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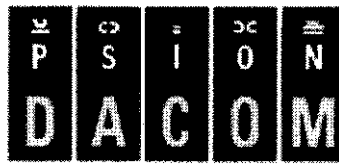
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Exhibit A

User Instructions

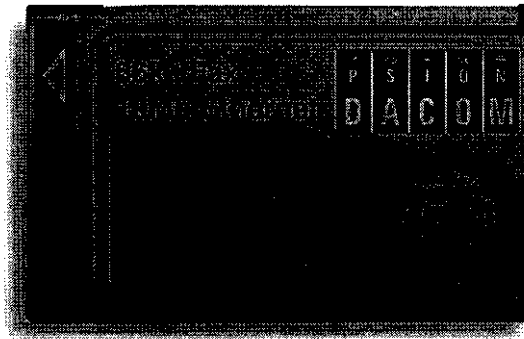


PSION DACOM

GOLD CARD NETGLOBAL

56K + 10/100 ETHERNET CARDBUS

CARD



[Introduction](#) [Installation](#) [EasySwitch](#) [Modem Commands](#) [Troubleshooting](#) [Product Specs.](#)
[Customer Support](#) [Contact Psion Dacom](#)

INTRODUCING THE GOLD CARD NETGLOBAL 56K + 10/100 ETHERNET CARDBUS CARD

Welcome...

...and thank you for choosing Gold Card NetGlobal from Psion Dacom. We hope you will take the time to read this manual, it will introduce you to your new Gold Card NetGlobal CardBus card and will give you the recommended method for installing the card in your laptop computer.

Your new Gold Card NetGlobal 56K + 10/100 Ethernet CardBus card can be used with a notebook computer equipped with a CardBus card slot running a supported operating system. It will enable you to connect your computer to the public telephone network (PSTN / POTS) and your office computer network AND with the optionally available Psion Dacom upgrade packs, you can also connect to your GSM mobile phone and ISDN telephone network.

To save you time and frustration we recommend you follow the Gold Card CardBus card installation instructions for DOS, Windows 95b, 98, NT 4.0 and CardWizard for NT 4.0

The installation procedure will also install EasySwitch country switching software which you can use to reprogram your modem for use in over **170 countries**.

For more information about Psion Dacom and our products please visit our web site at :

www.psiondacom.com

A brief word about quality and customer support

Your new Gold Card NetGlobal CardBus card has been made with quality and care in mind. To ensure peace of mind, your card is covered by lifetime warranty and lifetime technical support.

Psion Dacom's Customer Support service is available to help you get the most from your Gold Card product. You can contact us by telephone, fax and email or visit our web site at

www.psiondacom.com/support

where you will find the latest support information and drivers.

We at Psion Dacom want you to be pleased with your Gold Card. If you have any comments to make about our products or service then please contact us.

Register Your Gold Card NetGlobal CardBus Card

Please remember to complete and return your product registration card. This will register your Gold Card for lifetime technical support. It also helps us in keeping you up to date with the latest Gold Card developments.

Taking care of your Gold Card NetGlobal CardBus Card

We are confident that if you take the following simple precautions your Gold Card will provide many years of service.

- Do not expose your Gold Card to extreme temperatures.
- Do not connect your Gold Card to a digital telephone socket (sometimes found in offices and hotels). If in doubt please ask for advice at your hotel or office.
- Do not expose your Gold Card to extreme humidity.
- Do not drop or subject your Gold Card to hard knocks or excessive force.
- Do not insert your Gold Card CardBus PC Card into a standard PC Card slot, you may only insert it into a CardBus PC Card slot.

Package Contents

- Gold Card NetGlobal 56K + 10/100 Ethernet CardBus Card.
- NetGlobal network cable connector (10 Base T / RJ45)
- Gold Card telephone (PSTN / POTS) cable for modem connection.
- Country Specific Telephone Plug (availability subject to country).
- Gold Card NetGlobal installation disks (4).
- Fax / Comms software (availability subject to country).
- Product Registration / Warranty Card.

NETGLOBAL CARDBUS INSTALLATION INSTRUCTIONS

Please carefully follow the installation instructions for Windows 95, 98, NT 4.0 and Windows 3.x /DOS. It is also recommend that you review the preparation guidelines to ease the installation procedure.


The latest support information and drivers are available at

www.psiondacom.com/support

How To Install The NetGlobal CardBus Card in Windows 95



Disk 1

1. Switch on your laptop and load Windows 95.
2. Insert the floppy disk labelled 'Gold Card NetGlobal Disk 56k 10/100 CardBus Installation Disk 1' into your floppy disk drive.
3. Click the **Start** button choose **Run** and type **A:\Setup** and click **OK**. 
4. Follow the on-screen instructions to install the NetGlobal CardBus utility programs and on-line manuals.

The following programs have been installed:

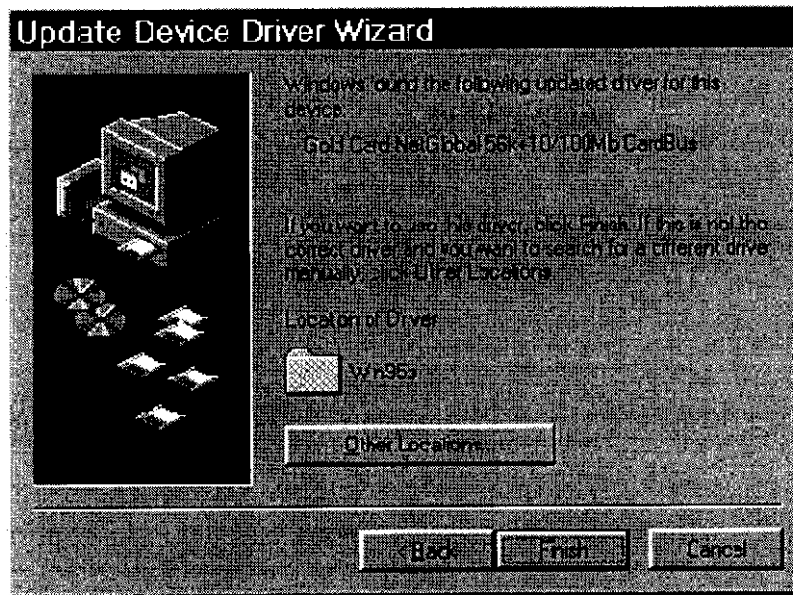
- EasySwitch country switching and modem utility program.
- NetGlobal CardBus online user manual.
- Uninstall program.

How To Install The NetGlobal CardBus Card Drivers



Disk 4

1. Before beginning the installation procedure, please read Preparing For NetGlobal CardBus Installation in Windows 95/98.
2. Insert the Gold Card into a CardBus slot on your laptop.
3. Windows will detect new hardware and find a 'PCI Ethernet Controller'.
4. The 'New Hardware Wizard' will automatically start ready to guide you through the installation process.
5. If not already inserted, insert '**Gold Card NetGlobal Disk 56k 10/100 CardBus Installation Disk 4**' into the floppy disk drive.
6. In the installation wizard, click **Other Locations** and enter the location as **A:\WIN95B** and click **OK**.
7. The wizard will read the floppy disk and locate the driver. Click **Finish** to install the drivers.




*Locate the driver at
A:\Win95A and click
Finish to install*

8. At this point, you may be prompted for network identification information. Fill in the details and click **Close** - the person responsible for network administration will be able to supply you with relevant network information.
9. The installation wizard will now prompt for the 'Psion Dacom CardBus Driver Disk'. Click **OK** and type **A:\WIN95B** in the 'Copying Files...' window.
10. You will also be prompted for the Windows installation disks. These may be located in cabinet files on your hard drive (usually **C:\WINDOWS\OPTIONS\CABS**) or on the Windows CD-ROM usually **<DRIVE>\WIN95**.
11. Once the PCI Controller has been installed, Windows 95 will detect a 'Psion Dacom Serial Controller'. Once again, specify the driver location as **A:\WIN95B**.
12. When the drivers have installed, please shutdown, **switch off** and restart your laptop to complete installation of the Gold Card NetGlobal CardBus card.
13. You should now load Psion Dacom's EasySwitch program to set your country location and then configure network components to access your network resources.
14. Installation of the Gold Card NetGlobal CardBus card is normally quick and easy. However if you have any difficulty getting the card to work in your laptop, then please see the troubleshooting sections for installation, network and modem problems.

How To Install The NetGlobal CardBus Card in Windows 98



Disk 1

1. Switch on your laptop and load Windows 98.
2. Insert the floppy disk labelled '**Gold Card NetGlobal Disk 56k 10/100 CardBus Installation Disk 1**' into your floppy disk drive.
3. Click the **Start** button choose **Run** and type **A:\Setup** and click **OK**. 
4. Follow the on-screen instructions to install the Gold Card NetGlobal utility programs and on-line manuals.

The following programs have been installed:

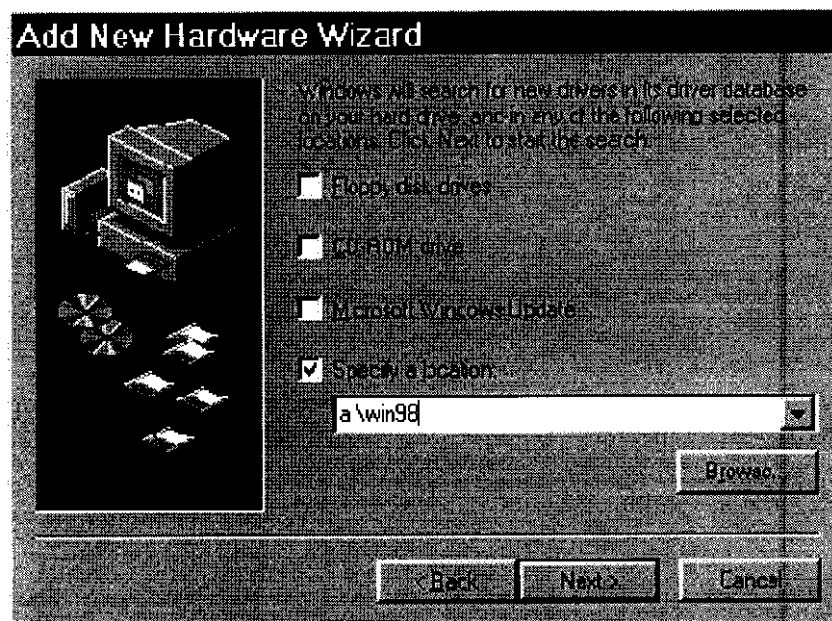
- EasySwitch country switching and modem utility program.
- NetGlobal CardBus online user manual.
- Uninstall program.

How To Install The NetGlobal CardBus Card Drivers



Disk 4

1. Before beginning the installation procedure, please read [Preparing For NetGlobal CardBus Installation in Windows 95/98](#).
2. Insert your NetGlobal CardBus card into a CardBus slot in your PC.
3. Windows will detect the Gold Card and start the 'Add New Hardware Wizard' to guide you through the installation process.
4. Choose '**Search for the best drivers for your device**' and click **Next**.
5. If not already inserted, insert 'Gold Card NetGlobal Disk 56k + 10/100 CardBus Installation Disk 4' into the floppy disk drive.
6. Place a tick in the 'Specify A Location' check box and enter the location as **A:\Win98** then click **Next**.



Enter the driver location as A:\Win98

7. The 'Add New Hardware Wizard' window opens and will read the floppy disk looking for drivers in the specified location.
8. Click **Next** to install the driver **NETPSDCB.INF**.

9. You will now be asked for the 'Psion Dacom CardBus Driver Disk'. Click OK then change the location to '**A:\Win98**'.
10. Click **Finish** when all the necessary drivers have been installed and click **Yes** to restart your computer.
11. In the 'Copying Files...' window specify the location of the driver as **A:\Win98** and click **OK**. Windows will copy the required files to your hard disk.
12. Click **Finish**. Remove the floppy disk and click **Yes** to restart your computer.
13. On restart the 'Add New Hardware Wizard' window appears again with the message 'This wizard searches for new drivers for PCI Serial Controller'. Click **Next**.
14. Insert 'Gold Card NetGlobal Disk 56k 10/100 CardBus Installation Disk 4' into the floppy disk drive.



Disk 4


15. Choose 'Search for the best drivers for your device' and click **Next**.
16. Place a tick in the 'Specify A Location' check box and deselect the other options. Type **A:\Win98** and click **Next**.
17. The 'Add New Hardware Wizard' window opens with the following message 'Windows found the following driver for this device '. Click **Next**.
18. Windows will now copy files to your hard disk. Click **Finish** to complete modem installation.
19. When the drivers have installed, please shutdown, **switch off** and restart your laptop to complete installation of the Gold Card NetGlobal CardBus card.
20. You should now load Psion Dacom's EasySwitch program to set your country location and then configure network components to access your network.
21. Installation of the Gold Card NetGlobal CardBus card is normally quick and easy. However if you have any difficulty getting the card to work in your laptop, then please see the troubleshooting sections for installation, network and modem problems.

How To Install The NetGlobal CardBus Card in NT 4.0

The following instructions are intended for machines not running CardWizard plug-and-play software. For help installing in NT 4.0 with CardWizard please click [here](#).



Disk 1

1. Switch on your laptop and load Windows NT 4.0.
2. Insert the floppy disk labelled 'Gold Card NetGlobal Disk - 56k 10/100 CardBus Installation Disk 1' into your floppy disk drive.
3. Click the **Start** button choose **Run** and type **A:\Setup** and click **OK**. 
4. Follow the on screen instructions to install the Gold Card NetGlobal utility programs and on-line manuals.
5. Remove the floppy disk, shutdown and **switch off** your laptop.

The following programs have been installed:

- EasySwitch country switching and modem utility program.
- NetGlobal CardBus online user manual.
- Uninstall program.

How To Install The NetGlobal CardBus Card Drivers



Disk 4

1. Before beginning the installation procedure, please read [Preparing For NetGlobal CardBus Installation in Windows NT 4.0](#).
2. Insert the Gold Card NetGlobal 56K 10/100 Ethernet CardBus card into a CardBus slot on your laptop.
3. Switch **on** your computer and load Windows NT 4.0.
4. Logon with Administrator rights.
5. Insert 'Gold Card NetGlobal Disk - 56k 10/100 CardBus Installation Disk 4' into the floppy disk drive.
6. Click the **Start** button, choose **Settings** and load the **Control Panel**.
7. Double-click the **Network** icon to open the network control panel.



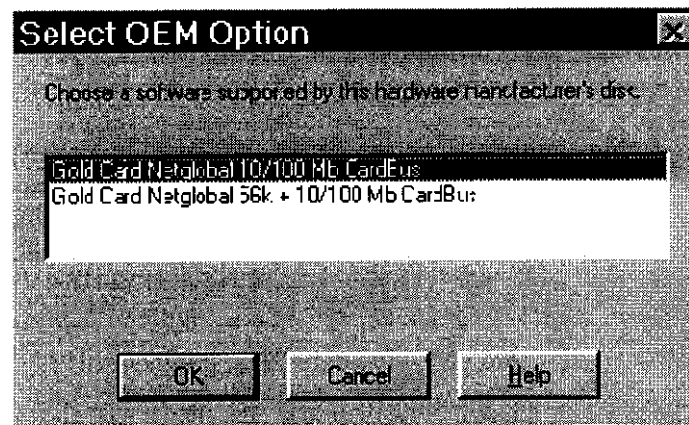
Network

If this is the first time you have setup networking, you will be asked to install Windows NT Networking:

- i. Click Yes to install NT Networking.
- ii. Select 'Wired to the Network' when asked how this computer should participate in the network.
- iii. When asked for your network adapter, choose 'Select from list'.
- iv. Click the 'Have Disk' button and enter the location of the files as A:\WinNT4

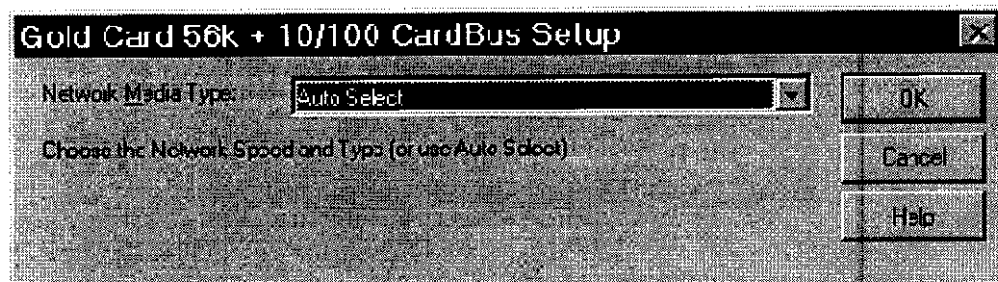
7. Select the **Adapters** tab and click the **Add** button. Windows NT will display a list of network adapters.
8. Click the **Have Disk** button and enter the location of the files as **A:\WinNT4**
9. Windows NT will read the diskette and provide a list of Gold Card NetGlobal CardBus adapters.

11. Choose your NetGlobal CardBus card from the list and click **OK**.



Select your Gold Card from the list and click OK

12. Windows NT will then load the 'CardBus Setup' dialogue box where you should select your network media type (or choose **Auto Select**).
13. Click **OK** to install the media type.



Choose your network's media type

14. Your NetGlobal CardBus card has now been added to the list of installed network adapters.
15. Remove the floppy disk and click **Yes** to restart your computer. Please switch **off** your laptop before restarting.

Modem Setup

1. Switch on your laptop, load Windows NT and log on as Administrator.
2. Open **Control Panel** and double-click the **Modems** icon.
3. Place a tick in the '**Don't detect my modem**' check box and click **Next**.
4. Insert 'Gold Card NetGlobal Disk 56k + 10/100 CardBus Installation Disk 2' into the floppy disk drive.
5. The 'Install New Modem' window reappears. Click the **Have Disk** button.
6. In the 'Install From Disk' window specify the location of the driver as **A:\WinNT4** and click **OK**.
7. Choose your NetGlobal CardBus modem and click **Next**.
8. Choose the port to install the modem on and click **Next**.


9. Click **Close** to complete modem installation.
10. Installation of the drivers for the Gold Card NetGlobal 56k + 10/100 Ethernet CardBus card is now complete.
11. You should now use Psion Dacom's EasySwitch program to set your country location and then configure network components in Windows 95/98 and NT 4.0 to access your network.
12. Installation of the Gold Card NetGlobal CardBus card is normally quick and easy. However if you have any difficulty getting the card to work in your laptop, then please see the troubleshooting sections for installation, network and modem problems.

How To Install The NetGlobal CardBus Card in NT4.0 with CardWizard

- The Gold Card NetGlobal 56K + 10/100 CardBus card is compatible with SystemSoft CardWizard for NT4.0 version 4.00.07 and above. For CardWizard updates contact SystemSoft via the web at www.systemsoft.com
- For all other versions of plug and play software you should contact the software vendor to confirm compatibility with this product.



Disk 1

1. Switch on your laptop and load Windows NT 4.0.
2. Insert the floppy disk labelled 'Gold Card NetGlobal Disk 56k 10/100 CardBus Installation Disk 1' into your floppy disk drive.
3. Click the **Start** button choose **Run** and type **A:\Setup** and click **OK**. 
4. Follow the on screen instructions to install the Gold Card NetGlobal utility programs and on-line manuals.
5. Remove the floppy disk, shutdown and **switch off** your laptop.

The following programs have been installed:

- EasySwitch country switching and modem utility program.
- NetGlobal CardBus online user manual.
- Uninstall program.

How To Install The NetGlobal CardBus Card Drivers

1. Before beginning the installation procedure, please read Preparing For NetGlobal CardBus Installation in Windows NT 4.0.
2. Switch on your PC and start Windows NT 4.0.
3. Insert the floppy disk labelled 'Gold Card NetGlobal Disk 56k + 10/100 CardBus Installation Disk 1'.
4. Click the **Start** button choose **Run** and type **A:\Setup** and click **OK**.
5. Follow the on screen instructions to install the Gold Card NetGlobal utility programs and on-line manuals inserting Disk 2 when prompted.

The following programs have been installed:

- EasySwitch country switching and modem utility program.
- NetGlobal user manual
- Uninstall program

Installation Procedure For Windows NT 4.0 + CardWizard

To connect to your network you must correctly install the appropriate network components, configure protocols and enter logon information. The person responsible for your network administration will be able to help you select the correct network components and configure them correctly.

1. Switch on your laptop and start Windows NT 4.0.
2. Insert the disk labelled 'Gold Card NetGlobal 56k + 10/100 CardBus Installation Disk 4'.
3. Click the Start button, choose Run and enter **A:\WinNT4\CRDWIZNT.BAT**. Click **OK**.
4. Insert the NetGlobal CardBus card into a CardBus PC Card slot.
5. The CardWizard software will install the adapter automatically and prompt you for the drivers that are located on the disk in the directory **A:\WinNT4**.
6. After the network adapter has been installed, remove the floppy disk and then click **Yes** to restart the computer. We recommend that you switch off your laptop before restarting.
7. After restart please verify that new devices **PSDETHCB** and **SERIAL** have been installed. To do this, open the NT Diagnostics window by clicking the **Start** button, choose **Run** and enter **WinMSD** and click **OK**.
8. Click the **Resources** tab and select the **IRQ** button.
9. The 'Serial' and 'PSDETHCB' devices should share the same interrupt. This is normal and you can proceed with installing the modem part of the Gold Card. If the IRQs are NOT the same read the troubleshooting section.

Modem Setup

1. Open the Windows NT **Control Panel**, then double-click the **Modems** icon.
2. Select the **Don't detect my modem** check box, and click **Next**.
3. Insert the disk labelled 'Gold Card NetGlobal 56k + 10/100 CardBus Installation Disk 4'.
4. The Install New Modem window reappears. Click **Have Disk**.
5. In the Install From Disk window specify the location of the driver **A:\WinNT4** and Click **OK**.
6. Select your modem and then click **Next**.
7. Choose **COM5** port and click **Next**.
8. Click **Close** to complete modem installation.
9. Installation of the Gold Card hardware components is now complete.
10. You should now use Psion Dacom's EasySwitch program to set your country location and then configure network components to access your network.
11. Installation of the Gold Card NetGlobal CardBus card is normally quick and easy. However if you have any difficulty getting the card to work in your laptop, then please see the troubleshooting sections for installation, network and modem problems.

Installation Procedure For DOS / Windows 3.x

- DOS does NOT support the modem function in the Gold Card NetGlobal + 56k 10/100 Ethernet CardBus card.
- The DOS CardBus enabler program will not function if Card and Socket Services are present.
- The DOS CardBus enabler program will not function if a DOS memory manager (i.e. EMM386.EXE) is installed.
- The DOS CardBus enabler program does not support hotswapping.

The DOS CardBus Enabler For NetGlobal CardBus Adapter

The DOS CardBus Enabler is located in the A:\DOS\ODI and A:\DOS\NDIS2 directories on the driver distribution diskette.

To run the DOS CardBus Enabler enter **PSDCBENA.EXE** at the DOS prompt.

The ODI Driver For NetGlobal CardBus Adapter

Psion Dacom supply a 16-bit ODI driver and networking environments that use the ODI standard. We have also supplied a minimal set of the Novell VLMs. You must use these VLMs or a later version. Earlier versions of VLMs (and NETX.exe) will not work with the supplied ODI driver.

To use the ODI driver, create a new directory (e.g. C:\NET) and copy all the files in the A:\DOS\ODI directory to this newly created directory.

To load the ODI driver modify the sample NET.CFG file as required for your networking and then load these files in this order:

LSL.COM
PSDETHCB.COM
IPXODI.COM
VLM.EXE

ODI Keywords

This section describes the ODI keywords that are supported by the NetGlobal 56k+10/100 CardBus ODI drivers.

The keywords must be set up in the net.cfg file under the line LINK DRIVER PSDETH and must be indented by at least one space.

FRAME <frame type>

Description: Frame type used by the driver
Default: Ethernet_802.2
Accepted values: Ethernet_802.3 , Ethernet_II ,
 Ethernet_SNAP, Ethernet_802.2

Make sure the frame type matches that used by the server.

MEDIA= <media type>

Description: Media type selected by the driver
Default: AUTO

NODE ADDRESS <nnnnnnnnnnnn>

Description: Station address used to override the default PROM value.

Default: None (driver uses PROM)

Accepted values: Valid hexadecimal for a Station Address according to Ethernet pattern.

PROTOCOL <named protocol> <protocol id> <frame type>

Description: Associate the named protocol with the protocol id

Default: Pre-defined Novell values

Accepted values: Refer to Novell documentation

Example net.cfg

An example of a net.cfg file is as follows:

```
Link Driver PSDETHCB
FRAME ETHERNET_802.3
MEDIA 10BASET
NODE ADDRESS 000079821660
PROTOCOL IPX 0 ETHERNET_802.3
```

The NDIS2 Driver For NetGlobal CardBus Adapter

An OEMSETUP.INF file is provided which will allow installation of the NDIS2 under Windows 3.x / Windows for Workgroups 3.xx. We also provide a PROTOCOL.INI stub file that will allow installation of the NDIS2 driver under other environments that support the NDIS2 driver specification.

When installing the NDIS2 driver, proceed with the installation of the network client and when prompted by the installation for an adapter or driver, point the installation routine to the A:\DOS\NDIS2 directory on the driver distribution diskette.

The NDIS2 driver will only load if the DOS CardBus Enabler has been loaded.

NDIS Keywords

NetGlobal 56k+10/100 CardBus NDIS drivers support the following NDIS keywords.

The keywords must be in the protocol.ini file under the line DriverName = PSDETHCB\$. If the keyword is not present the default value shown will be assumed.

MEDIA= <media type>

Description: Media type selected by the driver

Default: AUTO

Accepted Values: BASET, BASE100TX, POWER or AUTO

NETADDRESS= <'nnnnnnnnnnnn'>

Description: Station address used to override the default PROM value.

Default: None (driver uses PROM)

Accepted values: Valid hexadecimal for a Station Address according to Ethernet pattern.

Example protocol.ini

An example of a protocol.ini file follows:

```
[protocol manager]
DRIVERNAME=PROTMANS

[stack]
DRIVERNAME=STACK$
BINDINGS=PSIONDACOM_NIF
[PSIONDACOM_nif]
DRIVERNAME=PSDETHCB$
MEDIA=BASET
NETADDRESS='000079821660'
```

Warning messages

Warning messages will result in the network driver being loaded into memory, provided no error messages were reported. The driver will use pre-defined defaults when warnings are issued; you will be informed of these defaults. Improper operation can result when defaults are used.

MEDIA parameter is invalid

Accepted values: BASET, BASE100TX, POWER or AUTO

Default: AUTO

SOCKET parameter is invalid


Accepted values: 1 or 2

Default: AUTO

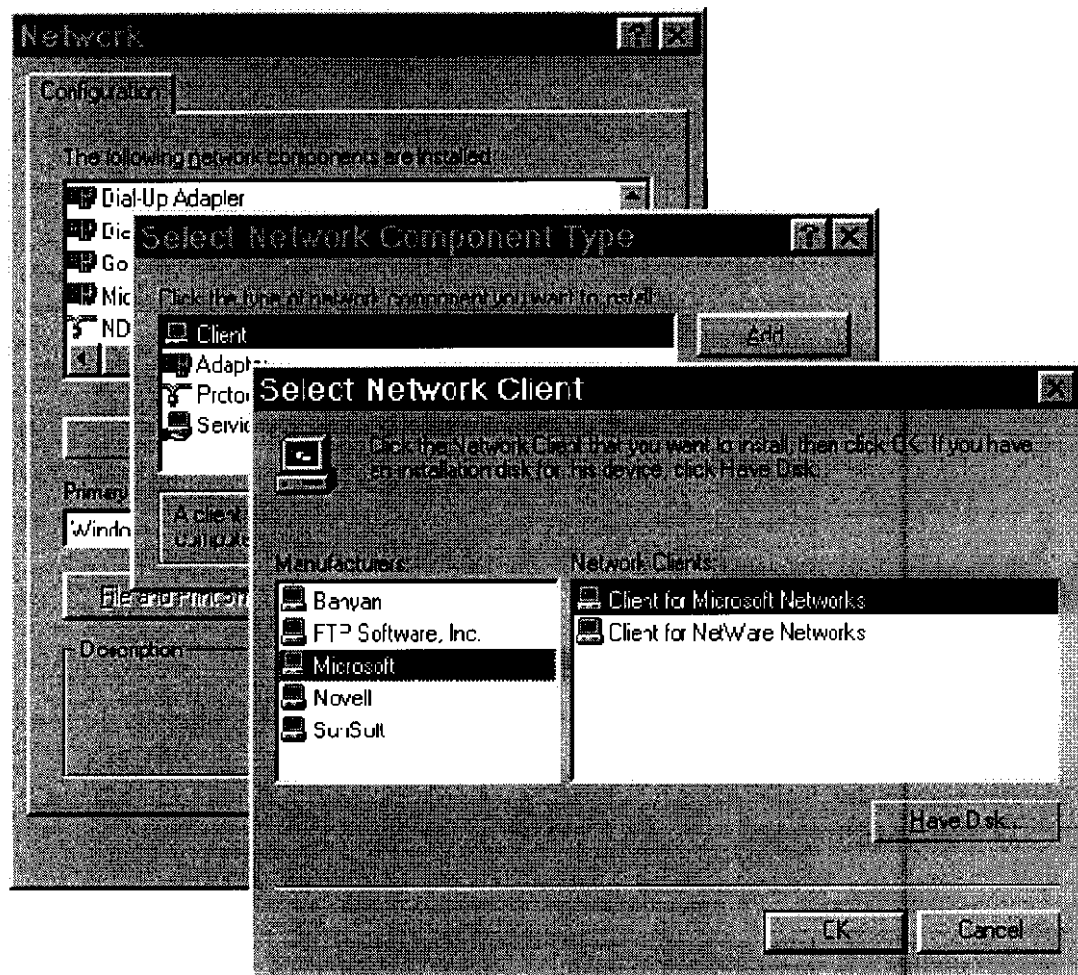
HOW TO CONFIGURE YOUR NETWORK COMPONENTS IN WINDOWS 95/98

To use your network's resources, you must install the appropriate network components, configure protocols and enter logon information. The person responsible for your network administration will be able to help you select the correct network components and configure them correctly.

Install A Network Client

1. Open the **Control Panel** and double-click the **Network** icon.
2. Click the **Add** button and choose **Client**.
3. Choose on the appropriate vendor from the list or select 'Have disk...'.

4. If the manufacture presents a choice, select the appropriate client for your network.

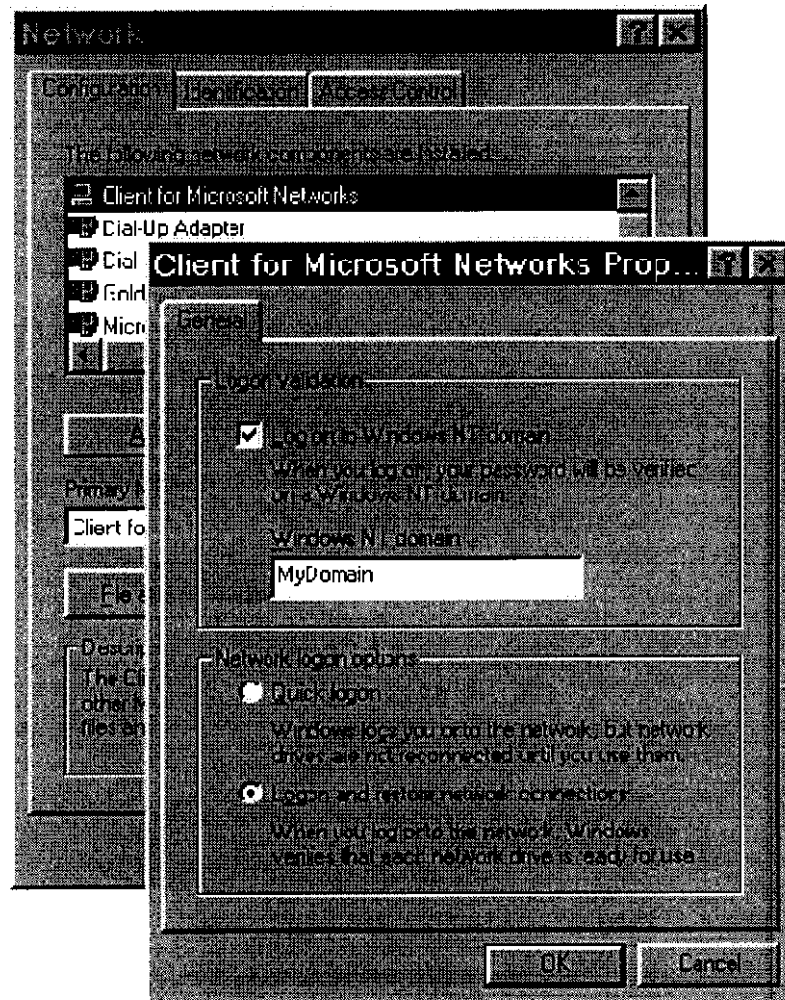
Network



Add your network client

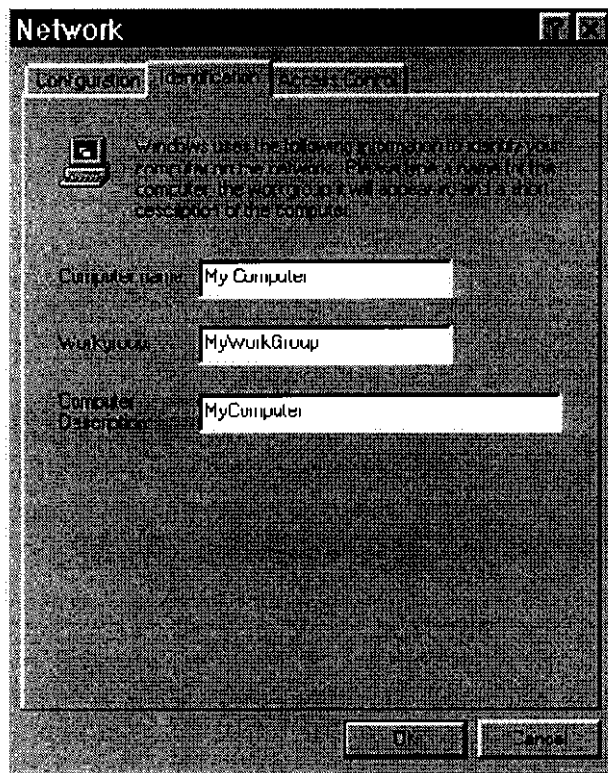
5. Click **OK** to install the client. The client will now be added to your list of installed networking components.
6. You should now enter your client's logon validation and network logon options. Make sure your client is select in the list of networking components and click the **Properties** button.

Enter the information as given to you by the network administrator. Click **OK** to set the details.



Enter your network domain details

7. Now that the client is installed you can configure 'Identification' and 'Access Control' information. Click on the 'Identification' tab and enter appropriate details into computer name, workgroup and computer description dialogue boxes. Click OK to set this information.
8. Click the 'Access Control' tab and complete the information required.



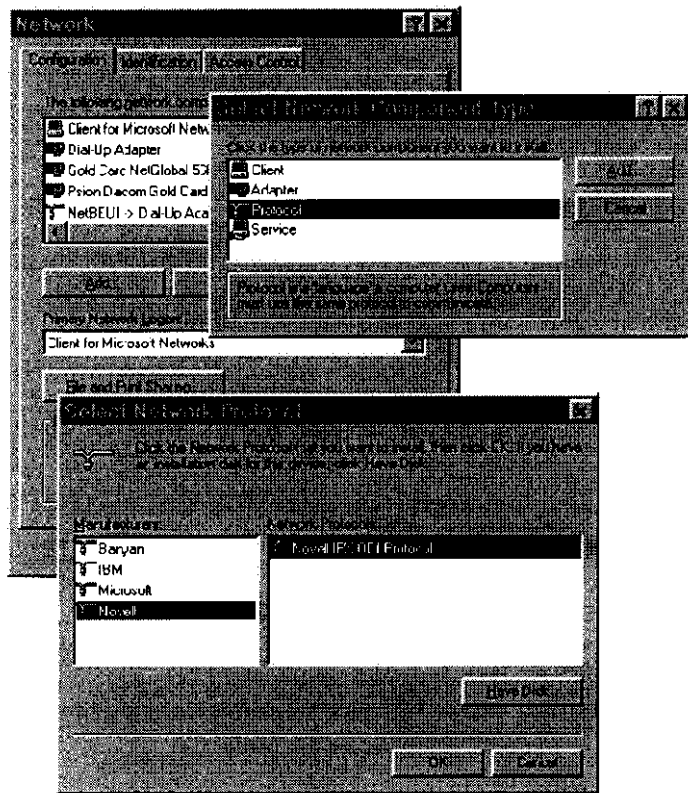
Fill in the details for Identification and Access Control.

Install Network Protocols

Installation of the Gold Card NetGlobal adapter will add TCP/IP and NetBEUI protocols to your list of networking components. You can remove these protocols if your network does **not** require them and add the correct protocols needed to connect to your network.

If your network uses TCP/IP then ask your Network Administrator for the necessary TCP/IP information needed to connect successfully to your network.

1. To add a new protocol click the **Add** button in the 'Network' control panel.
2. In the 'Select Network Component Type' window select **Protocol** and click the **Add** button.
3. From the list presented in the 'Select Network Protocol' window, choose the appropriate network vendor and the pick your protocol. Alternatively, click the 'Have Disk...' button and load the protocol from disk. Click **OK** to load the protocol.



If necessary, add other protocols needed by your network.

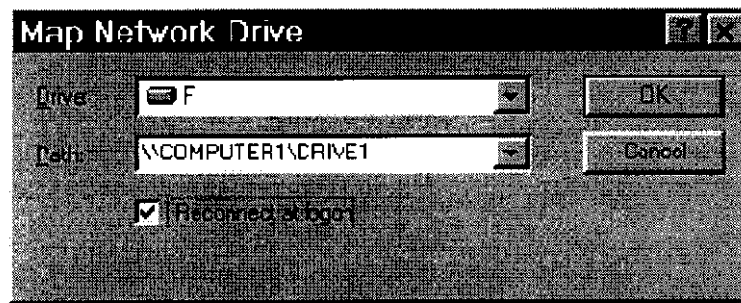
4. Repeat this procedure for other protocols your wish to add.
5. To configure the protocol for use with the Gold Card CardBus card click select the protocol from the list of installed network components and click the **Properties** button
6. When all the network components have been added and configured click **OK** to close the Network control panel.
7. You must now shutdown and restart your computer to complete the process.

Connect to Network Drives

Connecting to network drives and other resources is often automated by a 'Network Logon Script'. Please refer to your Network Administrator if your network uses logon scripts.

1. If your network does not use logon scripts or if you need to connect to other network drives, right-click **My Computer** on the desktop and choose '**Map Network Drive...**'
2. Choose a letter for the network drive you are connecting to and enter the path. For assistance, your Network Administrator can help here.





Set paths to your network drives

3. Place a tick in the 'Reconnect at logon' check box if you wish to make this connection active the next time you connect to your network.
4. Click **OK** to complete the mapping procedure.
5. Repeat this procedure over for all other network drives you wish to connect to.

Connect To A Network Printer

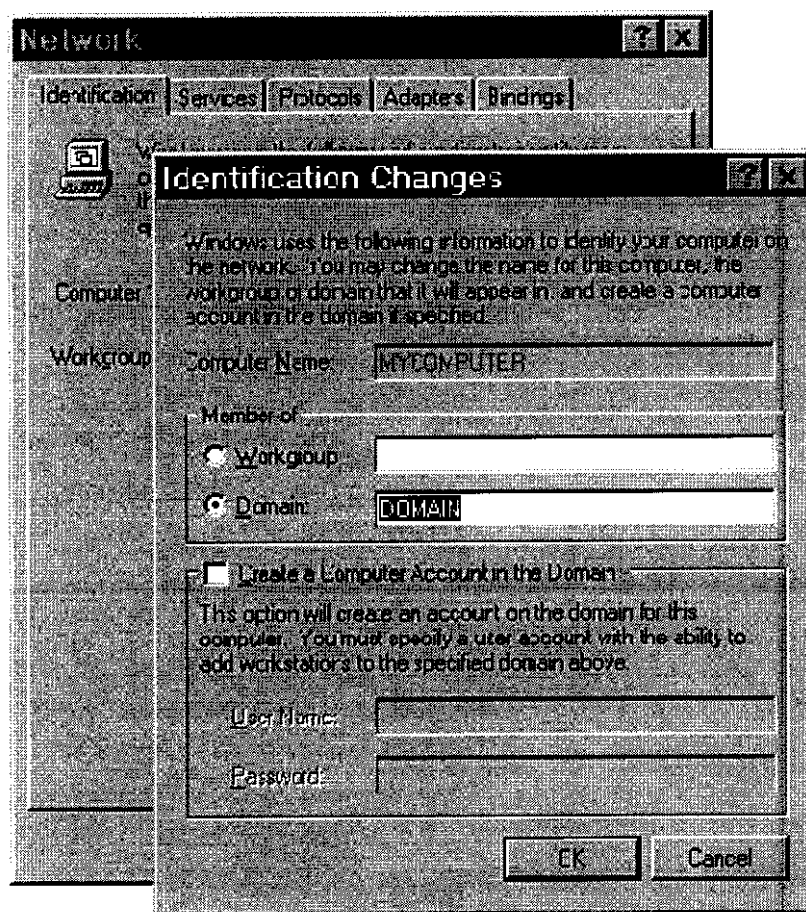
1. Click **Start** button and choose **Settings** and **Printers**.
2. Double-click the **Add Printer** icon.
3. Now follow the 'Add New Printer' wizard.
4. You may require a printer driver installation disk to complete printer setup.

You should now be able to gain access to your network resources. If however you are having difficulty connecting to your network then please read Gold Card NetGlobal Cardbus [network troubleshooting](#).

HOW TO CONFIGURE NETWORK COMPONENTS IN NT 4.0

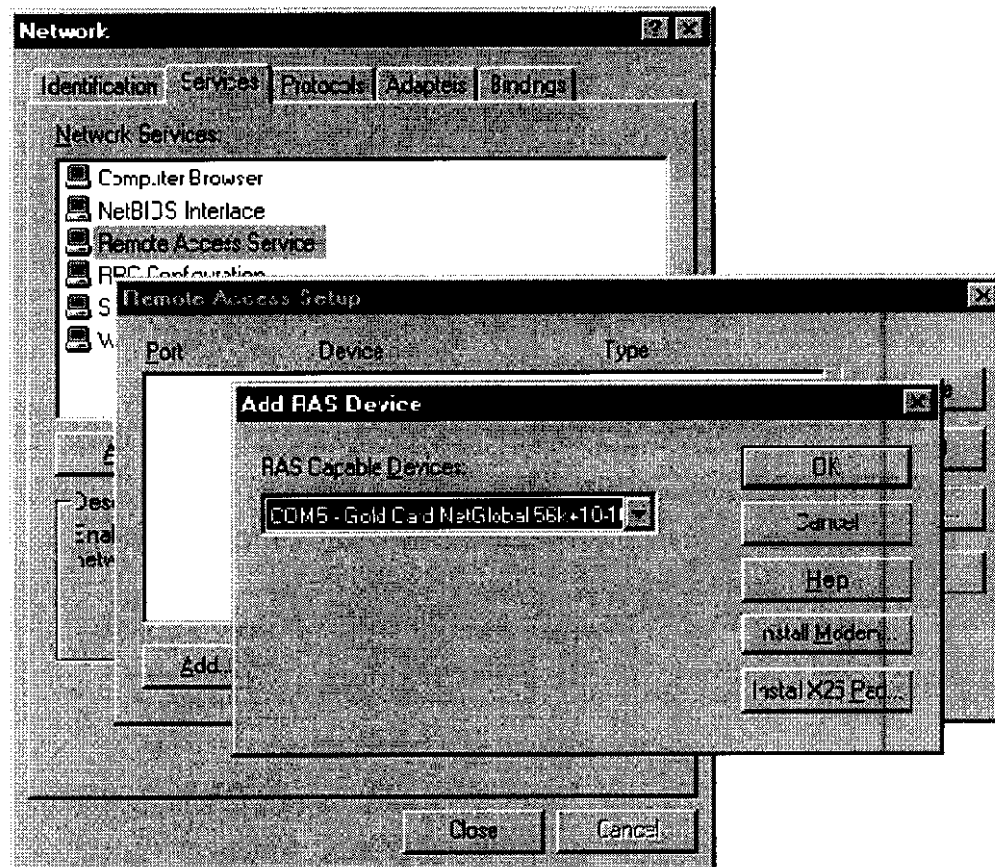
To use your network's resources, you must install the appropriate network components, configure protocols and enter logon information. The person responsible for your network administration will be able to help you select the correct network components and configure them correctly.

1. Click **Start** button and select **Settings** and **Control Panel**.
2. Double-click the **Network** icon to load the Network control panel.
3. In the **Identification** tab enter details as supplied by the Network Administrator.



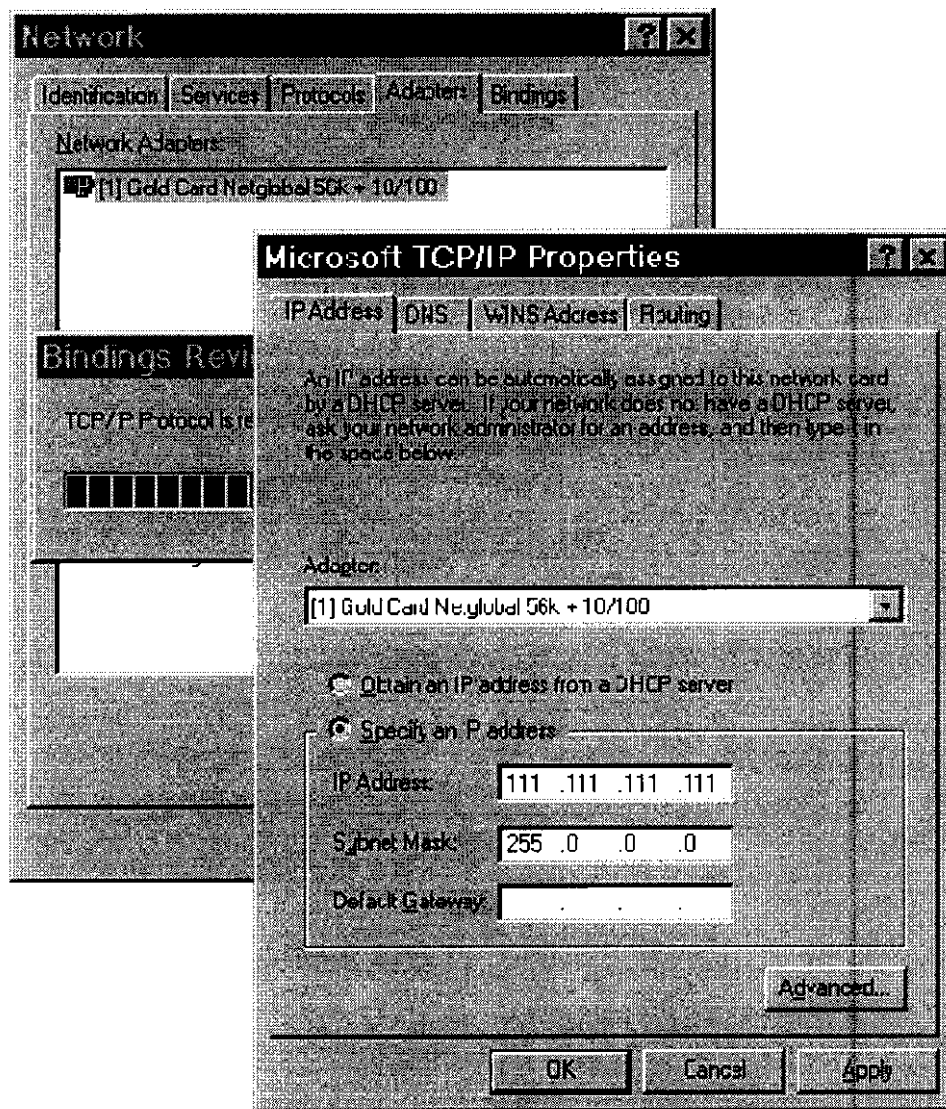
Enter Logon Identification details

4. Click the **Services** tab and add any additional services you may require. If you intend to use the Internet then you will need to add Remote Access Service.



Add Remote Access Service if you intend using the Internet.

5. Click the **Protocol** tab and make add/remove the appropriate protocols.
6. If you are installing TCP/IP click the **Properties** button and complete the information required by TCP/IP to work with your network – again the Network Administrator can help you here – and click **OK**. TCP/IP is needed to use the Internet and many Local Area Networks.



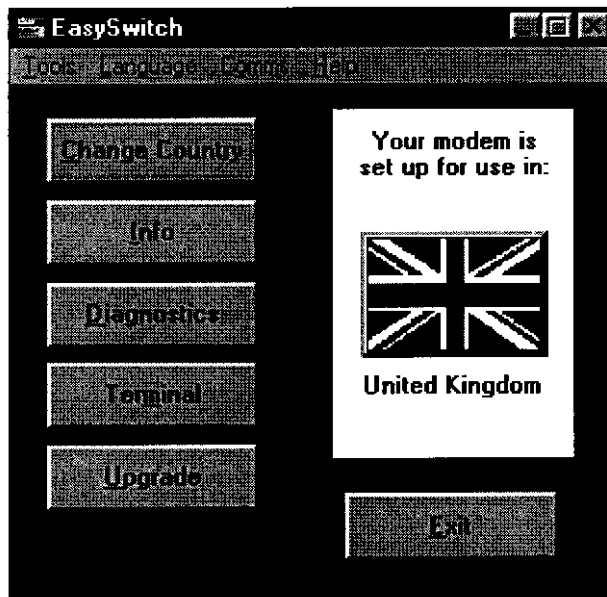
Ask your Network Administrator for help in configuring TCP/IP

7. **Close** the Network control panel and **restart** your computer once all your network information has been entered.
8. You should now be able to gain access to your network resources. If however you are having difficulty connecting to your network then please read Gold Card NetGlobal Cardbus [network troubleshooting](#).

EASYSWITCH COUNTRY SWITCHING AND MODEM DIAGNOSTICS UTILITY PROGRAM

EasySwitch is Psion Dacom's country switching and modem diagnostics utility for the Gold Card NetGlobal CardBus card. The program is installed by the NetGlobal CardBus setup program and by default can be found in the program group 'Gold Card NetGlobal'.

The following section describes the key benefits and functions of EasySwitch.



Click this button to change the country setting to optimise performance of your Gold Card Global and comply with local PTT regulations for modem devices.

To change country of use, just click on the **Change Country** button. Select the country that you are in, and then click on **Set**.

EasySwitch allows the Gold Card Global to be easily configured for optimum performance in over 20 countries. If necessary, change the phone adapter plug at the end of the lead. Optional country adapter kits can be purchased from your supplier.



Click this button to interrogate your Gold Card NetGlobal CardBus card. The information returned will include current information may be asked for by Customer Support should you need to contact us.



This facility is designed to perform simple tests on your Gold Card Global, to verify if key areas are functioning correctly. Simply click on the **Diagnostics** button and the tests will be performed with simple pass or fail responses. Should your card return any fail responses please check that it is correctly inserted and that all cables are connected securely. Re-run the diagnostic test again. If the problem persists please call our Technical Support for assistance.



This facility is designed to launch a simple terminal program that allows direct communication with the Gold Card Global. Simply click on the Terminal button to activate this facility.



This facility is designed to simplify the process of upgrading your Gold Card Global as they become available. Simply **click** on the **Upgrade** button and follow on the on screen instructions.

If you have Internet access, please take time to look at www.psiondacom.com for all the latest firmware and drivers can be downloaded from Psion Dacoms web site at

www.psiondacom.com

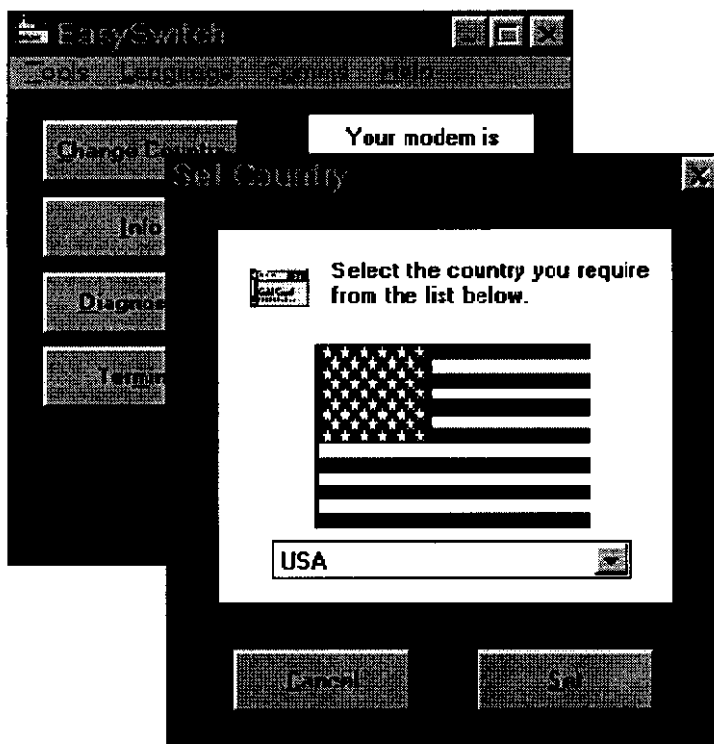
Change Country

After installing the NetGlobal CardBus card for the first time you should use EasySwitch to setup the modem to operate correctly in your country.

1. Click **Start, Programs** and locate the **Gold Card NetGlobal** program group.
2. Choose **EasySwitch** to start the program. EasySwitch will load and automatically try and detect your NetGlobal CardBus modem. This may take a few seconds.
3. If EasySwitch does not find a modem, click the **Comms** menu and choose **Find**. EasySwitch will search your com ports for the NetGlobal CardBus modem and report the country it is currently setup for use in.
4. If EasySwitch is not setup for your country, click the **Change Country** button and choose your country location from the list.



EasySwitch



Use EasySwitch to select your country location

5. Click the **Set** button to make the changes to your NetGlobal CardBus modem. You can change the country location as often as is necessary.
6. The **Diagnostics** button is used to verify that the modem is working correctly. It may help to troubleshoot problems if you encounter issues connecting with the Gold Card NetGlobal CardBus modem.

TROUBLESHOOTING INFORMATION

This section will help you to overcome any problems you may have getting your Gold Card NetGlobal CardBus card installed and working correctly. Please take the time to read through the articles on [installation](#), [modem](#) and [network](#) troubleshooting. You should also refer to the information about preparing your laptop for installation, as an ill-prepared machine is often the cause of many CardBus card issues.

You may also like to visit Psion Dacom's Customer Support web pages for the latest drivers and information at

www.psiondacom.com

If you still need assistance or general advice about your NetGlobal CardBus card, or indeed any Psion Dacom product then please contact [Customer Support](#) directly.

Windows NT Does Not Offer Me a Port For the Modem

1. Click the **Start** button, choose **Run** and enter **WinMSD** as the program name to open and click **OK**.
2. Click the **Resources** tab.
3. Compare the IRQs for devices **SERIAL** and **PSDETHCB**.
4. If the IRQs are different, open the Windows NT Control Panel, then double-click Ports. Highlight COM5 and click the Settings button. Then click on the Advanced button and change the IRQ value to that of PSDETHCB. Click OK until all dialog boxes are closed. Shut down your laptop and switch off then restart.

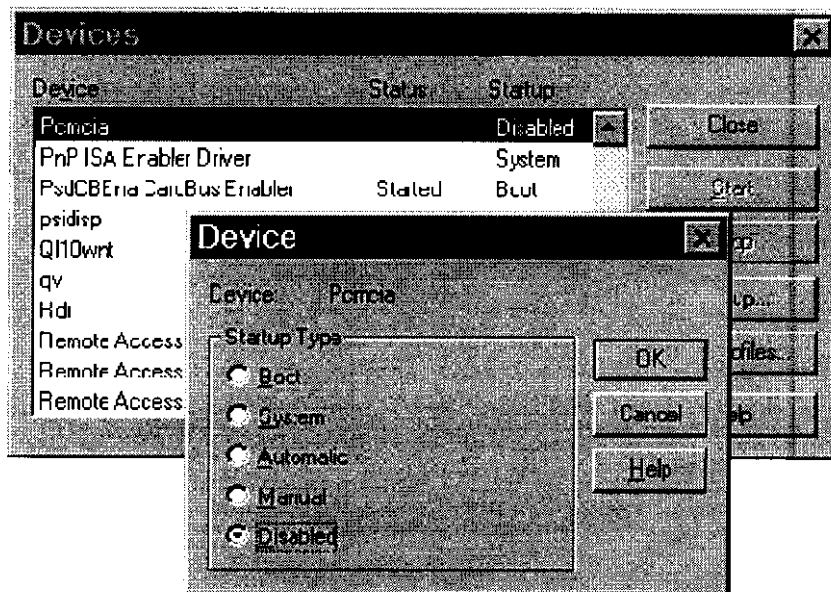
HOW TO PREPARE YOUR LAPTOP COMPUTER FOR INSTALLATION

Preparing For Installation in Windows 95/98

- We recommend that any third party plug and play software added to Windows 95/98 is completely disabled. Please edit your 'Config.sys' file for lines added by plug and play software and disable these lines by adding 'REM' at the start of the relevant line.
- Some notebooks need their BIOS to be adjusted to enable proper CardBus support. Please check with your notebook vendor for advice on setting up the BIOS correctly.
- It is also recommended that you check with your notebook vendor about later BIOS upgrades should you encounter problems installing the NetGlobal CardBus card.

Preparing For Installation in Windows NT 4.0

1. Disable any card services other than [SystemSoft](#) CardWizard for NT4.0 version 4.00.07 (or later).
2. Psion Dacom recommends that you install Service Pack 3 for NT4.0 **before** and **after** installing the Gold Card. You can obtain the latest Service Pack for NT 4.0 from www.microsoft.com or refer to your network administrator for assistance.
3. Disable the Windows NT PCMCIA.SYS device to ensure that the PC Card controller is set to CardBus mode. This is done in the Control Panel by opening the Device icon, selecting the PCMCIA.SYS device and setting the Startup type to Disabled. Restart the computer if you make any changes.



Disable the PCMCIA device and restart.

Gold Card Netglobal CardBus Adapter Does Not Fit In My Laptop

If the adapter does not easily fit into the PCMCIA slot then your laptop may not be CardBus ready. You should check your PC documentation or contact your vendor for verification of CardBus functionality.

After Installation the Laptop Fails to Detect the NetGlobal CardBus Adapter

- Verify with your laptop vendor that your laptop has been CardBus enabled - sometimes the BIOS on your PC may need updating to support CardBus adapters.
- Psion Dacom recommend that the notebook is completely shutdown and powered **off** after installation of the NetGlobal CardBus card. Some users have reported that after installation their laptop required restarting twice in order for the NetGlobal CardBus card to be recognised.
- Some users using a docking station, may experience problems installing the NetGlobal CardBus card. We advise you to contact your PC vendor for assistance if you have problems installing the card in a docking station.
- If using SystemSoft's CardWizard Card and Socket Service with Windows NT 4.0, please ensure that CardWizard v4.00.07 or later is being used. For CardWizard updates contact SystemSoft via the web at www.systemsoft.com
- CardBus cards will be redetected when inserted into a different slot when using Windows 95 or Windows 98. This is a result of the hardware enumeration process of Windows 95/98. Psion Dacom recommends that you always use the Gold Card NetGlobal CardBus card in the same slot used for installation.
- Windows NT 4.0 users will need to disable the Windows NT PCMCIA.SYS device and ensure in the BIOS that the PCCARD controller is set to CardBus/16-bit mode, prior to installation of the CardBus PC Card.

- Windows NT 4.0 does not natively support CardBus devices. During the installation a new device is added which will enable your Gold Card NetGlobal CardBus PC Card to function correctly in NT 4.0. Check that this device has been installed and has started correctly.
 1. Click Start button, Settings and Control Panel.
 2. Double-click the Devices icon.
 3. Scroll down to 'PsdCBEna CardBus Enabler'.
 4. The status of this device should be **Started at Boot**.
 5. If the device is not started then you should remove the Gold Card Adapter from Network control panel and start the installation procedure again.
- In NT 4.0 the IRQs for the NetGlobal CardBus drivers **Serial** and **PSDETHCB** should be identical. If the IRQs are different then
 1. Open the Windows NT Control Panel, double-click the **Ports** icon and highlight **COM5**.
 2. Click **Settings** then **Advanced** buttons.
 3. Change the IRQ value to that of PSDETHCB.
 4. Set the com port to read 5
 5. Click **OK** until all dialog boxes are closed.
 6. Switch **off** your computer and restart.

TROUBLESHOOTING MODEM PROBLEMS

Modem Has Been Installed on Com5

Modem Does Not Function in NT 4.0

Applications or packages that replace the SERIAL.SYS (installed by the NetGlobal CardBus installation procedure) will cause problems for the modem function. Replace the SERIAL.SYS file with the one supplied by Psion Dacom on the floppy disk 'Gold Card NetGlobal 56k + 10/100 CardBus Installation Disk 2' in the directory WinNT4.

Modem Makes No Audible Sound When Dialling.

At the time of writing, most laptop CardBus controllers do not support modem audio on CardBus Multi-Function cards.

NetGlobal CardBus Card Modem Will Not Dial

- Check the modem cable is connected securely to an analogue phone socket. The Gold Card NetGlobal CardBus modem is **not** designed to work on digital phone lines - contact your IT department for advice on connecting analogue modems to your office telephone system. An ISDN Upgrade kit is available to connect your Gold Card NetGlobal CardBus card to digital ISDN lines.
- Load EasySwitch and verify that the Gold Card is switched to your country location.
- Select Properties for your Dialup Networking connection and verify that the NetGlobal CardBus modem has been selected as the modem to use for dialling.
- Open Control Panel and double-click Modems. Click the **Diagnostics** tab and select the com port for the modem. Click the **More Info** button to test the modem is responding. If

the modem fails to respond remove the NetGlobal CardBus from your system and start the installation procedure over.

Windows NT Does Not Offer Me a Port for the Modem

1. Click the **Start** button, choose **Run** and enter **WinMSD** as the program name to open and click **OK**.
2. Click the **Resources** tab.
3. Compare the IRQs for devices **SERIAL** and **PSDETHCB**.
4. If the IRQs are different -
 - i. Open the Control Panel.
 - ii. Double-click **Ports**, select COM5 and click the **Settings** button.
 - iii. Click the **Advanced** button and change the IRQ value to that of PSDETHCB.
 - iv. Click **OK** until all dialog boxes are closed.
 - v. Shut down your laptop and switch **off** then restart.

Modem Application Does Not Communicate With The Gold Card

- Check that your modem application supports com ports 5 and above. Due to the nature of CardBus modems the NetGlobal CardBus card will NOT install itself on Com ports 1-4.
- DOS / Windows 3.x does not support the modem function on multi-function CardBus cards. This means that older 16-bit software running on Windows 3.x and Windows 95 will not be able to use the modem function of the NetGlobal CardBus card. The network adapter will work when installed correctly in DOS / Windows 3.x.
- Verify that your modem application is setup to use the NetGlobal CardBus card. This is usually done via the applications setup facility.
- Check the physical line connections and confirm that you are connected to an analogue telephone line.

TROUBLESHOOTING NETWORK PROBLEMS

Network Resources Cannot Be Accessed

There are many causes which can prevent you from accessing (logging on) your network. Here are a few checks which should enable you to pinpoint the problem.

1. Observe the Link and Data lights on the Gold Card connector pod. The Link light should be on and the Data light should flash. If the Link light is off then check your physical connection to the network and ask your Network Administrator to check that you are connected on the hub.
2. Confirm that the Gold Card NetGlobal CardBus card has been installed correctly. The easiest way to do this is to remove the adapter installation and start the installation procedure over.
3. Check your client, protocols and network identification settings are correct. The person responsible for your Network Administration will be able to help.
4. If you have TCP/IP installed try to **PING** a networked computer. If the packets fail to return (time-out) then check your physical connections. If the packets do return check your Client and other network settings and passwords.
5. Remove the protocols and re-install them again.

No Network Logon Prompt at Startup.

1. Observe the Link and Data lights on the Gold Card network connector pod. The 'Link' light should be permanently **on** and the 'Data' light should **flash**. If the 'Link' light is off then check the network cable is plugged in securely and ask your Network Administrator to check that you are connected on the hub.
2. Confirm that the Gold Card NetGlobal card has been installed correctly. The easiest way to do this is to remove the card installation and start the installation procedure over.
3. Check that the correct network client has been installed.
4. Check that the correct network protocols have been installed and configured correctly.
5. Remove all protocols and then add only the primary protocol used by your network. Restart the laptop and then add other protocols once you are able to connect to the network.

Network Applications Cannot Be Run

1. Confirm that the Gold Card NetGlobal CardBus card has been installed correctly. The easiest way to do this is to remove the card installation and start the installation procedure over.
2. Some network applications require specific protocols to be installed. Refer to your application documentation for help in configuring the protocols and other network components which may be needed.

MICROSOFT KNOWLEDGE BASE ARTICLES ON CARDBUS ADAPTERS

The following articles may prove useful when troubleshooting CardBus cards. These documents are available from Microsoft's web site at <http://support.microsoft.com/>

| | |
|---------|---|
| Q159005 | CardBus PCMCIA Controller Disabled After Second Boot |
| Q159349 | Resume On Ring Not Implemented for PC Card Modems |
| Q159492 | PC Card Device Not Enumerated When Reinserted |
| Q161316 | Ejecting Network PC Card from CardBus Socket Reboots Computer |
| Q163938 | Inserting Multifunction PC Card May Hang Computer |
| Q164222 | CardBus Card in Docking Station May Not Be Configured |
| Q164224 | Inserting PC Card in Dock with CardBus Card May Cause Reboot |
| Q164225 | Poor Data Transfer with CardBus Card in Docking Station |
| Q165405 | Computer with NeoMagic Display Hangs When PC Card Is Inserted |
| Q168909 | Query/Remove Support for CardBus Cards Hangs Computer |
| Q169652 | Windows 95 Stops Responding with CardBus Card Installed |
| Q171284 | Problems Enumerating CardBus Devices with No Free IRQs |
| Q173677 | Audio Problems with Cirrus Logic PD6832 CardBus Controller |
| Q175590 | CardBus Cards May Not Work with Vesuvius Chip Set |
| Q179897 | Memory Management Problems on Computers with Pentium Processors |
| Q182591 | CardBus Cards Not Enumerated on Some PC Card Controllers |
| Q184191 | Inserted CardBus PCMCIA Adapter Not Rebalanced Properly |
| Q185073 | CardBus Controller Displays Error Code 29 on IBM ThinkPad |

GOLD CARD NETGLOBAL CARDBUS CARD

TECHNICAL SPECIFICATIONS

Gold Card NetGlobal CardBus power consumption

| | X Indicates Supported Feature |
|--|----------------------------------|
| Networks | |
| Ethernet IEEE 802.3 10 base T | X |
| Ethernet IEEE 802.3u 100 base TX | X |
| N-WAY Auto Negotiation | X |
| Full Duplex | X |
| Magic Packet | X |
| ON Now | X |
| Drivers | |
| ODI | X |
| NDIS 2 | X |
| NDIS 3 | Not Supported |
| NDIS 4 | X |
| NDIS 5 | X |
| Operating Systems | |
| DOS (NDIS 2 & ODI) | X |
| Windows 3.1 & 3.11 | X |
| Windows 95 & 95a | Not Supported |
| Windows 95b | X |
| Windows 98 | X |
| Windows NT 4.0 | X |
| SystemSoft CardWizard | X |
| Networks | |
| Banyan Vines | X |
| DEC Pathworks | X |
| Microsoft Networks | X |
| Novell | X |
| Modem Specifications | |
| V.90 (56,000bps) | X |
| V.34 (33,600bps) | X |
| V.32bis (14,400bps), V.32 (9,600bps) | X |
| V.32 (1,200/75bps), V.22bis (2,400bps) | X |
| V.22 (1,200bps), V.21 (300bps) | X |
| V.42, MNP2-4, MNP10 Error Correction | X |
| V.42bis, MNP5 Compression | X |
| GSM and ISDN Upgradeable | X |
| Fax Class 1 | X |
| Approvals | |
| WHQL | PC98 |
| EN55022 | Class B |
| EN55082 | X |
| FCC part 15 | X |
| EN60950 | X |

| | |
|---------------------|---|
| TBR21 | X |
| PTT EEC+Nordics+USA | X |
| PTT Approval | X |
| UL and CSA | X |

Card Type

| | |
|-------------------------|---|
| PC Card Type II CardBus | X |
|-------------------------|---|

Gold Card NetGlobal CardBus Power Consumption Figures

| Operating Mode | NetGlobal CardBus 10/100Mb mA @ 3.3V (+/- 10%) |
|---|---|
| Modem (no network connected) | 255 |
| Modem + 10 Base T (using 10 Base T hub) | 270 |
| Modem + 100 Base Tx | 325 |
| 10 Base T (using 10 Base T hub) | 115 |
| 100 Base Tx | 180 |

Gold Card NetGlobal CardBus Is Supported on the Following Operating Systems:

- Microsoft Windows 95b
- Microsoft Windows 95c
- Microsoft Windows 98
- Microsoft Windows NT 4.0
- Microsoft DOS / Windows 3.x (modem functionality is NOT supported)

Gold Card NetGlobal CardBus Card Drivers

The following drivers are added during installation:

Windows 95b:

- Netpsdcb.inf (Network driver)
- Mdmpsdcdb.inf (Modem driver)
- Psdenum.inf (Interface layer between hardware and system serial port)
- Psdenum.vxd (Enumerator for serial port)
- Psdser.vxd (Serial driver)
- Psdcbnet.cat (Digital signature file for network)
- Psdcbmdm.cat (Digital signature file for modem)
- Psd06x4.sys (NDIS 4 ethernet driver)
- System files from the Windows CD-ROM

- Netpsdcb.inf (Network driver)
- Mdmpsdcdb.inf (Modem driver)
- Psdenum.vxd (Enumerator for serial port)
- Psdser.vxd (Serial driver)
- Psdcbnet.cat (Digital signature file for network)
- Psdcbmdm.cat (Digital signature file for modem)
- Psd06x4.sys (NDIS 4 ethernet driver)
- System files from the Windows CD-ROM

Windows NT 4.0

- Serial.sys (CardBus serial driver)
- Mdmpsdcdb.inf (Windows modem setup file)
- Oemsetnt.inf (Windows NT network setup file)
- Psd06x4.sys (NDIS 4 Ethernet driver)
- Psdcbena.sys (CardBus enabler)
- Psdcbmdm.cat (Digital signature file for modem)
- System files from the Windows CD-ROM

UPGRADE KITS AVAILABLE FOR THE GOLD CARD NETGLOBAL CARDBUS CARD

ISDN Upgrade For NetGlobal CardBus Cards

The Gold Card ISDN upgrade features DIVA ISDN technology from Eicon Diehl - a world-wide ISDN leader. The Gold Card ISDN upgrade supports many ISDN variants and signalling systems, including those found in Europe ("Euro-ISDN") and North America.

ISDN comprises of two 64k bps data channels, Gold Card ISDN allows you to use each of these channels separately or bind them together for 128k bps of digital data. With high speed, error free data and rapid connection time ISDN is ideal for remote LAN access, video conferencing and large file downloads.



GSM Upgrade For NetGlobal CardBus Cards

The Gold Card GSM upgrade provides wireless fax and data capability with GSM (900), PCS(1900) and PCN (1800) systems world-wide. Developed with the world's leading mobile phone manufacturers, the GSM upgrade gives top performance and quality connections every time.



PSION DACOM COMPANY ADDRESSES

Psion Dacom has offices around the world. If you wish to contact us please refer to the table below for your nearest Psion Dacom centre. Our manufacturing plant and Headquarters are based in the United Kingdom.

You will also find the latest support and product information on the Internet at

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PSION DACOM CUSTOMER SUPPORT

To ensure peace of mind, your new Gold Card is covered by a lifetime warranty and free lifetime technical support. In order that you enjoy using your new Gold Card, please do take time to read this manual specially designed to help you and answer some of your queries.

This manual contains a troubleshooting section which should help to solve any problems you may have. You should review this before calling Customer Support.

If you wish to contact Customer Support, please select your country from the list below and contact us via email, telephone or fax.

You will also find the latest support and product information on the Internet at

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MODEM AT COMMANDS AND S REGISTER REFERENCE

General

All "AT" commands are preceded by the ASCII characters AT (Attention Code) and terminated with a carriage return (i.e. by pressing the RETURN ↵ key).

The follows points are useful when entering AT commands:

Before terminating the AT command line you can edit mistakes using the backspace key. This will delete the last character entered, but it will not delete the AT at the beginning of the line.

Typing AT on its own will result in the OK message being returned by the modem.

The AT can be entered in either upper or lower case, but a combination of both is not valid.

You can enter more than one command on a line between the AT and the carriage return. Spaces are ignored.

AT command descriptions

(✓ indicates factory default setting)

ATA Answer

This command instructs the modem to "pick up" the line (go off-hook) and go to line in answer mode immediately. An incoming ringing signal does not have to be detected by the modem. The modem will issue answer frequencies and attempt to train up to the calling modem. If a connection is not established within the time period defined by S register 7, then the NO CARRIER message will be displayed.

A Answer immediately - force modem off-hook and into answer mode.

ATB Mode of operation

This command is used to put the modem into Bell mode or ITU-T (CCITT) mode. Bell modes are American modes of operation at 300bps or 1200bps.

✓ B0 Set to standard ITU-T (CCITT) protocols.

B1 Set Bell modes.

ATD Dial command and dial modifiers

ATD causes the modem to dial a number according to the suffixed modifier. E.g. ATDT12345 causes the modem to Tone dial 12345.

Dnnn Dial telephone number (nnn).

Dial string modifiers:

^ Changes the state of call tone

P Set to pulse dialling.

T Set to tone (DTMF) dialling

, Pause (S8) seconds before next digit.

W Wait for dial tone.

@ Wait for quiet answer.

- & Wait for credit card (bong) tone before continuing with the dial string.
- ;
 Return to command mode after dialling.
- S=n Dial number stored in location n.
- *#A Additional DTMF tone codes.
- BC
- D
- L Dial last number called.

ATE Command echo

The ATE command controls the echoing of commands to the DTE device when in command mode.

- E0 Command characters not echoed to the DTE.
- ✓ E1 Command characters echoed to the DTE.

ATH Hang up

The ATH command puts the modem into an on-hook or off-hook state e.g. when in command mode ATH would disconnect the call by hanging up the line.

- H0 Set the modem on-hook.
- H1 Set the modem off-hook.

ATI Interrogate modem

The ATI commands interrogate the modem and returns the relevant information.

- I0 Request product code.
- I1 Request firmware checksum.
- I2 Validate internal firmware checksum (OK response).
- I3 Request software release code.
- I4 Product identifier.

ATL Speaker volume

The ATL commands are used to set speaker volume where appropriate.

- L0 Set lowest speaker volume
- L1 Set low speaker volume
- L2 Set medium speaker volume
- ✓ L3 Set high speaker volume

ATM Speaker control

The ATM command controls when a speaker is active.

- ✓ M0 Turn loudspeaker off at all times.
- M1 Enable loudspeaker until carrier is detected.
- M2 Enable loudspeaker whenever modem is off-hook.
- M3 Enable loudspeaker after dialling and until carrier is detected.

ATN Automode detection

The ATN command controls the automode detection.

- N0 Automode detection is disabled (equivalent to setting the +MS<automode> sub-parameter to 0. A subsequent handshake will be conducted according to the value of S37 or, if S37 is set to 0, according to the most recent DTE speed.
- ✓ N1 Automode detection is enabled. A subsequent handshake will be conducted according to the contents of S37 or, if S37 is 0, starting at K56flex 56,000bps.

ATO Modem on-line

The ATO command is used to return a modem to data mode when it is on line and in command mode.

- O0 Return modem to Data mode.
- O1 Return modem to Data mode and initiate retrain sequence.

ATQ Quiet message control

This command is used to switch result codes from the modem to the DTE device on or off.

- ✓ Q0 Enable response codes to the DTE.
- Q1 Disable response codes to the DTE.

ATS Set S register

The ATS command is used to either read the value of an S register or set it to another value. See the Special Commands and Features section for more details.

- Sr? Return the contents of Register r to the DTE.
- Sr=n Set the contents of Register r to n.

ATV Result code format

The ATV command determines the format of the result messages returned by the modem.

- V0 Send numeric result code set.
- ✓ V1 Send verbose code set.

ATW Connect message format

This command determines the format of the messages returned by the modem when it connects in error corrected mode.

- ✓ W0 Report DTE speed only e.g. CONNECT 57600
- W1 Report line speed, EC protocol and DTE speed
- W2 Report DCE speed only e.g. CONNECT 33600

ATX Result code set and blind dialling

The ATX command determines which result code set is to be used by the modem and also determines the level of network tone recognition. See the

- X0 Select basic result code and disable all network tone recognition.
- X1 Select extended result codes and disable all network tone recognition.
- X2 Select extended result codes and enable dial tone recognition.
- X3 Select extended result codes and enable busy tone recognition.
- ✓ X4 Select extended result codes and enable both busy and dial tone recognition.

ATY Break disconnect format

This command is used to switch the break disconnect off or on. When the modem is in a non-error corrected mode and the long space disconnect is switched on, the modem will transmit a 4 second break before going on hook. In error corrected mode the modem will go on hook if it receives a break of greater than 1.6 seconds.

- ✓ Y0 Disable long space disconnect.
- Y1 Enable long space disconnect.

ATZ Modem reset

The ATZ command resets the modem to the profile selected. For example, ATZ1 will reset the modem to profile 1. If no profile number is specified, profile 0 will be used.

- Zn Reset the modem and load configuration n, where n is 0 or 1.

AT&C Data carrier detect

AT&C controls how the modem presents the DCD signal.

- &C0 DCD is always on
- ✓ &C1 DCD follows carrier

AT&D DTR options

The AT&D command in conjunction with the AT&Q command determines how the modem will react to a loss of DTR.

- &D0 Interpret DTR transition as per &Qn
 - &Q0, &Q5, &Q6 The modem ignores DTR
 - &Q1, &Q4 The modem hangs up
 - &Q2, &Q3 The modem hangs up, auto-answer is inhibited
- &D1 Interpret DTR transition as per &Qn
 - &Q0, &Q1, &Q4, &Q5, &Q6 Asynchronous escape to command state
 - &Q2, &Q3 The modem hangs up, auto-answer is inhibited
- ✓ &D2 Interpret DTR transition as per &Qn
 - The modem hangs up, auto-answer is inhibited
- &D3 Interpret DTR transition as per &Qn
 - &Q0, &Q1, &Q4, &Q5, &Q6 The modem performs soft reset
 - &Q2, &Q3 The modem hangs up, auto-answer is inhibited

AT&F Restore factory configuration

This command loads the factory default configuration.

&F0 Load factory configuration 0

AT&K Flow control options

The AT&K command selects the type of flow control to be used by the modem. Flow control is essential when the DTE speed is greater than the actual line speed.

- &K0 Disable flow control.
- ✓ &K3 Enable RTS/CTS flow control.
- &K4 Enable XON/XOFF flow control
- &K5 Support transparent XON/XOFF flow control
- &K6 Enable RTS/CTS and XON/XOFF flow control

AT&Q Asynchronous/synchronous operation

The AT&Q command selects the data and transmission mode.

- &Q0 Select direct asynchronous mode
- &Q4 Selects Autosync operation. Provides synchronous communications capability from an asynchronous terminal when used in conjunction with appropriate software.
- ✓ &Q5 Modem negotiates an error-corrected link
- &Q6 Select asynchronous operation in normal mode

AT&R CTS control

AT&R controls the response of the CTS signal. CTS is also affected by the AT&K command.

- &R0 CTS operates in accordance with V.25bis handshake
- ✓ &R1 CTS controlled by flow control

AT&S DSR control

This command determines how the DSR signal operates.

- ✓ &S0 DSR always ON.
- &S1 DSR operates in accordance with V.24 spec.

AT&T Loopback test options

These commands are used to perform V.54 modem self tests. The tests operate for the length of time specified in S register 18. If this is set to 0, tests can be cancelled by AT&T0.

- &T0 Terminate any test in progress.
- &T1 Initiate Local Analogue Loop-back Test.
- &T3 Initiate Local Digital Loop-back Test.
- &T4 Accept requests for remote Digital Loop-back.
- ✓ &T5 Deny requests for remote Digital Loop-back.
- &T6 Initiate remote Digital Loop-back Test (V.54) without self test.
- &T7 Initiate remote Digital Loop-back Test with self test.

&T8 Initiate local analogue loop back with self test

AT&V Display modem configuration

AT&V displays the current configurations and the other stored profiles.

&V Display current configuration.

AT&W Save to non-volatile memory

This command saves the current configuration into non-volatile memory.

&Wn Write active configuration to stored profile n where n is 0 or 1.

AT&Y Set power on default

AT&Y determines which profile is to be loaded when the modem is powered on e.g. AT&Y1 means that the profile stored in location 1 is loaded on power up.

&Yn Load configuration profile n at power-up, where n is 0 or 1.

AT&Z Store telephone numbers

The AT&Z command stores a telephone number into the modems telephone directory. There are 4 telephone locations available, each containing up to 24 digits. E.g. AT&Z2=12345 stores the telephone number 12345 in location 2.

&Z=n Store first telephone number.

&Z1=n Store second telephone number.

AT\A Set MNP packet sizes

The AT\A command sets the maximum block size used during an MNP connection. This command is only used when the phone line is very noisy.

- ✓ **\A0** Set max. packet size to 60
- \A1** Set max. packet size to 128
- \A2** Set max. packet size to 192
- \A3** Set max. packet size to 256

AT\B Set transmit break

The AT\B command is used to transmit a break from the local modem to the remote modem.

\Bn Send break of n (n = 1-9) duration's of 100ms.

AT\K Break control

The AT\K command determines how the modem will react when a break is received. A break can be received by the modem from the remote modem, or the DTE device, or from the local modem with the AT\B command. This command only affects the modem in non-error corrected links.

- \K0** Break from DTE causes the modem to enter command mode and not transmit break.
- Break command causes the modem to purge its buffers and transmit break to line

| | |
|-----|--|
| | Break from remote modem causes the modem to purge its' buffers and transmit break to DTE |
| \K1 | Break from DTE causes the modem to purge its' buffers and transmit break to line. Break command causes the modem to purge its' buffers and transmit break to line. Break from line causes the modem to purge its' buffers and transmit break to DTE. |
| \K2 | Break from DTE causes modem to enter command mode and not transmit break. Break command causes modem to transmit break to line immediately. Break from line causes modem to transmit break to DTE immediately. |
| \K3 | Break from DTE causes modem to transmit break to line immediately. Break command causes the modem to transmit break to line immediately. Break from line causes modem to transmit break to the DTE immediately. |
| \K4 | Break from DTE causes modem to enter command mode and not transmit break. Break command causes modem to transmit break to line in sequence with the data Break from line causes modem to transmit break to the DTE in sequence with the data. |
| \K5 | Break from DTE causes modem to transmit break to line in sequence with the data. Break command causes modem to transmit break to line in sequence with the data. Break from line causes modem transmit break to DTE in sequence with the data. |

AT+N Error correction protocol

AT+N selects the error correction protocol to be used by the modem. Both LAPM and MNP4 are supported. E.g. AT+N4 will cause the modem to establish a LAPM error corrected link only, if an error corrected link cannot be established the call is dropped. In reliable or auto-reliable V.42 mode, LAPM takes precedence over MNP.

| | |
|-------|---|
| \N0 | Disable MNP and LAPM operation |
| \N1 | Disable MNP and LAPM operation. |
| \N2 | Enable reliable V.42 operation. |
| ✓ \N3 | Enable auto-reliable V.42 operation (fallback to normal). |
| \N4 | Enable reliable LAPM. |
| \N5 | Enable reliable MNP operation . |

AT+MS Select line modulation

This extended format command selects the modulation, enables or disables automode, specifies the lowest and highest connection rates, specifies mu-Law or A-Law codec types, enables or disables robbed bit signalling generation, and specifies the uplink rate.

The command format is:

AT+MS= <mode>, <automode>, <min_rate>, <max_rate>, <x_law>, <rb_signaling>, <uplink_rate>

To determine what options are currently selected, use the command:

AT+MS?

This command returns the current selected parameters e.g. 56,1,300,56000,1,0,33600.

To determine what options the modem supports, use the command:

AT+MS=?

This command returns the available parameter values:

(0,1,2,3,9,10,11,56,64,69), (0,1),
(300-56000), (300-56000), (0,1), (0,1),
(300-33600)

The parameters for the AT+MS command are as follows:

| <mode> | Modulation | <min-rate>/ <max-rate> |
|--------|------------|---|
| 0 | V.21 | 300 |
| 1 | V.22 | 1200 |
| 2 | V.22bis | 2400 |
| 3 | V.23 | 1200 |
| 9 | V.32 | 9600, 4800 |
| 10 | V.32bis | 14400, 12000, 9600, 7200, 4800 |
| 11 | V.34 | 33600, 31200, 28800, 26400, 24000, 21600, 19200, 16800, 14400, 12000, 9600, 7200, 4800, 2400 |
| 56 | K56flex | 56000, 54000, 52000, 50000, 48000, 46000, 44000, 42000, 40000, 38000, 36000, 34000, 32000 |
| 64 | Bell103 | 300 |
| 69 | Bell 212 | 1200 |

<automode>

- 0 Automode disabled
- 1 Automode enabled (default)

<x_law>

- 0 mu-law (USA)
- 1 A-law (Europe)

<rb_signaling>

- 0 disable robbed bit signalling
- 1 enable robbed bit signalling

<uplink_rate>

33600, 31200, 28800, 26400, 24000, 21600, 19200, 16800, 14400, 12000, 9600, 7200, 4800, 2400

AT+C Data compression options

The AT+C command is used to select the data compression mode. The modem supports both MNP5 and V.42bis.

| | |
|-----|--|
| %C0 | Disable MNP5 and V.42bis data compression. |
| %C1 | Enable MNP class 5 data compression only. |
| %C2 | Enable V.42bis and disable MNP5 |
| %C3 | Enable V.42bis and MNP5 |

AT%E Auto retrain options

This command selects the auto-retrain facility. When enabled, the modem monitors the line quality and performs a retrain when the line deteriorates. If retraining is unsuccessful, the modem disconnects the call.

| | |
|-----|---|
| %E0 | Disable line quality monitor and auto retrain |
| %E1 | Enable line quality monitor and auto retrain |
| %E2 | Enable line quality monitor and fallback/fall forward |

AT%L Receive line signal level

The AT%L command reports the receive line signal level. This command is used when the modem is on line but in command mode. A value of 009 indicates a receive line of -9dBm.

| | |
|----|-----------------------------------|
| %L | Return received line signal level |
|----|-----------------------------------|

AT%Q Receive line noise level

The AT%Q command reports signal quality. This command is used when the modem is on line but in command mode. The higher the returned value, the noisier the line.

| | |
|----|----------------------------|
| %Q | Report line signal quality |
|----|----------------------------|

Special commands and features

A/ and +++ commands

There are two modem configuration commands that must not be preceded by the AT attention code:

A/

Typing A/ in the terminal emulation window causes the modem to re-execute the command previously entered. Note that it is not necessary to follow A/ with a carriage return.

+++

When in data mode, if the string +++ is sent to the modem preceded and followed by a pause (which by default is one second), the modem will exit from data mode and enter command mode. Meanwhile, the call is not automatically disconnected; data mode can be resumed by issuing the ATO command or the call manually disconnected by issuing ATH command.

Fax mode

Your modem is capable of sending and receiving faxes. Fax operation is controlled automatically by the software that may have been supplied with your modem.

Your modem can send and receive faxes at up to 14400bps. The fax feature is compatible with Group 3 fax machines and is fully compliant with the Class 1. Class 2 is supported on all cards in GSM mode (requires GSM Upgrade pack)

S Registers

Your Gold Card modem contains a set of internal registers (known as "S" registers) which are used to control the fine details of its operation.

Most S registers are not applicable to every day use of your Gold Card Global modem and can be ignored.

Note 1: The number in brackets following the S register number shows the default factory setting.

Note 2: When specifying bit-mapped registers with multiple options, the bit pattern is displayed in binary format starting with the most significant bit to the left.

Note 3: Modifying the contents of bit-mapped S registers is not recommended.

Note 4: All S register values must be input as 8-bit decimal numbers.

S0 (0) Auto answer ring number

Units: Rings

Range: 0 - 255

Defines the number of ring bursts before the modem automatically answers an incoming call. When set to zero, auto-answer is disabled.

S1 (0) Incoming ring count (read only register)

Units: Rings

Range: 0 - 255

Counts the number of ring bursts received. Reset to zero after 8 seconds of no ring.

S2 (43) Escape character

Units: ASCII

Range: 0 - 127

Defines the ASCII character used to exit into command mode from data mode. A value greater than 127 disables escape code detection.

S3 (13) Carriage return character

Units: ASCII

Range: 0 - 127

Specifies the ASCII code to be used as carriage return.

S4 (10) Line feed character

Units: ASCII

Range: 0 - 127

Specifies the ASCII code to be used as line feed.

S5 (8) Backspace character

Units: ASCII

Range: 0 - 127

Specifies the ASCII character to be used to erase the last command character entered.

S6 (4) Wait time for dial tone before blind dialling

Units: Seconds

Range: 4-7

Determines the period of time that the modem waits after connecting to line before commencing blind dialling of the telephone number specified. The W modifier in the dial string will override this and cause the modem to wait for a dial tone before commencing dialling.

S7 (40) Wait for carrier or silence after dialling

Units: Seconds

Range: 1 - 58

Determines the period of time that the modem waits for carrier from the remote modem before hanging up.

S8 (4) Pause time for the comma (,) dial modifier

Units: seconds

Range: 4- 11

This register contains the pause time of the (,) dial modifier used in the dial string. Consecutive commas will invalidate the modem's approval if the total pause period exceeds 12 seconds.

S9 (6) Carrier detect response time

Units: tenths of a second

Range: 1-255

This register contains the time period that a received carrier signal must be present for the modem to recognise it and turn on the DCD signal.

S10 (14) Loss of carrier to hang up delay time

Units: tenths of a second

Range: 1 - 255

This register contains the time period that the modem takes to disconnect from the telephone line upon detection of loss of carrier. If S10 is set to a value less than S9 any loss of carrier will result in disconnection. The loss of carrier time period that can be tolerated is the difference between S9 and S10.

S11 (95) Duration and spacing of DTMF tones

Units: milliseconds

Range: 50-255

This register contains the time period of the duration and inter-digital pause of the **DTMF dialling tones. This is a read only register.**

S12 (50) Escape code guard time

Units: fiftieths of a second

Range: 0-255

This register contains the time period of the escape code guard time. The escape code guard time is the delay required prior to and immediately succeeding the escape code. If the guard time is defined as 0, there will be no guard time and 3 consecutive escape characters will cause the modem to enter the command mode.

S14 (138) Bit mapped register

- | | |
|-------|--|
| Bit 0 | Reserved |
| Bit 1 | 0 Disable command echo. 1 Enable command echo. |
| Bit 2 | 0 Enable result codes. 1 Disable result codes |
| Bit 3 | 0 Short form result codes. 1 Long form result codes |
| Bit 4 | Reserved |
| Bit 5 | 0 DTMF dial. 1 Pulse dial. |
| Bit 6 | Reserved. |
| Bit 7 | 0 Answer |

1 Originate

S16 (0) Test options, bit mapped (read only register)

- Bit 0 0 Local analogue loop-back inactive.
 1 Local analogue loop-back active.
- Bit 1 Reserved
- Bit 2 0 Local digital loop-back inactive.
 1 Local digital loop-back active.
- Bit 3 0 Remote digital loop-back requested from remote modem active.
 1 Remote digital loop-back requested from remote modem active.
- Bit 4 0 Status bit, remote digital loop-back inactive.
 1 Status bit, remote digital loop-back active.
- Bit 5 0 Remote digital loop back disabled
 1 Remote digital loop back enabled
- Bit 6 0 Local analogue loop back disabled
 1 Local analogue loop back enabled
- Bit 7 Not used.

S18 (0) Test timer

Units: seconds

Range: 0 - 255

This register defines the time period (in seconds) of the modems diagnostic tests. When a test has been active for a period given by the register then the modem will automatically cancel the test. A value of 0 will disable the test timer and any test will remain active until cancelled by the user.

S21 (52) Bit mapped register

- Bit 0 0 &J0
 1 &J1
- Bit 1 Reserved
- Bit 2 0 CTS always on.
 1 CTS tracks RTS.
- Bits 4,3 00 DTR is ignored.
 01 Enter command state when DTR inactive.
 10 Clear down call when DTR inactive.
 11 Clear down call and reset when DTR inactive.
- Bit 5 0 DCD always active.
 1 DCD is active when carrier present.
- Bit 6 0 DSR always active.
 1 DSR active in data mode only.
- Bit 7 0 Long space disconnect disabled.
 1 Long space disconnect enabled.

S22 (119) Bit mapped register

| | |
|-----------|---|
| Bits 1,0 | 00 Speaker off |
| | 01 Speaker low |
| | 10 Speaker medium |
| | 11 Speaker high |
| Bits 3,2 | 00 Speaker disabled. |
| | 01 Speaker on until carrier. |
| | 10 Speaker always on. |
| | 11 Speaker on until carrier, off when dialling. |
| Bit 6,5,4 | 000 Basic result codes, no busy, blind dials. |
| | 100 Extended result codes, no busy, blind dials. |
| | 101 Extended result codes, no busy, detects dialtone. |
| | 110 Extended result codes, detects busy, blind dials. |
| | 111 Extended result codes, detects busy and dialtone. |
| Bit 7 | Reserved |

S23 (182) Bit mapped register

| | |
|-----------|--|
| Bit 0 | 0 disable remote request for remote digital loop-back. |
| | 1 enable remote request for remote digital loop-back. |
| Bit 3,2,1 | 000 DTE baud rate = 300 |
| | 010 DTE baud rate = 1200 |
| | 011 DTE baud rate = 2400 |
| | 100 DTE baud rate = 4800 |
| | 101 DTE baud rate = 9600 |
| | 111 DTE baud rate = 19200 |
| Bit 5,4 | 00 parity even |
| | 01 not used |
| | 10 odd parity |
| | 11 no parity |
| Bit 7,6 | Reserved |

S25 (5) Delay to DTR

Units: seconds

Range: 0 - 255

Sets the length of time that the modem will ignore DTR before hanging up.

S26 (1) RTS to CTS delay

Units: hundredths of a second

Range: 0 - 255

Sets the time delay before the modem turns CTS on after detecting an off-to-on transition on RTS when &R0 is commanded.

S27 (9) Bit mapped

Bit 0,1,3 0,0 &M0 or &Q0

 1,0 &M1 or &Q1

 2,0 &M2 or &Q2

 3,0 &M3 or &Q3

 0,1 &Q4

 1,1 &Q5

 2,1 &Q6

Bit 2,4,5 Reserved

Bit 6 0 CCITT mode

 1 Bell mode

Bit 7 Reserved

S29 (0) Flash dial modifier

Units: 10 milliseconds

Range: 0 - 255

Sets the length in time, in units of 10ms, that the modem will go on-hook when it encounters the flash (!) dial modifier in the dial string.

S30 (0) Disconnect inactivity timer

Units: tens of seconds

Range: 0-255

Sets the length of time that the modem will stay on line before disconnecting when no data is sent or received. In error correction mode, any data transmitted or received will reset the timer. In other modes, any data transmitted will reset the timer.

S31 (194) Modem modes

Bit 0 Reserved

Bit1 0 line speed detection disabled

 1 line speed detection enabled

Bit 2,3 00 Error correction progress messages report DTE speed only

 01 Full report given

 10 DCE speed only reported

Bit 4,5,6,7 Reserved

S32 (17) XON character

Units: ASCII
Range: 0 - 255

Sets the value of the XON character.

S33 (19) XOFF character

Units: ASCII
Range: 0 - 255

Sets the value of the XOFF character.

S36 (7) LAPM failure control

This value indicates what should happen upon a LAPM failure. These fallback options are initiated upon connection if S48=128.

| | | |
|---------------|----------|--|
| Bit 0,1,2 | 000 | Modem disconnects |
| | 001 | Modem stays on line and a direct mode connection is established |
| | 010 | Reserved |
| | 011 | Modem stays on line and a normal mode connection is established |
| | 100 | An MNP connection is attempted and if it fails the modem disconnects |
| | 101 | An MNP connection is attempted and if it fails a direct mode connection is established |
| | 110 | Reserved |
| | 111 | An MNP connection is attempted and if it fails a normal mode connection is established |
| Bit 3,4,5,6,7 | Reserved | |

S37(0) Desired line connection speed

| | | |
|----------------|-------|-------------------------------|
| Bit 4, 3,2,1,0 | 00000 | Attempt auto mode connection |
| | 00010 | Attempt to connect at 300bps |
| | 00100 | Attempt to connect at 300bps |
| | 00110 | Attempt to connect at 300bps |
| | 00100 | Reserved |
| | 00101 | Attempt V32bis/V32 4800bps |
| | 0110 | Attempt to connect at 2400bps |
| | 11000 | Attempt to connect at V23 |
| | 11100 | Attempt V32bis/V32 9600bps |
| | 11110 | Attempt V32bis 12000bps |

S38 (20) Delay before hanging up

Units: seconds
Range: 0 - 255

This register determines the time period that the modem waits before dropping the line when in error correction mode.

S39 (3) Flow control

| | |
|------------|---------------------|
| Bits 2,1,0 | 000 No flow control |
| | 011 RTS/CTS |
| | 100 XON/XOFF |
| | 101 Transparent XON |
| | 110 Both methods |

Bits 7,6,5,4,3 Reserved

S40 (104) Bit mapped

| | |
|-----------|---|
| Bit 0 | 0 Disable extended MNP services |
| | 1 Enable extended MNP services |
| Bit 1 | Reserved |
| Bit 2 | 0 MNP link negotiation at highest speed |
| | 1 MNP link negotiation at 1200bps |
| Bit 5,4,3 | 000 \K0 |
| | 001 \K1 |
| | 010 \K2 |
| | 011 \K3 |
| | 100 \K4 |
| | 101 \K5 |
| Bit 7,6 | 00 MNP block size 64 characters |
| | 01 128 characters |
| | 10 192 characters |
| | 11 256 characters |

S41 (195) Bit mapped

| | |
|-----------|--|
| Bit 1,0 | 00 Compression disabled |
| | 01 MNP5 |
| | 10 V42bis |
| | 11 MNP5 and V42bis |
| Bit 2 | 0 Retrain disabled |
| | 1 Retrain enabled |
| Bit 3 | 0 Modem to modem flow control disabled |
| | 1 Enabled |
| Bit 4 | 0 Stream mode |
| | 1 Block mode |
| Bit 7,6,5 | Reserved |

S46 (138) Data compression control

Range: 136 or 138

- 136 Execute error correction protocol with no compression
- 138 Execute error correction protocol with compression

S48 (0) V.42 negotiation action

Range: 0, 7 or 128

The V.42 negotiation process determines the capabilities of the remote modem. However, when the capabilities of the remote modem are known and the negotiation is unnecessary, this process can be bypassed if so desired.

If an invalid number is entered, it is accepted but S48 will act as if 128 has been entered.

- 7 Enable negotiation
- 0 Disable negotiation
- 128 Disable negotiation; bypass detection and proceed with LAPM

S86 (0) Connection failure identification (read only register)

This register gives diagnostic information regarding why the modem failed to connect.

- 0 Normal disconnection, no error occurred
- 4 Loss of carrier
- 5 V.42 failed to detect an error corrected modem at the other end
- 9 The modems could not find a common protocol
- 12 Normal disconnect initiated by the remote modem
- 13 Remote modem does not respond after 10 re-transmissions
- 14 protocol violation

S95 (44) Extended result codes

- Bit 0 CONNECT result code indicates DCE speed instead of DTE speed
- Bit 1 Append /ARQ to CONNECT XXX result code if error correction is on
- Bit 2 Enable CARRIER XXX result code
- Bit3 Enable PROTOCOL XXX result code
- Bit 4 Reserved
- Bit 5 Enable COMPRESSION result code
- Bit 6,7 Reserved

MODEM CONNECT MESSAGES

Your modem responds to commands and events by returning result codes. Result codes can be verbal (the default setting), numeric or can be turned off entirely. You can easily understand the verbal form, but your computer may find it easier to handle the numeric form. The table below lists the Hayes digital codes and their verbal equivalents.

| Connect Message | Numeric Code | Description |
|-----------------|--------------|-------------|
|-----------------|--------------|-------------|

General Codes

| | | |
|----------------|----|--------------------------------------|
| OK_CODE | 0 | OK |
| CONNECT_300 | 1 | Connect with 300 bps |
| RING_CODE | 2 | Ringing |
| NO_CARRIER | 3 | No carrier |
| ERROR_CODE | 4 | Error |
| CONNECT_1200 | 5 | Connect with 1200 bps |
| NO_DIAL_TONE | 6 | No dial tone |
| BUSY_CODE | 7 | Busy |
| NO_ANSWER | 8 | No answer |
| CONNECT_600 | 9 | Connect with DTE 600 bps |
| CONNECT_2400 | 10 | Connect with DTE 2400 bps |
| CONNECT_4800 | 11 | Connect with DTE 4800 bps |
| CONNECT_9600 | 12 | Connect with DTE 9600 bps |
| CONNECT_7200 | 13 | Connect with DTE 7200 bps |
| CONNECT_12000 | 14 | Connect with DTE 12000 bps |
| CONNECT_14400 | 15 | Connect with DTE 14400 bps |
| CONNECT_19200 | 16 | Connect with DTE 19200 bps |
| CONNECT_38400 | 17 | Connect with DTE 38500 bps |
| CONNECT_57600 | 18 | Connect with DTE 57600 bps |
| CONNECT_115200 | 19 | Connect with DTE 115200 bps |
| CONNECT_230400 | 20 | Connect with DTE 230400 bps |
| CONNECT_V23O | 22 | V.23 connect at 75TX/1200RX |
| CONNECT_V23A | 23 | V.23 connect at 1200TX/75RX |
| DELAYED_CODE | 24 | |
| BLACKLISTED | 32 | Number Blacklisted |
| FAX_CODE | 33 | FAX connection after fax auto-detect |
| FCERROR_CODE | 34 | FAX +FCERROR result code |
| DATA_CODE | 35 | Connect as data modem |
| CARRIER_75 | 39 | To display V.23 speed with ATV1 |
| CARRIER_300 | 40 | Carrier detected at 300 |
| CARRIER_600 | 42 | Carrier detected at 600 |
| CARRIER_V23A | 44 | Carrier detected at 1200/75 |
| CARRIER_V23O | 45 | Carrier detected at 75/1200 |
| CARRIER_1200 | 46 | Carrier detected at 1200 |
| CARRIER_2400 | 47 | Carrier detected at 2400 |
| CARRIER_4800 | 48 | Carrier detected at 4800 |
| CARRIER_7200 | 49 | Carrier detected at 7200 |

| | | |
|---------------|----|---------------------------|
| CARRIER_9600 | 50 | Carrier detected at 9600 |
| CARRIER_12000 | 51 | Carrier detected at 12000 |
| CARRIER_14400 | 52 | Carrier detected at 14400 |
| CARRIER_16800 | 53 | Carrier detected at 16800 |
| CARRIER_19200 | 54 | Carrier detected at 19200 |
| CARRIER_21600 | 55 | Carrier detected at 21600 |
| CARRIER_24000 | 56 | Carrier detected at 24000 |
| CARRIER_26400 | 57 | Carrier detected at 26400 |
| CARRIER_31200 | 78 | Carrier detected at 31200 |
| CARRIER_33600 | 79 | Carrier detected at 33600 |

K56Flex Codes

| | | |
|---------------|-----|---------------------------|
| CARRIER_32000 | 150 | Carrier detected at 32000 |
| CARRIER_34000 | 151 | Carrier detected at 34000 |
| CARRIER_36000 | 152 | Carrier detected at 36000 |
| CARRIER_38000 | 153 | Carrier detected at 38000 |
| CARRIER_40000 | 154 | Carrier detected at 40000 |
| CARRIER_42000 | 155 | Carrier detected at 42000 |
| CARRIER_44000 | 156 | Carrier detected at 44000 |
| CARRIER_46000 | 157 | Carrier detected at 46000 |
| CARRIER_48000 | 158 | Carrier detected at 48000 |
| CARRIER_50000 | 159 | Carrier detected at 50000 |
| CARRIER_52000 | 160 | Carrier detected at 52000 |
| CARRIER_54000 | 161 | Carrier detected at 54000 |
| CARRIER_56000 | 162 | Carrier detected at 56000 |
| CONNECT_32000 | 165 | Connect at 32000 |
| CONNECT_34000 | 166 | Connect at 34000 |
| CONNECT_36000 | 167 | Connect at 36000 |
| CONNECT_38000 | 168 | Connect at 38000 |
| CONNECT_40000 | 169 | Connect at 40000 |
| CONNECT_42000 | 170 | Connect at 42000 |
| CONNECT_44000 | 171 | Connect at 44000 |
| CONNECT_46000 | 172 | Connect at 46000 |
| CONNECT_48000 | 173 | Connect at 48000 |
| CONNECT_50000 | 174 | Connect at 50000 |
| CONNECT_52000 | 175 | Connect at 52000 |
| CONNECT_54000 | 176 | Connect at 54000 |
| CONNECT_56000 | 177 | Connect at 56000 |

Miscellaneous K56Flex Codes

| | | |
|---------------|----|---------------------------|
| CONNECT_16800 | 59 | Carrier detected at 16800 |
| CONNECT_21600 | 61 | Carrier detected at 21600 |
| CONNECT_24000 | 62 | Carrier detected at 24000 |
| CONNECT_26400 | 63 | Carrier detected at 26400 |
| CONNECT_28800 | 64 | Carrier detected at 28800 |
| CONNECT_33600 | 84 | Carrier detected at 33600 |

V.90 Codes

| | | |
|---------------|-----|---------------------------|
| CONNECT_28000 | 180 | Connect at 28000 |
| CONNECT_29333 | 181 | Connect at 29333 |
| CONNECT_30667 | 182 | Connect at 30667 |
| CONNECT_33333 | 183 | Connect at 33333 |
| CONNECT_34667 | 184 | Connect at 34667 |
| CONNECT_37333 | 185 | Connect at 37333 |
| CONNECT_38667 | 186 | Connect at 38667 |
| CONNECT_41333 | 187 | Connect at 41333 |
| CONNECT_42667 | 188 | Connect at 42667 |
| CONNECT_45333 | 189 | Connect at 45333 |
| CONNECT_46667 | 190 | Connect at 46667 |
| CONNECT_49333 | 191 | Connect at 49333 |
| CONNECT_50667 | 192 | Connect at 50667 |
| CONNECT_53333 | 193 | Connect at 53333 |
| CONNECT_54667 | 194 | Connect at 54667 |
| CARRIER_28000 | 195 | Carrier detected at 28000 |
| CARRIER_29333 | 196 | Carrier detected at 29333 |
| CARRIER_30667 | 197 | Carrier detected at 30667 |
| CARRIER_33333 | 198 | Carrier detected at 33333 |
| CARRIER_34667 | 199 | Carrier detected at 34667 |
| CARRIER_37333 | 200 | Carrier detected at 37333 |
| CARRIER_38667 | 201 | Carrier detected at 38667 |
| CARRIER_41333 | 202 | Carrier detected at 41333 |
| CARRIER_42667 | 203 | Carrier detected at 42667 |
| CARRIER_45333 | 204 | Carrier detected at 45333 |
| CARRIER_46667 | 205 | Carrier detected at 46667 |
| CARRIER_49333 | 206 | Carrier detected at 49333 |
| CARRIER_50667 | 207 | Carrier detected at 50667 |
| CARRIER_53333 | 208 | Carrier detected at 53333 |
| CARRIER_54667 | 209 | Carrier detected at 54667 |

Protocol codes:

| | | |
|---------------|----|---------------------|
| PROT_LAPM | 77 | LAPM |
| PROT_ALT | 80 | MNP4 |
| PROT_ALT_CELL | 81 | MNP10 with Cellular |

Miscellaneous V.90 codes

| | | |
|---------------|----|-------------------------------|
| DOWNLOAD_MSG | 82 | Ready to program flash memory |
| CONNECT_20800 | 90 | Connect with DTE 20800 bps |
| CONNECT_31200 | 91 | Connect with DTE 31200 bps |
| CONNECT_41600 | 92 | Connect with DTE 41600 bps |
| CONNECT_51200 | 93 | Connect with DTE 51200 bps |
| CONNECT_62400 | 94 | Connect with DTE 62400 bps |

VFC Codes

| | | |
|----------------|-----|-------------------|
| CARRIER_14400V | 95 | Carrier 14400/VFC |
| CARRIER_16800V | 96 | Carrier 16800/VFC |
| CARRIER_19200V | 97 | Carrier 19200/VFC |
| CARRIER_21600V | 98 | Carrier 21600/VFC |
| CARRIER_24000V | 99 | Carrier 24000/VFC |
| CARRIER_26400V | 100 | Carrier 26400/VFC |
| CARRIER_28800V | 101 | Carrier 28800/VFC |

STATUTORY INFORMATION

The unit referred to in this guide is the Gold Card NetGlobal 56k+10/100Mb CardBus Card.

Mark of origin:

The modem is manufactured in the UK by Psion Dacom at its Milton Keynes factory.

Selecting Country of operation:

The EasySwitch utility supplied with this product can be used to configure the modem for use in many countries. Please ensure that the modem is configured for the country in which it is to be used before connecting to the Public Switched Telecommunications Network.

IMPORTANT SAFETY INFORMATION

When using your modem, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

Do not use this product near water, for example, near a bath, washing bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.

When connected to a telephone line, avoid using during an electrical storm. There may be a remote risk of shock from lightning.

SAVE THESE INSTRUCTIONS

IMPORTANTES MESURES DE SECURITE

Certaines mesures de sécurité doivent être prises pendant l'utilisation de votre modem afin de réduire les risques d'incendie, de choc électrique et de blessures. En voici quelquesunes:

* Ne pas utiliser l'appareil près de l'eau, p.ex., près d'une baignoire, d'un lavabo, d'un évier de cuisine, d'un bac à laver, dans un sous-sol humide ou près d'une piscine.

Eviter d'utiliser le modem (sauf connecté à un téléphone portable) pendant un orage électrique. Ceci peut présenter un risque de choc électrique causé par la foudre.

CONSERVER CES INSTRUCTIONS

Host Independent User guide statements

The power required by the host and the total of all adapter cards installed within the host environment, together with any auxiliary apparatus, shall not exceed the power specification of the host apparatus.

The power requirement for the Gold Card NetGlobal 56K + 10/100 CardBus is:

3.3 VDC +/- 5% with 50mVrms maximum power rail noise
2.05 W maximum peak power dissipation

It is essential that the PC Card is fitted only in a compatible slot designed for PC CardBus cards, containing only Safety Extra Low Voltage (SELV). Under normal conditions, the SELV limit is 42.4V peak a.c. or 60V d.c. If you have any doubt, seek advice from a competent engineer before installing the card.

Interconnection circuits shall be selected to provide continued compliance with the requirements of EN60950 clause 2.3 for SELV circuits and with the requirements of EN60950 clause 6 for TNV circuits after making connections between equipment.

This user guide must be supplied with the modem otherwise the modem approval will be invalidated.

The modem approval mark (attached to the modem PSTN cable) must be visible whilst the modem is installed in the host. This should not, under any circumstances, be removed.

This product is in conformity with relevant regulatory standards following the provisions of European Council Directives 73/23/EEC (Low Voltage Directive) and 89/336/EEC amended by 92/31/EEC (EMC Directive).

Diese Endeinrichtung ist in Konformität gemäss Niederspannungsrichtlinie 73/23/EWG sowie EMC-Richtlinien 89/336/EWG und 92/31/EWG.

Ce matériel est conforme aux normes applicables de sécurité électrique d'après la directive 73/23/CEE et aux normes applicables de compatibilité électromagnétique d'après la directive 89/336/CEE, modifié par la directive 92/31/CEE.

Pan-European Approval Statutory Information

The Pan-European approval issued by BABT for this modem (indicated by CE168X) is valid for connection to the Public Switched Telephone Networks in at interfaces in the European Economic area compatible with TBR21:1998. In general this includes:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Norway, Portugal, Spain, Switzerland, The Netherlands and the UK.

This terminal equipment is intended for direct connection to the analogue Public Switched Telecommunications Network and is approved for use with the following features:

- Modem facility
- Autocalling facility
- Autoanswer facility
- DTMF signaling
- Operation in the absence of proceed indication or upon detection of proceed indication, selectable by the user.

MANDATORY STATEMENT

The equipment has been approved in accordance with Council Decision 98/482/EC for pan-European single terminal connection to the public switched telephone network (PSTN). However, due to differences between the individual PSTN's provided in different countries, the Approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

In the event of problems, you should contact your equipment supplier in the first instance.

NETWORK COMPATIBILITY STATEMENT

This product is designed to work with, and is compatible with the following networks. It has been tested to and found to conform with the additional requirements contained in EG 201 121.

Germany - ATAAB AN005, AN006, AN007, AN009, AN010, and DE03, 04, 05, 08, 09, 12, 14, 17

Greece - ATAAB AN005, AN006 and GR01, 02, 03, 04

Portugal - ATAAB AN001, 005, 006, 007, 011 and P03, 04, 08, 10

Spain - ATAAB AN005, 007, 012, and ES01

Switzerland - ATAAB AN002

All other countries - ATAAB AN003, 004

Specific switch settings or software setup are required for each network, please refer to the relevant sections of the user guide for more details.

The hookflash (timed break register recall) function is subject to separate national type approval. It has not been tested for conformity to national type regulations, and no guarantee of successful operation of that specific function on specific national networks can be given.

Explanation of REN:

The modem has a REN of 1.

Equipment for the attachment to the Public Telephone network is assessed to determine its "ringer equivalence" number (REN). The REN relates to the performance of the apparatus when used in combination with other items of apparatus. The REN is a customer guide indicating approximately the maximum number of items that should be simultaneously connected to the line.

To determine the maximum number of items of apparatus that should be connected simultaneously to an exclusive line, the total REN obtained by summing the REN values of each of the items of apparatus connected to the exclusive line should not exceed the maximum REN value of 4. The modem has a REN of 1 and care must be taken not to use it with other telephone equipment that would result in the maximum figure of 4 REN being exceeded.

BABT Approval Number :

Gold Card NetGlobal 56k +10/100 : 608910

Statutory Information for Australia

MODEM WARNING NOTICE

This modem has been specifically configured to ensure compliance with ACA Standards.

Do not adjust your modem or software outside the values indicated below. To do so would result in your modem being operated in a non-compliant manner.

Modem Commands:

| <u>Command</u> | <u>Default</u> | <u>Permissible Range</u> |
|----------------|----------------|--------------------------|
| ATA | - | Do not use |
| ATB | B0 | Do not set for Bell mode |
| AT&G0 &G2 | &G0 or &G2 | |

Following S-registers are limited in the modem firmware:

| <u>S-register</u> | <u>Default</u> | <u>Range</u> |
|-------------------|----------------|--------------|
| S0 | 0 | 0 - 4 |
| S6 | 3 | 2 - 4 |
| S7 | 20 | 20 - 255 |

Call Attempts/Retries:

Applications software is configured so that no more than 10 attempts can be made to establish a connection to a given number and there is at least 2 seconds between call attempts. If the call sequence is unsuccessful, there will be a delay of at least 30 minutes before attempting to call the number again.

[If the modem, and any application software used with it is not configured as set out above the modem will be operated in a non-compliant manner. Consequently, there would be no permit in force for this equipment, and the Telecommunication Act 1991 prescribes a penalty of \$12,000 for the connection of non permitted equipment. Psion Dacom PLC accepts no liability for the penalty or any other costs and expenses associated with it in the event that the customer uses the modem in a non-compliant manner.

STATUTORY INFORMATION FOR GERMANY

Diese Modem-Karte ist als Endeinrichtung vorgesehen und muss an ein TAE mit F-Kodierung angeschlossen werden.

STATUTORY INFORMATION FOR UNITED STATES OF AMERICA

FCC Requirements

1. The Federal Communications Commission (FCC) has established Rules which permit this device to be directly connected to the telephone network.

Standardised jacks are used for these connections. This equipment should not be used on party lines or coin phones.
2. If this device is malfunctioning, it may also be causing harm to the telephone network; this device should be disconnected until the source of the problem can be determined and until repair has been made. If this is not done, the telephone company may temporarily disconnect service.
3. The telephone company may make changes in its technical operations and procedures; if such changes affect the compatibility or use of this device, the telephone company is required to give adequate notice of the changes. You will be advised of your right to file a complaint with the FCC.
4. If the telephone company requests information on what equipment is connected to their lines, inform them of:
 - a. The telephone number to which this unit is connected.
 - b. The ringer equivalence number.
 - c. The USOC jack required.

- d. The FCC Registration Number.

Items (b) and (d) are indicated on the label. The Ringer Equivalence Number (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the REN's of all devices on any one line should not exceed five (5.0). If too many devices are attached, they may not ring properly.

Warning: Changes or modifications to this unit not expressly approved by Psion Dacom will void the user's authority to operate the equipment.

FCC Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions.

This device may not cause harmful interference and

This device must accept interference received, including interference that may cause undesired operation.

Service Requirements

In the event of equipment malfunction, all repairs should be performed by our Company or an authorised agent. It is the responsibility of users requiring service to report the need for service to our Company or to one of our authorised agents. Service can be obtained at:

Psion Inc
800 Airport Blvd
Suite 417
Burlingame
CA 94010

Psion Inc
150 Baker Avenue
Concord
MA 01742

Statutory Information for Canada

Industry Canada (ic) information

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. Industry Canada does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorised Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Emissions Information For Canada

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Ringer Equivalence Number

The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface.

The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five (5).

The Ringer Equivalence Number of this equipment is 0.2.

Notes for use of this device in New Zealand

The maximum upload speed of the modem is limited to 33.6 kbps as per the ITU V.34 Standard. The modem has a maximum possible download speed of 56 kbps. Operation of the modem at 56 kbps not only depends on line conditions and impairments but it also requires a very low noise line (noise levels well below the lower limits required for high quality speech). Consequently, the maximum download rate may not always be achievable.

The granting of a Telepermit for a device in no way indicates Telecom acceptance of responsibility for the correct operation of that device under all operating conditions. In particular the higher speeds at which this modem is capable of operating depend on a specific network implementation which is only **one** of many ways of delivering high quality voice telephony to customers. Failure to operate should not be reported as a fault to Telecom.

In addition to satisfactory line conditions a modem can only work properly if:

- a) it is compatible with the modem at the other end and
- b) the application using the modem is compatible with the application at the other end of the call - e.g. accessing the internet requires suitable software in addition to a modem.

This equipment shall not be used in any manner which could constitute a nuisance to other Telecom customers.

Immediately disconnect this equipment should it become physically damaged, and arrange for its disposal or repair.

The correct settings for use with this modem in New Zealand are as follows:

| | |
|----------|--|
| ATB0 | (CCITT operation) |
| AT&G2 | (1800 Hz guard tone) |
| AT&P1 | (Decadic dialling make-break ratio = 33%67%) |
| ATS0 | (not auto answer) |
| ATS11=65 | (DTMF dialling on/off duration = 65ms) |
| ATX2 | (Dial tone detect, but not (U.S.A) call progress detect) |

When used in the Auto Answer mode, the S0 register must be set with a value between 2 and 10. This ensures:

- a) a person calling your modem will hear a short burst of ringing before the modem answers.

This confirms that the call has been successfully switched through the network.

- b) caller identification information (which occurs between the first and second ring cadences) is not destroyed.

This equipment does not fully meet Telecom's impedance requirements. Performance limitations may occur when used in conjunction with some parts of the Network. Telecom will accept no responsibility should difficulties arise in such circumstances.

The transmit level from this device is set at a fixed level and because of this there may be circumstances where this performance may be less than optimal. Before reporting such occurrences as faults, please check the line with a standard Telepermitted telephone, and only report a fault if the phone performance is impaired.

It is recommended that this equipment be disconnected from the Telecom line during electrical storms.

When relocating the equipment, always disconnect the Telecom line connection before the power connection, and reconnect the power first.

This equipment *may not be* compatible with Telecom Distinctive Alert Cadences.

Note that fault callouts caused by any of the above causes may incur a charge from your telecom.

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This product fulfils the requirements of the following EC directives:

Electromagnetic Compatibility Directive 89/336/EC

Low Voltage Equipment Directive 73/23/EC

Notice: This manual has been validated and reviewed for accuracy. The included sets of instructions and descriptions were accurate for the Gold Card at the time of the manual's production. However, succeeding products and manuals are subject to change without notification. Psion Dacom Plc. assumes no liability for damages incurred directly or indirectly from errors, omissions or discrepancies between the Gold Card and the manual.

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