Agilent Technologies

Agilent Technologies Inc.
Customer Contact Center
800-829-4444

Agilent Service Request Number:
1-1213849116

Agilent Service Order Number:
1-1213849155

Customer Service Information

Carnegie Mellon University
Ece Dept
5000 Forbes Ave Hamerschag Hall 1301
Pittsburgh PA 15213-3815
United States

Customer Contact:
Amy Wung

Telephone:
(412) 268-4405

Receive Date:
15/FEB/2008

Schedule Date:
04/APR/2008

Shipped Date:

Product Number:
AGILENT 4395A

Product Serial Number:
JP1KE00187

Product Description:
Network/Spectrum/Impedance Analyzer

Purchase Order Number:
208502

Problem Description:

GSA Project or Govt: YES /
Agilent Calibration (Pre and Post Data) (Available as standalone cal only) /

Cal Interval: 36 Months /
Are Firmware Upgrades OK: No, please contact me /Installed Options: 001 010 1D5 1D6/
Special Requirements:Asset# 89132

*****Correct Shipping address:
Carnegie Mellon University
5000 Forbes Ave.
Hamerschlag Hall 1301
ECE Department
Pittsburgh, PA 15213

Services Provided:

The instrument failed multiple Performance Tests (see pre-data). Replaced Input Multiplexer. Also performed Service Note 4395A-09-S. Adjusted and verified operation. Cleaned and calibrated to manufacturer's specifications. Calibration certificate and data provided.

Accessories

NONE

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Parts Used

Qty	Part Number	Description
1	E4970-66509	Receiver
1	2110-1303	FUSE 5.0A 250.0V TIME DELAY 0.010OHM SOCKET
1	E4970-00223	PANEL REAR

Agilent Technologies AGILENT TECHNOLOGIES INTERNAL ASSESSMENT PROGRAM : EMG E102/1995	EMG Support Operation 10090 Foothills Blvd. Roseville, CA. 95747 (800) 829-4444

Certificate of Calibration

Agilent Calibration

Certificate Number: 1-1213849155-1

Manufacturer:	Agilent Technologies, Inc.	**Description:**	Network/Spectrum/Impedance Analyzer
Model Number:	4395A	**Options Installed:**	001,1D5,1D6
Serial Number:	JP1KE00187	**Customer Asset No:**	89132

Customer:

Carnegie Mellon University
5000 Forbes Ave Hamerschag Hall 1301
Ece Dept
Pittsburgh PA 15213-3815
UNITED STATES

Location of Calibration:

EMG Support Operation
10090 Foothills Blvd.
Roseville, CA. 95747
(800) 829-4444

Procedure:	STE-50109482-A.04.03A		
Date of Calibration:	31 Mar 2008	**Customer PO Number**	SSUF-302191270
Temperature:	18-28 °C	**Humidity:**	20-80% RH

This certifies that the above product was calibrated in compliance with a quality system registered to ISO 9001:2000 using applicable Agilent Technologies procedures.

Agilent Technologies Roseville Service Center is accredited to ISO/IEC 17025:2005, certificate # 1920-01. Please contact us for Accredited Calibrations.

As Received Conditions:
Initial testing found the equipment to be **OUT-OF-SPECIFICATION** at one or more points tested. Adjustment and(or) repair was necessary.

As Shipped Conditions:
At the completion of the calibration, measured values were **IN-SPECIFICATION** at the points tested.

Remarks or Special Requirements:

Our calibration procedures are designed to provide measurement uncertainty of less than or equal to one quarter of the specification of the unit under test, where possible, with a coverage factor of 2.

The test limits stated in the report correspond to the published specifications of the equipment, at the points tested.

This certificate is composed of 2 pages containing a summary of calibration information.

Based on the recommended calibration interval, the next calibration is due on 31 Mar 2011.

Print Date: 2 Apr 2008

Larry Goins Calibration District Mgr.

ver:E.00.00

Agilent Technologies AGILENT TECHNOLOGIES INTERNAL ASSESSMENT PROGRAM : EMG E102/1995	EMG Support Operation 10090 Foothills Blvd. Roseville, CA. 95747 (800) 829-4444

Certificate of Calibration

Agilent Calibration
Certificate Number: 1-1213849155-1

Traceability Information:

Technician ID Number: 88880

Traceability is to national standards administered by the U.S. NIST, NRC Canada, Euromet members (NPL, PTB, BNM, etc,) or other recognized standards laboratories.

Some measurements are traceable to natural physical constants, consensus standards or ratio type measurements.

Supporting documentation relative to traceability is available for review by appointment.

This certificate shall not be reproduced, except in full, without prior written approval of the laboratory.

Calibration Equipment Used:

Model Number:	Model Description:	Trace Number:	Cal Due Date:	Certificate Number:
5334B	100 MHz Universal Counter	5334B06059	17 Apr 2008	1-527600767-1
438A	Dual-channel power meter with GPIB	438A02747	26 Apr 2008	1-727952829-1
8482A	Power sensor, 100 kHz to 4.2 GHz	8482A94807	20 Aug 2008	1-735230160-1
8663A	Synth. signal generator, 0.1 to 2560 MHz	8663A02541	31 Jan 2009	1-1205664214-1
8496G	0-110dB Prog. Step Attenuator, 0-4GHz	8496G15441	5 Mar 2009	1-752324713-1
8481D	Diode power sensor, 10 MHz to 18 GHz	8481D17675	8 Dec 2008	1-685808022-1
5071A	Primary Frequency Standard	5071A00346	28 Feb 2010	5071A00346-3
8663A	Synth. signal generator, 0.1 to 2560 MHz	8663A02718	13 Jun 2008	1-1175054707-1
85044A	50-ohm Transmission/Reflection Test Set	85044A00814	30 Oct 2008	1-1141213913-1
3458A	Digital multimeter, 8.5 digit	3458A00186	9 May 2008	1-659255902-1
3325A	Synthesizer/Function Generator	3325A27300	17 Jan 2009	1-1192492339-1
436A	Digital power meter	436A29282	12 Jun 2009	1-1238740942-1
8753ES	RF Network Analyzer	8753ES75234	26 Nov 2008	1-1225340463-1
8566B	High-performance MW spectrum analyzer	8566B08741	2 May 2008	1-1148324542-1
85032B	50-ohm Type N Calibration Kit	85032B06609	6 Dec 2008	1-1170676991-1

ver:E.00.00

Measurement Report

AGILENT TECHNOLOGIES
TMO Support Operation
10090 Foothills Blvd.
Roseville, CA. 95747

As Received (Pre-Repair/Adjustment) Data

Report Number: 1-1213849155-1
Manufacturer: Hewlett-Packard Co. (Agilent Technologies)
Model Number: 4395A (HP4395A)
Options Installed: 001,1D5,1D6
Firmware Version:

Customer: CARNEGIE MELLON UNIVERSITY

Serial Number: JP1KE00187

Test Date: 20 Feb 2008
Temperature: 23±5 °C

Tested By: N5232030
Humidity: 20 to 80% RH

Test Program Name: HP4395A Part No. 5010-9482
Test Program Version: A.04.03A
Test Executive: STE/9000 C.08.18 (MENDOR B.06.11B)

Specification Limits:

Unless indicated otherwise, the units for minimum and/or maximum specification limits are the same as the units stated for the measured value.

Measurement Report

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

PERFORMANCE TEST RESULTS SUMMARY

Test Name	Status
INITIAL SETUP	DONE
FREQUENCY ACCURACY TEST OPTION 1D5	PASSED
SOURCE LEVEL ACCURACY/FLATNESS TEST	PASSED
NON-SWEEP LINEARITY TEST	PASSED
POWER SWEEP LINEARITY TEST	***FAILED***
HARMONICS/NON-HARMONIC TEST	PASSED
DC BIAS TEST	PASSED
RECEIVER NOISE LEVEL TEST	PASSED
INPUT CROSSTALK TEST	PASSED
INPUT IMPEDANCE TEST	***FAILED***
ABSOLUTE AMPLITUDE ACCURACY TEST	***FAILED***
MAGNITUDE R/P DYNAMIC ACCURACY TEST	***FAILED***
MAGNITUDE R/P FREQUENCY RESPONSE TEST	***FAILED***
DISPLAYED AVERAGE NOISE LEVEL TEST	PASSED
AMPLITUDE FIDELITY TEST	***PARTIAL***
INPUT ATTEN SWITCHING UNCERTAINTY TEST	PASSED
NOISE SIDEBANDS TEST	PASSED
AMPLITUDE ACCURACY/FREQ RESPONSE TEST	***FAILED***
SECOND HARMONIC DISTORTION TEST	PASSED
THIRD ORDER INTERMODULATION DISTORTION	PASSED
OTHER SPURIOUS TEST	PASSED
RESIDUAL RESPONSE TEST	PASSED
FREQUENCY ACC. TEST (OPT.1D5)	PASSED

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

FREQUENCY ACCURACY TEST OPTION 1D5 PASSED

TEST COND.	MIN	MEASURED	MAX
Frequency			
100 MHz	-13	0 Hz	13

SOURCE LEVEL ACCURACY/FLATNESS TEST PASSED

TEST CONDITIONS	MIN	MEASURED	MAX
Level Accuracy			
50 MHz 0dBm	-1.0	-0.1 dB	+1.0
Frequency			
1 MHz	-2.0	0.0 dB	+2.0
3 MHz	-2.0	0.0 dB	+2.0
10 MHz	-2.0	0.0 dB	+2.0
45 MHz	-2.0	0.0 dB	+2.0
75 MHz	-2.0	-0.1 dB	+2.0
110 MHz	-2.0	-0.1 dB	+2.0
140 MHz	-2.0	0.0 dB	+2.0
190 MHz	-2.0	0.1 dB	+2.0
235 MHz	-2.0	0.0 dB	+2.0
290 MHz	-2.0	-0.1 dB	+2.0
345 MHz	-2.0	0.0 dB	+2.0
400 MHz	-2.0	-0.1 dB	+2.0
445 MHz	-2.0	-0.3 dB	+2.0
470 MHz	-2.0	-0.1 dB	+2.0
500 MHz	-2.0	-0.1 dB	+2.0
10 Hz	-2.0	0.0 dB	+2.0
50 Hz	-2.0	0.0 dB	+2.0
500 Hz	-2.0	0.2 dB	+2.0
2 kHz	-2.0	0.0 dB	+2.0
12 kHz	-2.0	0.1 dB	+2.0
60 kHz	-2.0	0.1 dB	+2.0
160 kHz	-2.0	-0.2 dB	+2.0
500 kHz	-2.0	0.2 dB	+2.0

Measurement Report (As Received)

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

NON-SWEEP LINEARITY TEST — PASSED

TEST CONDITIONS	MIN	MEASURED	MAX
Power Setting			
15 dBm	-1.0	0.1 dB	+1.0
10 dBm	-1.0	0.2 dB	+1.0
-10 dBm	-1.0	-0.1 dB	+1.0
-20 dBm	-1.0	-0.2 dB	+1.0
-30 dBm	-1.0	-0.2 dB	+1.0
-40 dBm	-1.0	-0.1 dB	+1.0
-50 dBm	-1.0	-0.8 dB	+1.0

POWER SWEEP LINEARITY TEST — FAILED

TEST CONDITIONS		MIN	MEASURED	MAX	
STOP Power	Source Power				
-30 dBm	-35 dBm	-0.5	0.0 dB	+0.5	
	-40 dBm	-0.5	0.0 dB	+0.5	
	-45 dBm	-0.5	0.1 dB	+0.5	
	-50 dBm	-0.5	-1.5 dB	+0.5	****
15 dBm	10 dBm	-0.5	0.0 dB	+0.5	
	5 dBm	-0.5	0.0 dB	+0.5	
	0 dBm	-0.5	0.1 dB	+0.5	
	-5 dBm	-0.5	0.1 dB	+0.5	

HARMONICS/NON-HARMONIC TEST — PASSED

TEST CONDITIONS		MEASURED	MAX
Harmonics			
Frequency	Harmonic Frequency		
10 kHz	20 kHz	-60 dBc	-30
	30 kHz	-55 dBc	-30
500 kHz	1 MHz	-62 dBc	-30
	1.5 MHz	-66 dBc	-30
10 MHz	20 MHz	-60 dBc	-30
	30 MHz	-59 dBc	-30
100 MHz	200 MHz	-54 dBc	-30

continued...

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

HARMONICS/NON-HARMONIC TEST

TEST CONDITIONS		MEASURED	MAX
	300 MHz	-54 dBc	-30
250 MHz	500 MHz	-46 dBc	-30
	750 MHz	-52 dBc	-30
500 MHz	1 GHz	-46 dBc	-30
	1.5 GHz	-56 dBc	-30

Non-Harmonic Spurious

Frequency	Non-Harmonic Frequency		
10 Hz	830.00001 MHz	-87 dBc	-30
230 MHz	600 MHz	-79 dBc	-30
330 MHz	500 MHz	-64 dBc	-30
430 MHz	400 MHz	-53 dBc	-30
500 MHz	330 MHz	-53 dBc	-30

DC BIAS TEST

PASSED

TEST CONDITIONS	MIN	MEASURED	MAX
DC Bias Voltage			
-40 V	-44	-9 mV	44
-10 V	-14	-2 mV	14
-4 V	-8	0 mV	8
0 V	-4	0 mV	4
4 V	-8	2 mV	8
10 V	-14	3 mV	14
40 V	-44	9 mV	44
DC Bias Current			
-100 mA	-0.530	-0.028 mA	0.53
-10 mA	-0.080	-0.017 mA	0.08
-1 mA	-0.035	-0.011 mA	0.03
-20 uA	-0.030	-0.008 mA	0.03
20 uA	-0.030	0.006 mA	0.03
1 mA	-0.035	0.007 mA	0.03
10 mA	-0.080	0.013 mA	0.08
100 mA	-0.530	0.004 mA	0.53

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

RECEIVER NOISE LEVEL TEST — PASSED

TEST CONDITIONS		MEASURED	MAXIMUM
Freuency	Input		
100 Hz	R	-113.8 dBm	-85.0
	A	-112.7 dBm	-85.0
	B	-114.2 dBm	-85.0
1 kHz	R	-118.1 dBm	-85.0
	A	-117.7 dBm	-85.0
	B	-117.8 dBm	-85.0
10 kHz	R	-125.8 dBm	-85.0
	A	-125.4 dBm	-85.0
	B	-123.2 dBm	-85.0
100 kHz	R	-128.0 dBm	-115.0
	A	-128.7 dBm	-115.0
	B	-127.3 dBm	-115.0
1 MHz	R	-126.4 dBm	-115.0
	A	-126.9 dBm	-115.0
	B	-126.1 dBm	-115.0
11 MHz	R	-126.9 dBm	-114.9
	A	-126.0 dBm	-114.9
	B	-125.9 dBm	-114.9
101 MHz	R	-124.5 dBm	-114.0
	A	-124.1 dBm	-114.0
	B	-123.7 dBm	-114.0
499 MHz	R	-121.7 dBm	-110.5
	A	-121.6 dBm	-110.5
	B	-121.2 dBm	-110.5

INPUT CROSSTALK TEST — PASSED

TEST CONDITIONS	MEASURED	MAX
10 Hz <= Freq. < 1 kHz		
R into A Crosstalk	-120 dB	-100
R into B Crosstalk	-119 dB	-100
1 kHz <= Freq. < 100 kHz		
R into A Crosstalk	-121 dB	-100
R into B Crosstalk	-127 dB	-100
100 kHz <= Freq. <= 500 MHz		

continued...

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

INPUT CROSSTALK TEST

TEST CONDITIONS	MEASURED	MAX
R into A Crosstalk	-126 dB	-120
R into B Crosstalk	-123 dB	-120

INPUT IMPEDANCE TEST

FAILED

TEST CONDITIONS	MEASURED	MAX	
300 kHz <= Freq. <= 100 MHz			
R Return Loss	-39 dB	-25	
A Return Loss	-38 dB	-25	
B Return Loss	-6 dB	-25	****
100 MHz < Freq. <= 500 MHz			
R Return Loss	-32 dB	-15	
A Return Loss	-32 dB	-15	
B Return Loss	-6 dB	-15	****

ABSOLUTE AMPLITUDE ACCURACY TEST

FAILED

TEST COND.	MIN	MEASURED	MAX
Input R			
Frequency			
100 Hz	-1.5	-0.2 dB	1.5
200 Hz	-1.5	-0.2 dB	1.5
500 Hz	-1.5	-0.2 dB	1.5
1 kHz	-1.5	-0.2 dB	1.5
2 kHz	-1.5	-0.2 dB	1.5
5 kHz	-1.5	-0.2 dB	1.5
10 kHz	-1.5	-0.1 dB	1.5
20 kHz	-1.5	-0.1 dB	1.5
50 kHz	-1.5	0.0 dB	1.5
100 kHz	-1.5	0.0 dB	1.5
200 kHz	-1.5	0.0 dB	1.5
500 kHz	-1.5	0.0 dB	1.5
Input A			

continued...

Measurement Report (As Received)

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

ABSOLUTE AMPLITUDE ACCURACY TEST

TEST COND.	MIN	MEASURED	MAX	
Frequency				
100 Hz	-1.5	-0.3 dB	1.5	
200 Hz	-1.5	-0.3 dB	1.5	
500 Hz	-1.5	-0.3 dB	1.5	
1 kHz	-1.5	-0.3 dB	1.5	
2 kHz	-1.5	-0.3 dB	1.5	
5 kHz	-1.5	-0.3 dB	1.5	
10 kHz	-1.5	-0.2 dB	1.5	
20 kHz	-1.5	-0.2 dB	1.5	
50 kHz	-1.5	-0.1 dB	1.5	
100 kHz	-1.5	-0.2 dB	1.5	
200 kHz	-1.5	-0.2 dB	1.5	
500 kHz	-1.5	-0.1 dB	1.5	
Input B				
Frequency				
100 Hz	-1.5	-61.9 dB	1.5	****
200 Hz	-1.5	-61.8 dB	1.5	****
500 Hz	-1.5	-61.9 dB	1.5	****
1 kHz	-1.5	-61.9 dB	1.5	****
2 kHz	-1.5	-61.8 dB	1.5	****
5 kHz	-1.5	-61.8 dB	1.5	****
10 kHz	-1.5	-63.2 dB	1.5	****
20 kHz	-1.5	-111.2 dB	1.5	****
50 kHz	-1.5	-114.6 dB	1.5	****
100 kHz	-1.5	-61.6 dB	1.5	****
200 kHz	-1.5	-61.4 dB	1.5	****
500 kHz	-1.5	-60.4 dB	1.5	****
Input R				
Frequency				
1 MHz	-1.5	0.2 dB	1.5	
2 MHz	-1.5	0.2 dB	1.5	
5 MHz	-1.5	0.2 dB	1.5	
8 MHz	-1.5	0.1 dB	1.5	
10 MHz	-1.5	0.1 dB	1.5	
20 MHz	-1.5	0.0 dB	1.5	
50 MHz	-1.5	-0.2 dB	1.5	
100 MHz	-1.5	-0.4 dB	1.5	
125 MHz	-1.5	-0.2 dB	1.5	
175 MHz	-1.5	-0.7 dB	1.5	
200 MHz	-1.5	-1.2 dB	1.5	
225 MHz	-1.5	-1.3 dB	1.5	

continued...

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

ABSOLUTE AMPLITUDE ACCURACY TEST

TEST COND.	MIN	MEASURED	MAX	
275 MHz	-1.5	-1.9 dB	1.5	****
300 MHz	-1.5	-2.1 dB	1.5	****
325 MHz	-1.5	-2.5 dB	1.5	****
375 MHz	-1.5	-2.4 dB	1.5	****
400 MHz	-1.5	-2.2 dB	1.5	****
425 MHz	-1.5	-1.7 dB	1.5	****
475 MHz	-1.5	-1.8 dB	1.5	****
500 MHz	-1.5	-1.8 dB	1.5	****
Input A				
Frequency				
1 MHz	-1.5	0.1 dB	1.5	
2 MHz	-1.5	0.2 dB	1.5	
5 MHz	-1.5	0.2 dB	1.5	
8 MHz	-1.5	0.1 dB	1.5	
10 MHz	-1.5	0.1 dB	1.5	
20 MHz	-1.5	0.1 dB	1.5	
50 MHz	-1.5	-0.1 dB	1.5	
100 MHz	-1.5	-0.3 dB	1.5	
125 MHz	-1.5	-0.1 dB	1.5	
175 MHz	-1.5	-0.6 dB	1.5	
200 MHz	-1.5	-1.1 dB	1.5	
225 MHz	-1.5	-1.3 dB	1.5	
275 MHz	-1.5	-1.9 dB	1.5	****
300 MHz	-1.5	-2.0 dB	1.5	****
325 MHz	-1.5	-2.2 dB	1.5	****
375 MHz	-1.5	-2.4 dB	1.5	****
400 MHz	-1.5	-2.3 dB	1.5	****
425 MHz	-1.5	-2.0 dB	1.5	****
475 MHz	-1.5	-1.8 dB	1.5	****
500 MHz	-1.5	-2.2 dB	1.5	****
Input B				
Frequency				
1 MHz	-1.5	-58.0 dB	1.5	****
2 MHz	-1.5	-54.1 dB	1.5	****
5 MHz	-1.5	-47.3 dB	1.5	****
8 MHz	-1.5	-43.6 dB	1.5	****
10 MHz	-1.5	-41.7 dB	1.5	****
20 MHz	-1.5	-36.0 dB	1.5	****
50 MHz	-1.5	-28.5 dB	1.5	****
100 MHz	-1.5	-23.0 dB	1.5	****
125 MHz	-1.5	-21.0 dB	1.5	****

continued...

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

ABSOLUTE AMPLITUDE ACCURACY TEST

TEST COND.	MIN	MEASURED	MAX	
175 MHz	-1.5	-18.8 dB	1.5	****
200 MHz	-1.5	-18.2 dB	1.5	****
225 MHz	-1.5	-17.5 dB	1.5	****
275 MHz	-1.5	-16.4 dB	1.5	****
300 MHz	-1.5	-15.9 dB	1.5	****
325 MHz	-1.5	-15.5 dB	1.5	****
375 MHz	-1.5	-14.7 dB	1.5	****
400 MHz	-1.5	-14.0 dB	1.5	****
425 MHz	-1.5	-13.0 dB	1.5	****
475 MHz	-1.5	-12.0 dB	1.5	****
500 MHz	-1.5	-11.6 dB	1.5	****

MAGNITUDE R/P DYNAMIC ACCURACY TEST **FAILED**

TEST CONDITIONS		MINIMUM	MEASURED	MAXIMUM	
A/R Measurement					
Input Level Measurement					
0 dB	Mag Ratio	-0.400	0.033 dB	0.400	
	Phase	-3.00	0.59 deg	3.00	
-20 dB	Mag Ratio	-0.050	-0.008 dB	0.050	
	Phase	-0.30	-0.08 deg	0.30	
-30 dB	Mag Ratio	-0.050	-0.017 dB	0.050	
	Phase	-0.30	-0.07 deg	0.30	
-40 dB	Mag Ratio	-0.050	-0.036 dB	0.050	
	Phase	-0.30	-0.06 deg	0.30	
-50 dB	Mag Ratio	-0.050	-0.018 dB	0.050	
	Phase	-0.30	-0.05 deg	0.30	
-60 dB	Mag Ratio	-0.050	-0.035 dB	0.050	
	Phase	-0.30	-0.04 deg	0.30	
-70 dB	Mag Ratio	-0.300	-0.085 dB	0.300	
	Phase	-1.80	0.01 deg	1.80	
-80 dB	Mag Ratio	-0.300	-7.886 dB	0.300	****
	Phase	-1.80	-6.58 deg	1.80	****
-90 dB	Mag Ratio	-3.000	-7.992 dB	3.000	****
	Phase	-18.00	-6.84 deg	18.00	
-100 dB	Mag Ratio	-3.000	-8.406 dB	3.000	****
	Phase	-18.00	-9.39 deg	18.00	
B/R Measurement					

continued...

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

MAGNITUDE R/P DYNAMIC ACCURACY TEST

TEST CONDITIONS		MINIMUM	MEASURED	MAXIMUM	
Input Level Measurement					
0 dB	Mag Ratio	-0.400	-0.088 dB	0.400	
	Phase	-3.00	-0.07 deg	3.00	
-20 dB	Mag Ratio	-0.050	-0.001 dB	0.050	
	Phase	-0.30	0.05 deg	0.30	
-30 dB	Mag Ratio	-0.050	-0.004 dB	0.050	
	Phase	-0.30	0.29 deg	0.30	
-40 dB	Mag Ratio	-0.050	-0.025 dB	0.050	
	Phase	-0.30	0.92 deg	0.30	****
-50 dB	Mag Ratio	-0.050	-0.022 dB	0.050	
	Phase	-0.30	3.09 deg	0.30	****
-60 dB	Mag Ratio	-0.050	-0.063 dB	0.050	****
	Phase	-0.30	11.48 deg	0.30	****
-70 dB	Mag Ratio	-0.300	-0.138 dB	0.300	
	Phase	-1.80	35.37 deg	1.80	****
-80 dB	Mag Ratio	-0.300	-0.239 dB	0.300	
	Phase	-1.80	88.43 deg	1.80	****
-90 dB	Mag Ratio	-3.000	-1.544 dB	3.000	
	Phase	-18.00	91.85 deg	18.00	****
-100 dB	Mag Ratio	-3.000	4.375 dB	3.000	****
	Phase	-18.00	120.66 deg	18.00	****

MAGNITUDE R/P FREQUENCY RESPONSE TEST **FAILED**

TEST CONDITIONS		MIN	MEASURED	MAX	
A/R Measurement					
Magnitude Ratio		-2.0	-0.5 dB	2.0	
	Phase	-12	-4 deg	12	
B/R Measurement					
Magnitude Ratio		-2.0	-58.4 dB	2.0	****
	Phase	-12	44 deg	12	****

DISPLAYED AVERAGE NOISE LEVEL TEST **PASSED**

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

TEST COND.	MEASURED	MAX
Input R		
Frequency		
1 kHz	-136 dBm/Hz	-120
10 kHz	-141 dBm/Hz	-120
100 kHz	-147 dBm/Hz	-133
1 MHz	-151 dBm/Hz	-133
11 MHz	-149 dBm/Hz	-145
20 MHz	-151 dBm/Hz	-145
101 MHz	-149 dBm/Hz	-144
201 MHz	-151 dBm/Hz	-143
499 MHz	-147 dBm/Hz	-140
Input A		
Frequency		
1 kHz	-134 dBm/Hz	-120
10 kHz	-141 dBm/Hz	-120
100 kHz	-149 dBm/Hz	-133
1 MHz	-148 dBm/Hz	-133
11 MHz	-151 dBm/Hz	-145
20 MHz	-150 dBm/Hz	-145
101 MHz	-150 dBm/Hz	-144
201 MHz	-149 dBm/Hz	-143
499 MHz	-148 dBm/Hz	-140
Input B		
Frequency		
1 kHz	-138 dBm/Hz	-120
10 kHz	-143 dBm/Hz	-120
100 kHz	-147 dBm/Hz	-133
1 MHz	-147 dBm/Hz	-133
11 MHz	-150 dBm/Hz	-145
20 MHz	-149 dBm/Hz	-145
101 MHz	-153 dBm/Hz	-144
201 MHz	-151 dBm/Hz	-143
499 MHz	-146 dBm/Hz	-140

AMPLITUDE FIDELITY TEST **PARTIAL**

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM
Input R			
dB from			
Reference Input Level			

continued...

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

AMPLITUDE FIDELITY TEST

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	
10 dB	-0.05	0.01 dB	0.05	
-10 dB	-0.05	0.00 dB	0.05	
-20 dB	-0.05	-0.01 dB	0.05	
-30 dB	-0.07	-0.04 dB	0.07	
-40 dB	-0.15	0.00 dB	0.15	
-50 dB	-0.35	-0.01 dB	0.35	
-60 dB	-0.80	-0.04 dB	0.80	
-70 dB	-1.80	0.00 dB	1.80	
Input A dB from Reference Input Level				
10 dB	-0.05	0.03 dB	0.05	
-10 dB	-0.05	-0.05 dB	0.05	
-20 dB	-0.05	-0.05 dB	0.05	
-30 dB	-0.07	0.12 dB	0.07	****
-40 dB	-0.15	0.12 dB	0.15	
-50 dB	-0.35	0.13 dB	0.35	
-60 dB	-0.80	0.09 dB	0.80	
-70 dB	-1.80	0.17 dB	1.80	

INPUT ATTEN SWITCHING UNCERTAINTY TEST PASSED

TEST CONDITIONS	MIN	MEASURED	MAX
Input R Input Attenuation			
0 dB	-1.0	0.0 dB	1.0
20 dB	-1.0	0.0 dB	1.0
30 dB	-1.0	0.0 dB	1.0
40 dB	-1.5	0.0 dB	1.5
50 dB	-1.5	0.0 dB	1.5
Input A Input Attenuation			
0 dB	-1.0	0.0 dB	1.0
20 dB	-1.0	0.0 dB	1.0
30 dB	-1.0	0.0 dB	1.0
40 dB	-1.5	0.0 dB	1.5
50 dB	-1.5	0.0 dB	1.5

continued...

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

INPUT ATTEN SWITCHING UNCERTAINTY TEST

TEST CONDITIONS	MIN	MEASURED	MAX
Input B			
Input Attenuation			
0 dB	-1.0	-0.1 dB	1.0
20 dB	-1.0	0.0 dB	1.0
30 dB	-1.0	0.0 dB	1.0
40 dB	-1.5	0.0 dB	1.5
50 dB	-1.5	0.0 dB	1.5

NOISE SIDEBANDS TEST

PASSED

TEST CONDITIONS		MEASURED	MAX
Input R			
Frequency Offset from Carrier			
10 MHz	-1 kHz	-104 dBc/Hz	-97
	+1 kHz	-104 dBc/Hz	-97
	-10 kHz	-110 dBc/Hz	-97
	+10 kHz	-110 dBc/Hz	-97
	-100 kHz	-119 dBc/Hz	-110
	+100 kHz	-120 dBc/Hz	-110
	-1 MHz	-122 dBc/Hz	-110
	+1 MHz	-123 dBc/Hz	-110
100 MHz	-1 kHz	-103 dBc/Hz	-97
	+1 kHz	-103 dBc/Hz	-97
	-10 kHz	-108 dBc/Hz	-97
	+10 kHz	-108 dBc/Hz	-97
	-100 kHz	-120 dBc/Hz	-110
	+100 kHz	-120 dBc/Hz	-110
	-1 MHz	-126 dBc/Hz	-110
	+1 MHz	-126 dBc/Hz	-110
500 MHz	-1 kHz	-99 dBc/Hz	-97
	+1 kHz	-100 dBc/Hz	-97
	-10 kHz	-106 dBc/Hz	-97
	+10 kHz	-105 dBc/Hz	-97
	-100 kHz	-120 dBc/Hz	-110
	+100 kHz	-120 dBc/Hz	-110
	-1 MHz	-122 dBc/Hz	-110
	+1 MHz	-123 dBc/Hz	-110

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

AMPLITUDE ACCURACY/FREQ RESPONSE TEST — FAILED

TEST CONDITIONS	MIN	MEASURED	MAX	
Level Accuracy				
Level Accuracy Input R	-0.8	0.2 dB	0.8	
Frequency Response >=1MHz				
Input R				
1 MHz	-1.3	0.3 dB	1.3	
2 MHz	-1.3	0.3 dB	1.3	
5 MHz	-1.3	0.3 dB	1.3	
8 MHz	-1.3	0.2 dB	1.3	
10 MHz	-1.3	0.2 dB	1.3	
20 MHz	-1.3	0.1 dB	1.3	
100 MHz	-1.3	-0.2 dB	1.3	
125 MHz	-1.3	0.0 dB	1.3	
150 MHz	-1.3	-0.5 dB	1.3	
175 MHz	-1.3	-0.5 dB	1.3	
200 MHz	-1.3	-1.0 dB	1.3	
225 MHz	-1.3	-1.1 dB	1.3	
250 MHz	-1.3	-1.2 dB	1.3	
275 MHz	-1.3	-1.6 dB	1.3	****
300 MHz	-1.3	-1.9 dB	1.3	****
325 MHz	-1.3	-2.2 dB	1.3	****
350 MHz	-1.3	-2.2 dB	1.3	****
375 MHz	-1.3	-2.1 dB	1.3	****
400 MHz	-1.3	-1.9 dB	1.3	****
425 MHz	-1.3	-1.4 dB	1.3	****
450 MHz	-1.3	-1.5 dB	1.3	****
475 MHz	-1.3	-1.4 dB	1.3	****
500 MHz	-1.3	-1.5 dB	1.3	****
Level Accuracy Input A	-0.8	0.2 dB	0.8	
Frequency Response >=1MHz				
Input A				
1 MHz	-1.3	0.2 dB	1.3	
2 MHz	-1.3	0.2 dB	1.3	
5 MHz	-1.3	0.2 dB	1.3	
8 MHz	-1.3	0.1 dB	1.3	
10 MHz	-1.3	0.1 dB	1.3	
20 MHz	-1.3	0.1 dB	1.3	
100 MHz	-1.3	-0.2 dB	1.3	
125 MHz	-1.3	0.0 dB	1.3	
150 MHz	-1.3	-0.5 dB	1.3	
175 MHz	-1.3	-0.5 dB	1.3	

continued...

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

AMPLITUDE ACCURACY/FREQ RESPONSE TEST

TEST CONDITIONS	MIN	MEASURED	MAX	
200 MHz	-1.3	-1.0 dB	1.3	
225 MHz	-1.3	-1.2 dB	1.3	
250 MHz	-1.3	-1.2 dB	1.3	
275 MHz	-1.3	-1.8 dB	1.3	****
300 MHz	-1.3	-1.8 dB	1.3	****
325 MHz	-1.3	-2.0 dB	1.3	****
350 MHz	-1.3	-2.2 dB	1.3	****
375 MHz	-1.3	-2.2 dB	1.3	****
400 MHz	-1.3	-2.1 dB	1.3	****
425 MHz	-1.3	-1.8 dB	1.3	****
450 MHz	-1.3	-1.7 dB	1.3	****
475 MHz	-1.3	-1.6 dB	1.3	****
500 MHz	-1.3	-1.9 dB	1.3	****
Level Accuracy Input B	-0.8	-28.2 dB	0.8	****
Frequency Response >=1MHz				
Input B				
1 MHz	-1.3	-29.5 dB	1.3	****
2 MHz	-1.3	-25.7 dB	1.3	****
5 MHz	-1.3	-18.9 dB	1.3	****
8 MHz	-1.3	-15.2 dB	1.3	****
10 MHz	-1.3	-13.3 dB	1.3	****
20 MHz	-1.3	-7.6 dB	1.3	****
100 MHz	-1.3	5.6 dB	1.3	****
125 MHz	-1.3	7.5 dB	1.3	****
150 MHz	-1.3	8.4 dB	1.3	****
175 MHz	-1.3	9.7 dB	1.3	****
200 MHz	-1.3	10.3 dB	1.3	****
225 MHz	-1.3	11.1 dB	1.3	****
250 MHz	-1.3	11.9 dB	1.3	****
275 MHz	-1.3	12.2 dB	1.3	****
300 MHz	-1.3	12.6 dB	1.3	****
325 MHz	-1.3	13.0 dB	1.3	****
350 MHz	-1.3	13.5 dB	1.3	****
375 MHz	-1.3	14.0 dB	1.3	****
400 MHz	-1.3	14.7 dB	1.3	****
425 MHz	-1.3	15.6 dB	1.3	****
450 MHz	-1.3	16.1 dB	1.3	****
475 MHz	-1.3	16.6 dB	1.3	****
500 MHz	-1.3	17.0 dB	1.3	****
Frequency Response < 1MHz				
Input R				

continued...

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

AMPLITUDE ACCURACY/FREQ RESPONSE TEST

TEST CONDITIONS	MIN	MEASURED	MAX	
10 Hz	-3.0	-2.3 dB	3.0	
15 Hz	-3.0	-1.5 dB	3.0	
25 Hz	-3.0	-0.7 dB	3.0	
40 Hz	-3.0	-0.4 dB	3.0	
80 Hz	-3.0	-0.2 dB	3.0	
100 Hz	-1.3	-0.3 dB	1.3	
200 Hz	-1.3	-0.2 dB	1.3	
500 Hz	-1.3	-0.2 dB	1.3	
1 kHz	-1.3	-0.2 dB	1.3	
2 kHz	-1.3	-0.2 dB	1.3	
5 kHz	-1.3	-0.2 dB	1.3	
10 kHz	-1.3	-0.2 dB	1.3	
20 kHz	-1.3	-0.1 dB	1.3	
50 kHz	-1.3	-0.1 dB	1.3	
100 kHz	-1.3	-0.1 dB	1.3	
200 kHz	-1.3	-0.1 dB	1.3	
500 kHz	-1.3	0.0 dB	1.3	
Frequency Response < 1MHz				
Input A				
10 Hz	-3.0	-2.4 dB	3.0	
15 Hz	-3.0	-1.7 dB	3.0	
25 Hz	-3.0	-0.9 dB	3.0	
40 Hz	-3.0	-0.6 dB	3.0	
80 Hz	-3.0	-0.4 dB	3.0	
100 Hz	-1.3	-0.4 dB	1.3	
200 Hz	-1.3	-0.3 dB	1.3	
500 Hz	-1.3	-0.3 dB	1.3	
1 kHz	-1.3	-0.3 dB	1.3	
2 kHz	-1.3	-0.3 dB	1.3	
5 kHz	-1.3	-0.3 dB	1.3	
10 kHz	-1.3	-0.3 dB	1.3	
20 kHz	-1.3	-0.2 dB	1.3	
50 kHz	-1.3	-0.2 dB	1.3	
100 kHz	-1.3	-0.2 dB	1.3	
200 kHz	-1.3	-0.2 dB	1.3	
500 kHz	-1.3	-0.1 dB	1.3	
Frequency Response < 1MHz				
Input B				
10 Hz	-3.0	-35.7 dB	3.0	****
15 Hz	-3.0	-35.0 dB	3.0	****
25 Hz	-3.0	-34.2 dB	3.0	****

continued...

Measurement Report (As Received)

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

AMPLITUDE ACCURACY/FREQ RESPONSE TEST

TEST CONDITIONS	MIN	MEASURED	MAX	
40 Hz	-3.0	-33.8 dB	3.0	****
80 Hz	-3.0	-33.5 dB	3.0	****
100 Hz	-1.3	-33.7 dB	1.3	****
200 Hz	-1.3	-33.6 dB	1.3	****
500 Hz	-1.3	-33.4 dB	1.3	****
1 kHz	-1.3	-33.5 dB	1.3	****
2 kHz	-1.3	-33.5 dB	1.3	****
5 kHz	-1.3	-33.3 dB	1.3	****
10 kHz	-1.3	-33.4 dB	1.3	****
20 kHz	-1.3	-33.4 dB	1.3	****
50 kHz	-1.3	-33.3 dB	1.3	****
100 kHz	-1.3	-33.2 dB	1.3	****
200 kHz	-1.3	-33.0 dB	1.3	****
500 kHz	-1.3	-31.8 dB	1.3	****

SECOND HARMONIC DISTORTION TEST

PASSED

TEST COND.	MEASURED	MAX
Frequency 50.1 MHz	-86 dBc	-70

THIRD ORDER INTERMODULATION DISTORTION

PASSED

TEST COND.	MEASURED	MAX
Frequency 100.2 MHz	-74 dBc	-70

OTHER SPURIOUS TEST

PASSED

Report Number: 1-1213849155-1 **Test Date:** 20 Feb 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

TEST CONDITIONS		MEASURED	MAX
Input Frequency	Sprious Frequency		
276.8666667 MHz	300 MHz	-91 dBc	-70
416.3 MHz	1 MHz	-78 dBc	-70
16.3 MHz	1 MHz	-87 dBc	-70
212.8 MHz	210 MHz	-86 dBc	-70
205.9 MHz	210 MHz	-92 dBc	-70
213.7333333 MHz	210 MHz	-98 dBc	-70
209.1333333 MHz	210 MHz	-103 dBc	-70
6.897 MHz	6.900 MHz	-94 dBc	-70
6.897 MHz	6.903 MHz	-87 dBc	-70
256.897 MHz	256.900 MHz	-82 dBc	-70
256.897 MHz	256.903 MHz	-87 dBc	-70
494.397 MHz	494.400 MHz	-87 dBc	-70
494.397 MHz	494.403 MHz	-87 dBc	-70

RESIDUAL RESPONSE TEST

PASSED

TEST CONDITIONS	MEASURED	MAX
Frequency		
100.1833333 MHz	-131 dBm	-108
166.85 MHz	-133 dBm	-108
233.5166667 MHz	-136 dBm	-108
366.85 MHz	-132 dBm	-108
433.5166667 MHz	-127 dBm	-108
161.75 MHz	-136 dBm	-108
361.75 MHz	-130 dBm	-108
377.05 MHz	-121 dBm	-108
177.05 MHz	-136 dBm	-108
438.6166667 MHz	-129 dBm	-108
371.95 MHz	-134 dBm	-108
238.6166667 MHz	-134 dBm	-108
171.95 MHz	-132 dBm	-108
105.2833333 MHz	-131 dBm	-108

EXT: FREQUENCY ACC. TEST (OPT.1D5)

PASSED

See Attached Report

Measurement Report

AGILENT TECHNOLOGIES
TMO Support Operation
10090 Foothills Blvd.
Roseville, CA. 95747

As Completed (Post-Repair/Adjustment) Data

Report Number: 1-1213849155-1
Customer: CARNEGIE MELLON UNIVERSITY
Manufacturer: Hewlett-Packard Co. (Agilent Technologies)
Model Number: 4395A (HP4395A)
Serial Number: JP1KE00187
Options Installed: 001,1D5,1D6
Firmware Version:

Test Date: 31 Mar 2008
Tested By: N5232030
Temperature: 23±5 °C
Humidity: 20 to 80% RH

Test Program Name: HP4395A Part No. 5010-9482
Test Program Version: A.04.03A
Test Executive: STE/9000 C.08.18 (MENDOR B.06.11D)

Specification Limits:

Unless indicated otherwise, the units for minimum and/or maximum specification limits are the same as the units stated for the measured value.

Calibration Standards Used

Model No.	Serial No.	Trace No.	Cal Due Date
HP3325A	2652A27300	3325A27300	17 Jan 2009
HP3458A	2823A00186	3458A00186	09 May 2008
HP436A	2709A29282	436A29282	12 Jun 2009
HP438A	2625A02747	438A02747	26 Apr 2008
HP5071A	3249A00346	5071A00346	28 Feb 2010
HP5334B	2937A06059	5334B06059	17 Apr 2008
HP8481D	3643A17675	8481D17675	08 Dec 2008
HP8482A	US37294807	8482A94807	20 Aug 2008
HP8496G	3247A15441	8496G15441	05 Mar 2009
HP85032B	3217A06609	85032B06609	06 Dec 2008
HP85044A	2542A00814	85044A00814	30 Oct 2008
HP8566B	3638A08741	8566B08741	02 May 2008
HP8663A	3423A02541	8663A02541	31 Jan 2009
HP8663A	3909A02718	8663A02718	13 Jun 2008
HP8753ES	US39175234	8753ES75234	26 Nov 2008

Report Number: 1-1213849155-1 **Test Date:** 31 Mar 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

PERFORMANCE TEST RESULTS SUMMARY

Test Name	Status
INITIAL SETUP	DONE
FREQUENCY ACCURACY TEST OPTION 1D5	PASSED
SOURCE LEVEL ACCURACY/FLATNESS TEST	PASSED
NON-SWEEP LINEARITY TEST	PASSED
POWER SWEEP LINEARITY TEST	PASSED
HARMONICS/NON-HARMONIC TEST	PASSED
DC BIAS TEST	PASSED
RECEIVER NOISE LEVEL TEST	PASSED
INPUT CROSSTALK TEST	PASSED
INPUT IMPEDANCE TEST	PASSED
ABSOLUTE AMPLITUDE ACCURACY TEST	PASSED
MAGNITUDE R/P DYNAMIC ACCURACY TEST	PASSED
MAGNITUDE R/P FREQUENCY RESPONSE TEST	PASSED
DISPLAYED AVERAGE NOISE LEVEL TEST	PASSED
AMPLITUDE FIDELITY TEST	PASSED
INPUT ATTEN SWITCHING UNCERTAINTY TEST	PASSED
NOISE SIDEBANDS TEST	PASSED
AMPLITUDE ACCURACY/FREQ RESPONSE TEST	PASSED
SECOND HARMONIC DISTORTION TEST	PASSED
THIRD ORDER INTERMODULATION DISTORTION	PASSED
OTHER SPURIOUS TEST	PASSED
RESIDUAL RESPONSE TEST	PASSED
FREQUENCY ACC. TEST (OPT.1D5)	PASSED

Report Number: 1-1213849155-1 **Test Date:** 31 Mar 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

FREQUENCY ACCURACY TEST OPTION 1D5 PASSED

TEST COND.	MIN	MEASURED	MAX
Frequency			
100 MHz	-13	0 Hz	13

SOURCE LEVEL ACCURACY/FLATNESS TEST PASSED

TEST CONDITIONS	MIN	MEASURED	MAX
Level Accuracy			
50 MHz 0dBm	-1.0	0.0 dB	+1.0
Frequency			
1 MHz	-2.0	0.0 dB	+2.0
3 MHz	-2.0	0.0 dB	+2.0
10 MHz	-2.0	0.0 dB	+2.0
45 MHz	-2.0	0.0 dB	+2.0
75 MHz	-2.0	-0.1 dB	+2.0
110 MHz	-2.0	0.0 dB	+2.0
140 MHz	-2.0	0.0 dB	+2.0
190 MHz	-2.0	0.1 dB	+2.0
235 MHz	-2.0	0.0 dB	+2.0
290 MHz	-2.0	-0.1 dB	+2.0
345 MHz	-2.0	0.1 dB	+2.0
400 MHz	-2.0	0.1 dB	+2.0
445 MHz	-2.0	0.0 dB	+2.0
470 MHz	-2.0	0.1 dB	+2.0
500 MHz	-2.0	0.1 dB	+2.0
10 Hz	-2.0	0.0 dB	+2.0
50 Hz	-2.0	0.0 dB	+2.0
500 Hz	-2.0	0.0 dB	+2.0
2 kHz	-2.0	-0.2 dB	+2.0
12 kHz	-2.0	0.1 dB	+2.0
60 kHz	-2.0	0.0 dB	+2.0
160 kHz	-2.0	-0.2 dB	+2.0
500 kHz	-2.0	0.2 dB	+2.0

Measurement Report (As Completed)

Report Number: 1-1213849155-1 **Test Date:** 31 Mar 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

NON-SWEEP LINEARITY TEST — PASSED

TEST CONDITIONS	MIN	MEASURED	MAX
Power Setting			
15 dBm	-1.0	-0.4 dB	+1.0
10 dBm	-1.0	-0.1 dB	+1.0
-10 dBm	-1.0	-0.4 dB	+1.0
-20 dBm	-1.0	-0.3 dB	+1.0
-30 dBm	-1.0	-0.3 dB	+1.0
-40 dBm	-1.0	-0.4 dB	+1.0
-50 dBm	-1.0	0.0 dB	+1.0

POWER SWEEP LINEARITY TEST — PASSED

TEST CONDITIONS		MIN	MEASURED	MAX
STOP Power	Source Power			
-30 dBm	-35 dBm	-0.5	0.0 dB	+0.5
	-40 dBm	-0.5	0.0 dB	+0.5
	-45 dBm	-0.5	0.0 dB	+0.5
	-50 dBm	-0.5	-0.4 dB	+0.5
15 dBm	10 dBm	-0.5	0.0 dB	+0.5
	5 dBm	-0.5	0.0 dB	+0.5
	0 dBm	-0.5	0.0 dB	+0.5
	-5 dBm	-0.5	-0.1 dB	+0.5

HARMONICS/NON-HARMONIC TEST — PASSED

TEST CONDITIONS		MEASURED	MAX
Harmonics			
Frequency	Harmonic Frequency		
10 kHz	20 kHz	-53 dBc	-30
	30 kHz	-52 dBc	-30
500 kHz	1 MHz	-62 dBc	-30
	1.5 MHz	-50 dBc	-30
10 MHz	20 MHz	-60 dBc	-30
	30 MHz	-62 dBc	-30
100 MHz	200 MHz	-58 dBc	-30

continued...

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Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

HARMONICS/NON-HARMONIC TEST

TEST CONDITIONS		MEASURED	MAX
	300 MHz	-54 dBc	-30
250 MHz	500 MHz	-46 dBc	-30
	750 MHz	-51 dBc	-30
500 MHz	1 GHz	-47 dBc	-30
	1.5 GHz	-56 dBc	-30

Non-Harmonic Spurious

Frequency	Non-Harmonic Frequency		
10 Hz	830.00001 MHz	-87 dBc	-30
230 MHz	600 MHz	-79 dBc	-30
330 MHz	500 MHz	-64 dBc	-30
430 MHz	400 MHz	-54 dBc	-30
500 MHz	330 MHz	-54 dBc	-30

DC BIAS TEST

PASSED

TEST CONDITIONS	MIN	MEASURED	MAX
DC Bias Voltage			
-40 V	-44	1 mV	44
-10 V	-14	0 mV	14
-4 V	-8	0 mV	8
0 V	-4	-1 mV	4
4 V	-8	0 mV	8
10 V	-14	0 mV	14
40 V	-44	0 mV	44
DC Bias Current			
-100 mA	-0.530	0.032 mA	0.53
-10 mA	-0.080	-0.006 mA	0.08
-1 mA	-0.035	-0.003 mA	0.03
-20 uA	-0.030	-0.002 mA	0.03
20 uA	-0.030	0.004 mA	0.03
1 mA	-0.035	0.006 mA	0.03
10 mA	-0.080	0.008 mA	0.08
100 mA	-0.530	-0.036 mA	0.53

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Serial Number: JP1KE00187

RECEIVER NOISE LEVEL TEST

PASSED

TEST CONDITIONS		MEASURED	MAXIMUM
Freuency	Input		
100 Hz	R	-111.4 dBm	-85.0
	A	-113.4 dBm	-85.0
	B	-113.2 dBm	-85.0
1 kHz	R	-116.7 dBm	-85.0
	A	-117.8 dBm	-85.0
	B	-117.4 dBm	-85.0
10 kHz	R	-123.8 dBm	-85.0
	A	-125.0 dBm	-85.0
	B	-124.5 dBm	-85.0
100 kHz	R	-131.7 dBm	-115.0
	A	-131.5 dBm	-115.0
	B	-130.4 dBm	-115.0
1 MHz	R	-131.9 dBm	-115.0
	A	-132.4 dBm	-115.0
	B	-130.8 dBm	-115.0
11 MHz	R	-133.3 dBm	-114.9
	A	-132.7 dBm	-114.9
	B	-133.3 dBm	-114.9
101 MHz	R	-131.8 dBm	-114.0
	A	-132.0 dBm	-114.0
	B	-131.6 dBm	-114.0
499 MHz	R	-128.6 dBm	-110.5
	A	-128.8 dBm	-110.5
	B	-128.7 dBm	-110.5

INPUT CROSSTALK TEST

PASSED

TEST CONDITIONS	MEASURED	MAX
10 Hz <= Freq. < 1 kHz		
R into A Crosstalk	-121 dB	-100
R into B Crosstalk	-123 dB	-100
1 kHz <= Freq. < 100 kHz		
R into A Crosstalk	-124 dB	-100
R into B Crosstalk	-125 dB	-100
100 kHz <= Freq. <= 500 MHz		

continued...

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Model Number: HP4395A **Options:** 001,1D5,1D6
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INPUT CROSSTALK TEST

TEST CONDITIONS	MEASURED	MAX
R into A Crosstalk	-129 dB	-120
R into B Crosstalk	-129 dB	-120

INPUT IMPEDANCE TEST

PASSED

TEST CONDITIONS	MEASURED	MAX
300 kHz <= Freq. <= 100 MHz		
R Return Loss	-39 dB	-25
A Return Loss	-41 dB	-25
B Return Loss	-39 dB	-25
100 MHz < Freq. <= 500 MHz		
R Return Loss	-24 dB	-15
A Return Loss	-23 dB	-15
B Return Loss	-22 dB	-15

ABSOLUTE AMPLITUDE ACCURACY TEST

PASSED

TEST COND.	MIN	MEASURED	MAX
Input R			
Frequency			
100 Hz	-1.5	-0.1 dB	1.5
200 Hz	-1.5	-0.1 dB	1.5
500 Hz	-1.5	-0.1 dB	1.5
1 kHz	-1.5	-0.1 dB	1.5
2 kHz	-1.5	-0.1 dB	1.5
5 kHz	-1.5	-0.1 dB	1.5
10 kHz	-1.5	-0.1 dB	1.5
20 kHz	-1.5	0.0 dB	1.5
50 kHz	-1.5	0.0 dB	1.5
100 kHz	-1.5	-0.1 dB	1.5
200 kHz	-1.5	-0.1 dB	1.5
500 kHz	-1.5	-0.2 dB	1.5
Input A			

continued...

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ABSOLUTE AMPLITUDE ACCURACY TEST

TEST COND.	MIN	MEASURED	MAX
Frequency			
100 Hz	-1.5	-0.2 dB	1.5
200 Hz	-1.5	-0.2 dB	1.5
500 Hz	-1.5	-0.2 dB	1.5
1 kHz	-1.5	-0.2 dB	1.5
2 kHz	-1.5	-0.2 dB	1.5
5 kHz	-1.5	-0.2 dB	1.5
10 kHz	-1.5	-0.2 dB	1.5
20 kHz	-1.5	-0.2 dB	1.5
50 kHz	-1.5	-0.2 dB	1.5
100 kHz	-1.5	-0.2 dB	1.5
200 kHz	-1.5	-0.2 dB	1.5
500 kHz	-1.5	-0.3 dB	1.5
Input B			
Frequency			
100 Hz	-1.5	-0.2 dB	1.5
200 Hz	-1.5	-0.2 dB	1.5
500 Hz	-1.5	-0.2 dB	1.5
1 kHz	-1.5	-0.2 dB	1.5
2 kHz	-1.5	-0.2 dB	1.5
5 kHz	-1.5	-0.2 dB	1.5
10 kHz	-1.5	-0.2 dB	1.5
20 kHz	-1.5	-0.1 dB	1.5
50 kHz	-1.5	-0.1 dB	1.5
100 kHz	-1.5	-0.2 dB	1.5
200 kHz	-1.5	-0.2 dB	1.5
500 kHz	-1.5	-0.1 dB	1.5
Input R			
Frequency			
1 MHz	-1.5	-0.2 dB	1.5
2 MHz	-1.5	-0.1 dB	1.5
5 MHz	-1.5	-0.1 dB	1.5
8 MHz	-1.5	-0.2 dB	1.5
10 MHz	-1.5	-0.1 dB	1.5
20 MHz	-1.5	-0.2 dB	1.5
50 MHz	-1.5	0.0 dB	1.5
100 MHz	-1.5	-0.1 dB	1.5
125 MHz	-1.5	0.3 dB	1.5
175 MHz	-1.5	0.1 dB	1.5
200 MHz	-1.5	0.0 dB	1.5
225 MHz	-1.5	0.0 dB	1.5

continued...

Report Number: 1-1213849155-1 **Test Date:** 31 Mar 2008
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Serial Number: JP1KE00187

ABSOLUTE AMPLITUDE ACCURACY TEST

TEST COND.	MIN	MEASURED	MAX
275 MHz	-1.5	-0.2 dB	1.5
300 MHz	-1.5	-0.2 dB	1.5
325 MHz	-1.5	-0.3 dB	1.5
375 MHz	-1.5	-0.1 dB	1.5
400 MHz	-1.5	-0.2 dB	1.5
425 MHz	-1.5	0.0 dB	1.5
475 MHz	-1.5	-0.2 dB	1.5
500 MHz	-1.5	-0.2 dB	1.5
Input A			
Frequency			
1 MHz	-1.5	-0.1 dB	1.5
2 MHz	-1.5	0.0 dB	1.5
5 MHz	-1.5	0.1 dB	1.5
8 MHz	-1.5	0.0 dB	1.5
10 MHz	-1.5	0.1 dB	1.5
20 MHz	-1.5	0.1 dB	1.5
50 MHz	-1.5	0.2 dB	1.5
100 MHz	-1.5	0.2 dB	1.5
125 MHz	-1.5	0.5 dB	1.5
175 MHz	-1.5	0.4 dB	1.5
200 MHz	-1.5	0.2 dB	1.5
225 MHz	-1.5	0.1 dB	1.5
275 MHz	-1.5	-0.1 dB	1.5
300 MHz	-1.5	0.0 dB	1.5
325 MHz	-1.5	0.1 dB	1.5
375 MHz	-1.5	0.0 dB	1.5
400 MHz	-1.5	0.0 dB	1.5
425 MHz	-1.5	0.2 dB	1.5
475 MHz	-1.5	0.1 dB	1.5
500 MHz	-1.5	0.1 dB	1.5
Input B			
Frequency			
1 MHz	-1.5	0.0 dB	1.5
2 MHz	-1.5	0.1 dB	1.5
5 MHz	-1.5	0.1 dB	1.5
8 MHz	-1.5	0.0 dB	1.5
10 MHz	-1.5	0.0 dB	1.5
20 MHz	-1.5	0.0 dB	1.5
50 MHz	-1.5	0.1 dB	1.5
100 MHz	-1.5	0.2 dB	1.5
125 MHz	-1.5	0.5 dB	1.5

continued...

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Serial Number: JP1KE00187

ABSOLUTE AMPLITUDE ACCURACY TEST

TEST COND.	MIN	MEASURED	MAX
175 MHz	-1.5	0.3 dB	1.5
200 MHz	-1.5	0.2 dB	1.5
225 MHz	-1.5	0.1 dB	1.5
275 MHz	-1.5	0.1 dB	1.5
300 MHz	-1.5	0.1 dB	1.5
325 MHz	-1.5	0.0 dB	1.5
375 MHz	-1.5	0.0 dB	1.5
400 MHz	-1.5	0.0 dB	1.5
425 MHz	-1.5	0.3 dB	1.5
475 MHz	-1.5	0.0 dB	1.5
500 MHz	-1.5	0.1 dB	1.5

MAGNITUDE R/P DYNAMIC ACCURACY TEST PASSED

TEST CONDITIONS		MINIMUM	MEASURED	MAXIMUM
A/R Measurement				
Input Level Measurement				
0 dB	Mag Ratio	-0.400	0.041 dB	0.400
	Phase	-3.00	0.57 deg	3.00
-20 dB	Mag Ratio	-0.050	-0.010 dB	0.050
	Phase	-0.30	-0.09 deg	0.30
-30 dB	Mag Ratio	-0.050	-0.016 dB	0.050
	Phase	-0.30	-0.08 deg	0.30
-40 dB	Mag Ratio	-0.050	-0.034 dB	0.050
	Phase	-0.30	-0.07 deg	0.30
-50 dB	Mag Ratio	-0.050	-0.024 dB	0.050
	Phase	-0.30	-0.08 deg	0.30
-60 dB	Mag Ratio	-0.050	-0.015 dB	0.050
	Phase	-0.30	-0.08 deg	0.30
-70 dB	Mag Ratio	-0.300	-0.015 dB	0.300
	Phase	-1.80	-0.14 deg	1.80
-80 dB	Mag Ratio	-0.300	-0.015 dB	0.300
	Phase	-1.80	-0.31 deg	1.80
-90 dB	Mag Ratio	-3.000	0.051 dB	3.000
	Phase	-18.00	-0.87 deg	18.00
-100 dB	Mag Ratio	-3.000	0.002 dB	3.000
	Phase	-18.00	-2.60 deg	18.00

B/R Measurement

continued...

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MAGNITUDE R/P DYNAMIC ACCURACY TEST

TEST CONDITIONS		MINIMUM	MEASURED	MAXIMUM
Input Level Measurement				
0 dB	Mag Ratio	-0.400	0.035 dB	0.400
	Phase	-3.00	0.57 deg	3.00
-20 dB	Mag Ratio	-0.050	-0.008 dB	0.050
	Phase	-0.30	-0.08 deg	0.30
-30 dB	Mag Ratio	-0.050	-0.014 dB	0.050
	Phase	-0.30	-0.08 deg	0.30
-40 dB	Mag Ratio	-0.050	-0.043 dB	0.050
	Phase	-0.30	-0.07 deg	0.30
-50 dB	Mag Ratio	-0.050	-0.022 dB	0.050
	Phase	-0.30	-0.08 deg	0.30
-60 dB	Mag Ratio	-0.050	-0.012 dB	0.050
	Phase	-0.30	-0.10 deg	0.30
-70 dB	Mag Ratio	-0.300	-0.012 dB	0.300
	Phase	-1.80	-0.17 deg	1.80
-80 dB	Mag Ratio	-0.300	-0.018 dB	0.300
	Phase	-1.80	-0.47 deg	1.80
-90 dB	Mag Ratio	-3.000	0.065 dB	3.000
	Phase	-18.00	-1.28 deg	18.00
-100 dB	Mag Ratio	-3.000	0.069 dB	3.000
	Phase	-18.00	-3.82 deg	18.00

MAGNITUDE R/P FREQUENCY RESPONSE TEST PASSED

TEST CONDITIONS		MIN	MEASURED	MAX
A/R Measurement				
Magnitude Ratio		-2.0	0.4 dB	2.0
	Phase	-12	-3 deg	12
B/R Measurement				
Magnitude Ratio		-2.0	0.3 dB	2.0
	Phase	-12	-3 deg	12

DISPLAYED AVERAGE NOISE LEVEL TEST PASSED

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Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

TEST COND.	MEASURED	MAX
Input R		
Frequency		
1 kHz	-134 dBm/Hz	-120
10 kHz	-141 dBm/Hz	-120
100 kHz	-149 dBm/Hz	-133
1 MHz	-148 dBm/Hz	-133
11 MHz	-152 dBm/Hz	-145
20 MHz	-150 dBm/Hz	-145
101 MHz	-149 dBm/Hz	-144
201 MHz	-149 dBm/Hz	-143
499 MHz	-148 dBm/Hz	-140
Input A		
Frequency		
1 kHz	-135 dBm/Hz	-120
10 kHz	-143 dBm/Hz	-120
100 kHz	-147 dBm/Hz	-133
1 MHz	-149 dBm/Hz	-133
11 MHz	-151 dBm/Hz	-145
20 MHz	-152 dBm/Hz	-145
101 MHz	-149 dBm/Hz	-144
201 MHz	-150 dBm/Hz	-143
499 MHz	-149 dBm/Hz	-140
Input B		
Frequency		
1 kHz	-136 dBm/Hz	-120
10 kHz	-143 dBm/Hz	-120
100 kHz	-147 dBm/Hz	-133
1 MHz	-146 dBm/Hz	-133
11 MHz	-152 dBm/Hz	-145
20 MHz	-154 dBm/Hz	-145
101 MHz	-150 dBm/Hz	-144
201 MHz	-149 dBm/Hz	-143
499 MHz	-147 dBm/Hz	-140

AMPLITUDE FIDELITY TEST **PASSED**

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM
Input R			
dB from			
Reference Input Level			

continued...

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Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

AMPLITUDE FIDELITY TEST

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM
10 dB	-0.05	0.01 dB	0.05
-10 dB	-0.05	0.00 dB	0.05
-20 dB	-0.05	0.00 dB	0.05
-30 dB	-0.07	-0.04 dB	0.07
-40 dB	-0.15	-0.01 dB	0.15
-50 dB	-0.35	0.00 dB	0.35
-60 dB	-0.80	0.02 dB	0.80
-70 dB	-1.80	-0.12 dB	1.80
Input A dB from Reference Input Level			
10 dB	-0.05	0.00 dB	0.05
-10 dB	-0.05	0.00 dB	0.05
-20 dB	-0.05	-0.01 dB	0.05
-30 dB	-0.07	-0.02 dB	0.07
-40 dB	-0.15	-0.01 dB	0.15
-50 dB	-0.35	-0.01 dB	0.35
-60 dB	-0.80	0.05 dB	0.80
-70 dB	-1.80	0.03 dB	1.80
Input B dB from Reference Input Level			
10 dB	-0.05	0.01 dB	0.05
-10 dB	-0.05	0.00 dB	0.05
-20 dB	-0.05	-0.01 dB	0.05
-30 dB	-0.07	-0.04 dB	0.07
-40 dB	-0.15	0.00 dB	0.15
-50 dB	-0.35	0.00 dB	0.35
-60 dB	-0.80	-0.01 dB	0.80
-70 dB	-1.80	0.15 dB	1.80

INPUT ATTEN SWITCHING UNCERTAINTY TEST PASSED

TEST CONDITIONS	MIN	MEASURED	MAX
Input R Input Attenuation			
0 dB	-1.0	0.0 dB	1.0

continued...

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Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

INPUT ATTEN SWITCHING UNCERTAINTY TEST

TEST CONDITIONS	MIN	MEASURED	MAX
20 dB	-1.0	0.0 dB	1.0
30 dB	-1.0	0.0 dB	1.0
40 dB	-1.5	0.0 dB	1.5
50 dB	-1.5	0.0 dB	1.5
Input A			
Input Attenuation			
0 dB	-1.0	0.0 dB	1.0
20 dB	-1.0	0.0 dB	1.0
30 dB	-1.0	0.0 dB	1.0
40 dB	-1.5	0.0 dB	1.5
50 dB	-1.5	0.0 dB	1.5
Input B			
Input Attenuation			
0 dB	-1.0	0.0 dB	1.0
20 dB	-1.0	0.0 dB	1.0
30 dB	-1.0	0.0 dB	1.0
40 dB	-1.5	0.0 dB	1.5
50 dB	-1.5	0.0 dB	1.5

NOISE SIDEBANDS TEST

PASSED

TEST CONDITIONS		MEASURED	MAX
Input R			
Frequency Offset from Carrier			
10 MHz	-1 kHz	-104 dBc/Hz	-97
	+1 kHz	-104 dBc/Hz	-97
	-10 kHz	-109 dBc/Hz	-97
	+10 kHz	-109 dBc/Hz	-97
	-100 kHz	-120 dBc/Hz	-110
	+100 kHz	-121 dBc/Hz	-110
	-1 MHz	-123 dBc/Hz	-110
	+1 MHz	-124 dBc/Hz	-110
100 MHz	-1 kHz	-104 dBc/Hz	-97
	+1 kHz	-104 dBc/Hz	-97
	-10 kHz	-108 dBc/Hz	-97
	+10 kHz	-108 dBc/Hz	-97

continued...

Report Number: 1-1213849155-1 **Test Date:** 31 Mar 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

NOISE SIDEBANDS TEST

TEST CONDITIONS		MEASURED	MAX
	-100 kHz	-120 dBc/Hz	-110
	+100 kHz	-120 dBc/Hz	-110
	-1 MHz	-126 dBc/Hz	-110
	+1 MHz	-127 dBc/Hz	-110
500 MHz	-1 kHz	-100 dBc/Hz	-97
	+1 kHz	-100 dBc/Hz	-97
	-10 kHz	-106 dBc/Hz	-97
	+10 kHz	-106 dBc/Hz	-97
	-100 kHz	-121 dBc/Hz	-110
	+100 kHz	-121 dBc/Hz	-110
	-1 MHz	-124 dBc/Hz	-110
	+1 MHz	-124 dBc/Hz	-110

AMPLITUDE ACCURACY/FREQ RESPONSE TEST PASSED

TEST CONDITIONS	MIN	MEASURED	MAX
Level Accuracy			
Level Accuracy Input R	-0.8	0.2 dB	0.8
Frequency Response >=1MHz			
Input R			
1 MHz	-1.3	-0.1 dB	1.3
2 MHz	-1.3	-0.1 dB	1.3
5 MHz	-1.3	-0.1 dB	1.3
8 MHz	-1.3	-0.2 dB	1.3
10 MHz	-1.3	-0.2 dB	1.3
20 MHz	-1.3	-0.2 dB	1.3
100 MHz	-1.3	-0.1 dB	1.3
125 MHz	-1.3	0.3 dB	1.3
150 MHz	-1.3	0.0 dB	1.3
175 MHz	-1.3	0.1 dB	1.3
200 MHz	-1.3	-0.1 dB	1.3
225 MHz	-1.3	0.0 dB	1.3
250 MHz	-1.3	0.0 dB	1.3
275 MHz	-1.3	-0.1 dB	1.3
300 MHz	-1.3	-0.1 dB	1.3
325 MHz	-1.3	-0.3 dB	1.3
350 MHz	-1.3	-0.2 dB	1.3
375 MHz	-1.3	-0.1 dB	1.3

continued...

Report Number: 1-1213849155-1 **Test Date:** 31 Mar 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

AMPLITUDE ACCURACY/FREQ RESPONSE TEST

TEST CONDITIONS	MIN	MEASURED	MAX
400 MHz	-1.3	-0.2 dB	1.3
425 MHz	-1.3	0.0 dB	1.3
450 MHz	-1.3	-0.2 dB	1.3
475 MHz	-1.3	-0.2 dB	1.3
500 MHz	-1.3	-0.2 dB	1.3
Level Accuracy Input A	-0.8	0.3 dB	0.8
Frequency Response >=1MHz Input A			
1 MHz	-1.3	-0.3 dB	1.3
2 MHz	-1.3	-0.2 dB	1.3
5 MHz	-1.3	-0.1 dB	1.3
8 MHz	-1.3	-0.2 dB	1.3
10 MHz	-1.3	-0.1 dB	1.3
20 MHz	-1.3	-0.2 dB	1.3
100 MHz	-1.3	0.0 dB	1.3
125 MHz	-1.3	0.2 dB	1.3
150 MHz	-1.3	-0.1 dB	1.3
175 MHz	-1.3	0.1 dB	1.3
200 MHz	-1.3	-0.1 dB	1.3
225 MHz	-1.3	-0.2 dB	1.3
250 MHz	-1.3	-0.2 dB	1.3
275 MHz	-1.3	-0.4 dB	1.3
300 MHz	-1.3	-0.3 dB	1.3
325 MHz	-1.3	-0.2 dB	1.3
350 MHz	-1.3	-0.4 dB	1.3
375 MHz	-1.3	-0.3 dB	1.3
400 MHz	-1.3	-0.3 dB	1.3
425 MHz	-1.3	-0.1 dB	1.3
450 MHz	-1.3	-0.2 dB	1.3
475 MHz	-1.3	-0.1 dB	1.3
500 MHz	-1.3	-0.2 dB	1.3
Level Accuracy Input B	-0.8	0.2 dB	0.8
Frequency Response >=1MHz Input B			
1 MHz	-1.3	-0.2 dB	1.3
2 MHz	-1.3	0.0 dB	1.3
5 MHz	-1.3	-0.1 dB	1.3
8 MHz	-1.3	-0.2 dB	1.3
10 MHz	-1.3	-0.1 dB	1.3
20 MHz	-1.3	-0.2 dB	1.3
100 MHz	-1.3	0.0 dB	1.3

continued...

Report Number: 1-1213849155-1 **Test Date:** 31 Mar 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

AMPLITUDE ACCURACY/FREQ RESPONSE TEST

TEST CONDITIONS	MIN	MEASURED	MAX
125 MHz	-1.3	0.3 dB	1.3
150 MHz	-1.3	0.0 dB	1.3
175 MHz	-1.3	0.1 dB	1.3
200 MHz	-1.3	0.0 dB	1.3
225 MHz	-1.3	0.0 dB	1.3
250 MHz	-1.3	0.0 dB	1.3
275 MHz	-1.3	-0.1 dB	1.3
300 MHz	-1.3	-0.1 dB	1.3
325 MHz	-1.3	-0.2 dB	1.3
350 MHz	-1.3	-0.2 dB	1.3
375 MHz	-1.3	-0.1 dB	1.3
400 MHz	-1.3	-0.2 dB	1.3
425 MHz	-1.3	0.1 dB	1.3
450 MHz	-1.3	-0.2 dB	1.3
475 MHz	-1.3	-0.2 dB	1.3
500 MHz	-1.3	-0.1 dB	1.3
Frequency Response < 1MHz			
Input R			
10 Hz	-3.0	-0.5 dB	3.0
15 Hz	-3.0	-0.3 dB	3.0
25 Hz	-3.0	-0.2 dB	3.0
40 Hz	-3.0	-0.2 dB	3.0
80 Hz	-3.0	-0.2 dB	3.0
100 Hz	-1.3	-0.3 dB	1.3
200 Hz	-1.3	-0.2 dB	1.3
500 Hz	-1.3	-0.2 dB	1.3
1 kHz	-1.3	-0.2 dB	1.3
2 kHz	-1.3	-0.2 dB	1.3
5 kHz	-1.3	-0.3 dB	1.3
10 kHz	-1.3	-0.2 dB	1.3
20 kHz	-1.3	-0.2 dB	1.3
50 kHz	-1.3	-0.2 dB	1.3
100 kHz	-1.3	-0.2 dB	1.3
200 kHz	-1.3	-0.2 dB	1.3
500 kHz	-1.3	-0.3 dB	1.3
Frequency Response < 1MHz			
Input A			
10 Hz	-3.0	-1.0 dB	3.0
15 Hz	-3.0	-0.8 dB	3.0
25 Hz	-3.0	-0.6 dB	3.0
40 Hz	-3.0	-0.6 dB	3.0

continued...

Report Number: 1-1213849155-1 **Test Date:** 31 Mar 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

AMPLITUDE ACCURACY/FREQ RESPONSE TEST

TEST CONDITIONS	MIN	MEASURED	MAX
80 Hz	-3.0	-0.6 dB	3.0
100 Hz	-1.3	-0.6 dB	1.3
200 Hz	-1.3	-0.6 dB	1.3
500 Hz	-1.3	-0.6 dB	1.3
1 kHz	-1.3	-0.6 dB	1.3
2 kHz	-1.3	-0.6 dB	1.3
5 kHz	-1.3	-0.6 dB	1.3
10 kHz	-1.3	-0.6 dB	1.3
20 kHz	-1.3	-0.5 dB	1.3
50 kHz	-1.3	-0.5 dB	1.3
100 kHz	-1.3	-0.5 dB	1.3
200 kHz	-1.3	-0.5 dB	1.3
500 kHz	-1.3	-0.6 dB	1.3
Frequency Response < 1MHz			
Input B			
10 Hz	-3.0	-0.8 dB	3.0
15 Hz	-3.0	-0.6 dB	3.0
25 Hz	-3.0	-0.4 dB	3.0
40 Hz	-3.0	-0.4 dB	3.0
80 Hz	-3.0	-0.4 dB	3.0
100 Hz	-1.3	-0.5 dB	1.3
200 Hz	-1.3	-0.4 dB	1.3
500 Hz	-1.3	-0.4 dB	1.3
1 kHz	-1.3	-0.4 dB	1.3
2 kHz	-1.3	-0.4 dB	1.3
5 kHz	-1.3	-0.4 dB	1.3
10 kHz	-1.3	-0.4 dB	1.3
20 kHz	-1.3	-0.4 dB	1.3
50 kHz	-1.3	-0.4 dB	1.3
100 kHz	-1.3	-0.4 dB	1.3
200 kHz	-1.3	-0.4 dB	1.3
500 kHz	-1.3	-0.3 dB	1.3

SECOND HARMONIC DISTORTION TEST PASSED

Report Number: 1-1213849155-1 **Test Date:** 31 Mar 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

TEST COND.	MEASURED	MAX
Frequency		
50.1 MHz	-84 dBc	-70

THIRD ORDER INTERMODULATION DISTORTION PASSED

TEST COND.	MEASURED	MAX
Frequency		
100.2 MHz	-78 dBc	-70

OTHER SPURIOUS TEST PASSED

TEST CONDITIONS		MEASURED	MAX
Input Frequency	Sprious Frequency		
276.8666667 MHz	300 MHz	-96 dBc	-70
416.3 MHz	1 MHz	-82 dBc	-70
16.3 MHz	1 MHz	-98 dBc	-70
212.8 MHz	210 MHz	-83 dBc	-70
205.9 MHz	210 MHz	-95 dBc	-70
213.7333333 MHz	210 MHz	-96 dBc	-70
209.1333333 MHz	210 MHz	-89 dBc	-70
6.897 MHz	6.900 MHz	-87 dBc	-70
6.897 MHz	6.903 MHz	-89 dBc	-70
256.897 MHz	256.900 MHz	-86 dBc	-70
256.897 MHz	256.903 MHz	-92 dBc	-70
494.397 MHz	494.400 MHz	-95 dBc	-70
494.397 MHz	494.403 MHz	-89 dBc	-70

RESIDUAL RESPONSE TEST PASSED

TEST CONDITIONS	MEASURED	MAX
Frequency		
100.1833333 MHz	-127 dBm	-108
166.85 MHz	-137 dBm	-108

continued...

Report Number: 1-1213849155-1 **Test Date:** 31 Mar 2008
Model Number: HP4395A **Options:** 001,1D5,1D6
Serial Number: JP1KE00187

RESIDUAL RESPONSE TEST

TEST CONDITIONS	MEASURED	MAX
233.5166667 MHz	-136 dBm	-108
366.85 MHz	-136 dBm	-108
433.5166667 MHz	-124 dBm	-108
161.75 MHz	-136 dBm	-108
361.75 MHz	-133 dBm	-108
377.05 MHz	-116 dBm	-108
177.05 MHz	-136 dBm	-108
438.6166667 MHz	-129 dBm	-108
371.95 MHz	-136 dBm	-108
238.6166667 MHz	-136 dBm	-108
171.95 MHz	-135 dBm	-108
105.2833333 MHz	-126 dBm	-108

EXT: FREQUENCY ACC. TEST (OPT.1D5) PASSED

See Attached Report

Agilent Technologies

CONTROLLED DOCUMENT

TIME-BASE FREQUENCY OFFSET TEST

Date: 3/31/2008

Model #: 4395A

Technician: N5232030

Serial #: JP1KE00187

Service Order #: 1-1213849155

TEST CRITERIA – Relevant oscillator type is identified by "X"				
Type	**Minimum Warm-up**	**FRACTIONAL FREQ. ERROR (ΔF/F)** (OFFSET/REFERENCE (IN PARTS/UNIT)) **Offset**	**Adjustable "Window"**	**CHECK TYPE**
Room Temperature Air	1 hour	6×10^{-6}	6×10^{-7}	
Temperature Compensated	1 hour	1×10^{-6}	1×10^{-7}	
Medium Performance Oven-controlled	12 hours	1×10^{-7}	1×10^{-8}	
High Performance Oven-controlled	48 hours	5×10^{-8}	5×10^{-9}	X

Readings Before Adjustment:

Warm-up Time (hrs)	Frequency (MHz)	Offset ($N \times 10^{-E}$)	TAR
>48	10.0000000	0×10^{-8}	>/=10:1

Readings After Adjustment (N/A if no adjustments were necessary):

Frequency (MHz)	Offset ($N \times 10^{-E}$)	TAR
		>/=10:1

Frequency Standard

5071A00346

Phase System Standard

N/A

Phase System LO Standard

N/A