

*EEPS-30866-0

RELAY AND RELAY DRIVER TEST PROCEDURE

1. GROUND TP12 (RUN/TEST). VERIFY THAT RELAYS K1-K5, AND K22 FOR 30 MHz TUNERS, ARE CLOSED.
2. GROUND TP11 (ELEMENTS IN/OUT) AND TP12 (RUN/TEST). VERIFY THAT RELAYS K6-K21, AND K23 FOR 30 MHz TUNERS, ARE CLOSED. VERIFY THAT RELAYS K1-K5 ARE OPEN.
3. INDIVIDUALLY CHECK EACH RELAY BY:
 - DISCONNECTING EITHER END OF L9.
 - APPLYING 13.8 V TO THE SWITCHED A+ INPUT (GRN).
 - GROUNDING THE APPROPRIATE TEST POINT TO ACTIVATE RELAY (TP1-TP8, TP17-TP28).
4. RECONNECT AND SOLDER L9. REMOVE GROUND FROM TP11 AND TP12.

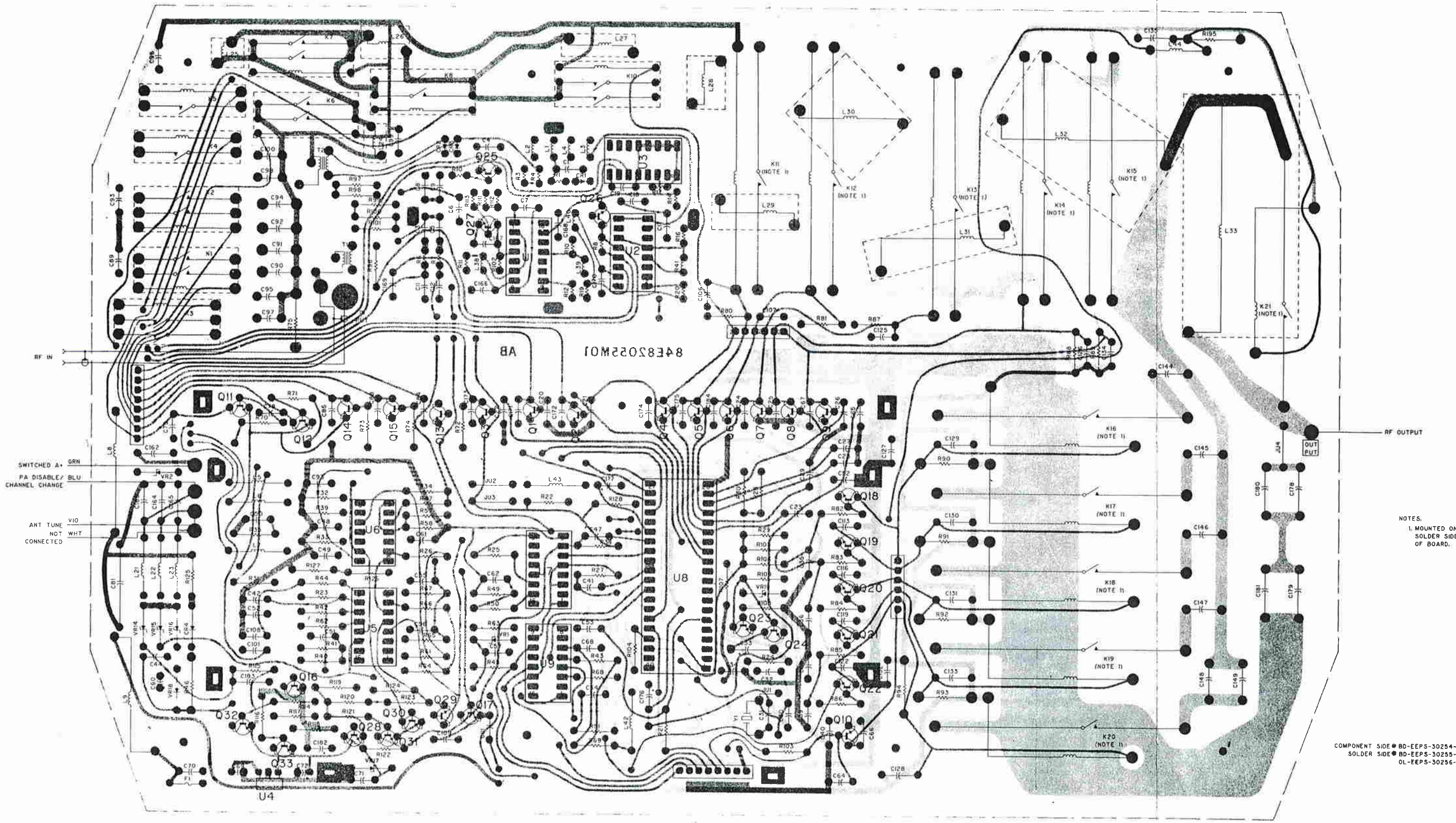
VSWR DETECTOR TEST PROCEDURE

1. CONNECT RF OUT TERMINAL TO ANTENNA OR DUMMY LOAD.
2. APPLY +5 V TO TP13 TO ENABLE SLOW TUNING MODE (SWITCHING AT 2 Hz RATE).
3. TURN ON RADIO TO APPLY SWITCHED A+ TO TUNER.
4. MONITOR VOLTAGE AT U6-11 AND J8-39. VOLTAGE AT U6-11 SHOULD GRADUALLY DROP DURING THE TUNING SEQUENCE AS THE MATCHED CONDITION IS APPROACHED. U8-39 SHOULD BE LOW FOR APPROXIMATELY ONE SECOND DURING THE TUNING SEQUENCE.

PHASE DETECTOR TEST PROCEDURE

1. DISCONNECT ANTENNA FROM RF OUT TERMINAL.
2. (T1960A AND T1962A MODELS ONLY.) CONNECT A 560 PF CAPACITOR FROM RF OUT TERMINAL TO GROUND.
3. GROUND TP11 AND TP12. UNSOLDER AND REMOVE EITHER END OF R112.
4. APPLY 3 WATT RF SIGNAL TO RF INPUT TERMINAL.
5. VARY FREQUENCY OF RF INPUT. MEASURE VOLTAGE AT U8-1. VOLTAGE SHOULD BE LOW WHEN INPUT FREQUENCY IS ABOVE 7.5 MHz.
6. RECONNECT AND SOLDER R112. REMOVE GROUND FROM TP11 AND TP12.

Automatic Antenna Tuners 2-18 MHz



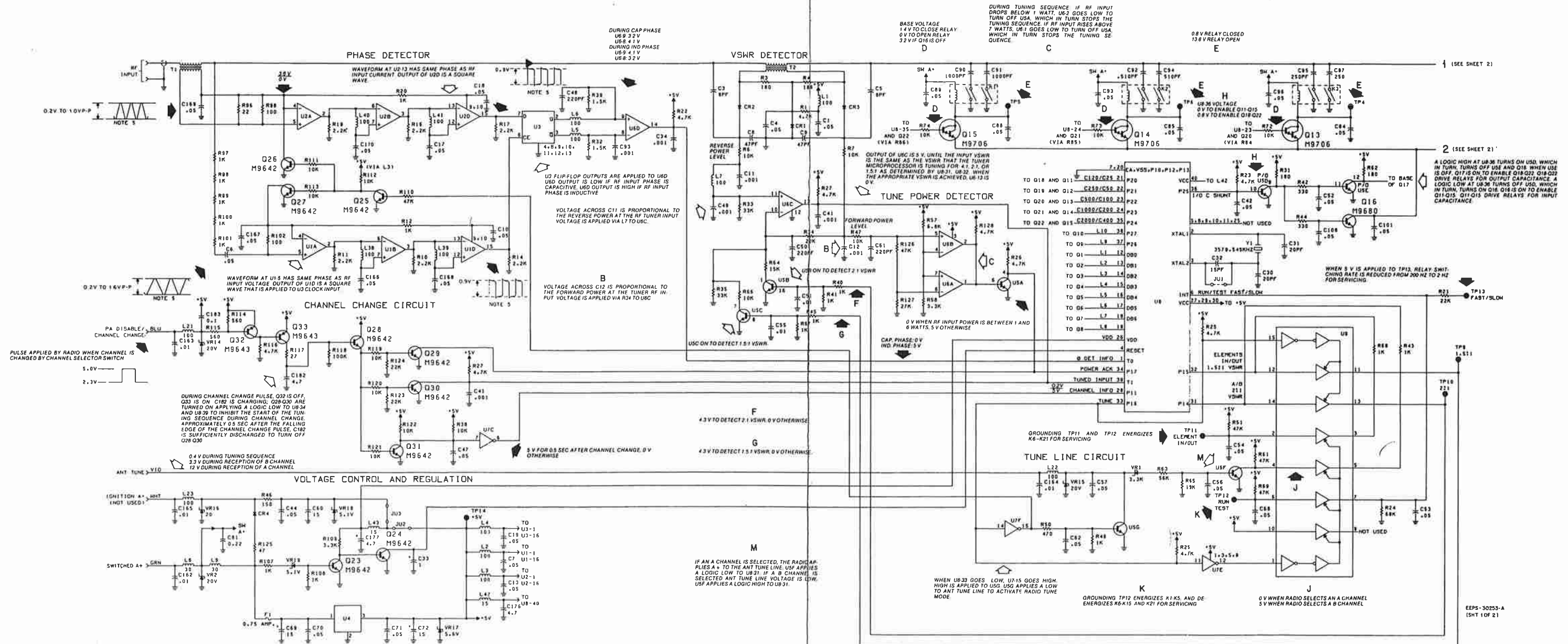
SHOWN FROM COMPONENT SIDE

NOTES:
1. MOUNTED ON
SOLDER SIDE
OF BOARD.

COMPONENT SIDE ● 8D-EEPS-30254-O
SOLDER SIDE ● 8D-EEPS-30255-O
OL-EEPS-30256-A

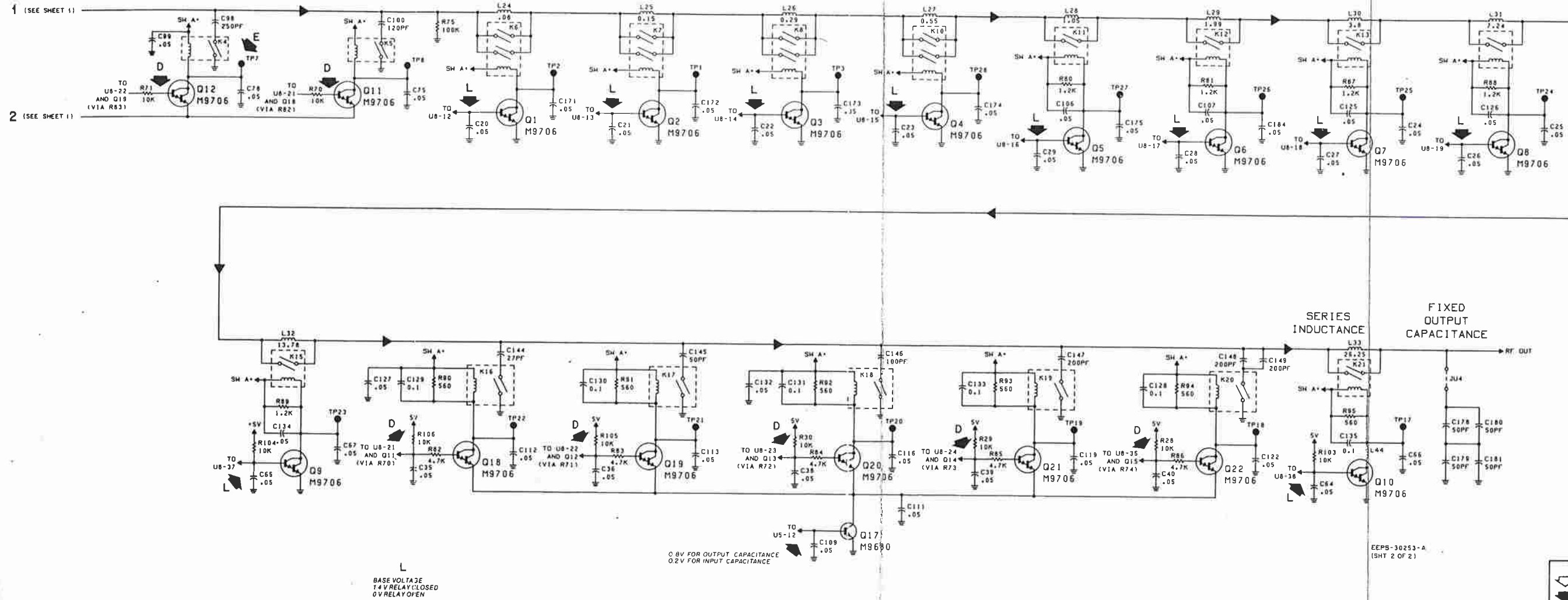
Automatic Antenna Tuners

2-18 MHz



Automatic Antenna Tuner Schematic Diagram

Automatic Antenna Tuners 2-18 MHz



NOTES

- UNLESS OTHERWISE INDICATED, RESISTOR VALUES ARE IN OHMS; CAPACITOR VALUES ARE IN MICROFARADS; INDUCTOR VALUES ARE IN MICROHENRIES
- THIS DIAGRAM SHOWS POSITIVE LOGIC
LOGIC "1" 2 TO 5 V DC
LOGIC "0" 0 TO 1.9 V DC
- SOME INTEGRATED CIRCUITS ON THIS BOARD ARE CMOS DEVICES
- IC TYPES AND CONNECTIONS FOR THIS BOARD ARE AS FOLLOWS:

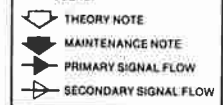
REFERENCE DESIGNATION	TYPE	VCC	GND
U1, U2	MC10115	1.16	8
U3	MC10131	1.16	8
U4	MC7805CP	1	2
U5	CA3081	3	15
U6	MC3302	3	12
U7	MC14049B	1	8
U8	8046	40.26	20
U9	MC14503	16	8

- PHASE DETECTOR WAVEFORMS AND VOLTAGES ARE MEASURED DURING TUNING SEQUENCE WITH A 2 MHz, 3 WATT LEVEL AT TUNER RF INPUT
- VOLTAGE SHOWN ABOVE LINE IS MEASURED DURING TUNING SEQUENCE, VOLTAGE SHOWN BELOW LINE IS MEASURED UNDER ALL OTHER CONDITIONS, FOR EXAMPLE 3.6V
0.7
- MEASURED WITH TUNER COMPLETELY MISMATCHED AND A 2 MHz, 3 WATT SIGNAL AT TUNER RF INPUT.

JUMPER TABLE

MODEL	JU1	JU2	JU3	JU4
T1959A	IN	IN	OUT	IN
T1961A	IN	IN	OUT	IN
T1962A	IN	IN	OUT	IN

LEGEND:



EEPS-30253-A
(SHT 2 OF 2)

Automatic Antenna Tuner
Schematic Diagram