GREEN B
MOTHERBOARD MEMORY UPGRADE

RADAR MEMORY USAGE

The standard RADAR systems shipped with 4 MB of memory on the motherboard. This memory is used to store both the operating system as well as the data for the file system and data for the playlists of the current project. The operating system takes about 1.5 MB, and the file system takes about 1.2 MB (about 0.4 MB per disk drive), leaving about 1.3 MB for playlist data.

WHY INSTALL MORE MEMORY?

More may need memory in RADAR to use more than 3 drives at a time or if editing a complicated project and receive an **OUT OF MEMORY** message.

WHAT TYPE OF MEMORY CAN BE INSTALLED?

The RADAR **Green B Motherboard** used 30pin 9bit (or 9chip) fastpage SIMM (Single Inline Memory Module) technology. Most memory stores on the web will have these available. Here are the configuration details:

Pin Count:	30-pin
Access Speed:	70 nanosecond
Memory Size:	1 MB x 9 bit SIMM
	4 MB x 9 bit SIMM
	16 MB x 9 bit SIMM

WHAT ARE THE POSSIBLE MEMORY CONFIGURATIONS?

SIMMs are installed in banks of 4, and there are sockets for two memory banks on the motherboard. So the possible configurations are:

Bank-0	Bank-1	Total Memory
4x1MB (standard)	- (standard)	4MB (standard)
4x1MB	4x1MB	8MB
4x1MB	4x4MB	20MB
4x1MB	4x16MB	68MB
4x4MB	-	16MB
4x4MB	4x1MB	20MB
4x4MB	4x4MB	32MB
4x4MB	4x16MB	80MB
4x16MB	-	64MB
4x16MB	4x1MB	68MB
4x16MB	4x4MB	80MB
4x16MB	4x16MB	128MB

EARLY RADAR SYSTEM LIMITATIONS

The earliest RADAR systems (the first 20 or so) used an older-style motherboard with "U4VL2" printed on the board, and a blue plastic socket for the 486 chip. These early systems can only accommodate 1 MB x 9 and 4 MB x 9 SIMMs. They are therefore limited to 32 MB total memory. This 32 MB limit is still more than adequate for RADAR's needs.

TO INSTALL EXTRA MEMORY, FOLLOW THESE STEPS:

1 Power off RADAR.

2 Remove the case lid.

3 Locate the empty memory bank (**Bank-1**) on the motherboard. The two banks are located nearest the power supply and the SCSI disk drives.

4 Remove any cables in the way of **Bank-1**. It is only nessessary only need to disconnect the cable connecting the SCSI drives to the CM24.

5   Install the extra SIMMs into **Bank-1**. The new SIMMs should face the same direction as those currently installed. Start with the socket closest to **Bank-0**. Insert each SIMM into its socket by:

- sliding the bottom SIMM edge into the socket at an angle, so that the top edge can pivot freely and

- rotate the SIMM until it is completely vertical and the top edge snaps into the holes and the metal clasps lock the SIMM in place.

6   Reattach any cables removed in step 4.

7   Install a **VGA card** (if not already present), **VGA monitor**, and a **PC keyboard**. Any VGA card will do, and it can be installed in the empty motherboard slot next to the MF3. The **PC keyboard** attaches on the back panel of RADAR.

8   Power on RADAR. The VGA monitor will display the normal PC boot sequence. It should show that the new RAM was installed correctly as it tests all available memory. It will stop with a **MEMORY MISMATCH** or **BAD MEMORY SIZE** message. This message is expected and does not indicate an error. (The message is stupid, misleading, and unnecessary, but unfortunately it will appear. ARGH!)

9   After the mismatch message press `F1` to enter the **BIOS SETUP** screen.

10   From the main **BIOS SETUP** menu, select **STANDARD CMOS SETUP** and press `ENTER`.

11   Don't change anything here. Just press `ESC` to get back to the **MAIN** menu.

12   From the main **BIOS SETUP** menu, press `F10` to **SAVE & EXIT**. Press `Y` to confirm the save operation. This operation will record the new memory size into the battery-backed configuration memory.

13   The RADAR system will now reboot. This time, no mismatch message will occur and the RADAR system should now boot off the SCSI drives.

14   From the RADAR **DIAGNOSTICS MENU** select **SHOW FREE RAM**. Verify that the new RAM has been recognized by the RADAR operating system. If upgrading from 4 MB to 8 MB, the system should now be reporting more the 4 MB of free ram (it will probably report around 5000 KB free).

15   Power off RADAR.

16   Remove the VGA card (only if it wasn't previously installed) and keyboard.

17   Close the case lid.

18   Power on RADAR.