

FURUNO

SERVICE MANUAL

MARINE RADAR

MODEL FR-2000X / 2000S SERIES



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FR-2000X/S SERIES

Addenda No. 2 to FR-2010/2020 Service Manual, Pub. No. SM-E3308-0A
 Addenda No. 1 to FR-2000X/2000S Series Service Manual, Pub. No. SM-E3311-0A

FR-2000 SERIES RADAR MODIFICATION OF VIDEO AMPLIFIER BOARD

①

MODIFICATIONS

②

- 1) Increase of gain (to match the noise filter characteristics of AD board)
- 2) Decrease of parts (use of custom ICs)
- 3) Addition of voltage regulator on +12V line to eliminate ripple

③

The Video Amplifier board is changed from VDA-7047 (or [B] VDA-7047) to [C] VDA-7047. Refer to the attached schematic diagram. The Memory board is changed from 03P7031 to [A] 03P7031.



④

BOARD COMPATIBILITY

The Video Amplifier board and the Memory board work as a pair, and their compatibility is as follows:

⑤

<u>Video Amplifier board</u>	—————	<u>Memory board</u>
VDA-7047 (Code 008-226-510)		03P7031 (Code 008-236-140)
[B] VDA-7047 (Code 008-388-980)		[A] 03P7031 (Code 008-388-740)
[C] VDA-7047 (Code 008-412-670)		[A] 03P7031 (Code 008-388-740)

⑥

When replacing the VDA-7047 board with [C] VDA-7047, the Memory board also must be replaced.

FACTORY MODIFICATION

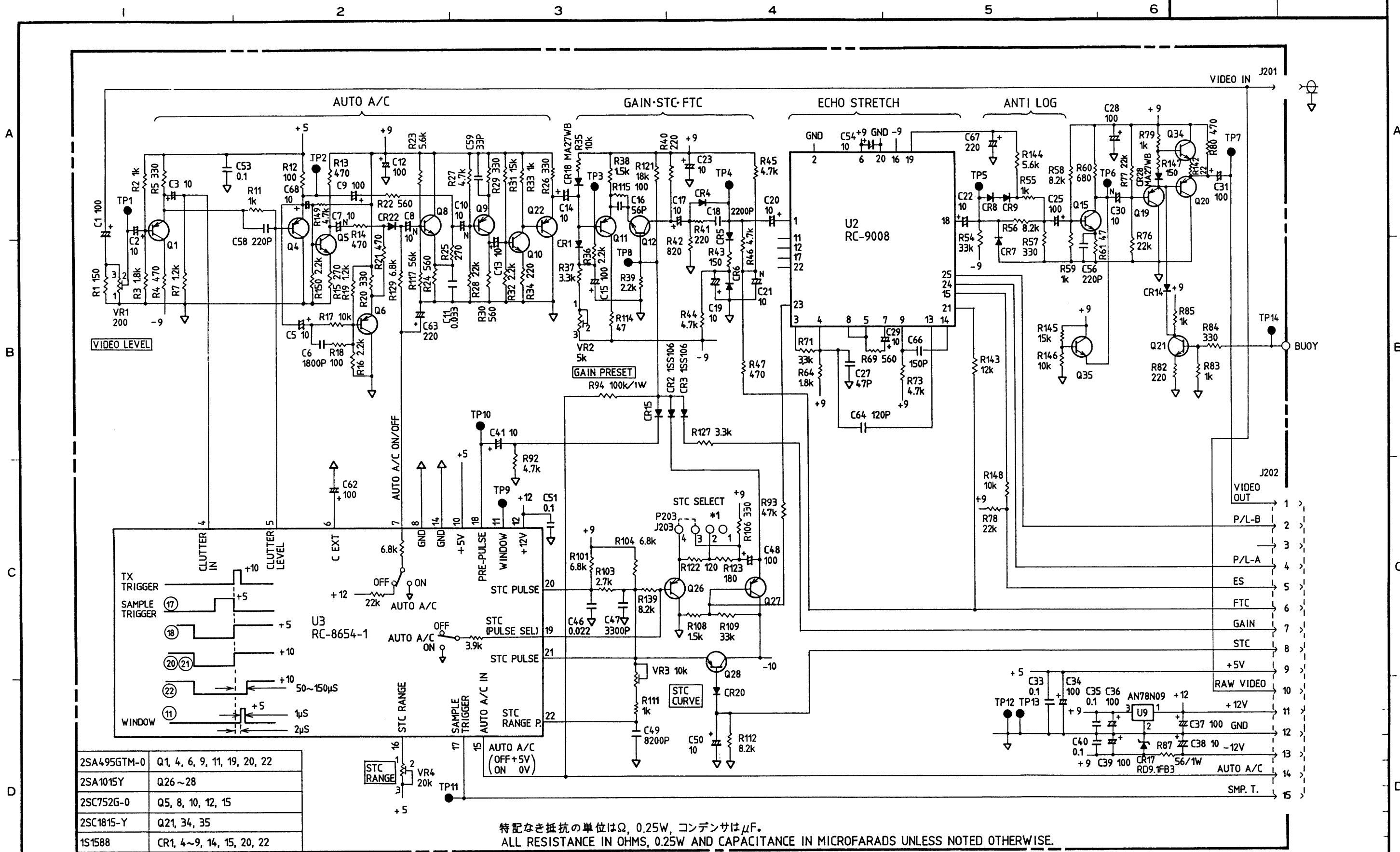
⑦

FR-2010/2020 FR-2020X/2050X FR-2030S/2032S FR-2060S	}	From the production in June 1991 (expected)
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⑧

FR-2010T/2020T Already modified (from the 1st set)

NOTE: [A] VDA-7047 Video Amplifier board for FR-2011/2021 will not be modified.



2SA495GTM-0	Q1, 4, 6, 9, 11, 19, 20, 22
2SA1015Y	Q26~28
2SC752G-0	Q5, 8, 10, 12, 15
2SC1815-Y	Q21, 34, 35
1S1588	CR1, 4~9, 14, 15, 20, 22

*1: STC SELECT

P203	CURVE EXPONENT	ANTENNA HEIGHT	APPLICATION
4-3	FOURTH	≤ 10m	FR-2010/2020, FR-2010T/2020T
3-2	THIRD	> 10m	FR-2020X/2050X, FR-2030S/2032S
2-1	SECOND	> 10m	FR-2060S

FR-2032S/2060S
FR-2020X/2050X
FR-2030S
FR-2010T/2020T
FR-2010/2020

承認 APPROVED	FEB. 21 '91 T. NAKAJO	名称 TITLE	□ VDA-7047 ビデオアンプ VIDEO AMPLIFIER
検図 CHECKED	FEB. 21 '91 N. SAITO	製図 DRAWN	図番 DWG. NO.
	FEB. 21 '91 I. AMANO		C3308-013-J

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FR-2000 SERIES RADAR CROSS REFERENCE

Unit		Model						
Name	Type	FR-2010	FR-2020	FR-2020X *	FR-2050X *	FR-2030S	FR-2032S *	FR-2060S *
Gear Box (Scanner unit less radiator)	C2P7N2N-016	o						
	RSB-0014-017		o					
	RSB-003 RSB-004 RSB-005			o	o			
	RSB-0026 RSB-0031					o		
	RSB-0027 RSB-0032						o	o
Transceiver Unit *	RTR-010				o			
	RTR-018							o
	RTR-019			o				
	RTR-025						o	
Display Unit	RDP-057					o		
	RDP-058			o	o		o	o
	RDP-062	o						
	RDP-063		o					

*: TR-down type

RSB-003.....for 220V/60Hz or 200V/50Hz, 3 ϕ (300W motor)
 RSB-004.....for 100V, 1 ϕ , 50/60Hz (200W motor)
 RSB-005.....for 220V/60Hz or 200V/50Hz, 3 ϕ (200W motor)
 RSB-0026.....for 220V/60Hz or 200V/50Hz, 3 ϕ (400W motor)
 RSB-0031.....for 440V/60Hz or 380V/50Hz, 3 ϕ (400W motor)
 RSB-0027.....for 220V/60Hz or 200V/50Hz, 3 ϕ (400W motor)
 RSB-0032.....for 440V/60Hz or 380V/50Hz, 3 ϕ (400W motor)

NOTE: Thermal relay contained in the display unit RDP-057/RDP-058 is subject to change according to the combined gear box.

For RSB-003.....Thermal relay Q-20, 1.8A
 (code no. 000-454-201)
 For RSB-004.....Thermal relay BMK9-11-8K
 (code no. 000-454-992)
 For RSB-005/0031/0032.....Thermal relay Q-20, 1.3A
 (code no. 000-454-200)
 For RSB-0026/0027Thermal relay Q-20, 2.3A
 (code no. 000-113-858)

P.C. Board Convertibility

Block No.	P.C. Board		Display Unit			
	Name	Type	RDP-057	RDP-058	RDP-062	RDP-063
B3	POWER PROTECTION	[B] PCT-5141	o		o (For AC)	o (For AC)
		[C] PCT-5141		o		
B4	POWER SUPPLY *1	PTU-7010			o (For AC)	o (For AC)
		[B] PTU-7010	o			
		[C] PTU-7010		o		
		PTU-7179			o (For DC)	o (For DC)
B6	RECTIFIER *1	03P7072 (PTA-7072)	o	o	o (For AC)	o (For AC)
		PTA-7073 (03P7073)			o (For DC)	o (For DC)
B7	TX-HV	[B] HV-7130			o	
		[C] HV-7130	o			o
B8	AD	03P7030	o	o	o	o
B9	MEMORY	03P7031	o	o	o	o
B10	MARK	03P7032	o	o	o	o
B11	MOTHER BOARD *2	03P7133	o	o	o	o
B12	VIDEO AMPLIFIER	VDA-7047	o	o	o	o
B13	PAR (Panel Right)	PAR-7139	o	o	o	o
B14	PAL (Panel Left)	PAL-7140	o	o	o	o
B15	PAF (Panel Front)	PAF-7141	o	o	o	o
B16	PAV (Panel Volume)	PAV-7142	o	o	o	o
B17	PST (Preset)	PST-7143	o	o	o	o
B18	DTB (Terminal Board)	DTB-7144			o	o
		[A] DTB-7144	o			
		[B] DTB-7144		o		
B19	CM (Check Meter)	[B] CM-5146	o	o	o	o
B20	PDM (Demagnetize)	PDM-7303			o (For DC)	o (For DC)
B21	FILTER	FIL-7220			o (For DC)	o (For DC)
B23-1	DISPLAY DRIVE	TS-861	o	o	o	o
B23-2	DEFLECTION DRIVE	TS-860	o	o	o	o
B23-3	CRT SOCKET	TS-769	o	o	o	o
B23-4	AUTO DEGAUSS	TS-885	o	o	o	o
Applied Models			FR-2030S	FR-2020X FR-2050X FR-2032S FR-2060S	FR-2010	FR-2020

*1: Power supply board and rectifier board are supplied in one set but not supplied independently when ordered.

PTU-7273 = PTU-7010 + 03P7072

[B] PTU-7273 = [B] PTU-7010 + 03P7072

[C] PTU-7273 = [C] PTU-7010 + 03P7072

*2: Mother board is supplied with attached to PCB rack.

P.C. Board Convertibility

P.C. Board		Gear Box (Scanner unit less radiator)					Transceiver Unit			
Name	Type	RSB-003 RSB-004 RSB-005	RSB-0026 RSB-0031	RSB-0027 RSB-0032	RSB-014- 017 (incl. RTR- 017)	C2P7N2N- 016 (incl. RTR- 016)	RTR-010	RTR-018	RTR-019	RTR-025
BEARING SIG. GEN.	MP-3795	o			o	o				
	MP-7302		o	o						
MODULATOR	MD-7063					o				
	MD-7083				o			o	o	
	MD-5145		o							
PFN (1)	03P6668					o	o			
PFN (2)	03P6669					o				
	[A] 03P6669							o		
MOD. TRIGGER	[B] 03P5732					o				
	[B] RF-5144				o			o		
	[C] RF-5144		o							
	[A] 03P6666							o		
	[B] 03P6666						o			
	03P8726									o
IF AMPLIFIER	03P6734						o		o	
	[A] 03P6734				o	o				
	[B] 03P6734							o		o
	03P6570		o							
MBS	03P6569		o							
MAG CURR. DET.	03P6827						o			
	[A] 03P6827							o		

P.C. Board		Gear Box (Scanner unit less radiator)					Transceiver Unit			
Name	Type	RSB-003 RSB-004 RSB-005	RSB-0026 RSB-0031	RSB-0027 RSB-0032	RSB-014- 017 (incl. RTR- 017)	C2P7N2N- 016 (incl. RTR- 016)	RTR-010	RTR-018	RTR-019	RTR-025
CHECK METER	CM-5146								o	
	[C] CM-5146							o		
	[D] CM-5146						o			o
POWER SUPPLY	03P6667						o	o		
	PT-5185								o	
	[D] PT-8179									o
TX HV	03P6680 *1						o	o		
	03P6810						o	o		
	HV-4119								o	
ATT (Attenuator)	ATT-7362							o		o
TRT (TR Tube Tuning)	TRT-7363							o		
MOTOR SLOW START	MSS-7497		o (200/220V)	o (200/220V)						
	[A] MSS-7497		o (380/440V)	o (380/440V)						
REVERSE ROTATION PROTECTOR	MPT-6237	o (for 1ø)								
Applied Models		FR-2020X FR-2050X	FR-2030S FR-2830S	FR-2032S FR-2060S FR-2832S FR-2862S	FR-2020 FR-2021	FR-2010 FR-2011	FR-2050X FR-2852X	FR-2060S FR-2862S	FR-2020X FR-2822X	FR-2032S FR-2832S

*1: 03P6680 board is supplied with 03P6810 board attached.

SPECIFICATIONS OF FR-2000X/2000S SERIES

FR-2020X X band 25kW TR-down type
 FR-2050X X-band 50kW TR-down type
 FR-2030S S-band 30kW TR-up type
 FR-2032S S-band 30kW TR-down type
 FR-2060S S-band 60kW TR-down type

1. SCANNER UNIT/TRANSCEIVER UNIT

Model	FR-2020X/2050X	FR-2030S/2032S/2060S
Radiator type & Length	Slotted Array XN3 : 200cm XN3A: 200cm XN4A: 240cm XN5 : 300cm	Slotted Array SN5AF : 270cm SN7AF : 380cm
Horizontal Beamwidth	1.23°(XN3/3A) 0.95°(XN4A) 0.75°(XN5)	2.3°(SN5AF) 1.9°(SN7AF)
Vertical Beamwidth	25°(XN3/5) 20°(XN3A/4A)	25°
Antenna Rotation	26 rpm nominal (60Hz, windless load) 21 rpm nominal (50Hz, windless load)	
Wind Load	Relative wind 51.5 m/s (100 knots)	
Frequency	9410 ± 30 MHz (25kW) 9415 ± 30 MHz (50kW)	3050 ± 30 MHz
Modulator	SCR Line Type Pulse Modulator	
Duplexer	Ferrite Circulator and TR Limiter	Ferrite circulator and TR Tube (60kW) or Diode Limiter (30kW)
Receiver Front End	MIC (Microwave IC)	
IF Amplifier Characteristics	60MHz Logarithm Amp. Bandwidth : 28 MHz (short pulse)/3 MHz (long pulse)	

Pulselength & Pulse Repetition Rate

Range (nm)		0.25-0.5	0.75-1.5	3	6-24	48	120
SHORT	Pulselength (us)	0.08		0.3/0.2*	0.6	1.2	
	Pulse Rep. Rate (Hz)	2200		1100	600		500
LONG	Pulselength (us)	0.08	0.3/0.2*	0.6	1.2		
	Pulse Rep. Rate (Hz)	2200	1100	600		500	

*: 0.2us for 50kW/60kW models

Note: When the second-trace echo rejection circuit is activated, the pulse repetition rate is 500Hz on other than the 0.08 us pulselength.

2. DISPLAY UNIT

1) Indication System: Raster scan daylight display
 2) Picture Tube: 20" diagonal high-resolution color CRT

3) Range:
 4) Range Ring Interval:
 5) Number of Rings:

0.25	0.5	0.75	1.5	3	6	12	24	48	120
0.05	0.1	0.25	0.25	0.5	1	2	4	8	20
5	5	3	6	6	6	6	6	6	6

6) Minimum Range: less than 30m
 7) Display Mode: Relative Motion: Head-up, North-up*
 Course-up*
 True Motion: By Video Plotter RP-2
 (optional)

* gyrocompass required

8) Bearing Resolution: Horizontal beamwidth + 0.34° (digitize error)

9) Bearing Accuracy: better than 1°

10) Range Resolution: better than 36m on 0.25nm scale

11) VRM/Range Ring Accuracy: 0.8% or 7m, whichever is greater

3. POWER REQUIREMENTS

Display Unit, TR Unit: 100/110/115VAC, 1ø, 50/60Hz
 500VA max. for 50kW/60kW models
 380VA max. for 25kW/30kW models

Scanner Unit

X-band scanner motor: 220V, 3ø, 60Hz or 200V, 3ø 50Hz
 290VA (for 200W motor)
 400VA (for 300W motor using 300cm radiator)
 110V, 1ø, 50/60Hz
 430VA

S-band scanner motor 220V/440V, 3ø 60Hz, or 200/380V, 3ø, 50Hz
 440VA

4. ENVIRONMENTAL CONDITIONS

1) Ambient Temperature: Scanner Unit --- -25°C to +70°C
 Display Unit --- -15°C to +55°C
 TR unit (TR-down type) --- -15°C to +55°C
 2) Humidity: Relative Humidity 95% @ +40°C

PART 1 DISPLAY UNIT

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3. CRT CIRCUIT	3-1 to 3-3
4. OPTIONAL RP-2 (VIDEO PLOTTER), ARP-2 (AUTO PLOTTER) & GC-2 (GYRO CONVERTER)	4-1

Main Function of P.C. Boards in display unit (RDP-057/058)

Block No.	PCB	Function
B3	PCT-5141	Over/lower input AC voltage protector
B4	PTU-7010	+10V regulator, Switching regulator, Overcurrent detector, etc.
B6	03P7072	Rectifier, Driver
	PTA-7073	+12V regulator, Rectifier, Driver
B7	HV-7130	Rectifier for transmission high voltage
B8	03P7030	A/D converter, Video input memory, System control, etc.
B9	03P7031	TV memory, Echo average, Color conversion, D/A converter, XY conversion, etc.
B10	03P7032	Character/mark memory, System control, etc.
B11	03P7133	Mother board
B12	VDA-7047	Video amplifier, A/C sea clutter, Echo stretch, etc.
B13	PAR-7139	Right-hand panel controls (Plot, Guard Zone, VRM)
B14	PAL-7140	Left-hand panel controls (Power, Brill., Mode, EBL)
B15	PAF-7141	Front panel controls (Color, A/C Auto, Range, etc.)
B16	PAV-7142	Front panel volumes (Function, Brill., Tune, etc.)
B17	PST-7143	Preset for gyro, tuning, main bang suppression, etc.
B18	DTB-7144	Terminal board
B19	CM-5146	Check meter
B23-1	TS-861	R, G, B driver, Deflection driver, Fly-back transformer
B23-2	TS-860	Horizontal/vertical buffer driver
B23-3	TS-769-1	CRT socket
B23-4	ADG	Relay for TV demagnetizer

Main Function of Optional Equipment's P.C. Boards

Model	PCB	Function
RP-2	PAB-7442	Key input
	03P7470	GD video memory, Character memory, Memory control, System control, etc.
	03P6990A	Interface with ROM/RAM memory card
ARP-2	PAA-7245	Key input
	03P7610	Data conversion to QV (Quantized Video)
	03P7611	CPU for processing
GC-2	03P6856 (GS-6856)	Gyro interface
	CG-4137	Isolation switch between gyro compass and radar during check of equipment

1. POWER SUPPLY CIRCUIT

1-1. AC Power Supply Circuit

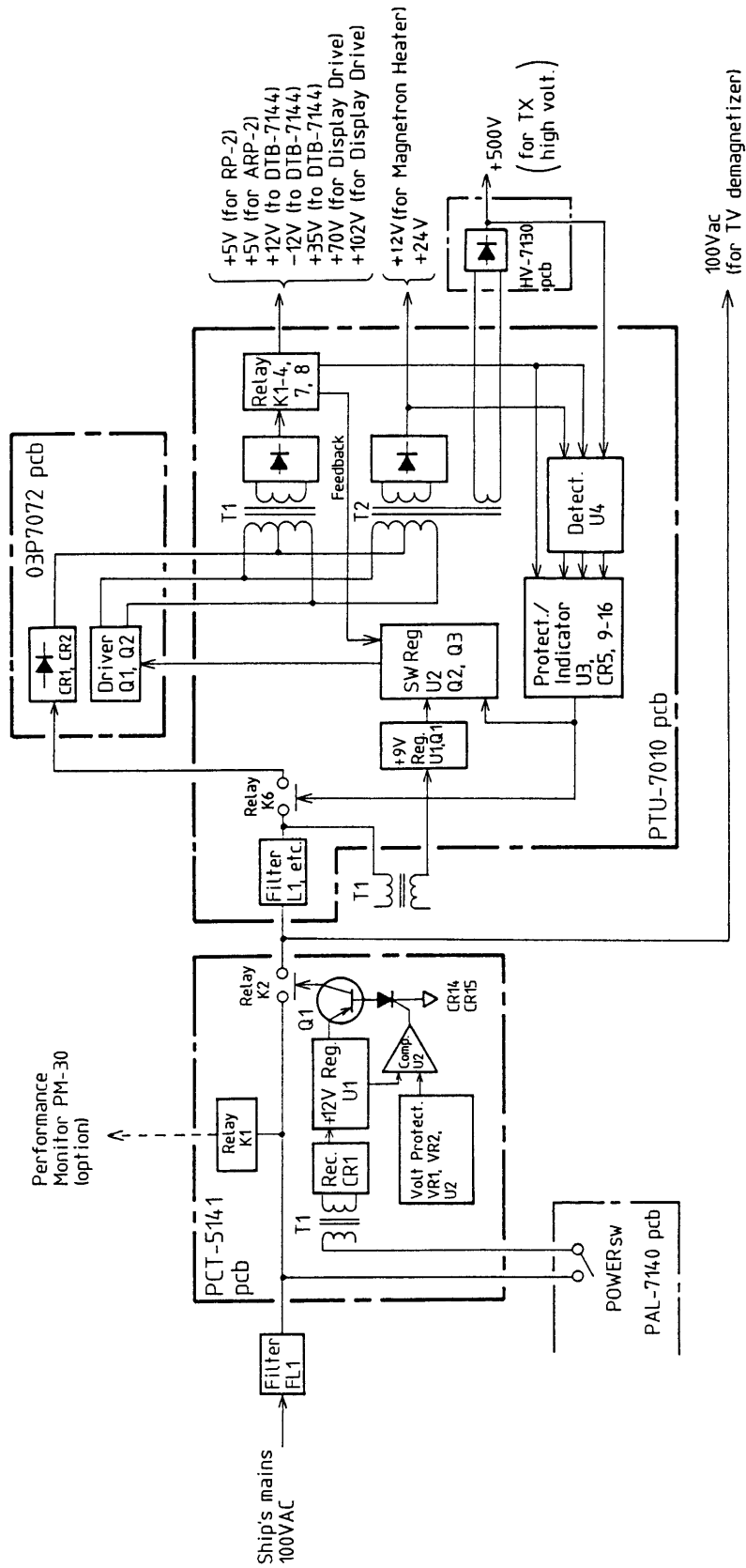


Fig.1-1 Block Diagram of AC Power Supply Circuit

PTU-7273 (PTU-7010 & 03P7072) & PCT-5141 for AC Power Supply Circuit

PTU-7010

LED's

LED No.	Meaning	Conditions
CR5	+102V line (for display drive)	Normally off. When a certain line voltage is abnormal due to overcurrent, etc., corresponding LED turns on.
CR9	+70V line (for display drive)	
CR10	-12V line	
CR11	+12V line	
CR12	+5V line (for ARP-2 Auto Plotter)	
CR13	+5V line (for RP-2 Video Plotter)	
CR14*	+12V line (for magnetron heater)	
CR15	+24V line	
CR16*	TX high voltage line	

Test Points

TP No.	Checking	Ratings
TP1	+102V line out	105.8 - 106.2Vdc
TP2	Magnetron heater (hot) } +12V line out	10.5-12.5Vdc
TP3	Magnetron heater (cold) }	
TP5	+12V line out	11.0 - 12.5Vdc
TP6	-12V line out	-11.2 - -13.0Vdc
TP7	+35V line out	30 - 36Vdc
TP8	+70V line out	70.5 - 78.0Vdc
TP9	(+) } +24V line out	22.9 - 28Vdc
TP10	(-) }	
TP11*	TX high voltage line out	500 - 580Vdc
TP12/16	Transformer T1 #2/#3, T2 #2	
TP13/15	Transformer T1 #1, T2 #1	
TP14/17	Transformer T1 #4, T2 #3	
TP18	Regulated +9V	9Vdc
TP19	+5V line out (for RP-2 Video Plotter)	4.75 - 7Vdc
TPG1/2/ 5/6	GND (chassis)	

Note: Each voltage is measured on "ST-BY", 0.25mm and scanner "ON".

Potentiometer

VR No.	Adjusting	Measurement
VR1	+102V line voltage	106±0.2Vdc should appear at TP1.

*: for TR-up type only

03P7072

Test Points

TP No.	Checking	Ratings
TP1	Floating GND	
TP2	Driver Q1 input	
TP3	Driver Q2 input	
TP4	Driver Q1 output	
TP5	Driver Q2 output	

Note: TP1 is not same potential as chassis ground.

PCT-5141

Caution: Since ship's mains voltage is always applied to this p.c.board even if the POWER switch is turned off, take great care when checking. Take out fuses F1 and F2 to escape from the ship's mains.

Test Points

TP No.	Checking	Ratings
TP1	Rectified output from CR1	
TP2	Regulated +12V	12Vdc

Potentiometers

VR No.	Adjusting	Measurement
VR1	Upper limit of ship's mains	Protection circuit should be actuated at 130Vac or higher input voltage.
VR2	Lower limit of ship's mains	Protection circuit should be actuated at 85Vac or lower input voltage.

1-4. Scanner Motor Drive Circuit

Simplified scanner motor control diagram is shown below. AC power is supplied to the scanner motor through relay K1 and sensor of thermal relay K2. The relay K1 is controlled by scanner switches (in display unit and scanner unit), thermal relay K2 and K11 on DTB-7144 board. The relay K11 is able to activate when the FUNCTION switch is turned to TX position in the condition that the ST-BY signal exists after warm-up period. If it is required to turn the scanner at standby condition, short circuit between #1 and #2 of J484 to activate the relay K1. If the overcurrent flows in the motor supply line (AC), the thermal relay K2 activates to turn off the relay K1 and the motor supply is cut off.

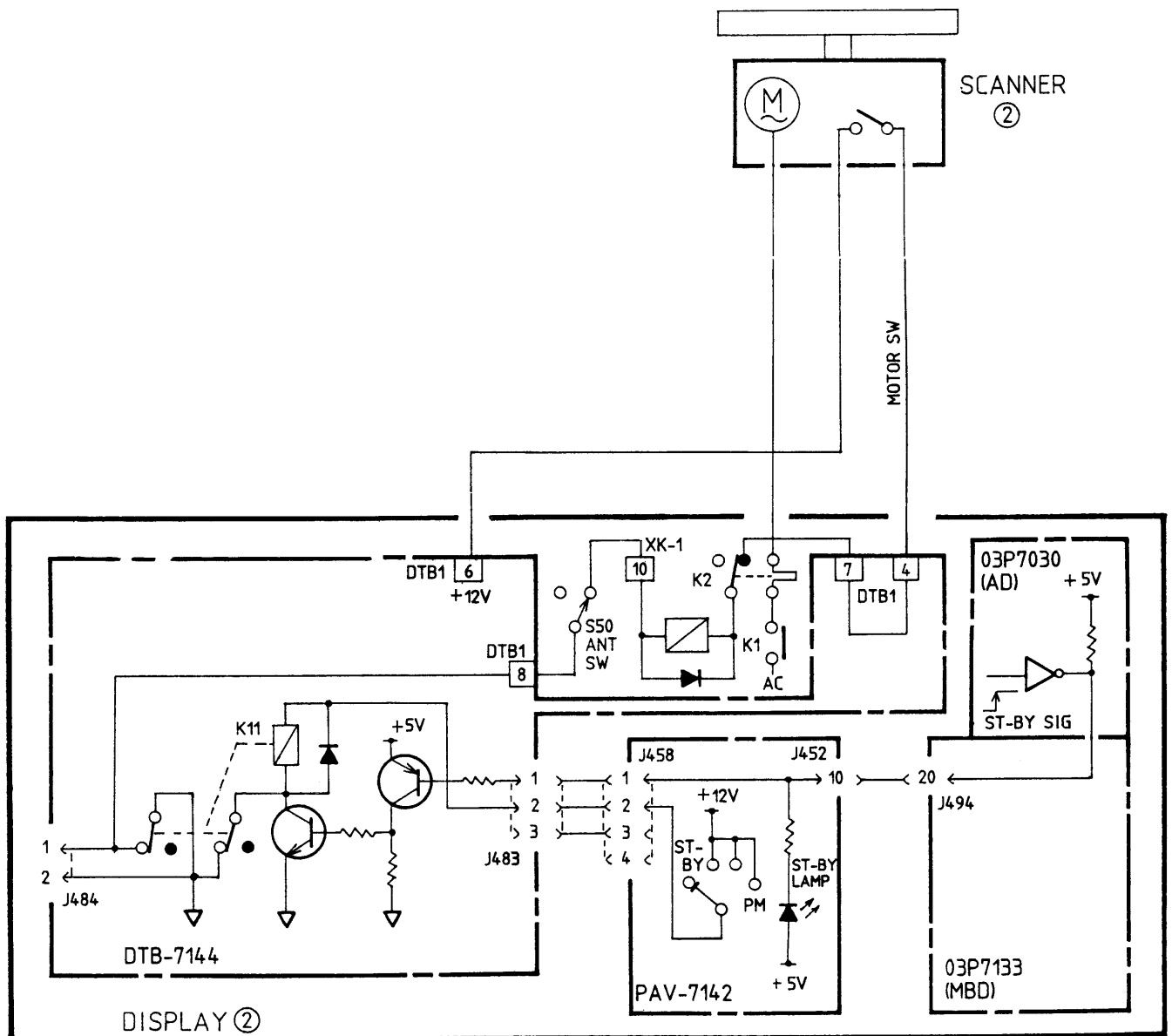


Fig.1-2 Scanner Motor Control Diagram

2. SIGNAL PROCESSING CIRCUIT

2-1. General

The signal processing circuit is the heart of the display unit, and contains various circuits. Each circuit is separately explained in detail.

The analogue IF signal (video signal) coming from the scanner unit is applied to the VDA board to amplify the video signal and to reduce the clutter. Then, the video signal is converted into 8-bit data (gradations) on the AD board. These data are led to the gate arrays "A" and "B" at the same time and encoded into 3-bit data depending on its gradation. Each data for one sweep is temporarily stored into S-RAM. The 3-bit data read-out from S-RAM's are led to the EAV (echo average) circuit on the MEMORY board, where the stable echoes, e.g., ships or land, are extracted from the unstable echo, e.g., sea clutter. After above signal processing, the data for one scan are stored into the video RAM. The V-RAM output, i.e., echo frame, is mixed with the mark/character frame coming from the MARK board. The mixed parallel data is converted into serial data, and then separated into R, G and B signals to display on the CRT. On the other hand, Z-80 CPU and associated circuit is provided on the AD board to control most of the circuit. The other CPU 68000 and ACRTC (Advanced CRT Controller) are mounted on the MARK board to control picture drawing.

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2-13. Check Point on AD Board 03P7030	2-17
2-14. Check Point on MEMORY Board 03P7031	2-18

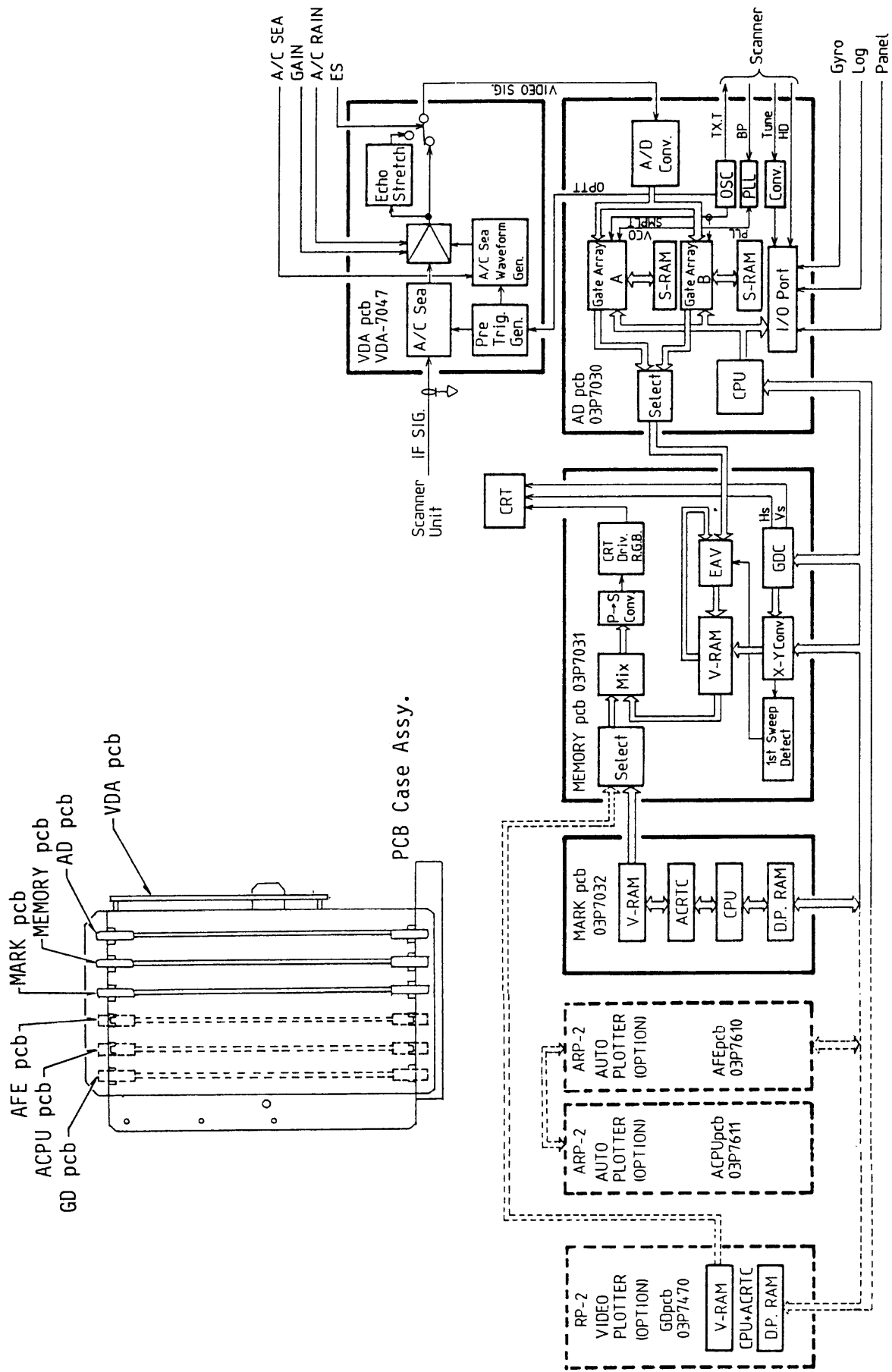

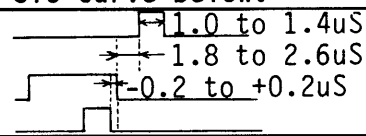


Fig.2-1 Block Diagram of Signal Processing Circuit

2-4. Check Point on VDA Board VDA-7047

Test Points

TP No.	Checking	Ratings
TP1	Input video signal level (*1)	Sig.: 3.0+0.2V, Noise: 0.6+0.1V
TP2	A/C AUTO function (*1)	Noise: 0.5+0.1V
TP3	Signal gain level (*1)	Sig.: 4.0+0.1V, Noise: 0.65+0.1V
TP4	Preset gain level (*2)	 0.08 to 0.12V Noise
TP5		
TP6		
TP7	Output video signal level	Sig.: 4Vpp max
TP8	STC waveform	See STC curve below.
TP9	U6 one-shot output	
TP10	Pre-trigger	
TP11	Option trigger (STC trigger)	
TP12/13	GND	

*Note: (*1) TX on 12nm, A/C AUTO: off, A/C SEA & A/C RAIN: fully CCW
(*2) TX on 12nm, A/C AUTO: off, A/C SEA & GAIN: fully CW*

Potentiometers

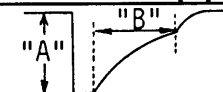
VR No.	Adjusting	Measurement
VR1	Input video level	TP1
VR2	Preset gain level	TP4
VR3	STC curve (fine adjustment)	Factory adjustment only
VR4	STC effective range ("B")	TP8 (See STC curve below.)
VR462	Preset STC voltage ("A")	TP8 (See STC curve below.)

Note: VR462 is located on PST-7143 p.c.board.

Plug

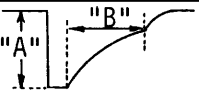
Plug No.	Adjusting	Measurement
P203	STC curve exponent selection	TP8 (See STC curve below.)

STC Curve (for FR-2020X/2050X/2030S/2032S)

STC curve at TP8 (*)	Ant. height (H)	Curve exponent	P203	Max. volt. "A"	Range "B"
	H < 10m	fourth	#4-#3	4.4Vpp	50us
	10m ≤ H < 30m	third	#3-#2	4.0Vpp	70us
	30m ≤ H	third	#3-#2	4.0Vpp	100us

*Note: * TX on 48nm, GAIN & A/C SEA: fully CW*

STC Curve (for FR-2060S)

STC curve at TP8 (*)	Ant. height (H)	Curve exponent	P203	Max. volt. "A"	Range "B"
	$H < 10\text{m}$	third	#3-#2	3.4Vpp	50us
	$10\text{m} < H < 30\text{m}$	second	#2-#1	3.0Vpp	70us
	$30\text{m} < H$	second	#2-#1	3.0Vpp	100us

Note: When connecting FR-2060S to RJ-5 for interswitching configuration with FR-2000 series or FR/FAR-2800 series except for FR-2060S and FR/FAR-2862S, the STC curve setting i.e. P203 jumper setting, should be matched to that for combined radar.

2-5. Video Input Buffer Memory on AD Board

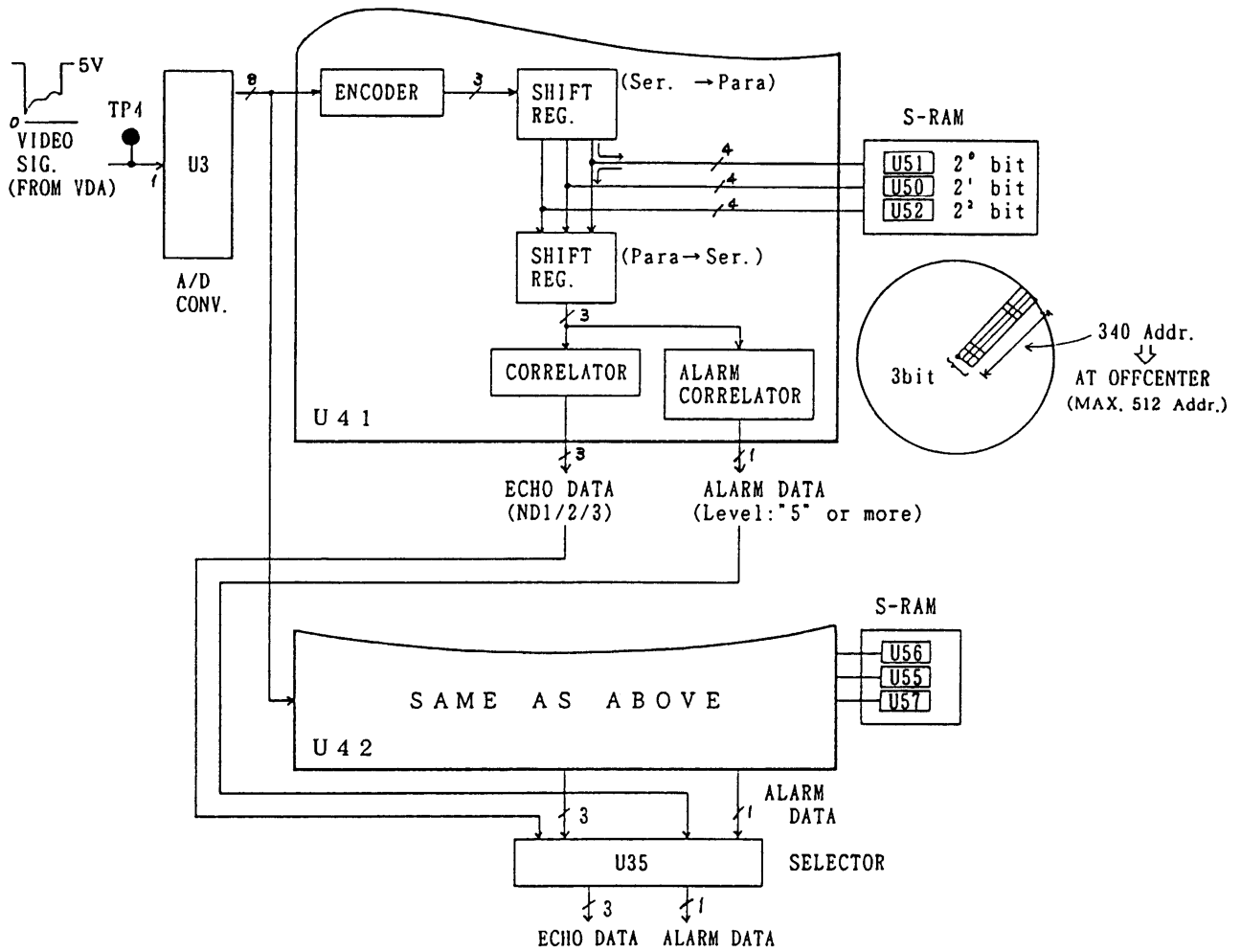


Fig.2-3

The A/D converted 8-bit data is led to the gate arrays U41 and U42, which have various functions. Some of them are shown in Fig.2-3. Each bit of the encoded 3-bit data is pushed into a 4-bit shift register, and the shift register content is parallel-transferred into a static RAM whenever the shift register becomes full. Three S-RAM's (1 word = 4 bits) store D_0 (LSB, 2^0), D_2 (2^2) and D_3 (MSB, 2^3) bits respectively. The purpose of the buffer memory is to improve picture quality on middle and long ranges. Since the pulse repetition rate on both ranges is lower than that on short range, there exists a gap between two neighboring transmissions. Interpolation, therefore, is effective to fill the gap by repeatedly reading out the same data stored in the buffer memory until the next transmission starts. The data read-out from S-RAM's are serialized into the original 3-bit data string and applied to two correlators to eliminate unwanted signal, noise, interference, etc.; one for 3-bit new echo data (ND1/2/3) and the other for 1-bit alarm data.

Write and read timing of S-RAM's is shown in Fig.2-4, i.e., S-RAM's U51/50/52 and U56/55/57 are alternately accessed at every sweep.

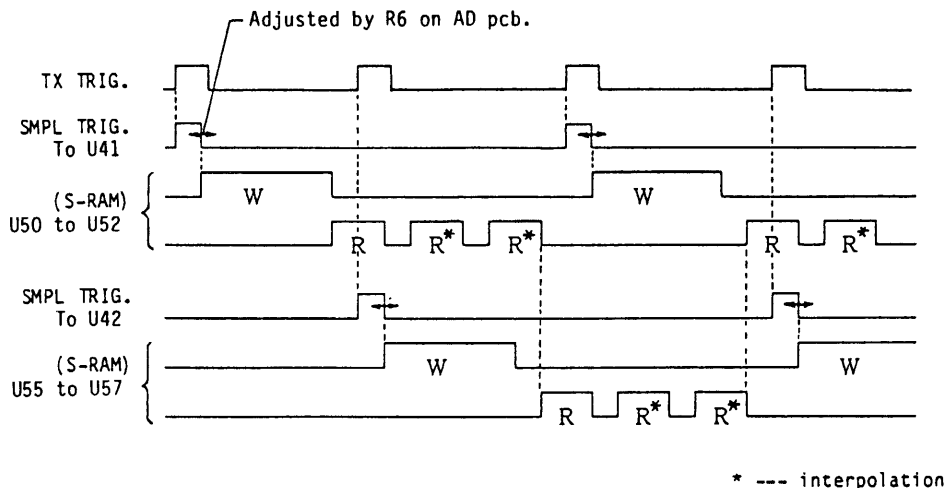


Fig.2-4

2-6. EAV (Echo Averaging) on MEMORY Board

The purpose of echo averaging is to correlate (compensate) the echo presented at near the own ship.

The sweep line is rotated clockwise by θ ($360^\circ/4096$) clock pulses, and hits each pixel. The number of the sweep line hit each pixel differs, depending on the X-Y address of the pixel, i.e., a pixel located near the sweep center is hit by more sweep lines than that located far from the center of the screen as illustrated below.

Pixel B is hit by sweep line θ_{N+3} and drawn by the data contained on sweep line θ_{N+3} . To the contrary, pixel A is hit by five sweep lines θ_N thru θ_{N+4} , and drawn by the data contained on sweep line θ_{N+4} only since sweep line θ_{N+4} is the latest sweep at pixel A. The data contained on sweep line θ_N thru θ_{N+3} are ignored.

Echo averaging technique has been introduced to effectively use all the pixel data offered by several sweep lines which hit a pixel.

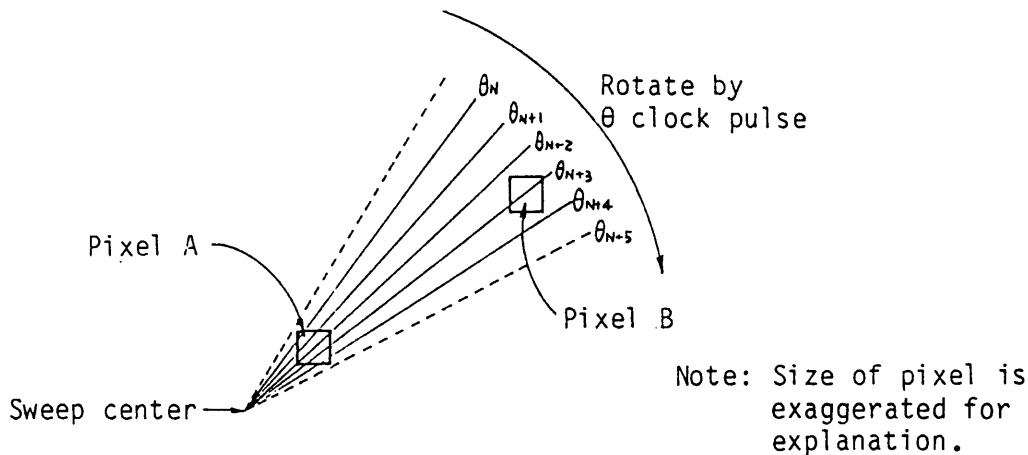


Fig.2-5

The "new" echo data ND1 to ND3 are applied to the address input of P-ROM U9, and the following things occur in order.

(1) When "new" echo data are delivered from the S-RAM, 3-bit data stored at the relevant X-Y address of the video RAM read out. The data are temporarily latched into U10, and applied to the other address input of U9 as the "old" echo data.

(2) Being addressed by both the new data and old data (latch content), ROM U9 outputs 3-bit data. U9 is a kind of correlator. The output data are similar to the new data, but modified a little bit by the old data. U9 contains such data for all the possible combinations of new and old data.

(3) The correlated data (ROM output) are stored into the same X-Y address of the video RAM from which the old data was read in step (2), i.e., the video RAM content is updated.

When the above-mentioned process (1) to (3) is applied to every new data after a transmission, the pixels (address locations) for one sweep line are updated, and after one scan (one rotation of the antenna) completion, the pixels for one complete plane are updated.

Note 1. ROM is divided into four areas, and each area contains a different correlation data. The ECHO AVG status (OFF, EAV1, EAV2, EAV3) is coded into 2-bit data (DM1, DM2) and applied to the address input of U9 for selection of the designated area.

2. When the sweep line hits a pixel for the first time, the new data are correlated with the pixel data which were written one scan before. When the sweep line hits the pixel for the second time and later, the new data are correlated with the pixel data which were written one sweep before. The first hitting and the second (and later) hittings are identified by U50, U25 and U26 for each pixel, and different areas (different correlation data) of the ROM are used between the two cases.

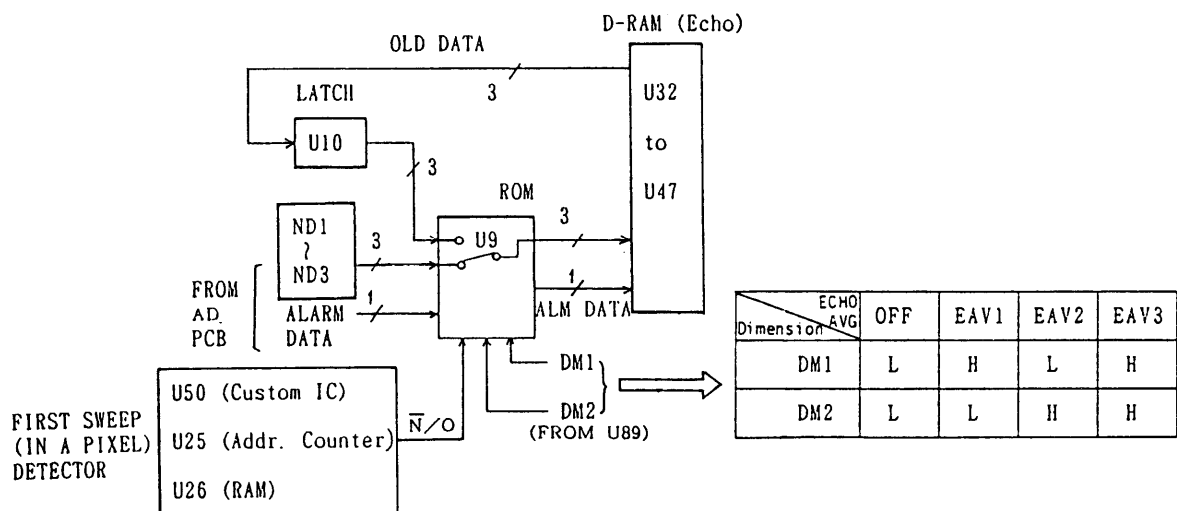


Fig.2-6 EAV Function

2-7. Memory Frame Construction on MEMORY and MARK Boards

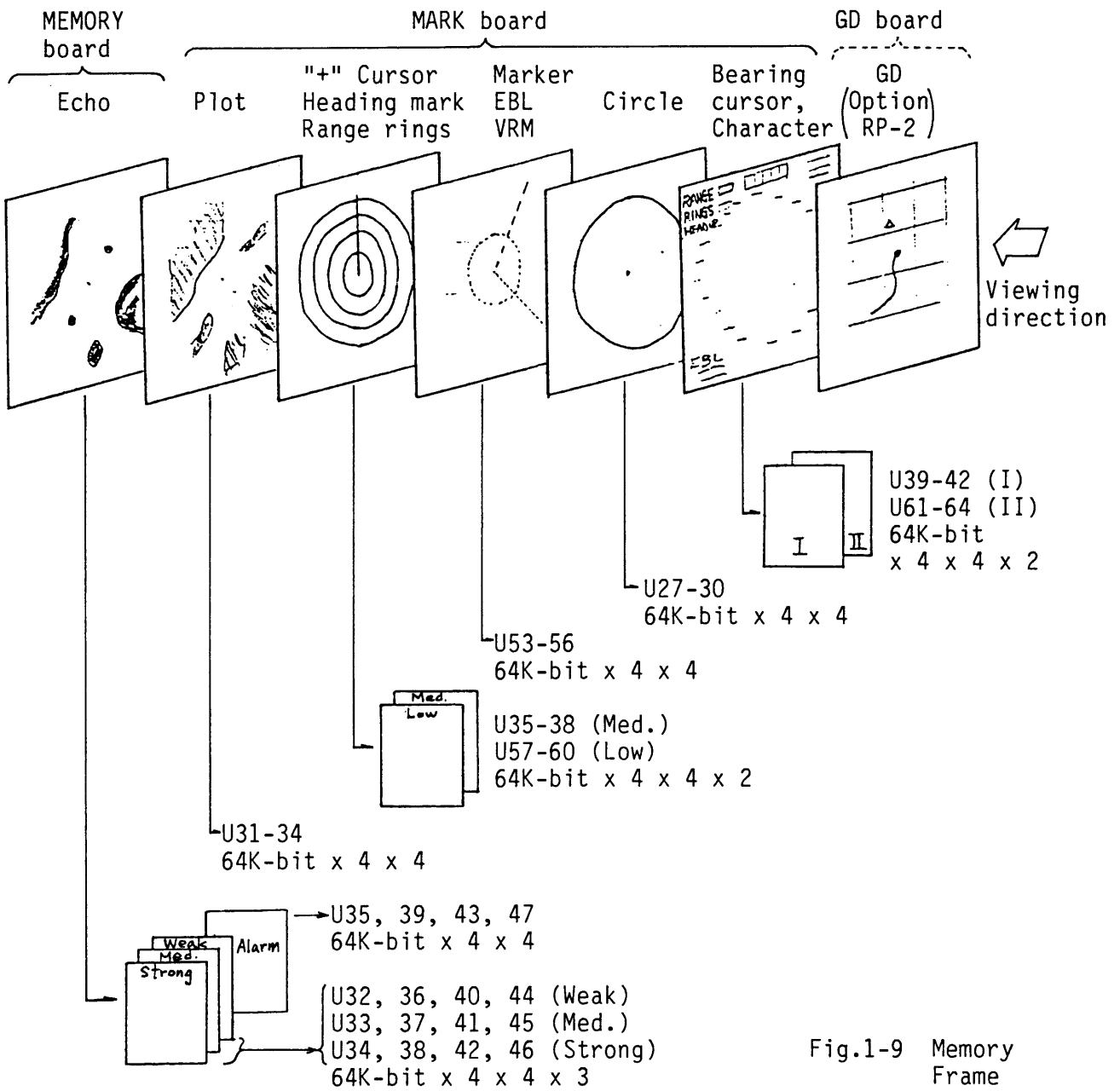
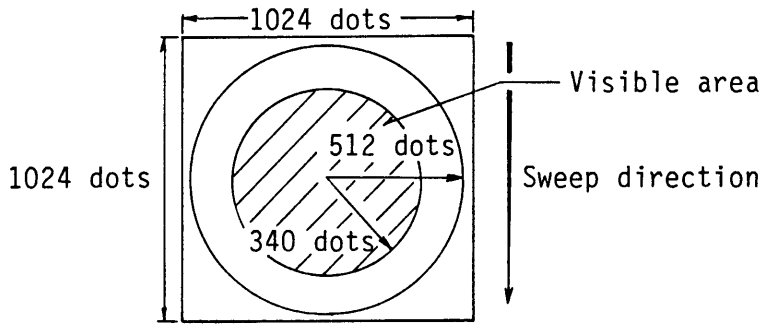


Fig.1-9 Memory Frame

2-8. Coordinates Conversion

Polar (r, θ) coordinates to X-Y coordinates conversion should be done in order to convert the target position assigned by range and bearing into (X, Y) address on the CRT.

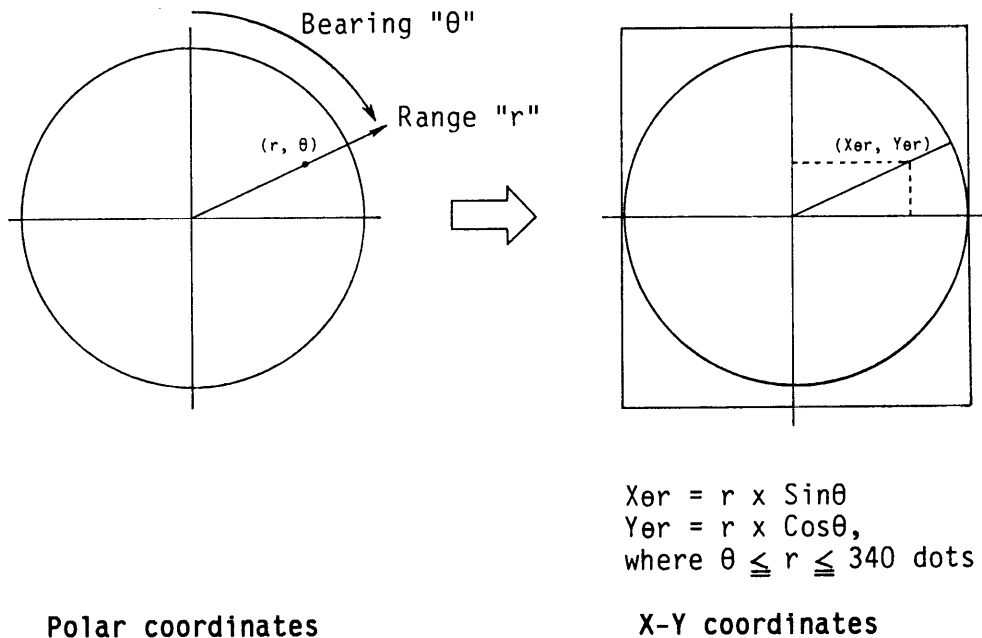


Fig.2-8 Coordinates Conversion

1. The bearing θ is known by counting θ clock pulses (0 to 4095). Since the $\sin \theta$ and $\cos \theta$ conversion table is pre-programmed at P-ROM U45 on the AD board, the values of $\sin \theta$ and $\cos \theta$ are known.
2. The range "r" is known by counting the read clock pulses for the input buffer memory. Note that the read clock pulse differs according to the range.
3. The video data at "r" address of the input buffer memory (S-RAM's U50-U52, U55-U57 on the AD board) is transferred to the pixel addressed by (X_{or}, Y_{or}) of the video RAM (D-RAM's U32-U47 on the MEMORY board).

Note: If two or more sweep lines hit the same pixel, only the latest data is transferred to the video memory and the previous data is ignored. EAV function is provided to improve this inconvenience. Refer to page 2-6.

2-9. BP (Bearing Pulse) & HP (Heading Pulse) Control on AD Board

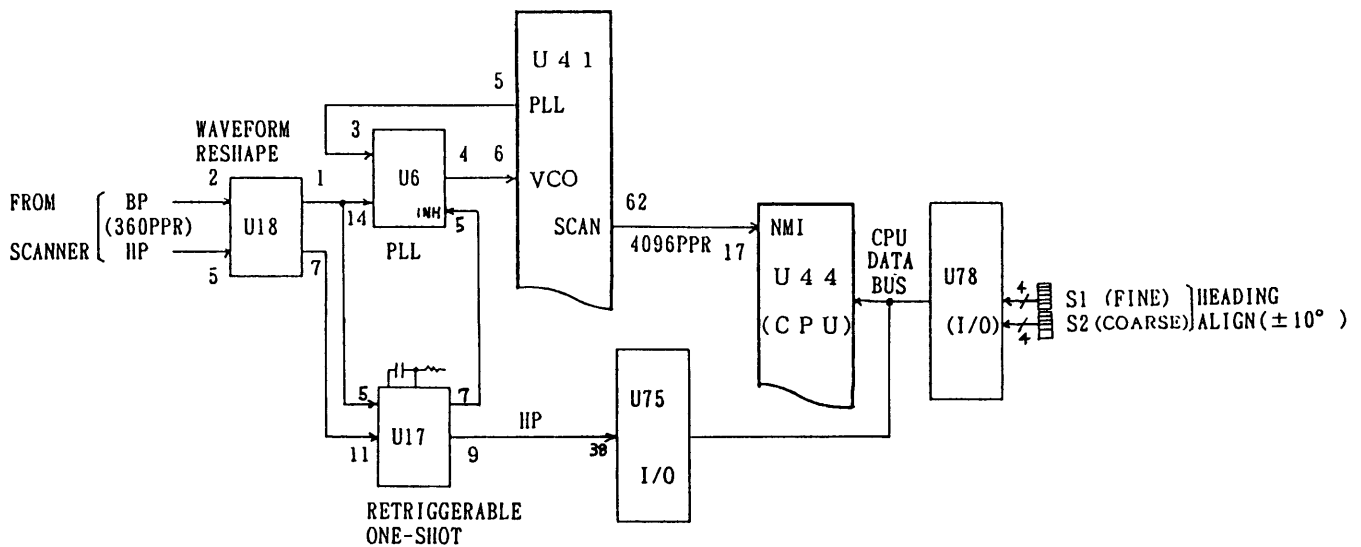


Fig.2-9

Bearing pulse BP (360 pulses/rotation) comes from the BEARING SIG. GEN. board MP-3795 inside the scanner unit. The BP is reshaped by U18 and the one output from U18 is applied to PLL U6. Gate array U41 contains a frequency divider and outputs 4096 pulses per rotation. This signal is called "SCAN", and is utilized to detect the antenna direction with high resolution. It means that the radar screen (360° full circle) is divided into 4096 equal sectors (every 0.088-degree). The scan signal is led to the NMI (Non Maskable Interrupt) terminal of CPU U44 and the CPU counts up the pulses in order to calculate $\sin\theta/\cos\theta$. The other output from U18 is led to the inhibit terminal of PLL U6 via U17 to stop PLL operation when no bearing pulses come in.

The heading pulse also comes from the BEARING SIG. GEN. board inside the scanner unit. The HP is reshaped by U18 and sent to the retriggerable one-shot multivibrator U17 in order to eliminate chattering which usually follows the heading pulse. Then, the heading signal is led to the CPU via PPI (Programmable Peripheral Interface) U75. By referring to this bit, the CPU can recognize the heading signal, and it clears the NMI count. (In reality, the count is not cleared. The CPU reads 4-bit HEADING ALIGN data through U78 and pre-sets the count with the SCAN pulse number which corresponds to the DIP switch value.)

2-10. TX Trig. & Echo Sampling Trig. on AD Board

Refer to Fig.2-11 on next page.

When the FUNCTION switch is turned to "Short" or "Long" three minutes after turning on the POWER switch, the negative going pulse called "INTT (INTERNAL Trigger)" comes out from the gate array U41. 55.03MHz (for 0.25nm and 0.5nm ranges) and 36.69MHz (for 0.75nm or more) oscillation frequencies are led to D-type flip flops U29 and U30 as the clock pulse. The internal trigger clears U29 and U30. Its outputs are applied to selector U3, where the range data is added. A positive going pulse having a certain period according to the range actuates retriggerable one-shot multivibrator U7 and a negative going pulse comes out at Q terminal. This pulse is inverted by OR gate U38 and turns on transistor Q7. As a result, a positive going TX trigger pulse shown below is obtained at TP2, and delivered to the MOD. TRIGGER board of the scanner unit.

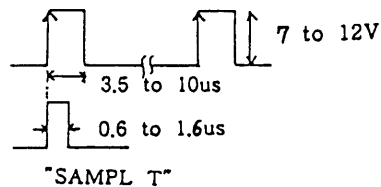


Fig.2-10

Note: The internal trigger slightly fluctuates, i.e., the pulse repetition rate changes slightly on every transmission, so as to avoid interference among radars operating in the field.

The other output from selector U13 is used to get the sampling clock pulse called "SCK", which is applied to gate arrays U41 and U42. This clock pulse is furthermore divided at the gate arrays in accordance with the range data coming from the CPU. On the other hand, the sampling start trigger pulse called "SMPL (SaMPLing)" is required in order to start the write operation (echo sampling). This pulse comes from D-type flip-flop U30 as shown in Fig.2-11. The clock pulse for U30 originates from the output Q of U7 and its timing is adjusted by potentiometer R6 so as to compensate the time lag of transmission timing. Both U22 and U23 are the selectors to switch over two gate arrays as explained on page 2-5. The read pulse for the S-RAM's is made by several clock pulses coming from the MEMORY board.

The timing of the related circuit is shown in Fig.2-4 on page 2-6.

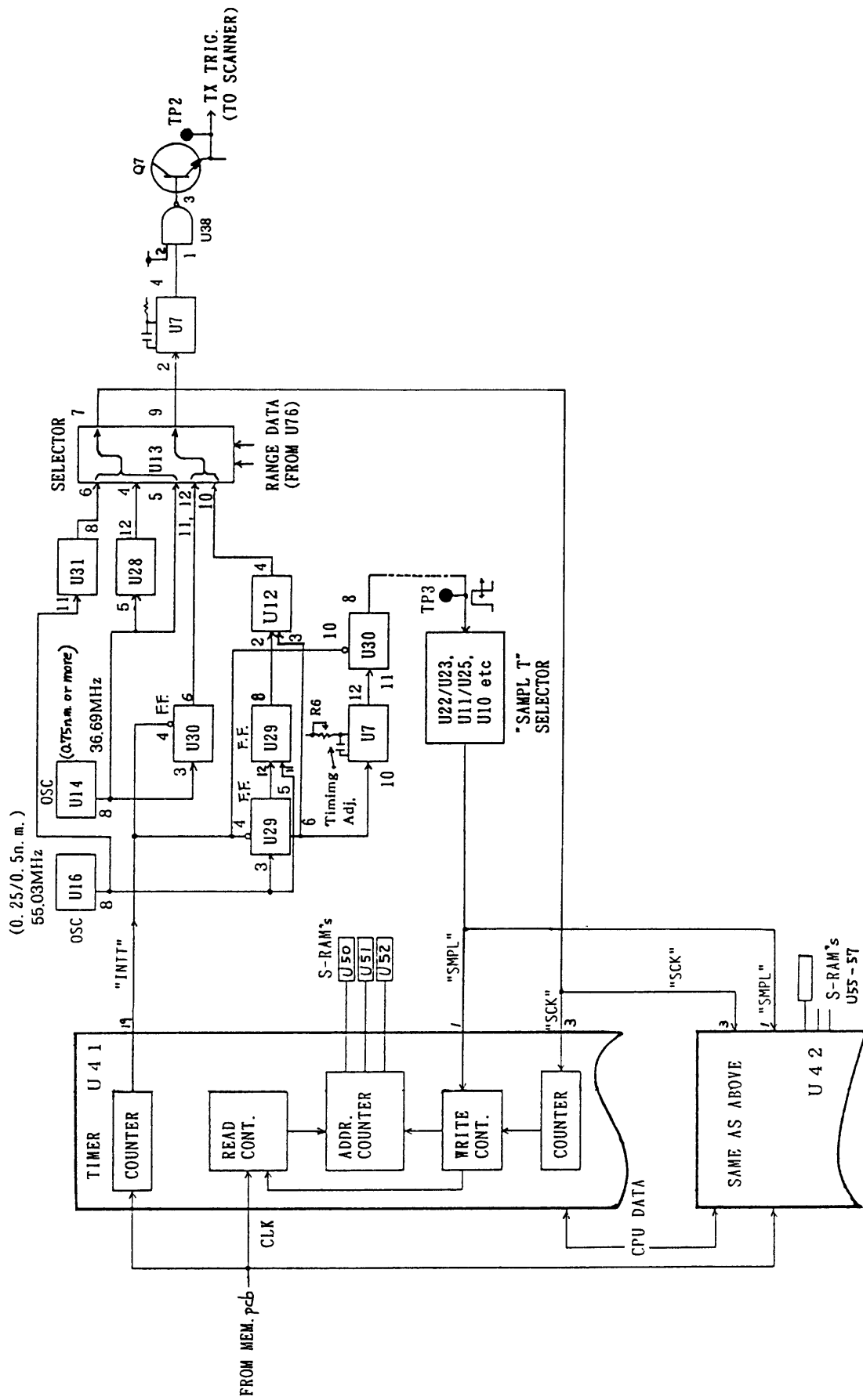


Fig.2-11

2-11. I/O Control on AD Board

Refer to Fig.2-14 on page 2-15.

Z-80 CPU and its associated parts shown below are used to control most circuits.

CPU (U44) : uPD70008AC-6
ROM (U45) : MBM27C256-25
RAM (U46) : uPD4464C-15L
I/O (U75 - U78) : uPD71055C Programmable Peripheral Interface
Timer (U21) : uPD71054C Programmable Interval Timer

The CPU accepts the following interrupt request (INT), i.e., gyro and timer interruptions. The latest gyro data is fetched to get true bearing. The periodical timer interruption is caused by the DBLK clock pulse to read/write a device which cannot issue an interrupt request, such as the touchpad keyboard. Another interruption to the CPU is NMI (Non Maskable Interrupt), which has a higher priority than INT. The "SCAN" signal explained on page 2-10 is applied to the NMI terminal in order to know the antenna direction.

U75 thru U78 are I/O ports, which contains three stages of parallel ports and one control register. When viewed from CPU U44, the three ports are read/write ports and the control register is a write-only-register. They are accessed from the CPU by using two LSB's of the address bus. Fig.2-12 shows the input/output data at each port.

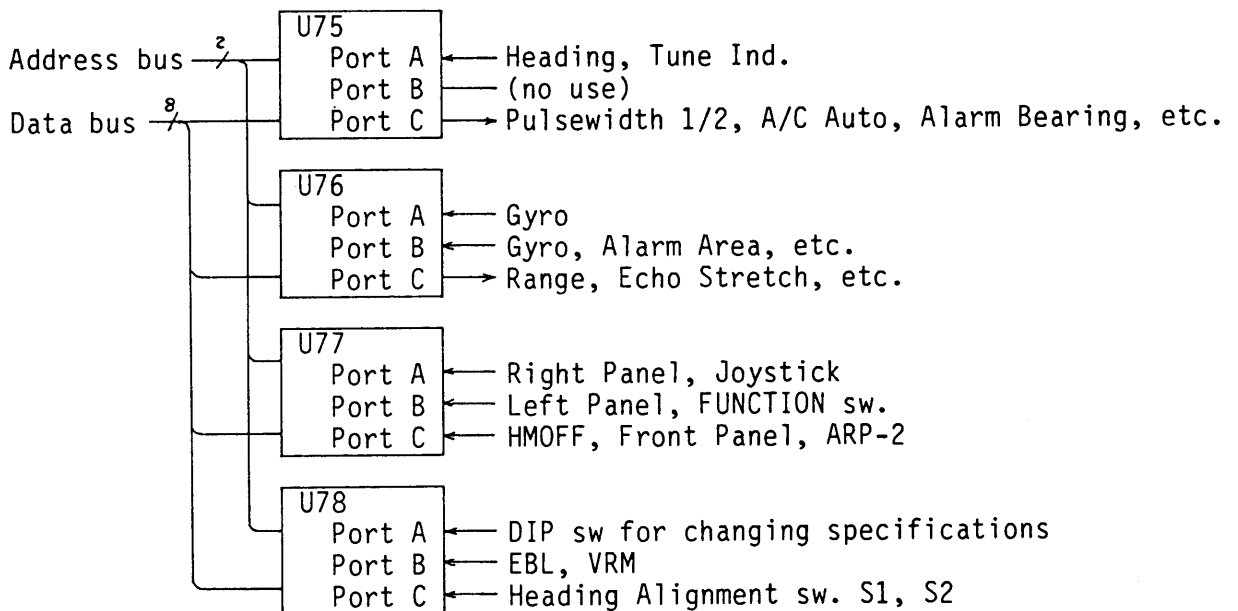


Fig.2-12

The gyro serial data and its shift clock pulse (synchro pulse) coming from optional Gyro Converter GC-2 (or AD-10S/AD-100) are applied to photo couplers U70 and U71, respectively. Output data from U70 is pushed into shift resistors U54 and U53 in this order. When 16-bit gyro data are shifted into the registers, the shift clock supply stops for a while and the retriggerable one-shot multivibrator (U33) output goes down. This causes an interrupt for the CPU to fetch the data. Fig.2-13 shows the gyro data fetch timing.

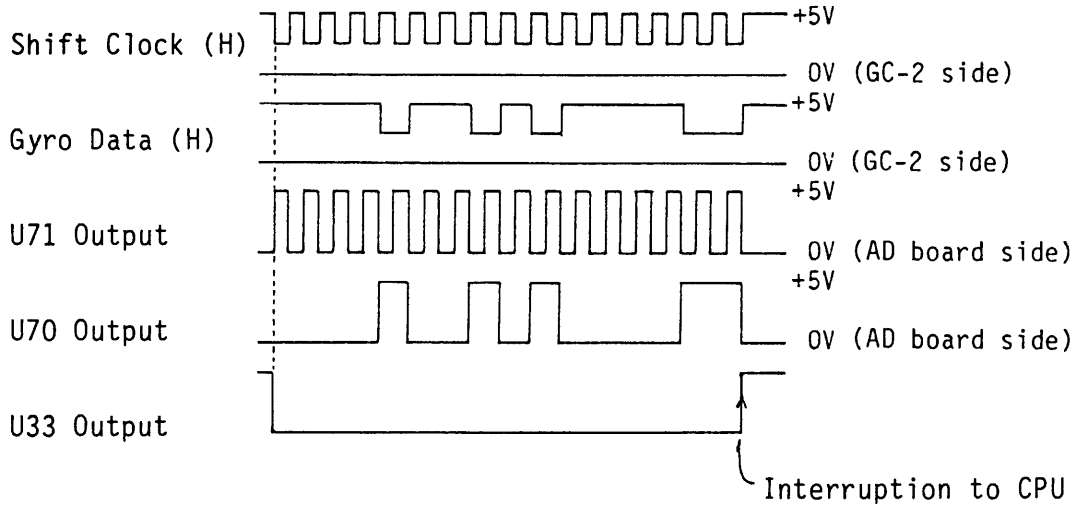


Fig.2-13

As for alarm, presentation of an alarm area and generation of alarm sound are required. The alarm data ("5" or more in level), alarm range and bearing data are NAND-gated by U39. The alarm data output from U39 is separated into two ways. One is stored into the D-RAM's on the MEMORY board in order to blink the target echo on the CRT. The other is led to driver U47 via one-shot multivibrator U33 to actuate an alarm buzzer mounted on the right panel, PAR-7139.

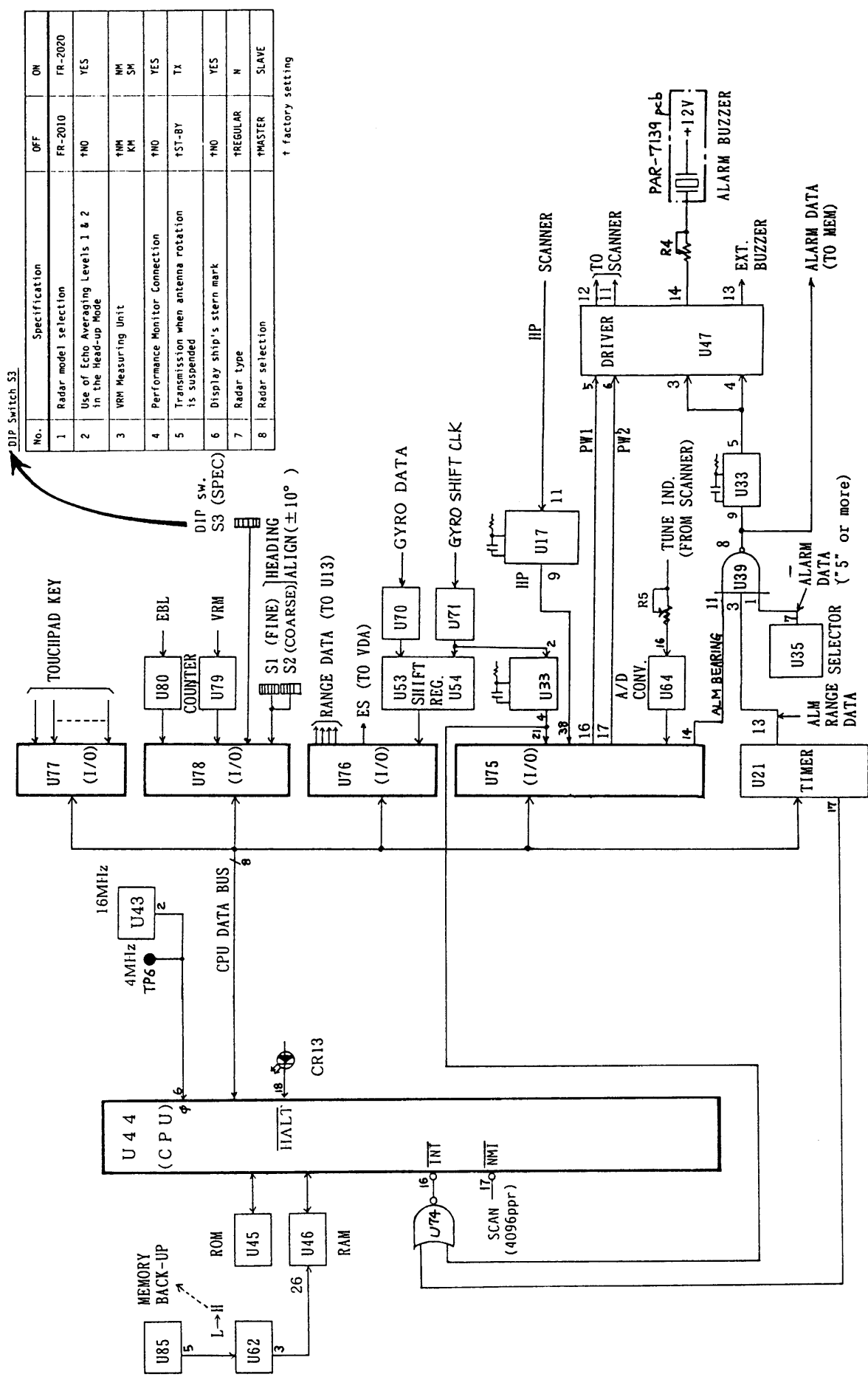


Fig.2-14

DIP switch S2

Specifications * --- factory setting							
No.	ON	OFF	ON	OFF	3min. OFF	1min. OFF	30sec. OFF
1							
2							
3							
4							
5	Speed vector length	ON	6min.	OFF	3min.	OFF	1min.
6	vector select	ON		OFF		OFF	OFF
7	vector display	ON	Yes*	OFF	No		
8							

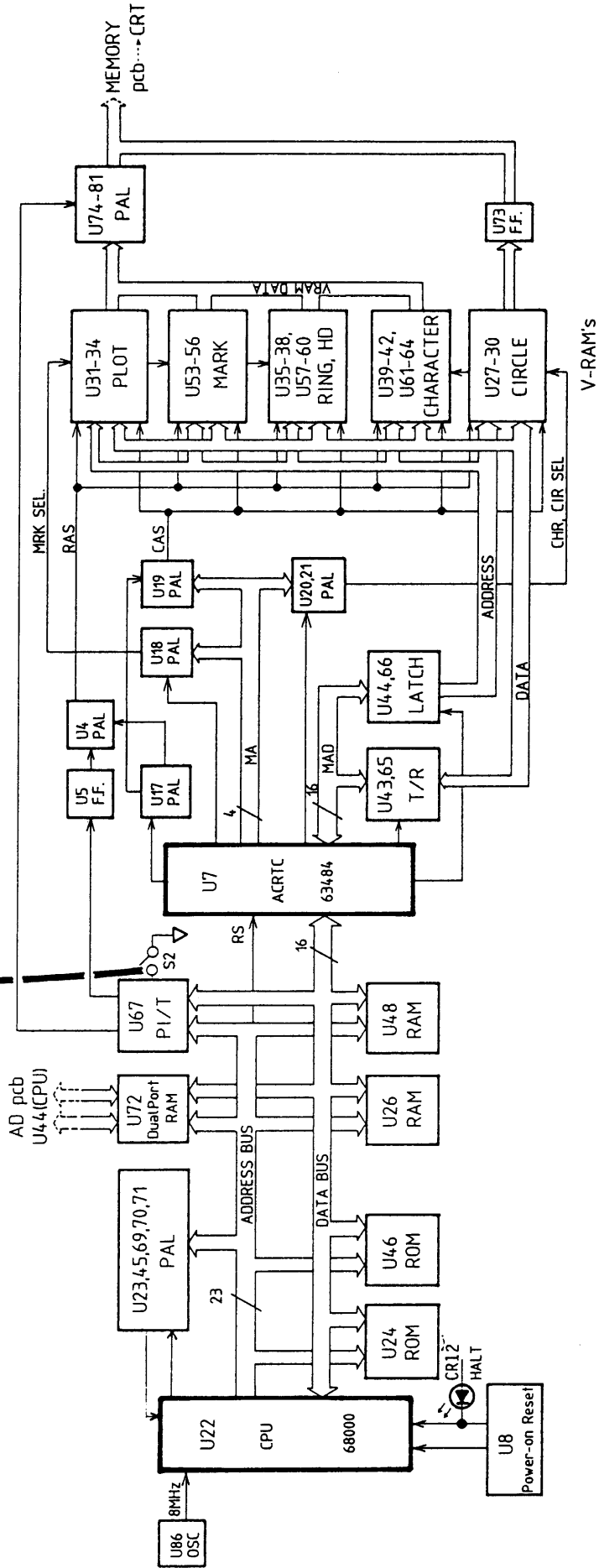


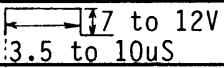
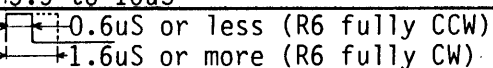
Fig.2-15 Block Diagram of MARK Board

2-13. Check Point on AD Board 03P7030

LED

LED No.	Meaning	Conditions
CR13	CPU halt	Normally lights up.

Test Points

TP No.	Checking	Ratings
TP1	GND	
TP2	TX trigger	
TP3	Sampling trigger (*)	
TP4	Video input signal	4Vpp max.
TP5	GND	
TP6	4MHz CPU clock	3.96MHz - 4.04MHz

Note: (*) TX on 0.25mm

Potentiometers

R No.	Adjusting	Measurements
R3	Beep tone volume	fully CCW (factory setting)
R4	Alarm sound volume	fully CW (factory setting)
R5	Tuning indicator	Refer to page 3-4 of the installation manual.
R6	TX timing	Refer to page 3-2 of the installation manual.

Switches

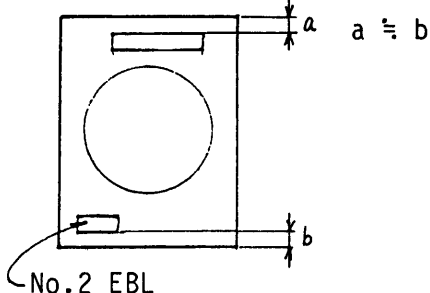
S No.	Adjusting	Settings
S1	Heading alignment for fine adj.	Refer to page 3-3 of the installation manual.
S2	Heading alignment for coarse adj.	
S3	DIP sw. for changing specifications	Refer to Fig.2-14 on page 2-15.

2-14. Check Point on MEMORY Board 03P7031

Test Points

TP No.	Checking	Ratings
TP1	5MHz clock for GDC U88	
TP2	38.85MHz DCLK (dot clock)	38.46MHz - 39.24MHz
TP3	HSYNC (horizontal synchro pulse)	Refer to Fig.3-1.
TP4	BLANK (blanking pulse) from GDC U88	
TP5	GND	
TP6	CRT-R (red signal output)	
TP7	CRT-G (green signal output)	
TP8	CRT-B (blue signal output)	
TP9	VSYNC (vertical synchro pulse)	Refer to Fig.3-2.
TP10	GND	

Potentiometer

R No.	Adjusting	Measurements
R1	Horizontal position	 <p>No.2 EBL</p>

3. CRT CIRCUIT

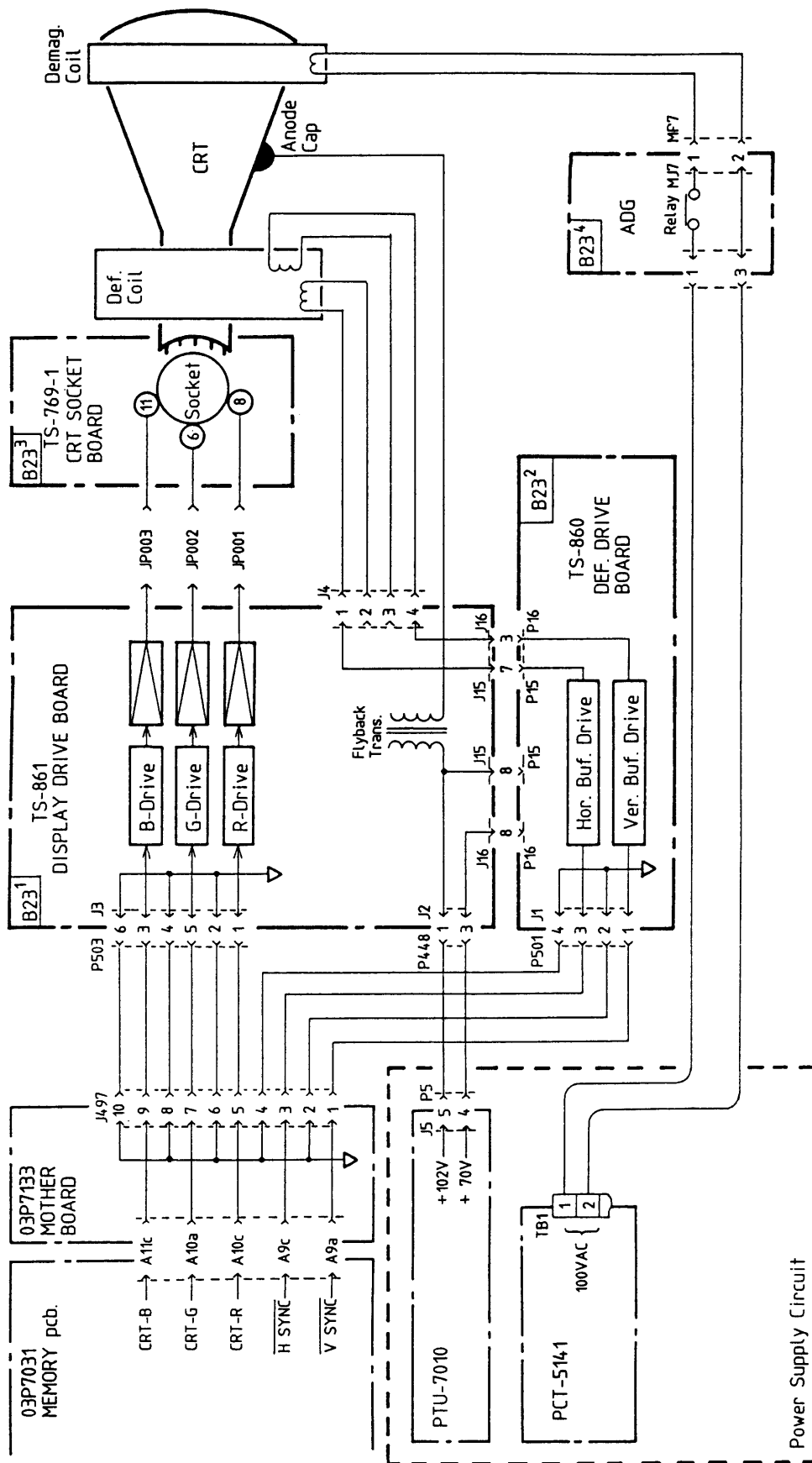


Fig.3-1 Block Diagram of CRT Display

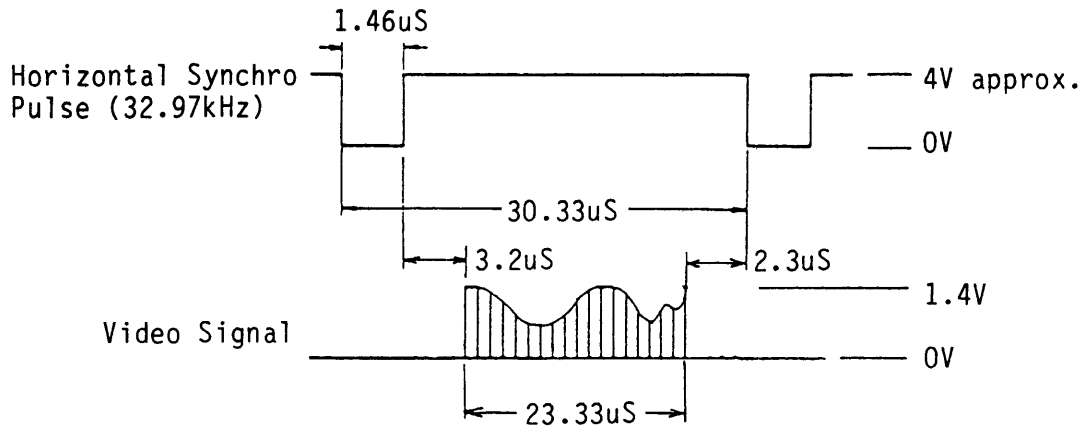


Fig.3-1 Timing Chart Between Horizontal Synchro Pulse and Video Signal

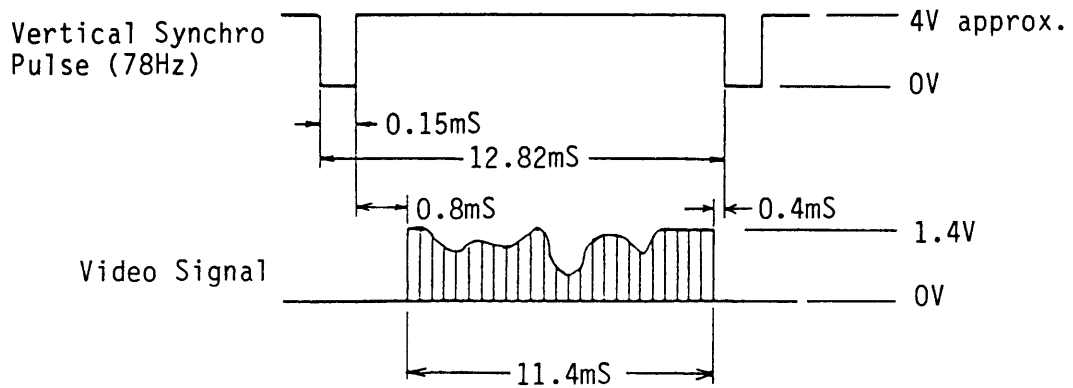


Fig.3-2 Timing Chart Between Vertical Synchro Pulse and Video Signal

Potentiometers on TS-861, TS-860 & TS-769-1 Boards

TS-861

VR No.	Adjusting	Measurement
VR303	Horizontal position	Use R1 on MEMORY board first.
L305	Horizontal size	
L306	Horizontal linearity	
T303(*)	Focus	
T303(*)	Screen	
VR206	Side-pin	Factory adjustment only. Do not adjust these controls in the field, otherwise its original color cannot be recovered.
VR401	Auto-brilliance level	
VR601	Red gain	
VR602	Blue gain	
VR603	Green gain	
VR607	Red bias	
VR608	Blue bias	
VR609	Green bias	

Note: (*) controls mounted on flyback transformer T303

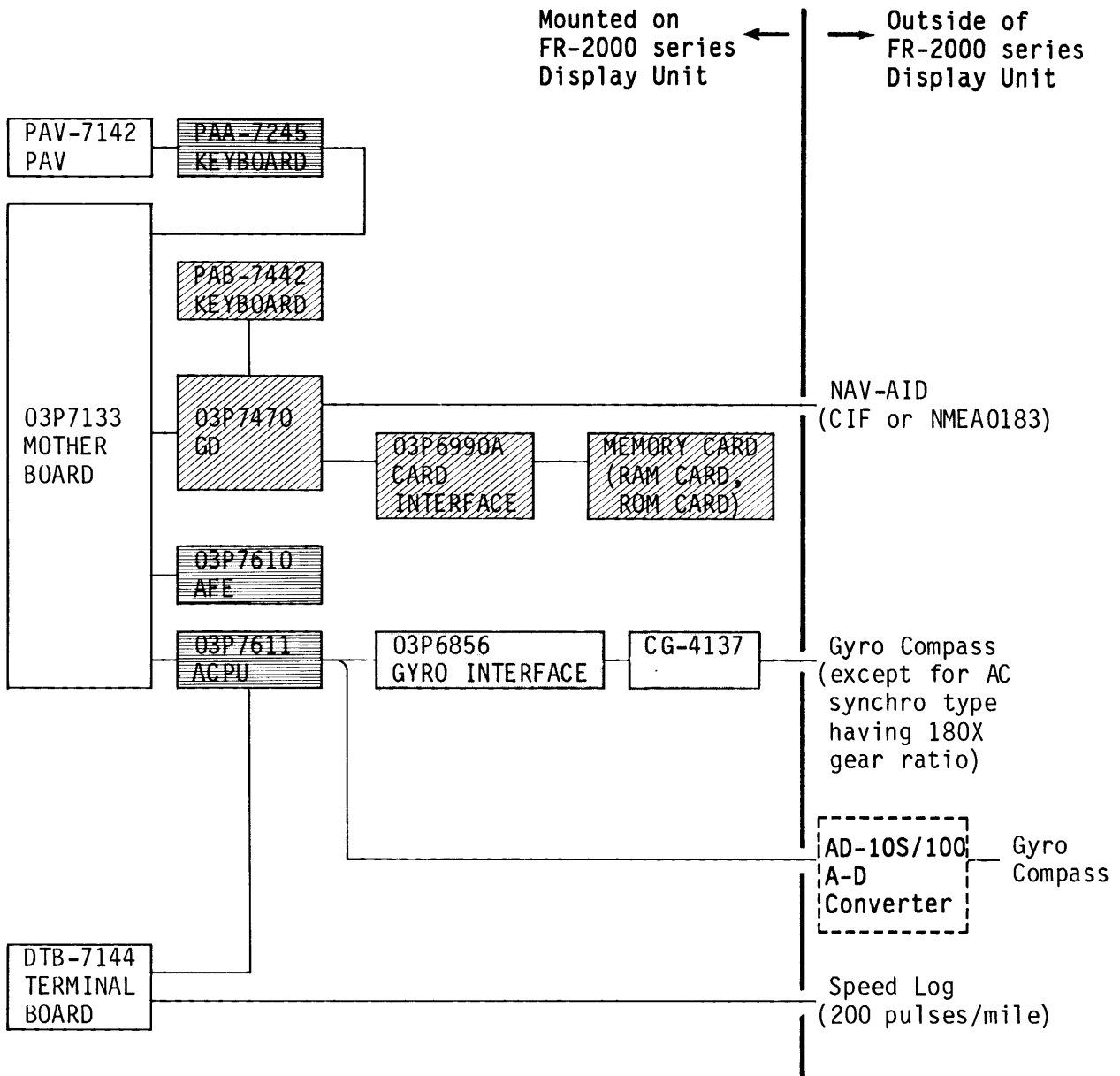
TS-860




VR No.	Adjusting	Measurement
VR201	Vertical hold	Factory adjustment only.
VR202	Vertical linearity	
VR203	Vertical size	
VR204	Vertical position	
VR301	Horizontal hold	
VR302	Horizontal limiter	
L301	Horizontal frequency	

TS-769-1

VR No.	Adjusting	Measurement
VR701	Intensity 1	When the BRILLIANCE control is turned fully CCW, nothing should be seen on the CRT. If not, adjust VR701.
VR702	Intensity 2	If VR701 cannot be adjusted, reduce the maximum brightness by VR702, and then adjust VR701 again.

4. OPTIONAL RP-2 (VIDEO PLOTTER), ARP-2 (AUTO PLOTTER) & GC-2 (GYRO CONVERTER)



Note:  --- included in RP-2
 --- included in ARP-2
 --- included in GC-2

PART 2 **SCANNER UNIT & TRANSCEIVER UNIT**

SCANNER UNIT

- | | |
|--|-------------|
| 1. TRANSMITTER & RECEIVER (for FR-2030S) | 1-1 to 1-10 |
| 1-1. Modulator Trigger Circuit | 1-1 |
| 1-2. Modulator Circuit | 1-3 |
| 1-3. IF Amplifier | 1-6 |
| 1-4. MBS Circuit | 1-9 |
| 2. OTHERS | 2-1 to 2-3 |
| 2-1. Bearing Signal Generator | 2-1 |
| 2-2. Reverse Rotation Protector | 2-2 |
| 2-3. Motor Slow Starter | 2-3 |

TRANSCEIVER UNIT

- | | |
|---|------------|
| 3. TRANSMITTER & RECEIVER | 3-1 to 3-5 |
| 3-1. Modulator Trigger Circuit | 3-1 |
| 3-2. Modulator Circuit | 3-3 |
| 3-3. IF Amplifier | 3-5 |
| 4. POWER SUPPLY CIRCUIT | 4-1 to 4-4 |
| 4-1. Transceiver Power Supply | 4-1 |
| 4-2. TX-HV Power Supply | 4-4 |
| 5. OTHERS | |
| 5-1. ATT-7362 Attenuator Board (for FR-2032S/2060S) | 5-1 |
| 5-2. TRT-7363 TR Tube Tuning Board (for FR-2060S) | 5-1 |

ADJUSTMENT & SETTING

- | | |
|---|-----|
| RSB-0026/0031 Scanner Unit (for FR-2030S) | 6-1 |
| RTR-010/018 Transceiver Unit (for FR-2050X/2060S) | 6-2 |
| RTR-019 Transceiver Unit (for FR-2020X) | 6-5 |
| RTR-025 Transceiver Unit (for FR-2032S) | 6-6 |

SCANNER UNIT

1. TRANSMITTER & RECEIVER (for FR-2030S)

1-1. Modulator Trigger Circuit

The modulator trigger circuit board RF-5144, consisting of Q850, Q854, Q853 and U850, generates pulses that fire the modulator SCRs (CR813/CR814).

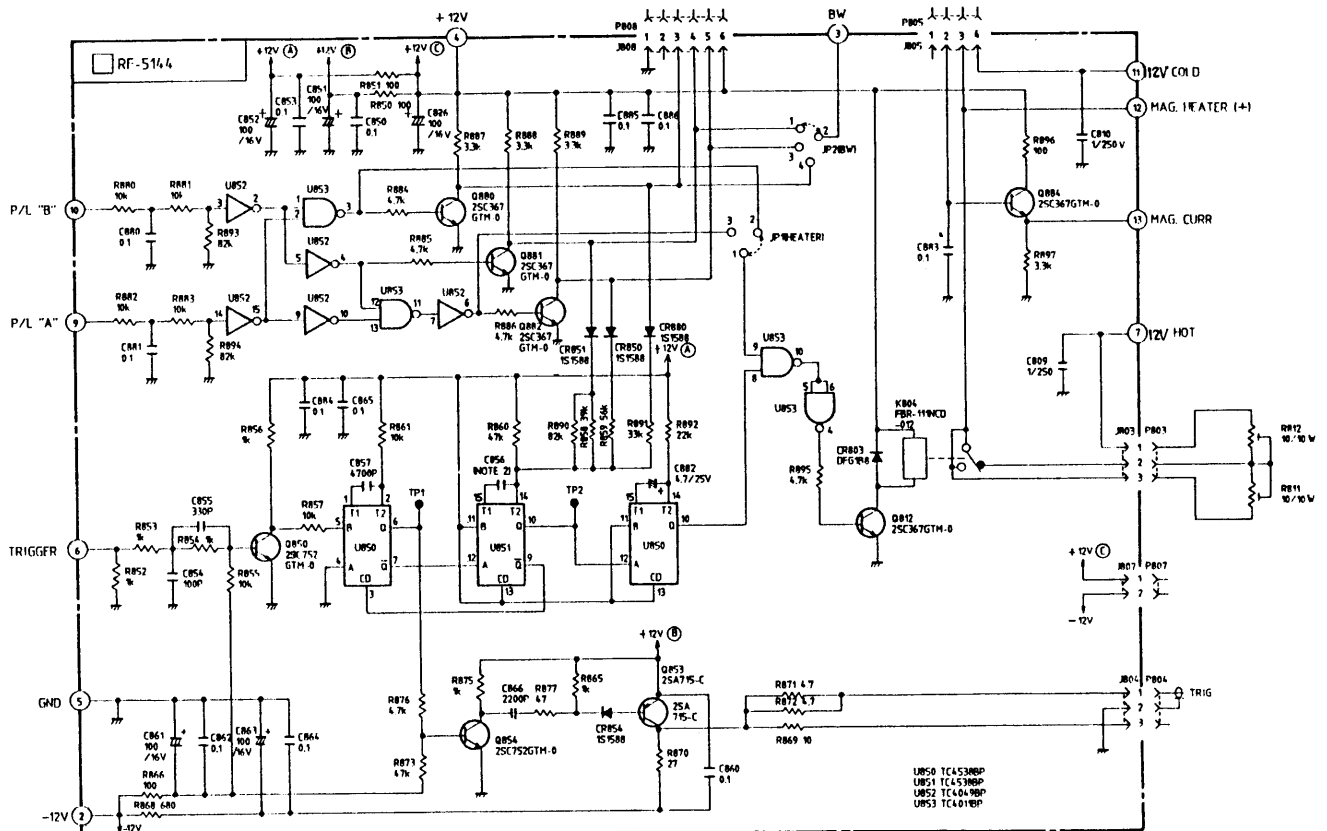
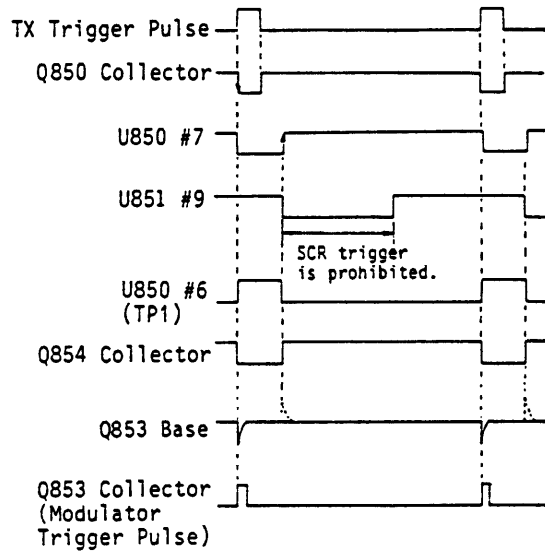


Fig. 1-1 Modulator Trigger Board RF-5144

Normally the circuit is stable with Q850/Q853 off. Q850 turns on upon receiving the TX trigger from the display unit and this causes a negative going pulse to be produced at its collector. Then, a positive going pulse is produced at pin #6 of U850 and sent to Q854, and then a negative going pulse is generated at the collector of Q854. The negative going pulse is differentiated by C866 and R865, and then only a negative going differentiated waveform is applied to the base of Q853. As a result, a positive going pulse (Modulator Trigger Pulse) is produced at the collector of Q853 and delivered to the modulator SCR.

The circuit made up of U850/U851 and Q854 prevents the modulator from being fired by noise. The first stage of the one-shot multivibrator U850 operates immediately after the TX trigger pulse, and next the second stage U851 operates. The output (#9) of U851 is applied to the reset terminal (#3) of the first stage of U850. In this manner, the level at pin #6 of U850 is kept "L" while the level at pin #9 of U851 is "L". Therefore, even if noise appears after the TX trigger pulse, Q853 is kept off.



The circuit made up of U852, U853, Q880, Q881 and Q882 operates as a decoder to drive the relays for changing of the TX pulselength depending on the settings of the RANGE switch and TX touchpad. Refer to the truth table shown below.

Pulselength	S	M1	M2	L
P/L Relay "B"	L	L	H	H
P/L Relay "A"	L	H	L	H
Q880/Relay K801	OFF	ON	ON	ON
Q881/Relay K802	OFF	OFF	ON	ON
Q882/Relay K803	OFF	OFF	OFF	ON

The circuit made up of K804, Q812, Q853 and half of U850 is the switching circuit for the magnetron heater voltage. On short/middle ranges, Q812 is cut off since the level at pin #9 of U853 is kept low. Therefore, relay K804 is not activated, and the voltage of "12V HOT" is passed through R812/K804 and applied to the magnetron as a magnetron heater voltage. On the contrary, Q812 becomes conductive on long ranges since the both levels at pins #8 and #9 of U853 go high under transmission condition, causing the voltage of "12V HOT" to pass through R812/R811/K804 in order. As the result, the less magnetron heater voltage is applied to the magnetron.

1-2. Modulator Circuit

The function of the modulator board MD-5145 is to produce a narrow high tension pulse that drives the magnetron. It is composed of a line-type-pulsar as shown in Fig. 1-2.

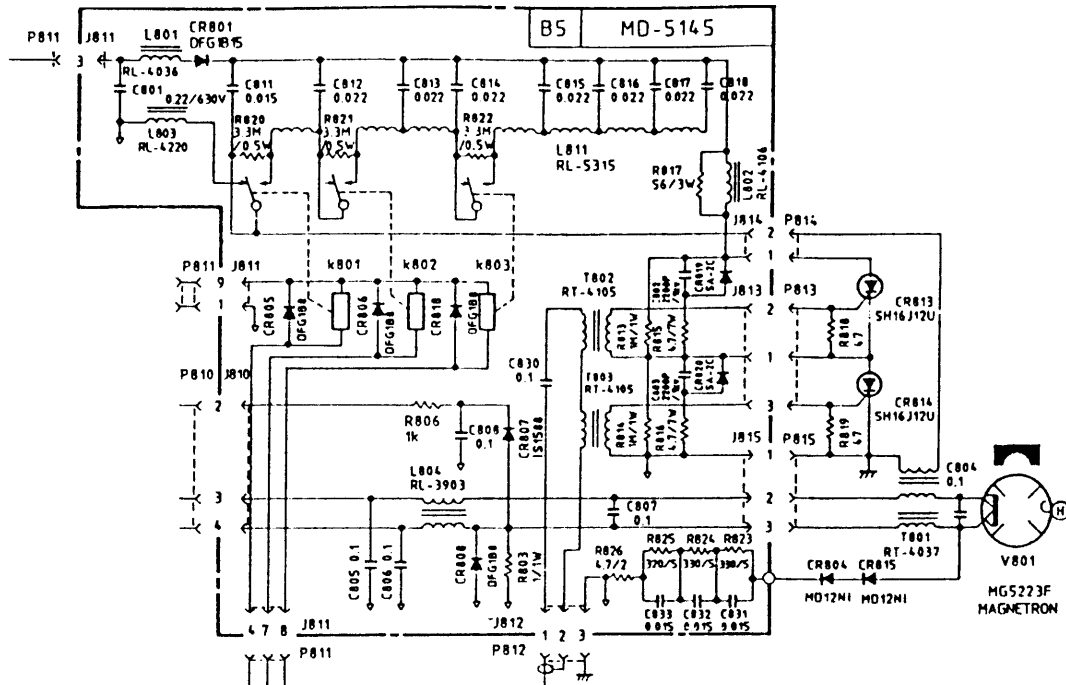


Fig. 1-2 Modulator

L801 is the charging choke, which forms a series resonant circuit with the pulse forming network (PFN) consisting of C811 thru C818 and L811. The TX high voltage in the input is doubled by the electromotive force of this coil and the PFN is charged up to twice the input voltage. The time taken for full charge is roughly given by the equation $T = 2\pi\sqrt{L \times C}$, where L represents L801 and C, capacitors of the PFN.

The PFN is a concentrated constant L-C circuit, which is an application of parallel two-line circuits with an open end. The modulation pulse that drives the magnetron develops when the energy in the PFN discharges through CR813/CR814. The duration of the pulse is equal to the time required for the voltage wave to go and return in the L-C network, and it is given by the duration $t = 2N\sqrt{L \times C}$, where N is the number of sections of the L-C network.

CR801 prevents the energy stored in the PFN from discharging to the input line. The advantage of employing CR801 is that it allows a wide choice of CR813/CR814 firing timings and efficient utilization of stored energy; CR813/CR814 can be fired at any time after the PFN has been charged to peak and fluctuation of trigger timing does not affect the amplitude of the pulse produced.

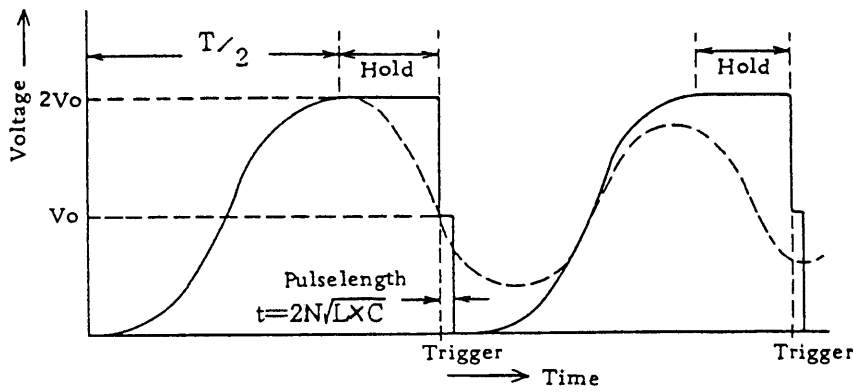


Fig. 1-3

The pulse transformer T801 boosts up the pulse produced by the PFN. Since the characteristic impedance of the PFN and the input impedance of T801 matches (about three ohms), a pulse with half of the network voltage is developed across T801's primary winding. T801 boosts this pulse up by 18 times and applies the resultant output to the magnetron, which oscillates at 3050MHz.

L802 is a switching coil. This conducts after CR813/CR814 turns on completely in order to minimize wasted heat energy. CR819/CR820 and R815/R816 absorb the counter electromotive force that develops at the moment CR813/CR814 turn off, protecting CR813/CR814 from damage. CR804 and CR815 absorb rising of pulse in the secondary of T801. C804 decouples the pulse energy that is liable to occur across the magnetron heater when T801's secondary windings are unbalanced or the load is asymmetric.

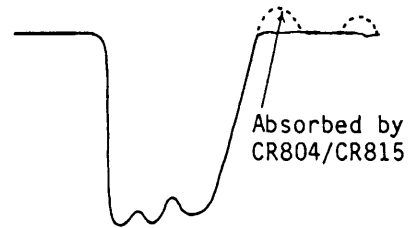


Fig. 1-4

Duplexer and Mixer

Since the radar system uses a single antenna for transmission and reception, an efficient device is required for switching the transmitter and the receiver. This radar employs circulator HY801 for this purpose.

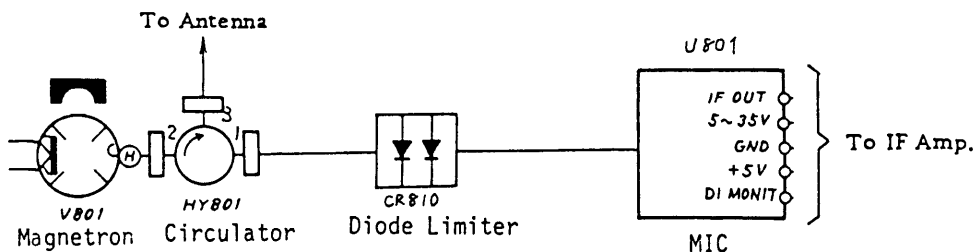


Fig. 1-5

The circulator HY801 is a passive directional coupler with three ports. It contains a permanent magnet and a core of ferrite material and bends the electromagnetic wave in a specific direction. In Fig. 1-5, the microwave energy produced by the magnetron enters the circulator from port 2. It is bent in the specific direction and emerges from port 3 with little loss, port 1 being isolated. In the same manner, the received signal entering into port 3 is transferred to port 1, isolating port 2. This operation of the circulator protects the receiver during transmission and minimizes loss of the received signal during reception.

The diode limiter is a self-activating switch made of two PIN diodes. Its function is to attenuate the strong transmission signals from the magnetron and from other boat radars through the antenna and to protect the MIC (Microwave IC). The PIN diode has certain characteristics as shown in Fig. 1-6 and conducts at a certain level of microwave power. When the diode is in the cut-off state, the input impedance of the diode limiter matches the characteristic impedance of the waveguide, and the microwave energy is delivered to the MIC. When the diode is put into a conductive state, the waveguide is short-circuited and most of the input energy is reflected back to the transmitter side. The strong signal is thus weakened down to about 50mW by the diode limiter.

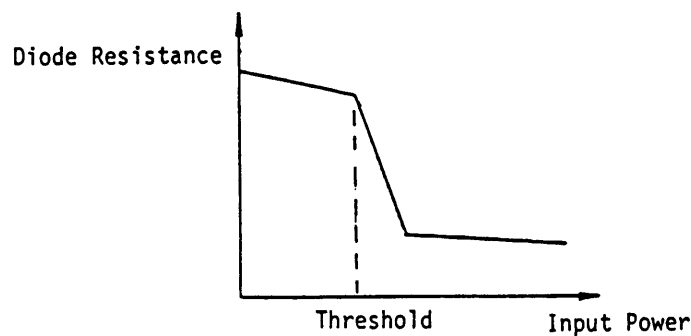


Fig. 1-6

The MIC incorporates a local oscillator and mixer diodes. The received microwave signal of 3050MHz coming from the diode limiter is mixed with the local oscillation signal in the mixer diodes and converted to an IF signal of 60MHz.

The IF amplifier is composed of five major circuits; Linear Amplifier (Q601/Q602), Logarithmic Amplifier (U601 to U609, Q604/Q605), Video Amplifier (Q606/Q607), Bandpass Selector (Q611 to Q613, CR601 to CR606) and Tuning Indicator Circuit (Q609/Q610, U610/U611).

A signal applied to the base of Q601 is amplified in cascade by Q601 and Q602, and sent to the bandpass selector via T602.

The IF amplifier operates in either a narrow or a wide bandwidth mode depending on the settings of the range and pulselength selection. For short ranges, a wide bandwidth (28MHz) is selected, since the levels at the base of Q612 and the cathode of CR614 go high, thus CR602 to CR605 are conductive and CR601/CR606 are cut off, causing the signal to pass through CR603/CR604. On the contrary, CR602 to CR605 are cut off and CR601/CR606 are conductive, which causes the signal to pass through T603/ T604, selecting a narrow bandwidth (3MHz) on middle and long ranges.

The signal thru the bandpass selector is coupled to the logarithmic amplifier and amplified by U601 to U607 and Q604/Q605. Thus, the output signals of Q604/Q605 are fed to Q606/Q607 to be amplified further, and then sent to the display unit.

The IF signal of 60MHz is amplified by Q609/U610 and detected by U611. Then the detected signal (Tuning Indicator Signal) is sent to the display unit via Q610.

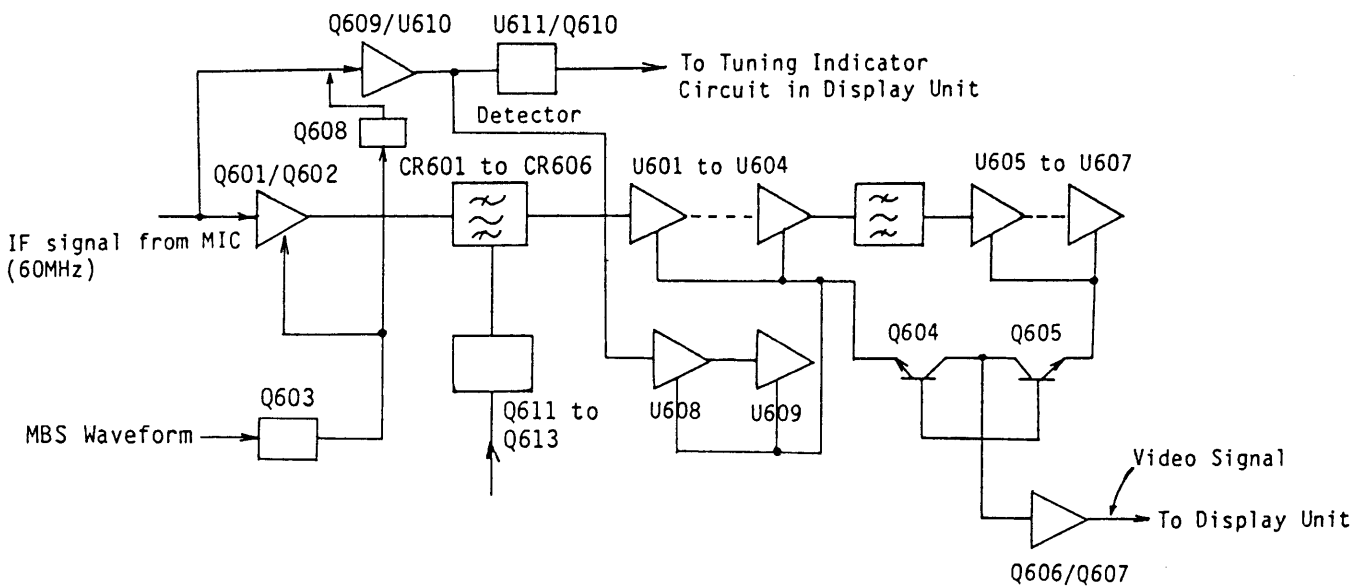


Fig. 1-8 Simplified Block Diagram of IF Amplifier

On the other hand, Q609/U610 and U608/U609 are additional amplifier circuits to make the dynamic range of the IF signal wider, causing the discrimination of the target echoes to improve. The IF signal from the MIC is fed to Q609 as well as thru resistors R636/R639 which are employed to attenuate the signal level. Therefore, Q609/U610 amplifies even a strong signal which may be saturated in Q601/Q602 and U601 to U607, and then sent to logarithmic amplifier U608/U609. This signal is added to the saturated signal in U601 to U607, causing the saturation level of the IF signal to become high.

The MBS (Main Bang Suppression) waveform is fed to the base of Q608 and the emitter of Q601 thru Q603, then Q608 and Q601 turn on and off respectively so as to eliminate a strong transmission signal (main bang).

1-4. MBS Circuit

The purpose of this board is to minimize transmission leakage near the center spot on the screen. It includes operational amplifier U501 for the "Di MONITOR" signal and +5V regulator U502 for MIC.

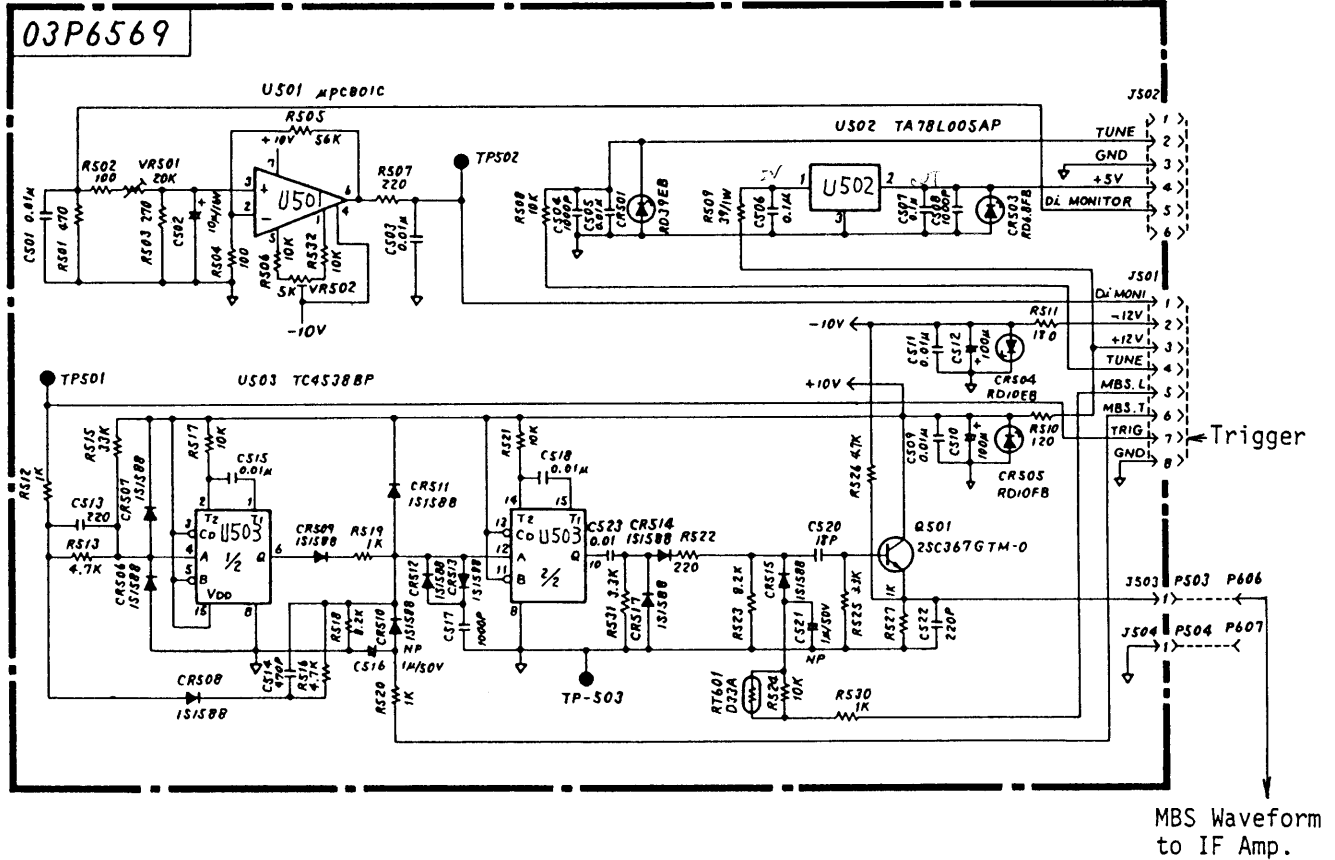


Fig. 1-9 MBS Board (03P6569)

When the TX trigger is fed to pin #4 of one-shot multivibrator U503, pin #6 of U503 produces a positive going pulse. Then this pulse is mixed with the TX trigger pulse through CR508 to compensate for the delay time caused by U503-1/2. Since the cathode voltage of CR510 is determined by VR464 (MBS Timing) on the PST-7143 board, the charging curve for C517 varies depending on the setting of VR464 as shown in Fig. 1-10(c). At the moment the charging curve exceeds the threshold level of U503-2/2, a positive going pulse is produced at pin #10 of U503 and differentiated by C523 and R531. Since the cathode voltage of CR515 is determined by VR463 (MBS Level) on the PST-7143 board, the level of the differentiated waveform varies depending on the setting of VR463 as shown in Fig. 1-10(e). Then, the differentiated waveform is passed through C520 and Q501 and applied to the base of Q603 on the IF AMPLIFIER board as a main bang suppression waveform.

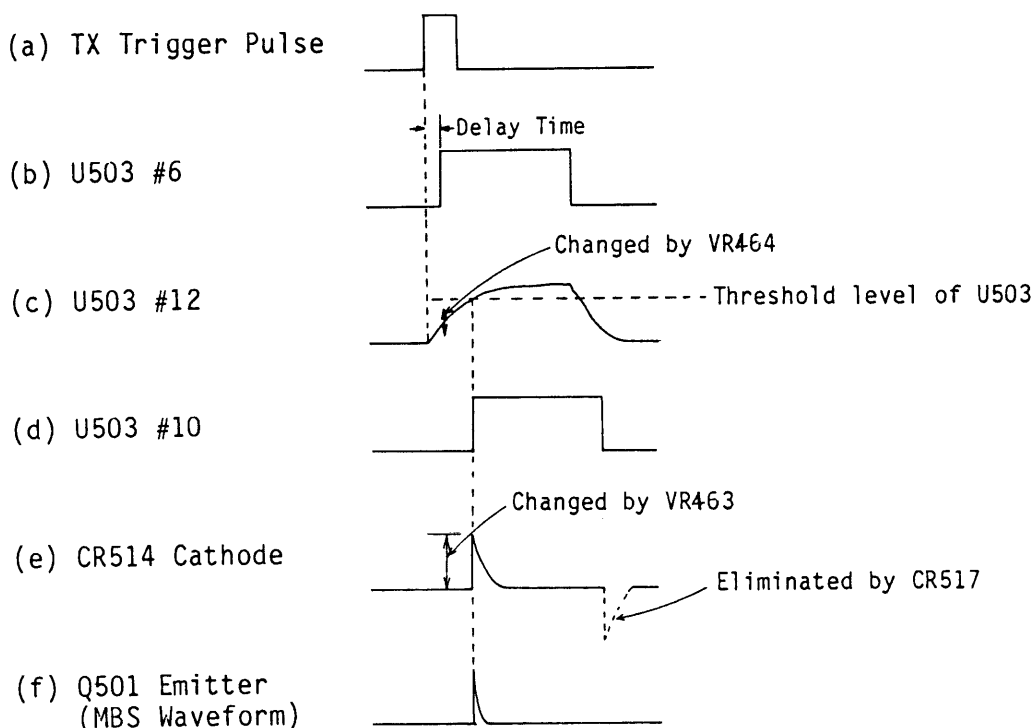


Fig. 1-10

2-1. Bearing Signal Generator

MP-3795 Board (for FR-2020X/2050X)

The bearing signal generator produces a square wave signal which is used to perform the X-Y coordinate conversion in the display unit.

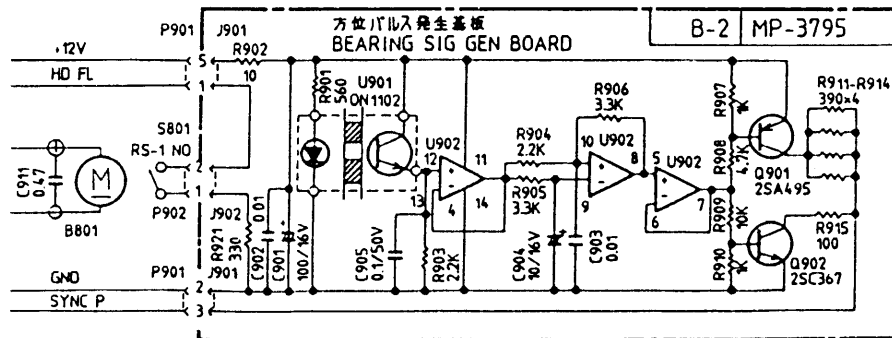


Fig. 2-1

U901 is a photo interrupter composed of a light emitting diode and a photo transistor. It has a "U" configuration. The light emitting diode is mounted on one wall and the photo transistor on the other wall. The timing disc, which is provided with 60 slits at regular intervals along its circumference, rotates at a speed of 144 rpm between the two walls.

The photo transistor receives the light emitted by the light emitting diode thru a slit on the timing disc and converts it into electric current. The output of the photo transistor across R903 represents a half-rectified sine wave at a frequency of 144Hz (360 pulses/rotation). This signal is amplified, reshaped and then sent to the display unit.

MP-7302 Board (for FR-2030S/2032S/2060S)

Instead of the photo interrupter, rotary encoder is used. The rotary encoder is driven by the gear in synchronous with the radiator shaft rotation and generates 144Hz pulse (360 pulses/rotation) the same as the photo interrupter and timing disc system.

2-2. Reverse Rotation Protector

MPT-6273 Board (for FR-2020X/2050X)

Heading pulse from S901 and another detecting pulse from S903 are applied to this board. The detecting pulse is generated once a scanner rotation like the heading pulse. However the timing of the detecting pulse is different from the heading pulse. The MPT-6273 board compares the timing of above two pulses. For normal timing, the Q-output of U3 is low and Q2 is conductive to supply +12V to the scanner switch line. For reverse timing, Q-output of U3 turns high to cut off the scanner switch line. The Q-output of the monostable vibrator U3 turn low after 4 to 5 second time constant decided by R9 and C5. The above sequence is repeated until the correct scanner rotation is obtained.

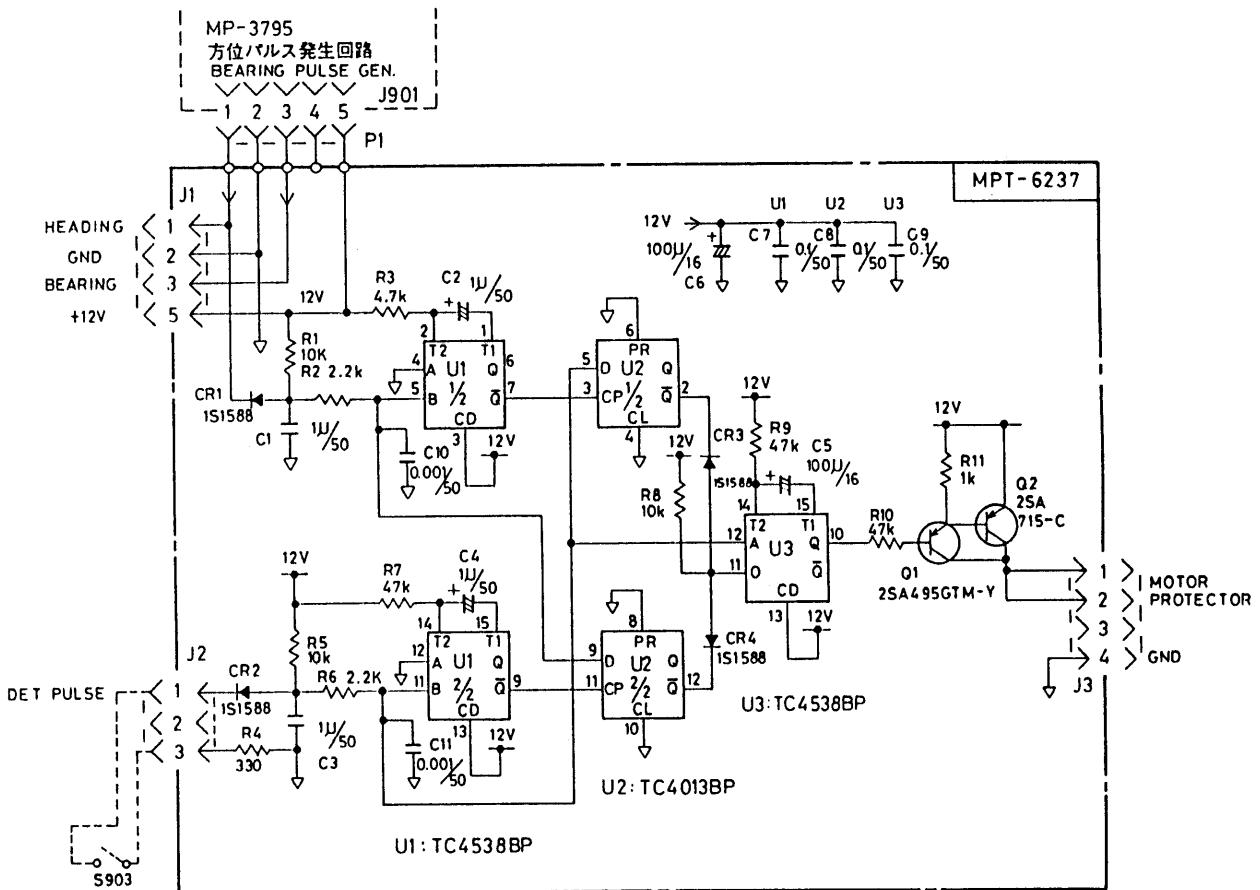


Fig. 2-2

2-3. Motor Slow Starter

MSS-7497 Board (for FR-2030S/2032S/2060S)

The scanner radiator of S-band radar is big and heavy. If full power is applied to the scanner motor at starting, the antenna rotating mechanism or motor itself may be damaged. To prevent that, this motor slow start circuit is used.

At first when the power is supplied, only two lines of 3-phase supply are connected to the motor. The remained one line is rectified and after a time constant decided by R6 and C3, the uni-junction transistor Q3 becomes conductive to trigger the photo triac coupler U1/U2. Thus the motor is driven at the full power approx. 1 second after the power on.

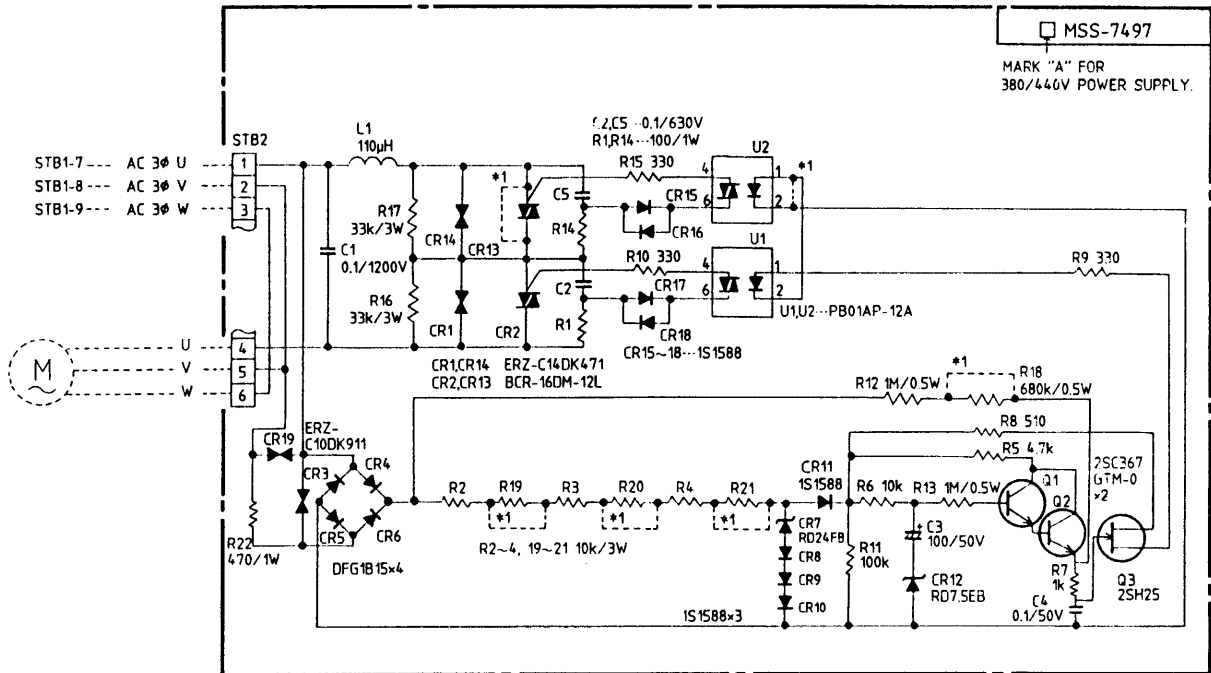


Fig. 2-3

TRANSCEIVER UNIT

3. TRANSMITTER & RECEIVER

3-1. Modulator Trigger Circuit

RF-5144 Board (for FR-2020X)

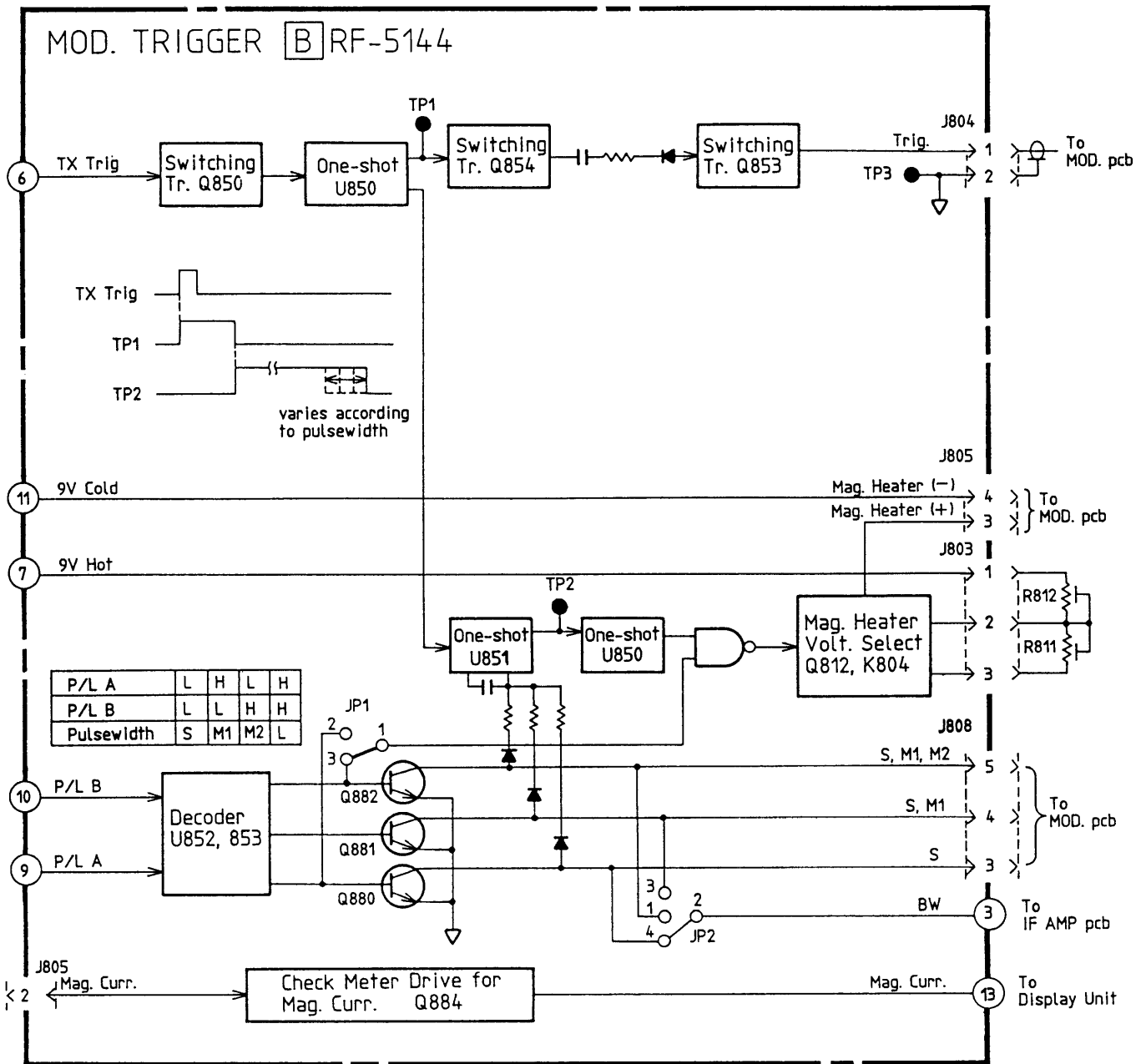


Fig.3-1 Block Diagram of Mod. Trig. Board RF-5144

Refer to page 1-1 for detailed circuit description.

03P6666 Board (for FR-2050X/2060S)

The function of this board is basically the same as that of RF-5144 board. Refer to page 1-1.

03P8726 Board (for FR-2032S)

The function of this board is basically the same as that of RF-5144 board. Refer to page 1-1.

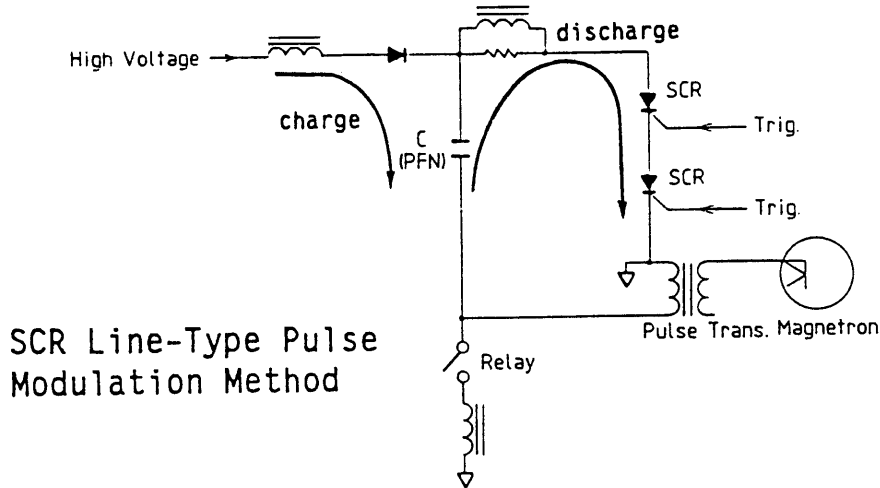
Q850, U802, Q854 and Q853 form the modulator trigger switching circuit to prevent the SCR from being fired by noise.

U803, U805 and U801 form the decoder for pulsewidth selection. Magnetron heater voltage selection circuit consists of U804, U805 and K804.

3-2. Modulator Circuit

MD-7083 Board (for FR-2020X)

The function of this board is basically the same as that of MD-5145 board. Refer to page 1-3 for detailed circuit description.



SCR Line-Type Pulse Modulation Method

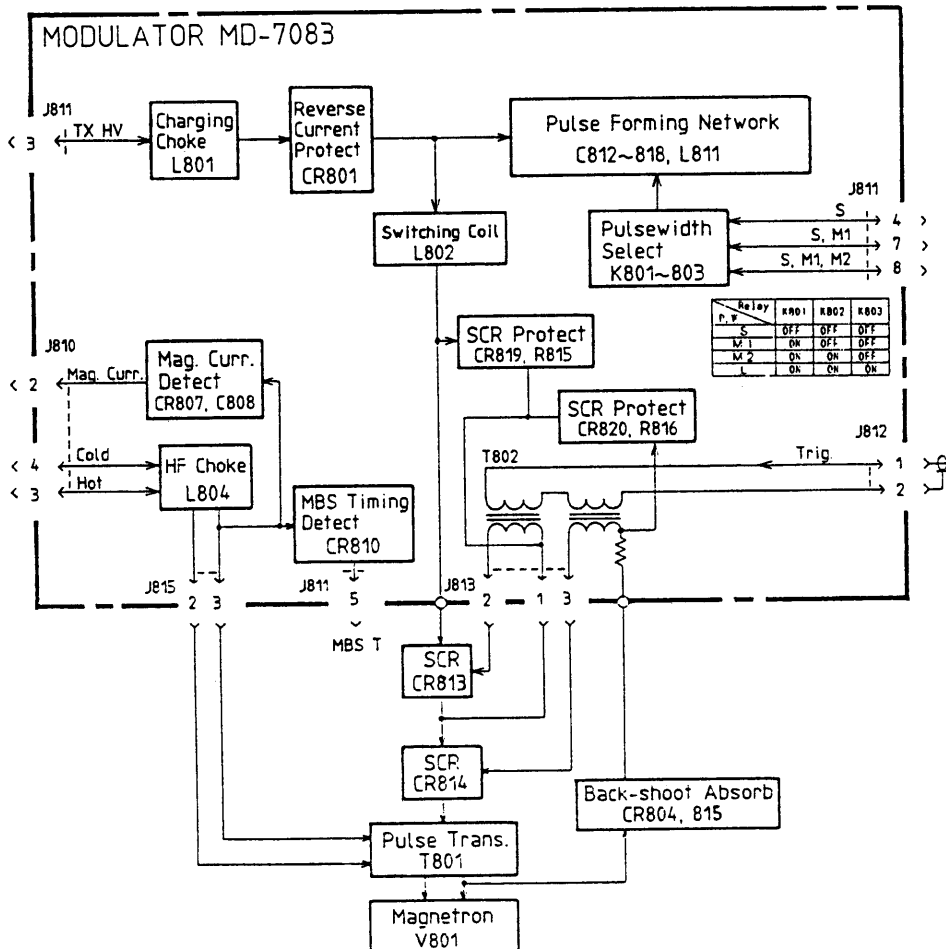


Fig.3-2 Block Diagram of Modulator Board MD-7083

03P6668 & 03P6669 Boards (for FR-2050X/FR2060S)

The function of circuit consisting of these boards and relays K801 thru K803 is basically the same as that of MD-5145 board. Refer to page 1-3. Since high voltage of approx. 1600V is applied to the PFN, three SCRs are used in series connection to withstand the voltage.

3-3. IF Amplifier

03P6734 (IF-6734) Board

The IF signal of 60MHz coming from the MIC is amplified in logarithm and converted into video signal, which is delivered to the display unit.

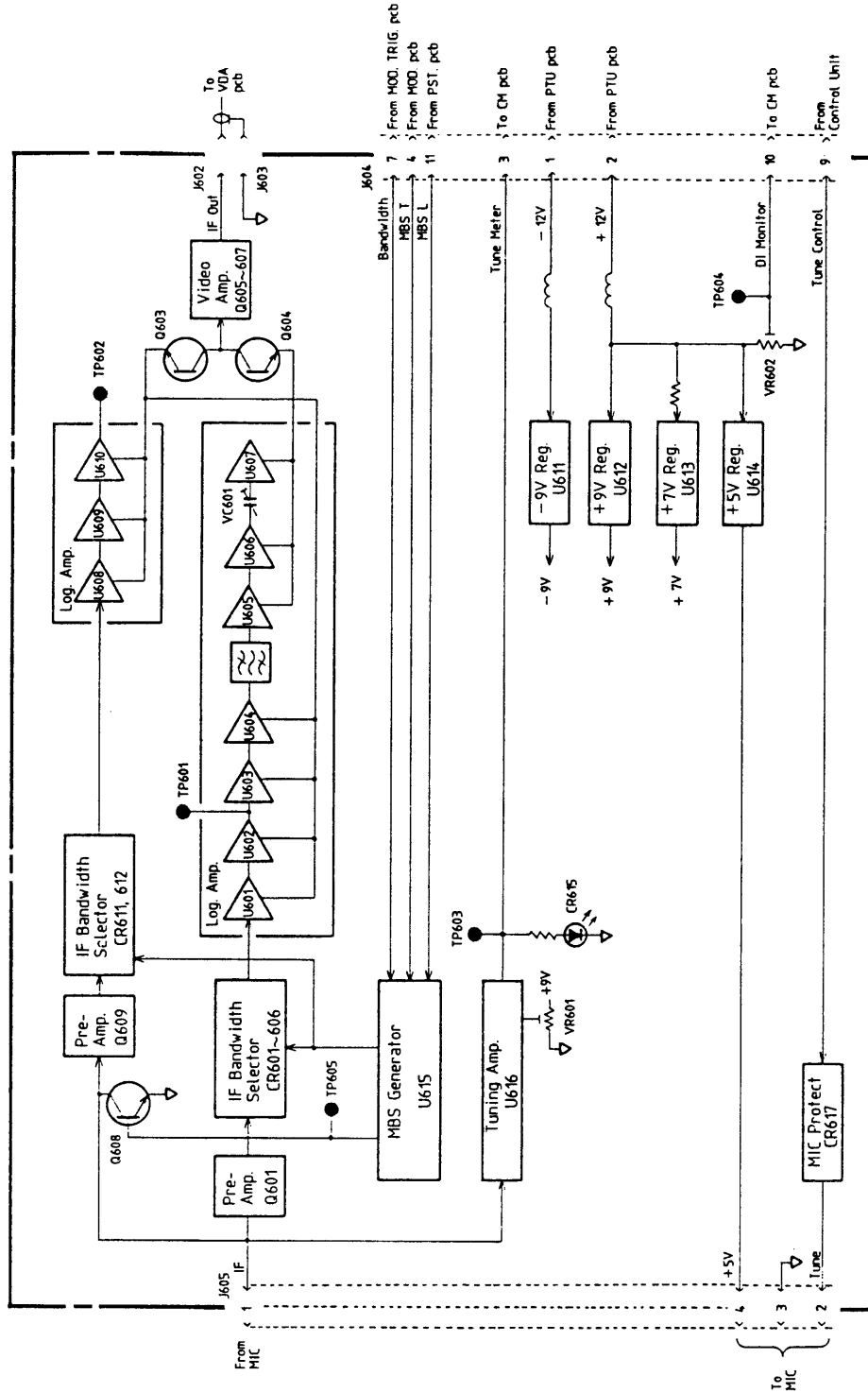


Fig.3-3 Block Diagram of IF Amp. Board 03P6734

4. POWER SUPPLY CIRCUIT

4-1. Transceiver Power Supply

PT-5185 Board (for FR-2020X)

This board includes a PWM (Pulse Width Modulation) switching regulator (MB3759M), and provides various voltages. Fig. 4-1 shows the block diagram of the switching regulator and its associated components.

The reference oscillator in U1301 is a sawtooth wave generator. Its frequency is set by external resistor (R8), capacitor (C1306), and potentiometer (VR1301). In this radar, the frequency is set at exactly 25kHz at the output of U1301 by VR1301. R1313 and C1307 are for starting the 25kHz PWM inverter softly. The +5V output voltage is applied to pin #1 of U1301 via VR1302 and compared with the reference voltage at pin #2, and the difference voltage (error voltage) controls the duty cycle of the switching pulse inside U1301. The variation of the duty cycle corresponds to that of the +5V output voltage. Since the feed-back circuit is so polarized as to cancel the variation, the +5V output is always kept constant.

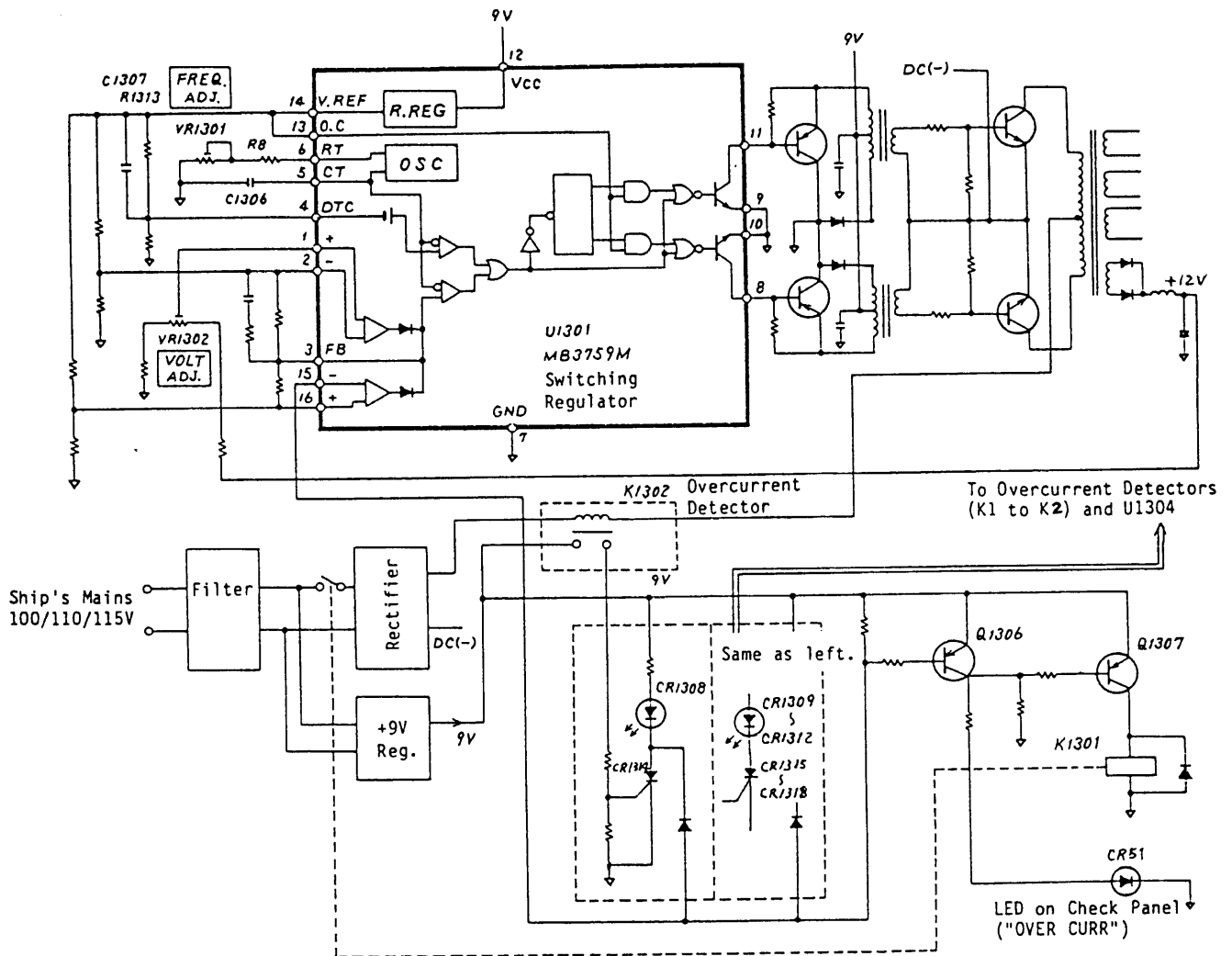


Fig. 4-1

PT-8179 Board (for FR-2032S)

This board produces +12V, -12V, magnetron heater voltage and TX-HV. U3 is a switching regulator oscillating at 22.5kHz. The circuit consisting of photo coupler U1, shunt regulator U2 and potentiometer VR1 detects the voltage deviation of +12V line and controls the pulse width of the switching regulator to stabilize the output voltage.

Overvoltage & overcurrent protectors are provided as follows.

- U5 Overvoltage protector of +12V line
- U6 Overcurrent protector of magnetron heater voltage line
- U7 Overcurrent protector of -12V line
- U4 Overcurrent protector of primary winding of power transformer

03P6667 Board (for FR-2050X/2060S)

This board produces +12V, -12V and magnetron heater voltage. U1 is a voltage comparator and U3 is a switching regulator oscillating at 90kHz. U3, Q3 and CR7 compose the overcurrent and overvoltage protector. VR9 is the voltage adjustor for +12V line.

4-2. TX-HV Power Supply

03P6680/03P6810 Boards (for FR-2050X/2060S)

03P6680 board contains voltage comparator U51, switching regulator U55/U52 and succeeding driver/power transistors Q53 thru Q56. The switching regulator oscillates at 18kHz with frequency adjustor VR51. The oscillated voltage is amplified and applied to stack rectifier on 03P6810 board through power transformer T55. Thus the TX-HV of +780V which is adjusted by VR52 is produced.

The following protectors are provided.

- K51 Overcurrent detector for input line
- U54 (½) Overvoltage detector for 780V TX-HV line
- U54 (½) Magnetron error detector
- U56 Overcurrent detector for 780V TX-HV line

The circuit consisting of U53 and Q52 controls the switching regulator to disable during stand-by period.

5. OTHERS

5-1. Attenuator Circuit (for FR-2032S/2060S)

This board generates the bias voltage applied to the pin diode in the diode limiter for the purpose to attenuate the receiving signal in the short range. The attenuation is either constant level or STC curve according to jumper settings as follows.

for S-band 30kW Jumpers J3, J4, J5 set to "CONST" side.
15dB constant attenuation on short range (SP and M1P pulses)

for S-band 60kW Jumpers J3, J4, J5 set to "STC" side.
STC curve attenuation on all ranges



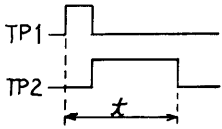
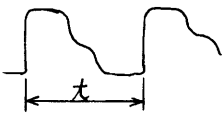
5-2. TR Tube Tuning Circuit (for FR-2060S)

This circuit picks up a part of video signal (output of IF amp) and produces the voltage for check meter "TR-TUBE" deflection, so that the adjustment of TR tube is easy with observing the check meter "TR-TUBE" reading.

Adjustment & Setting for RSB-0026/0031 Scanner Unit

P.C. Board	Item/Adjustor	Rating/Point	Remarks
MODULATOR TRIGGER [C]RF-5144	JP1 (Heater) JP2 (BW)	1-3 2-4	
IF AMP 03P6570	Connector jumper J604 (P604)	#11 - #13 (BW - LL) #15 - #17 (+V - +12V) #18 - #20 (-V - -12V)	
	Gian preset VC601		factory adjustment only
MBS 03P6569	Di monitor zero point VR502	less than 0.1Vdc TP502	without connecting MIC. factory adjustment only
	Di monitor output volt. VR501	1.8 to 2.2Vdc TP502	factory adjustment only
Out of P.C.B	Magnetron heater volt- age, R812	6.0 to 6.6Vdc Pulse trans T801 #4(+) and #6(-)	ST-BY, 0.25NM
	Magnetron heater volt- age, R811	5.1 to 5.4Vdc Pulse trans T801 #4(+) and #6(-)	TX, 48NM TX HV fuse F3 removed

Adjustment & setting for RTR-010/018 Transceiver Unit

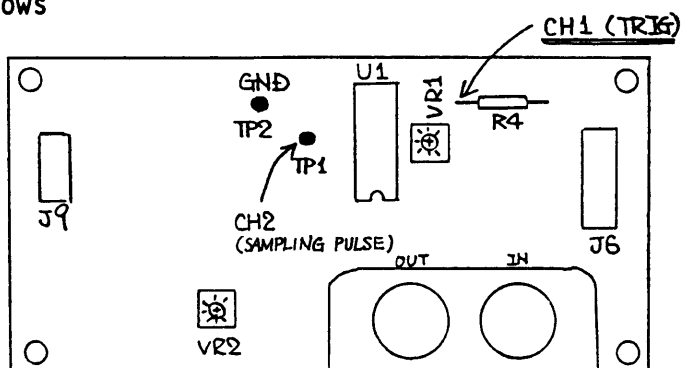
P.C. Board	Item/Adjustor	Rating/Point	Remarks
MODULATOR TRIGGER [A]03P6666 [B]03P6666	JP1 (Heater) JP2 (BW)	1-3 1-4	
	SCR trigger inhibit period VR858	375 to 385 usec 	Set to M1 pulse and adjust VR858.
TRANSCIEVER POWER SUPPLY 03P6667	+12V regulated voltage VR1	11.9 to 12.1V J801 #1(+) and #3(-) on 03P6666 board	
	Overcurrent protection	LED CR9 lit	Shortcircuit +12V line and confirm that the power supply is stopped.
IF AMP IF-6734 [B]IF-6734	Tuning preset VR601	Max. sensitivity at max. tune meter	
	Di monitor VR602	1.9 to 2.1Vdc TP604	Short range, stand-by. Check meter set to other than [DI MONITOR].
	Gain preset VC601		factory adjustment only.
TX-HV POWER SUPPLY 03P6680	Inverter frequency VR51	 54 to 57 usec TP53-TP52 (GND)	18 ± 0.5kHz
	Overvoltage protection VR53	820 to 840V C91(+) on 03P6810 board and chassis	Refer to adjusting procedure on next page.
	TX-HV VR52	770 to 790V C91(+) on 03P6810 board and chassis	Refer to adjusting procedure on next page.

RTR-010 X-band 50kW
RTR-018 S-band 60kW

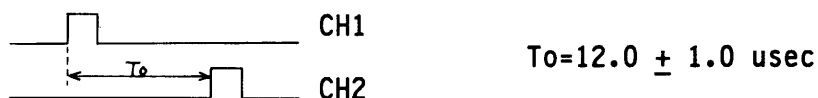
TR tube and TRT-7363 board (for RTR-018 only)

1. Connect the oscilloscope as follows

CH1 R4 (Q1 collector)
CH2 TP1
GND TP2



2. Adjust VR1 on TRT-7363 board for the waveform as shown below.



3. Set the check meter to "TUNE" and adjust the radar for max. check meter reading.
4. Set the check meter to "TR TUBE."
5. Set VR2 on TRT-7363 board at 9 o'clock position.
6. Adjust the knob of TR tube for max. check meter reading.
If the meter reading does not vary, adjust the VR2.

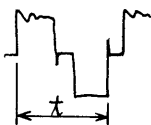
ATT-7362 board (for RTR-018 only)

1. Local adjustment of pots. (VR1-VR3) is impossible since special jig is required for adjustment of them.
Do not touch the pots. (VR1-VR3).

2. Jumper setting

J3, J4, J5 STC side

Adjustment & setting for RTR-019 Transceiver Unit

P.C Board	Item/Adjustor	Rating/Point	Remarks
POWER SUPPLY PT-8175	Inverter frequency VR1301	 39.6 to 40.4 usec TP1303(+) and TP1301(-)	25kHz
	+12V regulated voltage VR1302	11.88 to 12.12Vdc J56 #2(+) and #4(-)	
MODULATOR TRIGGER [B]RF-5144	JP1 (Heater) JP2 (BW)	1-3 2-4	
IF AMP IF-6734	Tuning preset VR601	Max. sensitivity at max. tune meter	
	Di monitor VR602	1.9 to 2.1V TP604	Short range, stand-by, check meter set to other than [D1 MONITOR]
	Gain preset VC601		factory adjustment only
Out of PCB	Magnetron heater volt- age, R812	7.2 to 7.7Vdc P801 #12(+) and #11(-)	ST-BY 0.25NM
	Magnetron heater Volt- age, R811	5.5 to 5.7Vdc P801 #12(+) and #11(-)	TX, 48NM TX-HV fuse F801 removed

RTR-019 X-band 25kW

Adjustment & setting for RTR-025 Transceiver Unit

P.C. Board	Item/Adjustor	Rating/Point	Remarks
MODULATOR TRIGGER 03P8726	JP1 (Heater) JP2 (BW) JP3 (ATT)	1-3 2-4 1-2	
POWER SUPPLY PT-8179	JP1 JP2 JP3	500V-C 300V-C 12V-C	
	Inverter frequency VR2	21.5 to 23.5kHz TP4-TP2	
	+12V regulated voltage VR1	12.0 to 12.2V P801 #3(+) - chassis(-)	without inserting F801 (0.5A fuse)
Out of PCB	Magnetron heater volt- age, R812	6.0 to 6.6Vdc T801 #4(+) - and #6(-)	ST-BY, 0.25NM
	Magnetron heater volt- age, R812	5.1 to 5.5Vdc T801 #4(+) - and #6(-)	TX, 48NM TX-HV fuse F801 removed

ATT-7362 Board

1. Local adjustment of pots. (VR1-VR3) is impossible since special jig is required for adjustment of them.
Do not touch the pots. (VR1-VR3).
2. Jumper setting
J3, J4, J5 CONST side

PART 3 MAINTENANCE & TROUBLESHOOTING

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3. MAINTENANCE

Good performance depends on regular maintenance. Following the recommended maintenance checks prescribed in this section will not only prevent unexpected malfunctions but will also lengthen equipment life.

Before beginning maintenance work, be sure to switch off the radar at the main switchboard. When checking inside the units, wait for a few minutes until the high voltage components (CRT or HV capacitors) can discharge the residual charge.

1-1. Periodical Maintenance

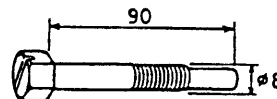
Interval	Check Point	Check/Measures	Remarks
3 to 6 months	Exposed nuts and bolts on scanner unit	Check for corroded or loosened nuts/bolts. If necessary, clean them and repaint thickly. Replace them if heavily corroded.	*Sealing compound may be used instead of paint. *Put slight amount of grease if nuts and bolts are replaced.
	Scanner radiator	Check for dirt or cracks on the radiator surface. Thick dirt should be wiped off by using a soft cloth immersed in fresh water. If a crack is found, apply a slight amount of sealing compound or adhesive as first-aid treatment, then call for repair.	*Do NOT use plastic solvent (acetone) for cleaning. *If removing ice on the scanner unit, use a wooden hammer or plastic-head hammer. Crack on the unit may cause water ingress, causing permanent damage to the circuits inside.
	Terminal boards and plugs in scanner unit	Open scanner cover to check terminal board/plug connections inside. Also check if the rubber packing of the scanner cover is in good order.	*When putting cover back in position, be careful not to catch flying wires between cover and unit.
	CRT screen	Dirt on CRT creates symptoms identical to poor sensitivity. Clean CRT surface carefully.	*Use a soft cloth with a slight amount of anti-static-charge spray. <u>NEVER USE PLASTIC SOLVENT.</u>

Interval	Check Point	Check/Measures	Remarks
yearly	CRT anode and approach	High tension on CRT attracts, dust in environment, and moist dust will cause poor insulation.	*If any crack is found on rubber cap or wire sheath, replace damaged part.
	Terminal boards, sockets and plugs	Check for loose connections. Clean contacts or replace plug, if necessary.	
	Antenna drive gear	Check whether there is sufficient grease on the gear or not. If not, grease it.	
	Timing disc (for X-band scanner unit)	Dust in the slit of timing disc may cause erroneous bearing signal resulting in abnormal sweep rotation.	*Clean the timing disc with a brush.

Note

For S-band Scanner Unit RSB-0026/0027/0031/0032

When the side cover of the scanner unit is hard to open, use the bolt (03-029-0403-0) supplied as accessories. Insert the bolt into the hole for scanner cover fixing bolt and turn the bolt clockwise, and the scanner cover is easily separated from the scanner housing.



1-2. Life Expectancy of Major Parts

	Parts	Type	Life Expectancy	Remarks
1	Scanner Motor	X-band RM-5213 RM-5203 RM-5347	gears: more then approx. 10000 hours	wind speed 40m/s
		S-band RM-7398 RM-7435		
2	Magnetron	X-band 25kW 9M752 M5187(F)	2000 to 3000 hours	
		X-band 50kW 9M31/M4505E		
		S-band 30kW MG5223F		
		S-band 60kW MG5240		

2. TROUBLESHOOTING

Operation	Symptom	Check Point	Remarks
Turn Power on.	Display unit does not start to operate. (no blower motor sound)	<ol style="list-style-type: none"> 1. Blown power fuse F1, F2 2. Mains voltage 3. Power Supply Board 	<p>*Measure mains voltage at DTB3 #1(+) and #3(-).</p> <p>100/110/115VAC (+10%)</p>
Adjust BRILLIANCE control.	Nothing appears on the display.	<ol style="list-style-type: none"> 1. CRT 2. CRT voltage 3. Memory Board 	*If CRT heater is lit, CRT is normal.
After ST-BY appears, begin transmitting.	Scanner is not rotating.	<ol style="list-style-type: none"> 1. Antenna drive mechanism 2. Defective antenna drive motor relay (thermal relay K2 200/220VAC or 380/440VAC) 	*Press the relay reset button.
	Marks, etc. are not displayed.	<ol style="list-style-type: none"> 1. AD Board 2. Memory Board 	
	Picture synchronization is abnormal.	<ol style="list-style-type: none"> 1. CRT assembly (Deflection Board, ect.) 2. Memory Board 	

Continued

Operation	Symptom	Check Point	Remarks
Adjust GAIN control with A/C SEA control set at minimum.	Marks and legends appear but no noise nor echo.	<ol style="list-style-type: none"> 1. IF amplifier 2. Multicore cable between the transceiver and display 3. Video Amplifier Board 	*Check continuity and isolation of coaxial cable (Note: Disconnect the plug and lugs at both ends of coaxial cable before checking it by ohmmeter.)
	Marks, legends and noise appear but no echo. (No transmission leak appears.)	<ol style="list-style-type: none"> 1. TX fuse F3 (display unit, FR-2030S) or F801 (transceiver unit) 2. Magnetron 3. Modulator Board 4. Modulator Trigger Board 5. Modulator SCR 6. AD Board 7. Memory Board 	<p>*If the fuse (0.5A) is blown replace it. If it blows again, the magnetron or modulator circuit may be faulty.</p> <p>*Check magnetron current with the check meter in the sub panel.</p>
	Sweep rotation is not synchronized with antenna rotation.	<ol style="list-style-type: none"> 1. Bearing Signal Generator Board (scanner unit) 2. AD Board 	
	Abnormal bearing of picture.	<ol style="list-style-type: none"> 1. AD Board 2. Memory Board 3. Gyro Interface Board 	*The message "NO HD" appears on the screen when heading pulse is not received.

Continued

Operation	Symptom	Check Point	Remarks
Adjust TUNE control.	Poor sensitivity	<ol style="list-style-type: none"> 1. Deteriorated magnetron 2. Detuned MIC 3. Dirt on radiator face 	<p>*With the radar transmitting on the 48nm range, check magnetron current with the check meter. If the current is below the normal value, magnetron may be defective.</p> <p>*Check MIC detecting current with the check meter. If it is below the normal value, MIC may have become detuned.</p>
Change range.	Radar picture does not change.	<ol style="list-style-type: none"> 1. Defective RANGE touchpad 2. AD Board 3. Memory Board 4. Mother Board 	
Activate Int. Rej. circuit	Int. Rej. not performed ("IR" not displayed).	<ol style="list-style-type: none"> 1. Bad contact of touchpad 2. AD Board 3. Mother Board 	
Activate Echo Stretch.	Echo Stretch not performed ("ECHO STR" not displayed).	<ol style="list-style-type: none"> 1. Bad contact of touchpad 2. AD Board 3. Mother Board 	
Operate [RING] touchpad.	Range rings are not displayed.	<ol style="list-style-type: none"> 1. Bad contact of touchpad 2. Mark Board 	

3. REPLACEMENT OF MAJOR COMPONENTS

3-1. Replacement of Magnetron

Precaution for Magnetron Replacement

1. There are many high tension points in the radar system. Residual voltage may exist in the parts even though the power is turned off. Do not touch the parts carelessly.
2. Use non-magnetic tools (such as stainless screwdriver) to the magnetron. When it is inevitable to use the iron tool, do not touch the tool to the magnetron body to prevent demagnetization of magnetron.
3. Do not apply shock to the magnetron.
4. As the magnetron has a strong magnetic force, the wrist watch should be removed while replacing the magnetron to preserve the watch from damage.

Storage of Magnetron

1. Use the original package box for carrying or storing the magnetron.
2. Keep the magnetron in the place considering the following points.
 - * Avoid the place where the temperature/humidity is high.
 - * Avoid the place where the vibration is remarkable.
 - * Avoid the place where the strong magnetic field exists.
3. Do not put the magnetron near the magnetic compass, or the compass may get wrong.

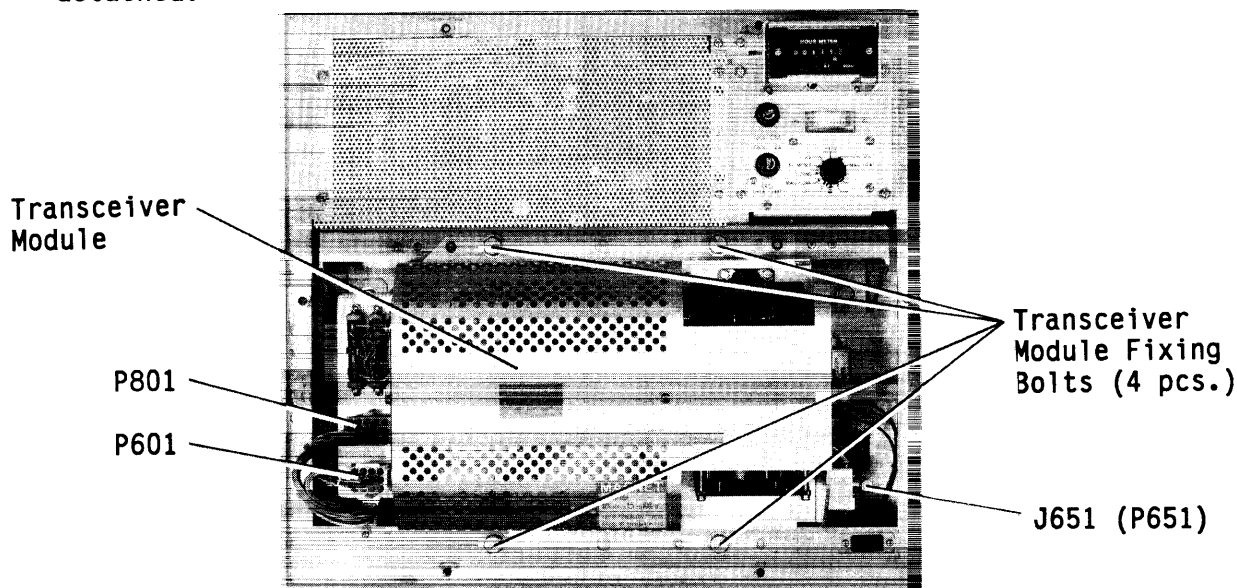
Adjustment at Magnetron Replacement

When a new magnetron is fitted, allow at least 15 to 20 minutes pre-heating under ST-BY, and turn the radar between ST-BY and TX about 10 times. During the above pre-heating period, the adjustment of magnetron heater voltage may be done.

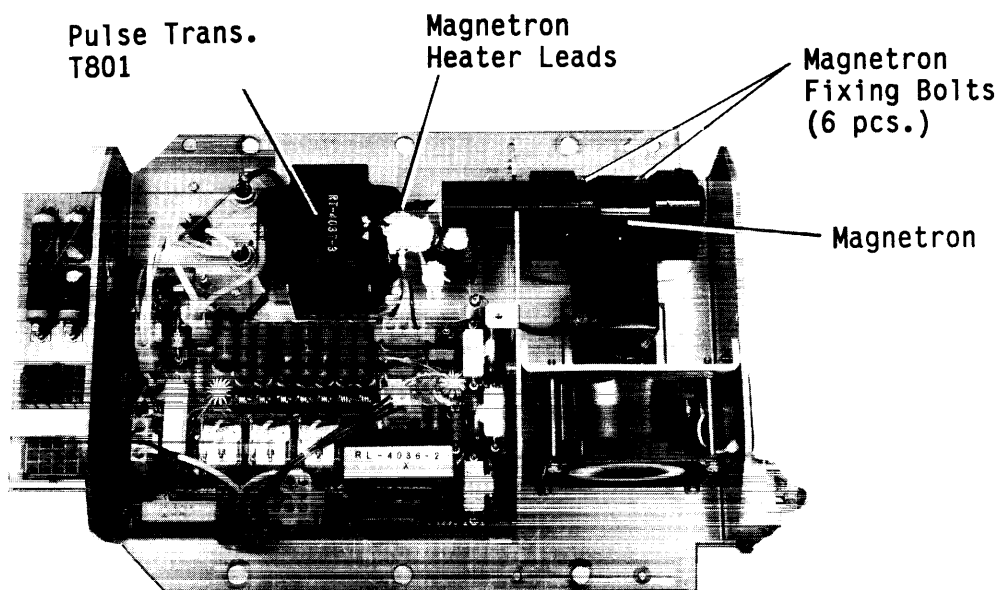
Transmit the radar on long range for 10 minutes or more and carry out the tuning adjustment.

Detachment of Magnetron (RTR-019 transceiver unit for X-band 25kW)

1. Turn the power off.
2. Open the transceiver unit cover by loosening four screws.
3. Loosen the transceiver module fixing bolts (4 pcs.) and disconnect the connectors P601, P801 and P651.
4. Take out the transceiver module from the transceiver chassis.
5. Remove the shield cover of the transceiver module by loosening seven screws.
6. Unsolder the magnetron heater leads at the pulse transformer T801.
7. Loosen the magnetron fixing bolts (6 pcs.), and the magnetron can be detached.



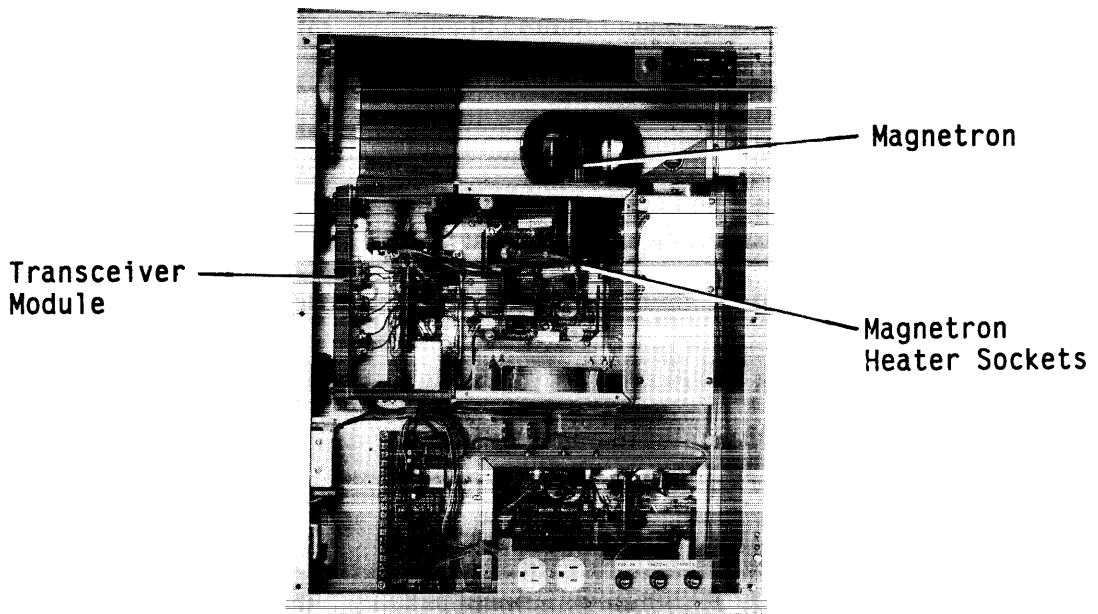
N Photo No.2541



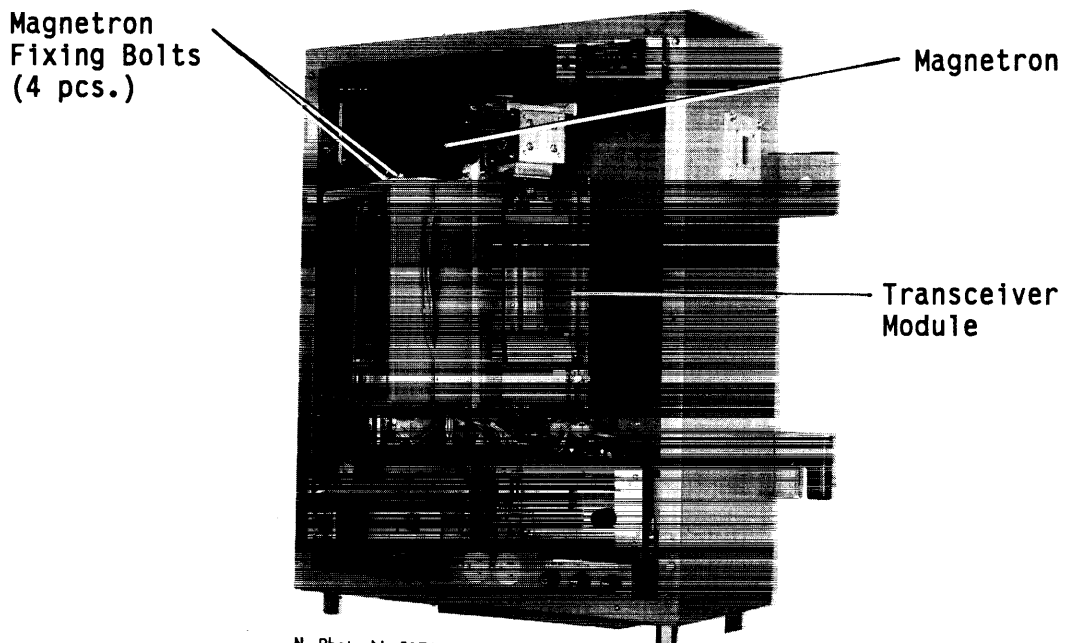
N Photo No.1483

Detachment of Magnetron (RTR-010 transceiver unit for X-band 50kW)

1. Turn the power off.
2. Open the transceiver unit cover by loosening six screws.
3. Remove the cover of the transceiver module by loosening four screws.
4. Pull out the magnetron heater leads from the heater sockets.
5. Loosen six screws fixing the transceiver module to the transceiver unit chassis. Then turn the transceiver module leftward as shown below.
6. Loosen the magnetron fixing bolts (4 pcs.), and the magnetron can be detached.



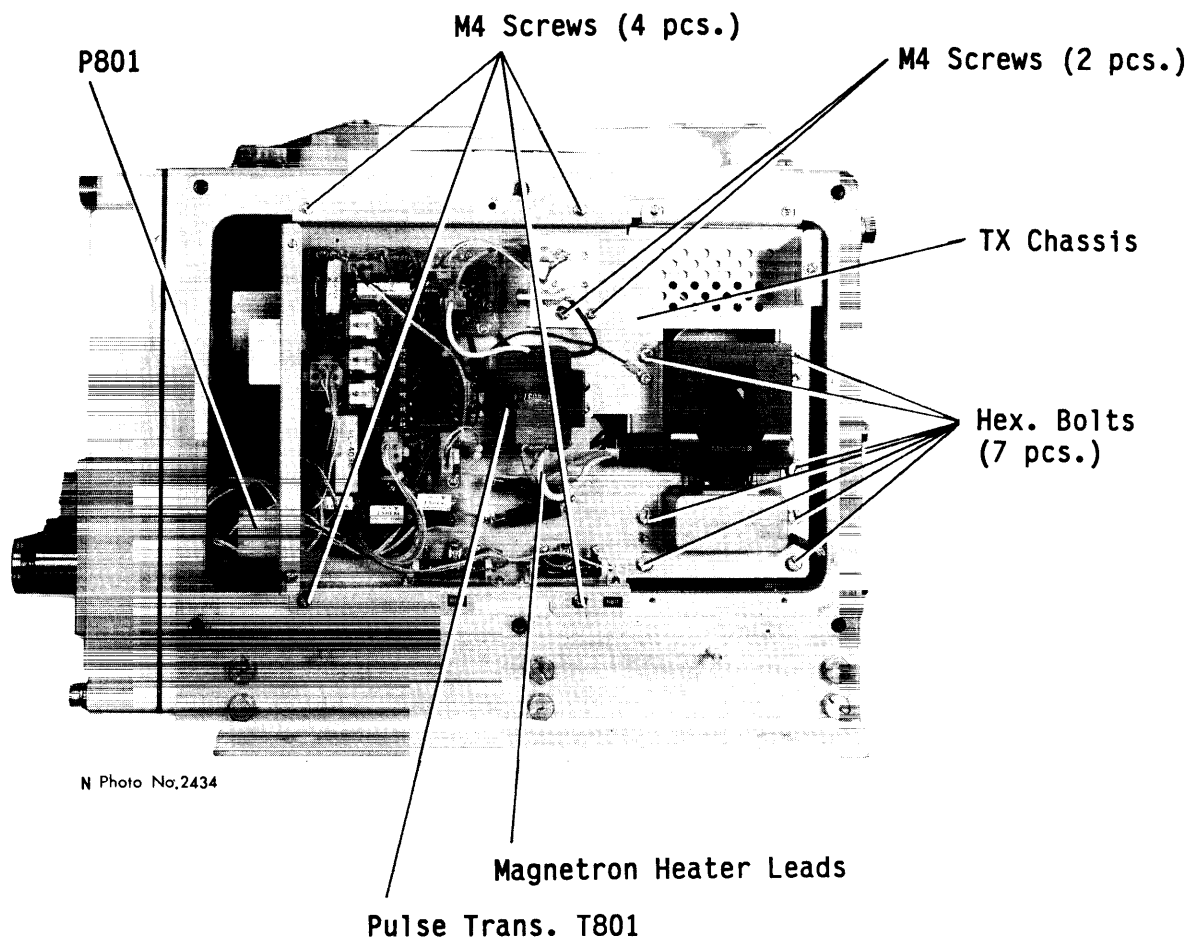
N Photo No.2177



N Photo No.2176

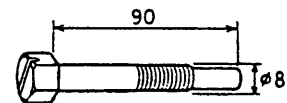
Detachment of Magnetron (RSB-0026/0031 scanner unit for S-band 30kW)

1. Turn the power off.
2. Open the right side cover of the scanner unit.
3. Remove the shield cover for the TX chassis.
4. Loosen six M4 screws and seven hex. bolts shown in the figure below. Disconnect connector P801 and take out the TX chassis.
5. Unsolder the magnetron heater leads at the pulse transformer T801. Loosen four screws fixing the magnetron to the TX chassis, and the magnetron can be detached.



Note

When the side cover of the scanner unit cannot be removed easily, use the bolt (03-029-0403-0) supplied as accessories. After removing the side cover fixing bolt, insert the bolt (03-029-0403-0) and turn clockwise it.

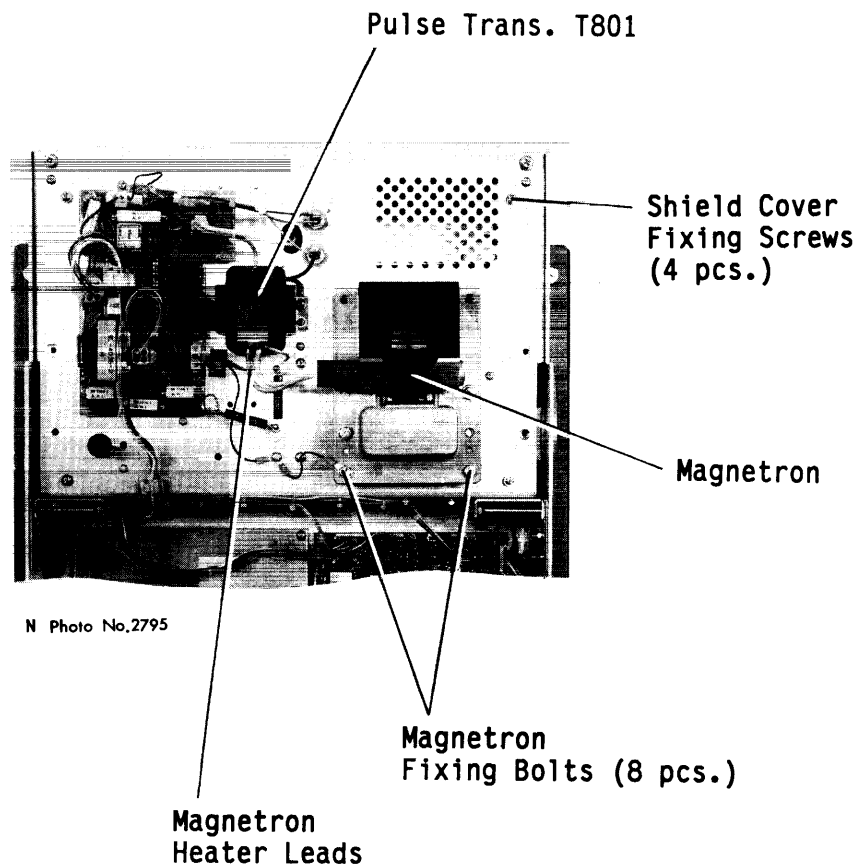


Detachment of Magnetron (RTR-025 transceiver unit for S-band 30kW)

1. Turn the power off.
2. Open the transceiver unit cover by unlocking four clasp hooks.
3. Remove the shield cover for RF chassis by loosening four screws.

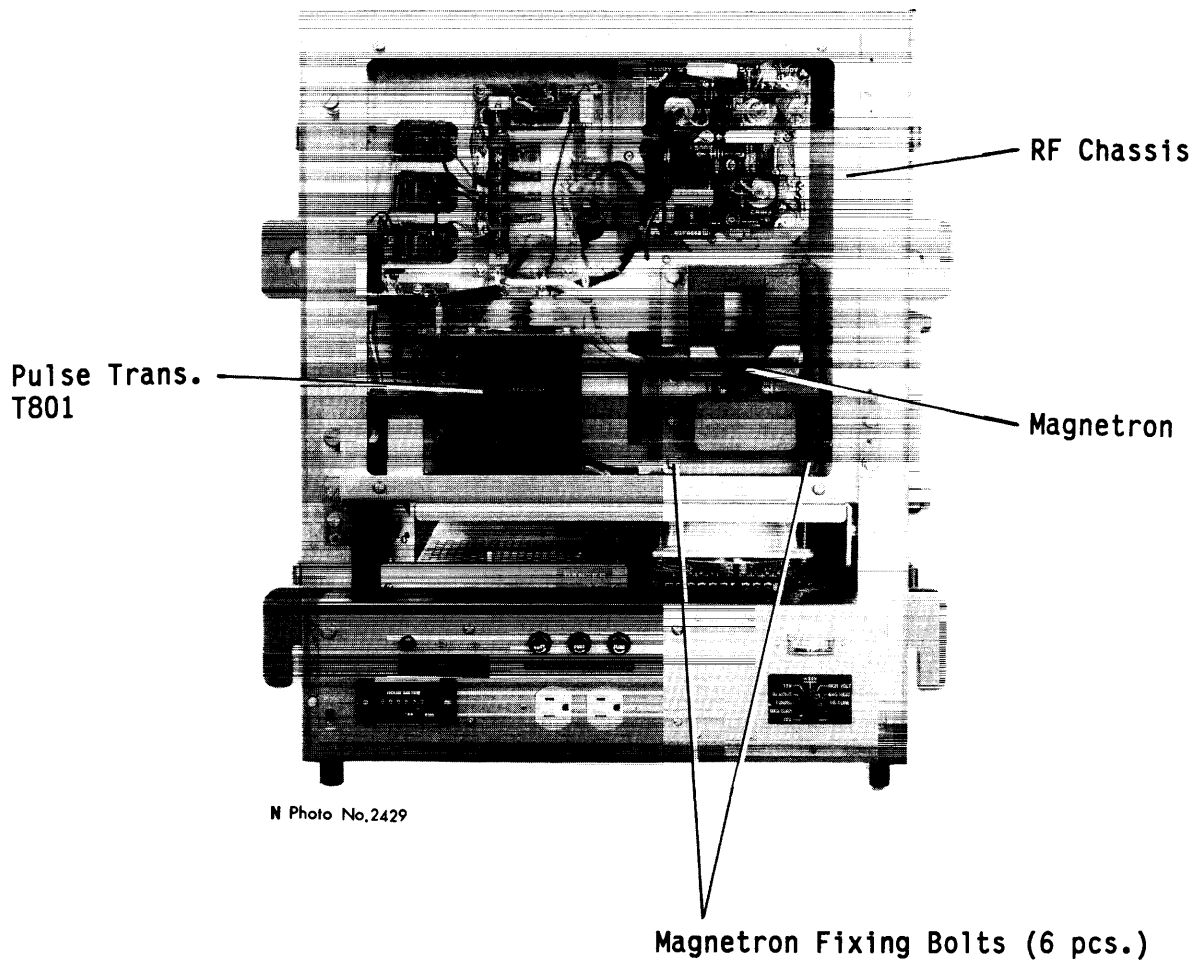
*NOTE: The upper right screw can not be removed from the RF chassis.
Shift the shield cover upward, and the cover can be removed.*

4. Unsolder the magnetron heater leads at the pulse transformer T801.
5. Loosen the magnetron fixing bolts (8 pcs.), and the magnetron can be detached.



Detachment of Magnetron (RTR-018 transceiver unit for S-band 60kW)

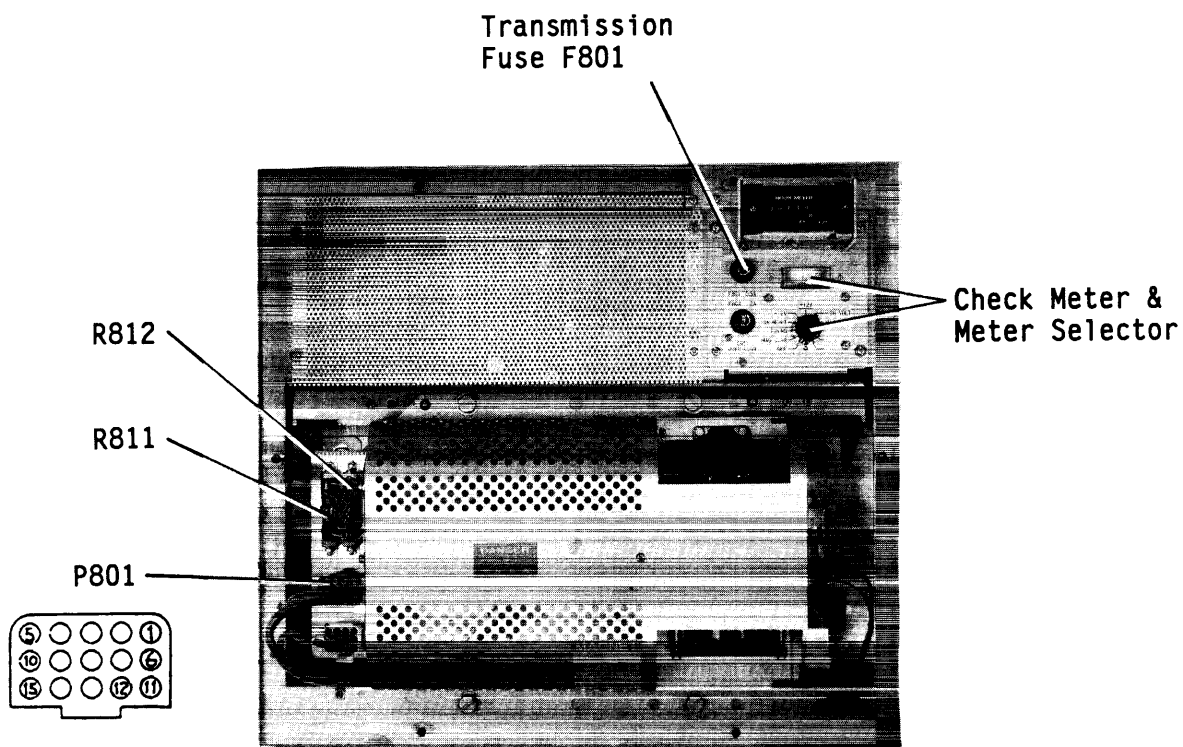
1. Turn the power off.
2. Open the transceiver unit cover by unlocking four clasp hooks.
3. Remove the cover for RF chassis by loosening six screws.
4. Unsolder the magnetron heater leads at the pulse transformer.
5. Loosen the magnetron fixing bolts (6 pcs.), and the magnetron can be detached.



3-2. Adjustment at Magnetron Replacement

Magnetron Heater Voltage (RTR-019 Transceiver unit for X-band 25kW)

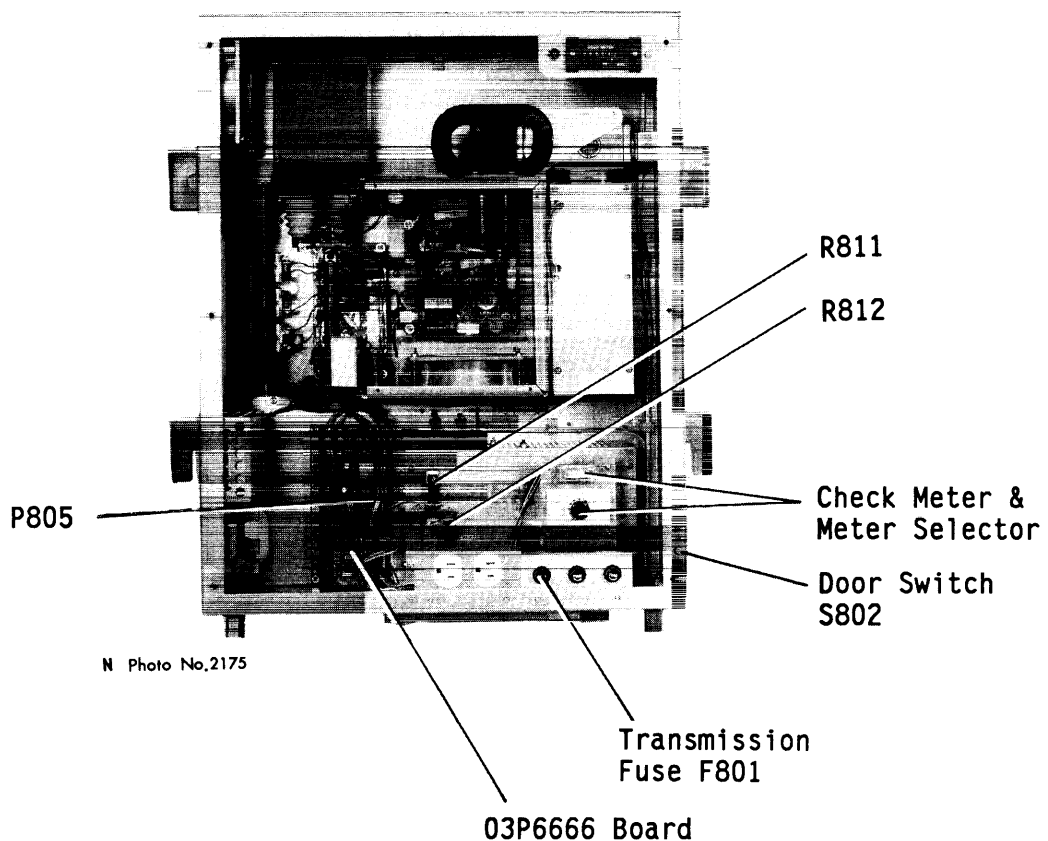
1. Set pulselength to short, remove transmission fuse F801 and turn the FUNCTION switch to "TX" position.
2. Connect a multimeter, set to the 10VDC range, between #12 (+) and #11 (-) of connector P801.
3. With the radar set to the 0.25 mile range, adjust sliding contact of R812 to obtain a multimeter reading of 7.2-7.7VDC.
4. With the radar set to a range greater than 3 mile (pulselength other than short) adjust sliding contact of R811 for a multimeter reading of 5.5-5.7VDC.
5. Replace the transmission fuse, transmit the radar and check that magnetron current, shown on the check meter in the transceiver unit, is normal (6.5 - 8.5) on the 48 mile range.



Transceiver Unit (RTR-019)

Magnetron Heater Voltage (RTR-010 transceiver unit for X-band 50kW)

1. Remove transmission fuse F801 from the transceiver unit and leave transceiver unit door switch S802 pulled out. Then, turn the FUNCTION switch to "TX" position.
2. Connect a multimeter, set to 10VDC range, between #1 (+) and #2 (-) of P805 on p.c. board 03P6666.
3. With the radar set to the 0.25 mile range, adjust sliding contact of R812 to obtain a multimeter reading of 7.0-7.6VDC.
4. With the radar set to the 48 mile range, adjust sliding contact of R811 for a multimeter reading of 4.5-5.1VDC.
5. Replace the transmission fuse, transmit the radar and check that magnetron current, shown on the check meter in the transceiver unit, is normal (6-9.5) on the 48 mile range.

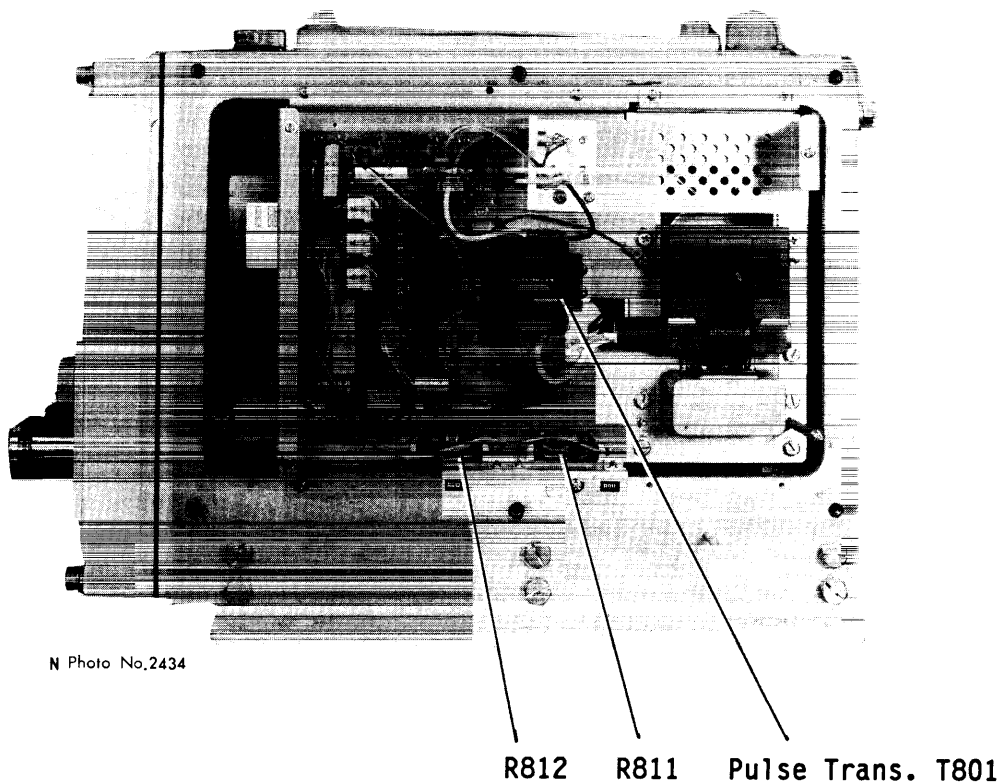


Transceiver Unit (RTR-010)

Magnetron Heater Voltage (RSB-0026/0031 scanner unit for S-band 30kW)

To perform magnetron heater voltage adjustment, the radar must be set to "TRANSMIT" with scanner rotation suspended. Turn the #5 switch of DIP switch S3 on the AD board 03P7030 to ON, to enable the transmission with the scanner switch turned off. After the adjustment, never fail to return the #5 of DIP switch S3 to OFF.

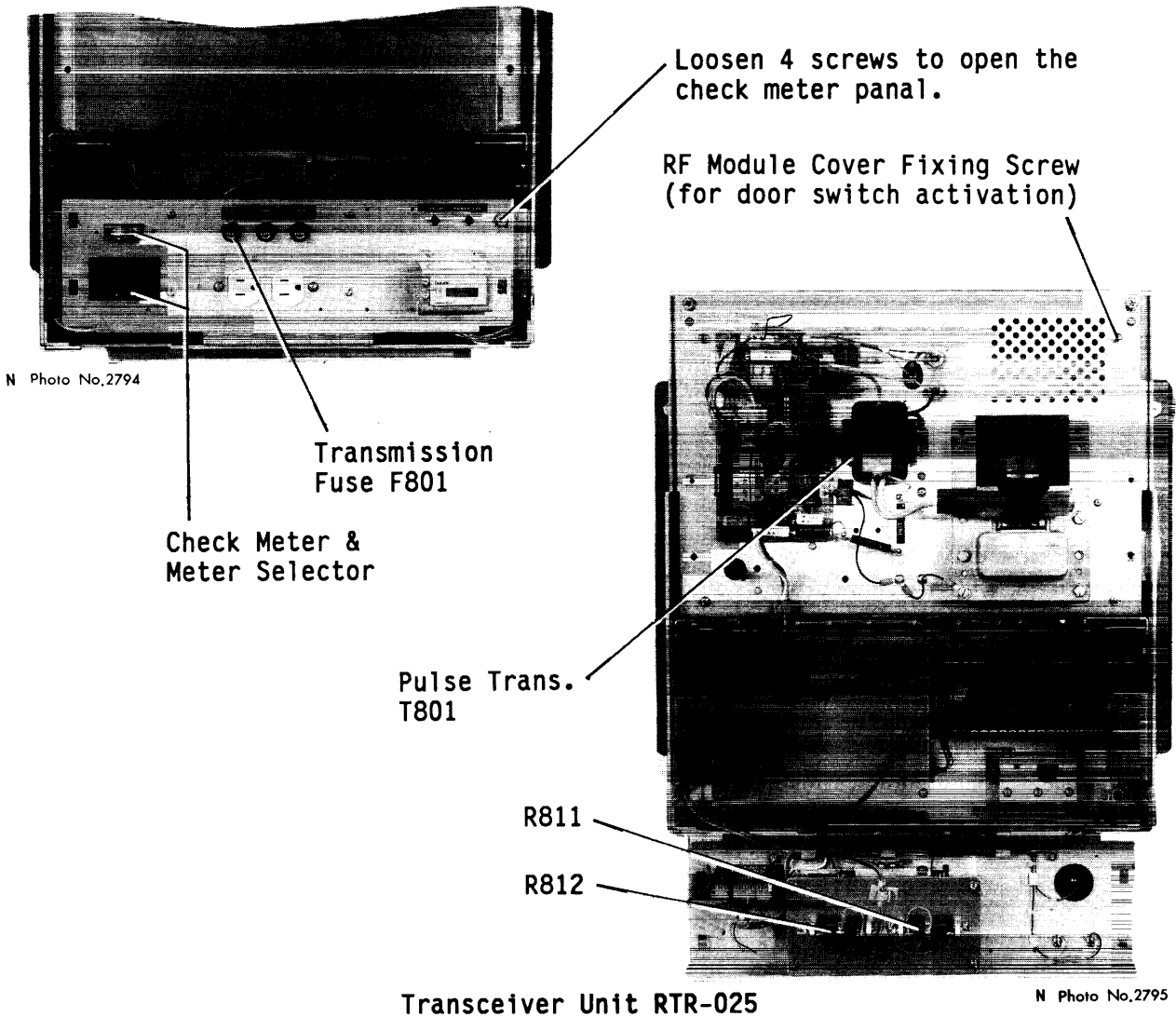
1. Set the radar to Stand-by, 0.25 mile range, CRT brilliance control fully counterclockwise, and turn the ANTENNA switch OFF.
2. Connect a multimeter, set to the 10VDC range, between #4(+) and #6(-) of pulse transformer T801. See the figure below for the location of pulse transformer T801.
3. Adjust the position of the sliding contact of R812 for a multimeter reading of 6.3V (tolerance within $\pm 0.3V$).
4. Remove the TX-HV fuse, set the range to 48 mile, and transmit the radar. Adjust the position of the sliding contact of R811 for a multimeter reading of 5.3V (tolerance within $\pm 0.2V$).



Scanner Unit (RSB-0026/0031)

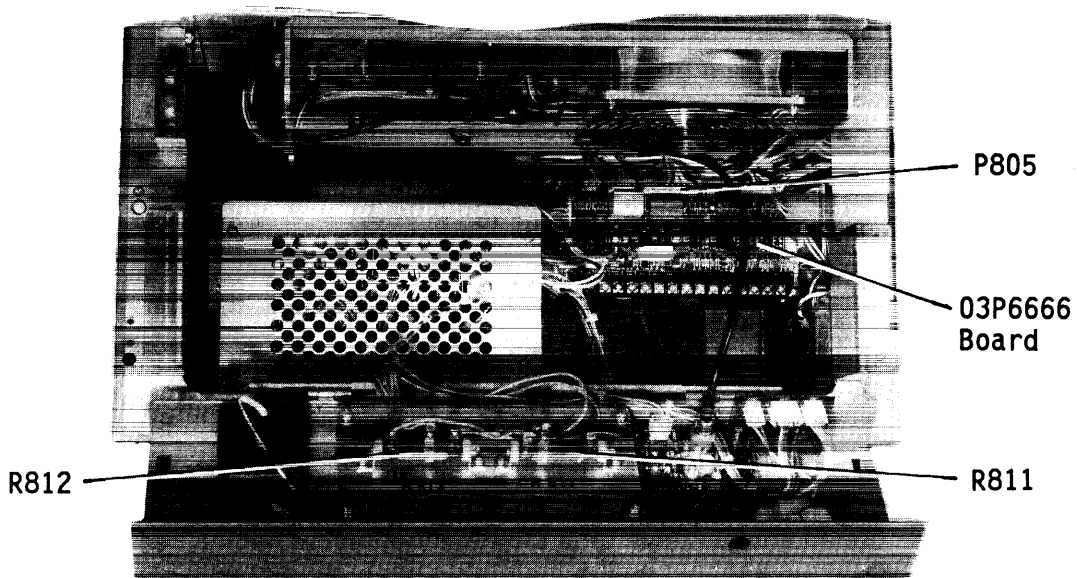
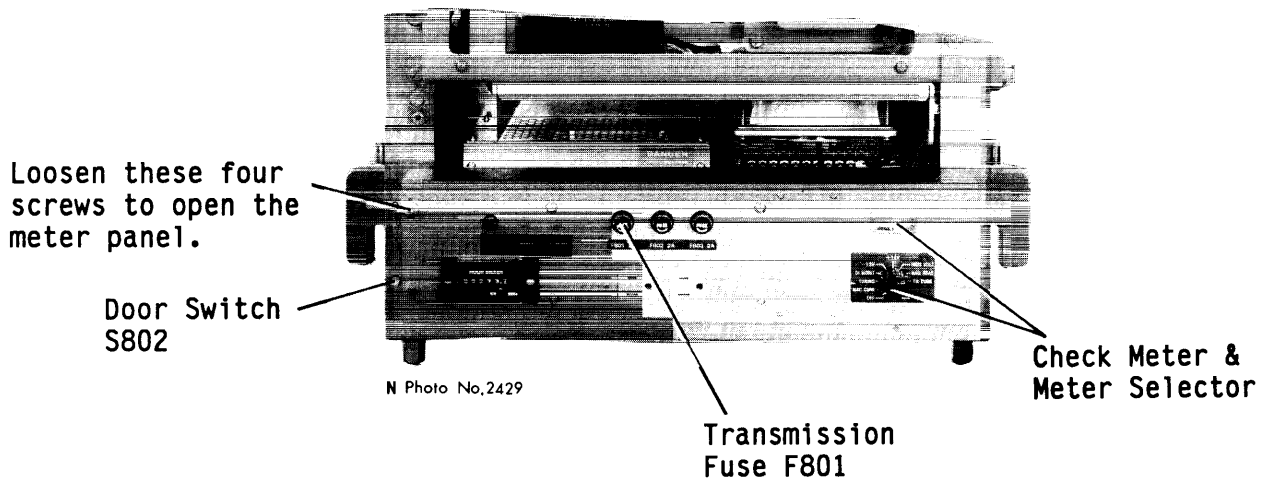
Magetron Heater Voltage (RTR-025 transceiver unit for S-band 30kW)

1. Turn off the radar, remove transmission fuse F801 from the transceiver unit.
2. Take out the RF module cover. Screw up the upper right one of RF module cover fixing screws, to turn the door switch on.
3. Connect a multimeter, set to 10VDC range, between #4 (+) and #6 (-) of pulse transformer T801.
4. With the radar set to the 0.25 mile range, adjust sliding contact of R812 to obtain a multimeter reading of 6.0-6.6 VDC.
5. With the radar set to the 48 mile range, adjust sliding contact of R811 for a multimeter reading of 5.1-5.5VDC.
6. Replace the transmission fuse, transmit the radar, and check that magetron current, shown on the check meter in the transceiver unit, is normal (6-9.5) on the 48 mile range.



Magnetron Heater Voltage (RTR-018 transceiver unit for S-band 60kW)

1. Turn off the radar, remove transmission fuse F801 from the transceiver unit and leave transceiver unit door switch S802 pulled out. Then turn the FUNCTION switch to "TX" position.
2. Connect a multimeter, set to 10VDC range, between #1 (+) and #2 (-) of P805 on p.c. board 03P6666.
3. With the range set to the 0.25 mile range, adjust sliding contact of R812 to obtain a multimeter reading of 6.1-6.5VDC.
4. With the radar set to the 48 mile range, adjust sliding contact of R811 for a multimeter reading of 4.1-4.5VDC.
5. Replace the transmission fuse, transmit the radar and check that magnetron current, shown on the check meter in the transceiver unit, is normal (6-10) on the 48 mile range.



N Photo No.2542

Transceiver Unit RTR-018

Tuning & Tuning Indicator Sensitivity

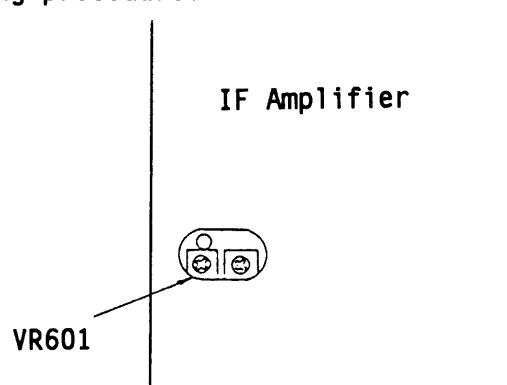
1. Transmit the radar on the 48 mile range and set controls and switches as follows;

*GAIN & CRT BRILLIANCE: properly adjusted,
A/C SEA & A/C RAIN: fully CCW, TUNE: center position,
ECHO STRETCH & INTERFERENCE REJECTOR: OFF*

2. Turn VR461 on the PST-7143 Board fully CW, then slowly turn it CCW until the maximum number of tuning markers are displayed.
3. Adjust R5 on the 03P7030 Board so that four tuning markers are lit with the fifth marker blinking.

X-band 50kW Transceiver only

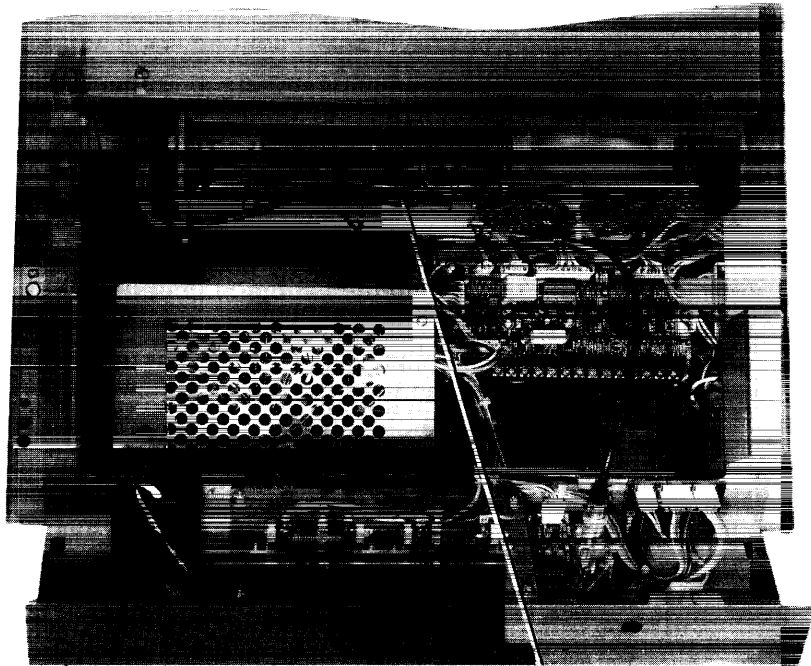
- a) If the maximum number of tuning markers cannot be displayed at the maximum echo sensitivity, take the following procedure.
- b) Set the TUNE control for maximum echo sensitivity and the transceiver unit check meter to TUNE. Adjust VR601 (IF Amplifier) for maximum meter deflection.
- c) Set the check meter to OFF. Note that the Door Switch S802 must be "out" to transmit.



S-band 60kW Transceiver only

The transceiver unit RTR-018 employs the TR tube (BS894) which must be tuned to the magnetron oscillation frequency.

- a) Transmit the radar at 48 mile range.
- b) Set the check meter selector in the transceiver unit to "TR-TUBE" position and turn the TR tube tuning knob so that the check meter reading becomes maximum. Refer to next page for location of the TR tube tuning knob.



N Photo No.2542

TR Tube Tuning Knob

Transceiver Unit RTR-018

3-3. Replacement of other Major Components

Do not forget to turn the power off before approaching inside the unit since the radar system uses high tension voltage.

When the MIC is replaced, the following cautions should be taken into account.

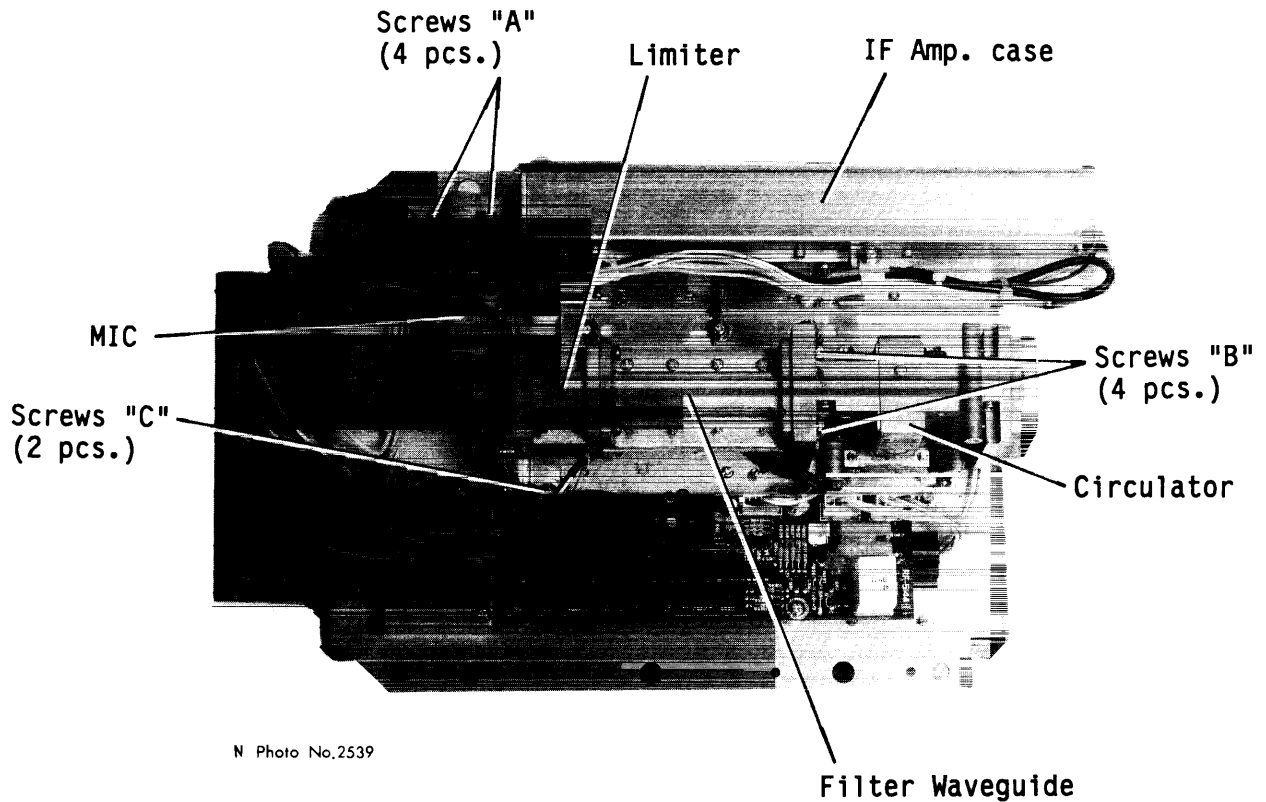
1. If the entrance of MIC is exposed to electromagnetic waves, the MIC may be damaged. Disassembly of the MIC and limiter should be performed in an area effectively shielded from electromagnetic waves. The bridge is not a good place! electromagnetic waves transmitted by the radar of another ship may be received. The safest place to perform the disassembly would be in a building onshore. However, keep in mind that electromagnetic waves can be received through windows, etc.

For S-band MIC, separation of the limiter from the MIC is not allowed. They should always be handled as one device.

2. The entrance of the new X-band MIC is sealed off with a strip of aluminum foil. Remove it when installing the MIC.
3. When MIC is replaced, carry out the tuning adjustment. Refer to page 3-12.

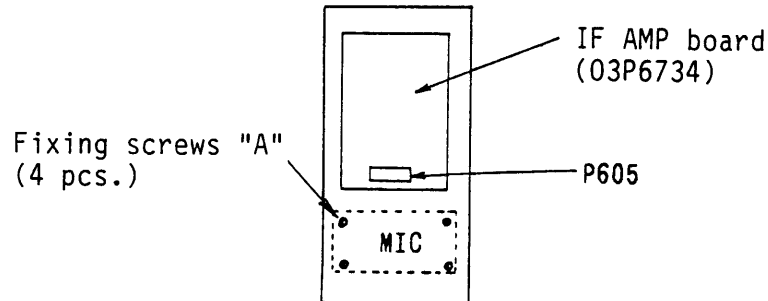
MIC Assembly (RTR-019 transceiver unit for X-band 25kW)

1. Take out the transceiver module from the transceiver unit.
2. Remove the cover of IF Amplifier case and disconnect 6P NH connector P605 coming from the MIC.
3. Loosen MIC fixing screws "A" (4 pcs.) to separate the MIC from the MIC adaptor.
4. Loosen four screws "B" to separate the filter waveguide from the circulator.
5. Loosen two screws "C" and take out the MIC together with the filter waveguide.
6. Separate the filter waveguide from the limiter by loosening four screws.

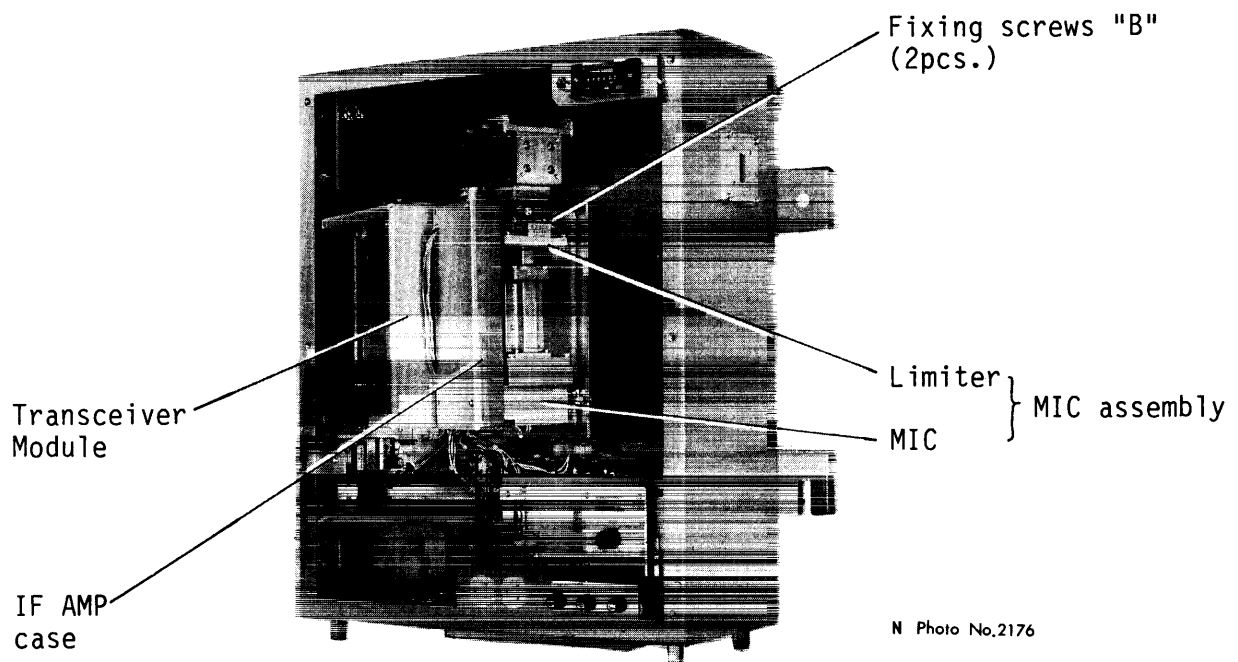


MIC Assembly (RTR-010 transceiver unit for X-band 50kW)

1. Remove the cover of IF Amplifier case and disconnect 6P NH connector P605 coming from the MIC.

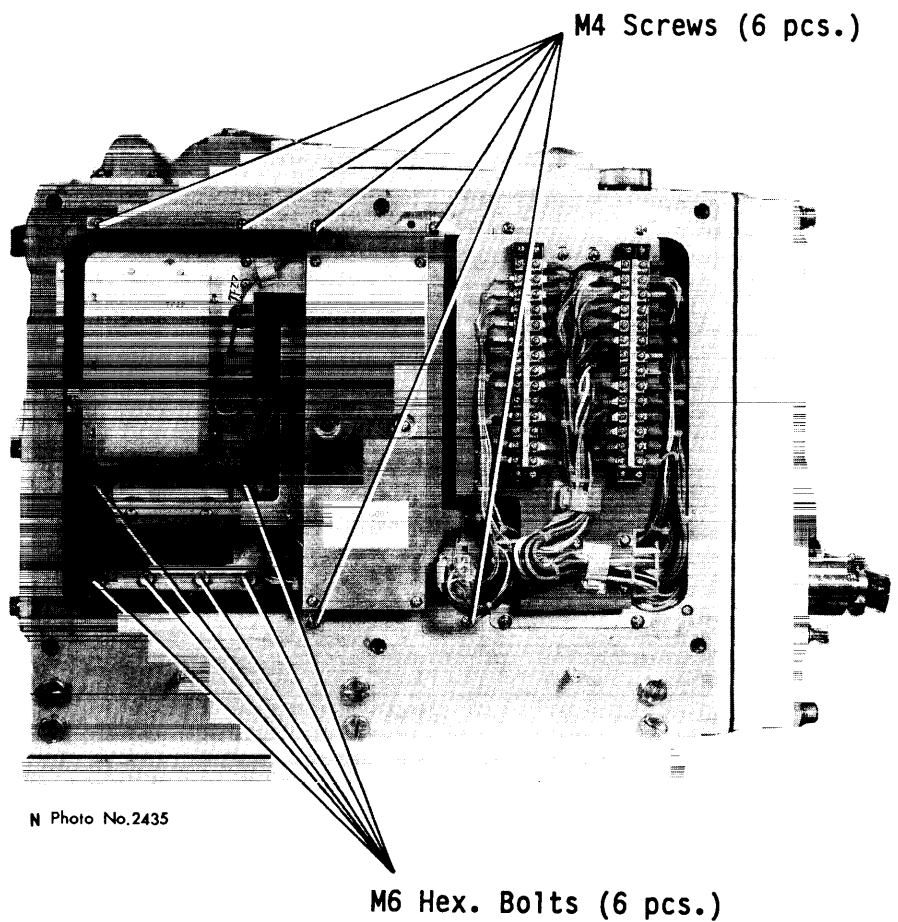


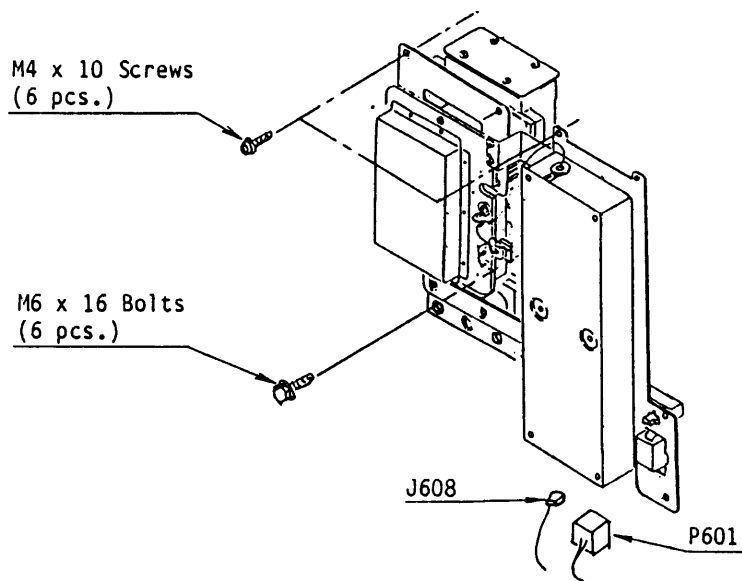
2. Loosen MIC fixing screws "A" (4 pcs.)
3. Pull the transceiver module forward by turning it leftward. Loosen two screws "B" securing the MIC assembly to the chassis of the transceiver module, and the MIC assembly can be taken out together with the limiter.



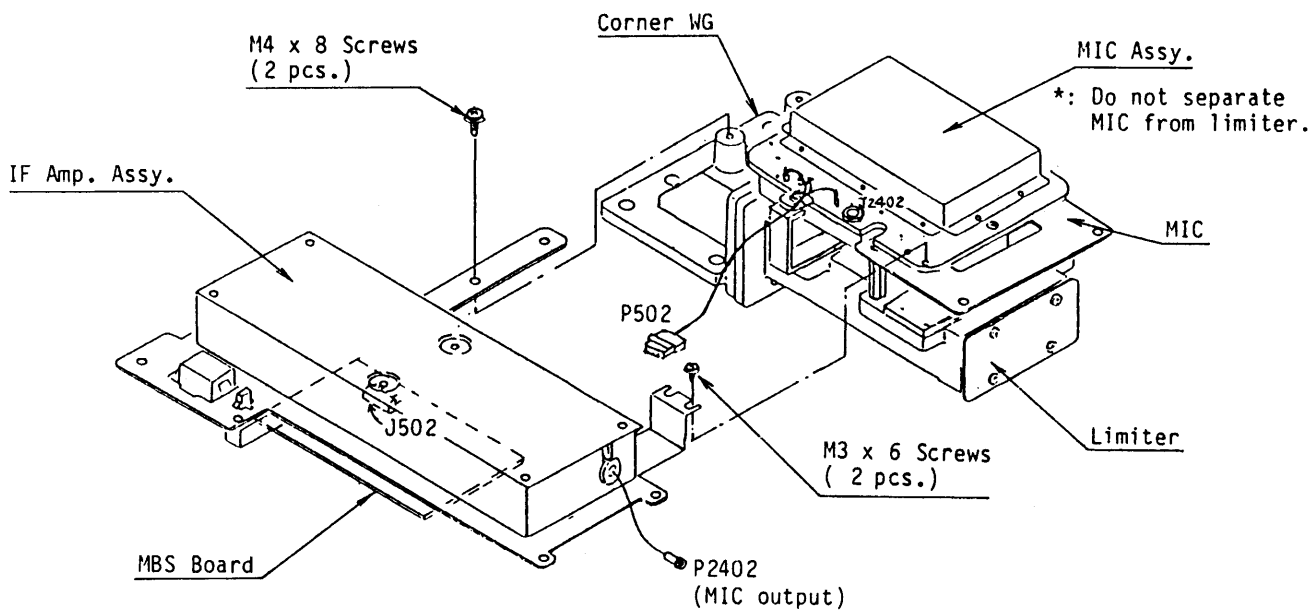
MIC Assembly (RSB-0026/0031 scanner unit for S-band 30kW)

1. Open the left side cover of the scanner unit.
2. Loosen six M4 screws and six M6 hex. bolts shown in the figure below. Disconnect connectors P601 and J608. Refer to the figure on the next page.
3. Take out the MIC assembly together with the IF Amp case.
4. To separate the IF Amp case from the MIC assembly, disconnect the connectors P2402 and P502, then loosen two M4x8 screws and two M3x6 screws shown in the figure on the next page.





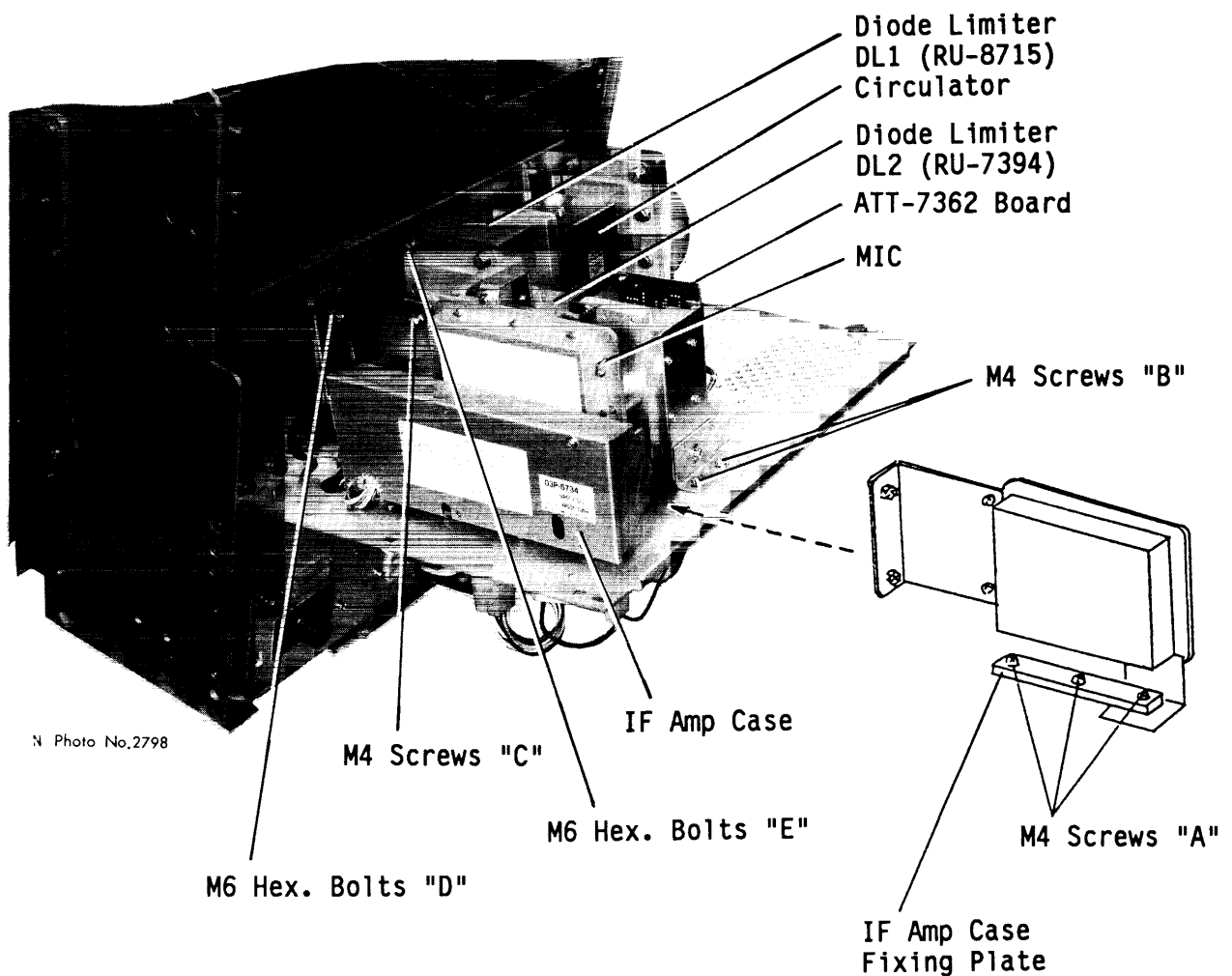
MIC Assembly / IF Amp Case



Separation of IF Amp Case from MIC Assembly

MIC Assembly (RTR-025 transceiver unit for S-band 30kW)

1. Loosen the RF chassis fixing screws (3 pcs. at right side and 2 pcs. at left side) and pull down the RF chassis for access to the rear side of RF chassis.
2. Remove the IF Amplifier case by loosening three M4 screws "A". Refer to the figure below.
3. Loosen two M4 screws "B".
4. Remove the E-corner fixing plate by loosening two M4 screws "C" and two M6 hex. bolts "D".
5. Disconnect P851 on ATT-7362 board. Loosen four M6 hex. bolts "E" and take out the MIC assembly together with corner waveguide.

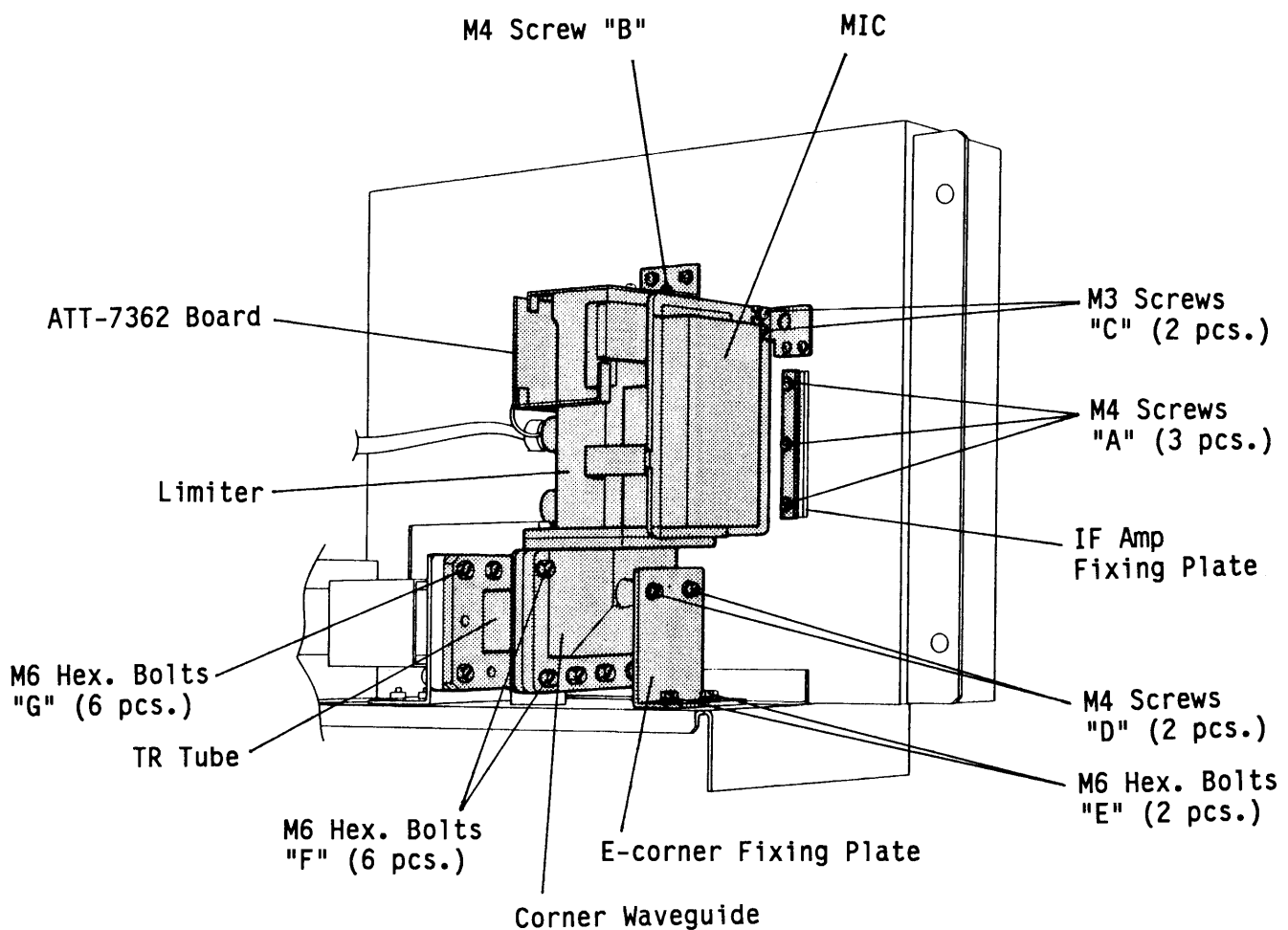


MIC Assembly (RTR-018 transceiver unit for S-band 60kW)

1. Loosen two bolts securing left side of the RF chassis to the transceiver unit housing. Turn the RF chassis rightward for access to the rear side of the RF chassis.
2. Remove the IF Amplifier case by loosening three M4 screws "A". Refer to the figure below.
3. Loosen an M4 screw "B" and three M3 screws "C".
4. Remove the E-corner fixing plate by loosening two M4 screws "D" and two M6 hex. bolts "E".
5. Disconnect P851 on ATT-7362 board. Loosen six M6 hex. bolts "F" and take out the MIC assembly together with corner waveguide.

TR Tube

After removing the MIC assembly, loosen six M6 hex. bolts "G", and the TR tube can be taken out.

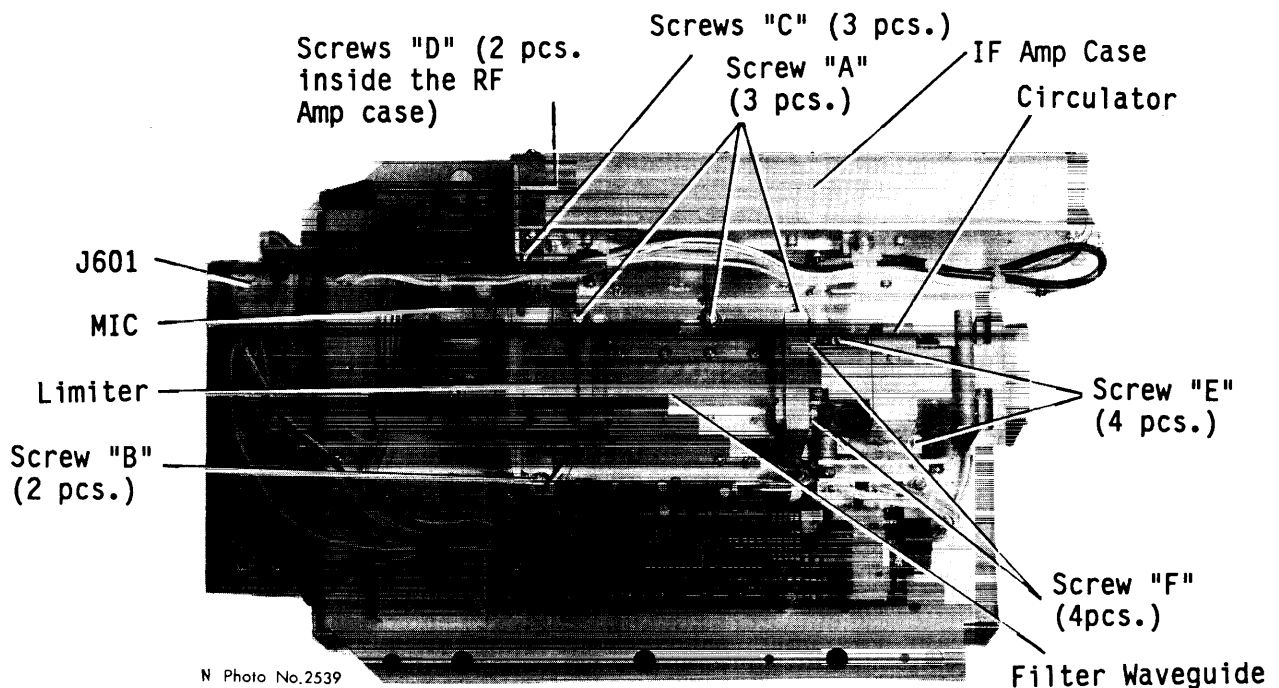


IF Amplifier (RTR-019 transceiver unit for X-band 25kW)

1. Take out the transceiver module from the transceiver chassis.
2. Loosen three screws "A" securing the IF Amplifier case to the transceiver module chassis. Refer to figure below.
3. Loosen four screws "F" and two screws "B".
4. Disconnect J601 and take out the IF Amplifier case together with the MIC assembly.
5. Open the cover for IF Amplifier case and disconnect P604 and P605.
6. Loosen three screws "C" and two screws "D" (inside the IF Amplifier case) to separate the IF Amplifier case from the MIC assembly.

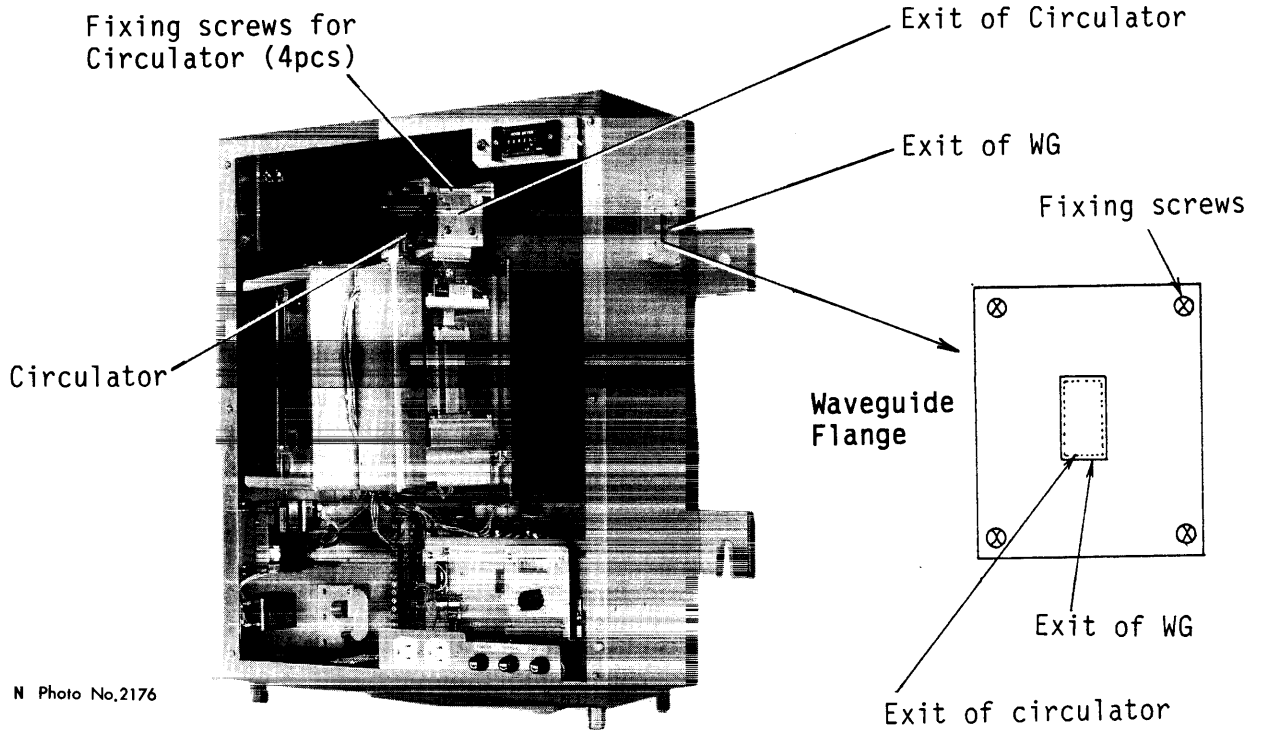
Circulator (RTR-019 transceiver Unit for X-band 25kW)

1. Take out the IF Amplifier case together with the MIC assembly as mentioned above.
2. Loosen four screws fixing the magnetron to the circulator.
3. Loosen four screws "E" and the circulator can be taken out.



Circulator (RTR-010 transceiver unit for X-band 50kW)

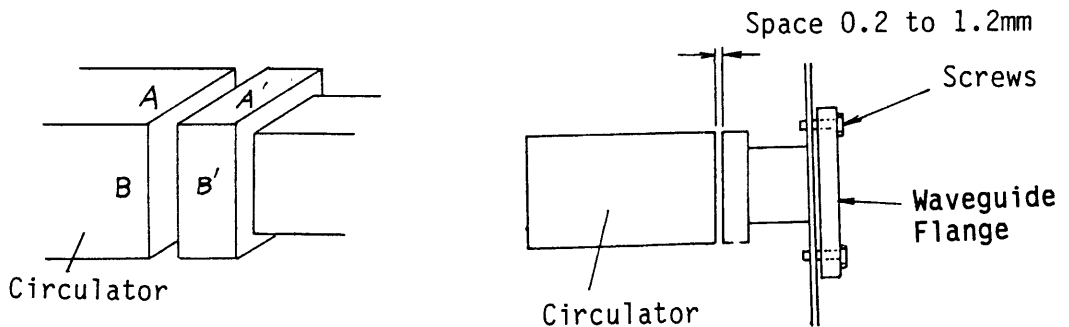
1. Pull the transceiver module forward as shown in figure below.
2. Loosen four screws on the upper side of the circulator and take it out together with the waveguide adapter.



Transceiver Unit RTR-010

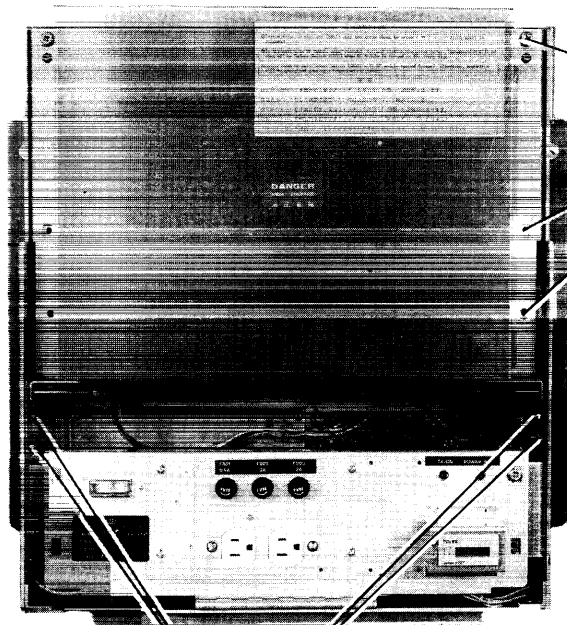
NOTE: When replacing the circulator with a new one, confirm that the exit of the circulator coincides with the exit of the waveguide flange, viewing from the outside of the waveguide flange. If not, adjust the position of the waveguide flange by loosening the four fixing screws. See the figure above.

If the above can not be performed, confirm that the sides A and B of the circulator flange, respectively. And also confirm that the space between the circulator and the waveguide flange is 0.2 to 1.2mm. If not, adjust the position of the circulator.



RF chassis Assembly (RTR-025 transceiver unit for S-band 30kW)

1. Loosen M4 countersunk screws "A" (4 pcs.) and M6 hex. bolts "B" (3 pcs. at right side and 2 pcs. at left side). See the figure below.
2. Disconnect plugs P802/804/805/809/821 on 03P8726 board and P834 located on the lefthand of PT-8179 board.
3. Pull out the RF chassis assembly. Disconnect coax connector P651, if connected, on the IF amplifier.
4. When remounting the RF chassis assembly, check that the exit of the circulator coincides with the exit of the WG outlet adaptor (waveguide flange), viewing from the outside of the WG outlet adaptor. If not, adjust the position of positioning pins.

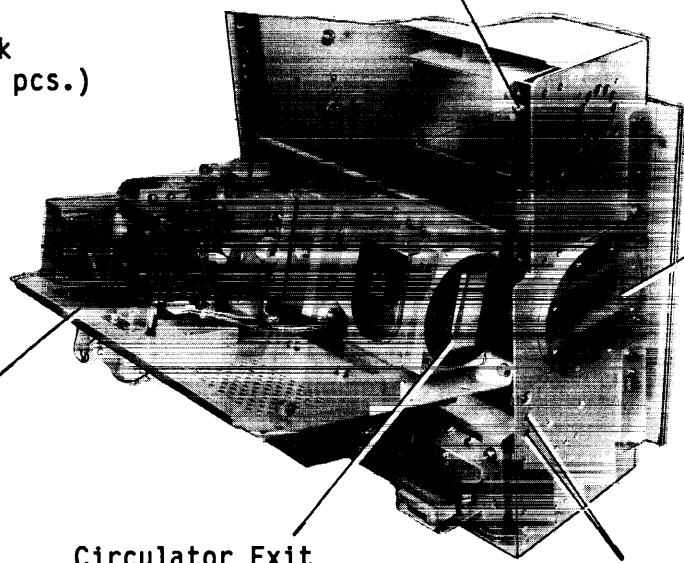


M6 Hex. Bolts "B"
(5 pcs.)

N Photo No.2794

M4 Countersunk
Screws "A" (4 pcs.)

Positioning Pin



WG Outlet
Adaptor

RF Chassis

Circulator Exit

M4 Countersunk
Screws "A" (4 pcs.)

ELECTRICAL PARTS LIST

DISPLAY UNIT (RDP-057 & RDP-058)	E-1 to E-12
SCANNER UNIT (RSB-003/4/5)	E-13 to E-14
SCANNER UNIT (RSB-0026/31)	E-15 to E-20
SCANNER UNIT (RSB-0027/32)	E-21 to E-22
TRANSCEIVER UNIT (RTR-019) Refer to page E-43 for IF Amp Board IF-6734.	E-23 to E-28
TRANSCEIVER UNIT (RTR-025) Refer to page E-43 for IF Amp Board IF-6734B.	E-29 to E-34
TRANSCEIVER UNIT (RTR-010 & RTR-018)	E-35 to E-45

FURUNOELECTRICAL PARTS LIST
電気部品表

1990-10

MODEL	FR-2030S		
UNIT	DISPLAY RDP-057 指示部	PAGE	
REF. DWG.	C3311-008-	BLOCK NO.	2B00
			1

SYMBOL 記号	T Y P E 型名	SPECIFICATIONS 規格	CODE NO. コード番号	REMARKS 備考
2B03	PCT-5141B	FR-2010/2020	008-226-460	
2B04	PTU-7273.B	RDP-057	008-256-100	PTR & PTA
2B07	HV-7130C	FR-2020	008-226-520	
2B08	03P-7030 AD	FR-2010/2020	008-236-130	
2B09	03P-7031 MEMORY	FR-2010/2020	008-236-140	
2B10	03P-7032 MARK	FR-2010/2020	008-236-180	
2B12	VDA-7047	FR-2010/2020	008-226-510	
2B13	PAR-7139	FR-2010/2020	008-226-370	
2B14	PAL-7140	FR-2010/2020	008-226-380	
2B15	PAF-7141	FR-2010/2020	008-226-390	
2B16	PAV-7142	FR-2010/2020	008-226-400	
2B17	PST-7143	FR-2010/2020	008-226-420	
2B18	DTB-7144.A	FR-2011/2021	008-375-280	
2B19	CM-5146B	FR-2010/2020	008-226-430	
2B23	TS-861 FOR CDT-2037B	FR-2000	000-117-048	2B23-1
	TS-860 FOR CDT-2037B	FR-2000	000-117-049	2B23-2
	TS-769 FOR CDT-2037B	FR-2000	000-117-046	2B23-3
	TS-885 FOR CDT-2037B	FR-2000	000-117-047	2B23-4
	PCB RACK ASSY	RDP-062/063	008-226-500	W/2B11 MBD
	GS-6856		008-235-040	FOR GC-2
	CG-4137	ASK	008-167-350	FOR GC-2

	MOTOR			モーター
2B01B0001	MMF-09A24DH-R	03S7130	000-112-104	
	CAPACITOR			コンデンサー
2B01C0001	ECO-S2DG821Y	820UF,200V	000-112-326	
2B01C0002	MDD-2-2G-474K	0.47UF,400V	000-104-440	
	DIODE			ダイオード
2B01CR0001	V19E		000-136-020	
	FUSE			ヒューズ
2B01F0001	FGB01 10A AC250V	00S0085-0	000-549-082	
2B01F0002	FGB01 10A AC250V	00S0085-0	000-549-082	
2B01F0003	FGB0 0.5A AC125V	00S0077-0	000-549-060	
2B01F0005	FGB0 0.5A AC125V	00S0077-0	000-549-060	
	FILTER			フィルター
2B01FL0001	LF-205A	13-3-5363	000-588-411	
	RELAY			リレー
2B01K0001	HG3-DC12V	13-3-5389	000-454-822	
2B01K0002	Q-20,2.3A		000-113-858	200/220V.3

UNIT	DISPLAY	RDP-057	REF. DWG.	C3311-008-	BLOCK NO.	2B00	2
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO.	REMARKS			
記 号	型 名	規 格	コード番号	備 考			
	RELAY						
	Q-20 1.3A		000-454-200	400W 380/440V.3 400W			
	COIL						
2B23L	PCL01-26 DGC	FOR CDT-2037B	000-117-051	DEGAUSS COIL			
	SWITCH						
2B01S0050	ST-115D22		000-470-062				
2B01S0481	PAA-7245	FR-2010/2020	008-226-410	JOY STICK			
	TRANSFORMER						
2B01T0001	RT-5086	13-3-5086	000-734-041				
	ELECTRON TUBE						
2B23V	M48JXD32XB33	FOR CDT-2037B	000-117-050	CRT			

FURUNOELECTRICAL PARTS LIST
電気部品表

1990-10

MODEL	FR2050X/2020X/2060S		
UNIT	DISPLAY RDP-058		PAGE
REF. DWG.	C3312-012-	BLOCK NO.	3B
			1

SYMBOL 記号	T Y P E 型名	SPECIFICATIONS 規格	CODE NO. コード番号	REMARKS 備考
3B03	PCT-5141C		008-379-030	
3B04	PTU-7273.C/03P7072	RDP-058	008-256-250	PTU & PTA
3B08	03P-7030 AD	FR-2010/2020	008-236-130	
3B09	03P-7031 MEMORY	FR-2010/2020	008-236-140	
3B10	03P-7032 MARK	FR-2010/2020	008-236-180	
3B12	VDA-7047	FR-2010/2020	008-226-510	
3B13	PAR-7139	FR-2010/2020	008-226-370	
3B14	PAL-7140	FR-2010/2020	008-226-380	
3B15	PAF-7141	FR-2010/2020	008-226-390	
3B16	PAV-7142	FR-2010/2020	008-226-400	
3B17	PST-7143	FR-2010/2020	008-226-420	
3B18	DTB-7144.B	RDP-058	008-256-260	
3B19	CM-5146B	FR-2010/2020	008-226-430	
3B23	TS-861 FOR CDT-2037B	FR-2000	000-117-048	3B23-1
	TS-860 FOR CDT-2037B	FR-2000	000-117-049	3B23-2
	TS-769 FOR CDT-2037B	FR-2000	000-117-046	3B23-3
	TS-885 FOR CDT-2037B	FR-2000	000-117-047	3B23-4
	PCB RACK ASSY	RDP-062/063	008-226-500	W/3B11 MBD
	GS-6856		008-235-040	FOR GC-2
	CG-4137	ASK	008-167-350	FOR GC-2
MOTOR モーター				
3B01B0001	MMF-09A24DH-R	03S7130	000-112-104	
CAPACITOR コンデンサー				
3B01C0001	ECO-S2DG821Y	820UF,200V	000-112-326	
3B01C0002	MDD-2-2G-474K	0.47UF,400V	000-104-440	
DIODE ダイオード				
3B01CR0001	V19E		000-136-020	
FUSE ヒューズ				
3B01F0001	FGB01 10A AC250V	00S0085-0	000-549-082	
3B01F0002	FGB01 10A AC250V	00S0085-0	000-549-082	
3B01F0005	FGB0 0.5A AC125V	00S0077-0	000-549-060	
FILTER フィルター				
3B01FL0001	20DBA55	03S7230	000-110-366	
RELAY リレー				
3B01K0001	HG3-DC12V	13-3-5389	000-454-822	
3B01K0002	Q-20,2.3A		000-113-858	200/200V. 400W
	Q-20 1.3A		000-454-200	200/220V.

UNIT	DISPLAY RDP-058	REF. DWG.	C3312-012-	BLOCK NO.	3B	2
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO.	REMARKS		
記号	型名	規格	コード番号	備考		
	RELAY					
						200W OR 380/440V. 400W
	Q-20, 1.8A	AC220 3FAI 300W	000-454-201			200/220V. 300W
	BMK-9-11-8	AC100 1FAI 200W	000-454-992			100V.200W
	COIL					
3B23L	PCL01-26 DGC	FOR CDT-2037B	000-117-051			DEGAUSS COIL
	SWITCH					
3B01S0050	ST-115D22		000-470-062			
3B01S0481	PAA-7245	FR-2010/2020	008-226-410			JOY STICK
	TRANSFORMER					
3B01T0001	RT-5086	13-3-5086	000-734-041			
	ELECTRON TUBE					
3B23V	M48JXD32XB33	FOR CDT-2037B	000-117-050			CRT

UNIT	DISPLAY	REF. DWG.	C3263-028-	BLOCK NO.	2B03	3
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO.	REMARKS		
記号	型名	規格	コード番号	備	考	
ASSEMBLY クミヒツ						
	PCT-5141B	FR-2010/2020	008-226-460	RDP-057		
	PCT-5141C		008-379-030	RDP-058		
CAPACITOR コンデンサ						
C 1	ECE-A1HS102	1000UF 50V	000-201-471			
C 2	FK20Y5V1H104Z	0.1UF 50V	000-254-900			
C 3	FK20Y5V1H104Z	0.1UF 50V	000-254-900			
C 4	ECE-A1CS101	100UF 16V	000-201-427			
C 5	ECE-A1HS100	10UF 50V	000-201-463			
C 6	FK20Y5V1H104Z	0.1UF 50V	000-254-900			
C 7	ECE-A1CS470	47UF 16V	000-201-426			
C 8	ECE-A1CS101	100UF 16V	000-201-427			
DIODE ダイオード						
CR 1	RB-151	13-3-5357	000-134-760			
CR 2	1S1588		000-112-795			
CR 3	1S1588		000-112-795			
CR 4	1S1588		000-112-795			
CR 5	1S1588		000-112-795			
CR 6	1S1588		000-112-795			
CR 7	MA27W-B		000-133-733			
CR 8	1S1588		000-112-795			
CR 9	MA27W-B		000-133-733			
CR 10	1S1588		000-112-795			
CR 11	1S1588		000-112-795			
CR 12	1S1588		000-112-795			
CR 13	1S1588		000-112-795			
CR 14	SFOR1B42		000-135-126			
CR 15	SFOR1B42		000-135-126			
JACK ジャック						
J 6	B6P-VH	6P	000-505-824			
J 7	B6P-SHF-1AA	6P	000-505-554			
RELAY リレー						
K 1	FBR-111NCD-012		000-450-351			
K 2	SP2-DC12V	13-3-5367	000-454-755			
TRANSISTOR トランジスタ						
Q 1	2SA733		000-117-445			
RESISTOR リジスタ						
R 1	ERD-25PJ682	0.25W 6.8K	000-330-377			
R 2	ERD-25PJ332	0.25W 3.3K	000-330-369			
R 3	ERD-25PJ272	0.25W 2.7K	000-330-367			
R 4	ERD-25PJ822	0.25W 8.2K	000-330-379			
R 5	ERD-25PJ103	0.25W 10K	000-330-381			

UNIT	DISPLAY	REF. DWG.	C3263-028-	BLOCK NO.	2B03	4
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO.	REMARKS		
記号	型名	規格	コード番号	備	考	
RESISTOR リジスタ						
R 6	ERD-25PJ822	0.25W 8.2K	000-330-379			
R 7	ERD-25PJ222	0.25W 2.2K	000-330-365			
R 8	ERD-25PJ222	0.25W 2.2K	000-330-365			
R 9	ERD-25PJ123	0.25W 12K	000-330-383			
R 10	ERD-25PJ222	0.25W 2.2K	000-330-365			
R 11	ERD-25PJ123	0.25W 12K	000-330-383			
R 12	ERD-25PJ222	0.25W 2.2K	000-330-365			
R 13	ERD-25PJ822	0.25W 8.2K	000-330-379			
R 14	ERD-25PJ272	0.25W 2.7K	000-330-367			
R 15	ERD-25PJ102	0.25W 1K	000-330-357			
R 16	ERD-25PJ102	0.25W 1K	000-330-357			
R 17	ERD-25PJ102	0.25W 1K	000-330-357			
R 18	ERD-25PJ221	0.25W 220	000-330-341			
R 19	ERD-25PJ123	0.25W 12K	000-330-383			
R 20	ERD-25PJ472	0.25W 4.7K	000-330-373			
R 21	ERD-25PJ682	0.25W 6.8K	000-330-377			
R 22	ERD-25PJ472	0.25W 4.7K	000-330-373			
R 23	ERD-25PJ223	0.25W 22K	000-330-389			
THERMISTOR サーミスタ						
RT 1	15SP010M	100HM	000-116-890			
VARISTOR バリスタ						
RV 1	ERZ-C14DK271		000-102-608			
RV 2	ERZ-C14DK271		000-102-608			
RV 3	ERZ-C14DK271		000-102-608			
TRANSFORMER トランス						
T 1	RT-5087	13-3-5087	000-734-042			
TERMINAL BOARD タンシバッド						
TB 1	ML-30-A,8P		000-531-382			
INTEGRATED CIRCUIT システムIC						
U 1	TA7BL012AP		000-163-609			
U 2	HA17901P		000-162-083			
POTENTIOMETER ポテンチオメータ						
VR 1	RGP102-502	5K	000-316-259			
VR 2	RGP102-502	5K	000-316-259			

UNIT	DISPLAY	REF. DWG.	C3308-014-	BLOCK NO	2B04	5
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO	REMARKS	
記号	型名	規格		コード番号	備考	
ASSEMBLY クミヒン						
	PTU-7010B BOARD PTU-7010C BOARD					RDP-057 RDP-058
CAPACITOR コンデンサ						
C 1	MDD-2-2G-474K	0.47UF,400V		000-104-440		
C 2	MDD-2-2J-103K	0.01UF,630V		000-108-663		
C 3	MDD-2-2J-103K	0.01UF,630V		000-108-663		
C 4	ECOS2DG331G	330UF,200V		000-110-370		
C 5	ECE-A1EU332	3300UF,25V		000-201-726		
C 6	ECE-A1CU471E	470UF,16V		000-201-808		
C 7	ECQ-M1H683KVM	0.068UF,50V		000-260-476		
C 8	ECOS2DG331G	330UF,200V		000-110-370		
C 9	ECOS2DG331G	330UF,200V		000-110-370		
C 10	ECE-A1AFE102	1000UF 10V		000-110-683		
C 11	ECQ-M1H472KVM	4700PF, 50V		000-260-421		
C 12	ECQ-M1H472KVM	4700PF, 50V		000-260-421		
C 13	PRE131CH821J50	820PF 50V		000-105-119		
C 14	ECE-A1CU470E	47UF 16V		000-206-104		
C 15	ECSF1EE106E	10UF 25V		000-232-761		
C 16	ECSF1EE106E	10UF 25V		000-232-761		
C 17	MDD-2-2G-474K	0.47UF,400V		000-104-440		
C 18	MDD-2-2J-103K	0.01UF,630V		000-108-663		
C 19	MDD-2-2J-103K	0.01UF,630V		000-108-663		
C 20	ECE-A1AFE472S	4700UF 10V		000-110-371		
C 21	ECE-A1CF102	1000UF 16V		000-201-620		
C 22	ECE-A1CF102	1000UF 16V		000-201-620		
C 23	ECE-A2AU471	470UF,100V		000-107-822		
C 24	ECE-A2CU101	100UF,160V		000-110-372		
C 25	ECE-A1HU010	1UF 50V		000-201-737		
C 26	ECE-A1HU101E	100MF 50V		000-201-836		
C 27	ECE-A1AFE102	1000UF 10V		000-110-683		
C 28	ECE-S1HU472H	4700UF 50V		000-110-373		
C 29	ECE-A1HN100S	10UF 50V		000-201-633		
C 31	ECE-A1HN100S	10UF 50V		000-201-633		
C 32	MDD-2-2J-103K	0.01UF,630V		000-108-663		
C 33	MDD-2-2J-103K	0.01UF,630V		000-108-663		
C 34	ECE-A1HN100S	10UF 50V		000-201-633		
C 35	ECE-A2WS3R3	3.3UF 450V		000-110-328		PTU-7010B
C 36	ECE-A2AU471	470UF,100V		000-107-822		
DIODE ダイオード						
CR 2	RD-9.1EB1	ZENER		000-134-835		
CR 3	MA27W-B			000-133-733		
CR 4	RB-151	13-3-5357		000-134-760		
CR 5	TLR124	LED		000-135-883		
CR 6	1S1588			000-112-795		
CR 7	1S1588			000-112-795		
CR 8	1S1588			000-112-795		
CR 9	TLR124	LED		000-135-883		

UNIT	DISPLAY	REF. DWG.	C3308-014-	BLOCK NO	2B04	7
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO	REMARKS	
記号	型名	規格		コード番号	備考	
PLUG プラグ						
P 3	VHR-10W					000-505-894
	BVH-21T-P1.1	VH CONTACT				000-100-049
P 10	SMP-03V-BC 3P	NH CONTACT				000-505-375
	BHF-001T-0.8BS					000-505-504
P 441	MLP-04	ML HOUSING				000-505-751
	LLF-01T-1.3					000-505-498
TRANSISTOR トランジスタ						
Q 1	2SB941AP					000-121-302
Q 2	2SC1162-C					000-124-743
Q 3	2SC1162-C					000-124-743
RESISTOR リジスタ						
R 1	ERX-2SJR22P	2W 0.22				000-375-427
R 2	ERD-25PJ223	0.25W 22K				000-330-389
R 3	ERG-1SJ100P	1W 10				000-375-384
R 4	ERG-1SJ100P	1W 10				000-375-384
R 5	ERG-2SJ103P	2W 10K				000-375-487
R 6	ERG-3SJ183P	3W 18K				000-375-555
R 7	ERG-3SJ183P	3W 18K				000-375-555
R 8	ERG-3SJ183P	3W 18K				000-375-555
R 9	ERG-3SJ183P	3W 18K				000-375-555
R 10	ERD-25PJ101	0.25W 100				000-330-333
R 11	ERG-1SJ103P	1W 10K				000-375-422
R 12	ERG-2SJ104P	2W 100K				000-110-684
R 13	ERG-1SJ472P	1W 4.7K				000-375-417
R 14	RW-10.1J	1W 0.1				000-104-811
R 15	ERX-1SJR33P	1W 0.33				000-375-364
R 16	ERD-25PJ101	0.25W 100				000-330-333
R 17	ERD-25PJ471	0.25W 470				000-330-349
R 18	ERD-25PJ471	0.25W 470				000-330-349
R 19	ERD-25PJ221	0.25W 220				000-330-341
R 20	ERD-25PJ221	0.25W 220				000-330-341
R 21	ERX-2SJR22P	2W 0.22				000-375-427
R 22	ERD-25PJ122	0.25W 1.2K				000-330-359
R 23	ERX-1SJ1R5P	1W 1.5				000-375-373
R 24	ERG-2SJ470P	2W 47				000-375-457
R 27	ERX-2SJR22P	2W 0.22				000-375-427
R 28	ERX-2SJR22P	2W 0.22				000-375-427
R 29	ERX-2SJR22P	2W 0.22				000-375-427
R 30	ERX-1ANJ100	1W 10				000-371-079
R 31	ERX-2ANJ4R7	2W 4.7				000-371-165
TRANSFORMER トランス						
T 1	RT-7033	03S7033				000-110-381
T 2	RT-7419	03S7419				000-113-848
T 3	RT-7272	03S7272				000-111-228
T 4	RT-7272	03S7272				000-111-228

UNIT	DISPLAY	REF. DWG.	C3308-014-	BLOCK NO	2B04	6
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO	REMARKS	
記号	型名	規格		コード番号	備考	
DIODE ダイオード						
CR 10	TLR124	LED		000-135-883		
CR 11	TLR124	LED		000-135-883		
CR 12	TLR124	LED		000-135-883		
CR 13	TLR124	LED		000-135-883		
CR 14	TLR124	LED		000-135-883		PTU-7010B
CR 15	TLR124	LED		000-135-883		
CR 16	TLR124	LED		000-135-883		PTU-7010B
CR 32	CTB-34M			000-110-393		
CR 33	RG4A			000-107-075		
CR 34	RG4A			000-107-075		
CR 35	RG4A			000-107-075		
CR 36	RG4A			000-107-075		
CR 37	HZ733	ZENER		000-105-934		
CR 38	RG4A			000-107-075		
CR 39	RG4A			000-107-075		
CR 40	RG4A			000-107-075		
CR 41	RG4A			000-107-075		
CR 42	RG4A			000-107-075		
CR 43	RG4A			000-107-075		
JACK ジャック						
J 1	B5P-VH	5P		000-505-823		
J 2	B6P-VH	6P		000-505-824		
J 3	B10P-VH	10P		000-505-828		
J 4	B10P-VH	10P		000-505-828		
J 5	B5P-VH	5P		000-505-823		
J 6	B6P-VH	6P		000-505-824		
J 7	B7P-VH	7P		000-505-825		
RELAY リレー						
K 1	SCD4A	13-3-5002		000-573-133		
K 2	SCD1A			000-573-136		
K 3	SCD1A			000-573-136		
K 4	SCD1A			000-573-136		
K 6	MR31-9HD			000-454-081		
K 7	SCD10A			000-110-374		
K 8	SCD4A	13-3-5002		000-573-133		
COIL コイル						
L 1	SC-10-10J			000-104-304		
L 2	HP-205			000-110-375		
L 3	HP-053J			000-110-376		
L 4	HP-023			000-110-377		
L 5	HP-024S			000-101-858		
L 6	HP-024S			000-101-858		
L 7	HP-024S			000-101-858		PTU-7010B
L 8	HP-024S			000-101-858		
L 9	HP-053			000-110-156		

UNIT	DISPLAY	REF. DWG.	C3308-014-	BLOCK NO	2B04	8
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO	REMARKS	
記号	型名	規格		コード番号	備考	
INTEGRATED CIRCUIT シックチップ						
U 1	RC-4210-1,03S4210-2	HI-MIC				000-164-253
U 2	RC6220-2	03S6220-12				000-104-531
U 3	RC-7134	03S7134-1				000-110-388
U 4	RC-7170	03S7170				000-110-389
POTENTIOMETER ポテンチオメータ						
VR 1	EVM-MWGA01B23	2K,B				000-103-648

UNIT	DISPLAY	REF. DWG.	C3308-014-	BLOCK NO	2806	9
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO	REMARKS		
記号	型名	規格	コード番号	備	考	
ASSEMBLY クミヒコ						
PTA-7072 BOARD						
CAPACITOR コンデンサ-						
C 1	ECW-H10H682JR	6800PF 1000V	000-259-610			
C 2	ECW-H10H682JR	6800PF 1000V	000-259-610			
DIODE ダイオード						
CR 1	CTU34S		000-132-463			
CR 2	CTU34R		000-132-462			
CR 3	CTB-34M		000-110-393			
CR 4	CTG-21R		000-110-394			
CR 5	CTG-21S	13-3-5361	000-132-437			
CR 6	CTG-21S	13-3-5361	000-132-437			
CR 7	CTU-24S		000-132-451			
TRANSISTOR トランジスタ-						
Q 1	2SK774		000-110-396			
Q 2	2SK774		000-110-396			
RESISTOR リジスタ						
R 1	ERX-3SJ2R2P	3W,2.2	000-375-505			
R 2	ERX-3SJ2R2P	3W,2.2	000-375-505			
R 3	ERD-25PJ102	0.25W 1K	000-330-357			
R 4	ERD-25PJ102	0.25W 1K	000-330-357			

UNIT	DISPLAY	REF. DWG.	C3308-023-	BLOCK NO	2811	11
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO	REMARKS		
記号	型名	規格	コード番号	備	考	
ASSEMBLY クミヒコ						
03P7133 MOTHER BOARD						
CAPACITOR コンデンサ-						
C 1	ECQVIH104JZW	0.1UF	000-105-967			
C 2	ECE-A1EU101E	100UF 25V	000-206-105			
C 3	ECE-A1CU100E	10UF 16V	000-201-672			
C 4	ECE-A1CU100E	10UF 16V	000-201-672			
C 5	ECE-A1CN100SE	10UF 16V B.P.	000-206-109			
C 7	ECE-A1CN100SE	10UF 16V B.P.	000-206-109			
C 8	ECE-A1CN100SE	10UF 16V B.P.	000-206-109			
C 9	ECE-A1AFE103	10000UF 10V	000-110-685			
C 10	ECE-A1AFE103	10000UF 10V	000-110-685			
C 11	ECE-A1EU101E	100UF 25V	000-206-105			
C 12	RPE132F104Z50	0.1UF 50V	000-104-501			
C 13	ECE-A1EU101E	100UF 25V	000-206-105			
C 14	RPE132F104Z50	0.1UF 50V	000-104-501			
C 15	RPE132F104Z50	0.1UF 50V	000-104-501			
C 16	RPE132F104Z50	0.1UF 50V	000-104-501			
DIODE ダイオード						
CR 1	1S158B		000-112-795			
CR 2	1S158B		000-112-795			
CR 3	1S158B		000-112-795			
CR 4	1S158B		000-112-795			
CR 5	1S158B		000-112-795			
CR 6	1S158B		000-112-795			
CR 7	1S158B		000-112-795			
JACK ジャック						
J 478	B8P-SHF-1AA-K	8P	000-100-592			
J 479	B8P-SHF-1AA-K	8P	000-100-592			
J 491	B10P-VH	10P	000-505-828			
J 492	B15P-SFH-1AA-K	15P	000-100-599			
J 493	B14P-SHF-1AA-K	13-3-3809-1	000-100-598			
J 494	B20P-SHF-1AA-K	13-3-3809-1	000-100-600			
J 495	B13P-SHF-1AA-K	13P	000-100-597			
J 496	B15P-SFH-1AA-K	15P	000-100-599			
J 497	B10P-SHF-1AA-K	13-3-3809-1	000-100-594			
J 498	B3P-SHF-1AA-K	3P	000-100-572			
J 551	128D-096S3A-S11A		000-110-122			
J 552	128D-096S3A-S11A		000-110-122			
J 553	128D-096S3A-S11A		000-110-122			
J 554	128D-096S3A-S11A		000-110-122			
J 555	128D-096S3A-S11A		000-110-122			
J 556	128D-096S3A-S11A		000-110-122			
J 557	128D-096S3A-S11A		000-110-122			
J 558	128D-096S3A-S11A		000-110-122			
J 559	128D-096S3A-S11A		000-110-122			

UNIT	DISPLAY	REF. DWG.	C3307-004-	BLOCK NO	2807	10
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO	REMARKS		
記号	型名	規格	コード番号	備	考	
ASSEMBLY クミヒコ						
HV-7130C FR-2020 008-226-520						
CAPACITOR コンデンサ-						
C 441	ECE-A2WS3R3	3.3UF 450V	000-110-328			
C 442	MDD-2-2G-474K	0.47UF,400V	000-104-440			
C 443	MDD-2-2G-474K	0.47UF,400V	000-104-440			
C 444	ECE-A2WS100	10UF 450V	000-106-334			
C 445	ECE-A2WS100	10UF 450V	000-106-334			
DIODE ダイオード						
CR 441	RU4DS		000-110-329			
CR 442	RU4DS		000-110-329			
CR 443	RU4DS		000-110-329			
CR 444	RU4DS		000-110-329			
CR 445	RU4DS		000-110-329			
CR 446	RU4DS		000-110-329			
CR 447	RU4DS		000-110-329			
CR 448	RU4DS		000-110-329			
CR 449	RU4DS		000-110-329			
CR 450	RU4DS		000-110-329			
CR 451	RU4DS		000-110-329			
CR 452	RU4DS		000-110-329			
JACK ジャック						
J 441	MLR-04	ML HOUSING	000-505-771			
J 442	SLM-01T-1.3	ML HOUSING	000-505-394			
J 442	MLR-02	ML HOUSING	000-505-770			
J 442	SLM-01T-1.3	ML HOUSING	000-505-394			
COIL コイル						
L 441	RL-3742		000-733-742			
L 442	RL-3742		000-733-742			
RESISTOR リジスタ						
R 441	ERG-3SJ183P	3W 18K	000-375-555			
R 442	ERG-3SJ183P	3W 18K	000-375-555			
R 443	ERG-3SJ183P	3W 18K	000-375-555			
R 444	ERG-3SJ183P	3W 18K	000-375-555			

UNIT	DISPLAY	REF. DWG.	C3308-023-	BLOCK NO	2811	12
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO	REMARKS		
記号	型名	規格	コード番号	備	考	
JACK ジャック						
J 560	128D-096S3A-S11A		000-110-122			
J 561	128D-096S3A-S11A		000-110-122			
J 562	128D-096S3A-S11A		000-110-122			
J 563	B7P-SHF-1AA-K	7P	000-100-591			
TRANSISTOR トランジスタ-						
Q 1	2SC372GTM-0		000-123-560			
Q 2	2SC372GTM-0		000-123-560			
Q 3	2SA495GTM-0		000-116-992			
Q 4	2SA495GTM-0		000-116-992			
Q 5	2SA495GTM-0		000-116-992			
Q 6	2SA495GTM-0		000-116-992			
RESISTOR リジスタ						
R 1	ERD-25PJ222	0.25W 2.2K	000-330-365			
R 2	ERD-25PJ220	0.25W 22	000-330-317			
R 3	ERD-25PJ562	0.25W 5.6K	000-330-375			
R 4	ERD-25PJ223	0.25W 22K	000-330-389			
R 5	ERD-25PJ470	0.25W 47	000-330-325			
R 6	ERD-25PJ332	0.25W 3.3K	000-330-369			
R 7	ERD-25PJ103	0.25W 10K	000-330-381			
R 8	ERD-25PJ820	0.25W 82	000-330-331			
R 9	ERD-25PJ471	0.25W 470	000-330-349			
R 11	ERD-25PJ220	0.25W 22	000-330-317			
R 12	ERD-25PJ222	0.25W 2.2K	000-330-365			
R 13	ERD-25PJ103	0.25W 10K	000-330-381			
R 14	ERD-25PJ332	0.25W 3.3K	000-330-369			
R 15	ERD-25PJ470	0.25W 47	000-330-325			
R 16	ERD-25PJ820	0.25W 82	000-330-331			
R 17	ERD-25PJ471	0.25W 470	000-330-349			
R 18	ERD-25PJ471	0.25W 470	000-330-349			
R 19	ERO-25CHF2701	0.25W 2.7K	000-106-888			
R 20	ERO-25CHF6801	0.25W 6.8K	000-110-686			
INTEGRATED CIRCUIT シリコンチップ						
U 1	M51946BL		000-110-171			

UNIT	DISPLAY	REF. DWG.	C3308-013-	BLOCK NO.	2B12	13
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.	REMARKS	
記号	型名	規格		コード番号	備考	
ASSEMBLY フミコン						
	VDA-7047	FR-2010/2020		008-226-510		
CAPACITOR コンデンサ						
C 1	ECE-A1CU101E	100UF 16V		000-206-112		
C 2	ECE-A1CU100E	10UF 16V		000-201-672		
C 3	ECE-A1CU100E	10UF 16V		000-201-672		
C 4	RPE132F104Z50	0.1UF 50V		000-104-501		
C 5	ECE-A1CU100E	10UF 16V		000-201-672		
C 6	ECQ-M1H222KVM	2200PF 50V		000-260-419		
C 7	ECE-A1CN100SE	10UF 16V B.P.		000-206-109		
C 8	ECE-A1CN100SE	10UF 16V B.P.		000-206-109		
C 9	ECE-A1CU101E	100UF 16V		000-206-112		
C 10	ECE-A1CN100SE	10UF 16V B.P.		000-206-109		
C 11	ECQ-M1H473KVM	0.047UF 50V		000-260-417		
C 12	ECE-A1CU101E	100UF 16V		000-206-112		
C 13	ECE-A1CU100E	10UF 16V		000-201-672		
C 14	ECE-A1CU100E	10UF 16V		000-201-672		
C 15	ECE-A1CU101E	100UF 16V		000-206-112		
C 16	ECC-W1H560JCS	56PF 50V		000-256-422		
C 17	ECE-A1CU100E	10UF 16V		000-201-672		
C 18	ECQ-M1H102KVM	1000PF 50V		000-260-415		
C 19	ECE-A1CU100E	10UF 16V		000-201-672		
C 20	ECE-A1CU100E	10UF 16V		000-201-672		
C 21	ECE-A1CN100SE	10UF 16V B.P.		000-206-109		
C 22	ECE-A1CU100E	10UF 16V		000-201-672		
C 23	ECE-A1CU100E	10UF 16V		000-201-672		
C 25	ECE-A1CU100E	10UF 16V		000-201-672		
C 26	ECE-A1CU100E	10UF 16V		000-201-672		
C 27	RPE132CH151J50	150PF 50V		000-105-388		
C 28	ECE-A1CU101E	100UF 16V		000-206-112		
C 29	ECE-A1CU100E	10UF 16V		000-201-672		
C 30	ECE-A1CU100E	10UF 16V		000-201-672		
C 31	ECE-A1CU101E	100UF 16V		000-206-112		
C 32	RPE132F104Z50	0.1UF 50V		000-104-501		
C 33	RPE132F104Z50	0.1UF 50V		000-104-501		
C 34	ECE-A1CU101E	100UF 16V		000-206-112		
C 35	RPE132F104Z50	0.1UF 50V		000-104-501		
C 36	ECE-A1CU101E	100UF 16V		000-206-112		
C 37	ECE-A1CU101E	100UF 16V		000-206-112		
C 38	ECE-A1CU100E	10UF 16V		000-201-672		
C 39	ECE-A1CU101E	100UF 16V		000-206-112		
C 40	RPE132F104Z50	0.1UF 50V		000-104-501		
C 41	RPE132CH101J50	100PF 50V		000-104-505		
C 42	RPE132CH101J50	100PF 50V		000-104-505		
C 43	PRE113R474K50	0.47UF 50V		000-105-385		
C 44	ECE-A1CN100SE	10UF 16V B.P.		000-206-109		
C 45	ECQ-M1H223KVM	0.022UF 50V		000-260-414		
C 46	ECQ-M1H223KVM	0.022UF 50V		000-260-414		
C 47	ECQ-M1H332KVM	3300PF 50V		000-260-413		

UNIT	DISPLAY	REF. DWG.	C3308-013-	BLOCK NO.	2B12	15
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.	REMARKS	
記号	型名	規格		コード番号	備考	
TRANSISTOR トランジスタ						
Q 2	2SA495GTM-0			000-116-992		
Q 3	2SA495GTM-0			000-116-992		
Q 4	2SA495GTM-0			000-116-992		
Q 5	2SC752GTM-0			000-124-129		
Q 6	2SA495GTM-0			000-116-992		
Q 7	2SA495GTM-0			000-116-992		
Q 8	2SC752GTM-0			000-124-129		
Q 9	2SA495GTM-0			000-116-992		
Q 10	2SC752GTM-0			000-124-129		
Q 11	2SA495GTM-0			000-116-992		
Q 12	2SC752GTM-0			000-124-129		
Q 13	2SC752GTM-0			000-124-129		
Q 14	2SC752GTM-0			000-124-129		
Q 15	2SC752GTM-0			000-124-129		
Q 16	2SC1815-Y			000-125-631		
Q 17	2SC1815-Y			000-125-631		
Q 18	2SC1815-Y			000-125-631		
Q 19	2SA495GTM-0			000-116-992		
Q 20	2SA495GTM-0			000-116-992		
Q 21	2SC1815-Y			000-125-631		
Q 22	2SA495GTM-0			000-116-992		
Q 23	2SA495GTM-0			000-116-992		
Q 24	2SA495GTM-0			000-116-992		
Q 26	2SA1015-Y			000-118-041		
Q 27	2SA1015-Y			000-118-041		
Q 28	2SA1015-Y			000-118-041		
Q 29	2SC1815-Y			000-125-631		
Q 30	2SK161-GR			000-129-370		
RESISTOR リジスタ						
R 1	ERD-25PJ151	0.25W 150		000-330-337		
R 2	ERD-25PJ102	0.25W 1K		000-330-357		
R 3	ERD-25PJ182	0.25W 1.8K		000-330-363		
R 4	ERD-25PJ471	0.25W 470		000-330-349		
R 5	ERD-25PJ331	0.25W 330		000-330-345		
R 6	ERD-25PJ182	0.25W 1.8K		000-330-363		
R 7	ERD-25PJ122	0.25W 1.2K		000-330-359		
R 8	ERD-25PJ102	0.25W 1K		000-330-357		
R 9	ERD-25PJ222	0.25W 2.2K		000-330-365		
R 10	ERD-25PJ223	0.25W 22K		000-330-389		
R 11	ERD-25PJ102	0.25W 1K		000-330-357		
R 12	ERD-25PJ101	0.25W 100		000-330-333		
R 13	ERD-25PJ471	0.25W 470		000-330-349		
R 14	ERD-25PJ471	0.25W 470		000-330-349		
R 15	ERD-25PJ271	0.25W 270		000-330-343		
R 16	ERD-25PJ122	0.25W 1.2K		000-330-359		
R 17	ERD-25PJ103	0.25W 10K		000-330-381		
R 18	ERD-25PJ101	0.25W 100		000-330-333		
R 19	ERD-25PJ222	0.25W 2.2K		000-330-365		
R 20	ERD-25PJ331	0.25W 330		000-330-345		
R 21	ERD-25PJ471	0.25W 470		000-330-349		

UNIT	DISPLAY	REF. DWG.	C3308-013-	BLOCK NO.	2B12	14
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.	REMARKS	
記号	型名	規格		コード番号	備考	
CAPACITOR コンデンサ						
C 48	ECE-A1CU101E	100UF 16V		000-206-112		
C 49	ECQ-M1H123KVM	0.012UF 50V		000-260-472		
C 50	ECE-A1CU100E	10UF 16V		000-201-672		
C 51	RPE132F104Z50	0.1UF 50V		000-104-501		
C 52	RPE132F104Z50	0.1UF 50V		000-104-501		
C 53	RPE132F104Z50	0.1UF 50V		000-104-501		
C 54	RPE132F104Z50	0.1UF 50V		000-104-501		
C 56	RPE132CH221J50	220PF 50V		000-105-390		
C 57	ECQ-M1H123KVM	0.012UF 50V		000-260-472		
C 58	RPE132CH221J50	220PF 50V		000-105-390		
C 59	ECC-W1H330JCS	33PF 50V		000-256-404		
C 60	ECQ-M1H223KVM	0.022UF 50V		000-260-414		
C 61	PRE113R474K50	0.47UF 50V		000-105-385		
DIODE ダイオード						
CR 1	1S1588			000-112-795		
CR 2	1S1588			000-112-795		
CR 3	1S1588			000-112-795		
CR 4	1S1588			000-112-795		
CR 5	1S1588			000-112-795		
CR 6	1S1588			000-112-795		
CR 7	1S1588			000-112-795		
CR 8	1S1588			000-112-795		
CR 9	1S1588			000-112-795		
CR 10	1S1588			000-112-795		
CR 11	1S1588			000-112-795		
CR 12	1S1588			000-112-795		
CR 13	1S1588			000-112-795		
CR 14	1S1588			000-112-795		
CR 15	1S1588			000-112-795		
CR 16	RD9.1FB3			000-112-123		
CR 17	RD9.1FB3			000-112-123		
CR 18	1S1588			000-112-795		
CR 19	1S1588			000-112-795		
CR 20	1S1588			000-112-795		
JACK ジャック						
J 201	CN-3561 1P (F)			000-510-559		
J 202	B15P-SFH-1AA-K	15P		000-100-599		
J 203	DIC-149-4P			000-112-848		
COIL コイル						
L 1	EL0606SKI101			000-100-172		
PLUG プラグ						
P 203	DIC-128			000-501-950		
TRANSISTOR トランジスタ						
Q 1	2SA495GTM-0			000-116-992		

UNIT	DISPLAY	REF. DWG.	C3308-013-	BLOCK NO.	2B12	16
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.	REMARKS	
記号	型名	規格		コード番号	備考	
RESISTOR リジスタ						
R 22	ERD-25PJ471	0.25W 470		000-330-349		
R 23	ERD-25PJ103	0.25W 10K		000-330-381		
R 24	ERD-25PJ561	0.25W 560		000-330-351		
R 25	ERD-25PJ271	0.25W 270		000-330-343		
R 26	ERD-25PJ331	0.25W 330		000-330-345		
R 27	ERD-25PJ472	0.25W 4.7K		000-330-373		
R 28	ERD-25PJ223	0.25W 22K		000-330-389		
R 29	ERD-25PJ331	0.25W 330		000-330-345		
R 30	ERD-25PJ561	0.25W 560		000-330-351		
R 31	ERD-25PJ153	0.25W 15K		000-330-385		
R 32	ERD-25PJ222	0.25W 2.2K		000-330-365		
R 33	ERD-25PJ102	0.25W 1K		000-330-357		
R 34	ERD-25PJ221	0.25W 220		000-330-341		
R 35	ERD-25PJ103	0.25W 10K		000-330-381		
R 36	ERD-25PJ222	0.25W 2.2K		000-330-365		
R 37	ERD-25PJ332	0.25W 3.3K		000-330-369		</

UNIT	DISPLAY	REF. DWG.	C3308-013-	BLOCK NO.	2B12	17
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO.	REMARKS		
記号	型名	規格	コード番号	備考		
RESISTOR						
抵抗器						
R 75	ERD-25PJ223	0.25W 22K	000-330-389			
R 76	ERD-25PJ223	0.25W 22K	000-330-389			
R 77	ERD-25PJ103	0.25W 10K	000-330-381			
R 78	ERD-25PJ223	0.25W 22K	000-330-389			
R 79	ERD-25PJ102	0.25W 1K	000-330-357			
R 80	ERD-25PJ471	0.25W 470	000-330-349			
R 81	ERD-25PJ223	0.25W 22K	000-330-389			
R 82	ERD-25PJ221	0.25W 220	000-330-341			
R 83	ERD-25PJ102	0.25W 1K	000-330-357			
R 84	ERD-25PJ331	0.25W 330	000-330-345			
R 85	ERD-25PJ102	0.25W 1K	000-330-357			
R 86	ERG-15J330P	1W 33	000-375-390			
R 87	ERG-25PJ390	0.25W 56	000-375-394			
R 90	ERD-25PJ393	0.25W 39K	000-330-395			
R 91	ERD-25PJ223	0.25W 22K	000-330-389			
R 92	ERD-25PJ153	0.25W 15K	000-330-385			
R 94	ERD-25PJ471	0.25W 470	000-330-349			
R 95	ERD-25PJ102	0.25W 1K	000-330-357			
R 96	ERD-25PJ331	0.25W 330	000-330-345			
R 97	ERD-25PJ103	0.25W 10K	000-330-381			
R 98	ERD-25PJ823	0.25W 82K	000-330-403			
R 99	ERD-25PJ472	0.25W 4.7K	000-330-373			
R 100	ERD-25PJ472	0.25W 4.7K	000-330-373			
R 101	ERD-25PJ682	0.25W 6.8K	000-330-377			
R 102	ERD-25PJ470	0.25W 47	000-330-325			
R 103	ERD-25PJ272	0.25W 2.7K	000-330-367			
R 104	ERD-25PJ822	0.25W 8.2K	000-330-379			
R 106	ERD-25PJ331	0.25W 330	000-330-345			
R 108	ERD-25PJ152	0.25W 1.5K	000-330-361			
R 109	ERD-25TJ333	0.25W 33K	000-330-393			
R 110	ERD-25PJ470	0.25W 47	000-330-325			
R 111	ERD-25PJ102	0.25W 1K	000-330-357			
R 112	ERD-25PJ822	0.25W 8.2K	000-330-379			
R 113	ERD-25PJ332	0.25W 3.3K	000-330-369			
R 114	ERD-25PJ470	0.25W 47	000-330-325			
R 115	ERD-25PJ101	0.25W 100	000-330-333			
R 117	ERD-25PJ103	0.25W 10K	000-330-381			
R 118	ERD-25TJ333	0.25W 33K	000-330-393			
R 121	ERD-25PJ183	0.25W 18K	000-330-387			
R 122	ERD-25PJ820	0.25W 82	000-330-331			
R 123	ERD-25PJ151	0.25W 150	000-330-337			
R 124	ERD-25PJ823	0.25W 82K	000-330-403			
R 125	ERD-25PJ223	0.25W 22K	000-330-389			
R 126	ERD-25PJ123V	0.25W 12K	000-330-717			
R 127	ERD-25PJ332	0.25W 3.3K	000-330-369			
R 128	ERD-25PJ223	0.25W 22K	000-330-389			
INTEGRATED CIRCUIT						
集積回路						
U 1	TC4066BP		000-163-264			
U 2	TC4066BP		000-163-264			

UNIT	DISPLAY	REF. DWG.	C3311-008-	BLOCK NO.	2B13	19
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO.	REMARKS		
記号	型名	規格	コード番号	備考		
ASSEMBLY						
組立						
PAR-7139		FR-2010/2020	008-226-370			
CAPACITOR						
コンデンサ						
C 401	ECE-A1CU101E	100UF 16V	000-206-112			
C 402	RPE132F104250	0.1UF 50V	000-104-501			
DIODE						
ダイオード						
CR 401	SLP-384H-51-A		000-132-875			
CR 402	SLP-384H-51-A		000-132-875			
CR 403	SLP-384H-51-A		000-132-875			
CR 404	SLP-384H-51-A		000-132-875			
CR 405	SLP-384H-51-A		000-132-875			
CR 406	SLP-384H-51-A		000-132-875			
JACK						
ジャック						
J 401	B11P-SHF-1AA-K	11P	000-100-595			
J 402	B4P-SHF-1AA-K	4P	000-100-573			
J 403	B4P-SHF-1AA-K	4P	000-100-573			
LOUDSPEAKER						
スピーカ						
LS 401	EFB-CD37C11		000-110-848			
RESISTOR						
抵抗器						
R 401	EXB-F9E103J	0.125W 10K	000-378-901			
R 402	EXB-F9E103J	0.125W 10K	000-378-901			
R 403	EXB-F5E473J	47KX4	000-379-085			
SWITCH						
スイッチ						
S 401	SKHCAC037A		000-100-871			
S 402	SKHCAC037A		000-100-871			
S 403	SKHCAC037A		000-100-871			
S 404	SKHCAC037A		000-100-871			
S 405	SKHCAC037A		000-100-871			
S 406	SKHCAC037A		000-100-871			
S 407	SKHCAC037A		000-100-871			
S 408	SKHCAC037A		000-100-871			
S 409	SKHCAC037A		000-100-871			
S 410	SKHCAC037A		000-100-871			
S 411	SKHCAC037A		000-100-871			
S 412	SKHCAC037A		000-100-871			
S 413	SKHCAC037A		000-100-871			
S 414	SKHCAC037A		000-100-871			
S 415	SKHCAC037A		000-100-871			
S 416	SKHCAC037A		000-100-871			
S 417	SKHCAC037A		000-100-871			
S 418	SKHCAC037A		000-100-871			
S 419	EWT-XDFS3550B	13-3-5309	000-475-581	ENCODER		

UNIT	DISPLAY	REF. DWG.	C3308-013-	BLOCK NO.	2B12	18
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO.	REMARKS		
記号	型名	規格	コード番号	備考		
INTEGRATED CIRCUIT						
集積回路						
U 3	HD7406P		000-162-198			
U 4	HD74LS26P		000-162-426			
U 5	TLPS31-GB		000-135-837			
U 6	HD74LS123P		000-162-480			
U 7	HD74LS123P		000-162-480			
U 8	HD74LS123P		000-162-480			
POTENTIOMETER						
*オームコンタクター						
VR 1	EVM-MCGA01B22	200 (00S0119)	000-103-629			
VR 2	EVM-MCGA01B53	5K	000-103-631			
VR 3	EVM-MCGA01B53	5K	000-103-631			
VR 4	EVM-MCGA01B14	10K	000-103-632			

UNIT	DISPLAY	REF. DWG.	C3311-008-	BLOCK NO.	2B13	20
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO.	REMARKS		
記号	型名	規格	コード番号	備考		
INTEGRATED CIRCUIT						
集積回路						
U 401	HD74LS148P		000-162-492			
U 402	HD74LS148P		000-162-492			
U 403	HD-74LS08P		000-162-408			
U 404	TC74HC14P		000-163-421			

UNIT	DISPLAY	REF. DWG.	C3311-008-	BLOCK NO.	2B14	21
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.	REMARKS	
記号	型名	規格	格	コード番号	備	考
ASSEMBLY クミヒン						
	PAL-7140	FR-2010/2020		008-226-380		
CAPACITOR コンデンサ						
C 421	ECE-A1CU101E	100UF 16V		000-206-112		
C 422	RPE132F104Z50	0.1UF 50V		000-104-501		
DIODE ダイオード						
CR 421	SLP-384H-51-A			000-132-875		
CR 422	SLP-384H-51-A			000-132-875		
CR 423	SLP-384H-51-A			000-132-875		
CR 424	SLP-384H-51-A			000-132-875		
CR 425	SLP-384H-51-A			000-132-875		
CR 426	SLP-384H-51-A			000-132-875		
JACK ジャック						
J 421	B6P-VH	6P		000-505-824		
J 422	B9P-SHF-1AA-K	9P		000-100-593		
J 423	B5P-SHF-1AA-K	5P		000-100-582		
RESISTOR 抵抗						
R 421	EXB-F9E103J	0.125W 10K		000-378-901		
R 422	EXB-F9E103J	0.125W 10K		000-378-901		
R 423	EXB-F5E473J	47KX4		000-379-085		
SWITCH スイッチ						
S 421	SKHCAC037A			000-100-871		
S 422	SKHCAC037A			000-100-871		
S 423	SKHCAC037A			000-100-871		
S 424	SKHCAC037A			000-100-871		
S 425	SKHCAC037A			000-100-871		
S 426	SKHCAC037A			000-100-871		
S 427	SKHCAC037A			000-100-871		
S 428	SKHCAC037A			000-100-871		
S 429	SKHCAC037A			000-100-871		
S 430	SKHCAC037A			000-100-871		
S 431	SKHCAC037A			000-100-871		
S 432	SKHCAC037A			000-100-871		
S 433	SKHCAC037A			000-100-871		
S 434	EMT-XDF5350B	13-3-5309		000-475-581	ENCODER	
S 435	RR-5075 13-3-5075			000-630-764		
INTEGRATED CIRCUIT システムIC						
U 421	HD74LS14BP			000-162-492		
U 422	HD74LS14BP			000-162-492		
U 423	HD-74LS08P			000-162-408		
U 424	TC74HC14P			000-163-421		

UNIT	DISPLAY	REF. DWG.	C3311-008-	BLOCK NO.	2B16	23
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.	REMARKS	
記号	型名	規格	格	コード番号	備	考
ASSEMBLY クミヒン						
	PAV-7142	FR-2010/2020		008-226-400		
DIODE ダイオード						
CR 451	SLP-384H-51-A			000-132-875		
CR 452	SLP-384H-51-A			000-132-875		
CR 453	SLP-384H-51-A			000-132-875		
CR 454	SLP-384H-51-A			000-132-875		
CR 455	SLP-384H-51-A			000-132-875		
CR 456	SLP-384H-51-A			000-132-875		
CR 457	SLP-384H-51-A			000-132-875		
CR 458	SLP-384H-51-A			000-132-875		
CR 459	TLG-154			000-135-885		
JACK ジャック						
J 451	B9P-SHF-1AA-K	9P		000-100-593		
J 452	B12P-SHF-1AA-K	12P		000-100-596		
J 453	B5P-VH	5P		000-505-823		
J 454	B5P-SHF-1AA-K	5P		000-100-582		
J 455	B4P-SHF-1AA-K	4P		000-100-573		
J 456	B3P-SHF-1AA-K	3P		000-100-572		
J 458	B4P-SHF-1AA-K	4P		000-100-573		
RESISTOR 抵抗						
R 451	ERD-25PJ102	0.25W 1K		000-330-357		
R 452	ERD-25PJ102	0.25W 1K		000-330-357		
R 453	ERD-25PJ102	0.25W 1K		000-330-357		
R 454	ERD-25PJ100	0.25W 10		000-330-309		
R 455	ERD-25PJ270	0.25W 27		000-330-319		
R 456	ERD-25PJ100	0.25W 10		000-330-309		
R 457	ERD-25PJ270	0.25W 27		000-330-319		
SWITCH スイッチ						
S 451	SRRZD4016A	13-3-5078		000-630-769		
INTEGRATED CIRCUIT システムIC						
U 451	TD62503P			000-163-096		
POTENTIOMETER 可変抵抗器						
VR 451	EVH17A280B15	03S7233		000-110-694		
VR 452	EVH17A280B23	03S7231		000-110-695		
VR 453	EVH17A280B53	03S7232		000-110-696		
VR 454	EVH17A280B53	03S7232		000-110-696		
VR 455	EVH17A280B23	03S7231		000-110-695		

UNIT	DISPLAY	REF. DWG.	C3311-008-	BLOCK NO.	2B15	22
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.	REMARKS	
記号	型名	規格	格	コード番号	備	考
ASSEMBLY クミヒン						
	PAF-7141	FR-2010/2020		008-226-390		
CAPACITOR コンデンサ						
C 441	ECE-A1CU101E	100UF 16V		000-206-112		
C 442	RPE132F104Z50	0.1UF 50V		000-104-501		
DIODE ダイオード						
CR 441	SLP-384H-51-A			000-132-875		
CR 442	SLP-384H-51-A			000-132-875		
CR 443	SLP-384H-51-A			000-132-875		
CR 444	SLP-384H-51-A			000-132-875		
CR 445	SLP-384H-51-A			000-132-875		
CR 446	SLP-384H-51-A			000-132-875		
JACK ジャック						
J 444	B57P-SHF-1AA-K	13-3-3809-1		000-100-605		
J 445	B54P-SHF-1AA-K	13-3-3809-1		000-100-602		
RESISTOR 抵抗						
R 441	EXB-F9E103J	0.125W 10K		000-378-901		
R 442	EXB-F9E103J	0.125W 10K		000-378-901		
SWITCH スイッチ						
S 441	SKHCAC037A			000-100-871		
S 442	SKHCAC037A			000-100-871		
S 443	SKHCAC037A			000-100-871		
S 444	SKHCAC037A			000-100-871		
S 445	SKHCAC037A			000-100-871		
S 446	SKHCAC037A			000-100-871		
S 447	SKHCAC037A			000-100-871		
S 448	SKHCAC037A			000-100-871		
S 449	SKHCAC037A			000-100-871		
INTEGRATED CIRCUIT システムIC						
U 441	HD74LS14BP			000-162-492		
U 442	HD74LS14BP			000-162-492		
U 443	HD-74LS08P			000-162-408		

UNIT	DISPLAY	REF. DWG.	C3311-008-	BLOCK NO.	2B17	24
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.	REMARKS	
記号	型名	規格	格	コード番号	備	考
FPHED フォトリソグラフィ						
	PST-7143	FR-2010/2020		008-226-420		
DIODE ダイオード						
CR 461	TLR124	LED		000-135-883		
JACK ジャック						
J 461	B10P-SHF-1AA-K	13-3-3809-1		000-100-594		
J 462	B9P-SHF-1AA-K	9P		000-100-593		
J 463	B5P-SHF-1AA-K	5P		000-100-582		
J 465	B6P-SHF-1AA-K	6P		000-100-584		
METER メータ						
M 461	SH48#3075 RP1892-3			000-631-892		
PLUG プラグ						
P 843	H3P-SHF-AA, 3P BHF-001T-0.8BS	NH HOUSING NH CONTACT		000-505-596 000-505-504		
RESISTOR 抵抗						
R 461	ERD-25PJ152	0.25W 1.5K		000-330-361		
R 462	ERD-25PJ102	0.25W 1K		000-330-357		
R 463	ERD-25PJ332	0.25W 3.3K		000-330-369		
SWITCH スイッチ						
S 461	SKHCADA			000-474-750		
S 462	SKHCADA			000-474-750		
S 463	SKHCADA			000-474-750		
POTENTIOMETER 可変抵抗器						
VR 461	RK1211210A0PA *203B*	13-3-4269		000-319-062		
VR 462	EVM-MCGA01B24	20K (00S0119)		000-103-591		
VR 463	EVM-MCGA01B53	5K		000-103-631		
VR 464	EVM-MCGA01B53	5K		000-103-631		

UNIT	DISPLAY	REF. DWG.	C3307-009-	BLOCK NO.	2B51	29
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.	REMARKS	
記号	型名	規格		コード番号	備考	
RESISTOR						
抵抗器						
R 1	ERD-25PJ682	0.25W	6.8K	000-330-377		
R 2	ERD-25PJ472	0.25W	4.7K	000-330-373		
R 3	ERD-25PJ682	0.25W	6.8K	000-330-377		
R 4	ERD-25PJ472	0.25W	4.7K	000-330-373		
R 5	ERD-25PJ682	0.25W	6.8K	000-330-377		
R 6	ERD-25PJ472	0.25W	4.7K	000-330-373		
R 7	EF-1/2-150K,J	0.5W	150K	000-374-109		
R 8	EF-1/2-150K,J	0.5W	150K	000-374-109		
R 9	EF-1/2-150K,J	0.5W	150K	000-374-109		
R 10	ERD-25PJ332	0.25W	3.3K	000-330-369		
R 11	ERD-25PJ103	0.25W	10K	000-330-381		
R 12	ERD-25PJ332	0.25W	3.3K	000-330-369		
R 13	ERD-25PJ103	0.25W	10K	000-330-381		
R 14	ERD-25PJ332	0.25W	3.3K	000-330-369		
R 15	ERD-25PJ103	0.25W	10K	000-330-381		
R 16	ERG-2AN472U	2W	4.7K	000-110-415		
R 17	ERG-2AN472U	2W	4.7K	000-110-415		
R 18	ERG-2AN332U	2W	3.3K	000-110-416		
R 19	ERG-2AN332U	2W	3.3K	000-110-416		
R 20	ERG-2AN181U	2W	180	000-110-417		
R 21	ERD-25PJ472	0.25W	4.7K	000-330-373		
R 22	ERD-25PJ103	0.25W	10K	000-330-381		
R 23	ERD-25PJ103	0.25W	10K	000-330-381		
R 24	EF1/2-330K J	0.5W	330K	000-110-418		
R 25	EF1/2-330K J	0.5W	330K	000-110-418		
R 26	ERD-25PJ823	0.25W	82K	000-330-403		
R 27	ERD-25PJ823	0.25W	82K	000-330-403		
R 28	ERD-25PJ473	0.25W	47K	000-330-397		
R 29	EF 1/2 100KJ	0.5W	100K	000-374-101		
R 30	ERD-25PJ102	0.25W	1K	000-330-357		
R 31	ERG-1ANP220S	1W	22	000-110-419		
R 32	ERG-1ANP180S	0.25W	18	000-110-420		
R 33	ERD-25J563	0.25W	56K	000-330-399		
R 34	ERD-25PJ562	0.25W	5.6K	000-330-375		
R 35	ERD-25PJ101	0.25W	100	000-330-333		
R 36	ERD-25PJ223	0.25W	22K	000-330-389		
R 37	ERD-25PJ823	0.25W	82K	000-330-403		
R 38	ERD-25J563	0.25W	56K	000-330-399		
R 39	EXB-C47-224K	0.25W	220K X 7	000-378-334		
R 40	EXB-C47-224K	0.25W	220K X 7	000-378-334		
R 41	EXB-C47-224K	0.25W	220K X 7	000-378-334		
R 42	EXB-T44-333J	0.25W	33K X 4	000-378-854		
R 43	EXB-T44-333J	0.25W	33K X 4	000-378-854		
R 44	EXB-T44-333J	0.25W	33K X 4	000-378-854		
R 45	ERD-25PJ682	0.25W	6.8K	000-330-377		
R 46	ERD-25PJ103	0.25W	10K	000-330-381		
R 47	EF-1/2-1M,J	0.5W	1M	000-374-110		
R 48	ERD-25PJ472	0.25W	4.7K	000-330-373		
R 49	ERD-25PJ682	0.25W	6.8K	000-330-377		
R 50	ERD-25PJ271	0.25W	270	000-330-343		
R 51	EXB-C44-331K	330X4		000-110-422		

UNIT	DISPLAY	REF. DWG.	C3311-008-	BLOCK NO.	2B52	31
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.	REMARKS	
記号	型名	規格		コード番号	備考	
ASSEMBLY						
組立品						
	CG-4137	ASK		008-167-350		
JACK						
ジャック						
J 1605	B5P-SHF-1AA	5P		000-505-553		
J 1606	B5P-SHF-1AA	5P		000-505-553		
SWITCH						
スイッチ						
S 1606	SSB062016	03S6240		000-474-555		

- END -

UNIT	DISPLAY	REF. DWG.	C3307-009-	BLOCK NO.	2B51	30
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.	REMARKS	
記号	型名	規格		コード番号	備考	
RESISTOR						
抵抗器						
R 52	EXB-C44-331K	330X4		000-110-422		
R 53	EXB-F5E103J	0.125W	10KX4	000-379-082		
R 54	EXB-C44-331K	330X4		000-110-422		
R 55	ERG-1ANP151S	1W	150	000-110-421		
R 56	ERD-25PJ103	0.25W	10K	000-330-381		
R 57	ERD-25PJ102	0.25W	1K	000-330-357		
VARISTOR						
バリスタ						
RV 1	ERZ-C07DK241			000-132-690		
RV 2	ERZ-C07DK241			000-132-690		
RV 3	ERZ-C07DK241			000-132-690		
RV 4	ERZ-C07DK241			000-132-690		
SWITCH						
スイッチ						
S 1	DSS104			000-471-330		
TRANSFORMER						
トランス						
T 1	RT-6829	03S6829		000-110-423		
T 2	ETP-24Z4AY			000-410-800		
INTEGRATED CIRCUIT						
シロウキカイロ						
U 1	TA75902P			000-163-700		
U 2	TA75902P			000-163-700		
U 3	TA75902P			000-163-700		
U 4	TA75902P			000-163-700		
U 5	TD62504P			000-163-097		
U 6	LC9022A-085	03S6839		000-110-424		
U 7	UPC14312H			000-161-105		
U 8	UPC14305H			000-161-104		
U 9	TC4049BP			000-163-255		
U 10	TC4538BP			000-163-907		
POTENTIOMETER						
ポテンシヨメータ						
VR 1	EVM-MCGA01B23	2K		000-103-630		

FURUNOELECTRICAL PARTS LIST
電気部品表

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MODEL	FR-2050X/2020X		
UNIT	SCANNER UNIT RSB-003/4/5		PAGE
REF. DWG.	C3263-022-	BLOCK NO.	1B

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SYMBOL 記号	TYPE 型名	SPECIFICATIONS 規格	CODE NO. コード番号	REMARKS 備考
1B02 1B04	MP-3795 MPT-6237	FR-2050X FR-1222X	008-256-290 008-192-560	1 PHASE

MOTOR		モーター		
1B01B0901	RM-5374-1 03S5374-1 RM-5213 13-3-5213 RM-5305-1 03S5305-1	AC220 3FAI 200W AC220 3FAI 300W AC100V 200W	000-430-761 000-430-672 000-430-760	200W 300W 1 PHASE
1B03B0902	23CX6	13-3-4613	000-640-905	OPTION
DIODE		ダイオード		
1B11CR3001	BCR-16C10L		000-132-185	DEICER
HEATER		ヒータ		
1B11HT3001	NDO-50040,60W	13-3-3409	000-633-409	DEICER
1B11HT3002	NDO-50040,60W	13-3-3409	000-633-409	DEICER
RESISTOR		抵抗		
1B11R3004	ERD-25PJ221	0.25W 220	000-330-341	DEICER
SWITCH		スイッチ		
1B01S0901	RS-1,NO	13-3-2799	000-478-301	
1B01S0902	ATK21-W		000-479-243	
1B11S3001	TR-8B50-PDS2	13-3-4962	000-478-160	DEICER

UNIT	SCANNER	UNIT	RSB-cc/4/S	REF. DWG.	C3263-022-	BLOCK NO.	1802	2
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.		REMARKS		
記号	型名	規	格	コード番号	備	考		
PRINTED CIRCUIT BOARD		プリント基板						
	MP-3795	FR-2050X	008-256-290					
CAPACITOR		コンデンサ						
C 901	ECE-A1CS101	100UF 16V	000-701-427					
C 902	DD109E103P50V	0.01UF 50V	000-253-436					
C 903	ECQ-M1H103KZ	0.01UF 50V	000-260-370					
C 904	ECE-A1CS100	10UF 16V	000-201-423					
C 905	ECQ-M1H104KZ	0.1UF 50V	000-260-390					
JACK		ジャック						
J 901	BSP-SHF-1AA	5P	000-505-553					
J 902	B2P-SHF-1AA	2P	000-505-550					
TRANSISTOR		トランジスタ						
Q 901	2SA495GTM-O		000-116-992					
Q 902	2SC367GTM-O		000-123-552					
RESISTOR		抵抗						
R 901	ERD-25PJ561	0.25W 560	000-330-351					
R 902	ERD-25PJ100	0.25W 10	000-330-309					
R 903	ERD-25PJ222	0.25W 2.2K	000-330-365					
R 904	ERD-25PJ222	0.25W 2.2K	000-330-365					
R 905	ERD-25PJ332	0.25W 3.3K	000-330-369					
R 906	ERD-25PJ333	0.25W 33K	000-330-393					
R 907	ERD-25PJ102	0.25W 1K	000-330-357					
R 908	ERD-25PJ472	0.25W 4.7K	000-330-373					
R 909	ERD-25PJ103	0.25W 10K	000-330-381					
R 910	ERD-25PJ102	0.25W 1K	000-330-357					
R 911	ERD-25PJ391	0.25W 390	000-330-347					
R 912	ERD-25PJ391	0.25W 390	000-330-347					
R 913	ERD-25PJ391	0.25W 390	000-330-347					
R 914	ERD-25PJ391	0.25W 390	000-330-347					
R 915	ERD-25PJ101	0.25W 100	000-330-333					
R 921	ERD-25PJ331	0.25W 330	000-330-345					
INTEGRATED CIRCUIT		シユウセイカイロ						
U 901	DN-1102	13-3-3512	000-134-100					
U 902	HA17902G		000-162-081					

UNIT	SCANNER	UNIT	RSB-cc/4/S	REF. DWG.	C3263-058-	BLOCK NO.	1804	4
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.		REMARKS		
記号	型名	規	格	コード番号	備	考		
INTEGRATED CIRCUIT		シユウセイカイロ						
U 1	TC4538BP		000-163-907					
U 2	TC4013BP		000-163-247					
U 3	TC4538BP		000-163-907					

- END -

UNIT	SCANNER	UNIT	RSB-cc/4/S	REF. DWG.	C3263-058-	BLOCK NO.	1804	3
SYMBOL	T Y P E	SPECIFICATIONS		CODE NO.		REMARKS		
記号	型名	規	格	コード番号	備	考		
PRINTED CIRCUIT BOARD		プリント基板						
	MPT-6237	FR-1222X	008-192-560					
CAPACITOR		コンデンサ						
C 1	ECQ-V1H105JZW	1UF 50V	000-104-801					
C 2	ECE-A1HU010E	1UF 50V	000-206-115					
C 3	ECQ-V1H105JZW	1UF 50V	000-104-801					
C 4	ECE-A1HU010E	1UF 50V	000-206-115					
C 5	ECE-A1CU101E	100UF 16V	000-206-112					
C 6	ECE-A1CU101E	100UF 16V	000-206-112					
C 7	FK20Y5V1H104Z	0.1UF 50V	000-254-900					
C 8	FK20Y5V1H104Z	0.1UF 50V	000-254-900					
C 9	FK20Y5V1H104Z	0.1UF 50V	000-254-900					
C 10	ECQ-M1H102KVM	1000PF 50V	000-260-415					
C 11	ECQ-M1H102KVM	1000PF 50V	000-260-415					
DIODE		ダイオード						
CR 1	1S1588		000-112-795					
CR 2	1S1588		000-112-795					
CR 3	1S1588		000-112-795					
CR 4	1S1588		000-112-795					
JACK		ジャック						
J 1	BSP-SHF-1AA-K	5P	000-100-582					
J 2	B3P-SHF-1AA-K	3P	000-100-572					
J 3	B4P-SHF-1AA-K	4P	000-100-573					
PLUG		プラグ						
P 1	HSP-SHF-AA,5P BHF-001T-0.8BS	NH HOUSING NH CONTACT	000-505-598 000-505-504					
TRANSISTOR		トランジスタ						
Q 1	2SA495GTM-Y		000-116-993					
Q 2	2SA715C		000-117-430					
RESISTOR		抵抗						
R 1	ERD-25PJ103	0.25W 10K	000-330-381					
R 2	ERD-25PJ222	0.25W 2.2K	000-330-365					
R 3	ERD-25PJ472	0.25W 4.7K	000-330-373					
R 4	ERD-25PJ331	0.25W 330	000-330-345					
R 5	ERD-25PJ103	0.25W 10K	000-330-381					
R 6	ERD-25PJ222	0.25W 2.2K	000-330-365					
R 7	ERD-25PJ683	0.25W 68K	000-330-401					
R 8	ERD-25PJ103	0.25W 10K	000-330-381					
R 9	ERD-25PJ473	0.25W 47K	000-330-397					
R 10	ERD-25PJ473	0.25W 47K	000-330-397					
R 11	ERD-25PJ102	0.25W 1K	000-330-357					

FURUNOELECTRICAL PARTS LIST
電気部品表

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MODEL	FR-2030S/2830S		
UNIT	SCANNER UNIT RSB-0026/31		PAGE
REF. DWG.	C3311-010-	BLOCK NO.	1B00

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SYMBOL 記号	T Y P E 型名	SPECIFICATIONS 規格	CODE NO. コード番号	REMARKS 備考
1B02	MP-7302	FR-2060S	008-256-330	
1B03	TX CHASSIS ASSY	RSB-0026	008-242-560	
1B04	RF-5144	RSB-0026	008-173-720	
1B05	MD-5145 MODULATOR		008-200-160	
1B06	IF AMP ASSY	FR-830DS/2030S	008-209-310	
1B08	MIC W/RU-6742A	RSB-0023/26/31	008-224-910	
1B14	RU-6742A		008-255-420	LIMITER
1B17	MSS-7497	FOR 200/220V	008-243-530	220/200V
	MSS-7497.A	FOR 380/440V	008-243-540	440/380V
	IF AMP 03P6570/MIC	RSB-0023	008-224-900	IF.MBS.MIC & LIMITER

MOTOR		モーター		
1B01B0801	RM-7398	03S7398	000-113-840	220/200V
	RM-7435	03S7435	000-114-399	440/380V
1B01B0802	109E1224M102		000-109-412	
CAPACITOR		コンデンサー		
1B03C0804	ECQ-M1H104KV	0.1UF 50V	000-260-401	
DIODE		ダイオード		
1B03CR0804	MD-12N1		000-133-735	
1B03CR0813	SH16J12U		000-135-165	
1B03CR0814	SH16J12U		000-135-165	
1B03CR0815	SH16J12U		000-135-165	
1B15CR3001	BCR-16C10R		000-132-186	DEICER
HEATER		ヒーター		
1B15HR3001	NDO-50040,60W	13-3-3409	000-633-409	DEICER
1B15HR3002	NDO-50040,60W	13-3-3409	000-633-409	DEICER
HIGH VOLTAGE PACK		コウアツハツク		
1B01HY0801	RC-6584	03S6584	000-106-771	
RESISTOR		抵抗		
1B03R0811	FGOS	10W,4	000-360-035	
1B03R0812	FGOS	10W,4	000-360-035	
1B03R0818	ERD-25PJ470	0.25W 47	000-330-325	
1B03R0819	ERD-25PJ470	0.25W 47	000-330-325	
1B15R3004	ERD-25PJ221	0.25W 220	000-330-341	DEICER

UNIT	SCANNER	UNIT	RSB-0026/31	REF. DWG.	C3311-010-	BLOCK NO.	1B00	2
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名			規 格	コード番号	備 考	
SWITCH				スイッチ				
1B01S0801	RS-1,N0				13-3-2799	000-478-301		
1B01S0802	ATK21-W					000-479-243		
1B15S3001	TR-8B50-PDS2				13-3-4962	000-478-160	DEICER	
TRANSFORMER				トランス				
1B03T0801	RT-4037					000-734-037		
INTEGRATED CIRCUIT				シロウセキカイロ				
1B01U0801	ENCODER ASSY				RSB-0026	008-256-320	RE20F-120-100-B	
ELECTRON TUBE				テコンシカン				
1B03V0801	MG5223F				S-BAND	000-109-081		

UNIT	SCANNER	UNIT	RSB-cc26/31	REF. DWG.	C3311-010-	BLOCK NO.	1B04	3
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	規格	コード番号	備考	
PRINTED CIRCUIT BOARD フプリント基板								
	MP-7302		FR-2060S			008-256-330		
CAPACITOR コンデンサ								
C	1	RPE132F104Z50	0.1UF	50V		000-104-501		
C	2	RPE132CH331J50	330PF	50V		000-105-389		
C	3	ECE-A1CU100E	10UF	16V		000-201-672		
C	4	DD109-69E103P50V	0.01UF	50V		000-253-801		
C	5	ECE-A1CU101E	100UF	16V		000-206-112		
C	6	DD109-69E103P50V	0.01UF	50V		000-253-801		
C	7	DD109-69E103P50V	0.01UF	50V		000-253-801		
JACK ジャック								
J	1	B4P-SHF-1AA-K	4P			000-100-573		
J	2	B5P-SHF-1AA-K	5P			000-100-582		
J	3	B3P-SHF-1AA-K	3P			000-100-572		
TRANSISTOR トランジスタ								
Q	1	2SA495GTM-0				000-116-992		
Q	2	2SC367GTM-0				000-123-552		
RESISTOR 抵抗								
R	1	ERD-25PJ561	0.25W	560		000-330-351		
R	2	ERD-25PJ222	0.25W	2.2K		000-330-365		
R	3	ERD-25PJ223	0.25W	22K		000-330-389		
R	4	ERD-25PJ223	0.25W	22K		000-330-389		
R	5	ERD-25PJ222	0.25W	2.2K		000-330-365		
R	6	ERD-25PJ332	0.25W	3.3K		000-330-369		
R	7	ERD-25TJ104	0.25W	100K		000-330-405		
R	8	ERD-25PJ102	0.25W	1K		000-330-357		
R	9	ERD-25PJ472	0.25W	4.7K		000-330-373		
R	10	ERD-25PJ103	0.25W	10K		000-330-381		
R	11	ERD-25PJ102	0.25W	1K		000-330-357		
R	12	ERG-1S1J01P	1W	100		000-375-397		
R	13	ERD-25PJ101	0.25W	100		000-330-333		
R	14	ERD-25PJ100	0.25W	10		000-330-309		
R	15	ERD-25PJ331	0.25W	330		000-330-345		
INTEGRATED CIRCUIT 半導体集積回路								
U	1	HA17902G				000-162-081		

UNIT	SCANNER	UNIT	RSB-cc26/31	REF. DWG.	C3311-010-	BLOCK NO.	1B04	5
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	規格	コード番号	備考	
RELAY リレー								
K	804	MR31-12D				000-454-079		
TRANSISTOR トランジスタ								
Q	812	2SC367GTM-0				000-123-552		
Q	850	2SC752GTM-0				000-124-129		
Q	853	2SA715C				000-117-430		
Q	854	2SC752GTM-0				000-124-129		
Q	880	2SC367GTM-0				000-123-552		
Q	881	2SC367GTM-0				000-123-552		
Q	882	2SC367GTM-0				000-123-552		
Q	884	2SC367GTM-0				000-123-552		
RESISTOR 抵抗								
R	850	ERD-25PJ101	0.25W	100		000-330-333		
R	851	ERD-25PJ101	0.25W	100		000-330-333		
R	852	ERD-25PJ102	0.25W	1K		000-330-357		
R	853	ERD-25PJ102	0.25W	1K		000-330-357		
R	854	ERD-25PJ102	0.25W	1K		000-330-357		
R	855	ERD-25PJ103	0.25W	10K		000-330-381		
R	856	ERD-25PJ102	0.25W	1K		000-330-357		
R	857	ERD-25PJ103	0.25W	10K		000-330-381		
R	858	ERD-25PJ393	0.25W	39K		000-330-395		
R	859	ERD-25TJ563	0.25W	56K		000-330-399		
R	860	ERD-25PJ473	0.25W	47K		000-330-397		
R	861	ERD-25PJ103	0.25W	10K		000-330-381		
R	865	ERD-25PJ102	0.25W	1K		000-330-357		
R	866	ERD-25PJ101	0.25W	100		000-330-333		
R	868	ERD-25TJ681	0.25W	680		000-330-353		
R	869	ERD-25PJ100	0.25W	10		000-330-309		
R	870	ERD-25PJ270	0.25W	27		000-330-319		
R	871	ERD-25PJ477	0.25W	4.7		000-330-301		
R	872	ERD-25PJ477	0.25W	4.7		000-330-301		
R	873	ERD-25PJ473	0.25W	47K		000-330-397		
R	875	ERD-25PJ102	0.25W	1K		000-330-357		
R	876	ERD-25PJ472	0.25W	4.7K		000-330-373		
R	877	ERD-25PJ470	0.25W	47		000-330-325		
R	880	ERD-25PJ103	0.25W	10K		000-330-381		
R	881	ERD-25PJ103	0.25W	10K		000-330-381		
R	882	ERD-25PJ103	0.25W	10K		000-330-381		
R	883	ERD-25PJ103	0.25W	10K		000-330-381		
R	884	ERD-25PJ472	0.25W	4.7K		000-330-373		
R	885	ERD-25PJ472	0.25W	4.7K		000-330-373		
R	886	ERD-25PJ472	0.25W	4.7K		000-330-373		
R	887	ERD-25PJ332	0.25W	3.3K		000-330-369		
R	888	ERD-25PJ332	0.25W	3.3K		000-330-369		
R	889	ERD-25PJ332	0.25W	3.3K		000-330-369		

UNIT	SCANNER	UNIT	RSB-cc26/31	REF. DWG.	C3311-010-	BLOCK NO.	1B04	4
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	規格	コード番号	備考	
PRINTED CIRCUIT BOARD フプリント基板								
	RF-5144		RSB-0026			008-173-720		
CAPACITOR コンデンサ								
C	809	MD-2-2E-105M	1UF	250WV		000-262-195		
C	810	MD-2-2E-105M	1UF	250WV		000-262-195		
C	826	ECE-A1CS101	100UF	16V		000-201-427		
C	850	FK20Y5V1H104Z	0.1UF	50V		000-254-900		
C	851	ECE-A1CS101	100UF	16V		000-201-427		
C	852	ECE-A1CS101	100UF	16V		000-201-427		
C	853	FK20Y5V1H104Z	0.1UF	50V		000-254-900		
C	854	RPE110CH101J50	100PF	50V		000-251-700		
C	855	RPE110CH331J50	330PF	50V		000-251-702		
C	856	ECQ-M1H223JZ	0.022UF			000-260-454		
C	857	ECQ-M1H472KV	4700PF	50V		000-260-209		
C	860	FK20Y5V1H104Z	0.1UF	50V		000-254-900		
C	861	ECE-A1CS101	100UF	16V		000-201-427		
C	862	FK20Y5V1H104Z	0.1UF	50V		000-254-900		
C	863	ECE-A1CS101	100UF	16V		000-201-427		
C	864	FK20Y5V1H104Z	0.1UF	50V		000-254-900		
C	865	FK20Y5V1H104Z	0.1UF	50V		000-254-900		
C	866	ECQ-M1H222KV	2200PF	50V		000-260-205		
C	880	FK20Y5V1H104Z	0.1UF	50V		000-254-900		
C	881	FK20Y5V1H104Z	0.1UF	50V		000-254-900		
C	882	ECE-A25V4R7T	4.7UF	25V		000-201-160		
C	883	FK20Y5V1H104Z	0.1UF	50V		000-254-900		
C	884	FK20Y5V1H104Z	0.1UF	50V		000-254-900		
C	885	FK20Y5V1H104Z	0.1UF	50V		000-254-900		
C	886	FK20Y5V1H104Z	0.1UF	50V		000-254-900		
DIODE ダイオード								
CR	803	DFG-1B8	13-3	5073		000-136-013		
CR	850	1S1588				000-112-795		
CR	851	1S1588				000-112-795		
CR	854	1S1588				000-112-795		
JACK ジャック								
J	801	LR-15				000-505-475		
J	803	SLW-01T-2.0				000-505-392		
J	804	B3P-VH	3P			000-505-821		
J	805	B3P-SHF-1AA	3P			000-505-551		
J	807	B4P-VH	4P			000-505-822		
J	808	B2P-VH	2P			000-505-820		
J	808	B6P-SHF-1AA	6P			000-505-554		

UNIT	SCANNER	UNIT	RSB-cc26/31	REF. DWG.	C3311-010-	BLOCK NO.	1B04	6
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	規格	コード番号	備考	
RESISTOR 抵抗								
R	890	ERD-25PJ823	0.25W	82K		000-330-403		
R	892	ERD-25PJ223	0.25W	22K		000-330-389		
R	893	ERD-25PJ823	0.25W	82K		000-330-403		
R	894	ERD-25PJ823	0.25W	82K		000-330-403		
R	895	ERD-25PJ472	0.25W	4.7K		000-330-373		
R	896	ERD-25PJ101	0.25W	100		000-330-333		
R	897	ERD-25PJ332	0.25W	3.3K		000-330-369		
INTEGRATED CIRCUIT 半導体集積回路								
U	850	TC4538BP				000-163-907		
U	851	TC4538BP				000-163-907		
U	852	TC4049BP				000-163-255		
U	853	TC4011BP				000-163-245		

UNIT	SCANNER	UNIT	RSB-006/31	REF. DWG.	C3311-010-	BLOCK NO.	1805	7
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
PRINTED CIRCUIT BOARD					プリント基板			
MD-5145 MODULATOR					008-200-160			
CAPACITOR					コンデンサ			
C 801	MD-1-2J	224K	0.22UF	630V	000-262-150			
C 802	ECK-D3A222KB		2200PF	1KV	000-255-750			
C 803	ECK-D3A222KB		2200PF	1KV	000-255-750			
C 805	ECQ-M1H104KV		0.1UF	50V	000-260-401			
C 806	ECQ-M1H104KV		0.1UF	50V	000-260-401			
C 807	ECQ-M1H104KV		0.1UF	50V	000-260-401			
C 808	ECQ-M1H104KV		0.1UF	50V	000-260-401			
C 811	ECW-H10H153JD		15000PF		000-259-580			
C 812	ECW-H6H223JD		0.022UF		000-259-532			
C 813	ECW-H6H223JD		0.022UF		000-259-532			
C 814	ECW-H6H223JD		0.022UF		000-259-532			
C 815	ECW-H6H223JD		0.022UF		000-259-532			
C 816	ECW-H6H223JD		0.022UF		000-259-532			
C 817	ECW-H6H223JD		0.022UF		000-259-532			
C 818	ECW-H6H223JD		0.022UF		000-259-532			
C 830	ECQ-M1H104KV		0.1UF	50V	000-260-401			
C 831	ECW-H10H153JD		15000PF		000-259-580			
C 832	ECW-H10H153JD		15000PF		000-259-580			
C 833	ECW-H10H153JD		15000PF		000-259-580			
DIODE					ダイオード			
CR 801	DFG-1B15				000-136-017			
CR 805	DFG-1B8		13-3-5073		000-136-013			
CR 806	DFG-1B8		13-3-5073		000-136-013			
CR 807	1S1588				000-112-795			
CR 808	DFG-1B8		13-3-5073		000-136-013			
CR 818	DFG-1B8		13-3-5073		000-136-013			
CR 819	RM2C				000-105-012			
CR 820	RM2C				000-105-012			
JACK					ジャック			
J 810	LP-04-1				000-505-456			
J 811	SLM-01T-2.0				000-505-392			
J 812	LR-03-1				000-505-468			
J 813	SLM-01T-2.0				000-505-392			
J 814	LR-03-1				000-505-468			
J 815	SLF-01T-2.0				000-505-391			
J 815	LR-03-1				000-505-468			
J 815	SLM-01T-2.0				000-505-392			

UNIT	SCANNER	UNIT	RSB-006/31	REF. DWG.	C3291-006-	BLOCK NO.	1806	9
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
PRINTED CIRCUIT BOARD					プリント基板			
IF AMP ASSY					FR-830DS/2030S 008-209-310 03P6570			
CAPACITOR					コンデンサ			
C 601	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 603	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 604	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 606	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 608	ECC-F1H180JC		18PF	50VDC	000-255-216			
C 609	ECC-F1H330JC		33PF	50VDC	000-255-222			
C 610	DD104B102K50V02		1000PF	50V	000-252-171			
C 611	RPE110CH101J50		100PF	50V	000-251-700			
C 612	ECE-A1CU100E		10UF	16V	000-201-672			
C 613	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 614	ECE-A1CU100E		10UF	16V	000-201-672			
C 616	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 617	DD104B102K50V02		1000PF	50V	000-252-171			
C 618	RPE110CH101J50		100PF	50V	000-251-700			
C 619	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 620	ECE-A1CN100SE		10UF	16V B.P.	000-206-109			
C 621	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 622	ECE-A1CN100SE		10UF	16V B.P.	000-206-109			
C 623	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 624	ECC-F1H050CC		5PF	50VDC	000-255-205			
C 625	ECC-F1H050CC		5PF	50VDC	000-255-205			
C 626	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 627	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 628	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 629	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 630	DD104B102K50V02		1000PF	50V	000-252-171			
C 631	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 632	ECE-A1CU101E		100UF	16V	000-206-112			
C 633	RPE110CH101J50		100PF	50V	000-251-700			
C 634	ECC-F1H180JC		18PF	50VDC	000-255-216			
C 635	DD104B102K50V02		1000PF	50V	000-252-171			
C 637	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 638	ECC-F1H100DC		10PF	50V	000-255-210			
C 639	ECC-F1H100DC		10PF	50V	000-255-210			
C 640	ECC-F1H100DC		10PF	50V	000-255-210			
C 641	RPE110CH181J50		180PF	50V	000-251-711			
C 642	DD104B102K50V02		1000PF	50V	000-252-171			
C 643	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 644	ECC-F1H050CC		5PF	50VDC	000-255-205			
C 645	ECC-F1H020CC		2PF	50VDC	000-255-202			
C 646	ECE-A1CN100SE		10UF	16V B.P.	000-206-109			
C 647	DD104B102K50V02		1000PF	50V	000-252-171			
C 648	ECE-A1CU101E		100UF	16V	000-206-112			
C 649	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 650	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 651	ECE-A1CU101E		100UF	16V	000-206-112			

UNIT	SCANNER	UNIT	RSB-006/31	REF. DWG.	C3311-010-	BLOCK NO.	1805	8
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
RELAY					リレー			
K 801	AP59044				000-454-568			
K 802	AP59044				000-454-568			
K 803	AP59044				000-454-568			
COIL					コイル			
L 801	RL-4036				000-734-036			
L 802	RL-4106		03S4106		000-734-106			
L 803	OR-12-4-6H				000-421-402			
L 803	RL-4220				000-734-220			
L 804	OR-12-4-6H				000-421-402			
L 804	RL-3903-3		03S3903-3		000-733-903			
L 804	OR-12-4-6H				000-421-402			
L 811	RL-5315		12-3-5315		000-734-791			
L 811	03-010-5320-1				301-053-201			
RESISTOR					抵抗			
R 803	ERX-1ANJ1R0		1W	1	000-371-055			
R 806	ERD-25PJ102		0.25W	1K	000-330-357			
R 813	RK14B3A105J		1W	1M 1000V	000-376-788			
R 814	RK14B3A105J		1W	1M 1000V	000-376-788			
R 815	ERF-7SK4R7		7W	4.7	000-370-951			
R 816	ERF-7SK4R7		7W	4.7	000-370-951			
R 817	ERG-3ANJ560		3W	56	000-371-435			
R 820	RK14B2H335J		0.5W	3.3M 700V	000-376-789			
R 821	RK14B2H335J		0.5W	3.3M 700V	000-376-789			
R 822	RK14B2H335J		0.5W	3.3M 700V	000-376-789			
R 823	ERF-5AJ331		5W	330	000-370-744			
R 824	ERF-5AJ331		5W	330	000-370-744			
R 825	ERF-5AJ331		5W	330	000-370-744			
R 826	ERX-2ANJ4R7		2W	4.7	000-371-165			
TRANSFORMER					トランス			
T 802	RT-4105				000-734-105			
T 803	OR-12-4-6H				000-421-402			
T 803	RT-4105				000-734-105			
T 803	OR-12-4-6H				000-421-402			

UNIT	SCANNER	UNIT	RSB-006/31	REF. DWG.	C3291-006-	BLOCK NO.	1806	10
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
CAPACITOR					コンデンサ			
C 652	ECE-A1CU101E		100UF	16V	000-206-112			
C 653	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 654	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 655	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 656	DD104B102K50V02		1000PF	50V	000-252-171			
C 657	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 658	DD104B102K50V02		1000PF	50V	000-252-171			
C 659	DD104B102K50V02		1000PF	50V	000-252-171			
C 660	DD104B102K50V02		1000PF	50V	000-252-171			
C 661	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 662	ECE-A1EU100E		10UF	25V	000-201-812			
C 663	ECE-A1CU100E		10UF	16V	000-201-672			
C 664	RPE132F104250</							

UNIT	SCANNER	UNIT	RSB-cc26/3i	REF. DWG.	C3291-006-	BLOCK NO.	1806	11
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
TRANSISTOR トランジスタ-								
Q 601	25C3358				000-106-772			
Q 602	25C3358				000-106-772			
Q 603	25A495GTM-0				000-116-992			
Q 604	25C1260				000-124-800			
Q 605	25C1260				000-124-800			
Q 606	25C372GTM-0				000-123-560			
Q 607	25A495GTM-0				000-116-992			
Q 608	25C1260				000-124-800			
Q 609	25C1260				000-124-800			
Q 610	25K11-Y				000-129-222			
Q 611	25A495GTM-0				000-116-992			
Q 612	25C367GTM-0				000-123-552			
Q 613	25A495GTM-0				000-116-992			
RESISTOR リジスタ								
R 602	ERD-25PJ470		0.25W	47	000-330-325			
R 603	ERD-25PJ471		0.25W	470	000-330-349			
R 604	ERD-25PJ47		0.25W	4.7	000-330-301			
R 605	ERD-25PJ122		0.25W	1.2K	000-330-359			
R 606	ERD-25PJ472		0.25W	4.7K	000-330-373			
R 607	ERD-25PJ392		0.25W	3.9K	000-330-371			
R 608	ERD-25PJ271		0.25W	270	000-330-343			
R 609	ERD-25PJ470		0.25W	47	000-330-325			
R 610	ERD-25PJ101		0.25W	100	000-330-333			
R 611	ERD-25PJ220		0.25W	22	000-330-317			
R 612	ERD-25PJ472		0.25W	4.7K	000-330-373			
R 613	ERD-25PJ222		0.25W	2.2K	000-330-365			
R 614	ERD-25PJ103		0.25W	10K	000-330-381			
R 615	ERD-25PJ472		0.25W	4.7K	000-330-373			
R 616	ERD-25PJ331		0.25W	330	000-330-345			
R 617	ERD-25PJ102		0.25W	1K	000-330-357			
R 618	ERD-25PJ331		0.25W	330	000-330-345			
R 619	ERD-25PJ391		0.25W	390	000-330-347			
R 620	ERD-25PJ471		0.25W	470	000-330-349			
R 621	ERD-25PJ471		0.25W	470	000-330-349			
R 622	ERD-25PJ221		0.25W	220	000-330-341			
R 623	ERD-25PJ221		0.25W	220	000-330-341			
R 624	ERD-25PJ221		0.25W	220	000-330-341			
R 625	ERD-25PJ221		0.25W	220	000-330-341			
R 626	ERD-25PJ182		0.25W	1.8K	000-330-363			
R 627	ERD-25PJ182		0.25W	1.8K	000-330-363			
R 628	ERD-25PJ821		0.25W	820	000-330-355			
R 629	ERD-25PJ332		0.25W	3.3K	000-330-369			
R 630	ERD-25PJ682		0.25W	6.8K	000-330-377			
R 631	ERD-25PJ392		0.25W	3.9K	000-330-371			
R 632	ERD-25PJ331		0.25W	330	000-330-345			
R 633	ERD-25PJ123		0.25W	12K	000-330-383			
R 634	ERD-25PJ221		0.25W	220	000-330-341			
R 635	ERD-25PJ47		0.25W	4.7	000-330-301			
R 636	ERD-25PJ472		0.25W	4.7K	000-330-373			
R 637	ERD-25PJ271		0.25W	270	000-330-343			

UNIT	SCANNER	UNIT	RSB-cc26/3i	REF. DWG.	C3291-006-	BLOCK NO.	1806	13
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
INTEGRATED CIRCUIT システムIC								
U 607	SL-1613C				000-169-132			
U 608	SL-1613C				000-169-132			
U 609	SL-1613C				000-169-132			
U 610	SL-1613C				000-169-132			
U 611	MC1330AP				000-169-447			
U 612	HA17807P				000-162-085			
U 613	AN78L09				000-108-031			
U 614	AN79L09				000-108-925			
TRIMMER CAPACITOR トリマ-コンデンサ-								
VC 601	TZ032100F		10PF		000-102-408			

UNIT	SCANNER	UNIT	RSB-cc26/3i	REF. DWG.	C3291-006-	BLOCK NO.	1806	12
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
RESISTOR リジスタ								
R 638	ERD-25PJ472		0.25W	4.7K	000-330-373			
R 639	ERD-25PJ471		0.25W	470	000-330-349			
R 640	ERD-25PJ222		0.25W	2.2K	000-330-365			
R 641	ERD-25PJ331		0.25W	330	000-330-345			
R 642	ERD-25PJ101		0.25W	100	000-330-333			
R 643	ERD-25PJ221		0.25W	220	000-330-341			
R 644	ERD-25PJ221		0.25W	220	000-330-341			
R 645	ERD-25PJ222		0.25W	2.2K	000-330-365			
R 646	ERD-25PJ102		0.25W	1K	000-330-357			
R 647	ERD-25PJ472		0.25W	4.7K	000-330-373			
R 648	ERD-25PJ682		0.25W	6.8K	000-330-377			
R 649	ERD-25PJ332		0.25W	3.3K	000-330-369			
R 650	ERD-25PJ102		0.25W	1K	000-330-357			
R 651	ERC-126K106		0.5W	10M	000-340-881			
R 652	ERD-25PJ472		0.25W	4.7K	000-330-373			
R 653	ERD-25PJ222		0.25W	2.2K	000-330-365			
R 654	ERD-25PJ221		0.25W	220	000-330-341			
R 655	ERD-25PJ271		0.25W	270	000-330-343			
R 656	EF 1/2 100KJ		0.5W	100K	000-374-101			
R 657	ERD-25PJ223		0.25W	22K	000-330-389			
R 658	ERD-25PJ101		0.25W	100	000-330-333			
R 659	ERD-25PJ682		0.25W	6.8K	000-330-377			
R 660	ERD-25PJ221		0.25W	220	000-330-341			
R 662	ERD-25PJ103		0.25W	10K	000-330-381			
R 666	ERD-25PJ390		0.25W	39	000-330-323			
R 667	ERX-1ANJ100		1W	10	000-371-079			
R 668	ERD-25PJ222		0.25W	2.2K	000-330-365			
R 669	ERD-25PJ472		0.25W	4.7K	000-330-373			
R 670	ERD-25PJ221		0.25W	220	000-330-341			
R 671	ERD-25PJ470		0.25W	47	000-330-325			
R 672	ERD-25PJ473		0.25W	47K	000-330-397			
R 673	ERD-25TJ563		0.25W	56K	000-330-399			
R 674	ERD-25PJ101		0.25W	100	000-330-333			
TRANSFORMER トランス								
T 601	RT-6604		03S6604		000-107-013			
T 602	RT-6605		03S6605		000-107-014			
T 603	RT-5332		13-3-5332		000-424-503			
T 604	RT-5332		13-3-5332		000-424-504			
T 605	RT-6606		03S6606		000-107-015			
T 606	RT-5335-1		13-3-5335-1		000-424-506			
T 607	RT-5336		13-3-5336		000-424-507			
INTEGRATED CIRCUIT システムIC								
U 601	SL-1613C				000-169-132			
U 602	SL-1613C				000-169-132			
U 603	SL-1613C				000-169-132			
U 604	SL-1613C				000-169-132			
U 605	SL-1613C				000-169-132			
U 606	SL-1613C				000-169-132			

UNIT	SCANNER	UNIT	RSB-4426/31	REF. DWG.	C3291-003-	BLOCK NO.	1807	14
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
PRINTED CIRCUIT BOARD					プリント基板			
03P6569					MBS			
CAPACITOR					コンデンサ			
C 501	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 502	ECE-A1CU100E		10UF	16V	000-201-672			
C 503	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 504	DD104-69B102K50V		0.001UF	50V	000-253-806			
C 505	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 506	RPE132F104Z50		0.1UF	50V	000-104-501			
C 507	RPE132F104Z50		0.1UF	50V	000-104-501			
C 508	DD104-69B102K50V		0.001UF	50V	000-253-806			
C 509	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 510	ECE-A1CU101E		100UF	16V	000-206-112			
C 511	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 512	ECE-A1CU101E		100UF	16V	000-206-112			
C 513	RPE132CH221J50		220PF	50V	000-105-390			
C 514	RPE132CH471J50		470PF	50V	000-104-903			
C 515	ECQ-M1H103KVV		0.01UF	50V	000-260-416			
C 516	ECE-A1HN010SE		1UF	50V	000-206-108			
C 517	ECQ-M1H102KVV		1000PF	50V	000-260-415			
C 518	ECQ-M1H103KVV		0.01UF	50V	000-260-416			
C 520	ECC-W1H180JCS		18PF	50V	000-256-406			
C 521	ECE-A1HN010SE		1UF	50V	000-206-108			
C 522	RPE132CH221J50		220PF	50V	000-105-390			
C 523	ECQ-M1H103KVV		0.01UF	50V	000-260-416			
DIODE					ダイオード			
CR 501	RD39EB	ZENER			000-134-842			
CR 503	RD6.8FB	ZENER			000-134-800			
CR 504	RD-10FB				000-134-817			
CR 505	RD-10FB				000-134-817			
CR 506	1S1588				000-112-795			
CR 507	1S1588				000-112-795			
CR 508	1S1588				000-112-795			
CR 509	1S1588				000-112-795			
CR 510	1S1588				000-112-795			
CR 511	1S1588				000-112-795			
CR 512	1S1588				000-112-795			
CR 513	1S1588				000-112-795			
CR 514	1S1588				000-112-795			
CR 515	1S1588				000-112-795			
CR 517	1S1588				000-112-795			
JACK					ジャック			
J 501	BS8P-SHF-1AA-K		13-3-3809-1		000-100-606			
J 502	BS6P-SHF-1AA-K		13-3-3809-1		000-100-604			

UNIT	SCANNER	UNIT	RSB-4426/31	REF. DWG.	C3311-009-	BLOCK NO.	1817	16
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
PRINTED CIRCUIT BOARD					プリント基板			
MSS-7497					FOR 200/220V			
MSS-7497.A					FOR 380/440V			
					008-243-530			
					008-243-540			
CAPACITOR					コンデンサ			
C 1	ECQ-E12104M2B				000-114-400			
C 2	ECQ-E6104KZ	0.1UF			000-261-545			
C 3	ECE-A1HU101E	100MF	50V		000-201-836			
C 4	RPE132R104K50	0.1UF	50V		000-112-997			
C 5	ECQ-E6104KZ	0.1UF			000-261-545			
DIODE					ダイオード			
CR 1	ER7-C14DK471				000-100-811			
CR 2	BCR160M-12L-A6				000-114-223			
CR 3	DFG-1815				000-136-017			
CR 4	DFG-1815				000-136-017			
CR 5	DFG-1815				000-136-017			
CR 6	DFG-1815				000-136-017			
CR 7	RD24FB	ZENER			000-134-853			
CR 8	1S1588				000-112-795			
CR 9	1S1588				000-112-795			
CR 10	1S1588				000-112-795			
CR 11	1S1588				000-112-795			
CR 12	RD7.5EB	ZENER			000-134-834			
CR 13	BCR160M-12L-A6				000-114-223			
CR 14	ER7-C14DK471				000-100-811			
CR 15	1S1588				000-112-795			
CR 16	1S1588				000-112-795			
CR 17	1S1588				000-112-795			
CR 18	1S1588				000-112-795			
COIL					コイル			
L 1	SN-10-500 3A 100UH				000-425-014			
TRANSISTOR					トランジスタ			
Q 1	2SC367GTM-0				000-123-552			
Q 2	2SC367GTM-0				000-123-552			
Q 3	2SH25				000-114-225			
RESISTOR					抵抗			
R 1	ERG-1SJ101P	1W	100		000-375-397			
R 2	ERG-3SJ103P	3W	10K		000-375-552			
R 3	ERG-3SJ103P	3W	10K		000-375-552			
R 4	ERG-3SJ103P	3W	10K		000-375-552			
R 5	ERD-25PJ472	0.25W	4.7K		000-330-373			
R 6	ERD-25PJ103	0.25W	10K		000-330-381			
R 7	ERD-25PJ102	0.25W	1K		000-330-357			
R 8	ERD-25TJ511	0.25W	510		000-330-350			
R 9	ERD-25PJ331	0.25W	330		000-330-345			

UNIT	SCANNER	UNIT	RSB-4426/31	REF. DWG.	C3291-003-	BLOCK NO.	1807	15
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
TRANSISTOR					トランジスタ			
Q 501	2SC367GTM-0				000-123-552			
RESISTOR					抵抗			
R 501	ERD-25PJ471	0.25W	470		000-330-349			
R 502	ERD-25PJ101	0.25W	100		000-330-333			
R 503	ERD-25PJ271	0.25W	270		000-330-343			
R 504	ERD-25PJ101	0.25W	100		000-330-333			
R 505	ERD-25TJ563	0.25W	56K		000-330-399			
R 506	ERD-25PJ103	0.25W	10K		000-330-381			
R 507	ERD-25PJ221	0.25W	220		000-330-341			
R 508	ERD-25PJ103	0.25W	10K		000-330-381			
R 509	ERG-1ANJ390	1W	39		000-371-227			
R 510	ERD-25PJ121	0.25W	120		000-330-335			
R 511	ERD-25PJ181	0.25W	180		000-330-339			
R 512	ERD-25PJ102	0.25W	1K		000-330-357			
R 513	ERD-25PJ472	0.25W	4.7K		000-330-373			
R 515	ERD-25TJ333	0.25W	33K		000-330-393			
R 516	ERD-25PJ472	0.25W	4.7K		000-330-373			
R 517	ERD-25PJ103	0.25W	10K		000-330-381			
R 518	ERD-25PJ822	0.25W	8.2K		000-330-379			
R 519	ERD-25PJ102	0.25W	1K		000-330-357			
R 520	ERD-25PJ102	0.25W	1K		000-330-357			
R 521	ERD-25PJ103	0.25W	10K		000-330-381			
R 522	ERD-25PJ221	0.25W	220		000-330-341			
R 523	ERD-25PJ822	0.25W	8.2K		000-330-379			
R 524	ERD-25PJ103	0.25W	10K		000-330-381			
R 525	ERD-25PJ332	0.25W	3.3K		000-330-369			
R 526	ERD-25PJ472	0.25W	4.7K		000-330-373			
R 527	ERD-25PJ102	0.25W	1K		000-330-357			
R 530	ERD-25PJ102	0.25W	1K		000-330-357			
R 531	ERD-25PJ332	0.25W	3.3K		000-330-369			
R 532	ERD-25PJ103	0.25W	10K		000-330-381			
THERMISTOR					サーミスタ			
RT 601	D-33A				000-180-625			
INTEGRATED CIRCUIT					マイクロチップ			
U 501	UPC801C				000-161-181			
U 502	TA78L005AP				000-163-606			
U 503	TC4538BP				000-163-907			
POTENTIOMETER					ポテンチオメータ			
VR 501	EVM-31GA00B24				000-102-275			
VR 502	EVM-31GA00B53				000-307-857			

UNIT	SCANNER	UNIT	RSB-4426/31	REF. DWG.	C3311-009-	BLOCK NO.	1817	17
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
RESISTOR					抵抗			
R 10	ERD-25PJ331	0.25W	330		000-330-345			
R 11	ERD-25TJ104	0.25W	100K		000-330-405			
R 12	EF-1/2-1M/J	0.5W	1M		000-374-110			
R 13	EF-1/2-1M/J	0.5W	1M		000-374-110			
R 14	ERG-1SJ101P	1W	100		000-375-397			
R 15	ERD-25PJ331	0.25W	330		000-330-345			
R 16	ERG-3SJ333P	00S0102-0			000-375-558			
R 17	ERG-3SJ333P	00S0102-0			000-375-558			
R 18	EF-1/2-680K/J	0.5W	680K		000-374-106			
R 19	ERG-3SJ103P	3W	10K		000-375-552			
R 20	ERG-3SJ103P	3W	10K		000-375-552			
R 21	ERG-3SJ103P	3W	10K		000-375-552			
TERMINAL BOARD					端子台			
TB 2	BU-546A-3P				000-114-224			
INTEGRATED CIRCUIT					マイクロチップ			

FURUNO

カール-フ°NO:01 FR2060S SCANNER
ELECTRICAL PARTS LIST
電気部品表

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MODEL	FR2060S/28626		
UNIT	SCANNER UNIT RSB-0027/32		PAGE
REF. DWG.	C3312-014-	BLOCK NO.	1B

SYMBOL 記号	T Y P E 型名	SPECIFICATIONS 規格	CODE NO. コード番号	REMARKS 備考
1B02	MP-7302	FR-2060S	008-256-330	
1B03	MSS-7497	FOR 200/220V	008-243-530	220/200V
	MSS-7497.A	FOR 380/440V	008-243-540	440/380V

MOTOR		モーター		
1B01B0801	RM-7398	03S7398	000-113-840	
	RM-7435	03S7435	000-114-399	
DIODE		ダイオード		
1B15CR3001	BCR-16C10R		000-132-186	DEICER
HEATER		ヒーター		
1B15HR3001	NDO-50040,60W	13-3-3409	000-633-409	DEICER
1B15HR3002	NDO-50040,60W	13-3-3409	000-633-409	DEICER
RESISTOR		抵抗		
1B15R3004	ERD-25PJ221	0.25W 220	000-330-341	DEICER
SWITCH		スイッチ		
1B01S0801	RS-1,NO	13-3-2799	000-478-301	
1B01S0802	ATK21-W		000-479-243	
1B15S3001	TR-8B50-PDS2	13-3-4962	000-478-160	DEICER
INTEGRATED CIRCUIT		シロウセキカイロ		
1B01U0801	ENCODER ASSY	RSB-0026	008-256-320	RE20F-120-100-B

UNIT	SCANNER	UNIT	RSB-0227/32	REF. DWG.	C3312-014-	BLOCK NO.	1802	2
SYMBOL (02)	T Y P E	SPECIFICATIONS		CODE NO.		REMARKS		
記号	型名	規格	格	コード番号	備	考		
PRINTED CIRCUIT BOARD フォトリソグラフィック								
	MP-7302	FR-2060S		008-256-330				
CAPACITOR コンデンサ								
C	1	RPE132F104250	0.1UF 50V	000-104-501				
C	2	RPE132CH331J50	330PF 50V	000-105-389				
C	3	ECE-A1CU100E	10UF 16V	000-201-672				
C	4	DD109-69E103P50V	0.01UF 50V	000-253-801				
C	5	ECE-A1CU101E	100UF 16V	000-206-112				
C	6	DD109-69E103P50V	0.01UF 50V	000-253-801				
C	7	DD109-69E103P50V	0.01UF 50V	000-253-801				
JACK ジャック								
J	1	B4P-SHF-1AA-K	4P	000-100-573				
J	2	B5P-SHF-1AA-K	5P	000-100-582				
J	3	B3P-SHF-1AA-K	3P	000-100-572				
TRANSISTOR トランジスタ								
Q	1	2SA495GTM-D		000-116-992				
RESISTOR 抵抗								
R	1	ERD-25PJ561	0.25W 560	000-330-351				
R	2	ERD-25PJ222	0.25W 2.2K	000-330-365				
R	3	ERD-25PJ223	0.25W 22K	000-330-389				
R	4	ERD-25PJ223	0.25W 22K	000-330-389				
R	5	ERD-25PJ222	0.25W 2.2K	000-330-365				
R	6	ERD-25PJ332	0.25W 3.3K	000-330-369				
R	7	ERD-25TJ104	0.25W 100K	000-330-405				
R	8	ERD-25PJ102	0.25W 1K	000-330-357				
R	9	ERD-25PJ472	0.25W 4.7K	000-330-373				
R	10	ERD-25PJ103	0.25W 10K	000-330-381				
R	11	ERD-25PJ102	0.25W 1K	000-330-357				
R	12	ERG-15J101P	1W 100	000-375-397				
R	13	ERD-25PJ101	0.25W 100	000-330-333				
R	14	ERD-25PJ100	0.25W 10	000-330-309				
R	15	ERD-25PJ331	0.25W 330	000-330-345				
INTEGRATED CIRCUIT システムIC								
U	1	HA17902G		000-162-081				

UNIT	SCANNER	UNIT	RSB-0227/31/32	REF. DWG.	C3311-009-	BLOCK NO.	1803	4
SYMBOL (04)	T Y P E	SPECIFICATIONS		CODE NO.		REMARKS		
記号	型名	規格	格	コード番号	備	考		
RESISTOR 抵抗								
R	10	ERD-25PJ331	0.25W 330	000-330-345				
R	11	ERD-25TJ104	0.25W 100K	000-330-405				
R	12	EF-1/2-1M-J	0.5W 1M	000-374-110				
R	13	EF-1/2-1M-J	0.5W 1M	000-374-110				
R	14	ERG-15J101P	1W 100	000-375-397				
R	15	ERD-25PJ331	0.25W 330	000-330-345				
R	16	ERG-35J333P	00S0102-0	000-375-558				
R	17	ERG-35J333P	00S0102-0	000-375-558				
R	18	EF-1/2-680K-J	0.5W 680K	000-374-106				
R	19	ERG-35J103P	3W 10K	000-375-552				
R	20	ERG-35J103P	3W 10K	000-375-552				
R	21	ERG-35J103P	3W 10K	000-375-552				
TERMINAL BOARD タerminalボード								
TB	2	BU-546A-3P		000-114-224				
INTEGRATED CIRCUIT システムIC								
U	1	PB01AP-12A		000-114-226				
U	2	PB01AP-12A		000-114-226				

- END -

UNIT	SCANNER	UNIT	RSB-0227/31/32	REF. DWG.	C3311-009-	BLOCK NO.	1803	3
SYMBOL (04)	T Y P E	SPECIFICATIONS		CODE NO.		REMARKS		
記号	型名	規格	格	コード番号	備	考		
PRINTED CIRCUIT BOARD フォトリソグラフィック								
	MSS-7497	FOR 200/220V		008-243-530				
	MSS-7497.A	FOR 380/440V		008-243-540				
CAPACITOR コンデンサ								
C	1	ECQ-E12104MZB		000-114-400				
C	2	ECQ-E6104KZ	0.1UF	000-261-545				
C	3	ECE-A1HU101E	100MF 50V	000-201-836				
C	4	RPE132R104K50	0.1UF 50V	000-112-997				
C	5	ECQ-E6104KZ	0.1UF	000-261-545				
DIODE ダイオード								
CR	1	ERZ-C14DK471		000-100-811				
CR	2	BCR160M-12L-A6		000-114-223				
CR	3	DFG-1B15		000-136-017				
CR	4	DFG-1B15		000-136-017				
CR	5	DFG-1B15		000-136-017				
CR	6	DFG-1B15		000-136-017				
CR	7	RD24FB	ZENER	000-134-853				
CR	8	1S1588		000-112-795				
CR	9	1S1588		000-112-795				
CR	10	1S1588		000-112-795				
CR	11	1S1588		000-112-795				
CR	12	RD7.5EB	ZENER	000-134-834				
CR	13	BCR160M-12L-A6		000-114-223				
CR	14	ERZ-C14DK471		000-100-811				
CR	15	1S1588		000-112-795				
CR	16	1S1588		000-112-795				
CR	17	1S1588		000-112-795				
CR	18	1S1588		000-112-795				
COIL コイル								
L	1	SN-10-500 3A 100UH		000-425-014				
TRANSISTOR トランジスタ								
Q	1	2SC367GTM-D		000-123-552				
Q	2	2SC367GTM-D		000-123-552				
Q	3	2SH25		000-114-225				
RESISTOR 抵抗								
R	1	ERG-15J101P	1W 100	000-375-397				
R	2	ERG-35J103P	3W 10K	000-375-552				
R	3	ERG-35J103P	3W 10K	000-375-552				
R	4	ERG-35J103P	3W 10K	000-375-552				
R	5	ERD-25PJ472	0.25W 4.7K	000-330-373				
R	6	ERD-25PJ103	0.25W 10K	000-330-381				
R	7	ERD-25PJ102	0.25W 1K	000-330-357				
R	8	ERD-25TJ511	0.25W 510	000-330-350				
R	9	ERD-25PJ331	0.25W 330	000-330-345				

FURUNOELECTRICAL PARTS LIST
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MODEL	FR-2020X/2822X		
UNIT	TR UNIT RTR-019		PAGE
REF. DWG.	C3316-005-	BLOCK NO.	2B00 1

SYMBOL 記号	T Y P E 型名	SPECIFICATIONS 規格	CODE NO. コード番号	REMARKS 備考
2B02	RF-019-S	RTR-019-S	008-280-340	RF MODULE
2B03	BRF-5144	FR-2020	008-226-300	
2B04	MD-7083	FR-2020	008-236-350	
2B05	CM-5146	CHECK METER	008-193-710	
2B06	PT-5185	RF RECTIFIER	008-200-200	
2B07	HV-4119	TX HV	008-200-030	
2B08	IF-6734	FR-2050X	008-234-250	

MOTOR		モーター		
2B02B0802	109-040UL		000-430-460	
CAPACITOR		コンデンサ		
2B02C0804	ECQ-M1H104KV	0.1UF 50V	000-260-401	
2B02C0840	DD104B102K50V02	1000PF 50V	000-252-171	
2B02C0844	DD106F103Z50 N5.0	0.01UF 50V	000-253-443	
DIODE		ダイオード		
2B01CR0051	TLR143K		000-100-146	
2B02CR0804	MD-12N1		000-133-735	
2B02CR0810	S-LX5B		000-107-087	
	BS4122		000-108-889	
	ND702B-1		000-106-150	
	E3902		000-105-620	
2B02CR0813	SH16J12U		000-135-165	
2B02CR0814	SH16J12U		000-135-165	
2B02CR0815	MD-12N1		000-133-735	
2B02CR0821	RD6.8FB	ZENER	000-134-800	
FUSE		ヒューズ		
2B01F0801	F-1065, 0.5A, AC125V	6.4MM DIA	000-547-004	
2B01F0802	F7161, 2A, AC125V	6.4MM DIA	000-547-008	
FILTER		フィルタ		
2B01FL0801	LF-202A	13-3-5362	000-588-412	
HOUR METER		アワーメータ		
2B01HM0801	HM-5-106	HOUR METER	000-440-923	
CIRCULATOR		サーキュレータ		
2B02HY0801	RC-3686	13-3-3686-2	000-106-850	TDK

UNIT	TR	UNIT	RTR-019	REF. DWG.	C3316-005-	BLOCK NO.	2B00	2
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
	CIRCULATOR			サーキュレータ				
	RC-3686		13-3-3687-1		000-106-851	TOKIN		
	JACK			ジャック				
2B02J0601	LR-12				000-505-473			
	LLM-01T-2.0				000-505-494			
2B01J0806	MC-015	2P			000-509-534			
2B02J0817	SMR-02V-B,2P				000-505-367			
	SYM-001T-0.6				000-505-360			
2B01J0840	1-480707-0				000-504-258			
	350689-1				000-504-546			
	METER			メータ				
2B01M0801	SH48#3075	RP1892-3			000-631-892			
	PLUG			プラグ				
2B01P0051	VHR-3N				000-505-886			
	SVH-21T-1.1				000-505-880			
2B01P0052	VHR-6N		VH HOUSING		000-505-890			
	SVH-21T-1.1				000-505-880			
2B01P0053	VHR-5N		VH HOUSING		000-505-889			
	SVH-21T-1.1				000-505-880			
2B01P0054	VHR-2N		VH HOUSING		000-505-885			
	SVH-21T-1.1				000-505-880			
2B01P0055	H3P-SHF-AA,3P		NH HOUSING		000-505-596			
	SHF-001T-08S				000-505-301			
2B01P0056	H6P-SHF-AA,6P		NH HOUSING		000-505-599			
	SHF-001T-08S				000-505-301			
2B01P0442	LP-02-1				000-505-458			
	SLF-01T-2.0				000-505-391			
2B01P0443	LP-02-1				000-505-458			
	SLM-01T-2.0				000-505-392			
2B01P0601	LP-12				000-505-460			
	SLF-01T-2.0				000-505-391			
2B02P0602	LDF-0.1T-1.3AS				000-538-143			
	111823				000-568-850			
2B02P0603	LDF-0.1T-1.3AS				000-538-143			
	111823				000-568-850			
2B02P0604	H12P-SHF-AA,12P		NH HOUSING		000-505-605			
	BHF-001T-0.8BS		NH CONTACT		000-505-504			
2B02P0605	H6P-SHF-AA,6P		NH HOUSING		000-505-599			
	SHF-001T-08S				000-505-301			
2B01P0801	LP-15				000-505-461			
	SLF-01T-2.0				000-505-391			
2B02P0803	VHR-3N				000-505-886			
	SVH-21T-1.1				000-505-880			
2B02P0804	H3P-SHF-AA,3P		NH HOUSING		000-505-596			
	SHF-001T-08S				000-505-301			

UNIT	TR	UNIT	RTR-019	REF. DWG.	C3316-005-	BLOCK NO.	2B00	3
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
PLUG		プラグ						
2B02P0805	VHR-4N					000-505-887		
	SVH-21T-1.1					000-505-880		
2B02P0807	VHR-2N			VH HOUSING		000-505-885		
	SVH-21T-1.1					000-505-880		
2B02P0808	H6P-SHF-AA,6P			NH HOUSING		000-505-599		
	SHF-001T-08S					000-505-301		
2B02P0810	LP-04-1					000-505-456		
	SLF-01T-2.0					000-505-391		
2B02P0811	LP-09					000-505-464		
	SLF-01T-2.0					000-505-391		
2B02P0812	LP-03-1					000-505-463		
	SLF-01T-2.0					000-505-391		
2B02P0813	LP-03-1					000-505-463		
	SLM-01T-2.0					000-505-392		
2B02P0814	LP-02-1					000-505-458		
	SLM-61T-2.0					000-505-303		
2B02P0815	LP-03-1					000-505-463		
	SLF-01T-2.0					000-505-391		
2B02P0816	SMP-02V-BC 2P					000-505-374		
	BHF-001T-0.8BS			NH CONTACT		000-505-504		
2B02P0817	SMP-02V-BC 2P					000-505-374		
	BHF-001T-0.8BS			NH CONTACT		000-505-504		
2B01P0840	1-480706-0					000-504-268		
	350690-1					000-504-549		
2B01P0841	H4P-SHF-AA,4P			NH HOUSING		000-505-597		
	SHF-001T-08S					000-505-301		
2B01P0842	H6P-SHF-AA,6P			NH HOUSING		000-505-599		
	SHF-001T-08S					000-505-301		
2B01P0843	H3P-SHF-AA,3P			NH HOUSING		000-505-596		
	SHF-001T-08S					000-505-301		
RESISTOR		抵抗						
2B02R0811	FGOS			10W 10		000-360-040		
2B02R0812	FGOS			10W 10		000-360-040		
2B02R0818	ERD-25PJ470			0.25W 47		000-330-325		
2B02R0819	ERD-25PJ470			0.25W 47		000-330-325		
TRANSFORMER		変圧器						
2B01T0051	RT-5086			13-3-5086		000-734-041		
2B02T0801	RT-4037					000-734-037		
2B01T0804	RT-5202-1			13-3-5202-1		000-734-320		
TERMINAL BOARD		端子板						
2B01TB0001	LC-01-30A14P			W/LTR 1-14		000-533-530		
2B01TB0002	LC-01-30A 3P			W/ LTR 1-3		000-533-533		
2B01TB0806	LC-01-30A 3P			W/ LTR 1-3		000-533-533		

UNIT	TR	UNIT	RTR-019	REF. DWG.	C3316-005-	BLOCK NO.	2B00	4
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
INTEGRATED CIRCUIT					シユウセキカイロ			
2B02U0801	S-RX24(S)					000-115-196		
	RU-5072		13-3-5072-3			000-633-686		
ELECTRON TUBE					テ"ンシカン			
2B02V0801	9M752					000-101-750		
	M5187(F)					000-101-760		

UNIT	TR	UNIT	RTR-019	REF. DWG.	C3308-017-	BLOCK NO.	2B03	5
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
PRINTED CIRCUIT BOARD フォトリソグラフィック								
	BRF-5144		FR-2020		008-226-300			
DIODE ダイオード								
CR 803	DFG-188		13-3-5073		000-136-013			
CR 850	1S1588				000-112-795			
CR 851	1S1588				000-112-795			
CR 854	1S1588				000-112-795			
CR 880	1S1588				000-112-795			
JACK ジャック								
J 801	LR-15				000-505-475			
	SLM-01T-2.0				000-505-392			
J 803	B3P-VH		3P		000-505-821			
J 804	B3P-SHF-1AA		3P		000-505-551			
J 805	B4P-VH		4P		000-505-822			
J 807	B2P-VH		2P		000-505-820			
J 808	B6P-SHF-1AA		6P		000-505-554			
J 816	SMR-02V-B,2P				000-505-367			
	SYM-001T-0.6				000-505-360			
RELAY リレー								
K 804	FBR-111NCD-012				000-450-351			
PLUG プラグ								
P 816	SMP-02V-BC 2P				000-505-374			
	BHF-001T-0.88S		NH CONTACT		000-505-504			
TRANSISTOR トランジスタ								
Q 812	2SC367GTM-0				000-123-552			
Q 850	2SC752GTM-0				000-124-129			
Q 853	2SA715C				000-117-430			
Q 854	2SC752GTM-0				000-124-129			
Q 880	2SC367GTM-0				000-123-552			
Q 881	2SC367GTM-0				000-123-552			
Q 882	2SC367GTM-0				000-123-552			
Q 884	2SC367GTM-0				000-123-552			
INTEGRATED CIRCUIT シリコンチップ								
U 850	TC4538BP				000-163-907			
U 851	TC4538BP				000-163-907			

UNIT	TR	UNIT	RTR-019	REF. DWG.	C3308-019-	BLOCK NO.	2B04	7
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
PRINTED CIRCUIT BOARD フォトリソグラフィック								
	MD-7083		FR-2020		008-236-350			
DIODE ダイオード								
CR 801	DFG-1815				000-136-017			
CR 805	DFG-188		13-3-5073		000-136-013			
CR 806	DFG-188		13-3-5073		000-136-013			
CR 807	1S1588				000-112-795			
CR 808	DFG-188		13-3-5073		000-136-013			
CR 810	1S1588				000-112-795			
CR 818	DFG-188		13-3-5073		000-136-013			
CR 819	RM2C				000-105-012			
CR 820	RM2C				000-105-012			
JACK ジャック								
J 810	LP-04-1				000-505-456			
	SLM-01T-2.0				000-505-392			
J 811	LR-09				000-505-470			
J 812	SLM-01T-2.0				000-505-392			
	LR-03-1				000-505-468			
J 813	SLM-01T-2.0				000-505-392			
	LR-03-1				000-505-468			
J 814	SLF-01T-2.0				000-505-391			
	LR-02F-1				000-505-450			
J 815	SLF-01T-2.0				000-505-391			
	LR-03-1				000-505-468			
	SLM-01T-2.0				000-505-392			
RELAY リレー								
K 801	AP5421 C01		03S7271		000-111-146			
K 802	AP59044				000-454-568			
K 803	AP59044				000-454-568			
COIL コイル								
L 801	RL-4036				000-734-036			
L 802	RL-4106		03S4106		000-734-106			
L 803	OR-12-8-6H SB-5				000-106-740			
L 804	RL-3903-3		03S3903-3		000-733-220			
	OR-12-8-6H SB-5				000-733-903			
L 811	RL-5315		12-3-5315		000-734-791			
TRANSFORMER トランス								
T 802	RT-4105				000-734-105			
T 803	RT-4105				000-734-105			

UNIT	TR	UNIT	RTR-019	REF. DWG.	C3308-017-	BLOCK NO.	2B03	6
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
INTEGRATED CIRCUIT シリコンチップ								
U 852	TC4049BP				000-163-255			
U 853	TC4011BP				000-163-245			
U 854	TC4011BP				000-163-245			

UNIT	TR	UNIT	RTR-019	REF. DWG.	C3316-005-	BLOCK NO.	2B05	8
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
PRINTED CIRCUIT BOARD フォトリソグラフィック								
	CM-5146		CHECK METER		008-193-710			
JACK ジャック								
J 841	B4P-SHF-1AA		4P		000-505-552			
J 842	B6P-SHF-1AA		6P		000-505-554			
J 843	B3P-SHF-1AA		3P		000-505-551			
RESISTOR リスタ								
R 841	ERD-25PJ473		0.25W 47K		000-330-397			
R 842	ERD-25PJ473		0.25W 47K		000-330-397			
R 843	ERD-25PJ822		0.25W 8.2K		000-330-379			
R 844	ERD-25PJ822		0.25W 8.2K		000-330-379			
R 845	ERD-25PJ223		0.25W 22K		000-330-389			
R 846	ERD-25PJ392		0.25W 3.9K		000-330-371			
R 847	ERD-25PJ333		0.25W 33K		000-330-393			
SWITCH スイッチ								
S 840	RR-5079		13-3-5079		000-110-409			

UNIT	TR	UNIT RTR-019	REF. DWG.	C3263-024-	BLOCK NO.	2B06	9
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS
記号	型	名	規	格	コード番号	備	考
PRINTED CIRCUIT BOARD フプリント基板							
PT-5185 RF RECTIFIER 008-200-200							
DIODE ダイオード							
CR 1	RG2Y		13-3-5360		000-134-889		
CR 2	RG2Y		13-3-5360		000-134-889		
CR 3	RG2Y		13-3-5360		000-134-889		
CR 4	RG2Y		13-3-5360		000-134-889		
CR 5	CTG-21S		13-3-5361		000-132-437		
CR1301	RB604FLFA		13-3-5359		000-134-892		
CR1302	1S1588				000-112-795		
CR1303	1S1588				000-112-795		
CR1304	RD-9.1EB1	ZENER			000-134-835		
CR1305	MA2640-B				000-133-739		
CR1306	RB-151		13-3-5357		000-134-760		
CR1307	GU3B				000-132-960		
CR1308	TLR124	LED			000-135-883		
CR1309	TLR124	LED			000-135-883		
CR1310	TLR124	LED			000-135-883		
CR1311	TLR124	LED			000-135-883		
CR1312	TLR124	LED			000-135-883		
CR1314	SFOR1B42				000-135-126		
CR1315	SFOR1B42				000-135-126		
CR1316	SFOR1B42				000-135-126		
CR1317	SFOR1B42				000-135-126		
CR1318	SFOR1B42				000-135-126		
CR1320	UPA64HA				000-113-559		
CR1321	1S1588				000-112-795		
CR1322	1S1588				000-112-795		
CR1323	1S1588				000-112-795		
CR1324	GU3B				000-132-960		
JACK ジャック							
J 51	B3P-VH		3P		000-505-821		
J 52	B6P-VH		6P		000-505-824		
J 53	B5P-VH		5P		000-505-823		
J 54	B2P-VH		2P		000-505-820		
J 55	B3P-SHF-1AA		3P		000-505-551		
J 56	B6P-SHF-1AA		6P		000-505-554		
RELAY リレー							
K 1	SCD1A				000-573-136		
K 2	SCD0.5A		13-3-5002		000-573-130		
K 1301	MR31-9HD				000-454-081		
K 1302	SCD1.5A		13-3-5002		000-573-131		
COIL コイル							
L 1	RL-3100 680 UH		03S3100		000-733-100		

UNIT	TR	UNIT RTR-019	REF. DWG.	C3263-024-	BLOCK NO.	2B07	11
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS
記号	型	名	規	格	コード番号	備	考
PRINTED CIRCUIT BOARD フプリント基板							
HV-4119 TX HV 008-200-030							
DIODE ダイオード							
CR 441	GU3B				000-132-960		
CR 442	GU3B				000-132-960		
CR 443	GU3B				000-132-960		
CR 444	GU3B				000-132-960		
CR 445	GU3B				000-132-960		
CR 446	GU3B				000-132-960		
CR 447	GU3B				000-132-960		
CR 448	GU3B				000-132-960		
CR 449	GU3B				000-132-960		
CR 450	GU3B				000-132-960		
CR 451	GU3B				000-132-960		
CR 452	GU3B				000-132-960		
JACK ジャック							
J 441	SLM-01T-2.0				000-505-392		
	LR-03-1				000-505-468		
J 442	SLM-01T-2.0				000-505-392		
	LR-02F-1				000-505-450		
J 443	SLF-01T-2.0				000-505-391		
	LR-02F-1				000-505-450		
COIL コイル							
L 441	RL-3742				000-733-742		
L 442	RL-3742				000-733-742		

UNIT	TR	UNIT RTR-019	REF. DWG.	C3263-024-	BLOCK NO.	2B06	10
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS
記号	型	名	規	格	コード番号	備	考
COIL コイル							
L 2	RL-1419 1.8MH		03S6125		000-731-416		
L 3	RL-1419 0.5MH		02S6124		000-731-411		
L 1301	SC-02-200		200UH		000-424-970		
PLUG プラグ							
P 441	LP-03-1				000-505-463		
	SLF-01T-2.0				000-505-391		
TRANSISTOR トランジスタ							
Q 1301	2SB941AP				000-121-302		
Q 1302	2SA743A-C				000-117-466		
Q 1303	2SA743A-C				000-117-466		
Q 1304	2SC2749L				000-126-303		
Q 1305	2SC2749L				000-126-303		
Q 1306	2SA733				000-117-445		
Q 1307	2SA733				000-117-445		
TRANSFORMER トランス							
T 1	RT-5112		13-3-5112		000-734-591		
T 1301	RT-4098-2				000-734-098		
T 1302	RT-4098-2				000-734-098		
INTEGRATED CIRCUIT 半導体回路							
U 1301	MB3759M				000-157-500		
U 1302	RC-4210-1,03S4210-2	HI-MIC			000-164-253		
U 1303	RC-4214-1				000-378-100		
U 1304	HA17903PS				000-162-087		
POTENTIOMETER 可変抵抗器							
VR1301	RGF102-502		5K		000-316-259		
VR1302	RGF102-102		1K		000-316-255		

FURUNOELECTRICAL PARTS LIST
電気部品表

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MODEL	FR-2032S/2832S		
UNIT	TR UNIT RTR-025	PAGE	
REF. DWG.	C3344-K01-	BLOCK NO.	2B00
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SYMBOL 記号	T Y P E 型名	SPECIFICATIONS 規格	CODE NO. コード番号	REMARKS 備考
2B03	03P8726	RF	008-404-610	
2B04	MD-7083	FR-2020	008-236-350	
2B05	PT-8179D	POWER SUPPLY	008-404-620	
2B06	IF-6734B	FR-2060S/2862S	008-256-130	
2B08	ATT-7362	RTR-018	008-257-540	REF.2B11
2B09	CM-5146DRTR-010	FR-2050X	008-256-160	
2B11	MIC ASSY	RTR-025	008-404-520	W/ATT-7362 & RU-7394
2B12	RU-8715	RTR-025	008-404-530	
2B13	RU-7394	RTR-018	008-257-390	REF.2B11

MOTOR		モーター		
2B01B0801	MMF-06C12DH-RD1	03S8292	000-117-061	
CAPACITOR		コンデンサー		
2B02C0804	ECQ-M1H104KV	0.1UF 50V	000-260-401	
DIODE		ダイオード		
2B01CR0001	MP-042, GREEN		000-133-775	
2B01CR0002	MP-040, RED		000-133-776	
2B02CR0804	MD-12N1		000-133-735	
2B02CR0813	SH16J12U		000-135-165	
2B02CR0814	SH16J12U		000-135-165	
2B02CR0818	MD-12N1		000-133-735	
FUSE		ヒューズ		
2B01F0801	FGBO 0.5A AC125V CQ-207HH 00S0140	00S0077-0 6.4MM X 30MM	000-549-060 000-519-180	
2B01F0802	FGBO-A CQ-207HH 00S0140	2A,125VAC 6.4MM X 30MM	000-549-062 000-519-180	
2B01F0803	FGBO-A CQ-207HH 00S0140	2A,125VAC 6.4MM X 30MM	000-549-062 000-519-180	
FILTER		フィルター		
2B01FL0801	LF-205A	13-3-5363	000-588-411	
HOUR METER		アワーメーター		
2B01HM0801	H7ET-BVM	03S8798	000-121-595	
HIGH VOLTAGE PACK		コウツハ ^o ツク		
2B02HY0801	RC-4910	13-3-4910	000-106-862	

UNIT	TR	UNIT	RTR-025	REF. DWG.	C3344-K01-	BLOCK NO.	2B00	2
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
JACK				ジャック				
2B01J0810	WF3003E		13-3-5387		000-518-022			
2B01J0831	SMR-02V-B,2P				000-505-367			
	SYM-001T-0.6				000-505-360			
2B01J0832	SMR-02V-B,2P				000-505-367			
	SYM-001T-0.6				000-505-360			
2B01J0833	SMR-03V-B,3P				000-505-370			
	SYM-001T-0.6				000-505-360			
2B01J2401	G-21 GP-BR				000-504-077			
METER				メータ				
2B01M0801	SH48#3075	RP1892-3			000-631-892			
PLUG				プラグ				
2B01P0006	H4P-SHF-AA,4P		NH HOUSING		000-505-597			
	BHF-001T-0.8BS		NH CONTACT		000-505-504			
2B01P0007	BNC-P-3				000-500-396			
2B01P0009	H3P-SHF-AA,3P		NH HOUSING		000-505-596			
	BHF-001T-0.8BS		NH CONTACT		000-505-504			
2B01P0051	VHR-3N				000-505-886			
	BVH-21T-P1.1		VH CONTACT		000-100-049			
2B01P0052	H5P-SHF-AA,5P		NH HOUSING		000-505-598			
	BHF-001T-0.8BS		NH CONTACT		000-505-504			
2B01P0053	VHR-5N		VH HOUSING		000-505-889			
	BVH-21T-P1.1		VH CONTACT		000-100-049			
2B01P0054	VHR-2N		VH HOUSING		000-505-885			
	BVH-21T-P1.1		VH CONTACT		000-100-049			
2B01P0604	H12P-SHF-AA,12P		NH HOUSING		000-505-605			
	BHF-001T-0.8BS		NH CONTACT		000-505-504			
2B01P0605	H6P-SHF-AA,6P		NH HOUSING		000-505-599			
	BHF-001T-0.8BS		NH CONTACT		000-505-504			
2B01P0606	H3P-SHF-AA,3P		NH HOUSING		000-505-596			
	BHF-001T-0.8BS		NH CONTACT		000-505-504			
2B01P0801	VHR-5N		VH HOUSING		000-505-889			
2B01P0802	VHR-4N				000-505-887			
	BVH-21T-P1.1		VH CONTACT		000-100-049			
2B01P0803	VHR-3N				000-505-886			
	BVH-21T-P1.1		VH CONTACT		000-100-049			
2B01P0804	H3P-SHF-AA,3P		NH HOUSING		000-505-596			
	BHF-001T-0.8BS		NH CONTACT		000-505-504			
2B01P0805	VHR-6N		VH HOUSING		000-505-890			
	BVH-21T-P1.1		VH CONTACT		000-100-049			
2B01P0806	H10P-SHF-AA,10P		NH HOUSING		000-505-603			
	BHF-001T-0.8BS		NH CONTACT		000-505-504			
2B01P0808	H9P-SHF-AA,9P		NH HOUSING		000-505-602			
	BHF-001T-0.8BS		NH CONTACT		000-505-504			
2B01P0809	H8P-SHF-AA,8P		NH HOUSING		000-505-601			
	BHF-001T-0.8BS		NH CONTACT		000-505-504			
2B01P0810	LP-04-1				000-505-456			
	SLF-01T-2.0				000-505-391			

UNIT	TR	UNIT	RTR-025	REF. DWG.	C3344-K01-	BLOCK NO.	2B00	3
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
PLUG				プラグ				
2B01P0811	LP-09					000-505-464		
	SLF-01T-2.0					000-505-391		
2B01P0812	LP-03-1					000-505-463		
	SLF-01T-2.0					000-505-391		
2B01P0813	LP-03-1					000-505-463		
	SLM-61T-2.0					000-505-303		
2B01P0814	LP-02-1					000-505-458		
	SLM-61T-2.0					000-505-303		
2B01P0815	LP-03-1					000-505-463		
	SLF-01T-2.0					000-505-391		
2B01P0831	SMP-02V-BC 2P					000-505-374		
	BHF-001T-0.8BS			NH CONTACT		000-505-504		
2B01P0832	SMP-02V-BC 2P					000-505-374		
	BHF-001T-0.8BS			NH CONTACT		000-505-504		
2B01P0833	SMP-03V-BC 3P					000-505-375		
	BHF-001T-0.8BS			NH CONTACT		000-505-504		
2B01P0841	H4P-SHF-AA,4P					000-505-597		
	BHF-001T-0.8BS			NH HOUSING		000-505-504		
2B01P0842	H6P-SHF-AA,6P					000-505-599		
	BHF-001T-0.8BS			NH HOUSING		000-505-504		
2B01P0843	H3P-SHF-AA,3P					000-505-596		
	BHF-001T-0.8BS			NH HOUSING		000-505-504		
2B01P0851	H8P-SHF-AA,8P					000-505-601		
	BHF-001T-0.8BS			NH HOUSING		000-505-504		
2B01P0852	H3P-SHF-AA,3P					000-505-596		
	BHF-001T-0.8BS			NH HOUSING		000-505-504		
2B01P2401	G-8-2				FOR 1.5C (D)-2V	000-504-079		
2B01P2402	G-8-2				FOR 1.5C (D)-2V	000-504-079		
RESISTOR				抵抗				
2B01R0811	FGOS			10W,4		000-360-035		
2B01R0812	FGOS			10W,4		000-360-035		
2B02R0818	ERD-25PJ470			0.25W 47		000-330-325		
2B02R0819	ERD-25PJ470			0.25W 47		000-330-325		
2B01R0821	RK14B3A105J			1W 1M 1000V		000-376-788		
2B01R0822	ERG-2ANJ332			2W 3.3K		000-371-373		
SWITCH				スイッチ				
2B01S0801	22AC-J5					000-473-400		
TRANSFORMER				トランス				
2B02T0801	RT-4037					000-734-037		
TERMINAL BOARD				ターミナルボード				
2B01TB0004	LK-3P					000-118-795	RTB4	

UNIT	TR UNIT	RTR-025	REF. DWG.	C3344-K01-	BLOCK NO.	2B00	4
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO.	REMARKS			
記号	型名	規格	コード番号	備考			
ELECTRON TUBE		デッシカン					
2B02V0801	MG5223F	S-BAND	000-109-081				

UNIT	TR	UNIT	RTR-025	REF. DWG.	C3344-K02-	BLOCK NO.	2B03	5
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
PRINTED CIRCUIT BOARD フォトリソレーション								
		03P8726		RF		008-404-610		
DIODE ダイオード								
CR 801		1S1588				000-112-795		
CR 802		1S2095A				000-113-046		
CR 803		1S1588				000-112-795		
CR 804		1S1588				000-112-795		
CR 805		1S1588				000-112-795		
CR 806		1S1588				000-112-795		
CR 807		1S1588				000-112-795		
CR 808		1S1588				000-112-795		
JACK ジャック								
J 801		B5P-VH		5P		000-505-823		
J 802		B4P-VH		4P		000-505-822		
J 803		B3P-VH		3P		000-505-821		
J 804		B3P-SHF-1AA-K		3P		000-100-572		
J 805		B6P-VH		6P		000-505-824		
J 806		B10P-SHF-1AA-K		13-3-3809-1		000-100-594		
J 807		B4P-SHF-1AA-K		4P		000-100-573		
J 808		B9P-SHF-1AA-K		9P		000-100-593		
J 809		B8P-SHF-1AA-K		8P		000-100-592		
J 821		B12P-SHF-1AA-K		12P		000-100-596		
RELAY リレー								
K 804		FBR-111NCD-012				000-450-351		
TRANSISTOR トランジスタ								
Q 850		2SC752GTM-0				000-124-129		
Q 851		2SC1815-0				000-116-151		
Q 853		2SA715C				000-117-430		
Q 854		2SC752GTM-0				000-124-129		
TERMINAL BOARD タerminalボード								
TB 1		ML-30AP-16P				000-108-678	RTB1	
INTEGRATED CIRCUIT シリコンチップ								
U 801		TD62004P				000-163-091		
U 802		TC4538BP				000-163-907		
U 803		TC4049BP				000-163-255		
U 804		TC4538BP				000-163-907		
U 805		TC4081BP				000-163-231		

UNIT	TR	UNIT	RTR-025	REF. DWG.	C3251-K10-	BLOCK NO.	2B05	6
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
PRINTED CIRCUIT BOARD フォトリソレーション								
		PT-8179D		POWER SUPPLY		008-404-620		
DIODE ダイオード								
CR 1		RBV-604				000-108-668		
CR 3		RG2A				000-114-274		
CR 4		1S2095A				000-113-046		
CR 5		HZT7A3		ZENER		000-116-179		
CR 6		RG2Y		13-3-5360		000-134-889		
CR 7		V06E				000-102-981		
CR 8		1S1588				000-112-795		
CR 9		1S1588				000-112-795		
CR 14		TLR124		LED		000-135-883		
CR 15		SFOR1842				000-135-126		
CR 16		1S1588				000-112-795		
CR 17		1S1588				000-112-795		
CR 31		ESAC92-02				000-104-806		
CR 32		ESAC92-02				000-104-806		
CR 33		RK49-LF-K1				000-115-535		
CR 34		RU-4DS-LF-K1		C17.5		000-111-767		
CR 35		RU-4DS-LF-K1		C17.5		000-111-767		
CR 36		RU-4DS-LF-K1		C17.5		000-111-767		
CR 37		TLG124A		LED		000-135-882		
JACK ジャック								
J 51		B3P-VH		3P		000-505-821		
J 52		B5P-SHF-1AA-K		5P		000-100-582		
J 53		B5P-VH		5P		000-505-823		
J 54		B2P-VH		2P		000-505-820		
RELAY リレー								
K 1		DS1-M-DC12V		AG2013		000-117-110		
COIL コイル								
L 1		CL300100DB		03S7097-0		000-112-786		
L 31		SN-5-400				000-105-220		
L 32		SN-3-205		04S4156-0		000-103-758		
L 33		SN-3-205		04S4156-0		000-103-758		
L 34		FL7H-222J				000-104-457		
L 35		FL7H-222J				000-104-457		
TRANSISTOR トランジスタ								
Q 6		2SC2752-L				000-116-165		
Q 7		2SK774				000-110-396		
Q 8		2SA733				000-117-445		

UNIT	TR	UNIT	RTR-025	REF. DWG.	C3344-K01-	BLOCK NO.	2B04	7
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
PRINTED CIRCUIT BOARD フォトリソレーション								
		MD-7083		FR-2020		008-236-350		
DIODE ダイオード								
CR 801		DFG-1815				000-136-017		
CR 805		DFG-188		13-3-5073		000-136-013		
CR 806		DFG-188		13-3-5073		000-136-013		
CR 807		1S1588				000-112-795		
CR 808		DFG-188		13-3-5073		000-136-013		
CR 810		1S1588				000-112-795		
CR 818		DFG-188		13-3-5073		000-136-013		
CR 819		RM2C				000-105-012		
CR 820		RM2C				000-105-012		
JACK ジャック								
J 810		LP-04-1				000-505-456		
J 811		SLM-01T-2.0				000-505-392		
J 812		LR-09				000-505-470		
J 813		SLM-01T-2.0				000-505-392		
J 814		LR-03-1				000-505-468		
J 815		SLF-01T-2.0				000-505-391		
J 816		LR-02F-1				000-505-450		
J 817		SLF-01T-2.0				000-505-391		
J 818		LR-03-1				000-505-468		
J 819		SLM-01T-2.0				000-505-392		
RELAY リレー								
K 801		AP5421 C01		03S7271		000-111-146		
K 802		AP59044				000-454-568		
K 803		AP59044				000-454-568		
COIL コイル								
L 801		RL-4036				000-734-036		
L 802		RL-4106		03S4106		000-734-106		
L 803		OR-12-8-6H SB-5				000-106-740		
L 804		RL-4220				000-734-220		
L 805		RL-3903-3		03S3903-3		000-733-903		
L 806		OR-12-8-6H SB-5				000-106-740		
L 811		RL-5315		12-3-5315		000-734-791		
TRANSFORMER トランス								
T 802		RT-4105				000-734-105		
T 803		RT-4105				000-734-105		

UNIT	TR	UNIT	RTR-025	REF. DWG.	C3251-K10-	BLOCK NO.	2B05	7
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
THERMISTOR サーミスタ								
RT 1		08SP010				000-117-112		
TRANSFORMER トランス								
T 1		RT-7735		03S7735-0		000-116-169		
T 2		RT-8165-0		03S8165		000-117-113		
INTEGRATED CIRCUIT シリコンチップ								
U 1		TLP521-1Y		PHOTO COUPLER		000-135-834		
U 2		UPC1093J				000-113-445		
U 3		RC-7106		03S7106-0		000-112-784		
U 4		HA17903PS				000-162-087		
U 5		TLP521-1Y		PHOTO COUPLER		000-135-834		
U 6		TLP521-1Y		PHOTO COUPLER		000-135-834		
U 7		TLP521-1Y		PHOTO COUPLER		000-135-834		
POTENTIOMETER 可変抵抗器								
VR 1		EVM-MCGA01B13		1K		000-103-593		
VR 2		EVM-MCGA01B14		10K		000-103-632		

UNIT	TR	UNIT	RTR-025	REF. DWG.	C3312-018-	BLOCK NO.	2B08	21
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
PRINTED CIRCUIT BOARD					プリント基板			
ATT-7362					REF.MIC			
CAPACITOR					コンデンサ			
C	1	ECE-A1CU100E	10UF	16V	000-201-672			
C	2	ECE-A1CU100E	10UF	16V	000-201-672			
C	3	DD104-69B102K50V	0.001UF	50V	000-253-806			
C	4	RPE132CH331J50	330PF	50V	000-105-389			
C	5	RPE132F104Z50	0.1UF	50V	000-104-501			
C	6	RPE132F104Z50	0.1UF	50V	000-104-501			
C	7	RPE132F104Z50	0.1UF	50V	000-104-501			
C	8	RPE132F104Z50	0.1UF	50V	000-104-501			
C	9	RPE132F104Z50	0.1UF	50V	000-104-501			
C	10	ECQ-M1H222KVM	2200PF	50V	000-260-419			
C	11	ECQ-M1H222KVM	2200PF	50V	000-260-419			
C	12	ECE-A1HNO10SE	1UF	50V	000-206-108			
C	13	ECQ-M1H102KVM	1000PF	50V	000-260-415			
C	14	ECQ-M1H822KVM	8200PF	50V	000-260-471			
C	15	RPE132F104Z50	0.1UF	50V	000-104-501			
DIODE					ダイオード			
CR	1	1S1588			000-112-795			
CR	2	1S1588			000-112-795			
CR	3	1S1588			000-112-795			
CR	4	1S1588			000-112-795			
CR	5	1S1588			000-112-795			
CR	6	1S1588			000-112-795			
CR	7	MA27W-B			000-133-733			
CR	8	MA27W-B			000-133-733			
CR	9	MA27W-B			000-133-733			
CR	10	MA27W-B			000-133-733			
CR	11	MA27W-B			000-133-733			
CR	12	MA27W-B			000-133-733			
CR	13	MA27W-B			000-133-733			
CR	14	MA27W-B			000-133-733			
JACK					ジャック			
J	3	DIC-149-3P			000-501-900			
J	4	DIC-149-3P			000-501-900			
J	5	DIC-149-3P			000-501-900			
J	851	B8P-SHF-1AA-K	8P		000-100-592			
J	852	B3P-SHF-1AA-K	3P		000-100-572			
PLUG					プラグ			
P	3	DIC-128			000-501-950			
P	4	DIC-128			000-501-950			
P	5	DIC-128			000-501-950			

UNIT	TR	UNIT	RTR-025	REF. DWG.	C3344-K01-	BLOCK NO.	2B09	15
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
PRINTED CIRCUIT BOARD					プリント基板			
CM-5146DRTR-010					FR-2050X 008-256-160			
JACK					ジャック			
J	841	B4P-SHF-1AA-K	4P		000-100-573			
J	842	B6P-SHF-1AA-K	6P		000-100-584			
J	843	B3P-SHF-1AA-K	3P		000-100-572			
PLUG					プラグ			
P	9	H3P-SHF-AA-3P	NH HOUSING		000-505-596			
		BHF-001T-0.8BS	NH CONTACT		000-505-504			
RESISTOR					抵抗			
R	841	ERD-25PJ473	0.25W	47K	000-330-397			
R	842	ERD-25PJ473	0.25W	47K	000-330-397			
R	843	ERD-25PJ822	0.25W	8.2K	000-330-379			
R	844	ERD-25PJ123	0.25W	12K	000-330-383			
R	845	ERD-25PJ223	0.25W	22K	000-330-389			
R	846	ERD-25PJ392	0.25W	3.9K	000-330-371			
R	847	ERD-25TJ333	0.25W	33K	000-330-393			
SWITCH					スイッチ			
S	840	RR-5079	13-3-5079		000-110-409			

UNIT	TR	UNIT	RTR-025	REF. DWG.	C3312-018-	BLOCK NO.	2B08	22
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
TRANSISTOR					トランジスタ			
Q	1	2SC752GTM-0			000-124-129			
Q	2	2SC752GTM-0			000-124-129			
Q	3	2SC752GTM-0			000-124-129			
Q	4	2SC752GTM-0			000-124-129			
Q	5	2SC752GTM-0			000-124-129			
RESISTOR					抵抗			
R	1	ERD-25PJ100	0.25W	10	000-330-309			
R	2	ERD-25PJ100	0.25W	10	000-330-309			
R	3	ERD-25PJ331	0.25W	330	000-330-345			
R	4	ERD-25PJ223	0.25W	22K	000-330-389			
R	5	ERD-25PJ103	0.25W	10K	000-330-381			
R	6	ERD-25PJ103	0.25W	10K	000-330-381			
R	7	ERD-25PJ472	0.25W	4.7K	000-330-373			
R	8	ERD-25PJ823	0.25W	82K	000-330-403			
R	9	ERD-25PJ332	0.25W	3.3K	000-330-369			
R	10	ERD-25PJ222	0.25W	2.2K	000-330-365			
R	11	ERD-25PJ103	0.25W	10K	000-330-381			
R	12	ERD-25PJ683	0.25W	68K	000-330-401			
R	13	ERD-25PJ102	0.25W	1K	000-330-357			
R	14	ERD-25PJ683	0.25W	68K	000-330-401			
R	15	ERD-25PJ123	0.25W	12K	000-330-383			
R	16	ERD-25PJ181	0.25W	180	000-330-359			
R	17	ERD-25PJ272	0.25W	2.7K	000-330-367			
R	18	ERD-25PJ222	0.25W	2.2K	000-330-365			
R	19	ERD-25PJ103	0.25W	10K	000-330-381			
R	20	ERD-25PJ821	0.25W	820	000-330-355			
R	21	ERD-25PJ122	0.25W	1.2K	000-330-359			
INTEGRATED CIRCUIT					ICチップ			
U	1	TC4538BP			000-163-907			
U	2	UPC251C			000-161-047			
U	3	TC4001BP			000-163-240			
POTENTIOMETER					ポテンチオメータ			
VR	1	EVM-MCGA01B53	5K		000-103-631			
VR	2	EVM-MCGA01B13	1K		000-103-593			
VR	3	EVM-MCGA01B23	2K		000-103-630			

FURUNOELECTRICAL PARTS LIST
電気部品表

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MODEL	FR-2050X/2852X		
UNIT	TR UNIT	RTR-010	PAGE
REF. DWG.	C3300-005-	BLOCK NO.	2B
			1

SYMBOL 記号	TYPE 型名	SPECIFICATIONS 規格	CODE NO. コード番号	REMARKS 備考
2B03	03P-6666B RTB	FR-2050X	008-256-220	
2B04	03P6668 PFN-1	FR-2050X	008-256-140	
2B05	03P-6669 PFN-2	FR-2050X	008-256-230	
2B06	03P-6827 MAG	FR-2050X	008-256-240	
2B07	03P-6667 PWR	FR-2050X	008-256-210	
2B08	03P-6680 HV-1	FR-2050X	008-256-180	W/ 03P6810
	03P-6810 HV-2	FR-2050X	008-256-190	
2B09	CM-5146DRTR-010	FR-2050X	008-256-160	
2B10	IF-6734	FR-2050X	008-234-250	
	TX MODULE	RTR-010	008-234-240	TX MODULE

MOTOR		モーター		
2B01B0801	109S005		000-430-454	
2B01B0802	109S005		000-430-454	
CAPACITOR		コンデンサー		
2B02C0801	ECK-D3D222KBN	2200PF 2KV	000-257-308	
2B02C0804	MD-1-2E-104M	0.1UF 250WV	000-262-001	
2B02C0851	DD104-69B102K50V	1000PF 50V	000-253-806	
2B02C0852	DD106F103Z50 N5.0	0.01UF 50V	000-253-443	
DIODE		ダイオード		
2B02CR0803	V19E		000-136-020	
2B02CR0804	V19E		000-136-020	
2B02CR0805	V19E		000-136-020	
2B02CR0808	ED-16H1	13-3-2643-0	000-132-550	
2B02CR0809	ED-16H1	13-3-2643-0	000-132-550	
2B02CR0810	E3902		000-105-620	
	BS4122		000-108-889	
2B02CR0813	SH16J12U		000-135-165	
2B02CR0814	SH16J12U		000-135-165	
2B02CR0815	SH16J12U		000-135-165	
2B02CR0851	RD-6.2EB	ZENER	000-134-793	
LAMP		ランプ		
2B01DS0801	BN-5668 AC100V 赤	RED	000-541-711	
FUSE		ヒューズ		
2B01F0801	FGBO-A	AC125V 5A	000-549-064	
2B01F0802	FGBO-A	2A,125VAC	000-549-062	
2B01F0803	FGBO-A	2A,125VAC	000-549-062	

UNIT	TR	UNIT	RTR-010	REF. DWG.	C3300-005-	BLOCK NO.	2B	2
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
	FILTER				フィルタ-			
2B01FL0801	LF-205A		13-3-5363		000-588-411			
	HOUR METER				アワーメータ-			
2B01HM0801	HM-5-106		HOUR METER		000-440-923			
	HIGH VOLTAGE PACK				コウアツパ ^o ツク			
2B02HY0801	CIRCULATOR ASSY		RTR-010		008-234-190	FCX548		
	RELAY				リレー			
2B02K0801	VF-12HN				000-108-676			
2B02K0802	VF-12HN				000-108-676			
2B02K0803	VF-12HN				000-108-676			
	COIL				コイル			
2B02L0801	RL-6772-1		03S6772-1		000-108-655			
2B02L0851	SP0406-5R6K-6				000-429-391			
	METER				メータ-			
2B01M0801	SH48#3075	RP1892-3			000-631-892			
	RESISTOR				テイコウ			
2B02R0801	FGO		20W,200		000-108-670			
2B02R0802	ERG-2ANJ6R8		2W,6.8		000-113-843			
2B01R0811	FGOS		10W,4		000-360-035			
2B01R0812	FGOS		10W,2		000-360-036			
2B02R0826	GS-1 J		4.7M		000-108-671			
2B02R0827	GS-1 J		4.7M		000-108-671			
2B02R0828	GS-1 J		4.7M		000-108-671			
	SWITCH				スイッチ			
2B01S0801	22AC-J5				000-473-400			
2B02S0802	22AC-J5				000-473-400			
	TRANSFORMER				トランス			
2B02T0801	RT-6664		03S6664-0		000-108-658			
2B01T0804	RT-6670-1		03S6670-1		000-108-661			
	INTEGRATED CIRCUIT				シユウセキカイロ			
2B02U0801	MIC ASSY		RTR-010-1		008-234-200	RU-5469 W/ MIC-5746		
	MIC ASSY		RTR-010-2		008-234-210	S-RX24 W/ MIC-6550		

UNIT	TR UNIT	RTR-010	REF. DWG.	C3300-005-	BLOCK NO.	2B	3
SYMBOL	T Y P E	SPECIFICATIONS	CODE NO.	REMARKS			
記号	型名	規格	コード番号	備考			
ELECTRON TUBE		テラシカン					
2B02V0801	M4505E	13-3-18201	000-106-012				

FURUNOELECTRICAL PARTS LIST
電気部品表

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MODEL	FR-2060S/2862S		
UNIT	TR UNIT	RTR-018	PAGE
REF. DWG.	C3312-019-	BLOCK NO.	2B00
			1

SYMBOL 記号	T Y P E 型名	SPECIFICATIONS 規格	CODE NO. コード番号	REMARKS 備考
2B02	RF ASSY	FR-2060S	008-173-840	INCL. IF AMP ETC.
2B03	03P6666A	FR-2060S	008-173-870	
2B04	03P6668 PFN-1	FR-2050X	008-256-140	
2B05	03P6669A PFN-2	FR-2060S	008-256-150	
2B06	03P6827.A	FR-2060S	008-256-110	
2B07	03P6667	FR-2060S	008-173-880	
2B08	TX-HV ASSY	RTR-018/FR2060S	008-173-850	
	03P6680	FR-2060S	008-256-280	
	03P6810	FR-2060S	008-256-270	
2B09	CM-5146DRTR-010	FR-2050X	008-256-160	
2B10	IF-6734B	FR-2060S/2862S	008-256-130	
	METER PANEL ASSY	RTR-018/FR2060S	008-173-860	W/ B9(CM) & B14(TRT)

MOTOR		モーター		
2B01B0801	109S005		000-430-454	
2B02B0802	109S005		000-430-454	
CAPACITOR		コンデンサー		
2B02C0801	ECK-D3D222KBN	2200PF 2KV	000-257-308	
2B02C0804	MD-1-2E-104M	0.1UF 250WV	000-262-001	
DIODE		ダイオード		
2B01CR0061	TLR143K		000-100-146	
2B01CR0062	TLR143K		000-100-146	
2B02CR0803	V19E		000-136-020	
2B02CR0804	V19E		000-136-020	
2B02CR0805	V19E		000-136-020	
2B02CR0808	ED-16H1	13-3-2643-0	000-132-550	
2B02CR0809	ED-16H1	13-3-2643-0	000-132-550	
2B02CR0810	BS894	S-BAND	000-105-100	TR TUBE
2B02CR0813	SH16J12U		000-135-165	
2B02CR0814	SH16J12U		000-135-165	
2B02CR0815	SH16J12U		000-135-165	
FUSE		ヒューズ		
2B01F0801	FGBO-A	5A,125VAC	000-549-064	
2B01F0802	FGBO-A	2A,125VAC	000-549-062	
2B01F0803	FGBO-A	2A,125VAC	000-549-062	
FILTER		フィルター		
2B01FL0801	LF-205A	13-3-5363	000-588-411	

UNIT	TR	UNIT	RTR-018	REF. DWG.	C3312-019-	BLOCK NO.	2B00	2
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
		HOUR METER			アワーメーター			
2B01HM0801	HM-5-106		HOUR METER		000-440-923			
		HIGH VOLTAGE PACK			コウアツパツク			
2B02HY0801	RC-4910		13-3-4910		000-106-862			
		RELAY			リレー			
2B02K0801	VF-12HN				000-108-676			
2B02K0802	VF-12HN				000-108-676			
2B02K0803	VF-12HN				000-108-676			
		COIL			コイル			
2B02L0801	RL-6772-1		03S6772-1		000-108-655			
		METER			メーター			
2B01M0801	SH48#3075	RP1892-3			000-631-892			
		RESISTOR			テイコウ			
2B02R0801	FGO		10W 1K		000-357-360			
2B02R0802	ERG-2ANJ6R8		2W,6.8		000-113-843			
2B01R0811	FGOS		10W,4		000-360-035			
2B01R0812	FGOS		10W,2		000-360-036			
2B02R0826	GS-1 J		4.7M		000-108-671			
2B02R0827	GS-1 J		4.7M		000-108-671			
2B02R0828	GS-1 J		4.7M		000-108-671			
		SWITCH			スイッチ			
2B01S0801	22AC-J5				000-473-400			
2B01S0802	22AC-J5				000-473-400			
		TRANSFORMER			トランス			
2B02T0801	RT-6991		03S6991-1		000-113-272			
2B02T0804	RT-6670-1		03S6670-1		000-108-661			
		INTEGRATED CIRCUIT			シユウセキカイロ			
2B02U0801	MIC ASSY		RTR-018/FR2060S	008-256-120	W/B13(ATT)			
		ELECTRON TUBE			デ"ンシカン			
2B02V0801	MG5240		S-BAND		000-100-240			

UNIT	TR	UNIT	RTR-018/eli	REF. DWG.	C3300-006-	BLOCK NO	2B03	3
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO	REMARKS	
記号	型	名	規	格	コード番号	備考		
PRINTED CIRCUIT BOARD フォトリソグラフィック								
		03P6666A	FR-2060S		008-173-870	RTR-018		
		03P-6666B RTB	FR-2050X		008-256-220	RTR-010		
CAPACITOR コンデンサ								
C	850	RPE132F104Z50	0.1UF	50V	000-104-501			
C	851	ECE-A1CU101E	100UF	16V	000-206-112			
C	852	ECE-A1CU101E	100UF	16V	000-206-112			
C	853	RPE132F104Z50	0.1UF	50V	000-104-501			
C	854	RPE110CH101J50	100PF	50V	000-251-700			
C	855	RPE110CH331J50	330PF	50V	000-251-702			
C	856	ECQ-M1H23JV	0.022UF	50V	000-105-005			
C	857	ECQ-M1H472KV	4700PF	50V	000-260-209			
C	858	ECE-A1CU101E	100UF	16V	000-206-112			
C	859	ECE-A1CU101E	100UF	16V	000-206-112			
C	860	RPE132F104Z50	0.1UF	50V	000-104-501			
C	861	ECE-A1CU101E	100UF	16V	000-206-112			
C	862	RPE132F104Z50	0.1UF	50V	000-104-501			
C	863	ECE-A1CU101E	100UF	16V	000-206-112			
C	864	RPE132F104Z50	0.1UF	50V	000-104-501			
C	866	ECQ-M1H222KV	2200PF	50V	000-260-205			
C	867	RPE132F104Z50	0.1UF	50V	000-104-501			
C	868	RPE132F104Z50	0.1UF	50V	000-104-501			
C	869	RPE132F104Z50	0.1UF	50V	000-104-501			
C	870	MDD-2-2E-105K	1UF	250V	000-105-201			
C	871	MDD-2-2E-105K	1UF	250V	000-105-201			
C	872	RPE132F104Z50	0.1UF	50V	000-104-501			
C	880	RPE132F104Z50	0.1UF	50V	000-104-501			
C	881	RPE132F104Z50	0.1UF	50V	000-104-501			
C	882	RPE132F104Z50	0.1UF	50V	000-104-501			
C	884	RPE132F104Z50	0.1UF	50V	000-104-501			
C	885	RPE132F104Z50	0.1UF	50V	000-104-501			
C	886	RPE132F104Z50	0.1UF	50V	000-104-501			
C	887	RPE132F104Z50	0.1UF	50V	000-104-501			
C	888	RPE132F104Z50	0.1UF	50V	000-104-501			
C	889	RPE132F104Z50	0.1UF	50V	000-104-501			
C	890	RPE132F104Z50	0.1UF	50V	000-104-501			
C	891	RPE132F104Z50	0.1UF	50V	000-104-501			
DIODE ダイオード								
CR	850	1S1588			000-112-795			
CR	851	1S1588			000-112-795			
CR	853	1S2095A			000-113-046			
CR	854	1S1588			000-112-795			
CR	855	1S2095A			000-113-046			
CR	856	1S2095A			000-113-046			
CR	857	1S2095A			000-113-046			

UNIT	TR	UNIT	RTR-018/eli	REF. DWG.	C3300-006-	BLOCK NO	2B03	5
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO	REMARKS	
記号	型	名	規	格	コード番号	備考		
RESISTOR リスタ								
R	871	ERD-25PJ47	0.25W	4.7	000-330-301			
R	872	ERD-25PJ47	0.25W	4.7	000-330-301			
R	873	ERD-25PJ473	0.25W	47K	000-330-397			
R	875	ERD-25PJ102	0.25W	1K	000-330-357			
R	876	ERD-25PJ472	0.25W	4.7K	000-330-373			
R	877	ERD-25PJ470	0.25W	47	000-330-325			
R	878	ERD-25PJ222	0.25W	2.2K	000-330-365			
R	879	ERD-25PJ103	0.25W	10K	000-330-381			
R	880	ERD-25PJ103	0.25W	10K	000-330-381			
R	881	ERD-25PJ103	0.25W	10K	000-330-381			
R	882	ERD-25PJ103	0.25W	10K	000-330-381			
R	883	ERD-25PJ103	0.25W	10K	000-330-381			
R	884	ERD-25PJ103	0.25W	10K	000-330-381			
R	885	ERD-25PJ103	0.25W	10K	000-330-381			
R	886	ERD-25PJ823	0.25W	82K	000-330-403			
R	887	ERD-25PJ332	0.25W	3.3K	000-330-369			
R	888	ERD-25PJ332	0.25W	3.3K	000-330-369			
R	889	ERD-25PJ332	0.25W	3.3K	000-330-369			
R	893	ERD-25PJ823	0.25W	82K	000-330-403			
R	894	ERD-25PJ823	0.25W	82K	000-330-403			
R	896	ERD-25PJ101	0.25W	10K	000-330-333			
R	897	ERD-25PJ103	0.25W	10K	000-330-381			
TERMINAL BOARD タンパ								
TB	1	ML-30AP-16P			000-108-678	RTB 1		
INTEGRATED CIRCUIT シリコンチップ								
U	850	TC4538BP			000-163-907			
U	851	TC4081BP			000-163-231			
U	852	TC4049BP			000-163-255			
U	853	TD62004P			000-163-091			
POTENTIOMETER 可変抵抗器								
VR	858	EVM-MCGA01B14	10K		000-103-632			

UNIT	TR	UNIT	RTR-018/eli	REF. DWG.	C3300-006-	BLOCK NO	2B03	4
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO	REMARKS	
記号	型	名	規	格	コード番号	備考		
DIODE ダイオード								
CR	858	1S2095A			000-113-046			
JACK ジャック								
J	801	B6P-VH	6P		000-505-824			
J	802	B5P-VH	5P		000-505-823			
J	803	B4P-VH	4P		000-505-822			
J	804	B3P-SHF-1AA-K	3P		000-100-572			
J	805	B10P-VH	10P		000-505-828			
J	806	B10P-SHF-1AA-K	13-3-3809-1		000-100-594			
J	807	B12P-SHF-1AA-K	12P		000-100-596			
RELAY リレー								
K	851	MR31-12HD			000-454-080			
PLUG プラグ								
P	6	H4P-SHF-AA-4P	NH HOUSING		000-505-597	RTR-018		
		BHF-001T-0.8BS	NH CONTACT		000-505-504			
P	853	SMP-08V-8C BP	NH CONTACT		000-505-368	RTR-018		
		BHF-001T-0.8BS	NH CONTACT		000-505-504			
TRANSISTOR トランジスタ								
Q	850	2SC752GTM-D			000-124-129			
Q	853	2SA715C			000-117-430			
Q	854	2SC752GTM-D			000-124-129			
Q	884	2SC367GTM-D			000-123-552			
RESISTOR リスタ								
R	850	ERD-25PJ101	0.25W	100	000-330-333			
R	851	ERD-25PJ101	0.25W	100	000-330-333			
R	852	ERD-25PJ102	0.25W	1K	000-330-357			
R	853	ERD-25PJ102	0.25W	1K	000-330-357			
R	854	ERD-25PJ102	0.25W	1K	000-330-357			
R	855	ERD-25PJ103	0.25W	10K	000-330-381			
R	856	ERD-25PJ102	0.25W	1K	000-330-357			
R	857	ERD-25PJ103	0.25W	10K	000-330-381			
R	858	ERD-25PJ273	0.25W	27K	000-330-391			
R	859	ERD-25PJ823	0.25W	82K	000-330-403			
R	860	ERD-25TJ563	0.25W	56K	000-330-399			
R	861	ERD-25PJ103	0.25W	10K	000-330-381			
R	862	ERF-5AJ560	5W	564-4	5X 000-370-732			
R	863	ERG-2ANJ471	2W	470	000-371-357			
R	864	ERD-25PJ332	0.25W	3.3K	000-330-369			
R	865	ERD-25PJ102	0.25W	1K	000-330-357			
R	866	ERD-25PJ101	0.25W	100	000-330-333			
R	867	ERD-25PJ334	0.25W	330K	000-330-417			
R	868	ERD-25TJ681	0.25W	680	000-330-353			
R	870	ERD-25PJ270	0.25W	27	000-330-319			

UNIT	TR	UNIT	RTR-018/eli	REF. DWG.	C3312-019-	BLOCK NO	2B04	6
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO	REMARKS	
記号	型	名	規	格	コード番号	備考		
PRINTED CIRCUIT BOARD フォトリソグラフィック								
		03P6668	PFN-1	FR-2050X	008-256-140			
CAPACITOR コンデンサ								
C	826	ECK-D3A222KBN	2200PF	1KV	000-255-755			
C	827	ECK-D3A222KBN	2200PF	1KV	000-255-755			
C	828	ECK-D3A222KBN	2200PF	1KV	000-255-755			
C	829	ECQ-M1H222KV	2200PF	50V	000-260-205			
C	830	ECQ-M1H222KV	2200PF	50V	000-260-205			
C	831	ECQ-M1H222KV	2200PF	50V	000-260-205			
C	832	ECQ-M1H104KV	0.1UF	50V	000-260-401			
DIODE ダイオード								
CR	816	RM2C			000-105-012			
CR	817	RM2C			000-105-012			
CR	818	RM2C			000-105-012			
CR	819	1S2095A			000-113-046			
CR	820	1S2095A			000-113-046			
CR	821	1S2095A			000-113-046			
CR	822	1S2095A			000-113-046			
CR	823	1S2095A			000-113-046			
CR	824	1S2095A			000-113-046			
CR	825	1S2095A			000-113-046			
JACK ジャック								
J	808	BS3P-SHF-1AA	3P		000-505-566			
RESISTOR リスタ								
R	813	EF2-330K4-LJ</						

UNIT	TR	UNIT	RTR-018 / 100	REF. DWG.	C3312-019-	BLOCK NO.	2B05	7
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	規格	コード番号	備考	
PRINTED CIRCUIT BOARD フォトリソグラフィック								
		03P-6669 PFN-2	FR-2050X			008-256-230	RTR-010	
		03P6669A PFN-2	FR-2060S			008-256-150	RTR-018	
CAPACITOR コンデンサ								
C 811		ECW-H15H153JD				000-108-426		
C 812		ECW-H15H222JD	2200PF	1.5KV		000-261-971		
C 813		ECW-H15H682JD	6800PF	1.5KV		000-259-609		
C 815		ECW-H15H153JD				000-108-426		
C 816		ECW-H15H153JD				000-108-426		
C 817		ECW-H15H153JD				000-108-426		
C 818		ECW-H15H153JD				000-108-426		
C 819		ECW-H15H153JD				000-108-426		
C 820		ECW-H15H153JD				000-108-426		
C 821		ECW-H15H153JD				000-108-426		
C 822		ECW-H15H153JD				000-108-426		
C 823		ECW-H15H153JD				000-108-426		
C 824		ECW-H15H153JD				000-108-426		
C 826		ECK-D3D222KBM	2200PF	2KV		000-257-308		
C 827		ECW-H15H102JD	1000PF	1.5KV		000-259-601		
DIODE ダイオード								
CR 801		U07N				000-103-504		
CR 802		U07N				000-103-504		
COIL コイル								
L 802		RL-7457	03S7457			000-113-845	RTR-018	
		RL-6869	03S6869			000-108-890	RTR-010	
L 811		RL-6868-0	03S6868-0			000-108-656		
RESISTOR リジスタ								
R 830		ERF-5AJ150	5W	15.		000-370-741		
R 831		ERF-5AJ150	5W	15.		000-370-741		

UNIT	TR	UNIT	RTR-018 / 100	REF. DWG.	C3300-008-	BLOCK NO.	2B07	9
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	規格	コード番号	備考	
PRINTED CIRCUIT BOARD フォトリソグラフィック								
		03P6667	FR-2060S			008-173-880		
CAPACITOR コンデンサ								
C 1		MDD-2-2J-103K	0.01UF	630V		000-108-663		
C 2		MDD-2-2J-103K	0.01UF	630V		000-108-663		
C 3		MDD-2-2E-104K	0.1UF			000-104-892		
C 5		ECE-S1HV472S	4700UF	50V		000-108-664		
C 6		ECE-A1HU221	220UF	50V		000-201-746		
C 7		ECQ-M1472KZW	4700PF	100V		000-104-800		
C 8		ECE-A1CF471	470UF	16V		000-201-610		
C 9		ECE-A1EF101	100UF	25V		000-201-651		
C 10		ECE-A1CF471	470UF	16V		000-201-610		
C 11		ECE-A1HU221	220UF	50V		000-201-746		
C 12		ECQ-A1CU101E	100UF	16V		000-206-112		
C 13		ECQ-M1H102KV	1000PF	50V		000-260-201		
C 14		ECE-A1CU100E	10UF	16V		000-201-672		
C 15		ECE-A1CU220E	22UF	16V		000-201-806		
C 16		ECQ-M1H154KVV	0.15UF	50V		000-104-802		
C 18		ECQ-M1H102KV	1000PF	50V		000-260-201		
C 19		ECE-A1CU100E	10UF	16V		000-201-672		
DIODE ダイオード								
CR 1		RBV-401				000-108-667		
CR 2		RG-22				000-134-890		
CR 3		FMG-22S				000-108-666		
CR 4		CTG-22R				000-132-440		
CR 5		FMG-22S				000-108-666		
CR 6		V19E				000-134-890		
CR 7		SFOR1842				000-135-126		
CR 8		1S1588				000-112-795		
CR 9		TLR124			LED	000-135-883		
JACK ジャック								
J 1		B2P-VH	2P			000-505-820		
J 2		B6P-VH	6P			000-505-824		
J 57		B3P-SHF-1AA-K	3P			000-100-572		
COIL コイル								
L 1		SC-05-10J	03S6316-0			000-104-536		
L 2		HPO32	03S6315			000-104-535		
L 3		FL9H-102J	1MH			000-428-050		
L 4		SN-5-400				000-105-220		
TRANSISTOR トランジスタ								
Q 1		2SK737(1)	03S6919			000-109-769		
Q 2		2SB941AP				000-121-302		
Q 3		2SA495GTM-0				000-116-992		

UNIT	TR	UNIT	RTR-018 / 100	REF. DWG.	C3312-019-	BLOCK NO.	2B06	8
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	規格	コード番号	備考	
PRINTED CIRCUIT BOARD フォトリソグラフィック								
		03P-6827 MAG	FR-2050X			008-256-240	RTR-010	
		03P6827.A	FR-2060S			008-256-110	RTR-018	
CAPACITOR コンデンサ								
C 805		ECQ-M1H104KV	0.1UF	50V		000-260-401		
C 806		ECQ-M1H104KV	0.1UF	50V		000-260-401		
C 807		ECQ-M1H104KV	0.1UF	50V		000-260-401		
C 808		ECQ-M1H104KV	0.1UF	50V		000-260-401		
C 809		ECQ-M1H473KVV	0.047UF	50V		000-260-417		
C 840		MDD-2-2J-103K	0.01UF	630V		000-108-663		
C 841		ECQ-M1H104KV	0.1UF	50V		000-260-401		
C 842		ECE-A1HU100E	10UF	50V		000-201-832		
C 843		RPE110CH101J50	100PF	50V		000-251-700		
DIODE ダイオード								
CR 807		1S2095A				000-113-046		
CR 840		1S2095A				000-113-046		
CR 842		1S1588				000-112-795		
JACK ジャック								
J 812		SMR-02V-B,2P				000-505-367		
		LTM-001T-0.6				000-505-487		
COIL コイル								
L 804		RT-5164	13-3-5164			000-734-003		
RESISTOR リジスタ								
R 803		ERX-1ANJR68	1W	0.68		000-371-051	RTR-010	
		ERX-1ANJR51	1W	0.51		000-371-048	RTR-018	
R 804		ERD-25PJ101	0.25W	100		000-330-333		
R 805		ERD-25PJ221	0.25W	220		000-330-341		
R 806		ERD-25PJ102	0.25W	1K		000-330-357		
R 807		ERD-25PJ825	0.25W	82K		000-330-403		
R 808		ERD-25PJ102	0.25W	1K		000-330-357		
R 809		ERD-25PJ331	0.25W	330		000-330-345		

UNIT	TR	UNIT	RTR-018 / 100	REF. DWG.	C3300-008-	BLOCK NO.	2B07	10
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	規格	コード番号	備考	
RESISTOR リジスタ								
R 1		RW-10.1J	1W	0.1		000-104-811		
R 2		ERG-25J150P	2W	15		000-375-451		
R 3		LF14100F	00S0096-0			000-373-601		
R 4		ERD-25PJ393	0.25W	39K		000-330-395		
R 5		ERD-25PJ152	0.25W	1.5K		000-330-361		
R 6		ERD-25PJ102	0.25W	1K		000-330-357		
R 8		ERD-25PJ103	0.25W	10K		000-330-381		
R 9		ERD-25PJ152	0.25W	1.5K		000-330-361		
R 10		ERD-25PJ473	0.25W	47K		000-330-397		
R 11		ERD-25PJ392	0.25W	3.9K		000-330-371		
R 12		ERG-2ANJ102	2W	1K		000-371-366		
R 13		ERD-25PJ182	0.25W	1.8K		000-330-363		
R 14		ERD-25PJ182	0.25W	1.8K		000-330-363		
R 15		ERX-2ANJR33	2W	0.33	5%	000-371-584		
R 16		ERD-25PJ103	0.25W	10K		000-330-381		
R 17		ERD-25PJ332	0.25W	3.3K		000-330-369		
R 18		ERD-25PJ102	0.25W	1K		000-330-357		
R 19		ERD-25PJ472	0.25W	4.7K		000-330-373		
R 20		ERD-25PJ222	0.25W	2.2K		000-330-365		
R 21		ERX-2ANJ470	2W	47		000-371-189		
R 22		ERX-1ANJR33	1W	0.33		000-371-043		
R 23		ERD-25PJ472	0.25W	4.7K		000-330-373		
TRANSFORMER トランス								
T 1		RT-6671-0	03S6671-0			000-108-660		
INTEGRATED CIRCUIT シリコンキチ								
U 1		RC6219	03S6219			000-104-530		
U 2		RC6220-2	03S6220-12			000-104-531		
U 3		HA17903PS				000-162-087		
POTENTIOMETER 可変抵抗器								
VR 1		EVM-MCGA01B52	500, B			000-103-592		

UNIT	TR	UNIT	RTR-018/c10	REF. DWG.	C3300-007-	BLOCK NO.	2B08	11
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
PRINTED CIRCUIT BOARD フプリント基板								
		03P6680		FR-2060S		008-256-280		
		03P6810		FR-2060S		008-256-270		
CAPACITOR コンデンサ								
C	51	MDD-2-2J-103K		0.01UF,630V		000-108-663		
C	52	MDD-2-2J-103K		0.01UF,630V		000-108-663		
C	53	MDD-2-2E-104K		0.1UF		000-104-892		
C	54	ECE-S2DG331M				000-108-665		
C	55	ECE-S2DG331M				000-108-665		
C	56	ECE-A1CU471		470UF 16V		000-201-714		
C	57	ECE-A1CU220E		22UF 16V		000-201-806		
C	59	CS99E1D6R8M3		6.8UF		000-232-060		
C	60	CS99E1D6R8M3		6.8UF		000-232-060		
C	61	ECW-M10H102JR		1000PF 1000V		000-104-546		
C	62	FK20Y5V1H104Z		0.1UF 50V		000-254-900		
C	63	FK20Y5V1H104Z		0.1UF 50V		000-254-900		
C	64	ECQ-M1H102KV		1000PF 50V		000-260-201		
C	65	PRE132R473M50				000-105-382		
C	66	FK20Y5V1H104Z		0.1UF 50V		000-254-900		
C	67	FK20Y5V1H104Z		0.1UF 50V		000-254-900		
C	68	ECQ-M1H472KV		4700PF 50V		000-260-209		
C	91	ECE-B2WS330				000-203-601		
C	92	ECE-B2WS330				000-203-601		
C	93	ECE-A1HN100S		10UF 50V		000-201-633		
DIODE ダイオード								
CR	51	RBV-604				000-108-668		
CR	52	1S1588				000-112-795		
CR	53	1S1588				000-112-795		
CR	54	1S1588				000-112-795		
CR	55	GU3B				000-132-960		
CR	56	GU3B				000-132-960		
CR	57	1S1588				000-112-795		
CR	58	1S1588				000-112-795		
CR	59	1S1588				000-112-795		
CR	60	1S1588				000-112-795		
CR	61	TLR143K				000-100-146		
CR	62	SFOR1B42				000-135-126		
CR	91	U07N				000-103-504		
CR	92	U07N				000-103-504		
CR	93	U07N				000-103-504		
CR	94	U07N				000-103-504		
CR	95	U07N				000-103-504		
CR	96	U07N				000-103-504		
CR	97	U07N				000-103-504		
CR	98	U07N				000-103-504		
CR	99	U07N				000-103-504		
CR	100	U07N				000-103-504		

UNIT	TR	UNIT	RTR-018/c10	REF. DWG.	C3300-007-	BLOCK NO.	2B08	13
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
RESISTOR 抵抗								
R	51	FGD 20W 14-L				000-108-675		
R	52	EF-1/2-1M-J		0.5W 1M		000-374-110		
R	53	ERD-25PJ122		0.25W 1.2K		000-330-359		
R	54	ERD-25PJ272		0.25W 2.7K		000-330-367		
R	55	ERD-25PJ103		0.25W 10K		000-330-381		
R	56	ERD-25PJ150		0.25W 15		000-330-313		
R	57	ERD-25PJ102		0.25W 1K		000-330-357		
R	58	ERD-25PJ122		0.25W 1.2K		000-330-359		
R	59	ERD-25PJ101		0.25W 100		000-330-333		
R	60	ERD-25PJ101		0.25W 100		000-330-333		
R	61	ERX-1S1J6R8P		00S0102-0		000-375-382		
R	62	ERX-1S1J6R8P		00S0102-0		000-375-382		
R	63	ERD-25PJ470		0.25W 47		000-330-325		
R	64	ERD-25PJ470		0.25W 47		000-330-325		
R	65	ERG-5S1J471P		430.0		000-108-673		
R	66	ERD-25PJ823		0.25W 82K		000-330-403		
R	67	ERD-25PJ222		0.25W 2.2K		000-330-365		
R	68	ERD-25PJ272		0.25W 2.7K		000-330-367		
R	69	ERD-25PJ222		0.25W 2.2K		000-330-365		
R	70	ERD-25PJ823		0.25W 82K		000-330-403		
R	71	ERD-25PJ103		0.25W 10K		000-330-381		
R	72	ERD-25PJ103		0.25W 10K		000-330-381		
R	73	ERD-25PJ222		0.25W 2.2K		000-330-365		
R	74	ERD-25PJ102		0.25W 1K		000-330-357		
R	75	ERD-25PJ102		0.25W 1K		000-330-357		
R	76	ERD-25PJ102		0.25W 1K		000-330-357		
R	77	ERD-25PJ102		0.25W 1K		000-330-357		
R	78	ERD-25PJ471		0.25W 470		000-330-349		
R	79	EF 1/2 100KJ		0.5W 100K		000-374-101		
R	80	EF-1/2-220K-J		0.5W 220K		000-374-103		
R	81	ERD-25PJ222		0.25W 2.2K		000-330-365		
R	82	ERD-25PJ471		0.25W 470		000-330-349		
R	83	ERD-25PJ271		0.25W 270		000-330-343		
R	91	EF2-220K4-LJ				000-108-674		
R	92	EF2-220K4-LJ				000-108-674		
R	93	ERD-25TJ681		0.25W 680		000-330-353		
R	94	EF2-220K4-LJ				000-108-674		
R	95	EF2-220K4-LJ				000-108-674		
R	96	ERX-1S1J1R5P		1W 1.5		000-375-373		
TRANSFORMER トランス								
T	51	RT-4098-2				000-734-098		
T	52	RT-4098-2				000-734-098		
T	53	RT-6831		03S6831-0		000-108-662		
INTEGRATED CIRCUIT システムIC								
U	51	RC6219		03S6219		000-104-530		
U	52	RC-4214-1				000-378-100		
U	53	TLP521-1Y		PHOTO COUPLER		000-135-834		
U	54	HA17903PS				000-162-087		

UNIT	TR	UNIT	RTR-018/c10	REF. DWG.	C3300-007-	BLOCK NO.	2B08	12
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
DIODE ダイオード								
CR	101	U07N				000-103-504		
CR	102	U07N				000-103-504		
JACK ジャック								
J	3	B5P-VH		5P		000-505-823		
J	4	B3P-VH		3P		000-505-821		
J	5	LR-03-1				000-505-468		
J		SLM-01T-2.0				000-505-392		
J	51	B2P-VH		2P		000-505-820		
J	52	B6P-VH		6P		000-505-824		
J	53	LR-02F-1				000-505-450		
J		SLF-01T-2.0				000-505-391		
J	54	LR-02F-1				000-505-450		
J		SLM-01T-2.0				000-505-392		
J	55	B7P-VH		7P		000-505-825		
J	56	B3P-SHF-1AA-K		3P		000-100-572		
RELAY リレー								
K	51	SCD5A		13-3-5002		000-573-134		
K	852	MR31-12GD				000-108-679		
COIL コイル								
L	51	SC-05-10J		03S6316-0		000-104-536		
L	52	RL-6832		03S6832-0		000-108-657		
PLUG プラグ								
P	51	VHR-2N		VH HOUSING		000-505-885		
P		BVH-21T-P1.1		VH CONTACT		000-100-049		
P	52	VHR-6N		VH HOUSING		000-505-890		
P		BVH-21T-P1.1		VH CONTACT		000-100-049		
P	53	LP-02-1				000-505-458		
P		LLM-01T-2.0				000-505-494		
P	54	LP-02-1				000-505-458		
P		LLF-01T-2.0				000-505-495		
P	55	VHR-7N				000-505-891		
P		BVH-21T-P1.1		VH CONTACT		000-100-049		
P	56	H3P-SHF-AA-3P		NH HOUSING		000-505-596		
P		BHF-001T-0.8BS		NH CONTACT		000-505-504		
TRANSISTOR トランジスタ								
Q	51	2SB941AP				000-121-302		
Q	52	2SC367GTM-0				000-123-552		
Q	53	2SA743A-C				000-117-466		
Q	54	2SA743A-C				000-117-466		
Q	55	2SC2749L				000-126-303		
Q	56	2SC2749L				000-126-303		
Q	57	2SA733				000-117-445		

UNIT	TR	UNIT	RTR-018/c10	REF. DWG.	C3300-007-	BLOCK NO.	2B08	14
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
INTEGRATED CIRCUIT システムIC								
U	55	MB3759M				000-157-500		
U	56	TLP521-1Y		PHOTO COUPLER		000-135-834		
POTENTIOMETER 可変抵抗器								
VR	51	EVM-MCGA01B14		10K		000-103-632		
VR	52	EVM-MCGA01B52		500.0		000-103-592		
VR	53	EVM-MCGA01B23		2K		000-103-630		

UNIT	TR	UNIT	RTR-018/cic	REF. DWG.	C3312-019-	BLOCK NO.	2809	15
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
PRINTED CIRCUIT BOARD フォトリソグラフィック								
CM-5146DRTR-010 FR-2050X 008-256-160								
JACK ジャック								
J 841	B4P-SHF-1AA-K		4P		000-100-573			
J 842	B6P-SHF-1AA-K		6P		000-100-584			
J 843	B3P-SHF-1AA-K		3P		000-100-572			
PLUG プラグ								
P 9	H3P-SHF-AA-3P	NH HOUSING			000-505-596			
	BHF-001T-0.8BS	NH CONTACT			000-505-504			
RESISTOR リジスタ								
R 841	ERD-25PJ473		0.25W	47K	000-330-397			
R 842	ERD-25PJ473		0.25W	47K	000-330-397			
R 843	ERD-25PJ822		0.25W	8.2K	000-330-379			
R 844	ERD-25PJ123		0.25W	12K	000-330-383			
R 845	ERD-25PJ223		0.25W	22K	000-330-389			
R 846	ERD-25PJ392		0.25W	3.9K	000-330-371			
R 847	ERD-25TJ333		0.25W	33K	000-330-393			
SWITCH スイッチ								
S 840	RR-5079		13-3-5079		000-110-409			

UNIT	TR	UNIT	RTR-018/cic	REF. DWG.	C3308-016-	BLOCK NO.	2810	17
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
CAPACITOR コンデンサ								
C 647	DD104B102K50V02		1000PF	50V	000-252-171			
C 648	RPE132F104Z50		0.1UF	50V	000-104-501			
C 649	RPE132F104Z50		0.1UF	50V	000-104-501			
C 650	RPE132F104Z50		0.1UF	50V	000-104-501			
C 651	DD104B102K50V02		1000PF	50V	000-252-171			
C 652	RPE132F104Z50		0.1UF	50V	000-104-501			
C 653	DD104B102K50V02		1000PF	50V	000-252-171			
C 654	RPE132F104Z50		0.1UF	50V	000-104-501			
C 655	DD104B102K50V02		1000PF	50V	000-252-171			
C 656	DD104B102K50V02		1000PF	50V	000-252-171			
C 657	DD104B102K50V02		1000PF	50V	000-252-171			
C 659	DD104B102K50V02		1000PF	50V	000-252-171			
C 660	DD104B102K50V02		1000PF	50V	000-252-171			
C 661	DD104B102K50V02		1000PF	50V	000-252-171			
C 662	DD104B102K50V02		1000PF	50V	000-252-171			
C 663	RPE132CH101J50		100PF	50V	000-104-505			
C 664	RPE132CH101J50		100PF	50V	000-104-505			
C 665	RPE132CH101J50		100PF	50V	000-104-505			
C 666	RPE132CH101J50		100PF	50V	000-104-505			
C 667	ECC-F1H560JC		56PF	50VDC	000-255-228			
C 668	ECC-F1H330JC		33PF	50VDC	000-255-222			
C 669	DD104B102K50V02		1000PF	50V	000-252-171	RTR-018		
C 670	DD104B102K50V02		1000PF	50V	000-252-171	RTR-018		
C 671	DD104B102K50V02		1000PF	50V	000-252-171	RTR-018		
DIODE ダイオード								
CR 601	MI-301				000-133-699			
CR 602	1S1588				000-112-795			
CR 603	MI-301				000-133-699			
CR 604	MI-301				000-133-699			
CR 605	1S1588				000-112-795			
CR 606	MI-301				000-133-699			
CR 608	MA27W-B				000-133-733			
CR 609	1S1588				000-112-795			
CR 610	1SS16				000-114-001			
CR 611	MI-301				000-133-699			
CR 612	MI-301				000-133-699			
CR 613	MI-301				000-133-699			
CR 614	1SV68	VARI. CAP.			000-114-120			
CR 615	TLR124	LED			000-135-883			
CR 616	MA27W-B				000-133-733			
CR 617	RD59EB	ZENER			000-134-862			
CR 618	RD-5.6EB	ZENER			000-134-805			
JACK ジャック								
J 604	B12P-SHF-1AA-K		12P		000-100-596			
J 605	B6P-SHF-1AA-K		6P		000-100-584			
J 606	B3P-SHF-1AA-K		3P		000-100-572	RTR-018		
J 651	UG-535/U, L TYPE		FB-LRF2A		000-500-430			

UNIT	TR	UNIT	RTR-018/cic	REF. DWG.	C3308-016-	BLOCK NO.	2810	16
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
PRINTED CIRCUIT BOARD フォトリソグラフィック								
IF-6734 FR-2050X 008-234-250								
IF-6734B FR-2060S/2862S 008-256-130								
CAPACITOR コンデンサ								
C 601	ECE-A1CU100E		10UF	16V	000-201-672			
C 602	DD104B102K50V02		1000PF	50V	000-252-171			
C 604	RPE132CH101J50		100PF	50V	000-104-505			
C 605	ECC-F1H180JC		18PF	50VDC	000-255-216			
C 606	DD104B102K50V02		1000PF	50V	000-252-171			
C 607	RPE132CH101J50		100PF	50V	000-104-505			
C 608	DD104B102K50V02		1000PF	50V	000-252-171			
C 609	RPE132CH101J50		100PF	50V	000-104-505			
C 610	DD104B102K50V02		1000PF	50V	000-252-171			
C 611	RPE132F104Z50		0.1UF	50V	000-104-501			
C 612	ECE-A1CU100E		10UF	16V	000-201-672			
C 613	RPE132F104Z50		0.1UF	50V	000-104-501			
C 614	DD104B102K50V02		1000PF	50V	000-252-171			
C 615	ECC-F1H050CC		5PF	50VDC	000-255-205			
C 616	ECC-F1H050CC		5PF	50VDC	000-255-205			
C 617	DD104B102K50V02		1000PF	50V	000-252-171			
C 618	DD104B102K50V02		1000PF	50V	000-252-171			
C 619	DD104B102K50V02		1000PF	50V	000-252-171			
C 620	DD104B102K50V02		1000PF	50V	000-252-171			
C 621	DD104B102K50V02		1000PF	50V	000-252-171			
C 622	ECE-A1CU100E		10UF	16V	000-201-672			
C 623	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 624	ECC-F1H180JC		18PF	50VDC	000-255-216			
C 625	DD104B102K50V02		1000PF	50V	000-252-171			
C 626	DD104B102K50V02		1000PF	50V	000-252-171			
C 627	DD104B102K50V02		1000PF	50V	000-252-171			
C 628	DD104B102K50V02		1000PF	50V	000-252-171			
C 629	ECE-A1CU100E		10UF	16V	000-201-672			
C 630	DD104B102K50V02		1000PF	50V	000-252-171			
C 631	DD104B102K50V02		1000PF	50V	000-252-171			
C 632	ECE-A1CU101E		100UF	16V	000-206-112			
C 633	RPE132F104Z50		0.1UF	50V	000-104-501			
C 634	DD104B102K50V02		1000PF	50V	000-252-171			
C 635	ECC-F1H100DC		10PF	50V	000-255-210			
C 636	DD104B102K50V02		1000PF	50V	000-252-171			
C 637	DD104B102K50V02		1000PF	50V	000-252-171			
C 638	DD109-69E103P50V		0.01UF	50V	000-253-801			
C 639	DD104B102K50V02		1000PF	50V	000-252-171			
C 640	ECE-A1CU100E		10UF	16V	000-201-672			
C 641	DD104B102K50V02		1000PF	50V	000-252-171			
C 642	DD104B102K50V02		1000PF	50V	000-252-171			
C 643	RPE132F104Z50		0.1UF	50V	000-104-501			
C 644	RPE132F104Z50		0.1UF	50V	000-104-501			
C 645	RPE132F104Z50		0.1UF	50V	000-104-501			
C 646	RPE132F104Z50		0.1UF	50V	000-104-501			

UNIT	TR	UNIT	RTR-018/cic	REF. DWG.	C3308-016-	BLOCK NO.	2810	18
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備考		
JACK ジャック								
J 2401	G-21 GP-BR				000-504-077	RTR-018		
COIL コイル								
L 601	ELO710-5R6K00S0037		5.6UH	270MA	000-427-625			
L 602	ELO710-5R6K00S0037		5.6UH	270MA	000-427-625			
L 603	ELO710-5R6K00S0037		5.6UH	270MA	000-427-625			
L 604	ELO710-5R6K00S0037		5.6UH	270MA	000-427-625			
L 605	ELO710-5R6K00S0037		5.6UH	270MA	000-427-625			
L 606	ELO710-5R6K00S0037		5.6UH	270MA	000-427-625			
L 607	ELO710-5R6K00S0037		5.6UH	270MA	000-427-625			
PLUG プラグ								
P 602	LDF-0.1T-1.3AS				000-538-143			
P 605	H6P-SHF-AA, 3P	NH HOUSING			000-505-599			
	BHF-001T-0.8BS	NH CONTACT			000-505-504			
TRANSISTOR トランジスタ								
Q 601	2SC3358				000-106-772			
Q 602	2SA1015-Y				000-118-041			
Q 603	2SC1815-Y				000-125-631			
Q 604	2SC1815-Y				000-125-631			
Q 605	2SC1815-Y				000-125-631			
Q 606	2SC1815-Y				000-125-631			
Q 607	2SA1015-Y				000-118-041			
Q 608	2SC1260				000-124-800			
Q 609	2SC1260				000-124-800			

UNIT	TR	UNIT	RTR-018/cic	REF. DWG.	C3308-016-	BLOCK NO.	2B10	19
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
		RESISTOR		抵抗器				
R	622	ERD-25PJ471	0.25W	470	000-330-349			
R	623	ERD-25PJ331	0.25W	330	000-330-345			
R	624	ERD-25PJ221	0.25W	220	000-330-341			
R	625	ERD-25PJ331	0.25W	330	000-330-345			
R	626	ERD-25PJ221	0.25W	220	000-330-341			
R	627	ERD-25PJ681	0.25W	680	000-330-353			
R	628	ERD-25PJ182	0.25W	1.8K	000-330-363			
R	629	ERD-25PJ182	0.25W	1.8K	000-330-363			
R	630	ERD-25PJ221	0.25W	220	000-330-341			
R	631	ERD-25PJ471	0.25W	470	000-330-349			
R	632	ERD-25PJ471	0.25W	470	000-330-349			
R	633	ERD-25PJ471	0.25W	470	000-330-349			
R	634	ERD-25PJ221	0.25W	220	000-330-341			
R	635	ERD-25PJ182	0.25W	1.8K	000-330-363			
R	636	ERD-25PJ561	0.25W	560	000-330-351			
R	637	ERD-25PJ220	0.25W	22	000-330-317			
R	638	ERD-25PJ220	0.25W	22	000-330-317			
R	639	ERD-25PJ472	0.25W	4.7K	000-330-373			
R	640	ERD-25PJ471	0.25W	470	000-330-349			
R	641	ERD-25PJ272	0.25W	2.7K	000-330-367			
R	642	ERD-25PJ472	0.25W	4.7K	000-330-373			
R	643	ERD-25PJ101	0.25W	100	000-330-333			
R	644	ERD-25PJ222	0.25W	2.2K	000-330-365			
R	645	ERD-25PJ472	0.25W	4.7K	000-330-373			
R	646	ERD-25PJ561	0.25W	560	000-330-351			
R	647	ERD-25PJ472	0.25W	4.7K	000-330-373			
R	648	ERD-25PJ100	0.25W	10	000-330-309			
R	649	ERD-25PJ100	0.25W	10	000-330-309			
R	650	ERD-25PJ102	0.25W	1K	000-330-357	RTR-010		
R	651	ERD-25PJ103	0.25W	10K	000-330-381	RTR-010		
R	652	ERD-25PJ100	0.25W	10	000-330-309			
R	653	ERD-25PJ222	0.25W	2.2K	000-330-365			
R	654	ERD-25PJ102	0.25W	1K	000-330-357			
R	655	ERD-25PJ332	0.25W	3.3K	000-330-369			
R	656	ERD-25PJ272	0.25W	2.7K	000-330-367			
R	657	ERG-1SJ100P	1W	10	000-375-384			
R	658	ERG-1SJ390P	1W	39	000-375-391			
R	659	ERD-25PJ151	0.25W	150	000-330-337			
R	660	ERD-25PJ561	0.25W	560	000-330-351			
R	661	ERD-25PJ222	0.25W	2.2K	000-330-365			
R	662	ERD-25PJ473	0.25W	47K	000-330-397			
R	663	ERD-25PJ472	0.25W	4.7K	000-330-373			
R	665	ERD-25PJ103	0.25W	10K	000-330-381	RTR-018		
R	666	ERD-25PJ561	0.25W	560	000-330-351	RTR-018		
		TRANSFORMER		変圧器				
T	601	RT-6846	03S6846		000-108-918			
T	602	RT-6847	03S6847		000-108-919			
T	603	RT-6848	03S6848		000-108-920			
T	604	RT-6849	03S6849		000-108-921			
T	605	RT-6850	03S6850		000-108-922			

UNIT	TR	UNIT	RTR-018/cic	REF. DWG.	C3308-016-	BLOCK NO.	2B10	20
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
		TRANSFORMER		変圧器				
T	606	RT-6851	03S6851		000-108-923			
T	607	RT-6852	03S6852		000-108-924			
		INTEGRATED CIRCUIT		集積回路				
U	601	SL-1613C			000-169-132			
U	602	SL-1613C			000-169-132			
U	603	SL-1613C			000-169-132			
U	604	SL-1613C			000-169-132			
U	605	SL-1613C			000-169-132			
U	606	SL-1613C			000-169-132			
U	607	SL-1613C			000-169-132			
U	608	SL-1613C			000-169-132			
U	609	SL-1613C			000-169-132			
U	610	SL-1613C			000-169-132			
U	611	AN79L09			000-108-925			
U	612	AN78L09			000-108-031			
U	613	AN78N07			000-108-926			
U	614	TA78L005AP			000-163-606			
U	615	RC-6861	03S6861		000-108-927			
U	616	RC-6372-1	03S6372-1		000-106-859			
		TRIMMER CAPACITOR		トリマ コンデンサ				
VC	601	T203Z100F	10PF		000-102-408			
		POTENTIOMETER		ポテンチオメータ				
VR	601	EVM-MCGA01B53	5K		000-103-631			
VR	602	EVM-MCGA01B53	5K		000-103-631			

UNIT	TR	UNIT	RTR-018	REF. DWG.	C3312-018-	BLOCK NO.	2B13	21
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
PRINTED CIRCUIT BOARD フプリント基板								
ATT-7362 REF.MIC								
CAPACITOR コンデンサ								
C	1	ECE-A1CU100E	10UF	16V	000-201-672			
C	2	ECE-A1CU100E	10UF	16V	000-201-672			
C	3	DD104-69B102K50V	0.001UF	50V	000-253-806			
C	4	RPE132CH331J50	330PF	50V	000-105-389			
C	5	RPE132F104Z50	0.1UF	50V	000-104-501			
C	6	RPE132F104Z50	0.1UF	50V	000-104-501			
C	7	RPE132F104Z50	0.1UF	50V	000-104-501			
C	8	RPE132F104Z50	0.1UF	50V	000-104-501			
C	9	RPE132F104Z50	0.1UF	50V	000-104-501			
C	10	ECQ-M1H222KVM	2200PF	50V	000-260-419			
C	11	ECQ-M1H222KVM	2200PF	50V	000-260-419			
C	12	ECE-A1HN010SE	1UF	50V	000-206-108			
C	13	ECQ-M1H102KVM	1000PF	50V	000-260-415			
C	14	ECQ-M1H822KVM	8200PF	50V	000-260-471			
C	15	RPE132F104Z50	0.1UF	50V	000-104-501			
DIODE ダイオード								
CR	1	1S1588			000-112-795			
CR	2	1S1588			000-112-795			
CR	3	1S1588			000-112-795			
CR	4	1S1588			000-112-795			
CR	5	1S1588			000-112-795			
CR	6	1S1588			000-112-795			
CR	7	MA27W-B			000-133-733			
CR	8	MA27W-B			000-133-733			
CR	9	MA27W-B			000-133-733			
CR	10	MA27W-B			000-133-733			
CR	11	MA27W-B			000-133-733			
CR	12	MA27W-B			000-133-733			
CR	13	MA27W-B			000-133-733			
CR	14	MA27W-B			000-133-733			
JACK ジャック								
J	3	DIC-149-3P			000-501-900			
J	4	DIC-149-3P			000-501-900			
J	5	DIC-149-3P			000-501-900			
J	851	B8P-SHF-1AA-K	8P		000-100-592			
J	852	B3P-SHF-1AA-K	3P		000-100-572			
PLUG プラグ								
P	3	DIC-128			000-501-950			
P	4	DIC-128			000-501-950			
P	5	DIC-128			000-501-950			

UNIT	TR	UNIT	RTR-018	REF. DWG.	C3312-017-	BLOCK NO.	2B14	23
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
PRINTED CIRCUIT BOARD フプリント基板								
TRT-7363								
CAPACITOR コンデンサ								
C	1	ECE-A1CU100E	10UF	16V	000-201-672			
C	2	DD104-69B102K50V	0.001UF	50V	000-253-806			
C	3	RPE132CH331J50	330PF	50V	000-105-389			
C	4	DD104-69B102K50V	0.001UF	50V	000-253-806			
C	5	RPE132CH331J50	330PF	50V	000-105-389			
C	6	RPE132F104Z50	0.1UF	50V	000-104-501			
C	7	ECE-A1CU101E	100UF	16V	000-206-112			
C	8	ECE-A1CU100E	10UF	16V	000-201-672			
C	9	ECE-A1CU100E	10UF	16V	000-201-672			
C	10	RPE132F104Z50	0.1UF	50V	000-104-501			
C	11	ECQ-M1H223KVM	0.022UF	50V	000-260-414			
JACK ジャック								
J	6	B4P-SHF-1AA-K	4P		000-100-573			
J	7	BNC-R (FB-SRF3C)			000-500-391			
J	8	BNC-R (FB-SRF3C)			000-500-391			
J	9	B3P-SHF-1AA-K	3P		000-100-572			
TRANSISTOR トランジスタ								
Q	1	2SC752GTM-D			000-124-129			
Q	2	2SA495GTM-D			000-114-992			
Q	3	2SC752GTM-D			000-124-129			
Q	4	2SC752GTM-D			000-124-129			
RESISTOR リジスタ								
R	1	ERD-25PJ100	0.25W	10	000-330-309			
R	2	ERD-25PJ102	0.25W	1K	000-330-357			
R	3	ERD-25PJ223	0.25W	22K	000-330-389			
R	4	ERD-25PJ103	0.25W	10K	000-330-381			
R	5	ERD-25PJ103	0.25W	10K	000-330-381			
R	6	ERD-25PJ472	0.25W	4.7K	000-330-373			
R	7	ERD-25PJ182	0.25W	1.8K	000-330-363			
R	8	ERD-25PJ102	0.25W	1K	000-330-357			
R	9	ERD-25PJ332	0.25W	3.3K	000-330-369			
R	10	ERD-25PJ331	0.25W	330	000-330-345			
R	11	ERD-25PJ471	0.25W	470	000-330-349			
R	12	ERD-25PJ562	0.25W	5.6K	000-330-375			
R	13	ERD-25PJ102	0.25W	1K	000-330-357			
R	14	ERD-25PJ821	0.25W	820	000-330-355			
R	15	ERD-25PJ103	0.25W	10K	000-330-381			
R	16	ERD-25PJ103	0.25W	10K	000-330-381			
INTEGRATED CIRCUIT シリコンチップ								
U	1	TC4528BP			000-163-293			

UNIT	TR	UNIT	RTR-018	REF. DWG.	C3312-018-	BLOCK NO.	2B13	22
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
TRANSISTOR トランジスタ								
Q	1	2SC752GTM-D			000-124-129			
Q	2	2SC752GTM-D			000-124-129			
Q	3	2SC752GTM-D			000-124-129			
Q	4	2SC752GTM-D			000-124-129			
Q	5	2SC752GTM-D			000-124-129			
RESISTOR リジスタ								
R	1	ERD-25PJ100	0.25W	10	000-330-309			
R	2	ERD-25PJ100	0.25W	10	000-330-309			
R	3	ERD-25PJ331	0.25W	330	000-330-345			
R	4	ERD-25PJ223	0.25W	22K	000-330-389			
R	5	ERD-25PJ103	0.25W	10K	000-330-381			
R	6	ERD-25PJ103	0.25W	10K	000-330-381			
R	7	ERD-25PJ472	0.25W	4.7K	000-330-373			
R	8	ERD-25PJ823	0.25W	82K	000-330-403			
R	9	ERD-25PJ332	0.25W	3.3K	000-330-369			
R	10	ERD-25PJ222	0.25W	2.2K	000-330-365			
R	11	ERD-25PJ103	0.25W	10K	000-330-381			
R	12	ERD-25PJ683	0.25W	68K	000-330-401			
R	13	ERD-25PJ102	0.25W	1K	000-330-357			
R	14	ERD-25PJ683	0.25W	68K	000-330-401			
R	15	ERD-25PJ123	0.25W	12K	000-330-383			
R	16	ERD-25PJ181	0.25W	180	000-330-339			
R	17	ERD-25PJ272	0.25W	2.7K	000-330-367			
R	18	ERD-25PJ222	0.25W	2.2K	000-330-365			
R	19	ERD-25PJ103	0.25W	10K	000-330-381			
R	20	ERD-25PJ821	0.25W	820	000-330-355			
R	21	ERD-25PJ122	0.25W	1.2K	000-330-359			
INTEGRATED CIRCUIT シリコンチップ								
U	1	TC4538BP			000-163-907			
U	2	UPC251C			000-161-047			
U	3	TC4001BP			000-163-240			
POTENTIOMETER 可変抵抗器								
VR	1	EVM-MCGA01B53	5K		000-103-631			
VR	2	EVM-MCGA01B13	1K		000-103-593			
VR	3	EVM-MCGA01B23	2K		000-103-630			

UNIT	TR	UNIT	RTR-018	REF. DWG.	C3312-017-	BLOCK NO.	2B14	24
SYMBOL	T	Y	P	E	SPECIFICATIONS	CODE NO.	REMARKS	
記号	型	名	規	格	コード番号	備	考	
INTEGRATED CIRCUIT シリコンチップ								
U	2	TC4066BP			000-163-264			
POTENTIOMETER 可変抵抗器								
VR	1	EVM-MCGA01B14	10K		000-103-632			
VR	2	EVM-MCGA01B23	2K		000-103-630			

MECHANICAL PARTS LIST

DISPLAY UNIT (RDP-057/RDP-058)	M-1
SCANNER UNIT (RSB-003/4/5)	M-3
SCANNER UNIT (RSB-0026/31)	M-4
SCANNER UNIT (RSB-0027/32)	M-6
TRANSCEIVER UNIT (RTR-019)	M-8
TRANSCEIVER UNIT (RTR-010)	M-10
TRANSCEIVER UNIT (RTR-025)	M-12
TRANSCEIVER UNIT (RTR-018)	M-14

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MECHANICAL PARTS LIST

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MODEL	FR-2050X/2030S/2060S	
UNIT	RDP-057, RDP-058	PAGE
REF. DWG.	C3311-E01-A/C3308-035-A (C3316-E01-A/C3308-035-A)	M- 1

SYMBOL	PARTS NAME	TYPE/DWG. NO	CODE NO.	REMARKS
A 201	SIDE COVER (R)	03-026-1001-1	100-072-841	
A 202	SIDE COVER (L)	03-026-1002-1	100-072-851	
A 203	RIGHT SHASSIS	03-026-1141-6	100-073-276	
A 204	LEFT CHASSIS	03-026-1142-4	100-073-284	
A 205	BOTTOM PLATE	03-026-1143-4	100-073-294	
A 206	REAR RETAINER (UPPER PATT)	03-026-1144-0	100-073-300	
A 207	DISPLAY UNIT FIXING PLATE	03-026-1004-0	100-072-870	
A 208	RETAINER FOR CRT ASSY.	03-026-1146-1	100-073-321	
A 209	REAR COVER	03-026-1003-0	100-072-860	
A 210	CRT NECK SUPPORTING PLATE	03-026-1035-3	100-073-003	
A 211	SPONGE	02-023-1104-1	202-311-041	
A 212	SHILD CASE	03-026-1106-6	100-073-136	
A 213	PANEL FIXING SCREW BASE (1)	03-026-1041-1	100-073-011	
A 214	PANEL FIXING SCREW BASE (2)	03-026-1042-1	100-073-021	
A 215	PANEL FIXING SCREW BASE (3)	03-026-1043-2	100-073-032	
A 216	PANEL FIXING SCREW BASE (4)	03-026-1044-1	100-073-041	
A 217	PCB CASE MOUNTING BASE (3)	03-026-1112-1	100-073-161	
A 218	CABLE CLAMP (1)	03-026-1121-0	100-073-200	
A 219	CABLE CLAMP (1)	03-026-1122-0	100-079-760	
A 220	CABLE CLAMP FIXING PLATE	03-026-1123-1	100-079-771	
A 221	PCB CASE MOUNTING BASE (3)	03-026-1116-0	100-087-390	2PCS
A 223	LABEL	03-033-1004-0	100-090-440	
A 224	HELICAL INSERT COIL	M8X1.5D	000-867-635	
A 227	CRT CHASSIS FIXING PLATE	03-026-1111-0	100-073-150	
A 228	BASE FOR EYE BOLT (2)	03-026-1109-0	100-087-380	4PCS
A 229	FRONT RETAINER	03-026-1147-0	100-073-330	
A 230	MASK SPONGE FOR PRESET PCB	03-026-1126-0	100-079-790	
A 231	KNOB *WING TYPE*	023-4420 BLACK 21DIA	000-515-311	
A 232	KNOB CAP	040-4010	000-515-332	
A 233	FRONT COVER	03-026-1011-4	100-072-884	
A 234	STUD	316-120-170	000-801-403	
A 236	CHECK DOOR FIXING PLATE	03-026-1013-1	100-079-741	
A 237	MAGNET RECIEVE PLATE	03-026-1015-0	100-097-340	
A 238	MAGNET	TL-78S	000-801-679	
A 239	HINGE	TH-TM-5 BRASS	000-872-005	2PCS
A 240	NAME PLATE	03-009-0114-0	100-046-040	RDP-057
	NAME PLATE	03-009-0113-0	300-901-130	RDP-058
A 241	(GS) STICKER	03-024-9001	100-074-400	
A 242	REAR RETAINER (LOWER PART)	03-026-1145-3	100-073-313	
A 243	PCB CASE MAIN CHASSIS	03-026-1131-0	100-073-210	
A 244	PCB CASE SIDE PLATE (L)	03-026-1133-1	100-073-231	
A 245	PCB CASE SIDE PLATE (L)	03-026-1132-1	100-073-220	
A 246	RETAINER FOR MOTHER BOARD	03-026-1139-0	100-074-070	2PCS
A 247	PCB CASE FIXING ANGLE	03-026-1134-0	100-073-240	2PCS
A 248	SPONGE FOR PCB FIX PLATE	03-026-1137-0	100-073-260	
A 249	BLIND SHEET (1)	03-026-1135-0	100-073-250	
A 250	STICKER	18-001-1021-0	100-015-120	
A 251	BOTTOM PLATE OF MOUNT BASE	03-026-1052-1	100-073-061	
A 252	REINFORCEMENT PLATE	03-005-1034-0	300-510-340	
A 253	TOP PLATE OF MOUNT BASE	03-005-1032-0	300-510-320	
A 254	JOINT ANGLE FOR MOUNT BASE	03-026-1053-0	100-073-070	2PCS
A 255	GUIDE PIN	03-005-1035-0	300-510-350	2PCS
A 256	SPLIT PIN	4X8 S15C	000-866-391	
A 257	SPACER *B*	SB6M3-15BS	000-655-985	14PCS
A 258	SPACER	SB-6M3-10-BS	000-877-113	7PCS ACSET 9PCS DCSET
A 259	SPACER	SB-6M3-20-BS	000-877-112	6PCS
A 260	SPACER (2)	HSA-3025	000-803-025	2PCS
A 261	SPACER (3)	HSA-4070	000-804-070	6PCS
A 262	GUIDE RAIL	G-1714	000-800-153	12PCS
A 263	SPACER	SB8M4-15-BS	000-877-111	4PCS
A 264	SPACER	SB8M4-10-BS	000-655-988	7PCS ACSET 9PCS DCSET
A 265	CHECK DOOR FIXING TAPE	03-026-1014-0	100-079-750	13PCS
A 270A	PCB RACK ASSEMBLY	PCB RACK ASSY	008-226-500	

UNIT	RDP-057, RDP-058		REF. DWG.	C3311-E01-A		PAGE	M-2
SYMBOL	PARTS NAME	TYPE/DWG. NO	CODE NO.	REMARKS			
A	325	CHECK DOOR	03-026-1012-2	100-072-892			

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MECHANICAL PARTS LIST

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MODEL	FR-2020X/2050X	
UNIT	RSB-003/004/005	PAGE
REF. DWG.	C3263-005-D	M- 3

SYMBOL	PARTS NAME	TYPE/DWG. NO	CODE NO.	REMARKS
A	101A	ANTENNA RADIATOR	XN5-B01	008-325-810 FOR 3.0M
A	103	WAVEGUIDE CLAMP INSULATOR	RSB-2008-0	360-220-080 FOR 3.0M
A	104A	FEEDER W.G. ASSY.	03-005-4230-0	300-542-300 FOR 3.0M
A	105	W.G. CLAMP	RSB-2006-1	360-220-061 FOR 3.0M
A	110	ROTARY JOINT	RC-B	000-879-058
A	112	RADIATOR MOUNTING BASE	03-006-3221-0	300-632-210
A	113	SEALING	RSQ-2202-1	361-722-021
A	114	HEATER COVER	03-006-3281-0	300-632-810
A	115	HEATER COVER	03-006-3281-0	300-632-810
A	116	HEATER LEAD WIRE OUTLET	03-006-3283-0	300-632-830
A	117	HEATER SUPPORTING PLATE	03-006-3282-0	300-632-820
A	120	HOOK	RSQ-2602-2	361-726-022
A	121	SIDE COVER	03-006-3271-1	300-632-711
A	122	SCANNER HOUSING	03-006-3211-3	300-632-113
A	123	SIDE COVER	03-006-3271-1	300-632-711
A	124	HOOK	RSQ-2602-2	361-726-022
A	125	W.G. ASSY.	03-006-3260-2	300-632-602
A	126	SW MOUNTING PLATE	03-006-3215-0	300-632-150
A	127	BEARING	6014ZZ	000-873-273
A	128	SPACER (2)	03-006-3222-0	300-632-220
A	129	GEAR	03-006-3251-0	300-632-510
A	130	SPACER (1)	03-006-3201-0	300-632-010
A	131	BEARING	6013ZZ	000-873-268
A	132	BEARING SUPPORTER	03-006-3204-0	300-632-040
A	133	BEARING RETAINER	03-006-3202-1	300-632-021
A	134	MOTOR MOUNTING BASE	03-006-3205-0	300-632-050
A	135	FEEDER FIXING RING	03-006-3206-1	300-632-061
A	136	SW POSITION PLATE	03-006-3217-1	300-632-171
A	137	SW COVER	03-006-3216-0	300-632-160
A	140	GEAR (1)	03-006-3232-0	300-632-320
A	141	PULSE GEN. DISC	03-006-3233-2	300-632-332
A	142	LED SW MOUNTING PLATE	03-006-3209-0	300-632-090
A	143	P.C.B. MOUNTING PLATE	03-006-3236-2	300-632-362
A	144	MOTOR FIXING PLATE	03-006-3231-3	300-632-313
A	145	ROPE	4PHI *400MM*	000-835-318
A	150A	ANTENNA RADIATOR ASSEMBLY	XN4A	008-324-000 FOR 2.4M
		ANTENNA RADIATOR ASSEMBLY	XN3A	008-324-500 FOR 2.0M
A	151	W.G. CLAMP	RSB-2006-1	360-220-061
A	152A	FEEDER WAVEGUIDE ASSY	03-003-4200-1	300-342-001 FOR 2.4M
		W.G. ASSY.	03-007-4200-0	300-742-000 FOR 2.0M
A	153	WAVEGUIDE CLAMP INSULATOR	03-003-4003-0	300-340-030
A	200A	SCANNER ASSEMBLY	RSB-003-N-S	008-200-980 220V,30,300W
		SCANNER ASSEMBLY	RSB-003-N *USA*	008-200-990 USA VERSION
		SCANNER ASSEMBLY	RSB-004-N-S	008-201-000 220V,30,200W
		SCANNER ASSEMBLY	RSB-004-N *USA*	008-201-010 USA VERSION
		SCANNER ASSEMBLY	RSB-005-N-S	008-201-020 100V,10,200W
		SCANNER ASSEMBLY	RSB-005-N *USA*	008-201-030 USA VERSION
GK	101	O-RING	AS568-125, 1115-70	000-851-840
GK	102	O-RING	AS568-142, 1115-70	000-851-855
GK	103	COVER PACKING	03-006-3272-0	300-632-720
GK	104	COVER PACKING	03-006-3272-0	300-632-720
GK	105	FEEDER PACKING	03-008-3302-0	300-833-020
GK	106	SW PACKING	03-006-3213-1	300-632-131
GK	107	HEATER PACKING	03-006-3293-0	300-632-930
GK	150	O-RING	AS568-125, 1115-70	000-851-840
GK	151	V-RING	VR-120A	000-850-738
S	101	STOPPER	03-006-3234-0	300-632-340

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MODEL	FR-2030S/2830S	
UNIT	RSB-0026/0031	PAGE
REF. DWG.	C3311-E02-B	M- 4

SYMBOL	PARTS NAME	TYPE/DWG. NO	CODE NO.	REMARKS
A 100A	SCANNER HOUSING	RSB-0026-N-S	008-256-030	
A 101A	ANTENNA RADIATOR ASSEMBLY	SN5AF 9 FOOT	008-254-370	
A 103	ANTENNA RADIATOR ASSEMBLY	SN7AF	008-254-380	
A 104	ANTENNA BRACKET	03-015-3213-0	100-090-540	
A 105A	PROTECTION CAP	03-029-0402-1	100-091-131	
A 106	RADIATOR BRACKET ASSEMBLY	RSB-0026	008-256-340	
A 107	HELI-SERT	M10-1.5X1DNS	000-801-591	
A 108	CHOKER GUIDE	03-015-3235-0	100-090-740	
A 109	BALL BEARING	6809VV	000-801-590	
A 110	O-RING	JISB2401-1A-G65	000-851-310	
A 111	LABEL	03-029-0202-0	100-091-100	
A 112	MAIN SHAFT	03-015-3214-0	100-090-550	
A 113	SEAL RING	03-015-3215-0	100-090-560	
A 114	KEY	03-015-3216-0	100-090-570	
A 115	V-RING	VR-130A 319-5141	000-850-739	
A 116	BEARING FIXING PLATE	03-011-3218	100-049-531	
A 117	BEARING	6014ZZ	000-873-273	
A 118	SPACER (1)	03-015-3217-0	100-090-580	
A 119	GEAR BOX	03-015-3212-0	100-090-530	
A 120	BLIND PLATE	03-006-3292-0	300-632-920	
A 121	HEATER PACKING	03-006-3293-0	300-632-930	
A 122	SCANNER TURNING GEAR	03-015-3226-0	100-090-660	
A 123	SPACER (2)	03-015-3218-0	100-090-590	
A 124	BEARING	6014ZZ	000-873-273	
A 125	BRACKET	03-015-3219-0	100-090-600	
A 126	TIMING GEAR	03-015-3223-0	100-090-630	
A 127	BEARING WASHER	AW-13X	000-800-969	
A 128	BEARING NUT	AN-13	000-800-968	
A 129	MAGNET FIXING PLATE	03-015-3225-0	100-090-650	
A 130	SPACER	SB8M4-10-BS	000-655-988	
A 131A	BLIND PLATE	03-011-3224-0	100-049-580	
A 132	HEATER MOUNTING BASE	03-011-3501-0	100-049-940	FOR DE-ICER
A 133	HEATER SUPPORTING PLATE	03-006-3282-0	300-632-820	FOR DE-ICER
A 134	HEATER LEAD WIRE OUTLET	03-006-3283-0	300-632-830	FOR DE-ICER
A 135	SENSOR COVER	03-006-3219-0	300-632-190	FOR DE-ICER
A 136	SENSOR PACKING	RSR-2112-0	361-821-120	
A 137	KEY	03-015-3224-0	100-090-640	
A 138	PC BOARD FIXING PLATE	03-015-3222-0	100-090-620	
A 139A	THERMAL SWITCH SUPPORTER	RSR-2115-0	361-821-150	
A 140	THERMAL SWITCH FIXING PLATE	RSR-2114-0	361-821-140	
A 141	CIRCULATOR FIXING ANGLE	03-011-3227-1	100-049-611	
A 142	WAVEGUIDE ADAPTOR	03-011-3301-0	100-049-680	
A 143	CONDUCTOR	03-015-3301-0	100-090-760	
A 144	CENTERING METAL	03-011-3225-1	100-049-591	
A 145	SCANNER CHASSIS	03-015-3201-0	100-090-480	
A 146	FILTER	03-018-5302-0	100-098-170	
A 147	FILTER WAVEGUIDE	03-018-5301-0	100-098-160	
A 148	AMPLIFIER FIXING PLATE	03-018-5201-0	100-098-200	
A 149	EARTH PLATE	03-018-5304-0	100-098-190	
A 150	P.C.B. FIXING PLATE (1)	03-016-5203-0	100-050-040	
A 151	P.C.B. FIXING PLATE (2)	03-016-5204-0	100-050-050	
A 152	AMP. CASE SUPPORTER	03-016-5202-2	100-050-032	
A 153	IF AMP CASE	03-016-5201-0	100-050-020	
A 154	LABEL	03-017-0203-0	100-050-910	
A 155	AMP. CASE COVER	RRF-1302-2	340-613-022	
A 156	AMP CASE FIXTURE	03-016-5206-2	100-050-072	
A 157	CIRCULATOR FIXING PLATE	03-015-3203-0	100-090-500	
A 158	EDGING	CE-024 *1M*	000-570-285	
A 159	PC BOARD FIXING PLATE	03-015-3237-0	100-094-360	
A 160	FIXTURE	03-015-3238-0	100-094-370	
A 161	TERMINAL BOARD PLATE	03-015-3236-0	100-090-750	
A 162	HINGE	TH-TM-5 BRASS	000-872-005	
A 163	TRIAC FIXING PLATE	03-011-3502-0	100-049-950	
A 164	MOTOR COVER	03-015-3101-0	100-090-450	
A 165	MOTOR COVER PACKING	03-015-3102-0	100-090-460	

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SYMBOL	PARTS	NAME	TYPE/DWG. NO	CODE NO.	REMARKS	
A	162A	SW COVER	03-006-3216-0	300-632-160		
		SWITCH COVER PACKING	03-005-3225-0	300-532-250		
		SWITCH COVER CHAIN	TM-14-B-CR NO.2	000-841-376		
A	163	SW POSITION PLATE	03-006-3217-1	300-632-171		
A	164	SW MOUNTING PLATE	03-006-3215-0	300-632-150		
A	165	SW PACKING	03-006-3213-1	300-632-131		
A	166	CABLE GLAND	JIS F8801 A30B BRASS	000-870-050		
A	167	CABLE GLAND	JIS F8801 A25C	000-870-151		
A	168	EARTH BOLT	03-011-3226-1	100-049-601		
A	169	COVER FIXING BOLT	03-015-3103-0	100-090-470		
A	170	RUBBER WASHER	03-011-3105-0	100-049-360		
A	171	TEFLON WASHER	03-011-3106-0	100-057-100		
A	172	WASHER	03-011-3104-0	100-049-350		
A	173	COVER	03-011-3101-0	100-049-320		
A	174	COVER PACKING	03-011-3102-0	100-049-330		
A	175	COVER FIXING BOLT	03-011-3103-0	100-049-340		
A	176	LABEL	RNC-1040-0	390-310-400		
A	177	CIRCULATOR FIXING BOLT	03-015-3204-0	100-090-510		
A	178	FIXING ANGLE	03-015-3211-0	100-090-520		
A	179	LIFTING FIXTURE	03-015-3241-0	100-095-230		
A	180	PIN	03-011-3206	100-049-421		
A	181	LABEL	03-029-0201-0	100-091-090		
A	182	HELICAL INSERT COIL	M8X1.5D	000-867-635		
A	183	DRIVE GEAR RETAINER	03-015-3228-0	100-090-680		
A	184	DRIVE GEAR	03-015-3227-0	100-090-670		
A	185	MOTOR FIXING PLATE	03-015-3229-0	100-090-690		
A	186	POSITIONING BOLT	03-015-3231-0	100-090-700		
A	187	HEAT SINK	03-016-5105	100-050-000		
A	188	ADAPTER FIXING PLATE	03-012-3202	100-062-970		
A	189	ADAPTER FOR MUGNETRON	03-012-3201	100-062-961		
A	190	FAN MOTOR COVER	03-012-3204	100-062-990		
A	191	SPACER FOR FAN MOTOR	03-012-3203	100-062-980		
A	192	ROPE	4mmφ *600MM* 12φ	000-835-320		
A	193	COUPLING	STB-01 SUS	000-844-165		
A	194	PIN	03-015-3232-0	100-090-710		
A	195	BLIND PLATE	03-015-3202-0	100-090-490		
A	196	ENCODER FIXING PLATE	03-015-3221-0	100-090-610		
A	197	MAGNET	RP-1757 MS4X9X15	000-499-055		
A	200A	ANTENNA BRACKET ASSEMBLY	RSB-0026	008-256-310		
A	201A	RECEIVER ASSEMBLY	IF AMP 03P6570/MIC	008-224-900		
A	202A	FILTER ASSY	RSB-0023/0026/0031	008-209-370		
A	301	RF CHASSIS	03-018-5101-1	100-063-001		
A	302	TRANSMITTER COVER	03-018-5102	100-063-010		
A	303	RETAINER FOR SCR FIX PLATE	03-018-5104	100-063-030		
A	304	MOD. TRIG. PCB COVER	03-018-5103	100-063-020		
A	305	SCR FIXING PLATE	03-018-5105	100-063-040		
A	306	SPACER	03-018-5106	100-063-050		
A	307	SPACER(2)	HSA-3010	000-803-010		
A	308	LABEL (A)	03-017-5612	100-062-260		
A	309	TRANSMITTER CHASSIS	03-025-0203	100-063-080		
A	310	LABEL FOR FIXING SCREWS	03-017-0207	100-056-580		
A	311	STICKER (HIGH VOLTAGE)	R-12135-D-0	390-100-010		
A	312	LABEL "CAUTION"	03-025-0202	100-063-071		
A	313A	TX CHASSIS ASSEMBLY	TX CHASSIS ASSY	008-242-560		

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UNIT	RSB-0027/0032	PAGE
REF. DWG.	C3312-E02-A	M- 6

SYMBOL	PARTS NAME	TYPE/DWG. NO	CODE NO.	REMARKS
A 101A	ANTENNA RADIATOR ASSEMBLY	SN5AF 9 FOOT	008-254-370	
	ANTENNA RADIATOR ASSEMBLY	SN7AF	008-254-380	
A 103	ANTENNA BRACKET	03-015-3213-0	100-090-540	
A 104	PROTECTION CAP	03-029-0402-1	100-091-131	
A 105A	RADIATOR BRACKET ASSEMBLY	RSB-0026	008-256-340	
A 106	CHOKE GUIDE	03-015-3235-0	100-090-740	
A 107	BALL BEARING	6809VV	000-801-590	
A 108	O-RING	JISB2401-1A-G65	000-851-310	
A 109	LABEL	03-029-0202-0	100-091-100	
A 110	MAIN SHAFT	03-015-3214-0	100-090-550	
A 111	SEAL RING	03-015-3215-0	100-090-560	
A 112	KEY	03-015-3216-0	100-090-570	
A 113	V-RING	VR-130A 319-5141	000-850-739	
A 114	BEARING FIXING PLATE	03-011-3218	100-049-531	
A 115	MAGNET FIXING PLATE	03-015-3225-0	100-090-650	
A 116	MAGNET	RP-1757 MS4X9X15	000-499-055	
A 117	HELI-SERT	M10-1.5X1DNS	000-801-591	
A 118	BLIND PLATE	03-006-3292-0	300-632-920	
A 119	HEATER PACKING	03-006-3293-0	300-632-930	
A 120A	HEATER MOUNTING BASE	03-011-3501-0	100-049-940	FOR DE-ICER
	HEATER SUPPORTING PLATE	03-006-3282-0	300-632-820	FOR DE-ICER
	HEATER LEAD WIRE OUTLET	03-006-3283-0	300-632-830	FOR DE-ICER
A 121	BEARING	6014ZZ	000-873-273	
A 122	SPACER (1)	03-015-3217-0	100-090-580	
A 123	GEAR BOX	03-015-3212-0	100-090-530	
A 124	SCANNER TURNING GEAR	03-015-3226-0	100-090-660	
A 125	SPACER (2)	03-015-3218-0	100-090-590	
A 126	BEARING	6014ZZ	000-873-273	
A 127	BRACKET	03-015-3219-0	100-090-600	
A 128	TIMING GEAR	03-015-3223-0	100-090-630	
A 129	BEARING WASHER	AW-13X	000-800-969	
A 130	BEARING NUT	AN-13	000-800-968	
A 131	ENCODER FIXING PLATE	03-015-3221-0	100-090-610	
A 132	SPACER	SB8M4-10-BS	000-655-988	
A 133	BLIND PLATE	03-011-3224-0	100-049-580	
A 134	SENSOR COVER	03-006-3219-0	300-632-190	FOR DE-ICER
A 135	SENSOR PACKING	RSR-2112-0	361-821-120	
A 136	PC BOARD FIXING PLATE	03-015-3222-0	100-090-620	
A 137	ADAPTOR	03-012-5402-0	301-254-020	
A 138A	WAVEGUIDE ADAPTOR	03-011-3301-0	100-049-680	
	CONDUCTOR	03-015-3301-0	100-090-760	
A 139	CENTERING METAL	03-011-3225-1	100-049-591	
A 140	SCANNER CHASSIS	03-016-3201-0	100-091-160	
A 141	COVER	03-011-3101-0	100-049-320	
A 142	COVER PACKING	03-011-3102-0	100-049-330	
A 143	CABLE GLAND	JIS F8801 A30B BRASS	000-870-050	
A 144	WAVEGUIDE RETAINER	03-016-3205-0	100-091-200	
A 145	WAVEGUIDE	03-016-3202-0	100-091-170	
A 146	O-RING	ARP568-345 A305	000-851-891	
A 147A	SW COVER	03-006-3216-0	300-632-160	
	SWITCH COVER PACKING	03-005-3225-0	300-532-250	
	SWITCH COVER CHAIN	TM-14-B-CR NO.2	000-841-376	
A 148	SW MOUNTING PLATE	03-006-3215-0	300-632-150	
A 149	SW PACKING	03-006-3213-1	300-632-131	
A 150	MOTOR COVER	03-016-3101-0	100-091-150	
A 151	MOTOR COVER PACKING	03-015-3102-0	100-090-460	
A 152	EARTH BOLT	03-011-3226-1	100-049-601	
A 153	WAVEGUIDE FIXING PLATE	03-016-3204-0	100-091-190	
A 154	THERMAL SWITCH SUPPORTER	RSR-2115-0	361-821-150	
A 155	THERMAL SWITCH FIXING PLATE	RSR-2114-0	361-821-140	
A 156	DRIVE GEAR RETAINER	03-015-3228-0	100-090-680	
A 157	DRIVE GEAR	03-015-3227-0	100-090-670	
A 158	MOTOR FIXING PLATE	03-015-3229-0	100-090-690	
A 159	POSITIONING BOLT	03-015-3231-0	100-090-700	
A 160	FIXING ANGLE	03-015-3211-0	100-090-520	
A 161	WAVEGUIDE FIXING BOLT	03-016-3203-0	100-091-180	

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SYMBOL	PARTS	NAME	TYPE/DWG. NO	CODE NO.	REMARKS	
A	162	LIFTING FIXTURE	03-015-3241-0	100-095-230		
A	163	PIN	03-011-3206	100-049-421		
A	164	PC BOARD FIXING PLATE	03-015-3237-0	100-094-360		
A	165	FIXTURE	03-015-3238-0	100-094-370		
A	166	TERMINAL BOARD PLATE	03-015-3236-0	100-090-750		
A	167	EDGING	CE-024 *1M*	000-570-285		
A	168	HINGE	TH-TM-5 BRASS	000-872-005		
A	169	TRIAC FIXING PLATE	03-011-3502-0	100-049-950		
A	170	LABEL	03-029-0201-0	100-091-090		
A	171	COVER FIXING BOLT	03-011-3103-0	100-049-340		
A	172	COVER FIXING BOLT	03-015-3103-0	100-090-470		
A	173	RUBBER WASHER	03-011-3105-0	100-049-360		
A	174	TEFLON WASHER	03-011-3106-0	100-057-100		
A	175	WASHER	03-011-3104-0	100-049-350		
A	176	PIN	03-015-3232-0	100-090-710		
A	177	HELICAL INSERT COIL	M8X1.5D	000-867-635		
A	178	ROPE	4/1" *600MM* 12寸	000-835-320		
A	179	COUPLING	STB-01 SUS	000-844-165		
A	180	BLIND PLATE	03-030-0401-0	100-091-640		
A	181	LABEL	RNC-1040-0	390-310-400		
A	182	KEY	03-015-3224-0	100-090-640		
A	183	SW POSITION PLATE	03-006-3217-1	300-632-171		
A	200A	ANTENNA BRACKET ASSEMBLY	RSB-0026	008-256-310		

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REF. DWG.	C3263-003-C	M- 8

SYMBOL	PARTS NAME	TYPE/DWG. NO	CODE NO.	REMARKS
A 300A	TRANSCEIVER MODULE	RF-019-S	008-280-340	
A 310	CHECK CKT CHASSIS	03-010-5206-0	301-052-060	
A 311	PIN FIXING PLATE	03-010-5103-0	301-051-030	
A 312	RF CHASSIS BASE	03-010-5102-0	301-051-020	
A 313	ANGLE PLATE	03-010-5105-0	301-051-050	
A 314	POWER UNIT COVER	03-010-5202-0	301-052-020	
A 315	AIR FILTER	03-010-5134-0	301-051-340	
A 316	MAIN COVER	03-010-5131-3	301-051-313	
A 317	CABLE CLAMP	03-010-5108-0	301-051-080	
A 318	W.G. ASSY.	03-010-5120-1	301-051-201	
A 319	KNOB *WING TYPE*	023-4420 BLACK 21DIA	000-515-311	
A 320	KNOB CAP	040-4020 BLACK	000-515-324	
A 321	RUBBER BUSH *2*	03-004-1223-0	300-412-230	
A 322	E-TYPE CIRCLIP	SIZE 7	000-866-640	
A 323	PIN	03-010-5104-0	301-051-040	
A 324	CLAMP PLATE	03-010-5109-0	301-051-090	
BT 301	COVER FIXING SCREN	03-010-5132-0	301-051-320	

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MODEL	FR/FAR-2822X	
UNIT	TRANSCEIVER UNIT <i>RTR-019</i>	PAGE
REF. DWG.	C3263-004-D	M- 9

SYMBOL	PARTS NAME	TYPE/DWG. NO	CODE NO.	REMARKS
A 300A	TRANSCEIVER MODULE	RF-019-S	008-280-340	
A 301	SHIELD COVER	03-010-5303-0	301-053-030	
A 302	RF CHASSIS	03-010-5301	301-053-014	
A 303	MIC ADAPTER	03-006-5301-1	300-653-011	
A 304	WAVEGUID ADATOR (2)	03-010-5310	301-053-010	
A 305	MIC FIXING PLATE	03-006-5302-1	300-653-021	
A 306	W.G. ASSY. (2)	03-010-5330-1	301-053-301	
A 307	SCR COVER	03-010-5306-0	301-053-060	

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UNIT	RTR-010	PAGE
REF. DWG.	C3300-003-A	M-10

SYMBOL	PARTS NAME	TYPE/DWG. NO	CODE NO.	REMARKS
A	301	CHASSIS	03-017-5101-2	100-062-072
A	302	COVER	03-017-5201-0	100-062-270
A	303	FAN FIXING PLATE	03-017-5127-0	100-070-550
A	304	BLIND PLATE	03-017-5118-0	100-062-230
A	305	SHIELD CASE FIXING PLATE	03-017-5125-0	100-070-530
A	306	SPONGE	03-017-5128-0	100-070-560
A	307	PT FIXING PLATE	03-017-5112-0	100-062-170
A	308	HEAT SINK	03-017-5113-0	100-062-180
A	309	SHIELD CASE	03-017-5111-2	100-062-162
A	310	STOPPER	03-017-5117-2	100-062-222
A	311	CONNECTOR FIXING PLATE	03-017-5115-0	100-062-200
A	312	CABLE CLAMP (1)	03-017-5109-0	100-062-150
A	313	BOTTOM PLATE	03-017-5603-1	100-062-741
A	314	SIDE PLATE (1)	03-017-5601-1	100-062-721
A	315	SIDE PLATE (2)	03-017-5602-1	100-062-731
A	316	TOP PLATE	03-017-5604-2	100-062-752
A	317	GUIDE PLATE	03-017-5116-0	100-062-210
A	318	METER FIXING PLATE	03-017-5605-1	100-062-761
A	319	FUSE FIXING PLATE	03-017-5107-1	100-062-131
A	320	COVER	03-017-5108-0	100-062-140
A	321	AIR FILTER CASE	03-017-5103-0	100-062-090
A	322	AIR FILTER	03-017-5104-0	100-062-100
A	323	FOOT	03-012-5108-1	301-251-081
A	324	METER FIXING PLATE	03-017-5106-0	100-062-120
A	325	DRAIN WAVEGUIDE (H)	03-017-0360-0	100-062-800
A	326	WAVEGUIDE FLANGE (2)	03-017-5420-4	100-062-554
A	327	LINER	03-017-5423-0	100-070-620
A	328	RETAINING BAR (2)	03-017-5205-0	100-062-310
A	329	EARTHING FIXTURE (H)	03-017-5203-0	100-062-290
A	330	CUSHION (2)	03-017-5207-0	100-062-330
A	331	RETAINING BAR (1)	03-017-5204-0	100-062-300
A	332	EARTHING FIXTURE (V)	03-017-5202-0	100-062-280
A	333	CUSHION (1)	03-017-5206-0	100-062-320
A	334	BOLT	03-017-5208-0	100-062-340
A	335	SEAL WASHER	03-009-3219-0	100-004-550
A	336	SPACER	HSA-3035	000-803-035
A	337	SPACER	SB-6M3-10-BS	000-877-113
A	338	SPACER (2)	HSA-3045	000-803-045
A	339	SPACER (2)	HSA-3015	000-803-015
A	340	SPACER(2)	HSA-3010	000-803-010
A	341	TRANSFORMER FIXING PLATE	03-017-5114-0	100-062-190
A	342	LABEL (R)	03-017-5611-0	100-062-770
A	343	LABEL (F)	03-017-5122-0	100-062-250
A	344	STICKER (HIGH VOLTAGE)	R-12135-D-0	390-100-010
A	345	HOURLY METER WINDOW	03-010-5133-0	301-051-330
A	346	NAME PLATE	03-009-0117-1	300-901-171
A	347	SPACER	HSA-4040	000-804-040
A	348	CLAMP PLATE	03-010-5109-0	301-051-090
A	349	BOLT	03-017-5314-0	100-062-470
A	350	NYLON RIVET	FNRP 3X6.5 BLACK	000-865-859
A	351	LABEL (A)	03-017-5612	100-062-260
A	352	LABEL (T)	03-017-5121-1	100-062-241
A	400A	TX MODULE	RTR-010	008-234-240
A	401	SIDE PLATE (1)	03-017-5301-4	100-062-354
A	402	BOTTOM PLATE	03-017-5303-1	100-062-371
A	403	TOP PLATE	03-017-5304-0	100-062-380
A	404	SIDE PLATE (2)	03-017-5302-3	100-062-363
A	405	FAN GUIDE	03-017-5305-2	100-062-392
A	406	SCR FIXING BASE	03-017-5311-1	100-062-441
A	407	SCR FIXING PLATE	03-017-5312-0	100-062-450
A	408	HINGE (1)	03-009-1004-1	300-910-041
A	409	HINGE FIXING PLATE	03-017-5126-1	100-070-541
A	410	STOPPER	03-017-5316-0	100-062-490
A	411	BOBBIN FIXTURE	03-017-5313-0	100-062-460

UNIT	RTR-010		REF. DWG.	C3300-003-A	PAGE	M-11
SYMBOL	PARTS	NAME	TYPE/DWG. NO	CODE NO.	REMARKS	
A	412	MAGNETRON FIXING PLATE	03-017-5309-0	100-062-430		
A	413	FAN GUARD	109-019C	000-102-963		
A	414	SWITCH FIXING PLATE	03-017-5317-0	100-062-500		
A	415	BOBBIN	03-017-5315-0	100-062-480		
A	416	HEAT SINK	GE-50	000-108-677		
A	417	SPACER	03-009-1006-0	300-910-060		
A	418	IF AMP CASE LID	03-017-5505-0	100-062-710		
A	419	IF AMP CASE	03-017-5504-0	100-062-700		
A	420	IF AMP CASE FIXING PLATE	03-007-5314-0	100-049-110		
A	421	MAGNETRON FLANGE	03-017-5413-0	100-062-540		
A	422	WAVEGUIDE FLANGE (1)	03-017-5410-1	100-062-511		
A	423	CIRCULATOR FIXING PLATE	03-017-5306-4	100-062-404		
A	424	REINFORCEMENT PLATE (2)	03-017-5308-0	100-062-420		
A	425	REINFORCEMENT PLATE (1)	03-017-5307-1	100-062-411		
A	426	WAVEGUIDE ADAPTOR (2)	03-017-5443-0	100-062-640		
A	427	WAVEGUIDE FLANGE (3)	03-017-5430-3	100-062-583		
A		WAVEGUIDE FLANGE (4)	03-017-5440-0	100-062-613		
A	428	WAVEGUIDE PLAIN FLANGE	03-017-5502-0	100-062-680		
A	429	SHIELD CASE	03-017-5501-0	100-062-670		
A	430	MIC ADAPTOR	03-017-5503-0	100-062-690		
A	431	FILTER WAVEGUIDE	03-011-5342-0	100-062-650		
A	432	FILTER	03-011-5343-1	100-062-661		
A	433	LABEL	03-017-5131-0	100-070-610		
A	434	LABEL	03-017-5129-0	100-070-600		
A	435	STICKER (HIGH VOLTAGE)	R-12135-D-0	390-100-010		
A	436	LABEL 6	03-004-0206-2	300-402-062		
A	437	SPACER	HSA-4095	000-804-095		
A	438	SPACER	SB8M4-15-BS	000-877-111		
A	439	SPACER(2)	HSA-3010	000-803-010		
A	440	SPACER (3)	HSA-4015	000-804-015		
A	441	GROMMET	NG-79-0 30X25X20X8	000-871-215		
A	442	GROMMET	NG-79-K	000-871-211		

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MECHANICAL PARTS LIST

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REF. DWG.	C3344-E01-A	M-12

SYMBOL	PARTS NAME	TYPE/DWG. NO	CODE NO.	REMARKS
A 201	COVER	03-030-5101-0	100-134-380	
A 202	EMI FILTER	03-030-5102-0	100-134-390	
A 203	AIR FILTER	03-030-5103-0	100-134-400	
A 204	FILTER RETAINER	03-030-5104-0	100-134-410	
A 205	CLASP *HOOK & LOCK*	C-1007-2 00S0053-0	000-872-857	
A 211	CHASSIS	03-030-5201-2	100-134-422	
A 212	MOUNTING ANGLE (R)	03-030-5202-0	100-134-430	
A 213	MOUNTING ANGLE (L)	03-030-5203-0	100-134-440	
A 214	WG OUTLET ADAPTOR	03-030-5204-1	100-134-451	
A 215	WEEP PROTECTION BLOCK	03-030-5206-0	100-134-470	
A 216	GAP ADJUSTOR	03-030-5205-1	100-134-461	
A 217	RF CHASSIS FIXING ANGLE	03-030-5207-0	100-134-480	2 PCS.
A 218	POSITIONING PIN	03-030-5208-1	100-134-491	2 PCS.
A 219	PIN SUPPORTING PLATE	03-030-5209-0	100-134-500	2 PCS.
A 220	AIR DUCT	03-030-5211-1	100-134-511	
A 221	SHIELD COVER	03-030-5212-1	100-134-521	
A 222	METER PANEL FIXING ANGLE	03-030-5213-0	100-134-530	2 PCS.
A 223	METER PANEL	03-030-5214-1	100-134-541	
A 224	HOUR METER FIXING PLATE	03-030-5215-0	100-134-550	
A 225	BOTTOM PLATE	03-030-5216-0	100-134-560	
A 226	LABEL (TX ON)	03-030-5217-0	100-134-570	
A 227	FUSE LABEL	03-030-5218-0	100-134-580	
A 228	CABLE CLAMP FIXING PLATE	03-030-5219-0	100-134-590	
A 229	CORNER PLATE	03-030-5221-0	100-134-600	2 PCS.
A 230	HOUR METER FIXTURE	03-030-5222-0	100-134-610	
A 231	CABLE CLAMP	03-010-5108-0	301-051-080	
A 232	CLAMP PLATE	03-010-5109-0	301-051-090	
A 233	PROTECT PLATE	03-023-5211-0	100-091-330	
A 234	BLIND PLATE	03-023-5219-0	100-091-410	
A 235	STICKER (HIGH VOLTAGE)	R-12135-D-0	390-100-010	2 PCS.
A 236	LABEL (R)	03-017-5611-0	100-062-770	
A 237	HINGE	TH-TM-11	000-872-011	2 PCS.
A 238	FILTER RETAINER	03-023-5218-0	100-091-400	2 PCS.
A 239	KNOB *WING TYPE*	023-4420 BLACK 21DIA	000-515-311	
A 240	KNOB CAP	040-4020 BLACK	000-515-324	
A 251	RF CHASSIS	03-030-5301-1	100-134-621	
A 252	RF SHIELD COVER	03-030-5302-1	100-134-631	
A 253	AIR SHUTTER	03-030-5303-0	100-134-640	
A 254	RF CHASSIS FIXING PLATE	03-030-5304-2	100-134-652	2 PCS.
A 255	SUPPORTING PIN	03-030-5305-0	100-134-660	2 PCS.
A 256	CORNER PLATE	03-030-5306-0	100-134-670	4 PCS.
A 257	NUT	03-030-5307-0	100-134-680	
A 258	CAUTION LABEL	03-030-5308-0	100-137-630	
A 259	SCR COVER	03-010-5306-0	301-053-060	
A 260	MAGNETRON FIXING ANGLE	03-023-5307-0	100-091-490	
A 261	MAGNETRON FIXING PLATE	03-023-5308-0	100-091-500	
A 262	GROMMET	NG-79-K	000-871-421	
A 263	GROMMET	NG-79-M	000-871-213	
A 272	CIRCULATOR FIXING ANGLE	03-030-5405-0	100-134-730	
A 273	E-CORNER FIXING PLATE	03-023-5403-0	100-091-560	
A 274	ADAPTOR	03-012-5402-0	301-254-020	
A 275	HY MOUNTING PLATE (2)	03-012-5404-0	301-254-040	
A 276	FILTER WAVEGUIDE	03-018-5301-0	100-098-160	
A 277	FILTER	03-018-5302-0	100-098-170	
A 278	MIC FIXTURE	03-023-5406-0	100-091-590	
A 279	IF AMP CASE FIXING PLATE	03-007-5314-0	100-049-110	
A 280	LABEL	03-017-5506-0	100-070-590	
A 281	IF AMP CASE COVER	03-017-5505-1	100-062-711	
A 282	IF AMP CASE	03-017-5504-0	100-062-700	
A 283	CONNECTOR FIXING PLATE	03-023-5501-0	100-091-620	
A 286	EARTHING PLATE	03-030-5501-0	100-137-640	
A 292	SPACER	SB8M4-10-BS	000-655-988	3 PCS.
A 293	SPACER	HSA-4065	000-804-065	4 PCS.

UNIT	TR UNIT RTR-025		REF. DWG.	C3344-E01-A	PAGE	M-13
SYMBOL	PARTS NAME	TYPE/DWG. NO	CODE NO.	REMARKS		
A	294	SPACER	HSA-4040	000-804-040	4 PCS.	
A	295	SPACER *B*	SB6M3-15BS	000-655-985	5 PCS.	
A	296	SPACER(2)	HSA-3010	000-803-010	6 PCS.	
A	297	SPACER (2)	HSA-3045	000-803-045		

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REF. DWG.	C3312-E01-A	M-14

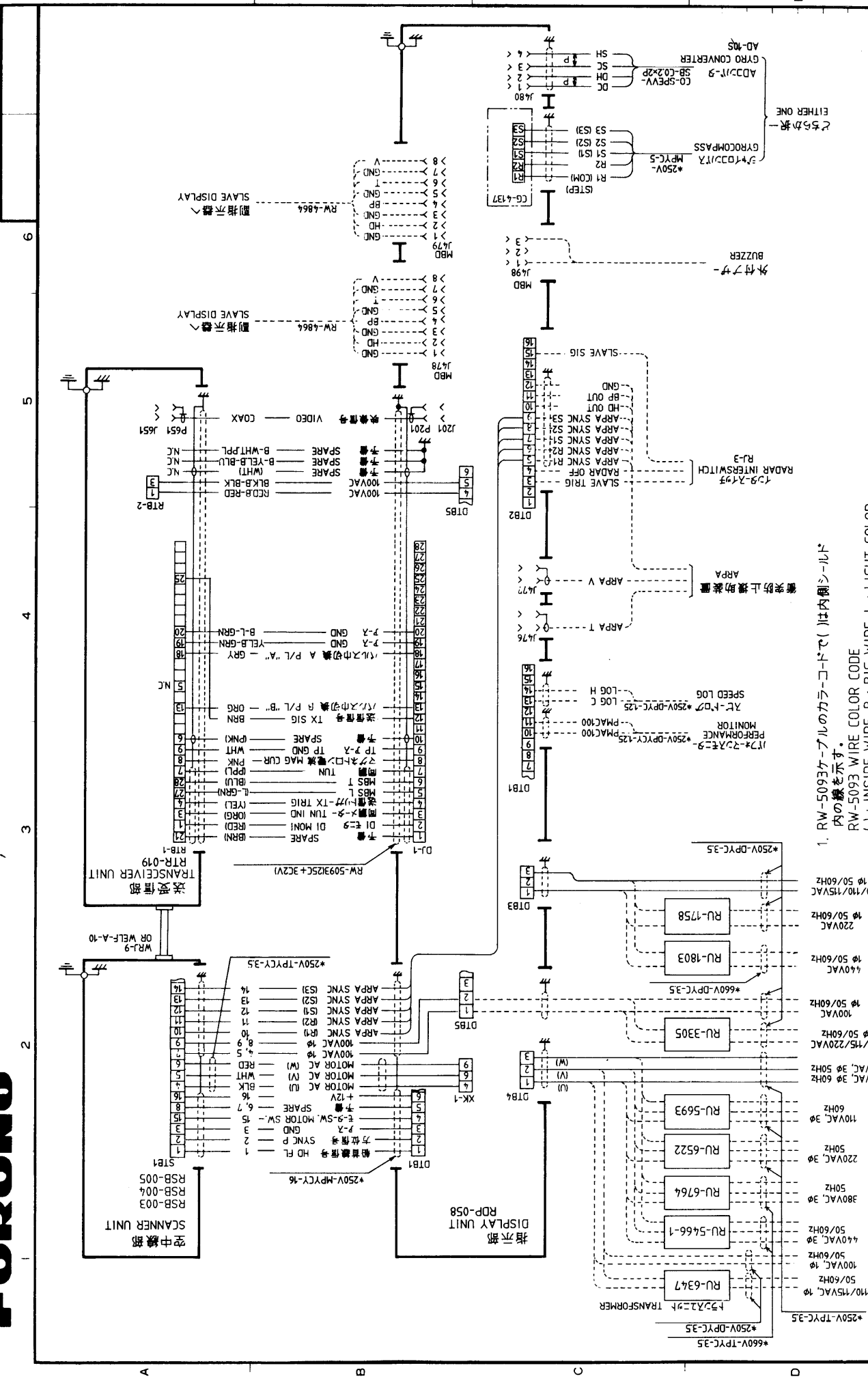
SYMBOL	PARTS NAME	TYPE/DWG. NO	CODE NO.	REMARKS
A	301	CHASSIS	03-023-5201-0	100-091-240
A	302	COVER	03-023-5101-0	100-091-210
A	303	RF CHASSIS	03-023-5301-0	100-091-430
A	304	MICRO WAVE CKT CHASSIS	03-023-5401-0	100-091-540
A	305	RF CHASSIS COVER	03-023-5302-0	100-091-440
A	306	FIXING ANGLE	03-023-5303-0	100-091-450
A	307	REINFORCEMENT ANGLE	03-023-5306-0	100-091-480
A	308	MAGNETRON FIXING PLATE	03-023-5308-0	100-091-500
A	309	IF AMP FIXING PLATE	03-023-5311-0	100-091-520
A	310	EARTHING PLATE	03-023-5312-0	100-091-530
A	311	MAGNETRON FIXING ANGLE	03-023-5307-0	100-091-490
A	312	NUT PLATE	03-023-5304-0	100-091-460
A	313	BAND FIXING PLATE	03-023-5309-0	100-091-510
A	314	SCR FIXING BASE	03-017-5311-1	100-062-441
A	315	SCR FIXING PLATE	03-017-5312-0	100-062-450
A	316	HEAT SINK	GE-50	000-108-677
A	317	SPACER	SB8M4-15-BS	000-877-111
A	318	SPACER	HSA-4095	000-804-095
A	319	STICKER (HIGH VOLTAGE)	R-12135-D-0	390-100-010
A	320	LABEL	03-017-5129-0	100-070-600
A	321	FAN GUARD	109-019C	000-102-963
A	322	SPACER (2)	HSA-3015	000-803-015
A	323	HINGE	03-012-5325-0	301-253-250
A	324	STOPPER	03-023-5313-0	100-094-630
A	325	HY MOUNTING PLATE (1)	03-012-5403-0	301-254-030
A	326	HY MOUNTING PLATE (2)	03-012-5404-0	301-254-040
A	327	E-CORNER FIXING PLATE	03-023-5403-0	100-091-560
A	328	MIC FIXTURE	03-023-5406-0	100-091-590
A	329	IF AMP CASE	03-017-5504-0	100-062-700
A	330	IF AMP CASE LID	03-017-5505-0	100-062-710
A	331	IF AMP CASE FIXING PLATE	03-007-5314-0	100-049-110
A	332	AMP CASE FIXTURE	03-017-5507-0	100-088-860
A	333	LABEL	03-017-5506-0	100-070-590
A	334	ADAPTOR	03-012-5402-0	301-254-020
A	335	WAVEGUIDE SEAL	03-005-3155-0	100-025-810
A	336	SHIELD CASE	03-017-5111-2	100-062-162
A	337	HEAT SINK	03-017-5113-1	100-062-181
A	338	PT FIXING PLATE	03-017-5112-0	100-062-170
A	339	PC BOARD FIXING PLATE	03-023-5216-0	100-091-380
A	340	SPACER	HSA-3035	000-803-035
A	341	SPACER (2)	HSA-3045	000-803-045
A	342	METER PANEL	03-023-5208-0	100-091-310
A	343	HINGE FIXING PLATE	03-023-5209-0	100-091-320
A	344	PROTECT PLATE	03-023-5211-0	100-091-330
A	345	SPACER	HSA-4040	000-804-040
A	346	EDGING	CE-024 *1M*	000-570-285
A	347	LABEL (R)	03-017-5611-0	100-062-770
A	348	HINGE	TH-TM-5 BRASS	000-872-005
A	349	EDGING	CE-032 *1M*	000-570-287
A	350	LABEL	03-030-0202-0	100-091-820
A	351	KNOB *WING TYPE*	023-4420 BLACK 21DIA	000-515-311
A	352	KNOB CAP	040-4020 BLACK	000-515-324
A	353	METER PANEL SUPPORT	03-023-5207-0	100-091-300
A	354	CABLE CLAMP	03-010-5108-0	301-051-080
A	355	CLAMP PLATE	03-010-5109-0	301-051-090
A	356	MOUNTING FIXTURE	03-023-5204-0	100-091-270
A	357	MOUNTING FIXTURE	03-023-5202-0	100-091-250
A	358	MOUNTING FIXTURE	03-023-5203-0	100-091-260
A	359	W.G. FLANGE	03-012-5130-0	301-251-300
A	360	BLIND PLATE	03-030-0401-0	100-091-640
A	361	SPRING PIN	4X20 SUS	000-866-185
A	362	CONNECTOR FIXING PLATE	03-017-5115-0	100-062-200
A	363	FAN FIXING PLATE	03-023-5217-0	100-091-390
A	364	COVER SUPPORT	03-023-5205-0	100-091-280
A	365	RF CHASSIS SUPPORT	03-023-5206-0	100-091-290

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SYMBOL	PARTS	NAME	TYPE/DWG. NO	CODE NO.	REMARKS	
A	366	FILTER RETAINER	03-023-5218-0	100-091-400		
A	367	BLIND PLATE	03-023-5219-0	100-091-410		
A	368	STOPPER	03-012-5107-0	301-251-070		
A	369	SPRING PIN	4X40 SUS	000-866-191		
A	370	FOOT	03-012-5108-1	301-251-081		
A	371	SPONGE	03-023-5221-0	100-091-420		
A	372	SPACER *B*	SB6M3-15BS	000-655-985		
A	373	SIDE PLATE	03-023-5213-0	100-091-350		
A	374	POWER PACK CASE	03-023-5212-0	100-091-340		
A	375	BOTTOM PLATE	03-023-5214-0	100-091-360		
A	376	TOP PLATE	03-023-5215-0	100-091-370		
A	377	SPACER (2)	HSA-3020	000-803-020		
A	378	CLASP *HOOK & LOCK*	C-1007-2 00S0053-0	000-872-857		
A	379	AIR FILTER	03-023-5103-0	100-091-230		
A	380	AIR FILTER RETAINER	03-023-5102-0	100-091-220		
A	381	NAME PLATE	03-009-0117-1	300-901-171		
A	382	CONNECTOR FIXING PLATE	03-023-5501-0	100-091-620		
A	383	SPACER	SB-6M3-10-BS	000-877-113		
A	384	SPRING PIN	4X8 AW SUS304	000-801-595		
A	385	NUT PLATE	03-023-5305-0	100-091-470		
A	386	BOLT	RRA-3004-0	340-130-040		
A	387	BOBBIN FIXTURE	03-017-5313-0	100-062-460		
A	388	BOBBIN	03-017-5315-0	100-062-480		
A	389	LIMITER FIXTURE	03-023-5402-0	100-091-550		

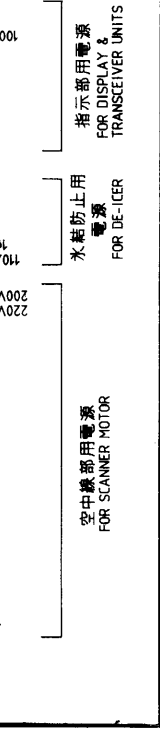
INTERCONNECTION/SCHEMATIC DIAGRAMS

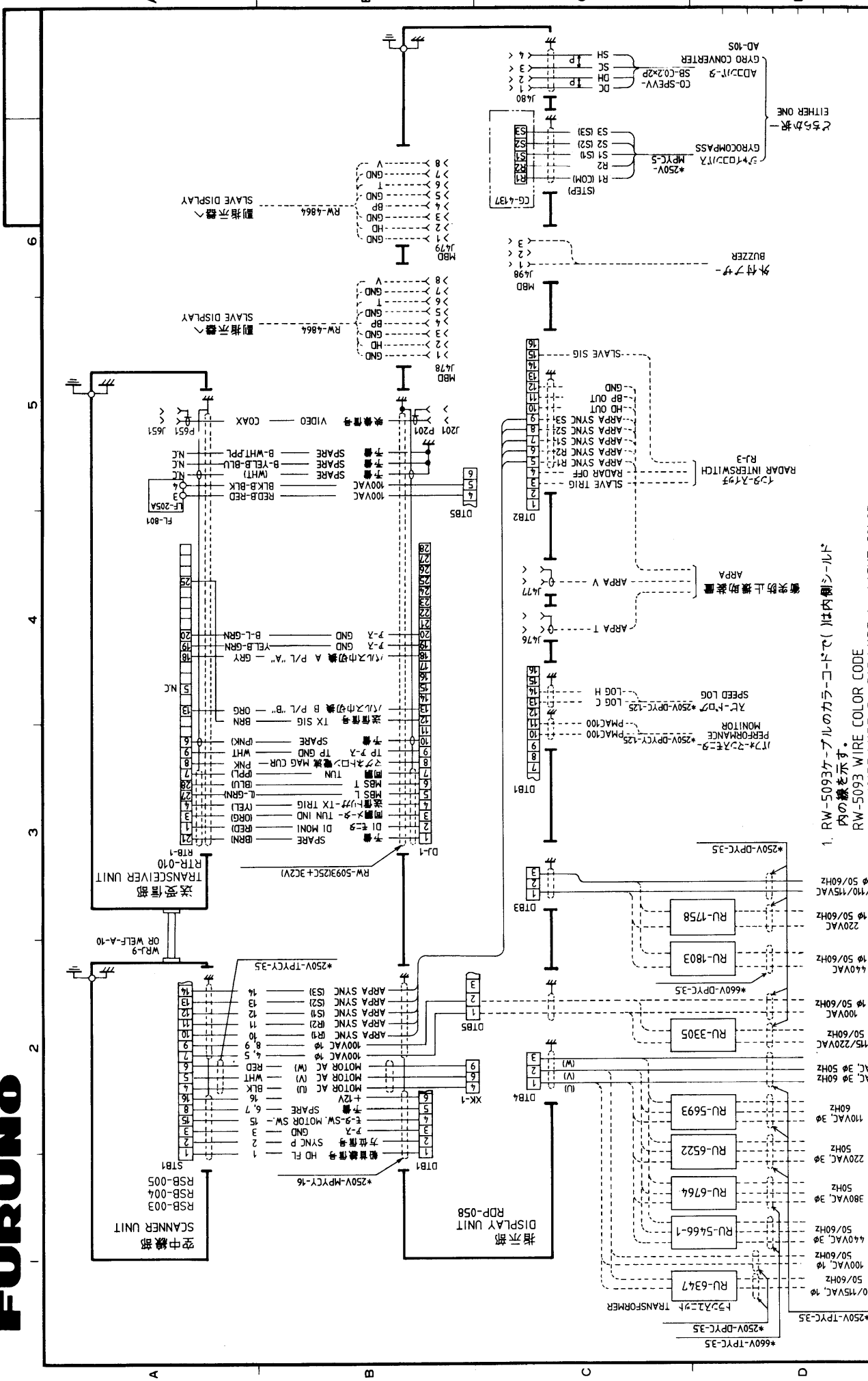
Title	Type	Dwg. No.	Page
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For FR-2050X		C3313-002	S-2
For FR-2030S		C3311-012	S-3
For FR-2032S		C3347-C01	S-4
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Display Unit Schematic Diagrams			
Overall Diagram (TR-up type)	RDP-057	C3311-008	S-6
" (TR-down type)	RDP-058	C3312-012	S-7
AC Power Protection Board	PCT-5141	C3263-028	S-8
Power Supply Board	PTU-7010 & PTA-7072	C3308-014	S-9
TX HV Board	HV-7130	C3307-004	S-10
Mother Board	03P7133	C3308-023	S-11
Video Amplifier Board	VDA-7047	C3308-013	S-12
Gyro Interface Board	03P6856	C3307-009	S-13
CRT Display Drive Board	TS-861	C3308-027	S-14
CRT Deflection Drive Board	TS-860	C3308-028	S-15
CRT Socket Board	TS-769-1	C3308-024	S-16
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Overall Diagram (X-band, TR-down)	RSB-003/4/5	C3263-022	S-17
" (S-band, TR-up)	RSB-0026/31	C3311-010	S-18
" (S-band, TR-down)	RSB-0027/32	C3312-014	S-19
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Motor Slow Start Board	MSS-7497	C3311-009	S-21
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MBS Board	03P6569	C3291-003	S-23
Transceiver Unit Schematic Diagrams			
Overall Diagram (X-band, 25kW)	RTR-019	C3316-005	S-24
" (X-band, 50kW)	RTR-010	C3300-005	S-25
" (S-band, 30kW)	RTR-025	C3344-K01	S-26
" (S-band, 60kW)	RTR-018	C3312-019	S-27
Transceiver Power Supply Board	PT-5185 & HV-4119	C3263-024	S-28
"	03P6667	C3300-008	S-29
TX HV Power Supply Board	03P6680 & 03P6810	C3300-007	S-30
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Modulation Trigger Board	RF-5144	C3308-017	S-32
"	03P6666	C3300-006	S-33
"	03P8726	C3344-K02	S-34
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IF Amplifier Board	03P6734	C3308-016	S-36
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承認 〇〇〇 〇〇〇 〇〇〇
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 名 称 相互結線図
 TITLE FR-2020X INTERCONNECTION DIAGRAM
 図 番 C3316-004-A
 DWG. NO. C3316-004-A



1. RW-5093ケーブルのカラーコードで()は内側シールド内の線を示す。
 RW-5093 WIRE COLOR CODE
 () : INSIDE WIRE, B-: BIG WIRE, L-: LIGHT COLOR
2. シールドは両端で完全にアースすること。
 SHIELD SHOULD BE EFFECTIVELY GROUNDED AT BOTH ENDS.
3. * : 造船所支給。SHOULD BE PREPARED LOCALLY.





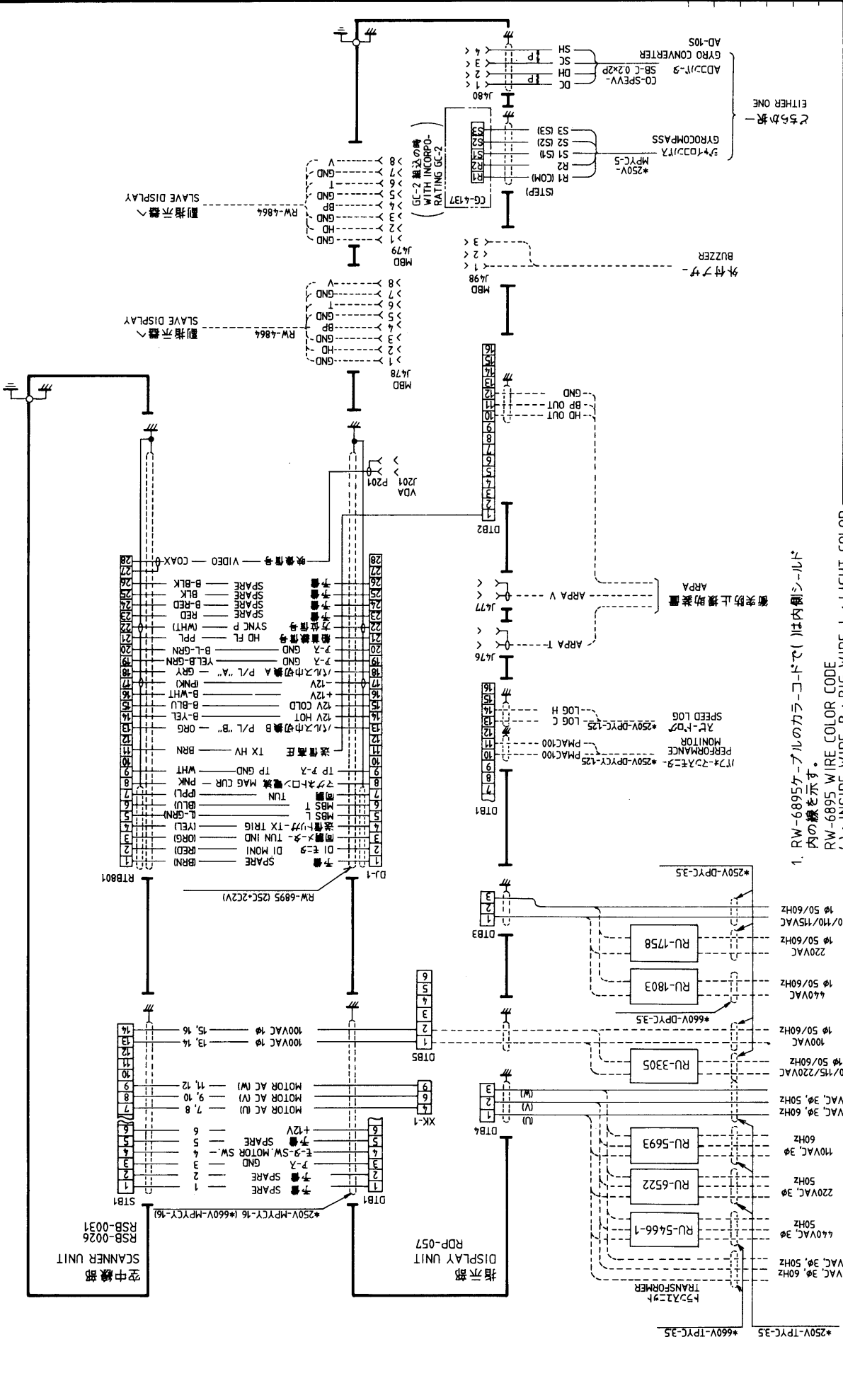
1. RW-5093ケーブルのカラーコードで()は内側シールド内の線を示す。
RW-5093 WIRE COLOR CODE
() : INSIDE WIRE, B-: BIG WIRE, L-: LIGHT COLOR
2. シールドは両端で完全にアースすること。
SHIELD SHOULD BE EFFECTIVELY GROUNDED AT BOTH ENDS.
3. * : 造船所支給。SHOULD BE PREPARED LOCALLY.

承認 APPROVED	名 称 名称	相互結線図 INTERCONNECTION DIAGRAM
検図 CHECKED	図 号 FIG. NO.	
製図 DRAWN	図 番 DWG. NO.	
検図 CHECKED	図 番 DWG. NO.	

FR-2050X INTERCONNECTION DIAGRAM

C3313-002-A

FURUNO ELECTRIC CO., LTD.

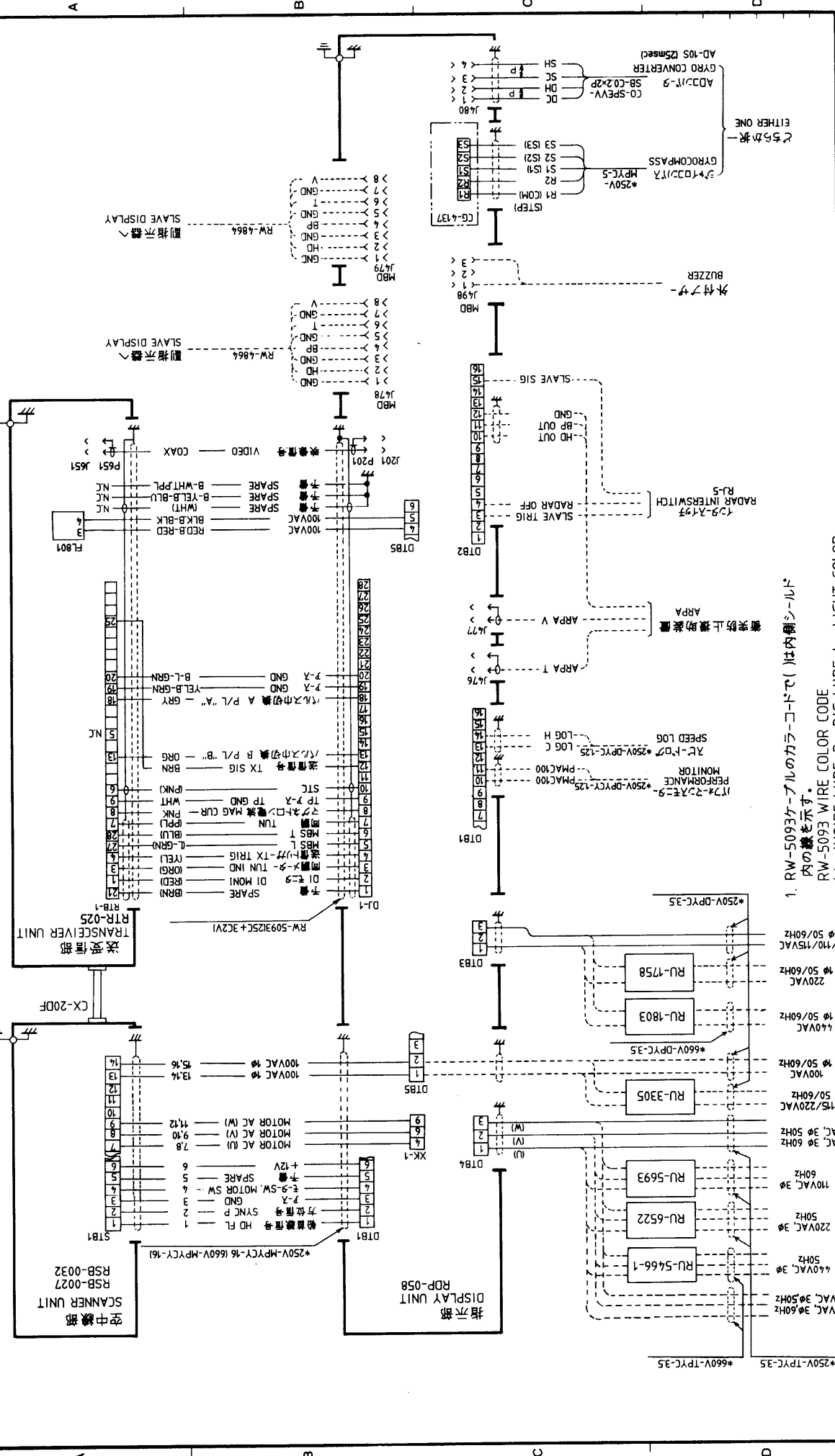


承認	名 称
検 査	TITLE
製 図	FR-2030S INTERCONNECTION DIAGRAM
	図 番
	C3311-012-B

1. RW-6895ケーブルのカラーコードで()は内側シールド内の線を示す。
RW-6895 WIRE COLOR CODE
() : INSIDE WIRE, B-: BIG WIRE, L-: LIGHT COLOR.

2. シールドは両端で完全にアースすること。
SHIELD SHOULD BE EFFECTIVELY GROUNDED AT BOTH ENDS.

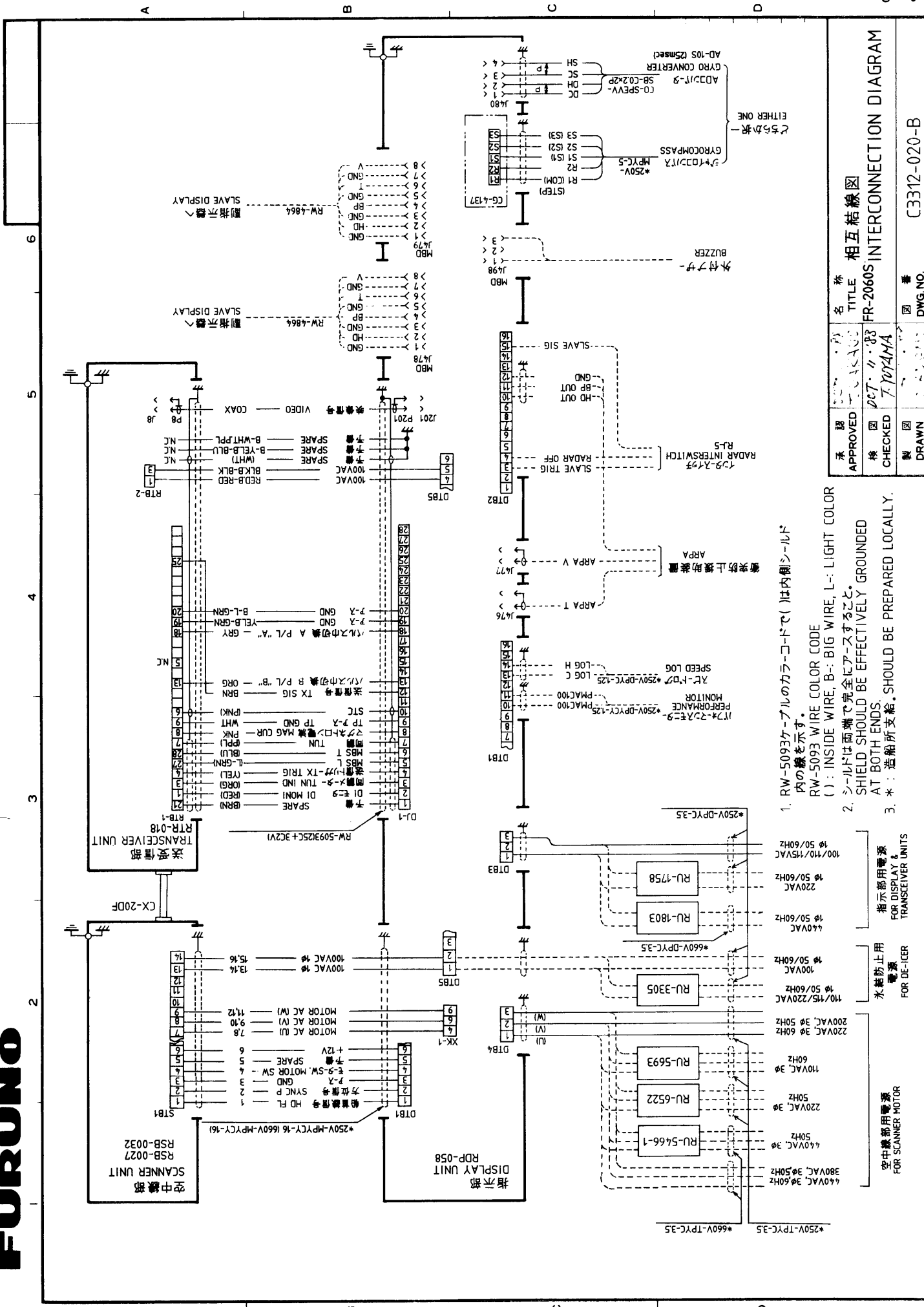
3. * : 造船所支給, SHOULD BE PREPARED LOCALLY.



承認	名 称	相 互 結 線 図 FR-2032S INTERCONNECTION DIAGRAM	製 図 番 号 C3347-C01-A
検 査	図 名		
製 図	検 査 日 付	製 図 日 付	製 図 者
製 図 者	製 図 日 付	製 図 者	製 図 者

1. RW-5093ケーブルのカラーコードで()は内側シールド内の線を示す。
RW-5093 WIRE COLOR CODE
() : INSIDE WIRE; B-: BIG WIRE; L-: LIGHT COLOR
2. シールドは両端で完全にアースすること。
SHIELD SHOULD BE EFFECTIVELY GROUNDED AT BOTH ENDS.
3. * : 造船所支給, SHOULD BE PREPARED LOCALLY.

220VAC 3ø 50Hz	440VAC 3ø 50Hz	110/115/220VAC	100VAC	100/110/115VAC	220VAC	100/110/115VAC
FOR SCANNER MOTOR	FOR DE-ICER	FOR DISPLAY & TRANSMITTER UNITS	FOR DE-ICER	FOR DE-ICER	FOR DISPLAY & TRANSMITTER UNITS	FOR DISPLAY & TRANSMITTER UNITS



相互結線図
FR-2060S
INTERCONNECTION DIAGRAM

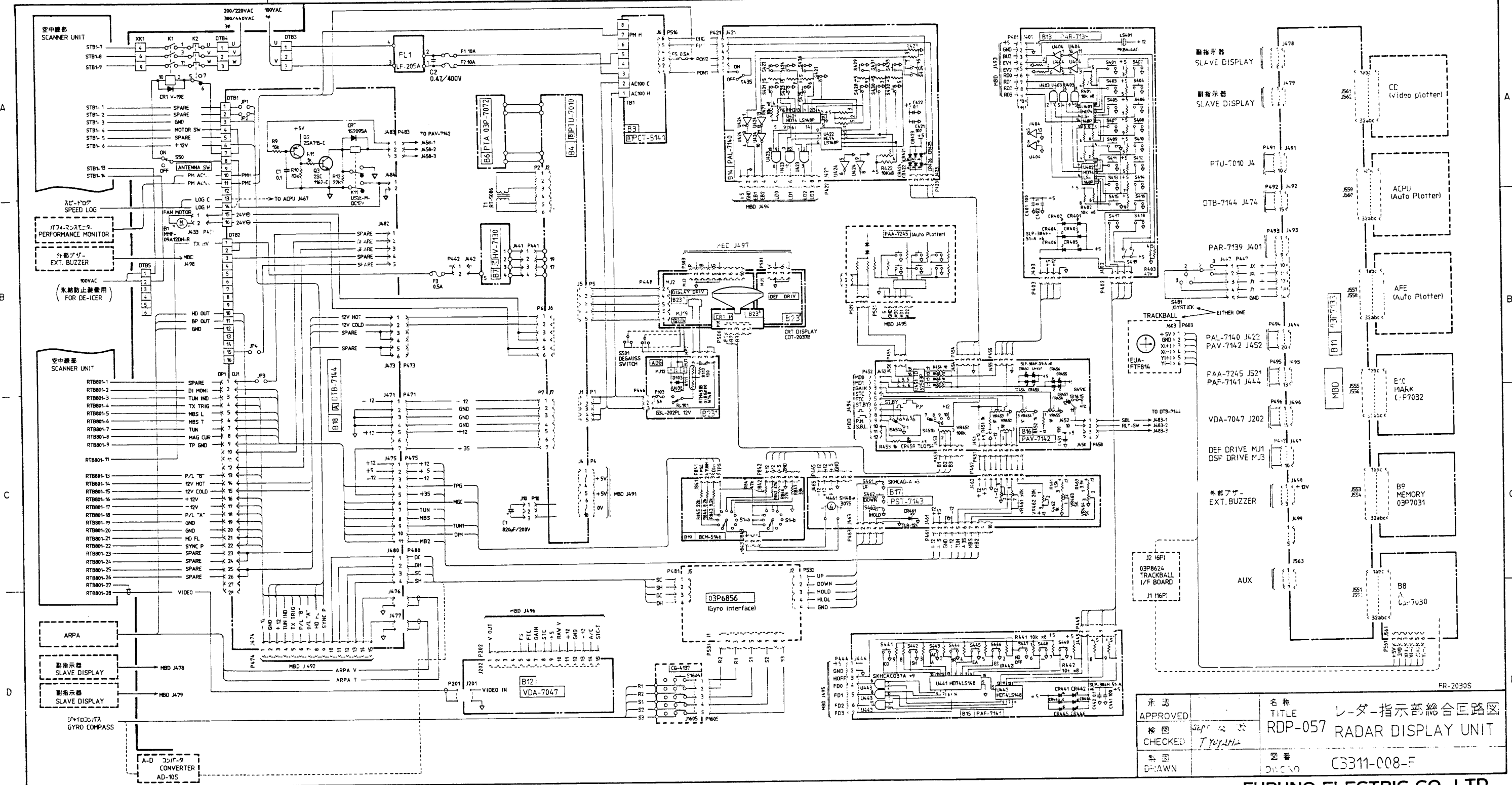
承認 (APPROVED)	名 称 (TITLE)
検 査 (CHECKED)	FR-2060S
製 図 (DRAWN)	相互結線図
製 図 番 (DWG. NO.)	C3312-020-B

1. RW-5093ケーブルのカラーコードで()は内側シールド内の線を示す。
RW-5093 WIRE COLOR CODE
() : INSIDE WIRE, B-: BIG WIRE, L-: LIGHT COLOR
2. シールドは両端で完全にアースすること。
SHIELD SHOULD BE EFFECTIVELY GROUNDED AT BOTH ENDS.
3. * : 造船所支給。SHOULD BE PREPARED LOCALLY.

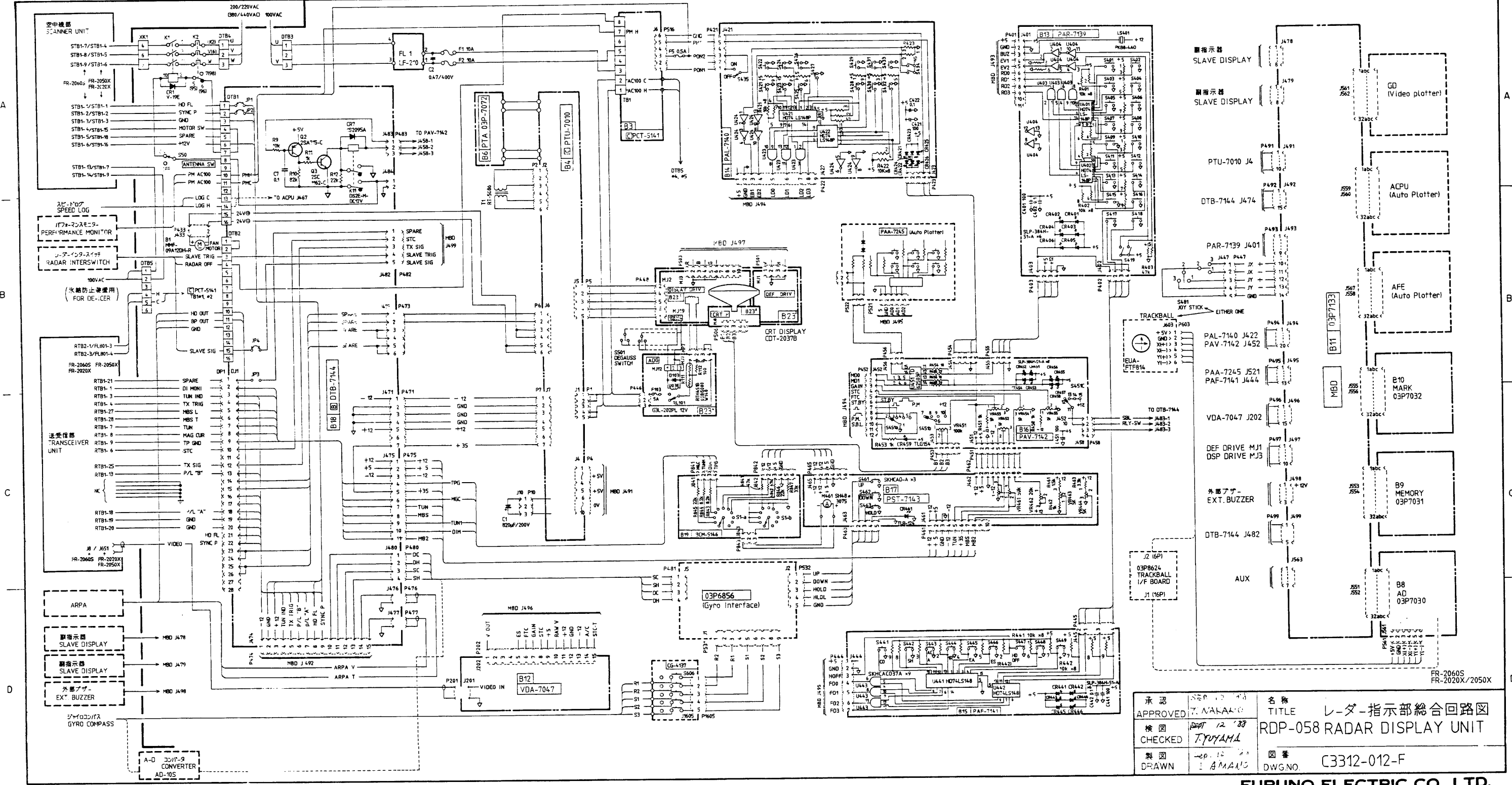
指示部用電源
FOR DISPLAY &
TRANSCIVER UNITS

水密防止用電源
FOR DE-ICER

空中機部用電源
FOR SCANNER MOTOR



承認 APPROVED	名称 レダ-指示部総合回路図
検閲 CHECKED	TITLE RDP-057 RADAR DISPLAY UNIT
製図 DRAWN	図番 C3311-008-F

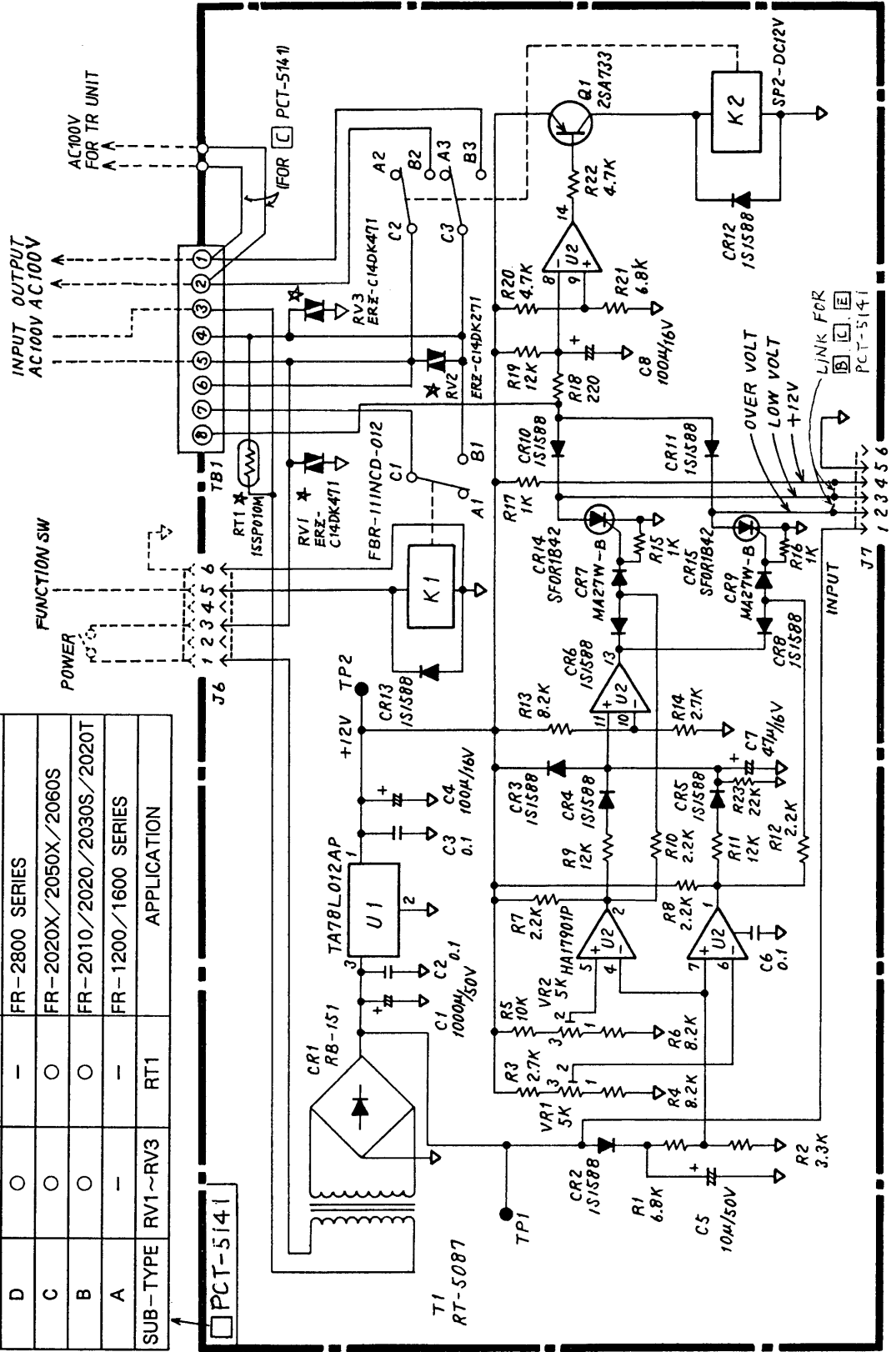


承認 APPROVED	SEP 12 '88 T. MALAHO	名称 TITLE	レーダー指示部総合回路図
検図 CHECKED	SEP 12 '88 TYUYAMA	図番 DWG. NO.	C3312-012-F
製図 DRAWN	SEP 12 '88 I. AMANO		

FURUNO ELECTRIC CO., LTD.

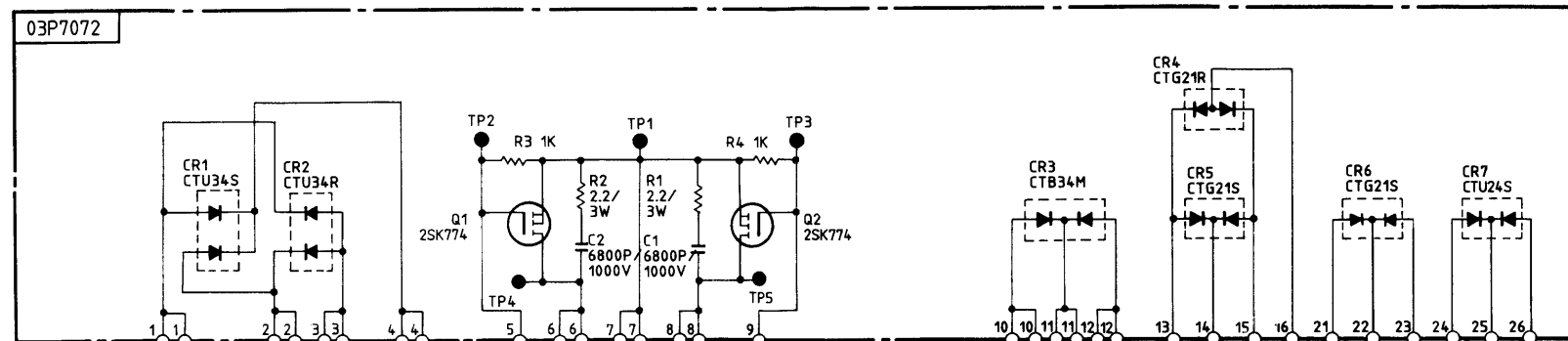
A
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E	-	FR-2011/2021/2001	
D	-	FR-2800 SERIES	
C	○	FR-2020X/2050X/2060S	
B	○	FR-2010/2020/2030S/2020T	
A	-	FR-1200/1600 SERIES	
SUB-TYPE	RV1~RV3		APPLICATION
		RT1	

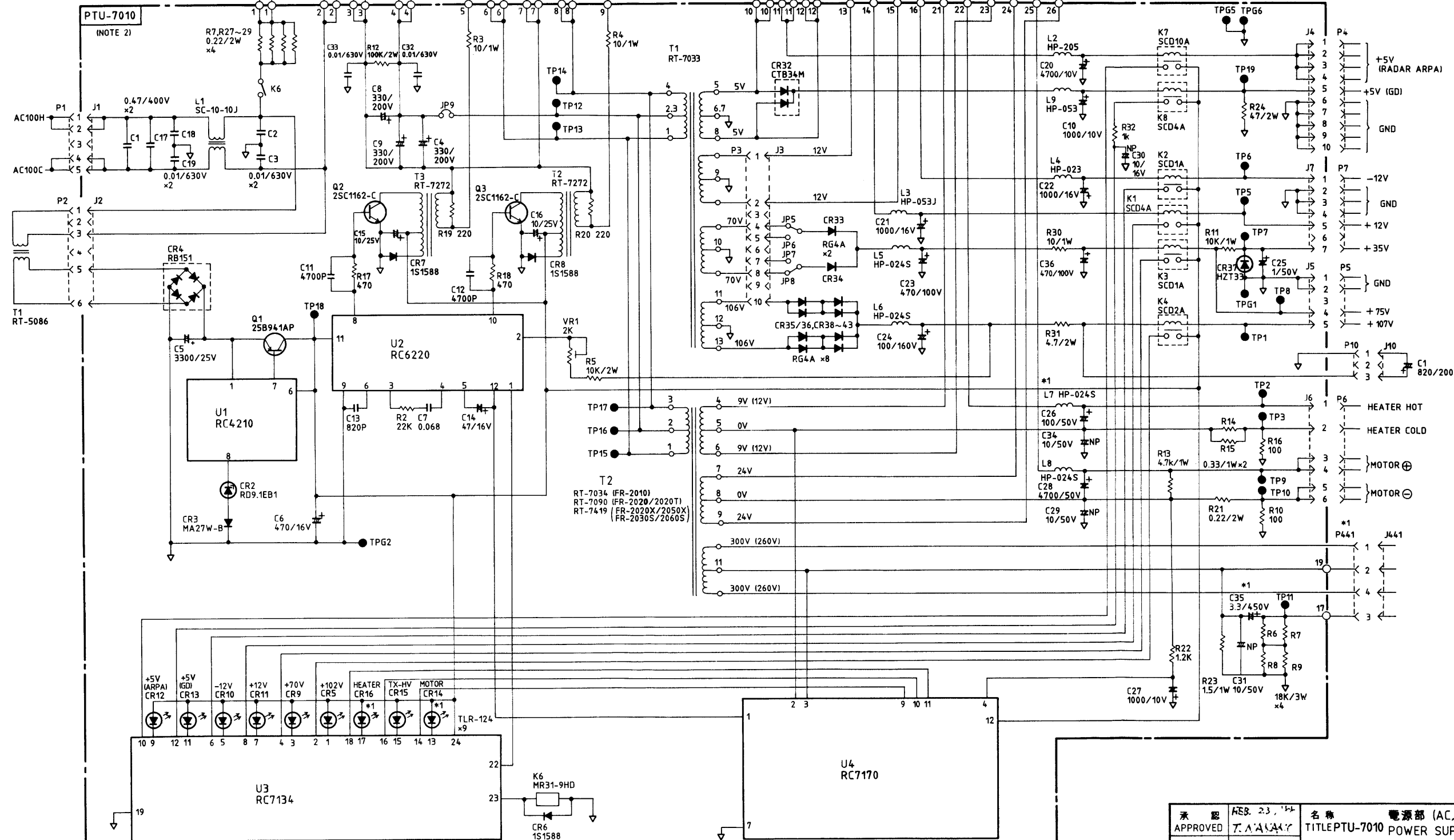


品番 ITEM	品名 NAME	材質 MATERIAL	数量 Q'TY	図番 DWG. NO.	摘要 REMARKS
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承認 APPROVED	DEC. 19. 89 T. KAKAO	三角法 THIRD ANGLE PROJECTION		名称 TITLE	PCT-5141 AC電源保護基板 AC POWER PROTECTION BOARD
検図 CHECKED	DEC. 19. 89 N. SAITO	尺度 SCALE	/	重量 WEIGHT	kg
製図 DRAWN	DEC. 19. 89 I. AMANO	重量 WEIGHT	kg	図番 DWG. NO.	C3263-028-N



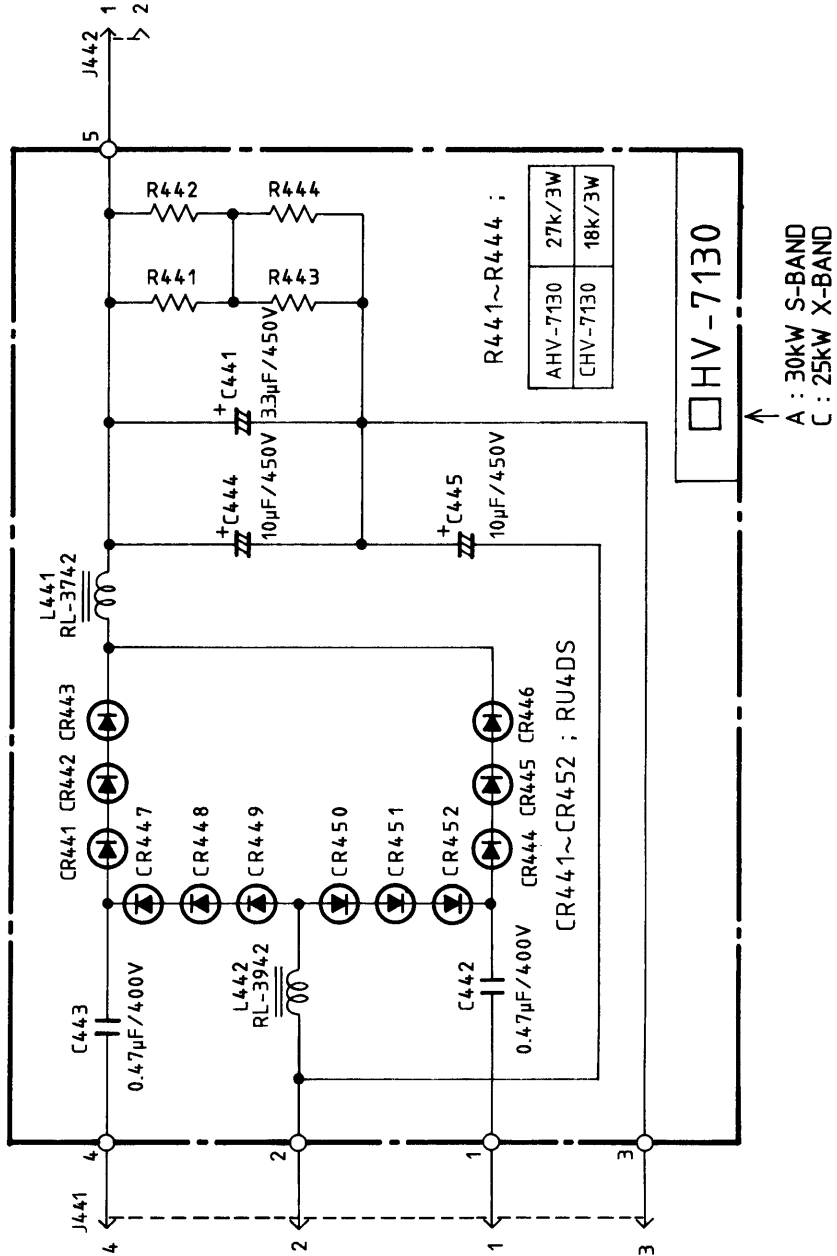
NOTE
 1. 特記なき抵抗の単位はΩ, 0.25W, コンデンサはμF
 ALL RESISTANCE IN OHMS, 0.25W AND CAPACITANCE
 IN MICROFARADS UNLESS NOTED OTHERWISE.
 2. PTU-7010.....FOR FR-2010/2020/2020T
 □ PTU-7010.....FOR FR-2030S
 □ PTU-7010.....FOR FR-2020X/2050X/2060S
 *1: □ PTU-7010 の場合、C35,L7,CR14,CR16,P441は使用しない。
 C35,L7,CR14,CR16&P441 ARE NOT USED FOR □ PTU-7010.



承認 APPROVED	7. A. A. A. Y.	名称 TITILE	電源部 (AC入力用) POWER SUPPLY CKT
検図 CHECKED			整流部 RECTIFIER CKT
製図 DRAWN		図番 DWG. NO.	03P7072 C3308-014-H

FR-2020T
 FR-2030S/2060S
 FR-2020X/2050X
 FR-2010/2020

A
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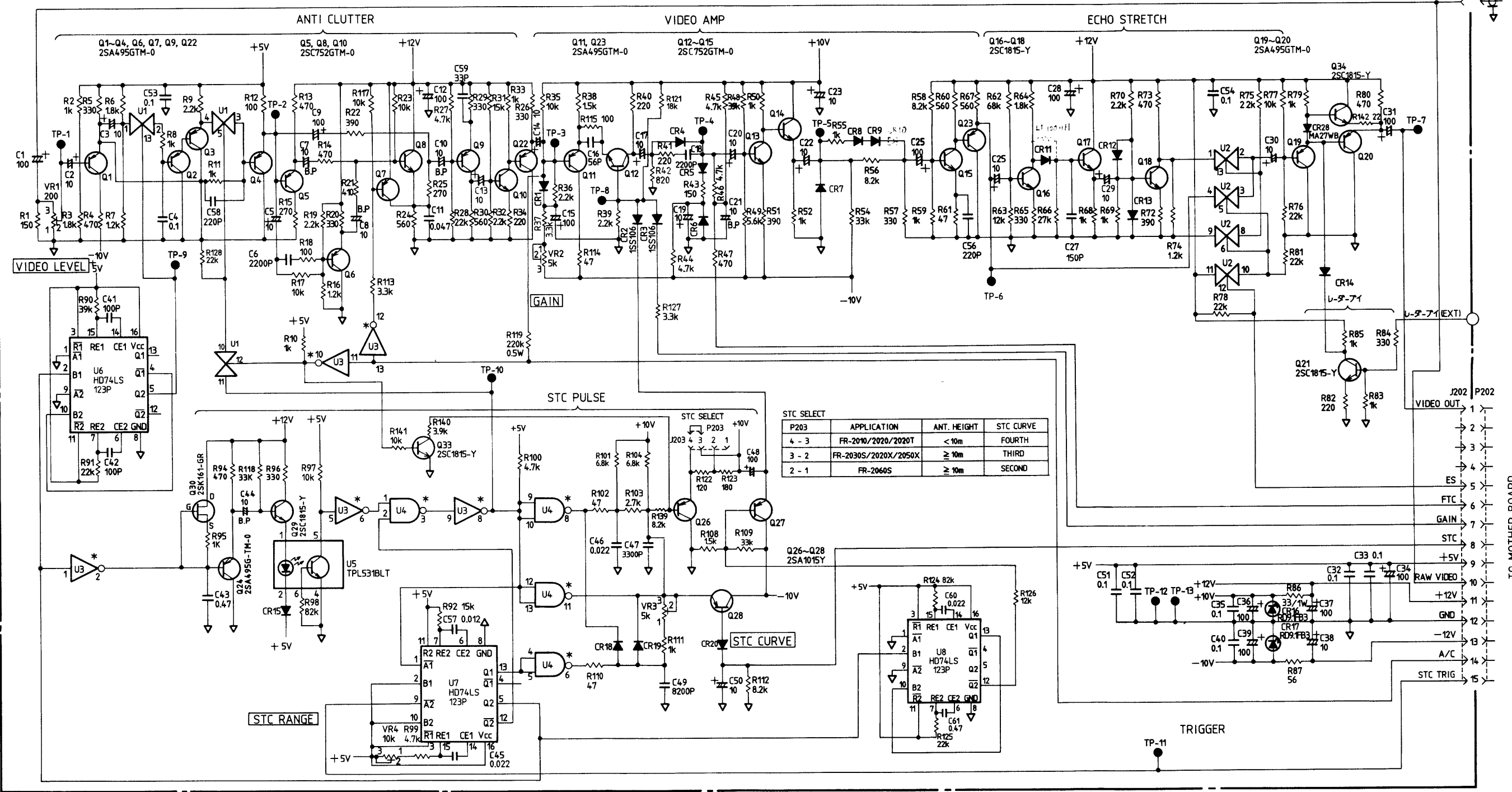


FOR 25kW/30kW RADARS

承認 APPROVED	APR. 24 '87	名称 TITLE	送信 高压
検図 CHECKED	APR. 23 '87 I. Ameno	AHV-7130 CHV-7130	TX HV
製図 DRAWN	April. 23 '87 Y. Tomiyama	番 DWG. NO.	C3307-004-F

MARK	C18	C25	C49	CR10	CR28	1.1	Q33/34	R10	R22	R48	R56	R57	R74	R104	R119	R122	R123	R139	R140	R141	R142
NO MARK (FOR EXPORT)	1000pF	10uF	0.012 uF	1S1588	NONE	100uH	NONE	22kΩ	470Ω	33kΩ	1kΩ	180Ω	2.2kΩ	8.2kΩ	NONE	82Ω	150Ω	NONE	NONE	NONE	NONE
B (FOR DOMESTIC)	2200pF	100uF	8200pF	NONE	MA27WB	NONE	ZSC 1815-Y	1kΩ	390Ω	39kΩ	8.2kΩ	330Ω	1.2kΩ	6.8kΩ	220kΩ	120Ω	180Ω	8.2kΩ	3.9kΩ	10kΩ	22Ω

CR1, 4~15, 18~20 1S1588
 U1~2 TC4066BP
 U3 HD7406
 U4 HD74LS26P



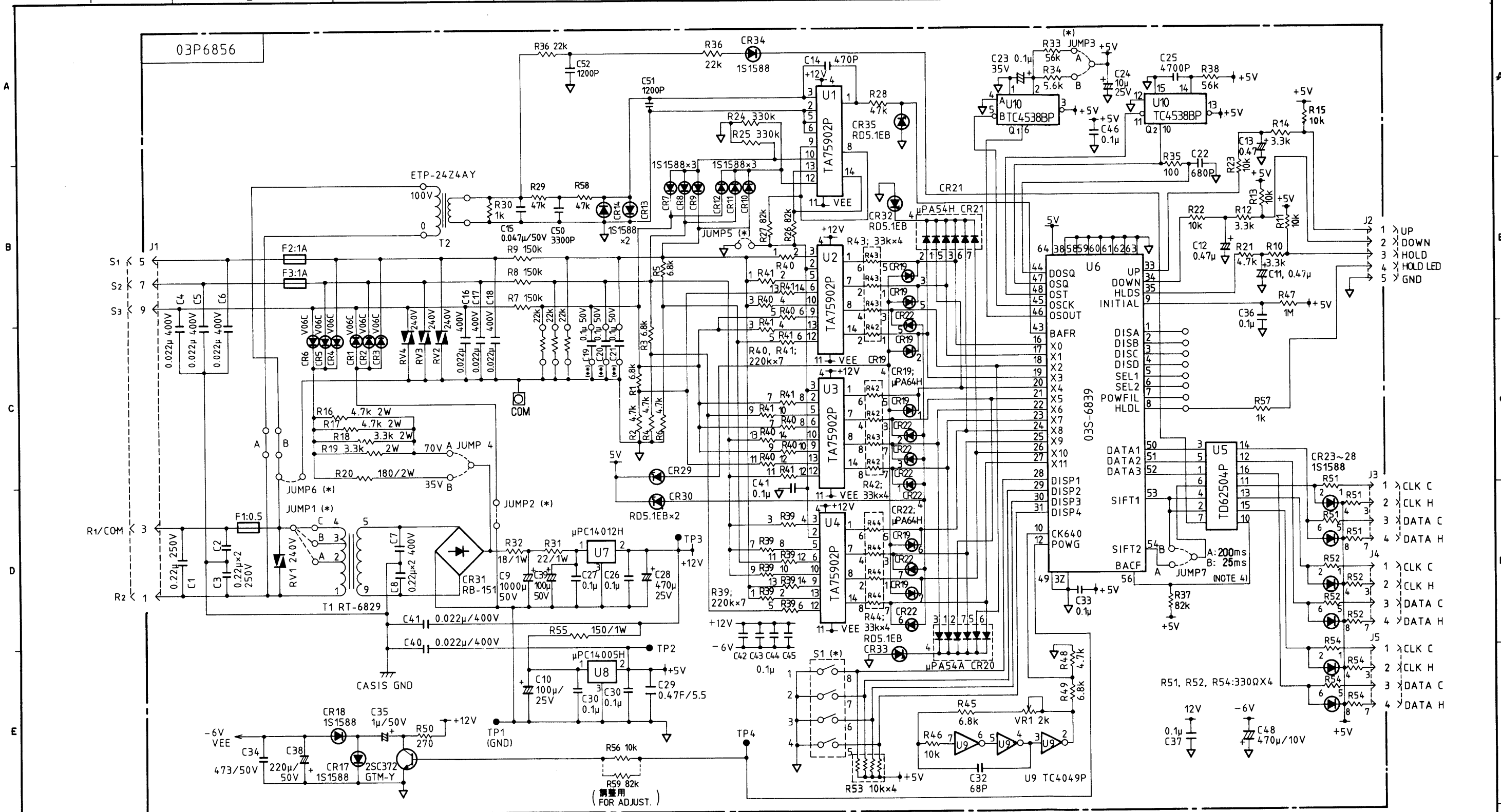
STC SELECT

P203	APPLICATION	ANT. HEIGHT	STC CURVE
4 - 3	FR-2010/2020/2020T	< 10m	FOURTH
3 - 2	FR-2030S/2020X/2050X	≥ 10m	THIRD
2 - 1	FR-2060S	≥ 10m	SECOND

NOTE
 1. 特記なき抵抗の単位はΩ, 0.25W, コンデンサはμF.
 ALL RESISTANCE IN OHMS, 0.25W AND CAPACITANCE IN MICROFARADS UNLESS NOTED OTHERWISE.

FR-2020T
 FR-2030S/2060S
 FR-2020X/2050X
 FR-2010/2020

承認 APPROVED	SEP・4・97 T. NAKANO	名称 TITLE	□VDA-7047 ビデオアンプ VIDEO AMPLIFIER
検閲 CHECKED	SEP・4・97 T. YUJAMA	図番 DWG. NO.	C3308-013-H
製図 DRAWN	SEP・4・97 I. Amami		



NOTE 1: 特記無き抵抗の値は全てΩ, V4W, 又コンデンサはF.
 ALL RESISTANCE IN OHMS, 1/4W, AND CAPACITANCE IN FARADS UNLESS NOTED OTHERWISE.

NOTE 2: ジャイロのタイプにより右の表の様にジャンパ接続及び
 (*) ディップスイッチの設定が変わる。
 CHANGE THE JUMPER CONNECTIONS AND SETTING OF DIP SWITCH ACCORDING TO TYPE OF GYRO COMPASS. REFER TO TABLES AT RIGHT.

NOTE 3: 工事材料で支給。
 (***) SUPPLIED FOR INSTALLATION MATERIALS.

JUMPER CONNECTIONS

	GYRO SIGNAL		JUMPER					
	Freq.(Hz)	Volt (V)	JUMP1	JUMP2	JUMP3	JUMP4	JUMP5	JUMP6
SYNCHRO-TYPE	50/60	25	○-○A	OPEN	A	/	CONNECT	OPEN
		50	○-○B					
	400/500	25	○-○C	OPEN	A	/	CONNECT	OPEN
		50	○-○A					
STEP TYPE	35	70	CONNECT	OPEN	A○ B○	/	OPEN	CONNECT
		70	CONNECT					

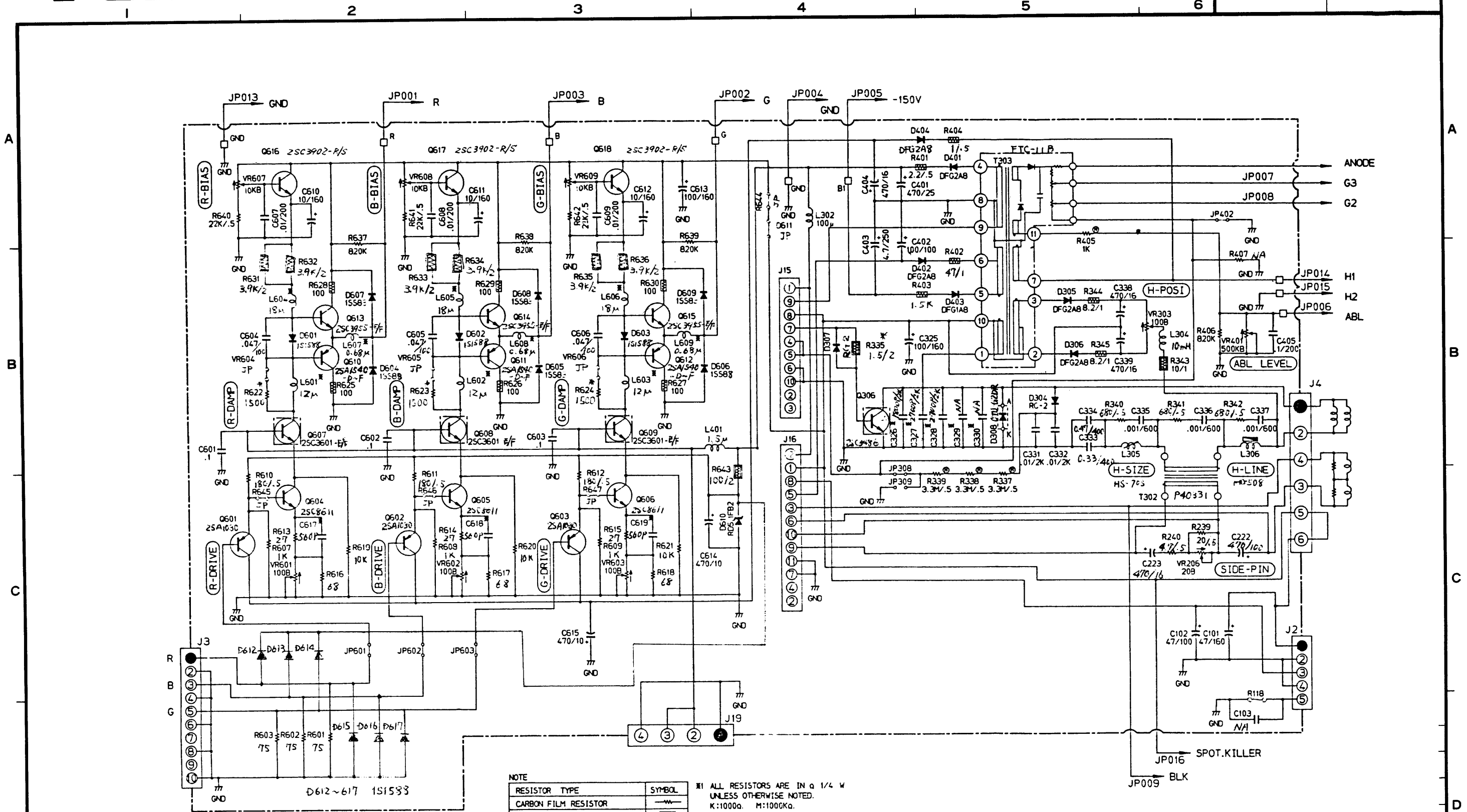
SETTING OF DIP SWITCH

DIP SWITCH S1	SYNCHRO TYPE						STEP TYPE	
	50/60	400/500						
	Freq. (Hz)	50/60	400/500					
	Volt. (V)	25/50/100	35	70				
	GYRO RATIO	360X	90X	36X	360X	90X	36X	180X
1	ON	ON	OFF	ON	ON	OFF	ON	
2	OFF	OFF	OFF	ON	ON	ON	ON	
3	ON	OFF	OFF	ON	OFF	OFF	ON	
4	OFF	OFF	OFF	OFF	OFF	OFF	ON	

NOTE 4: 出力データ転送周期(J3, J4, J5)
 OUTPUT DATA TRANSMISSION INTERVAL.
 J3-----25msec/200msec
 ジャンパ線(JUMP7)により切替可
 SELECTABLE BY JUMP7.
 J4, J5-----25msec

GC-1/2/6

承認 APPROVED	検査 CHECKED	製図 DRAWN	名称 TITLE	図番 DWG. NO.
			03P6856 (GS-6856) ジャイロインターフェース基板 GYRO INTERFACE P.C.B.	C3307-009-F

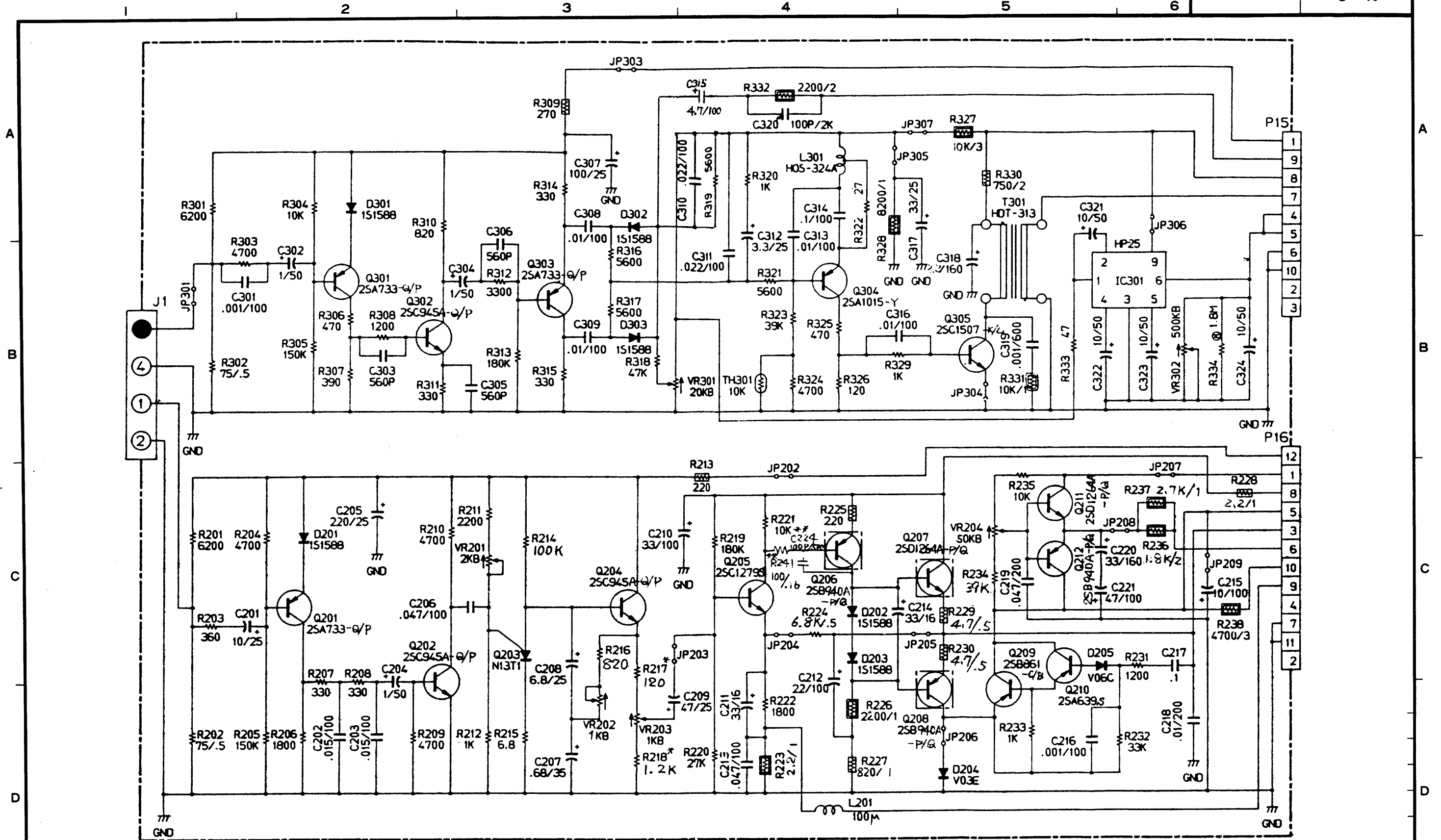


NOTE

RESISTOR TYPE	SYMBOL	EXPLANATION
CARBON FILM RESISTOR		1 ALL RESISTORS ARE IN A 1/4 W UNLESS OTHERWISE NOTED. K:1000Ω. M:1000KΩ.
METAL OXIDE RESISTOR		2 ALL CAPACITORS ARE IN μF 50V UNLESS OTHERWISE NOTED. P:μF.
METAL FILM RESISTOR		3 ALL INDUCTORS ARE IN μH UNLESS OTHERWISE NOTED.
FUSING RESISTOR		4 * : FACTORY ADJUSTED PARTS.
CARBON COMPOSITION RESISTOR		
FLAME PROOF CARBON RESISTOR		
WIRE WOUND RESISTOR		

承認 APPROVED	DEC. 18. 87 T. NAKANO	名称 TITLE	TS-861 CRTディスプレイドライブ基板 DISPLAY DRIVE BOARD
検図 CHECKED	DEC. 18. 87 I. AMANO	図番 DWG. NO.	C3308-027-B
製図 DRAWN	DEC. 18. 87 I. AMANO		

FR 20207
FR 210/2007
(CDT. 03/1B)



NOTE 1. 特記なき抵抗の単位はΩ, 0.25W コンデンサはμF.
 ALL RESISTANCE IN OHMS, 0.25W AND CAPACITANCE IN MICROFARADS UNLESS NOTED OTHERWISE.

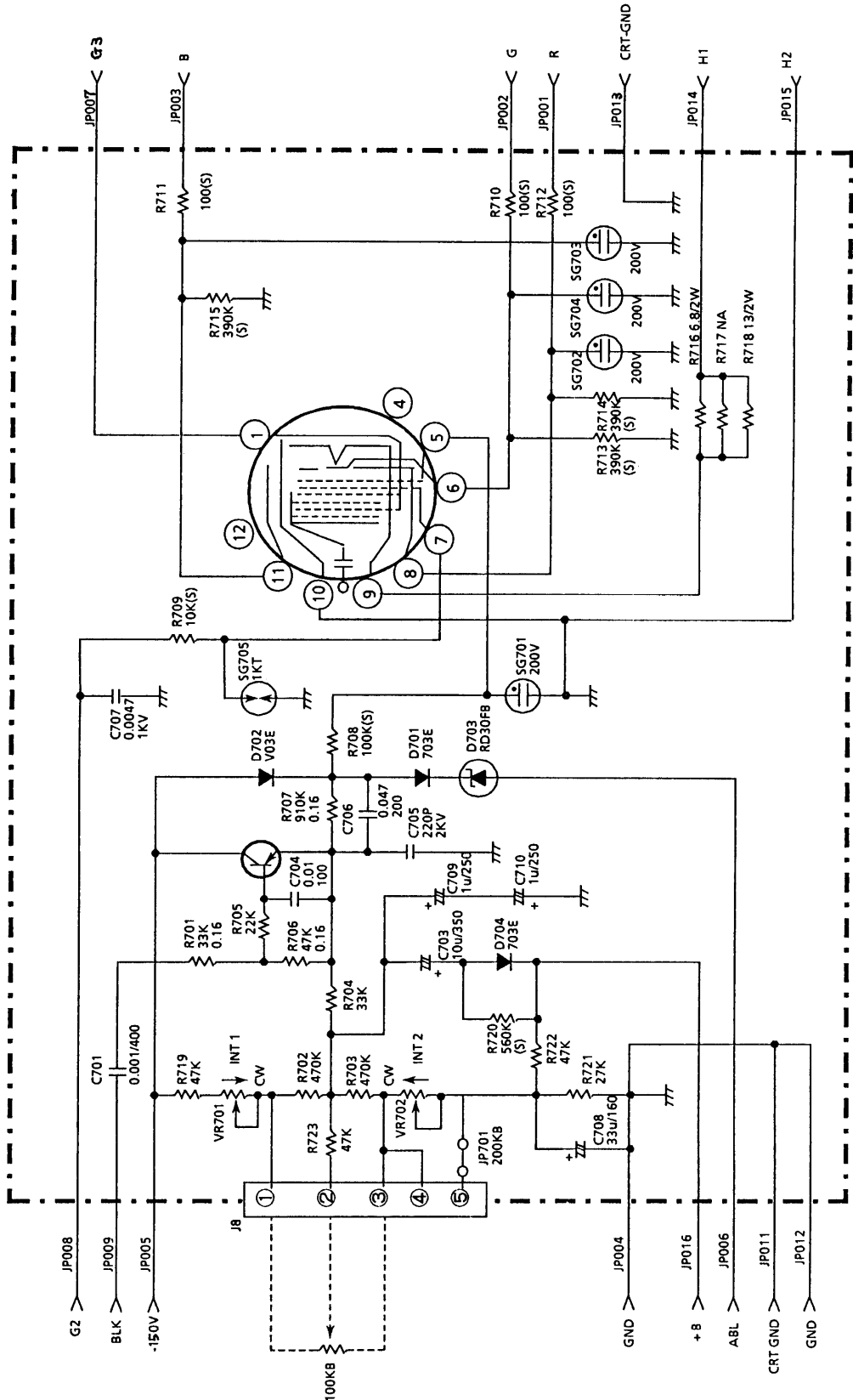
FR-2020T
 FR-2010/2020
 (CDT2037B)

承認 APPROVED	DR-18.17 T. UAKAUO	名称 TITLE	TS-860 CRT 偏向ドライブ基板
検図 CHECKED	Dec. 18. '87 I AMANO		DEF DRIVE BOARD
製図 DRAWN	Dec. 18. '87 I AMANO	図番 DWG. NO.	C3308-028-B

A
B
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3



FR-2010/2020/2020T

品番 ITEM	品名 NAME	材質 MATERIAL	数量 Q'TY	図番 DWG.NO.	摘要 REMARKS
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承認
APPROVED
007.8.87
T. NAKAGI

検図
CHECKED
007.8.87
T. YOSHIDA

製図
DRAWN
007.8.87
I. AMANO

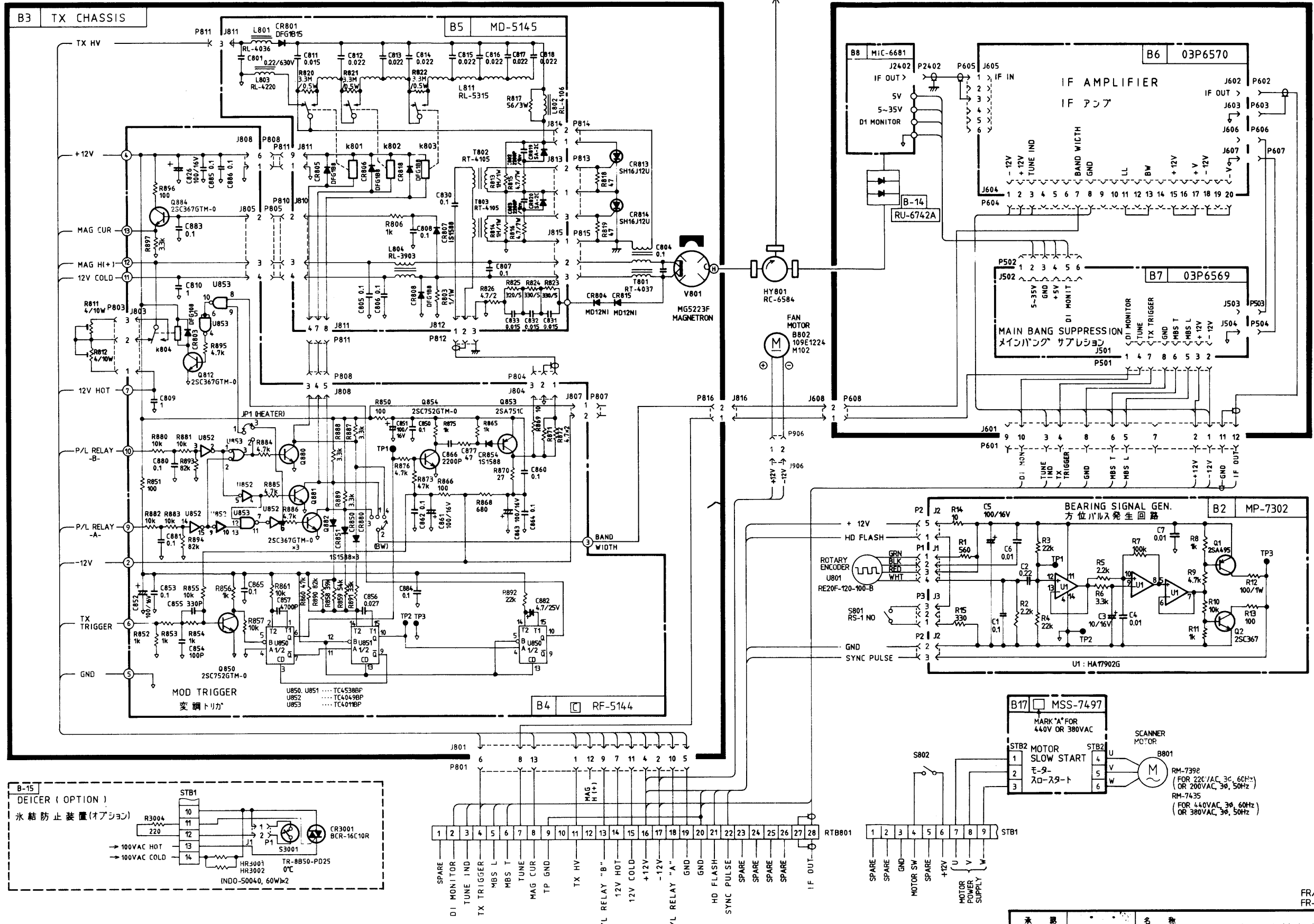
三角法
THIRD ANGLE PROJECTION

尺度
SCALE

重量
WEIGHT

名称
TITLE
TS769-1
CRTソケット基板
CRT SOCKET BOARD

図番
DWG.NO.
C3308-024-B



NOTE: 特記なき抵抗の単位は Ω, ¼W またコンデンサは µF.
 ALL RESISTANCE IN OHMS, ¼W AND CAPACITANCE IN MICROFARADS UNLESS NOTED OTHERWISE.

承認 APPROVED	名 TITLE	レーダ-空中線部総合回路図
検 CHECKED	検 RSB-0026	RADAR SCANNER UNIT
製 DRAWN	製 RSB-0031	
	図 DWG.NO.	C3311-010-E

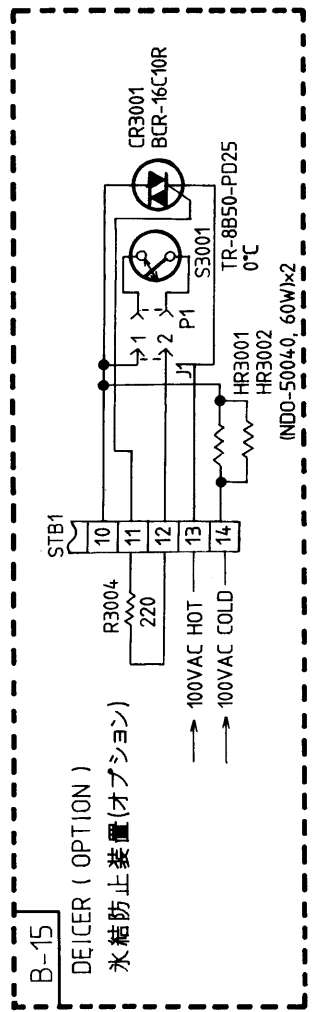
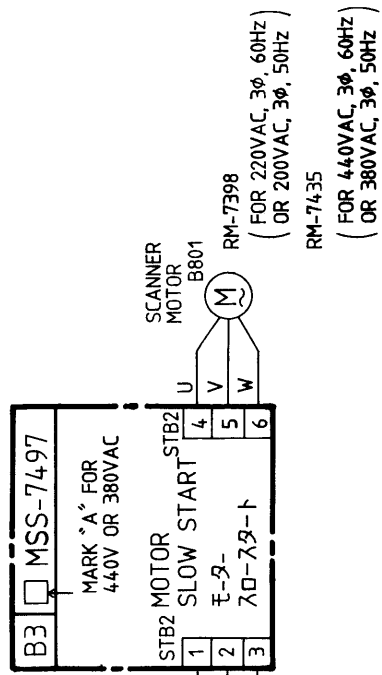
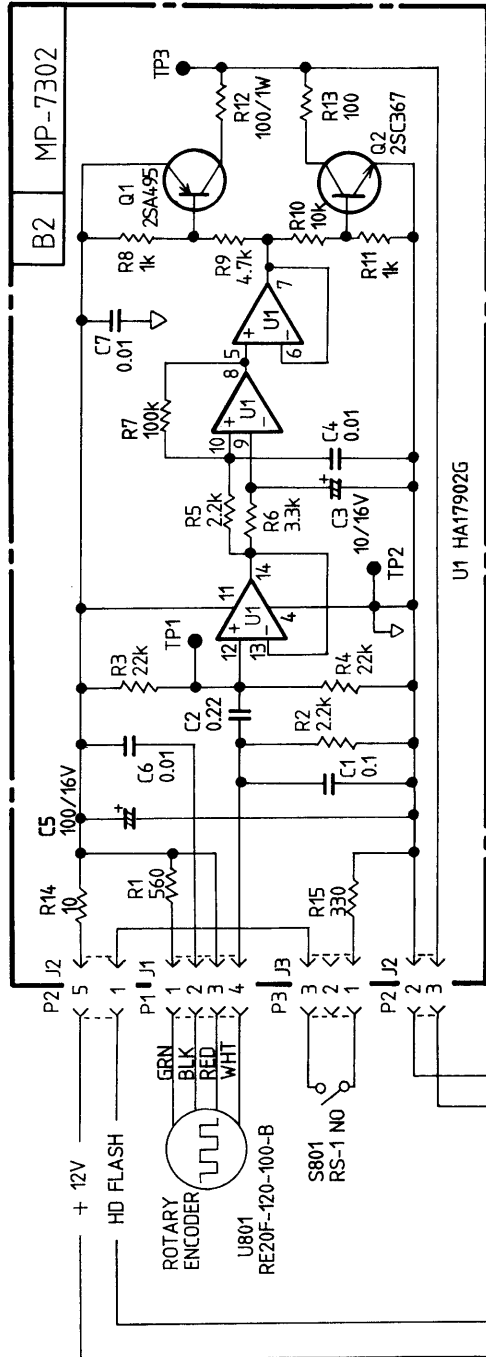
FR/FAR-2830S
 FR-2030S

A

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D



NOTE :
 特記なき抵抗の単位は全て Ω , 1/4W 又コンデンサは μ F.
 ALL RESISTANCE IN OHMS, 1/4W AND CAPACITANCE
 IN MICROFARADS UNLESS NOTED OTHERWISE.

FR/FAR-2832S/2862S
 FR-2032S/2060S

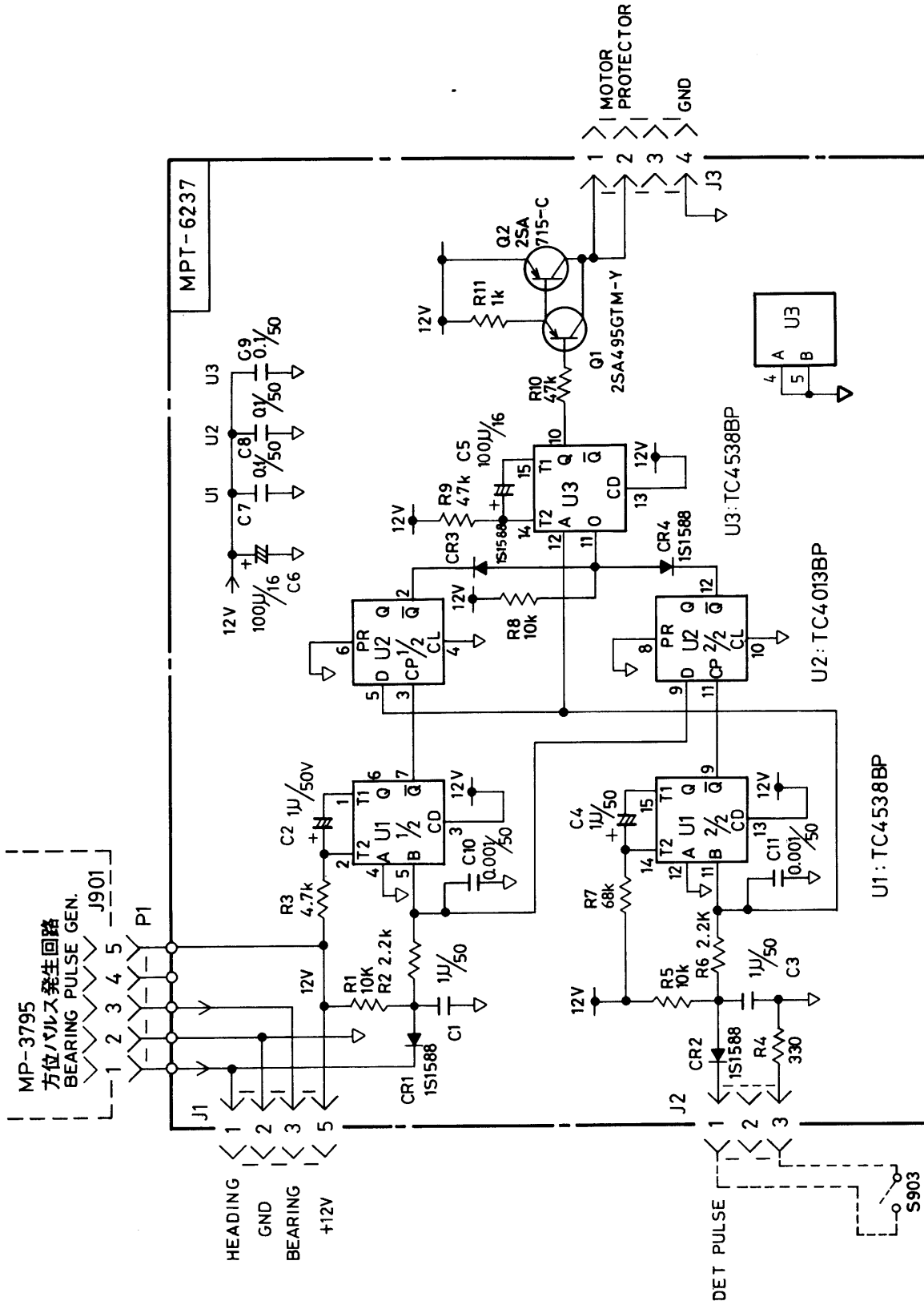
品番 ITEM	品名 NAME	材質 MATERIAL	数量 Q'TY	図番 DWG.NO.	摘要 REMARKS
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承認 APPROVED	SEP. 1 '88 T. NAKAUC	三角法 THIRD ANGLE PROJECTION	名称 TITLE レーダ-空中線部総合回路図		
検図 CHECKED	SEP. 1 '88 T. YUYAMA	尺度 SCALE	RSB-0027 RSB-0032 RADAR SCANNER UNIT		
製図 DRAWN	SEP. 1 '88 E. AMANO	重量 WEIGHT	kg	図番 DWG.NO. C3312-014-C	

A

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D

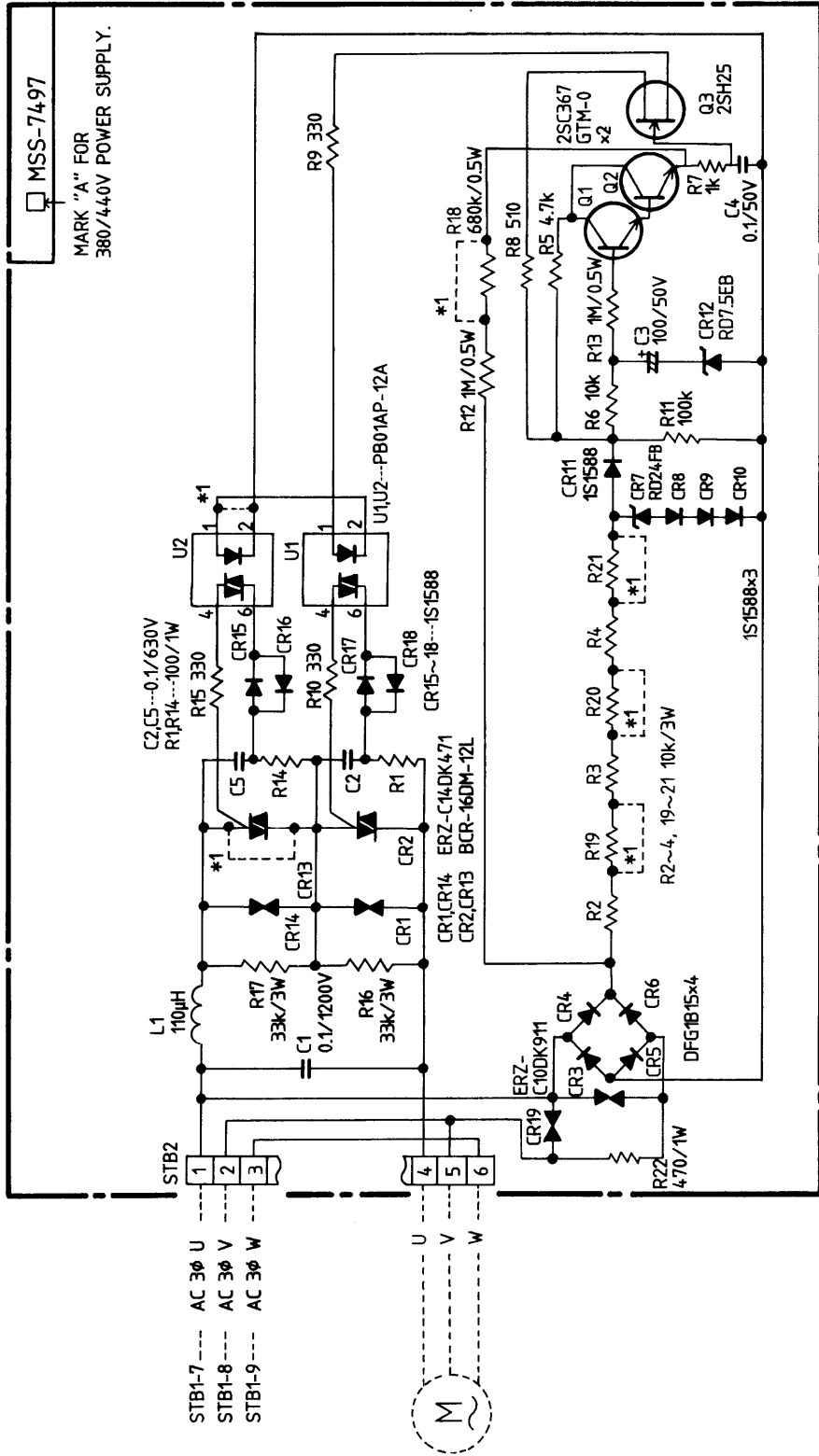


NOTE: この基板はアンテナモーターがRM-5305(1φ, 100VAC)のときのみ、空中線部に使用される。
 WHEN THE TYPE OF ANTENNA MOTOR IS RM-5305(1φ, 100AC), THIS CIRCUIT BOARD IS ADDED IN THE SCANNER UNIT.

FR-1222X/1252X/1622X/1652X, FAR-1622X/1652X, FR-2020X/2050X

承認 APPROVED	OCT. 7. '86 T. NAKANO	三角法 THIRD ANGLE PROJECTION		名称 TITLE	MPT-6237 逆転防止回路 REVERSE ROTATION PROTECTOR
検図 CHECKED	OCT. 7. '86 I. Amano	尺度 SCALE	/	図番 DWG.NO.	C3263-058-B
製図 DRAWN	OCT. 7. '86 J. Takai	重量 WEIGHT	kg		

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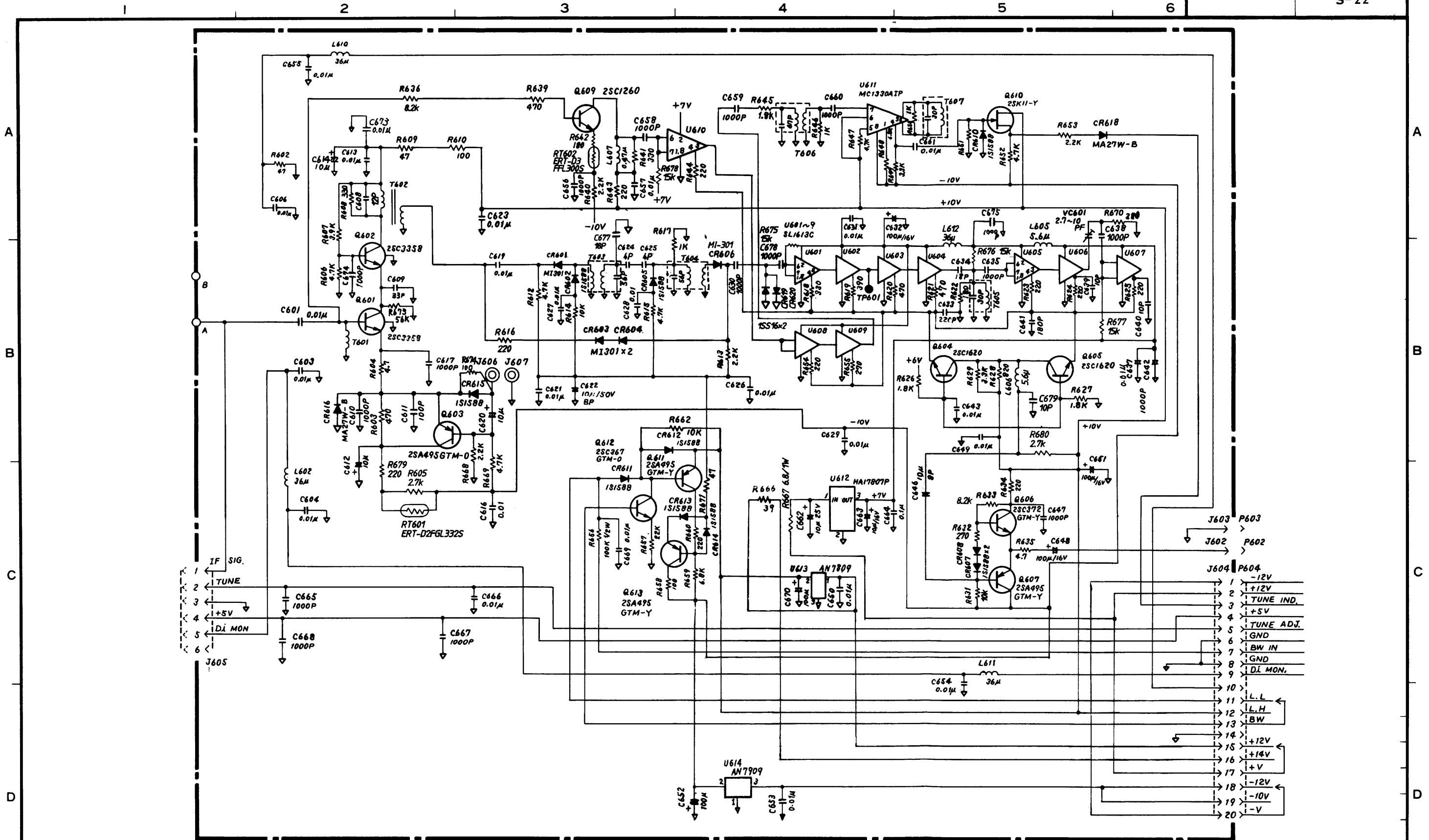


- NOTE : 1. 200/220V電源の時は C5、CR13 ~ 16、R14 ~ 21、U2 を削除し、*1の6箇所をショートする。
 FOR 200/220V POWER SUPPLY C5, CR13~16, R14~21 AND U2 ARE DELETED AND 6 POSITIONS MARKED WITH *1 ARE SHORTED.
2. 特配なき抵抗の単位はΩ、0.25W、コンデンサの単位はμF。
 ALL RESISTANCE IN OHMS, 0.25W AND CAPACITANCE IN MICROFARADS UNLESS NOTED OTHERWISE.

FAR-2830S/2862S
 FR-2830S/2862S
 FR-2030S/2060S

品番 ITEM	品名 NAME	材質 MATERIAL	数量 Q'TY	図番 DWG.NO.	摘要 REMARKS
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承認 APPROVED	AUG. 31. '88 T. WAKALU	三角法 THIRD ANGLE PROJECTION		名称 TITLE MSS-7497 モータ-スロ-スタート回路 MOTOR SLOW START CKT	
検図 CHECKED	AUG. 31. '88 T. YUYAMA	尺度 SCALE			
製図 DRAWN	AUG. 31. '88 E. AMANO	重量 WEIGHT	kg	図番 DWG.NO.	C3311-009-C



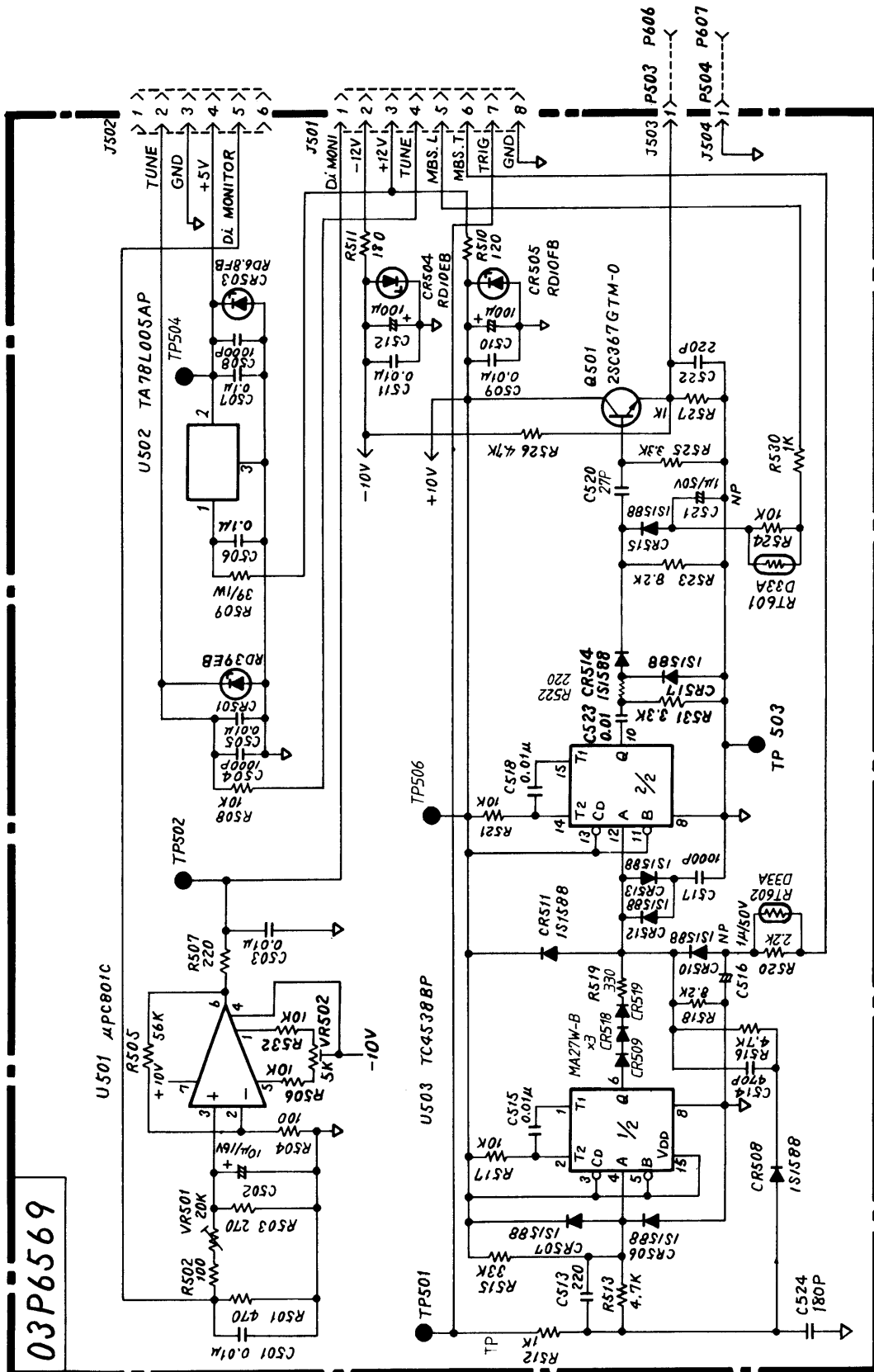
NOTE 1. 特記なき抵抗は全てΩ, 1/4W コンデンサはF, コイルはH.
 ALL RESISTANCE IN OHMS 1/4W, CAPACITANCE IN FARAD
 AND INDUCTANCE IN HENRRY UNLESS NOTED OTHERWISE.

FR-2030S/2830S
 FR-1500DS SERIES
 FR-8000DS SERIES
 FR-800DS SERIES

承認 APPROVED	APR. 10. 84	名称 TITLE	IF アンプ基板 IF AMPLIFIER BOARD
検閲 CHECKED	FEB. 14. 84	番 NO.	03P6570
製図 DRAWN	FEB. 14. 84	図番 DWG. NO.	C3291-006-N

REV.: 9/86, 2/87

A
B
C
D

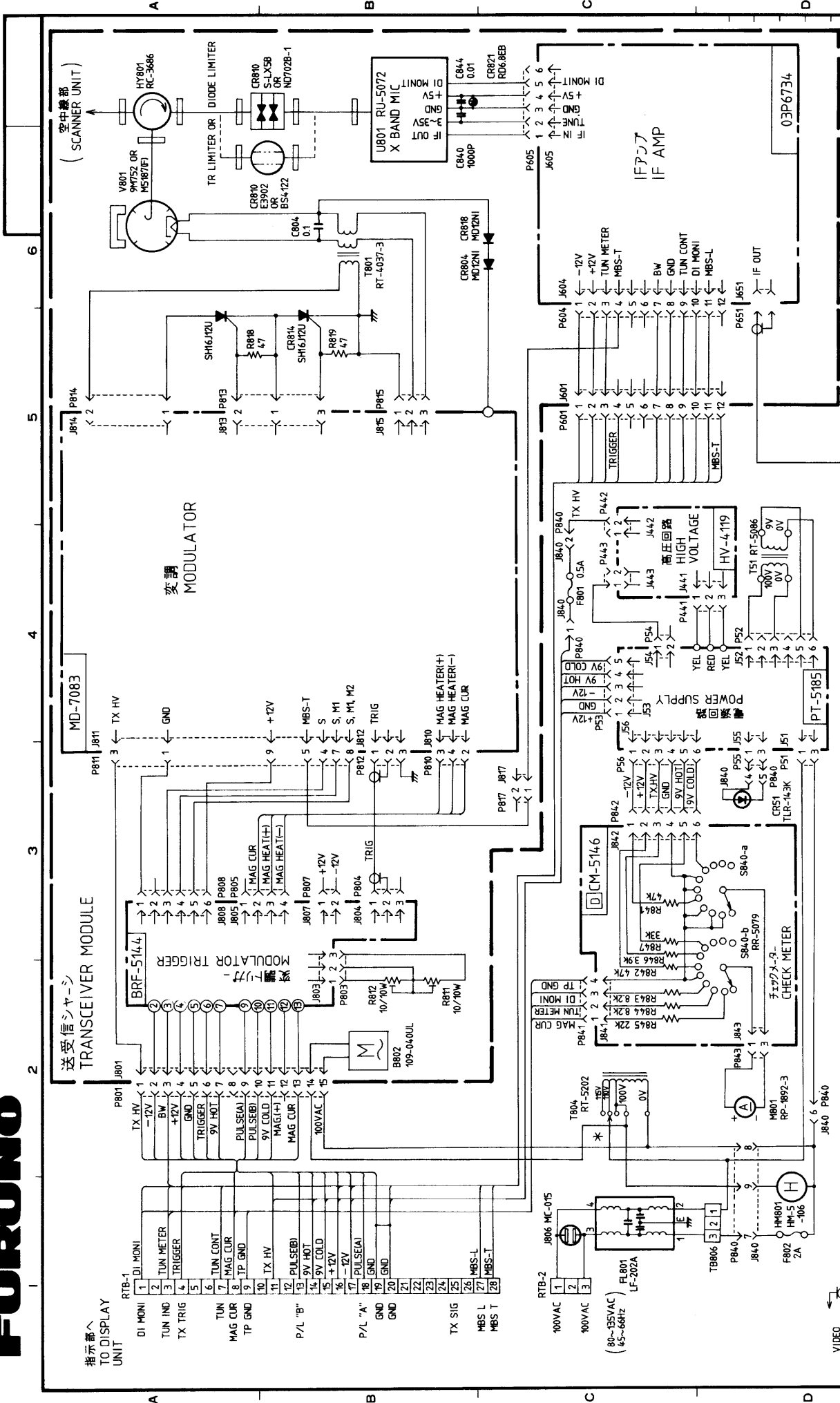


03P6569

NOTE: 特記なき抵抗の単位は全てΩ, 1/4W 又コンデンサは F.
ALL RESISTANCE IN OHMS, 1/4W AND CAPACITANCE IN FARADS UNLESS NOTED OTHERWISE.

FAR-2830S
FR-2030S/2830S
FR-800DS/8000DS/1500DS

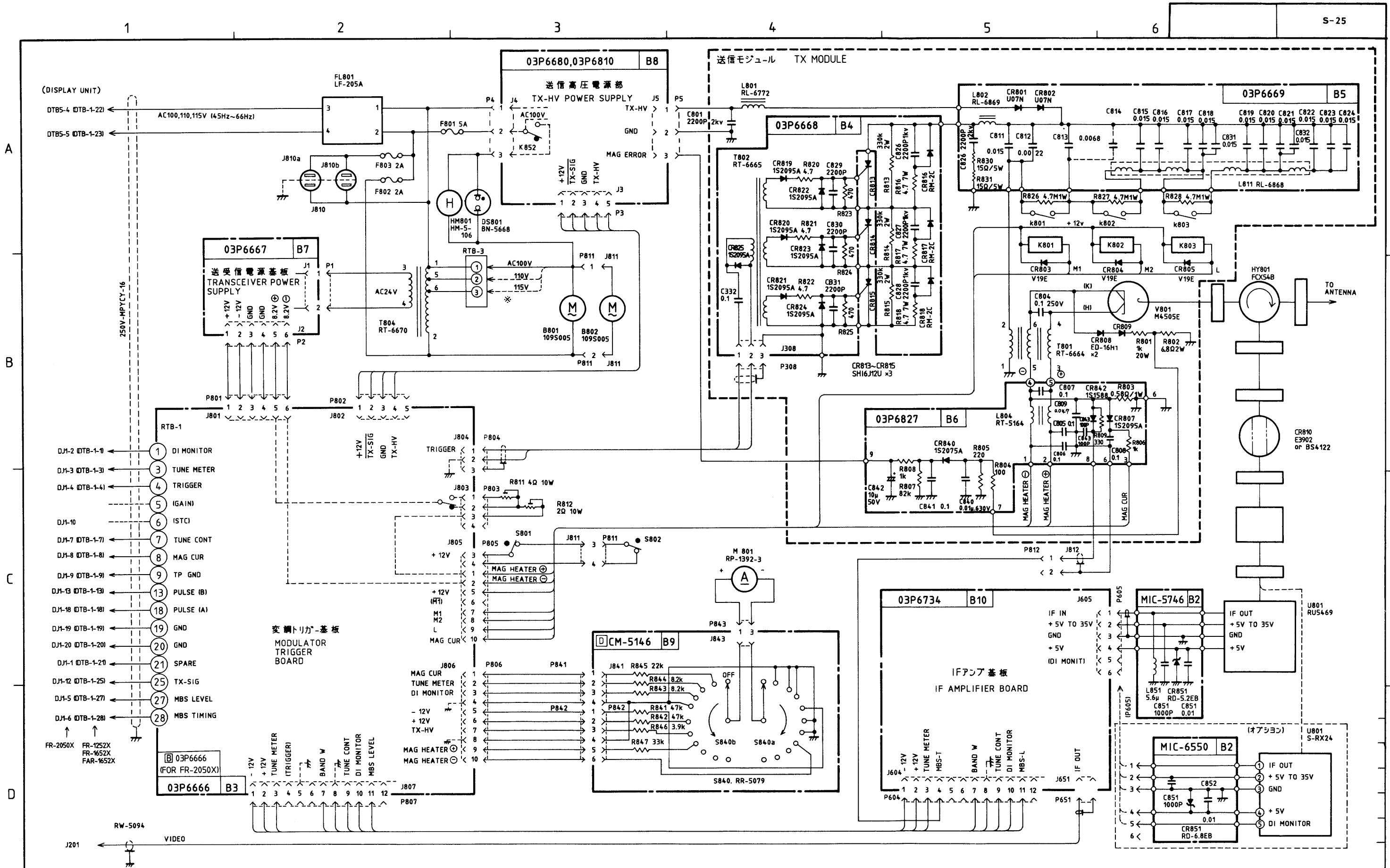
承認 APPROVED	品番 ITEM	品名 NAME	材質 MATERIAL	数量 Q'TY	図番 DWG.NO.	摘要 REMARKS
APR 10 '84		三角法 THIRD ANGLE PROJECTION				
検図 CHECKED		尺度 SCALE				名称 TITLE
製図 DRAWN		重量 WEIGHT	kg			03P6569 メインバンクサプレッション基板 MAIN BANG SUPPRESSION BOARD
						図番 DWG.NO. C3291-003-F



NOTE 1. * : 入力電源により 100V, 110V, 115V のいずれかのタップを使用。
 : CHANGE TAP CONNECTION WITH SHIP'S MAINS VOLTAGE.
 2. 特記なき抵抗の単位は全てΩ, 1/4W 又コンデンサはμF.
 ALL RESISTANCE IN OHMS, 1/4W AND CAPACITANCE IN MICROFARADS
 UNLESS NOTED OTHERWISE.

承認 APPROVED	名 称 TITLE	レ-ダ-送受信部総合回路図 RTR-019 RADAR TRANSCIEVER UNIT
検閲 CHECKED	製 図 DRAWN	製 図 DWG. NO.
検査 INSPECTED	製 図 DRAWN	製 図 DWG. NO.
承認 APPROVED	名 称 TITLE	レ-ダ-送受信部総合回路図 RTR-019 RADAR TRANSCIEVER UNIT
検閲 CHECKED	製 図 DRAWN	製 図 DWG. NO.
検査 INSPECTED	製 図 DRAWN	製 図 DWG. NO.

FR/FAR-2822X
FR-2020X

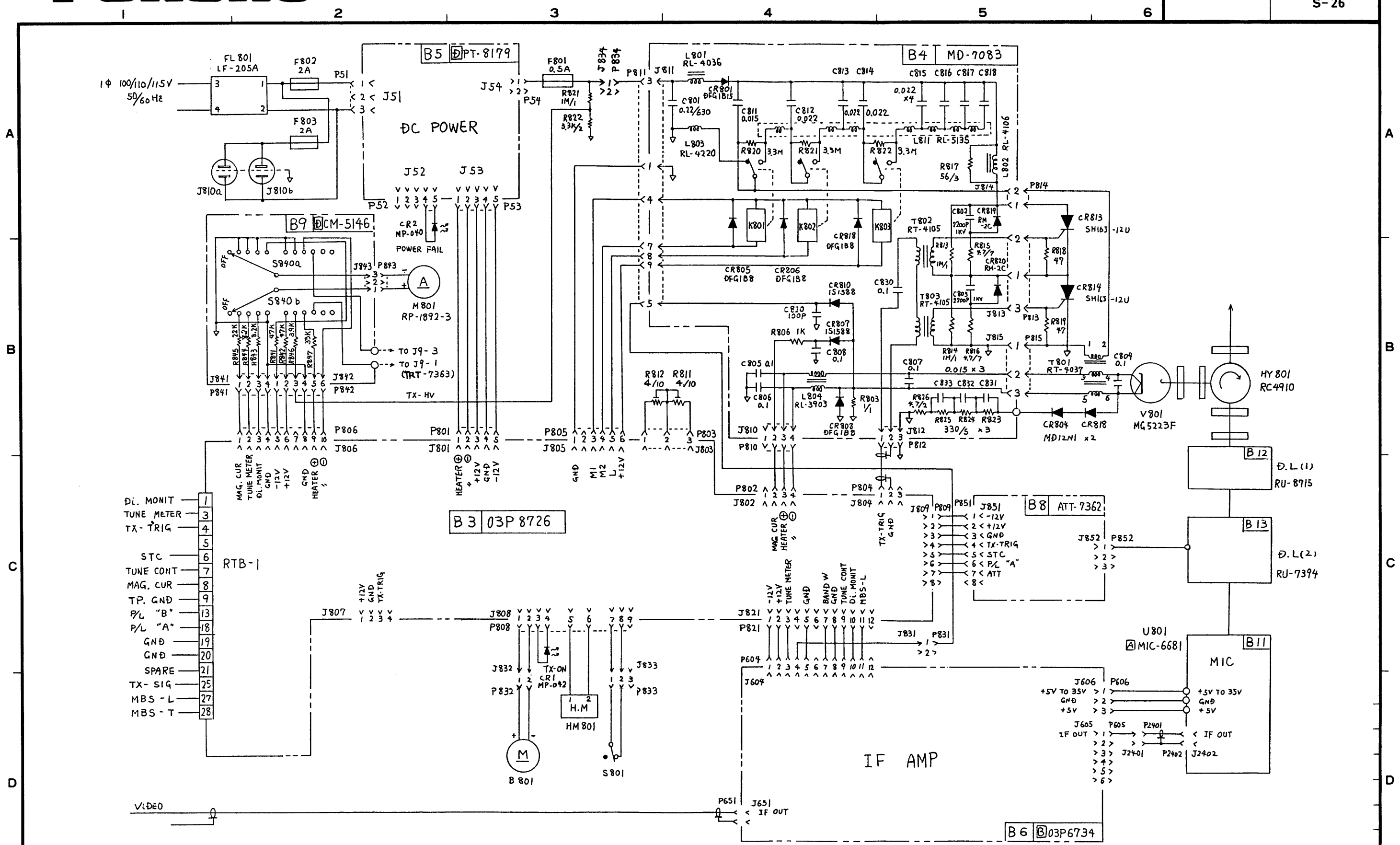


NOTE 1. ※: 入力電源により100V,110V,115Vのいずれかのタップを使用。
 : CHANGE TAP CONNECTION WITH SHIP'S MAINS VOLTAGE.

2. 特記なき抵抗の単位は全てΩ,1/4W 又コンデンサはμF.
 ALL RESISTANCE IN OHMS, 1/4W AND CAPACITANCE IN MICROFARADS UNLESS NOTED OTHERWISE.

機内部品番号 :2B1 ---
 CHASSIS PARTS NO.

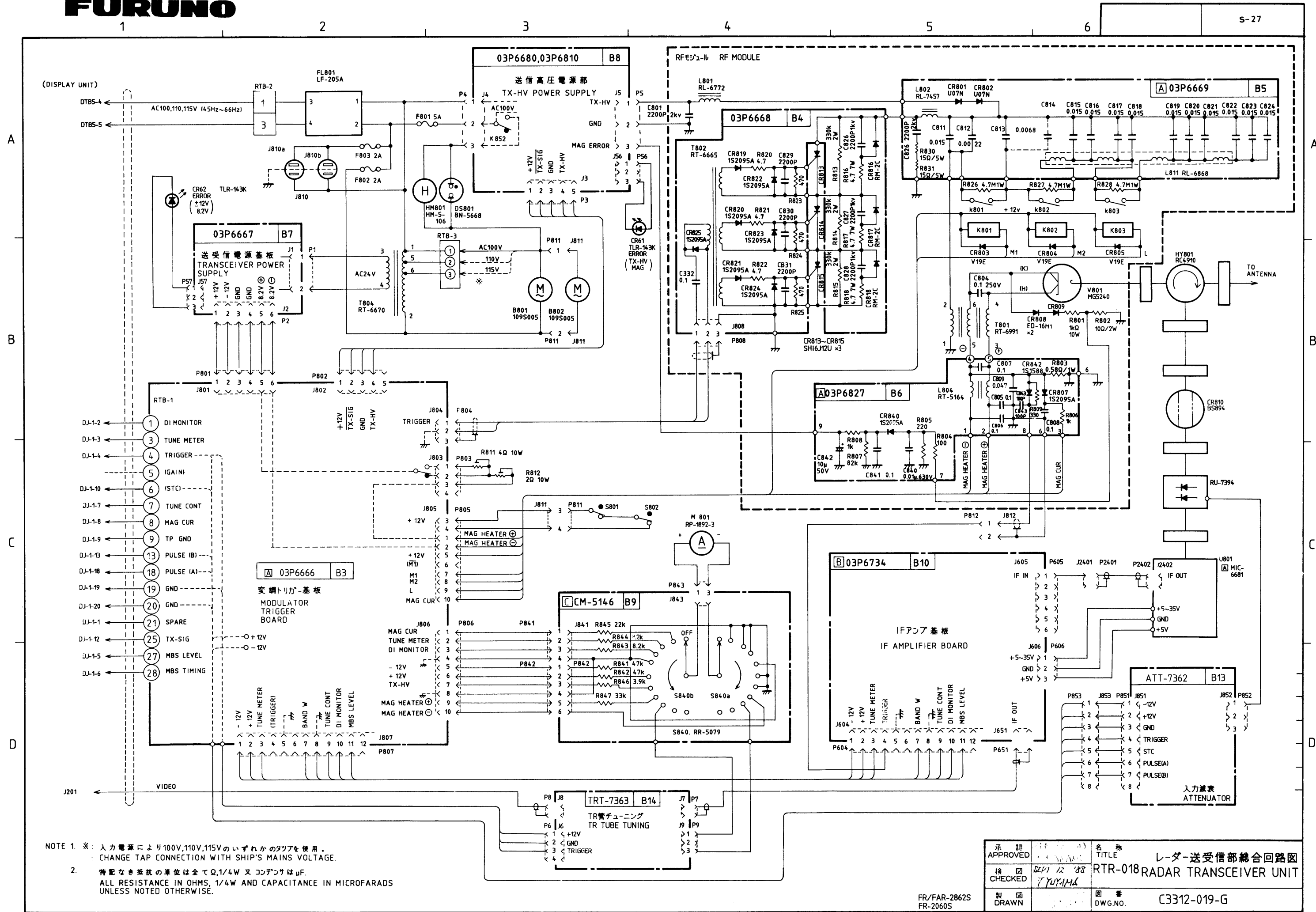
FR-1252X/1652X, FAR-1652X, FR-2050X, FR-2852X, FAR-2852X	
承認 APPROVED	名称 TITLE
検閲 CHECKED	RTR-010 送受信部総合回路図
製図 DRAWN	図番 DWG.NO. C3300-005-K



- 1 Di. MONIT
- 2 TUNE METER
- 3 TX-TRIG
- 4
- 5
- 6 STC
- 7 TUNE CONT
- 8 MAG. CUR
- 9 TP. GND
- 10 P/L "B"
- 11 P/L "A"
- 12 GND
- 13 GND
- 14 SPARE
- 15 TX-SIG
- 16 MBS-L
- 17 MBS-T
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27
- 28

承認 APPROVED	AUG. 7 '90 T. NAKANO	名称 TITLE	RTR-025 送受信部総合回路図 TRANSCIVER UNIT
検 CHECKED	AUG. 7 '90 N. SAITO	製 DRAWN	I. AMANO
製 DRAWN	AUG. 7 '90 I. AMANO	図番 DWG. NO.	C3344-K01-A

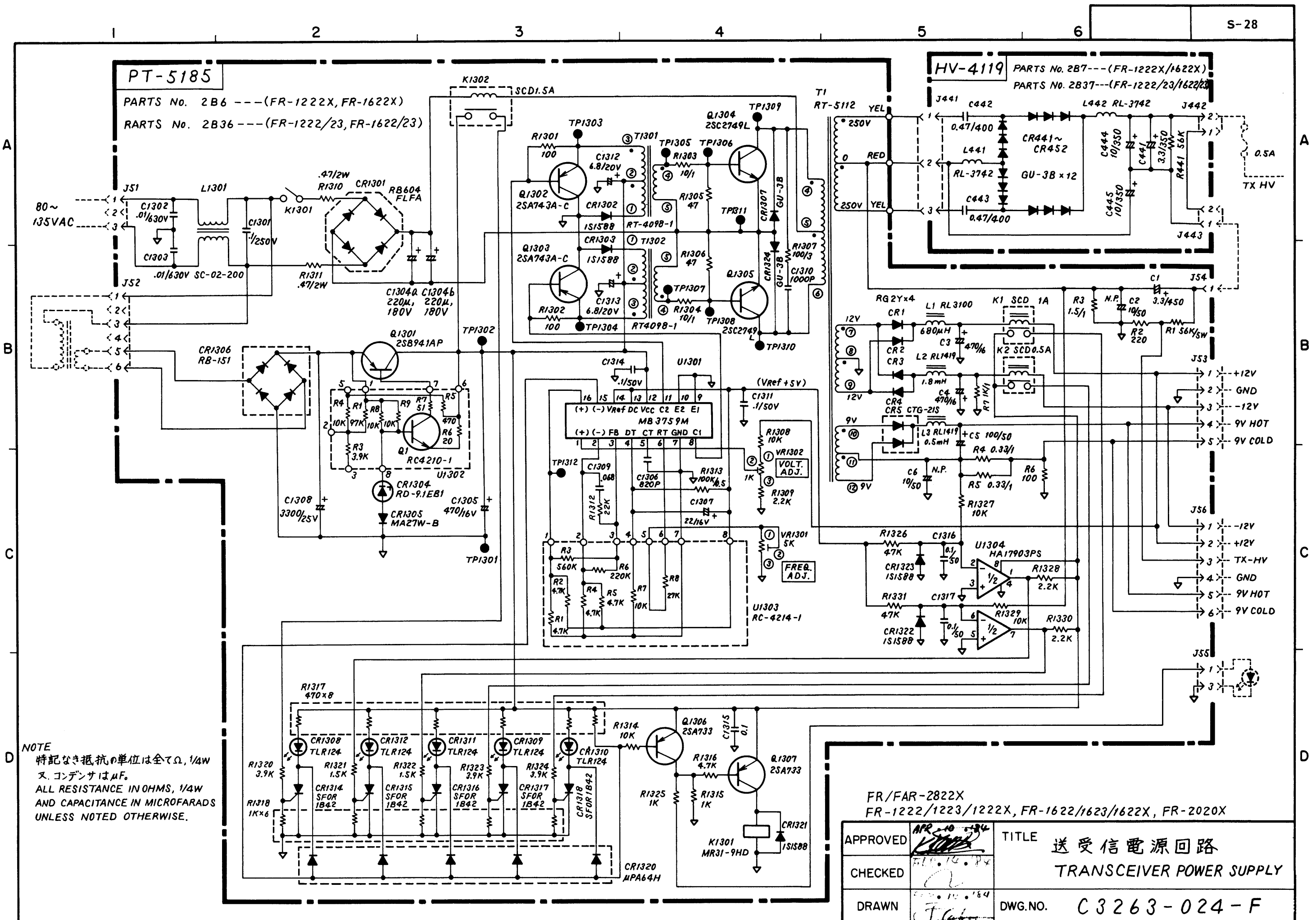
FR-2032S
FR/FAR-2832S



NOTE 1. * 入力電源により100V,110V,115Vのいずれかのタップを使用。
 CHANGE TAP CONNECTION WITH SHIP'S MAINS VOLTAGE.

2. 特記なき抵抗の単位は全てΩ,1/4W又コンデンサはμF.
 ALL RESISTANCE IN OHMS, 1/4W AND CAPACITANCE IN MICROFARADS
 UNLESS NOTED OTHERWISE.

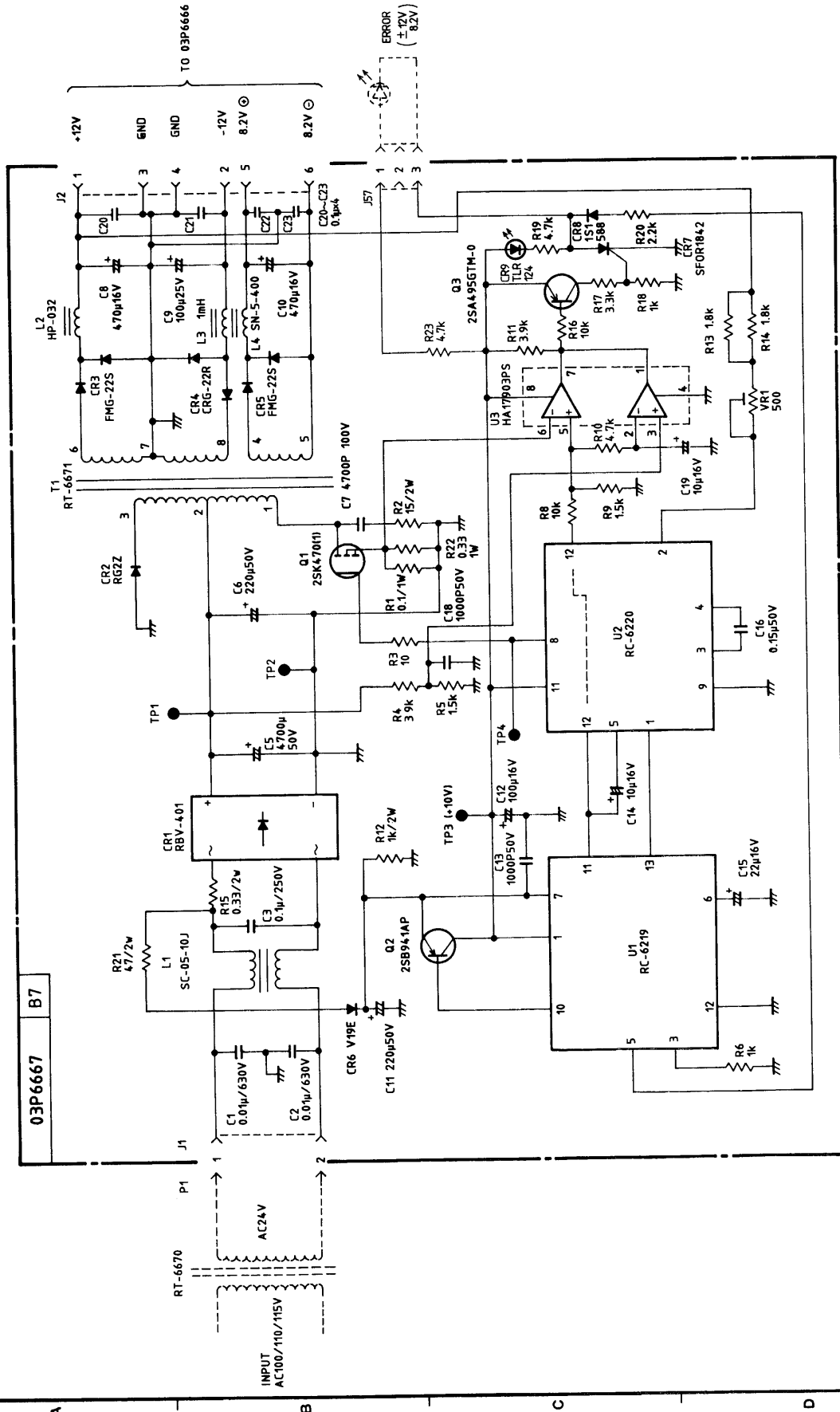
承認 APPROVED	名称 TITLE	レダ-送受信部総合回路図
検閲 CHECKED	図番 DWG. NO.	RTR-018 RADAR TRANSCIVER UNIT
製図 DRAWN		C3312-019-G



NOTE
 特記なき抵抗の単位は全てΩ, 1/4W
 又、コンデンサはμF.
 ALL RESISTANCE IN OHMS, 1/4W
 AND CAPACITANCE IN MICROFARADS
 UNLESS NOTED OTHERWISE.

FR/FAR-2822X
 FR-1222/1223/1222X, FR-1622/1623/1622X, FR-2020X

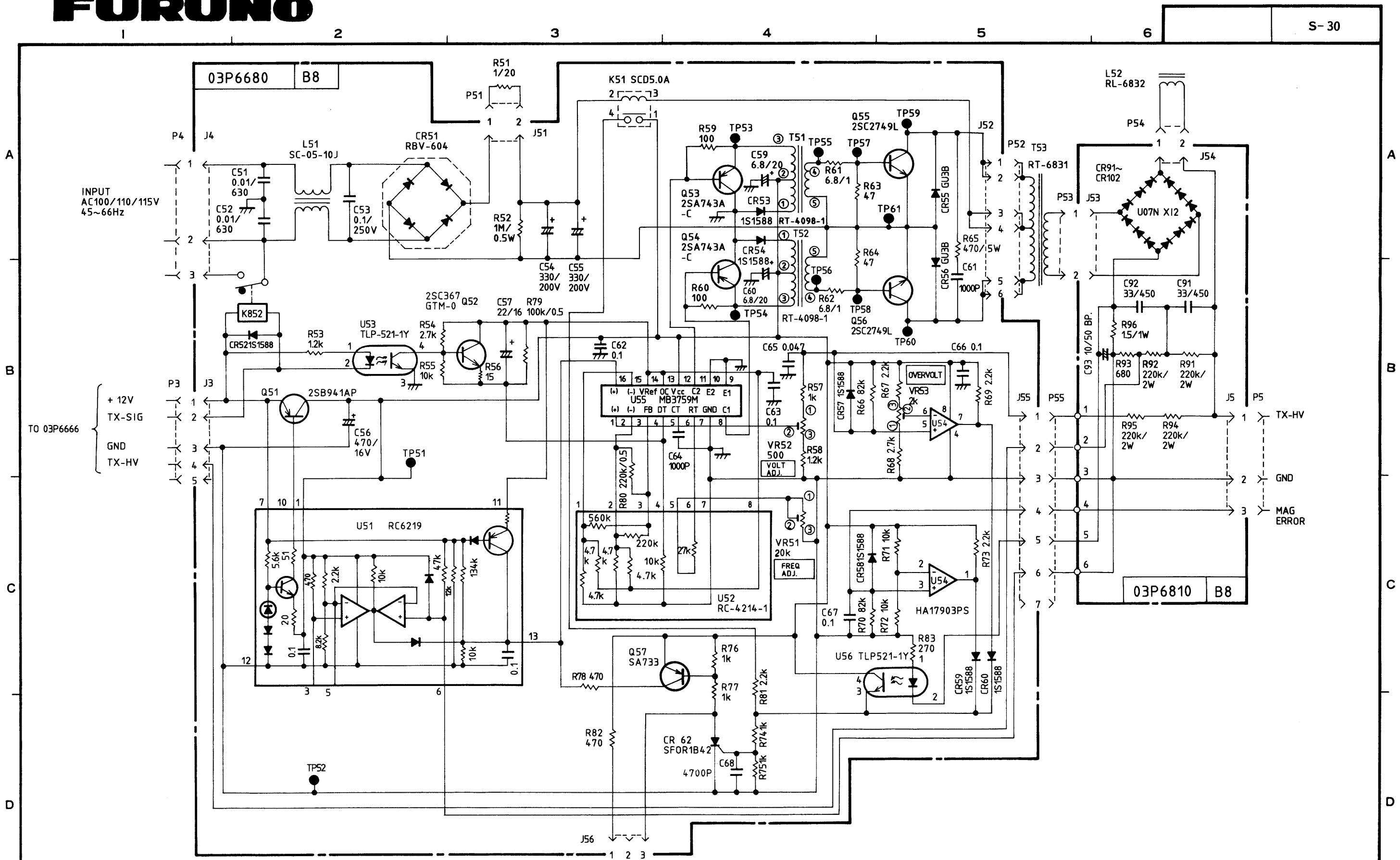
APPROVED	<i>[Signature]</i>	TITLE	送受信電源回路
CHECKED	<i>[Signature]</i>		TRANSCEIVER POWER SUPPLY
DRAWN	<i>[Signature]</i>	DWG.NO.	C3263-024-F



FR-1252X/1652X, FAR-1652X, FR-2050X/2060S, RR/FAR-2852X, RR/FAR-2862S

承認 APPROVED	名義 TITLE	03P6667	送受信電源基板 TRANSEIVER POWER SUPPLY
検閲 CHECKED	検閲者 I. Amano	1977.07.27	
製図 DRAWN	製図者 F. T. Sato		
	図番 DWG. NO.	C3300-008-E	

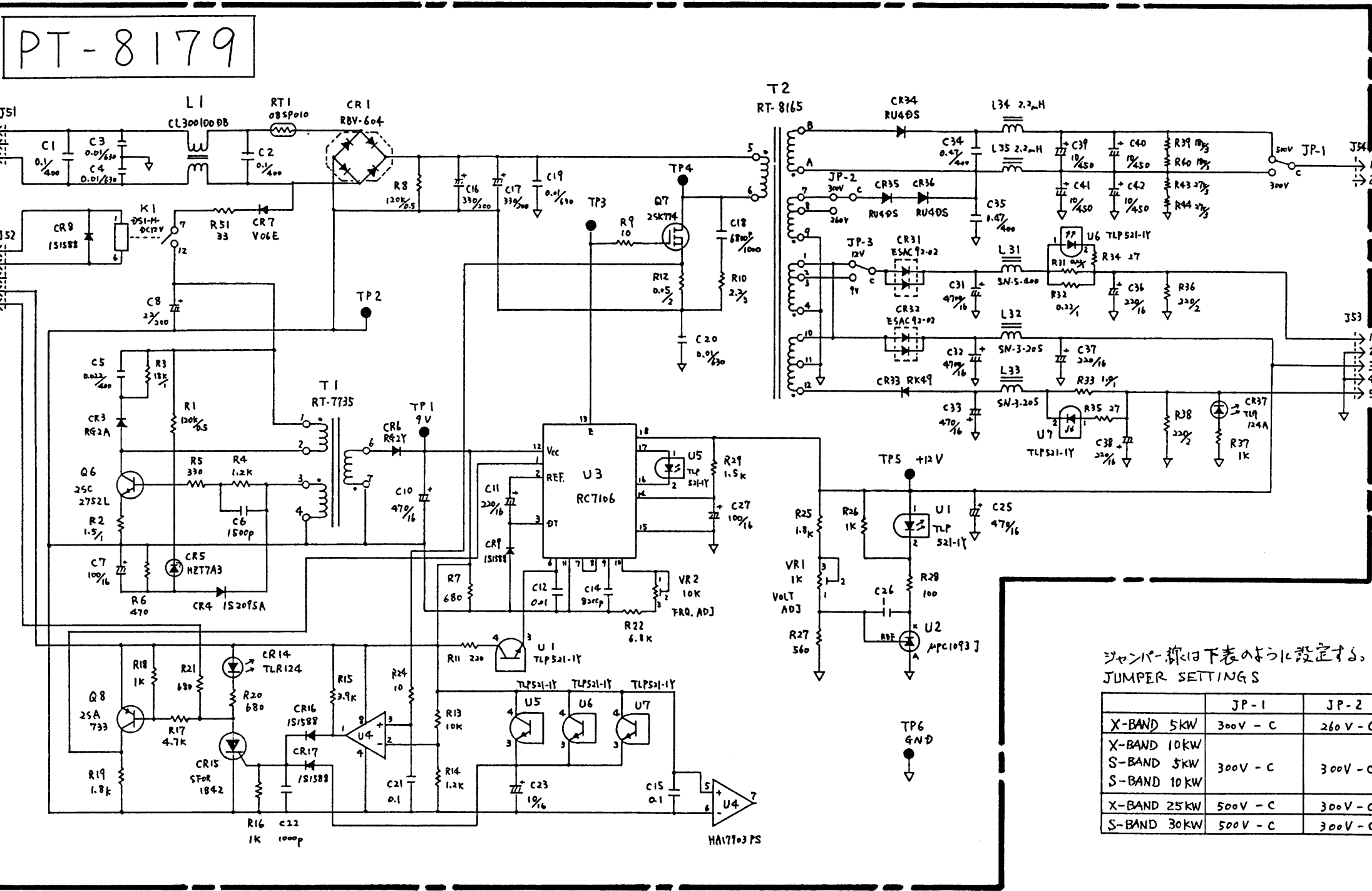
NOTE: 特記なき抵抗は全て0.1/4WコンポネンツはF.
ALL RESISTANCE IN OHMS, 1/4W AND CAPACITANCE
IN FARADS UNLESS NOTED OTHERWISE.



NOTE: 特記なき抵抗は全てΩ 1/4W,コンデンサはμF.
 ALL RESISTANCE IN OHMS, 1/4W AND CAPACITANCE IN MICROFARADS UNLESS NOTED OTHERWISE.

FR-1252X/1652X, FAR-1652X, FR-2050X/2060S, FR/FAR-2852X, FR/FAR-2862S

承認 APPROVED	DATE 1.1.1987	名称 TITLE	送信高圧電源部
検図 CHECKED	DATE Jan. 27. 87	03P6680 03P6810	TX-HV POWER SUPPLY
製図 DRAWN	DATE 1987. JAN. 21	図番 DWG. NO.	C3300-007-C

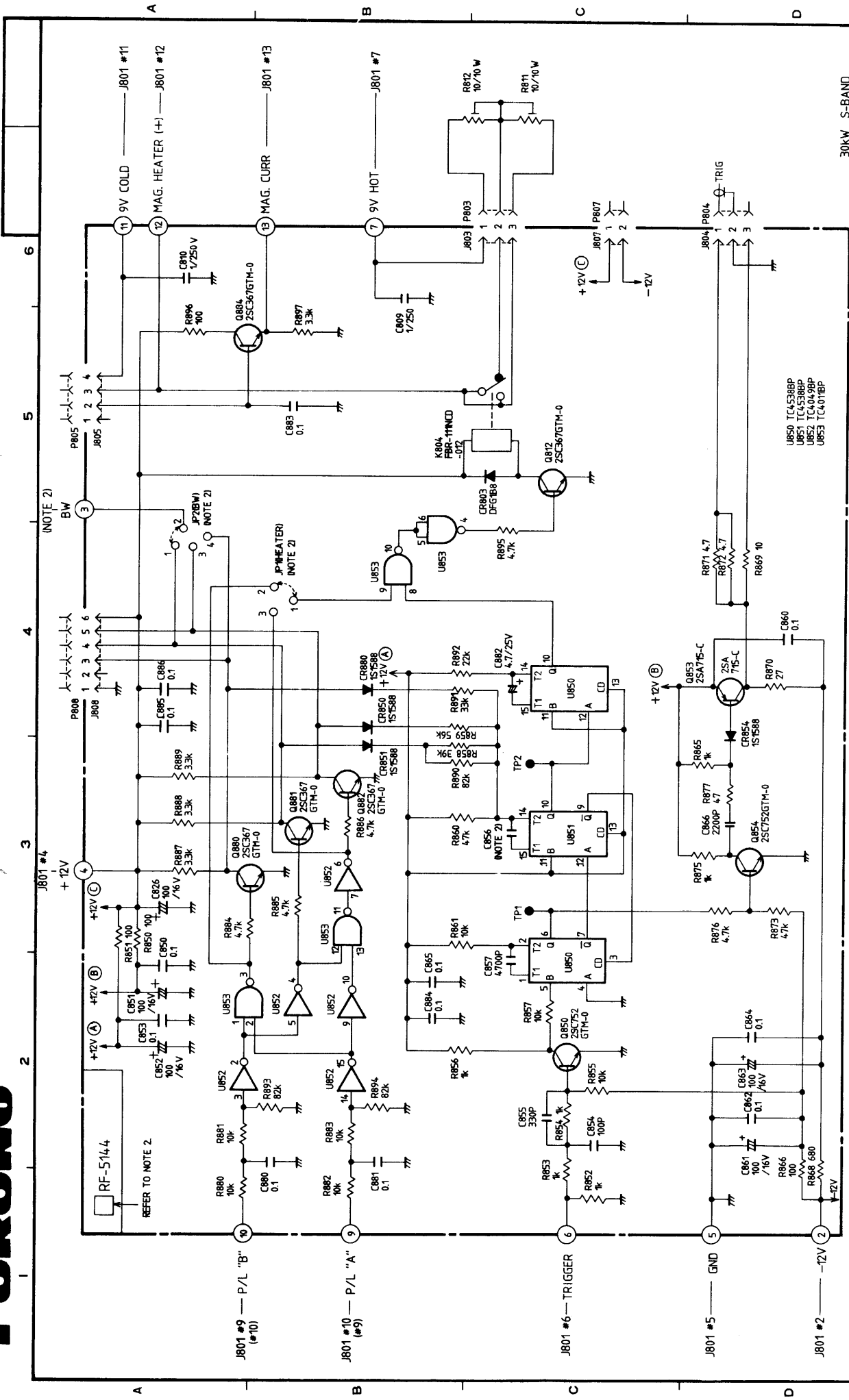


ジャンパー線は下表のように設定する。
JUMPER SETTINGS

	JP-1	JP-2	JP-3
X-BAND 5KW	300V - C	260V - C	9V - C
X-BAND 10KW			
S-BAND 5KW	300V - C	300V - C	9V - C
S-BAND 10KW			
X-BAND 25KW	500V - C	300V - C	9V - C
S-BAND 30KW	500V - C	300V - C	12V - C

FR/FAR-2830S
FR-FAR-2822
RJ-5

承認 APPROVED	JUL. 6. '89 T. NAKAWO	名称 TITLE	PT-8179 RF部電源基板 RF POWER SUPPLY BOARD
検 CHECKED	JUL. 6. '89 N. SAITO		
製 DRAWN	July. 6. '89 I. AMANO	図番 DWG. NO.	C3251-K10-B



RF-5144

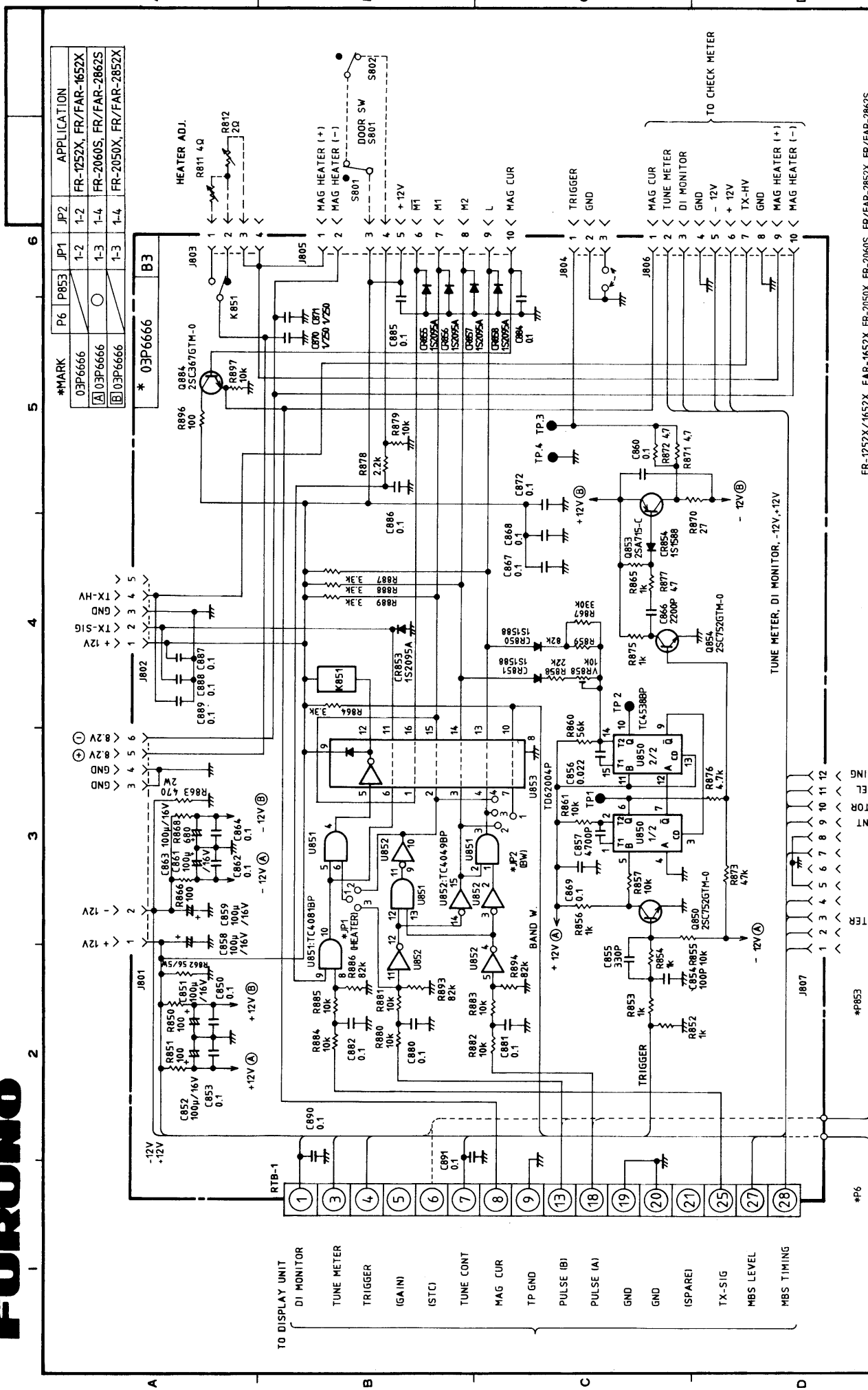
30KW S-BAND
25KW X-BAND

承認	設計	検査	製図	名 称	図 番
APPROVED	T. AKAKI	Y. UCHIYAMA	I. Amano	変調トリガ-基板 MODULATION TRIGGER BOARD	C3308-017-G
検 査	Y. UCHIYAMA				
製 図	I. Amano				

NOTE 1
特記なき抵抗の単位はΩ、0.25W
コンデンサはμF。

ALL RESISTANCE IN OHMS, 0.25W
AND CAPACITANCE IN MICROFARADS
UNLESS NOTED OTHERWISE.

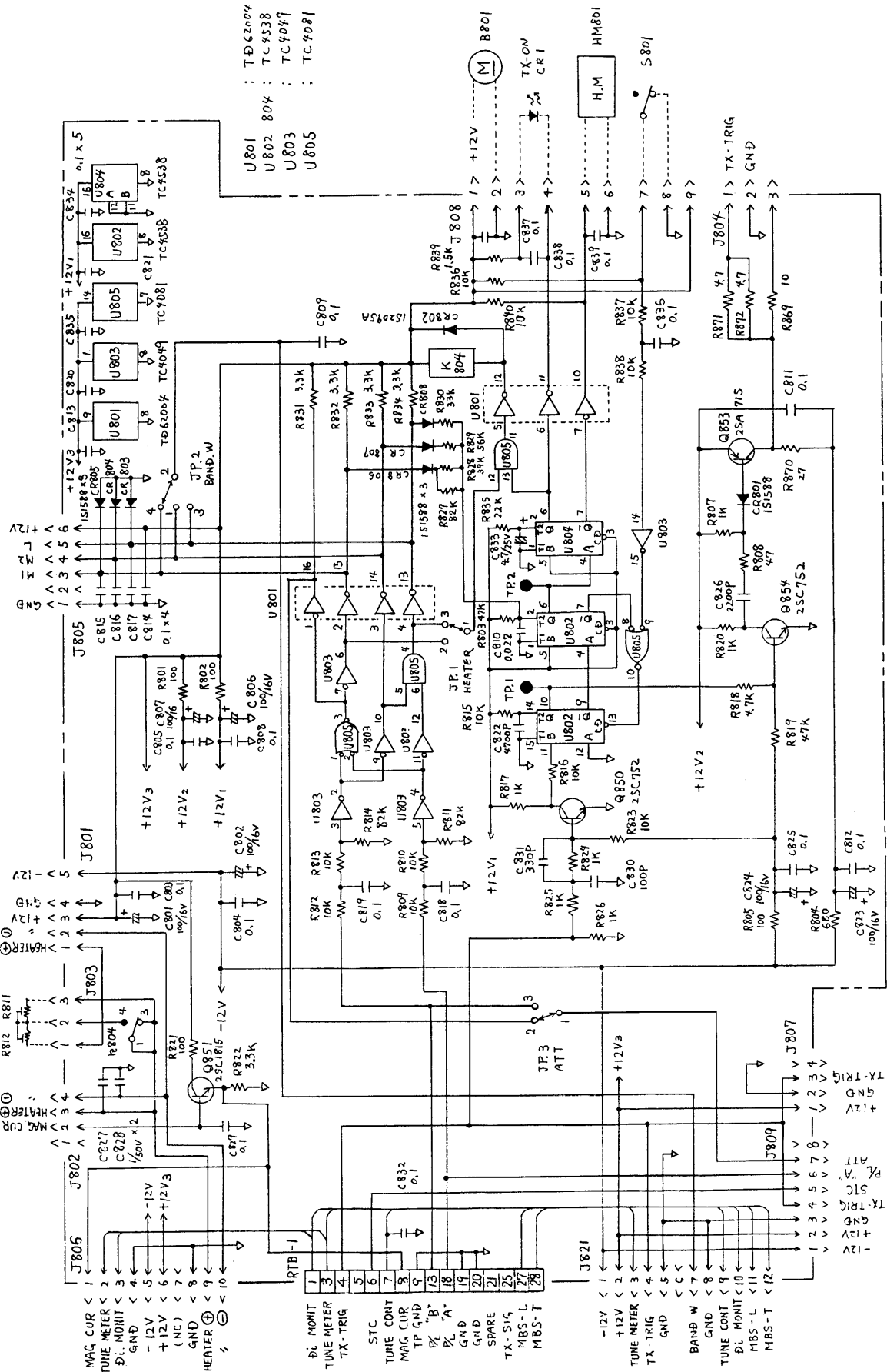
ジャンパ設定	ジャンパ	設定	目的地	適用機種	適用に
RF-5144	J1-2	2-1	J801 #3	FR-1222/1223/1222X/1622/1623/1622X	
RF-5144	J1-2	2-1	J816 #2	FR-724/1027/2022 M-II-4A, FFR-1421 M-II-4A	
RF-5144	J1-3	2-4	J801 #5 OR J816 #2 OR J816 #2	FR-2020/2021/2822 FR-2020X/2822X FR-2020T	
RF-5144	J1-3	2-4	J816 #2	FR-2030S/2830S	



承認	承認日	名称
APPROVED	1970.02.27	03P6666
検閲	1970.02.27	変調トリガ基板
CHECKED	1970.02.27	MODULATOR TRIGGER BOARD
製図	1970.02.27	03P6666
DRAWN	1970.02.27	図番 C3300-006-D

FR-1252X/1652X, FAR-1652X, FR-2050X, FR-2060S, FR/FAR-2052X, FR/FAR-2862S

NOTE: 特記なき抵抗は全て0.1/4W, コンデンサはμF.
ALL RESISTANCE IN OHMS, 1/4W AND CAPACITANCE
IN MICROFARADS UNLESS NOTED OTHERWISE.



U801 : TD 62004
 U802 804 : TC 4538
 U803 : TC 4047
 U805 : TC 4081

承認 APPROVED	名 称 TITLE
検 査 CHECKED	図 番 DWG. NO.
製 図 DRAWN	製 作 MFG.

承認者: 丸山 功
 検 査者: 丸山 功
 製 図者: 丸山 功
 名 称: 03P8726
 図 番: C3344-K02-A
 製 作: RF 変調トリガ基板
 製 図: RF MOD TRIGGER BOARD

RTR-025
 (FR-2032S)
 (FR/FAR-2832S)

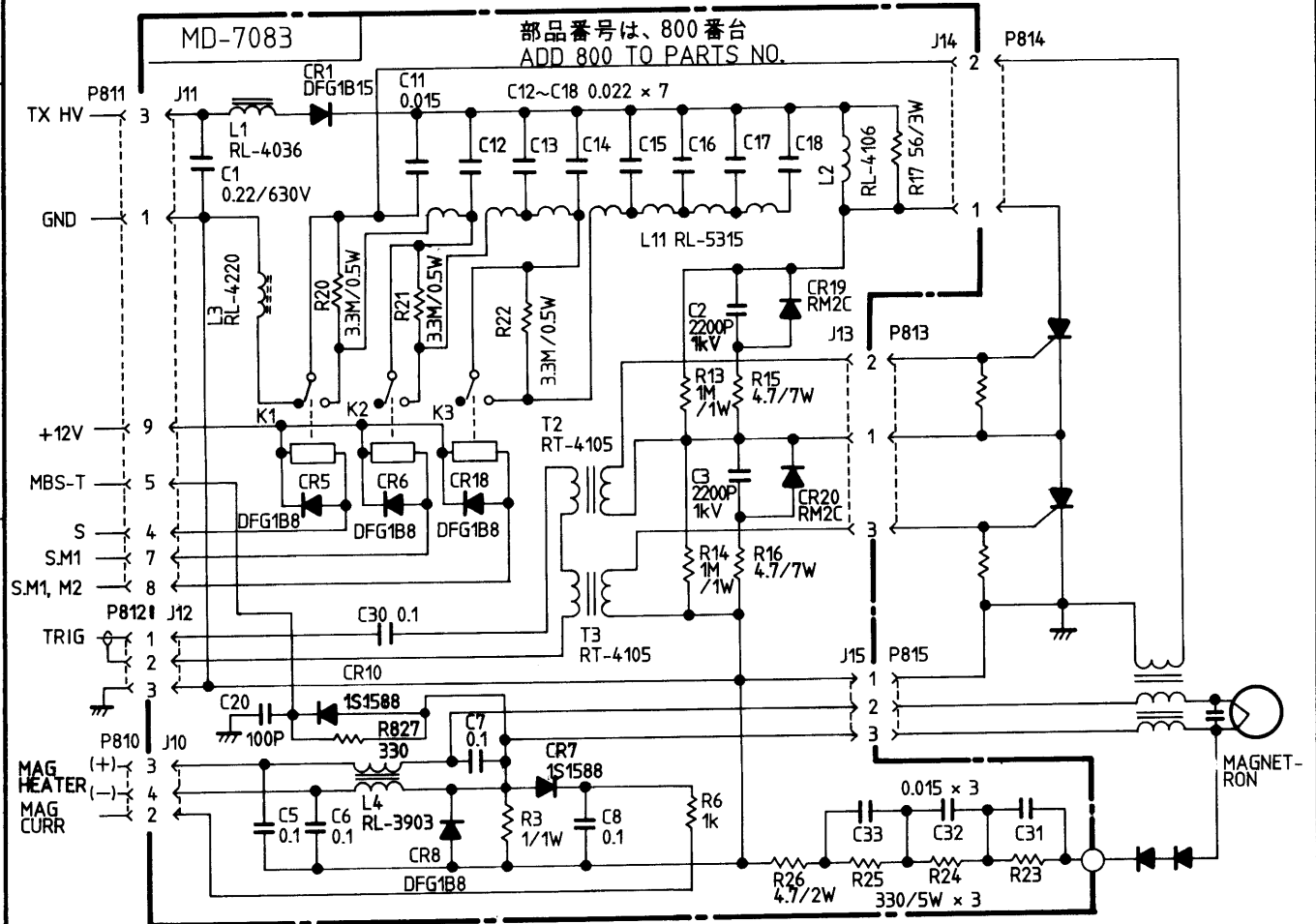
JUMPER SETTINGS ジャンパー設定
 FOR FR-2032S & FR/FAR-2832S用
 JP1 (HEATER) 1 ↔ 3
 JP2 (BANDWIDTH) 2 ↔ 4
 JP3 (ATT) 1 ↔ 2

A

B

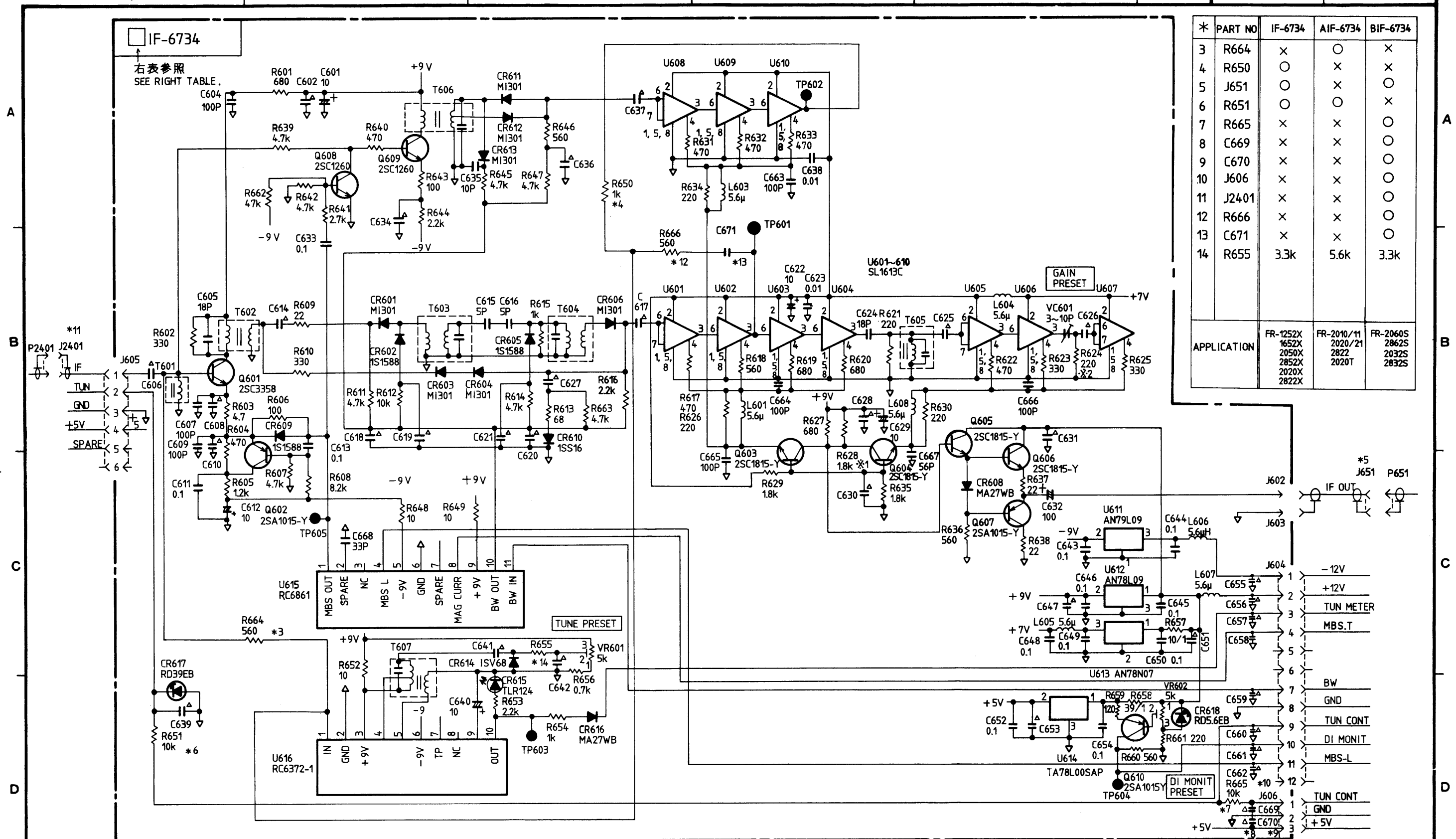
C

D



25kW X-BAND

承認 APPROVED	SEP. 22 '87 T. NAKAMU	名称 TITLE	MD-7083 変調基板 MODULATOR BOARD
検 CHECKED	SEP. 22 '87 T. YUJAMA		
製 DRAWN	SEP. 22 '87 I. AMANO	図番 DWG. NO.	C3308-019-F



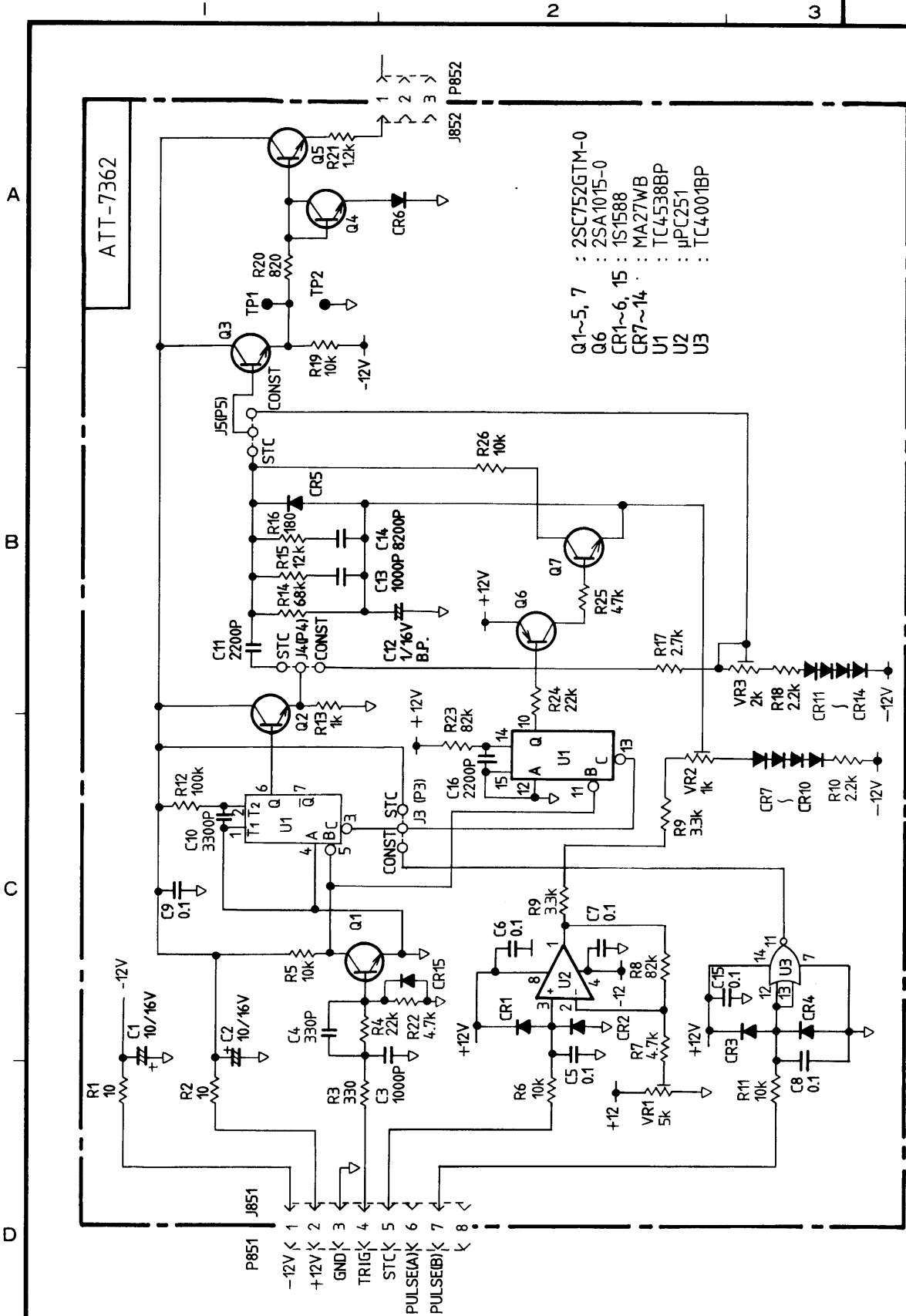
* PART NO	IF-6734	AIF-6734	BIF-6734
3 R664	X	O	X
4 R650	O	X	X
5 J651	O	X	O
6 R651	O	O	X
7 R665	X	X	O
8 C669	X	X	O
9 C670	X	X	O
10 J606	X	X	O
11 J2401	X	X	O
12 R666	X	X	O
13 C671	X	X	O
14 R655	3.3k	5.6k	3.3k
APPLICATION	FR-1252X 1652X 2050X 2852X 2020X 2822X	FR-2010/11 2020/21 2822 2020T	FR-2060S 2862S 2032S 2832S

NOTE 1. 特記なき抵抗の単位はΩ, 0.25W コンデンサはμF.
ALL RESISTANCE IN OHMS, 0.25W AND CAPACITANCE IN MICROFARADS UNLESS NOTED OTHERWISE.

2. Δ印-----1000PF, *印-----調整用
ΔMARK---1000PF, *MARK---SUBJECT TO ADJUSTMENT.

FR-2020T
FR/FAR-2862S/2832S
FR/FAR-2852X
FR/FAR-2822/2822X
FR-2011/2021
FR-2060S/2032S
FR-2050X/2020X
FAR-1652X
FR-1252X/1652X
FR-2010/2020

承認 APPROVED	SEP. 4 '87 T. NAKAUC	名称 TITLE	IF アンパ基板 IF AMP BOARD
検図 CHECKED	Sept. 4 '87 T. YUYAMA	図番 DWG. NO.	C3308-016-K
製図 DRAWN	Sep. 4 '87 I. Amano		



ジャンパー設定 (U3~J5)
JUMPER SETTING

STC-----FR-2060S, FR/FAR-2862S
CONST---FR-2032S, FR/FAR-2832S

NOTE. 特記なき抵抗の単位はΩ 0.25W, コンデンサはμF.
ALL RESISTANCE IN OHMS, 0.25W AND CAPACITANCE IN MICRO FARADS
UNLESS NOTED OTHERWISE.

FR/FAR-2862S/2832S
FR-2060S/2032S

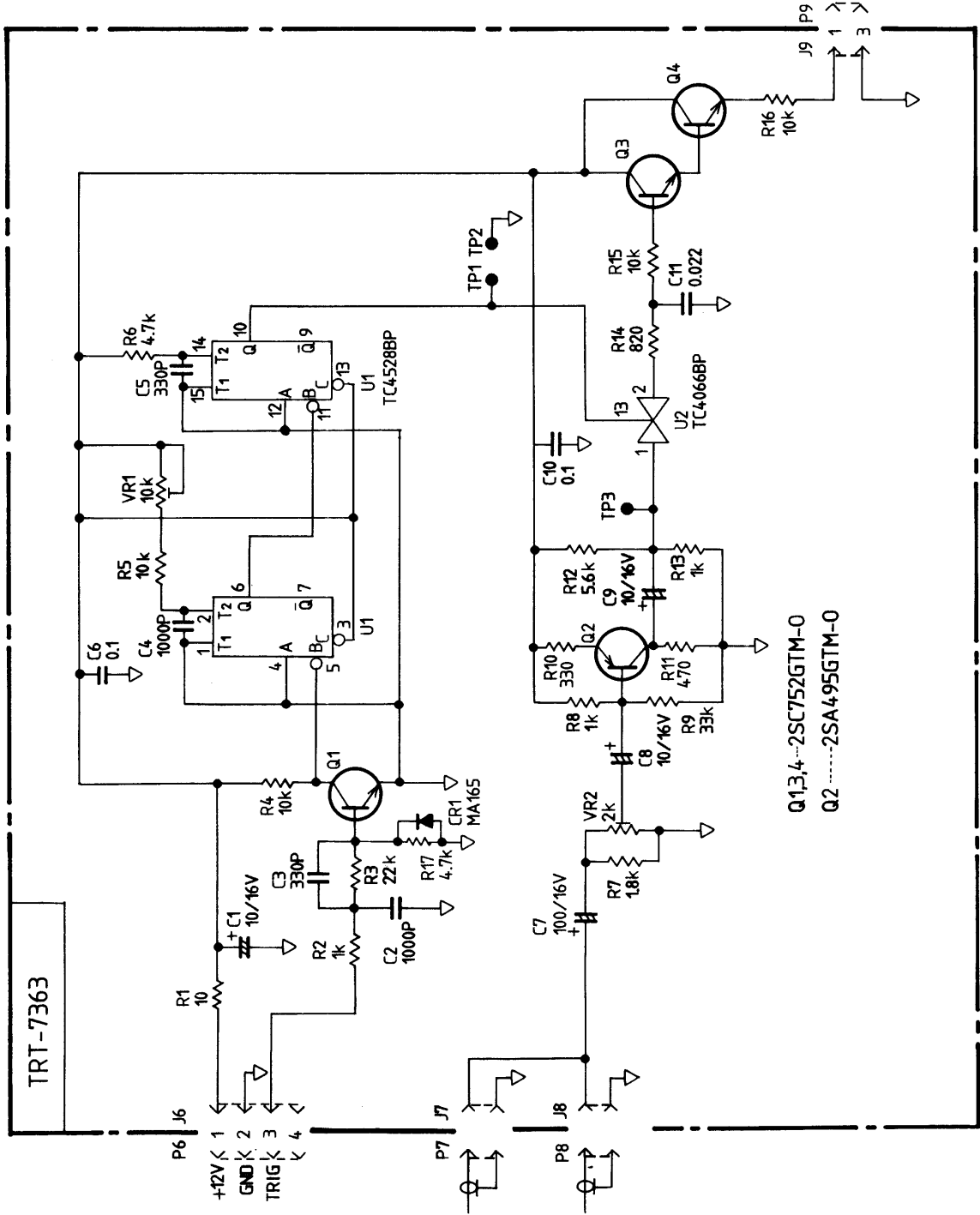
承認 APPROVED	品番 ITEM	品名 NAME	材質 MATERIAL	数量 QTY	図番 DWG. NO.	摘要 REMARKS
SEP. 12 '88 T. AMANO		三角法 THIRD ANGLE PROJECTION				
検図 CHECKED		尺度 SCALE				
製図 DRAWN		重量 WEIGHT	kg			
名称 TITLE ATT-7362 入力減衰回路 ATTENUATOR CKT						
図番 DWG. NO. C3312-018-E						

A

B

C

D



Q1,3,4---2SC752GTM-0
Q22SA495GTM-0

NOTE: 特記なき抵抗の単位はΩ, 0.25W、コンデンサはμF.
ALL RESISTANCE IN OHMS, 0.25W AND CAPACITANCE IN MICRO FARADS
UNLESS NOTED OTHERWISE.

FAR-2862S
FR-2060S/2862S

承認 APPROVED	品番 ITEM	品名 NAME	材質 MATERIAL	数量 Q'TY	図番 DWG.NO.	摘要 REMARKS
SEP. 12 '88 T. NAKAWO		三角法 THIRD ANGLE PROJECTION				
検図 CHECKED	SEP. 12 '88 T. YUJAMA	尺度 SCALE				名称 TITLE TR管チューニング回路 TR TUBE TUNING CKT
製図 DRAWN	SEP. 12 '88 I. AMANO	重量 WEIGHT	kg		図番 DWG.NO.	C3312-017-C

MECHANICAL EXPLODED VIEW

Title	Type	Dwg. No.	Page
Display Unit (TR-up type)	RDP-057	C3311-E01	D-1
" (TR-down type)	RDP-058	C3316-E01	D-2
Panel Assembly		C3308-035	D-3
Scanner Unit (X-band, TR-down)	RSB-003/4/5	C3263-005	D-4
" (S-band, TR-up)	RSB-0026/31	C3311-E02	D-5
" (S-band, TR-down)	RSB-0027/32	C3312-E02	D-6
Transceiver Unit (X-band, 25kW)	RTR-019	C3263-003	D-7
Transceiver Module (")		C3263-004	D-8
Transceiver Unit (X-band, 50kW)	RTR-010	C3300-003	D-9
Transceiver Module (")		C3300-004	D-10
Transceiver Unit (S-band, 30kW)	RTR-025	C3344-E01	D-11
" (S-band, 60kW)	RTR-018	C3312-E01	D-12

- ① マーク基板
MARK BOARD
- ② メモリー基板
MEMORY BOARD
- ③ A/D基板
A/D BOARD
- ④ マザーボード
MOTHER BOARD
- ⑤ DTB基板
DTB BOARD
- ⑥ GS基板
GYRO INTERFACE BOARD
- ⑦ ADG基板
ADG BOARD

- ⑧ 電源保護基板
POWER PROTECTION BOARD
- ⑨ CG基板
GYRO SWITCH BOARD
- ⑩ PTA基板
PTA BOARD
- ⑪ 電源基板
POWER SUPPLY BOARD

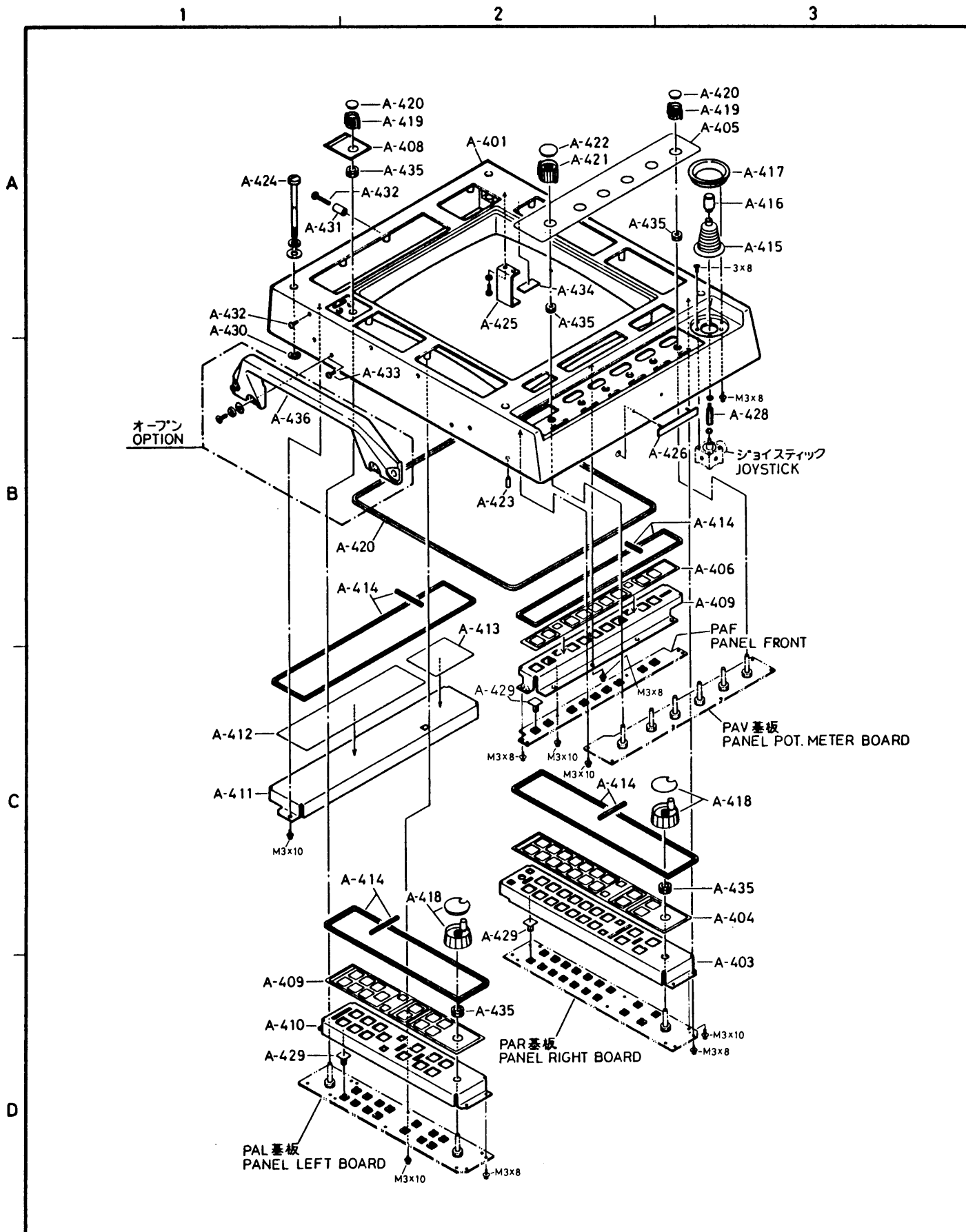
- ⑬ プリセット基板
PRESET BOARD
- ⑭ チェックメーター基板
CHECK METER BOARD
- ⑮ CRT基板
CRT BOARD
- ⑯ ビデオアンプ基板
VIDEO AMPLIFIER BOARD

- ⑰ CRT組品
CRT ASSEMBLY

パネル組立品
PANEL ASSY
(図番 C3308-035-□参照
REF. DWG. NO. : C3308-035-□)

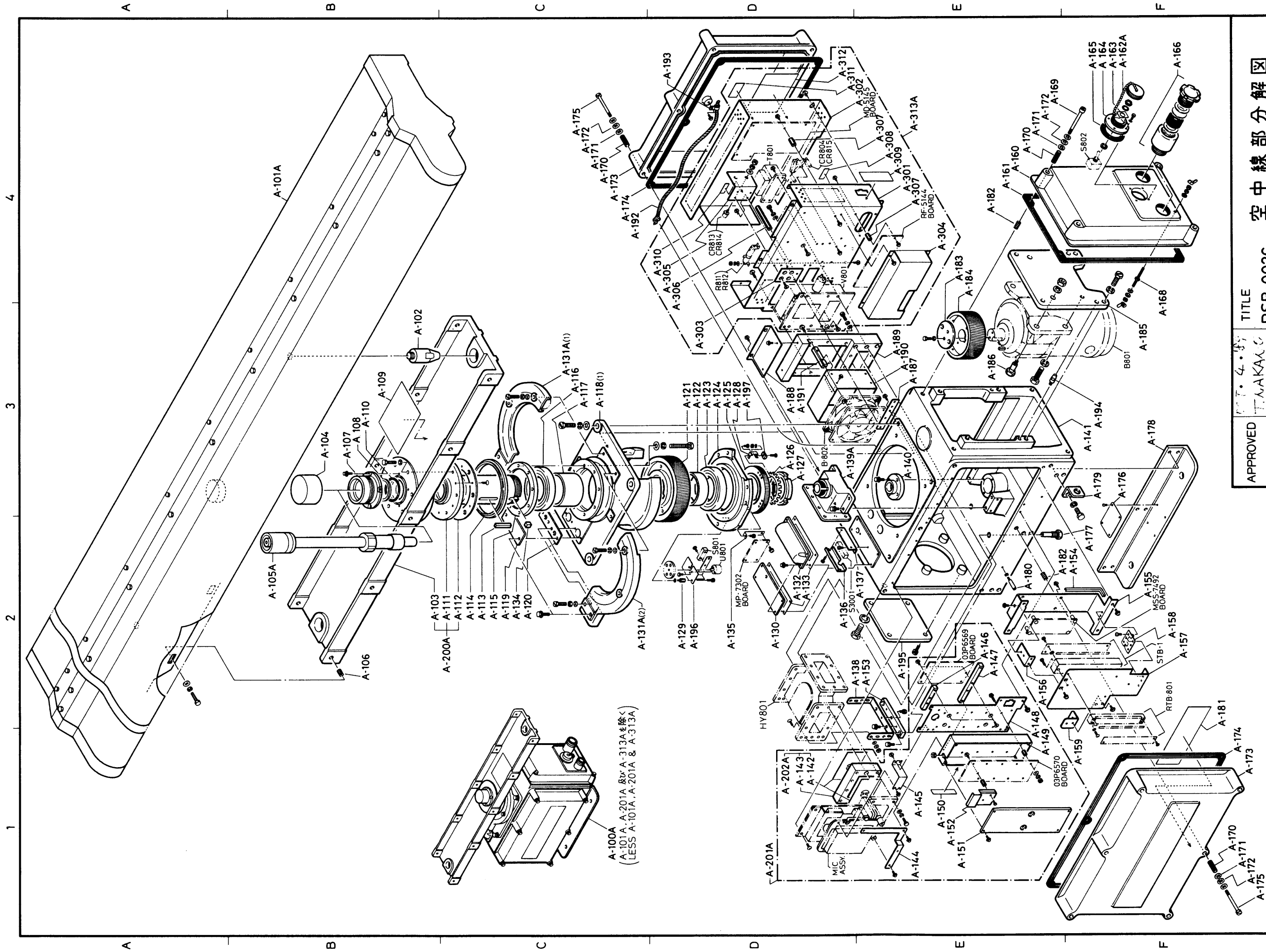
FR-2020X/2050X/2060S

APPROVED		TITLE	指示部分解図
CHECKED		RDP-058	DISPLAY UNIT
DRAWN		DWG. NO.	C3316-E01-B



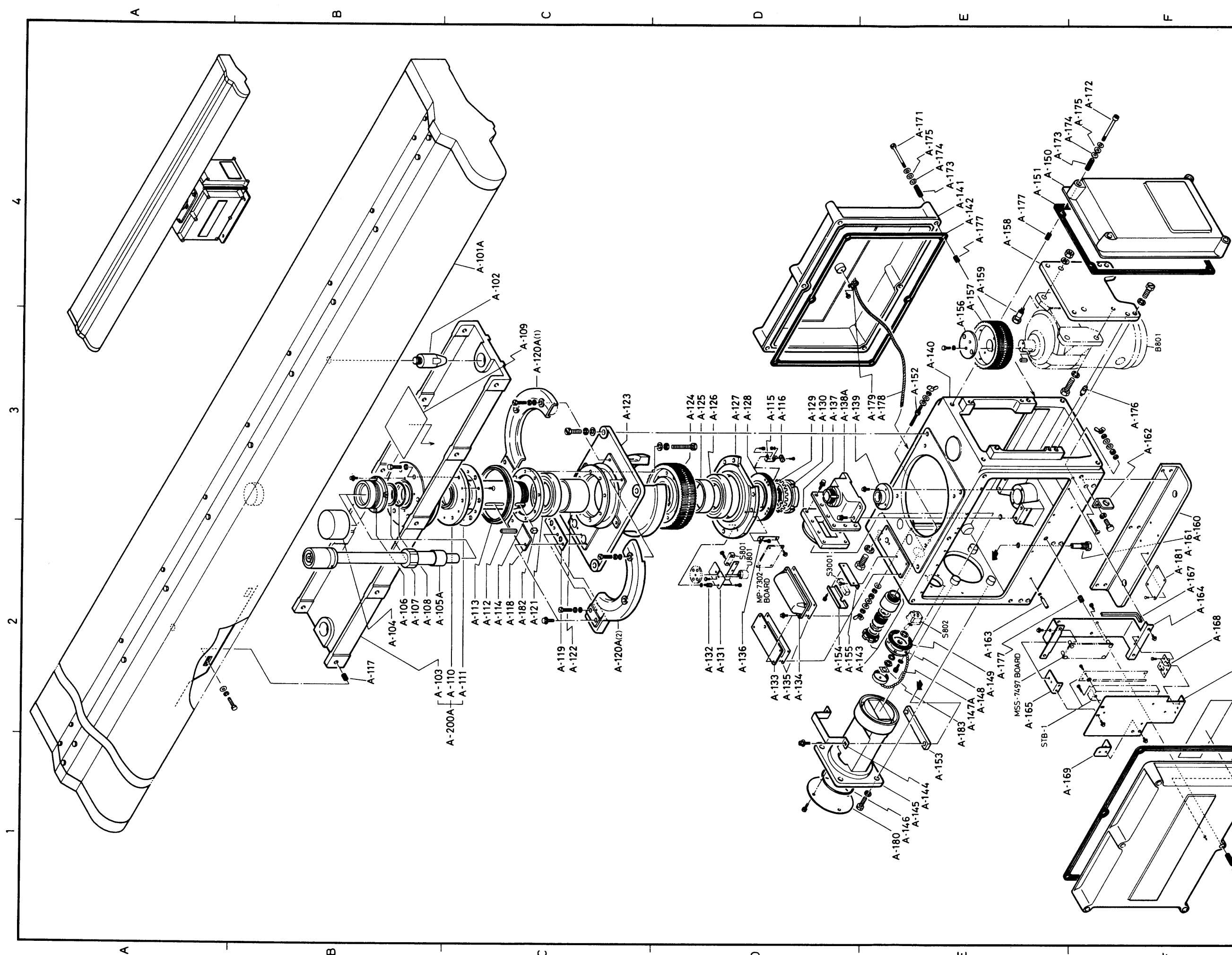
APPROVED	JAN. 20 '89 T. NAKANO	TITLE	パネル組立品分解図 PANEL ASSEMBLY
CHECKED	JAN. 20 '89 N. SAITO		
DRAWN	Jan. 19 '89 I. Amuro	DWG. NO.	C3308-035-A

FR-2000 SERIES



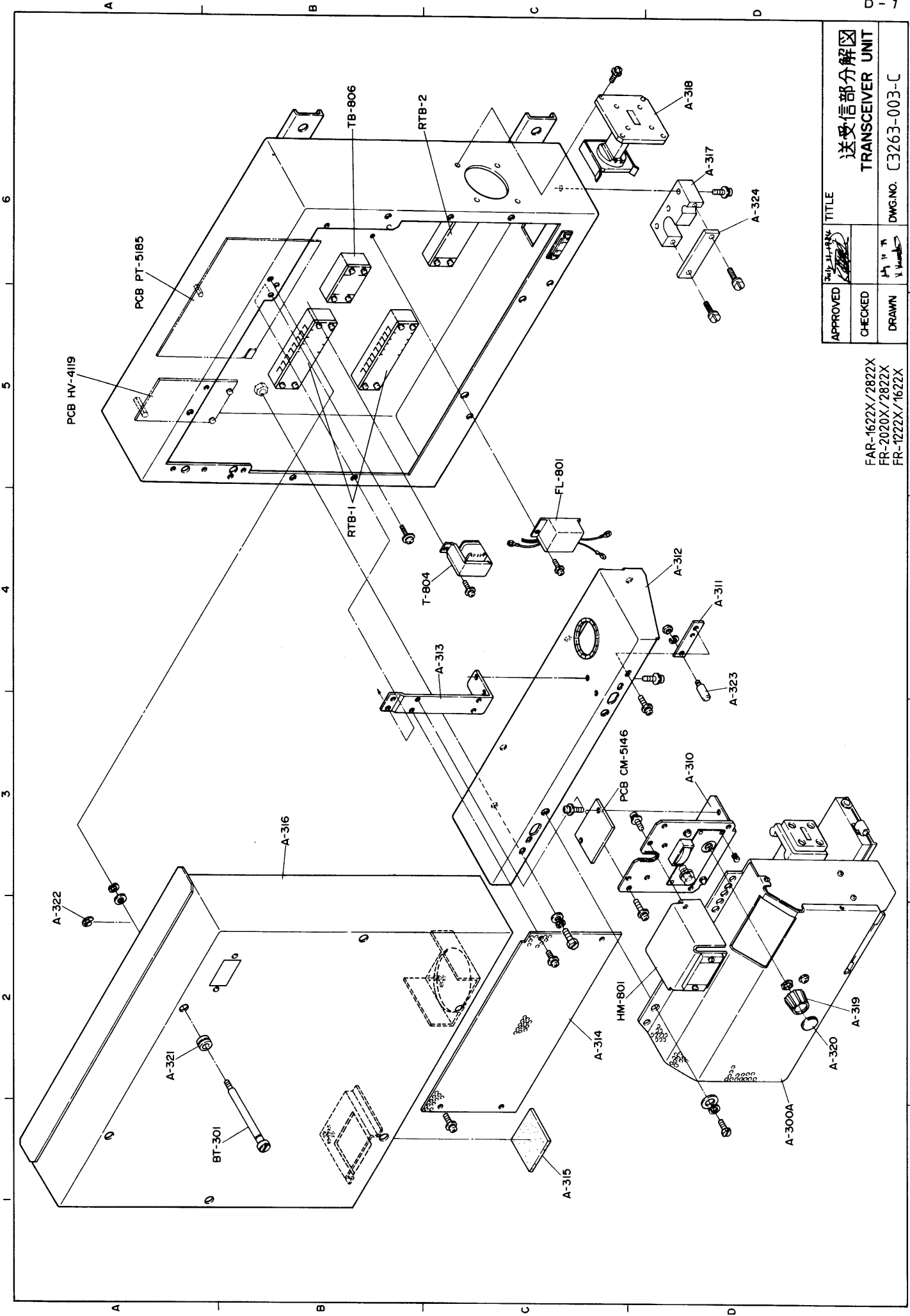
APPROVED	DATE: 4.8.87	TITLE	RSB-0026	DWG. NO.	C3311-E02-B
CHECKED	TAKAKO	RSB-0026	(RSB-0031)		
DRAWN	SHIBATA				

FAR-2830S
FR-2030S/2830S



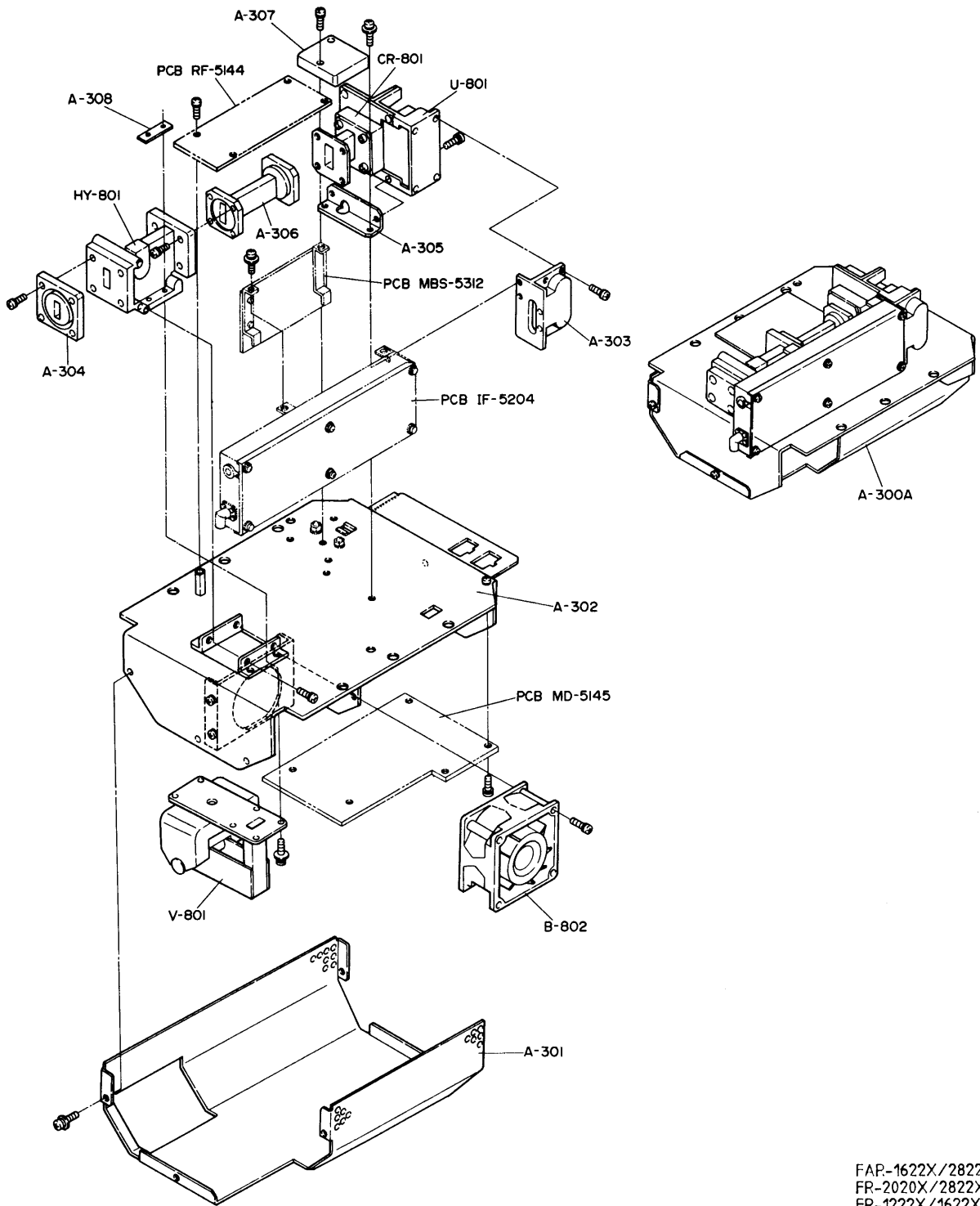
APPROVED	DATE: 4.84	TITLES	DWG. NO.
CHECKED	T. NAKAKI	RSB-0027 (RSB-0032)	C3312-E02-A
DRAWN	M. S. S. S.	空中線部分解図 SCANNER UNIT	

FAR-2862S
FR-2060S/2862S



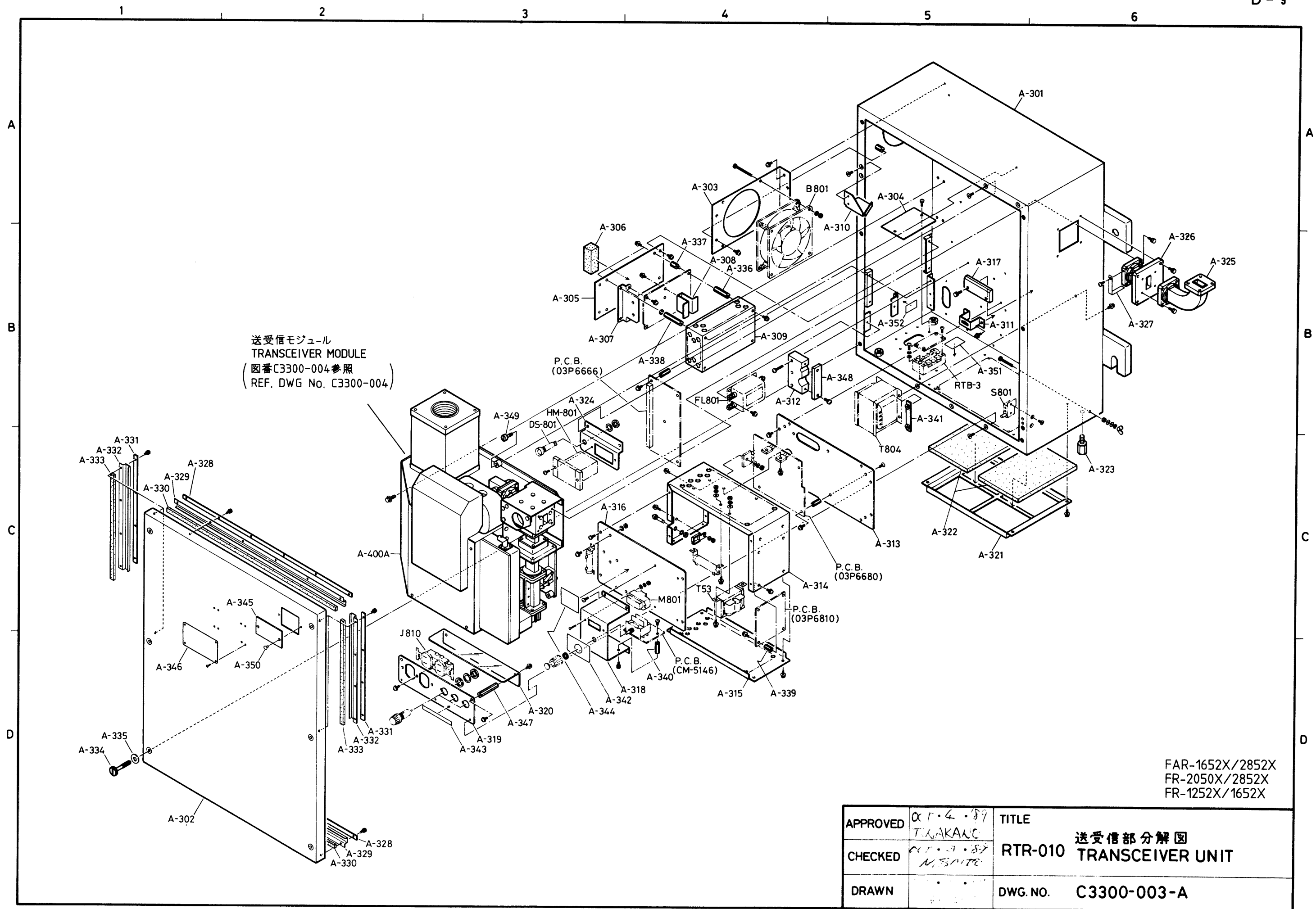
APPROVED	<i>[Signature]</i>	TITLE	送受信部分分解図 TRANSCIVER UNIT
CHECKED			
DRAWN	<i>[Signature]</i>	DWG. NO.	C3263-003-C

FAR-1622X/2822X
FR-2020X/2822X
FR-1222X/1622X



FAP-1622X/2822X
 FR-2020X/2822X
 FR-1222X/1622X

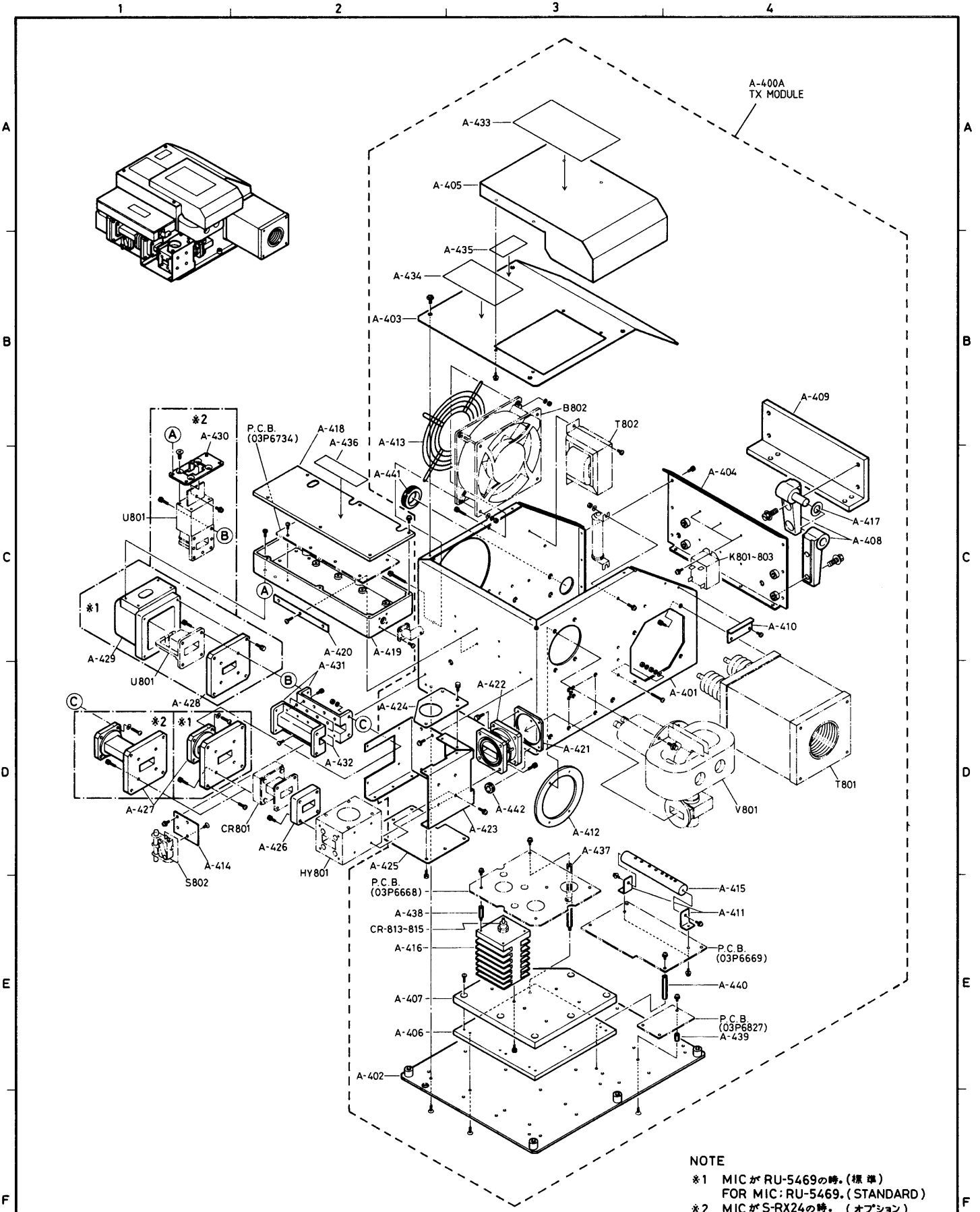
APPROVED	July 31, 1984 <i>[Signature]</i>	TITLE
CHECKED		送受信シャーシ分解図 TRANSCEIVER MODULE
DRAWN	July 30, 1984 <i>[Signature]</i>	DWG. NO. C3263-004-D



送受信モジュール
 TRANSCEIVER MODULE
 (図番C3300-004参照
 REF. DWG No. C3300-004)

FAR-1652X/2852X
 FR-2050X/2852X
 FR-1252X/1652X

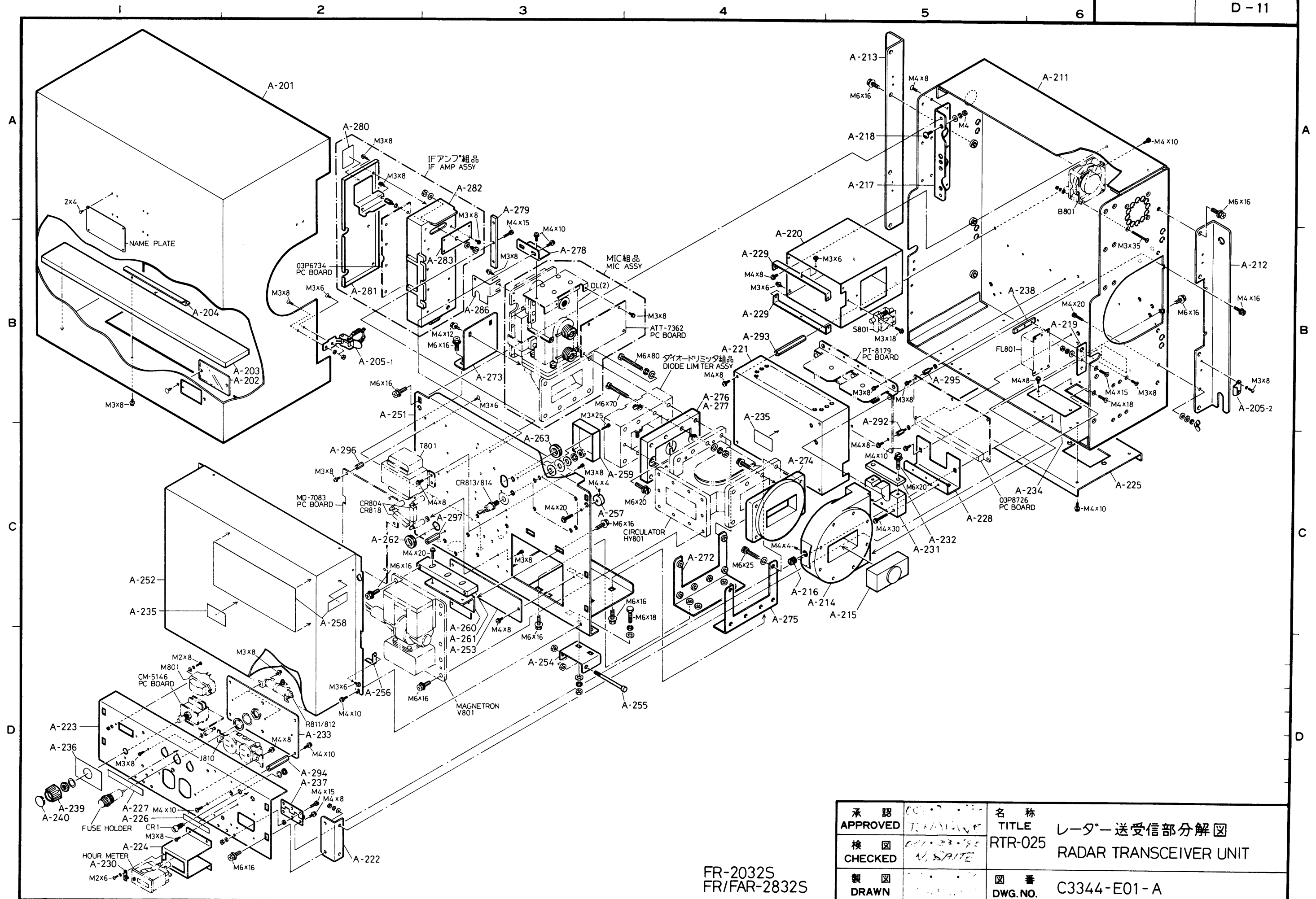
APPROVED	01.4.89 TAKAKU	TITLE	送受信部分解図
CHECKED	01.3.89 M. SAITO	RTR-010	TRANSCEIVER UNIT
DRAWN		DWG. NO.	C3300-003-A



NOTE
 *1 MICがRU-5469の時。(標準)
 FOR MIC:RU-5469.(STANDARD)
 *2 MICがS-RX24の時。(オプション)
 FOR MIC:S-RX24.(OPTION)

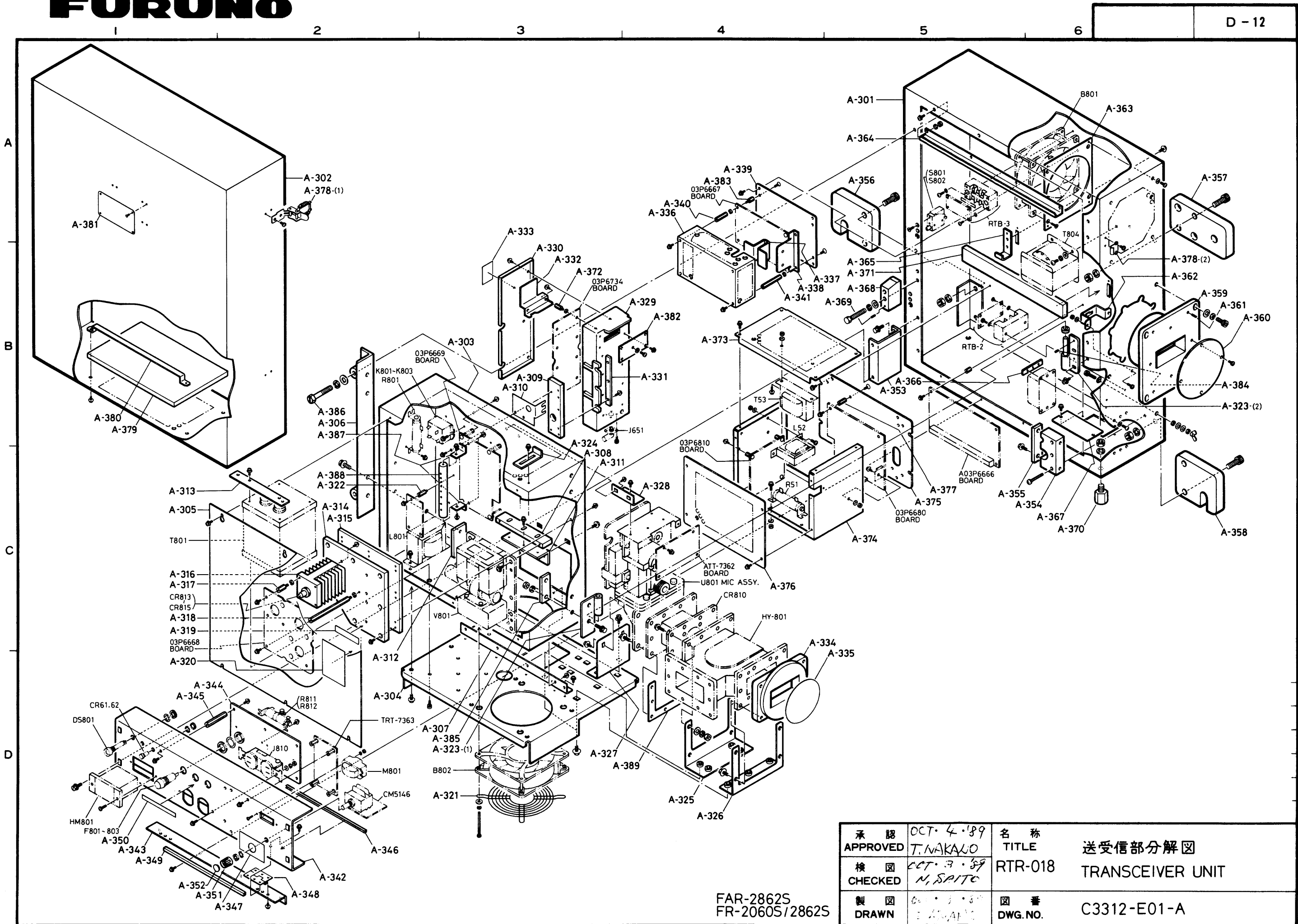
FAR-1652X/2852X
 FR-2050X/2852X
 FR-1252X/1652X

APPROVED	<i>T. UAKA</i>	TITLE	送受信モジュール分解図 TRANSCIVER MODULE
CHECKED	<i>T. UAKA</i>	DWG. NO.	
DRAWN	<i>T. UAKA</i>	C3300-004-A	



FR-2032S
FR/FAR-2832S

承認 APPROVED	名称 TITLE	レーダー送受信部分解図 RADAR TRANSCIVER UNIT
検図 CHECKED	図番 DWG. NO.	RTR-025 C3344-E01-A
製図 DRAWN		



FAR-2862S
FR-2060S/2862S

承認 APPROVED	OCT. 4 '89 T. NAKAO	名称 TITLE	送受信部分解図
検図 CHECKED	OCT. 13 '89 N. SAITO	RTR-018	TRANSCEIVER UNIT
製図 DRAWN	02.1.89 I. SAITO	図番 DWG. NO.	C3312-E01-A