

PAYLINK

Money Controls



User Manual

Disclaimer

Crane Payment Solutions Ltd does not accept liability for any errors or omissions contained within this document. Crane Payment Solutions Ltd shall not incur any penalties arising out of the adherence to, interpretation of, or reliance on, this standard. Crane Payment Solutions Ltd will provide support for this product in accordance with the standard warranty of Crane Payment Solutions Ltd, subject to any modifications to that warranty agreed in writing by Crane Payment Solutions Ltd. Crane Payment Solutions Ltd reserves the right to amend, improve or change the product referred to within this document or the document itself at any time.

Contents

1. Diary of Changes	4
2. Overview	5
2.1 Introduction	5
2.2 Contents	7
3. Specification	8
3.1 PayLink Functional block diagram	8
3.2 PayLink Lite Functional block diagram	9
3.3 Connector Overview	10
3.4 Mechanical Dimensions	12
3.5 Electrical Specification	14
4. Installation	15
4.1 Hardware installation	15
4.2 Software Download	15
4.3 Software Installation	16
5. Interface	18
5.1 Power interface	18
5.2 ccTalk interface	18
5.3 ID003 interface (over RS232)	20
5.4 PayLink Auxiliary input/output interface	21
5.5 PayLink Lite input interface	22
5.6 Serial printer interface	23
5.7 Serial meter interface	23
5.8 MDB Device interface	24
5.9 Connector details	24
6. Peripheral Features/Support	25
6.1 CcTalk Coin Acceptors	25
6.2 CcTalk hoppers	25
6.3 ID003	26
6.4 Serial ticket printer	26
6.5 MDB Device	26
6.6 Inputs	26
6.7 Outputs	26
6.8 Serial meter	26
7. Using PayLink	27
7.1 Configuration File (Standard.cfg)	27
7.2 Paylink Driver (Paylink.exe)	28
7.3 MilanDiag.exe	29
7.4 Demo.exe	32
7.5 Upgrading PayLink firmware	34
8. Technical Support	36

Figures

Figure 1: Functional block diagram	8
Figure 2: Functional block diagram	9
Figure 3: PayLink Connector overview with examples	10
Figure 4: PayLink Lite Connector overview with examples	11
Figure 5: PayLink mechanical dimensions	12
Figure 6: PayLink Lite mechanical dimensions	13
Figure 7: PayLink power interface	18
Figure 8: PayLink ccTalk interface	18
Figure 9: ccTalk coin acceptor interface	19
Figure 10: ccTalk coin acceptor interface	19
Figure 11: ccTalk hopper (Money Controls SCH2) ccTalk interface	19
Figure 12: ccTalk hopper (Money Controls SUH) ccTalk interface	20
Figure 13: PayLink – RJ45 connector with RS232	20
Figure 14: PayLink – Single in-line Molex connector with RS232	20
Figure 15: 9-way D Type - ID003 interface	21
Figure 16: High power outputs	21
Figure 17: Low power outputs	21
Figure 18: Switches / Inputs	21

Figure 19: Switches / Inputs	22
Figure 20: PayLink Lite Switch Inputs.....	22
Figure 21: PayLink – RS232 Serial Printer Interface	23
Figure 22: PayLink serial meter interface	23
Figure 23: MDB Slave interface	24

Tables

Table 1: Electrical Specification (PayLink).....	14
Table 2: Electrical Specification (PayLink Lite).....	14
Table 3: Status LED table.....	15
Table 4: I/O Interface.....	22
Table 5: Hopper address Wiring & Coin Values	25

1. Diary of Changes

Issue 1.0.....	August 2005
➤ 1 st Issue	
Issue 1.1.....	November 2005
➤ Changed the value for ccTalk hopper address 10, from 500 to 1	
➤ Corrected a mistake with the pinout for RS232 printer interface	
➤ Change 'red and black' to 'orange and black' for 24V	
➤ Included information on hotswapping	
➤ Above mentioned changes in line with firmware release 4.1.9.6	
Issue 1.2.....	December 2005
➤ Corrected a mistake with the ccTalk connector pinout information.	
Issue 1.3.....	May 2006
➤ Added hopper level sense support	
➤ Added MDB changer support	
➤ Added hopper power fail support	
➤ Corrected mistakes in Figure 14 and Figure 15	
➤ Added SCH3 Combi Support	
➤ Removed all connector details – referecne now to release drawings.	
➤ Added driver and dll revisions.	
➤ Added additional functions available in AESWDriver and Firmware updater.	
➤ Above mentioned changes in line with firmware release 4-1-10-4	
Issue 1.4.....	November 2006
➤ Changes to reflect 4-1-10-6 release of software	
➤ Updated the hopper Address vs Value table	
Issue 1.5.....	August 2008
➤ Changes to reflect 4-1-10-9 release of software	
➤ Added PayLink Lite reference	
Issue 1.6.....	April 2009
➤ Changes to reflect 4-1-10-11 release of software	
Issue 1.7.....	April 2011
➤ Changes to reflect 4-1-12-4 release of software	
Issue 2.0.....	August 2013
➤ Major changes to reflect 4-1-12-6 release of software	

2. Overview

2.1 Introduction

PayLink is a simple, compact system that offers trouble free interfacing between a PC and money handling Equipment. **PayLink** allows the rapid integration of a variety of payment peripherals into new machine platforms, without the need for bespoke software.

Designed for use in a wide range of applications and markets, such as:

- **Gaming**
- **Amusement**
- **Transportation**
- **Vending**

Interfaces/protocols supported

- **ccTalk**
- **ID003**
- **MDB (Master & Slave)**
- **RS232 serial**
- **ccNet**

I/O supported

- **16 Outputs (8 High Power – 8 Low Power)**
- **16 Inputs**
- **Serial electronic meter (RS232)**

PayLink Lite, allows the connection of a range of payment peripherals (but with fewer
hoppers than PayLink) driven using the ccTalk industry-standard protocol.

Designed for use in a wide range of markets

- **Gaming**
- **Amusement**
- **Transportation**
- **Vending**

Interfaces/protocols supported

- **ccTalk**

I/O supported

- **2 Inputs**

2.2 Contents

Paylink Development Kit consists of the following:

- **PayLink**
- 1 X ccTalk multidrop cable
- 2 X SR5/Lumina cable
- 1 x Ardac Elite ccTalk Cable
- 1 X SR3/Condor Plus cable
- 1 X SCH2 cable – set to address 4
- 1 X SUH cable – set to address 3
- 1 X Serial ticket printer cable
- 1 X Serial meter cable
- 1 X Paylink power cable
- 4 X 20-way headers – for use with inputs/outputs
- 1 X USB Type A – Type B cable
- 1 x RJ45 cable
- 1 X RJ45 – 9 Way D Type cable
- 1 X MDB cable
- 1 X RS232 – 7 Way Molex cable

The contents of the **PayLink Lite** Development Kit are as follows:

- **PayLink Lite**
- 1 X ccTalk multidrop cable
- 2 X SR5/Lumina cable
- 1 x Ardac Elite ccTalk Cable
- 1 X SR3/Condor Plus cable
- 1 X SCH2 cable – set to address 4
- 1 X SUH cable – set to address 3
- 1 X Paylink power cable
- 1 X USB Type A – Type B cable
- 1 X 2 way Switch Input cable

However, Crane Payment Solutions can provide a development kit, which consists of example cables, but this development kit should only be ordered for small volume integration samples.

Crane Payment Solutions recommend purchasing a development kit, in order to aid the integration process in the host machine. Please contact your local Customer Services Dept to place an order.

Paylink and Paylink part numbers

PayLink part number: **APCUSBXX00008**

PayLink development kit part number: **APCUSBXX00009**

PayLink Lite part number: **APCUSBXX00003**

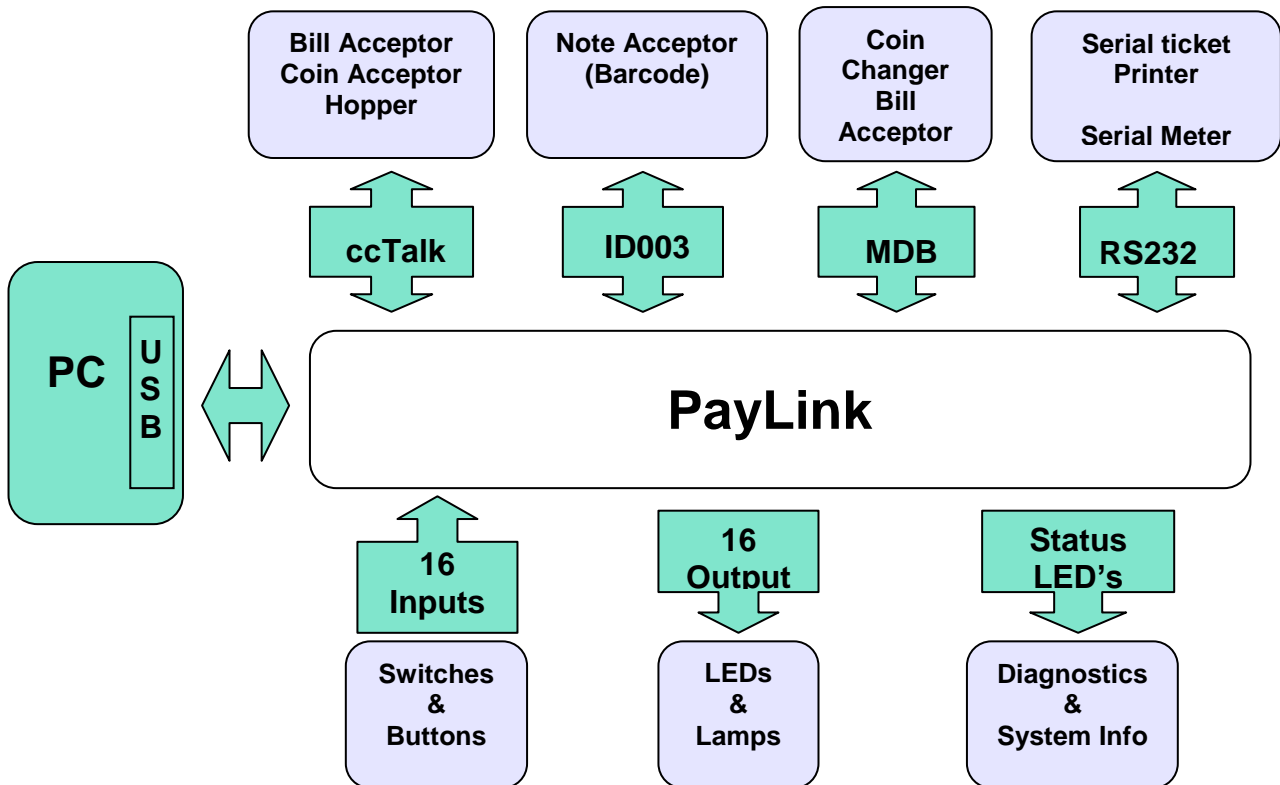
PayLink Lite development kit part number: **APCUSBXX00004**

Note: Crane Payment Solutions reserve the right to withdraw/change the development kits at anytime.

3. Specification

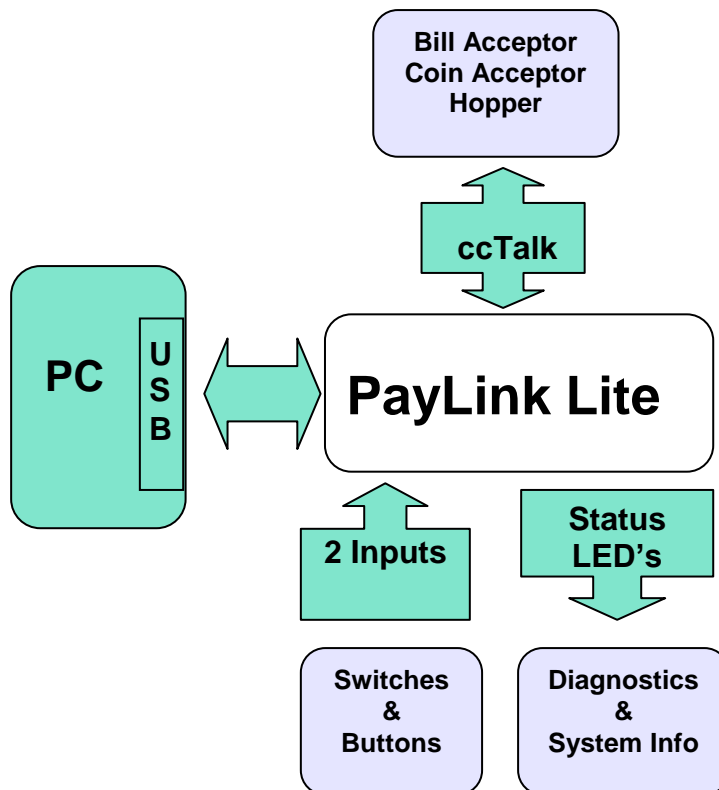
3.1 PayLink Functional block diagram

Figure 1: Functional block diagram



3.2 PayLink Lite Functional block diagram

Figure 2: Functional block diagram



3.3 Connector Overview

Below is an overview of each connector on **PayLink**.

Figure 3: PayLink Connector overview with examples

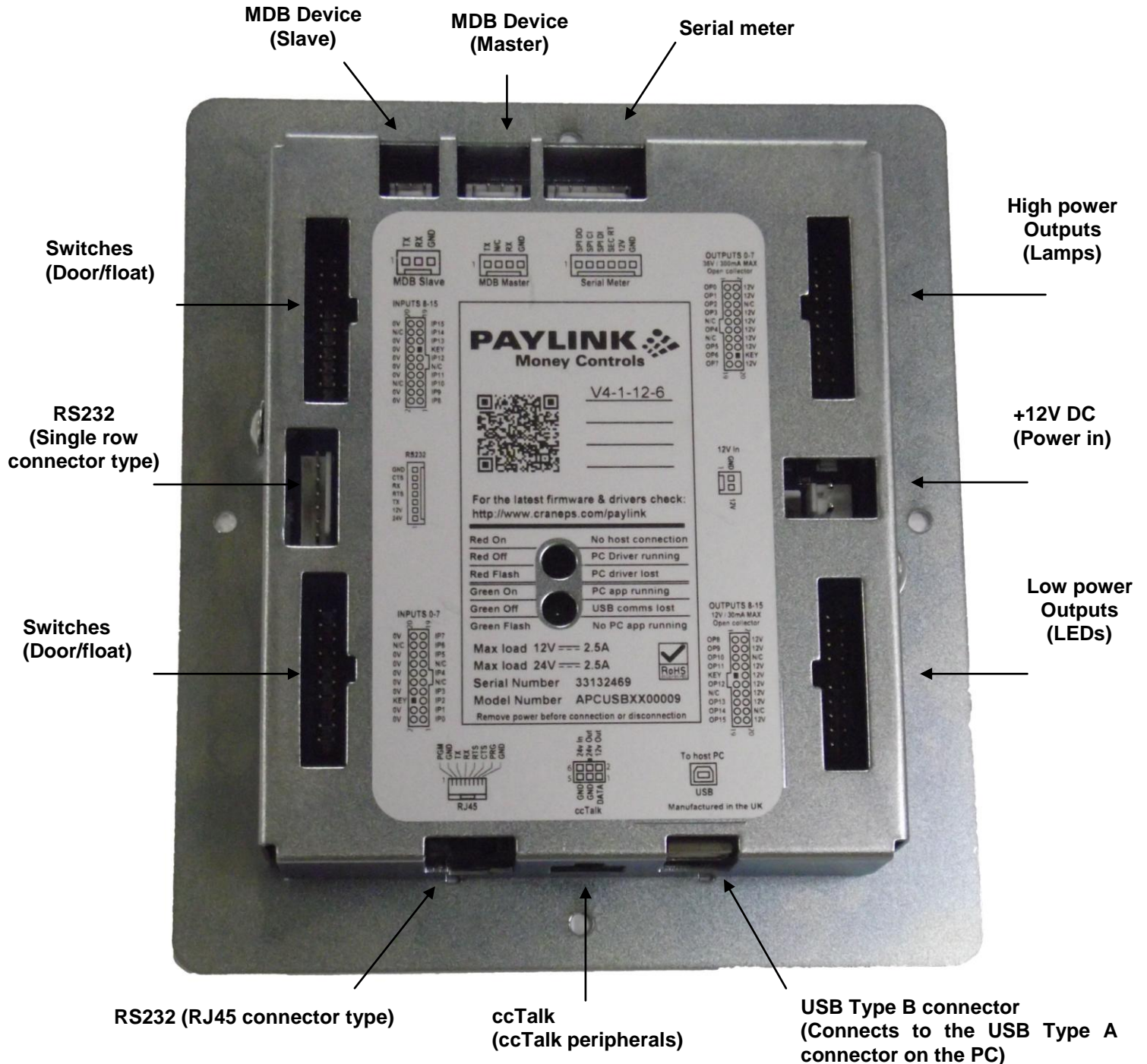
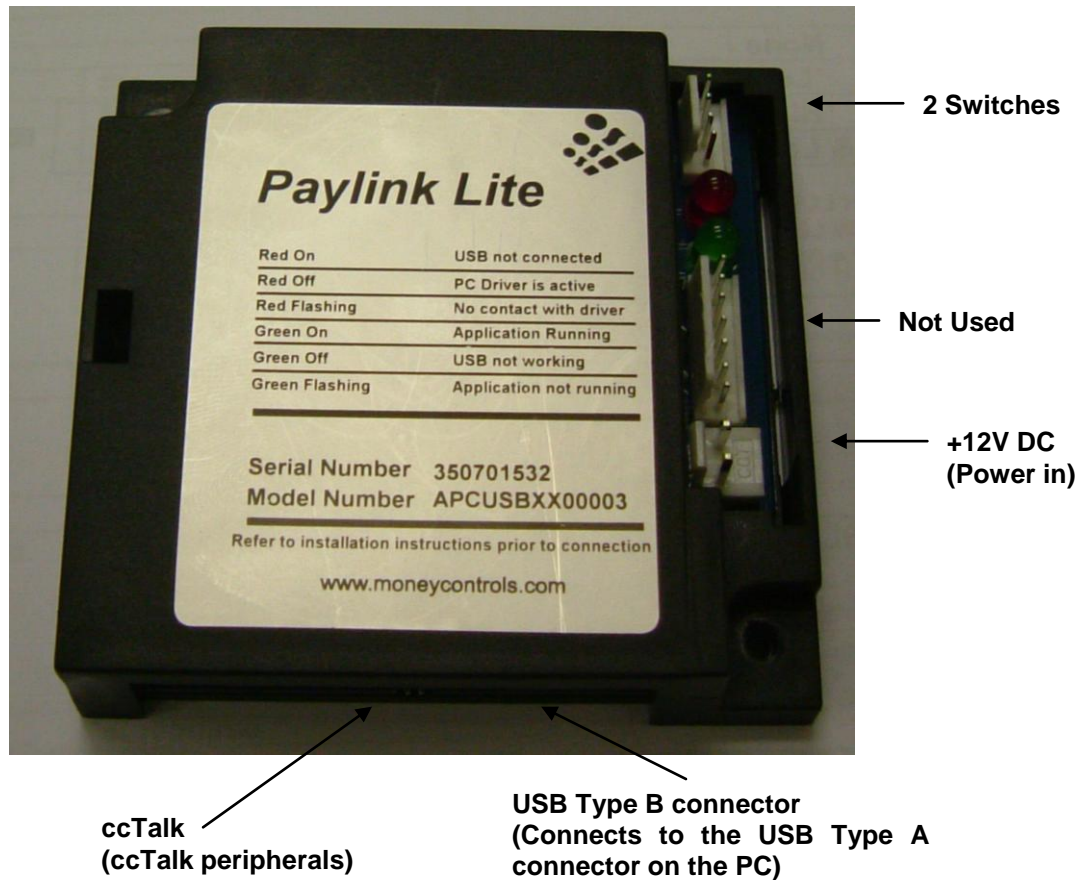


Figure 4: PayLink Lite Connector overview with examples



3.4 Mechanical Dimensions

Figure 5: PayLink mechanical dimensions

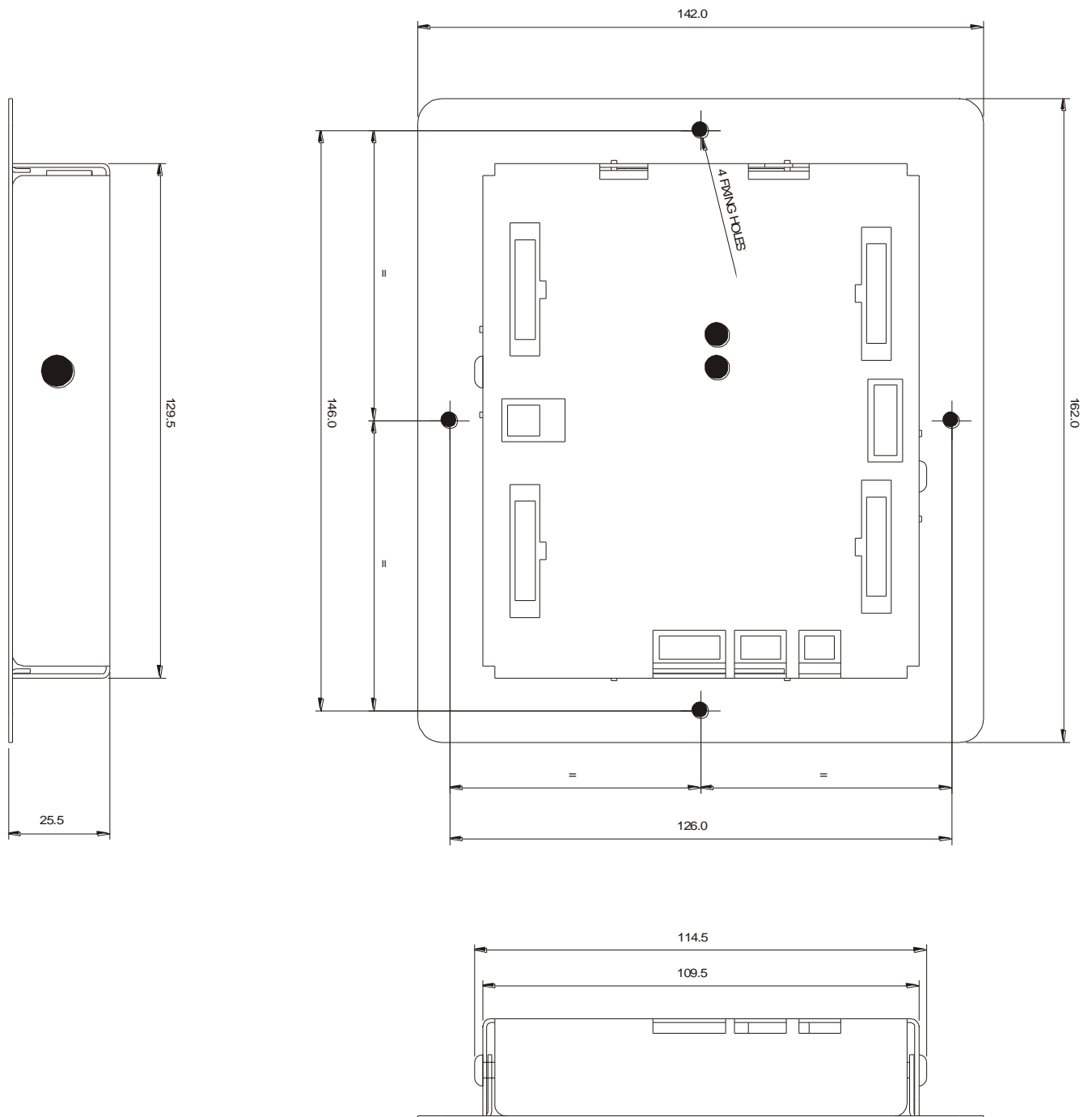
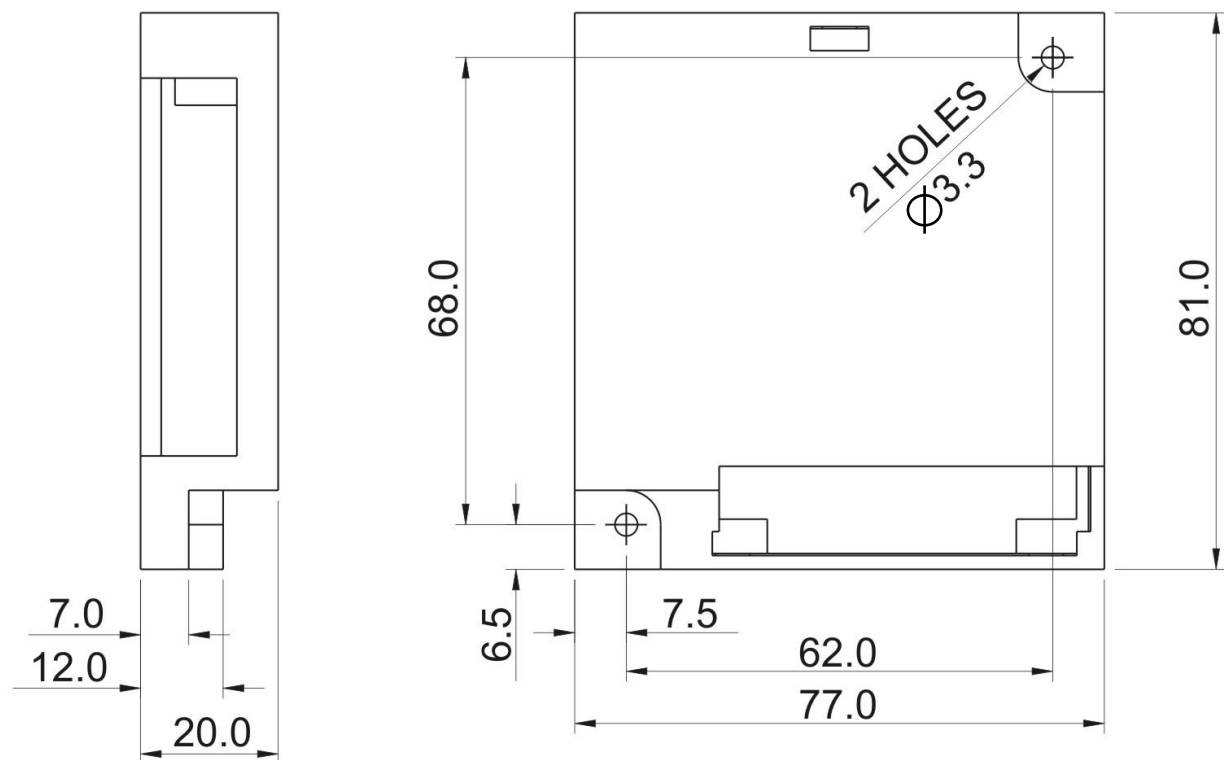


Figure 6: PayLink Lite mechanical dimensions

3.5 Electrical Specification

Table 1: Electrical Specification (PayLink)

Environmental	
Operating temperature range	0°C to 55°C
Storage temperature range	-20°C to 70°C
Humidity range	Up to 75% RH non-condensing
Electrical - General	
Voltage range	USB Powered
Outputs (fuse protected) +12Vdc	2.5A continuous, 5A peak for 200ms
Outputs (fuse protected) +24Vdc	2.5A continuous, 5A peak for 200ms
Electrical – I/O Ports	
16 inputs	Switch inputs 3V3 CMOS thresholds with 3V3 pull-ups, 5mA max.
8 high power outputs	Open drain up to 300mA, max output 36V. (Inductive or resistive)
8 low power outputs	Open drain up to 30mA, max output 12V (resistive only)
Communications Interface	
	USB Type B interface, V1.1 and above
Protocols support	
	ccTalk, ccNet, ID003, MDB, RS232

Table 2: Electrical Specification (PayLink Lite)

Environmental	
Operating temperature range	0°C to 55°C
Storage temperature range	-20°C to 70°C
Humidity range	Up to 75% RH non-condensing
Electrical - General	
Voltage range	USB Powered
Outputs (fuse protected) +12Vdc	2.5A continuous, 5A peak for 200ms
Outputs (fuse protected) +24Vdc	2.5A continuous, 5A peak for 200ms
Electrical – I/O Ports	
2 inputs	Switch inputs 3V3 CMOS thresholds with 3V3 pull-ups, 5mA max.
Communications Interface	
	USB Type B interface, V1.1 and above
Protocols support	
	ccTalk

4. Installation

4.1 Hardware installation

PayLink and **Paylink Lite** connect to the PC via the USB Type A – Type B cable, during the installation process; the LED indicates the current status of **PayLink**.

Table 3: Status LED table

RED on	USB not connected (electrical)
RED off	PC driver is active
RED flashing	No contact with PC driver program
GREEN off	USB not working
GREEN flashing	Application not running
GREEN on	Application running & Peripherals Enabled

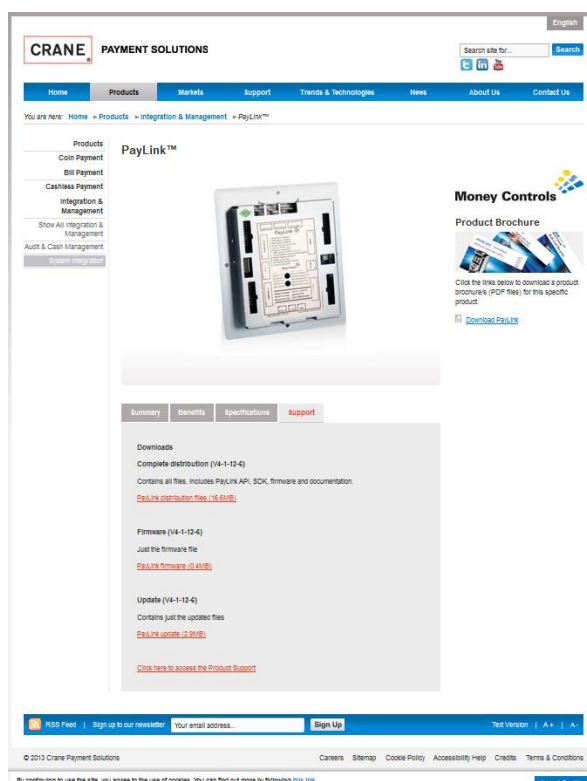
4.2 Software Download

The following link below will send you to our website (www.craneps.com) Paylink to download the PayLink Distribution directory, latest firmware and update files:

<http://www.craneps.com/PayLink/Support>

For **PayLink Lite** please use version 'V4-1-10-8 Distribution' directory.

http://www.craneps.com/PayLink_Lite/support



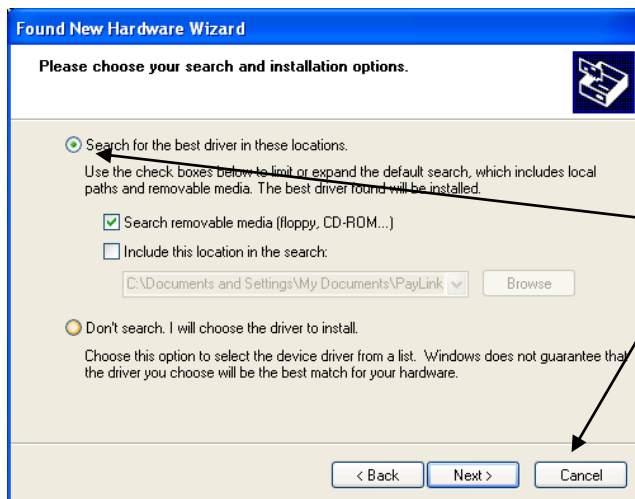
4.3 Software Installation

Connect PayLink or Paylink Lite to the PC via the USB Type A – Type B cable.

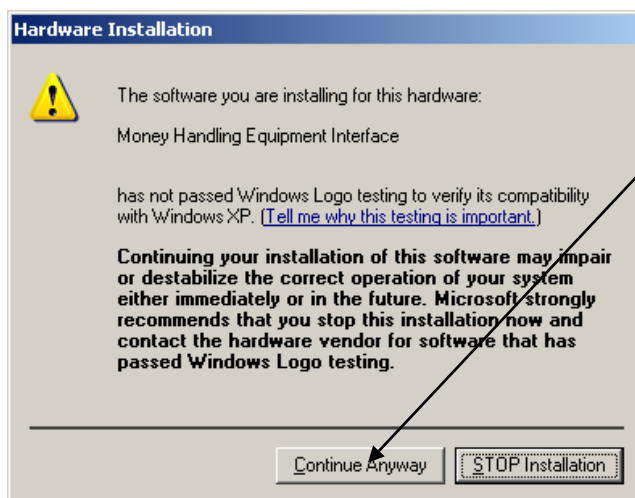
Paylink will install automatically but if this doesn't happen you are able to install manually:



Choose **Install from a specific location**, and then click **Next**



Choose **Search for the best driver in these locations** then click **Next**
Click on **Browse** and select the **Paylink** directory



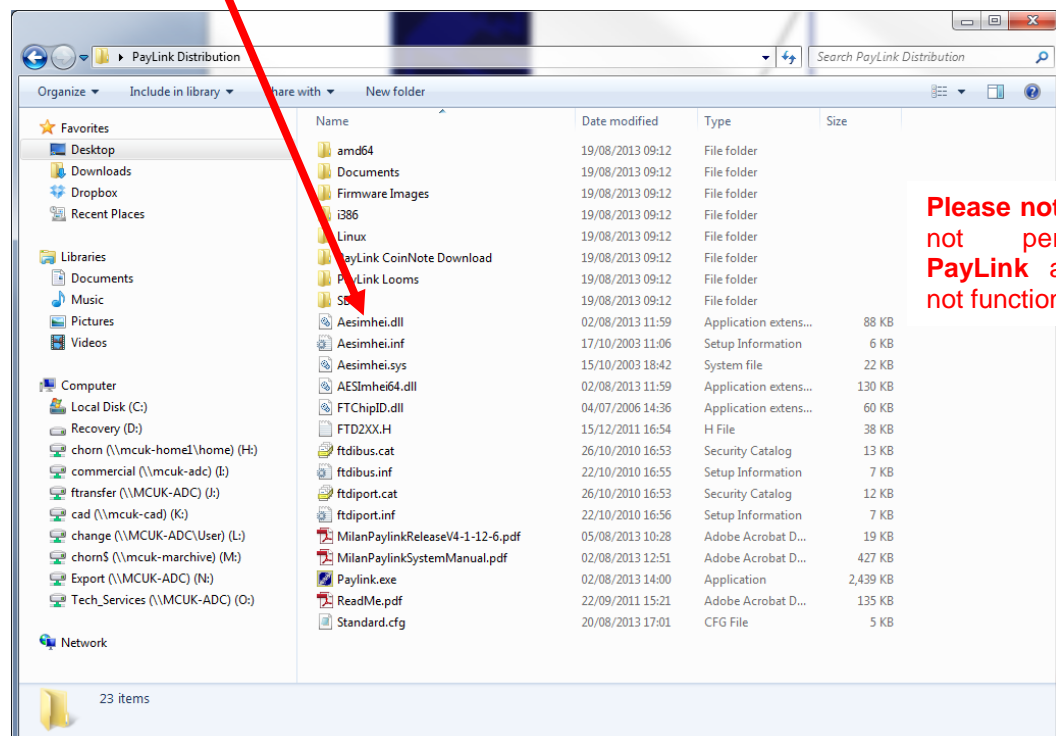
If this screen appears, click **Continue Anyway**



Click **Finish** to complete the software installation for **PayLink**.

To complete the software installation, take the following step:

In the PayLink Distribution CD there is a file called *Aesimhei.dll* – copy this to C:\Windows\System32



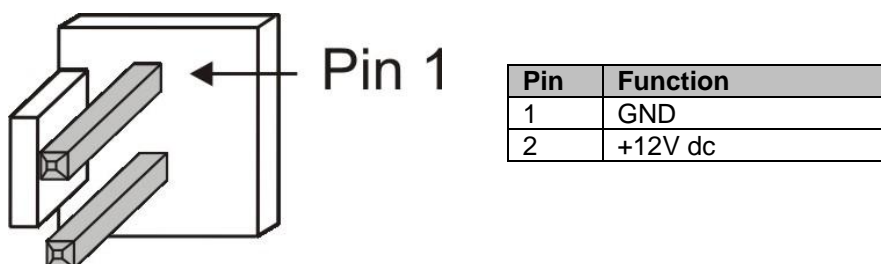
Please note: If this step is not performed, the **PayLink** applications will not function correctly.

Note: For Windows 64-bit operating systems, copy the '*Aesimhei.dll*' file into your C:\Windows directory.

5. Interface

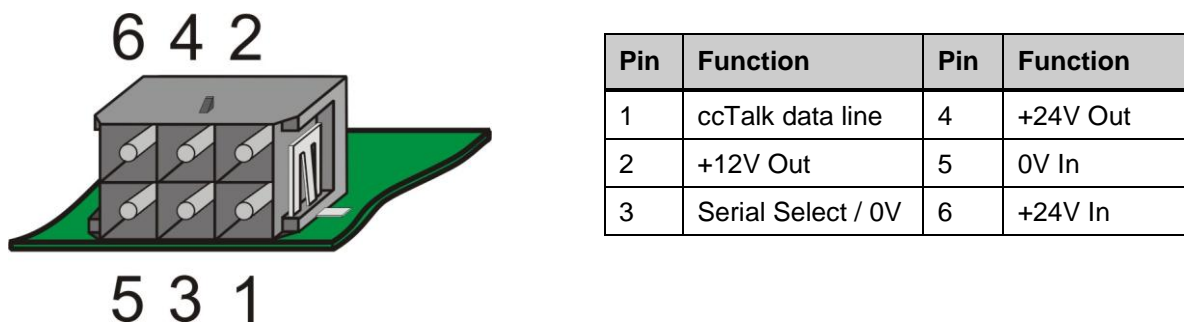
5.1 Power interface

Figure 7: PayLink power interface



5.2 ccTalk interface

Figure 8: PayLink ccTalk interface



IMPORTANT INFORMATION

- +12V Out is the supply which is provided to PayLink on the 2 pin connector via a polyfuse for protection (see Figure 7).
- +24V In must be provided by the host machine (in the PayLink development kit, this is shown by orange and black power cables) and is passed through a polyfuse for protection, this becomes +24V Out (see Figure 8).
- Under no circumstances can any more than 2.5A drawn through the card.
- Under no circumstances should PayLink be 'hot swapped' meaning disconnect power before plugging cables or peripherals.

Figure 9: ccTalk coin acceptor interface

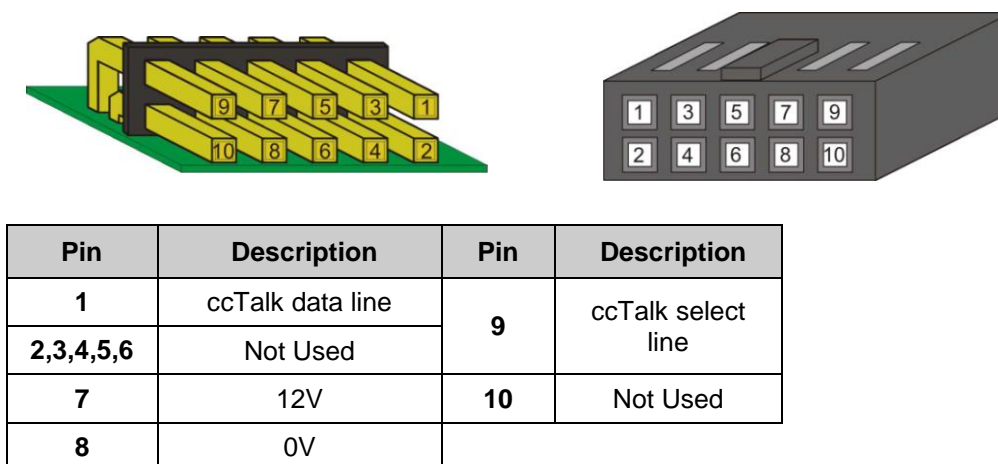


Figure 10: ccTalk coin acceptor interface

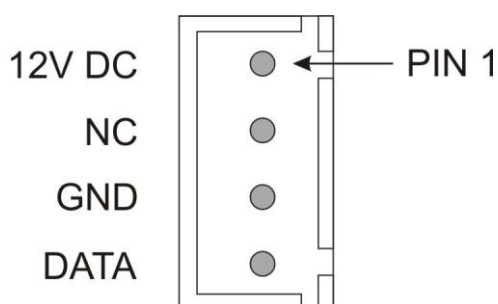
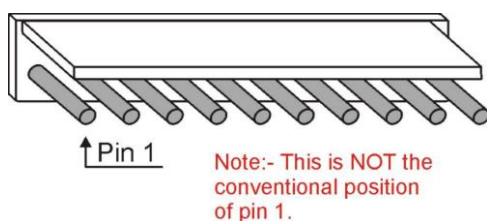


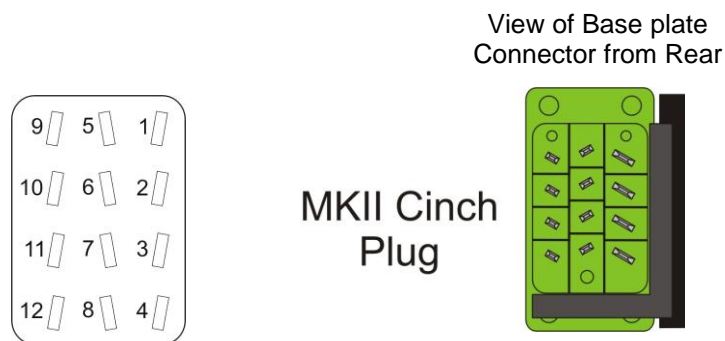
Figure 11: ccTalk hopper (Money Controls SCH2) ccTalk interface



Pin	Function	Pin	Function
1	Address select 3 - MSB	6,7	0V
2	Address select 2	8	ccTalk data line
3	Address select 1 - LSB	9	N/C
4,5	+Vs	10	/RESET

The address selection process is covered in [Section 6.2](#).

Figure 12: ccTalk hopper (Money Controls SUH) ccTalk interface



Pin	Function	Pin	Function
1	0V	8	Address Select 2
2,3	N.C.	9	+Vs
4	Address Select 1 - LSB	10,11	N.C.
5	ccTalk data line	12	Address Select 3 - MSB
6,7	N.C.		

The address selection process is covered in [section 6.2](#).

5.3 ID003 interface (over RS232)

Figure 13: PayLink – RJ45 connector with RS232

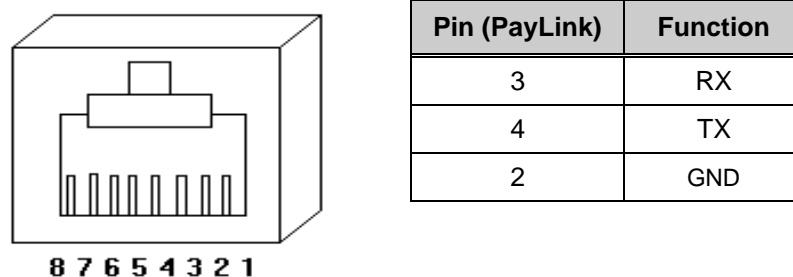


Figure 14: PayLink – Single in-line Molex connector with RS232

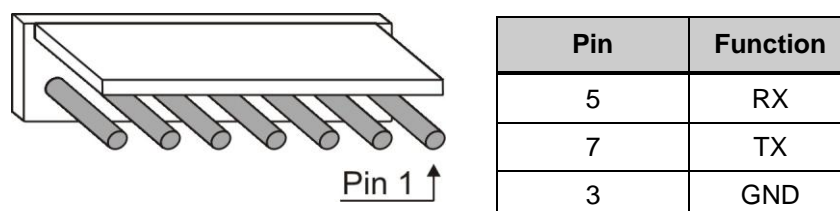
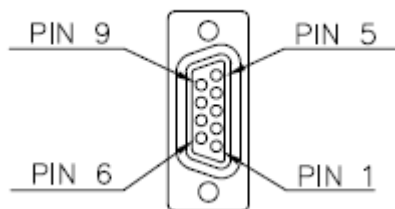


Figure 15: 9-way D Type - ID003 interface

9 Way D-type Plug – Rear view of connector

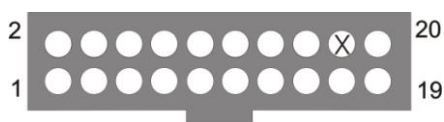
The CAT 5 cable connects the RJ45 to the 9way D Type.



Pin	Function
2	RX
3	TX
5	GND

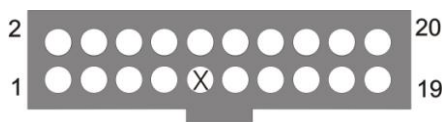
5.4 PayLink Auxiliary input/output interface

Figure 16: High power outputs



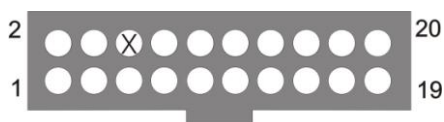
+12V	+12V	N/C	+12V	+12V	+12V	+12V	+12V	Key	+12V
0	1	2	3	N/C	4	N/C	5	6	7

Figure 17: Low power outputs

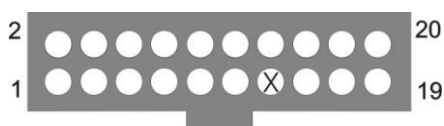


+12V	+12V	N/C	+12V	+12V	+12V	+12V	+12V	N/C	+12V
8	9	10	11	Key	12	N/C	13	14	15

Figure 18: Switches / Inputs



0V	0V	Key	0V	0V	0V	0V	0V	N/C	0V
0	1	2	3	N/C	4	N/C	5	6	7

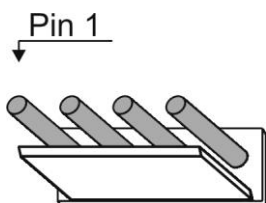
Figure 19: Switches / Inputs

0V	0V	N/C	0V	0V	0V	0V	0V	N/C	0V
8	9	10	11	N/C	12	Key	13	14	15

Table 4: I/O Interface

Pin	Conn 4	Conn 6	Conn 10	Conn 12
1	Output 0	Output 8	Input 0	Input 8
2	+12V	+12V	0V	0V
3	Output 1	Output 9	Input 1	Input 9
4	+12V	+12V	0V	0V
5	Output 2	Output 10	Input 2	Input 10
6	N/C	N/C	KEYWAY	N/C
7	Output 3	Output 11	Input 3	Input 11
8	+12V	+12V	0V	0V
9	N/C	KEYWAY	N/C	N/C
10	+12V	+12V	0V	0V
11	Output 4	Output 12	Input 4	Input 12
12	+12V	+12V	0V	0V
13	N/C	N/C	N/C	KEYWAY
14	+12V	+12V	0V	0V
15	Output 5	Output 13	Input 5	Input 13
16	+12V	+12V	0V	0V
17	Output 6	Output 14	Input 6	Input 14
18	KEYWAY	N/C	N/C	N/C
19	Output 7	Output 15	Input 7	Input 15
20	+12V	+12V	0V	0V

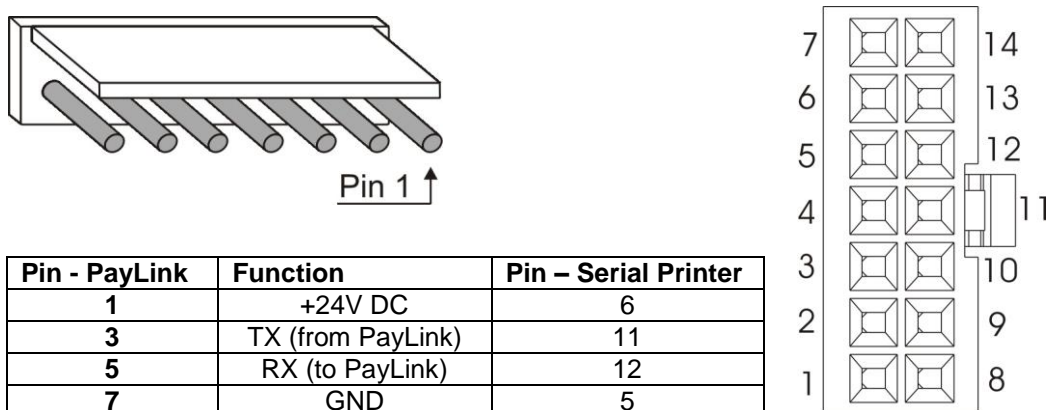
5.5 PayLink Lite input interface

Figure 20: PayLink Lite Switch Inputs

Pin - PayLink	Function
1	GND
2	Switch 1
3	GND
4	Switch 2

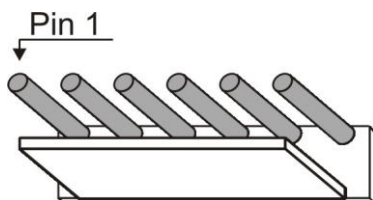
5.6 Serial printer interface

Figure 21: PayLink – RS232 Serial Printer Interface



5.7 Serial meter interface

Figure 22: PayLink serial meter interface

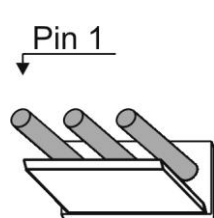


This is a 1 to 1 connection between **PayLink** and the Serial meter.

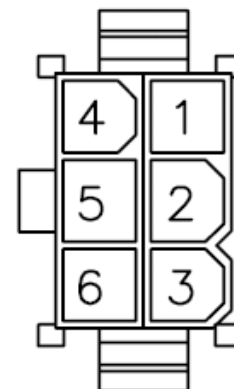
Pin (Meter)	Function	Pin (Meter)	Function
1	SPI Data Output	4	SEC Reset
2	SPI Clock Input	5	+12V Supply
3	SPI Data Input	6	0V Supply

5.8 MDB Device interface

Figure 23: MDB Slave interface



Pin (PayLink)	Function	Pin (MDB)
1	Rx (to PayLink)	5
2	TX (from PayLink)	4
3	Signal GND	6
	0V DC	2
	+V DC	1



Note: The *MDB Master interface* is currently not supported and can be used for special projects only. Please contact Crane Payment Solutions if you would like further information.

5.9 Connector details

Full drawings and connector details are provided within the **PayLink Distribution\PayLink Looms** section of the directory.

Name	Date modified	Type	Size
Ardac Elite ccTalk WMH682.pdf	07/06/2007 14:23	Adobe Acrobat D...	68 KB
ccTalk Multi wmh610.pdf	19/08/2005 08:26	Adobe Acrobat D...	345 KB
ccTalk SCH2 wmh615.pdf	19/08/2005 08:26	Adobe Acrobat D...	189 KB
ccTalk SUH wmh611.pdf	19/08/2005 08:26	Adobe Acrobat D...	190 KB
Input 1 wmh619.pdf	19/08/2005 08:26	Adobe Acrobat D...	279 KB
Input 2 wmh620.pdf	19/08/2005 08:26	Adobe Acrobat D...	279 KB
MDB WMH645.pdf	04/04/2006 13:00	Adobe Acrobat D...	69 KB
Output 1 wmh621.pdf	19/08/2005 08:26	Adobe Acrobat D...	275 KB
Output 2 wmh622.pdf	19/08/2005 08:26	Adobe Acrobat D...	275 KB
PayLink Lite Switches 704-2.pdf	02/02/2009 09:10	Adobe Acrobat D...	48 KB
PayLink Power wmh618.pdf	19/08/2005 08:26	Adobe Acrobat D...	216 KB
RJ45 - 9 Way D wmh937-1.pdf	23/09/2011 10:16	Adobe Acrobat D...	67 KB
RJ45 Cable wmh616.pdf	19/08/2005 08:26	Adobe Acrobat D...	261 KB
RS232 - 9D wmh1030-1.pdf	05/08/2013 15:01	Adobe Acrobat D...	61 KB
SEC Meter wmh617.pdf	19/08/2005 08:26	Adobe Acrobat D...	248 KB
SR3 - Condor WMH360-8.pdf	01/11/2006 12:13	Adobe Acrobat D...	50 KB
SR5i - Lumina wmh359-6.pdf	01/11/2006 12:13	Adobe Acrobat D...	44 KB
Ticket Printer wmh612R2.pdf	14/02/2006 08:38	Adobe Acrobat D...	79 KB
USB A-B wmh613.pdf	19/08/2005 08:26	Adobe Acrobat D...	255 KB

6. Peripheral Features/Support

6.1 CcTalk Coin Acceptors

- A complex system of routing is provided, which supports the diversion of coins.
- Both individual coins and the entire unit can be easily inhibited.
- The automatic retrieval from the unit of the value of each coin is supported.

6.2 CcTalk hoppers

- Currently, 8 Hoppers, at addresses 3 to 10, are supported and the pre-set values are linked to the ccTalk address (shown below).
- 6 are supported on PayLink Lite (2 when a Coin or Bill acceptor are connected)
- The hopper addresses is selected by hardwiring the connector.

Table 5: Hopper address Wiring & Coin Values

X = Connect to +Vs (Pins 4 or 5)			ccTalk Address
Address select 3 (Pin 1)	Address select 2 (Pin 2)	Address select 1 (Pin 3)	
			3
		X	4
	X		5
	X	X	6
X			7
X		X	8
X	X		9
X	X	X	10

- It is recommend to use only use 24V hoppers.
- +12V SCH2 Money Controls hoppers can be used, but you must not power via **PayLink**, as the current consumption will be too high. Under no circumstances can any more than 2.5A drawn through the card.
- Hopper level sense is supported in PayLink firmware version 3-1-10-1 and above. See section [7.2 Demo.exe](#) & PayLink Programming manual for information.
- Hopper 'power fail' is supported in PayLink firmware version 3-1-10-1 and above. See PayLink Programming manual information.

6.3 ID003

- Paylink supports ID003 protocol over RS232 interface only
- Both individual notes and the entire unit can be easily inhibited.
- The automatic retrieval from the unit of the value of each note is supported.

6.4 Serial ticket printer

- The printer needs to be preloaded with a template.
- Currently only supports Futurelogic GEN2 and Ithaca (transact or Epic) ticket printer. Please contact Crane Payment Solutions Technical Services for details.

6.5 MDB Device

- The MDB hardware has always existed on the PayLink PCB. However, this was designed to be used with an MDB coin changer only.

6.6 Inputs

- 16 Individual external switches are supported by the unit, and are easily accessible by the user's application.
- Provision is made for the user's application to easily use switches in two modes:
 1. Key Press - Where a button may be pressed several times and it is important to know how many times
 2. State - Where the switch changes over a long time frame and all the application needs to know is where the switch is at any instant.

6.7 Outputs

- 8 Individual external LED's are supported by the unit, and are easily accessible by the user's application.
- 8 high power (lamp) outputs are supported by the unit, and are easily accessible by the user's application.
- See Electrical Specifications for more details.

6.8 Serial meter

- One external meter with an SPI interface corresponding to that defined by Starpoint is supported.
- The **PayLink** board fully supports all 31 of the Starpoint's counters.
- Provision is made to allow the user's application to easily support the BACTA standard for displaying counter values, as well as to implement any other scheme.
- The **PayLink** board continually checks that the meter is operation.

In the SDK directory there is a 'Aesimhei.h' file (can be opened in notepad) which shows all the products supported by Paylink.

7. Using PayLink

This section shows how to run and use various programs, all of which are provided on the **PayLink** distribution Directory.

- **Paylink.exe** (the PayLink driver)
- **MilanDiag.exe** (diagnostics program)
- **Demo.exe** (API example)
- **Firmware.exe** upgrade program

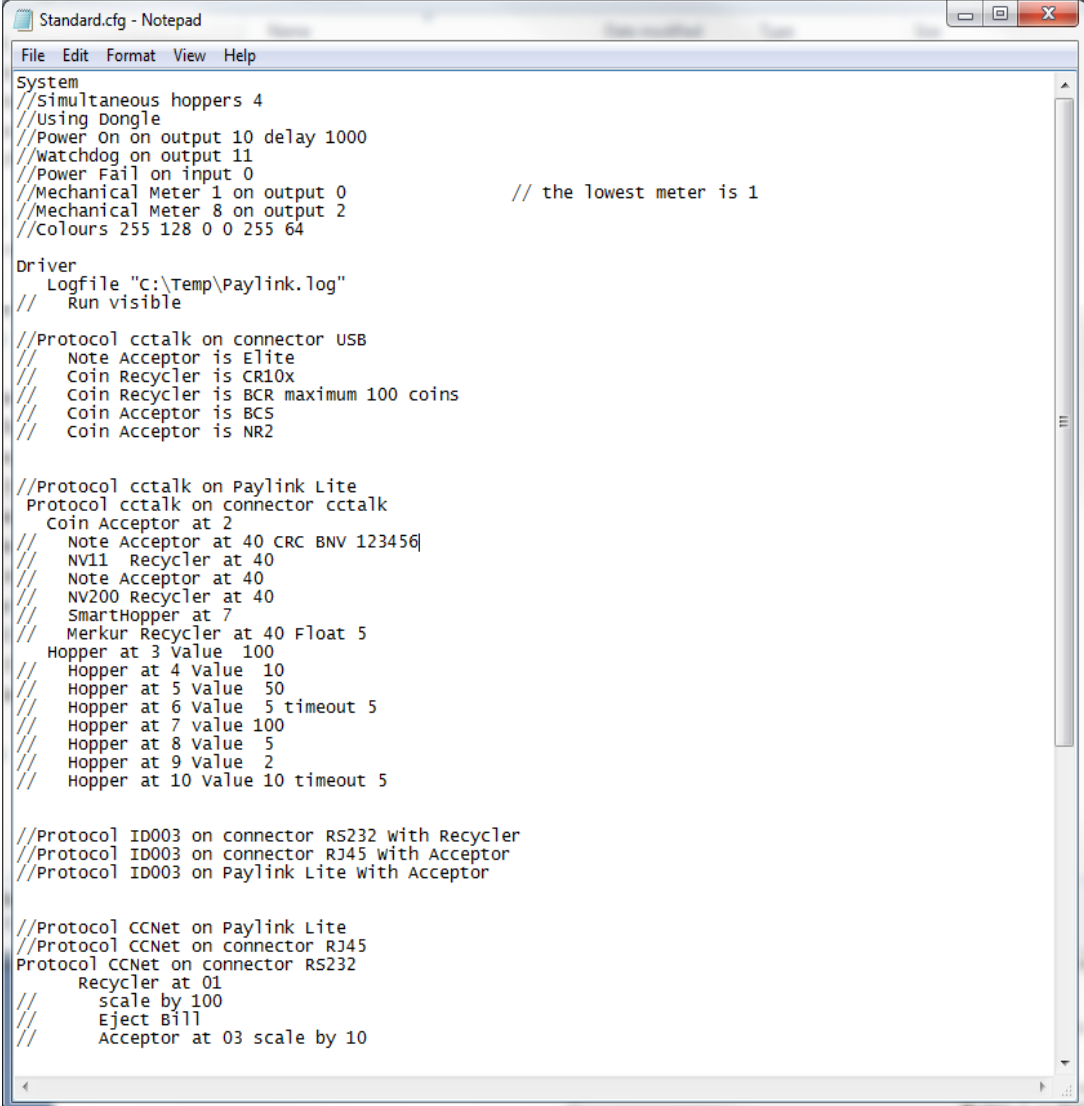
7.1 Configuration File (Standard.cfg)

The 'Standard.cfg' file has been supported since version V4-1-12-4 Paylink firmware.

The 'cfg' file needs to be set for the peripherals connected to the Paylink.

Remove '//' if the peripheral is connected.

Save the 'Standard.cfg' file once you have selected the peripherals.



```
Standard.cfg - Notepad
File Edit Format View Help
System
//Simultaneous hoppers 4
//Using Dongle
//Power On on output 10 delay 1000
//watchdog on output 11
//Power Fail on input 0
//Mechanical Meter 1 on output 0           // the lowest meter is 1
//Mechanical Meter 8 on output 2
//Colours 255 128 0 0 255 64

Driver
Logfile "C:\Temp\Paylink.log"
// Run visible

//Protocol cctalk on connector USB
// Note Acceptor is Elite
// Coin Recycler is CR10x
// Coin Recycler is BCR maximum 100 coins
// Coin Acceptor is BCS
// Coin Acceptor is NR2

//Protocol cctalk on Paylink Lite
Protocol cctalk on connector cctalk
Coin Acceptor at 2
// Note Acceptor at 40 CRC BNV 123456
// NV11 Recycler at 40
// Note Acceptor at 40
// NV200 Recycler at 40
// SmartHopper at 7
// Merkur Recycler at 40 Float 5
Hopper at 3 Value 100
// Hopper at 4 Value 10
// Hopper at 5 Value 50
// Hopper at 6 Value 5 timeout 5
// Hopper at 7 Value 100
// Hopper at 8 Value 5
// Hopper at 9 Value 2
// Hopper at 10 Value 10 timeout 5

//Protocol ID003 on connector RS232 With Recycler
//Protocol ID003 on connector RJ45 With Acceptor
//Protocol ID003 on Paylink Lite With Acceptor

//Protocol CCNet on Paylink Lite
//Protocol CCNet on connector RJ45
Protocol CCNet on connector RS232
Recycler at 01
// scale by 100
// Eject Bill
// Acceptor at 03 scale by 10
```

- You can set the coin value for the hoppers, i.e. “**Hopper at 3 value 100**”. This is the value that will be reported for each coin paid out by the hopper.
- If the ccTalk peripheral is encrypted you need to add “**CRC BNV 123456**”. 123456 is the default BNV code. Please insert the peripheral BNV code.

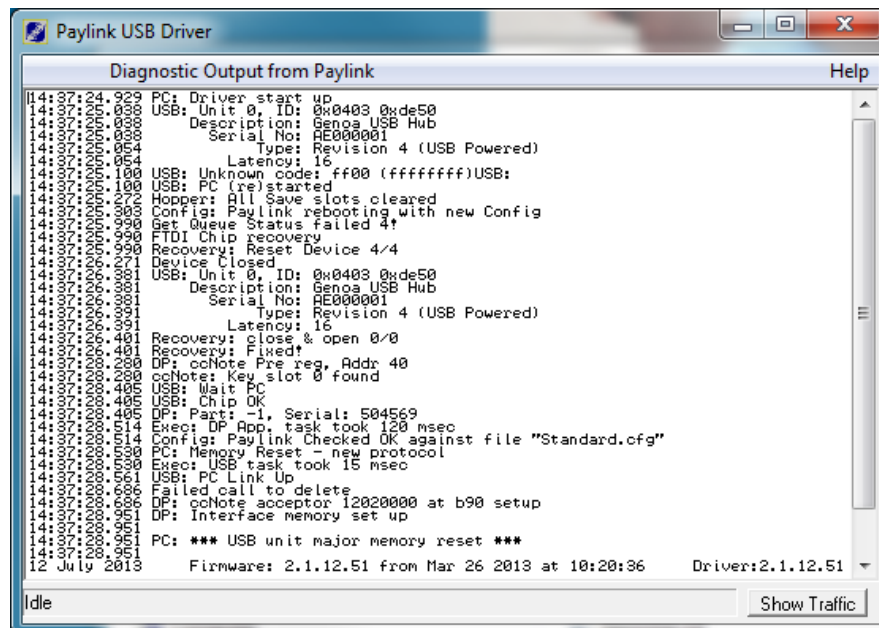
For more detailed descriptions of these features, please refer to the ‘Documents’ directory in the Paylink distribution directory.

See page 46 and onwards in the ‘MilanPaylinkSystemManual’ for full configuration file details.

7.2 Paylink Driver (Paylink.exe)

Paylink.exe is found in the ‘**PayLink 4-1-12-6 distribution**’ directory. When the application is running, the following screen will be shown.

You can output to a log file by adding a parameter to Paylink start line. This will generate a time stamped log that will show driver and PayLink events. There will be no GUI when this is performed.



The contents of this screen should be similar to the one shown above. The status LED on **PayLink** will now **flash GREEN** to indicate that the driver is working correctly.

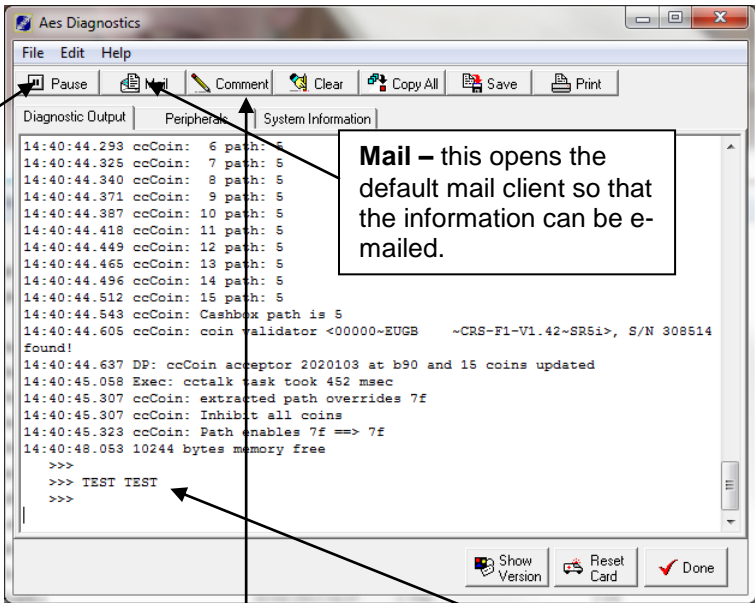
Refer to [Table 3: Status LED table](#) for information.

This driver **MUST** be run before running the demo software or your own API.

The ‘**PayLink 4-1-12-6 distribution**’ directory can be placed anywhere on your PC as long as the DLL file is copied into the correct directory.

7.3 MilanDiag.exe

This is a Diagnostics program, which shows various information about **PayLink**, such as the peripherals, which are connected and the version number of PayLink firmware. Diag.exe is found in the following directory: **PayLink\SDK**. When the application is run, the following screen will be shown:



Pause – This pauses the application.

Mail – this opens the default mail client so that the information can be e-mailed.

Clear – clears the screen.

Copy all – this copies the shown text to clipboard.

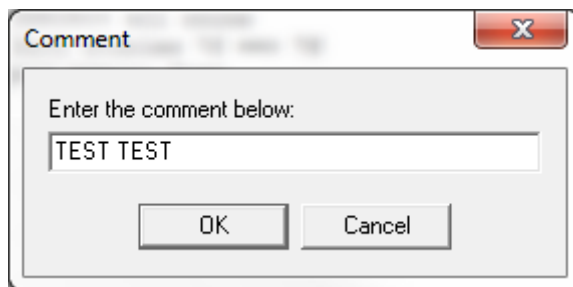
Save – This saves the text in a log file.

Print – This prints the current text.

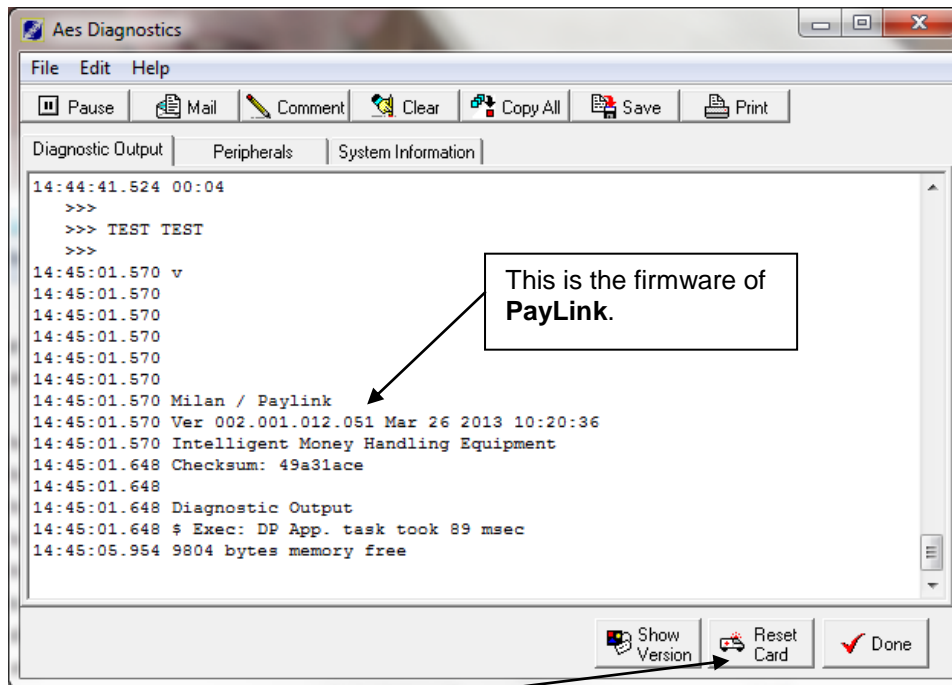
A comment will then appear in the diagnostics window.

The screenshot shows the 'Aes Diagnostics' window with a menu bar (File, Edit, Help) and a toolbar (Pause, Mail, Comment, Clear, Copy All, Save, Print). The 'Diagnostic Output' tab is active, displaying a log of system events. The 'Comment' button is highlighted with a callout indicating that clicking it will add a comment to the log.

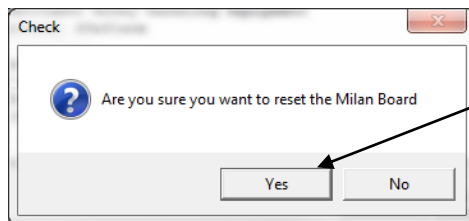
Clicking the **Comment** button, allows a comment to be added, the following screen will appear.



Clicking on the **Show Version** button will show the following screen.

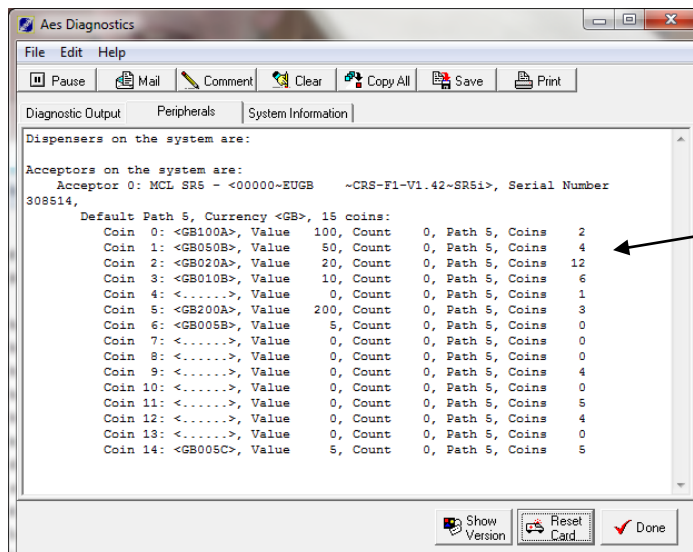


Click on the **Reset Card** button will show the following screen.

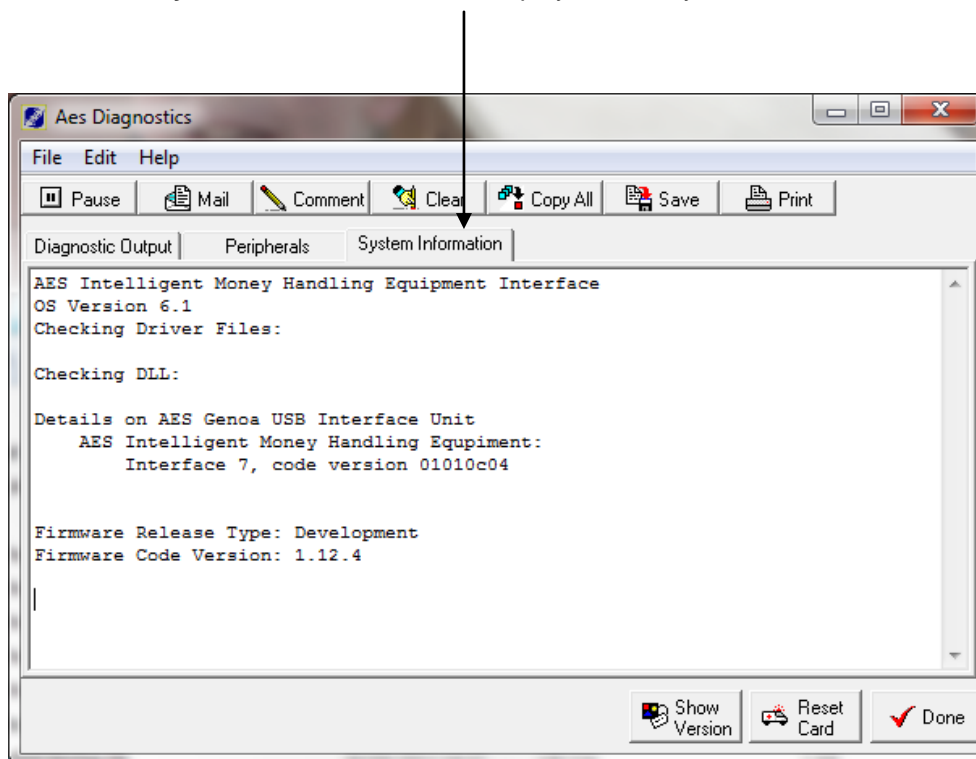


Note: "Milan Board" is an internal reference only.

Click on the **Peripherals** tab to see which peripherals are connected.



Click on the **System Information** tab to display various system information about **PayLink**.



Click '**Done**' to close the Diagnostics application.

7.4 Demo.exe

This is an API example, which also doubles up as a quick and easy way to test/demo **PayLink** before the software writing can begin. The application is called Demo.exe and is in the following location: **PayLink Distribution\SDK**

Click **Acceptors** to show the current connected Coin/Note acceptors

Click **Dispensers** to show the current connected Hoppers

Click **Escrow** for the Escrow control

The **Latest Event** notifies the application of events that are not to do with money. Faults, misreads etc.

Click **Switches/LEDs** to control the Inputs/outputs

Click **Meter** to show the current connected Serial Meter

Click **Barcodes** to control the barcode features (Ardac 5/Serial ticket printer)

Coins and notes entered into the peripherals will be displayed in the **Amount Just Read** box. The **Total Amount Read** box is the amount read over the lifetime of the PayLink

The **Payout** box shows the value to be paid out. Click the **Pay It** button to pay out the desired value. **Paylink** will decide how to pay out the value depending on which value hoppers are connected. The **Total Amount Paid Out** shows the amount paid over the lifetime of the PayLink

This drop down menu shows the acceptors connected

Click **Disable** to disable the acceptor selected

Various information about the selected acceptor such as currency, coins programmed etc

Click **'Done'** to return to the front screen.

Click on the **Dispersers** button and this screen will be shown. Various information about the connected **Dispersers** is shown.

Click on the Switches/LEDs button to see the following screen.

Click on the Led buttons to drive the LED output.

The switch box will light when the switch inputs are activated.

Click on the **Meter** button to show this screen. The counter can be incremented using the **Increment Counter** button.

Click on the **Barcodes** button to show the following screen.

When a barcode is inserted, the number will be shown here. Click **Accept ticket** or **Return ticket** to proceed.

The barcodes screen can be exited using the **Bar Codes Off** button

7.5 Upgrading PayLink firmware

PayLink has an on board flash device, which can be reprogrammed using a small application through the USB link. The application is found in the following directory **PayLink Distribution\PayLink Firmware**

The following parameters can be added to the file name to provide enhanced functionality.

/Force - will automatically re-program the PayLink even if the images match.

/Check - will cause the loader to exit without showing a window if the PayLink firmware matches, and has no errors.

/Nogui - will never display anything on the screen and will report progress to stdout or a console window if either is available.

The screenshot shows a window titled "AES Programming Utility". It contains two main sections for comparing firmware. The first section, "Currently Loaded:", shows "Paylink" with version "1.12.4", status "Development", Xsum "0x4B5926D5", and kernel version "4.2.2.0". The second section, "This Image:", shows "GenoaV4-1-12-6.exe" with version "1.12.6", status "Full Release", Xsum "0x445BB0C2", and kernel version "4.2.2.0". At the bottom, it shows "Address 0x8E80: 29 blocks out of 1654 programmed" with a progress bar and a "Configure" button. The version "Ver: Jun 29 2011" is also displayed.

AES Programming Utility			
Currently Loaded:	Paylink	Status:	Development
Version:	1.12.4	Xsum:	0x4B5926D5
Compiled:	Not available		
Kernel Version:	4.2.2.0		
This Image:	GenoaV4-1-12-6.exe	Status:	Full Release
Version:	1.12.6	Xsum:	0x445BB0C2
Compiled:	on Aug 2 2013 at 13:59:14		
Kernel Version:	4.2.2.0		
Ver: Jun 29 2011			
Address 0x8E80: 29 blocks out of 1654 programmed		Configure	

Once complete the **AES Programming Utility** will self terminate.

While running a “Configure” button is accessible. This can be used to access advanced features.

“Startup Configuration” provides the ability to “Set” and “Clear” an entry in the Windows registry that will silently run this copy of the programming utility at system Startup.

The screenshot shows the 'AES Programming Utility' window. It contains two main sections for configuration details. The first section, 'Currently Loaded:', shows 'Paylink' with version '1.12.4', status 'Development', and Xsum '0x4B5926D5'. The second section, 'This Image:', shows 'GenoaV4-1-12-6.exe' with version '1.12.6', status 'Full Release', and Xsum '0x445BB0C2'. Both sections also show a 'Compiled:' time of 'on Aug 2 2013 at 13:59:14' and a 'Kernel Version' of '4.2.2.0'. A progress bar at the bottom indicates 'Address 0x12180: 323 blocks out of 1654 programmed' with a 'Configure' button. Below this is the 'Startup Configuration' section, which has a 'Startup Check:' dropdown set to 'None' and a 'Set' button. A text box explains that this facility allows setting an automatic check at startup to ensure the AES IMHEI card is running the correct version of the firmware.

Currently Loaded:	Paylink	Status:	Development
Version:	1.12.4	Xsum:	0x4B5926D5
Compiled:	Not available		
Kernel Version:	4.2.2.0		

This Image:	GenoaV4-1-12-6.exe	Status:	Full Release
Version:	1.12.6	Xsum:	0x445BB0C2
Compiled:	on Aug 2 2013 at 13:59:14		
Kernel Version:	4.2.2.0		

Ver: Jun 29 2011

Address 0x12180: 323 blocks out of 1654 programmed Configure

Startup Configuration

Startup Check: None Set

This facility allows you to set an automatic check at startup to ensure that the AES IMHEI card is running the correct version of the firmware.

8. Technical Support

For any questions, support or queries, please contact Crane Payment Solutions Technical support team:

Email: technical.uk@craneps.com

Phone: +44(0)161 955 0124

Please click on the following link for support outside the UK:

<http://www.craneps.com/en/contact/globaloffices>

Below are the quick links to the Paylink Distribution directory, drivers, firmware, etc:

Paylink: <http://www.craneps.com/PayLink/Support>

Paylink Lite: http://www.craneps.com/PayLink_Lite/support