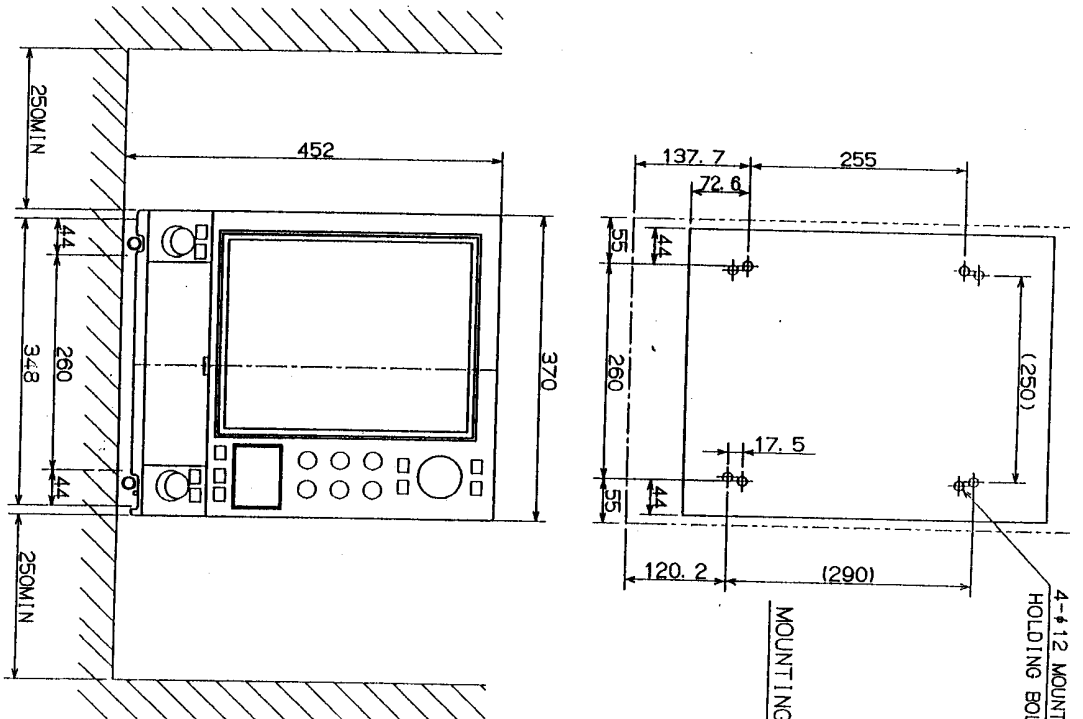


**WARNING**  
DO NOT  
REMOVE COVER  
ELECTRICAL  
HAZARD

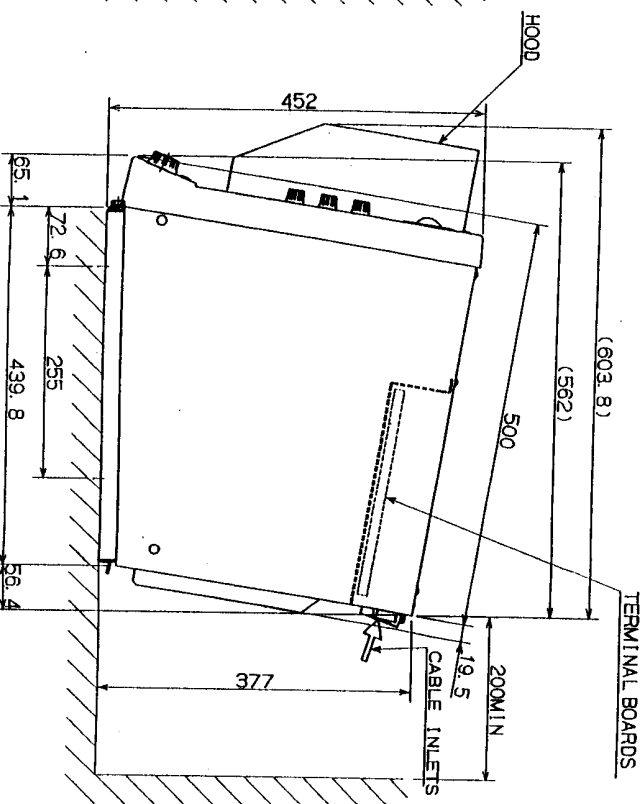
**MARINE RADAR EQUIPMENT**  
APPROVED BY FCC PART 80.101-3  
APPROVAL DATE 4 DEC 1993  
SERIAL NO. 107610  
MANUFACTURE DATE  
MAY 1982-1992  
ART. FCC-105-3  
Japan Radio Co., Ltd.

**DISPLAY UNIT**  
SERIAL NO. 100-0780  
CONTAINS RANGE DISTANCE  
CONTROLLER & P.P.S.  
CIRCUIT  
Japan Radio Co., Ltd.  
MAY 1982-1992



4-#12 MOUNTING HOLES  
HOLDING BOLT M10

MOUNTING DIMENSIONS



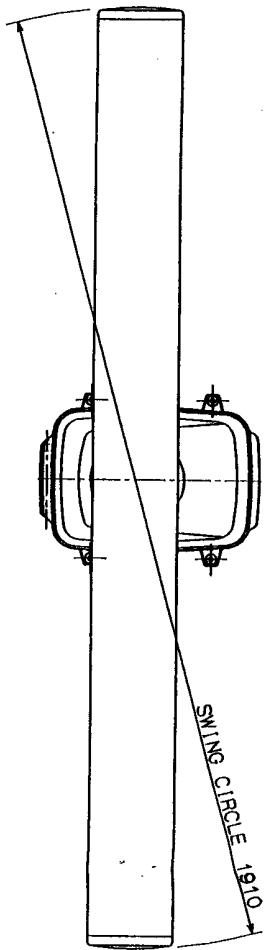
UNLESS OTHERWISE SPECIFIED

DIMENSION SPECIFIED	TOLERANCE	TOLERANCE
0 TO 30	± 1	± 0.5
OVER 30 TO 120	± 1.5	± 1
OVER 120 TO 400	± 2.5	± 2
OVER 400 TO 1000	± 4	± 3
OVER 1000 TO 2000	± 6	± 4
OVER 2000 TO 3000	± 8	± 5

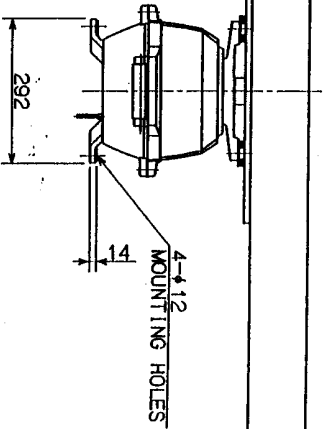
WEIGHT APPROX. 34 K.G.

CHECKED M. Morikubo	APPROVED M. Morikubo	DATE 19 MAY '98	TITLE NCD-3780 DISPLAY UNIT	SHEET NO. 1
	DESIGNED R. Funakoshi	SCALE A3	TITLE OUTLINE DRAWING	DRAWING NO. 1
JRC Japan Radio Co. Ltd.		SCNCDS106		

3rd Angle System Dimension mm 3 6 7 8



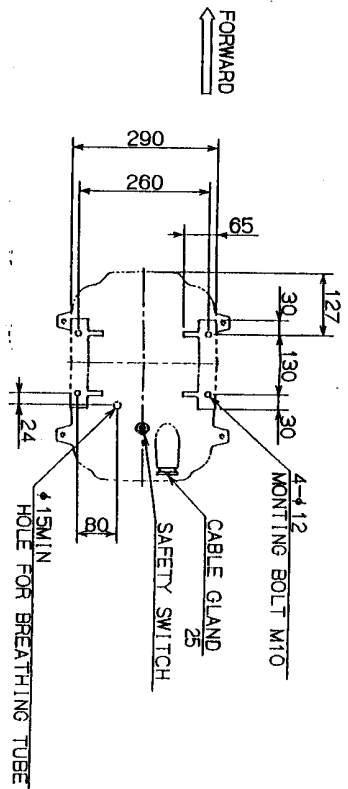
1890 (SWING CIRCLE 1910)



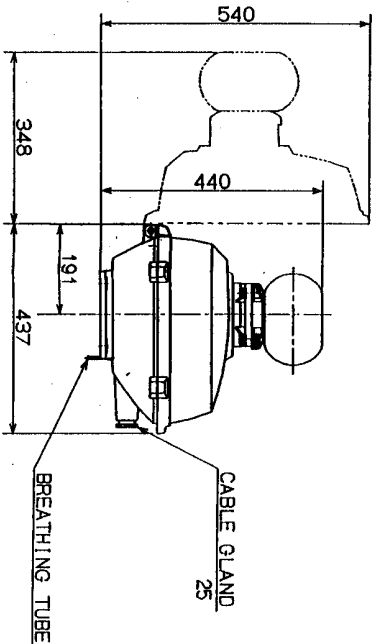
UNLESS OTHERWISE SPECIFIED

DIMENSION SPECIFIED	TOLERANCE	TOLERANCE
0 TO 30	± 1	± 0.5
OVER 30 TO 120	± 1.5	
OVER 120 TO 400	± 2.5	± 1
OVER 400 TO 1000	± 4	± 2
OVER 1000 TO 2000	± 6	
OVER 2000 TO 3000	± 8	± 3

Dimension mm



MOUNTING DIMENSIONS



WEIGHT APPROX. 31. Kg

3rd Angle System

Dimension mm

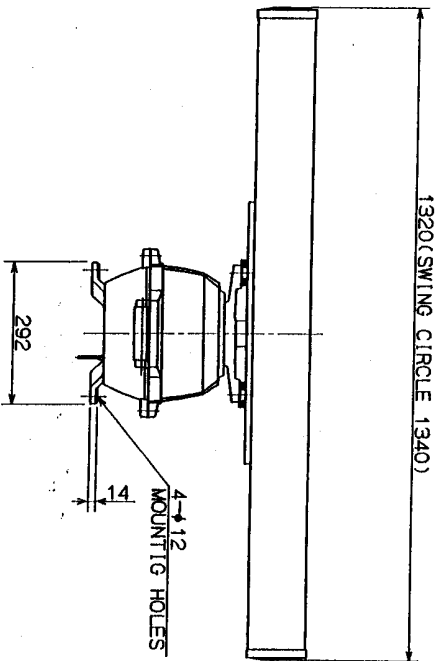
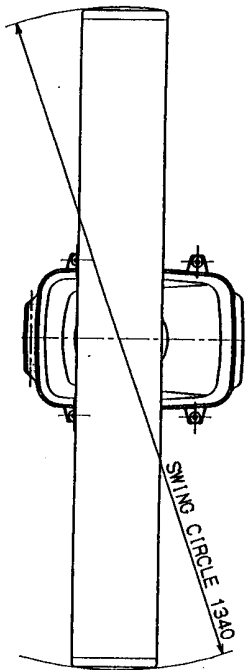
3

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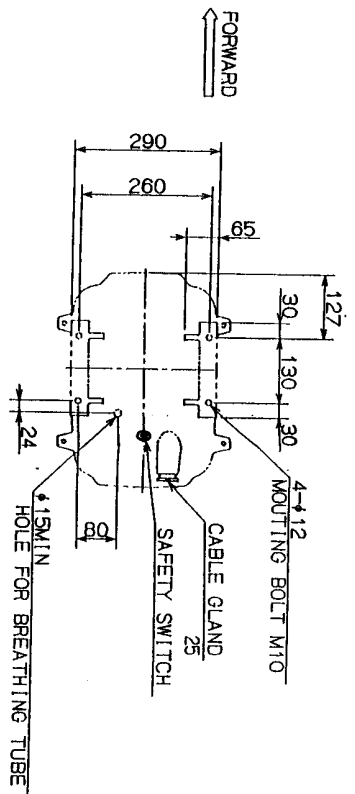
8

 Japan Radio Co., Ltd.	CHECKED	H. Kobayashi	APPROVED	H. Kobayashi	DATE	1998 JUN 10	TITLE	SCANNER UNIT	SHEET NO.	1
	DESIGNED	K. Oeuri	SCALE	1:10	DRAWING NO.		SCNKE5134			

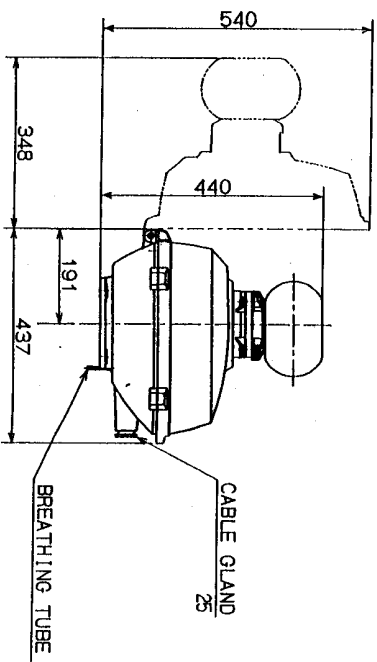


UNLESS OTHERWISE SPECIFIED

DIMENSION SPECIFIED	TOLERANCE	TOLERANCE
0 TO 30	± 1	± 0.5
OVER 30 TO 120	± 1.5	
OVER 120 TO 400	± 2.5	± 1
OVER 400 TO 1000	± 4	± 2
OVER 1000 TO 2000	± 6	
OVER 2000 TO 3000	± 8	± 3



MOUNTING DIMENSIONS



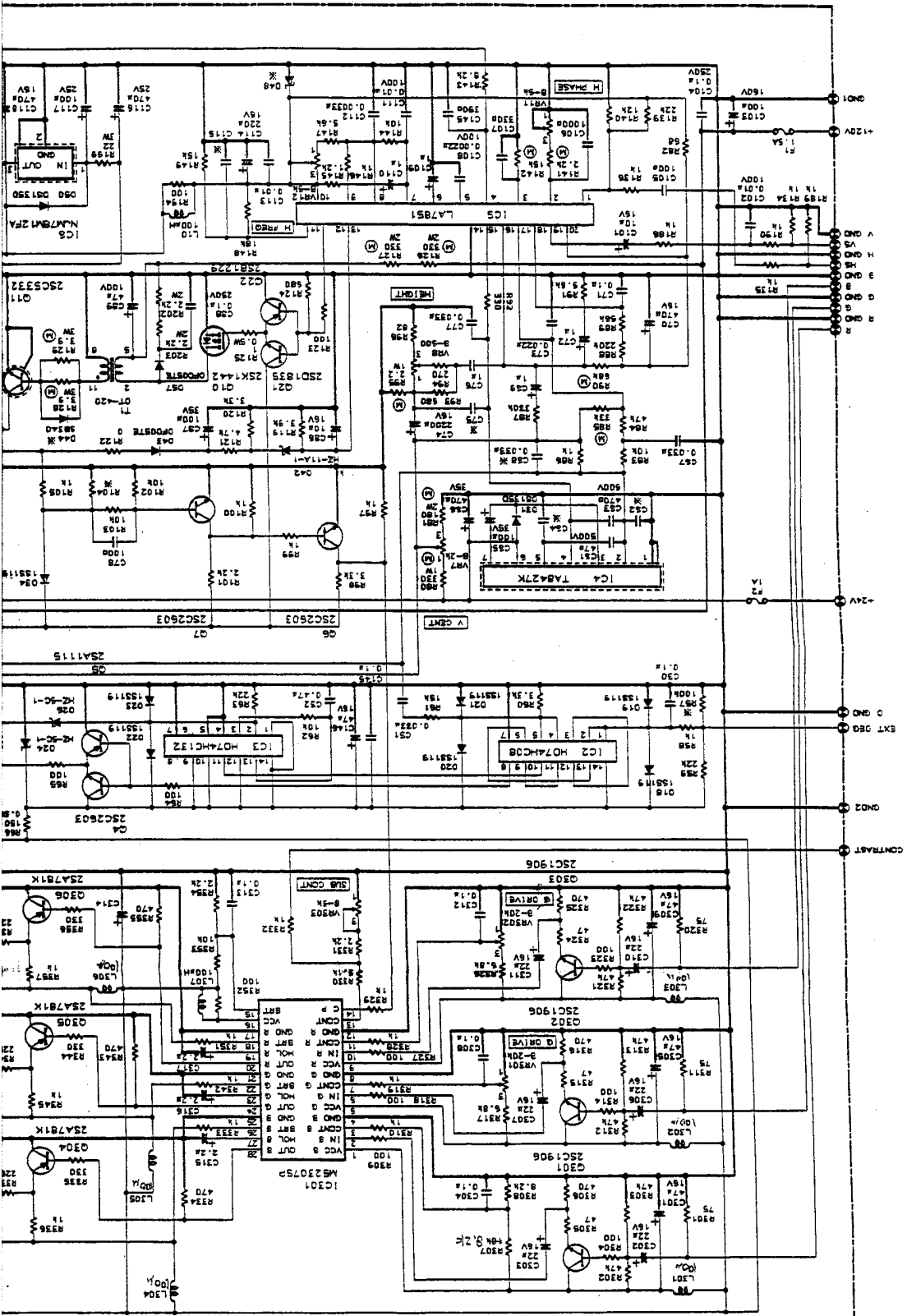
Dimension mm

WEIGHT APPROX. 29 Kg

3rd Angle System Dimension mm

DESIGNED	H. Kobayashi	APPROVED	H. Kobayashi	DATE	09 JUN '98	TITLE	NKE-1055-4 SCANNER UNIT	SHEET NO.	1
CHECKED	K. Osuri	DESIGNED		SCALE	1:10		OUTLINE DRAWING	DRAWING NO.	1

# PG432A MAIN

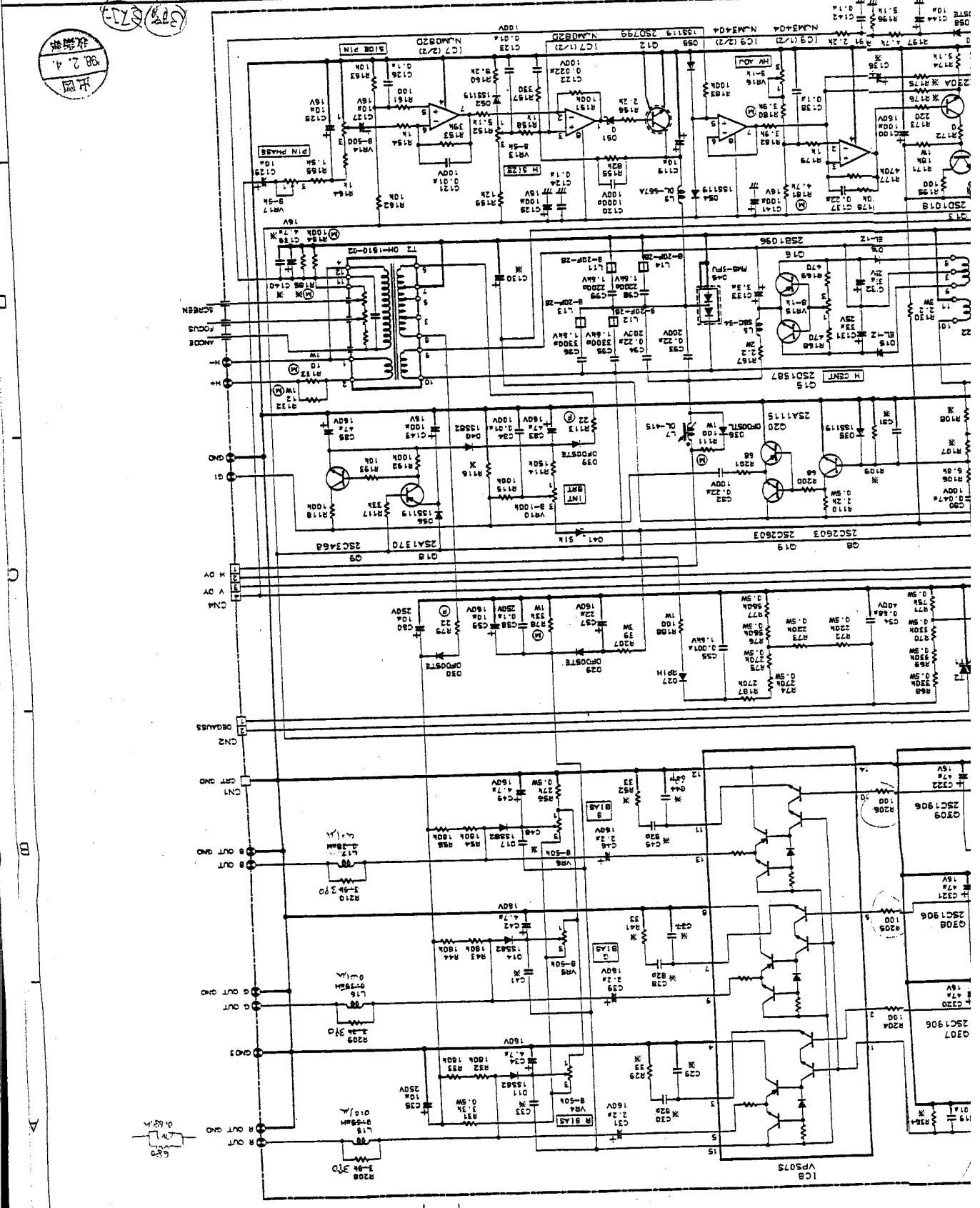


## NOTES

1. All capacitors are 50V unless otherwise noted. Unit is in FARAD(F).
2. All resistors are 0.25W unless otherwise noted. Unit is in OHM(O).
3. Components marked with X are subject to change without notice.
4. Semiconductors may be changed for equivalent.
5. (M) : Fixed Metal Film Resistor
6. (F) : Fuse Resistor

SCALE	IN	APPD	DATE	SIZE	SHEET	OF
TOLERANCE	CHK	DATE	CIRCUIT DIAGRAM			
FINISH	DATE	MAIN				
MATERIAL	DATE	Q1513				

DR: *G. Koyama* 9/12/57  
 DSN: *H. Masuda* 9/12/57  
 IN: *G. Masuda* 9/12/57  
 DATE: 9/12/57  
 SIZE: A2  
 SHEET: 1 OF 1  
 2N305-201

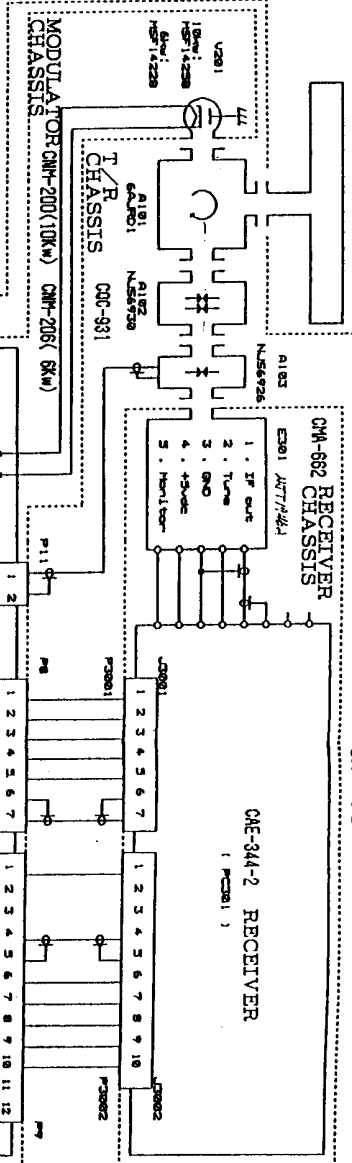


98.2.4  
 98.2.4  
 98.2.4

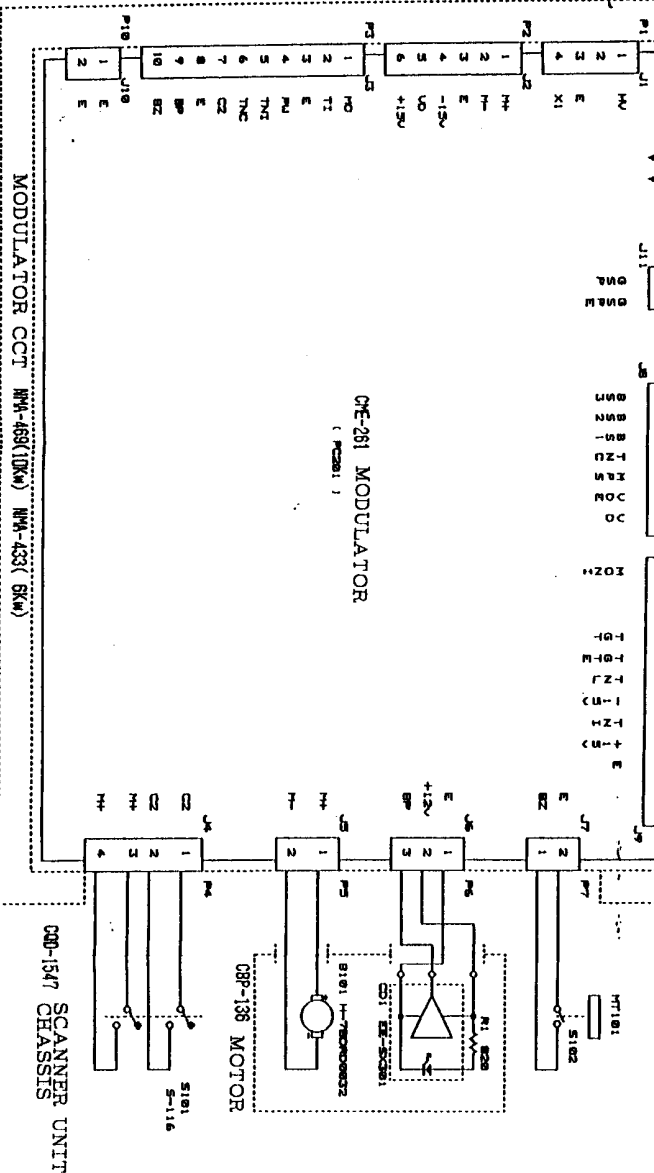
REV	DESCRIPTION	BY	APPD
6			
7			

RADIATOR CTF-18

NRG-210 RECEIVER CCT



- MOD. HV
- EARTH
- MOD. HEATER
- SCANNER MOTOR (+)
- SCANNER MOTOR (-)
- EARTH
- 12V
- VIDEO OUT
- +12V
- MOD. POINT
- TRIS.
- EARTH
- P.U.S
- TUNING IND.
- TUNE
- MOTOR CONT/ SWAR
- EARTH
- BEARING PULSE
- BEARING PRESET
- EARTH
- EARTH



SCANNER TYPE	T/R TYPE	MODULATOR TYPE	RECEIVER TYPE
NKE-1055(10kw)	NZT-110(10kw)	NMA-469	NRG-210
NKE-1062(6kw)	NZT-106(6kw)	NMA-473	NRG-210

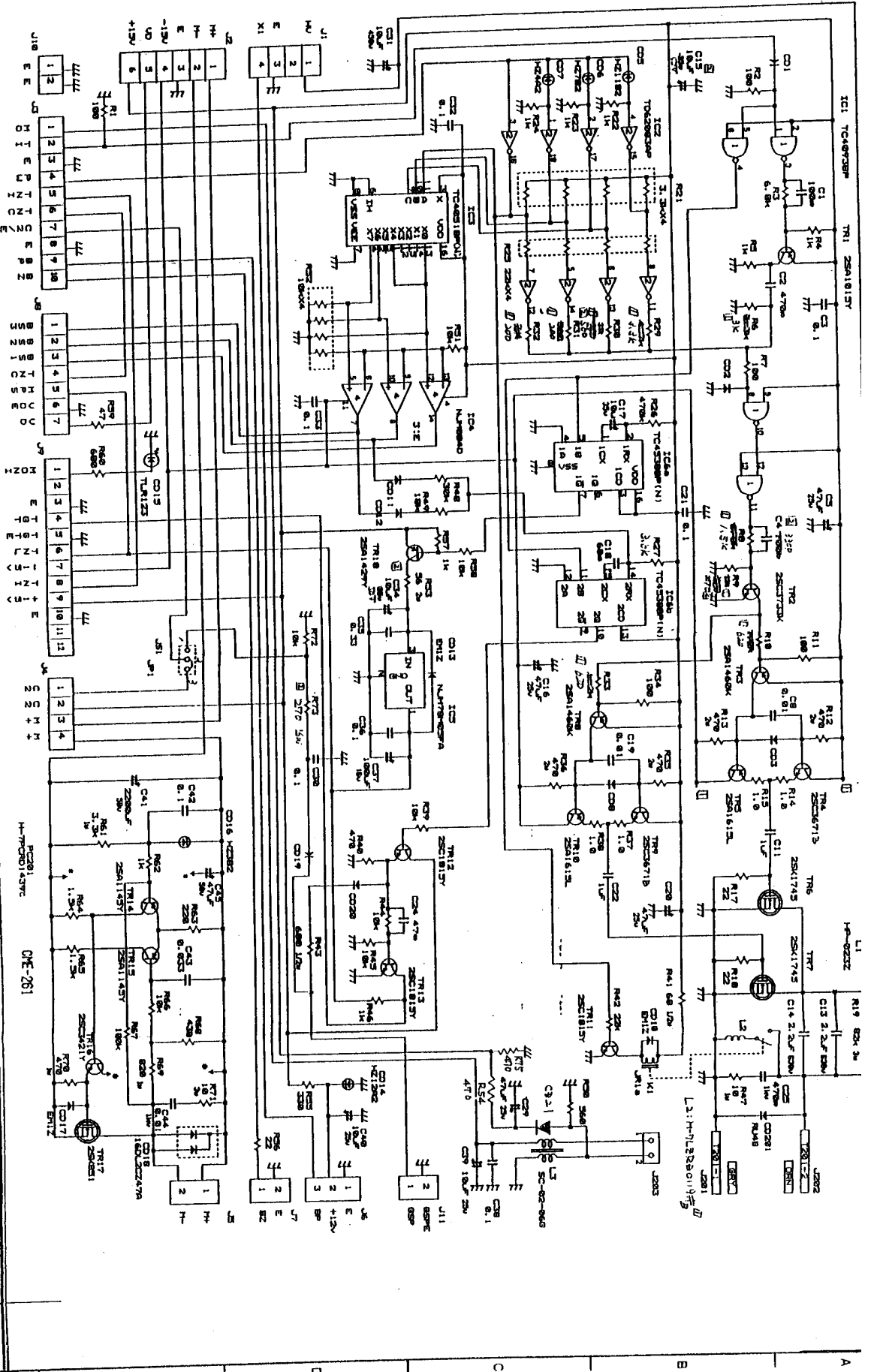
APPROVED	DATE	TITLE	SHEET NO.
<i>M. Sudo</i>		INTERNAL CONNECTIONS OF ANTENNA: NKE-1055	1
CHECKED	SCALE		
<i>M. Sudo</i>	A3		
DESIGNED			
<i>M. Sudo</i>			
JRC Japan Radio Co., Ltd.			
DRAWING NO.			
NKE-11055-10:0011			

第3角迄 單位mm 2 3 6 7 8

NOTE  
 UNLESS OTHERWISE SPECIFIED  
 ALL RESISTORS ARE IN OHMS, 1/4W RATING  
 ALL CAPACITORS ARE IN MICRO FARADS, 50V RATING  
 ALL DIODE :1SS120

JPI SETTING  
 1-2 short for JMA-3807/3811  
 2-3 short for JMA-3910

CHECKED <i>M. Suleh</i>	APPROVED	DATE	TITLE	SHEET NO.
	DESIGNED	SCALE	MODULATOR CCT	1
JRC Japan Radio Co. Ltd.		A3	NMA-469 CME-261	
N:1 M:A:4:6:9:1-2:0:1				



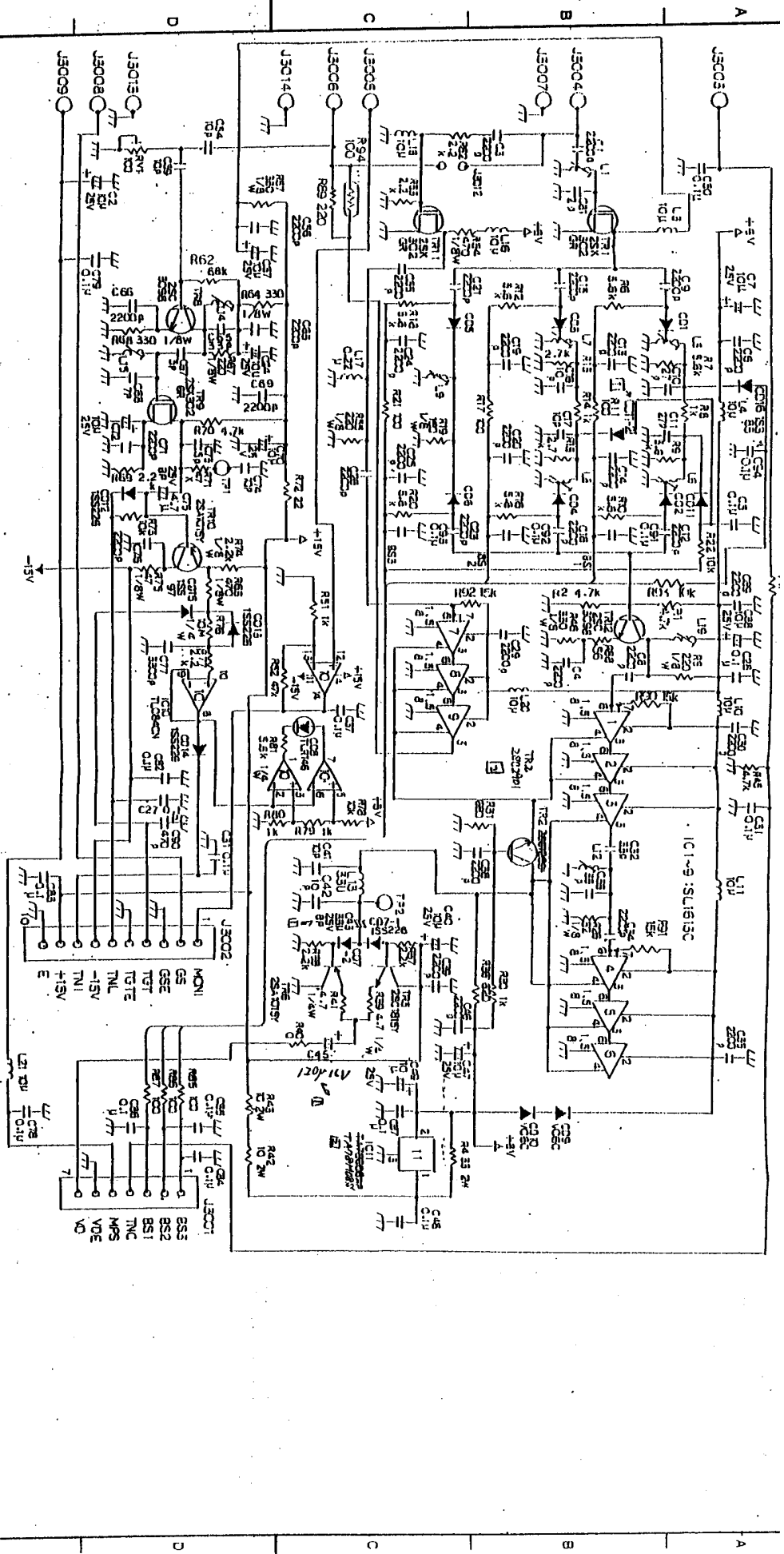
第3巻法 単位mm 2 3

6

7

8





NOTE  
UNLESS OTHERWISE SPECIFIED  
ALL RESISTORS ARE IN OHMS, 1/10W RATING  
ALL CAPACITORS ARE IN FARADS, 50V RATING

7PC01343E CAE-344-2 PC301

DESIGNED	APPROVED	DATE	TITLE	SHEET NO.
Checked by: <i>N. Williams</i>	Designed by: <i>H. S. Suda</i>		CAE-344-2	1
Checked by: <i>R. M. W. R.</i>	Designed by: <i>H. S. Suda</i>		IP AMP COT	
Checked by: <i>A. 3</i>	Designed by: <i>H. S. Suda</i>			
JRC Japan Radio Co. Ltd.				
E D 0 2				
N:K:E-1:0:5:6-1:3:0:1:1				

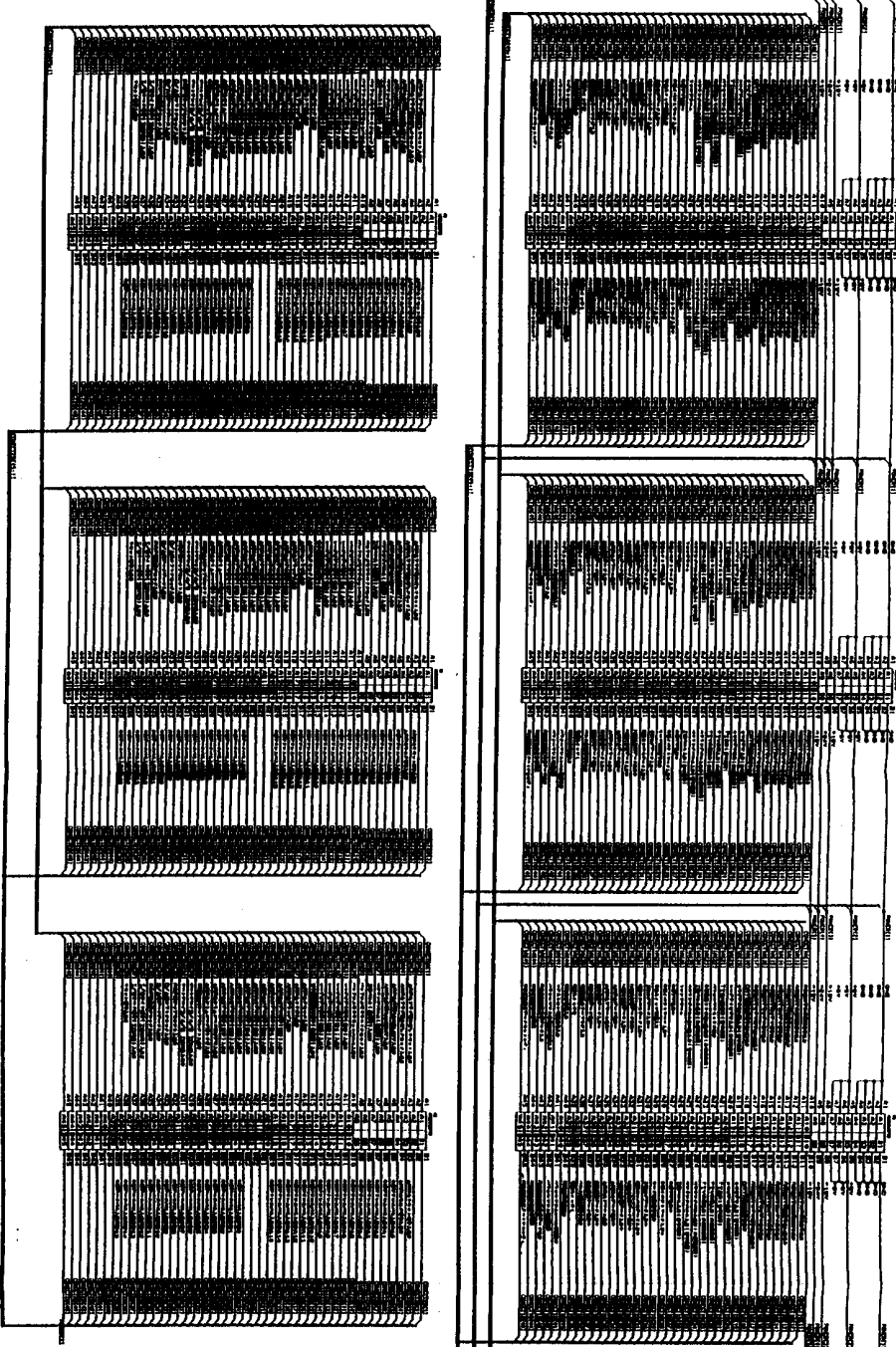
15 INCHES  
3.75 INCHES  
1.875 INCHES  
0.9375 INCHES

PC4403 ASSEMBLY

PC4401 COLUMN

PC4402 COLUMN

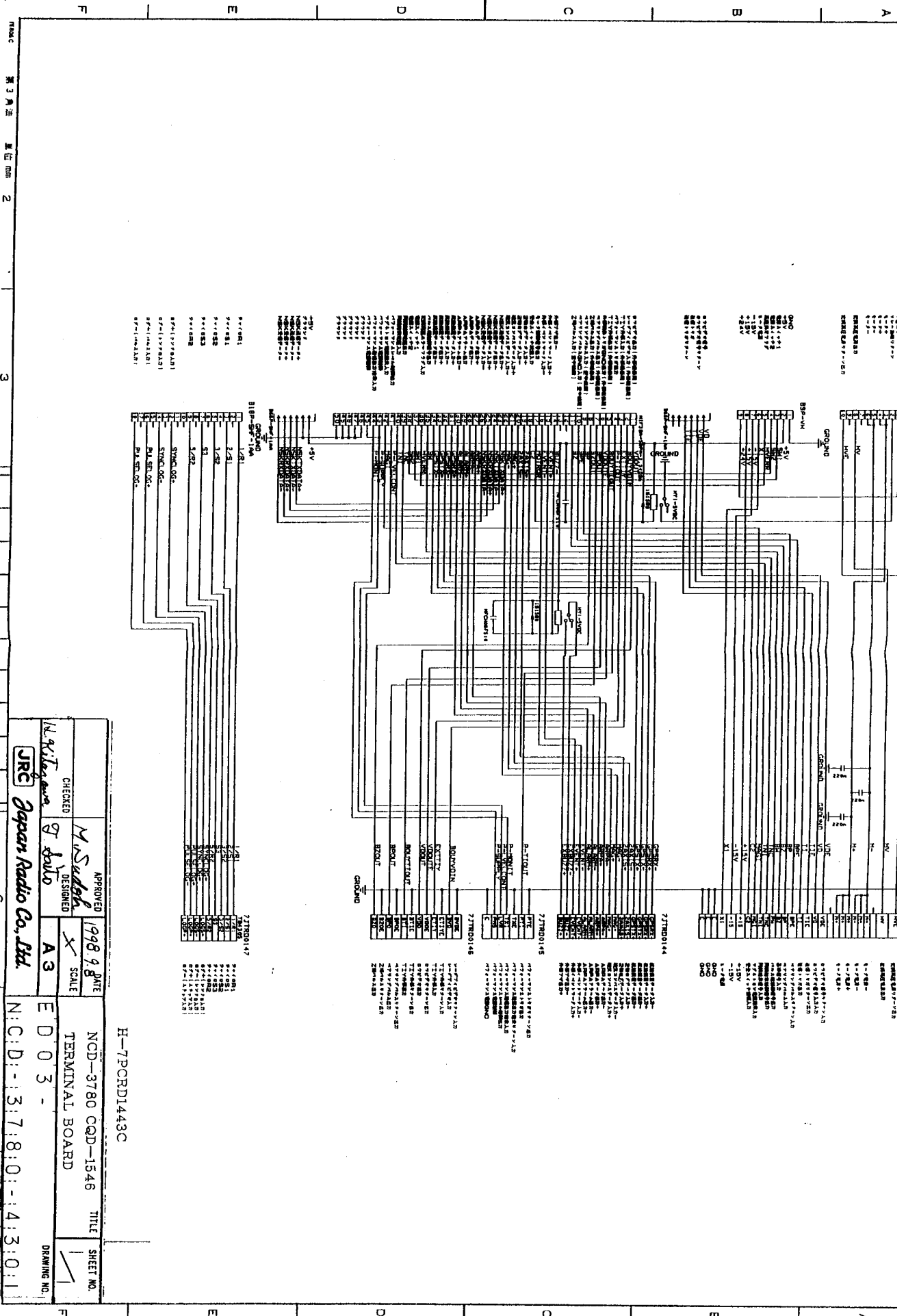
PC4404 COLUMN



15 INCHES COLOR RADAR MOTHER BOARD CIRCUIT PC4101  
CFQ-8682 H-7PCRD1442A

DESIGNED BY <i>N. Williams</i>	CHECKED BY <i>V. Sando</i>	APPROVED BY <i>M. Sudo</i>	DATE 1997.6.19	TITLE MOTHER BOARD CCT	SHEET NO. 1
SCALE A3		DRAWING NO. NCD-3780 CFQ-8682		DRAWING NO. ED01-	

第3号法 单位mm 2 3 6 7 8

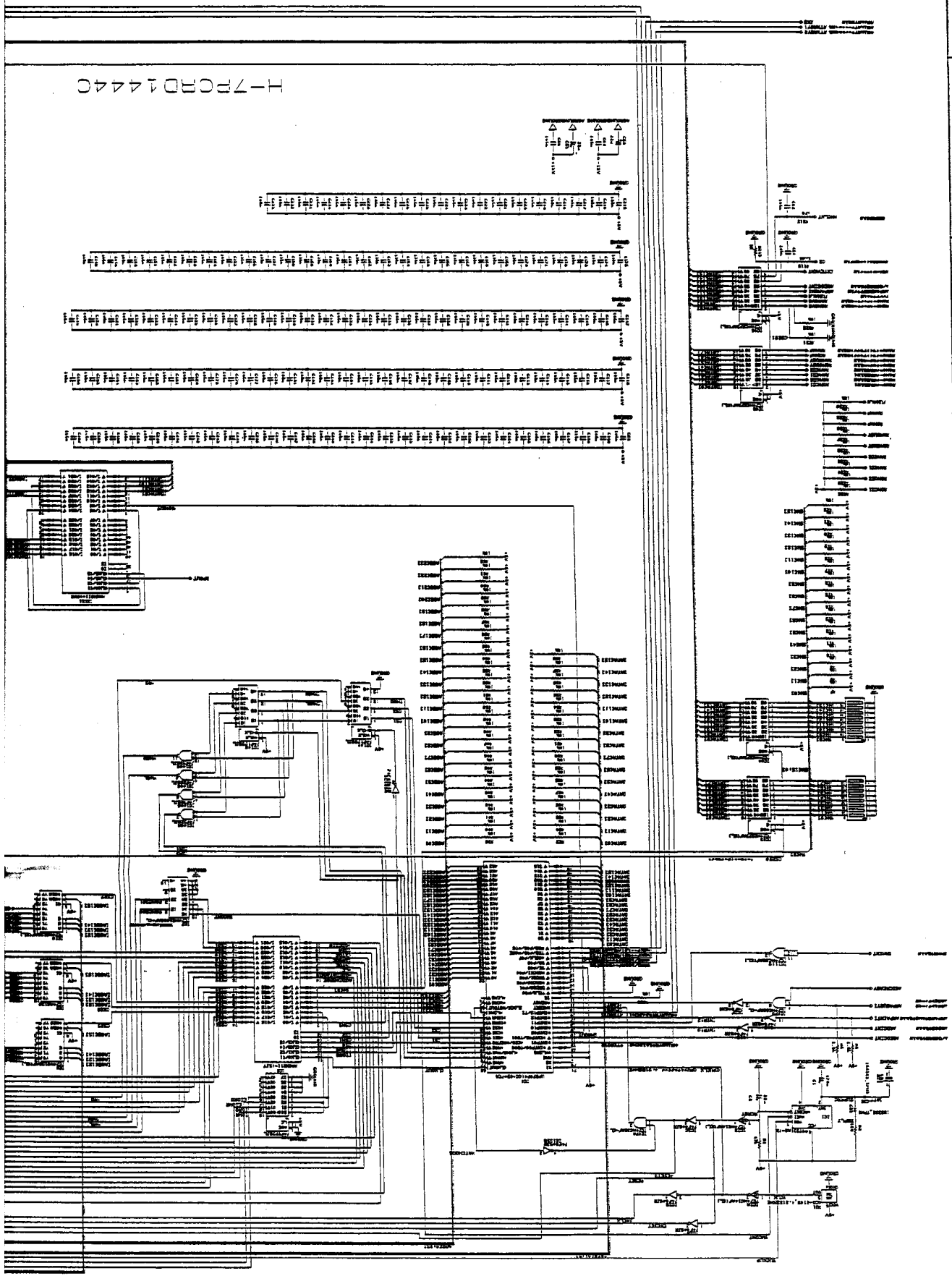


CHECKED		APPROVED		DATE		TITLE	
<i>M. S. Sudo</i>		<i>M. S. Sudo</i>		1998 9 8		NCD-3780 CQD-1546	
DESIGNED		SCALE		SHEET NO.		DRAWING NO.	
<i>A. S. Sudo</i>		A3		1		1	
JRC Japan Radio Co., Ltd.				H-7PCRD1443C			
TERMINAL BOARD				E D O 3 -			
N:C:D: 3:7:8:0: -4:3:0:1				7			

FIG. 3 第3頁 單位 mm 2 3 6 7 8

15INCHES COLOR RAI

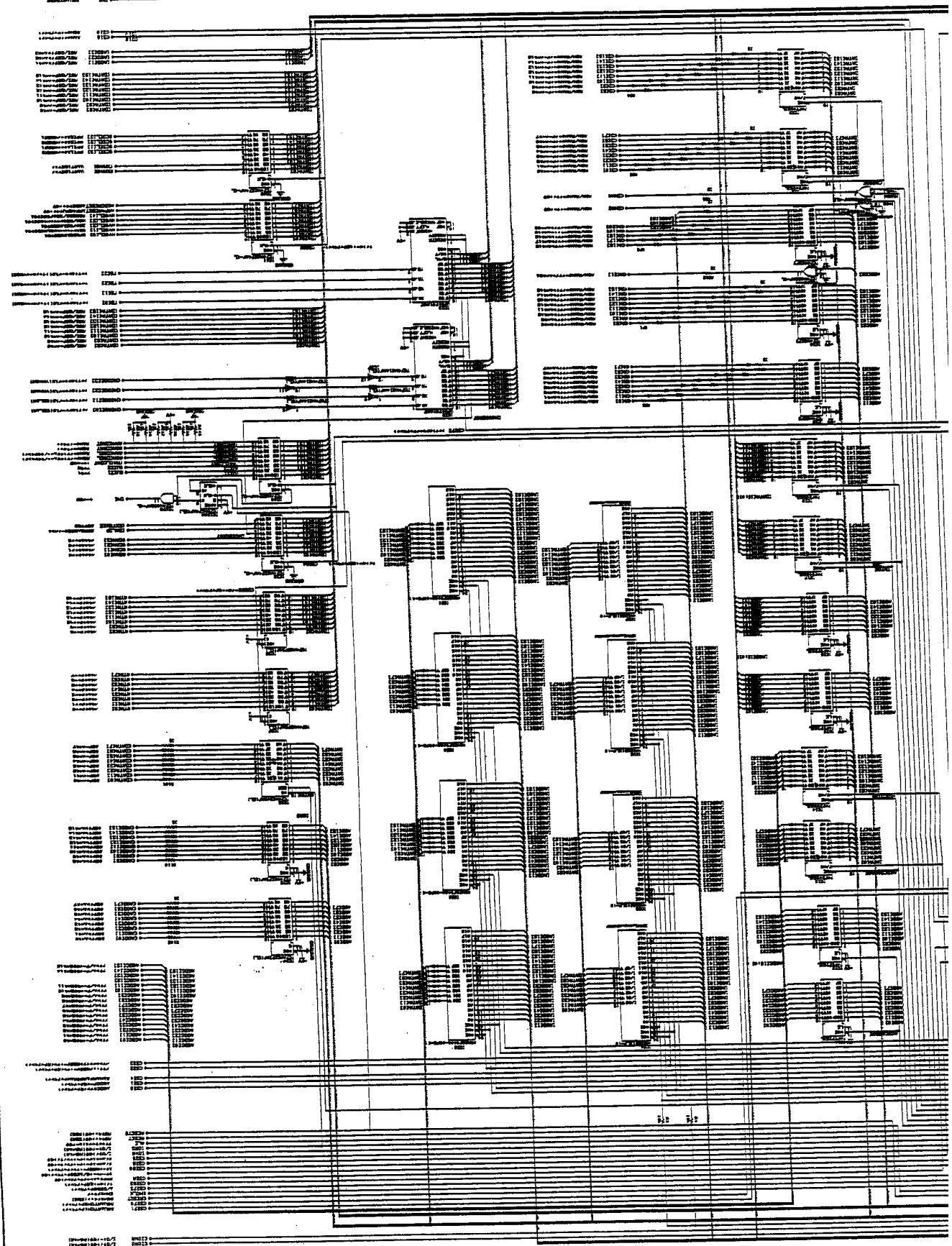
H-7PCRD1444C



A B C D E F G H

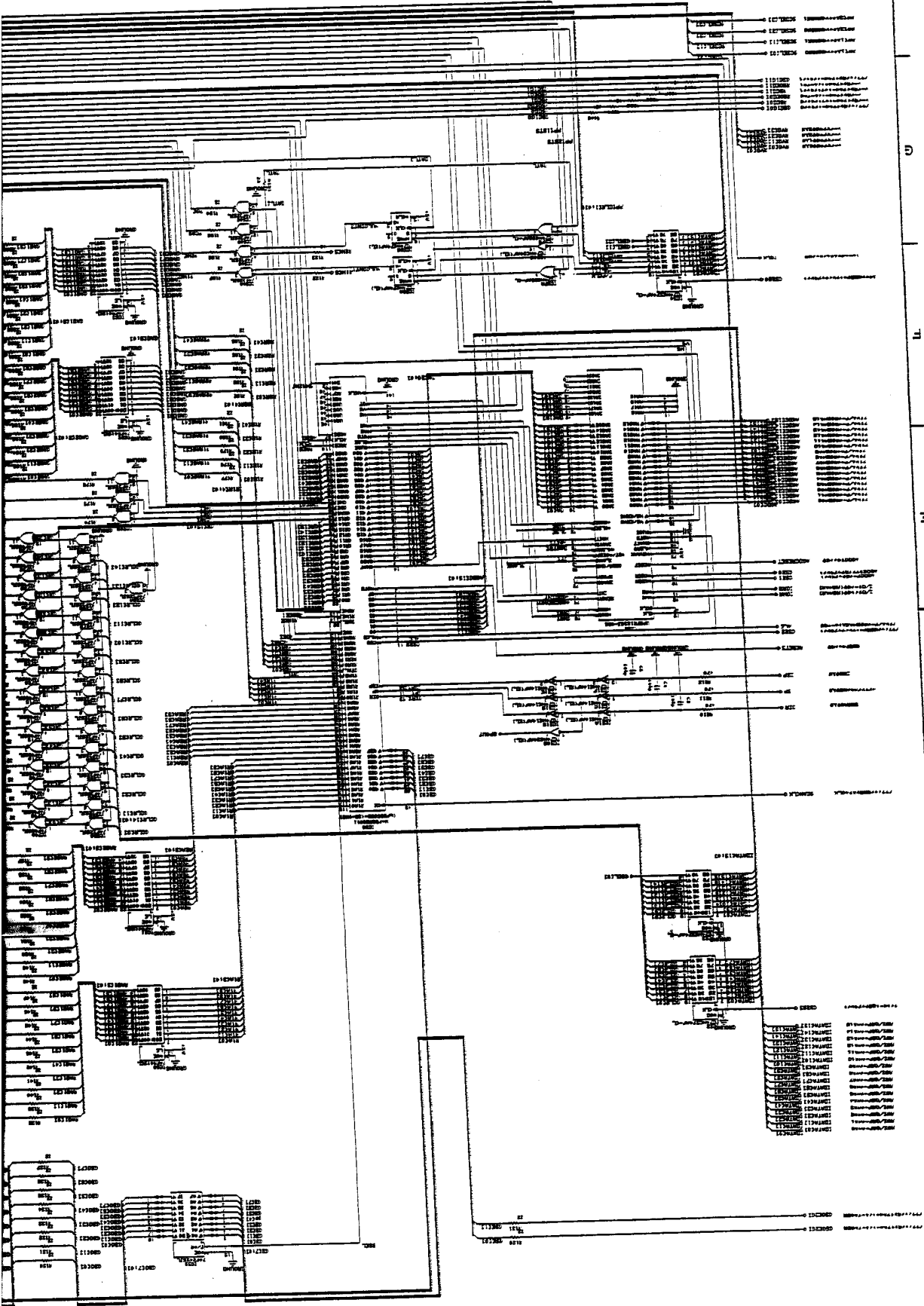
PU CONTROL CIRCUIT PC4401:1/4

DRAWING NO. E D O 3 -		DATE 1989.8.8		APPROVED H. Suda		DESIGNED G. Kato		CHECKED H. Kato	
SHEET NO. 4		SCALE 1/4		TITLE NCD-3780 CPU CONTROL CCT		JRC Japan Radio Co., Ltd.		NCD-1012-3780-4401	



H  
G  
F  
E  
D  
C  
B  
A

15 INCHES COLOR RADAR CPU



1

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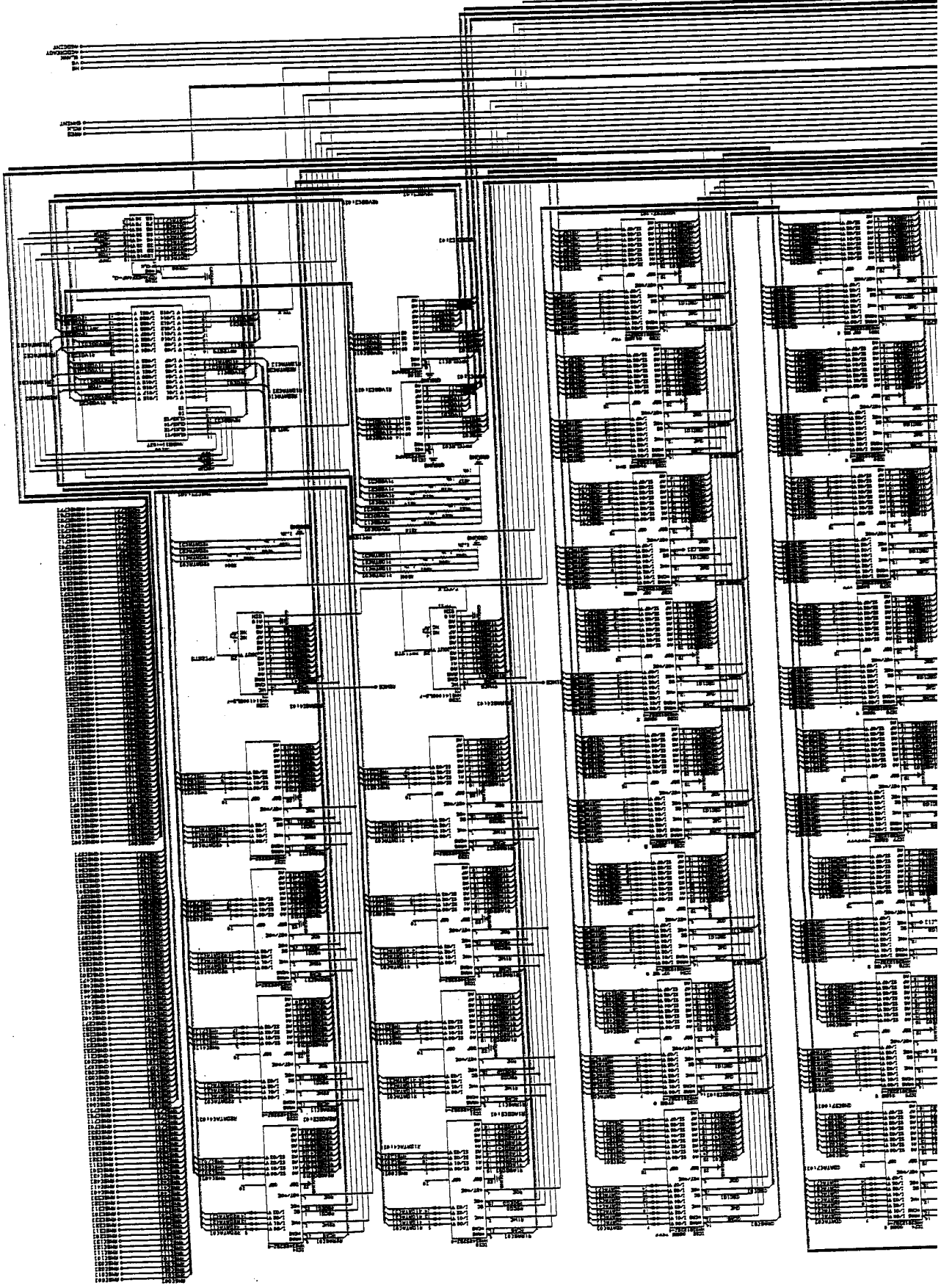
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2

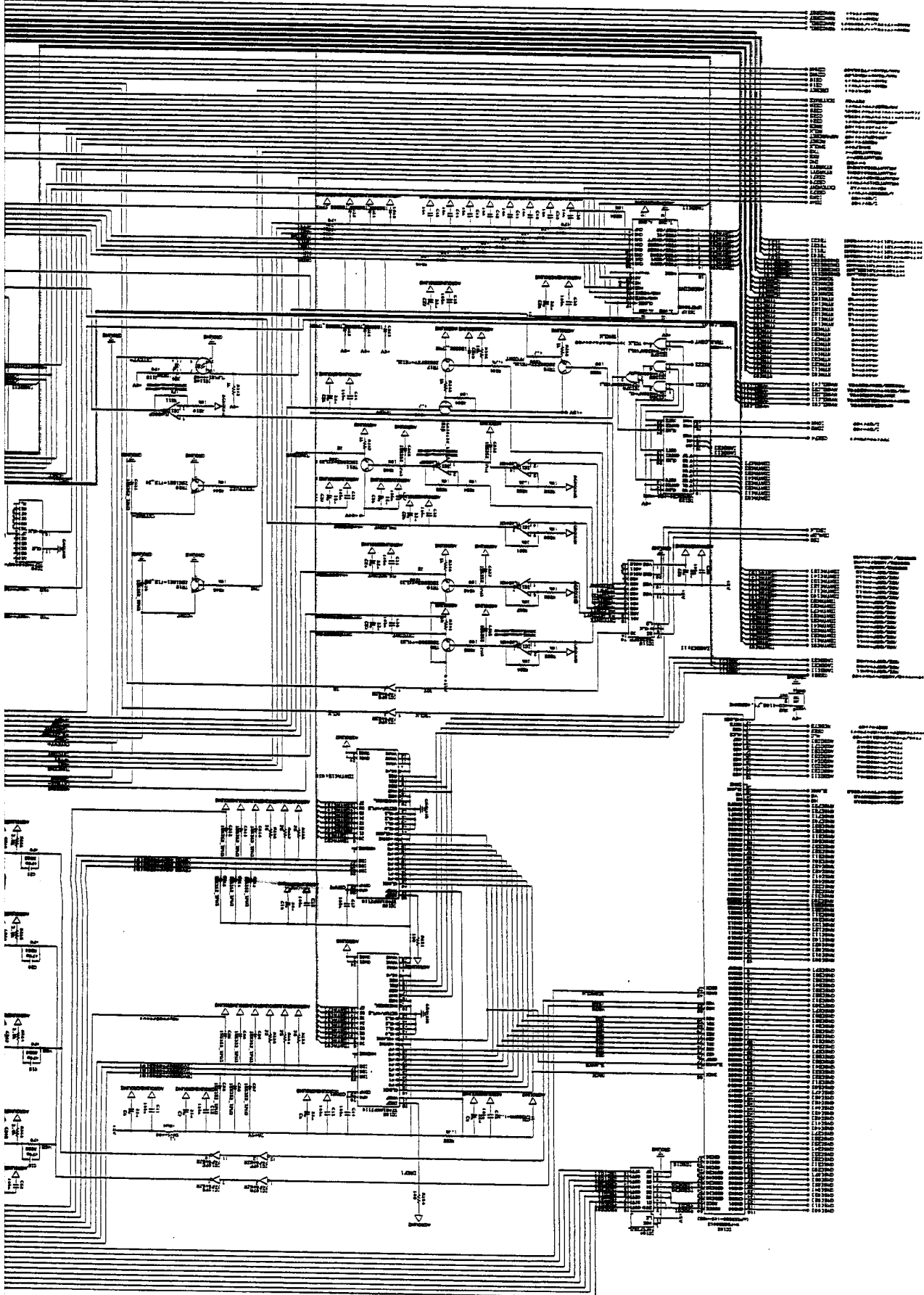
1

CUIT PC4401:2/4

JRC Japan Radio Co., Ltd.		N. Y. K. Line	
APPROVED	M. Swada	DESIGNED	A. Swada
DATE	1998.9.8	SCALE	X
NCD-3780 CPU CONTROL CPT		E D O 3 -	
TITLE		DRAWING	
SHEET 2		N.C.D.1-3780-4401	



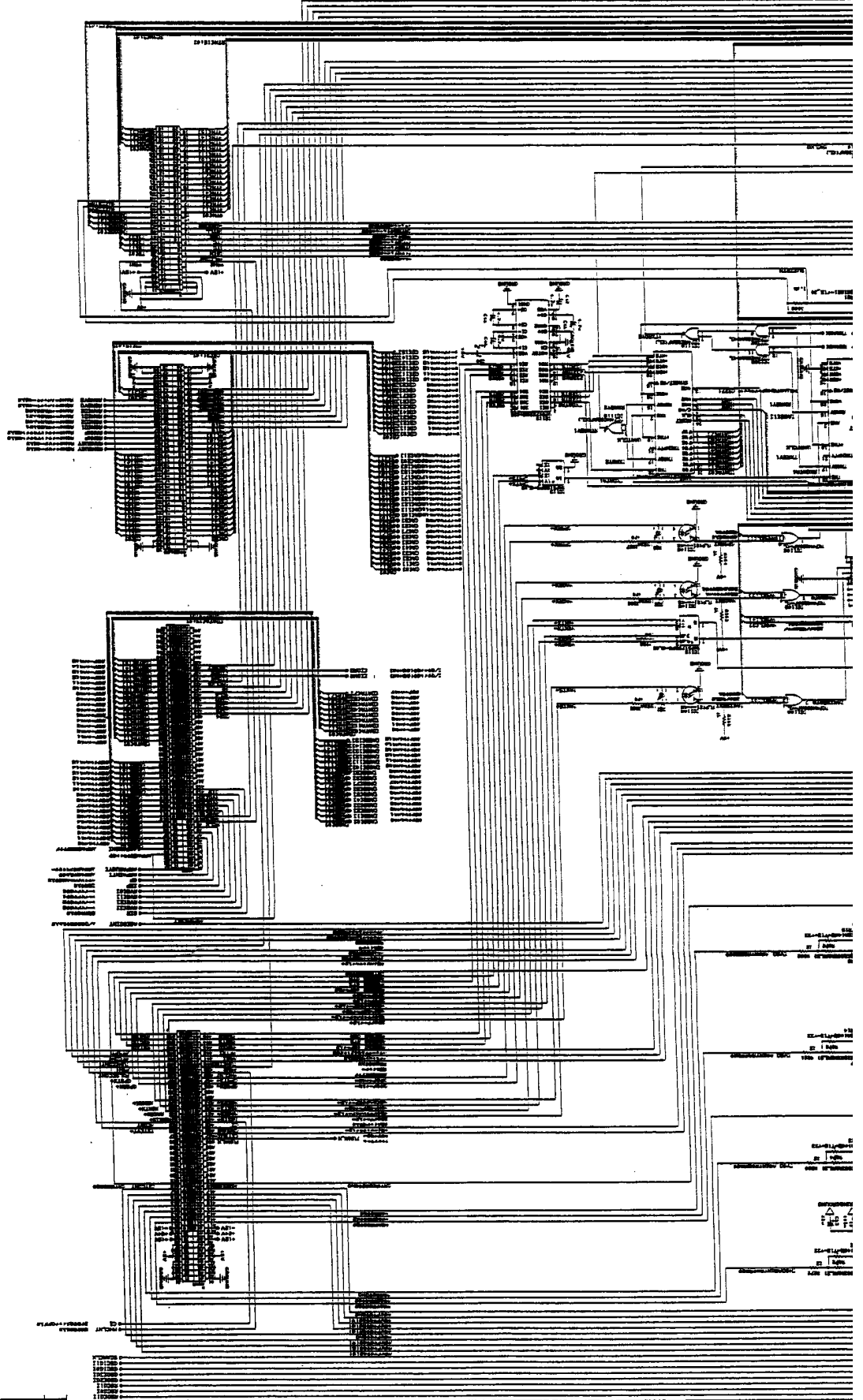
15 INCHES COLOR RADAR CPU CONTROL CIRCUIT



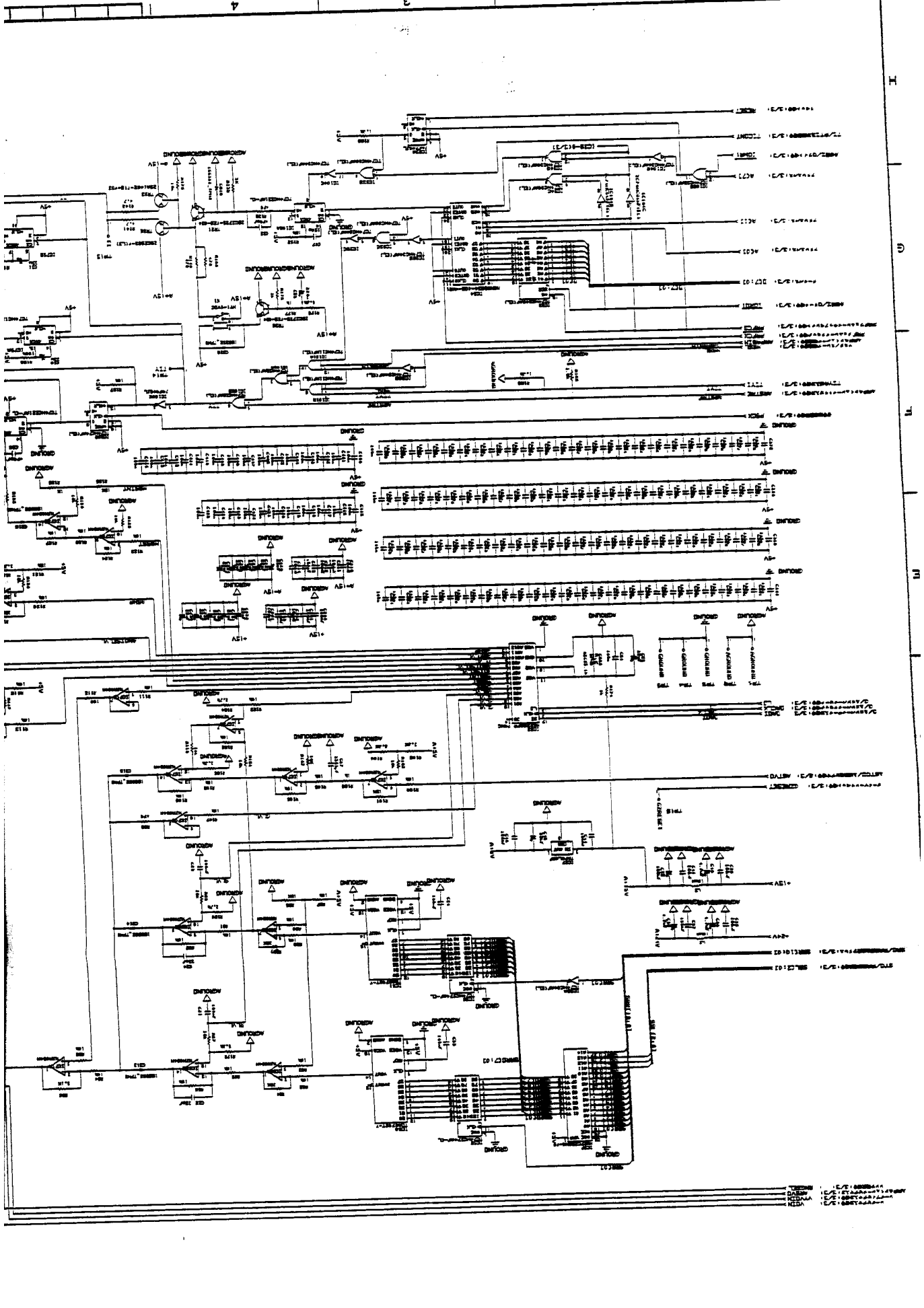
H  
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F  
E  
D  
C  
B  
A



JRC Japan Radio Co., Ltd.		CHECKED H. Kato	
E D O 3 -		DESIGNED H. Saito	
NCD-3780 CPU CONTROL CCT		SCALE X	
SHEET NO. 3/4		APPROVED 1998.9.8 DATE	



Grid coordinates: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z



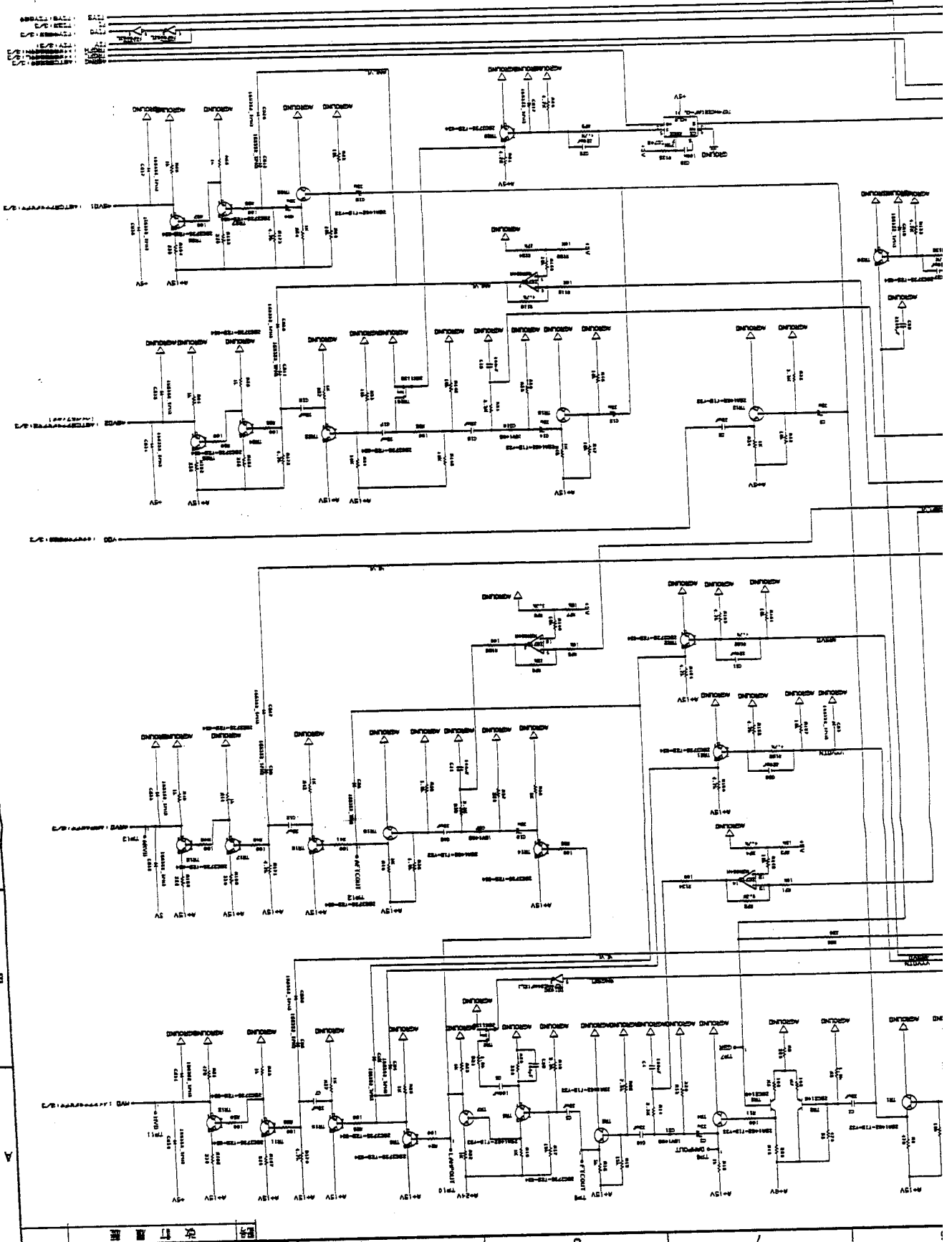
1. 1/1000  
 2. 1/1000  
 3. 1/1000  
 4. 1/1000

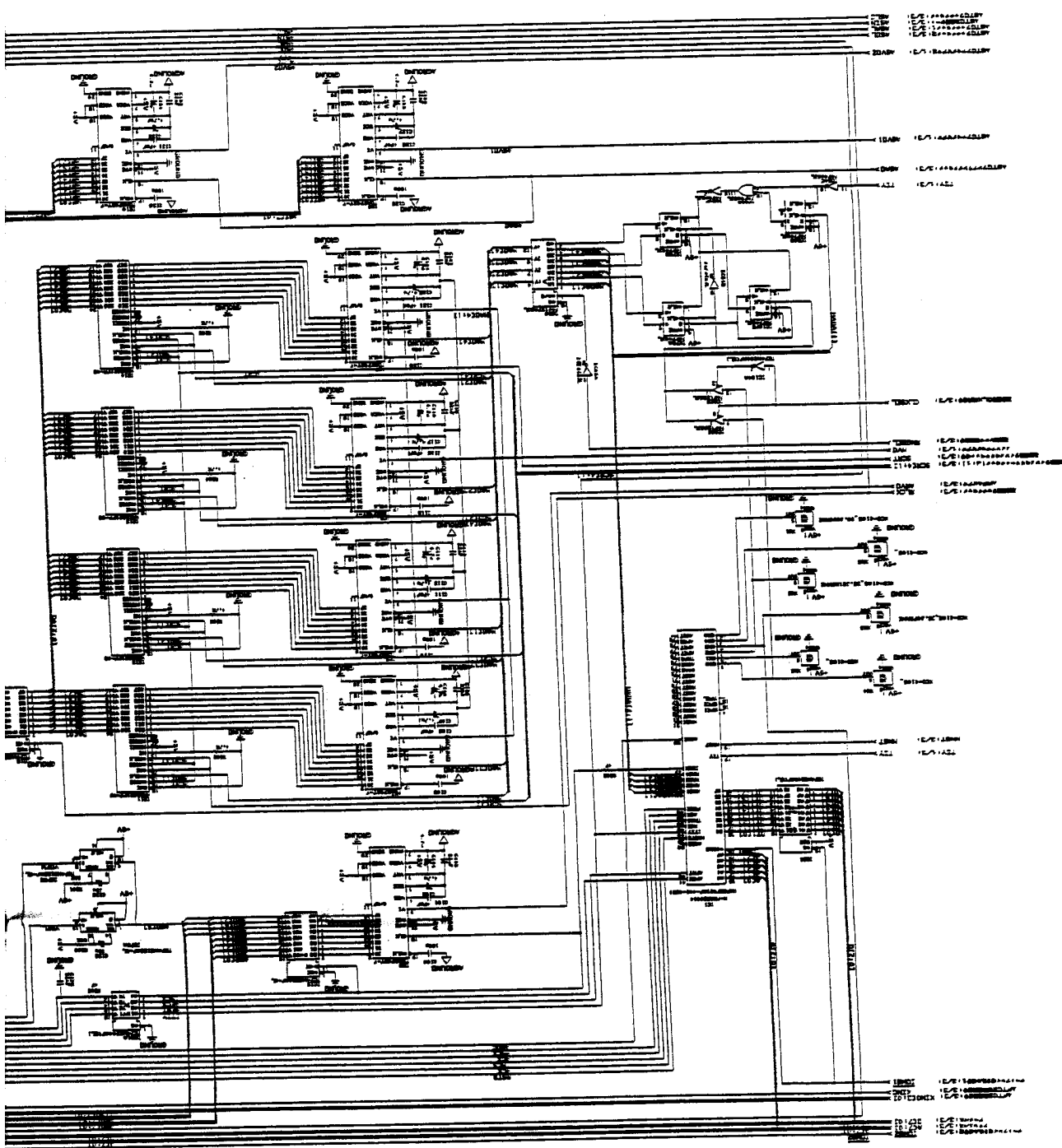
DRAWING NO. E D O 3 -		DESIGNED <i>N. K. Tanaka</i>		CHECKED <i>M. Suda</i>	
TITLE NCD-3780 CED-42		SCALE X		DATE 1982.16	
SHEET NO. 3		APPROVED <i>M. Suda</i>			

Japan Radio Co., Ltd.

NCD-3780-3780-4402

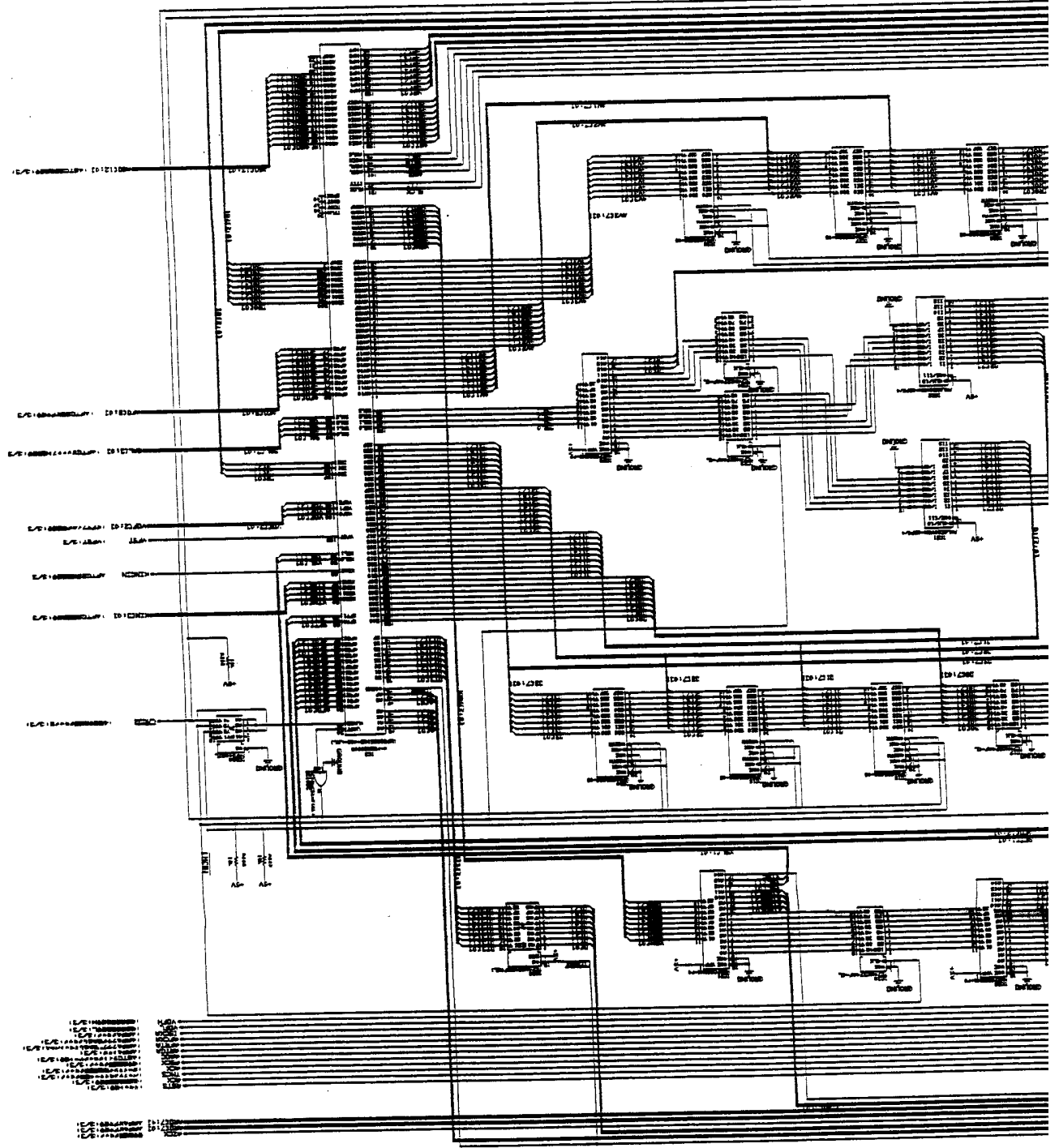
H-7PFD1445C P04402 CED-42





DRAWING NO. E D 0 3 -		JRC Japan Radio Co. Ltd.	
SHEET NO. 2/3		CHECKED N. K. Kawanishi	
TITLE NCD-3780 CED-42		DESIGNED Q. Kato	
DATE 1998.2.16		APPROVED M. Saitoh	
SCALE X		SCALE X	

1-7P0R014450 PC4402 CED-42



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A

H

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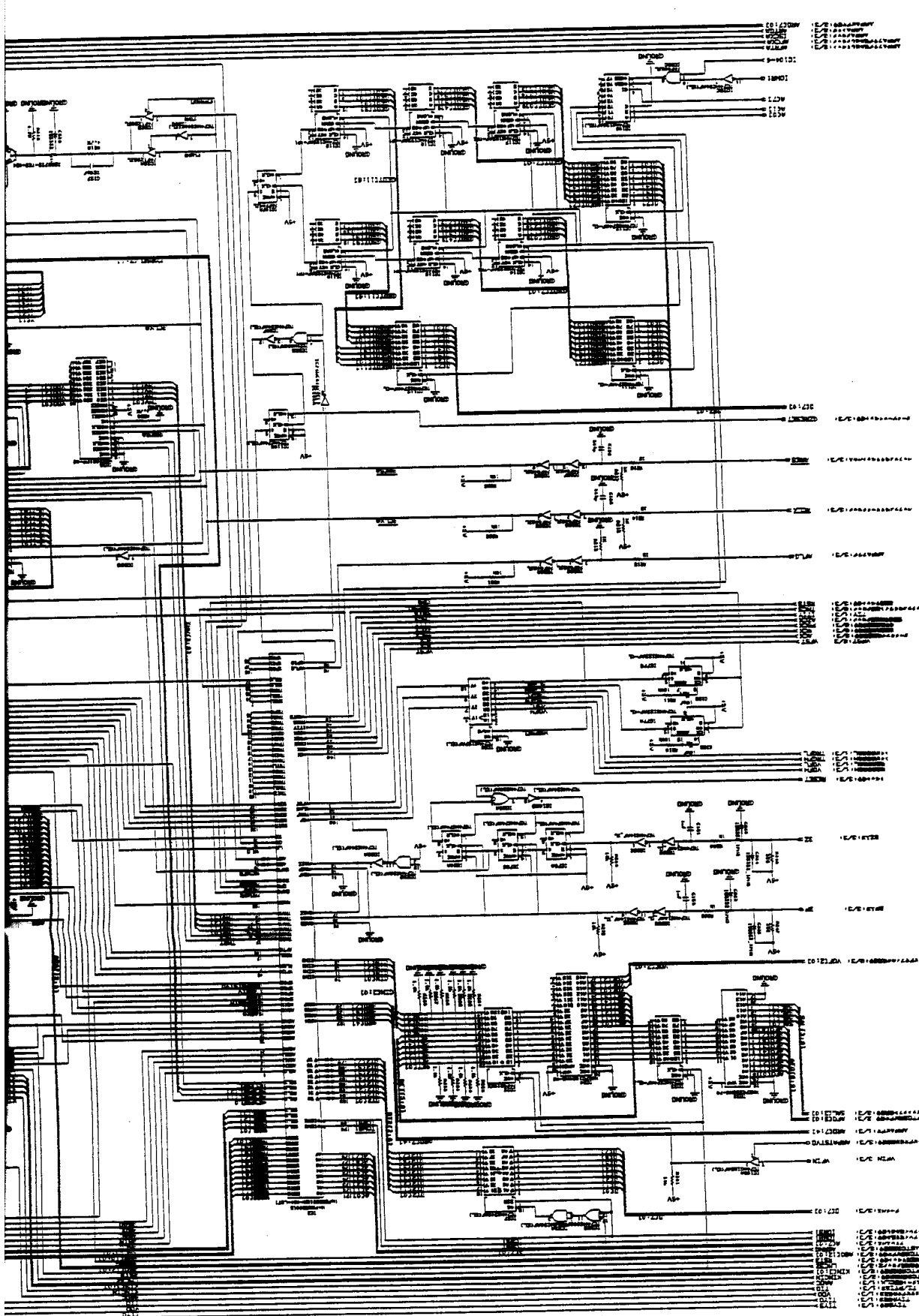
E

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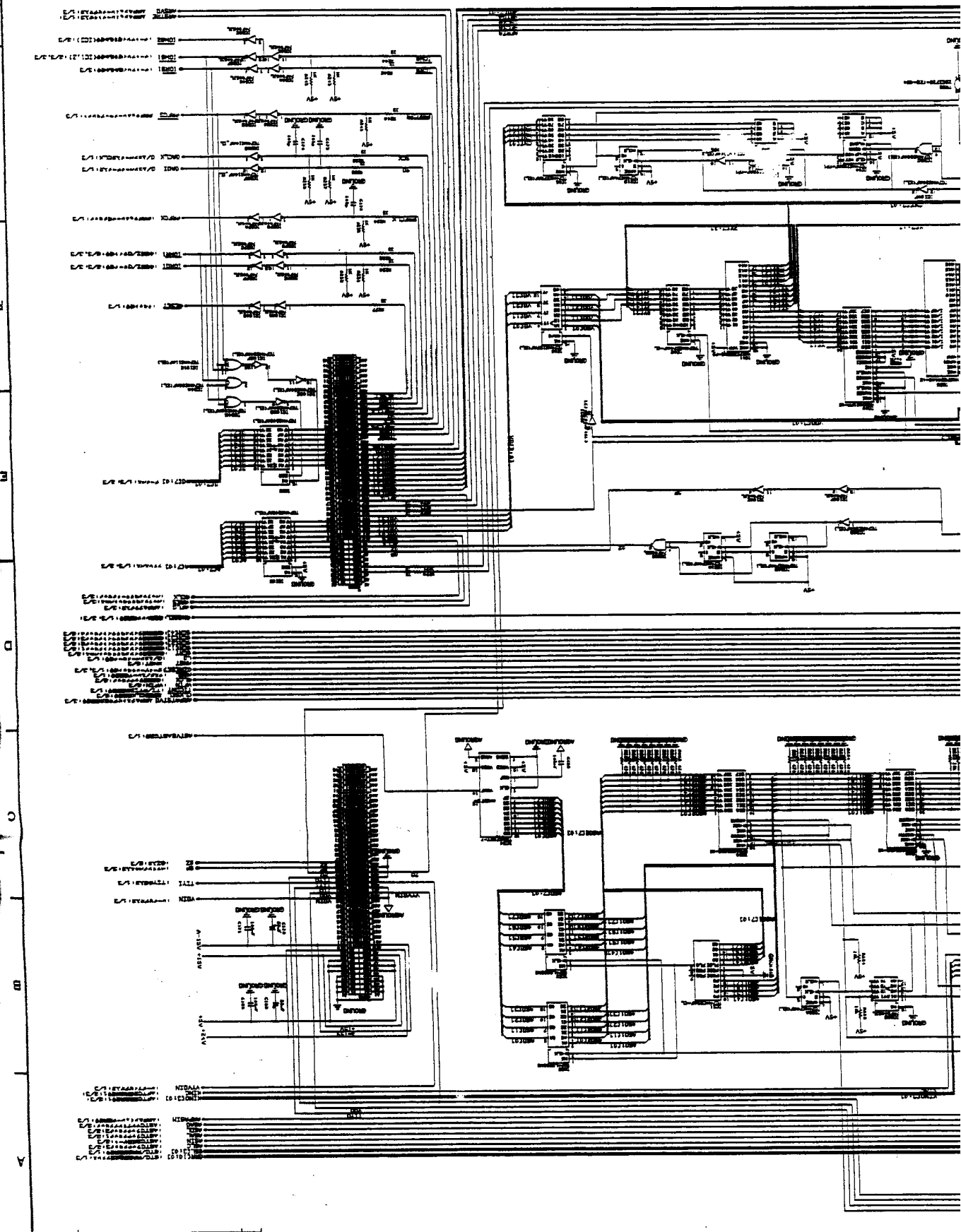
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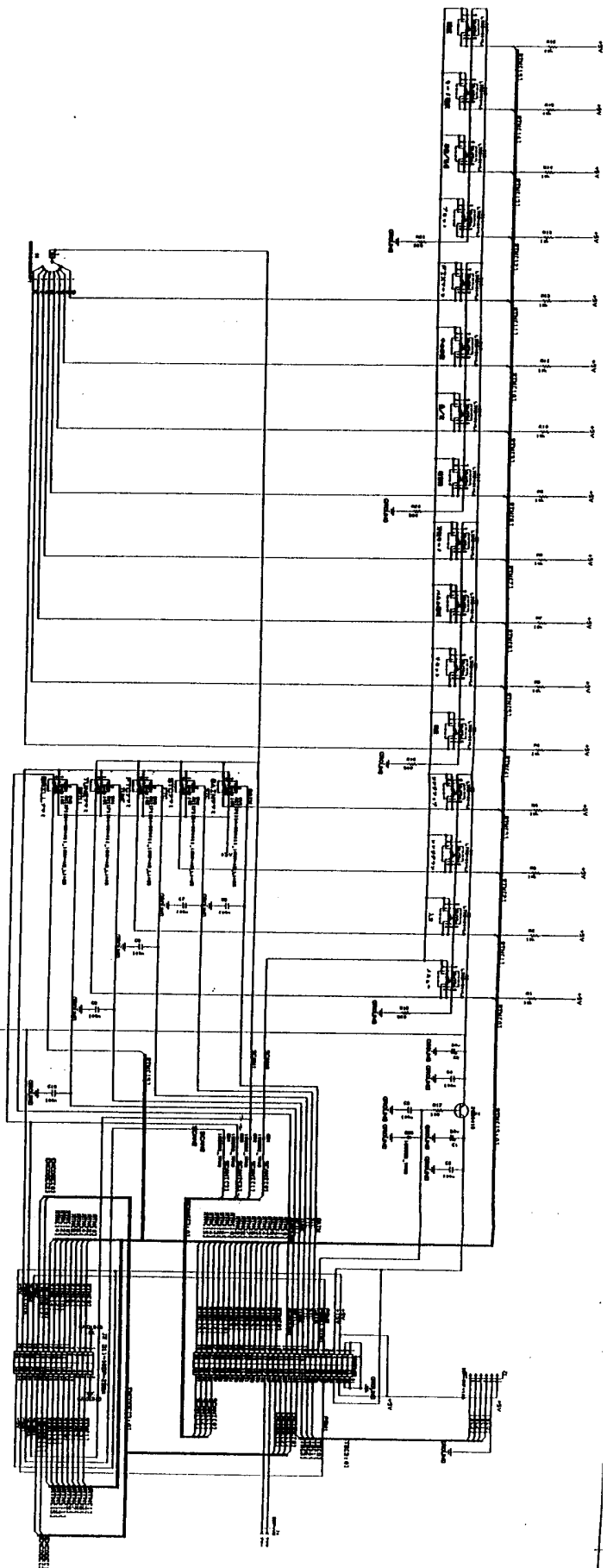
H-7PCD1445C P04402 CED-42

DRAWING NO. E D 0 3 -		DESIGNED <i>M. S. Kato</i>		CHECKED <i>M. S. Kato</i>	
TITLE NCD-3780 CED-42		DATE 1998.2.16		APPROVED <i>M. S. Kato</i>	
SHEET NO. 3		SCALE		A2	
NCD-3780 CED-42					



- R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100
- C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100

10 9 8 7 6



15 INCHES COLOR RADAR MAIN CONTROL CIRCUIT PC4501  
 CCK-787 H-7PCRD1447A/B

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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CHECKED <i>N. Miyamae</i>		APPROVED <i>M. Sudo</i>		DATE 1998.1.4
DESIGNED <i>T. Sudo</i>		SCALE A3		TITLE NCD-3780 CCK-787 PANEL CCT1
JRC Japan Radio Co., Ltd.		ED 01 -		SHEET NO. 1/1
DRAWING NO.		N.C.D.-3780:01-45:01		DRAWING NO.

比例尺 2:1

3

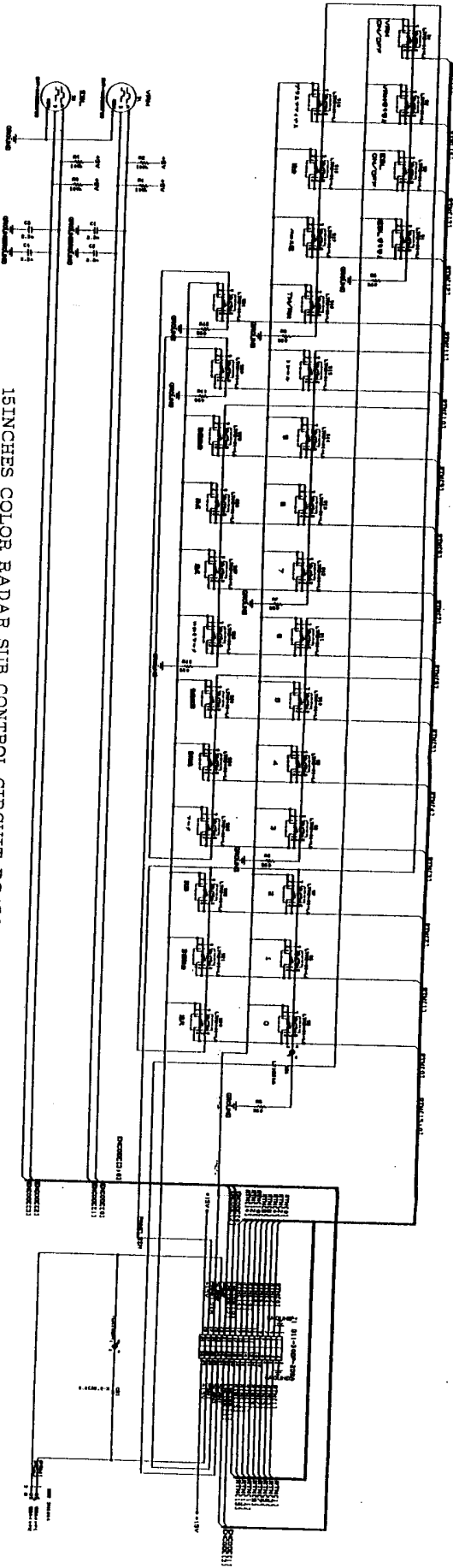
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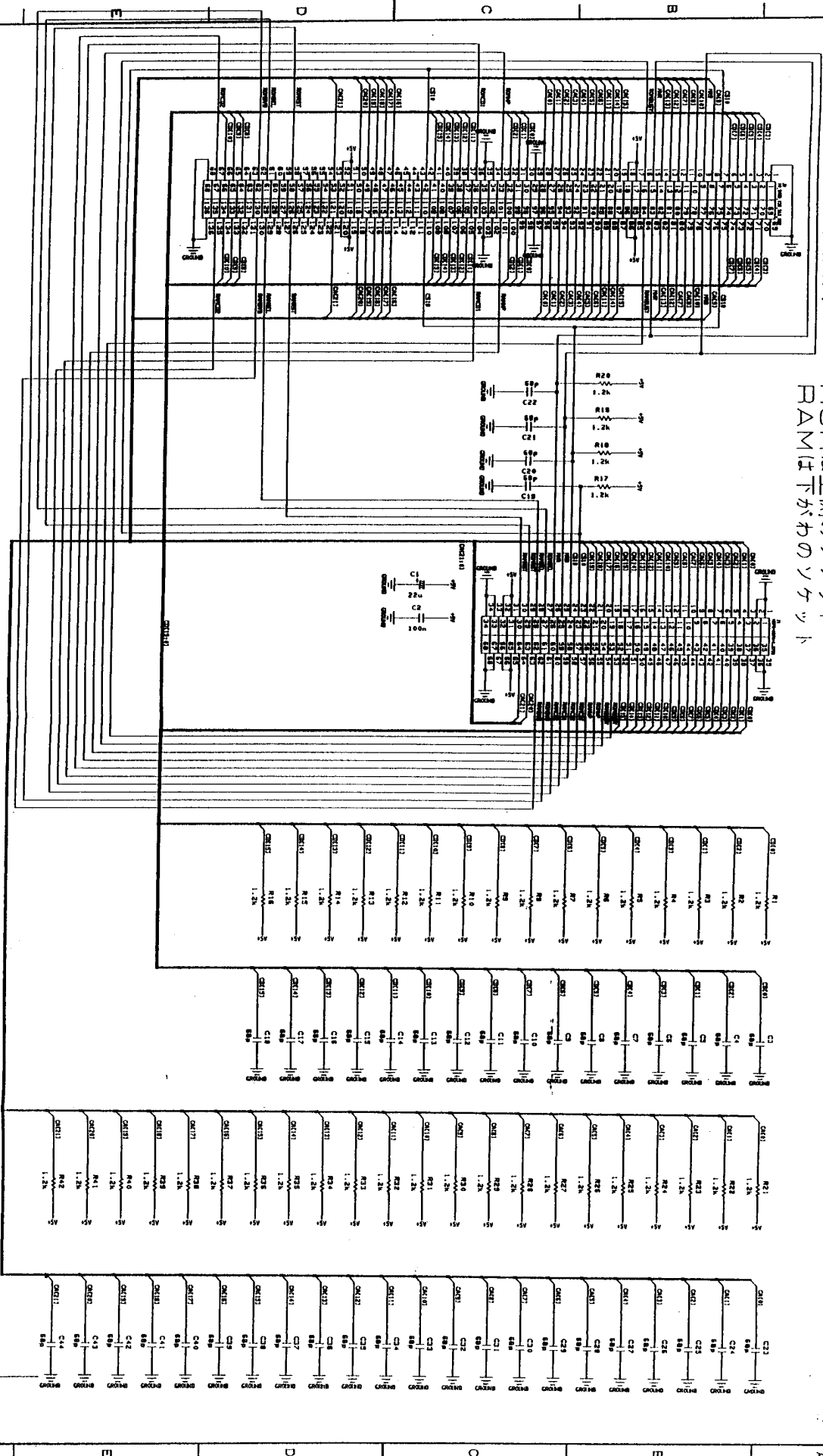
15 INCHES COLOR RADAR SUB CONTROL CIRCUIT PC4502  
 CCK-789 H-7PCRD1448A/B



CHECKED <i>N. Kitagawa</i>	DESIGNED <i>H. Sudo</i>	APPROVED <i>M. Sudo</i>	DATE 1978.1.6
		SCALE A3	TITLE NCD-3780 CCK-789 PANEL CCT2
JRC Japan Radio Co., Ltd.		SHEET NO. 1	
ED 0 1 -		DRAWING NO.	
N.C.D.-3780-0-4502			

第3頁 單位 2 3 5 7 8

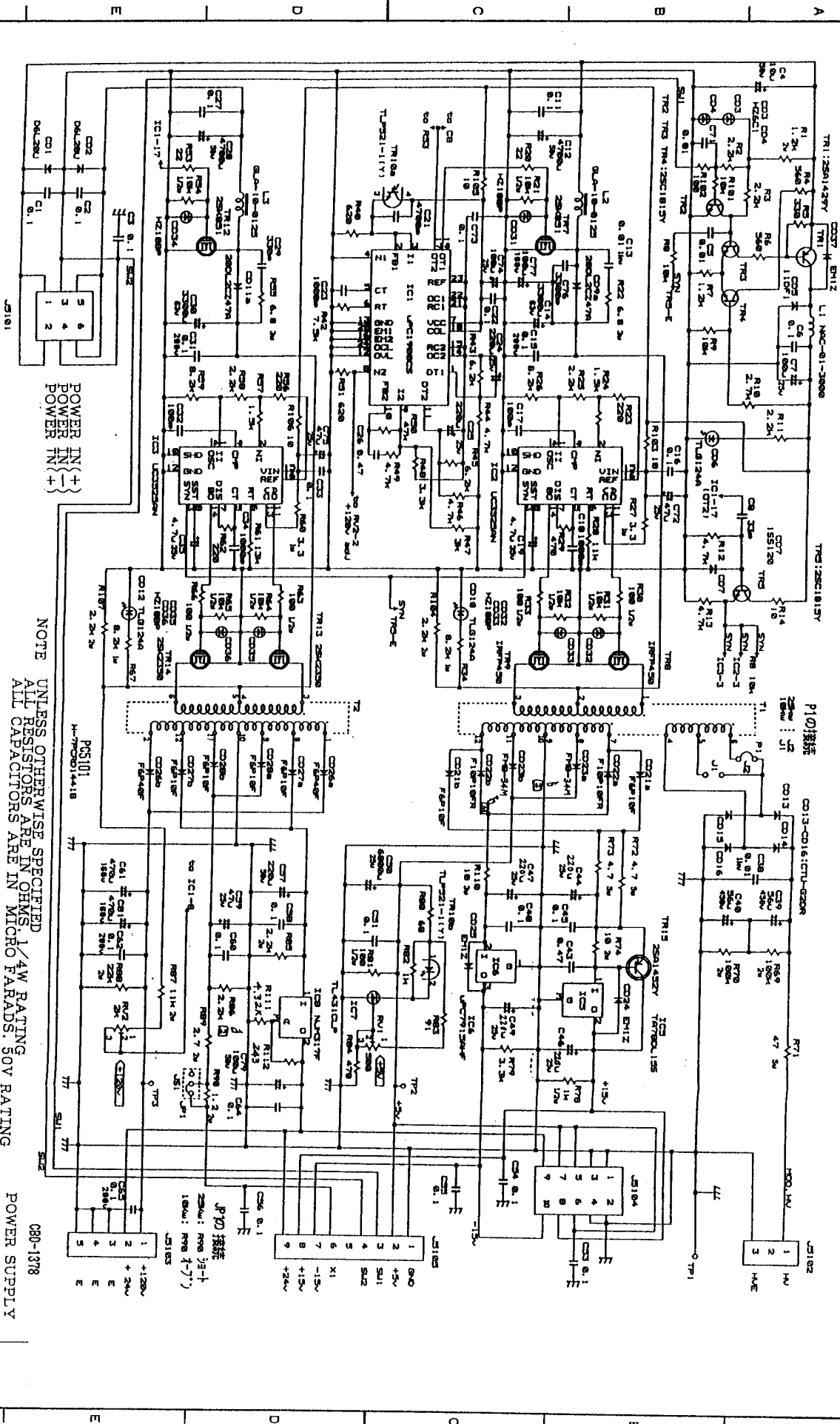
ROM側 RAM側  
ROMは上側のソケット  
RAMは下側のソケット



15 INCHES COLOR RADAR PANEL CIRCUITS PC4503  
CCK-790 H-7PCRD1449C

CHECKED <i>M. D. ...</i>	DESIGNED <i>V. ...</i>	APPROVED <i>HT 12.9</i>	DATE A 3
	SCALE		
DRAWING NO. N.C.D. - 3778:01 - 45:03		TITLE PANEL CCT3	
DRAWING NO.		SHEET NO.	

第3巻 単位mm 2 3 5 7 8



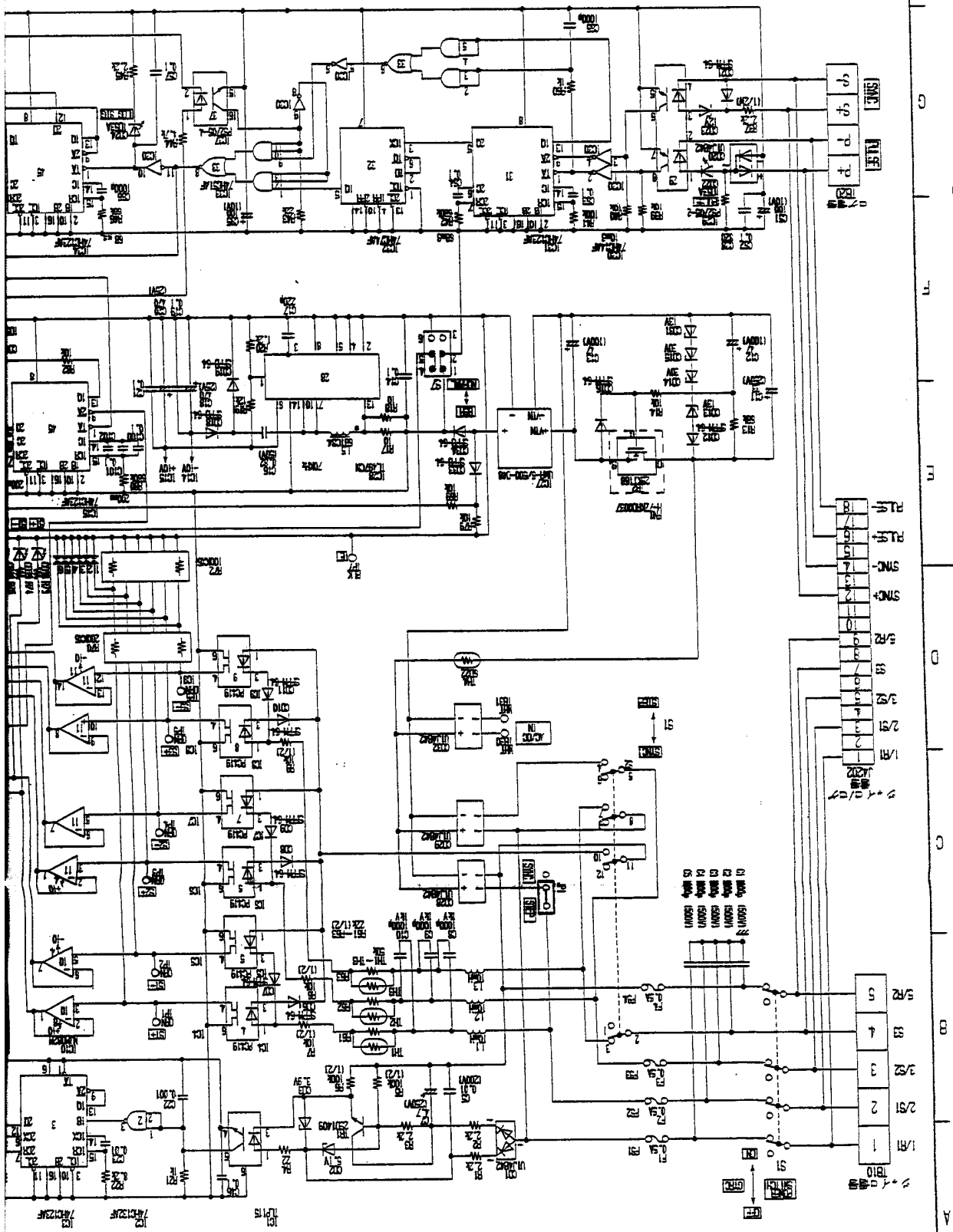
NOTE  
UNLESS OTHERWISE SPECIFIED  
ALL RESISTORS ARE IN OHMS, 1/4W RATING  
ALL CAPACITORS ARE IN MICRO FARADS, 50V RATING

080-1378

APPROVED	DATE	TITLE	SHEET NO.
<i>M. Suda</i>		NCD-3780 CBD-1378	1
CHECKED	SCALE	POWER SUPPLY CCT	
<i>M. Suda</i>	A3		
DESIGNED			
<i>K. Niikawa</i>			
DRAWING NO.		N.C.D.: 1378.0: 15.10.1	

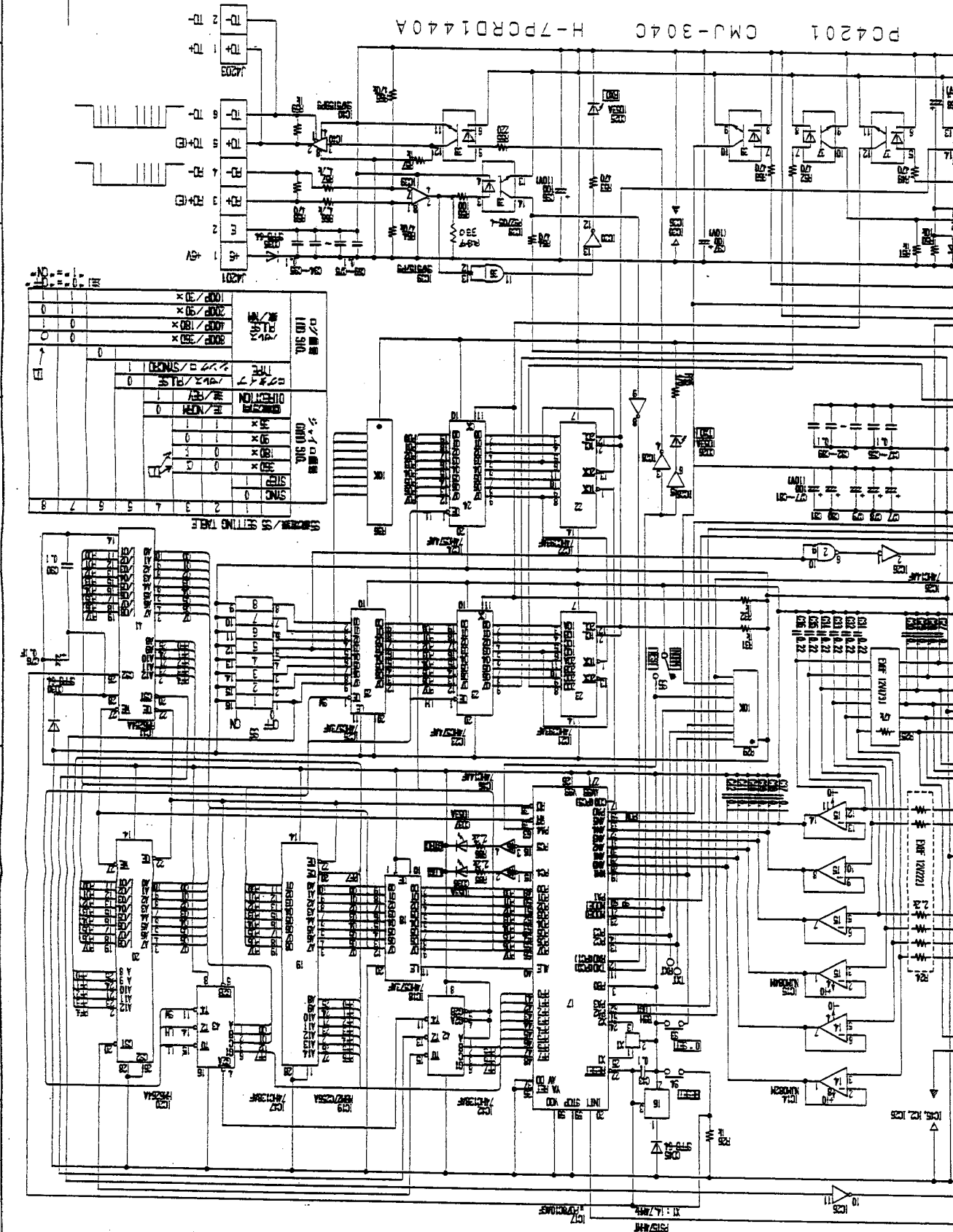
JRC Japan Radio Co., Ltd.

NOTE  
UNLESS OTHERWISE  
ALL RESISTORS A  
ALL CAPACITORS



1 2 3 4 5

1 2 3 4 5



1

2

3

4

改訂履歴

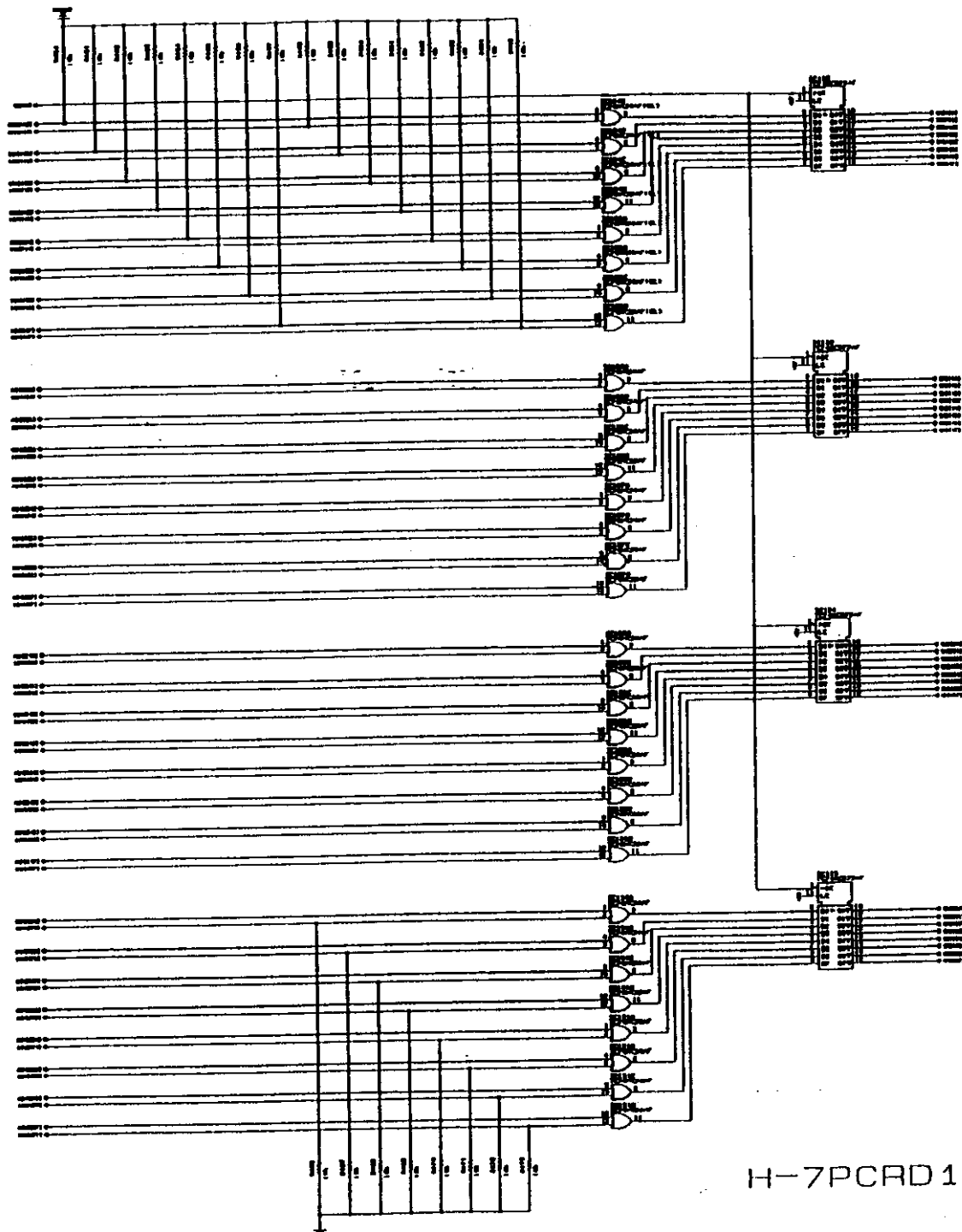
A

B

C

D

E



H-7PCRD1444C

15INCHES COLOR RADAR CPU CONTROL CIRCUIT PC4401;4/4

F

CHECKED <i>H. Kitayama</i>	APPROVED <i>M. Sudo</i>	1978.9.8 DATE	TITLE NCD-3780 CMC-1012 CPU CONTROL CCT	SHEET NO. 4/4
	DESIGNED <i>J. Saito</i>	SCALE A4		
DRAWING NO. E D 0 3 -				

A

B

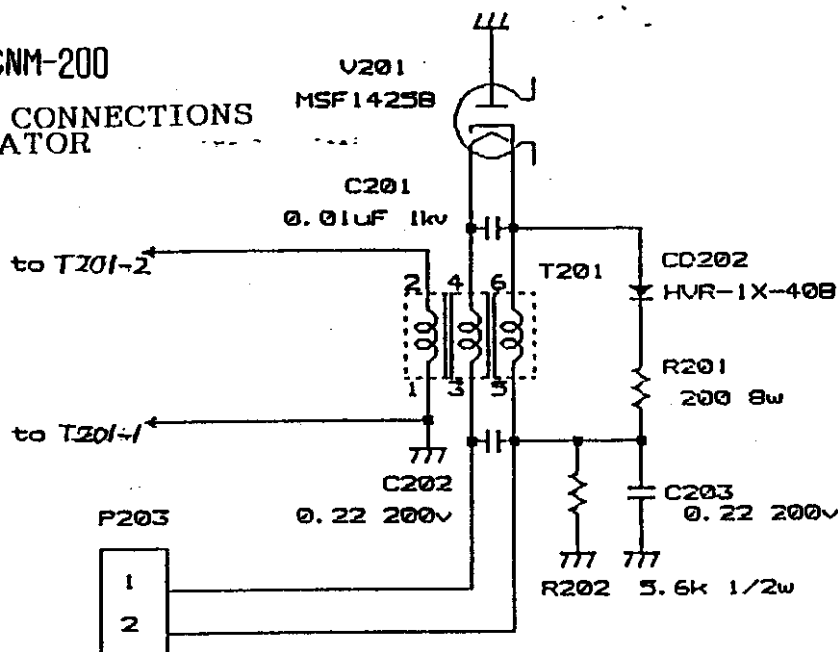
C

D

E

F

CNM-200  
INTERNAL CONNECTIONS  
OF MODULATOR



APPROVED		DATE	TITLE	SHEET NO.
<i>M. Sudo</i>			INTERNAL CONNECTIONS OF MODULATOR :NKE-1055	/
DESIGNED		SCALE		
CHECKED	<i>H. Morita</i>	<b>A 4</b>	ED 0 0 -	DRAWING NO.
<i>H. Kitagawa</i>				

1 2 3 4

A

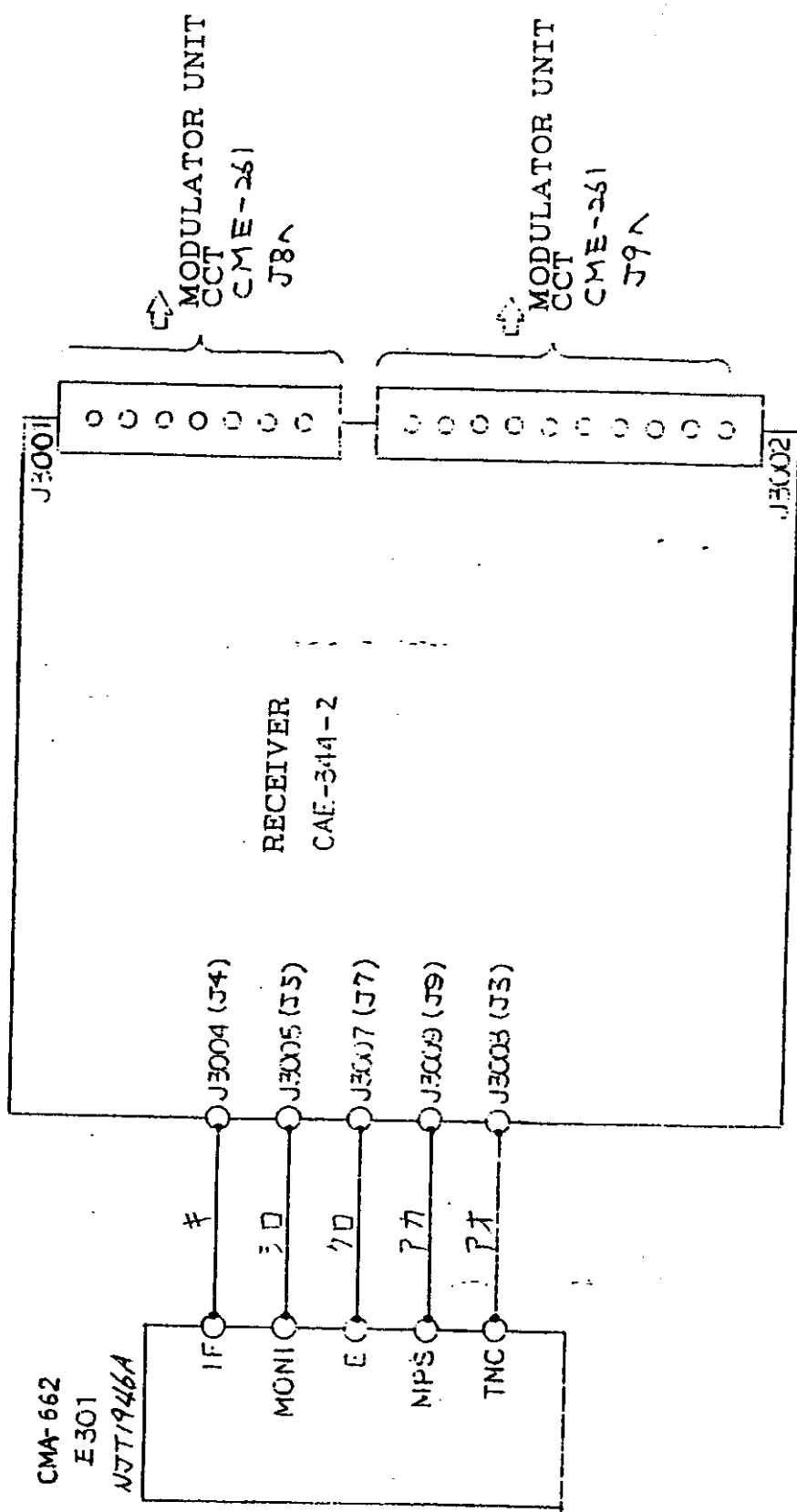
B

C

D

E

F



NOTE COLOR NOMINATION CABLE IS 250V-HV-12/0.18

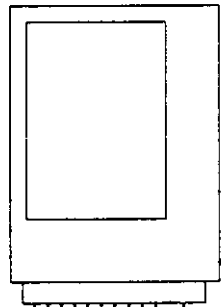
CHECKED	APPROVED <i>M. Sudo</i> DESIGNED	DATE	TITLE	SHEET NO.
<i>H. Kitazawa</i>	<i>H. Morita</i>	SCALE	INTERNAL CONNECTIONS OF RECEIVER :NRG-210	/
A 4		E D 0 0 -		DRAWING NO.



SCANNER UNIT  
NKE-1055-4



DISPLAY UNIT  
NCD-3780

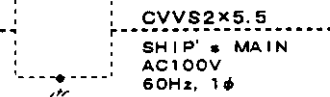


28-CORES COMPOSITE CABLE  
H-CFQ-8681  
MAX. 18.5  $\phi$  (JRC SUPPLY)

- GYRO 250V-MPYCYS-5
- LOG 250V-DPYCS-1.25
- GPS 250V-TTYCYS-1
- RADAR BUOY H-2695110006 MAX.12.5  $\phi$  (JRC SUPPLY)
- RADAR ADAPTER H-2695110006 MAX.12.5  $\phi$  (JRC SUPPLY)
- 2 AXES LOG 250V-TTYCYS-1
- ELECTRIC COMPASS 250V-TTYCYS-1
- EXT. BUZZER 250V-TTYCYS-1
- ARPA ALARM 250V-TTYCYS-1

USE EXCLUSON

RECTIFIER UNIT (OPTION)  
NBA-3308



CVVS2x5.5

CVVS2x5.5

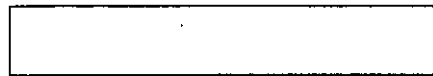
SHIP'S MAIN  
AC100V  
60Hz, 1 $\phi$

CVVS2x5.5

SHIP'S MAIN  
DC24V

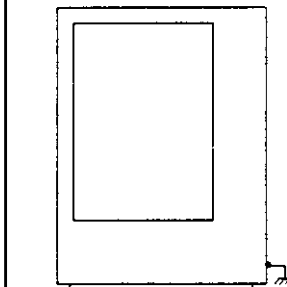
NOTES: ELIMINATING THE INTERFERENCE ON FREQUENCIES USED FOR MARINE COMMUNICATIONS AND NAVIGATION DUE TO OPERATION OF THE RADAR.  
ALL CABLES OF THE RADAR ARE TO BE RUN AWAY FROM THE CABLES OF RADIO EQUIPMENT.  
(EX. RADIOTELEPHONE, COMMUNICATIONS RECEIVER AND DIRECTION FINDER, ETC.).  
ESPECIALLY INTER-WIRING CABLES BETWEEN SCANNER UNIT AND DISPLAY UNIT OF THE RADAR SHOULD NOT BE RUN PARALLEL WITH THE CABLES OF RADIO EQUIPMENT.

SCANNER UNIT  
NKE-1055-6



28-CORES COMPOSITE CABLE  
H-CFO-8681  
MAX. 18.5 ϕ (JRC SUPPLY)

DISPLAY UNIT  
NCD-3780



GYRO 250V-MPYCYS-5

LOG 250V-DPYCS-1.25

GPS 250V-TTYCYS-1

RADAR BUOY H-2695110006 MAX. 12.5 ϕ (JRC SUPPLY)

RADAR ADAPTER H-2695110006 MAX. 12.5 ϕ (JRC SUPPLY)

2 AXES LOG 250V-TTYCYS-1

USE EXCLUSION { ELECTRIC 250V-TTYCYS-1  
COMPASS

EXT. BUZZER 250V-TTYCYS-1

ARPA ALARM 250V-TTYCYS-1

RECTIFIER UNIT (OPTION)  
NBA-3308

NBA-3308

CVVS2x5.5

CVVS2x5.5

SHIP' s MAIN  
AC100V  
60Hz, 1 ϕ

CVVS2x5.5

SHIP' s MAIN  
DC24V

NOTES: ELIMINATING THE INTERFERENCE ON FREQUENCIES USED FOR MARINE COMMUNICATIONS AND NAVIGATION DUE TO OPERATION OF THE RADAR.  
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