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**Uniden PRO-510e Service Manual**

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**uniden®**

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***CB TRANSCEIVER***

**MODEL : PRO 510e**

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**SERVICE INFORMATION  
MANUAL**

UNIDEN CUSTOMER SERVICE  
9340 Castlegate Drive  
Indianapolis IN 46256  
(317) 842 - 2483

UNIDEN PARTS DEPT.  
9319 Castlegate Drive  
Indianapolis IN 46256  
(317) 842 - 1036

# **CB TRANSCEIVER**

**MODEL : PRO 510e**

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    - VCO P.C.B. (E24-6651)**

# 1. SPECIFICATIONS

CB AM TRANSCEIVER MODEL: PRO 510e (UT-317Z)

## GENERAL

1. Channels : 40
2. Frequency Range : 26.965 MHz to 27.405 MHz
3. Semiconductors : 10 Transistors, 20 Diodes, 7 IC's  
1-19 Segments Hybrid Type LED
4. Crystal Oscillators : 1
5. Microphone : Electret Condenser Type
6. Speaker : 16 ohm 3 W Max
7. Antenna Connector : M-Type
8. Jacks & Connectors : Mic 5p Din  
EXT SP 3.5  $\phi$
9. Controls : Channel Selector, Volume/Power ON-OFF,  
Squelch, ANL/OFF
10. LED Bar Meter : RF Output Power, Signal Strength
11. Illumination Indicators (LED) : Channel Readout, TX
12. Cabinet Size : W: 116 mm  
H: 36 mm  
D: 166.5mm
13. Weight : 0.75 kg
14. Accessories : Microphone, Microphone Hanger,  
Mounting Bracket with Screws.

### MEASUREMENT CONDITIONS

1.	Standard DC Power	:	13.8V DC
2.	Test Temperature	:	25°C <u>+5°C</u>
3.	Standard Audio Frequency	:	1kHz
4.	Standard RF Input	:	1mV
5.	Standard Ref. Modulation	:	30%
6.	Standard Ref. Audio Output	:	0.5W
7.	Standard Ref. Audio Load	:	8 ohm Resistive
8.	Antenna Impedance	:	50 ohm
9.	Measurement Channel	:	19
10.	Standard Method of Measurement:	:	EIA RS-382 ( ISS : 8-26-86 )

NOTE: Limit specs. are for measurement on all channels.

### RECEIVER (ANL OFF)

	<u>ITMS</u>	<u>UNIT</u>	<u>NOMINAL</u>	<u>LIMIT</u>
1.	Usable Sensitivity (10dB S/N)	uV	0.5	1
2.	Max. Sensitivity	uV	0.5	1
3.	Audio Output @ 10% THD	W	4.0	2.0
4.	Max. Audio Output Power	W	7.0	3.0
5.	Max. S/N @ 1mV	dB	35	25
6.	Squelch Sensitivity:			
	Threshold	uV	0.5	1.0
	Tight	uV	1000	250 to 4000
7.	AGC Figure of Merit (50 mV for 10 dB Change)	dB	85	75
8.	Audio Response (Refer to 1kHz)			
	@ 6 dB down    Lower	Hz	300	400 Max
	Upper	Hz	2000	1600 Min
9.	Detector Linearity 1mV, 30% Mod.	%THD	4	7
10.	ANL Performance	dB	4	7
11.	Adjacent Ch. Rejection	dB	60	45
12.	"S" Indicator (4th LED just ON) @ No Mod.	uV	1000	500 Min
13.	Spurious Resp.			
	- 22.734MHz (Ch 40)	dB	50	40
	- All other freqs.	dB	55	45

	<u>ITBMS</u>	<u>UNIT</u>	<u>NOMINAL</u>	<u>LIMIT</u>
14.	Image Rejection Ratio (900 kHz)	dB	80	60
15.	i-f Rejection Ratio 1ST & 2ND	dB	70	60
16.	1/2 i-f Rejection Ratio	dB	55	45
17.	Oscillator Drop Out Voltage	V	9.0	11.0
18.	Battery Drain - No Signal	mA	230	350
	- Max. Audio	mA	1400	1700

TRANSMITTER

1.	Carrier Power - No Mod.	W	4.0	3.6 to 4.4
2.	Frequency Tolerance after 5 min.	%	<u>+0.002</u>	<u>+0.003</u>
3.	Spurious Harmonic Emission	dB	-70	-60
4.	Battery Drain - No Mod.	mA	850	1300
	- 80% Mod.	mA	1300	1700
5.	Modulation Freq. Resp. (1kHz, 0dB Ref)	dB	-6	0 to -12
	300Hz	dB	-6	0 to -12
	2500Hz	dB	-6	0 to -12
6.	Microphone Sensitivity 50% Mod.	mV	7	15
7.	AMC Range 50 to 100% Mod.	dB	36	30
8.	Transmit Hum & Noise	dB	50	40
9.	Relative Power Meter (No Mod.)		4 just ON	3 Min
10.	Transmit Distortion (1kHz, 80% Mod.)	%	4.0	7.0

## OVERALL PERFORMANCE

1. Output Protection: Shall meet for 5 minutes for all VSWR'S (around the Smith Chart) of 20:1 without damage.
2. Output stability of all VSWR'S (around the Smith Chart) of up to 5:1 under continuous operation of a duty cycle of 5 minutes transmitting, and 1 minute receiving.
3. Reverse Polarity Protection: Shall have reverse polarity protection and be operable with positive and negative grounding.
4. Standard Operating Temperature:  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$
5. Storage Temperature:  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$
6. Electrostatic Discharge Protection: All external case and component parts shall withstand the application of 15kV ESD without causing failure or malfunction to the unit.

Test Conditions - Probe: 150 pF with 500 ohm in series  
Temp.:  $25^{\circ}\text{C}$

## 2. ALIGNMENT PROCEDURE

### ALIGNMENT OF P.L.L. PORTION

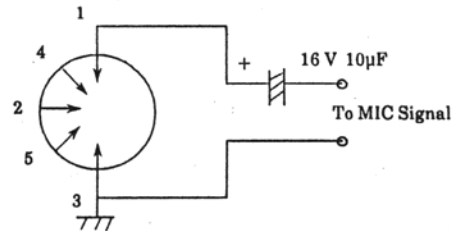
#### 1. Test Equipment Required

- a. Oscilloscope (0 - 50 MHz)
- b. DC Power Supply (13.8V)
- c. DC Voltmeter (10V maximum, 100 Kohm/V)

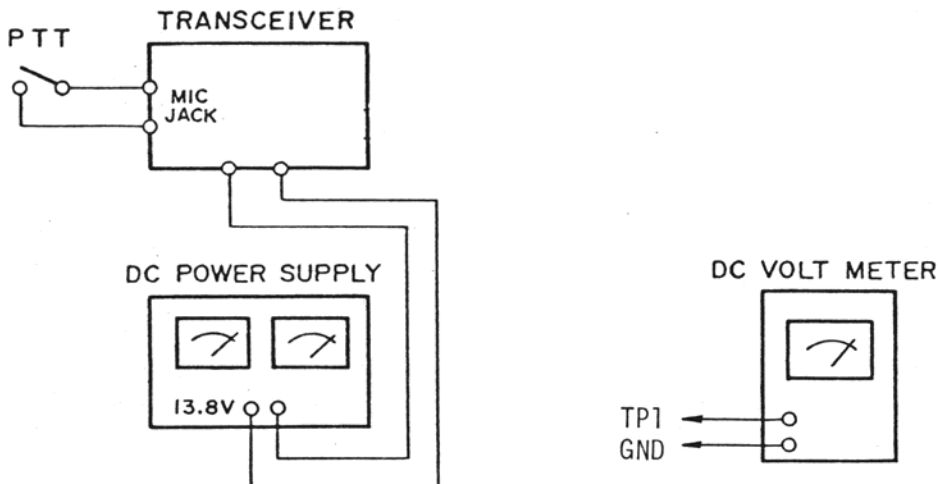
#### 2. Alignment Procedure

STEP	PRESET TO	ADJUSTMENT	REMARKS
1	TX Mode CH : 40 No Modulation	L702	Connect DC Voltmeter to TP1 (Lead of R77). Adjust for approx. 4.5V on DC Voltmeter
2	RX Mode CH : 40 No Modulation	L701	Same as step 1.

\* Note : MIC Signal Line of Dummy MIC requires electrolytic condenser due to MIC Jack J502's No. 1 pin added DC Voltage.



#### 3. Test Equipment Connection





ALIGNMENT OF RECEIVER PORTION

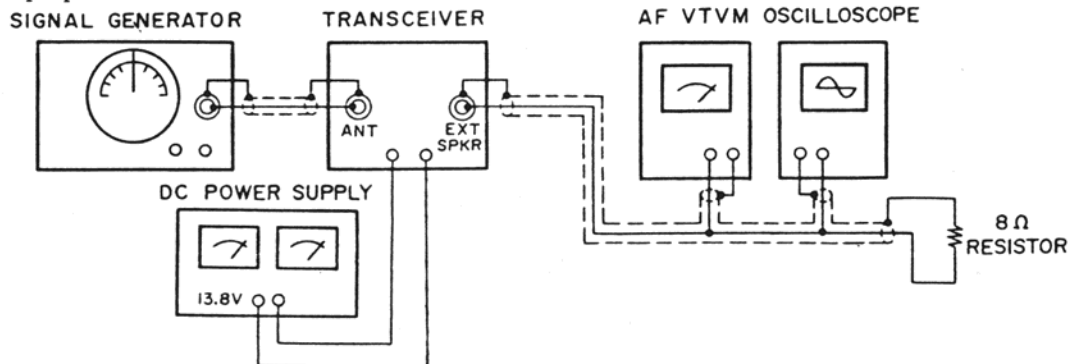
1. Test Equipment Required

- a. RF Signal Generator (27 MHz Band, 1000 Hz, 30% Modulation & Output Impedance 50 ohm)
- b. AF VTVM
- c. Oscilloscope (0 50 MHz)
- d. Dummy Load (8 ohm, 5 watts, resistive (General Output Power))
- e. DC Power Supply (13.8 V)
- f. DC Voltmeter

2. Alignment Procedure

STEP	PRESET TO	ADJUSTMENT	REMARKS
1	RX Mode CH : 19 VOL : MAX SQL : MIN ANL : OFF	L1, L2, L3 L11	Connect RF SSG to ANT Connector (J501) and set it 27.185 MHz. Connect AF VTVM to EXT. SPK. Jack(J3). Adjust coils for maximum reading on AF VTVM.
2	Same as above.	VR4	Set the SSG Attenuator to 0.25uV and adjust the output power to normal position. If the output power is less than normal, keep resistance value of VR4 at minimum (CW) and keep it at maximum (CCW) if over normal to the contrary.
3	Same as Step 1 except SQL : Max	VR1 (Squelch)	Set the RF Signal Generator to 1000uV output level. Adjust VR1 for 2V on AF VTVM.
4	Same as step 1 No Modulation	VR3	Set the RF Signal Generator to 1000uV output level. Adjust VR3 so that 4th digit of LED meter of the unit just illuminates.

3. Test Equipment Connection



## ALIGNMENT OF TRANSMITTER PORTION

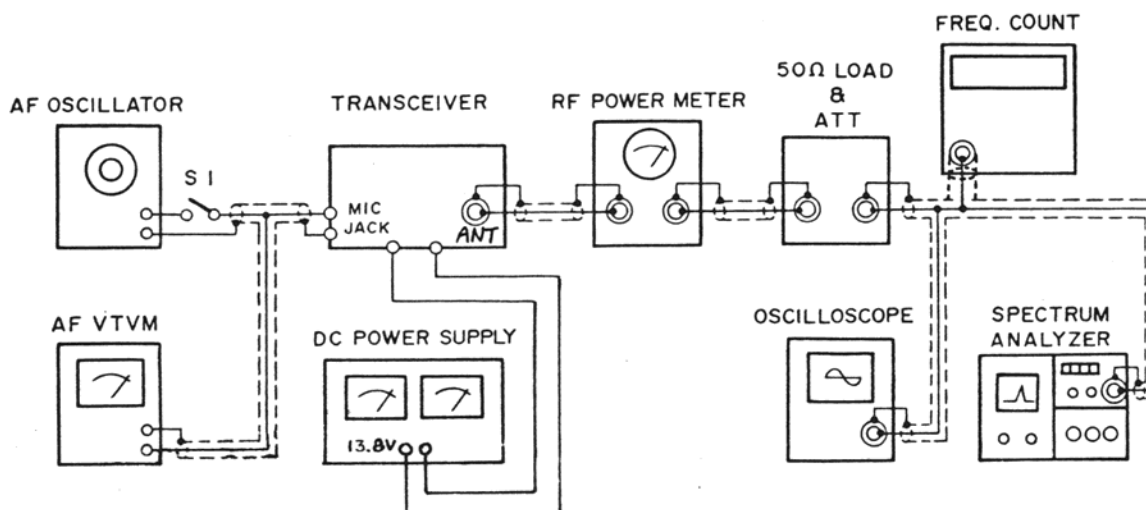
### 1. Test Equipment Required

- a. RF VTVM (Full Scale : 1V DC with RF Probe)
- b. RF Power Meter
- c. Field Strength Meter
- d. Frequency Counter (0 - 50 MHz)
- e. DC Power Supply (13.8 V)
- f. Oscilloscope (0 - 50 MHz)
- g. AF Oscillator

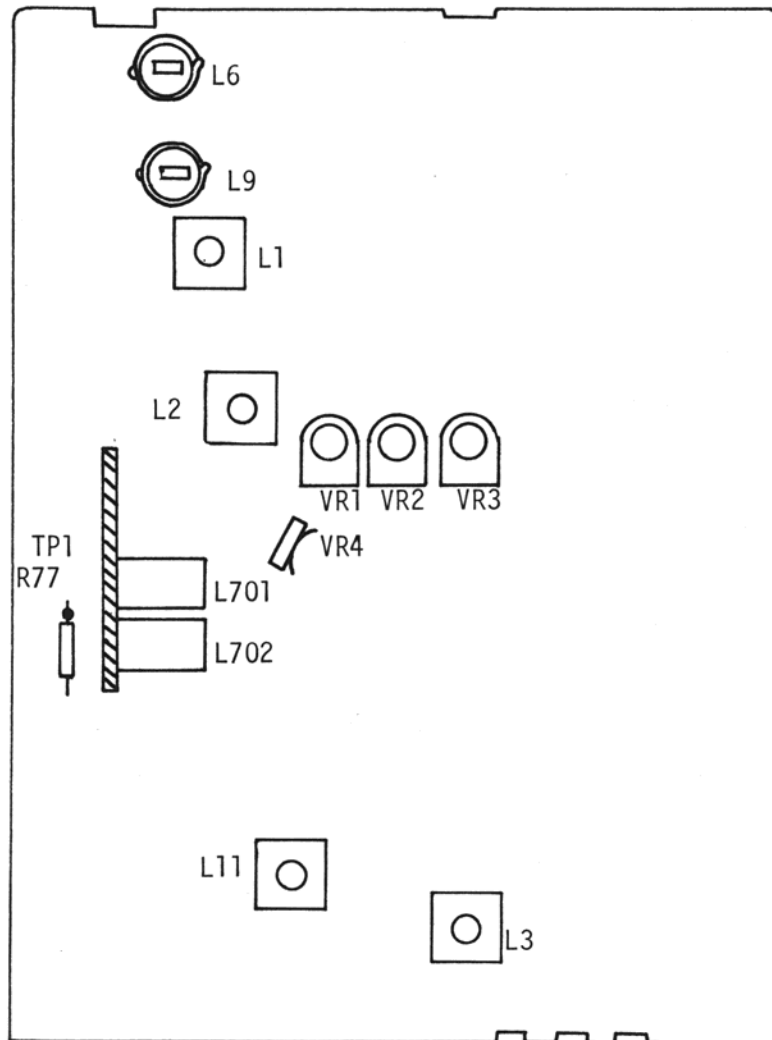
### 2. Alignment Procedure

STEP	PRESET TO	ADJUSTMENT	REMARKS
1	TX Mode CH : 19 1 KHz 80% Modulation	L6, L9	Connect RF Power Meter to ANT. Jack (J501). Adjust for maximum reading.
2	TX Mode CH : 19 No Modulation	L6	Adjust for 4.0W on RF Power Meter.
3	Same as step 2	VR2	Adjust VR2 so that 4th digit of LED meter of the unit just illuminates.

### 3. Test Equipment Connection



### 3. ALIGNMENT POINTS



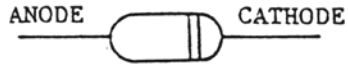
### 4. IC VOLTAGE CHART

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 1220 B	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	MS223'L	1	0.2	SQ 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	1.2
		6	1.6	1.6	1.6
		7	6.5	0	7
		8	8	8	8

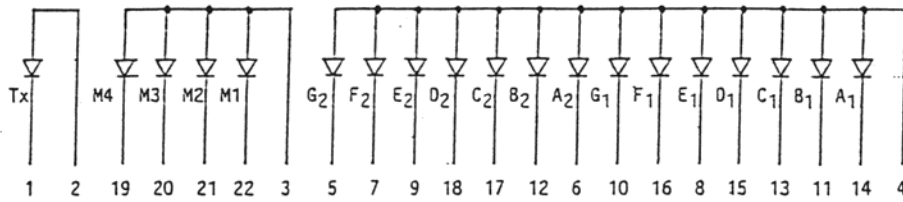
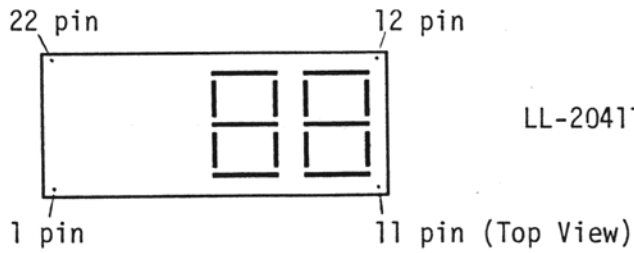
IC NO.	IC NAME	IC PIN NO.	RX (V)		TX (V)
4	TDA 1905	1	7	SQ MAX 7	7
		2	13.6	13.6	13.6
		3	13.6	13.6	13.6
		4	3	0	2.2
		5	0	0	0
		6	2.5	2.5	2.5
		7	2.5	2.5	2.5
		8	2.4	2.4	2.4
		9	0	0	0
		10	0	0	0
		11	0	0	0
		12	0	0	0
		13	0	0	0
		14	0	0	0
		15	0	0	0
		16	0	0	0
5	SM5124 A	1	2.6		2.6
		2	3		3
		3	6		6
		4	6		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	LB1423	1	6		6
		2	6		6
		3	6		6
		4	6		6
		5	0		0
		6	0.2		0.2
		7	0.2		0.2
		8	0.2		0.2
		9	4		4

# 5. SEMICONDUCTOR LEAD IDENTIFICATION

## DIODE



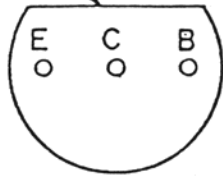
1N60AM  
 1N4003  
 1S1555  
 HZ-6C1  
 1SV73-EB



1. Tx	Cathode	12. B <sub>2</sub>	Cathode
2. Tx	Anode	13. C <sub>1</sub>	"
3. +8		14. A <sub>1</sub>	"
4. Digital 1. 2. Anode		15. D <sub>1</sub>	"
5. G <sub>2</sub>	Cathode	16. F <sub>1</sub>	"
6. A <sub>2</sub>	"	17. C <sub>2</sub>	"
7. F <sub>2</sub>	"	18. D <sub>2</sub>	"
8. E <sub>1</sub>	"	19. M <sub>4</sub>	"
9. E <sub>2</sub>	"	20. M <sub>3</sub>	"
10. G <sub>1</sub>	"	21. M <sub>2</sub>	"
11. B <sub>1</sub>	"	22. M <sub>1</sub>	"

TRANSISTOR

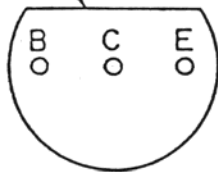
MARKING  
SIDE



Bottom View

2SA733A-PB  
2SC941TM-0  
2SC945A-Q  
2SC1675-L

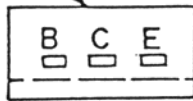
MARKING  
SIDE



Bottom View

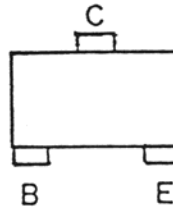
2SC2086-D

MARKING  
SIDE



Bottom View

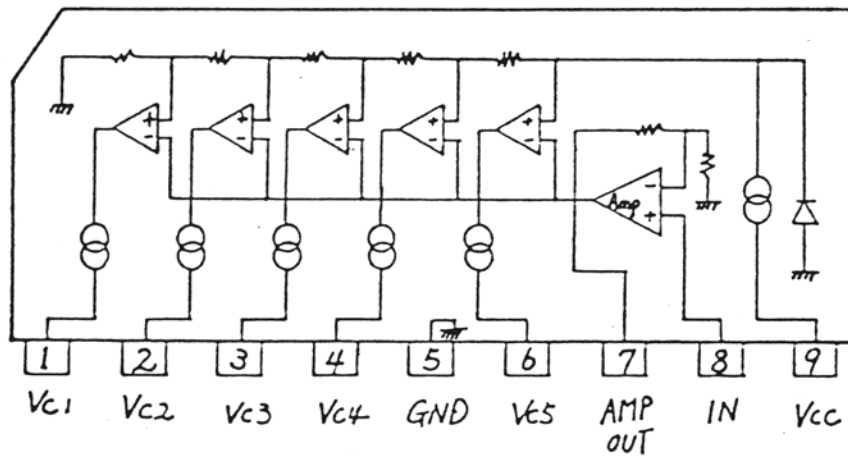
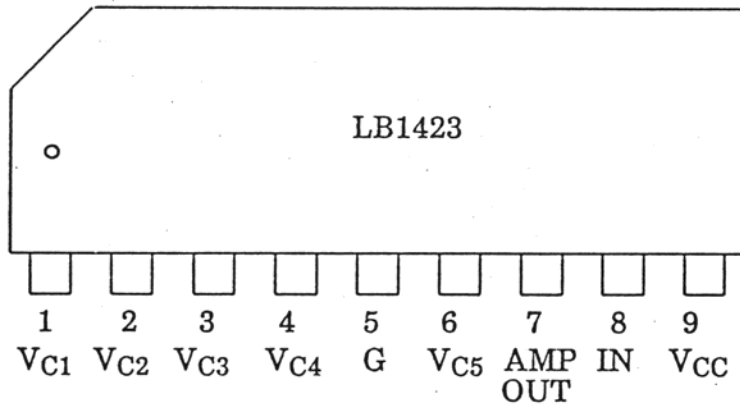
2SC2166-C



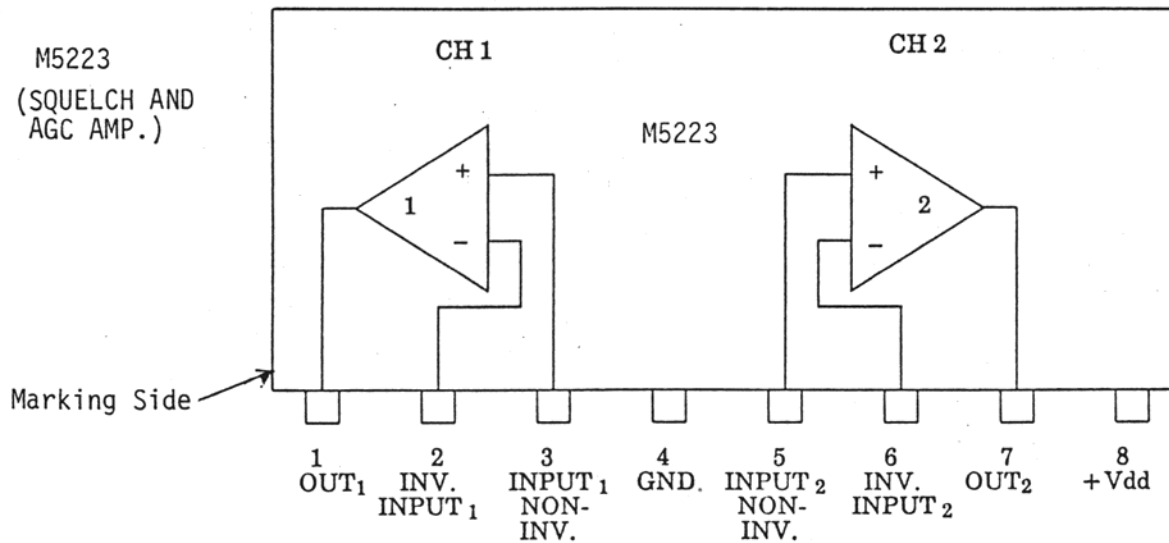
2SC2814-F5

Top View

LB1423  
(LED METER DRIVE)

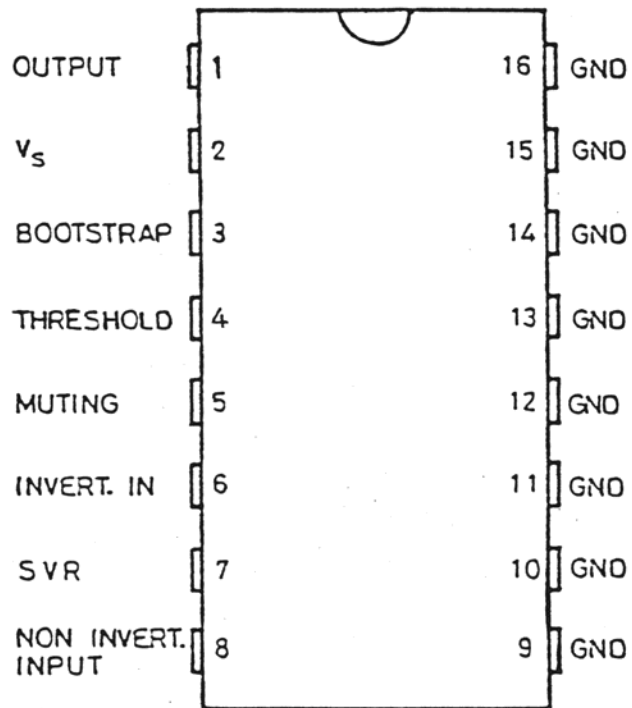


M5223  
(SQUELCH AND  
AGC AMP.)



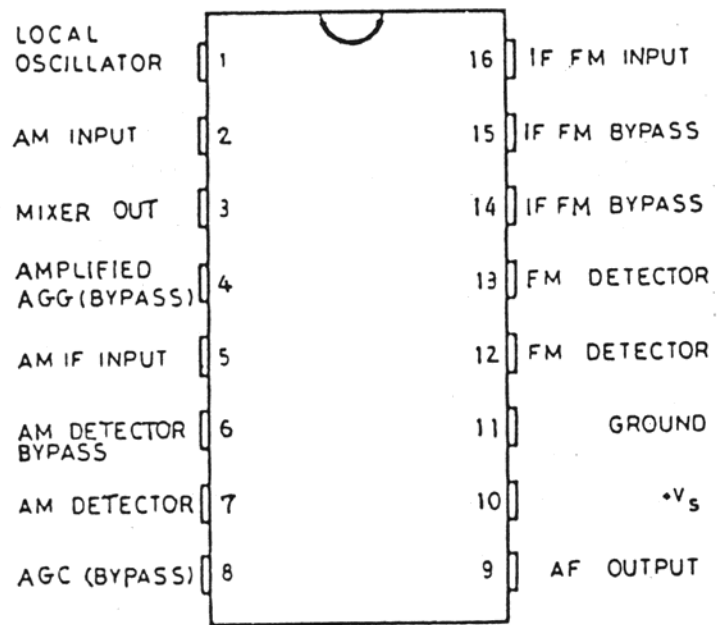


TDA1905  
(AUDIO AMPLIFIER)



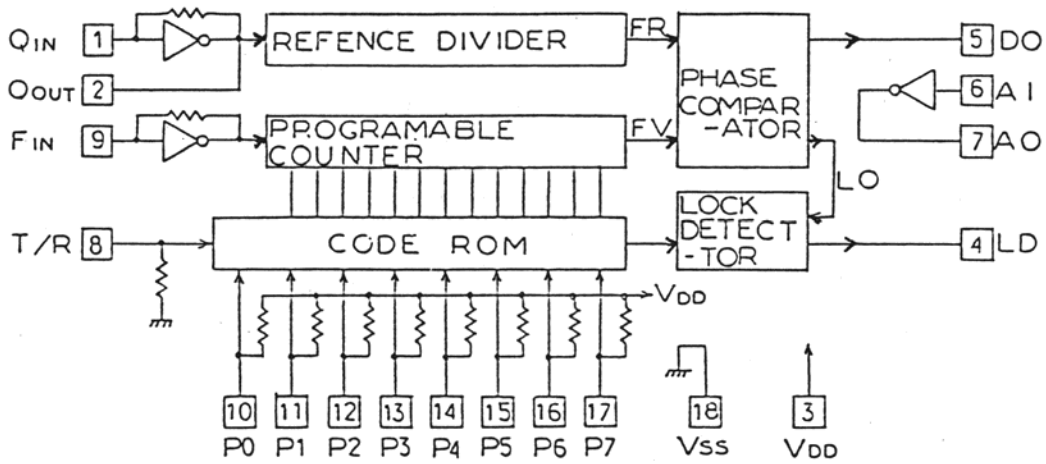
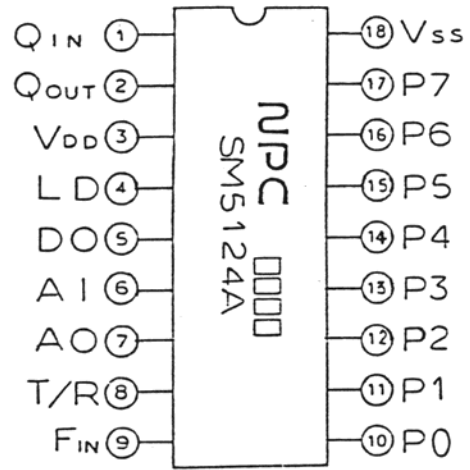
S-2913

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

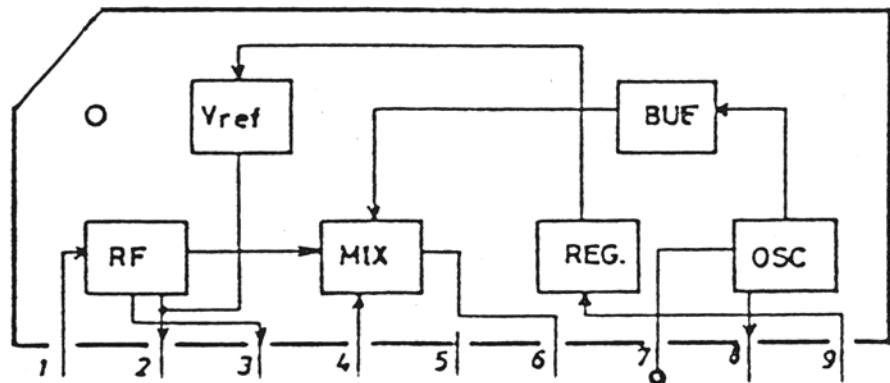


S-5185

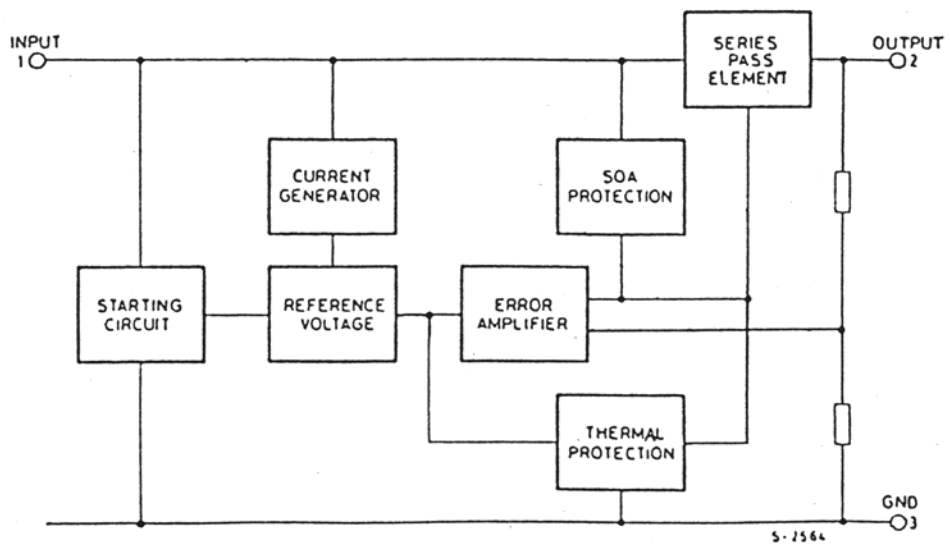
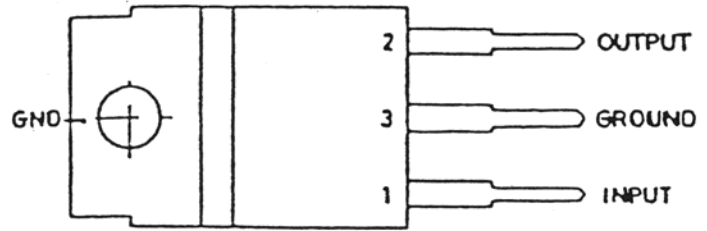
SM5124A  
 (PLL Frequency Synthesizer)



LA-1185  
 (\* RF Amp.  
 \* 1'st Mix.)



L7808  
(REGULATOR)



## **6. PARTS PRICE LIST**

(MODEL)  
UT317ZT

PRO-510E

(PARTS CODE)	(DESCRIPTION)		(SYMBOL)	(Q'TY)	(LIST PRICE)
BCCC811204Z	CAPACITOR:CERAMIC	12PF 50V J CH	C065	1	\$ 0.145
BCCC812215Z	CAPACITOR:CERAMIC	220PF 50V K CH	C033	1	\$ 0.304
			C035	1	\$ 0.304
BCCC813305Z	CAPACITOR:CERAMIC	33PF 50V K CH	C034	1	\$ 0.145
BCCC815604Z	CAPACITOR:CERAMIC	56PF 50V J CH	C068	1	\$ 0.158
BCCF812091Z	CAPACITOR:CERAMIC	2PF 50V C CK	C040	1	\$ 0.145
BCCG811515Z	CAPACITOR:CERAMIC	150PF 50V K SL	C501	1	\$ 0.139
BCCG815615Z	CAPACITOR:CERAMIC	560PF 50V K SL	C069	1	\$ 0.297
BCCU811805Z	CAPACITOR:CERAMIC	18PF 50V K UJ	C001	1	\$ 0.145
BCCU812215Z	CAPACITOR:CERAMIC	220PF 50V K UJ	C041	1	\$ 0.205
BCCU813305Z	CAPACITOR:CERAMIC	33PF 50V K UJ	C101	1	\$ 0.145
BCCU813315Z	CAPACITOR:CERAMIC	330PF 50V K UJ	C036	1	\$ 0.238
BCCU814715Z	CAPACITOR:CERAMIC	470PF 50V K UJ	C045	1	\$ 0.304
BCCU818205Z	CAPACITOR:CERAMIC	82PF 50V K UJ	C007	1	\$ 0.145
BCEF114706Z	CAPACITOR:ELECTROLYTIC	47UF 10V M C-059	C014	1	\$ 0.211
			C016	1	\$ 0.211
BCEF812296Z	CAPACITOR:ELECTROLYTIC	2.2UF 50V M C-059	C032	1	\$ 0.185
BCEF814796Z	CAPACITOR:ELECTROLYTIC	4.7UF 50V M C-059	C012	1	\$ 0.185
BCEL112200Z	CAPACITOR:ELECTROLYTIC	22UF 10V	C075	1	\$ 0.284
BCEL112210Z	CAPACITOR:ELECTROLYTIC	220UF 10V	C066	1	\$ 0.449
BCEL114700Z	CAPACITOR:ELECTROLYTIC	47UF 10V	C053	1	\$ 0.284
			C071	1	\$ 0.284
			C076	1	\$ 0.284
BCEL311000Z	CAPACITOR:ELECTROLYTIC	10UF 16V	C073	1	\$ 0.284
			C087	1	\$ 0.284
BCEL514710Z	CAPACITOR:ELECTROLYTIC	470UF 25V	C051	1	\$ 1.056

(MODEL)  
UT3172T

PRO-510E

(PARTS CODE) (DESCRIPTION)

(SYMBOL) (Q'TY)

(LIST PRICE)

BCEL811090Z	CAPACITOR:ELECTROLYTIC	1UF	50V	C021	1	\$ 0.284
				C037	1	\$ 0.284
				C056	1	\$ 0.284
				C094	1	\$ 0.284
BCEL812280Z	CAPACITOR:ELECTROLYTIC	0.22UF	50V	C018	1	\$ 0.284
BCEL812290Z	CAPACITOR:ELECTROLYTIC	2.2UF	50V	C055	1	\$ 0.284
				C061	1	\$ 0.284
				C063	1	\$ 0.284
				C064	1	\$ 0.284
BCEL814780Z	CAPACITOR ELECTROLYTIC	0.47UF	50V	C072	1	\$ 0.284
BCEL814790Z	CAPACITOR:ELECTROLYTIC	4.7UF	50V	C070	1	\$ 0.284
BCER511026Z	CAPACITOR:ELECTROLYTIC	1000UF	25V M C-095	C052	1	\$ 1.855
BCGC511035Z	CAPACITOR:SEMI CONDUCTOR(SR)	0.01UF	25V K	C019	1	\$ 0.205
				C057	1	\$ 0.205
				C062	1	\$ 0.205
				C083	1	\$ 0.205
BCGC511045Z	CAPACITOR:SEMI-CONDUCTOR(SR)	0.1UF	25V K	C054	1	\$ 0.462
				C059	1	\$ 0.462
				C074	1	\$ 0.462
BCGC512235Z	CAPACITOR:SEMI-CONDUCTOR(SR)	0.022UF	25V K	C023	1	\$ 0.211
				C025	1	\$ 0.211
BCGC514735Z	CAPACITOR:SEMI-CONDUCTOR(SR)	0.047UF	25V K	C011	1	\$ 0.304
				C058	1	\$ 0.304
				C089	1	\$ 0.304
				C092	1	\$ 0.304
BCGC518225Z	CAPACITOR:SEMI-CONDUCTOR(SR)	0.0022UF	25V K	C027	1	\$ 0.205

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(PARTS CODE) (DESCRIPTION)	(SYMBOL)	(Q'TY)	(LIST PRICE)
BCKB811025Z CAPACITOR:CERAMIC	0.001UF 50V K YR(B)	C017	1 \$ 0.139
		C022	1 \$ 0.139
		C048	1 \$ 0.139
BCKC514730Z CAPACITOR:CERAMIC	0.047UF 25V Z ZF	C004	1 \$ 0.218
		C067	1 \$ 0.218
		C105	1 \$ 0.218
BCKD811026Z CAPACITOR:CERAMIC	0.001UF 50V M YD	C002	1 \$ 0.119
		C006	1 \$ 0.119
		C013	1 \$ 0.119
		C042	1 \$ 0.119
		C047	1 \$ 0.119
		C084	1 \$ 0.119
		C086	1 \$ 0.119
		C090	1 \$ 0.119
		C103	1 \$ 0.119
BCKD811036Z CAPACITOR:CERAMIC	0.01UF 50V M YD	C044	1 \$ 0.218
		C096	1 \$ 0.218
BCKD814726Z CAPACITOR:CERAMIC	0.0047UF 50V M YD	C095	1 \$ 0.165
		C097	1 \$ 0.165
BCKG811030Z CAPACITOR:CERAMIC	0.01UF 50V Z YF	C005	1 \$ 0.139
		C009	1 \$ 0.139
		C046	1 \$ 0.139
		C088	1 \$ 0.139
BCKG814720Z CAPACITOR:CERAMIC	0.0047UF 50V Z YF	C003	1 \$ 0.125
		C008	1 \$ 0.125
		C031	1 \$ 0.125

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(PARTS CODE)	(DESCRIPTION)		(SYMBOL)	(Q'TY)	(LIST PRICE)
BCKG814720Z	CAPACITOR:CERAMIC	0.0047UF 50V Z YF	C043	1	\$ 0.125
			C060	1	\$ 0.125
			C104	1	\$ 0.125
			C551	1	\$ 0.125
			C552	1	\$ 0.125
BCVL813904Z	CAPACITOR:CERAMIC CHIP	39PF 50V J SL C-140 TAPE	C701	1	\$ 0.185
			C705	1	\$ 0.185
			C711	1	\$ 0.185
BCVL814704Z	CAPACITOR:CERAMIC CHIP	47PF 50V J SL C-140 TAPE	C707	1	\$ 0.185
BCVL816804Z	CAPACITOR:CERAMIC CHIP	68PF 50V J SL C-140 TAPE	C712	1	\$ 0.185
BCVM811504Z	CAPACITOR:CERAMIC CHIP	15PF 50V J CH C-140 TAPE	C706	1	\$ 0.205
BCVP811015Z	CAPACITOR:CERAMIC CHIP	100PF 50V K B C-140 TAPE	C708	1	\$ 0.185
BCVP811025Z	CAPACITOR:CERAMIC CHIP	0.001U 50V K B C-140 TAPE	C093	1	\$ 0.185
BCVP813315Z	CAPACITOR:CERAMIC CHIP	330PF 50V K B C-140 TAPE	C709	1	\$ 0.185
BCVQ311036Z	CAPACITOR:CERAMIC CHIP	0.01UF 16V M Y C-140 TAPE	C702	1	\$ 0.218
			C703	1	\$ 0.218
			C704	1	\$ 0.218
			C713	1	\$ 0.218
			C714	1	\$ 0.218
RDAY0001001	DIODE	1N60 AM	D026	1	\$ 0.284
RDAY0133001	DIODE	1N4003	D007	1	\$ 0.165
			D018	1	\$ 0.165
RDAY0181001	DIODE	1S1555	D001	1	\$ 0.125
			D002	1	\$ 0.125
			D004	1	\$ 0.125
			D008	1	\$ 0.125



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(PARTS CODE)(DESCRIPTION)

(SYMBOL) (Q\*TY) (LIST PRICE)

BDAY0181001	DIODE	1S1555	D009	1	\$	0.125
			D011	1	\$	0.125
			D012	1	\$	0.125
			D013	1	\$	0.125
			D014	1	\$	0.125
			D015	1	\$	0.125
			D022	1	\$	0.125
			D023	1	\$	0.125
			D027	1	\$	0.125
			D028	1	\$	0.125
			D552	1	\$	0.125
			D553	1	\$	0.125
BDAY0220001	DIODE	1SV73-EB	D701	1	\$	0.634
BDAY0269019	DIODE:ZENER	HZ-6C1	D010	1	\$	0.257
BDAY0421001	DIODE:LED	LL-2041T	D551	1	\$	7.973
BDBA0733541	TRANSISTOR	DB-027 2SA733A-PB	Q005	1	\$	0.495
BDBC0941523	TRANSISTOR	DB-301 2SC941TM-0	Q003	1	\$	0.462
BDBC0945507	TRANSISTOR	DB-224 2SC945A-Q	Q001	1	\$	0.449
			Q006	1	\$	0.449
BDBC1675111	TRANSISTOR	DB-259 2SC1675-L	Q004	1	\$	0.535
BDBC2086104	TRANSISTOR	DB-228 2SC2086-D	Q002	1	\$	2.033
BDBC2166103	TRANSISTOR	DB-331 2SC2166-C	Q501	1	\$	4.561
BDBC2814641	TRANSISTOR	DB-744 2SC2814-F5	TAPING Q701	1	\$	0.356
			Q702	1	\$	0.356
			Q703	1	\$	0.356
BDEY0430001	INTEGRATED CIRCUIT	LB1423	IC007	1	\$	2.812

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(PARTS CODE)	(DESCRIPTION)		(SYMBOL)	(Q'TY)	(LIST PRICE)
BDEY0582001	INTEGRATED CIRCUIT	M5223L	IC003	1	\$ 1.822
BDEY0603001	INTEGRATED CIRCUIT	TDA1905	IC004	1	\$ 4.349
BDEY0890001	INTEGRATED CIRCUIT	TDA1220B	IC002	1	\$ 3.161
BDEY0891001	INTEGRATED CIRCUIT	SM5124A	IC005	1	\$ 11.233
BDEY0902001	INTEGRATED CIRCUIT	LA-1185	IC001	1	\$ 1.888
BDEY0924001	INTEGRATED CIRCUIT	L7808CV	IC006	1	\$ 2.244
BFLY0048001	FILTER:CERAMIC	FL-048 SFE10.7MS2-M	FT001	1	\$ 1.399
BFLY0231001	FILTER:CERAMIC	FL-231 CFU450HT 450KHZ	FT002	1	\$ 6.547
BJKY0089001	JACK	JK-089 HSJ0615	J003	1	\$ 1.023
BJKY0370001	JACK	JK-370	J501	1	\$ 1.855
BJKY0374001	JACK	JK-374	J502	1	\$ 1.729
BLAY0138001	COIL	LA-138 TKXC-16853N	L002	1	\$ 1.927
BLAY0204001	COIL	LA-204 RMC-41997N	L003	1	\$ 1.445
			L011	1	\$ 1.445
BLAY0279001	COIL	LA-279 TKXNF-25439N	L001	1	\$ 1.756
BLBY0537001	COIL	LB-537 V113CN-6851BS	L701	1	\$ 0.799
			L702	1	\$ 0.799
BLCY0072001	COIL	LC-072	L009	1	\$ 0.739
BLCY0074001	COIL	LC-074	L006	1	\$ 0.739
BLDY0087001	COIL	LD-087 BF04-3*5*1	L008	1	\$ 0.066
BLDY0168001	COIL	LD-168	L007	1	\$ 0.449
BLEY0096001	COIL	LE-096 8 1/2T	L004	1	\$ 0.145
			L005	1	\$ 0.145
BLEY0187001	COIL	LE-187 D4.0 7T	L010	1	\$ 0.165
BMKY0356001	MICROPHONE	MK-356	MC951	1	\$ 16.790
BPAY0243AAZ	PC BOARD:VCO	PA-243AA	B701	1	\$ 0.515

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(PARTS CODE)	(DESCRIPTION)		(SYMBOL)	(Q'TY)	(LIST PRICE)
BPAY0247AAZ	PC BOARD:MAIN	PA-247AA	B001	1	\$ 3.901
BPAY0248AAZ	PC BOARD:FRONT	PA-248AA	B551	1	\$ 0.911
BQXY0250001	CRYSTAL	QX-250 10.2419M	X001	1	\$ 3.128
BRFD181014Z	RESISTOR:CARBON MELF CHIP	100 1/8W J TAPING	R702	1	\$ 0.073
			R706	1	\$ 0.073
BRFD181034Z	RESISTOR:CARBON MELF CHIP	10K 1/8W J TAPING	R704	1	\$ 0.073
BRFD181534Z	RESISTOR:CARBON MELF CHIP	15K 1/8W J TAPING	R707	1	\$ 0.073
BRFD183314Z	RESISTOR:CARBON MELF CHIP	330 1/8W J TAPING	R708	1	\$ 0.073
BRFD183334Z	RESISTOR:CARBON MELF CHIP	33K 1/8W J TAPING	R701	1	\$ 0.073
BRFD183914Z	RESISTOR:CARBON MELF CHIP	390 1/8W J TAPING	R703	1	\$ 0.073
BRFD183934Z	RESISTOR:CARBON MELF CHIP	39K 1/8W J TAPING	R705	1	\$ 0.073
BRFD185634Z	RESISTOR:CARBON MELF CHIP	56K 1/8W J TAPING	R709	1	\$ 0.073
BRPB181014Z	RESISTOR:CARBON AXIAL LEAD	100 1/8W J	R051	1	\$ 0.066
BRPB181024Z	RESISTOR:CARBON AXIAL LEAD	1K 1/8W J	R711	1	\$ 0.066
BRPB181234Z	RESISTOR:CARBON AXIAL LEAD	12K 1/8W J	R077	1	\$ 0.066
BRPB181504Z	RESISTOR:CARBON AXIAL LEAD	15 1/8W J	R048	1	\$ 0.066
BRPB181514Z	RESISTOR:CARBON AXIAL LEAD	150 1/8W J	R064	1	\$ 0.066
			R114	1	\$ 0.066
BRPB181534Z	RESISTOR:CARBON AXIAL LEAD	15K 1/8W J	R056	1	\$ 0.066
BRPB181544Z	RESISTOR:CARBON AXIAL LEAD	150K 1/8W J	R017	1	\$ 0.066
BRPB182224Z	RESISTOR:CARBON AXIAL LEAD	2.2K 1/8W J	R117	1	\$ 0.066
BRPB182734Z	RESISTOR:CARBON AXIAL LEAD	27K 1/8W J	R078	1	\$ 0.066
BRPB184754Z	RESISTOR:CARBON AXIAL LEAD	4.7M 1/8W J	R116	1	\$ 0.066
BRPB186814Z	RESISTOR:CARBON AXIAL LEAD	680 1/8W J	R106	1	\$ 0.066
BRPB611024Z	RESISTOR:CARBON AXIAL LEAD	1K 1/6W J	R554	1	\$ 0.066
			R556	1	\$ 0.066

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(PARTS CODE)	(DESCRIPTION)		(SYMBOL)	(Q'TY)	(LIST PRICE)
BRPB611034Z	RESISTOR:CARBON AXIAL LEAD	10K 1/6W J	R567	1	\$ 0.066
BRPB612224Z	RESISTOR:CARBON AXIAL LEAD	2.2K 1/6W J	R555	1	\$ 0.066
BRPB613924Z	RESISTOR:CARBON AXIAL LEAD	3.9K 1/6W J	R553	1	\$ 0.066
BRPB616814Z	RESISTOR:CARBON AXIAL LEAD	680 1/6W J	R565	1	\$ 0.066
BRSJ302794Z	RESISTOR:METAL OXIDE	2.7 3W J	R001	1	\$ 0.601
BRSJ308294Z	R:METAL OXIDE	8.2 3W J	R002	1	\$ 0.601
BRTY0182104	RESISTOR:SEMI-FIXED	RT-182 TT24R 100KB	VR003	1	\$ 0.871
BRTY0182203	RESISTOR:SEMI-FIXED	RT-182 TT24R 20KB	VR001	1	\$ 0.871
BRTY0182504	RESISTOR:SEMI-FIXED	RT-182 TT24R 500KB	VR002	1	\$ 0.871
BRTY0520102	RESISTOR:SEMI-FIXED	RT-520 B1K	VR004	1	\$ 0.317
BRUB181014Z	RESISTOR:CARBON FORMED VERT	100 1/8W J	R005	1	\$ 0.066
			R011	1	\$ 0.066
			R053	1	\$ 0.066
			R068	1	\$ 0.066
BRUB181024Z	RESISTOR:CARBON FORMED VERT	1K 1/8W J	R007	1	\$ 0.066
			R093	1	\$ 0.066
			R113	1	\$ 0.066
			R115	1	\$ 0.066
BRUB181034Z	RESISTOR:CARBON FORMED VERT	10K 1/8W J	R022	1	\$ 0.066
			R030	1	\$ 0.066
			R061	1	\$ 0.066
			R079	1	\$ 0.066
			R083	1	\$ 0.066
			R109	1	\$ 0.066
BRUB181054Z	RESISTOR:CARBON FORMED VERT	1M 1/8W J	R021	1	\$ 0.066
			R037	1	\$ 0.066

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(PARTS CODE)	(DESCRIPTION)	(SYMBOL)	(Q'TY)	(LIST PRICE)
BRUB181094Z	RESISTOR:CARBON FORMED VERT 1 1/8W J	R067	1	\$ 0.066
BRUB181224Z	RESISTOR:CARBON FORMED VERT 1.2K 1/8W J	R027	1	\$ 0.066
BRUB181514Z	RESISTOR:CARBON FORMED VERT 150 1/8W J	RC82	1	\$ 0.066
BRUB181534Z	RESISTOR:CARBON FORMED VERT 15K 1/8W J	R059	1	\$ 0.066
		R087	1	\$ 0.066
BRUB181544Z	RESISTOR:CARBON FORMED VERT 150K 1/8W J	R018	1	\$ 0.066
BRUB181814Z	RESISTOR:CARBON FORMED VERT 180 1/8W J	R057	1	\$ 0.066
		R058	1	\$ 0.066
BRUB181824Z	RESISTOR:CARBON FORMED VERT 1.8K 1/8W J	R091	1	\$ 0.066
BRUB182204Z	RESISTOR:CARBON FORMED VERT 22 1/8W J	R004	1	\$ 0.066
BRUB182214Z	RESISTOR:CARBON FORMED VERT 220 1/8W J	R013	1	\$ 0.066
BRUB182224Z	RESISTOR:CARBON FORMED VERT 2.2K 1/8W J	R029	1	\$ 0.066
		R044	1	\$ 0.066
		R081	1	\$ 0.066
		R088	1	\$ 0.066
BRUB182244Z	RESISTOR:CARBON FORMED VERT 220K 1/8W J	R019	1	\$ 0.066
BRUB182254Z	RESISTOR:CARBON FORMED VERT 2.2M 1/8W J	R025	1	\$ 0.066
BRUB182704Z	RESISTOR:CARBON FORMED VERT 27 1/8W J	R054	1	\$ 0.066
BRUB182734Z	RESISTOR:CARBON FORMED VERT 27K 1/8W J	R074	1	\$ 0.066
BRUB183304Z	RESISTOR:CARBON FORMED VERT 33 1/8W J	R085	1	\$ 0.066
BRUB183314Z	RESISTOR:CARBON FORMED VERT 330 1/8W J	R006	1	\$ 0.066
		R038	1	\$ 0.066
		R046	1	\$ 0.066
BRUB183324Z	RESISTOR:CARBON FORMED VERT 3.3K 1/8W J	R014	1	\$ 0.066
		R066	1	\$ 0.066
BRUB183344Z	RESISTOR:CARBON FORMED VERT 330K 1/8W J	R031	1	\$ 0.066

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(PARTS CODE)	(DESCRIPTION)	(SYMBOL)	(Q'TY)	(LIST PRICE)
BRUB183344Z	RESISTOR:CARBON FORMED VERT 330K 1/8W J	R039	1	\$ 0.066
BRUB183934Z	RESISTOR:CARBON FORMED VERT 39K 1/8W J	R092	1	\$ 0.066
BRUB183944Z	RESISTOR:CARBON FORMED VERT 390K 1/8W J	R033	1	\$ 0.066
		R112	1	\$ 0.066
BRUB184714Z	RESISTOR:CARBON FORMED VERT 470 1/8W J	R108	1	\$ 0.066
BRUB184724Z	RESISTOR:CARBON FORMED VERT 4.7K 1/8W J	R071	1	\$ 0.066
BRUB184734Z	RESISTOR:CARBON FORMED VERT 47K 1/8W J	R032	1	\$ 0.066
BRUB184754Z	RESISTOR:CARBON FORMED VERT 4.7M 1/8W J	R023	1	\$ 0.066
		R110	1	\$ 0.066
BRUB185614Z	RESISTOR:CARBON FORMED VERT 560 1/8W J	R015	1	\$ 0.066
		R065	1	\$ 0.066
BRUB185624Z	RESISTOR:CARBON FORMED VERT 5.6K 1/8W J	R035	1	\$ 0.066
		R062	1	\$ 0.066
		R072	1	\$ 0.066
		R073	1	\$ 0.066
		R086	1	\$ 0.066
		R111	1	\$ 0.066
BRUB185634Z	RESISTOR:CARBON FORMED VERT 56K 1/8W J	R076	1	\$ 0.066
BRUB185644Z	RESISTOR:CARBON FORMED VERT 560K 1/8W J	R034	1	\$ 0.066
BRUB185694Z	RESISTOR:CARBON FORMED VERT 5.6 1/8W J	R049	1	\$ 0.066
BRUB186814Z	RESISTOR:CARBON FORMED VERT 680 1/8W J	R045	1	\$ 0.066
		R102	1	\$ 0.066
		R103	1	\$ 0.066
		R104	1	\$ 0.066
		R105	1	\$ 0.066
		R107	1	\$ 0.066

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(PARTS CODE)	(DESCRIPTION)		(SYMBOL)	(Q'TY)	(LIST PRICE)
BRUB186824Z	RESISTOR:CARBON FORMED VERT	6.8K 1/8W J	R028	1	\$ 0.066
			R075	1	\$ 0.066
			R084	1	\$ 0.066
BRUB186834Z	RESISTOR:CARBON FORMED VERT	68K 1/8W J	R026	1	\$ 0.066
BRUB188224Z	RESISTOR:CARBON FORMED VERT	8.2K 1/8W J	R055	1	\$ 0.066
			R089	1	\$ 0.066
BRUB188234Z	RESISTOR:CARBON FORMED VERT	82K 1/8W J	R069	1	\$ 0.066
BRUB612734Z	RESISTOR:CARBON FORMED VERT	27K 1/6W J	R003	1	\$ 0.066
BRUB616814Z	RESISTOR:CARBON FORMED VERT	680 1/6W J	R558	1	\$ 0.066
			R559	1	\$ 0.066
			R561	1	\$ 0.066
			R562	1	\$ 0.066
			R563	1	\$ 0.066
			R564	1	\$ 0.066
			R566	1	\$ 0.066
BRVY0650001	RESISTOR:VARIABLE	RV-650 VB12L B50K	VR502	1	\$ 2.270
BRVY0651001	RESISTOR:CEMENT	RV-651 RK1211111014-50KA	VR501	1	\$ 4.547
BSPY0154001	SPEAKER	SP-154	SP501	1	\$ 3.874
BSRY0303001	SWITCH:ROTARY	SR-303 USW-0377	S501	1	\$ 12.283
BSWY0557001	SWITCH:SLIDE	SW-557 SSFYP22-14.5B	S554	1	\$ 0.818
BTFY0083001	TRANSFORMER:AF CHOKE	TF-083	T002	1	\$ 1.201
BTFY0215001	TRANSFORMER:OUTPUT	TF-215	T001	1	\$ 3.538
BWZY0246001	CORD:DC	WZ-246 1500MM	WA951	1	\$ 3.293
BYDY0019003	BUSHING:TRANSISTOR	YD-019 B312D-11-A	YI501	1	\$ 0.092
BYDY0058001	HEAT SINK	YD-058 TESS	YI001	1	\$ 0.000
BYYY0027001	INSULATION SHEET	YY-027	YI502	1	\$ 0.561

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(PARTS CODE)(DESCRIPTION)		(SYMBOL)	(Q'TY)	(LIST PRICE)
BYYY0052001 JUMPER WIRE	YY-052 5.0MM	JP003	1	\$ 0.020
		JP012	1	\$ 0.020
		JP028	1	\$ 0.020
		JP038	1	\$ 0.020
		JP701	1	\$ 0.020
		JP002	1	\$ 0.026
BYYY0052002 JUMPER WIRE	YY-052 7.5MM	JP005	1	\$ 0.026
		JP006	1	\$ 0.026
		JP013	1	\$ 0.026
		JP014	1	\$ 0.026
		JP020	1	\$ 0.026
		JP022	1	\$ 0.026
		JP025	1	\$ 0.026
		JP030	1	\$ 0.026
		JP011	1	\$ 0.026
		JP021	1	\$ 0.026
BYYY0052003 JUMPER WIRE	YY-052 10.0MM	JP029	1	\$ 0.026
		JP551	1	\$ 0.026
		JP552	1	\$ 0.026
		JP702	1	\$ 0.026
		JP001	1	\$ 0.026
		JP004	1	\$ 0.026
BYYY0052004 JUMPER WIRE	YY-052 12.5MM	JPC15	1	\$ 0.026
		JP017	1	\$ 0.026
		JP026	1	\$ 0.026
		JP034	1	\$ 0.026



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(PARTS CODE) (DESCRIPTION)		(SYMBOL)	(Q'TY)	(LIST PRICE)
BYYY0052004 JUMPER WIRE	YY-052 12.5MM	JP039	1	\$ 0.026
BYYY0052005 JUMPER WIRE	YY-052 15.0MM	JP008	1	\$ 0.026
		JP016	1	\$ 0.026
		JP018	1	\$ 0.026
		JP024	1	\$ 0.026
		JP037	1	\$ 0.026
BYYY0052006 JUMPER WIRE	YY-052 17.5MM	JP009	1	\$ 0.026
		JP010	1	\$ 0.026
		JP019	1	\$ 0.026
		JP027	1	\$ 0.026
		JP035	1	\$ 0.026
		JP703	1	\$ 0.026
BYYY0052007 JUMPER WIRE	YY-052 20.0MM	JP007	1	\$ 0.026
		JP032	1	\$ 0.026
		JP036	1	\$ 0.026
BYYY0052009 JUMPER WIRE	YY-052 25.0MM	JP031	1	\$ 0.026
BYYY0052012 JUMPER WIRE	YY-052 2.5MM	JP040	1	\$ 0.020
		JP041	1	\$ 0.020
CUAB008021Z WIRE	UL 1007 #24 5- 80- 3 RED		1	\$ 0.086
CUAH015021Z WIRE	UL 1007 #24 5-150- 3 GRY		1	\$ 0.119
			1	\$ 0.119
CUAJ003041Z WIRE	UL 1007 #24 10- 30- 3 WHT		1	\$ 0.073
CUAK011044Z WIRE	UL 1007 #24 10-110-10 BLK		1	\$ 0.092
CUAV005011Z WIRE	UL 1007 #24 3- 50- 3 PNK		1	\$ 0.073
CUHC008021Z WIRE	UL 1007 #26 5- 80- 3 ORG		1	\$ 0.073
CUKC004044Z WIRE	UL 1007 #28 10- 40-10 ORG		1	\$ 0.073

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GCMF218693Z	PANEL:FRONT	ABS,DARK GRAY PAINT		1	\$ 3.346
GHDL418694Z	HOLDER:LED	ABS NATURAL		1	\$ 0.317
GMSC405736Z	SCREW:MOUNTING	ABS INST CLR BLACK		2	\$ 0.356
GNBC418695Z	KNOB:CHANNEL	ABS,BLACK		1	\$ 0.370
GNBY418593A	KNOB	ABS,BLACK		2	\$ 0.284
HBCT418696Z	MOUNTING BRACKET	SPCC,1.2T,MFZN3		1	\$ 0.000
HCMB318697Z	COVER:BOTTOM	VINYTOP E,0.75T BLACK		1	\$ 0.000
HCMT318698Z	COVER:TOP	VINYTOP E,0.75T,BLACK		1	\$ 0.000
HCSY218699A	CHASSIS	SECC,1.0T,NONOIL		1	\$ 0.000
HHDC418700A	HOLDER:JACK	SECC,1.0T		1	\$ 0.231
HHSK418924Z	HEAT:SINK	C5191R,0.5T		1	\$ 0.568
HMHG402919Z	HANGER:MICROPHONE	SPCC,1.0T,NI		1	\$ 0.356
HSDP403852Z	SHIELD PLATE	SPTE,0.3T,NON OIL		1	\$ 0.119
JDPF418701Z	ID PLATE:FCC	ALP,0.5T		1	\$ 0.422
KDPT418702Z	PLATE:WINDOW	POLYCARBO,0.5T,BLACK		1	\$ 0.515
PLBC419000Z	LABEL:WARNING,DC CORD	PAPER,PRINT		1	\$ 0.053
PLBZ412255B	LABEL:CHECK	PAPER PRINT		1	\$ 0.053
RUTC418435Z	WOOL-COATED PAPER:WOOL TACK	WOOL PAPER,100*5*0.3T		4	\$ 0.026
SSCW133005N	SCREW:FLAT HD +	M3X5 NI		2	\$ 0.020
SSCW193008B	SCREW:BIND HD +	M3X8 BNI		4	\$ 0.020
SSCW193008N	SCREW:BIND HD +	M3X8 NI		1	\$ 0.020
SSCW293508N	SCREW:TAPPING ROUND HD +	D3.5X8 NI		2	\$ 0.066
SSCW295010N	SCREW:TAPPING ROUND HD +	D5X10 NI		2	\$ 0.112
SSCW343006B	SCREW:TAPTIGHT BIND HD +	M3X6 BNI		8	\$ 0.066
SSCW343006N	SCREW:TAPTIGHT BIND HD +	M3X6 NI		4	\$ 0.066
SSCW430030N	HEX NUT	M3.0 NI		1	\$ 0.046

(MODEL)  
UT3172T

PRO-510E

(PARTS CODE)(DESCRIPTION)	(SYMBOL)	(Q'TY)	(LIST PRICE)
SSCW480030N NUT:FLANGE	M3 NI	4	\$ 0.073
SSCW530035N WASHER:LOCK	D3.5 NI	2	\$ 0.026
SSCW540050N WASHER:STAR	D5 NI	2	\$ 0.046
SSCW803006N SCREW:P TIGHT BIND HD +	D3X6 NI	1	\$ 0.066
TSTD0200003 SPRING PLATE:KNOB	D6.02XL9.53	3	\$ 0.389
TSTD0213232 RIVET:AL,ID PLATE	D3.2X3.2	2	\$ 0.158
UTUD013172Z OWNER'S MANUAL	**	1	\$ 0.000
UTYY580002A FCC RULES RART 95	**	1	\$ 0.389
VNYL1081800 VINYL BAG	80X180X0.05T	1	\$ 0.026
VNYL1122800 VINYL BAG	120X280X0.05T	1	\$ 0.086
VNYL2323765 VINYL	320X370X650X0.07	0.08333	\$ 1.406
VNYL3101200 VINYL BAG	100X120X0.1T	1	\$ 0.053
VNYL3173200 VINYL BAG	170X320X0.1T	1	\$ 0.139
WBXC318703Z DISPLAY BOX	**	1	\$ 0.000
WCT2418704Z SHIPPING CARTON BOX	**	0.08333	\$ 0.000
WSFC318705Z STYROFOAM PAD	**	2	\$ 0.851
WSLV418706Z SLEEVE	**	1	\$ 0.403
TOTAL >>>>>>>>>>			177.828

## 7. FREQUENCY CHART

Frequency Chart of Fvco and Divide Ratio N

Antenna Frequency (MHz)	Channel Number	For Trasmit (R/T=H) Divide Ratio (N)	VCO Frequency (MHz)	For Receive (R/T=L) Divide Ratio (N)	VCO Frequency (MHz)
26.965	1	2696	26.965	1627	16.273
26.975	2	2697	26.975	1628	16.283
26.985	3	2698	26.985	1629	16.293
27.005	4	2700	27.005	1631	16.313
27.015	5	2701	27.015	1632	16.323
27.025	6	2702	27.025	1633	16.333
27.035	7	2703	27.035	1634	16.343
27.055	8	2705	27.055	1636	16.363
27.065	9	2706	27.065	1637	16.373
27.075	10	2707	27.075	1638	16.383
27.085	11	2708	27.085	1639	16.393
27.105	12	2710	27.105	1641	16.413
27.115	13	2711	27.115	1642	16.423
27.125	14	2712	27.125	1643	16.433
27.135	15	2713	27.135	1644	16.443
27.155	16	2715	27.115	1646	16.463
27.165	17	2716	27.165	1647	16.473
27.175	18	2717	27.175	1648	16.483
27.185	19	2718	27.185	1649	16.493
27.205	20	2720	27.205	1651	16.513
27.215	21	2721	27.215	1652	16.523
27.225	22	2722	27.225	1653	16.533
27.255	23	2725	27.255	1656	16.563
27.233	24	2723	27.235	1654	16.543
27.245	25	2724	27.245	1655	16.553
27.265	26	2726	27.265	1657	16.573
27.275	27	2727	27.275	1658	16.583
27.285	28	2728	27.285	1659	16.593
27.295	29	2729	29.295	1660	16.603
27.305	30	2730	27.305	1661	16.613
27.315	31	2731	27.315	1662	16.623
27.325	32	2732	27.325	1663	16.633
27.335	33	2733	27.335	1664	16.643
27.345	34	2734	27.345	1666	16.663
27.365	36	2736	27.365	1667	16.673
27.375	37	2737	27.375	1668	16.683
27.385	38	2738	27.385	1669	16.693
27.395	39	2739	27.395	1670	16.703
27.405	40	2740	27.405	1671	16.713

## **8. TECHNICAL DRAWINGS**





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				

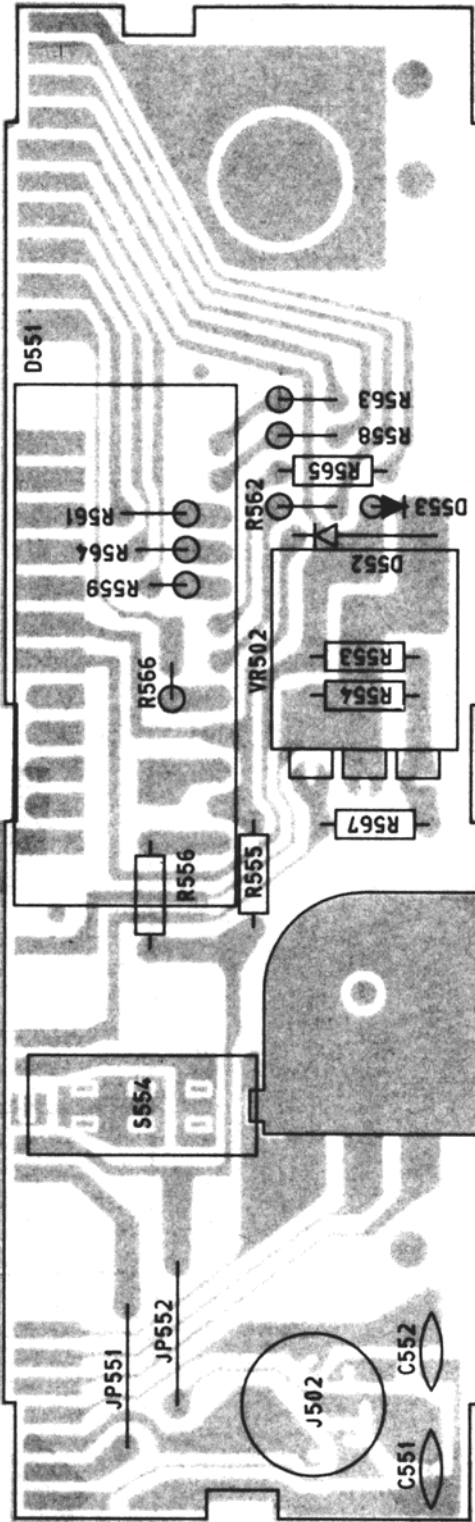
JP551	10				
JP552	10				

S554	SW557				

D551	LL-2041T				
D552	1S1555				
D553	1S1555				

J502	JK374				

B551 PA248AA



- 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.
Sb/11/13	UT-317	PRO 510e
Kenya as	TITLE	FRONT PCB
CHECK BY	APPRO. BY	PARTS ASSEMBLY TOP VIEW
		REV. MARK
		E24-6650

UT317/PA248AA::52:1

UNIDEN CORP.



