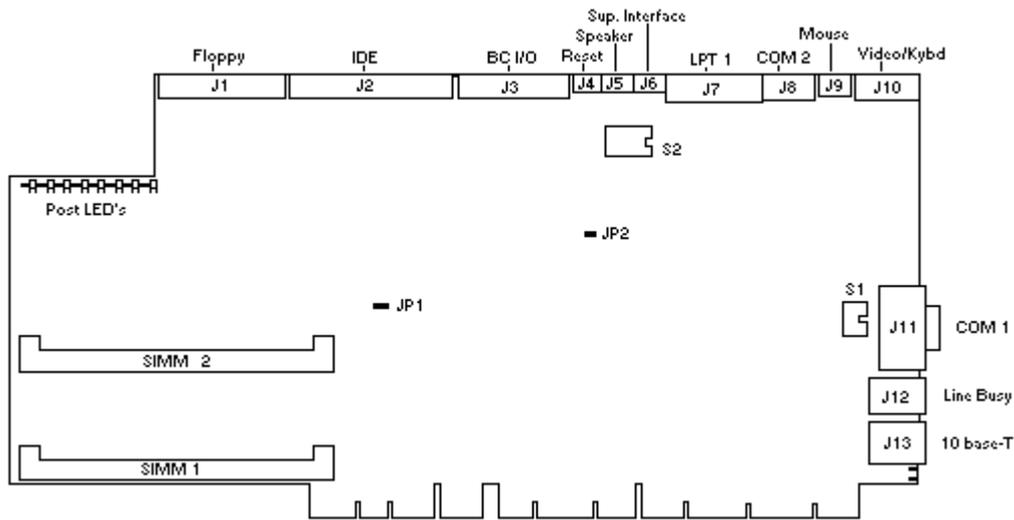


# BC 4045

## Quick Reference Guide

### Board Layout



### Connectors

#### 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 1    | 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   |                |                |

#### 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     |    |         |    |         |

## 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 | dcidiled | 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    |    |          |

## J4 - Reset Connector

- 1 Resistor pull-up for Power on LED
- 2 not used
- 3 Reset switch (ground to reset computer)
- 4 IDE Drive LED
- 5 Ground

## J5 - Speaker Connector

- 1 Speaker data
- 2 n/c
- 3 Ground
- 4 +5V (speaker power)

## J6 - Supervisory Interface

- 1 ack (to supervisor)
- 2 not used
- 3 poll (from supervisor)
- 4 not used

## 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.

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## 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.

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## J9 - PS/2 Mouse Connector

This header requires a optional I/O adapter from Cubix. Attempting to connect a PS/2 mouse directly to this connector will damage the board.

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## J10 - Video/Kybd Mux Connector

This header is for connection to the Optional Cubix Video Mux.

- |          |               |
|----------|---------------|
| 1 Red    | 2 Ground      |
| 3 Green  | 4 Ground      |
| 5 Blue   | 6 Ground      |
| 7 Hsync  | 8 Ground      |
| 9 Vsync  | 10 mse data   |
| 11 Kclk  | 12 mse clk    |
| 13 Kdata | 14 +5 (fused) |
- 

## 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

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## 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

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## Switch & Jumper Settings

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### Jumper JP1 & JP2 - Processor Select

Factory configured - should not be changed.

|            |            |                        |
|------------|------------|------------------------|
| Jumper JP1 | Jumper JP2 |                        |
| 1-2        | 1-2 3-4    |                        |
| off        | on off     | DX-33, DX2-66, DX4-100 |

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### 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 |

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### Switch 2 - Board Options and Interrupts

|                          | SW1 | SW2 | SW3 | SW4 | SW5 | SW6 | SW7 | SW8 |
|--------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Enable Video controller  |     | on  |     |     |     |     |     |     |
| Disable Video controller |     | off |     |     |     |     |     |     |
| 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 |     |     |     |
| Enable Ethernet controller  | on  |  |  |  |     | off | off | off |
| Disable Ethernet Controller | off |  |  |  |     | off | off | off |

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## IRQ, I/O, SIMM's & Memory Map

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### Simm Module configuration

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

| Simm Socket | 1  | 2  | Total |
|-------------|----|----|-------|
|             | 4  |    | 4MB   |
|             | 4  | 4  | 8MB   |
|             | 8  | 4  | 12MB  |
|             | 8  | 8  | 16MB  |
|             | 16 |    | 16MB  |
|             | 4  | 16 | 20MB  |
|             | 16 | 16 | 32MB  |
|             | 32 | 16 | 48MB  |
|             | 32 | 32 | 64MB  |
|             | 64 |    | 64MB  |
|             | 64 | 64 | 128MB |

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### IRQ Information

| IRQ | Description                 |
|-----|-----------------------------|
| 0   | Timer Click                 |
| 1   | Keyboard                    |
| 2   | Second PIC controller       |
| 3   | COM2/Ethernet (sw2)         |
| 4   | COM1                        |
| 5   | Available/Ethernet (sw2)    |
| 6   | Floppy Disk Controller      |
| 7   | LPT1                        |
| 8   | Real-Time Clock             |
| 9   | Redirected IRQ2             |
| 10  | Available/Supervisory (sw2) |
| 11  | Available                   |
| 12  | Available/PS2 Mouse (sw2)   |
| 13  | Math Coprocessor            |
| 14  | Fixed Disk Controller       |
| 15  | Available/Supervisory (sw2) |

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### I/O Map

|           |                                    |
|-----------|------------------------------------|
| 0000-00FF | Various "AT" functions             |
| 01F0-01F7 | IDE hard drive interface           |
| 02F8-02FF | COM 2                              |
| 0300-0317 | Ethernet controller                |
| 03A0      | Cubix Supervisory system interface |
| 03A8-03AF | IES serial port                    |
| 03B4-03B5 | VGA                                |

03BC-03BF LPT1  
03C0-03CF VGA  
03D4-03D5 VGA  
03F0-03F7 Floppy/IDE  
03F8-03FF COM 1

#### EISA Ports

0400-04FF Used by EISA chipset  
0C00-0CFF Used by EISA chipset

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## Memory Configuration

|        |        |           |  |
|--------|--------|-----------|--|
| FFFF / | -----\ |           |  |
|        | 32KB   | F800-FFFF | Reserved for AMI ROM BIOS.                           |
| F800   | -----  |           |  |
|        | 4KB    | F700-F7FF | Available  |
| F700   | -----  |           |  |
|        | 28KB   | F000-F6FF | Reserved for AMI ROM BIOS                            |
| F000   | -----  |           |  |
|        | 128K   | C800-EFFF | Available as Expanded<br>(EMS) or Upper Memory (UMB) |
| D000   | -----  | D000-EFFF | Available  |
|        | 32K    |           |  |
| C800   | -----  | C800-CFFF | Remote Boot ROM (if enabled)                         |
|        | 32K    | C000-C7FF | Reserved for VGA BIOS                                |
| C000   | -----  |           |  |
|        | 32K    | B800-BFFF | VGA/CGA Video Memory                                 |
| B800   | -----  |           |  |
|        | 32K    | B000-B7FF | VGA/Mono Video Memory                                |
| B000   | -----  |           |  |
|        | 64K    | A000-AFFF | VGA Video Memory                                     |
| A000   | -----  |           |  |
|        | 640K   | 0000-9FFF | Conventional DOS                                     |
| 0000   | -----\ |           |  |