

**LE8-0 line printer  
engineering drawings**



| CUSTOMER PRINT SET |         | ELECTRICAL |                                |     |           |  | CUSTOMER PRINT SET   |   | MECHANICAL |          |                  |     |           |                              |                      |
|--------------------|---------|------------|--------------------------------|-----|-----------|--|----------------------|---|------------|----------|------------------|-----|-----------|------------------------------|----------------------|
|                    | FG. SET | FIG. NO.   | DRAWING NO.                    | REV | NO OF SHT | DESCRIPTION                            | OPTION NO./FILE DATE |   | MFG SET    | FIG. NO. | DRAWING NO.      | REV | NO OF SHT | DESCRIPTION                  | OPTION NO./FILE DATE |
| X                  |         | 1          | A-SP-LE8-0-1                   | A   | 3         | ENGINEERING SPEC                       |                      | X |            | 1        | A-PL-KE8-0-0     | A   | 1         | PARTS LIST                   |                      |
|                    | X       |            | A-SP-LE8-0-2                   | A   | 3         | TEST PROCEDURE                         |                      |   |            |          |                  |     |           |                              |                      |
| X                  |         | X          | A-SP-LE8-0-3                   | A   | 3         | ACCEPTANCE PROCEDURE                   |                      |   |            |          |                  |     |           |                              |                      |
| X                  |         |            | A-AL-LE8-0-4                   | A   | 1         | ACCESSORY LIST                         |                      |   |            |          |                  |     |           |                              |                      |
|                    |         |            |                                |     |           |  |                      | X |            | 3        | D-IA-7006964-0-0 | #   | 1         | CABLE, DATA PRODUCTS TO M841 |                      |
| X                  |         | 2          | E-CS-M841-0-1<br>B-MH-M841-0-6 | #   | 2<br>1    | LINE PRINTER CONTROL<br>MODULE HISTORY | M841                 |   |            |          |                  |     |           |                              |                      |
|                    |         |            |                                |     |           |  |                      |   |            | 4        | A-ML-LP01-0      |     | 1         | LINE PRINTER (80 COLUMN)     | LP01                 |
|                    |         |            |                                |     |           |  |                      |   |            | 5        | E-UA-LP02-0-0    |     | 1         | LINE PRINTER (132 COLUMN)    | LP02                 |
|                    |         |            |                                |     |           |  |                      |   |            | 6        | B-DD-LP05-0      |     |           | LINE PRINTER (80/132 COLUMN) | LP05                 |

CUSTOMER PRINT SET CODES  
X = PRINT OF DOCUMENT INCLUDED IN PRINT SET  
C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT  
S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE  
LINE PRINTER & CONTROL  
SHEET 2 OF 2  
SIZE CODE  
B DD  
NUMBER  
LE8-0  
REV  
B

| DIGITAL EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |                        |                               | LEGEND                    |                         | QUANTITY / VARIATION |                    |                    |  |  |  |           |      |              |                    |    |      |  |
|---|------------------------|-------------------------------|---------------------------|-------------------------|----------------------|--------------------|--------------------|--|--|--|-----------|------|--------------|--------------------|----|------|--|
| ACCESSORY LIST  |                        |                               | D                         | DOCUMENT                | LE8-FA, FB, HA, HB   | LE8-JA, JB, KA, KB | LE8-VA, VE, WA, WE |  |  |  |           |      |              |                    |    |      |  |
| MADE BY <i>Famy Harkis</i>                              | CHECKED <i>J. Bell</i> | SECTION                       | DN                        | DOCUMENT CHANGE NOTICE  |                      |                    |                    |  |  |  |           |      |              |                    |    |      |  |
| DATE <i>3-4-74</i>                                      | DATE <i>3-4-74</i>     | 1                             | PA                        | PAPER TAPE ASCII        |                      |                    |                    |  |  |  |           |      |              |                    |    |      |  |
| ENG <i>Famy Harkis</i>                                  | PROD                   | ISSUED SECT.                  | PB                        | PAPER TAPE BINARY       |                      |                    |                    |  |  |  |           |      |              |                    |    |      |  |
| DATE <i>3-4-74</i>                                      | DATE                   | !                             | PM                        | PAPER TAPE READ-IN-MODE |                      |                    |                    |  |  |  |           |      |              |                    |    |      |  |
| ITEM NO.  | DWG NO. / PART NO.     | DESCRIPTION                   |                           |                         |                      |                    |                    |  |  |  | KIT CHECK | BY   | DATE         | INSTALLATION CHECK | BY | DATE |  |
| 1   | B-DD-LE8-0             | LE8 CUSTOMER PRINT SET        | 1                         | 1                       | 1                    |                    |                    |  |  |  |           |      |              |                    |    |      |  |
| 2   | DEC-8E-HMM-D           | MAINTENANCE MANUAL VOLUME III | 1                         | 1                       | 1                    |                    |                    |  |  |  |           |      |              |                    |    |      |  |
| 3   | LIBKIT-8E-LE8          | SOFTWARE KIT                  | 1                         | 1                       | 1                    |                    |                    |  |  |  |           |      |              |                    |    |      |  |
| 4   | A-AL-LP01-0-4          | LP01 ACCESSORIES              | 1                         | -                       | -                    |                    |                    |  |  |  |           |      |              |                    |    |      |  |
| 5   | A-AL-LP02-0-1          | LP02 ACCESSORIES              | -                         | 1                       | -                    |                    |                    |  |  |  |           |      |              |                    |    |      |  |
| 6   | A-AL-LP05-0            | LP05 ACCESSORIES              | -                         | -                       | 1                    |                    |                    |  |  |  |           |      |              |                    |    |      |  |
| 7   | M841                   | LINE PRINTER CONTROL          | *1                        | *1                      | *1                   |                    |                    |  |  |  |           |      |              |                    |    |      |  |
| 8   | 7006964                | CABLE                         | *1                        | *1                      | *1                   |                    |                    |  |  |  |           |      |              |                    |    |      |  |
| * INCLUDED ONLY WHEN NOT INSTALLED IN A COMPUTER        |                        |                               |                           |                         |                      |                    |                    |  |  |  |           |      |              |                    |    |      |  |
| TITLE<br>LE8 ACCESSORY LIST                             |                        |                               | ASSY. NO.<br>A-PL-LE8-0-0 |                         | SIZE                 | CODE               | NUMBER             |  |  |  |           | REV. | ECO NO       |                    |    |      |  |
|   |                        |                               | SHEET 1 OF 1              |                         | A                    | AL                 | LE8-0-4            |  |  |  |           | A    | LE8<br>00004 |                    |    |      |  |
|   |                        |                               |                           |                         | DIST.                |                    |                    |  |  |  |           |      |              |                    |    |      |  |

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|---|--------------------|----------------------|----------|----------------------|--------|---------|--------|--------|--------|--------|-----------|--------|--------|--------|--------|
| PARTS LIST  |                    |                      |          | LE8-FA               | LE8-FB | LE8-HA  | LE8-HB | LE8-JA | LE8-JB | LE8-KA | LE8-KB    | LE8-VA | LE8-VE | LE8-WA | LE8-WE |
| ITEM NO.  | DWG NO. / PART NO. | DESCRIPTION          |          |                      |        |         |        |        |        |        |           |        |        |        |        |
| 1   | M841               | LINE PRINTER CONTROL |          | 1                    | 1      | 1       | 1      | 1      | 1      | 1      | 1         | 1      | 1      | 1      | 1      |
| 2   | 7006964            | CABLE                |          | 1                    | 1      | 1       | 1      | 1      | 1      | 1      | 1         | 1      | 1      | 1      | 1      |
| 3   | 3009766            | LPØ1-FA              |          | 1                    | -      | -       | -      | -      | -      | -      | -         | -      | -      | -      | -      |
| 4   | 3009767            | LPØ1-FB              |          | -                    | 1      | -       | -      | -      | -      | -      | -         | -      | -      | -      | -      |
| 5   | 3009768            | LPØ1-HA              |          | -                    | -      | 1       | -      | -      | -      | -      | -         | -      | -      | -      | -      |
| 6   | 3009769            | LPØ1-HB              |          | -                    | -      | -       | 1      | -      | -      | -      | -         | -      | -      | -      | -      |
| 7   | 3009770            | LPØ2-JA              |          | -                    | -      | -       | -      | 1      | -      | -      | -         | -      | -      | -      | -      |
| 8   | 3009771            | LPØ2-JB              |          | -                    | -      | -       | -      | -      | 1      | -      | -         | -      | -      | -      | -      |
| 9   | 3009772            | LPØ2-KA              |          | -                    | -      | -       | -      | -      | -      | 1      | -         | -      | -      | -      | -      |
| 10  | 3009773            | LPØ2-KB              |          | -                    | -      | -       | -      | -      | -      | -      | 1         | -      | -      | -      | -      |
| 11  | 3011631-01         | LPØ5-VA              |          | -                    | -      | -       | -      | -      | -      | -      | -         | 1      | -      | -      | -      |
| 12  | 3011631-02         | LPØ5-VE              |          | -                    | -      | -       | -      | -      | -      | -      | -         | -      | 1      | -      | -      |
| 13  | 3011631-05         | LPØ5-WA              |          | -                    | -      | -       | -      | -      | -      | -      | -         | -      | -      | 1      | -      |
| 14  | 3011631-06         | LPØ5-WE              |          | -                    | -      | -       | -      | -      | -      | -      | -         | -      | -      | -      | 1      |
| TITLE   |                    |                      | ASSY NO. | SIZE                 | CODE   | NUMBER  |        |        |        | REV.   | ECO NO.   |        |        |        |        |
| LE8 PARTS LIST  |                    |                      |          | A                    | PL     | LE8-0-0 |        |        |        | A      | LE8-00004 |        |        |        |        |
| SHEET 1 OF 1  |                    |                      | DIST.    |                      |        |         |        |        |        |        |           |        |        |        |        |

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**DIGITAL EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS**

**ENGINEERING SPECIFICATION**

DATE 8-17-70

TITLE LE8-XX Line Printer Interface to the PDP-8/E

REVISIONS

| REV | DESCRIPTION | CHG NO      | ORIG  | DATE | APPD BY  | DATE   |
|-----|-------------|-------------|-------|------|----------|--------|
| A   | ECO CHANGE  | LE8 - 00004 | NARHI | 2/74 | L. Narhi | 3/4/74 |

|                    |                            |           |            |                   |          |
|--------------------|----------------------------|-----------|------------|-------------------|----------|
| ENG<br>Larry Narhi | APPD<br><i>Larry Narhi</i> | SIZE<br>A | CODE<br>SP | NUMBER<br>LE8-0-1 | REV<br>A |
|--------------------|----------------------------|-----------|------------|-------------------|----------|

DEC FORM NO. DRA 107

SHEET 1 OF 3

**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE LE8-XX LINE PRINTER INTERFACE TO THE PDP-8/E

1. OVERALL DESCRIPTION

The LE8 is an interface to several models of the Data Products Line Printer to the PDP-8/E computer. The logic is designed entirely of TTL integrated circuits for low cost and high speed.

2. GENERAL SPECIFICATIONS

2.1 The basic option consists of:

One M841 control card and  
One 80 column, 64 character line printer.

Its designation is LE8-FA.

2.2 Options to the basic control and line printer are:

- LE8-FB 80 column, 64 characters 50 Hz.
- LE8-HA 80 column, 96 characters 60 Hz.
- LE8-HB 80 column, 96 characters 50 Hz.
- LE8-JA 132 column, 64 characters 60 Hz.
- LE8-JB 132 column, 64 characters 50 Hz.
- LE8-KA 132 column, 96 characters 60 Hz.
- LE8-KB 132 column, 96 characters 50 Hz.
- LE8-VA 64 Char Scientific Drum
- LE8-VE 64 Char EDP Drum
- LE8-WA 96 Char Scientific Drum
- LE8-WE 96 Char EDP Drum

2.3 The interface is contained on one 8½" Quad Board whose pins are defined by the 8E bus.

2.4 Temperature limits:

32 F to 155° F  
Relative humidity: 0 to 95% non-condensing  
Power Required: 650 MA at +5 volts.

|           |            |                   |          |
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| SIZE<br>A | CODE<br>SP | NUMBER<br>LE8-0-1 | REV<br>A |
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DEC FORM NO. DEC 16-(381)-1022-N370  
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SHEET 2 OF 3

**TITLE** LEB-XX Line Printer Interface to the PDP-8/E

**3. PROGRAMMING**

3.1 IOT coding is as follows:

| Mnemonic   | IOT  | Function                   |
|------------|------|----------------------------|
| PSKF       | 6661 | Skip if Flag = 1           |
| PCLF       | 6662 | Clear Flag                 |
| PSKE       | 6663 | Skip on Error or Not Ready |
| PSTB       | 6664 | Strobe, Load Buffer        |
| PSIE       | 6665 | Set Interrupt Enable       |
| PCLF, PSTB | 6666 | Clear Flag, Load Character |
| PCIE       | 6667 | Clear Interrupt Enable     |

Note: Initialize Resets Interrupt Enable, to disable interrupts.

3.2 There are no maintenance instructions.

3.3 The line printer uses the standard ASCII character set. The least significant bit appears in AC bit 11.

3.4 There are no operator controls on the control board. Operator controls on the printer are:

Top of Form - Advances paper to top of form

Paper Step - Advances paper one line at a time, disabled on line.

On line/Off line - Selects mode of operation

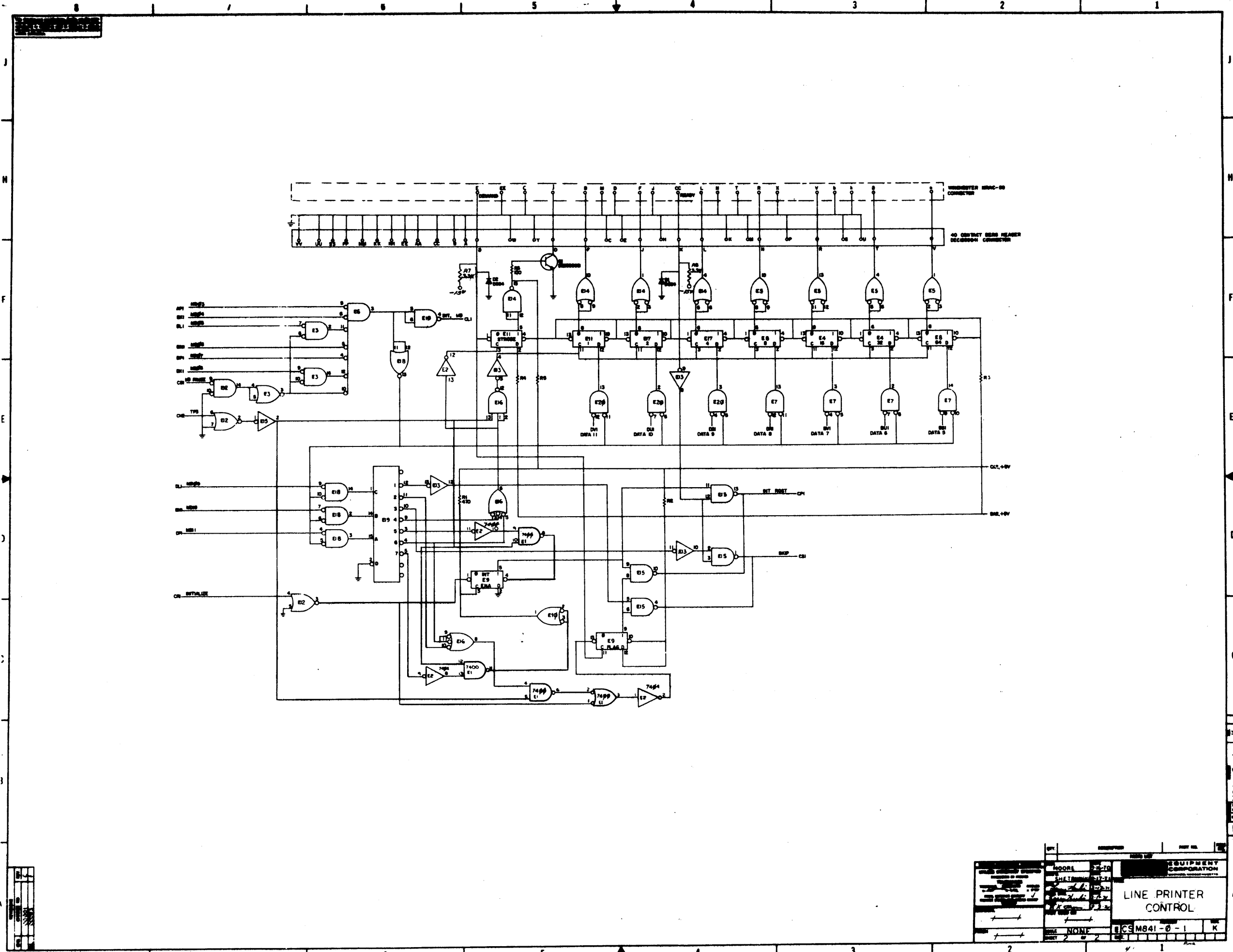
Master Clear - Initializes printer to insure proper state of electronic elements.

Print Inhibit - Stop printing action.

|      |      |         |     |
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|      |             |          |        |
|------|-------------|----------|--------|
| REV. | DESCRIPTION | DATE     | BY     |
| 1    | INITIAL     | 11-10-64 | MOORE  |
| 2    | REVISION    | 12-1-64  | SHULTZ |
| 3    | REVISION    | 12-1-64  | SHULTZ |
| 4    | REVISION    | 12-1-64  | SHULTZ |
| 5    | REVISION    | 12-1-64  | SHULTZ |
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| 100  | REVISION    | 12-1-64  | SHULTZ |

LINE PRINTER CONTROL

CSM841-0-1



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|---|-------------|--------------|-------|------|-----------------|--------|
| ENGINEERING SPECIFICATION                               |             |              |       |      | DATE 4/72       |        |
| TITLE    LES ACCEPTANCE PROCEDURE                       |             |              |       |      |                 |        |
| REVISIONS   |             |              |       |      |                 |        |
| REV   | DESCRIPTION | CHG NO       | ORIG  | DATE | APPD BY         | DATE   |
| A   | ECO CHANGE  | LE8<br>00004 | NARHI | 2/74 | <i>L. Narhi</i> | 3-3-74 |

|     |          |      |                 |      |      |         |     |
|-----|----------|------|-----------------|------|------|---------|-----|
| ENG | L. NARHI | APPD | <i>L. Narhi</i> | SIZE | CODE | NUMBER  | REV |
|     |          |      |                 | A    | SP   | LE8-0-3 | A   |

| ENGINEERING SPECIFICATION  |                         |      |      | CONTINUATION SHEET |            |               |            |               |            |                |            |                |        |                         |        |                  |        |                         |        |                  |
|--|-------------------------|------|------|--------------------|------------|---------------|------------|---------------|------------|----------------|------------|----------------|--------|-------------------------|--------|------------------|--------|-------------------------|--------|------------------|
| TITLE    LES ACCEPTANCE PROCEDURE  |                         |      |      |                    |            |               |            |               |            |                |            |                |        |                         |        |                  |        |                         |        |                  |
| <p>1.0 Equipment required</p> <p>1.1 LES-Control Module - M841</p> <p>1.2 LES-Control Cable - 7006964</p> <p>1.3 Line Printer Models -</p> <table style="margin-left: 40px;"> <tr><td>LPØ1-FA/FB</td><td>64 Char/80Col</td></tr> <tr><td>LPØ1-HA/HB</td><td>96 Char/80Col</td></tr> <tr><td>LPØ2-JA/JB</td><td>64 Char/132Col</td></tr> <tr><td>LPØ2-KA/KB</td><td>96 Char/132Col</td></tr> <tr><td>LES-VA</td><td>64 Char Scientific Drum</td></tr> <tr><td>LES-VE</td><td>64 Char EDP Drum</td></tr> <tr><td>LES-WA</td><td>96 Char Scientific Drum</td></tr> <tr><td>LES-WE</td><td>96 Char EDP Drum</td></tr> </table> <p>1.4 PDP-8E, 8M or 8F and Teletype</p> <p>1.5 LES Line Printer Diagnostic Maindec-08-DILPA-A</p> <p>1.6 Paper    LPØ1 - 1 Part DEC # 36-9829<br/> <span style="margin-left: 100px;">6 Part Dec # 18-9536</span><br/> <span style="margin-left: 100px;">LPØ2 - 1 Part Dec # 36-9141</span><br/> <span style="margin-left: 100px;">6 Part Dec # 36-1Ø293</span></p> <p>2.0 Preliminary Inspection</p> <p>2.1 Check the M841 for proper revision and date coding.</p> <p>2.2 Insure that all paper work is complete (Keysheet ECO Status Sheet, Etc)</p> <p>3.0 Acceptance Procedure for LPØ1 or LPØ2 and LES</p> <p>3.1 Turn the machine power on.</p> <p>3.2 Place paper in printer so that it covers the hammers and the bottom paper out switch but not the top paper out switch.</p> <p>3.3 Turn breaker on, wait 10 seconds, "READY" light should not turn on, and "PAPER FAULT" light should be lit.</p> <p>3.4 Turn breaker off, and place paper in printer so that it covers the hammers and the top paper out switch, but not the bottom paper out switch.</p> <p>3.5 Turn breaker on, "READY" light should not turn on, and "PAPER FAULT" light should be lit.</p> <p>3.6 Open drum gate, remove paper; press "TOP OF FORM" switch and place in a continous form (line up perforation with arrow).</p> <p>3.7 Close drum gate, "READY" should light within 15 seconds. Check "TOP OF FORM" and "PAPER STEP" switches for correct operation. Correct operation is paper step will advance one line and top of form will advance to the next page.</p> <p>3.8 Press "ON LINE" switch. Check "TOP OF FORM" and "PAPER STEP" switch. Both switches should not operate.</p> <p>3.9 Press "ON LINE" switch and "MASTER CLEAR" switch. Check "TOP OF FORM" and "PAPER STEP" switch. Both switches should operate.</p> <p>3.10 Refer to the diagnostic write-up and run tests 1 thru 6.</p> |                         |      |      |                    | LPØ1-FA/FB | 64 Char/80Col | LPØ1-HA/HB | 96 Char/80Col | LPØ2-JA/JB | 64 Char/132Col | LPØ2-KA/KB | 96 Char/132Col | LES-VA | 64 Char Scientific Drum | LES-VE | 64 Char EDP Drum | LES-WA | 96 Char Scientific Drum | LES-WE | 96 Char EDP Drum |
| LPØ1-FA/FB   | 64 Char/80Col           |      |      |                    |            |               |            |               |            |                |            |                |        |                         |        |                  |        |                         |        |                  |
| LPØ1-HA/HB   | 96 Char/80Col           |      |      |                    |            |               |            |               |            |                |            |                |        |                         |        |                  |        |                         |        |                  |
| LPØ2-JA/JB   | 64 Char/132Col          |      |      |                    |            |               |            |               |            |                |            |                |        |                         |        |                  |        |                         |        |                  |
| LPØ2-KA/KB   | 96 Char/132Col          |      |      |                    |            |               |            |               |            |                |            |                |        |                         |        |                  |        |                         |        |                  |
| LES-VA   | 64 Char Scientific Drum |      |      |                    |            |               |            |               |            |                |            |                |        |                         |        |                  |        |                         |        |                  |
| LES-VE   | 64 Char EDP Drum        |      |      |                    |            |               |            |               |            |                |            |                |        |                         |        |                  |        |                         |        |                  |
| LES-WA   | 96 Char Scientific Drum |      |      |                    |            |               |            |               |            |                |            |                |        |                         |        |                  |        |                         |        |                  |
| LES-WE   | 96 Char EDP Drum        |      |      |                    |            |               |            |               |            |                |            |                |        |                         |        |                  |        |                         |        |                  |
|  |                         | SIZE | CODE | NUMBER             | REV        |               |            |               |            |                |            |                |        |                         |        |                  |        |                         |        |                  |
|  |                         | A    | SP   | LE8-0-3            | A          |               |            |               |            |                |            |                |        |                         |        |                  |        |                         |        |                  |

## TITLE LE8 ACCEPTANCE PROCEDURE

- 3.11 Stop diagnostic from running; press "PRINT INHIBIT" switch, press "ON LINE" switch, restart diagnostic form part 1 of test 1.
- 3.12 "PRINT INHIBIT" light should turn on and the diagnostic run as before. Continue for 1 minute. Turn "PRINT INHIBIT" switch off.
- 3.13 Diagnostic should run as before
- 4.0 Refer to the Diagnostic write-up and run tests 1 thru 6 in an Auto Sequence. Run for a period of 15 minutes. Tests should repeat until terminated.
- 4.1 Run Power supply Test for 10 minutes.
- 4.1.1 Refer to Diagnostic write-up for the starting procedure for this test.
- 4.2 Ribbon run until completion
- 4.2.1 Load address 0203 and start. If paper does not advance one step printer is in error. Diagnostic will halt at completion of test. Manually advance ribbon to inspect for damage.
- 5.0 Run test 1 thru 6 using six copy carbon paper. Check the quality of the copies to the copies in the T&I envelope.
- 6.0 Shipping
- 6.1 Refer to the Accessory List (A-AL-LE8-0-4) to determine the shipping hardware and software.

| SIZE | CODE | NUMBER  | REV |
|------|------|---------|-----|
| A    | SP   | LE8-0-3 | A   |



| CUSTOMER PRINT SET |          | ELECTRICAL |                                |     |           |  | CUSTOMER PRINT SET   |   | MECHANICAL |          |                  |     |           |                              |                      |
|--------------------|----------|------------|--------------------------------|-----|-----------|--|----------------------|---|------------|----------|------------------|-----|-----------|------------------------------|----------------------|
|                    | MFG. SET | FIND NO.   | DRAWING NO.                    | REV | NO OF SHT | DESCRIPTION                            | OPTION NO./FILE DATE |   | MFG. SET   | FIND NO. | DRAWING NO.      | REV | NO OF SHT | DESCRIPTION                  | OPTION NO./FILE DATE |
| X                  |          | 1          | A-SP-LE8-0-1                   | B   | 3         | ENGINEERING SPEC                       |                      | X |            | 1        | A-PL-LE8-0-0     | A   | 1         | PARTS LIST                   |                      |
|                    | X        |            | A-SP-LE8-0-2                   | B   | 3         | TEST PROCEDURE                         |                      |   |            |          |                  |     |           |                              |                      |
| X                  | X        |            | A-SP-LE8-0-3                   | B   | 3         | ACCEPTANCE PROCEDURE                   |                      |   |            |          |                  |     |           |                              |                      |
| X                  |          |            | A-AL-LE8-0-4                   | A   | 1         | ACCESSORY LIST                         |                      |   |            |          |                  |     |           |                              |                      |
|                    |          |            |                                |     |           |  |                      | X |            | 3        | D-IA-7006964-0-0 | #   | 1         | CABLE, DATA PRODUCTS TO M841 |                      |
| X                  |          | 2          | E-CS-M841-0-1<br>B-MH-M841-0-6 | #   | 2<br>1    | LINE PRINTER CONTROL<br>MODULE HISTORY | M841                 |   |            |          |                  |     |           |                              |                      |
|                    |          |            |                                |     |           |  |                      |   |            | 4        | A-ML-LP01-0      |     | 1         | LINE PRINTER (80 COLUMN)     | LP01                 |
|                    |          |            |                                |     |           |  |                      |   |            | 5        | E-UA-LP02-0-0    |     | 1         | LINE PRINTER (132 COLUMN)    | LP02                 |
|                    |          |            |                                |     |           |  |                      |   |            | 6        | B-DD-LP05-0      |     |           | LINE PRINTER (80/132 COLUMN) | LP05                 |

CUSTOMER PRINT SET CODES  
 X = PRINT OF DOCUMENT INCLUDED IN PRINT SET  
 C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT  
 S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE  
 LINE PRINTER & CONTROL  
 SHEET 2 OF 2  
 SIZE CODE B DD  
 NUMBER LE8-0  
 REV C

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**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**ENGINEERING SPECIFICATION** DATE 4/72

TITLE LE8 ACCEPTANCE PROCEDURE

REVISIONS

| REV | DESCRIPTION | CHG NO    | ORIG  | DATE | APPD BY  | DATE   |
|-----|-------------|-----------|-------|------|----------|--------|
| A   | ECO CHANGE  | LE8-00004 | NARHI | 2/74 | L. Narhi | 3-3-74 |
| B   | ECO CHANGE  | LE8-00005 | NARHI | 3/74 | L. Narhi | 4/74   |

|     |          |      |                    |      |   |      |    |        |         |     |   |
|-----|----------|------|--------------------|------|---|------|----|--------|---------|-----|---|
| ENG | L. NARHI | APPD | <i>[Signature]</i> | SIZE | A | CODE | SP | NUMBER | LE8-0-3 | REV | B |
|-----|----------|------|--------------------|------|---|------|----|--------|---------|-----|---|

**ENGINEERING SPECIFICATION** CONTINUATION SHEET

TITLE LE8 ACCEPTANCE PROCEDURE

- 1.0 Equipment required
  - 1.1 LE8-Control Module - M841
  - 1.2 LE8-Control Cable - 7006964
  - 1.3 Line Printer Models -
    - LPØ1-FA/FB 64 Char/80Col
    - LPØ1-HA/HB 96 Char/80Col
    - LPØ2-JA/JB 64 Char/132Col
    - LPØ2-KA/KB 96 Char/132Col
    - LE8-VE 64 Char Scientific Drum
    - LE8-VA 64 Char EDP Drum
    - LE8-WE 96 Char Scientific Drum
    - LE8-WA 96 Char EDP Drum
  - 1.4 PDP-8E, 8M or 8F and Teletype
  - 1.5 LE8 Line Printer Diagnostic Maindec-08-DILPA-A
  - 1.6 Paper
    - LPØ1 - 1 Part DEC # 36-9829
    - 6 Part Dec # 18-9536
    - LPØ2 - 1 Part Dec # 36-9141
    - 6 Part Dec # 36-1Ø293
- 2.0 Preliminary Inspection
  - 2.1 Check the M841 for proper revision and date coding.
  - 2.2 Insure that all paper work is complete (Keysheet ECO Status Sheet, Etc)
- 3.0 Acceptance Procedure for LPØ1 or LPØ2 and LE8
  - 3.1 Turn the machine power on.
  - 3.2 Place paper in printer so that it covers the hammers and the bottom paper out switch but not the top paper out switch.
  - 3.3 Turn breaker on, wait 10 seconds, "READY" light should not turn on, and "PAPER FAULT" light should be lit.
  - 3.4 Turn breaker off, and place paper in printer so that it covers the hammers and the top paper out switch, but not the bottom paper out switch.
  - 3.5 Turn breaker on, "READY" light should not turn on, and "PAPER FAULT" light should be lit.
  - 3.6 Open drum gate, remove paper; press "TOP OF FORM" switch and place in a continous form (line up perforation with arrow).
  - 3.7 Close drum gate, "READY" should light within 15 seconds. Check "TOP OF FORM" and "PAPER STEP" switches for correct operation. Correct operation is paper step will advance one line and top of form will advance to the next page.
  - 3.8 Press "ON LINE" switch. Check "TOP OF FORM" and "PAPER STEP" switch. Both switches should not operate.
  - 3.9 Press "ON LINE" switch and "MASTER CLEAR" switch. Check "TOP OF FORM" and "PAPER STEP" switch. Both switches should operate.
  - 3.10 Refer to the diagnostic write-up and run tests 1 thru 6.

|      |   |      |    |        |         |     |   |
|------|---|------|----|--------|---------|-----|---|
| SIZE | A | CODE | SP | NUMBER | LE8-0-3 | REV | B |
|------|---|------|----|--------|---------|-----|---|

**ENGINEERING SPECIFICATION** CONTINUATION SHEET

TITLE **LE8 ACCEPTANCE PROCEDURE**

- 3.11 Stop diagnostic from running; press "PRINT INHIBIT" switch, press "ON LINE" switch, restart diagnostic form part 1 of test 1.
- 3.12 "PRINT INHIBIT" light should turn on and the diagnostic run as before. Continue for 1 minute. Turn "PRINT INHIBIT" switch off.
- 3.13 Diagnostic should run as before
- 4.0 Refer to the Diagnostic write-up and run tests 1 thru 6 in an Auto Sequence. Run for a period of 15 minutes. Tests should repeat until terminated.
  - 4.1 Run Power supply Test for 10 minutes.
    - 4.1.1 Refer to Diagnostic write-up for the starting procedure for this test.
  - 4.2 Ribbon run until completion
    - 4.2.1 Load address 0203 and start. If paper does not advance one step printer is in error. Diagnostic will halt at completion of test. Manually advance ribbon to inspect for damage.
- 5.0 Run test 1 thru 6 using six copy carbon paper. Check the quality of the copies to the copies in the T&I envelope.
- 6.0 Shipping
  - 6.1 Refer to the Accessory List (A-AL-LE8-0-4) to determine the shipping hardware and software.

|                  |            |                   |                 |
|------------------|------------|-------------------|-----------------|
| SIZE<br><b>A</b> | CODE<br>SP | NUMBER<br>LE8-0-3 | REV<br><b>B</b> |
|------------------|------------|-------------------|-----------------|

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**ENGINEERING SPECIFICATION** DATE 2/25/71

TITLE **LE8 TEST PROCEDURE**

| REVISIONS |             |           |       |      |                  |        |
|-----------|-------------|-----------|-------|------|------------------|--------|
| REV       | DESCRIPTION | CHG NO    | ORIG  | DATE | APPD BY          | DATE   |
| A         | ECO CHANGE  | LE8-00004 | NARHI | 2/74 | <i>L. Markie</i> | 3/3/74 |
| B         | ECO CHANGE  | LE8-00006 | NARHI | 3/74 | <i>L. Markie</i> | 4/9/74 |

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|                            |                   |                  |            |                   |                 |
|----------------------------|-------------------|------------------|------------|-------------------|-----------------|
| ENG<br><i>Larry Markie</i> | APPD<br><i>BT</i> | SIZE<br><b>A</b> | CODE<br>SP | NUMBER<br>LE8-0-2 | REV<br><b>B</b> |
|----------------------------|-------------------|------------------|------------|-------------------|-----------------|



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|---|-------------|-----------|-------|--------------|----------|--------|
| MAYNARD, MASSACHUSETTS                            |             |           |       |              |          |        |
| <b>ENGINEERING SPECIFICATION</b>                  |             |           |       | DATE 8-17-70 |          |        |
| TITLE LE8-XX Line Printer Inteface to the PDP-8/E |             |           |       |              |          |        |
| REVISIONS   |             |           |       |              |          |        |
| REV   | DESCRIPTION | CHG NO    | ORIG  | DATE         | APPD BY  | DATE   |
| A   | ECO CHANGE  | LE8-00004 | NARHI | 2/74         | L. Narhi | 3/4/74 |
| B   | ECO CHANGE  | LE8-00005 | NARHI | 3/74         | L. Narhi | 4/9/74 |

|                    |                            |           |            |                   |          |
|--------------------|----------------------------|-----------|------------|-------------------|----------|
| ENG<br>Larry Narhi | APPD<br><i>Larry Narhi</i> | SIZE<br>A | CODE<br>SP | NUMBER<br>LE8-0-1 | REV<br>B |
|--------------------|----------------------------|-----------|------------|-------------------|----------|

|  |                           |                   |            |                   |          |
|--|---------------------------|-------------------|------------|-------------------|----------|
| <b>ENGINEERING SPECIFICATION</b>   | <b>CONTINUATION SHEET</b> |                   |            |                   |          |
| TITLE LE8-XX LINE PRINTER INTERFACE TO THE PDP-8/E   |                           |                   |            |                   |          |
| <p>1. OVERALL DESCRIPTION</p> <p>The LE8 is an interface to several models of the Data Products Line Printer to the PDP-8/E computer. The logic is designed entirely of TTL integrated circuits for low coast and high speed.</p>  |                           |                   |            |                   |          |
| <p>2. GENERAL SPECIFICATIONS</p> <p>2.1 The basic option consists of:</p> <p style="margin-left: 40px;">One M841 control card and<br/>One 80 column, 64 character line printer.</p> <p style="margin-left: 40px;">Its designation is LE8-FA.</p> <p>2.2 Options to the basic control and line printer are:</p> <p style="margin-left: 40px;">LE8-FB 80 column, 64 characters 50 Hz.<br/>LE8-HA 80 column, 96 characters 60 Hz.<br/>LE8-HB 80 column, 96 characters 50 Hz.<br/>LE8-JA 132 column, 64 characters 60 Hz.<br/>LE8-JB 132 column, 64 characters 50 Hz.<br/>LE8-KA 132 column, 96 characters 60 Hz.<br/>LE8-KB 132 column, 96 characters 50 Hz.<br/>LE8-VE 64 Char Scientific Drum<br/>LE8-VA 64 Char EDP Drum<br/>LE8-WE 96 Char Scientific Drum<br/>LE8-WA 96 Char EDP Drum</p> <p>2.3 The interface is contained on one 8½" Quad Board whose pins are defined by the 8E bus.</p> <p>2.4 Temperature limits:</p> <p style="margin-left: 40px;">32 F to 155° F<br/>Relative humidity: 0 to 95% non-condensing<br/>Power Required: 650 MA at +5 volts.</p> |                           |                   |            |                   |          |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">SIZE<br/>A</td> <td style="width: 15%;">CODE<br/>SP</td> <td style="width: 20%;">NUMBER<br/>LE8-0-1</td> <td style="width: 50%;">REV<br/>B</td> </tr> </table>   |                           | SIZE<br>A         | CODE<br>SP | NUMBER<br>LE8-0-1 | REV<br>B |
| SIZE<br>A  | CODE<br>SP                | NUMBER<br>LE8-0-1 | REV<br>B   |                   |          |

**ENGINEERING SPECIFICATION****CONTINUATION SHEET**

TITLE LE8-XX Line Printer Interface to the PDP-8/E

ECO No. LE8-00005 Sheet 8 of 8

## 3. PROGRAMMING

3.1 IOT coding is as follows:

| Mnemonic   | IOT  | Function                   |
|------------|------|----------------------------|
| PSKF       | 6661 | Skip if Flag = 1           |
| PCLF       | 6662 | Clear Flag                 |
| PSKE       | 6663 | Skip on Error or Not Ready |
| PSTB       | 6664 | Strobe, Load Buffer        |
| PSIE       | 6665 | Set Interrupt Enable       |
| PCLF, PSTB | 6666 | Clear Flag, Load Character |
| PCIE       | 6667 | Clear Interrupt Enable     |

Note: Initialize Resets Interrupt Enable, to disable interrupts.

3.2 There are no maintenance instructions.

3.3 The line printer uses the standard ASCII character set. The least significant bit appears in AC bit 11.

3.4 There are no operator controls on the control board. Operator controls on the printer are:

Top of Form - Advances paper to top of form

Paper Step - Advances paper one line at a time,  
disabled on line.

On line/Off line - Selects mode of operation

Master Clear - Initializes printer to insure proper  
state of electronic elements.

Print Inhibit - Stop printing action.

|      |      |         |     |
|------|------|---------|-----|
| SIZE | CODE | NUMBER  | REV |
| A    | SP   | LE8-0-1 | B   |