Parallel Ports

Only one parallel port has been available for SGI systems as a built-in port. It has been built into all the systems since the Personal IRIS. The connector used is a 25 Pin Sub-D (DB-25).

There are three possible modes the this port can support:

- STDPP - Standard Parallel Port

  This is a standard centronics type parallel port. It can be used to support a parallel interface printer. It is unidirectional in its data flow. This is the same style of parallel port as used on the PC compatible type platforms. In fact, parallel printer cables used on PC compatibles (with one end having a DB-25 conector, the other with a “Centronics” style 36 pin connector) work perfectly for connecting printers to the SGI systems.

- SGIPP - SGI Parallel Port

  This port mode supports bidirectional transfers. It was designed to support a particular Ricoh parallel port scanner. This scanner is does not conform to any other parallel port standard.

- BOISEPP - Boise Parallel Port

  This port mode supports bidirectional transfers according to the Boise interface specification. However, the hardware was designed before the Boise spec was complete and approved. It has also not been fully tested with a “Boise Compatible” device.

One other parallel port has been available from SGI as an optional port. This was a VME add-in board that supported the Versatec plotter.

The table below shows the parallel ports and modes available by platform:

Chassis	Built In Parallel Port			Ikon Versatec Parallel Port (option only)
	STDPP (Unidirectional)	SGIPP (Bidirectional)	BOISEPP (Boise Interface)	
Twin Tower, Diehard, Predator				X
Personal IRIS	X			X
Indigo	X	X		
Indigo2	X	X	X	
Onyx, Challenge	X			
Indy	X	X	X	

Table 17 Parallel Ports on SGI Systems

Built-In Parallel Port (DB-25)

A built-in parallel port has been included with every system designed since the Personal IRIS.

Connector Drawing

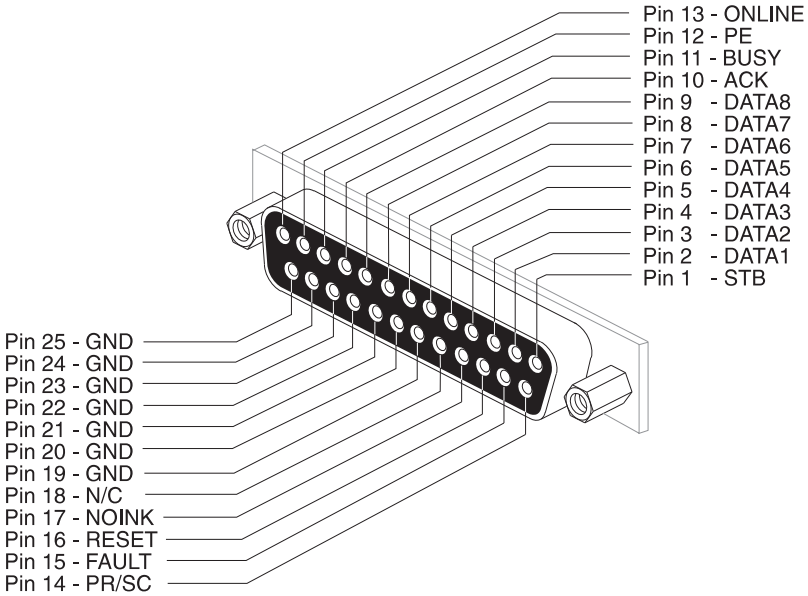

Figure 16 DB-25 Parallel Port Connector

Parallel Port Modes and Signals

The three possible modes the port can support have different names for certain signals. These signals will be defined here.

- BUSY - In the STDPP and BOISEPP modes this signal indicates that the printer is busy. In the SGIPP mode this signal indicates the device receiving the data is busy. Note that in the SGIPP mode the signal is an input/output pin, while in STDPP the signal is an input only.
- PE - In the STDPP and BOISEPP modes this signal indicates that the printer has some sort of paper error. This could be a paper path problem (a jam, for instance) or that the printer is out of paper. In the SGIPP mode the signal indicates that the device (in this case assumed to be a scanner) has had an error.
- AUTOFEED/PR/SC - In the STDPP and BOISE PP modes the AUTOFEED signal turns on the auto line feed mode of the printer (or some other capability). In the SGIPP mode this signal determines the direction of the data flow. When the signal is high, data flows from the computer to the parallel port device (i.e. printing). When the signal is low, data flows from the device to the computer (i.e. scanning).
- NOINK/SELECTIN - In the STDPP mode this signal, when high, indicates the printer has no ink. In the BOISEPP mode, the signal is used to select the attached device. Note that in STDPP mode the signal is an input, while in the BOISEPP mode it's an output.

Pinout

Pin	STDPP			SGIPP (Ricoh)			BOISEPP		
	Signal Name	Description	I/O	Signal Name	Description	I/O	Signal Name	Description	I/O
1	$\overline{STB}$	Strobe	O	Same					
2	DATA1	LSB	I/O	Same					
3	DATA2								
4	DATA3								
5	DATA4	Parallel Data							
6	DATA5								
7	DATA6								
8	DATA7								
9	DATA8	MSB							
10	$\overline{ACK}$	Acknowledge	I	Same					
11	BUSY	Printer Busy	I	BUSY	Data *Receive* Busy	I/O	BUSY	Printer Busy	I
12	PE	Paper Error	I	PE	Scanner Error	I	PE	Paper Error	I
13	SELECT	Printer Online	I	Not Used			SELECT	Printer Online	I
14	$\overline{AUTO}$ $\overline{FEED}$	Auto Line Feed	O	PR/$\overline{SC}$	Establishes Data Direction PR = Out SC = In	O	$\overline{AUTO}$ $\overline{FEED}$	Auto Line Feed	O
15	$\overline{FAULT}$	Printer Fault	I	Not Used			$\overline{FAULT}$	Printer Fault	I
16	$\overline{RESET}$	Reset Signal	O	Same					
17	$\overline{NOINK}$	No Ink in Printer	I	Not Used			SELECT IN	Device Selected	O
18	N/C	No Connection					GND	Signal Ground	-
19 - 25	GND	Ground	-	Same					

Table 18 Built-In Parallel Port Pinout

Ikon Parallel Port Interface (DB-37)

This board was made by Ikon Corporation as an OEM product for SGI. It is no longer sold as an SGI product. It is known as the Ikon board. It's interface is a 37 Pin Sub-D (DB-37). This board actually has two outputs. One is for the Versatec, the other is a standard Centronics printer output. However, the Centronics output was never supported by software.

Since this is a 6U VME board, it was put in a 6U to 9U adapter for placement in the Twin Tower, Diehard or Predator series chassis. For these systems an I/O Panel with a DB-37 connector was installed on the I/O Panel. It could also be placed directly into a Personal IRIS. For these systems a version of the board with a sheetmetal extension was available, again with a DB-37 connection.

Connector Drawing

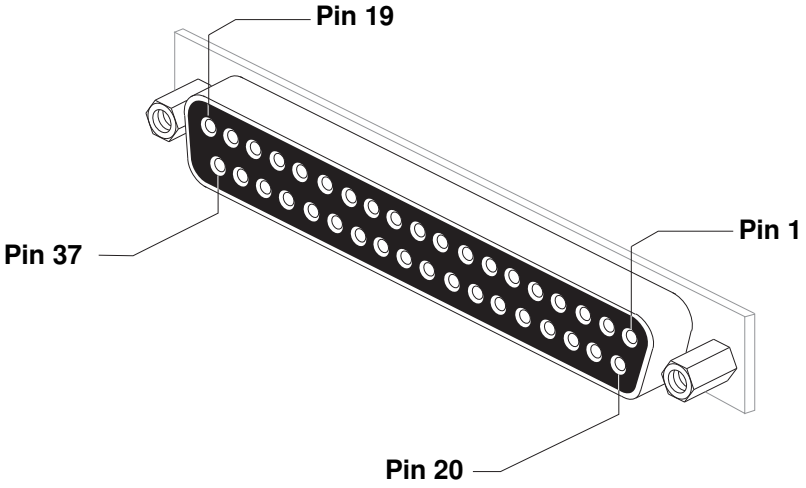

Figure 17 DB-37 Ikon Parallel Port Connector

Pinout

Pin	Signal Name	Description	Input/ Output
1	STB	Strobe	Output
2	Data1	Parallel Data	Output
3	Data2		
4	Data3		
5	Data4		
6	Data5		
7	Data6		
8	Data7		
9	Data8		

Table 19 Ikon Parallel Port Pinout

Pin	Signal Name	Description	Input/ Output
10	ACK	Acknowledge	Input
11	BUSY	Busy	Input
12	PE	Printer Enabled	Input
13	ONLINE	Printer Online	Input
14	PR/SC	Printer/Scanner	
15	NOPAPER	No Paper in Printer	Input
16	N/C		
17	NOINK	No Ink in Printer	Input
18	N/C		
19	GND	Ground	
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31	RESET	Reset	
32	N/C		
33			
34			
35			
36			
37			

Table 19 Ikon Parallel Port Pinout