

AM-PC 4.2A Release Notes

These *Release Notes* describe the changes between AM-PC 4.2A, PR 10/98, and the previous version, AM-PC 4.2, and discuss compatibility information, especially issues relating to using AM-PC with Windows 95.

This document assumes you are already familiar with the AM-PC software, and want a brief description of the changes in AM-PC 4.2A. We do not include a full description of AM-PC; if you are not familiar with AM-PC, see the *Falcon Owner's Manual*. For descriptions of the changes and new features in previous AM-PC 4.x releases, and detailed discussions of compatibility and requirements, please refer to the *AM-PC 4.2 Release Notes*, DSS-10549-00, Rev. A02.

A README file containing any changes made after these *Release Notes* were printed may be included on the AM-PC release—please see that file for important installation or operator information.

AMOS 2.3A

The major change between AM-PC 4.2 and AM-PC 4.2A is the incorporation of the latest AMOS 2.3A in AM-PC 4.2A, replacing AMOS 2.3. For brief descriptions of the changes and new features in AMOS 2.3A, please see the *AMOS 2.3A Release Notes*, DSS-10572-00, Rev. A01 or later. Several other AMOS documents were also updated for AMOS 2.3A; see *AMOS 2.3 Current Revisions of Software Documentation*, DSS-10276-00, Rev. A13 or later, for information about the latest revisions of AMOS documentation.

COMPATIBILITY CHANGES

There have been two changes to the compatibility information found in the *Falcon Owner's Manual*, Rev. 03:

- PR 10/98 of AM-PC 4.2A removes a limitation found in earlier versions of AM-PC and Metropolis: you can now log in the console VTMI port under Metropolis using any FLiP terminal driver, such as FLPCOL or FLP62A. This works on any VTmX port. A sample initialization file using this configuration, SYS:AMPCAB.INI, is included with the AM-PC software.
- If you use the JATON57 video card, and are having problems with 132-column mode, enter these commands from the DOS prompt:

```
CD \ampc [ENTER]
COPY ampc.exe ampcbak.exe
COPY ampc57.exe ampc.exe
```

Then, reboot AMOS using the AMPC/B command.

NEW SIMULTANEOUS NETWORKING OPTION

Instead of following the directions later in these *Release Notes*, and in Chapter 8 of the *Falcon Owner's Manual*, to enable simultaneous AMOS and Windows networking under Windows95, you now have the option of using a 32-bit enhanced-mode NDIS driver, NDIS3PKT. This 32-bit driver improves performance in most configurations and is easier to install and maintain than the 16-bit driver. You can obtain the file from www.danlan.com.



If you choose to use this driver, you must use the released version; the beta test version will not work. This driver is not an Alpha Micro product; it is third-party shareware. While we have found it to work well, it is not supported by or under the control of Alpha Micro.

Using this driver changes the networking setup procedure. For more information, please see the file `\amp;pc\anet\amp;pcpkt\amp;pcpkt.txt` included with the AM-PC 4.2A PR 10/98 software.

WINDOWS 95 COMPATIBILITY

There is both good news and bad news in the area of Windows 95 compatibility: you can use both AMOS and Windows networking on the same PC, through the same Ethernet card; however, you may run into problems sharing certain devices between AMOS and Windows 95.



All references to Windows 95 in this document also apply to Windows 98.

Device Contention with Windows 95

Some Windows 95 device drivers work differently than those under previous versions of Windows or Windows for Workgroups. Once you access certain devices under Windows 95, the device driver does not “let it go” so the device can be used by AMOS, even after you exit the Windows 95 program which had been using it.

In practical terms, this means: ***You cannot use any device on a COM port or parallel port from AMOS after you have accessed it from Windows 95***, unless you do a hardware reset of the PC.

For example, if you have a modem on COM1, you can boot the PC, bring up AMOS, and use VersiCOMM or another communications program to dial out over the modem. You can then exit VersiCOMM, return to Windows 95, and dial your Internet Service Provider. However, even after you disconnect from your provider and exit the program, Windows does not completely release the modem port, and you cannot use it again from AMOS unless you perform a hardware reset.

This problem exists only under Windows 95; it is not an issue under DOS, Windows 3.1, or Windows for Workgroups. It is also not a problem if you boot your Windows 95 machine under DOS.

For more information, please see Chapter 4 of the *Falcon Owner's Manual*, DSO-00190-00, Rev. 03.

SCSI and IDE Devices

We have received reports indicating that some users could not access SCSI tape devices or certain IDE devices, such as CD-ROMs, from both AMOS and Windows 95. After testing in several configurations, it appears *there is no basic conflict between AMOS and Windows 95 when using these devices*; you can access them from AMOS after they have been used from Windows. We believe the reported problems are configuration and/or application specific; some application software may not properly relinquish the device when it is through accessing it. We recommend that you thoroughly test any Windows software, such as tape backup software, which could cause a problem with AMOS access.

Also, please keep in mind the guidelines for using SCSI devices from AM-PC, as described in the *AM-PC 4.2 Release Notes*, DSS-10549-00, Rev. A02 or later.

Simultaneous Networking

You can use Windows 95 Peer-to-Peer Networking, Windows PC-TCP/IP, and AMOS AlphaTCP or AlphaNET networking under AM-PC 4.2A, at the same time, using a single Network Interface Card (NIC). We have successfully installed this combination in five separate PC configurations; however, due to the very large number of possible combinations of network hardware and software in the Windows 95 world, it is impossible for us to guarantee that it will work in all configurations.

The next sections describe the general procedure to follow to enable simultaneous networking in a Falcon PC. Again due to the great variety of hardware/software combinations, we can't give specific instructions for all configurations. Instead, following the general instructions you'll find a detailed example of how we set up one of our installations.



We recommend you do not use TCP/IP from both Windows 95 and AMOS at the same time. It greatly increases network overhead and, therefore, reduces the performance of your entire network.

Also, do not enable any of the AlphaTCP SLIP interfaces when using Ethernet. Doing so will cause all packets destined for Windows to be re-sent by AM-PC to the default router, causing a lot of extra network traffic.

Finally, you cannot make a network connection between the Windows side of your PC and the Falcon/AMOS side of the same PC.



A note to Network Administrators: A PC running TCP under both Windows and AM-PC will appear on the network like a router using proxy-ARP. The PC's MAC address will have multiple IP addresses associated with it in the various network ARP caches.

Step 1 - Set Up Windows and Install Hardware

Make sure Windows 95 is installed and running. Turn off the PC and install the NIC, following the directions that came with the card. Make sure the jumper settings on the NIC do not conflict with any other board configuration. Connect the Ethernet cable to the correct connector on the NIC.

If you have not yet done so, install the Falcon board and AM-PC 4.2A software, following the procedure in the *Falcon Owner's Manual*.



These directions assume you have installed AM-PC into the default directory, C:\AMPC. If you installed AM-PC into a different directory or a different disk, please adjust all file locations, commands, etc., accordingly.

Step 2 - Configure Windows Networking

You must now configure Windows networking so it will not conflict with the AMOS network. To do so:



Be sure you have your Windows 95 setup CD or diskettes when you start this procedure. Windows may need to copy files to your hard disk.

1. From the Windows Task Bar, select **Start, Settings, Control Panel**.
2. From the Control Panel, select **Network**.
3. On the Network dialog Configuration tab page, double-click the selection for your type of NIC.
4. On the Driver Type tab page, select **Real Mode (16 bit) NDIS Driver**. You must use this driver even if the NIC supports a 32-bit driver!
5. Go to the Bindings tab page. Make sure the box to the left of **IPX/SPX Compatible Protocol** is checked.
6. Click **OK**.
7. If you do not already have TCP/IP networking enabled, follow these steps (you can skip this step if you want to run only Windows 95 Peer-to-Peer Networking, not TCP/IP):
 - On the Network dialog Configuration tab page, click **Add**.
 - Select **Protocol**.
 - Select **Microsoft**.
 - Select **TCP/IP**.
 - Click **OK**.
 - On the Network dialog Configuration tab page, double-click **TCP/IP**.
 - Specify an IP address. ***This must be different*** than the address you will specify in the AMOS TCP:NETWRK. file (see step 6).
 - Perform any other network setup for your installation. For example, you may need to enter a subnet mask, go to the Gateway tab page and enter the gateway address, etc.
 - Click **OK**.
8. Click **OK**. Don't restart Windows when it asks if you want to; you'll restart the PC later in this procedure.
9. Close the Control Panel dialog box.

Step 3 - Edit the Windows Registry

You need to change one of the network entries in the Windows Registry. Follow these steps:

1. From the Task Bar, select **Start, Run**.
2. Type **REGEDIT** .
3. In the Registry Editor dialog box, navigate to the Real Mode Net folder. Under My Computer, select the following folders, in order:

```
HKEY_LOCAL_MACHINE
SOFTWARE
Microsoft
Windows
Current Version
Network
Real Mode Net
```

The right side of the Registry Editor now shows:

```
Default           value not set
LoadRMDrivers     01 00 00 00
netcard           depends on card type
preferredredir    "VREDIR"
transport         "nwlink,ndishlp.sys"
```

4. Double-click on transport. In the Value data field, add these characters to the end of the entry:

```
,dis_pkt.dos 
```

The data field for transport should now read:

```
"nwlink,ndishlp.sys,dis_pkt.dos"
```

5. Exit the Registry Editor.



You have just manually modified your network registry entries. From now on, any time you modify your networking setup, or view your network setup and exit by clicking **OK**, you will need to repeat this step. Each time you modify the network setup, Windows will rewrite the Registry, and your modification (adding “,dis_pkt.dos”) will disappear. This will stop AMOS networking from working until you re-add it.

Step 4 - Edit System Files

1. From the Task Bar, select **Start, Run**.
2. Type **SYSEDIT** .
3. Select the C:\AUTOEXEC.BAT file. Make sure it contains these commands at the beginning of the file.

```
C:\WINDOWS\NET START
C:\WINDOWS\WINPKT 0X65
```

The address in the WINPKT command (shown as 0X65) can be any unused interrupt for your PC. Remember this interrupt, you will need it later.

You may want to also check AUTOEXEC.BAT to make sure the PATH statement includes your AM-PC folder, and that the SET AMPC command has been added.

4. Make any necessary changes. Save the file and close the AUTOEXEC.BAT window.
5. Look at the PROTOCOL.INI file window. Following the [data] section, add a section defining the packet driver to use, as shown:

```
[pktdrv]
bindings=depends on NIC type
intvec=0x65
drivername=pktdrv$
```

The `bindings` setting must be the correct one for your NIC. This should be listed in the [data] section of PROTOCOL.INI, on a line starting `netcards=`. The [intvec] setting must match that in the WINPKT statement in AUTOEXEC.BAT.

The rest of PROTOCOL.INI will vary depending on your network hardware and configuration; there is a sample file later in this document.

6. Save the file and close the PROTOCOL.INI window.
7. Close the SYSEDIT dialog box.

Step 5 - Modify the AMPC.INI File

1. From the Task Bar, select **Start, Programs, AMPC, AMPC.INI**.
2. At the end of this file, you should see this line:

```
;NETWORK = CLARKSON
```
3. Remove the semicolon (;) from the first column.
4. Save the file and close the window.

Step 6 - Restart Windows

Make sure you've closed all running programs. From the Task Bar, select **Start, Shut Down**. On the Shut Down Windows dialog box, select **Restart the Computer**.

Once Windows is running, you should see an Enter Network Password dialog box. Enter your name and password.

You should be able to see the other PCs on the network. Test your network access under Windows Explorer.

Step 7 - Modify AMOS Networking Files

You have now finished the Windows part of the setup. To configure AM-PC for networking:

1. Select the AM-PC boot icon to boot AM-PC using the AMOSL.INI file.



If you did not do so when you installed AM-PC, run OSINST and enter your AMOS PIC.

2. You need to edit the AlphaTCP network configuration file. Type these commands:

```
LOG TCP: [ENTER]
VUE NETWRK. [ENTER]
```

3. In NETWRK., change the Ethernet line to enter your network IP address for AMOS on this PC. If you are also using PC-TCP/IP, **this address must be different than the one you entered for the PC during your network setup**. To use both AMOS and Windows TCP simultaneously, you need one IP address for the "AMOS computer" and one for the "Windows PC" even though they are physically the same machine.
4. Press [ESC] and use Finish to save and exit from the file.
5. Next, you can add ersatz names for your installation. Log to SYS: and VUE the ETH101.ERZ file to do so.
6. To activate AMOS networking (AlphaTCP and AlphaNET), type:

```
LOG OPR: [ENTER]
MONTST AMOSL, TCP. INI [ENTER]
```

AMOS will restart; it should display an Ethernet MAC address when it executes the ETH101.NIN file. Then it should finish initializing and spawn the TCP tasks.

Your Falcon PC is now running Windows Peer-to-Peer Networking, Windows TCP/IP, and AlphaTCP and/or AlphaNET under AMOS. For more details about AlphaNET and AlphaTCP features and installation, please refer to the appropriate manuals listed in the related documentation section.

A Sample Network Installation

We started with a Falcon-equipped PC containing these components:

Component	Comments
Pentium 133MHz CPU	
COM1	IRQ=4, I/O Address Range 3F8-3FF, Mouse
COM2	IRQ=3, I/O Address Range 2F8-2FF
LPT1	I/O Address Range 3BC-3BE
Falcon	I/O Address Range 294-297, 8MB of memory
Kingston KNE40T PCI Network Adapter	PCI slot 0; SIA Mode set to Auto Detect
Video board	VGA compatible
Floppy drive	IRQ=6, I/O Address Range 3F2-3F5, DMA=2
SCSI controller	IRQ=11 I/O Address Range 234-237, DMA=5, Adaptec1542C
SCSI disks and CD-ROM	



Note that many of these settings (such as the SCSI controller information) do not directly affect the network setup. We include them here only for completeness.

Here is how we made Windows 95 Peer-to-Peer Networking, PC TCP/IP and AMOS AlphaTCP and AlphaNET networking work on this PC, simultaneously.

Step 1 - Set Up Windows and Install Hardware

Since the Falcon and the NIC were already in the PC, we just checked to make sure everything was installed properly: jumper settings were correct, the Ethernet cable was attached, and there were no loose connections. Windows 95 was up and running with no problems.

We installed AM-PC 4.2A, following the procedure in the *Falcon Owner's Manual*.

Step 2 - Configure Windows Networking

Next, we configured our Windows Peer-to-Peer and TCP/IP networking:

1. From the Windows Task Bar, we selected Start, Settings, Control Panel.
2. From the Control Panel, we selected **Network**.
3. On the Network dialog Configuration tab page, we double-clicked PCI Ethernet 21041 Based Adapter.
4. On the Driver Type tab page, we chose Real Mode (16 bit) NDIS Driver. Even though we had a 32-bit NIC, simultaneous networking is supported only with the 16-bit driver.
5. We went to the Bindings tab page and made sure the box to the left of IPX/SPX Compatible Protocol was checked.
6. We clicked **OK** to leave the Network dialog box.

7. We hadn't yet set up PC-TCP/IP networking, so we:
 - Clicked **Add** on the Network dialog Configuration tab page.
 - Selected Protocol.
 - Selected Microsoft.
 - Selected TCP/IP.
 - Clicked **OK**.
 - On the Network dialog box Configuration tab page, double-clicked TCP/IP.
 - Specified an IP address. We noted the address, so we could be sure to use a different one in the AMOS TCP:NETWRK. file (see step 7).
 - Entered the subnet mask and gateway address for our network.
 - Clicked **OK** to leave the TCP/IP Properties dialog box.
8. We clicked **OK** to leave the Network dialog box. We did not restart Windows; we waited until later in the setup procedure.
9. We closed the Control Panel.

Step 3 - Edit the Windows Registry

To make the needed change to the Windows Registry, we did the following:

1. Selected **Start, Run** from the Task Bar.
2. Typed **REGEDIT** .
3. In the Registry Editor dialog box, under My Computer, we selected the following folders:

```
HKEY_LOCAL_MACHINE
SOFTWARE
Microsoft
Windows
Current Version
Network
Real Mode Net
```

The right side of the Registry Editor showed:

```
Default          value not set
LoadRMDrivers    01 00 00 00
netcard          "dc21x4.dos"
preferredredir   "VREDIR"
transport        "nwlink,ndishlp.sys"
```

4. We double-clicked on transport and, in the Value data field, added these characters to the end of the entry:

```
,dis_pkt.dos 
```

so the field read:

```
"nwlink,ndishlp.sys,dis_pkt.dos"
```

5. Exited the Registry Editor.

Step 4 - Edit System Files

1. From the Task Bar, we selected **Start, Run**.
2. We typed **SYSEDIT** , then selected the C:\AUTOEXEC.BAT file. It looked like this:

```
C:\WINDOWS\NET START
C:\WINDOWS\WINPKT 0X65
@ECHO OFF
PROMPT $p$g
PATH C:\WINDOWS;C:\WINDOWS\COMMAND;C:\DOS;C:\AMPC
SET TEMP=C:\TEMP
SET AMPC=C:\AMPC
C:\WINDOWS\COMMAND\DOSKEY
```

Since it contained all the commands necessary for AMOS networking, we closed the file.

6. We selected the PROTOCOL.INI file window, and added the section shown in bold italics below, defining the packet driver to use. Notice that the bindings line matches the “netcards” entry from the [data] section. This example shows our entire PROTOCOL.INI file:

```
[ndishlp$]
DriverName=ndishlp$
Bindings=DC21X4$

[protman$]
DriverName=protman$
priority=ndishlp$

[data]
version=v4.00.1111
netcards=DC21X4$,PCI\VEN_1011&DEV_0014



[pktdrv]  

bindings=DC21X4$  

intvec=0x65  

drivername=pktdrv$


[nwlink$]
DriverName=nwlink$
Frame_Type=4
cachesize=0
Bindings=DC21X4$

[DC21X4$]
DriverName=DC21X4$
SIA_Mode=AUTODETECT
```

8. After adding the lines shown in bold, we saved the file, closed the PROTOCOL.INI window, and closed the SYSEDIT dialog box.

Step 5 - Modify the AMPC.INI File

Next, we added the necessary network statement to the AM-PC initialization file. This statement is already in the default file but is commented out. Here are the steps:

1. From the Task Bar, we selected **Start, Programs, AMPC, AMPC.INI**.
2. The end of the file contained this line:

```
;NETWORK = CLARKSON
```
3. We removed the semicolon (;) from the first column, saved the file, and closed the window.

Step 6 - Restart Windows

Having made all necessary Windows changes, we made sure no programs were running and restarted the PC by selecting **Start, Shut Down** from the Task Bar. On the Shut Down Windows dialog box, we selected **Restart the Computer**.

After Windows restarted, we entered our name and password in the Enter Network Password dialog box.

In Windows Explorer, we could see and access the other PCs on our network, so we knew the Windows Peer-to-Peer Networking was working correctly. We also launched our Web browser and accessed Internet sites so we knew that PC-TCP/IP was functioning.

Step 7 - Modify AMOS Networking Files

To configure AM-PC for networking, we:

1. Selected the AM-PC boot icon to boot AM-PC using the AMOSL.INI file.
2. To edit the AlphaTCP network configuration file, we typed these commands:

```
LOG TCP:   
VUE NETWRK. 
```
3. In NETWRK., we changed the IP address on the Ethernet line to the address we wanted. Since we were also using PC-TCP/IP, we set this to a different address than the one we used on the Network dialog box in step 2. *To use both AMOS and Windows TCP, the Windows and AMOS IP addresses must be different.*
4. We saved and exited from the file.
5. We VUEd SYS:ETH101.ERZ and added the ersatz names we wanted for our installation.
6. We were now ready to activate AMOS networking. We typed these commands:

```
LOG OPR:   
MONTST AMOSL, TCP. INI 
```

As AMOS restarted, we watched to make sure it displayed an Ethernet MAC address when it executed the ETH101.NIN file. It then finished initializing and spawned the TCP tasks.

Now that we knew the basic setup was complete and correct, and we could run Windows Peer-to-Peer Networking, PC-TCP/IP, and AlphaTCP and/or AlphaNET under AMOS, we modified our AMOS initialization file so networking would always be enabled, following the instructions in our AMOS documentation.

RELATED DOCUMENTATION

In addition to these *Release Notes*, these Alpha Micro documents contain information you may find helpful while installing or using AM-PC 4.2:

- *Falcon Owner's Manual*, DSO-00190-00, Rev. 02 or later: Describes how to install and use the AM-PC 4.2 software and AMOS on your PC. It also includes a list of other AMOS documentation you may want to refer to.
- *Falcon AMOS Application Processor Installation Instructions*, PDI-00113-10, Rev. A01 or later: Tells you how to install the Falcon AMOS Co-processor in your PC and build terminal cables to attach additional terminals.
- *Upgrading from AMOS 1.X to AMOS 2.X*, DSS-10408-00: If you're upgrading from an AM-PC version using a 1.X version of AMOS.
- The *AMOS 2.3 Release Notes*, DSS-10555-00: Describe the enhancements in AMOS 2.3.
- The *AMOS 2.3A Release Notes*, DSS-10572-00, Rev. A01 or later: Describe the enhancements in AMOS 2.3A.

For AMOS network setup , you may also want to refer to these documents:

- *AlphaTCP Administrator's Guide*, DSO-00187-00
- *AlphaNET 2.4 Installation Guide*, DSO-00064-00