INSTRUCTION MANUAL

Serial Number _____

021-0028-00

32-BIT INPUT

INTERFACE PACKAGE

Tektronix, Inc.
S.W. Millikan Way ● P. O. Box 500 ● Beaverton, Oregon 97005 ● Phone 644-0161 ● Cables: Tektronix

070-3054-00

All Tektronix instruments are warranted against defective materials and workmanship for one year.

Any questions with respect to the warranty, mentioned above should be taken up with your Tektronix Field Engineer or Representative.

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021-0028-00

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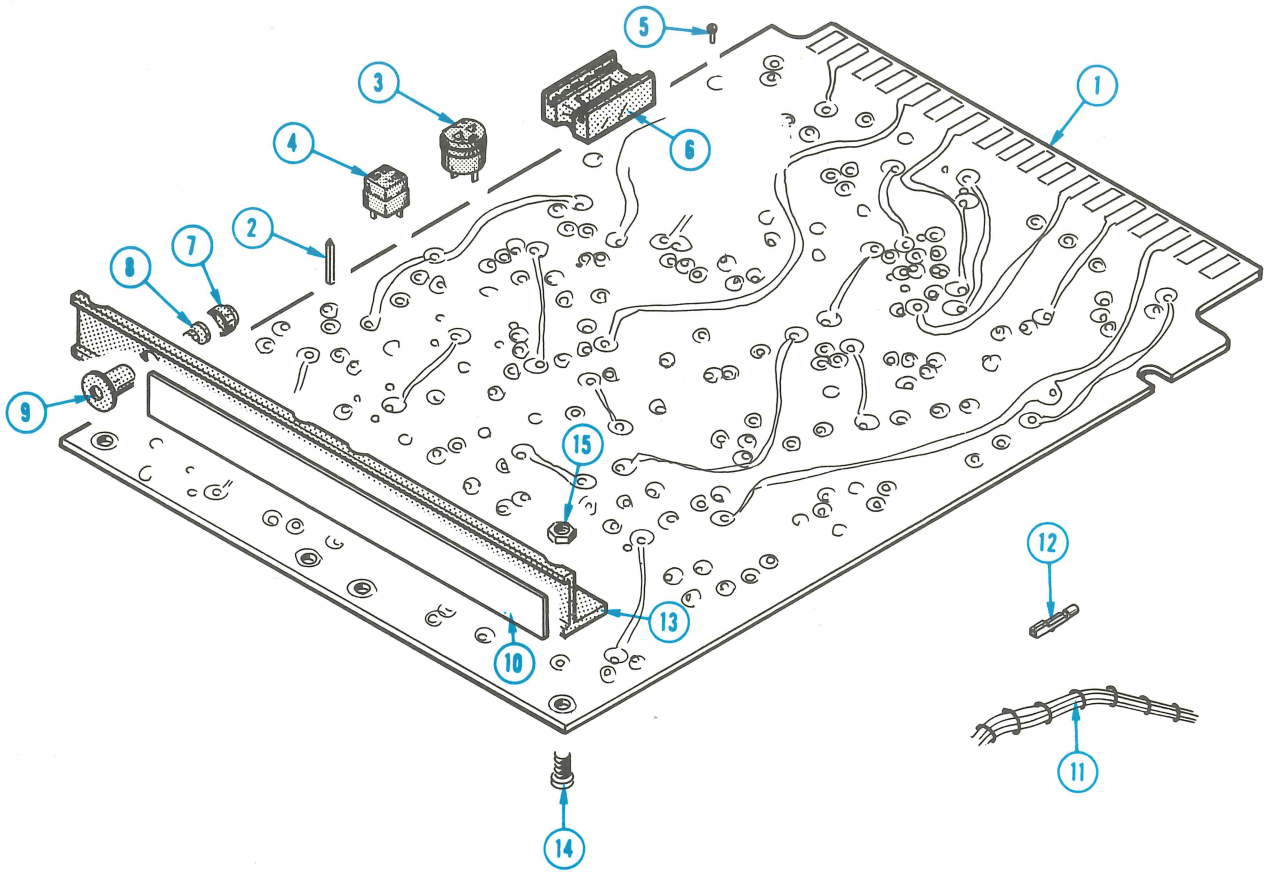
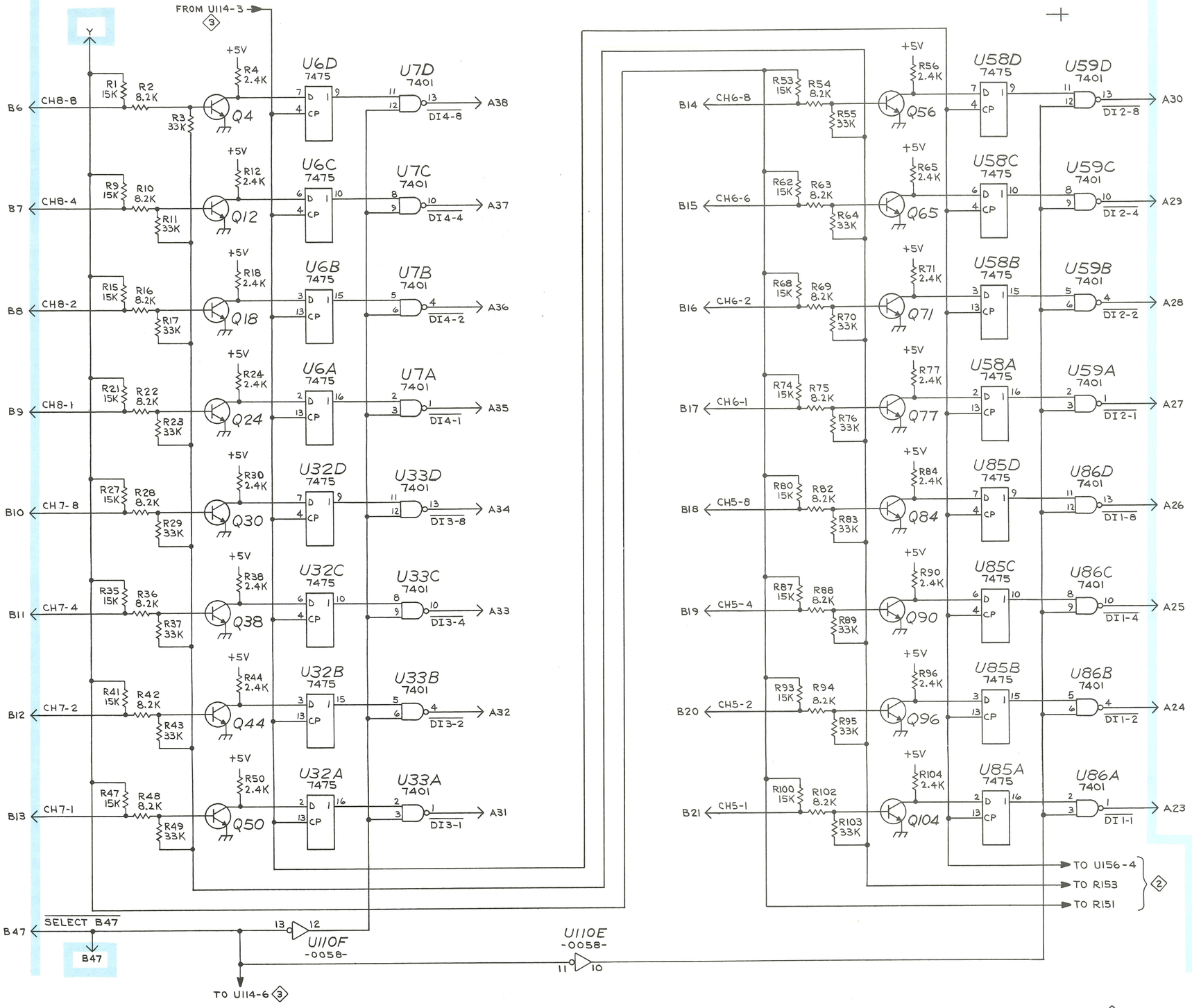


Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff	Disc	Qty	1 2 3 4 5	Description
	021-0028-00			1		INTERFACE, 32 bit input
	- - - - - - - - - -			-		interface includes:
-1	670-1419-00			1		CIRCUIT CARD ASSEMBLY
	- - - - - - - - - -			-		circuit card assembly includes:
	388-1974-00			1		CIRCUIT CARD
-2	131-0608-00			64		TERMINAL, pin, 0.365 inch long
-3	136-0183-00			2		SOCKET, transistor, 3 pin
-4	136-0220-00			2		SOCKET, transistor, 3 pin, square
-5	136-0252-04			99		SOCKET, pin terminal
-6	136-0260-01			8		SOCKET, integrated circuit, 16 pin
-7	200-0935-00			1		CAP, lampholder
-8	378-0602-00			1		LENS, indicator light, plastic
-9	352-0157-00			1		HOLDER, lamp, plastic
-10	334-1852-00			3		LABEL
-11	179-1700-00			1		WIRING HARNESS
	- - - - - - - - - -			-		wiring harness includes:
-12	131-0707-00			8		CONNECTOR, terminal
-13	344-0149-01			1		TIE STRIP, angle, plastic
	- - - - - - - - - -			-		mounting hardware: (not included w/tie strip)
-14	211-0008-00			4		SCREW, 4-40 x 0.25 inch, PHS
-15	210-0406-00			4		NUT, hex., 4-40 x 0.188 inch
	070-3054-00			1		MANUAL, instruction (now shown)

P/O A17 32 BIT INPUT BUFFER BOARD



R1340 (021-0028-00)

A

32 BIT INPUT BUFFER 1 mgf/grs 0771

021-0028-00

INTRODUCTION

The R1340 32-Bit Input Interface package may be used to store 32 data bits from various devices such as counters, digital voltmeters, registers, etc. The card has flexible interface voltage levels (See Applications section).

This Interface package may be installed in the R1340 for use with all Tektronix Automated Systems, and all other interface packages.

The package contains:

Item	Tektronix Part Number
Interface Card	670-1419-00
Instruction Manual	070-3054-00

A17 32 Bit Input Buffer

The 32 Bit Input Buffer accepts and stores 32 bits of data from a variety of data sources having logic levels between +28 V and −9 V. On demand, the card divides the data into 16-bit groups and presents each group to the R1340 Data In (DI) bus. Data must be set into the latches by a DATA READY signal from the external data source, by a System Strobe from another external data source, or by the computer (or other data receiver) when it reads the Buffer Card data. Setting the data latches also sets a Ready flip-flop (FF) that provides a READY signal to the R1340. The Ready FF is cleared when the second (usually the least significant) 16-bit byte is read. The Ready FF output may also be used to provide a Data Hold or Trigger signal to the external data source, signalling it when the card is ready for new data.

The user must choose logic levels by permanently connecting the appropriate supply voltages to the input transistors for proper Buffer circuit operation. There are three choices of logic levels to be made, as follows:

Group 1	Data logic levels from the external data source.
Group 2	Trigger edge and logic levels, or Data Hold logic levels to the external data source.
Group 3	Data Ready logic levels from the external data source.

Several sample schematics for each of the three groups are included. The card should be wired according to the samples (one from each of the three groups) that match the external data source levels.

If the external data source provides no Data Ready signal, one must be generated to strobe the data latches. This may be done on the card by choosing a trigger circuit from Group 2, and a logic level compatible Data Ready circuit from Group 3. Connect the trigger circuit output to the Data Ready circuit input.

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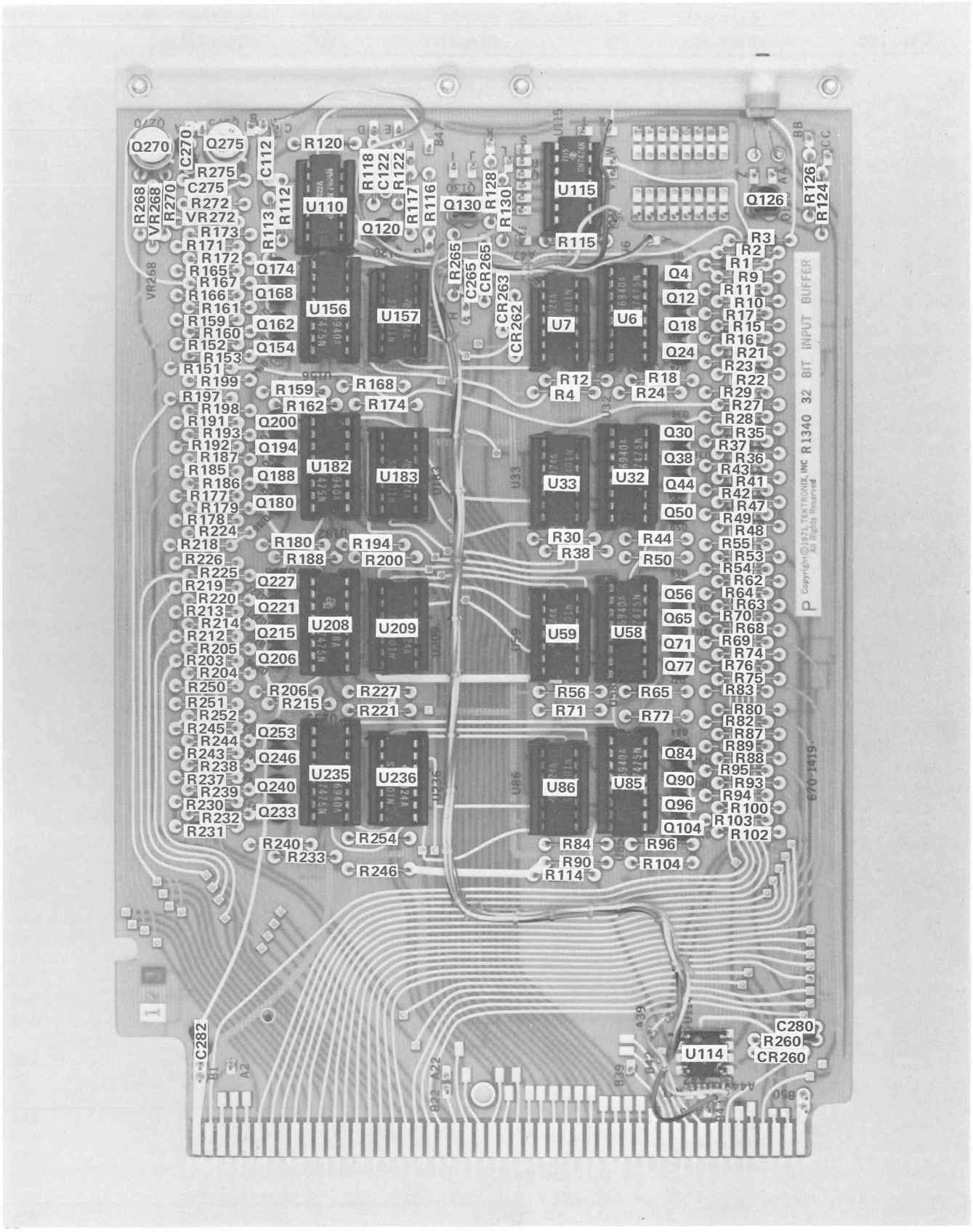
R1340 32 BIT INPUT BUFFER
670-1419
Q270
Q275
C270
C112
R120
R275
C275
R272
VR272
R173
R171
R172
R165
R167
R166
R161
R159
R160
R152
R153
R151
R199
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R239
R230
R232
R231
R268
VR268
R270
R113
R112
R118
C122
R122
R117
R116
Q130
R128
R130
U115
R115
Q126
R126
R124
U110
Q120
R265
C265
CR265
CR263
CR262
U156
U157
U7
U6
Q174
Q168
Q162
Q154
Q200
Q194
Q188
Q180
Q227
Q221
Q215
Q206
Q253
Q246
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R82
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R100
R103
R102
C282
U114
C280
R260
CR260
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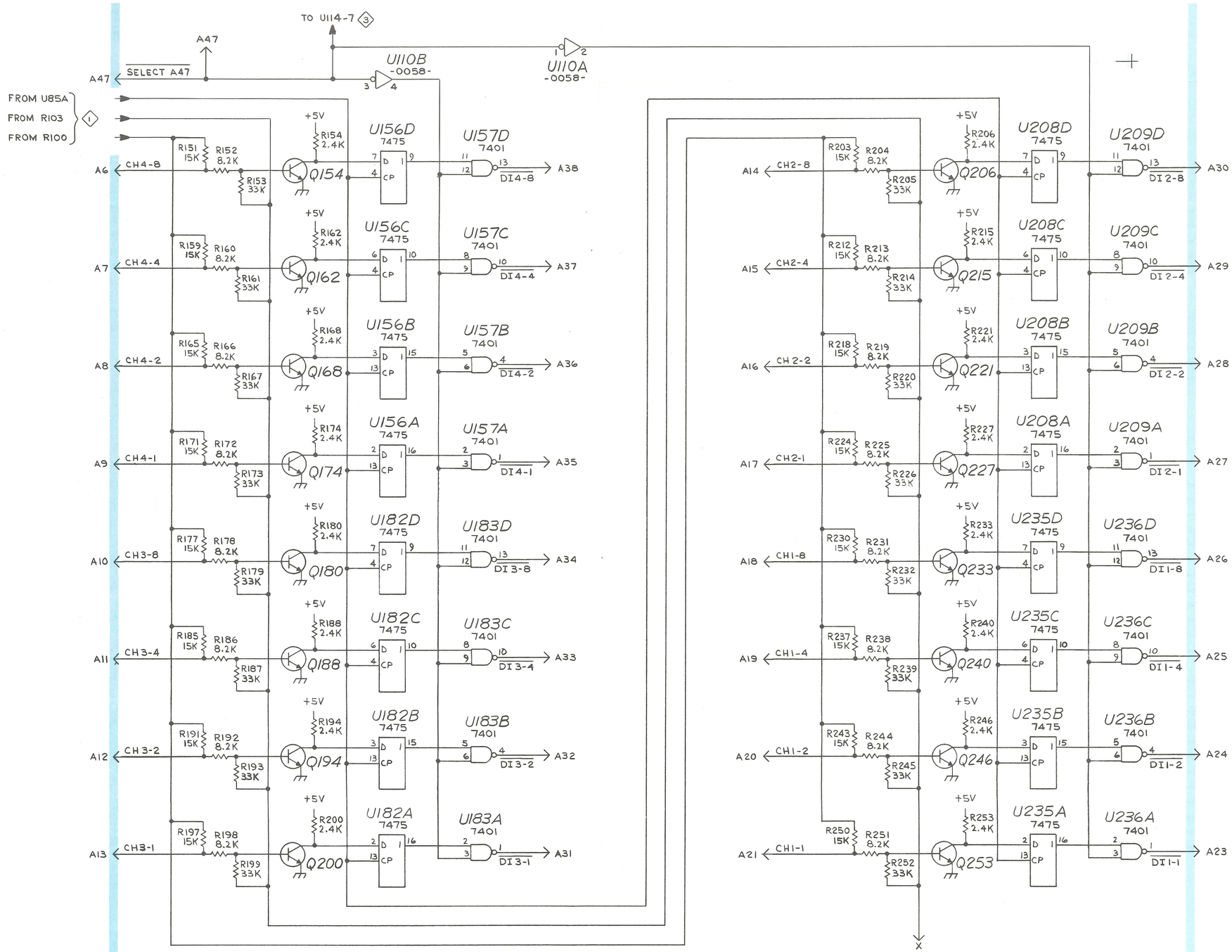

P/O A17 32 BIT INPUT BUFFER BOARD

A17 32 BIT GENERAL INPUT Circuit Card Assembly

Ckt. No.	Tektronix Part No.	Serial/Model No. Eff	Disc	Description
	670-1419-00			Complete Card
				CAPACITORS
C112	283-0067-00			0.001 µF, Cer, 200 V, 10%
C122	283-0032-00			470 pF, Cer, 500 V, 5%
C265	283-0177-00			1 µF, Cer, 25 V, +80%-20%
C270	283-0177-00			1 µF, Cer, 25 V, +80%-20%
C275	283-0177-00			1 µF, Cer, 25 V, +80%-20%
C280	283-0177-00			1 µF, Cer, 25 V, +80%-20%
C282	283-0177-00			1 µF, Cer, 25 V, +80%-20%
				SEMICONDUCTOR DEVICE, DIODES
CR260	152-0107-00			Silicon, replaceable by 1N647 or TI60
CR262	152-0107-00			Silicon, replaceable by 1N647 or TI60
CR263	152-0107-00			Silicon, replaceable by 1N647 or TI60
CR265	152-0107-00			Silicon, replaceable by 1N647 or TI60
VR268	152-0405-00			Zener, replaceable by 1N5567B, 1 W, 15 V, 5%
VR272	152-0405-00			Zener, replaceable by 1N5567B, 1 W, 15 V, 5%
				BULB
DS260	150-0048-00			Incandescent #683
				TRANSISTORS
Q4	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q12	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q18	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q24	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q30	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q38	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q44	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q50	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q56	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q65	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q71	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q77	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q84	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q90	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q96	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q104	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q120	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q126	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q130	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q154	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q162	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q168	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q174	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q180	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904

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A17 32 BIT GENERAL INPUT Circuit Card Assembly (cont)

Ckt. No.	Tektronix Part No.	Serial/Model No. Eff	Disc	Description
				TRANSISTORS (cont)
Q188	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q194	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q200	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q206	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q215	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q221	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q227	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q233	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q240	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q246	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q253	151-0190-00			Silicon, NPN, replaceable by 2N3904 or TE3904
Q270	151-0290-00			Silicon, NPN, replaceable by 2N4895
Q275	151-0235-00			Silicon, PNP, replaceable by 2N4890
				RESISTORS
R1	315-0153-00			15 kΩ, 1/4 W, 5%
R2	315-0822-00			8.2 kΩ, 1/4 W, 5%
R3	315-0333-00			33 kΩ, 1/4 W, 5%
R4	315-0242-00			2.4 kΩ, 1/4 W, 5%
R9	315-0153-00			15 kΩ, 1/4 W, 5%
R10	315-0822-00			8.2 kΩ, 1/4 W, 5%
R11	315-0333-00			33 kΩ, 1/4 W, 5%
R12	315-0242-00			2.4 kΩ, 1/4 W, 5%
R15	315-0153-00			15 kΩ, 1/4 W, 5%
R16	315-0822-00			8.2 kΩ, 1/4 W, 5%
R17	315-0333-00			33 kΩ, 1/4 W, 5%
R18	315-0242-00			2.4 kΩ, 1/4 W, 5%
R21	315-0153-00			15 kΩ, 1/4 W, 5%
R22	315-0822-00			8.2 kΩ, 1/4 W, 5%
R23	315-0333-00			33 kΩ, 1/4 W, 5%
R24	315-0242-00			2.4 kΩ, 1/4 W, 5%
R27	315-0153-00			15 kΩ, 1/4 W, 5%
R28	315-0822-00			8.2 kΩ, 1/4 W, 5%
R29	315-0333-00			33 kΩ, 1/4 W, 5%
R30	315-0242-00			2.4 kΩ, 1/4 W, 5%
R35	315-0153-00			15 kΩ, 1/4 W, 5%
R36	315-0822-00			8.2 kΩ, 1/4 W, 5%
R37	315-0333-00			33 kΩ, 1/4 W, 5%
R38	315-0242-00			2.4 kΩ, 1/4 W, 5%
R41	315-0153-00			15 kΩ, 1/4 W, 5%
R42	315-0822-00			8.2 kΩ, 1/4 W, 5%
R43	315-0333-00			33 kΩ, 1/4 W, 5%
R44	315-0242-00			2.4 kΩ, 1/4 W, 5%
R47	315-0153-00			15 kΩ, 1/4 W, 5%
R48	315-0822-00			8.2 kΩ, 1/4 W, 5%
R49	315-0333-00			33 kΩ, 1/4 W, 5%
R50	315-0242-00			2.4 kΩ, 1/4 W, 5%
R53	315-0153-00			15 kΩ, 1/4 W, 5%
R54	315-0822-00			8.2 kΩ, 1/4 W, 5%
R55	315-0333-00			33 kΩ, 1/4 W, 5%
R56	315-0242-00			2.4 kΩ, 1/4 W, 5%
R62	315-0153-00			15 kΩ, 1/4 W, 5%
R63	315-0822-00			8.2 kΩ, 1/4 W, 5%
R64	315-0333-00			33 kΩ, 1/4 W, 5%
R65	315-0242-00			2.4 kΩ, 1/4 W, 5%

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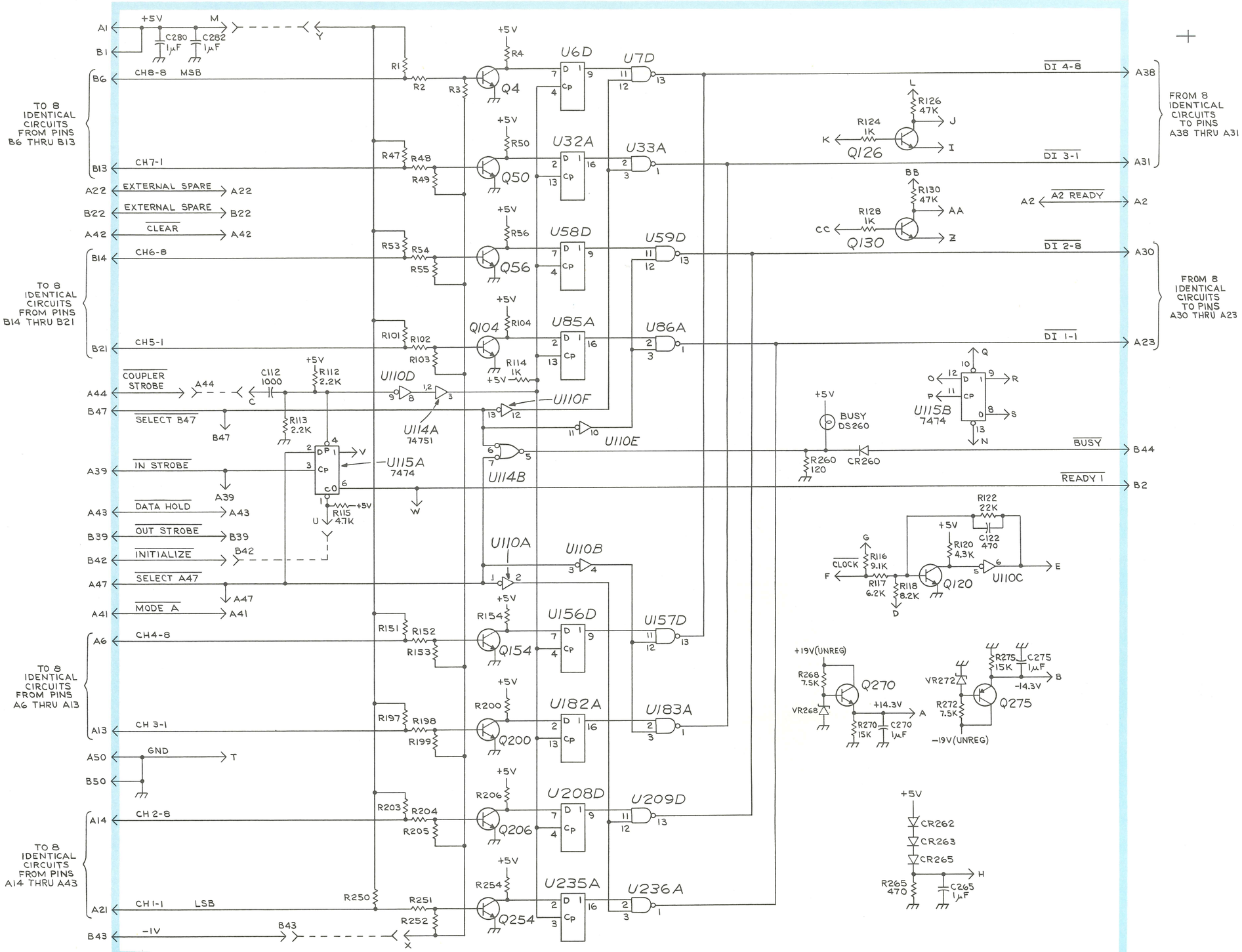
Ckt. No.	Tektronix Part No.	Serial/Model No. Eff	Disc	Description
				RESISTORS (cont)
R68	315-0153-00			15 kΩ, 1/4 W, 5%
R69	315-0822-00			8.2 kΩ, 1/4 W, 5%
R70	315-0333-00			33 kΩ, 1/4 W, 5%
R71	315-0242-00			2.4 kΩ, 1/4 W, 5%
R74	315-0153-00			15 kΩ, 1/4 W, 5%
R75	315-0822-00			8.2 kΩ, 1/4 W, 5%
R76	315-0333-00			33 kΩ, 1/4 W, 5%
R77	315-0242-00			2.4 kΩ, 1/4 W, 5%
R80	315-0153-00			15 kΩ, 1/4 W, 5%
R82	315-0822-00			8.2 kΩ, 1/4 W, 5%
R83	315-0333-00			33 kΩ, 1/4 W, 5%
R84	315-0242-00			2.4 kΩ, 1/4 W, 5%
R87	315-0153-00			15 kΩ, 1/4 W, 5%
R88	315-0822-00			8.2 kΩ, 1/4 W, 5%
R89	315-0333-00			33 kΩ, 1/4 W, 5%
R90	315-0242-00			2.4 kΩ, 1/4 W, 5%
R93	315-0153-00			15 kΩ, 1/4 W, 5%
R94	315-0822-00			8.2 kΩ, 1/4 W, 5%
R95	315-0333-00			33 kΩ, 1/4 W, 5%
R96	315-0242-00			2.4 kΩ, 1/4 W, 5%
R100	315-0153-00			15 kΩ, 1/4 W, 5%
R102	315-0822-00			8.2 kΩ, 1/4 W, 5%
R103	315-0333-00			33 kΩ, 1/4 W, 5%
R104	315-0242-00			2.4 kΩ, 1/4 W, 5%
R112	315-0222-00			2.2 kΩ, 1/4 W, 5%
R113	315-0222-00			2.2 kΩ, 1/4 W, 5%
R114	315-0102-00			1 kΩ, 1/4 W, 5%
R115	315-0472-00			4.7 kΩ, 1/4 W, 5%
R116	315-0912-00			9.1 kΩ, 1/4 W, 5%
R117	315-0622-00			6.2 kΩ, 1/4 W, 5%
R118	315-0822-00			8.2 kΩ, 1/4 W, 5%
R120	315-0432-00			4.3 kΩ, 1/4 W, 5%
R122	315-0223-00			22 kΩ, 1/4 W, 5%
R124	315-0102-00			1 kΩ, 1/4 W, 5%
R126	315-0472-00			4.7 kΩ, 1/4 W, 5%
R128	315-0102-00			1 kΩ, 1/4 W, 5%
R130	315-0472-00			4.7 kΩ, 1/4 W, 5%
R151	315-0153-00			15 kΩ, 1/4 W, 5%
R152	315-0822-00			8.2 kΩ, 1/4 W, 5%
R153	315-0333-00			33 kΩ, 1/4 W, 5%
R154	315-0242-00			2.4 kΩ, 1/4 W, 5%
R159	315-0153-00			15 kΩ, 1/4 W, 5%
R160	315-0822-00			8.2 kΩ, 1/4 W, 5%
R161	315-0333-00			33 kΩ, 1/4 W, 5%
R162	315-0242-00			2.4 kΩ, 1/4W, 5%
R165	315-0153-00			15 kΩ, 1/4 W, 5%
R166	315-0822-00			8.2 kΩ, 1/4 W, 5%
R167	315-0333-00			33 kΩ, 1/4 W, 5%
R168	315-0242-00			2.4 kΩ, 1/4 W, 5%
R171	315-0153-00			15 kΩ, 1/4 W, 5%

Ckt. No.	Tektronix Part No.	Serial/Model No. Eff	Disc	Description
				RESISTORS (cont)
R172	315-0822-00			8.2 kΩ, 1/4 W, 5%
R173	315-0333-00			33 kΩ, 1/4 W, 5%
R174	315-0242-00			2.4 kΩ, 1/4 W, 5%
R177	315-0153-00			15 kΩ, 1/4 W, 5%
R178	315-0822-00			8.2 kΩ, 1/4 W, 5%
R179	315-0333-00			33 kΩ, 1/4 W, 5%
R180	315-0242-00			2.4 kΩ, 1/4 W, 5%
R185	315-0153-00			15 kΩ, 1/4 W, 5%
R186	315-0822-00			8.2 kΩ, 1/4 W, 5%
R187	315-0333-00			33 kΩ, 1/4 W, 5%
R188	315-0242-00			2.4 kΩ, 1/4 W, 5%
R191	315-0153-00			15 kΩ, 1/4 W, 5%
R192	315-0822-00			8.2 kΩ, 1/4 W, 5%
R193	315-0333-00			33 kΩ, 1/4 W, 5%
R194	315-0242-00			2.4 kΩ, 1/4 W, 5%
R197	315-0153-00			15 kΩ, 1/4 W, 5%
R198	315-0822-00			8.2 kΩ, 1/4 W, 5%
R199	315-0333-00			33 kΩ, 1/4 W, 5%
R200	315-0242-00			2.4 kΩ, 1/4 W, 5%
R203	315-0153-00			15 kΩ, 1/4 W, 5%
R204	315-0822-00			8.2 kΩ, 1/4 W, 5%
R205	315-0333-00			33 kΩ, 1/4 W, 5%
R206	315-0242-00			2.4 kΩ, 1/4 W, 5%
R212	315-0153-00			15 kΩ, 1/4 W, 5%
R213	315-0822-00			8.2 kΩ, 1/4 W, 5%
R214	315-0333-00			33 kΩ, 1/4 W, 5%
R215	315-0242-00			2.4 kΩ, 1/4 W, 5%
R218	315-0153-00			15 kΩ, 1/4 W, 5%
R219	315-0822-00			8.2 kΩ, 1/4 W, 5%
R220	315-0333-00			33 kΩ, 1/4 W, 5%
R221	315-0242-00			2.4 kΩ, 1/4 W, 5%
R224	315-0153-00			15 kΩ, 1/4 W, 5%
R225	315-0822-00			8.2 kΩ, 1/4 W, 5%
R226	315-0333-00			33 kΩ, 1/4 W, 5%
R227	315-0242-00			2.4 kΩ, 1/4 W, 5%
R230	315-0153-00			15 kΩ, 1/4 W, 5%
R231	315-0822-00			8.2 kΩ, 1/4 W, 5%
R232	315-0333-00			33 kΩ, 1/4 W, 5%
R233	315-0242-00			2.4 kΩ, 1/4 W, 5%
R237	315-0153-00			15 kΩ, 1/4 W, 5%
R238	315-0822-00			8.2 kΩ, 1/4 W, 5%
R239	315-0333-00			33 kΩ, 1/4 W, 5%
R240	315-0242-00			2.4 kΩ, 1/4 W, 5%
R243	315-0153-00			15 kΩ, 1/4 W, 5%
R244	315-0822-00			8.2 kΩ, 1/4 W, 5%
R245	315-0333-00			33 kΩ, 1/4 W, 5%



R1340 (021-0028-00)

Ⓐ

32 BIT INPUT CONTROL CIRCUITS 3 0771 mgf/gs

Ckt. No.	Tektronix Part No.	Serial/Model No. Eff	Disc	Description
				RESISTORS (cont)
R246	315-0242-00			2.4 kΩ, 1/4 W, 5%
R250	315-0153-00			15 kΩ, 1/4 W, 5%
R251	315-0822-00			8.2 kΩ, 1/4 W, 5%
R252	315-0333-00			33 kΩ, 1/4 W, 5%
R254	315-0242-00			2.4 kΩ, 1/4 W, 5%
R260	315-0121-00			120 Ω, 1/4 W, 5%
R265	315-0471-00			470 Ω, 1/4 W, 5%
R268	315-0752-00			7.5 kΩ, 1/4 W, 5%
R270	315-0153-00			15 kΩ, 1/4 W, 5%
R272	315-0752-00			7.5 kΩ, 1/4 W, 5%
R275	315-0153-00			15 kΩ, 1/4 W, 5%
				INTEGRATED CIRCUITS
U6	156-0040-00			Dual, 2-bit, bistable latch, replaceable by SN7475N
U7	156-0057-00			Quad, 2-input, nand gate, replaceable by SN7401N
U32	156-0040-00			Dual, 2-bit, bistable latch, replaceable by SN7475N
U33	156-0057-00			Quad, 2-input, nand gate, replaceable by SN7401N
U58	156-0040-00			Dual, 2-bit, bistable latch, replaceable by SN7475N
U59	156-0057-00			Quad, 2-input, nand gate, replaceable by SN7401N
U85	156-0040-00			Dual, 2-bit, bistable latch, replaceable by SN7475N
U86	156-0057-00			Quad, 2-input, nand gate, replaceable by SN7401N
U110	156-0058-00			Hex., inverter, replaceable by SN7404N
U114	156-0094-00			Dual, peripheral driver, replaceable by SN75451P
U115	156-0041-00			Dual, 15 MHz, D-type pos.-edge-trig., flip-flop, reaplceable by SN7474N
U156	156-0040-00			Dual, 2-bit, bistable latch, replaceable by SN7475N
U157	156-0057-00			Quad, 2-input, nand gate, replaceable by SN7401N
U182	156-0040-00			Dual, 2-bit, bistable latch, replaceable by SN7475N
U183	156-0057-00			Quad, 2-input, nand gate, replaceable by SN7401N
U208	156-0040-00			Dual, 2-bit, bistable latch, replaceable by SN7475N
U209	156-0057-00			Quad, 2-input, nand gate, replaceable by SN7401N
U235	156-0040-00			Dual, 2-bit, bistable latch, replaceable by SN7475N
U236	156-0057-00			Quad, 2=input, nand gate, replaceable by SN7401N

Suggested External Connector Pin Assignments

Card	Ext.	Signal	Card	Ext.	Signal
B6	1	Most Significant Bit Character 8 Bit 8	A6	19	4-8
B7	2	8-4	A7	20	4-4
B8	3	8-2	A8	21	4-2
B9	4	8-1	A9	22	4-1
B10	5	7-8	A10	23	3-8
B11	6	7-4	A11	24	3-4
B12	7	7-2	A12	25	3-2
B13	8	7-1	A13	26	3-1
B14	9	6-8	A14	27	2-8
B15	10	6-4	A15	28	2-4
B16	11	6-2	A16	29	2-2
B17	12	6-1	A17	30	2-1
B18	13	5-8	A18	31	1-8
B19	14	5-4	A19	32	1-4
B20	15	5-2	A20	33	1-2
B21	16	5-1	A21	34	1-1 Least Sig. Bit
B22	17	Hold or Trigger	A22	18	Data Ready
B50	36	Gnd	A50	36	Gnd.

Applications

Introduction

Three groups of sample schematics are illustrated in Fig. I through 15. The Data Input levels are described in Group 1; Data Hold and Data Release levels are described in Group 2; Data Ready logic levels are described in Group 3.

A tabulation of the information contained in the three Groups is found in Table 1.

Figure 16 shows a typical interconnection of samples from the three groups.

Table 1

		Logic 1	Logic 0
GROUP 1	Sample 1	+3.6 V to −2.5 V	+5.8 V to 32.0 V
	Sample 2	+3 V to +32 V	+0.8 V to −6.0 V
	Sample 3	−3.7 V to −9.1 V	−I.8 V to +28 V

		Data Hold	Data Release	Triggers On
GROUP 2	Sample 1	+.04 V	+14.3 V	+ Edge
	Sample 2	−14.3 V	+2.5 V	+ Edge
	Sample 3	+14.3 V	+0.4 V	− Edge
	Sample 4	+2.5 V	−14.3 V	− Edge
	Sample 5	+5 V	+0.4 V	− Edge
	Sample 6	+0.4 V	+5 V	+ Edge

		Data Ready	Data Ready	Data Latch Sets on
GROUP 3	Sample 1	+5.5 V to 32 V	+3.6 V to −2.5 V	+ Edge
	Sample 2	+3.6 V to −2.5 V	+5.5 V to +32 V	− Edge
	Sample 3	−2.3 V to +28 V	−4.0 V to −11 V	+ Edge
	Sample 4	−4.0 V to −11.0 V	−2.3 V to +28 V	− Edge
	Sample 5	+0.8 V to −6.0 V	+2.0 V to +32 V	− Edge
	Sample 6	+2.0 V to +32 V	+0.4 V to −6.0 V	+ Edge

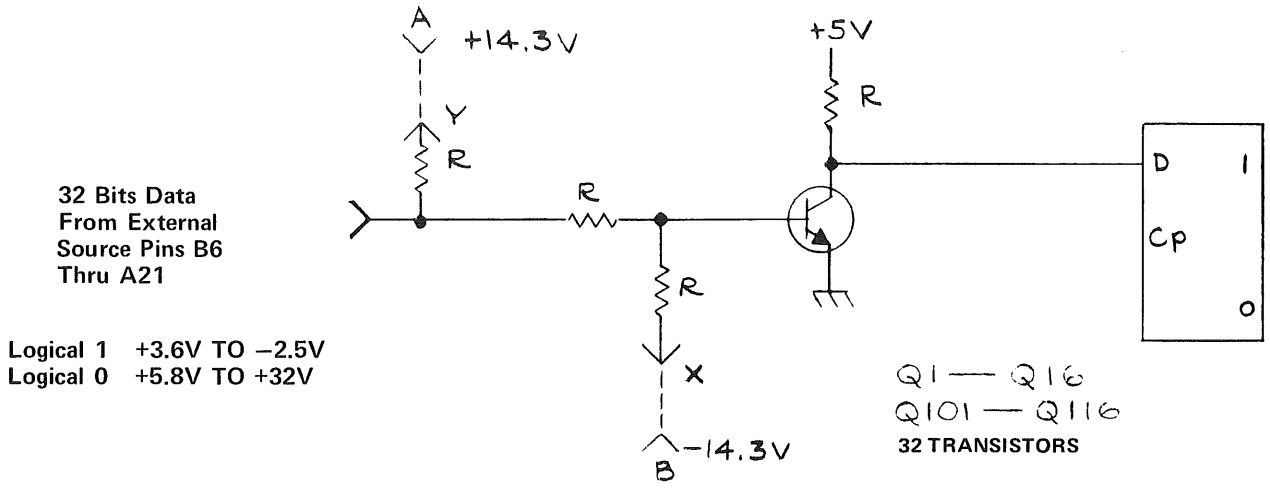


Figure 1. Group 1, Sample 1.

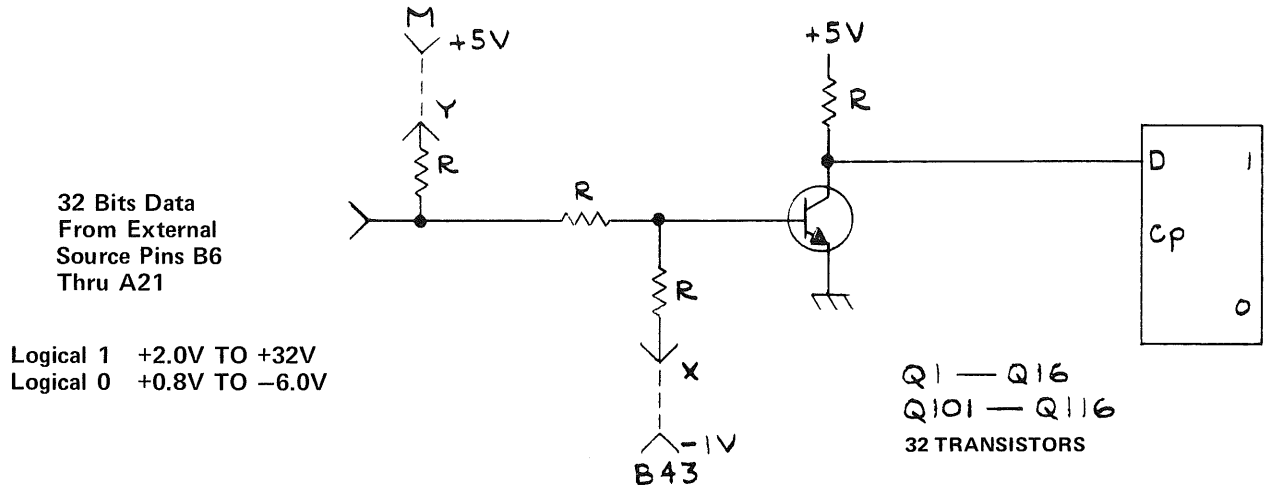


Figure 2. Group 1, Sample 2.

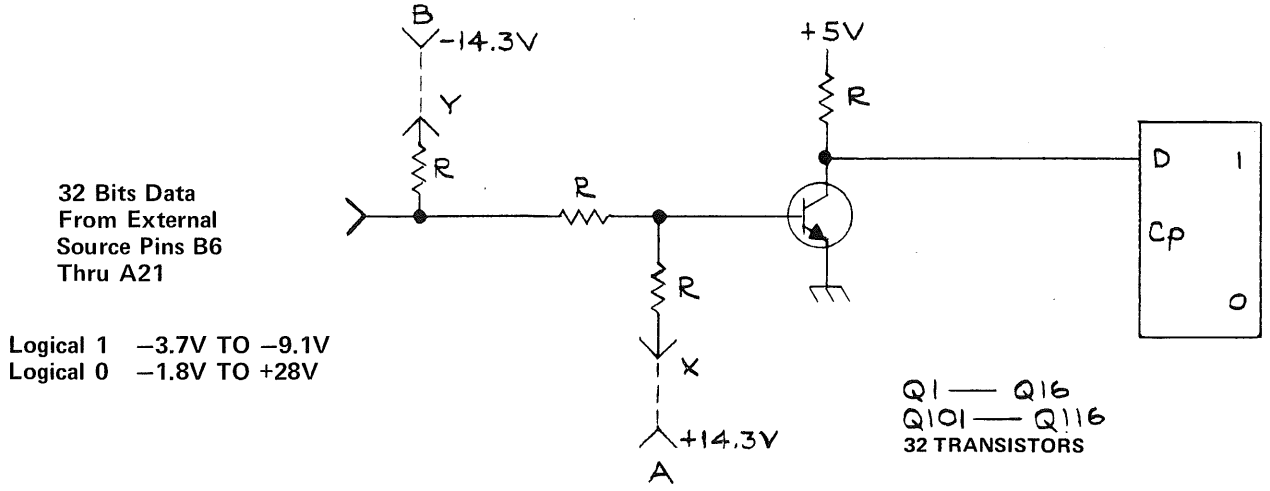


Figure 3. Group 1, Sample 3.

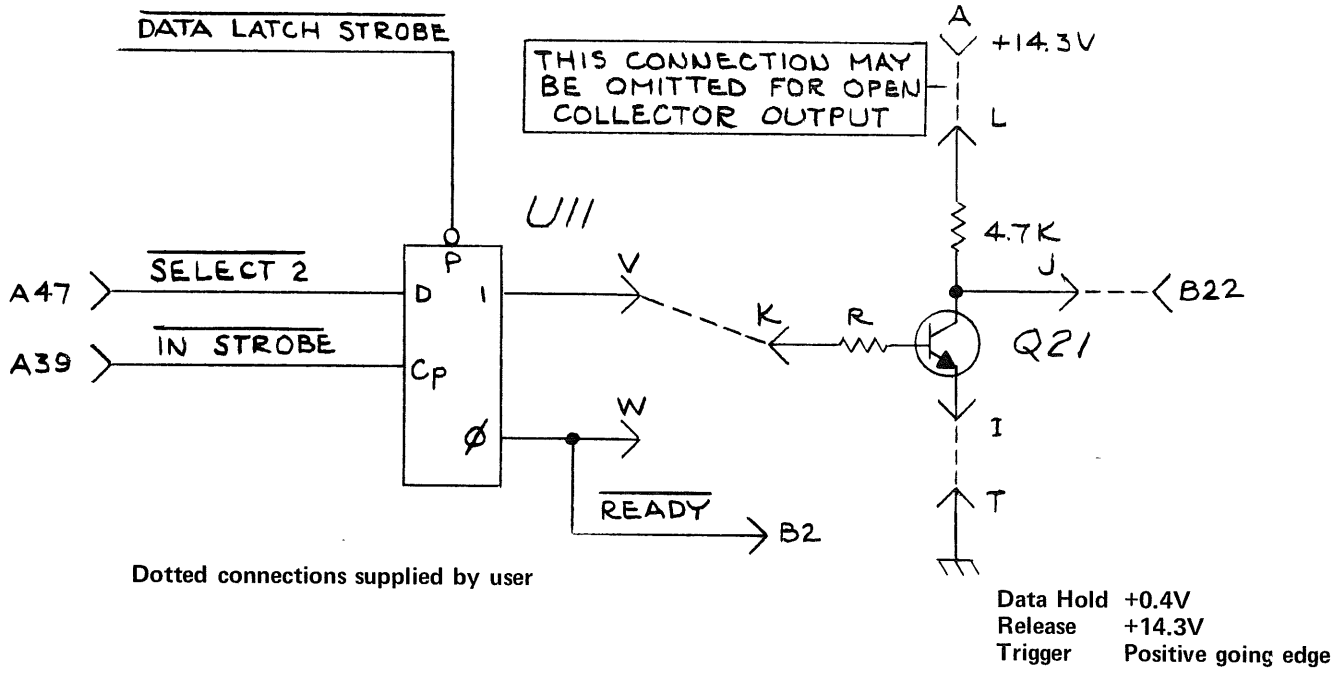


Figure 4. Group 2, Sample 1.

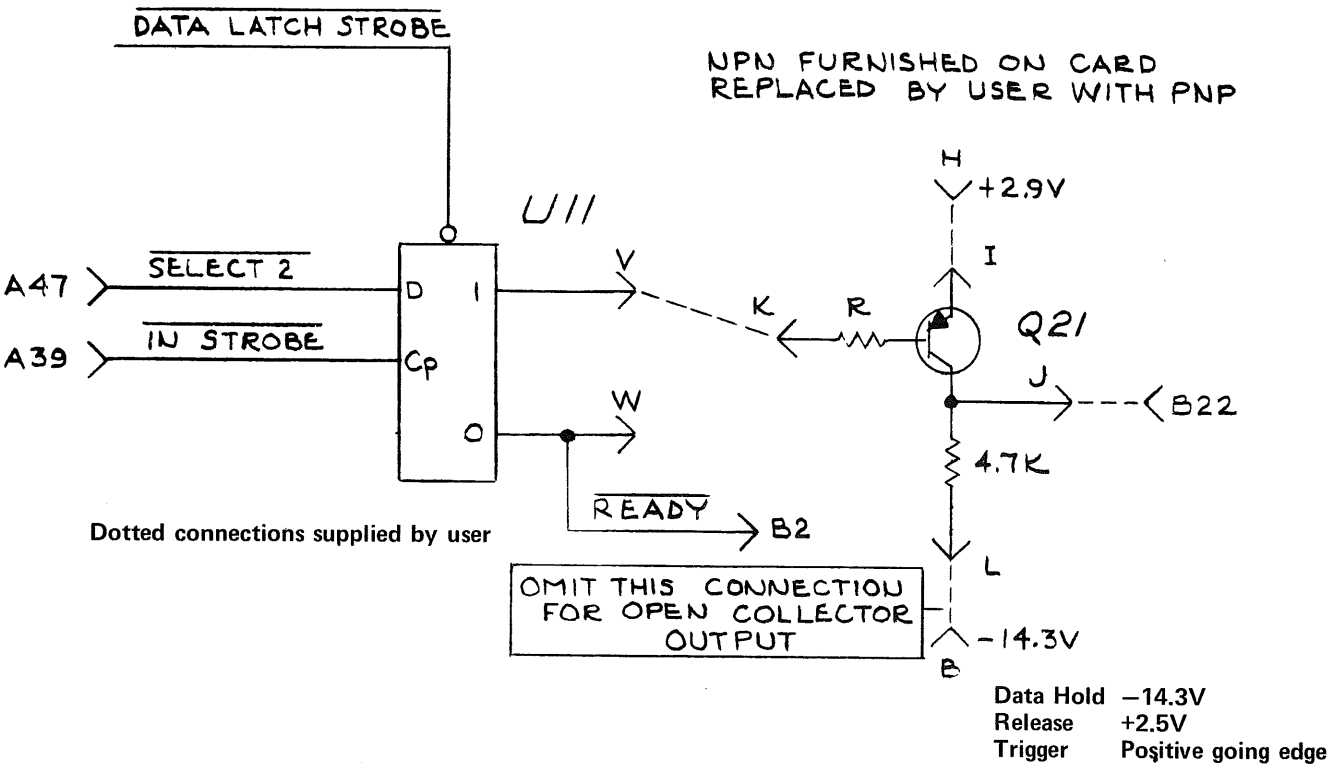
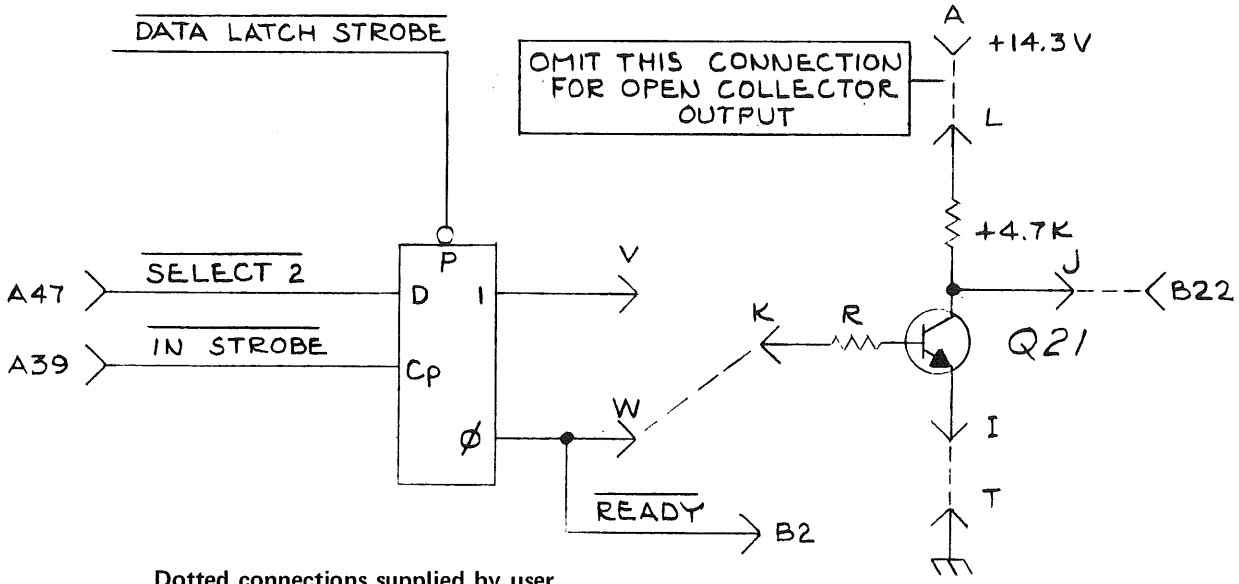


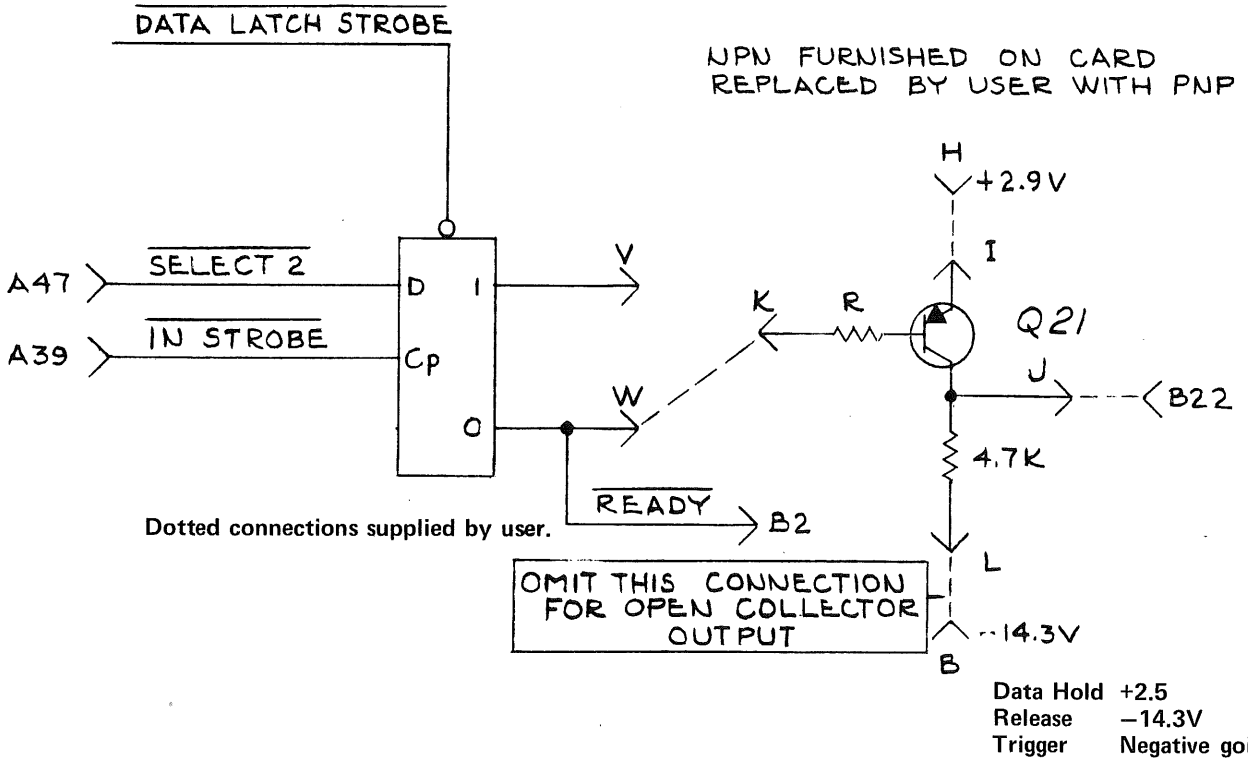
Figure 5. Group 2, Sample 2.



Dotted connections supplied by user.

Data Hold +14.3V
Release +0.4V
Trigger Negative going edge

Figure 6. Group 2, Sample 3.



Dotted connections supplied by user.

Data Hold +2.5
Release −14.3V
Trigger Negative going edge

Figure 7. Group 2, Sample 4.

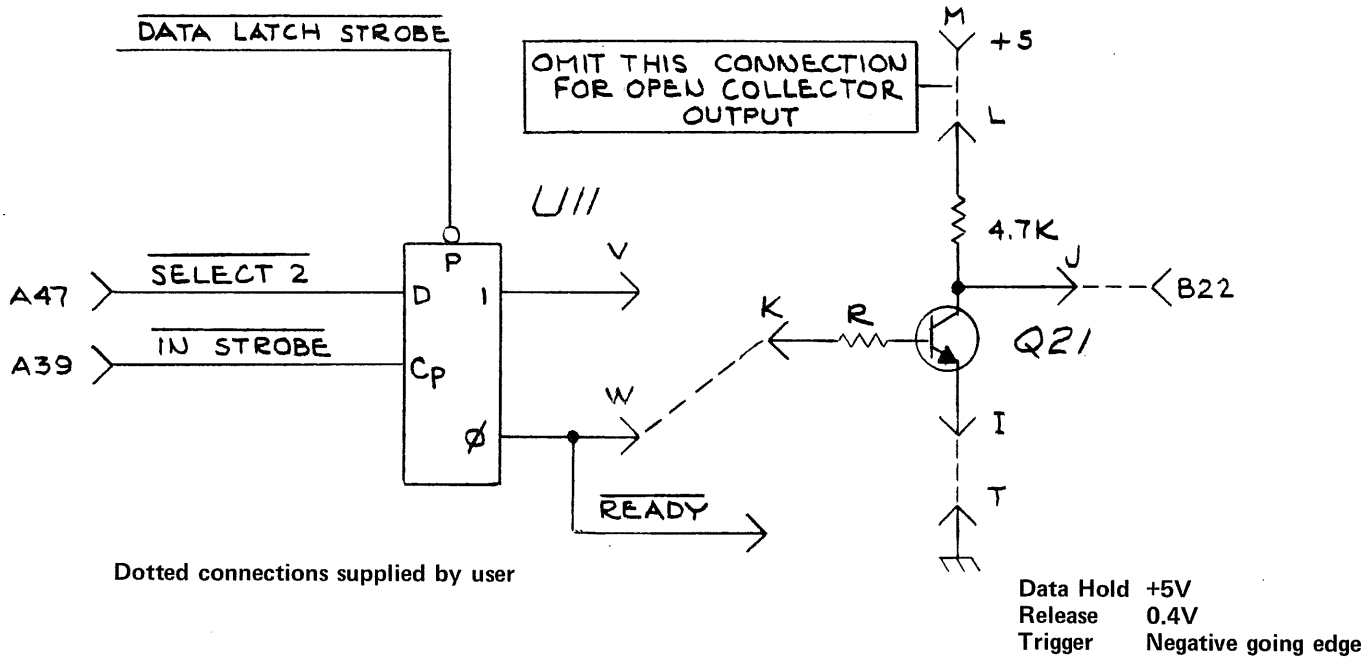


Figure 8. Group 2, Sample 5.

NPN Furnished on card replaced by user with PNP

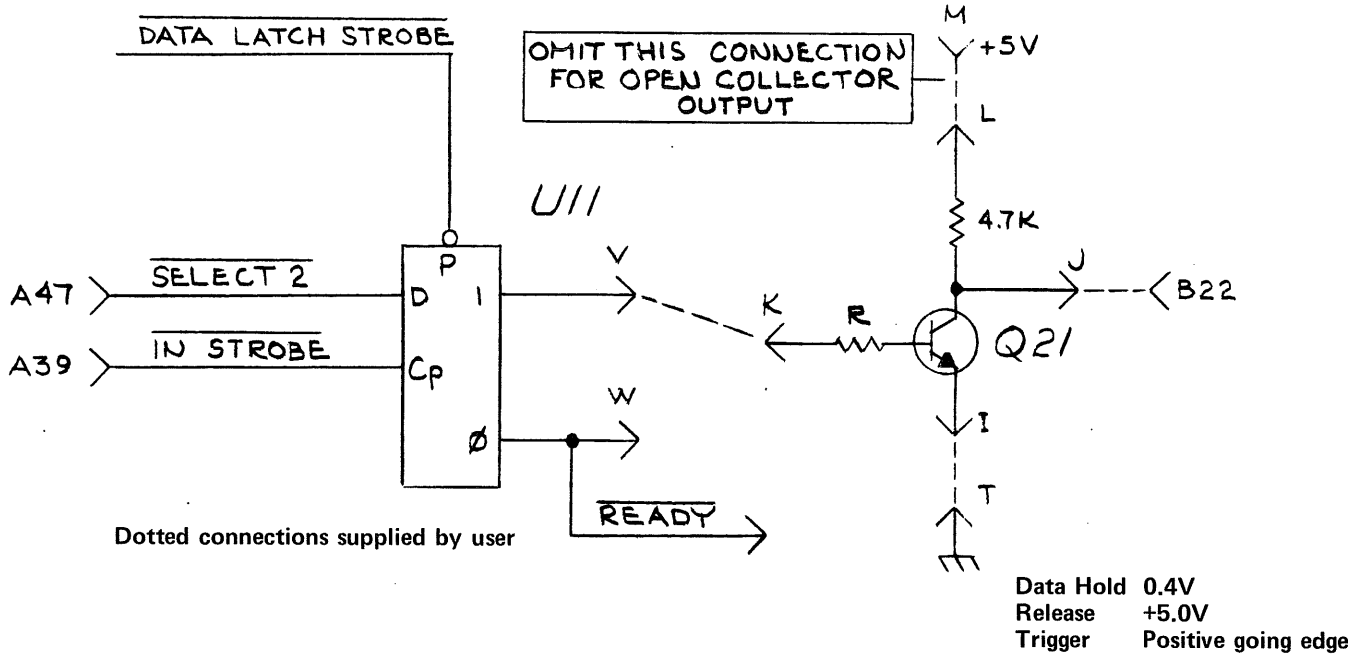
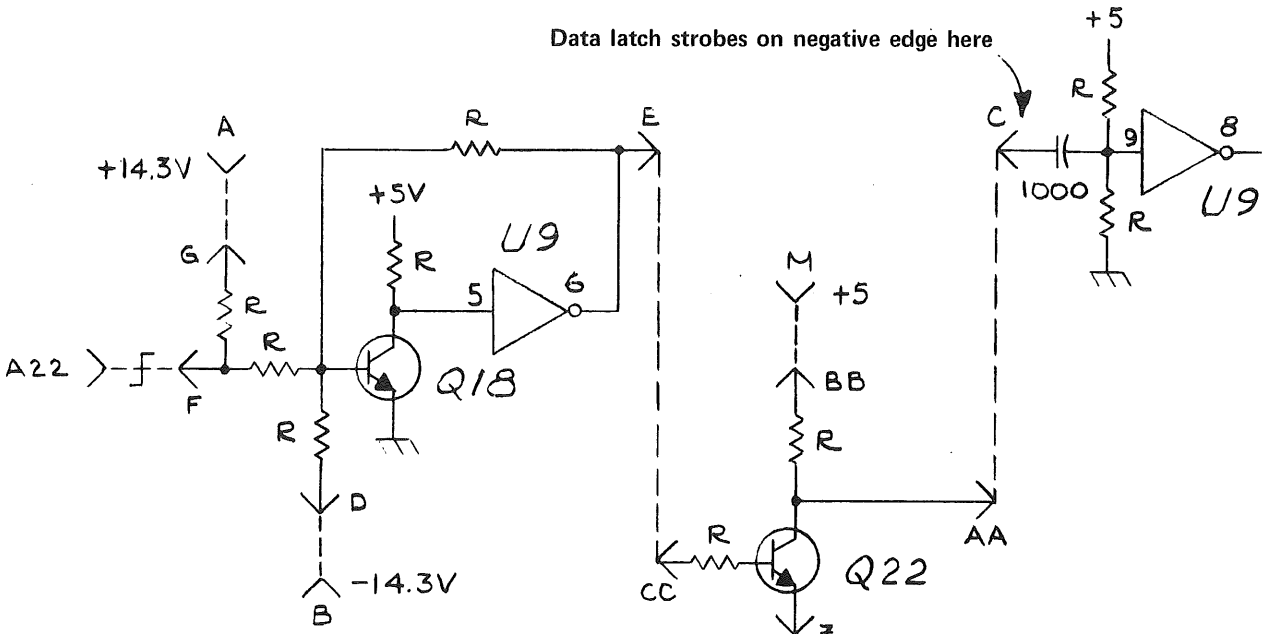


Figure 9. Group 2, Sample 6.

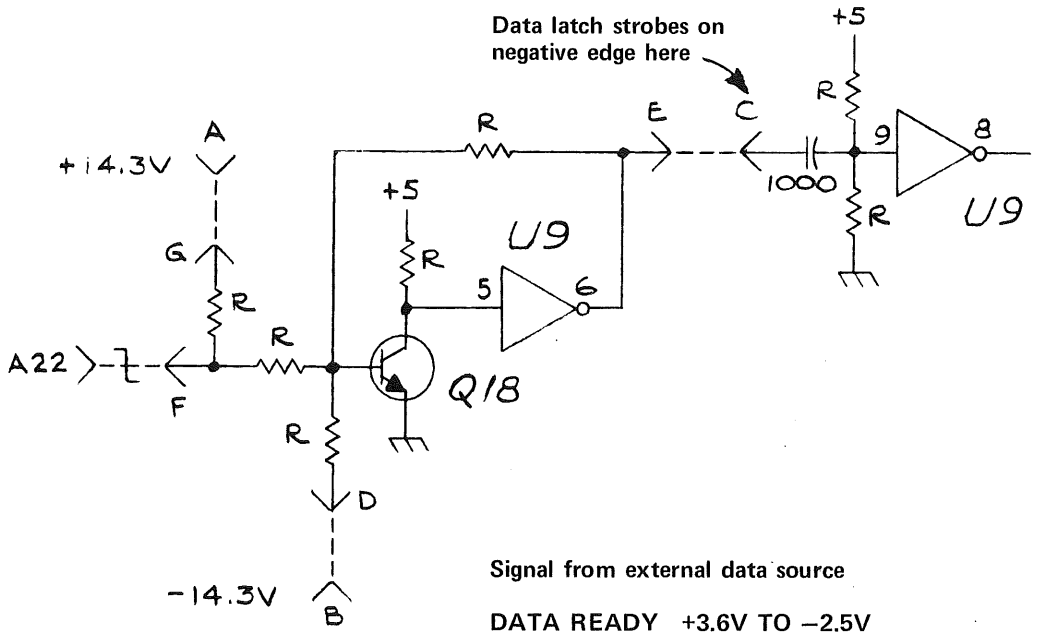


Signal from external data source

DATA READY +5.5V TO 32V
NOT READY +3.6V TO −2.5V

Data latch sets on positive edge

Figure 10. Group 3, Sample 1.

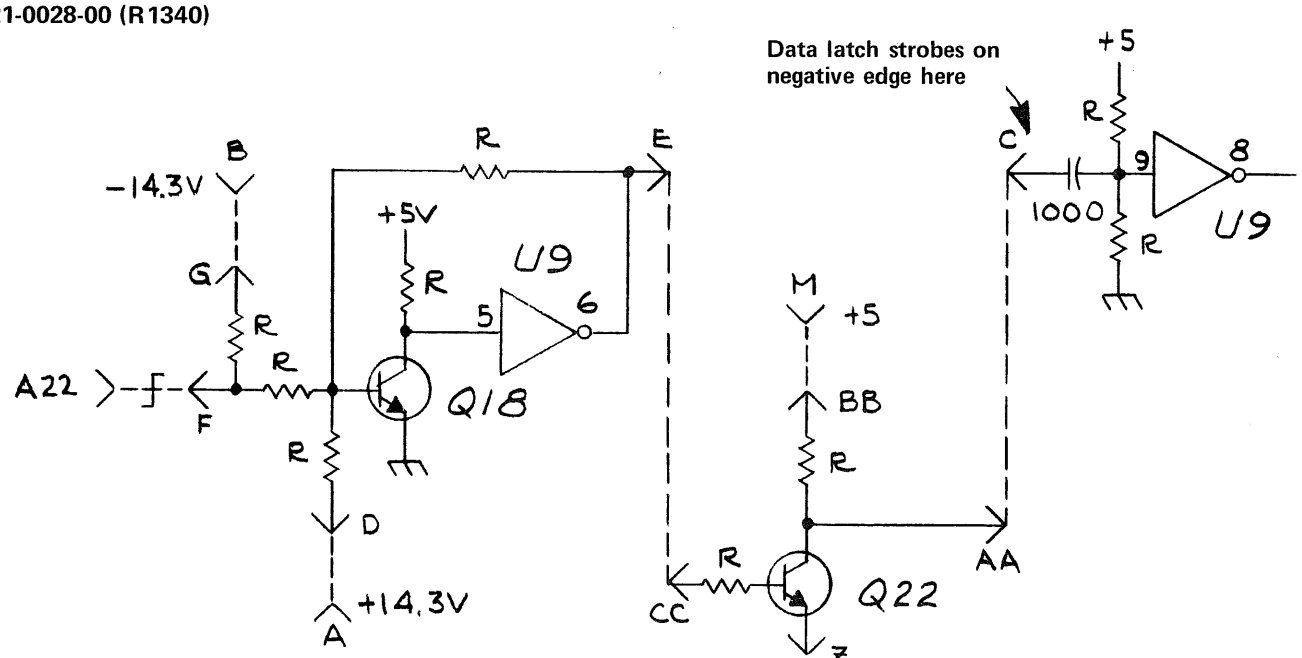


Signal from external data source

DATA READY +3.6V TO −2.5V
NOT READY +5.5V TO +32V

Data latch sets on negative edge

Figure 11. Group 3, Sample 2.

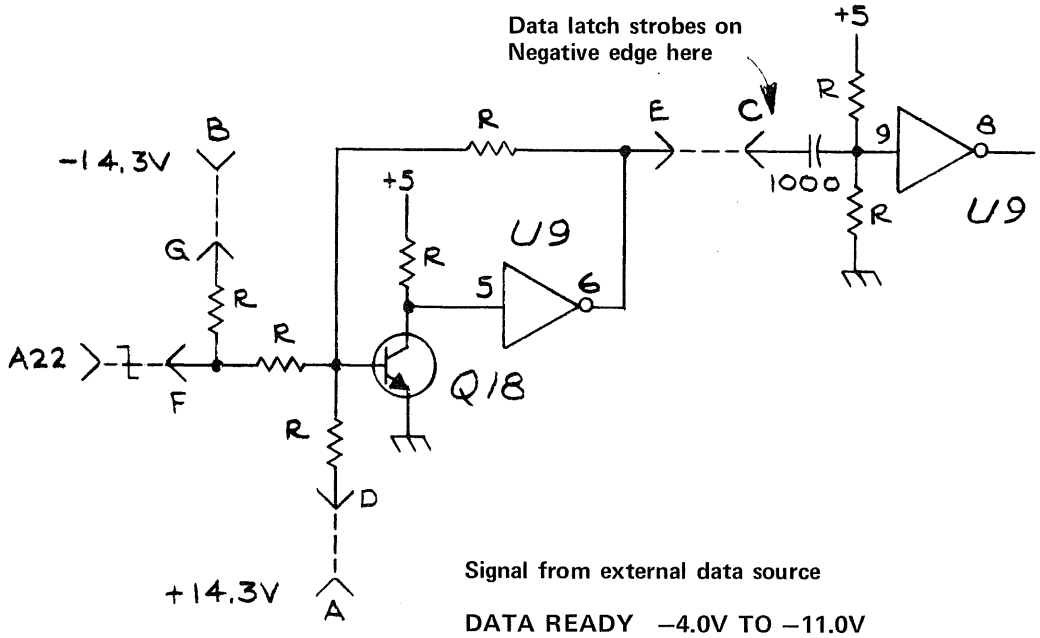


Signal from external data source

DATA READY	−2.3V TO +28V
NOT READY	−4.0V TO −11V

Data latch sets on positive edge

Figure 12. Group 3, Sample 3.

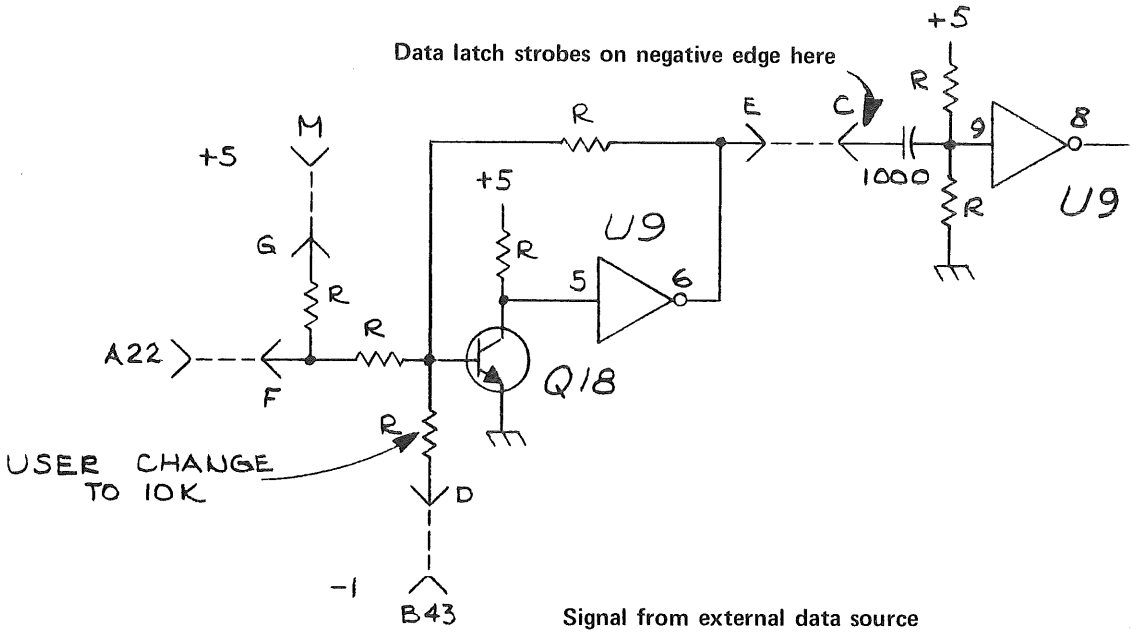


Signal from external data source

DATA READY	−4.0V TO −11.0V
NOT READY	−2.3V TO +28V

Data latch sets on negative edge

Figure 13. Group 3, Sample 4.

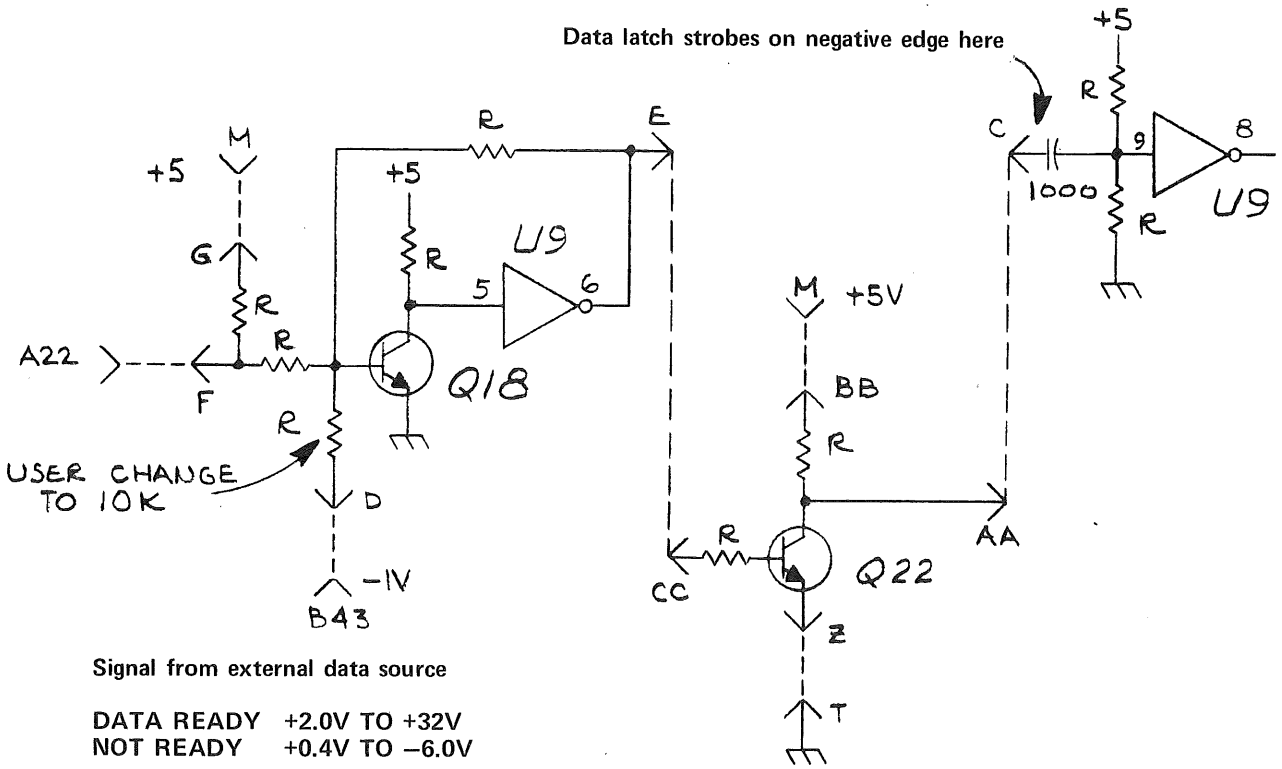


Signal from external data source

DATA READY +0.8V TO −6.0V
NOT READY +2.0V TO +32V

Data latch sets on negative edge

Figure 14. Group 3, Sample 5.



Signal from external data source

DATA READY +2.0V TO +32V
NOT READY +0.4V TO −6.0V

Data latch sets on positive edge

Figure 15. Group 3, Sample 6.

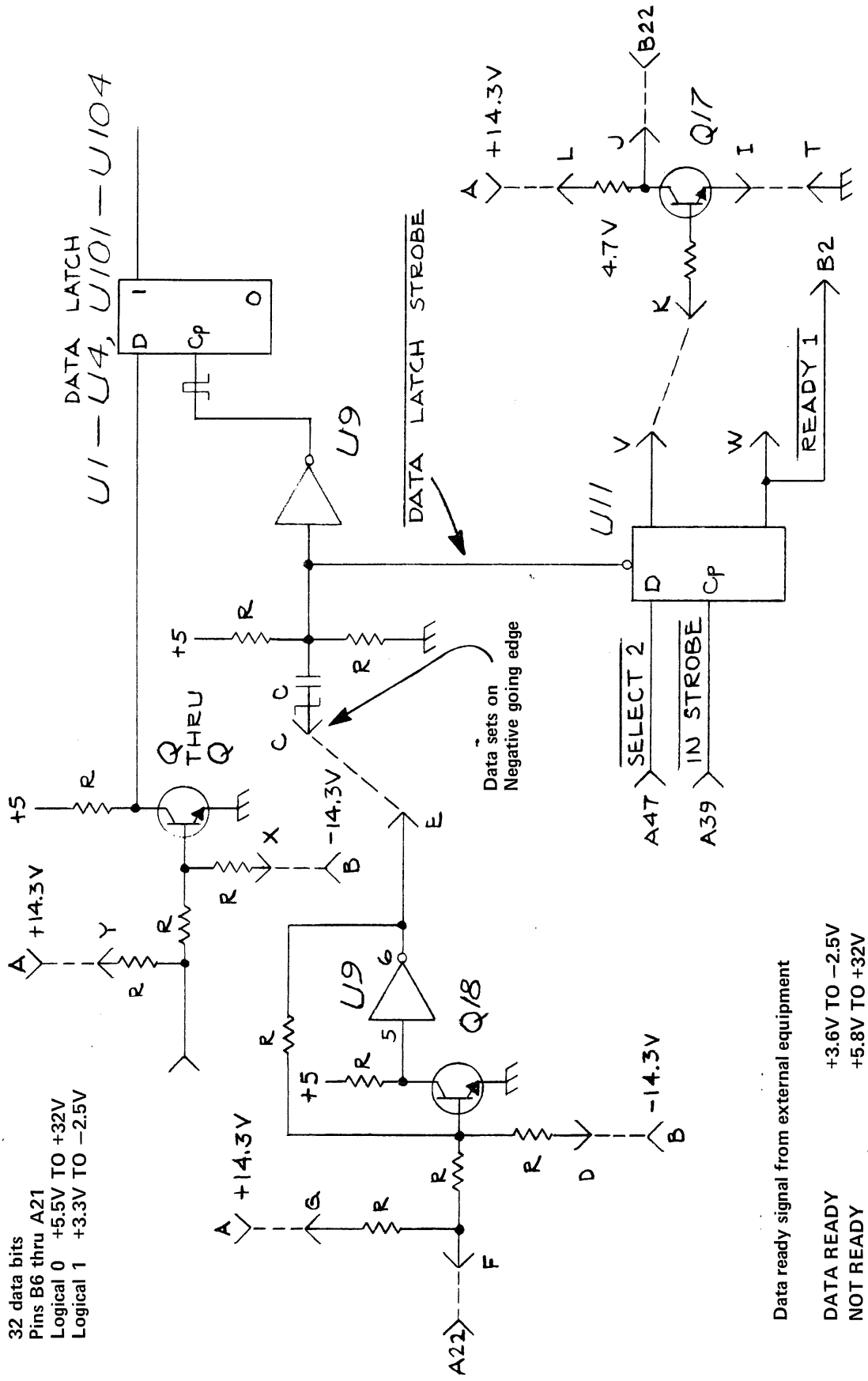


Figure 16. Typical connections,partial 32 Bit Input Buffer.