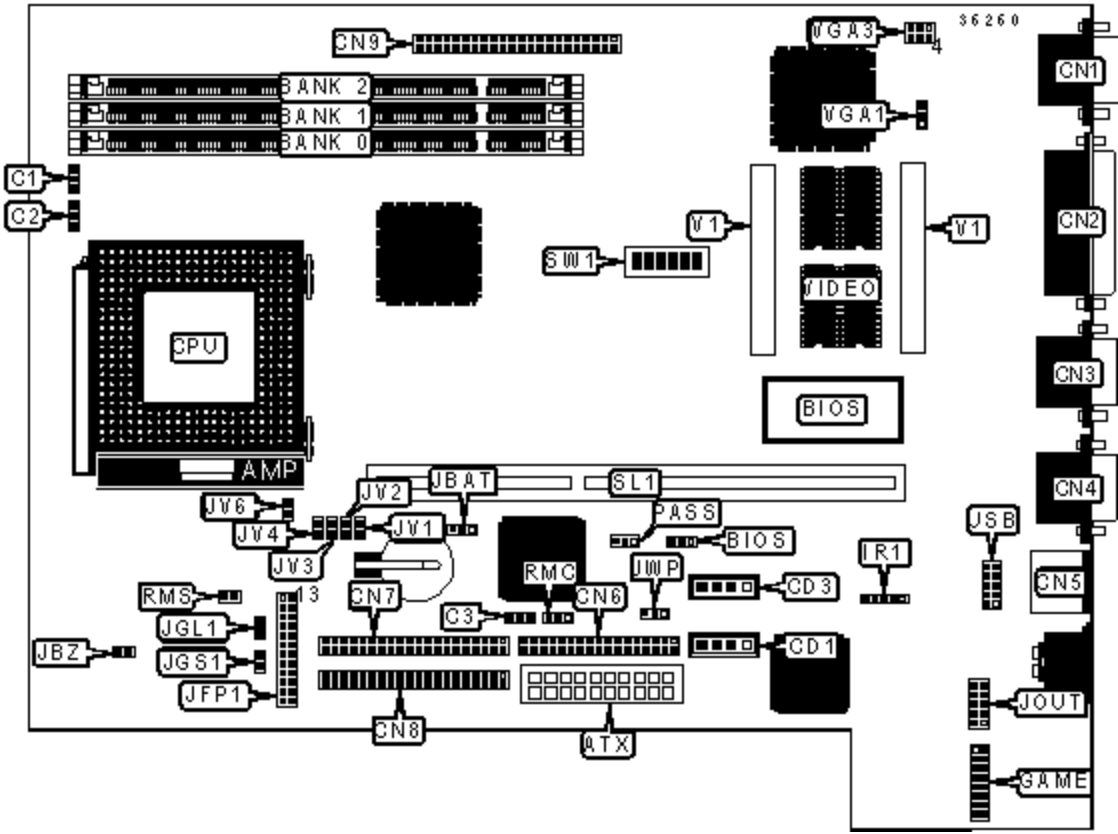


# MICRO-STAR INTERNATIONAL CO.,LTD.

## MS-5161

|                               |   |
|-------------------------------|---|
| <b>Device Type</b>            | Mainboard   |
| <b>Processor</b>              | CX 6X86/CX 6X86L/CX 686MX/AM K5/AM K6/Pentium/Pentium MMX   |
| <b>Processor Speed</b>        | 90/100/120/133/150/166/200/233/266MHz   |
| <b>Chip Set</b>               | Intel 430TX   |
| <b>Video Chip Set</b>         | ATI   |
| <b>Maximum Onboard Memory</b> | 768MB (EDO & SDRAM supported)   |
| <b>Maximum Video Memory</b>   | 8MB   |
| <b>Audio Chip Set</b>         | Vibra   |
| <b>Cache</b>                  | 512KB   |
| <b>BIOS</b>                   | Unidentified  |
| <b>Dimensions</b>             | 270mm x 237mm   |
| <b>I/O Options</b>            | Floppy drive interface, game interface, green PC connector, IDE interfaces (2), parallel port, PS/2 mouse port, serial ports (2), VGA feature connector, VGA port, riser slot, IR connector, USB connector, ATX power connector, audio in - CD-ROMs (2) |



### CONNECTIONS

| Purpose             | Location | Purpose             | Location          |
|---------------------|----------|---------------------|-------------------|
| ATX power connector | ATX      | Game interface      | GAME              |
| Chassis fan power   | C1       | IR connector        | IR1               |
| CPU fan power       | C2       | Power LED & keylock | JFP1/pins 1 - 5   |
| Power fan power     | C3       | Speaker             | JFP1/pins 7 - 10  |
| Audio in - CD-ROM   | CD1      | IDE interface LED   | JFP1/pins 12 & 24 |

|                        |     |                          |                   |
|------------------------|-----|--------------------------|-------------------|
| Audio in - CD-ROM      | CD3 | Turbo LED                | JFP1/pins 14 & 15 |
| VGA port               | CN1 | Reset switch             | JFP1/pins 21 & 22 |
| Parallel port          | CN2 | Green PC LED             | JGL1              |
| Serial port 2          | CN3 | Green PC connector       | JGS1              |
| Serial port 1          | CN4 | Audio out connector      | JOUT              |
| PS/2 mouse port        | CN5 | Remote power connector   | RMC               |
| Floppy drive interface | CN6 | Soft off power supply    | RMS               |
| IDE interface 2        | CN7 | Riser slot               | SL1               |
| IDE interface 1        | CN8 | USB connector            | USB               |
| VGA feature connector  | CN9 | Video upgrade connectors | V1                |

### USER CONFIGURABLE SETTINGS

| Function |   | Label | Position          |
|----------|---|-------|-------------------|
|          | BIOS setup normal operation                   | BIOS  | Pins 1 & 2 closed |
|          | BIOS setup cannot enter BIOS setup            | BIOS  | Pins 2 & 3 closed |
| »        | CMOS memory normal operation                  | JBAT  | Pins 1 & 2 closed |
|          | CMOS memory clear                             | JBAT  | Pins 2 & 3 closed |
| »        | Factory configured - do not alter             | JBZ   | Unidentified      |
|          | Floppy drive interface write protect disabled | JWP   | Pins 1 & 2 closed |
|          | Floppy drive interface write protect enabled  | JWP   | Pins 2 & 3 closed |
| »        | Password normal operation                     | PASS  | Pins 1 & 2 closed |
|          | Password clear                                | PASS  | Pins 2 & 3 closed |
|          | On board video enabled                        | VGA1  | Pins 1 & 2 closed |
|          | On board video disabled                       | VGA1  | Pins 2 & 3 closed |

**DIMM CONFIGURATION**

| Size | Bank 0      | Bank 1      | Bank 2      |
|------|-------------|-------------|-------------|
| 8MB  | (1) 1M x 64 | None        | None        |
| 16MB | (1) 2M x 64 | None        | None        |
| 16MB | (1) 1M x 64 | (1) 1M x 64 | None        |
| 24MB | (1) 2M x 64 | (1) 1M x 64 | None        |
| 24MB | (1) 1M x 64 | (1) 1M x 64 | (1) 1M x 64 |
| 32MB | (1) 4M x 64 | None        | None        |
| 32MB | (1) 2M x 64 | (1) 1M x 64 | (1) 1M x 64 |
| 32MB | (1) 2M x 64 | (1) 2M x 64 | None        |
| 40MB | (1) 4M x 64 | (1) 1M x 64 | None        |
| 40MB | (1) 2M x 64 | (1) 2M x 64 | (1) 1M x 64 |

**DIMM CONFIGURATION (CON'T)**

| Size  | Bank 0       | Bank 1      | Bank 2      |
|-------|--------------|-------------|-------------|
| 48MB  | (1) 4M x 64  | (1) 1M x 64 | (1) 1M x 64 |
| 48MB  | (1) 4M x 64  | (1) 2M x 64 | None        |
| 48MB  | (1) 2M x 64  | (1) 2M x 64 | (1) 2M x 64 |
| 56MB  | (1) 4M x 64  | (1) 2M x 64 | (1) 1M x 64 |
| 64MB  | (1) 8M x 64  | None        | None        |
| 64MB  | (1) 4M x 64  | (1) 2M x 64 | (1) 2M x 64 |
| 64MB  | (1) 4M x 64  | (1) 4M x 64 | None        |
| 72MB  | (1) 8M x 64  | (1) 1M x 64 | None        |
| 80MB  | (1) 4M x 64  | (1) 4M x 64 | (1) 2M x 64 |
| 104MB | (1) 8M x 64  | (1) 4M x 64 | (1) 1M x 64 |
| 112MB | (1) 8M x 64  | (1) 4M x 64 | (1) 2M x 64 |
| 128MB | (1) 16M x 64 | None        | None        |
| 128MB | (1) 8M x 64  | (1) 4M x 64 | (1) 4M x 64 |

|       |              |              |              |
|-------|--------------|--------------|--------------|
| 128MB | (1) 8M x 64  | (1) 8M x 64  | None         |
| 136MB | (1) 16M x 64 | (1) 1M x 64  | None         |
| 136MB | (1) 8M x 64  | (1) 8M x 64  | (1) 1M x 64  |
| 144MB | (1) 16M x 64 | (1) 1M x 64  | (1) 1M x 64  |
| 144MB | (1) 16M x 64 | (1) 2M x 64  | None         |
| 160MB | (1) 16M x 64 | (1) 4M x 64  | None         |
| 160MB | (1) 8M x 64  | (1) 8M x 64  | (1) 4M x 64  |
| 192MB | (1) 16M x 64 | (1) 8M x 64  | None         |
| 192MB | (1) 8M x 64  | (1) 8M x 64  | (1) 8M x 64  |
| 200MB | (1) 16M x 64 | (1) 8M x 64  | (1) 1M x 64  |
| 208MB | (1) 16M x 64 | (1) 8M x 64  | (1) 2M x 64  |
| 224MB | (1) 16M x 64 | (1) 8M x 64  | (1) 4M x 64  |
| 256MB | (1) 32M x 64 | None         | None         |
| 256MB | (1) 16M x 64 | (1) 8M x 64  | (1) 8M x 64  |
| 264MB | (1) 32M x 64 | (1) 1M x 64  | None         |
| 272MB | (1) 32M x 64 | (1) 1M x 64  | (1) 1M x 64  |
| 272MB | (1) 32M x 64 | (1) 2M x 64  | None         |
| 288MB | (1) 32M x 64 | (1) 2M x 64  | (1) 2M x 64  |
| 288MB | (1) 32M x 64 | (1) 4M x 64  | None         |
| 320MB | (1) 32M x 64 | (1) 4M x 64  | (1) 4M x 64  |
| 320MB | (1) 32M x 64 | (1) 8M x 64  | None         |
| 384MB | (1) 32M x 64 | (1) 8M x 64  | (1) 8M x 64  |
| 384MB | (1) 32M x 64 | (1) 16M x 64 | None         |
| 512MB | (1) 32M x 64 | (1) 32M x 64 | None         |
| 768MB | (1) 32M x 64 | (1) 32M x 64 | (1) 32M x 64 |

Note: Board accepts EDO & SDRAM memory.

### CACHE CONFIGURATION

Note: The location of the cache is unidentified.

### VIDEO MEMORY CONFIGURATION

Note: Board is installed with 0/2/4MB of video memory. To increase to 8MB, install MS-5936 board at V1.

### VIDEO MEMORY JUMPER CONFIGURATION

| On board | MS-5936 | Total | JM1          | VGA3         |
|----------|---------|-------|--------------|--------------|
| 0MB      | 2MB     | 2MB   | 1 & 2, 4 & 5 | 2 & 3, 4 & 5 |
| 0MB      | 4MB     | 4MB   | 1 & 2, 4 & 5 | 2 & 3, 4 & 5 |
| 2MB      | 0MB     | 2MB   | N/A          | 2 & 3, 4 & 5 |
| 2MB      | 2MB     | 4MB   | 2 & 3, 5 & 6 | 2 & 3, 4 & 5 |
| 4MB      | 0MB     | 4MB   | N/A          | 1 & 2, 4 & 5 |
| 4MB      | 2MB     | 6MB   | 1 & 2, 4 & 5 | 1 & 2, 4 & 5 |
| 4MB      | 4MB     | 8MB   | 1 & 2, 4 & 5 | 1 & 2, 4 & 5 |

Note: JM1 is located on the Ms-5936. Pins designated should be in the closed position.

### CPU SPEED SELECTION (CX 6X86)

| CPU speed | Clock speed | Multiplier | SW1/1 | SW1/2 | SW1/3 | SW1/4 | SW1/5 | SW1/6 |
|-----------|-------------|------------|-------|-------|-------|-------|-------|-------|
| 150MHz    | 60MHz       | 2x         | On    | Off   | Off   | On    | Off   | Off   |
| 166MHz    | 66MHz       | 2x         | On    | Off   | Off   | Off   | Off   | Off   |
| 200MHz    | 75MHz       | 2x         | On    | Off   | Off   | Off   | On    | Off   |

### CPU SPEED SELECTION (CX 6X86L)

| CPU speed | Clock speed | Multiplier | SW1/1 | SW1/2 | SW1/3 | SW1/4 | SW1/5 | SW1/6 |
|-----------|-------------|------------|-------|-------|-------|-------|-------|-------|
| 166MHz    | 66MHz       | 2x         | On    | Off   | Off   | Off   | Off   | Off   |
| 200MHz    | 75MHz       | 2x         | On    | Off   | Off   | Off   | On    | Off   |

**CPU SPEED SELECTION (CX 6X86MX)**

| CPU speed | Clock speed | Multiplier | SW1/1 | SW1/2 | SW1/3 | SW1/4 | SW1/5 | SW1/6 |
|-----------|-------------|------------|-------|-------|-------|-------|-------|-------|
| 166MHz    | 60MHz       | 2.5x       | On    | On    | Off   | On    | Off   | Off   |
| 200MHz    | 66MHz       | 2.5x       | On    | On    | Off   | Off   | Off   | Off   |
| 233MHz    | 75MHz       | 2.5x       | On    | On    | Off   | Off   | On    | Off   |
| 233MHz    | 66MHz       | 3x         | Off   | On    | Off   | Off   | Off   | Off   |
| 266MHz    | 75MHz       | 3x         | Off   | On    | Off   | Off   | On    | Off   |
| 266MHz    | 66MHz       | 3.5x       | Off   | Off   | Off   | Off   | Off   | Off   |

**CPU SPEED SELECTION (AM K5)**

| CPU speed | Clock speed | Multiplier | SW1/1 | SW1/2 | SW1/3 | SW1/4 | SW1/5 | SW1/6 |
|-----------|-------------|------------|-------|-------|-------|-------|-------|-------|
| 90MHz     | 60MHz       | 1.5x       | Off   | Off   | Off   | On    | Off   | Off   |
| 100MHz    | 66MHz       | 1.5x       | Off   | Off   | Off   | Off   | Off   | Off   |
| 120MHz    | 60MHz       | 2x         | On    | Off   | Off   | On    | Off   | Off   |
| 133MHz    | 66MHz       | 2x         | On    | Off   | Off   | Off   | Off   | Off   |
| 150MHz    | 60MHz       | 2.5x       | On    | On    | Off   | On    | Off   | Off   |
| 166MHz    | 66MHz       | 2.5x       | On    | On    | Off   | Off   | Off   | Off   |

**CPU SPEED SELECTION (AM K6)**

| CPU speed | Clock speed | Multiplier | SW1/1 | SW1/2 | SW1/3 | SW1/4 | SW1/5 | SW1/6 |
|-----------|-------------|------------|-------|-------|-------|-------|-------|-------|
| 166MHz    | 66MHz       | 2.5x       | On    | On    | Off   | Off   | Off   | Off   |
| 200MHz    | 66MHz       | 3x         | Off   | On    | Off   | Off   | Off   | Off   |
| 233MHz    | 66MHz       | 3.5x       | Off   | Off   | Off   | Off   | Off   | Off   |

**CPU SPEED SELECTION (INTEL)**

| CPU speed | Clock speed | Multiplier | SW1/1 | SW1/2 | SW1/3 | SW1/4 | SW1/5 | SW1/6 |
|-----------|-------------|------------|-------|-------|-------|-------|-------|-------|
| 90MHz     | 60MHz       | 1.5x       | Off   | Off   | Off   | On    | Off   | Off   |

|        |       |      |     |     |     |     |     |     |
|--------|-------|------|-----|-----|-----|-----|-----|-----|
| 100MHz | 66MHz | 1.5x | Off | Off | Off | Off | Off | Off |
| 120MHz | 60MHz | 2x   | On  | Off | Off | On  | Off | Off |
| 133MHz | 66MHz | 2x   | On  | Off | Off | Off | Off | Off |
| 150MHz | 60MHz | 2.5x | On  | On  | Off | On  | Off | Off |
| 166MHz | 66MHz | 2.5x | On  | On  | Off | Off | Off | Off |
| 200MHz | 66MHz | 3x   | Off | On  | Off | Off | Off | Off |

| CPU SPEED SELECTION (INTEL MMX) |             |            |       |       |       |       |       |       |
|---------------------------------|-------------|------------|-------|-------|-------|-------|-------|-------|
| CPU speed                       | Clock speed | Multiplier | SW1/1 | SW1/2 | SW1/3 | SW1/4 | SW1/5 | SW1/6 |
| 166MHz                          | 66MHz       | 2.5x       | On    | On    | Off   | Off   | Off   | Off   |
| 200MHz                          | 66MHz       | 3x         | Off   | On    | Off   | Off   | Off   | Off   |
| 233MHz                          | 66MHz       | 3.5x       | Off   | Off   | Off   | Off   | Off   | Off   |

| CPU TYPE SELECTION           |        |
|------------------------------|--------|
| Type                         | JV6    |
| All CPU types                | Open   |
| Intel Pentium Overdrive only | Closed |

| CPU VOLTAGE SELECTION (SINGLE) |        |        |        |        |
|--------------------------------|--------|--------|--------|--------|
| Voltage                        | JV1    | JV2    | JV3    | JV4    |
| 3.3v                           | Open   | Closed | Closed | Closed |
| 3.5v                           | Closed | Closed | Closed | Closed |

| CPU VOLTAGE SELECTION (DUAL) |        |        |      |      |        |
|------------------------------|--------|--------|------|------|--------|
| Voltage                      | V core | JV1    | JV2  | JV3  | JV4    |
| 3.3v                         | 2.1v   | Closed | Open | Open | Open   |
| 3.3v                         | 2.8v   | Open   | Open | Open | Closed |

|      |      |        |      |        |        |
|------|------|--------|------|--------|--------|
| 3.3v | 2.9v | Closed | Open | Open   | Closed |
| 3.3v | 3.2v | Open   | Open | Closed | Closed |