Please do not upload this copyright pdf document to any other website. Breach of copyright may result in a criminal conviction.

This Acrobat document was generated by me, Colin Hinson, from a document held by me. I requested permission to publish this from Texas Instruments (twice) but received no reply. It is presented here (for free) and this pdf version of the document is my copyright in much the same way as a photograph would be. If you believe the document to be under other copyright, please contact me.

The document should have been downloaded from my website https://blunham.com/Radar, or any mirror site named on that site. If you downloaded it from elsewhere, please let me know (particularly if you were charged for it). You can contact me via my Genuki email page: https://www.genuki.org.uk/big/eng/YKS/various?recipient=colin

You may not copy the file for onward transmission of the data nor attempt to make monetary gain by the use of these files. If you want someone else to have a copy of the file, point them at the website. (https://blunham.com/Radar). **Please do not point them at the file itself as it may move or the site may be updated.**

It should be noted that most of the pages are identifiable as having been processed by me.

I put a lot of time into producing these files which is why you are met with this page when you open the file.

In order to generate this file, I need to scan the pages, split the double pages and remove any edge marks such as punch holes, clean up the pages, set the relevant pages to be all the same size and alignment. I then run Omnipage (OCR) to generate the searchable text and then generate the pdf file.

Hopefully after all that, I end up with a presentable file. If you find missing pages, pages in the wrong order, anything else wrong with the file or simply want to make a comment, please drop me a line (see above).

It is my hope that you find the file of use to you personally – I know that I would have liked to have found some of these files years ago – they would have saved me a lot of time !

Colin Hinson
In the village of Blunham, Bedfordshire.

SECTION VIII

ELECTRICAL SCHEMATICS AND LOGIC DIAGRAMS

This section contains electrical schematics and logic drawings to help maintain and service Silent 700® Electronic Data Terminals. These drawings are in the following order.

Title	Drawing Number
Printer Control	D215020E (2 SH)
Printer Control	E215752G
Printer Driver	D215023E
Printer Driver	D215755C
Printhead Driver	D954807
Drive Mechanism Assembly	C215645
Motherboard	E215957E
Lamp Driver	C215927A
Keyboard Encoder, ASCII, MOS	D215981D
Keyboard Encoder, ASCII, MOS, w/delay	E215044D
Keyboard Encoder, TTL, 720/730	D215933
Keyboard Encoder, ASCII, 720C	E962590
Terminal Control Receiver	E215975D
Terminal Control Receiver, 720C	E962584G
Terminal Control Transmitter	E215978B
Terminal Control Transmitter, 720C	E962581A
Regulator and Compensator	E953126P
Code PC Card, ASCII Uppercase-only	D244509D (2 SH)
Code PC Card, ASCII Uppercase-only, 720C	E962587
Code PC Card, ASCII Upper/Lowercase	E244512E (2 SH)
Answer-Back Memory	D244532F
Interface, Models 722 & 723	D968301B
Interface, EIA	D215029
Interface, EIA, Model 725	D965140
Interface, TTY Type-I Neutral	D244558H
Interface, TTY Type-I Polar	D244559H
Interface, TTY Type-II	D244556G
Modem, T103-F, Transmit Low	D244564G (2 SH)
Modem, T103-F, Transmit High	D244565E (2 SH)
Modem, T-103F, Receive Low	D244575C (2 SH)
Modem, T-103F, Receive High	D244576C (2 SH)
Modem, DS-100A, Transmit Low	D958849 (2 SH)
Interface, Acoustic Coupler	B954761A
Wire List	A215633A
Wire List	A215824B
Wire List	A953128D

SECTION VIII

ELECTRICAL SCHEMATICS AND LOGIC DIAGRAMS

This section presents electrical schematics and logic diagrams to help service the Models 720/730 series Data Terminals. The drawings are arranged in numerical order as listed below.

Title	TI Drawing Number
EIA Interface	215029
Keyboard Encoder, ASCII, MOS, with delay	215044D
Wire List	215633A
Drive Mechanism	215645
Printer Control	215752G
Printer Driver	215755C
Lamp Driver	215927A
Keyboard Encoder, TTL, Models 720/730	215933
Motherboard	215957E
Terminal Control Receiver	215975D
Terminal Control Transmitter	215978E
Keyboard Encoder, ASCII, MOS	215981D
Code, ASCII, Uppercase-only	244509D
Code, ASCII, Uppercase/Lowercase	244512E
Answer-Back Memory	244532F
Teletype Interface, Type II	244556G
Teletype Interface, Type I Neutral	244558H
Teletype Interface, Type I Polar	244559H
Modem, T103-F, Transmit Low	244564G
Modem, T103 F, Transmit High	244565E
Modem, T103 F, Receive Low	244575C
Modem, T103 F, Receive High	244576C
Regulator/Compensator	953126P
Wire List for Power Assembly 953023	953128D
Acoustic Coupler Interface	954761A
Printhead Driver	954807
Modem, DS-100A, Transmit Low	958849A
Terminal Control Transmitter, Model 720C	962581A
Terminal Control Receiver, Model 720C	962584C
Code, ASCII, Uppercase-only, Model 720C	962587
Keyboard Encoder, ASCII, Model 720C	962590
EIA Interface, Model 725	965140
Interface, Model 722, 723	968301E

Q8 and allows C9 to charge through R39 for a 91 to 200 millisecond period. When Q9 fires, Z14-9 is cleared and presets Z21-6 through Z10 to inhibit a carriage return and line feed.

3-2.2 PRINTER DRIVER. Drive for the stepping motors and head-lift solenoid are provided by circuits on this printed circuit card. Details of the printer driver circuits are shown in drawing 215755. Printer driver signal signatures are identified in Table 3-2.2.

One phase for each stepping motor is selected by the printer control, to make the corresponding input pin a logic ZERO. The power transistor is saturated to energize the associated motor field winding.

When either motor is to be moved, the full power signal (MHFP1 or PAFP1) is held HIGH, and the voltage on the motor ramps from the normal holding voltage up to full voltage.

During a paper advance or carriage return cycle, the printhead is lifted to prevent unnecessary paper drag. RHDP0 goes LOW and the associated power transistor Q4 supplies 500 mA to energize the head-lift solenoid.

3-2.3 REGULATOR AND COMPENSATION. This printed circuit card contains analog circuits for low power sections of the power supply and compensation circuits which control signals applied to the printhead. The regulator and compensation circuits are illustrated in drawing 953126. The compensation circuit and each regulator circuit are described below.

3-2.3.1 Compensation Circuit. The compensation circuit provides the correct drive voltage to the printhead and provides a print-allow power pulse to the MOS character generators.

Current is supplied by a constant current source consisting of Q18, R54, R56, and CR16. The circuit uses +38V as a power source and supplies 4 milliamps current. This current drives two series-regulating transistors (Q26 and Q23) on a heatsink located external to the PC card.

The output is the print voltage (PVOLT) supplied to the printhead. The PVOLT output is controlled by the print pulse (PRNT0) which is a negative-going pulse with a duration of 16 milliseconds generated on printer control card J2. The PRNT0 pulse is applied to a level converter which drives the base of transistor Q16. Transistor Q16 is saturated and sinks the 4 milliamps of current from the current source until PRNT0 goes LOW; therefore, the PVOLT output remains HIGH for a period equal to the incoming print pulse. The PVOLT output voltage is controlled by the voltage compensation circuit which adjusts the voltage by sinking a portion of the current available for PVOLT drive. The compensation current consists of two operational amplifier circuits (AR1 and AR2). The AR2 amplifier sinks the current. The AR2 circuit has two negative inputs: one negative input from the slow printing bias circuit, and the other from the gain feedback circuit. The gain feedback loop consists of resistor R52 and variable resistor R54. Resistor R54 is the contrast adjustment, capable of changing the gain from 30 to 50. The positive input to AR2 is effective when the printer is operating at fast printing speeds.

The AR1 operational amplifier is used as a sensing amplifier for the printhead temperature compensation diode. The negative input of this amplifier is designed for a gain of 30 with resistor divider R32 and R34. Resistor R34 sets the reference voltage on both AR1 and AR2. The positive input of AR1 is where the diode voltage (DVOLT) is applied. The anode of the printhead temperature compensating diode is connected to pin 10, and the cathode is connected to ground. Current is supplied to the diode from a 15 volt reference through R30. The output of the level converter (Q2 and Q3) controls the gate of FET Q11. Transistor Q11 is normally ON to charge C15 to the DVOLT level. When PRNT0 goes LOW, Q4 turns off and C15 is isolated to retain the DVOLT level during the 16-microsecond printing time. The output of AR1 (TP4) should go to 0.00 ±0.05 volt when the head is at ambient temperature.

When printing slow, the temperature of the printhead rises quickly; however, the temperature returns to ambient quickly. The DVOLT signal is constant during nonprinting times. In this condition, amplifier gain is controlled exclusively by slow resistance.

When printing fast, printhead temperature rises (diode voltage drops), and amplifier gain is controlled by the fast resistance.

The print-pulse-too-long circuit disables the PVOLT signal when PRNT0 is longer than 24 ±6 milliseconds. When PRNT0 goes low, Q14 turns off and allows C17 to start charging through R63 R62, and R21 to apply 7 volts to the gate connection at programmable unijunction Q15. If PRNT0 stays LOW long enough for C1 to change to 7.0 volts, Q15 conducts and sets latch Z1. Latch Z1 holds the base of Q16 HIGH and clamps the output drive to ground. The latch is reset by PWRTN. Capacitor C1 is discharged when PRNT0 goes HIGH.

A print-allow pulse of +12 volts is supplied to the MOS character generators. The output of the PRNT0 level converter drives the base of Q12 to turn it off when PRNT0 is LOW. The Q13 output provides drive to the character generators. The base of Q12 is also controlled by an overvoltage clamp consisting of CR5, CR4, and CR3. When the drive voltage exceeds 24 volts, Q12 clamps to ground and prevents activation of the MOS character generators.

Current regulation is provided by resistor R58 and Q17. This limits short circuit current of the PVOLT output to 2.5 amperes. Reference voltages for the compensation circuits are supplied by voltage regulator VR1. Resistors R28, R27, and R29 are selected to produce a 15 volt output on pin 3.

3-2.3.2 +5 Volt Regulator. The +5 V regulator circuit provides current limiting, short-current protection, and overvoltage protection. The input to the regulator is the output of a full wave bridge rectifier with a filter capacitor to ground.

The circuit is a series regulator with regulating transistor Q21 externally mounted to a heatsink. Transistor Q21 is controlled by Q1 and the semiconductor LM-305 voltage regulator. On LM-305 pin 6 is the voltage sensing pin. By connecting a voltage divider from the regulator voltage to ground and connecting the center of the voltage divider to pin 6, LM-305 controls the external series regulating transistor to maintain 1.8 volts at pin 6. Resistors R5, R6, and R7 form the voltage divider (values for R5 and R6 are selected during manufacture).

Foldback current limiting is accomplished by connecting pin 1 to the center of a voltage divider (R2 and R4) and using a resistor (R61) in series with the current flow to provide the input to the voltage divider. As the current increases, the emitter of Q21 must go higher to compensate for the voltage drop across R61. Pin 1 of the LM-305 follows the rise until the sense voltage is reached. When the sense voltage is reached, the regulator limits current to approximately 3.5 amps.

When the regulator output is shorted to ground, pin 1 voltage rises to the sense voltage, and the network causes Q21 to supply a short circuit current of approximately 0.75 amps.

Overvoltage protection is accomplished with a Triac (crowbar) SCR1 which is externally mounted to a heatsink. The gate is controlled by CR1. When the +5 volt line exceeds the zener breakdown voltage (5.6 V) by an amount equal to the Triac gate breakdown voltage (typically less than 1V), the Triac rises and holds the +5V line to ground. The terminal must be turned off and then on to reset the crowbar. If the +5V line goes negative, the zener conducts in the forward direction, and the Triac turns on again.

3-2.3.3 +12 Volt Regulator. The +12 volt regulator, a series regulator, has an overvoltage crowbar and current limiting protection. The input to the regulator is the output of a full-wave bridge rectifier with a filter capacitor to ground.

Regulator transistor Q22, externally mounted on a heatsink, is driven by driving transistor Q2. Q2 is used in a feedback amplifier to sink the current necessary to keep the output regulated at +12V. The voltage reference for Q7 is obtained from voltage divider R17, R18, and R73 which is connected to the base of Q12. The base of Q6 is connected to +5 volts.

When the output voltage tries to rise, the base of Z7 rises and conducts more heavily, reducing the drive to Q2 which lowers the output voltage. Conversely, when the voltage tries to drop, more drive is supplied to Q2 (Q7 conducts less). Current limiting is accomplished by Q2 when approximately 1.0 amp flows through R59.

The +12V overvoltage crowbar functions the same as the +5V crowbar, except the voltage is developed by CR14 and CR15 in series, producing a breakdown voltage of 12.6 volts.

3-2.3.4 -12 Volt Regulator. Operation of the -12 volt regulator is identical to the +12 volt regulator. The only difference is that current flows in the opposite direction. Thus, the transistors are all complemented (PNP for NPN), and the diodes are all reversed.

3-3 KEYBOARD.

The keyboard completes the interface between the operator and the terminal. Silent 700 Electronic Data Terminals are available with numerous keyboard configurations. Each keyboard contains two types of keys: (1) coded keys and (2) function keys. Each keyboard assembly generates encoded data for each coded key and provides level conversion for each control key.

All data encoding is performed by one 40-pin MOS chip (Z1). This device is basically a four-level read-only memory (ROM). Each chip has 11 data inputs and three shift inputs. Each chip provides 10 output bits. The inputs enable the three shift lines to select one of four levels or modes, and the 11 data inputs are arranged so that two lines are HIGH

PROJ NO.	SIZE	NEXT ASSY DWG NO.
8720	D	953023

D 953128 A

REVISIONS

LTR	DESCRIPTION	DATE	APPD
A	369935 (B) Ratliff 2-17-71	2-17-71	L. Bonge
	CHG, WIRE LIST, POINT TO POINT, SH 4, WIRE NO NO.'S 7 & 8 WERE: 7 | YELLOW | | | FAN | TBI-A; 8 | YELLOW | | | FAN | TBI-A		
B	370055 (C) 4-13-71 E. Umry	4-15-71	L. Bonge
	1) SH 2 WIRES 19,20 & 21 WAS TIP 33A & ITEM 6. 2) SH 3 WIRES 4 THRU 12 WAS TIP 33A & ITEM 6. 3) SH 4 WIRES 18,19 & 20 WAS TIP 29A & ITEM 10. 4) SH 2 WIRE 10 WAS "HLDV1" & WIRE 11 WAS "HLDV2" 5) SH 4 WIRE 7, REMARKS ADDED "TB1-B FOR 230V" 6) SH 2 WIRE 7,9 & 10 ADDED ITEM 91 TO LM ITEM NO. & NOTE IN REMARKS COLUMN. 7) SH 3 WIRE 18 ADDED ITEM 91 TO ITEM NO & NOTE TO REMARKS. 8) SH 5 WIRES 10 THRU 15 ADDED TOTAL LENGTH TO EA. ADDED NOTE TO REMARKS COLUMN OF EACH. 9) SH 5 LM ITEM NO. OF WIRE 10-ADDED ITEM 87,90,91. WIRE 11-ADDED ITEMS 85,90,91 WIRE 12 ADDED ITEMS 86,90,91 WIRE 13-ADDED ITEMS 87,90,91,89. WIRE 14-ADDED ITEMS 85,90,91 WIRE 15-ADDED ITEMS 86,90,91.		
C	369552 (B) 7-27-71 [signature]	7-27-71	Politzer
	CHG 1) SH 2, IT. 11 FINISH STATION WAS E30, E28-MOTHER B. 2) SH 4 IT. 12, START STATION WAS J20-2, IT. 13 WAS J20-1, IT. 14, WAS J20-3, & IT. 15 WAS J20-4. ADDED 1) SH 2, IT. 4 & 16. 2) SH 4, "GND STUD ON BACK PLATE" TO REMARKS OF IT. 17		
D	371564 (B) S. Piercey 9-24-71	9-27-71	Politzer
	CHG: SH 2, IT. 10 DESCRIPTION WAS "ORANGE"		

REV STATUS OF SHEETS						
REV	D	D	B	C	B
SHEET	1	2	3	4	5

INT DIST

DR E. Umry 12-1-70	APPD [signature] 12/11/70	TITLE WIRE LIST, POINT TO POINT-POWER ASSY.	TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION HOUSTON, TEXAS
CKD K. Pressl 12/8/70	APPD [signature]		SCALE NONE / SIZE A / 953128 / REV D
ENGR Don Ashton 12/9/70	RELEASE [signature] 1-6-71		SHEET 1 OF 5

TI-4260-B

WIRE NO.	DESCRIPTION	TOTAL LENGTH	SIGNATURE	COMPONENT CONNECTION FOR START STATION	COMPONENT CONNECTION FOR FINISH STATION	REMARKS	N/A LM ITEM NO.
1	YELLOW		+5 WINDING	XFMR	CR25		2
2	YELLOW		+5 WINDING	XFMR	CR25		
3							
4	ORANGE/WHT		TTY	XFMR	E28-MOTHER B		
5	BLUE		+28 WINDING	XFMR	CR26		
6	BLUE		+28 WINDING	XFMR	CR26		2
7	RED		+12 WINDING	XFMR	E2-FUSE B	ADD ITEM 91 TO FUSE B CONN. .7 LG.	2, 91
8	RED/YELLOW		+12 CENTER TAP	XFMR	E2-MOTHER B		2
9	RED		+12 WINDING	XFMR	E6-FUSE B	ADD ITEM 91 TO FUSE B CONN. .7 LG.	2, 91
10	VIOLET		PWTR 1	XFMR	E7-FUSE B	ADD ITEM 91 TO FUSE B CONN. .7 LG.	2, 91
11	ORANGE		PWTR 2	XFMR	E30, MOTHER B		2
12	BLACK		PRIMARY WINDING	XFMR	TB1-A		
13	BROWN		PRIMARY WINDING	XFMR	TB1-C	TB1-B FOR 230V OPER	
14	GREEN		PRIMARY WINDING	XFMR	TB1-A	TB1-B FOR 230V OPER	
15	WHITE		PRIMARY WINDING	XFMR	TB1-C		2
16	GRAY		SHIELD WINDING	XFMR	GROUND	GND STUD ON BACK PLATE	
17	* NOTE: N/A IT. NO. APPLIES TO COMPONENT AT START STATION.						
18							
19	BLUE STRIPE		P5B	Q21-BASE	E9-M.B.		10
20	RED STRIPE		P5C	Q21-COLLECTOR	E10-M.B.	TIP 35A	10
21	YELLOW STRIPE		P5E	Q21-EMITTER	E11-M.B.		10
22	BLUE STRIPE		P12B	Q22-BASE	E12-M.B		6
23	RED STRIPE		P12C	Q22-COLLECTOR	E13-M.B	TIP 33A	6
24	YELLOW STRIPE		+12V	Q22-EMITTER	E14-M.B		6

TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION HOUSTON, TEXAS

A | 953128 | SHEET 2 | REV D

WIRE NO.	DESCRIPTION	TOTAL LENGTH	SIGNATURE	COMPONENT CONNECTION FOR START STATION	COMPONENT CONNECTION FOR FINISH STATION	REMARKS	N/A LM ITEM NO.
1	BLUE STRIPE		N12B	Q20-BASE	E15-M.B		5
2	RED STRIPE		N12C	Q20-COLLECTOR	E16-M.B	TIP 34A	1
3	YELLOW STRIPE		-12V	Q20-EMITTER	E17-M.B		5
4	BLUE STRIPE		PCT1B	Q24-BASE	E18-M.B		10
5	RED STRIPE		PCT1C	Q24-COLLECTOR	E19-M.B	TIP 35A	10
6	YELLOW STRIPE		PCT1E	Q24-EMITTER	E20-M.B		10
7	BLUE STRIPE		PCT2B	Q25-BASE	E21-M.B		10
8	RED STRIPE		PCT2C	Q25-COLLECTOR	E22-M.B	TIP 35A	10
9	YELLOW STRIPE		PCT2E	Q25-EMITTER	E23-M.B		10
10	BLUE STRIPE		PHT2B	Q23-BASE	E24-M.B		10
11	RED STRIPE		PHT2E	Q23-COLLECTOR	E25-M.B	TIP 35A	10
12	YELLOW STRIPE		PHTEB	Q23-EMITTER	E26-M.B		10
13							
14							
15							
16	GREEN STRIPED			+C23	E4-MOTHER B.	CAPACITOR CABLE ASSY	4
17	YELLOW STRIPED			-C24	E5-MOTHER B		4
18	BLUE STRIPED			+C21	E4-FUSE B	ADD ITEM 91 TO FUSE B CONN .7 LG.	4, 91
19	BLUE STRIPED			+CR26	+C21		4
20	BLACK STRIPED			E7-MOTHER B	-C21		
21	BLACK STRIPED			-C21	-CR26		
22	RED STRIPED			+C22	F2-LOWER LUG		
23	RED STRIPED			+C22	+CR25		
24	BLACK STRIPED			-C22	-CR25		4

TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION HOUSTON, TEXAS

A | 953128 | SHEET 3 | REV B

WIRE NO.	DESCRIPTION	TOTAL LENGTH	SIGNATURE	COMPONENT CONNECTION FOR START STATION	COMPONENT CONNECTION FOR FINISH STATION	REMARKS	N/A LM ITEM NO.
1	BLACK STRIPED			-C23	+C24		4
2	BLACK STRIPED			-C22	-C23		1
3	BLACK STRIPED			+C24	E6-MOTHER B		4
4							
5							
6							
7	RED			FAN-B1	TB1-A	TB1-B FOR 230V	3
8	WHT/BLU			R1	TB1-C		3
9							
10							
11							
12	BLACK STRIPED			FILTER BD-E3	F1-UPPER LUG		7
13	WHITE			FILTER BD-E4	SPLICE		7
14	BLACK STRIPED			FILTER BD-E2	TB1-A		7
15	WHITE			FILTER BD-E1	TB1-C		7
16	WHITE			POWER CORD	SPLICE		8
17	GREEN			POWER CORD	GROUND	GND STUD ON BACK PLATE	8
18	BLUE STRIPE			Q26-BASE	E43-M.B		36
19	RED STRIPE			Q26-COLLECTOR	E32-M.B	TIP 33A	36
20	YELLOW STRIPE			Q26-EMITTER	E33-M.B		36
21	BLACK STRIPE			SCR1-1	E34-M.B		
22	RED STRIPE			SCR1-2	E35-M.B	RCA 40668	11
23	ORANGE STRIPE			SCR1-3	E36-M.B		11
24	BLACK STRIPE			SCR2-1	E37-M.B	RCA 40668	11

TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION HOUSTON, TEXAS

A | SHEET 4 | 953128 | REV C

FILMED

WIRE NO.	DESCRIPTION	TOTAL LENGTH	SIGNATURE	COMPONENT CONNECTION FOR START STATION	COMPONENT CONNECTION FOR FINISH STATION	REMARKS	N/A LM ITEM NO.
1	RED STRIPE			SCR2-2	E38-M.B	RCA 40668	11
2	ORANGE STRIPE			SCR2-3	E39-M.B		11
3	BLACK STRIPE			SCR3-1	E40-M.B		11
4	RED STRIPE			SCR3-2	E41-M.B	RCA 40668	11
5	ORANGE STRIPE			SCR3-3	E42-M.B		11
6	BLACK			POWER CORD	F1-LOWER LUG		8
7							
8							
9							
10	BLUE STRIPE	4"		E1-FUSE B	E1-MOTHER B	ADD ITEM 91 TO FUSE B CONN .7 LG.	87.50 91.50
11	RED STRIPE	6"		E5-FUSE B	E3-MOTHER B	"	87.50 91.50
12	YELLOW STRIPE	9"		E3-FUSE B	E31-MOTHER B	"	87.50 91.50
13	BLUE STRIPE	11"		E8-MOTHER B	F2-UPPER LUG	"	87.50 91.50
14	RED STRIPE	7"		E8-FUSE B	E29-MOTHER B	"	87.50 91.50
15	YELLOW STRIPE	9"		E9-FUSE B	E27-MOTHER B	"	87.50 91.50
16							
17							
18							
19							
20							
21							
22							
23							
24							

TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION HOUSTON, TEXAS

A | SHEET 5 | 953128 | REV B

WIRE NO	DESCRIPTION	TOTAL LENGTH	SIGNATURE	COMPONENT CONNECTION FOR START STATION	COMPONENT CONNECTION FOR FINISH STATION	REMARKS *	N/A LM ITEM NO
	YELLOW		+5 WINDING	XFMR	CR25		2
	YELLOW		+5 WINDING	XFMR	CR25		
	YELLOW/GREEN		+5 WINDING	XFMR	E27		
	YELLOW/GREEN		+5 WINDING	XFMR	E28		
	BLUE		+28 WINDING	XFMR	CR26		
	BLUE		+28 WINDING	XFMR	CR26		
	RED		+12 WINDING	XFMR	E1-MOTHER B		
	RED/YELLOW		+12 CENTER TAP	XFMR	E2-MOTHER B		
	RED		+12 WINDING	XFMR	E3-MOTHER B		
	ORANGE		HLDV1	XFMR	E29-MOTHER B		
	ORANGE		HLDV2	XFMR	E30-MOTHER B		
	BLACK		PRIMARY WINDING	XFMR	TB1-A		
	BROWN		PRIMARY WINDING	XFMR	TB1-C	TB1-B FOR 230 V OPER	
	GREEN		PRIMARY WINDING	XFMR	TB1-A	TB1-B FOR 230V OPER	
	WHITE		PRIMARY WINDING	XFMR	TB1-C		2
	GRAY		SHIELD	XFMR	GND	SEE NOTE 5 OF POWER ASSY DWG.	
	* NOTE: N/A IT. NO. APPLIES TO COMPONENT AT START STATION.						
	BLUE STRIPE		P5B	Q21-BASE	E9		6
	RED STRIPE		P5C	Q21-COLLECTOR	E10	TIP 33A	
	YELLOW STRIPE		P5E	Q21-EMITTER	E11		
	BLUE STRIPE		P12B	Q22-BASE	E12		
	RED STRIPE		P12C	Q22-COLLECTOR	E13	TIP 33A	
	YELLOW STRIPE		+12V	Q22-EMITTER	E14		6

TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION HOUSTON TEXAS

MANUAL 215799 FILM

A | SHEET 2 | 215633 | REV A

WIRE NO	DESCRIPTION	TOTAL LENGTH	SIGNATURE	COMPONENT CONNECTION FOR START STATION	COMPONENT CONNECTION FOR FINISH STATION	REMARKS	N/A LM ITEM NO
	BLUE STRIPE		N12B	Q20-BASE	E15		5
	RED STRIPE		N12C	Q20 COLLECTOR	E16	TIP 32A	1
	YELLOW STRIPE		-12V	Q20-EMITTER	E17		5
	BLUE STRIPE		PCT1B	Q24-BASE	E18		
	RED STRIPE		PCT1C	Q24-COLLECTOR	E19	TIP 33A	6
	YELLOW STRIPE		PCT1E	Q24-EMITTER	E20		
	BLUE STRIPE		PCT2B	Q25 BASE	E21		
	RED STRIPE		PCT2C	Q25-COLLECTOR	E22	TIP 33A	
	YELLOW STRIPE		PCT2E	Q25 EMITTER	E23		
	BLUE STRIPE		PHT2B	Q23 BASE	E24		
	RED STRIPE		PHT2E	Q23 COLLECTOR	E25	TIP 33A	6
	YELLOW STRIPE		PHTEB	Q23 EMITTER	E26		
	GREEN STRIPED			+C23	E4-MOTHER B	CAPACITOR CABLE ASSY	4
	YELLOW STRIPED			-C24	E5-MOTHER B		
	BLUE STRIPED			+C21	E31-MOTHER B		
	BLUE STRIPED			+CR26	+C21		
	BLACK STRIPED			E7-MOTHER B	-C21		
	BLACK STRIPED			-C21	-CR26		
	RED STRIPED			+C22	E8		
	RED STRIPED			+C22	+CR25		
	BLACK STRIPED			+C24	-CR25		4

TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION HOUSTON TEXAS

MANUAL 215799 FILM

A | SHEET 3 | 215633 | REV

TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON TEXAS

A | 215633 | SHEET 4

WIRE NO	DESCRIPTION	TOTAL LENGTH	SIGNATURE	COMPONENT CONNECTION FOR START STATION	COMPONENT CONNECTION FOR FINISH STATION	REMARKS	N/A LM ITEM NO
	BLACK STRIPED			-C23	+C24		4
	BLACK STRIPED			-C22	-C23		1
	BLACK STRIPED			-C22	E6-MOTHER B		4
	YELLOW			FAN	TB1-A		3
	YELLOW			FAN	TB1-C		3
	BLACK STRIPED			POWER SWITCH	FUSE POST →	UPPER LUG	7
	WHITE			POWER SWITCH	SPLICE		|
	BLACK STRIPED			POWER SWITCH	TB1-A		|
	WHITE			POWER SWITCH	TB1-C		7
	WHITE			POWER CORD	SPLICE		8
	GREEN			POWER CORD	GROUND		8
	BLUE STRIPE			Q26-BASE	E43		
	RED STRIPE			Q26 COLLECTOR	E32	TIP 29A	10
	YELLOW STRIPE			Q26-EMITTER	E33		
	BLACK STRIPE			SCR1-1	E34		
	RED STRIPE			SCR1-2	E35	RCA-40668	11
	ORANGE STRIPE			SCR1-3	E36		|
	BLACK STRIPE			SCR2-1	E37	RCA-40668	|

TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON TEXAS

A | 215633 | SHEET 5 OF 5

WIRE NO	DESCRIPTION	TOTAL LENGTH	SIGNATURE	COMPONENT CONNECTION FOR START STATION	COMPONENT CONNECTION FOR FINISH STATION	REMARKS	N/A LM ITEM NO.
	RED STRIPE			SCR2-2	E38		11
	ORANGE STRIPE			SCR2-3	E39	RCA-40668	|
	BLACK STRIPE			SCR3-1	E40		|
	RED STRIPE			SCR3-2	E41	RCA-40668	|
	ORANGE STRIPE			SCR3-3	E42		11
	BLACK			POWER CORD	FUSE POST →	LOWER LUG	8

B | 215824 | A

PROJ NO.	SIZE	NEXT ASSY DWG NO.
07200	D	215823

REVISIONS

LTR	DESCRIPTION	DATE	APPD
A	366654 (C) 10-19-70 C. Barbuena	10-...	...
	CHGD: 1) SH3 LAST LINE WAS START STA. + C24 (2) SH4 3RD. LINE WAS START STA. - C22-		
B	370103 (B) 5-14-71 J Politzer	5-1...	...
	CHG 1) SH 2 & 3, REMARKS FOR Q21, Q23, Q24 & Q25 WAS TIP33A & N/A LM IT. NO. WAS 6. 2) SH 4, REMARKS FOR Q26 WAS TIP29A & N/A LM IT. NO. WAS 10. 3) SH 4, RED STRIPED/FAN/TB1-A/TB1-B FOR 230V WAS YELLOW/FAN/TB1-A. 4) SH 4, BLUE STRIPED/R1/TB1-C WAS YELLOW/FAN/TB1-C.		

REV STATUS OF SHEETS						
REV	B	B	B	B	—	
SHEET	1	2	3	4	5	

DR D. Clarke 5-19-70	APPD H. L. Cope 6/2/70	TITLE WIRE LIST, POINT TO POINT - POWER ASSY
CKD ... II 5/26/70	APPD Mike ... 6/2/70	
ENGR 5/29/70 ... 9/18	RELEASE C. Gleason 6-2-70	

TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON TEXAS

SCALE	SIZE	DWG NO.	REV
NONE	A	215824	B
		SHEET 1 OF 5	

TI-4260 B

WIRE NO	DESCRIPTION	TOTAL LENGTH	SIGNATURE	COMPONENT CONNECTION FOR START STATION	COMPONENT CONNECTION FOR FINISH STATION	REMARKS	N A LM ITEM NO
	BLACK STRIPED			-C23	+C24		4
	BLACK STRIPED			-C22	-C23		1
	BLACK STRIPED			+C24	E6-MOTHER B		4
	RED STRIPED			FAN	TB1-A	TB1-B FOR 230V	3
	BLUE STRIPED			R1	TB1-C		3
	BLACK STRIPED			J20-2	FUSE POST	← UPPER LUG	7
	WHITE			J20-1	SPLICE		
	BLACK STRIPED			J20-3	TB1-A		
	WHITE			J20-4	TB1-C		7
	WHITE			POWER CORD	SPLICE		8
	GREEN			POWER CORD	GROUND		8
	BLUE STRIPE			Q26-BASE	E43		
	RED STRIPE			Q26-COLLECTOR	E32	TIP 33A	6
	YELLOW STRIPE			Q26-EMITTER	E33		
	BLACK STRIPE			SCR1-1	E34		
	RED STRIPE			SCR1-2	E35	RCA-40668	11
	ORANGE STRIPE			SCR1-3	E36		
	BLACK STRIPE			SCR2-1	E37	RCA 40668	

TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION DALLAS, TEXAS

A

SHEET 4

215824

B REV

WIRE NO	DESCRIPTION	TOTAL LENGTH	SIGNATURE	COMPONENT CONNECTION FOR START STATION	COMPONENT CONNECTION FOR FINISH STATION	REMARKS	N A LM ITEM NO
	RED STRIPE			SCR2-2	E38		11
	ORANGE STRIPE			SCR2-3	E39	RCA 40668	
	BLACK STRIPE			SCR3-1	E40		
	RED STRIPE			SCR3-2	E41	RCA-40668	
	ORANGE STRIPE			SCR3-3	E42		11
	BLACK			POWER CORD	FUSE POST	← LOWER LUG	8

TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION DALLAS, TEXAS

A

SHEET 5

215824

REV

WIRE NO	DESCRIPTION	TOTAL LENGTH	SIGNATURE	COMPONENT CONNECTION FOR START STATION	COMPONENT CONNECTION FOR FINISH STATION	REMARKS	N/A LM ITEM NO
	YELLOW		+5 WINDING	XFMR	CR25		2
	YELLOW		+5 WINDING	XFMR	CR25		
	YELLOW/GREEN		+5 WINDING	XFMR	E27		
	YELLOW/GREEN		+5 WINDING	XFMR	E28		
	BLUE		+28 WINDING	XFMR	CR26		
	BLUE		+28 WINDING	XFMR	CR26		
	RED		+12 WINDING	XFMR	E1-MOTHER B		
	RED/YELLOW		+12 CENTER TAP	XFMR	E2-MOTHER B		
	RED		+12 WINDING	XFMR	E3-MOTHER B		
	ORANGE		HLDV1	XFMR	E29-MOTHER B		
	ORANGE		HLDV2	XFMR	E30-MOTHER B		
	BLACK		PRIMARY WINDING	XFMR	TB1-A		
	BROWN		PRIMARY WINDING	XFMR	TB1-C	TB1-B FOR 230V OPER	
	GREEN		PRIMARY WINDING	XFMR	TB1-A	TB1-B FOR 230V OPER	
	WHITE		PRIMARY WINDING	XFMR	TB1-C		2
	* NOTE: N/A IT. NO. APPLIES TO COMPONENT AT START STATION.						
	BLUE STRIPE		P5B	Q21-BASE	E9		82
	RED STRIPE		P5C	Q21-COLLECTOR	E10	TIP 35A	
	YELLOW STRIPE		P5E	Q21-EMITTER	E11		82
	BLUE STRIPE		P12B	Q22-BASE	E12		6
	RED STRIPE		P12C	Q22-COLLECTOR	E13	TIP 33A	
	YELLOW STRIPE		+12V	Q22-EMITTER	E14		6

TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION HOUSTON TEXAS

MANUAL 215799

A

SHEET 2

215824

REV B

WIRE NO	DESCRIPTION	TOTAL LENGTH	SIGNATURE	COMPONENT CONNECTION FOR START STATION	COMPONENT CONNECTION FOR FINISH STATION	REMARKS	N/A LM ITEM NO
	BLUE STRIPE		N12B	Q20-BASE	E15		5
	RED STRIPE		N12C	Q20-COLLECTOR	E16	TIP 32A	1
	YELLOW STRIPE		-12V	Q20-EMITTER	E17		5
	BLUE STRIPE		PCT1B	Q24-BASE	E18		
	RED STRIPE		PCT1C	Q24-COLLECTOR	E19	TIP 35A	82
	YELLOW STRIPE		PCT1E	Q24-EMITTER	E20		
	BLUE STRIPE		PCT2B	Q25 BASE	E21		
	RED STRIPE		PCT2C	Q25 COLLECTOR	E22	TIP 35A	
	YELLOW STRIPE		PCT2E	Q25-EMITTER	E23		
	BLUE STRIPE		PHT2B	Q23 BASE	E24		
	RED STRIPE		PHT2E	Q23-COLLECTOR	E25	TIP 35A	82
	YELLOW STRIPE		PHTEB	Q23 EMITTER	E26		
	GREEN STRIPED			+C23	E4 MOTHER B	CAPACITOR CABLE ASSY	4
	YELLOW STRIPED			-C24	E5 MOTHER B		
	BLUE STRIPED			+C21	E31-MOTHER B		
	BLUE STRIPED			+CR26	+C21		
	BLACK STRIPED			E7-MOTHER B	-C21		
	BLACK STRIPED			-C21	-CR26		
	RED STRIPED			+C22	E8		
	RED STRIPED			+C22	+CR25		
	BLACK STRIPED			-C22	-CR25		4

TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION HOUSTON TEXAS

MANUAL 215799

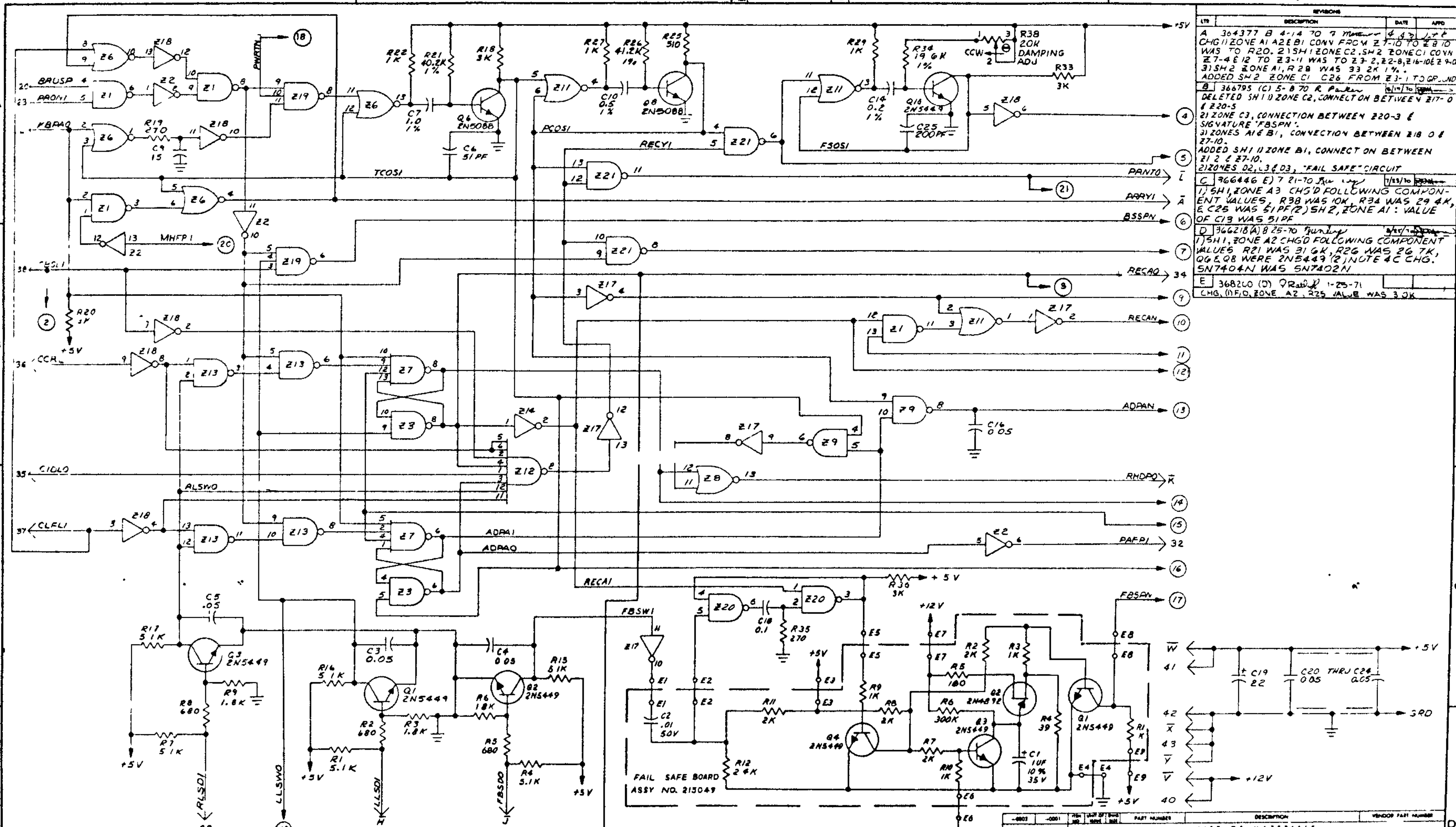
A

SHEET 3

215824

REV B

215020-1



LTR	DESCRIPTION	DATE	APPD
A	364377 B 4-14 70 [illegible] CHG 1) ZONE A1 A2 & B1 CONN FROM Z7-10 TO Z8 10 WAS TO R20. 2) SH1 ZONE C2, SH2 ZONE C1 CONN Z7-4 & 12 TO Z3-11 WAS TO Z3-2, Z2-8, Z16-10 & Z9-10 3) SH2 ZONE A1, R28 WAS 33 2K 1%. ADDED SH2 ZONE C1 C26 FROM Z3-1 TO GROUND	4 [illegible]	[illegible]
B	366795 (C) 5-8 70 R Parker DELETED SH1 1) ZONE C2, CONNECTION BETWEEN Z17-0 & Z20-5 2) ZONE C3, CONNECTION BETWEEN Z20-3 & SIGNATURE "FBSPN". 3) ZONES A1 & B1, CONNECTION BETWEEN Z18 0 & Z7-10. ADDED SH1 1) ZONE B1, CONNECTION BETWEEN Z1 2 & Z7-10. 2) ZONES D2, C3 & D3, "FAIL SAFE" CIRCUIT	6/19/70	[illegible]
C	366446 E) 7 21-70 [illegible] 1) SH1, ZONE A3 CHG'D FOLLOWING COMPONENT VALUES, R38 WAS 10K, R34 WAS 29 4K, & C25 WAS 51PF (2) SH2, ZONE A1: VALUE OF C13 WAS 51PF	7/23/70	[illegible]
D	366218 (A) 8 25-70 [illegible] 1) SH1, ZONE A2 CHG'D FOLLOWING COMPONENT VALUES R21 WAS 31 6K, R26 WAS 26 7K, Q6 & Q8 WERE 2N5449 (2) NOTE 4C CHG. SN7404N WAS SN7402N	8/25/70	[illegible]
E	368260 (D) [illegible] 1-25-71 CHG. (1) F, D, ZONE A2, R25 VALUE WAS 3.0K		

NOTES:
UNLESS OTHERWISE SPECIFIED:
1. RESISTANCE VALUES ARE IN OHMS
2. RESISTORS ARE 1/4W, 5%
3. CAPACITANCE VALUES ARE IN MICROFARADS
4. NETWORKS ARE AS FOLLOWS
A. Z1, Z3, Z4, Z9, Z13, Z20, Z21 ARE SN7400N
B. Z6, Z8, Z11 ARE SN7402N
C. Z2, Z14, Z17, Z18 ARE SN7404N
D. Z19 IS SN7410N
E. Z7, Z22 IS SN7420N
F. Z12 IS SN7430N
G. Z5 IS SN7451N
H. Z10 AND Z15 ARE SN7473N
J. Z16 IS SN7474N

UNLESS OTHERWISE SPECIFIED
DECIMAL .XX ± .03 .XXX ± .010
FRACTIONAL ±1/64 ANGULAR ± 1°
CONCENTRICITY MACHINED DIAMETERS .004 TIR
ALL DIMENSIONS TO BE MET BEFORE PLATING
REMOVE ALL BURRS AND SHARP EDGES
DO NOT SCALE THIS DRAWING
ALL DIMENSIONS IN INCHES
SURFACES MARKED ✓ 0 HAVE ✓

PROCESSES: NONE

PROJ NO	SIZE	NEXT ASSY DWG NO
07200	D	215019
07200	D	215049

LIST OF MATERIALS

TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON, TEXAS

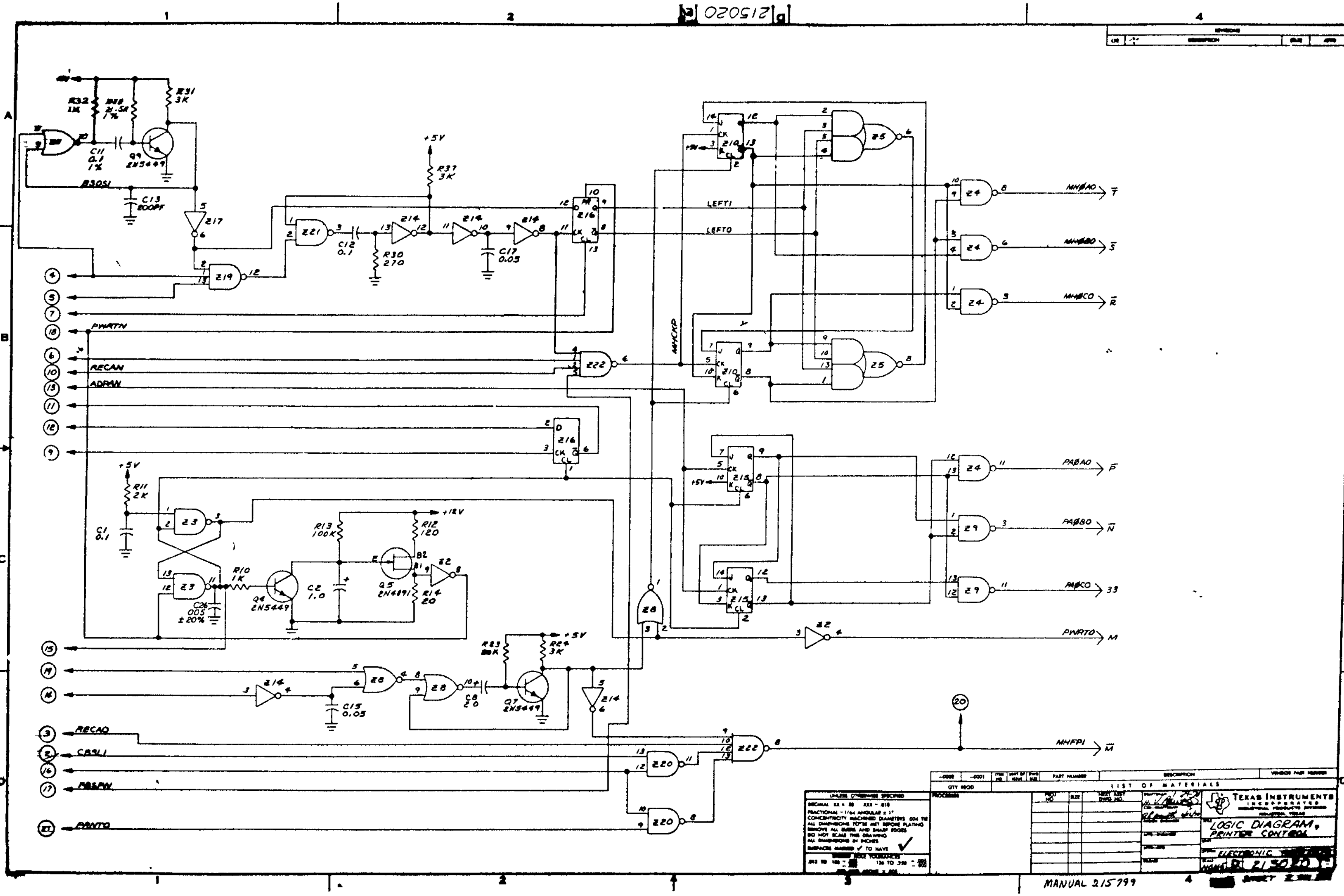
LOGIC DIAGRAM. PRINTER CONTROL

SCALE NONE D 215020

MANUAL 215799

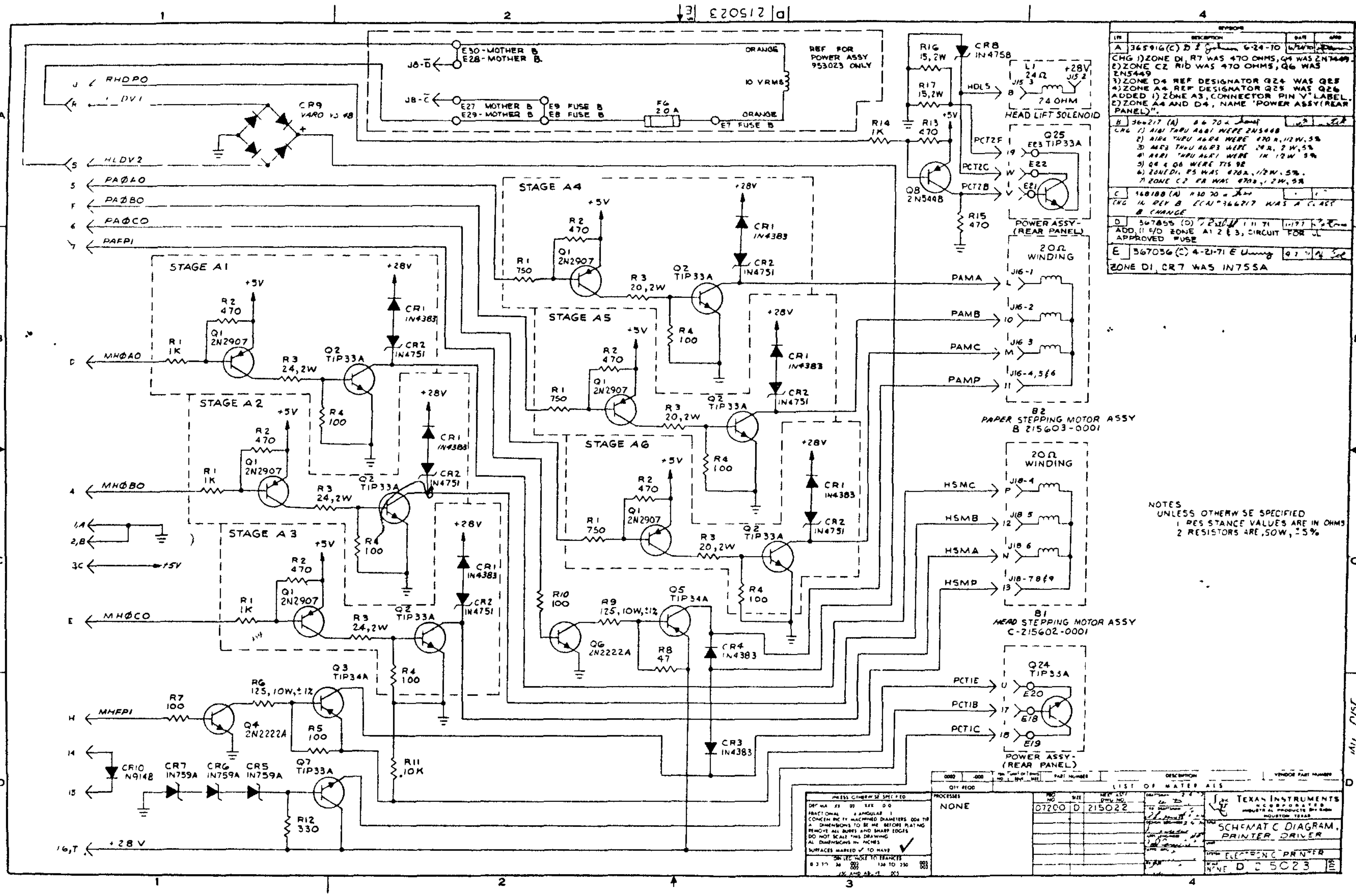
SHEET 1 OF

215020-2



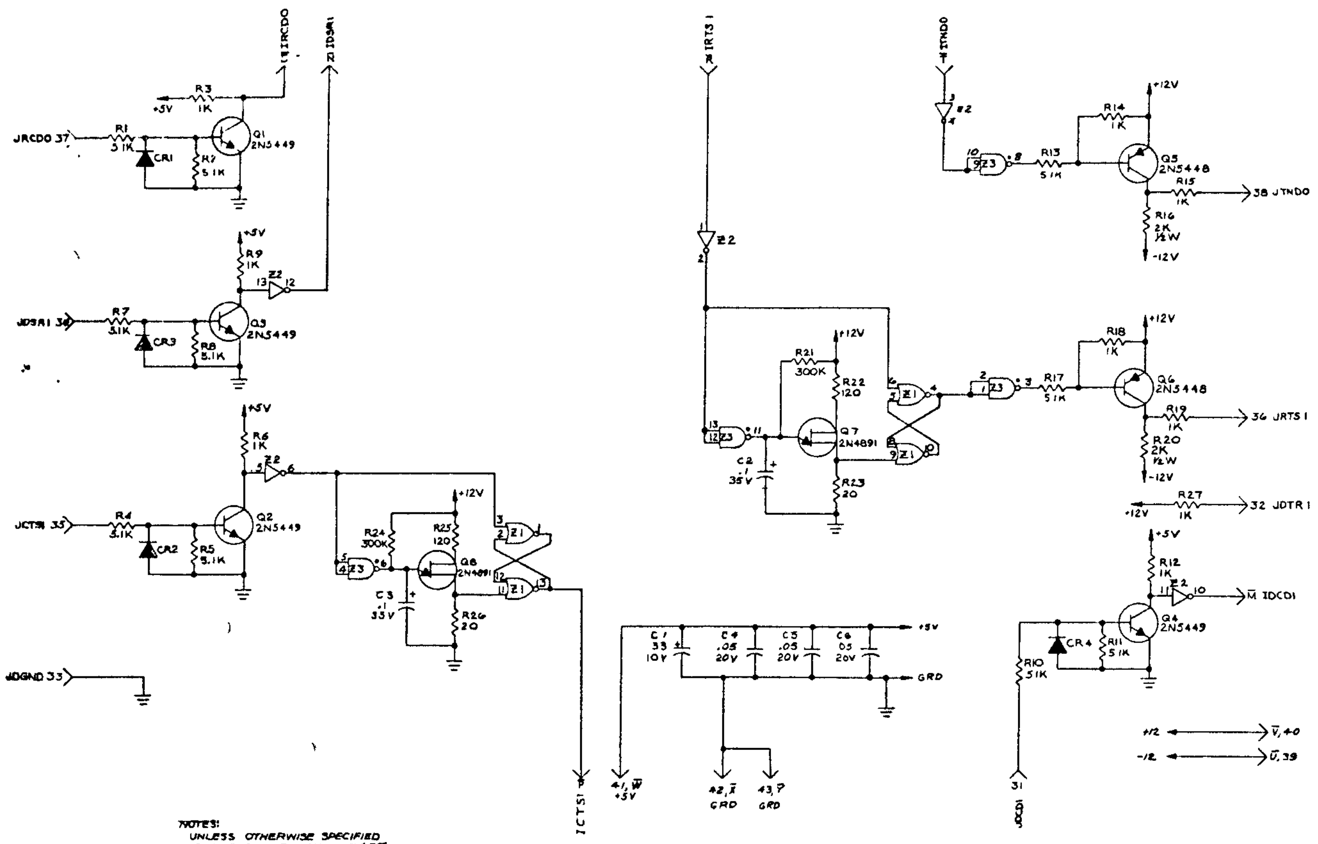
215020
LEFT1
LEFT0
MHCKP
PWRTN
RECAN
ADRAN
RECAQ
CB9L1
PBSPN
PRNTO
PWRTO
MHFPI
MHØAO
MHØBO
MHØCO
PAØAO
PAØBO
PAØCO
B3OS1
R31 3K
R32 1K
C11 0.1 1%
Q9 2N5449
C13 200PF
R37 3K
+5V
C12 0.1
R30 270
C17 0.05
R11 2K
C1 0.1
R13 100K
R12 120
+12V
R10 1K
Q4 2N5449
C2 1.0
Q5 2N4891
R14 20
C26 .005 ±20%
R23 20K
R24 3K
C8 20
Q7 2N5449
C15 0.05
UNLESS OTHERWISE SPECIFIED
LIST OF MATERIALS
PART NUMBER
DESCRIPTION
QTY REQD
TEXAS INSTRUMENTS INCORPORATED
LOGIC DIAGRAM, PRINTER CONTROL
ELECTRONIC
215020
MANUAL 215799

215023



REF FOR POWER ASSY 953023 ONLY
HEAD LIFT SOLENOID
POWER ASSY-(REAR PANEL)
20Ω WINDING
B2 PAPER STEPPING MOTOR ASSY B 215603-0001
B1 HEAD STEPPING MOTOR ASSY C-215602-0001
STAGE A1
STAGE A2
STAGE A3
STAGE A4
STAGE A5
STAGE A6
NOTES
UNLESS OTHERWISE SPECIFIED
1 RESISTANCE VALUES ARE IN OHMS
2 RESISTORS ARE .50W, ±5%
ZONE D1, CR7 WAS IN755A
TEXAS INSTRUMENTS INCORPORATED
SCHEMATIC DIAGRAM, PRINTER DRIVER
ELECTRONIC PRINTER
D 215023
LIST OF MATERIALS
NONE

215029



NOTES:

UNLESS OTHERWISE SPECIFIED

1. RESISTORS ARE 1/4 WATT ±5%
2. RESISTANCE VALUES ARE IN OHMS
3. CAPACITANCE VALUES ARE IN MICROFARADS
4. NETWORKS ARE AS FOLLOWS:
   - A) Z1 IS TYPE 7402N
   - B) Z2 IS TYPE 7404N
   - C) Z3 IS TYPE 7486N
5. DIODES ARE IN914B

UNUSED GATES

9 ▷ 8 Z2

0002	0001	ITEM NO	UNIT OF MEAS	DWG SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER
QTY REQD		LIST OF MATERIALS					

UNLESS OTHERWISE SPECIFIED
DECIMAL .XX .02 .XXX .010
FRACTIONAL ±1/64 ANGULAR ±1°
CONCENTRICITY MACHINED DIAMS .004 TIR
DIMENSIONS TO BE MET BEFORE PLATING
REMOVE ALL BURRS AND SHARP EDGES
DO NOT SCALE THIS DRAWING
ALL DIMENSIONS IN INCHES
SURFACES MARKED ✓ TO HAVE ✓
DRILL TO HOLE TOLERANCES
.013 TO .136 .003/.002 .36 TO .250 .003/.003
.250 AND ABOVE .005

PROCESSES: NONE

PROJ NO 07200 | SIZE 0 | NEXT ASSY DWG NO 215028

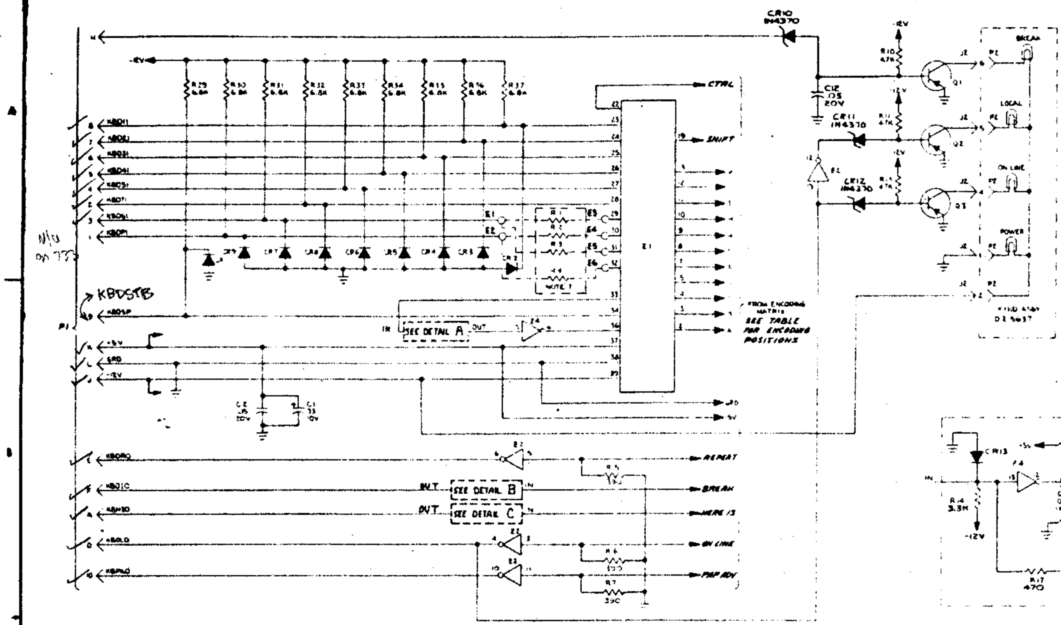
TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON, TEXAS

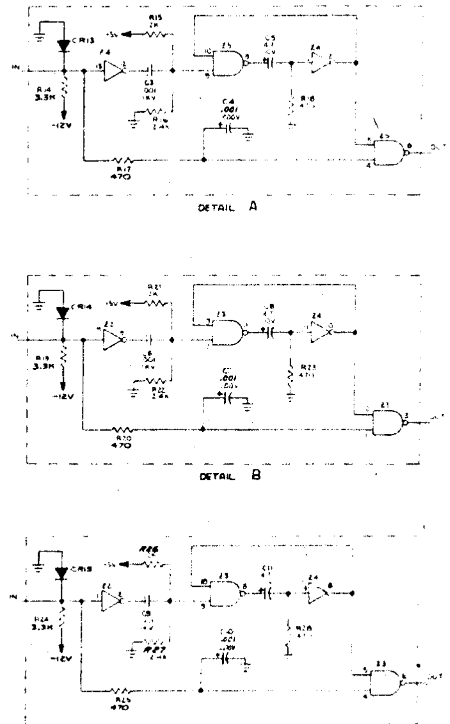
DIAGRAM, LOGIC, EIA INTERFACE

ELETRONIC PRINTER

SCALE NONE | D 215029

215044

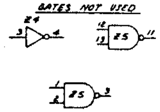




ENCODING POSITIONS			
KEY POSITIONS	ENCODING LINES	KEY POSITIONS	ENCODING LINES
1		41	
2	B&G	42	CTRL
3	B&H	43	SHIFT
4	A&B	44	A&K
5	B&F	45	A&I
6	B&I	46	A&J
7	B&J	47	F&J
8	D&J	48	F&I
9	D&I	49	F&K
10	D&H	50	A&F
11	A&D	51	F&H
12	D&H	52	F&G
13	G&G	53	B&F
14	B&D	54	E&F
15	D&E	55	D&F
16	HERE IS	56	C&F
17	ON LINE	57	C&D
18	PAP ADV	58	
19		59	
20		60	
21		61	
22	C&H	62	
23	H&H	63	
24	A&E	64	SHIFT
25	E&H	65	A&H
26	E&I	66	H&K
27	H&J	67	H&I
28	C&J	68	E&J
29	E&I	69	E&I
30	C&K	70	E&K
31	A&C	71	A&C
32	C&H	72	E&H
33	C&G	73	E&G
34	D&C	74	B&E
35	C&E	75	SHIFT
36	REPEAT	76	
37	BREAK	77	J&K
38		78	
39		81	H&J
40			

NOTES:
UNLESS OTHERWISE SPECIFIED,
1. RESISTANCE VALUES ARE IN OHMS.
2. RESISTORS ARE 1/2 WATT, 5%.
3. CAPACITANCE VALUES ARE IN MICROFARADS.
4. DIODES ARE 1N914.
5. NETWORKS ARE AS FOLLOWS
A) Z1 IS A MOS ROM 2442 3 C) Z3/Z5 IS A SN7400N
B) Z2 AND Z4 ARE SN7404N
6.
7. A) INSTALL ONLY R1, 10K / R2, 10Ω FOR UPPER/LOWER CASE USE ONLY
B) INSTALL ONLY R1, 10Ω / R4, 10Ω FOR UPPER CASE USE ONLY.
C) INSTALL SWITCH PER DETAIL 'D' IN PLACE OF RESISTOR R1 THRU R4 FOR SWITCHABLE UPPER CASE TO UPPER/LOWER CASE USE.
8. TRANSISTORS ARE 2N5447.

GATES NOT USED



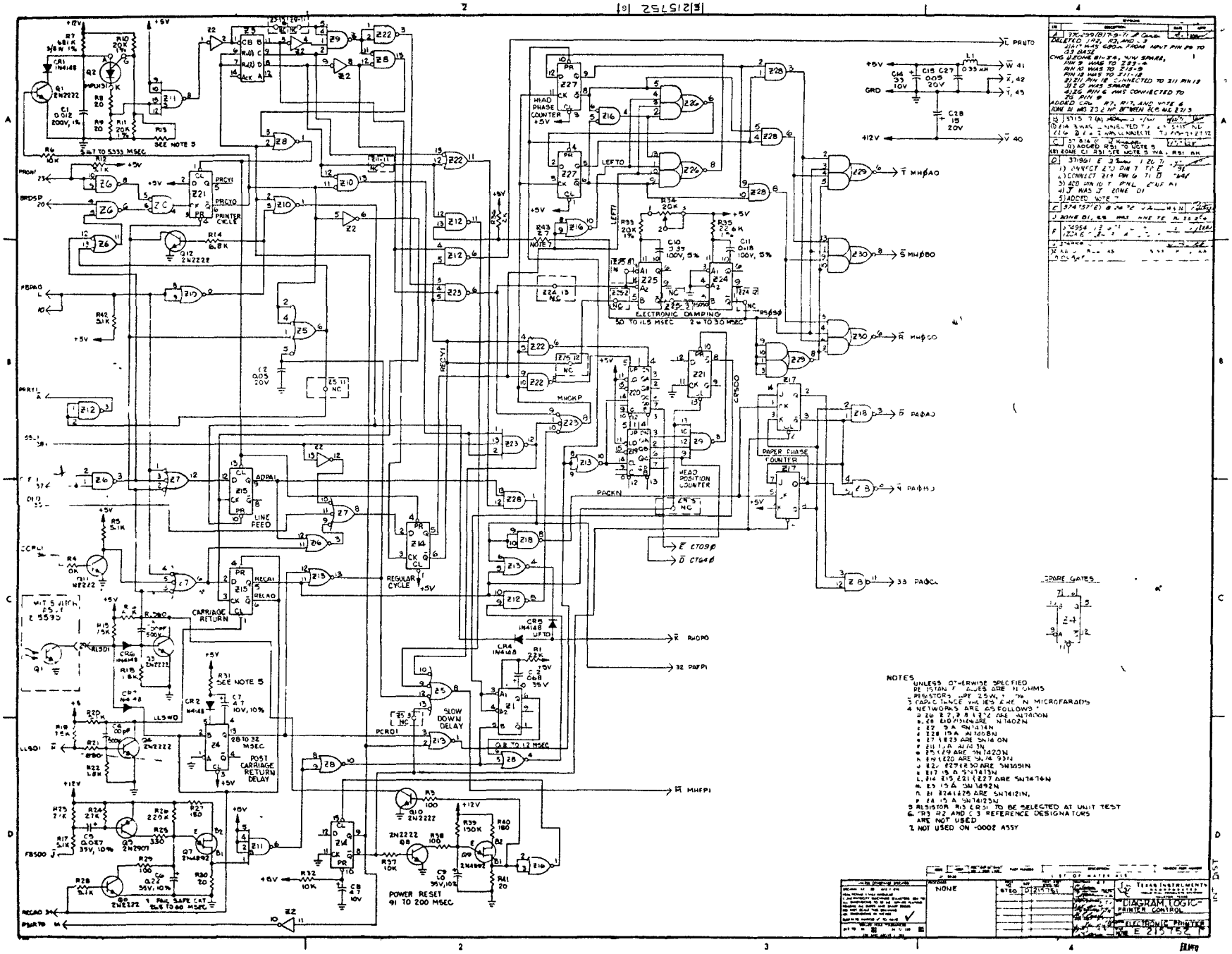
FORMAL RELEASE

TEXAS INSTRUMENTS

LOGIC DIAGRAM

215044

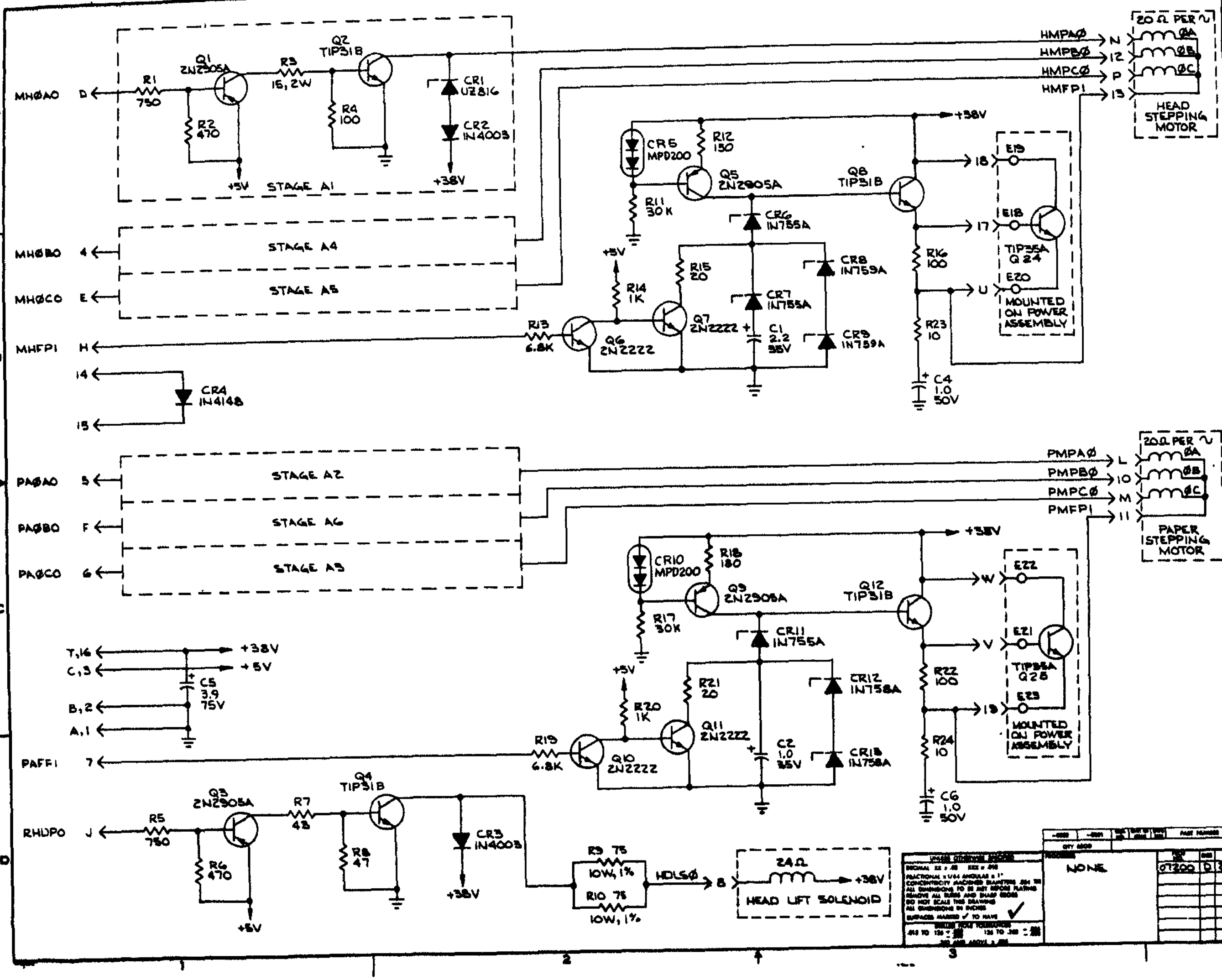
MANUAL 215799



215752

215755

LTR	DESCRIPTION	DATE	APPR
A	367034(B) 4-20-71	4-20-71	
	CHG ZONE D3, CR13 IN965B WAS CR13, IN758A.		
B	365192(B) 4/24/71 1) ADDED C4, C5, C6, R23 + R24. 2) CR9 WAS IN758A 3) CR13 WAS IN965B		
C	970300(A) 7-9-71	7/14/71	
	CHG 1) Q2, Q4, Q8, AND Q12 WERE TIP31A 2) R11 AND R17 WERE 3K 3) R12 AND R18 WERE 150 Ω 4) C1 WAS 4.7 μF 5) C2 WAS 10 μF 6) CR5 AND CR10 WERE IN751A 7) CR9 WAS IN965B ADDED 1) REF DES Q24 AND Q25		



NOTES:

1. ALL RESISTORS ARE 1/4W, 5%.
2. RESISTANCE VALUES ARE IN OHMS.
3. CAPACITANCE VALUES ARE IN MICROFARARDS.
4. STAGES A1 THRU A6 ARE IDENTICAL.

INT DIST

LIST OF MATERIALS

NONE

07200 D 215754

TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON, TEXAS

SCHEMATIC DIAGRAM PRINTER DRIVER

D 215755 C

REVISIONS			
LTR	DESCRIPTION	DATE	APPD
A	297225 (C) 5-8-70 J. Martin CHG. CR1,4,3 & 2 IN4370A WERE P/N 9,785, 1K, 1/4W, 5% Q1 THRU Q4 2N5447 WERE 2N5448.	11MAY70	

NOTES:
UNLESS OTHERWISE SPECIFIED
1. RESISTANCE VALUES ARE IN OHMS.
2. RESISTORS ARE 1/4 WATT, 5%.
3. "PROCEED" IS ON THE MODEL 10 LEGEND, "RECEIVE" IS ON THE MODEL 15 LEGEND
4. "BUSY" IS ON THE MODEL 10 LEGEND "TRANSMIT" IS ON THE MODEL 15 LEGEND
5. "ERROR" IS ON THE MODEL 10 LEGEND "LOCAL" IS ON THE MODEL 15 LEGEND
6. "ALARM" IS ON THE LEGENDS OF MODEL 10 & 15.
7. POWER" IS ON THE LEGENDS OF MODEL 10 & 15.

-0002	-0001	ITEM NO	UNIT OF ISSUE	DWG SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER
QTY REQD					LIST OF MATERIALS		

UNLESS OTHERWISE SPECIFIED
DECIMAL XX ± .02 XXX ± .010
FRACTIONAL ±1/64 ANGULAR ± 1°
CONCENTRICITY MACHINED DIAMETERS .004 TIR
ALL DIMENSIONS TO BE MET BEFORE PLATING
REMOVE ALL BURRS AND SHARP EDGES
DO NOT SCALE THIS DRAWING
ALL DIMENSIONS IN INCHES
SURFACES MARKED ✓ TO HAVE
DRILLED HOLE TOLERANCES
.013 TO .136 ± .003 .136 TO .250 ± .005
.250 AND ABOVE ± .005

PROCESSES: NONE

PROJ NO.	SIZE	NEXT ASSY DWG NO.
07200	D	215926

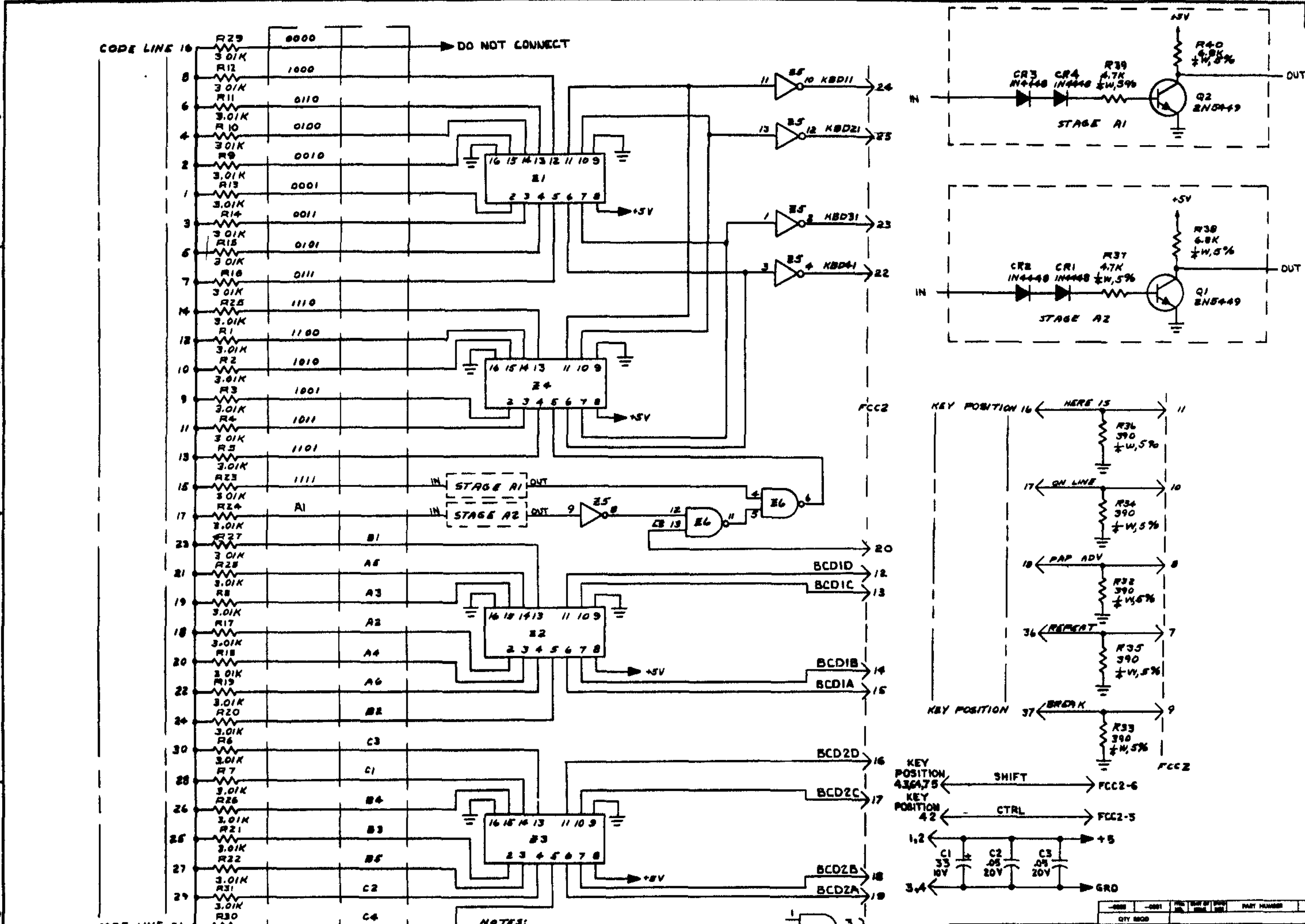
DRAFTSMAN 2-11-70
CKD—DRAFTSMAN
DESIGN ENGINEERS 12-70
APPD—ENGINEER 3-12-70
APPD—MFG

TEXAS INSTRUMENTS
INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON, TEXAS

TITLE SCHEMATIC DIAGRAM, LAMP DRIVER
UNIT
SYSTEM ELECTRONIC PRINTER
SCALE NONE | C | 215927 | A

215927

215933



MATRIX CONNECTIONS

KEY POSITION	1 ST. 4 BITS	2 ND. 3 BITS
2	1101	C1
3	1101	B1
4	1000	B3
5	0100	↑
6	1100	
7	0010	
8	1010	
9	0110	
10	1110	
11	0001	↓
12	1001	B3
13	A1	B2
14	1011	B4
15	1011	B1
16	HERE IS	
17	ON LINE	
18	PAP. ADV.	
22	0011	B5
23	0111	B5
24	1000	A3
25	1110	A4
26	1010	A4
27	0100	A3
28	0010	A3
29	1001	A3
30	1010	A3
31	1001	A4
32	1111	A4
33	0000	A3
34	0000	A6
35	1111	C3
36	REPEAT	
37	BREAK	
38		
42	CTRL	
43	SHIFT LOCK	
44	1000	A4
45	1100	A3
46	0010	A4
47	0110	↑
48	1110	
49	0001	
50	0101	
51	1101	↓
52	0011	A4
53	1101	B3
54	0101	B3
55		
56	1011	C2
57	0101	C2
58		
62		
63		
64	SHIFT	
65	0101	A3
66	0001	A3
67	1100	A4
68	0110	A3
69	0100	A4
70	0111	A4
71	1011	A5
72	0011	A2
73	0111	A2
74	1111	A2
75	SHIFT	
76		
77		
78		
81	0000	C4

NOTES:
5 REFER TO KEYBOARD SPEC. D244211 FOR POSITIONS OF KEY CONNECTIONS.

NOTES:
UNLESS OTHERWISE SPECIFIED
1. RESISTANCE VALUES ARE IN OHMS
2. RESISTORS ARE 1/4 WATT, 1%
3. NETWORKS ARE AS FOLLOWS:
A. Z1 IS MDV10038
B. Z2, Z3, Z4 ARE MW10039
C. Z5 IS SN7404N
D. Z6 IS SN7400N
4. CAPACITANCE VALUES ARE IN MICROFARADS.

LIST OF MATERIALS

NONE

07800 D 215932

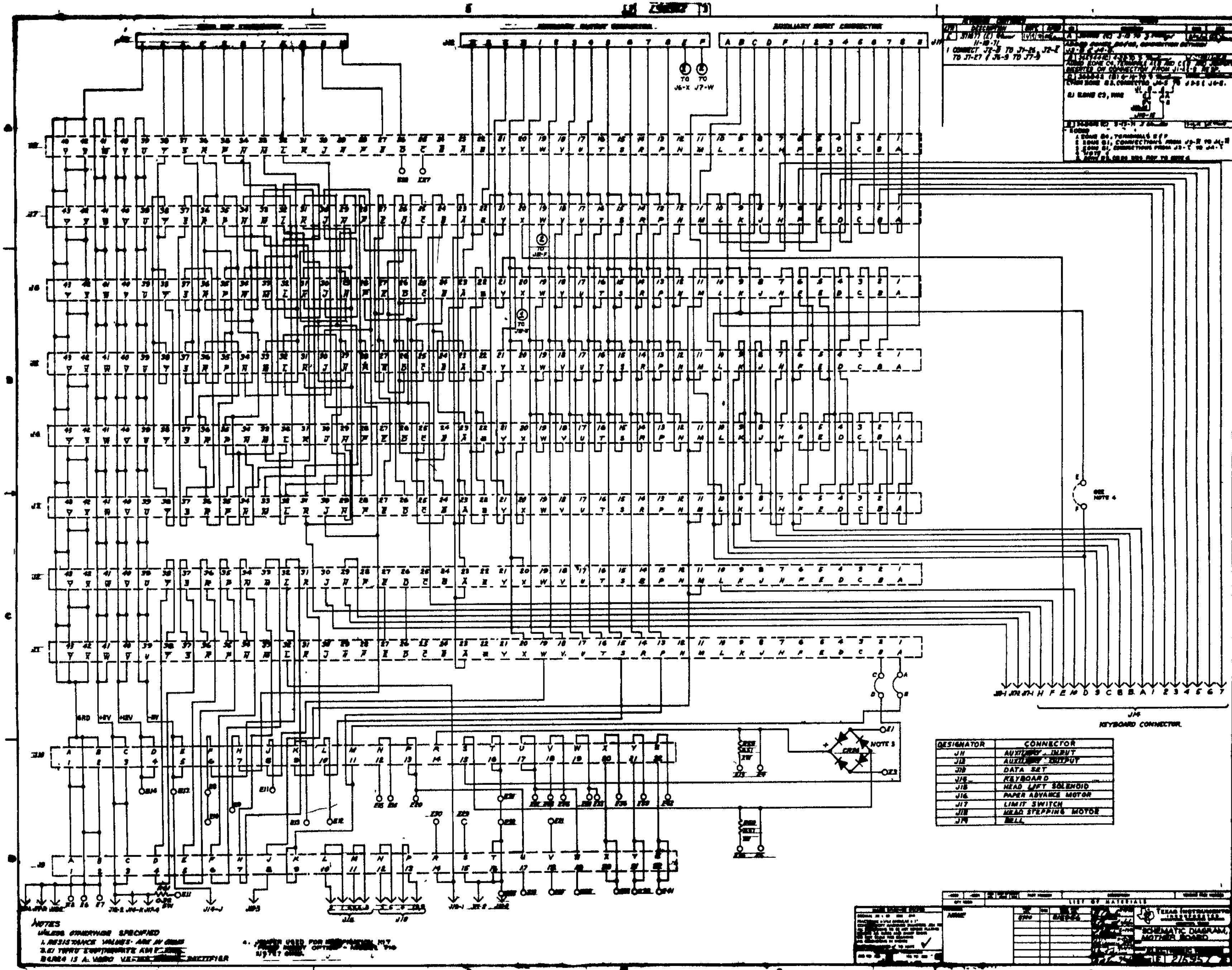
TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON, TEXAS

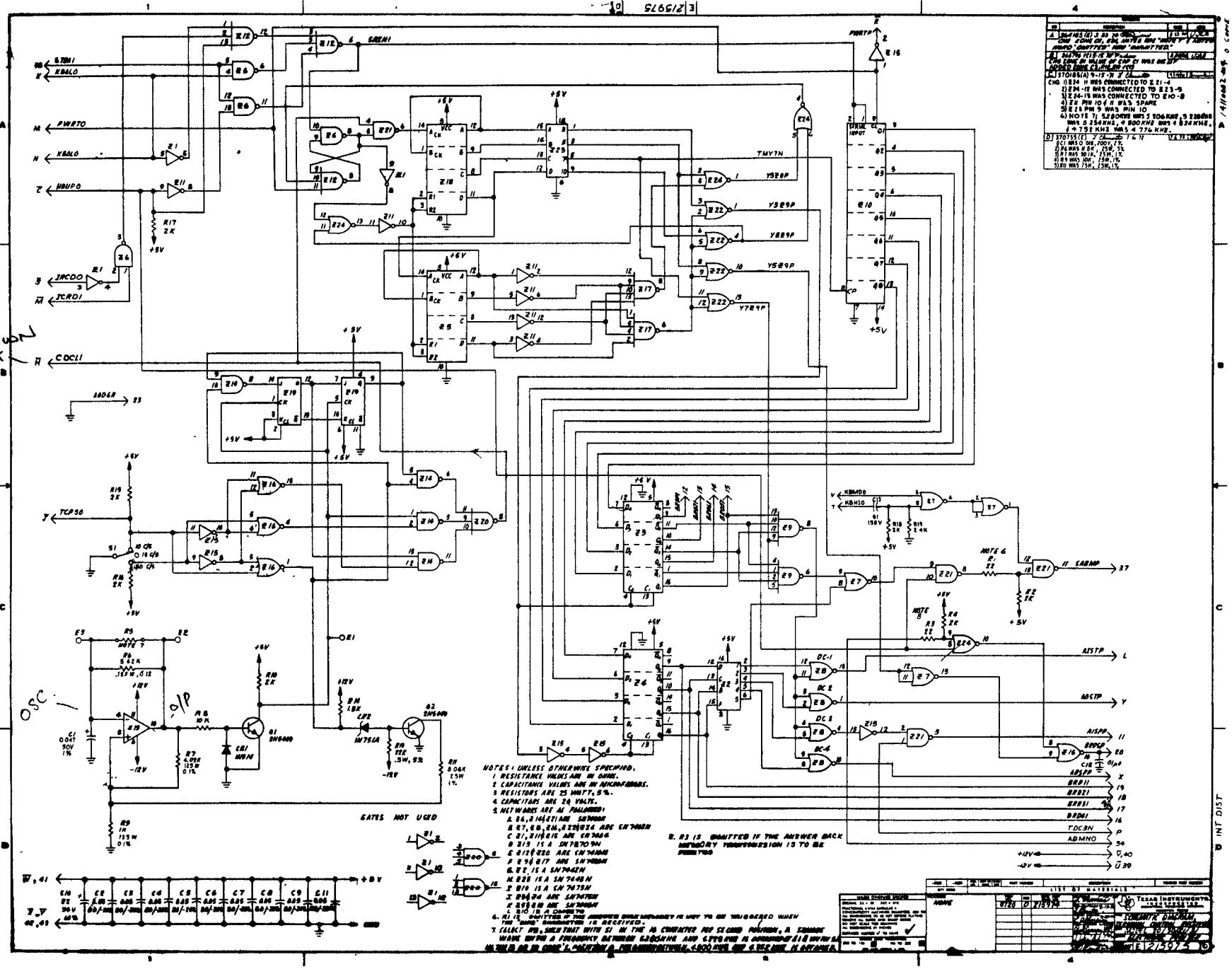
LOGIC DIAGRAM, KEYBOARD ENCODE TTL 20/20
ELECTRONIC PRINTER

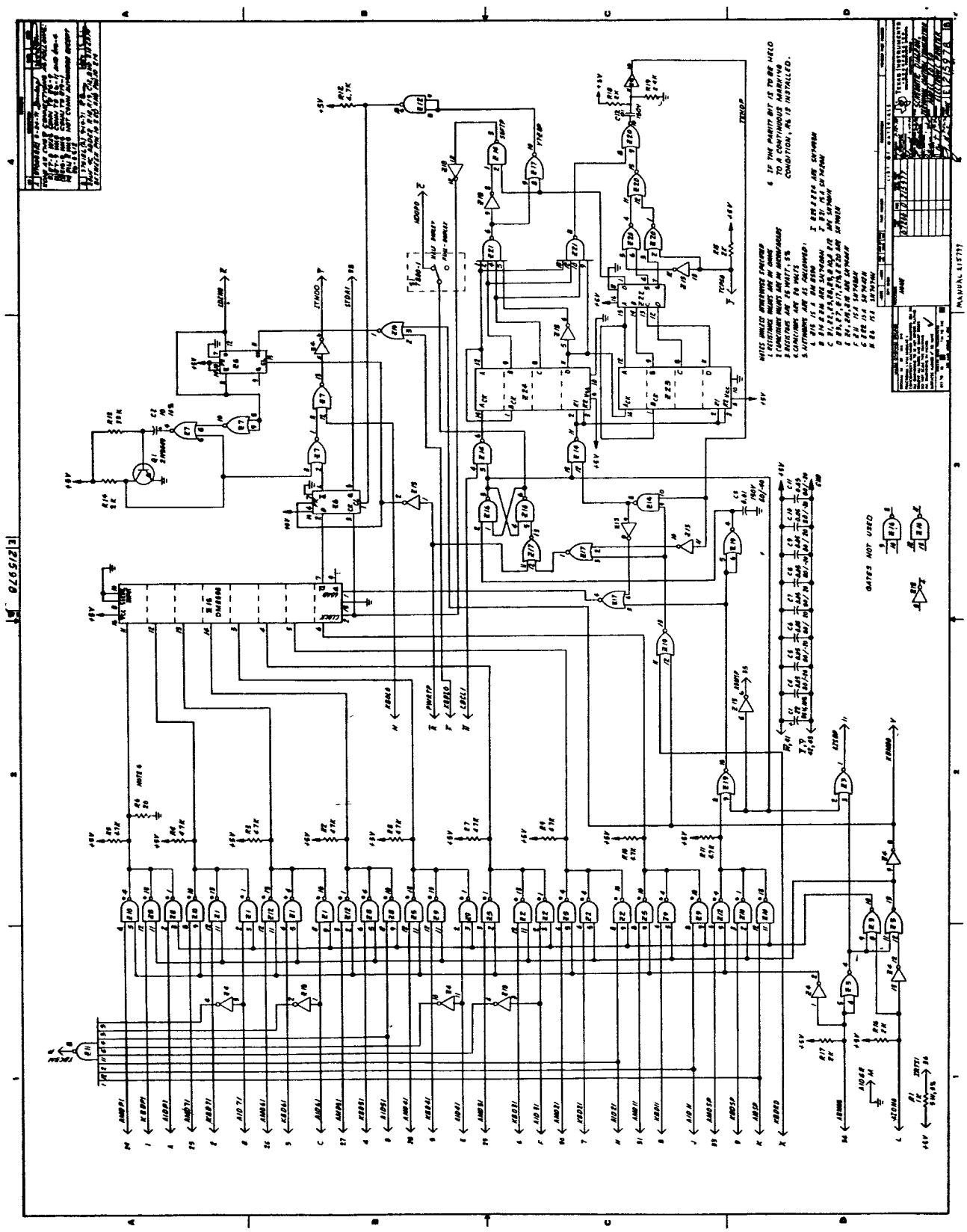
D 215933

MANUAL 215799

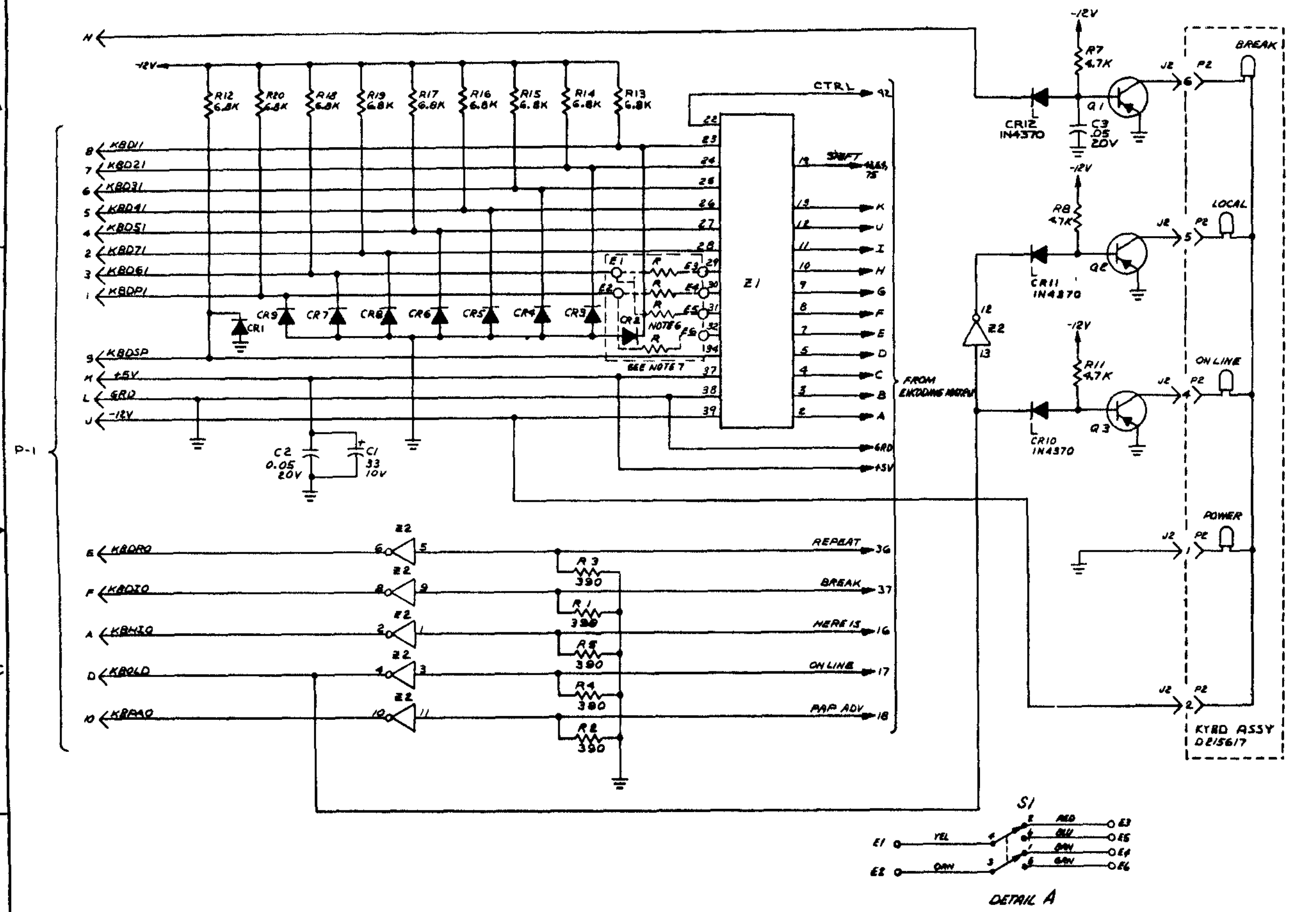
215957


AUXILIARY INPUT CONNECTOR
J6-X J7-W
KEYBOARD CONNECTOR
DESIGNATOR | CONNECTOR
JH | AUXILIARY INPUT
J12 | AUXILIARY OUTPUT
J13 | DATA SET
J14 | KEYBOARD
J15 | HEAD LIFT SOLENOID
J16 | PAPER ADVANCE MOTOR
J17 | LIMIT SWITCH
J18 | HEAD STEPPING MOTOR
J19 | BELL
NOTES
UNLESS OTHERWISE SPECIFIED
1. RESISTANCE VALUES ARE IN OHMS
RECTIFIER
LIST OF MATERIALS
TEXAS INSTRUMENTS
SCHEMATIC DIAGRAM, MOTHER BOARD


COUNTED DOWN CLOCK
OSC
o/p
4.5KHz 30cps
2 KHz 10cps
215975
NOTES: UNLESS OTHERWISE SPECIFIED,
1 RESISTANCE VALUES ARE IN OHMS.
2 CAPACITANCE VALUES ARE IN MICROFARADS.
3 RESISTORS ARE 25 WATT, 5%.
4 CAPACITORS ARE 20 VOLTS.
5 NETWORKS ARE AS FOLLOWED:
A Z4, Z14, Z21 ARE SN7400N
B Z7, Z8, Z11, Z12, Z24 ARE SN7403N
C Z1, Z13, Z16 ARE SN7404
D Z19 IS A SN7870 DM
E Z20, Z22 ARE SN7408N
F Z6, Z17 ARE SN7409N
G Z2, IS A SN7442N
H Z23 IS A SN7448N
I Z10 IS A SN7475N
J Z9, Z18 ARE SN7490N
K Z5 IS A SN74121N
L R1 IS OMITTED IF THE ANSWER BACK MEMORY TRANSMISSION IS TO BE PERFORMED
6. R3 IS OMITTED IF THE ANSWER BACK MEMORY TRANSMISSION IS TO BE PERFORMED
7. (SELECT PER CUSTOMER REQUIREMENTS) WHEN WITH S1 IN THE 10 CYCLE/SEC POSITION, A SQUARE WAVE OF A FREQUENCY BETWEEN 5.5 KHz AND 6.5 KHz IS OBTAINED AT Z18 PIN 12, THE CIRCUIT IS CONSIDERED SATISFACTORY.
GATES NOT USED
TEXAS INSTRUMENTS
SCHEMATIC DIAGRAM
215975-2



215981



REVISIONS

LTR	DESCRIPTION	DATE	APPD
A	366058 (B) 6-18-70 R. Parker CHG 1) ZONES A3 & B3; CR10 WAS R10, CR11 WAS R9 & CR12 WAS R6. 2) ZONE D2 NOTE 8, 2N5447 WAS 2N5448.		
B	366454(B) D. E. Johnson 6-30-70 ADDED ZONE A3, C3 FROM BASE OF Q1 TO GROUND.	1 JUL 70	
C	368818 (D) 2/9/71 ADD 1) "INSTALL SWITCH PER DETAIL A FOR SWITCHABLE UPPER CASE OR UPPER/LOWER CASE" TO NOTE 7. 2) DETAIL A.	2-11-71	
D	371178(D) 12-10-71 M. Decker CHG NOTE 7 WAS CONNECT E1 TO E3 & E2 TO E4 FOR UPPER & LOWER CASE CONNECT E1 TO E5 & E2 TO E6 FOR UPPER CASE ONLY INSTALL SWITCH PER DETAIL A FOR SWITCHABLE UPPER CASE OR UPPER/LOWER CASE.	12-10-71	

KEY POSITIONS	ENCODING LINES	KEY POSITIONS	ENCODING LINES
1		41	
2	B&G	42	CTRL
3	B&H	43	SHIFT
4	A&B	44	A&K
5	B&K	45	A&I
6	B&I	46	A&J
7	B&J	47	F&J
8	D&J	48	F&I
9	D&I	49	F&K
10	D&K	50	A&F
11	A&D	51	F&H
12	D&H	52	F&G
13	D&G	53	B&F
14	B&D	54	E&F
15	D&E	55	D&F
16	HERE IS	56	C&F
17	ON LINE	57	C&D
18	PAP ADV	58	
19		59	
20		60	
21		61	
22	I&K	62	
23	G&H	63	
24	A&G	64	SHIFT
25	G&K	65	A&H
26	G&I	66	H&K
27	G&J	67	H&I
28	C&J	68	E&J
29	C&I	69	E&I
30	C&K	70	E&K
31	A&C	71	A&E
32	C&H	72	E&H
33	C&G	73	E&G
34	B&C	74	B&E
35	C&E	75	SHIFT
36	REPEAT	76	
37	BREAK	77	J&K
38		78	
39		81	H&J
40			

NOTES:
UNLESS OTHERWISE SPECIFIED;
1. RESISTANCE VALUES ARE IN OHMS.
2. RESISTORS ARE 1/4 WATT, 5%.
3. CAPACITANCE VALUES ARE IN µF
4. DIODES ARE 1N914
5. NETWORKS ARE AS FOLLOWS:
A) Z1 IS A MOS ROM 244213
B) Z2 IS A SN7406N
6. RESISTORS USED AS JUMPERS ARE 10Ω 1/2 WATT
7. CONNECT E1 TO E5 & E2 TO E6 FOR UPPER CASE ONLY (215979-0001 ASSY). SWITCH INSTALLED AT HIGHER ASSEMBLY (PER DETAIL A) FOR SWITCHABLE UPPER OR UPPER/LOWER CASE (-0002 ASSY 215979)
8. TRANSISTORS ARE 2N5447.

LIST OF MATERIALS

PROCESSES: NONE

8720 | D | 215979

TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION HOUSTON TEXAS

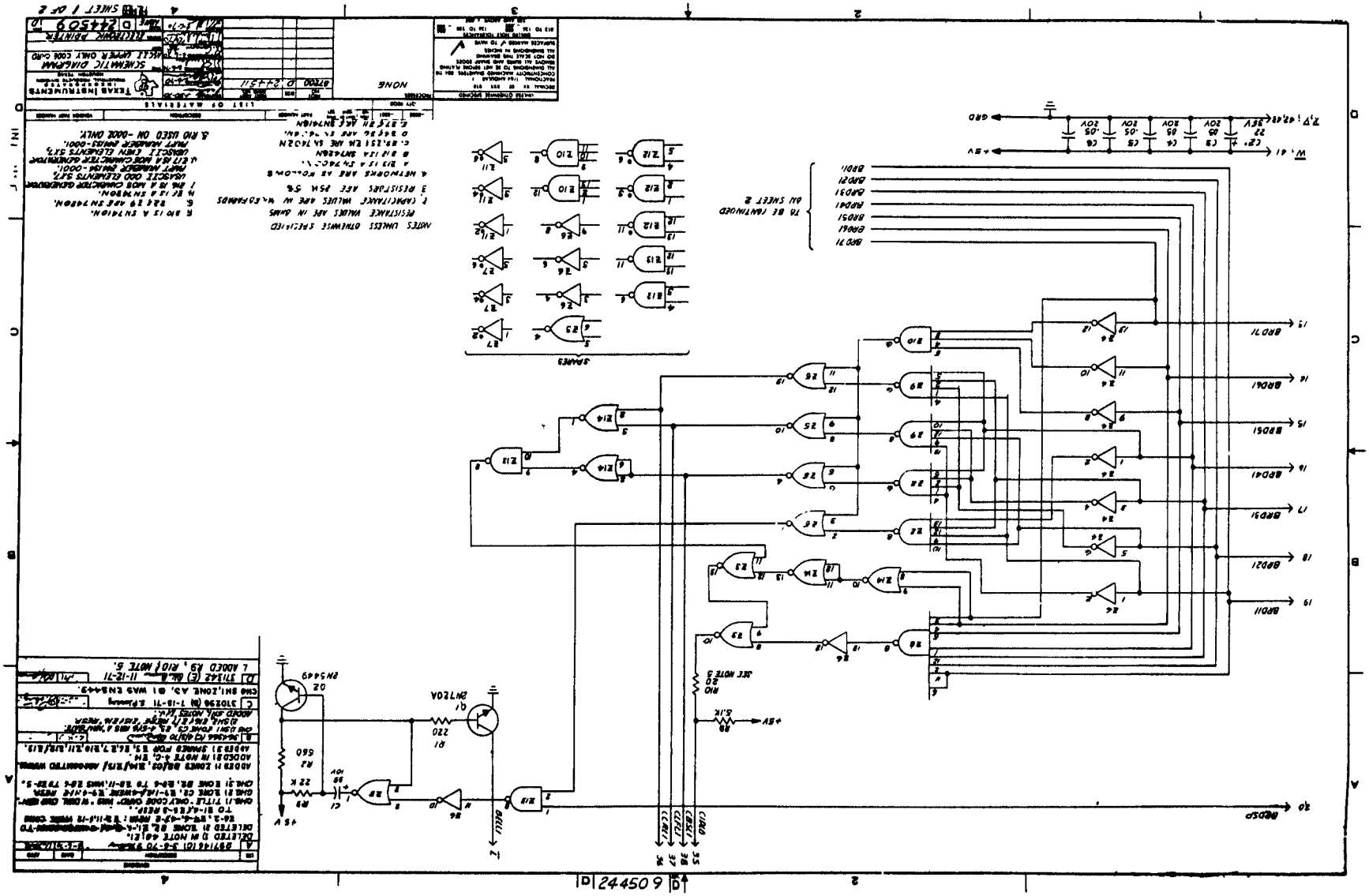
LOGIC DIAGRAM KEYBOARD ENCODER ASCII (MOS)

ELECTRONIC PRINTER

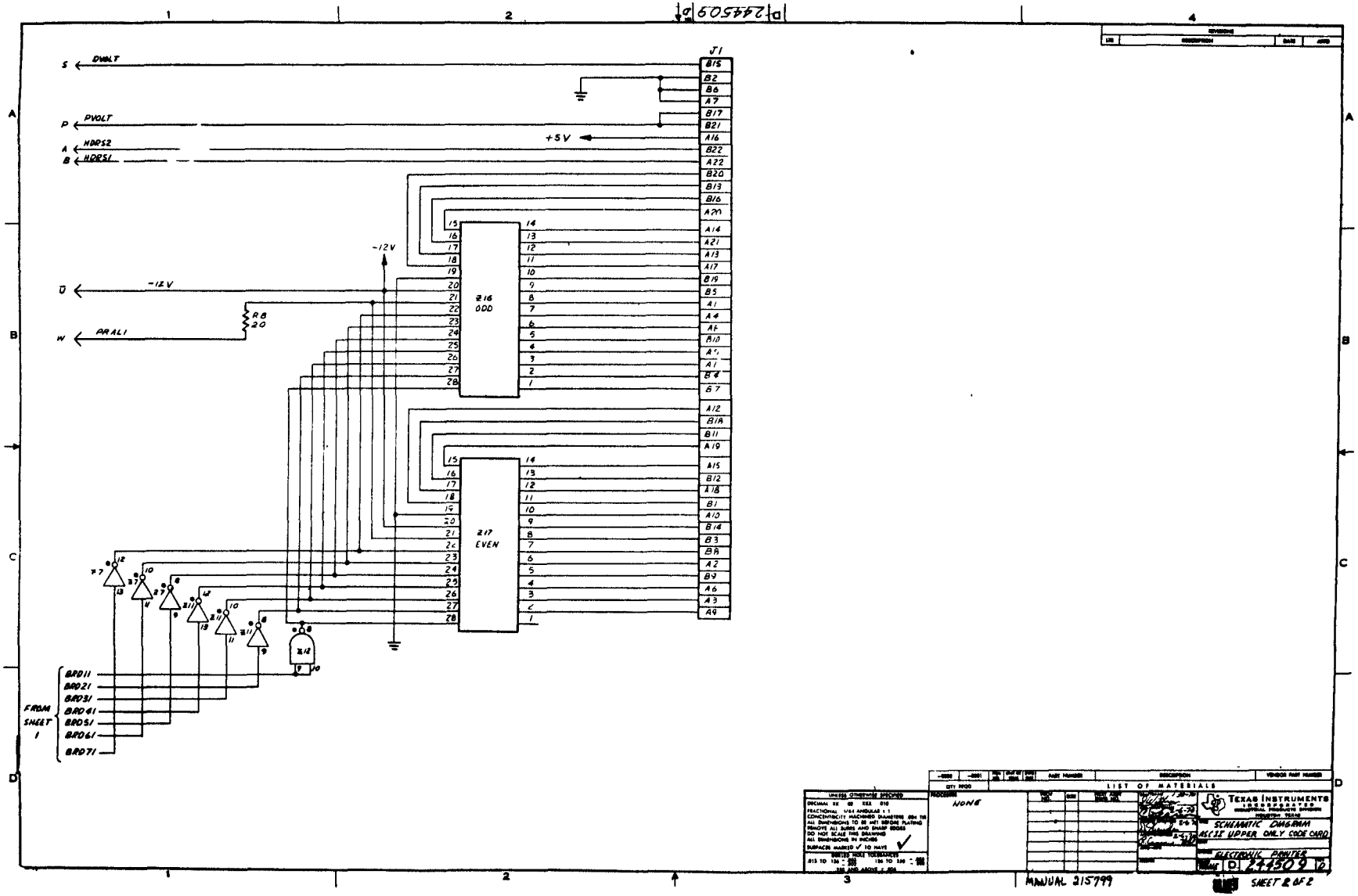
NONE | D | 215981 | D

MANUAL 215799

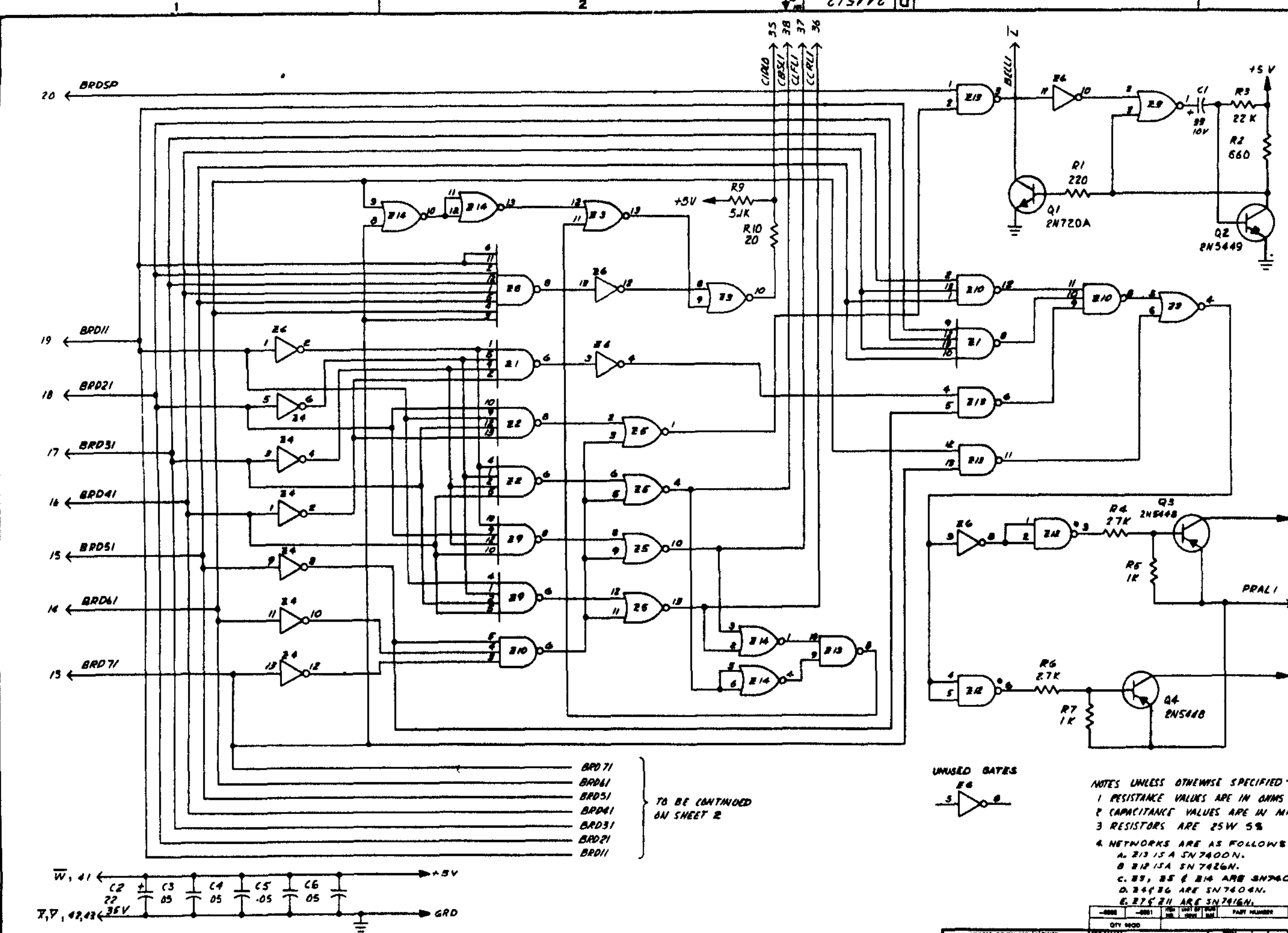
INT DIST



244509-1


244509 D
J1
S ← DVOLT
P ← PVOLT
A ← HDRS2
B ← HDRS1
+5V
-12V
D ← -12V
W ← PRALI
R8 20
216 ODD
217 EVEN
FROM SHEET 1
BRD11
BRD21
BRD31
BRD41
BRD51
BRD61
BRD71
LIST OF MATERIALS
NONE
TEXAS INSTRUMENTS
SCHEMATIC DIAGRAM
ASR33 UPPER ONLY CODE CARD
ELECTRONIC PUNCH
D 244509
SHEET 2 OF 2
MANUAL 215799

244512-1



Revisions

LTR	DESCRIPTION	DATE	APPD
A	[illegible]	[illegible]	[illegible]
B	297140 (C) 3-5-70 R. Parker CHG 1) TITLE, CODE CARD WAS "W/DUAL CHAR GEN." 2) ZONE C-2 TERMS. Z9-1,2&4, WERE Z9-4,1&2 RESP. 3) ZONE C-3 TERMS. Z6-6&2, WERE Z6-6&5 RESP. 4) ZONE B-3 TERMS. Z3-5&6, WERE INTERCHG. 5) ZONE B-2 Z8-6, WAS CONN. TO Z8-5. 6) ZONE A-2 Z3-11, WAS CONN. TO Z1-6. 7) ZONE A-2 Z3-12, WAS CONN. TO Z5-3. ADDED 1) ZONES A2, C2 & C3; Z14-8,9&10, Z14-11,12&13; Z14-1,2&3; Z14-4,5&6, AND Z13-8,9&10 AND ASSOC WIRING. 2) TO NOTE 4C, Z14. 3) UNUSED GATE Z6-5&6.	3-6-70	[illegible]
C	364965(C) 4-8-70 [illegible] CHG SH2 REF DESIG Z15, Z16 & Z17 WERE Z14, Z15 & Z16 RESP. ADDED 1) SH1 NOTES 4.I, 4.J & 4.K. 2) CONN BET. Z9-13 & Z13-10.	4-9-70	[illegible]
D	370298 (B) 7-15-71 [illegible] CHG: 1) SH 1, ZONE A3, Q1 WAS 2N5449.	7-20-71	[illegible]
E	371342 E [illegible] 11-16-71 ADD R9 & R10 TO F/D ZONE A2 SH 1	[illegible]	[illegible]

UNUSED GATES

NOTES UNLESS OTHERWISE SPECIFIED:

1. RESISTANCE VALUES ARE IN OHMS
2. CAPACITANCE VALUES ARE IN MICROFARADS
3. RESISTORS ARE .25W 5%
4. NETWORKS ARE AS FOLLOWS
   - A. Z13 IS A SN7400N.
   - B. Z12 IS A SN7426N.
   - C. Z3, Z5 & Z14 ARE SN7402N.
   - D. Z4 & Z6 ARE SN7404N.
   - E. Z7 & Z11 ARE SN7416N.
   - F. Z10 IS A SN7410N.
   - G. Z1, Z2 & Z9 ARE SN7420N.
   - H. Z8 IS A SN7430N.
   - I. Z15 IS A MOS CHARACTER GENERATOR TMS-2A-4881 USASCII 5X5 ELEM, PART NO. 218703-0001.
   - J. Z16 IS A MOS CHARACTER GENERATOR USASCII ODD ELEMENTS 5X7, PART NO. 244134-0001.
   - K. Z17 IS A MOS CHARACTER GENERATOR USASCII EVEN ELEM 5X7, PART NO. [illegible]

-0000	-0001	ITEM NO.	UNIT OF ISSUE	QTY REQD	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER
QTY REQD		LIST OF MATERIALS					

UNLESS OTHERWISE SPECIFIED
DECIMAL .XX ± .02 .XXX ± .010
FRACTIONAL ± 1/64 ANGULAR ± 1°
CONCENTRICITY MACHINED DIAMETERS .004 TIR
ALL DIMENSIONS TO BE MET BEFORE PLATING
REMOVE ALL BURRS AND SHARP EDGES
DO NOT SCALE THIS DRAWING
ALL DIMENSIONS IN INCHES
SURFACES MARKED ✓ TO HAVE ✓
DRILLED HOLE TOLERANCES

PROCESSES: NONE

PROJ NO.	SIZE	NEXT ASSY DWG NO.
87200	D	244511

TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON, TEXAS

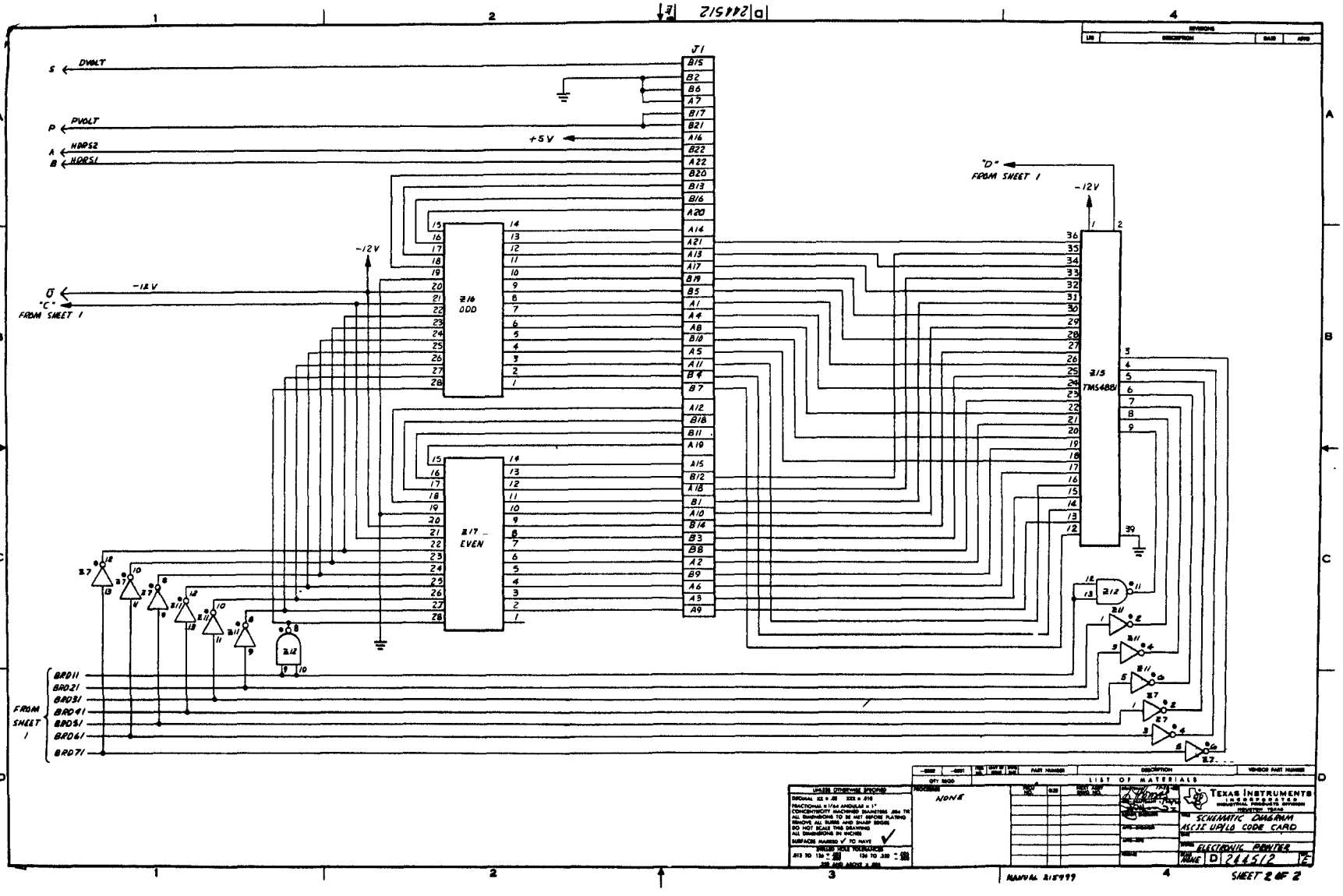
SCHEMATIC DIAGRAM
ASCII UP/LO CODE CARD
ELECTRONIC PRINTER

SCALE NONE | D | 244512 | E

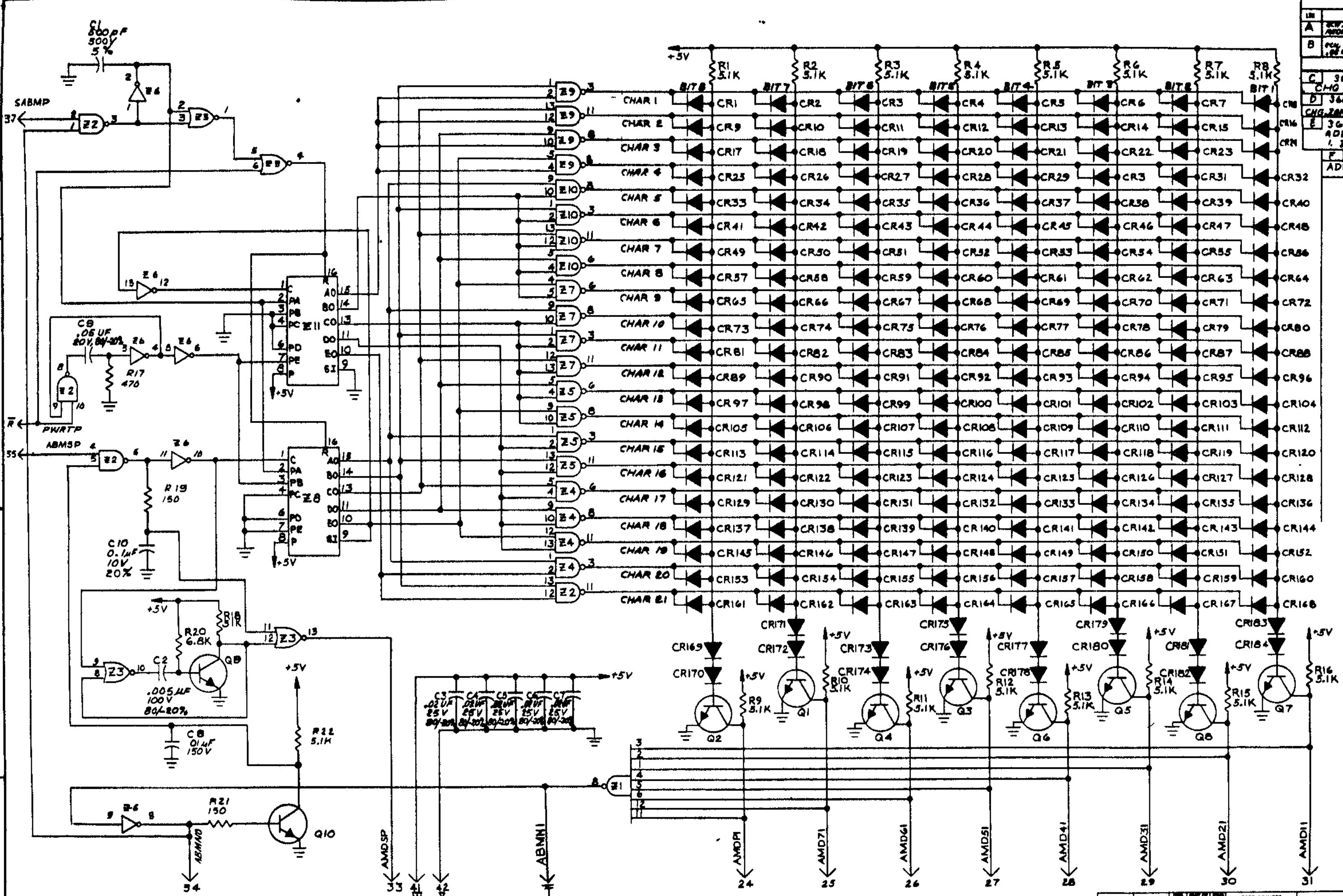
MANUAL 215779

SHEET 1 OF 2

INT DIST


244512
DVOLT
PVOLT
+5V
HDRS2
HDRS1
-12V
"C"
FROM SHEET 1
"D"
FROM SHEET 1
Z16
ODD
Z17
EVEN
Z15
TMS4801
Z12
FROM SHEET 1
BRD11
BRD21
BRD31
BRD41
BRD51
BRD61
BRD71
NONE
LIST OF MATERIALS
TEXAS INSTRUMENTS
SCHEMATIC DIAGRAM
ASCII UP/LO CODE CARD
ELECTRONIC PRINTER
244512
SHEET 2 OF 2
MANUAL 2154999

244512-2



LTR	DESCRIPTION
A	
B	
	FORMAL RELEASE
C	363488(C) 4-3-70 CHG C1 & C8 WAS .001UF, 100V & .05UF, 20V RESP.
D	366630 (C) 5-20-70 CHG ZONE D1, C8 WAS .1UF 10V 80/-20%
E	369822(B) 3-17-71 ADDED 1. ZONE D1, Q10, R21, R22
F	367058(B) 7-21-72 ADDED 1) ZONE D1; CONNECTED Z1-8 TO

NOTES:
1. RESISTANCE VALUES ARE IN OHMS.
2. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE .25 W, 5%.
3. UNLESS OTHERWISE SPECIFIED ALL DIODES ARE IN914B.
4. UNLESS OTHERWISE SPECIFIED ALL TRANSISTORS ARE 2N5449.
5. UNLESS OTHERWISE SPECIFIED ALL NETWORKS ARE AS FOLLOWS:
   A. Z8 & Z11 ARE SN7496N
   B. Z1 IS A SN7430N
   C. Z3 IS A SN7402N
   D. Z2, Z4, Z5, Z7, Z9, Z10, ARE SN7400N
   E. Z6 IS A SN7404N

LIST OF MATERIALS

NONE

8720 D 244531

TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON, TEXAS

LOGIC DIAGRAM, ANSWER-BACK MEMORY
ELECTRONIC PRINTER

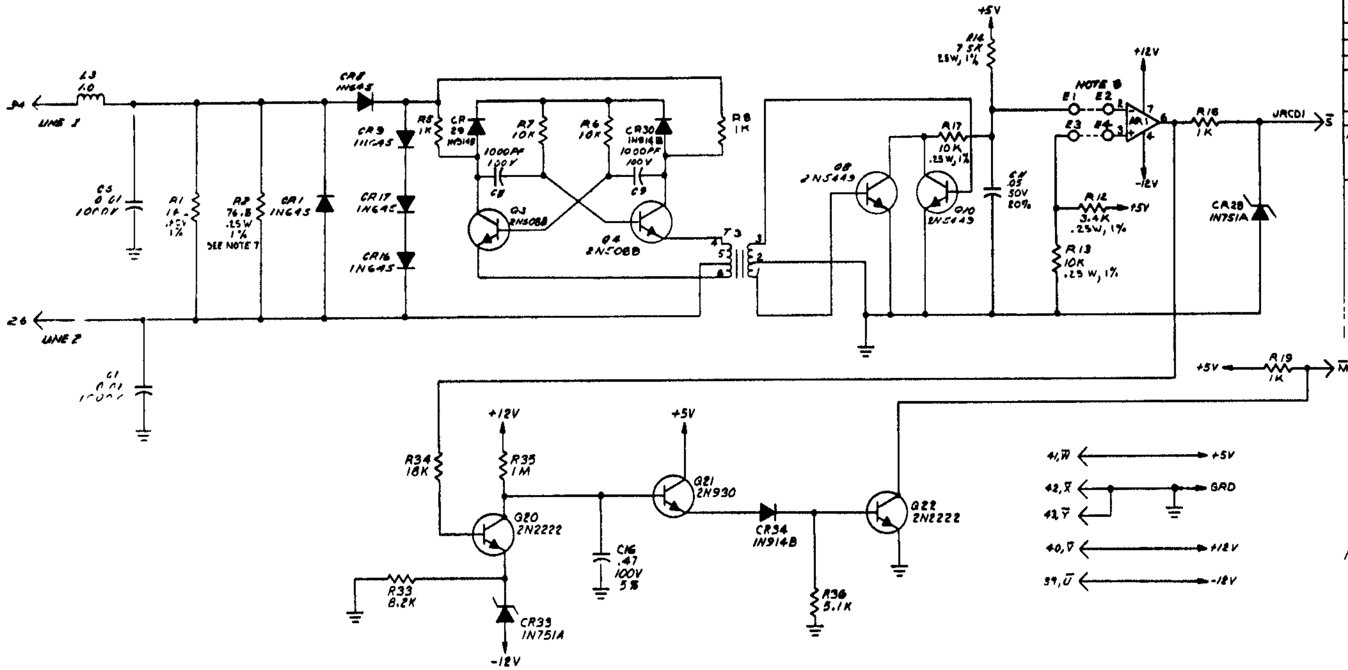
NONE D 244532 F

MANUAL 215799

INT DIST

244532

244556



REVISIONS

LTR	DESCRIPTION	DATE	APPD
A	3xxxxx(C) 5/18/70 CHANGE 1) R18 VALUE WAS 7.5K	5/15/70	
B	366051 (B) 7-7-70 CHG (1) ZONE B2, C8, WAS 500 PF, 1000V (2) ZONE A3, R14, WAS 10K (3) ZONE B3, C11, WAS 0.1 50V, 20%; ADDED (1) NOTE 7 (2) ZONE B1, SEE NOTE 7	7-7-70	
C	366355 (C) 8-18-70 1) VALUE OF C8 WAS 1500pf 500V.	8-19-70	
D	366338 (B) 9-10-70 CHG. 1) ZONE B2, R7/R6 VALUE WAS 24K, C9 VALUE WAS 500 PF / Q3 Q4 WAS 2N5449. 2) ZONE B2, WIRING CHG. MADE ADDED ZONE B2, CR29 / CR30.		
E	369163 (B) 4-30-71 VALUE OF R1 WAS 150, R2 WAS 68	5-5-71	
F	376131 (B) 6-6-72 CHG: 1) R1 WAS 300 Ω, 5%; 2) R2 WAS 150 Ω, 5%; 3) R12 WAS 2.7K Ω, 5%; 4) R14 WAS 5%; 5) R13 & R17 WERE 5%		
G	367056 (E) A. Conti 7-27-72 ADDED 1) Q20 Q21 Q22 2) R33 R34 R35 R36 3) CR33 CR34 4) C16	7/31/72	

NOTES UNLESS OTHERWISE SPECIFIED
1. RESISTANCE VALUES ARE IN OHMS
2. RESISTORS ARE .25W ±5%
3. CAPACITANCE VALUES ARE IN MICROFARADS
4. T3 IS A LM39-1 TRANSFORMER
5. INDUCTANCE VALUES ARE IN HENRIES
6. CONNECT E1 TO E4 & E3 TO E2 TO INVERT RECEIVED DATA.
7. REMOVE R2 FOR 20 MA ...

UNLESS OTHERWISE SPECIFIED
DECIMAL XX ± .02 XXX ± .010
FRACTIONAL ± 1/64 ANGULAR ± 1°
CONCENTRICITY MACHINED DIAMETERS .004 TIR
ALL DIMENSIONS TO BE MET BEFORE PLATING
REMOVE ALL BURRS AND SHARP EDGES
DO NOT SCALE THIS DRAWING
ALL DIMENSIONS IN INCHES
SURFACES MARKED ✓ TO HAVE ✓

PROCESSES: NONE

LIST OF MATERIALS

NEXT ASSY: D 244555

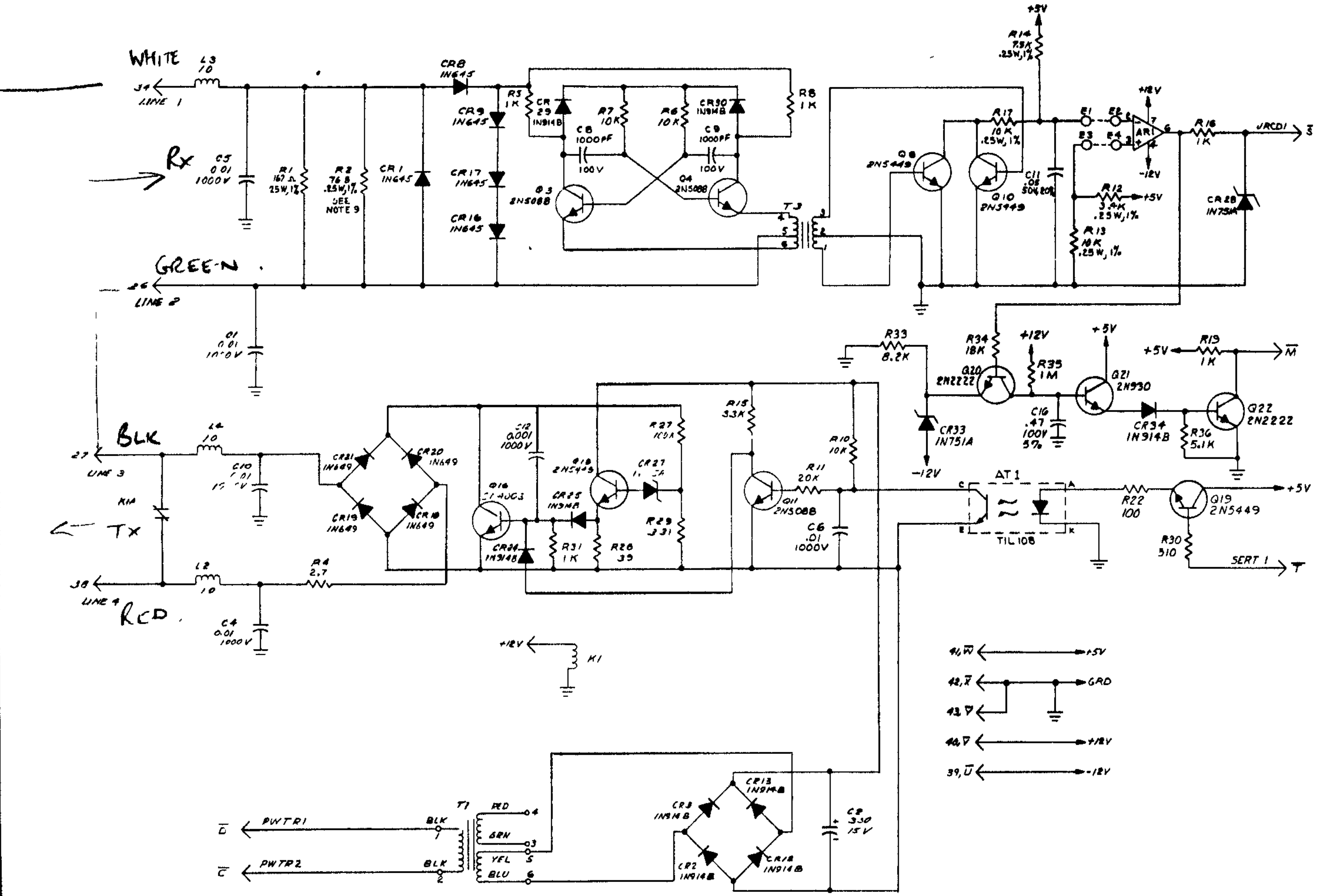
TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON, TEXAS

SCHEMATIC DIAGRAM ... ELECTRONIC ...

D 244556

MANUAL 215799

D 244558 H



LTR	DESCRIPTION	DATE	APPD
A	294682 (C) 2-20-70 CHG, ZONE B3, R11 WAS 5.1K	3/4/70	
B	365940 (E) 5-26-70 CHG. ZONE A3 R12 WAS 7.5K.		
C	366049 (B) 7-7-70 CHG ZONE A2, C8 WAS 500 PF, 1000V ZONE A3, C11 WAS 0.1, 50V, 20%, ZONE A3, R14 WAS 10K; ZONE B3, C15 WAS 500 PF 1000V. ADDED NOTE 9 AND ZONE A1, SEE NOTE 9 TO R2		
D	366355 (C) 8-18-70 1) VALUES OF C8 & C15 WAS 1500pf 500V	8-17-70	
E	366358 (B) 9-10-70 CHG 1) ZONE A2, R6 & R7 VALUE WAS 24K. 2) ZONE B3, R23 & R24 VALUE WAS 24K 3) ZONE A2, C9 VALUE WAS 500PF, 1000V. 4.) ZONE A2, Q3 & Q4 WAS 2N5449. 5) ZONE B3, C14 VALUE WAS 500 PF, 1000V. 6.) ZONE B3, Q14 & Q15 WAS 2N5449. 7) ZONE B3, GND FROM EMITTER Q15 TO PIN 5 OF T4 R30 VALUE WAS 5.1K 8) ZONE B2, R15 VALUE WAS 1K, C6 VALUE WAS 0.01, 1000V & Q11 WAS 2N5449. ADDED 1) ZONE A2 CR29 & CR30 2) ZONE B2, R31. 3) ZONE B3, CR31 & CR32.		
F	369163 (B) 4-30-71 DELETED Q5, Q6, Q14 & Q15. CR31 & CR32. R23, R24 & R25. C14 & C15. T4 AND ASSOCIATED WIRING. CHANGED VALUE OF R1, WAS 150. R2 WAS 68 R22 WAS 1K. C6 WAS .2, 25V. ADDED AT1 AND ASSOCIATED WIRING.		
G	376131 (B) 6-6-72 CHG 1) R1 WAS 300Ω, 5%; 2) R2 WAS 150Ω, 5%; 3) R12 WAS 2.7KΩ, 5%; 4) R14 WAS 5%; 5) R13 & R17 WERE 5%		
H	367056 (E) 7-27-72 ADDED 1) Q20, Q21, Q22 2) R33, R34, R35, R36 3) CR33, CR34 4) C16		

NOTES UNLESS OTHERWISE SPECIFIED
1 RESISTANCE VALUES ARE IN OHMS
2 RESISTORS ARE .25W 5%.
3 K INDICATES THOUSANDS OF OHMS
4 CAPACITANCE VALUES ARE IN MICROFARADS
5 T3 IS A UM 50-M TRANSFORMER
6 T1 IS AN ... TYPE AM 50.8
7 K1 IS A STRUTHERS-DUNN REED RELAY TYPE 9R18 (12V)
8 INDUCTANCE VALUES ARE IN MILLIHENRIES
9 REMOVE R2 FOR 20 MA. OPERATION

-0002	-0001	ITEM NO.	UNIT OF ISSUE	DWG SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER
QTY REQD						LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED
DECIMAL .XX ±.03 .XXX ±.010
FRACTIONAL ±1/64 ANGULAR ±1°
CONCENTRICITY MACHINED DIAMETERS .004 TIR
ALL DIMENSIONS TO BE MET BEFORE PLATING
REMOVE ALL BURRS AND SHARP EDGES
DO NOT SCALE THIS DRAWING
ALL DIMENSIONS IN INCHES
SURFACES MARKED ✓ TO HAVE ✓
DRILLED HOLE TOLERANCES

PROCESSES: NONE

PROJ NO: 8720 | SIZE: D | NEXT ASSY DWG NO.: 244555

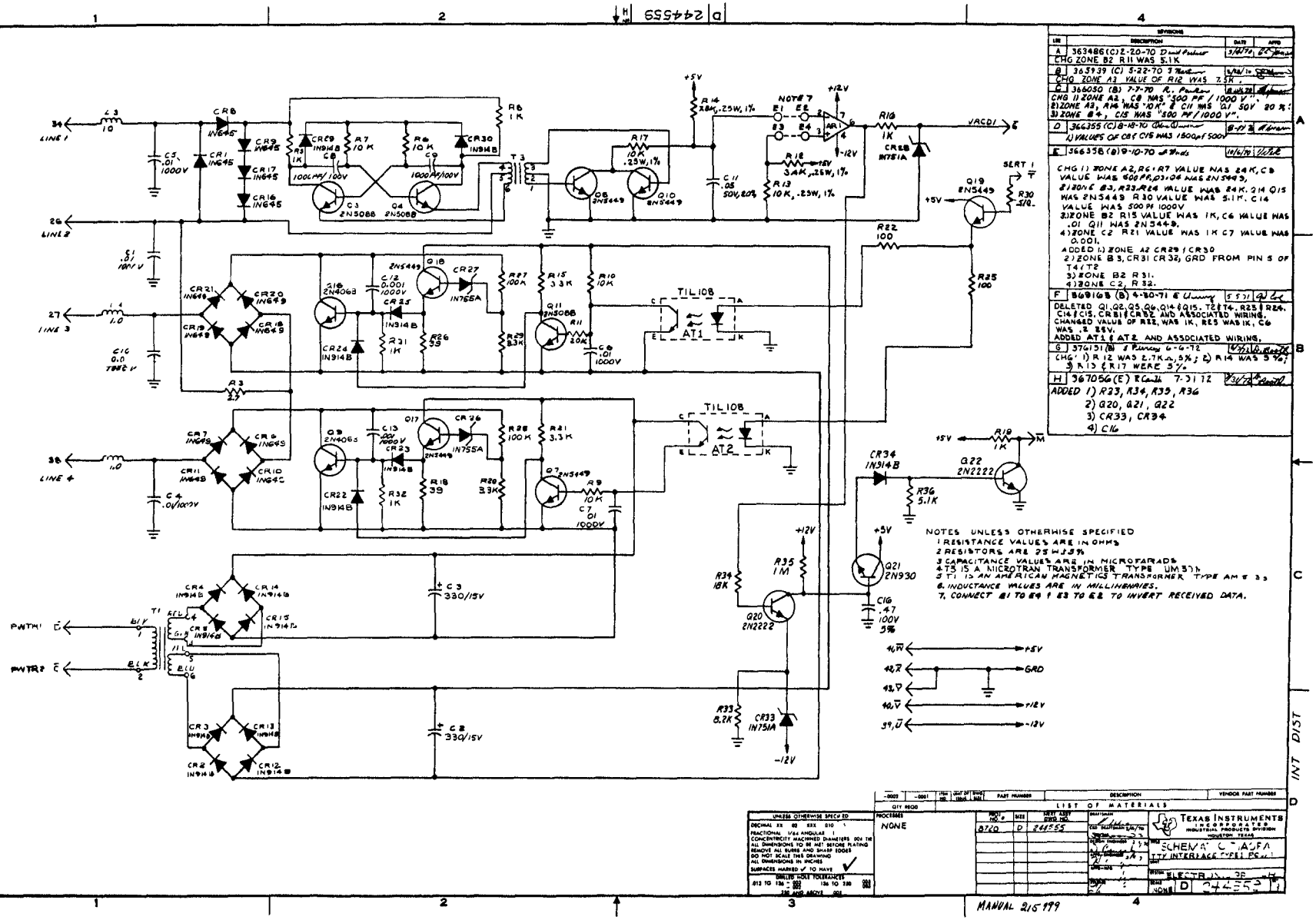
TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION HOUSTON TEXAS

TITLE: SCHEMATIC DIAGRAM

ELECTRONIC PRINTER

D 244558 | REV H

INT DIST



LTR	DESCRIPTION	DATE	APPD
A	363486(C) 2-20-70 D Ford Product CHG ZONE B2 R11 WAS 5.1K	3/10/70	
B	363939 (C) 5-22-70 T Hudson CHG ZONE A3 VALUE OF R12 WAS 7.5K	5/26/70	
C	366050 (B) 7-7-70 R. Pontiac CHG 1) ZONE A2, C8 WAS "500 PF / 1000 V". 2) ZONE A3, A16 WAS "10K" & C11 WAS .01 50V 20 %. 3) ZONE B4, C05 WAS "500 PF/1000 V".	8/4/70	
D	366355 (C) 8-18-70 Chevrolet 1) VALUES OF C8 & C16 WAS 1500 pf 500V	8-19-70	
E	366358 (B) 9-10-70 AMC Jeeps CHG 1) ZONE A2, R6 & R7 VALUE WAS 24K, C8 VALUE WAS 500 PF, Q3 & Q4 WAS 2N5088. 2) ZONE B3, R23, R24 VALUE WAS 24K. 2N Q15 WAS 2N5449 R30 VALUE WAS 5.1K. C14 VALUE WAS 500 PF 1000V 3) ZONE B2 R15 VALUE WAS 1K, C6 VALUE WAS .01 Q11 WAS 2N5449. 4) ZONE C2 R21 VALUE WAS 1K C7 VALUE WAS 0.001. ADDED 1) ZONE A2 CR29 & CR30 2) ZONE B3, CR31 CR32, GRD FROM PIN 5 OF T4/T2 3) ZONE B2 R31. 4) ZONE C2, R32.	11/4/70	
F	369168 (B) 4-30-71 E Chevy DELETED Q1, Q2, Q5, Q6, Q14 & Q15. T2, T4, R25 & R26. C14 & C15. CR31 & CR32 AND ASSOCIATED WIRING. CHANGED VALUE OF R22, WAS 1K, R25 WAS 1K, C6 WAS .5 25V. ADDED AT1 & AT2 AND ASSOCIATED WIRING.	5 5 71	
G	374151 (B) E Chevy 6-6-72 CHG 1) R12 WAS 2.7K Ω, 5%; 2) R14 WAS 5 %; 3) R15 & R17 WERE 5%.	6/23/72	
H	376056 (E) E Cavalier 7-31-72 ADDED 1) R23, R34, R39, R36 2) Q20, Q21, Q22 3) CR33, CR34 4) C16	8/24/72	

-0003	-0001	ITEM NO.	QUAN PER ASSY	QUAN PER MAKE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER
QTY REQD							

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DECIMAL XX ±02 XXX ±010
FRACTIONAL 1/64 ANGULAR ±1
CONCENTRICITY MACHINED DIAMETERS .004 TIR
ALL DIMENSIONS TO BE MET BEFORE PLATING
REMOVE ALL BURRS AND SHARP EDGES
DO NOT SCALE THIS DRAWING
ALL DIMENSIONS IN INCHES
SURFACES MARKED √ TO HAVE
SHELVED TOLERANCES
.812 TO 136 ±.005 136 TO 330 ±.010
330 AND ABOVE ±.015

PROCESSES
NONE

PROJ NO. 8760 | SIZE D | NEXT ASSY DWG NO. 244555

TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON, TEXAS

SCHEMATIC - ASR
TTY INTERFACE TYPE PS

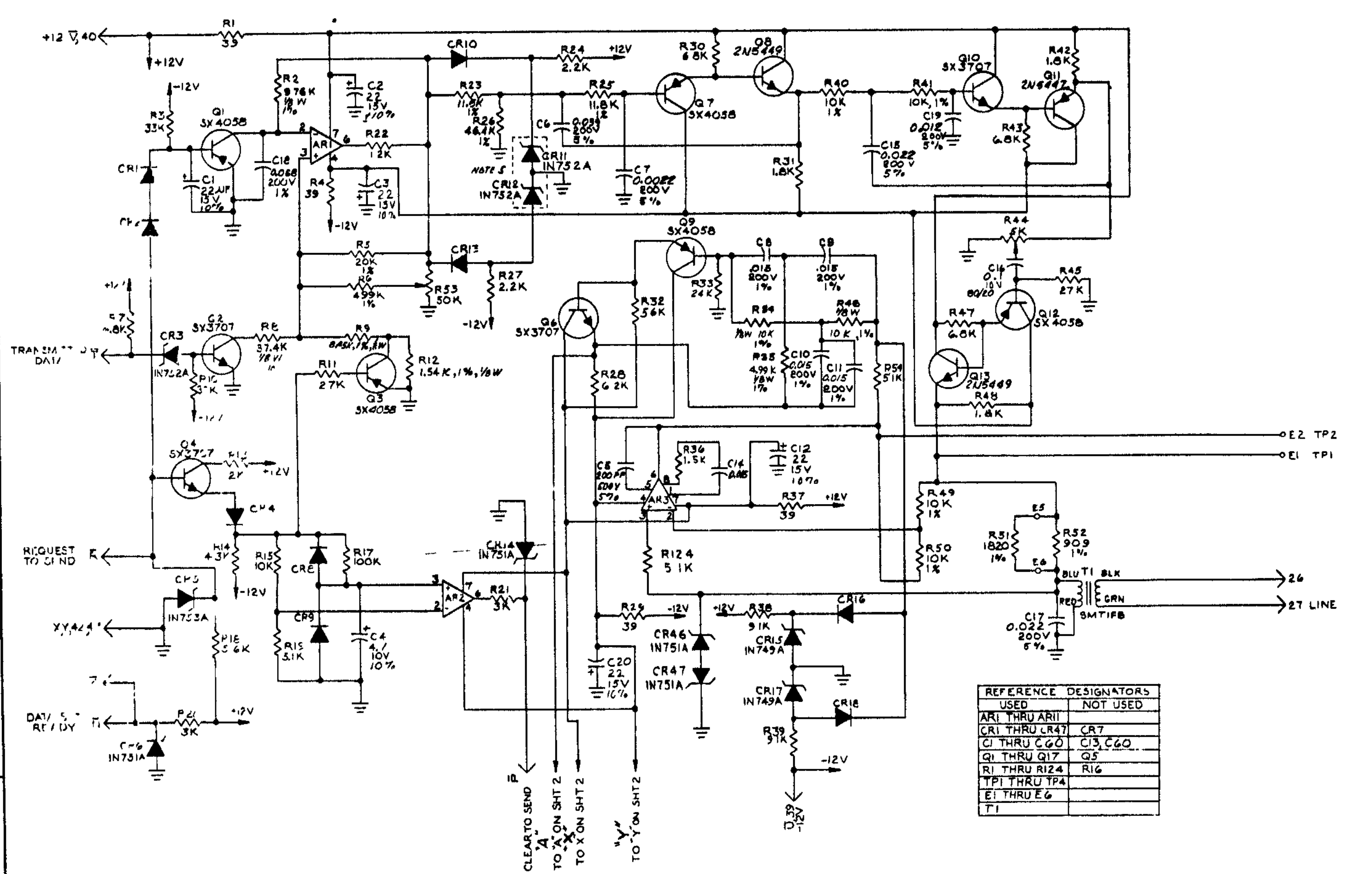
ELECTRICAL
SIZE D | 244559 | REV

MANUAL 215-999

INT DIST

244564-1

LTR	DESCRIPTION	DATE	APPD
A	CHGD ... TO 2N5449 CHGD Q11 TO 2N5447 FROM 5X3702	1/8/70	
	FORMAL RELEASE		
B	280377 (B) 1-30-70 CHG 1) ZONE A3 C42 & C43, 1000V WAS 100V. 2) ZONE B3 C44, 1% WAS 5%. ADDED ZONE A2 C35 & C37, 10V/20%.		
C	296006 (C) 2-14-70 1) CHG ZONE B-1, VALUES OF R9, R12, & Q3 WAS 20K, 3.9K, & 5X3707 RESP		
D	366759 (C) 5-19-70 CHG 1) SH1, ZONE A1, VALUE OF R2 WAS 6.19K 1/8W 1% 2) SH1, ZONES B1 & B2, VALUES OF R8, R9 & R12 WERE 61.9K, 16.9K & 3.09K, ALL 1/8W 1%, RESP 3.) ON F/D TITLE WAS TRANSMITTER-2025 2225 Hz.		
E	366425 (D) 7-8-70 CHG (1) SHT 1, ZONE A1, R2 WAS 10K (2) SHT 2, ZONE D2, TITLE WAS RECEIVER-1070-1270 Hz		
F	366520 (C) 7-23-70 SH1, ZONE A2 & B3: CHGD VALUE OF THE FOLLOWING COMPONENTS: R25 WAS 51.1K, R26 WAS 11.8K, C6 WAS 0.1, C7 WAS 0.0012, C15 WAS 0.068, AND C19 WAS 0.003.		
G	371218 (B) 9-27-71 1. SH1, ZONE C2, ADDED R124, CR46 & CR47 2. SH1, ZONE C3, REF DESIG CHART, USED CPNT LIST WAS CR1 THRU CR45 & R1 THRU R123 3. SH 2, ZONE A2, C34 WAS 0.33UF, 200V, 5%		



NOTES:
UNLESS OTHERWISE SPECIFIED
1. RESISTANCE VALUES ARE IN OHMS.
2. RESISTORS ARE .25 WATT ±5%.
3. CAPACITANCE VALUES ARE IN MICROFARADS.
4. DIODES ARE 1N916B.
5. CR11, CR12, CR30, CR31 & CR37, CR39 ARE 1% VOLTAGE MATCHED ZENER DIODES.
6. NETWORKS ARE SN72-709-L
7. CAPACITORS ARE 100V, 80/20%

REFERENCE DESIGNATORS	
USED	NOT USED
AR1 THRU AR11	
CR1 THRU CR47	CR7
C1 THRU C60	C13, C60
Q1 THRU Q17	Q5
R1 THRU R124	R16
TP1 THRU TP4	
E1 THRU E6	
T1	

TRANSMITTER - 1070 - 1270 Hz

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DECIMAL .XX ± .03 .XXX ± .010
FRACTIONAL ± 1/64 ANGULAR ± 1°
CONCENTRICITY MACHINED DIAMETERS .004 TIR
ALL DIMENSIONS TO BE MET BEFORE PLATING
REMOVE ALL BURRS AND SHARP EDGES
DO NOT SCALE THIS DRAWING
ALL DIMENSIONS IN INCHES
SURFACES MARKED ✓ TO HAVE

07200 | D | 244563

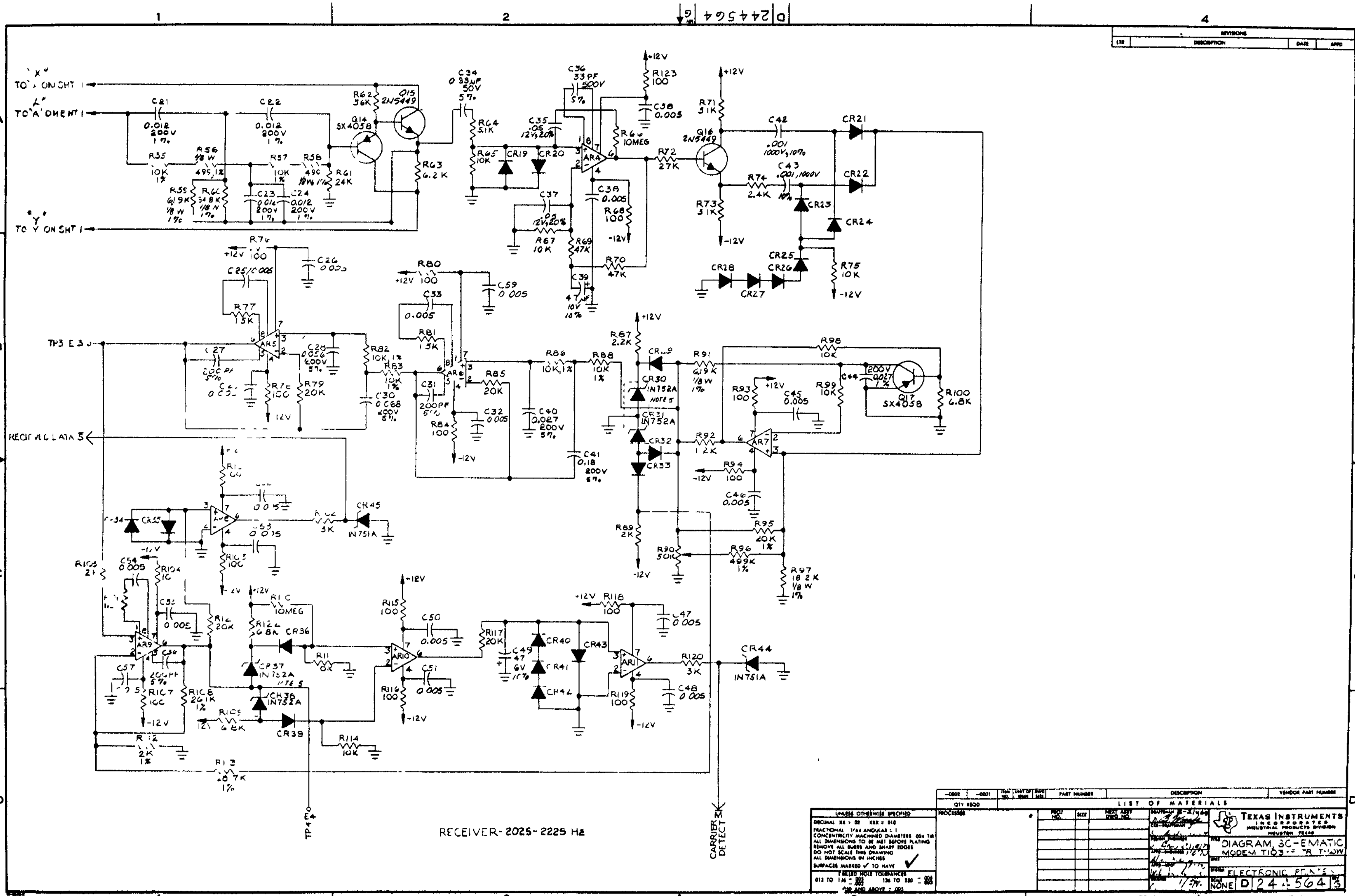
TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON, TEXAS

DIAGRAM SCHEMATIC MODEM T103-F TRMT-LIN
ELECTRONIC PRINTER
NONE | D | 244564 | G

MANUAL 215799

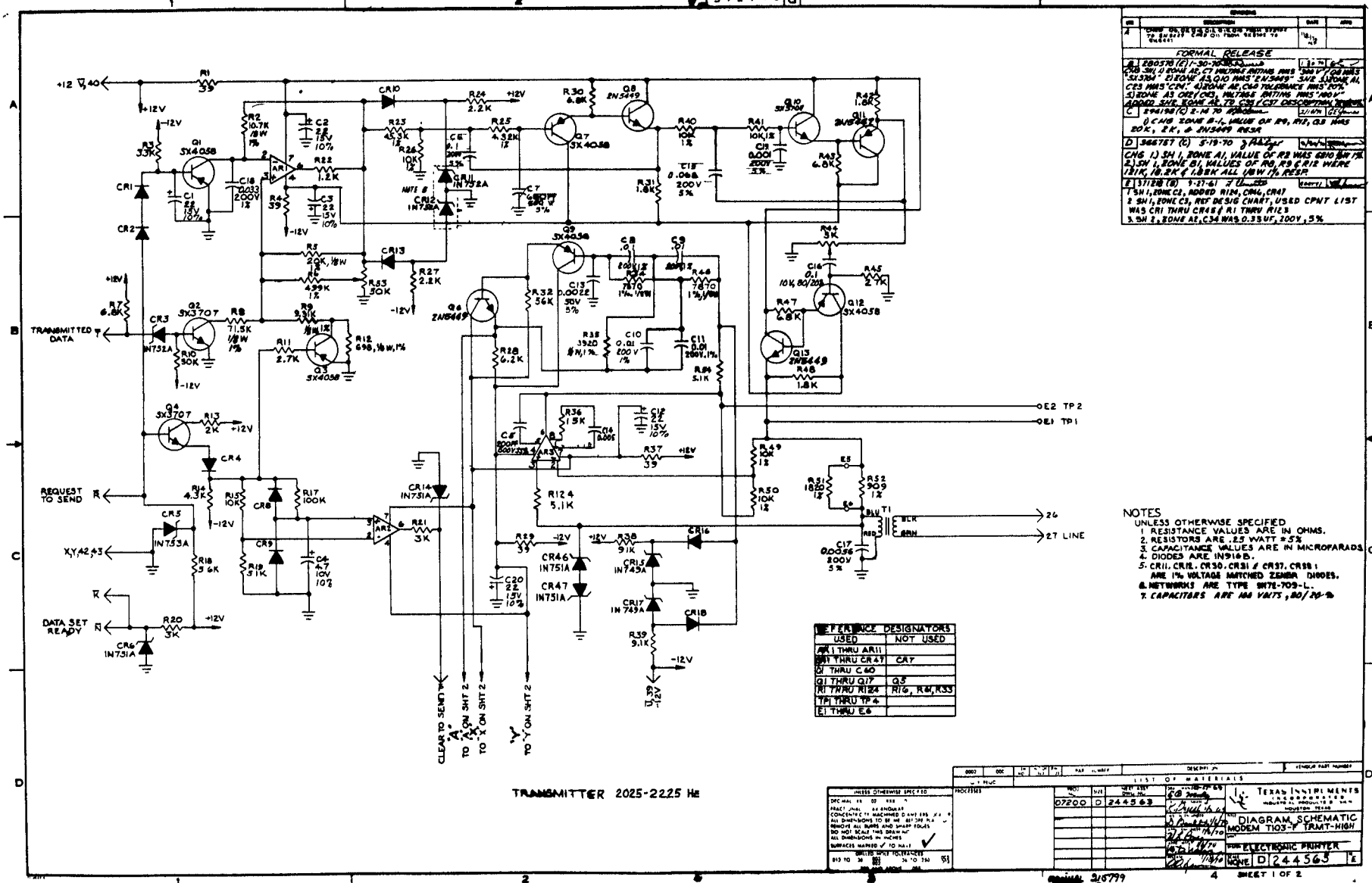
SHEET 1 OF 2

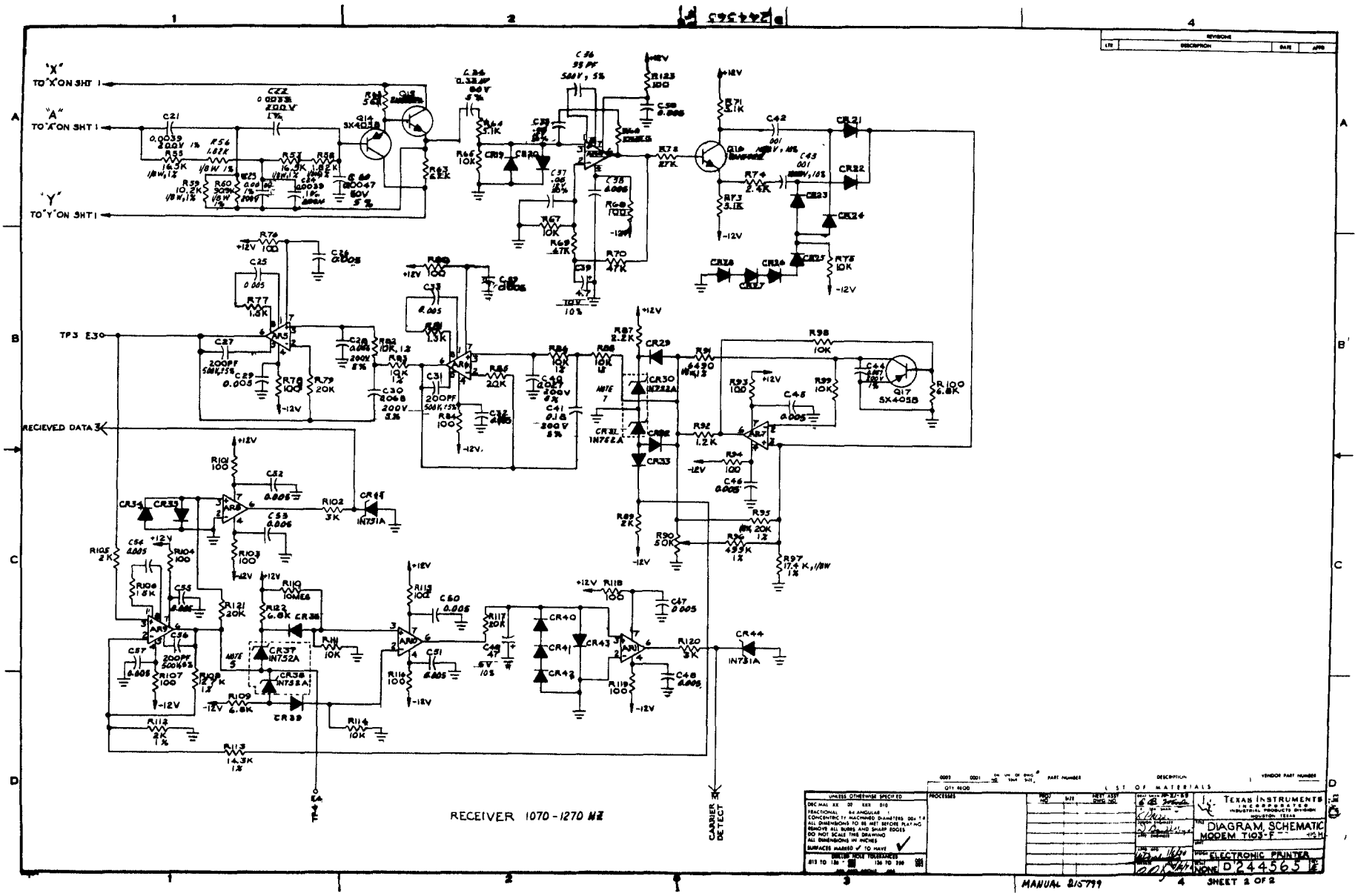
2445664-2



MANUAL 215799

SHEET 2 OF 2

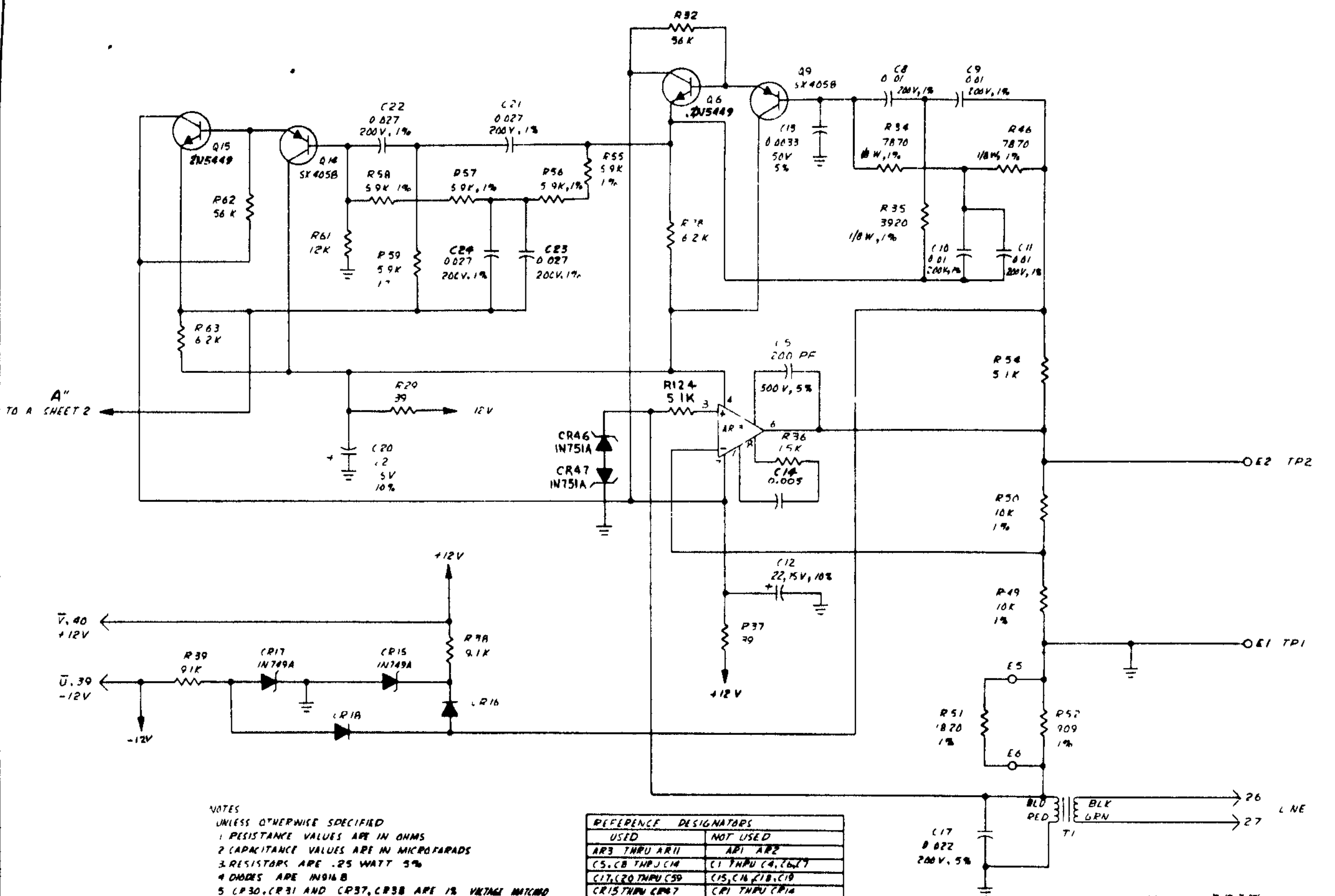

TRANSMITTER 2025-2225 Hz
TRANSMITTED DATA
REQUEST TO SEND
XY,A2,A3
DATA SET READY
CLEAR TO SEND "A"
TO "A" ON SHT 2
TO "X" ON SHT 2
"Y" TO Y ON SHT 2
E2 TP 2
E1 TP 1
24
27 LINE
FORMAL RELEASE
REFERENCE DESIGNATORS USED
REFERENCE DESIGNATORS NOT USED
NOTES
UNLESS OTHERWISE SPECIFIED
1. RESISTANCE VALUES ARE IN OHMS.
2. RESISTORS ARE .5 WATT ± 5%
3. CAPACITANCE VALUES ARE IN MICROFARADS
4. DIODES ARE IN914B.
5. CR11, CR18, CR30, CR31 & CR37, CR38 ARE 1% VOLTAGE MATCHED ZENER DIODES.
6. NETWORKS ARE TYPE 9K7E-709-L.
7. CAPACITORS ARE 100 VOLTS, 80/20%
LIST OF MATERIALS
TEXAS INSTRUMENTS INCORPORATED
DIAGRAM, SCHEMATIC
MODEM T103-F TRMT-HIGH
ELECTRONIC PRINTER
D 244565
SHEET 1 OF 2


"X" TO "X" ON SHT 1
"A" TO "A" ON SHT 1
"Y" TO "Y" ON SHT 1
TP3 E30
RECIEVED DATA 3
TO EA
CARRIER DETECT
RECEIVER 1070 - 1270 HZ
DIAGRAM, SCHEMATIC MODEM 7103-F
ELECTRONIC PRINTER
D 244565
SHEET 2 OF 2
MANUAL 8/5799
TEXAS INSTRUMENTS

244565-2

244575-1

REVISIONS			
LTR	DESCRIPTION	DATE	APPD
A	[illegible]	1/8/70	
FORMAL RELEASE			
B	[illegible] CHG SH2 ZONE A2 TOL FOR C42 & C66, 10% WAS 1%. CHG SH2 ZONE B2 TOL FOR C40, 5% WAS 1%. ADDED ZONE A2 C56 & C57, VALUES 12/80%.	1-31-70	[illegible]
C	371218(B) 9-27-71 1. SH1, ZONE B2, ADDED R124, CR46 & CR47 2. SH1, ZONE D2, REF DESIG CHART, USED CPNT LIST WAS CR15 THRU CR45 & R61 THRU R123 3. SH 2, ZONE A2, C34 WAS 0.33UF, 200V, 5%		



NOTES
UNLESS OTHERWISE SPECIFIED
1 RESISTANCE VALUES ARE IN OHMS
2 CAPACITANCE VALUES ARE IN MICROFARADS
3 RESISTORS ARE .25 WATT 5%
4 DIODES ARE IN916B
5 CR30, CR31 AND CR37, CR38 ARE 1% VOLTAGE MATCHED ZENER DIODES IN752A
6 RECEIVE 1070 - 1270 HZ
7 NETWORKS ARE SN72 700 L
8 CAPACITORS ARE 100 VOLTS 80/20 %

REFERENCE DESIGNATORS	
USED	NOT USED
AR3 THRU AR11	AR1 AR2
C5, C8 THRU C14	C1 THRU C4, C6, C7
C17, C20 THRU C59	C15, C16, C18, C19
CR15 THRU CR47	CR1 THRU CR14
Q6, Q9	Q1 THRU Q5, Q7, Q8
Q14 THRU Q17	Q10 THRU Q13
R28, R29	R1 THRU R27, R30
R32, R34 THRU R39	R31, R33, R40 THRU R48
R49 THRU R52	R53,
R54 — R59, R61 — R124	R60
E1 THRU E6	
T1	

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DECIMAL .XX .XXX
FRACTIONAL ANGULAR
CONCENTRIC MACHINED DIAMETERS
ALL DIMENSIONS TO BE MET BEFORE PLATING
REMOVE ALL BURRS AND SHARP EDGES
DO NOT SCALE THIS DRAWING
ALL DIMENSIONS IN INCHES
SURFACES MARKED ✓ TO HAVE

PROCESSES

PROJ NO 07200 | SIZE D | NEXT ASSY DWG NO 244565

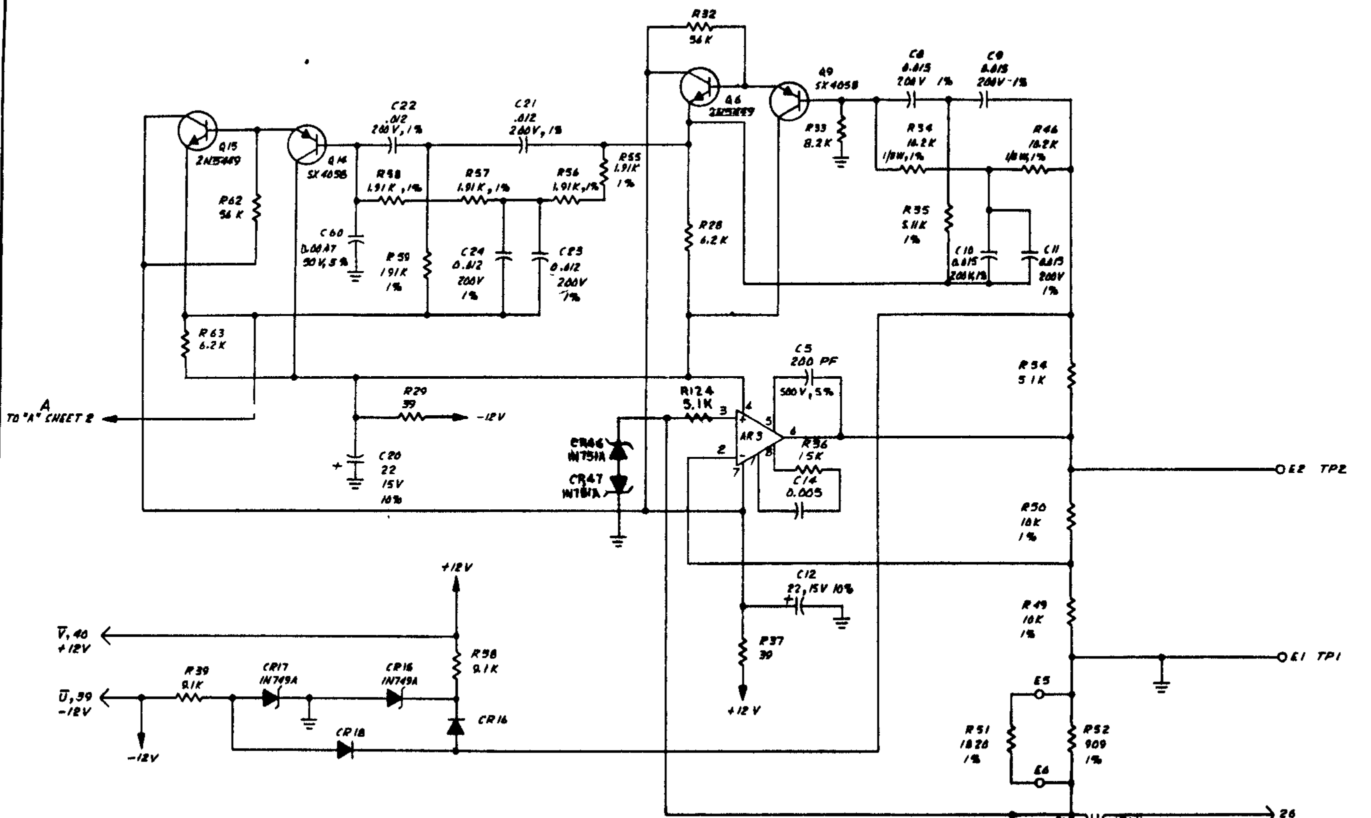
TEXAS INSTRUMENTS INCORPORATED
HOUSTON TEXAS

SCHEMATIC DIAGRAM, MODEM TIDBE RCVR LOW
ELECTRONIC PRINTER

SIZE D 244575 REV C

MANUAL 215799

SHEET 1 OF 2



REVISIONS			
LTR	DESCRIPTION	DATE	APPD
A	[illegible]	[illegible]	
	FORMAL RELEASE		
B	ECN [illegible] C. [illegible] 1) SHEET 1, ZONE A1 C60 VALUE WAS 0.0050, 50V 20% 2) SHEET 2, ZONE A-2 VALUES 10V/80% ADDED TO CAPS. C86 & C97 3) SHEET 2, ZONE B-3 C44 TOL WAS 5%	[illegible]	[illegible]
C	3112/8(B) 9-27-71 [signature] 1. SH 1, ZONE B2, ADDED R124, CR46 & CR47 2. SH 1, ZONE D2, REF DESIG CHART, USED CR... LIST WAS CR15 THRU CR45/R61 THRU R123 3. SH 2, ZONE A2, C34 WAS 0.33 UF, 200V, 5%	[illegible]	[illegible]

NOTES:
UNLESS OTHERWISE SPECIFIED:
1. RESISTANCE VALUES ARE IN OHMS
2. CAPACITANCE VALUES ARE IN MICROFARADS
3. RESISTORS ARE .25 WATT 5%
4. DIODES ARE IN914B
5. CR30, CR31 AND CR37, CR38 ARE 1% VOLTAGE-MATCHED ZENER DIODES IN762A
6. NETWORKS ARE SN72-709-L
7. CAPACITORS ARE 100 VOLTS, 80/20%

REFERENCE DESIGNATORS	
USED	NOT USED
AR3 THRU AR11	AR1 AR2
C5, C8 THRU C12, C14	C1 THRU C4, C6, C7, C13
C20 THRU C60	C15 THRU C19
CR15 THRU CR47	CR1 THRU CR14
Q6, Q9	Q1 THRU Q5, Q7, Q8
Q14 THRU Q17	Q10 THRU Q13
R28, R29	R1 THRU R27, R30
R32 THRU R39	R31, R40 THRU R48
R49 THRU R52	R53,
~~R54~~ R56, R62 [illegible]	R60, R61
E1 THRU E6	
T1	

UNLESS OTHERWISE SPECIFIED
DECIMAL .XX ± .03 .XXX ± .010
FRACTIONAL ± 1/64 ANGULAR ± 1°
CONCENTRICITY MACHINED DIAMETERS .004 TIR
ALL DIMENSIONS TO BE MET BEFORE PLATING
REMOVE ALL BURRS AND SHARP EDGES
DO NOT SCALE THIS DRAWING
ALL DIMENSIONS IN INCHES
SURFACES MARKED ✓ TO HAVE ✓

LIST OF MATERIALS

87200	D	244565

TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON, TEXAS

SCHEMATIC DIAGRAM MODEM T-103F RCVR HIGH

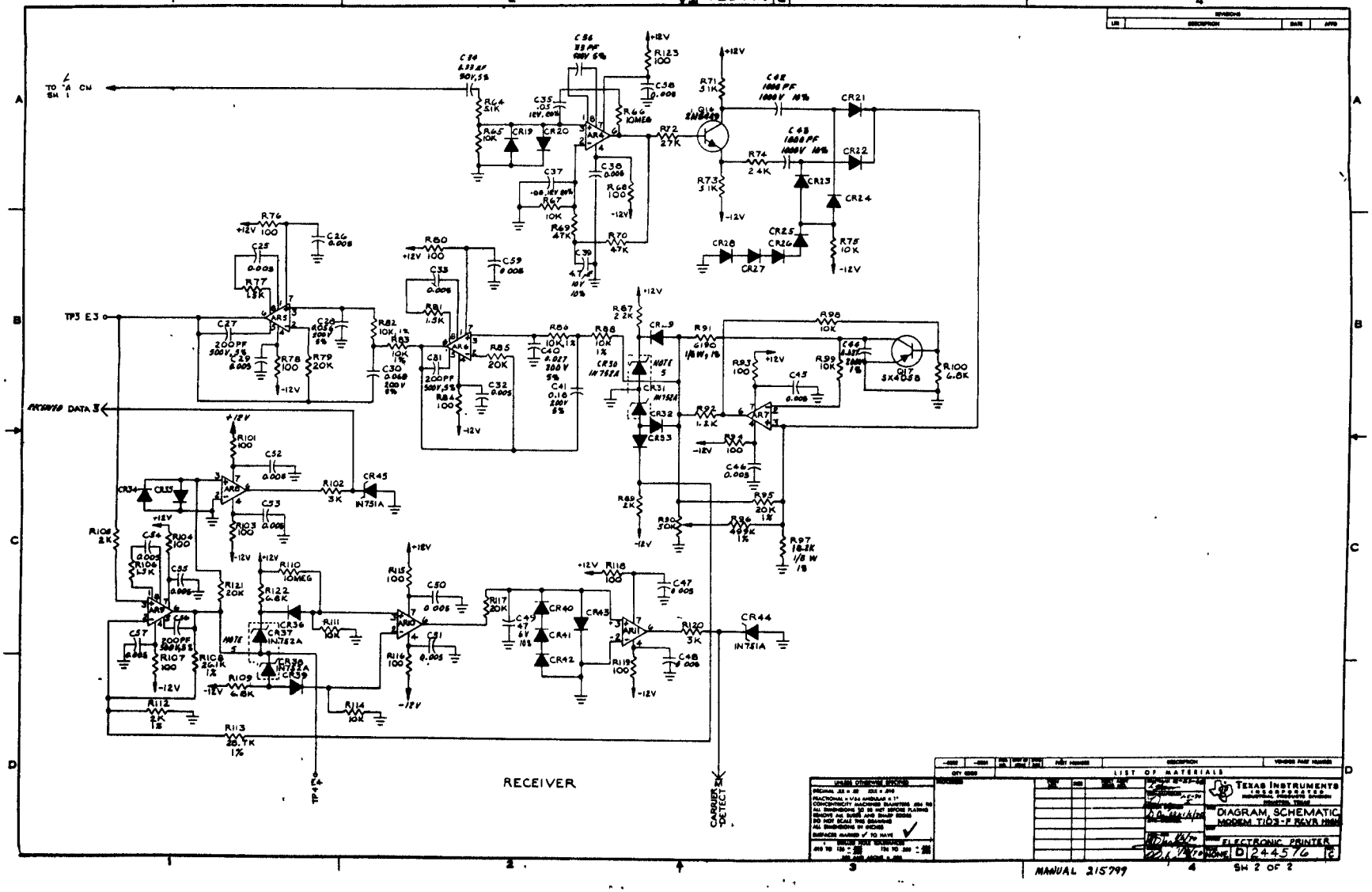
ELECTRONIC PRINTER

D 244576 C

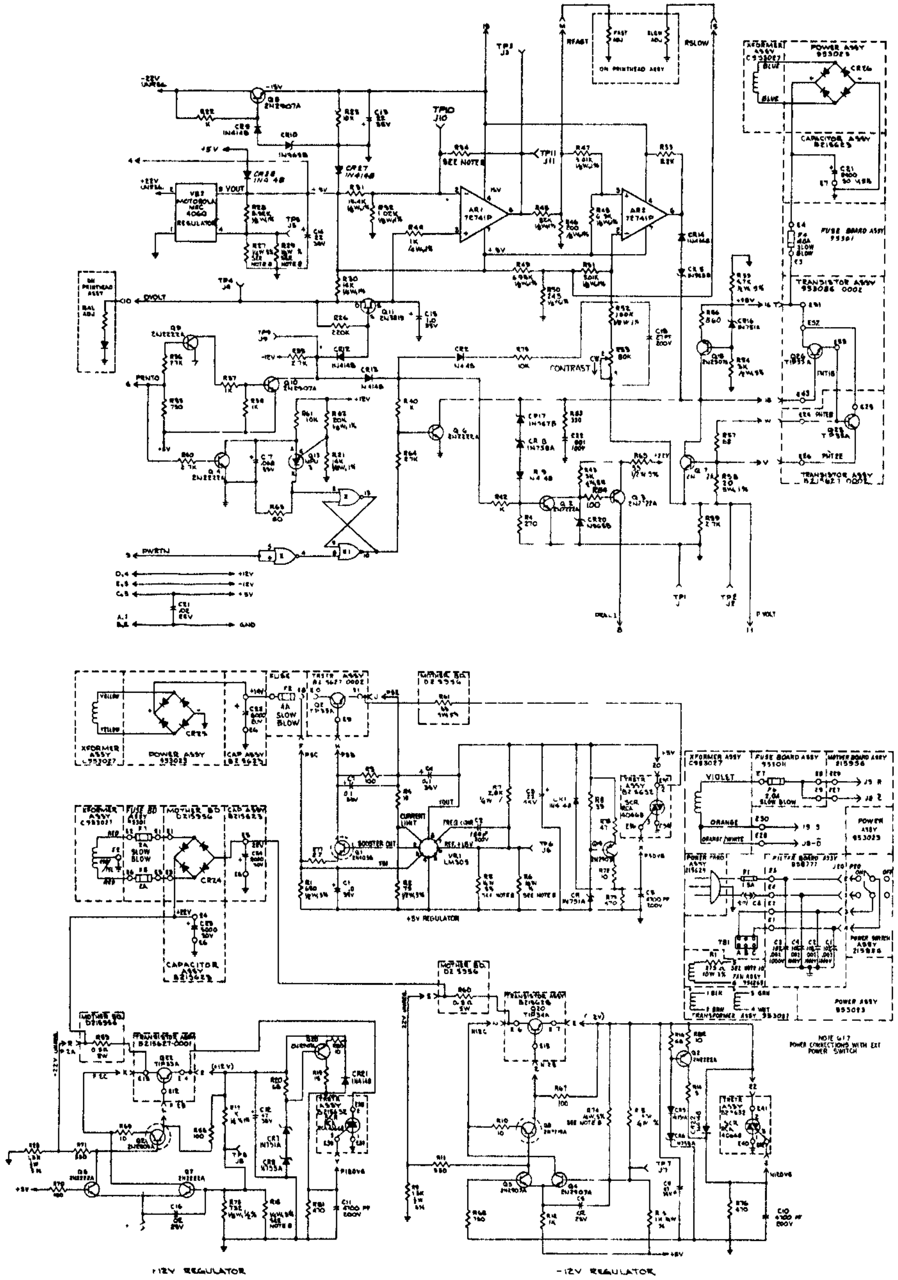
MANUAL 215799

SHEET 1 OF 2

244576-1


RECEIVER
DIAGRAM, SCHEMATIC
MODEM TI03-F RCVR HYBR
ELECTRONIC PRINTER
D244576
MANUAL 215799
SH 2 OF 2
TEXAS INSTRUMENTS

244576-2



NOTES: UNLESS OTHERWISE SPECIFIED,
1. RESISTANCE VALUES ARE IN OHMS.
2. CAPACITANCE VALUES ARE IN MICROFARADS
3. RESISTORS ARE 1/4 W 5%
4. Z1 IS SN7402N
5.
6. FOR 115V OPERATION CONNECT 1 & 3 TO A AND CONNECT 2 & 4 TO C
7. FOR 230V OPERATION CONNECT 1 TO A, CONNECT 2 & 3 TO B & CONNECT 4 TO C
8. RESISTORS R5, R6, R18, R27, R29, R34 & R74 TO BE SELECTED AT UNIT TEST
9. TP1,J1 THRU TP9,J9 USED FOR TEST POINTS ONLY
10. FOR 115V OPERATION CONNECT 5 TO TB1-C AND 6 TO TB1 A. FOR 230V OPERATION CONNECT 5 TO TB1 C AND 6 TO TB1 B

Rev	Description
A	CHG ZONE B2 R36 / R37 WAS 90 Ω
B	REVISED ZONE C3; ADDED ZONE C3 ... RESISTOR
C	CHG 1) ZONE C2 ...
D	369529 (B) 4-23-71. DELETED NOTE 5 WAS, P/N 215396 FOR INT POWER SWITCH, P/N 216083 FOR EXT POWER SWITCH. CHG 1) ZONE B2, P/N OF CR17 & CR18 WAS IN753A 2) ZONE C1, POWER ASSY 953023 WAS POWER ASSY NOTE 5.
E	369503 (B) 5-6-71. REDRAWN WITH CHANGES 1) ZONE A3 TO XFORMER, PWR, TRANSISTOR & FUSE BOARD ASSY 2) ZONE C1, TWO XFORMER ASSY 3) ZONE C3, XFORMER, FUSE BOARD, MOTHER BOARD & FAN ASSY 4) ZONE C3, POWER CORD, FILTER BOARD, POWER SWITCH, FAN, XFORMER & POWER ASSY 5) ADDED NOTE 10. BECAUSE DOCUMENT ON SCHEMATIC CHANGES TO XFORMER AND ADDITION OF FILTER BOARD
F	370307 (B) 8-11-71. CHG 1) FUSE BOARD ASSY WAS 954821 2) F3 WAS F1 4) F6 WAS F4. ADD ZONE B2, ADDED R81 & C22
G	371565 B 9-24-71. CHG ZONE C3, VIOLET XFMR WIRE WAS ORANGE
H	371371 (C) 1-7-72. CHG ZONE B2, R56 WAS 1.2K
J	371670 (C) 2-15-72. 1 ADDED CR28 TO ZONE A1 2 ADDED CR27 TO ZONE A2
K	372787 (C) 4-12-72. CHG ZONE A2 R34 WAS 38.9K, 1/8W, 1%. ADDED R34 TO NOTE 8
L	372188 (E) J C TANNER 5/72. ADD ZONE A1, TEST POINTS TP10, J10 & TP11, J11
M	372789 (E) J C TANNER 1972. ADD ZONE B2 RESISTOR R84
N	374893 (D) D W. CHG 1) ZONE B2 R52 VALUE WAS 100K 1/8 W 1% 2) R53 VALUE WAS 50K
P	381312 (D) 8-8-75. ZONE A2, R52 WAS 499K, 1/4W & R53 WAS 140K

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED

NONE

8720 D 953125

TEXAS INSTRUMENTS INCORPORATED

DIAGRAM, SCHEMATIC-REGULATOR & COMPENSATION

ELECTRONIC PRINTER

E 953126 P

953126

954761

REVISIONS			
LTR	DESCRIPTION	DATE	APPD
A	ADDED SIGNATURES 11/16/70		
	FORMAL RELEASE		

31	CARRIER DETECT	$\overline{M}$
33	GRD	$\overline{X}, \overline{Y}, 42, 43$
34	-12V	$\overline{U}, 39$
35	+12V	$\overline{V}, 40$
36	+5V	$\overline{W}, 41$
37	RECEIVED DATA	$\overline{S}$
38	TRANSMITTED DATA	$\overline{T}$

LIST OF MATERIALS

-0002 QTY REQD	-0001	ITEM NO.	UNIT OF ISSUE	DWG SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER

UNLESS OTHERWISE SPECIFIED
DECIMAL .XX ± .02 XXX ± .010
FRACTIONAL ±1/64 ANGULAR ± 1°
CONCENTRICITY MACHINED DIAMETERS .004 TIR
ALL DIMENSIONS TO BE MET BEFORE PLATING
REMOVE ALL BURRS AND SHARP EDGES
DO NOT SCALE THIS DRAWING
ALL DIMENSIONS IN INCHES
SURFACES MARKED ✓ TO HAVE ✓

DRILLED HOLE TOLERANCES
.013 TO .136 ± .003 / ± .002 — .136 TO .250 ± .005 / ± .003 — .250 AND ABOVE ± .005

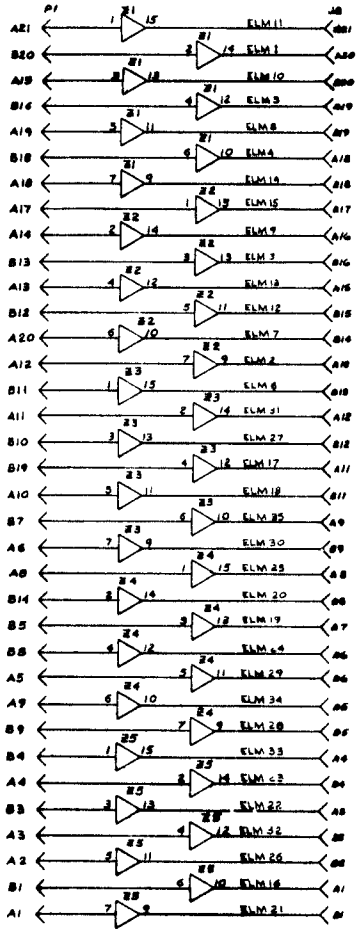
PROCESSES: NONE

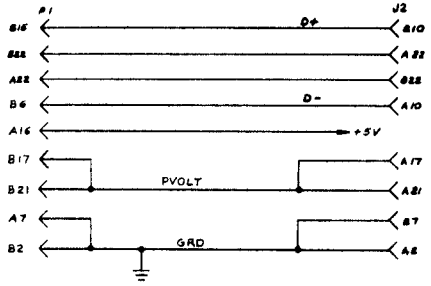
PROJ NO.	SIZE	NEXT ASSY DWG NO.
07200	D	954760

DRAFTSMAN 10-2-70
CKD. DRAFTSMAN 10-8-70
DESIGN ENGINEER 11/5/70
APPD. ENGINEER 12/7/70
APPD. APG 12/7/70
RELEASE 12-23-70

TEXAS INSTRUMENTS
INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON, TEXAS

TITLE: DIAGRAM, SCHEMATIC ACOUSTIC COUPLER INTERFACE
UNIT: PORTABLE DATA TERMINAL
SYSTEM: ELTN PRINTER
SCALE: NONE | B | 954761 | REV. A



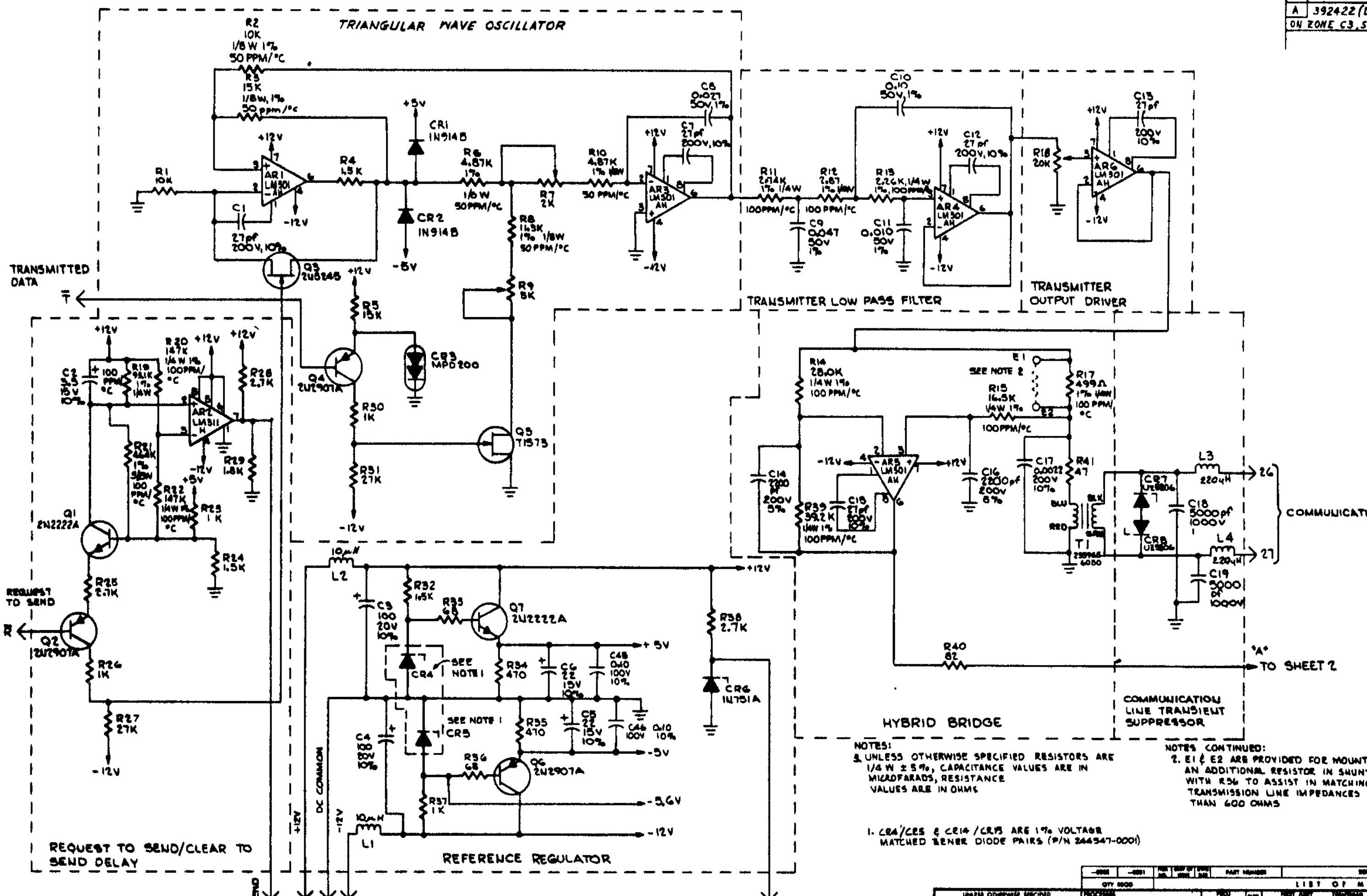


NOTES:
UNLESS OTHERWISE SPECIFIED:
1. NETWORKS ARE SN2111
2. FOR SPECIFICATIONS ON SN2111 SEE AB44578. PIN 16 IS +5 V. PIN 8 IS GRD.

954807

958849-1

LTR	DESCRIPTION	DATE	APPD
A	392422 (D) [illegible] 3-74; ON ZONE C3, SH. 1 VOLTAGE OF C14 & C16 WAS 100 V	[illegible]	[illegible]



REFERENCE DESIGNATORS	
USED	NOT USED
R1 THRU R15	
R17 THRU R105	R16
Q1 THRU Q12	
C1 THRU C76	
E1 & E2	
CR1 THRU CR18	
AR1 THRU AR16	
L1 THRU L4	
T1	
TP1 THRU TP5	
J1 THRU J5	

NOTES:

3. UNLESS OTHERWISE SPECIFIED RESISTORS ARE 1/4 W ± 5%, CAPACITANCE VALUES ARE IN MICROFARADS, RESISTANCE VALUES ARE IN OHMS

1. CR4/CR5 & CR14/CR15 ARE 1% VOLTAGE MATCHED ZENER DIODE PAIRS (P/N 244547-0001)

NOTES CONTINUED:

2. E1 & E2 ARE PROVIDED FOR MOUNTING AN ADDITIONAL RESISTOR IN SHUNT WITH R56 TO ASSIST IN MATCHING TRANSMISSION LINE IMPEDANCES OTHER THAN 600 OHMS

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DECIMAL .XX ± .02 .XXX ± .010
FRACTIONAL ± 1/64 ANGULAR ± 1°
CONCENTRICITY MACHINED DIAMETERS .004 TIR
ALL DIMENSIONS TO BE MET BEFORE PLATING
REMOVE ALL BURRS AND SHARP EDGES
DO NOT SCALE THIS DRAWING
ALL DIMENSIONS IN INCHES
SURFACES MARKED ✓ TO HAVE

PROCESSES: NONE

8720 D 958850

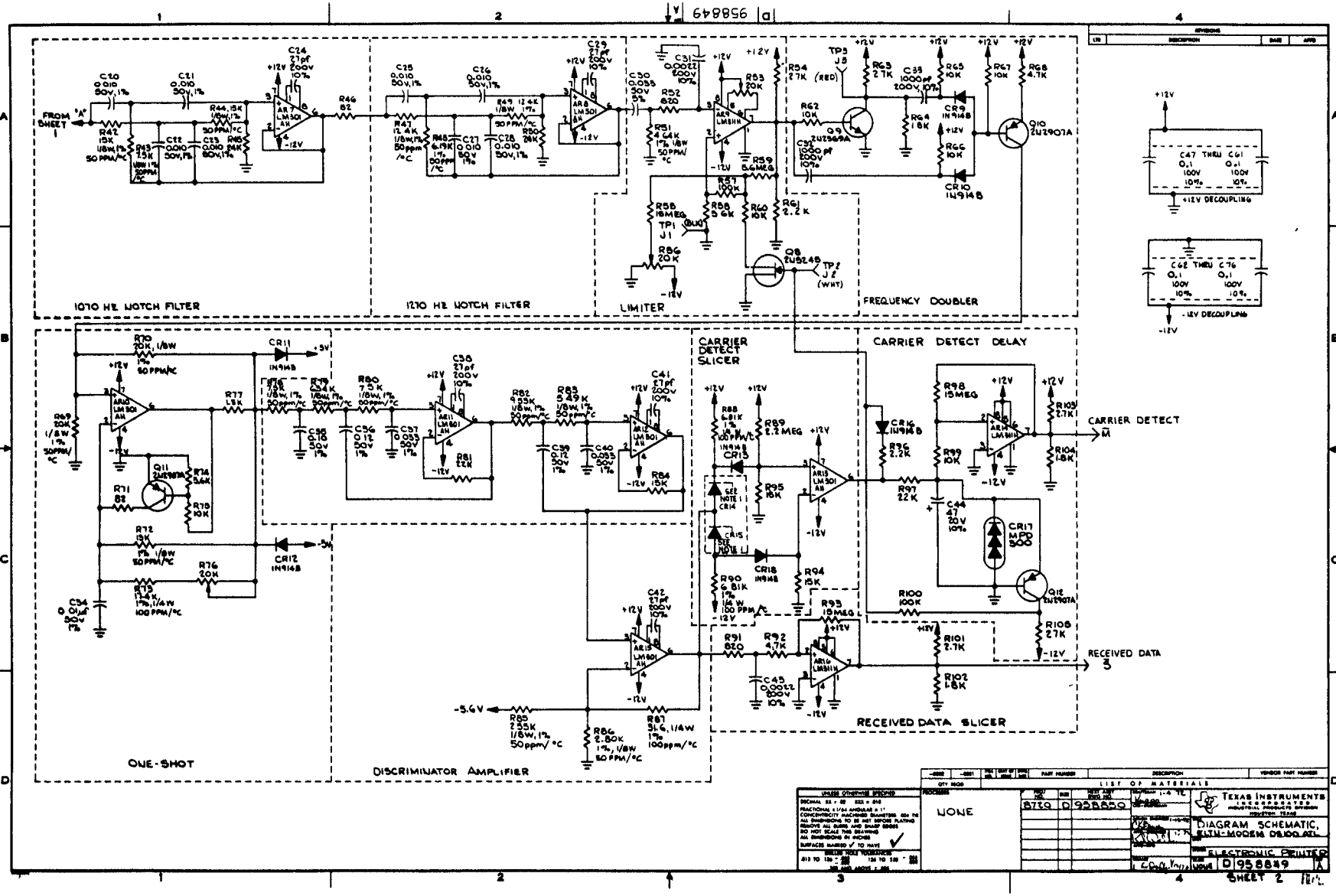
TEXAS INSTRUMENTS INCORPORATED
INDUSTRIAL PRODUCTS DIVISION
HOUSTON, TEXAS

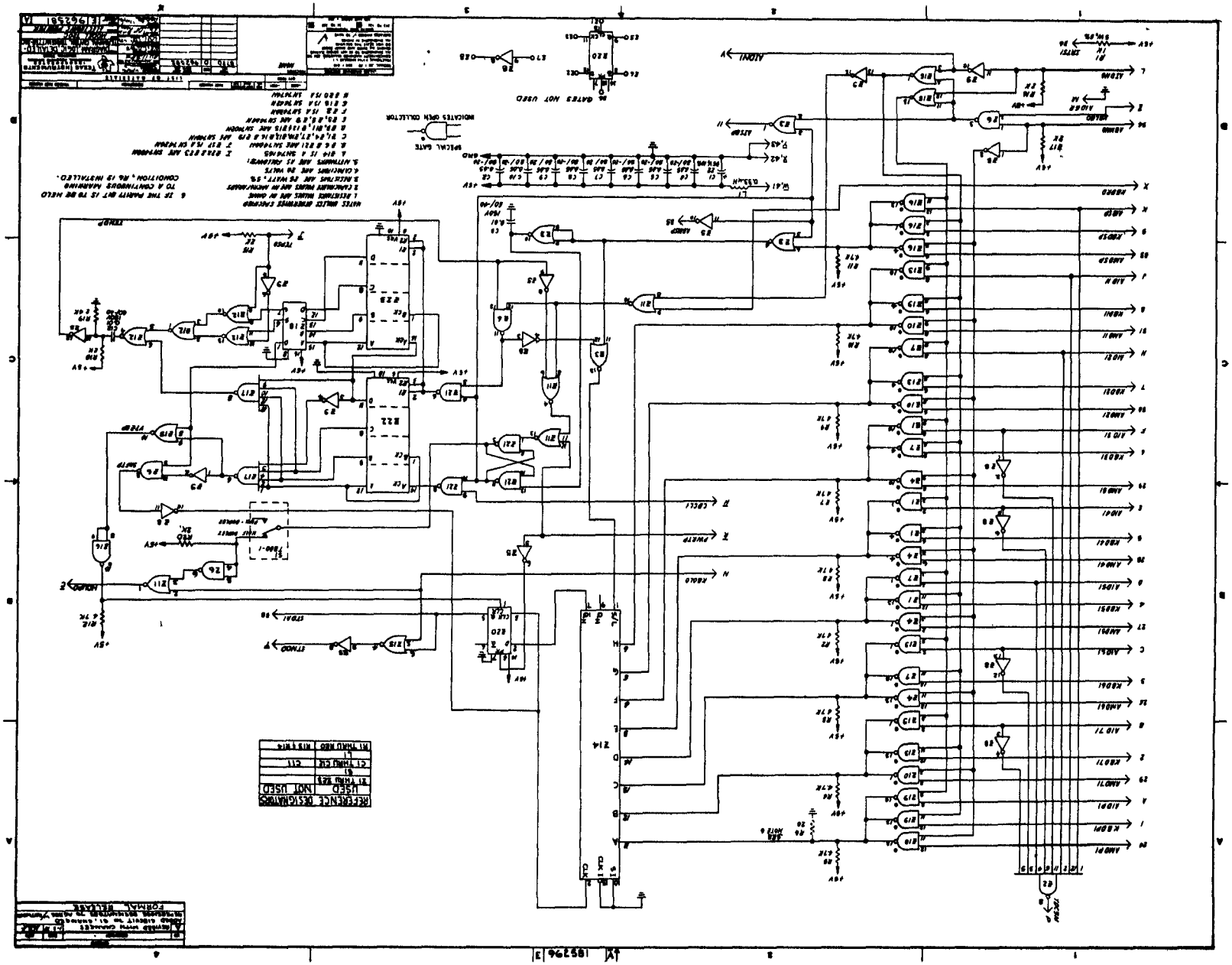
DIAGRAM SCHEMATIC
ELTU-MODEM DS 100ATL
ELECTRONIC PRINTER

NONE D 958849 A

SH 1 OF 2

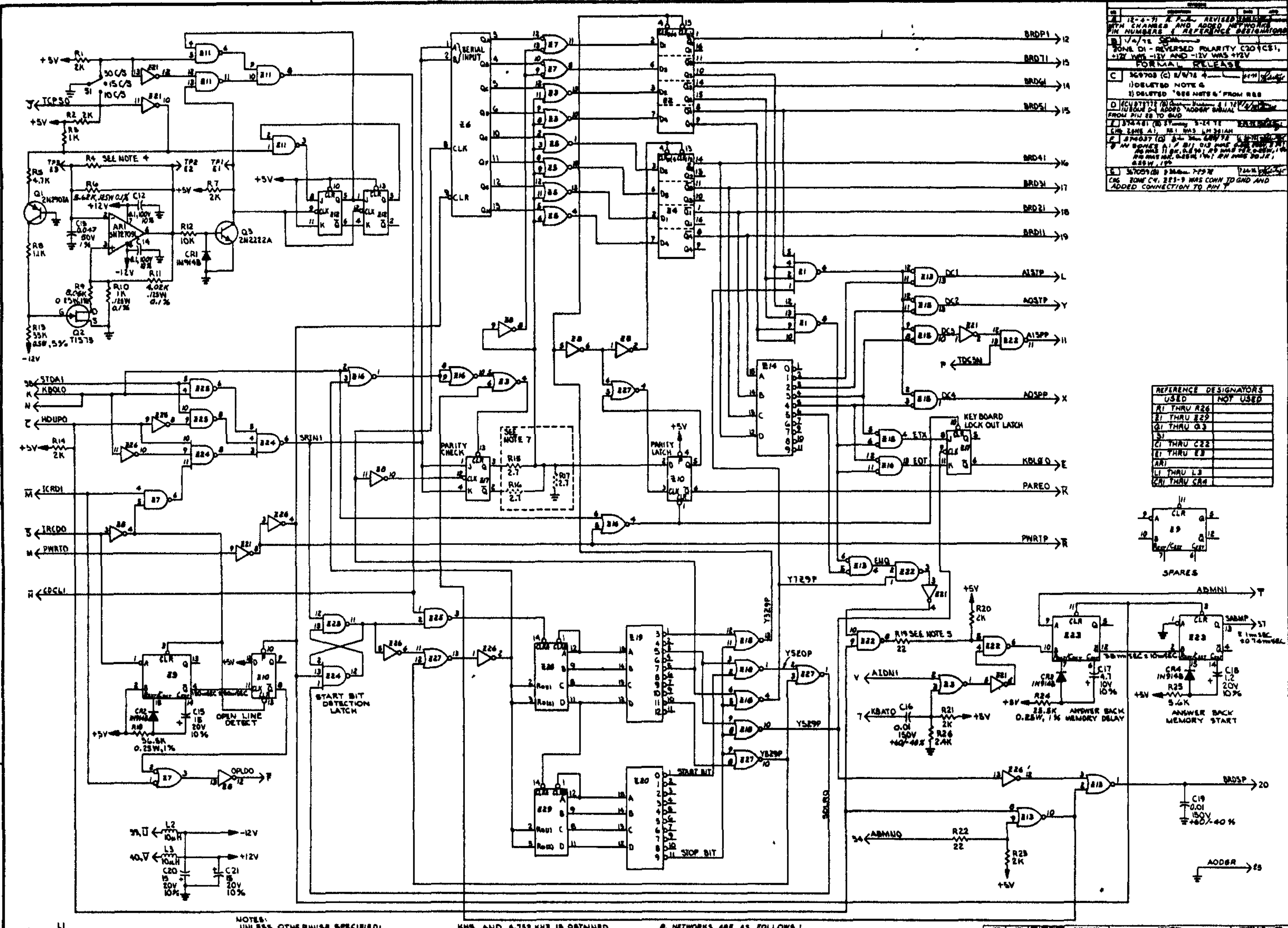
FILMED


1070 HZ NOTCH FILTER
1270 HZ NOTCH FILTER
LIMITER
FREQUENCY DOUBLER
ONE-SHOT
DISCRIMINATOR AMPLIFIER
CARRIER DETECT SLICER
CARRIER DETECT DELAY
RECEIVED DATA SLICER
CARRIER DETECT
RECEIVED DATA
+12V DECOUPLING
-12V DECOUPLING
FROM SHEET 1 "A"



962581

962584



REFERENCE DESIGNATORS USED	NOT USED
R1 THRU R26	
Z1 THRU Z29	
Q1 THRU Q3	
S1	
C1 THRU C22	
E1 THRU E3	
AR1	
L1 THRU L3	
CR1 THRU CR4	

A 12-4-71 REVISED WITH CHANGES AND ADDED NETWORKS PIN NUMBERS & REFERENCE DESIGNATORS

B 1/4/72 ZONE D1 - REVERSED POLARITY C20 & C21, +12V WAS -12V AND -12V WAS +12V

FORMAL RELEASE

C 369703 (C) 1) DELETED NOTE 6 2) DELETED 'SEE NOTE 6' FROM R23

D IN ZONE D4 ADDED 'AODGR' SIGNAL FROM PIN 25 TO GND

E 374481 (B) 5-24-72 CHG ZONE A1, AR1 WAS LM301AH

F 376037 (D) IN ZONES A1 / B1

G 367059 (B) 7-25-72 CHG ZONE C4, Z23-9 WAS CONN TO GND AND ADDED CONNECTION TO PIN T

NOTES:
UNLESS OTHERWISE SPECIFIED:
1. RESISTANCE VALUES ARE IN OHMS
2. CAPACITANCE VALUES ARE IN MICROFARADS
3. RESISTORS ARE .25W, 5%
4. SELECT R4 SUCH THAT WITH S1 IN THE 10 CHARACTER PER SECOND POSITION, A SQUARE WAVE WITH A FREQUENCY BETWEEN 5.280 KHZ AND 5.228 KHZ IS OBTAINED AT TP1(E1) AND WITH S1 IN THE 15 OR 30 CHAR'S. POSITION A FREQUENCY BETWEEN 4.800 KHZ AND 4.752 KHZ IS OBTAINED
5. R19 IS OMITTED IF THE ANSWER BACK MEMORY IS NOT TO BE TRIGGERED WHEN THE "ENQ" CHARACTER IS RECEIVED
7. FOR EVEN PARITY REMOVE R16 AND R17, FOR ODD PARITY REMOVE R15 AND R17, AND FOR NO PARITY CHECK REMOVE R15 AND R16
8. NETWORKS ARE AS FOLLOWS:
A. SN7400N - Z7, Z11, Z22 & Z25
B. SN7402N - Z3, Z5, Z13, Z15, Z16, Z18 & Z27
C. SN7404N - Z8, Z21 & Z26
D. SN7410N - Z24
E. SN7442N - Z14 & Z20
F. SN7443N - Z19
G. SN7474N - Z10
H. SN74107N - Z12 & Z17
J. SN7420N - Z1
K. SN7475N - Z2 & Z4
L. SN7493N - Z28 & Z29
M. SN74123N - Z9 & Z23
N. SN74164N - Z6

LIST OF MATERIALS

NONE

TEXAS INSTRUMENTS

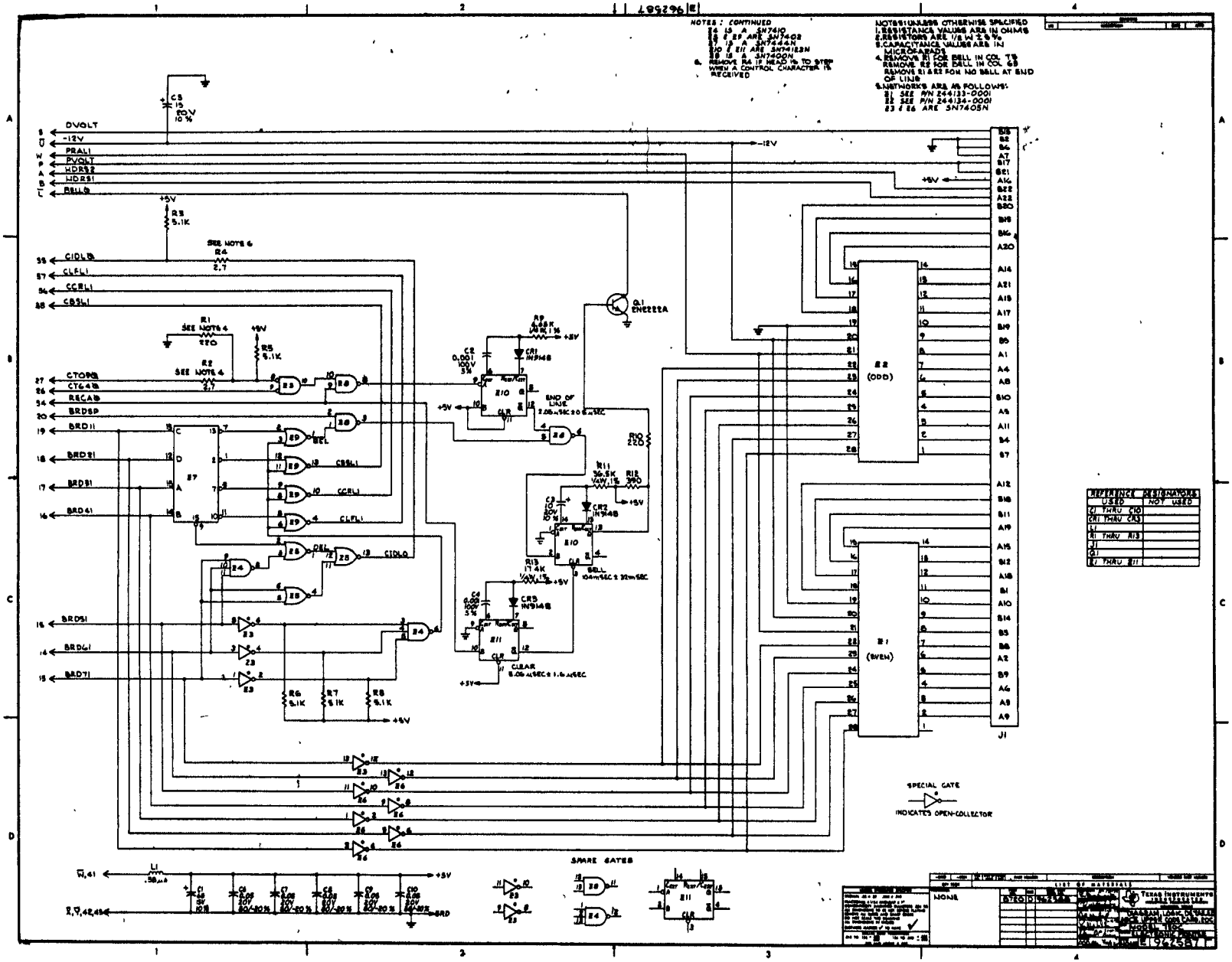
DIAGRAM, LOGIC, DETAILED TERMINAL CONTROL RCVR-XMTR

MODEL 730

ELECTRONIC PRINTER

E 962584 G

FILMED

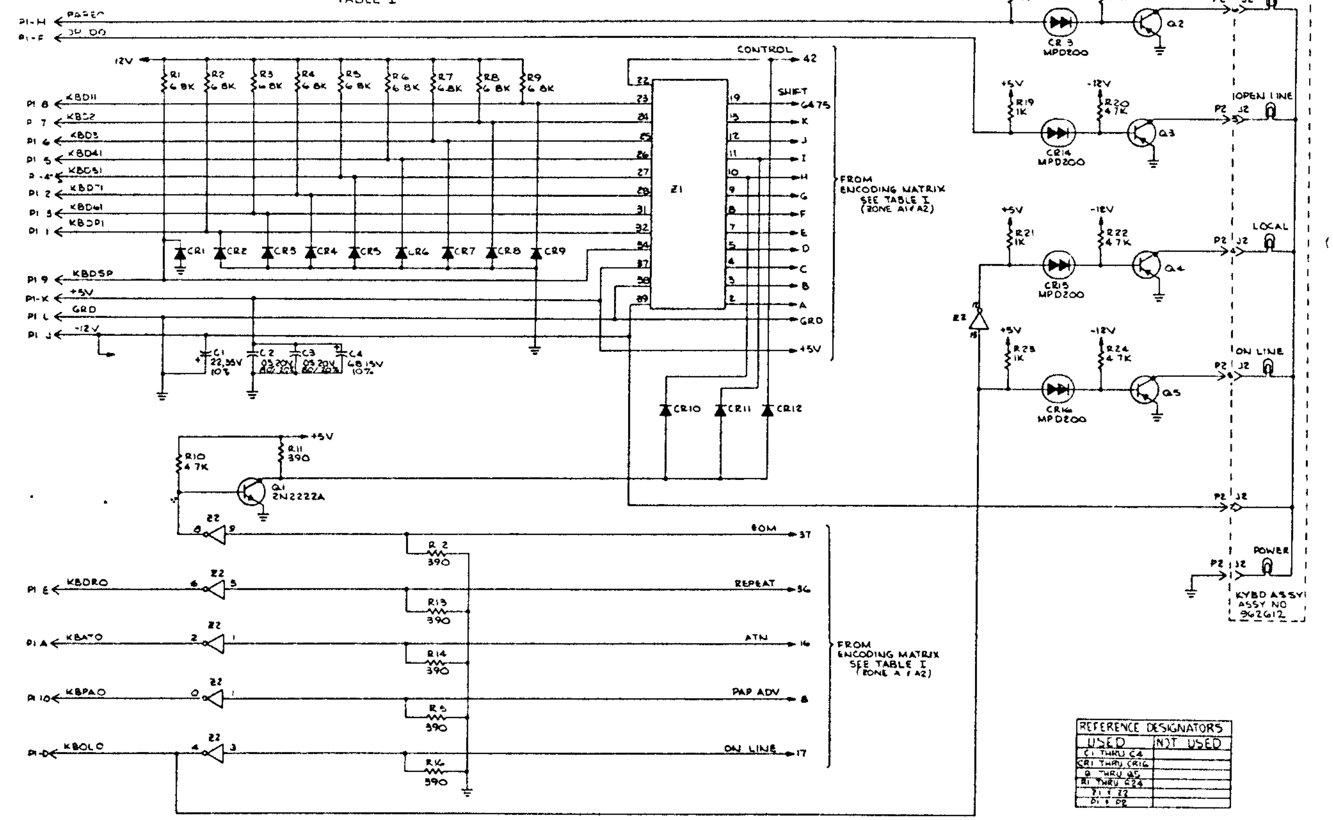

962587
NOTES : CONTINUED
4. REMOVE R4 IF HEAD 19 TO BYTE WHEN A CONTROL CHARACTER IS RECEIVED
NOTES: UNLESS OTHERWISE SPECIFIED
1. RESISTANCE VALUES ARE IN OHMS
2. RESISTORS ARE 1/8 W ± 5 %
3. CAPACITANCE VALUES ARE IN MICROFARADS
4. REMOVE R1 FOR BELL IN COL 79. REMOVE R2 FOR BELL IN COL 69. REMOVE R1 & R2 FOR NO BELL AT END OF LINE
5. WITHDRAWS ARE AS FOLLOWS:
U1 SEE P/N 2441133-0001
U2 SEE P/N 2441134-0001
U3 & U6 ARE SN7405N
DVOLT
-12V
PRALI
PVOLT
HDRS2
HDRS1
BELL9
+5V
R3 5.1K
SEE NOTE 4 R4 2.7
CIDL9
CLFLI
CCRLI
CBSLI
R1 SEE NOTE 4 220
R5 5.1K
R2 SEE NOTE 4 2.7
CTOP9
CT64 9
RECA9
BRDS9
BRD11
BRD21
BRD31
BRD41
BRD51
BRD61
BRD71
Q1 2N2222A
CR1 IN914B
CR2 IN914B
CR3 IN914B
R9 4.48K 1/4W 1%
R10 220
R11 56.2K 1/4W 1%
R12 390
R13 17.4K 1/4W 1%
R6 5.1K
R7 5.1K
R8 5.1K
END OF LINE
BELL
CLEAR
SPECIAL GATE
INDICATES OPEN-COLLECTOR
SPARE GATES
J1
J2 (ODD)
J3 (EVEN)
REFERENCE DESIGNATORS
USED
NOT USED
MONE
TEXAS INSTRUMENTS
962587

065296 E

KEY POSITIONS	ENCODING LINES	KEY POSITIONS	ENCODING LINES	KEY POSITIONS	ENCODING LINES	KEY POSITIONS	ENCODING LINES	KEY POSITIONS	ENCODING LINES
1		17	ON LINE	33	C&G	49	F&K	65	A&H
2	B&G	18	PAP ADV	34	B&C	50	A&F	66	H&K
3	B&H	9		35	C&E	51	F&H	67	H&I
4	A&B	20		36	REPEAT	52	F&G	68	E&J
5	B&K	21		37	EOM	53	B&F	69	E&I
6	B&I	22	I&K	38		54	E&F	70	E&K
7	B&J	23	G&H	39		55	D&F	71	A&E
8	D&J	24	A&G	40		56	C&F	72	E&H
9	D&I	25	G&K	41		57	C&D	73	E&G
0	D&K	26	G&I	42	CONTROL	58		74	B&E
11	A&D	27	G&J	43		59		75	SHIFT
12	D&H	28	C&J	44	A&K	60		76	
3	D&G	29	C&I	45	A&I	61		77	J&K
4	B&D	30	C&K	46	A&J	62		78	
5	D&E	31	A&C	47	F&J	63		79	
6	ATN	32	C&H	48	F&I	64	SHIFT	80	
								81	H&J

TABLE I

NOTES UNLESS OTHERWISE SPECIFIED
1 RESISTANCE VALUES ARE IN OHMS
2 RESISTORS ARE ½W ±5%
3 CAPACITANCE VALUES ARE MICROFARADS
4 DIODES ARE N914B
5 TRANSISTORS ARE 2N2907A
6 NETWORKS ARE AS FOLLOWS
Z1 IS MOS KEYBOARD ENCODER (P/N 244213-0001)
Z2 IS AN SN7404N



REFERENCE DESIGNATORS	
USED	NOT USED
C1 THRU C4	
CR1 THRU CR16	
Q1 THRU Q5	
R1 THRU R24	
Z1 & Z2	
P1 & P2	

NONE

0720 | 0 | 962291
0720 | 0 | 9126 2

TEXAS INSTRUMENTS

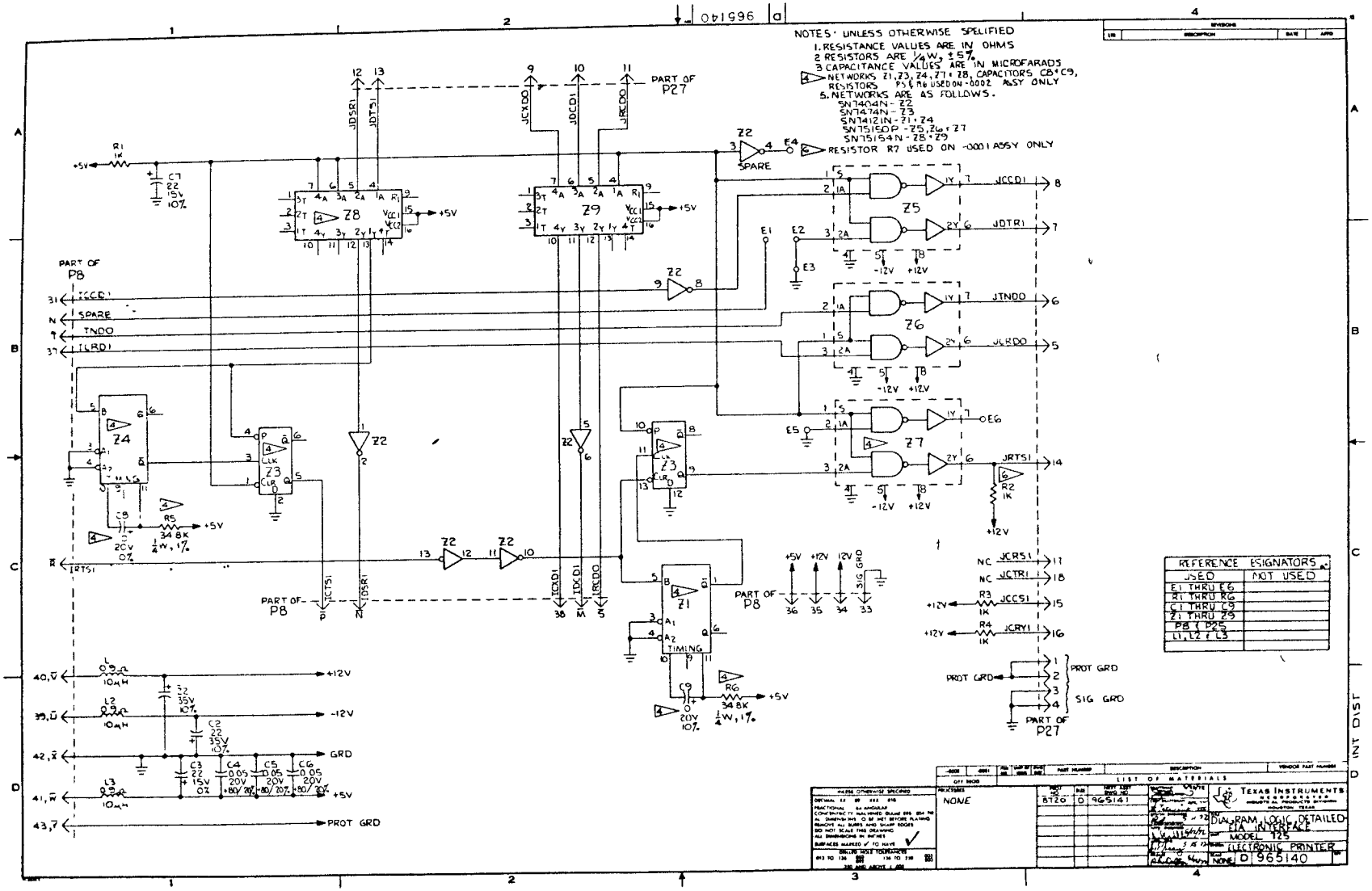
DIAGRAM LOGIC DETAILED KEYBOARD ENCODER ASSY 700

MODEL 7206

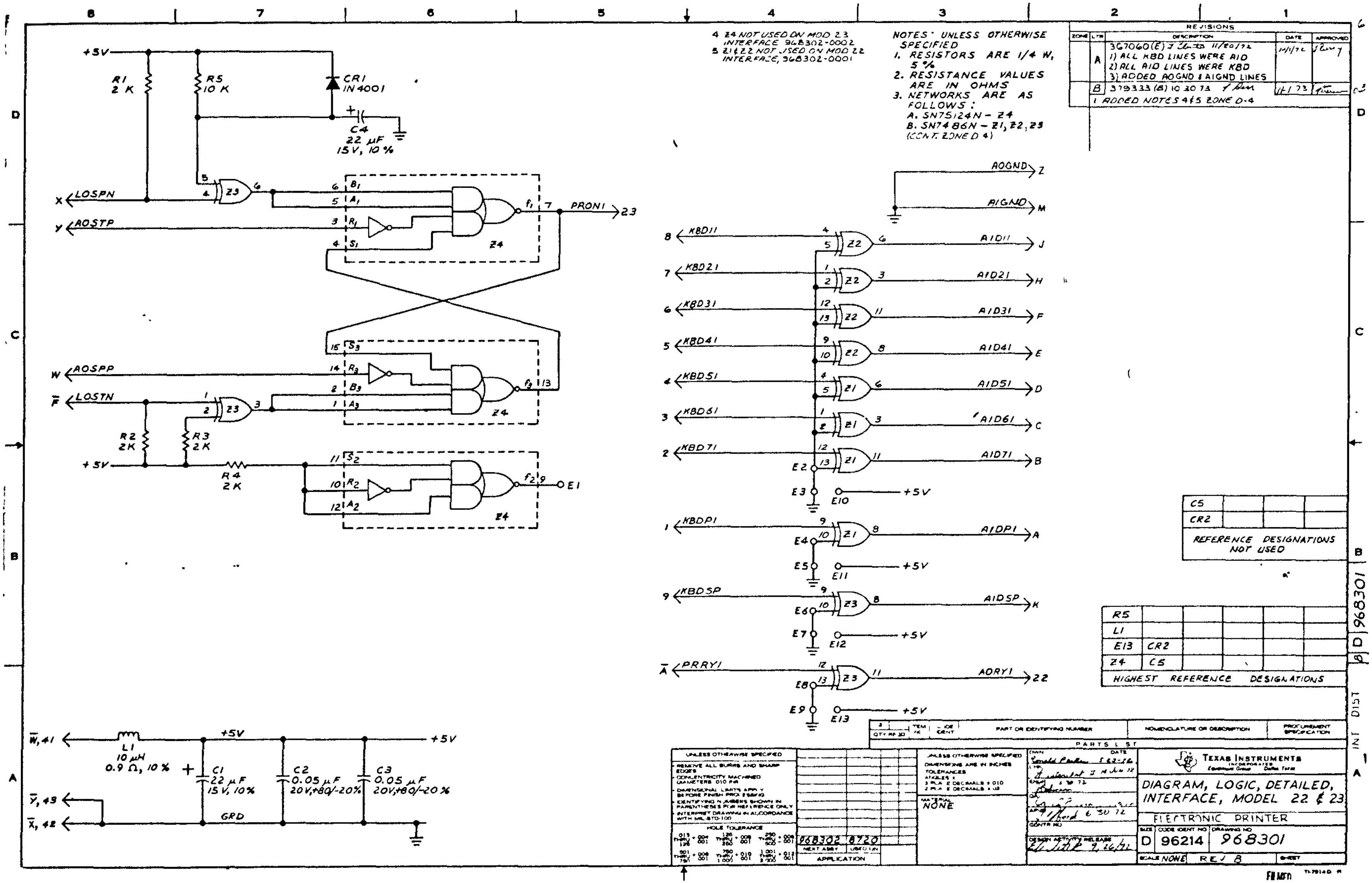
ELECTRONIC PRINTER

NONE E 962590

962590


NOTES: UNLESS OTHERWISE SPECIFIED
1. RESISTANCE VALUES ARE IN OHMS
2. RESISTORS ARE 1/4W, ±5%
3. CAPACITANCE VALUES ARE IN MICROFARADS
4. NETWORKS Z1,Z3,Z4,Z7 & Z8, CAPACITORS C8 & C9, RESISTORS R5 & R6 USED ON -0002 ASSY ONLY
5. NETWORKS ARE AS FOLLOWS.
SN7404N - Z2
SN7474N - Z3
SN7412IN - Z1, Z4
SN75150P - Z5, Z6 & Z7
SN75154N - Z8 & Z9
RESISTOR R7 USED ON -0001 ASSY ONLY
PART OF P27
PART OF P8
SPARE
TIMING
REFERENCE DESIGNATORS
USED
NOT USED
E1 THRU E6
R1 THRU R6
C1 THRU C9
Z1 THRU Z5
P8 , P25
L1, L2 & L3
PROT GRD
SIG GRD
NONE
TEXAS INSTRUMENTS
DIAGRAM, LOGIC, DETAILED
EIA INTERFACE
MODEL 725
ELECTRONIC PRINTER
D 965140

965140


4 Z4 NOT USED ON MOD 23 INTERFACE 968302-0002
5 Z1 & Z2 NOT USED ON MOD 22 INTERFACE, 968302-0001
NOTES: UNLESS OTHERWISE SPECIFIED
1. RESISTORS ARE 1/4 W, 5 %
2. RESISTANCE VALUES ARE IN OHMS
3. NETWORKS ARE AS FOLLOWS:
A. SN75124N - Z4
B. SN7486N - Z1, Z2, Z3
(CONT. ZONE D 4)
REVISIONS
A 367060(E) 11/20/72
1) ALL KBD LINES WERE AID
2) ALL AID LINES WERE KBD
3) ADDED AOGND & AIGND LINES
B 379333 (B) 10 30 73
1 ADDED NOTES 4 & 5 ZONE D-4
+5V
R1 2 K
R5 10 K
CR1 IN4001
C4 22 µF 15V, 10 %
X LOSPN
Y AOSTP
PRON1 23
W AOSPP
F LOSTN
R2 2K
R3 2K
R4 2K
+5V
E1
Z3
Z4
AOGND Z
AIGND M
8 KBD11 — Z2 — AID11 J
7 KBD21 — Z2 — AID21 H
6 KBD31 — Z2 — AID31 F
5 KBD41 — Z2 — AID41 E
4 KBD51 — Z1 — AID51 D
3 KBD61 — Z1 — AID61 C
2 KBD71 — Z1 — AID71 B
1 KBDP1 — Z1 — AIDP1 A
9 KBDSP — Z3 — AIDSP K
A PRRY1 — Z3 — AORY1 22
E2 E3 E10 +5V
E4 E5 E11 +5V
E6 E7 E12 +5V
E8 E9 E13 +5V
W, 41
L1 10 µH 0.9 Ω, 10 %
C1 22 µF 15 V, 10%
C2 0.05 µF 20V, +80/-20%
C3 0.05 µF 20V, +80/-20 %
+5V
Y, 43
X, 42
GRD
C5
CR2
REFERENCE DESIGNATIONS NOT USED
R5 L1 E13 CR2 Z4 C5
HIGHEST REFERENCE DESIGNATIONS
PARTS LIST
968302 8720
APPLICATION
MATERIAL NONE
TEXAS INSTRUMENTS
DIAGRAM, LOGIC, DETAILED, INTERFACE, MODEL 22 & 23
ELECTRONIC PRINTER
D 96214 968301
SCALE NONE REV B
D 968301

968301