

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Aeroflex / Tektronix / CDS 53A-525* at our website: *Click HERE*

SERVICE MANUAL

53A-525

WAVEFORM DIGITIZER

Copyright 1989 Colorado Data Systems, Inc. All rights reserved.
Contents of this publication may not be reproduced in any
form without the written permission of Colorado Data Systems, Inc.

REFERENCE DESIGNATOR	CDS PART NUMBER	QTY.	PART DESCRIPTION	MFG. NUM.	MFG. PART NUMBER
	525SA1	1	BOTTOM BOARD FOR 53A-525	0026	525SA1
	525SA2	1	TOP BOARD FOR 53A-525	0026	525SA2
	53A-729	2	ADAPTER CABLE BNC MALE TO SMB SNAP-ON PLUG	0026	53A-729
	53A-729-010	2	OPT 10 10 FT CABLE LENGTH	0026	53A-729-010

525SA1 BOTTOM BOARD FOR 53A-525

REV 8909-01-1

REFERENCE DESIGNATOR	CDS PART NUMBER	QTY.	PART DESCRIPTION	MFG. NUM.	MFG. PART NUMBER
C00,1011,1012,1031,1044,1045,105 1111,1114,1131,1143,1145,15,16 17,30,35,43,47,50,75,841,843,85 87,912,941,942,96	20128-10006	29	CAP FXD CER .1UF 20% 50VDCW	0058	C322C104M5U5CA
C05,1041,1112	22022-47008	3	CAP FXD TA 47UF 20% 20WVDC	0106	199D476X0025EE2
C061,062	21528-20002	2	CAP FXD MICA 20PF 5% 500VDCW	0025	CD6ED200J03
C1042,1142	22022-47007	2	CAP FXD TA 4.7UF 10-20% 16-25	0106	199D475X0016BA1
C1043,1113,1141,1144,27,63,641 67,73,741	20128-10005	10	CAP FXD CER .01UF 20% 50VDCW	0106	1C25Z5U103M050B
C642,643,742,842	22022-10007	4	CAP FXD TA 1UF 10-20% 16-35DWC	0106	199D105X0025AA1
C70,71	20128-47005	2	CAP FXD CER .047UF 10% STABLE 100VDCW	0058	CK069X473K
C771,771,971,972	21528-51002	4	CAP FXD MICA 51PF 5% 500VDCW	0012	DM10-510J
C90,911	25028-50001	2	CAP CER VAR 1-5PF	0242	513-011A 1-5
CR17	32000-04148	1	DICDE SILICON 75V 1A 5%	0078	1N4148
CR73,83	32000-01001	2	DIODE SILICON SCHOTTKY 35V .5A	0050	5082-1001
DS01	32000-00103	1	DIODE LIGHT EMITTING RED 50MA	0039	550-0103
DS11,12,13,14,15,16,17,18	32000-02003	8	DIODE LIGHT EMITTING RED WITH RESISTOR 0	0039	547-2003
E06	47000-06812	1	HEAT SINK	0185	MCHS-68-1.2R
E1	40401-00525	1	EJECTOR STAMP 53A-525 STYLE B BLUE	0026	40401-00525
E2	40401-10069	1	EJECTOR STAMP WV DIG STYLE D BLUE	0026	40401-10069
E3	45050-03304	1	DCL LED 8POS DRW 00000-00098	0026	45050-03304
E4	45050-03236	1	DCL LED 8POS BLK DRW 00000 -00473	0026	45050-03236
F07	42202-52004	1	FUSE SUB-MIN 4 AMP OR 5 AMP	0061	251004 OR 251005

525SA1 BOTTOM BOARD FOR 53A-525

REV 8909-01-I

REFERENCE DESIGNATOR	CDS PART NUMBER	QTY.	PART DESCRIPTION	MFG. NUM.	MFG. PART NUMBER
J30,40,501,502,60,70,80	45002-51053	7	CONNECTOR SMB RT. ANGLE PC BD MOUNT	0287	R114665
K102,112,62,70,72,80,82,92	83500-20009	8	RELAY DPDT 45 OHMS 5V	0013	DS2E-M-DC5V
L1041	27051-00200	1	INDUCTOR WIDE-BAND FERRITE CHOKE	0042	VK 200 10-3B
L63	27051-10007	1	INDUCTOR 1.0 UH 10%	0080	WEE-1.0-UH10
P1041,1071	45001-10400	2	SOCKET 4 PIN SIP LOW PROFILE	0001	929870-01-04-10
PCB	41530-52500	1	P.C. BOARD VERSION 8L 8909 4	0026	41530-52500
Q1041	51100-05583	1	TRANSISTOR HIGH SPEED PNP	0074	2N5583
Q30,50	51100-03646	2	TRANSISTOR NPN HIGH SPEED SWITCH	0074	MPS3646
Q60	51100-03906	1	TRANSISTOR PNP SWITCHING	0107	2N3906
R07	10117-10006	1	100K RES COMP 1-4W 5%	0087	R25J-100K-5%
R1011,813	14014-24302	2	24.3 OHM RESISTOR FILM 1 4W 1% 50 PPM	0035	RN55C24R3F
R1021,1022	14044-14304	2	1.43K RES FILM 1-4W .1% 10PPM	0037	PTF-651K43BT-13
R1023,1024	14044-15404	2	1.54K RES FILM 1-4W .1% 10PPM	0037	PTF-651K54BT-13
R1041,1141	10127-15003	2	150 OHM RES COMP 1-2W 5%	0008	EB1515
R1121,1122	14036-59704	2	5.97K RES FILM 1-4W .1% 25PPM	0035	RN55E5971B
R1131	15138-20005	1	20K RES VAR CER 20TRN 1-2W 100PPM	0021	3299W-1-203
R1132	14014-15005	1	15K RES FILM 1-4W 1% 50PPM	0035	RN55C1502F
R22	12008-33004	1	3.3K RES NETWORK SIP 5% 1.5W 9-PKG	0027	750-101-R3.3K
R27,401,502,60	10117-10005	4	10K RES COMP 1-4W 5%	0087	R25J-10K-5%
R31	10116-33004	1	3.3K RES COMP 1-8W 5%	0087	R10J-3.3K-5%

525SA1 BOTTOM BOARD FOR 53A-525

REV 8909-01-I

REFERENCE DESIGNATOR	CDS PART NUMBER	QTY.	PART DESCRIPTION	MFG. NUM.	MFG. PART NUMBER
R402	10117-33003	1	330 OHM RES COMP 1-4W 5%	0087	R25J-330-5%
R43,501,612,65,76,77,85,944	10117-10004	8	1K RES COMP 1-4W 5%	0087	R25J-1K-5%
R611	10117-33005	1	33K RES COMP 1-4W 5%	0087	R25J-33K-5%
R621,622,623,624,63	14044-12003	5	120 OHM RES FILM 1-4W .1% 10PPM	0037	PTF-65120RBT-13
R631	14024-20003	1	200 OHM RES FILM 1-4W 1% 100PPM	0035	RN55D2000F
R721,722	14036-15003	2	150 OHM RES FILM 1-4W .1% 25PPM	0035	RN55E1500B
R723,724	14044-33203	2	332 OHM RES FILM 1-4W .1% 10PPM	0037	PTF-65332RBT-13
R741	12006-56003	1	560 OHM RES NETWORK 5% .7W 7-PKG	0027	750-81-R560
R742,743,83	14024-61903	3	619 OHM RES FILM 1-4W 1% 100PPM	0035	RN55D6190F
R801,811	10117-91006	2	910K RES COMP 1-4W 5%	0087	R25J-910K-5%
R802,812	15138-25006	2	250K RES VAR CER 25TRN 1-2W 100PPM	0021	3299W-1-254
R821,822	14044-38803	2	388 OHM RES FILM 1-4W .1% 10PPM	0037	PTF-65388RBT-13
R912	15138-20003	1	200 OHM RES VAR CER 25TRN 1-2W 100PPM	0021	3299W-1-201
R921,922	14044-14704	2	1.47K RES FILM 1-4W .1% 10PPM	0037	PTF-651K47BT-13
R941	15138-10004	1	1K RES VAR CER 25TRN 1-2W 100PPM	0021	3299W-1-102
R942,943	14044-15004	2	1.5K OHM RES FILM 1-4W .1% 10PPM	0037	PTF65 1.5K B-T13
S17,45,61	42050-10101	3	SWITCH DIP 1POS SPST	0093	JS-8794-01
S97	42050-10010	1	SWITCH 10POS.	0101	C42315-A61-A11
U01,15,35	73004-74573	3	IC HCMOS TRISTATE OCTAL D-TYPE LATCH	0107	74HC573
U02,031,032,12,131,132	71209-74592	6	IC TTL LS 8-BIT BINARY COUNTER	0107	74LS592

525SA1 BOTTOM BOARD FOR 53A-525

REV 8909-01-I

REFERENCE DESIGNATOR	CDS PART NUMBER	QTY.	PART DESCRIPTION	MFG. NUM.	MFG. PART NUMBER
U04,24	79805-06264	2	IC CMOS 8K X 8-BIT STATIC RAM 150 NSEC	0401	HY6264P-15
U05,25,47,86	73306-74245	4	IC HCMOS OCTAL TRANSCEIVER	0107	74HC245
U06	79801-80186	1	IC NMOS CENTRAL PROCESSING UNIT	0118	R80186
U07	79814-00102	1	PAL PROGRAMMED EP320 REV A 53A-525	0026	79814-00102
U100,90	61000-00033	2	OP AMP FAST BUFFER AMP	0078	LH0033CG
U103	61000-00220	1	OP AMP WIDEBAND	0253	CLC220AI
U104	61000-00007	1	OP AMP BIPOLAR ULTRA LOW DRIFT	0082	OP07EP
U105,106,1151,1152,1161,1162,952 962	79805-00169	8	IC CMOS 4K X 4 25NS STATIC RAM 15NS TACC	0218	CY7C169-25PC
U1071,1072,21,951	73606-74574	4	IC TTL AS OCTAL TRI-STATE LATCH	0107	74AS574
U11	73306-07404	1	IC TTL AS HEX INVERTER	0107	74AS04
U14	79813-00081	1	PROGRAMMED PROM U14 53A-525	0026	79813-00081
U17	73600-07475	1	IC TTL QUAD BISTABLE LATCH	0107	7475
U26	79814-00103	1	PAL PROGRAMMED EP310-2 REV A 53A-525	0026	79814-00103
U27	73300-07406	1	IC TTL HEX INVERTER BUFFER-DRIVER	0107	7406
U31	79814-00106	1	PAL PROGRAMMED 16L8B REV A 53A-525	0026	79814-00106
U33	79009-74138	1	IC HCMOS 3-TO-8 DECODER	0107	74HC138
U34	79813-00082	1	PROGRAMMED PROM U34 53A-525	0026	79813-00082
U36	79813-00083	1	PROGRAMMED PROM U36 53A-525	0026	79813-00083
U37	73004-74563	1	IC HCMOS OCTAL TRI-STATE TRANSPARENT LATCH	0107	74HC563
U41	77826-74832	1	IC TTL AS HEX 2-INPUT OR	0107	74AS832

525SA1 BOTTOM BOARD FOR 53A-525

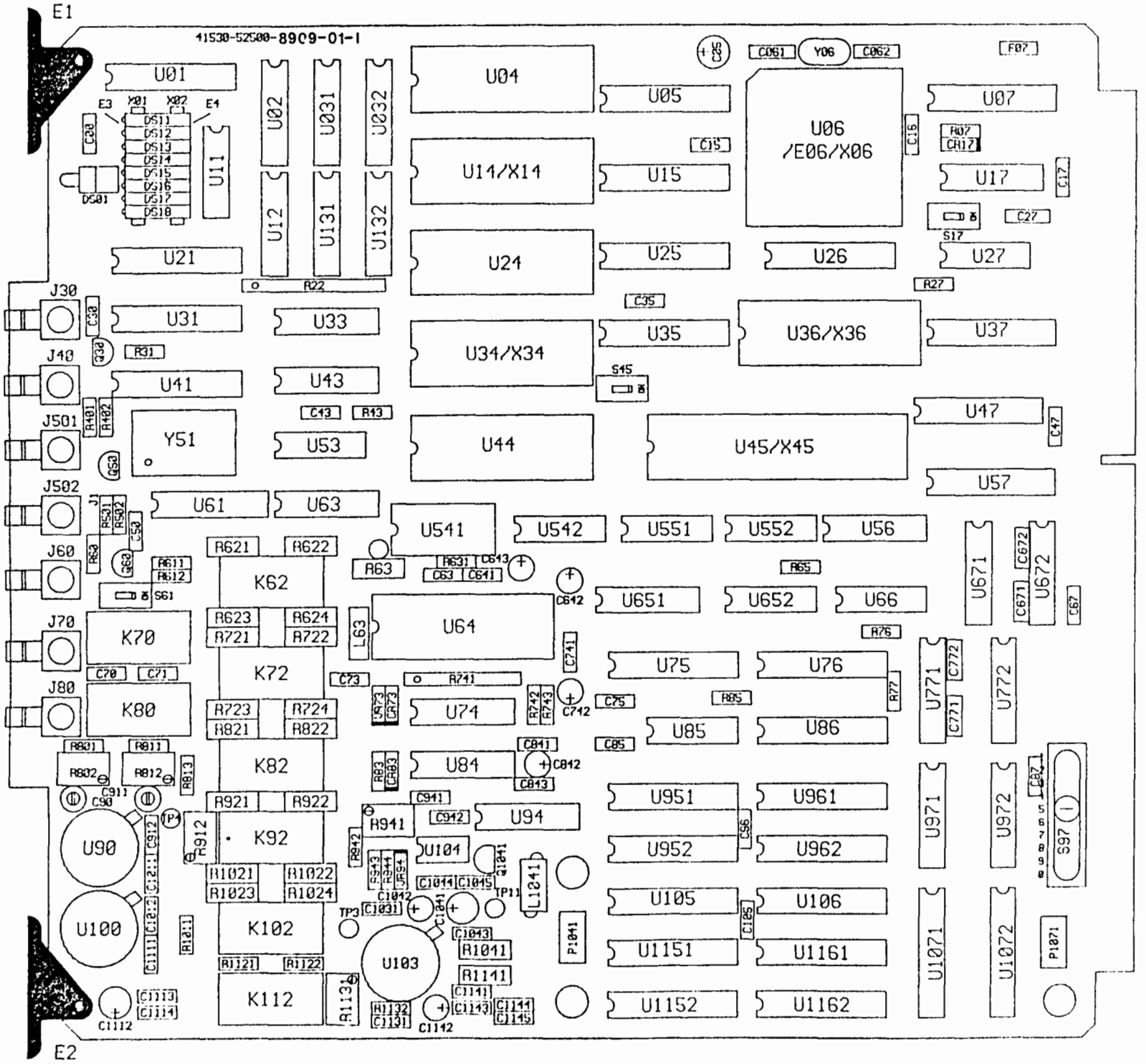
REV 8909-01-I

REFERENCE DESIGNATOR	CDS PART NUMBER	QTY.	PART DESCRIPTION	MFG. NUM.	MFG. PART NUMBER
U43,63,651,671	73604-74259	4	IC HCMOS 8-BIT ADDRESSABLE LATCH	0107	74HC259
U44	79801-82188	1	IC NMOS ADVANCED BUS CONTROLLER	0118	P82188
U45	79801-08087	1	IC NMOS NUMERIC COPROCESSOR	0118	D8087-1
U53	77204-07408	1	IC TTL AS QUAD 2-INPUT AND GATE	0107	74AS08
U541	79920-44750	1	IC HYBRID DELAY LINE 5-NS INC 50-NS MAX	0205	0447-0050-10
U542,551,85	73006-07474	3	IC TTL AS DUAL D-TYPE FLIP-FLOP	0107	74AS74
U552	76906-07402	1	IC TTL AS QUAD 2-INPUT NOR	0107	74AS02
U56,672	79010-74151	2	IC TTL AS 1-OF-8 DIGITAL MUX	0107	74AS151
U57	73005-74564	1	IC HCT OCTAL TRISTATE LATCH	0107	74HCT564
U61	73405-02803	1	IC HIGH-VLT-CUR DARLINGTON TRANS ARRAY	0106	ULN2803A
U64	20100-01056	1	IC ECL 8-BIT FLASH A-D CONVERTER	0282	CXA1056P
U652,66	76602-07464	2	IC TTL S AND-OR-INVERT	0107	74S64
U74,84	73315-10125	2	IC ECL QUAD ECL TO TTL TRANSLATOR	0074	MC10125
U75	79814-00105	1	PAL PROGRAMMED 16L8B REV B 53A-525	0026	79814-00105
U76	79814-00104	1	PAL PROGRAMMED 16L8B REV A 53A-525	0026	79814-00104
U771	73006-74194	1	IC TTL AS 4-BIT SHIFT REGISTER	0107	74AS194
U772,971,972	73006-74169	3	IC TTL AS 4-BIT SYNC-COUNTER	0107	74AS169
U94	73315-10124	1	IC ECL QUAD TTT TO ECL TRANSLATOR	0074	MC10124
U961	73305-74524	1	IC TTL F 8-BIT COMPARATOR	0078	74F524
VR73	32000-05221	1	DIODE ZENER 2.4V 500MW 5%	0074	1N5221B

525SA1 BOTTOM BOARD FOR 53A-525

REV 8909-01-I

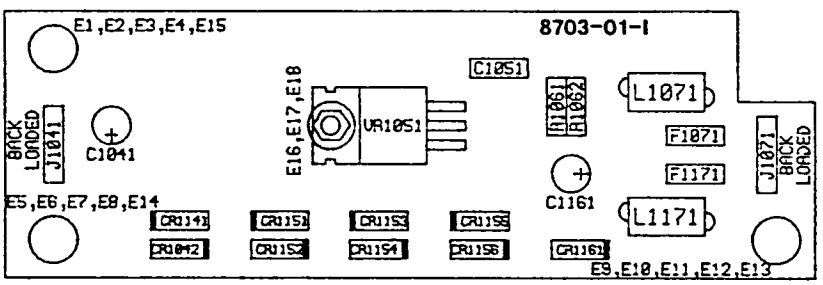
REFERENCE DESIGNATOR	CDS PART NUMBER	QTY.	PART DESCRIPTION	MFG. NUM.	MFG. PART NUMBER
VR94	32000-04575	1	DIODE REF 6.4V .01%	0074	1N4575
X01,02	45010-08100	2	SOCKET SIP 8 PIN	0032	CAS-08VSC-12B
X06	45013-05400	1	SOCKET 68-PIN 3M ONLY	0001	268-5400-11-1102
X14,34,36	45012-28128	3	SOCKET 28-PIN DIP MACHINED	0089	ICA-286-S-TG30
X45	45012-40128	1	SOCKET 40-PIN DIP MACHINED	0089	ICA-406-S-TG30
Y06	89500-16000	1	CRYSTAL 16.000MHZ 25PPM	0062	MP-1 16.0000
Y51	89499-40000	1	CRYSTAL OSC 40.000MHZ 10PPM 50PPM	0286	T-M80041AR40.00MHZ

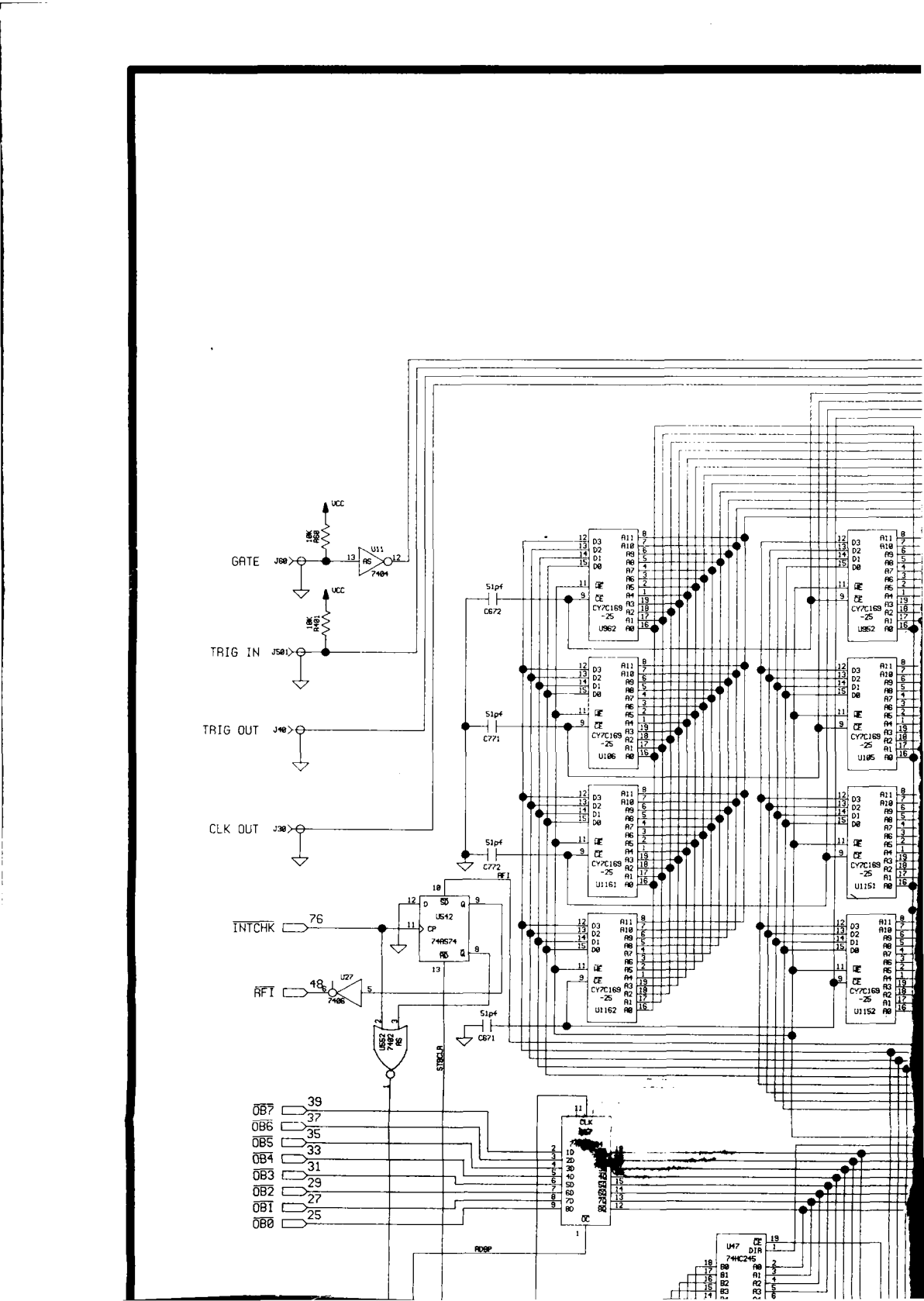

E1
41530-52500-8909-01-I
U01
U02
U031
U032
U04
U05
U06
/E06/X06
U07
U11
U12
U131
U132
U14/X14
U15
U17
U21
U24
U25
U26
U27
R22
J30
U31
U33
U34/X34
U35
U36/X36
U37
J40
U41
U43
J501
Y51
U53
U44
U45/X45
U47
U57
J502
U61
U63
U541
U542
U551
U552
U56
J60
K62
U64
U651
U652
U66
U671
U672
J70
K70
K72
U75
U76
U771
U772
J80
K80
U74
U85
U86
K82
U84
U951
U961
U971
U972
U90
K92
U94
U952
U962
U100
U104
U105
U106
K102
U103
U1151
U1161
U1071
U1072
K112
U1152
U1162
S97
E2

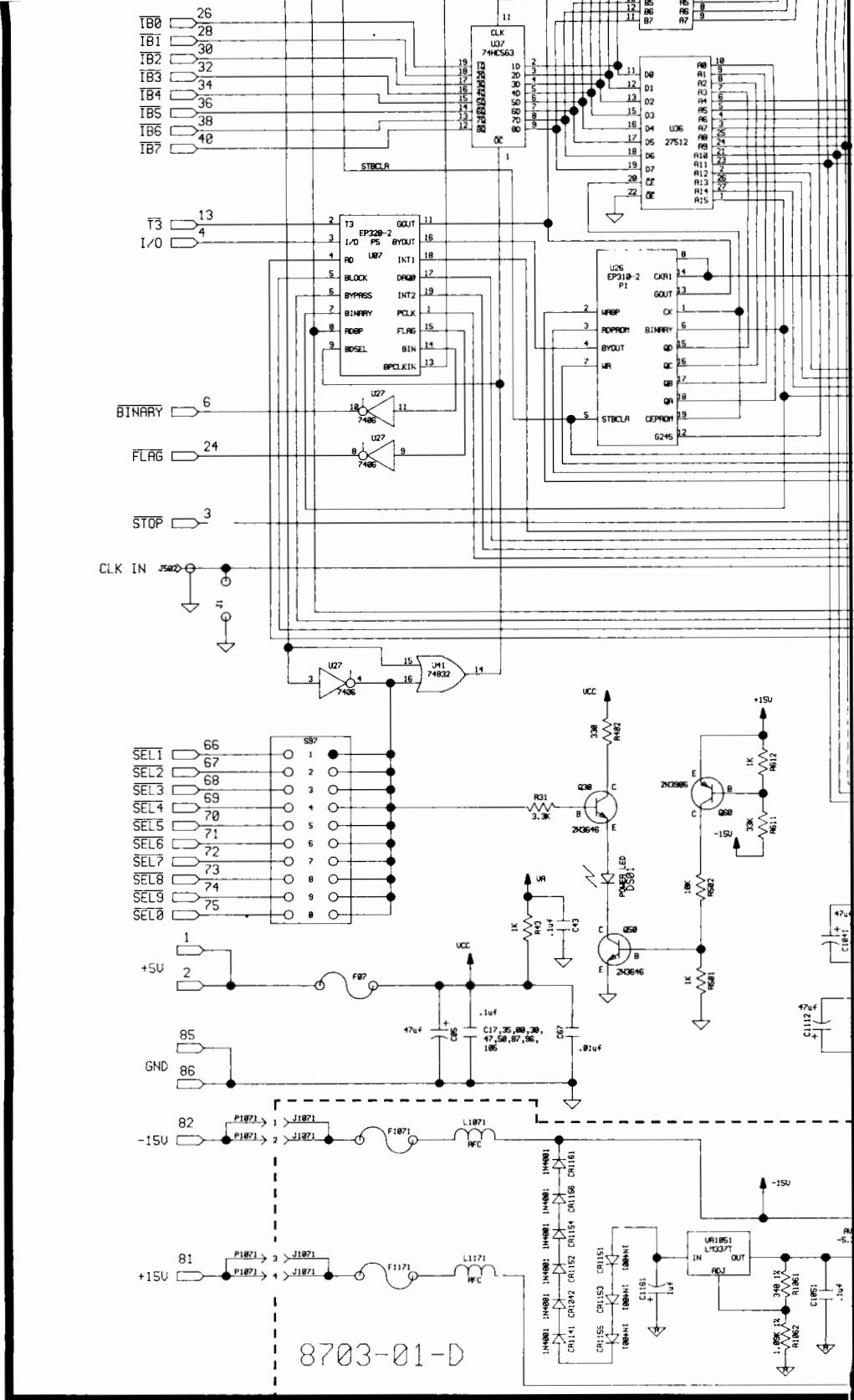
525SA2 TOP BOARD FOR 53A-525

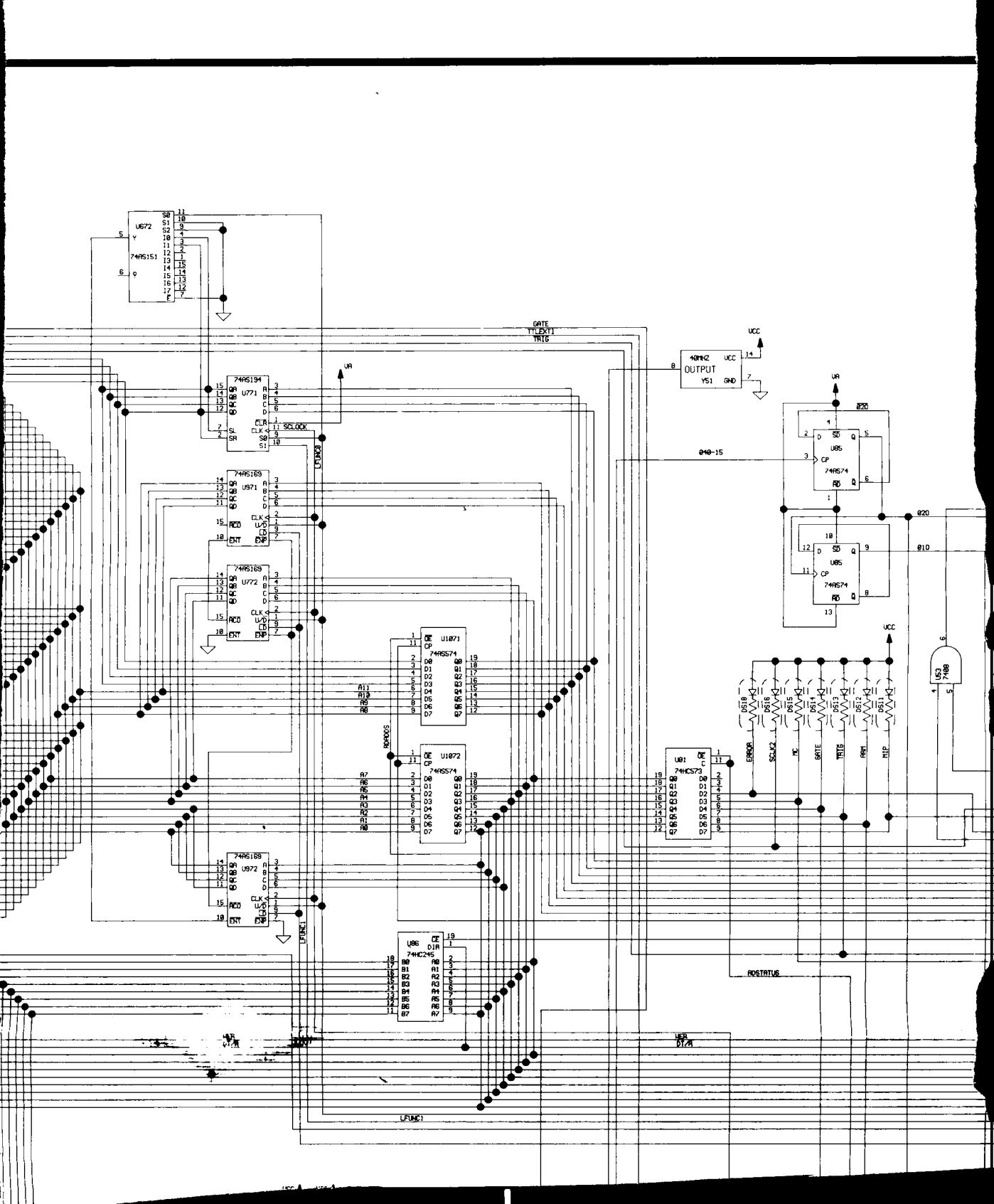
REV 8703-01-I

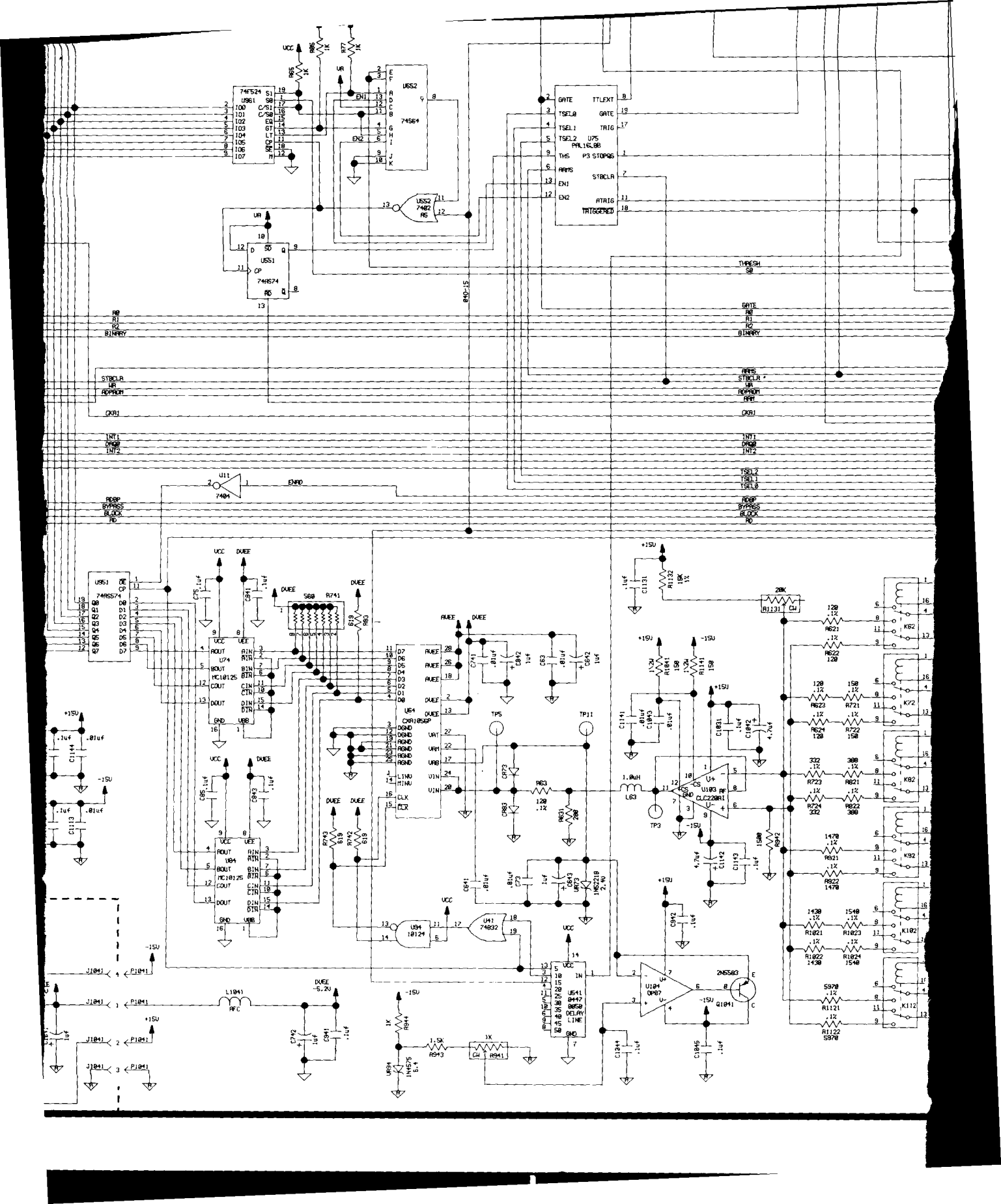
REFERENCE DESIGNATOR	CDS PART NUMBER	QTY.	PART DESCRIPTION	MFG. NUM.	MFG. PART NUMBER
C1041,1161	22022-10007	2	CAP FXD TA 1UF 10-20% 16-35DWC	0106	199D105X0025AA1
C1051	20128-10006	1	CAP FXD CER .1UF 20% 50VDCW	0058	C322C104M5U5CA
CR1042,1141,1151,1152,1153,1154 1155,1156,1161	32000-04001	9	DIODE SILICON 50V 1A 5%	0107	1N4001
E1,5,9	92201-00250	3	STAND-OFF 4040 X 0.25	0183	4030-440A
E10,2,6	92301-10440	3	SCREW PHIL PNHD 4-40 X .1875 BRITE ZINC	0137	4-40X3-16 PHIL PNH
E11,17,3,7	92303-00440	4	MACHINE NUT 4-40 ZINC	0137	MACHINE NUT 4-40
E12,13,14,15,4,8	92300-00440	6	WASHER SPLITRING 4-40 3-16 OD	0137	4R
E16	92300-75440	1	SCREW PHIL PNHD 4-40X.25 ZINC	0137	4-40X.25 PHIL PNHD
E18	92300-00004	1	NUMBER 4 FLAT WASHER ZINC	0137	4 FL WASH ZINC
F1071,1171	42202-52001	2	FUSE SUB-MIN 2AMP	0061	251002
J1041,1071	45001-10401	2	CONNECTOR 4 PIN SIP LOW PROF	0001	929805-01-04-10
L1071,1171	27051-00200	2	INDUCTOR WIDE-BAND FERRITE CHOKE	0042	VK 200 10-3B
PCB	41530-52501	1	P.C. BOARD VERSION 2S 8703 P4	0026	41530-52501
R1061	14024-34003	1	340 OHM RES FILM 1-4W 1% 100PPM	0035	RN55D3400F
R1062	14025-10904	1	1.09K RES FILM 1-4W .5% 100PPM	0035	RN55D1091D
VR1051	52000-00336	1	VOLTAGE REGULATOR NEGATIVE 3 TERM ADJUSTABLE	0078	LM337T

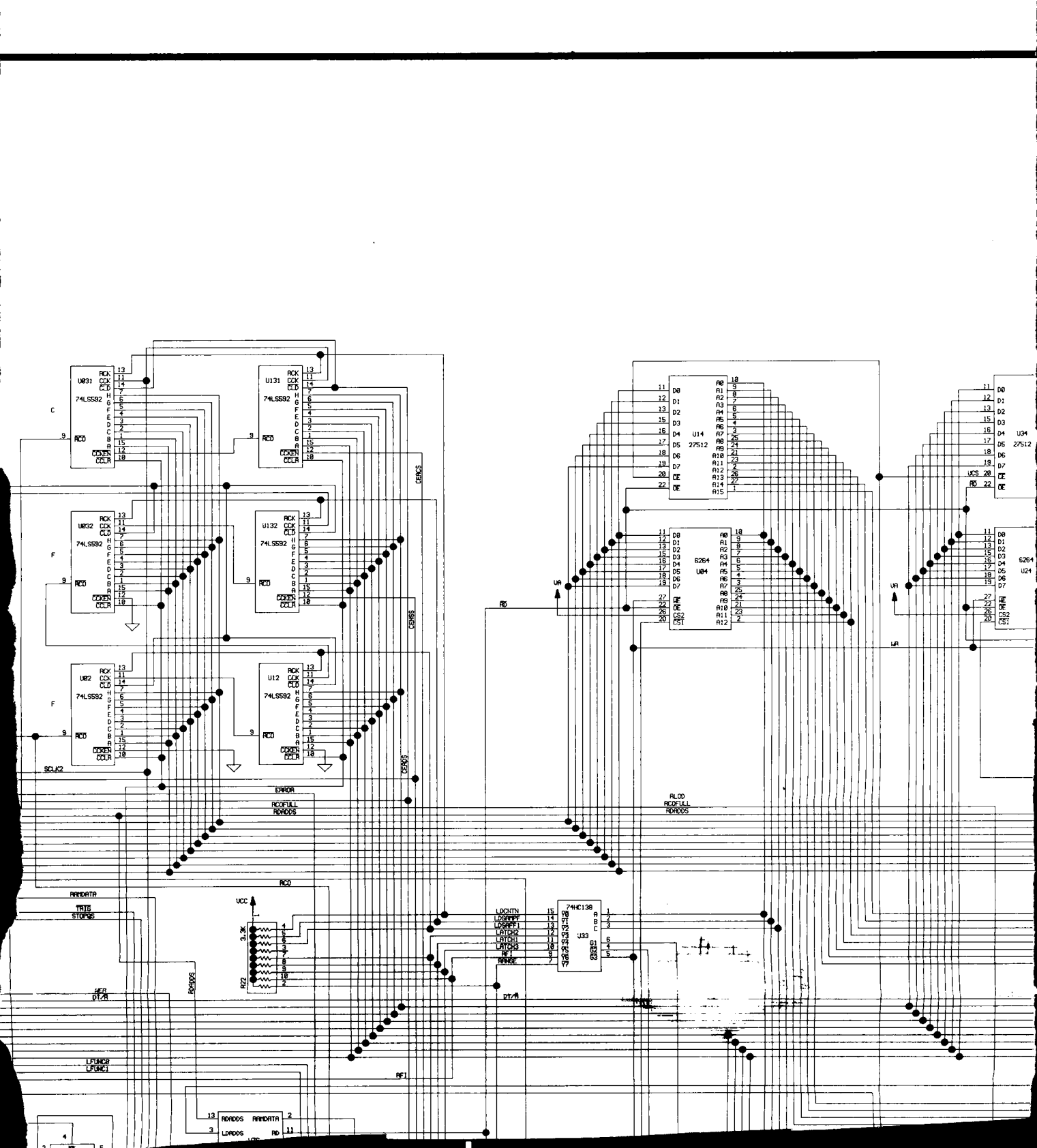

E1,E2,E3,E4,E15
8703-01-I
C1051
L1071
R1061
R1062
E16,E17,E18
VR1051
BACK LOADED
J1041
C1041
F1071
F1171
J1071
BACK LOADED
C1161
L1171
E5,E6,E7,E8,E14
CR1041
CR1042
CR1051
CR1052
CR1053
CR1054
CR1055
CR1056
CR1161
E9,E10,E11,E12,E13

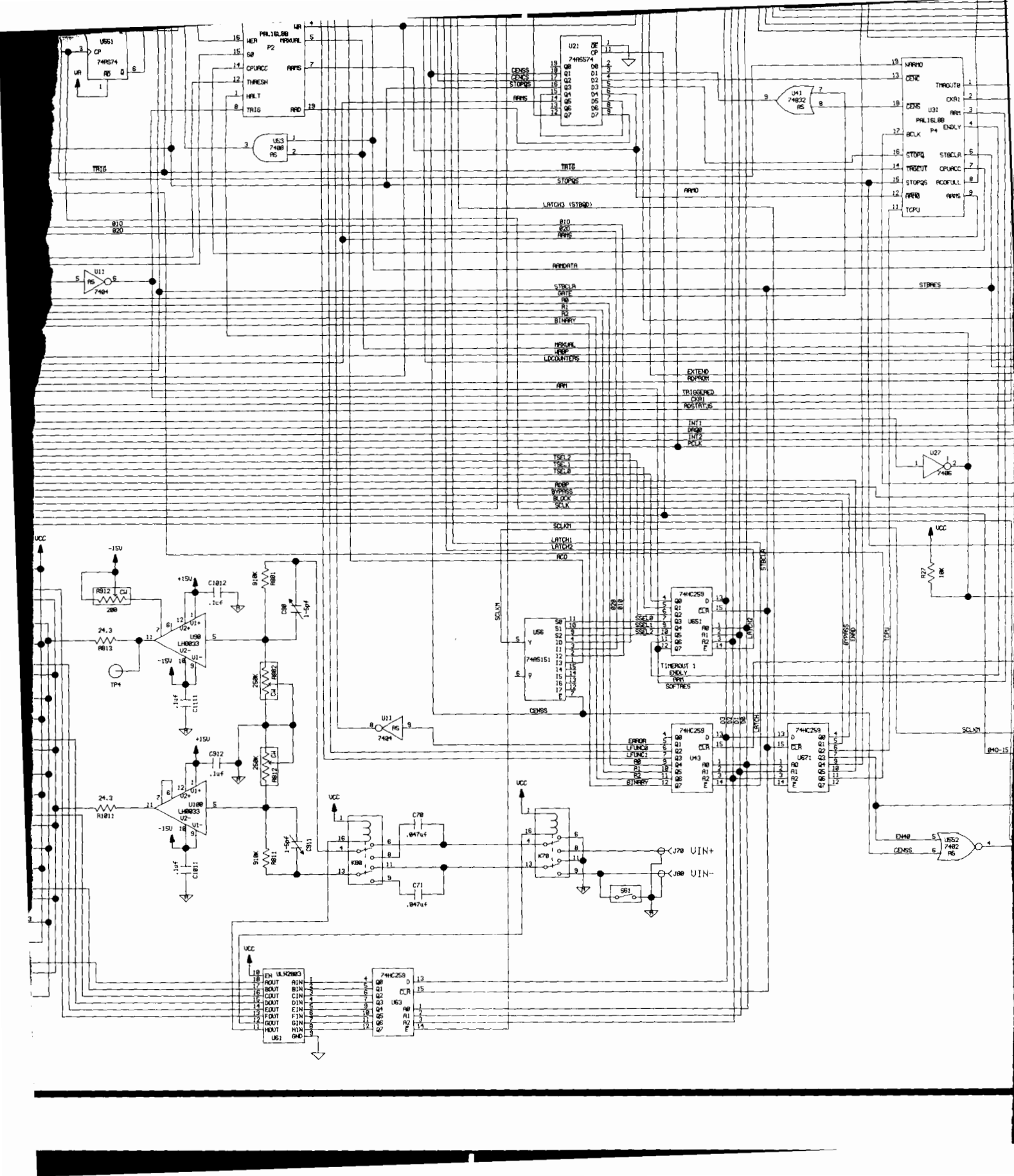

GATE
J60
TRIG IN
J501
TRIG OUT
J40
CLK OUT
J30
VCC
10K
R58
10K
R481
U11
7404
51pf
C672
C771
C772
C671
U962
U962
U106
U1161
U1162
U1151
U1152
INTCHK
76
RFI
48
U27
7408
U542
74RS74
STROBE
OB7
OB6
OB5
OB4
OB3
OB2
OB1
OB0
39
37
35
33
31
29
27
25
CLK
OC
RDBP
U47
74HC245
DIR

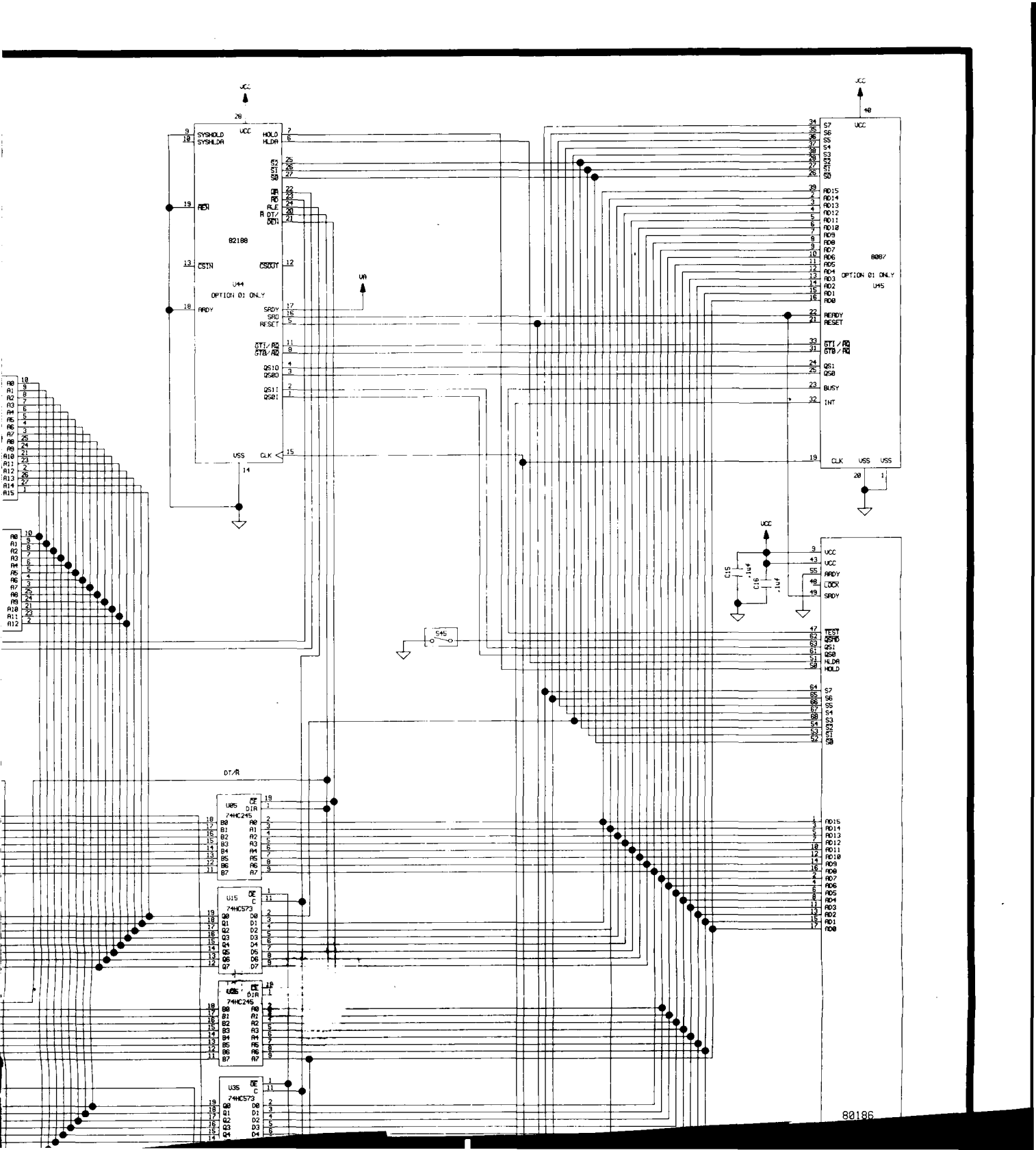

IB0
IB1
IB2
IB3
IB4
IB5
IB6
IB7
STBCLR
T3
I/O
BINARY
FLAG
STOP
CLK IN
SEL1
SEL2
SEL3
SEL4
SEL5
SEL6
SEL7
SEL8
SEL9
SEL0
+5V
GND
-15V
+15V
8703-01-D

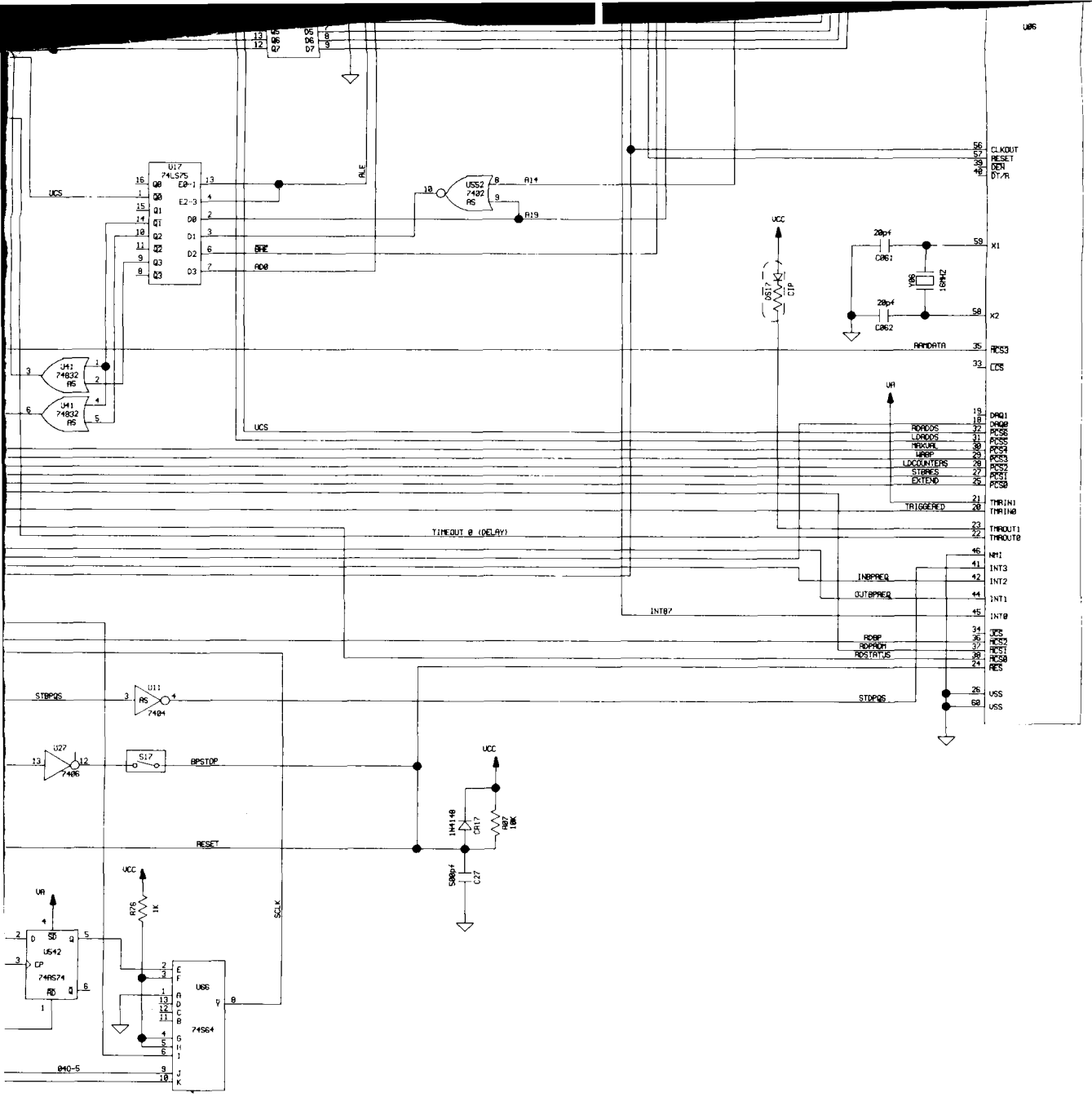

U672
74AS151
74AS194
U771
74AS169
U971
U772
U972
U1071
74AS574
U1072
U86
74HC245
U81
74HCS73
40MHZ
OUTPUT
U85
74AS74
U63
7408
SCLOCK
GATE
TYLEXT1
TRIG
LFUNC0
LFUNC1
RDSTATUS
ERROR
SCLK2
MC
GATE
TRIG
ARM
MIP




U031
U131
U032
U132
U02
U12
74LS592
RCK
CCK
CLD
RCO
CCKEN
CCLR
CEACS
CEBSS
CECSS
SCLK2
ERROR
RCOFULL
RDRDDS
RADDATA
TRIG
STOPGS
VCC
3.3K
RZ2
MEM
DT/R
LFUNC0
LFUNC1
RDRDDS
RADDATA
LDRDDS
RD
U14
U34
U04
U24
6264
27512
WA
RD
RLOD
LDCNTN
LDSAMPF
LDSAMPF1
LATCH2
LATCH1
LATCH3
RF1
RANGE
74HC138
U33
RF1


U551
74AS74
PAL16L8B
P2
MAXVAL
CPUACC
THRESH
HALT
TRIG
U53
7408
AS
U21
74AS574
CENSS
CENDS
STOPQS
ARMS
U41
74032
U31
P4
WRMD
CENE
CENS
BCLK
STOPQ
TRGOUT
CPUACC
RCDFULL
TCPU
TRIG
STOPQS
ARMD
LATCH3 (STBQD)
010
020
ARMS
U11
7404
ARMDATA
STBCLR
DATE
A0
A1
A2
BINARY
STBRES
MAXVAL
ADDR
LOCCOUNTERS
EXTEND
ADAPOR
TRIGGERED
CKA1
ADSTATUS
INT1
DRQ0
INT2
PCLK
U27
7406
TSEL2
TSEL1
TSEL0
ADDR
BYPASS
BLOCK
SCLK
SCLKM
LATCH1
LATCH2
RCD
VCC
-15V
+15V
R812
200
C1012
.1uf
R813
24.3
TP4
U1A
U2+
U2-
LH0033
V1+
V1-
C1111
.1uf
R881
910K
C38
1-5pf
R882
250K
C912
R811
C1011
R1011
U11
7404
U56
74AS151
CENSS
U43
74HC259
U571
ERROR
LFUNC0
LFUNC1
LATCH
TIMEROUT 1
ENDLY
ARM
SOFTRES
TCPU
BYPASS
ENAD
SCLKM
010-15
R27
10K
K80
C70
.047uf
C71
.047uf
K70
J70 VIN+
J80 VIN-
S81
U52
7402
AS
ENA0
CENSS
U61
ULN2803
74HC259
U63


82188
U44
OPTION 01 ONLY
8087
U45
OPTION 01 ONLY
80186
74HC245
74HC573
VCC
VSS
DT/R
SYSHOLD
SYSHLDA
AREN
CSIN
CSOUT
ARDY
SRDY
ARST
GT1/RQ
GT0/RQ
QS10
QS00
QS11
QS01
CLK
READY
RESET
BUSY
INT
LOCK
HOLD
HLDA
S7
S6
S5
S4
S3
S2
S1
S0
AD15
AD14
AD13
AD12
AD11
AD10
AD9
AD8
AD7
AD6
AD5
AD4
AD3
AD2
AD1
AD0
A8
A9
A10
A11
A12
A13
A14
A15
C15
.1uf
C16
.1uf
S45
TEST



REVISION LEVEL	ECO #
8706-01-A	ISSUED
8802-01-B	622
8804-01-C	
8804-01-D	759
8810-01-E	
8905-01-F	1002
8906-01-G	1024
8907-01-H	

COLORADO DATA SYSTEMS

PART NO.: 53A-525

DESCRIPTION: WAVEFORM DIGITIZER

P.C.B. NUMBER: 41530-52500

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP