

M-S Cash Drawer Corporation

KSI type interface instructions

Introduction

The M-S Cash Drawer KSI trigger board enables the cash drawer to be controlled directly by the compatible PC's serial port. Two cable configurations are available allowing the drawer to be operated as a "dead-end" device or as a "parasite" device. The interface is programmable allowing opening character selection. Multiple drawers may be "Daisy Chained" together. The interface is capable of reporting the drawer's status.

Cable Options

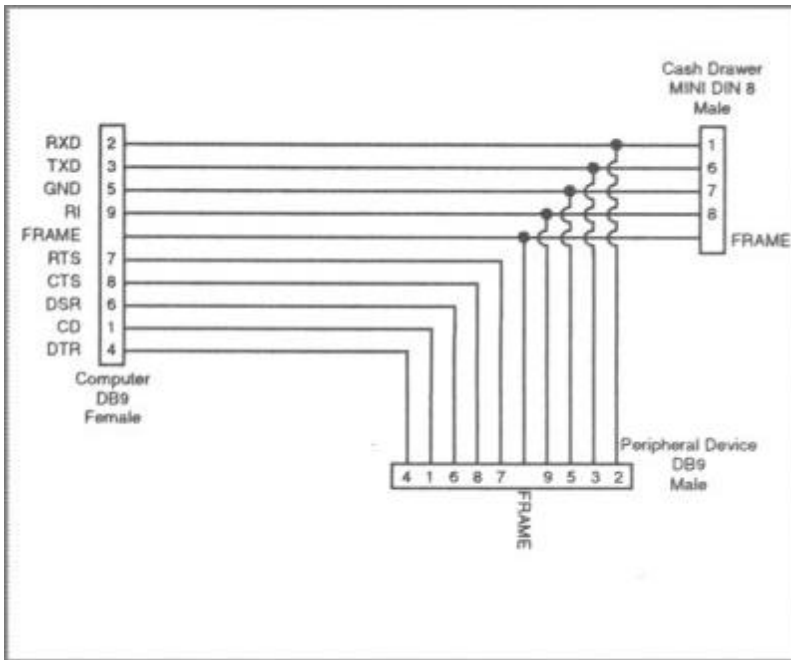
Two cable configurations are available: Dead-End and Parasite. Dead-End cables are available with either a DB9 pin or a DB25 pin female connector for direct connection to the serial port. A DB25 pin male version is also available allowing connection to a DCE type auxiliary port (i.e. Wyse terminal).

KSI Dead-End Cabling Specifications				
Color	Mini Din Connector	Computer Serial Port		Definition
	<u>Pin #</u>	<u>25 Pin</u>	<u>9 Pin</u>	
Brown	Shell	1	5	FG
Green	6	2	3	TxD
Blue	1	3	2	RxD
Red	2	4	7	RTS
Black	7	7	5	SG
White	8	22	9	RI
Jumper 1*	-	4-5	7-8	RTS-CTS
Jumper 2*	-	6-8-20	1-4-6	DSR-DCD-DTR

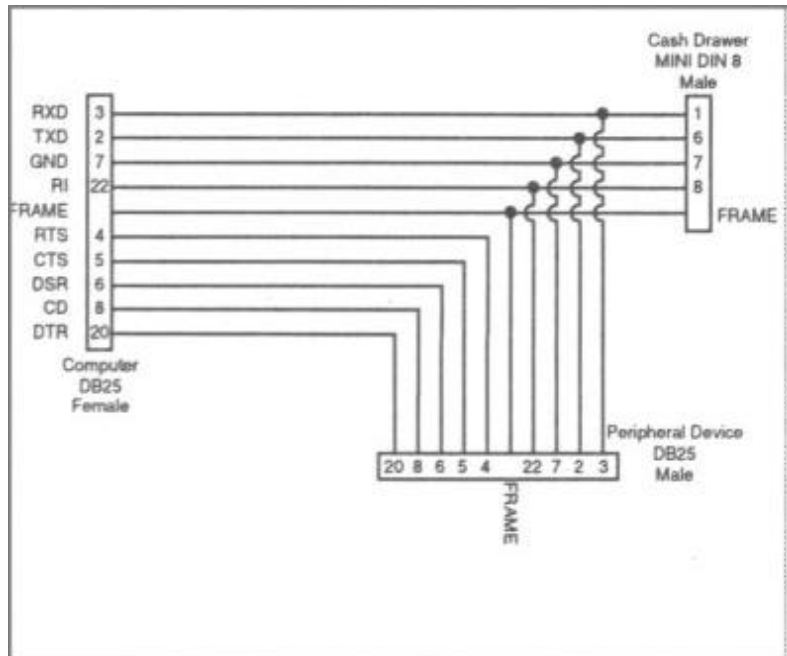
* Jumpers simulate hardware handshaking

Parasite Y-cable configurations are available with DB9 pin or DB25 pin connectors. In both configurations 1 male connector and 1 female connector are provided.

KSI 9 pin 'Y' cable



KSI 25 pin 'Y' cable



Configuring the interface board

There are 10 dipswitches on the interface board. The switches are used to instruct the interface board as to which character to respond to (the opening character), whether to respond to a single occurrence or a dual occurrence of the specified opening character; and the communication (baud) rate.

In all cases the switches are read as:

- "0" indicates Off/Open
- "1" indicates On/Closed
- * = Factory Setting

The switches are used as follows:

Switches 1 through 7 -- are used to set the opening character. The switches are the binary representation of the selected ASCII character byte. High bit (#8) is not used. Valid characters are 0 "NUL" through 127 "DEL". To select the desired character, please refer to the ASCII chart.

Switch 8 -- is used to determine whether the interface responds to a single occurrence of the opening character or whether the drawer requires two identical characters (without any intervening characters). Switch 8: *1 = Single /0 = Double

Switches 9 and 10 -- are used to determine the communication rate of the interface.

Valid Baud Rates		
Switch	9	10
1200	1	1
2400	0	1
4800	1	0
*9600	0	0

Special Operation

The KSI interface can also be used in PULSE MODE - similar in function to the M-S Cash Drawer "KC" type interface. In PULSE MODE the drawer will respond to any data at any baud rate without the need to determine a specific character at a specific baud rate.

Switch:	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Pulse Mode:	0	0	1	1	1	1	1	0	1	1

Drawer Open Signal

The Drawer Open Signal can be read by software as **Ring Indicate** (pin 22 on the DB25 connector). The signal is HIGH when the drawer is OPEN and LOW when the drawer is CLOSED. The following example shows how to read status from QBASIC on a compatible PC.

```
10 A1 = INP(&H3FE) AND (&H40) IF A1 > 0 THEN PRINT "Drawer is open" (for COM1:)  
10 A1 = INP(&H2FE) AND (&H40) IF A1 > 0 THEN PRINT "Drawer is open" (for COM2:)
```

Testing

The factory settings are: ^G (BEL), Single Character; 9600 Baud

Switch:	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
	1	1	1	0	0	0	0	1	0	0

To test the interface on COM1:, enter the following at any DOS prompt:

- A:> MODE COM1:9600,n,8,1
- A:> ECHO > COM1: ^G
- ^G = Hold the <Ctrl> key while pressing G

test #1

The interface requires that PARITY is set to NONE, Data bits are set to 8 with 1 Stop bit

Troubleshooting

NOTE: The switch settings are only read immediately after power is applied. It is necessary to remove power for 5 seconds after changing the switch settings.

All tests assume operation in Dead-End mode. In Parasite mode handshaking is handled by the attached device (i.e. a printer). If no such device is attached, the interface must use the Dead-End cable configuration.

- 1.) The green LED should illuminate when the power adaptor is plugged in and powered. If the LED does not illuminate, check the adaptor and your power strip.
- 2.) The green LED should flash momentarily when the interface receives data. Watch the LED carefully as the opening character is sent using the DOS test.

If the light does not flash, unplug the cable AT THE COMPUTER and run the test again. You should get a "Write Fault Error" from DOS. If you do not get the error message it indicates that you are sending the data to the wrong port or that there is a conflict with your serial ports. Change ports and/or remove the conflicting device.

- 3.) Try testing the drawer in PULSE MODE. Reset the switches as listed for PULSE MODE and type:

```
A:> DIR > COM1:
```

```
test #2
```

If the drawer triggers with test #2 try resetting to factory default and running test #1 again. Remember to unplug power each time you change the switch settings.