**Aardvark Embedded Solutions**

MDB Paylink Lite


**Product Description:**

## Why do I need an MDB Paylink Lite?

If you want to create a system that drives MDB peripherals from a Windows or Linux PC, or a Raspberry Pi and you want to make that job easy, then the Aardvark MDB Paylink Lite unit is exactly what you need.

MDB Peripherals handle coins, notes and payment cards and are generally the lowest cost options. They are often found in vending machines.

Featuring the well proven Paylink API, the Paylink MDB Lite is designed from the ground up to support a system using these MDB peripherals in an easy, cost efficient way.
The unit is fitted with the MDB standard 6-way peripheral connector, so **all** MDB peripherals, coin changers, note recyclers and cashless units can be plugged *directly* into the unit without using any additional cabling.

A high power barrel connector is also connected to this 6-way, to easily provide power to your MDB peripherals without any extra cabling.

This power connection is totally isolated from the rest of the unit, in conjunction with the opto-isolation used on MDB peripherals, this results in a very low noise system with no ground connection between the PC and the peripherals.

## What does MDB Paylink Lite do?

When you use the MDB Paylink Lite in a system the standard Paylink is replaced with this small box which supports the MDB peripheral connection, allowing you to use a set of MDB peripherals.

Alongside this MDB peripheral connection you can also use a direct USB connection to supported peripherals or you can use an RS232 peripheral alongside the MDB Paylink Lite using an auxiliary Paylink Lite device.

As well as this, you can connect up to 4 digital inputs (switches) or up to 4 outputs (LEDs). MDB Paylink Lite provides the same electrical specification for these as the equivalents on the standard Paylink.

The 20 pin digital I/O connector on the MDB board (the same as the cctalk Lite unit) provides the following 5 groups of 4 pins:

- 4 pins are digital inputs (switches) which are each the same as one of the 16 digital inputs on a standard Paylink
- 4 pins are connected to ground for use with these inputs
- 4 pins are digital outputs (are each the same as the 8 low power outputs on a standard Paylink) connected to ground when driven from Paylink.
- 4 pins which are pre-wired for an LED, driven from the 5V USB supply. There is no equivalent of these pins on the Standard Paylink.
- 4 pins connected to the 5V USB supply though a 500mA fuse, for convenience when using general outputs – equivalent to the pins on a Standard Paylink.
  The main MDB supply is not available here as it is electrically isolated from everything else on the board.

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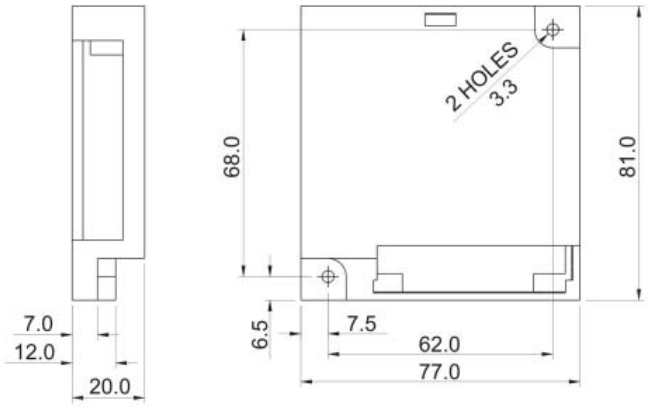
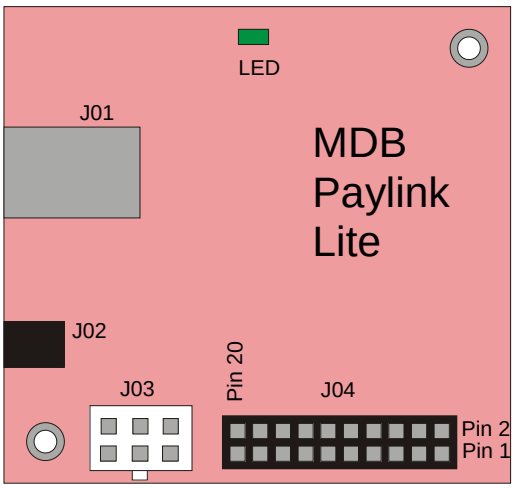
## Technical Details

### Dimensions




### Layout


### Connectors



### *J01 – USB Connector*

The connection from the PC to the Paylink Lite 2 board is through a standard “Type B” connector.

### *J02 – MDB Power Connector*

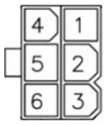
T
his is a standard DC power barrel connector, compatible with many power supplies

| Connector | Diameter | Description |
|---|---|---|
| Inside Contact | 2 mm | V+ Peripheral Supply |
| Outside Contact | 6.5 mm | V- Peripheral Supply |

This DC power barrel connector is rated at 8A and is *only* connected to the peripheral power pins on the MDB Peripheral connector, with no internal fuse

The MDB specification calls for opto-isolated communications on all MDB peripherals. Where the peripherals in use follow this specification, an isolated power supply used with this connector will mean that the peripheral system ground is completely isolated from the PC, with the associated immunity to electrical noise.

### *J03 – Standard MDB connector*




*Note that this is the standard connector as specified and used on all MDB peripherals. This means that there is no need for any cables, the (first) MDB peripheral just plugs directly into the Paylink Lite*

| Pin | Signal Name | Description |
|---|---|---|
| 1 | +V DC | Only connected to the V+ power pin on J04 |
| 2 | 0V DC | Only connected to the V- power pin on J04 |
| 3 | N/C | |
| 4 | TX (from Paylink) | Standard MDB serial communications |
| 5 | Rx (to Paylink) | Standard MDB serial communications |
| 6 | Signal GND | Connected to Paylink (and the PC) Ground |

Most MDB peripherals come with two cables ending in MDB standard six way plugs. These can plug directly into each other making a “daisy chain” of peripherals along the bus.

This connector is identical to the outgoing connector on such peripherals, so there is no need to create any cables to use this Paylink with most MDB peripherals.

### *J04 – Digital I/O Connector*

The pinout of the I/O connector on all Paylink Lite 2 boards is the same. The view is looking down onto the connector and board.

*Connector latch on this side*


*In order to maintain compatibility with earlier versions of Paylink, the pin allocation of this connector is as shown in the diagram to the left.*

*Note that this does <u>not</u> match the standard pin allocation described in the Molex Microfit documentation.*

| Pin | Signal Name | Description |
|---|---|---|
| 1 | +5 VF | 5V USB supply, with a 500mA fuse |
| 2 | +5 VF | |
| 3 | +5 VF | |
| 4 | +5 VF | |
| 5 | Output 0 | Output signal 0 (Active Low) |
| 6 | Output 1 | Output signal 1 (Active Low) |
| 7 | Output 2 | Output signal 2 (Active Low) |
| 8 | Output 3 | Output signal 3 (Active Low) |
| 9 | Pull-Up 0 | Pull-ups to the USB 5V to allow the direct driving of LEDs, without using an external power supply |
| 10 | Pull-Up 1 | |
| 11 | Pull-Up 2 | |
| 12 | Pull-Up 3 | |
| 13 | Ground | Ground reference signals for use with input signals |
| 14 | Ground | |
| 15 | Ground | |
| 16 | Ground | |
| 17 | Input 0 | Switch input 0 |
| 18 | Input 1 | Switch input 1 |
| 19 | Input 2 | Switch input 2 |
| 20 | Input 3 | Switch input 3 |