

CAT-200B Programming Information

Nine new voice variables have been added to the vocabulary list to announce weather information during the repeater ID or other voice messages.

VARIABLE	DESCRIPTION	EXAMPLE (VARIABLE IN BOLD)
110	INSIDE TEMPERATURE	75 Degrees
111	OUTSIDE TEMPERATURE	40 Degrees
112	WIND SPEED AND DIRECTION	The wind is out of the EAST at 10 miles per hour
113	RAIN FALL	Today's rain fall is .2 inches
114	ONE MINUTE WIND SPEED	The one minute wind speed is 25 miles per hour
115	HIGH / LOW TEMPERATURE	
116	WIND CHILL	
117	AIR PRESSURE	
118	HUMIDITY	

Program Voice Message With Temperature Variables

To program a voice message with the temperature load the number [111]. Example: Load message 3 with the actual temperature. The voice will say: "THE TEMPERATURE IS **75** DEGREES]"

Message Number Actual Temperature
 *31 03 830 824 482 111

Program Voice Message With Wind Speed And Direction Variables

To program a voice message with the wind speed and direction load the number [112]. Example: Load message 2 with the actual wind speed and direction. The Voice will Say: "THE WIND IS OUT OF THE **EAST** AT **10** MILES PER HOUR]." If the wind speed is 0 miles per hour, the voice will say: "THE WIND IS **CALM**".

Message Number Actual Wind Direction and Speed
 *31 02 112

Program Voice Message With Rain Fall Variables

To program a voice message with the rainfall load the number [113]. Example: Load message 3 with the rainfall. The voice will say: "TODAY'S RAIN FALL IS **.1** INCHES]"

Message Number Today's Rain Fall since midnight
 *31 03 113

The Peet Brothers weather station resets the rain gauge at 12:00 A.M. and is under the control of the Peet Brothers weather station clock.

Program Voice Message With Complete Weather Report

To program a voice message with a complete weather report load message 2 with:
"THE TEMPERATURE IS 75 DEGREES THE WIND IS OUT OF THE **EAST** AT 10 MILES PER HOUR."

Message Number
*31 02 830 824 482 111 150 112

Chapter 8 - Voice Vocabulary

Zero.....	000
One.....	001
Two.....	002
Three.....	003
Four.....	004
Five.....	005
Six.....	006
Seven.....	007
Eight.....	008
Nine.....	009
Ten.....	010
Eleven.....	011
Twelve.....	012
Thirteen.....	013
Fourteen.....	014
Fifteen.....	015
Sixteen.....	016
Seventeen.....	017
Eighteen.....	018
Nineteen.....	019
Twenty.....	020
Thirty.....	030
Forty.....	040
Fifty.....	050
Sixty.....	060
Seventy.....	070
Eighty.....	080
Ninety.....	090

A	
A.....	210
A.M.....	211
Above.....	214
Adjust.....	217
Advise.....	218
Again.....	221
Alert.....	223
All.....	224
Alpha.....	225
Amateur.....	228
An.....	230
And.....	231
Area.....	235
As.....	236
Assistance.....	237
At.....	239
Attempt.....	240
Attention.....	241

B	
B.....	250
Back.....	251
Band.....	252
Base.....	253
Beacon.....	254
Below.....	255
Bravo.....	257
By.....	260

C	
C.....	270
Call.....	272
Calling.....	273
Calm.....	271
Cancel.....	274
Cat.....	275
Caution.....	276
Change.....	279
Charlie.....	280
Check.....	281
Clear.....	283
Closed.....	285
Club.....	286
Code.....	287
Come.....	288
Complete.....	289
Condition.....	292
Connect.....	294
Contact.....	295
Control.....	296

D	
D.....	310
Danger.....	311
Data.....	312
Date.....	313
Day.....	314
Days.....	315
Decrease.....	317
Degree.....	318
Delay.....	319
Delta.....	320
Direction.....	322
Do.....	323
Down.....	324

E	
E.....	340
East.....	341
Echo.....	342
Ed (suffix).....	343
Emergency.....	344
End.....	345
Enter.....	346
Error.....	348
Exit.....	350

F	
F.....	370
Failure.....	372
Fall.....	393
Fast.....	374
Feet.....	376
File.....	378
For.....	004
Foxtrot.....	386
Freezing.....	387

Frequency.....	388
Friday.....	389
From.....	390
Full.....	392

G	
G.....	410
Get.....	412
Go.....	413
Golf.....	414
Good.....	415

H	
H.....	440
Ham.....	443
Hamfest.....	444
Have.....	445
Hertz.....	449
High.....	450
Hotel.....	453
Hour.....	454
Hours.....	455
Hundred.....	456

I	
I.....	470
Ice.....	471
Icing.....	472
Identify.....	473
In.....	475
Inches.....	474
India.....	477
Information.....	478
Ing (suffix).....	479
Inputs.....	480
Intruder.....	481
Is.....	482
It.....	483

J	
J.....	500
Juliet.....	502

K	
K.....	530
Key.....	531
Keypad.....	532
Kilo.....	533

L	
L.....	550
Last.....	552
Left.....	554
Let.....	556
Lima.....	559
Link.....	561
List.....	562
Load.....	563
Long.....	566
Low.....	568

Lower.....	569
M	
M.....	580
Machine.....	581
Make.....	583
Manual.....	585
Many.....	586
Meeting.....	593
Mega.....	594
Message.....	595
Meter.....	596
Meters.....	597
Mike.....	599
Miles.....	600
Minus.....	603
Minute.....	604
Minutes.....	605
Mobile.....	606
Monday.....	608
Month.....	609
Move.....	611
N	
N.....	620
Near.....	621
Net.....	623
New.....	624
Next.....	625
Night.....	626
No.....	627
Normal.....	628
North.....	629
Not.....	630
November.....	631
Now.....	632
Number.....	633
O	
O.....	650
Of.....	653
Off.....	654
On.....	656
Open.....	657
Operator.....	659
Or.....	660
Oscar.....	662
Other.....	663
Out.....	664
Over.....	665
P	
P.....	680
P.M.....	681
Papa.....	682
Per.....	683
Percent.....	684
Plan.....	688
Please.....	689
Plus.....	690
Point.....	691

Pound.....	694
Power.....	695
Preset.....	697
Press.....	698
Pressure.....	699
Q	
Q.....	720
Quebec.....	721
R	
R.....	730
Radio.....	731
Rain.....	733
Range.....	735
Ready.....	737
Receive.....	738
Receiver.....	739
Remote.....	743
Repeat.....	745
Repeater.....	746
Reset.....	747
Right.....	749
Road.....	750
Roger.....	751
Romeo.....	752
S	
S.....	770
Saturday.....	772
Seconds.....	774
Send.....	777
Sent.....	778
Service.....	781
Set.....	782
Severe.....	783
Short.....	784
Sierra.....	788
Slow.....	790
Snow.....	791
South.....	792
Speed.....	793
Star.....	795
Start.....	796
Stop.....	797
Storm.....	798
Sunday.....	799
System.....	801
S (plural).....	802
T	
T.....	820
Tango.....	821
Temperature.....	824
Test.....	826
Than.....	827
Thank-You.....	828
That.....	829
The (shortE).....	830
The (longE).....	831
Then.....	832

This.....	833
This-is.....	834
Thunderstorms.....	836
Thursday.....	837
Time.....	838
Timer.....	839
To.....	002
Today.....	840
Today's.....	852
Tomorrow.....	841
Tone.....	854
Tonight.....	842
Tornado.....	843
Traffic.....	845
Transceiver.....	853
Transmit.....	846
Try.....	848
Tuesday.....	849
Turn.....	850
Type.....	851
U	
U.....	870
Uniform.....	871
Unit.....	872
Until.....	874
Up.....	875
Use (noun).....	876
Use (verb).....	877
V	
V.....	880
Verify.....	882
Version.....	883
Victor.....	884
W	
W.....	890
Wait.....	891
Warning.....	892
Watch.....	893
Watts.....	894
Weather.....	896
Wednesday.....	897
Week.....	898
Weekday.....	899
Welcome.....	900
West.....	902
What.....	903
Whiskey.....	904
Will.....	905
Wind.....	906
Wind Chill.....	907
With.....	908
X	
X.....	920
X-Ray.....	921
Y	
Y.....	930
Yankee.....	931

Year.....	932
Yes.....	934
You.....	936
Your.....	937

Z

Z.....	950
Zed.....	951
Zero.....	952
Zone.....	953
Zulu.....	954

Pause

Pause 1.....	960
Pause 2.....	961
Pause 3.....	962
Pause 4.....	963

Weather

Variables

Inside Temp.....	110
Outside Temp.....	111
Wind Speed.....	112
Rainfall.....	113
Peak Wind.....	114
High/Low Temp.....	115*
Wind Chill.....	116*
Air Pressure.....	117*
Humidity.....	118*

Link Port

Control

Link Port Off.....	120
Link Port On.....	121
Link Port Rec.....	122

User Switch

Control

500 mSEC Delay...	150
UF #1 OFF.....	151
UF #1 ON.....	152
UF #1 MON.....	153
UF #2 OFF.....	154
UF #2 ON.....	155
UF #2 MON.....	156
UF #3 OFF.....	157
UF #3 ON.....	158
UF #3 MON.....	159
UF #4 OFF.....	160
UF #4 ON.....	161
UF #4 MON.....	162

UF #5 OFF.....	163
UF #5 ON.....	164
UF #5 MON.....	165
UF #6 OFF.....	166
UF #6 ON.....	167
UF #6 MON.....	168

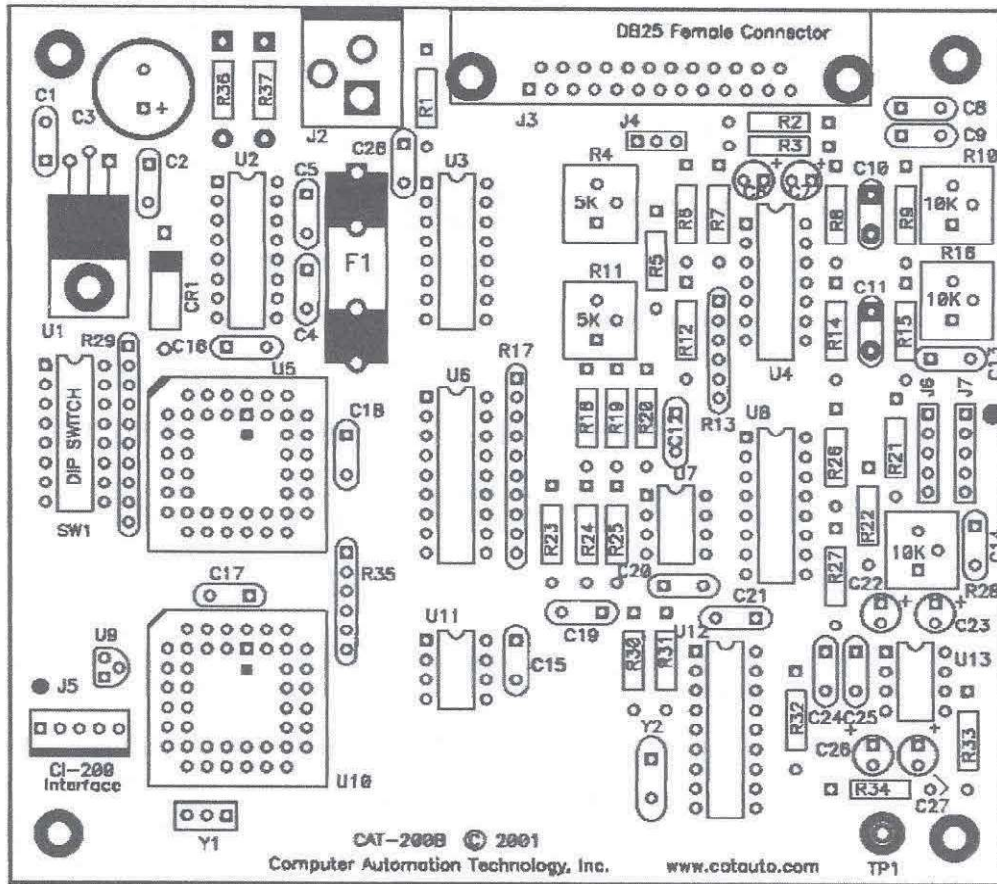
* Requires CI-200

NOTE:

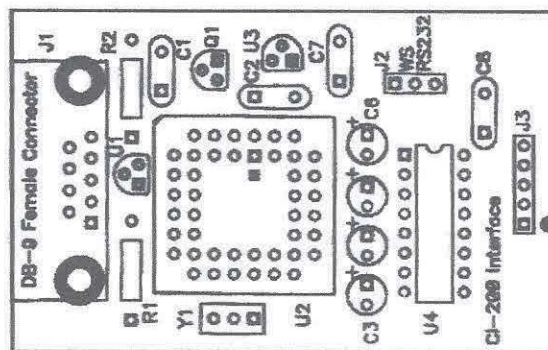
Humidity requires
Ultimeter 800 or 2000.

Air Pressure requires
Ultimeter 2000.

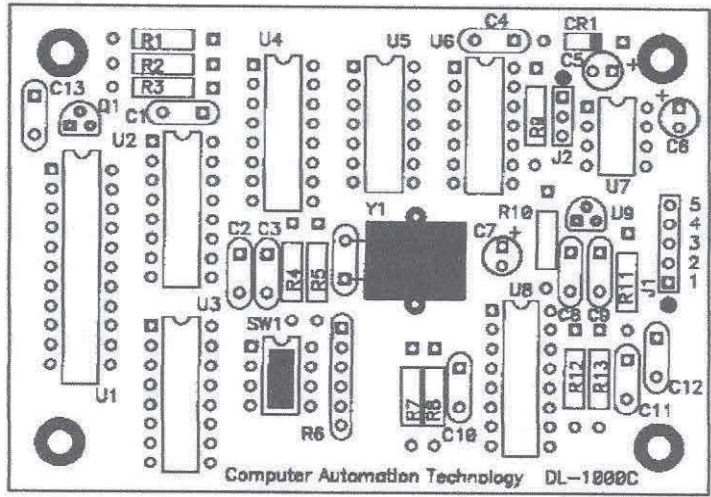
Chapter 9 - Diagram



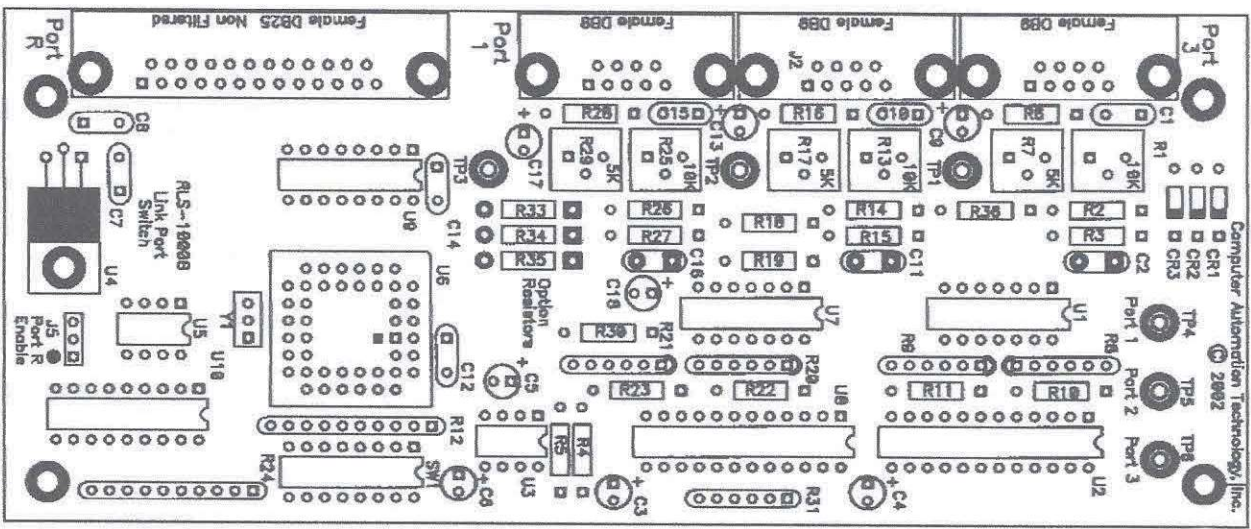
CAT-200B
Figure 9-1



CI-200
Figure 9-2



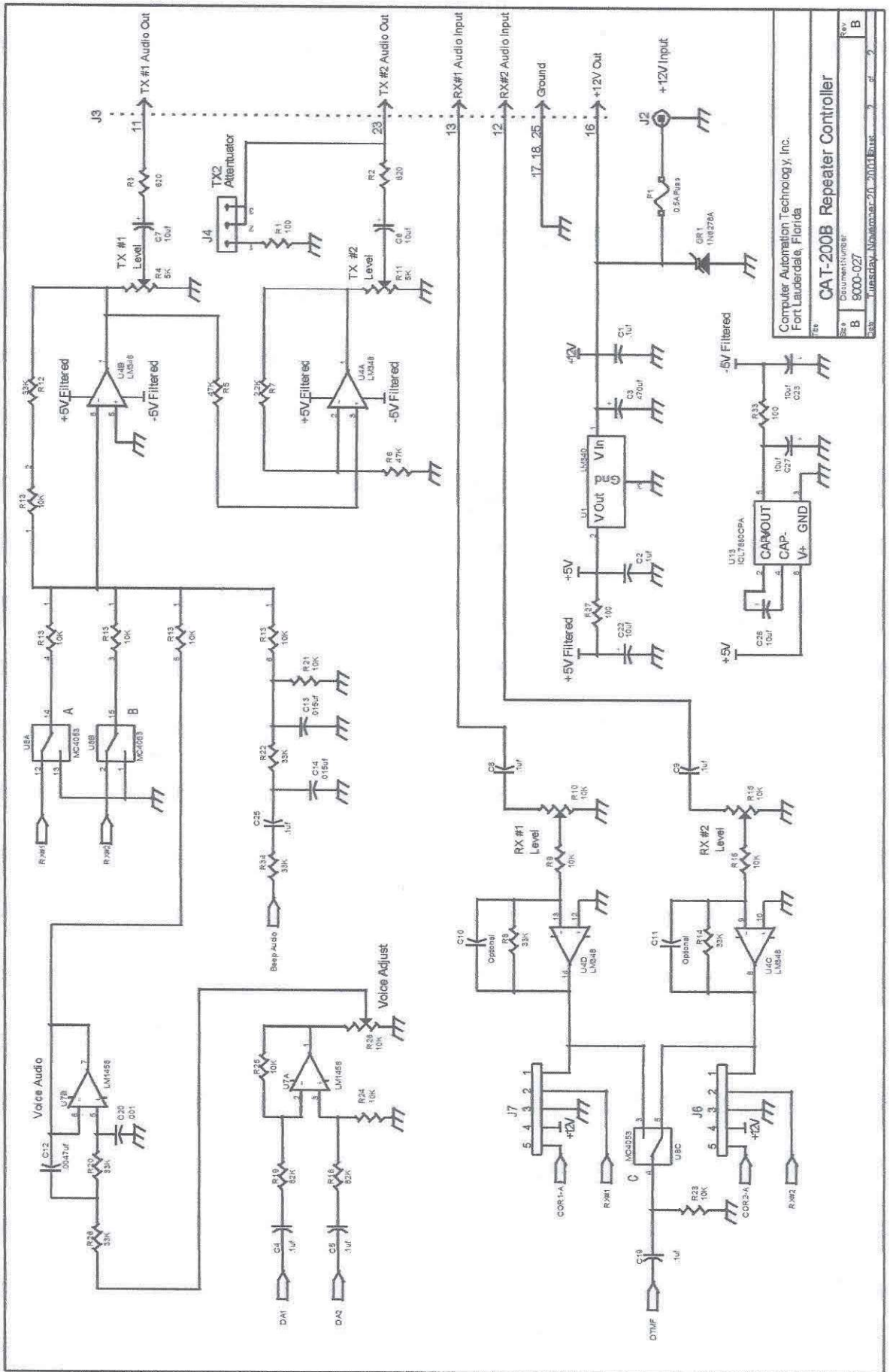
DL-1000C Audio Delay Board
Figure 9-3



RLS-1000B Remote Link Switch
Figure 9-4

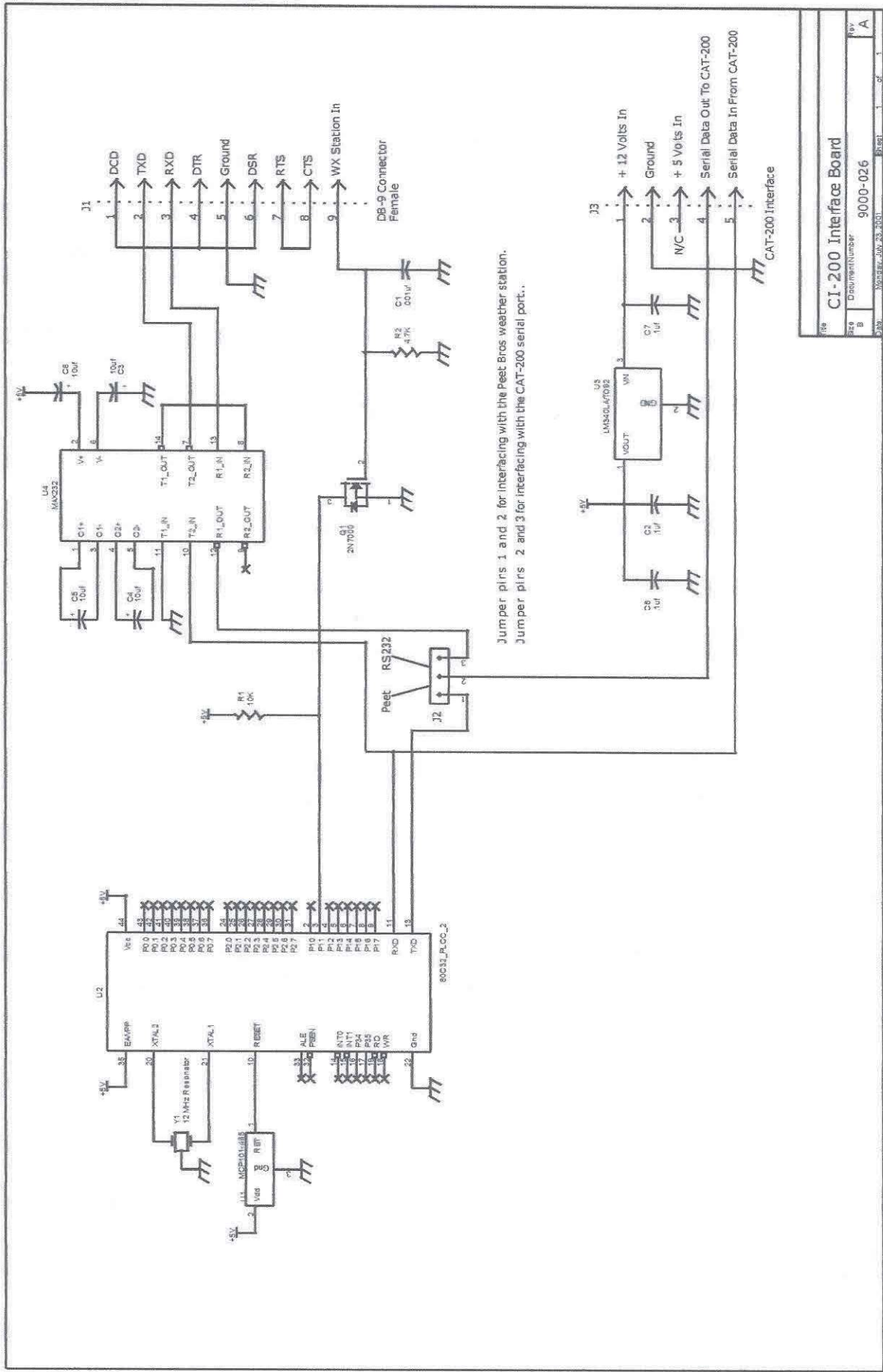
Chapter 10 - Schematic

Controller Board (CAT-200B)	Sheet 1 of 2
Controller Board (CAT-200B)	Sheet 2 of 2
Interface Board (CI-200)	Sheet 1 of 1
Audio Delay Board (DL-1000C)	Sheet 1 of 1
Remote Link Switch (RLS-1000B)	Sheet 1 of 2
Remote Link Switch (RLS-1000B)	Sheet 2 of 2



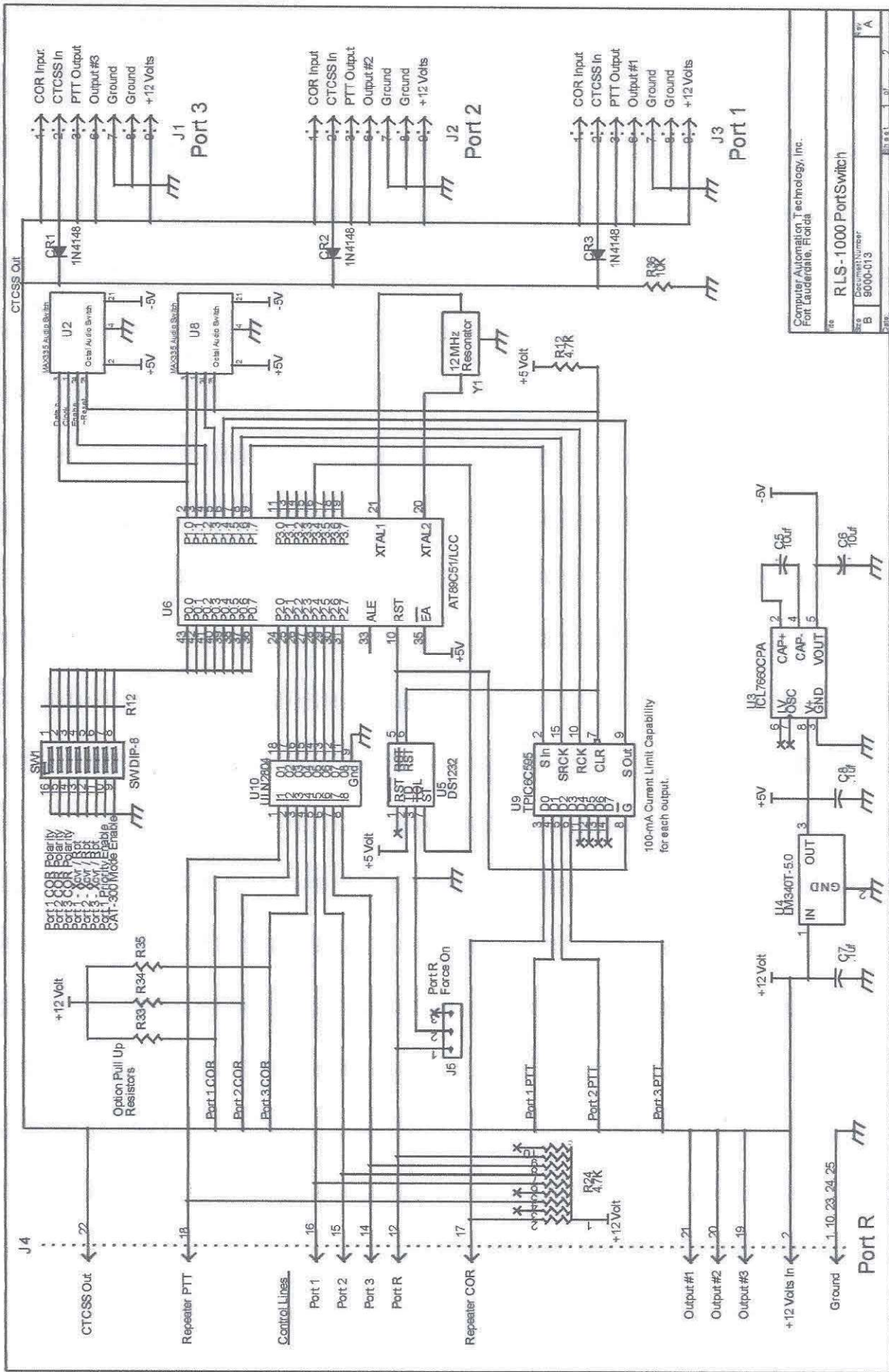
Computer Automation Technology, Inc.
 Fort Lauderdale, Florida

File: CAT-200B Repeater Controller
 Document Number: 8000-027
 Rev: B
 Date: Tuesday, November 20, 2001 11:58 AM



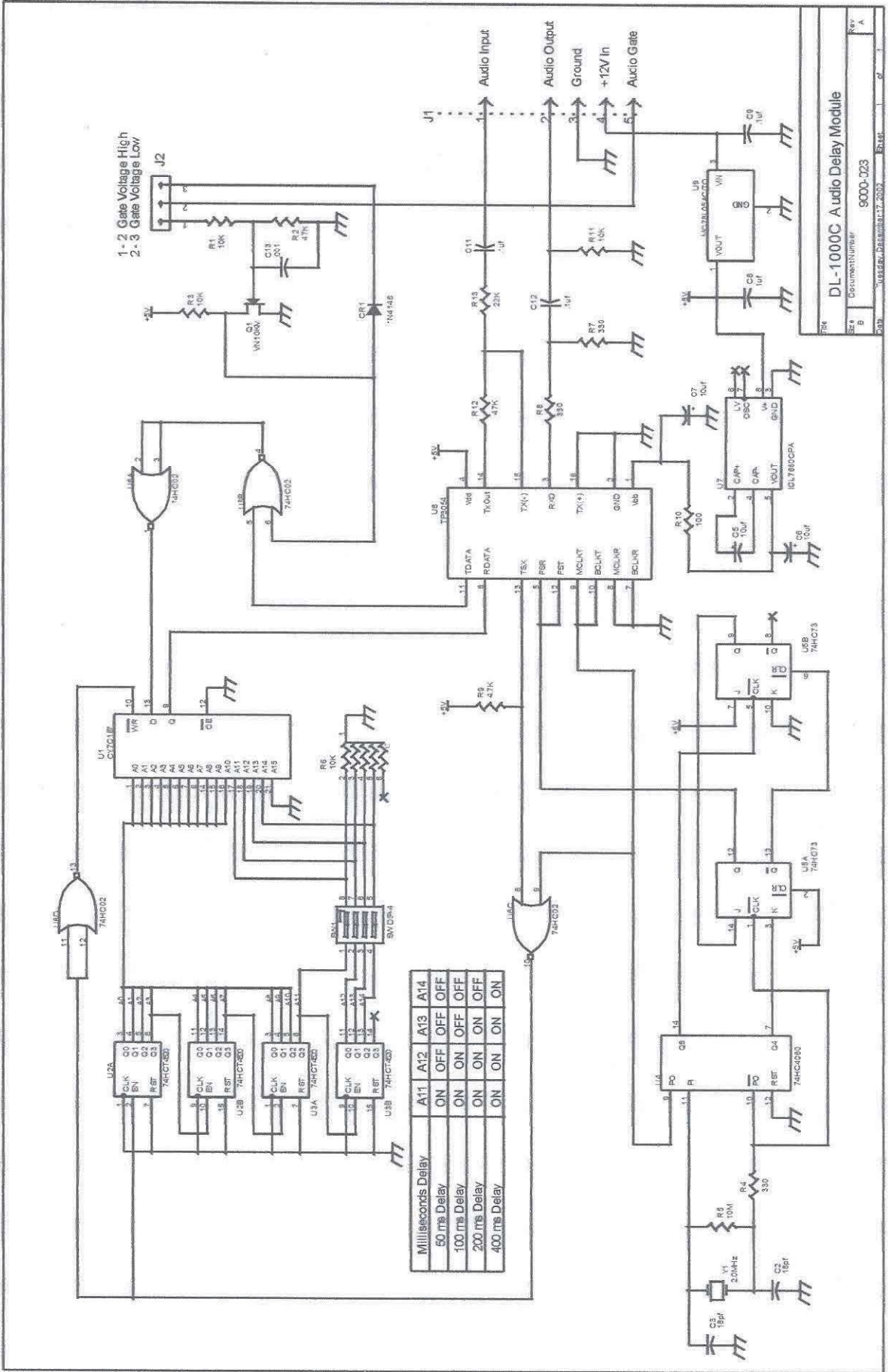
Jumper pins 1 and 2 for interfacing with the Peet Bros weather station.
 Jumper pins 2 and 3 for interfacing with the CAT-200 serial port..

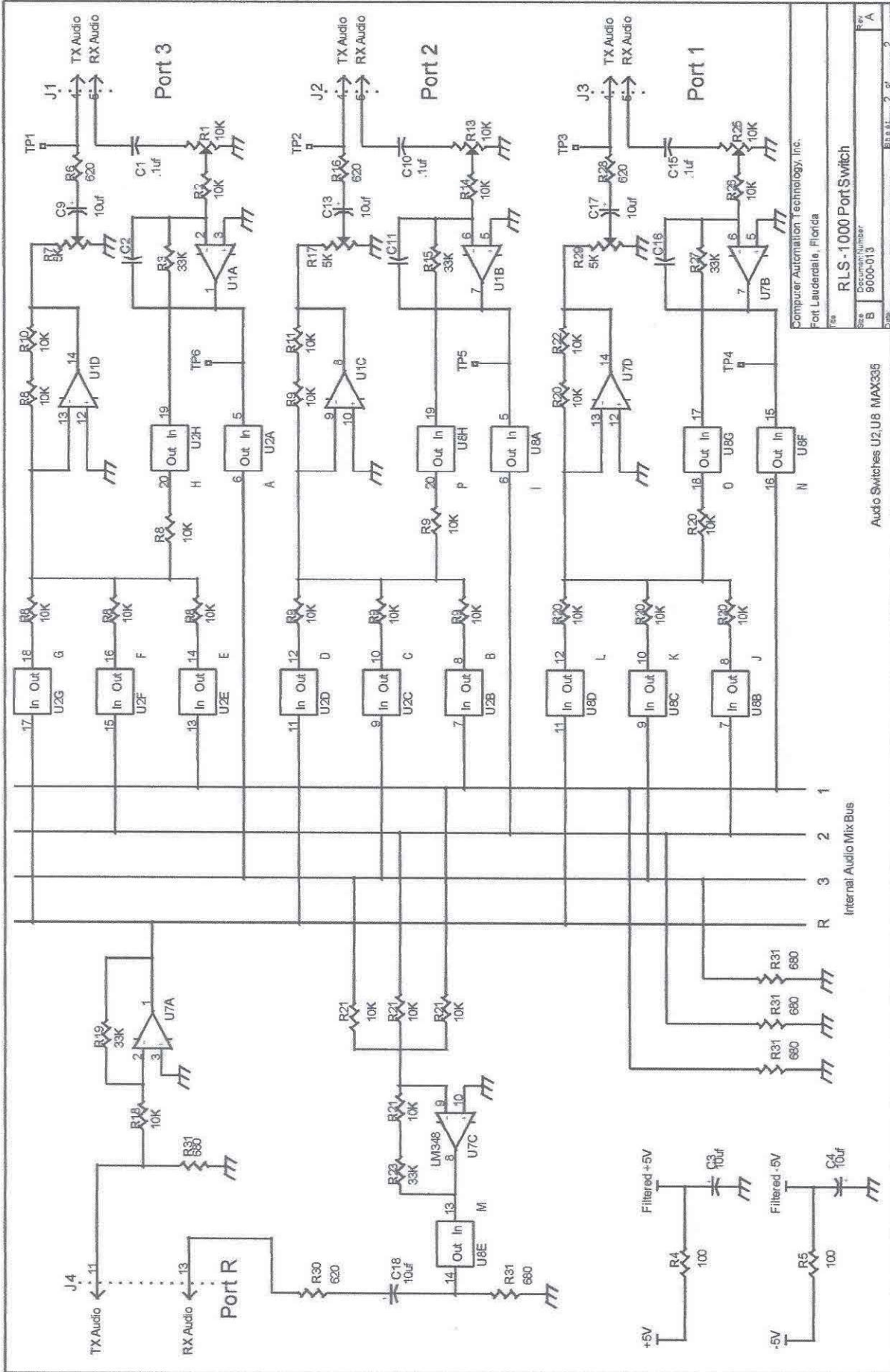
File	CI-200 Interface Board		
Size	Document Number	9000-026	Rev
Part			A
Order	308787-001-23-0031	Issue	1 of 1



Computer Automation Technology, Inc.
 Fort Lauderdale, Florida

File	RLS-1000 PortSwitch
Size	B
Document Number	9000-013
Rev	A





Computer Automation Technology, Inc.
 Fort Lauderdale, Florida
 Part No. RLS-1000 Port Switch
 Docu. Number 8000-013
 Rev. A

Audio Switches U2, U8 MAX335

Chapter 11 - Part List

CAT-200B Controller

1	Capacitor	.001UF 50V	C20
2	Capacitor	.015UF 50V	C13,C14
1	Capacitor	.0047UF 50V	C12
15	Capacitor	.1UF 50V	C1,C2,C4,C5,C8,C9,C15,C16, C17,C18,C19,C21,C24,C25,C28
6	Capacitor	10uf 16V	C6,C7,C22,C23,C26,C27
1	Capacitor	470uf 50V	C3
2	Capacitor	Optional	C10,C11
1	Connector	Berg 1X3	J4
1	Connector	Berg 1X5	J5
1	Connector	DB25	J3
1	Connector	DC Power	J2
1	Crystal	3.58MHz	Y2
1	Diode	1N6278A	CR1
1	Fuse	0.5 AMP	F1
2	Header	1X5	J6,J7
1	I.C.	25C320/P	U11
1	I.C.	P89C51RD2HBA	U10
1	I.C.	MC101-485	U9
1	I.C.	ILC7660	U13
1	I.C.	LM340-05	U1
1	I.C.	LM348	U4
1	I.C.	LM1458	U7
1	I.C.	MC4053	U8
1	I.C.	MSP53C391	U2
1	I.C.	MT8870D	U12
1	I.C.	ATF1502ASL-25	U5
1	I.C.	TPIC6C595	U3
1	I.C.	ULN2804	U6
1	Resistor	2.2K Ohm .25W	R7
2	Resistor	5K Variable	R4,R11
1	Resistor	10K 6 Pin SIP	R13,R35
2	Resistor	10K 10 Pin SIP	R17,R29
7	Resistor	10K Ohm .25W	R6,R9,R15,R21,R23,R24,R25
3	Resistor	10K Variable	R10,R16,R28
7	Resistor	33K Ohm .25W	R8,R12,R14,R20,R22,R26,R34
5	Resistor	47K Ohm .25W	R5
2	Resistor	82K Ohm .25W	R18,R19
3	Resistor	100 Ohm .25W	R1,R27,R33
2	Resistor	100K Ohm .25W	R30,R31
1	Resistor	560K Ohm .25W	R32
2	Resistor	620 Ohm .25W	R2,R3
1	Resonator	12MHz	Y1
1	Switch	DIP 8 Position	SW1

CI-200 Interface Board

1	Capacitor	.001UF 50V	C1
3	Capacitor	.1UF 50V	C2,C7,C8
4	Capacitor	10uf 16V	C3,C4,C5,C6
1	Connector	Berg 1X3	J2
1	Connector	Berg 1X5	J3
1	Connector	DB9	J1
1	I.C.	LM78L05	U3
1	I.C.	MAX232	U4
1	I.C.	MP-102	U1
1	I.C.	89C52	U2
2	Resistor	4.7K Ohm .25W	R1,R2
1	Resonator	12 MHz	Y1
1	Transistor	2N7000	Q1

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.	7660CEA	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

RLS-1000B Remote Link Switch

8	Capacitor	10uF 16V	C3, C4, C5, C6, C9, C13, C17, C18
7	Capacitor	0.1uF 50V	C1, C7, C8, C10, C12, C14, C15
3	Capacitor	.0047uF 50V	C2, C11, C16 (Select Part)
3	Connector	DB-9F	J1, J2, J3
1	Connector	DB-25F	J4
1	Crystal	12MHz	Y1
3	Diode	1N4148	CR1, CR2, CR3
1	Header	1X3	J5
1	I.C.	LM340T-5	U4
1	I.C.	ICL7660	U3
1	I.C.	AT89C5124JC	U6
1	I.C.	TD62084AP	U10
1	I.C.	TPIC6C595	U9
1	I.C.	DS1232	U5
2	I.C.	LM348	U1, U7
2	I.C.	MAX335CNG	U2, U8
1	Jumper		JP1
3	Resistor	10K Variable	R1, R13, R25
3	Resistor	5K Variable	R7, R17, R29
1	Resistor	10K 10Pin SIP	R12
4	Resistor	10K 6Pin SIP	R8, R9, R20, R21
1	Resistor	4.7K 10Pin SIP	R24
1	Resistor	680 6Pin SIP	R31
2	Resistor	100 .25W	R4, R5
4	Resistor	620 .25W	R6, R16, R28, R30
3	Resistor	2200 .25W	R33, R34, R35 (Select Part)
9	Resistor	10K .25W	R2, R10, R11, R14, R18, R22, R23, R26, R36
4	Resistor	33K .25W	R3, R15, R19, R27
1	Switch	Dip 8 Position	SW1
6	Test Point		TP1, TP2, TP3, TP4, TP5, TP6

Chapter 12 - Remote Transceiver Weather Station Interface

In this configuration, the CAT-200B supports a transceiver and a Peet Brothers Weather Station. The transceiver is located off site and tuned to the repeater's frequency. When a weather request DTMF command is received, the CAT-200B will key the transceiver and send a weather report in a synthesized voice. A COR connection is not required.

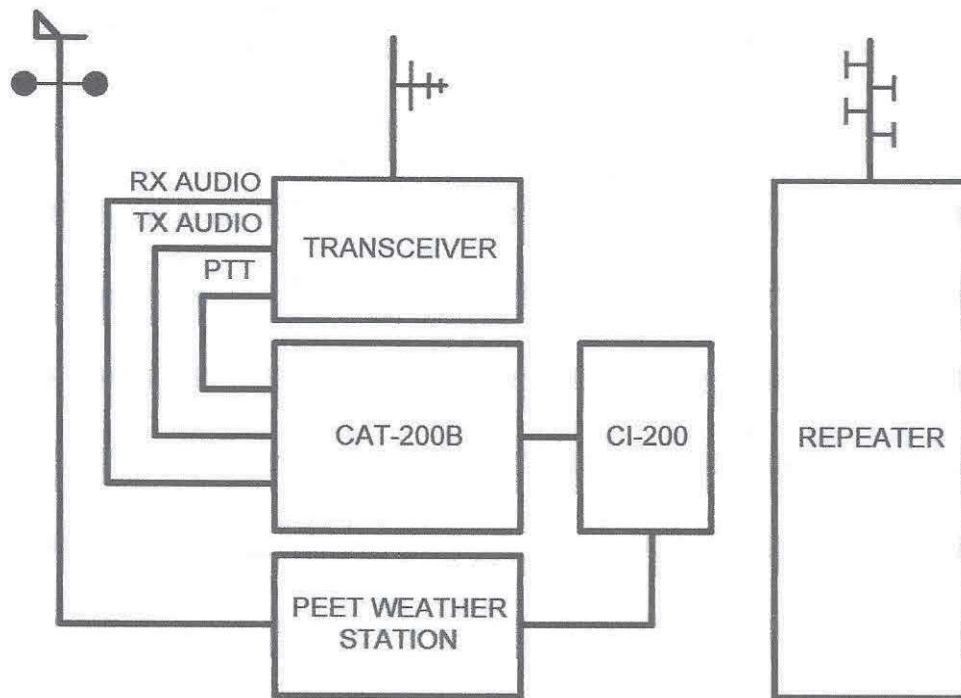


Figure 12-1

CAT-200B Transceiver Mode Set-up

Set dipswitch #5 and #7 to ON. Apply DC power to the CAT-200B. Check the power up message. The voice synthesizer will say: "CAT-200B TRANSCEIVER, VERSION 1.11, RESET SYSTEM OK, CAT-200B TRANSCEIVER." Set dipswitch #7 to OFF. Verify that Zone 1 Channel 4 is enabled. Follow the Peet Brothers Interconnect section described in Chapter 7.

Kenwood Transceiver Weather Station Interface

In this configuration the CAT-200B is connected to the microphone jack of the Kenwood TM-421 transceiver. Voltage to power the CAT-200B is derived from the +8VDC output pin #5 of the microphone jack. The equipment is located at the repeater trustee's house and tuned to the repeater output. When the proper DTMF command is received, the CAT-200B will key the transceiver and send a weather report to the input of the repeater. The CAT-200B will also work in parallel with a Peet Brothers Weather Station and a packet modem.

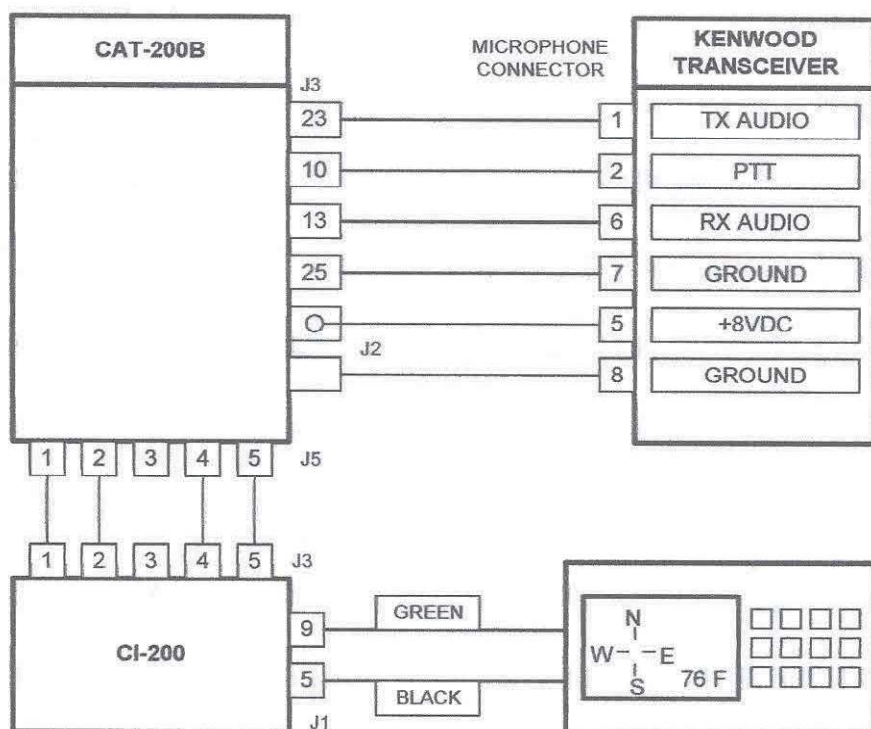


Figure 12-2

Transceiver Control Channels

In this mode the CAT-200B has two control zones for a total of sixteen control channels. These channels are controlled by DTMF commands on the transceiver's input.

Interrogation of Transceiver Control Status by Radio

Key-up and send the control operator code [100] followed by the zone number and a zero. Un-key and the voice will read back the channels that are turned on in that zone. Example: "ONE TWO FIVE ON." If all the channels are turned off, the voice will say: "CLEAR."

2. Transceiver ID Enable

When this channel is enabled, the CAT-200B will append the voice identification any time the weather report is sent. This ID will consist of up to 15 words selected from the voice vocabulary table and is programmed with the [*3101] command. If voice message #1 is empty, the identification will be sent in CW.

3. DTMF Pad Test Enable

When this channel is enabled, a user is able to perform a test of their radio's 12 or 16-button keypad. As the numbers are being decoded, they are stored in memory. When the user stops transmitting the CAT-200B will key the transceiver and the voice synthesizer will read back all the numbers that were decoded.

4. Weather Report Enable

When this channel is enabled, the transceiver will accept the command to provide a weather report.

5. CTCSS Encoder Switch Enable

When this channel is enabled, the CTCSS Encoder Switch at J3-7 will turn ON whenever the CAT-200B responds to an input command. This switch will turn OFF only when the CAT-200B sends ID Message #1. Use this switch to gate a CTCSS encoder. During the weather report the transceiver ID will be suppressed on the output of the repeater.

6. Reserved

7. Reserved

8. Reserved

Zone 3 - Logic Inputs - Switch Outputs

1. Logic Input #1 Enable

When this channel is enabled, a logic active high input on connector J3-1 will activate voice message #3. This message is user programmable. The default message is "EMERGENCY POWER".

2. Logic Input #2 Enable

When this channel is enabled, a logic high input on connector J3-2 will activate voice message #4. This message is user programmable. The default message is "WEATHER ALERT".

3. Logic Input #3 Enable

When this channel is enabled, a logic high input on connector J3-21 will activate voice message #5. This message is user programmable. The default message is "INTRUDER ALERT".

4. Logic Input #4 Enable

When this channel is enabled, a logic high input on connector J3-22 will activate voice message #6. This message is user programmable. The default message is "HIGH TEMPERATURE".

5. Switch #1 Enable

When this channel is enabled, switch #1 is turned on. Connector J3 pin 14 will sink 50 MA to ground.

6. Switch #2 Enable

When this channel is enabled, switch #2 is turned on. Connector J3 pin 15 will sink 50 MA to ground.

7. Switch #3 Enable

When this channel is enabled, switch #3 is turned on. Connector J3 pin 19 will sink 50 MA to ground.

8. Switch #4 Enable

When this channel is enabled, switch #4 is turned on. Connector J3 pin 20 will sink 50 MA to ground.

DTMF Programming Commands (Transceiver)

ENTRY	DESCRIPTION	DEFAULT
*27	READ WEATHER STATION DATA SETTING	
*30XX	SEND VOICE MESSAGE (01-12)	
*31XX	PROGRAM VOICE MESSAGE (01-12)	
*32XX	ERASE VOICE MESSAGE (01-12)	
501	PROGRAM CONTROL OPERATOR PREFIX	100
503	PROGRAM DTMF PAD TEST PREFIX	375
504	PROGRAM WEATHER REPORT PREFIX	200
505	PROGRAM VOICE DEMONSTRATION PREFIX	700
610	PROGRAM DTMF INTERDIGIT TIMER (0.1 - 9.9 SECONDS)	1.0
*91	SEND AUDIO TEST TONE (REPEATER)	
*92	SEND AUDIO TEST TONE (LINK)	
*93	SEND AUDIO TEST TONE (REPEATER + LINK)	
*0	MANUAL EXIT OF PROGRAMMING MODE	

Figure 12-3

DTMF Inter-Digit Timer [*610*]

This timer determines the time between entries of DTMF digits that make-up a command. This timer is programmable between 0.1 and 9.9 seconds. The timer default is 1 second. When the CAT-200B is unlocked and placed in the programming mode, the DTMF inter-digit timer doubles in length. This provides more time to enter the programming commands. Once the CAT-200B is locked with the [*0] command this timer returns to the normal setting.

Chapter 13 - CI-200 Interface Board

The CI-200 Interface board provides a RS-232 port to program the CAT-200B with the ED-200 Windows Editor.

RS-232 Computer Interface

Connect your computer's COMM port to the CI-200 as described in Figure 13-1. On the CI-200 set the J2 jumper plug to the RS-232 position. On the CAT-200B check that dipswitch #6 is in the ON position.

Start the windows editor program to display the "CAT-200 Repeater Controller Editor" window. To activate the RS-232 port, set the DC power to OFF. Set dipswitch #8 to ON. Turn the DC power to ON. The CAT-200 editor program will automatically set the computer's COMM port to 4800 8,N,1.

Activation Of The RS-232 Port By Radio

To activate the RS-232 port, key-up and enter the control operator prefix code [100] followed by [97]. Un-key, a beep will be heard and the transmitter will turn off.

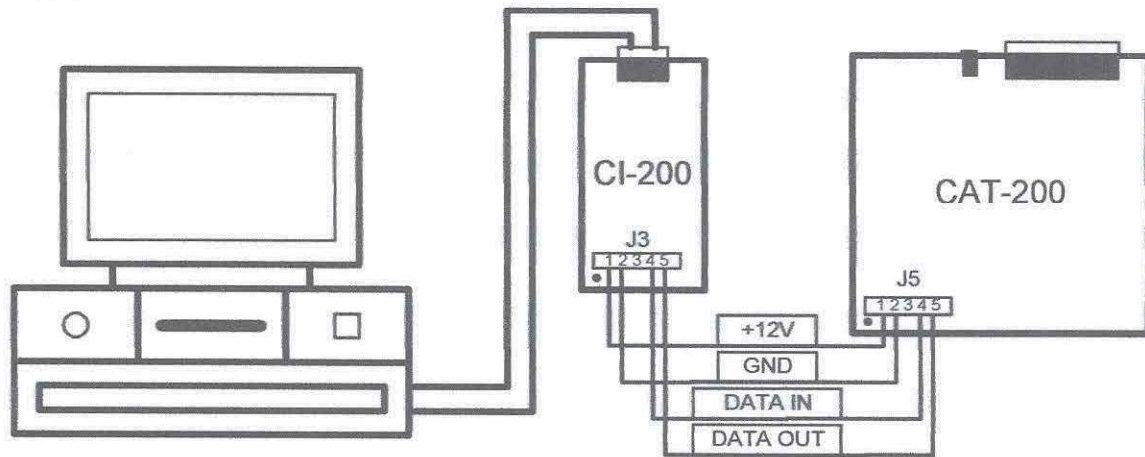


Figure 13-1

ED-200W Windows Editor

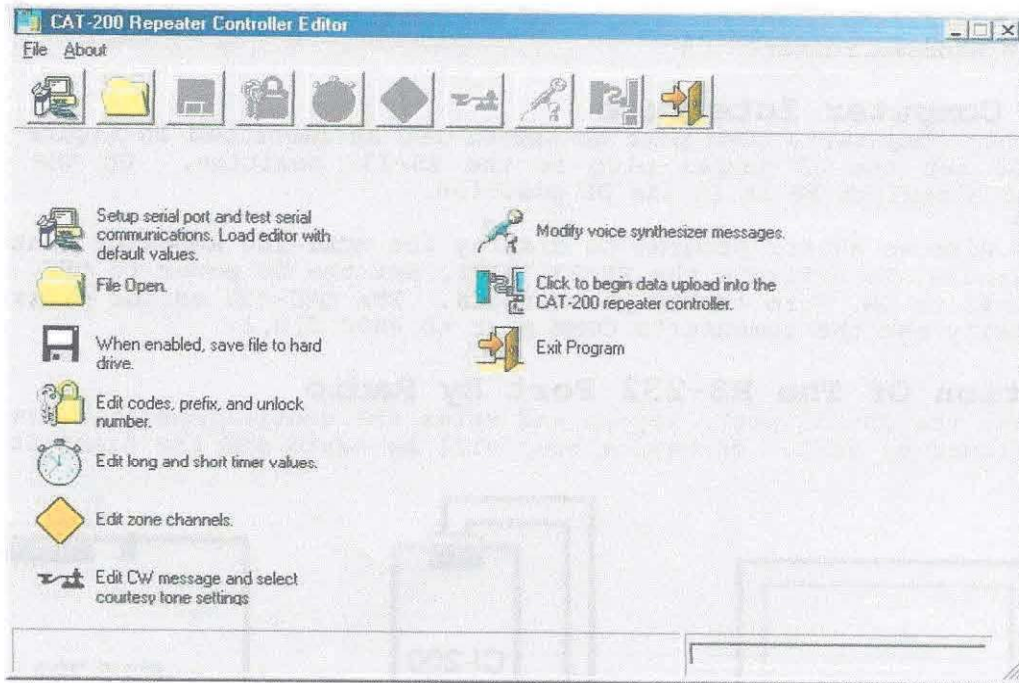


Figure 13-3

Click on **[SETUP SERIAL PORT AND TEST SERIAL COMMUNICATIONS]** button to display the "CAT-200B Setup" window. Click on the **[FIND SERIAL PORT]** button. Check that the program indicates the port was found and set. Click on "OK".

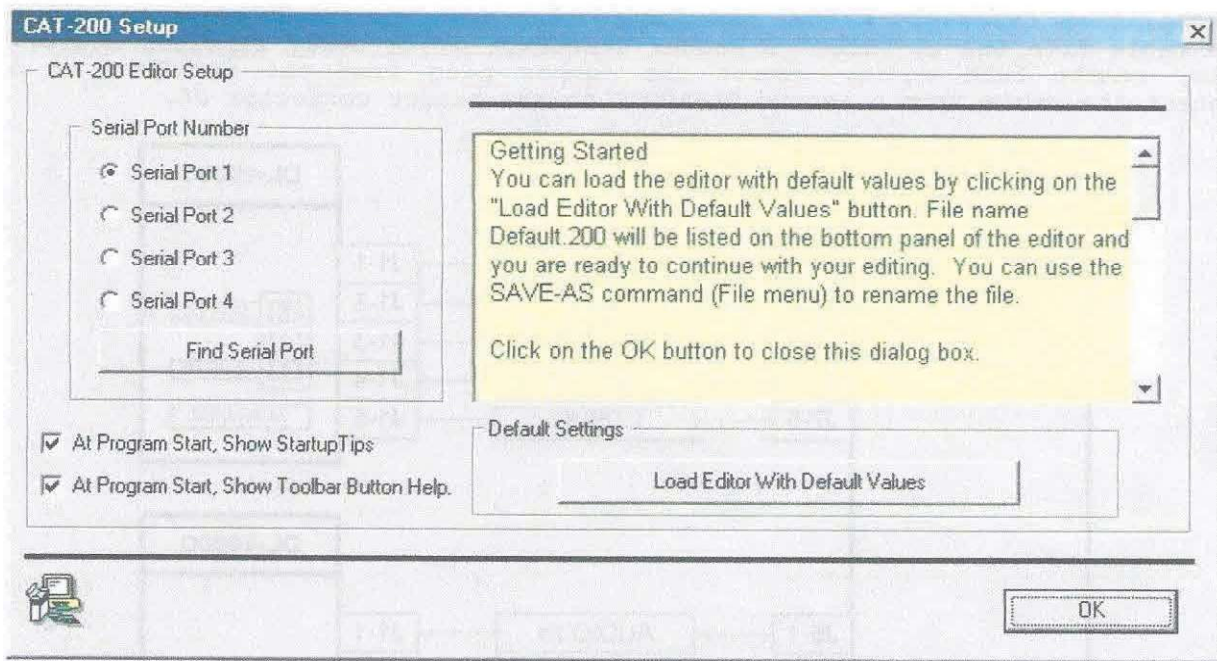


Figure 13-4

Click on the **[LOAD EDITOR WITH DEFAULT VALUES]** button.

Use the Editor to program your codes, timers, courtesy tones, zone channel settings, CW identification, and voice synthesizer messages. Save the program for future use. Click the **[DATA UPLOAD]** button to transfer the program to the CAT-200B memory.

Chapter 14 - DL-1000C Audio Delay Board

When placed in the receive audio path, the DL-1000C 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 CAT-200B at J7. Connect the cable from the DL-1000C to header connector J7 to delay repeater audio. To delay remote base audio, remove the jumper plug from the CAT-200B at J6. Connect the cable from a second DL-1000C to the header connector J6.

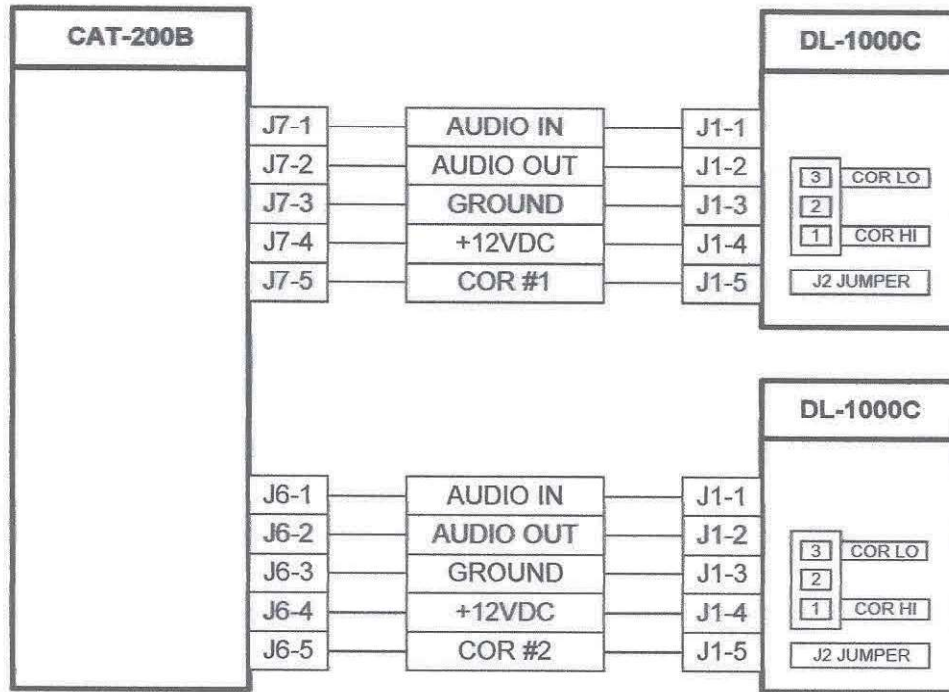


Figure 14-1

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 14-2

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.

Chapter 15 - RLS-1000B Remote Link Switch

The RLS-1000B provides a method to connect up to three transceivers to the remote base port of the CAT-200B repeater controller. Transceiver selection is accomplished by grounding three control lines. Since the receiver audio and COR inputs are mixed, all three transceivers can be selected at the same time.

To select a transceiver, connect the CAT-200B user function switch outputs to the control line inputs on the RLS-1000B.

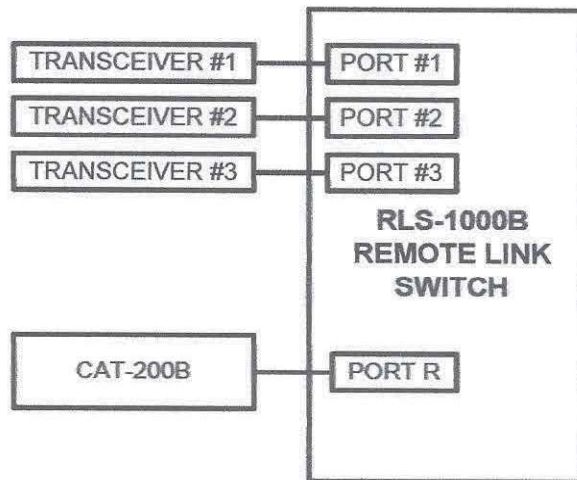


Figure 15-1

COR Output Polarity

The COR output will always be active HIGH. The COR polarity dipswitch on the CAT-200B must be set to the OFF position.

Audio Input Output

The audio input and output circuits are identical to the CAT-200B controller. Level adjustments on both the input and output amplifiers, makes it easy to compensate for varying input and output requirements. The audio input impedance is 10K ohms while the output is 600 ohms.

Receiver Audio Response

Each receiver input has a buffer amplifier with a gain of three. The frequency response is flat over a range of 300 to 3000 Hz. If discriminator audio is being used, it may be necessary to add some high frequency roll off. Space has been provided to install a capacitor across the feedback resistor on each receive audio amplifier. These locations are identified on the RLS-1000B board as C2, C11 and C16. Start with a .0047uF capacitor. Increase the value to provide more high frequency roll off or decrease the value to provide less high frequency roll off.

Dip Switch Selection

Switch #1 - Port #1 COR Polarity

This switch determines COR input logic for the RLS-1000B port #1 input. Switch #1 should be ON if the COR input is active low and OFF if the COR input is active high. For an active low COR input a pull-up resistor may be required. Install a 2200ohm .25W resistor on the RLS-1000B board at the R33 position.

Switch #2 - Port #2 COR Polarity

This switch determines COR input logic for the RLS-1000B port #2 input. Switch #2 should be ON if the COR input is active low and OFF if the COR input is active high. For an active low COR input a pull-up resistor may be required. Install a 2200ohm .25W resistor on the RLS-1000B board at the R34 position.

Switch #3 - Port #3 COR Polarity

This switch determines COR input logic for the RLS-1000B port #3 input. Switch #3 should be ON if the COR input is active low and OFF if the COR input is active high. For an active low COR input a pull-up resistor may be required. Install a 2200ohm .25W resistor on the RLS-1000B board at the R35 position.

Switch #4 - Port #1 Configuration

This switch configures port #1. If a transceiver is connected to the RLS-1000B at port #1, dipswitch #4 should be in the OFF position. If a repeater is connected to port #1, dipswitch #4 should be in the ON position.

Switch #5 - Port #2 Configuration

This switch configures port #2. If a transceiver is connected to the RLS-1000B at port #2, dipswitch #5 should be in the OFF position. If a repeater is connected to port #2, dipswitch #5 should be in the ON position.

Switch #6 - Port #3 Configuration

This switch configures port #3. If a transceiver is connected to the RLS-1000B at port #3, dipswitch #6 should be in the OFF position. If a repeater is connected to port #3, dipswitch #6 should be in the ON position.

Switch #7 - Port #1 Priority Enable

Switch #7 provides a method of assigning port #1 with priority over ports #2 and #3. If switch #7 is OFF the RLS-1000B will be configured for normal operation. Any COR input will enable the corresponding audio switch and pass the receive audio to the mixer. If switch #7 is ON port #1 will have priority. Audio switches for ports #2 and #3 will be disabled when port #1 COR is active.

Switch #8 - Port #1 CAT-300 Mode Enable

Switch #8 configures the RLS-1000B for operation with the CAT-300 in the one repeater, two-transceiver mode. This mode is not used when the RLS-1000B is connected to the CAT-200B controller.

Port R - Enable

To activate Port-R, J4 pin 12 must be grounded. With the jumper plug on J5 pins 1 and 2 Port-R is forced on. Use the CAT-200B remote base on and off commands to control the connection between the RLS-1000B and the CAT-200B.

CAT-200B - RLS-1000B Interconnect

Figure 15-2 describes how to connect three remote base transceivers to the link port of the CAT-200B controller. Control of the remote base is through user function switches one, two and three.

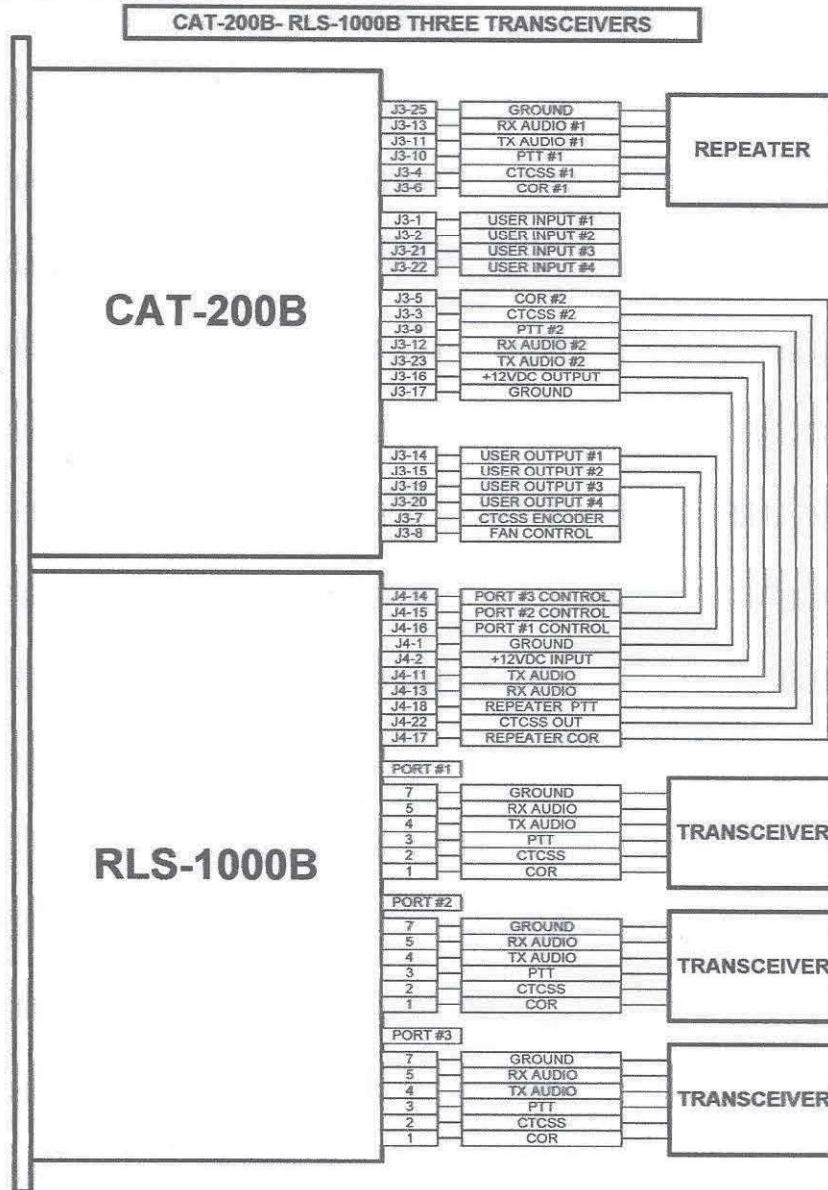
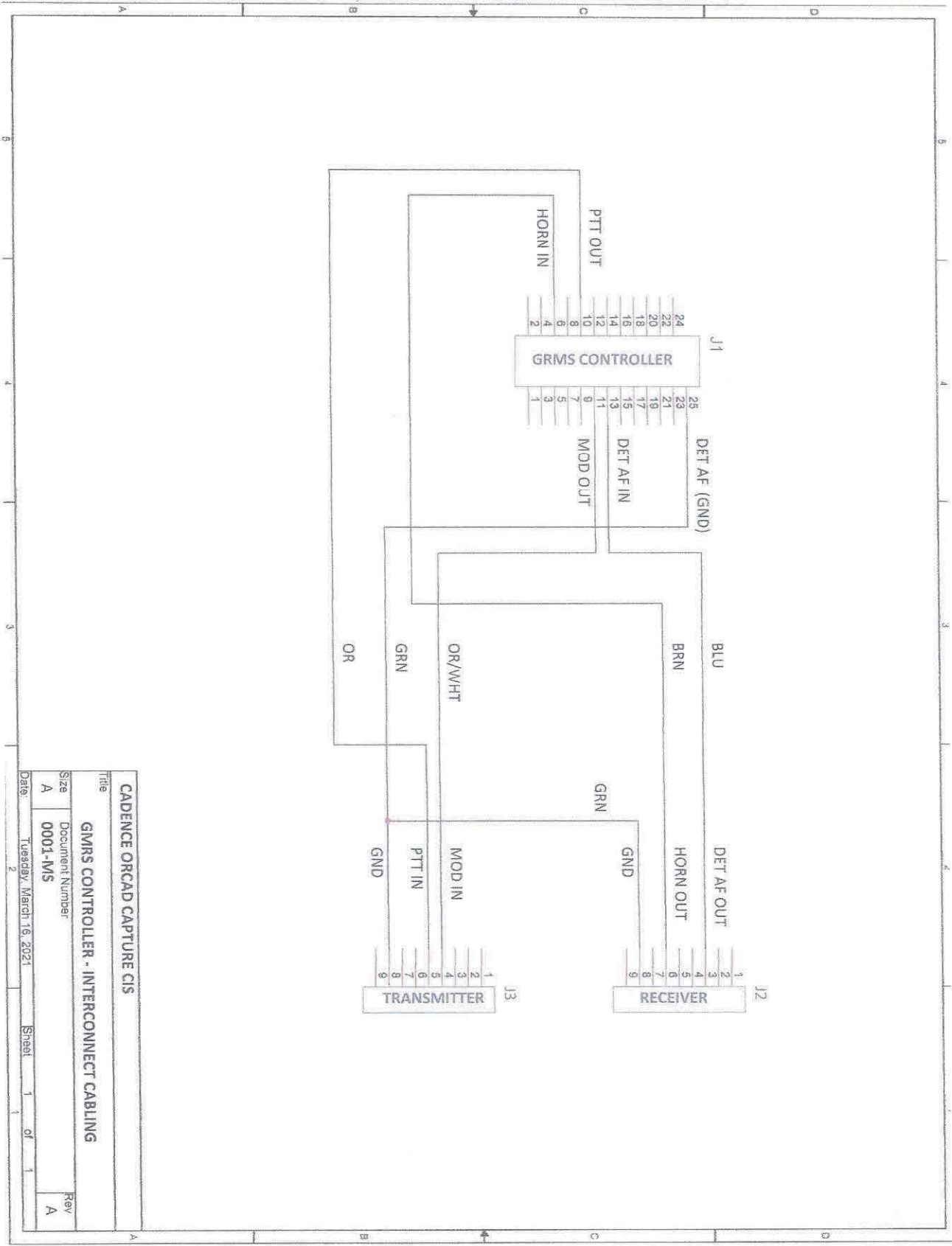


Figure 15-2



Title		CADENCE ORCAD CAPTURE CIS	
Document Number		GMRS CONTROLLER - INTERCONNECT CABLING	
Size	Document Number	Date	Sheet
A	0001-MS	Tuesday, March 16, 2021	1 of 1
Rev		A	