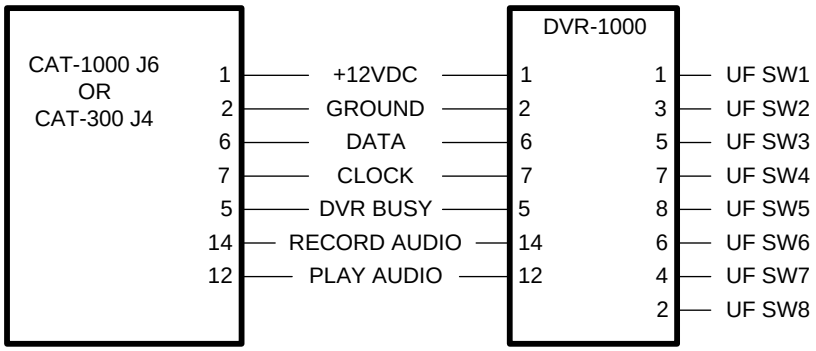
DVR-1000 - Digital Voice Recorder

The DVR-1000 provides true voice message announcements on your repeater system. Substitute DVR tracks for voice messages, speed dial identifications and courtesy tones. Sixteen audio tracks provide sufficient message capacity. Eight expanded user function switches are also included.

To prevent recording loss, install three "AA" alkaline batteries on the board. Connect the cable to the CAT-1000 at J6 or the CAT-300 at J4. See Figure 1 below. Apply power to the controller.



DVR-1000 Interface
Figure 1

DVR Control Selection

When the CAT-1000 or CAT-300 is initialized, selection defaults to the DVR-1000. When you install the new PROM in the CAT-1000 you must make sure the DVR-1000 is selected. To check the selection, enter the programming mode, (unlock the controller) and use the [*280] programming command. If necessary enter the [*281] programming command to select the DVR-1000.

Format DVR Memory

When power is first applied, the DVR memory must be formatted. With batteries installed, the memory will be protected during power failures. To format the DVR memory, press the DVR Format switch SW1 located on the board.

Battery Back-up

Three "AA" alkaline batteries installed on the board provide approximately forty-eight hours of back-up protection. If the DVR-1000 will be powered-down for an extended period of time, remove jumper J2 to disconnect the batteries.

Sampling Rate Selection

Jumper JP5 sets the sampling rate. With the jumper installed, the rate will be 32KHz. With the Jumper removed, the rate is 50KHz. At 50KHz, the maximum record time of two minutes will be reduced. The signal report test sampling rate is fixed at 50KHz.

Signal Report Test

Key-up and send the DVR prefix code [725] followed by a [*]. Un-key and the voice will say: "START TEST NOW." Key-up and record a seven second message. Un-key and the test message will play back. You instantly know how your signal sounds through the repeater.

Record Tracks By Radio (01-16)

The CAT-1000 must be in the programming mode to record DVR tracks. Key-up and enter the seven digit unlock code. Once unlocked, key-up and send [*95XX]. Un-key and the voice will say: "START MESSAGE". Key-up and enter the message to be stored at track "XX". Un-key and the voice will say: "CONTROL OK". To review the message, key-up and send [*94XX]. Un-key and the CAT-1000 will play the message stored at track "XX". To erase a message, key-up and send [*96XX]. Un-key and the voice will say: "CONTROL OK". Tracks can be recorded, played or erased in any order. Total record time is two minutes. Maximum track length is thirty seconds. The DVR-1000 cannot be used in a mailbox type

application. It can only be used for announcement type messages.

Record Tracks By Telephone (01-16)

Call the repeater by telephone. The CAT-1000 will answer and send a beep. Enter the seven digit unlock code followed by the [#]. Once unlocked, enter [*95XX#]. The voice will say: "START MESSAGE" and the record function will start. Speak into the phone to record the message. To stop the recording, press the [#]. Press and release the [#] quickly. The DVR is programmed to automatically back-up and erase the [#] tone from the end of the message. The voice will say: "CONTROL OK". To review the message, enter [*94XX#]. Un-key and the CAT-1000 will play the message stored at track "XX" over the telephone. The CAT-300 will play the message over the transmitter. To erase a message, enter [*96XX#]. The voice will say: "CONTROL OK".

Audio Level Adjustment

Set the RECORD level control R3 and the PLAYBACK level control R4 to mid-range. This set the audio path through the DVR at approximately unity gain. Use R3 and R4 to adjust the audio levels as desired. Measure the TX1 audio level at TP5 for the CAT-1000 or TP2 for the CAT-300. Adjust R4 so the playback audio at TP5 or TP2 is the same level as the audio of the original signal.

Expanded User Function Switches

The eight expanded user function switches are open drain power FET relay drivers. Each driver can sink up to 80 ma. and switch 40 VDC. When connected to the CAT-1000, use the second expanded user function table, controlled by the [580] default prefix code. Place diodes across the relay coils to protect the driver from negative spikes produced when the relay coil collapses.

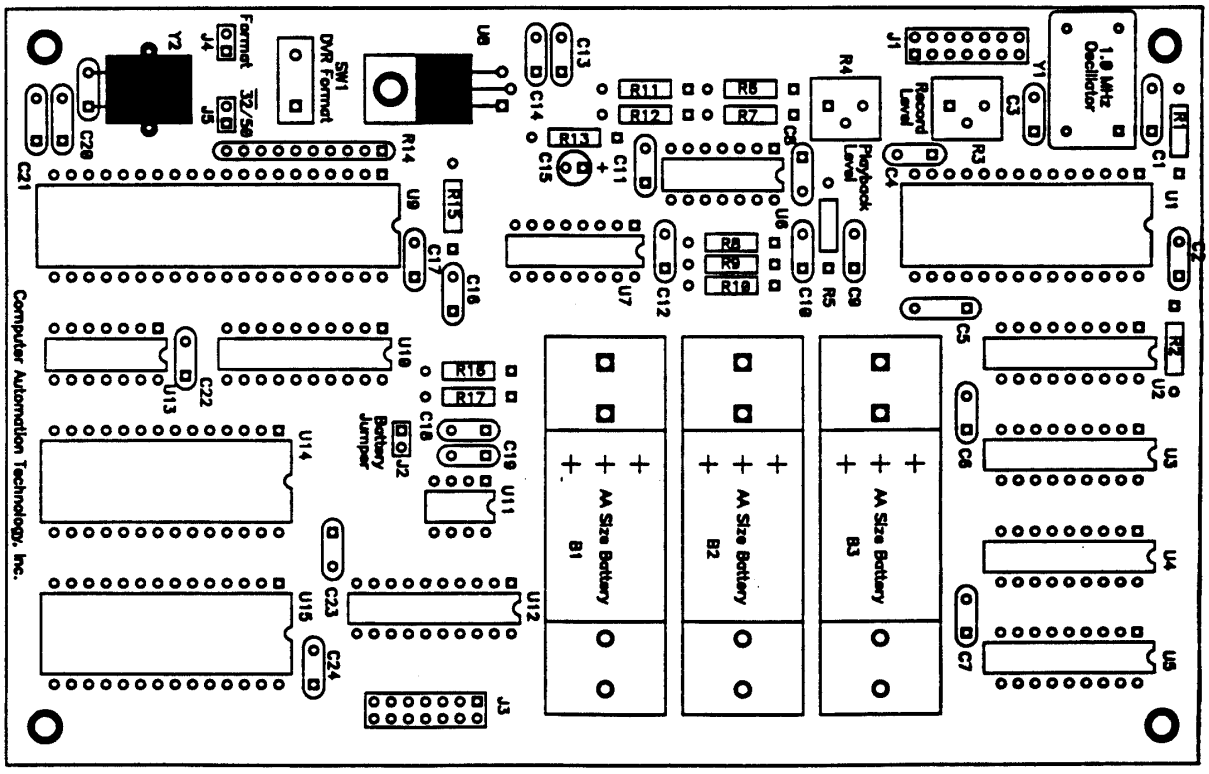
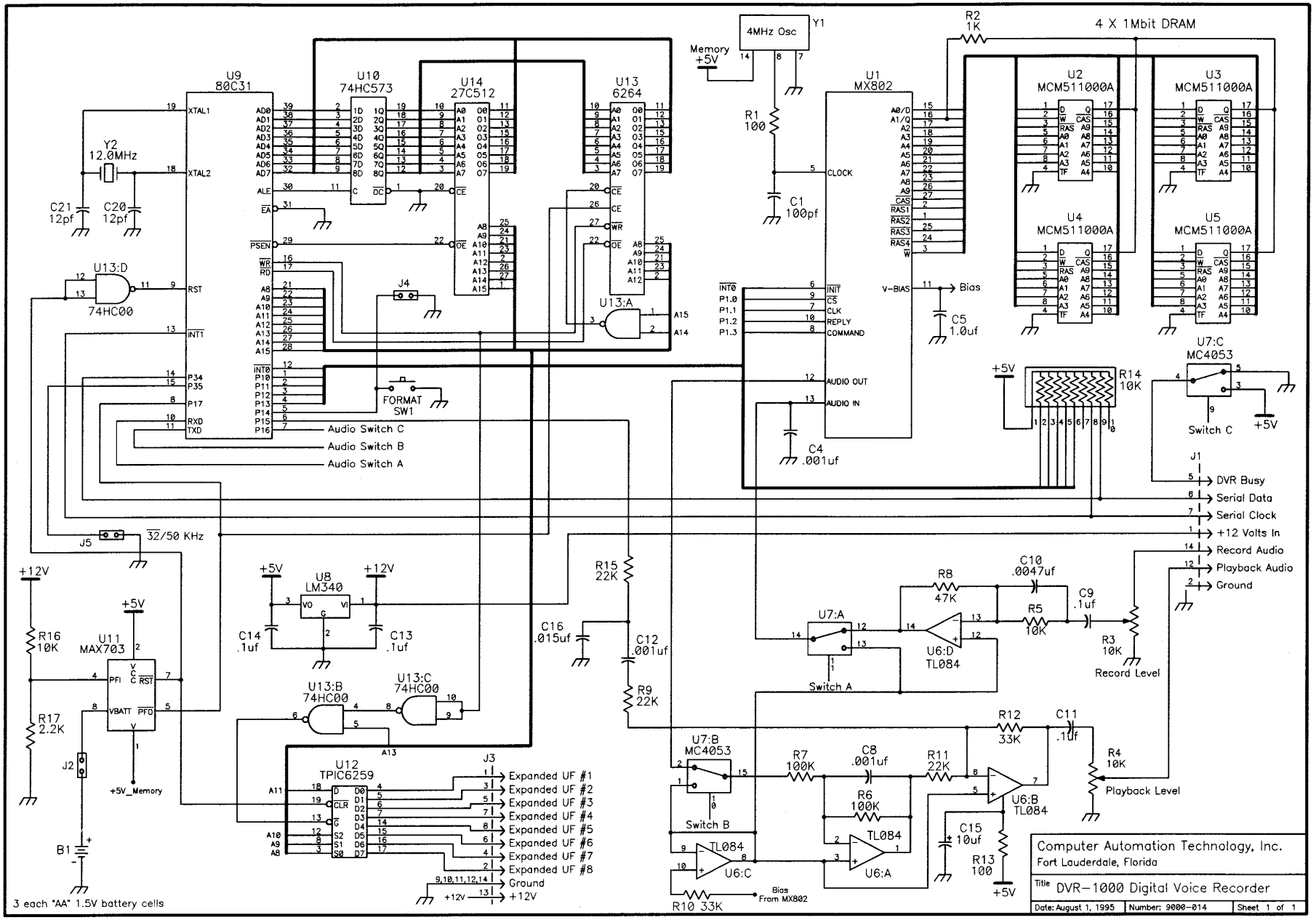


Figure 2

DVR-1000 Parts List

1	Capacitor	1.0uF 50V	C5
1	Capacitor	10uF 16V	C15
2	Capacitor	12pF 50V	C20,C21
1	Capacitor	100pF 50V	C1
3	Capacitor	.001uF 50V	C4,C8,C12
1	Capacitor	.0047uF 50V	C10
1	Capacitor	.015uF 50V	C16
14	Capacitor	0.1uF 50V	C2,C3,C6,C7,C9,C11,C13,C14, C17,C18,C19,C22,C23,C24
1	Crystal	12MHz	Y2
2	Header2X7		J1,J3
3	Header1X2		J2,J4,J5
1	I.C.	74HC00	U13
1	I.C.	74HCT573	U10
1	I.C.	27C512	U14
1	I.C.	MC6264	U15
4	I.C.	MCM511000A	U2,U3,U4,U5
1	I.C.	MC4053	U7
1	I.C.	80C31	U9
1	I.C.	LM340-5	U8
1	I.C.	TL084CN	U6
1	I.C.	MX-703	U11
1	I.C.	MX-802J	U1
1	I.C.	TPIC6259	U12
1	Module4.00MHz		Y1
1	Resistor	1K 5% 1/4W	R2
1	Resistor	2.2K 5% 1/4W	R17
2	Resistor	10K 5% 1/4W	R5,R16
1	Resistor	33K 5% 1/4W	R12
4	Resistor	22K 5% 1/4W	R9,R10,R11,R15
1	Resistor	47K 5% 1/4W	R8
2	Resistor	100 5% 1/4W	R1,R13
2	Resistor	100K 5% 1/4W	R6,R7
1	Resistor	10K 12pin	R14
2	Resistor	10K Variable	R3,R4
1	SwitchPush-Button		SW1


4 X 1Mbit DRAM
U9
80C31
U10
74HC573
U14
27C512
U13
6264
U1
MX802
U2
MCM511000A
U3
MCM511000A
U4
MCM511000A
U5
MCM511000A
4MHz Osc
Y1
Memory
+5V
R2
1K
R1
100
C1
100pf
Y2
12.0MHz
C21
12pf
C20
12pf
U13:D
74HC00
U13:A
J4
FORMAT
SW1
Audio Switch C
Audio Switch B
Audio Switch A
Bias
C5
1.0uf
C4
.001uf
U7:C
MC4053
R14
10K
Switch C
J1
DVR Busy
Serial Data
Serial Clock
+12 Volts In
Record Audio
Playback Audio
Ground
J5
32/50 KHz
U8
LM340
C14
.1uf
C13
.1uf
R15
22K
C16
.015uf
C12
.001uf
R9
22K
U7:A
R8
47K
C10
.0047uf
R5
10K
C9
.1uf
R3
10K
Record Level
U6:D
TL084
Switch A
R16
10K
U11
MAX703
R17
2.2K
J2
+5V_Memory
B1
3 each "AA" 1.5V battery cells
U13:B
74HC00
U13:C
74HC00
U12
TPIC6259
J3
Expanded UF #1
Expanded UF #2
Expanded UF #3
Expanded UF #4
Expanded UF #5
Expanded UF #6
Expanded UF #7
Expanded UF #8
Ground
+12V
U7:B
MC4053
Switch B
R7
100K
C8
.001uf
R11
22K
R12
33K
C11
.1uf
R4
10K
Playback Level
R6
100K
U6:B
TL084
U6:C
TL084
U6:A
TL084
C15
10uf
R13
100
R10 33K
Bias
From MX802
Computer Automation Technology, Inc.
Fort Lauderdale, Florida
Title DVR-1000 Digital Voice Recorder
Date: August 1, 1995
Number: 9000-014
Sheet 1 of 1