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Giga-tronics
ASCOR

Model 7012

2 x 16 SINGLE-WIRE SHIELDED MATRIX

Rev: B
NOV 2008

Manual Part No.
75007012

Technical Manual

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Introduction

This manual provides the necessary information for the Model 7012 card assembly.

General Description

This ASCOR Pixie Series card assembly contains a 2 x 16 single-wire shielded matrix. The card assembly fits in a National Instrument PXI specifications and allows ease of design of complex switch systems.

Weight and Dimensions

Size: 3U PXI
Width: .80 in.
Height: 5.2 in.
Length: 6.5 in.
Weight: 0.5 lbs.

Features

- ASCOR's Pixie series card assembly.
- Insertion Loss: > -0.55 dB @ 50 MHz
- Bandwidth: > 113 MHz @ -3dB
- Crosstalk: > -34 dB @ 50 MHz

Electrical Specifications

Switching Voltage (DC/Peak, AC, Resistive):	200 VAC
Switching Current (DC/Peak, AC, Resistive):	1.0 Amp
Carry Current (DC/Peak, AC, Resistive)	1.0 Amp
AC Power/DC Power	10 Watts
Life expectancy @ 1A, 30 VDC	5,000,000 cycles
Initial Contact resistance:	< 0.187 ohm
Front Panel Connector 50 pin:	AMP 104129-9
Mating Parts Kit :	p/n 89800700

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Programming

The Model 7012 is a PXI register based card assembly design to be used with the National Instrument PXI specification. The Model 7012 can be programmed in 8, 16 or 32 bit wide data format. Through your PXI controller, write the data to the appropriate register as shown on the register map for the relay or relays in the register that is being closed. When the data bit is true, the relay chosen will be closed. The state of the relays in a register can be determined by reading the desired register. Data read back represents the value of the desired register. In addition, you can read back the coil state to verify that the coil is driven correctly by the program register. This scenario verifies that the program register has correctly controlled the relay coil.

The register map is organized to show the relay designation in each register. It is followed by the register's functionality and the path connections to the front panel. PXI will automatically assign the starting address of the card, called Bar0. This will be the starting address of the first register. Each address location controls 8 bits. Shown are the control functions using 16 format.

Programming of the Model 7012 is very simple. The module is organized as a 2 x 16 shielded single wire matrix. The location of the first register is assigned by the PCI enumerator. This is designated as "Bar0" or the starting address of the card. The program registers using 16 bit format are located as follows:

Register #1:	**read/write function:**	**Bar0 + 0000h**
	coil read back:	**Bar0 + 0008h**
Register #2:	**read/write function:**	**Bar0 + 0002h**
	coil read back:	**Bar0 + 000Ah**

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J1

Description	Pin #	Pin #	Description
Shield	50	49	Shield
Shield	48	47	Channel B
Shield	46	45	Channel A
Shield	44	43	Not Used
Not Used	42	41	Not Used
Not Used	40	39	Not Used
Not Used	38	37	Not Used
Not Used	36	35	Not Used
Shield	34	33	PIN 1
Shield	32	31	PIN 2
Shield	30	29	PIN 3
Shield	28	27	PIN 4
Shield	26	25	PIN 5
Shield	24	23	PIN 6
Shield	22	21	PIN 7
Shield	20	19	PIN 8
Shield	18	17	PIN 9
Shield	16	15	PIN 10
Shield	14	13	PIN 11
Shield	12	11	PIN 12
Shield	10	9	PIN 13
Shield	8	7	PIN 14
Shield	6	5	PIN 15
Shield	4	3	PIN 16
Shield	2	1	Shield

Front Panel Connector Pin Assignments

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SCHEMATICS/ASSEMBLY

Module

PL91000020

Assy91000020

Schematics/Assembly

PL85002560

Assy850002560

SCH85002560

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Single Level Bills Of Material Report

Assembly ID	Dwg Item	Component ID	Required	Description	ECN	Dwg Rev
91000020		07507012	1.000000	MANUAL,MODEL 7012		A
91000020		PI-GENERIC MODULE	0.000000	PROC.INSTR;GENERIC MODULE		A
91000020		PL91000020	0.000000	PARTS LIST,2 X 16 SINGLE WIRE,MODEL 7012		A
91000020		PP-REGCON	0.000000	PLUG & PLAY,GP REG. CON.		
91000020	0001	85002560	1.000000	ASSY,2 X 16 SINGLE WIRE MATRIX	2536	B
91000020	0002	78002320-001	0.000000	PANEL,2 X 16 WIRE MATRIX		A
91000020	0002	86500490	1.000000	FRONT PANEL KIT,50 POS. AMP IDC		
91000020	0003	05200160	1.000000	PRIMER,ZINC CHROMATE		
91000020	0004	79301280-012	1.000000	LABEL,INSERT,MODEL NUMBERS 7012		
91000020	0004	89800740	0.000000	KIT,PXI MODULE ASSY	2388	B
91000020	0005	79300360	1.000000	LABEL,BRADY PRINTER,.75 X .25		

Records Printed: 11

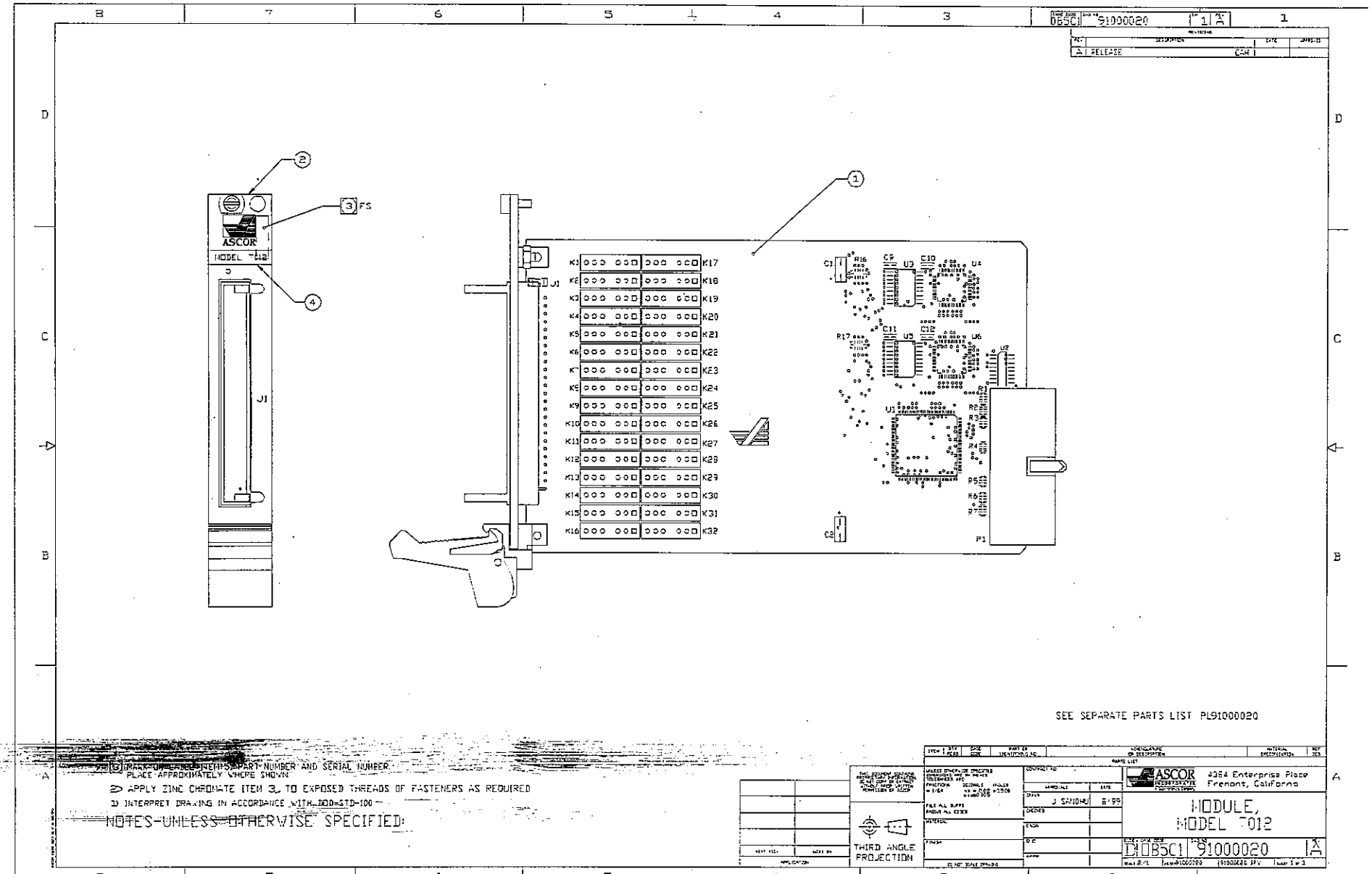
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Single Level Bills Of Material Report

Assembly ID	Dwg Item	Component ID	Required	Description	ECN	Dwg Rev
85002560		PI85002560	0.000000	PROC.INSTR.,ASSY,2 X 16 SINGLE WIRE MATR		
85002560		PL85002560	0.000000	PARTS LIST,ASSY,2 X 16 SINGLE WIRE MATRI	2536	B
85002560		SCH85002560	0.000000	SCHEMATIC,ASSY,2 X 16 SINGLE WIRE MATR		B
85002560	0001	75002560	1.000000	PCB,2 X 16 SINGLE WIRE MATR		B
85002560	0002	12500190-001	2.000000	CAP,10 UF,10V,TANTALUM,SMD		
85002560	0003	12500290-001	13.000000	CAP,CHIP,0805,.1 UF,50V		
85002560	0004	38100140	2.000000	IC,CUSTOM,16-BIT REG,64TQFP	3125	C
85002560	0005	50100060	32.000000	RELAY,9002-05		
85002560	0006	37000160-001	4.000000	IC,2803,8CH DRIVER,SOIC		
85002560	0007	30400123-001	1.000000	IC,74HCT123,MULTIVIBRATOR,MONOS,SML OUTL		
85002560	0009	79300360	1.000000	LABEL,BRADY PRINTER,.75 X .25		
85002560	0010	SN63WRMAP2	0.000000	SOLDER,TIN ALLOY:TIN-LEAD ALLOY		
85002560	0011	79300290	1.000000	LABEL,STATIC SYMBOL,.375 X .375		
85002560	0012	10800100-008	1.000000	RES,CHIP,0805,10.0K OHM,1%		
85002560	0013	10600360	12.000000	RESISTOR,CHP ARRAY		
85002560	0014	56104030	1.000000	CONN,110 POS,PC MOUNT,TYPE A		
85002560	0015	10800100-012	1.000000	RES,CHIP,0805,100K OHM,1%		
85002560	0016	89104930-002	1.000000	PXI 7012,2 X 16,SINGLE WIRE	2647	B
85002560	0017	12500290-005	1.000000	CAP,CHIP,0805,1UF,16V,10%,SMD		
85002560	0018	10600370-001	8.000000	RESNTWK,10K OHM, 8R,BUSS,SMT		
85002560	0019	40300150-001	1.000000	LED,RED,SMT 1206		
85002560	0020	10800100-001	1.000000	RES,CHIP,0805,100 OHM,1%		
85002560	0021	56100520	1.000000	CONN,50 POS,LOW PROFILE HEADER		

Records Printed: 23

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SEE SEPARATE PARTS LIST PL91000020

3. MARK-UP LABEL ITEM 5 PART NUMBER AND SERIAL NUMBER PLACE APPROXIMATELY WHERE SHOWN
2. APPLY ZINC CHROMATE ITEM 3, TO EXPOSED THREADS OF FASTENERS AS REQUIRED
1. INTERPRET DRAWING IN ACCORDANCE WITH ASME-STD-100

NOTES-UNLESS OTHERWISE SPECIFIED:

THIRD ANGLE PROJECTION

ASCOR 4364 Enterprise Place Fremont, California

MODULE, MODEL 7012

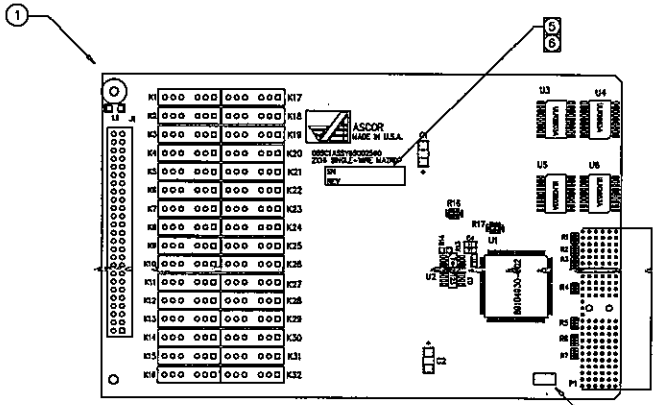
DWG 91000020 REV A

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DWG SIZE	DWG NO	REV
0B5C1	85002560	B

REV	DESCRIPTION	DATE	APPROVED
B	FORMAL RELEASE		



(1) PLACE APPROX. AS SHOWN. ADVOID ALL CIRCUITRY.

CAUTION
THIS ASSEMBLY CONTAINS PARTS AND ASSEMBLIES SUSCEPTIBLE TO DAMAGE BY ELECTROSTATIC DISCHARGE (ESD).

SEE SEPARATE PARTS LIST – PL85002560

NOTES–UNLESS OTHERWISE SPECIFIED:

1) INTERPRET DRAWING IN ACCORDANCE WITH DOD–STD–100.

2) ASSEMBLE PER MIL–STD–454.

3) SQUARE PIN DENOTES:
PIN 1 OF DIPS,SIPS AND CONNECTORS
EMITTER OF TRANSISTOR
CATHODE OF DIODE
POSITIVE SIDE OF CAPACITORS

[4] TRIM LEADS SOLDER SIDE .060 MAX.

7) ATTENTION: OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC DISCHARGE SENSITIVE DEVICES.

[6] MARK SERIAL NUMBER APPROX. NEAR ASCOR LOGO.

[5] MARK ASSEMBLY REVISION APPROX. NEAR ASCOR LOGO.

91000020

THIRD ANGLE PROJECTION

DRAWN	CHER REIS	7/99	
CHECKED			
ENGR			
MFG			
APPR			

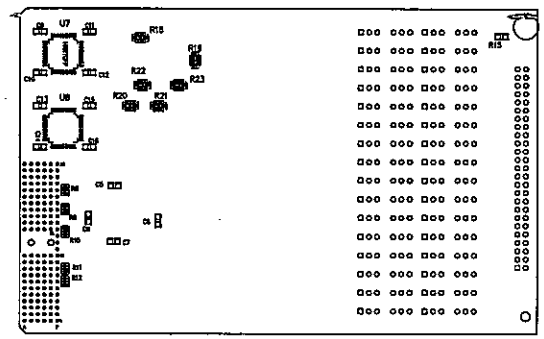
ASCOR 4384 Enterprise Place Fremont, California

ASSY PCB
2X16 MATRIX

SIZE	CAGE CODE	DWG NO	REV
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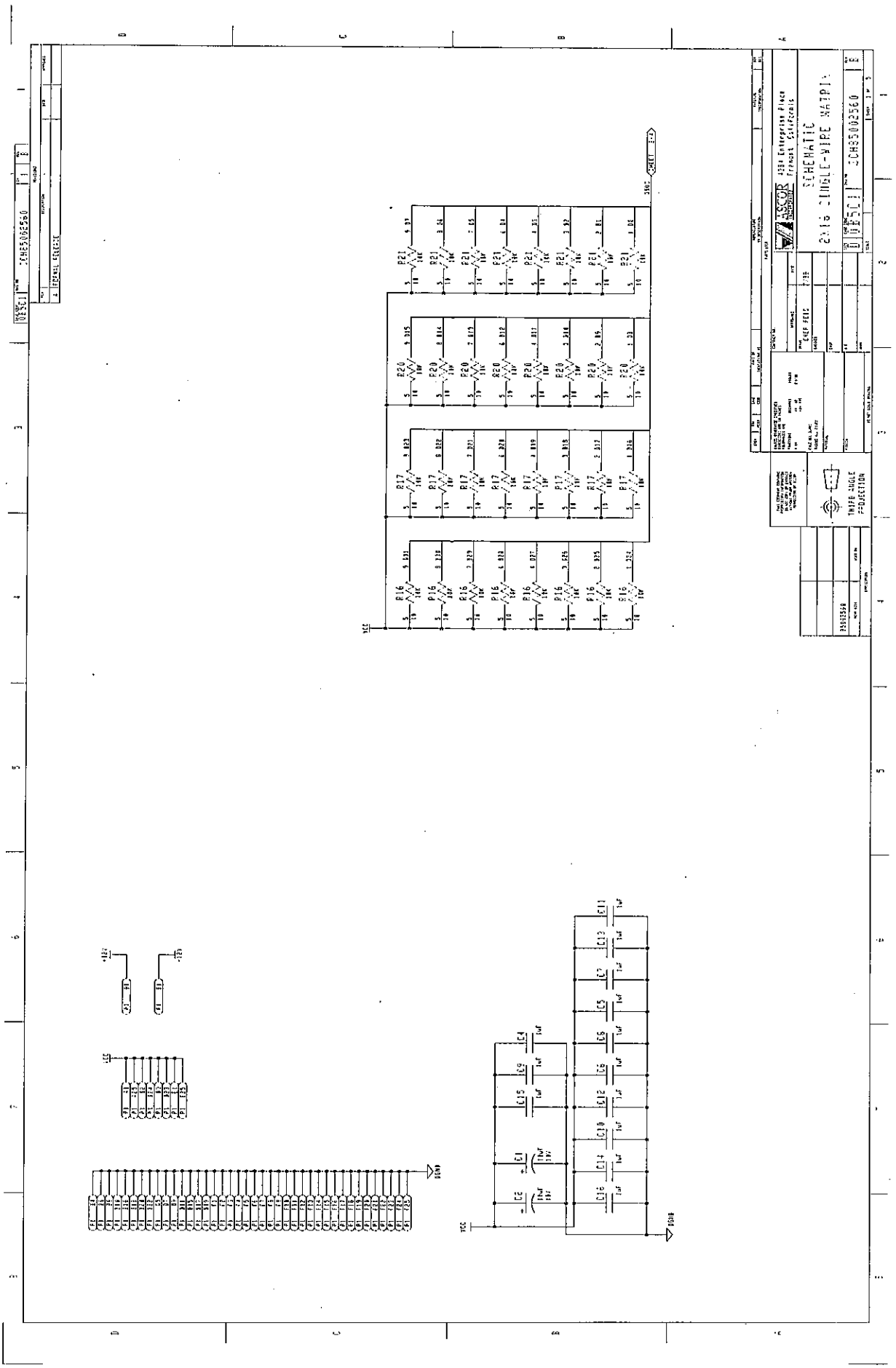
MATL NONE | A2560–1.DWG | SHEET 1 OF 2

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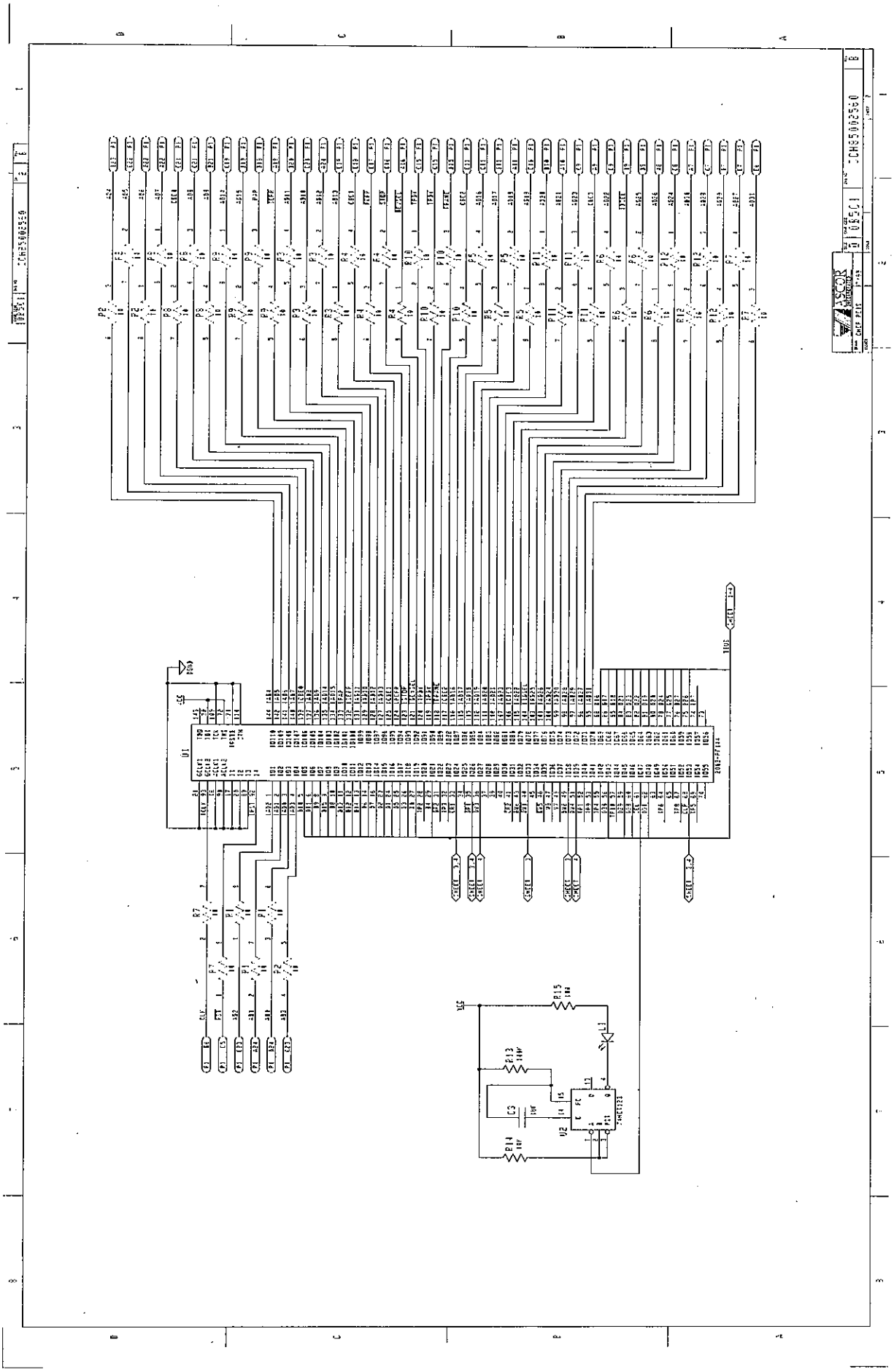


VIEWED FROM BACK SIDE

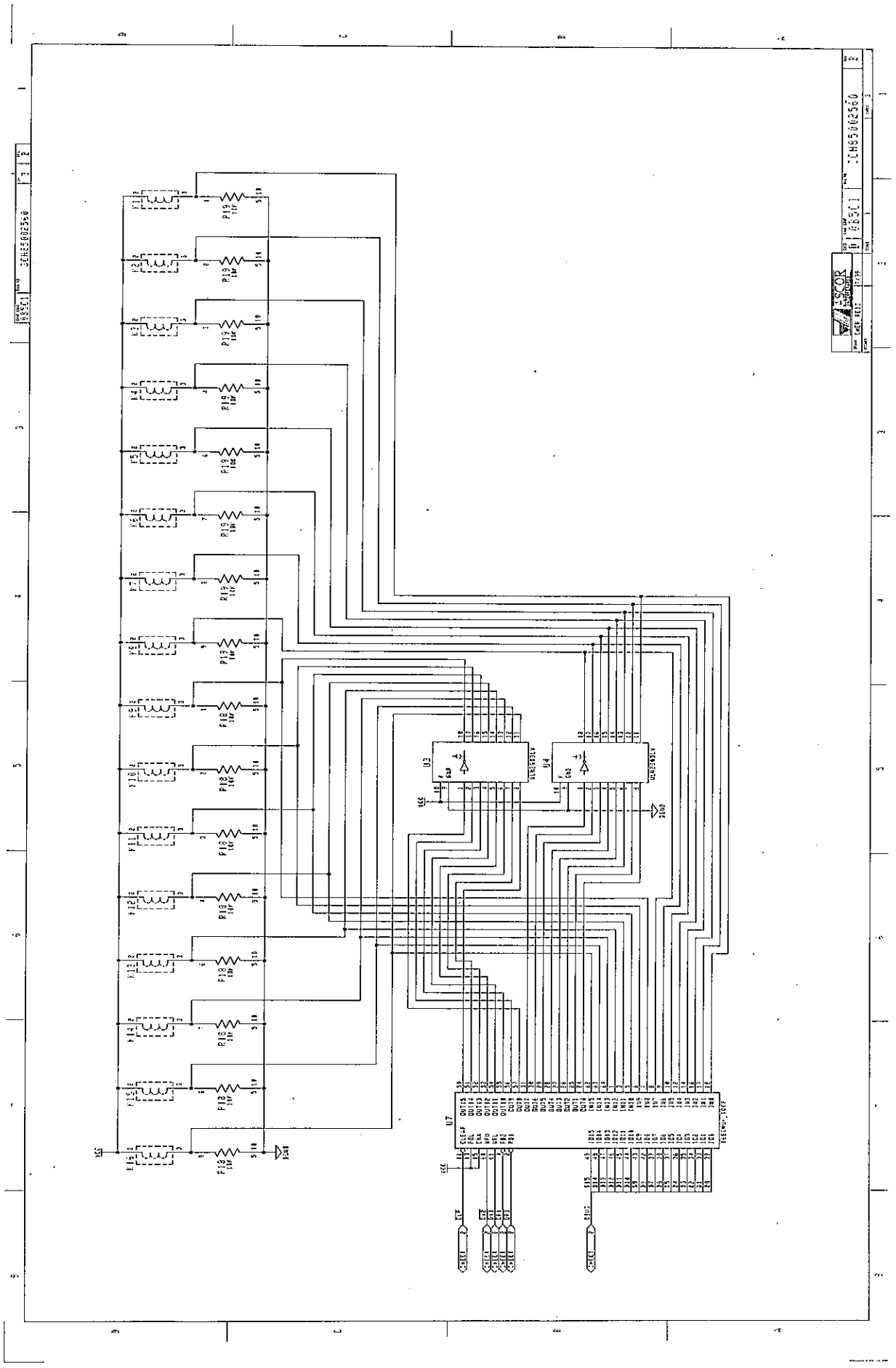
ASCOR		D	0B5C1	85002560	B
DRAWN CHER REIS 7/99		SCALE NONE	A2560-2.DWG	SHEET 2



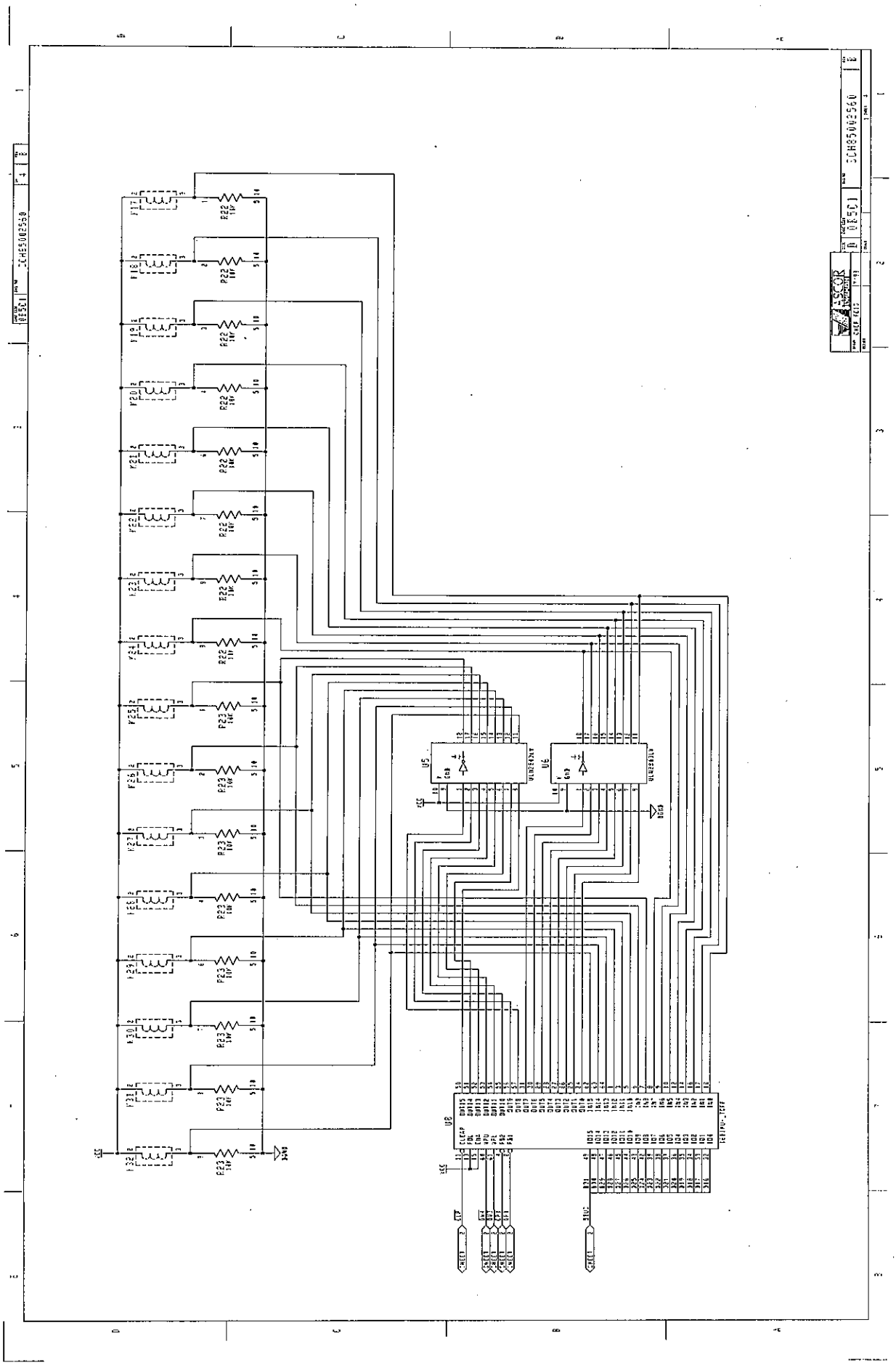
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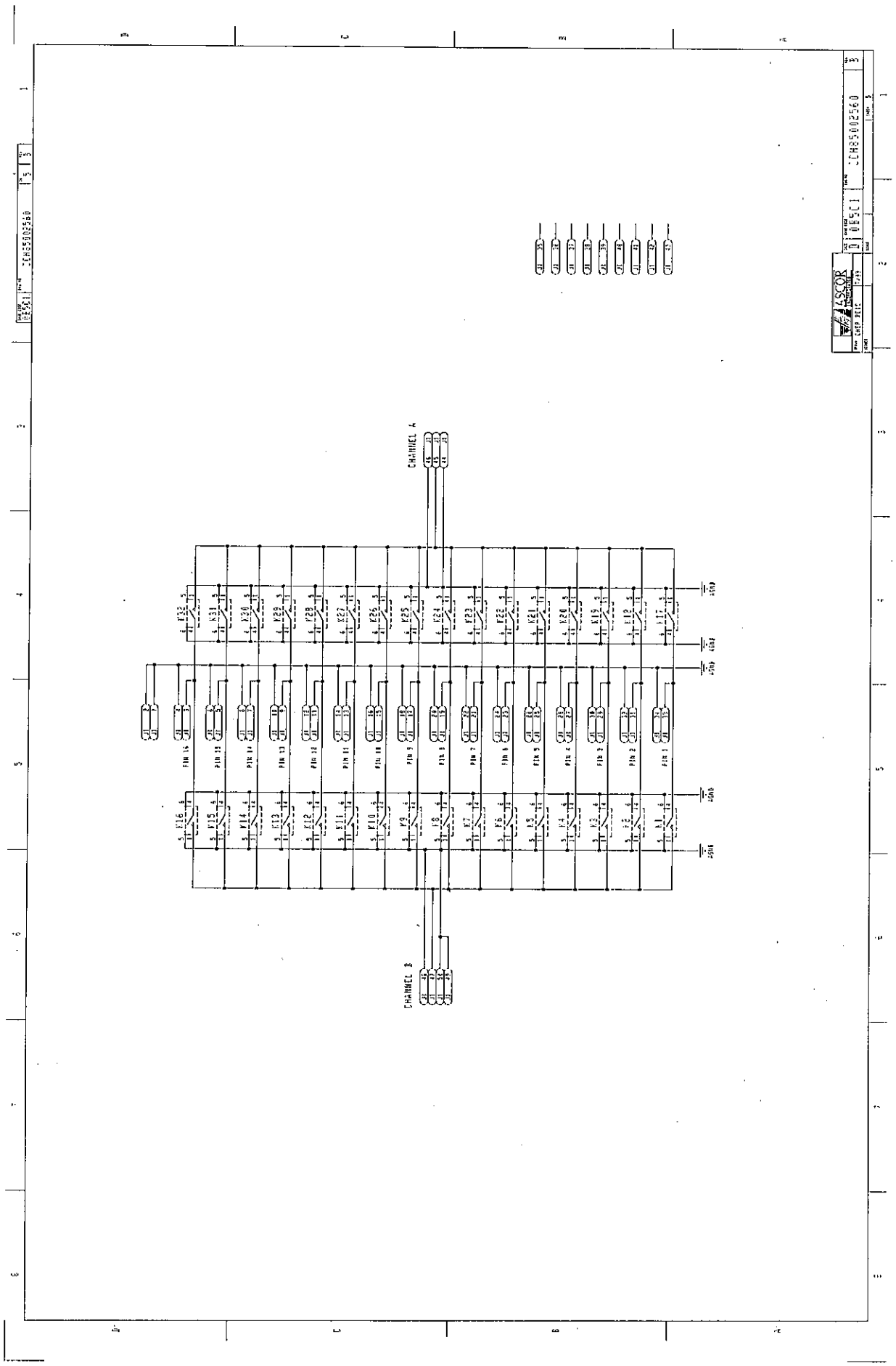
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