A MODIFICATION ONLY - DOES NOT COMMUNICATE A MODIFICATION OR SAFETY CONDITION

E4991A-01 <u>SERVICE NOTE</u>

Supersedes: NONE

E4991A RF Impedance/Material Analyzer

Serial Numbers: JP1KHxxxxx, JP2KHxxxxx, MY432xxxxx

HDD repair procedure is changed

Parts Required: P/N	Description	
04287-65000	Mass Storage Disk (HDD) for service	1

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:

INFORMATION ONLY

AUTHOR: kW PRODUCT LINE: WN

ADDITIONAL INFORMATION:

This procedure must be performed by Agilent Technologies service offices

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Situation:

The new HDD (04287-65000) for repair does not include any operating system. When the HDD (04287-65000) is used, the operating system for E4991A should be installed.

Solution/Action:

The new HDD repair procedure for the E4991A is as follows.

Required Equipment

OS Image: CD disk (Operating system for E4991A, F/w rev.1.01, Agilent service office use only) HDD: p/n 04287-65000 (It is available for 4287A(win98), E4991A(win98), E5070/71A) Software : Symantec Ghost ™ 8.0 (English version, Enterprise product) System(PC) : Windows 2000 Professional (or Windows XP Professional) with DVD drive (or available to support external DVD drives)

LAN Cable: Cross (It enables the peer-to-peer communication between the 4287A and the PC.) (or 2 straight cables and a hub.)

PC installed E4991A adjustment/performance test program(VEE, Agilent service office use only) and a GPIB cable

Outline of the procedure

- 1. Make Boot disks using Symantec Ghost (only needs to be done one time) (5 min.)
- 2. Replace the defective HDD with the new HDD(p/n 04287-65000) (10 min.)
- 3. Connect the E4991A to your PC installed Symantec Ghost directly
- 4. Set up IP address and subnet mask of your PC (5 min.)
- 5. Set up GhostCast server (10 min.)
- 6. Copy the image file onto the E4991A's HDD (10 min.)
- 7. Perform initial setting for the E4991A (10 min.)
- 8. Perform the E4991A Adjustment / Performance test (110 min.)

1. Make Boot disks using Symantec Ghost (Required for the first time)

- 1) Click Start Programs Symantec Ghost Ghost Boot Wizard.
- 2) Select Network Boot Disk and press the Next button.

1		
💕 Symantec Ghost Boot Wizard - Introduction		×
Welcome to the Ghost Boot Wizard. Select the type of boot package yo to create for starting your client machines.	u wish	
Ghost boot disk with support for non-TCP peer-to-peer and CD/DVD reading/writing operations.	-	
Shost boot disk with network support for GhostCasting and TCP peer-to-peer connections.		
Boot disk that maps a drive letter to a shared resource on a server.		
Ghost boot disk with generic CD-ROM drivers for reading from	-	
8.0.0.984 - Copyright (C) 1998-2003 Symantec Corp. All rights reserved.		
< <u>B</u> ack. <u>N</u> ext > Cancel	<u>l</u> elp	

3) Select **3COM 3c90x** and press the **Next** button.

Name Name	Туре
Add 🛛 📼 3COM 3c556	NDIS2 Driver
🙀 🙀 3COM 3c556 Packet	Packet Driver
odify 🛤 3COM 3c575 (fe575c) CardBu	is NDIS2 Driver
🖷 3COM 3c59x	NDIS2 Driver
🛎 🛛 🙀 3COM 3c59x Packet	Packet Driver
💭 🧠 3COM 3c689x TokenLink III	NDIS2 Driver
300M 3c90x	NDIS2 Driver
🚾 📼 3COM 3c920 Integrated	NDIS2 Driver
K 🛛 📼 3Com 3c98xx	NDIS2 Driver
lete 💶 3COM 3ccfe574b	NDIS2 Driver
📼 3COM cc10	NDIS2 Driver

4) Press the **Next** button

					_
🇊 Syn	antec Ghost Boot Wizard - DOS Ver	sion			>
Ř	 Select the version of DOS that you war Ghost Boot Wizard and requires no add add the required system files. This requ 	nt to use. P litional files ires a syste	C-DOS is includ . To use MS-DO m formatted flop	ded in the DS, you must opy disk.	
	- DOS Version				
	• Use PCDOS				
	0.000 <u>C0000</u>				
	C Use MS-DUS				
÷.		a	Get MS-DI	ns 1	
ir	isert a system formatted floppy disk into driv	se riles, re A, then	Remove M9	snas	
. c	lick Get MS-DOS.		<u>H</u> emove wa	1003	
	C Rook Mout		Canad	Halp	1
	< Back Next		Cancel		

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5)	Press	the Next	button.
5)	11035	THE THEAT	button.

🖇 Symantec Ghost Boot Wizard - Client Type	×
Select the type of client to be included in the boot package. The location of the files can be changed if the default install path is incorrect.	
Symantec Ghost	
C Symantec Ghost Console <u>C</u> lient	
Program Location	
Ghost.exe C:#Program Files#Symantec#Ghost#ghost.exe Browse	
Parameters	
	-
< <u>B</u> ack <u>N</u> ext> Cancel <u>H</u> elp	

6) Press the **Next** button.

🗲 Symantec Ghost Boot Wizard - External storage support	×
Ghost has built-in support for accessing external storage devices, such as FireWire, USB or Zip drives.	
USB and FireWire Options	
Some BIOS's may limit access to USB or FireWire external storage devices. To enable Ghost to override the BIOS and gain full access to these devices, select the appropriate option:	
Override BIOS USB control	
Override BIOS <u>F</u> ireWire control	
	_
<u>< B</u> ack <u>N</u> ext > Cancel <u>H</u> elp	

7) Select The IP setting, and enter IP address 192.168.0.1 and subnet mask 255.255.255.0. Press the Next button.

🐉 Symantec Ghost Boot Wizard - Network Settings	×
Enter the network settings for the client that is to be booted from this boot package. Your network administrator will be able to tell you what values are required.	
C DHCP will assign the IP settings	
• The IP settings will be <u>s</u> tatically defined:	
First JP Address: 192 . 168 . 0 . 1	
Subnet <u>M</u> ask: 255 . 255 . 255 . 0	
<u>G</u> ateway:	
Router Hops: 16	
< <u>B</u> ack <u>Next></u> Cancel <u>H</u> elp	

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8) Insert a floppy disk into your PC's FDD, and the Next button.

9) Press the **Next** button.

Client Dotoils:	In process, click Next.	•
Client:	Symantec Ghost	- 1
Destination:	Floppy Drive A:(Two disk set)	_
Network Driver		
Template:		
Driver:	EL90X.DOS	
Driver Type:	NDIS2 Driver	
Configuration F	ïles:	
AUTOEXEC.BAT:		
@echo off		-
•		

10) Press the **OK** button..

Ghost B	oot Wizard 🔀
\triangle	There is not enough room on a single disk to hold all the drives and executables that you require. The Ghost Boot Wizard will make a two disk set, putting the Ghost executable on the second disk.

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11) Press the **Start** button.

Format A:¥	? ×
Cagacity:	
3.5", 1.44MB, 512 bytes/sector	•
<u>F</u> ile system	
FAT	•
Allocation unit size	
Default allocation size	•
Volume <u>l</u> abel	
I	
Format options	
Quick Format	
Enable Compression	
	_
<u>Start</u> <u>C</u> lose	

12) Press the **OK** button.



13) Press the **OK** button.

Formattir	ng A:¥	×
•	Format Cor	nplete.
	OK	

14) Press the **Close** button.



15) Copying File. Please Wait...



×

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16) Insert the second disk into your PC's FDD, and press OK button..

Ghost Boot Wizard
Insert the second disk in the set. Select OK to continue, or CANCEL to abort creation of the disk set.
OK Cancel

17) Press the **Start** button.

ormat A:¥	? ×
Cagacity:	
3.5", 1.44MB, 512 bytes/sector	•
<u>File</u> system	
FAT	•
Allocation unit size	
Default allocation size	•
Volume label	
Format options	
Quick Format	
Enable Compression	
	_
[]	

18) Press the **OK** button.



19) Press the **OK** button.



20) Press the **Close** button.

ormat A:¥	? ×
Cagacity:	
3.5", 1.44MB, 512 bytes/sector	•
<u>F</u> ile system	
FAT	-
Allocation unit size	
Default allocation size	-
Volume label	
Format options	
Quick Format	
Enable Compression	
<u>S</u> tart <u>Clos</u>	e)

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21) Copying File.

lease Wait	
Creating Directory: A:\GHOST\ A:\GHOST\	
J	
Cancel	

22) Press the **Finish** button.

💕 Symantec Ghost Bo	ot Wizard - Finished	×
The new Network Boo floppy drive and press I or Finish to exit.	Disk has been created. Please remove the disk from the he Start Again button to restart the wizard from the beginning,	
	Symantec Ghost ** Boot Wizard	
	<u>S</u> tart Again	
	Finish Cancel <u>H</u> elp	

2. Replace the defective HDD with the new HDD(p/n 04287-65000)

1) When the defective HDD is readable, save the following syscal files onto floppy disks. You need to exit from the Measurement View. Refer to "How to exit from the E4991A Measurement View" of the E4991A service manual.

C:\E4991A\syscal\ A1paren.txt A2syscal.txt A3paren.txt A3syscal.txt A4syscal.txt Calfreq.csv DefCal.dat Fqsyscal.txt

2) Replace the defective HDD with the new HDD (p/n 04287-65000).

Refer to "A27 Mass Storage Disk Drive Assembly Removal" of the E4991A service manual.

3. Connect the E4991A to your PC installed Symantec Ghost directly

1) Connect the E4991A to your PC installed Symantec Ghost directly using a crossed LAN cable (or two straight LAN cables and a Hab for LAN).

4. Set up your PC's IP address and subnet mask

- 1) Double-click "My Computer" icon on Windows desktop of your PC. And double-click Control Panel. The Control Panel window will appear.
- 2) In the Control Panel window, double-click Network and..., and click Local Area Connection.

🔁 Network and Dial-up Connections	_ 🗆 ×
Eile Edit View Favorites Iools Advanced Help	
🛛 🕁 Back 🔹 🔿 🗧 🔯 Search 🖓 Folders 🛛 History 🛛 🎥 📉 🖄 🧱	
Address Retwork and Dial-up Connections	
Network and Dial-up Connections Image: Connection Connection This folder contains network connections for this computer, and a wizard to help you create a new connection. Image: Connection Connection To create a new connection, dick Make New Connection Image: Connection Connection]
To open a connection, click its icon. To access settings and components of a connection, right-click its icon and then click Properties. To identify your computer on the network, click <u>Network Identification</u> . To add additional networking components, click <u>Add Network Components</u> . Select an item to view its description.	
2 object(s)	11.

3) Press the **Properties** button.

Local Area Connecti	on Status	? ×
General		
Connection Status: Duration: Speed:		Connected 22:18:21 10.0 Mbos
Activity Packets:	Sent — 🗐 L 👍 1,292,732	
Properties	<u>D</u> isable	
		<u>C</u> lose

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4) Select **TCP/IP** and press the **Properties** button.

Local Area Connectior	Properties	? ×		
General				
Connect using:				
3Com EtherLink	XL 10/100 PCI TX NIC	C (3C905B-TX)		
		<u>C</u> onfigure		
Components checked	l are used by this conne	ction:		
Install	col (TCP/IP)	Properties		
D is				
Usscription Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.				
·	0	K Cancel		

5) Select **Use the following IP address**, and then enter the IP address 192.168.0.2 and subnet mask 255.255.255.0. Press the **OK** button.



6) Restart your PC.

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5. Set up GhostCastServer

- 1) Insert the CD disk (Operating System for E4991A) into your PC's CD drive (or an external CD drive). Then, copy the image file of the CD disk onto your PC's HDD (C drive) as a temporary image file.
- 2) Click Start Programs Symantec Ghost GhostCastServer.
- 3) Click the **Browse** button.

🏂 Symantec Ghos	tCast Server			<u>_ ×</u>
<u>F</u> ile ⊻iew <u>H</u> elp				
Session Name		<u> R</u> estore Image	C <u>C</u> reate Image	
Image File			Browse	
O Djsk n				
C Partition			<u>_</u>	Less Uptions <<
Client command lin	e options		Auto	o Start
Diek No.	Partition No		Time	e
			Clier	nt Count
Command line			Tim	
				eout
IP Address	MAC Address	Mode	Status	Accept Clients
				<u>S</u> end
				Stop
Speed (MB/min)	MB Transmitted	Time Elapsed	Connected Clients	0
Percent Complete	MB Remaining	Time Remaining	Failed Clients	0
,				

4) If Insert disk dialog box is displayed, click the **Cancel** button.

Insert disk	×
	Please insert a disk into drive D:.
	Cancel

5) Select the temporary image file you copied, and press the **Open** button.

Open					? ×
Look jn:	🔄 e4991a_hddir	nage	•	⇔ € 💣 📰	•
3	SIG110.GHO				
History					
ſ					
Desktop					
ער באלים איין איין איין איין איין איין איין אי					
	1				
Mu Network P	File <u>n</u> ame:	IG110.GHO		_	<u>O</u> pen
My Heavoire 1	Files of type:	Ghost Images (*.gho)		•	Cancel

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6) Enter session name kobe and client count 1. Then select Restore Image and Disk

🏂 Symantec Gho	stCast Server - kobe			_ 🗆 ×
<u>F</u> ile ⊻iew <u>H</u> elp				
Session Name	kobe	Bestore Image	C <u>C</u> reate Image	
Image File	C:¥e4991a_hddimage¥lG110.GHO		Browse	
💿 Djsk				
© <u>P</u> artition	1	*	L	Less Uptions <<
Client command li	ne options		Aut	o Start
Dist. No.	Dealling Ma		Tim	ne
DISK NO.			Clie	ent Count 1
Command line				· · · ·
	,		lim	neout
IP Address	MAC Address	Mode	Status	Accept Clients
				<u>S</u> end
J				Stop
Speed (MB/min)	MB Transmitted	Time Elapsed	Connected Clients	0
Percent Complete	MB Remaining	Time Remaining	Failed Clients	0

7) Click the **Accept Client**. Then, a message of "Waiting for client to connect..." is displayed.

🇊 Symantec Gho	ostLast Server - kobe			_U_X
<u>File View H</u> elp				
Session Name	kobe		C Greate Imag	e
Image File	C:¥e4991a_hddimage¥lG110.GH	40	Browse	
🖲 Djsk			-	1 or
C <u>P</u> artition	ļ			Less Uptions <<
Client command I	ine options		[Auto Start
Disk No.	Partition No			Time
Command line				Timeout
IP Address	MAC Address	Mode	Status	Accept Clients
				Send
				Stop
Speed (MB/min)	MB Transmitted	Time Elapsed	Connected Clie	ents O
Percent Complete	MB Remaining	Time Remaining	Failed Clients	0
, Waiting for clients	to connect			

6. Copy the image file onto the E4991A's HDD

- 1) Connect the external keyboard and mouse to the connectors on the E4991A rear panel.
- 2) Insert the ghost boot disk (1st disk) into the FDD of the E4991A.
- 3) Turn the instrument on.
- 4) PC DOS 7.1 Startup Menu is displayed. Then, select 1 and press Enter key.
- 5) Confirm that there are no error messages on the display.
- 6) A message of "Insert Ghost boot disk 2 (containing Ghost.exe). Press any key to continue.." is displayed. Then, insert the disk 2 into the FDD, and press Enter key.
- 7) About Symantec Ghost dialog box is displayed. Then, click the OK button.
- 8) Click Ghost Cast Unicast.
- 9) GhostCast Session Name to Join dialog box is displayed. Enter the session name kobe, select Server IP Address and enter the IP address 192.168.0.2. Then, click the OK button.
- 10) **Select local destination drive by clicking on the driver number** dialog box is displayed. Then, click the **OK** button.
- 11) Destination Drive Details dialog box is displayed. Then, click the OK button.
- 12) Question: (LB22) dialog box is displayed. Then, click the Yes button.
- 13) Progress Indicator dialog box appears.
- 14) In your PC, a message of "GhostCast in progress.." is displayed.

Symantec Gho	stCast	Server - kobe						I	- 🗆 >
Session Name	kobe			Bestore Image		C <u>C</u> reate	Image		
Image File	C:¥e49	91a_hddimage¥IG11	0.GHO			Browse			
O Disk C Eartition					7			Less <u>O</u> ptions <	<
Client command li	ine optior	าร					Auto	o Start	
Disk No.		Partitio	n No.	* *			Clie	nt Count 1	
Command line							Tim	eout	
IP Address	M/	AC Address		Mode		Status	<u> </u>	Accent Clients	_
192.168.0.1	00	-10-5A-7C-27-2A		Unicast		In Progress		Courd	
							_	<u>s</u> ena	
							<u>.</u>	Stop	
Speed (MB/min)	59	MB Transmitted	15	Time Elapsed	00:	15 Connecte	d Clients	1	
Percent Complete	3	MB Remaining	371	Time Remaining	06:	15 Failed Clie	ents	0	
GhostCast in progr	ess							NUM	

- 15) In E4991A display, Clone Complete dialog box is displayed. Then, click the Continue button and Quit.
- 16) Quit Symantec Ghost dialog box is displayed. Then, click the Yes button.
- 17) A:\GHOST> prompt is displayed. Then, turn the E4991A off.
- 18) In your PC, **Transfer Complete** is displayed. Then, click the **OK** button.

 Symantec GhostCast Server



19) Remove the boot disk from the E4991A's FDD.

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- 1) Disconnect the LAN cable from the E4991A.
- 2) Turn the E4991A on.
- 3) System Setting Change Dialog Box is displayed. Then, click the No button.
- 4) Double-click the **NetConf** icon.
- 5) Network adapter window is displayed. Then, click the OK button.
- 6) Success window is displayed. Then, click the **OK** button.
- 7) Double-click the **NetCheck** icon.
- 8) Network adapter window is displayed. Then, click the **OK** button.
- 9) Success window is displayed. Then, click the OK button.
- 10) Double-click the CreateShortcut icon.
- 11) VBScript window is displayed. Then, click the **OK** button.
- 12) Click Start Shut down. Then, select Shout down and click the OK button.
- 13) Turn the E4991A on. Then, confirm that the Measurement View is displayed.
- 14) Turn the E4991A off.
- 17) Turn the E4991A on.
- 18) Press B on the keyboard immediately when a message of "Push 'B' key to enter back up mode [B, N]?" is displayed.
- 19) Follow the instructions for back up mode.
- 20) The E4991A is restarted. Confirm that a message of "Push 'R" key to enter recovery mode [R, N]?" is displayed.
- 21) Confirm that the Measurement View is displayed. Then, turn the E4991A off.

8. Perform the E4991A Adjustment program and performance test program

1) When you save the syscal files previously, restore the files onto the following folder. C:\E4991A\syscal\

If the current syscal files exist on factory or service center's PC, you can copy the files onto the new HDD without performing the E4991A adjustment program.

- 2) If the current syscal files do not exist any more, perform All adjustment of the E4991A adjustment program.
- 3) Perform System Backup with the system backup disk. For details, see chapter 3 "Adjustment" on the E4991A Service Manual
- 4) When the All adjustment is performed, perform All tests of the E4991A performance test program.