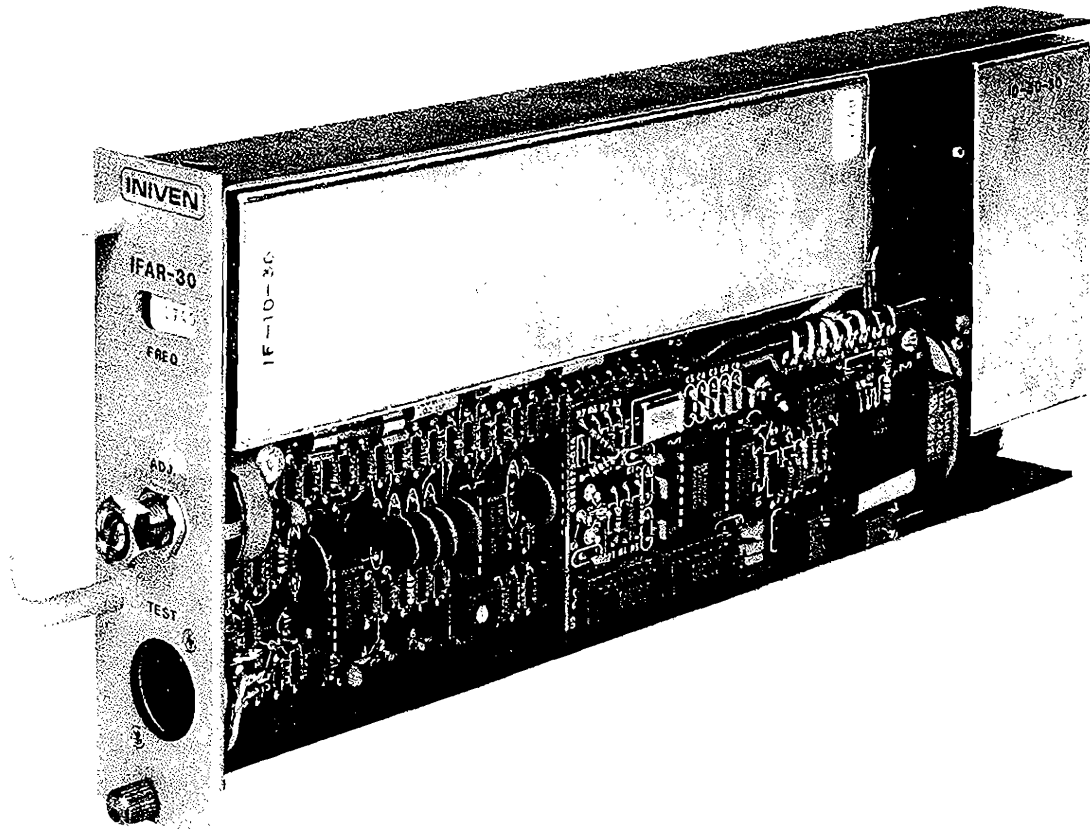


INIVEN™

ANALOG
RECEIVER

INSTRUCTION MANUAL



IFAR-30 ANALOG RECEIVER

1. DESCRIPTION

1.1 The IFAR-30 is a variable frequency (5-25 Hz) to single analog (4-20 ma typical) receiver. The IFAR-30 accepts a variable frequency input from a matching transmitter and converts it to a 4-20 ma signal.

1.2 The IFAR-30 is available in narrow and broad band channel spacings of 100 Hz, 120 Hz, 170 Hz, 240 Hz, and 340 Hz. The operating frequency of the unit is determined by two plug-in modules, an IF-10 filter and ID-30 discriminator. The operating frequency is visually displayed on the front panel in the cutout of the IFAR-30.

2. SPECIFICATIONS

INPUT: Variable frequency (5-25 Hz).

OUTPUT: Current or voltage (4-20 ma standard into 500 ohm load).

ACCURACY: $\pm 0.1\%$ at room temperature.
 $\pm 0.5\%$ at extreme temperature points.

SENSITIVITY: Continuously adjustable to -40 DBM

INPUT IMPEDANCE: 600 ohms nominal with rising characteristics out of passband.

POWER REQUIREMENT: ± 12 Vdc; 105 ma. max.

PROTECTION: 1/2 amp fuse located internally.

TEMPERATURE RANGE: -30°C to $+70^{\circ}\text{C}$

WEIGHT: Approximately 3 lbs.

3. FEATURES

3.1 Sensitivity Adjustment—A potentiometer located on the front panel allows the IFAR-30 to be operated with a wide range of input levels.

3.2 Test Socket—A TEST socket located on the front panel of the IFAR-30 provides the user access to the following important measurements without disengaging the unit from the system:

PIN NUMBER FUNCTION

- 1 and 2 Tone input
- 3 Positive side of 12 Vdc power supply
- 4 Negative side of 12 Vdc power supply

3.3 Span Adjustment—A Span adjustment allows the user to calibrate the receiver for 100% full scale (20 ma).

3.4 Offset Adjustment—An offset adjustment allows the user to calibrate the receiver for 0% full scale (4 ma).

3.5 Carrier Relay—A carrier relay ensures transmitter/receiver continuity.

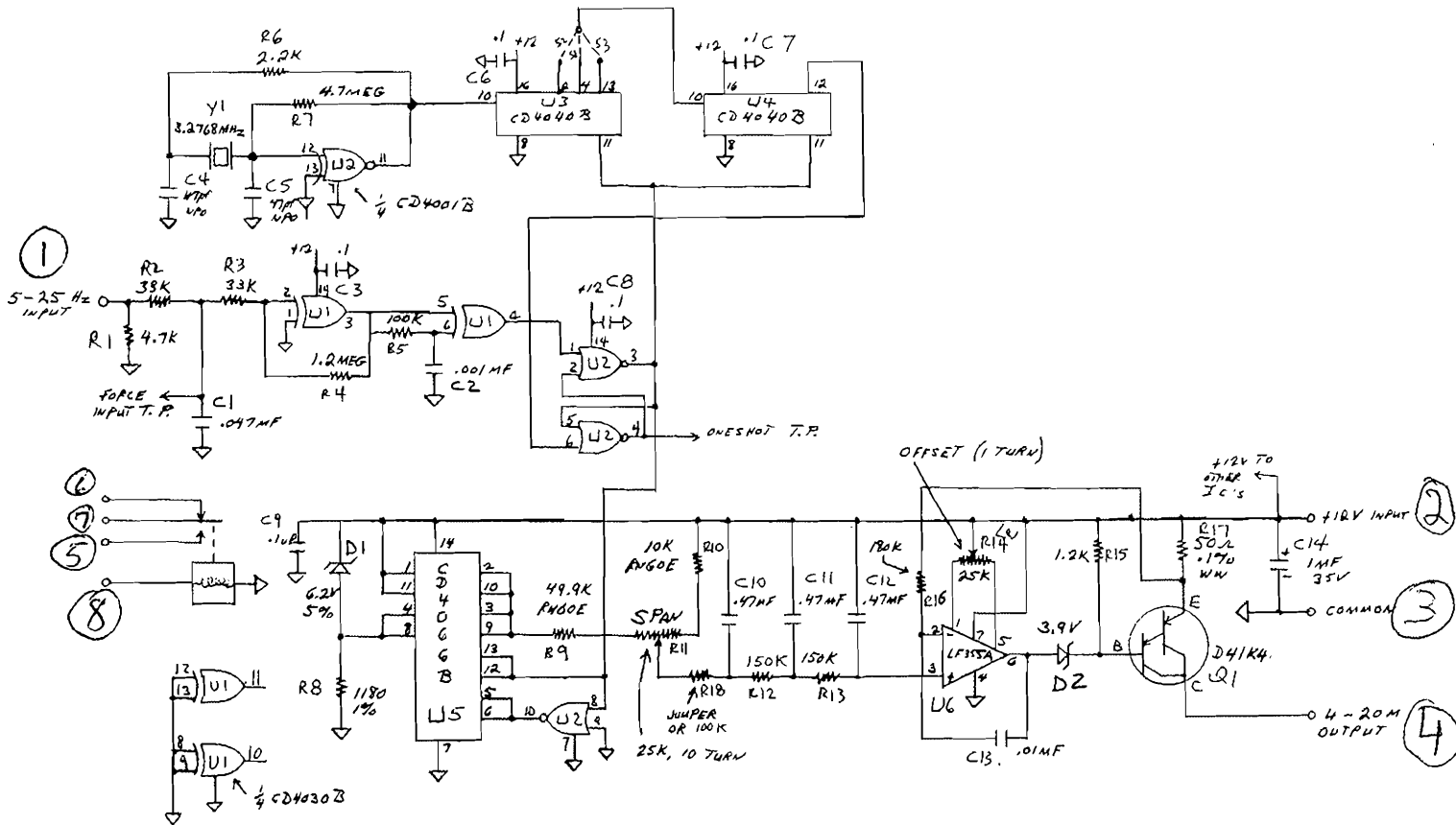
4. INSTALLATION

4.1 Electrical Installation—All wiring is done externally through the rear connector as follows:

TERMINAL	SIGNAL
1	+12 Vdc
2	-12 Vdc
3 & 4	Tone Input
7	Analog Output (+)
8	Analog Output (-)
13	N.C. Carrier Relay
14	A. Carrier Relay
15	N.O. Carrier Relay

4.2 Sensitivity Adjustment—Sensitivity Adjustment Procedure As Follows:

- a) With transmitter of matching frequency on-line, rotate pot on faceplate counter-clockwise until carrier relay de-energizes.
- b) Rotate pot clockwise until carrier relay energizes.



4.3 Span Adjustment—The Span adjustment is as follows:

- a) Input a 25 Hz signal to the receiver at TP1.
- b) Observe the output of the receiver at terminals 7(+) and 8(-) with a multimeter.
- c) Adjust pot R10 until the multimeter indicates 20 ma.

4.4 Offset Adjustment—The offset adjustment procedure is as follows:

- a) Input a 5 Hz signal to the receiver at TP1.
- b) Observe the output of the receiver at terminals 7(+) and 8(-) with a multimeter.
- c) Adjust pot R13 until the multimeter indicates 4 ma.

5. ORDERING INFORMATION

5.1 When ordering please specify:

1. Model Number—Center Frequency—Shift, i.e. IFAR-30-1775-25 would specify a Model IFAR-30 receiving at the center frequency of 1775 Hz with a shift to 1800 Hz to receive Mark and a shift to 1750 Hz to receive Space. (± 25 Hz shift)
2. Special Features or Options

5.2 Refer to Table 5-2 for complete list of available frequencies.

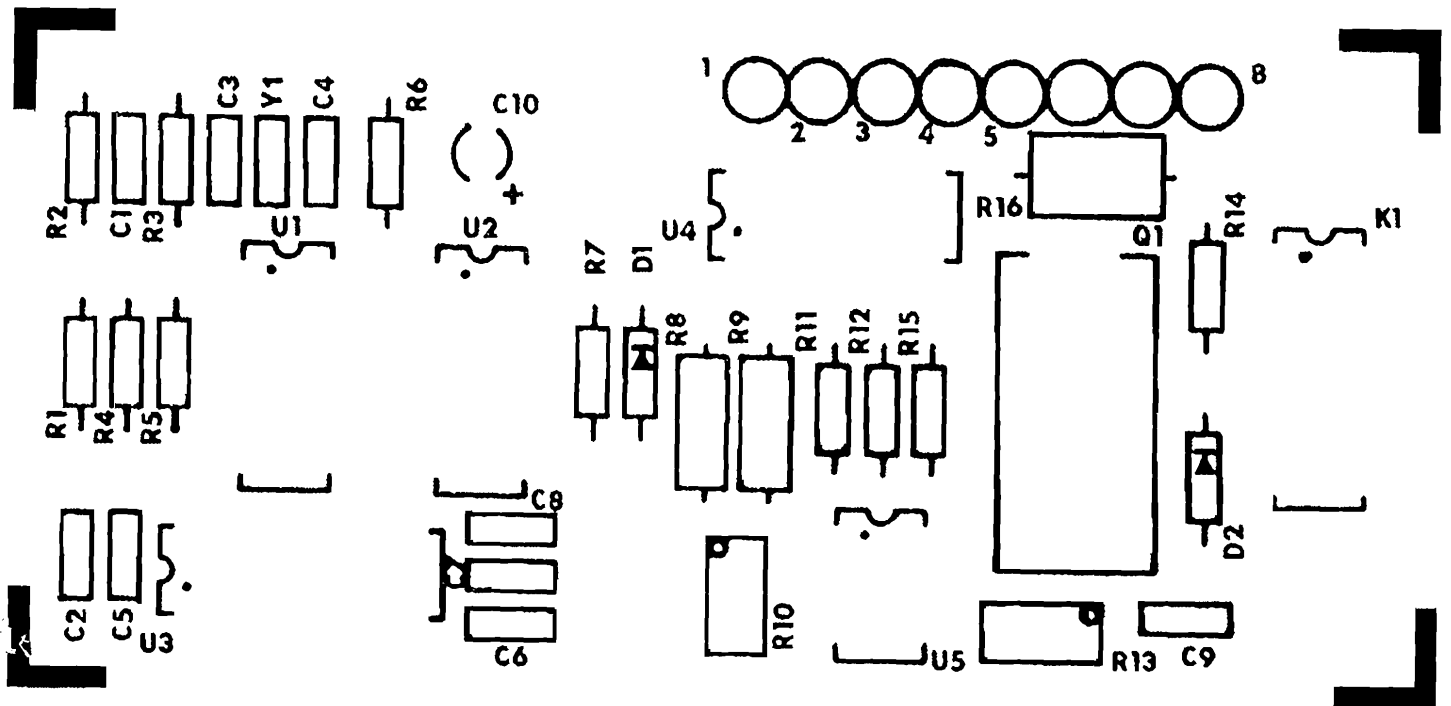
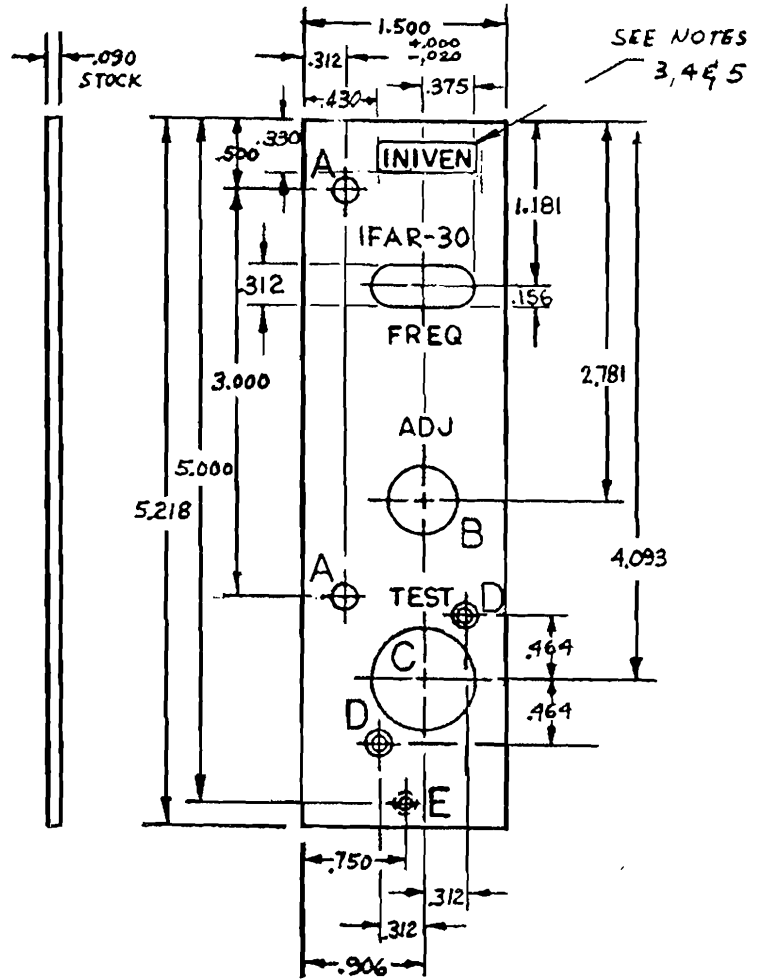


Table 5-1. Suggested Multiple Tone Transmitter Output Levels

WHEN INFORMATION IS NOT AVAILABLE FROM TELEPHONE CO.

NUMBER OF TONE CHANNELS ON LINE	RECOMMENDED LEVELS	
	DBM	RMS VOLTS (600 μ)
1	0	0.78
2	-3	0.55

3	-5	0.45
4	-6	0.40
5	-7	0.35
6 to 7	-8	0.30
8 to 10	-10	0.25
12 to 16	-12	0.20
17 to 25	-13	0.17

Table 5-2.

Channel Center Frequency (Hz)					
Series Half Band Width	25	30	35 or 42	60	85
	Channel Spacing (Hz)	100	120	170	240
Baud Rate	50	60	80	120	170
Channel No. -01	365	420	425	480	850
-02	465	540	595	720	1190
-03	565	660	765	960	1530
-04	665	780	935	1200	1870
-05	765	900	1105	1440	2210
-06	865	1020	1275	1680	2550
-07	965	1140	1445	1920	2890
-08	1075	1260	1615	2160	3230
-09	1175	1380	1785	2400	
-10	1275	1500	1955	2640	
-11	1375	1620	2125	2880	
-12	1475	1740	2295	3120	
-13	1575	1860	2465	3360	
-14	1675	1980	2635		
-15	1775	2100	2805		
-16	1875	2220	2975		
-17	2000	2340	3145		
-18	2100	2460	3315		
-19	2200	2580	3485		
-20	2300	2700			
-21	2400	2820			
-22	2500	2940			
-23	2600	3060			
-24	2700	3180			
-25	2800	3300			
-26	2900	3420			
-27	3000				
-28	3100				
-29	3200				
-30	3300				
-31	3400				
-32	3500				

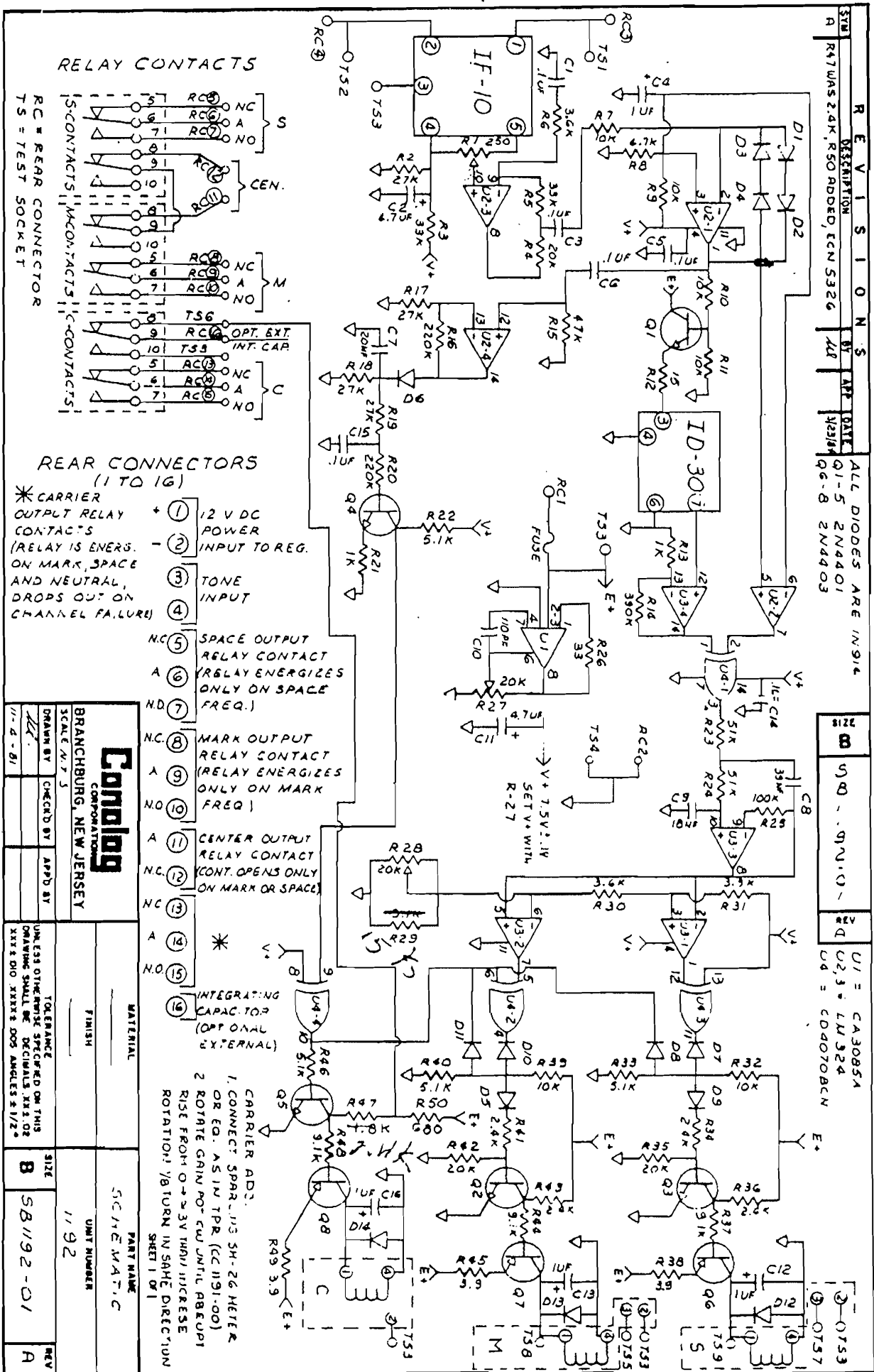


Figure 1.