Agilent Technologies

Instrument Firmware Upgrade Guide

OmniBER OTN
10Gb/s Communications Performance Analyzer
Document Revision 1.7 (Oct 13th, 2004)

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Chapter 1   Instrument Upgrade Procedure

1.1   Introduction

This document describes the procedure for upgrading the firmware installed on your Agilent OmniBER OTN communications performance analyzer. Typical scenarios include installing an updated version of firmware, or re-installing firmware from scratch on a troublesome instrument.

The instrument firmware upgrade is performed using a computer as a 'host'. The firmware is loaded onto the computer, which is then used as a server to allow the instrument to retrieve the firmware. The host computer must be a desktop or Laptop computer running Windows 98, Windows 2000 or Windows NT. For recommended system specifications see Appendix A.
NOTE: The Windows 95 operating system is NOT supported!

There are two methods of connecting to the OmniBER OTN to perform the upgrade as illustrated below:
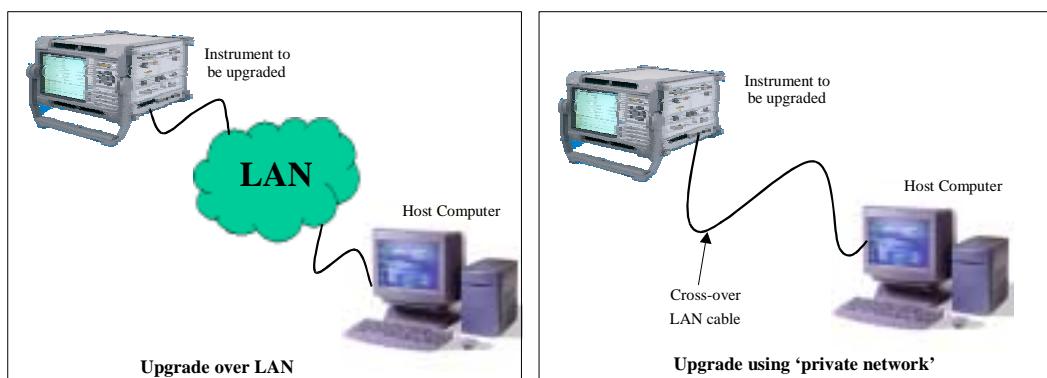
"Upgrade over LAN" (shown above left) requires cooperation with your network administrator to allocate an IP address, subnet mask, default gateway etc.
You may prefer to "Upgrade using a private network" (shown above right). This means you are in complete control of the connection between the instrument and the host.

Each of the above methods is explained fully in the appropriate section in this document;
Upgrade Using Private Network – see Chapter 1 section 1.2
Upgrade Over existing LAN – see Chapter 1 section 1.3
If either of these procedures fail you can "recover" the instrument firmware using the Instrument Recovery Procedure in Chapter 2

1.2   Instrument Upgrade Using a Private Network

Overview

This procedure avoids connecting to a "site" LAN therefore eliminating the need to contact IT experts to obtain IP addresses, Subnet Masks, Gateways etc.

To use this procedure, you will need;   **One RJ45 LAN crossover cable**

Here is a summary of what you will do in the following procedure. You must complete each step.

1. Transfer the upgrade firmware onto the Host PC
2. Configure the PC network settings
3. Connect the instrument to the host PC
4. Start the upgrade server on the PC
5. Configure the instrument network settings
6. Start the upgrade process from the instrument user interface
7. Restore PC network settings to original values

If you encounter problems with this procedure you may have to re-install the instrument boot firmware. If this happens see the Instrument Recovery Procedure in Chapter 2

Procedure Step 1: Transfer the upgrade firmware onto the Host PC

The instrument upgrade firmware will typically be delivered to you by way of a ZIP file on a Web site or on a CD-ROM shipped with an upgrade kit. If there is a ReadME file associated with the upgrade please read it now for any special instructions.

Once you have obtained the ZIP file, extract the files to your **C:** drive using WinZip or similar tool. This will give you two new directories: `a_tools`, and `a_software_sets`.

Note: You must unpack the ZIP file into your C drive and not into any sub-directory or folder.

Procedure Step 2: Configure the PC network settings

Windows NT
1. Right-click on the Network Neighbourhood icon and select 'Properties'.
2. Click on the 'Protocols' tab
3. Double-click on 'TCP/IP Protocol'
4. If 'Specify an IP address' is selected, **make a note of the IP Address and Subnet Mask fields. You will need these later when restoring the settings**.
5. Change the IP Address to **192.168.0.1** and the Subnet Mask to **255.255.255.0**
6. Click OK, and then OK again.
7. You will need to reboot the PC for the new settings to take effect.

Windows 98
1. Right-click on the Network Neighbourhood icon and select 'Properties'.
2. Locate the TCP/IP entry for the LAN connector. On a HP Omnibook 6000 this will be similar to 'TCP/IP -> 3Com 10/100', but other computers will be different. **Do not use any 'Dial Up' adapter!** Once you have identified the appropriate entry, double-click on it.
3. If 'Specify an IP address' is selected, make a note of the IP Address and Subnet Mask fields. You will need these later when restoring the settings.

4. Change the IP Address to **192.168.0.1** and the Subnet Mask to **255.255.255.0**
5. Click OK, and then OK again.
6. You will need to reboot the PC for the new settings to take effect.

Windows 2000

1. Right-click on the "My Network Places" icon and select 'Properties'.
2. Right-click on the "Local Area Connection" icon and select 'Properties'.
3. Locate the TCP/IP entry for the LAN connector. On a HP Omnibook 6000 this will be similar to 'TCP/IP -> 3Com 10/100', but other computers will be different. **Do not use any 'Dial Up' adapter!** Once you have identified the appropriate entry, double-click on it.
4. If 'Specify an IP address' is selected, make a note of the IP Address and Subnet Mask fields. You will need these later when restoring the settings.
5. Change the IP Address to **192.168.0.1** and the Subnet Mask to **255.255.255.0**
6. Click OK, and then OK again.
7. You will need to reboot the PC for the new settings to take effect.

Procedure Step 3: Connect the instrument to the Host PC

Power on the instrument and connect up as shown in diagram below;

Instrument to be upgraded

Host Computer

Cross-over LAN cable

Upgrade using 'private network'

Check that the Green LED's on both LAN ports (instrument and PC) are illuminated.

Note: Some PC network cards require the 'crossover' cable to be connected prior to power on to ensure it recognises the LAN connection as 'live'. If you experience difficulty, and the instrument tells you the 'host does not respond to ping', rebooting the PC will clear the fault.

Procedure Step 4: Start the upgrade server on the PC

In the PC desktop area double click on **My Computer**, then **(C:)**, then **a_tools**. Inside this directory, you should be able to see 'startserver' (or 'startserver.bat') – double-click on this file. This will bring up a window similar to this:
The PC is now ready to transfer firmware to the instrument.

Procedure Step 5: Configure the instrument network settings

On the OmniBER OTN instrument:

Press **MENU** -> **System** -> **Options**
Now press **Select** to display the System – Options page as shown below.
Highlight the 'Software' tab

Highlight the 'Upgrade Software' button and press SELECT
The Software Upgrade Settings window should now be visible and you need to provide some information about your network before the upgrade can be started.

Software Upgrade Settings

Network Settings   [...]

Server Name   [_____]

[Start Upgrade]   [Close]
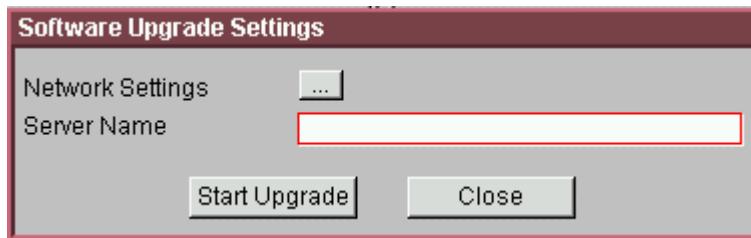
Highlight the Network Settings button then press SELECT.

Network Settings

☐ Autoconfigure using DHCP [...]   ☐ Autoconfigure using AutoIP [...]

☑ Manually configured   ([...])

[Apply]   [Cancel]

Current IP Configuration

IP Address	156.141.077.102	MAC Address	00:20:0C:10:CD:C7
Subnet Mask	255.255.248.000	Hostname	
Default Gateway	156.141.072.001	Domain name	.britain.agilent.com
DNS Server 1	156.141.048.017	2 134.040.032.018	3 000.000.000.000
Network Status	Network is ready		
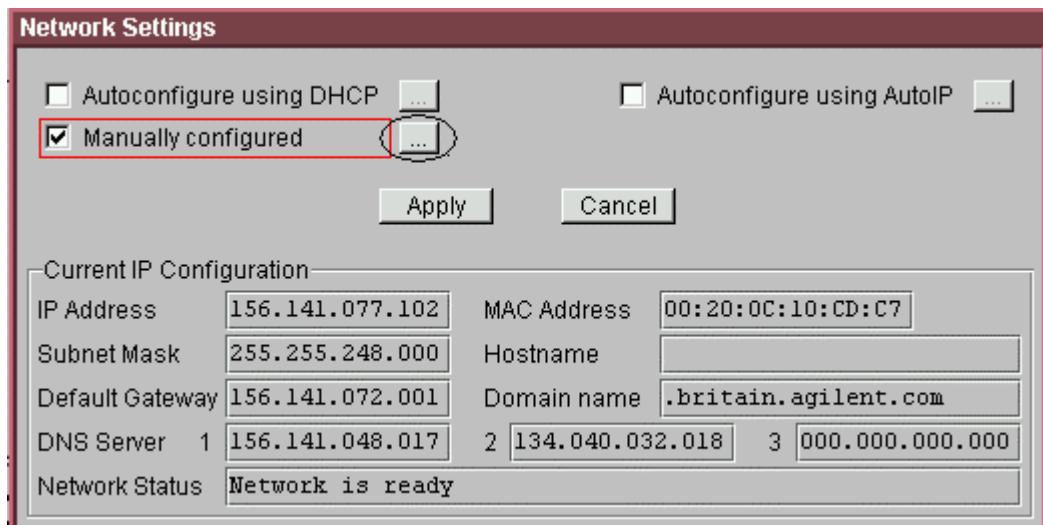
Enable only "Manually Configured" by ticking the box as shown above. Now select the dialogue box encircled above and add the Network Settings as shown below:

Network Settings - Manual

IP address	192.168.000.002
Subnet mask	255.255.255.000

The following settings are optional:

Default gateway	000.000.000.000
DNS server 1	000.000.000.000
2	000.000.000.000
3	000.000.000.000
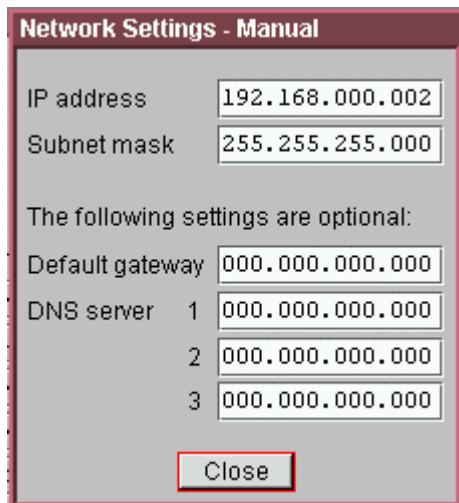
[Close]

Press "Close", then press "Apply"

Now enter the Server Name as shown below:

Software Upgrade Settings

Network Settings   [...]
Server Name   192.168.0.1

[Start Upgrade]   [Close]
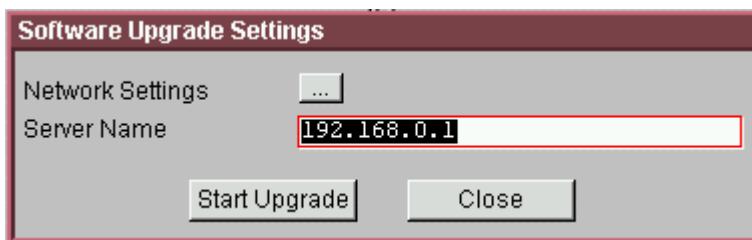
Now select Start Upgrade.
Highlight "**Start upgrade**" and press SELECT.
The instrument will reset itself, and start downloading firmware from the host PC. While it does this, you will be able to see messages on the host PC indicating that files are being transferred. At a few points during the process, the instrument will reset itself again – this is normal behaviour. A complete upgrade will take 5-10 minutes, and requires no user intervention.

At the end of the upgrade, the instrument GUI will be displayed as normal. You will also see a dialog box showing the message 'Instrument reset to default settings – the software was upgraded' (or similar). Clear this dialog by pressing SELECT.

Procedure Step 6: Restoring the host computer IP address

Remove the LAN crossover cable, then restore your host PC settings **after** the Instrument Upgrade Process has completed.

Windows NT

1. Right-click on the Network Neighbourhood icon and select 'Properties'.
2. Click on the 'Protocols' tab
3. Double-click on 'TCP/IP Protocol'
4. If 'Specify an IP address' was originally selected, change the IP Address and Subnet Mask fields to what you noted previously. If 'Obtain an IP address from DHCP' was originally selected, select it now.
5. Click OK, and then OK again.
6. You will need to reboot the PC for the new settings to take effect

Windows 98

1. Right-click on the Network Neighbourhood icon and select 'Properties'.
2. Locate the TCP/IP entry for the LAN connector – on a HP Omnibook 6000 this will be similar to 'TCP/IP -> 3Com 10/100', but other computers will be different – and double-click on it.
3. If previously this dialog did not specify an IP address, select 'Obtain an IP address automatically'. Otherwise enter in the IP address and Subnet Mask you noted down earlier.
4. Click OK, and OK again.
5. You will need to reboot the PC for the new settings to take effect

Windows 2000

1. Right-click on the "My Network Places" icon and select 'Properties'.
2. Right-click on the "Local Area Connection" icon and select 'Properties'. Locate the TCP/IP entry for the LAN connector – on a HP Omnibook 6000 this will be similar to 'TCP/IP -> 3Com 10/100', but other computers will be different – and double-click on it.

3. If previously this dialog did not specify an IP address, select 'Obtain an IP address automatically'. Otherwise enter in the IP address and Subnet Mask you noted down earlier.
4. Click OK, and OK again.
5. You will need to reboot the PC for the new settings to take effect

The upgrade is now complete.

1.3   Instrument Upgrade over LAN

Overview

This section explains the procedure to follow when upgrading an OmniBER OTN over a "site" LAN.

Upgrade over LAN
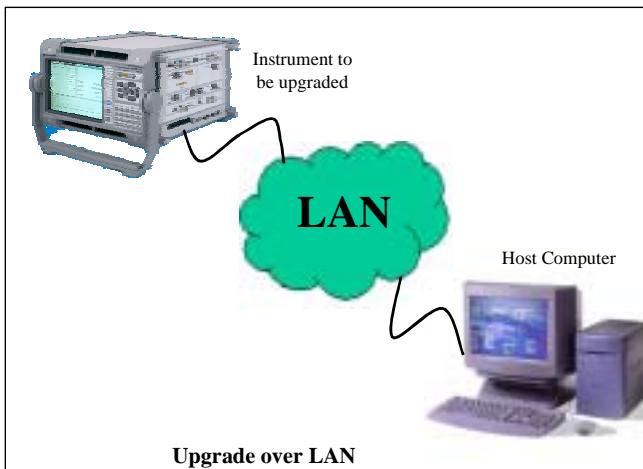
It is important to get approval from your Network System Administrator before connecting devices to your system. The instrument supports either DHCP *(Dynamic Host Configuration Protocol)* for automatic configuration onto the network, or manual configuration by entering the values for IP Address, Subnet Mask and Default Gateway.

To use this procedure, you will need to have the information in the following table;

Instrument IP address *	The IP address that has been assigned to your instrument. This information is available from your network administrator. If the network *Dynamic Host Configuration Protocol* (DHCP)
Subnet mask *	The subnet mask for the section of the network that the instrument is to be connected to. This information is available from your network administrator.
Default gateway *	If the instrument and the host computer are on different logical subnets, you will need to supply a default gateway. If the instrument and the host computer are on the same subnet, this can be set to 000.000.000.000. This information is available from your network administrator.
Host IP address	This is the IP address of the host computer. See 'Finding the IP address of the host* in the Appendix at the end of this guide.

Here is a summary of what you will do in the following procedure. You must complete each step;

1. Configure the instrument network settings
2. Connect the instrument to the LAN
3. Transfer the upgrade firmware onto the Host PC
4. Start the upgrade server on the PC
5. Start the upgrade process from the instrument user interface

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* Only required for manual configuration, not for DHCP

If you encounter problems with this procedure you may have to re-install the instrument boot firmware. If this happens see the Instrument Recovery Procedure in Chapter 2

Procedure Step 1: Configure the instrument network settings

On the OmniBER OTN instrument;
Press **MENU** -> **System** -> **Remote Control.** Now press **Select** to display the
System – Remote Control page.

Set the connection mode to LAN and select Network Settings to get the following display;
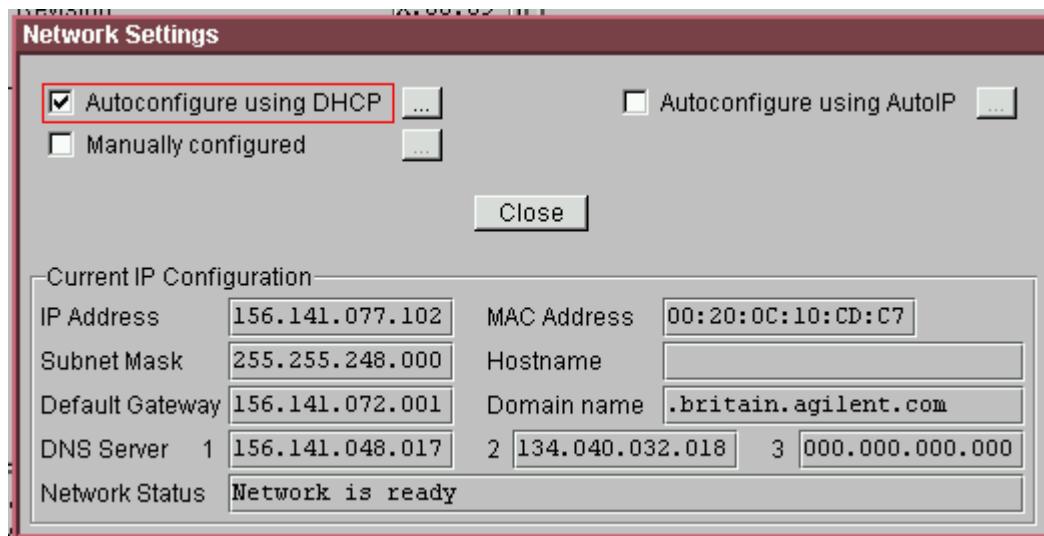
If using DHCP then Enable <u>only</u> the Autoconfigure using DHCP by ticking the box as shown above. Press Close.
OR
If Configuring Manually then Enable <u>only</u> Manually Configured as shown below;
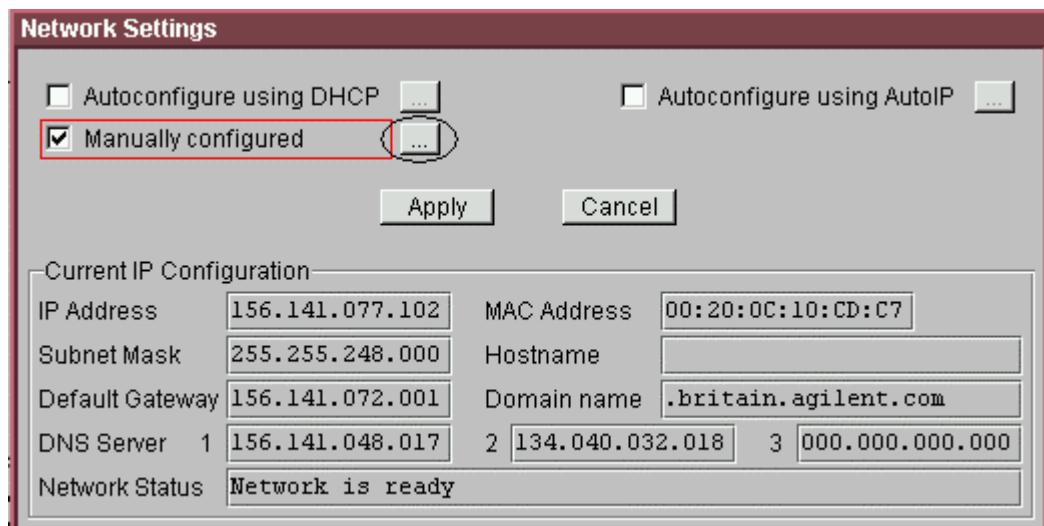
Now select the dialogue box shown encircled above and add the Network Settings obtained from your network administrator.
Now press Apply and power cycle the instrument so that the new network settings take effect.

Procedure Step 2: Connect the instrument to the LAN

Connect up using normal LAN cables as shown in the diagram below; (do NOT use crossover LAN cables)

Upgrade over LAN
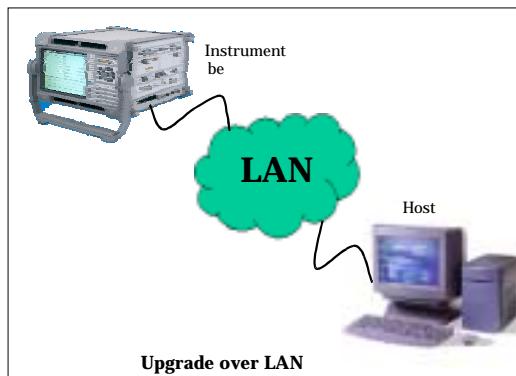
Check that the Green LED's on both LAN ports (instrument and PC) are illuminated. Send a ping command from the Host PC to the instrument to check the connection and settings are correct. To do this press Start->Programs->MS DOS Command prompt. In this window type **ping** nnn.nnn.nnn.nnn   (where nnn.nnn.nnn.nnn = Instrument IP Address). See Appendix B for details of the ping command if you are having trouble (leading zeros must be removed).

Procedure Step 3: Transfer the upgrade firmware onto the Host PC

The instrument upgrade firmware will typically be delivered to you by way of a ZIP file on a Web site or on a CD-ROM shipped with an upgrade kit. If there is a ReadME file associated with the upgrade please read it now for any special instructions.
Once you have obtained the ZIP file, extract the files to your **C:** drive using WinZip or similar tool. This will give you two new directories: `a_tools`, and `a_software_sets`.

Note: You must unpack the ZIP file directly into your C:\ drive and not into any sub-directory or folder.

Procedure Step 4: Start the upgrade server on the PC

In the PC desktop area double click on `My Computer`, then `(C:)`, then `a_tools`. Inside this directory, you should be able to see 'startserver' (or 'startserver.bat') – double-click on this file. This will bring up a window similar to this:
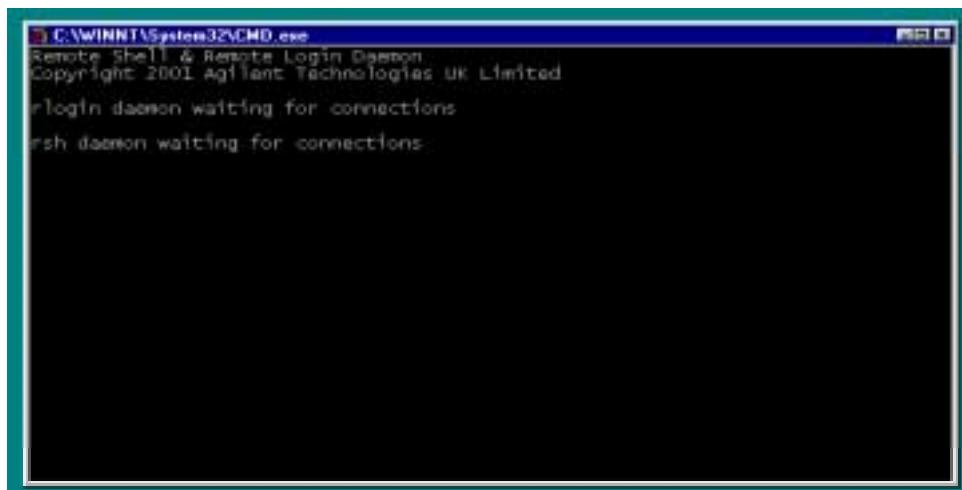
The PC is now ready to transfer firmware to the instrument.

Procedure Step 5: Start the upgrade process from the instrument user interface

On the OmniBER OTN instrument press **MENU** -> **System** -> **Options**
Now press **Select** to display the System – Options page as shown below.

Highlight the 'Software' tab

System - Options

Instrument	Software	Option Control

Software Revision   X.00.09

Build Time   Fri Oct 3 13:50:40 2003
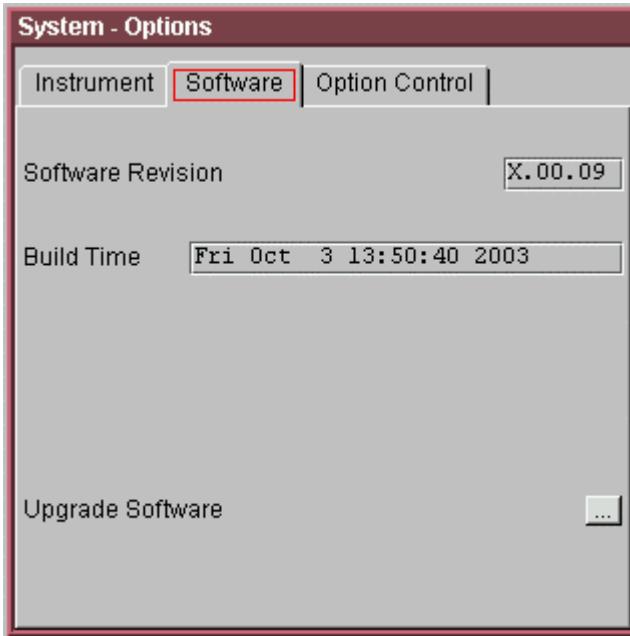
Upgrade Software   ...

Highlight the 'Upgrade Software' button and press SELECT. The Software Upgrade
Settings window should now be visible as shown below;
(There is no need to set any Network Settings as we already did this in Step 1)

Software Upgrade Settings

Network Settings   ...
Server Name

Start Upgrade   Close
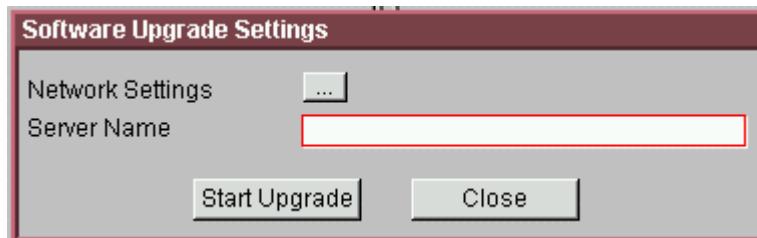
Enter the Server Name (eg the name or IP address of your computer).

Now press Start Upgrade.

The instrument will reset itself, and start downloading firmware from the host PC. While
it does this, you will be able to see messages on the host PC indicating that files are being
transferred. At a few points during the process, the instrument will reset itself again –
this is normal behaviour. A complete upgrade will take 5-10 minutes, and requires no
user intervention.
At the end of the upgrade, the instrument GUI will be displayed as normal. You will also
see a dialog box showing the message 'Instrument reset to default settings – the software
was upgraded' (or similar). Clear this dialog by pressing SELECT.

The upgrade is now complete.

Chapter 2   Instrument Recovery Procedure

2.1   Instrument Recovery

Overview

If you have reached this section then you probably have come across a problem with the instrument. The following procedure can be used to restore the instrument boot firmware and re-load the instrument operating firmware.

To use this procedure, you will need;   **One RJ45 LAN crossover cable**
                                                                    Keyboard
                                                                    DOS Boot Disk (DOS6.22)
                                                                    2 Blank Floppy Disks

Here is a summary of what you will do in the following procedure. You must complete each step;
1.   Transfer the firmware onto the Host PC. This can be either the original firmware OR the upgrade firmware if you are performing an upgrade.
2.   Create "Instrument Recovery" and "Instrument Install Disks" as outlined below.
3.   Configure the PC network settings.
4.   Connect the instrument to the host PC.
5.   Start the upgrade server on the PC.
6.   Use the Instrument Recovery disk to re-initailize the instrument.
7.   Start the upgrade process.
8.   Restore PC network settings to original values.
9.   Re-enter the instrument serial number and restore the options.

Procedure Step 1: Transfer the upgrade firmware onto the Host PC

The instrument upgrade firmware will typically be delivered to you by way of a ZIP file on a Web site or on a CD-ROM shipped with an upgrade kit. If there is a ReadME file associated with the upgrade please read it now for any special instructions.
Once you have obtained the ZIP file, extract the files to your **C:** drive using WinZip or similar tool. This will give you two new directories: `a_tools`, and `a_software_sets`.

Note: You must unpack the ZIP file into your C drive and not into any sub-directory or folder.

Procedure Step 2: Creating the "Instrument recovery" and "Instrument Install" disks

You will need two boot disks – an Instrument Recovery disk and an Instrument Install disk. The instructions below will tell you how to create these disks on your PC/Laptop.
To start with, you must have two blank, formatted disks.

Making the Instrument disks

Under Windows NT, select Start -> Programs -> Command Prompt. Under Windows 98, select Start -> Programs -> MS-DOS Prompt.
Enter the following commands:

```
================================================================
c:
cd\a_tools
rawrite –f recovery.img –d a
================================================================
```

At this point, insert a blank disk into the floppy drive, and follow the on-screen prompts. Once the disk copy has finished (indicated by the C:\a_tools prompt appearing again), remove the disk and label it "Instrument Recovery disk".
Next, enter this command:

```
=============================================================
rawrite –f instboot.dsk –d a
=============================================================
```

At this point, insert a blank disk into the floppy drive, and follow the on-screen prompts. Once the disk copy has finished (indicated by the C:\a_tools prompt appearing again), remove the disk and label it "Instrument Install disk".

Procedure Step 3: Configure the PC network settings

Windows NT
1. Right-click on the Network Neighbourhood icon and select 'Properties'.
2. Click on the 'Protocols' tab
3. Double-click on 'TCP/IP Protocol'
4. If 'Specify an IP address' is selected, make a note of the IP Address and Subnet Mask fields. You will need these later when restoring the settings.
5. Change the IP Address to **192.168.0.1** and the Subnet Mask to **255.255.255.0**
6. Click OK, and then OK again.
7. You will need to reboot the PC for the new settings to take effect.

Windows 98
1. Right-click on the Network Neighbourhood icon and select 'Properties'.
2. Locate the TCP/IP entry for the LAN connector. On a HP Omnibook 6000 this will be similar to 'TCP/IP -> 3Com 10/100', but other computers will be different. **Do not use any 'Dial Up' adapter!** Once you have identified the appropriate entry, double-click on it.
3. If 'Specify an IP address' is selected, make a note of the IP Address and Subnet Mask fields. You will need these later when restoring the settings.
4. Change the IP Address to **192.168.0.1** and the Subnet Mask to **255.255.255.0**
5. Click OK, and then OK again.
6. You will need to reboot the PC for the new settings to take effect.

Windows 2000
1. Right-click on the "My Network Places" icon and select 'Properties'.
2. Right-click on the "Local Area Connection" icon and select 'Properties'.
3. Locate the TCP/IP entry for the LAN connector. On a HP Omnibook 6000 this will be similar to 'TCP/IP -> 3Com 10/100', but other computers will be different. **Do not use any 'Dial Up' adapter!** Once you have identified the appropriate entry, double-click on it.
4. If 'Specify an IP address' is selected, make a note of the IP Address and Subnet Mask fields. You will need these later when restoring the settings.
5. Change the IP Address to **192.168.0.1** and the Subnet Mask to **255.255.255.0**
6. Click OK, and then OK again.
7. You will need to reboot the PC for the new settings to take effect.

Procedure Step 4: Connect the instrument to the Host PC
Power on the instrument and connect up as shown in diagram below;

Upgrade using 'private network'

Check that the Green LED's on both LAN ports (instrument and PC) are illuminated.

Note: Some PC network cards require the 'crossover' cable to be connected prior to power on to ensure it recognises the LAN connection as 'live'. If you experience difficulty, and the instrument tells you the 'host does not respond to ping', rebooting the PC will clear the fault.

Procedure Step 5: Start the upgrade server on the PC

In the PC desktop area double click on `My Computer`, then `(C:)`, then `a_tools`. Inside this directory, you should be able to see 'startserver' (or 'startserver.bat') – double-click on this file. This will bring up a window similar to this:

The PC is now ready to transfer firmware to the instrument.

Procedure Step 6: Using the Instrument Recovery disk to re-initialize the instrument

This step is to be carried out on the INSTRUMENT. Do not try this section on your computer!
Insert the "Instrument Recovery disk" into the disk drive and switch on. After a short delay, you should see this message:

```
=============================================================
 *** WARNING ***
This disk will ERASE all data on this instrument.
Press the SELECT key to proceed.
If you do NOT want to proceed, switch OFF now.
=============================================================
```

Press the SELECT key. You should then see this message:

```
=============================================================
OK Clean flash disk.............
OK Reset nonvolatile memory
=============================================================
```

Instrument has now been reset.

When you see the 'OK' messages, remove the disk and switch off. Proceed to step 7.
If you do not see the 'OK' messages, then the instrument flash disk may be corrupt. You
will need to follow the procedure in step 6.1

Procedure Step 6.1

Creating a DOS boot disk
The instructions below will create a suitable disk from a Windows 95, 98, or Me system
(NT does not allow this function).

1. Insert blank floppy into drive
2. Click on 'Start', then 'Settings', then 'Control Panel'
3. Double-click on 'Add/Remove Programs'
4. Click on the 'Start-up Disk' tab
5. Click on the 'Create Disk' button
6. Follow the on-screen prompts

Once the disk has finished copying, remove the disk and label it DOS boot disk.

Connect a keyboard to the port on the right-hand side of the instrument. Insert the DOS
boot disk into the instrument floppy drive and switch the instrument on. After about a
minute, the instrument will boot and you will see an 'A:\>' prompt on the instrument
display.
Enter this command:

```
=============================================================
format c:
=============================================================
```

You will be prompted if you want to continue – press Y, return.
When prompted for a disk label, press Enter to leave it blank.
When the A:\> prompt reappears, remove the DOS boot disk and switch off the
instrument.

Procedure Step 7: Start the upgrade process

Use the Instrument Install disk to transfer the software as follows:
1. Insert the Instrument install disk into the instrument floppy drive and switch it
   on.
2. After a few moments you will see a light grey screen with the message "Initialising
   instrument".
3. A few seconds later, you should start to see messages on the laptop indicating the
   files are being transferred. Do not remove the Instrument BOOT disk.

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4. During the upgrade process the instrument will re-boot several times and on completion will show a normal instrument GUI (approximately 5 minutes). You can now remove the Instrument boot disk from the floppy drive

Procedure Step 8: Restoring the host computer IP address

Remove the LAN crossover cable, then restore your host PC settings **after** the Instrument Upgrade Process has completed as per the following procedures -

Windows NT

1. Right-click on the Network Neighbourhood icon and select 'Properties'.
2. Click on the 'Protocols' tab
3. Double-click on 'TCP/IP Protocol'
4. If 'Specify an IP address' was originally selected, change the IP Address and Subnet Mask fields to what you noted previously. If 'Obtain an IP address from DHCP' was originally selected, select it now.
5. Click OK, and then OK again.
6. You will need to reboot the PC for the new settings to take effect

Windows 98

1. Right-click on the Network Neighbourhood icon and select 'Properties'.
2. Locate the TCP/IP entry for the LAN connector – on a HP Omnibook 6000 this will be similar to 'TCP/IP -> 3Com 10/100', but other computers will be different – and double-click on it.
3. If previously this dialog did not specify an IP address, select 'Obtain an IP address automatically'. Otherwise enter in the IP address and Subnet Mask you noted down earlier.
4. Click OK, and OK again.
5. You will need to reboot the PC for the new settings to take effect

Windows 2000

1. Right-click on the "My Network Places" icon and select 'Properties'.
2. Right-click on the "Local Area Connection" icon and select 'Properties'. Locate the TCP/IP entry for the LAN connector – on a HP Omnibook 6000 this will be similar to 'TCP/IP -> 3Com 10/100', but other computers will be different – and double-click on it.
3. If previously this dialog did not specify an IP address, select 'Obtain an IP address automatically'. Otherwise enter in the IP address and Subnet Mask you noted down earlier.
4. Click OK, and OK again.
5. You will need to reboot the PC for the new settings to take effect

The firmware recovery/upgrade is now complete.

Procedure Step 9: Re-entering the Instrument serial number and restoring the options

A consequence of using the Instrument Recovery procedure is that the instrument serial number, instrument option data and current date and time may be erased from the flash memory. To check if the data has been erased, press **Menu** and select **System > Options** and choose the **Instrument** folder. If the serial number field is blank the data will need to be re-entered.

Use the following procedure to re-enter the serial number, option data and the date/time. You will find your current serial number on the back or the base of your unit.

Entering the Serial Number

1. Press **Menu** and select **System** > **Options** and choose the **Software** folder . You should see A.02.01 or later in the software revision box.
2. Tab over to **Option Control** and scroll down to software option. Select **Software Option** and choose **SERIAL** (The current serial number field will be blank.)
3. Scroll down to **New serial number** and type in the serial number exactly as shown on the back or base of your instrument (format is GBXXXXXXXX) then press the Select key.
4. Scroll down to codeword and enter **464164** then press **Select**.
5. Click **OK**, the instrument will then re-boot and the new serial number should show up in the "Current serial number box".

Restoring Instrument Options

The instrument options are protected by codewords You need to contact the Agilent TNTD support email node at **tntd_support@agilent.com** stating your instrument serial number and option required to obtain a valid codeword. Once you have a valid codeword use the following procedure to enable the option.

1. Press **Menu** and select **System** > **Option** and choose the **Option Control** folder.
2. Select **Software Option** and choose the option to be enabled, then press **Select**.
3. Set the Enable/Disable field to **Enable**.
4. Enter the Codeword and press **Select**. Now press **OK**. The instrument will now re-boot.
5. Go back to the **Instrument** folder and you should now see the option has been enabled.

Restoring the Instrument Date and Time

1. Press **Menu** and select **System** > **Time** and **Date**.
2. Enter the current time and date in the pop-up window.
3. End of procedure

Appendix A

Recommended Host Specification

Here are the host PC's that have been used successfully;

Host PC	Operating System	Lan card
OmniBook 900	Win 98 or Win 2000	Xircom Cardbus (Ethernet 100 + Modem 56)
OmniBook 6000	Win 98 or Win 2000	Built-in
Desktop (Kayak XA)	Win NT	Built-in

NOTE: The Omnibook 800 uses Win 95 and is NOT recommended. The host requires Java Virtual Machine - this is not standard on the Omnibook 800.

Finding the IP address of the host computer

If you do not know the IP address of the host computer, follow this procedure.
Note: If you have Carbon Copy installed on your PC, Click: Programs, Carbon Copy, What's my IP address? Else follow the procedure below that relates to your Operating System.

Windows 98

1. Click 'Start' and then 'Run'.
2. Enter 'winipcfg' and press Enter. You should see a dialog similar to this:
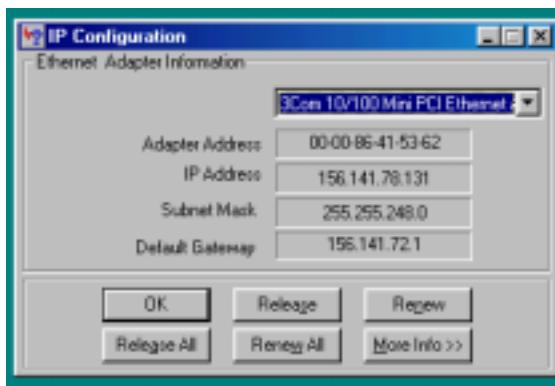
3. In the pop-down list, highlight your network adapter. A typical computer would have two entries in this list; ignore 'PPP Adapter'!
4. The 'IP Address' field shows the host computer's IP address on the network. This value should be entered into the 'Host IP address' field on the instrument's Software Upgrade dialog.
5. Click OK to close the dialog.

Windows NT

1. Click 'Start', then 'Programs', then 'Command Prompt'.
2. In the Command Prompt window, enter 'ipconfig'. You should see some output similar to this:

```
================================================================
Windows NT IP Configuration
Ethernet adapter AMDPCN1:
     IP Address. . . . . . . . . : 156.141.76.68
     Subnet Mask . . . . . . . . : 255.255.248.0
     Default Gateway . . . . . . : 156.141.72.1
PPP adapter NdisWan4:
     IP Address. . . . . . . . . : 0.0.0.0
     Subnet Mask . . . . . . . . : 0.0.0.0
     Default Gateway . . . . . . :
================================================================
```

3. Under the part which begins 'Ethernet adapter <name>', the line IP Address contains the host computer's IP address.
7. Type 'exit' to close the Command Prompt window.

Windows 2000

1. Click 'Start' -> 'Programs' -> 'Accessories' -> 'Command Prompt'.
2. In the Command Prompt window, enter 'ipconfig'. You should see some output similar to this:

```
================================================================
Windows 2000 IP Configuration
Ethernet adapter Local Area Connection 2:
     Connection Specific DNS suffix...
 IP Address. . . . . . . . . : 156.141.76.68
     Subnet Mask . . . . . . . . : 255.255.248.0
     Default Gateway . . . . . . : 156.141.72.1
================================================================
```

8. The line IP Address contains the host computer's IP address.
9. Type 'exit' to close the Command Prompt window.

Appendix B   Frequently Asked Questions

1) What happens if I start an upgrade without starting the host computer?

After the instrument resets for the first time, it attempts to contact the host computer. If it cannot, it will abort with an error message. Switching the instrument off and on again will clear this error. The instrument may give a warning as it starts up, but the instrument should still start up properly. Subsequent power-ons will be as normal.

2) Can I interrupt the upgrade process?

The instrument tries to upgrade itself 'safely', but this is not always possible. The software package consists of several files, which have interdependencies. If you interrupt the upgrade after only half the files have been upgraded, these files will no longer match the not-upgraded files, potentially causing the instrument to fail to boot. While in many cases the instrument will recover, you should assume that this will not be the case and try to ensure that the upgrade will not be interrupted.

3) Can I keep multiple versions of software on a single host?

Yes. The instrument software is kept in the 'a_software_sets' directory, so you can rename this directory before unpacking the second version.

To switch between the versions, there are two approaches you can take. The easiest is to rename directories such that the one you want to use is called 'a_software_sets' before you start the software server. The second way is to run the 'startserver' program from a command prompt – it takes an optional parameter, which is the name of the directory to use. Using this method the software does not have to be in the a_software_sets directory.

4)   Can I upgrade several instruments at once?

Yes. The software server can accept connections from many instruments at once.   Run the software server as normal, then tell all the instruments to use this host and start the upgrades. There is no built-in limit to the number of simultaneous upgrades, however you will probably hit practical limits (such as network bandwidth).

5) I cannot find my instrument on the LAN with the PING command?

When using the PING command in Windows, be sure to drop any leading zeros when using the command. Whereas the instrument will present the IP addresses in the form, for instance: 010.225.000.001, the PING command should use the form: 10.225.0.1 without any leading zeros. If the extra zeros are included, then the PING command interprets the following address in Octal. Ensure that the command output correctly presents the IP address. Using a command prompt window to allow the ping responses to be read.

6) During the Instrument Recovery Procedure, my instrument stops downloading the files and freezes on a screen displaying 'initializing instrument'. Why might this happen?

You must unpack the ZIP file into your C drive (top level), and not into any sub directory or folder. Placing the firmware into a sub directory will stop the instrument from reading the necessary files and halt the procedure.

7) What is DHCP?

The Dynamic Host Configuration Protocol (DHCP) is an Internet protocol for automating the configuration of computers that use TCP/IP. DHCP can be used to automatically assign IP addresses, to deliver TCP/IP stack configuration parameters such as the subnet mask and default router, and to provide other configuration information such as the addresses for printer, time and news servers. This allows you to connect the instrument to the network without having to set the IP Address etc, etc.