

THEORY OF OPERATION

Circuits provide a total signal division of 65,536. This takes HF signals which can be up to 30 Mhz, and changes them into a signal which can be read directly by microprocessor U1 to determine the operating frequency of the exciter. The signal information is sent to U1 on connector pin J1-4, "counter output".

4.6 RF OUTPUT PCB ASSEMBLY A4

Refer to schematic diagram figure 6-3 for the following discussion. Unless otherwise noted all components are prefixed A4.

The RF Output PCB Assembly consists of four relays and their support circuitry. The relays are used to switch various RF output functions such as coupler bypass and capacitor A1U1. Voltage input (+28 Vdc) for all of the relays is applied through connector J1, pin 7. The relays are activated by applying a ground through a transistor switch located externally to the A4 assembly.

Relay K1 is used to switch capacitors C1, C2, C3, C4, and C5. These capacitors form the shunt network for the coupler RF output. Ground to activate the relay is applied to

connector J7, pin 10. This ground is supplied from the Microprocessor PCB Assembly A1, connector A1J1-2.

Relay K2 is used to switch capacitors C6, and C7. These capacitors are series with the RF output forming a "T" network. Ground to activate the relay is applied to J1-9 and originates from A1J1-3.

Relay K3 is activated when the antenna coupler is in bypass mode. RF signal from assembly A3 is applied to terminals E1, and E2. This RF is then sent through K3 whose output goes directly to the antenna output terminal on the antenna coupler. Ground to activate the the relay is applied to J1-1, and originates from connector A3J2-9 on the RF input pcb assembly.

Relay K4 is activated anytime the antenna coupler is in its normal operating condition with tuning components in the RF path. Ground to activate relay K4 is applied to J1-8 and originates at connector A3J2-8. Circuitry on the RF input pcb assembly and microprocessor pcb assembly ensure that relays K4, and K3 will never be open or closed at the same time.

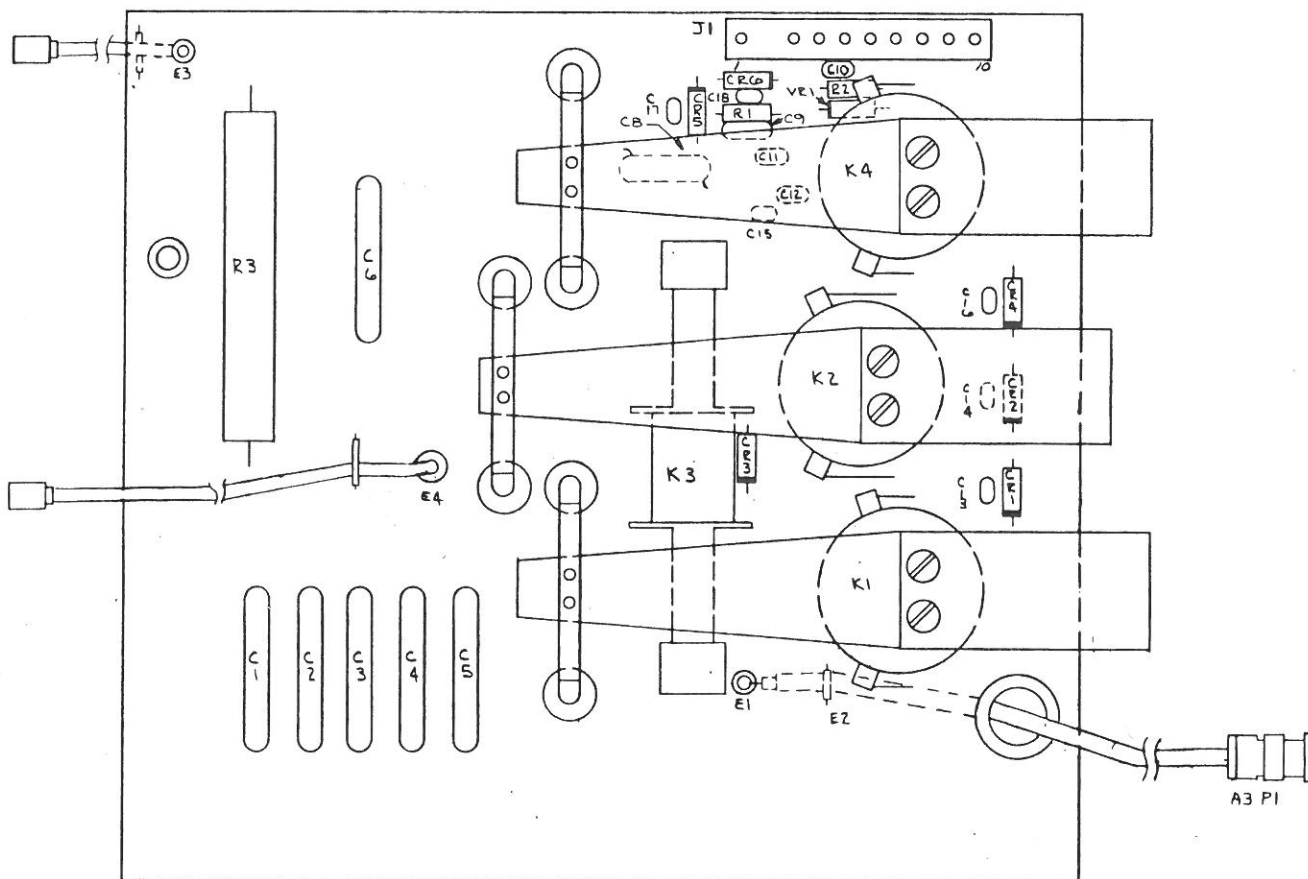


Figure 10-1. RF Output PCB Assembly A4, Component Locations

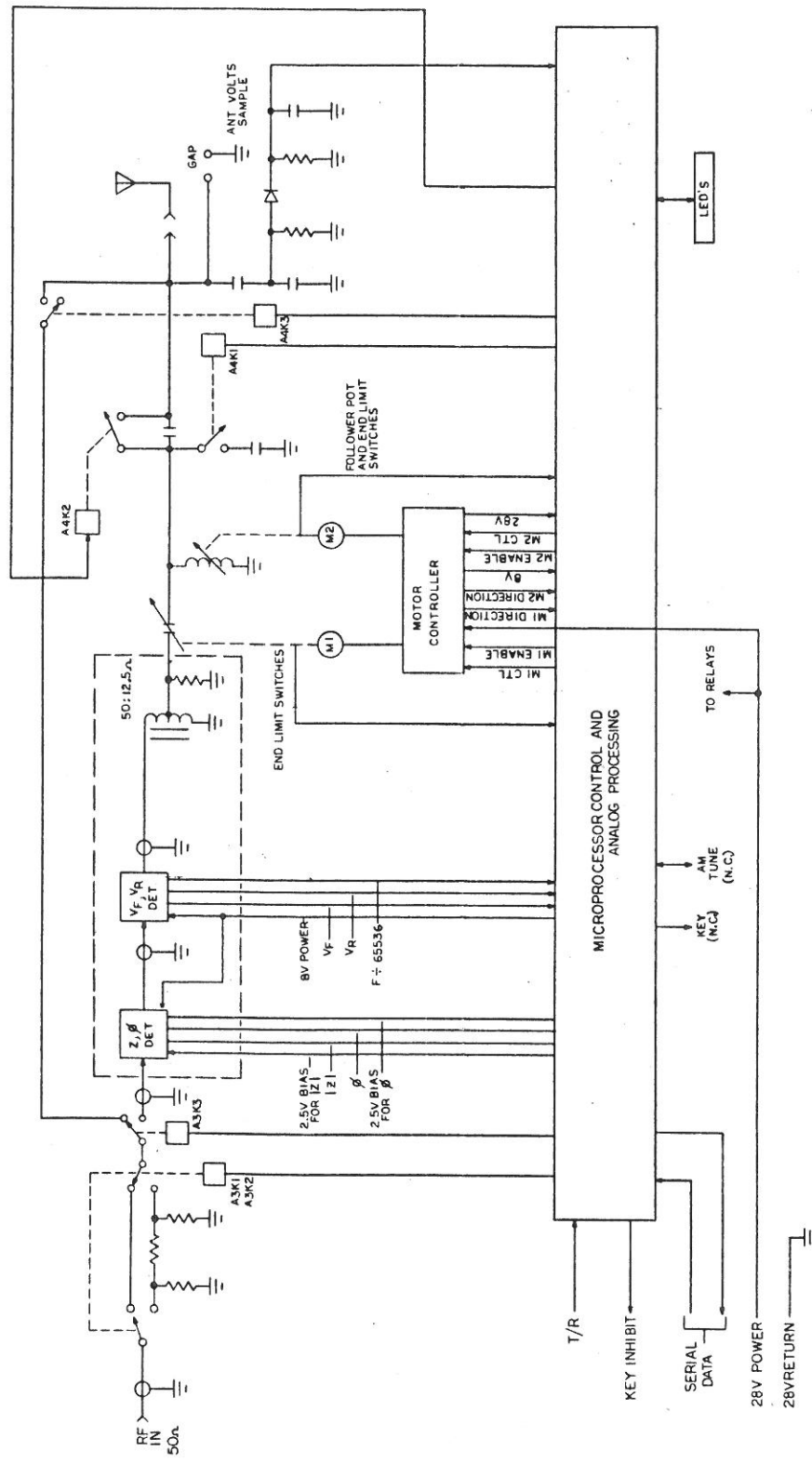


Figure 4-1. SR-680 Antenna Coupler, Block Diagram

CHAPTER 10

RF OUTPUT PCB ASSEMBLY A4

REF. DESIG.	DESCRIPTION	P/N
- -	RF OUTPUT PCB ASSY A4	680330
C1	Cap, cer, 100 pF, 5%, np0, 5 kV	C00040
C2	Cap, cer, 100 pF, 5%, np0, 5 kV	C00040
C3	Cap, cer, 100 pF, 5%, np0, 5 kV	C00040
C4	Cap, cer, 100 pF, 5%, np0, 5 kV	C00040
C5	Cap, cer, 100 pF, 5%, np0, 5 kV	C00040
C6	Cap, cer, 100 pF, 5%, np0, 5 kV	C00040
C7	Not used	- - -
C8	Cap, cer, 4.7 pF, np0, 6 kV	C00036
C9	Cap, mica, 4700 pF, 5%, 500V	C06472
C10	Cap, cer, .01 uF, 20%, 50V	C10102
C11	Cap, cer, .01 uF, 20%, 50V	C10102
C12	Cap, cer, .01 uF, 20%, 50V	C10102
C13	Cap, cer, .01 uF, 20%, 50V	C10102
C14	Cap, cer, .01 uF, 20%, 50V	C10102
C15	Cap, cer, .01 uF, 20%, 50V	C10102
C16	Cap, cer, .01 uF, 20%, 50V	C10102
C17	Cap, cer, .01 uF, 20%, 50V	C10102
C18	Cap, cer, .01 uF, 20%, 50V	C10102

REF. DESIG.	DESCRIPTION	P/N
CR1	Diode, rect, 200V, 1A, 1N4003	CR4003
CR2	Diode, rect, 200V, 1A, 1N4003	CR4003
CR3	Diode, rect, 200V, 1A, 1N4003	CR4003
CR4	Diode, rect, 200V, 1A, 1N4003	CR4003
CR5	Diode, si, 1N4148	CR4148
CR6	Diode, si, 1N4148	CR4148
J1	Recept, 10 pin, m, pc	J00211
K1	Clapper Assembly	680335-01
K2	Clapper Assembly	680335-02
K3	Relay, reed, 5 kV, 5A	K10026
K4	Clapper Assembly	680335-01
R1	Res, cc, 470 ohm, 5%, 1/4W	R20471
R2	Res, cc, 10K, 5%, 1/4W	R20103
R3	Res, hi-volt, 47 meg	R90010
VR1	Zener, 4.7V, 400 mV, 5%, 1N750A	CR7500