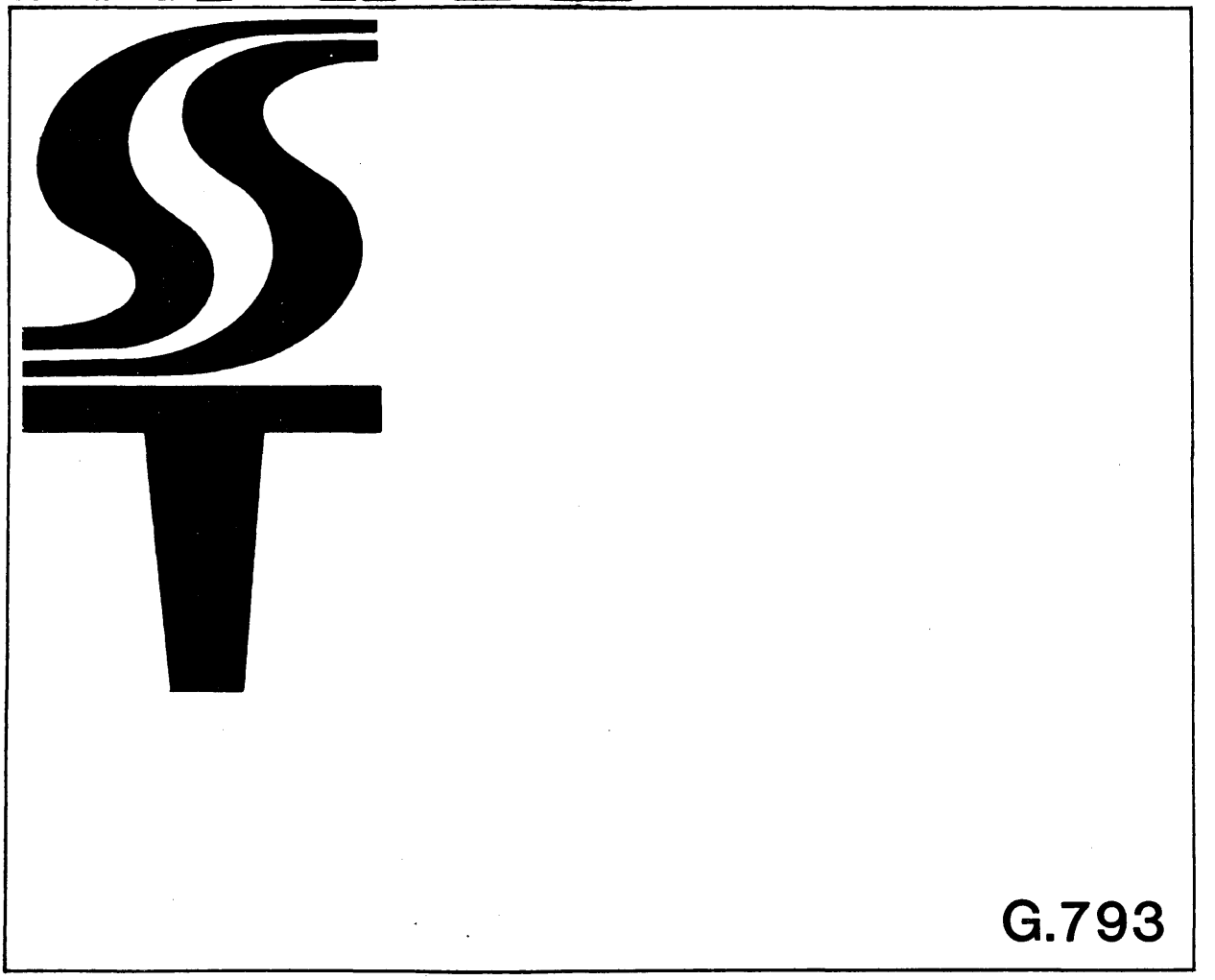
DPS8 46/70 REFERENCE MANUAL



G.793

REV. C

M.S. J-10
HED AZ07

September, 1982

REFERENCE MANUAL

DPS8 46/70

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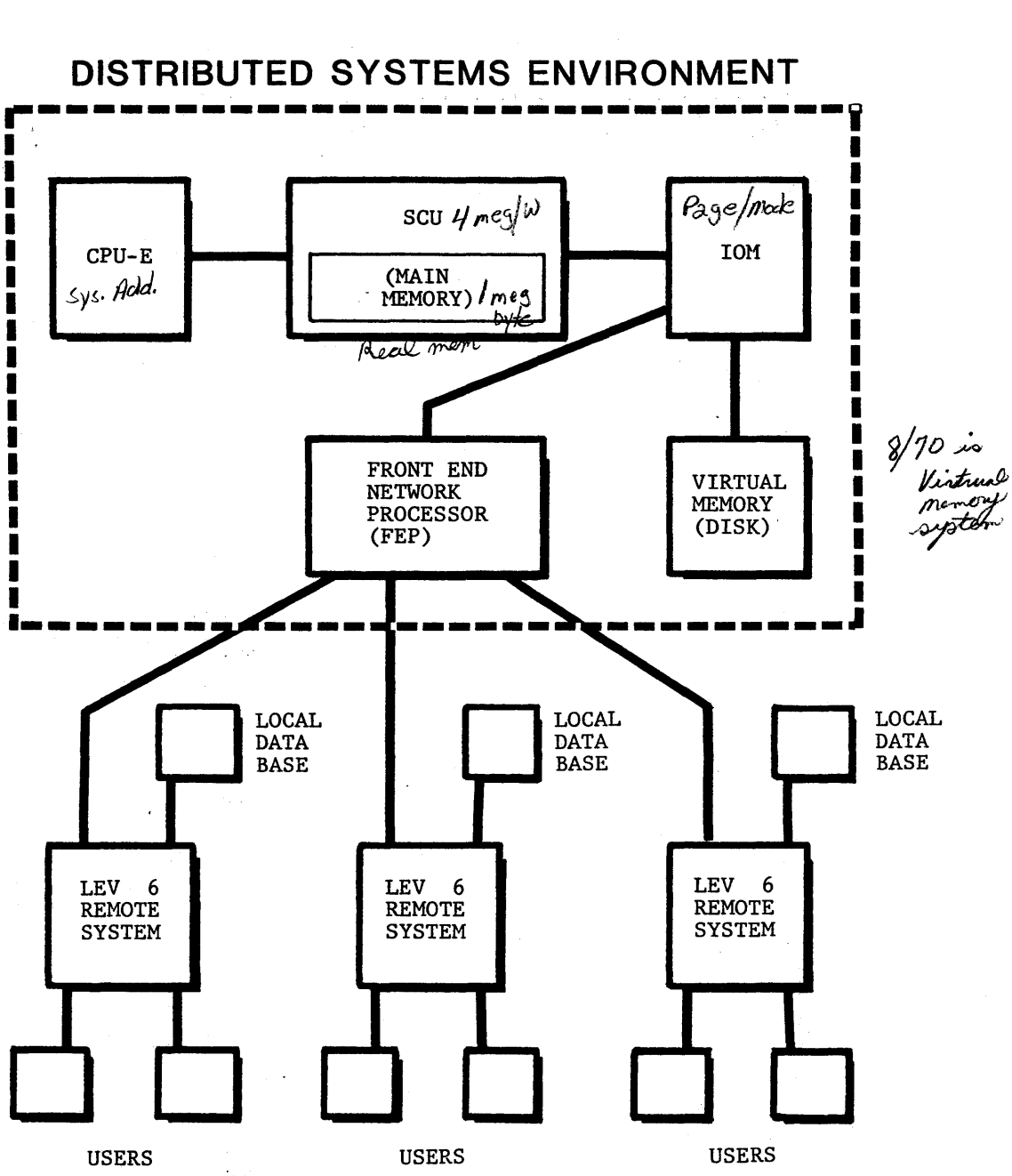

DISTRIBUTED SYSTEMS ENVIRONMENT
CPU-E
Sys. Add.
SCU 4 meg/w
(MAIN MEMORY) 1 meg byte
Real mem
Page/mode
IOM
FRONT END NETWORK PROCESSOR (FEP)
VIRTUAL MEMORY (DISK)
8/70 is Virtual memory system
LOCAL DATA BASE
LOCAL DATA BASE
LOCAL DATA BASE
LEV 6 REMOTE SYSTEM
LEV 6 REMOTE SYSTEM
LEV 6 REMOTE SYSTEM
USERS
USERS
USERS

Figure 1-1

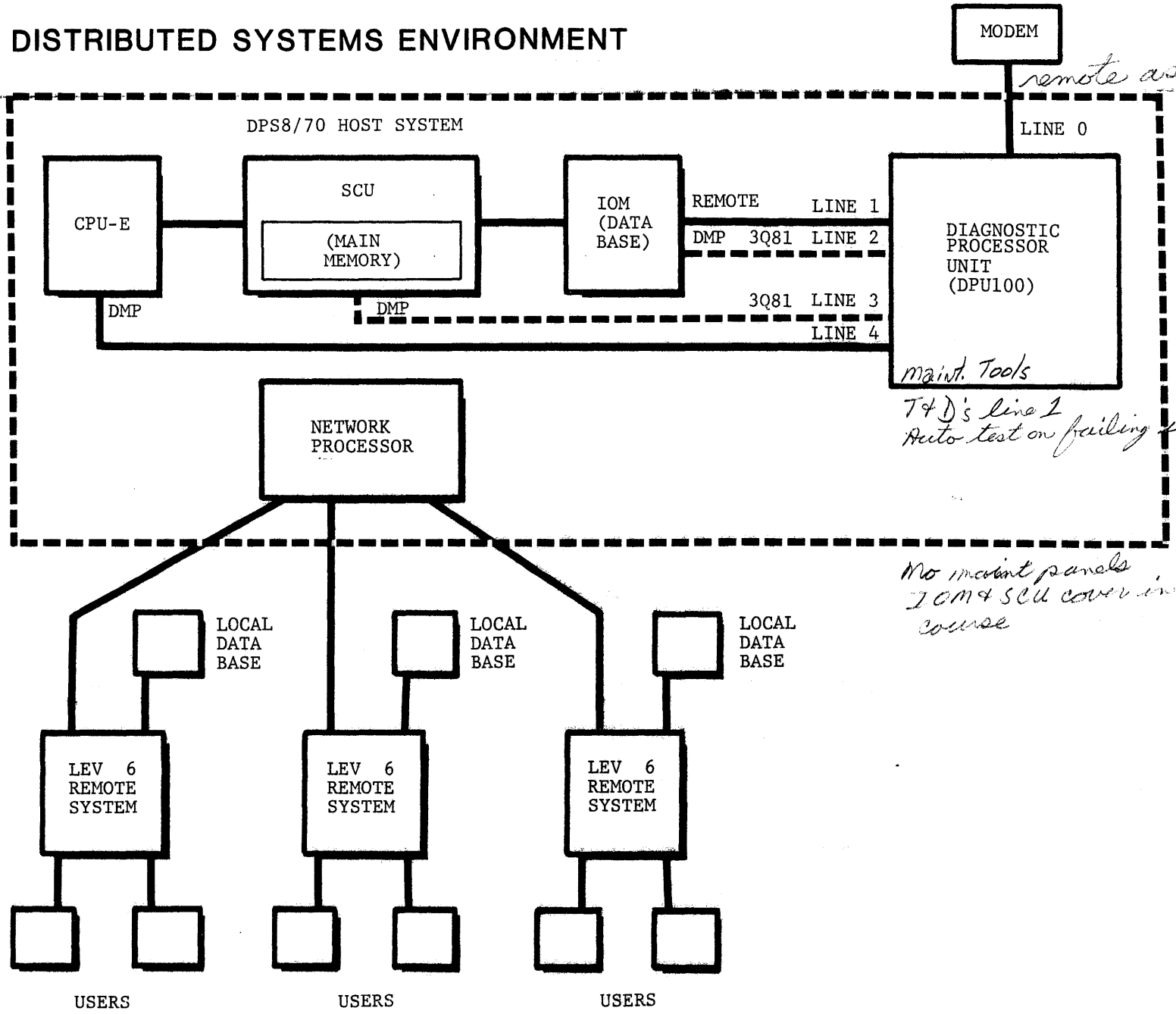


Figure 1-2 Accessibility of DPU to DPS8/70 Host System

FOUR DPS8 PRODUCT LINE MODELS

- DPS8/70
- DPS8/52

DPSE
Distribute Process system enhanced

- DPS8/44
- DPS8/20

ELS
entry level system

POWER RANGE OF ALMOST 17 TIMES,
FROM SMALLEST TO LARGEST

RELATIVE POWER*	MODELS	
16.8	8/70 (QUAD)	
12.5	8/70 (TRIPLE)	
8.5	8/70 (DUAL)	
4.8	8/70	1.7 X 6680 WITH 2K CACHE/faster
2.5	8/52	
1.5	8/44	firmware driven CPU,
1.0	8/20	

*TYPICAL APPLICATION MIX

Figure 1-3
Sheet 1 of 2

DPS8 MODEL NUMBERS

COMMON HARDWARE NAME	MARKETING MODEL NUMBERS	
DPS8/20	CPS8124	ELS
DPS8/44	CPS8126	
DPS8/52	CPS8183	DPSE
DPS8/70	CPS8187	

Figure 1-3
Sheet 2 of 2

DPS8 FEATURES

DPS 8/70 AND DPS 8/52

- Use New LSI and MSI Circuits
- High Density Boards
  - -33% Reduction in Board Count
  - -25% Reduction in Footprint
  - -22% Reduction in Power Requirements
- Microprocessor Based Maintenance/Diagnostic Features
  - -Future Growth of DMS Concept
  - -Future Remote Diagnosis
- Microprocessor in New Console Controller
  - -Utilization of Standard Terminals
- Automatic Switching of Blower Speed
  - -Temperature Dependent standard
  - -Reduced Noise Levels

CPU-E bd. count of 66

Figure 1-4

DPS8/70 - NEW TOP-OF-THE LINE POWER

- Power range of 40% to 70% greater than previous single processor models
- GCOS 3, GCOS 8, and CP6 are supported
- Central System includes: min.
  - Central Processor with 32KB Cache 8K words
  - IOM
  - SCU
  - One MB Memory
- Up to three additional processors, IOM's, SCU's, can be configured.
- Additional Memory supported
  - GCOS - 16 MB Maximum
  - GCOS 8/CP6 - 64 MB Maximum Virtual
- Up to eight FNP's are supported.
  - DATANET 6641 or DATANET 6651
- All standard Level 66/DPS Peripherals are supported.
- Up to four consoles supported.
  - One CSU6601 Console is required. New console LCC
- CM66 is supported.

DPS8/70 Power Range
Figure 1-5

NEW OPERATING SYSTEM - GCOS 8

- Based on proven multidimensional, multi-processing design of GCOS.
- Features full compatibility with GCOS, a design first, with a major new operating system.
- Designed to improve efficiency and ease of use.
- Features "Integrated Transaction Processing" (ITP)
  - Improved efficiency, ease of use
  - Major departure from traditional Execs TP an inherent characteristic.
- Features dynamic memory management for unlimited program size (virtual).

Figure 1-6

EXTENDED STORAGE ADDRESSING CAPACITIES

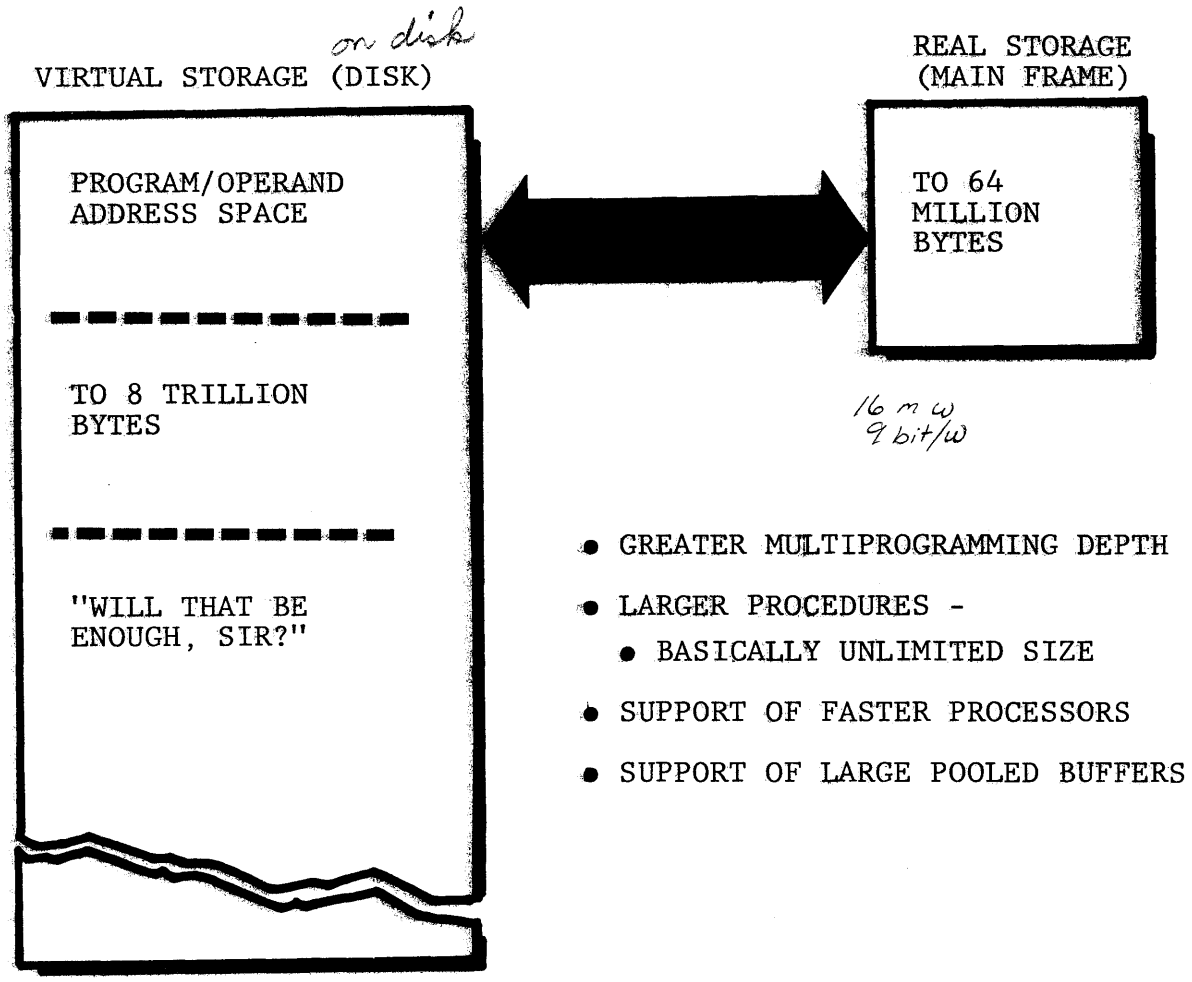


Figure 1-7

SOPHISTICATED STORAGE MANAGEMENT - REAL AND VIRTUAL

- Storage Hierarchy

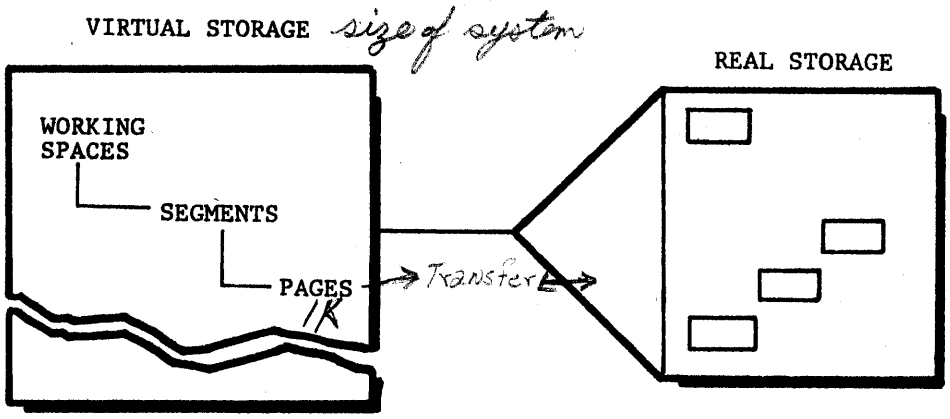
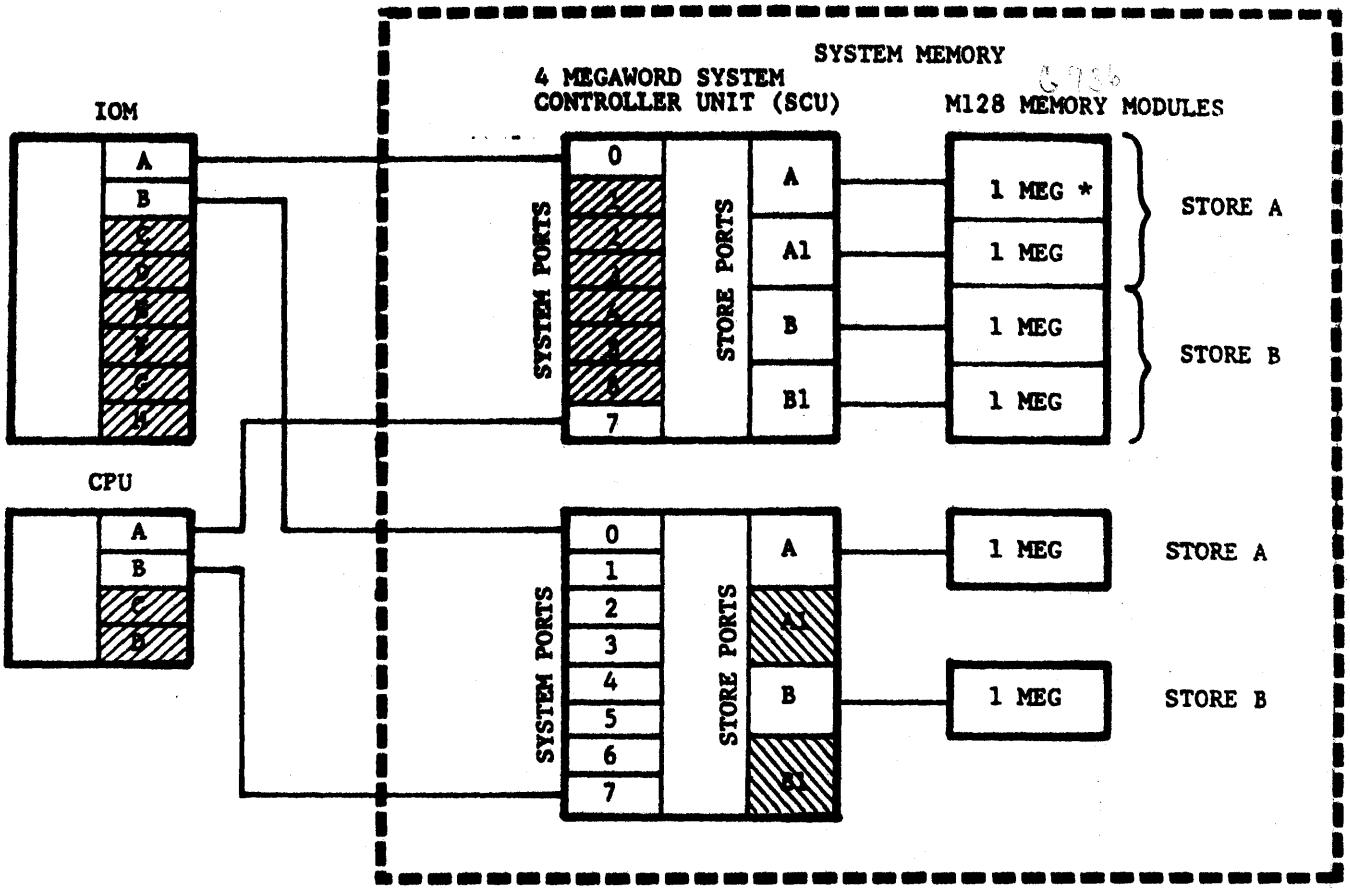


Figure 1-8



System Memory
Figure 1-9

REV. 1

DISTRIBUTED MAINTENANCE SERVICES

(DMS) Large systems

"FIELD ENGINEERING DIVISION'S SYSTEMATIC APPROACH TO MAINTENANCE"

- REMOTE MAINTENANCE CONTRACTS
  - Customer calls single 800 toll-free number for service. (Nationwide response center)
  - Technical Assistance Center specialist returns customer's call for problem diagnosis over the phone (remote maintenance). Phonier
  - TAC access to customer system is via the DPU remote comm line.
  - TAC specialist performs extensive hardware/software diagnosis of customer problem.
  - TAC specialist determines failing component (optimum replaceable unit, or ORU).
  - TAC calls response center with identical ORU for dispatch of local Level 1 FER for replacement and test.
  - Further troubleshooting by on-site FER with TAC support if identified ORU is not the fix.
- ON-SITE MAINTENANCE CONTRACTS
  - Customer requests on-site FER give assistance with the problem.
  - Level 1 FER runs Test and Diagnostic programs locally, to obtain automatic ORU call out.
  - FER replaces called out ORU and re-tests for proper operation.
  - For failures not diagnosed by T&D to an ORU, the Level 1 FER calls TAC directly for support.
  - On-site Level 2 FER does diagnosis to ORU as TAC specialist would do remotely.
- CUSTOMER SERVICE ACCOUNT REPRESENTATIVE "CSAR"
  - Individual FER assigned as Honeywell's representative to personally deal with the customer and his/her problems.

Figure 1-10

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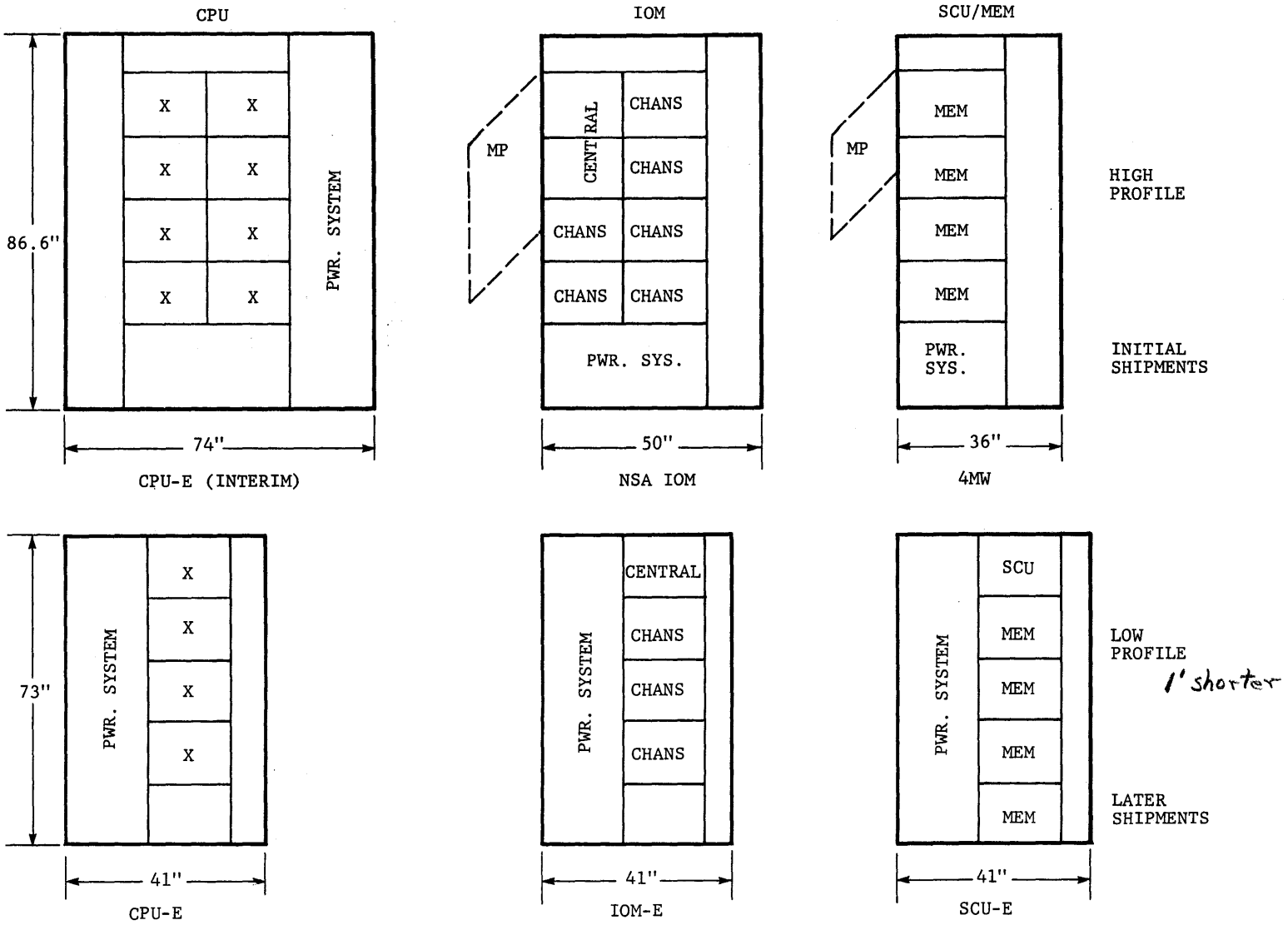

DPSE System Components
Figure 2-1

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MAJOR UNIT DESCRIPTION: FREE-STANDING CENTRAL PROCESSOR SYSTEM WITH MEMORY

INCLUDES:

Central Processor

Central Processor Addressing

Free-standing I/O Multiplexer w/35 Channel Function Slots

I/O Multiplexer Addressing

I/O Multiplexer Data Rate Expansion

System Control Unit (Supports up to 8MB Memory)

1MB of Main Memory

Memory Addressing Included

REQUIRES:

System Console (CSU6601)

Motor Generator and Control Unit

REDUNDANT SYSTEM: Not Avail.

CONFIGURABILITY:

Additional CPU: None

CM66: Available with GCOS (III) only

Memory Sizes: 1MW, 2MW, 4MW

Memory Addressing: Included

Additional SCU: None

Additional IOM: None

Mass Storage: (Processors) MSP0606/0609
(Units) MSU0400/0402/0451/0500/0501

Magnetic Tape: (Processors) MTP0610
(Units) MT0400/0419/0411/0412/
0500/0600/0610

Unit Record: (Processors) URP0600/ /0602
(Printers) PRU1100/1200/1600
(Cards) CRU0501/1050, CCU0401,
PCU0210/0121, PCU0300

Document Handler: (Processors) DHP0700/0701
(Two Maximum)
(Units) DHU0800/1600 Series

Communications: DCU6641/6651 (Two Maximum)

IOM Expansion: 19 Additional Channel Function Slots (MXF6005)

System Console: CSU6601, CSU6004, CSU6005
(Two Maximum)

Figure 2-2

MAJOR UNIT DESCRIPTION: FREE-STANDING CENTRAL PROCESSOR SYSTEM WITH MEMORY

INCLUDES:

Central Processor

Central Processor Addressing

Free-standing I/O Multiplexer w/35 Channel Function Slots

I/O Multiplexer Addressing

I/O Multiplexer Data Rate Expansion

System Control Unit (Supports up to 16MB Memory GCOS 8: 8MB Memory GCOS III)

1MB of Main Memory

Memory Addressing Included

REQUIRES:

System Console (CSU6601)

Motor Generator and Control Unit

**A fourth, additional processor available by RPQ for use with GCOS (III).*

CONFIGURABILITY:

Additional CPU: Three*

CM66: Available with GCOS (III) only

Memory Sizes: 1MW, 2MW, 4MW, 8MW, 16MW

Memory Addressing: Included

Additional SCU: Three MXC8001

Additional IOM: Three MXU6002

Mass Storage: (Processors) MSP0607/0609
(Units) MSU0400/0402/0451/0500/0501

Magnetic Tape: (Processors) MTP0610
(Units) MTU0400/0410/0411/0412
0500/0600/0610

Unit Record: (Processors) URP0600/ /0602
(Printers) PRU1100/1200/1600
(Cards) CRU0501/1050, CCU0401,
PRU0120/0121, PCU0300

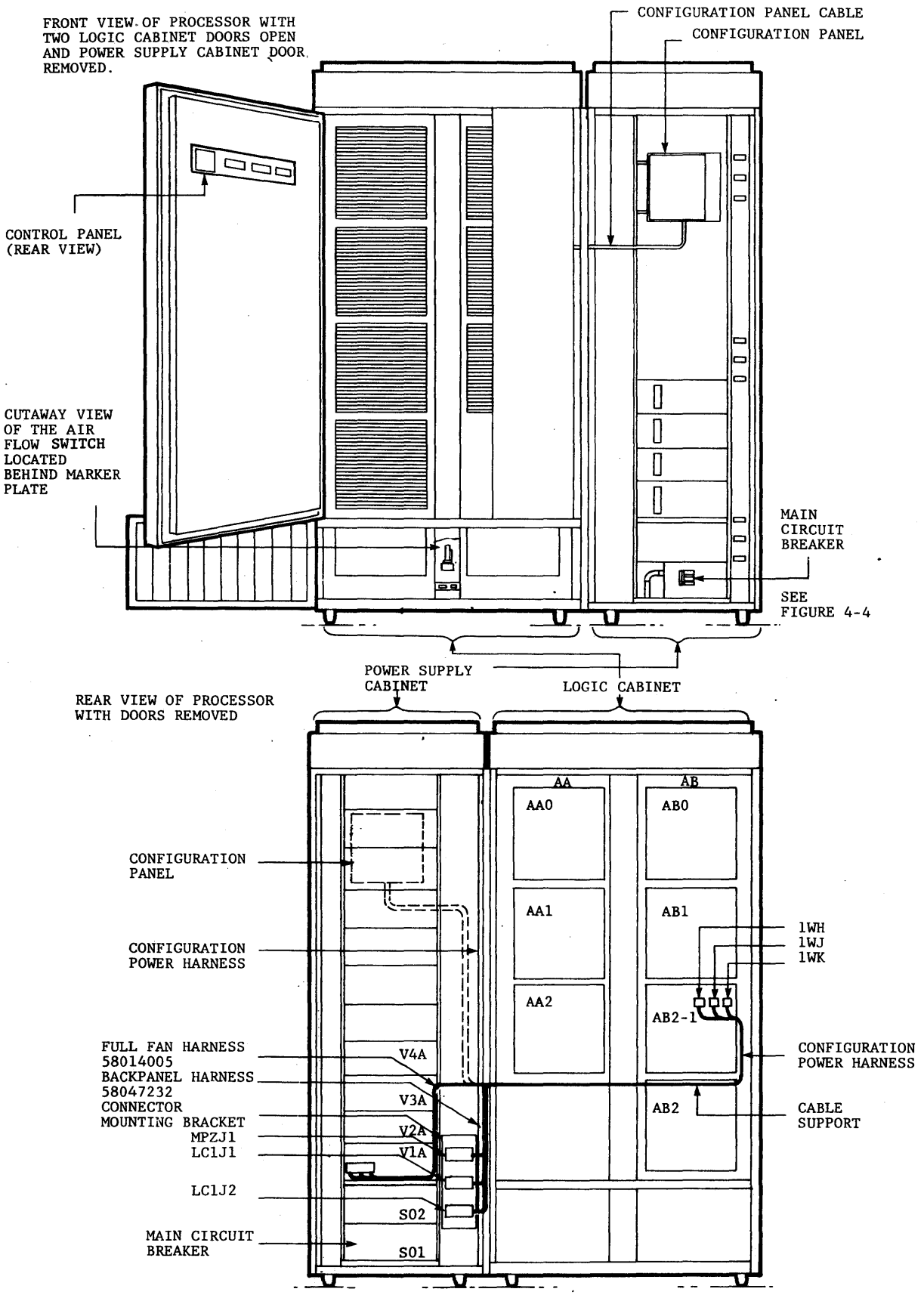
Document Handler: (Processors) DHP0700/0701
(Units) DHU0800/1600 Series

Communications: DCU6641/6651 Maximum of Eight

IOM Expansion: 19 Additional Channel Function Slots (MXF6005)

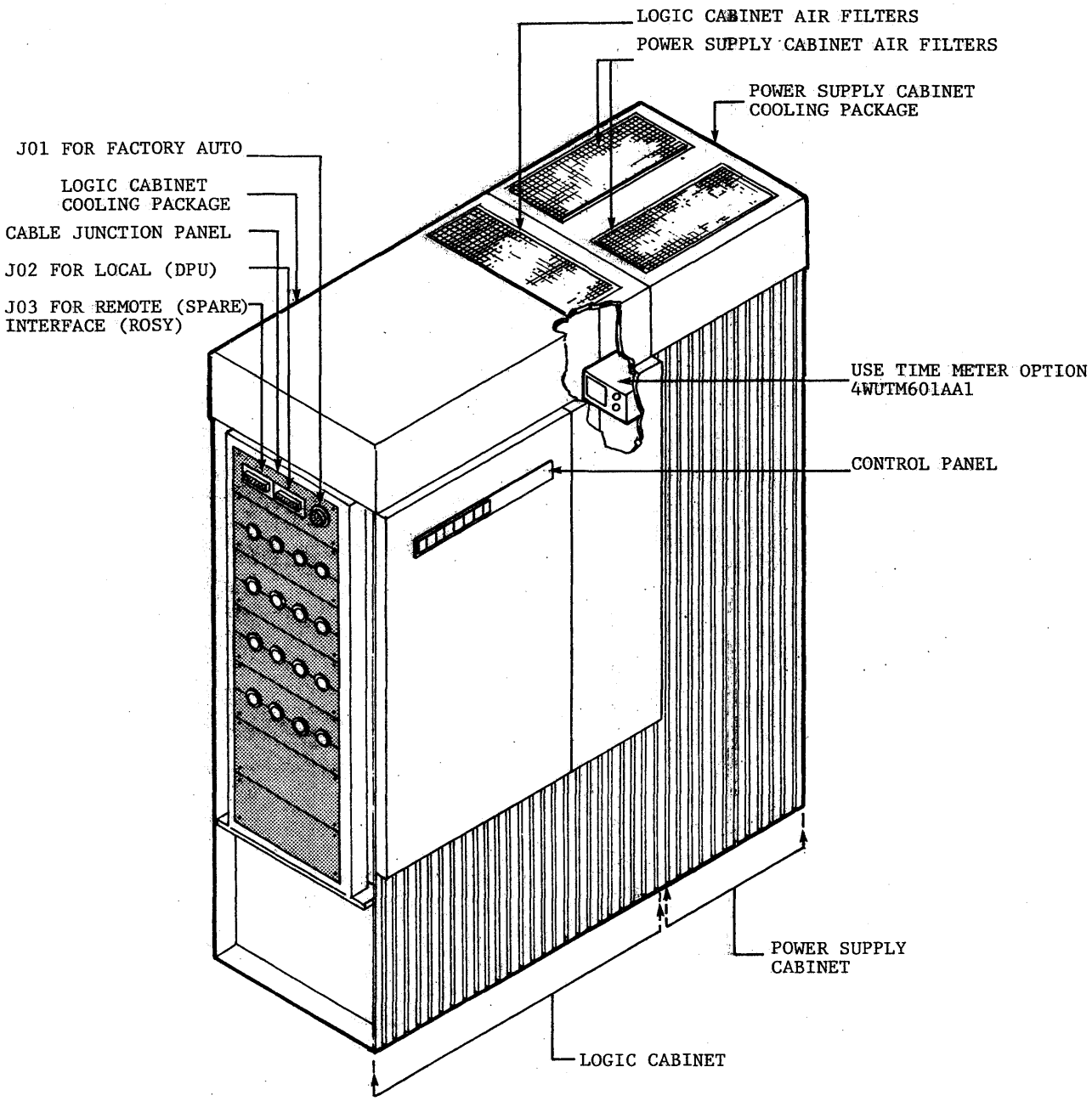
System Console: CSU6601, CSU6004, CSU6005, (Maximum of Four)

Figure 2-3



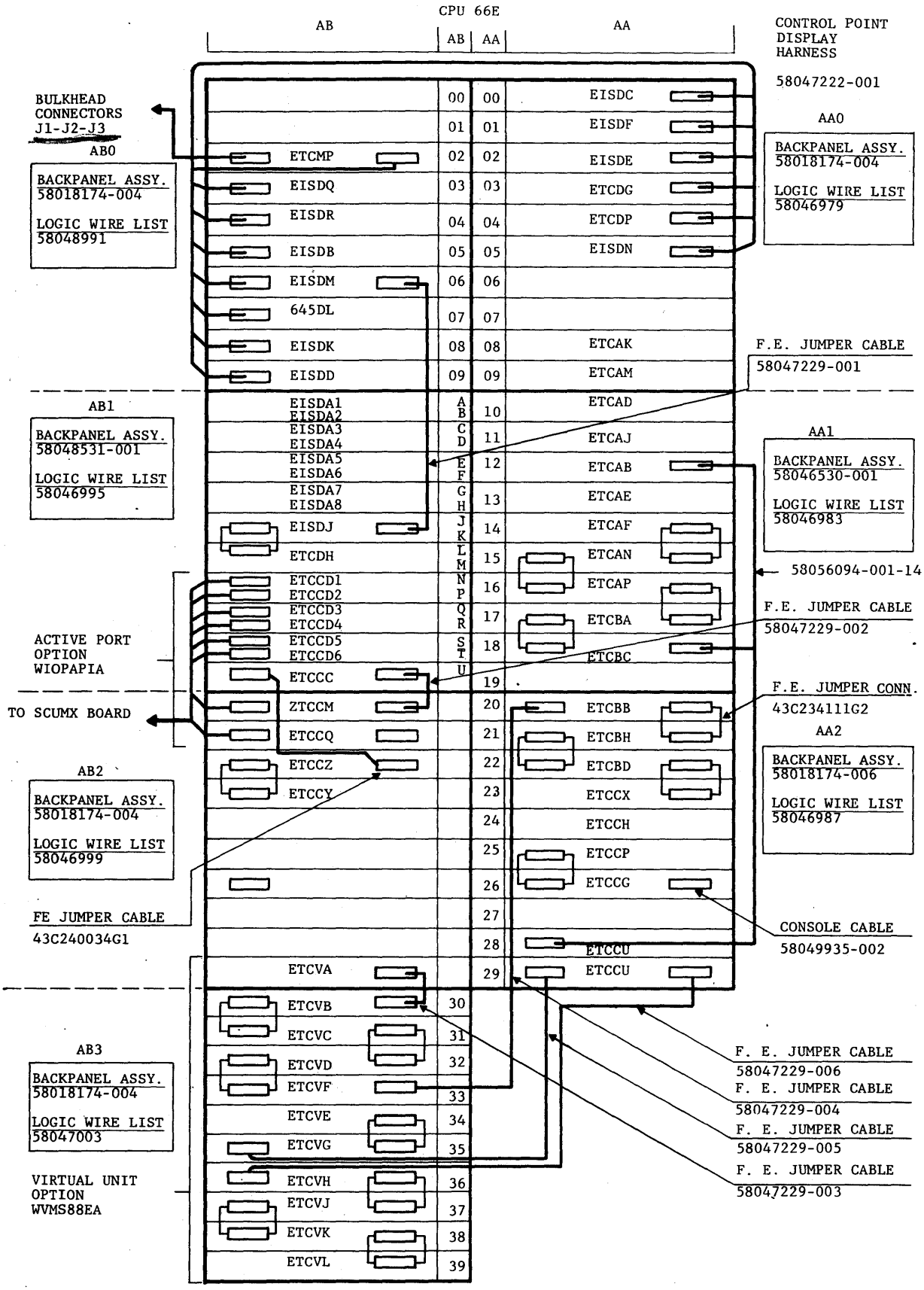
Interim CPU-E Front and Rear View
Figure 2-4

REV. 1

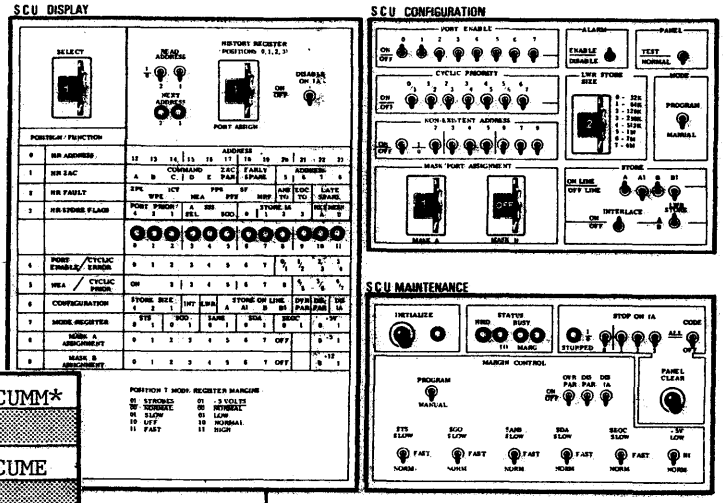


WCPU66EA, DPS-E PROCESSOR

Interim CPU-5
Figure 2-5



Interim CPU-66E Logic Board Layout
Figure 2-6

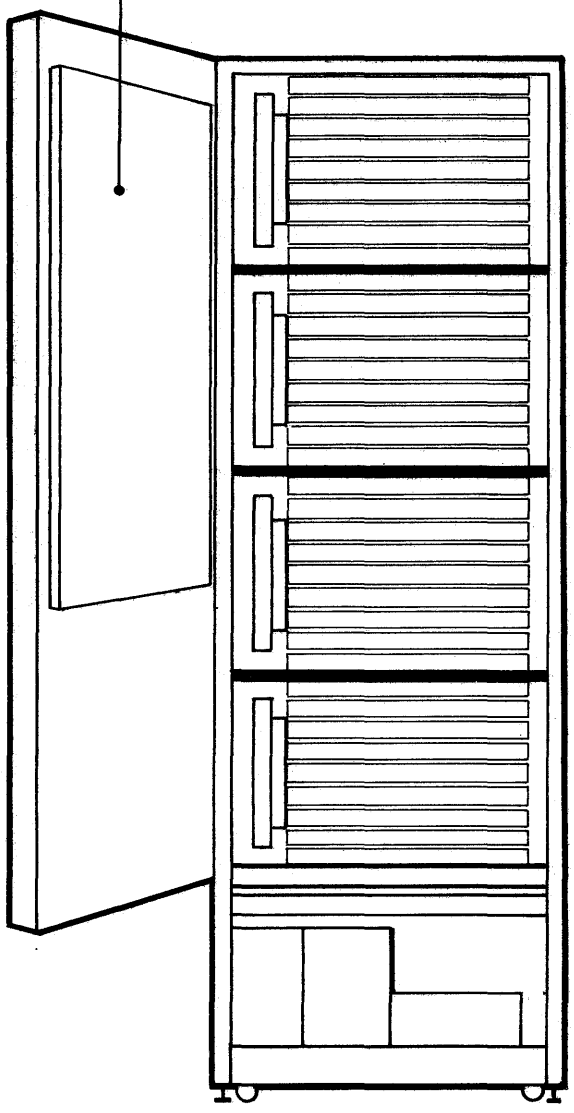


20	2 A	Early Cycle Control		SCUMB/SCUMM*
	2 B			
21	2 C	Store Select		SCUME
	2 D			
22	2 E	Late Cycle Control		SCUMG/SCUMJ**
	2 F			
23	2 G	XEC Cells		SCUMD
	2 H			
24	2 J	Configuration		SCUMC
	2 K			
25	2 L	Clock/Histore Registers		SCUMF
	2 M			
26	2 N	Store Port	A	SCUMY
	2 P	Store Port	A1	SCUMY
27	2 Q	Store Port	B	SCUMY
	2 R	Store Port	B1	SCUMY
28	2 S	System Port	0	SCUMX
	2 T	System Port	1	SCUMX
29	2 U	System Port	2	SCUMX
30	3 A	System Port	3	SCUMX
	3 B	System Port	4	SCUMX
	3 C	System Port	5	SCUMX
	3 D	System Port	6	SCUMX
32	3 E	System Port	7	SCUMX
	3 F	Termination Board		SCUMT
33	3 G			
	3 H	Cache Clear Option		SCUMH***
34	3 J			

*WSCUMMA uses SCUMB.
WSCUNSAA uses SCUMM.

**WSCU003 uses SCUMG unless WHCC001A is installed, then SCUMJ is used.
WSCU004 uses SCUMJ Standard.

***Installed when Hardware Cache Clear (8K Cache) Option used. All models WSCUNSAA must also be installed.

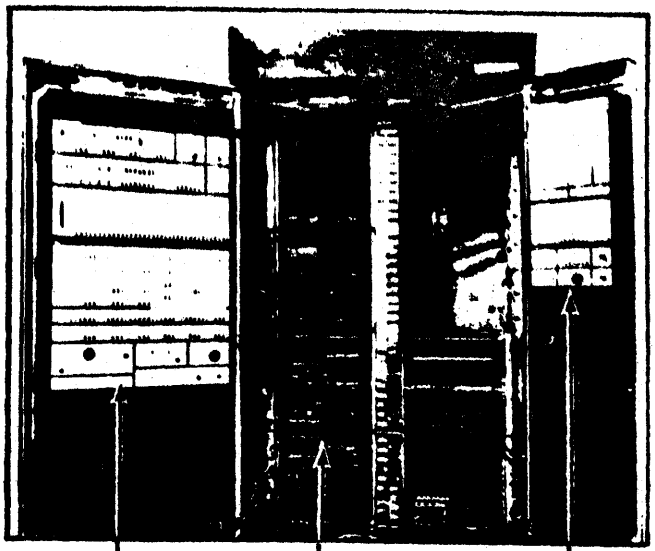


FRONT VIEW

4-Megaword SCU Physical Layout
Figure 2-7

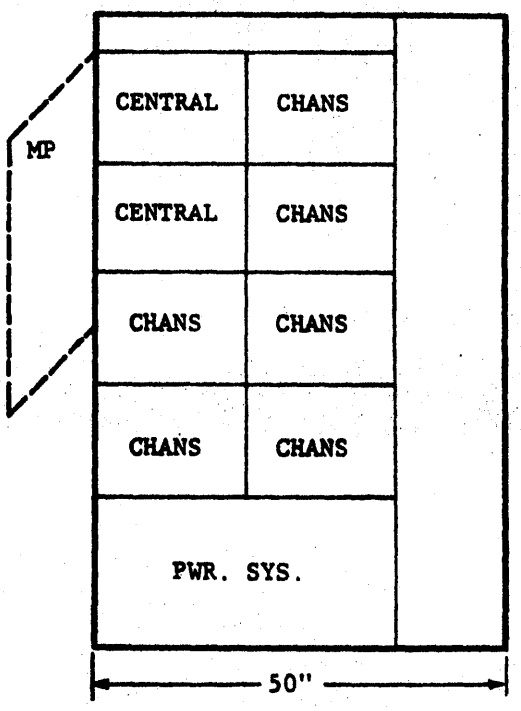
0	NSBIM	Scratchpad Board
07	NSBIM	Scratchpad Board
08	NSAMY	System Port "A"
09	NSAMY	System Port "B"
10	NSAIC	Data Board 1
11	NSAIE	Data Board 2
12	NSAIG	Bounds Board
13	645ID	Data Board 2
14	NSAIF	Data Board 4 Size Plug
15	NSAIH	Maint. Board 1
16	NSAIJ	Maint. Board 2
17	NSAIK	Overhead Board
18	NSAIB	Control Board 2
19	NSAIA	Control Board 1
20	MOXIU	I/O Bus-Bootload Ch.
21	NSAIP	Highest Priority WAC Channel
22	NSAJA NSAJB NSAJC	PSIA Channel
23	NSAJA NSAJB	PSIA Channel
24	NSAJC	
25	NSAJA NSAJB NSAJC	PSIA Channel
26	NSAJA NSAJB	PSIA Channel
27	NSAJC	
28	645JF 645JG	Common Periph. Channel
29		
30	645JF	Common Periph. Channel
31	645JG	
32	645JQ	Paper Tape Channel
33	645JG	
34		
35		
36	NSAJM	Direct Channel
37	CONJK	EMC/SCC Ch.
38	645JK	Address Ext.
39	CONJK	EMC/SCC Ch.

I/O BUS

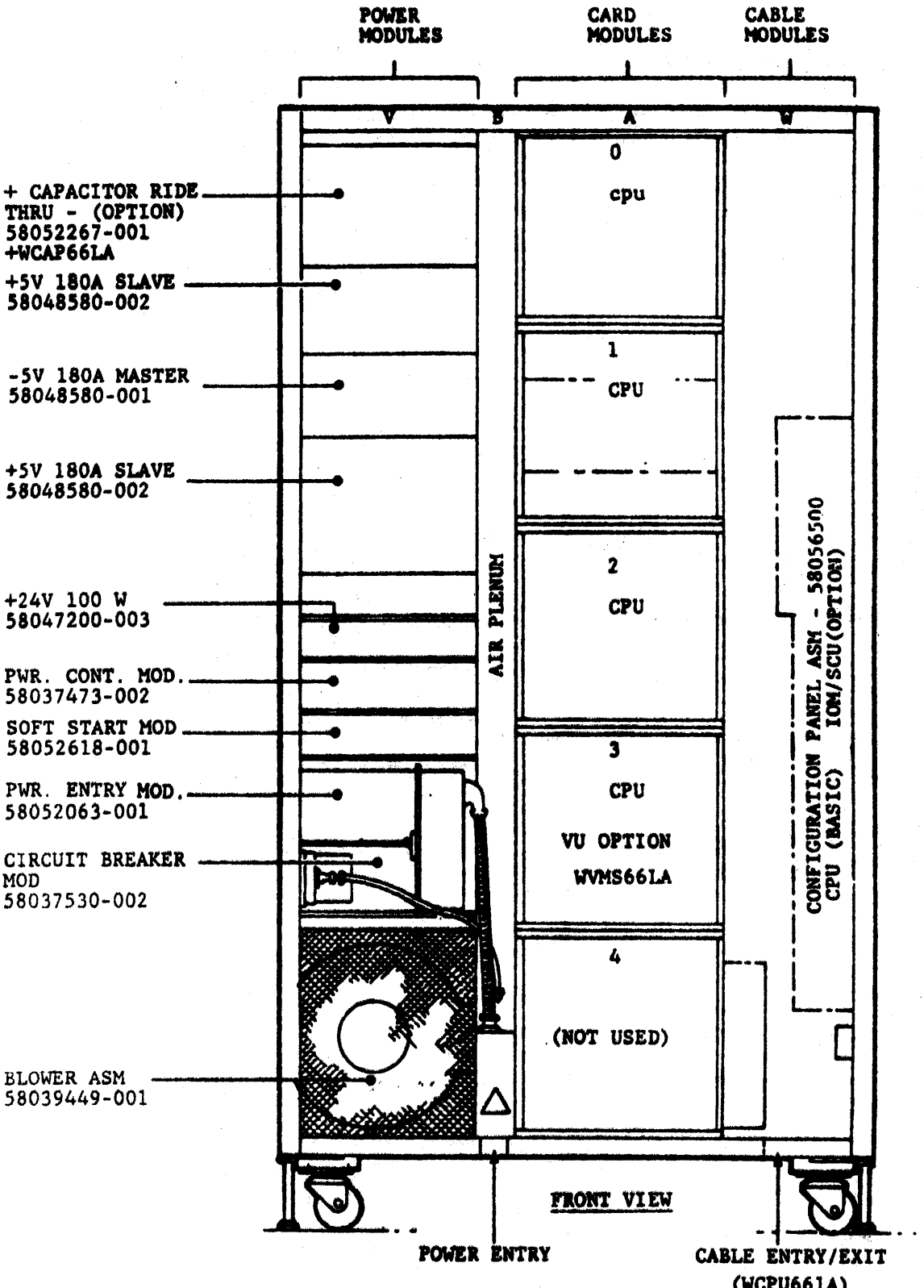


MAINTENANCE PANEL

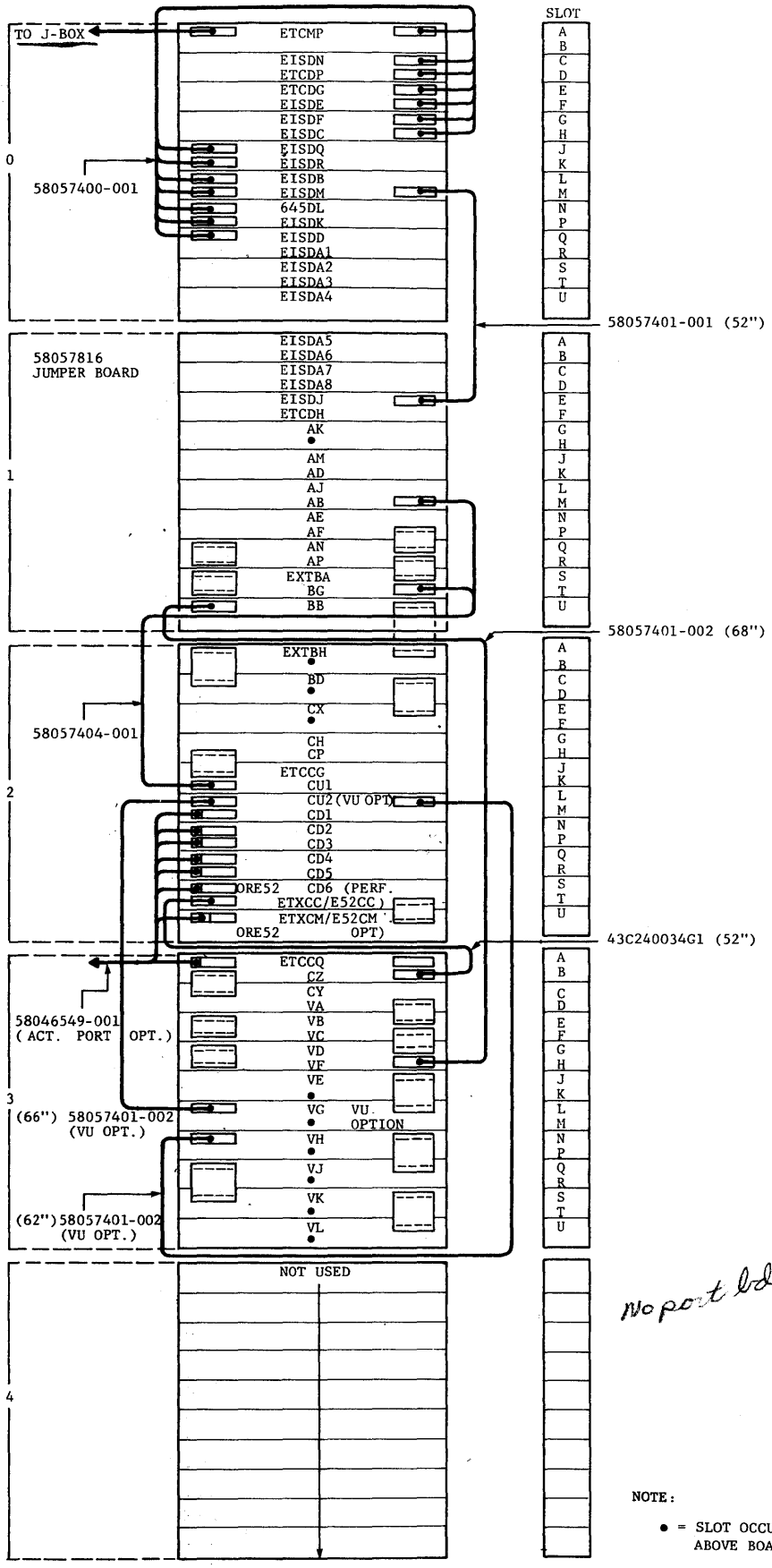
CONFIGURATION PANEL



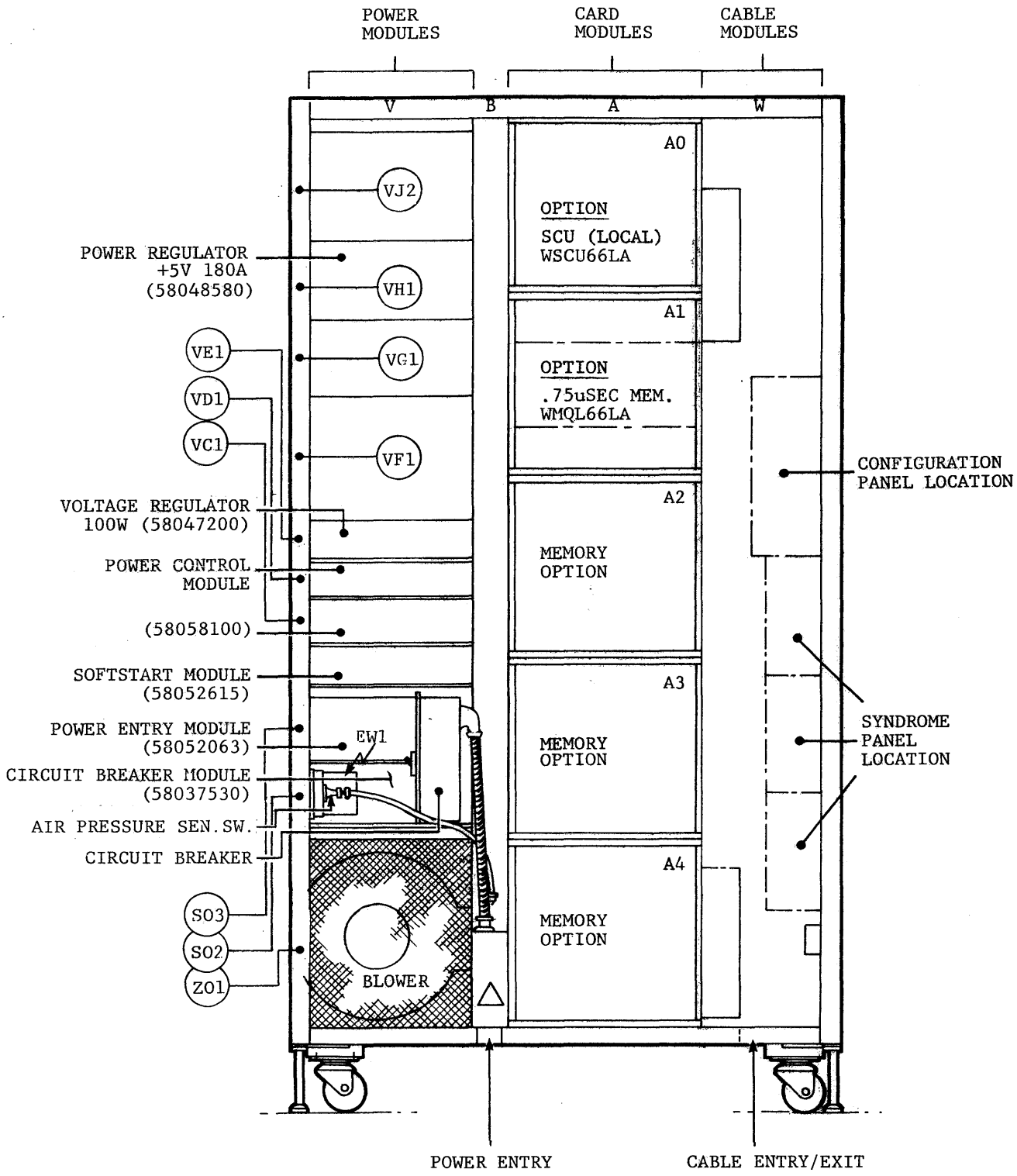
NSA IOM Physical Layout
Figure 2-8



DPS-E Central Processor Unit Physical Layout
Figure 2-9 Low profile

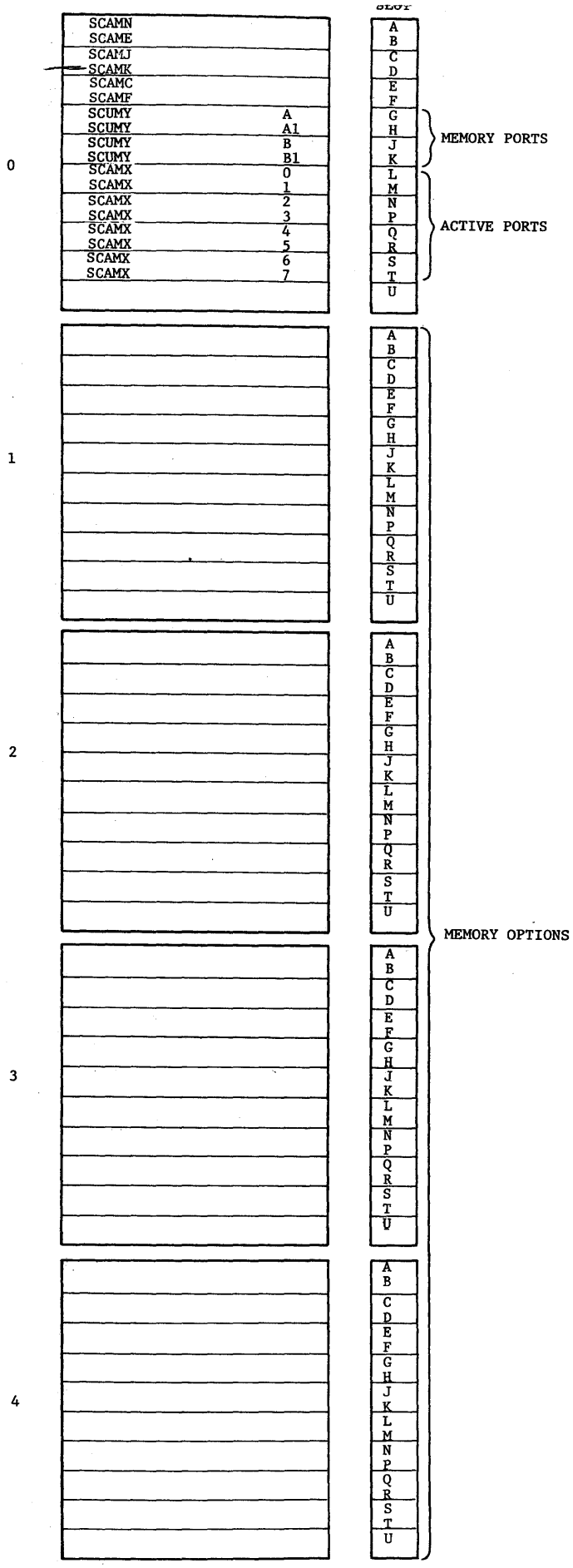


DPS-E Central Processor Unit Board Layout
Figure 2-10 Low Profile

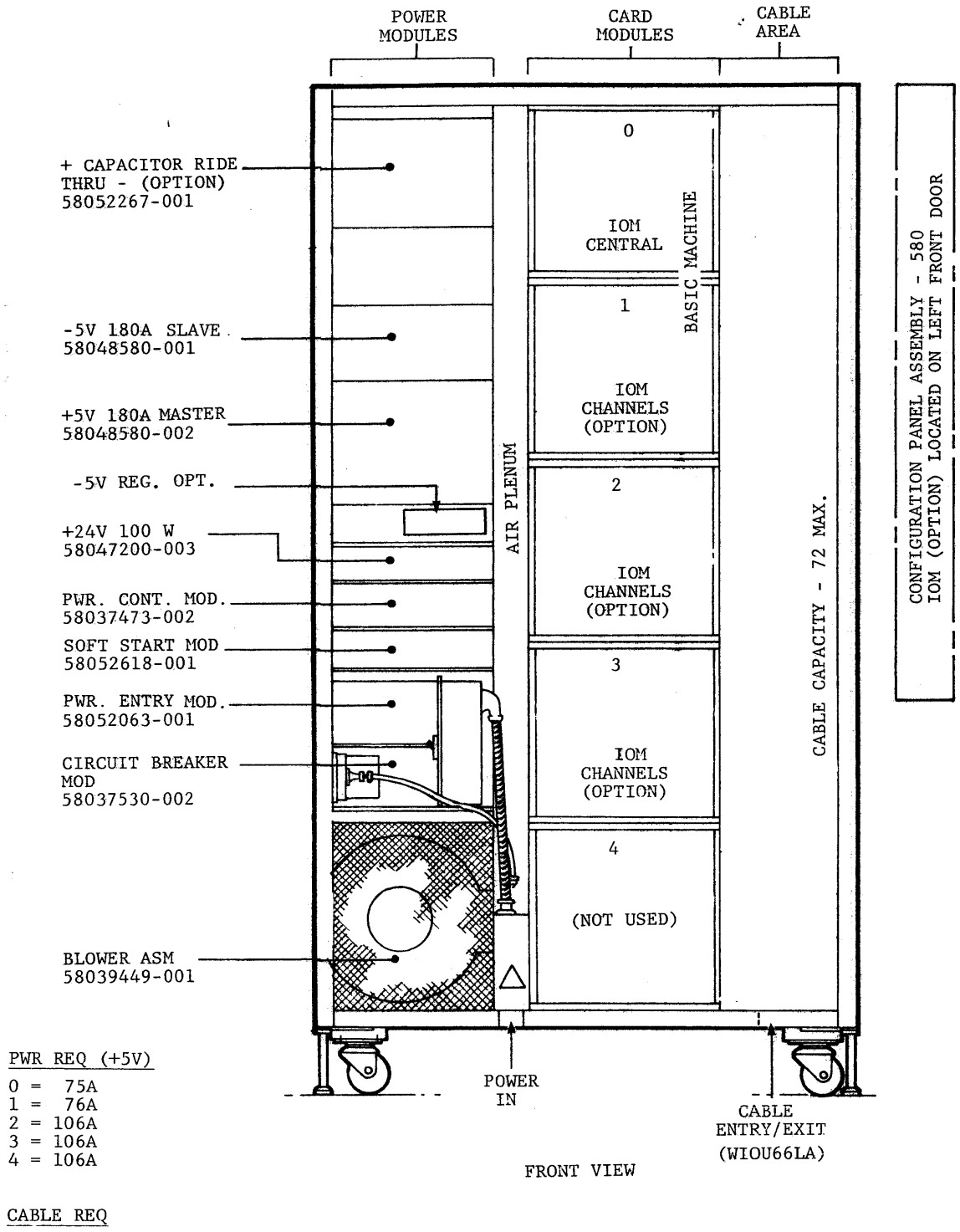


Lo Profile SCU Physical Layout
Figure 2-11

REV. 2

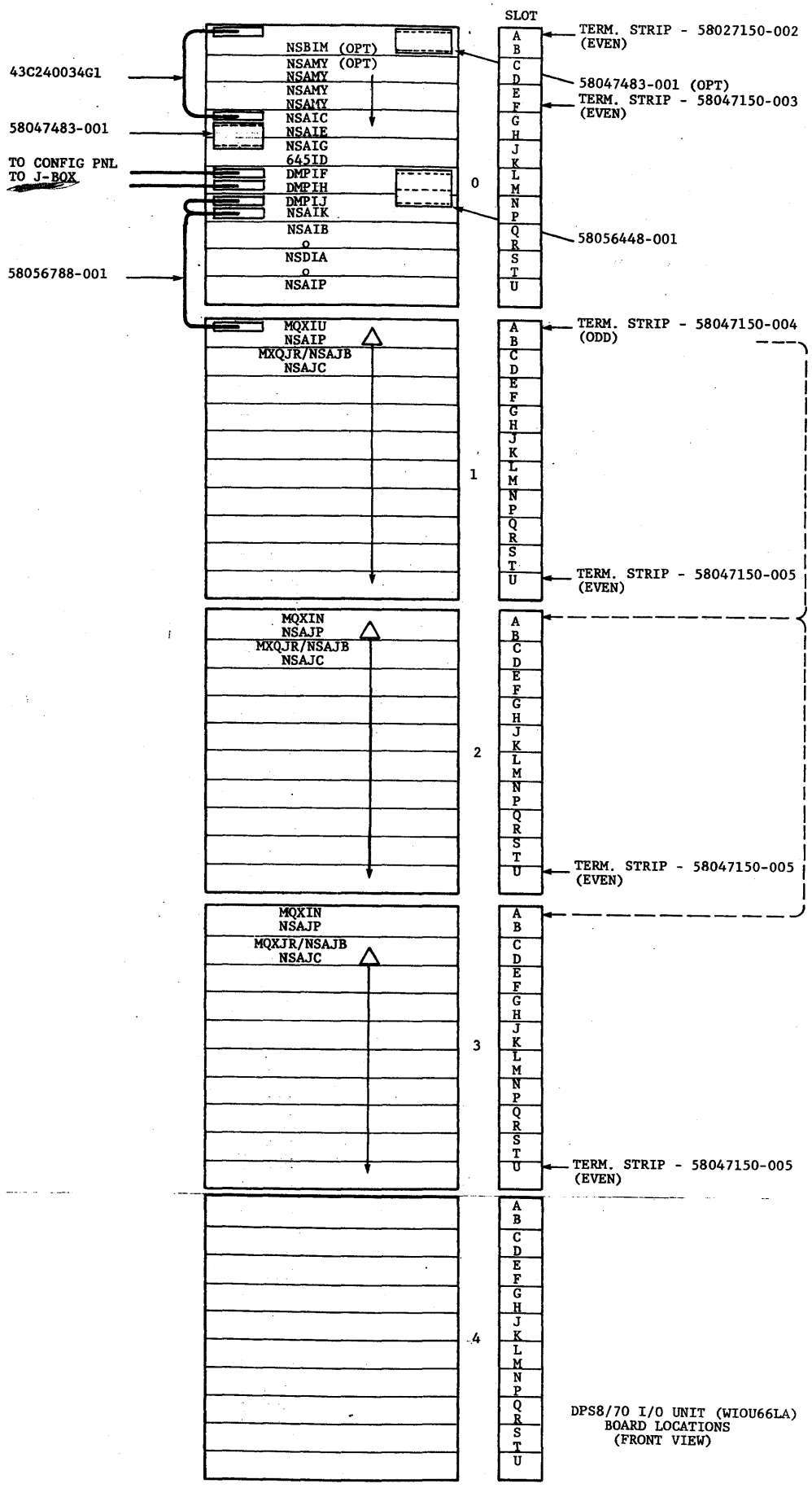


Lo Profile SCU Memory Board Layout
Figure 2-12

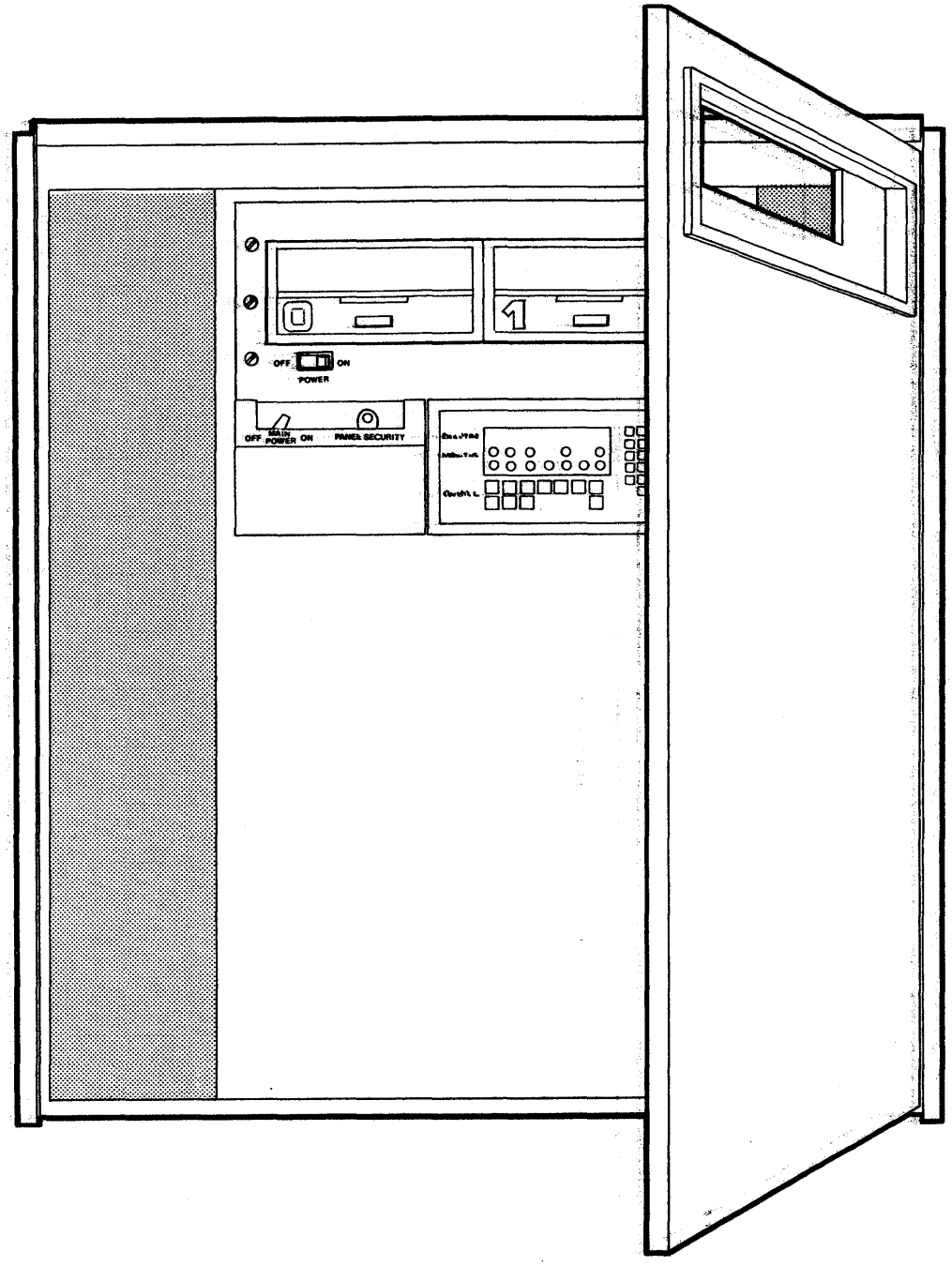


LO PROFILE INPUT/OUTPUT MULTIPLEXER

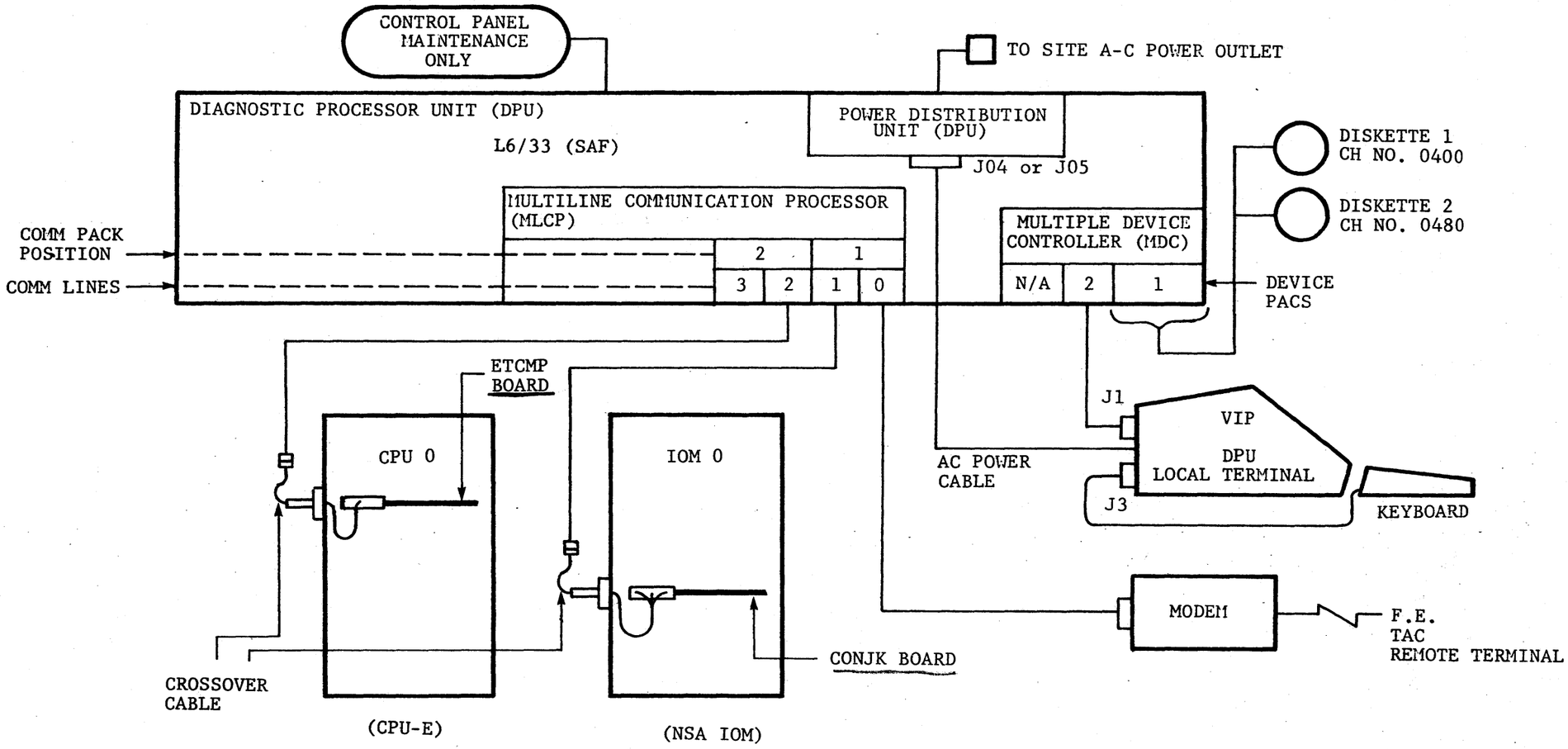
Physical Layout (IOM-E)
Figure 2-13



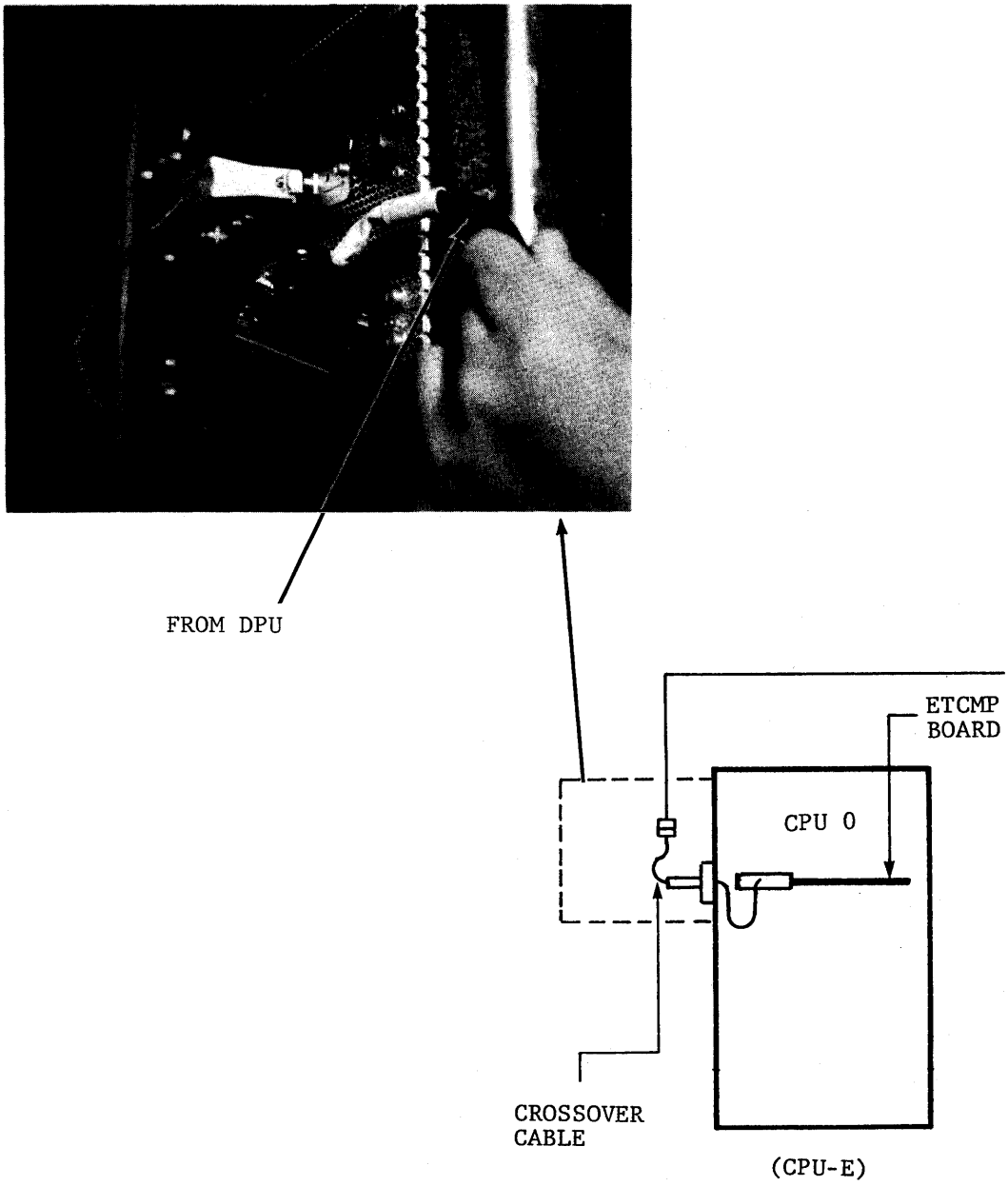
Lo Profile IOM Board Layout
Figure 2-14



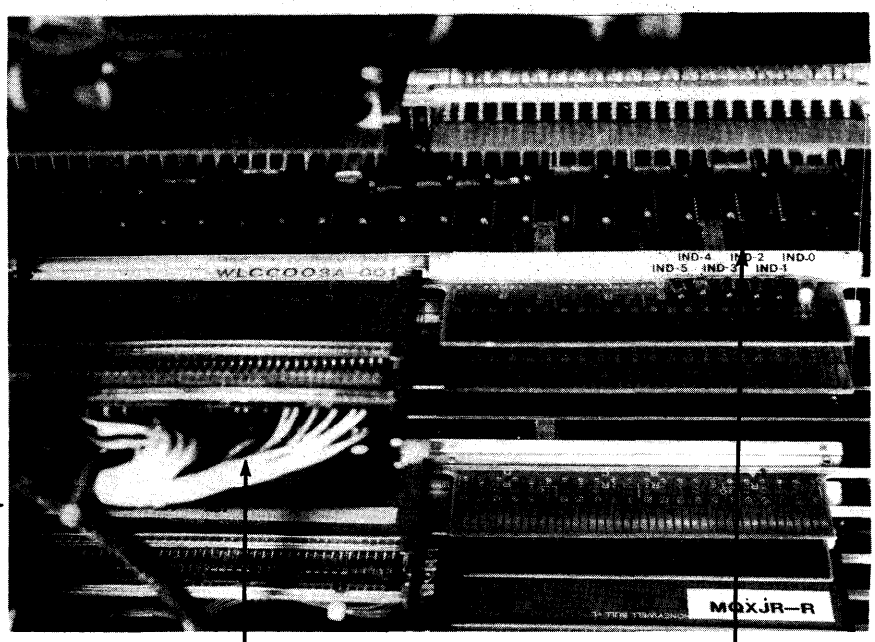
DPU Physical Layout
Figure 2-15



DPU with Minimum Diagnostic Hook-up
Figure 2-16



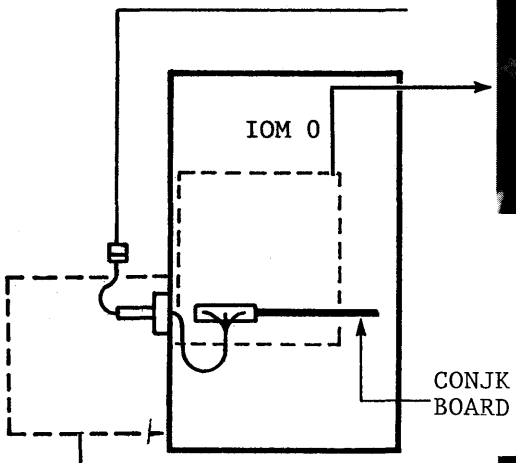
CPU-E Diagnostic Bulkhead Connector
Figure 2-17



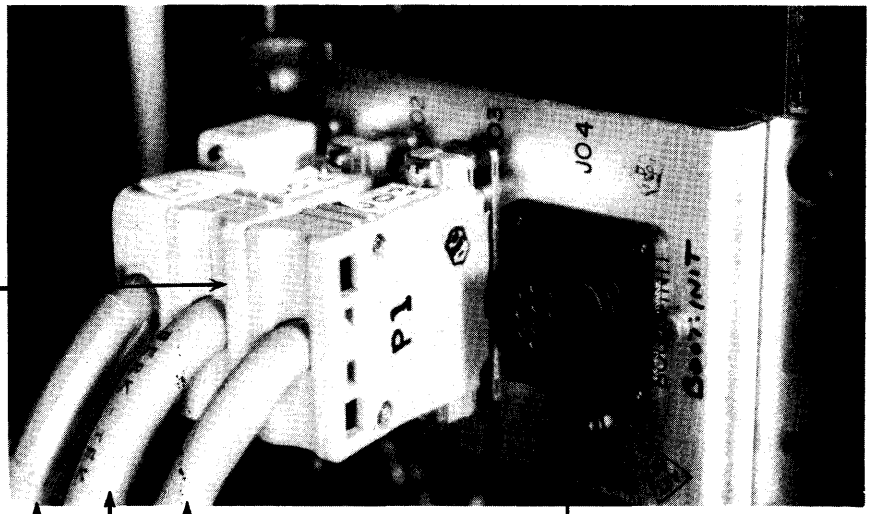
CABLE TO I/O BULKHEAD

CONJK BOARD

CONJK Board Installed
Figure 2-18



(NSA IOM)



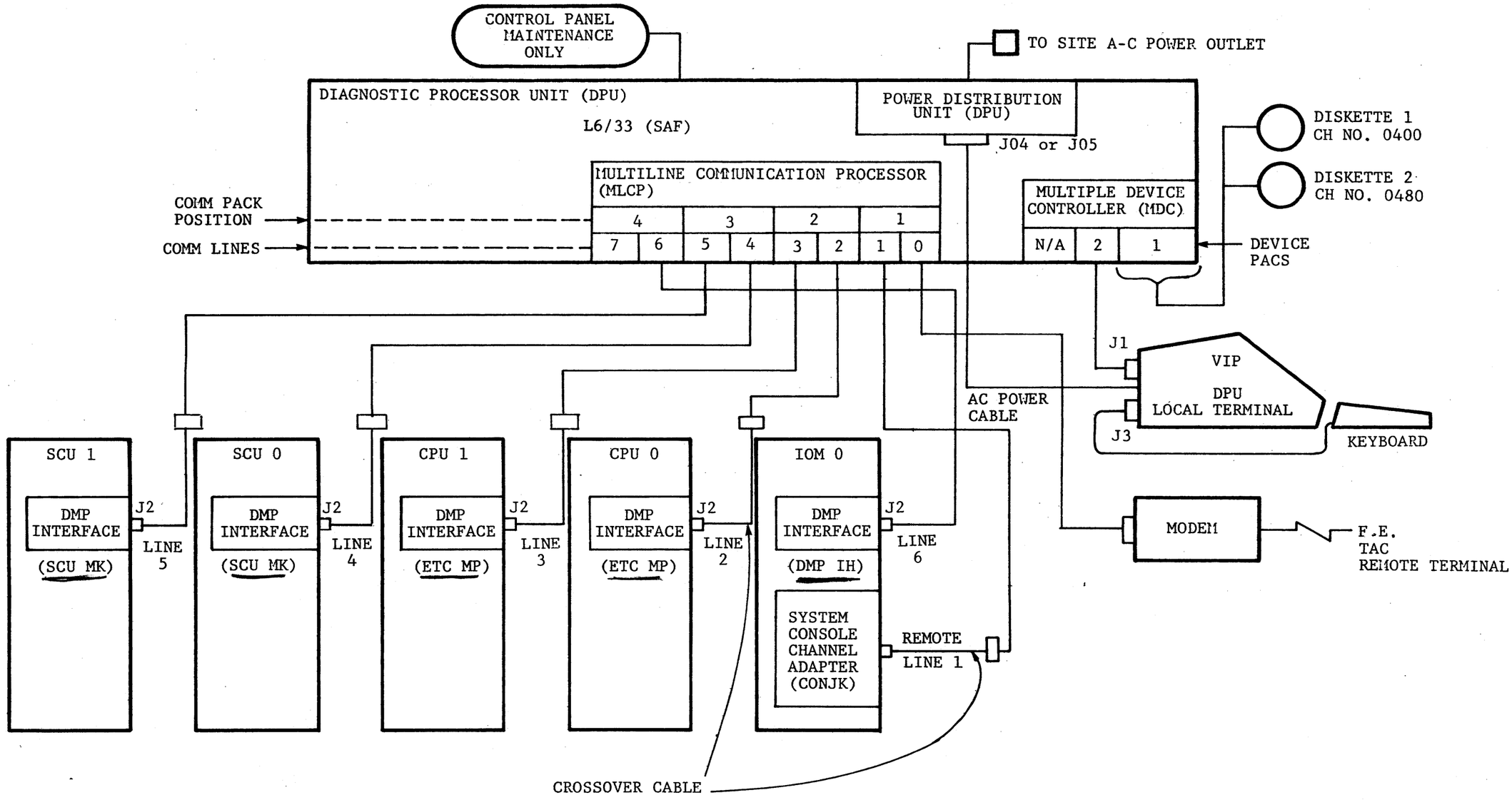
TO ROSY System

TO DPU

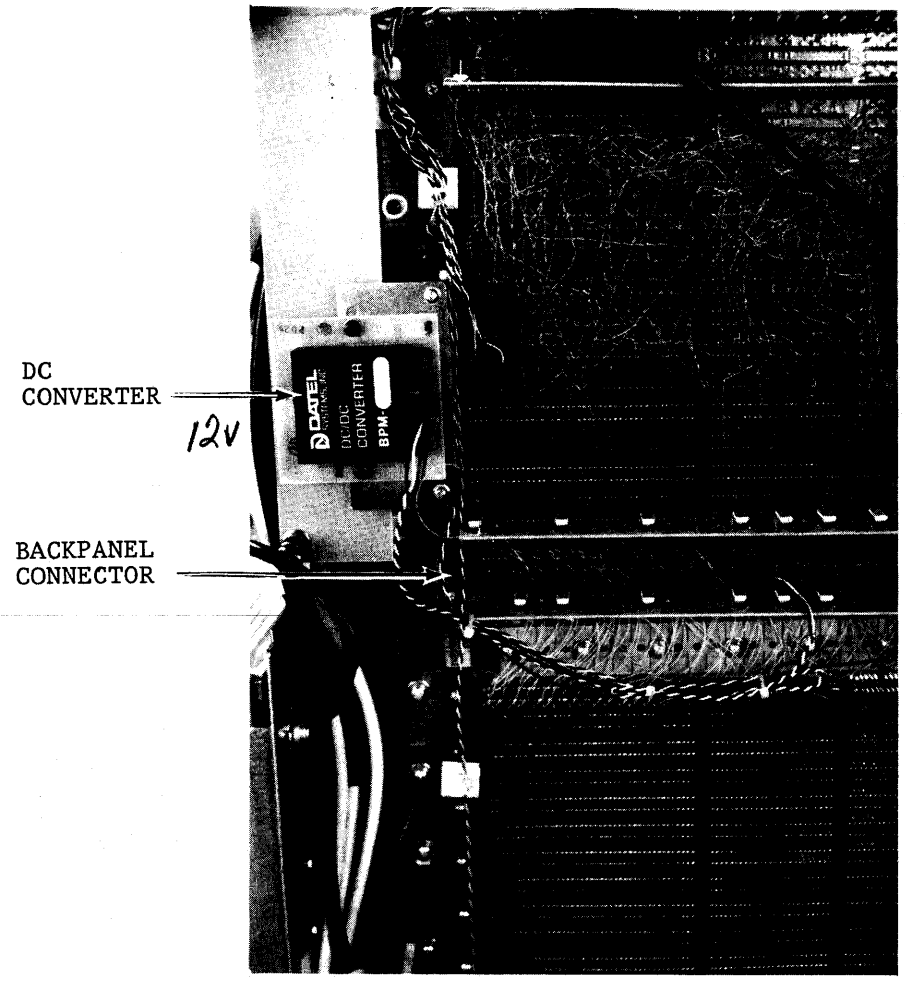
TO VIP System

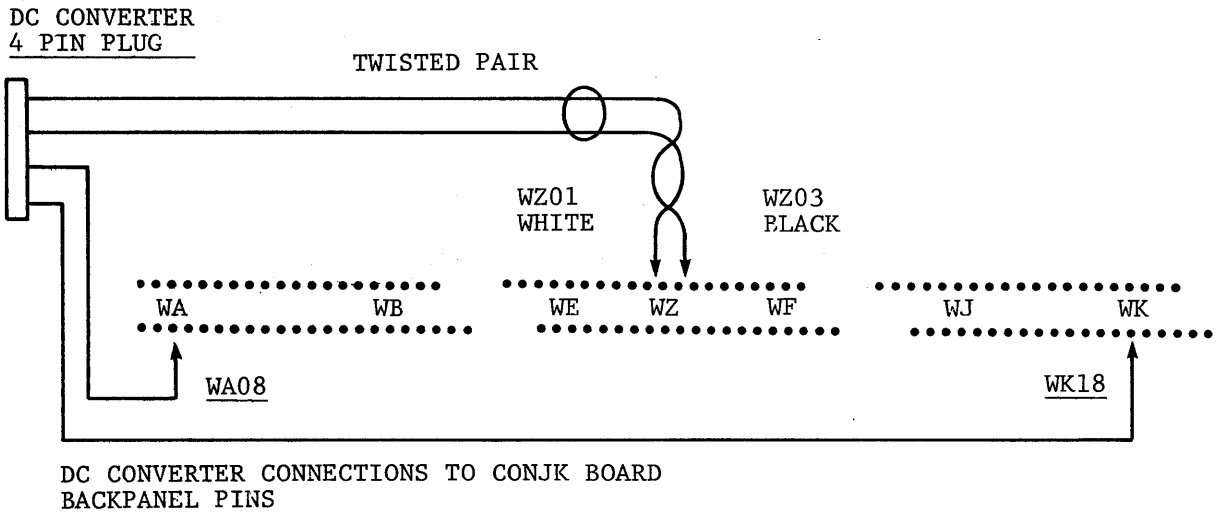
ACTIVITY MONITOR CONNECTOR

Console Bulkhead Connectors
Figure 2-19



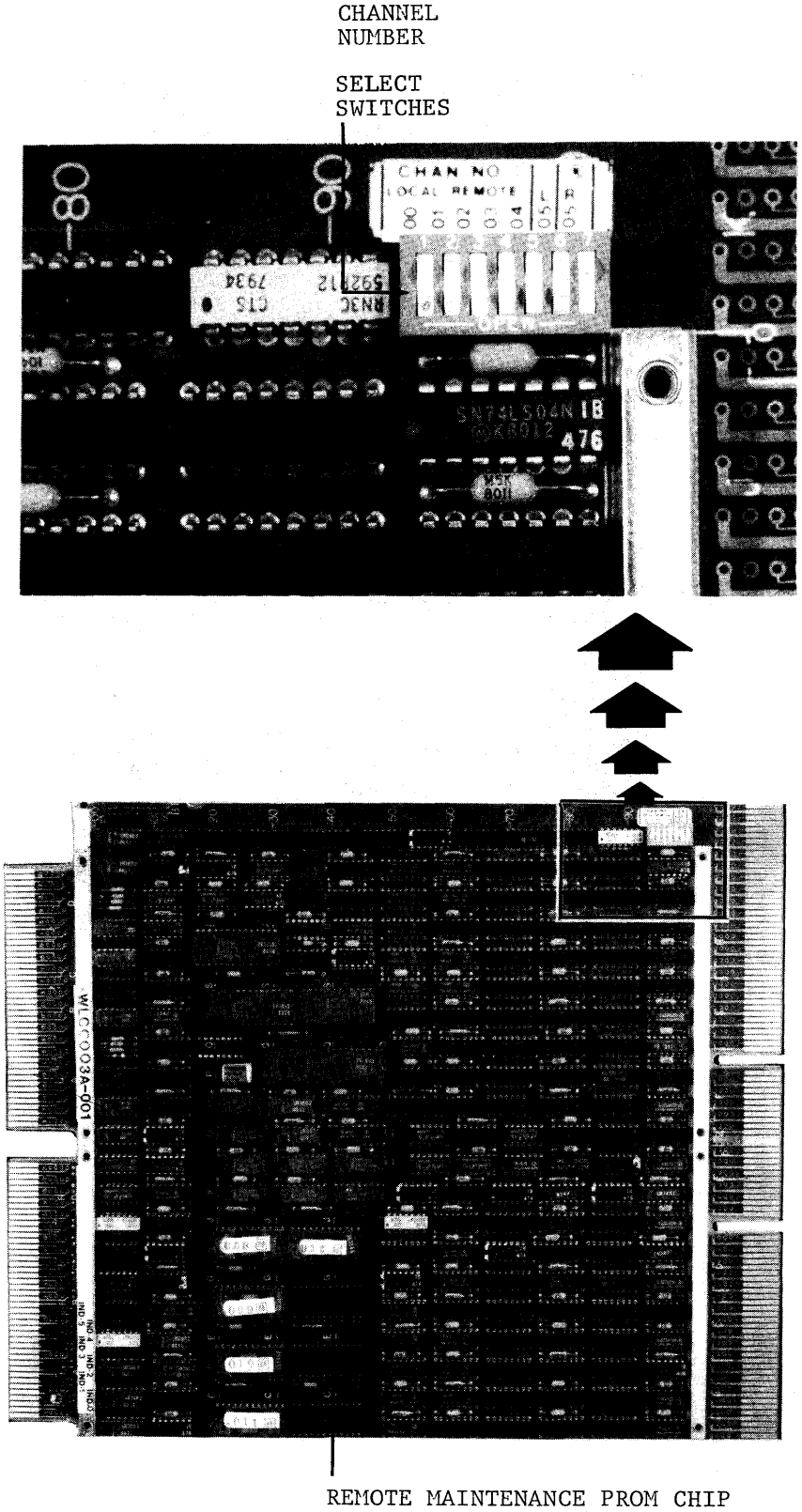
DPS Sample Hookup
Figure 2-20



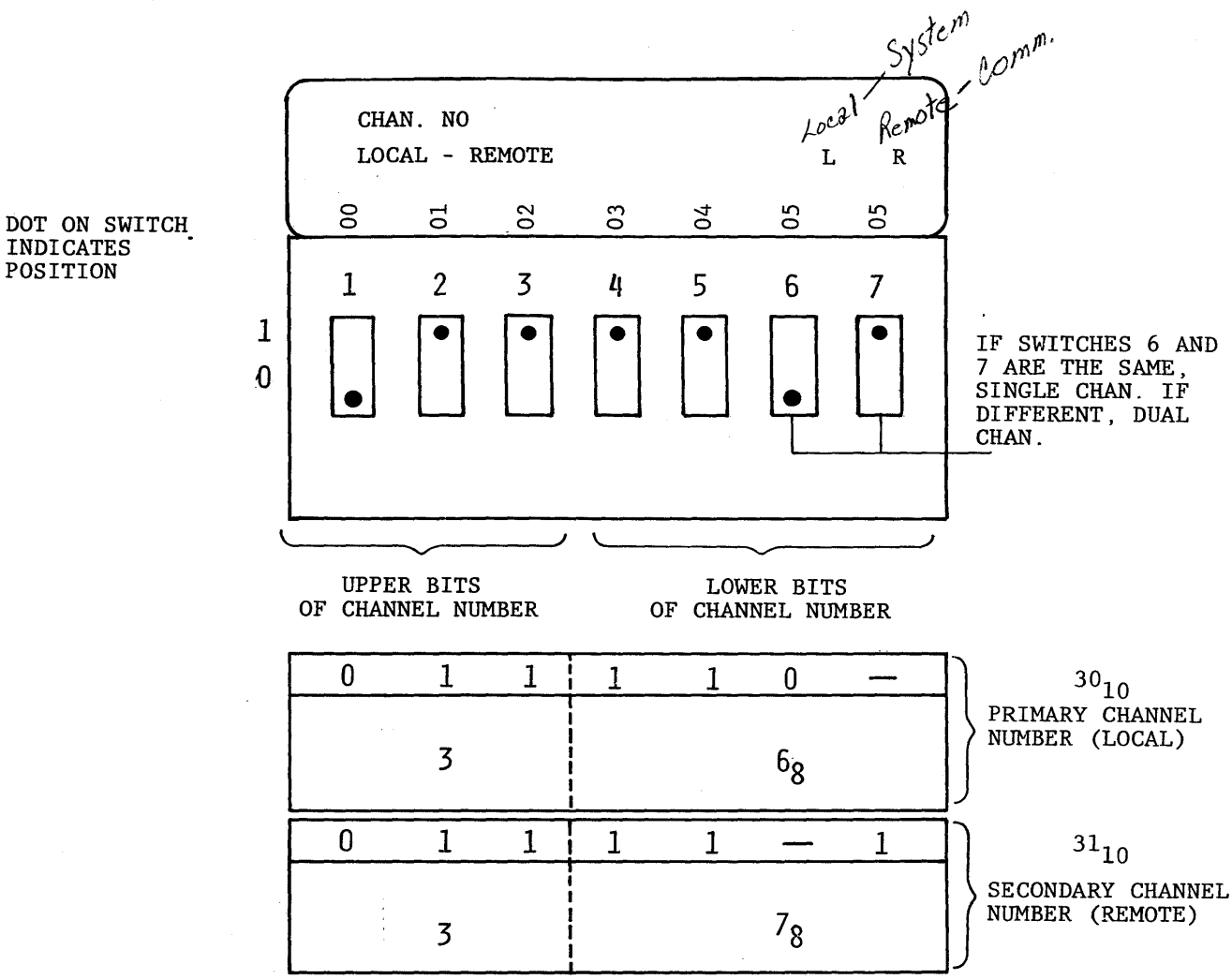


DC CONVERTER CONNECTIONS TO CONJK BOARD
BACKPANEL PINS

CONJK Board Auxiliary Backpanel Power Connection
Figure 2-21



CONJK Board Physical Layout
Figure 2-22



CONJK Board Channel Number Select Switches
Figure 2-23

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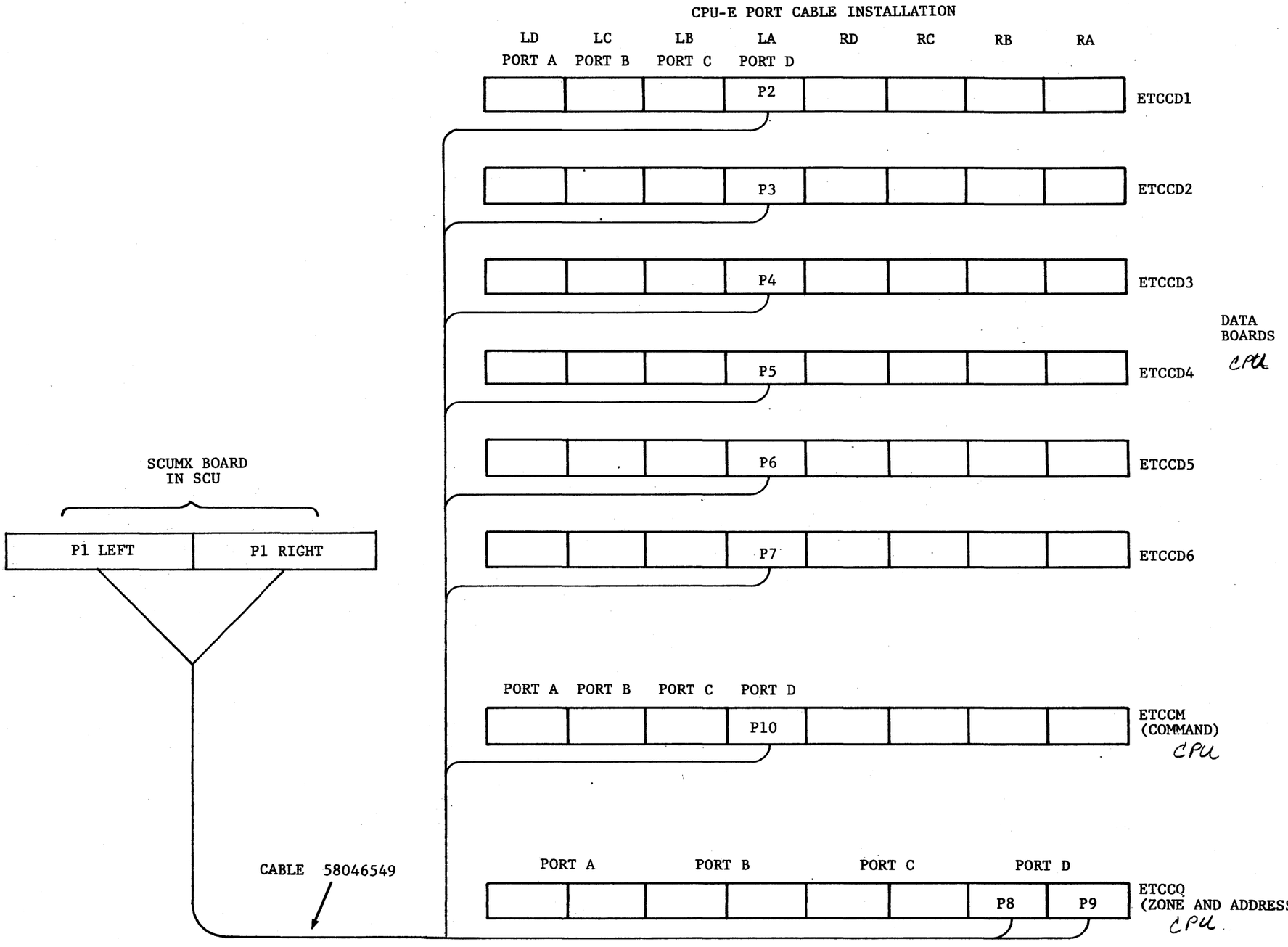
CPU-E PORT CABLE INSTALLATION



EXAMPLE SHOWS PORT D CONNECTED

REV. 2
Figure 2-24
39/40

CPU-E CONFIGURATION PANEL DESCRIPTION

This is a new configuration panel which contains the combined features of the L66B standard configuration panel and the NSA configuration panel. In addition to containing all of the capabilities of the L66B processor panel, the new configuration panel includes certain functions of the old maintenance panel. The additional pushbuttons/switches are necessary for operator control of the processor. These functions are the Execute Fault, the Initialize-Clear pushbuttons,and the Test-Normal switch. The pushbuttons provide the operator with the capability to initialize and clear the CPU as well as to execute a fault condition.

The Test-Normal switch is used as a security feature to prevent accidental maintenance access to an active processor. When the Test-Normal switch is in the "NORMAL" position, only the DMP self-test may be executed. In the "TEST" position, the DMP allows the complete range of CPU and DMP MAINTENANCE FUNCTIONS.

On multiprocessor systems where one of the CPU's is to be tested while the system (and other processors) remain up, it is recommended that the processor ports on the processor being tested be disabled at the processor configuration panel. This would limit the CPU to internal tests only. These ports would then be enabled for any additional tests that involve CPU to memory. In other words, remote maintenance will require assistance since the operation or security of the system may be breached by leaving the CPU in the Test mode during normal operation. This is a decision to be made by the site operator and FED to facilitate local or remote maintenance.

The switching of the Test-Normal to either of its modes will not affect the operation of the processor.

A "BUSY" indicator is provided on the configuration panel to indicate that the CPU is an active state. ($MATCH)

CONFIGURATION PANEL OPERATION

The Configuration Panel provides basically the same functions as previous panels. The difference is that functions of separate panels have been consolidated and enhanced. The INITIALIZE-CLEAR and EXECUTE pushbuttons have been added for operator convenience.

PORT

Four SCU ports, A through D, may be designated 0 through 7 by their respective ASSIGNMENT switches. Processor interface blocks of two or four words may be selected by the three position INTERLACE SCU Port switches. The Port Enable switches allow enabling of the individual SCU ports, while the INITIALIZE ENABLE switch permits initialization at the system console, when enabled.

STORE SIZE

Thumbwheel switches are used to select one of eight Memory sizes for the four ports. Selection is from 32 to 4096 thousand words.

PROCESSOR FAULT BASE ADDRESS

The Processor Fault Base Address may be selected by modulo 32 between 0040_8 and 7740_8.

PROCESSOR NUMBER

The Processor may be assigned numbers 0 through 7.

MODE

The operator may select GCOS or VMS mode of operation.

ALARM

The alarm for fault detection may be enabled or disabled.

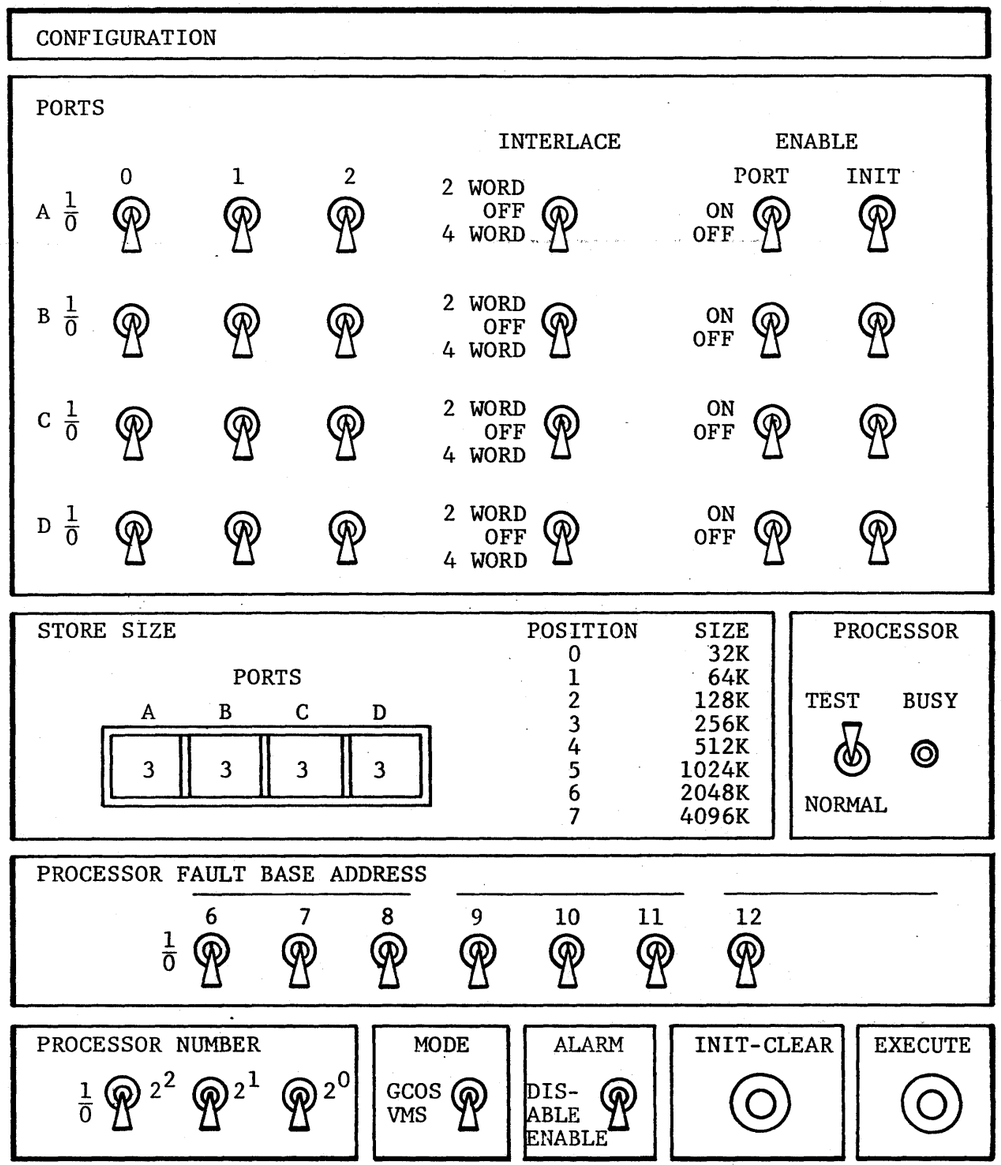
INITIALIZE - CLEAR

The INITIALIZE - CLEAR pushbutton allows the operator to initialize and clear the system. This includes the microprocessor and its supporting circuitry.

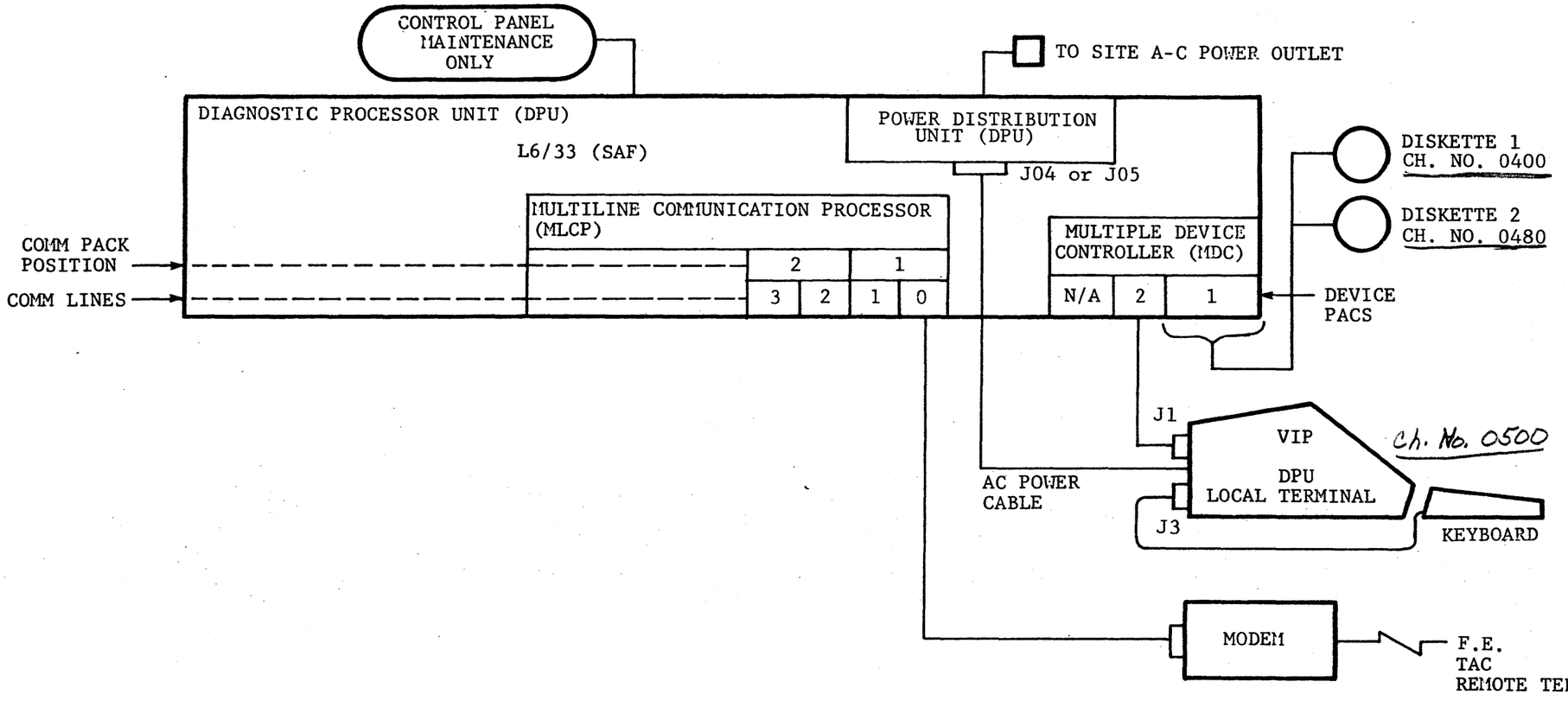
EXECUTE

The EXECUTE pushbutton allows the operator to initiate an Execute Fault to a designated location.

CPU-E CONFIGURATION PANEL



Operator's View of the Configuration Panel
Figure 2-25



COMM LINE	CHANNEL NO.	DEVICE NAME
0	1000	REMOT (MODEM) TAC
1	1080	CPU
2	1100	IOM
3	1180	SCU

Basic DPU Layout

Figure 2-26

LINE 1. ***** DIAGNOSTIC PROCESSOR UNIT (REV A.1) *****

LINE 2. RMI ACTIVE (RMI = REMOTE MAINTENANCE INTERFACE)

LINE 3. C? [?]

LINE 4. SYS CMDS (U = UNIT KEY_NAME REQUIRED)

```
OFL  U
ONL  U
CLST
CBLD
IDLE
```

LINE 5. C? [CLST]
WORKING...

LINE 6.

SPD DEVICE NAME	CHANNEL NUMBER
DSK00	0400
LOCAL	0500
DSK01	0480
REMOT	1000

SYSTEM COMMANDS

OFL U - INVOKES OFF-LINE FUNCTION ON UNIT XX.

ONL U - INVOKES ON-LINE FUNCTION THROUGH LCCXX.

CLST - LIST DPU CONFIGURATION.

CBLD - BUILD OR ALTER SITE CONFIGURATION FILE.

IDLE - RUN DMP SELF-TESTS.

Each unit that cables to the DPU (CPU, SCU, IOM, LCC) has an associated KEY_NAME that the DPU uses to identify that unit by type and number. These KEY_NAMES are:

L66-E CPU = CPUXX
L68-E CPU = CPMXX
SCU = SCUXX
IOM = IOMXX
LCC = LCCXX
FEP = FEPXX

XX is a number from 00 to 99 that uniquely identifies a Central Unit. A four processor, one SCU, one IOM system would be configured as CPU00, CPU01, CPU02, CPU03 to identify CPU, 0, 1, 2, 3, and SCU00, IOM00 to identify the SCU and IOM.

Printout of Console/VIP Configuration Dialogue for Basic DPU
Figure 2-27

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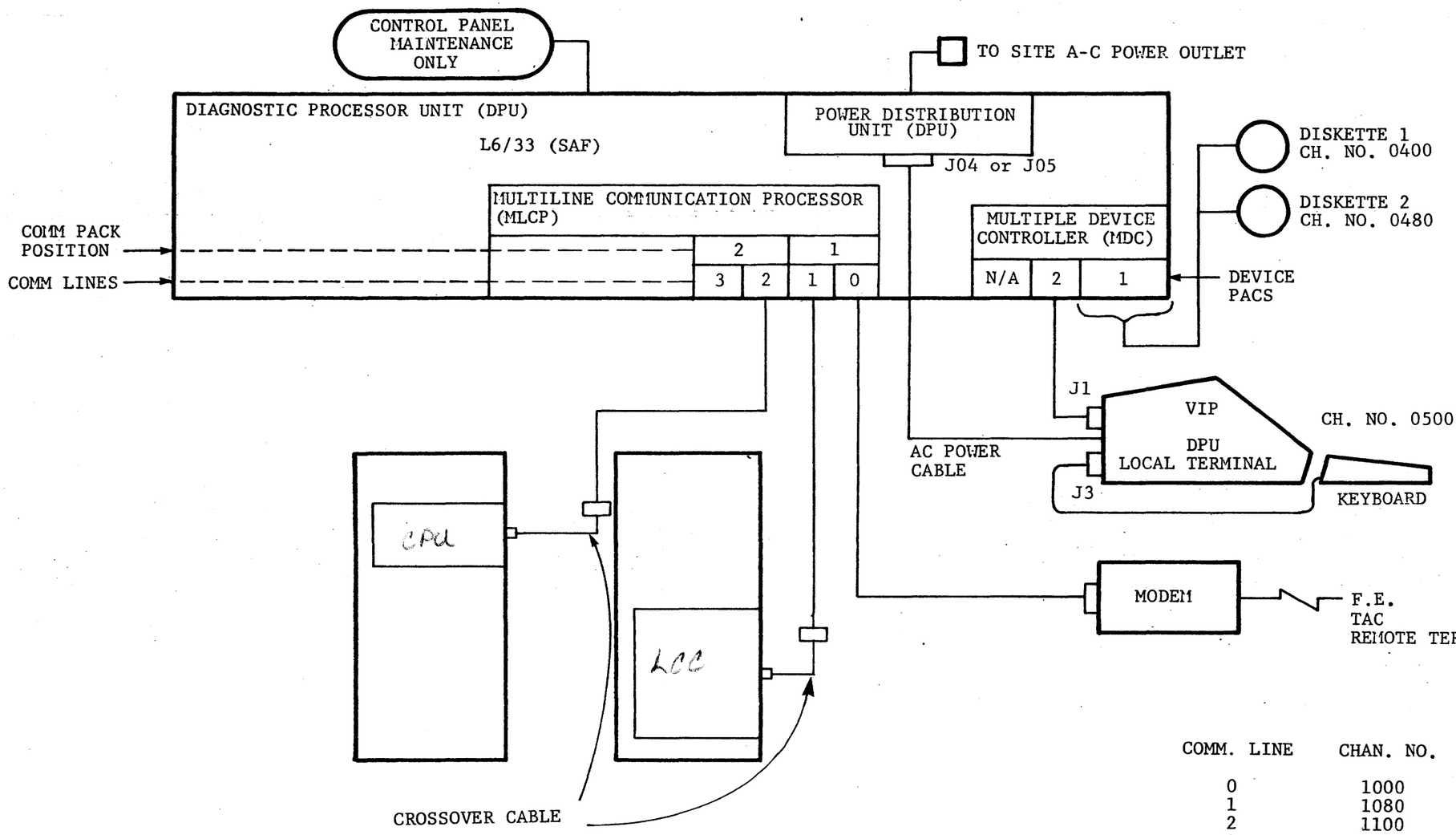


COMM. LINE	CHAN. NO.	DEVICE NAME
0	1000	REMOTE (MODEM)
1	1080	LCC00
2	1100	CPU00
3	1180	

Basic DPU with System Console and Dynamic Maintenance Panel Connections

Figure 2-28
REV. 2

```
LINE 1.          *****  DIAGNOSTIC  PROCESSOR  UNIT  (REV A.1)        *****

LINE 2.     RMI ACTIVE

LINE 3.     C? [CLST]      (YOU ENTER CLST AND HIT RETURN KEY.)
            WORKING...

LINE 4.        SPD          CHANNEL
            DEVICE NAME     NUMBER
            ************************
            *  DSK00       *  0400  *
            *  LOCAL       *  0500  *  } VIRGIN PACK
            *  DSK01       *  0480  *
            *  REMOT       *  1000  *
            ************************

LINE 5.     C? [CBLD]
            WORKING...     (START CONFIG DIALOGUE)

LINE 6.     ENTER UPDATE OPTION: BUILD, ADD, CHANGE, OR LIST
            ?[?]
              ?
            LIST
            BUILD
            ADD
            CHANGE   } (SEE TABLE BELOW.)
            DONE
            ABORT

LINE 7.     ENTER UPDATE OPTION: BUILD, ADD, CHANGE, OR LIST
            ?[BUILD]
             NAME    CHAN   BAUD   MODEM

LINE 8.      REMOT   1000   1200   1
            ENTER DEVICE NAME:[LCC00]
            ENTER CHANNEL NUMBER:[1080]
            ENTER DEVICE NAME:[CPU00]
            ENTER CHANNEL NUMBER:[1100]
            ENTER DEVICE NAME:[DONE]
             NAME    CHAN   BAUD   MODEM

LINE 9.      REMOT   1000   1200   1
             LCC00   1080   1200   0   } NEW INFORMATION
             CPU00   1100   1200   0
            C?
```

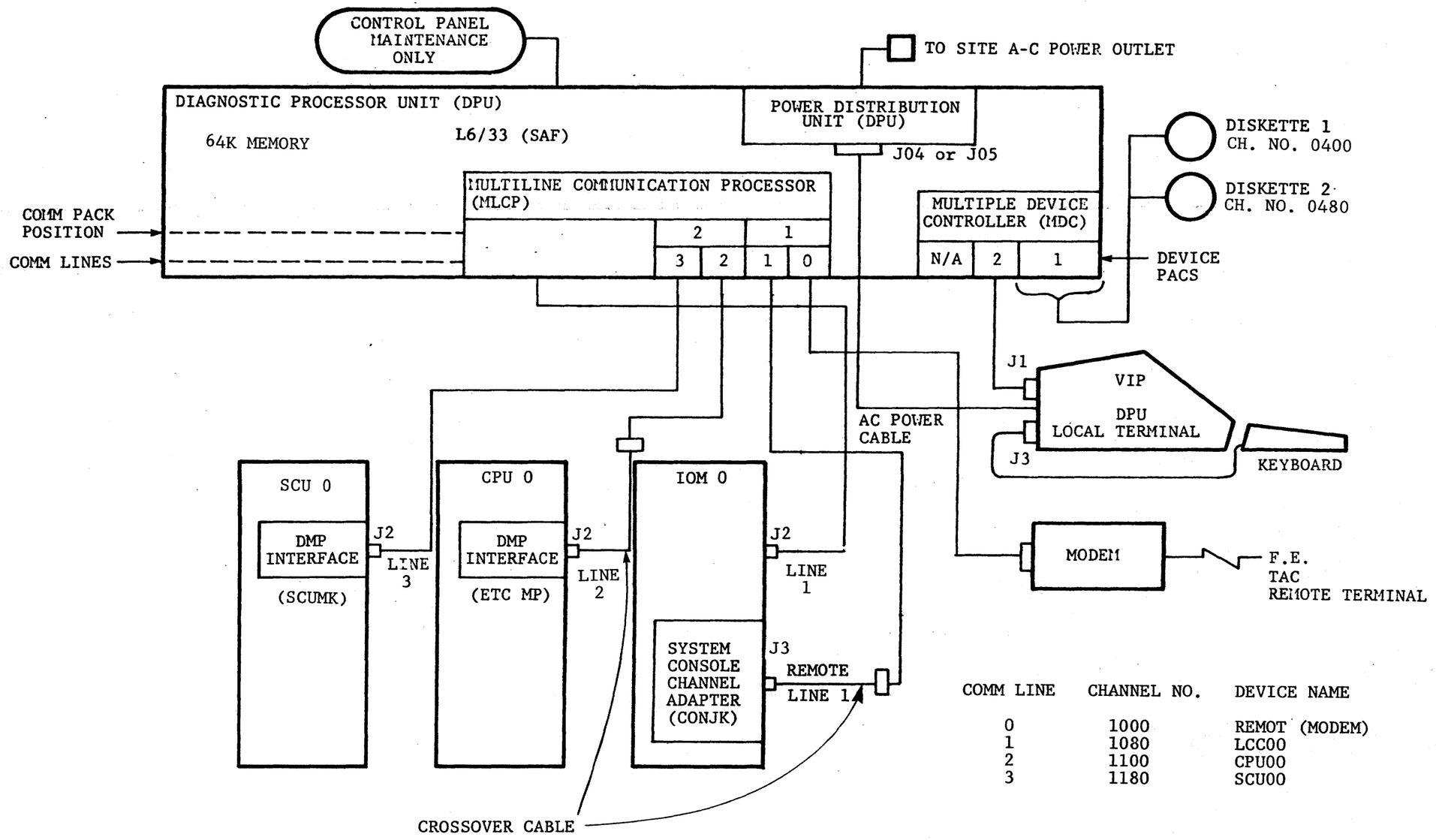
CONFIGURATION UPDATE OPTIONS

```
   ?    - PROVIDE A LIST OF ALL CONFIG OPTIONS.
LIST    - LIST ALL UNITS CURRENTLY IN CONFIG FILE.
BUILD   - BUILD NEW CONFIGURATION FILE.
ADD     - NEW UNITS WILL BE ADDED TO EXISTING CONFIG FILE.
CHANGE  - MODIFY EXISTING CONFIG FILE.
DONE    - ALL INPUT OF NEW INFORMATION IS COMPLETED.
ABORT   - IGNORE ALL INPUTS (DO NOT CHANGE EXISTING FILE).
```

Figure 2-29

```
LINE 1.        *****   DIAGNOSTIC  PROCESSOR  UNIT  (REV A.1)        *****

LINE 2. RMI ACTIVE

LINE 3. C? [? ]

          SYS CMDS  (U = UNIT KEY_NAME REQUIRED)

              OFL  U
              ONL  U
              CLST
              CBLD
              IDLE

LINE 4. C? [CLST ]
        WORKING...


            SPD          CHANNEL
LINE 5.   DEVICE NAME    NUMBER
        **************************
        *  DSK00       *  0400  *
        *  LOCAL       *  0500  *
        *  DSK01       *  0480  *   } NEW CONFIGURATION
        *  REMOT       *  1000  *
        *  LCC00       *  1080  *
        *  CPU00       *  1100  *
        *                       *
        **************************
```

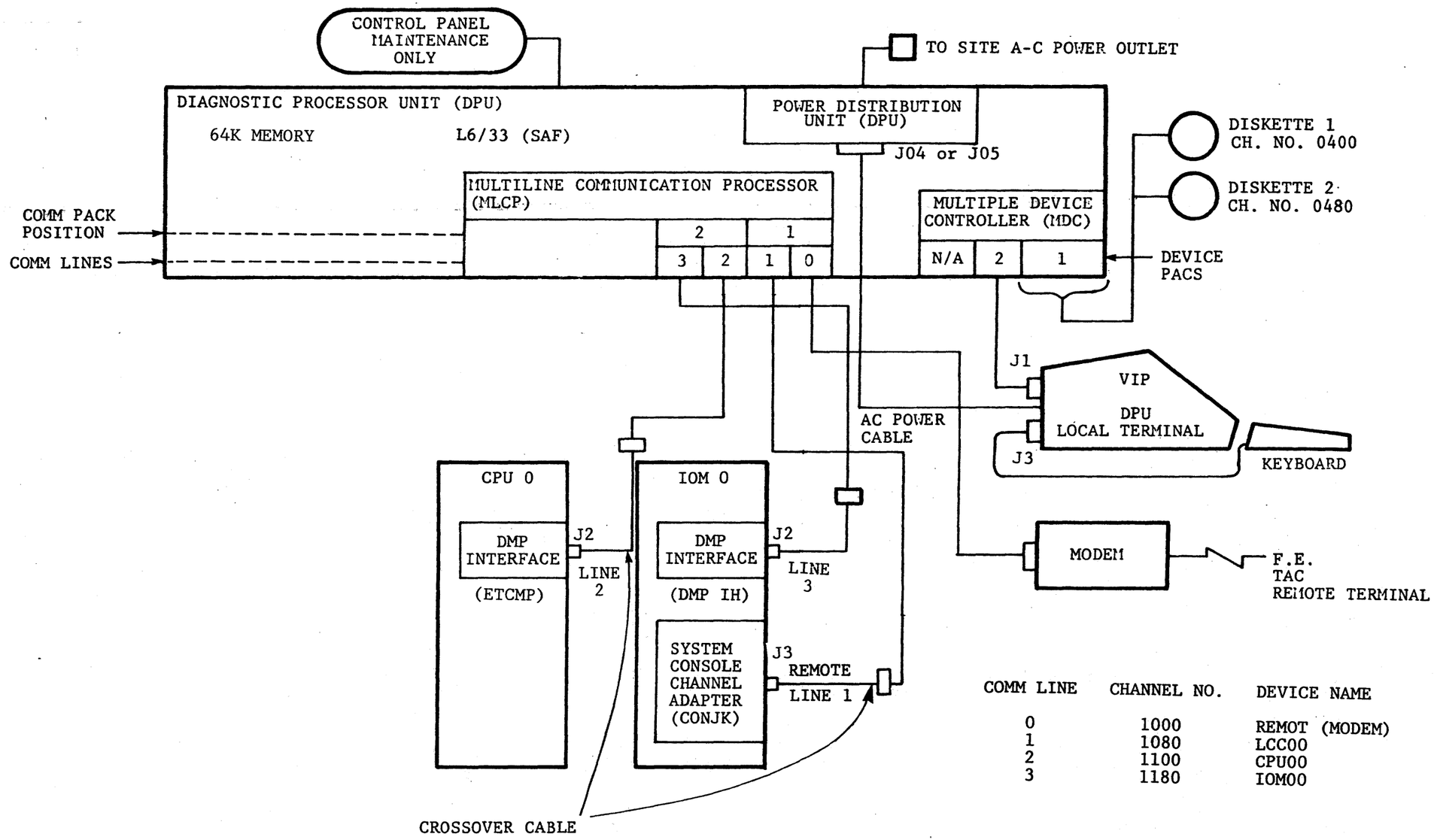
Verification of Newly-Built CONFIG File
Figure 2-30



COMM LINE	CHANNEL NO.	DEVICE NAME
0	1000	REMOT (MODEM)
1	1080	LCC00
2	1100	CPU00
3	1180	SCU00

Layout of Rebuilt CONFIG File Containing SCU00

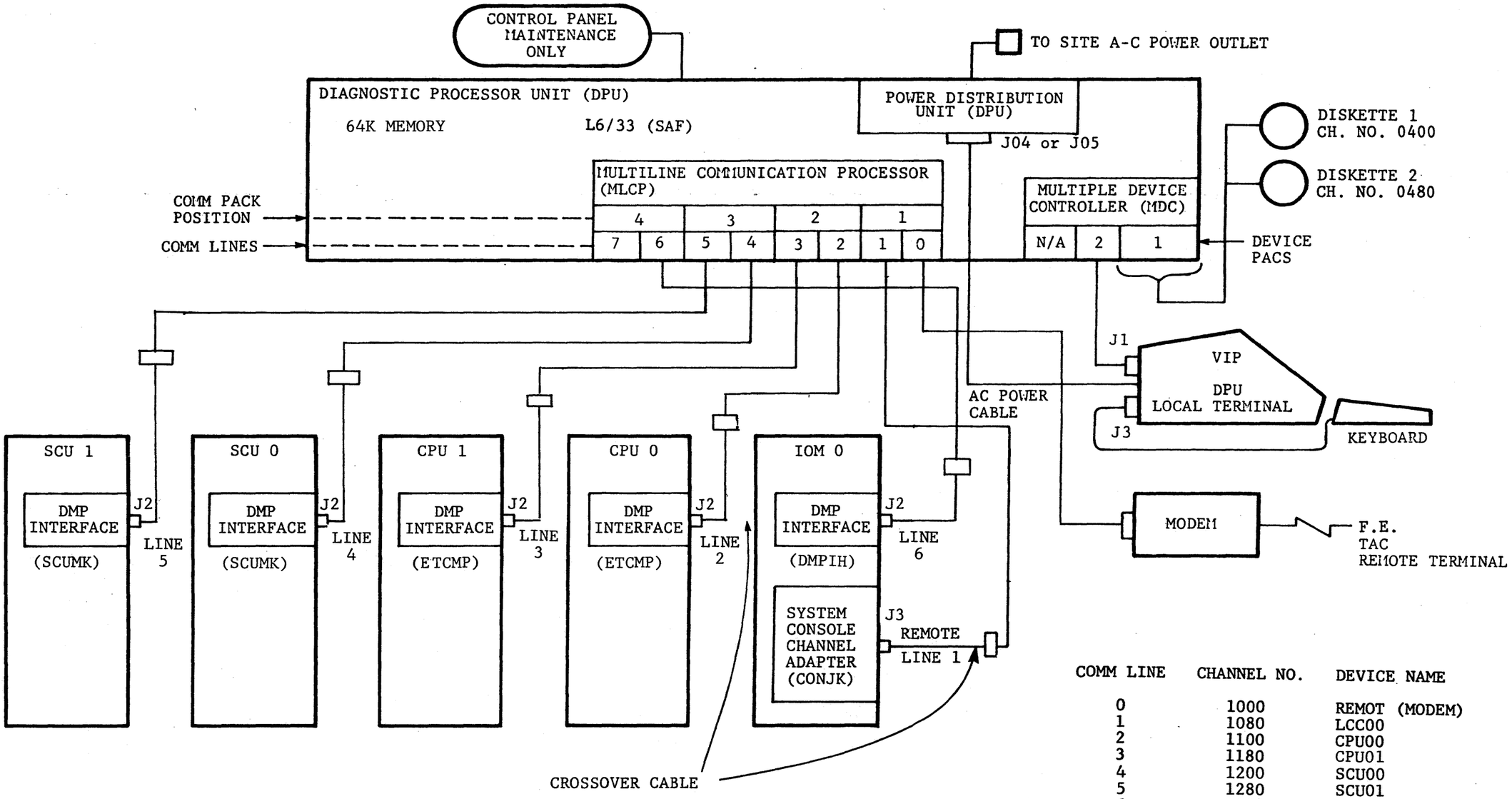
Figure 2-31 REV. 3



COMM LINE	CHANNEL NO.	DEVICE NAME
0	1000	REMOT (MODEM)
1	1080	LCC00
2	1100	CPU00
3	1180	IOM00

Layout of Rebuilt CONFIG File Containing IOM00

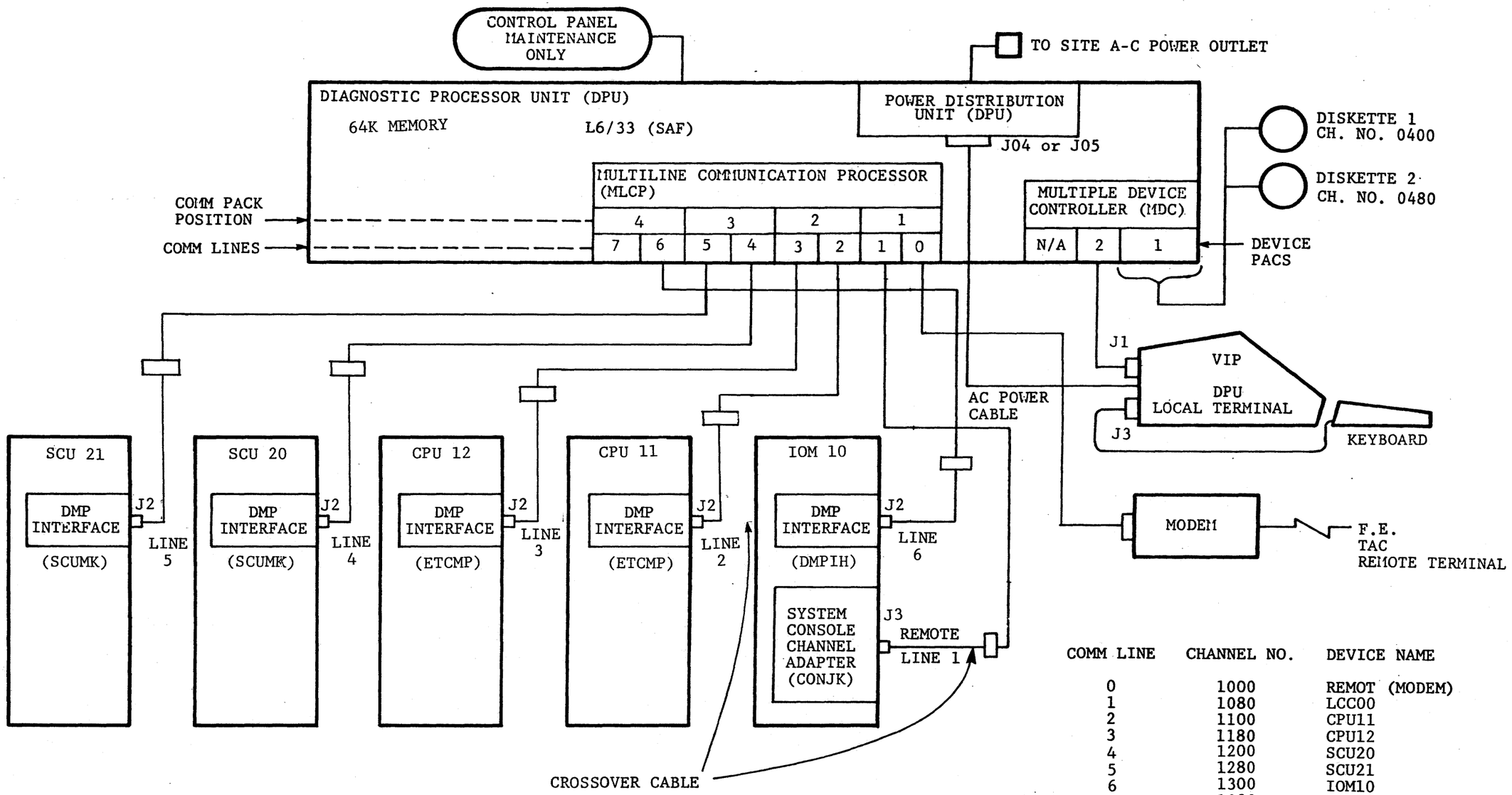
Figure 2-32



COMM LINE	CHANNEL NO.	DEVICE NAME
0	1000	REMOT (MODEM)
1	1080	LCC00
2	1100	CPU00
3	1180	CPU01
4	1200	SCU00
5	1280	SCU01
6	1300	IOM00
7	1380	

Site Layout of Seven COMM Lines

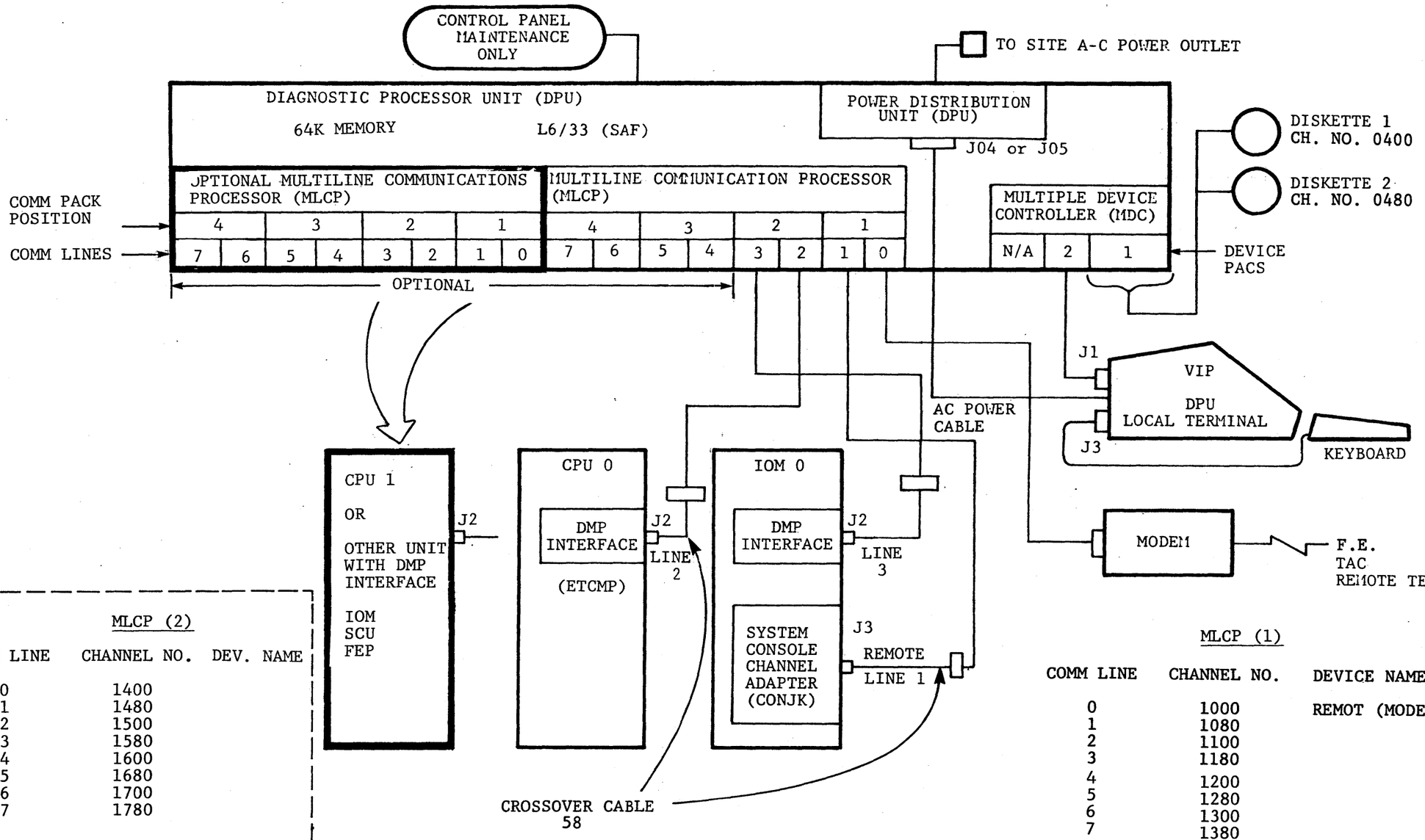
Figure 2-33



COMM LINE	CHANNEL NO.	DEVICE NAME
0	1000	REMOT (MODEM)
1	1080	LCC00
2	1100	CPU11
3	1180	CPU12
4	1200	SCU20
5	1280	SCU21
6	1300	IOM10
7	1380	

Device "Keyname" Number Assignments

Figure 2-34



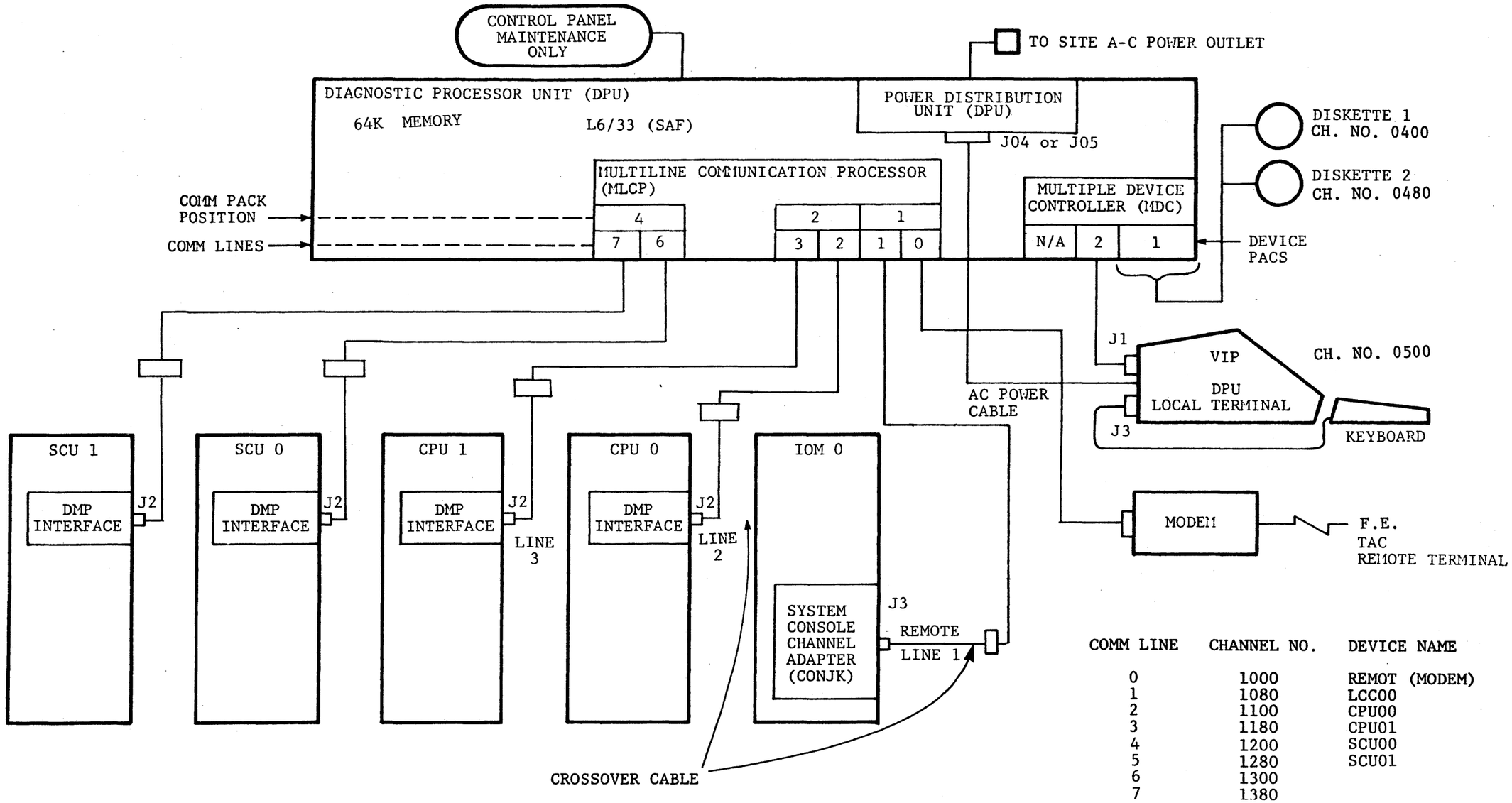
MLCP (2)

COMM LINE	CHANNEL NO.	DEV. NAME
0	1400	
1	1480	
2	1500	
3	1580	
4	1600	
5	1680	
6	1700	
7	1780	

MLCP (1)

COMM LINE	CHANNEL NO.	DEVICE NAME
0	1000	REMOT (MODEM)
1	1080	
2	1100	
3	1180	
4	1200	
5	1280	
6	1300	
7	1380	

Site Layout Expanded to 16 COMM Lines
Figure 2-35



Channel Number Assignment Error

COMM LINE	CHANNEL NO.	DEVICE NAME
0	1000	REMOT (MODEM)
1	1080	LCC00
2	1100	CPU00
3	1180	CPU01
4	1200	SCU00
5	1280	SCU01
6	1300	
7	1380	

Figure 2-36

```
RMI ACTIVE

LINE 1.     C? [CLST]
            WORKING...


              SPD          CHANNEL
            DEVICE NAME    NUMBER
            **********************
            *  DSK00       *  0400  *
            *  LOCAL       *  0500  *   } NEW DISKETTE
            *  DSK01       *  0480  *
            *  REMOT       *  1000  *
            **********************

LINE 2.     C? [CBLD]
            WORKING...

            ENTER UPDATE OPTION: BUILD, ADD, CHANGE, OR LIST
LINE 3.     ?[?]
              ?
            LIST
            BUILD
            ADD
            CHANGE
            DONE
            ABORT

            ENTER UPDATE OPTION: BUILD, ADD, CHANGE, OR LIST
LINE 4.     ?[LIST]
             NAME   CHAN  BAUD  MODEM

             REMOT  1000  1200  1
            ENTER UPDATE OPTION: BUILD, ADD, CHANGE, OR LIST
LINE 5.     ?[BUILD]
             NAME   CHAN  BAUD  MODEM

LINE 6.
             REMOT  1000  1200  1
            ENTER DEVICE NAME: [LCC00]
            ENTER CHANNEL NUMBER: [1080]
            ENTER DEVICE NAME: [CPU00]
            ENTER CHANNEL NUMBER: [1100]
            ENTER DEVICE NAME: [CPU01]
            ENTER CHANNEL NUMBER: [1180]
            ENTER DEVICE NAME: [SCU00]
            ENTER CHANNEL NUMBER: [1200]  } These two entries will cause
            ENTER DEVICE NAME: [SCU01]    } an error code of 0B33 during
            ENTER CHANNEL NUMBER: [1280]  } the next Bootload sequence.
            ENTER DEVICE NAME: [DONE]
             NAME   CHAN  BAUD  MODEM

LINE 7.
             REMOT  1000  1200  1
             LCC00  1080  1200  0
             CPU00  1100  1200  0
             CPU01  1180  1200  0
             SCU00  1200  1200  0
             SCU01  1280  1200  0
            C?
```

Sample Printout of "Building" a New Diskette
Figure 2-37

```
      *****   DIAGNOSTIC  PROCESSOR  UNIT  (REV A.1)       *****

      RMI ACTIVE

LINE 1.  C? [CLST]
         WORKING...


            SPD          CHANNEL
LINE 2.    DEVICE NAME    NUMBER
         **************************
         *  DSK00       *  0400  *
         *  LOCAL       *  0500  *
         *  DSK01       *  0480  *
         *  REMOT       *  1000  *
         *  LCC00       *  1080  *
         *  CPU00       *  1100  *
         *  CPU01       *  1180  *
         *  SCU00       *  0000  *   CHANNEL NUMBERS SHOULD BE 1200 AND 1280.
         *  SCU01       *  0000  *
         **************************

LINE 3.  C? [CBLD]
         WORKING...

         ENTER UPDATE OPTION: BUILD, ADD, CHANGE, OR LIST
LINE 4.  ?[LIST]
          NAME   CHAN  BAUD  MODEM

LINE 5.   REMOT  1000  1200  1
          LCC00  1080  1200  0
          CPU00  1100  1200  0
          CPU01  1180  1200  0
          SCU00  1200  1200  0
          SCU01  1280  1200  0
         ENTER UPDATE OPTION: BUILD, ADD, CHANGE, OR LIST
```

Figure 2-38

SITE CONFIGURATION

On initial start-up of the DPU, the site configuration must be entered via the "CBLD" command. The "BUILD" option may now be used to inform the DPU where the mainframe units are cabled.

Each unit that cables to the DPU (CPU, SCU, IOM, LCC) has an associated KEY_NAME that the DPU uses to identify that unit by type and number. These KEY_NAMES are:

```
L66-E CPU = CPUXX
L68-E CPU = CPMXX  (Multics)
SCU       = SCUXX
IOM       = IOMXX
LCC       = LCCXX
FEP       = FEPXX
```

XX is a number from 00 to 99 that uniquely identifies a Central Unit. A four processor, one SCU, one IOM system would be configured as CPU00, CPU01, CPU02, CPU03 to identify CPU, 0, 1, 2, 3, and SCU00, IOM00 to identify the SCU and IOM.

CONFIGURATION BUILD PROCEDURES

First, verify the DPU cable connections on the MLCP's.

- Line 0. Channel 1000 is reserved for the Remote DPU Terminal modem.
- Line 1, Channel 1080 is reserved for the LCC by convention.
- Lines 2 thru 7, Channels 1100, 1180, 1280, 1300, 1380, respectively, are available for unit connection.
- Lines 8 thru 15 (on MLCP 2), Channels 1400, 1480, ... 1780 are also for unit connections.

Second, record the line number, channel number, unit cabled, and then assign appropriate KEY_NAMES:

LINE	CHANNEL	UNIT	KEY
0	1000	MODEM	REMOTE
2	1100	CP0	CPU00
7	1380	CP1	CPU01
11	1080	CP2LCC	CPU02
5	1280	CP3	CPU03
3	1180	SCU	SCU00
6	1300	IOM	IOM00

At the DPU terminal, enter CBLD at the system command level (denoted by "C?"). When CBLD responds, enter the BUILD option and proceed as instructed to enter the device name (KEY_NAME) and associated channel number. When complete, enter DONE after the device name prompt.

> The DPU must now be rebooted to include the new configuration information in the system. Thereafter, subsequent boots will include the site configuration as entered.

The CLBD ADD and CHANGE options are available to alter the site configuration to accommodate system expansion, field upgrades, ... etc.

The KEY_NAMES used in the site configuration are later used to identify the unit to be acted upon by various DPU Function commands, such as OFL, ONL, TST, ...etc.

Typical usage would be:

C? OFL CPU00 invokes Off-Line function on CP0.

C? ONL LCC00 invokes On-Line function through LCC0.

Figure 2-39

DPU ERROR CODES

R1 = OBXX	Software COMM Module Errors
R1 = OB13	Invalid channel number
R1 = OB23	Invalid channel number, already assigned
R1 = OB48	MLCP busy, cannot load software module
R1 = OB49	Main memory error during software loading
R1 = OB4A	Incorrect parity during load
R1 = OBXX	Other codes* (See footnote.)
R1 = OB33	Undefined (This halt will occur with hardware holes.)
R1 = 13XX	Software "CMD" Module Errors

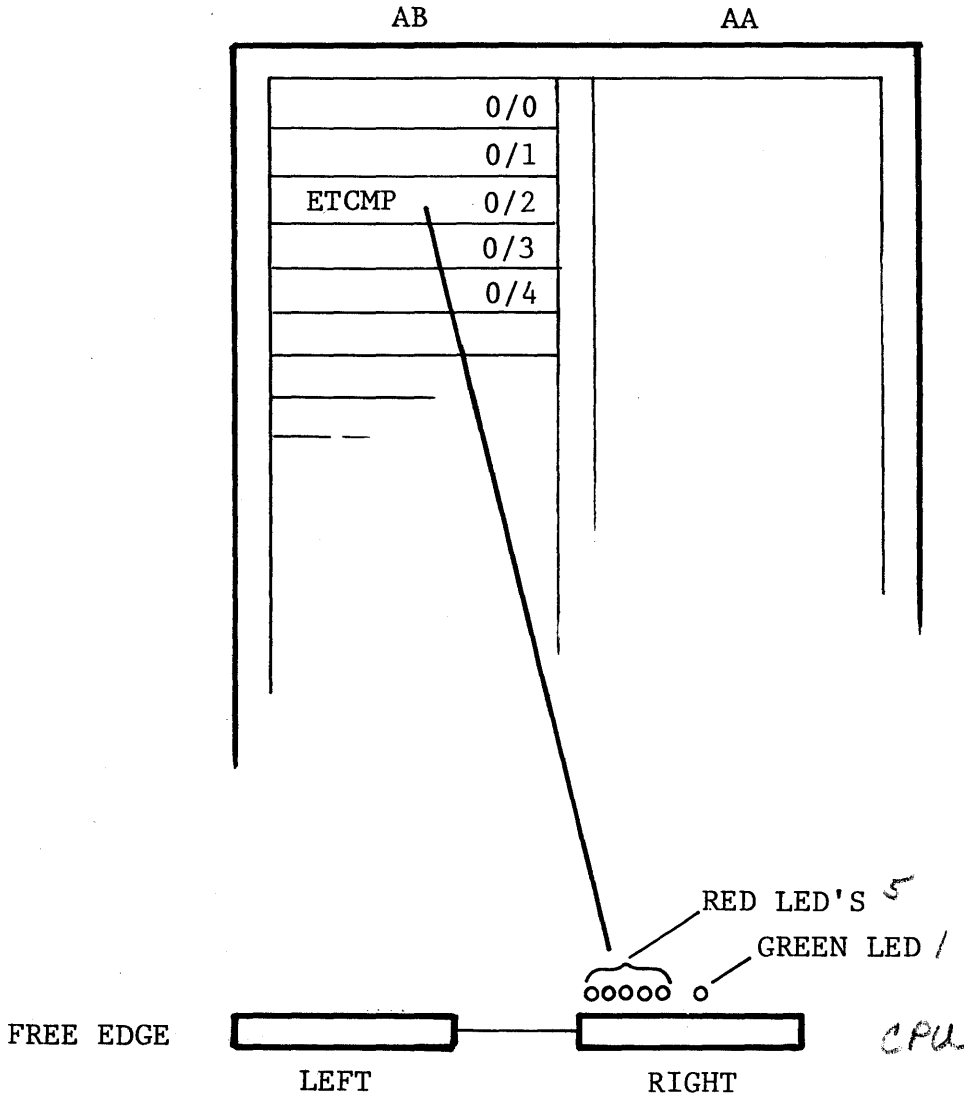
These errors may be caused by invalid entries to the "CBLD" command of the DPU.

R1 = 1301	Command directive invalid
R1 = 1302	Command argument required decimal digit
R1 = 1303	Command argument requires smaller digit
R1 = 1306	Command includes an argument error.
R1 = 130F	Command error due to missing or faulty argument
R1 = 1324	Command specifies invalid device tape
R1 = 132A	Command specifies duplicate channel
R1 = 1339	Command Device error, cannot read label
R1 = 13XX	Other codes* (See footnote.)
R1 = 1330	Undefined
R2 = CDXX	SMTCS Command Processor INIT Errors
R2 = CD0C	Fatal I/O error
R2 = CD0D	Non-fatal I/O error
R2 = CDXX	Other codes* (See footnote.)

This is the final stage of bootload. Failures detected during this INIT phase will halt the DPU with error codes in R1 and R2. To retry, clear R1 and hit RUN.

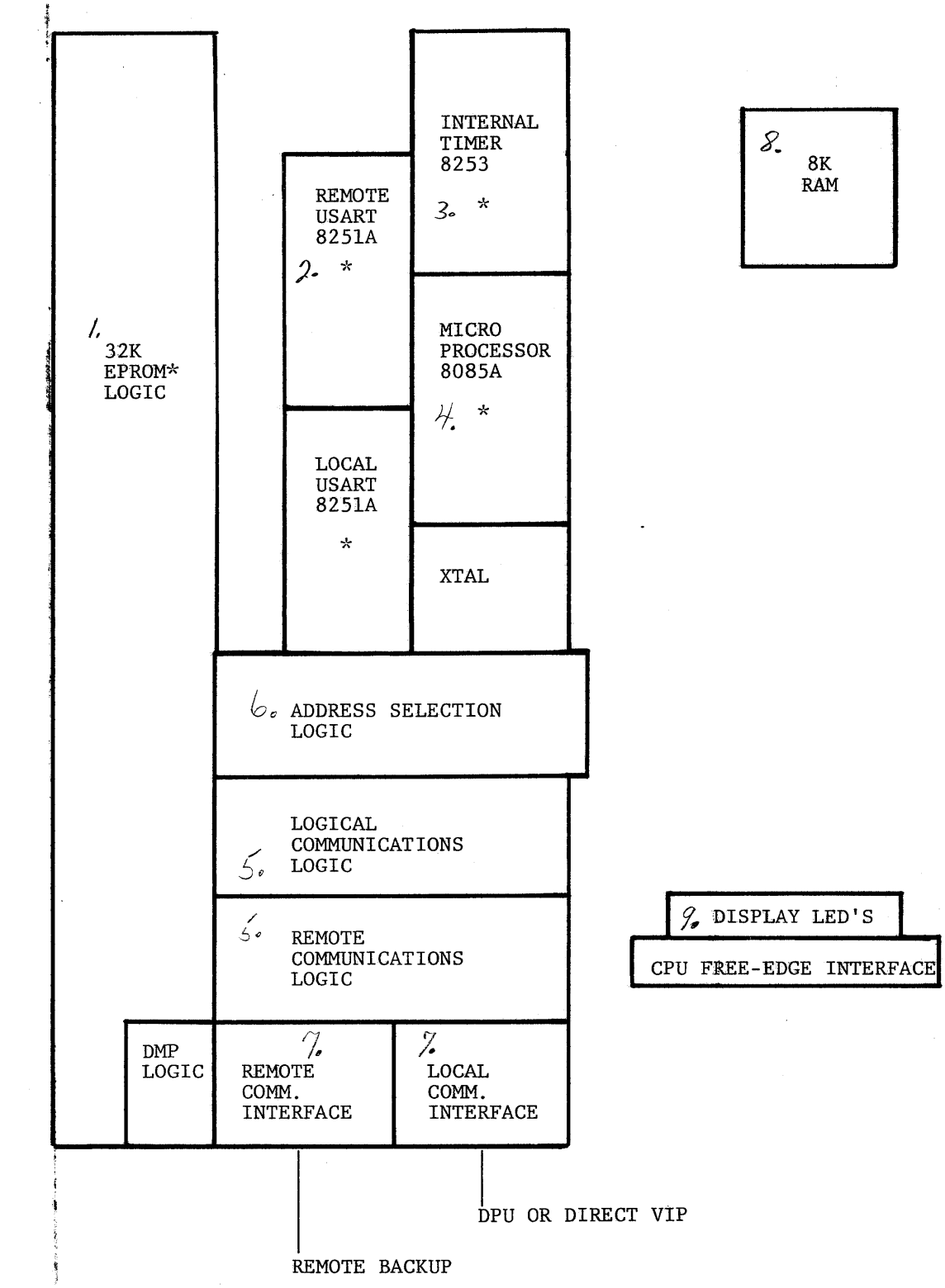
**All codes listed as XX are concerned with the DPU operating system software. The DPU O/S is not accessible by, or manipulated by the DPU user.*

Figure 2-40



ETCMP Physical Location
Figure 3-1

ETCMP BASIC BLOCK DIAGRAM



*PLUGGABLE CHIPS TO BE CHANGED.

Figure 3-2

SELF-TEST CAPABILITY

On Start-up or Init. Clear P.B. the DMP will run through a series of self-tests. The startup self-tests will initialize the DMP and clear the DMP RAM memory. The self-test will not change the state of the DMP or CPU.

As each self-test is entered, the associated free-edge LED is turned on, and if that test is not completed successfully, that LED will remain on.

The following subtests make up the DMP self-test:

TEST IN PROGRESS (ORDER OF RUNNING)	FREE-EDGE LED'S
Microprocessor Test	5
RAM Test	2
EPROM Test	1 (Leftmost)
TIMER Test	3
USART Test	4
Self-Tests Complete	6 (Green)

If one of the above test LED's remains on, indicating a failure, the remaining LED's are used to present a code identifying the failed device.

Refer to Figure 3-3, Sheet 2 for display codes.

ETCMP Self-Test
Figure 3-3
Sheet 1 of 4

LED DISPLAY CHART

LED's (a) 1 R	2 R	3 R	4 R	5 R	6 G	CHIP	LOC	PART NUMBER	REMARKS
0	0	0	0	0	0				(b)
0	0	0	0	0	1				ALL TESTS PASSED
1	0	0	0	0	0	2R3646	65W	58002646-XXX	EPROM 0 (d)
1	0	0	0	1	0	2R3646	65U	58002646-XXX	EPROM 1
1	0	0	1	0	0	2R3646	65S	58002646-XXX	EPROM 2
1	0	0	1	1	0	2R3646	52W	58002646-XXX	EPROM 3
1	0	1	0	0	0	2R3646	52U	58002646-XXX	EPROM 4
1	0	1	0	1	0	2R3646	52S	58002646-XXX	EPROM 5
1	0	1	1	0	0		39W		EPROM 6
1	0	1	1	1	0		39U		EPROM 7
1	1	0	0	0	0	2R3646	26W	58002646-XXX	EPROM 8
1	1	0	0	1	0	2R3646	26U	58002646-XXX	EPROM 9
1	1	0	1	0	0	2R3646	26S	58002646-XXX	EPROM 10
1	1	0	1	1	0	2R3646	13W	58002646-XXX	EPROM 11
1	1	1	0	0	0	2R3646	13U	58002646-XXX	EPROM 12
1	1	1	0	1	0	2R3646	13S	58002646-XXX	EPROM 13
1	1	1	1	0	0	2R3646	00W	58002646-XXX	EPROM 14
1	1	1	1	1	0		00U		EPROM 15
0	0	0	0	0	0				
0	0	0	0	1	0	2V-613	47M	58002613-001	MICROPROCESSOR
0	0	1	0	0	0	2V-574	68M	58002574-001	TIMER TEST
0	0	0	1	0	0	2V3605	42P	58002605-001	LOCAL USART
0	0	0	1	1	0	2V3605	57P	58002605-001	REMOT USART
0	1	x	x	x	0				RAM TEST (c)

(a) R=Red, G=Green, 1-On, 0=Off
(b) Dead microprocessor symptom-check microprocessor. XTAL and LED's.
(c) LED's 3, 4, 5 indicate failed bit in byte.
(d) EPROM part numbers XXX must be replaced by same TAB numbers as the one removed.

Figure 3-3
Sheet 2 of 4

REV. 1

LESSON 3 ETCMP BOARD LAYOUT

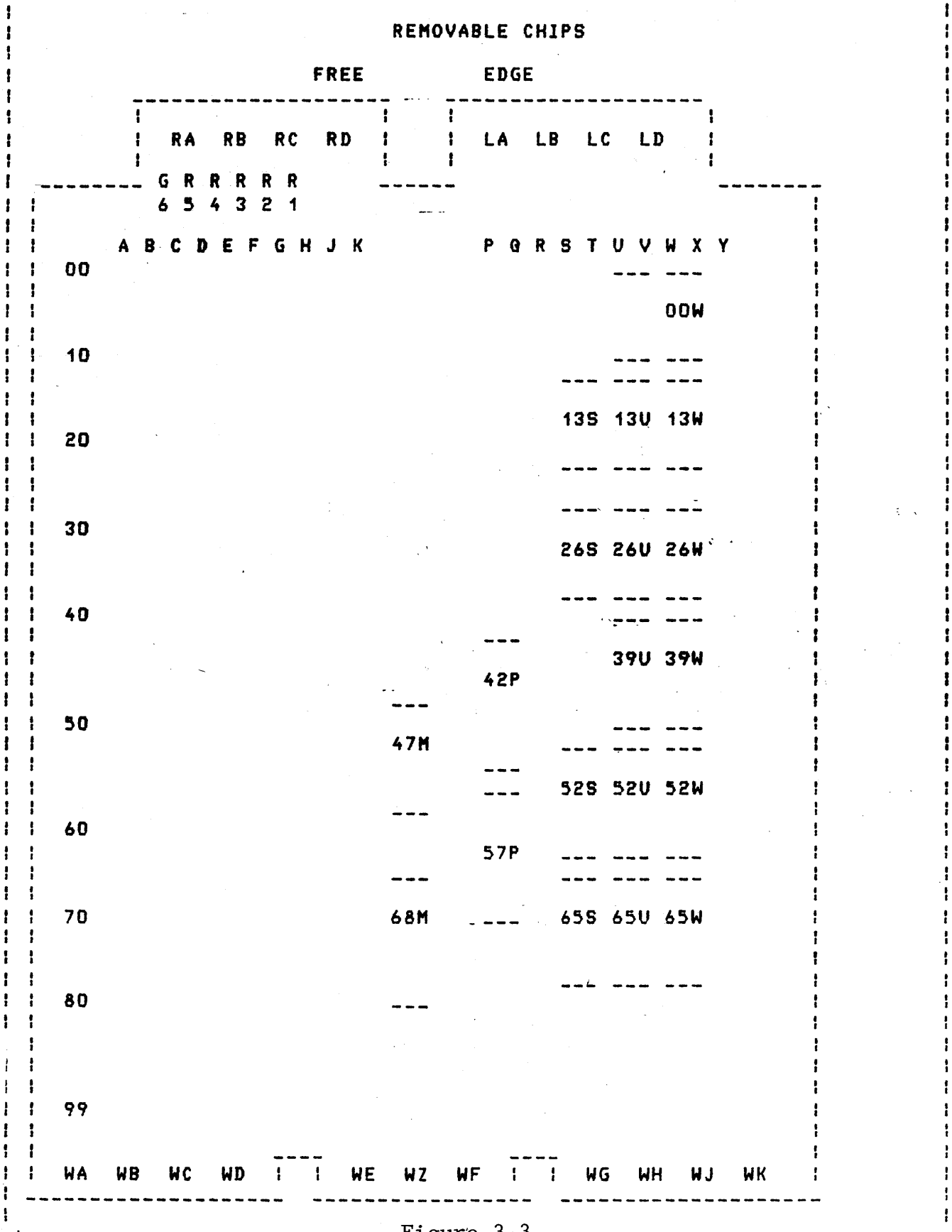


Figure 3-3
Sheet 3 of 4

ETCMP STATUS

After the self-tests are completed, the DMP will indicate ready by lighting the green LED (6). The Ready LED will remain on during operation. The remaining LED's (1-5) will now display the Central Processor status as follows:

CPU STATUS	FREE-EDGE LED'S
ADDRESS BUSY	1
DIS	2
STOP ON FAULT	3
STOP ON ADDRESS	4
UNUSED	5
MICRO READY	6

Figure 3-3
Sheet 4 of 4

To run CONJK self-test, turn Console VIP off line and then back on line.

LED DISPLAY CHART

LED's (a) 1R 2R 3R 4R 5R 6G	CHIP	LOC	PART NUMBER	REMARKS
0 0 0 0 0 0				(b)
0 0 0 0 0 1				ALL TESTS PASSED
0 0 0 0 1 0	2V-613	29P	58002613-001	MICROPROCESSOR
0 0 0 1 0 0				(c)
0 0 0 1 1 0	2R3646	20H	58002646-XXX	EPROM 0 (f)
0 0 1 0 0 0	2R3646	10F	58002646-XXX	EPROM 1
0 0 1 0 1 0	2R3646	20D	58002646-XXX	EPROM 2
0 0 1 1 0 0	2R3646	20B	58002646-XXX	EPROM 3
0 1 0 0 0 0	1A0351	19N		RAM 0
0 1 0 0 1 0	1A0351	20M		RAM 1
0 1 0 1 0 0	1A0351	20L		RAM 2
0 1 0 1 1 0	1A0351	20K		RAM 3
0 1 1 0 0 0	1A0351	30L		RAM 4
0 1 1 0 1 0	1A0351	30K		RAM 5
0 1 1 1 0 0	1A0351	40L		RAM 6
0 1 1 1 1 0	1A0351	40K		RAM 7
1 0 0 0 0 0	2V-574	35R	58002574-001	TIMER
1 0 0 0 1 0	2V3605	20R	58002605-001	USART 0 (d)
1 0 0 1 0 0	2V3605	17T	58002605-001	USART 1 (e)

Replace Rd.

(a) R=Red, G=Green, 1=On, 0=Off
(b) Dead microprocessor symptom-check microprocessor. XTAL and LED's.
(c) Microprocessor tests which use RAM could be microprocessor or RAM subsystem.
(d) Problem may be caused by timer, 2V574, or chips 08N, 25V, 08Q, 08L, 08M.
(e) Problem may be caused by timer, 2V574 or chips 08M, 00L, 08P, 08L, 08M.
(f) EPROM part numbers XXX must be replaced by same tab number as the one removed.

Figure 3-4
Sheet 1 of 2

REV. 2

LESSON 3 CONJK BOARD LAYOUT

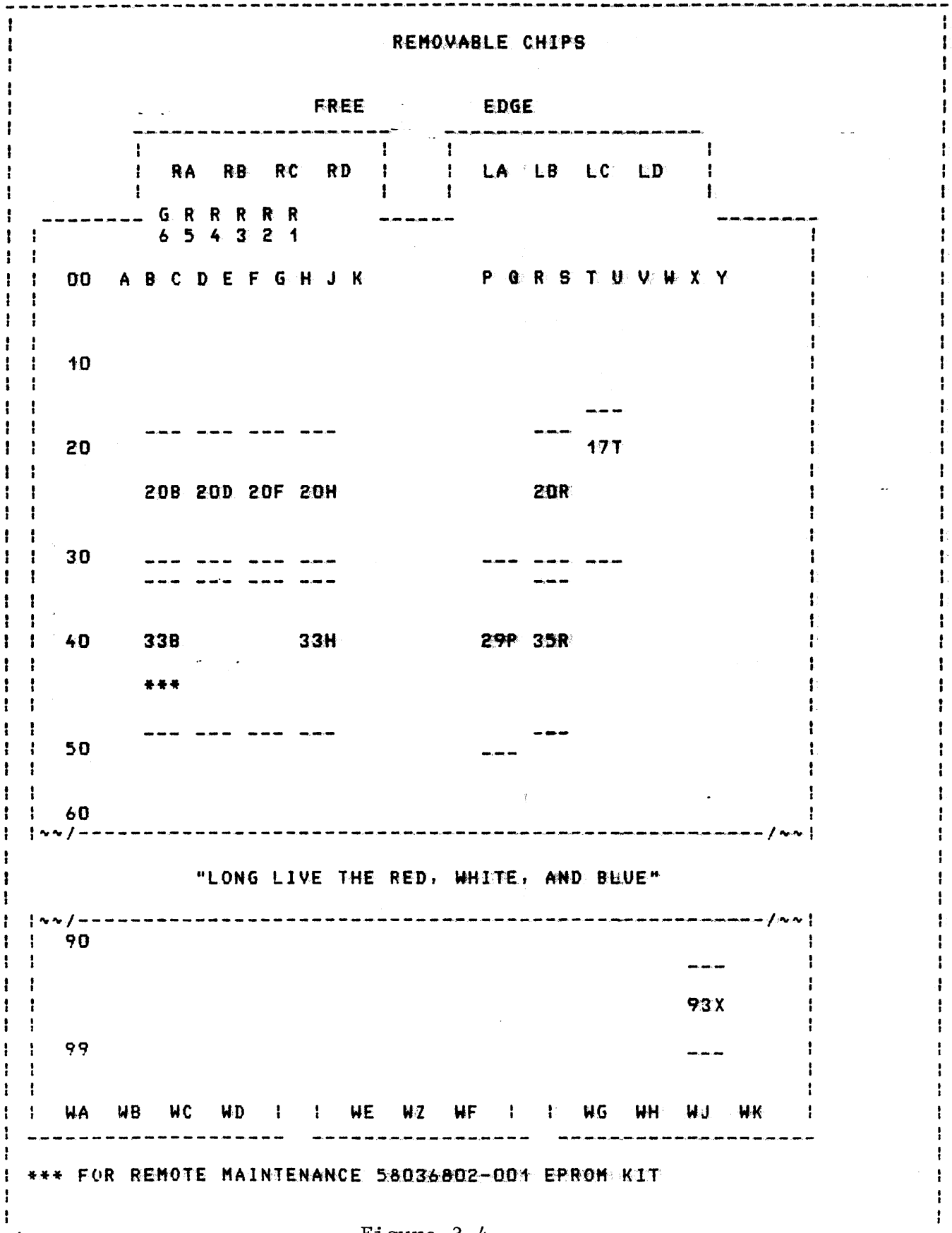
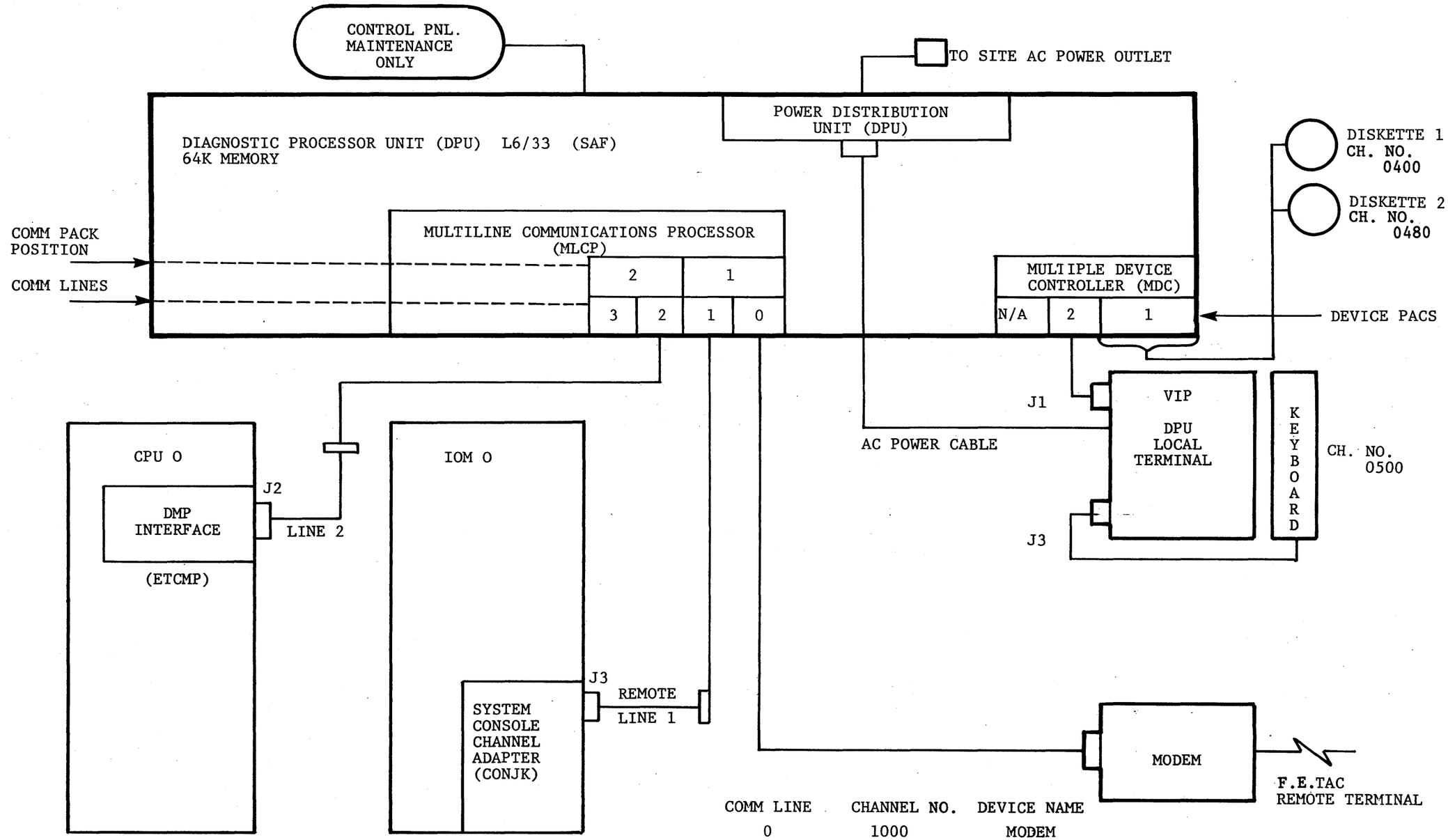


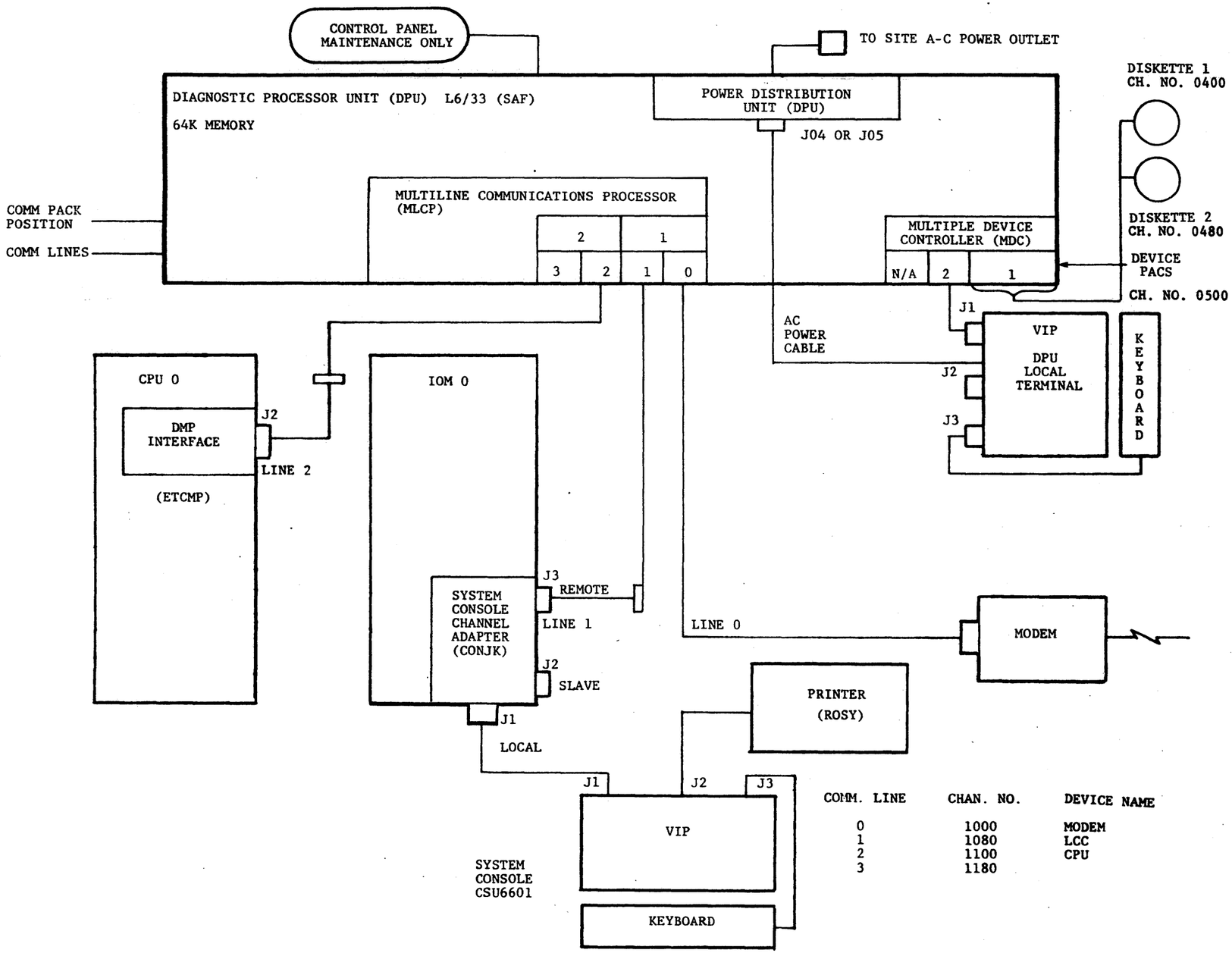
Figure 3-4
Sheet 2 of 2



COMM LINE	CHANNEL NO.	DEVICE NAME
0	1000	MODEM
1	1080	LCC
2	1100	CPU
3	1180	

Basic System
Figure 4-1

REV. 1
75/76

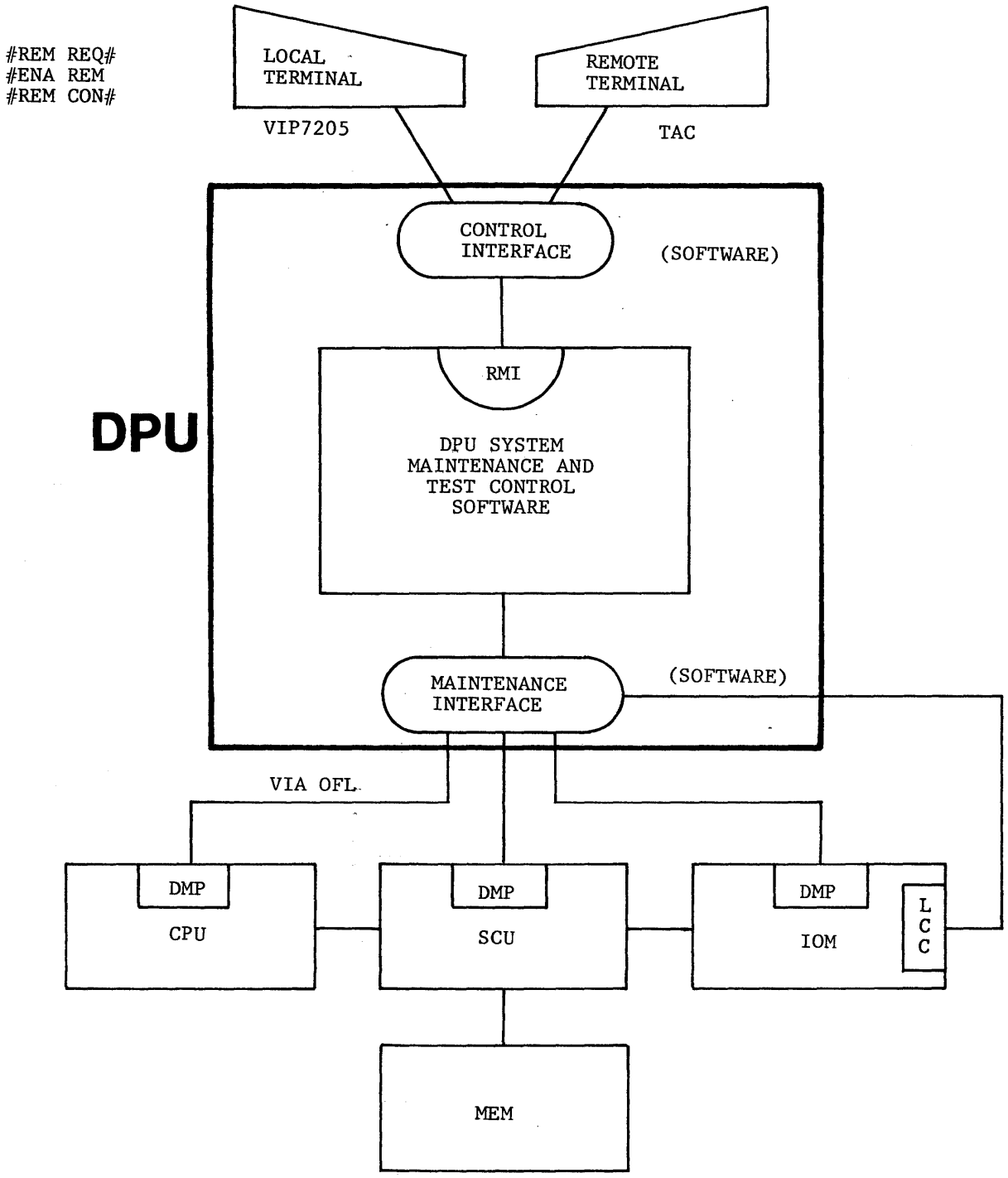


COMM. LINE	CHAN. NO.	DEVICE NAME
0	1000	MODEM
1	1080	LCC
2	1100	CPU
3	1180	

J1 - DATA SET
J2 - EXT PORT
J3 - KEYBOARD

System Console Connected

Figure 4-2
REV. 1
77/78



DPU/RMI Relation Off-Line
Figure 4-3

```
*****  DIAGNOSTIC  PROCESSOR  UNIT  (REV A.1)        *****

RMI ACTIVE

C?
```

NOTE: Normal message upon completion of bootloading the system Maintenance Test Control Software diskette (SMTCS).

RMI Active
Figure 4-4

```
LINE 1        *****  DIAGNOSTIC  PROCESSOR  UNIT  (REV A.1)        *****

          RMI ACTIVE

LINE 2    C? [#STA]

LINE 3    # REM DIS #
          # LOC ACT #
          # MAI ENA #      SEE TABLE 1 BELOW FOR MEANING
          # MON DIS #
          # CPY DIS #
```

#STA	DISPLAY RMI OPERATING STATUS TO ISSUING TERMINAL.	#REM DIS# #LOG ACT# #MAI ENA# #MON DIS# #CPY DIS#
#REM DIS#	REMOTE DISABLED	
#REM ENA#	REMOTE ENABLED	
#LOC ACT#	LOCAL KEYBOARD IS ACTIVE	
#REM ACT#	REMOTE KEYBOARD IS ACTIVE	
#MAI ENA#	MAINTENANCE MODE ENABLED	
#TEX ENA#	TEXT MODE ENABLED	
#MON DIS#	MONITOR DISABLED	
#MON ENA#	MONTIOR ENABLED	
#CPY DIS#	COPY DISABLED	
#CPY ENA#	COPY ENABLED	

TABLE 1

Maintenance Interface Status
Figure 4-5

```
LINE 1      *****  DIAGNOSTIC  PROCESSOR  UNIT  (REV A.1)      *****

    RMI ACTIVE

    C?
LINE 2        #REM REQ#
LINE 3       [#ENA REM ]  C/R
LINE 4        #REM CON#
```

TAC/Site Dialogue
Figure 4-6

OFL

THE OFF-LINE FUNCTIONS

mainframe panels.

Provides interactive manipulation of the Unit Maintenance Panel functions.

Invoked at the system command level:

NOTE: XX = DPU OUTPUT (UNDERSCORED)
□ = SPACE

C? OFL □ KEY_NAME

Key_name is the unit to be accessed:
CPU00
SCU00
IOM00
CPM00

When ready, Off-line will prompt for input:

OFL ?

Maintenance panel troubleshooting is done under VIP mode.

To ENTER the VIP mode of Off-line operation:

OFL? VIP C/R

When ready, the VIP will prompt for input:

CMD □

The "CMD" prompt desingates the VIP mode of operation.

To exit VIP mode and return to offline:

CMD TM

When ready, Off-line will prompt (as before):

OFL ?

To terminate the Off-line function, enter:

OFL ? QUIT or Q

This will return control to the system command level:

C?

Off-Line Prompts
Figure 4-7

DISPLAY COMMANDS

```
: DS      DISPLAY CPU STATUS
: CU      DISPLAY CU/OU REGISTERS
: DU      DISPLAY DECIMAL UNIT REGISTERS
: VR      DISPLAY VU REGISTERS
: VC      DISPLAY VU CONTROL REGISTERS
: SC      DISPLAY SCROLL POINT REGISTERS
: HS      DISPLAY OU,CU, AND PARTIAL HISTORY REGISTER
: HC      DISPLAY CU,DU, AND OU HISTORY REGISTER
: HV      DISPLAY VU HISTORY REGISTER
: CF      DISPLAY SWITCHES CONFIG
: MR      DISPLAY L66E MEMORY
: CR      DISPLAY CACHE DIRECTORY AND MEMORY
: AM      DISPLAY VU PTW AND ASSOC. MEMORY
: MD      DISPLAY MICRO MEMORY
```

Display Commands
Figure 4-8

```
LINE 1   C?
LINE 2   #REM REQ#
LINE 3  [#ENA REM ]- (CSD)
LINE 4   #REM CON# Sys
LINE 5   # REM ACT # TAC
          <-
          ->  RMT input/output
          -> C?
LINE 6    <- #ENA MON TAC
          <- #ENA CPY TAC
          <-
          ->
LINE 7    -> C?
          <- OFL CPU00 TAC
          ->
          -> WORKING...
          -> RD CMD FILE
          ->
LINE 8    -> OFL? System
          <- VIP
          ->
LINE 9    ->  *** DPS-8/L66 CPU MAINTENANCE PANEL * REV D.O *** System
          CMD
LINE 10   <- CF TAC
LINE 11   -> *CONFIGURATION PANEL* System
          PROCESSOR# 0 TYPE 70200   MODE GCOS DATA 000000000000 ADDR 000000000000
                        PORT     INIT              STORE
                 ASSIGN ENABLE   ENABLE  INTERLACE SIZE    MARGINS STATUS
          PORT A   0      ON       ON       OFF     256K    VU NORM RUN  CACHE 1       ON
          PORT B   0      OFF      OFF      OFF     32K     DU NORM RUN  CACHE 2       ON
          PORT C   0      OFF      OFF      OFF     32K     CU NORM RUN  CACHE FORCE OFF
          PORT D   0      OFF      OFF      OFF     32K     OU NORM RUN
          STOP ON ADDRESS                STOP ON FAULTS          MEM     RUN   FAULT BASE
          CFG SW   0 A MEM IN  0         UWS  0 SCL2 0 SCL1 0 DLF  0 SSSF 0     2200
          V-ADDR   0 WRK-STR   0         MSEG 0 MPGE 0 FTG  0 DRL  0 MME  0
          STORE    0 OPND      0         IPR  0 OVFL 0 DVCK 0 SHF  0 TRO  0
          INSTR    0 DBL PCSW  0         CNF  0 STR  0 CMD  0 PAR  0   XEC DATA    CLR
                     BLK LOADS 0         LUF  0 ONC  0 SUF  0 INHS 0

          ARB DIS SOF SOA OUS CUS DUS VUS XIP
           0   1   0   0   0   0   0   0   0

LINE 12   CMD System.
LINE 13   <- TM TAC
          ->
LINE 14   -> OFL? System
LINE 15   <- 0 TAC
          ->
          ->
          -> C?
LINE 16   <- #DIS REM TAC
          # REM DIS # System
          C?
```

(TAC/Site Printout)
Figure 4-9

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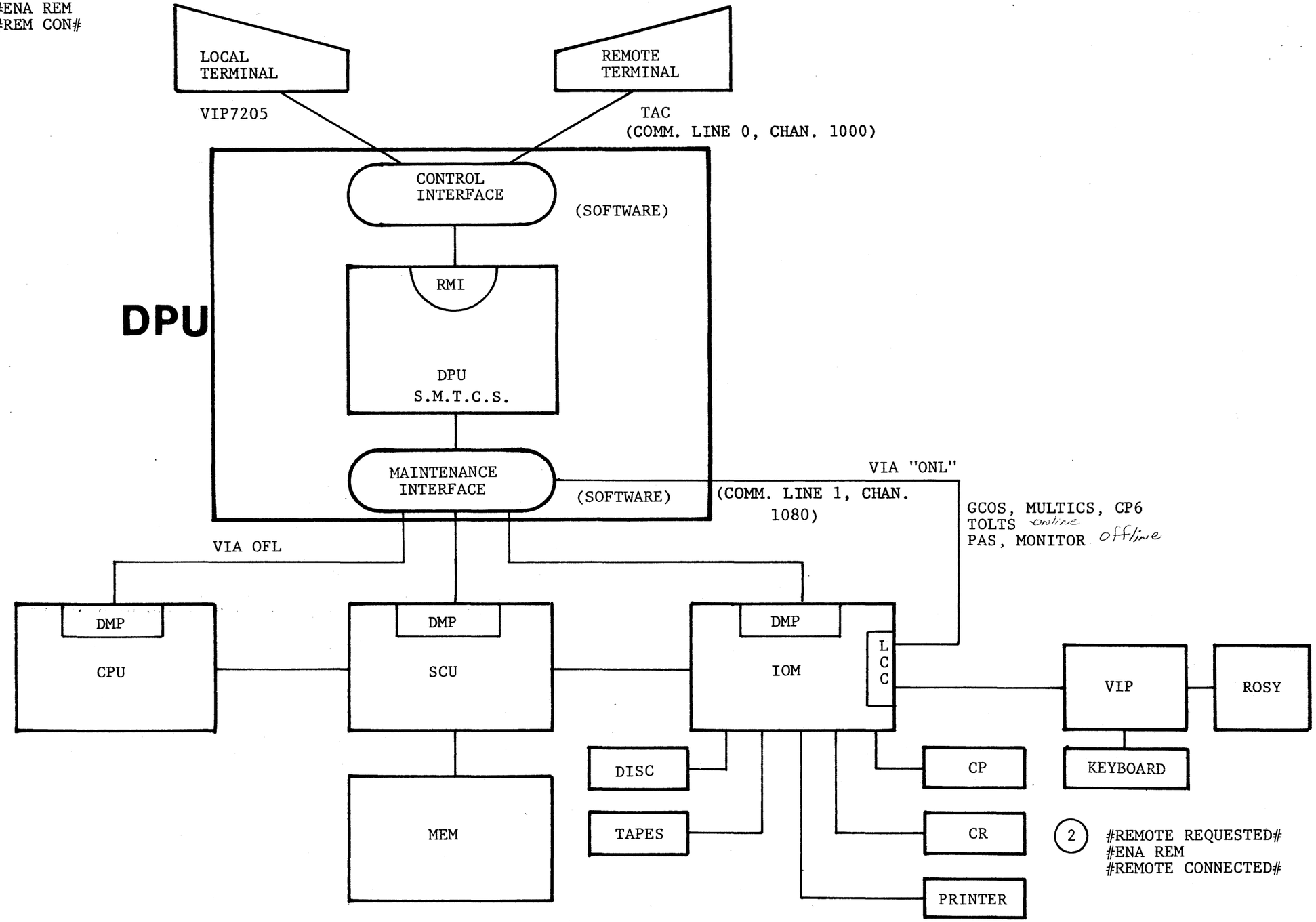
(1) #REM REQ#
#ENA REM
#REM CON#



DPU/RMI Relation Online ;

Figure 4-10
REV. 1
87/88

```
        *OPTIONS?
LINE 1  # REMOTE REQUEST # TAC
LINE 2 [# ENA REM ] System console
LINE 3  # REMOTE CONNECTED # System
```

TAC/LCC Dialogue
Figure 4-11

```
LINE 1.          *****  DIAGNOSTIC  PROCESSOR  UNIT  (REV A.1)        *****

          RMI ACTIVE

          C? [?]<------ Your Action (C/R)

 LINE 2.    SYS CMDS  (U = UNIT KEY_NAME REQUIRED)

                OFL  U
                ONL  U
                CLST          See definition below.
                CBLD
                IDLE
```

Command List as a result of "?" with "C" prompt.

OFL UNITXX = Invokes Off-line function on Unit XX.

UNIT = CPUXX
SCUXX
IOMXX

ONL UNITXX = LCCXX (only) Invokes On-Line function through LCCXX.

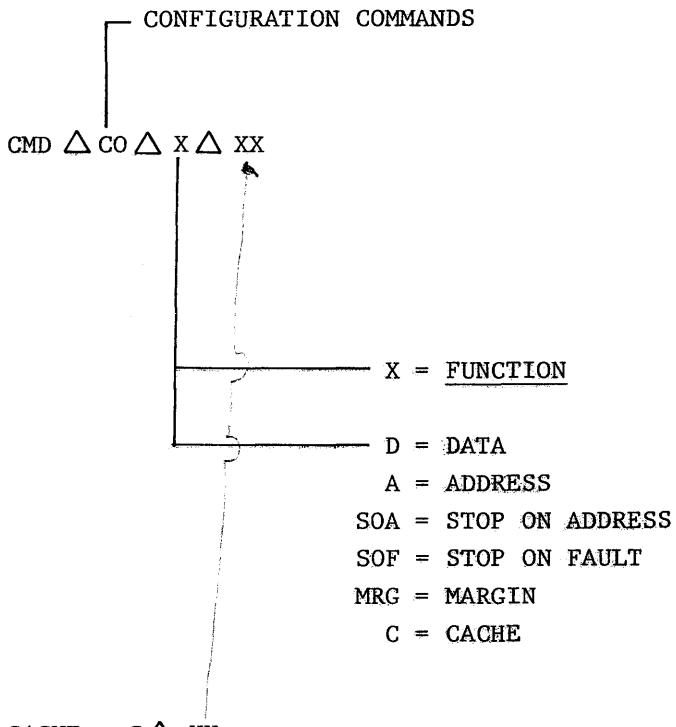
CLST
Used to get DPU Configuration.
CBLD

IDLE = Used for testing DMP's

System Commands
Figure 5-1

```
      *****   DIAGNOSTIC  PROCESSOR  UNIT  (REV A.1)       *****

LINE 1.  RMI ACTIVE

LINE 2.  C? [CLST ]
         WORKING...

            SPD          CHANNEL
          DEVICE NAME    NUMBER
         ************************
         *  DSK00       *  0400  *
         *  LOCAL       *  0500  *
         *  DSK01       *  0480  *
         *  REMOT       *  1000  *
         *  LCC00       *  1080  *
         *  CPU00       *  1100  *
         *  SCU00       *  1180  *
         ************************

LINE 3.  C? [OFL CPU00 ]
         WORKING...
         RD CMD FILE

LINE 4.  OFL? [VIP ]↵
          *** DPS-8/L66 CPU MAINTENANCE PANEL * REV D.0 ***
LINE 5.  ØMD [CF] ↵
         *CONFIGURATION PANEL*
         PROCESSOR# 0 TYPE 70200   MODE GCOS DATA 000000710000 ADDR 000000000000
                              PORT      INIT                STORE
                    ASSIGN    ENABLE    ENABLE   INTERLACE  SIZE     MARGINS STATUS
         PORT A       0        ON        ON        OFF       256K     VU NORM RUN  CACHE 1       ON
         PORT B       0        OFF       OFF       OFF       32K      DU NORM RUN  CACHE 2       ON
         PORT C       0        OFF       OFF       OFF       32K      CU NORM RUN  CACHE FORCE OFF
         PORT D       0        OFF       OFF       OFF       32K      OU NORM RUN
         STOP ON ADDRESS                    STOP ON FAULTS            MEM      RUN   FAULT BASE
         CFG SW    0 A MEM IN  0            UWS  0 SCL2 0 SCL1 0 DLF  0 SSSF 0      2200
         V-ADDR    0 WRK-STR   0            MSEG 0 MPGE 0 FTG  0 DRL  0 MME  0
         STORE     0 OPND      0            IPR  0 OVFL 0 DVCK 0 SHF  0 TRO  0
         INSTR     0 DBL PCSW  0            CNF  0 STR  0 CMD  0 PAR  0   XEC DATA     CLR
                     BLK LOADS 0            LUF  0 ONC  0 SUF  0 INHS 0

LINE 6.  ARB DIS SOF SOA OUS CUS DUS VUS XIP
          0   1   0   0   0   0   0   0   0

LINE 7.  ØMD [TM ]
LINE 8.  OFL? [Q ]

LINE 9.  C?
```

CPU Configuration
Figure 5-2



CACHE C△ XX

0 0 = Enable Cache 1 and 2 both ON.

0 1 = Cache 1 Off.
Cache 2 On.

0 2 = Cache 1 On.
Cache 2 Off.

0 3 = Disable Cache (1 and 2 both Off.)

1 0 = Cache Force On. (Enables Mode Register.)

0 X = Cache Force on. (Selective 1 or 2)

Configuration Commands (CACHE)
Figure 5-3

cache disable

```
@MD[ CO C 03 ]
@MD [CF ]
*CONFIGURATION PANEL*
PROCESSOR# 0 TYPE 70200   MODE GCOS DATA 000000000000 ADDR 000000000000
                  PORT      INIT                  STORE
        ASSIGN  ENABLE    ENABLE  INTERLACE  SIZE     MARGINS STATUS
PORT A    0       ON        ON       OFF      256K     VU NORM RUN  CACHE 1      OFF
PORT B    0       OFF       OFF      OFF      32K      DU NORM RUN  CACHE 2      OFF
PORT C    0       OFF       OFF      OFF      32K      CU NORM RUN  CACHE FORCE OFF
PORT D    0       OFF       OFF      OFF      32K      OU NORM RUN
STOP ON ADDRESS                 STOP ON FAULTS         MEM      RUN   FAULT BASE
CFG SW    0 A MEM IN  0         UWS  0 SCL2 0 SCL1 0 DLF  0 SSSF 0      2200
V-ADDR    0 WRK-STR   0         MSEG 0 MPGE 0 FTG  0 DRL  0 MME  0
STORE     0 OPND      0         IPR  0 OVFL 0 DVCK 0 SHF  0 TRO  0
INSTR     0 DBL PCSW  0         CNF  0 STR  0 CMD  0 PAR  0   XEC DATA    CLR
            BLK LOADS 0         LUF  0 ONC  0 SUF  0 INHS 0

ARB DIS SOF SOA OUS CUS DUS VUS XIP
 0   1   0   0   0   0   0   0   0
```

Cache Disabled
Figure 5-4

OFL?[VIP]

CMD

DISPLAY COMMANDS

```
: DS      DISPLAY CPU STATUS.
: CU      DISPLAY CU/OU REGISTERS
: DU      DISPLAY DECIMAL UNIT REGISTERS
: VR      DISPLAY VU REGISTERS
: VC      DISPLAY VU CONTROL REGISTERS
: SC      DISPLAY SCROLL POINT REGISTERS
: HS      DISPLAY OU, CU, AND PARTIAL HISTORY REGISTER
: HC      DISPLAY CU, DU, AND OU HISTORY REGISTER
: HV      DISPLAY VU HISTORY REGISTER
: CF      DISPLAY SWITCHES CONFIG
: MR      DISPLAY L66E MEMORY
: CR      DISPLAY CACHE DIRECTORY AND MEMORY
: AM      DISPLAY VU PTW AND ASSOC MEMORY
: MD      DISPLAY MICRO MEMORY
```

VIP Mode Display Commands
Figure 5-5

Display CPU Status

```
ZMD[DS]

ARB DIS SOF SOA OUS CUS DUS VUS XIP
 0   1   0   0   0   0   0   0   0
```

ARB = ADDRESS REGISTER BUSY (PORT CYCLE OUTSTANDING)

DIS = DELAY UNTIL INTERRUPT

SOF = STOP ON FAULT

SOA = STOP ON ADDRESS

OUS = OPERATION UNIT STEP

CUS = CONTROL UNIT STEP

DUS = DECIMAL UNIT STEP

VUS = VIRTUAL UNIT STEP

XIP = INTERRUPT PRESENT

CPU Status Display
Figure 5-6

```
C? [OFL CPU00]
WORKING...
RD CMD FILE

OFL?[VIP]
 *** DPS-8/L66 CPU MAINTENANCE PANEL * REV D.O ***
@MD[DS]

ARB DIS SOF SOA OUS CUS DUS VUS XIP
 0   1   0   0   0   0   0   0   0

@MD[CU]
   IC&I 000001 000200 DATA 000000710000 ADR 0000 00000000 FLTSW 00000000
X0 000000 AR0 00006631 EXP 000 ACC 000000000000  Q 000000000000 RT 000000
X1 000000 AR1 00004250 PL1 00000000 000000000000 RH 000000000000 000000000000
X2 000000 AR2 00004210 PL2 00000000 000000000000 RN 037000000000 000000000000
X3 000000 AR3 00000004 PL3 00000000 000000000000 RM 000000000000 000000000000
X4 000000 AR4 00210223 MBA  00000 BAR 00 100776                   TIMER 125636332
X5 000000 AR5 00000200 MBB  00000                  MODE000000000041 000000000003
X6 000000 AR6 02520260 RG1 000006 RMA 00000001     ZDO 000000000000 000000000000
X7 000000 AR7 03770140 RG2 000006 ZFR-000001-0--00
ADDER 000000000000 000000000000 IWRY 000000000000  FLT 000000000000 000000000000

@MD
```

	BITS 0-17	BITS 18-35 Indicator Reg.
IC&I	0 0 0 0 0 1	0 0 0 2 0 0

CU Register Printout
Figure 5-7

INDICATOR REGISTER

BIT POSITION	INDICATOR	INDICATOR INSTRUCTIONS
18	Zero	1. Load Indicators (LDI)
19	Negative	
20	Carry	2. Store Indicators (STI)
21	Overflow	
22	Exponent Overflow	3. Store Instruction Counter Plus 1 and Indicators (STC1)
23	Exponent Underflow	
24	Overflow Mask	
25	Tally Runout	
26	Parity Error	4. Return (RET)
27	Parity Mask	
28	Master Mode	
29	Truncation (EIS only)	
30	Multiword Instr. Interpt. (EIS only)	
31	0	
32	Hex Indicator	
33	Must be Zero	
34		
35		

Indicator Register Bit Decode
Figure 5-8

MODE REGISTER

ETCCG

0-15 UNUSED

16 ENABLE FOR BITS 20 25

17-19 UNUSED

ENABLED BY BIT 16

20 Set Store Incorrect Data Parity. The CU shall cause incorrect data parity to be sent to the store for the next Store instruction and then reset Bit 20.

21 Set Store Incorrect ZAC Parity. The CU shall cause incorrect ZAC parity to be generated on each memory cycle until the $DA of the next Store instruction. At this time Bit 21 will be reset.

22,23 Set Timing Margin accordingly:

	22	23
SLOW	0	1
FAST	1	1
NORMAL	X	0

24,25 Set Voltage (+5) Margins accordingly:

	24	25
LOW	0	1
HIGH	1	0
NORMAL	OTHERWISE	

26,27 UNUSED

28 Stop HR Strobe on HR Counter Overflow. (Setting Bit 28 shall cause the HR counter to be reset to zero.)

29 Strobe the HR on Transfer Mode. If Bits 29, 30, and 35 are = to 1, the HR will be strobed on all Tranfers made. Bits 36-53 of the OU/DU Register will indicate the "From" location and Bits 36-59 of the CU Register will contain the real address of the final "To" location.

30 Enable History Registers. If Bit 30 = 1, the HR's may be strobed. If Bit 30 = 0 or Bit 35 = 0, they will be locked out. This bit will be reset by either an LCPR with the bit corresponding to 30 = 0, or by an Op Not Complete fault. It may be reset by other faults (See Bit 31). After being reset, it must be enabled by another LCPR instruction before the History Registers may be strobed again.

31 Additional Resetting of Bit 30. If Bit 31 = 1, the following faults will also reset Bit 30:

- Lock Up
- Parity
- Command
- Store
- Illegal Procedure
- Shutdown

Mode Register Decode (Bits 0-35)
Figure 5-9
Sheet 1 of 2

ETCCG	32		Margin Control. Bit 32 shall be used to inform the Software when it can control margins. A One shall indicate that software has control. When the LOCAL/REMOTE switch on the power supply is in REMOTE and Bit 35 = 1, Bit 32 shall be set to a one by occurrence of the following conditions: the NORMAL/TEST switch is in the TEST position, the Memory and CU overlap Inhibit switches are OFF, the Timing Margins for the OU, CU, DU and VU are NORMAL, and the Forced Data and ZAC Parity are OFF.
	33		Hexadecimal Exponent Floating Point Arithmetic Mode can be set. When this bit is set, the Hex Mode will become effective when the Indicator Register Bit 32 is set to a ONE.
	34		UNUSED
	35		Use Mode Register. Unless Bit 35 = 1, all other bits in the Mode Register will be ignored and the History Register will be locked.
ETCCC	36-48		13 MOST SIGNIFICANT ADDRESS BITS (ON GCOS III, E_0 - E_5, A_0 - A_6).
	49-50		Unassigned
	51	CACHE	DIRECTORY PARITY BIT
	52	CACHE	DIRECTORY LEVEL FULL/EMPTY
	53		Unassigned
	54	CACHE	CSH1 ENABLED
ETCCG	55	CACHE	CSH2 ENABLED
	56		
	57	CACHE	INSTRUCTIONS ENABLED TO CACHE
	58		Unassigned
	59	CACHE	CACHE TO REGISTER ENABLED to Mode Register for display.
	60		Unassigned
ETCCC	61	CACHE	LEVEL - LEAST RECENTLY USED - LEVEL 1/2
	62	CACHE	LEVEL - LEAST RECENTLY USED - LEVEL 1/3
	63	CACHE	LEVEL - LEAST RECENTLY USED - LEVEL 1/4
	64	CACHE	LEVEL - LEAST RECENTLY USED - LEVEL 2/3
	65	CACHE	LEVEL - LEAST RECENTLY USED - LEVEL 2/4
	66	CACHE	LEVEL - LEAST RECENTLY USED - LEVEL 3/4
	67-69		Unassigned
ETCCG	70-71		LOCK UP FAULT TIMER REGISTER 00 = 2 MIL. S. 01 = 4 " 10 = 8 " 11 = 16 " (32 = MASTER MODE)

Mode Register Decode (Bits 36-71)
Figure 5-9
Sheet 2 of 2

MISC: COMMANDS

: CD		Cache test, checks the main and duplicate directories for a mismatch and then checks directory parity.	
: DS		Display contents of CPU Status Register	
: CW	AAAAAAAAAAAA	Write Cache Entry Where AAAA = Address	(C/R) - Skips to next entry without change to current entry.
: CR	AAAAAAAAAAAA	Read Cache Entry, all four levels are displayed and any parity errors reported.	(C/R) - Displays next index block.
: MR	AAAAAAAAAAAA	Read Main Memory starting at the input address and report parity errors. (Default Address is Zero) (DEL will return to CMD level.) 48	
: MRS	AAAAAAAAAAAA	Read a single memory location continuously.	
: WM	AAAAAAAAAAAA	Write Main Memory.	
:WMS	AAAAAAAAAAAA	DDDDDDDDDDDD Write a single memory location continuously Where A = Address D = Data.	

VIP Mode Miscellaneous Commands
Figure 5-10

for memory

```
LINE 1. ──► C? [ OFL CPU00 ]
            WORKING...
            RD CMD FILE

LINE 2. ──► OFL? [VIP ]
             *** DPS-8/L66 CPU MAINTENANCE PANEL * REV D.0 ***
LINE 3. ──► CMD [MR 10000]  T&D Tape will not Boot  CPU stop in DIS
            000000010000  474400060020 256723000044
            000000010002  000000055252 202020202020
            000000010004  202020202020 000000010410
            000000010006  000000000000 202567252364
            000000010010  633165252047 514627512144
            000000010012  000000000000 000000000000
            000000010014  000000000000 000000000000
            000000010016  000000000000 000000000000
            000000010020  000000000000 000000000000
            000000010022  000000000000 000501061000
            000000010024  475146472551 637020462620
            000000010026  304645257066 254343203145
            000000010030  264651442163 314645206270
            000000010032  626325446220 314523337320
            000000010034  264651203046 452570662543
            000000010036  432025444743 467025256220
            000000010040  464543702020 770154472162
            000000010042  200600000020 256725236463
            000000010044  316525205125 653320171717
            000000010046  442020202020 171717171717
            000000010050  171717171717 000502001000
            000000010052  000006710004 000000000000
            000000010054  000000000000 456221522333
LINE 4. ──► 000000010056  012010005200 075201062020
LINE 5. ──► OFL? Q

            C?
                                                  Hit DEL and CR.

LINE 6. ──► CMD[TM]
            OFL?[Q]
            C?
```

Memory Read Listing
Figure 5-11

T&D TAPE CONTENTS (As of Revision A.5)

PRIMITIVE FUNCTION (BASIC CHECKS OF PROCESSOR)	PAS EXECUTIVE	IRT/FW DRIVER	I/O MONITOR EXECUTIVE	DUMP MPC	UPDATE F/W TAPE	UPDATE T&D TAPE	CHECK IOM (SEE NOTES BELOW)	PERIPHERAL TESTS	END OF FILE	PROCESSOR AND STORE TESTS	END OF FILE
PM01A	060	06D	080	08D	08F	08M	OM1 thru ON2	102 thru 5ZZ	EOF	700 thru 980	EOF
PM01Z											
PM02A											
PM03A											
PM04A											
PM05A											
PM06A											

PRIMITIVE FUNCTION ERROR IDENTIFICATION

If an error occurs on one of the PFT's, the Processor will stop in a DIS. To determine the cause of an error it is necessary to determine the record in which the error occurred. The record I.D. word will be in Location 010000_8. Location 010000_8 will contain the following octal format:

4 7 4 4 0 0 X X X X 2 0 (T&D REV. A.2)
P M 0 ø

0 1 2 1 = 1A
0 1 7 1 = 1Z
0 2 2 1 = 2A
0 3 2 1 = 3A
0 4 2 1 = 4A
0 5 2 1 = 5A

To determine the function in error, use the following procedure:

1. Check Tape Controller Status = Ready.
2. Determine record number (Read Location 010000_8)
3. Get Instruction Word count from Processor I.C. Counter.
4. Look up value of IC in appropriate listing. Comments in listing will indicate the function that failed. DIS (616_8).

Primitive Function Errors
Figure 5-12

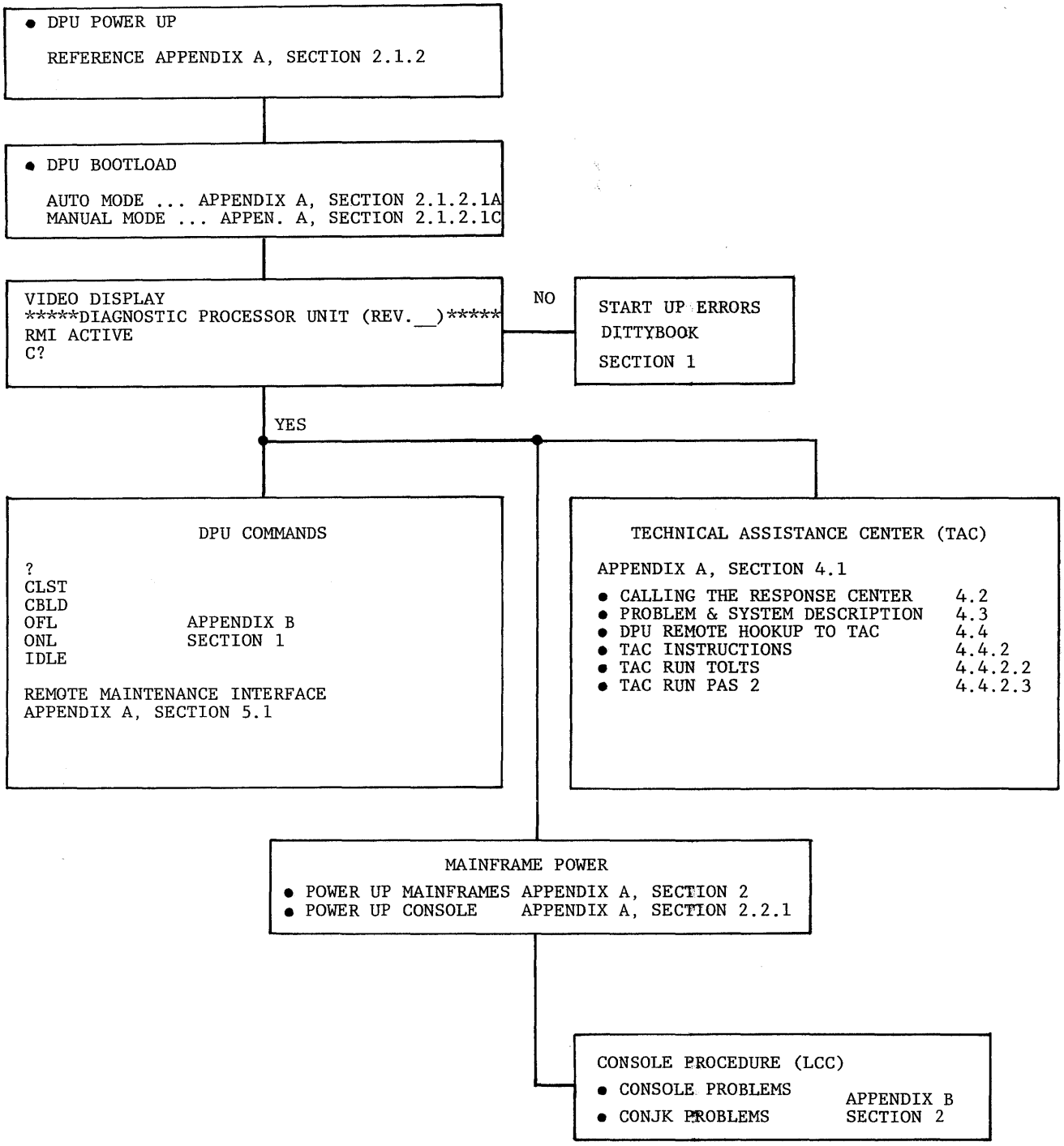
FAULT REGISTER

BIT POSITION			FAULT	
0	ILLEGAL OP CODE	ETCCG	IPR	FILL-OPCODE-CH
1	ILLEGAL ADDRESS OR MODIFIER	ETCCG	IPR	FILLADRMOD-CH
2	ILLEGAL SLAVE PROCEDURE	ETCCG	CMD	FILL-SLVPRO-CH
3	ALL OTHER PROCEDURES	ETCCG	IPR	FMISC-PROC-CH+FIPR-ED-CF
4	NONEXISTANT ADDRESS	ETCCG	STR	FNONEXSTMEM-CD
5	OUT OF BOUNDS	ETCCG	STR	FOOB-CP
6	DU MISC	ETCCG	IPR	FDUMSCFLT-CP
7	PROCESSOR PARITY (UPPER)	ETCCG	PAR	FPROC-PARU-CP
8	PROCESSOR PARITY (LOWER)	ETCCG	PAR	FPROC-PARL-CP
9	CONNECT PORT A	ETCCG	CON	FCON-A-CP
10	CONNECT PORT B	ETCCG	CON	FCON-B-CP
11	CONNECT PORT C	ETCCG	CON	FCON-C-CP
12	CONNECT PORT D	ETCCG	CON	FCON-D-CP
13*	SC TO PROCESSOR CONTROL SEQUENCE ERROR #1	ETCCG		FDA-ERROR-CM
14	NOT USED	ETCCG		NOT USED
15	NOT USED	ETCCG		NOT USED
16	$1A_0$	ETCCG		F1AR0-CP
17	$1A_1$ PORT A	ETCCG		F1AR1-CP
18	$1A_2$ PORT A	ETCCG		F1AR2-CP FRDIR-PORTA
19	$1A_3$ PORT A	ETCCG		F1AR3-CP
20	$1A_0$ PORT B	ETCCG		F1AR0-CP
21	$1A_1$ PORT B	ETCCG		F1AR1-CP
22	$1A_2$ PORT B	ETCCG		F1AR2-CP FRDIR-PORTB
23	$1A_3$ PORT B	ETCCG		F1AR3-CP
24	$1A_0$ PORT C	ETCCG		F1AR0-CP
25	$1A_1$ PORT C	ETCCG		F1AR1-CP
26	$1A_2$ PORT C	ETCCG		F1AR2-CP FDIR-PORTC
27	$1A_3$ PORT C	ETCCG		F1AR3-CP
28	$1A_0$ PORT D	ETCCG		F1AR0-CP
29	$1A_1$ PORT D	ETCCG		F1AR1-CP
30	$1A_2$ PORT D	ETCCG		F1AR2-CP FRDIR-PORTD
31	$1A_3$ PORT D	ETCCG		F1AR3-CP
32***	DIRECTORY PARITY ERROR	ETCCG		$PARERR-CC
33	CACHE STORE PARITY ERROR	ETCCG		$CSH-PERR-CP
34	ILLEGAL ACTION ON STORE	ETCCG		$STORE-IA-CP
35	PARITY ERROR ON BLOCK LOAD	ETCCG		$BLK-PERR-CP
36 **	BUFFER OVERFLOW - PORT A	ETCCZ		BUF-A-OVF-CZ
37 **	BUFFER OVERFLOW - PORT B	ETCCZ		BUF-B-OVF-CZ
38 **	BUFFER OVERFLOW - PORT C	ETCCZ		BUF-C-OVF-CZ
39 **	BUFFER OVERFLOW - PORT D	ETCCZ		BUF-D-OVF-CZ
40 **	PRIMARY DIRECTORY BUFFER OVERFLOW	ETCCZ		BUF-O-OVF-CZ
41 **	WRITE NOTIFY PARITY ERROR ON ANY PORT	ETCCZ		FPAR-ERROR-CZ
42 **	DUPLICATE DIRECTORY - LEVEL 0 PARITY ERROR	ETCCZ		LV-0-PAR-CZ
43 **	DUPLICATE DIRECTORY - LEVEL 1 PARITY ERROR	ETCCZ		LV-1-PAR-CZ
44 **	DUPLICATE DIRECTORY - LEVEL 2 PARITY ERROR	ETCCZ		LV-2-PAR-CZ
45 **	DUPLICATE DIRECTORY - LEVEL 3 PARITY ERROR	ETCCZ		LV-3-PAR-CZ
46 **	DUPLICATE DRIECTORY MULTIPLE MATCH ERROR	ETCCZ		FMATCH-ERROR-CZ
47	ZEROS			

1A Code (Octal)	Illegal Action	
03	Fault On Condition	CMD
14	ZAC Parity, Proc. to S.C.	PAR
12	Illegal Command	CMD
10	Not Control	CMD
02	Non-existent Address	STR
15	Data Parity, Proc. to S.C.	PAR
16	ZAC Parity, S.C. to Store	STR
17	Data Parity, S.C. to Store	PAR
07	Data Parity Store to S.C. and in Store	PAR
06	Data Parity in Store	PAR
05	Data Parity, Store to S.C.	PAR
11	Port Not Enabled	PAR
01	Not Assigned	CMD
04	Not Assigned	CMD
00	None	NONE

*** *No Fault, No Flush, and Cache Mis-Occurs*
** *No Fault and Cache Flush*
* *Does not Cause a Fault*

Fault Register Bit Decode
Figure 5-13



Job Performance Aid
Figure 5-14

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VOLUME 1F

Binder, Blue, A-Size 1½-inch	58009844-009
Separator Tabs, A-Size	58009853-013
Window, Vol. 1F	58009853-030

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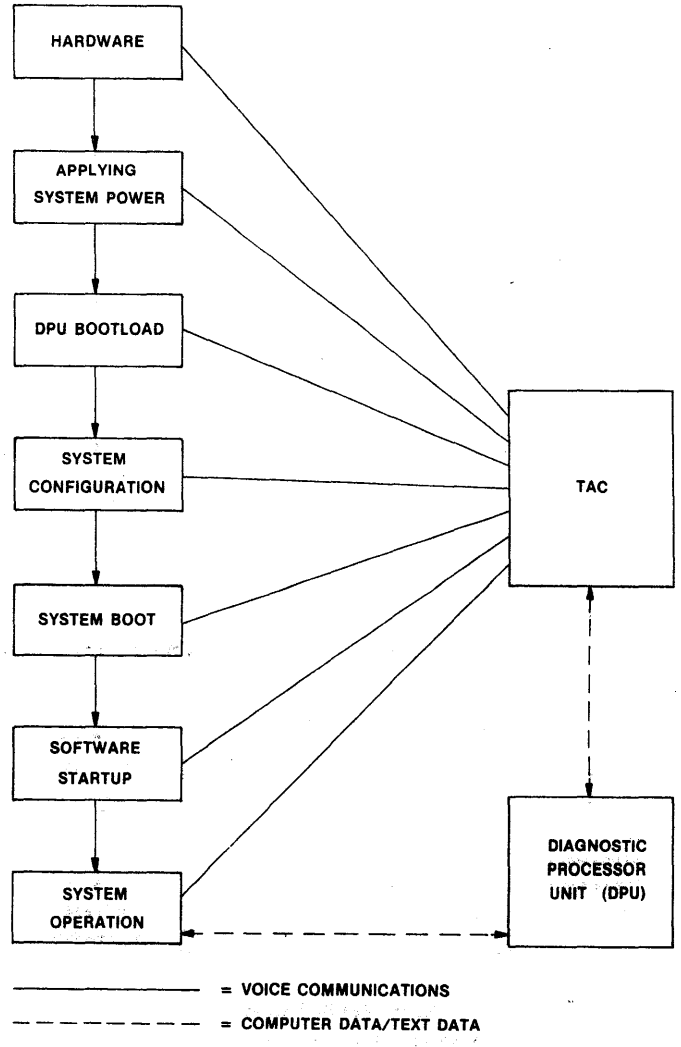
INTRODUCTION

This manual provides information which is intended for use by you for familiarization with the DPS 8 System, Models 52/70, and associated hardware, firmware, and software.

Instructions and illustrations provide the proper sequence and methods for power-up and configuring the entire system in accordance with your requirements.

Distributed Maintenance Service (DMS) concepts are defined for you. Maintenance objectives and procedures, including calling the Response Center and remote hookup to the Technical Assistance Center (TAC), are presented for test and diagnosis of your system in the event of a suspected or actual malfunction.

The adjoining diagram represents the sequence of events that occur prior to, and during system operation. Initially, the system hardware is defined. Subsequent sections contain equipment power and configurations, procedures for interfacing with TAC, and methods of monitoring, testing and diagnosing suspected or actual equipment failures.



SECTION 1 HARDWARE *

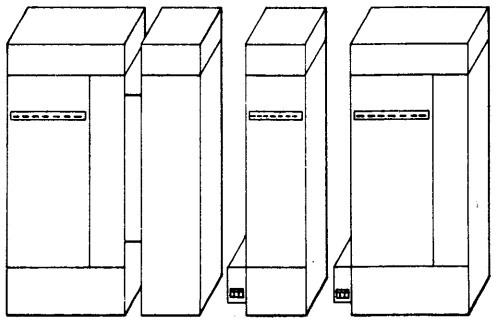
1.1 DPS 8 MODELS 52/70 SYSTEM

Distributed Processing System 8 (DPS 8) is Honeywell's family of large scale, general purpose information systems, one of the most capable and versatile available today. A basic DPS 8 Central System configuration includes a Central Processor Unit (CPU), an Input/Output Multiplexer (IOM), and a single Central Memory Unit (CMU) that contains one System Control Unit and 264K words of Main Memory.

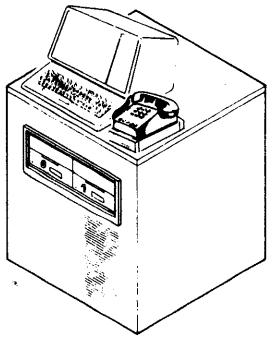
The DPS 8 Model 52 is comprised of a Central System, one System Console and an optional Front-End Network Processor. In addition, a second System Console and Front-End Network Processor may be used. Main Memory may be expanded to a maximum of one megaword.

The DPS 8 Model 70 is comprised of the same named units as the Model 52, but with a much larger degree of expansion capability. The Model 70 can accomodate up to four Central Processor Units, four Input/Output Multiplexers and four Central Memory Units comprised of a total of four System Control Units and up to 4 megawords (GCOS VIII) of Main Memory. In addition, up to eight Front-End Network Processors and four System Consoles may be added.

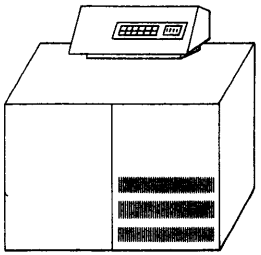
*Refers to only that equipment required to be operated in accordance with procedures contained within this manual.



CENTRAL SYSTEM



DPU SUBSYSTEM



MICROPROGRAMMED PERIPHERAL CONTROLLER

SYSTEM CONSOLE

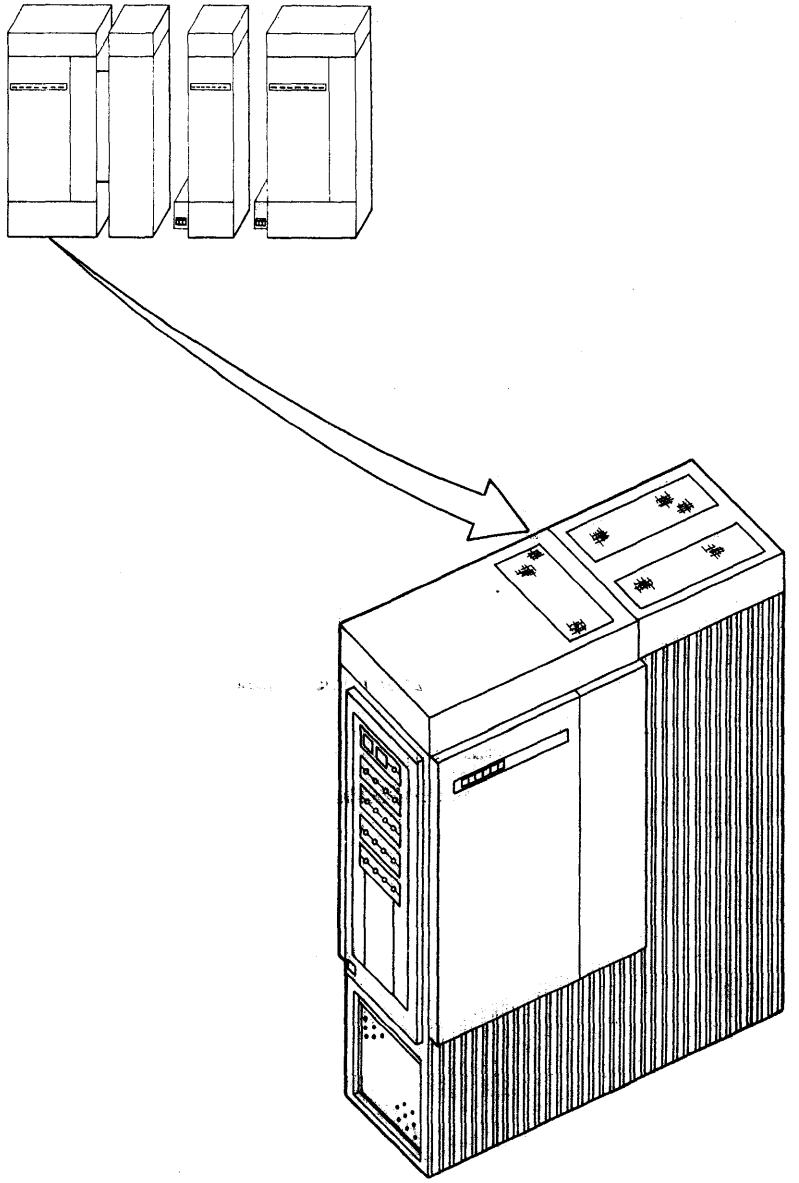
A-3

1.2 CENTRAL SYSTEM

1.2.1 CENTRAL PROCESSOR UNIT (CPU)

The Central Processor is the primary unit to execute all information processing instructions. It performs many system control functions independently, overlapping most operations for highly efficient instruction execution.

The Central Processor operates in three modes: master mode, priviledged master modes, and slave mode. Master and priviledged master modes are reserved for GCOS VIII. They allow unrestricted access to all memory, permit initiation of data transfers operations through the IOM's and permit the setting of control registers. Slave mode is used by GCOS VIII when appropriate, and for the execution of all user programs. Programs executing in slave mode cannot perform certain control operations. This tri-mode operation allows for effective operating control and security in a multiprogramming environment.

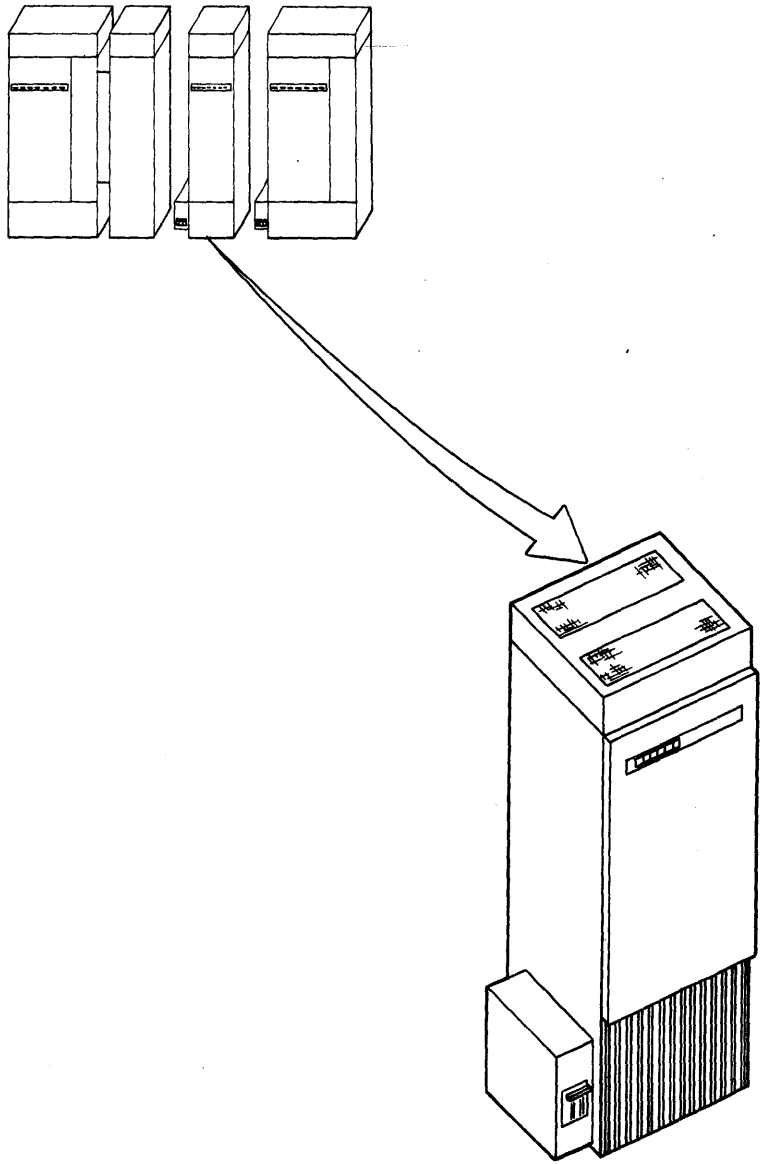


1.2.2 CENTRAL MEMORY UNIT (CMU)

The Central Memory Unit contains both the System Control Unit and Main Memory Unit.

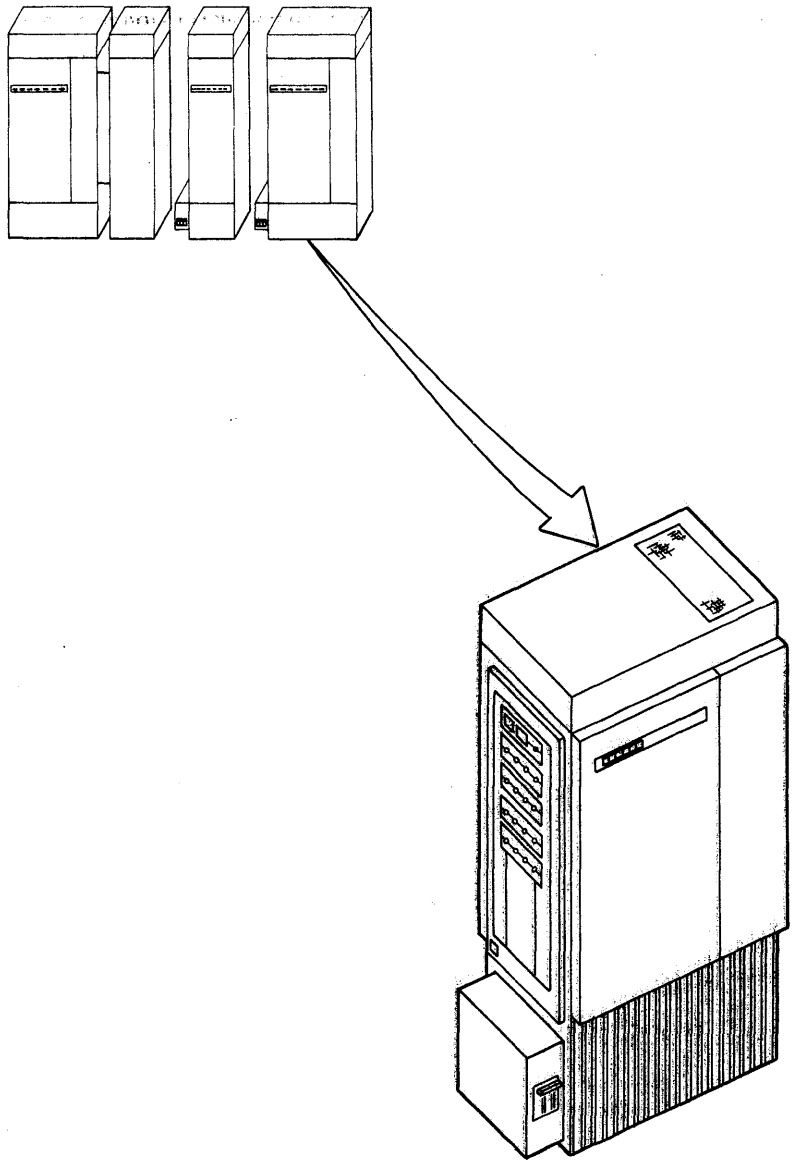
The System Control Unit (SCU) is the principal interface between all Central System components. It handles all accesses to Memory for both the Central Processor and Input/Output Multiplexers. It also provides complete system interrupt control, regulates communication between components, and services all demands on Memory. The SCU switches control signals, addresses, and data in and out of the Memory Units, while monitoring data and control paths for accuracy. It also provides memory reconfiguration facilities to bypass memory modules with an irrecoverable error. This allows service personnel to work on a failed module without disturbing the operation of the remaining modules.

The Main Memory Unit features current solid state technology for reduced access time and automatic error detection and correction to help minimize data errors. The minimum Main Memory size is 264K words and may be expanded up to 16 megawords.



1.2.3 INPUT/OUTPUT MULTIPLEXER (IOM)

The IOM provides for a variable number of data channels that connect with the peripherals and Front-End Network Processors. All transfers of data between memory and peripheral devices or communication lines pass via the IOM. The IOM is responsible for coordinating the input/output operations of the System Control Units, Peripheral Controllers and Network Processors. All input/output operations occur independently of, and asynchronously with processing.

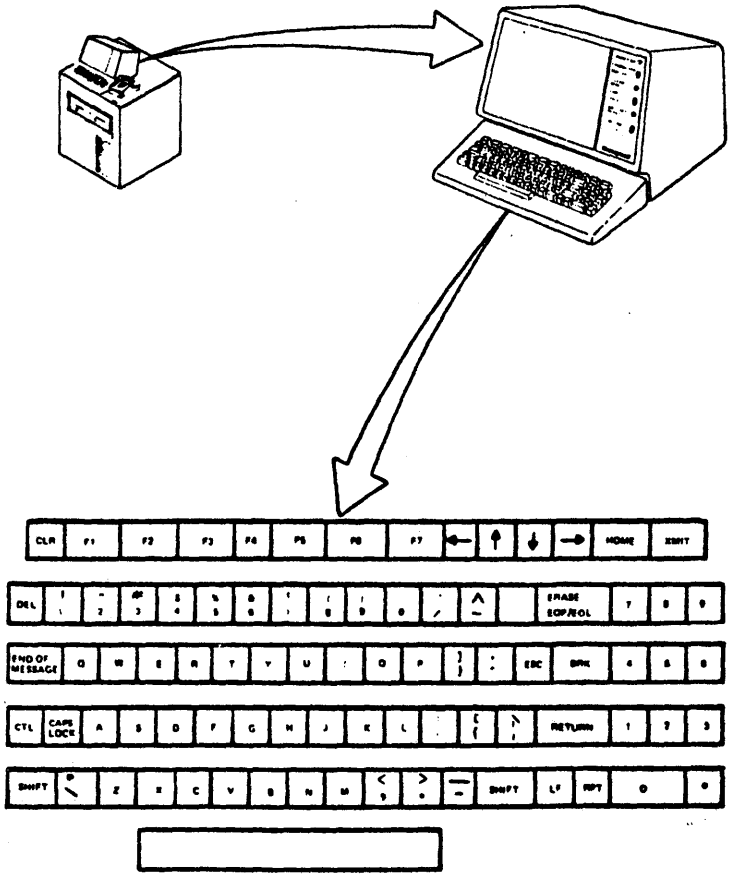


1.3 DPU SUBSYSTEM

The DPU Subsystem is utilized to facilitate remote hook-up of the Central System to the Technical Assistance Center (TAC) for diagnosis of suspected or actual equipment failures.

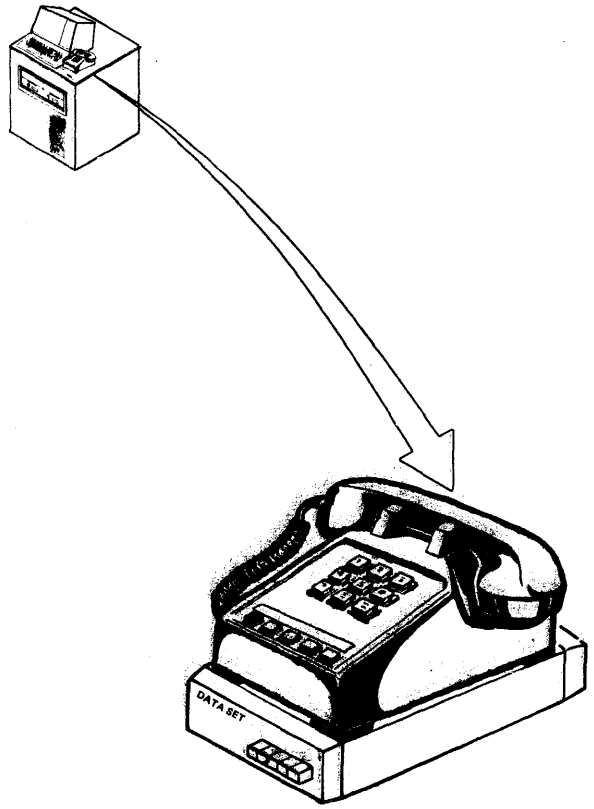
1.3.1 VIDEO DISPLAY UNIT

The Visual Information Projection (VIP) 7205 Video Display Unit consists of a CRT display with a separate keyboard interconnected via a ribbon cable. Normally, all data transfers are accomplished at a data rate of 1200 baud. An extension port for connecting an additional input or output device, such as a serial printer, is provided for user versatility.



1.3.2 DATA SET

The Data Set is provided by the customer as the necessary interface between the customers computer site and the Technical Assistance Center (TAC). The Data Set is a modulator/demodulator which converts digital computer data for transmission over commercial telephone lines.



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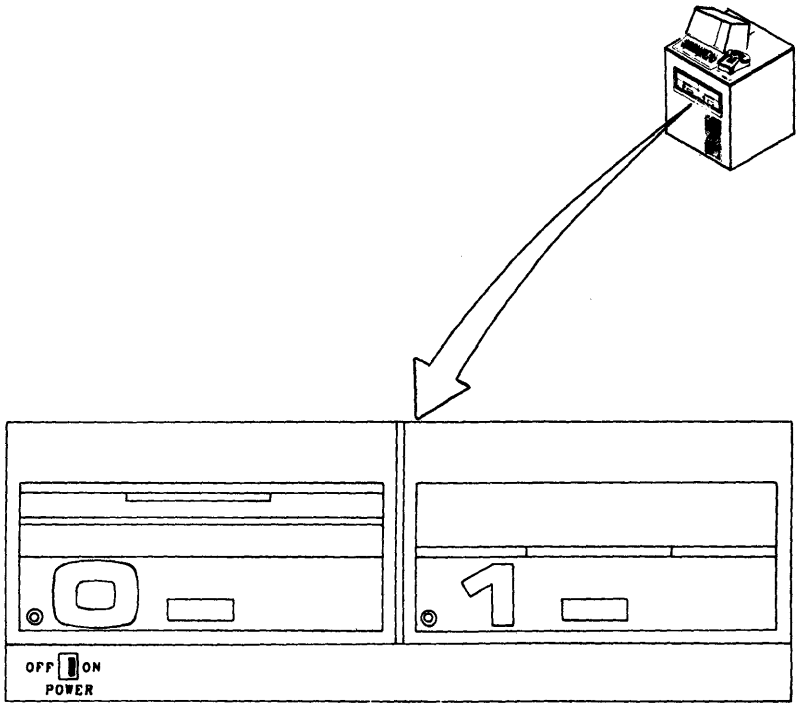
1.3.3 DPU SYSTEM

A. DISKETTE DRIVE UNIT

The Diskette Drive Unit is a double-sided, two spindle flexible disk handling device. It provides the operator with a method of entering bootload, operational and diagnostic programs into the DPU.



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B. CONTROL/MAINTENANCE PANEL

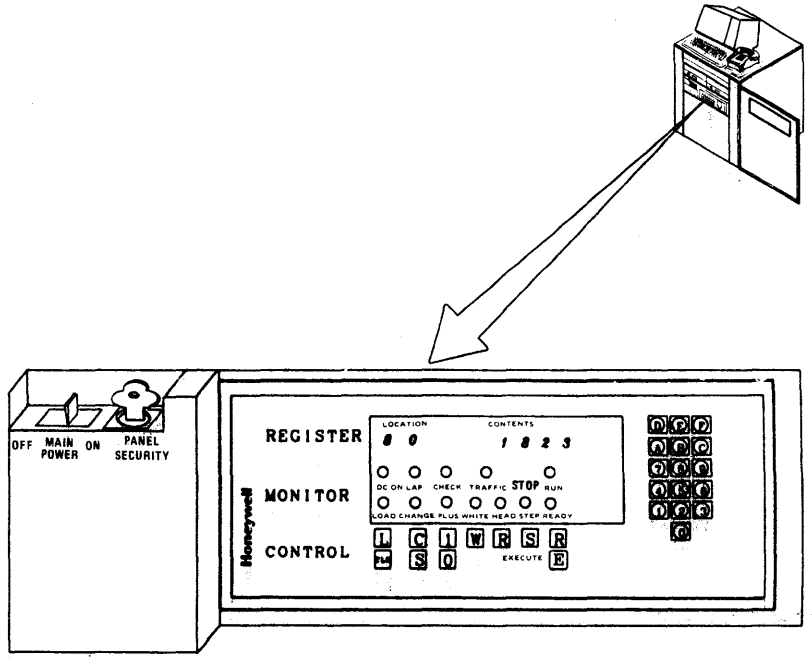
The full panel allows the DPU register and main memory contents to be entered and displayed. It controls, in a step-by-step fashion, the DPU intialization sequence.

REGISTER DISPLAY

A six-digit hexadecimal (hex) display in the upper part of the panel marked REGISTER indicates the two-digit LOCATION and four-digit CONTENTS of any one of the various user-visible registers.

HEXADECIMAL-PAD KEYS

The set of 16 hexadecimal keys in the right part of the control panel marked REGISTERS is called the hex pad. These keys provide access to the user-visible registers. In the select mode, a hex pad key-in selects the register to be operated on and the entered digits light up under LOCATION in the register display. In the change mode, a hex pad key-in changes the contents of the selected register and the entered digits light up under CONTENTS in the register display. Each keystroke shifts and loads one hexadecimal digit into the least significant hexadeximal position of the selected register and the display.



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1.4 MICROPROGRAMMED PERIPHERAL CONTROLLER (MPC)

The MPC is a multipurpose peripheral device controller. It may be factory configured to control either tape, disk or card handling devices.

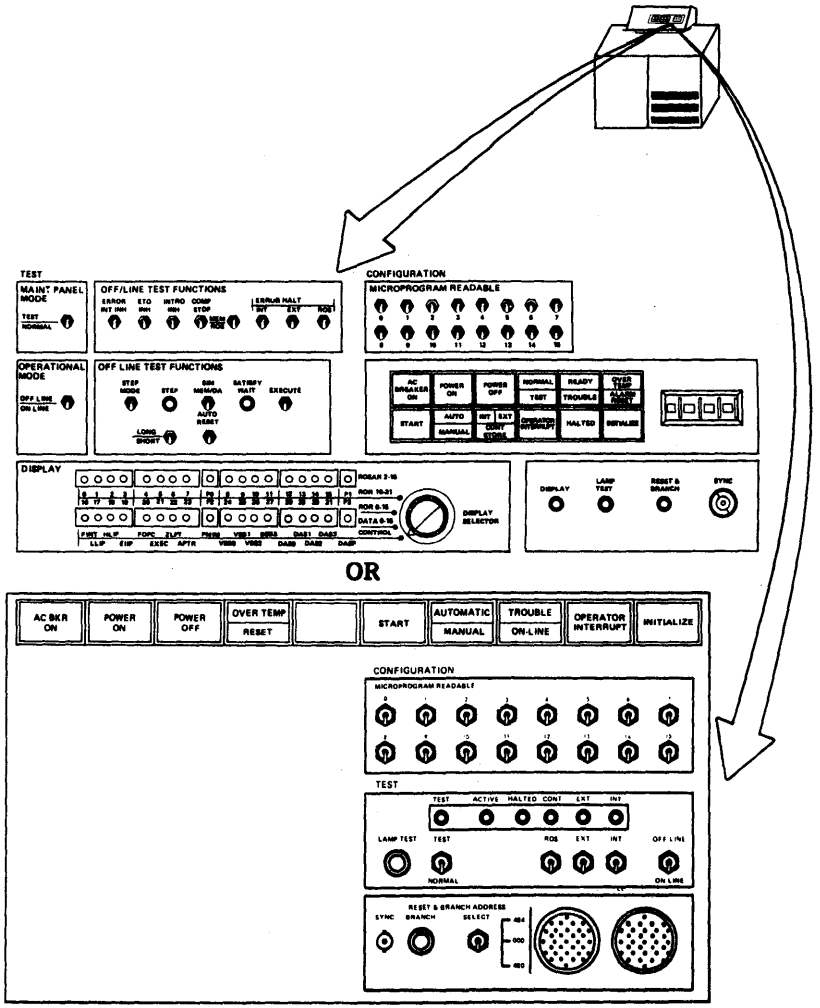
1.4.1 MAGNETIC TAPE CONTROLLER (MTC)

The MTC is a free standing, single or dual channel peripheral control device that is comprised of:

MODEL 601	MODEL 610
Basic MPC Memory Accessories Basic Tape Channel Tape Unit Interface	Basic MPC Tape Unit Matix Tape Control Adpater

The controller is capable of governing the operation of up to sixteen Magnetic Tape Handlers (MTH's). All data transfers between the Central System and associated peripheral devices are routed and controlled by the MTC.

Two different MPC control panels are available on either of the two controller models. One panel incorporates both maintenance and control functions while the other furnishes operator controls along with an input/output connector for use with the external maintenance panel.

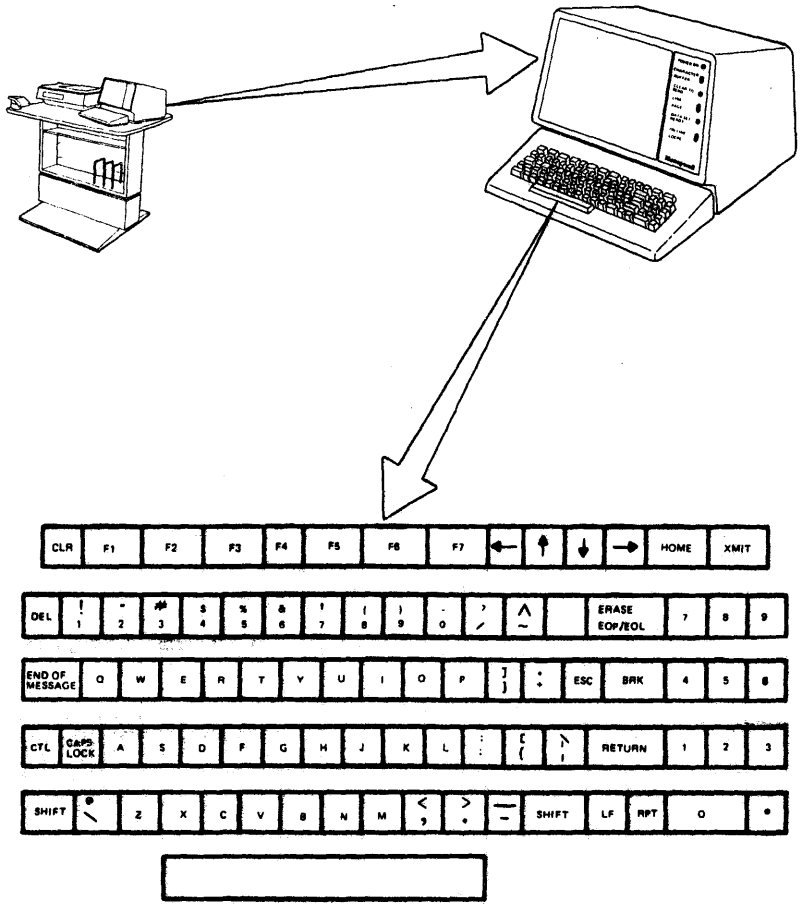


1.5 SYSTEM CONSOLE

The System Console enables the operator to control and interact with the total DPS 8 system, entering messages, commands and responding to queries and requests from the system.

1.5.1 VIDEO DISPLAY UNIT

The Visual Information Projection (VIP) 7205 Video Display Unit consists of a CRT display with a separate keyboard interconnected via a ribbon cable. Normally, all data transfers are accomplished at a data rate of 1200 baud. An extension port for connecting an additional input or output device, such as a serial printer, is provided for user versatility.



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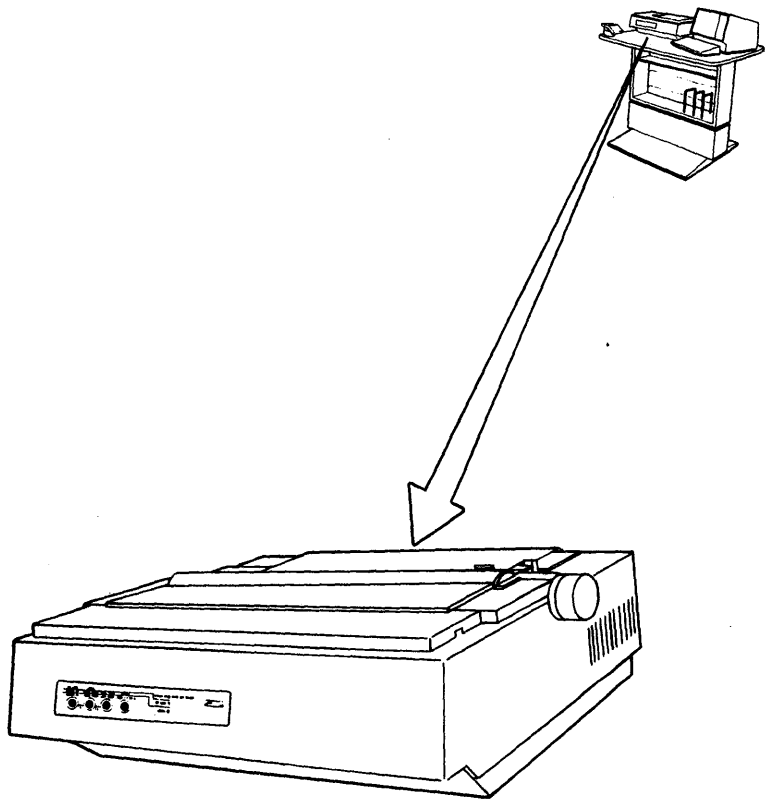
1.5.2 SERIAL PRINTER - ROSY 26

The basic ROSY 26 Printer (slave terminal) provides the capability of printing 120 CPS in a 9x7 dot-matrix scheme. The interface is a serial EIA RS232/C which operates in asynchronous mode at 1200 baud (BPS) with TTY-like procedures.

The printer provides:

- o Up to 132 print columns
- o Paper handling of the tractor type
- o Upper/low case character set



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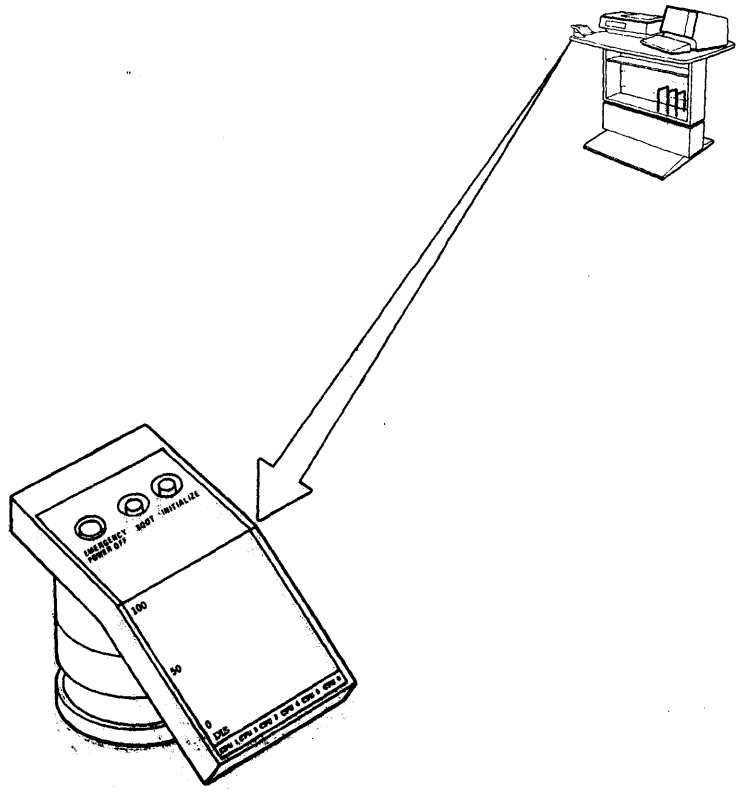
1.5.3 PROCESSOR ACTIVITY MONITOR POD

The Processor Activity Monitor Pod furnishes the operator with the capability to bootload and initialize the Central System. The percentage of the maximum data traffic load experienced by the Central Processor is displayed via LED indicators.



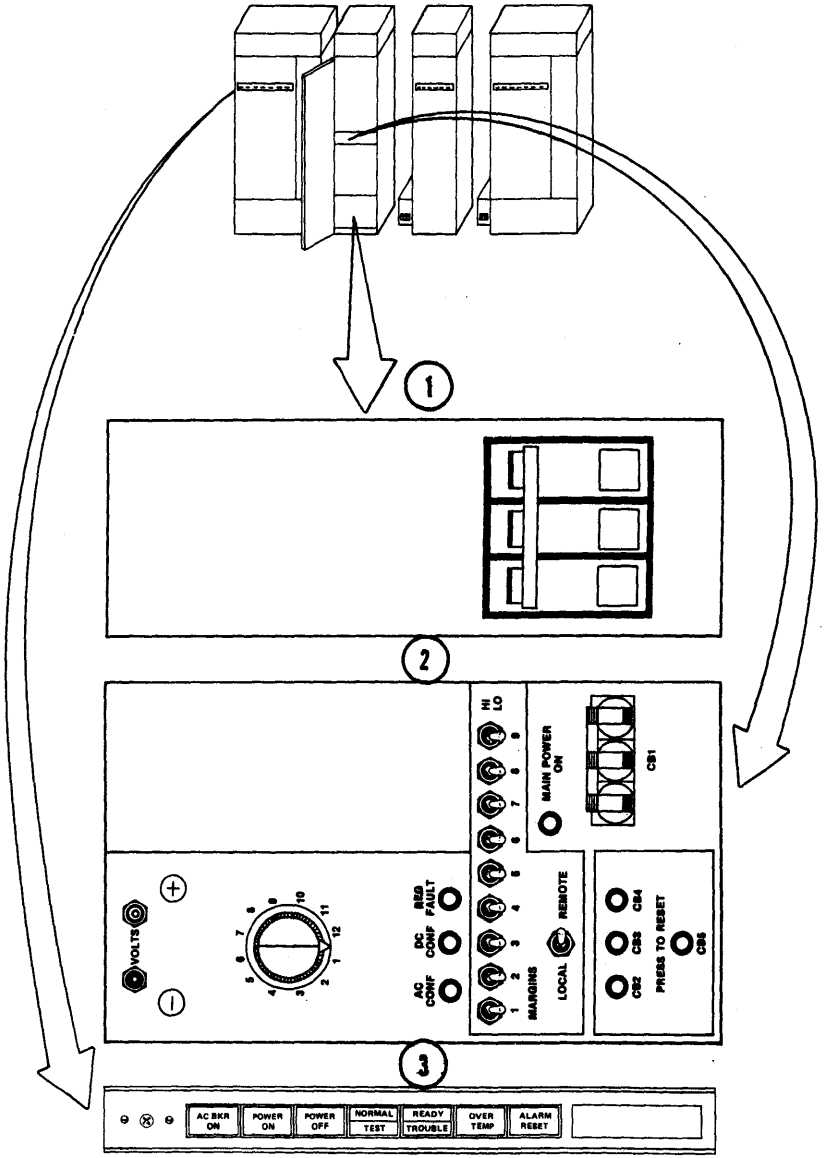
SECTION 2 POWER AND CONFIGURATION

2.1 APPLYING SYSTEM POWER

2.1.1 CENTRAL SYSTEM

A. Central Processor-Power Supply

1. Set the Central Processor cabinet AC circuit breaker (1) to the **ON** position.
2. Verify that the **AC BKR ON** indicator (3) is illuminated.
3. Ensure that the **LOCAL-REMOTE** switch (2) is in the **REMOTE** position.
4. Set the Main Power circuit breaker (CB1) (2) to the **ON** position.
5. Verify that the **MAIN POWER ON** and **AC CONF** indicators (2) are illuminated.
6. Press and release the **POWER ON** switch-indicator (3).
7. Verify that the **DC CONF** indicator (2) and **POWER ON** switch-indicator (3) are illuminated.
8. Verify that the **POWER OFF** switch-indicator (3) is extinguished.



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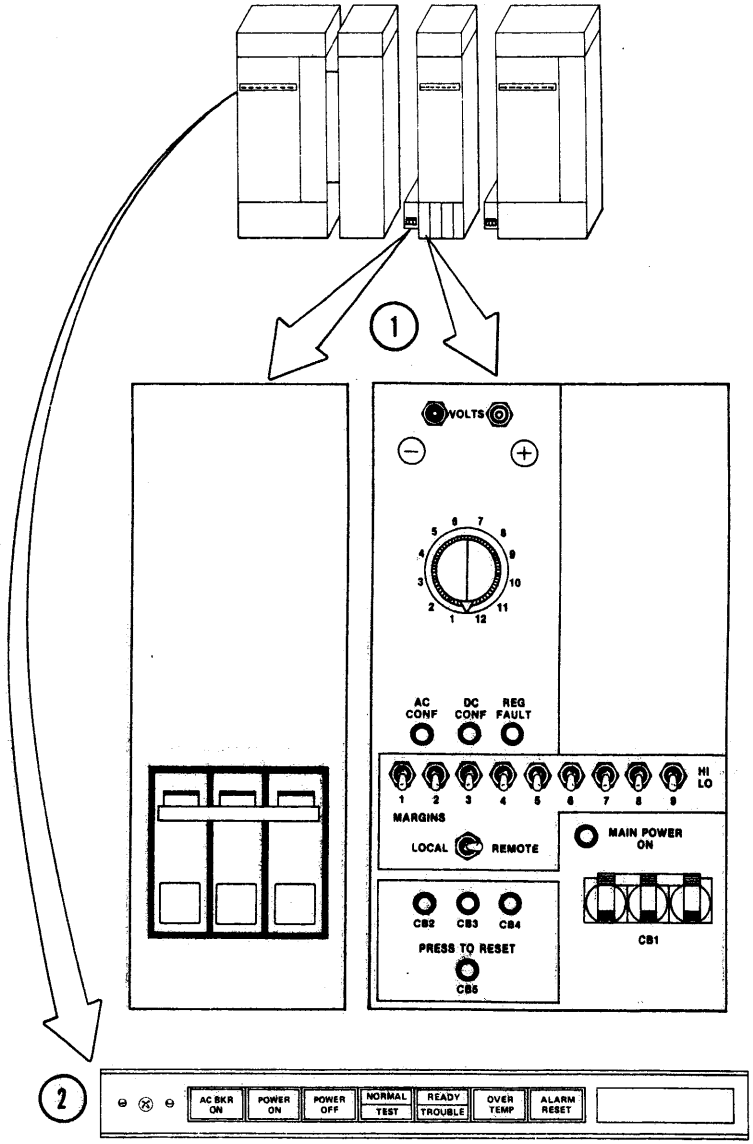
B. Central Memory

1. Set the Central Memory cabinet AC circuit breaker (1) to the **ON** position.
2. Verify that the **AC BKR ON** indicator (2) is illuminated.
3. Ensure that the **LOCAL-REMOTE** switch (1) is in the **REMOTE** position.
4. Set the Main Power circuit breaker (CB1) (1) to the **ON** position.
5. Verify that the **MAIN POWER ON** and **AC CONF** indicators (1) are illuminated.
6. Press and release the **POWER ON** switch-indicator (2) .
7. Verify that the **DC CONF** indicator (1) and **POWER ON** switch-indicator (2) are illuminated.
8. Verify that the **POWER OFF** switch-indicator (2) is extinguished.



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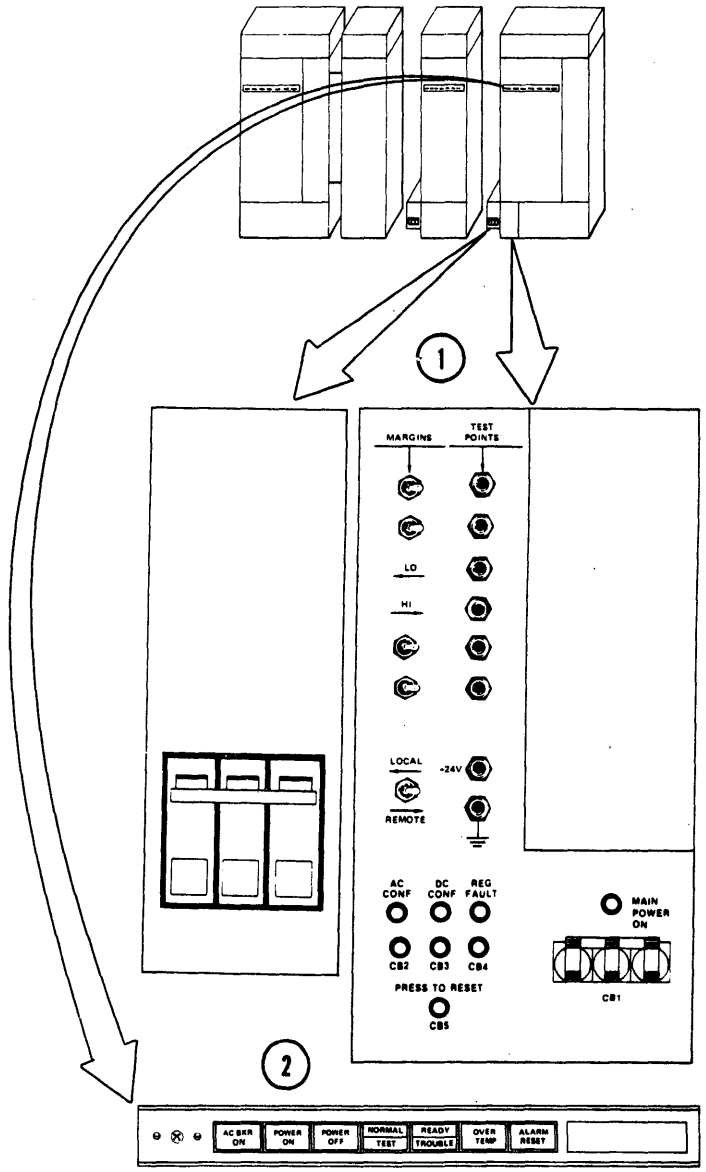
C. Input/Output Multiplexer

1. Set the Input-Output Multiplexer cabinet AC circuit breaker (1) to the **ON** position.
2. Verify that the **AC BKR ON** indicator (2) is illuminated.
3. Ensure that the **LOCAL-REMOTE** switch (1) is in the **REMOTE** position.
4. Set the Main Power circuit breaker (CB1) (1) to the **ON** position.
5. Verify that the **MAIN POWER ON** and **AC CONF** indicators (1) are illuminated.
6. Press and release the **POWER ON** switch-indicator (2) .
7. Verify that the **DC CONF** indicator (1) and **POWER ON** switch-indicator (2) are illuminated.
8. Verify that the **POWER OFF** switch-indicator (2) is extinguished.



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2.1.2 DPU SUBSYSTEM

2.1.2.1 DPU SYSTEM

A. DPU POWER APPLICATION

1. At the Control/Maintenance panel ensure that the **PANEL SECURITY** key (1) is fully **COUNTERCLOCKWISE.**

2. Press the dust cover latch release (2) on Diskette Drive #0 and #1, remove any Diskette Media present.

CAUTION

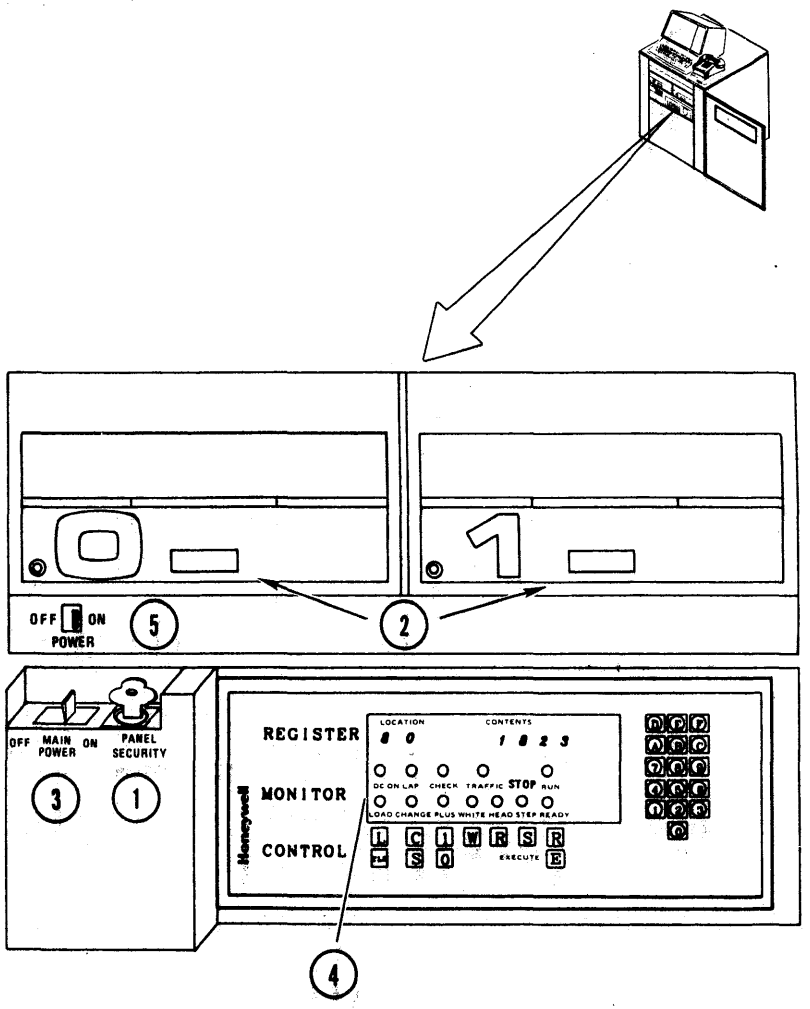
THE DISKETTE MEDIA MUST BE REMOVED FROM THE DISKETTE DRIVE UNITS OR DAMAGE TO THE MEDIA OR DRIVE MAY RESULT.

3. Place the **MAIN POWER ON-OFF** switch (3) to the **ON** position.

4. Verify that the **D.C. ON** indicator (4) illuminates after approximately 20 seconds.

5. Place the Diskette Drive **POWER OFF-ON** switch (5) to the **ON** position.

6. Proceed to paragraph 2.1.2.1B, DPU AUTO BOOTLOAD.



(2.1.2.1 cont.)

B. DPU AUTO BOOTLOAD

1. Insert the bootload diskette media (1) into Diskette Drive #0 as shown in the illustration.

2. Close both Diskette Drive Unit #0 and #1 dust covers by pulling down on the tab located at the center edge of the open covers.

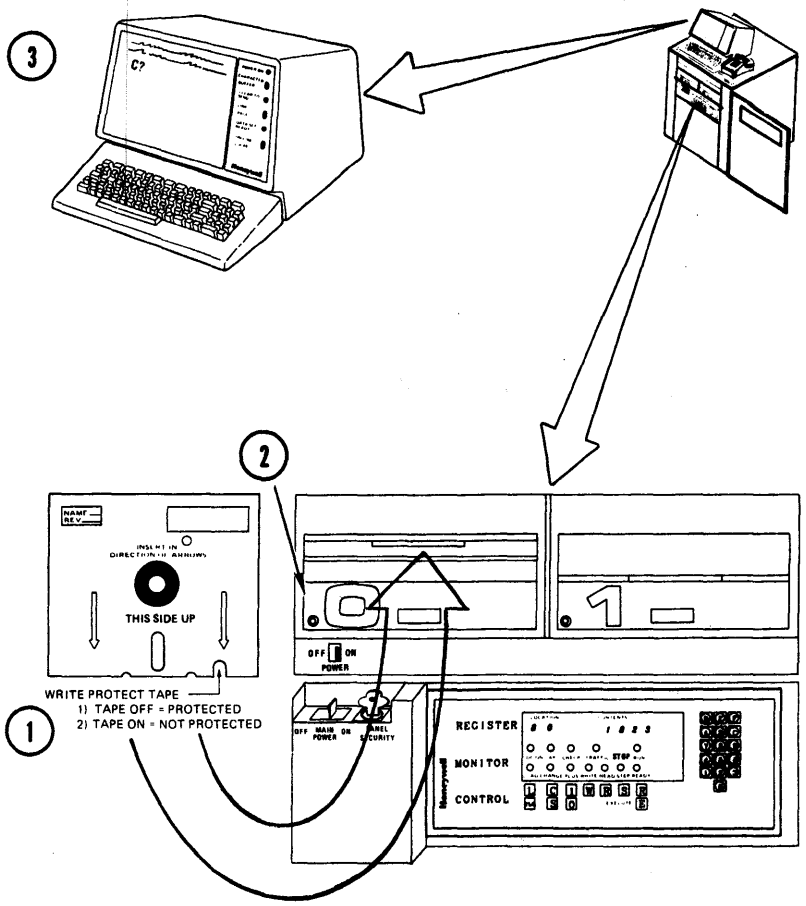
3. Verify that Diskette Drive Unit #0 monitor lamp (2) is flashing, indicating that data is being transferred.

NOTE

DPU bootload takes approximately three minutes during which time you will hear the diskette drive heads accessing data.

4. Verify the presence of the following message on the DPU Subsystem Video Display Unit (3) .

```
***D___ P___ U___ (Rev.)***
RMI ACTIVE
C?
```



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(2.1.2.1B Cont.)

NOTE

If the correct message does not appear repeat steps 1 through 4 using the spare bootload diskette media. If the correct message still does not appear perform steps 6 through 9.

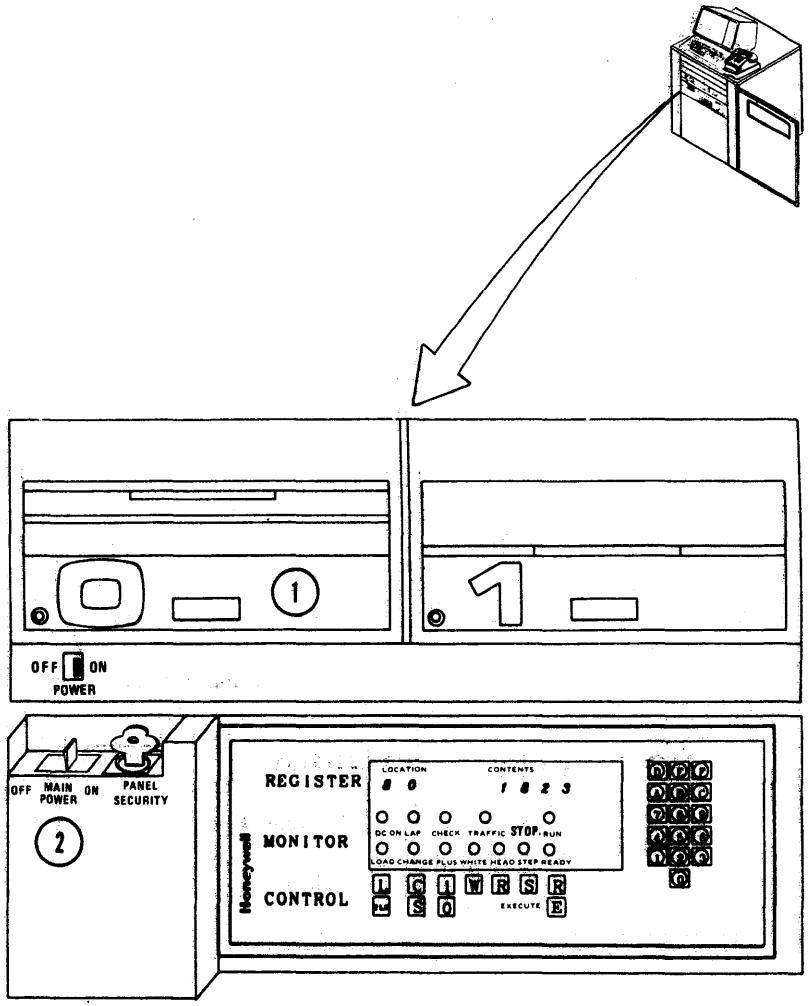
5. Remove and safeguard the diskette media then proceed to paragraph 2.1.2.2, DPU VIDEO DISPLAY UNIT.

6. Press the dust cover latch release (1) on Diskette Drive #0 and carefully remove the diskette media.

CAUTION

THE DISKETTE MEDIA MUST BE REMOVED FROM THE DRIVE UNIT OR DAMAGE TO THE MEDIA OR DRIVE MAY RESULT.

7. Place the **MAIN POWER OFF-ON** switch (2) in the **OFF** position then back to **ON**.



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(2.1.2.1B Cont.)

NOTE

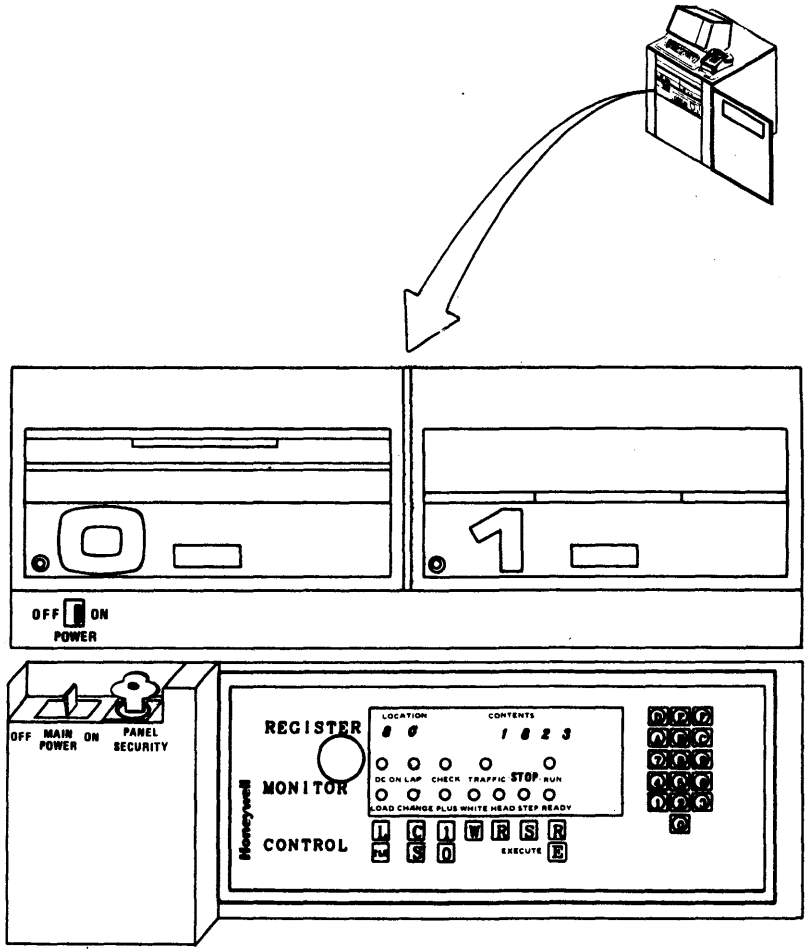
Approximately 30 seconds time delay is required for the DPU system to reach an operational state.

8. At the Monitor lamps verify that the **DC ON** indicator ◯ is illuminated.

9. Repeat steps 1 through 5 using the original bootlaod diskette media.

NOTE

If bootload is still not successful proceed to paragraph 2.1.2.1C, DPU MANUAL BOOTLOAD.

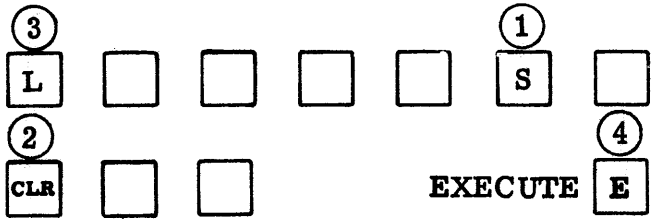


(2.1.2.1 Cont.)

C. CPU MANUAL BOOTLOAD

1. At the Control/Maintenance panel turn the **PANEL SECURITY** key (1) fully **CLOCKWISE.**

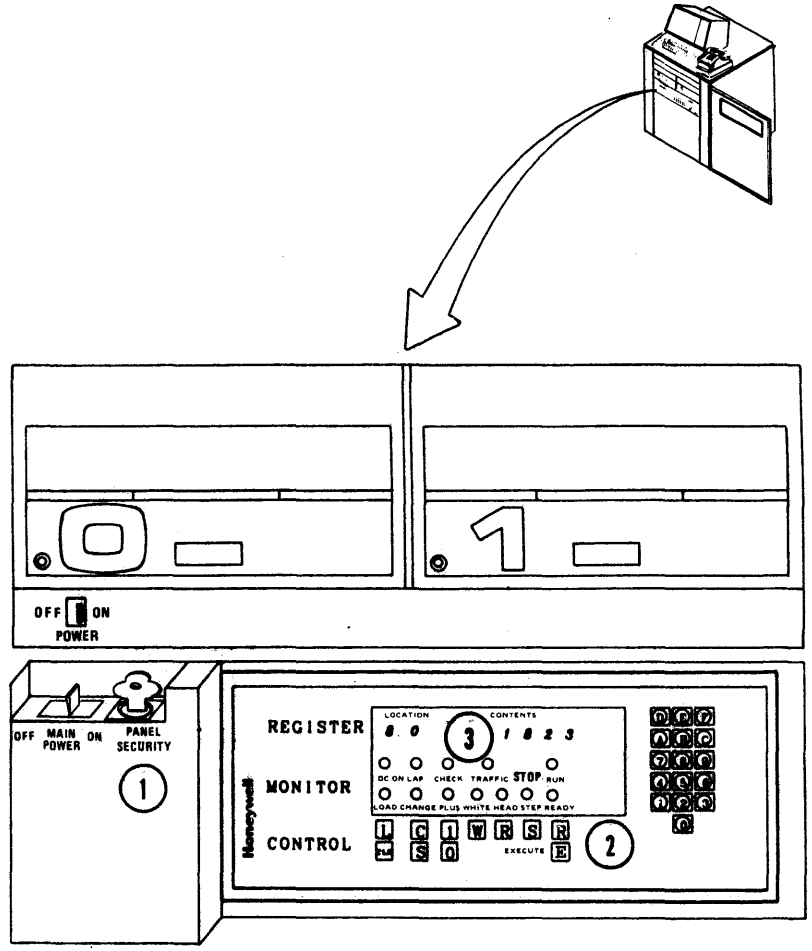
2. At the Control Keyboard (2) press the identified keys in sequential order:



3. At the Monitor lamps verify that the **CHECK** and **TRAFFIC** indicators (3) extinguish after approximately 30 seconds.

NOTE

If the **CHECK** and **TRAFFIC** lamps have not extinguished after the first attempt repeat the procedure. If the indicators do not extinguish after the second attempt, note the error and continue with paragraph 2.1.2.2 DPU VIDEO DISPLAY UNIT.



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(2.1.2.1C Cont.)

4. At the Control Keyboard (1) press **EXECUTE** [E] to initiate software bootload.

NOTE

DPU bootload takes approximately three minutes during which time you will hear the diskette drive heads accessing data.

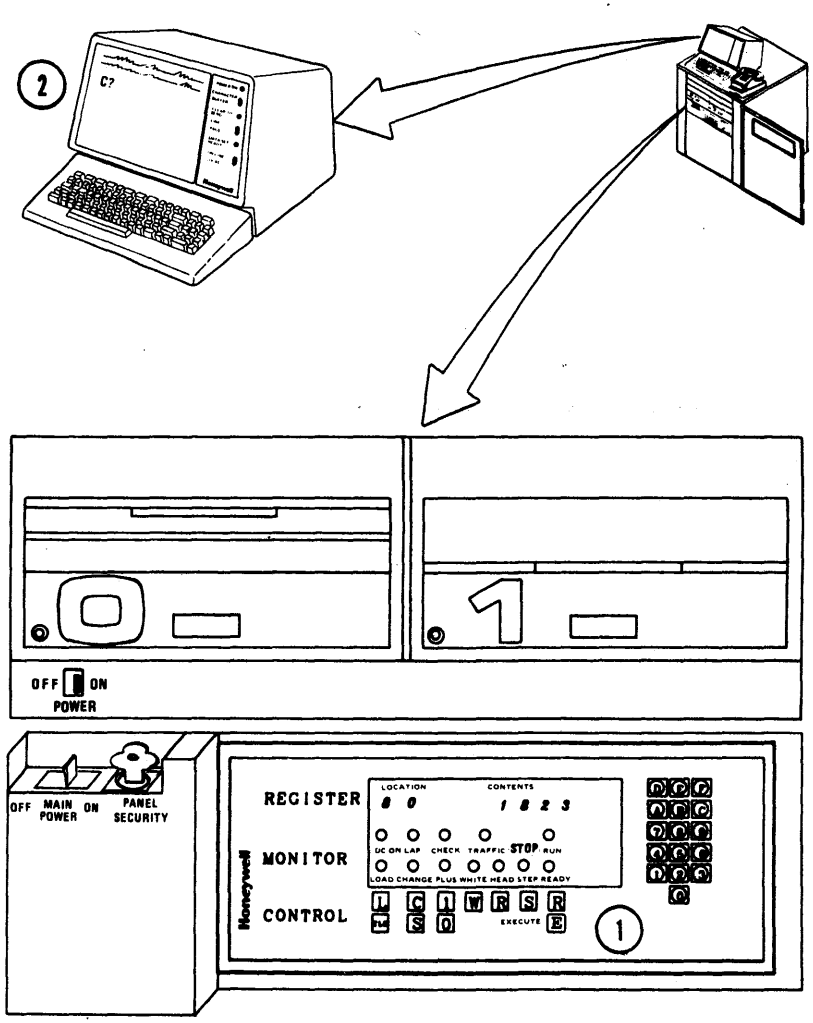
5. Verify the presence of the following message on the DPU Subsystem Video Display Unit (2) .

*** D___ P___ U___ (Rev.)***
RMI ACTIVE
C?

NOTE

If the correct message does not appear repeat steps 2 through 5. If after the second attempt the correct message still does not appear proceed to paragraph 2.1.2.1D DPU MANUAL BOOT ALTERNATE METHOD.

6. Remove and safeguard the diskette media then proceed to paragraph 2.1.2.2, DPU Video Display Unit.



A-23

(2.1..2.1 Cont.)

D. DPU MANUAL BOOT ALTERNATE METHOD

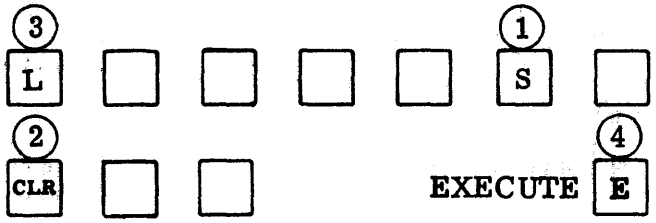
1. Press the dust cover latch release (1) on Diskette Drive Unit #0 and remove the diskette media present.

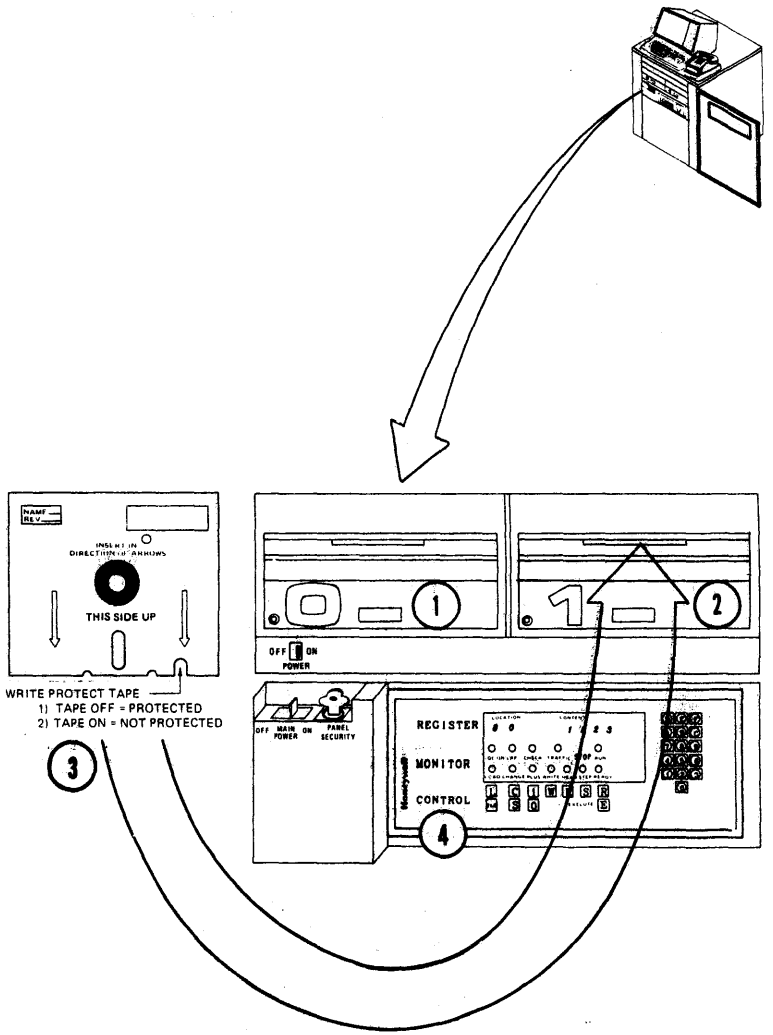
2. Press the dust cover latch release (2) on Diskette Drive Unit #1.

3. Insert the bootload diskette removed from Diskette Drive #0 into Diskette Drive #1 as shown in the illustration (3).

4. Close both Diskette Drive Unit #0 and #1 dust covers by pulling down on the tab located at the center edge of the open covers.

5. At the Control Keyboard (4) press the identified keys in sequential order:





A-24

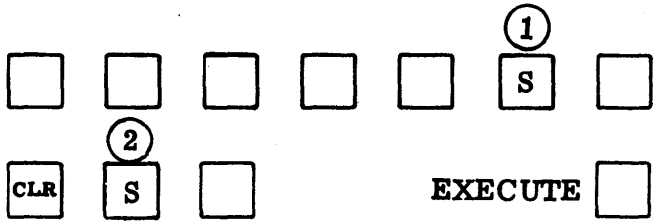
(2.1.2.1D Cont.)

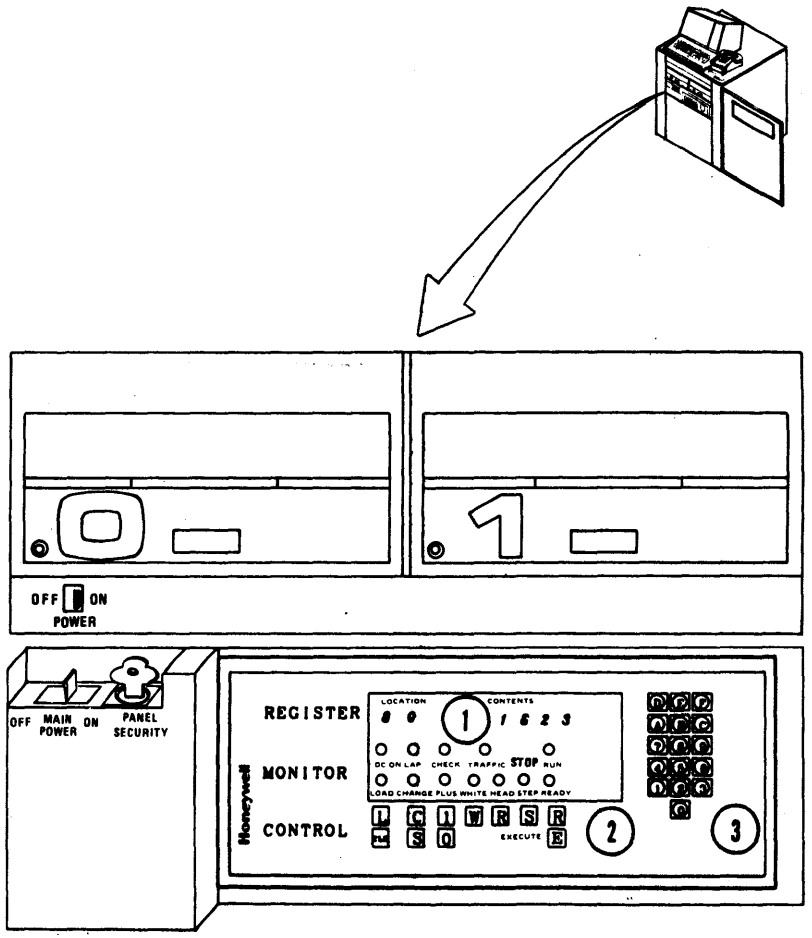
6. At the Monitor lamps verify that the **CHECK** and **TRAFFIC** indicators (1) extinguish after approximately 30 seconds.

NOTE

If the **CHECK** and **TRAFFIC** indicators do not extinguish repeat steps 5 and 6. If the do not extinguish after the second attempt note the error and continue with paragraph 2.1.2.2, DPU VIDEO DISPLAY UNIT.

7. At the Control Keyboard (2) press the identified keys in sequential order:

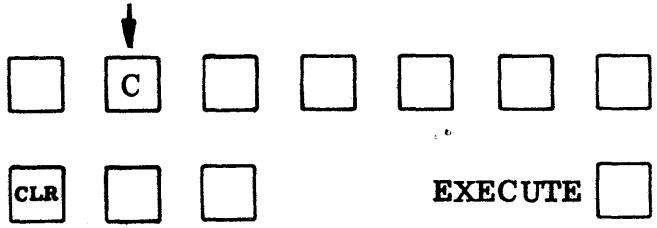




8. At the Alpha-Numeric keyboard (3) type in:

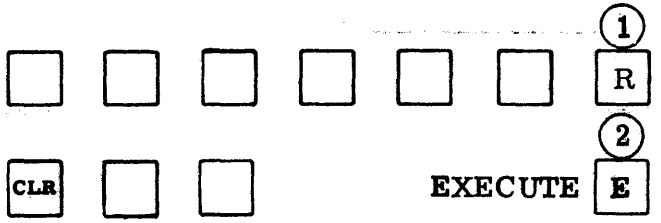
(2.1.2.1D Cont.)

9. At the Control Keyboard (1) press the identified key:



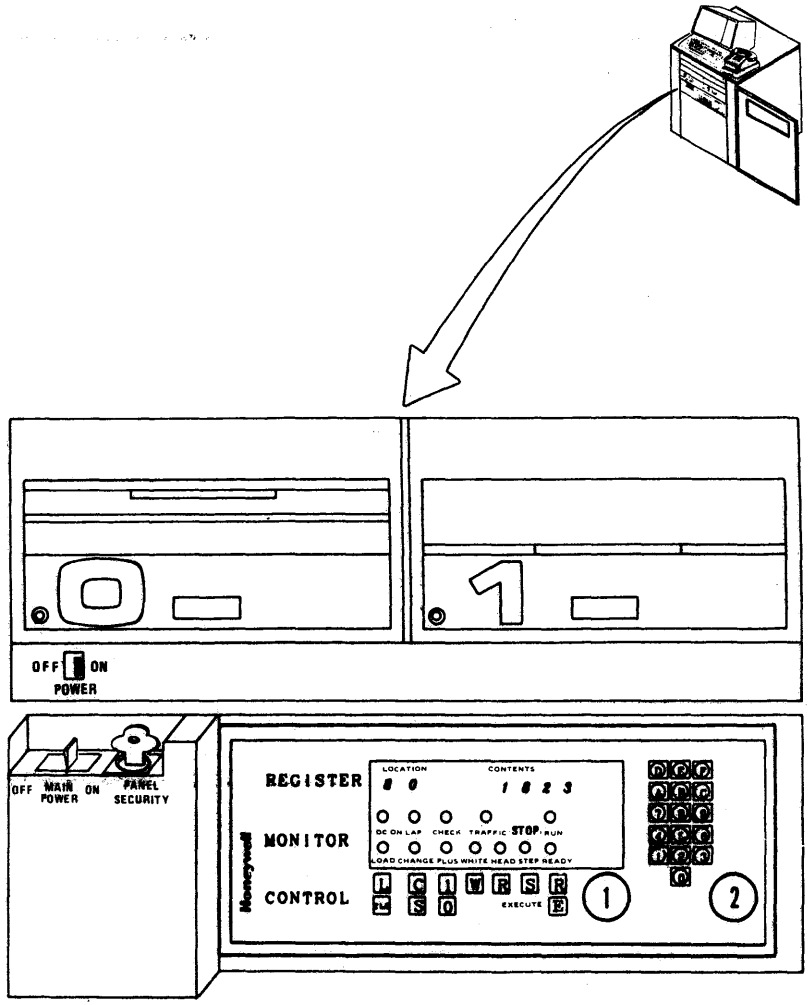
10. At the Alpha-Numeric Keyboard (2) type in:

11. At the Control Keyboard (1) press the identified keys in sequential order:



NOTE

DPU bootload takes approximately three minutes during which time you will hear the diskette drive heads accessing data.



A-26

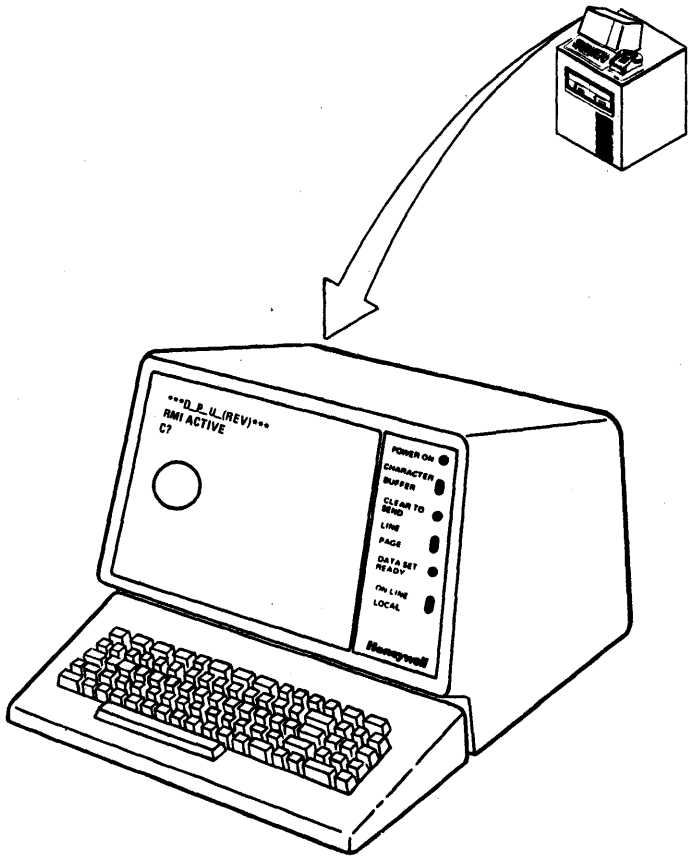
(2.1.2.1D Cont.)

12. Verify the presence of the following message on the DPU Subsystem Video Display Unit ◯ .

```
*** D___ P___ U___ (Rev.)***
RMI ACTIVE
C?
```

NOTE

If the correct message ◯ does not appear repeat steps 5 through 12. If after the second attempt the correct message still does not appear note the failure and proceed to 2.1.2.2, DPU Video Display Unit.



A-27

2.1.2.2 DPU VIDEO DISPLAY UNIT

A. POWER APPLICATION

1. Place the **POWER OFF-ON** switch (1) to the **ON** position.

2. Verify that the **POWER ON** indicator (2) is illuminated.

B. SWITCH CONFIGURATION

NOTE

Normal switch positions are underscored.

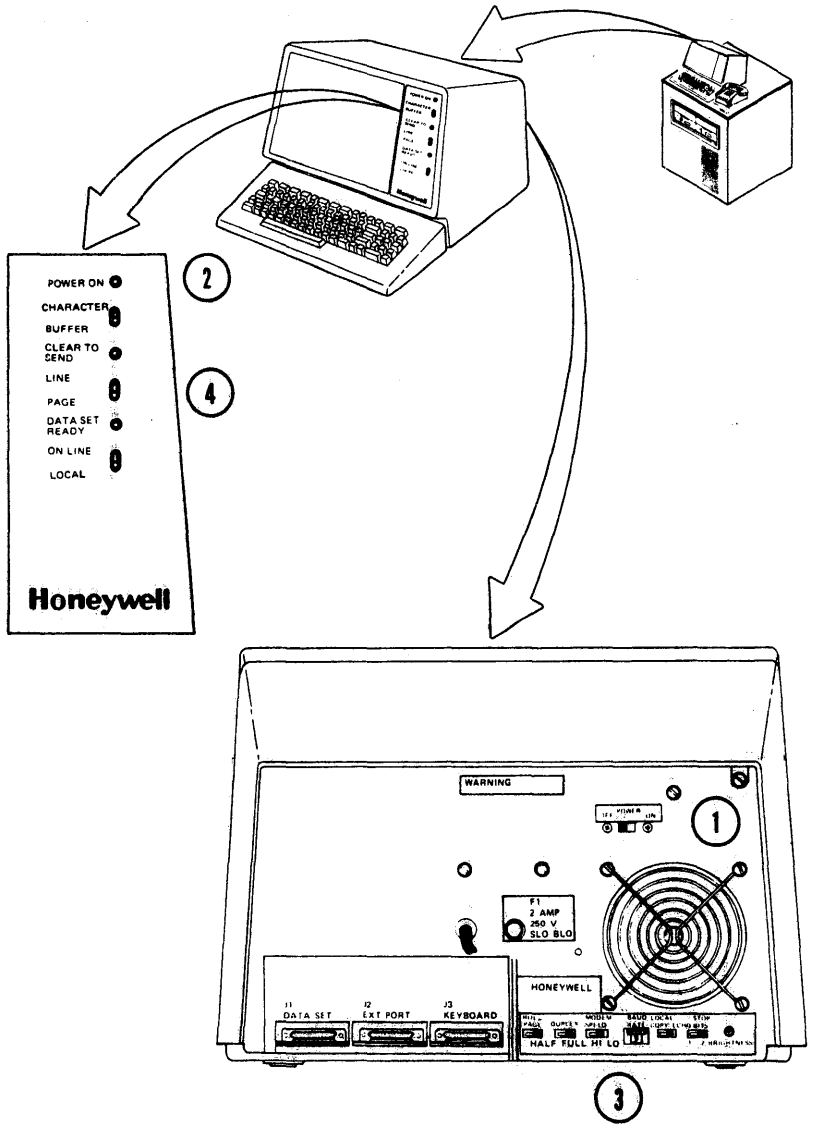
o Place the identified switches to their **NORMAL** positions.

SWITCH (3)

ROLL	DUPLEX		MODEM		BAUD RATE	STOP BITS	
PAGE	HALF	FULL	HI	LO	9	1	2

SWITCH (4)

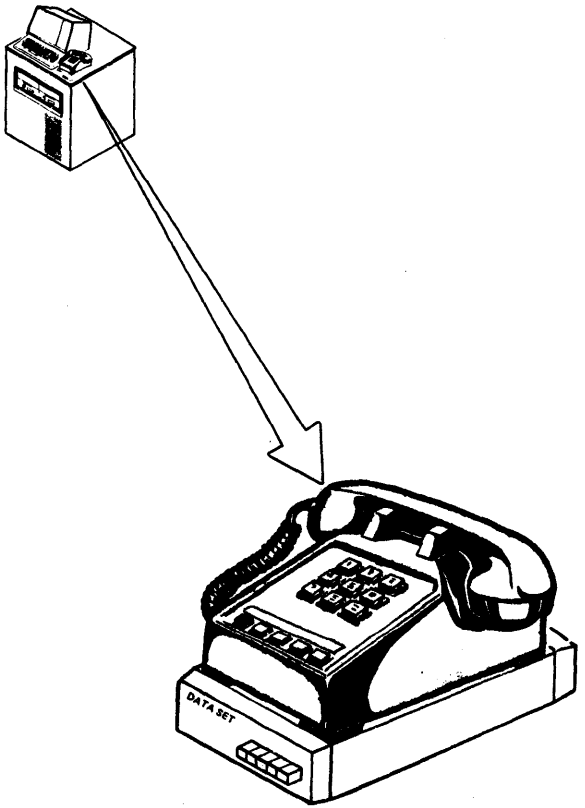
Character	Line	On Line
Buffer	Page	Local



A-28

2.1.2.3 Data Set

No operator power up or configuration requirements exist for this unit.

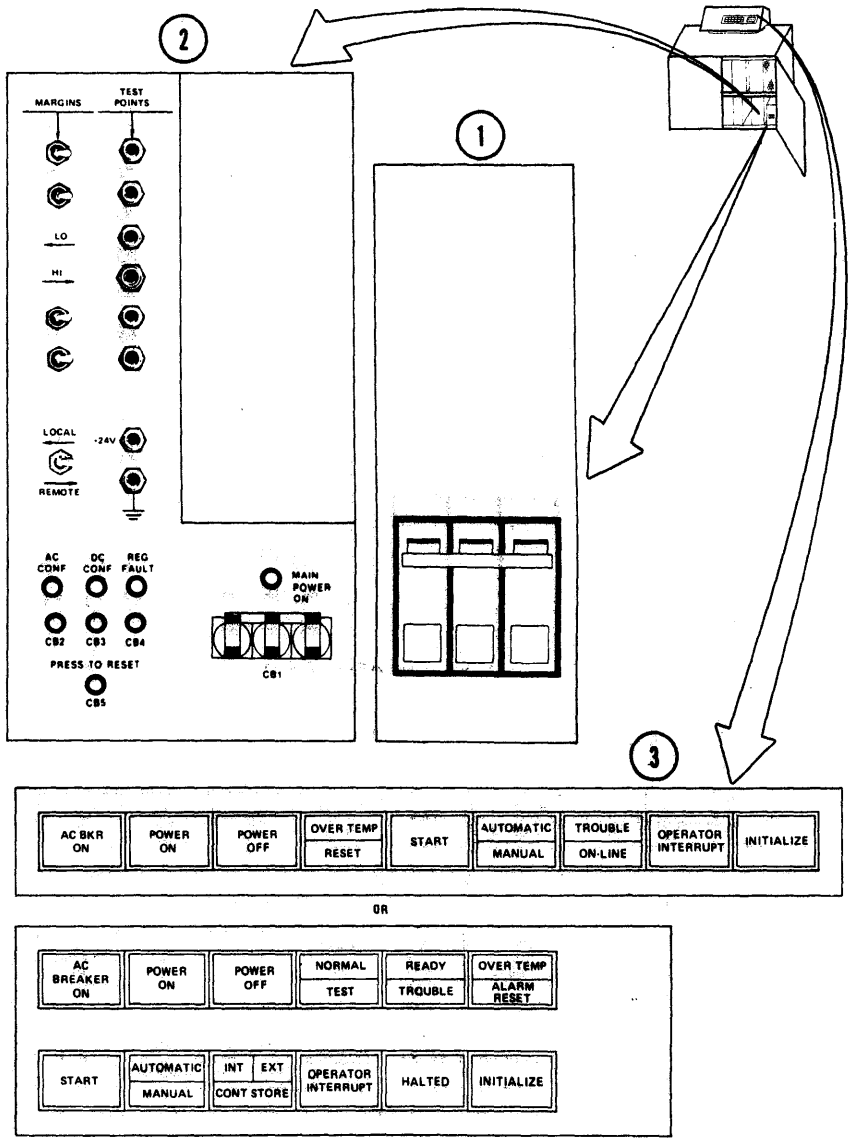


A-29

2.1.3 MICROPROGRAMMED PERIPHERAL CONTROLLER (MPC)

A. MAGNETIC TAPE CONTROLLER (MTC)-MODEL 601, 610

1. Set the Magnetic Tape Controller cabinet AC circuit breaker (1) to the **ON** position.
2. Verify that the **AC BKR ON** indicator (3) is illuminated.
3. Ensure that the **LOCAL-REMOTE** switch (2) is in the **REMOTE** position.
4. Set the Main Power circuit breaker (CB1) (2) to the **ON** position.
5. Verify that the **MAIN POWER ON** and **AC CONF** indicators (2) are illuminated.
6. Press and release the **POWER ON** switch indicator (3) .
7. Verify that the **DC CONF** indicator (2) and the **POWER ON** switch-indicator (3) are illuminated.
8. Verify that the **POWER OFF** switch-indicator (3) is extinguished.



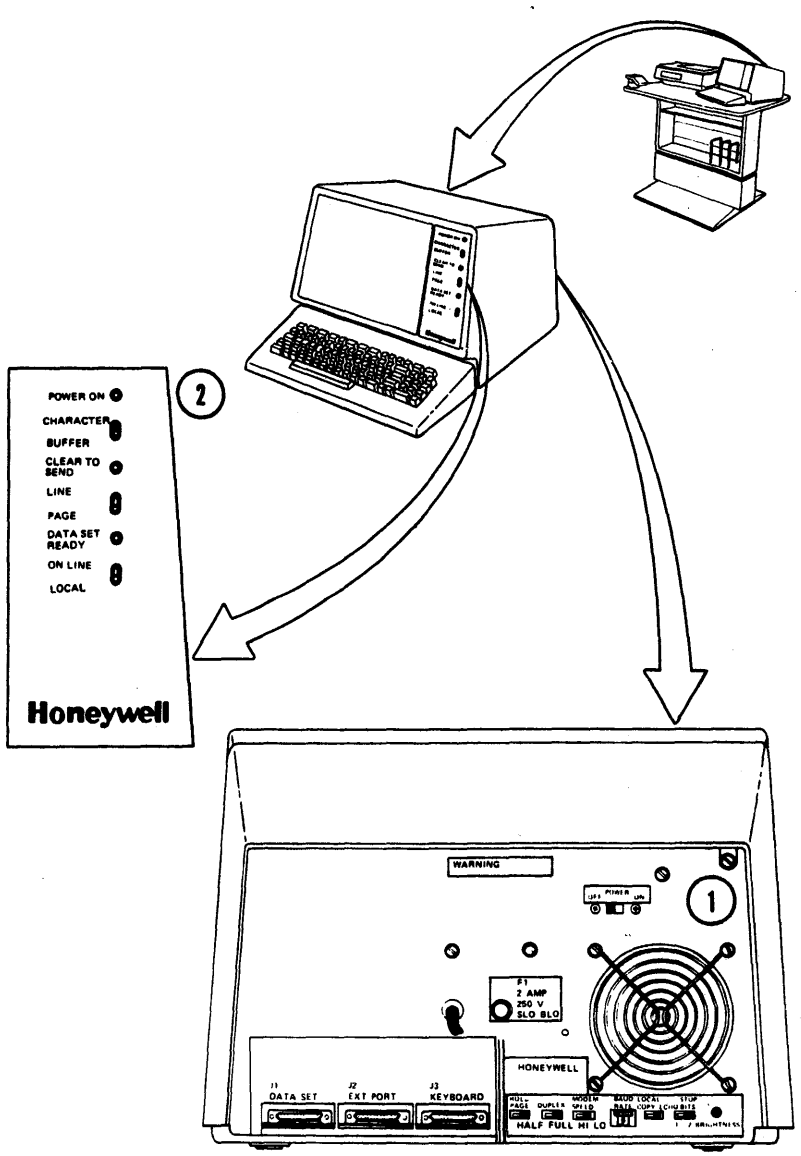
A-30

2.1.4 SYSTEM CONSOLE

A. VIDEO DISPLAY UNIT

1. Place the **POWER OFF-ON** switch (1) to the **ON** position.

2. Verify that the **POWER ON** indicator (2) is illuminated.

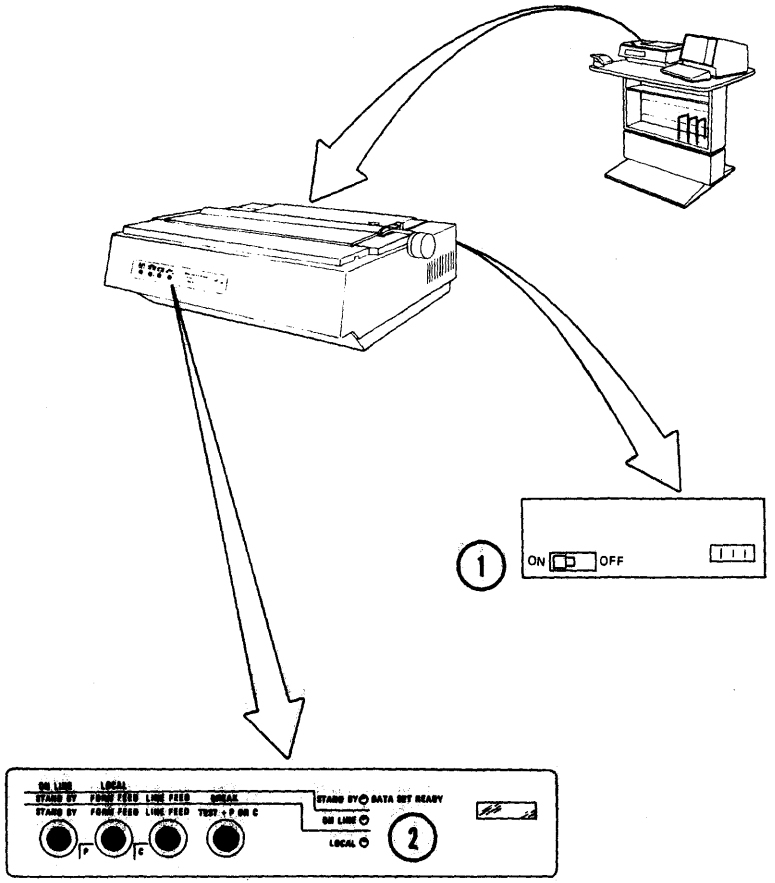


(2.1.4 Cont.)

B. SERIAL PRINTER-ROSY 26

1. Place the **POWER OFF-ON** switch (1) to the **ON** position.

2. Verify that the **STANDBY** and **ON-LINE** indicators (2) are illuminated.

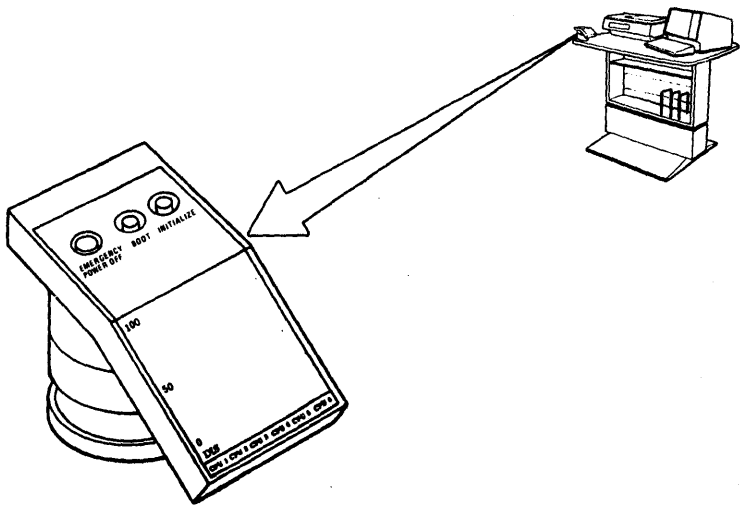


A-32

(2.1.4 Cont.)

C. PROCESSOR ACTIVITY MONITOR POD

No operator power up or configuration requirements exist for this unit.



A-33

2.2 CONFIGURING THE SYSTEM

2.2.1 SYSTEM CONSOLE

A. VIDEO DISPLAY UNIT

NOTE

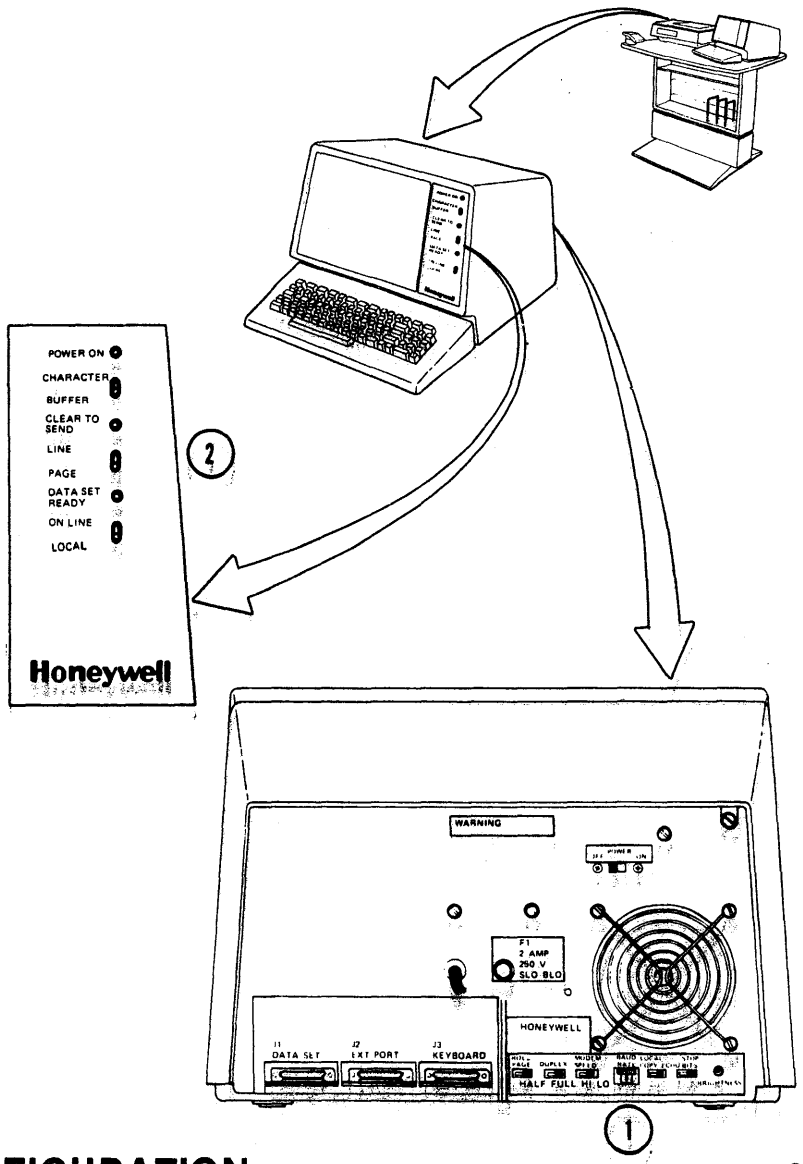
Normal switch positions are underscored.

1. Place the identified rear panel switches (1) to their **NORMAL** positions.

ROLL	DUPLEX		MODEM		BAUD RATE	STOP BITS	
PAGE	HALF	FULL	HI	LO	9	1	2

2. Place the identified front panel switches (2) to their **NORMAL** positions.

Character	Line	On Line
Buffer	Page	Local



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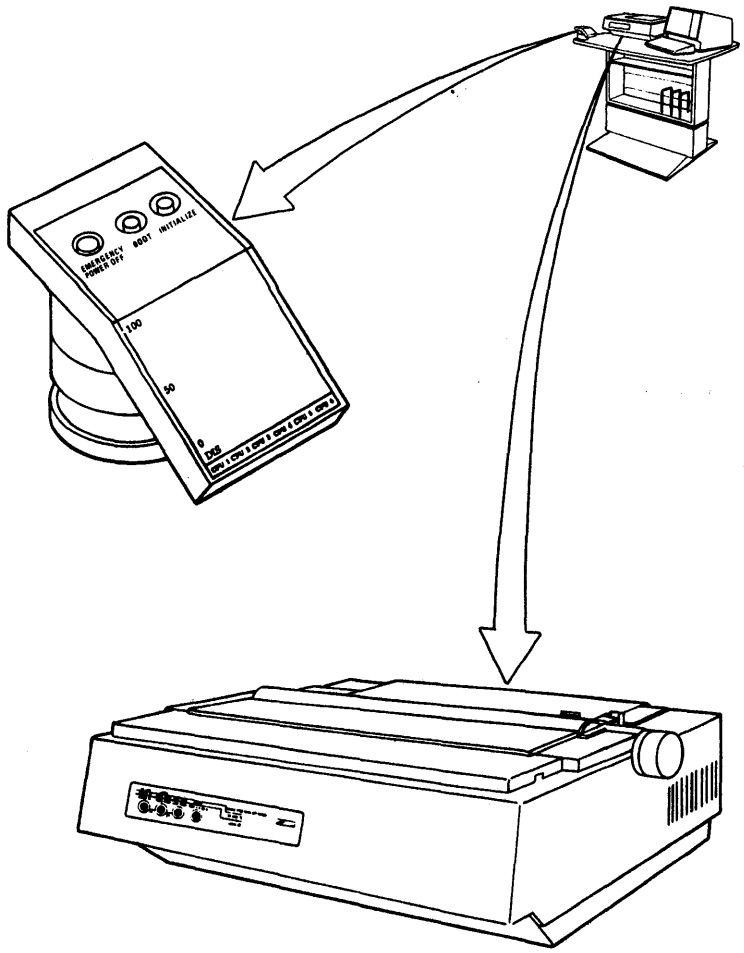
(2.2.1 Cont.)

B. PROCESSOR ACTIVITY MONITOR POD

- o No operator configuration requirements exist for this unit.

C. SERIAL PRINTER-ROSY 26

- o No operator configuration requirements exist for this unit.



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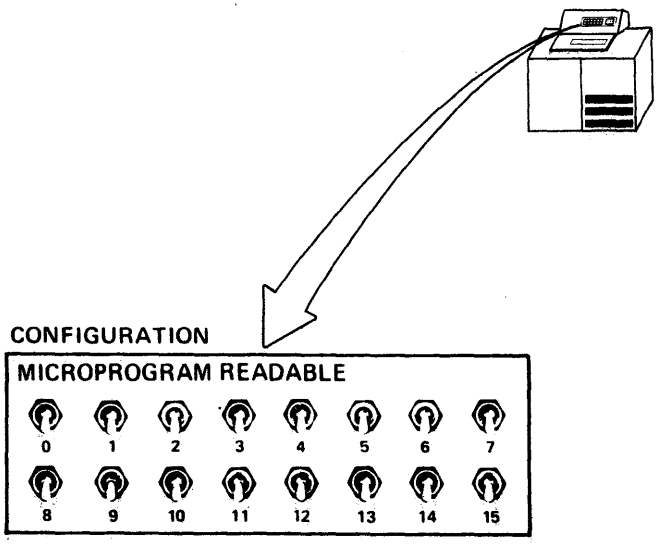
2.2.2 MICROPROGRAMMED PERIPHERAL CONTROLLER (MPC)

MAGNETIC TAPE CONTROLLER (MTC)-MODEL 601, 610

- Verify that all panel switches are in the site configuration position.



CONFIGURATION SWITCH APPLICATION
IN NORMAL FIRMWARE ENVIRONMENT

SWITCH #	MTS 500		MTP 601		MTP 610		
	UP	DOWN	UP	DOWN	UP	DOWN	
1							
2							
3							
4							SEE TABLE 1
5							
6							
7							
8							
9							
10							
11					NOT USED 1600 BPI ONLY		SEE TABLE 2
12							
13							
14							
15							

☐ REQUIRES OPERATOR INPUT DURING TAPE HANDLER SELECTION AND LOADING.

TABLE 1

SWITCHES 4, 5, 6, 7	TAPE BOOTLOAD DEV. NO.
0 0 0 1	DEVICE NO. ONE
0 0 1 0	DEVICE NO. TWO
0 0 1 1	DEVICE NO. THREE
0 1 0 0	DEVICE NO. FOUR
0 1 0 1	DEVICE NO. FIVE
0 1 1 0	DEVICE NO. SIX
0 1 1 1	DEVICE NO. SEVEN
0 0 0 0	DEVICE NO. EIGHT

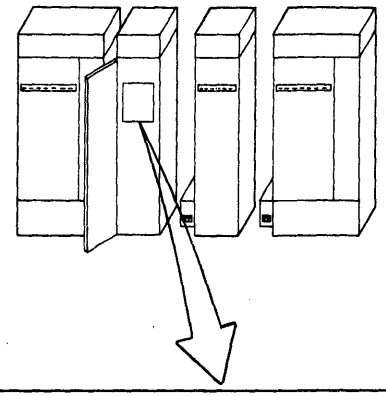
TABLE 2

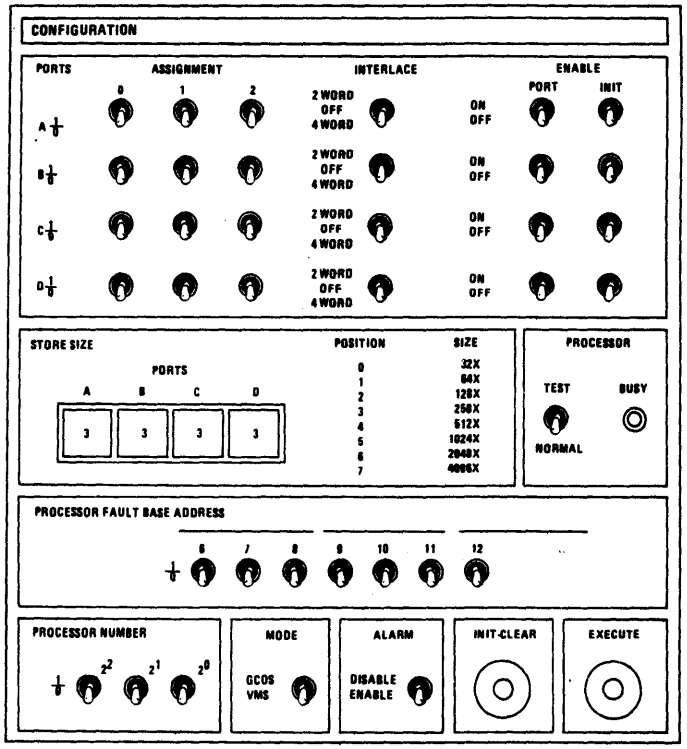
EQUIP. TYPE	TAPE DENSITY 556	800
MTS 500	DN	UP
MTP 601	DN	UP
MTP 610	N/A	N/A

2.2.3 CENTRAL SYSTEM

A. CENTRAL PROCESSOR UNIT (CPU)

- Verify that all switches are in the normal site configuration position.





CPU # 0	PORTS	ASSIGNMENT 0 1 2	INTERLACE	ENABLE PORT INIT
	A			
	B			
	C			
	D			

STORE SIZE ☐☐☐☐ PROCESSOR _____

PROCESSOR FAULT BASE ADDRESS (SWITCHES)

6 7 8 9 10 11 12

DN UP DN ___ ___ ___ ___

PROCESSOR NUMBER 2^2	2^1	2^0	MODE
___	___	___	___

CPU # 1	PORTS	ASSIGNMENT 0 1 2	INTERLACE	ENABLE PORT INIT
	A			
	B			
	C			
	D			

STORE SIZE ☐☐☐☐ PROCESSOR _____

PROCESSOR FAULT BASE ADDRESS (SWITCHES)

6 7 8 9 10 11 12

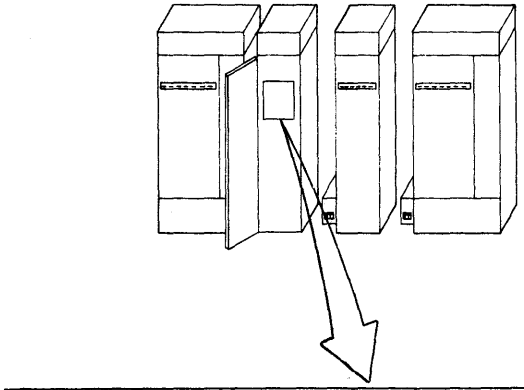
DN UP UP ___ ___ ___ ___

PROCESSOR NUMBER 2^2	2^1	2^0	MODE
___	___	___	___

(2.2.3A Cont.)

CPU # 2	PORTS	ASSIGNMENT 0 1 2	INTERLACE	ENABLE PORT INIT
	A B C D			
STORE SIZE			PROCESSOR	
PROCESSOR FAULT BASE ADDRESS (SWITCHES) 6 7 8 9 10 11 12				
PROCESSOR NUMBER 2^2 2^1 2^0			MODE	

CPU # 3	PORTS	ASSIGNMENT 0 1 2	INTERLACE	ENABLE PORT INIT
	A B C D			
STORE SIZE			PROCESSOR	
PROCESSOR FAULT BASE ADDRESS (SWITCHES) 6 7 8 9 10 11 12				
PROCESSOR NUMBER 2^2 2^1 2^0			MODE	



(2.2.3 Cont.)

B. CENTRAL MEMORY UNIT (CPU)

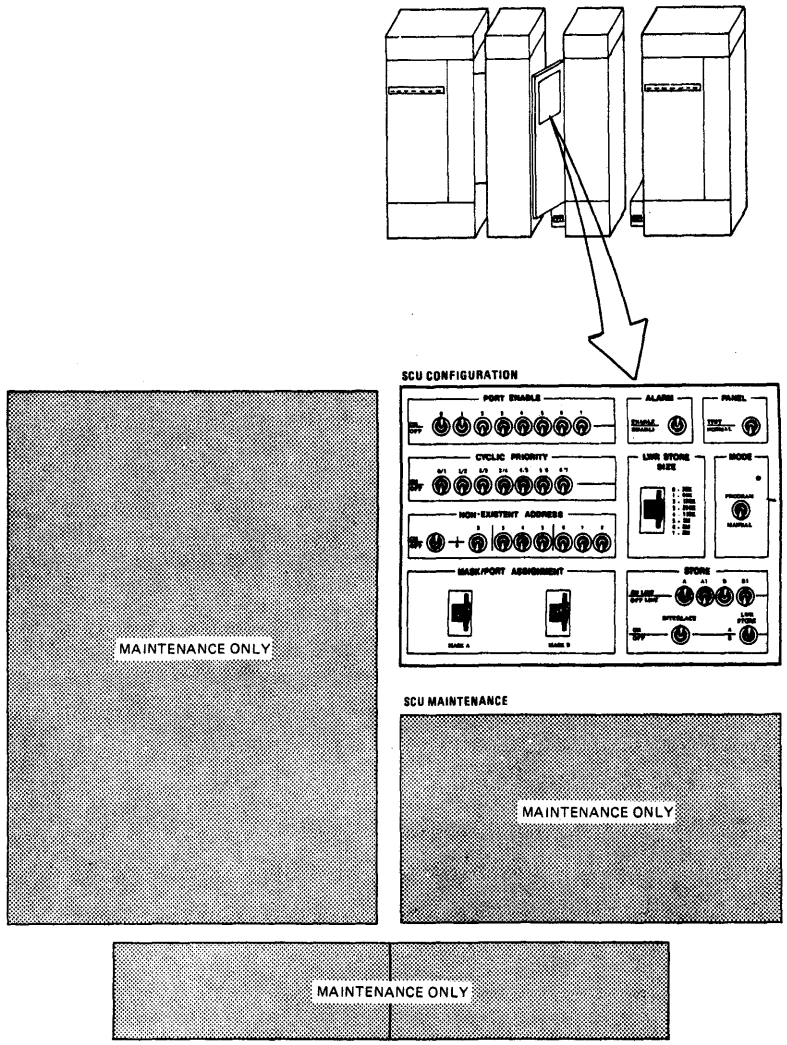
- Verify that all switches are in the normal site configuration positions.

SCU A

PORT ENABLE 0 1 2 3 4 5 6 7		PANEL
CYCLIC PRIORITY	STORE SIZE	MODE
NON-EXISTENT ADDRESS 2 3 4 5 6 7		
MASK PORT ASSIGNMENT	STORE	

SCU B

PORT ENABLE 0 1 2 3 4 5 6 7		PANEL
CYCLIC PRIORITY	STORE SIZE	MODE
NON-EXISTENT ADDRESS 2 3 4 5 6 7		
MASK PORT ASSIGNMENT	STORE	



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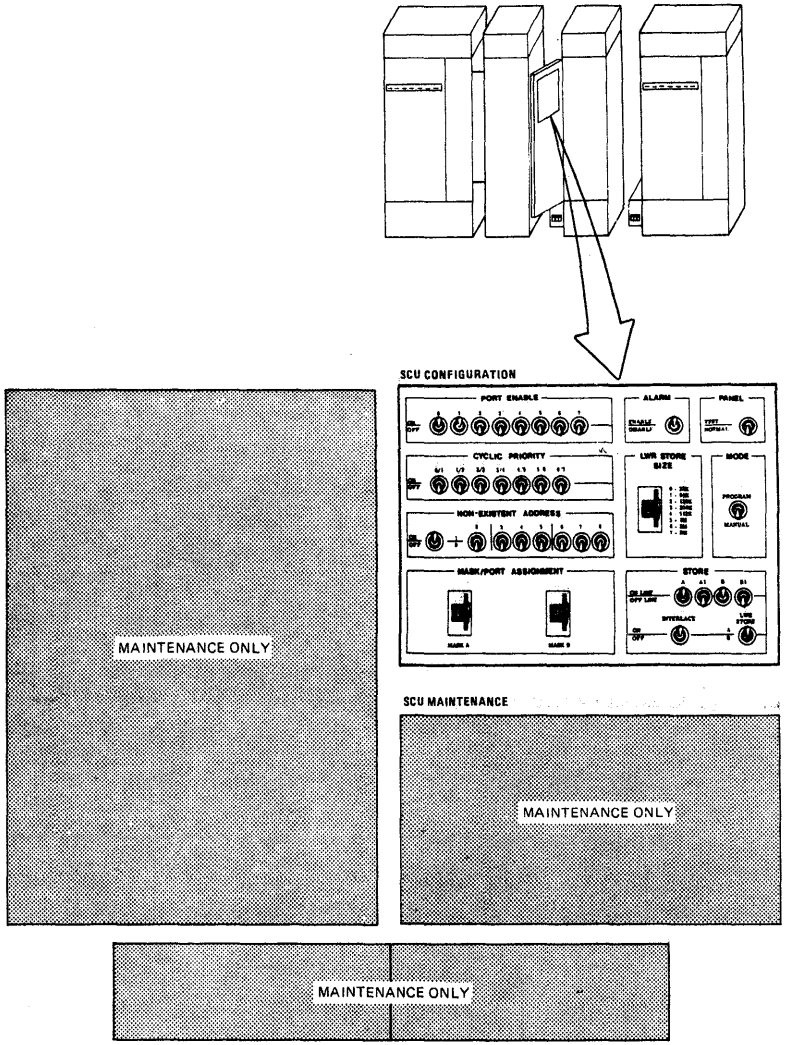
(2.2.3B Cont.)

SCU C

PORT ENABLE 0 1 2 3 4 5 6 7		PANEL
CYCLIC PRIORITY	STORE SIZE	MODE
NON-EXISTENT ADDRESS 2 3 4 5 6 7		
MASK PORT ASSIGNMENT	STORE	

SCU D

PORT ENABLE 0 1 2 3 4 5 6 7		PANEL
CYCLIC PRIORITY	STORE SIZE	MODE
NON-EXISTENT ADDRESS 2 3 4 5 6 7		
MASK PORT ASSIGNMENT	STORE	



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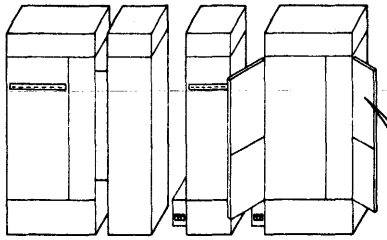
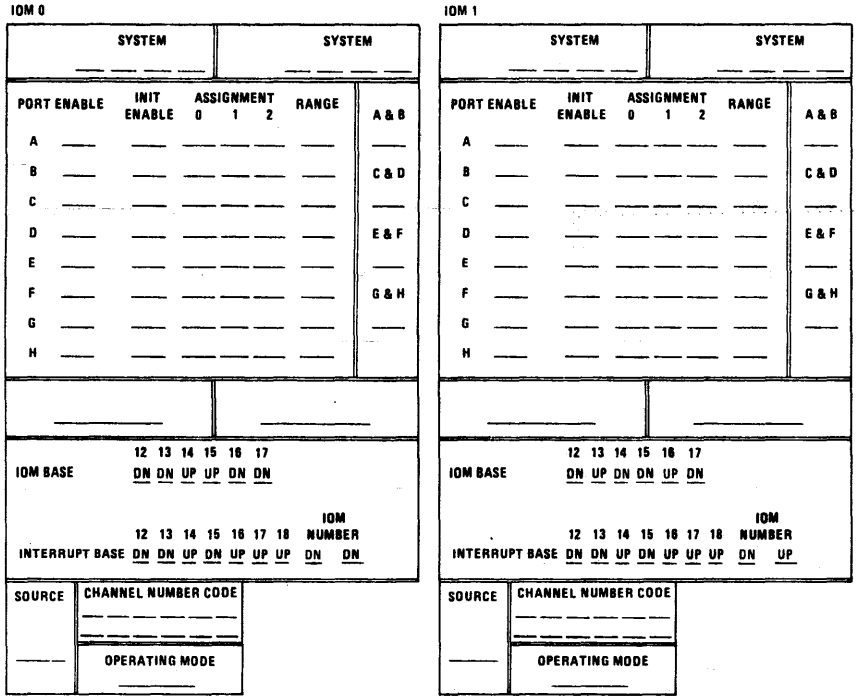
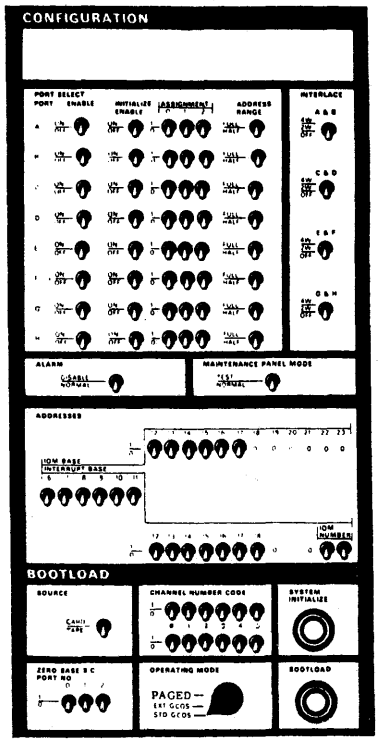
(2.2.3 Cont.)

C. INPUT/OUTPUT MULTIPLEXER UNIT (IOM)

- Verify that all switches are in the normal site configuration positions.







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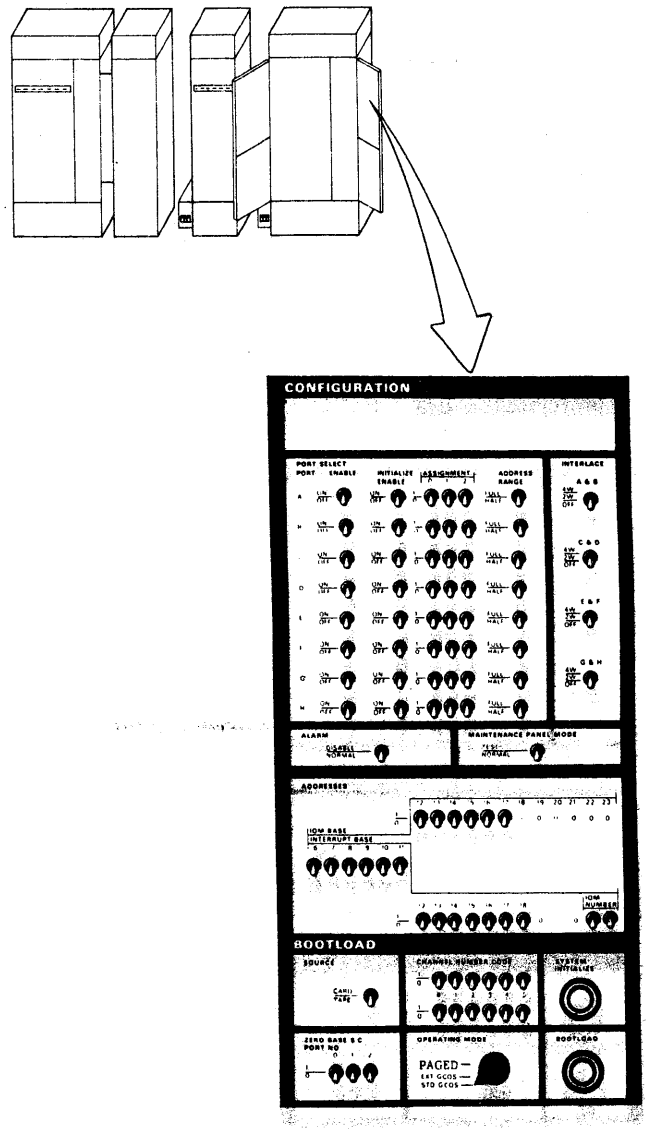
(2.2.3C Cont.)

IOM 2

	SYSTEM						SYSTEM					
PORT ENABLE		INIT ENABLE	ASSIGNMENT 0	1	2	RANGE	A & B					
A												
B							C & D					
C												
D							E & F					
E												
F							G & H					
G												
H												
IOM BASE		12 DN	13 UP	14 UP	15 DN	16 DN	17 DN					
INTERRUPT BASE		12 DN	13 DN	14 UP	15 DN	16 UP	17 UP	18 UP	IOM NUMBER UP	IOM NUMBER DN		
SOURCE	CHANNEL NUMBER CODE											
	OPERATING MODE											

IOM 3

	SYSTEM						SYSTEM					
PORT ENABLE		INIT ENABLE	ASSIGNMENT 0	1	2	RANGE	A & B					
A												
B							C & D					
C												
D							E & F					
E												
F							G & H					
G												
H												
IOM BASE		12 DN	13 UP	14 UP	15 UP	16 UP	17 DN					
INTERRUPT BASE		12 DN	13 DN	14 UP	15 DN	16 UP	17 UP	18 UP	IOM NUMBER UP	IOM NUMBER UP		
SOURCE	CHANNEL NUMBER CODE											
	OPERATING MODE											



(2.2.3 Cont.)

D. SOFTWARE STARTUP

At the System Console:

1. Having mounted your system task media, press the **INITIALIZE** button located on the Processor Activity Monitor Pod (1).

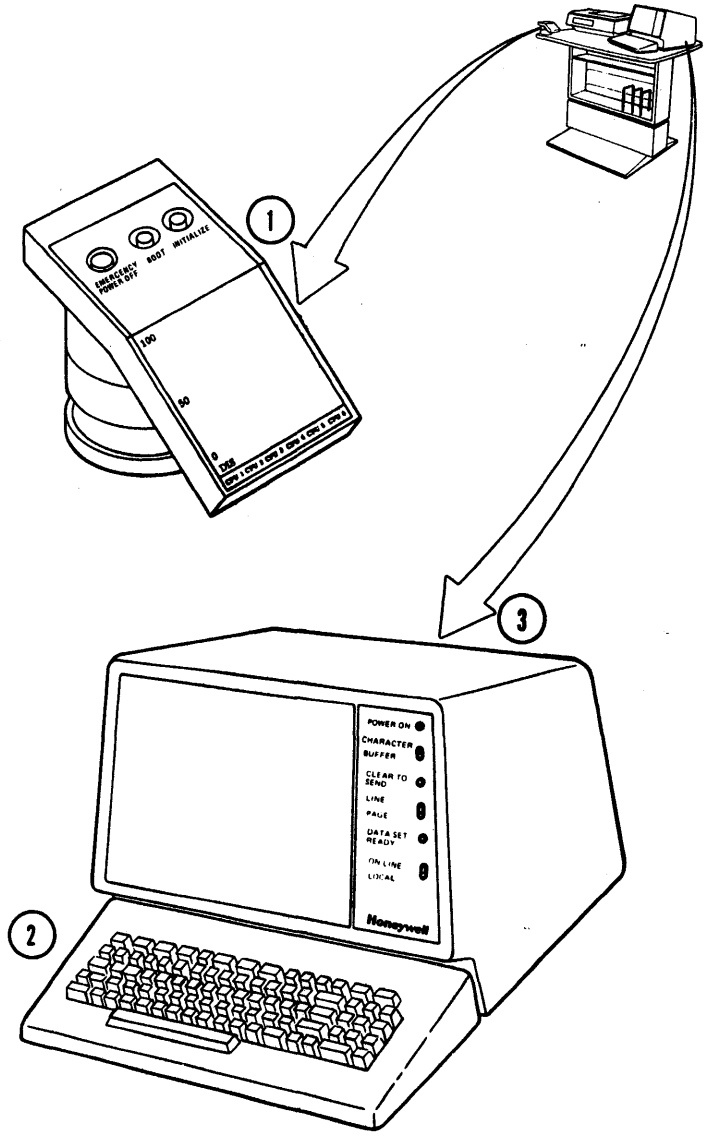
2. Press the **RETURN** key on the Video Display Unit Keyboard (2).

3. Verify the presence of the following message on the Video Display Unit (3).

#CONSOLE READY VER 1.4#

NOTE

If the message is not present repeat the procedure. If after the second attempt the message still does not appear perform paragraph 4.1, PRIOR TO CALLING THE RESPONSE CENTER.



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(2.2.3D Cont.)

4. Press the **BOOT** button located on the Processor Activity Monitor Pod (1) .

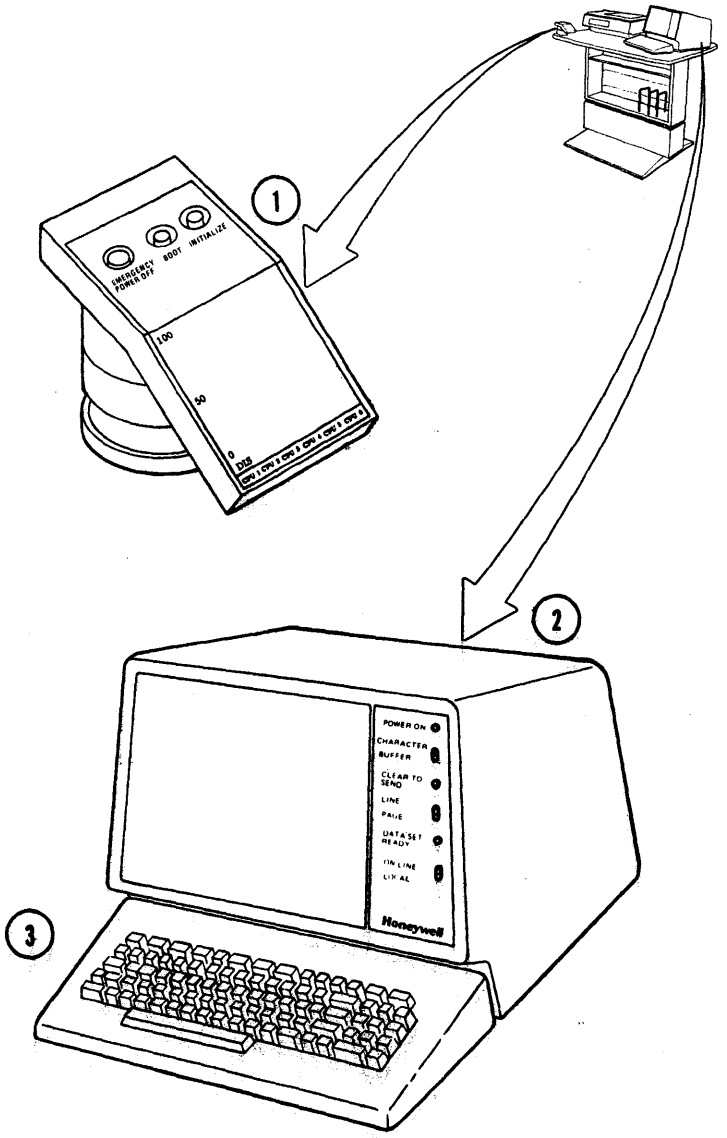
5. Verify the presence of operator messages and answer, via the Video Display Unit Keyboard, any questions displayed (2) , (3) .

   A. Typical Bootload in progress messages:

NOTE

Your replies to central system questions should be made in accordance with your particular installation operating instructions.

```
*REPLACE?
*RESTART?
*SCF CONTINUATION?
*DATE 000000?
*TIME 00.000?
*INITIALIZE?
*SYSOUT FOUND: A BACKDOOR FILE, TOO
```



A-44

(2.2.3D Cont.)

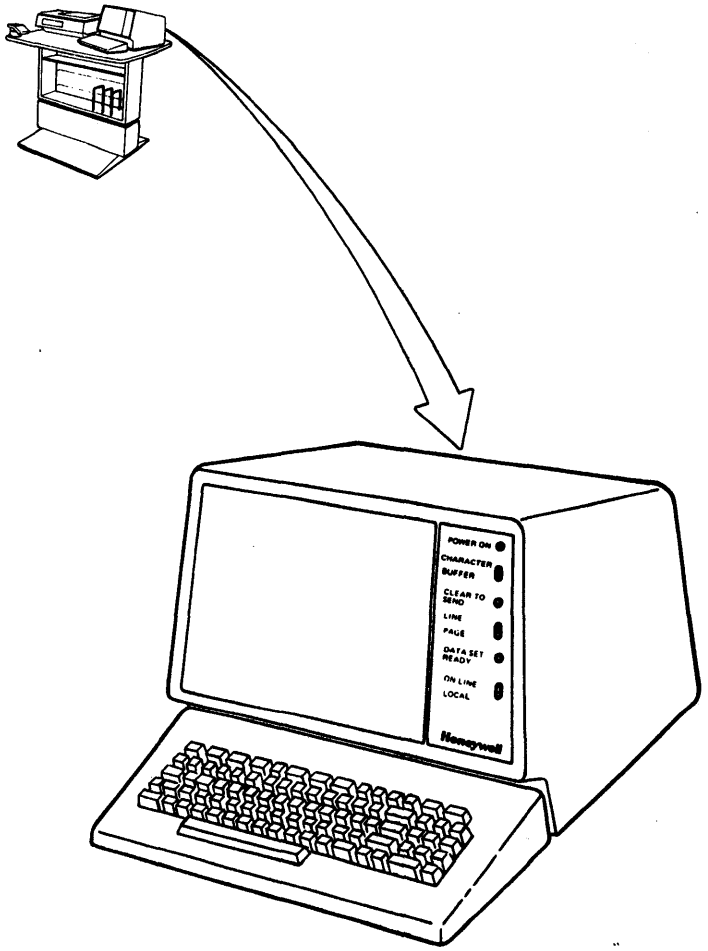
B. Typical Bootload failure messages:

***BOOTLOAD DEVICE ERROR**
***COMMAND FAULT AT 00154046,**
CAN NOT PROCEED

NOTE

If failure messages appear perform paragraph 4.1, PRIOR TO CALLING THE RESPONSE CENTER.

6. Proceed with normal job processing.



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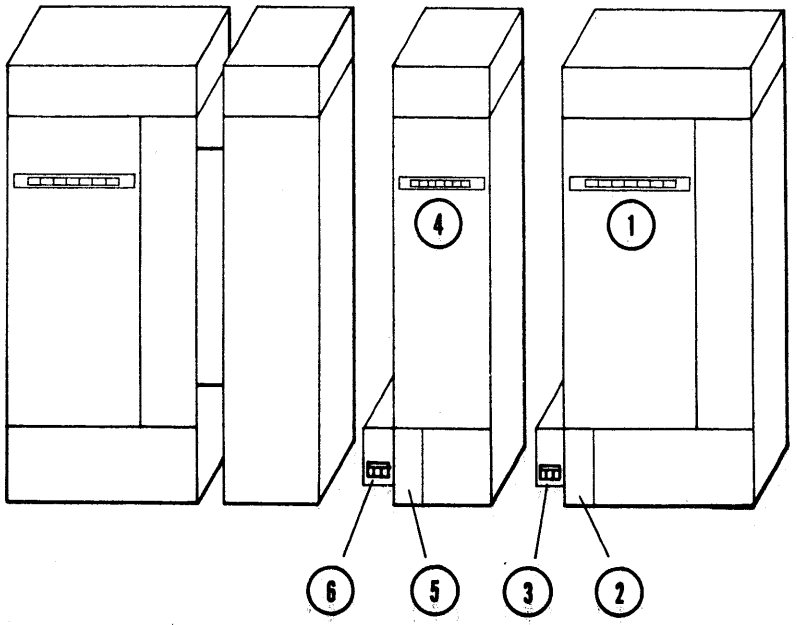
2.3 POWER SHUTDOWN

2.3.1 NORMAL SHUTDOWN (Central System)

NOTE

Prior to normal central system shut-down perform a boot-down of the operating system.



A. INPUT-OUTPUT MULTIPLEXER UNIT (IOM)

1. Press and release the **POWER OFF** switch indicator (1) .
2. Set the Main Power circuit breaker (CB1) (2) to **OFF**.
3. Set the AC circuit breaker (3) to **OFF**.

B. CENTRAL MEMORY UNIT (CMU)

1. Press and release the **POWER OFF** switch-indicator (4) .
2. Set the Main Power circuit breaker (CBI) (5) to the **OFF** position.
3. Set the AC circuit breaker (6) to the **OFF** position.

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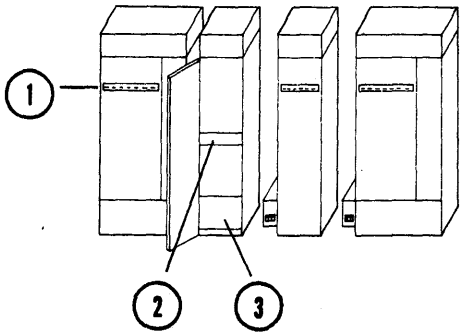
(2.3.1 Cont.)

C. CENTRAL PROCESSOR UNIT (CPU)

1. Press and release the **POWER OFF** switch-indicator (1) .

2. Set the Main Power circuit breaker (CBI) (2) to **OFF**.

3. Set the AC circuit breaker (3) to **OFF**.

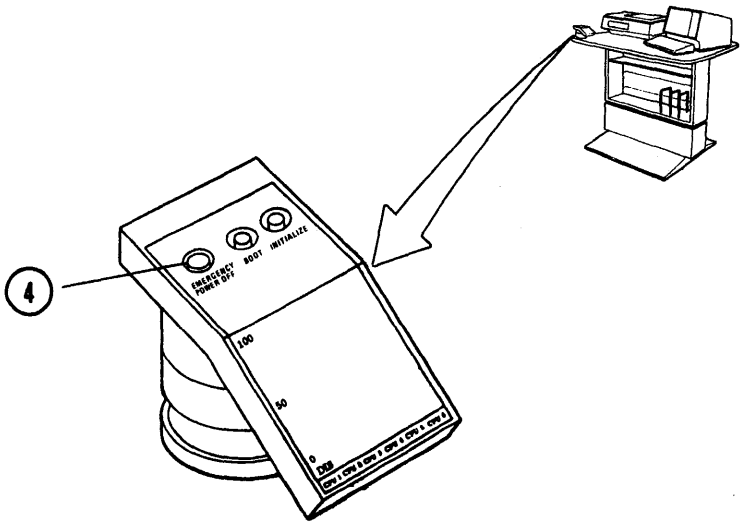


2.3.2 EMERGENCY SHUTDOWN (CENTRAL SYSTEM)

In the event that emergency shutdown is required due to equipment malfunction or hazardous conditions, the following procedure shall be followed.

A. If your system is so configured; at the Processor Activity Monitor Pod on the System Console (4) press the **EMERGENCY POWER OFF** switch.

B. Set equipment circuit breaker at the Site Main Power Distribution Panel to the **OFF** position.



SECTION 3 DISTRIBUTED MAINTENANCE SERVICE (DMS)

3.1 GENERAL

Honeywell's Distributed Maintenance Services (DMS) provides large systems users with a comprehensive program of installation and maintenance support and services. DMS is designed to coordinate Honeywell's full service capabilities, thereby providing customers with improved product system performance and availability. Through responsive, competent service offerings, the proper technical support resources will provide rapid response to customer needs and focus on effective solutions which reduce downtime and improve overall system availability.

DMS is provided by Honeywell's Field Engineering Division, a single support organization that services the entire system--mainframe hardware, peripherals, terminals, communication and satellite equipment, and software. Whether the system is a large complex distributed system, Field Engineering's DMS support program responds to user needs for a high level of system performance and availability.

3.2 THE BENEFITS OF DMS

To achieve improved system performance and availability and increase the probability of no-visit or first-visit repairs, the DMS maintenance philosophy emphasizes:

- Advanced remote diagnostic capabilities.
- Remote software support and hardware technical assistance.
- A single-point dispatch for service.
- Adequate parts inventory at a point near the user.
- Fully trained technical specialists who can provide the broadest spectrum of maintenance services.

3.3 THE ELEMENTS OF DMS

DMS is implemented to provide full service capabilities through a number of major elements including:

- Technical Assistance Center (TAC) - a remote software support and hardware technical assistance service.
- Response Center System - for single-point dispatch of service requests.
- Logistics Inventory Data System - a major network for control and distribution of spare parts.
- Service Account Representative - for personalized efficient service and direct interaction with user's data processing staff.
- Field Engineering Representatives.
- Specialized Services.

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SECTION 4 TECHNICAL ASSISTANCE CENTER (TAC)

4.1 PRIOR TO CALLING THE RESPONSE CENTER

When you feel that it has become necessary to call for Honeywell technical assistance please take a few additional moments to assure yourself that you have not overlooked a small procedural step. A careful review of the following symptom-related-questions will provide you with increased confidence prior to CALLING THE RESPONSE CENTER.

A. **SYSTEM DOWN-WON'T BOOT**

- o Did you attempt the startup more than once? Refer to paragraph **2.2.3D**
- o Did you double-check the system configuration? Refer to paragraphs **2.2.3A,B,C.**
- o Did you successfully boot the DPU System? Refer to paragraphs **2.2.4.3A,B,C,D.**

B. **SYSTEM INTERMITTENT FAILURES/JOB ABORTS**

- o Can your provide the TAC specialist with a clear description of the problem and symptoms?
- o What error message did you receive at the time of failure?
- o Is the problem a reoccurring problem? If yes, is there a specific time interval or type of job being performed correlation?

C. **DPU WON'T BOOT**

- o Did you try both the Autoboot and Manual Boot procedures? Refer to paragraphs **2.2.4.3A,B,C,D.**

D. **PERIPHERAL PROBLEM - SYSTEM RUNS**

- o What type of peripheral is experiencing the problem?
- o Did you attempt to alleviate the problem using the pertinent unit manual?
- o Can you provide the TAC specialist with a clear description of the problem and symptoms?

Proceed to paragraph 4.2, CALLING THE RESPONSE CENTER.

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4.2 CALLING THE RESPONSE CENTER

When it becomes necessary to call Honeywell for technical assistance you will call the Response Center.

The Response Center will ask you for following information:

1. System Number
2. Confirmation of the name and address of the company.
3. Type of problem i.e. Hardware or Software.
4. Brief description of the problem.

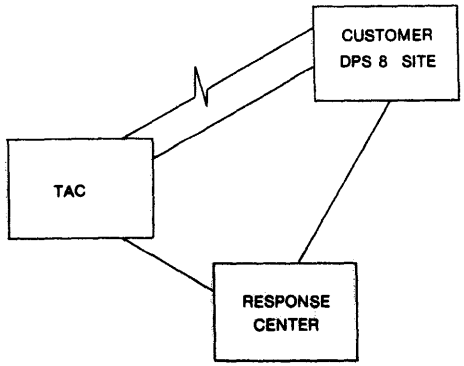
Having collected the above information the Response Center will forward these system particulars to the Technical Assistance Center (TAC). Please wait for the TAC specialist to contact you.

Honeywell

FIELD ENGINEERING DIVISION

SYSTEM NUMBER _____

FOR SERVICE CALL 800-241-1634



4.3 PROBLEM & SYSTEM DESCRIPTION

Having received your call from the Technical Assistance Center (TAC) you will be required to furnish the TAC specialist with parts or all of the following information.

4.3.1 FAULT SYMPTOMS

A. **System Down - Won't Boot**

B. **System Intermittent Failures**

C. **DPU Down - Won't Boot**

D. **Peripheral Problem - System Runs**

4.3.2 SYSTEM DESCRIPTION

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Each installation is characterized by differing amounts and types of equipment. Your installation is described within the chart on the following page. This information may be required by the TAC Specialist in his efforts to isolate and resolve faults within the system. It is critical that these system particulars be accurate and up-to-date.

SYSTEM CONFIGURATION CHART

SCU A		DPU ID SCU – –	SCU B		DPU ID SCU – –	SCU C		DPU ID SCU – –	SCU D		DPU ID SCU – –
PORT #	CPU#,PORT#	IOM#,PORT#	PORT #	CPU#,PORT#	IOM#,PORT#	PORT #	CPU#,PORT#	IOM#,PORT#	PORT #	CPU#,PORT#	IOM#,PORT#
	DPU ID	DPU ID		DPU ID	DPU ID		DPU ID	DPU ID		DPU ID	DPU ID
0	CPU– –	IOM– –	0	CPU– –	IOM– –	0	CPU– –	IOM– –	0	CPU– –	IOM– –
1	CPU– –	IOM– –	1	CPU– –	IOM– –	1	CPU– –	IOM– –	1	CPU– –	IOM– –
2	CPU– –	IOM– –	2	CPU– –	IOM– –	2	CPU– –	IOM– –	2	CPU– –	IOM– –
3	CPU– –	IOM– –	3	CPU– –	IOM– –	3	CPU– –	IOM– –	3	CPU– –	IOM– –
4	CPU– –	IOM– –	4	CPU– –	IOM– –	4	CPU– –	IOM– –	4	CPU– –	IOM– –
5	CPU– –	IOM– –	5	CPU– –	IOM– –	5	CPU– –	IOM– –	5	CPU– –	IOM– –
6	CPU– –	IOM– –	6	CPU– –	IOM– –	6	CPU– –	IOM– –	6	CPU– –	IOM– –
7	CPU– –	IOM– –	7	CPU– –	IOM– –	7	CPU– –	IOM– –	7	CPU– –	IOM– –

MEMORY ASSIGNMENT/SIZE

PORT #	MEMORY A OR B	MEMORY SIZE	PORT #	MEMORY A OR B	MEMORY SIZE	PORT #	MEMORY A OR B	MEMORY SIZE	PORT #	MEMORY A OR B	MEMORY SIZE
0			0			0			0		
1			1			1			1		
2			2			2			2		
3			3			3			3		
4			4			4			4		
5			5			5			5		
6			6			6			6		
7			7			7			7		

NUMBERING SYSTEM:

- SCU ID = A,B,C,D
- SCU PORT # = 0-7
- CPU ID = 0-3
- CPU PORT # = A,B,C,D
- IOM ID = 0-3
- IOM PORT # = A,B,C,D
- MEMORY ID = A OR B
- MEMORY SIZE = 256K, 512K, 768K, 1024K
- DPU ID: CPU– –, IOM– –, SCU 0 –

4.4 DPU REMOTE HOOKUP TO TAC

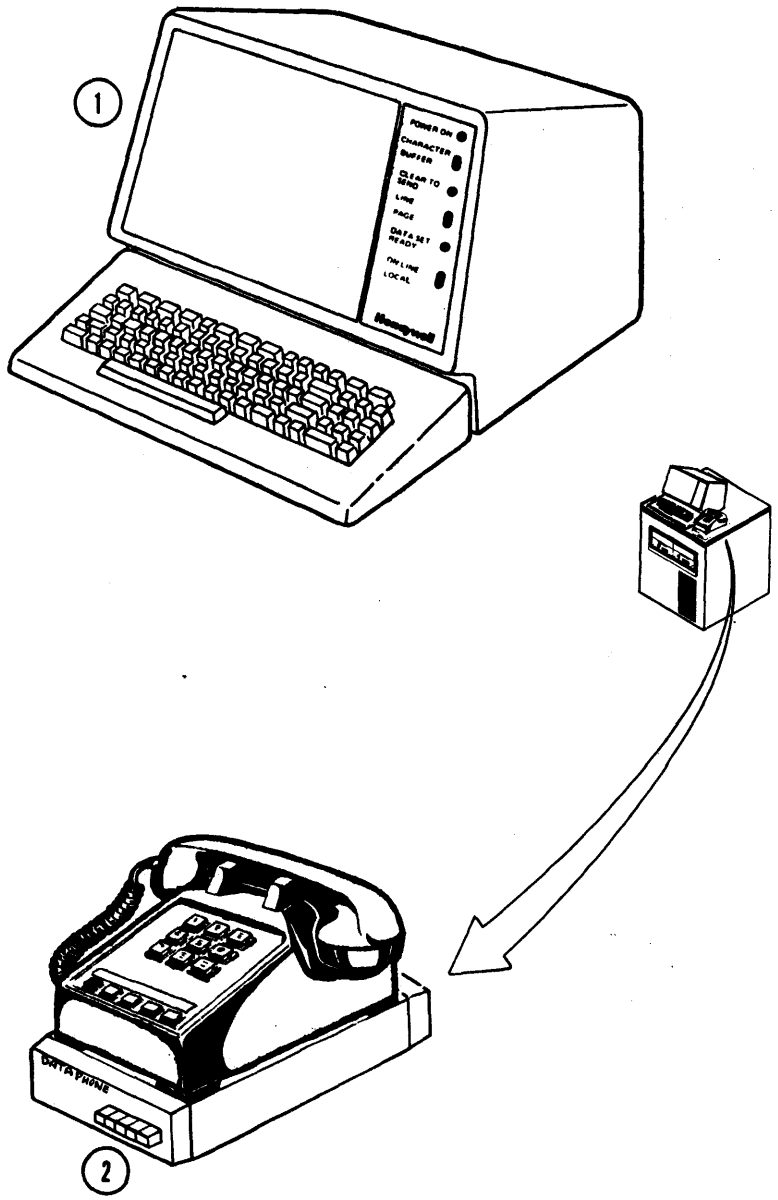
4.4.1 ACTIVATE REMOTE MAINTENANCE

A. Ensure that the DPU is operational by observing the presence of data messages on the DPU Video Display Unit. (1)

B. Upon receiving instructions from TAC switch the telephone from the talk mode to the data mode via the line selection buttons (2) and hang up.

NOTE

Additional DPU commands not utilized within this section are contained under the tab entitled **RMI COMMANDS.**



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(4.4.1 Cont.)

C. Wait for the TAC remote maintenance request (1) .

D. Respond to the request by:
Type in: **#ENA REM**
Depress: RETURN (2)

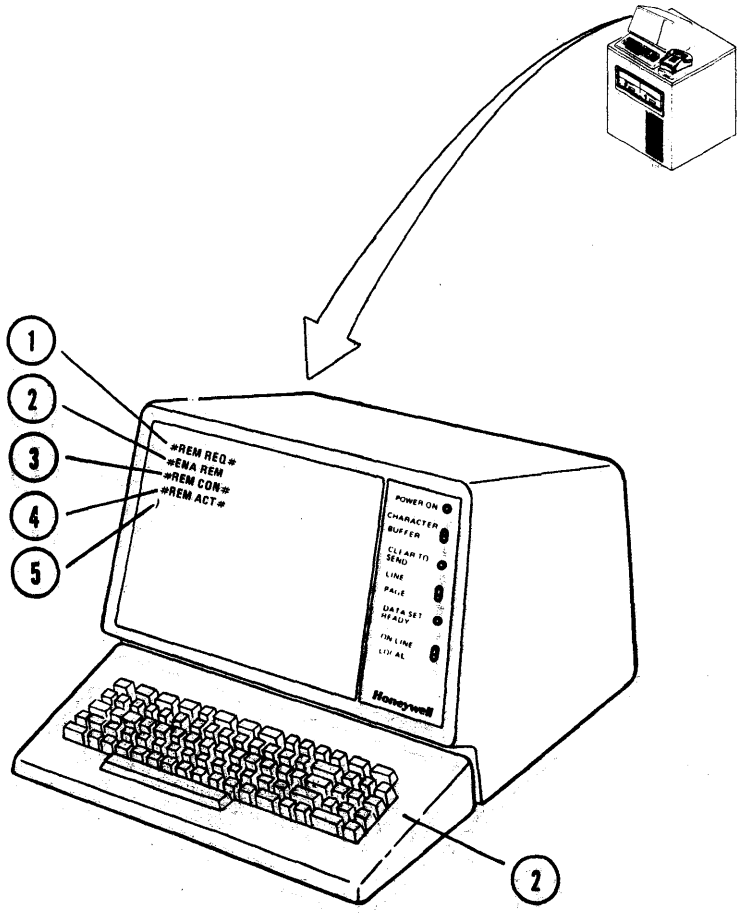
E. Wait for the remote connected message (3) .

F. Indicates that TAC has control and is ready to test your system (4) .

G. Proceed to paragraph 4.4.2, TAC INSTRUCTIONS.

NOTE

All messages to the operator from TAC will be prefaced with a right parenthesis character (5) .

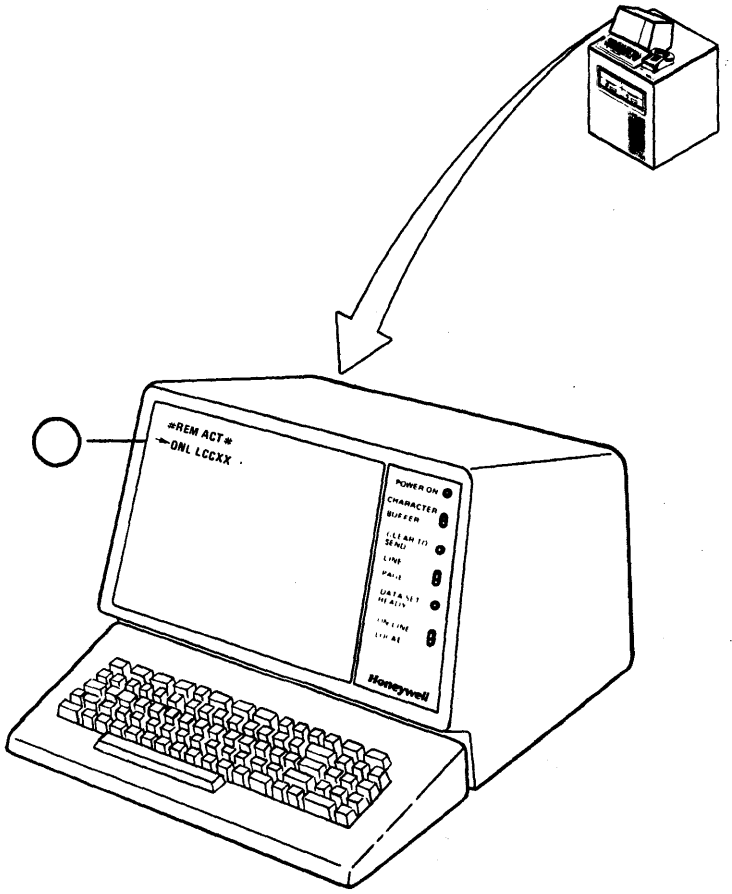


4.4.2 TAC INSTRUCTIONS

The TAC specialist has a variety of methods at his disposal to diagnose your equipment problems. His selection will be based upon the failure description that you provided during your intitial contact. The following troubleshooting methods represent the choices at his disposal.

- o Run the system with TAC interaction (Job Monitoring) - **paragraph 4.4.2.1**
- o Run TOLTS (Total On-Line Test System) - **paragraph 4.4.2.2**
- o Run PAS2 (Off-Line Test and Diagnostics) - **paragraph 4.4.2.3**
- o Use the MPC portable maintenance panel **-paragraph 4.4.2.4**

At the direction of TAC proceed to the appropriate paragraph.



4.4.2.1 JOB MONITORING

A. Having previously established DPU REMOTE HOOKUP TO TACK, paragraph 4.4.1, TAC will invoke the DPU ON-LINE function ◯ . Please move to the System Console.

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(4.4.2.1 Cont.)

B. At the System Consoles Video Display Unit Keyboard respond to the **#REM REQ#** by:

Depress and hold	[ESC]
Type in # E N A	[SPACE] R E M
Release	[ESC]
Depress	[RETURN] (1)

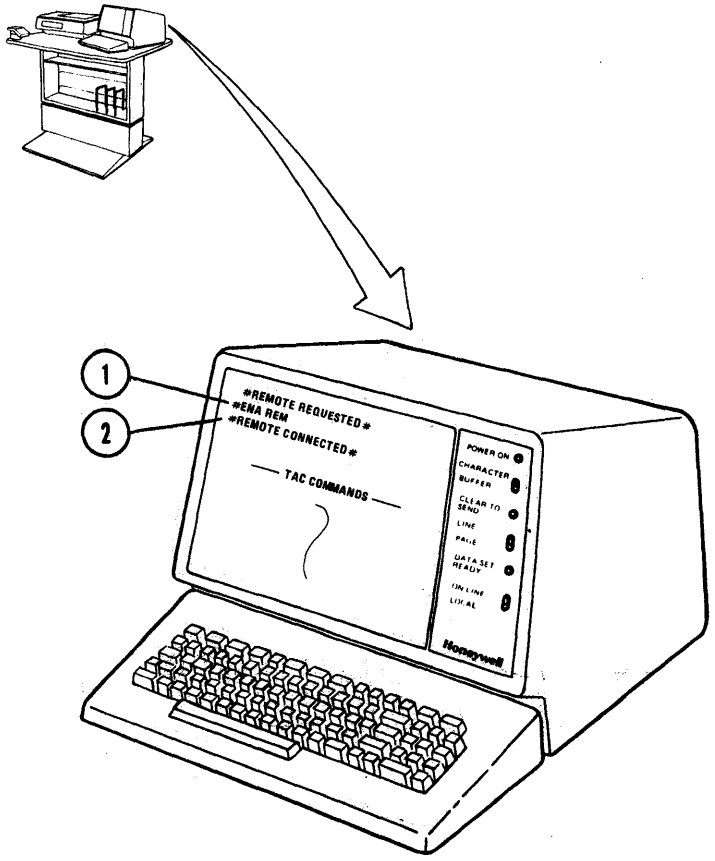
C. TAC has gained control and is capable of monitoring all of your System Console activities (2) .

NOTE

SHOULD YOU DESIRE TO TEMPORARILY TERMINATE TAC CONTROL:

Depress and hold	**[CTL]**
Type in	**[X]**
Release	**[CTL]**

D. Should you desire to communicate with the TAC specialist there are three methods at your disposal.



(4.4.2.1 Cont.)

1. **QUICKEST METHOD** - This method of communicating is ideal for transmission of short messages and it does not inhibit the System Consoles ability to communicate with the Central System.

   o At the DPU Video Display Unit Keyboard:

   Depress)

   Type in the text of message - maximum one line

   Depress [RETURN] (1)

   o Wait for TAC to reply to your message (3) .

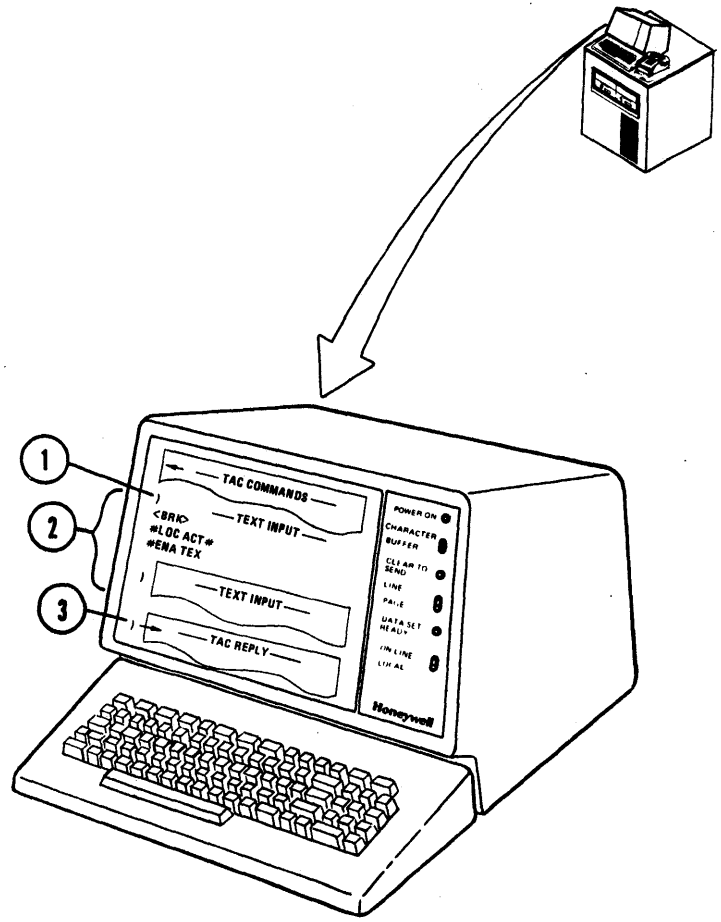
2. **ALTERNATE METHOD** - This method would be used if the text of the message will exceed a single line.

   o At the DPU Video Display Unit Keyboard:
   Type in # E N A [SPACE] T E X

   Type in the message text lines

   Depress [RETURN] (2) to transmit each line

   o Wait for TAC to reply to your message (3) .



(4.4.2.1 Cont.)

3. **LEAST DESIRABLE METHOD** - This method while being the most convenient should be considered the least desirable because when you enter the text mode on the System Console you are diminishing your capability to easily respond to Central System requests and instructions. You also risk losing TAC replys to your communications while you are responding to the Central System.

   o At the System Console Video Display Unit Keyboard:

     Type in # E N A [SPACE] T E X

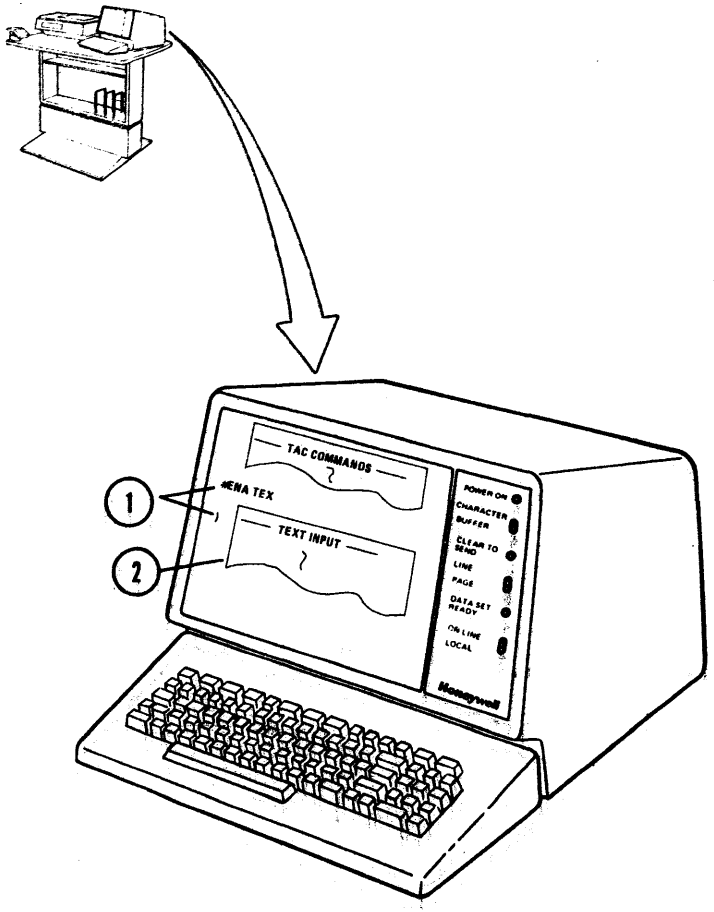
     Depress [RETURN] (1)

     NOTE

     You have now inhibited your ability to communicate with the Central System. Your only connection via the Keyboard is directly to TAC.

   o Type in the text of the message (2) .

     Depress [RETURN] to transmit each line



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(4.4.2.1 Cont.)

- Wait for TAC to reply to your message (1).

NOTE

If you receive instructions or messages from the Central System while in the text mode you must restore the communications link between the Central System and the console keyboard before attempting to reply. During this period any communications received from TAC will be lost at the Central Console, but may be viewed at the DPU Video Display Unit.

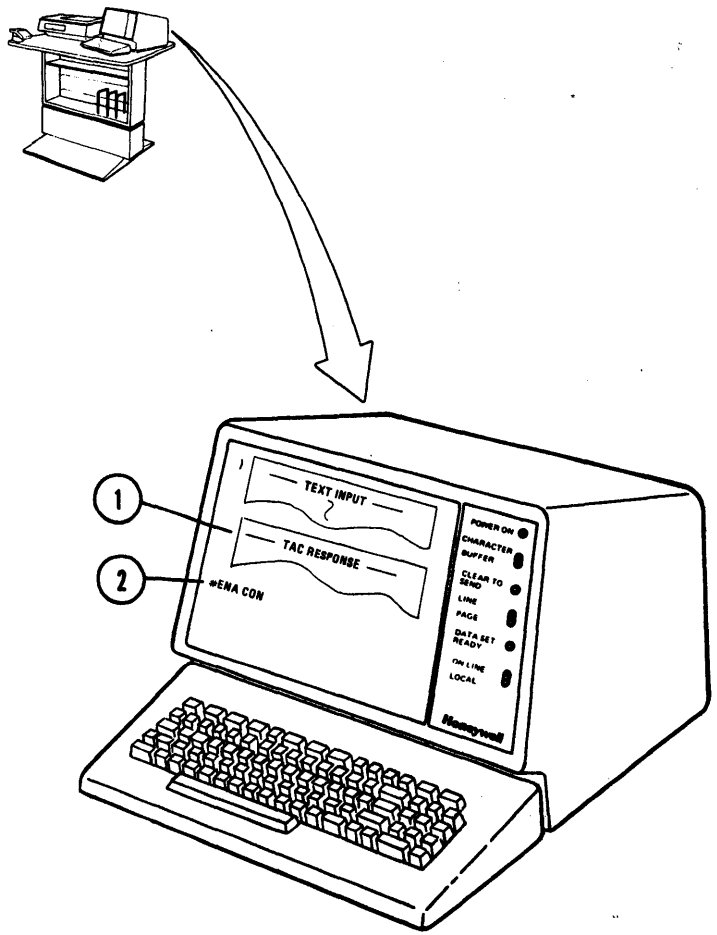
- Re-establish the communications link between the Central System and the console keyboard by:

  Type in # E N A [SPACE] C O N

  Depress [RETURN] (2)

- Reply to the Central Systems question or instruction.

- Return to the text mode using the Normal **#ENA TEX** command if so desired.



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(4.4.2.1 Cont.)

E. Normally TAC will relinguish control of the System Console. At the completion of **JOB MONITORING.** Notification will appear at the Video Display Unit (1) .

NOTE

If for any reason you desire to terminate the TAC Remote System Console connection perform step F.

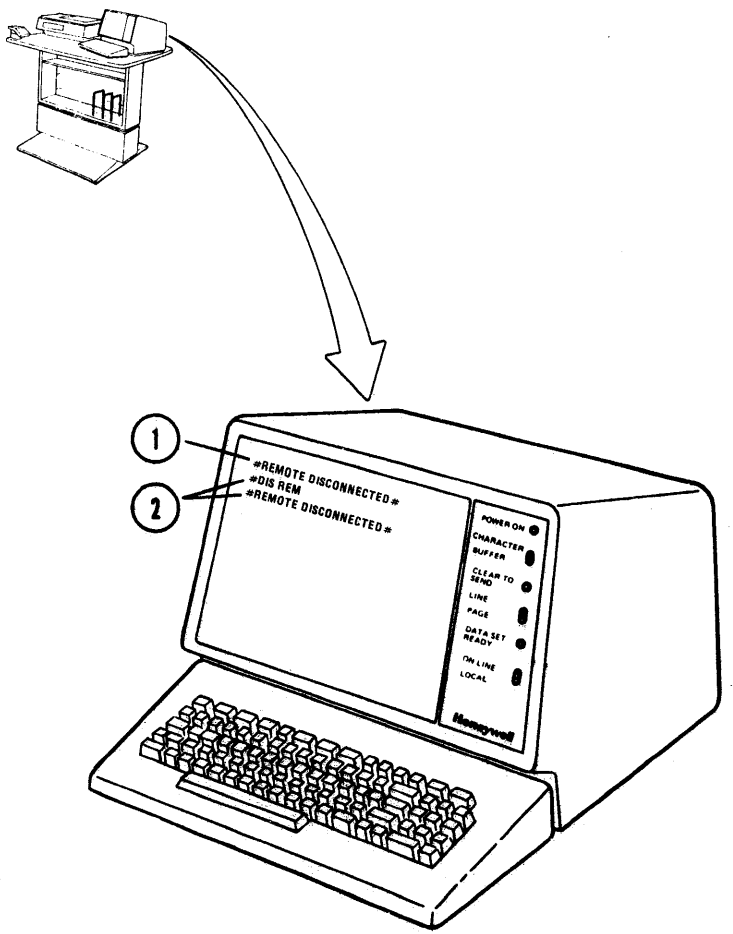
F. At the System Console terminate the TAC remote connection by:

Depress and hold [ESC]

Type in # D I S [SPACE] R E M

Release [ESC]

Depress [RETURN] (2)



A-50

4.4.2.2 TAC RUN TOLTS

A. Perform paragraph 4.4.2.1, steps A-C allowing TAC to gain control and monitor your system console activities.

B. TAC will inform you that they are running the total On-Line Test System (TOLTS) ◯ , (Example Only).

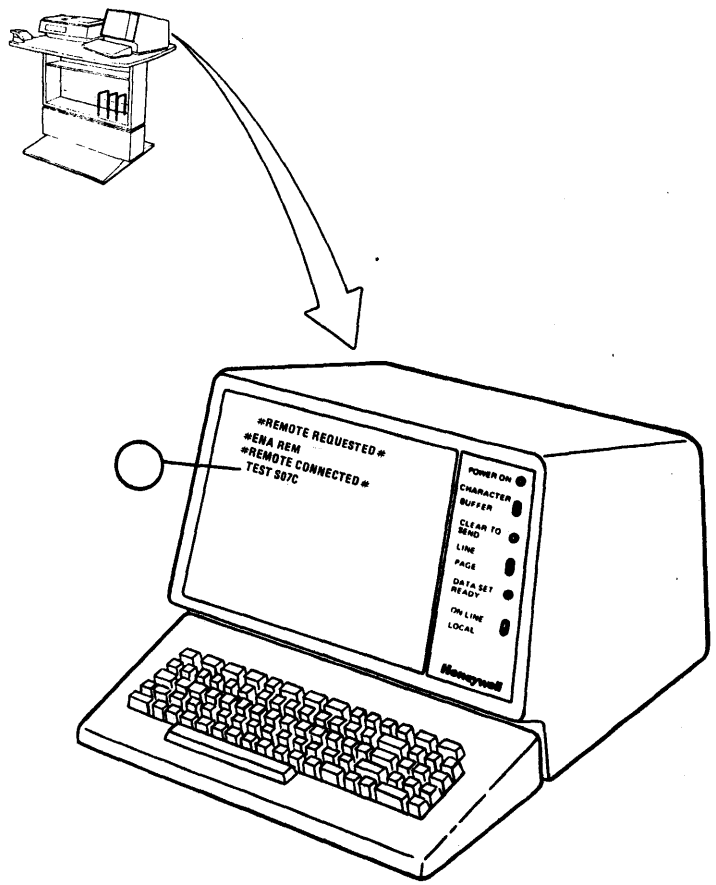
NOTE

Ignore all test message data that may appear.

C. No further action is required unless instructed to do so by the TAC specialist. Please standby the DPU Subsystem.

NOTE

If you must enter the text mode to communicate with the TAC specialist refer to paragraph 4.2.2.1, step D.



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4.4.2.3 TAC RUN PAS2

A. Mount the PAS2 and firmware tapes on convenient tape handlers (1) . Note each tape handler number.

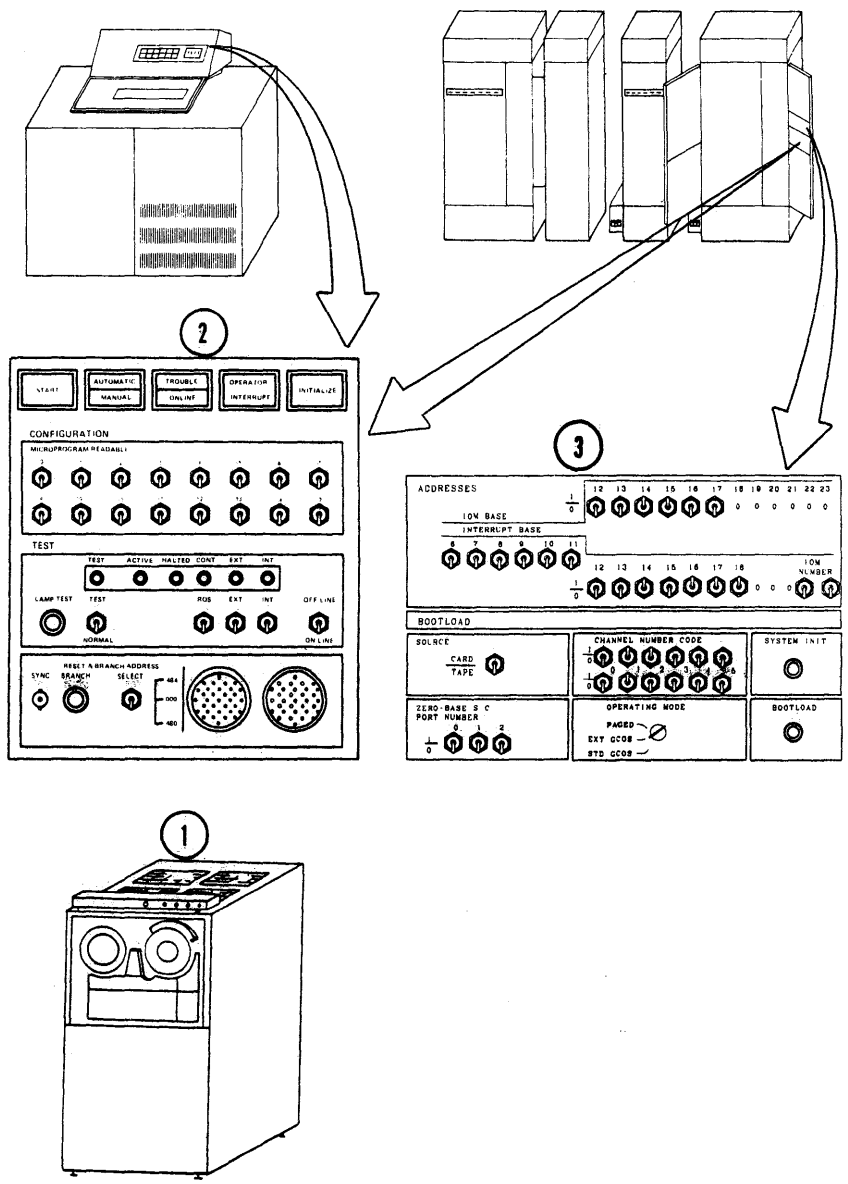
B. Locate the tape MPC configuration panel (2) and enter the octal equivalent to the PAS2 tape handler number in switches 5, 6, 7.

TAPE HANDLER #	SWITCHES (5)	(6)	(7)
1	DN	DN	UP
2	DN	UP	DN
3	DN	UP	UP
4	UP	DN	DN
5	UP	DN	UP
6	UP	UP	DN
7	UP	UP	UP
8	DN	DN	DN

C. At the **IOM CONFIGURATION** panel (3) place the identified switches in their appropriate position.

SWITCH NAME	POSITION
IOM BASE	OCTAL 1400 (As indicated)
INTERRUPT BASE	OCTAL 1340 (As indicated)
SOURCE	TAPE
CHANNEL NUMBER CODE	OCTAL 20 (As indicated)*
OPERATING MODE	EXT. GCOS

*Check your particular site configuration, paragraph 2.2.3 C and D.



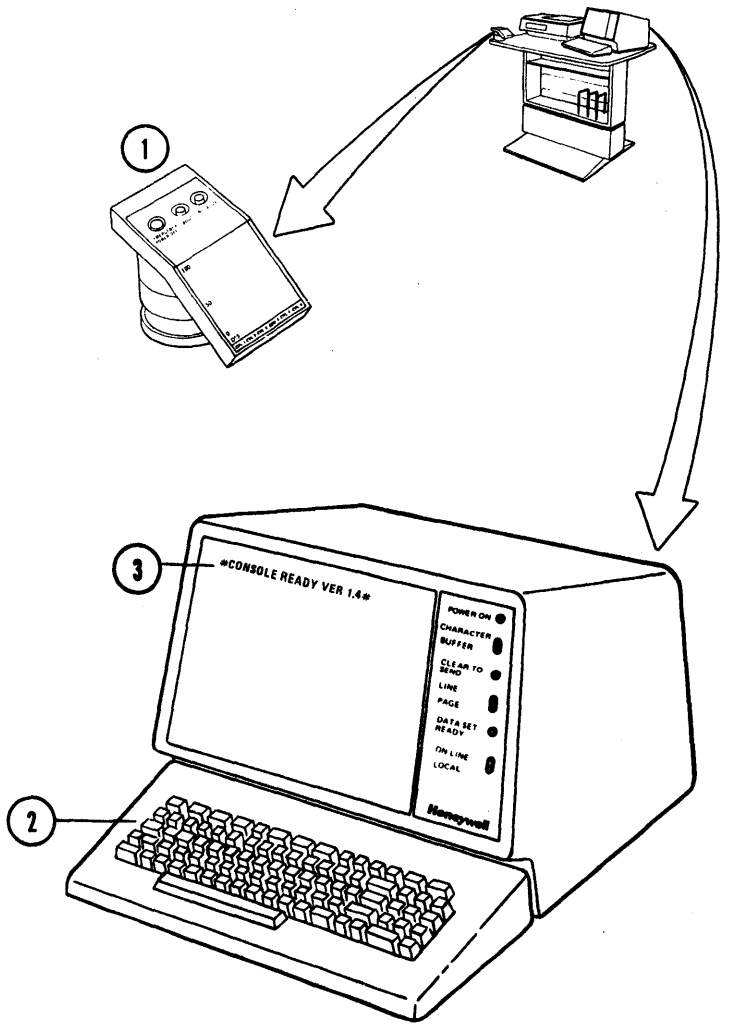
(4.4.2.3 Cont.)

D. Press the **INITIALIZE** button located on the Processor Activity Monitor Pod (1) .

E. Press the **RETURN** key on the Video Display Unit Keyboard (2) .

F. Verify the presence of the following message on the Video Display Unit (3) .

#CONSOLE READY VER 1.4#



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(4.4.2.3 Cont.)

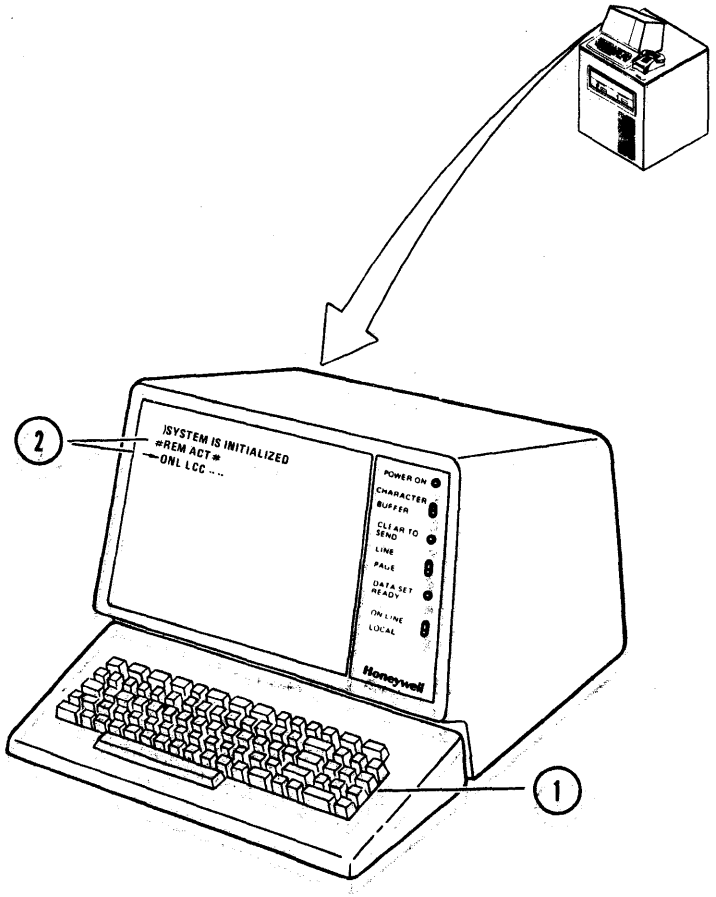
G. At the DPU Video Display Unit Keyboard type in:

) S Y S T E M [SPACE] I S [SPACE]

I N I T I A L I Z E D

Depress [RETURN] (1)

H. Wait for TAC to invoke the DPU ON-LINE function (2) .



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(4.4.2.3 Cont.)

I. At the System Console Video Display Unit verify the presence of TAC's remote maintenance request (1) .

J. Respond to the request by:

Depress and hold [ESC]

Type in # E N A [SPACE] R E M

Release [ESC]

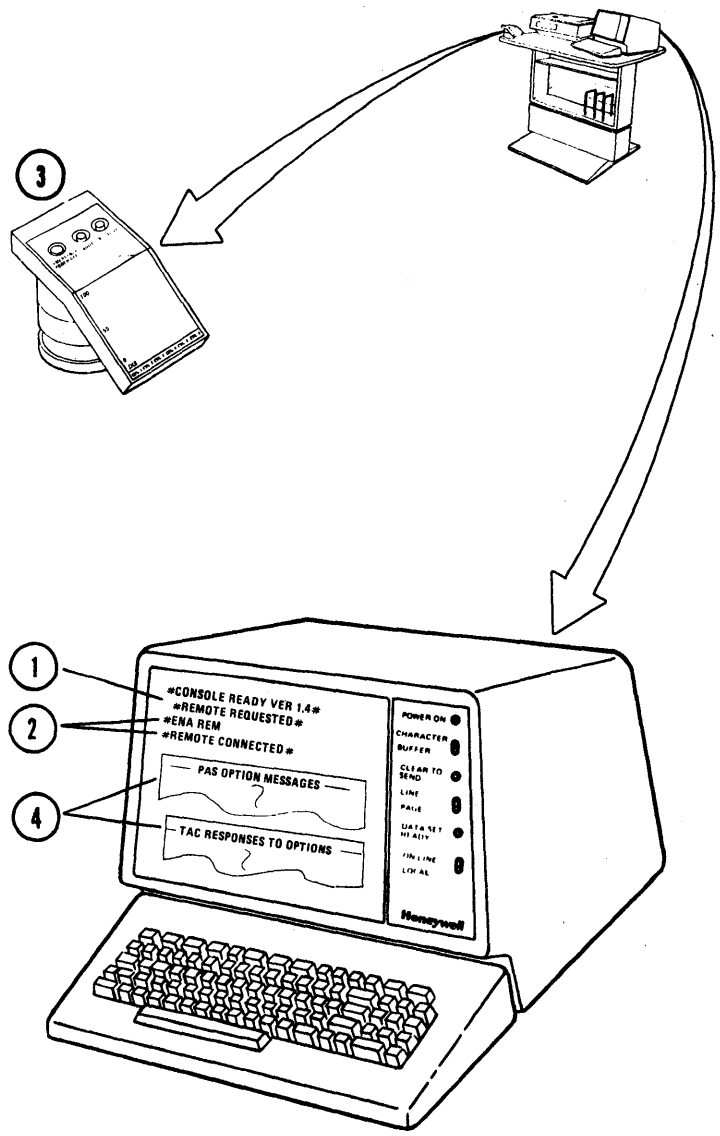
Depress [RETURN]

K. Verify the presence of the **#REMOTE CONNECTED#** message (2) indicating that TAC is capable of controlling/monitoring your system console activities.

L. Press the **BOOT** button located on the Processor Activity Monitor (3) .

NOTE

At the System Console Video Display Unit various PAS options will be listed (4) . If the message, "IS MTS F/W ALREADY LOADED?" is to be answered "N" for No perform step M. If answered "Y" for Yes go to step N.



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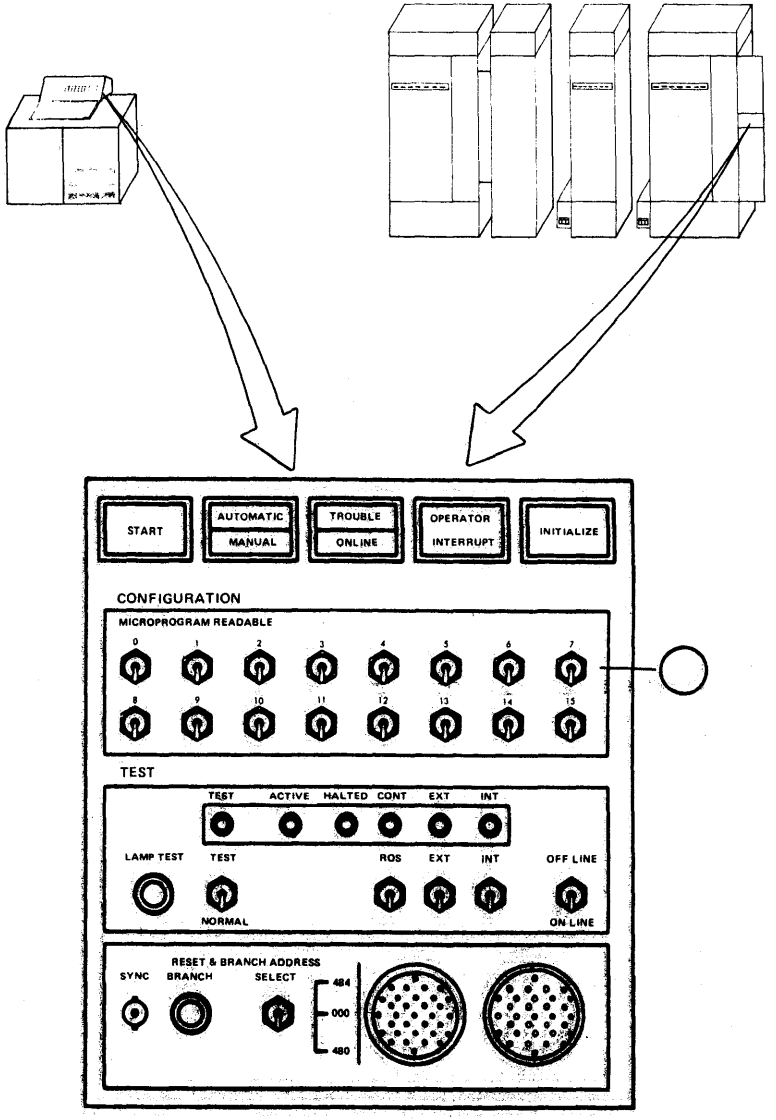
M. At the MPC configuration panel ◯ enter the octal equivalent to the firmware tape handler number noted in step A.

TAPE HANDLER #	SWITCHES (5)	(6)	(7)
1	DN	DN	UP
2	DN	UP	DN
3	DN	UP	UP
4	UP	DN	DN
5	UP	DN	UP
6	UP	UP	DN
7	UP	UP	UP
8	DN	DN	DN

N. No further action is required unless directed by TAC.

NOTE

Should **#REMOTE DISCONNECTED#** appear on the System Console Video Display screen it indicates that TAC has completed their task and relinquished control of the System Console. Additional messages from TAC, if any, will appear on the DPU Video Display Unit.



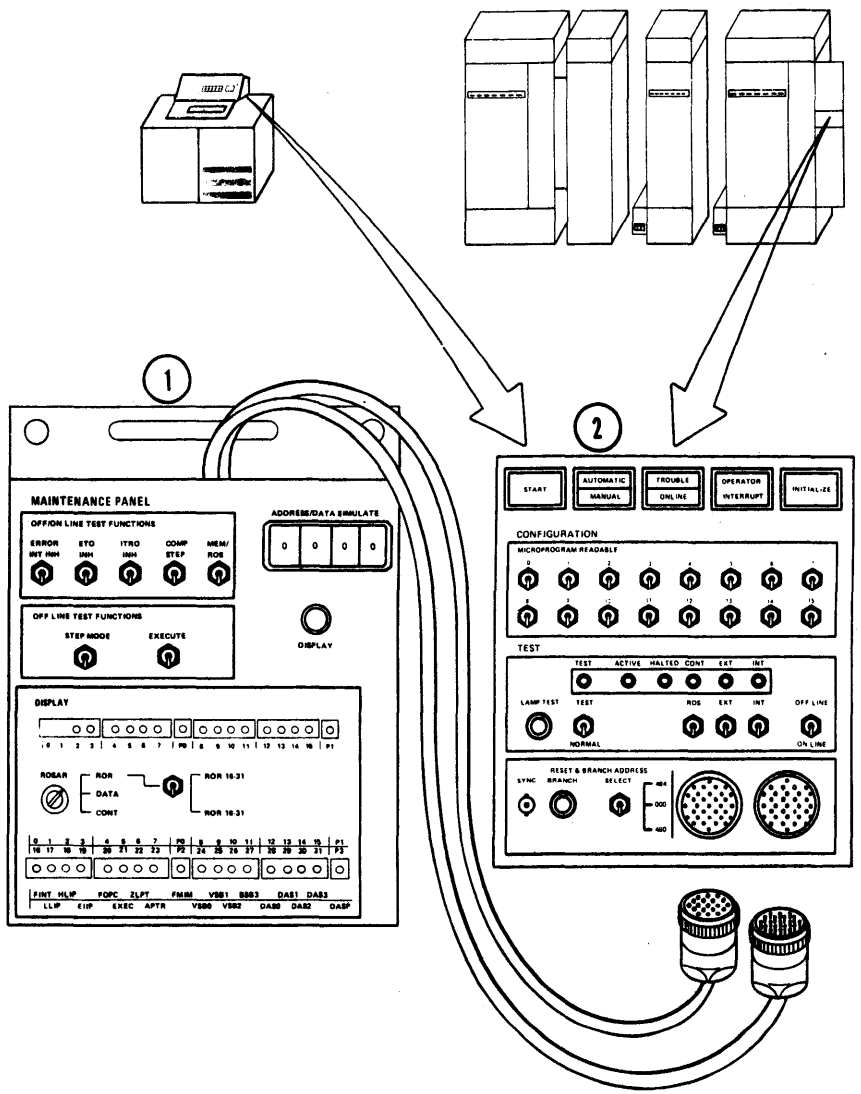
4.4.2.4 MPC PORTABLE MAINTENANCE PANEL

A. Locate the MPC Portable Maintenance Panel (1) .

B. Connect the two plugs to the MPC Configuration Panel (2) .

- o Note that the plugs are not interchangeable.
- o Rotate the plugs as necessary to insert them. Turn the locking ring to secure each plug.

C. TAC will direct you in the setting of switches and reading of display information on the Maintenance and Configuration panels.



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SECTION 5 REMOTE MAINTENANCE INTERFACE (RMI) COMMANDS

5.1 RMI PROTOCALL

- All command inputs are entered as upper case, fixed format, prefixed with a # sign and terminated by **RETURN.**

  Example: **# ENA REM** [RETURN]

- RMI commands may be entered at any time from either the REMOTE (TAC) or local (DPU) Video Display Unit, whether the keyboard is active or inactive.

- RMI acknowledges command input by issuing a carriage return and linefeed.

- All RMI responses are bracketed by # signs.

- For inputs other than RMI commands only one keyboard (Local or Remote) is active at a time. Control may be taken from the active keyboard by issuing a **BRK** or **CTL X.** The remote connection may be terminated by issuing a command of **#DIS REM** from either the remote or local location.

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5.1.1 RMI COMMANDS AND RESPONSES

COMMAND	EXPLANATION	RESPONSE	DEFINITION
#STA	Display RMI status to issuing terminal	#REM DIS#	Remote Disabled
		#REM ENA#	Remote Enabled
		#LOC ACT#	Local Keyboard Active
		#REM ACT#	Remote Keyboard Active
		#MAI ENA#	Maintenance Mode Enabled
		#TEX ENA#	Text Mode Enabled
		#MON DIS#	Monitor Disabled
		#MON ENA#	Monitor Enabled
		#CPY DIS#	Copy Disabled
		#CPY ENA#	Copy Enabled
		#REM REQ#	Remote is connected and requesting control.
#ENA REM (DPU Only)	Allows the remote Keyboard (TAC) to input to the control system. Disables the local keyboard	#REM CON#	Remote connected
#DIS REM	Terminate the Remote connection	#REM DIS#	Remote Disconnected

(5.1.1 Cont.)

COMMAND	EXPLANATION	RESPONSE	DEFINITION
#ENA MON (DPU only)	Enable local monitor to view DPU data to TAC.	data....	Designates data going to TAC
#DIS MON (DPU only)	Disable local monitor		
#ENA CPY (DPU only)	Enable remote copy of local input and output.		Designates output Designates input
#DIS CPY (DPU only)	Disable remote copy		
#ENA MAI (DPU only)	Enable maintenance mode (Normal DPU mode)-Disables text mode.		
#ENA CON	Exit text mode.		
#ENA TEX	Enables text mode.		Designates text mode Designates received text

COMMAND	EXPLANATION	RESPONSE	DEFINITION
CTL X	Enables issuing keyboard, Disables other keyboard	#LOC ACT#	
(DPU only)	Designates text string to be transmitted with out enabling text mode		
CX (DPU only)	DPU captures system console	#REM ACTIVE#	
		#?	Illegal RMI Command

APPENDIX B

REV. 1

1.0 DPU START-UP

1.1 FIELD CONFIG

UNIT	BOARD	CHANNEL	
Diskette 0	MDC	0400x	Boot Record, O/S, and "SMTCS"
Diskette 1	MDC	0480x	Lib & User Scratch
Local VIP	MDC	0500x	
Remote	MLCP1	1000x	(Sys. Maint/Test)
Site Config	MLCP1	1080, 1100, 1180, ...	(Contro Software)

1.2 FACTORY CONFIG

UNIT	BOARD	CHANNEL	
MSU00	MSC	0400x	Boot & System SFWR
Diskette 0	MDC	0800x	Bkup Media
Diskette 1	MDC	0880x	Bkup Media
8 Bit GPI	MDC	0900x	Factory Auto Interface
Local Rosy	MLCP1	1000x	Console
Lev II Comm	MLCP1	1080x	
			Unit(s) Under Test/FFICS (Factory Floor Info. Cont. Sys.)

1.3 POWER-UP

Switch-On: DPU - Enable Maintenance Panel for Manual boot, disable for Auto boot.
Floppy Drives Mass Store Drive
VIP Rosy

1.4 MANUAL BOOTLOAD (Key switch must be unlocked) (Enable Maintenance)

Depress Maintenance Panel keys:

- STEP
- CLEAR
- LOAD
- EXECUTE

QLT's are invoked - CHECK and TRAFFIC indicators should be illuminated. When CHECK and TRAFFIC indicators extinguish, QLT's are complete.

Mount system Diskette on Drive 0. (System Pack on MSM for factory system)
Depress EXECUTE.

Bootload begins.

1.5 AUTO BOOTLOAD

- Disable Maintenance Panel via Key switch (to lock position)
- Switch on DPU power
- Mount system diskette on drive 0 (READY Mass Store Drive if factory)

DPU will automatically sequence through the steps outlined in Section 1.4 and begin the bootload.

1.6 START-UP COMPLETE

The DPU is ready when the prompt "C?" appears on the local VIP. Proceed to Section 2, "DPU Function Commands".

If DPU operating system trouble occurs after this point there will be a "SYS ERROR" code reported on the local/remote terminal, or the DPU will halt with error codes in registers 1 and 2.

- SYS ERROR CODES: Are reported on local VIP and/or remote terminal. See Table 2 for "OPERATIONAL ERROR CODES (OEC)" and recovery procedures.

- DPU ERROR HALT: Display and record registers 1 and 2 on the DPU Maintenance Panel. Proceed to Table 1 for error codes and any possible recovery procedures.

1.7 START-UP ERRORS (Bootload and Init. of DPU Operating System)

- Quality Logic Tests (QLT's)

  These hardware-resident QLT's are automatically run as the first phase of the Bootload sequence. If the CHECK or TRAFFIC indicators remain illuminated longer than approximately 30 seconds after LOAD/EXECUTE, there is a QLT failure. (Reference course K910 for repair or DPU hardware.)

- Bootload Phase

  If trouble occurs during the actual Bootload phase the DPU will halt with error codes in registers 1 and 2. Display and record the values of registers 1 and 2 on the DPU Maintenance Panel. Proceed to Table 1 for error codes and recovery procedures.

- DPU Config Processing

  Two error types which will halt the DPU are reported by the Config Load Manager software module during initial DPU Config. Processing.

  - Comm errors (R1 = 0BXX)

    Indicate an invalid COMM Configuration.

  - CMD errors (R1 = 13XX)

    Indicate an improper CLM CMD directive or argument.

  Unless a DPU hardware failure has occurred, appearance of these error types indicates an improper entry has been made during the previous "CBLD" activity.

1.7 START-UP ERRORS (Cont'd.)

- DPU Config Processing (Cont'd.)

  To bypass the error, follow the restart procedure at 1.8 until the DPU completes start-up with the prompt "C?". Then enter the "CBLD" function to correct the indicated errors. Reboot the DPU after the "CBLD" command.

  GENERAL INFORMATION

  The DPU config is contained on two separate files within the SMTCS (System Maintenance and Test Control Software) diskette:

  - System Attributes and non-comm directives are on the file CLM_USER, which is fixed and not accessible by the DPU user. CLM_USER contains diskette, and local terminal configuration information.

  - COMM directives (MLCP connections) are on the file CLM_SITE, which is site dependent and accessible by the DPU user via the "CBLD" command. CLM_SITE contains remote, system console, and unit connection (CPUXX, SCUXX) configuration information.

    The Config Load Manager (CLM) processes the DPU config sequentially, starting with CLM_USER, then CLM_SITE.

1.8 CONFIG COMMAND RESTART PROCEDURE

Config errors (OBXX and 13XX) may be bypassed and processing continued by clearing R1 (D1 on DPU Maintenance Panel) and resuming:

On the DPU Maintenance Panel:

- Depress STEP
  SELECT.
- Key in "D1" to select register 1.
- Depress CHANGE.
- Key in "0000" to clear R1.
- Depress RUN
  EXECUTE to resume processing.

If additional errors are detected (as is generally the case), repeat the above procedure until all config errors are bypassed. Start-up is complete with the prompt "C?" on the local VIP.

Once the DPU is ready ("C?"), enter the "CBLD" function to correct the indicated errors, then reboot the DPU.

APPENDIX B - SECTION 1

TABLE 1

DPU ERROR CODES

The error types listed in this table usually indicate a DPU hardware failure or a bad system diskette. Replace the diskette or see course K910 for DPU hardware repair.

NOTE: It is possible that error types OBXX and 13XX could be caused by an improper entry being made during the previous "CBLD" activity. See Section 1.7, DPU Config Processing, for information and recovery procedure.

Further error definition should not be needed in the field or factory floor environment. If additional information is desired on an error code see LEVEL 6 Manual.

R1 and R2 and D1 and D2 on the DPU Maintenance Panel.

R1 = 99XX INITIAL BOOTLOAD FAILURE

R2 = Operational Error Code (OEC) (Secondary information) See Table 2.

R1 = 9900	Cannot read boot device channel number. (May enter Chan number in R2, then continue.)
R1 = 9908	No operational terminal.
R1 = 9911	I/O error
R1 = 9924	Error clearing memory
R1 = 9926	Software trap (number in R2)
R1 = 9927	Cannot read boot device status
R1 = 99XX	Other codes (See footnote on page B-5)

R1 = 16XX BOOTSTRAP HALT

R1 = 1616	I/O error, Press EXECUTE on DPU Maintenance Panel to retry the I/O.
R1 = 16XX	Other codes (See footnote on page B-5)

R1 = OBXX SOFTWARE COMM MODULE ERRORS

These entries may be caused by invalid entries to the prior "CBLD" activity. Follow recovery procedure in Section 1.8.

R1 = 0B13	Invalid channel number
R1 = 0B23	Invalid channel number, already assigned
R1 = 0B48	MLCP busy, cannot load software module
R1 = 0B49	Main Memory error during software loading
R1 = 0B4A	Incorrect parity during load
R1 = 0BXX	Other codes (See footnote on page B-5.)

TABLE 1

DPU ERROR CODES - CONT'D

R1 = 13XX SOFTWARE "CMD" MODULE ERRORS

These errors may be caused by invalid entries to the "CBLD" command of the DPU. Follow recovery procedure in Section 1.8.

R1 = 1301	Command Directive invalid
R1 = 1302	Command argument required decimal digit
R1 = 1303	Command argument requires smaller digit
R1 = 1306	Command includes an argument error
R1 = 130F	Command error due to missing or faulty argument
R1 = 1324	Command specifies invalid device type
R1 = 132A	Command specifies duplicate channel
R1 = 1339	Command device error, cannot read label
R1 = 13XX	Other codes (See footnote at bottom of this page.)

R2 = CDXX SMTCS COMMAND PROCESSOR INIT ERRORS

R2 = CDOC	Fatal I/O error
R2 = CDOD	Non-fatal I/O error
R2 = CDXX	Other codes (see footnote below.)

This is the final stage of bootload. Failures detected during this init phase will halt the DPU with error codes in R1 and R2. To retry, clear R1 and press RUN. (Ref. CMD Error Retry Section 1.8.)

Footnote: All codes listed as XX are concerned with the DPU operating system software. The DPU O/S is not accessible by, or manipulated by the DPU user. However, for your information, all codes are defined in LEVEL 6 Manual.

APPENDIX B - SECTION 1

TABLE 2

OPERATIONAL ERROR CODES

The BASIC EXEC generates these error types on behalf of SMTCS, and SMTCS generally reports them as "SYS ERROR" codes on the DPU terminal (local and/or remote.

During bootload, these error codes may accompany other primary errors, as indicated in Table 1, to further isolate failures or report unexpected occurrences.

The OEC errors will be registered in R1 or R2, depending on primary error.

OEC = 01XX I/O ERROR

OEC = 0105	Device not ready
OEC = 0106	Device timeout no interrupt
OEC = 0107	Hardware error in status word
OEC = 0108	Device software disabled
OEC = 0109	File mark encountered
OEC = 010A	Controller unavailable
OEC = 010B	Device unavailable
OEC = 01XX	Other codes (See footnote on Page B-5.)

OEC = 02XX COMM SOFTWARE ERROR CODES

OEC = 02XX	All codes (See footnote on page B-5)

OEC = 03XX SOFTWARE TRAP CODE

OEC = 0311	Memory or MEGABUS error
OEC = 0318	Memory bus error
OEC = 03XX	Other codes (See footnote on page B-5.)

OEC = 06XX MEMORY MANAGEMENT ERRORS

OEC = 06XX	All codes (See footnote or page B-5.)

OEC = 08XX EXEC SERVICE ERRORS

OEC = 081E	Unrecoverable media error on roll in/out.
OEC = 0821	Error loading system overlay.
OEC = 08XX	Other codes (See footnote on page B-5.)

TABLE 2

OPERATIONAL ERROR CODES - CONT'D.

OEC = 16XX	LOADER ERROR
OEC = 1607	Unrecoverable media error
OEC = 16XX	Other codes (See footnote on page B-5.)

OEC = DXXX	DYNAMIC MAINTENANCE PANEL ERROR
OEC = D108	DMP Read task disabled - fatal error
OEC = D108	DMP Read terminated - DMP unavailable
OEC = D110	DMP connect timeout; check cables
OEC = D204	Expected response from DMP not received
OEC = D801	DMP Read or Write is busy - fatal error
OEC = DDXX	Unexpected response from DMP

OEC = XXXX	OTHER OEC ERRORS REPORTED BY EXEC

The error types listed on this table usually indicate a DPU hardware failure or a bad system diskette. Replace the diskette or see course K910 for DPU hardware repair.

Further error definition should not be needed in the field or factory environment. If additional information is desired on an error code, see LEVEL 6 Manual.

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APPENDIX B - SECTION 2

SYSTEM COMMANDS

At the "C?" prompt on the 7200 VIP, if you type in a "?" carriage return (C/R) you get the following display:

```
C? ?

  SYS CMDS  (U = UNIT KEY_NAME REQUIRED)

      OFL  U
      ONL  U
      CLST
      CBLD
      IDLE
```

This is a list of all commands that can be entered at the C? prompt.

All commands must be terminated by a carriage return.

REV. 1

SYSTEM COMMANDS - CONT'D.

The DPU has been hooked up to the devices, and software was booted into the DPU. The software must be made aware of what devices are hooked to what cables. This is accomplished with the "CBLD" verb.

Typing the "CBLD" verb at the C? prompt results in the following display:

```
C? CBLD
WORKING...

ENTER UPDATE OPTION: BUILD, ADD, CHANGE, OR LIST
??
```

Entering a "?" in response to the above message will give a list of permissable commands that can be entered at this time.

Resultant display to your ? input

```
  ?
LIST
BUILD
ADD
CHANGE
DONE
ABORT
```

SYSTEM COMMANDS - CONT'D.

At the end of the display just received, "ENTER UPDATE OPTION" was printed again and a response of "BUILD" was typed in as shown below.

The two lines printed after "BUILD" was entered show the fixed remote modem configuration.

Next, response to the "ENTER DEVICE NAME" is a "?". This will give a listing of all acceptable device names.

The "XX" in the device name can be 00 through 99.

```
ENTER UPDATE OPTION: BUILD, ADD, CHANGE, OR LIST
?BUILD
 NAME   CHAN  BAUD  MODEM

 REMOT  1000  1200  1
ENTER DEVICE NAME: ?
  REMOT

  LOCAL

  CPUXX

  CPMXX

  LCCXX

  SCUXX

  FEPXX
```

SYSTEM COMMANDS - CONT'D.

At the end of the listing just received, the "ENTER UPDATE OPTION:" was asked again, and a response of "BUILD" was given. A question/answer sequence is now entered and the configuration of the devices can be given to the "DPU" software.

```
ENTER UPDATE OPTION: BUILD, ADD, CHANGE, OR LIST
?BUILD
 NAME    CHAN   BAUD   MODEM


 REMOT  1000   1200   1
ENTER DEVICE NAME: CPU00
ENTER CHANNEL NUMBER: 1100
ENTER DEVICE NAME: LCC00
ENTER CHANNEL NUMBER: 1080
ENTER DEVICE NAME: DONE
 NAME    CHAN   BAUD   MODEM


 REMOT  1000   1200   1
 CPU00  1100   1200   0
 LCC00  1080   1200   0
```

When you have entered all key_names and channel numbers and you wish to exit this operation, type in "DONE". This will result in a heading line and a type out of the configuration just entered. You must now wait until the C? prompt is displayed. When this occurs, and the configuration just generated is to be made permanent, you must now reboot the DPU.

SYSTEM COMMANDS - CONT'D.

To enable the "ONL" function so that the "TAC" personnel can use their console (at the TAC center) as the system console, perform the following:

At C? prompt type in: ONL space LCC00

At the site's system console and at the DPU display, #REMOTE REQUEST # will be displayed.

Type in #ENA REM, which will result in # REMOTE CONNECTED # being displayed on the site's system console and on the DPU console.

```
C?  ONL LCC00
WORKING...

# REMOTE REQUEST #

#ENA REM

# REMOTE CONNECTED #
```

To enter/exit the Maintenance mode, do the following:

At the C? prompt enter: OFL space CPU00.

As a result of this command the display will be an OFL? prompt. Now enter the command VIP. This will result in a display of CMD prompt.

To go back to the OFL? prompt from the CMD prompt, type in TM.

To go back to the C? prompt from the OFL?, type in Q.

```
C?  OFL CPU00
WORKING...
RD CMD FILE

OFL? VIP
 *** DPS-8/L66 CPU MAINTENANCE PANEL * REV D.0 ***
CMD TM
OFL? Q

C?
```

SYSTEM COMMANDS - CONT'D.

You may desire to get a listing of the DPU configuration. This may be accomplished by two different commands, CLST and CBLD.

CLST gives the following display:

```
C? CLST
WORKING...
```

SPD DEVICE NAME	CHANNEL NUMBER
DSK00	0400
LOCAL	0500
DSK01	0480
REMOT	1000
LCC00	1080
CPU00	1100
FEP01	1180

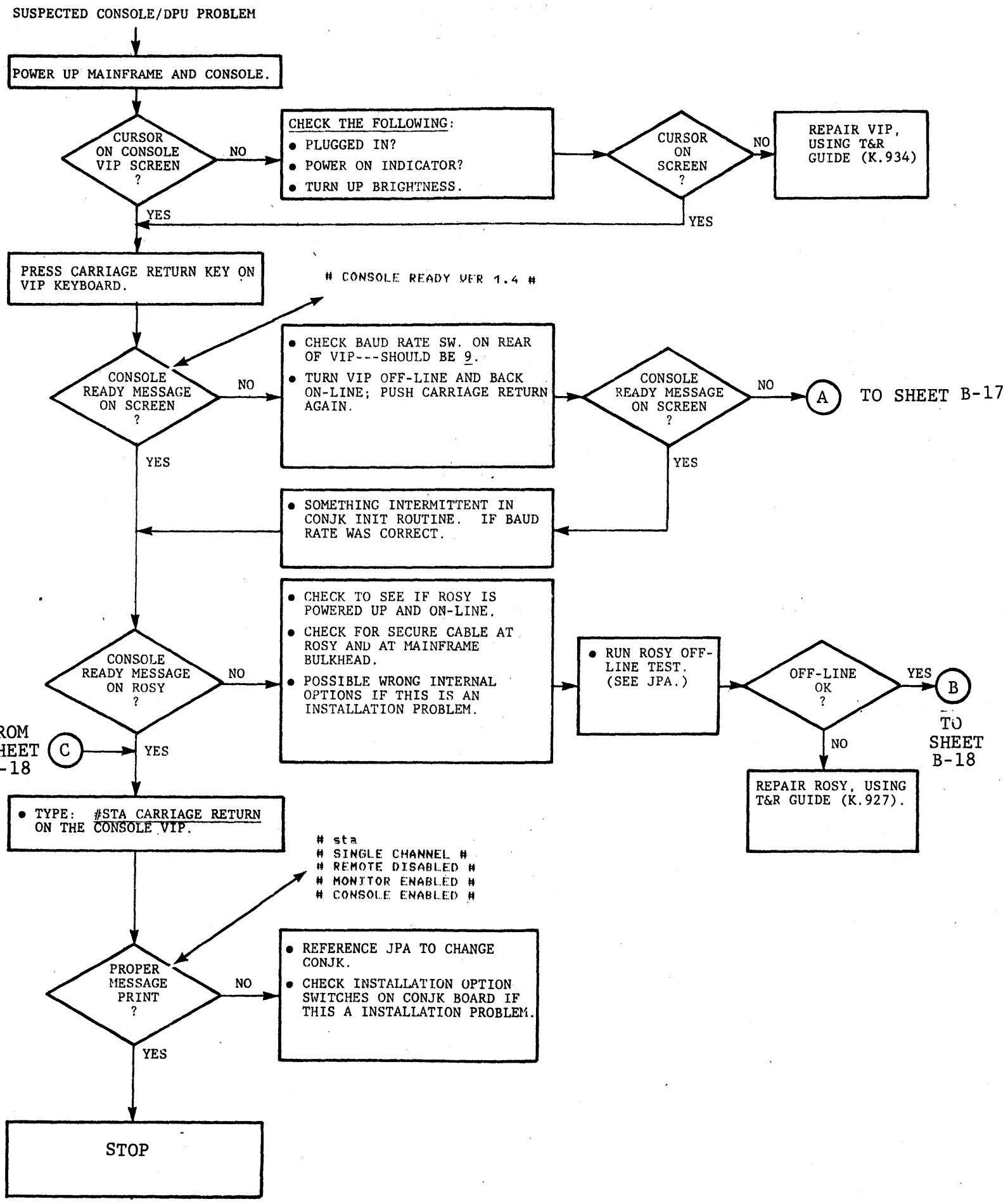
OR

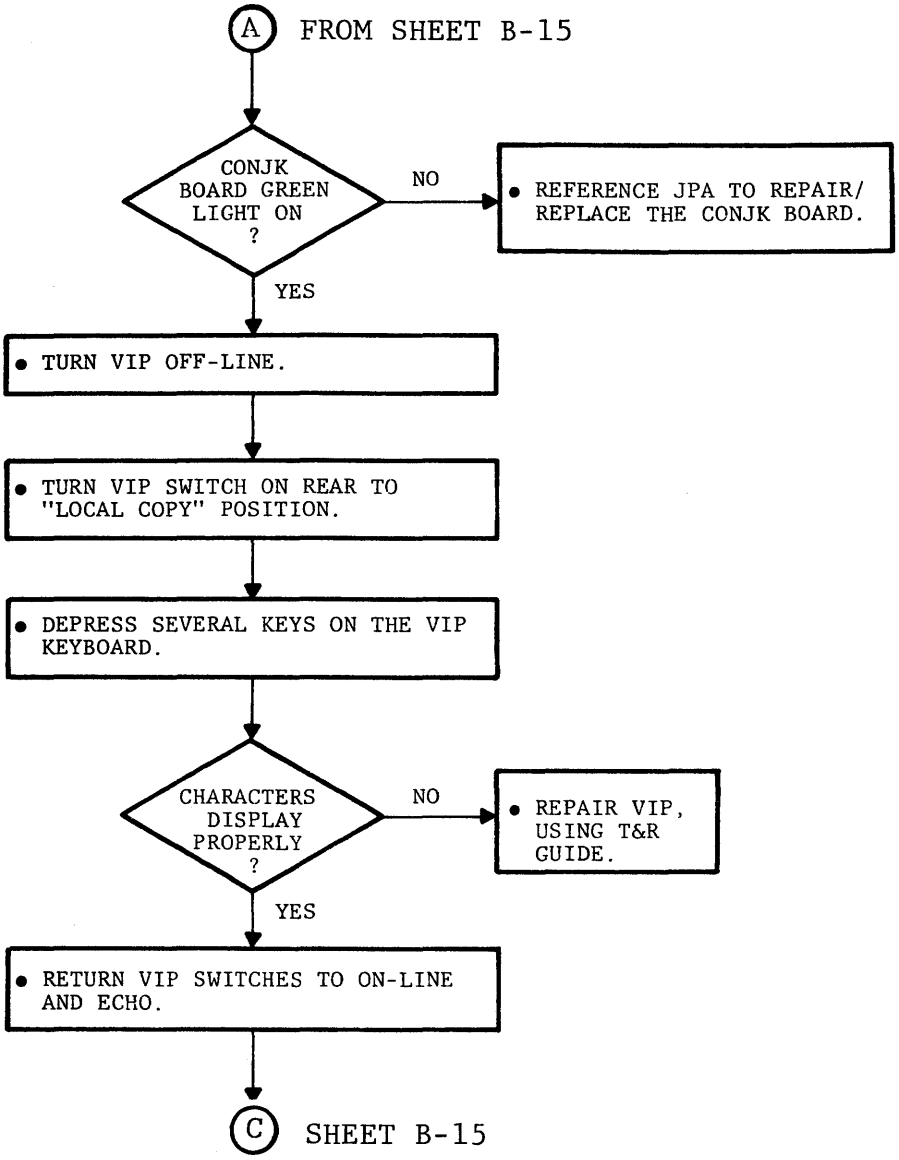
The "LIST" option under the "CBLD" verb will give the following display:

```
C? CBLD
WORKING...


ENTER UPDATE OPTION: BUILD, ADD, CHANGE, OR LIST
?LIST
 NAME   CHAN  BAUD  MODEM


 REMOT  1000  1200  1
 LCC00  1080  1200  0
 CPU00  1100  1200  0
 FEP01  1180  1200  0
```


SUSPECTED CONSOLE/DPU PROBLEM
POWER UP MAINFRAME AND CONSOLE.
CURSOR ON CONSOLE VIP SCREEN ?
NO
CHECK THE FOLLOWING:
• PLUGGED IN?
• POWER ON INDICATOR?
• TURN UP BRIGHTNESS.
CURSOR ON SCREEN ?
NO
REPAIR VIP, USING T&R GUIDE (K.934)
YES
YES
PRESS CARRIAGE RETURN KEY ON VIP KEYBOARD.
CONSOLE READY VER 1.4
CONSOLE READY MESSAGE ON SCREEN ?
NO
• CHECK BAUD RATE SW. ON REAR OF VIP---SHOULD BE 9.
• TURN VIP OFF-LINE AND BACK ON-LINE; PUSH CARRIAGE RETURN AGAIN.
CONSOLE READY MESSAGE ON SCREEN ?
NO
A
TO SHEET B-17
YES
YES
• SOMETHING INTERMITTENT IN CONJK INIT ROUTINE. IF BAUD RATE WAS CORRECT.
CONSOLE READY MESSAGE ON ROSY ?
NO
• CHECK TO SEE IF ROSY IS POWERED UP AND ON-LINE.
• CHECK FOR SECURE CABLE AT ROSY AND AT MAINFRAME BULKHEAD.
• POSSIBLE WRONG INTERNAL OPTIONS IF THIS IS AN INSTALLATION PROBLEM.
• RUN ROSY OFF-LINE TEST. (SEE JPA.)
OFF-LINE OK ?
YES
B
TO SHEET B-18
NO
REPAIR ROSY, USING T&R GUIDE (K.927).
FROM SHEET B-18
C
YES
• TYPE: #STA CARRIAGE RETURN ON THE CONSOLE VIP.
sta
SINGLE CHANNEL
REMOTE DISABLED
MONITOR ENABLED
CONSOLE ENABLED
PROPER MESSAGE PRINT ?
NO
• REFERENCE JPA TO CHANGE CONJK.
• CHECK INSTALLATION OPTION SWITCHES ON CONJK BOARD IF THIS A INSTALLATION PROBLEM.
YES
STOP



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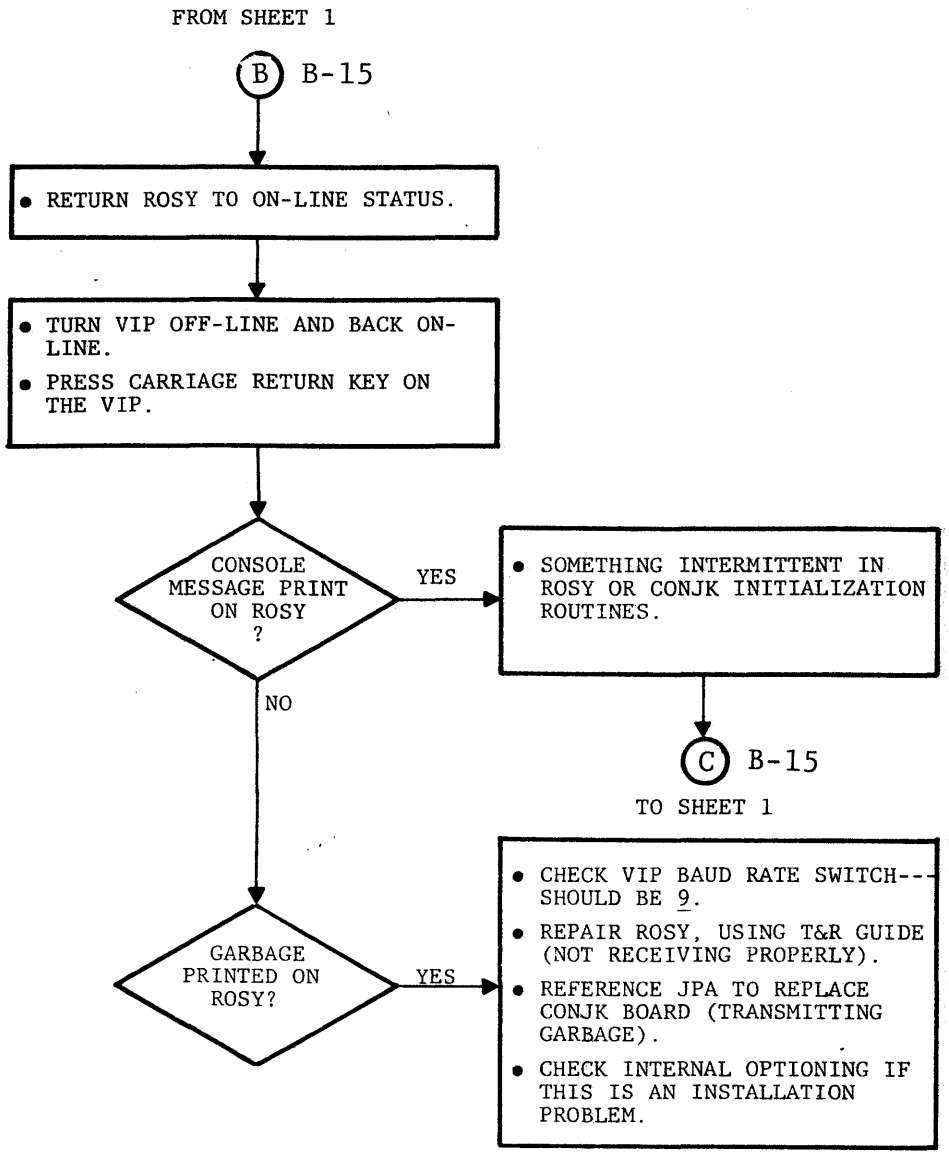

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