TL Technologies

TL-USB *dual peripheral*
USB Computer Interface for Coin & Note Acceptors

The TL-USB can independently connect either a coin or a note acceptor or both simultaneously, to a host PC via a single USB port. The unit is a very compact, standalone module. An external 12Vdc 1A regulated power source is required. You need to specify model TL4: coin only or TL6 : note & coin

Three protocols are available, providing 4, 6 or 8 note data formats. Each protocol format is activated by a unique query command. Protocols 2 & 3 support a coin dispense output to drive a coin hopper

Power : 12Vdc 1.5A regulated plug pack (2.0 or 2.5mm). *Polarity is centre positive.*

Connector : Coin validator (parallel operation, 6 coin output lines) – 10 pin IDC
Note Acceptor (RS232 serial or pulse) – 4 pin screw terminal (Rx, TX, +Vdc, Gnd)

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

ASCII Protocol : **Data Description from TL-USB to PC – up to 19 byte string**

C1	C2	C3	C4	C5	C6	Y	E/D	N1	N2	N3	...	N8	A	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	**(Protocol 1)**
...	...	...	
N6	0-9	Identifies the number of N6 notes received	**(Protocol 2)**
...	...	...	
N8	0-9	Identifies the number of N8 notes received	**(Protocol 3)**
A	C,R,J,F,N	Transmitted if various Alarms are received	**(See Note 1)**
E/D	E or D	Status of BNR - either enabled or disabled	

Data Description from PC to TL-USB

Output	Description	
n<CR>	TL-USB Data Request	**Protocol 1 : n = ?** **Protocol 2 : n = !** **Protocol 3 : n = #**
EV<CR>	Enable Coin Validator	
DV<CR>	Disable Coin Validator	
EN<CR>	Enable Bank Note Reader	
DN<CR>	Disable Bank Note Reader	
PN_data1_data2<CR>	Program Bank Note Reader (future use, e.g. Flash program)	
EN##<CR>	Enable Note No. ##	
DN##<CR>	Disable Note no. ##	
DC<CR>	Dispense coin (10msec pulse, available in protocol 2& 3)	

Notes

1.0 Various alarms will be sent to the host when available and received from the Bank Note Reader. These will be placed in Byte A. *(Only available in Protocols 2 & 3)*

Alarm (Byte A)	Description
C	Cheated
R	Note is rejected
J	Note is jammed
F	Stacker is full
N	No communications

2.0 TL4 (Protocol 1) functionality is supported by Sitekiosk and Netstop i-kiosk browser programs

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INSTALLATION NOTES

The TL-USB can independently connect either a coin or a note acceptor or both simultaneously, to a host PC via a single USB port. The unit is a very compact, standalone module. An external 12Vdc 1A regulated power source is required. You need to specify model TL4: coin only (single peripheral) or TL6 : note & coin (dual peripheral)

Power : 12Vdc 1.5A regulated switch mode plug pack. **Polarity is centre positive.**

Connector : Coin validator (parallel operation, 6 coin output lines) – 10 pin IDC
Note Acceptor (RS232 serial or pulse) – 4 pin screw terminal (Rx, TX, +Vdc, Gnd)

Supplied GBA harness		
	GND	Black/white
	Tx	Green
	Rx	Blk/White/Green or White/Green stripe
	12V	Red/white

1. The USB device should already be installed into your computer application.

    (If you are developing your own application, please contact TL Technologies for driver and data information)

2. Connect coin/note acceptor to appropriate connector

3. Connect power to USB, ensuring correct polarity on the connector

4. Connect appropriate length of USB cable from USB device to the host.

5. USB should be automatically identified by host and commence operation.

Note 1 : Microcoin QL will have ORANGE LED until host enables the unit. Then it will be steady GREEN. The GBA has a green flashing Led, which will go steady GREEN upon enable.

Note 2 : If you experience difficulties, install USB Test program and test the USB operation. This will allow you to determine whether a problem is in the host or in the cash handling system.

Note 3 : The USB driver is a Windows Communications Class driver. Available upon request

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