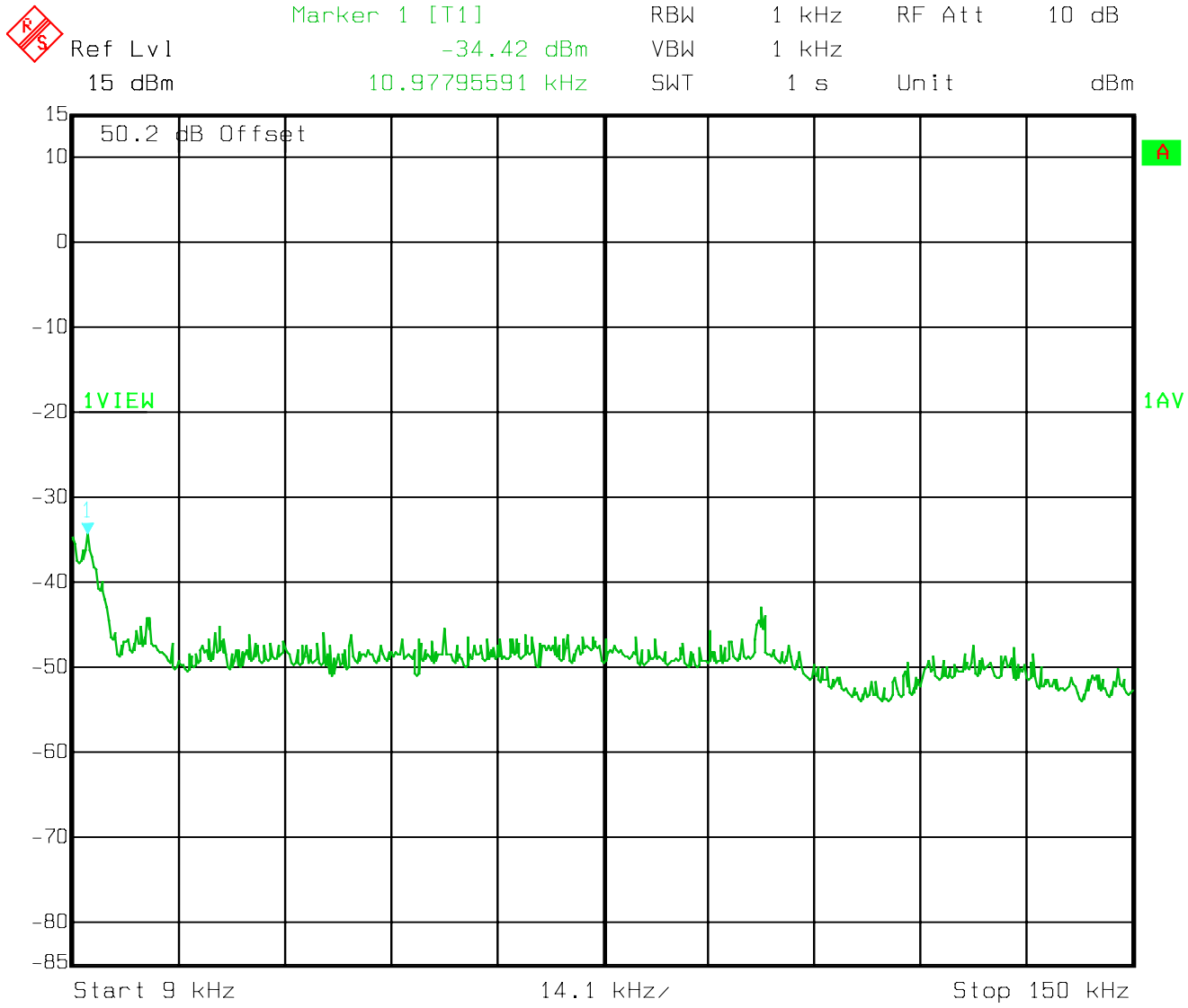

Marker 1 [T1]
RBW 10 kHz
RF Att 10 dB
Ref Lvl
-44.31 dBm
VBW 10 kHz
15 dBm
150.00000000 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 23.SEP.2005 16:05:55

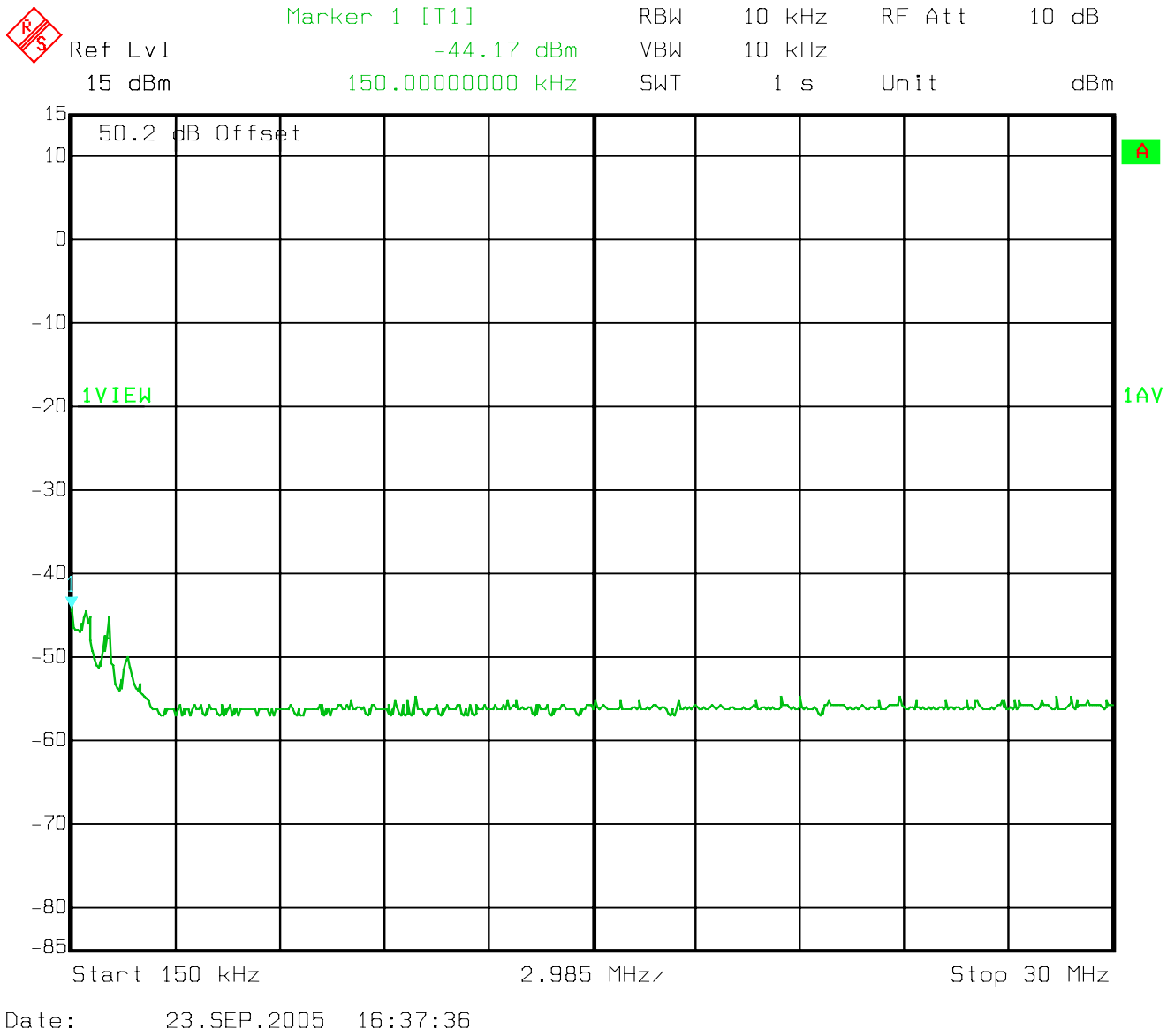

Marker 1 [T1]
Ref Lvl
35 dBm
-38.98 dBm
986.39278557 MHz
RBW 100 kHz
VBW 100 kHz
SWT 1 s
RF Att 10 dB
Unit dBm
50.2 dB Offset
1VIEW
1AV
A
35
30
20
10
0
-10
-20
-30
-40
-50
-60
-65
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 23.SEP.2005 16:07:57

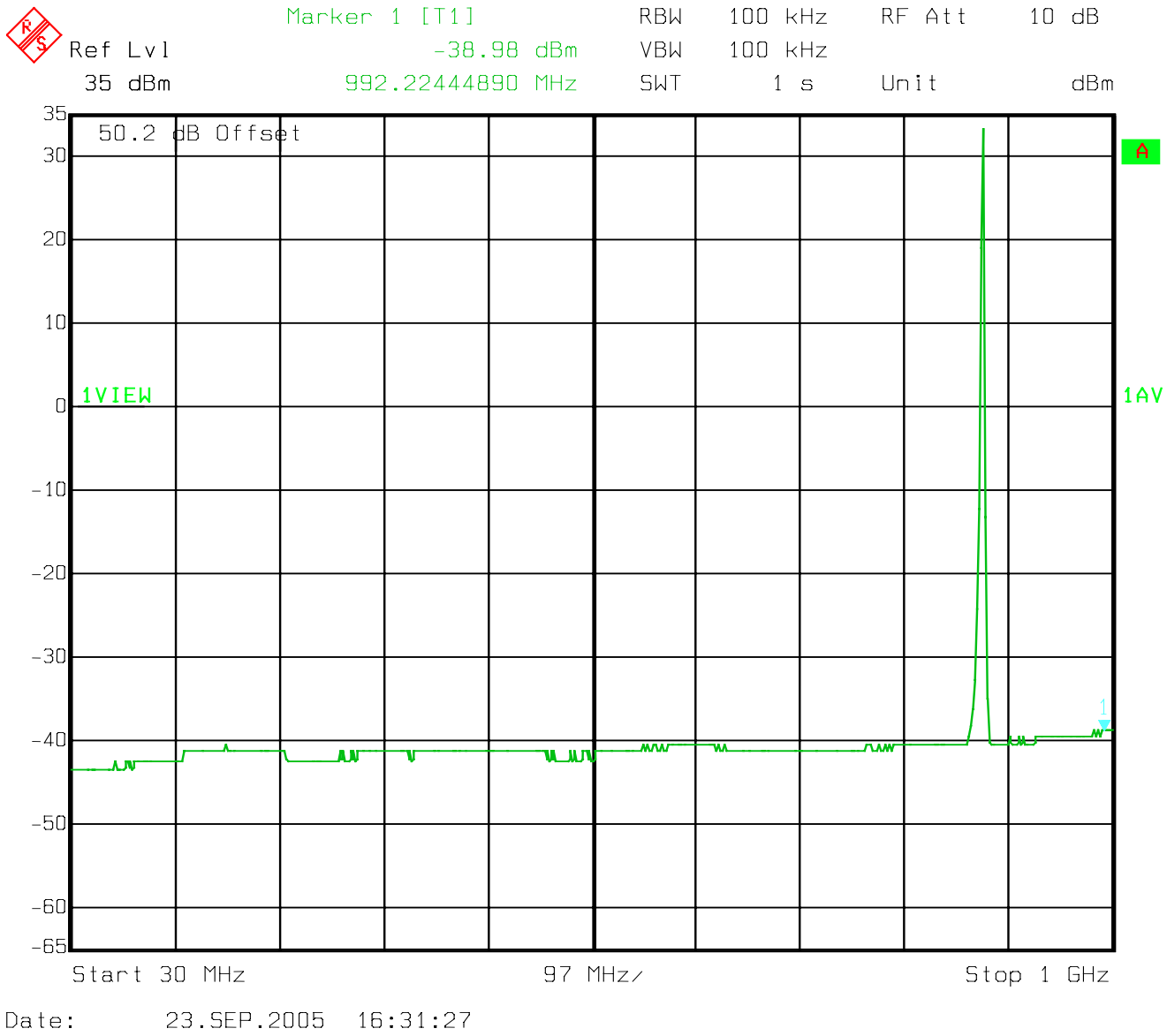

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-22.78 dBm
VBW 1 MHz
25 dBm
1.74549098 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 23.SEP.2005 16:09:58

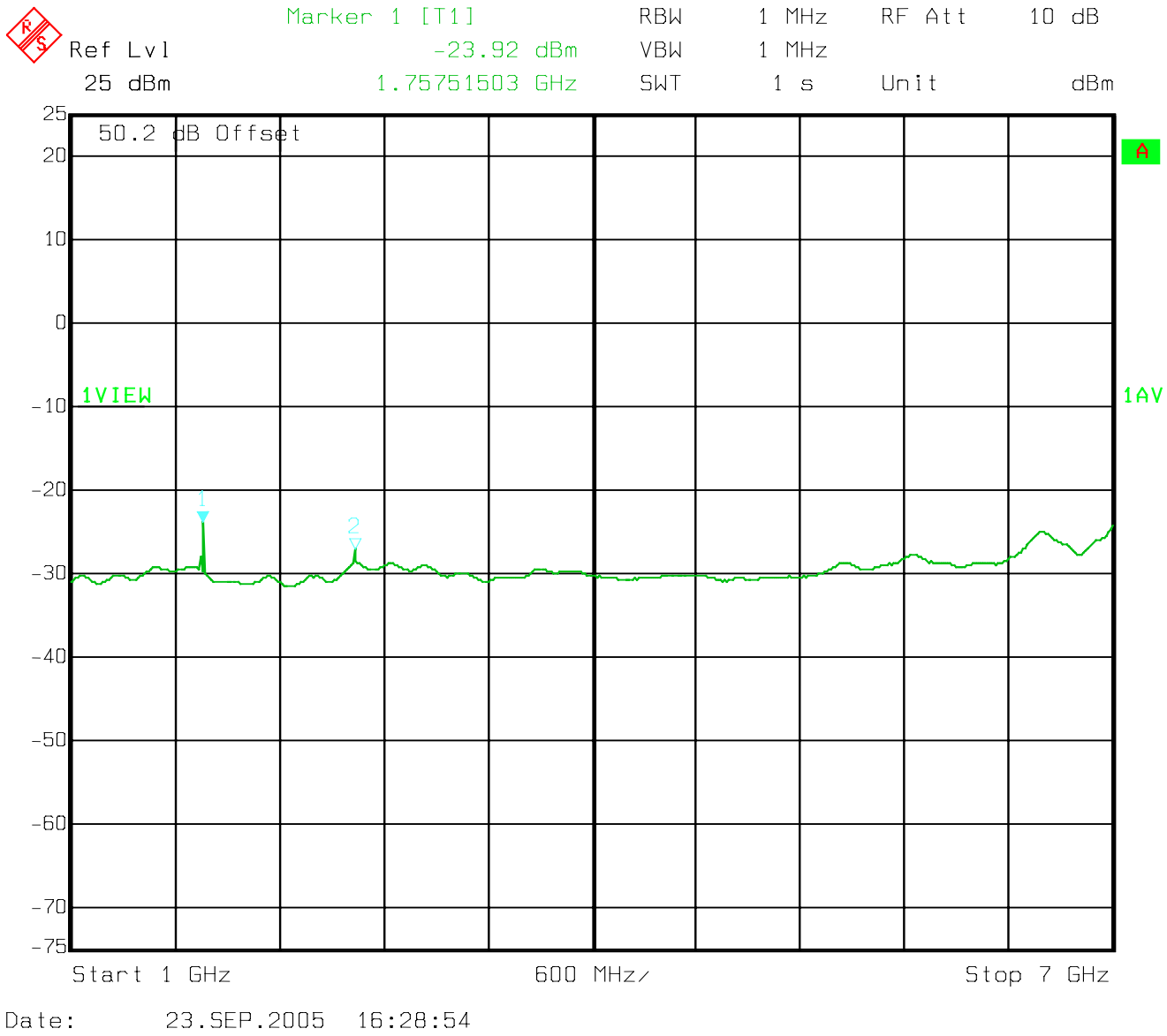

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-31.38 dBm
VBW 1 MHz
25 dBm
9.71743487 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 23.SEP.2005 16:11:11

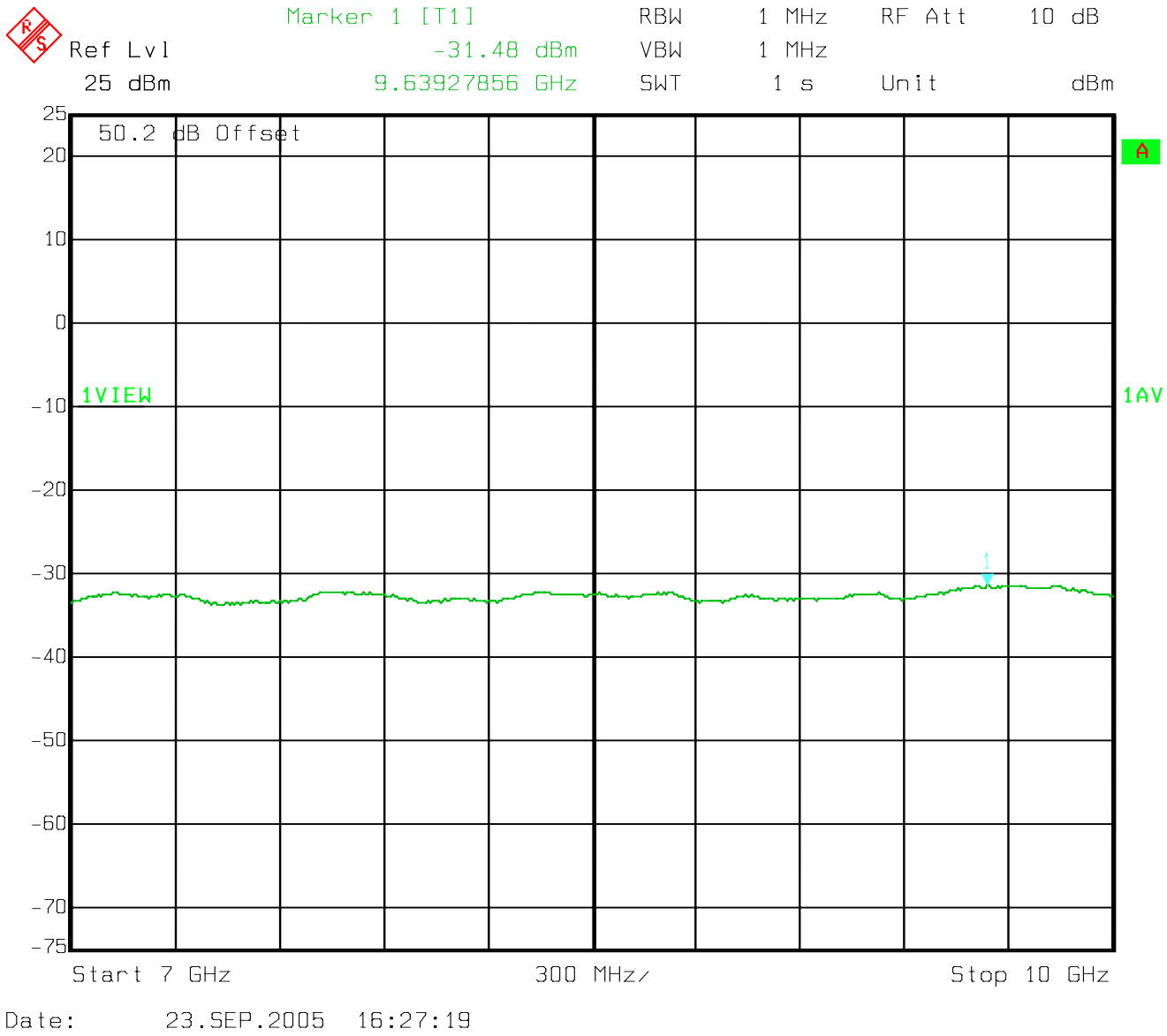
Channel 312


Marker 1 [T1]
RBW 1 kHz
RF Att 10 dB
Ref Lvl
-34.42 dBm
VBW 1 kHz
15 dBm
10.97795591 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
1VIEW
1AV
A
Start 9 kHz
14.1 kHz/
Stop 150 kHz
Date: 23.SEP.2005 16:39:24


Marker 1 [T1]
RBW 10 kHz
RF Att 10 dB
Ref Lvl
-44.17 dBm
VBW 10 kHz
15 dBm
150.00000000 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 23.SEP.2005 16:37:36

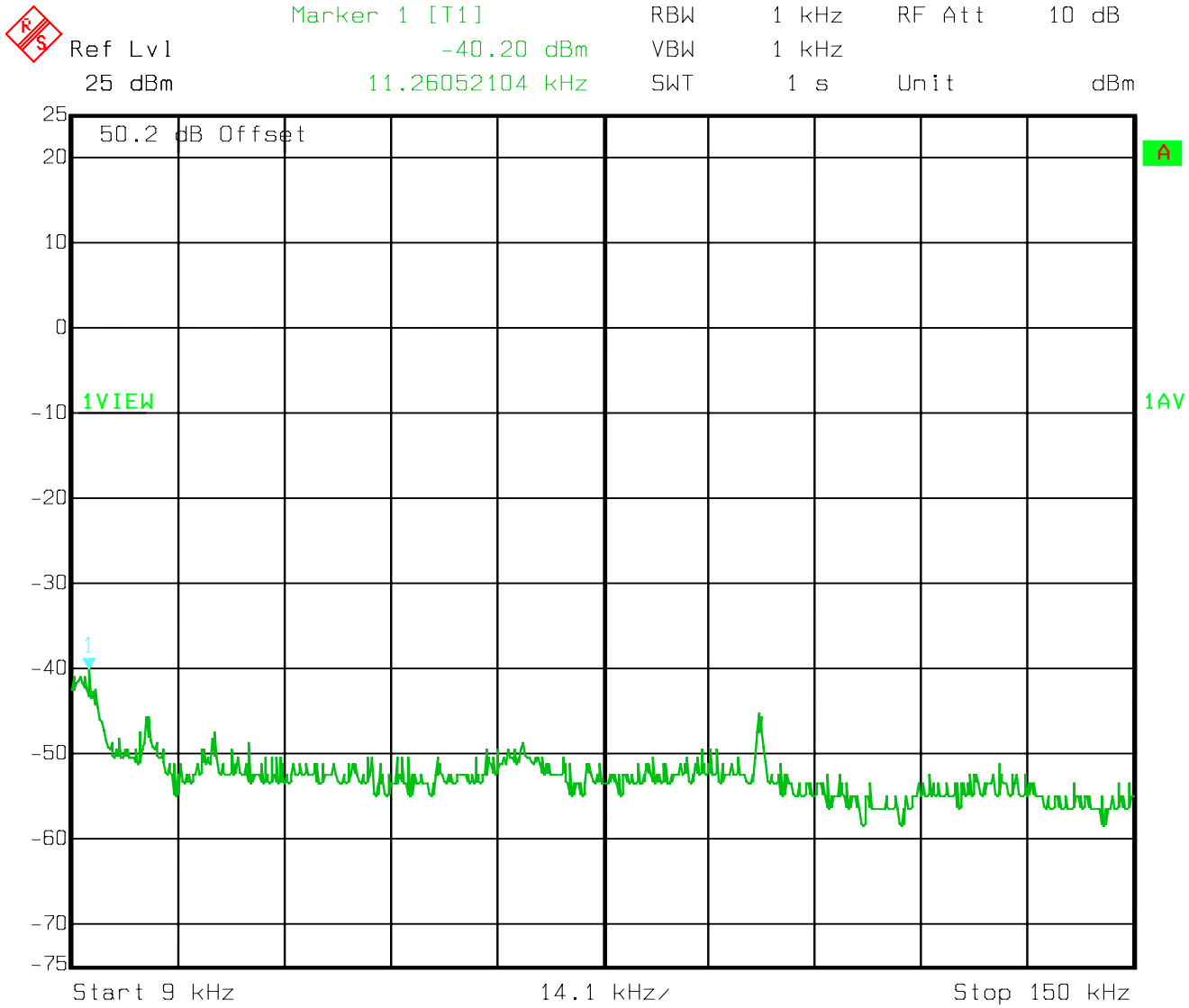

Marker 1 [T1]
RBW 100 kHz
RF Att 10 dB
Ref Lvl
-38.98 dBm
VBW 100 kHz
35 dBm
992.22444890 MHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
35
30
20
10
0
-10
-20
-30
-40
-50
-60
-65
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 23.SEP.2005 16:31:27

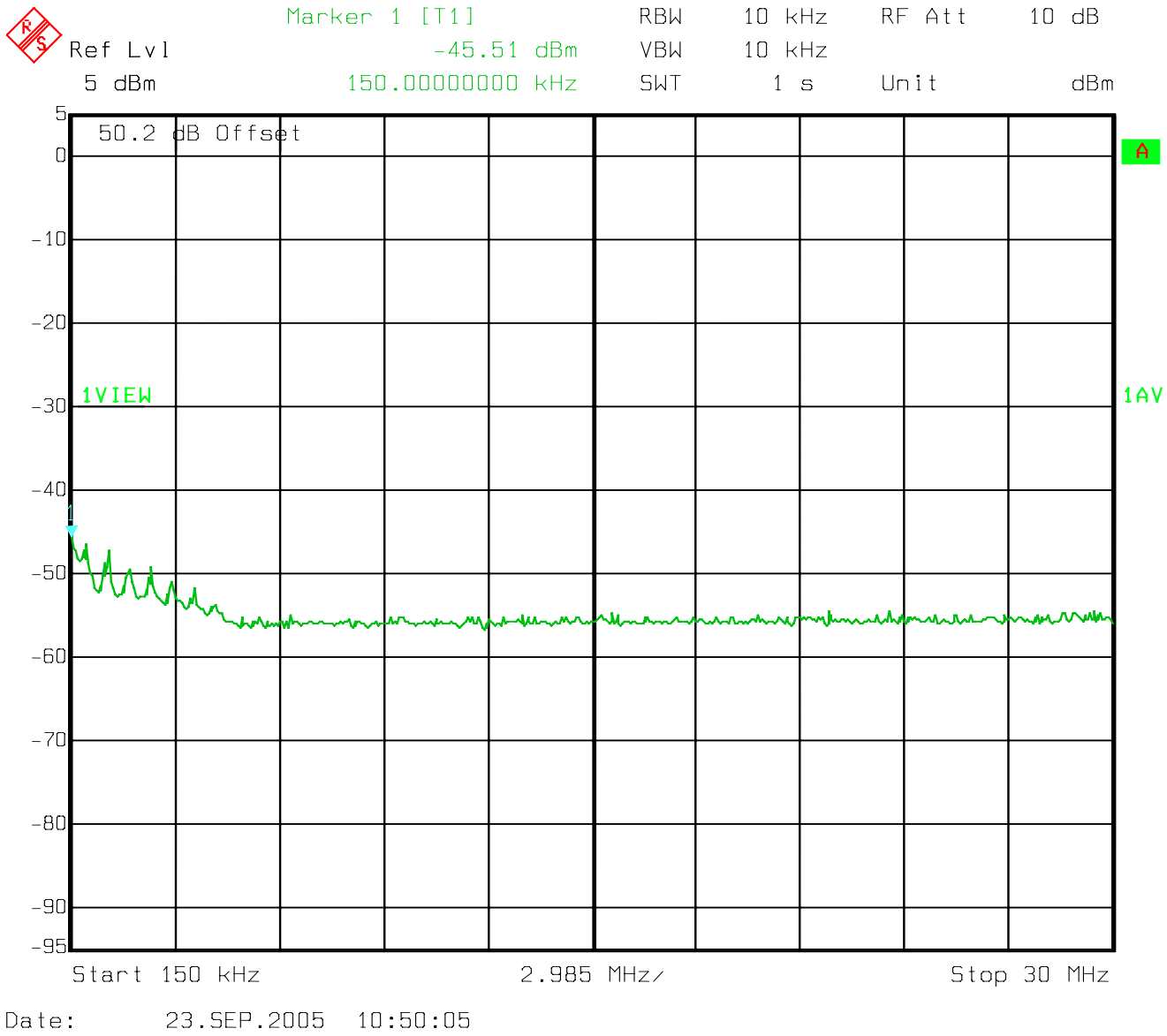

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-23.92 dBm
VBW 1 MHz
25 dBm
1.75751503 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 23.SEP.2005 16:28:54

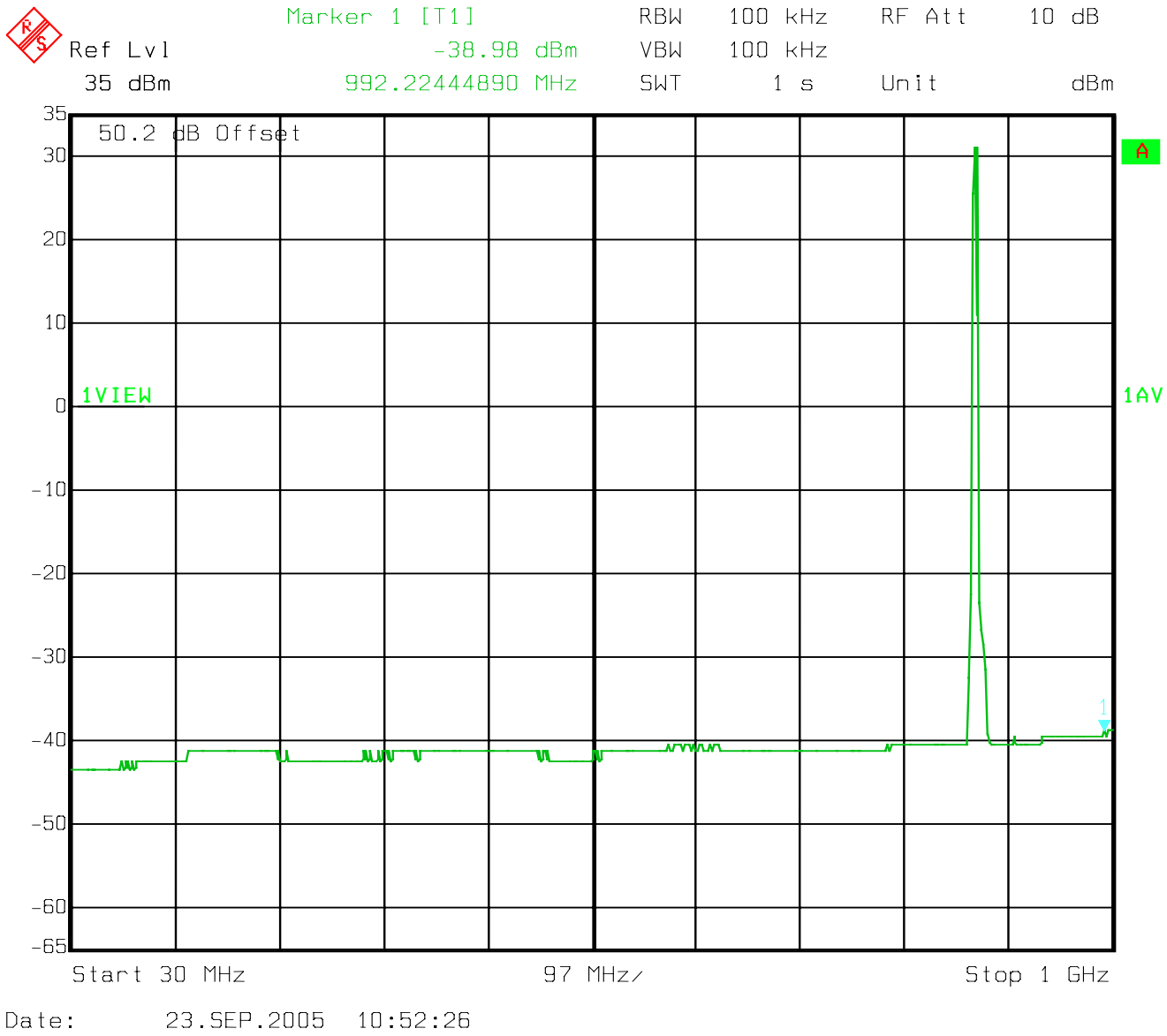

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-31.48 dBm
VBW 1 MHz
25 dBm
9.63927856 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 23.SEP.2005 16:27:19

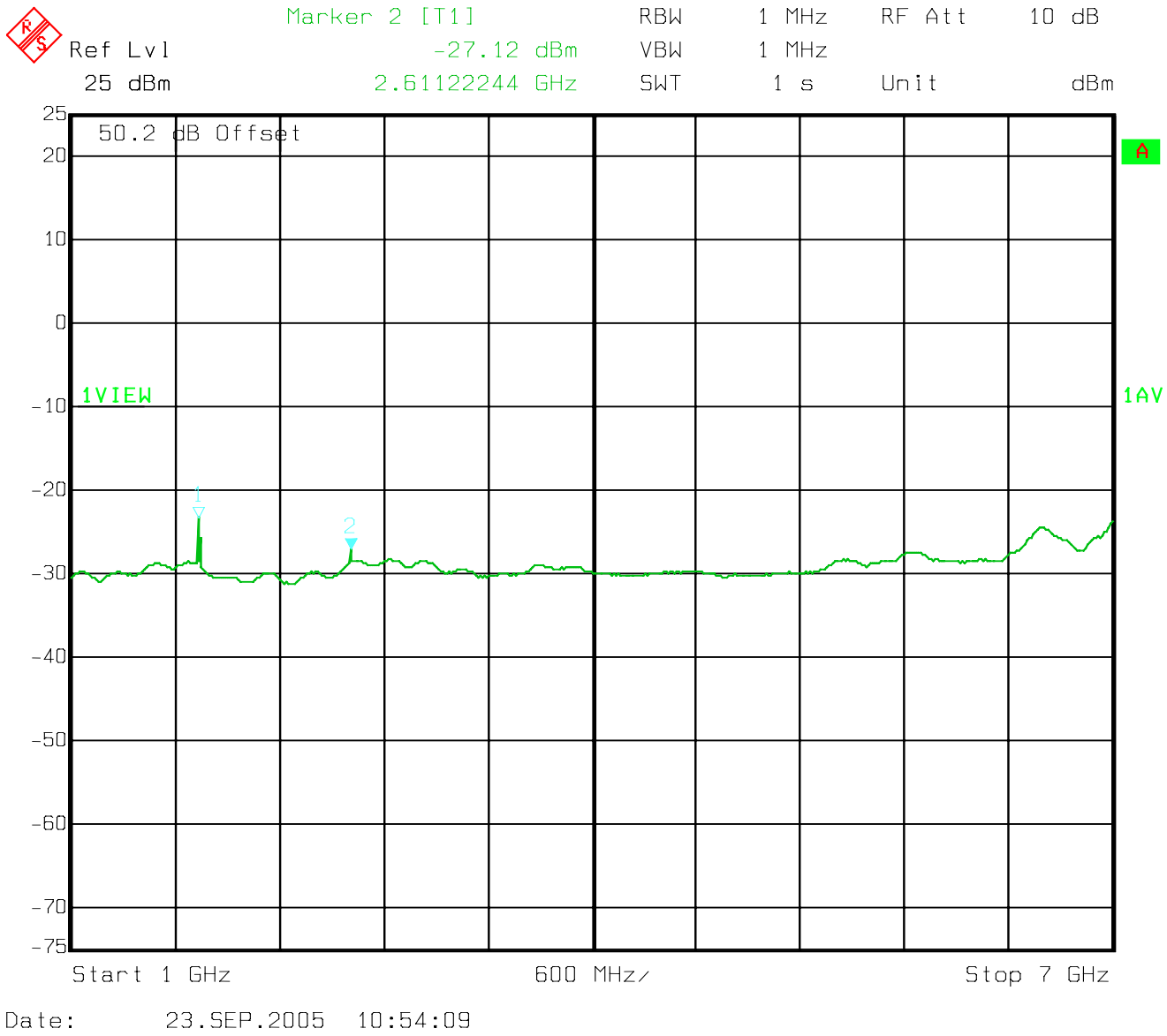
Transceiver and Receiver Module *LPA+RFE*

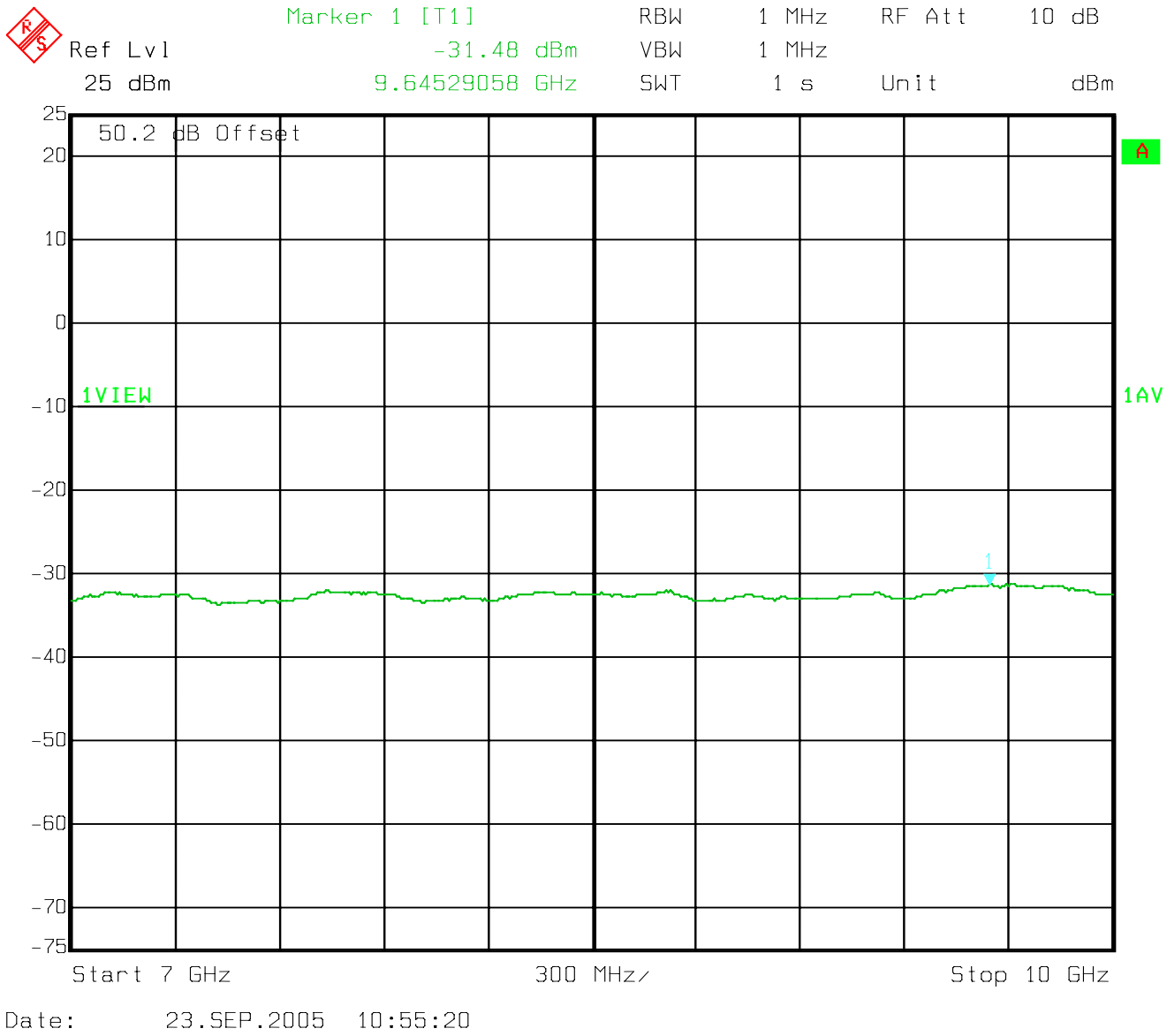
Channel 1013



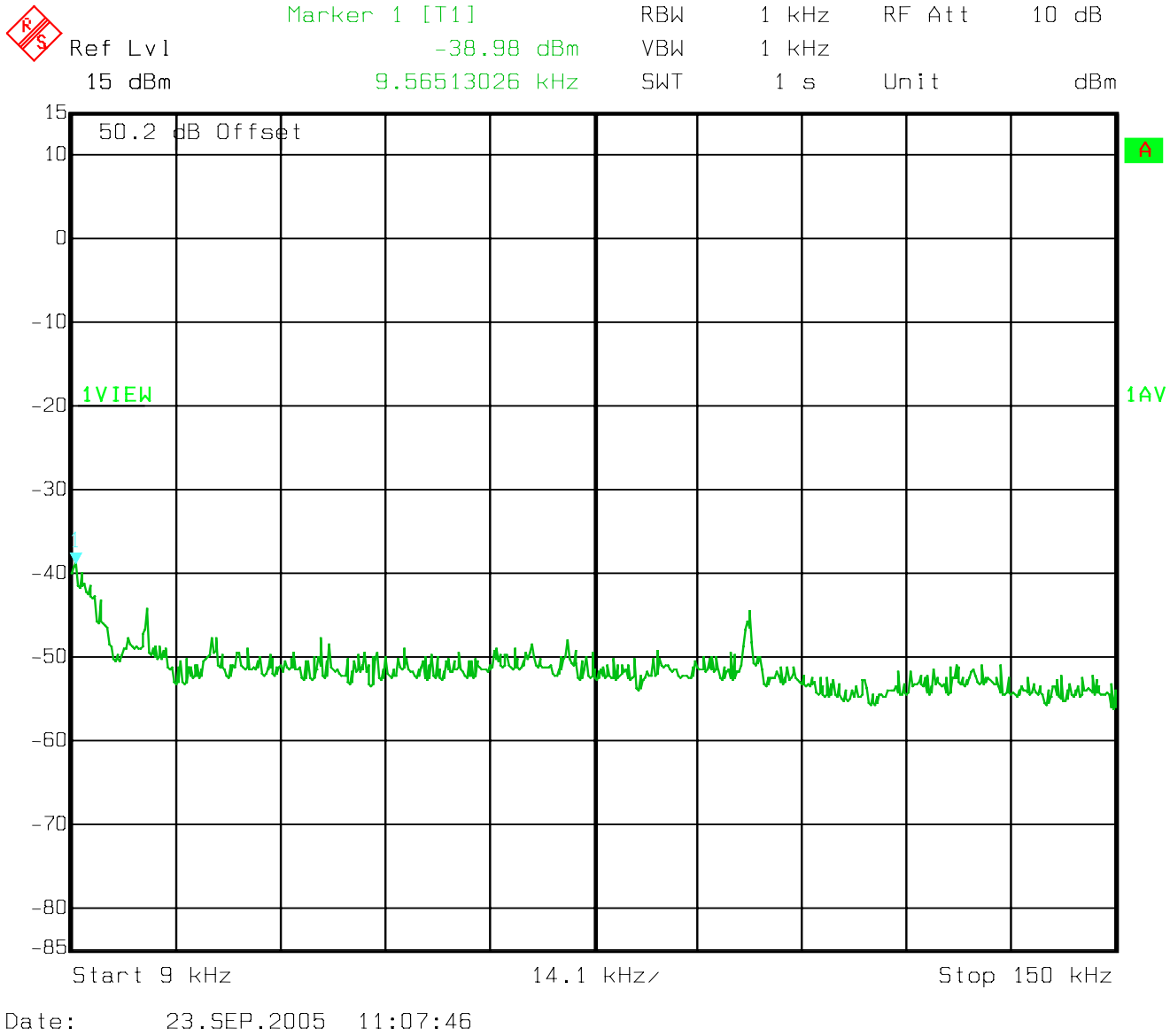

Marker 1 [T1]
RBW 10 kHz
RF Att 10 dB
Ref Lvl
-45.51 dBm
VBW 10 kHz
5 dBm
150.00000000 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
5
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-95
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 23.SEP.2005 10:50:05

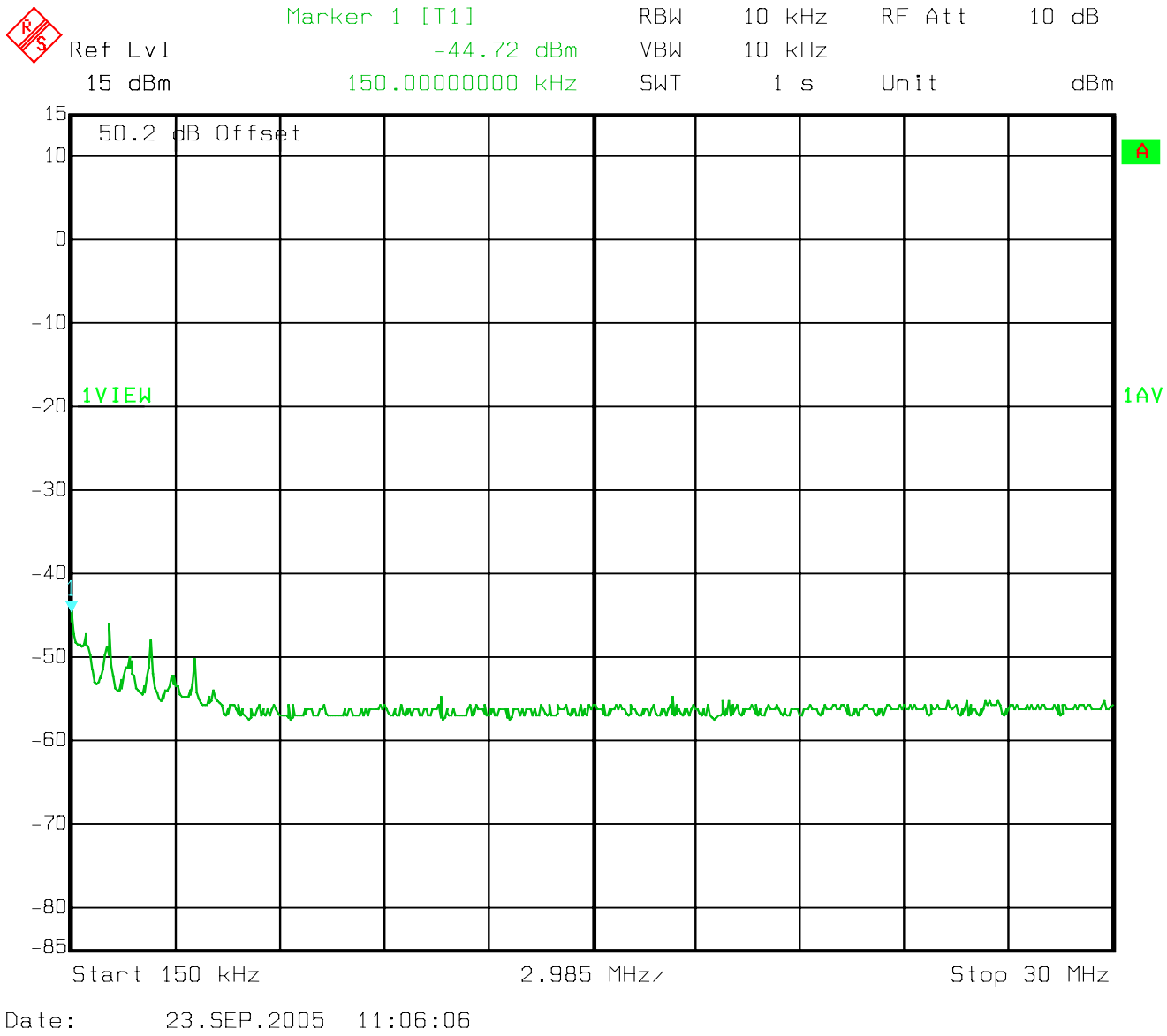

Marker 1 [T1]
RBW 100 kHz
RF Att 10 dB
Ref Lvl
-38.98 dBm
VBW 100 kHz
35 dBm
992.22444890 MHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
35
30
20
10
0
-10
-20
-30
-40
-50
-60
-65
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 23.SEP.2005 10:52:26

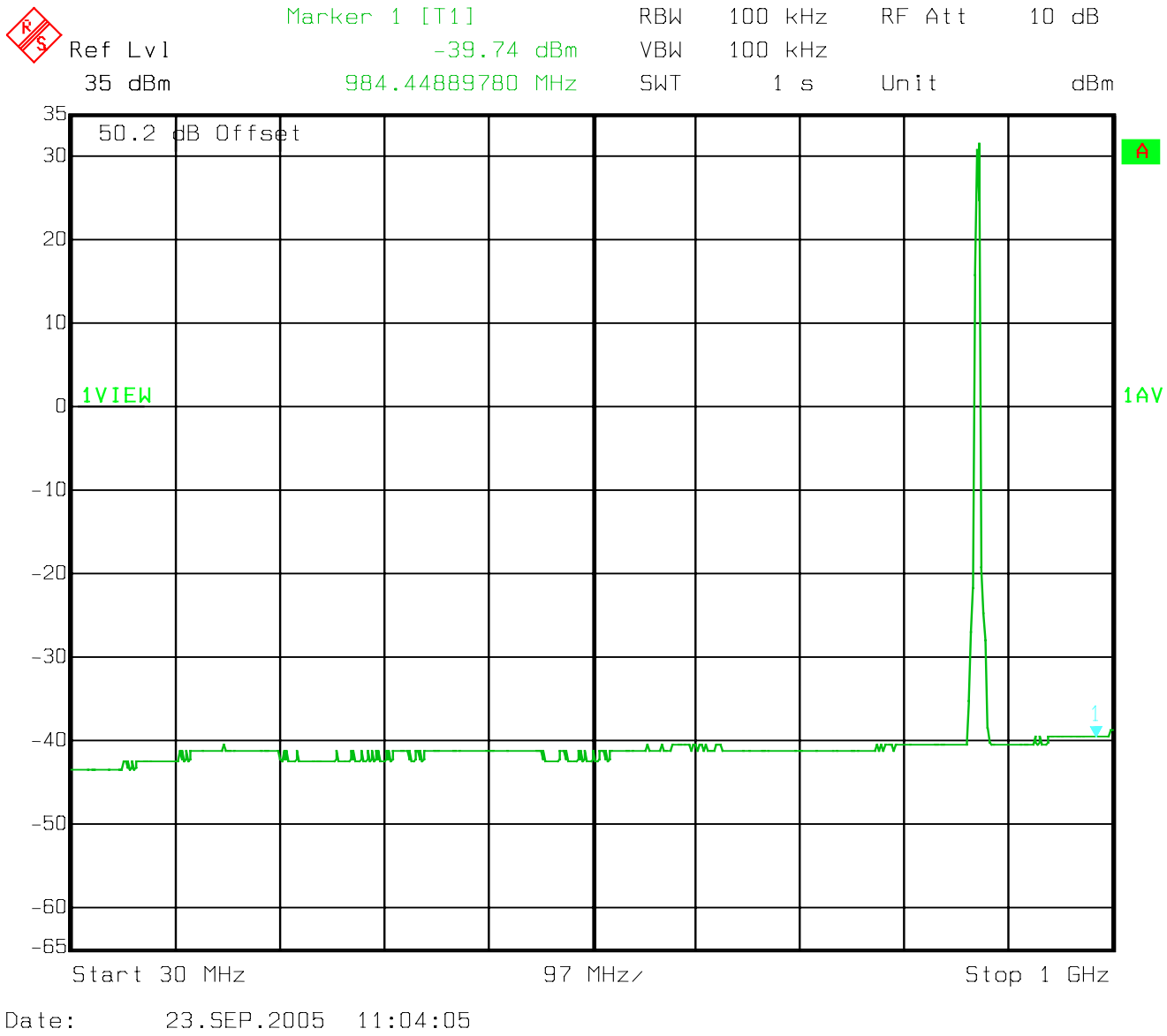

Marker 2 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-27.12 dBm
VBW 1 MHz
25 dBm
2.61122244 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 23.SEP.2005 10:54:09

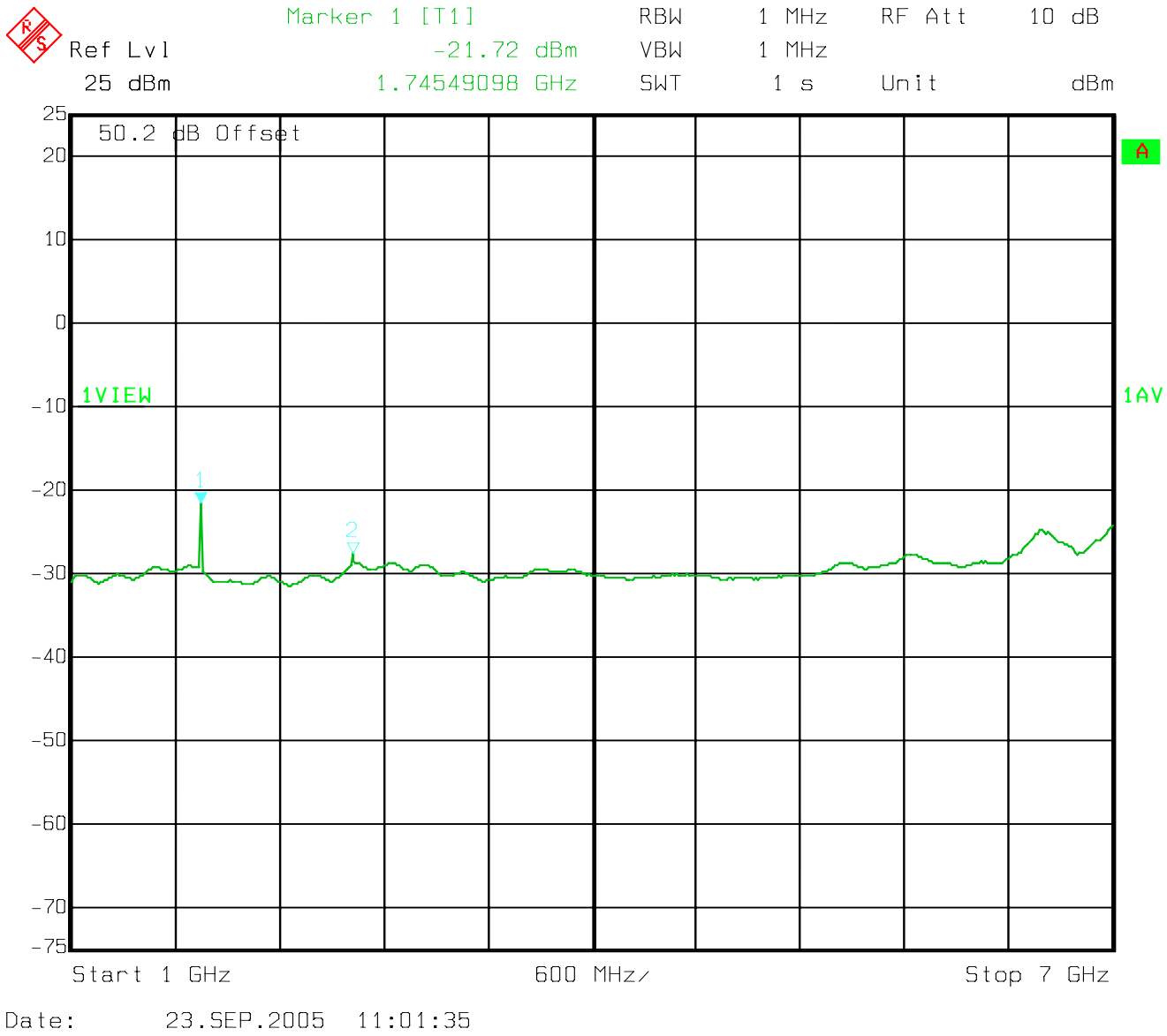

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-31.48 dBm
VBW 1 MHz
25 dBm
9.64529058 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 23.SEP.2005 10:55:20

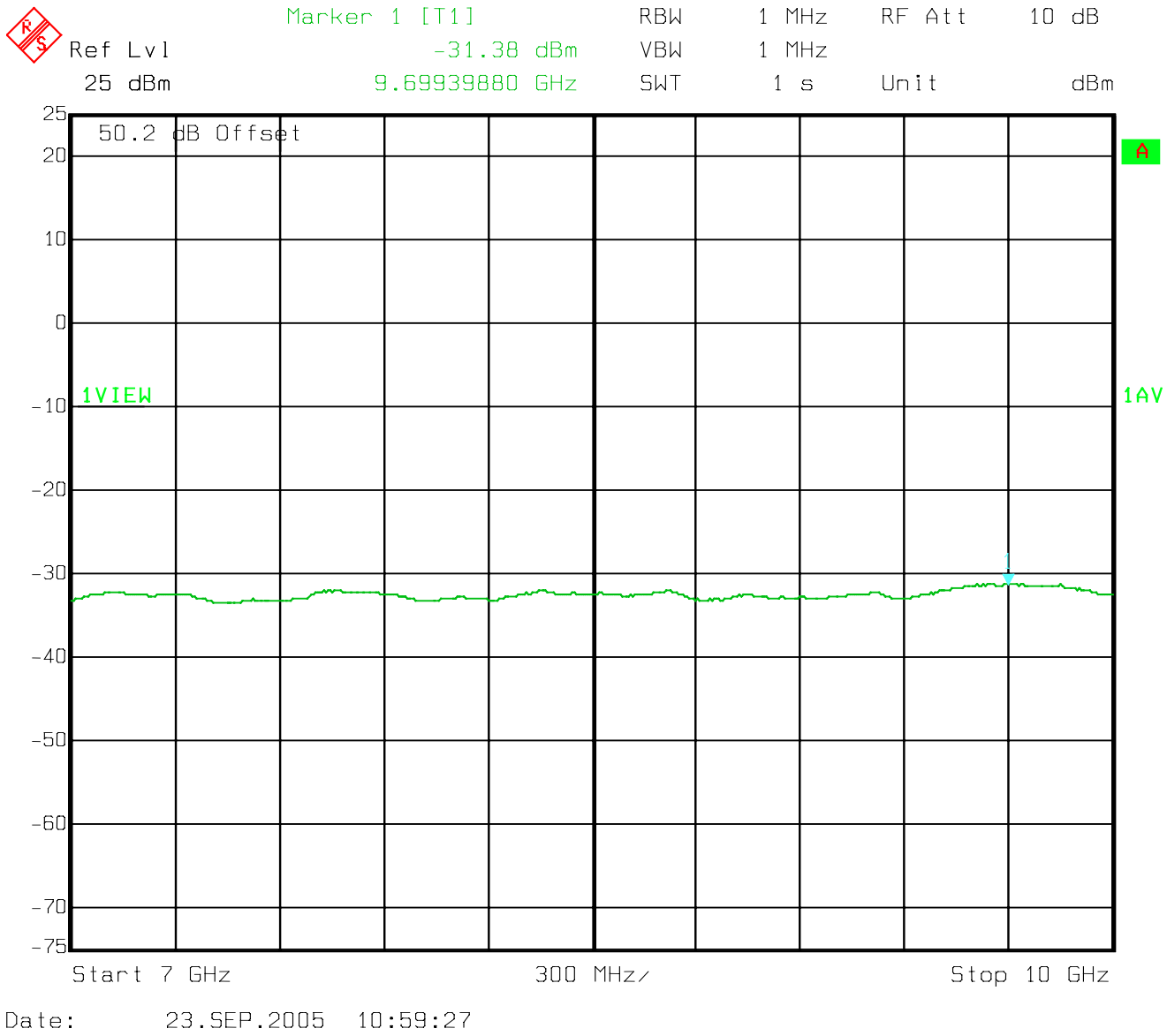
Channel 119


Marker 1 [T1]
-38.98 dBm
9.56513026 kHz
RBW 1 kHz
VBW 1 kHz
SWT 1 s
RF Att 10 dB
Unit dBm
Ref Lvl
15 dBm
50.2 dB Offset
1VIEW
1AV
A
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 9 kHz
14.1 kHz/
Stop 150 kHz
Date: 23.SEP.2005 11:07:46

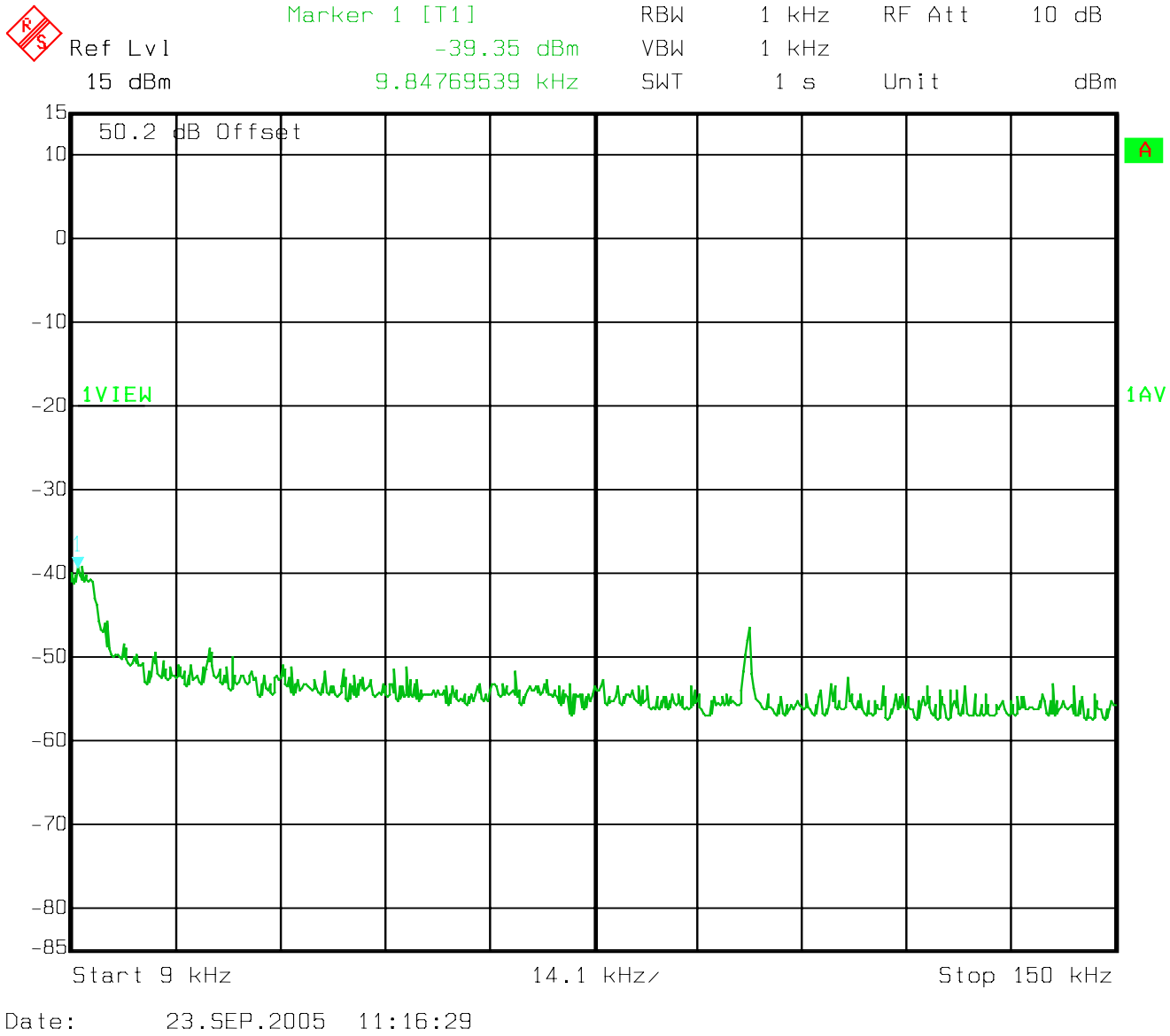

Marker 1 [T1]
RBW 10 kHz
RF Att 10 dB
Ref Lvl
-44.72 dBm
VBW 10 kHz
15 dBm
150.00000000 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 23.SEP.2005 11:06:06

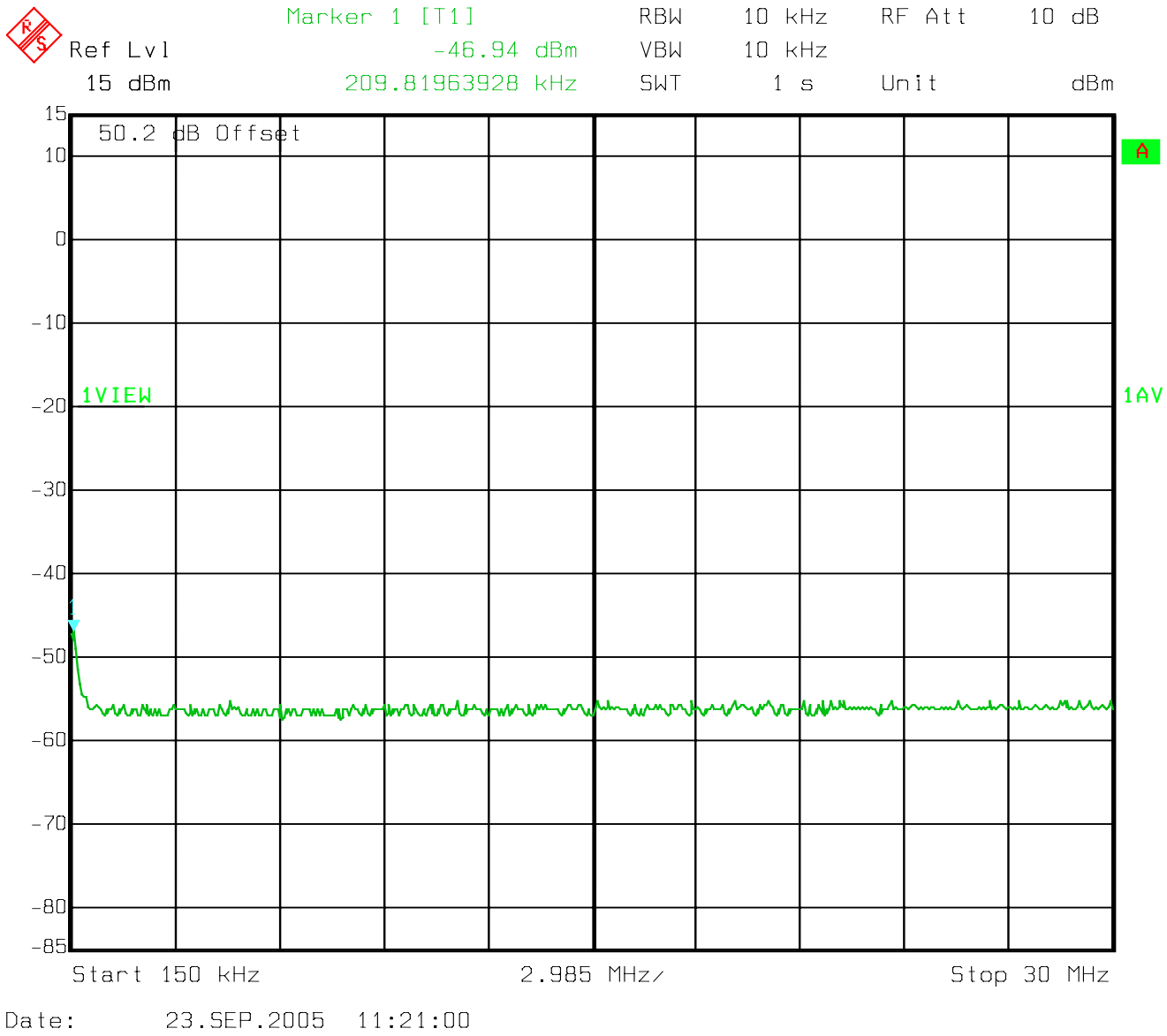

Marker 1 [T1]
Ref Lvl
35 dBm
-39.74 dBm
984.44889780 MHz
RBW 100 kHz
VBW 100 kHz
SWT 1 s
RF Att 10 dB
Unit dBm
50.2 dB Offset
1VIEW
1AV
A
35
30
20
10
0
-10
-20
-30
-40
-50
-60
-65
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 23.SEP.2005 11:04:05

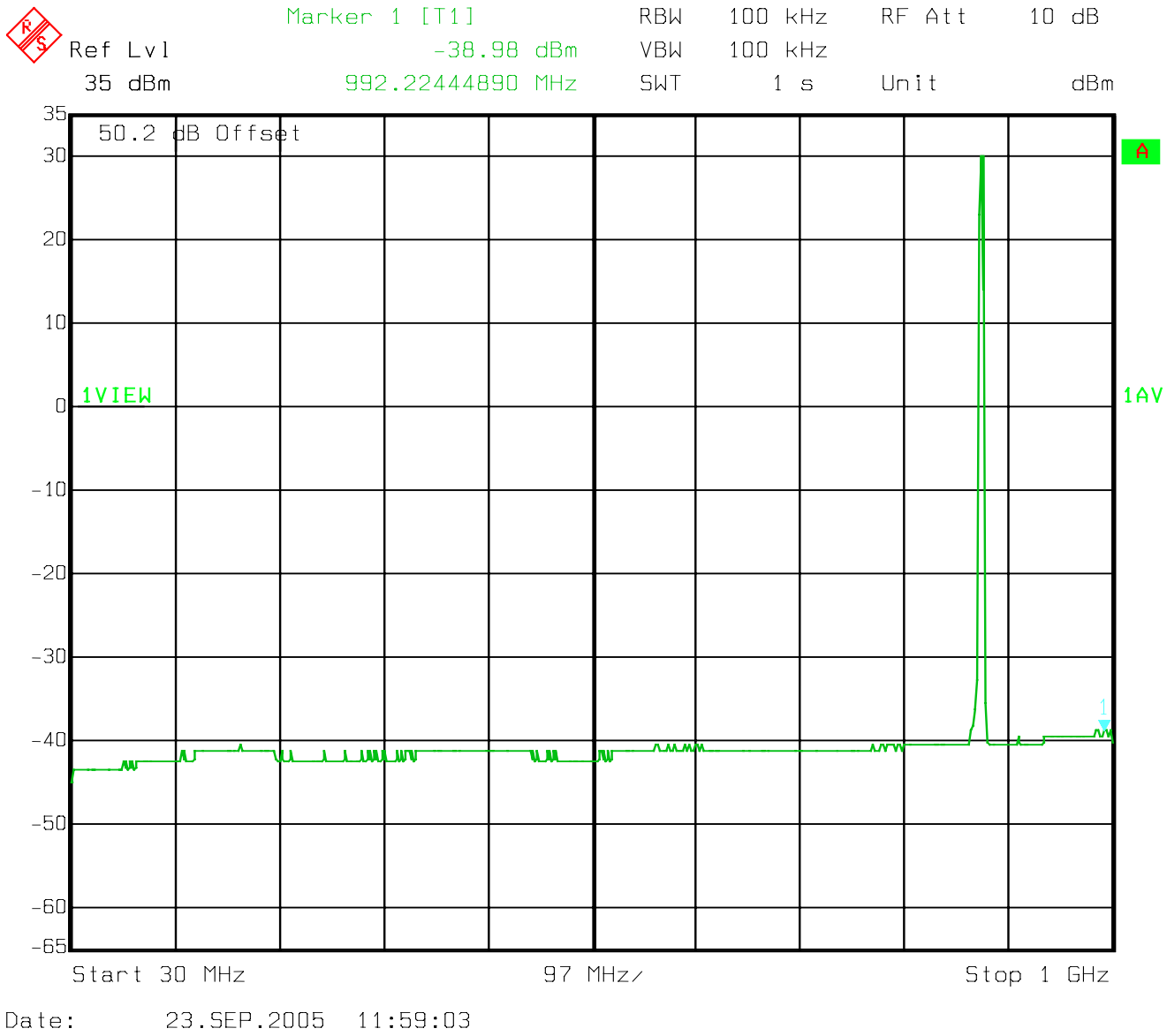

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-21.72 dBm
VBW 1 MHz
25 dBm
1.74549098 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 23.SEP.2005 11:01:35

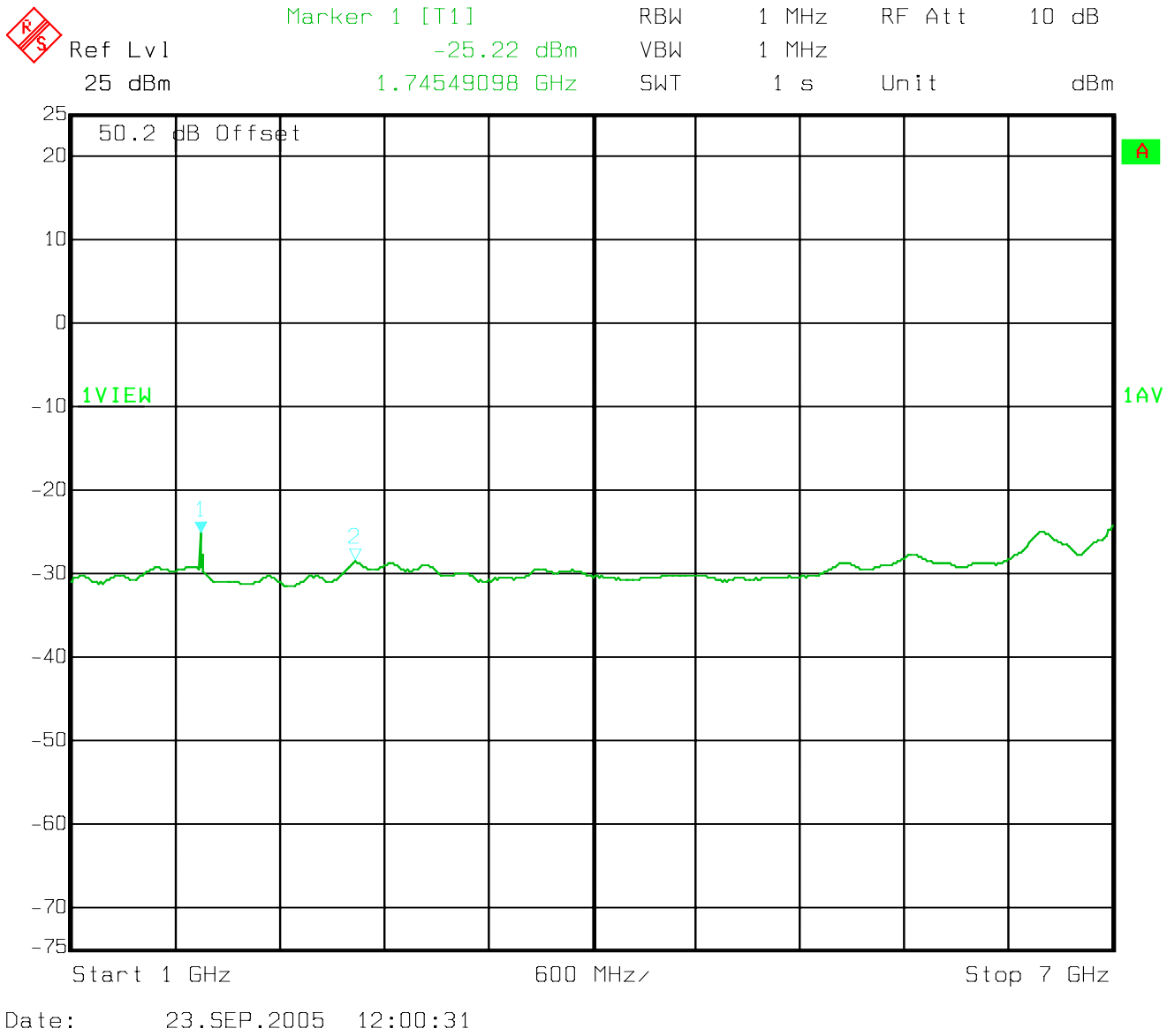

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-31.38 dBm
VBW 1 MHz
25 dBm
9.69939880 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 23.SEP.2005 10:59:27

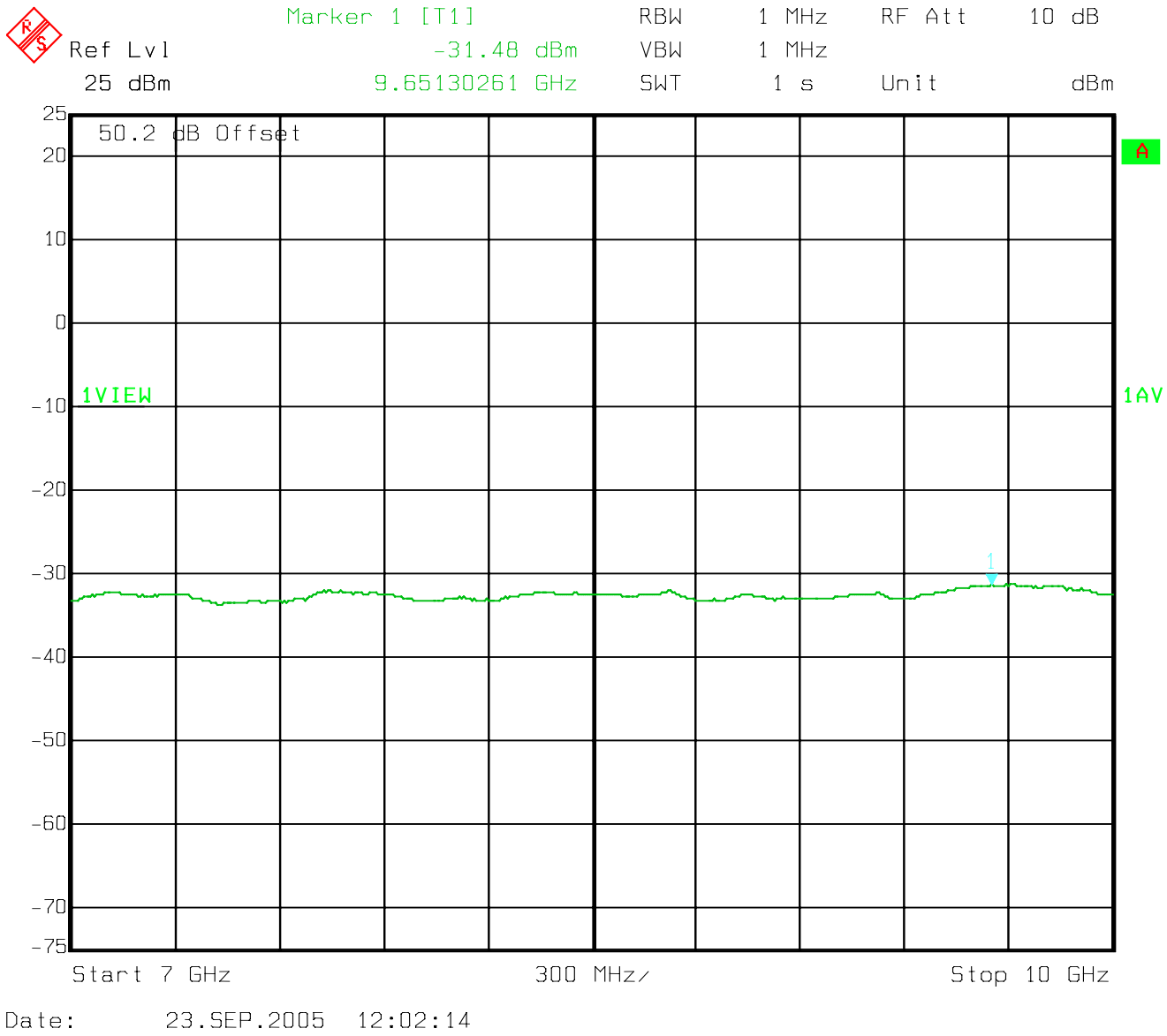
Channel 312


Marker 1 [T1]
RBW 1 kHz
RF Att 10 dB
Ref Lvl
-39.35 dBm
VBW 1 kHz
15 dBm
9.84769539 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
1VIEW
1AV
A
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 9 kHz
14.1 kHz/
Stop 150 kHz
Date: 23.SEP.2005 11:16:29


Marker 1 [T1]
RBW 10 kHz
RF Att 10 dB
Ref Lvl
-46.94 dBm
VBW 10 kHz
15 dBm
209.81963928 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 23.SEP.2005 11:21:00

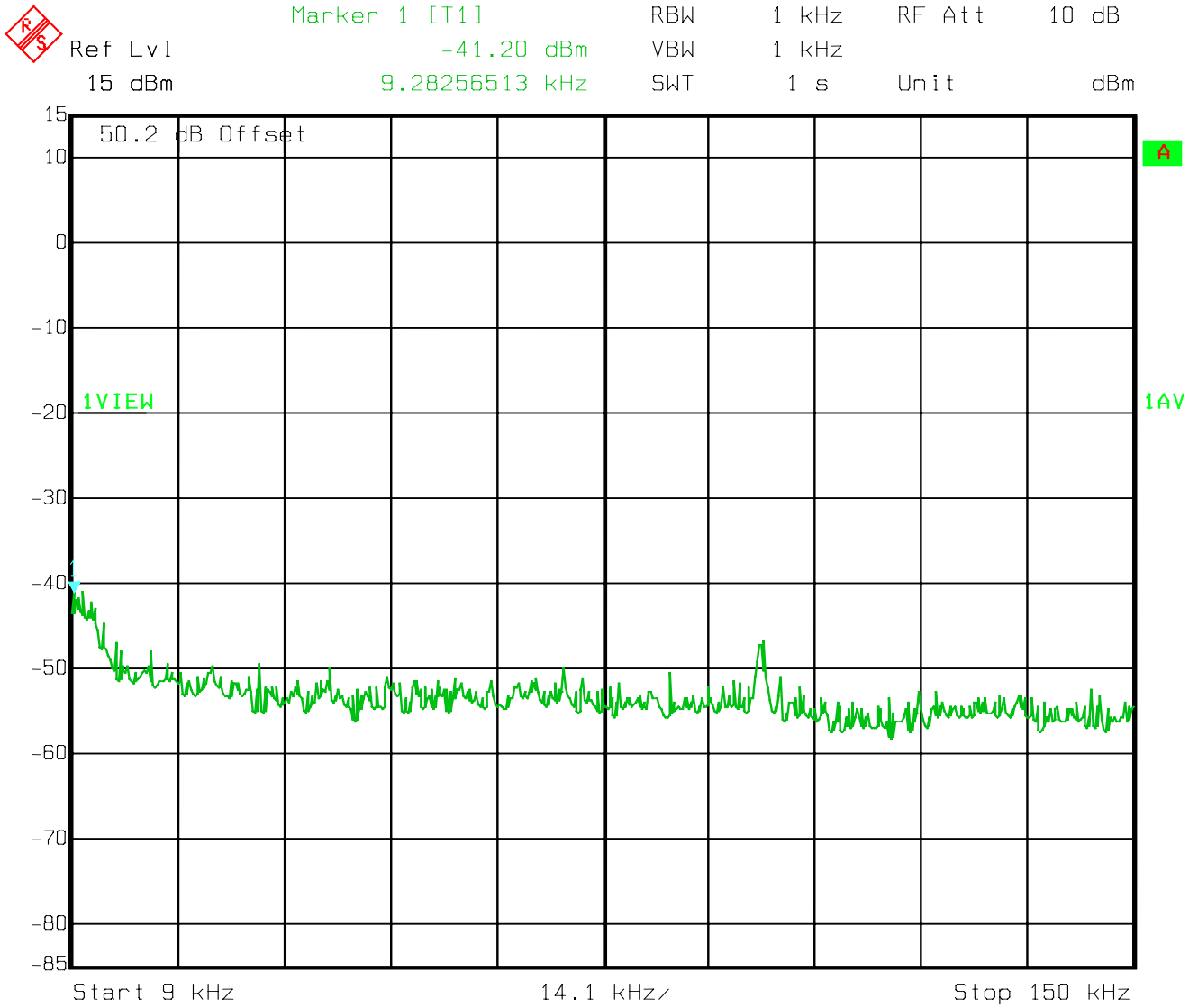

Marker 1 [T1]
RBW 100 kHz
RF Att 10 dB
Ref Lvl
-38.98 dBm
VBW 100 kHz
35 dBm
992.22444890 MHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
35
30
20
10
0
-10
-20
-30
-40
-50
-60
-65
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 23.SEP.2005 11:59:03

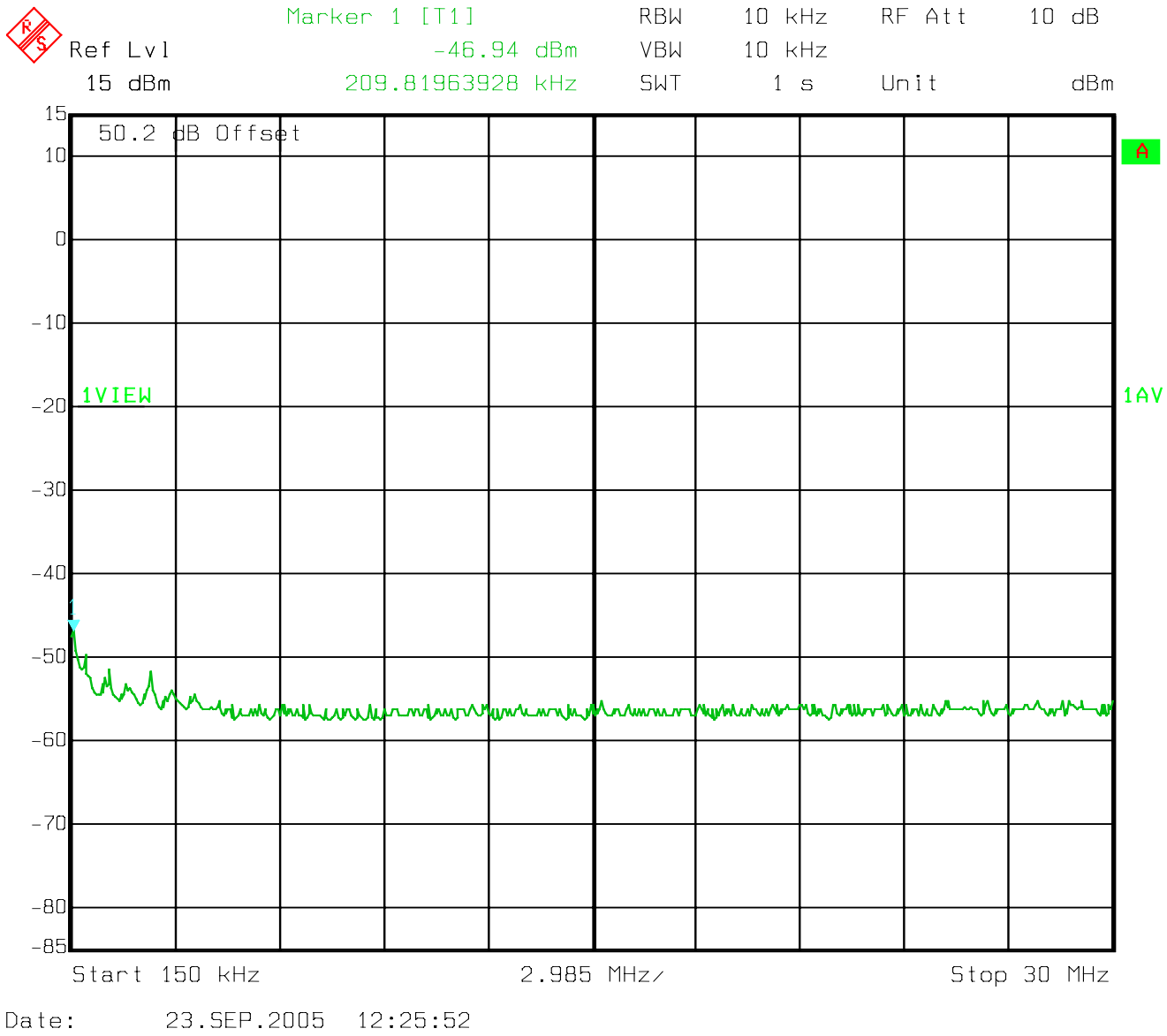

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-25.22 dBm
VBW 1 MHz
25 dBm
1.74549098 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 23.SEP.2005 12:00:31

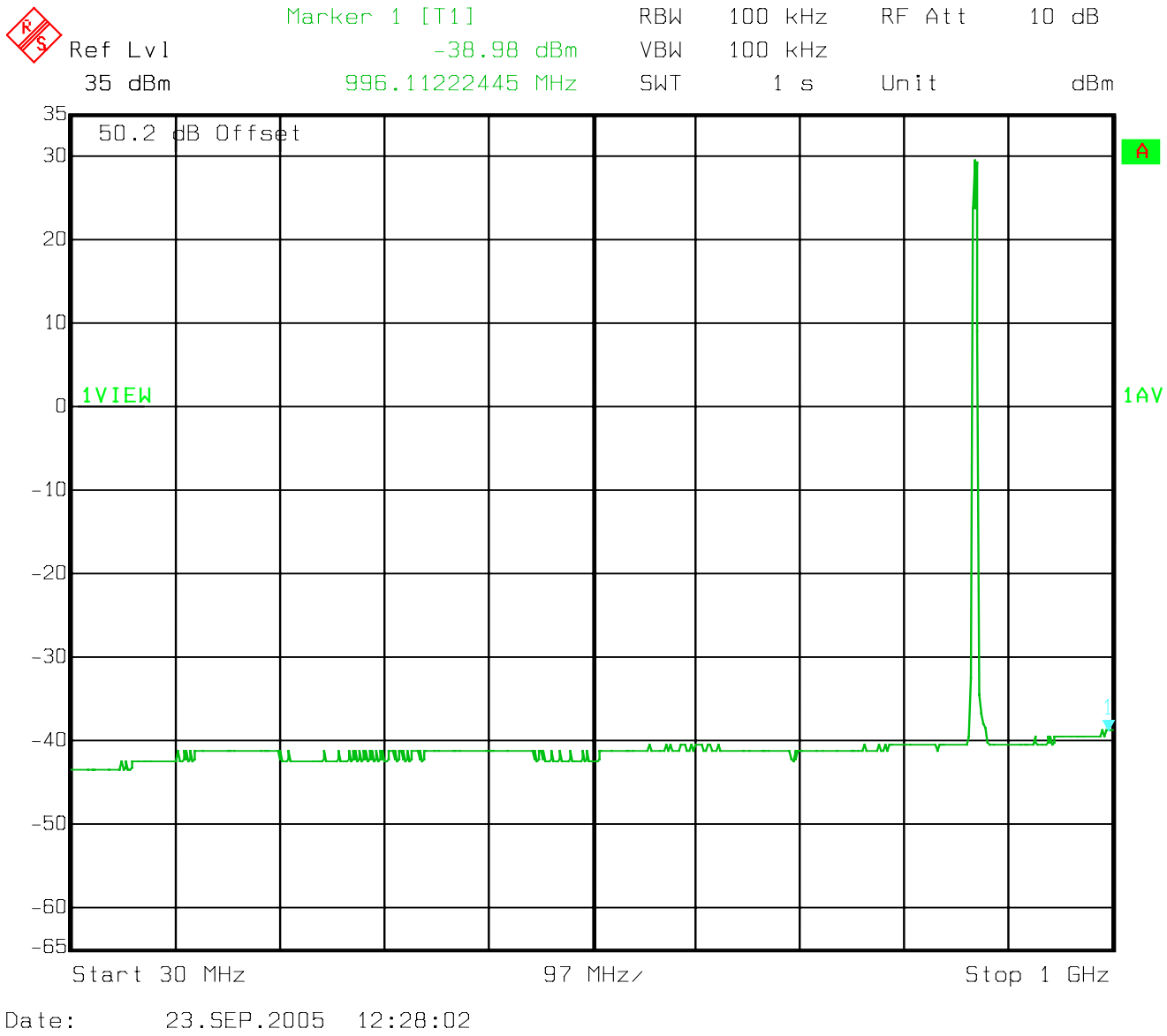

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-31.48 dBm
VBW 1 MHz
25 dBm
9.65130261 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 23.SEP.2005 12:02:14

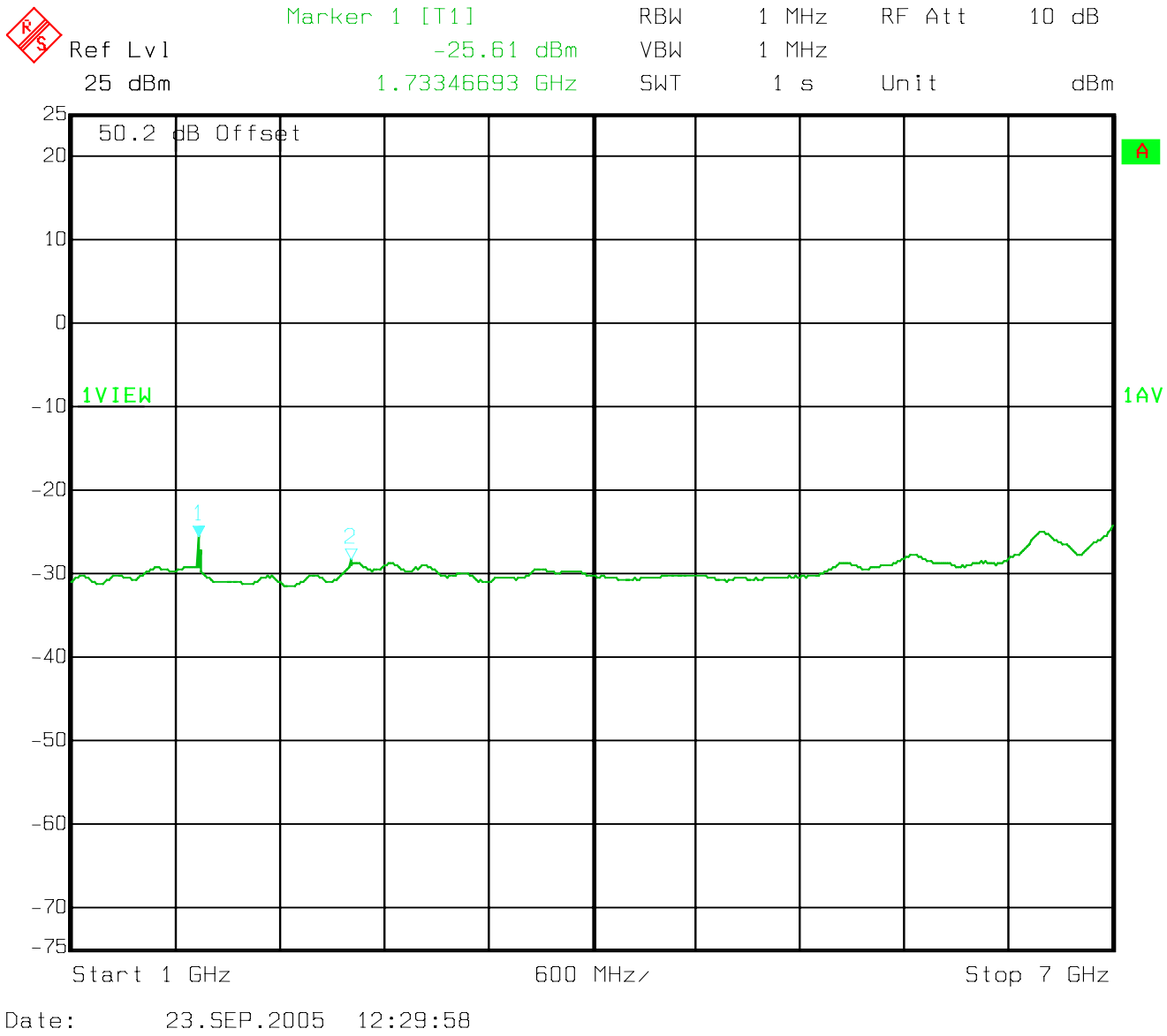
Transceiver and Receiver Module *LPA2+RFE*

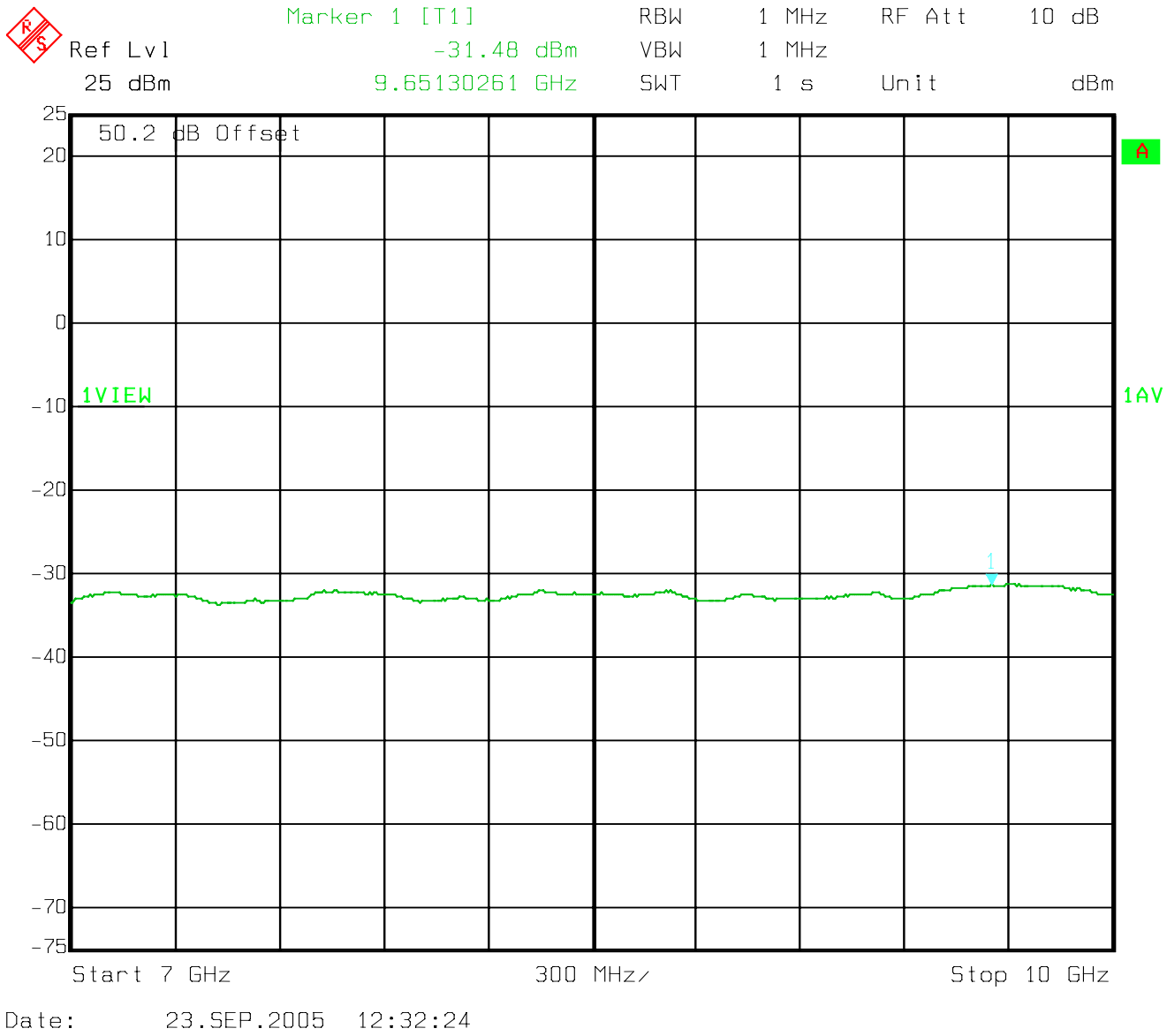
Channel 1013



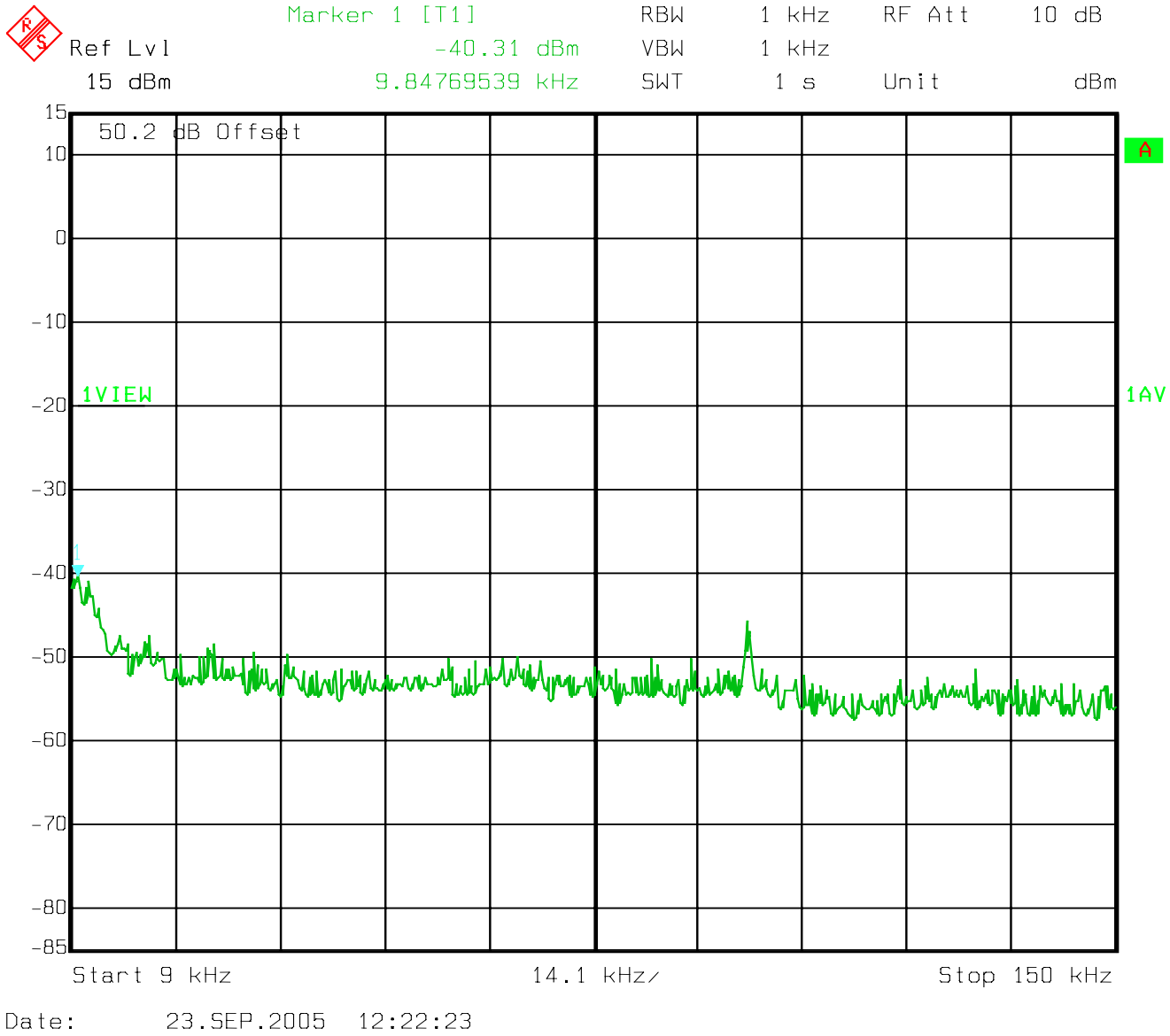

Marker 1 [T1]
RBW 10 kHz
RF Att 10 dB
Ref Lvl
-46.94 dBm
VBW 10 kHz
15 dBm
209.81963928 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 23.SEP.2005 12:25:52

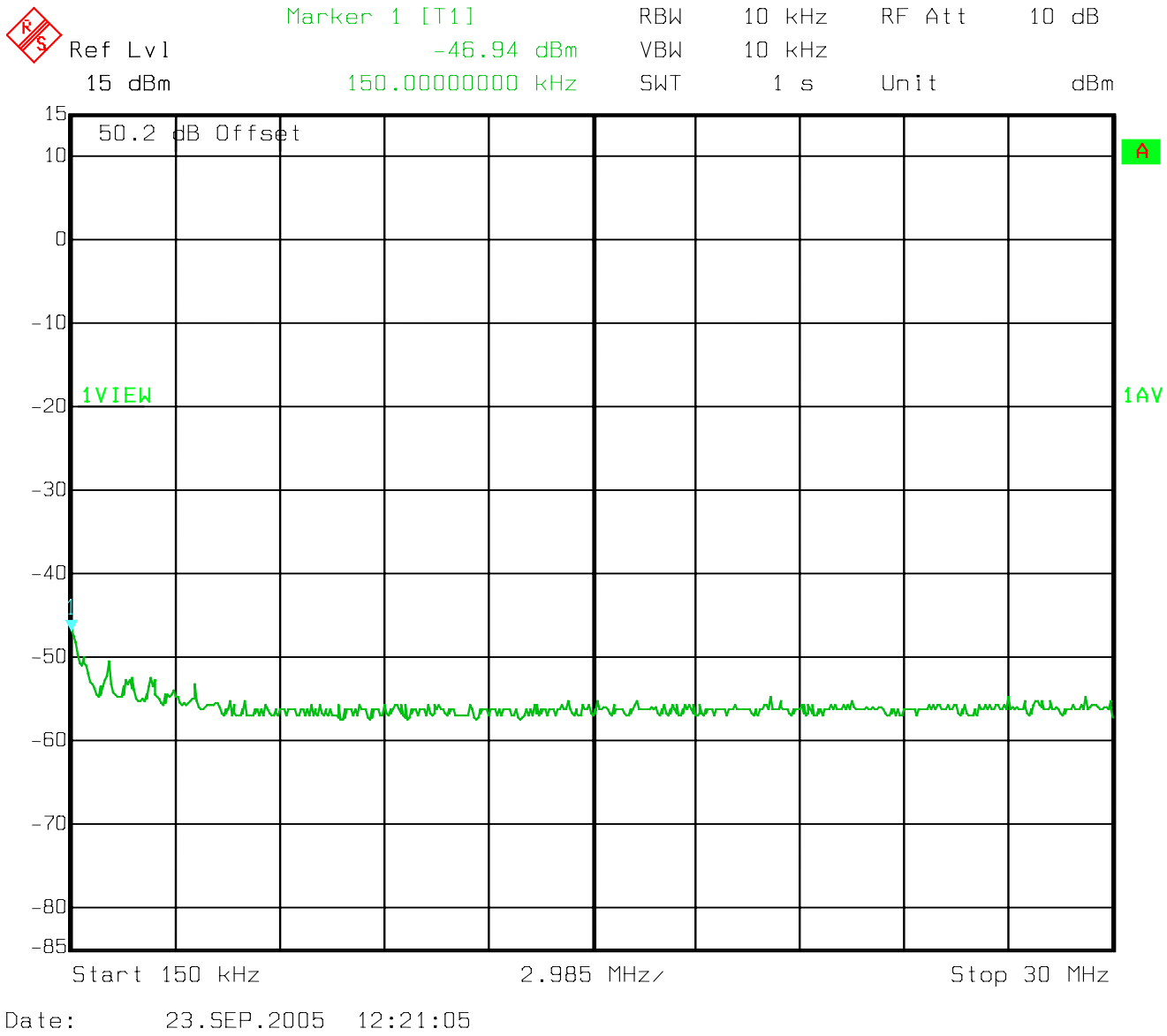

Marker 1 [T1]
RBW 100 kHz
RF Att 10 dB
Ref Lvl
-38.98 dBm
VBW 100 kHz
35 dBm
996.11222445 MHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
35
30
20
10
0
-10
-20
-30
-40
-50
-60
-65
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 23.SEP.2005 12:28:02

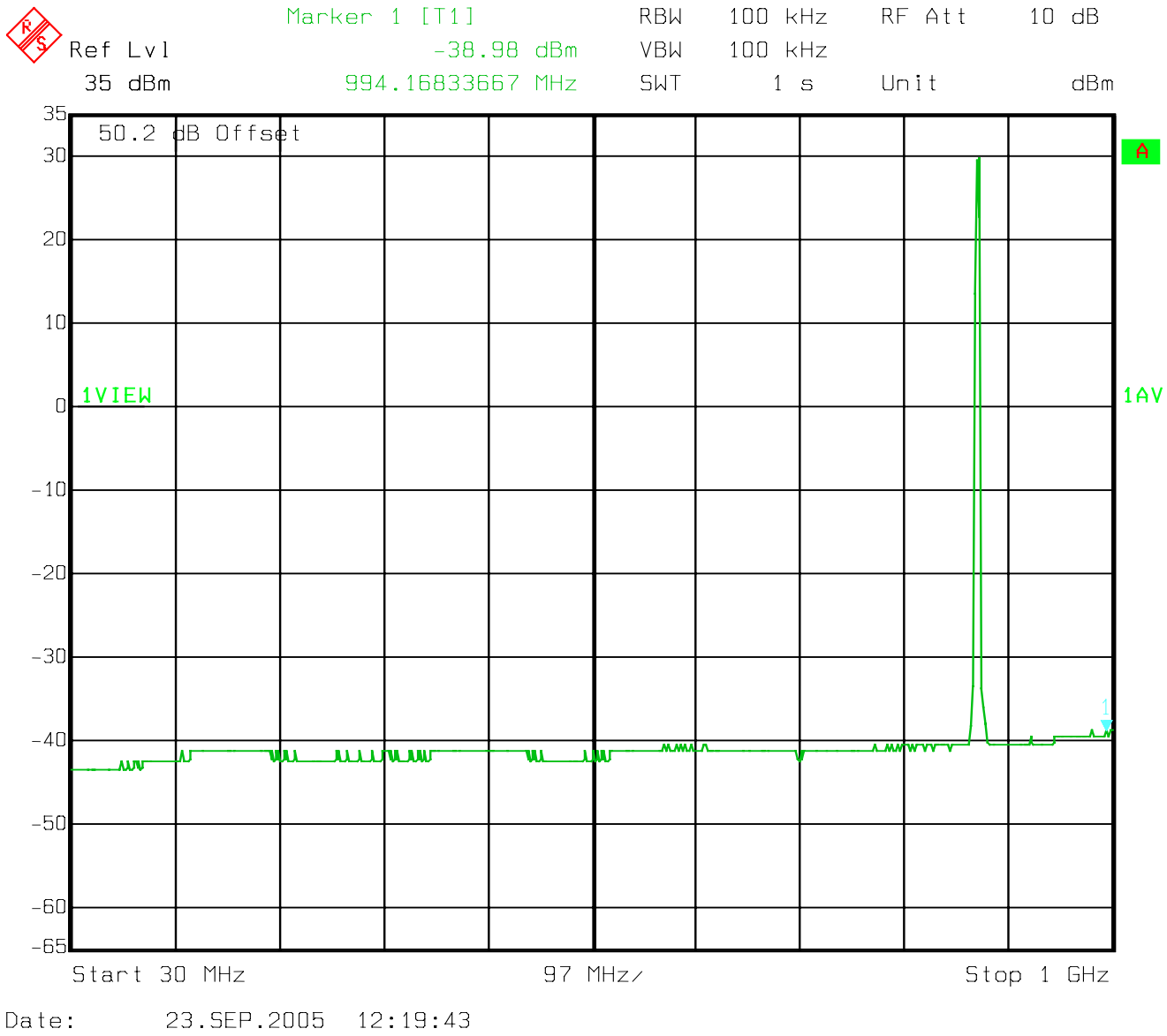

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-25.61 dBm
VBW 1 MHz
25 dBm
1.73346693 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 23.SEP.2005 12:29:58

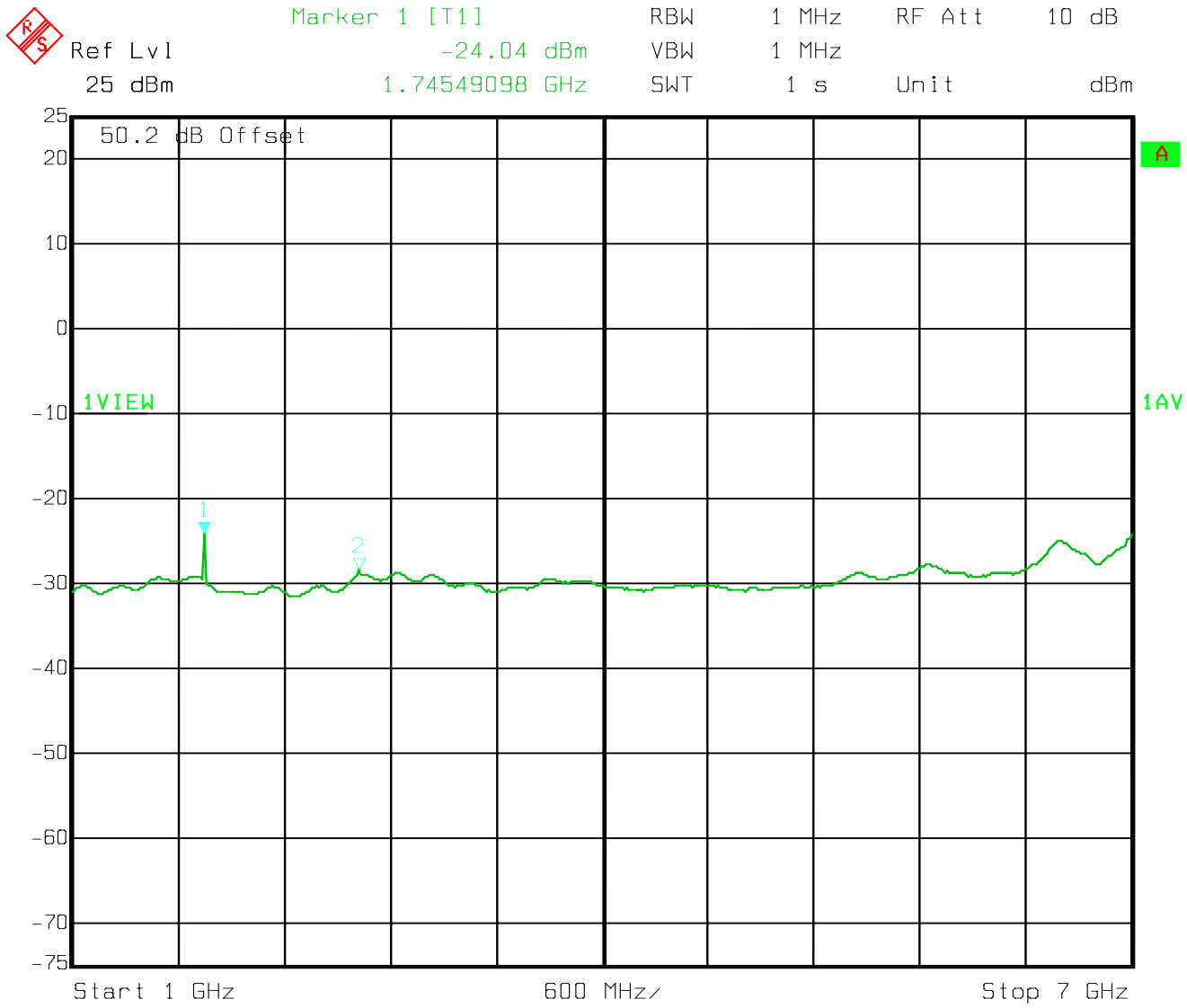

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-31.48 dBm
VBW 1 MHz
25 dBm
9.65130261 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 23.SEP.2005 12:32:24

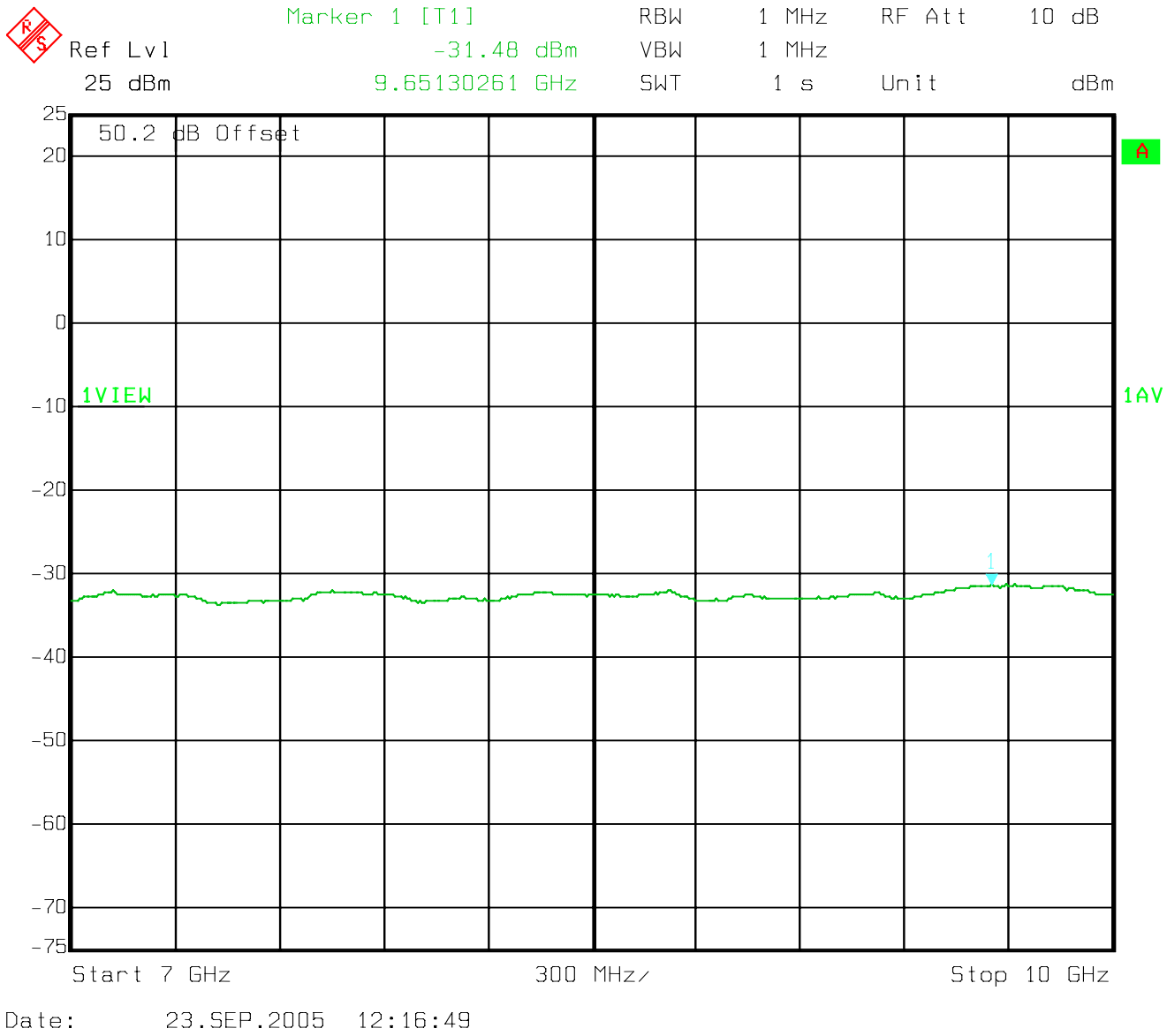
Channel 119


Marker 1 [T1]
-40.31 dBm
9.84769539 kHz
RBW 1 kHz
VBW 1 kHz
SWT 1 s
RF Att 10 dB
Unit dBm
Ref Lvl
15 dBm
50.2 dB Offset
1VIEW
1AV
A
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 9 kHz
14.1 kHz/
Stop 150 kHz
Date: 23.SEP.2005 12:22:23

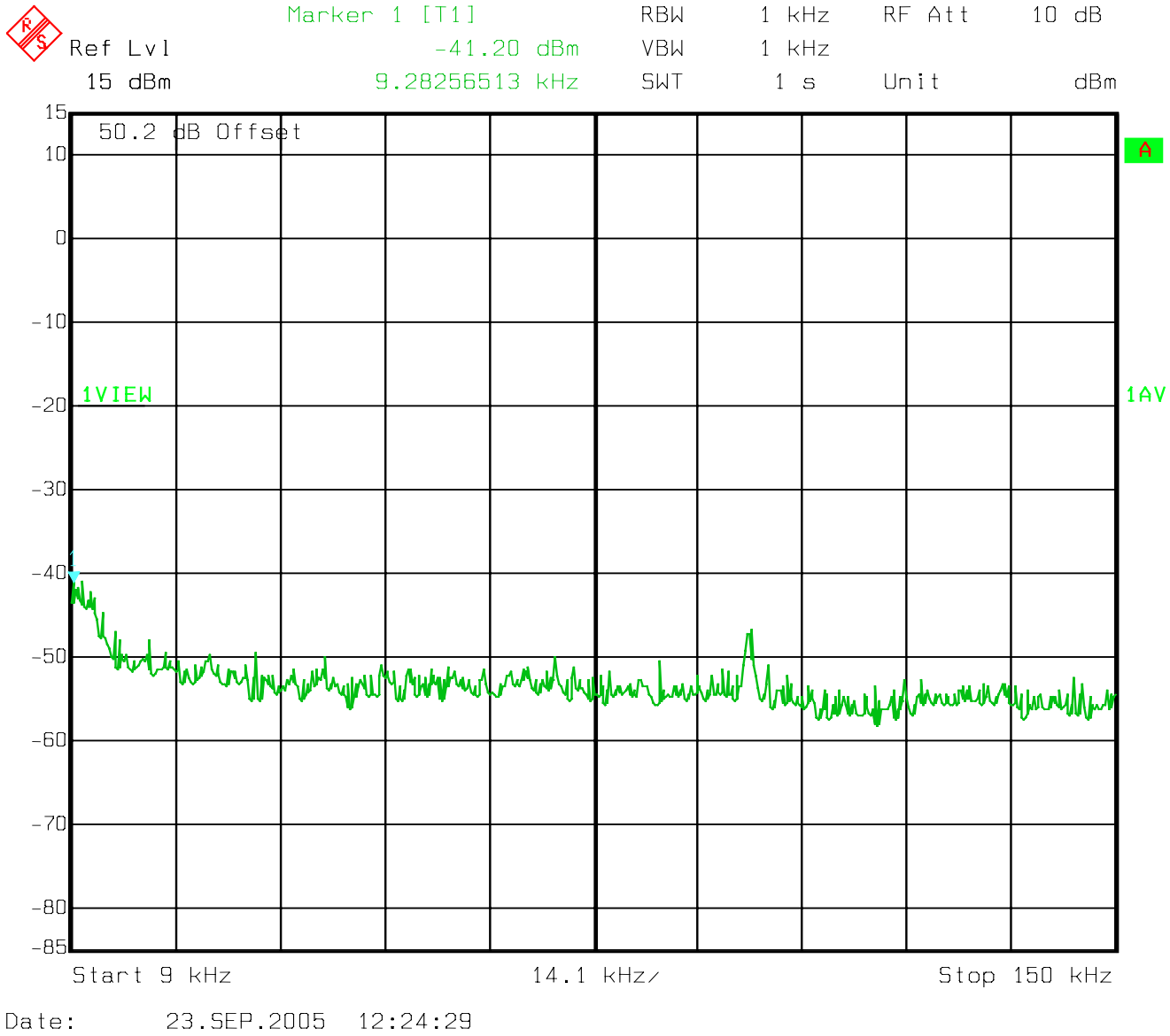

Marker 1 [T1]
RBW 10 kHz
RF Att 10 dB
Ref Lvl
-46.94 dBm
VBW 10 kHz
15 dBm
150.00000000 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 23.SEP.2005 12:21:05

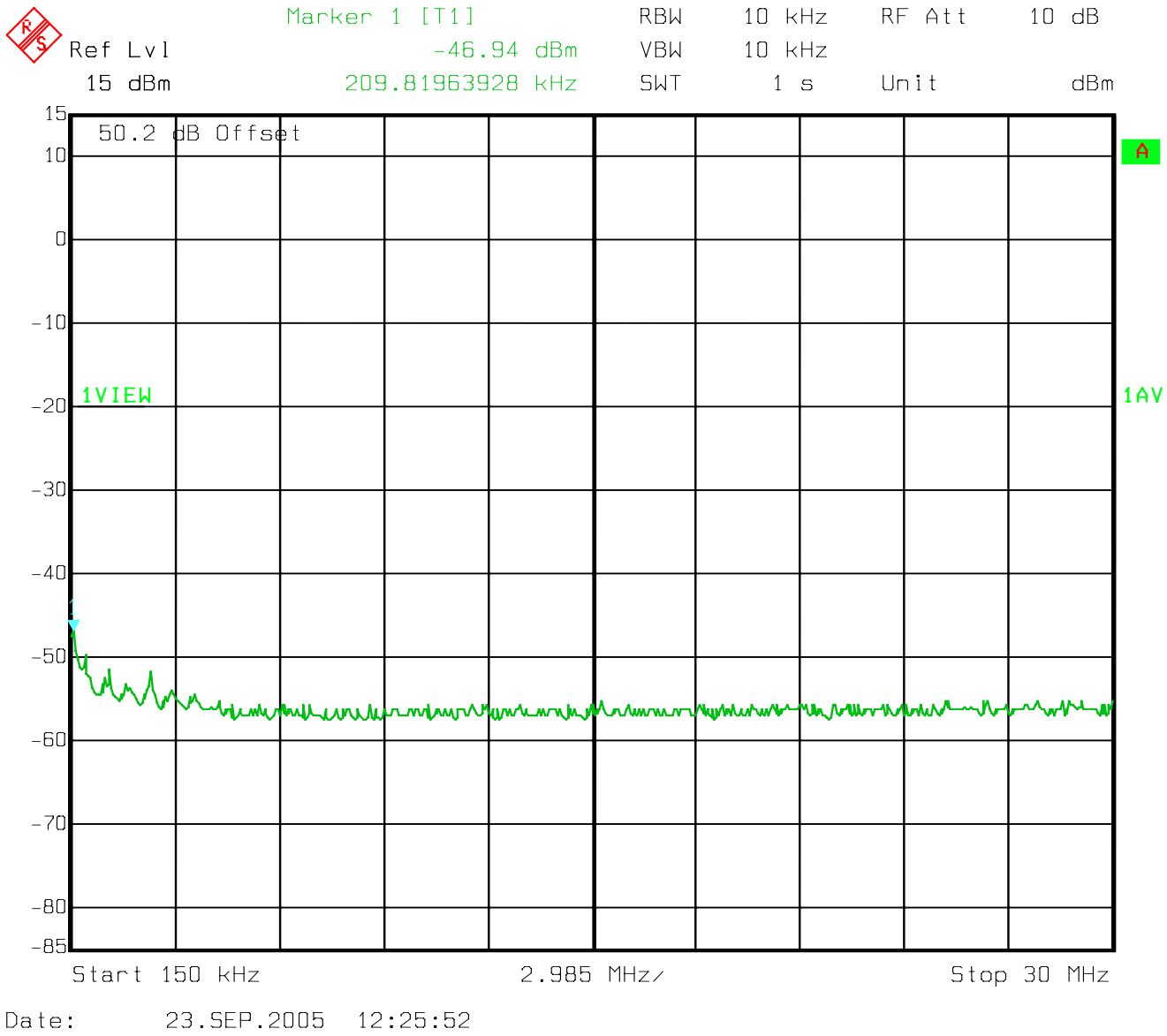

Marker 1 [T1]
RBW 100 kHz
RF Att 10 dB
Ref Lvl
-38.98 dBm
VBW 100 kHz
35 dBm
994.16833667 MHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
35
30
20
10
0
-10
-20
-30
-40
-50
-60
-65
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 23.SEP.2005 12:19:43

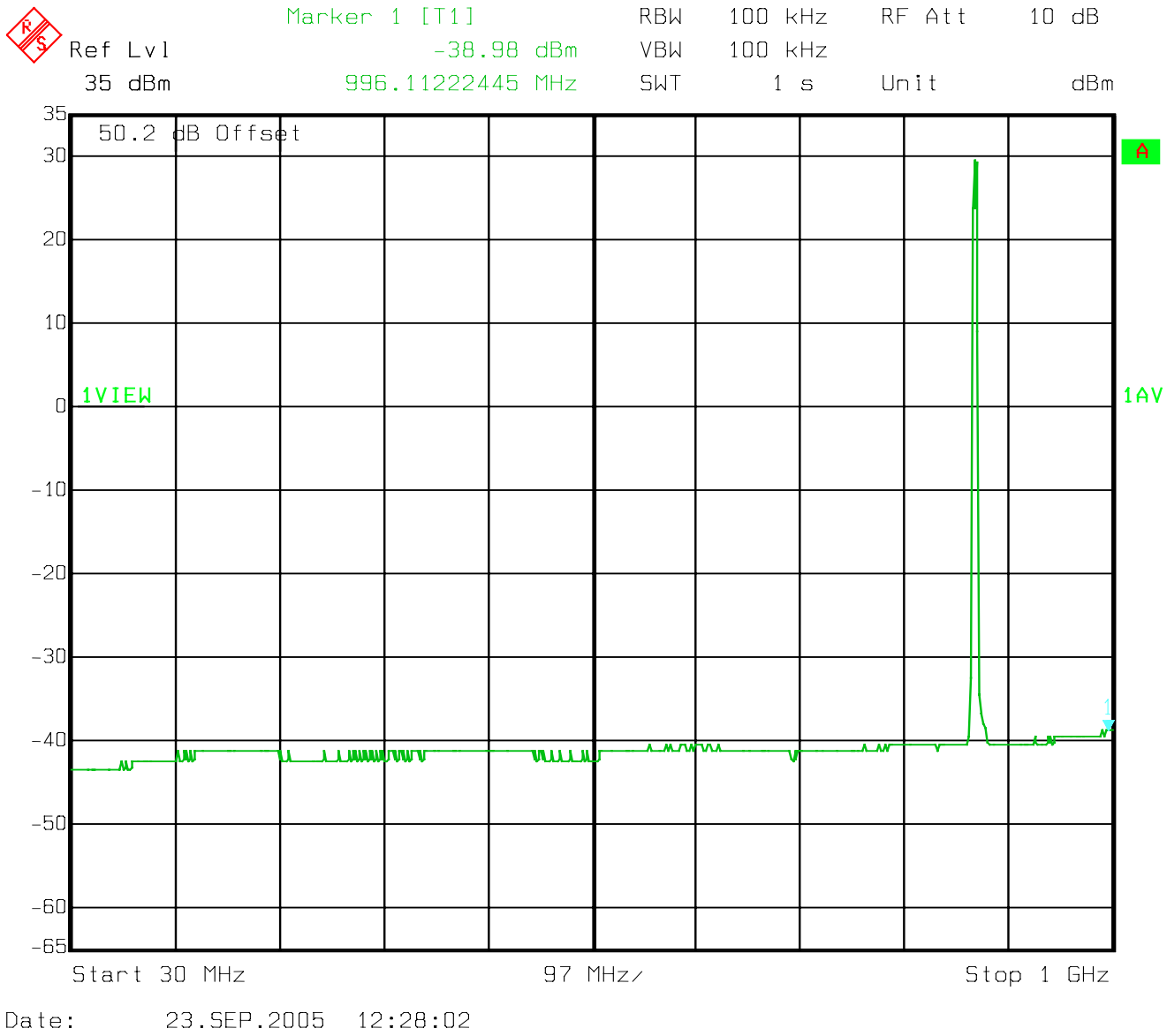

Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-24.04 dBm
VBW 1 MHz
25 dBm
1.74549098 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 23.SEP.2005 12:18:04

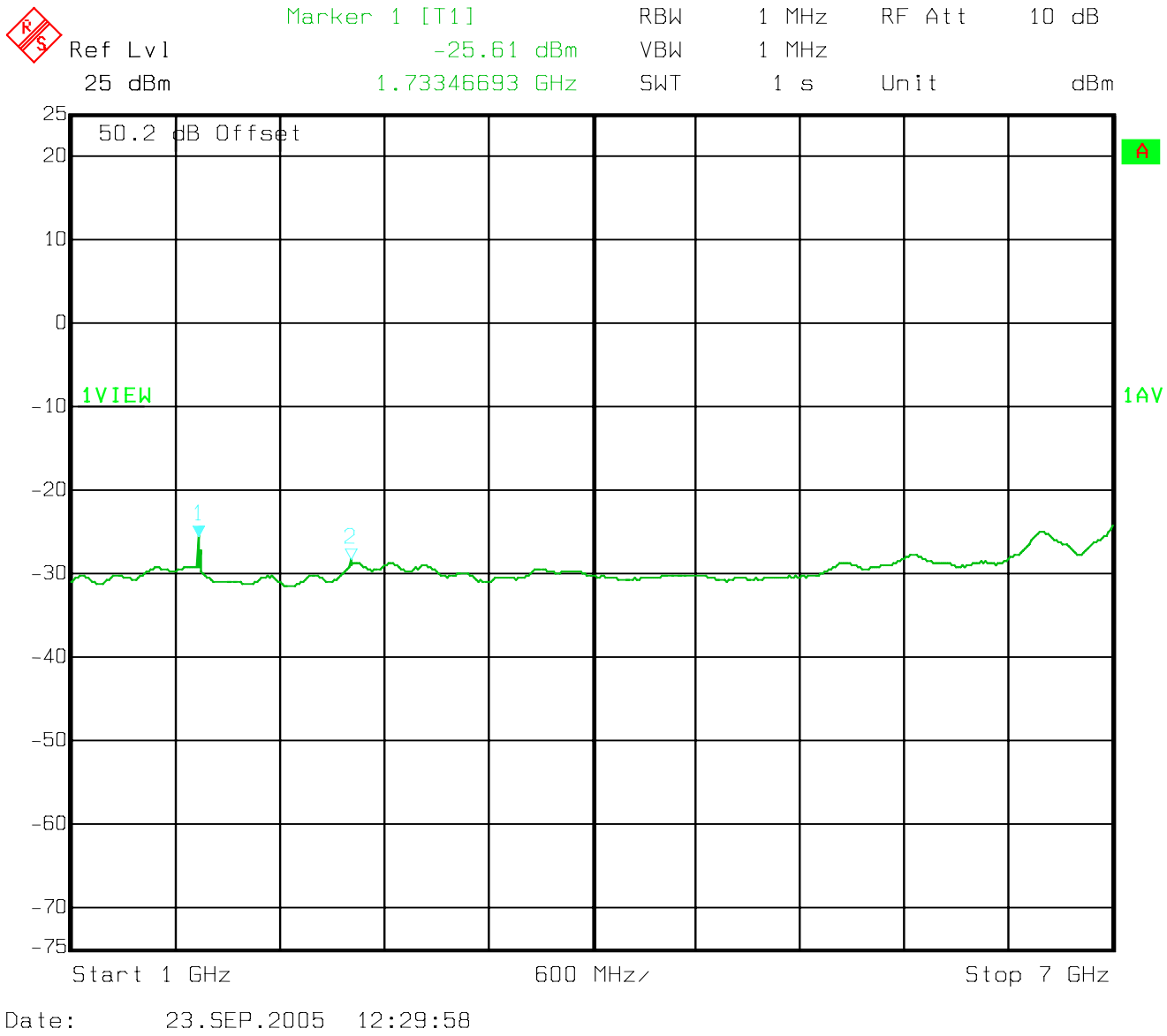

Marker 1 [T1]
Ref Lvl
25 dBm
-31.48 dBm
9.65130261 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 10 dB
Unit dBm
50.2 dB Offset
1VIEW
1AV
A
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 23.SEP.2005 12:16:49

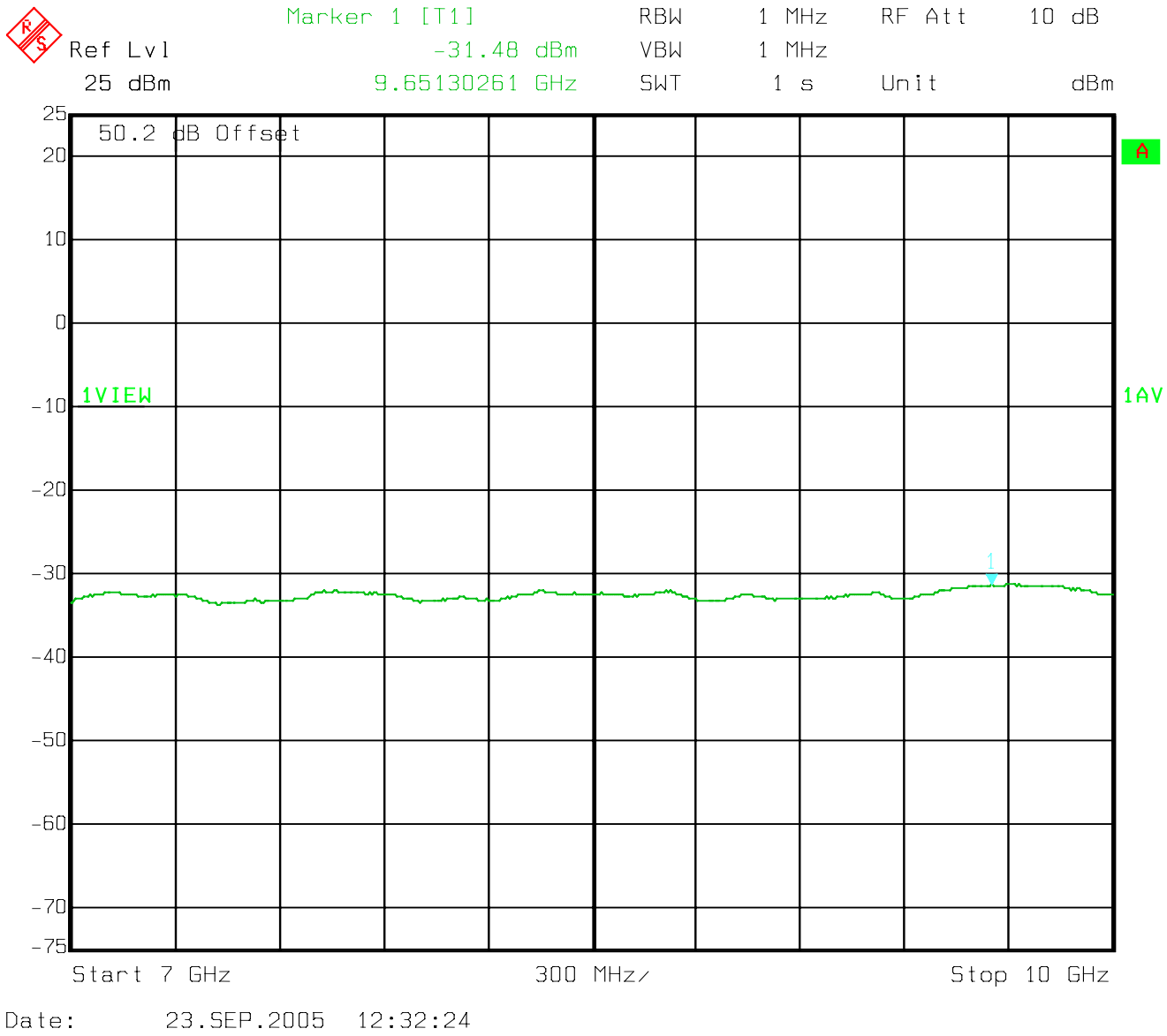
Channel 312


Marker 1 [T1]
RBW 1 kHz
RF Att 10 dB
Ref Lvl
-41.20 dBm
VBW 1 kHz
15 dBm
9.28256513 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
1VIEW
1AV
A
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 9 kHz
14.1 kHz/
Stop 150 kHz
Date: 23.SEP.2005 12:24:29


Marker 1 [T1]
RBW 10 kHz
RF Att 10 dB
Ref Lvl
-46.94 dBm
VBW 10 kHz
15 dBm
209.81963928 kHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
15
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-85
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 23.SEP.2005 12:25:52


Marker 1 [T1]
RBW 100 kHz
RF Att 10 dB
Ref Lvl
-38.98 dBm
VBW 100 kHz
35 dBm
996.11222445 MHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
35
30
20
10
0
-10
-20
-30
-40
-50
-60
-65
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 23.SEP.2005 12:28:02


Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-25.61 dBm
VBW 1 MHz
25 dBm
1.73346693 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 23.SEP.2005 12:29:58


Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-31.48 dBm
VBW 1 MHz
25 dBm
9.65130261 GHz
SWT 1 s
Unit dBm
50.2 dB Offset
A
1VIEW
1AV
25
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 23.SEP.2005 12:32:24

§2.1049, §22.917, §22.905 -OCCUPIED BANDWIDTH

Applicable Standard

Requirements: CFR 47, Section 2.1049, Section 22.901and Section 22.917.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2005-6-3	2006-6-3

*** Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

The RF out of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 30 kHz and the 26 dB and 99%Power bandwidth was recorded.

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	50%
ATM Pressure:	1009mbar

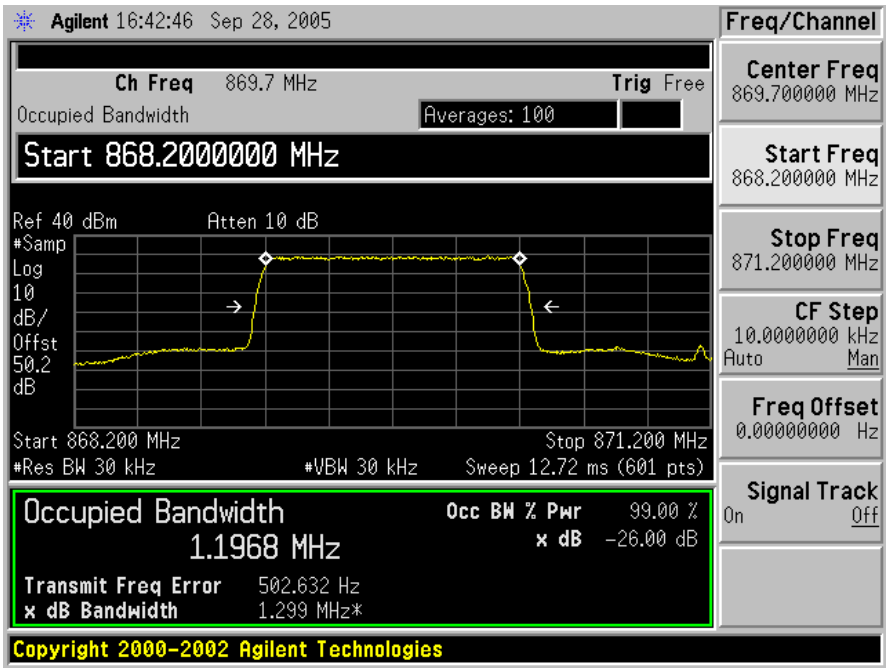
The testing was performed by Sam Lin on 2005-9-28.

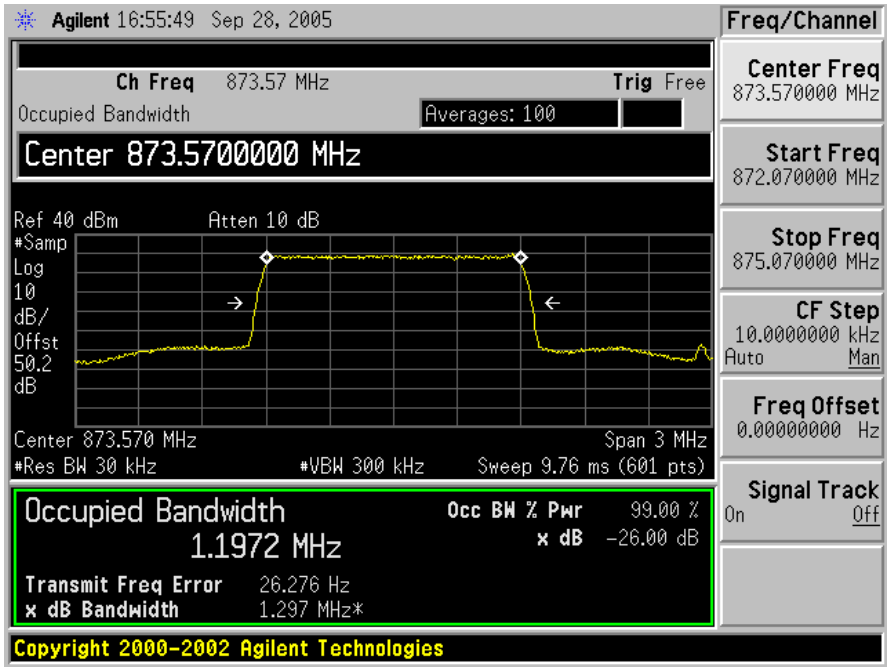
Test Result: Pass

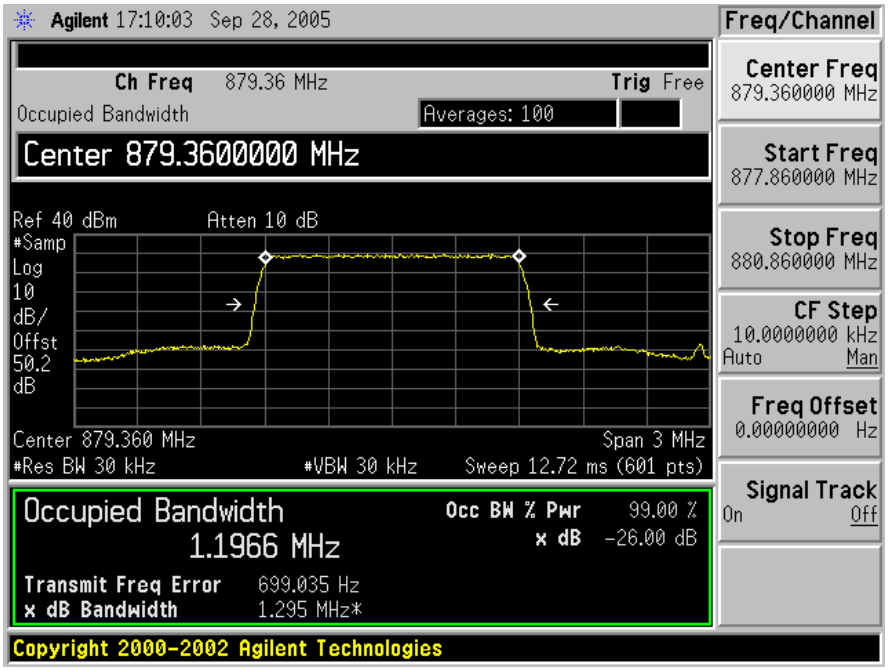
Test Mode: Transmitting

Digital Pre-Distortion Transceiver and Receiver Module DPA

Channel	Channel frequency (MHz)	99% Power Bandwidth (MHz)
Channel 1013	869.70	1.1968
Channel 119	873.57	1.1972
Channel 312	879.36	1.1966

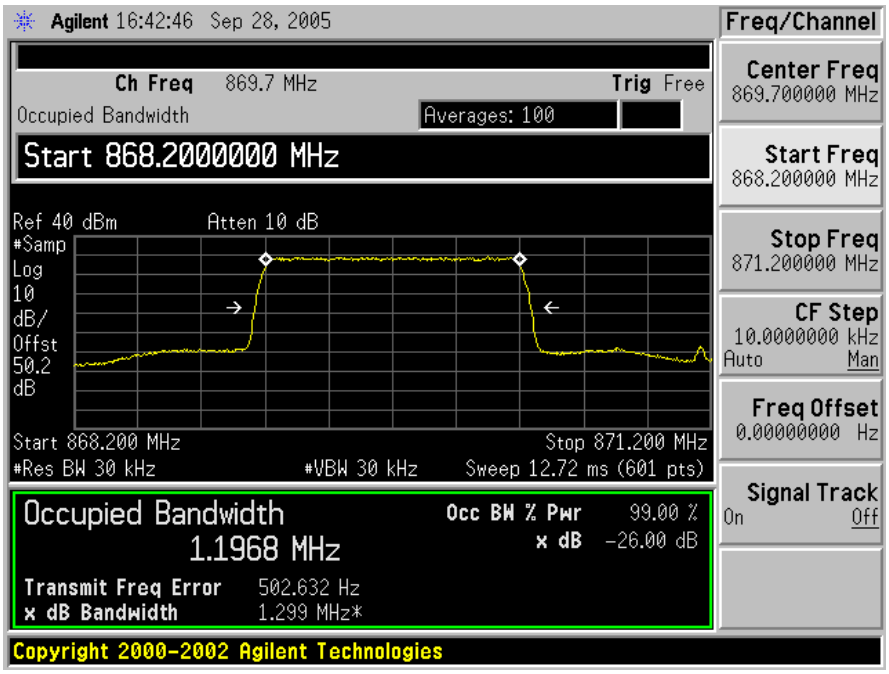


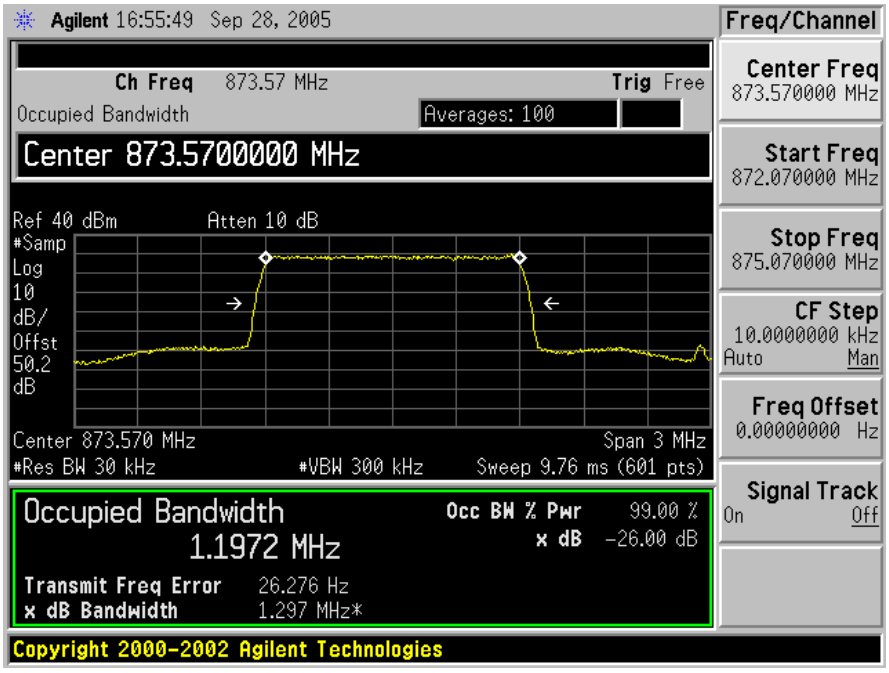

Agilent 16:55:49 Sep 28, 2005
Freq/Channel
Ch Freq 873.57 MHz
Trig Free
Occupied Bandwidth
Averages: 100
Center 873.5700000 MHz
Ref 40 dBm
Atten 10 dB
#Samp
Log
10
dB/
Offst
50.2
dB
Center 873.570 MHz
Span 3 MHz
#Res BW 30 kHz
#VBW 300 kHz
Sweep 9.76 ms (601 pts)
Occupied Bandwidth
1.1972 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error 26.276 Hz
x dB Bandwidth 1.297 MHz*
Center Freq
873.570000 MHz
Start Freq
872.070000 MHz
Stop Freq
875.070000 MHz
CF Step
10.0000000 kHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Copyright 2000-2002 Agilent Technologies

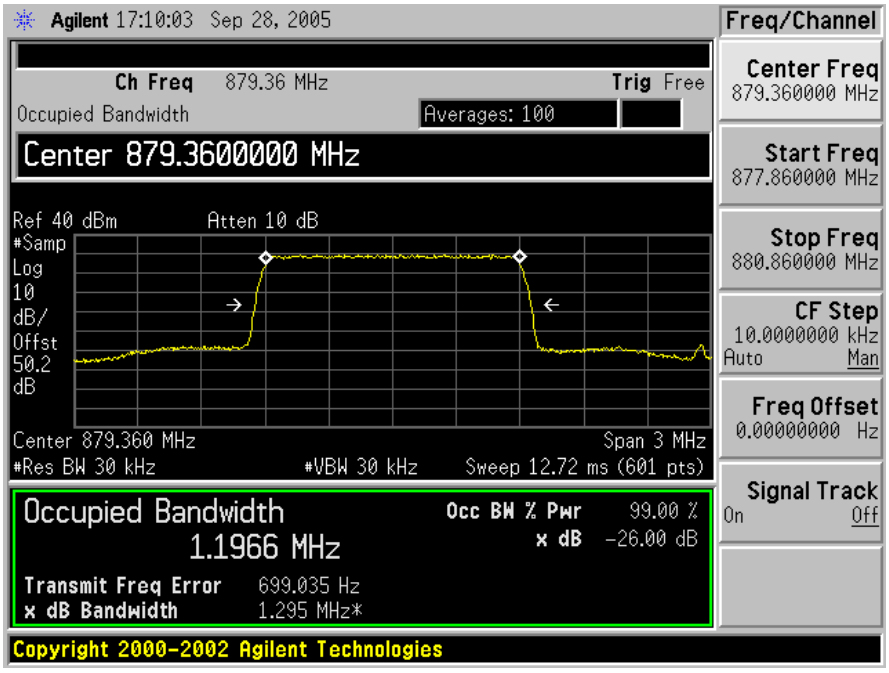

Agilent 17:10:03 Sep 28, 2005
Freq/Channel
Ch Freq 879.36 MHz
Trig Free
Occupied Bandwidth
Averages: 100
Center 879.3600000 MHz
Ref 40 dBm
Atten 10 dB
#Samp
Log
10
dB/
Offst
50.2
dB
Center 879.360 MHz
Span 3 MHz
#Res BW 30 kHz
#VBW 30 kHz
Sweep 12.72 ms (601 pts)
Occupied Bandwidth
1.1966 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error 699.035 Hz
x dB Bandwidth 1.295 MHz*
Center Freq
879.360000 MHz
Start Freq
877.860000 MHz
Stop Freq
880.860000 MHz
CF Step
10.0000000 kHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Copyright 2000-2002 Agilent Technologies

Transceiver and Receiver Module *DPA*

Channel	Channel frequency (MHz)	99% Power Bandwidth (MHz)
Channel 1013	869.70	1.1968
Channel 119	873.57	1.1972
Channel 312	879.36	1.1966

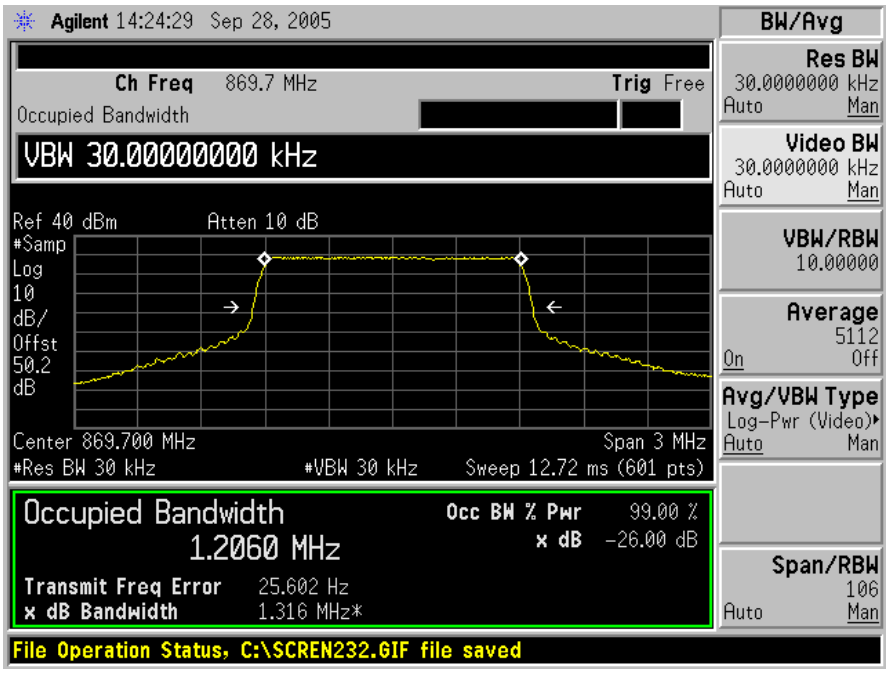


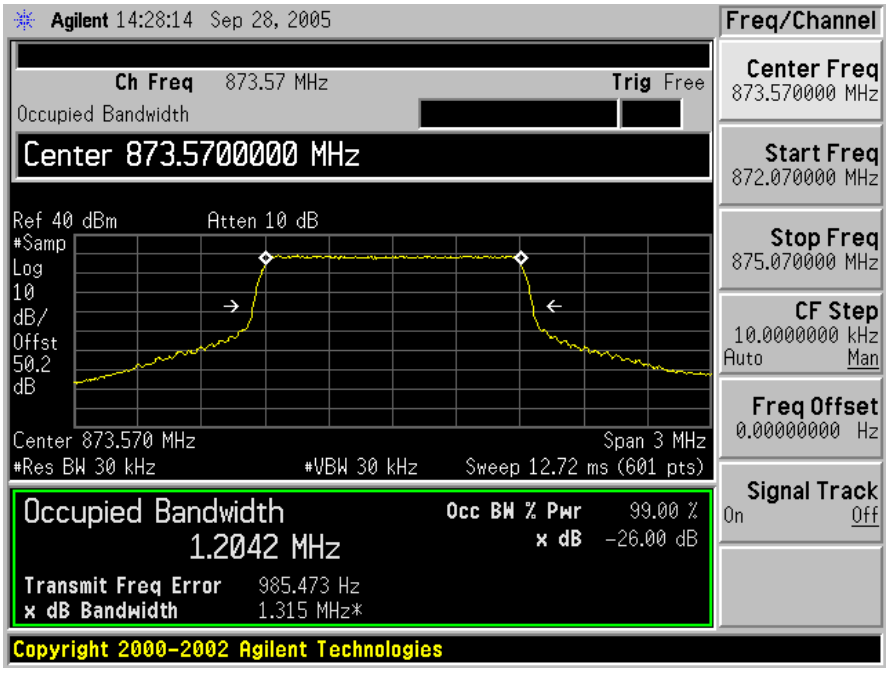

Agilent 16:55:49 Sep 28, 2005
Freq/Channel
Ch Freq 873.57 MHz
Trig Free
Occupied Bandwidth
Averages: 100
Center 873.5700000 MHz
Ref 40 dBm
Atten 10 dB
#Samp
Log
10
dB/
Offst
50.2
dB
Center 873.570 MHz
Span 3 MHz
#Res BW 30 kHz
#VBW 300 kHz
Sweep 9.76 ms (601 pts)
Occupied Bandwidth
1.1972 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error 26.276 Hz
x dB Bandwidth 1.297 MHz*
Center Freq
873.570000 MHz
Start Freq
872.070000 MHz
Stop Freq
875.070000 MHz
CF Step
10.0000000 kHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Copyright 2000-2002 Agilent Technologies

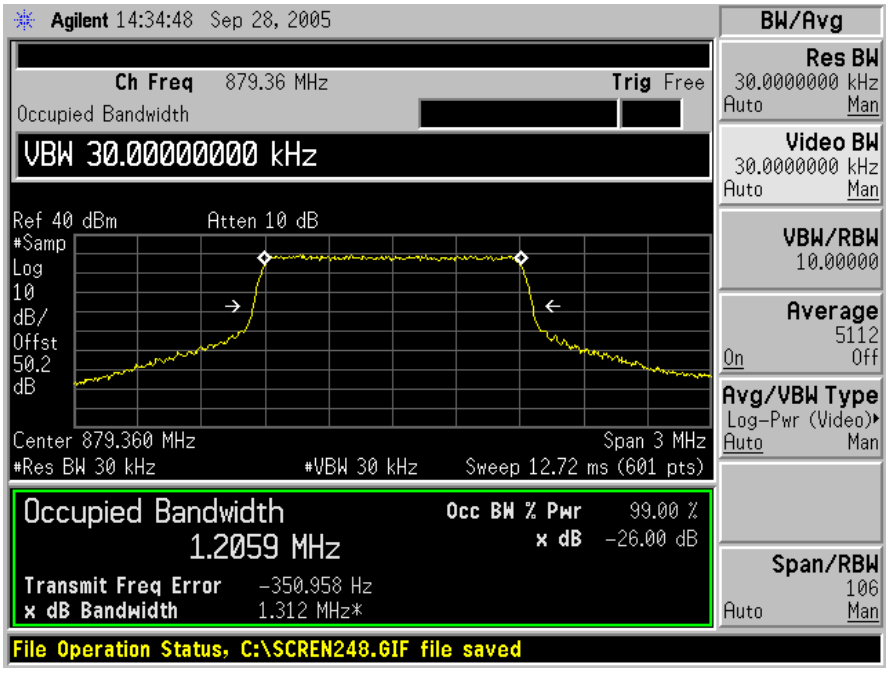

Agilent 17:10:03 Sep 28, 2005
Freq/Channel
Ch Freq 879.36 MHz
Trig Free
Occupied Bandwidth
Averages: 100
Center 879.3600000 MHz
Ref 40 dBm
Atten 10 dB
#Samp
Log
10
dB/
Offst
50.2
dB
Center 879.360 MHz
Span 3 MHz
#Res BW 30 kHz
#VBW 30 kHz
Sweep 12.72 ms (601 pts)
Occupied Bandwidth
1.1966 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error 699.035 Hz
x dB Bandwidth 1.295 MHz*
Center Freq
879.360000 MHz
Start Freq
877.860000 MHz
Stop Freq
880.860000 MHz
CF Step
10.0000000 kHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Copyright 2000-2002 Agilent Technologies

Transceiver and Receiver Module *LPA1+RFE*

Channel	Channel frequency (MHz)	99% Power Bandwidth (MHz)
Channel 1013	869.70	1.2060
Channel 119	873.57	1.2042
Channel 312	879.36	1.2059

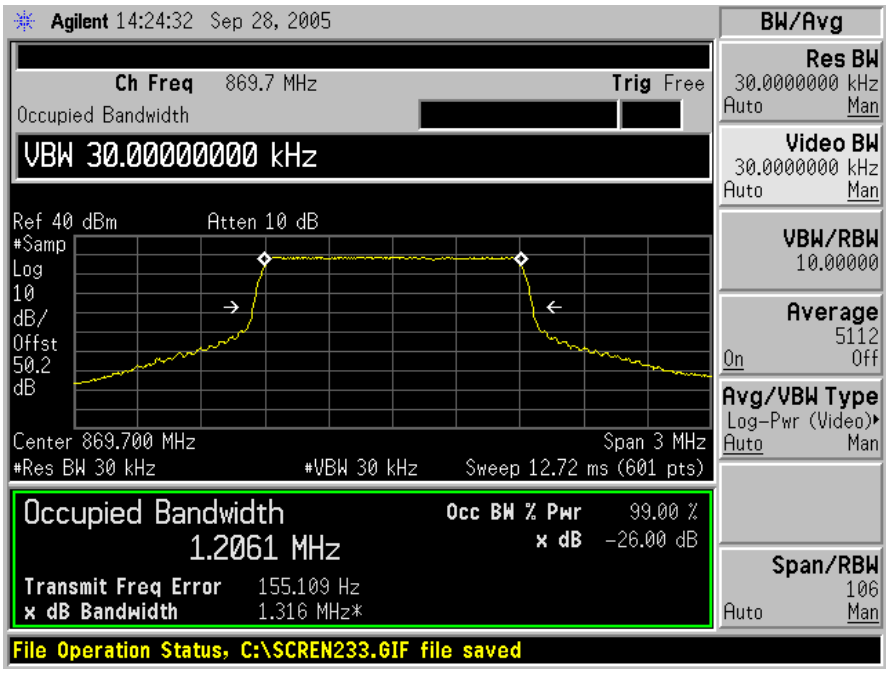


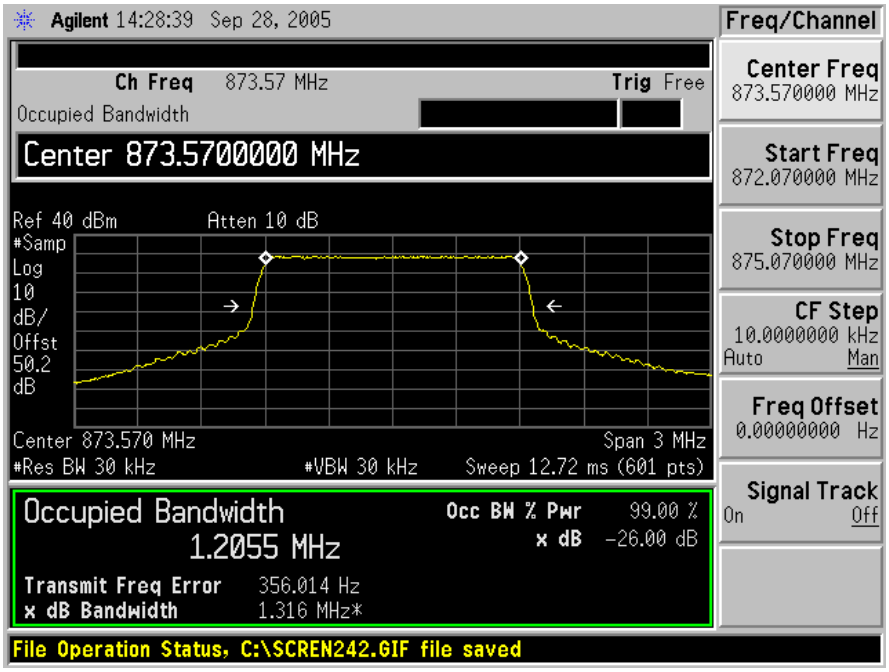

Agilent 14:28:14 Sep 28, 2005
Freq/Channel
Ch Freq 873.57 MHz
Trig Free
Occupied Bandwidth
Center 873.5700000 MHz
Ref 40 dBm
Atten 10 dB
#Samp
Log
10
dB/
Offst
50.2
dB
Center 873.570 MHz
Span 3 MHz
#Res BW 30 kHz
#VBW 30 kHz
Sweep 12.72 ms (601 pts)
Occupied Bandwidth
1.2042 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error 985.473 Hz
x dB Bandwidth 1.315 MHz*
Center Freq
873.570000 MHz
Start Freq
872.070000 MHz
Stop Freq
875.070000 MHz
CF Step
10.0000000 kHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Copyright 2000-2002 Agilent Technologies

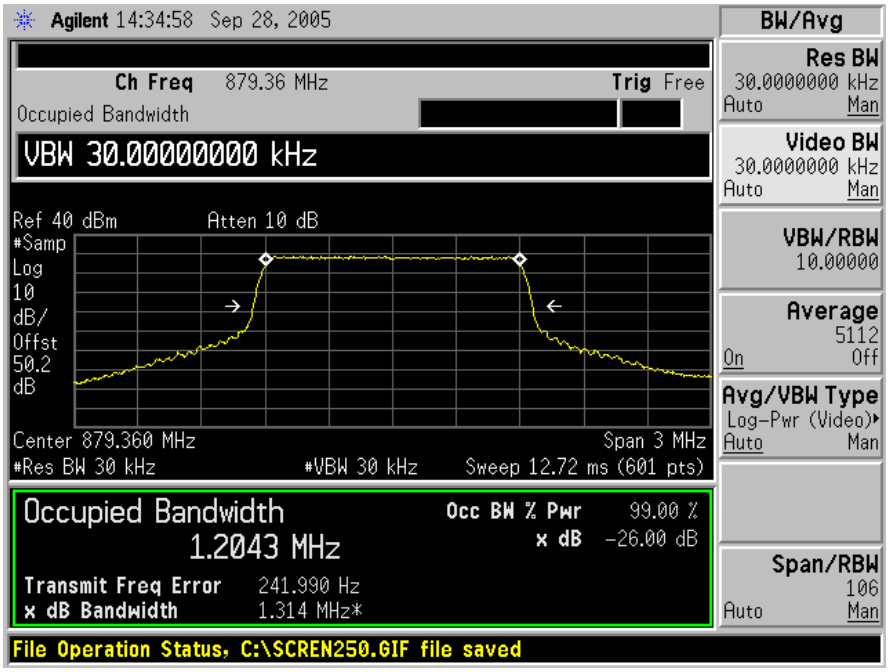

Agilent 14:34:48 Sep 28, 2005
BW/Avg
Ch Freq 879.36 MHz
Trig Free
Occupied Bandwidth
VBW 30.00000000 kHz
Ref 40 dBm
Atten 10 dB
#Samp
Log
10
dB/
Offst
50.2
dB
Center 879.360 MHz
Span 3 MHz
#Res BW 30 kHz
#VBW 30 kHz
Sweep 12.72 ms (601 pts)
Occupied Bandwidth
1.2059 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error -350.958 Hz
x dB Bandwidth 1.312 MHz*
Res BW
30.0000000 kHz
Auto Man
Video BW
30.0000000 kHz
Auto Man
VBW/RBW
10.00000
Average
5112
On Off
Avg/VBW Type
Log-Pwr (Video)
Auto Man
Span/RBW
106
Auto Man
File Operation Status, C:\SCREN248.GIF file saved

Transceiver and Receiver Module *LPA2+RFE*

Channel	Channel frequency (MHz)	99% Power Bandwidth (MHz)
Channel 1013	869.70	1.2061
Channel 119	873.57	1.2055
Channel 312	879.36	1.2043




Agilent 14:28:39 Sep 28, 2005
Freq/Channel
Ch Freq 873.57 MHz
Trig Free
Occupied Bandwidth
Center 873.5700000 MHz
Ref 40 dBm
Atten 10 dB
#Samp
Log
10
dB/
Offst
50.2
dB
Center 873.570 MHz
Span 3 MHz
#Res BW 30 kHz
#VBW 30 kHz
Sweep 12.72 ms (601 pts)
Occupied Bandwidth
1.2055 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error 356.014 Hz
x dB Bandwidth 1.316 MHz*
File Operation Status, C:\SCREN242.GIF file saved
Center Freq
873.570000 MHz
Start Freq
872.070000 MHz
Stop Freq
875.070000 MHz
CF Step
10.0000000 kHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off


Agilent 14:34:58 Sep 28, 2005
BW/Avg
Ch Freq 879.36 MHz
Trig Free
Occupied Bandwidth
VBW 30.00000000 kHz
Ref 40 dBm
Atten 10 dB
#Samp
Log
10
dB/
Offst
50.2
dB
Center 879.360 MHz
Span 3 MHz
#Res BW 30 kHz
#VBW 30 kHz
Sweep 12.72 ms (601 pts)
Occupied Bandwidth
1.2043 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error 241.990 Hz
x dB Bandwidth 1.314 MHz*
File Operation Status, C:\SCREN250.GIF file saved
Res BW
30.0000000 kHz
Auto Man
Video BW
30.0000000 kHz
Auto Man
VBW/RBW
10.00000
Average
5112
On Off
Avg/VBW Type
Log-Pwr (Video)
Auto Man
Span/RBW
106
Auto Man

§22.917- BAND EDGES

Applicable Standard

According to §22.917, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (p) by a factor of at least 43 + 10 log (p) dB.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2005-6-3	2006-6-3

*** Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency, RBW set to 30 kHz.

Test Data

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	59%
ATM Pressure:	1009mbar

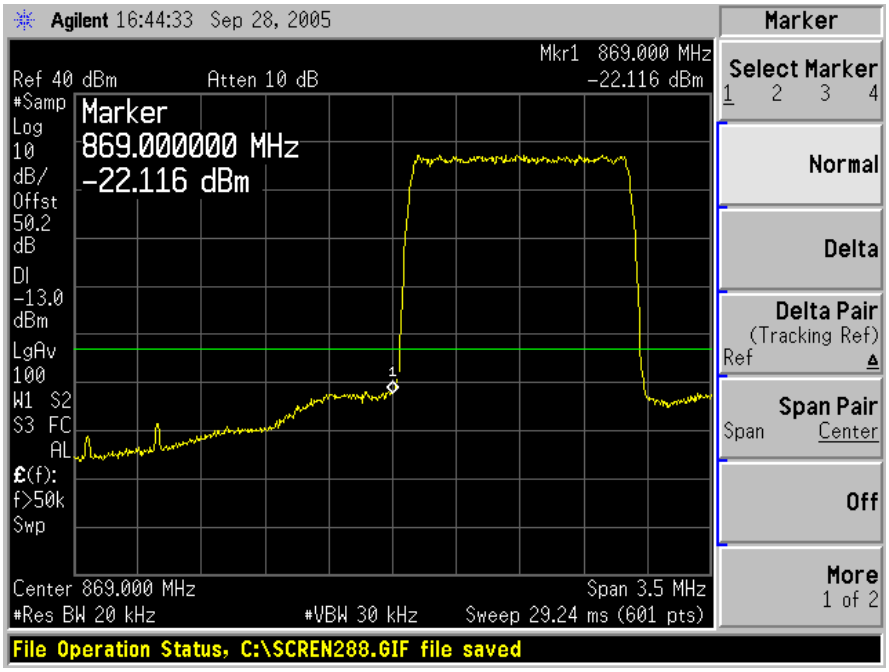
The testing was performed by Sam Lin on 2005-9-28

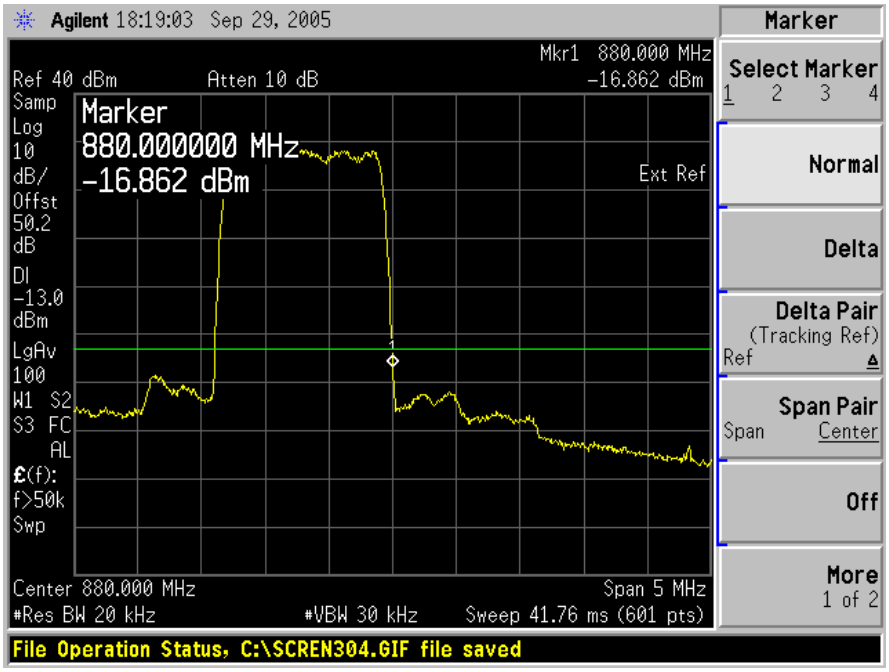
Test Result: Pass

Test Mode: Transmitting

Digital Pre-Distortion Transceiver and Receiver Module DPA

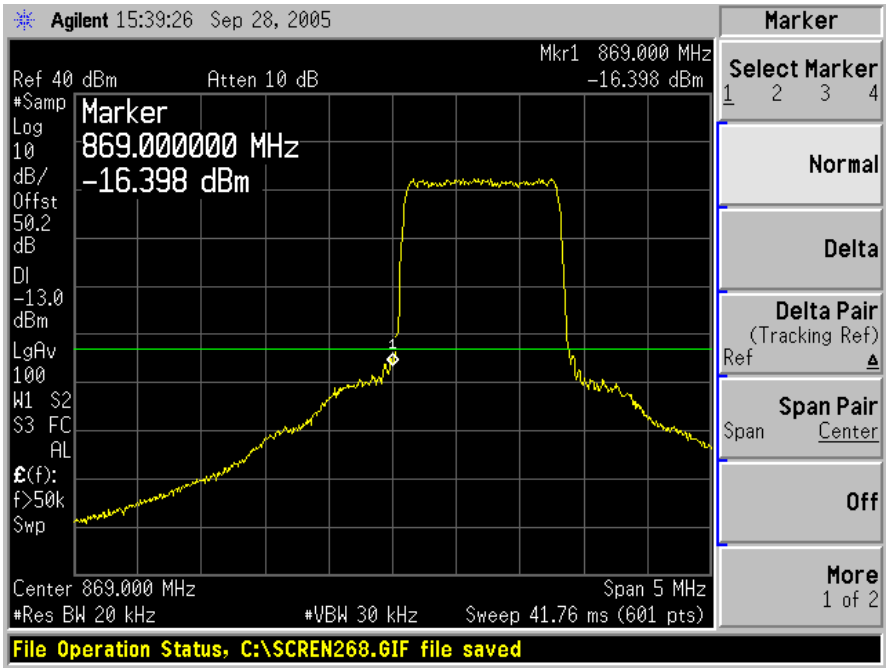
Frequency MHz	Emission dBm	Limit dBm
869.00	-22.116	-13.00
880.00	-16.862	-13.00

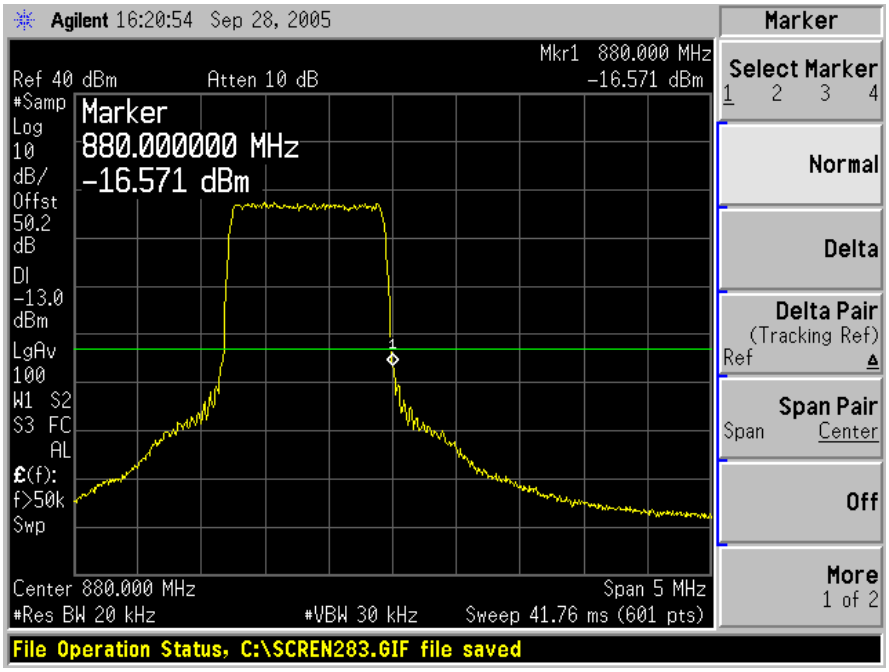




Transceiver and Receiver Module *DPA*

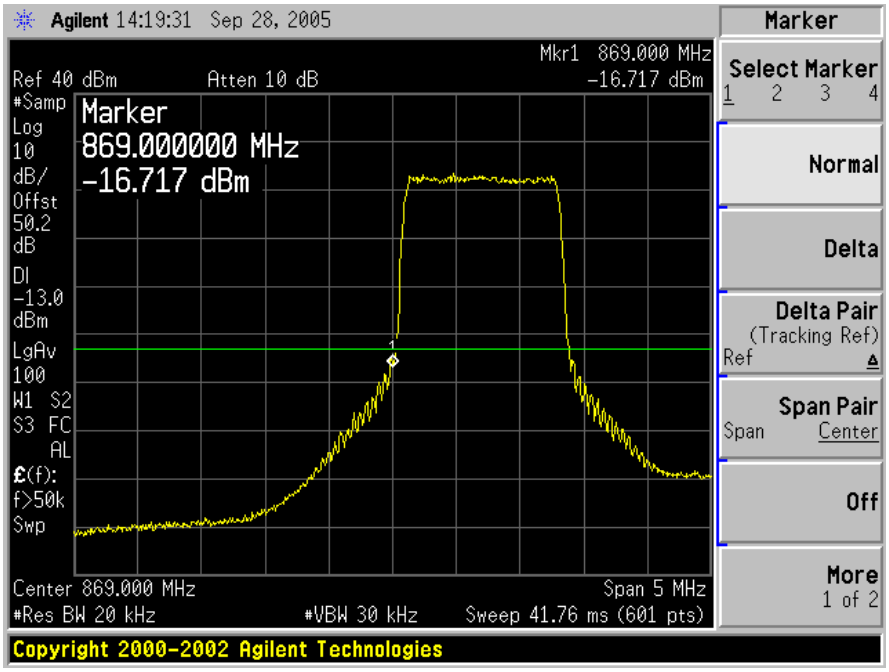
Frequency MHz	Emission dBm	Limit dBm
869.00	-16.398	-13.00
880.00	-16.571	-13.00

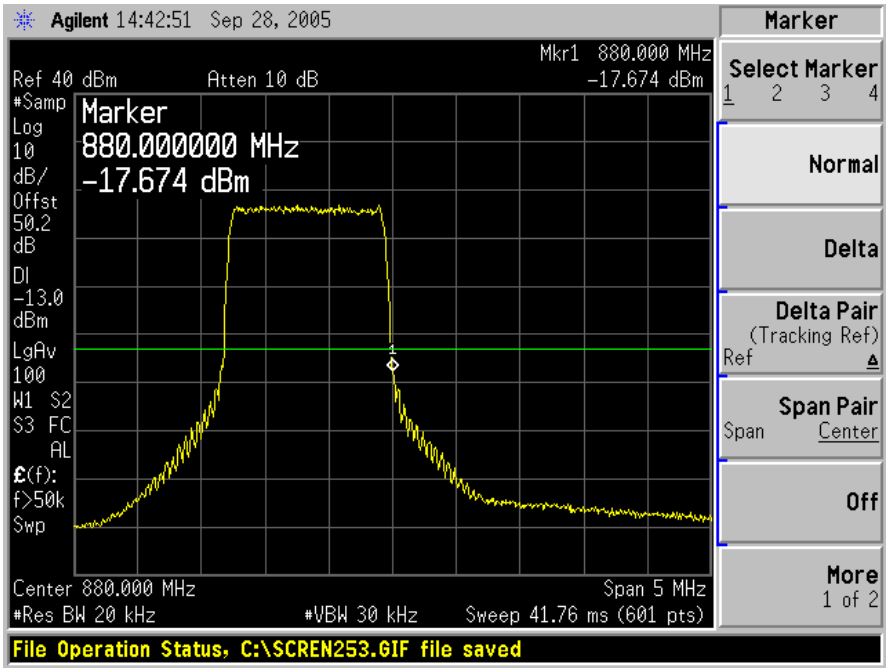




Transceiver and Receiver Module *LPA1+RFE*

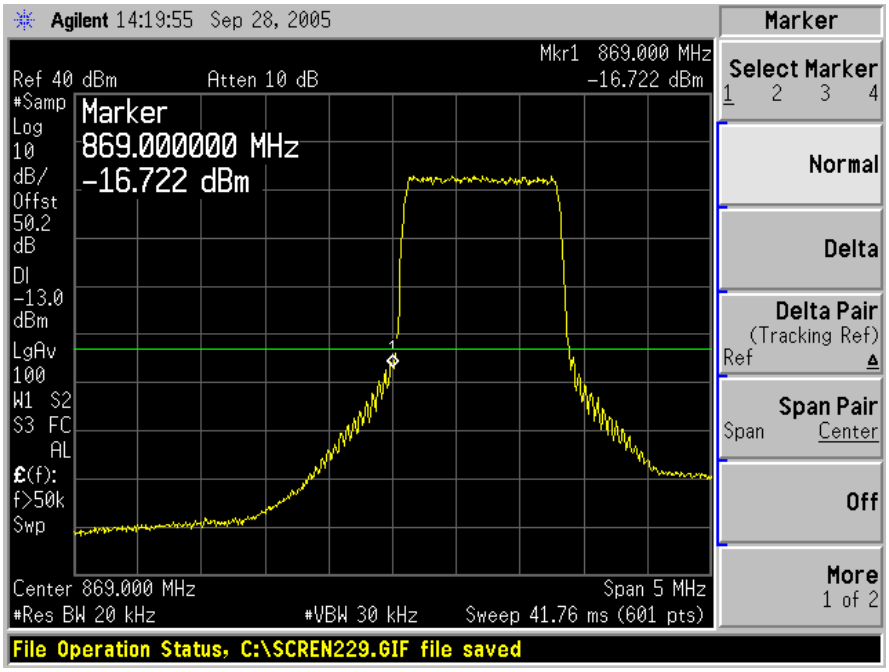
Frequency MHz	Emission dBm	Limit dBm
869.00	-16.717	-13.00
880.00	-17.647	-13.00

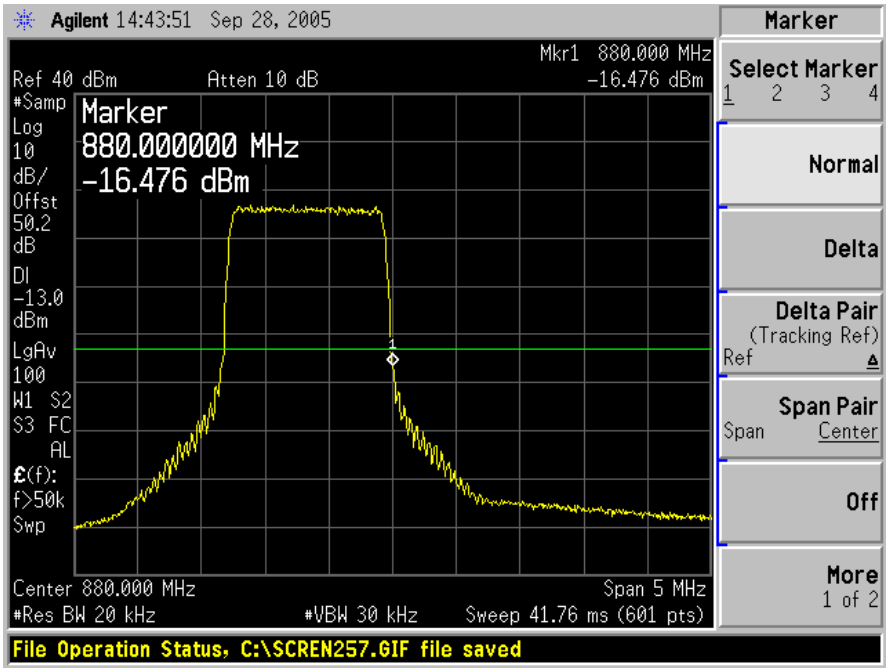




Transceiver and Receiver Module *LPA2+RFE*

Frequency MHz	Emission dBm	Limit dBm
869.00	-16.722	-13.00
880.00	-16.476	-13.00





§2.1055 (a), §2.1055 (d), §22.355 - FREQUENCY STABILITY

Applicable Standard

Requirements: FCC § 2.1055 (a), § 2.1055 (d) & following:

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C-1 of this section.

Table C-1_Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency range (MHz)	Base, fixed (ppm)	Mobile [SU][le][/ SU]3 watts (ppm)	Mobile [le]3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929	5.0	n/a	n/a
929 to 960	1.5	n/a	n/a
2110 to 2220	10.0	n/a	n/a

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2005-6-3	2006-6-3
GZ-ESPEC	Temperature Chamber	GRW-120	00020268	2005-3-8	2006-3-8
Chroma	DC Power	6230K-80	N/A	2005-8-11	2006-8-11

*** Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to a f Spectrum Analyzer via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the Spectrum Analyzer.

Frequency Stability vs. Voltage: An external variable DC power supply Source. The voltage was set to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the end point. The output frequency was recorded for each voltage.

Test Data

Environmental Conditions

Temperature:	20° C
Relative Humidity:	49%
ATM Pressure:	1009 mbar

The testing was performed by Sam Lin on 2005-9-30.

Test Result: Pass

Test Mode: Transmitting

Digital Pre-Distortion Transceiver and Receiver Module DPA

Frequency Stability vs. Temperature				
Temperature ℃	Power Supplied Vdc	Frequency Measure Error Hz	Error ppm	Limit 1.5ppm
CH1013 f=869.70MHz				
-5	-48	-3.63	0.004174	1.5
5	-48	3.57	0.0041049	1.5
15	-48	3.10	0.0035644	1.5
25	-48	4.33	0.0049787	1.5
35	-48	-3.22	0.003702	1.5
45	-48	-1.76	0.002024	1.5
CH119 f=873.57MHz				
-5	-48	-2.87	0.003285	1.5
5	-48	-3.82	0.004373	1.5
15	-48	3.57	0.0040867	1.5
25	-48	-3.61	0.004132	1.5
35	-48	1.10	0.0012592	1.5
45	-48	-1.04	0.001191	1.5
CH312 f=879.36MHz				
-5	-48	3.68	0.0041849	1.5
5	-48	-3.39	0.003855	1.5
15	-48	-3.67	0.004173	1.5
25	-48	3.44	0.0039119	1.5
35	-48	-1.67	0.001899	1.5
45	-48	-1.69	0.001922	1.5

Frequency Stability vs. Voltage				
Voltage Vdc	Temperature ℃	Frequency Measure Error Hz	Error ppm	Limit 1.5ppm
CH1013 f=869.70MHz				
-42	20	-2.62	0.003013	1.5
-46	20	-1.14	0.001311	1.5
-48	20	1.61	0.0018512	1.5
-50	20	-3.89	0.004473	1.5
-54	20	-2.55	0.002932	1.5
-58	20	-1.72	0.001978	1.5
CH119 f=873.57MHz				
-42	20	1.44	0.0016484	1.5
-46	20	-0.99	0.001133	1.5
-48	20	2.63	0.0030106	1.5
-50	20	-3.07	0.003514	1.5
-54	20	2.03	0.0023238	1.5
-58	20	-2.09	0.002392	1.5
CH312 f=879.36MHz				
-42	20	3.25	0.0036959	1.5
-46	20	4.30	0.0048899	1.5
-48	20	1.46	0.0016603	1.5
-50	20	-0.65	0.000739	1.5
-54	20	-1.99	0.002263	1.5
-58	20	-2.42	0.002752	1.5

Transceiver and Receiver Module *DPA*

Frequency Stability vs. Temperature				
Temperature ℃	Power Supplied Vdc	Frequency Measure Error Hz	Error ppm	Limit 1.5ppm
CH1013 f=869.70MHz				
-5	-48	-4.25	0.004887	1.5
5	-48	3.67	0.0042198	1.5
15	-48	-3.29	0.003783	1.5
25	-48	-3.40	0.003909	1.5
35	-48	-2.33	0.002679	1.5
45	-48	1.98	0.0022766	1.5
CH119 f=873.57MHz				
-5	-48	3.12	0.0035716	1.5
5	-48	-4.42	0.00506	1.5
15	-48	-3.73	0.00427	1.5
25	-48	3.29	0.0037662	1.5
35	-48	-3.64	0.004167	1.5
45	-48	2.41	0.0027588	1.5
CH312 f=879.36MHz				
-5	-48	2.23	0.0025359	1.5
5	-48	-3.97	0.004515	1.5
15	-48	3.63	0.004128	1.5
25	-48	3.56	0.0040484	1.5
35	-48	-1.54	0.001751	1.5
45	-48	2.27	0.0025814	1.5

Frequency Stability vs. Voltage				
Voltage Vdc	Temperature ℃	Frequency Measure Error Hz	Error ppm	Limit 1.5ppm
CH1013 f=869.7MHz				
-42	20	4.68	0.0053812	1.5
-46	20	3.74	0.0043003	1.5
-48	20	-3.18	0.003656	1.5
-50	20	-3.52	0.004047	1.5
-54	20	-2.56	0.002944	1.5
-58	20	3.55	0.0040819	1.5
CH119 f=873.57MHz				
-42	20	-2.15	0.002461	1.5
-46	20	2.06	0.0023581	1.5
-48	20	-3.18	0.00364	1.5
-50	20	-1.52	0.00174	1.5
-54	20	-7.43	0.008505	1.5
-58	20	-4.69	0.005369	1.5
CH312 f=879.36MHz				
-42	20	-4.07	0.004628	1.5
-46	20	-4.72	0.005368	1.5
-48	20	4.80	0.0054585	1.5
-50	20	4.10	0.0046625	1.5
-54	20	5.43	0.0061749	1.5
-58	20	3.04	0.0034571	1.5

Transceiver and Receiver Module *LPA1+RFE*

Frequency Stability vs. Temperature				
Temperature ℃	Power Supplied Vdc	Frequency Measure Error Hz	Error ppm	Limit 1.5ppm
CH1013 f=869.70MHz				
-5	-48	-3.44	0.003955	1.5
5	-48	-4.00	0.004599	1.5
15	-48	-3.08	0.003541	1.5
25	-48	-3.00	0.003449	1.5
35	-48	3.57	0.0041049	1.5
45	-48	-3.86	0.004438	1.5
CH119 f=873.57MHz				
-5	-48	-3.12	0.003572	1.5
5	-48	-3.32	0.0038	1.5
15	-48	3.18	0.0036402	1.5
25	-48	-2.97	0.0034	1.5
35	-48	-2.41	0.002759	1.5
45	-48	-3.07	0.003514	1.5
CH312 f=879.36MHz				
-5	-48	-4.22	0.004799	1.5
5	-48	3.83	0.0043554	1.5
15	-48	-3.54	0.004026	1.5
25	-48	-2.19	0.00249	1.5
35	-48	-3.72	0.00423	1.5
45	-48	2.28	0.0025928	1.5

Frequency Stability vs. Voltage				
Voltage Vdc	Temperature ℃	Frequency Measure Error Hz	Error ppm	Limit 1.5ppm
CH1013 f=869.70MHz				
-42	20	-6.14	0.00706	1.5
-46	20	5.86	0.006738	1.5
-48	20	-5.78	0.006646	1.5
-50	20	-3.62	0.004162	1.5
-54	20	-6.62	0.007612	1.5
-58	20	-4.63	0.005324	1.5
CH119 f=876.57MHz				
-42	20	-2.57	0.002942	1.5
-46	20	-2.36	0.002702	1.5
-48	20	-3.35	0.003835	1.5
-50	20	-2.58	0.002953	1.5
-54	20	-3.65	0.004178	1.5
-58	20	4.95	0.0056664	1.5
CH312 f=879.36MHz				
-42	20	-6.66	0.007574	1.5
-46	20	-2.79	0.003173	1.5
-48	20	-3.23	0.003673	1.5
-50	20	-3.25	0.003696	1.5
-54	20	-3.03	0.003446	1.5
-58	20	-2.71	0.003082	1.5

Transceiver and Receiver Module *LPA2+RFE*

Frequency Stability vs. Temperature				
Temperature ℃	Power Supplied Vdc	Frequency Measure Error Hz	Error ppm	Limit 1.5ppm
CH1013 f=869.70MHz				
-5	-48	3.69	0.0042428	1.5
5	-48	-3.80	0.004369	1.5
15	-48	-4.46	0.005128	1.5
25	-48	-3.80	0.004369	1.5
35	-48	-2.43	0.002794	1.5
45	-48	-2.57	0.002955	1.5
CH119 f=873.57MHz				
-5	-48	3.73	0.0042698	1.5
5	-48	2.03	0.0023238	1.5
15	-48	3.77	0.0043156	1.5
25	-48	-2.22	0.002541	1.5
35	-48	-2.00	0.002289	1.5
45	-48	-2.89	0.003308	1.5
CH312 f=879.36MHz				
-5	-48	-5.60	0.006368	1.5
5	-48	-3.34	0.003798	1.5
15	-48	-3.19	0.003628	1.5
25	-48	-2.66	0.003025	1.5
35	-48	-3.48	0.003957	1.5
45	-48	2.39	0.0027179	1.5

Frequency Stability vs. Voltage				
Voltage Vdc	Temperature ℃	Frequency Measure Error Hz	Error ppm	Limit 1.5ppm
CH1013 f=869.70MHz				
-42	20	-4.48	0.005151	1.5
-46	20	-3.10	0.003564	1.5
-48	20	-2.90	0.003334	1.5
-50	20	-4.79	0.005508	1.5
-54	20	4.02	0.0046223	1.5
-58	20	-2.30	0.002645	1.5
CH119 f=876.57MHz				
-42	20	-3.10	0.003549	1.5
-46	20	-5.17	0.005918	1.5
-48	20	-3.21	0.003675	1.5
-50	20	-1.21	0.001385	1.5
-54	20	-4.95	0.005666	1.5
-58	20	-2.69	0.003079	1.5
CH312 f=879.36MHz				
-42	20	-2.93	0.003332	1.5
-46	20	-2.37	0.002695	1.5
-48	20	4.06	0.004617	1.5
-50	20	2.07	0.002354	1.5
-54	20	-2.29	0.002604	1.5
-58	20	-2.19	0.002490	1.5