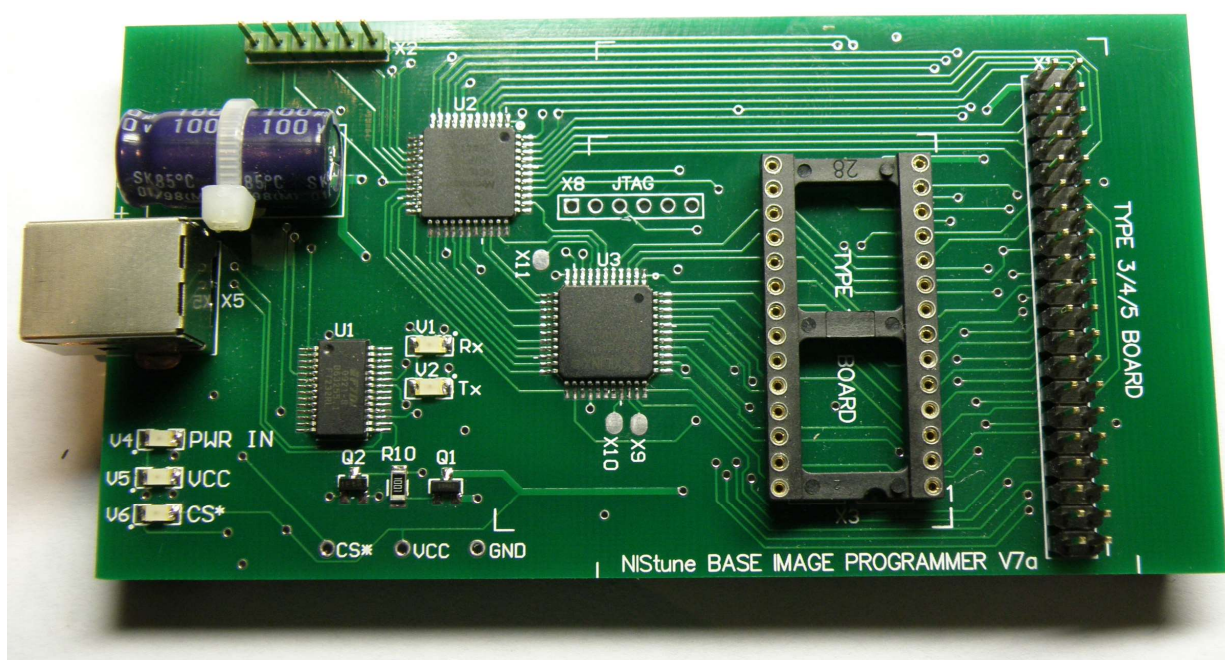




BASE IMAGE PROGRAMMER



Nistune Base Image Programmer - Users Guide

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INTRODUCTION

Base Image Programmer

All Nistune real-time boards require the “base image” (ENT) file to be programmed before they can be used. The base image is the Nissan ECU ROM code (BIN) file plus the Nistune firmware to allow the board to be retuned in realtime

Normally the board is programmed by Nistune or a distributor prior to shipping. It cannot be altered by the end user without using a base image programmer.

Professional tuners who purchase multiple boards may find it necessary to change the base image, so we have made the programmers available for this purpose.

Installation

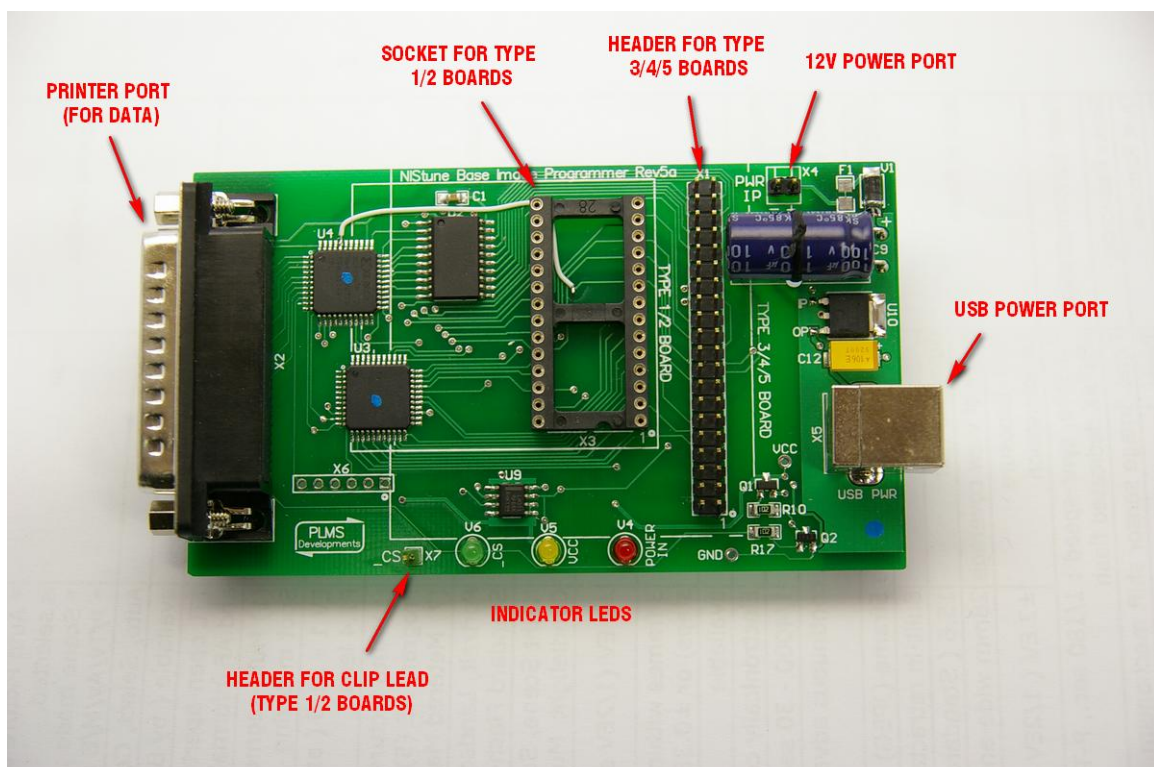
NTProg installation is covered in a separate document. Please refer to the NTProgCE installation document on our website prior to using the base image programmer in this document

Versions

Base image programmers come in two varieties:

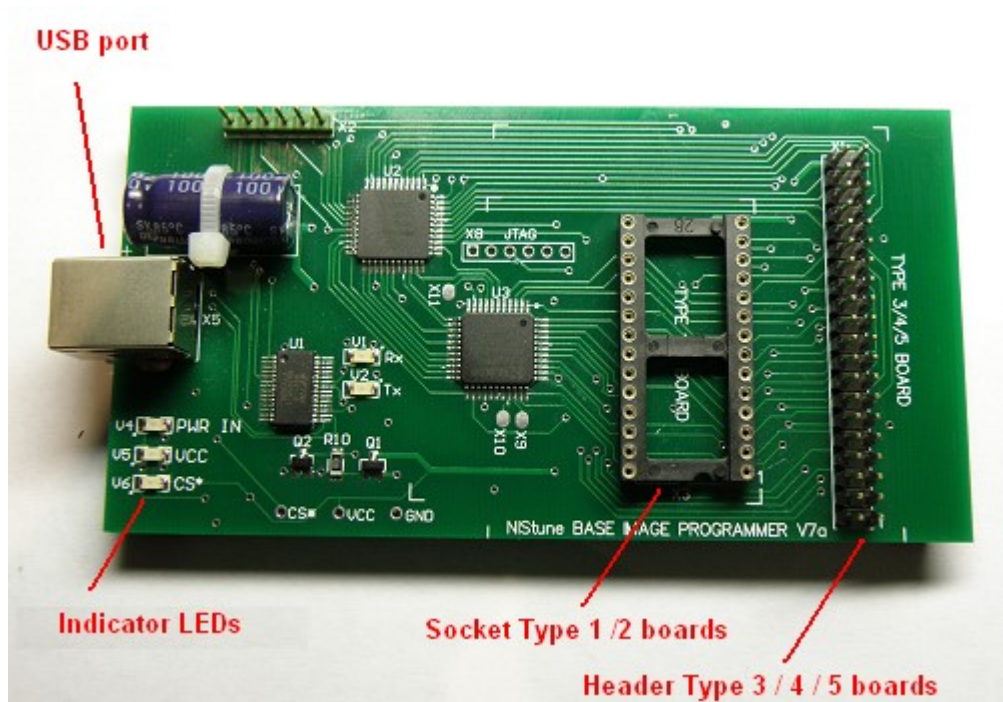
Parallel port version: (Revision 3 - Revision 5B)

The programmers are driven from the parallel (printer) port of a laptop/desktop PC for earlier models (upto Rev5B). Power is provided separately and may be taken from either an external 12V source (8V to 18V is acceptable) or from a USB port.



USB version: only on later models (Rev 7 upwards)

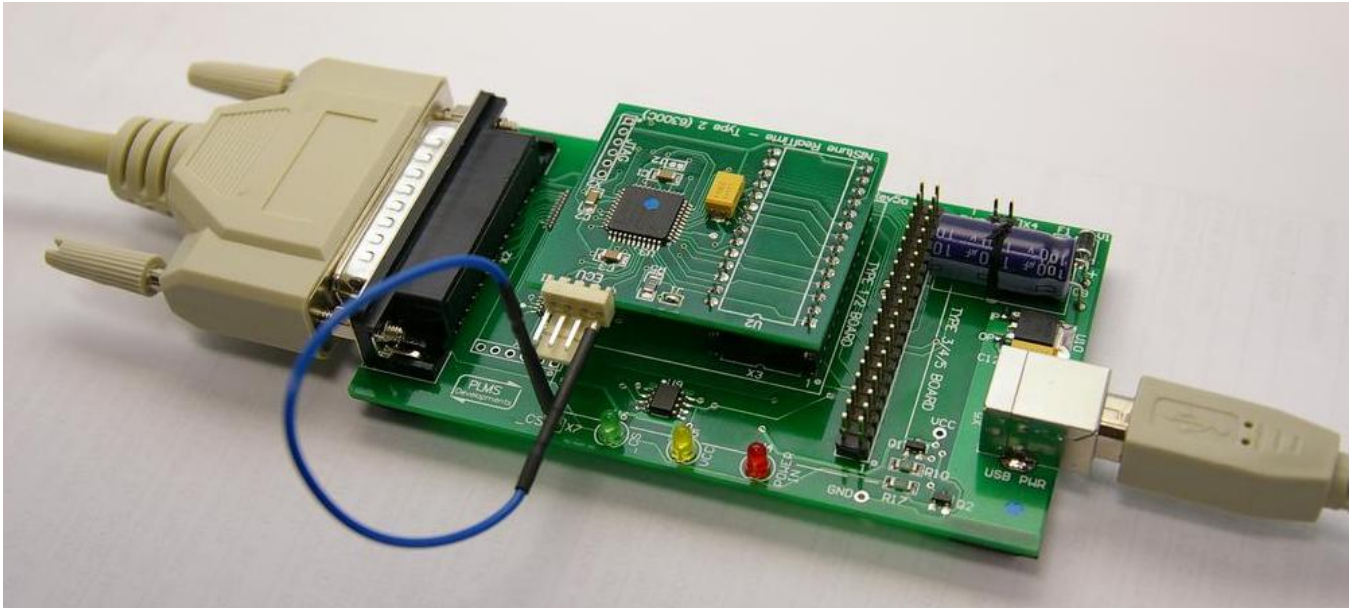
USB Version:
(Revision 6 onwards)



Indicator LEDs		
V4	Red	Programmer Power
V5	Yellow	Board Power
V6	Green	Data Transfer

Parallel Port Programmer

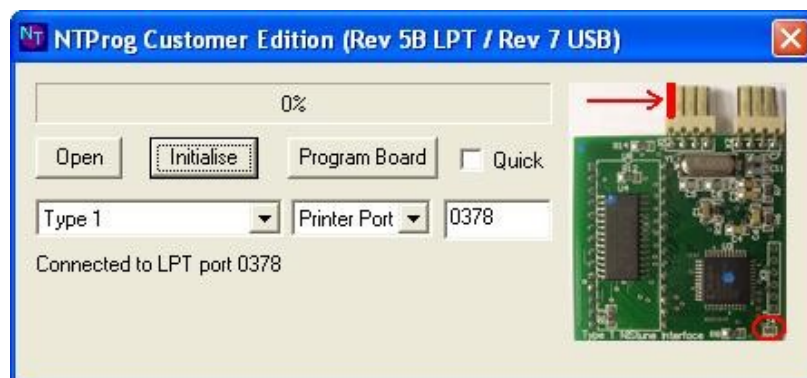
Programming 8 Bit (Type 1 / 2) boards



1. Before fitting Nistune board to programmer, solder across the two pads of the “PGM” solder link on the Nistune board.

**** Do NOT attempt to solder the link after the board is fitted to the programmer or damage to board/programmer/PC may result ****

2. Connect printer cable between computer and programmer.
3. Boot up computer, start NTprog application (available for download from NISTune website www.nistune.com)
4. Connect power to programmer by using either the USB cable or by supplying 12V from an external supply to the 12V header pins. Verify that “Power” LED V4 is on.
5. Check that your computer is communicating with the programmer by selecting 'Printer port' as the port. *Note: If you are using a different port number to default (0378h) then put this in the port box instead. Only required where the PC has more than one printer port*
6. Test the programmer by pressing 'Initialise' button and the LEDs on the programmer should flash on and off. The power (RED) LED will remain lit whilst there is power.



6. Upon successful initialisation the lights on the Base Image Programmer will flash and Nistune will report 'Connected to LPT port. If you have a failure then there are several things you can check on your PC:

- (a) Check your printer port works with other devices (printers, EPROM programmer etc)
- (b) Check your DriverLynx printer port drivers were installed correctly
- (c) Check your printer port cable is working. Sometimes a single wire in these cables can break and cause the programmer not to connect
- (d) Check your base image programmer has correct power (12 volts on PWR IF) or 5V USB voltage from the same PC as the printer port.
- (e) You cannot use USB-Printer port adaptors or other equipment to emulate a printer port with these programmers

7. Fit Nistune board to be programmed. There is no need to push the board all the way into the socket – a gentle push will usually be enough to make reliable contact. If you do push the board all the way into the socket you'll need to lever it out with a suitable blade screwdriver after programming. They can be quite tight when new.

**** Be careful with the pins when fitting/removing the board as they are easily damaged ****

8. Fit a clip lead between programmer X7 (_CS) and X1 pin 4 of the Nistune board.

Note that this is only required on earlier programmers (earlier than rev5B) and older Nistune boards (earlier than Rev2 Type 1, Rev2 Type 2).

Rev5B programmers used with latest Type 1 and Type 2 boards do not require this as an extra line was added internally to avoid requiring the clip lead.

9. Select the board Type from the drop down list

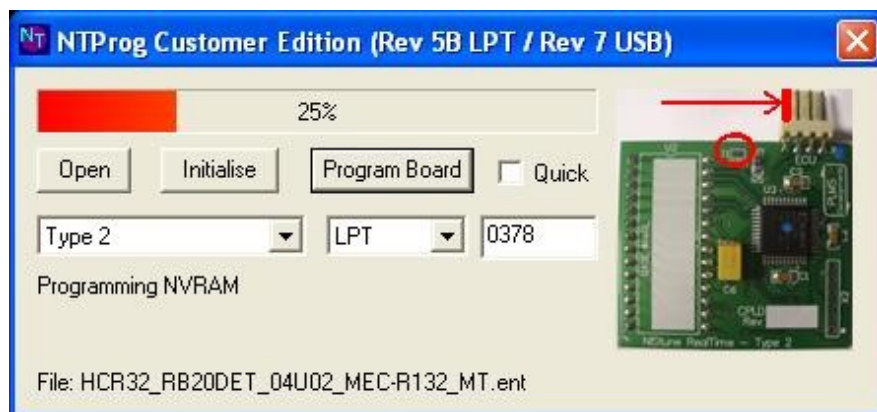
10. Load the ENT file from the ROM pack to program in the board. Generally the part number on the ECU should match the board fitting the ECU. However you can use later revision part numbers:

23710-XXXyz where y normally 0=MT, 1=AT, 6=MT later, 7 = AT later, z = revision ID

* Where available use the Feature Pack firmware (23710-XXXyF or XXXyG)

11. Press 'Program Board'

- VCC and _CS LEDs will light as programming takes place.
- Progress bar will indicate that programming is occurring.



12. Following programming, the image is burnt to the board and then power temporarily removed and then verification will proceed

13. Programming is now complete.

14. Remove board from programmer - make sure VCC LED is off before removing.

**15. Remove “program” solder link J1
(Don’t forget this step or the board will not run in the ECU)**

Diagnostics: See end of document

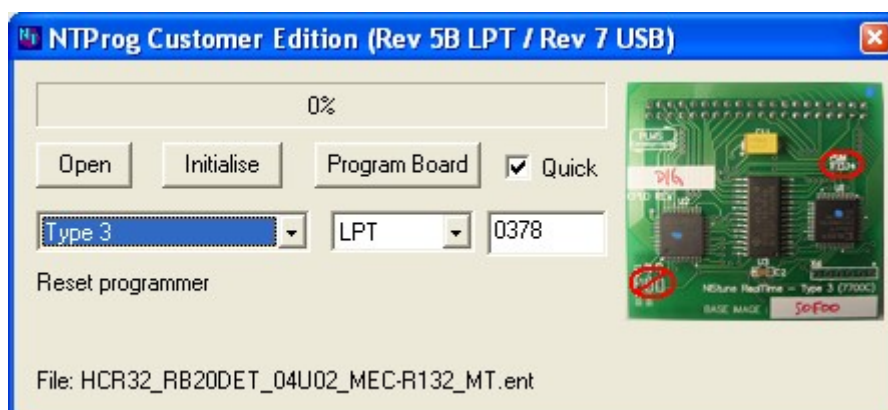
Programming 16 Bit (Type 3 / 4) boards



1. Before fitting NISTune board to programmer, fit “PGM” solder link. Ensure that no other links are fitted.

Do NOT attempt to solder the link after the board is fitted to the programmer or damage to board/programmer/PC may result

2. Instructions are the same as for 8 bit boards except select Type 3 or Type 4 and then press 'Program Board'



3. Programming is now complete. Make sure VCC LED is off before removing board.
4. Remove “PGM” solder link. Fit solder link(s) J1, J2 J3 to select ECU type. Refer to Type 3 and Type 4 hardware installation manuals for exact jumper settings.

Don't forget this step or the ECU will not run!

Diagnostics: See end of document

USB Base Image Programmer

Installation Notes

Nistune NTProg software is designed to work with both parallel and USB base image programmers. NTProg uses Windows DriverLynx DLL files to support both programmer types.

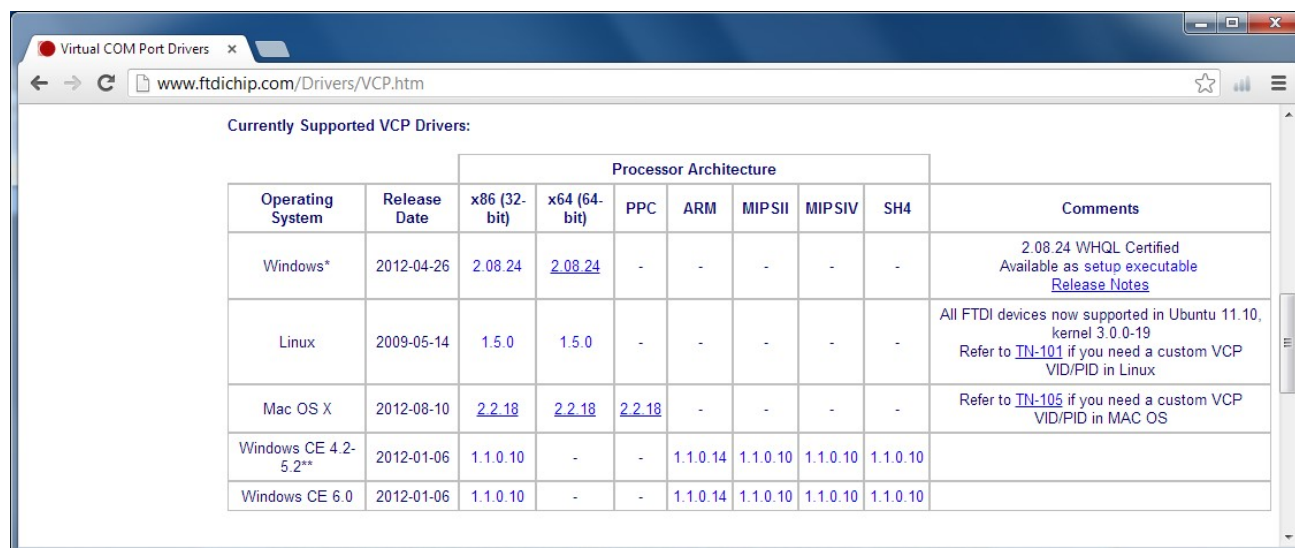
USB base image programmer will still require the DriverLynx drivers for parallel port during installation. Ignore any DriverLynx errors if they appear on your PC when running NTProg

USB Drivers Location

FTDI drivers must be installed to use your USB base image programmer. These must be downloaded from www.ftdichip.com

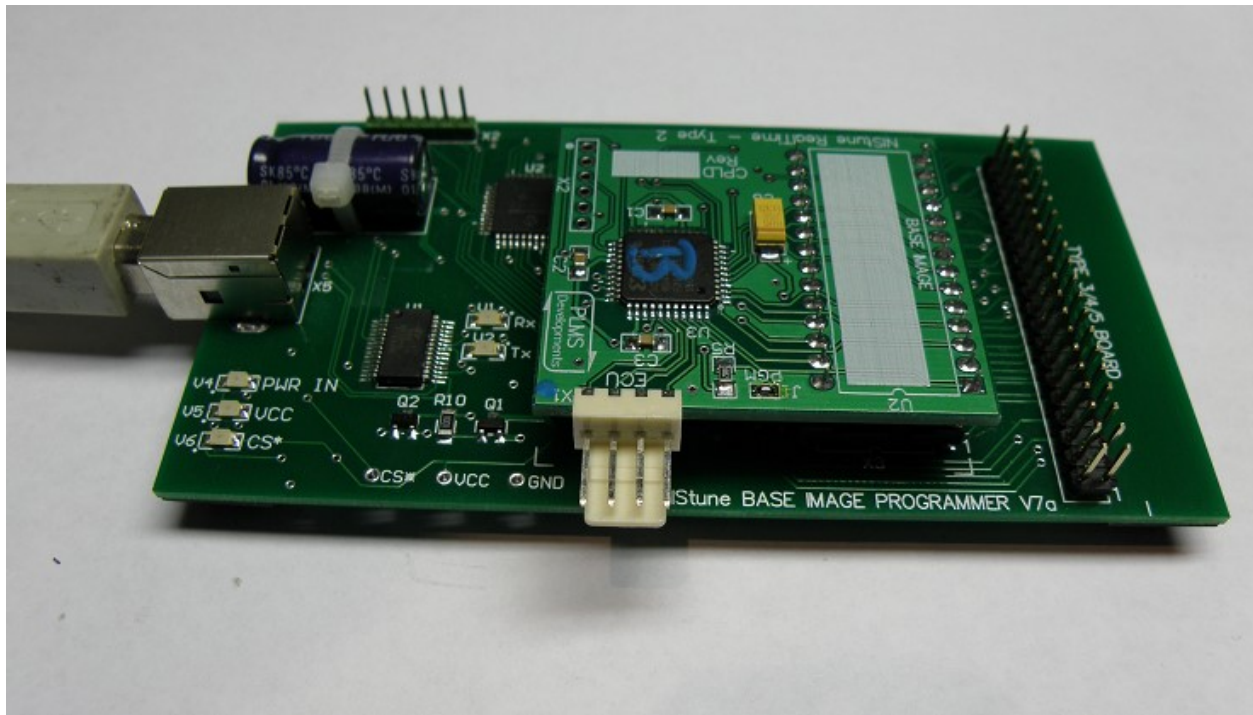
Download link location for release 2.08.24

<http://www.ftdichip.com/Drivers/VCP.htm>



Operating System	Release Date	Processor Architecture							Comments
		x86 (32-bit)	x64 (64-bit)	PPC	ARM	MIPSII	MIPSIV	SH4	
Windows*	2012-04-26	2.08.24	2.08.24	-	-	-	-	-	2.08.24 WHQL Certified Available as setup executable Release Notes
Linux	2009-05-14	1.5.0	1.5.0	-	-	-	-	-	All FTDI devices now supported in Ubuntu 11.10, kernel 3.0.0-19 Refer to TN-101 if you need a custom VCP VID/PID in Linux
Mac OS X	2012-08-10	2.2.18	2.2.18	2.2.18	-	-	-	-	Refer to TN-105 if you need a custom VCP VID/PID in MAC OS
Windows CE 4.2-5.2**	2012-01-06	1.1.0.10	-	-	1.1.0.14	1.1.0.10	1.1.0.10	1.1.0.10	
Windows CE 6.0	2012-01-06	1.1.0.10	-	-	1.1.0.14	1.1.0.10	1.1.0.10	1.1.0.10	

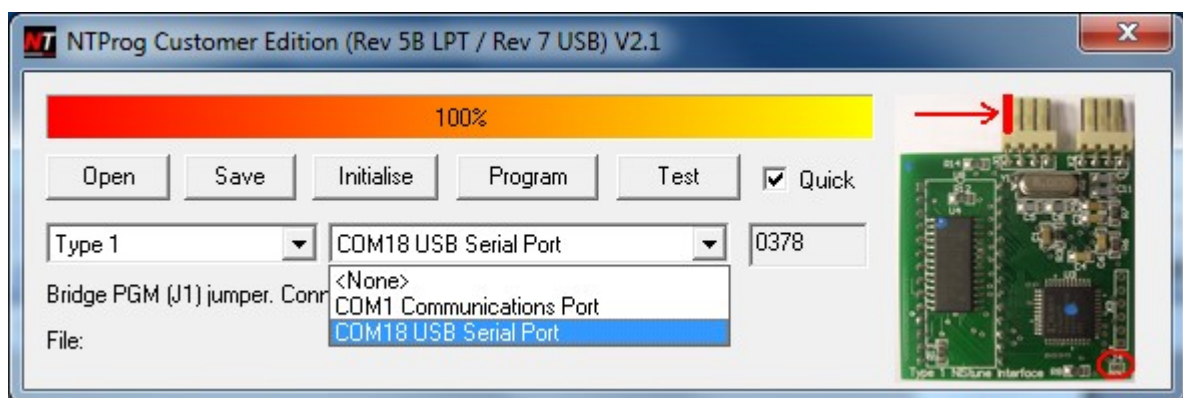
Programming 8 Bit (Type 1 / 2) boards



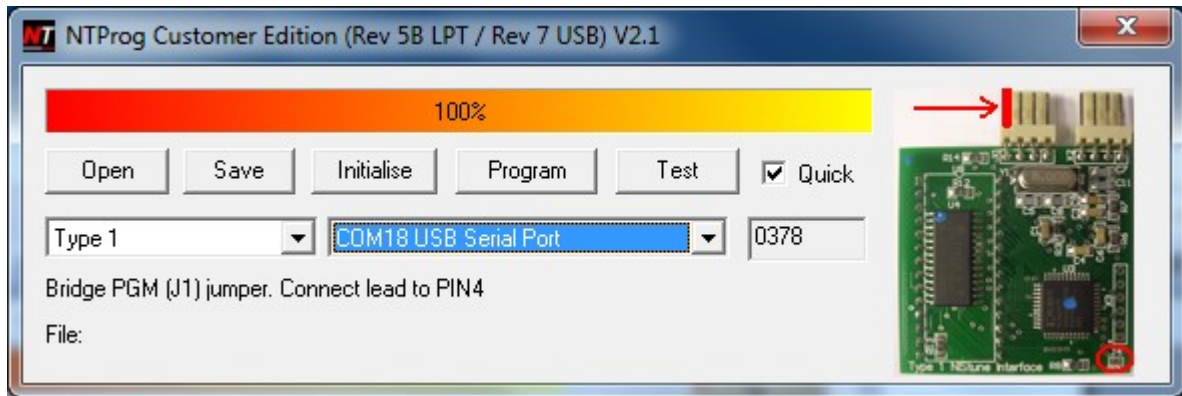
1. Before fitting NISTune board to programmer, solder across the two pads of the “PGM” solder link on the Nistune board.

**** Do NOT attempt to solder the link after the board is fitted to the programmer or damage to board/programmer/PC may result ****

2. Connect USB cable between computer and programmer. Ensure drivers are installed correctly and you know the COM port number allocated for the programmer (inside Device Manager). Verify that “Power” LED is on.
3. Start NTprog application (available for download from NISTune website www.nistune.com)
4. Select the COM port for the programmer from the list available. This list collects devices connected to your PC when NTProg was started.



5. When the COM port has been selected the lights on your programmer should flicker and communication status will appear

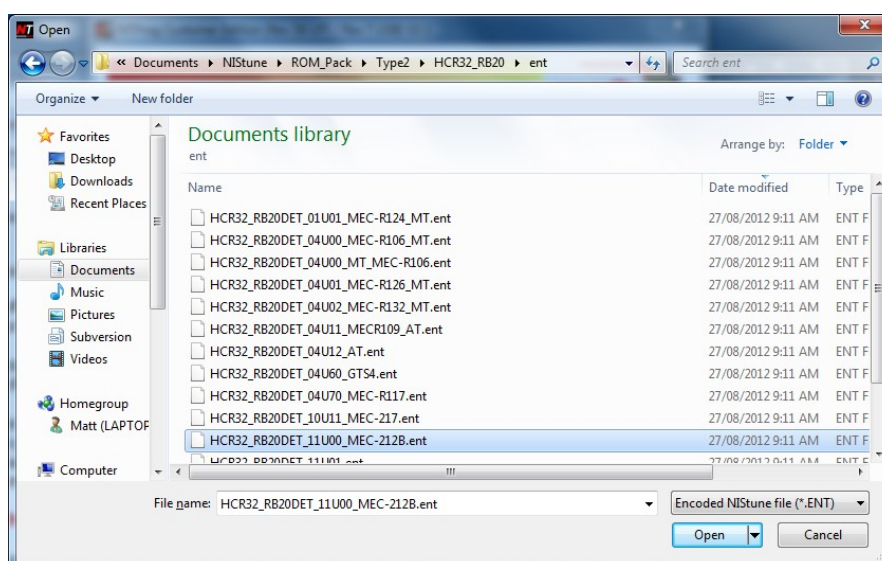


5. If you see anything other than 'connected to COMx' then you may have selected the wrong device on your PC. COM3 is typically reserved for Internal Modem on some laptops
6. Test the programmer by pressing 'Initialise' button and the LEDs on the programmer should flash on and off. The power (RED) LED will remain lit whilst there is power.
7. Fit the Nistune board to be programmed. There is no need to push the board all the way into the socket – a gentle push will usually be enough to make reliable contact. If you do push the board all the way into the socket you'll need to lever it out with a suitable blade screwdriver after programming. They can be quite tight when new.

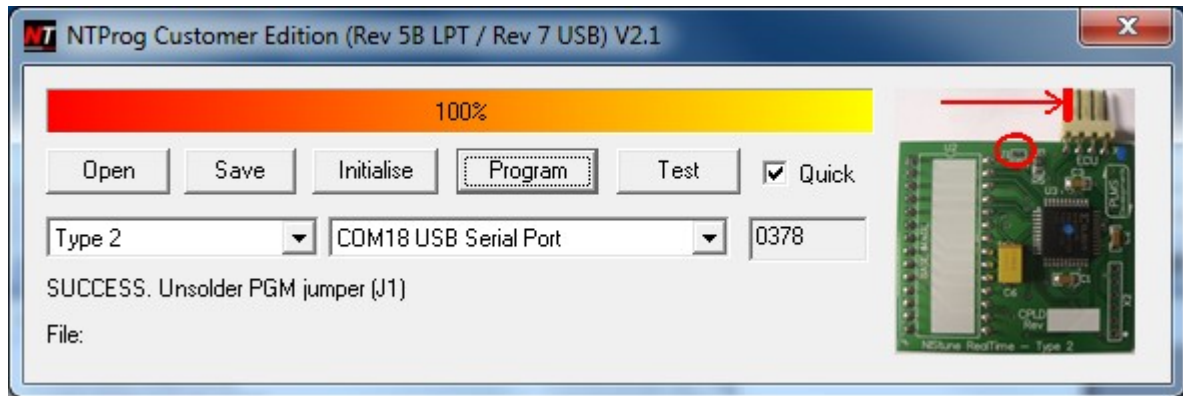
**** Be careful with the pins when fitting/removing the board as they are easily damaged ****

8. Note if your Type 1 or Type 2 board is an older board (earlier than Rev2 markings) then you will require a clip lead to use with the programmer. Contact Nistune developments for more information.

8. Select the board Type from the drop down list
9. Load the ENT file from the ROM pack to program in the board. Generally the part number on the ECU should match the board fitting the ECU.



10. Press 'Program Board'
 - VCC and _CS LEDs will light as programming takes place.
 - Progress bar will indicate that programming is occurring.



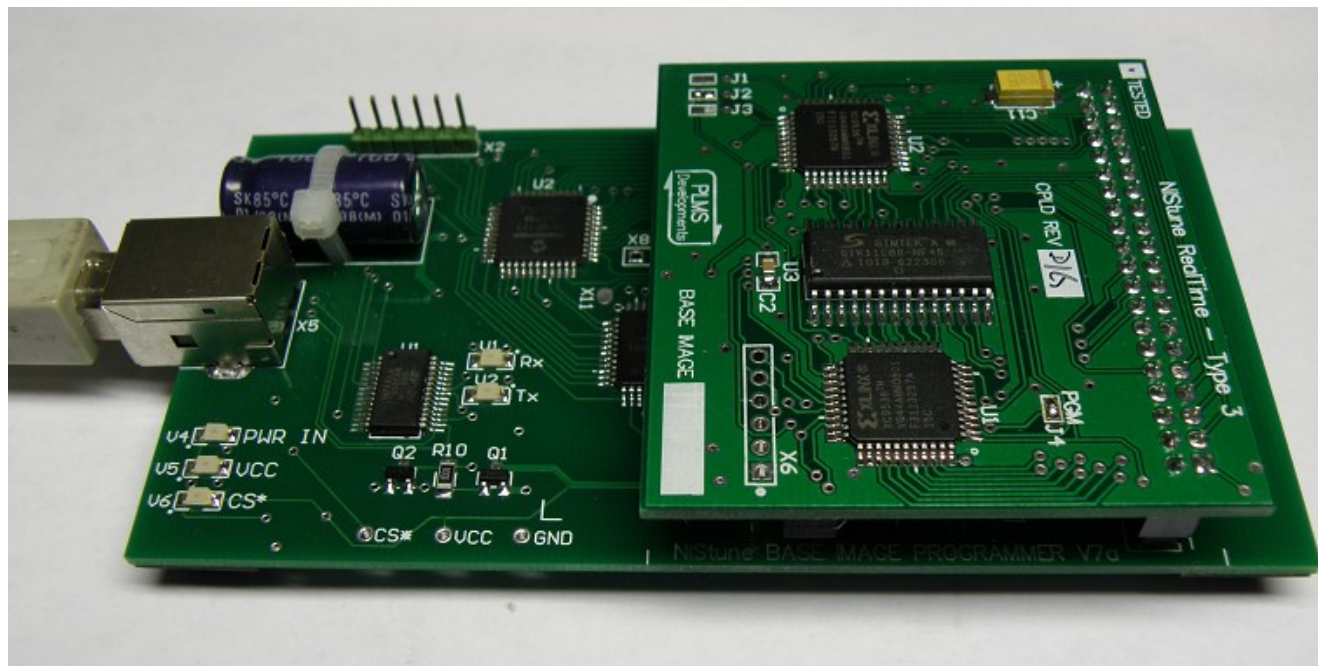
11. Following programming, the image is burnt to the board and then power temporarily removed and then verification will proceed

12. Programming is now complete.

13. Remove board from programmer - make sure VCC LED is off before removing.

**14. Remove “program” solder link PGM
(Don’t forget this step or the board will not run in the ECU)**

Programming 16 Bit (Type 3 / 4 / 5) boards



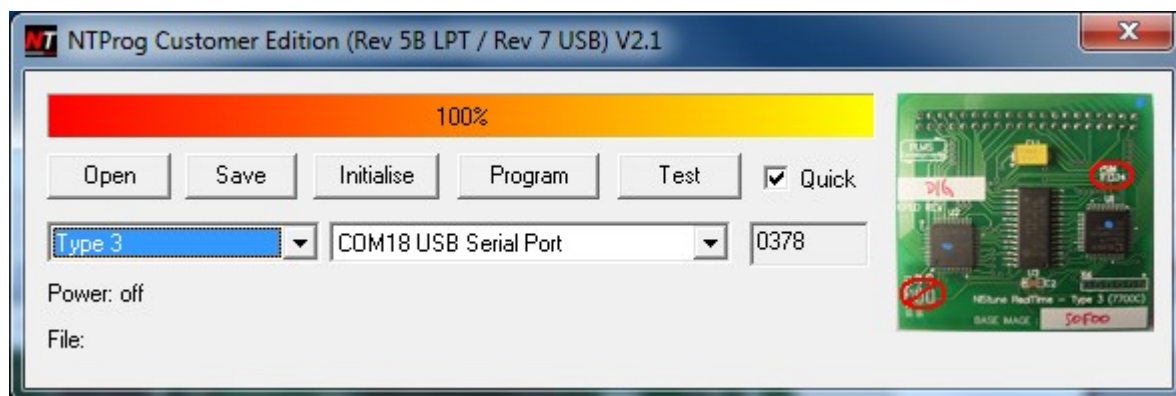
IMPORTANT NOTICE:

Type 5 boards require upgraded PIC firmware. Revision 11 firmware must be programmed on the base image programmer board. This firmware is available from March 2013 and boards will be marked with this revision. For upgrade information contact Nistune Developments.

1. Before fitting NISTune board to programmer, connect the “PGM” solder link.
2. Type 3 and Type 4 board, ensure that other JMP links (J1-J3) are not connected. Type 5 boards ensure that all JMP links are open (J1-J8)

Do NOT attempt to solder the link after the board is fitted to the programmer or damage to board/programmer/PC may result

3. Instructions are the same as for 8 bit boards except select Type 3, Type 4 or Type 5 and then press 'Program Board'



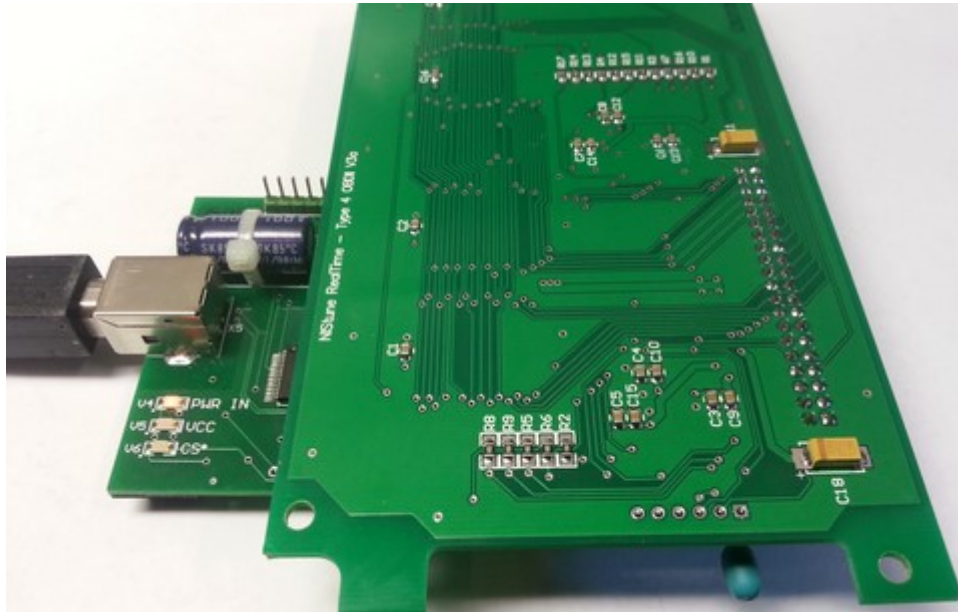
4. Programming is now complete.
5. Remove “PGM” solder link.

6. Type 3 and Type 4 boards: Fit solder link(s) J1, J2 J3 to select ECU type. Refer to Type 3 and Type 4 hardware installation manuals for exact jumper settings.
7. Type 5 board. Depending on ECU, Install resistors (as required) as per the Type 5 hardware installation manual

Don't forget this step or the ECU will not run!

Diagnostics: See end of document

Programming 16 Bit (Type 4 - 1996+ OBDII) boards



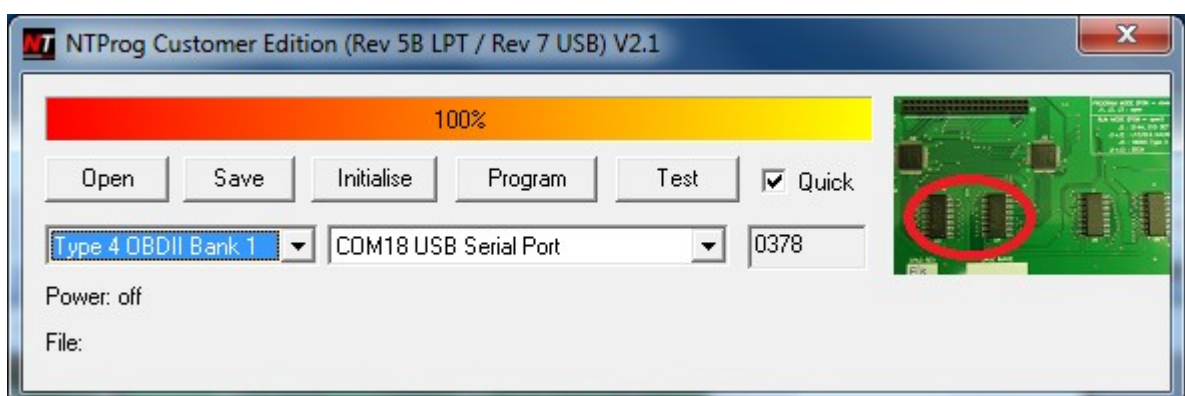
IMPORTANT NOTICE:

Type 4 OBD-II boards require upgraded PIC firmware. Revision 11 firmware must be programmed on the base image programmer board. This firmware is available from March 2013 and boards will be marked with this revision. For upgrade information contact Nistune Developments.

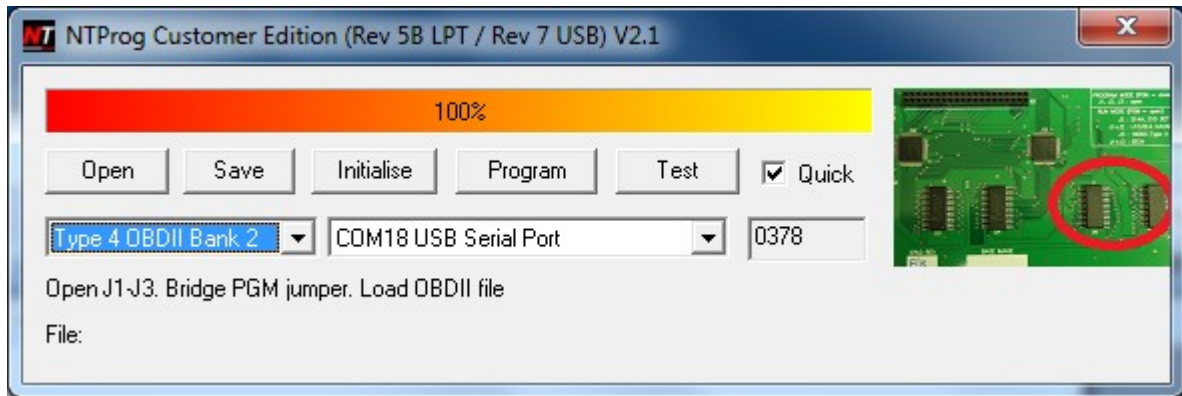
1. Before fitting Nistune board to programmer, connect the "PGM" solder link.
2. Ensure that other JMP links (J1-J3) are not connected.

Do NOT attempt to solder the link after the board is fitted to the programmer or damage to board/programmer/PC may result

3. Instructions are the same as for 8 bit boards except there are two banks on the Type 4 OBD-II board to be programmed. Firstly select "Type 4 OBD-II bank 1" and open the matching Bank1 ENT file for the ECU.



4. Once programming has completed for Bank 1, select "Type 4 OBD-II bank 2" and open the matching Bank2 ENT file for the ECU.



5. Now programming is complete.
6. Remove “PGM” solder link.
7. Fit solder link(s) J1, J2 J3 to select ECU type. Refer to the Type 4 hardware installation manual for exact jumper settings.

Don't forget this step or the ECU will not run!

Diagnostics:

Write Fail / Write Verify Fail

Occurs when attempt to write to the board has resulted in read back not matching what was written.

This can be caused by:

- The PGM jumper not being completely desoldered

=> Double check PGM jumper under magnifying glass

- Other jumpers on Type 3 or Type 4 boards still being soldered

=> Open up all other jumpers

- Using an older Rev 1 Type 1 board or Type 2 board without hook up cable.

=> Check the Rev ID of the board (bottom of board in green). You can use a hookup line from CS line to pin 1 on the Type 1/2 board as per this manual (printer programmer - 8 bit boards). Otherwise contact Nistune Developments for assistance. Only boards manufactured in 2008 have these revision identifiers

- Fault with the Nistune board

=> Check using another Nistune board with the programmer to see if that programs. If so then contact Nistune Developments. We preprogram each board and test in an ECU before shipping out to customers

- Parallel port issues

=> Some PC parallel ports have issues with the line levels used to control our programmer board. It can cause failures. We recommend trying a different PC in this case

- Parallel port BIOS settings

=> Enter your BIOS settings and ensure that LPT port is Normal or ECP and then try again. Ensure that port number of your parallel port matches the port number in NTProg. Default is 378H but when using a PCI parallel port card this may change. Drivers only support 32 bit Windows.

- Printer port cable

=> Some times printer port cables end up with a broken wire or connector. Try another printer port cable

- Printer port power supply

=> Ensure your power supply is working. 5V USB voltage or 12V regulated DC voltage into the older programmer boards.

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