

PSI BOX

DESCRIPTION

The PSI Box is a very flexible 3 way interface, converting between IEEE488, RS232 and Centronics Parallel. It allows data to be passed through any combination of the different ports. The PSI Box acts as an IEEE device or as the IEEE bus controller depending on the operational mode selected. The PSI Box is the one stop solution to your interfacing problems. The enhanced PSI Box Plus+ allows any computer with an RS232 port full control over 14 devices in an IEEE bus system! (See facing page).



QUICKLY SETUP

16 DIP switches and 7 LED's allow the user to select options and monitor the progress of data transfers. Each port has 2 dedicated LED's that indicate when data is entering or leaving each port. A further LED is the mains power indicator. The PSI Box is instantly configured, at the flick of a switch, to route your data any way you wish! The 32k buffer may be DIP switch disabled.

IEEE PORT

The fully bidirectional IEEE port uses industry standard IEEE488 connector. The IEEE address set by front panel DIP switches is in the range 0-15. Listen Only and Talk Only operation can also be selected for Modes 1 & 2 and 5 & 6 respectively.

PARALLEL PORT

The centronics parallel port, using a 25 way female D screw lock connector, is identical to the standard PC printer port LPT1, and may be used as either an input or output port as set by a front panel DIP switch.

RS232 PORT

The bidirectional serial port, using a 25 way male D screw lock connector, is identical to the standard PC serial port, with industry standard ± 12 Volt RS232 signals. Data is exchanged using either a hardware handshake controlled by the DSR, CTS, DCD, DTR and RTS pins or by the XON-XOFF software protocol.

PSI CABLE SET

The PSI Cable set comprises a 2 metre IEEE488, 2 metre RS232 crossover cable and 2 metre parallel printer cable.

MULTIMODE OPERATION

Configured at the flick of a switch. It can be set to 1 of 8 modes:

- MODE 1: IEEE488 to RS232 bidirectional. IEEE488 from Centronics Parallel in.**
- MODE 2: IEEE488 to RS232 bidirectional. IEEE488 to Centronics Parallel out.**
- MODE 3: Centronics Parallel input to RS232 output.**
- MODE 4: RS232 input to Centronics Parallel output.**
- MODE 5: Centronics Parallel Input to IEEE488 output.**
- MODE 6: RS232 input to IEEE488 output.**
- MODE 7: PSI Box Plus+ only. See opposite page.**
- MODE 8: RS232 input to IEEE488 output with talk back.**

FEATURES

- **Flexible 3 way converter.**
- **8 modes available at flick of switch.**
- **Front panel control.**
- **Complete with 100 page manual.**

APPLICATIONS

- **HP Workstation to PC**
- **PC LPT: to HP plotter**
- **PC COM: to HP plotter**
- **GPIB controller to RS232**

SPECIFICATION

Ports:	IEEE488, RS232 and Centronics Parallel.
Baud Rates:	75, 150, 300, 1200, 2400, 4800, 9600, 19200.
Parity:	None, odd or even.
Data length:	7 or 8 bits.
Buffer :	32k.
Handshake:	DTR/RTS lines or XON/XOFF protocol.
Power:	1Amp @ 240Volts. 110V optional. No compromise RFI filter. Mains lead included.
Size:	10.3 long x 2.3 high x 5.3 inches wide.
Weight:	5 lbs: 2kg.

ORDER

DESCRIPTION

PSI BOX

PSI CABLE SET

CODE

PS-307

PS-318

ALL PRODUCTS WITH HOTLINE SUPPORT AND 36 MONTH NO QUIBBLE WARRANTY

PSI BOX PLUS+



DESCRIPTION

The PSI Box Plus+ allows any computer with an RS232 serial port to become an IEEE bus controller, exercising complete control over a bus of up to 14 IEEE instruments. An easy to use, enhanced industry standard control language is used to address the IEEE devices and to provide complete instrumentation control. The PSI Box Plus+ has all the features of the standard PSI Box.

IEEE INTELLIGENCE

The basis of the PSI Box Plus+ IEEE control is an intelligent command handler. The character sequence that invokes the IEEE command language is <CR> BUS where <CR> is the carriage return character. After receiving the <CR> BUS sequence the data following up until a trailing <CR> with optional <LF> is treated as an Ascii string containing IEEE bus keywords and numeric parameters. These keywords are interpreted as commands to perform Serial or Parallel Polls, send any IEEE bus commands or specify the timeout period, etc.,

The command interpreter checks the syntax of your IEEE string and responds with 'All done OK' or 'Error in command when messages are enabled. The PSI Box Plus+ language is a superset of the familiar Hewlett Packard HP-IB BASIC.

LEARNT IN MINUTES

Since the PSI Box Plus+ talks the established IEEE control language, you probably already know how to use it! A good way of learning is interactively from the keyboard of your PC via the specially written terminal program. This includes details of how to set the DIP switches, and has predefined functions assigned to the function keys.

SENDING DATA

Data can be sent to the IEEE bus in several ways. Characters sent to the PSI Box Plus+ that do not start with the <CR> BUS sequence are treated as data to be sent direct to the current IEEE device, ie. passed straight through the RS232 port to the IEEE bus. Also data can be sent to the IEEE devices with the BUS command using one of three methods:- as specified by decimal numbers after a DATA or EOI command, as literal data within delimiters after a STRING command, as literal data within delimiters after an OUTPUT command.

```
BUS IAG 5 DATA 72,69,76,76,79 UNL<CR>
BUS LISTEN 5 STRING "HELLO" UNL <CR>
BUS OUTPUT "HELLO" <CR>
```

RECEIVING DATA

Data can be requested from any IEEE device using the ENTER command, this performs a complete bus handshake sequence with the current device being addressed to talk. The input is terminated by the receipt of the number of bytes specified or by the EOS received.

```
BUS ENTER <CR>
BUS ENTER 200 <CR>
```

IEEE STATUS STRING

The PSI Box Plus+ maintains a table of information about the IEEE bus called the status string. This includes the current bus device address, the SRQ line state, serial and parallel poll responses, amount of data last input and output & many other useful parameters. The STATUS command returns this string to the PC .

MACRO CAPABILITY

A Macro is a series of PSI Box Plus+ comands, up to 255 bytes long, grouped together, that are executed by issuing the X keyword. Whenever this command is given, the whole series of commands defined in the macro is executed. Thus the macro facility allows the user to define their own pseudo commands, that can be simply executed.

Macros are a powerful feature. They allow multiple, timed, bus sequences to be performed by simply issuing one command. The overhead on the RS232 line is cut dramatically and the PSI Box Plus+ can be used in an automated fashion whilst the controlling terminal is busy performing other jobs.

```
BUS MACRO OUTPUT "CURVE?" ENTER 1024 WAIT 25000 Defines
Macro.
```

```
BUS X10 Executes MACRO 10 times, once every 25 seconds.
```

The above MACRO definition commands a TEKTRONIC scope to digitise its waveform & then output that data to the PSI Box Plus+. It sends the data back to the user, then waits 25 seconds. The X 10 command causes the PSI Box Plus+ to execute the macro 10 times, so retrieving a new digitised waveform, every 25 seconds.

Used carefully and intelligently, the X and MACRO commands provide a powerful and elegant means of automating the repetitive collection of large amounts of data.

ORDER

DESCRIPTION	CODE
PSI BOX PLUS+	PS-329
PSI CABLE SET	PS-318