

DD-002

Dataway Display

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Dataway Display R/W Circuit DD-002 Drawing No. 105254, Rev. E

Dataway Display Command Signal Display DD-002 Drawing No. 105255 Rev.

Assembly Printed Wiring Board DD-002 Drawing No. 105314, Rev. E

DD-002 Manual Revision Record

Warranty

MODEL DD-002

DATAWAY DISPLAY



FEATURES

- ◆ Latched and dynamic modes
- ◆ Front panel reset
- ◆ All signal lines displayed on front panel

DESCRIPTION

The Dataway Display Module is designed for the convenience of the CAMAC user in test, fault finding, monitoring and educational situations. The display is a single width module. The front panel mounts 68 miniature wide angle light emitting diodes (LEDs) which exhibit the signals present on the Dataway. To accomplish this display the latest Dataway signals are latched in a memory register and then displayed. The DD-002 does not generate any signals on the Dataway but simply passively display those signals present from other operations.

The displayed signal lines are the following: R1 through R24, W1 through W24; F1, F2, F8, F16; A1, A2, A4, A8; N, B, I, Z, C, Q, X, P1, P2, S1 and S2.

There are two modes in which the DD-002 may be used:

Latched: In this mode the latest Dataway signals are latched in memory and displayed on the front panel.

Dynamic: In this mode the front panel displays real time information present on the Dataway.

The display may be cleared with a front panel reset switch.

Three LEDs have pulse stretched networks associated with them: B, S1, and S2. Thus a visual display of these short duration pulses is obtained.

This module is useful for system set-up, test and maintenance, monitoring and educational purposes. Most CAMAC users employ a complete test system consisting of a CAMAC System Simulator CSS/T, Word Generator (WGR-241) and Dataway Display Module (DD-002) for these purposes.

TECHNICAL SPECIFICATIONS

FRONT PANEL

68 LED display

3 position display control switch

POWER REQUIREMENTS

+ 6 V @ 1.6 A

TEMPERATURE RANGE

0° C to 40° C (32° F to 104° F) ambient to operate within specifications (when installed in crate with enough air flow to hold maximum air exit temperature to 55° C (131° F).

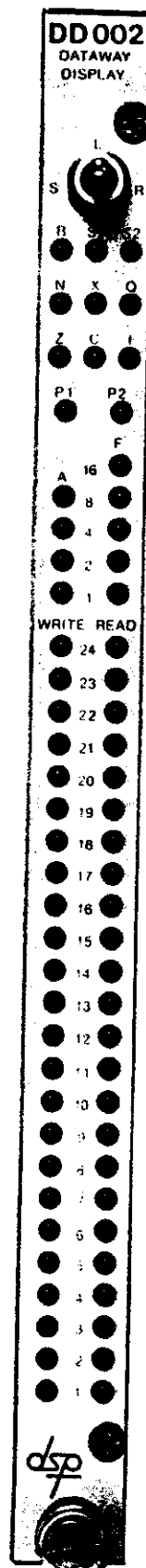
PACKAGING

1 Width CAMAC Module

221 mm H, 18 mm W, 292 mm D* (8.7" x 0.7" x 11.5")

*Depth front to rear panel. Rear connector 13 mm (0.5").

In conformance with the CAMAC standard for RF shielded instrumentation modules (IEEE standard 583, European Esone Report #EUR4100e).



ACTUAL SIZE

GENERAL DESCRIPTION

The DD-002 Dataway Display is a single width Camac module for use in test, fault finding, and educational purposes. Front panel has 68 miniature wide angle light emitting diodes to illustrate dataway operation. This module may be used in any position in the Camac crate.

There are two modes in which the DD-002 may be used;

Latched

The latest dataway signals are latched in memory and displayed via the front panel.

Static

In this mode the front panel LED's display real time information present on the dataway.

All displays may be cleared with the front panel switch.

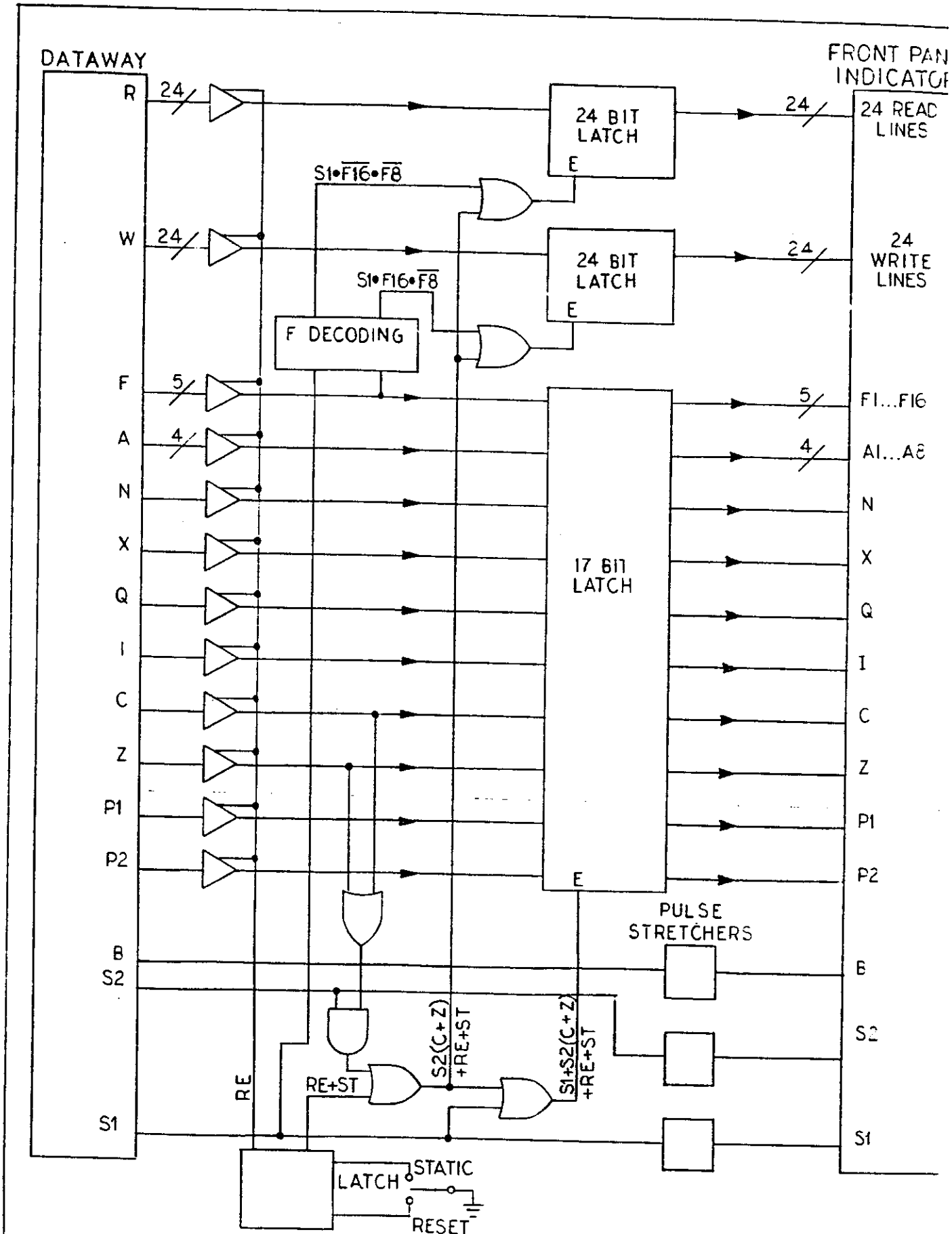
Three LED's have pulse stretched networks associated with them. (Busy, S1, S2.) This will give a visual indication of these short duration pulses.

Displayed lines include the following; R1 through R24, W1 through W24, F16, F8, F2, F1, A8, A4, A2, A1, N, B, I, Z, C, Q, X, P1, P2, S1, and S2.

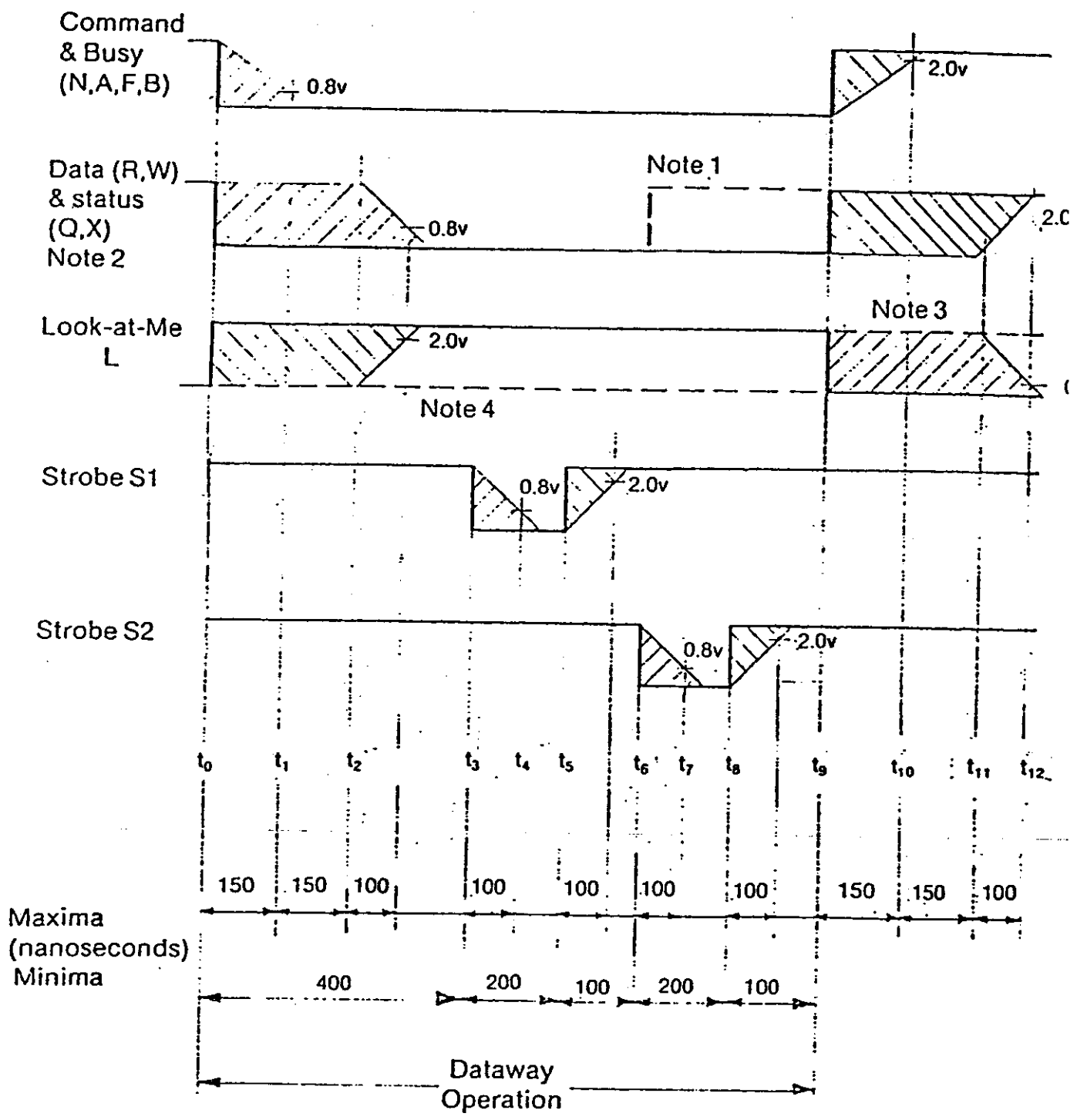
The DD-002 does not generate any signals onto the dataway.

Power Requirements	Volts	Amps
	+6v.	1.9 Amps

DATAWAY DISPLAY BLOCK DIAGRAM



TIMING OF A DATAWAY COMMAND OPERATION



- Note 1: Data & status may change in response to S2.
- Note 2: During some operations Q may change at any time.
- Note 3: LAM status may be reset during operation.
- Note 4: L signal may be maintained during operation.

FUNCTION CODES:

R/W:	Code F():	Function:
R	0	Read group 1 register.
R	1	Read group 2 register.
R	2	Read and clear group 1 register.
R	3	Read complement of group 1 register.
R	4	Nonstandard.
R	5	Reserved.
R	6	Nonstandard.
R	7	Reserved.
	8	Test look-at-me (LAM).
	9	Clear group 1 register.
	10	Clear look-at-me (LAM).
	11	Clear group 2 register.
	12	Nonstandard.
	13	Reserved.
	14	Nonstandard.
	15	Reserved.
W	16	Overwrite group 1 register.
W	17	Overwrite group 2 register.
W	18	Selective set group 1 register.
W	19	Selective set group 2 register.
W	20	Nonstandard.
W	21	Selective clear group 1 register.
W	22	Nonstandard.
W	23	Selective clear group 2 register.
	24	Disable.
	25	Execute.
	26	Enable.
	27	Test status.
	28	Nonstandard.
	29	Reserved.
	30	Nonstandard.
	31	Reserved.

DATAWAY PIN ALLOCATION:

Contact Allocation at a Normal Station (Viewed from Front of Crate):

		Pin No.			
Free bus-line	P1	1	2	B	Busy
Free bus-line	P2	3	4	F16	Function
	P3	5	6	F8	Function
	P4	7	8	F4	Function
	P5	9	10	F2	Function
Command accepted	X	11	12	F1	Function
Inhibit	I	13	14	A8	Subaddress
Clear	C	15	16	A4	Subaddress
Station number	N	17	18	A2	Subaddress
Look-at-me	L	19	20	A1	Subaddress
Strobe 1	S1	21	22	Z	Initialize
Strobe 2	S2	23	24	Q	Response
MSB	W24	25	26	W23	
	W22	27	28	W21	
	W20	29	30	W19	
	W18	31	32	W17	
	W16	33	34	W15	
24 write	W14	35	36	W13	
Bus-lines	W12	37	38	W11	
	W10	39	40	W9	
	W8	41	42	W7	
	W6	43	44	W5	
	W4	45	46	W3	
	W2	47	48	W1	LSB
MSB	R24	49	50	R23	
	R22	51	52	R21	
	R20	53	54	R19	
	R18	55	56	R17	
	R16	57	58	R15	
24 read	R14	59	60	R13	
Bus-lines	R12	61	62	R11	
	R10	63	64	R9	
	R8	65	66	R7	
	R6	67	68	R5	
	R4	69	70	R3	
	R2	71	72	R1	LSB
-12 V dc	-12	73	74	-24	-24 V dc
+200 V dc	+HV	75	76	-6	-6 V dc
117 V ac live	ACL	77	78	ACN	117 V ac neutral
Reserved	Y1	79	80	E	Clean earth
+12 V dc	+12	81	82	+24	+24 V dc
Reserved	Y2	83	84	+6	+6 V dc
0V (power return)	0	85	86	0	0V (power return)

DATAWAY PIN ALLOCATION:

Contact Allocation at the Control Station (Viewed from Front of Crate):

		Pin No.			
Patch contact	P1	1	2	B	Busy
Patch contact	P2	3	4	F16	Function
Patch contact	P3	5	6	F8	Function
Patch contact	P4	7	8	F4	Function
Patch contact	P5	9	10	F2	Function
Command accepted	X	11	12	F1	Function
Inhibit	I	13	14	A8	Subaddress
Clear	C	15	16	A4	Subaddress
Patch contact	P6	17	18	A2	Subaddress
Patch contact	P7	19	20	A1	Subaddress
Strobe 1	S1	21	22	Z	Initialize
Strobe 2	S2	23	24	Q	Response
	L24	25	26	N24	
	L23	27	28	N23	
	L22	29	30	N22	
	L21	31	32	N21	
	L20	33	34	N20	
	L19	35	36	N19	
	L18	37	38	N18	
	L17	39	40	N17	
	L16	41	42	N16	
	L15	43	44	N15	
24 individual Look-at-me lines L1 from Station 1, etc.	L14	45	46	N14	24 individual Station number lines N1 to Station 1, etc.
	L13	47	48	N13	
	L12	49	50	N12	
	L11	51	52	N11	
	L10	53	54	N10	
	L9	55	56	N9	
	L8	57	58	N8	
	L7	59	60	N7	
	L6	61	62	N6	
	L5	63	64	N5	
	L4	65	66	N4	
	L3	67	68	N3	
	L2	69	70	N2	
	L1	71	72	N1	
-12 V dc	-12	73	74	-24	-24 V dc
+200 V dc	+200	75	76	-6	-6 V dc
117 V ac live	ACL	77	78	ACN	117 V ac neutral
Reserved	Y1	79	80	E	Clean earth
+12 V dc	+12	81	82	+24	+24 V dc
Reserved	Y2	83	84	+6	+6 V dc
0V (power return)	0	85	86	0	0V (power return)

SINGLE LEVEL BILL OF MATERIAL REPORT

DSP Technology Inc.

Assembly: 105314 (ASSY: PCB, DD-002)
 Revision: E1
 As of: 09/30/89

Date: 10/05/89
 Page: 1

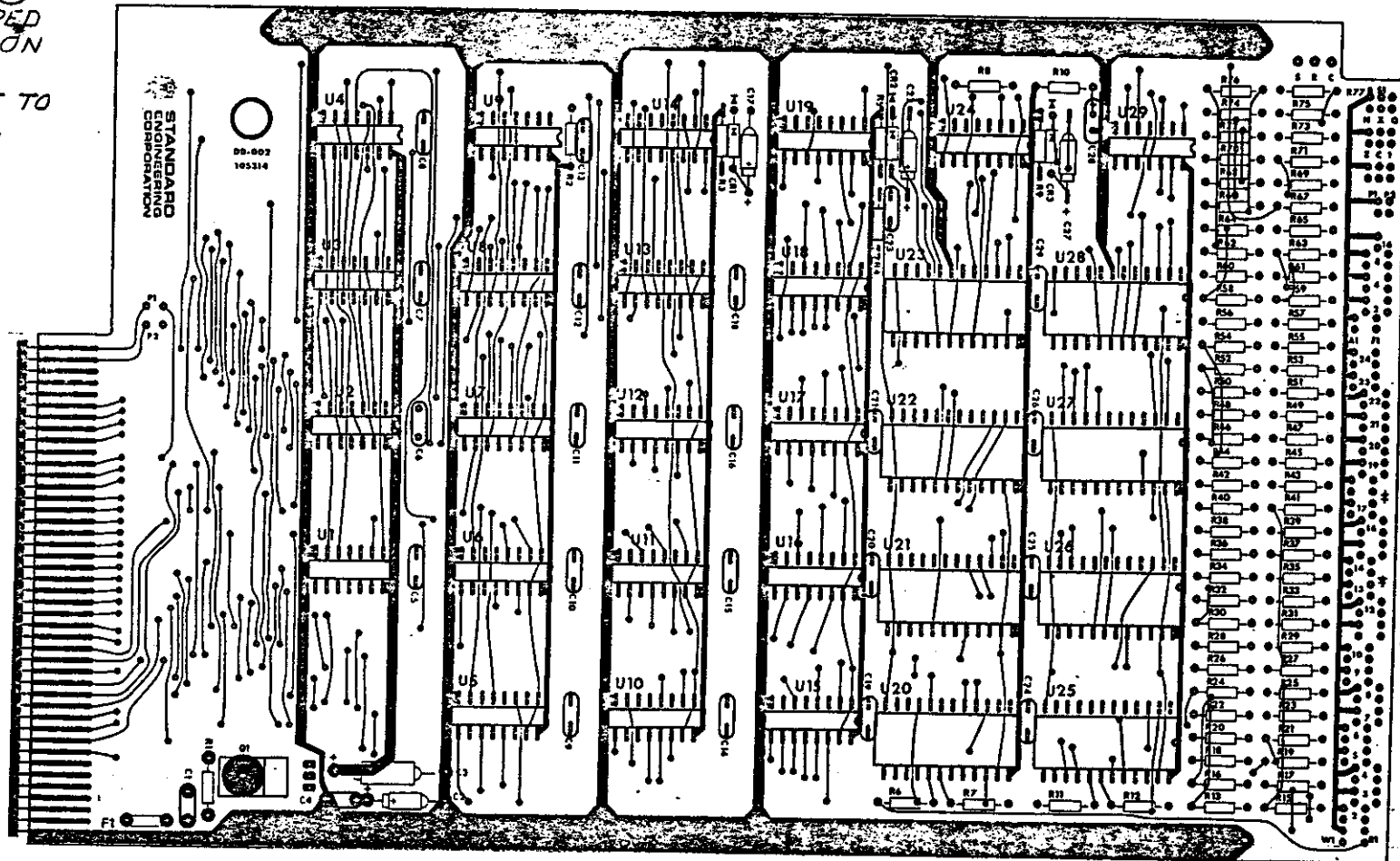
Component	Description	Dty Per	As of	Until	Reference
1.	0100-0102				
	RES: RCD7 1K OHM	3.00	01/22/87	12/31/99	R2, R8, R10
2.	0100-0103				
	RES: RCD7 10K OHM	1.00	01/22/87	12/31/99	R4
3.	0100-0181				
	RES 5X 1/4W CC RESISTOR R=180	68.00	01/22/87	12/31/99	R6, R7, R11-R77
4.	010113				
	CAP: CER, .01UF, 50V SPRAGUE SGAT12	23.00	03/16/87	12/31/99	C1, C4-16, C18-C21 C23-C26, C29
5.	013150				
	CAP: TANT KEMET T110B156K020AS	4.00	01/22/87	12/31/99	C2, C17, C22, C27
6.	013470				
	CAP: AX TANT KEMET T110C476K020AS	1.00	01/22/87	12/31/99	C3
7.	040001				
	DIO: LED, RED STANLEY SAR 3931	68.00	01/22/87	12/31/99	
8.	050393				
	RES: 5X 1/4W CC RESISTOR R=39K	3.00	01/22/87	12/31/99	R3, R5, R9
9.	0600-0475				
	C TANT 4.7MF 10X 35V	1.00	01/22/87	12/31/99	C28
10.	060414				
	DIO: 1N4148	3.00	01/22/87	12/31/99	CR1-CR3
11.	061612				
	XSTR: NPN, 2N6121	1.00	01/22/87	12/31/99	D1
12.	062011				
	IC 7411	1.00	01/22/87	12/31/99	U9
13.	062075				
	IC 7475	1.00	01/22/87	12/31/99	U14
14.	062100				
	IC: 74100	8.00	01/22/87	12/31/99	U20-U23, U25-U28
15.	062123				
	IC: 74123	2.00	01/22/87	12/31/99	U19, U24
16.	062367				
	IC: 74367	11.00	01/22/87	12/31/99	U5-U8, U10-U12, U15-18
17.	062368				
	IC: SN74368	1.00	01/22/87	12/31/99	U13
18.	105313				
	PCB: DD-002	1.00	01/22/87	12/31/99	
19.	106278				
	RAIL: GUIDE, MDL, 11 HOLE	2.00	01/22/87	12/31/99	
20.	120440				
	HDW: SCREW 4-40 X 3/16 BHMS ZINC	5.00	01/22/87	12/31/99	
21.	122045				
	HDW: 4-40 KEP NUT ZINC	1.00	01/22/87	12/31/99	
22.	1750-0004				
	ICS SN7404	1.00	01/22/87	12/31/99	U4
23.	1750-0008				
	ICS SN7408	2.00	01/22/87	12/31/99	U3, U29
24.	1750-0032				
	ICS SN7432	2.00	06/03/87	12/31/99	U1, U2
25.	3100-0202				
	FUSE 2AMP LITTLEFUSE 251002	1.00	01/22/87	12/31/99	F1
26.	5000-0024				
	SKT CAMBION 703-1324-01-04-10	8.00	01/22/87	12/31/99	U20-U23, U25-U28
27.	DOCUMENTATION				
	PER ASSY DWG REFERENCE	1.00	01/22/87	12/31/99	105314

Component	Description	Dty Per	As of	Until	Reference
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Assembly: 105314 (ASSY: PCB, DD-002)

NOTES:

1. MODULE TO BE SHIPPED WITHOUT JUMPERS ON P1 & P2
2. U28 MUST LAY FLAT TO CLEAR SIDE COVER.



STANBARD
ENGINEERING
CORPORATION

DD-002
105314

6.00"

silkscreen
105314

MATERIAL
SEE PARTS LIST
PL 105314

FINISH ~
DIMENSIONAL TOLERANCES
UNLESS OTHERWISE NOTED
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TITLE ASSEMBLY P.C.B.
DD-002

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DSP Technology

RELEASE PER ECO 176

10-7-81

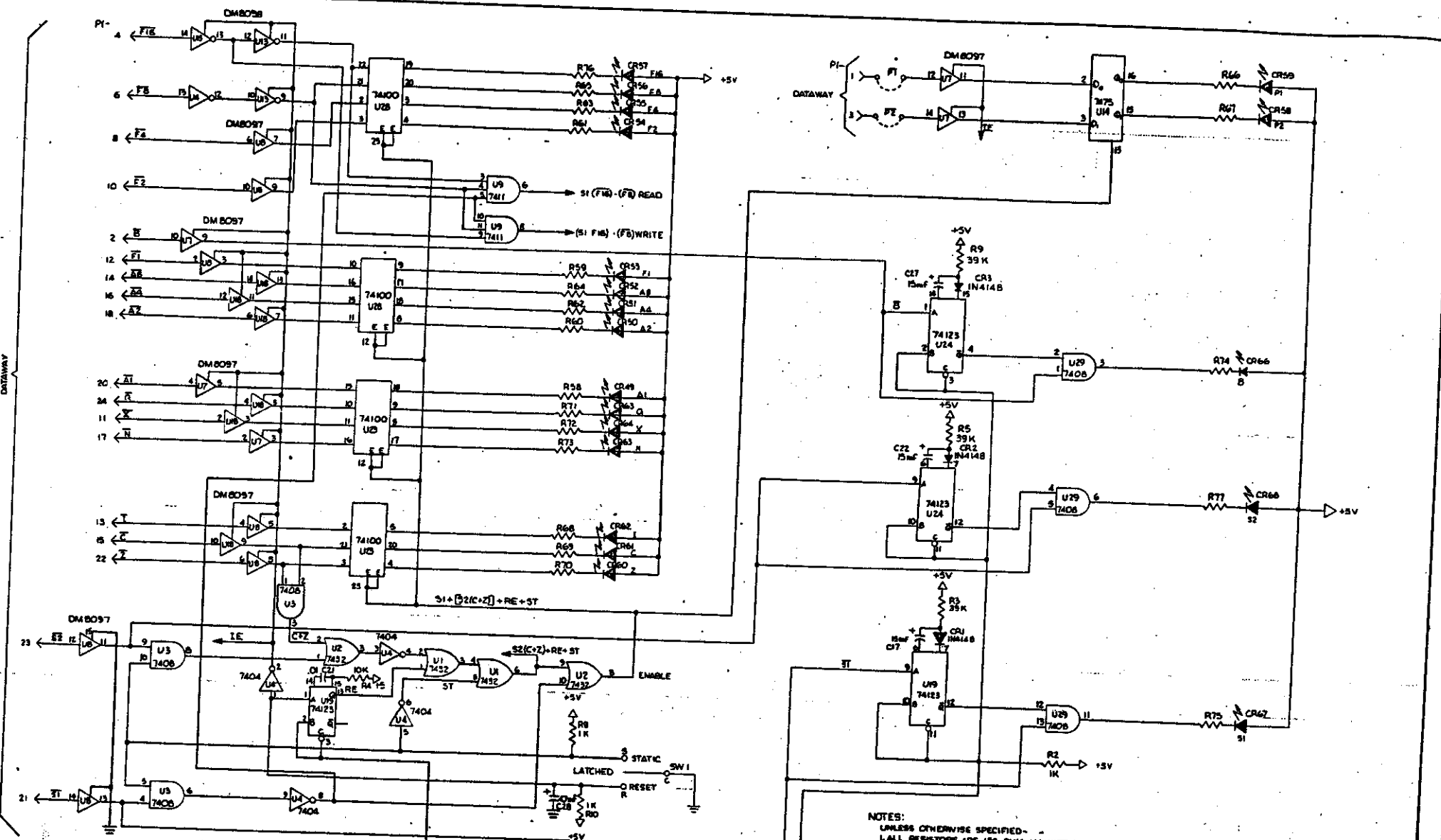
[Signature]

DESCRIPTION	DATE	APPROVAL

REVISIONS

DESIGN	DATE
DRAWN <i>e.c. hannett</i>	DATE 10-7-81
CHECK	DATE
APPRO <i>[Signature]</i>	DATE 10-7-81

SIZE	DRAWING NUMBER	ISSUE
B	105314	E
SHEET 1	OF 1	



NOTES:
 UNLESS OTHERWISE SPECIFIED-
 1. ALL RESISTORS ARE 180 OHM, 1/4 WATT, 5% C.C.
 2. ALL DIODES ARE TIL-205 OR EQUIV.
 3. ALL SIGNALS ARE POS. LOGIC.

REVISIONS		DATE	APPROVAL	DESCRIPTION
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DATAWAY DISPLAY
 COMMAND SIGNAL DISPLAY
 DO-002

DSP Technology
 JOB NO. 1
 DATE 105255

DD-002 MANUAL REVISION RECORD:

Revision:	Date Issued:	Description:	Reference:
A	11/10/81	Updated drawings list	None

PRODUCT WARRANTY

(Excludes Software)

DSP TECHNOLOGY ("DSP") warrants its products to be free from defects in material and workmanship and to meet DSP's performance specifications. The warranty period is one year from the date of shipment to the buyer. The warranty is limited by the paragraphs below.

RETURN TO FACTORY

If a buyer discovers a defect in a DSP product covered by this agreement, buyer's exclusive remedy is to ship the product back to DSP's Fremont factory, where DSP will, at its option, either repair or replace the product. This remedy applies if DSP receives the returned product on or before the tenth day after the expiration of the warranty period and the buyer notifies DSP of the defect before returning the product.

COST TO BUYER OF REPAIRS OR REPLACEMENT

Buyer must prepay freight charges to DSP. DSP will pay standard return freight to buyer. Buyer will be charged for premium freight if that method of transport is requested by buyer. There is no other charge for repair or replacement during the warranty period.

TRANSFERRABLE WARRANTIES

In addition to the foregoing warranty, DSP also provides the buyer the transferrable warranty, if any, provided to DSP by the manufacturers of other products such as terminals and disk systems supplied by SEC as part of a total system.

LIMITATION OF WARRANTY AND LIABILITY

The foregoing constitutes DSP's entire warranty, expressed, implied, and/or statutory (except as to title), and to any other party for any breach of such warranty and for damages, whether direct, special, incidental, or consequential. Other than as expressly provided in this document, no warranties expressed or implied, including any warranty of merchantability or fitness for a particular purpose are made. No employee, representative, or agent or seller has any authority expressed or implied to alter or supplement the terms of this warranty.