

**Innovative  
Technology  
Ltd**

**Hardware  
Integration  
Guide SET**

**Section 1  
SSP**

**INTELLIGENCE IN VALIDATION**



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## MANUAL AMENDMENTS

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## INTRODUCTION

This document provides information and resources that explain how to implement and integrate products from Innovative Technology Ltd. into a cash handling application.

This document is intended for those who will be implementing ITL products into a cash handling system.

This manual is intended for use alongside the product manuals that are free for download on [www.innovative-technology.co.uk](http://www.innovative-technology.co.uk). This manual is intended as a guide and reference to assist with implementing ITL products into a machine.

Please contact your local support for more information.

### WARNING

- If you do not understand any part of this document please contact your local support office for assistance; contact details are over the page. In this way we may continue to improve our products.
- Innovative Technology Ltd has a policy of continual product improvement. As a result the products supplied may vary from the specification described here.

## GENERAL DESCRIPTION

ITL products can be used for a wide range of different machines and different applications such as gaming, amusement, vending, kiosk, retail or ticketing. These machines might have various different requirements to a cash handling device.

In order being capable and compatible to these requirements ITL products support many standard communication protocols like SSP, ccTalk, MDB, etc. Furthermore ITL products provide various hardware interfaces like open collector, RS232 and USB for an easy integration.

This guide is an overview of the possibilities how to integrate ITL products into a cash handling application.

## SSP SETUP OPTIONS

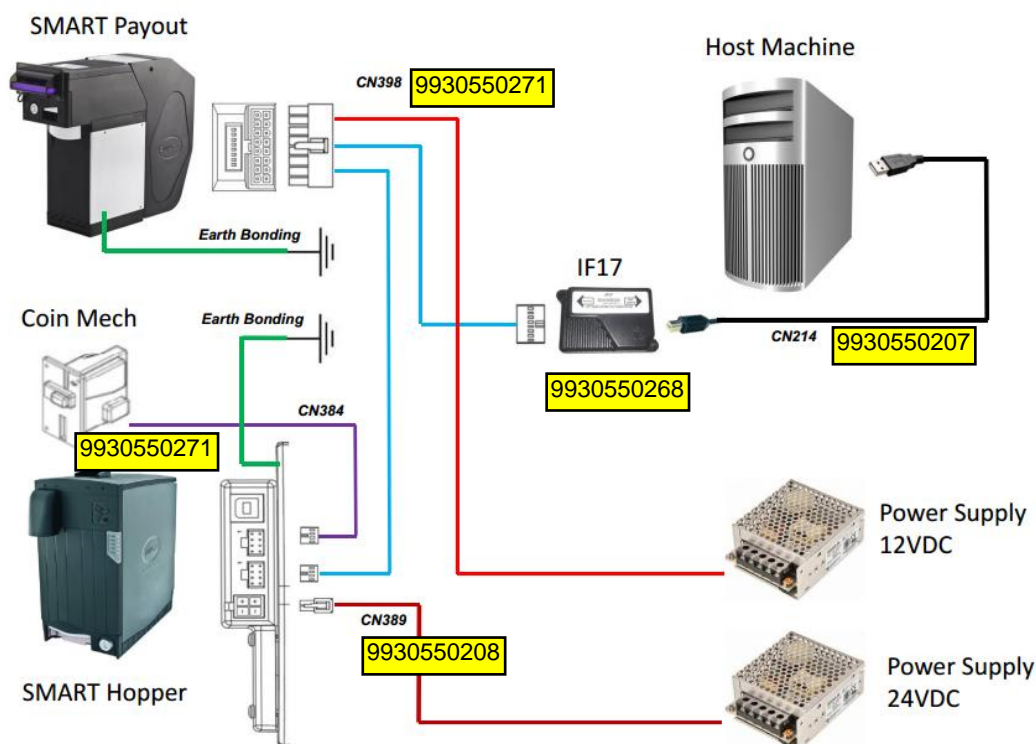
Smiley Secure Protocol (SSP) is a serial communication protocol designed by Innovative Technology LTD to address problems historically experienced by cash handling systems in gaming machines. Problems such as acceptor swapping, reprogramming acceptors and line tapping.

Since its first release in May 1998 the SSP protocol has developed and expanded to include the functionality offered by the latest generation of cash handling devices. The interface uses a master slave communication model, the host machine is the master and the devices (Note Validator, SMART Hopper, SMART Payout) are the slaves. The devices will respond to commands sent from the host machine using a bi-directional serial transmission. Please refer to product documentation and GA138 (eSSP Specification) for full explanations on SSP.

The following section describes the options how to connect ITL payin and payout devices into a SSP host machine using available cables and interfaces.

## SSP SETUP OPTION USB 01

This setup option shows how to connect a SMART Payout and a SMART Hopper with an attached coin mech into a host machine via a USB COM port by using available ITL cables and interfaces.



Drawing 1 – SSP SETUP OPTION USB 01

Part Name	Description	Quantity
SMART Payout	Multi Denomination Note Payout	1
SMART Hopper	Multi Denomination Coin Payout	1
IF17	USB Interface Converter	1
CN398	Dual eSSP Interface Cable Assembly	1
CN384	Hopper to Coin Mech Cable Assembly	1
CN389	Hopper Interface Power Cable	1
CN214	USB A to B Cable Assembly	1

Table 1 – Content Table ITL products SSP SETUP OPTION USB 01

### Power Requirements

This setup option requires a stable 12VDC / 5A power supply for only the SMART Payout according to the product specification. Please refer to the appendix A or SMART Payout Manual Set GA860 for full details of SMART Payout's power requirements. This setup option requires a stable 24VDC / 6,5A power supply for only the SMART Hopper according to the product specification. Please refer to the appendix A or SMART Hopper Manual Set GA401 for full details of SMART Hopper's power requirements. Please check the power requirements of your host machine and other peripherals to dimension a proper power environment for your system setup.

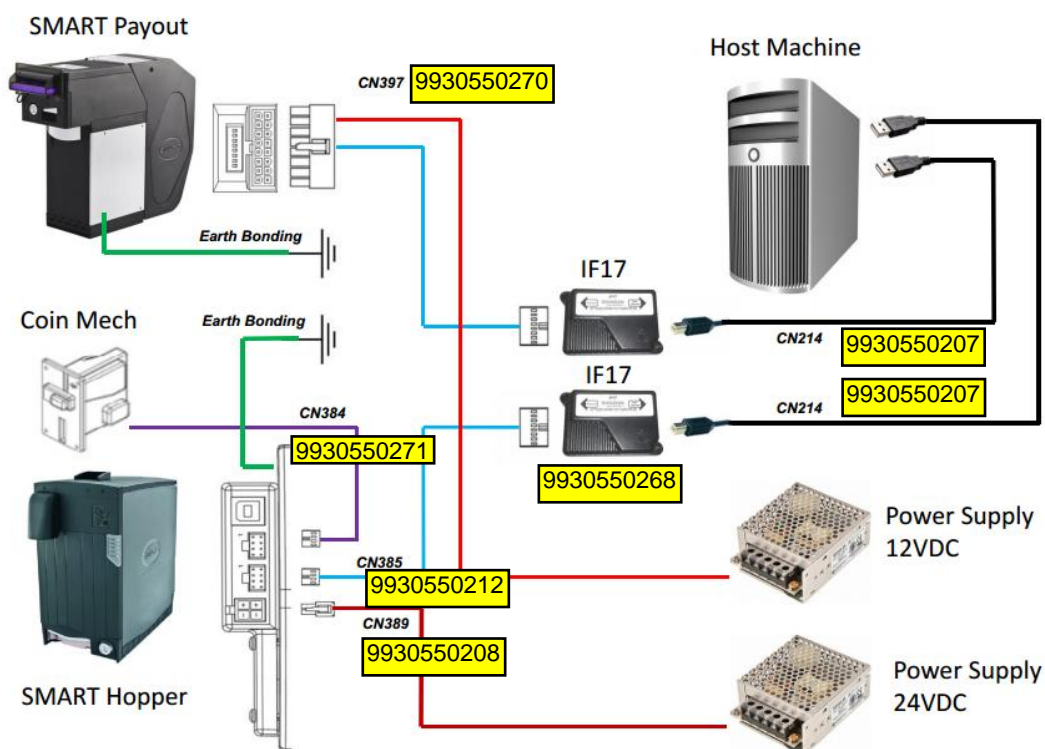
### Cautions

It is very important that the cashbox chassis of the SMART Payout is bonded to earth, as lack of proper bonding can cause communication issues and failures. The earth bond on a SMART Payout should be made to any of the 8 holes in the side of the cashbox and be bonded to mains earth, typically through the Power Supply Unit. The resistance between the cashbox and the Earth pin on the mains plug should be less than 0.7 ohms.

It is very important that the base plate of the SMART Hopper is bonded to earth, as lack of proper bonding can cause communication issues and failures. The earth bond on a SMART Hopper should be made to the intended connection on the base plate right next to the USB connector and be bonded to mains earth, typically through the Power Supply Unit. The resistance between the base plate and the Earth pin on the mains plug should be less than 0.7 ohms.

## SSP SETUP OPTION USB 02

This setup option shows how to connect a SMART Payout and a SMART Hopper with an attached coin mech into a host machine via two USB COM ports by using available ITL cables and interfaces.



Drawing 2 – SSP SETUP OPTION USB 02

Part Name	Description	Quantity
SMART Payout	Multi Denomination Note Payout	1
SMART Hopper	Multi Denomination Coin Payout	1
IF17	USB Interface Converter	2
CN397	SMART Payout to Host Cable Assembly	1
CN385	SMART Hopper User Interface Cable Assembly	1
CN384	Hopper to Coin Mech Cable Assembly	1
CN389	Hopper Interface Power Cable	1
CN214	USB A to B Cable Assembly	2

Table 2 – Content Table ITL products SSP SETUP OPTION USB 02

### Power Requirements

This setup option requires a stable 12VDC / 5A power supply for only the SMART Payout according to the product specification. Please refer to the appendix A or SMART Payout Manual Set GA860 for full details of SMART Payout's power requirements. This setup option requires a stable 24VDC / 6,5A power supply for only the SMART Hopper according to the product specification. Please refer to the appendix A or SMART Hopper Manual Set GA401 for full details of SMART Hopper's power requirements. Please check the power requirements of your host machine and other peripherals to dimension a proper power environment for your system setup.

### Cautions

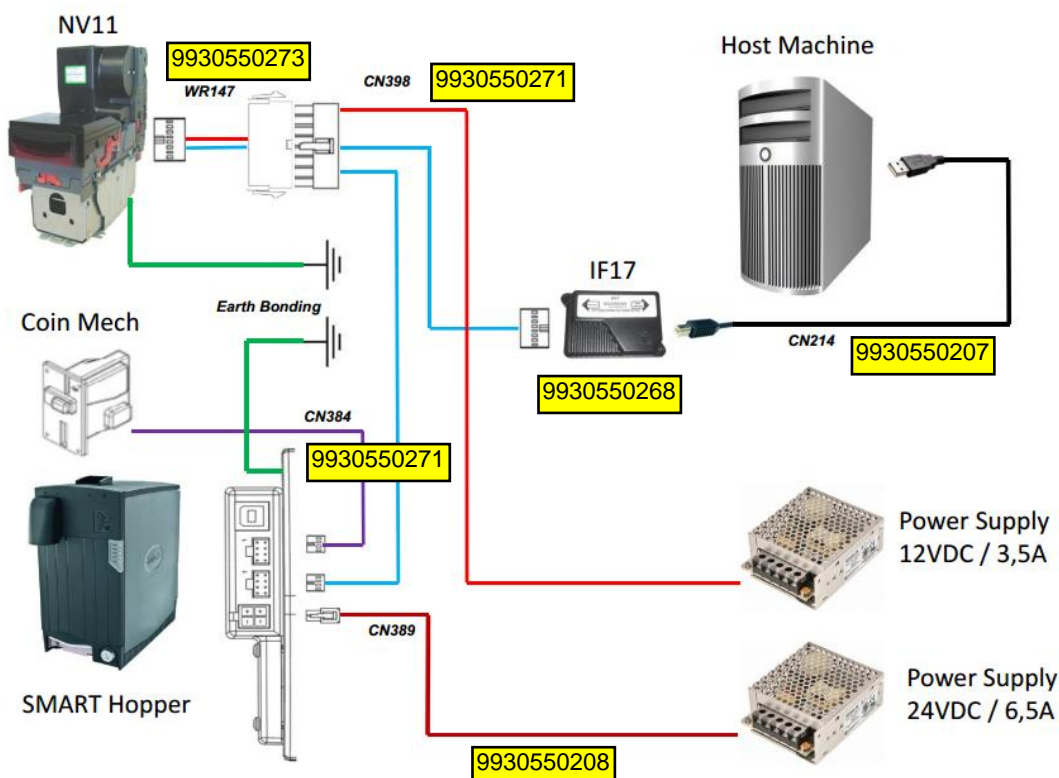
It is very important that the cashbox chassis of the SMART Payout is bonded to earth, as lack of proper bonding can cause communication issues and failures. The earth bond on a SMART Payout should be made to any of the 8 holes in the side of the cashbox and be bonded to mains earth, typically through the Power Supply Unit. The resistance between the cashbox and the Earth pin on the mains plug should be less than 0.7 ohms.

It is very important that the base plate of the SMART Hopper is bonded to earth, as lack of proper bonding can cause communication issues and failures. The earth bond on a SMART Hopper should be made to the intended connection on the base plate right next to the USB connector and be bonded to mains earth, typically through the Power Supply Unit. The resistance between the base plate and the Earth pin on the mains plug should be less than 0.7 ohms.



## SSP SETUP OPTION USB 03

This setup option shows how to connect an NV11 and a SMART Hopper with an attached coin mech into a host machine via a USB COM port by using available ITL cables and interfaces.



Drawing 3 – SSP SETUP OPTION USB 03

Part Name	Description	Quantity
NV11	Multi Denomination Note Payout	1
SMART Hopper	Multi Denomination Coin Payout	1
IF17	USB Interface Converter	1
CN398	Dual eSSP Interface Cable Assembly	1
WR147	Payout to Validator Adapter	1
CN384	Hopper to Coin Mech Cable Assembly	1
CN389	Hopper Interface Power Cable	1
CN214	USB A to B Cable Assembly	1

Table 3 – Content Table ITL products SSP SETUP OPTION USB 03

### Power Requirements

This setup option requires a stable 12VDC / 3,5A power supply for only the NV11 according to the product specification. Please refer to the appendix A or NV11 Manual Set GA963 for full details of NV11's power requirements.

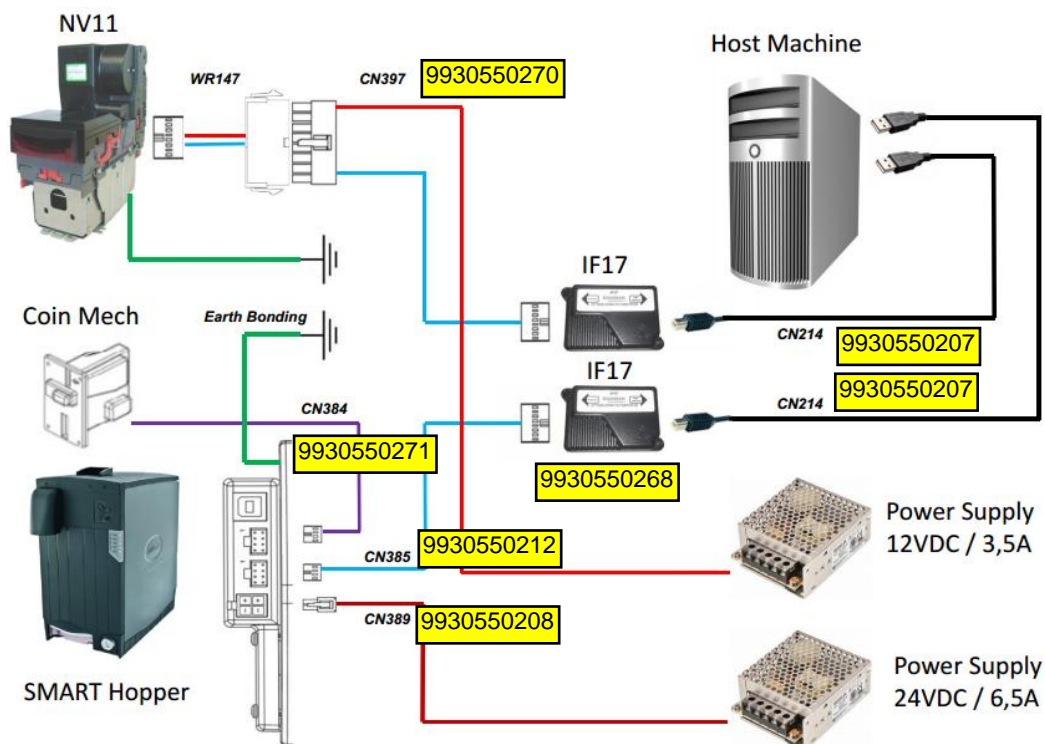
This setup option requires a stable 24VDC / 6,5A power supply for only the SMART Hopper according to the product specification. Please refer to the appendix A or SMART Hopper Manual Set GA401 for full details of SMART Hopper's power requirements. Please check the power requirements of your host machine and other peripherals to dimension a proper power environment for your system setup.

### Cautions

It is very important that the base plate of the SMART Hopper is bonded to earth, as lack of proper bonding can cause communication issues and failures. The earth bond on a SMART Hopper should be made to the intended connection on the base plate right next to the USB connector and be bonded to mains earth, typically through the Power Supply Unit. The resistance between the base plate and the Earth pin on the mains plug should be less than 0.7 ohms.

## SSP SETUP OPTION USB 04

This setup option shows how to connect an NV11 and a SMART Hopper with an attached coin mech into a host machine via two USB COM port by using available ITL cables and interfaces.



Drawing 4 – SSP SETUP OPTION USB 04

Part Name	Description	Quantity
NV11	Multi Denomination Note Payout	1
SMART Hopper	Multi Denomination Coin Payout	1
IF17	USB Interface Converter	2
CN397	Dual eSSP Interface Cable Assembly	1
WR147	Payout to Validator Adapter	1
CN384	Hopper to Coin Mech Cable Assembly	1
CN389	Hopper Interface Power Cable	1
CN214	USB A to B Cable Assembly	2

Table 4 – Content Table ITL products SSP SETUP OPTION USB 04

### Power Requirements

This setup option requires a stable 12VDC / 3,5A power supply for only the NV11 according to the product specification. Please refer to the appendix A or NV11 Manual Set GA963 for full details of NV11's power requirements.

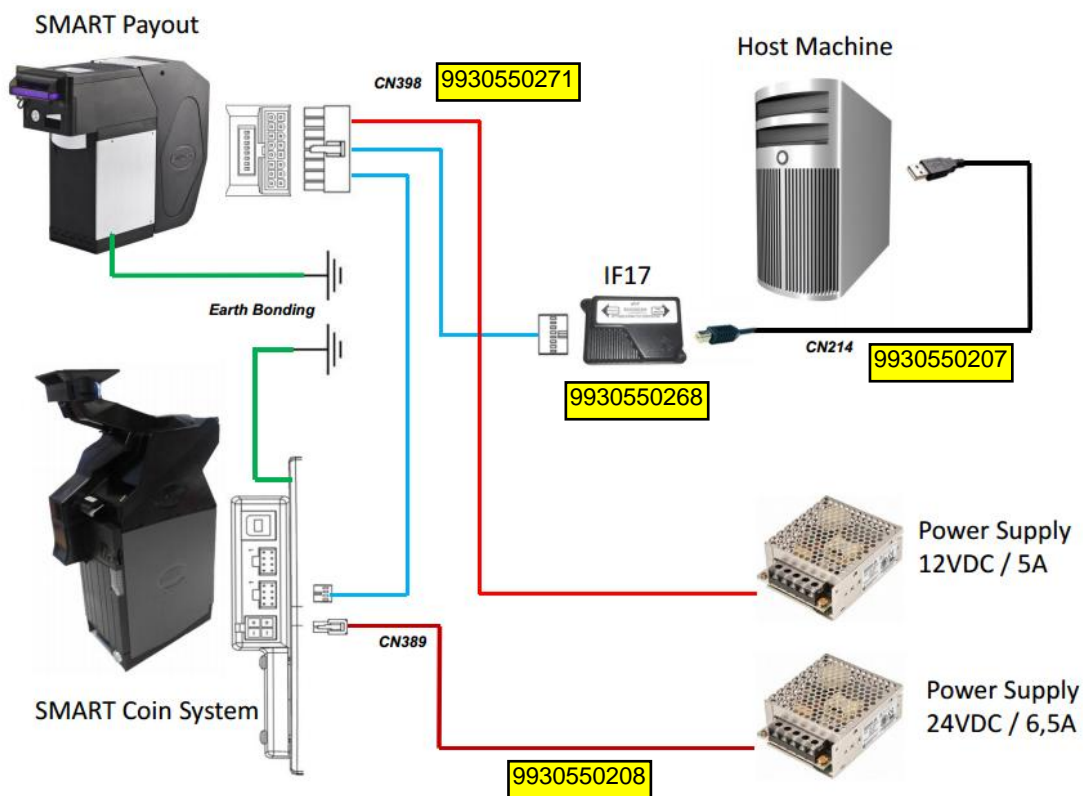
This setup option requires a stable 24VDC / 6,5A power supply for only the SMART Hopper according to the product specification. Please refer to the appendix A or SMART Hopper Manual Set GA401 for full details of SMART Hopper's power requirements. Please check the power requirements of your host machine and other peripherals to dimension a proper power environment for your system setup.

### Cautions

It is very important that the base plate of the SMART Hopper is bonded to earth, as lack of proper bonding can cause communication issues and failures. The earth bond on a SMART Hopper should be made to the intended connection on the base plate right next to the USB connector and be bonded to mains earth, typically through the Power Supply Unit. The resistance between the base plate and the Earth pin on the mains plug should be less than 0.7 ohms.

## SSP SETUP OPTION USB 05

This setup option shows how to connect a SMART Payout and a SMART Coin System into a host machine via a USB COM port by using available ITL cables and interfaces.



Drawing 5 – SSP SETUP OPTION USB 05

Part Name	Description	Quantity
SMART Payout	Multi Denomination Note Payout	1
SMART Coin System	Multi Denomination Coin Handling System	1
IF17	USB Interface Converter	1
CN398	Dual eSSP Interface Cable Assembly	1
CN389	Hopper Interface Power Cable	1
CN214	USB A to B Cable Assembly	1

Table 5 – Content Table ITL products SSP SETUP OPTION USB 05

### Power Requirements

This setup option requires a stable 12VDC / 5A power supply for only the SMART Payout according to the product specification. Please refer to the appendix A or SMART Payout Manual Set GA860 for full details of SMART Payout's power requirements. This setup option requires a stable 24VDC / 6,5A power supply for only the SMART Coin System according to the product specification. Please refer to the appendix A or SMART Coin System Manual Set GAxxx for full details of SMART Coin System's power requirements.

Please check the power requirements of your host machine and other peripherals to dimension a proper power environment for your system setup.

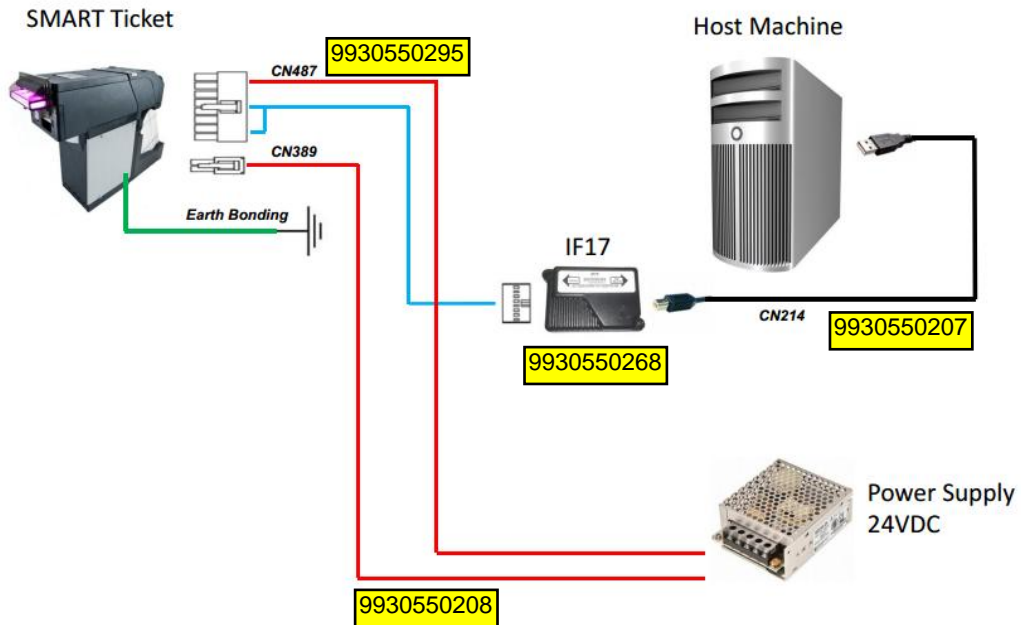
### Cautions

It is very important that the cashbox chassis of the SMART Payout is bonded to earth, as lack of proper bonding can cause communication issues and failures. The earth bond on a SMART Payout should be made to any of the 8 holes in the side of the cashbox and be bonded to mains earth, typically through the Power Supply Unit. The resistance between the cashbox and the Earth pin on the mains plug should be less than 0.7 ohms.

It is very important that the base plate of the SMART Coin System is bonded to earth, as lack of proper bonding can cause communication issues and failures. The earth bond on a SMART Coin System should be made to the intended connection on the base plate right next to the USB connector and be bonded to mains earth, typically through the Power Supply Unit. The resistance between the base plate and the Earth pin on the mains plug should be less than 0.7 ohms.

## SSP SETUP OPTION USB 06

This setup option shows how to connect a SMART Ticket into a host machine via a USB COM port by using available ITL cables and interfaces.



Drawing 6 – SSP SETUP OPTION USB 06

Part Name	Description	Quantity
SMART Payout	Multi Denomination Note Payout	1
SMART Coin System	Multi Denomination Coin Handling System	1
IF17	USB Interface Converter	1
CN487	Smart Ticket SSP Bus Interface Cable	1
CN389	Hopper Interface Power Cable	1
CN214	USB A to B Cable Assembly	1

Table 6 – Content Table ITL products SSP SETUP OPTION USB 06

### Power Requirements

This setup option requires a stable 24VDC / 11A power supply for only the SMART Ticket according to the product specification. Please refer to the appendix A or SMART Ticket Manual Set GAxxx for full details of SMART Ticket's power requirements. Please check the power requirements of your host machine and other peripherals to dimension a proper power environment for your system setup.

### Cautions

It is very important that the cashbox chassis of the SMART Ticket is bonded to earth, as lack of proper bonding can cause communication issues and failures. The earth bond on a SMART Ticket should be made to any of the 8 holes in the side of the cashbox and be bonded to mains earth, typically through the Power Supply Unit. The resistance between the cashbox and the Earth pin on the mains plug should be less than 0.7 ohms.

**APPENDIX a – Power Supply Recommendation**

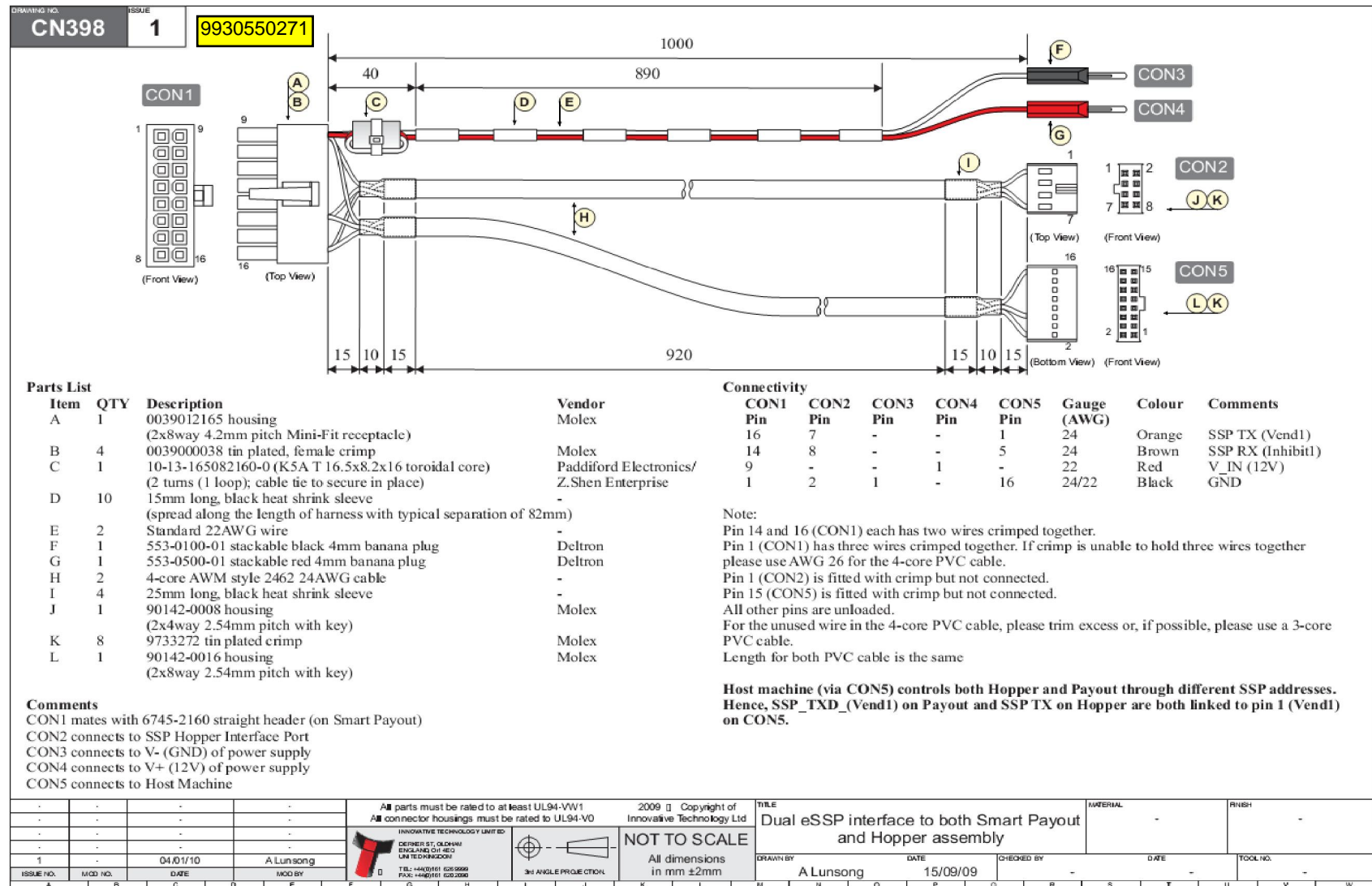
**TDK Lambda produces suitable power supplies. For further details please refer to the list below.**

<b>product</b>	<b>power requirements</b>	<b>recommended power supply</b>	<b>stock code RS</b>	<b>stock code farnell</b>
NV11	12VDC/3,5A	TDK Lambda SWS50-12	466-5869	1184645
Smart Payout	12VDC/5A	TDK Lambda SWS75-12	466-5904	1184648
Smart Hopper	24VDC/6,5A	TDK Lambda SWS150-24	466-5982	1184653
Smart Coin System	24VDC/6,5A	TDK Lambda SWS150-24	466-5982	1184653
Smart Ticket	24VDC/11A	TDK Lambda SWS300-24	494-4651	1085928

**WARNING**

- Please check the power requirements of your host machine and other peripherals to dimension a proper power environment for your system setup.

APPENDIX B – Cable Layouts

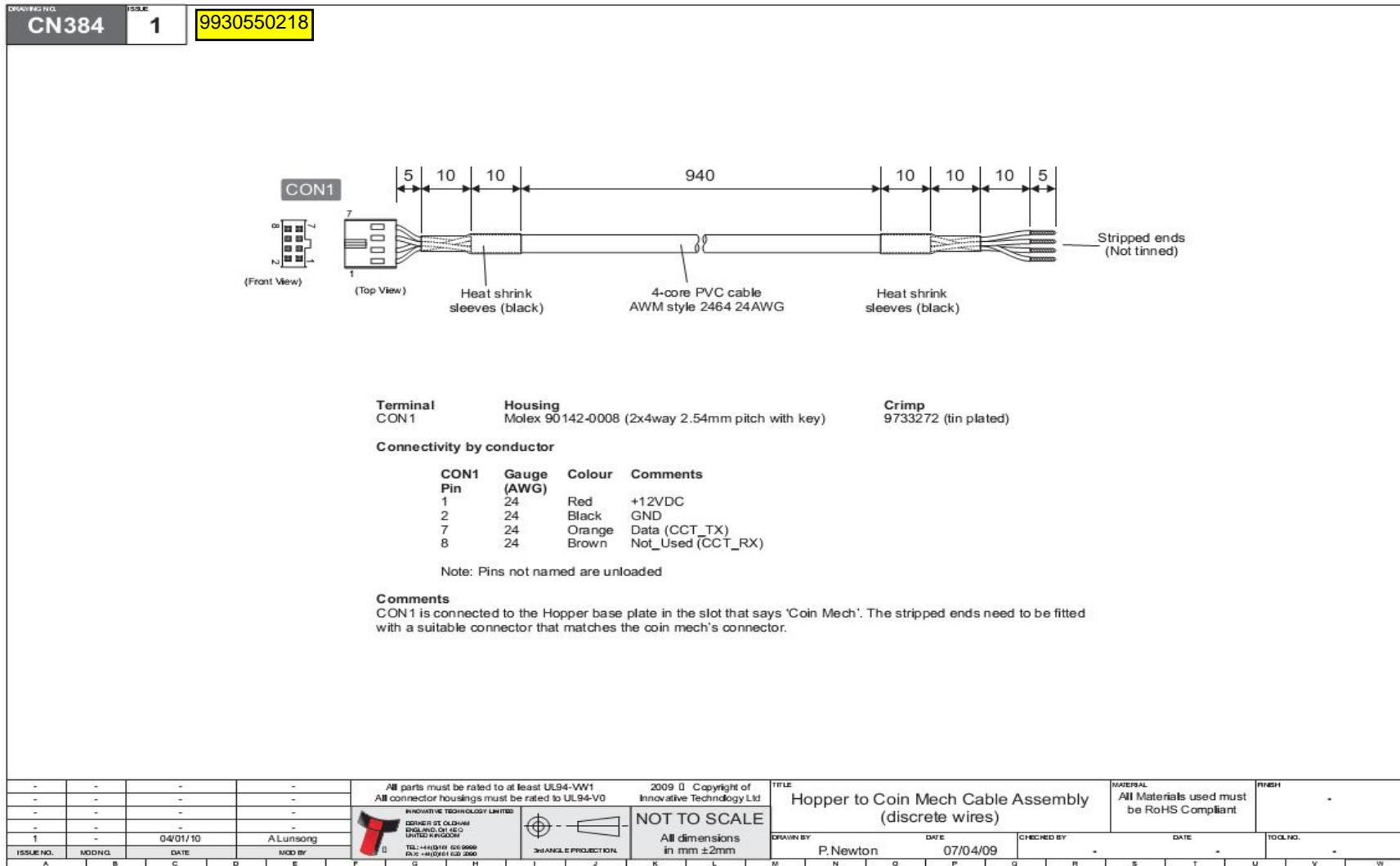






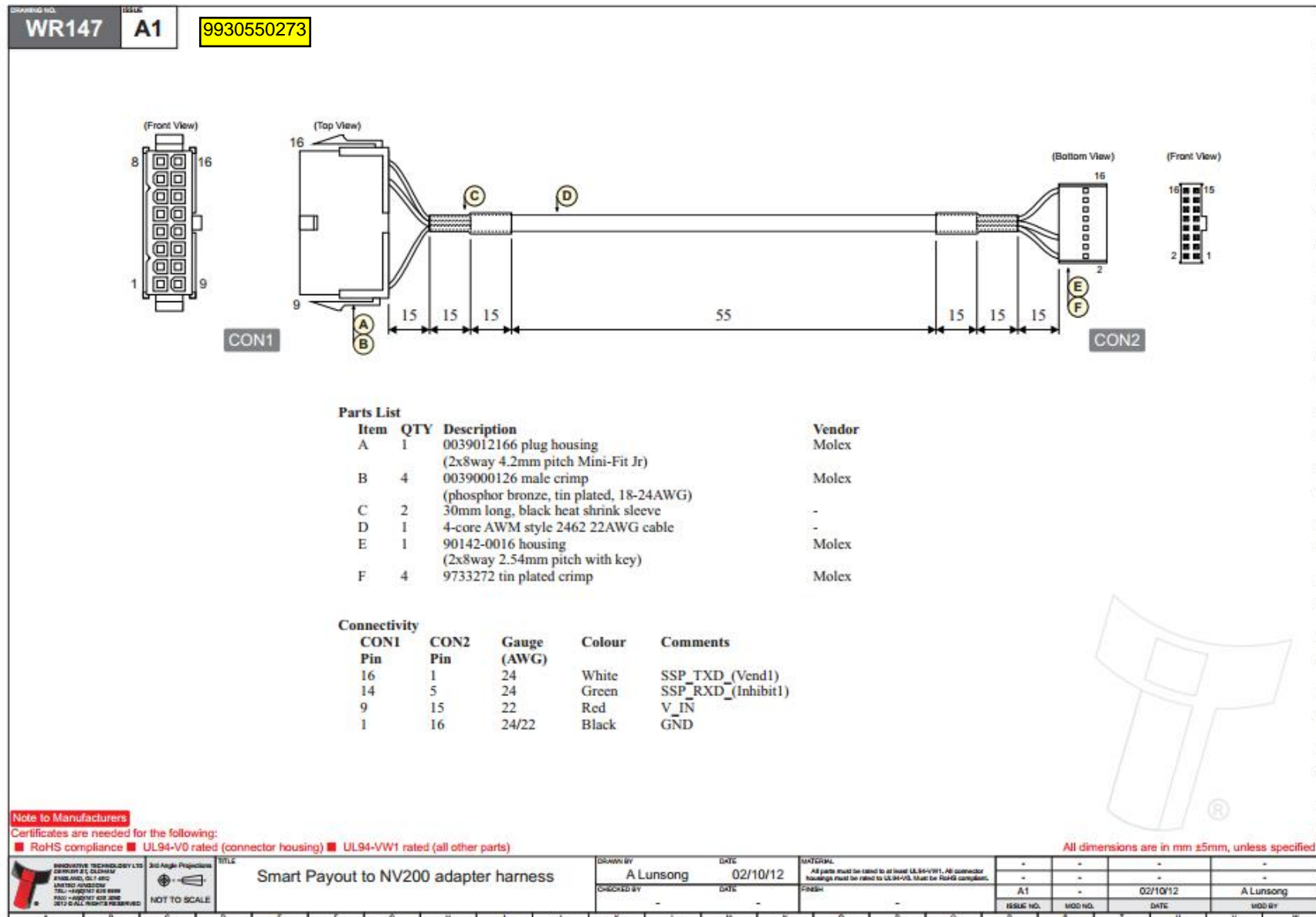














9930550207

**CN214 – STANDARD USB TYPE A TO TYPE B CABLE ASSEMBLY**

