

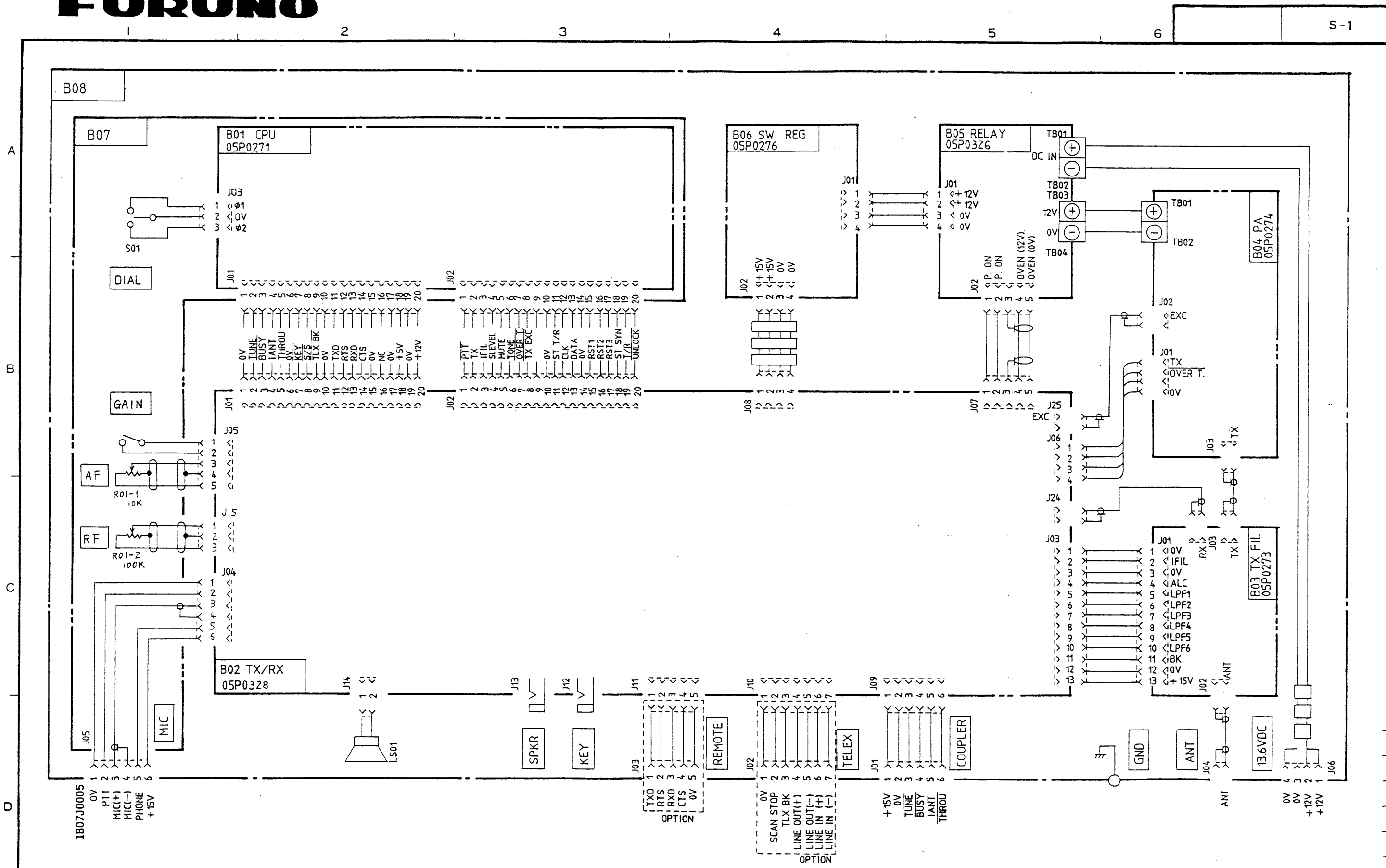
APPROVED
 SEP. 12. 1989
 J. NAKANO

CHECKED
 Sept. 11. 1989
 M. IKEDA

DRAWN
 Sept. 11. 1989
 S. Nishi

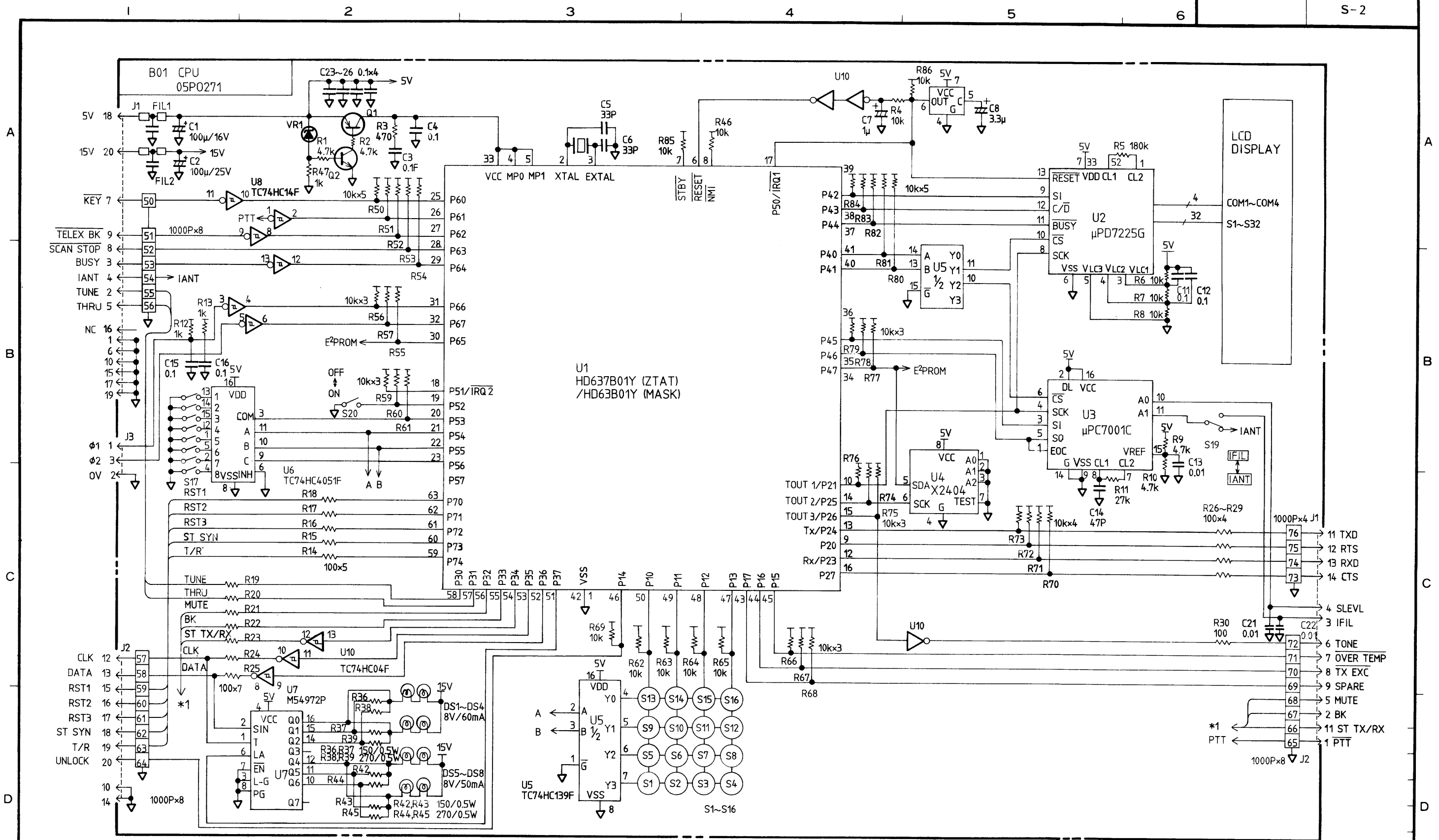
TITLE
**FS-1550
 SSB RADIOTELEPHONE
 INTERCONNECTION DIAGRAM**

DWG. NO.
 E 5 5 1 0 - C 0 1 - A



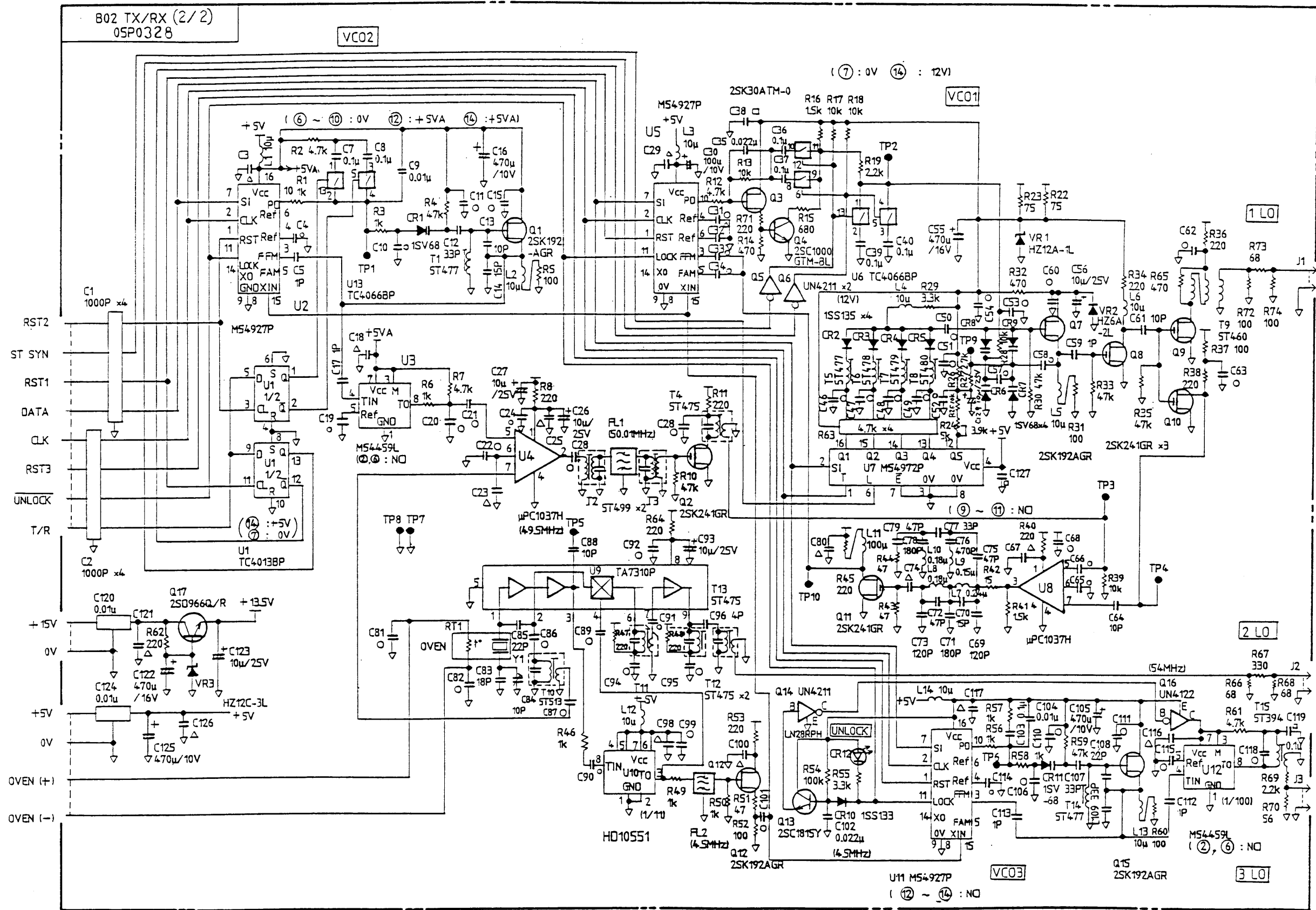
承認 APPROVED	Aug. 7 '88 <i>H. Oshima</i>	名称 TITLE	FS-1550 SSB TRANSCEIVER
検図 CHECKED	Aug. 7 '88 <i>B. Nakano</i>	製図 DRAWN	図番 DWG.NO. E5510-002-B
	July 1 '88 <i>T. Suematu</i>		

FS-1550



承認 APPROVED	MAY-31-88 M. TAKEDA	名称 TITLE	B01 05P0271 CPU
検 CHECKED	MAY-27-88 M. TAKEDA	製 DRAWN	S. NISHIDA
製 DRAWN	MAY-27-88 S. NISHIDA	図番 DWG. NO.	E5485-013-C

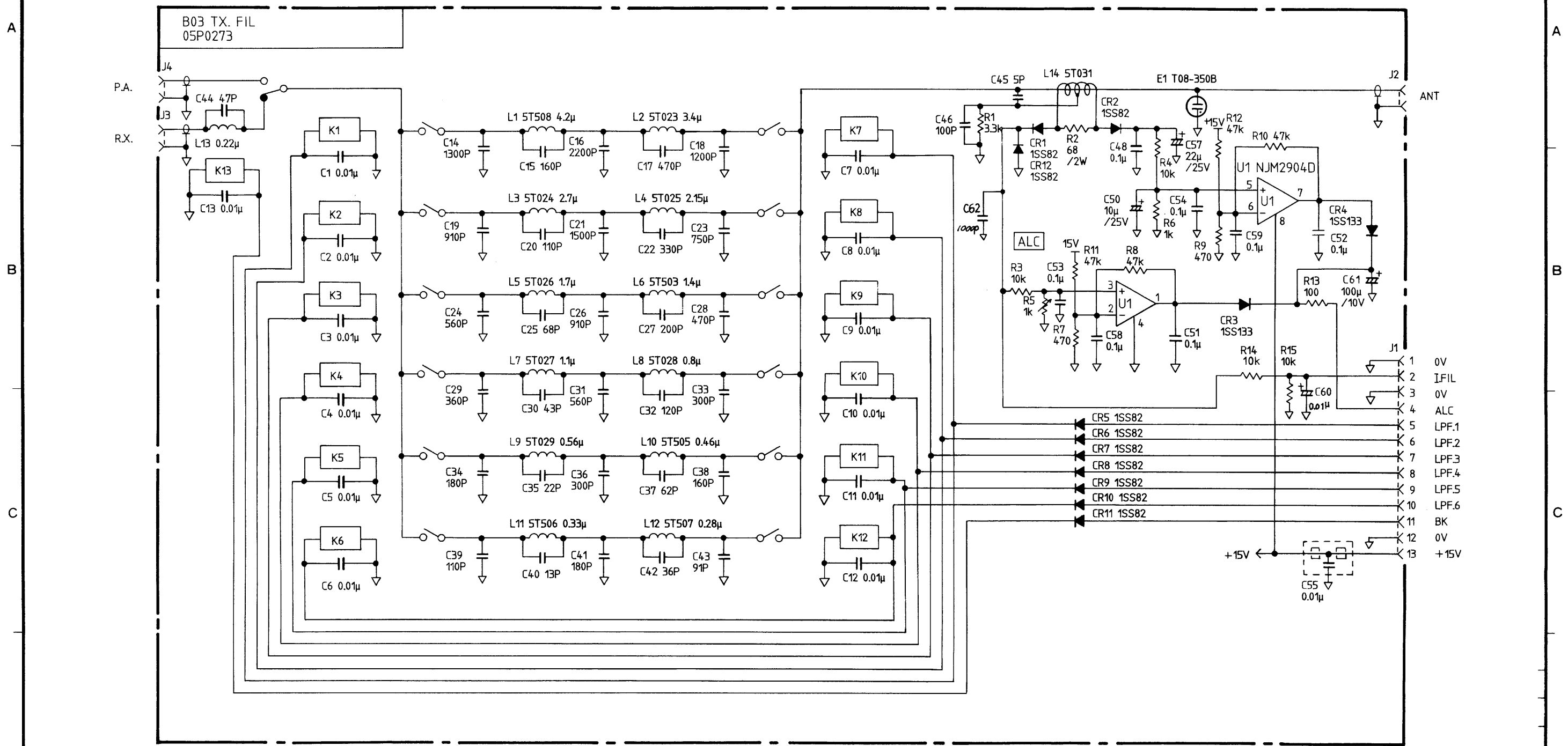
FS-1500 SERIES



NOTE : (1) RESISTORS ARE IN Ω(1/6W), CAPACITORS ARE IN F.
 INDUCTORS ARE IN H, UNLESS OTHERWISE NOTED.
 (2) MARKS ○ ARE 1000PF/50WV CAPACITORS.
 △ ARE 0.01μF/50WV CAPACITORS AND
 □ ARE 0.1μF/25WV CAPACITORS.

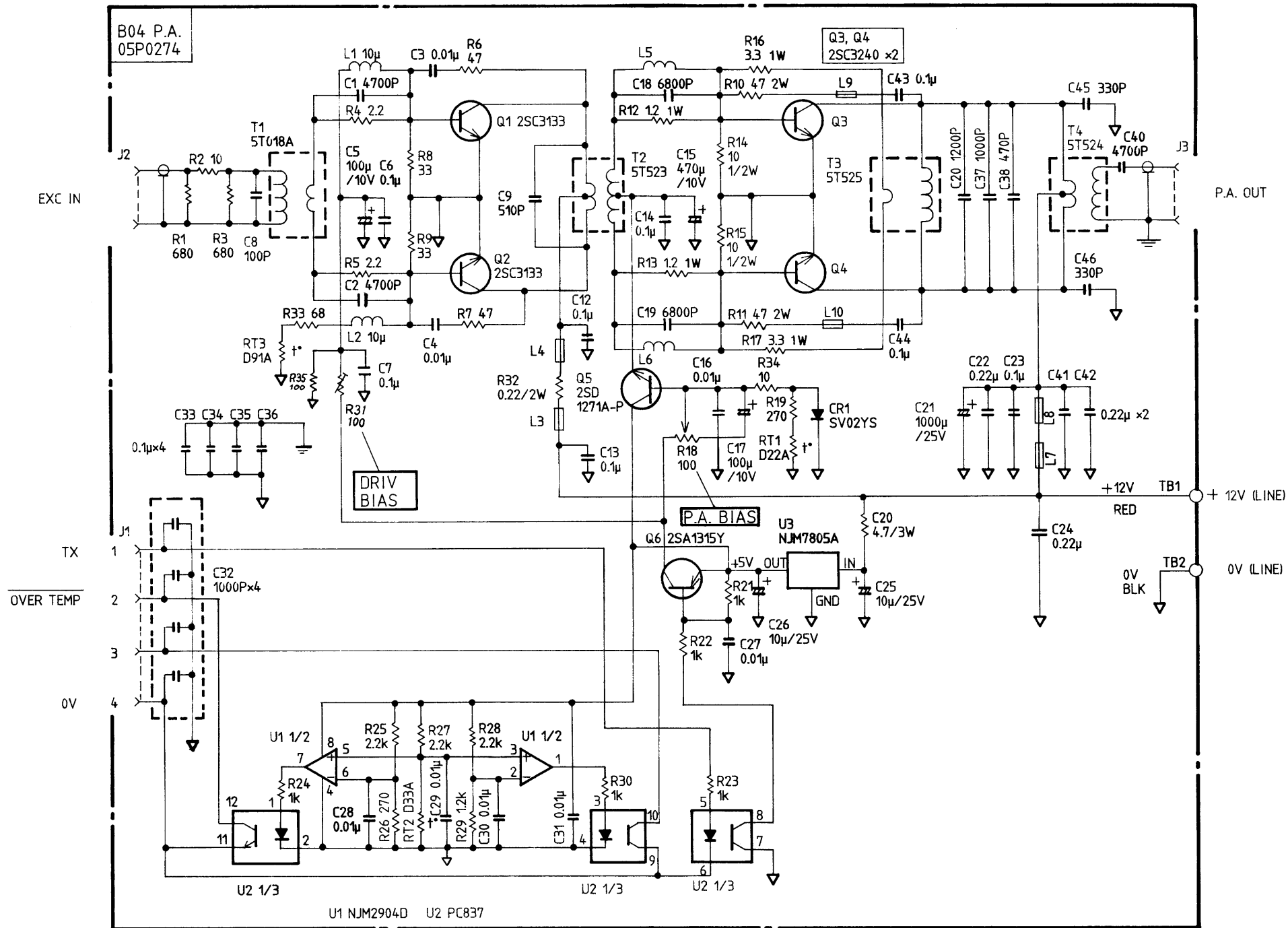
承認 APPROVED	Aug. 1 '88 <i>[Signature]</i>	名称 TITLE	
検図 CHECKED	Aug. 1 '88 <i>[Signature]</i>	B02	05P0328 TX/RX (2/2)
製図 DRAWN	July. 22 '88 <i>[Signature]</i>	図番 DWG. NO.	E5510-004-A

FS-1550



承認 APPROVED	4.27.31.88 M. TABUCHI	名称 TITLE	B03 05P0273 TX.FIL
検図 CHECKED	May. 27. 88 M. IKEDA	図番 DWG. NO.	E5485-016-D
製図 DRAWN	May 27. 88 S. NISHIO		

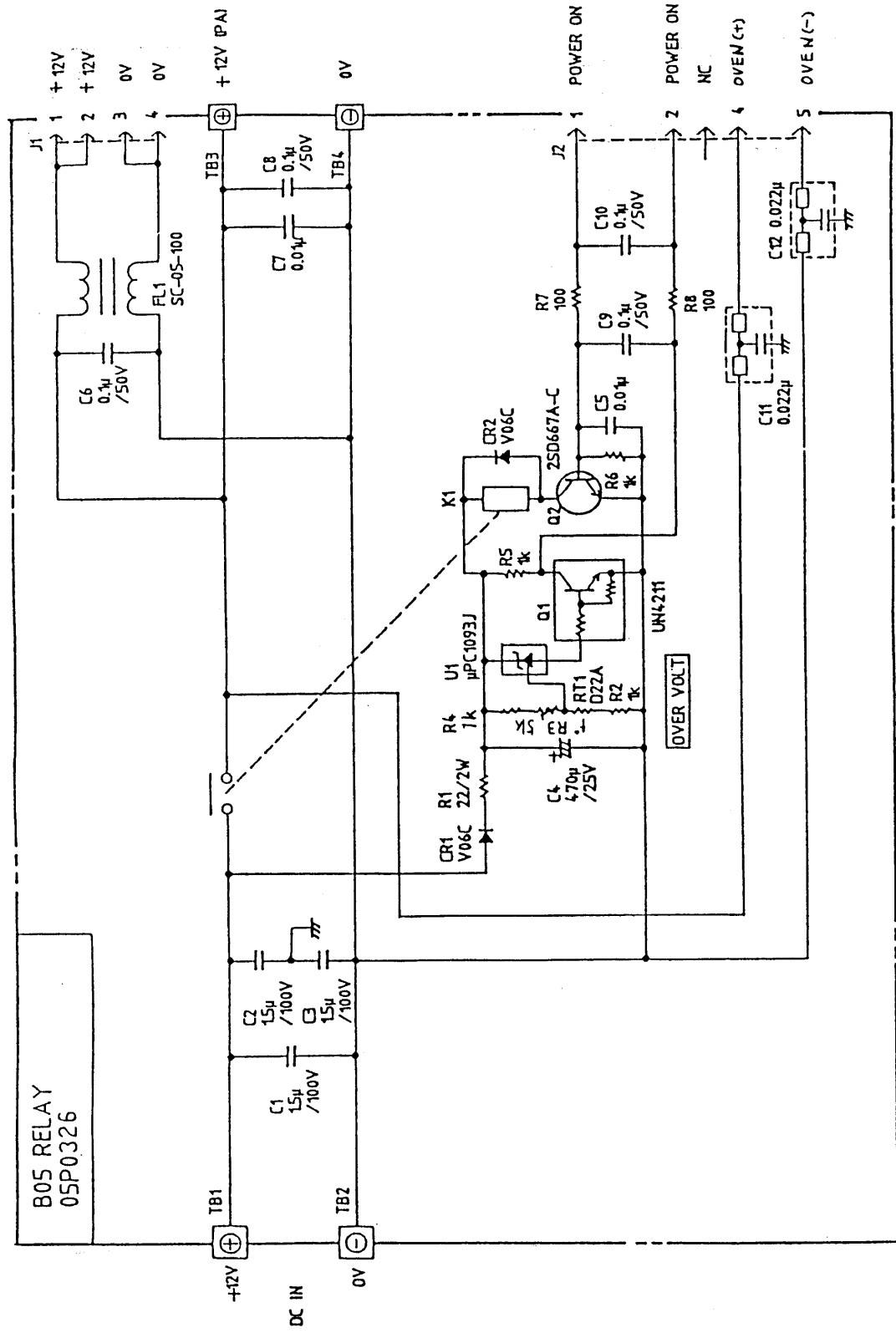
FS-1500 SERIES



承認 APPROVED	MAY 31 '88 M. TAEUCHI	名称 TITLE	B04 05P0274 P.A.
検図 CHECKED	MAY 27 '88 M. IICHI	製図 DRAWN	MAY 27 '88
製図 DRAWN	MAY 27 '88	図番 DWG. NO.	E5485-017-D

FS-1500 SERIES

A
B
C
D



FS-1550

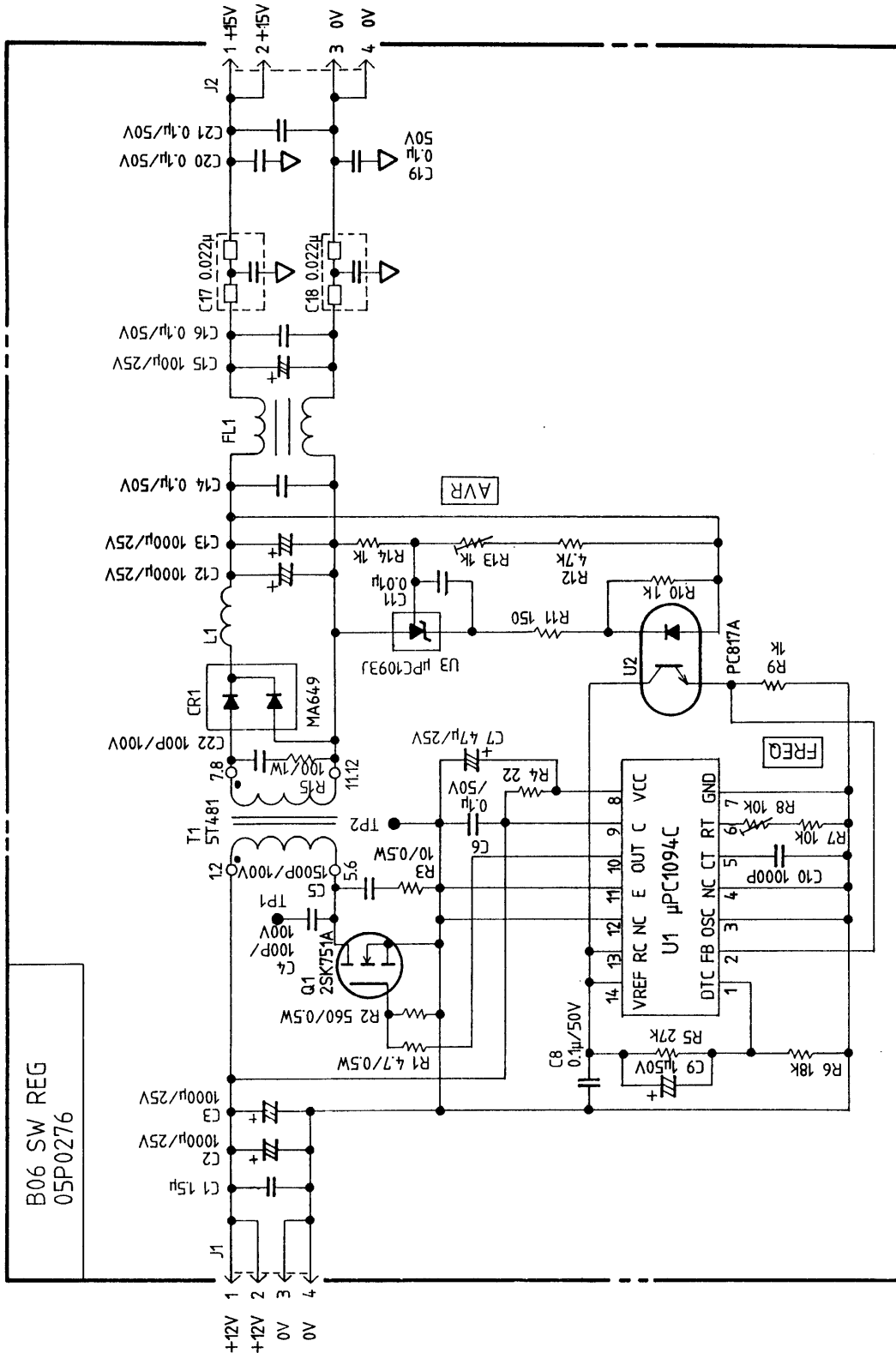
承認 APPROVED	品番 ITEM	品名 NAME	材質 MATERIAL	数量 Q'TY	図番 DWG.NO.	概要 REMARKS
Aug. 1 '88 <i>M. Okabe</i>		三角法 THIRD ANGLE PROJECTION				B05 05P0326 RELAY
検査 CHECKED		尺度 SCALE				
製図 DRAWN		重量 WEIGHT	kg		図番 DWG.NO.	E 5510-001-B

A

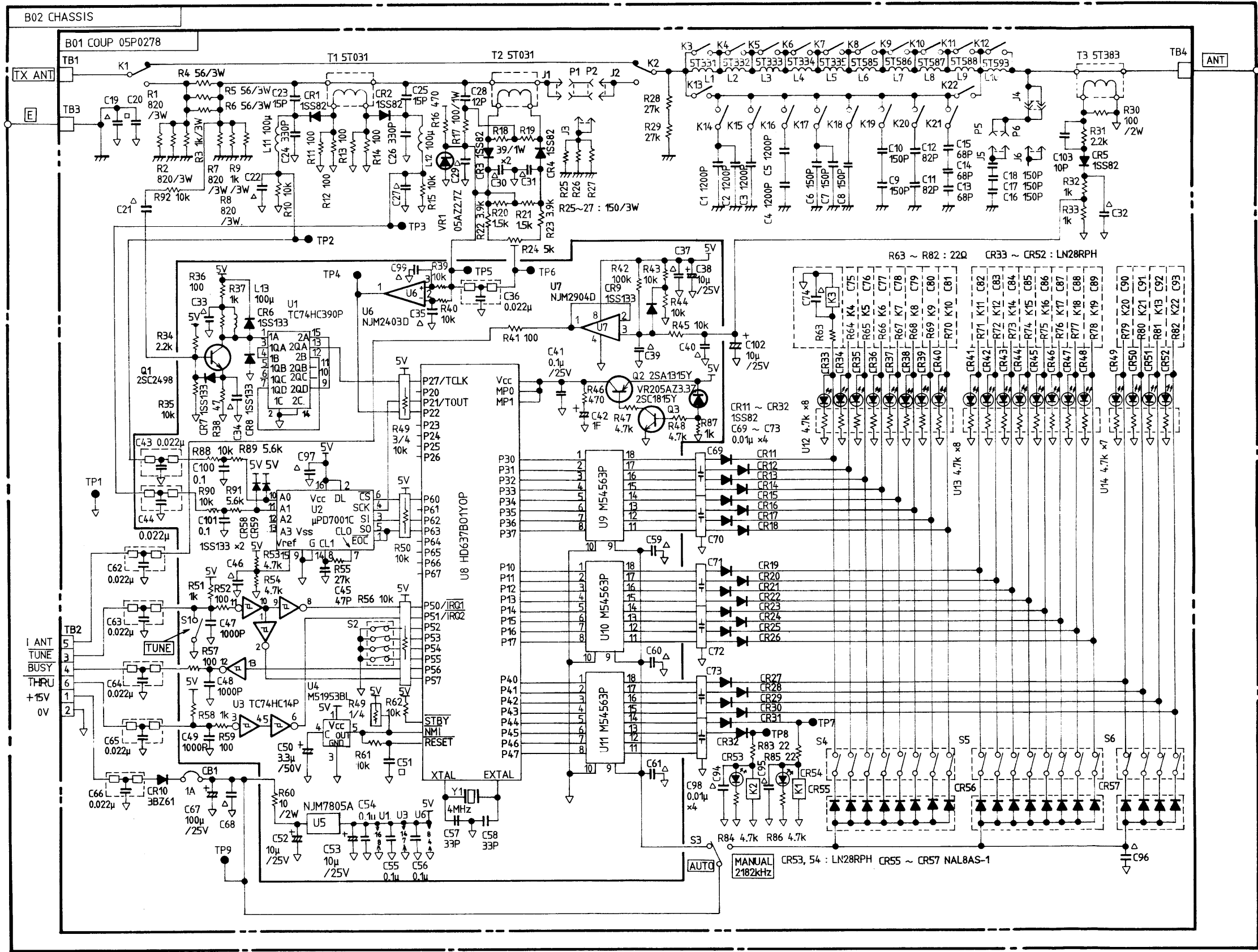
B

C

D



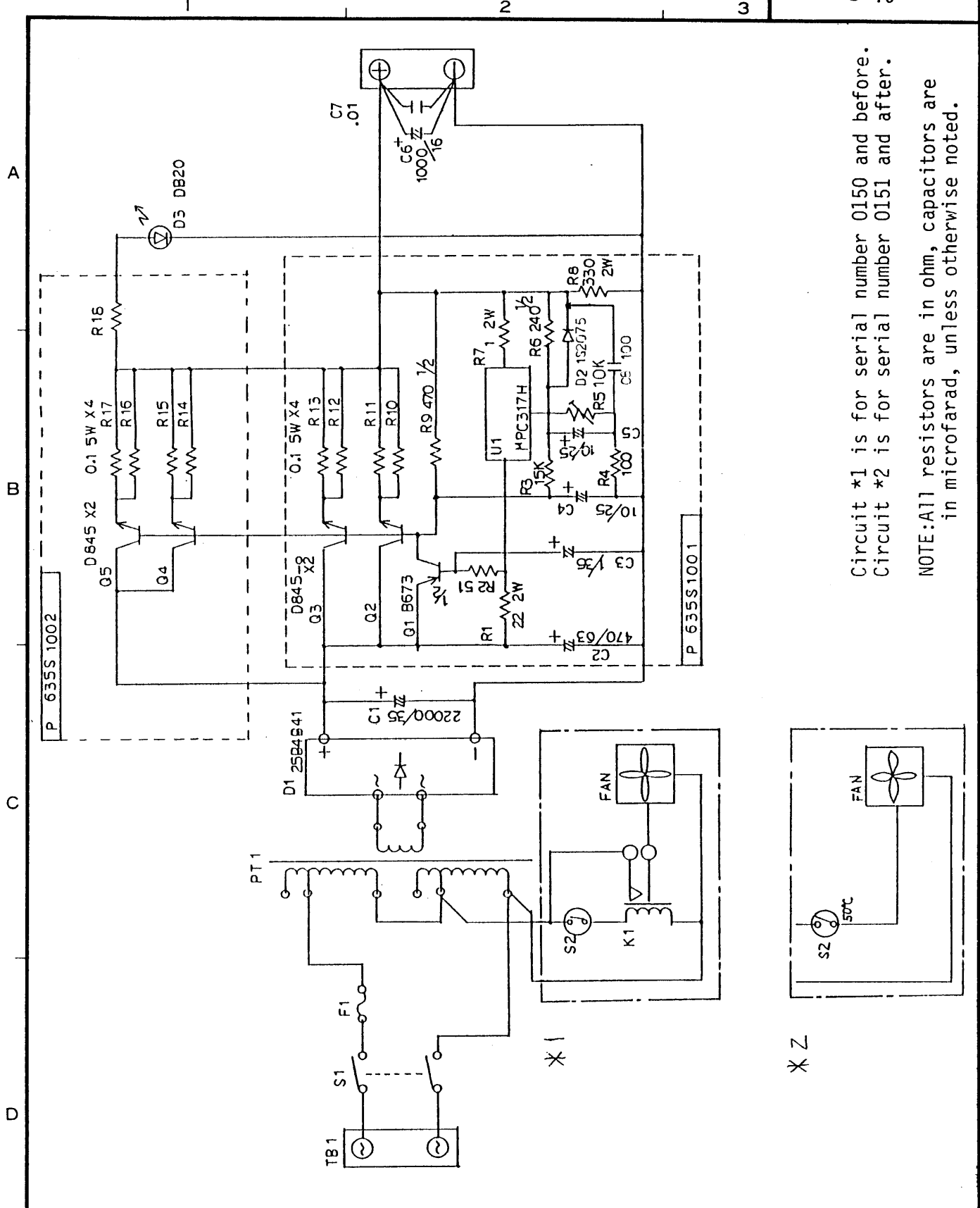
FS-1500 SERIES		品番 ITEM	品名 NAME	材質 MATERIAL	数量 Q'TY	図番 DWG.NO.	摘要 REMARKS
承認 APPROVED	MAY. 31. '88 M. TABUCHI		三角法 THIRD ANGLE PROJECTION	名称 TITLE			
検 CHECKED	MAY. 27. '88 M. IKEDA		尺 SCALE			B06 05P0276 SW. REG	
製 DRAWN	MAY. 27. '88 S. NISHI		重 WEIGHT	kg		図番 DWG.NO. E5485-019-B	



NOTE : (1) RESISTORS ARE IN Ω (1/6W), CAPACITORS ARE IN F, INDUCTORS ARE IN H, UNLESS OTHERWISE NOTED.
 (2) MARKS ○ ARE 1000PF/50WV CAPACITORS
 △ ARE 0.01μF/50WV CAPACITORS AND
 □ ARE 0.1μF/25WV CAPACITORS.

承認 APPROVED	MAY-31-88 M. TAECCHI	名称 TITLE
検図 CHECKED	MAY-27-88 M. IKEDA	AT-1500 ANTENNA COUPLER
製図 DRAWN	MAY-24-88 S. IZAWA	図番 DWG. NO. E5485-020-C

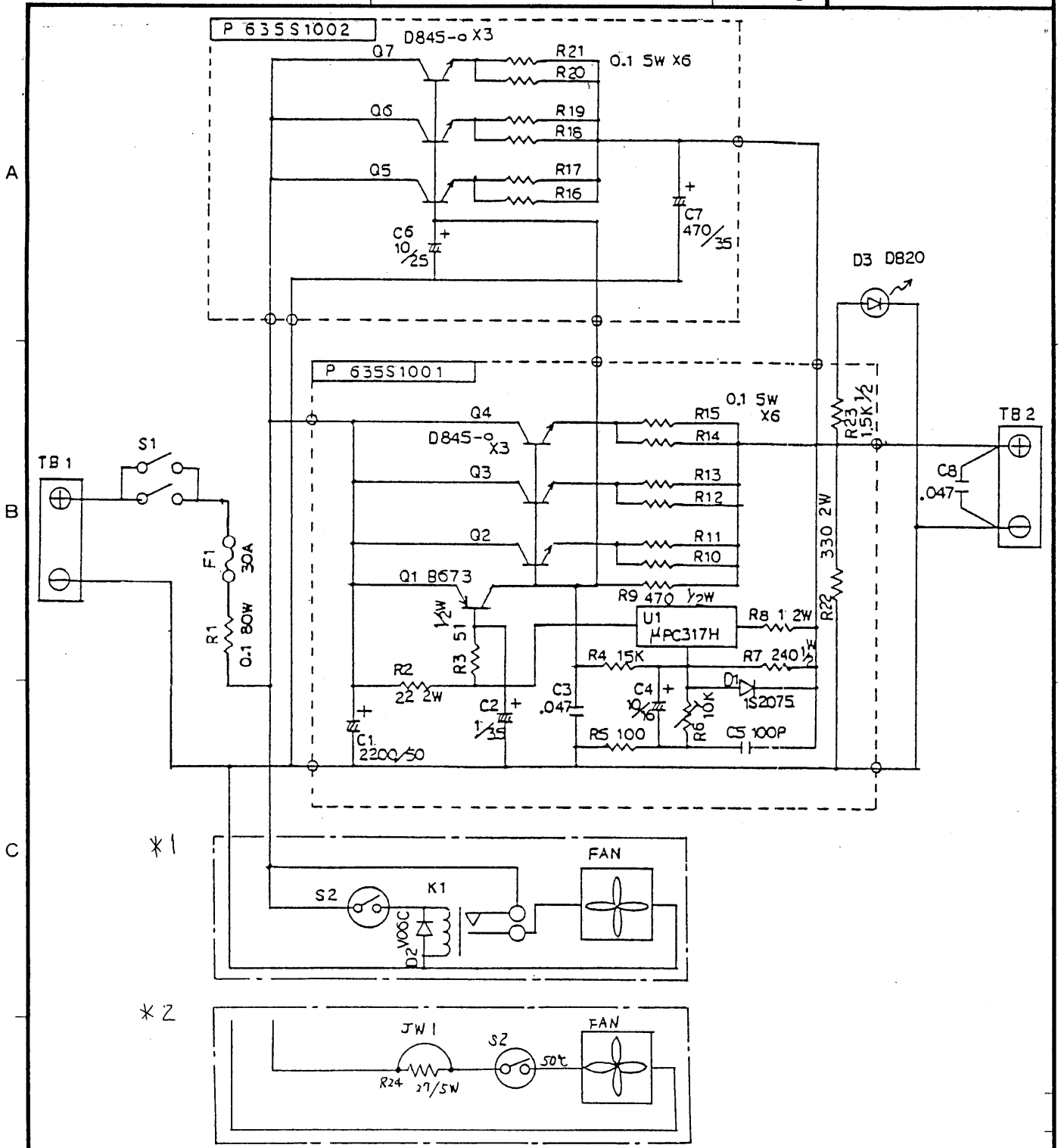
FS-1500 SERIES



Circuit *1 is for serial number 0150 and before.
 Circuit *2 is for serial number 0151 and after.

NOTE: All resistors are in ohm, capacitors are in microfarad, unless otherwise noted.

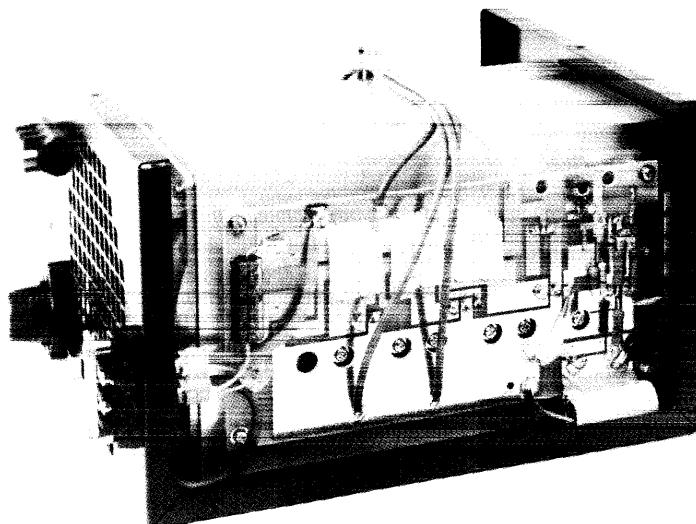
品番 ITEM	品名 NAME	材質 MATERIAL	數量 Q'TY	圖番 DWG.NO.	摘要 REMARKS
承認 APPROVED	DEC. 14. '88 T. A. K.	三角法 THIRD ANGLE PROJECTION	名稱 TITLE	AC 電源	
檢 CHECKED	DEC. 14. '88 M. H. K.	尺 SCALE	PR-270	POWER SUPPLY	
製 DRAWN	Dec. 14. '88 S. N.	重 WEIGHT	kg	圖番 DWG.NO.	C5485-032-B



Circuit *1 is for serial number 0150 and before.
 Circuit *2 is for serial number 0151 and after.

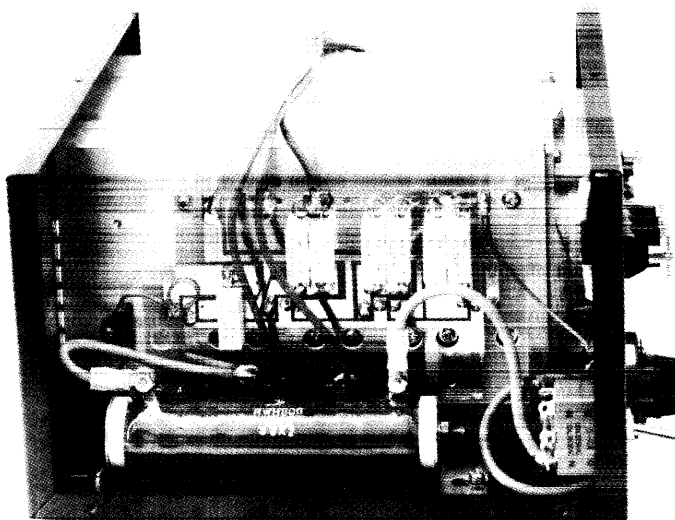
NOTE: All resistors are in ohm, capacitors are in microfarad, unless otherwise noted.

品番 ITEM	品名 NAME	材質 MATERIAL	数量 Q'TY	図番 DWG.NO.	摘要 REMARKS
承認 APPROVED	DEC. 14. '88 T. WAKANO	三角法 THIRD ANGLE PROJECTION	名称 TITLE	DC-DC コンバータ DC-DC CONVERTER	
検図 CHECKED	DEC. 14. '88 M. IICEDA	尺度 SCALE	PC-220		
製図 DRAWN	DEC. 14. '88 S. NISHI	重量 WEIGHT	kg	図番 DWG.NO.	C5485-030-A



Left Side View

T Photo No.1026



Right Side View

T Photo No.1027

DC-DC CONVERTER PC-220

APPENDIX A Connection of TELEX Terminal

§1 GENERAL

When automatic telex communication is required, it is recommended to use the Thrane-Thrane Model 1600 system, comprising Radiotelex Modem TT-1585, Keyboard-processor TT-1601A and Video Monitor TT-1602A. The scanning function of the Radiotelex Modem enables fully-automatic telex communication.

Description

The TT-1600 System is an integrated Radiotelex Package including the Model TT-1585 Radiotelex Modem with 256 k character text editing facility, a detached keyboard and video display unit with full soft-key operation of system commands, a hard-copy printer for multicopying of received and transmitted messages, and all necessary interface cables between the TT-1600 System parts and the radio equipment.

The intelligence provided by the TT-1600 System enables fully automatic control of the complete radio station: start the transmitter, tune it, establish the connection and transmit and/or receive messages. It can even scan the receiver, search for incoming calls, adjust the transmitter frequency and handle the traffic without any operator intervention.

The TT-1600 System has storage capacity for 105 user programmable frequency pairs and call codes.

Characteristics

Communication protocol: CCIR 476-3, Rec. 491, Rec. 492, and the new Rec. 625.

Line signal: Two tone keyed with 7-unit code. Constant 4B/3Y ratio in accordance with CCIR Rec. 476-3, 100 Baud synchronous.

Modulation: Phase-continuous AFSK keying.

Tone frequencies: Fully programmable between 1 kHz and 3 kHz with 1 Hz resolution.

Frequency stability: < 0.1 Hz.

Filter tracking: Adaptive tracking within ± 100 Hz.

Decision filtering: Bit-slicing with multipath correction.

Threshold control: Software controlled dynamic threshold.

Demodulator sensitivity: - 1.2 dB signal/noise ratio at 10% block error rate (1 kHz noise bandwidth).

RX-tone output: + 10 dBm to - 60 dBm, 600 ohm balanced, strap selectable.

TX-tone output: + 10 dBm to - 21 dBm, 600 ohm balanced, continuous adjustable.

The built-in, comprehensive screen-oriented text editor adds powerful dimensions to Telex handling. No more difficulties with message preparation, editing and transmission. The text editor becomes familiar to any user with a minimum of training.

A large number of different messages can be stored in the text memory for later transmission (separately or in groups).

The TT-1600 System can operate in a number of automatic modes, including unprotected/protected remote mode, public/secret save mode, operator programmable group command mode, and scan mode with automatic call controlled by the reception of "Free" signals.

Software controlled channel quality evaluation and frequency tracking ensures optimum selection of frequency channels.

Radio control input: RS-410 type N.

Radio control output RS-410 type N (open collector, Darlington drive).

Remote control: CCITT Rec. V. 10 SPECIAL (RS-423).

Character storage capacity: 256 kbyte shared between output buffer and text memory.

Soft-key commands: All editing and operational commands.

Keyboard programming: Full EEPROM programming of installation set-up, 105 user programmable frequency pairs and scanning tables.

System power source: 220 Vac/110 Vac, $\pm 25\%$, 46-400 Hz, 100 VA max.

DC power source: 10-30 Vdc, 35 W (TT-1585 and TT-1601A only).

Ambient temperature: 0° C to 55° C operating, - 20° C to 70° C storage.

Relative humidity: 95 % non-condensing.

Vibration: IEC, CEPT and MPT 1204.

Features

- Unattended transmission and reception of telex messages, 24 hours a day.
- Simple operation by use of soft-keys.
- Screen-oriented word processor with 256 kbyte text memory.
- File packing for optimum usage of memory space.
- Storage capacity for 105 user programmable frequency pairs and call codes.
- Built-in High security Telex cipher.
- Automatic control of communication equipment with "Free" signal scanning and automatic power-up.
- Automatic channel quality evaluation and frequency tracking for optimum channel selection.
- IBM-PC/XT Communications Software.

Ordering Information

TT-1600, Integrated Radiotelex System, comprising:

TT-1585 Radiotelex Modem, C or E model
TT-1601A, Keyboard-Processor
TT-1602A, Video Monitor
TT-1608A, Hard-Copy Printer
TT-16101A, Cable Kit

TT-16102A, Mounting Kit

Option 001, Text Memory Battery Back-Up.
TT-10201A, IBM-PC Communications Support Software.

Specify 1585C or E:
TT-1585C: Standard speed (50 Baud) Radiotelex Modem with 256 kbyte text memory, compact cabinet version.

TT-1585E: Standard speed (50 Baud) Radiotelex Modem with 256 kbyte text memory, 19" rack version.

Options

- Option 002: Integrated 3.5" Microfloppy Disc Drive, 720 kbyte formatted (for 1585E only).
- Option 003: Remote Panel Interface (for 1585E only).
- Option 004: Free-Signal Generation for Base- and Coast Stations (CCIR Rec. 492).
- Option 005: Adds double speed (100 Baud) Twinplex operation (CCIR Rec. 346-1).
- Option 006: Space/frequency diversity.
- Option 007: High Security Telex Cipher.

From the product guide of Thrane-Thrane

§2 Modification of FS-1550

Prepare the "Telex Connection Kit" (OP05-14 Code No. 005-923-670).

Table 1. Contents of Telex Connection Kit

NO.	NAME	TYPE	CODE NO.	Q'TY
1	5-pin Jack	FM14-5P	000-111-537	1
2	5-pin Plug Assy.	05S4487-0	000-113-471	1
3	7-pin Jack	FM14-5P	000-113-345	1
4	6-pin Plug Assy.	05S4488-0	000-113-472	1
5	Connector Cover	05S4426-0	000-113-346	2
6	7-pin Plug	FM214-7SM	000-113-463	1
7	5-pin Plug	FM214-5SM	000-113-464	1
8	IC	LT1080CN	000-111-479	1
9	Gasket	05-029-0122-2	100-087-842	2

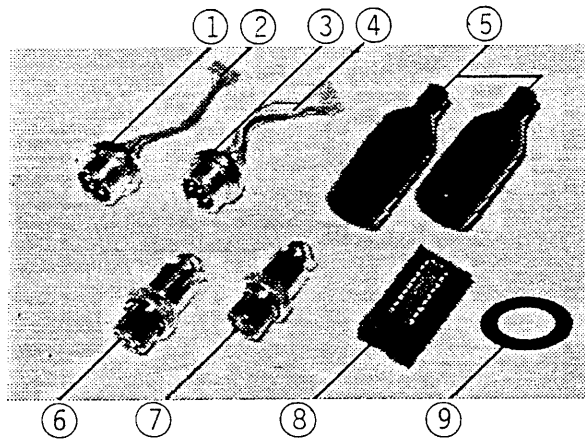


Fig 1. Telex Connection Kit

Installing the connector jacks

- 1) Peel off the rubber seals on the rear of the transceiver.
- 2) Solder "plug assys." to proper plugs.
- 3) Fix connector plugs to the chassis.
- 4) Connect lead wires to the respective connector on the TX/RX board.

§3 Connection

Table 2. Connections for Telex Communication

CONNECTOR	NO.	COLOR	SIGNAL	FUNCTION
TELEX (1B08J0002)	1.	BRN	0V	connected to ground
	2.	RED	SCAN STOP	not used
	3.	ORG	TLX BK	readies the transceiver for TX
	4.	YEL	LINE OUT(+)	0dBm/600 ohms audio output
	5.	GRN	LINE OUT(-)	
	6.	BLU	LINE IN (+)	0dBm/600 ohms audio input
	7.	*1	LINE IN (-)	
REMOTE (1B08J0003)	1.	BRN	TXD	Transmit Data (Not used)
	2.	RED	RTS	Request to Send (Not used)
	3.	ORG	RXD	Receive Data (Cont. Sig.)
	4.	YEL	CTS	Clear to Send (Not used)
	5.	GRN	0V	Common

*1: Connect a jumper wire to pin No.5.

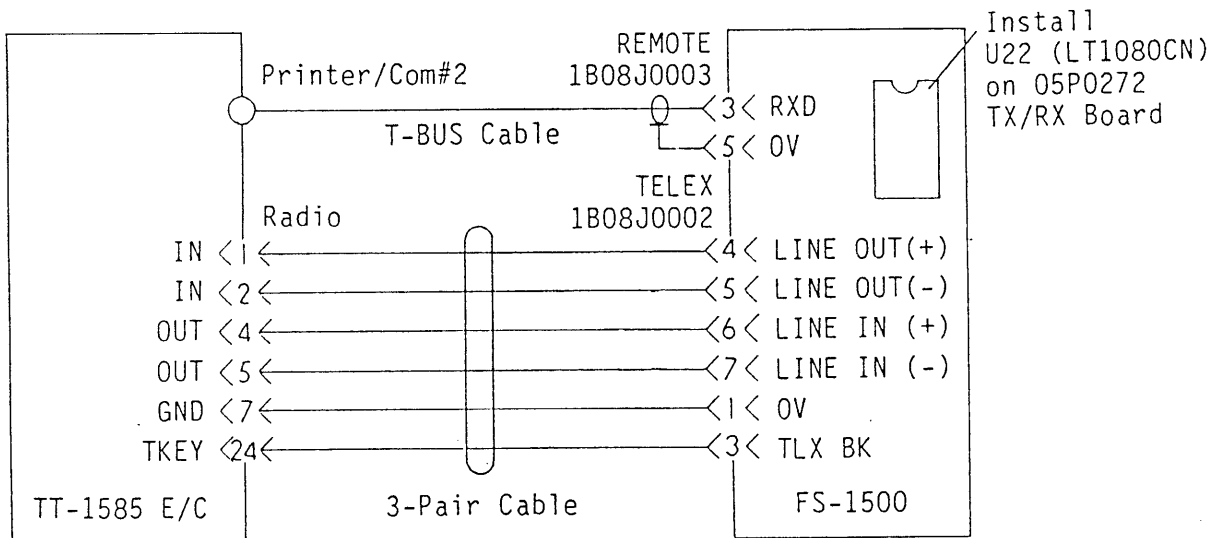
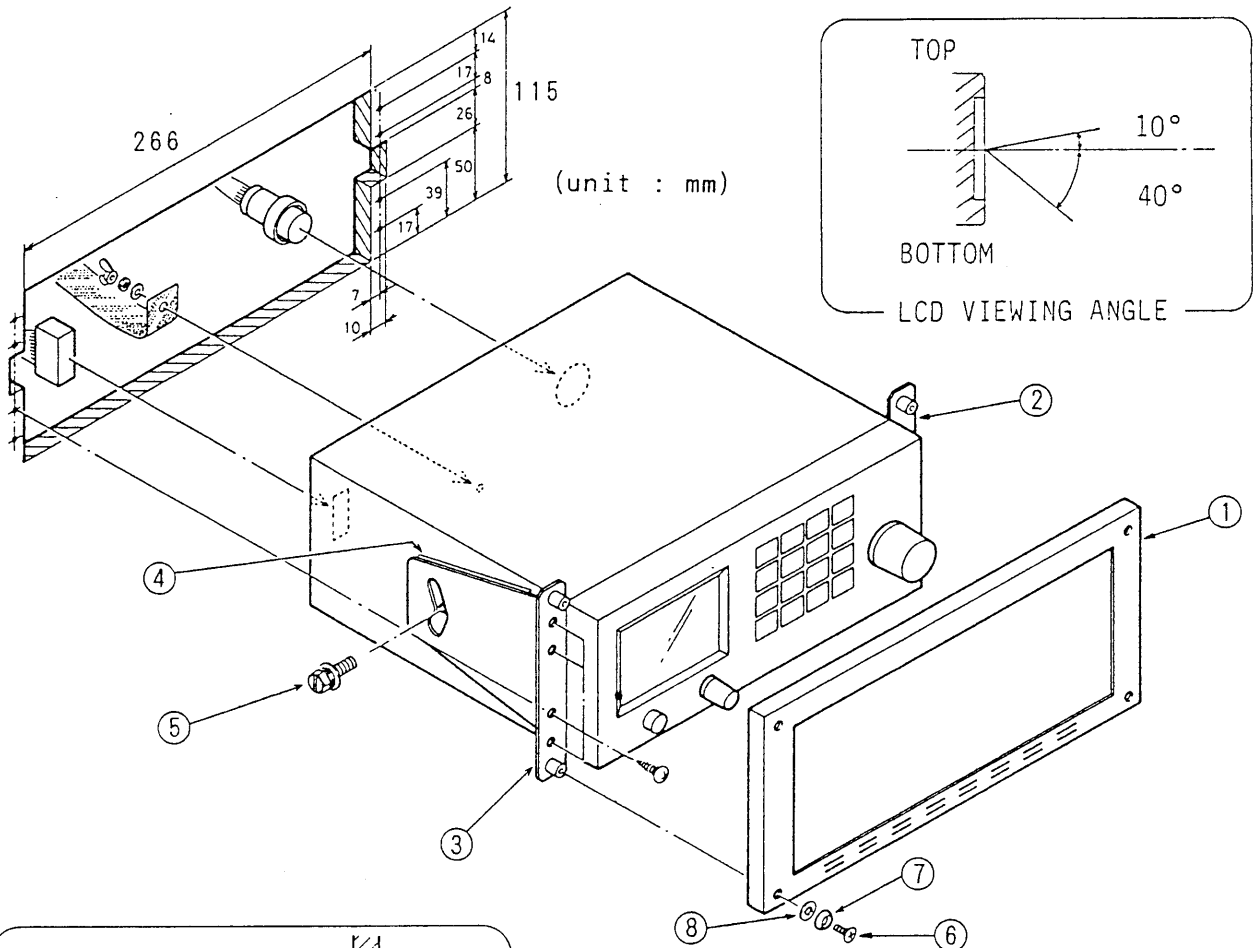


Fig. 2 Connection of FS-1550 to TT-1585

APPENDIX B Notes for Flush Mount Installation

NOTES FOR FLUSH MOUNT INSTALLATION OF FS-1550 RADIOTELEPHONE

1. Select a place where the LCD can be easily viewed, keeping in mind that the LCD viewing angle is as illustrated below. Where required the unit may be tilted a maximum of 8°.
2. Ensure the mounting location is strong enough to support the weight of the unit (6kg approx.). If necessary fix the unit to a suitable reinforcement plate.
3. Two mounting brackets are supplied for flush mounting, one for right hand side and one for left hand side. Be careful not to interchange them when mounting.
4. Screws for bulkhead mounting (M4 bolts and nuts for $\phi 4$ screws : 8 pieces) and a reinforcement plate (where required) must be supplied locally.



Parts supplied

No.	NAME	TYPE	CODE No.	QUANTITY
1	FLUSH MOUNT PANEL		100-105-470	1
2	RIGHT MOUNTING BRACKET		100-105-480	1
3	LEFT MOUNTING BRACKET		100-105-490	1
4	FLUSH MOUNT LINER		100-105-500	2
5	HEX. WASHERHEAD SCREW	M8X16	000-882-160	2
6	PANHEAD SCREW	M3X8	000-861-495	4
7	ROSETTE WASHER	M3	000-864-900	4
8	NYLON WASHER	2.8X7X0.5	000-800-728	4

APPENDIX C ITU/TELEX Frequency List

ITU SSB CHANNEL/FREQUENCY LIST (1/2)

CH. NO.	4MHz		CH. NO.	6MHz		CH. NO.	8MHz	
	TX	RX		TX	RX		TX	RX
401	4063.0*	4357.4*	601	[6200.0]*	[6506.4]*	801	8195.0*	8718.9*
402	4066.1	4360.5	602	6203.1	6509.5	802	8198.1	8722.0
403	4096.2	4363.6	603	6206.2	6512.6	803	8201.2	8725.1
404	4072.3	4366.7	604	6209.3	6516.7	804	8204.3	8728.2
405	4075.4	4369.8	605	6212.4	6518.8	805	8207.4	8731.3
406	4078.5	4372.9	606	6215.5	6521.9	806	8210.5	8734.4
407	4081.6	4376.0	607	(6218.6)	(6218.6)	807	8213.6	8737.5
408	4084.7	4379.1	608	(6221.6)	(6221.6)	808	8216.7	8740.6
409	4087.8	4382.2				809	8219.8	8743.7
410	4090.9	4385.3				810	8222.9	8746.8
411	4094.0	4388.4				811	8226.0	8749.9
412	4097.1	4391.5				812	8229.1	8753.0
413	4100.2	4394.6				813	8232.2	8756.1
414	4103.3	4397.7				814	8235.3	8759.2
415	4106.4	4400.8				815	8238.4	8762.3
416	4109.5	4403.9				816	[8241.5]	[8765.4]
417	4112.6	4407.0				817	8244.6	8768.5
418	4115.7	4410.1				818	8247.7	8771.6
419	4118.8	4413.2				819	8250.8	8774.7
420	4121.9	4416.3				820	8253.9	8777.8
421	4125.0	4419.4				821	8257.0	8780.9
422	4128.1	4422.5				822	8260.1	8784.0
423	4131.2	4425.6				823	8263.2	8787.1
424	[4134.3]	[4428.7]				824	8266.3	8790.2
425	4137.4	4431.8				825	8269.4	8793.3
426	4140.5	4434.9				826	8272.5	8796.4
427	(4143.6)	(4143.6)				827	8275.6	8799.5
						828	8278.7	8802.6
						829	8281.8	8805.7
						830	8284.9	8808.8
						831	8288.0	8811.9
						832	(8291.1)	(8291.1)
						833	(8294.2)	(8294.2)

NOTE: * J3E mode only
 Calling channel
 () Ship-to-ship simplex channel
 [] USCG AMVER channel

ITU SSB CHANNEL/FREQUENCY LIST (2/2)

CH. NO.	12MHz		CH. NO.	16MHz		CH. NO.	22MHz	
	TX	RX		TX	RX		TX	RX
1201	12330.0*	13100.8*	1601	16460.0*	17232.9*	2201	22000.0*	22596.0*
1202	12333.1	13103.9	1602	16463.1	17236.0	2202	22003.1	22599.1
1203	12336.2	13107.0	1603	16466.2	17239.1	2203	22006.2	22602.2
1204	12339.3	13110.1	1604	16469.3	17242.2	2204	22009.3	22605.3
1205	[12342.4]	[13113.2]	1605	16472.4	17245.3	2205	22012.4	22608.4
1206	12345.5	13116.3	1606	16475.5	17248.4	2206	22015.5	22611.5
1207	12348.6	13119.4	1607	16478.6	17251.5	2207	22018.6	22614.6
1208	12351.7	13122.5	1608	16481.7	17254.6	2208	22021.7	22617.7
1209	12354.8	13125.6	1609	16484.8	17257.7	2209	22024.8	22620.8
1210	12357.9	13128.7	1610	16487.9	17260.8	2210	22027.9	22623.9
1211	12361.0	13131.8	1611	16491.0	17263.9	2211	22031.0	22627.0
1212	12364.1	13134.9	1612	16494.1	17267.0	2212	22034.1	22630.1
1213	12367.2	13138.0	1613	16497.2	17270.1	2213	22037.2	22633.2
1214	12370.3	13141.1	1614	16500.3	17273.2	2214	22040.3	22636.3
1215	12373.4	13144.2	1615	16503.4	17276.3	2215	22043.4	22639.4
1216	12367.5	13147.3	1616	16506.5	17279.4	2216	22044.5	22642.5
1217	12379.6	13150.4	1617	16509.6	17282.5	2217	22049.6	22645.6
1218	12382.7	13153.5	1618	16512.7	17285.6	2218	22052.7	22648.7
1219	12385.8	13156.6	1619	16515.8	17288.7	2219	22055.8	22651.8
1220	12388.9	13159.7	1620	16518.9	17291.8	2220	22058.9	22654.9
1221	12392.0	13162.8	1621	16522.0	17294.9	2221	22062.0	22658.0
1222	12395.1	13165.9	1622	16525.1	17298.0	2222	22065.1	22661.1
1223	12398.2	13169.0	1623	16528.2	17301.1	2223	22068.2	22664.2
1224	12401.3	13172.1	1624	16531.3	17304.2	2224	22071.3	22667.3
1225	12404.4	13175.2	1625	[16534.4]	[17307.3]	2225	22074.4	22670.4
1226	12407.5	13178.3	1626	16537.5	17310.4	2226	22077.5	22673.5
1227	12410.6	13181.4	1627	16540.6	17313.5	2227	22080.6	22676.6
1228	12413.7	13184.5	1628	16543.7	17316.6	2228	22083.7	22679.7
1229	12416.8	13187.6	1629	16546.8	17319.7	2229	22086.8	22682.8
1230	12419.9	13190.7	1630	16549.9	17322.8	2230	22089.9	22685.9
1231	12423.0	13193.8	1631	16553.0	17325.9	2231	22093.0	22698.0
1232	12426.1	13196.9	1632	16556.1	17329.0	2232	22096.1	22692.1
1233	(12429.2)	(12429.2)	1633	16559.2	17332.1	2233	22099.2	22695.2
1234	(12432.3)	(12432.3)	1634	16562.3	17335.2	2234	22102.3	22698.3
1235	(12435.4)	(12435.4)	1635	16565.4	17338.3	2235	22105.4	22701.4
			1636	16568.5	17341.4	2236	22108.5	22704.5
			1637	16571.6	17344.5	2237	22111.6	22707.6
			1638	16574.7	17347.6	2238	22114.7	22710.7
			1639	16577.8	17350.7	2239	22117.8	22713.8
			1640	16580.9	17353.8	2240	22120.9	22716.9
			1641	16584.0	17356.9	2241	(22124.0)	(22124.0)
			1642	(16587.1)	(16587.1)	2242	(22127.1)	(22127.1)
			1643	(16590.2)	(16590.2)	2243	(22130.2)	(22130.2)
			1644	(16593.3)	(16593.3)	2244	(22133.3)	(22133.3)
						2245	(22136.4)	(22136.4)

NOTE: * J3E mode only
 Calling channel
 () Ship-to-ship simplex channel
 [] USCG AMVER channel

ITU TELEX CHANNEL/FREQUENCY LIST (1/3)

CH. NO.	4MHz		CH. NO.	6MHz		CH. NO.	8MHz	
	TX	RX		TX	RX		TX	RX
401	4170.5	4350.0	601	6256.5	6494.5	801	8344.0	8705.0
402	4171.0	4350.5	602	6257.0	6495.0	802	8344.5	8705.5
403	4171.5	4351.0	603	6257.5	6495.5	803	8345.0	8706.0
404	4172.0	4351.5	604	6258.0	6496.0	804	8345.5	8706.5
405	4172.5	4352.0	605	6258.5	6496.5	805	8346.0	8707.0
406	4173.0	4352.5	606	6259.0	6497.0	806	8346.5	8707.5
407	4173.5	4353.0	607	6259.5	6497.5	807	8347.0	8708.0
408	4174.0	4353.5	608	6260.0	6498.0	808	8347.5	8708.5
409	4174.5	4354.0	609	6260.5	6498.5	809	8348.0	8709.0
410	4175.0	4354.5	610	6261.0	6499.0	810	8348.5	8709.5
411	4175.5	4355.0	611	6261.5	6499.5	811	8349.0	8710.0
412	4176.0	4355.5	612	6262.0	6500.0	812	8349.5	8710.5
413	4176.5	4356.0	613	6262.5	6500.5	813	8350.0	8711.0
414	4177.0	4356.5	614	6263.0	6501.0	814	8350.5	8711.5
			615	6263.5	6501.5	815	8351.0	8712.0
			616	6264.0	6502.0	816	8351.5	8712.5
			617	6264.5	6502.5	817	8352.0	8713.0
			618	6265.0	6503.0	818	8352.5	8713.5
			619	6265.5	6503.5	819	8353.0	8714.0
			620	6266.0	6504.0	820	8353.5	8714.5
			621	6266.5	6504.5	821	8354.0	8715.0
			622	6267.0	6505.0	822	8354.5	8715.5
			623	6267.5	6505.5	823	8355.0	8716.0
						824	8355.5	8716.5
						825	8356.0	8717.0
						826	8356.5	8717.5
						827	8357.0	8718.0

ITU TELEX CHANNEL/FREQUENCY LIST (2/3)

CH. NO.	12MHz		CH. NO.	16MHz		CH. NO.	22MHz	
	TX	RX		TX	RX		TX	RX
1201	12491.5	13071.5	1601	16660.5	17197.5	2201	22192.5	22561.5
1202	12492.0	13072.0	1602	16661.0	17198.0	2202	22193.0	22562.0
1203	12492.5	13072.5	1603	16661.5	17198.5	2203	22193.5	22562.5
1204	12493.0	13073.0	1604	16662.0	17199.0	2204	22194.0	22563.0
1205	12493.5	13073.5	1605	16662.5	17199.5	2205	22194.5	22563.5
1206	12494.0	13074.0	1606	16663.0	17200.0	2206	22195.0	22564.0
1207	12494.5	13074.5	1607	16663.5	17200.5	2207	22195.5	22564.5
1208	12495.0	13075.0	1608	16664.0	17201.0	2208	22196.0	22565.0
1209	12495.5	13075.5	1609	16664.5	17201.5	2209	22196.5	22565.5
1210	12496.0	13076.0	1610	16665.0	17202.0	2210	22197.0	22566.0
1211	12496.5	13076.5	1611	16665.5	17202.5	2211	22197.5	22566.5
1212	12497.0	13077.0	1612	16666.0	17203.0	2212	22198.0	22567.0
1213	12497.5	13077.5	1613	16666.5	17203.5	2213	22198.5	22567.5
1214	12498.0	13078.0	1614	16667.0	17204.0	2214	22199.0	22568.0
1215	12498.5	13078.5	1615	16667.5	17204.5	2215	22199.5	22568.5
1216	12499.0	13079.0	1616	16668.0	17205.0	2216	22200.0	22569.0
1217	12499.5	13079.5	1617	16668.5	17205.5	2217	22200.5	22569.5
1218	12500.0	13080.0	1618	16669.0	17206.0	2218	22201.0	22570.0
1219	12500.5	13080.5	1619	16669.5	17206.5	2219	22201.5	22570.5
1220	12501.0	13081.0	1620	16670.0	17207.0	2220	22202.0	22571.0
1221	12501.5	13081.5	1621	16670.5	17207.5	2221	22202.5	22571.5
1222	12502.0	13082.0	1622	16671.0	17208.0	2222	22203.0	22572.0
1223	12502.5	13082.5	1623	16671.5	17208.5	2223	22203.5	22572.5
1224	12503.0	13083.0	1624	16672.0	17209.0	2224	22204.0	22573.0
1225	12503.5	13083.5	1625	16672.5	17209.5	2225	22204.5	22573.5
1226	12504.0	13084.0	1626	16673.0	17210.0	2226	22205.0	22574.0
1227	12504.5	13084.5	1627	16673.5	17210.5	2227	22205.5	22574.5
1228	12505.0	13085.0	1628	16674.0	17211.0	2228	22206.0	22575.0
1229	12505.5	13085.5	1629	16674.5	17211.5	2229	22206.5	22575.5
1230	12506.0	13086.0	1630	16675.0	17212.0	2230	22207.0	22576.0
1231	12506.5	13086.5	1631	16675.5	17212.5	2231	22207.5	22576.5
1232	12507.0	13087.0	1632	16676.0	17213.0	2232	22208.0	22577.0
1233	12507.5	13087.5	1633	16676.5	17213.5	2233	22208.5	22577.5
1234	12508.0	13088.0	1634	16677.0	17214.0	2234	22209.0	22578.0
1235	12508.5	13088.5	1635	16677.5	17214.5	2235	22209.5	22578.5
1236	12509.0	13089.0	1636	16678.0	17215.0	2236	22210.0	22579.0
1237	12509.5	13089.5	1637	16678.5	17215.5	2237	22210.5	22579.5
1238	12510.0	13090.0	1638	16679.0	17216.0	2238	22211.0	22580.0
1239	12510.5	13090.5	1639	16679.5	17216.5	2239	22211.5	22580.5
1240	12511.0	13091.0	1640	16680.0	17217.0	2240	22212.0	22581.0
1241	12511.5	13091.5	1641	16680.5	17217.5	2241	22212.5	22581.5
1242	12512.0	13092.0	1642	16681.0	17218.0	2242	22213.0	22582.0
1243	12512.5	13092.5	1643	16681.5	17218.5	2243	22213.5	22582.5
1244	12513.0	13093.0	1644	16682.0	17219.0	2244	22214.0	22583.0
1245	12513.5	13093.5	1645	16682.5	17219.5	2245	22214.5	22583.5
1246	12514.0	13094.0	1646	16683.0	17220.0	2246	22215.0	22584.0
1247	12514.5	13094.5	1647	16683.5	17220.5	2247	22215.5	22584.5
1248	12515.0	13095.0	1648	16684.0	17221.0	2248	22216.0	22585.0
1249	12515.5	13095.5	1649	16684.5	17221.5	2249	22216.5	22585.5
1250	12516.0	13096.0	1650	16685.0	17222.0	2250	22217.0	22586.0

ITU TELEX CHANNEL/FREQUENCY LIST (3/3)

CH. NO.	12MHz		CH. NO.	16MHz		CH. NO.	22MHz	
	TX	RX		TX	RX		TX	RX
1251	12516.5	13096.5	1651	16685.5	17222.5	2251	22217.5	22586.5
1252	12517.0	13097.0	1652	16686.0	17223.0	2252	22218.0	22587.0
1253	12517.5	13097.5	1653	16686.5	17223.5	2253	22218.5	22587.5
1254	12518.0	13098.0	1654	16687.0	17224.0	2254	22219.0	22588.0
1255	12518.5	13098.5	1655	16687.5	17224.5	2255	22219.5	22588.5
1256	12519.0	13099.0	1656	16688.0	17225.0	2256	22220.0	22589.0
1257	12519.5	13099.5	1657	16688.5	17225.5	2257	22220.5	22589.5
			1658	16689.0	17226.0	2258	22221.0	22590.0
			1659	16689.5	17226.5	2259	22221.5	22590.5
			1660	16690.0	17227.0	2260	22222.0	22591.0
			1661	16690.5	17227.5	2261	22222.5	22591.5
			1662	16691.0	17228.0	2262	22223.0	22592.0
			1663	16691.5	17228.5	2263	22223.5	22592.5
			1664	16692.0	17229.0	2264	22224.0	22593.0
			1665	16692.5	17229.5	2265	22224.5	22593.5
			1666	16693.0	17230.0	2266	22225.0	22594.0
			1667	16693.5	17230.5	2267	22225.5	22594.5
			1668	16694.0	17231.0			
			1669	16694.5	17231.5			