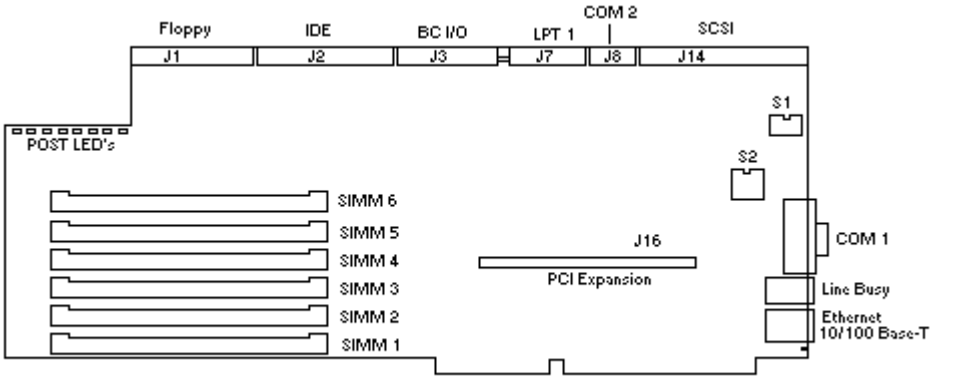
# BC 5090/5120/SP
# Quick Reference Guide

## Board Layout




## Connectors

| | |
|---|---|
| J1 | Floppy Drive |
| J2 | IDE Drive |
| J3 | BC I/O |
| J7 | LPT1 |
| J8 | COM2 |
| J11 | COM1 |
| J12 | Line Busy |
| J13 | Ethernet |
| J14 | SCSI (8 bit) |
| J16 | PCI Expansion |

### J1 - Floppy diskette

| | | |
|---|---|---|
| 1 ground | 2 speed | 3 ground |
| 4 n/c | 5 ground | 6 n/c |
| 7 ground | 8 index | 9 ground |
| 10 motor on | 11 ground | 12 drive sel 2 |
| 13 ground | 14 motor sel 1 | 15 ground |
| 16 motor on 2 | 17 ground | 18 direction |

| | | |
|---|---|---|
| 19 ground | 20 stop step | 21 ground |
| 22 write data | 23 ground | 24 write gate |
| 25 ground | 26 track 0 | 27 ground |
| 28 write protect | 29 ground | 30 read data |
| 31 ground | 32 side select | 33 ground |
| 34 disk change | | |

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## J2 - IDE Hard Disk

| | | |
|---|---|---|
| 1 reset | 2 ground | 3 data 7 |
| 4 data 8 | 5 data 6 | 6 data 9 |
| 7 data 5 | 8 data 10 | 9 data 4 |
| 10 data 11 | 11 data 3 | 12 data 12 |
| 13 data 2 | 14 data 13 | 15 data 1 |
| 16 data 14 | 17 data 0 | 18 data 15 |
| 19 ground | 20 n/c | 21 n/c |
| 22 ground | 23 iow | 24 ground |
| 25 ior | 26 ground | 27 n/c |
| 28 bale | 29 n/c | 30 ground |
| 31 idint | 32 n/c | 33 sa1 |
| 34 n/c | 35 sa0 | 36 sa2 |
| 37 cs5 | 38 hcs1 | 39 n/c |
| 40 n/c | | |

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## J3 - BC I/O connector

| | | |
|---|---|---|
| 1 gnd | 2 n/c | 3 ledsel- |
| 4 lanled | 5 ideled | 6 txdiled |
| 7 rxdiled | 8 n/c | 9 dtriled |
| 10 dcdiled | 11 spkr | 12 resetsw- |
| 13 ack | 14 poll | 15 mseclk |
| 16 mse data | 17 kclk | 18 kdata |
| 19 + 5vf | 20 vsync | 21 hsync |
| 22 gnd | 23 blu | 24 grn |
| 25 red | 26 gnd | |

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**J7 - LPT1**

This header requires a optional I/O adapter from Cubix. Attempting to connect a device directly to this connector will damage the board.

**J8 - COMM 2**

| | |
|---|---|
| 1 DCD (data carrier detect) | 2 RD (receive data) |
| 3 TD (transmit data) | 4 DTR (data terminal ready) |
| 5 GND (ground) | 6 DSR (data set ready) |
| 7 RTS (request to send) | 8 CTS (clear to send) |
| 9 RI (ring indicator) | |

Note: The COM2 header requires a optional I/O adapter from Cubix. Attempting to connect a serial device directly to this connector will damage the board.

## J11 - COMM 1

| | |
|---|---|
| 1 DCD (data carrier detect) | 2 RD (receive data) |
| 3 TD (transmit data) | 4 DTR (data terminal ready) |
| 5 GND (ground) | 6 DSR (data set ready) |
| 7 RTS (request to send) | 8 CTS (clear to send) |
| 9 RI (ring indicator) | |

**J12 - Line Busy (RJ11)**

| | |
|---|---|
| 1 n/c | 2 n/c |
| 3 tip | 4 ring |
| 5 n/c | 6 n/c |

**J13 - 10 Base-t Ethernet (RJ45)**

| | |
|---|---|
| 1 transmit data (+) | 2 transmit data (-) |
| 3 Receive data (+) | 4 n/c |
| 5 n/c | 6 receive data (-) |
| 7 n/c | 8 n/c |

**J14 - SCSI Interface**

Information not available

**J16 - PCI extension connector**

Information not available

# Switch Settings

## Switch 1 - Reset on Loss of DCD or DSR

| | sw1 | sw2 |
|---|---|---|
| Reset when DSR drops on COM1 | on | off |
| Reset when DCD drops on COM1 | off | on |
| Reset when DCD or DSR drops on COM1 | on | on |
| Reset disabled | off | off |
| Factory settings (default) | off | off |

Note: If positions 1 and 2 are both set to ON, then loss of DSR or DCD will reset the BC processor.

## Switch 2 - Board Options and Interrupts

| | sw1 | sw2 | sw3 | sw4 | sw5 |
|---|---|---|---|---|---|
| Supervisory IRQ to 10 | on | off | | | |
| Supervisory IRQ to 15 | off | on | | | |
| Disable Supervisory IRQ | off | off | | | |
| PS/2 Mouse on IRQ 12 | | | on | | |
| Disable PS/2 Mouse | | | off | | |
| VGA Enabled | | | | | on |
| VGA Disabled | | | | | off |
| SCSI Terminator Enabled | | | | off | |
| SCSI Terminator Disabled | | | | on | |
| Factory settings (default) | off | on | on | off | on |

# Simms, IRQ's and Memory Map

# Simm Module Configuration

All system memory is provided in 72-pin by 36 bit standard 70ns SIMM modules. For the proper placing of SIMM modules, see table below.

| 1 | 2 | 3 | 4 | 5 | 6 | Total |
|---|---|---|---|---|---|---|
| 4 | 4 | | | | | 8 |
| 4 | 4 | 4 | 4 | | | 16 |
| 8 | 8 | | | | | 16 |
| 4 | 4 | 4 | 4 | 4 | 4 | 24 |
| 8 | 8 | 4 | 4 | | | 24 |
| 8 | 8 | 4 | 4 | 4 | 4 | 32 |
| 8 | 8 | 8 | 8 | | | 32 |
| 16 | 16 | | | | | 32 |
| 8 | 8 | 8 | 8 | 4 | 4 | 40 |
| 16 | 16 | 4 | 4 | | | 40 |
| 8 | 8 | 8 | 8 | 8 | 8 | 48 |
| 16 | 16 | 4 | 4 | 4 | 4 | 48 |
| 16 | 16 | 8 | 8 | | | 48 |
| 16 | 16 | 8 | 8 | 8 | 8 | 64 |
| 16 | 16 | 16 | 16 | | | 64 |
| 32 | 32 | | | | | 64 |
| 16 | 16 | 16 | 16 | 4 | 4 | 72 |
| 32 | 32 | 4 | 4 | | | 72 |
| 16 | 16 | 16 | 16 | 4 | 4 | 72 |
| 32 | 32 | 4 | 4 | 4 | 4 | 80 |
| 32 | 32 | 8 | 8 | | | 80 |
| 32 | 32 | 8 | 8 | 8 | 8 | 88 |
| 16 | 16 | 16 | 16 | 16 | 16 | 96 |
| 32 | 32 | 8 | 8 | 8 | 8 | 96 |
| 32 | 32 | 16 | 16 | | | 96 |
| 32 | 32 | 16 | 16 | 4 | 4 | 104 |
| 32 | 32 | 16 | 16 | 8 | 8 | 112 |
| 32 | 32 | 16 | 16 | 16 | 16 | 128 |
| 32 | 32 | 32 | 32 | | | 128 |
| 64 | 64 | | | | | 128 |
| 32 | 32 | 32 | 32 | 4 | 4 | 136 |
| 64 | 64 | 4 | 4 | | | 136 |
| 32 | 32 | 32 | 32 | 8 | 8 | 144 |
| 64 | 64 | 4 | 4 | 4 | 4 | 144 |
| 64 | 64 | 8 | 8 | | | 144 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 64 | 64 | 8 | 8 | 4 | 4 | 152 |
| 32 | 32 | 32 | 32 | 16 | 16 | 160 |
| 64 | 64 | 8 | 8 | 8 | 8 | 160 |
| 64 | 64 | 16 | 16 | | | 160 |
| 64 | 64 | 16 | 16 | 4 | 4 | 168 |
| 64 | 64 | 16 | 16 | 8 | 8 | 176 |
| 32 | 32 | 32 | 32 | 32 | 32 | 192 |
| 64 | 64 | 16 | 16 | 16 | 16 | 192 |
| 64 | 64 | 32 | 32 | | | 192 |
| 64 | 64 | 32 | 32 | 4 | 4 | 200 |
| 64 | 64 | 32 | 32 | 8 | 8 | 208 |
| 64 | 64 | 32 | 32 | 16 | 16 | 224 |
| 64 | 64 | 32 | 32 | 32 | 32 | 256 |
| 64 | 64 | 64 | 64 | | | 256 |
| 64 | 64 | 64 | 64 | 4 | 4 | 264 |
| 64 | 64 | 64 | 64 | 8 | 8 | 272 |
| 64 | 64 | 64 | 64 | 16 | 16 | 288 |
| 64 | 64 | 64 | 64 | 32 | 32 | 320 |
| 64 | 64 | 64 | 64 | 64 | 64 | 384 |

# IRQ Information

| IRQ | Description |
|---|---|
| 0 | Timer Click |
| 1 | Keyboard |
| 2 | Second PIC controller |
| 3 | COM2 |
| 4 | COM1 |
| 5 | Available/Ethernet |
| 6 | Floppy Disk Controller |
| 7 | LPT1 |
| 8 | Real-Time Clock |
| 9 | Redirected IRQ2 |
| 10 | Available/IES (s2) |
| 11 | Available/SCSI |
| 12 | Available/PS2 Mouse (s2) |
| 13 | Math Coprocessor |
| 14 | Fixed Disk Controller |
| 15 | Available/IES (s2) |

# I/O Map

| | |
|---|---|
| 0000-00FF | Various "AT" functions |
| 01F0-01F7 | IDE hard drive interface |
| 02F8-02FF | COM 2 |
| 03A0 | Cubix supervisory interface |
| 03A8-03AF | IES serial port |
| 03B4-03B5 | VGA |
| 03BC-O3BF | LPT1 |
| 03C0-03CF | VGA |
| 03D4-03D5 | VGA |
| 03F0-03F7 | Floppy/IDE |
| 03F8-03FF | COM 1 |
| | |
| PCI PORTS | |
| 0CF8-0CFF | Used by PCI chipset |
| FC00-FC7F | Used by SCSI adapter |
| FF80-FF9F | Used by Ethernet controller |

# Memory Configuration

| | | |
|---|---|---|
| 10000-7FFFF | 127MB | Extended Memory |
| E000-FFFF | 128KB | Reserved for system and PCI ROM BIOS |
| C800-DFFF | 96K | Available as Expanded (EMS) or Upper Memory (UMB) |
| C800-CABFF | 11K | SCSI BIOS (if installed) |
| B800-BFFF | 32K | VGA/CGA Video Memory |
| B000-B7FF | 32K | VGA/Mono Video Memory |
| A000-AFFF | 64K | VGA Video Memory |
| 0000-9FFF | 640K | Conventional DOS |