

## DL-1000C Audio Delay Card

When placed in the receive audio path, it will eliminate the first chirp of DTMF tone during DTMF muting, and it will eliminate the squelch crash noise present on many repeater systems. A dipswitch selects delays of 50, 100, 200 or 400 milliseconds. The delayed audio is faithfully reproduced.

Installation is easy. Remove the jumper plug from the Controller. Replace the jumper with the cable from the DL-1000C. (See figure 1).

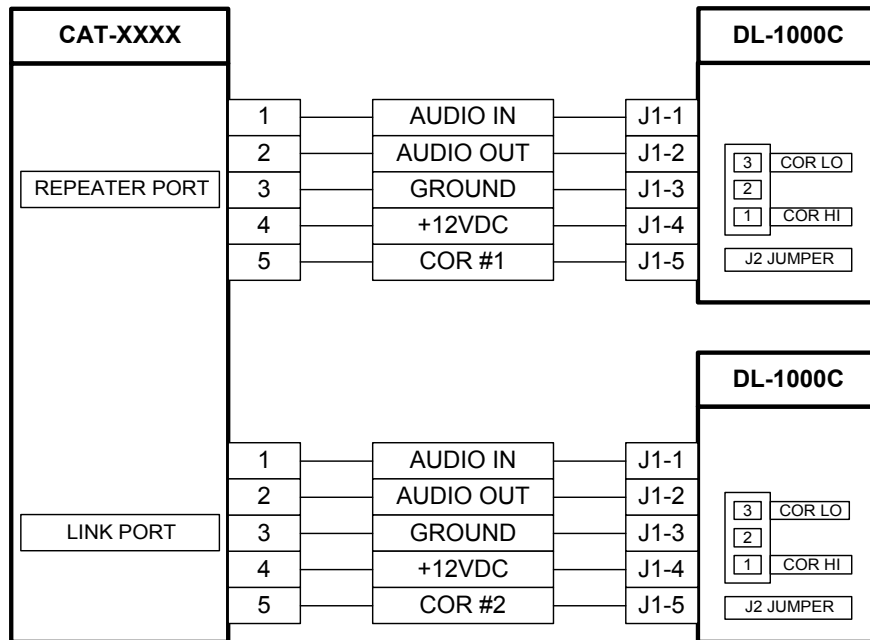


Figure 1

### Select Delay

The amount of audio delay is determined by the setting of dipswitch SW1. The typical repeater receiver has a squelch crash noise of approximately 40 milliseconds. The 100 millisecond setting should be sufficient to eliminate the noise in most cases. If not, increase the delay to the next setting.

MILLISECONDS	SW1	SW2	SW3	SW4
0.0	OFF	OFF	OFF	OFF
50	ON	OFF	OFF	OFF
100	ON	ON	OFF	OFF
200	ON	ON	ON	OFF
400	ON	ON	ON	ON

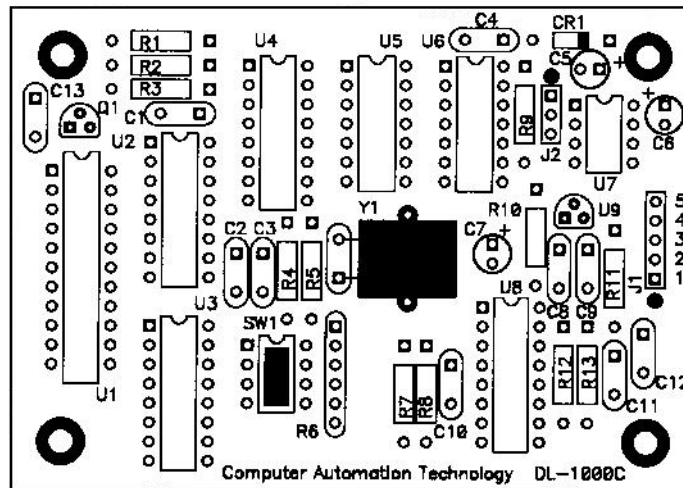
Figure 2

The DL-1000C is inserted in the receive audio path before the controller's audio switch. This audio switch is controlled by the COR logic signal. Loss of COR will cause the audio switch to open, preventing the receive audio from reaching the transmitter. The DL-1000C provides time for the switch to open before the squelch crash noise reaches the switch's input.

During DTMF muting, 40 milliseconds of the first tone will sneak through before the DTMF decoder can tell the microprocessor to open the audio switch. The DL-1000C provides the necessary delay to overcome this problem.

### Discriminator Switch

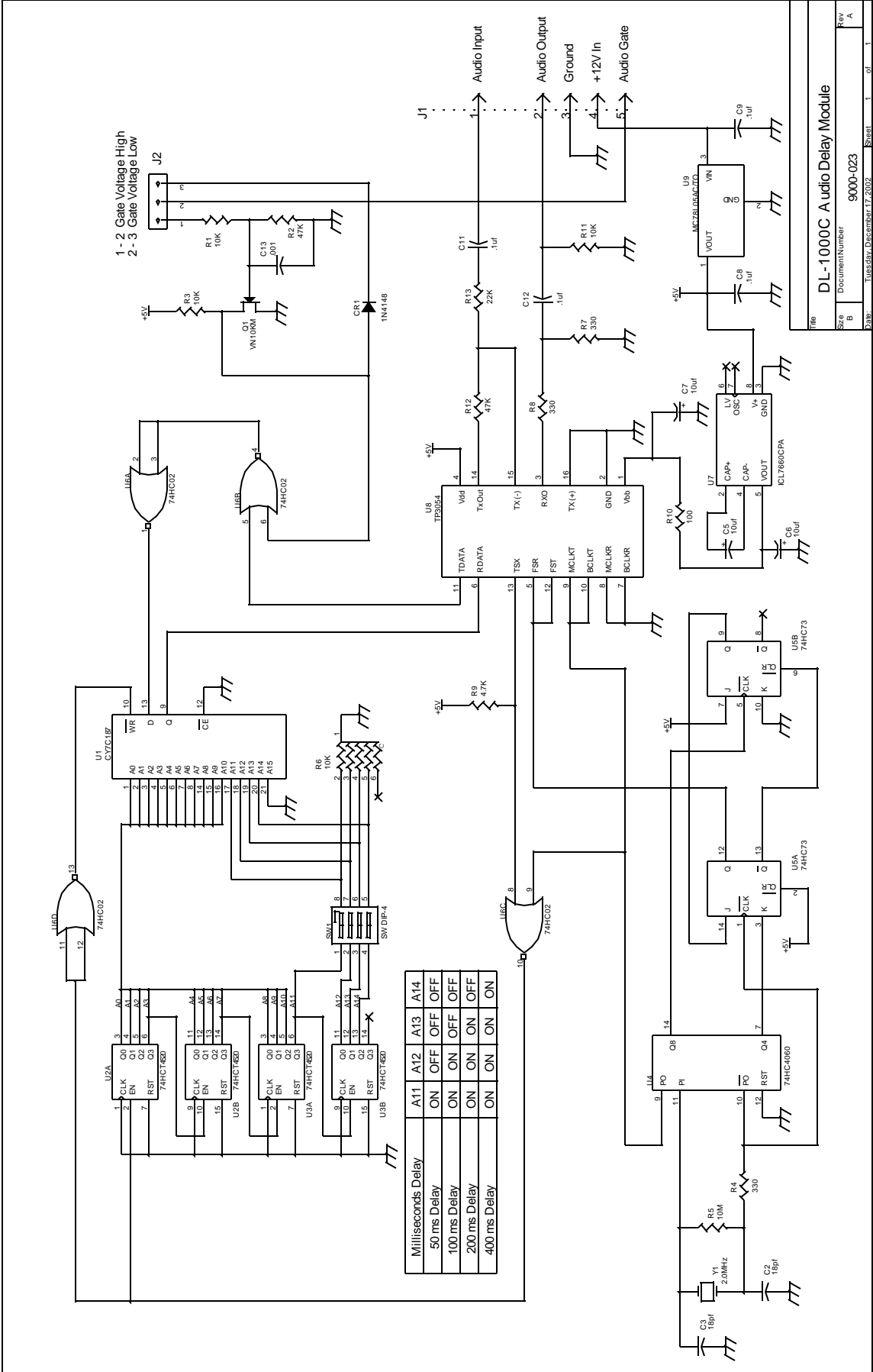
The DL-1000C can be used with discriminator audio. A FET switch Q1 is included on the board. If the repeater's COR logic is connected to the J1 header, the white noise hiss will be eliminated during key-up. If the COR logic is active high set the J2 jumper between pins 1 and 2. If the COR is active low set the J2 jumper between pins 2 and 3.



### DL-1000C Audio Delay Board

7	Capacitor	0.1uF 50V	C1,C4,C8,C9,C10,C11,C12
3	Capacitor	10uF 16V	C5,C6,C7
2	Capacitor	18pF 50V	C2,C3
1	Capacitor	.001uF 50V	C13
1	Crystal	2.048Mhz	Y1
1	Diode	1N4148	CR1
1	Header	1X3	J2
1	Header	1X5	J1
1	I.C.	74HC73	U5
1	I.C.	74HC02	U6
2	I.C.	74HC4520	U2,U3
1	I.C.	CY7C187	U1
1	I.C.	MC7805AC	U9
1	I.C.	74HC4060	U4
1	I.C.	TP3054	U8

1	I.C.	7660CPA	U7
3	Resistor	10K 5% 1/4W	R1,R3,R11
1	Resistor	4.7K 5% 1/4W	R9
1	Resistor	22K 5% 1/4W	R13
1	Resistor	100 5% 1/4W	R10
2	Resistor	47K 5% 1/4W	R2,R12
3	Resistor	330 5% 1/4W	R4,R7,R8
1	Resistor	10MEG 5% 1/4W	R5
1	Resistor	10K 6pin Network	R6
1	Switch	Dip 4 Pole	SW1
1	Transistor	2N7000	Q1



Milliseconds Delay	A11	A12	A13	A14
50 ms Delay	ON	OFF	OFF	OFF
100 ms Delay	ON	ON	OFF	OFF
200 ms Delay	ON	ON	ON	OFF
400 ms Delay	ON	ON	ON	ON