

# APPENDIX G

## BOOTSTRAP PROCEDURES

Figure G-1 shows a PDP-11 console. The up position indicates "on" for all switches.



Figure G-1  
The PDP-11 Console

The switch register comprises the 18 switches numbered 0-17. Flipping one of these switches up indicates a "1" condition for the bit that it represents. For example, to enter the octal value 173100, switches 15, 14, 13, 12, 10, 9, and 6 must be up.

#### G.1 BM792-YB BOOTSTRAP LOADER FOR DISK/DECTAPE

1. Move HALT/ENABLE switch to HALT position.
2. Load the processor switch register with 773100.
3. Depress LOAD ADDRESS processor switch.
4. Load the switch register with the correct address from the following:
  - 777344 for DECTape.
  - 777450 for RC disk.
  - 777462 for RF11 disk.
  - 777406 for RK11 disk.
  - 776716 for RP11 disk.
5. Move HALT/ENABLE processor switch to ENABLE position.
6. Depress START processor switch.

#### G.2 MR11 (DISK/DECTAPE), BM792-YA (PAPER TAPE), BM792-TC (CARD READER), AND BM792-YH (CASSETTE) BOOTSTRAP LOADERS

1. Move HALT/ENABLE switch to HALT.
2. Load processor switch register with 773100.
3. Depress LOAD ADDRESS switch.
4. Load the switch register with correct address from the following:
  - 773100 for RF11 disk.
  - 773110 for RK11 disk.
  - 773154 for RP11 disk.
  - 773220 for RC11 disk.
  - 773120 for DECTape.
  - 773136 for magnetic tape.
  - 773000 for paper tape.
  - 773200 for card reader.
  - 773300 for cassette.
5. Move HALT/ENABLE switch to ENABLE.
6. Depress START processor switch.

#### G.3 PAPER TAPE BOOTSTRAP LOADER

In the following description nn is a code that represents the amount of memory available. The value of nn should be specified according to the following list.

| Memory Size in Words | Value of nn |
|----------------------|-------------|
| 8K                   | 03          |
| 12K                  | 05          |
| 16K                  | 07          |
| 20K                  | 11          |
| 24K                  | 13          |
| 28K                  | 15          |

1. Place the absolute loader paper tape into the high-speed paper tape reader with the special leader code (351) positioned over the read sensors.
2. Set HALT/ENABLE to HALT.
3. Set the console switch register to nn7744, and depress LOAD ADDR.
4. Load the bootstrap procedure by loading the switch register the first value listed below. After setting the value raise the DEP key. This deposits the value into the specified address. Repeat this operation for the remaining thirteen values in the list. (The DEP key automatically increments the address by 2 each time, so that subsequent values are inserted into the next thirteen words.)

| Address | Value  |
|---------|--------|
| nn7744  | 016701 |
| nn7746  | 000026 |
| nn7750  | 012702 |
| nn7752  | 000352 |
| nn7754  | 005211 |
| nn7756  | 105711 |
| nn7760  | 100376 |
| nn7762  | 116162 |
| nn7764  | 000002 |
| nn7766  | nn7400 |
| nn7770  | 005267 |
| nn7772  | 177756 |
| nn7774  | 000765 |
| nn7776  | 177550 |

5. Reset console switch register to nn7744, and depress LOAD ADDR.
6. Set HALT/ENABLE to ENABLE.
7. Depress START processor switch.

#### G.4 MAGNETIC TAPE BOOTSTRAP LOADER

1. Move HALT/ENABLE to HALT.
2. Set the processor switch register to 010000.
3. Depress the LOAD ADDR switch.
4. Load the bootstrap procedure by loading the switch register with the first value listed below. Raise the DEP key. This deposits the value into the specified address. Repeat this operation for the remaining fifteen values in the list. (The DEP key automatically increments the address by 2 each time, so that subsequent values are inserted into the next fifteen words.)

| Address | Value  |
|---------|--------|
| 10000   | 12700  |
| 10002   | 172524 |
| 10004   | 5310   |
| 10006   | 12740  |
| 10010   | 60011  |
| 10012   | 105710 |
| 10014   | 100376 |
| 10016   | 5710   |
| 10020   | 100767 |
| 10022   | 12710  |
| 10024   | 60003  |
| 10026   | 105710 |
| 10030   | 100376 |
| 10032   | 5710   |
| 10034   | 100777 |
| 10036   | 5007   |

5. Reset processor switch register to 010000, and press LOAD ADDR.
6. Set HALT/ENABLE to ENABLE.
7. Depress START processor switch.

#### G.5 CASSETTE BOOTSTRAP LOADER

1. Move the HALT/ENABLE switch to HALT.
2. Load the processor switch register with 001000.
3. Press LOAD ADDR switch.
4. Load the bootstrap procedure by loading the switch register with the first value listed below. Raise the DEP key. This deposits the value into the specified address (001000). Repeat this operation for the remaining 27 values in the list. (The DEP key automatically increments the address by 2 each time, so that subsequent values are inserted into the next 27 words.)

| Address | Value  |
|---------|--------|
| 001000  | 012700 |
| 001002  | 177500 |
| 001004  | 005010 |
| 001006  | 010701 |
| 001010  | 062701 |
| 001012  | 000052 |
| 001014  | 012702 |
| 001016  | 000375 |
| 001020  | 112103 |
| 001022  | 112110 |
| 001024  | 100413 |
| 001026  | 130310 |
| 001030  | 001776 |
| 001032  | 105202 |
| 001034  | 100772 |
| 001036  | 116012 |

| Address | Value  |
|---------|--------|
| 001040  | 000002 |
| 001042  | 120337 |
| 001044  | 000000 |
| 001046  | 001767 |
| 001050  | 000000 |
| 001052  | 000755 |
| 001054  | 005710 |
| 001056  | 100774 |
| 001060  | 005007 |
| 001062  | 017640 |
| 001064  | 002415 |
| 001066  | 112024 |

5. Reset console register switch with 001000, and press LOAD ADDR.
6. Set HALT/ENABLE to ENABLE.
7. Depress START processor switch.

