# TL Technologies

## TL4-PCI
### Serial Computer Interface for Coin Acceptors

## 1. Description
TL4 is a serial computer interface which allows a user-friendly means of developing “user pays”, PC-based applications. It is the “gateway” between an IBM compatible PC and credit validation equipment such as electronic coin validators and bank note readers. By using a standard comms DLL, the credit information can be easily interfaced into a Windows-based environment in real-time and with complete data integrity.

TL4 is contained on a standard PCI card, residing in the I/O bus of the computer, with a connection directly to the PC serial communications port. It receives credit information from its credit validation peripherals and translates this information into an ASCII character based data string which is passed to the PC through the serial port. Similarly, control of the peripherals is effected by the PC through the same comms port, via the TL4.

## 2. Technical Details
**2.1 Physical** : Standard PCI bus card, conforming to IBM bus standards

**2.2 I/O Description**

| | | |
|---|---|---|
| ***Validator*** | : | 10 way IDC header connection to electronic coin validator |
| ***Power*** | : | Regulated 12VDC supply from PC |
| ***Inhibit*** | : | Software controlled output to inhibit an electronic validator |
| ***Serial*** | : | Serial 9 pin connection to PC serial comms port |

**2.3 Communications** : 9600bps, 8, 1, N, half duplex

**2.4 ASCII Protocol**

**2.4.1 Data Description from TL4 to PC - 14 byte string**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C1 | C2 | C3 | C4 | C5 | C6 | Y | E/D | N1 | N2 | N3 | N4 | E/D | CR |

| Bit | Data | Description |
|---|---|---|
| C1 | 0-9 | Identifies the number of C1 coins received |
| C2 | 0-9 | Identifies the number of C2 coins received |
| C3 | 0-9 | Identifies the number of C3 coins received |
| C4 | 0-9 | Identifies the number of C4 coins received |
| C5 | 0-9 | Identifies the number of C5 coins received |
| C6 | 0-9 | Identifies the number of C6 coins received |
| Y | Y | Transmitted if a yo-yo alarm is received |
| E/D | E or D | Status of validator - either enabled or disabled |
| N1 | 0-9 | Identifies the number of N1 notes received |
| N2 | 0-9 | Identifies the number of N2 notes received |
| N3 | 0-9 | Identifies the number of N3 notes received |
| N4 | 0-9 | Identifies the number of N4 notes received |
| E/D | E or D | Status of BNR - either enabled or disabled |

**2.3.2 Data Description from PC to TL4**

| Output | Description |
|---|---|
| ?<CR> | TL4 Data Request |
| EV<CR> | Enable Validator |
| DV<CR> | Disable Validator |
| EN<CR> | Enable Bank Note Reader |
| DN<CR> | Disable Bank Note Reader |



**TL Technologies**
P.O. Box 183 Burwood Victoria Australia 3125
Ph : (61 3) 9808 515 Fax : (61 3) 9808 0515
Email : TLTechnologies@bigpond.com

**3. Notes**

**3.1** Coin validator is automatically inhibited upon power up. PC must send “EV” command to enable validator and “DV” commands thereafter to disable validator.

**3.2** TL4 data packet is only transmitted after a “?” command is received. PC must only transmit one query per packet received.

**3.3** If any coin or note data exceeds 10 units (0-9), the validator/BNR is automatically inhibited until the TL4 is interrogated by the PC and the full data packet is transmitted.

**3.4** Minimum validator pulse width is 100 msec

**3.5** The features and output data string described in Section 2.4 is defined by the Model descriptions detailed below.

**3.6** **Ordering Information**

| **Model** | | | **Feature** | |
|---|---|---|---|---|
| | **Coin** | **Note** | **Enable/Disable** | **Escrow** |
| TL4-PCI | ✓ | | ✓ | |
| TL6-PCI | ✓ | ✓ | ✓ | |
| TL6E (ISA only) | ✓ | ✓ | ✓ | ✓ |
| TL8-PCI | | ✓ | ✓ | |




**TL Technologies**
P.O. Box 183 Burwood Victoria Australia 3125
Ph : (61 3) 9808 515 Fax : (61 3) 9808 0515
Email : TLTechnologies@bigpond.com