

uniden®

SERVICE MANUAL

HARRY

ALIGNMENT PROCEDURE

Alignment of P.L.L.

1. Test Equipment Required

DC Power Supply : 8V(DC)

DC voltmeter

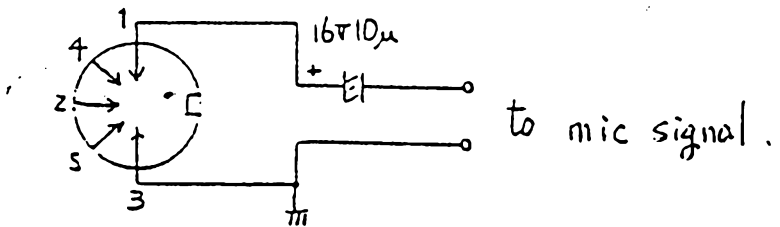
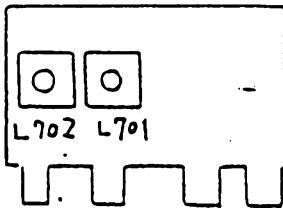
Oscillator

: 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, ± 15 kHz dev.	L601	Connect a DC voltmeter to between TP601 and GND. Adjust L601 for 4.5 ± 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

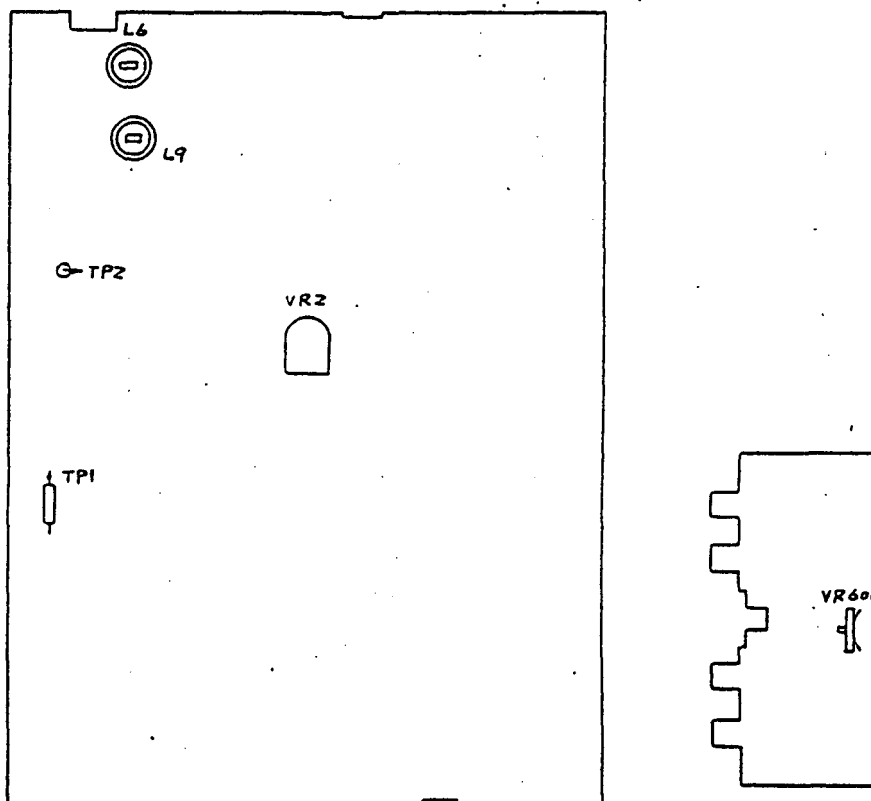
Deviation meter

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 ± 3 kHz 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

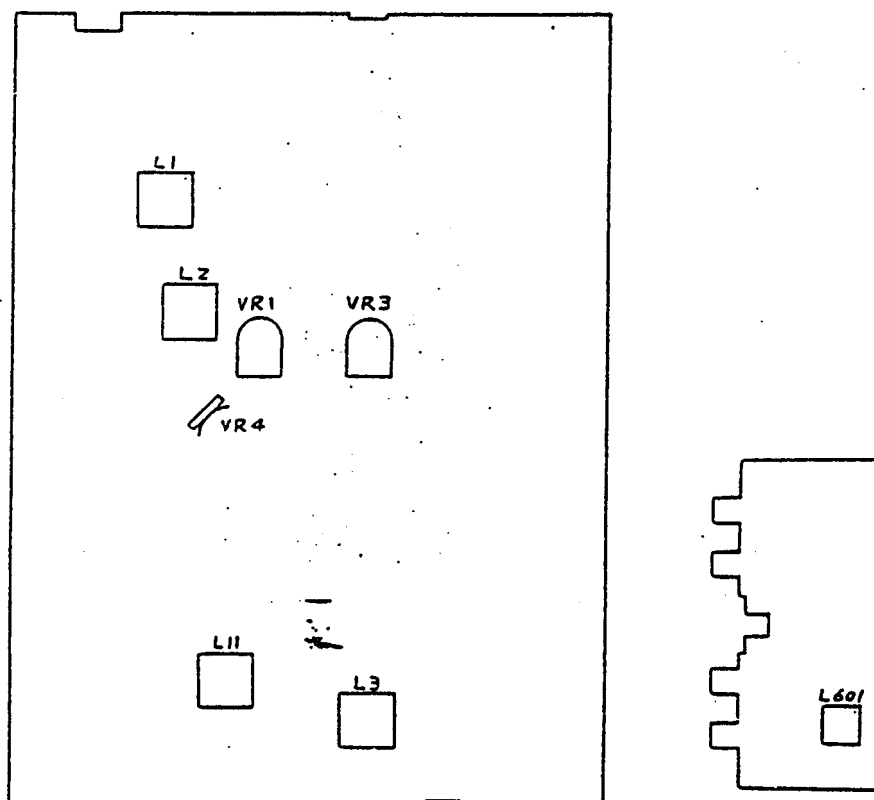
Frequency : 27.185 MHz
Attenuator : 0dB = 0.5μV

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	TDA 1220B	1	2.8		2.8
		2	1.4		1.4
		3	8		8
		4	1.4		1.4
		5	1.4		1.4
		6	2.4		2.4
		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	20 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)
				SQ MAX	
4	TDA 1905	1	7	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	0	0	2.6
		2	3	3	3
		3	6	6	6
		4	5	5	5
		5	3	3	3
		6	3	3	3
		7	3	3	3.6
		8	0.2	0.2	5.8
		9	2.9	2.9	2.9
		10	0.6	0.6	0.6
		11	0.6	0.6	0.6
		12	0.6	0.6	0.6
		13	6	6	6
		14	6.4	6.4	6.4
		15	0	0	0
		16	6.4	6.4	6.4
		17	6.4	6.4	6.4
		18	0	0	0
6	L7808 CV	1	13.6	13.6	13.6
		2	0	0	0
		3	8	8	8
7	LB 1423	1	12	12	12
		2	12	12	12
		3	12	12	12
		4	12	12	12
		5	0	0	0
		6	0.2	0.2	0.2
		7	0.2	0.2	0.2
		8	0.2	0.2	0.2
		9	8	8	8

DESIGN BY 62.7.9	DRAWN BY	UNDEX NO. UT-322	MODEL NO. HARRY
T. NAKAMURA		TITLE SCHEMATIC DIAGRAM (VOLTAGE CHART) 1/2	
CHECK BY 57.7.9	APPROV. BY M. MATSU	DRAWING NO. E13-2677 3/2	REV MARK

UT-322B

HT 99-00

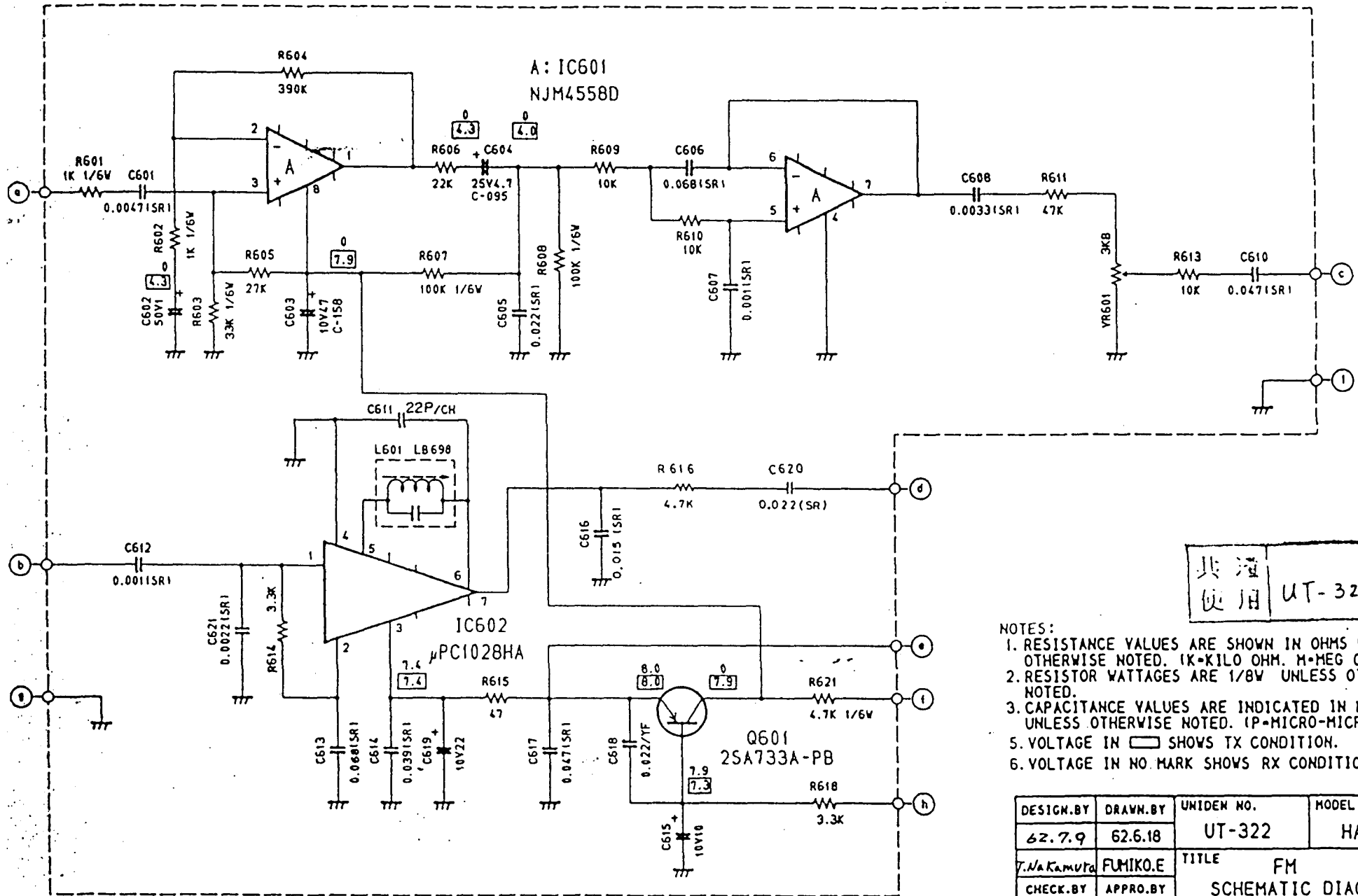
IC VOLTAGE CHART

IC NO.	IC NAME	IC PIN NO.	R X (V)	T X (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	μPC1028HA	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) 2/2	
87.7.9	87.7.9	DRAWING NO.	REV. MARK
M. MATSU	NAGA	E14-2678 3/2	

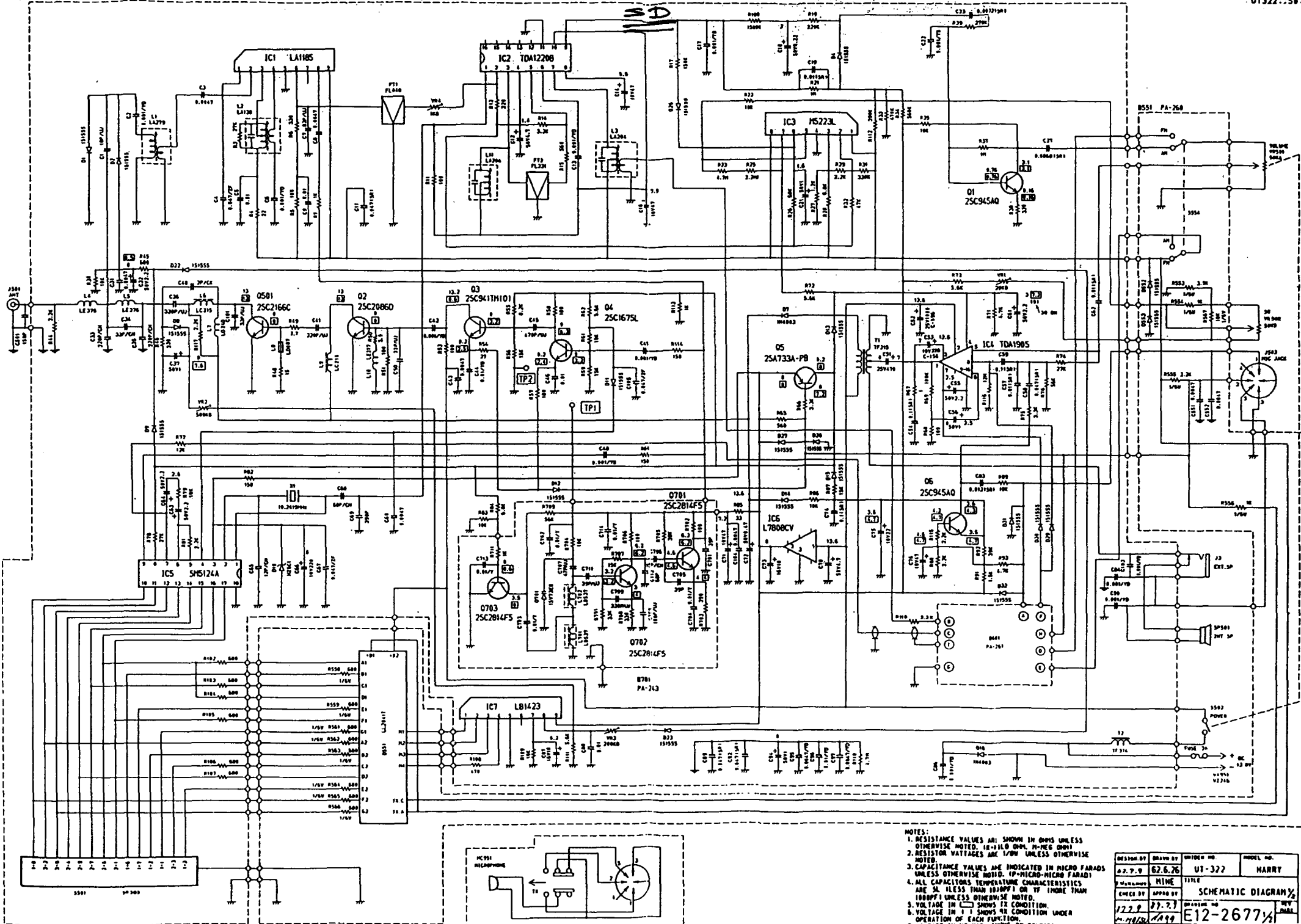
B601 PA-261



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 WATTAGES 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.

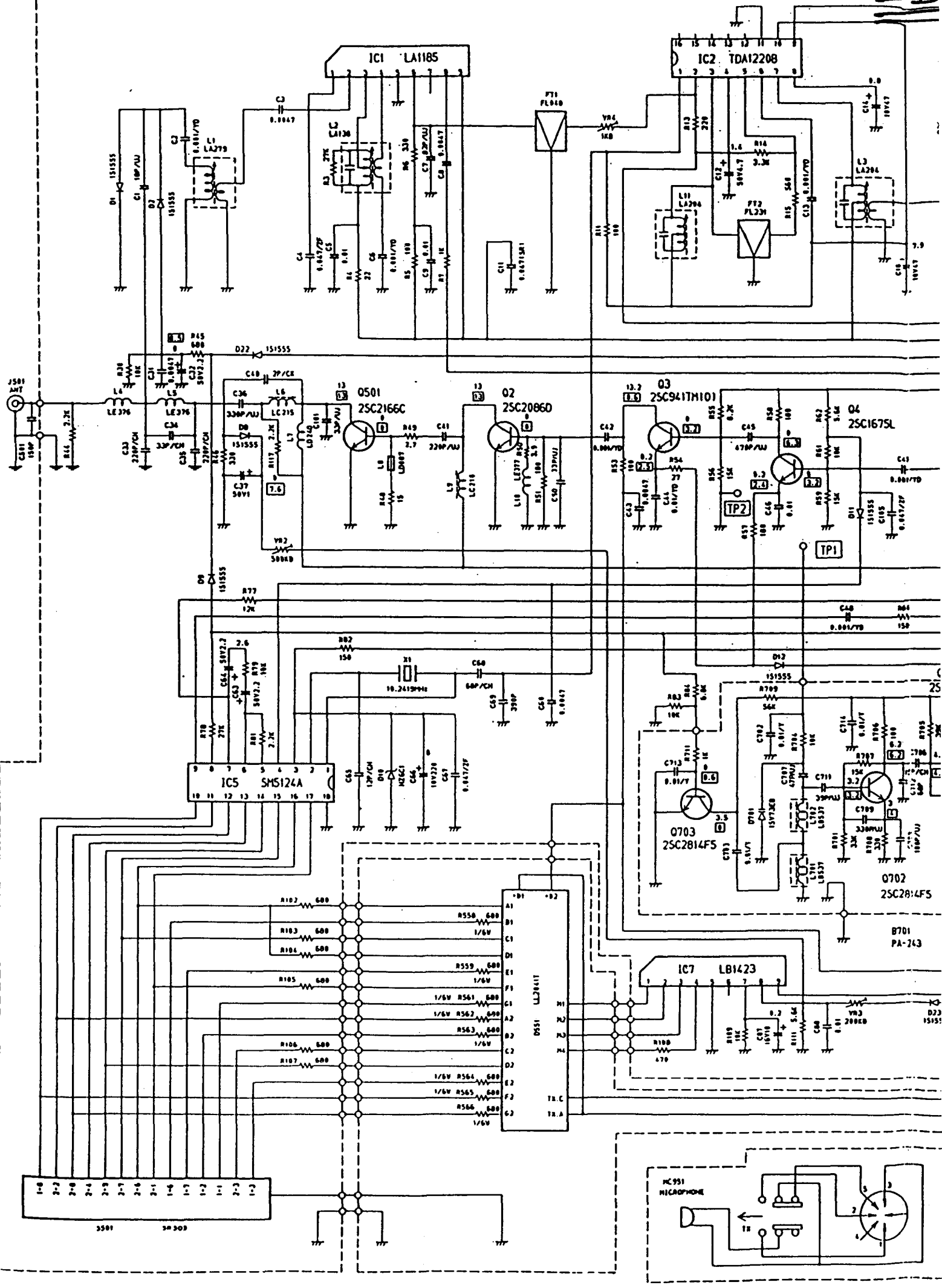
DESIGN.BY	DRAWN.BY	UNITDEN NO.	MODEL NO.
62.7.9	62.6.18	UT-322	HARRY
7.NaKamura	FUMIKO.E	TITLE FM	
CHECK.BY	APPRO.BY	SCHEMATIC DIAGRAM 3/2	
82.7.9	77.7.9	DRAWING NO.	REV. MARK
H.HAISU	YA99	E14-2678 1/2	

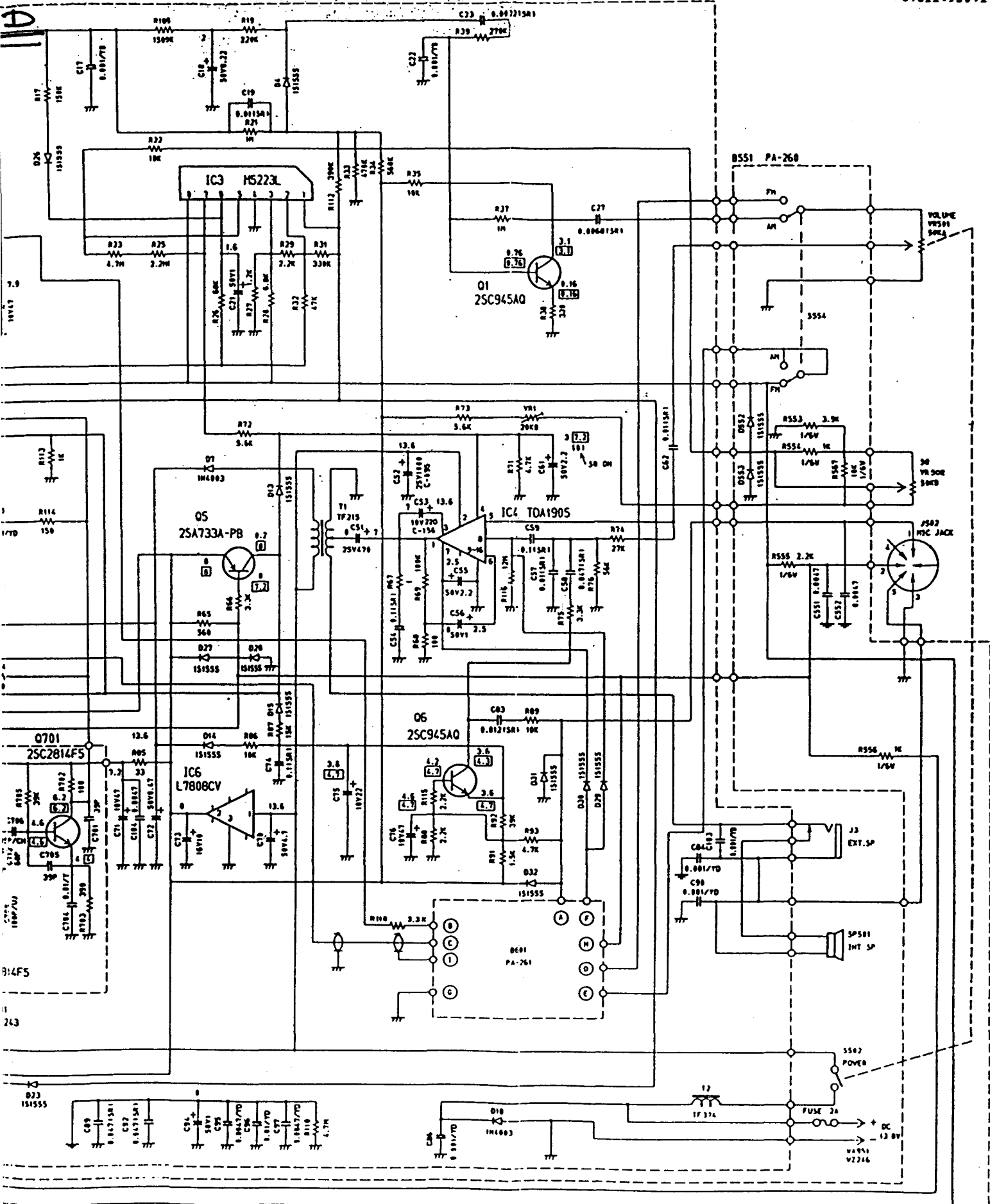


- NOTES:
1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. IN-1110 OHM, 1/4W, 500M
 2. RESISTOR RATINGS ARE 1/4W UNLESS OTHERWISE NOTED.
 3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. IF MICRO-NICHO FARAD ARE SA (LESS THAN 100PF) OR TF (MORE THAN 1000PF) UNLESS OTHERWISE NOTED.
 4. ALL CAPACITORS TEMPERATURE CHARACTERISTICS ARE SA (LESS THAN 100PF) OR TF (MORE THAN 1000PF) UNLESS OTHERWISE NOTED.
 5. VOLTAGE IN () SHOWS TX CONDITION.
 6. VOLTAGE IN [] SHOWS RX CONDITION UNDER OPERATION OF EACH FUNCTION.

DESIGN BY	62.6.76	UT-322	MODEL NO.
APPROVED BY	H.M.E.		HARRY
DATE	12.2.8	REV. 1	
BY	12.2.8	REV. 1	
SCHEMATIC DIAGRAM			REV. 1
E12-2677			

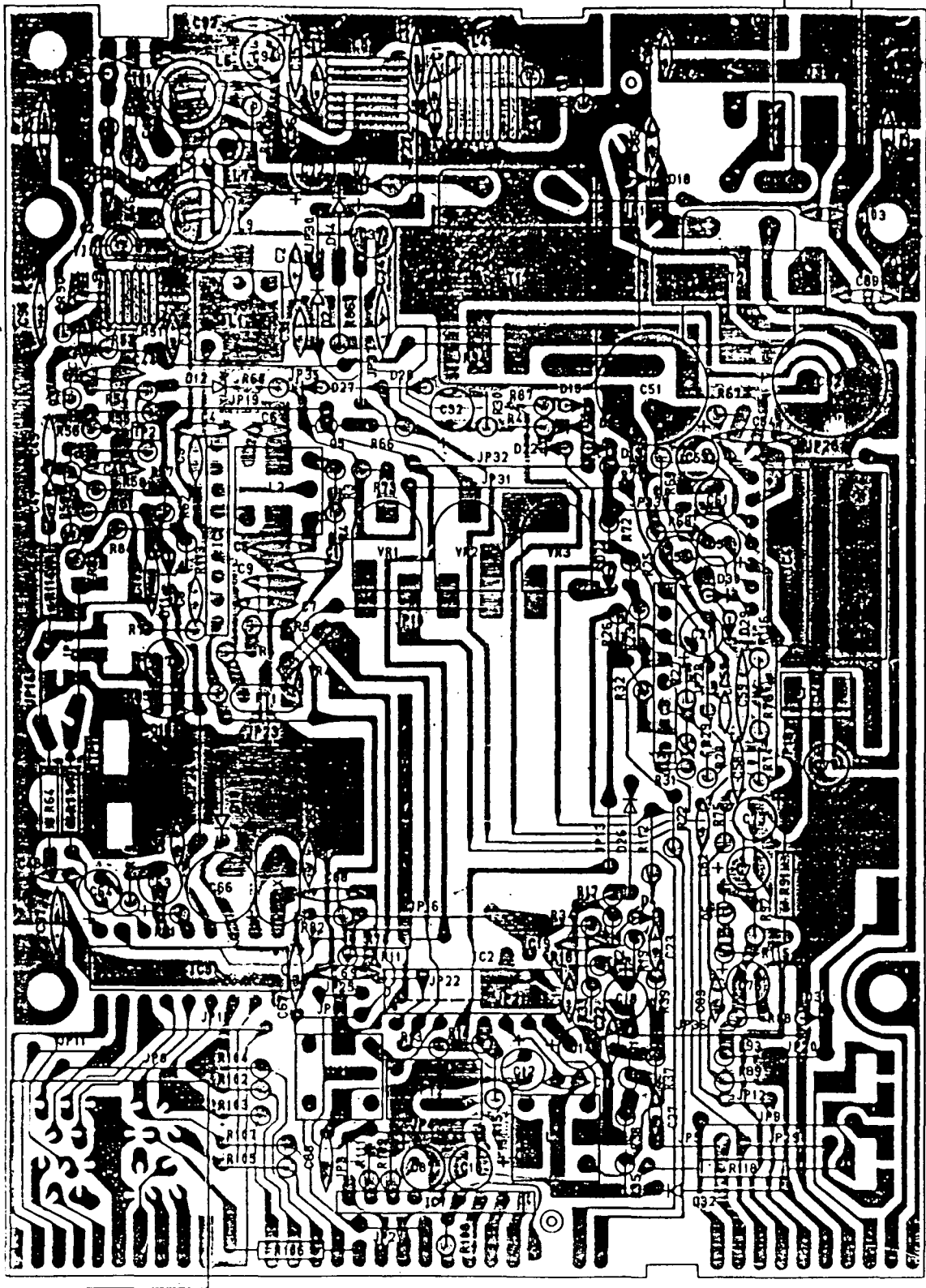
AM



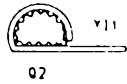


- NOTES:
1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. 1K=1,000 OHM. M=MEG OHM.
 2. RESISTOR WATTAGES ARE 1/8W UNLESS OTHERWISE NOTED.
 3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. (P=PICO-FARAD)
 4. ALL CAPACITORS TEMPERATURE CHARACTERISTICS ARE S1 UNLESS THAN 100PPM OR YF (MORE THAN 1000PPM) UNLESS OTHERWISE NOTED.
 5. VOLTAGE IN \square SHOWS TX CONDITION.
 6. VOLTAGE IN \square SHOWS RX CONDITION UNDER OPERATION OF EACH FUNCTION.
 7. VOLTAGE IN NO MARK SHOWS RX CONDITION.

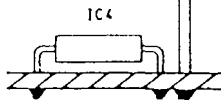
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62.7.9	62.6.26	UT-322	HARRY
NAME	MINE	TITLE	
CHECK BY	APPRO BY	SCHEMATIC DIAGRAM 1/2	
1229	77.7.7	DRAWING NO.	REV.
M. HARRIS	1/99	E12-2677 1/2	DATE



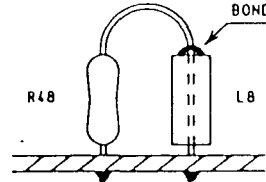
BOND LOCK

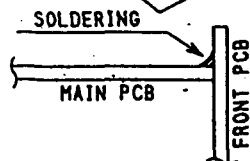
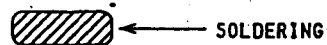
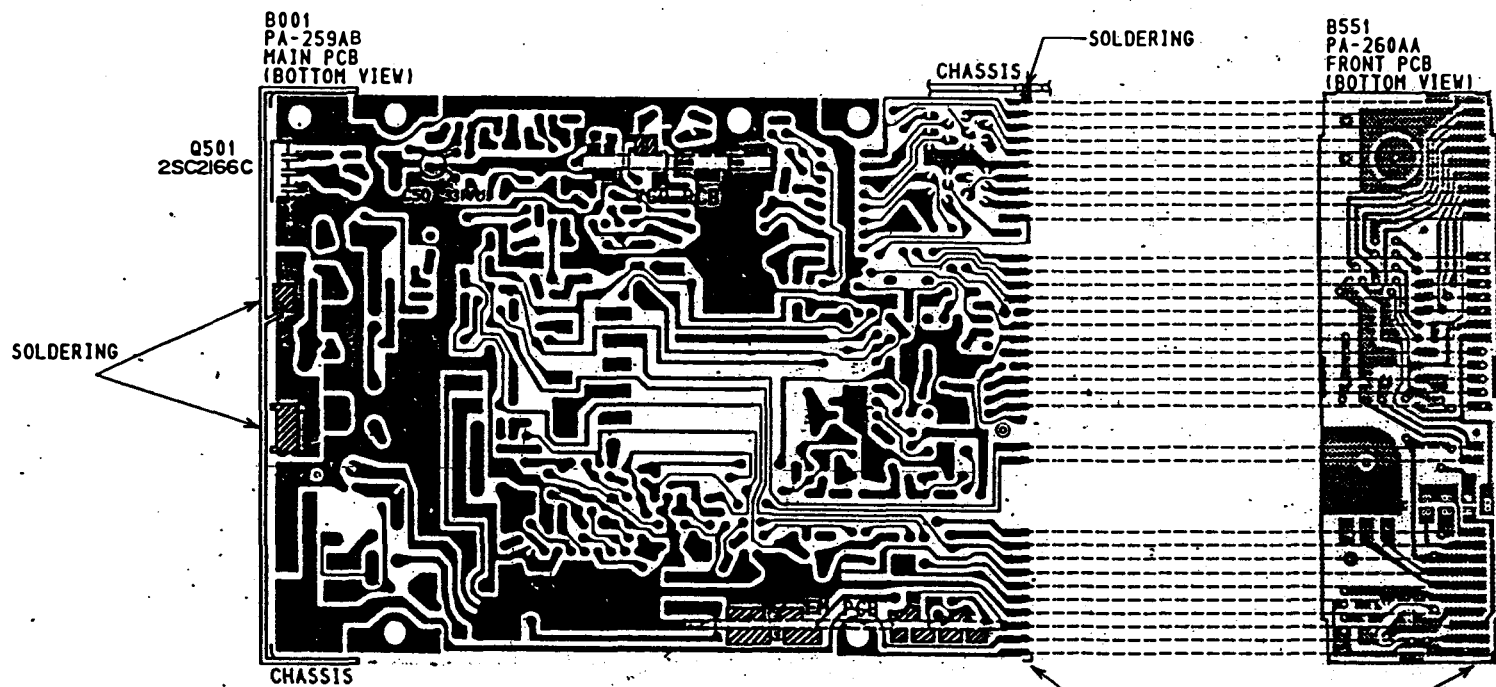
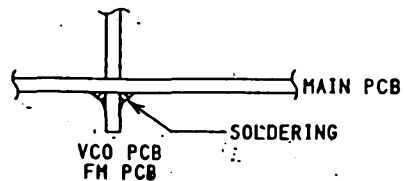


HEAT SINK M4-18924



BOND LOCK



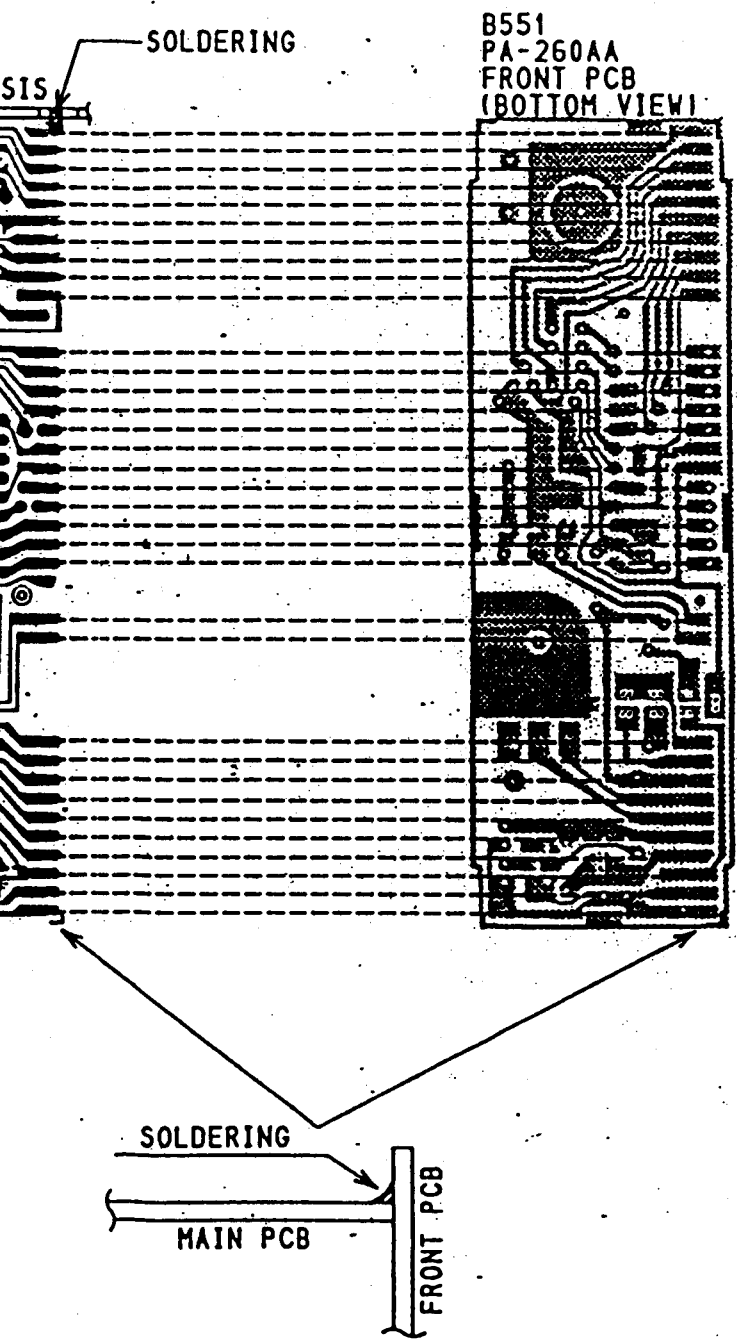


UT-322B

DESIGN BY	DRAWN BY	UNIDEN NO.	MODEL NO.
42.7.9	62.6.26	UT-322	HARRY
CHECK BY	APPRO BY	TITLE	
		PARTS ASSEMBLY BOTTOM VIEW	
42.7.9	62.6.26	DRAWING NO.	REV.
M. MATSU	NAGA	E23-6997	

HT86-013

UNIDEN CORP.



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

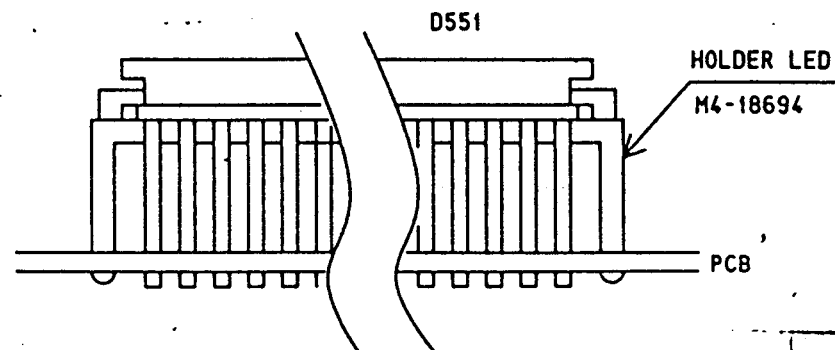
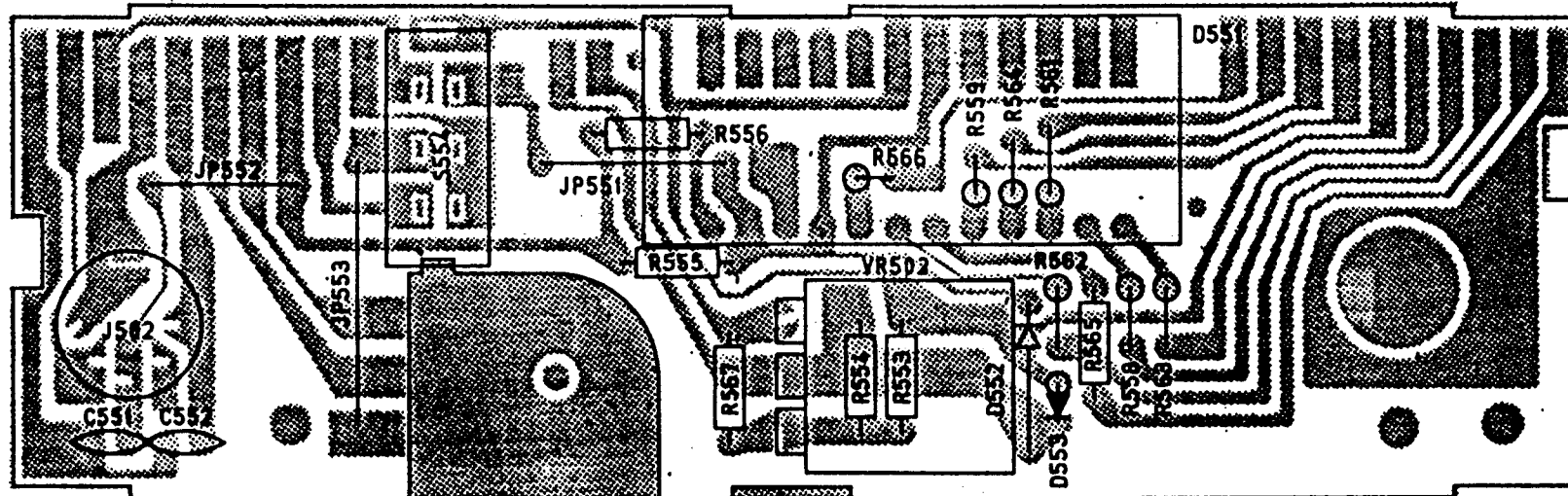
R553	3.9K
R554	1K
R555	2.2K
R556	1K
R558	680
R559	680
R561	680
R562	680
R563	680
R564	680

R565	680
R566	680
R567	10K

JP551	12.5
JP552	10
JP553	17.5
D551	LL-2041T
D552	1S1555
D553	1S1555

S554	SW557
VR502	RV650 50KB
J502	JK374

B551 PA-260AA



- NOTES: 1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. 1K-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)

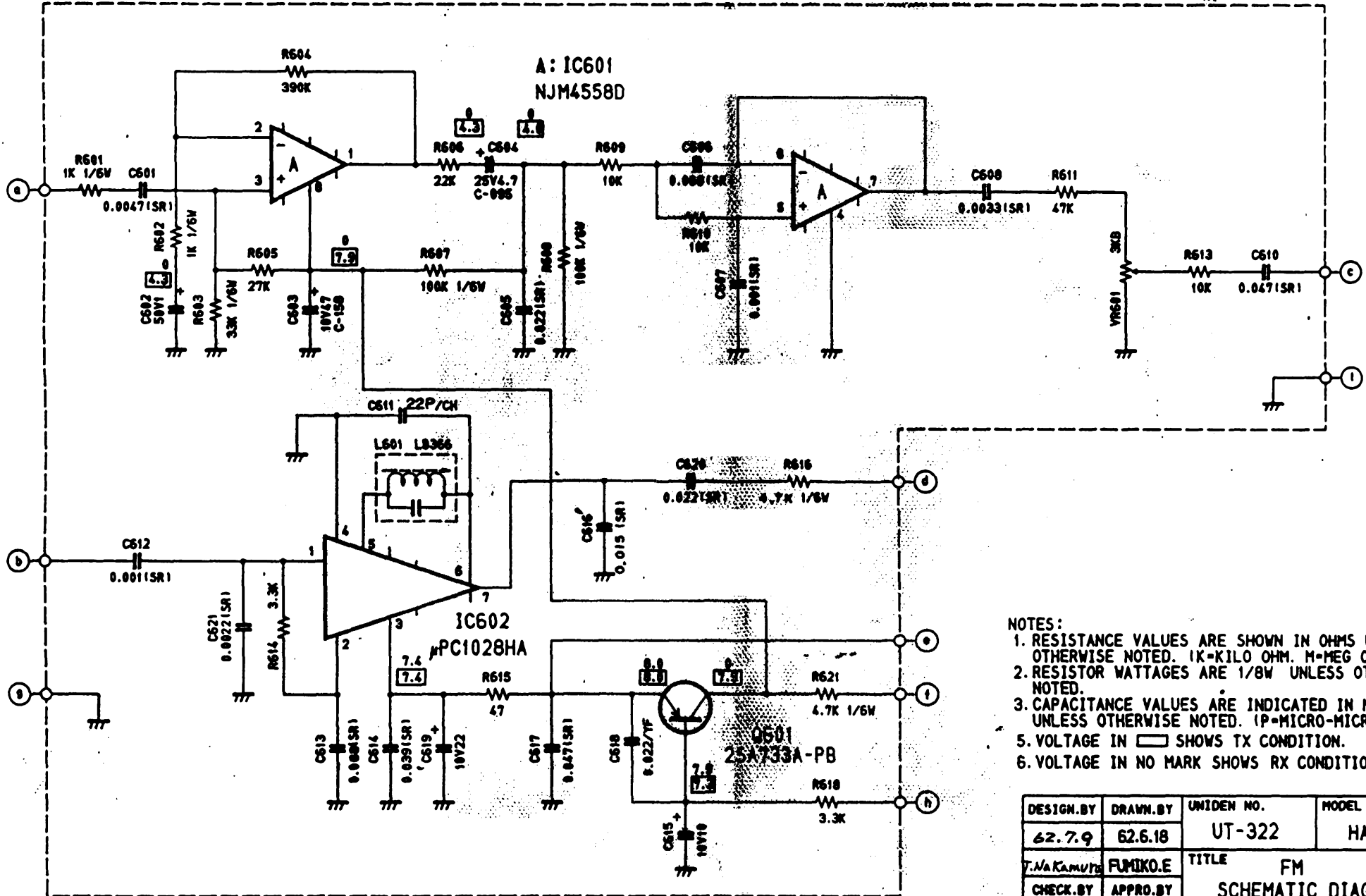
DESIGN.BY	DRAWN.BY	UNIDEN NO.	MODEL NO.
62.7.9	62.6.26	UT-322	HARRY
T.NAKAMURA	FUMIKO.E	TITLE FRONT PCB	
CHECK.BY	APPRO.BY	PARTS ASSEMBLY TOP VIEW -	
87.7.9	87.7.9	E24-6998	REV. MARK
M. MATSU	NAGA		

UT322/PA260AA::52:1

UT-322B

UNIDEN CORP.

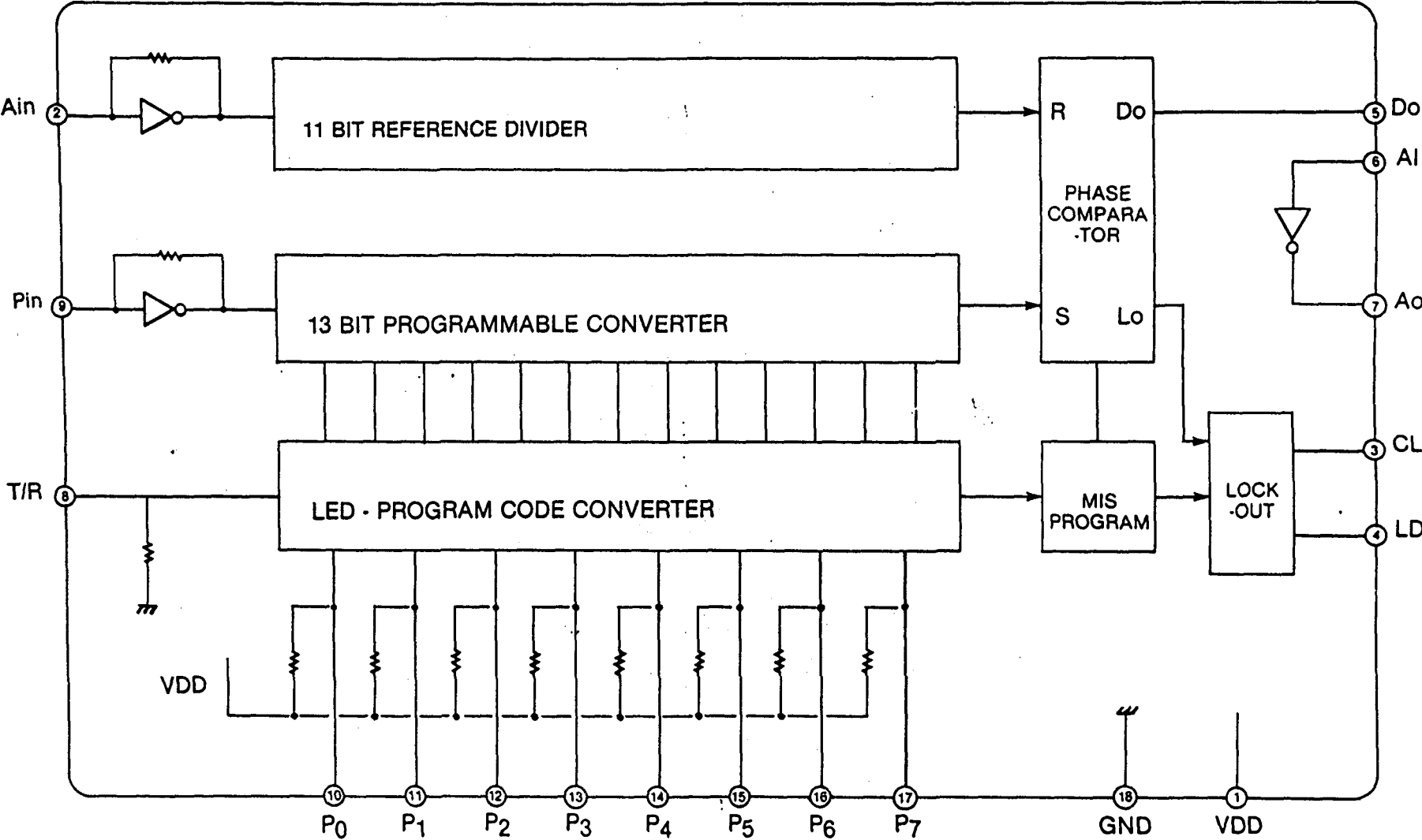
B601 PA-261



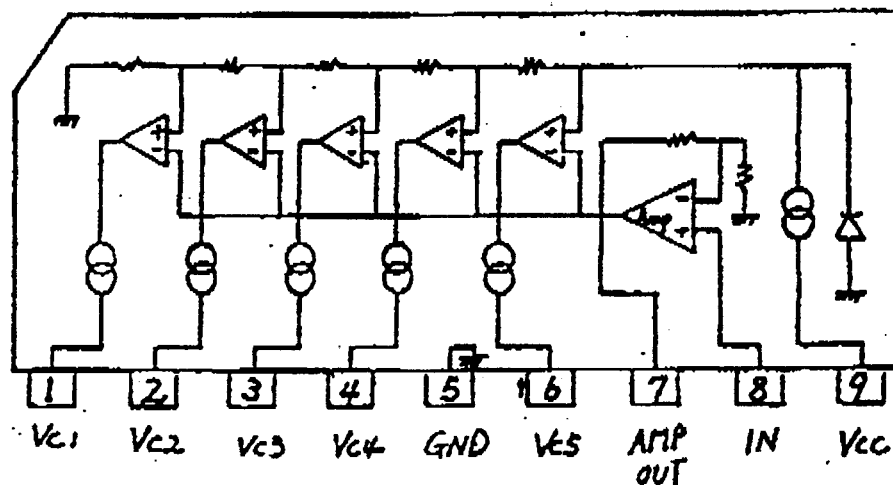
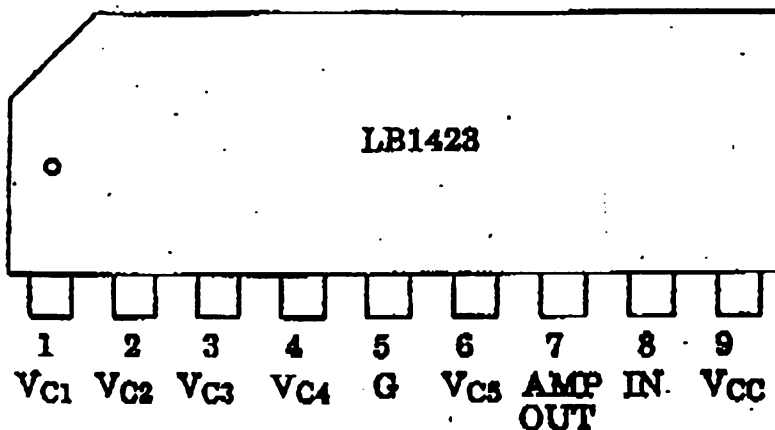
- NOTES:
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 2. RESISTOR WATTAGES ARE 1/8W UNLESS OTHERWISE NOTED.
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 4. VOLTAGE IN SHOWS TX CONDITION.
 5. VOLTAGE IN NO MARK SHOWS RX CONDITION.

DESIGN BY	DRAWN BY	UNIDEN NO.	MODEL NO.
62.7.9	62.6.18	UT-322	HARRY
T. NAKAMOTO	FUMIKO.E	TITLE FM	
CHECK BY	APPRO BY	SCHEMATIC DIAGRAM 3/2	
82.7.9	87.7.9	DRAWING NO.	REV. MARK
M. MATSU	NA99	E14-2678 1/2	

PLL BLOCK DIAGRAM (IC 1)



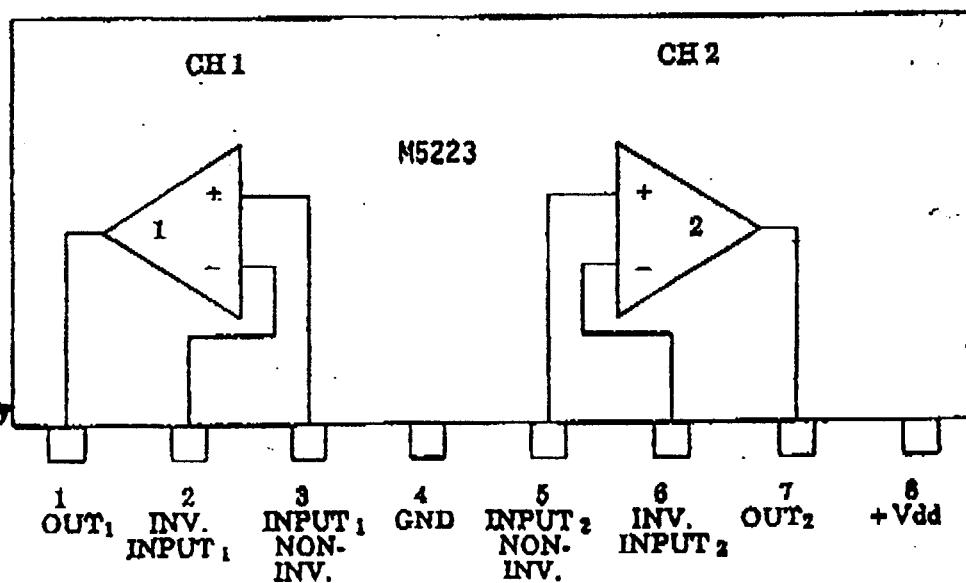
LB1423
(LED METER DRIVE)



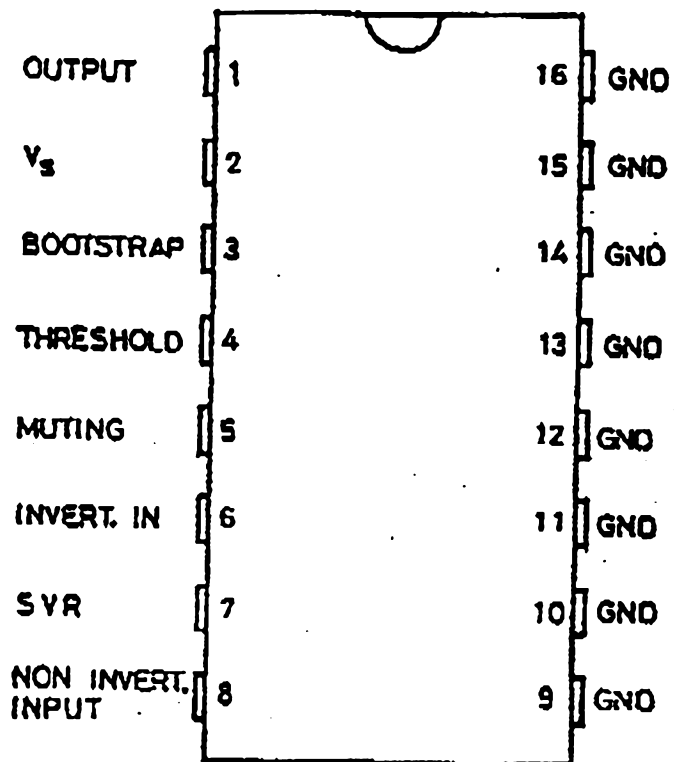
IC3

M5223
(SQUELCH AND
AGC AMP.)

Marking Side



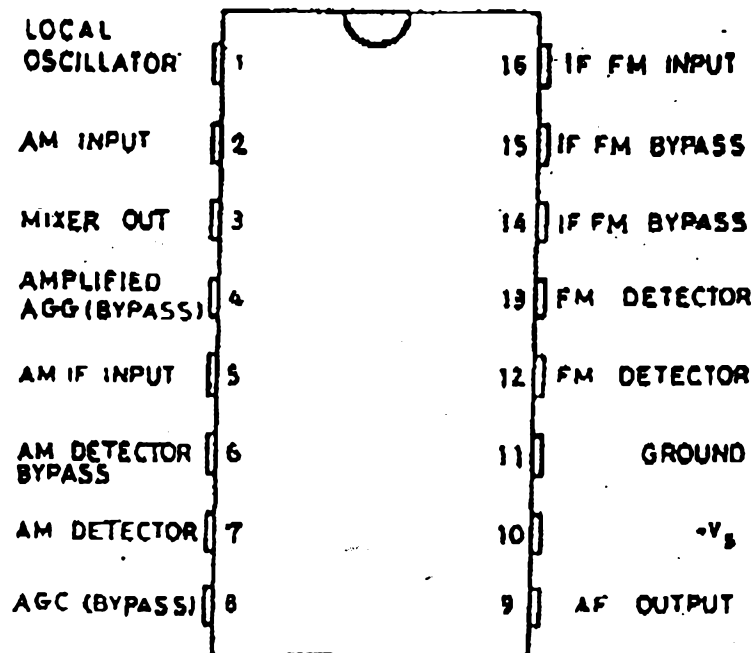
**TDA1905
(AUDIO AMPLIFIER)**



S-2913

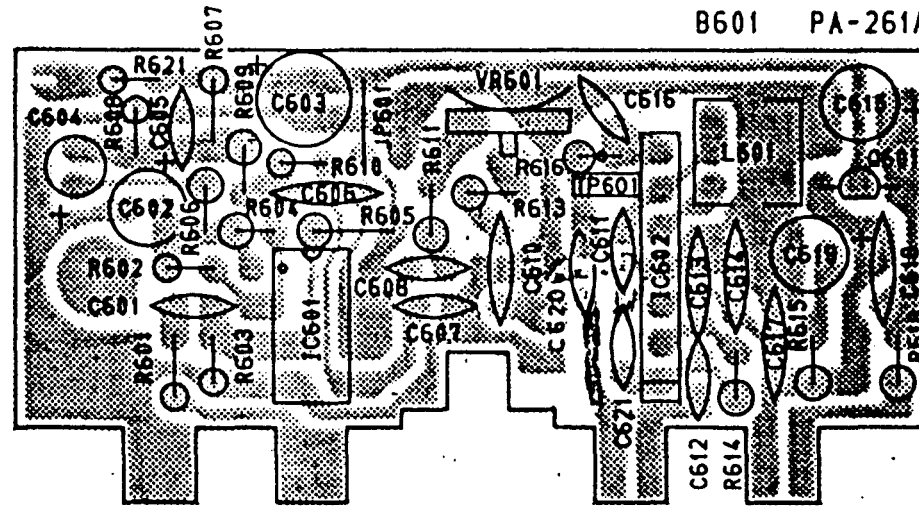
IC2

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



S-3185

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	NJM4558D
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:

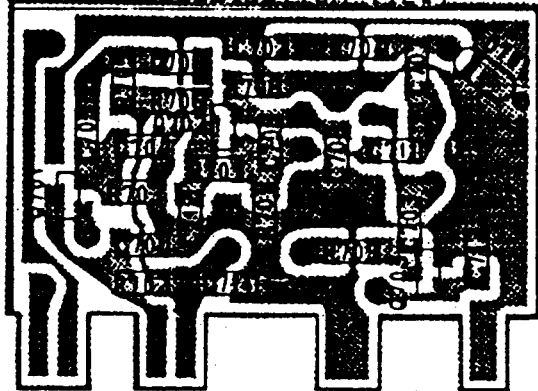
1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. (K-KILO OHM, M-MEG OHM)
2. RESISTOR WATTAGES ARE 1/8W UNLESS OTHERWISE NOTED.
3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. (P-MICRO-MICRO FARAD)
4. ALL CAPACITORS TEMPERATURE CHARACTERISTICS ARE ZF UNLESS OTHERWISE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

DESIGN.BY	DRAWN.BY	UNIDEN NO.	MODEL NO.
62.7.9	62.6.26	UT-322	HARRY
T.Nakamura	FUMIKO.E.	TITLE FM PCB	
CHECK.BY	APPRO.BY	PARTS ASS'Y TOP VIEW	
87.7.9	87.7.9	E24-6999	
M.MATSU	NAGA	REV. MARK	

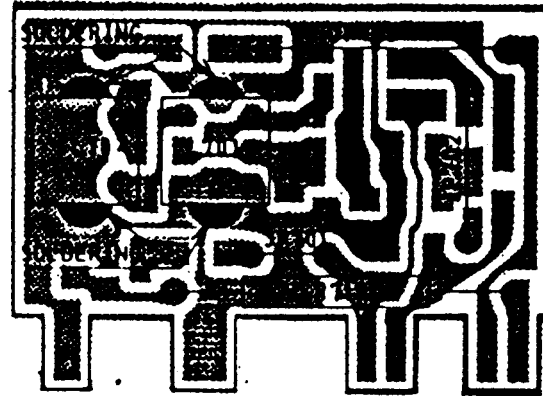
1P88 - 006

UNIDEN CORP.

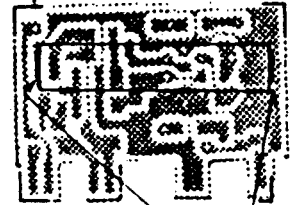
B701 PA-243AB (BOTTOM VIEW)



B701 PA-243AB (TOP VIEW)



B701 PA-243AB (BOTTOM VIEW)



SHIELD
PLATE
M4-16157

SOLDERING

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

Q701	25C2814F5
Q702	25C2814F5
Q703	25C2814F5

O701	15V73EB



CHIP

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-MICRO-MICRO FARAD)

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

共通
使用 UT-322B

HP88-009

UNIDEN CORP.

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/CANAU	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
****	LOT MANUELS MAINT. PRESIDENT	1
*	MANUEL DE MAINTENANCE HARRY	1