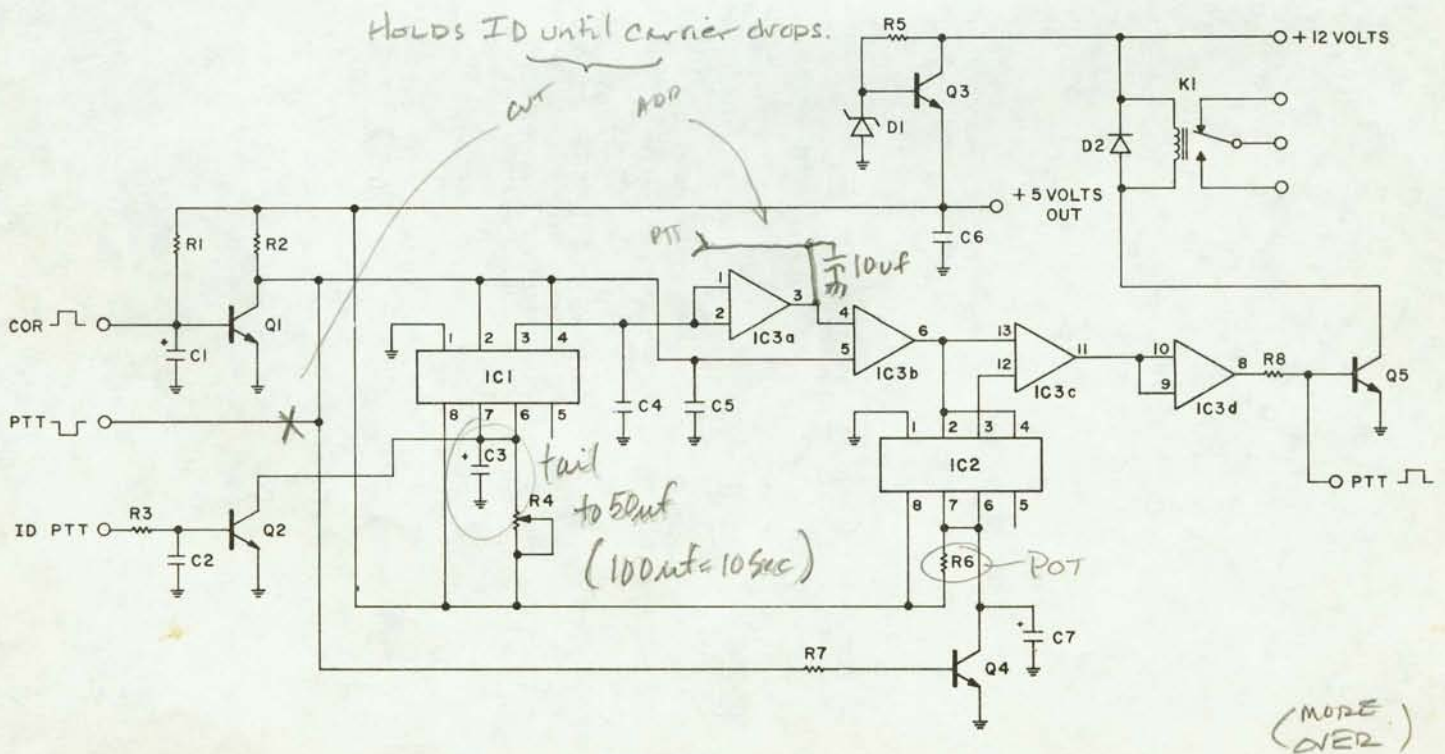
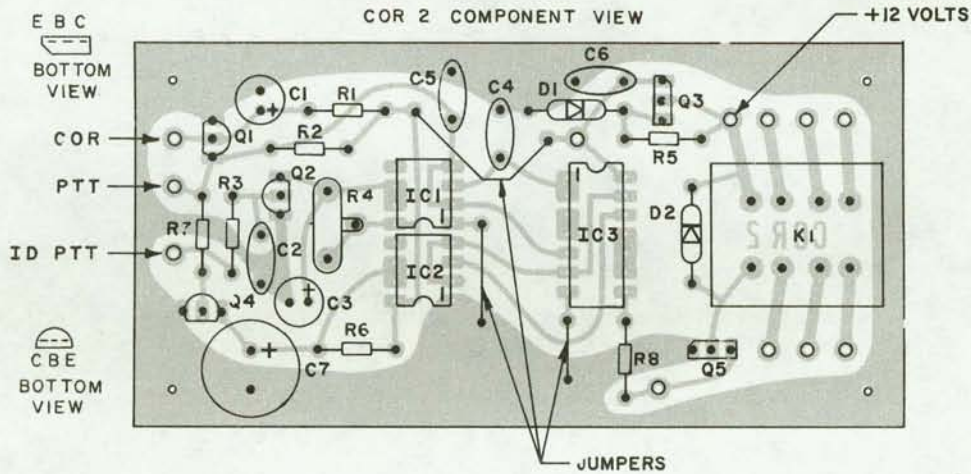


# COR 2

5011001  
REV.00  
SEPT 1977

(Kit 7010250)  
(Wired 7010251)

C1	4.7MFD 16V	(2010490)	R1	100K	(2020410)
C2	.001	(2010370)	R2	2.2K	(2020260)
C3	22MFD 16V	(2010520)	R3	2.2K	(2020260)
C4	.01	(2010410)	R4	50K Pot	(2020560)
C5	.01	(2010410)	R5	470 1/2W	(2020200)
C6	.1	(2010440)	R6	1 Meg	(2020470)
C7	150 TAN	(2010560)	R7	4.7K	(2020290)
			R8	2.2K	(2020260)
IC1	NE555V	(1050150)	Q1	MPS5172	(1020090)
IC2	NE555V	(1050150)	Q2	MPS5172	(1020090)
IC3	SN7400	(1040010)	Q3	NSE180	(1020080)
			Q4	MPS5172	(1020090)
			Q5	NSE180	(1020080)
K1	12V DPDT Relay	(3020028)	D1	5.6V Zener	(1010075)
13	Keystone Pins	(4060130)	D2	1N4148	(1010049)
1	Printed Circuit Board	(4040150)			
1	Instruction Sheet	(5011001)			



## TIMERS

### Squelch Tail Timer

The squelch tail (3 second) timer circuit is composed of IC 1, C3 & R4. The delay is adjustable from .1 to 5 seconds by adjusting the value of R4.

### Time-Out Timer

The time-out (3 minute) timer circuit is composed of IC2, C7 & R6. The delay is adjustable from  $\frac{1}{2}$  minute to 3 minutes by changing the value of R6, 470k about 1 min., 1 meg about 2 min. 1.5 meg about 3 min.

## CONNECTIONS

### COR

To be connected to the COR output connection, indicated on the schematic of the RX-144 receiver. The receiver normally supplies a ground through an open collector of a transistor in the squelch IC. DO NOT APPLY ANY VOLTAGE TO THE COR INPUT. Ground this connection when testing.

### PTT Input

Normally used to activate the ID by supplying a logic 0 when a signal is being received. May also be used for local control (mike, phone patch, etc.). The COR input must be grounded when using the PTT for local control.

### ID PTT

Normally connected to PTT output of ID. A positive voltage from the ID holds the 3 second timer until cycle is finished. Connect to ground if not used.

### PTT

The PTT connected to the base of Q5 may be used two ways. Applying a ground will lock the COR off. Applying a positive voltage (5-12 volts) through a 2.2 K resistor will activate the COR, by passing the timers.

## TESTING

Applying power (12 volts) to the COR with all inputs open will activate the relay. Grounding the COR input will cause the relay to open after a delay depending on the setting of R-4. Grounding the PTT input line should cause the relay to close. Leaving the PTT input grounded or COR open, the relay will open after the time-out timer trips. The exact time will depend on the value of R-6.

## THEORY OF OPERATION

The COR-2 is a complete control module designed for use with the RX series of receivers for repeater control.

When no signal is being received, the output transistor in the receiver squelch circuit effectively grounds the COR input.

When a signal is received, the COR input goes high (.6V nominal) switching Q1 on and effectively grounding the push to talk line.

WARNING: Any D.C. voltage applied to the COR input may cause Q1 to be damaged.

When the PTT line goes low, Q5 is turned on through a series of gates in IC3 causing the relay to close. Q4 is also switched off allowing C7 to begin charging through R6 starting the 3 minute time function. If the carrier stays on for 3 minutes IC2 fires ground pin 12 of IC3 causing the relay to open. The circuit will reset when the carrier drops.

When the PTT line goes high, IC1 holds the relay closed until C3 charges. Q2 will keep C3 from charging when the ID is running. This is accomplished by applying a positive voltage from the ID push to talk line. If this function is not needed, Q2 may be omitted when building the circuit. An alternative is to simply ground the ID line.

Q4 resets the three minute timer each time the PTT line goes high. If you desire to reset the three minute timer only when the repeater carrier drops - disconnect the end of R7 that goes to PTT line and connect it to the junction of pins 9, 10, and 11 of IC3.