

# SECTION 2

## SMART PAYOUT MANUAL SET

## FIELD SERVICE MANUAL

INTELLIGENCE IN VALIDATION

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

**SMART PAYOUT MANUAL SET – SECTION 2**

2.	FIELD SERVICE MANUAL	3
2.1	Cleaning	3
2.2	Fault Finding - Flash Codes	5
2.3	Tape and Diverter Positions	7
2.4	Technical Specifications	9
2.5	Fault Finding Flow Chart	10
2.6	Frequently Asked Questions	11
2.7	Spare Parts	12



## 2. FIELD SERVICE MANUAL

This section is one part of a complete manual set: typically, a field service engineer who is maintaining the product would use this section.

This section contains the essential information that the field engineer needs to clean, maintain and fault find a SMART Payout unit that is installed in a host machine.

The SMART Payout unit has been designed to minimise any problems or performance variations over time. This has been achieved by careful hardware and software design; this attention to the design means there is very little user maintenance required.

### 2.1 Cleaning

The payout module is effectively a 'sealed' unit; as such there are no parts to clean other than the external case. The NV200 Validator has been designed in a way to prevent damage and airborne contamination reaching the optical sensors; however, depending upon the environment the NV200 may require occasional cleaning.



#### Caution!

Do not use solvent based cleaners on any part of the Payout or NV200 units.

Do not use solvent based cleaners such as alcohol, petrol, methylated spirits, white spirit or PCB cleaner. Using these solvents can cause permanent damage to the units; only use a mild detergent solution as directed below.

To clean the NV200 note path, you will need to remove the validator head from the assembly – you cannot open the note path cover when the payout unit is fitted.

To remove the NV200 head unit, first unlock the NV200 cashbox and head release lock (if fitted)

Then, lift the silver head release catch located on the front of the NV200

Finally, slide the head unit forward and lift it off the chassis

Head  
release  
catch



After removing the head unit, to open the note path cover, pull the top cover release latch forward (towards the bezel) and lift the cover as shown here (it is recommended to also remove the front bezel to allow correct cleaning of the note path guides):



The note path is now visible and can be cleaned. Carefully wipe the surfaces with a soft lint free cloth that has been moistened with a water and mild detergent solution (e.g. household washing up liquid) - be very careful when cleaning around the sensor lenses and make sure they are clean and dry before closing the cover and restarting the unit.

**Caution!**

Do not use any lubricants.

Do not lubricate any of the note transport mechanism or any part of the note path, as this can affect the operation of the validator.

**WARNING!**

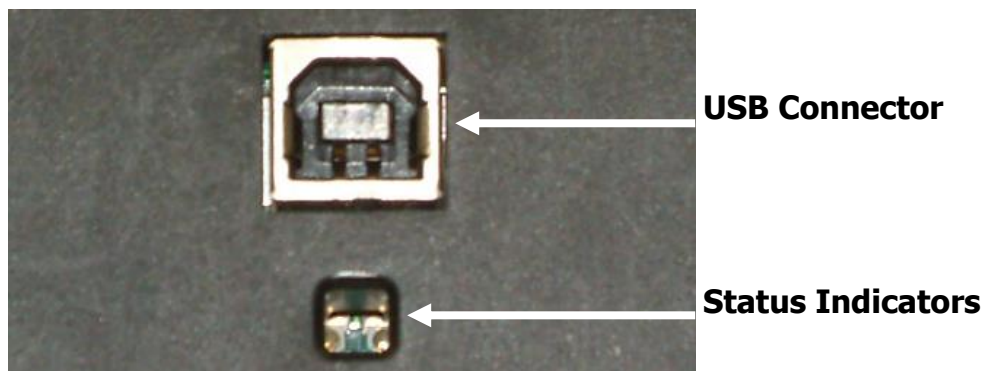
Do not try to disassemble

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

## 2.2 Fault Finding - Flash Codes

Both the payout module and the NV200 validator have inbuilt fault detection facilities. If there is a configuration or other error, the payout module status indicators or the NV200 front bezel will flash in a particular sequence.

The payout module status indicators are on the rear of the payout module, just below the USB socket:



A summary of the Status Indicator Flash Codes for the payout module are shown here:

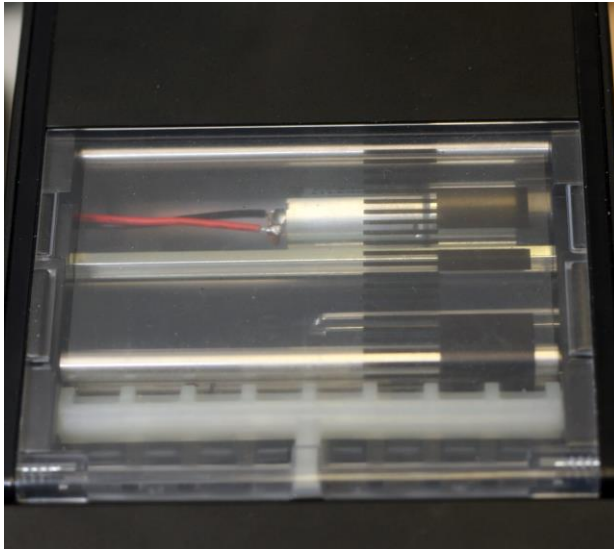
Status Indicators		Flashes	Indicated Error	Comments
Red	Green			
		0	No LEDs lit	No power
●		1	Motor / barcode error	Check tape in window (see Subsection 2.3 of this manual)
		2	Note sensor error	
		3	EEPROM error	Reprogram unit (see Section 3 of this manual set)
		4	Payout jammed	Remove trapped note (see Section 4 of this manual set)
		5	Diverter error	Switch Payout module DIP switch 8 on and off with power <b>on</b> (diverter position shown in Subsection 2.3)
●	●	0	Both LEDs on (no flash)	Turn power on and off
		1	Power reset	For information only
		2	Wakeup from low power	For information only
		3	Software reset	For information only
		4	Software command	For information only
		5	User manual reset	For information only
		6	Power supply issue	Check power supply
		7	Unknown cause	For information only
	●	1 every second	None	All OK

Summary of the Bezel Flash Codes for the NV200:

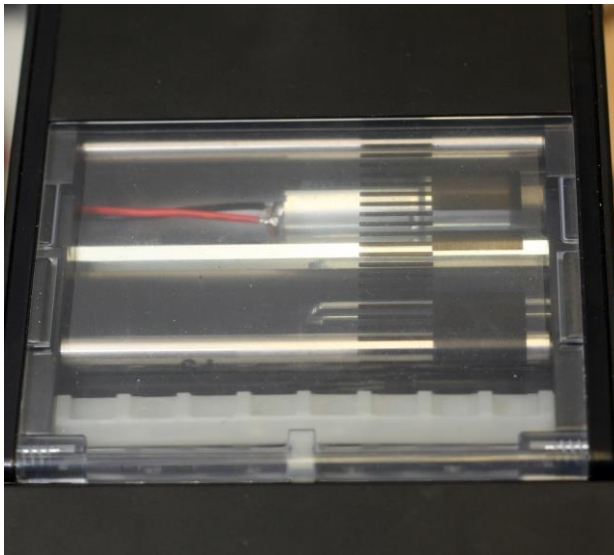
Flashes		Indicated Error	Comments
Red	Blue		
<b>0</b>	<b>0</b>	None	
<b>1</b>	<b>1</b>	Note path open	Close note path
	<b>2</b>	Note path jam	Remove obstruction and follow the cleaning procedure in Subsection 2.1 of this manual
	<b>3</b>	Unit not initialised	Contact ITL technical support
<b>2</b>	<b>1</b>	Cashbox removed	Refit cashbox
	<b>2</b>	Cashbox jam	Remove trapped notes
<b>3</b>	<b>1</b>	Firmware checksum error	Download new firmware
	<b>2</b>	Interface checksum error	
	<b>3</b>	EEPROM checksum error	Download new firmware
	<b>4</b>	Dataset checksum error	
<b>4</b>	<b>1</b>	Power supply too low	Check power supply
	<b>2</b>	Power supply too high	
	<b>3</b>	Card format	Reprogram programming card
	<b>4</b>	Payout reset	Turn power on and off
<b>5</b>	<b>1</b>	Firmware mismatch	Reprogram unit

### 2.3 Tape and Diverter Positions

The images below show the barcode tape position with the diverter in the open and closed positions, and an indication of the diverter in the OPEN position:

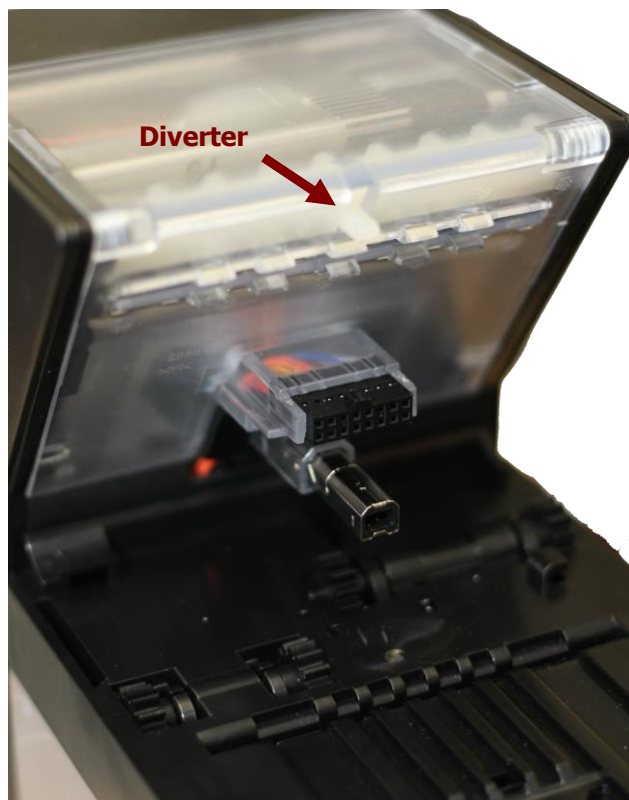


Normal tape position – diverter in CLOSED position

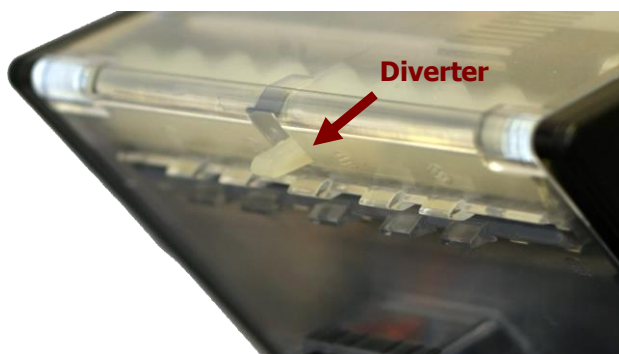


Normal tape position – diverter in OPEN position





Top view – diverter in OPEN position



Close up – diverter in OPEN position



## 2.4 Technical Specifications

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

<b>DC Voltage</b>	<b>Minimum</b>	<b>Nominal</b>	<b>Maximum</b>
Absolute limits	10.8 V	12 V	13.2 V
Supply ripple voltage	0 V	0V	0.25 V @ 100 Hz
<b>Supply Current (when connected to an NV200):</b>			
Standby	400 mA		
Running	3 A		
Peak (motor stall)	5 A		

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

We recommend that your power supply is capable of supplying 12V DC at 6.3 A.

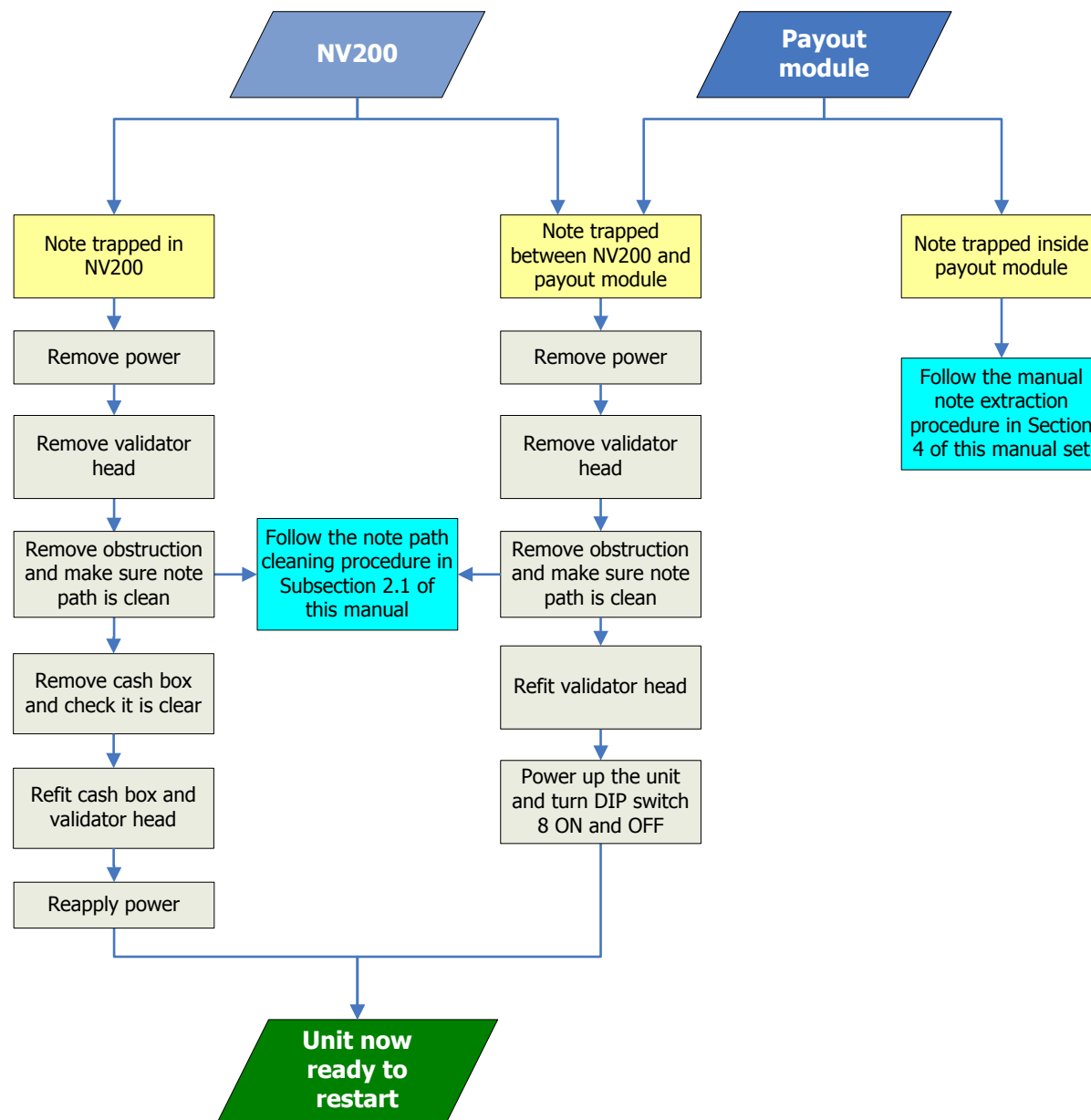
TDK Lambda produces a suitable power supply (model SWS75-12). This power supply is available from a variety of suppliers including Farnell (stock code 1184648) and RS (stock code 466-5904).

## 2.5 Fault Finding Flow Chart

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 with the SMART Payout unit.

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](http://www.innovative-technology.co.uk)), or on the last page of this section.



## 2.6 Frequently Asked Questions

### a. What settings should I use on the DIP switches on the rear of the unit?

- Look at the DIP switch tables in Section 1 of this manual set (subsection 1.4). By default, all DIP switches are turned OFF.

### b. The payout unit does not securely lock on the back of the NV200

- Make sure the plastic mountings are fitted on the back of the cashbox.
- Ensure the payout module is correctly located on the mountings before the validator head is installed.

### c. My notes are always stacked in the cashbox even though I have chosen for them to go into the payout unit

- Check that the Green LED on the rear of the SMART Payout unit is flashing – see the Flash Codes in subsection 2.2 if this is not the case.
- Make sure the diverter is in the correct position – with the unit powered up turn DIP switch 8 ON and OFF to make sure (check the information in subsection 2.2 if you are unsure).
- The Payout module might be disabled in software - send an enable payout command.
- The Payout module might be full – check how many notes are stored using your host software.
- The notes might be detected as damaged or not straight – in this case they will be stacked in the cash box so that they will not jam the payout module.

### d. My payout module has stopped functioning and I want to return it for repair - however it has bank notes inside

- All bank notes that are inside payout modules returned to ITL are handled with the highest security and carefully tracked internally until their return to the customer - if you do not want to ship the unit with the bank notes inside, please follow the instructions for manual payout in Section 4 of this manual set (subsection 4.10).
- If manual emptying is not possible please contact ITL technical support.

### e. Can I connect to the Host machine via USB?

- The direct USB port is for on the bench testing/Programming only. If a USB connection is desired, we recommend going through our IF17. The IF17 is a TTL to USB conversion box which filters out any noise and provides a smooth signal between the SMART Hopper and Host machine.



## 2.7 Spare Parts

Full details of the interface cable connector pinouts, connector types / makes and other related information can be found in Section 4 of this manual set.

### Payout Module

The Payout Module is a 'sealed' unit and there are no user-replaceable spare parts. However, several cables designed to be used with the module are available, and these are listed below:

ITL Part Number	Description	Details
<b>CN214</b>	USB Cable	USB 2.0 Compliant Type A to Type B cable
<p><b>Notes: Not to be used for Host communications. Programming Only.</b>          USB cable should be USB 2.0 compliant, electrically shielded and less than 5 metres long.</p>		

ITL Part Number	Description	Details
<b>CN370</b>	SMART Payout power cable	Provides 12V supply only to SMART Payout

The diagram illustrates the CN370 SMART Payout power cable. On the left, two connector views are shown: a 'Front View' of a 16-pin D-sub connector with pins numbered 1, 8, 9, and 16, and a 'Top View' of the same connector labeled 'CON1' with pins numbered 9 and 16. The cable itself is 1000mm long. Dimensions are specified along its length: 30mm from the CON1 connector to the first strain relief, 15mm between strain reliefs, and a pitch of 87mm between the remaining strain reliefs. At the right end, there are three conductors with dimensions of 15mm, 25mm, and 5mm from the last strain relief to the stripped ends. The stripped ends are labeled 'Stripped (no tinning)'.

ITL Part Number	Description	Details
<b>CN391</b>	SMART Payout to SMART Hopper eSSP interface cable	Connects SMART payout to SMART hopper for eSSP communications. Also provides 12V supply to SMART Payout

The diagram illustrates the CN391 cable assembly. The top view shows a cable of length 1000 units, with a 40-unit section near connector CON1 and an 890-unit section to connector CON3. The front view shows the cable's profile with dimensions of 15, 10, and 15 units for the main body, and 15, 10, and 15 units for the section near connector CON2. Connector CON1 is a 16-pin D-sub connector with pins 1, 9, 8, and 16 labeled. Connector CON2 is a 7-pin D-sub connector with pins 1, 2, 7, and 8 labeled. Connectors CON3 and CON4 are 2-pin D-sub connectors. The cable has a red and white striped section and a solid red section.

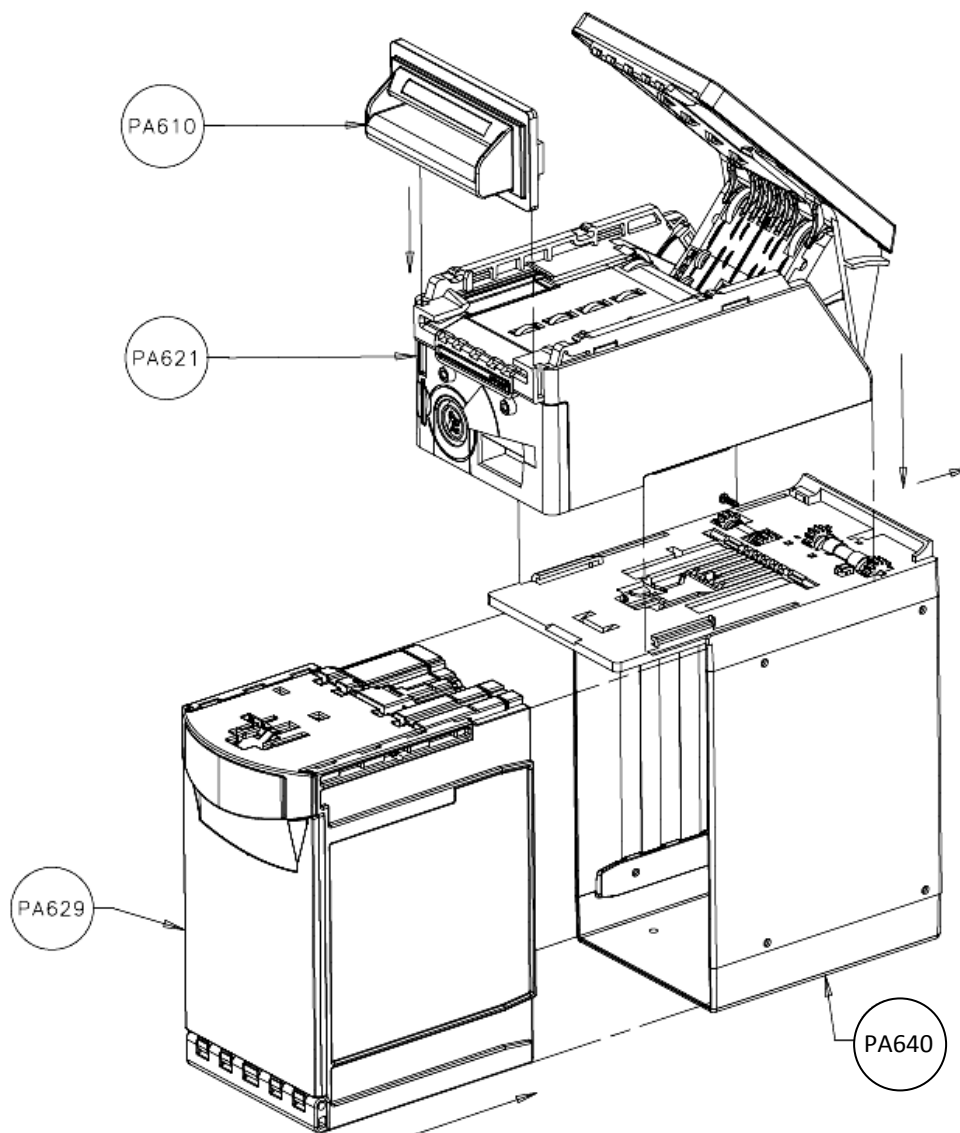




**NV200**

The user can obtain the following parts for the NV200 validator:

<b>ITL Part Number</b>	<b>Description</b>
<b>PA610</b>	Bezel Assembly
<b>PA621</b>	NV200 Validator Head Assembly
<b>PA629</b>	Cashbox Final Assembly
<b>PA640</b>	Chassis Assembly
<b>PA650</b>	Lock Assembly



## MAIN HEADQUARTERS

Innovative Technology Ltd  
Derker Street – Oldham – England - OL1 4EQ  
Tel: +44 161 626 9999 Fax: +44 161 620 2090  
E-mail: [support@innovative-technology.co.uk](mailto:support@innovative-technology.co.uk)  
Web site: [www.innovative-technology.co.uk](http://www.innovative-technology.co.uk)



### AUSTRALIA

[support@innovative-technology.com.au](mailto:support@innovative-technology.com.au)

### BRAZIL

[suporte@bellis-technology.com.br](mailto:suporte@bellis-technology.com.br)

### CHINA

[support@innovative-technology.co.uk](mailto:support@innovative-technology.co.uk)

### GERMANY

[supportDE@innovative-technology.eu](mailto:supportDE@innovative-technology.eu)

### ITALY

[supportIT@innovative-technology.eu](mailto:supportIT@innovative-technology.eu)

### SPAIN

[supportES@innovative-technology.eu](mailto:supportES@innovative-technology.eu)

### UNITED KINGDOM

[support@innovative-technology.co.uk](mailto:support@innovative-technology.co.uk)

### REST OF THE WORLD

[support@innovative-technology.co.uk](mailto:support@innovative-technology.co.uk)

