

SECTION 3

NV11 MANUAL SET

ITL SOFTWARE SUPPORT GUIDE

INTELLIGENCE IN VALIDATION



A.u.S. Spielgeräte GesmbH
Scheydgasse 48 A-1210 Wien
Tel. +43-1-271 66 00 Fax.+43-1-271 66 00 75
E-mail: verkauf@aus.at
<http://www.aus.at>
Öffnungszeiten: Mo-Fr. 9-18 Uhr

NV11 MANUAL SET – SECTION 3

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3. ITL SOFTWARE SUPPORT GUIDE

3.1 PiPS Software

PiPS (Pay in Pay out System) is a software package developed by Innovative Technology Ltd to allow customers to carry out programming, setup and operational tasks on the full range of NV11 devices.

3.1.1 Preparing for Installation

If you do not have the PiPS software on CD, you can easily download it from the Innovative Technology website. Visit www.innovative-technology.co.uk, and select 'Software Download' from the 'Support' tab:



Clicking this link will take you to the software download page. To download any files you must log in as a registered user – if you have not already registered this is a very quick process; just click the 'create an account' link and follow the on-screen instructions.

To download a software file you must first login.
 NB: All users must re-register with the new site.

Enter your login details here, or create a new account

Always ensure you are using the most up-to-date software before altering any firmware or currency dataset files.

Username
 Password
 Remember Me
 Login

- [Forgot your password?](#)
- [Forgot your username?](#)
- [Create an account](#)

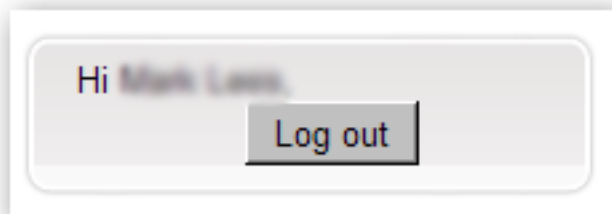
Latest Datasets

- UGX02602 (NV200)
- UGX01603 (NV200)
- CRC01602 (NV200)
- ISK0110100 (NV10)
- MYR01203 (BV20)
- IDR02602 (NV200)
- IDR01603 (NV200)
- THB01602 (NV200)
- KZT01602 (NV200)
- LVL01603 (NV200)

Title	Version	File		
Bank Note Validator Currency Manager	3.3.13			
VPS (Validator Programming System)	1.0.16			
SMART PIPS (Pay In Pay Out System)	1.4.5			
Bank Note Validator Diagnostics Tools	1.0.4			
DA2 Drivers - 32 bit				
DA2 Drivers - 64 bit	1			
BV Interface Driver Install - 32 bit	2			
BV Interface Driver Install - 64bit	1			
NV4 Currency Manager	2.5.3			

After logging in, the download screen will change slightly:

Your user name will be displayed in the top right hand corner of the screen



The padlock icon for each file will change from locked to unlocked. To download a file, just click on the padlock icon opposite the file name.



If you want to find more information about the file before you download it, you can click on the blue information icon.



In this case, we want to download the PiPS software, so we click on the padlock icon opposite the 'SMART PIPS (Pay In Pay Out System)' filename:

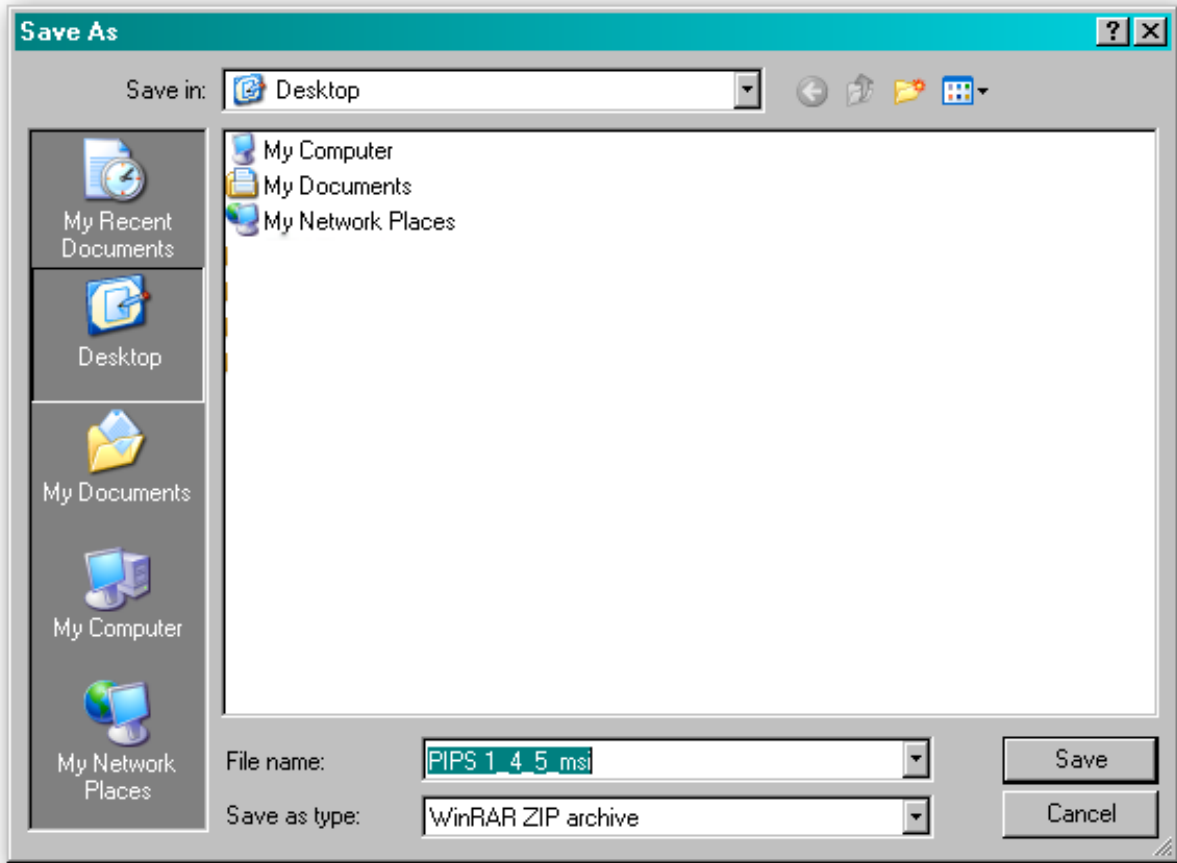
Title	Version	File	Info	Lock
VPS (Validator Programming System)	1.0.16			
Bank Note Validator Currency Manager	3.3.11			
Bank Note Validator Diagnostics Tools	1.0.4			
SMART PIPS (Pay In Pay Out System)	1.4.5			
DA2 Drivers - 32 bit				
DA2 Drivers - 64 bit	1			
BV Interface Driver Install - 32 bit	2			
BV Interface Driver Install - 64bit	1			
eSSP Developer Kit	2			
NV4 Currency Manager	2.5.3			

After clicking the link, a file download dialog box will appear – choose the option to **save** the file:

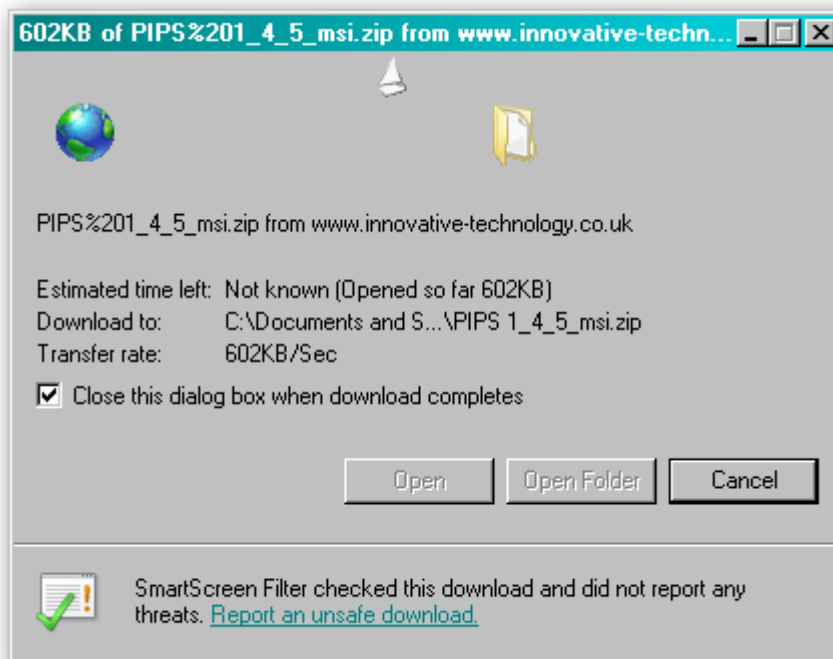


You can save the file anywhere that is convenient, as long as you can remember where it is when you want to install the software.



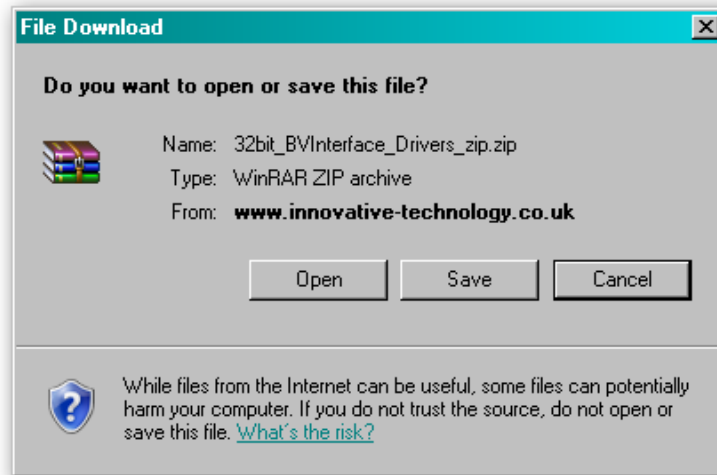


After choosing where to save the file, a file transfer dialog box will appear showing the progress of the file download:

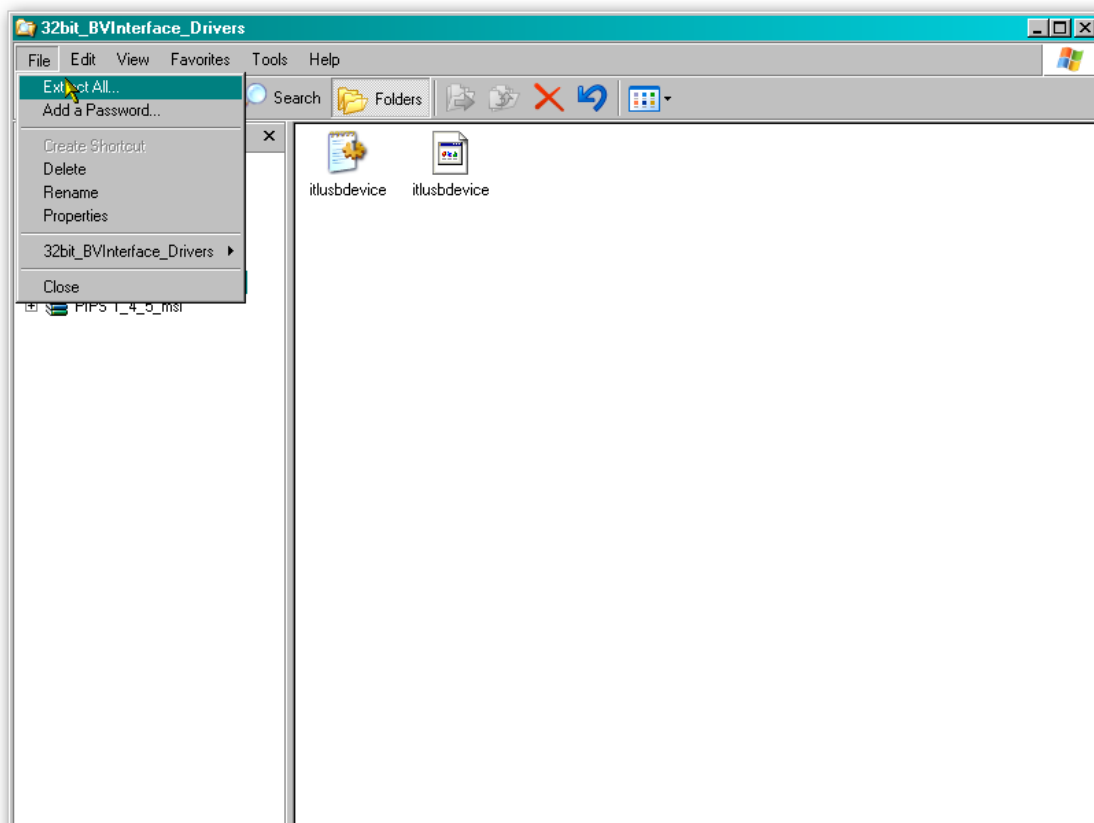


3.1.2 BV Interface Drivers

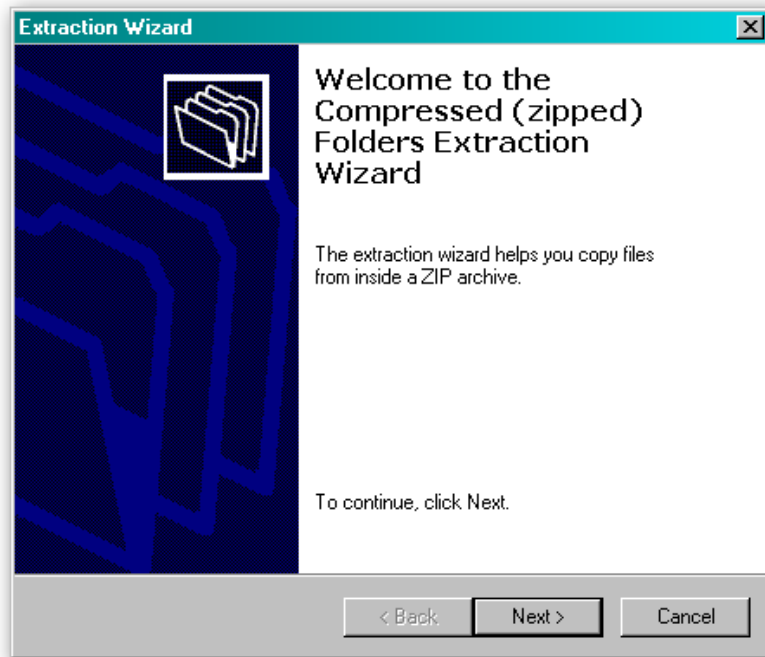
After downloading the Validator Manager software, you will also need to download the Banknote Validator (BV) Interface drivers – two versions are available (32 bit and 64 bit) so choose the correct type for your operating system. Again, remember where you saved the file.



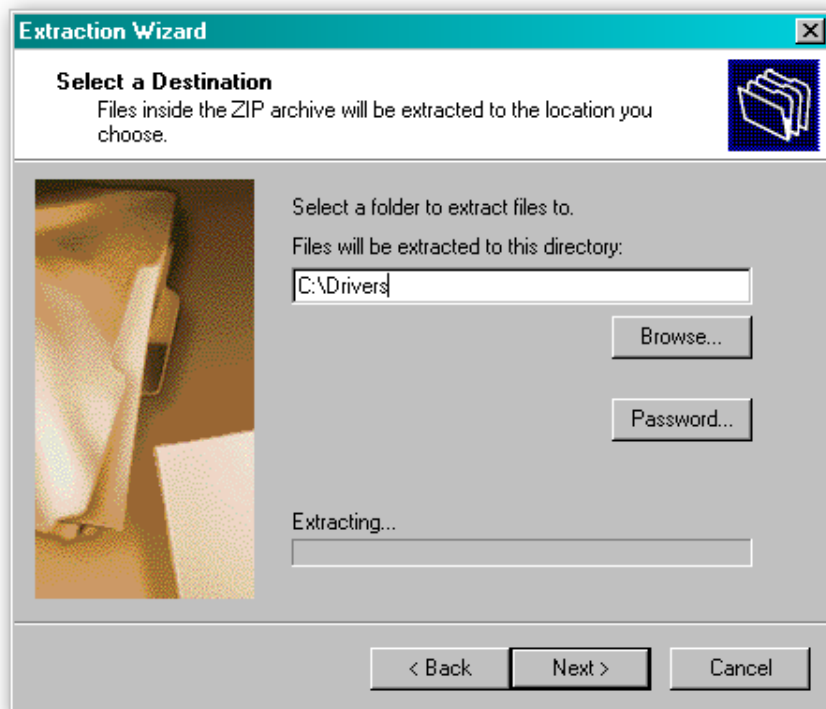
Both files are provided in a 'zipped' (compressed) form – you will need to extract the files from the zipped file before you can install the software or driver. Any version of Windows from Windows 98 onwards can open zipped files; or you may want to use a third party software tool such as Winzip or WinRAR.

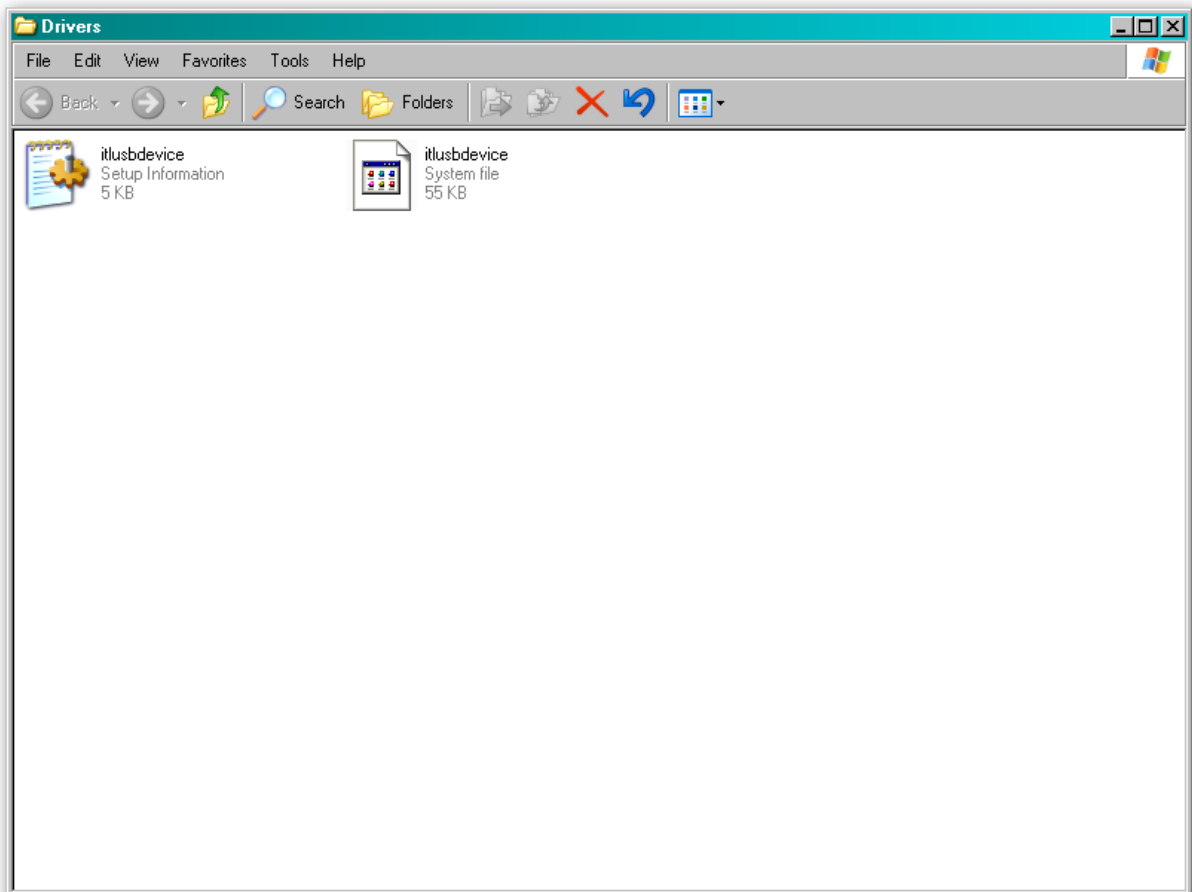
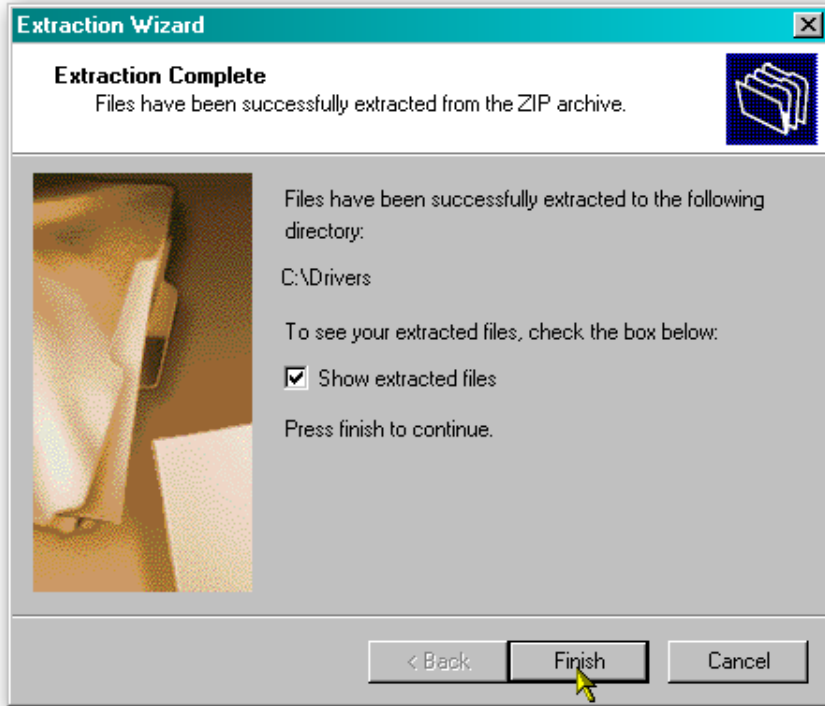


Extract the files to a convenient location – this might be an existing folder, or you may want to save them into a new folder.



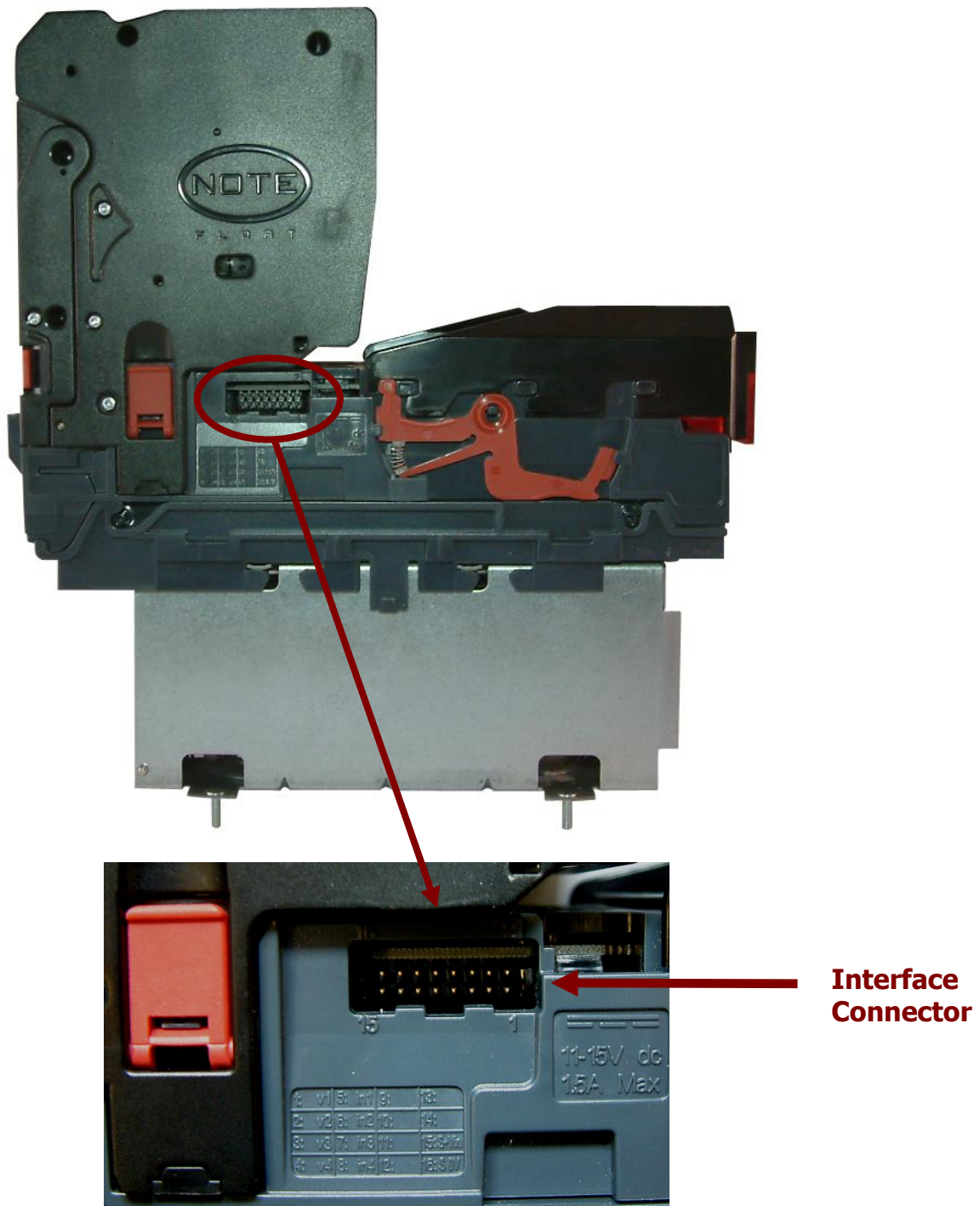
In this example, the BV Interface driver files are being saved into a folder called 'Drivers' on the computers C: drive.





3.1.3 Installing the Drivers

There are several ways to communicate with the NV11 validator, which include using a direct connection from computer to validator with a CN00392 validator to USB cable, or by using a special interface unit called a DA2. Use of the DA2 is not covered here – please refer to ITL Document number GA00338-2 for more information. In this manual we will be using the USB connection method. The connector needed to set up and interface the NV11 validator is easily accessible on the side of the unit:



To use a USB connection with the NV11, a USB cable fitted with a 16 way connector on one end (ITL Part Number CN00392) should be used. The CN00392 cable fits into the 16 way connector and allows high speed programming and serial communications when used in SSP and ccTalk modes. When using the USB connection, power must be supplied to the NV11 using the red and black power leads on the CN00392 cable.

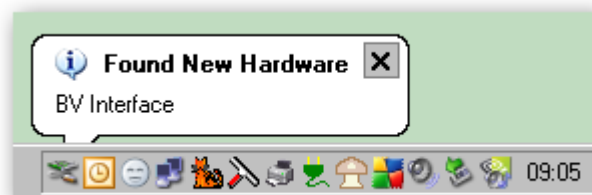
The NV11 validator must be powered up for the interface to be recognised by Windows. If the validator is not in the host machine, you will need to provide power to the 16 way interface connector first. The connection information and pin numbering is as follows:



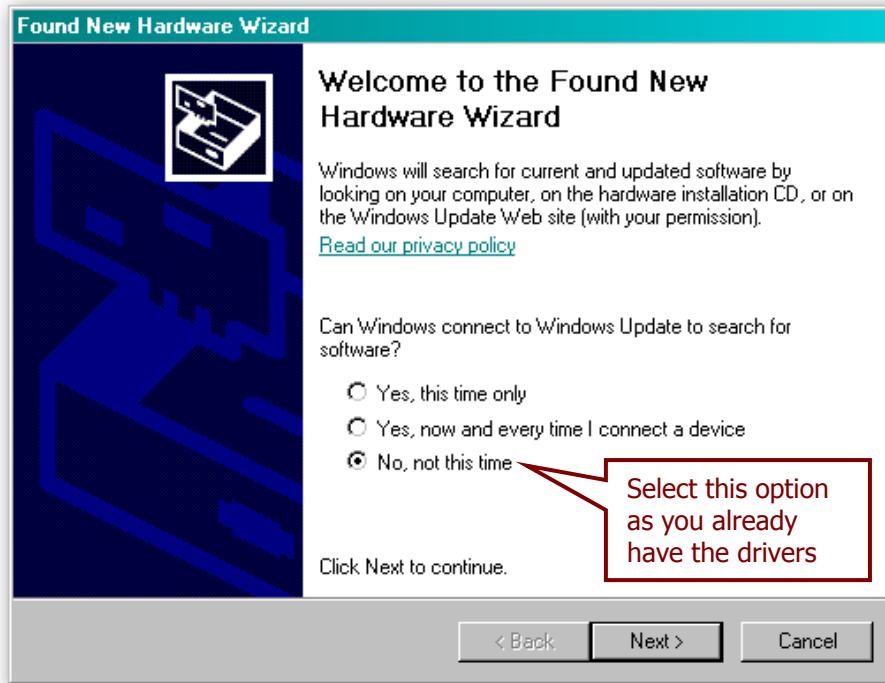
Pin	Description
1	Serial Data Out (Tx)
5	Serial Data In (Rx)
11	USB Data +
12	USB Data -
13	USB Power (+5V)
15	+ V
16	0V / Ground Connection

Before connecting the USB cable to the computer, make sure that the CN00392 cable is connected to the validator and that the unit is powered up. Once you have carried out these steps, plug the USB cable into the computer.

After connecting the USB cable, Windows should then detect the NV11 validator interface – a 'Found New Hardware' bubble or dialog box should appear.

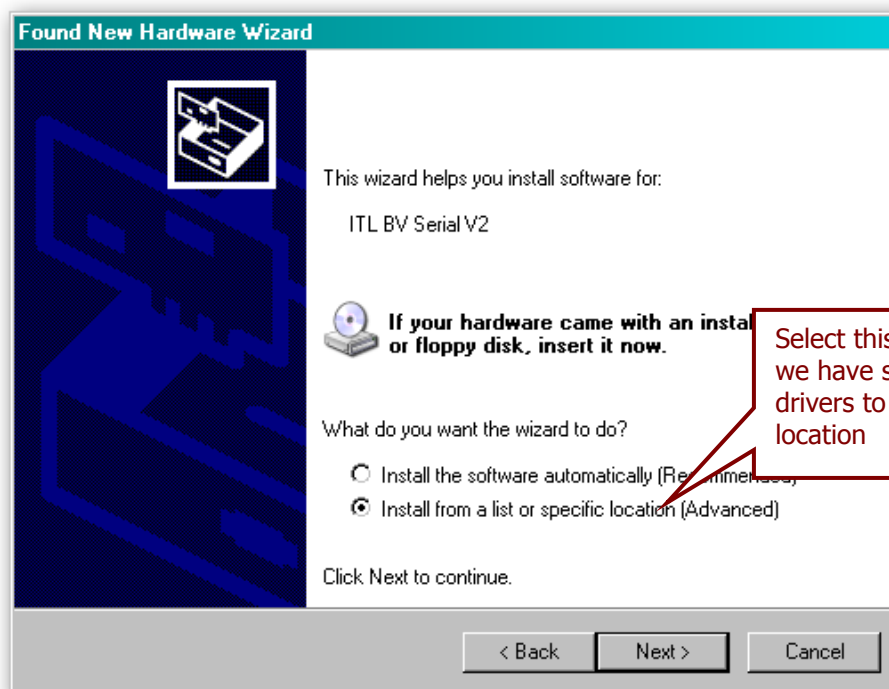


A 'Found New Hardware' wizard should then start to guide you through the installation process (this first screen is not always shown on some computers):

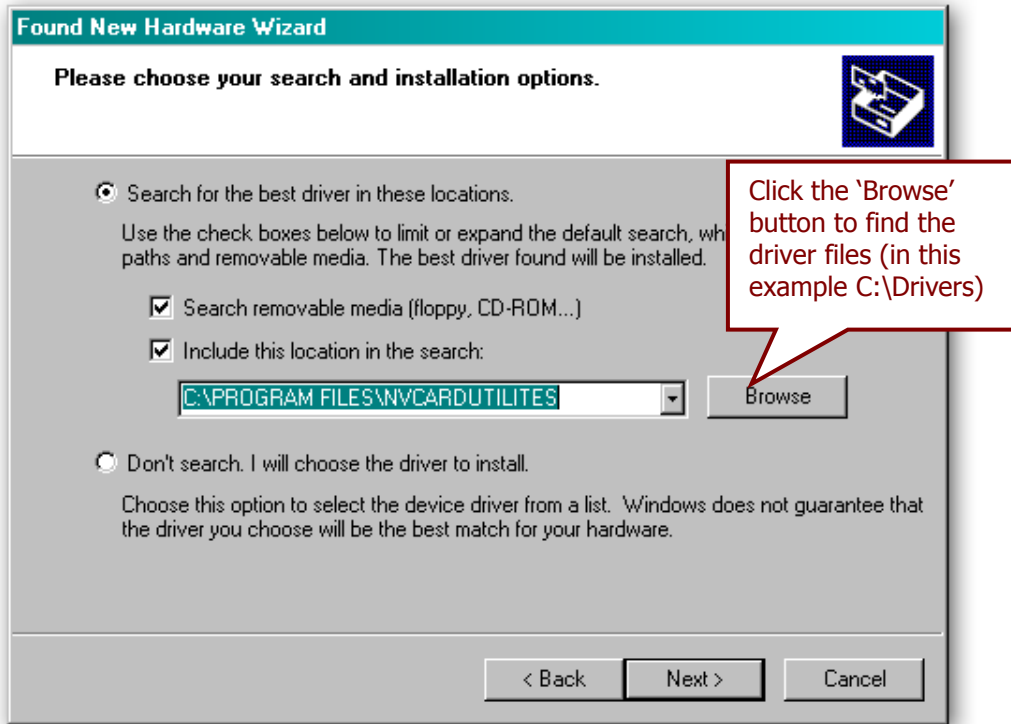


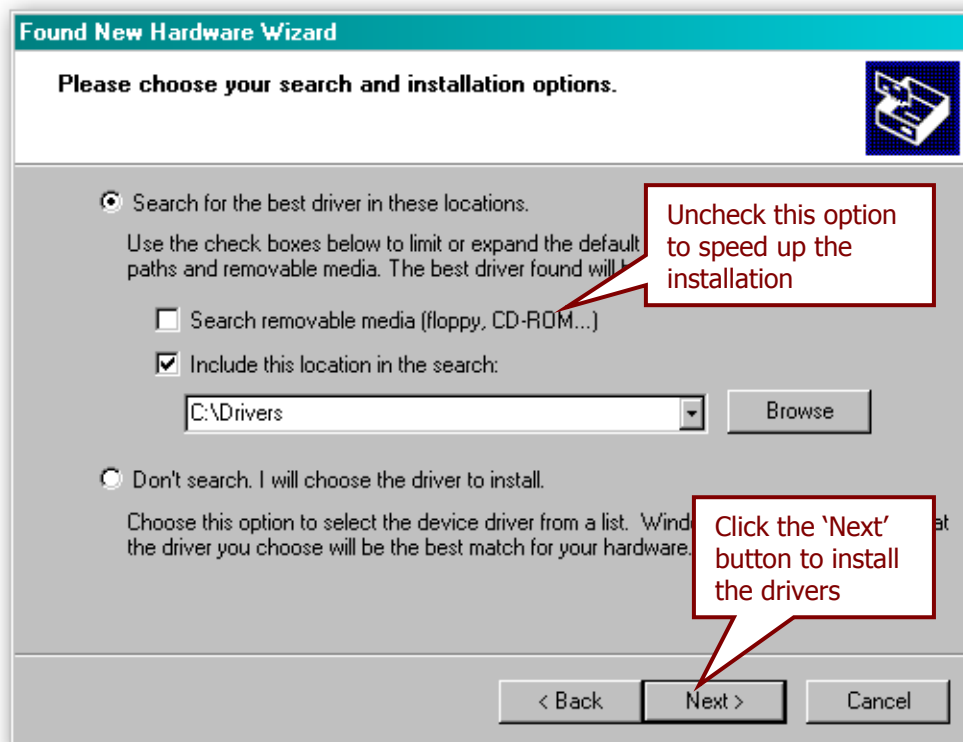
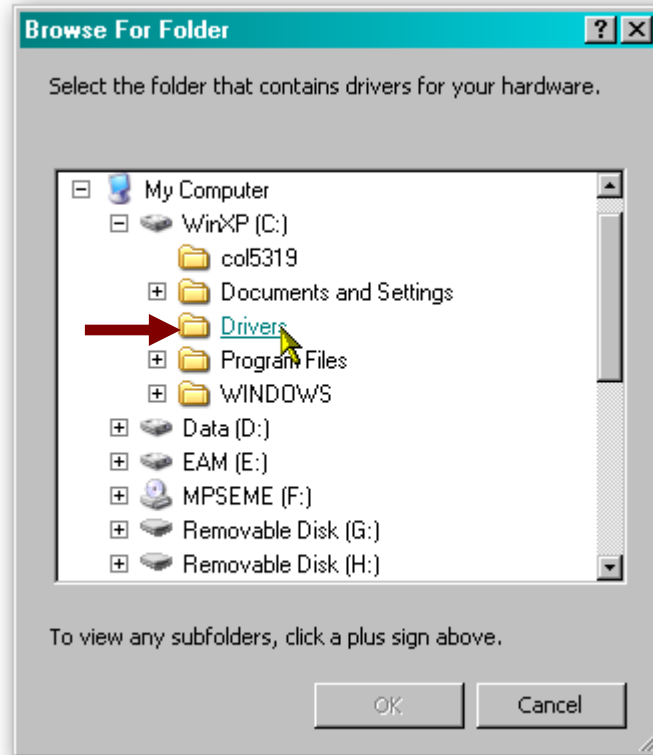
i Information
Only use V2 drivers

Please make sure that you are using the V2 drivers for the installation.

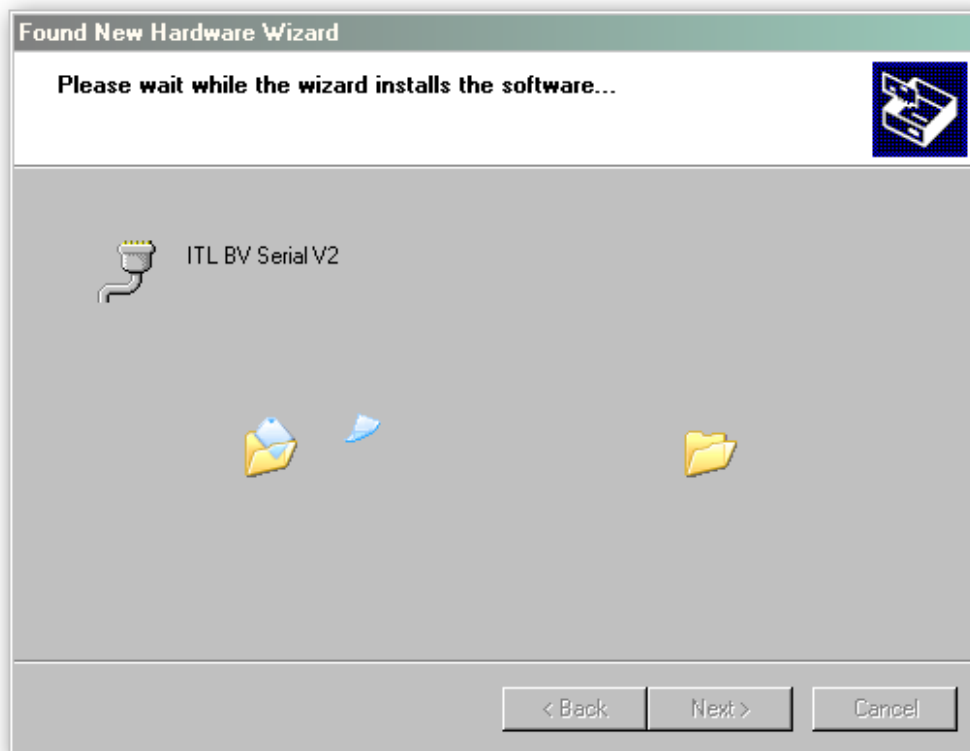
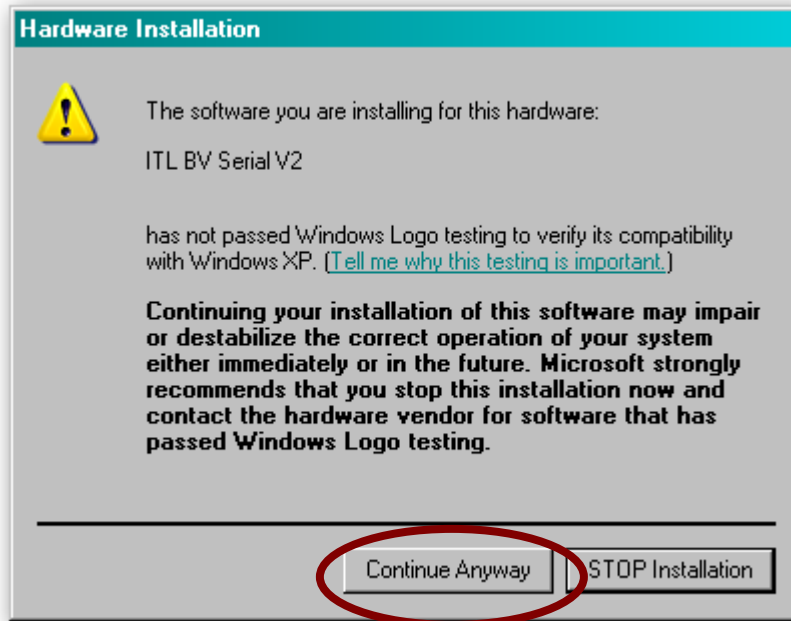


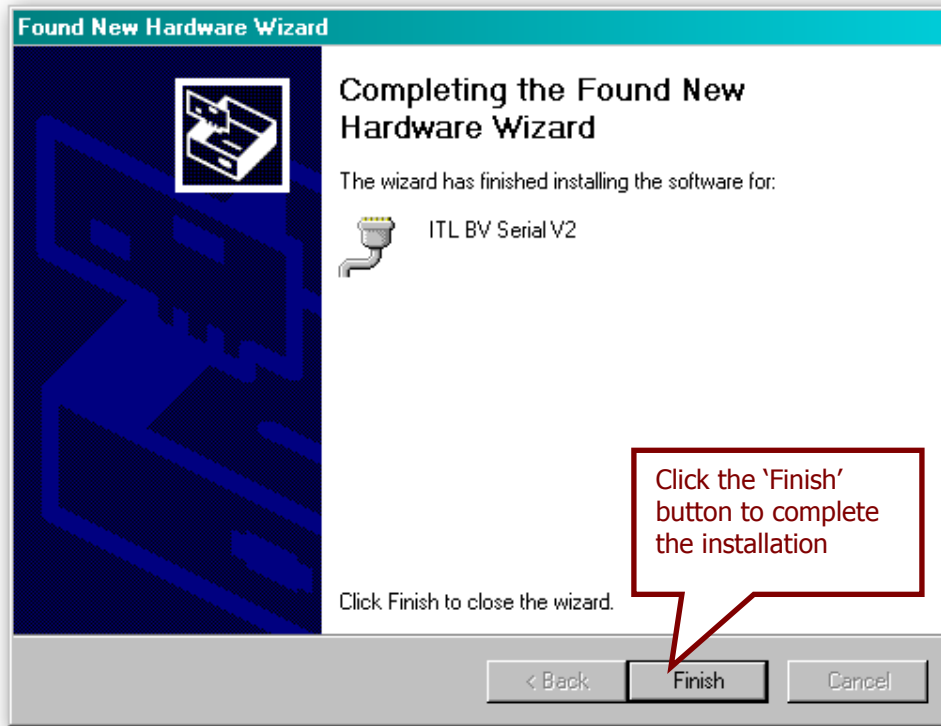
The next dialog box will ask you where to search for the drivers:





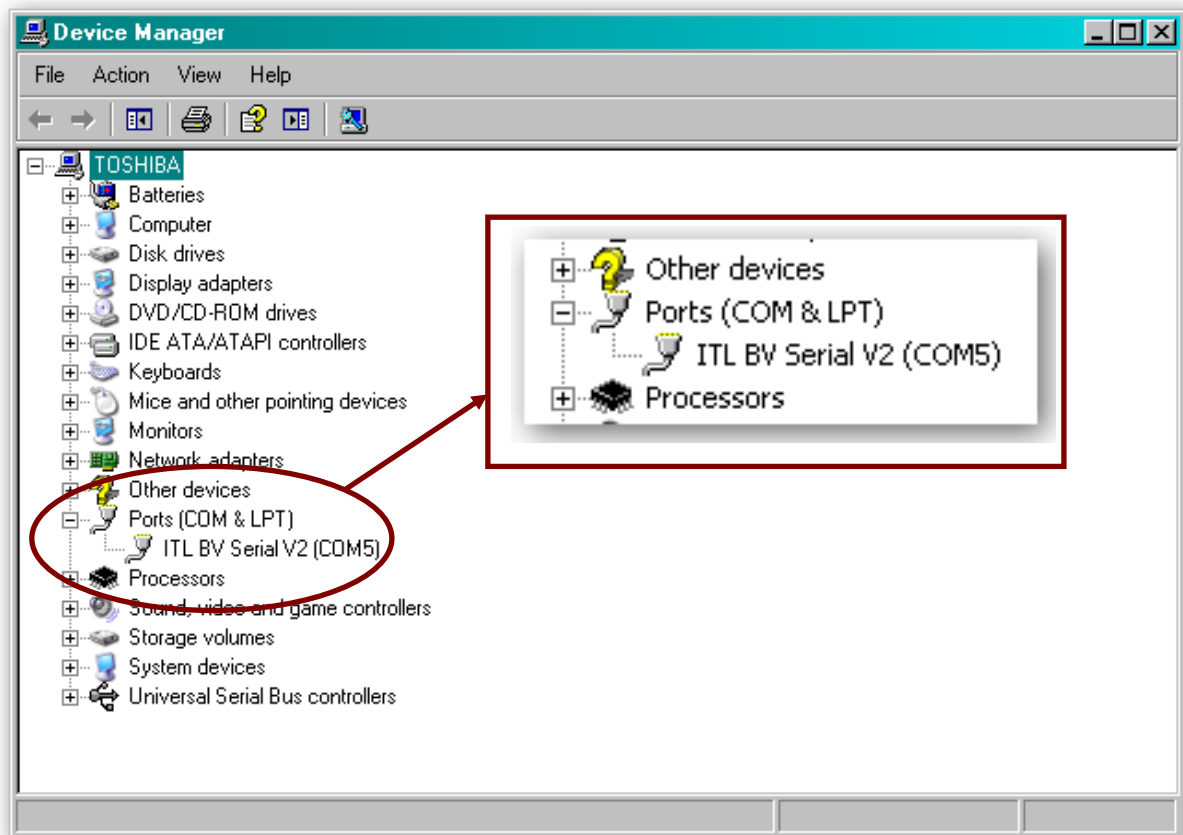
You may see a warning dialog saying that the drivers have not passed Windows logo testing – you can ignore this warning. Just click the 'Continue Anyway' button.





After completing the driver installation you can check that the communications port has been installed correctly.

Open Windows Device Manager, and click on the Plus symbol (+) next to the 'Ports' entry. This will expand the list of installed communications ports. You should see an entry for an '**ITL BV Serial V2**' port as shown here:

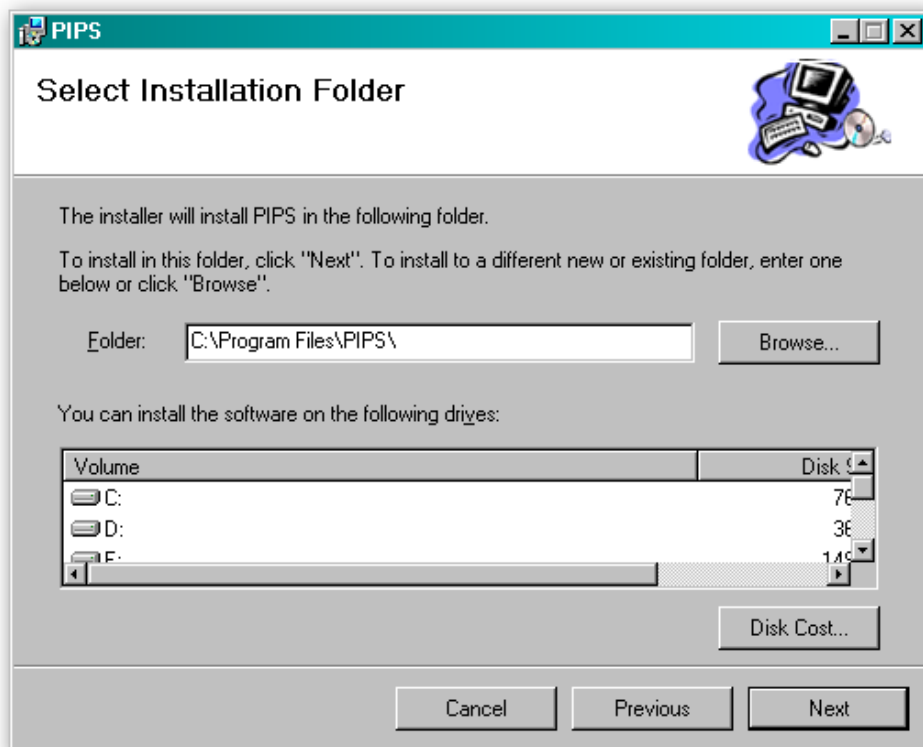
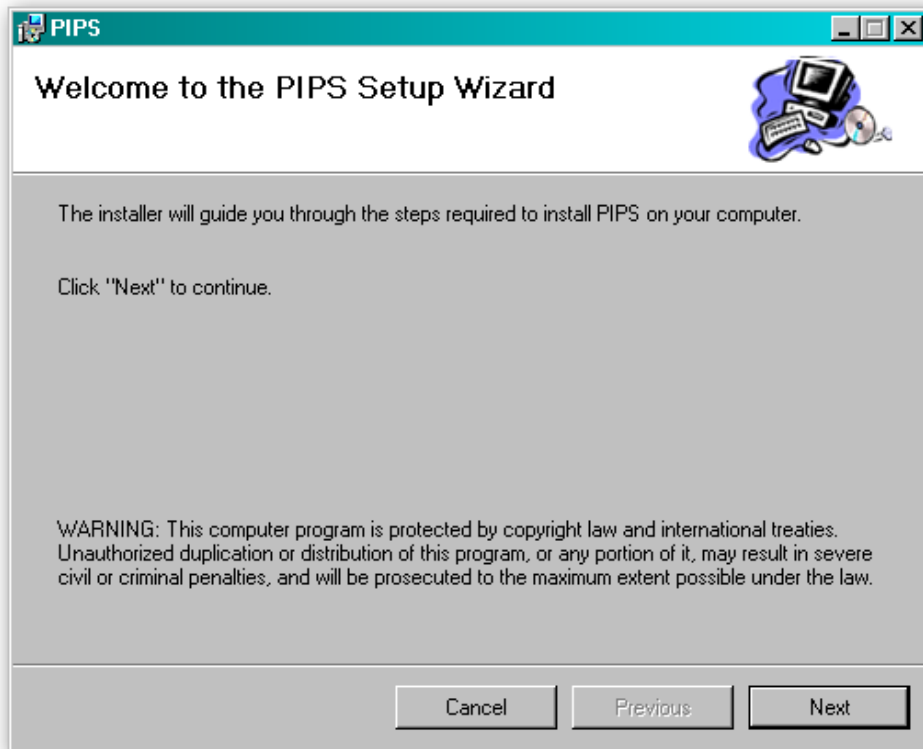


The actual communications port number (in our example COM5) may vary depending on your particular computer configuration.

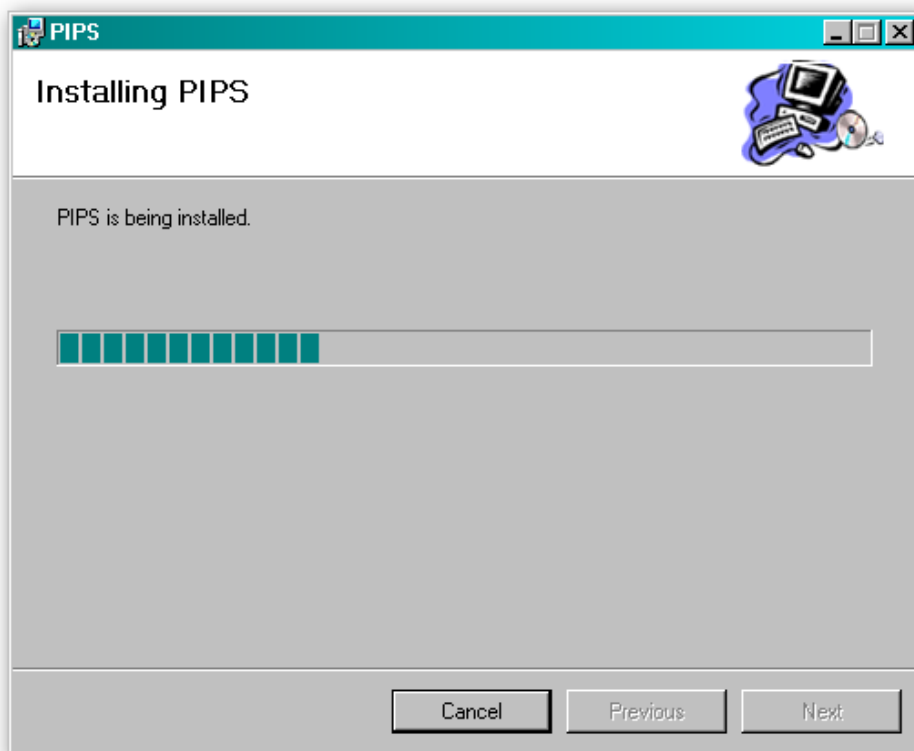
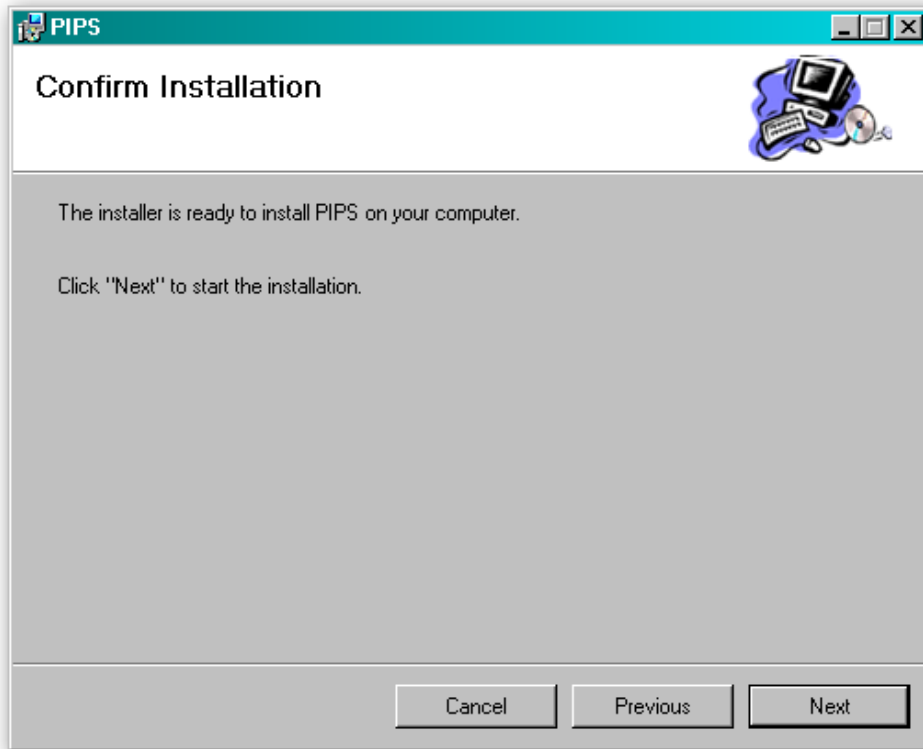
Now the drivers have been correctly installed you can install the Validator Manager software – this is covered next.

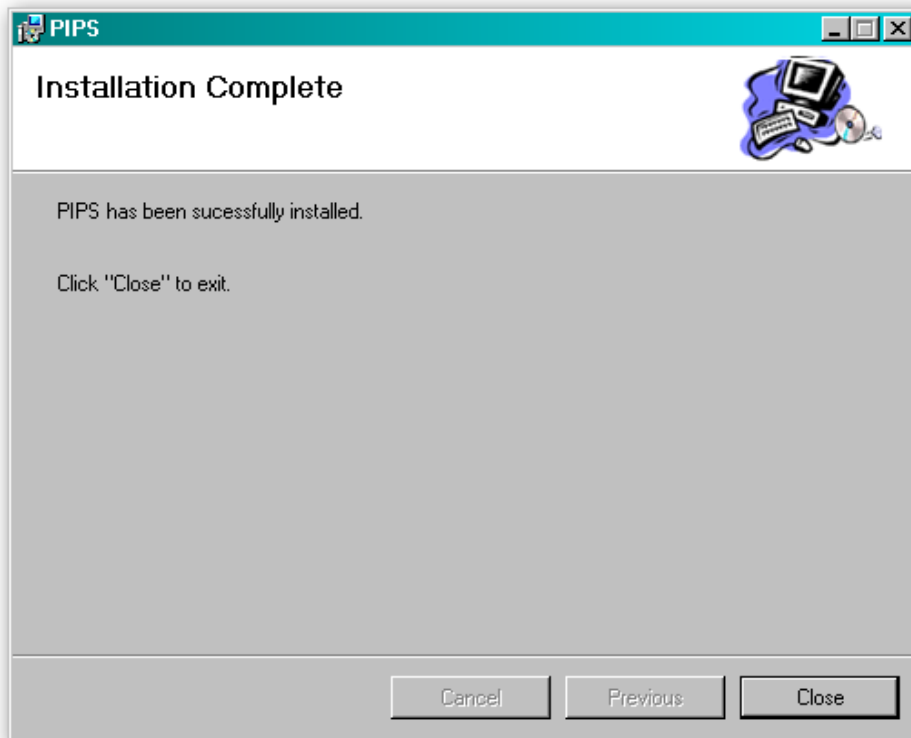
3.1.4 Installing the PiPS Software

Installing the PiPS software is very straightforward. Find the PiPS installation file you downloaded earlier, extract the installation file from the zipped file and double click the file (it has an .msi extension) – this will start the installation process:

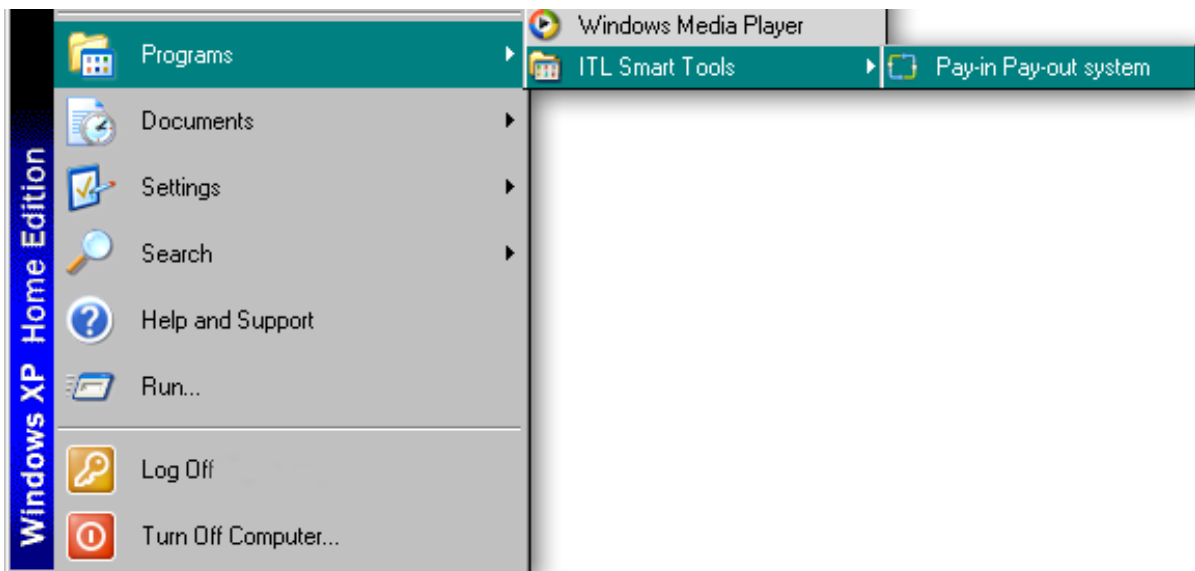


You can choose where you would like to install the software, or just accept the default location (as shown above). Clicking on the 'Next' button will then ask you to confirm the installation:





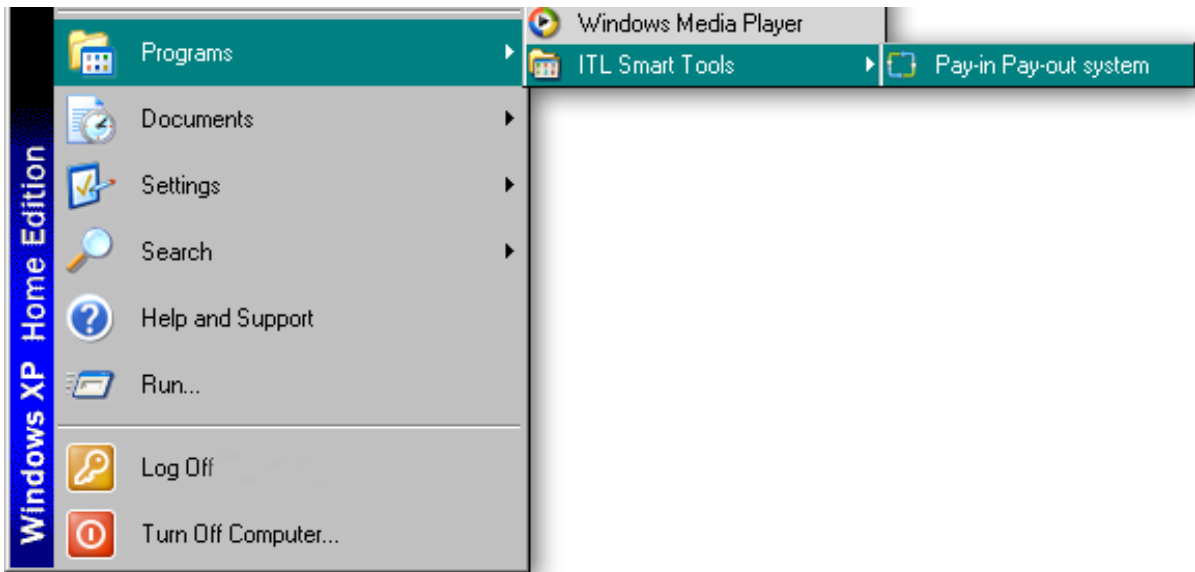
Once the installation is complete, you will have a new program group called 'ITL Smart Tools' in the Windows Start Menu, similar to the one shown here:



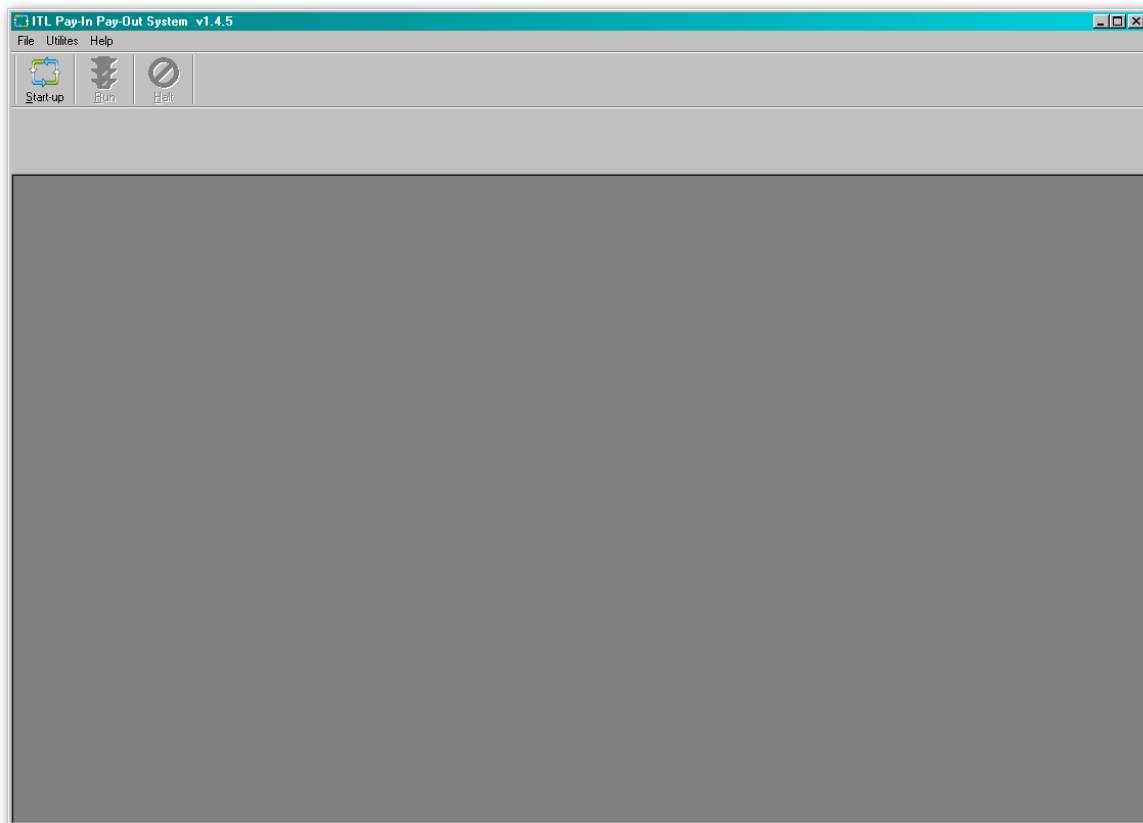
You can run the PiPS software by clicking the 'Pay-in Pay-Out system' menu entry; however, before you can use the PiPS software with an NV11 you will need to make sure that you have installed the BV interface drivers (as described earlier).

3.1.5 Starting the PiPS Software

The PiPS software is launched by clicking the 'Pay-in Pay-out system' entry in the 'ITL Smart Tools' menu group.

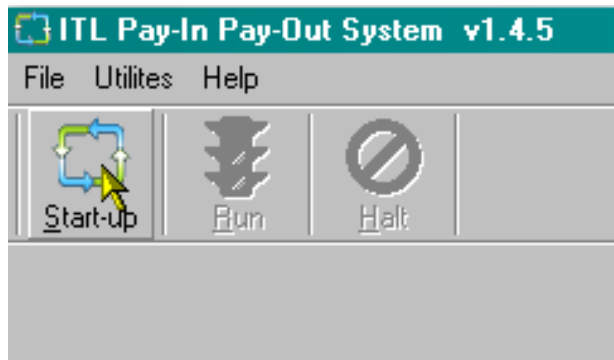


The initial program screen looks like this:

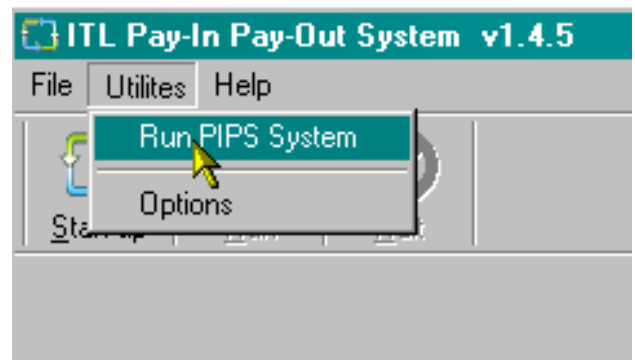


Make sure that the NV11 is powered up and the USB cable is connected before going any further.

Once the NV11 is connected, there are two ways to start the program operation:

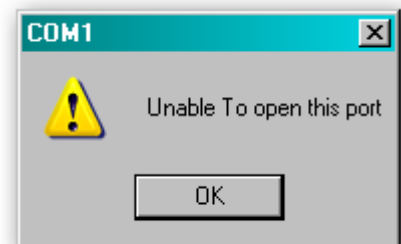


Click the 'Start-up' icon

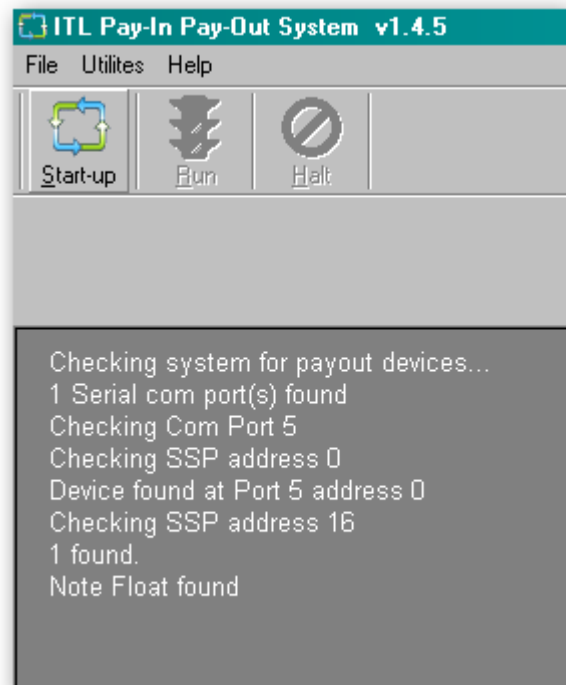


Click 'Utilities', then 'Run PIPS System'

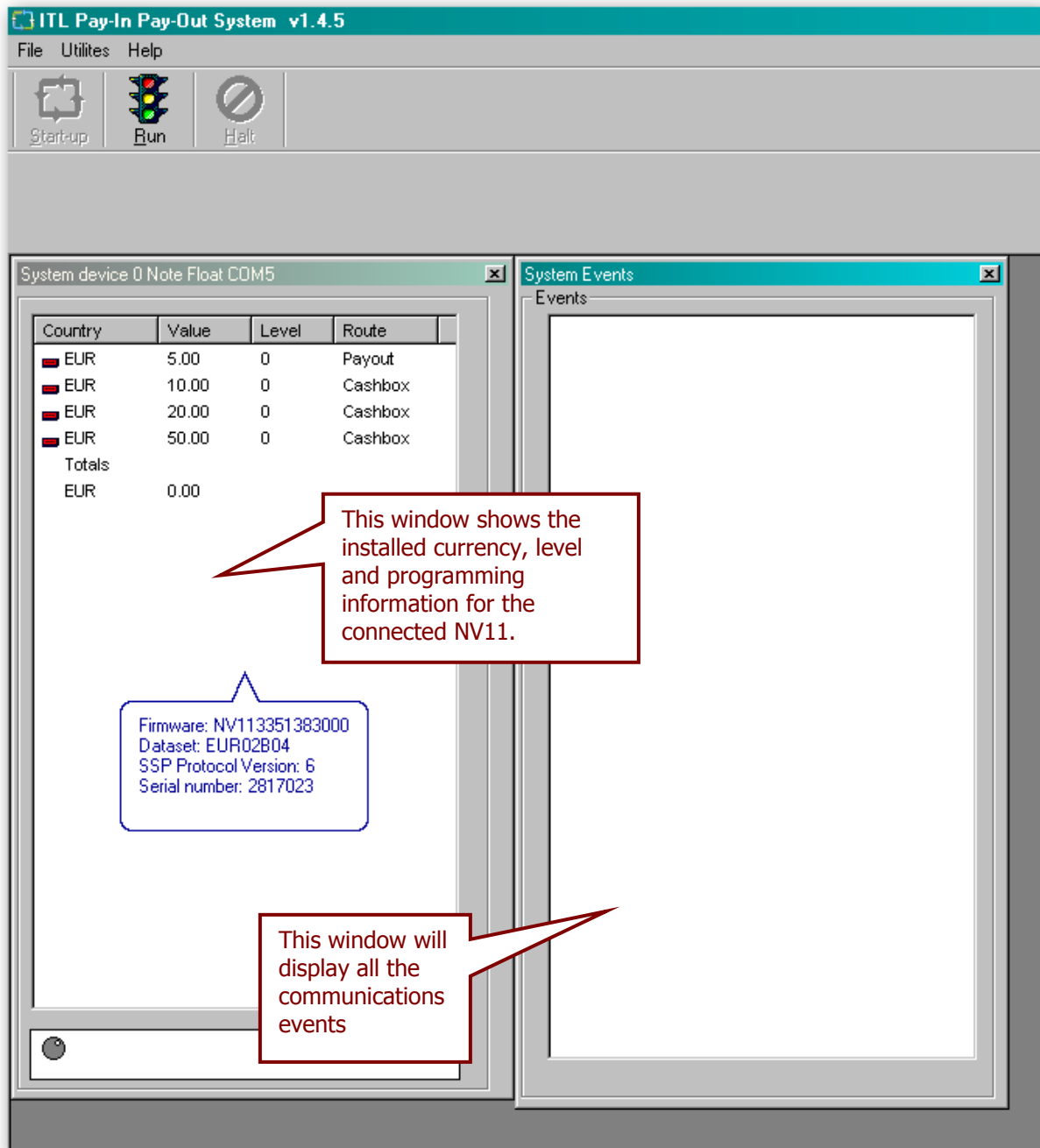
The PiPS software will then start to connect to the NV11. Depending on the number and types of communications ports on your computer, you may get an error message similar to the one shown on the right saying 'Unable to open this port' – this isn't a problem, just click the 'OK' button.



You will see some text in the PIPS program window as the software checks the communications ports for the NV11 (similar to what is shown here) – this text may vary depending on your particular computer configuration.



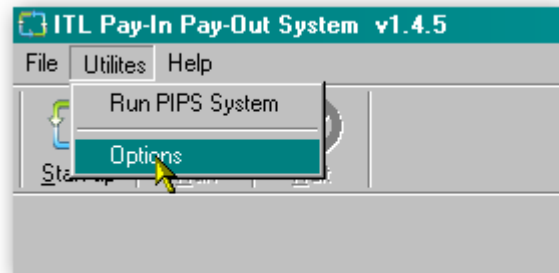
Once the NV11 unit has been found, two windows will appear on the screen:



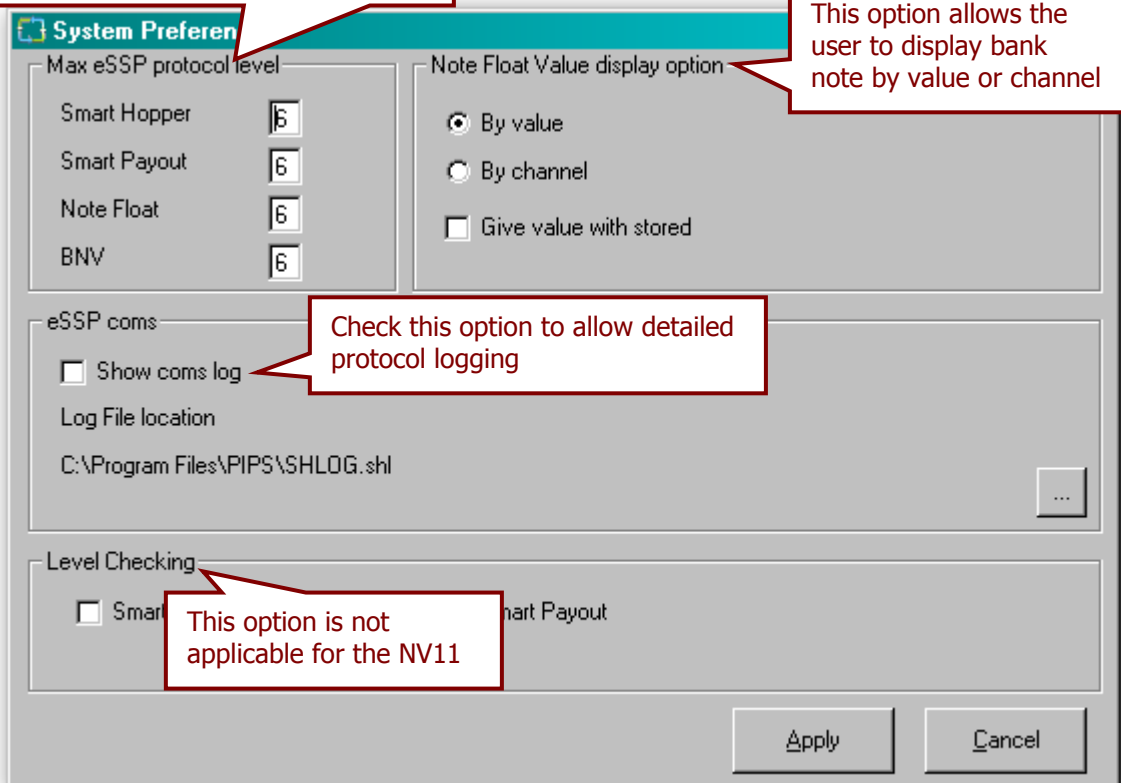
More details of the program options and operations that can be carried out will be covered in the next subsection.

3.1.6 Preferences, Settings and Options

The preferences for the PiPS software are accessible from the Utilities menu (as shown). Click the 'Options' entry to open a new dialog box:



This option sets the protocol version used for communications – contact ITL Technical Support for the current configuration details.



This option allows the user to display bank note by value or channel

Check this option to allow detailed protocol logging

This option is not applicable for the NV11

Normally, these preferences should not need changing.

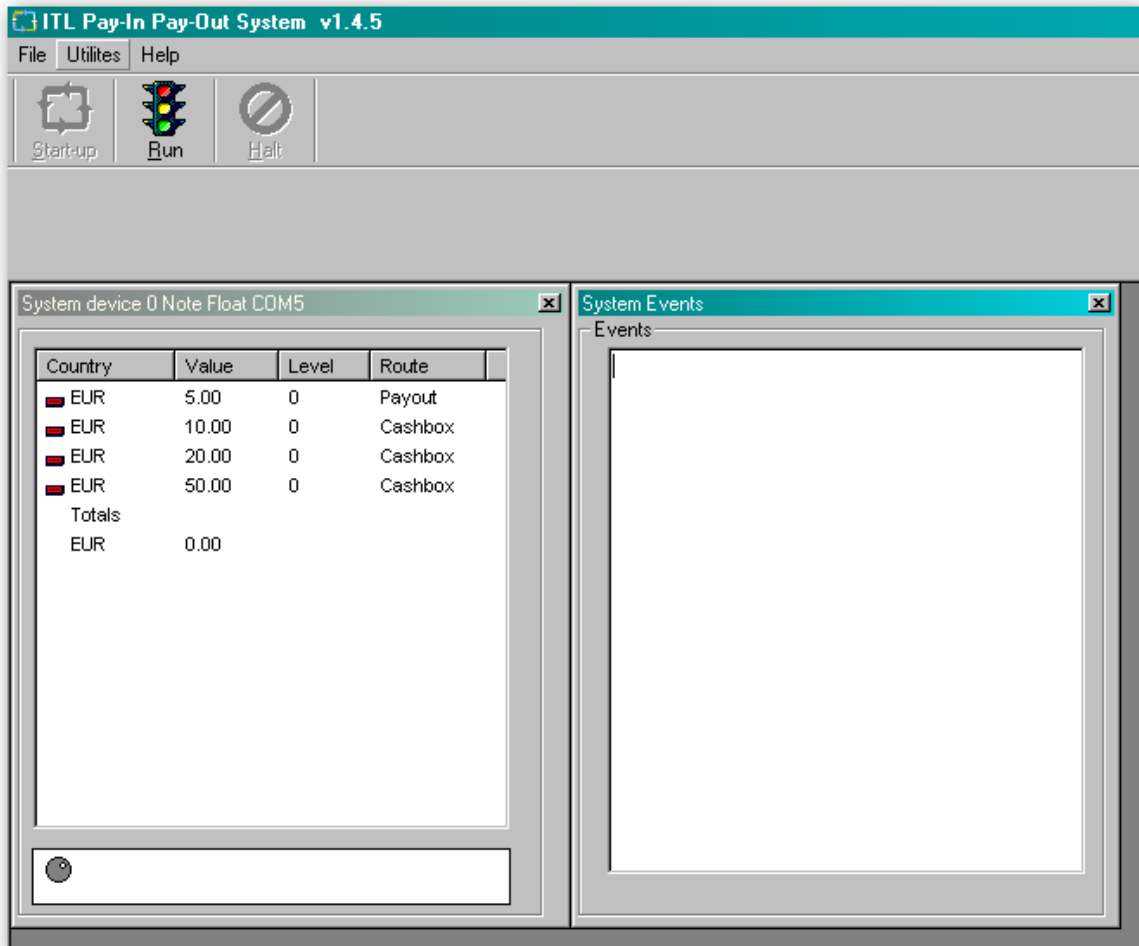
The settings and options for the NV11 vary depending whether the system is in the 'Run' or the 'Halt' state – generally the system will need to be halted before any changes to setup options can be made. Pay in/pay out operations are only available when in 'Run' state.

Halt State

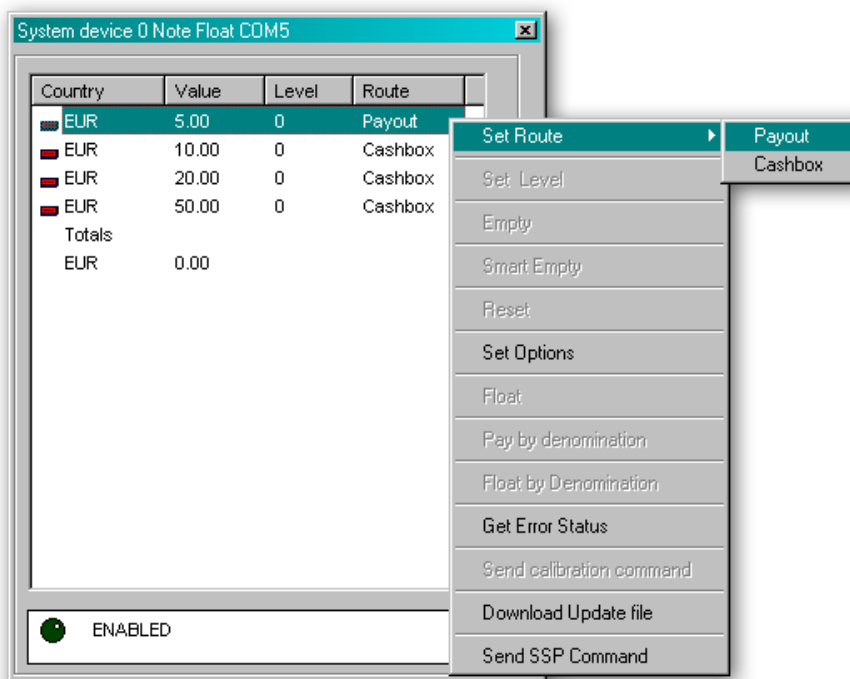
If the system is in 'Halt' state, the user will either have just started the PiPS software, or clicked on the 'Halt' button. The menu bar will look like this:



The main screen should look something like this:




The various settings and options can be accessed from a right click when the mouse cursor is over any of the system device entries:



Halt State Options

<p>Set Route</p>	<p>To set the pay in route for inserted bank notes to either Cashbox or Note Float module, select the desired denomination(s) and click the required route. The system will send the commands to the device and store these preferences so that they will be set again on the next start-up.</p>
<p>Set Options</p>	<p>Using this dialog, the user can setup the device SSP address and eSSP keys by double clicking on the required option.</p>
<p>Get Error Status</p>	<p>This option displays any device error messages in the 'System Events' window.</p>
<p>Download Update File</p>	<p>This option allows the user to download an ITL update file to the connected device.</p>
<p>Send SSP Command</p>	<p>This option brings up the SSP communications dialog which allows the user to send individual commands to the connected device.</p>



CAUTION!

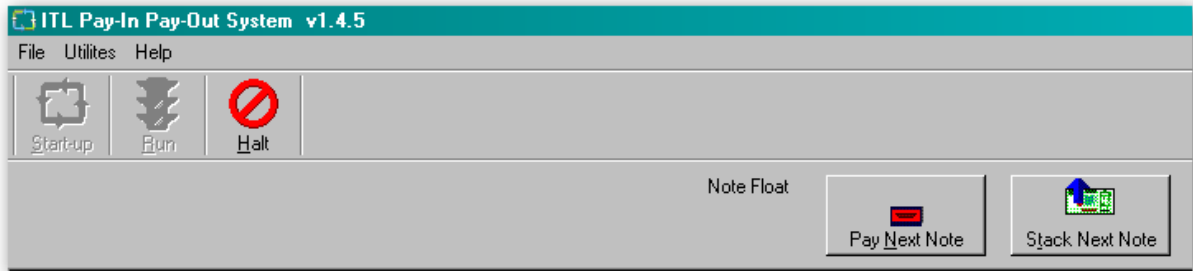
Take care when changing eSSP key

Exercise care when changing the device eSSP key. The user must make a note of the new key and change the host key to match. If the key is not known then device must be returned to ITL for key reset.



Run State

If the system is in 'Run' state, the user will have clicked on the 'Run' button and the menu bar will look like this:



Run State Options

<p>Set Route</p>	<p>To set the pay in route for inserted bank notes to either Cashbox or Note Float module, select the desired domination(s) and click the required route. The system will send the commands to the device and store these preferences so that they will be set again on the next start-up.</p>
<p>Empty</p>	<p>This command will empty all the stored notes in the connected Note Float module into the device cashbox. After emptying the notes, counters on the device will be reset to zero.</p>
<p>Reset</p>	<p>This command will reset the connected payout device. After reset, the system will re-initialise the device for use.</p>



3.2 Updating Firmware and Datasets

CAUTION!

Do not power off

Powering off the NV11 when updating the firmware or dataset can cause the validator to stop working.

The NV11 validator firmware and dataset can be updated very easily using the PiPS software. The process uses NV9USB dataset files which can be downloaded from the Innovative Technology Ltd website:

Select Validator:
Select Currency:

Display #

<< Start < Prev 1 2 Next > End >>

Page 1 of 2

Name	Code	Issue	Validator		
Euro (20-50)	EUR71B02	2	NV9USB		
Euro (5-10-20) MDB Multip	EUR52B02	2	NV9USB		
Euro (5-10-20-50)	EUR02B04	4	NV9USB		
Euro (5-10-20-50)	EUR56B03	3	NV9USB		
Euro (5-10-20-50)	EUR58B03	3	NV9USB		
Euro (5-10-20-50-100-200-	EUR45B15	15	NV9USB		
Euro (5-10-20-50-B-100)	EUR69B03	3	NV9USB		
Euro (B-B-5-10-20-50)	EUR60B03	3	NV9USB		
Euro(10-20-50)	EUR67B03	3	NV9USB		
Euro(5(i)-10(i)-20-50)	EUR74B02	2	NV9USB		
Euro(5(i)-10-20-50)	EUR72B02	2	NV9USB		
Euro(5-10)	EUR04B04	4	NV9USB		
Euro(5-10-20)	EUR70B02	2	NV9USB		
Euro(5-10-20)	EUR10B04	4	NV9USB		
Euro(5-10-20-50)	EUR73B02	2	NV9USB		
Euro(5-10-20-50)	EUR59B03	3	NV9USB		
Euro(5-10-20-50-100)	EUR63B03	3	NV9USB		
Euro(5-10-20-50-100)	EUR61B03	3	NV9USB		
Euro(5-10-20-50-100)	EUR03B03	3	NV9USB		
Euro(5-10-20-50-100-200)	EUR54B03	3	NV9USB		

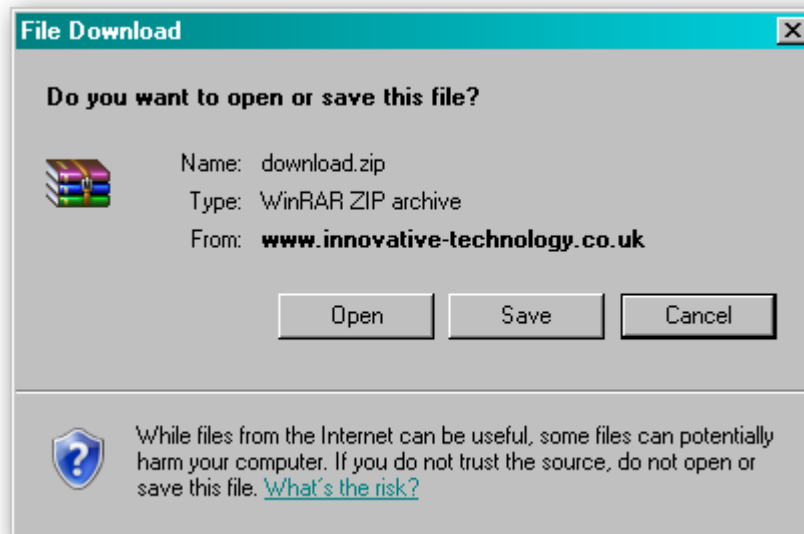
Information

Combined data files

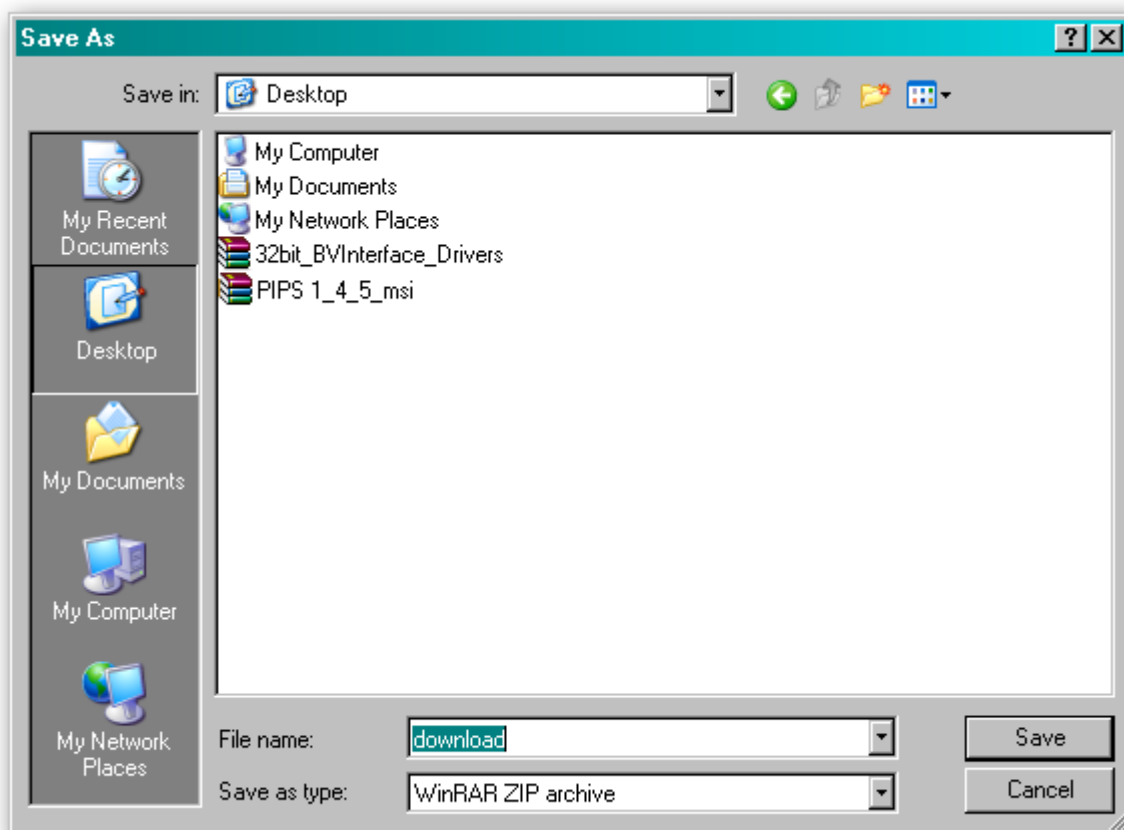
The firmware and dataset files for the NV11 validator are combined into a single file, so both will be updated when you carry out the update.



After selecting the dataset, a dialog will prompt you to save or open the file: select the **Save** option

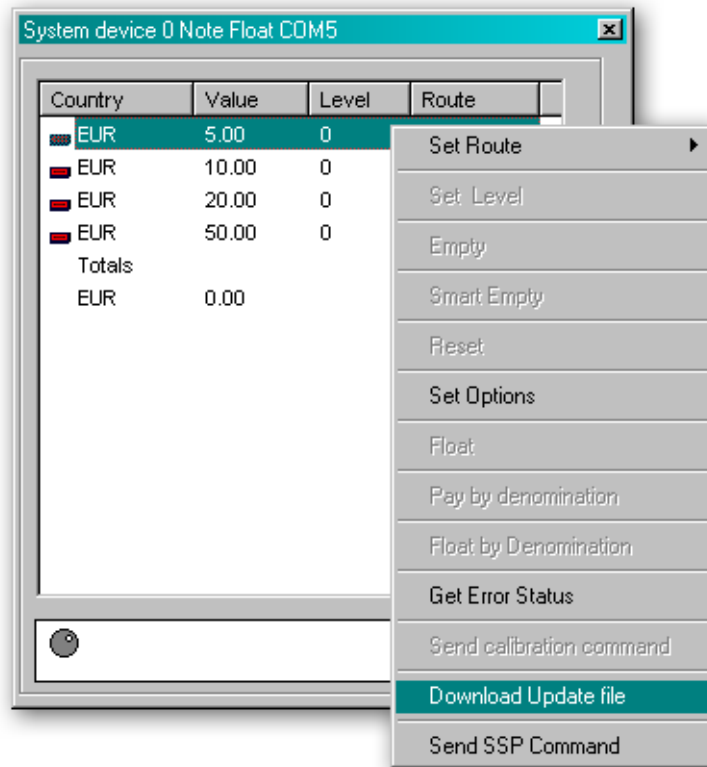


You can then choose where to save the file – choose a location that is convenient for you:

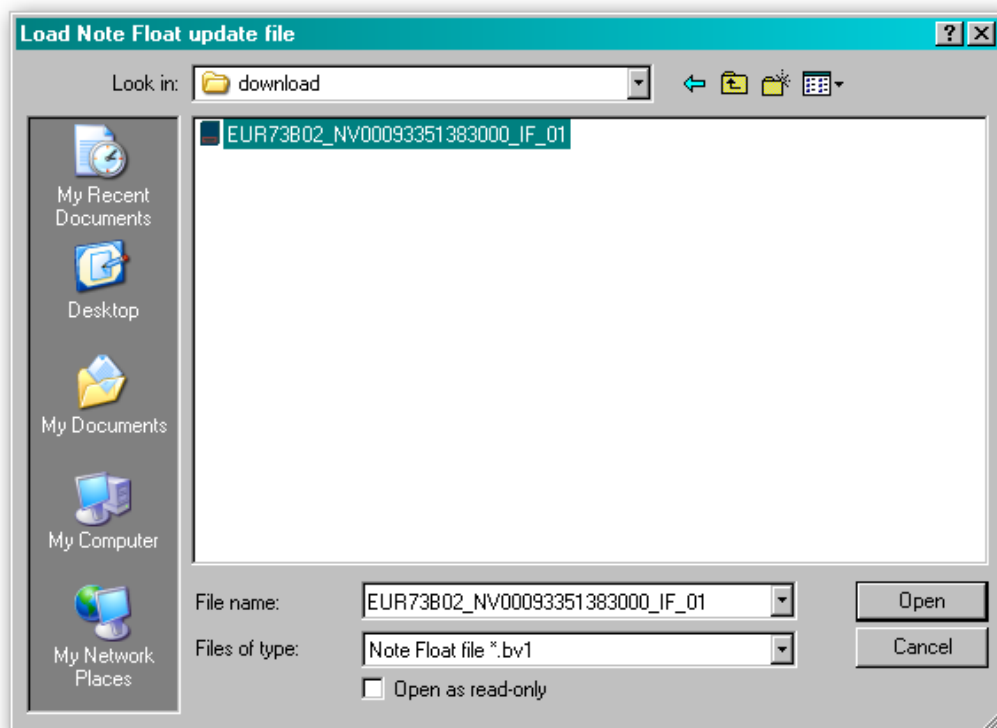


Once the dataset file is saved, unzip the file and you can then start the process to update the NV11 validator by connecting the USB cable and starting the PiPS software as described previously.

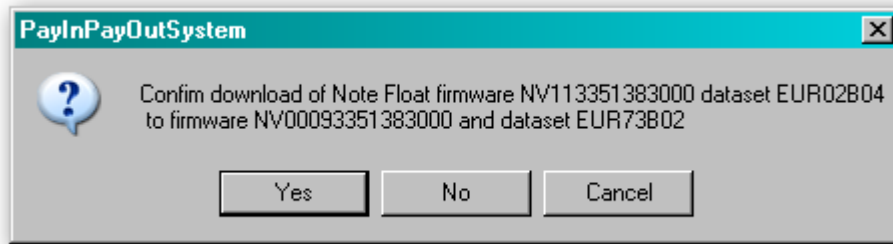
With the PiPS software in 'Halt' mode, right click on one of the currency entries and select 'Download Update File' from the dialog as shown here:



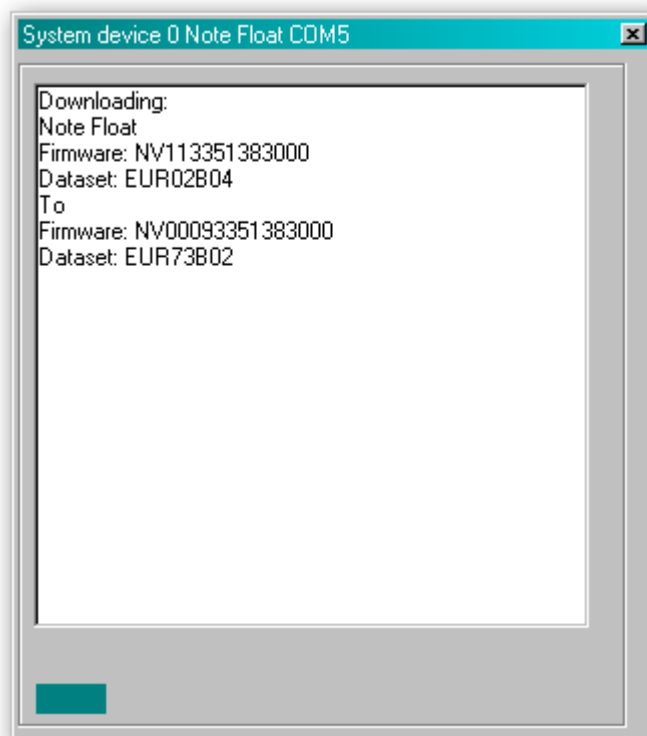
You will then be prompted to select the dataset file you downloaded and unzipped earlier – select the file and click the 'Open' button:



The PiPS software will then ask you to confirm that this is file you want to use to update the NV11 unit with – click the 'Yes' button to continue:



A new dialog will then appear showing the update status:



After the reset is complete, the NV11 validator will then be ready for use with the new currency.

3.3 Tools

3.3.1 Diagnostics

There is a dedicated software diagnostics tool for use with the NV11 validator called 'Bank Note Validator Diagnostics Tools', and this software can be downloaded from the Innovative Technology Ltd website:

Title	Version	File
Bank Note Validator Currency Manager	3.3.13	 
VPS (Validator Programming System)	1.0.16	 
SMART PIPS (Pay In Pay Out System)	1.4.5	 
Bank Note Validator Diagnostics Tools	1.0.4	 
DA2 Drivers - 32 bit		 
DA2 Drivers - 64 bit	1	 
BV Interface Driver Install - 32 bit	2	 
BV Interface Driver Install - 64bit	1	 
NV4 Currency Manager	2.5.3	 

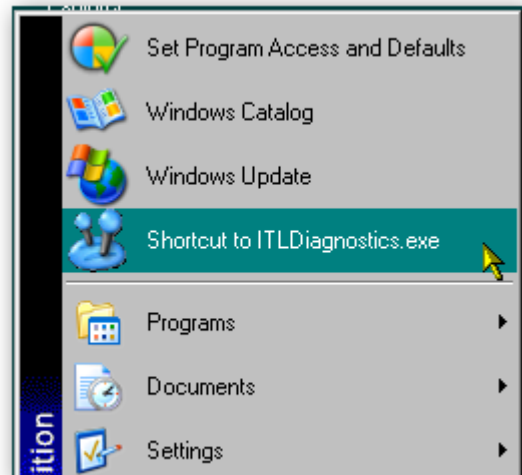
When the file download dialog box appears, click the 'Save' button and select a suitable location to save the file in:



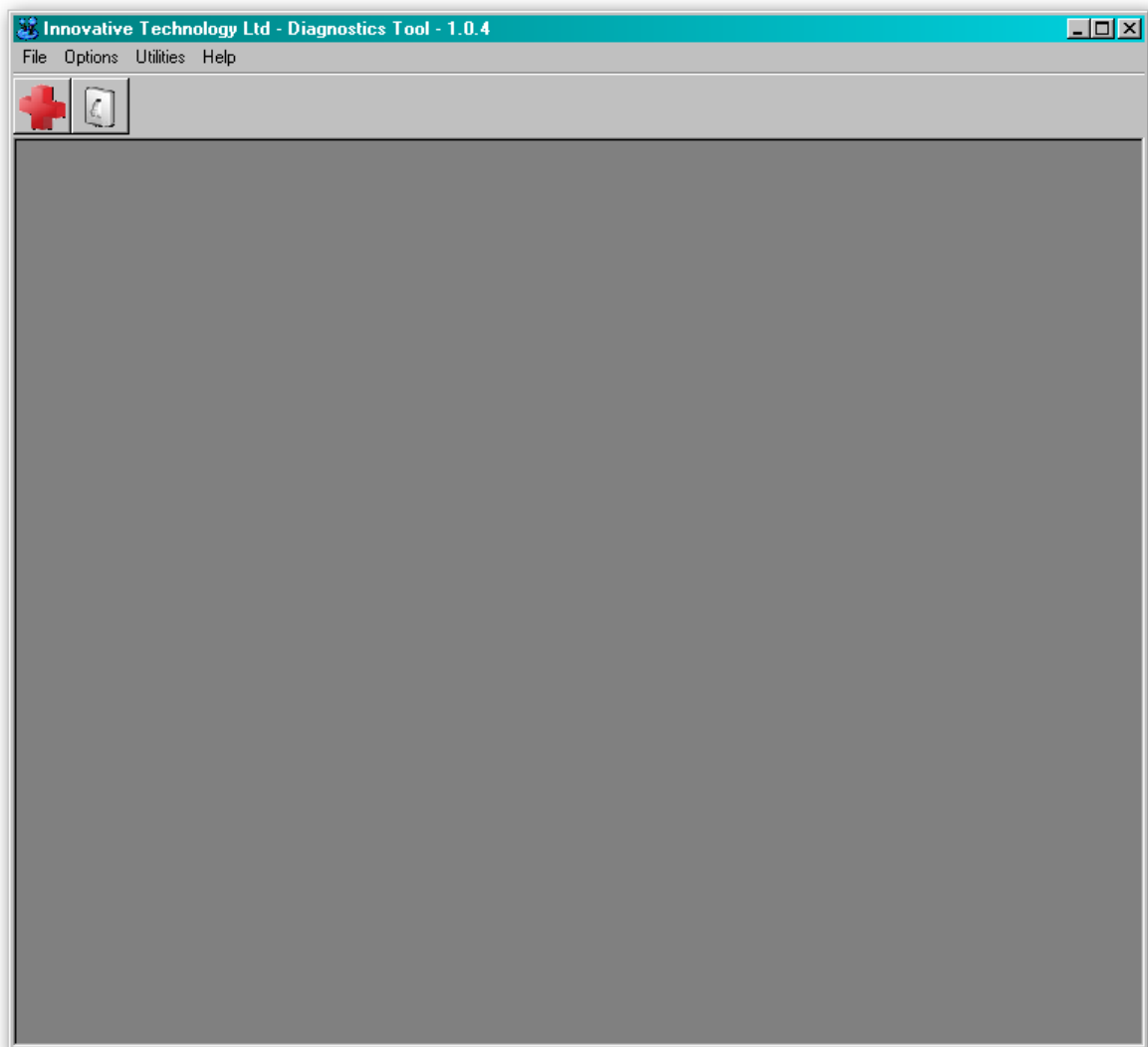
Installing the Diagnostics tools software is done in the same way as the PiPS software - Find the ITLDiagnosticsTools zipped file you just downloaded, extract the installation file from the zipped file and double click the extracted file (it has an .msi extension) – this will start the installation process.



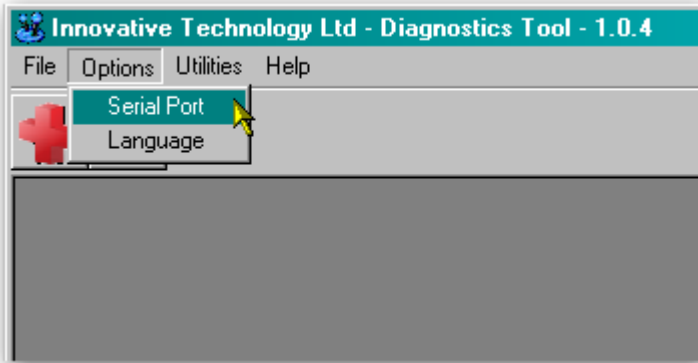
After installing the software, you can run the diagnostics software by selecting the 'Shortcut to ITL Diagnostics.exe' item near the top of the Windows Start menu. Make sure that the NV11 Validator is powered up and the USB cable is connected before starting the program.



The main screen of the diagnostics tools software looks like this:

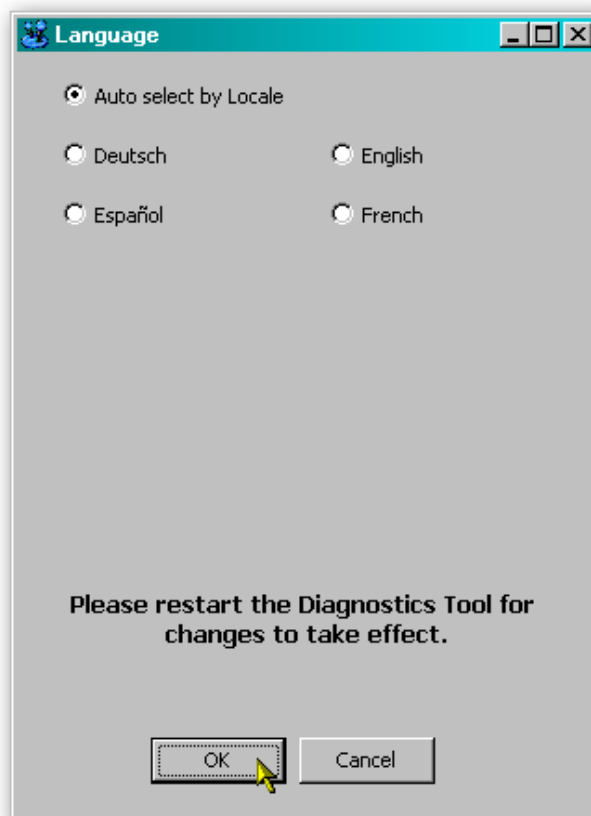


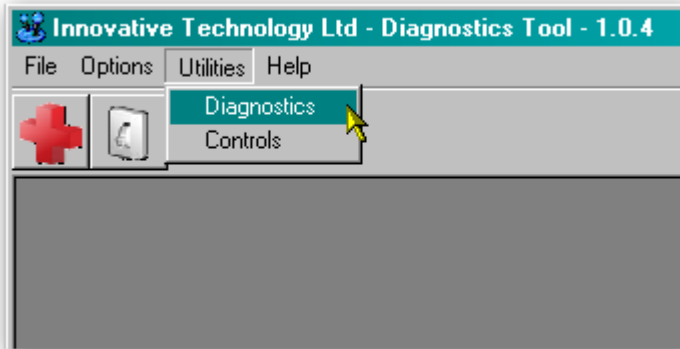
When running the software for the first time, you need to set a few options. These are accessed from the 'Options' menu:



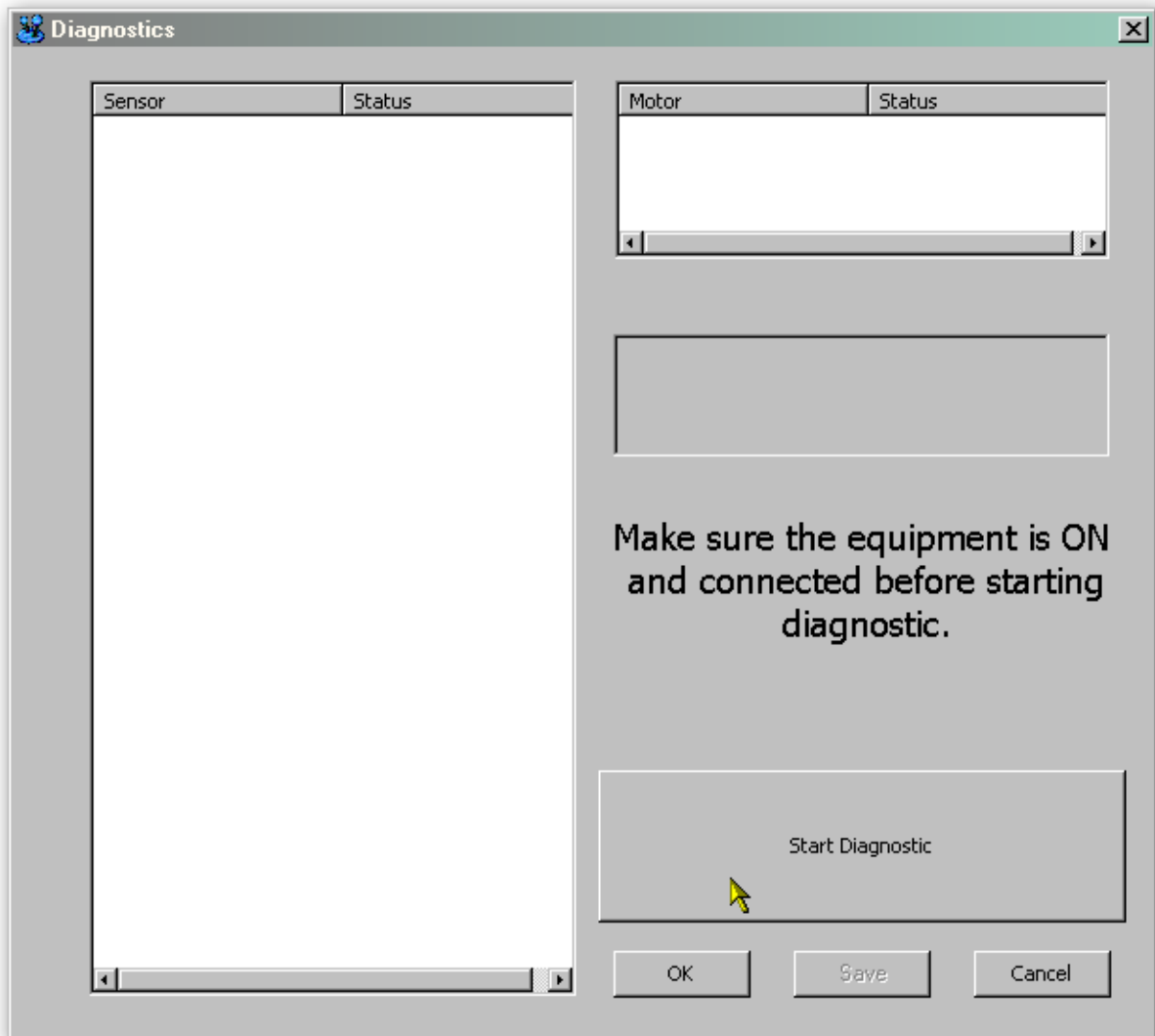
By selecting the 'Serial Port' item from the 'Options' menu you can define which serial port is being used to connect to the NV11 validator. After selecting this option, a new dialog box will open allowing you to choose the correct serial port.

Select the required port from the dropdown list, and then click the 'OK' button to confirm your selection. This will close the dialog box and allow you to select another option from the menu. You shouldn't normally need to change the language setting, as this is determined by the Windows locale settings. You can if you wish select one of four specific languages if needed, as shown below:





Select the 'Diagnostics' item from the 'Utilities' menu to start the diagnostics process (you can also start the diagnostics by clicking on the left hand icon below the menu bar) - this will open the Diagnostics screen:



Click the 'Start Diagnostic' button to start the diagnostic process. The software will then prompt you to insert a special piece of green diagnostics paper (ITL part number LB149). Insert the paper in the same way you would with a bank note – at the end of the diagnostics test the paper will be ejected.

Diagnostics Pass:

A summary of the validator type and related information is displayed here.

Motor test results are shown in this window.

The screenshot shows a software window titled "Diagnostics" with a teal header. It is divided into several sections:

- Sensor Test Results Table:** A table with two columns: "Sensor" and "Status". All 28 entries show "OK" in green text.
- Motor Test Results Table:** A smaller table with two columns: "Motor" and "Status". It lists "Motor Fwd", "Motor Rev", and "Stacker", all with "OK" in green text.
- Validator Information:** A text box containing: "Type NV9", "Serial Nb. 2817023", and "Firmware Ver. NV903331339000".
- Overall Test Result:** The word "PASSED" is displayed in large, bold, black letters.
- Buttons:** At the bottom, there are three buttons: "OK", "Save", and "Cancel". A "Start Diagnostic" button is located above the "OK" button.

The overall test result is displayed here.

Sensor test results are shown in this window.



Diagnostics Fail:

A summary of the validator type and related information is displayed here.

Motor test results are shown in this window – in this example all the motors have passed testing.

The overall test result is displayed here.

Sensor test results are shown in this window – in this example, several sensors have failed during the diagnostics test.

Sensor	Status
X2 UV Reflected 200	OK
X4 UV Reflected 200	OK
X1 IR Reflected 200	OK
X3 IR Reflected 200	OK
X2 IR Reflected 200	OK
X4 IR Reflected 200	OK
X1 Red Reflected 200	OK
X3 Red Reflected 200	OK
X2 UV Through 200	OK
X4 UV Through 200	OK
X2 IR Through 200	OK
X4 IR Through 200	OK
X1 Red Through 200	OK
X3 Red Through 200	OK
Card Read NV 1	OK
Card Read NV 2	OK
Front	OK
Start	FAIL
Rear Flag	FAIL
Roller one	OK
Stacker Home	OK
Stacker Opto	OK
Drive Opto	OK
Motor Stacker Full	OK
PSU Monitor	OK
Rear_Note_Detect	FAIL
NF_Sleeper	FAIL
NF_Note_Detect	FAIL
NF_Motor_Current	FAIL
Lens Position 1	FAIL
Lens Position 2	FAIL

Motor	Status
Motor Fwd	OK
Motor Rev	OK
Stacker	OK

Type NV9
Serial Nb. 2817023
Firmware Ver. NV903331339000

FAILED

Start Diagnostic

OK Save Cancel

Further details on how to use the diagnostics tools and interpret the results can be found in the program help file.

3.3.2 Connections

The NV11 validator has a single connector that is used to allow interfacing and programming.

Information

Power always required regardless of connection type.

Power is always required on pins 15 and 16 of the 16 way connector.

The connector is a 16 pin socket used to interface the NV11 to the host machine. The pin numbering of the socket is shown below, as well as an overview of the socket connections:



Pin	Description
1	Serial Data Out (Tx)
5	Serial Data In (Rx)
11	USB Data +
12	USB Data -
13	USB Power (+5V)
15	+ V
16	0V / Ground Connection

To use a USB connection with the NV11, a USB cable fitted with a 16 way connector on one end (ITL Part Number CN00392) should be used. The CN00392 cable fits into the 16 way connector and allows high speed programming and serial communications when used in SSP and ccTalk modes. When using the USB connection, power must be supplied to the NV11 using the red and black power leads on the CN00392 cable.

The socket connections for the natively supported protocols are shown in the tables below, as is a summary of the interface units needed for other types of operation:

WARNING!

Risk of unit damage

Do not make any connections to the interface socket pins marked '**Do not connect**' – making connections to these pins could cause severe damage to the unit.



NV11 SSP Interface:

Pin	Name	Type	Description
1	TxD	Output	Serial data out (Tx)
2	Factory use only		Do not connect
3			
4			
5	RxD	Input	Serial data in (Rx)
6	Factory use only		Do not connect
7			
8			
9			
10			
11	USB D+	Data	USB Data +
12	USB D-	Data	USB Data -
13	USB Vcc	Power	USB +V (+5V)
14	Factory use only		Do not connect
15	V In	Power	+V
16	GND	Ground	GND

NV11 ccTalk Interface:

Pin	Name	Type	Description
1	TxD	Output	ccTalk data – must also be connected to pin 5
2	Factory use only		Do not connect
3			
4			
5	RxD	Input	ccTalk data – must also be connected to pin 1
6	Factory use only		Do not connect
7			
8			
9			
10			
11	USB D+	Data	USB Data +
12	USB D-	Data	USB Data -
13	USB Vcc	Power	USB +V (+5V)
14	Factory use only		Do not connect
15	V In	Power	+V
16	GND	Ground	GND



3.4 Frequently Asked Questions

a. Why are there no DIP switches on the unit?

- The NV11 has no dipswitches. Configuring the unit is carried out using a configuration button mounted on the front of the Note Float module – see Section 1, subsection 1.5 of this manual set for more information.

b. Are 64 bit drivers available?

- Both 32 and 64 bit drivers can be downloaded from the 'Support' section of the ITL website – please make sure that you are using the correct type of driver for your Operating System.

c. Some or all notes are not accepted

- Check that no inhibits are set in the PiPS software. If the problem persists, contact ITL Support for further assistance.

