

**uniden®**

# **SERVICE MANUAL**

# **HARRY**

*www.cbradio.nl*

**thanks Homer**

*for sharing this file*

# ALIGNMENT PROCEDURE

## Alignment of P.L.L.

### 1. Test Equipment Required

DC Power Supply : 8V(DC)

DC voltmeter

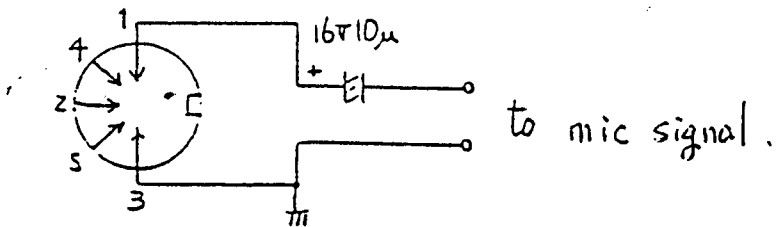
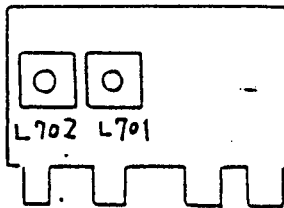
Oscillator

: 10.2419 MHz

### 2. Alignment Procedure

Step	Preset to	Adjustment	Remarks
1	TX 40CH	L702	Connect a DC voltmeter to VCO. Adjust L702 for $4.5V \pm 0.1V$ reading on the DC voltmeter.
2	RX 40cH	L701	Ditto

### 3. Alignment Points



# Alignment of FM PCB

## 1. Test Equipment Required

DC Power Supply (DC 8V)

Oscilloscope

Oscillator

FM SG 450KHz

AC voltmeter 2

DC voltmeter

## 2. Alignment Procedure

PA : OFF

Step	Preset to	Adjustment	Remarks
1	RX FM SG : 3mV out 1kHz, $\pm 15$ kHz dev.	L601	Connect a DC voltmeter to between TP601 and GND. Adjust L601 for $4.5 \pm 0.1$ V reading on the DC voltmeter. Check if voltage value is 150~350 mV.
2	TX Osc : 10mV 1kHz	VR601 middle position	Adjust VR601 for 4~9 mV reading on the AC voltmeter.

# Alignment of Transmitter Section

## 1. Test Equipment Required

DC Power Supply (DC 13.8 V)

Dummy load 50Ω

OSC : 1kHz

RF power meter

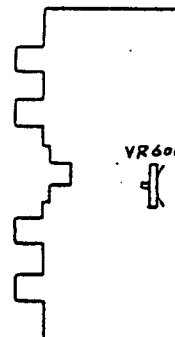
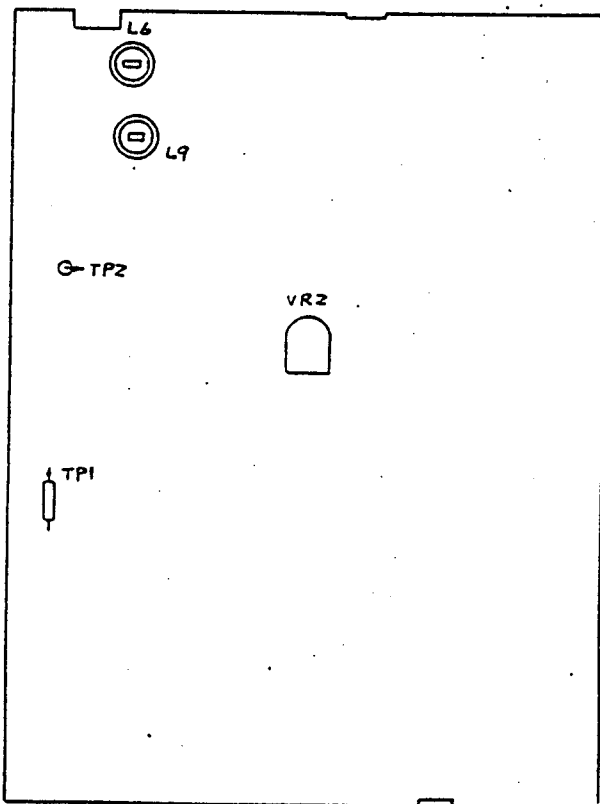
Deviation meter

## 2. Alignment Procedure

Step	Preset to	Adjustment	Remarks
1	CH 19 AM Mod. 500mV input	L6 and L9	Connect the RF power meter to Antenna jack. Adjust coils for maximum reading on the RF power meter.
2	No. Mod. CH19	L6	Adjust L6(CW) for 4.0W reading on the RF power meter.
3	Ditto	VR2	Adjust VR 2 so that the 4th LED just turns on.
4	Mod. 30mV input CH 1 FM	VR601	Adjust VR601 for ± 3kHz dev. reading on the deviation meter.

Note : After Alignment, lock with paraffin the area of L6 and L9.

## 3. Alignment Points



## Alignment of Receiver Section

### 1. Test Equipment Required

DC Power Supply : DC 13.8V  
S.S.G.

Dummy load : 50Ω

### 2. Preparation for Alignment

S.S.G. : 1kHz 30% Mod.(AM)  
1kHz ± 1.5 kHz Dev. (FM)  
Output impedance : 8Ω

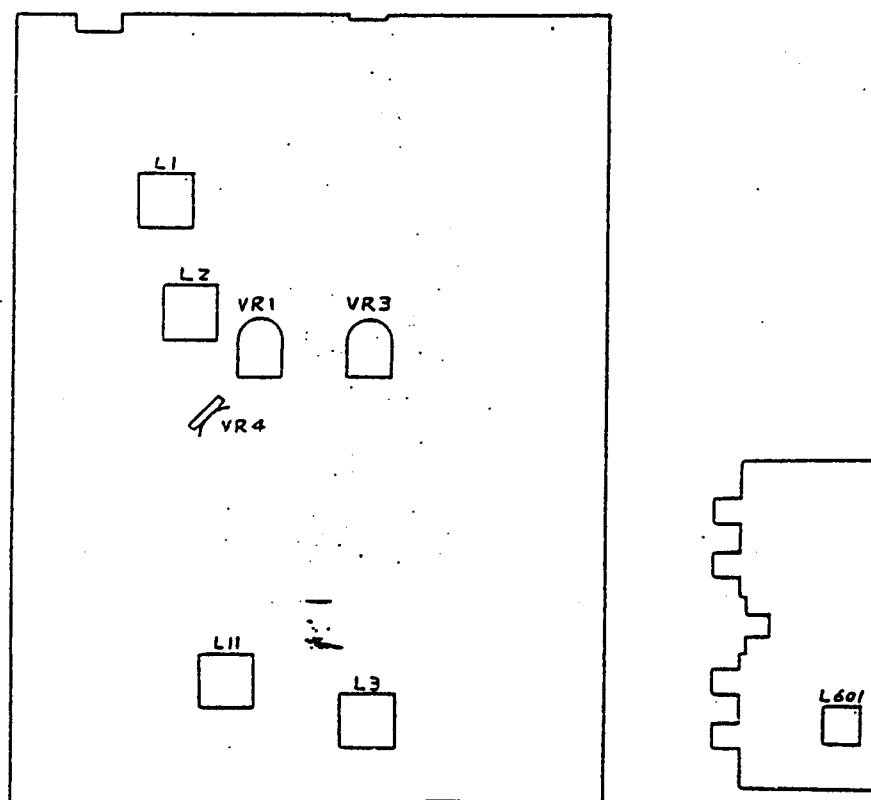
Frequency : 27.185 MHz  
Attenuator : 0dB = 0.5μV

Squelch : Min (Counterclockwise)

### 3. Alignment Procedure

Step	Preset to	Adjustment	Remarks
1	AM CH19 volume : Max.	L1, 2, 3 and L11	Connect the S.S.G. to antenna jack and AF VTVM to External speaker (J3). Adjust coils for maximum reading on the AF VTVM
2	Ditto	VR4	Set the S.S.G. attenuator to -3dB and adjust the output power to 5mW. (If the adjusting range is under the desired power, set VR2 to the minimum. If the one is over the desired power, set it to the maximum.)
3	AM CH19 No MOD	VR3	Set the S.S.G. to 1000mV output level. Adjust VR3 so that the 4th LED just turns on.
4	AM CH19 Vol. : Max Squelch : Max	VR1	Adjust VR1 so that squelch just breaks.
5	FM CH19	L601	Set the S.S.G. to 100μV output level. Adjust L601 for 4.5 ± 0.2V reading on the DC voltmeter.

### 4. Alignment Points



IC VOLTAGE CHART

IC NO.	IC NAME	IC PIN NO	R X (V)		TX (V)
1	LA 1185	1	0.8		0.8
		2	1.5		1.5
		3	8		8
		4	1.5		1.5
		5	0		0
		6	2.5		2.5
		7	2.2		2.2
		8	8		8
		9	8		8
2	TDA1220B	1	7.8		7.8
		2	1.4		1.4
		3	8		8
		4	1.4		1.4
		5	1.4		1.4
		6	7.4		7.4
		7	8		8
		8	0.8		0.8
		9	1.8		1.8
		10	2.9		2.9
		11	0		0
		12	0		0
		13	0		0
		14	2.4		2.4
		15	2.4		2.4
		16	0		0
3	MS223L	1	0.2	50 MAX 0.2	0.2
		2	1.2	1.2	1.2
		3	1.2	1.2	1.2
		4	0	0	0
		5	2	1.2	2
		6	1.6	1.6	1.6
		7	6.5	0	7
		8	8	8	8

IC NO.	IC NAME	IC PIN NO.	RX (V)		TX (V)
4	TDA 1905	1	7	SQ MAX 7	7
		2	13.6	13.6	13.6
		3	13.6	13.6	13.6
		4	3	0	2.2
		5	0	0	0
		6	2.5	2.5	2.5
		7	2.5	2.5	2.5
		8	2.4	2.4	2.4
		9	0	0	0
		10	0	0	0
		11	0	0	0
		12	0	0	0
		13	0	0	0
		14	0	0	0
		15	0	0	0
		16	0	0	0
5	M15124 A (LARGE)	1	6		2.6
		2	3		3
		3	6		6
		4	5		6
		5	3		3
		6	3		3
		7	3		3.6
		8	0.2		5.8
		9	2.9		2.9
		10	0.6		0.6
		11	0.6		0.6
		12	0.6		0.6
		13	6		6
		14	6.4		6.4
		15	0		0
		16	6.4		6.4
		17	6.4		6.4
		18	0		0
6	L7808 CV	1	13.6		13.6
		2	0		0
		3	8		8
7	LB 1423	1	12		12
		2	12		12
		3	12		12
		4	12		12
		5	0		0
		6	0.2		0.2
		7	0.2		0.2
		8	0.2		0.2
		9	8		8

DESIGN BY	DRAWN BY	UNIDEN NO.	MODEL NO.
62.7.9		UT-322	HARRY
T. NAKAMURA		TITLE SCHEMATIC DIAGRAM (VOLTAGE CHART) 1/2	
CHECK BY	APPROV. BY	DRAWING NO.	REV. MARK
67.7.9	67.7.9	E13-2677 3/2	
H. MATSU	YAGA		

UT-322B

IC VOLTAGE CHART

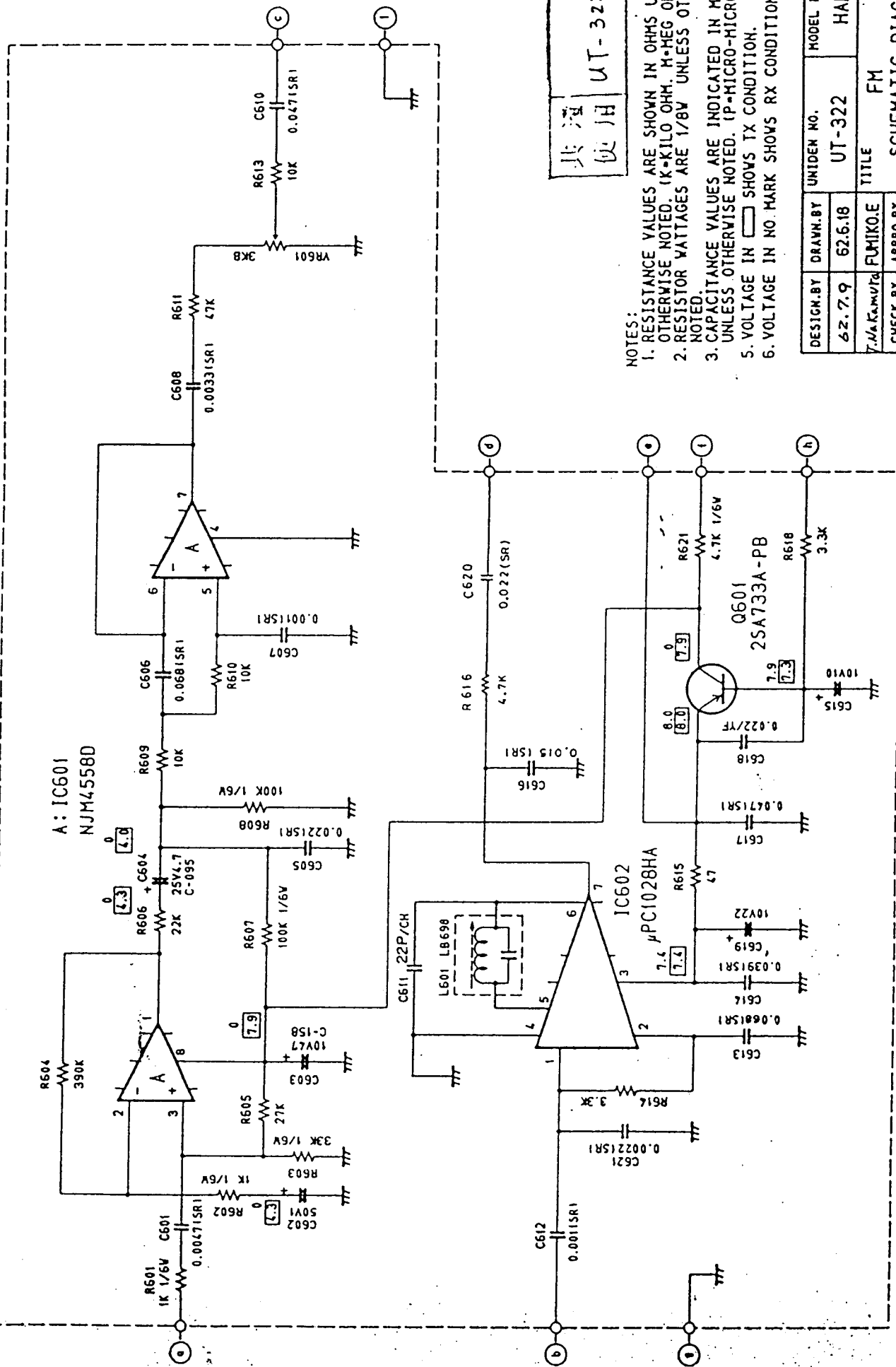
IC NO.	IC NAME	IC PIN NO.	R X (V)	TX (V)
601	NTM4558D	1	0	4.3
		2	0	4.3
		3	0	4.3
		4	0	0
		5	0	4.0
		6	0	4.0
		7	0	4.0
		8	0	7.9
602	MPC1028HA	1	1.3	1.3
		2	1.3	1.3
		3	7.4	7.4
		4	0	0
		5	3.4	3.4
		6	3.4	3.4
		7	4.6	4.6

UT-322 B

DESIGN BY	DRAWN BY	UNIDEN NO.	MODEL NO.
62.7.9		UT-322	HARRY
T. Nakamura		TITLE	
CHECK BY		SCHMATIC DIAGRAM	
APPRO BY		(VOLTAGE CHART) 3/2	
87.7.9	87.7.9	DRAWING NO.	REV. MARK
M. MATSU	NAGA	E14-2678 1/2	



8601 PA-261

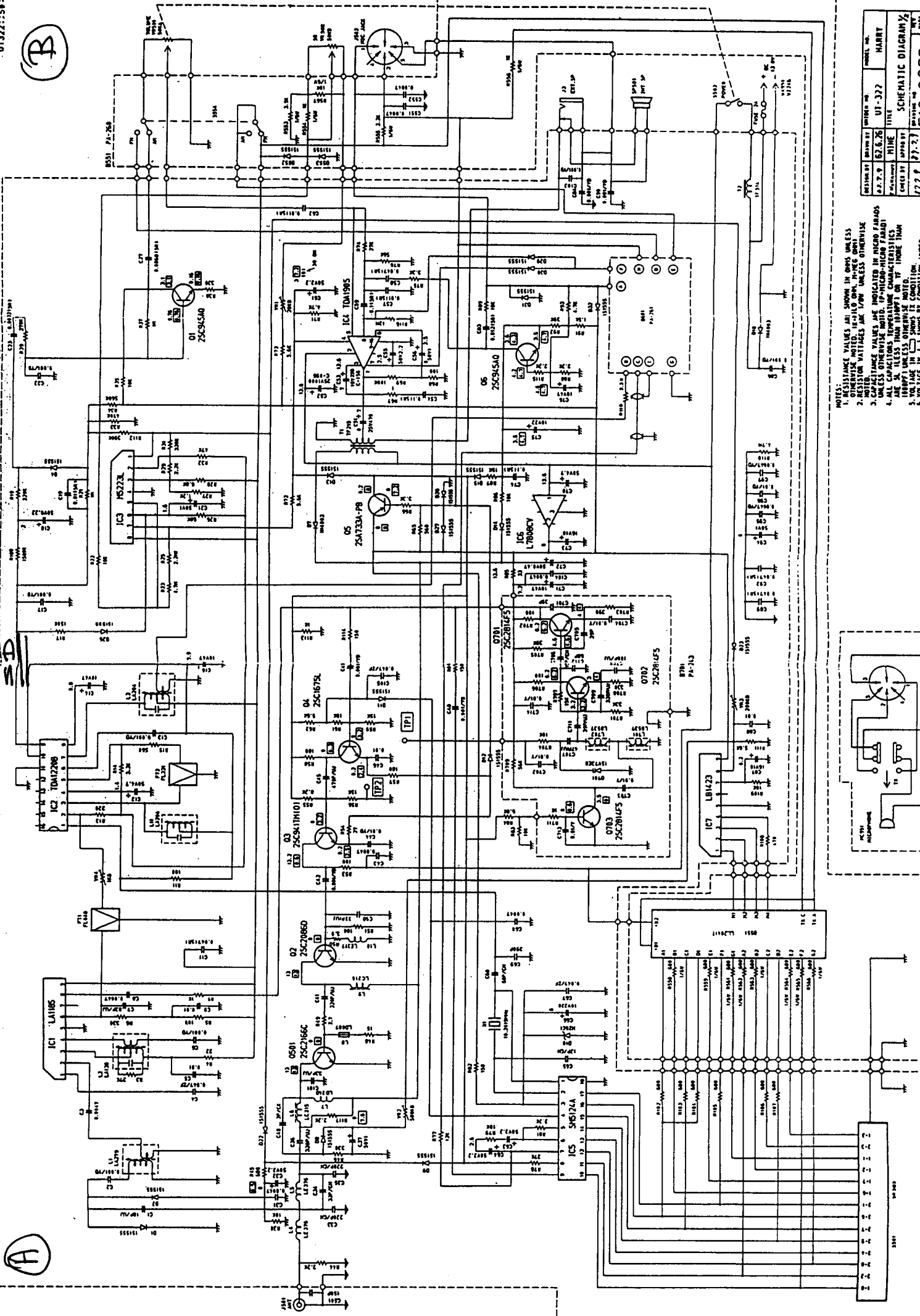


共通  
使用  
UT-322B

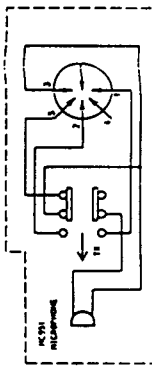
- NOTES:
1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. (K=KILO OHM, M=MEG OHM)
  2. RESISTOR VATTAGES ARE 1/8W UNLESS OTHERWISE NOTED.
  3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. (P=MICRO-MICRO FARAD)
  5. VOLTAGE IN □ SHOWS TX CONDITION.
  6. VOLTAGE IN NO. MARK SHOWS RX CONDITION.

DESIGN BY	62.7.9	UNIDER NO.	UT-322	MODEL NO.	HARRY
CHECK BY	7.7.9	APPRO. BY	FUMIKO.E	TITLE	FM
DRAWN BY	7.7.9	APPRO. BY	7.7.9	SCHEMATIC DIAGRAM	2/2
REV. MARK	H. HATSU	NA49	17.7.9	DRAWING NO.	E14-2678 1/2

(B)



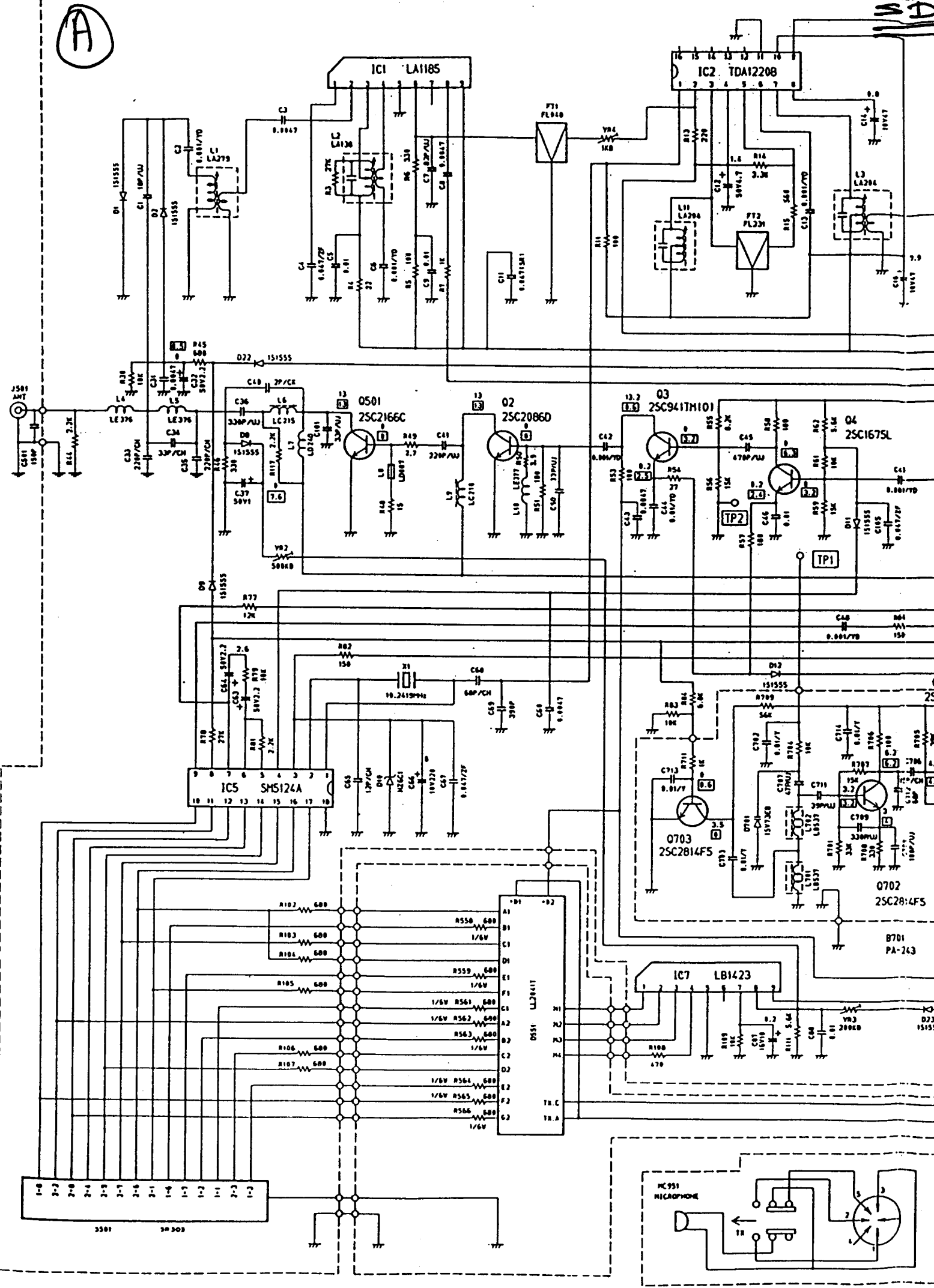
- NOTES: RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. RESISTOR VALUES ARE 1/4W UNLESS OTHERWISE NOTED. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. UP-HIGH-IMPEDANCE CHARACTERISTICS ARE SHOWN BY THE LETTER 'H'. ALL CAPACITORS ARE 50V UNLESS OTHERWISE SPECIFIED. VOLTAGE IN CIRCLES SHOWS THE CONDITION UNDER WHICH EACH FUNCTION IS TO BE PERFORMED.
1. RESISTOR VALUES ARE 1/4W UNLESS OTHERWISE NOTED.
  2. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED.
  3. ALL CAPACITORS ARE 50V UNLESS OTHERWISE SPECIFIED.
  4. VOLTAGE IN CIRCLES SHOWS THE CONDITION UNDER WHICH EACH FUNCTION IS TO BE PERFORMED.

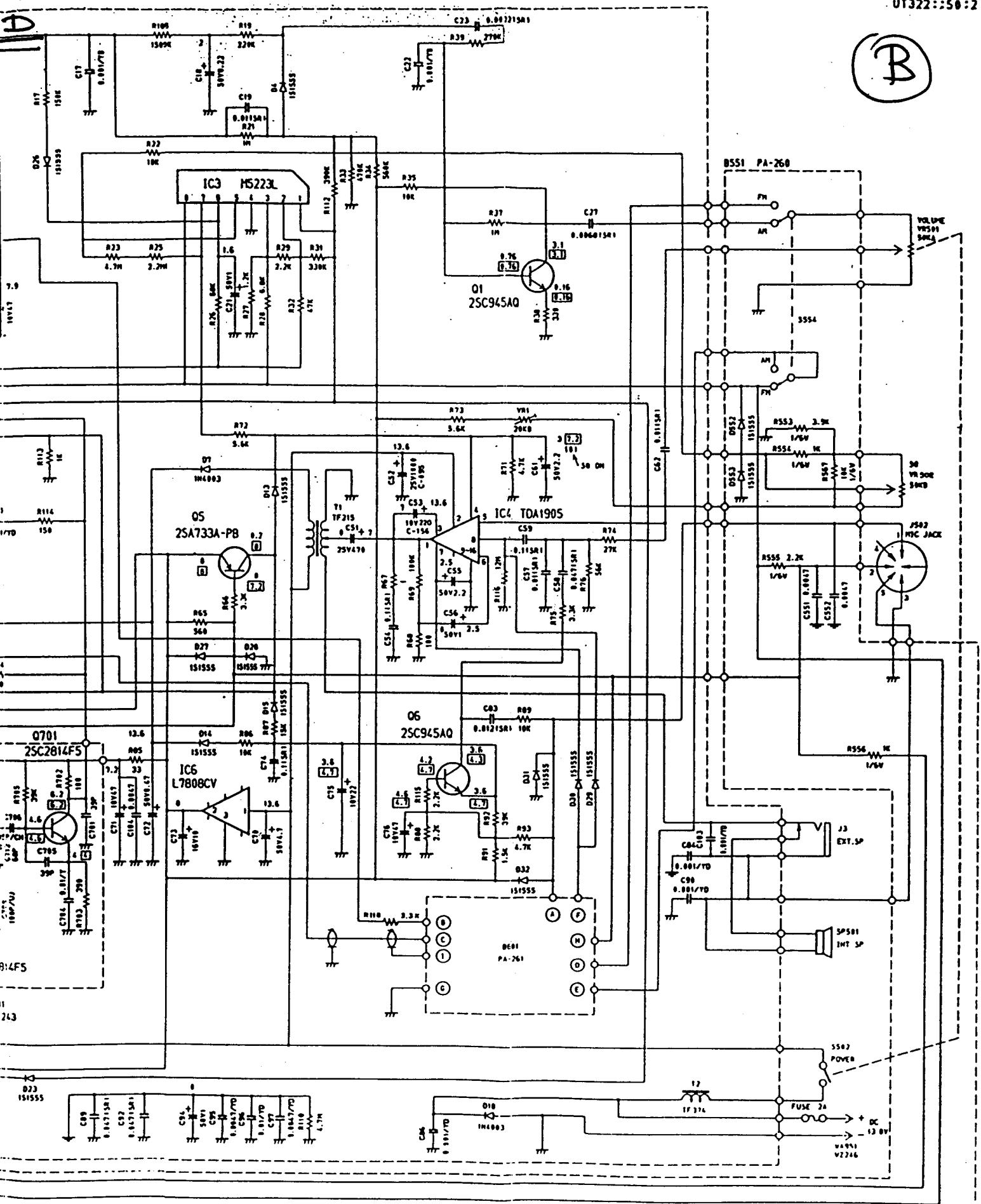


DESIGNED BY	UT-322	PROJECT NO.	HARRY
DATE	62.6.76	TITLE	UT-322
APPROVED BY		SCHEMATIC DIAGRAM	
CHECKED BY		DATE	72.2.77
SCALE	1:1	REV.	E12-26774

(A)

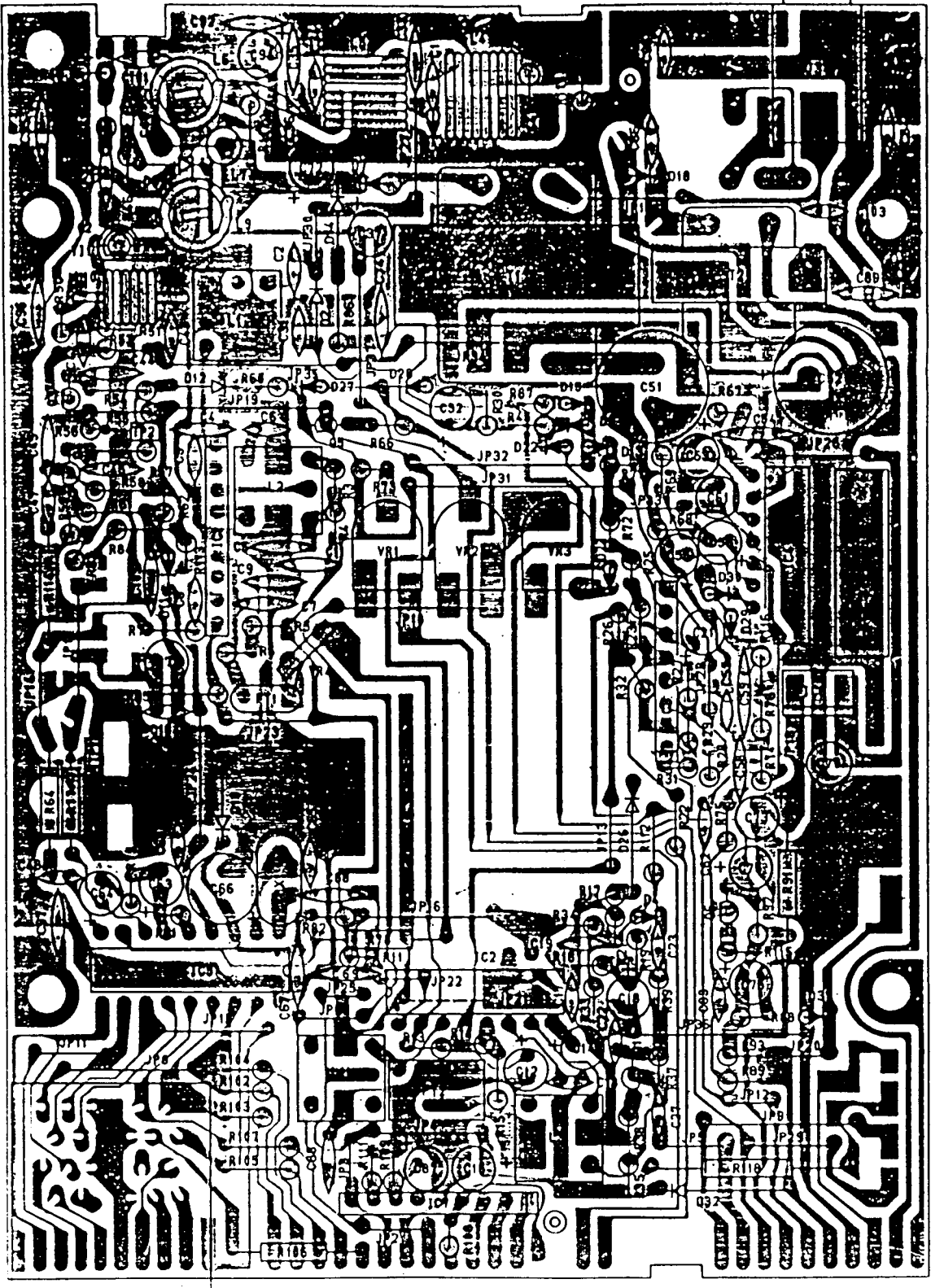
(A)



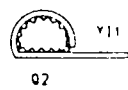


- NOTES:
1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. 1K=KILO OHM, M=MEG OHM
  2. RESISTOR VATTAGES ARE 1/8W UNLESS OTHERWISE NOTED.
  3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. (P=PICTO-MICRO FARAD)
  4. ALL CAPACITORS TEMPERATURE CHARACTERISTICS ARE SL (LESS THAN 100PFI) OR YF (MORE THAN 1000PFI) UNLESS OTHERWISE NOTED.
  5. VOLTAGE IN ( ) SHOWS TX CONDITION.
  6. VOLTAGE IN [ ] SHOWS RX CONDITION UNDER OPERATION OF EACH FUNCTION.
  7. VOLTAGE IN NO MARK SHOWS RX CONDITION.

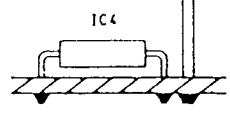
DESIGN BY	DRAWN BY	UNIDEN NO.	MODEL NO.
6.2.7.9	62.6.26	UT-322	HARRY
NAME	MINE	TITLE	
CHECK BY	APPROB BY	SCHEMATIC DIAGRAM 1/2	
1228	27.7.7	DRAWING NO.	REV
M. HARRIS	1999	E12-2677 1/2	DRAW



BOND LOCK



HEAT SINK M4-18924



BOND LOCK

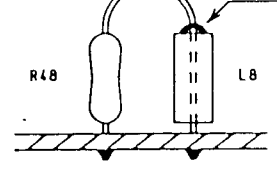


Table with components O1 to O6 and J3, JK89.

Table with components D1 to D32 and Y11, YD58.

Table with components L1 to L11, IC1 to IC7.

Table with components JP1 to JP34.

Table with components JP35, JP37, T1, T2, YR1 to YR4, X1, FT1, FT2.

Table with components C1 to C59.

Table with components C60 to C105.

Table with components R3 to R62.

Table with components R64 to R50.

Table with empty cells.

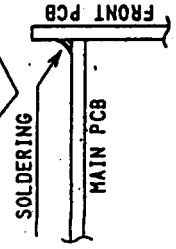
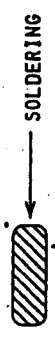
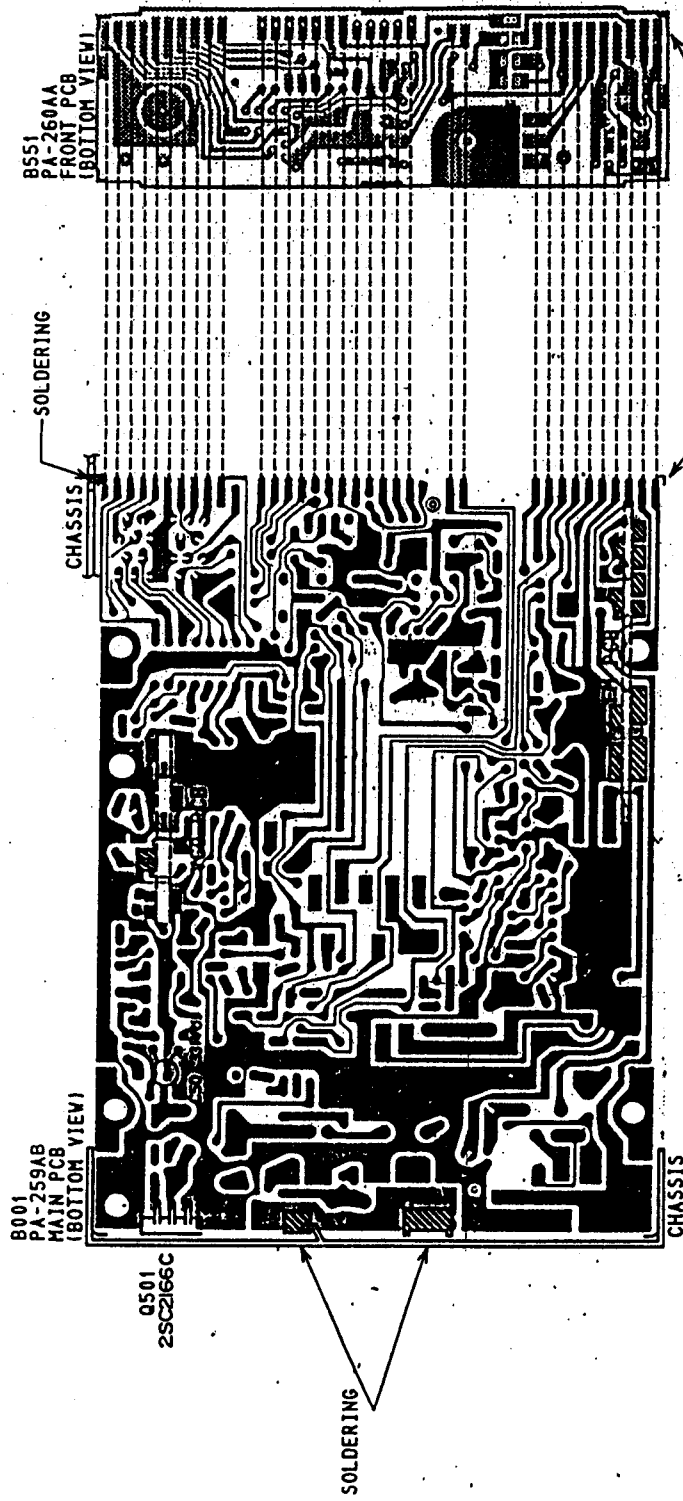
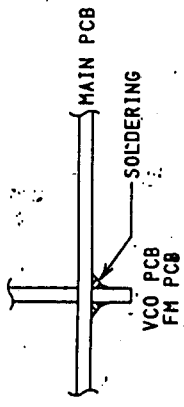
NOTES: 1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED... 2. RESISTOR VATTAGES ARE 1/8W UNLESS OTHERWISE NOTED... 3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARAD UNLESS OTHERWISE NOTED... 4. ALL CAPACITORS TEMPERATURE CHARACTERISTICS ARE YF UNLESS OTHERWISE NOTED.

Table with design and drawing information including titles like MAIN PCB and PARTS ASSEMBLY TOP VIEW.

(A)

PCB

(B)



DESIGNED BY	DRAWN BY	DATE	UNION NO.	MODEL NO.
42.7.9	62.6.26	UT-322	HARRY	
CHECKED BY	APPROVED BY	TITLE	PARTS ASSEMBLY BOTTOM VIEW	
PT.9.9	42.7.1	PA-259AB	E23-6997	
M. HARRIS			UNIDEN-CORP.	

UT-322B

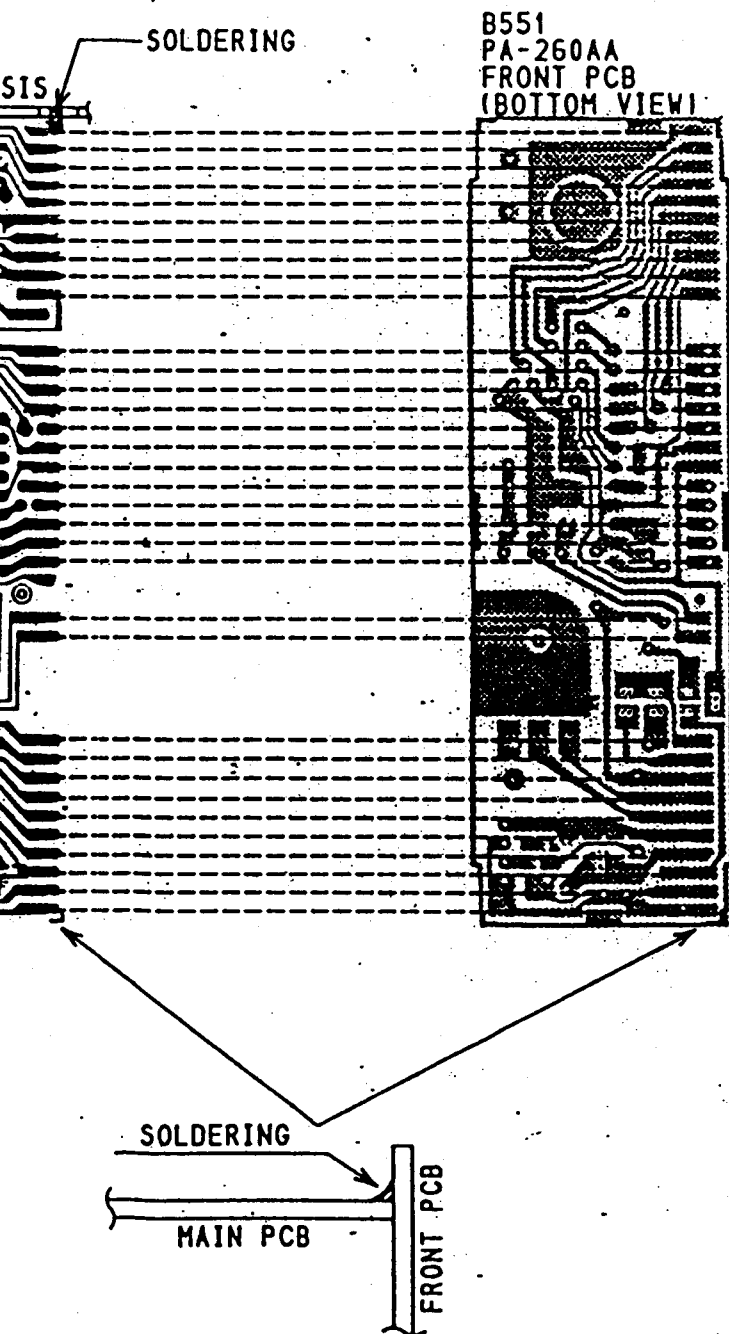
UT 86-013





PCB

(B)



UT-322B

DESIGN BY	DRAWN BY	UNIDEN NO.	MODEL NO.
62.7.9	62.6.26	UT-322	HARRY
T. NAKAMURA	MINE	TITLE	
CHECK BY	APPRO BY	PARTS ASSEMBLY BOTTOM VIEW	
87.7.9	82.7.9	DRAWING NO.	REV. MARK
M. MATSU	NAGA	E23-6997	

HT86-013

UNIDEN CORP.

C551	0.0047/YF				
C552	0.0047/YF				

R553	3.9K				
R554	1K				
R555	2.2K				
R556	1K				
R558	680				
R559	680				
R561	680				
R562	680				
R563	680				
R564	680				

R565	680				
R566	680				
R567	10K				

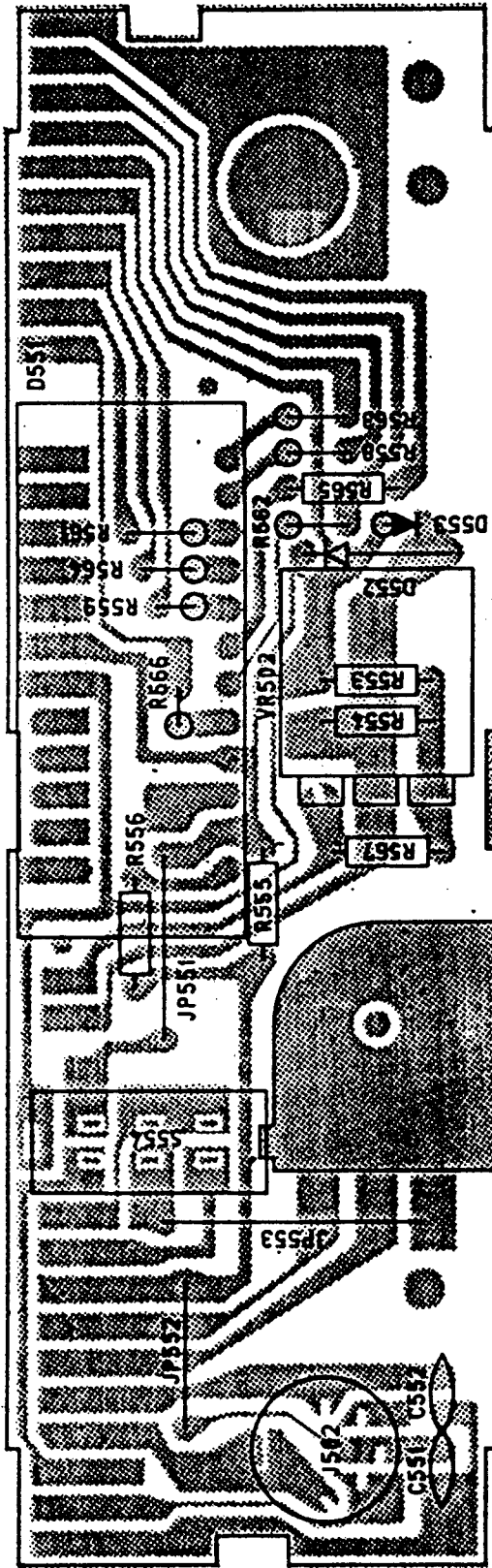
JP551	12.5				
JP552	10				
JP553	17.5				

S554	SV557				

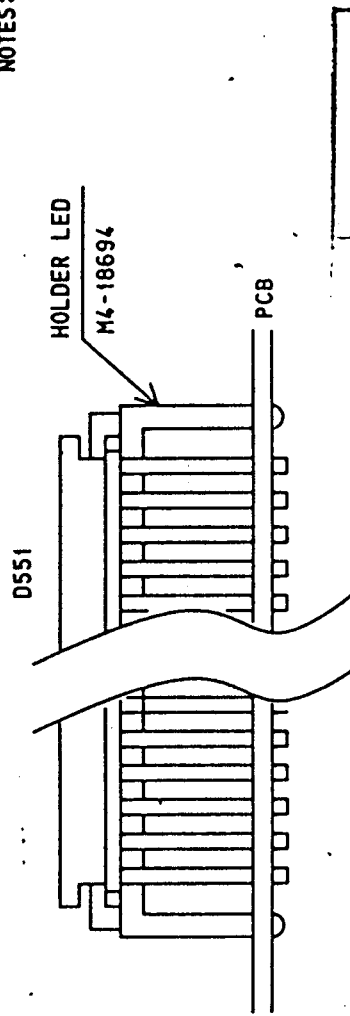
D551	LL-2041T				
D552	1S1555				
D553	1S1555				

J502	JK374				

B551 PA-260AA



- NOTES: 1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. (K-KILO OHM, M-MEG OHM)  
 2. RESISTOR WATTAGES ARE 1/6W UNLESS OTHERWISE NOTED.  
 3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. (P-MICRO-MICRO FARAD)



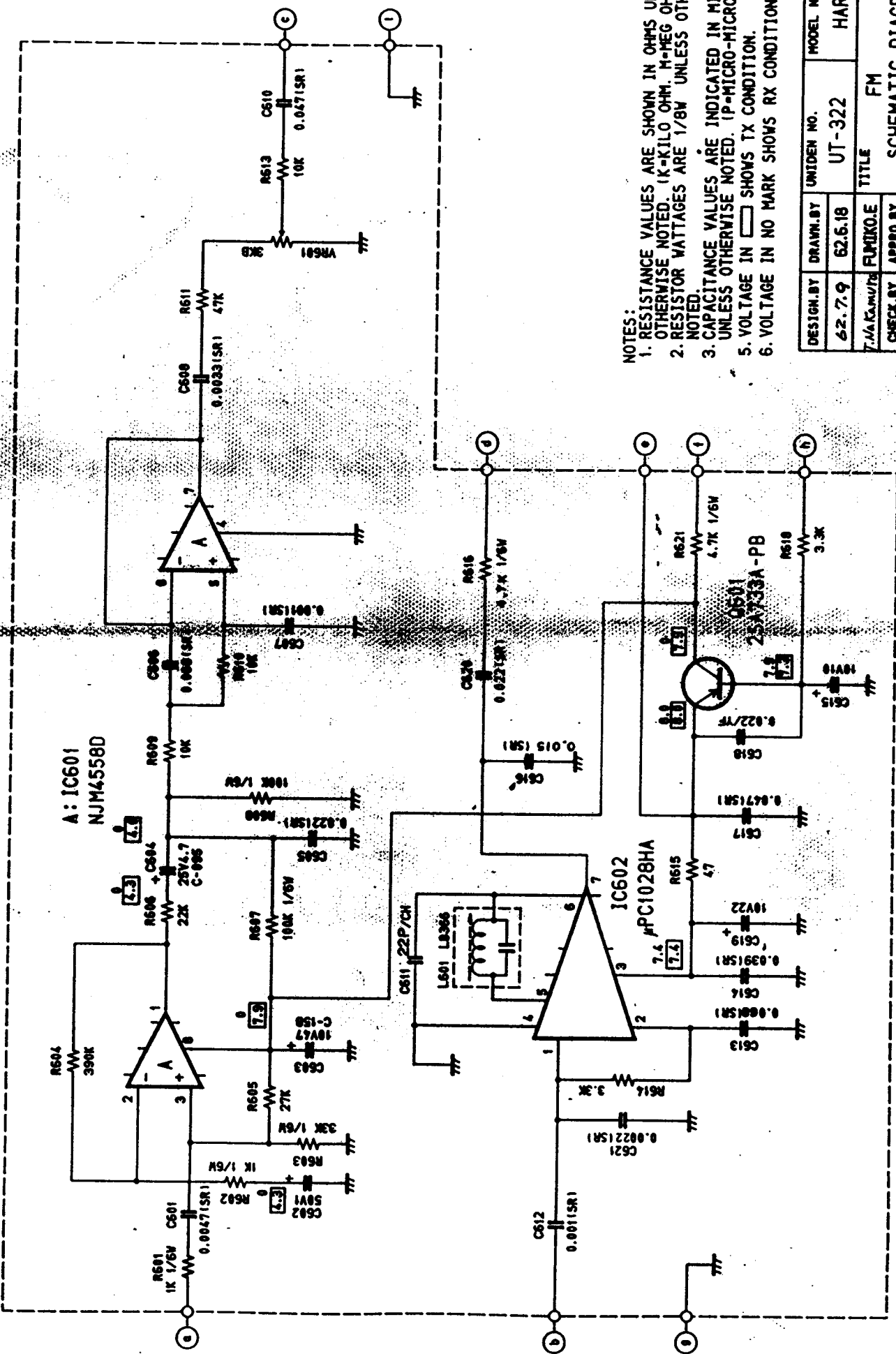
DESIGN BY	UNIDEN NO.	MODEL NO.
62.7.9	UT-322	HARRY
T.NAKAMURA	TITLE	FRONT PCB
CHECK BY	APPRO BY	PARTS ASSEMBLY TOP VIEW
87.7.9	87.7.9	
M. HARRY	NAQA	REV. MARK
		E24-6998

UT322/PA260AA::52:1

UT-322B

UNIDEN CORP.

8601 PA-261

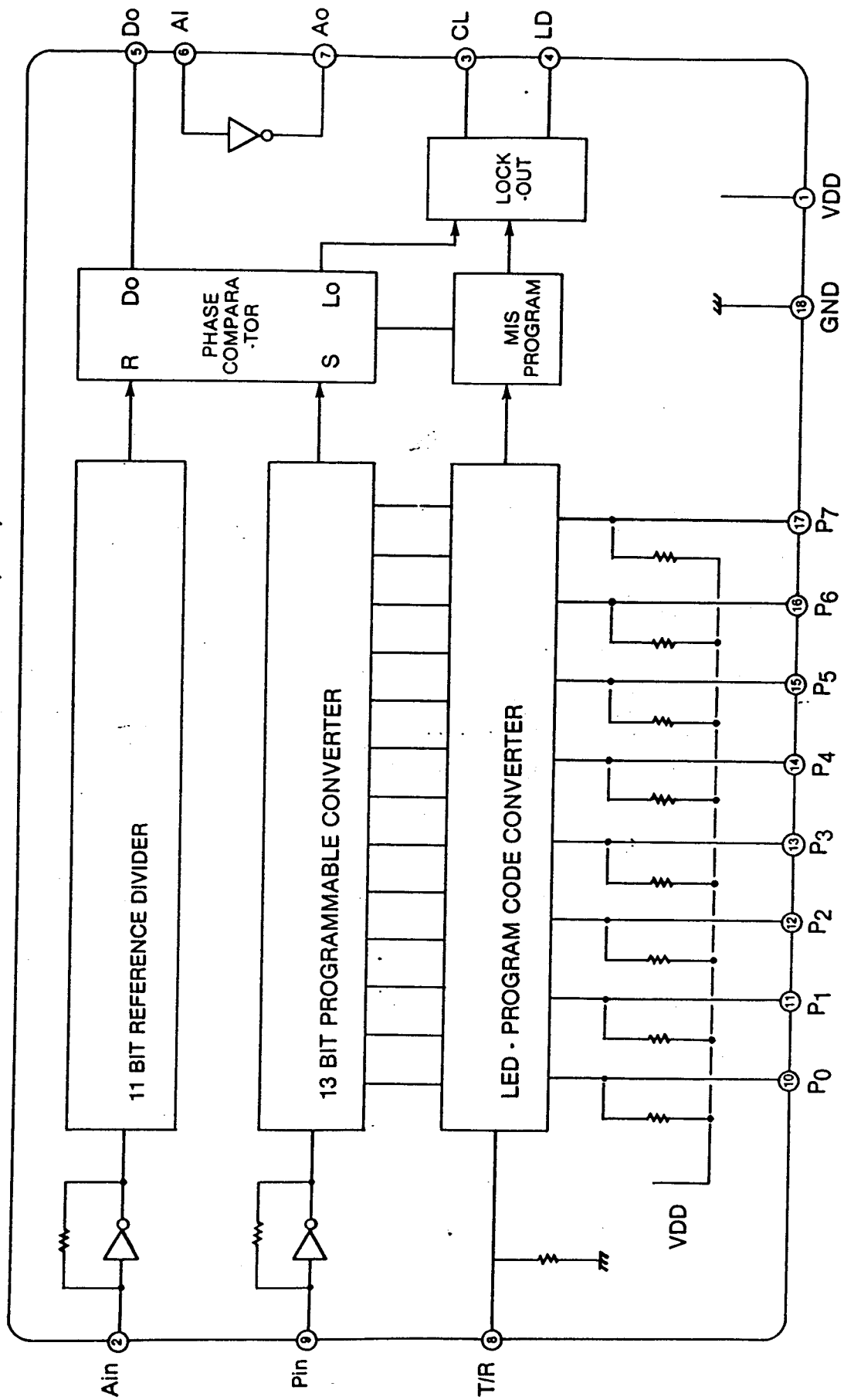


NOTES:

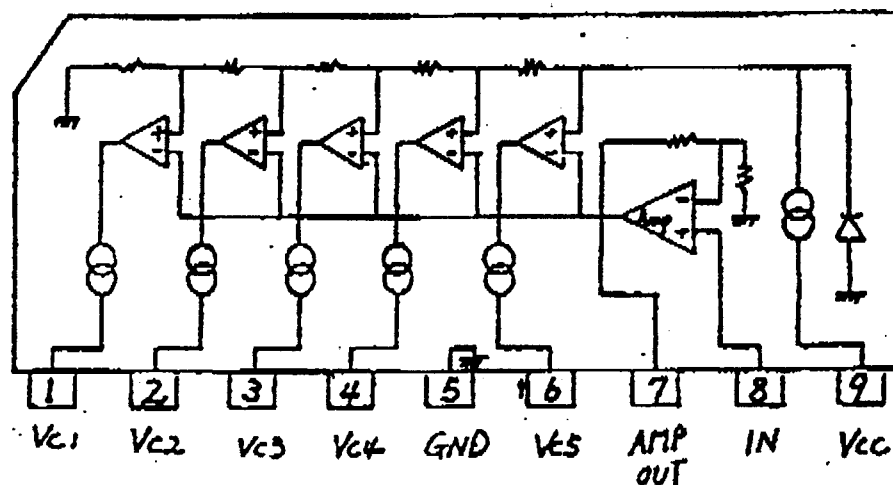
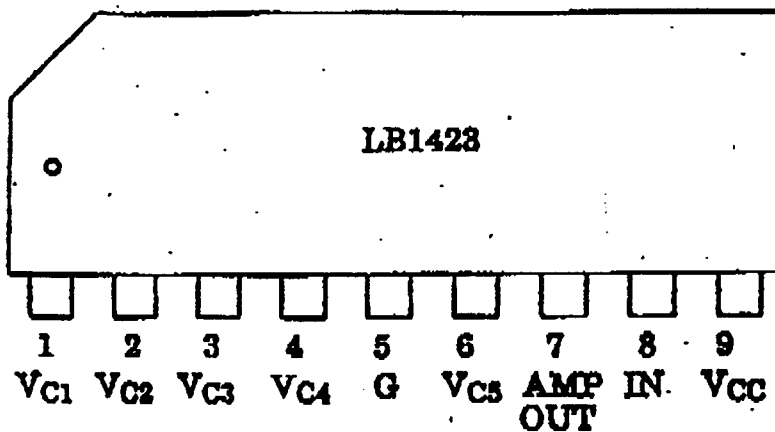
1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. 1K=KILO OHM, M=MEG OHM
2. RESISTOR WATTAGES ARE 1/8W UNLESS OTHERWISE NOTED.
3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. (P=PICO-MICRO FARAD)
5. VOLTAGE IN  $\square$  SHOWS TX CONDITION.
6. VOLTAGE IN  $\square$  SHOWS RX CONDITION.

DESIGN BY	62.7.9	DRAWN BY	62.6.18	UNIDEN NO.	UT-322	MODEL NO.	HARRY
CHECK BY	82.7.9	APPROV BY	M.A.SU	TITLE	FM	SCHEMATIC DIAGRAM 3/2	
DRAWING NO.		REV.		MARK			
E14-2678 1/2		M.A.SU					

# PLL BLOCK DIAGRAM (IC 1)

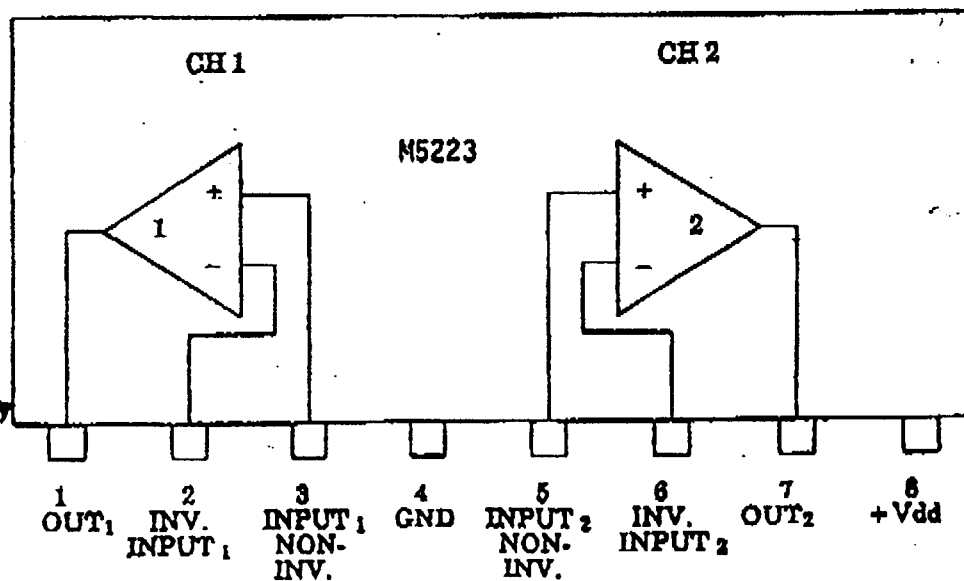


LB1423  
(LED METER DRIVE)



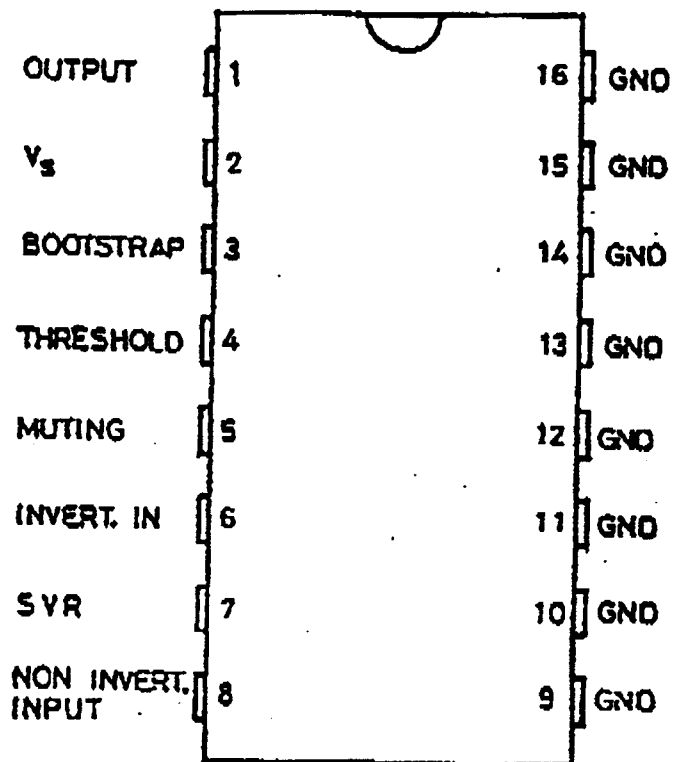
IC3

M5223  
(SQUELCH AND  
AGC AMP.)



Marking Side

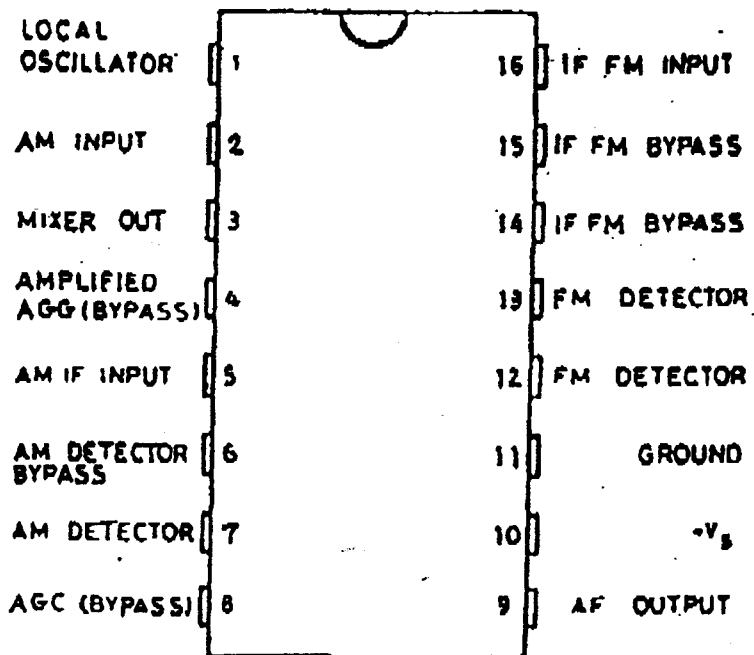
**TDA1905  
(AUDIO AMPLIFIER)**



S-2913

*IC2*

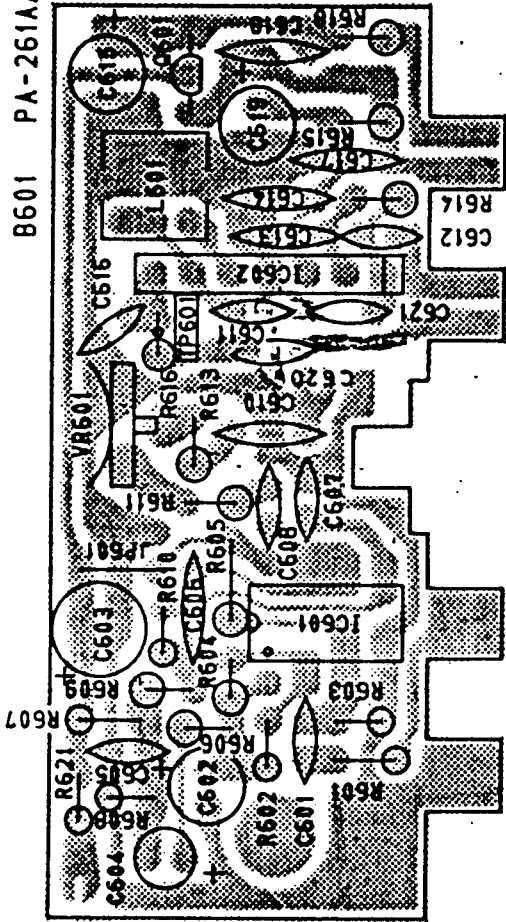
**TDA1220B**  
 (\* 2nd Mix.  
 \* 2nd IF Amp.  
 \* DET  
 \* AGC)



S-5185



B601 PA-261AA



C601	0.0047(SR)
C602	50V1
C603	10V47 C-158
C604	25V4.7 C-095
C605	0.022(SR)
C606	0.068(SR)
C607	0.001(SR)
C608	0.0033(SR)
C610	0.047(SR)
C611	22P/CH
C612	0.001(SR)
C613	0.068(SR)
C614	0.039(SR)
C615	10V10
C616	0.015(SR)
C617	0.047(SR)
C618	0.022/YF
C619	10V22
C620	0.022(SR)

C621	0.0022(SR)
IC601	NJM45580
IC602	PC1028HA
Q601	2SA733A-PB

R601	1K	1/6W
R602	1K	1/6W
R603	33K	1/6W
R604	390K	
R605	27K	
R606	22K	
R607	100K	1/6W
R608	100K	1/6W
R609	10K	
R610	10K	
R611	47K	
R613	10K	
R614	3.3K	
R615	47	
R616	4.7K	
R618	3.3K	
R621	4.7K	1/6W

JP601	5
L601	LB698
VR601	3KB RT-535

共通  
使用 UT-322B

- NOTES:
1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED, 1K-KILO OHM, M-MEG OHM, 1/8W UNLESS OTHERWISE NOTED.
  2. RESISTOR VOLTAGES ARE 1/8W UNLESS OTHERWISE NOTED.
  3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. (P-MICRO-MICRO FARAD)
  4. ALL CAPACITORS TEMPERATURE CHARACTERISTICS ARE ZF UNLESS OTHERWISE NOTED.
  5. ALL CAPACITORS TEMPERATURE CHARACTERISTICS ARE SL (LESS THAN 1000PF) OR ZF (MORE THAN 1000PF) UNLESS OTHERWISE NOTED.

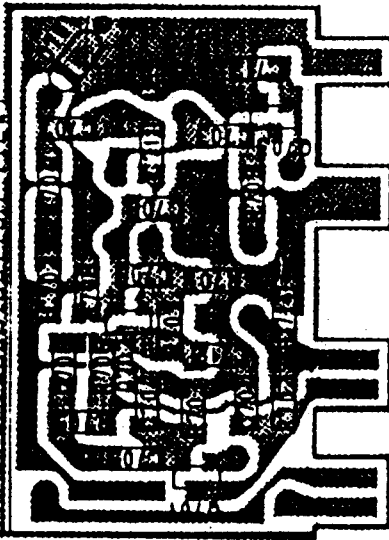
DESIGN BY	DRWN. BY	UNIDEN NO.	MODEL NO.
62.7.9	62.6.26	UT-322	HARRY
7.11.64	FUJIKO.E	TITLE	FM PCB
CHECK BY	APPRO. BY	PARTS ASS'Y TOP VIEW	
87.7.9	87.7.9	REV.	MARK
M. HATSU	NAGA	E24-6999	

UNIDEN CORP.

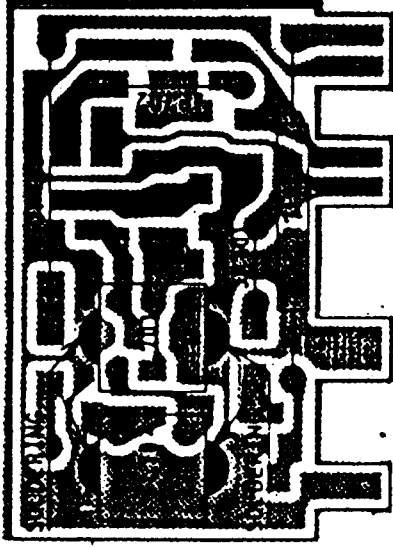
1/1988 - 006



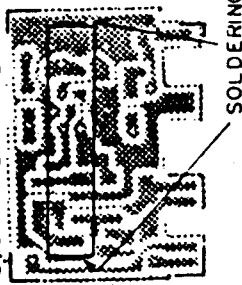
B701 PA-243AB (BOTTOM VIEW)



B701 PA-243AB (TOP VIEW)



B701 PA-243AB (BOTTOM VIEW)



SHIELD  
PLATE  
M4-16157

SOLDERING

CHIP



C701	39P/5L	
C702	0.01/Y	
C703	0.01/Y	
C704	0.01/Y	
C705	39P/5L	
C706	15P/CH	
C707	47P/UJ	
C708	100P/UJ	
C709	330P/UJ	
C711	39P/UJ	
C712	68P/5L	
C713	0.01/Y	
C714	0.01/Y	

R701	33K	
R702	100.	
R703	390	
R704	.10K	
R705	39K	
R706	100	
R707	15K	
R708	330	
R709	56K	

JP704	5	
JP702	10	
JP703	17.5	

R711	1K	

L701	LB537	
L702	LB537	

NOTES:

1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. (K-KILO OHM, M-MEG OHM)
2. RESISTOR WATTAGES ARE 1/8W UNLESS OTHERWISE NOTED.
3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. (P-MICRO-MICRO FARAD)

Q701	25C2814F5	
Q702	25C2814F5	
Q703	25C2814F5	

D701	15V73EB	

DESIGN BY	DRAWN BY	UNIDEN NO.	MODEL NO.
62.7.9		UT-322	HARRY
T. MAKIYAMA	CHECK BY	TITLE	VCO PCB
	APPRO. BY	PARTS ASSEMBLY	
87.7.9	87.7.9		
M. MATSUDA	MATSUDA	E24-7000	
		REV. MARK	

使用 15V73EB  
UT-322B

## LISTE PIECES DETACHEES HARRY

1

	REF.	D E S I G N A T I O N	QTE/MOD.
	BC003	BOBINE LD-087	1
	BC004	BOBINE LE-096 / LE-376	2
	BC007	BOBINE LE-187 / LE-377	1
*	BC011	SELF ALIMENTATION TF-083/TF374	1
*	BC017	BOBINE LC-072 / LC-218	1
	BC129	BOBINE LC-074 / LC-215	1
	BC130	BOBINE LD-168 / LD-240	1
	BR011	BOBINE LA-351 / LB-537	2
*	BR033	BOBINE LA-279 / LA-442	1
*	BR055	BOBINE LA-204 / LA-431	2
*	BR059	BOBINE LA-138 / LA-427	1
*	BR070	BOBINE LB-366 / LB-398	1
*	BT015	TRANSFORMATEUR TF-215	1
	DC008	DIODE 1N 4001-1N 4002-1N 4003	2
	DC022	DIODE 1S V73-EB/1S 2688 EA	1
*****	HM019	MICRO ORIGINE DIN/ELECTRET	1
*	HP016	HAUT-PARLEUR SP-154 / SP-169	1
***	IL051	CIRCUIT INTEGRE SM 5124A	1
*	I0004	CIRCUIT INTEGRE LB 1423	1
*	IP015	CIRCUIT INTEGRE TDA 1905	1
**	IR000	CIRCUIT INTEGRE M 5223L	1
*	IR003	CIRCUIT INTEGRE NJM4558D/BA45	1
*	IR004	CIRCUIT INTEGRE UPC 1028H	1
*	IR047	CIRCUIT INTEGRE 7808	1
*	IR055	CIRCUIT INTEGRE TDA 1220B	1
*	IR056	CIRCUIT INTEGRE LA 1185	1

## LISTE PIECES DETACHEES HARRY

2

	REF.	DESIGNATION	QTE/MOD.
**	IY301	PLATINE VCO HARRY	1
*	JX001	JACK JK-089 HP EXTERNE	1
*	JX003	JACK JK-068(JK261/JK370/JK426)	1
*	JX034	JACK JK-374	1
**	OA017	AFFICHEUR LL-2041 HARRY	1
*	PF001	FILTRE FL-048 SFE 10.7 MHZ	1
**	PF024	FILTRE FL-231	1
	QX052	VIS ETRIER PRESIDENT	2
*	QX079	ETRIER HARRY - PC 33	1
*	QX114	CORDON ALIM. HARRY	1
*	QX121	FACE AVANT HARRY	1
	QX122	BOUTON CNX JIMMY HARRY	1
	QX123	BOUTON VOL ET SQ HARRY	1
	QX136	PLAQUE AFFICHEUR HARRY	1
	QX204	CAPOT INFERIEUR JIMMY	1
**	QX205	CAPOT SUPERIEUR JIMMY	1
*	RV077	POTENTIOM.RV-650 SQUELCH	1
**	RV078	POTENTIOM.RV-651 VOL/M/A 50KA	1
***	SS031	COMMUTATEUR SR-303/CANAUX	1
	SX072	COMMUTATEUR SW-557/AM.FM	1
*	TH001	TRANSISTOR 2SC 2166	1
	TX001	TRANSISTOR 2SA 733	1
	TX002	TRANSISTOR 2SC 945	2
	TX004	TRANSISTOR 2SC 1675	1
*	TX010	TRANSISTOR 2SC 2086	1
	TX015	TRANSISTOR 2SC 941	1

## LISTE PIECES DETACHEES HARRY

3

	REF.	DESIGNATION	QTE/MOD.
	TX300	TRANSISTOR 2SC 2814 (CMS)	3
****	XX001	LOT MANUELS MAINT. PRESIDENT	1
*	XX040	MANUEL DE MAINTENANCE HARRY	1