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1- INTRODUCTION

This procedure is valid for Signa Horizon LX systems with an Digital DASM. The Digital DASM is an interface module that enables communication and data transfer between a laser camera and a host computer. It connects to a host's SCSI port, and the laser camera's data ports.

The DASM-VDB interface module consists of two printed circuit boards: the Data Acquisition System Manager (DASM) and the Video Display Board (VDB) personality module.

The DASM (also referred to as the motherboard) accepts data and commands from a host, via a SCSI bus. The motherboard processes the data and commands, and transfers them to the VDB.

The VDB (also referred to as the daughterboard) accepts the outputs from the motherboard. commands and status are transferred to the camera via a low-speed serial line (RS-422). all image data is presented to the laser imager in a composite video format. The entire system is packaged in a stand-alone enclosure containing the power supply, a cooling fan, and all necessary connectors.

2- HARDWARE CONFIGURATION

2-1 DASM Indicator Lights

The DASM-VDB interface module has four LEDs, which are used for status and error information. These lights are located on the DASM-VDB front panel in Illustration 2-2.

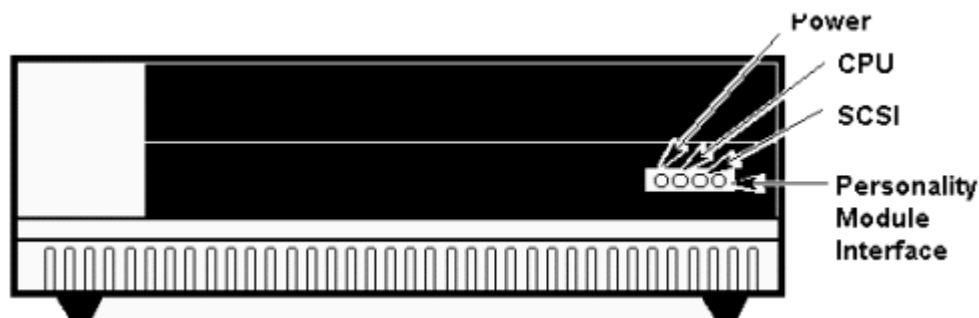


ILLUSTRATION 2-2
DASM-VDB FRONT PANEL

1. Power Light - This light indicates that the DASM-VDB is powered up. If this light does not illuminate at power up, check the power cable connections.
2. CPU - This light indicates that the DASM CPU is active and operating properly. It flashes continuously ("blinks" on and off) following power up.
3. SCSI - This light indicates activity on the SCSI bus, such as commands sent or data received.
4. Personality Module Interface - This light indicates activity in the DASM-VDB personality

module, such as data received.

5. Image Ready - Indicates that an image has been processed, and is stable at the VDB video output.
6. Image Transfer - Indicates that an image in the DASM is being processed and transferred to the VDB frame buffer. Note that the video image is not available at the output port during this internal transfer.

2-2 DASM Jumpers

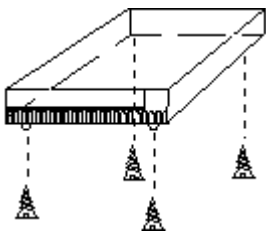
The DASM-VDB module is initially set up as follows:

- SCSI ID set to ID 3.
- Memory configured to 1Mbyte RAM
- RAM diagnostic disabled
- Manufacturing diagnostics disabled
- Power supply set to customer specification

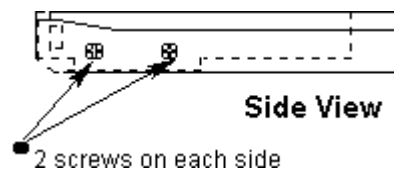
The first four parameters are controlled by Jumper J2, located on the back of the motherboard. Parameter five controls the input voltage setting, and is located on the power supply. The enclosure must be removed in order to gain access to J2.



Be sure the DASM-VDB is unplugged before disassembly.

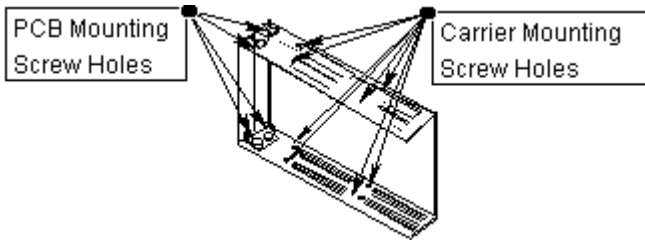


Step 1. Remove the 4 screws at the bottom of the DASM. Separate box top and bottom with a flat screwdriver or similar tool.

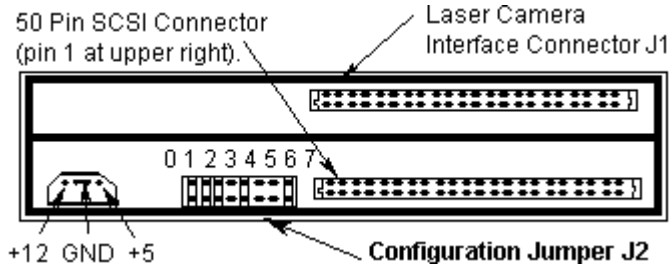


Step 2. Locate the four screws that secure the carrier in place, and remove them. Move the carrier to allow easier access to the cable connectors.

Step 3. Disconnect the ribbon and power cables.



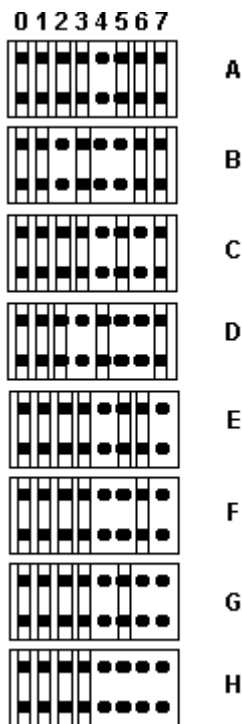
Step 4. Locate the four PCB mounting screws on the carrier assembly. Remove the screws and slide the boards out together.



Step 5. The J2 jumper is located at the rear of the carrier assembly. It is adjacent to the DASM SCSI connector. It consists of eight shunt positions. See Table 1 for detail on Jumper J2.

TABLE 1
JUMPER 2 DETAILS

Configuration Jumper J2
Examples



Example D is the normal Signa LX configuration.

- Example A shows SCSI ID 0.
- Example B shows SCSI ID 1.
- Example C shows SCSI ID 2.
- Example D shows SCSI ID 3.
- Example E shows SCSI ID 4.
- Example F shows SCSI ID 5.
- Example G shows SCSI ID 6.
- Example H shows SCSI ID 7.

Jumper J2 is adjacent to the DASM SCSI connector. It consists of eight shunt positions.

Signa Horizon LX J2 Configuration:

Example D shows J2's shunts positioned for manufacturing diagnostics disabled, the memory test disabled, 1 Mbytes of RAM installed, and a SCSI ID of 3. Note that removing the shunt enables the pins; adding the shunt disables the pins. Do not remove the shunts at positions 0 and 1.

RAM Diagnostics:

Example A shows position 2 on J2. This disables the RAM Diagnostic. If it is necessary to run the RAM Diagnostic, remove the shunt on position 2; see Example B. Note that the more memory that is installed, the longer this test will take. For example, it can take more than one minute to run this diagnostic if there are 8 Mbytes of RAM installed. Be sure to re-install this shunt after RAM diagnostics are run.

Memory Size:

Shunt positions 3 and 4 control memory configuration for the DASM. Under certain circumstances, the DASM may work with the memory size set incorrectly. To ensure the DASM works correctly under all circumstances, the memory size must be set correctly. DASM's used on Signa Horizon LX use 1 Mbytes of SIMMS in the DASM. See Example D.

SCSI ID:

Shunt Positions 5 through 7 establish the SCSI ID. The shunts in positions 5, 6, and 7 represent one bit each, where: shunt position 5 = bit 0 (LSB), shunt position 6 = bit 1, and shunt position 7 = bit 2 (MSB). If the pin-pair has a shunt placed over it, the bit is clear (0); if no shunt is placed over the pair, the bit is set (1). This allows the SCSI ID to have a binary value from 0 to 7. Do not change this setting until all SCSI addresses are mapped correctly.

2-3 Fuses

There are two fuses used on this unit. They are located behind the AC Fuse Cover at the rear of the DASM unit. See Illustration 2-1 for fuse location and fuse specification.

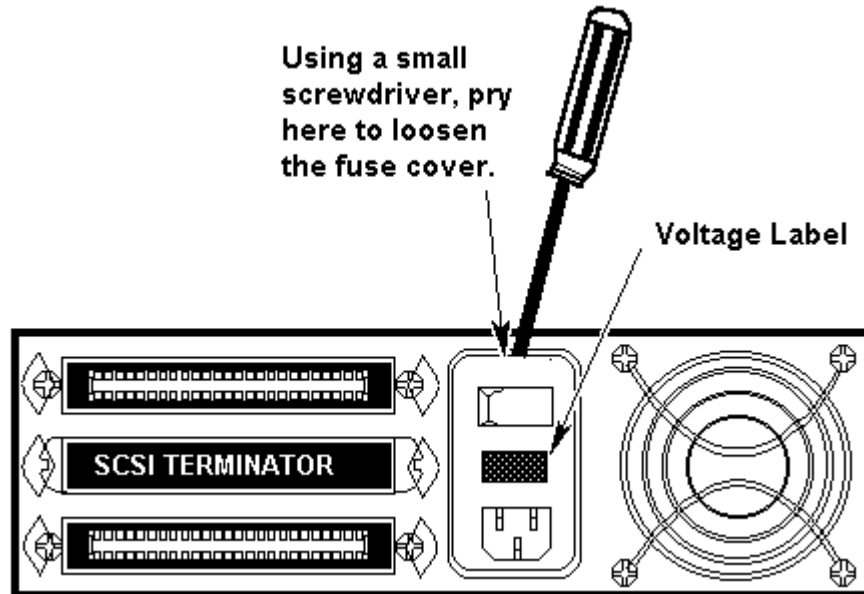


ILLUSTRATION 2-1
REMOVING AC FUSE COVER

1. Pry the fuse cover open with a small flat blade screwdriver. Then, pull the cover down to expose the fuse carriers.
2. Slide each fuse carrier out and check its fuse. Note that there are arrows on the ends of the fuse carriers, and on the inside of the fuse cover. When re-installing the carriers, these arrows must point in the same direction as those on the fuse cover or the carriers are not installed correctly. Once the carriers are reinstalled with the correct fuses, press firmly on the fuse cover to snap it shut.

TABLE 2
FUSES

	UL/CSA IEC 127	5x20 mm 250V
115 VAC	2A SB	T2.0A
230 VAC	2A SB	T2.0A

2-4 Power Requirements

The DASM-VDB may be configured for 115 VAC or 230 VAC operation as specified in the Table 2-1.

TABLE 2-1
DASM OPERATIONAL VOLTAGES

Voltage AC	Amperage	Wattage
115	0.8	92
230	0.4	92

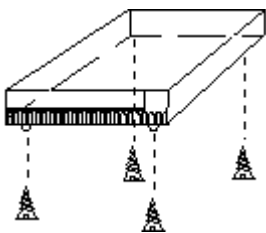
2-5 Configuring Power Supply & Fuses

The DASM-LCAM interface module can be configured for operation at 115 VAC (60 Hz) or 230- VAC (50). A connector on the power supply circuit board allows the voltage to be set. Like other set-up parameters, you can only configure the power supply by opening the DASM-LCAM enclosure.

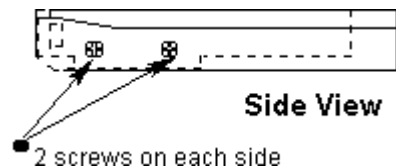


BE SURE THE DASM-LCAM IS UNPLUGGED BEFORE ATTEMPTING TO CONFIGURE THE POWER SUPPLY.

Remove the outer enclosure cover.

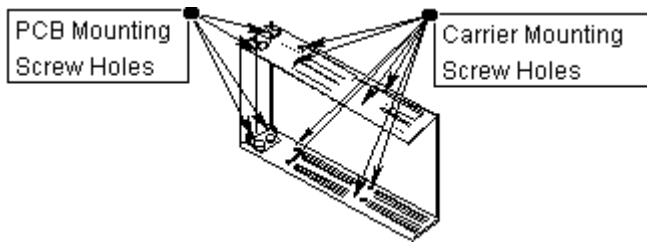


Step 1. Remove the 4 screws at the bottom of the DASM. Separate box top and bottom with a flat screwdriver or similar tool.



Step 2. Locate the four screws that secure the carrier in place, and remove them. Move the carrier to allow easier access to the cable connectors.

Step 3. Disconnect the ribbon and power cables.



Step 4. Locate the four PCB mounting screws on the carrier assembly. Remove the screws and slide the boards out together.

To configure the power supply and fuses,

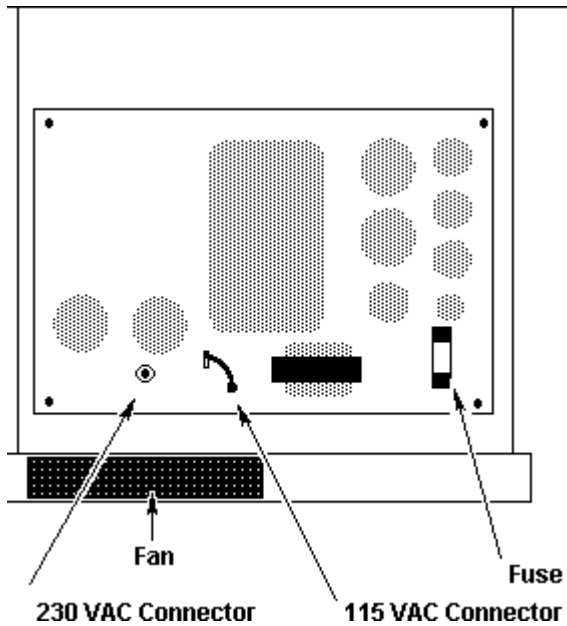


ILLUSTRATION 2-5
CONFIGURING THE POWER SUPPLY

1. With the enclosure open, locate the power supply. The power supply is at the rear of the enclosure near the fan assembly and SCSI connectors.
2. Open the power supply cover panel by removing the four screws that secure it.
3. Locate the power jumper connector.
4. To configure the power supply for 230 VAC operation, remove the connector from the 115 VAC jumper and place it on the 230 VAC jumper. Also, verify the power supply fuse is correct. See section 2.3 of this document.

Note

When changing the voltage setting, remember to change the voltage label on the rear panel.

2-6 DASM Installation

1. SGI and DASM powered down.
2. Set DIP switches so that DASM SCSI device address =3. Ensure all other DIP settings are correct. See section 2.2 of this document to configure DASM jumpers.
3. Connect (Centronix to micro SCSI) SCSI cable between DASM and SGI.
4. Connect (Centronix to 25 pin/38 pin RS232) camera cable between DASM/Camera.
5. Power on the DASM.
6. Power on the SGI. Continue with Section 3- Start-Up Sequence

3- START-UP SEQUENCE

3-1 Power On Sequence

Please refer to Illustration 3-1 for this section. The following sequence occurs in the front panel's LEDs when the power switch is turned on:

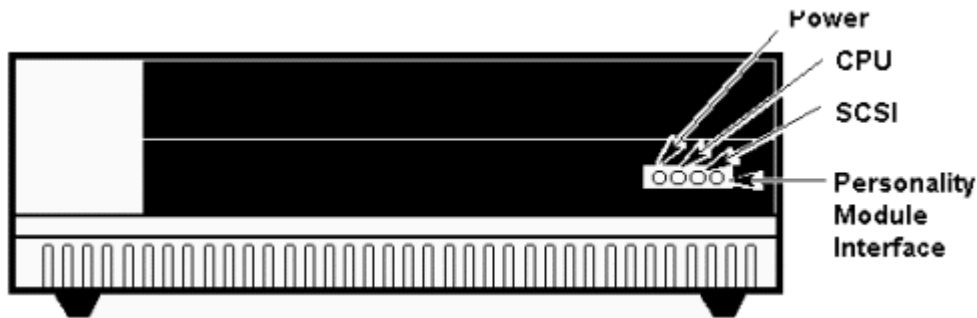


ILLUSTRATION 3-1
DIGITAL DASM FRONT PANEL

1. The power LED comes on.
2. The octal SCSI ID flashes briefly. The Least Significant Bit is next to the power LED. Note that if the SCSI ID is zero, no LEDs flash.
3. The three LED which represent an octal value flash once and go out.
4. Once the power-up sequence completes, the DASM CPU LED (second light from the left) blinks regularly, indicating that the CPU is active and functioning normally.

3-2 Software Start-up Sequence

When the DASM-VDB interface model is powering up, it performs start-up diagnostics and other related actions.

At power-up, the DASM unit performs the following tests:

1. EPROM checksum test
2. MFP 68901 access test (the Multi Function Peripheral (MFP) chip controls the serial port, timing, and I/O.
3. SCSI register access test
4. Static RAM test
5. Dynamic RAM test

6. DMA test

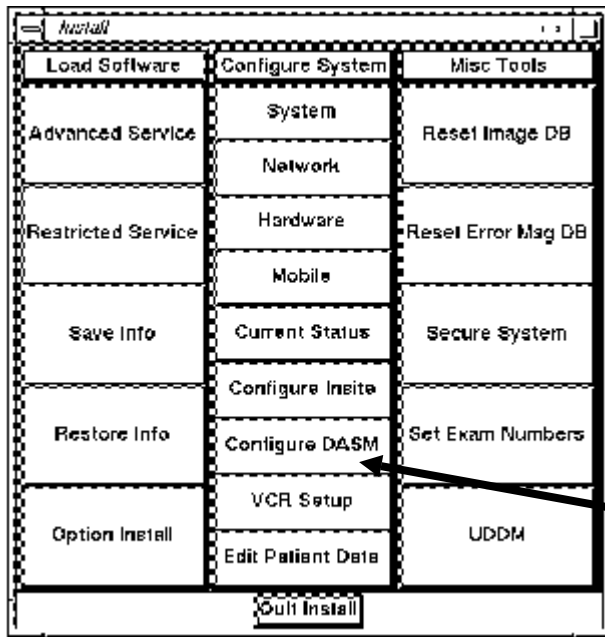
When the DASM CPU LED blinks continuously at about two flashes per second, the initialization sequence is complete, and the continuous self-test is in progress. The self-test runs until a SCSI command (a write to block 0 on the DASM) is sent by the host. This test signals an error condition by blinking the CPU, SCSI, and Personality Module Interface LEDs in tandem, continuously. Refer to Appendix A for error condition strategy.

3-3 Signa System Start-up Sequence

To properly install the Digital DASM, hardware connections must be made (see Section 2-2 DASM Jumpers and Section 2-6 DASM Installation).

Signa application software must be configured properly.

3-3-1 Software Setup For Signa Systems 8.2.5 or Earlier

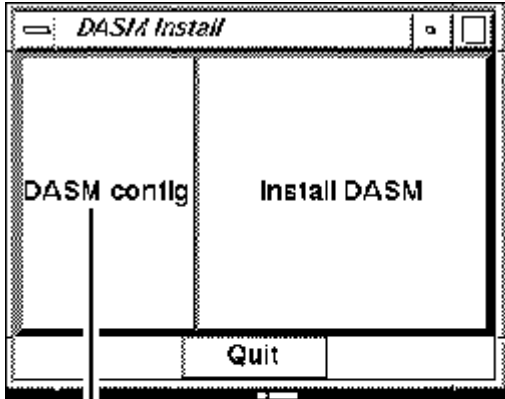


INSTALLATION MANAGER

To configure the DASM

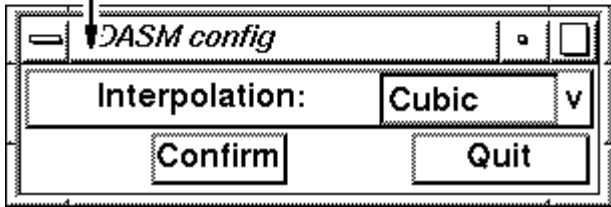
1. If Signa is running, Go the Service Desktop, push the **[Install]** button found on the left toolbar.
2. At the logon screen Type: "root" Password: "operator"
3. On the Install manager, Select **"Configure DASM"**. See Illustration 3-2.

ILLUSTRATION 3-2



For the next two steps, see illustration 3-3.

Step 1: Set the DASM configuration to "linear" and then press confirm.



Step 2: Push the Install DASM button. Enter the appropriate selection, See Table 3-3. Push the Quit button when done. Log off and relog in as Signa if no other configurations are needed at this time.

ILLUSTRATION 3-3
DASM INTERPOLATION SETUP

TABLE 3-3
EXAMPLE CAMERA SETUP

```

Is there a camera used by your Advantage Windows (y/n): . y<Enter>

Enter the DASM filming interface type [0 DIGITAL (LCAM): 1 VIDEO (VDB)]:
. . . . . 1<Enter>

Enter laser camera type [0 for 3M 952
                        1 for 3M XL or HQ
                        2 for 3M DryView
                        3 for AGFA MIN
                        4 for KODAK
                        5 for DUPONT
                        6 for FUJI
                        7 for KONICA
                        8 for AGFA MG3000]: . . . . . 2 <Enter>

Enter DASM host name or <Return> for local host: . . . <Enter>

installing lcam environment
Application removed
Application declared
Filming option is installed.
lx-0 3# . . . . . exit <Enter>
    
```

3-3-2 Software Setup For Signa Systems 8.3 and later

With Signa up and running, go to the Service Desktop and push the **<Install>** button found on the left toolbar. A screen will open asking for the system "root" password. Type in the password and press the **<Enter>** button to continue. The Signa default password is "Operator". The Install GUI will open within 2-3 minutes depending on the type of host computer your system is using. Be patient. Once the Install Manager has opened, use the mouse and select the DASM tab. See illustration 3-4.

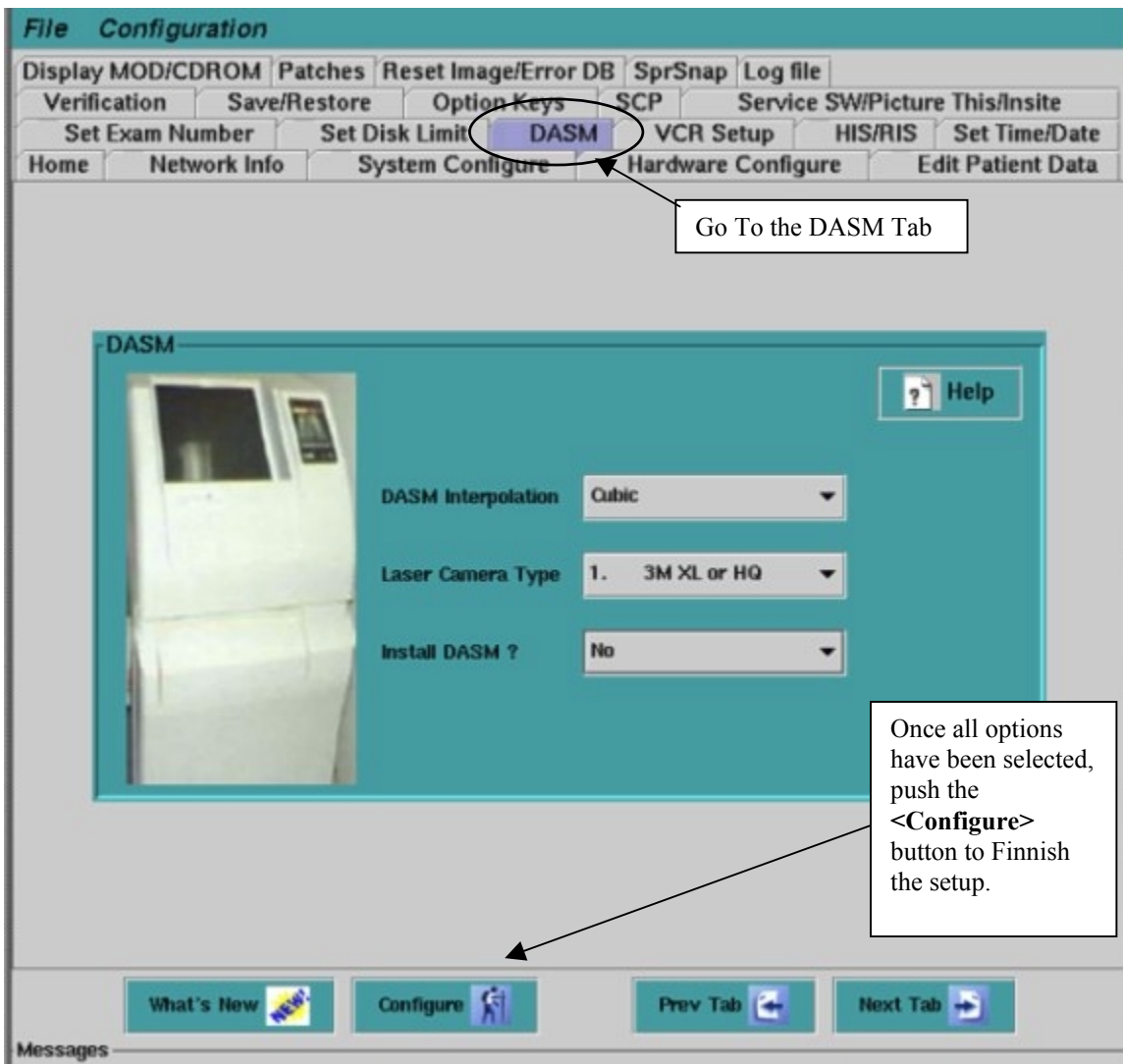


ILLUSTRATION 3-4
DASM TAB IN INSTALLATION GUI

1. Select the DASM Interpolation Mode by selecting the options available in the pull down. Cubic is the norm for most sites. See illustration 3-5.

ILLUSTRATION 3-5



INTERPOLATION MODE SELECTION

2. Select the Camera type the system is using by selecting the options available in the pull down. See illustration 3-6.

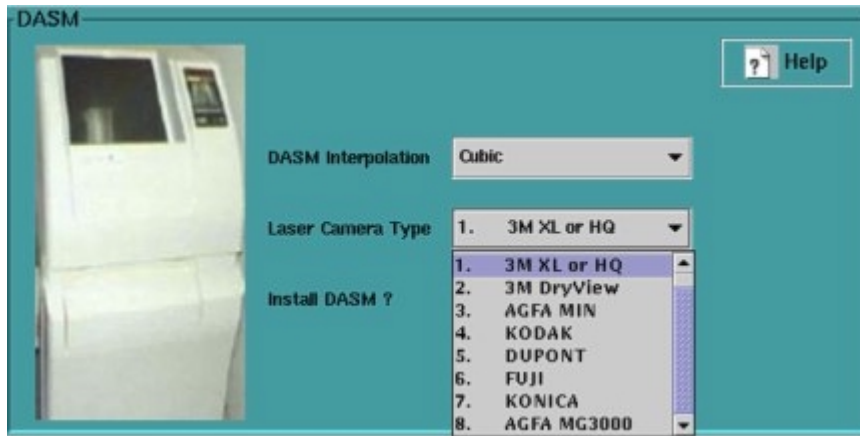


ILLUSTRATION 3-6
SYSTEM CAMERA TYPE

- 3. Select **Yes** to prepare the system to install the DASM once the **[Configure]** button is pushed. See illustration 3-7.

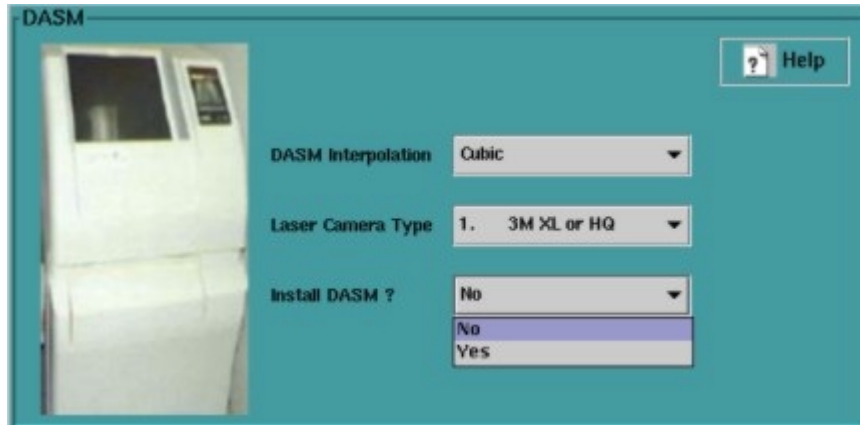


ILLUSTRATION 3-7
INSTALL DASM YES OR NO

- 4. When finished, push the **[Configure]** button at the bottom of the DASM tab in order to complete the software configuration. See illustration 3-4.
- 5. Select **File** then **Exit** from the menu to exit the Guided Install.

4- TROUBLESHOOTING

4-1 Cabling

The DASM interface module comes configured to customer specifications. However, the installation and configuration of the cables should be checked if the unit fails to operate.

The DASM connects to the host's SCSI port with a 50 pin SCSI cable, and to the laser camera's data port using a 50 pin Y cable. The supplied AC power cable must be plugged into the power receptacle at the rear of the DASM enclosure.



All units must be powered down before connecting the interface cables.

The maximum length of the SCSI cable is 6.0 meters. The SCSI bus terminator must be connected to the second SCSI port, or the next device in the daisy chain, if present will not function.

See Illustration 4-1 for DASM I/O Panel descriptions.

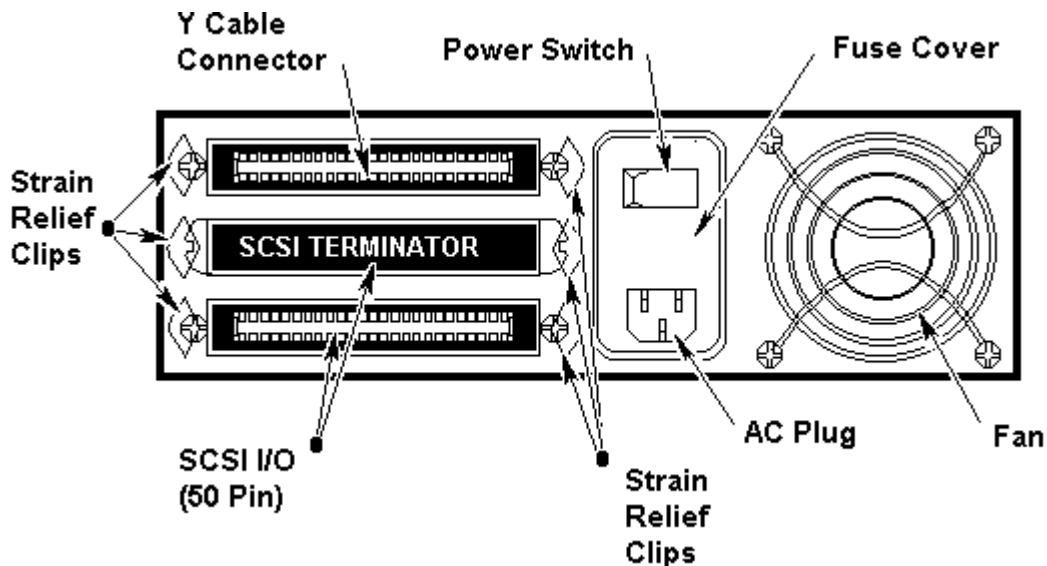


ILLUSTRATION 4-1
DASM I/O PANEL DESCRIPTIONS

The SCSI devices at both ends of the cable must be terminated. When connecting another SCSI device to the DASM-VDB module. If the DASM-VDB interface module is the last device in the chain, a SCSI terminator must be connected.

APPENDIX A DASM ERROR CODES

To report diagnostic conditions, the LEDs on the DASM-LCAM front panel have a corresponding binary representation. The figure below shows the value assigned to each LED. See Illustration A-1 for an explanation of how the LEDs represent error codes.

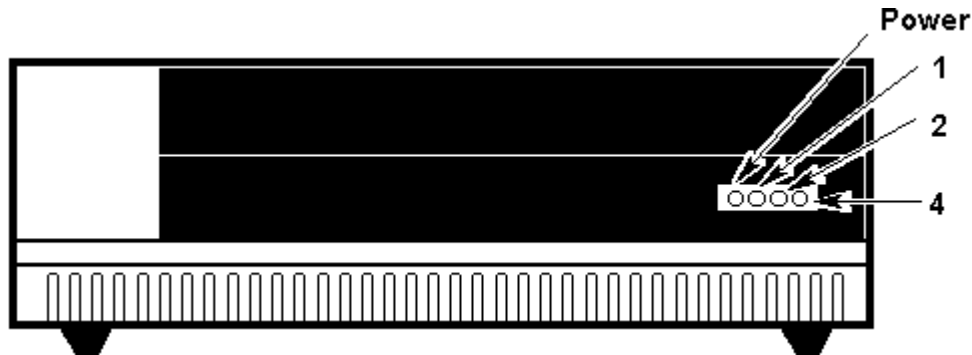


ILLUSTRATION A-1
LEDS POSITIONS

Using LEDs 1, 2, and 4, a 2-bit binary code signals any of the conditions listed in Table A-1. The power light is not used to report diagnostic conditions.

The three LEDs permit a combined total of only seven error codes. To overcome this limitation, the codes are defined as a series of one or more patterns. Each pattern begins with all LEDs flashing briefly, to indicate the start of the number of sequence that follows.

For example, to display error code 12 (Failed SCSI Interface Test), the CPU LED displays the first digit (1), stopping briefly before the SCSI LED displays the second digit (2).

The display of each digit lasts approximately four times the duration of the initial binary "7" (that is, the flash of all LEDs). The pattern then repeats. Only the significant digits for each error condition are listed in Table A-1.

The first error stops the start-up sequence immediately

DASM ERROR BOOT UP ERROR CODES

TABLE 4-1

Error Code	Significance
1	Failed to Set Timer
2	Failed to Set Baud Rate
3	Failed to Access Rcvr Status Reg. for Serial I/O
4	Failed to Start Refresh Clock
5	Failed in Set Up of Serial I/O
6	Checksum Failed
7	Failed Static RAM Test
11	Failed I/O RAM Test
12	Failed SCSI Interface Test
13	Failed to Start VRTX Operating System
21	Bus Error
22	Address Error
23	Illegal Instruction
24	Undefined MFP (MC68901) Interrupt
25	Zero-divide - Through Trace Trap Level 5
26	Chk, Trapv, Privilege, or Trace Interrupt
31	Unknown Interrupt

REVISION HISTORY

REV	DATE	AUTHOR	PRIMARY REASONS FOR CHANGE
0	April 9, 1998	R.Hawthorne	Initial conversation from ToolBook to Word.
1	Jan 27, 2000	R. Hawthorne	Added section 3-3-2 concerning setting up system software using the 8.3 Install GUI. Table A-1 also added to Appendix A.