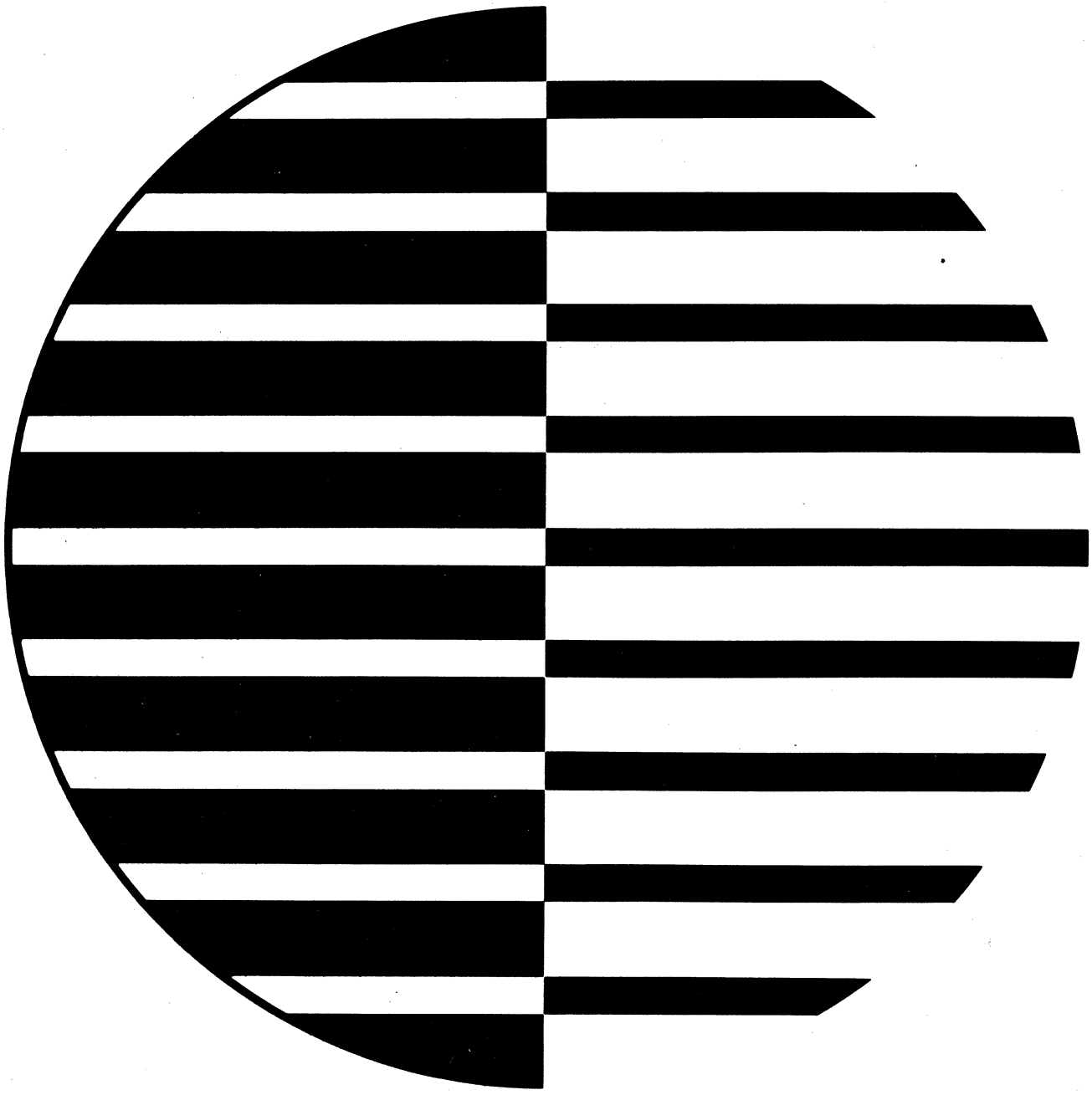
CONTROL DATA INSTITUT

CONTROL DATA



P H A S E IV

VORLÄUFIGE AUSGABE

T E R M I N A L 92450

BEGLEITMATERIAL

VORLÄUFIGE AUSGABE

T E R M I N A L 92450

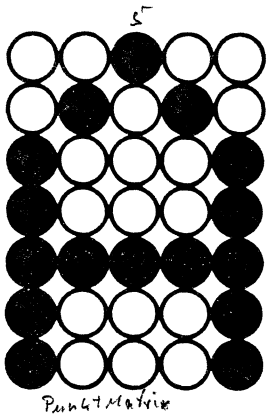
BEGLEITMATERIAL

Herausgeber: Control Data Institut Frankfurt/M.
Control Data GmbH Frankfurt/M.

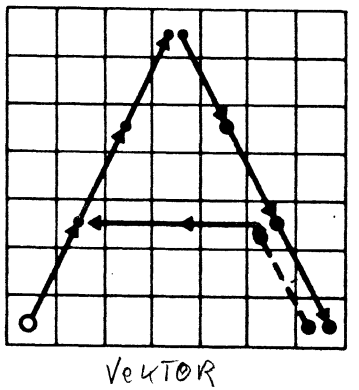
DEVELOPED & PRINTED BY CDI FRANKFURT

Printed in Germany
CDI-CT-PHIV-10-01/40

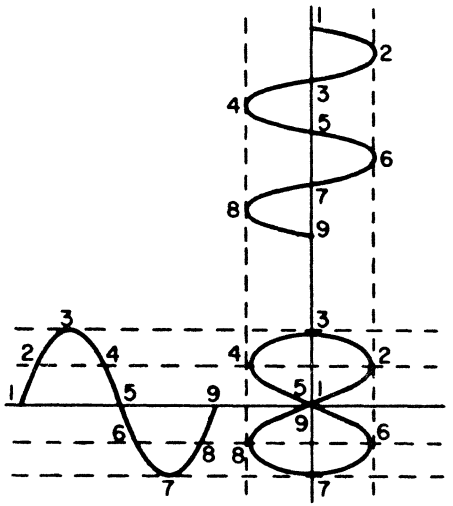
DISPLAY IMAGES



DOT MATRIX



STROKE PATTERN



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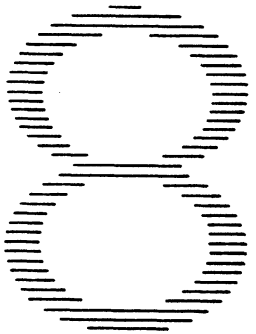
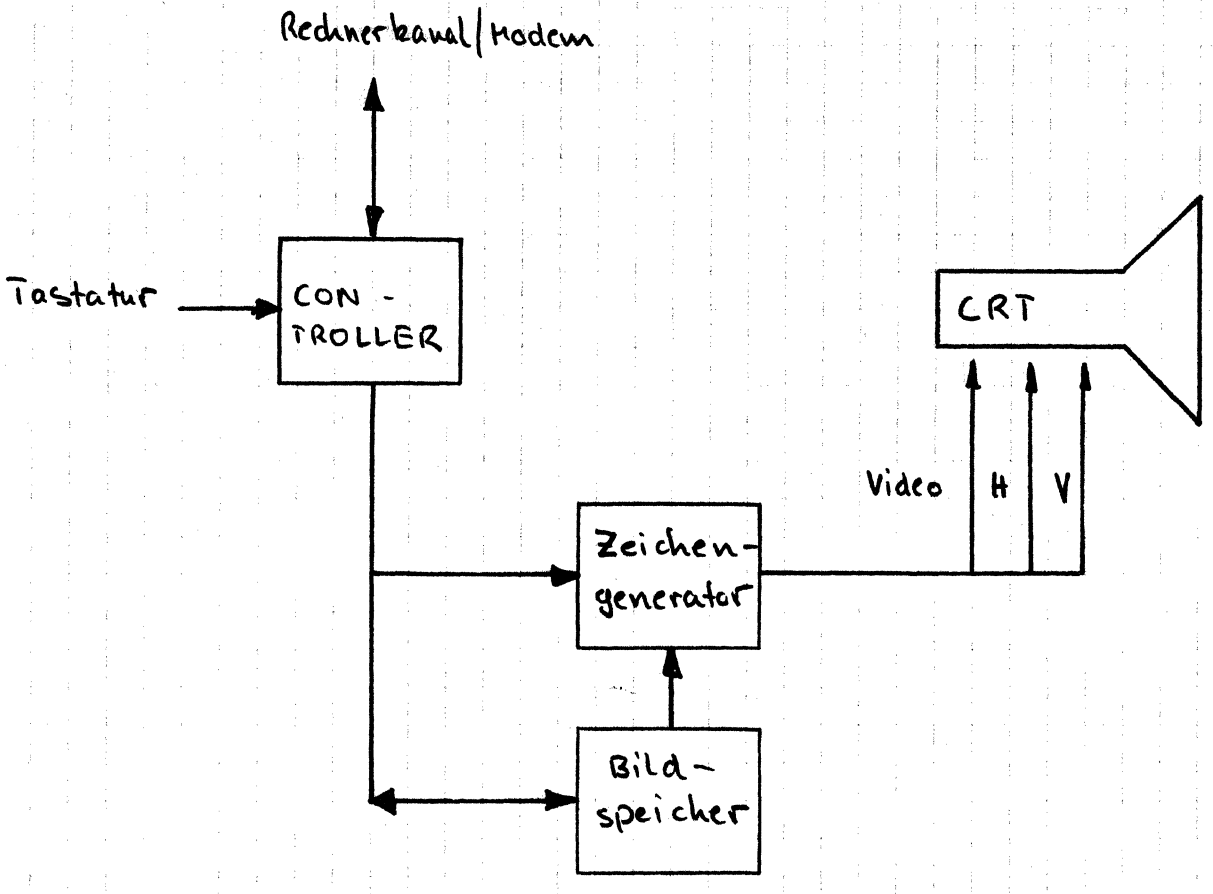
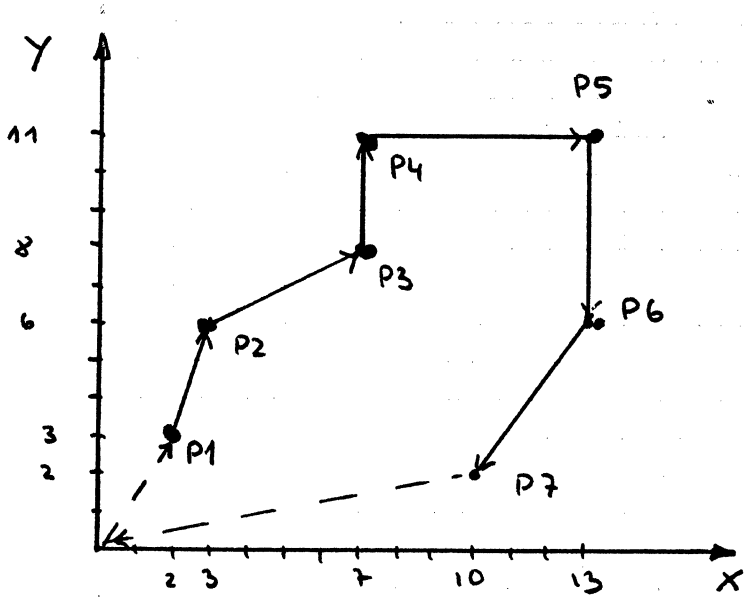


SCAN PATTERN

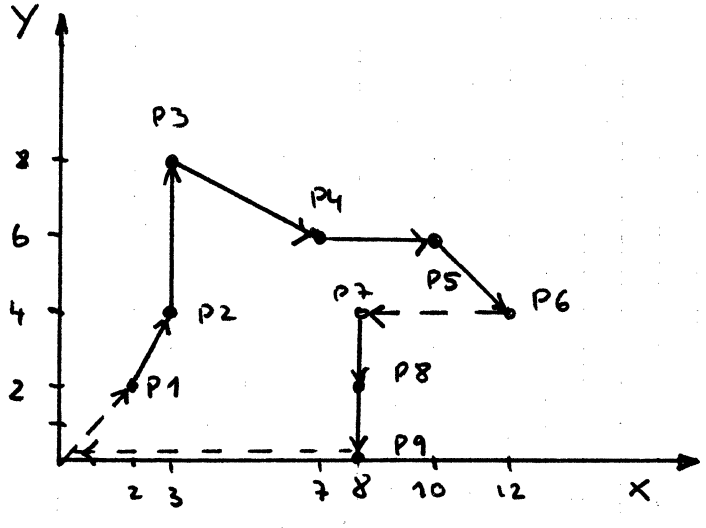


Block diagram Bildschirmgerät

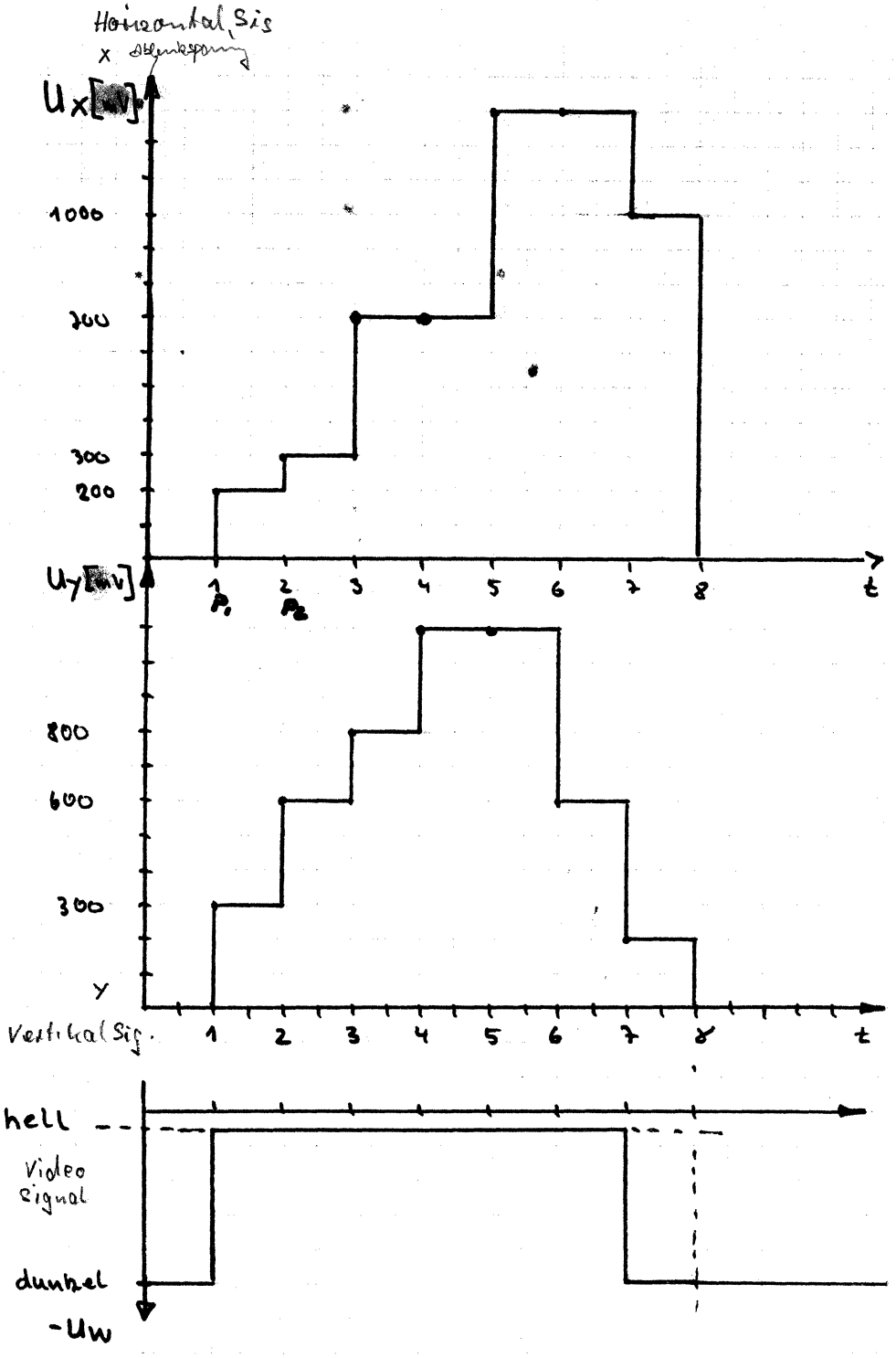


——— Elektronen strahl = hell

– – – – " " " " = dunkel

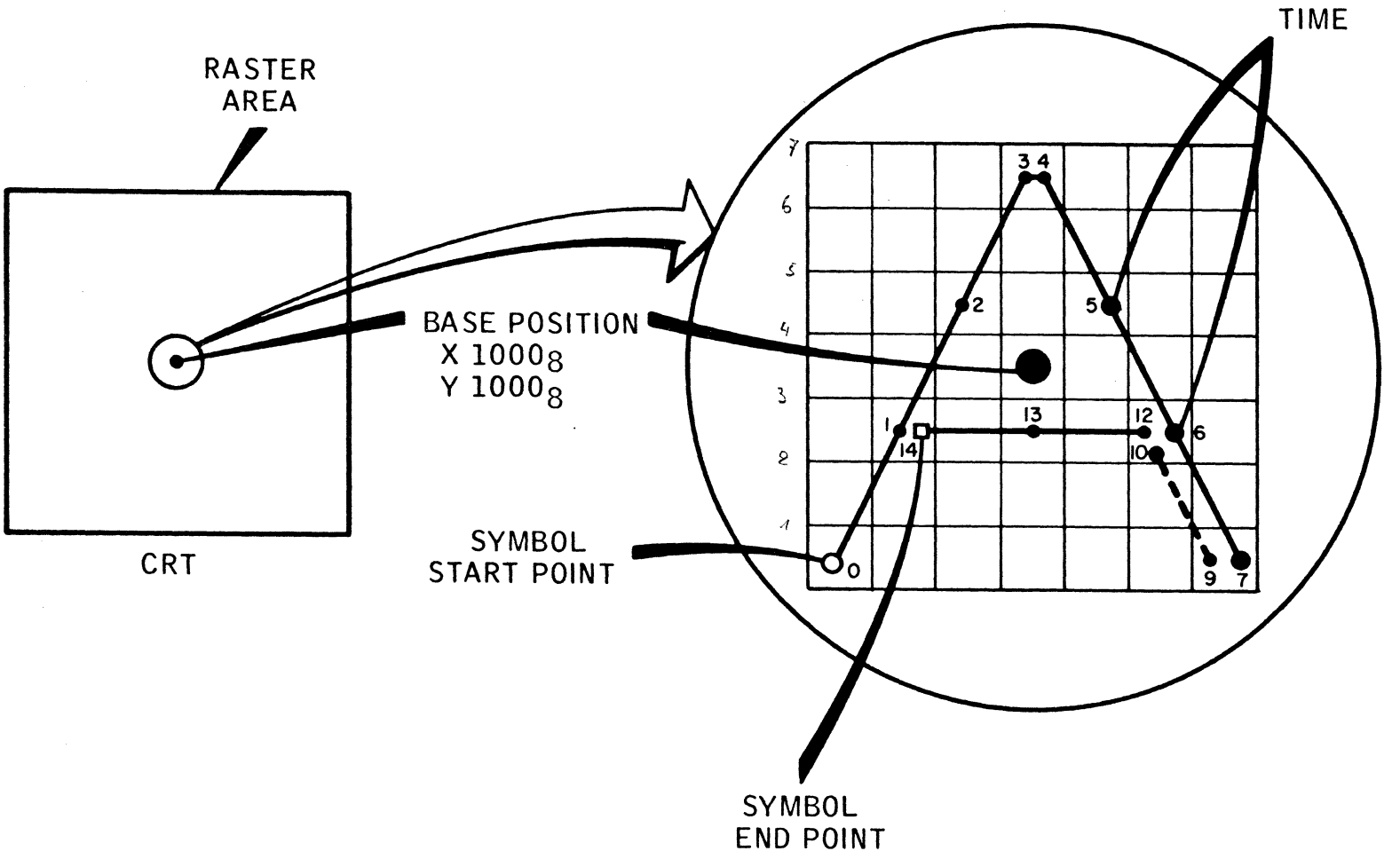


Graphische Darstellung auf einem Bildschirm

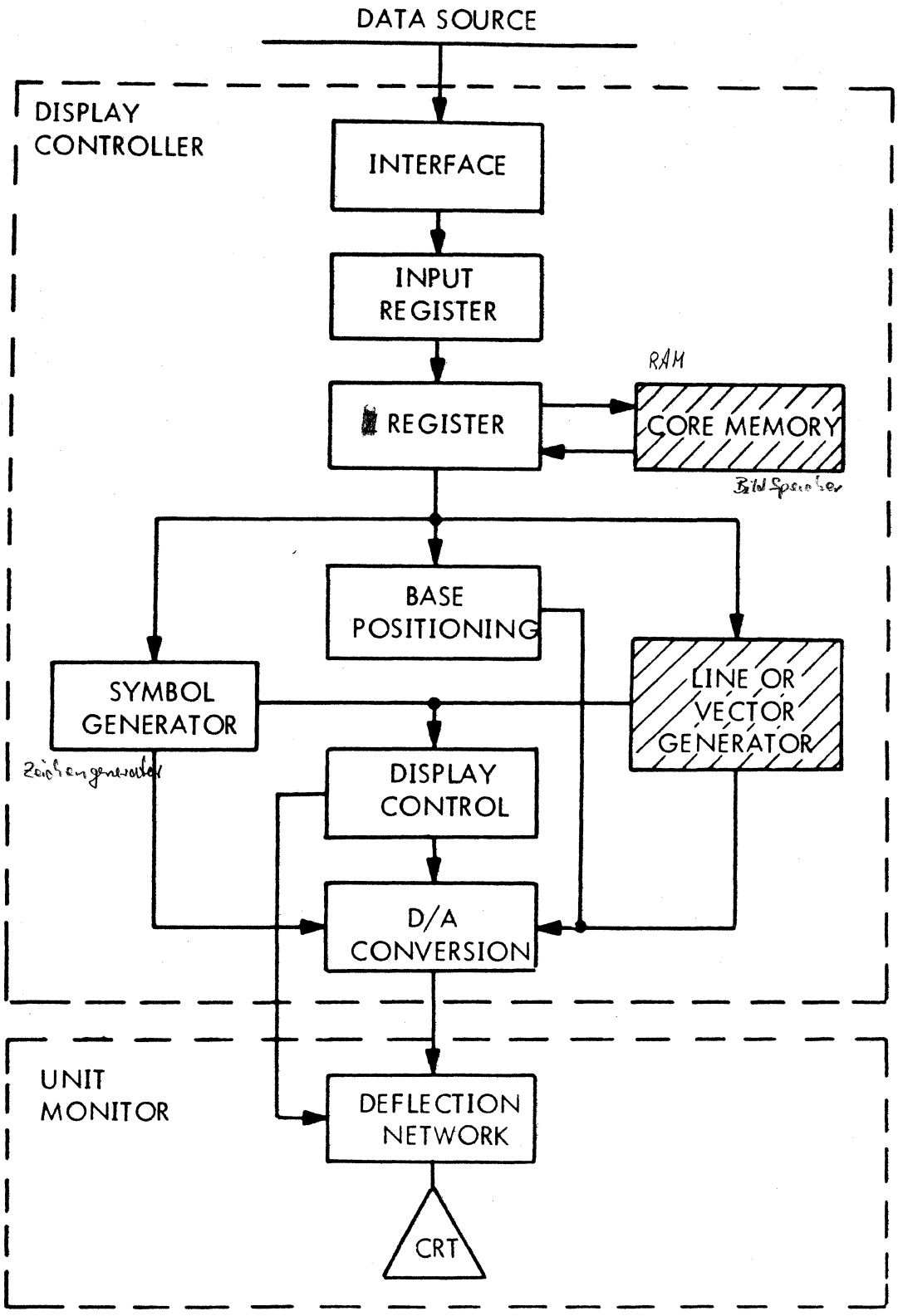


Ablenkspannungen und Helltastimpuls

FORMATION OF CHARACTER A



R-0008

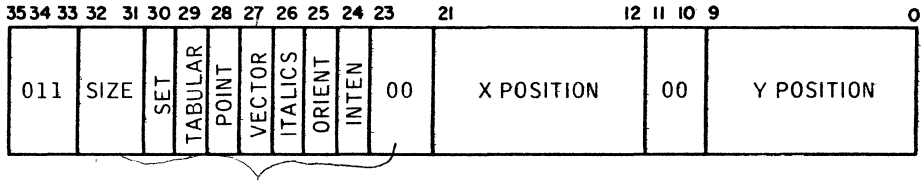


Display System Block Diagram

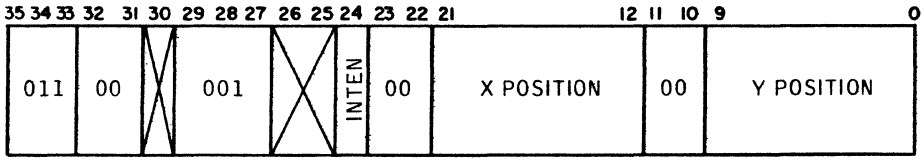
1 = Vektor
0 = Character

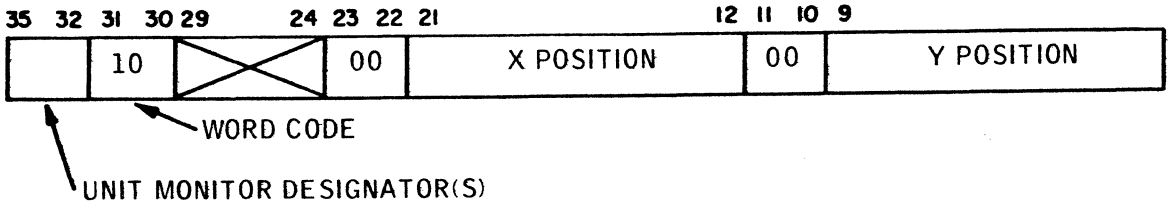
Base Positioning

OP CODE 3 — SET-UP



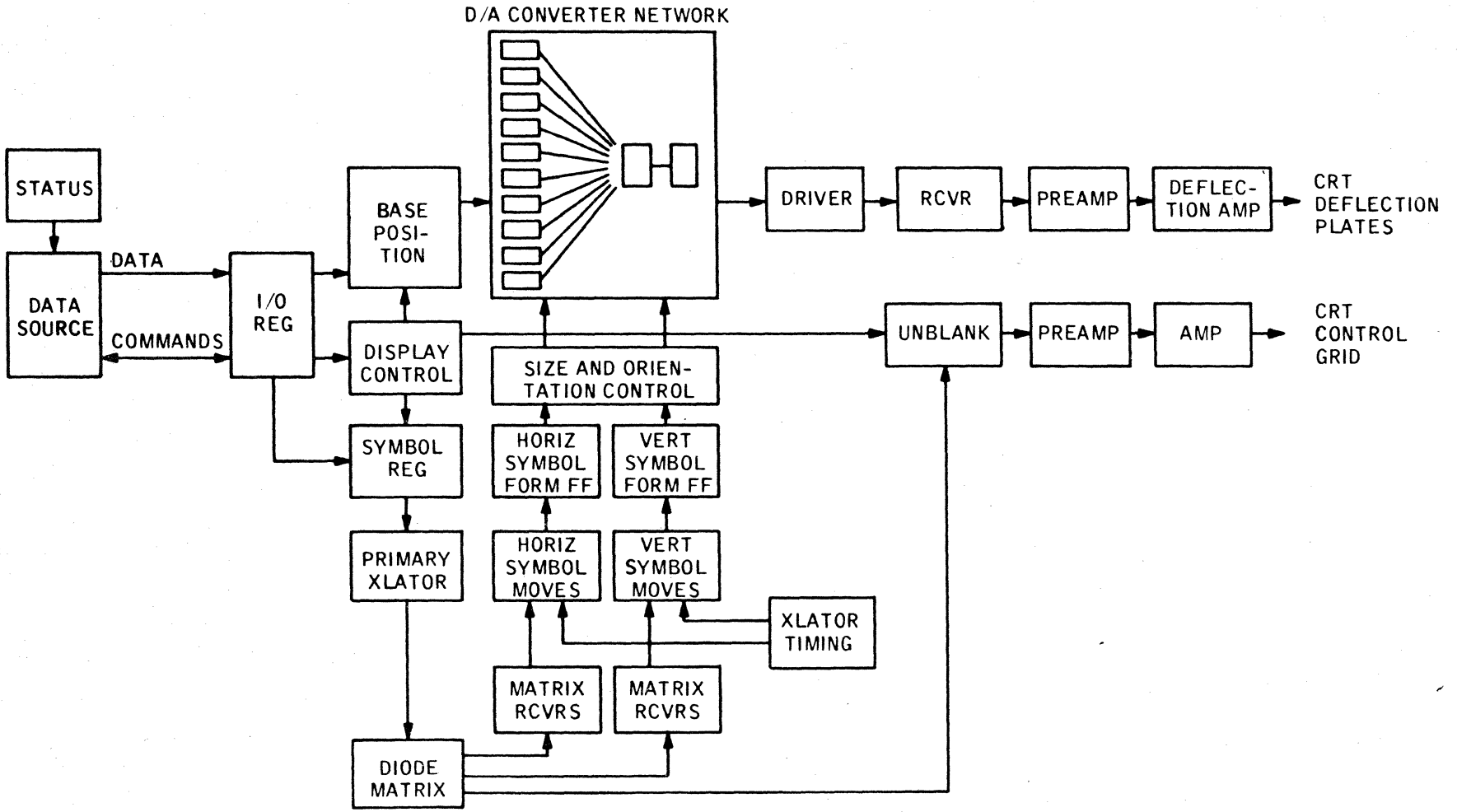
OP CODE 3 — VECTOR





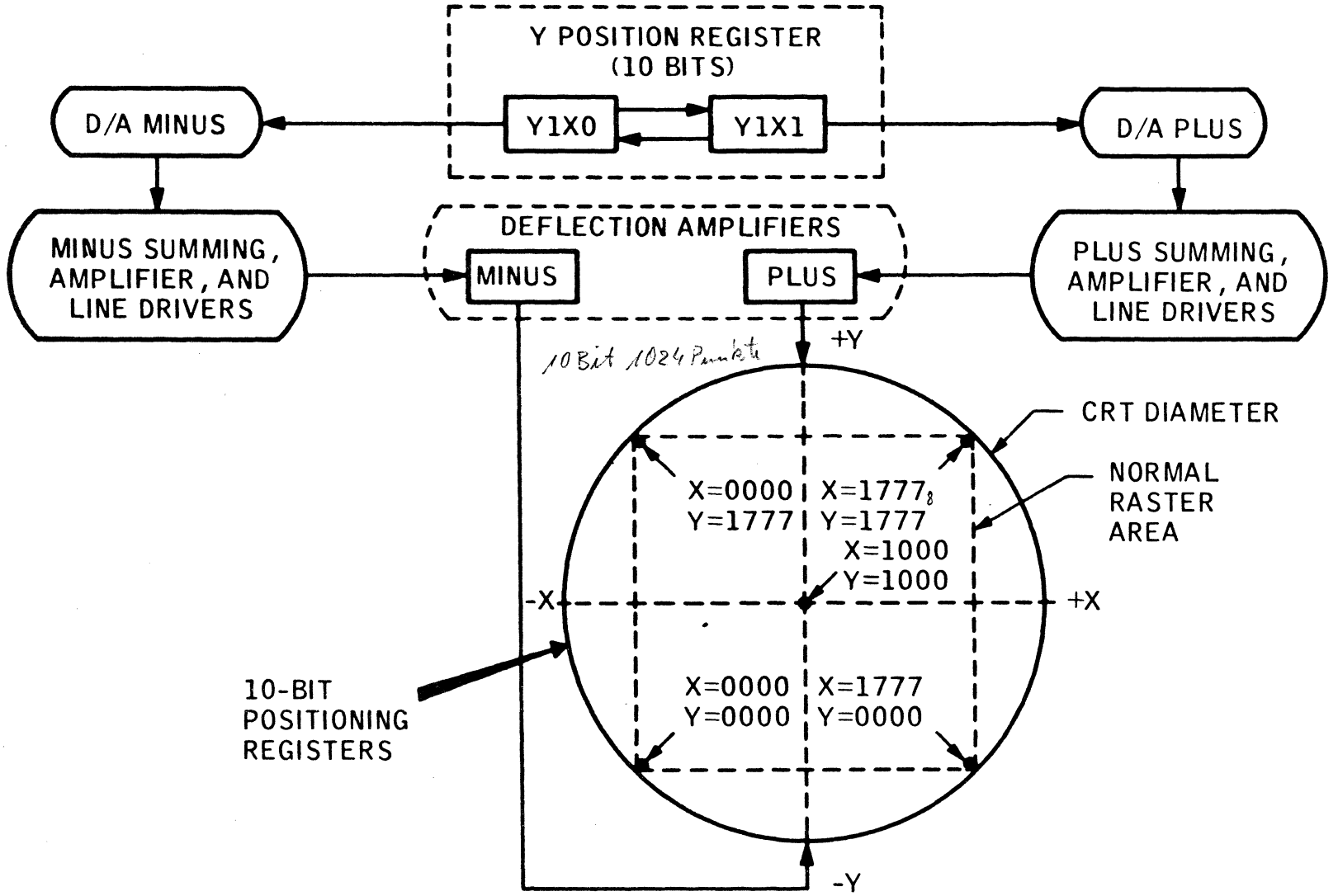
Programmbeispiele : graphisches Display

SYMBOL FORMATION BLOCK DIAGRAM



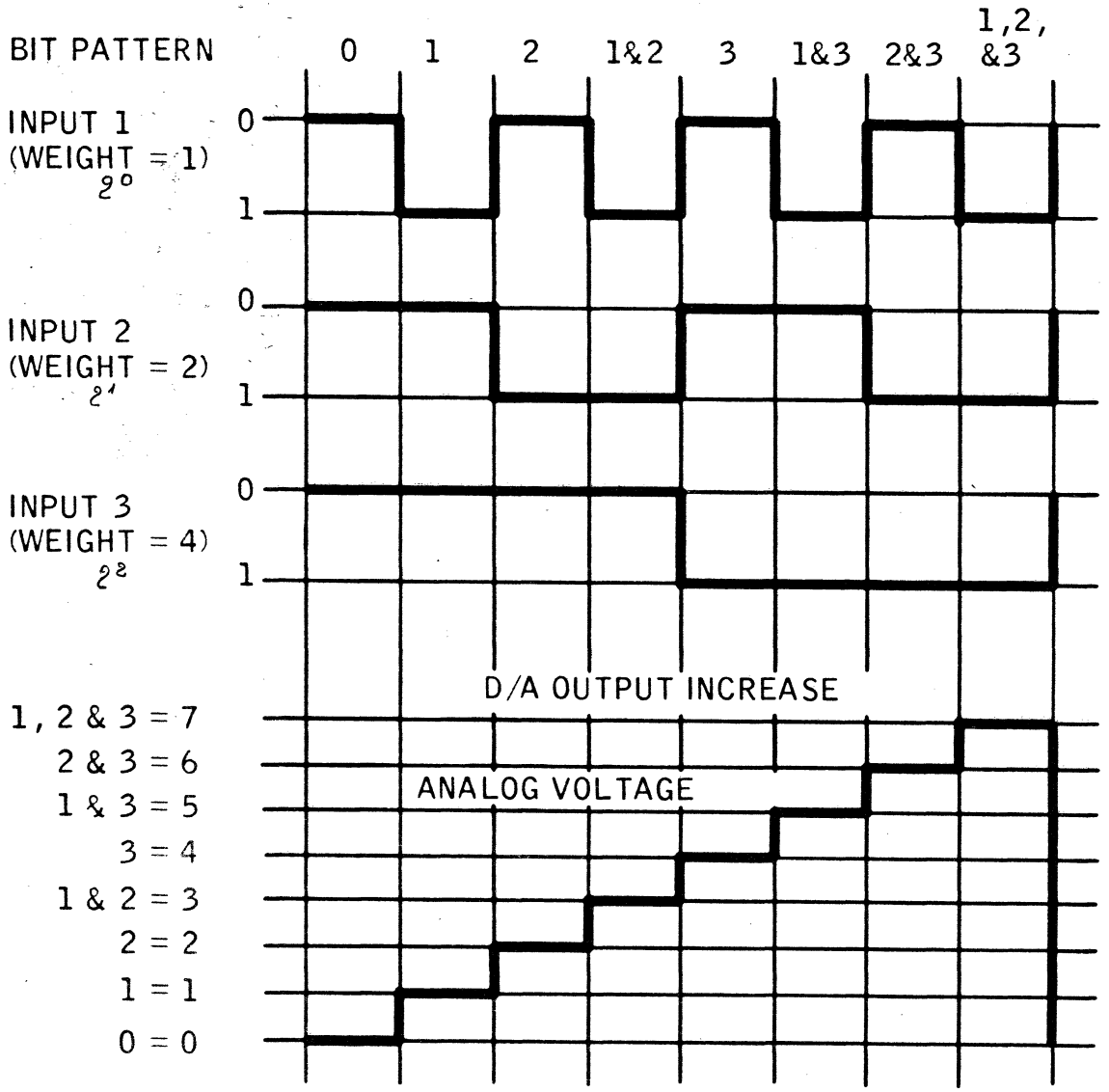
R-0008

BASE POSITIONING NETWORK



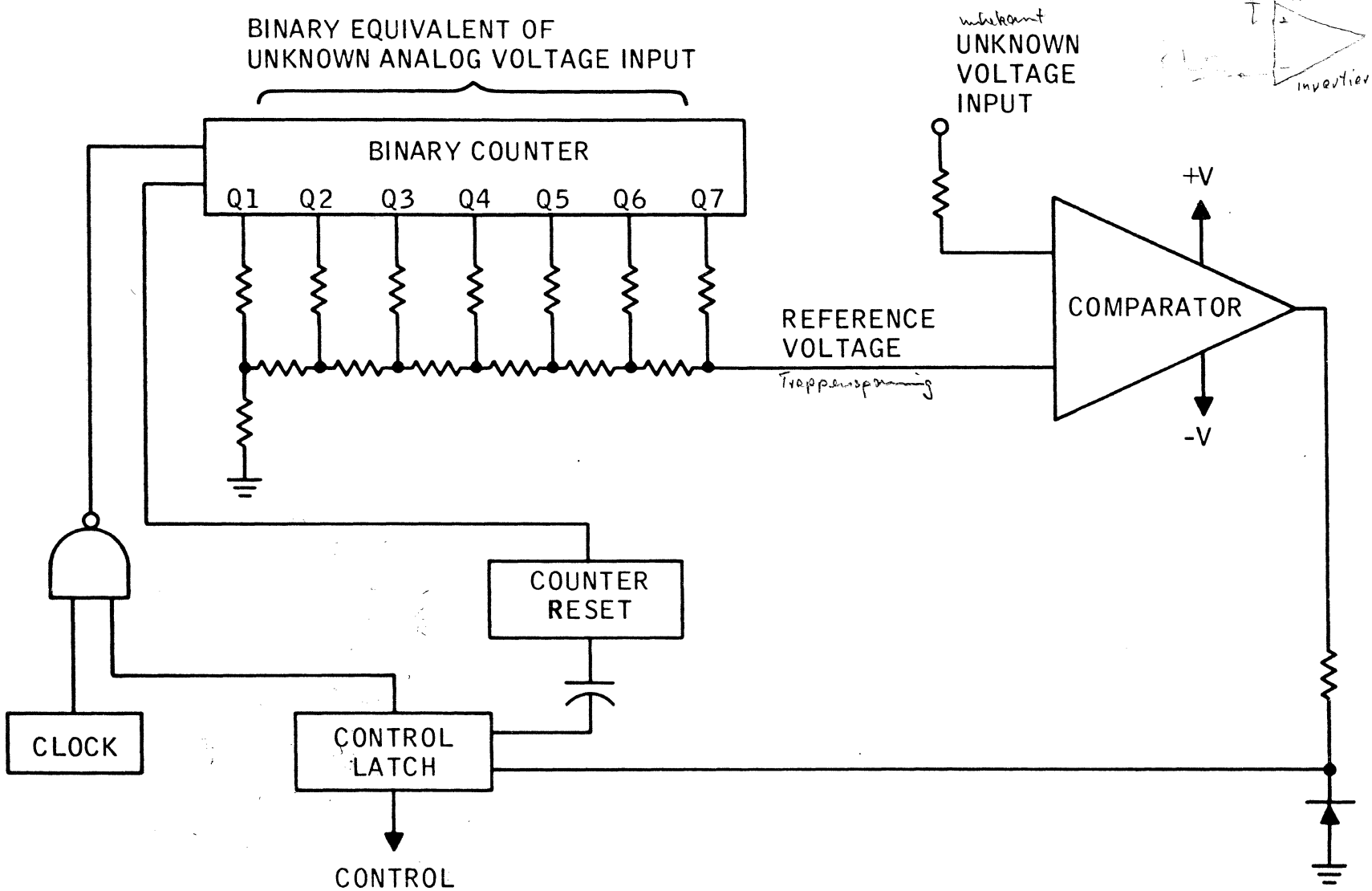
R-0008

D/A CONVERSION: WEIGHTING (3-BIT WORD)

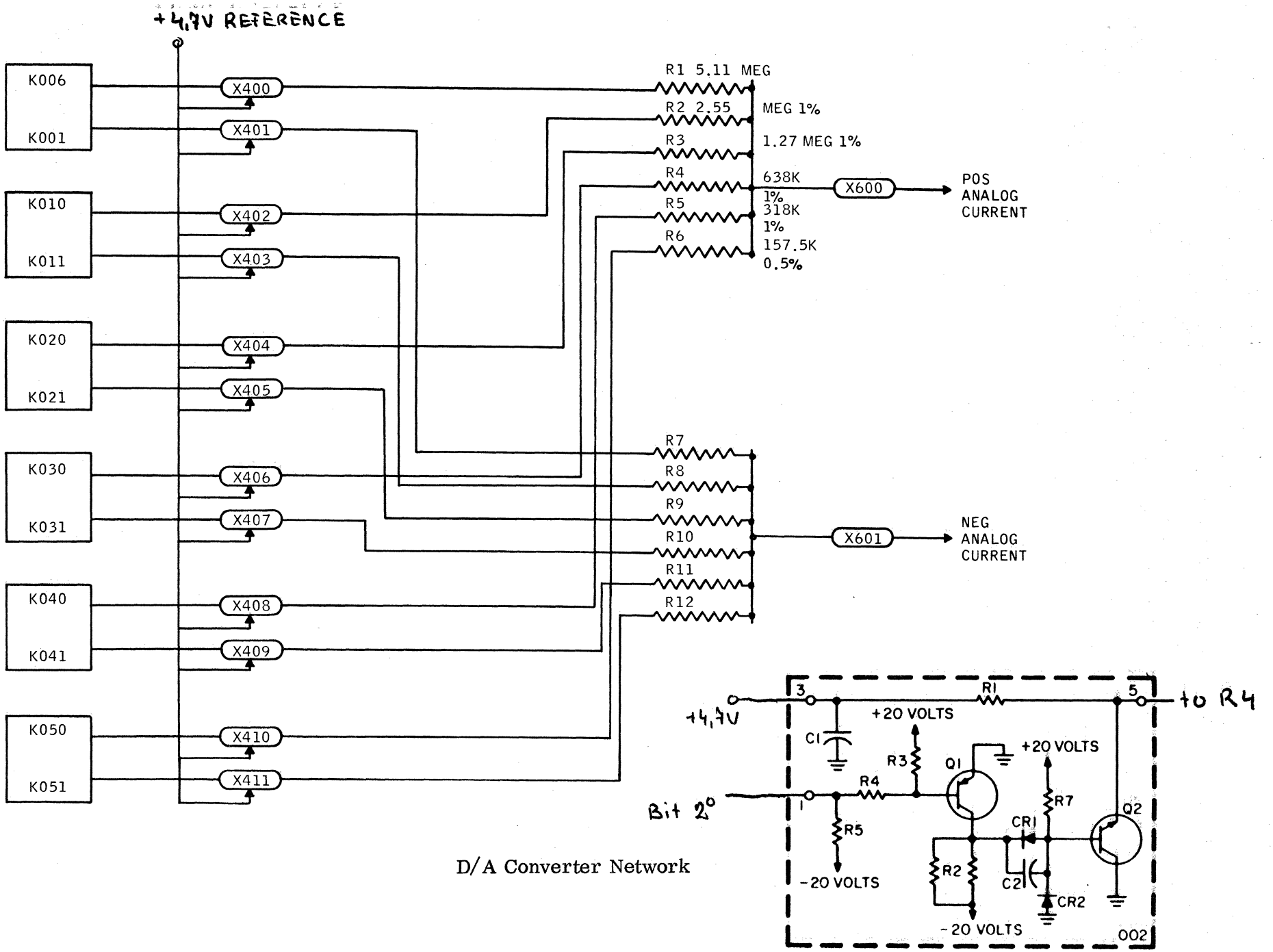


R-0008

COMPARATOR CIRCUIT FOR A/D CONVERSION

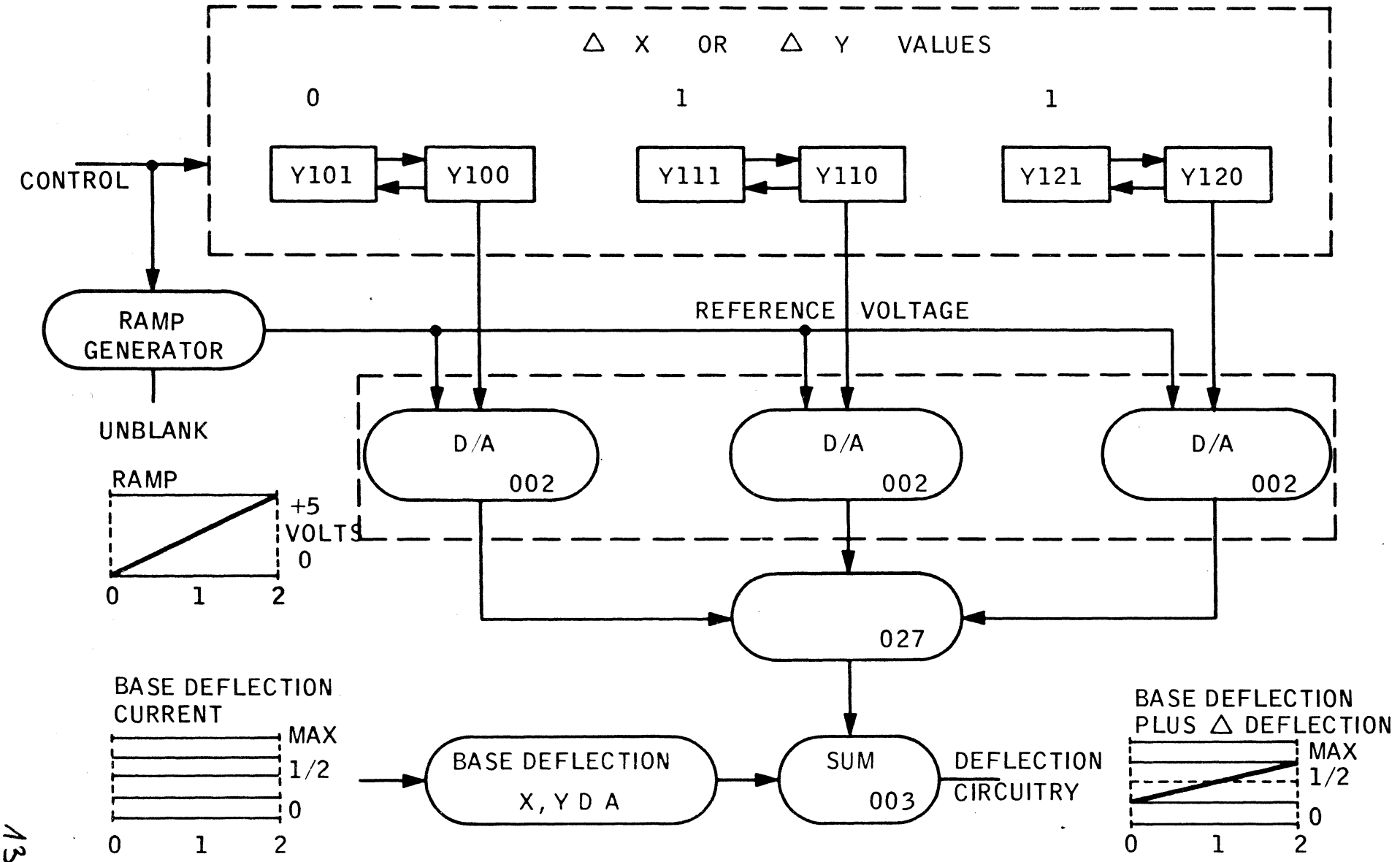


R-0008

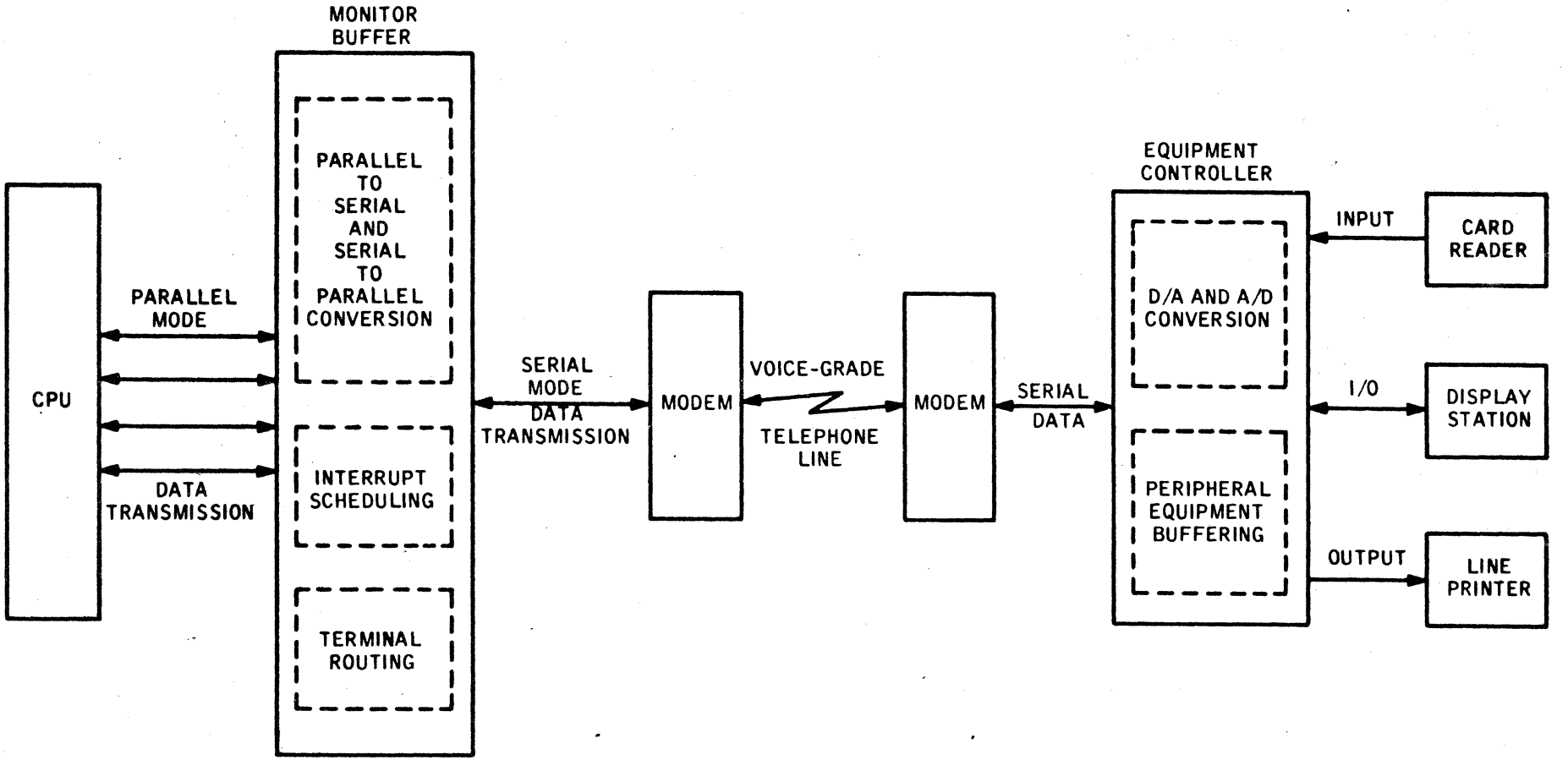


D/A Converter Network

VECTOR GENERATOR

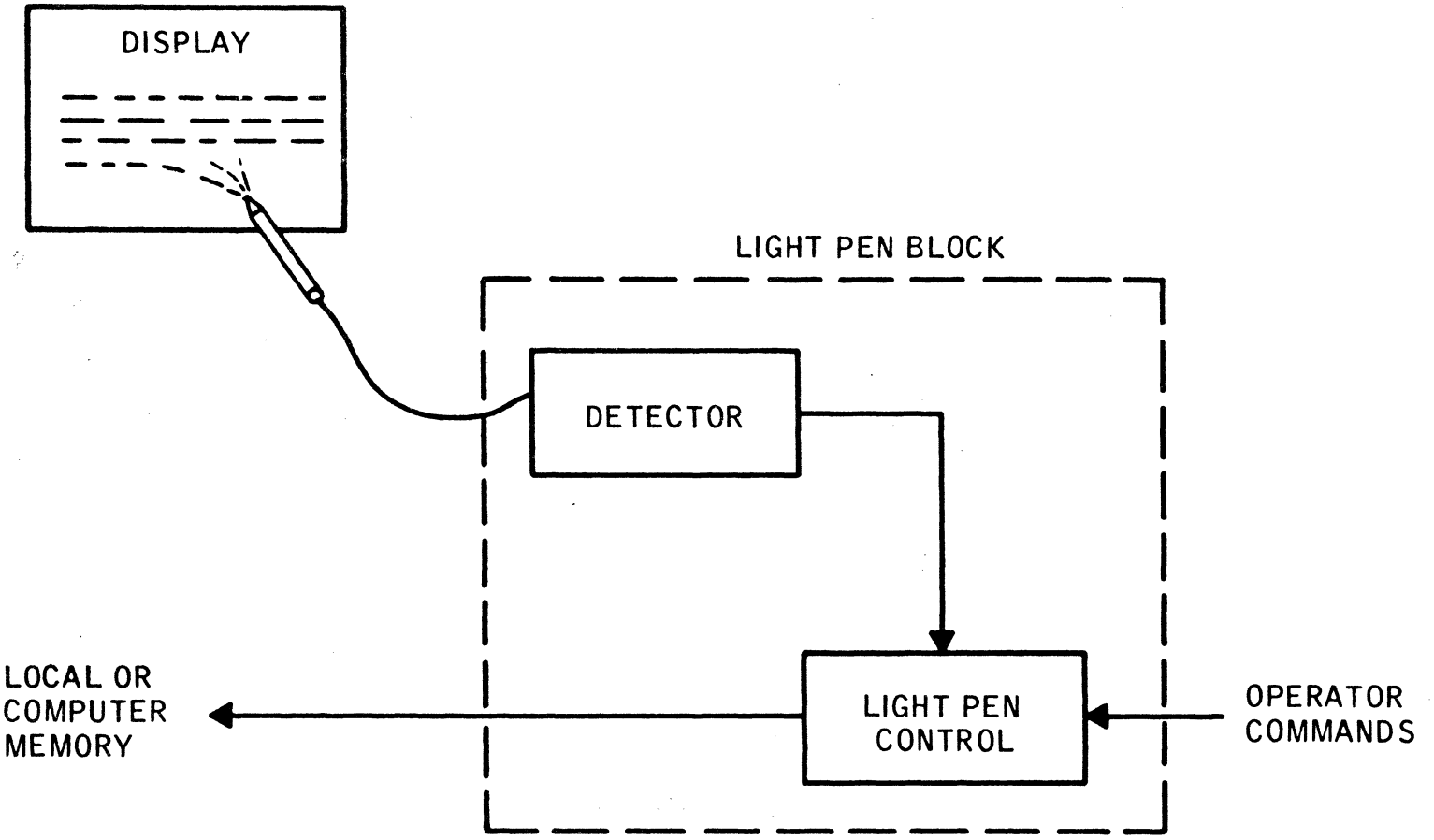


REMOTE I/O TERMINAL/CENTRAL SITE COMPUTER COMMUNICATION LINK

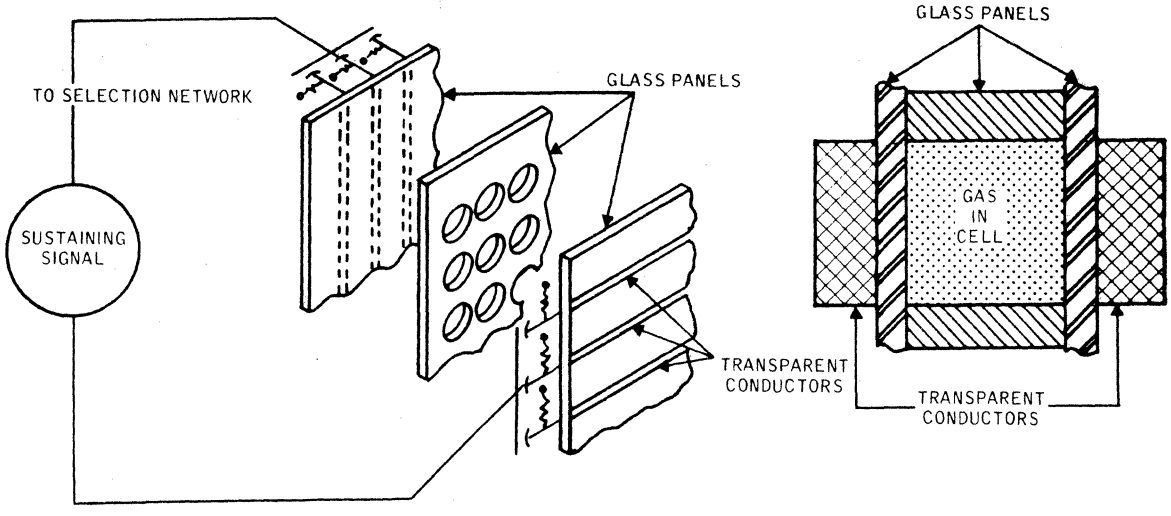


R-0008

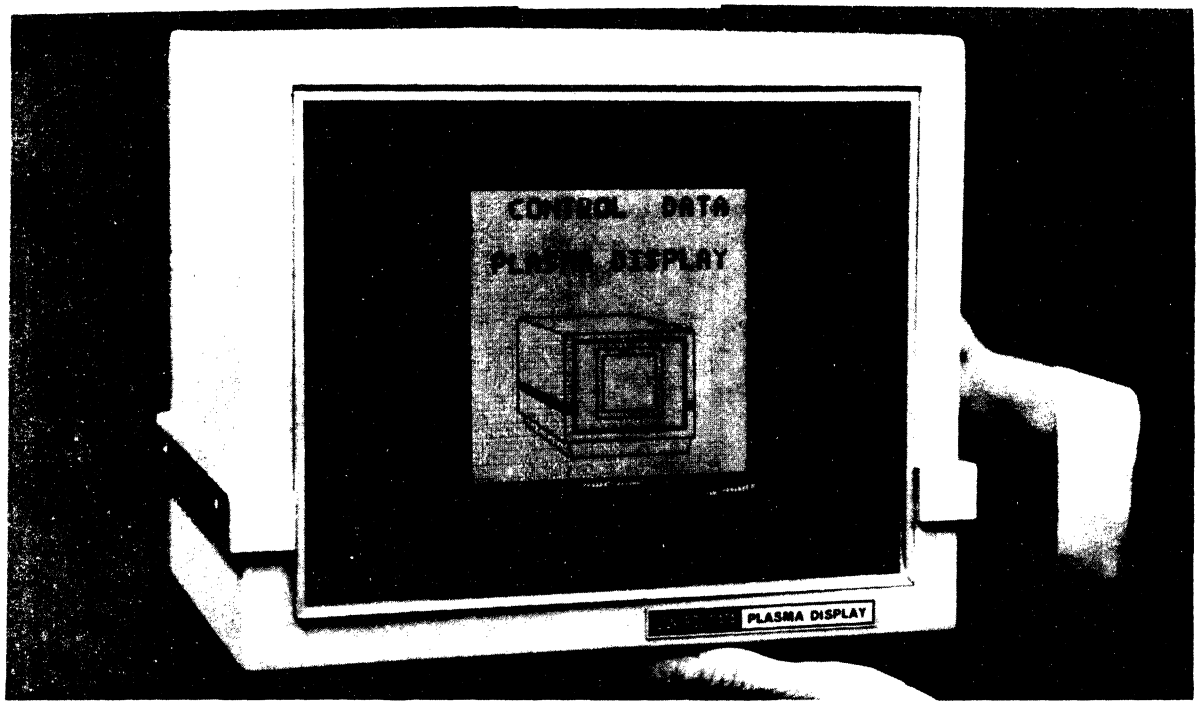
LIGHT PEN

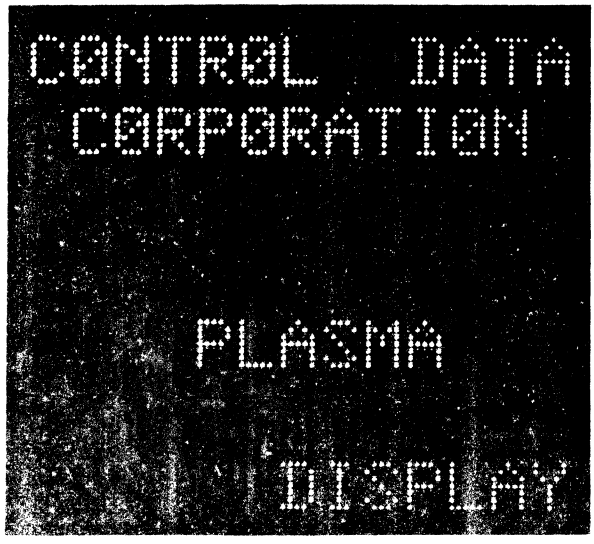


PLASMA DISPLAY

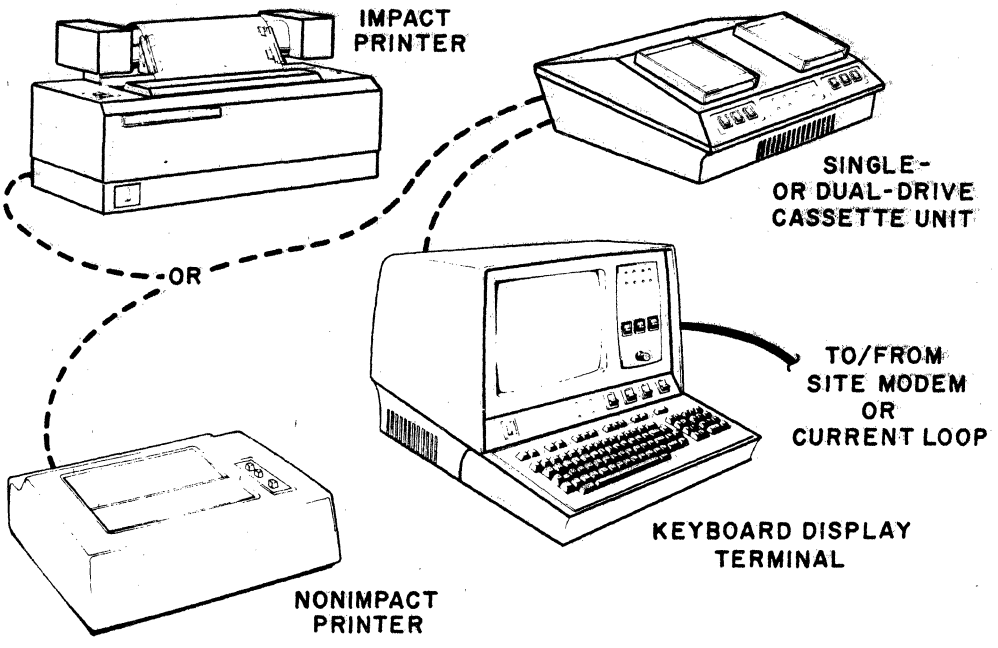


Gas Discharge Display



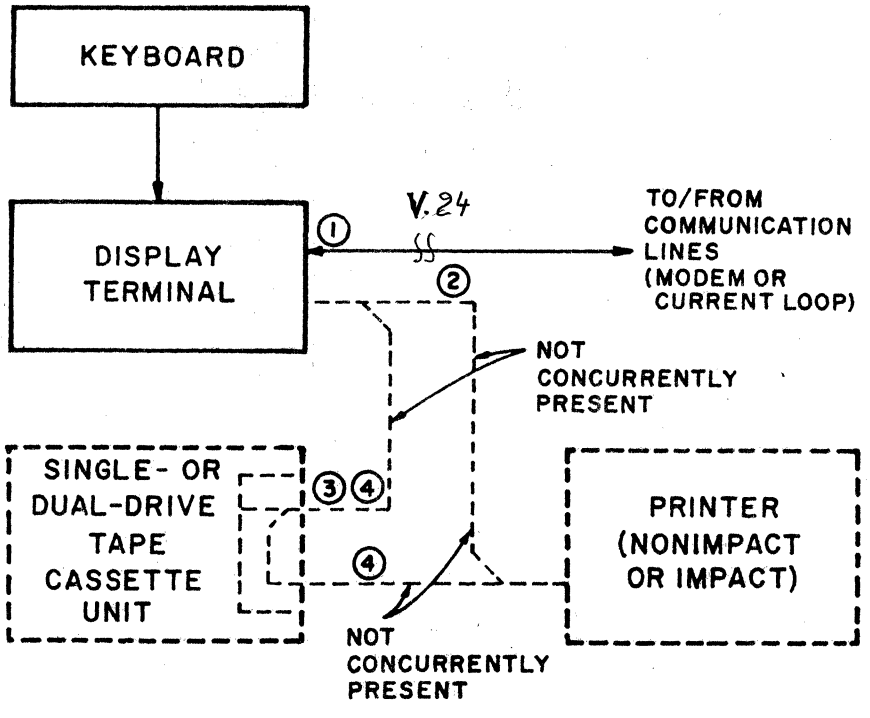


Plasma Display



NOTE: BROKEN LINES SHOW INTER-CONNECTING CABLE PATHS.

Terminal Subsystem Cabinet Configurations

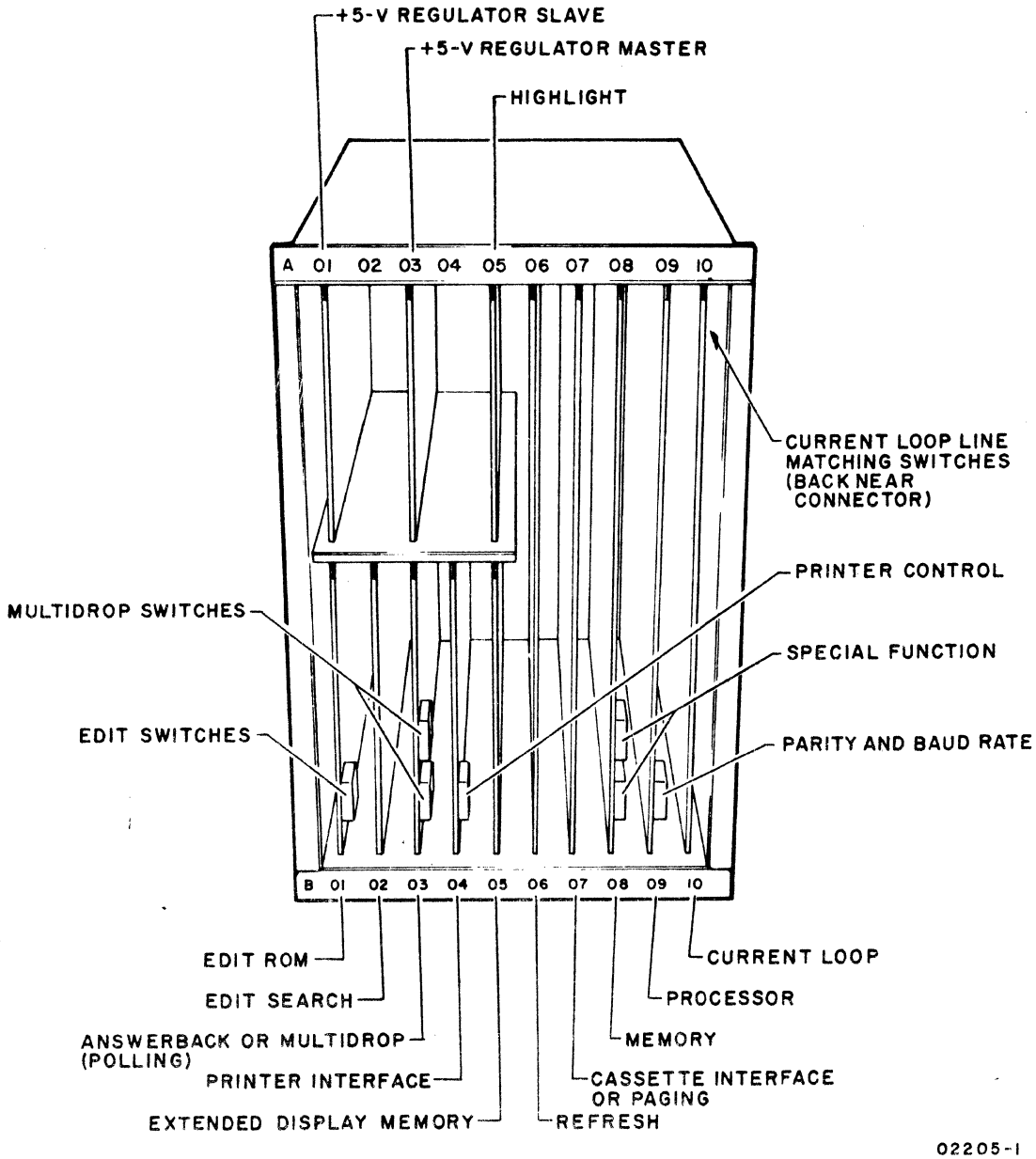


POSSIBLE TERMINAL SUBSYSTEM CONFIGURATIONS:

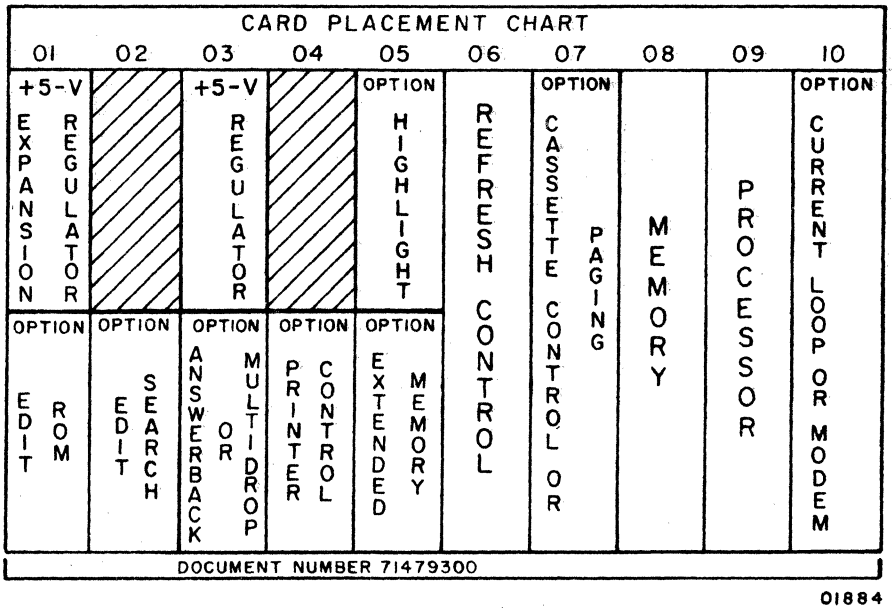
① STAND-ALONE KEYBOARD DISPLAY TERMINAL
② KEYBOARD DISPLAY TERMINAL WITH A PRINTER
③ KEYBOARD DISPLAY TERMINAL WITH A CASSETTE UNIT
④ KEYBOARD DISPLAY TERMINAL WITH A CASSETTE UNIT AND A PRINTER

02199

Terminal Subsystem Functional Schematic



Logic Module Assembly/Card Rack

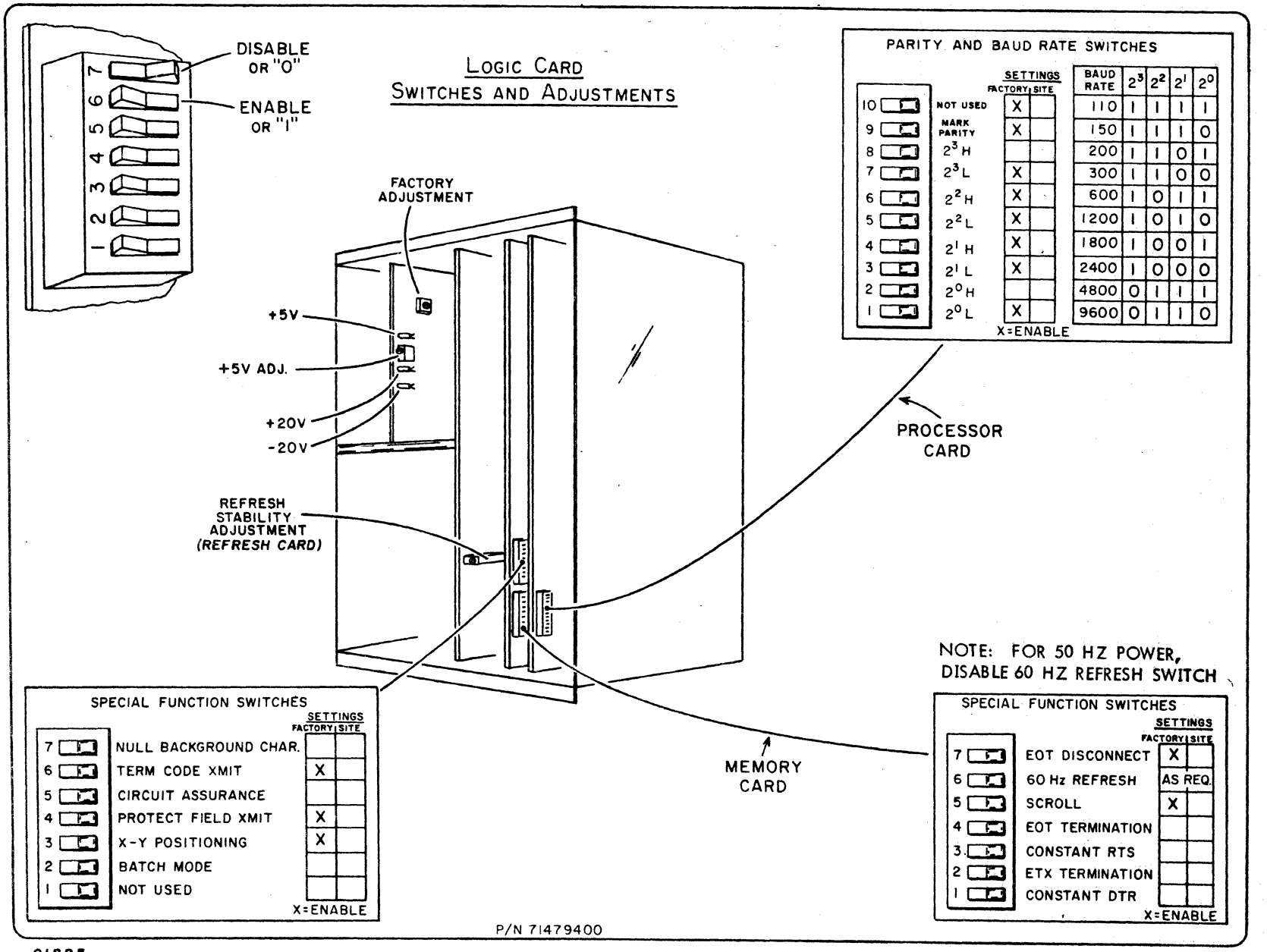


Card Placement Chart Decal

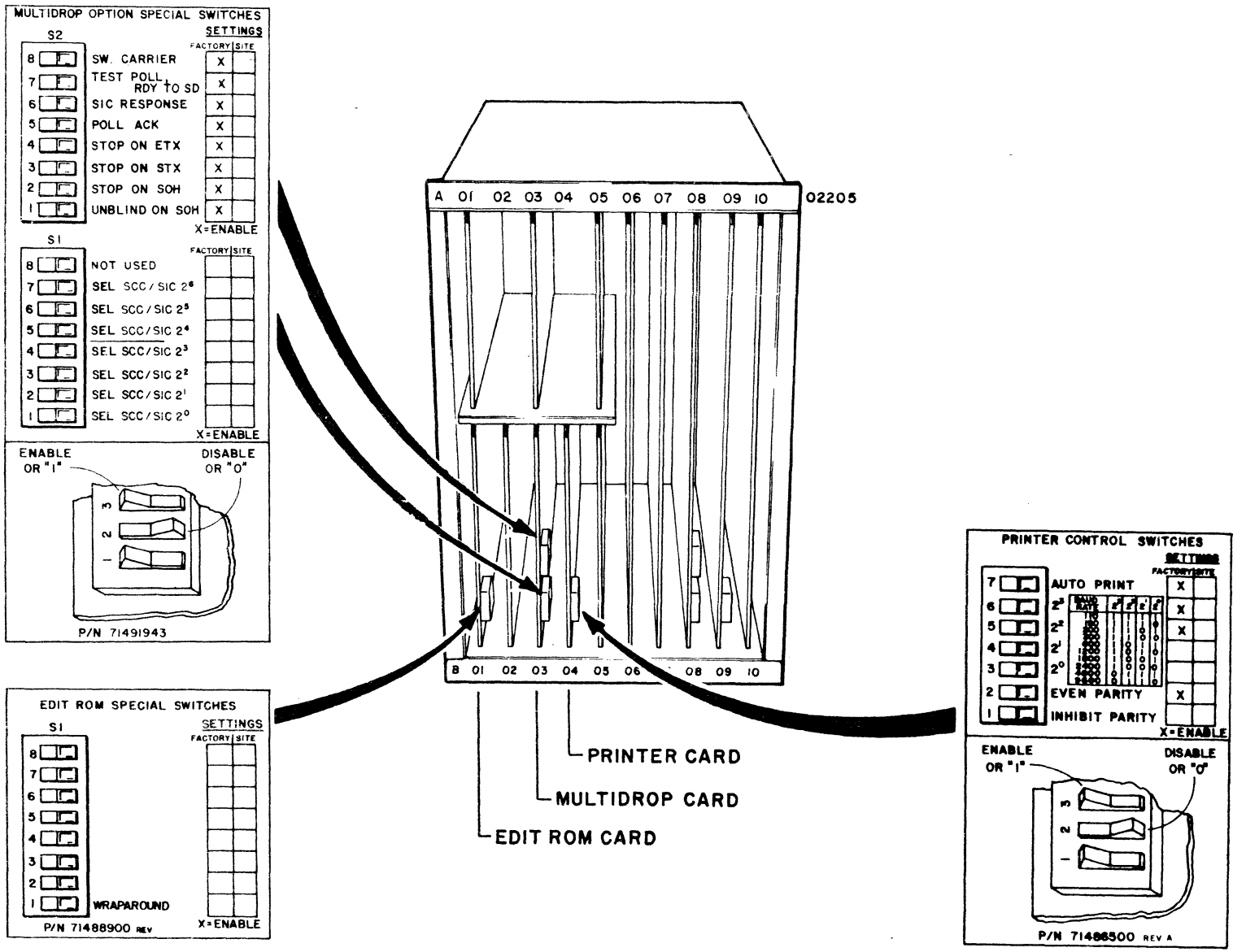
LOGIC MODULE MEMORY ADDRESSING STRUCTURE

ADDRESS (HEXADECIMAL)	FUNCTIONAL MEMORY AREA BEING ADDRESSED*
0000 — 0FFF	Processing control ROM (4K).
2000 — 27FF	Display RAM (2K; includes 1K for basic 960-character display and 1K optional extended for additional 960 characters for 1920-character display. Also provides 64 addresses in each 1K for use as temporary storage by the processor).
2800 — 2FFF	Search RAM for edit function (2K, 3-bit words).
3000 — 33FF	Printer ROM (1K).
3400 — 3414	Diode matrix ROM (21 words) for answerback function.
3800 — 3BFF	Multidrop ROM (1K).
3C00 — 3FFF	Multidrop RAM (1K).
4000 — 43FF	Cassette RAM (1K).
4400 — 47FF	Cassette RAM (1K).

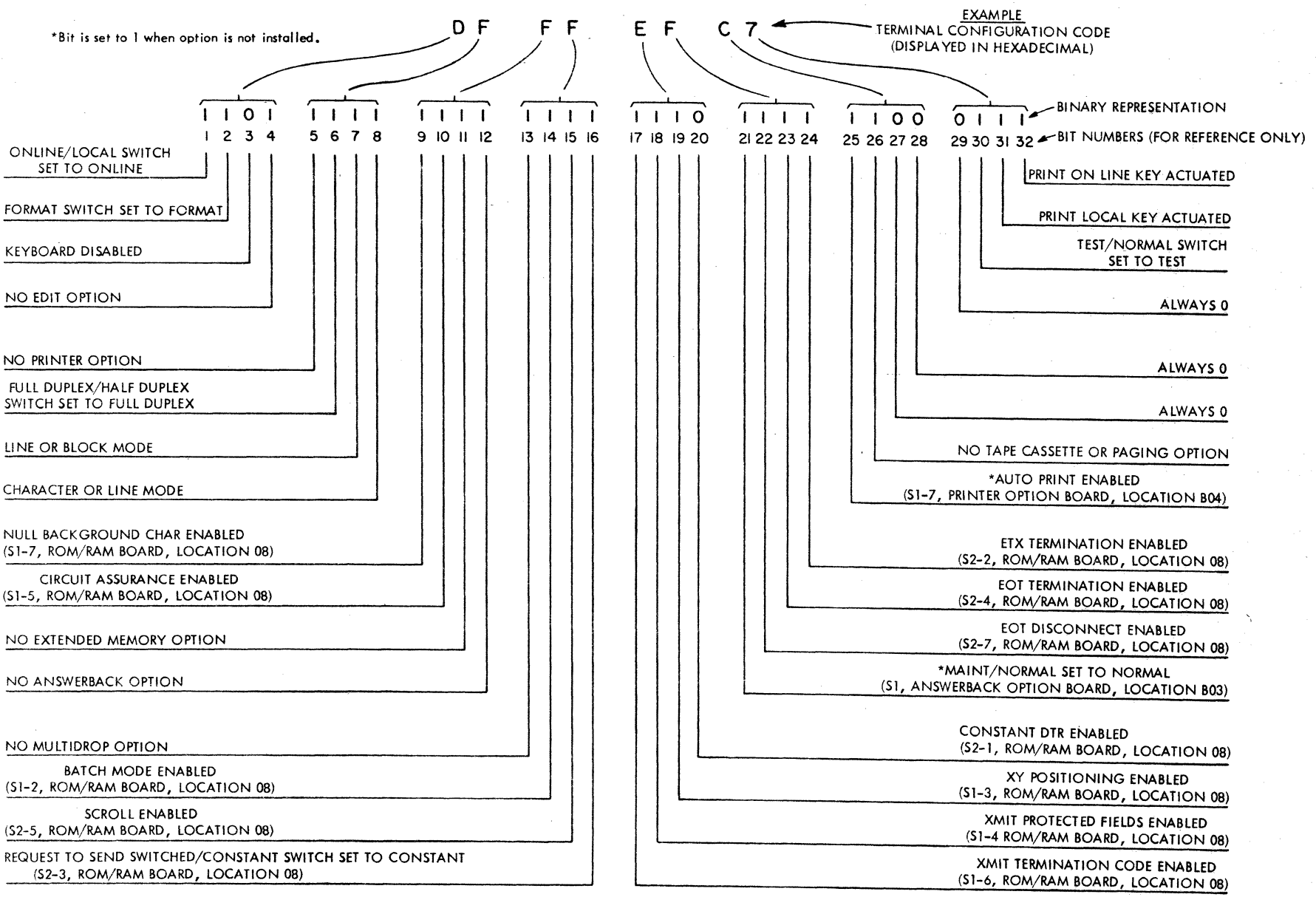
* One 8-bit word is at each address unless otherwise specified.



Sheet 1 of 2. Logic Module Decal (Switches and Adjustments)

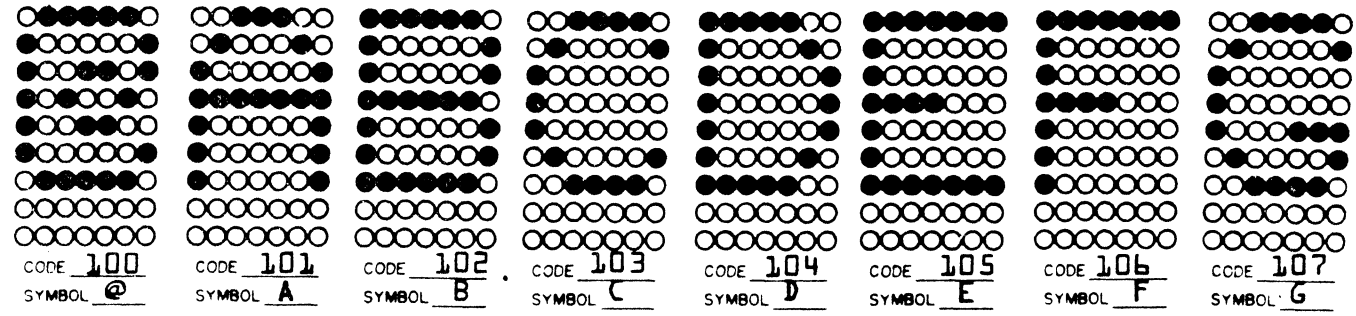


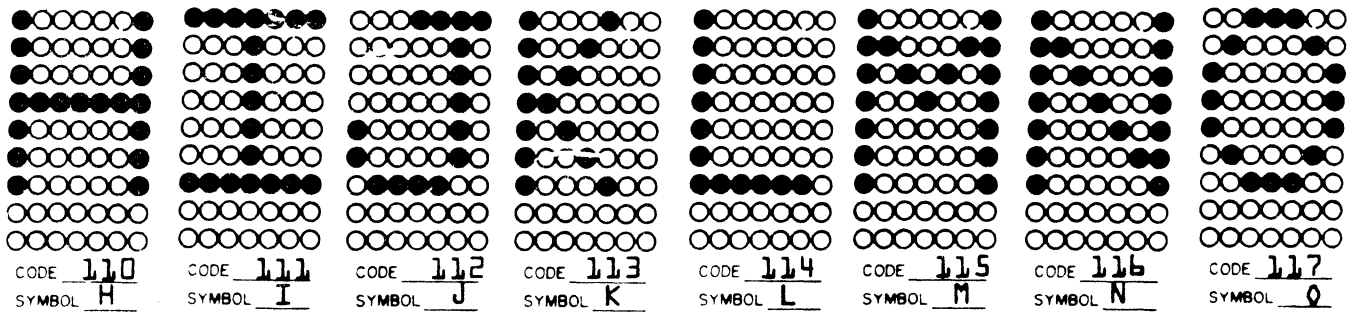
Sheet 2 of 2. Supplemental Function Switch Decals

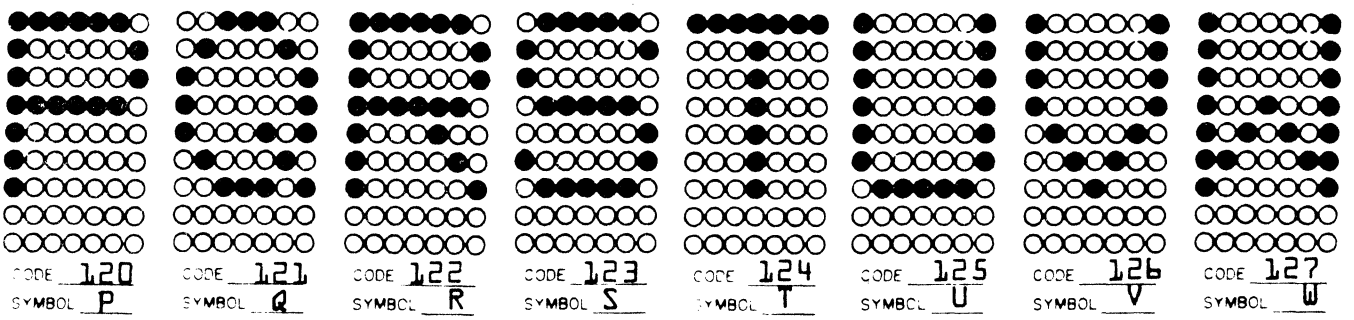


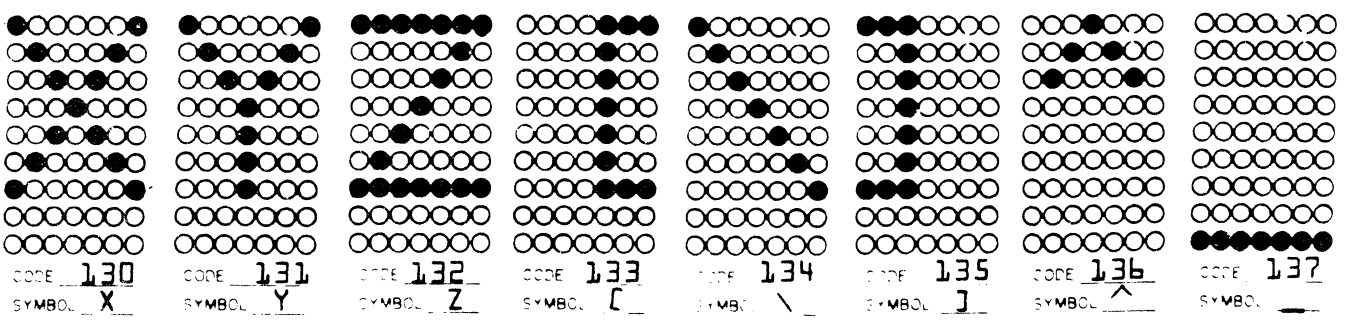
Terminal Configuration Display Bit Assignments

01973









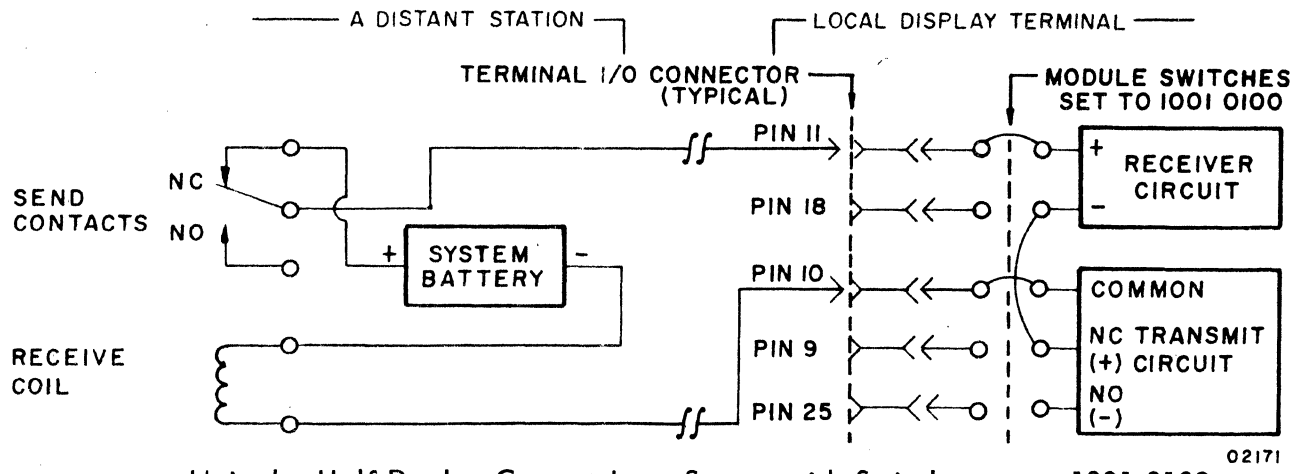
Display Alphanumeric Repertoire (Sheet 2 of 3)

This section contains the cabling pin assignments used for the cable connected to the communications line (data) and the peripheral connector. The communications line pin assignments are listed in table A-1; the pin assignments to peripheral equipment are listed in table A-2. The communications line voltage levels and assignments conform to EIA Standard RS-232-C and CCITT Recommendation V.24 as applied to asynchronous telecommunications. On the peripheral interface, only the voltage levels conform to RS-232-C/CCITT Recommendation V.24.

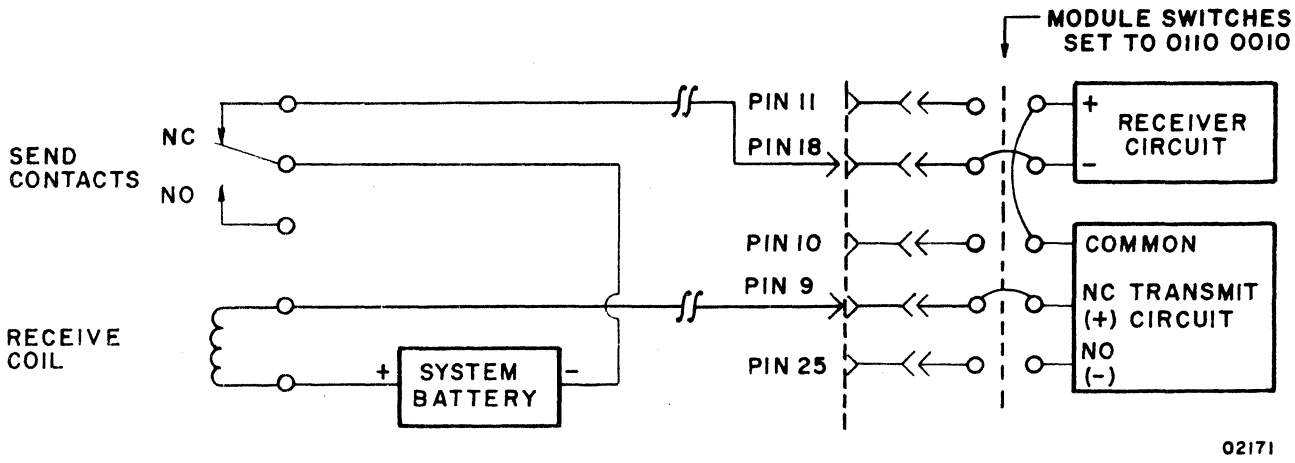
TABLE A-1. COMMUNICATIONS LINE SIGNALS

DATA SET CONNECTOR PIN NUMBER	CCITT MODEM CIRCUIT	EIA MODEM CIRCUIT	SIGNAL NAME	ORIGIN
1	101	AA	Protective Ground	Modem/Terminal
2	103	BA	Transmitted Data	Terminal
3	104	BB	Received Data	Modem
4	105	CA	Request To Send (RTS)	Terminal
5	106	CB	Clear To Send (CTS)	Modem
6	107	CC	Data Set Ready (DSR)	Modem
7	102	AB	Signal Ground	Modem/Terminal
8	109	CF	Received Line Signal Detector (CO)	Modem
9			Unused	
10			Unused	
11			Unused	
12	122	SCF	Secondary Received Line Signal Detector (SCO)	Modem
13	121	SCB	Secondary Clear To Send (SCTS)	Not Used
14	118	SBA	Secondary Transmitted Data	Not Used
15	114	DB	Transmission Signal Element Timing	Not Used
16	119	SBB	Secondary Received Data	Not Used
17	115	DD	Receiver Signal Element Timing	Not Used
18			Unused	
19	120	SCA	Secondary Request To Send (SRTS)	Terminal
20	108.2	CD	Data Terminal Ready (DTR)	Terminal
21	110	CG	Signal Quality Detector	Not Used
22	125	CE	Ring Indicator	Not Used
23	111/112	CH/CI	Data Signal Rate Indicator	Not Used
24	113	DA	Transmit Signal Element Timing	Not Used
25			Unused	

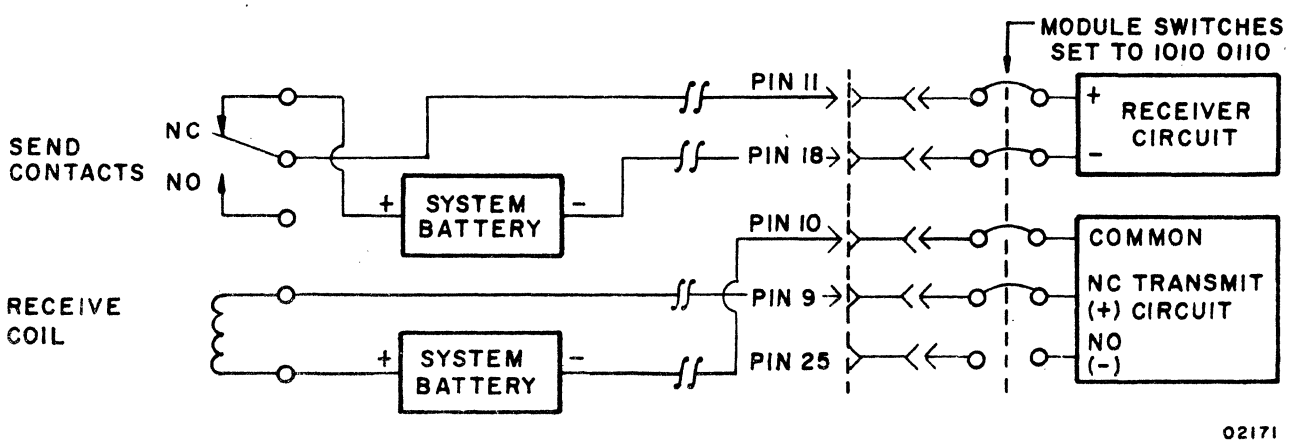
V. 24. Schnittstelle



a. Unipolar Half Duplex Current Loop System with Switches set to 1001 0100

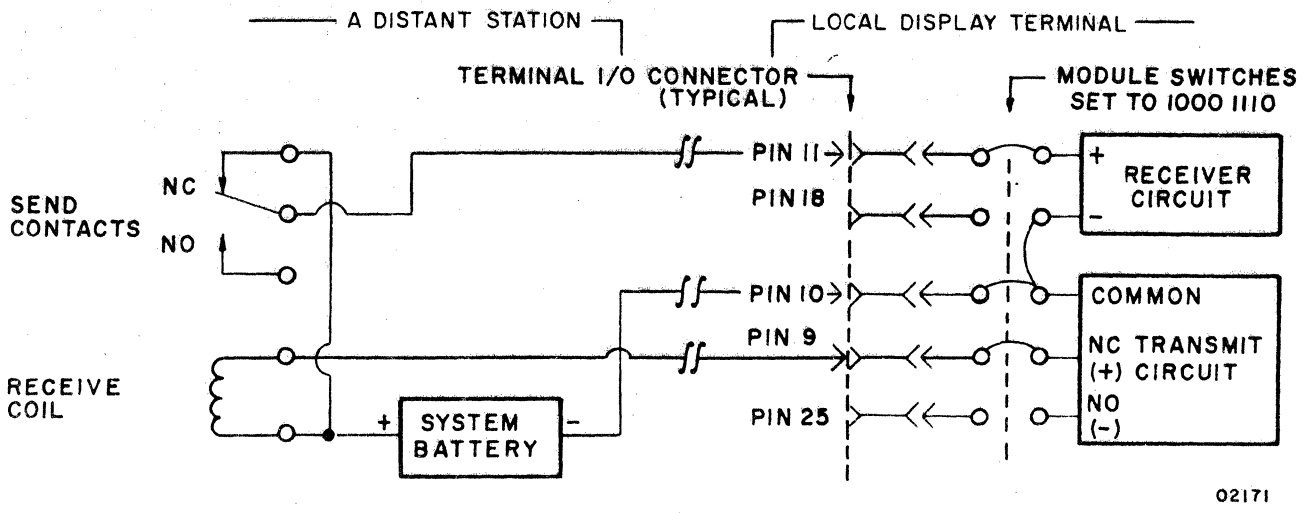


b. Unipolar Half Duplex Current Loop System with Switches set to 0110 0010

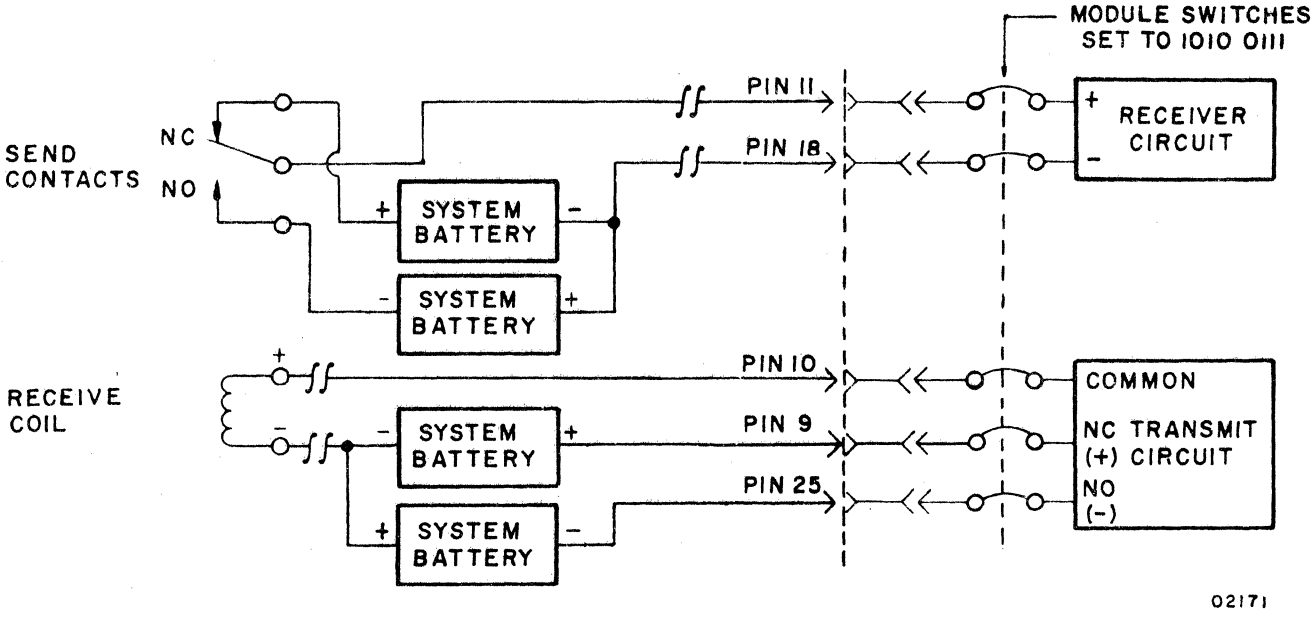


c. Unipolar Full Duplex Current Loop System with Switches set to 1010 0110

Sheet 1 of 2. Current Loop Line-Adapter Switch Settings



d. Unipolar Full Duplex Current Loop System with Switches set to 1000 1110



e. Bipolar Full Duplex Current Loop System with Switches set to 1010 0111

Sheet 2 of 2. Current Loop Line-Adapter Switch Settings

TABLE TS1. DDLT FOR TERMINAL SUBSYSTEM

TERMINAL SUBSYSTEM OPERATION CHECKS

START

ASSUME

Subsystem equipment(s) required at the site have been individually installed and checked out (Installation and Checkout, section 3) at a prior time. All ac power cords and signal cables present and secure. If printer present, paper properly loaded (procedure NIP1 or IMP1). If tape cassette unit present, usable tape cassette (with BOT and EOT holes) is loaded ready for read/write. An operational failure occurred during subsystem use and the information available does not point conclusively to a particular part of the subsystem, e.g., keyboard display, printer, or tape cassette unit, as being at fault.

CONDITIONS	SITUATION 1	2	3	4	5	6	7	8	9
Apply subsystem power (procedure TS1). Does each cabinet/equipment present appear to have power?	Y	Y	Y	Y	Y	Y	Y	N	
See Test Mode Diagnostic in a prior part of this section, and step through entire test described there. Did Test Mode complete without error?	Y	Y	Y	Y	Y	Y	N	-	
If a tape cassette unit is present, exercise it via the keyboard. Do this per Tape Cassette Unit Checkout procedure in section 3. Did tape unit check out OK?	Y	Y	Y	Y	Y	N	-	-	OTHER
Place terminal subsystem online with communication subsystem (this may require establishing connection via a site modem; site personnel may be able to assist here). Attempt system communications (sending/receiving per system protocol). Do communications operate as intended for the site application? (site management personnel may assist here)	Y	Y	Y	N	N	-	-	-	
The operational failure which originally occurred does not seem to be recurring. Could the original failure have been operator error or random communication system error? Exercise careful judgement here based on all information available.	Y	N	N	-	-	-	-	-	
Contact communication system maintenance personnel. Did they acknowledge a communications line problem?	-	Y	N	Y	N	-	-	-	

ACTIONS	SEQUENCE								
Turn subsystem over to site operator(s) and observe that it works properly for them. If not, start more detailed analysis at table CRT1 and continue through following DDLTs until fault is found.	X	X	-	X	-	-	-	-	-
Start more detailed analysis at table CRT1 and continue through following DDLTs until fault is found.	-	-	2	-	3	-	-	-	-
Carefully check that operator procedures/uses are compatible with the particular terminal installation (switches, etc.). Instruct operators as necessary or, if system requires, change internal/external switch settings (figure CRT44).	-	-	1	-	1	-	-	-	-
Contact communications main system personnel and check if they have central processor trouble.	-	-	3	-	2	-	-	-	-
Start detailed troubleshooting at table TCU1, DDLT for Tape Cassette Unit.	-	-	-	-	-	X	-	-	-
Start detailed troubleshooting at DDLT for cabinet which did not power up, e.g., table CRT1, table NIP1, table IMP1, or table TCU1.	-	-	-	-	-	-	-	X	-
Remove each supplement function (option) card (module) present in the display logic module (figure CRT51 and procedure CRT8). Rerun test mode. If test mode still has errors, start more detailed analysis at table CRT1 and continue through following DDLTs until fault is found. However, if test mode runs OK, reinstall the option cards just removed one at a time and rerun test mode after each to verify if that card introduces the error. If one causes test mode error, replace it with a new card (procedure CRT8) and check with test mode again. If error persists, start more detailed analysis at table CRT1. If test mode OK, continue going through the module, adding and checking each option function card which you had removed. If, when done, test mode error still occurs, go to table CRT1 and subsequent DDLTs as necessary until problem is solved.	-	-	-	-	-	-	X	-	-
Call Regional Tech Support.	-	-	4	-	4	-	-	-	X
Note: After completing any repairs or maintenance, verify that the subsystem is operational by rerunning test mode.									