SECTION 1

NV10 USB MANUAL SET

QUICK START AND CONFIGURATION GUIDE

INTELLIGENCE IN VALIDATION

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NV10 USB MANUAL SET – SECTION 1

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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 NV10 USB validator ready for installation into the host machine.

Information

Validator compatibility.

The NV10 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 NV10 USB is a simple operation; the validator can be installed **horizontally**:

Information

Check website for options.

There are variants of bezel available for the NV10 USB validator. Please check the ITL website (www.innovative-technology.co.uk) for up to date information.

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 NV10 USB validator unit – trying to do this could cause personal injury and will damage the unit beyond repair.

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1.2 Bezel Removal and Refitting:

- Push the red Bezel Release Catch in the centre and top of the NV10.
- The bezel can then be unhooked from the 4 locating points on the NV10.
- To refit, hook the bezel onto the bottom 2 locating points and then lift to fit onto the top 2 locating point on the NV10.
- The bezel will click home into the NV10 USB when fitted correctly.

1.3 Fitting the Bezel into Machine:

- Remove the 4 nuts, 2 metal clamps, star washers and 2 bolts from each side of the bezel as above (see Figure 1 below).
- Place the bezel (usually PA231) through the aperture in the door of the machine from the front.
- Fit the two metal clamps and star washers and tighten the nuts onto the bolts (recommended torque 25cN per metre).
- Fit the main bezel assembly onto the black part to the top. Fit the star washers and tighten the nuts onto the bolts (recommended torque 25cN per metre).
- The bezel is refitted by hooking the bottom of the bezel and pushing the top back into the locating slots until top hooks are engaged in the slots.

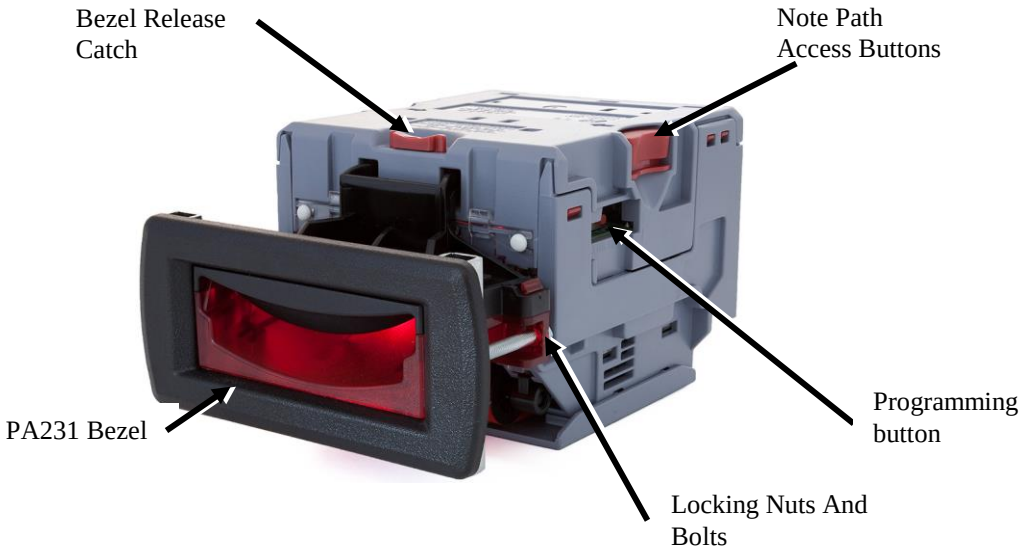

Figure 1 – NV10 USB Unit & Bezel

Caution!

Check locking hooks.

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

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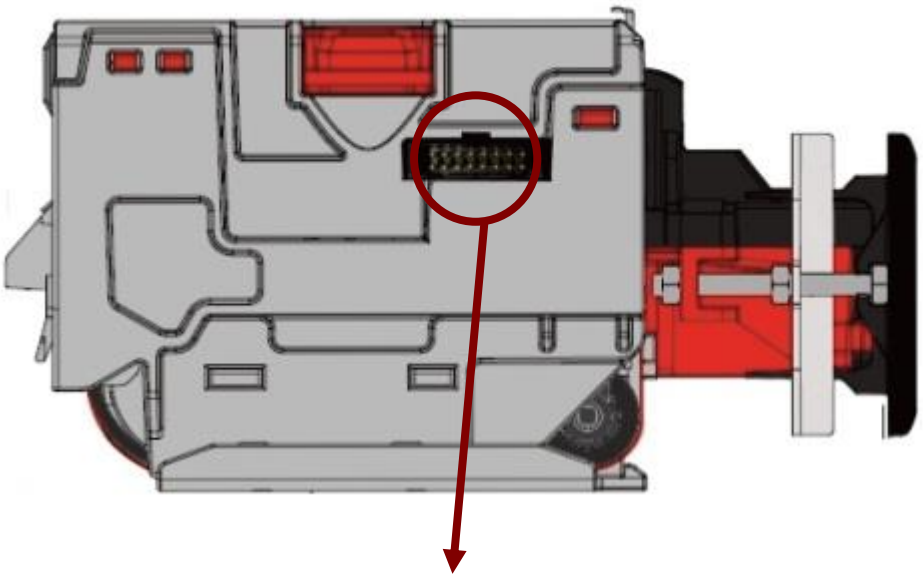
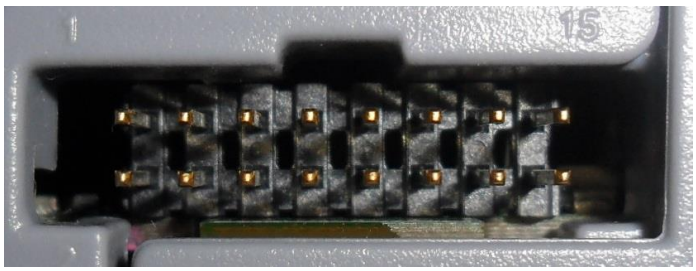
1.4 Interfacing

The connector needed to set up and interface the NV10 USB Validator is easily accessible on the side of the unit:



Interface Socket



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1.5 Configuration

The NV10 USB does not use DIP switches to configure the unit – configuration and setting is carried out with the use of the Configuration Button mounted on the right hand side of the unit as indicated below:

Configuration Button

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.

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

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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 NV10 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.

1.6 Connector and Pinouts

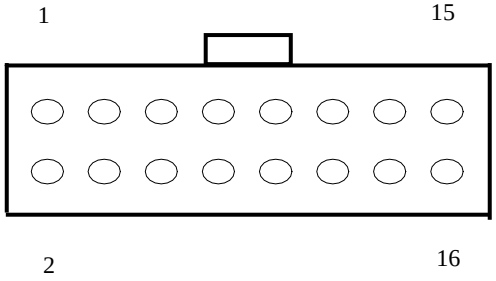
The NV10 USB Validator has a single connector that is used to allow interfacing and programming.

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 NV10 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

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To use a USB connection with the NV10 USB, a USB cable fitted with a 16 way connector on one end (ITL Part Number CN392) should be used. The CN392 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 NV10 USB using the CN392 cable.

1.7 Programming

Full details on programming the NV10 USB Validator can be found in Section 3 of this manual set (ITL Software Support Guide).

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1.8 Technical Specifications

The full technical specifications for the NV10 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	14.2 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			0.2 A
Running			1.0 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 kΩ 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 NV10 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).

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1.9 NV10 USB Bezel Flash Codes

The NV10 USB Validator has inbuilt fault detection. If there is a configuration or other error the NV10 USB front bezel will flash in a particular sequence to indicate the problem; a summary of the Bezel Flash Codes for the NV10 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	

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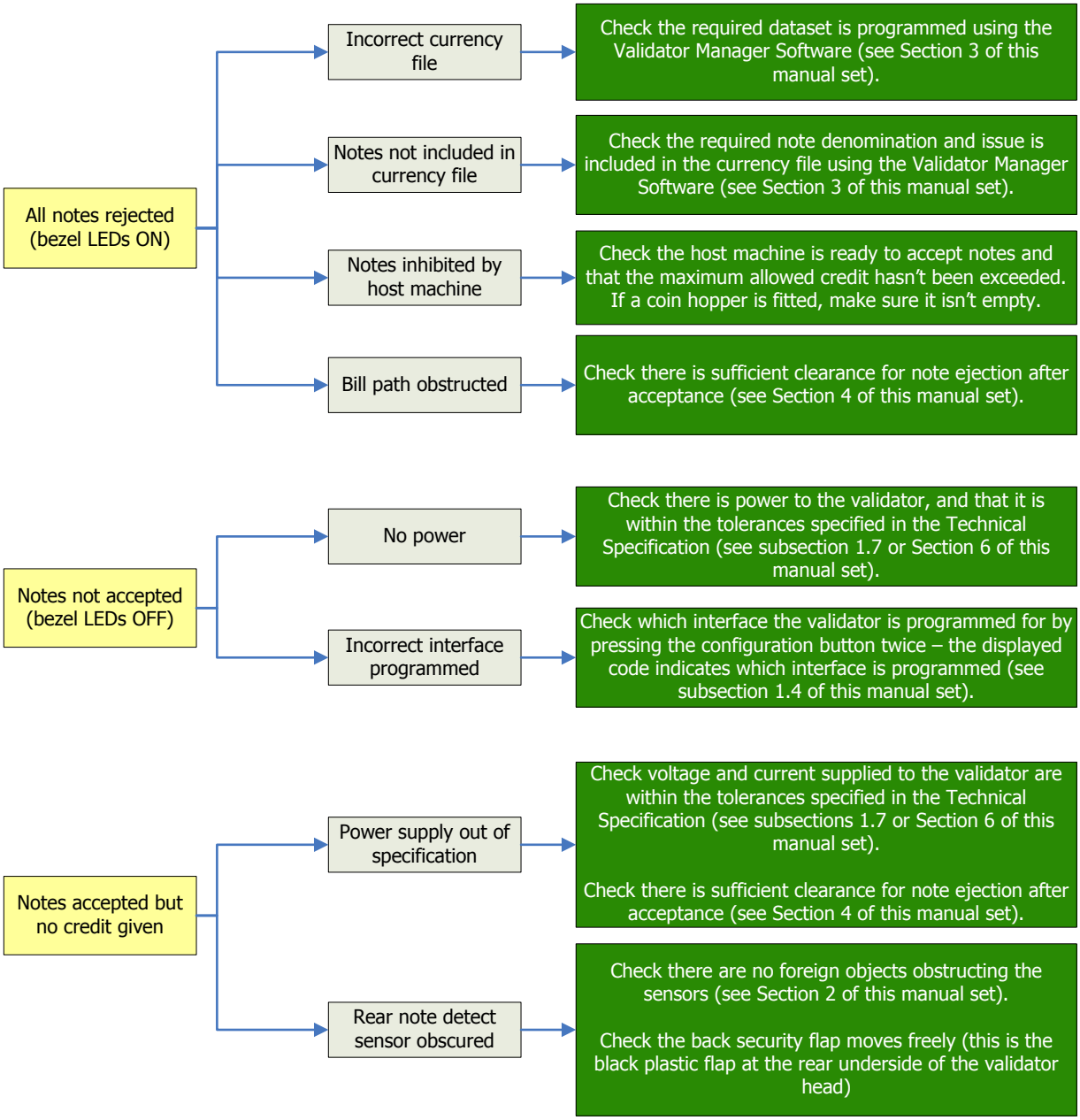
1.10 Fault Finding

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 NV10 USB validator



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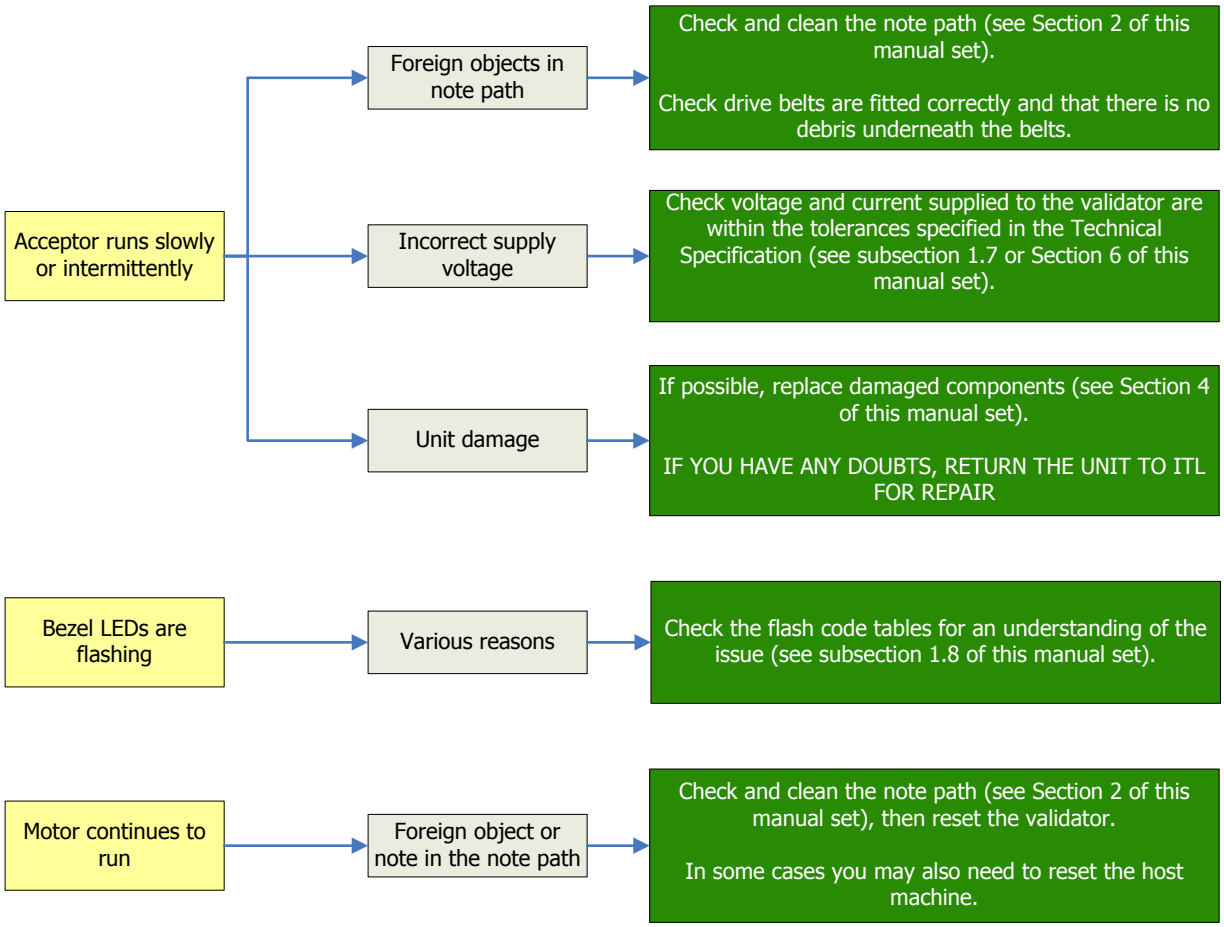

If you are unsure about the cause or how to resolve the problem, please contact the Innovative Technology Technical Support Team. Support contact details can be found on the ITL website (www.innovative-technology.co.uk), or on the last page of this section.

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1.11 Frequently Asked Questions

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

- The NV10 USB has no dipswitches. The unit is configured with the configuration button mounted on right hand side of the unit – see subsection 1.3 of this manual for more information.

b. In what orientation can I use the NV10 USB validator?

- The NV10 USB can only be mounted horizontally. See subsection 1.1 – 1.3 of this manual for more information on mounting the validator – check the ITL website.

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 the right hand side 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 by using the configuration button mounted on the right hand side 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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