

SECTION 1

NV9 USB MANUAL SET

QUICK START AND CONFIGURATION GUIDE

INTELLIGENCE IN VALIDATION

Innovative Technology assume no responsibility for errors, omissions, or damages resulting from the use of information contained within this manual.

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1. QUICK START AND CONFIGURATION GUIDE

This section is one part of a complete manual set: most users should use this section of the manual - typical users are software engineers looking at how to make it work, project engineers evaluating their first unit, or installation engineers installing the unit into a host machine.

This section contains the essential information that a user needs to quickly assemble and configure the NV9 USB validator ready for installation into the host machine.



Information

Validator compatibility.

The NV9 USB validator is pin for pin compatible with the NV7 / NV8 / NV9 / NV10 series of validators, but **NOT** with earlier versions of the product (NV2 – NV5).

1.1 Assembly

Installing the NV9 USB is a simple operation; the validator can be installed **vertically** or **horizontally**, depending on the type of cashbox fitted or orientation needed:

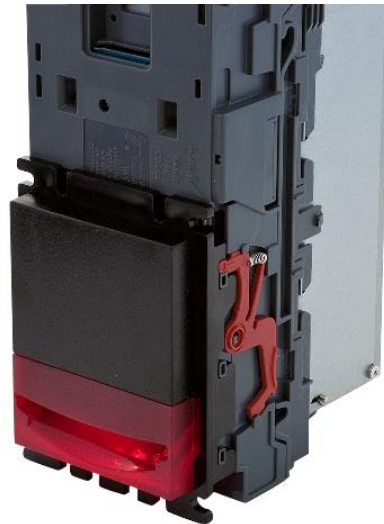
1. If the validator is fitted with a clip-on cashbox, then the validator will be mounted **VERTICALLY**



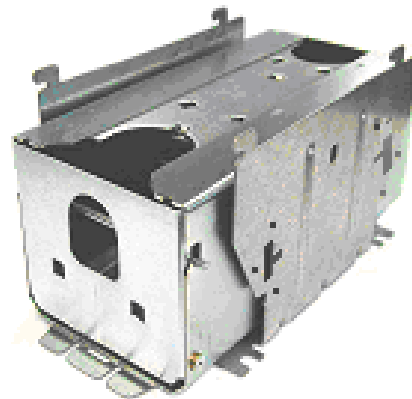
2. The validator is secured in the host machine using a suitable vertical bezel



3. The cashbox is attached to the validator by locating and sliding until the cashbox is clipped securely



4. If the validator is fitted with a slide-on cashbox, then the validator can be mounted HORIZONTALLY or VERTICALLY



5. The validator will be fitted with a suitable horizontal or vertical bezel



6. The cashbox housing is mounted in the host machine with the NV9 USB mounted on top. The cashbox is then slid into the housing until it is securely clipped.



7. If the validator is fitted with an NV11 standard cashbox, then the validator will be mounted HORIZONTALLY



8. The validator will be fitted with a suitable horizontal bezel



9. The cashbox is attached to the validator by locating and sliding until the cashbox is clipped securely



**Information**

Check website for options.

There are many variants of bezel and cashbox type available for the NV9 USB validator. Please check the ITL website (www.innovative-technology.co.uk) for up to date information on the options available.

The technical drawings which can be found at the end of this section show all the dimensional information needed to mount the unit.

**WARNING!**

Do not attempt disassembly

Do not attempt to disassemble the NV9 USB validator head – trying to do this could cause personal injury and will damage the unit beyond repair.

1.2 Bezel Removal and Refitting:

- The bezel is removed by pushing the red locking arms on both sides of the validator upwards, and sliding the bezel away from the locking arms

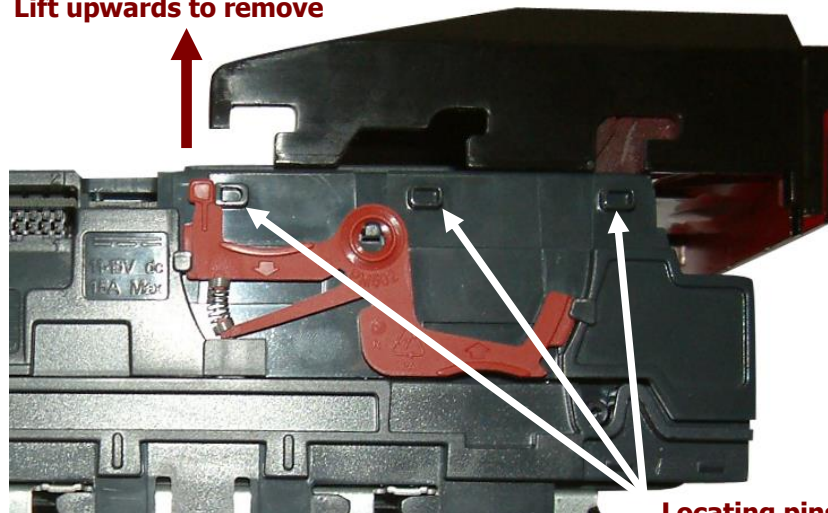
b. Slide bezel away from locking arms



a. Push locking arms upwards

- Lift the bezel off once the bezel has been slid fully across and is clear of the locating pins

Lift upwards to remove



Locating pins



The bezel is refitted by pushing the bezel back onto the locating pins and sliding backwards until all six pins are engaged in the slots. The locking arms will then spring back and locate into the bezel.

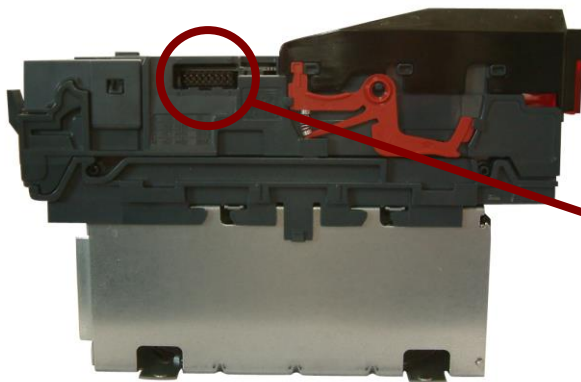
**Caution!**

Check locking arms.

Always make sure that **BOTH** locking arms are fully located in the bezel – trying to operate the validator if they are not correctly located can cause unit damage.

1.3 Interfacing

The connector needed to set up and interface the NV9 USB Validator is easily accessible on the side of the unit:

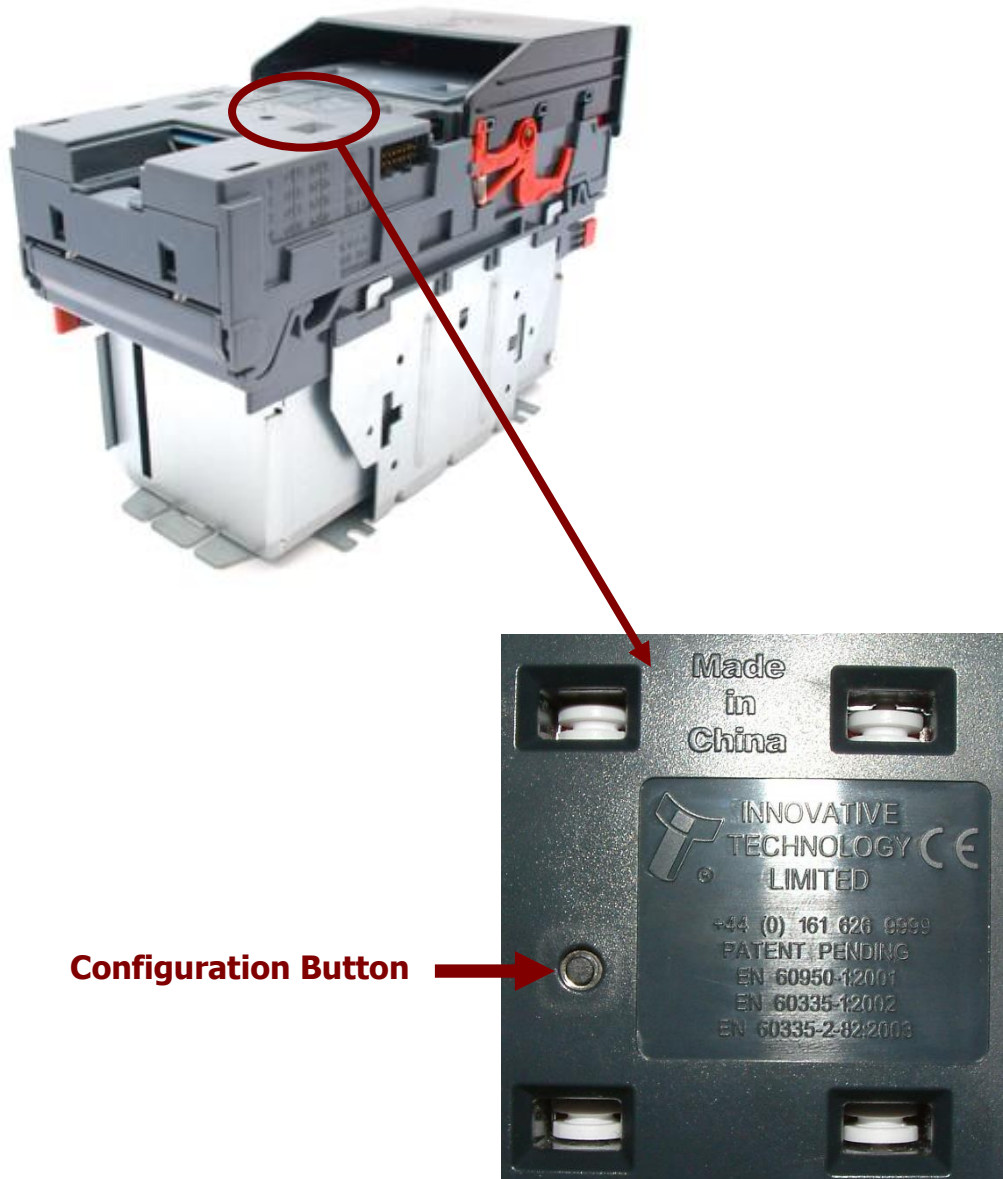


Interface Socket



1.4 Configuration

The NV9 USB does not use DIP switches to configure the unit – configuration and setting is carried out by using a Configuration Button mounted on top of the unit:



There are several functions available when using the Configuration Button, and these are listed in the next table:



WARNING!

Risk of unit damage

When in programming mode, do not turn off the power before the operation is complete as this will make the unit unusable.

Action	Power Status	Function
Press and hold (more than 2 seconds) until the bezel illuminates, then release	Powered ON	Sets validator to Programming mode (SSP)
Press once (less than 1 second)	Powered ON	Enables Configuration Card programming – press again to cancel this mode
Press twice (within half a second)	Powered ON	Shows current interface type (see flash count table below)
Press and hold as validator is powered up	Powered OFF / ON	Resets to factory settings

Flash Count	Interface
1	SSP
2	Pulse
3	MDB
6	ccTalk
7	SIO
8	Parallel

The NV9 USB Validator leaves the factory preset to at least one currency and one interface so that it is ready for immediate installation. The dataset and interface used are shown on the label fixed to the top of the validator head.

1.5 Connector and Pinouts

The NV9 USB 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 NV9 USB 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 NV9 USB, 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, ccTalk and SIO modes.

When using the USB connection, power must be supplied to the NV9 USB using the CN00392 cable.

1.6 Programming

Full details on programming the NV9 USB Validator can be found in Section 3 of this manual set (ITL Software Support Guide).

1.7 Technical Specifications

The full technical specifications for the NV9 USB Validator can be found in Section 6, Appendix B of this manual set. A brief summary is given here:

DC Voltage	Minimum	Nominal	Maximum
Absolute limits	10.8 V	12 V	13.2 V
Absolute limits (when fitted with IF5 interface)	18 V	---	48 V DC or 34 V AC
Supply ripple voltage	0 V	0V	0.25 V @ 100 Hz
Supply Current			
Standby	200 mA		
Running	1 A		
Peak (motor stall)	1.5 A		

Interface Logic Levels	Logic Low	Logic High
Inputs	0 V to +0.5 V	+3.7 V to +12 V
Outputs (2.2 k Ω pull-up)	+0.6 V	Pull-up voltage of host interface
Maximum current sink	50 mA per output	



WARNING!

Use suitable power supply

Ensure that the supply voltage to the NV9 USB is not lower than 10.8 V and that the power supply can provide sufficient current to avoid incorrect operation and excessive note rejects.

We recommend that your power supply is capable of supplying 12V DC at 3 A.

- For 12V operation, use TDK Lambda model SWS50-12. This power supply is available from a variety of suppliers including Farnell (stock code 1184645) and RS (stock code 466-5869).

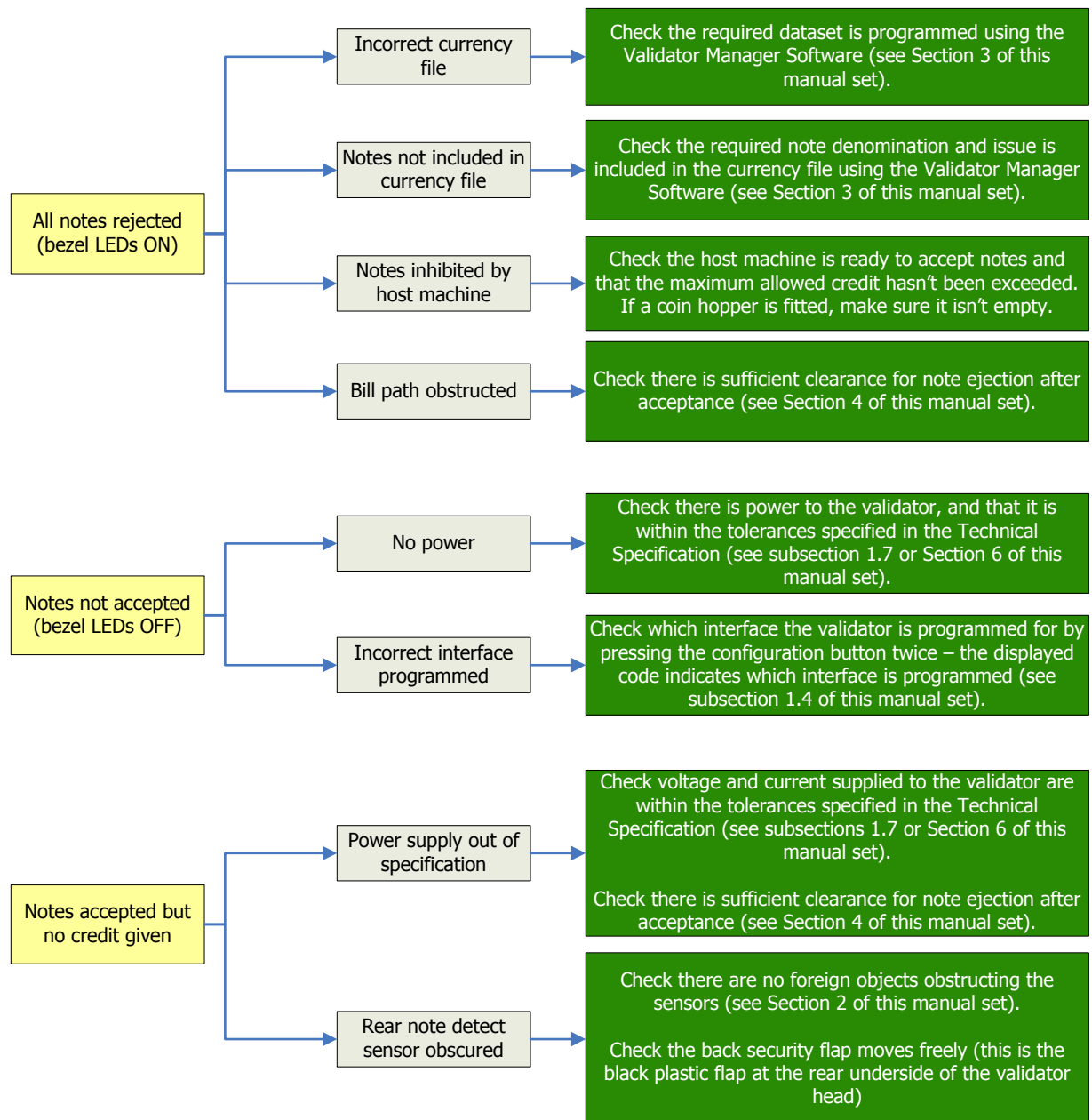
1.8 NV9 USB Bezel Flash Codes

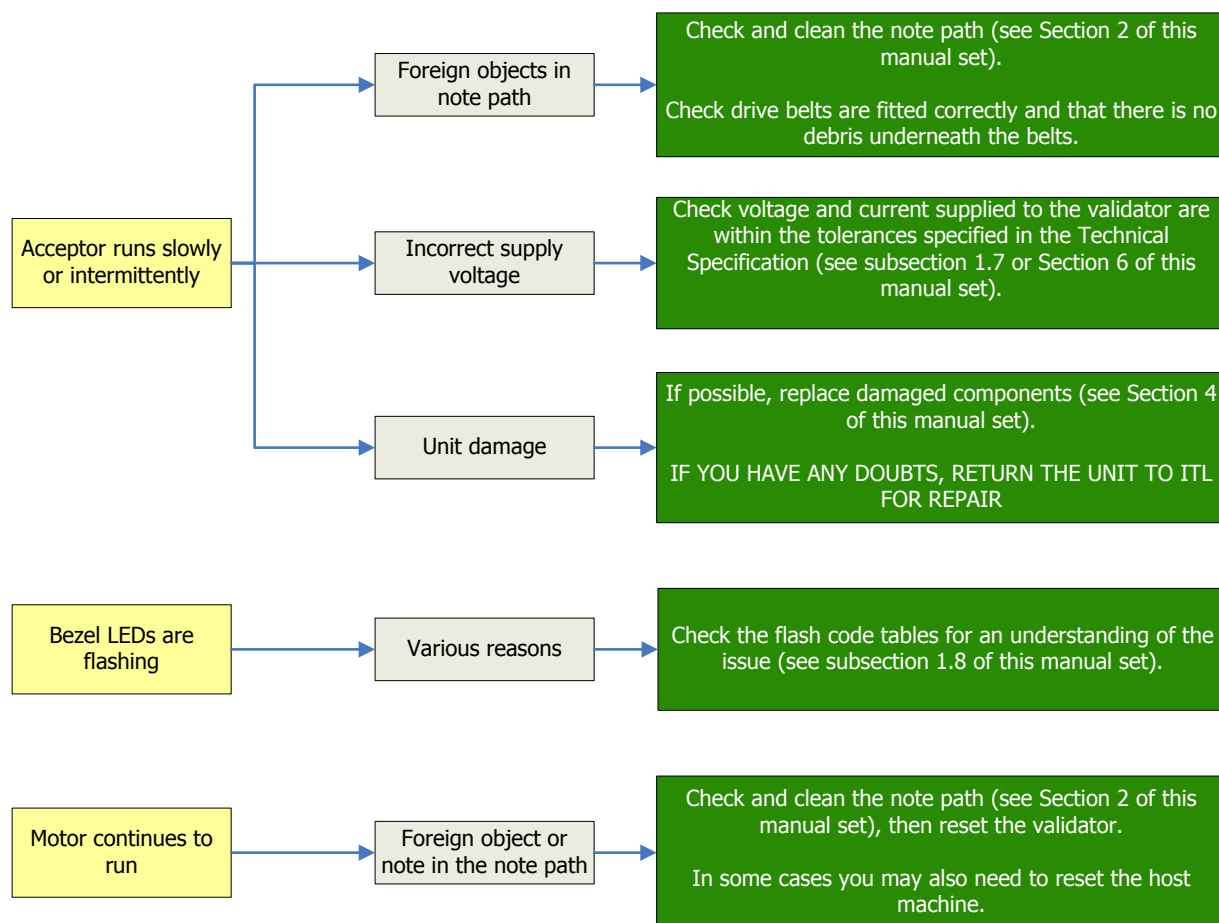
The NV9 USB Validator has inbuilt fault detection facilities. If there is a configuration or other error the NV9 USB front bezel will flash in a particular sequence; a summary of the Bezel Flash Codes for the NV9 USB is shown below:

Flashes		Indicated Error	Comments
Long	Short		
0	0	None	
1	2	Note path jam	Remove obstruction and follow the cleaning procedure in Section 2 of this manual set
	3	Unit not initialised	Contact ITL technical support
3	1	Firmware checksum error	Download new firmware
	2	Interface checksum error or unable to set programmed interface	
	3	EEPROM checksum error	
	4	Dataset checksum error	
4	1	Power supply too low	Check power supply
	2	Power supply too high	

1.9 Fault Finding

Please use this flow chart with the Flash Codes in the previous sub-section as an aid to help resolve any configuration or start up problems you might have after installing the NV9 USB validator





If you are unsure about the cause or how to resolve the problem, please contact ITL's technical support department. Support contact details can be found on the ITL website (www.innovative-technology.co.uk), or on the last page of this section.



1.10 Frequently Asked Questions

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

- The NV9 USB has no dipswitches. Configuring the unit is carried out using a configuration button mounted on top of the unit – see subsection 1.3 of this manual for more information.

b. In what orientation can I use the NV9 USB validator?

- The NV9 USB can be mounted horizontally or vertically, depending on the type of bezel and cashbox selected. See subsection 1.1 of this manual for more information on mounting the validator – check the ITL website to see the currently available range of cashboxes and bezels.

c. How do I check which interface has been set?

- You can check which interface has been selected by using the configuration button mounted on top of the unit – see subsection 1.3 of this manual for more information.

d. How do I change the interface type?

- You can change the interface type by using the configuration button mounted on top of the unit – see subsection 1.4 of this manual for more information.

e. Some or all notes are not accepted

- Check that no inhibits are set in the Validator Manager software (see Section 3 of this manual set). If the problem persists, contact ITL Support for further assistance.

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