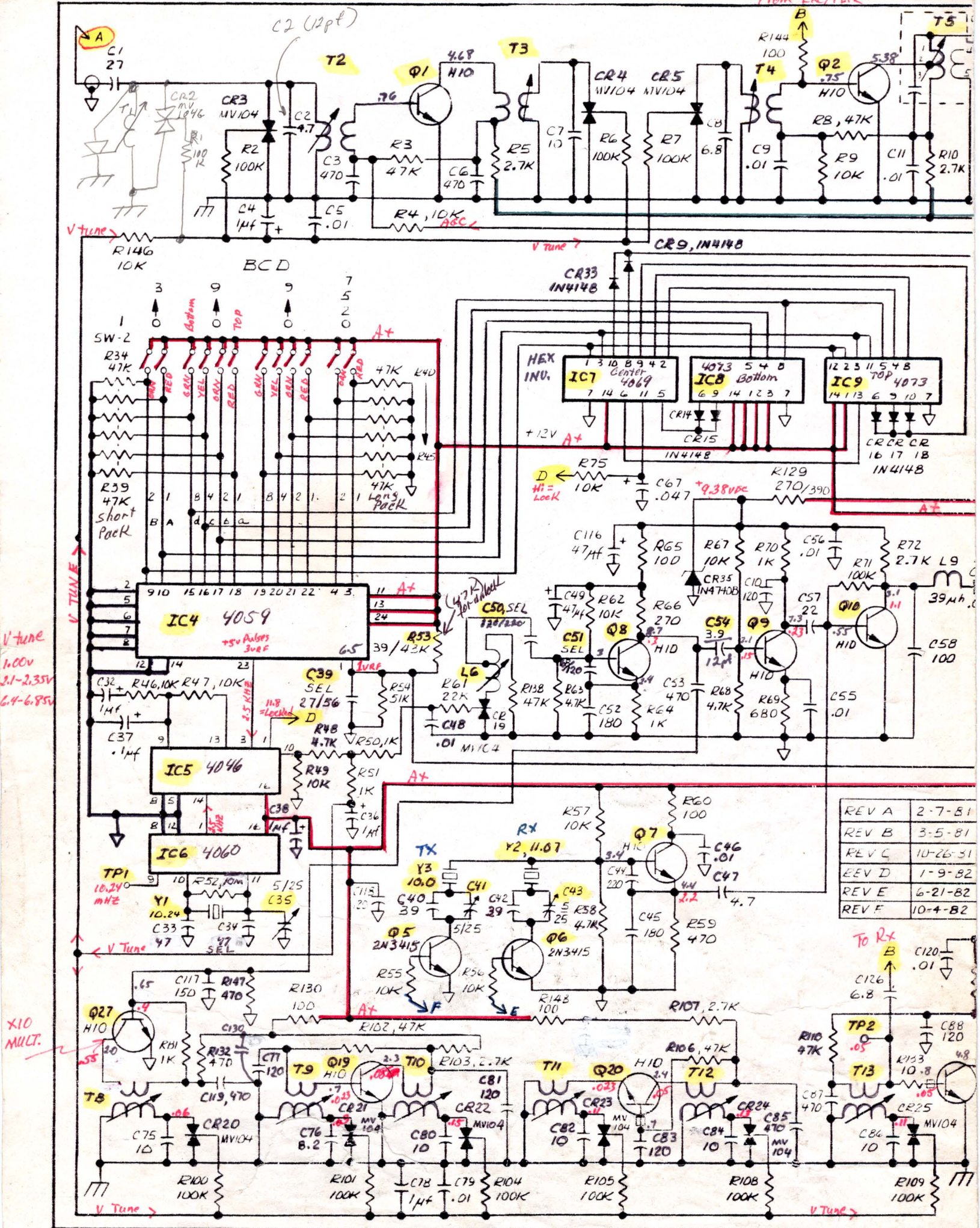
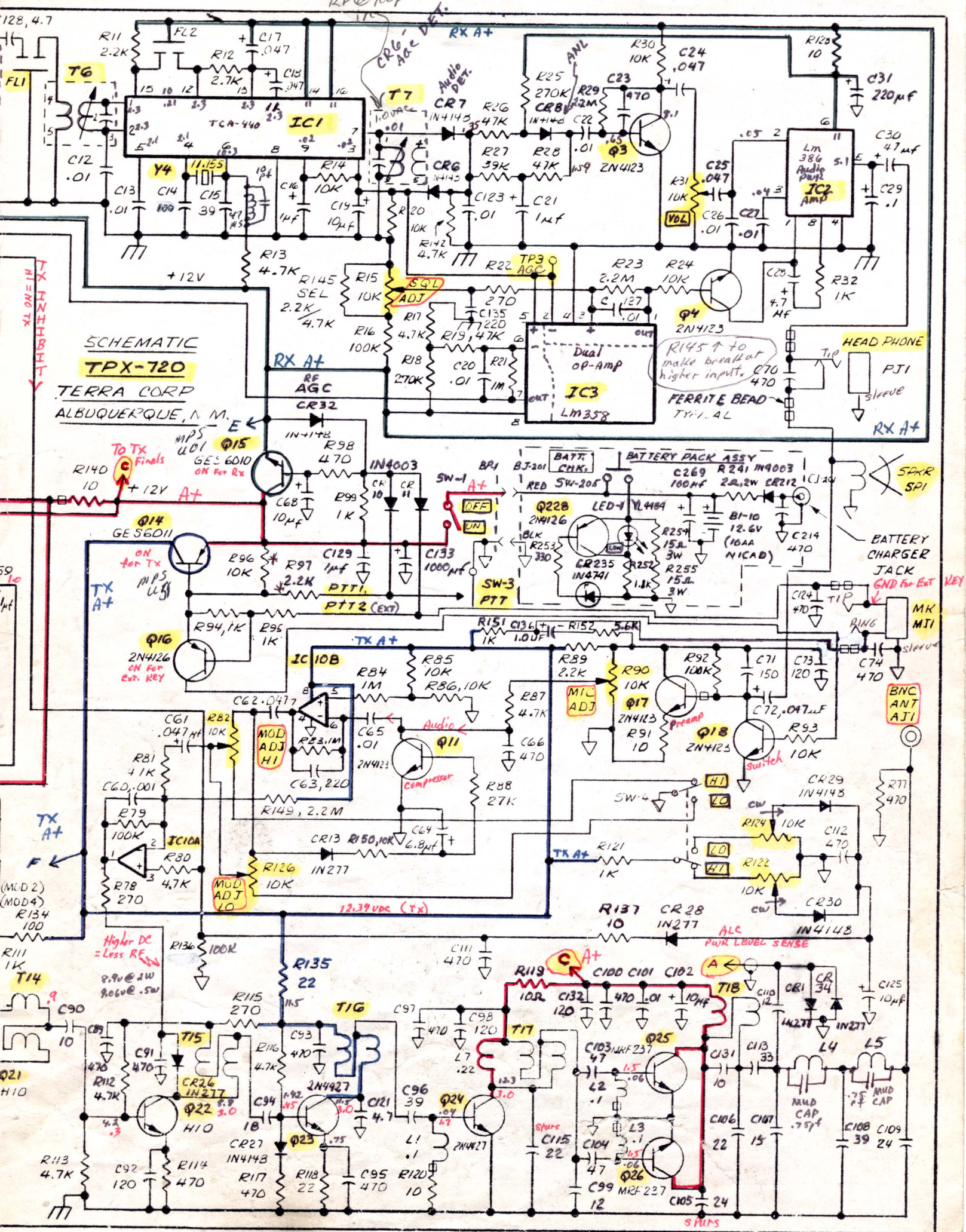
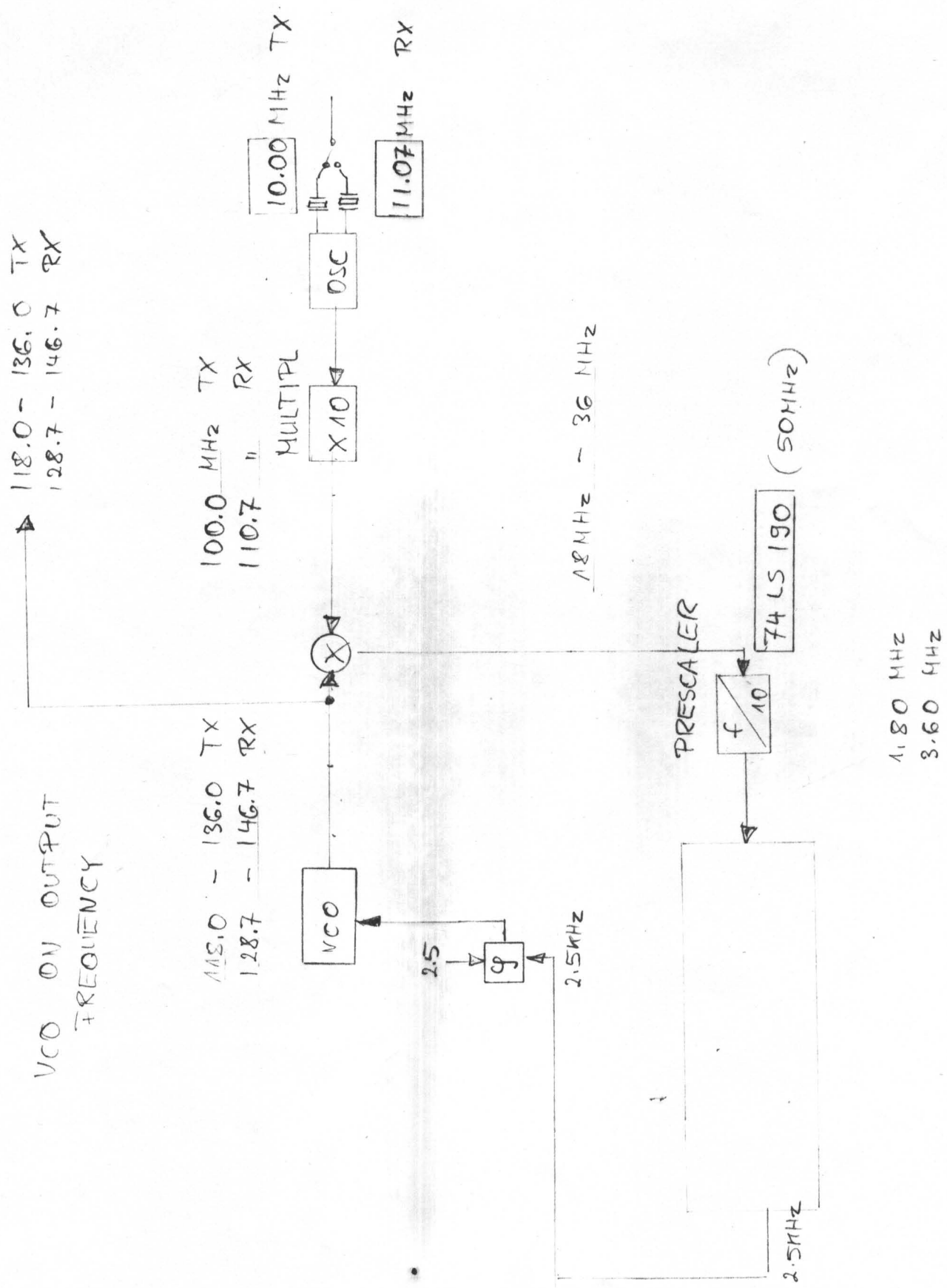




REV A	2-7-81
REV B	3-5-81
REV C	10-26-81
REV D	1-9-82
REV E	6-21-82
REV F	10-4-82

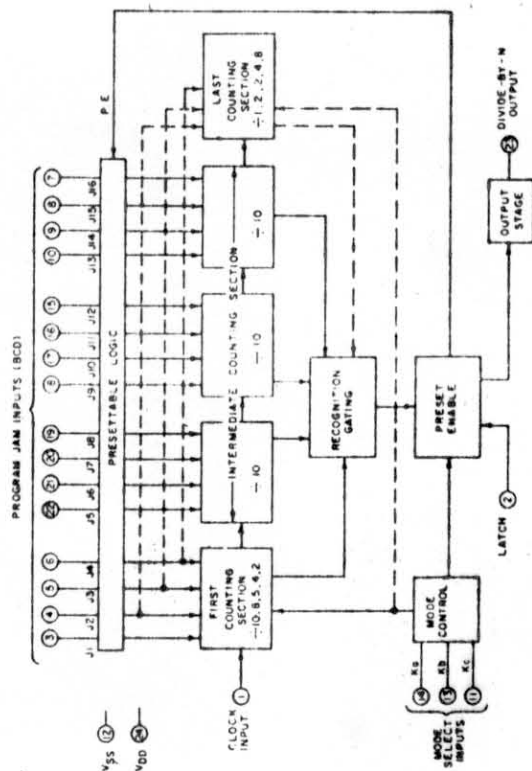




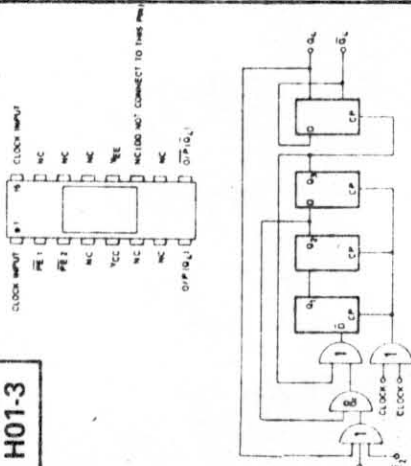
29. LOGIC/BLOCK DRAWINGS

29.

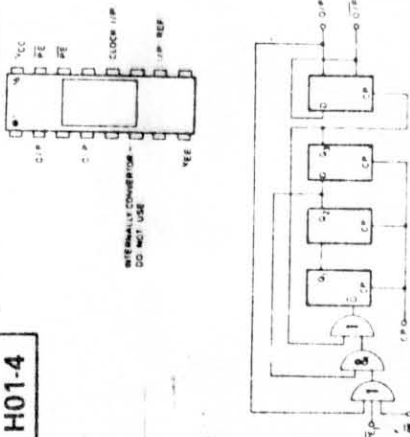
H01-1



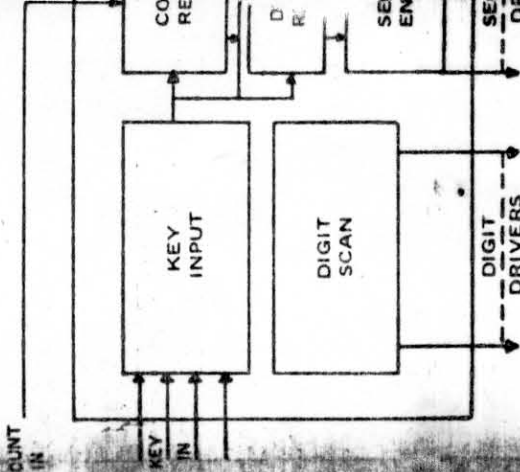
H01-3



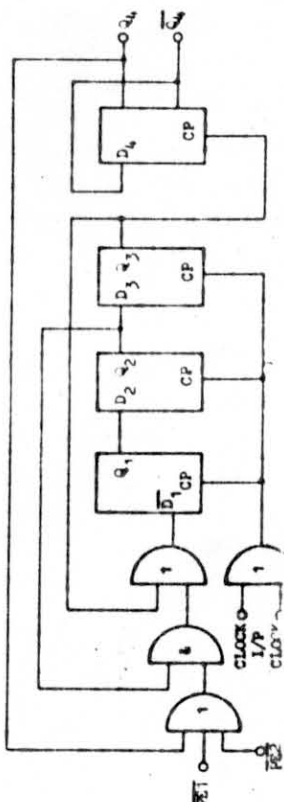
H01-4



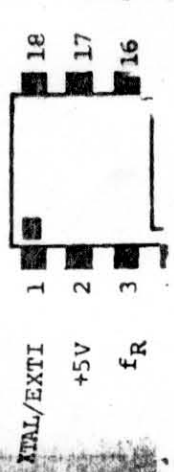
H01-8



H01-5

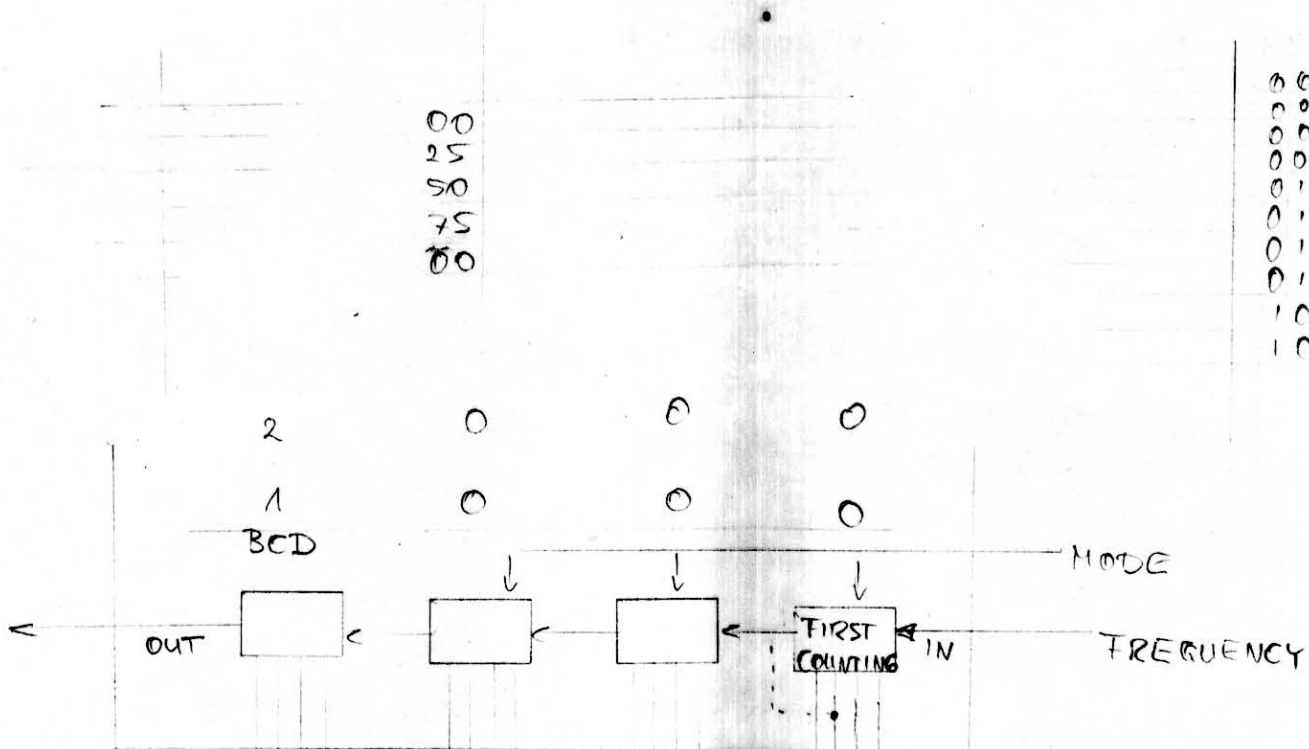


H01-9



7 -> 8
2 -> 13

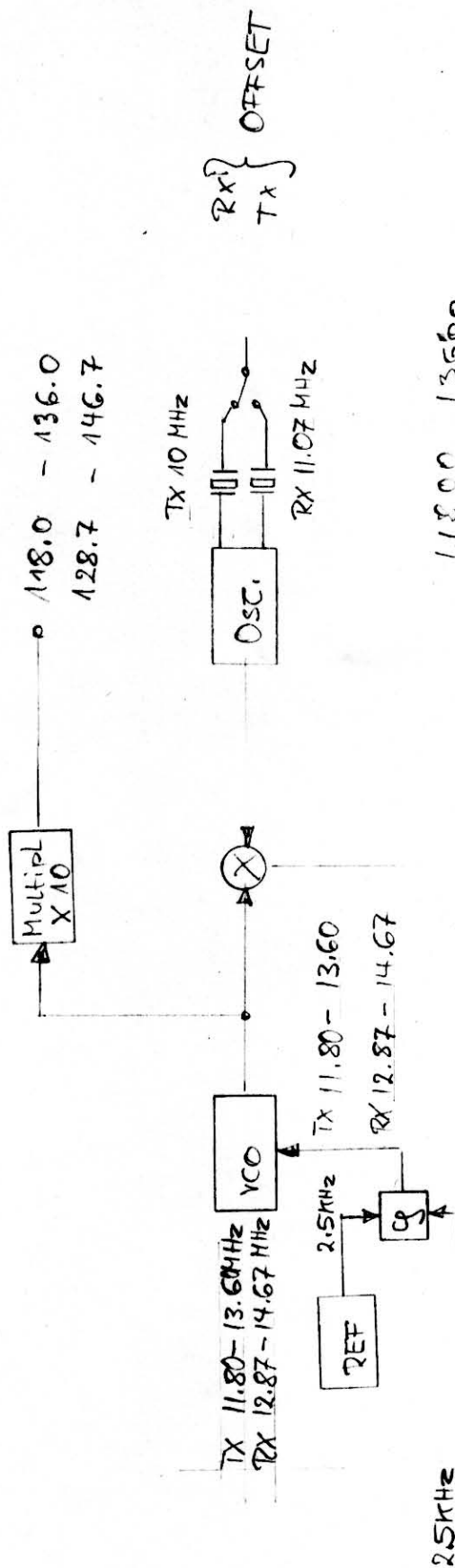
EXAMPLE BCD COUNTER



	0000	0000	0000	0000	
1000	0001	0000	0000	0000	
1532	1	0101	0011	0010	
2999	0010	1001	1001		
	2	9	9		
1000	0001	0000	0000	0000	00
1001	0001	0000	0000	01	25
1002	0001	0000	0000	10	50
1003	0001	0000	0000	11	75
1004	0001	0000	0000	00	00
1005					
6					
7					

⇒ 1.004

$$A \cos 2\pi \cdot f \cdot t \left[1 + m \left(\cos 2\pi f \cdot t \right) \right]$$

$$\begin{array}{r} 136 \text{ MHz} \\ 108 \text{ MHz} \\ 28 \text{ MHz} \\ \hline 0.0025 \text{ MHz} \end{array} = 1120$$
$$\frac{1.8 - 1.36}{0.025} \Delta F = 18 \text{ MHz} = 720$$


1.80 MHz
3.60 MHz

11800	13600
720	1440
11080	12160

CONTINUED

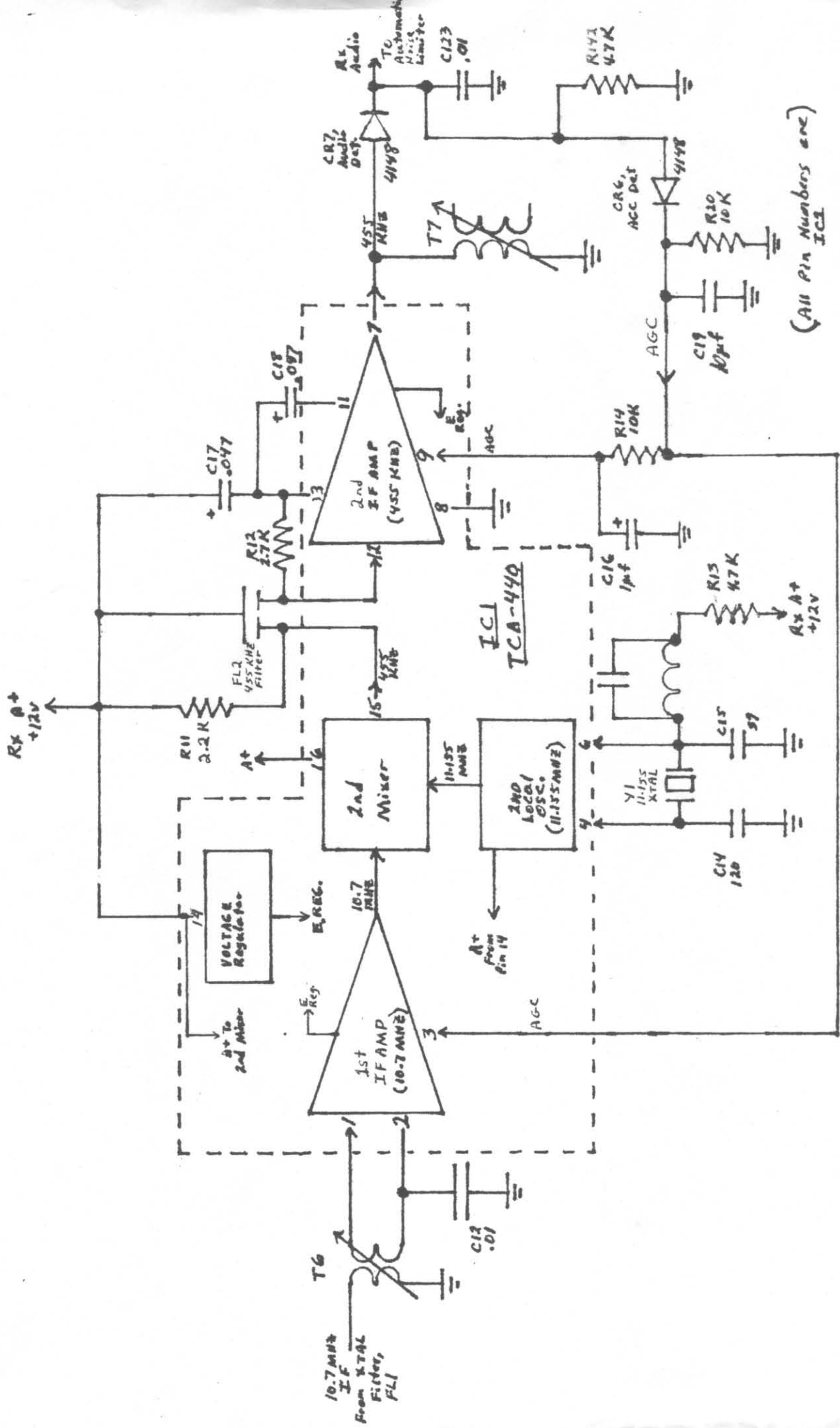
[illegible]

001NH1RIT

NO 6/7/8/9
if $A \leq 3$

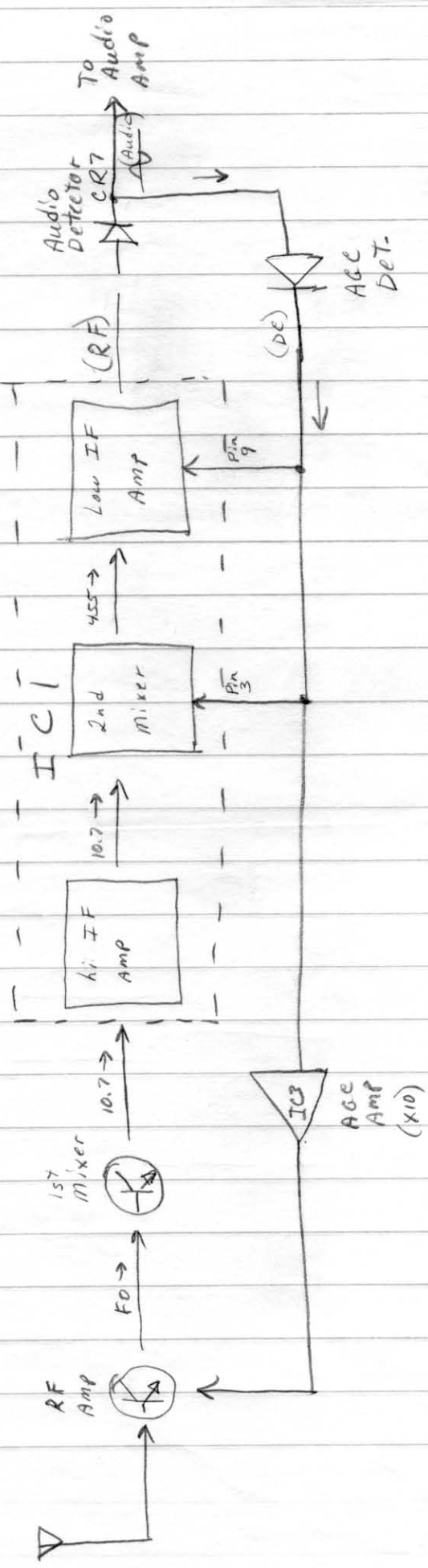
$$\begin{array}{r} 1.8 \\ 0.0025 \end{array}$$
$$= 0.0025 \text{ Hz} = 2.5 \text{ kHz}$$
$$= 0.0025 \text{ } nH_2 = 2.5 \text{ } nH_2$$
[illegible]

III



(All Pin Numbers are IC1)

TPX-720
IC1 Circuit
9-8-83



LISTED BY

IN HOUSE WOUND COIL PART NUMBERS CIRCUIT SYMBOL

TX-720:

T1-1900-3507-01	T10-1900-3380-01	T16-1900-3506-01
T2-1900-3507-01	T11-1900-3395-01	T17-1900-3501-01
T3-1900-3501-01	T12-1900-3506-01	T18-1900-3360-01
T4-1900-3509-01	T13-1900-3501-01	L5-1900-3290-01
T8-1900-3360-01	T14-1900-3506-01	L6-1900-3290-01
T9-1900-3370-01	T15-1900-3501-01	L7-1900-3290-01

TX-10:

T1-1900-3507-01	T10-1900-3380-01	T16-1900-3502-01
T2-1900-3507-01	T11-1900-3395-01	T17-1900-3290-01
T3-1900-3501-01	T12-1900-3285-01	T18-1900-3290-01
T4-1900-3509-01	T13-1900-3285-01	T19-1900-3360-01
T8-1900-3360-01	T14-1900-3502-01	L5, L6, L7-1900-3290-01
T9-1900-3370-01	T15-1900-3502-01	

TPX-720:

T1-1900-3500-01	T10-1900-3504-01	T16-1900-3370-01
T2-1900-3501-01	T11-1900-3505-01	T17-1900-3380-01
T3-1900-3501-01	T12-1900-3505-01	T18-1900-3390-01
T4-1900-3504-01	T13-1900-3501-01	L4-1900-3340-01
T8-1900-3504-01	T14-1900-3360-01	L5-1900-3340-01
T9-1900-3501-01	T15-1900-3330-01	

TPX
4/108:

T1-1900-3502-01	T9-1900-3390-01	T14-1900-3506-01
T2-1900-3502-01	T10-1900-3285-01	T15-1900-3507-01
T3-1900-3506-01	T11-1900-3285-01	L3-1900-3340-01
T7-1900-3360-01	T12-1900-3506-01	L4-1900-3340-01
T8-1900-3370-01	T13-1900-3502-01	

TN-200 VOR/LOR:

T1-1900-3507-01	T4-1900-3510-01	T10-1900-3501-01
T2-1900-3501-01	T8-1900-3501-01	T11-1900-3501-01
T3-1900-3501-01	T9-1900-3501-01	T12, 13-1900-3501-01

GLideslope:

L1-1900-3512-01	L3-1900-3512-01
L2-1900-3512-01	L5-1900-3512-01

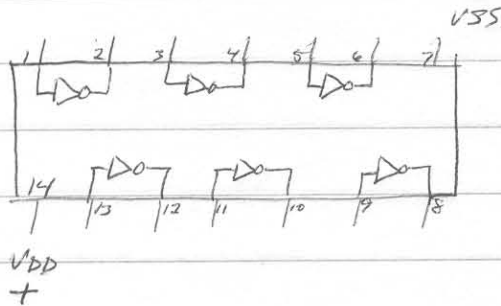
Nicad Oct. 81
charger QSTor 73

Cost. - 1

Fresh -

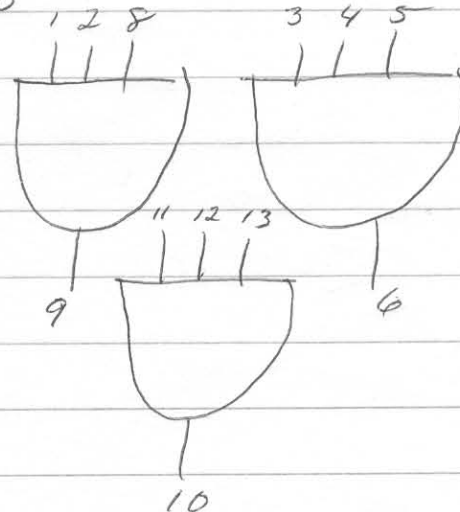
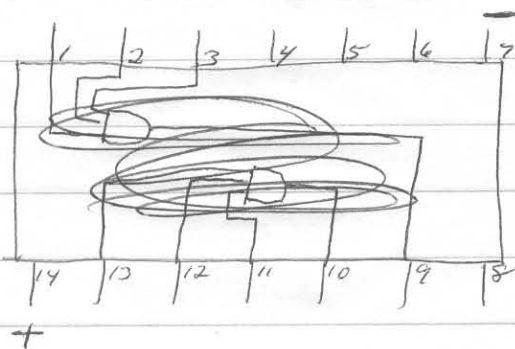
CD 4069 (IC7)

COS/mos Hex Inv. Hi Voltage



IC8+9
CD 4073 COS/mos

Triple
AND



REV-1 11/3/80

IC4 LOGIC INPUT VS. CHANNEL FREQUENCY

CHANNEL FREQUENCY
1

N	IC4 PIN#	
	9	10
0	0	0
1	0	1
2	1	0
3	1	1

0 = LOW = 0 Volts
1 = HIGH ≈ 12 Volts

N	IC4 PIN#			
	15	16	17	18
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1

N	IC4 PIN#			
	19	20	21	22
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1

NN	IC4 PIN#			
	3	4	0	0
00	0	0	0	0
25	1	0	0	1
50	0	1	0	1
75	1	1	0	1

IC4 PINS WITHOUT VARIABLE LOGIC:

- #1 - APPROX 6.5V
- #23 - APPROX 0.15 - 0.20 Volts
- #3, 5, 6, 7, 8, 12, 14 ALWAYS LOW
- #11, 13, 24 ALWAYS HIGH

EXCEPT ON PINS #1, 23, ANY VOLTAGE IN EXCESS OF 0.03 Volts AND LESS THAN THE VOLTAGE NORMAL FOR HIGH LOGIC INDICATES IMPROPER OPERATION

10/22/81
L. DILGER

LOCK SENSE PIN 1 IC5	PIN 9 IC4	PIN 10 IC4	PIN 15 IC4	PIN 16 IC4	PIN 17 IC4	AFC LEVEL	TRANS- MITTER	
0	X	X	X	X	X	1	OFF	1
1	1	1	1	1	1	1	OFF	2
1	0	1	1	1	1	0	ON	3
1	0	0	1	1	1	1	OFF	4
1	0	0	0	1	1	1	OFF	5
1	0	0	0	0	1	1	OFF	6
1	0	0	0	0	0	1	OFF	7
1	0	0	0	1	0	1	OFF	8
1	0	0	1	1	0	1	OFF	9
1	0	1	1	1	0	0	ON	10
1	1	1	1	1	0	1	OFF	11
1	0	0	1	0	0	1	OFF	12
1	0	1	1	0	0	0	ON	13
1	1	1	1	0	0	1	OFF	14
1	0	1	0	0	0	1	OFF	15
1	1	1	0	0	0	0	ON	16
1	1	0	0	0	0	0	ON	17
1	1	0	1	0	1	0	ON	18
1	0	1	0	1	0	1	OFF	19
1	1	1	1	0	1	1	OFF	20
1	1	1	0	1	1	1	OFF	21
1	1	0	1	1	1	0	ON	22
1	1	0	1	0	0	0	ON	23
1	1	1	0	1	0	0	ON	24
1	1	0	0	1	1	0	ON	25
1	1	1	0	0	1	0	ON	26
1	1	0	0	0	1	0	ON	27
1	1	0	0	1	0	0	ON	28
1	0	1	0	0	1	1	OFF	29
1	0	1	0	1	1	0	ON	30
1	0	1	1	0	1	1	OFF	31
1	1	0	1	1	0	1	OFF	32
1	0	0	1	0	1	1	OFF	33

1 = LOGIC HIGH
0 = LOGIC LOW
X = DOES NOT CARE

D

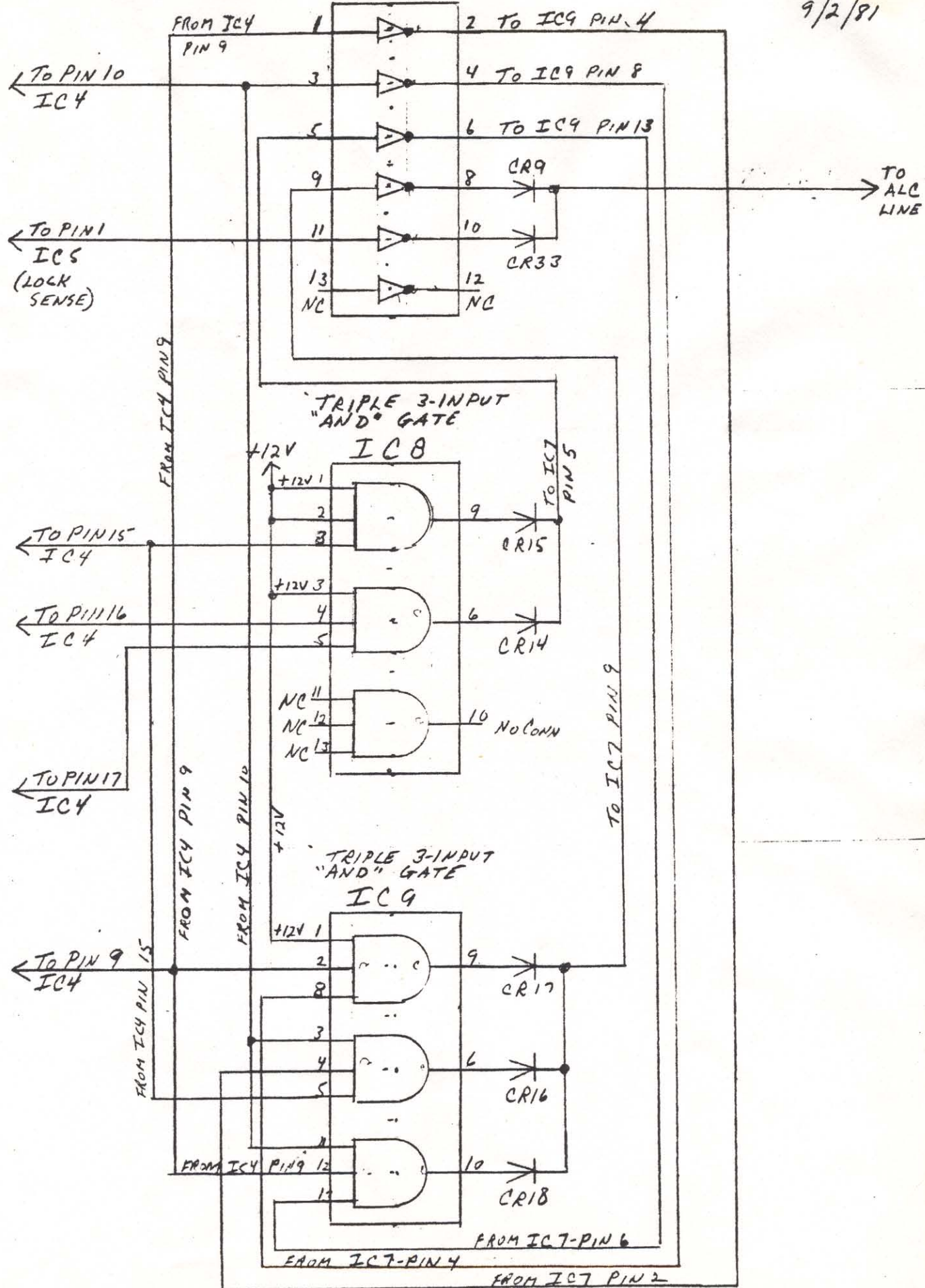
01.11

TPX 720

HEX INVERTER
IC7

TRANSMITTER INHIBIT
LOGIC CIRCUIT

9/2/81



TPX-720

CTX-720

136
122.25 6.2 0 0 1 0 0 0 0 1 0 1 0 1 0 0 0 1 0 0 0 1 0 .73 1

IC 4 (IC8)

135
6.2 0 0 0 0 0 0 0 1 1 1 0 1 0 0 1 0 1 0 0 0 0 .23 1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

108 6.2 0 0 0 0 0 0 0 0 0 H 0 H 0 H 0 0 0 0 0 0 .23 H

118 6.2 0 0 0 0 0 0 0 0 H H 0 H 0 H 0 0 0 0 0 0 .23 H

127 6.2 0 0 0 0 0 0 0 H 0 H 0 H 0 0 H H H 0 0 0 .23 H

135.95 6.2 0 0 H 0 0 0 0 H H H 0 H 0 0 H 0 H H 0 0 H .23 H

IC 9 (IC13)
TOP

1 2 3 4 5 6 7 8 9 10 11 12 13 14

108 H 0 0 H H 0 0 H 0 0 0 0 0 H

118 H 0 H H H H 0 0 0 0 H 0 0 H

127 H H 0 0 0 0 0 H H 0 0 H 0 H

135.95 H H H 0 0 0 0 0 0 H H H H H

IC 7 (IC11)
CENTER

1 2 3 4 5 6 7 8 9 10 11 12 13 14

108 0 H 0 H H 0 0 H 0 0 H H 0 H

118 0 H H 0 H 0 0 0 H 0 H H 0 H

127 H 0 0 H H 0 0 0 H 0 H H 0 H

135.95 H 0 H 0 0 H 0 0 0 H 0 H H 0 H

IC 8 (IC12)
BOTTOM

1 2 3 4 5 6 7 8 9 10 11 12 13 14

108 H H H 0 0 0 0 H H H 0 0 0 H

118 H H H 0 0 0 0 H H H 0 0 0 H

127 H H H H H H 0 0 0 H 0 0 0 H

135.95 H H H H 0 0 0 0 0 H 0 0 0 H

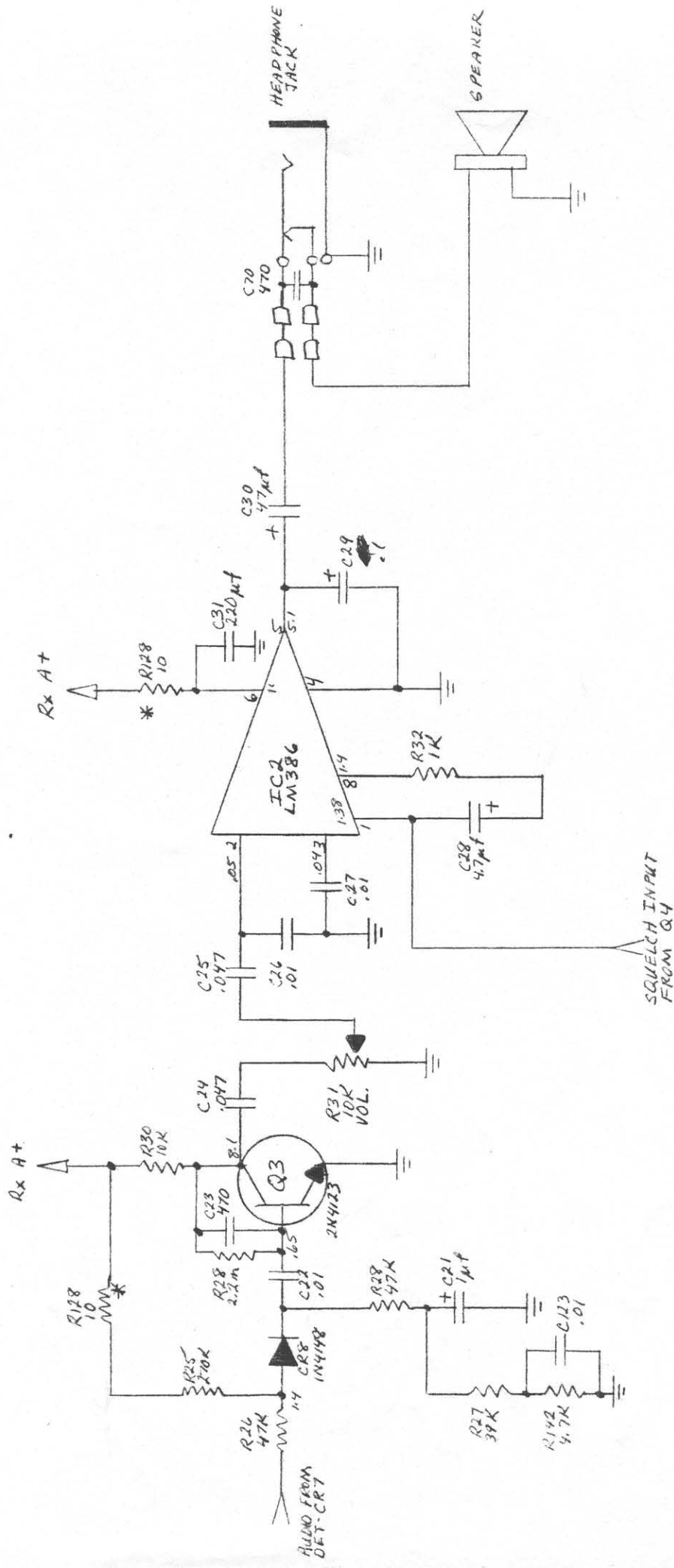
IC4
TPX-720

IC8
TX-720

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
108	6.2	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	.23	1
118	6.2	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	.23	1
122.250	6.2	0	0	1	0	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	1	0	.23	1
125.500	6.2	0	0																				.23	1
127.0	6.2	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	1	1	0	0	0	0	.23	1
135.0	6.2	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	1	0	0	0	0	0	.23	1
135.950	6.2	0	0	1	0	0	0	0	1	1	1	0	1	0	0	1	0	1	1	0	0	1	.23	1
																							.23	1
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

IC4
TPX-720

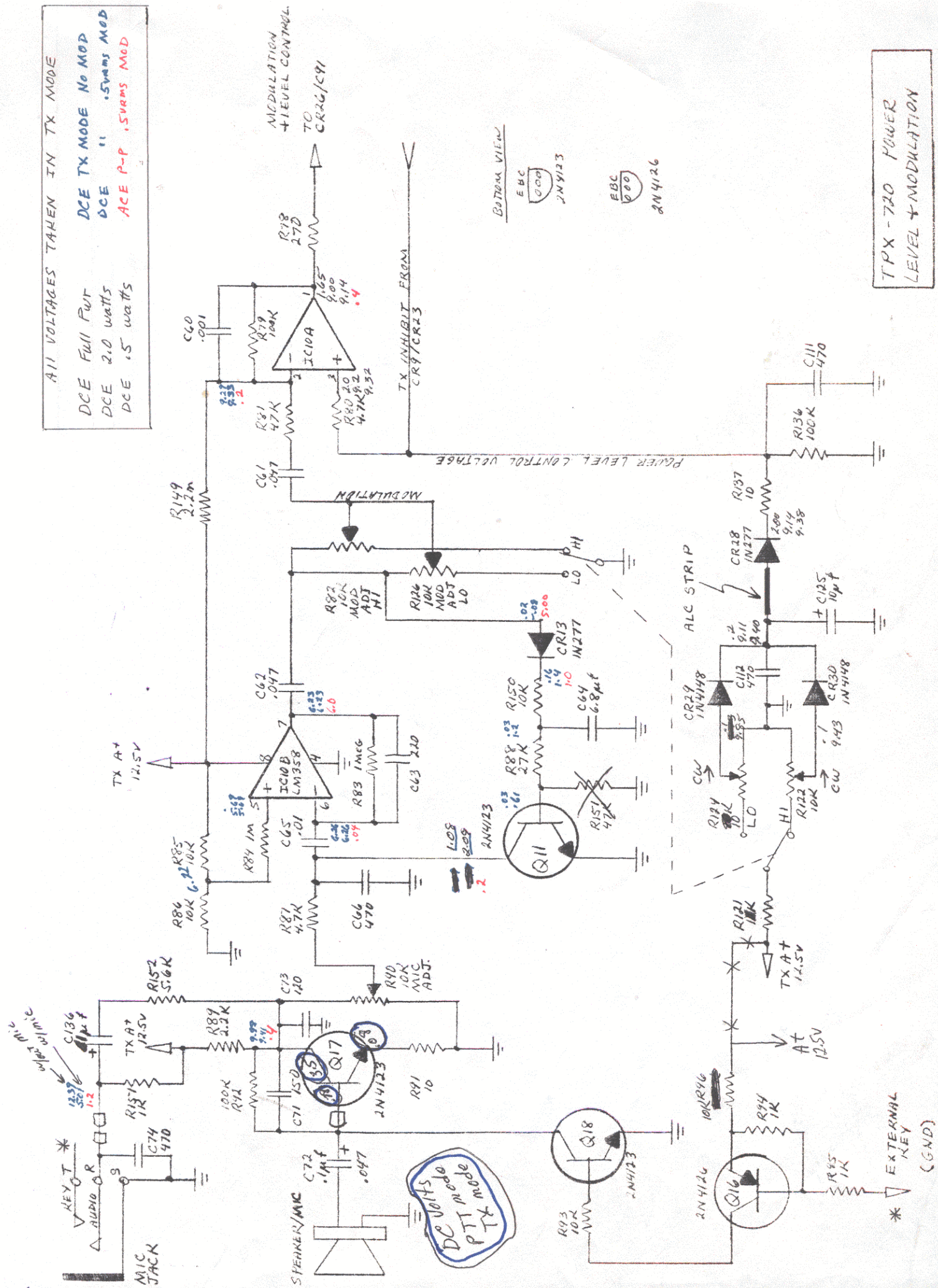
TPX-720
RX AUDIO CIRCUITS



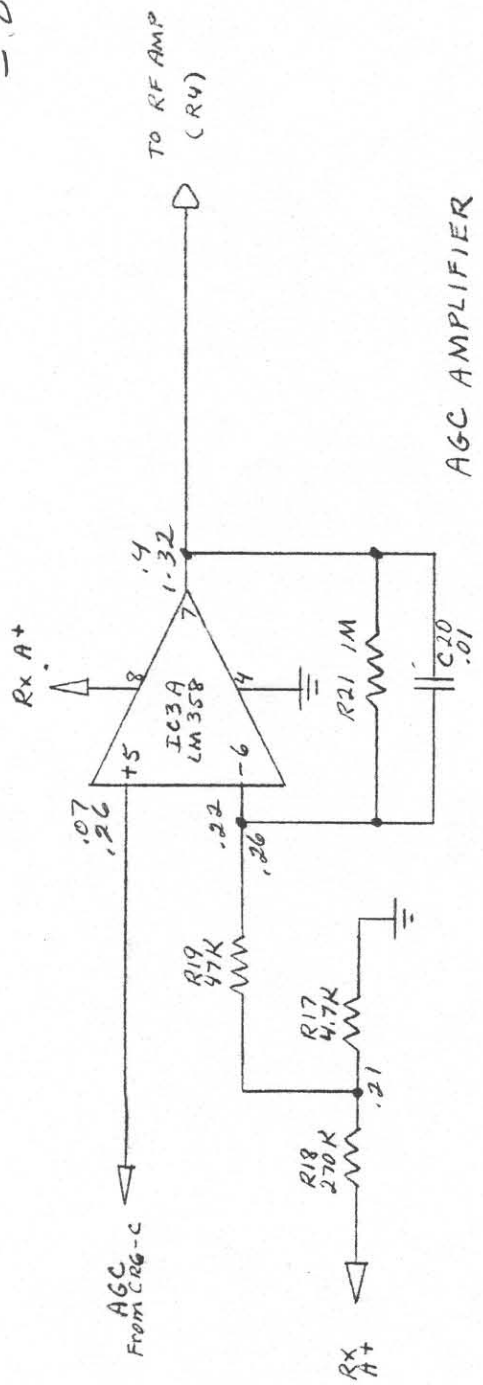
ALL VOLTAGES TAKEN IN TX MODE

DCE FULL PWR
DCE 2.0 watts
DCE 1.5 watts

DCE TX MODE No MOD
DCE " .5watts MOD
ACE P-P .5watts MOD

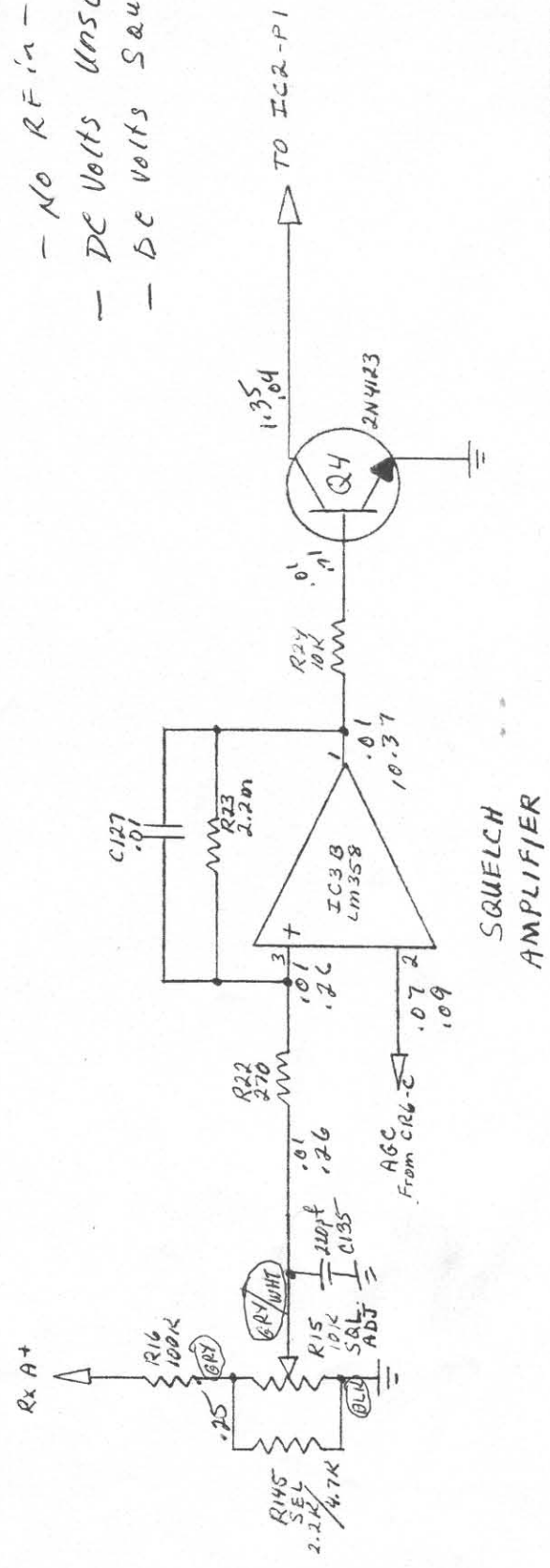


- DC Voltage
- No Input (RF)
- DC Voltage 100µV Input



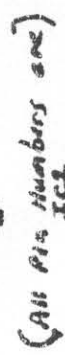
AGC AMPLIFIER
X10

- No RF in -
- DC Volts Unsqueled
- DC Volts Squelched (max)

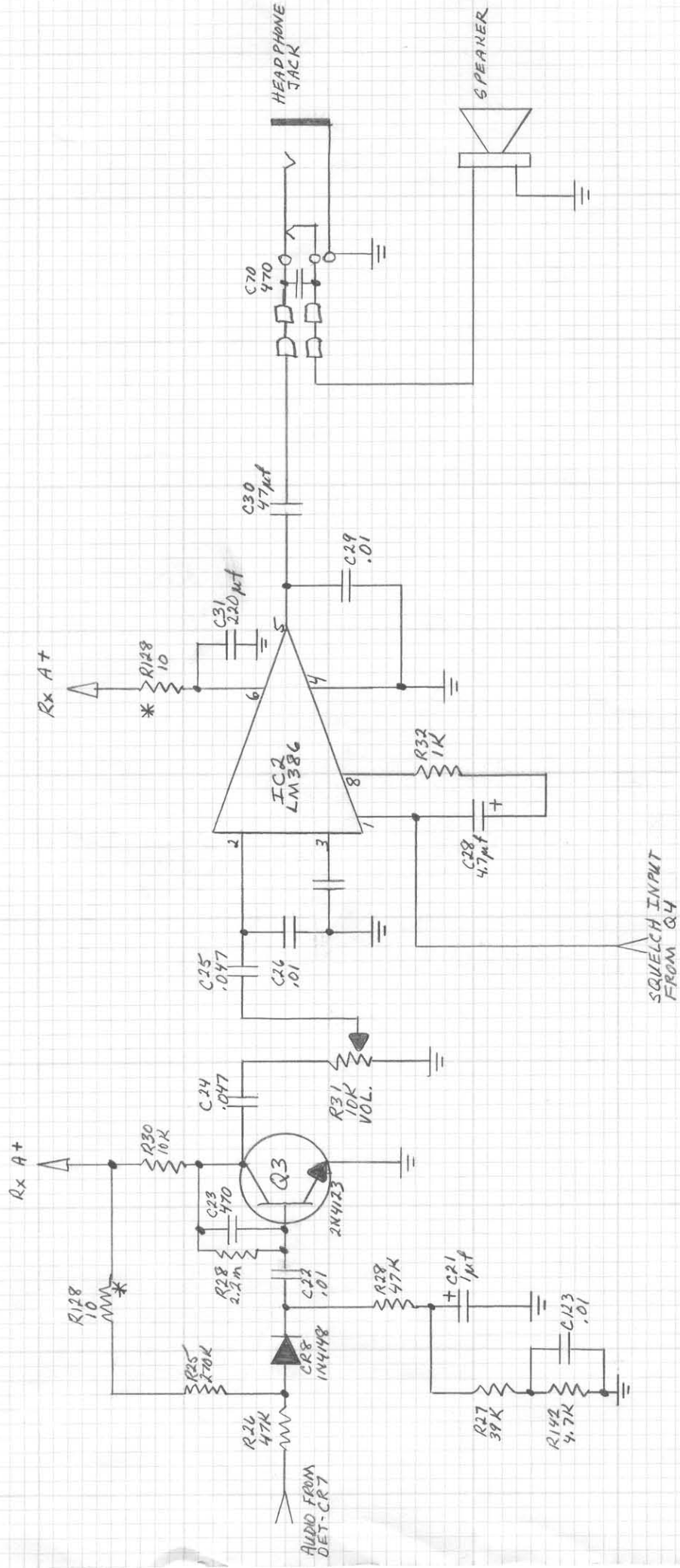


SQUELCH
AMPLIFIER

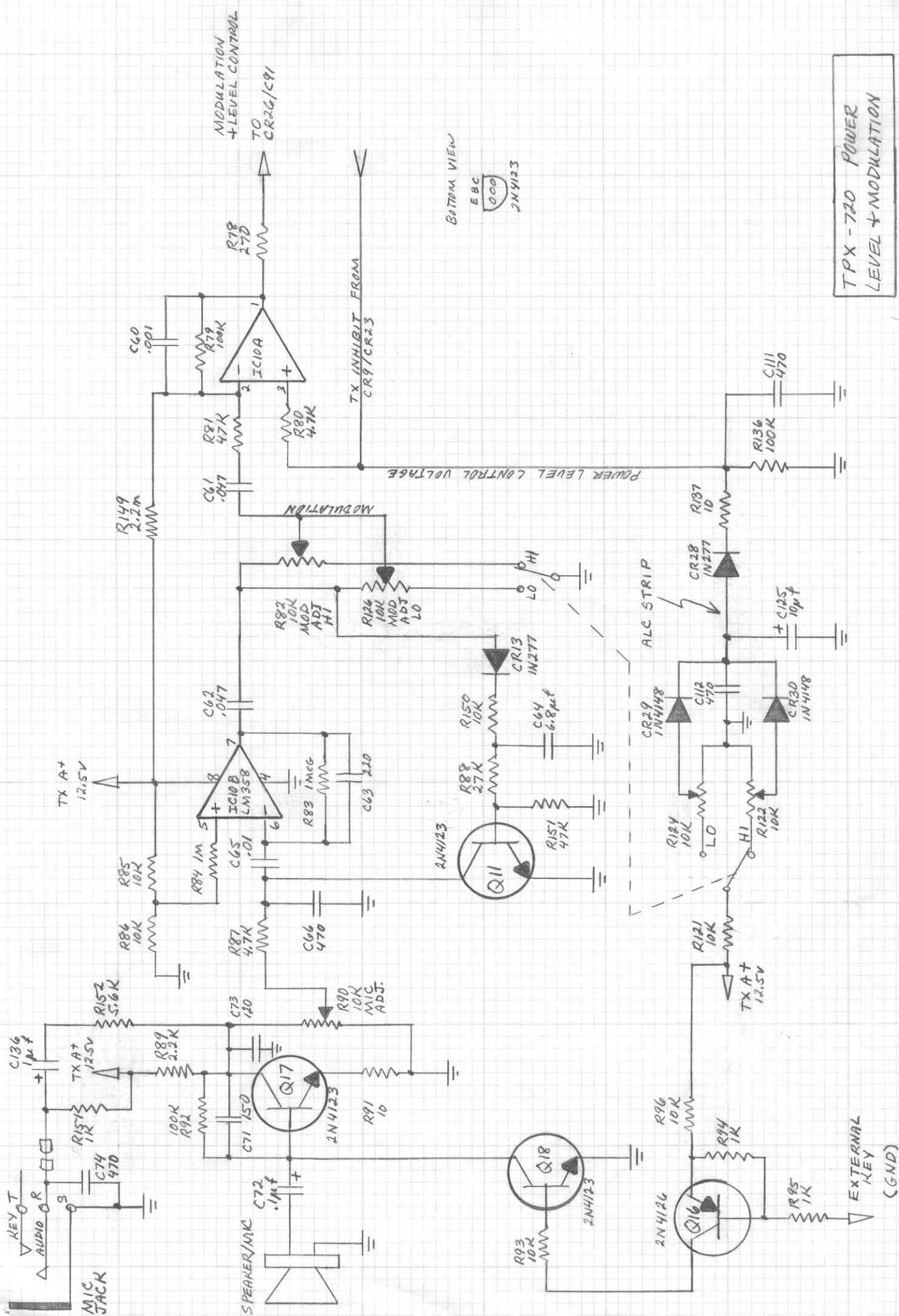
TPX-720 AGC &
SQUELCH AMPS

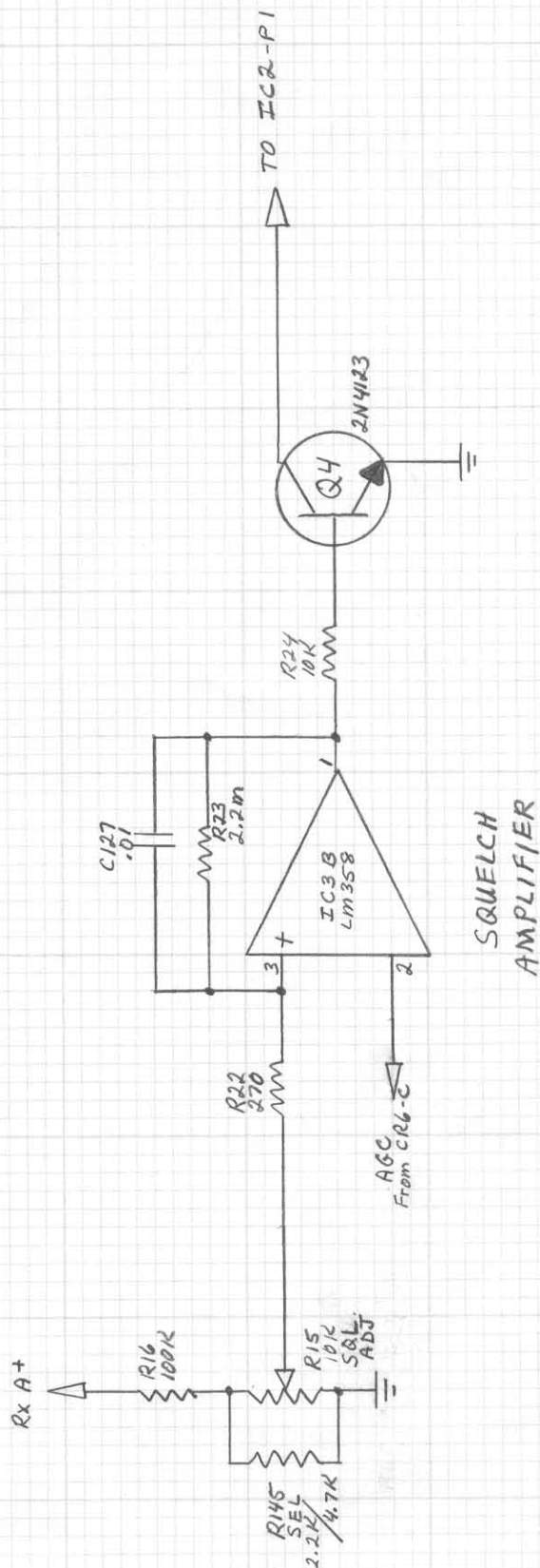
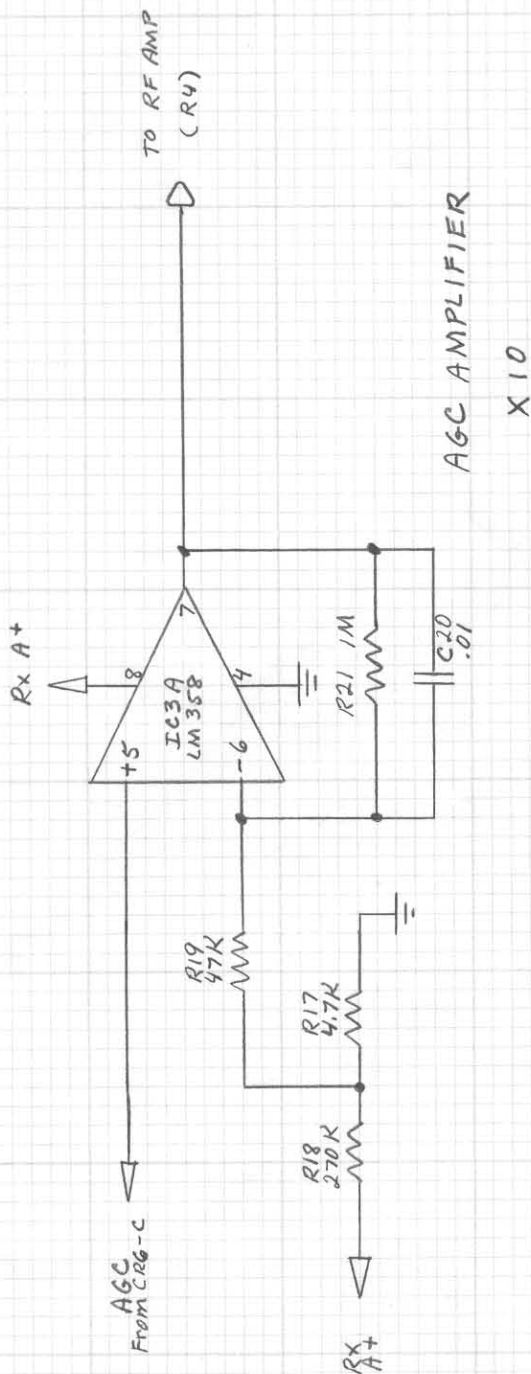


TPX-720
IC1 Circuit
9-8-85



TPX-720
Rx Audio Circuits





TPX-720 AGC &
SQUELCH AMPS