

LPS-1000 Link Port Switch

Use the LPS-1000 Link Port Switch in conjunction with the CAT-1000 repeater controller to develop a backbone or hub linking system. In addition to controlling two repeaters or transceivers, the LPS-1000 provides a connection to the linking port of the CAT-1000. The CAT-1000 will monitor the local port even when the link is turned off. This permits the CAT-1000 to respond to macro commands from the backbone repeaters or hub transceivers. These macros will change the settings of the user function switches and reconfigure the audio switch, COR and PTT paths.

CAT-1000 Link Port To Backbone Configuration

Control a backbone or hub system through the link port of a CAT-1000. The path is selected by grounding control lines with the CAT-1000 user function switches.

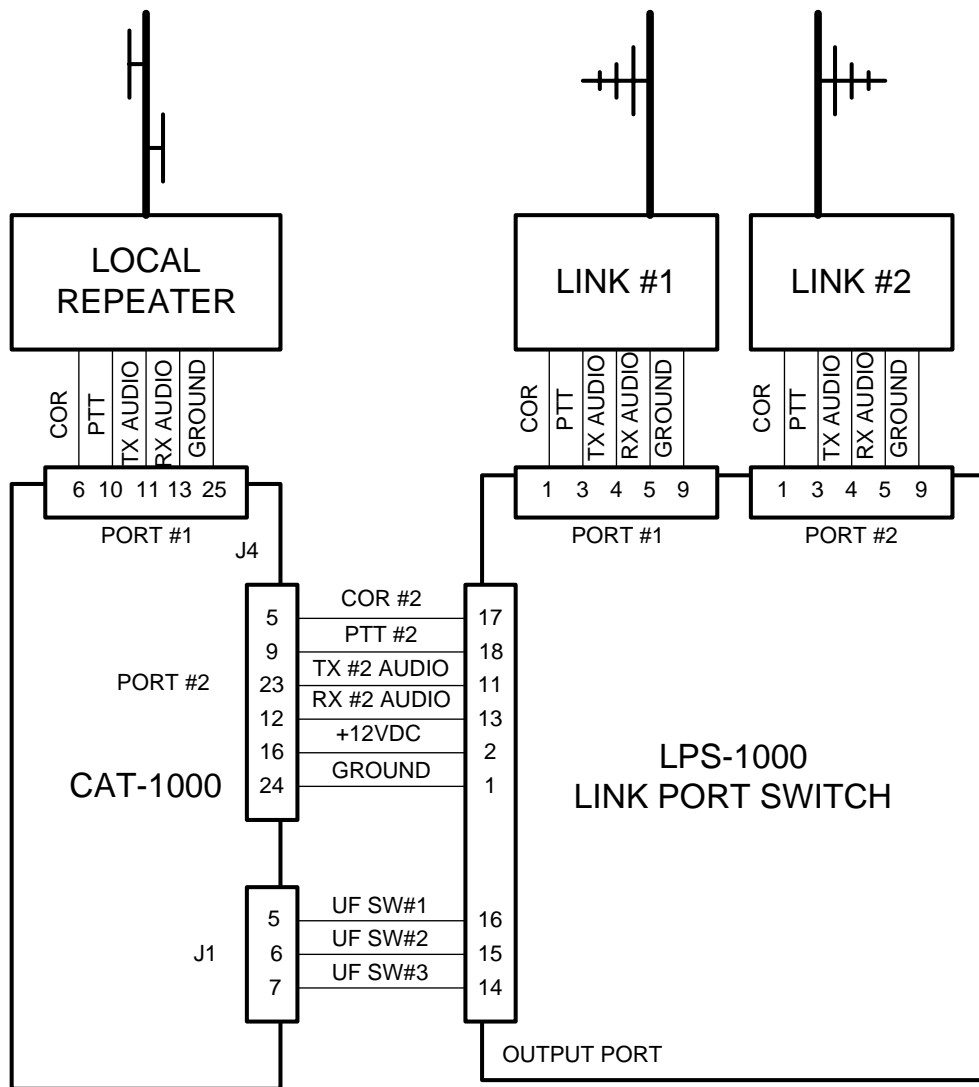


Figure 1

Control

The three control inputs are pulled high by resistor network R31 and jumpers installed at J8. For a port to receive or send information its control input must be grounded. To communicate through the LPS-1000 a minimum of two control

inputs must be grounded.

Options

The two option inputs are pulled high by resistor network R31 and jumpers installed at J8. Ground the option lines as desired or connect them to user function switches to remotely change the options. This will reconfigure the LPS-1000 between half and full duplex. See Figure 2.

OPTION #1	OPTION #2	DEFINITION
high	high	Half duplex
low	high	Full duplex

Figure 2

Half-duplex (Control 1-2)

In half-duplex, with control #1 and #2 grounded, COR #1 activity will produce PTT #2 activity with an audio path from Port #1 to Port #2. COR #2 activity will produce PTT #1 activity with an audio path from Port #2 to Port #1.

Full-duplex (Control 1-2)

In full-duplex, with control #1 and #2 grounded, COR #1 activity will produce PTT #1 and PTT #2 activity with an audio path from Port #1 to Port #2. COR #2 activity will produce PTT #2 and PTT #1 activity with an audio path from Port #2 to Port #1. To wrap around the audio, jumpers JP4 and JP6 must be installed.

Half-duplex (Control 1-2-3)

In half-duplex, with control #1, #2 and #3 grounded, COR #1 activity will produce PTT #2 and PTT #3 activity with an audio path from Port #1 to Port #2 and Port #3. COR #2 activity will produce PTT #1 and PTT #3 activity with an audio path from Port #2 to Port #1 and Port #3. COR #3 activity will produce PTT #1 and PTT #2 activity with an audio path from Port #3 to Port #1 and Port #2. In this configuration, Port #3 will have priority over Port #1 and Port #2.

Full-duplex (Control 1-2-3)

In full-duplex, with control #1, #2 and #3 grounded, COR #1 activity will produce PTT #1, PTT #2 and PTT #3 activity with an audio path from Port #1 to Port #2 and Port #3. COR #2 activity will produce PTT #1, PTT #2 and PTT #3 activity with an audio path from Port #2 to Port #1 and Port #3. COR #3 activity will produce PTT #1 and PTT #2 activity with an audio path from Port #3 to Port #1 and Port #2. To wrap around the audio, jumpers JP4 and JP6 must be installed. In this configuration, Port #3 will have priority over Port #1 and Port #2.

Half-duplex (Control 1-3)

In half-duplex, with control #1 and #3 grounded, COR #1 activity will produce PTT #3 activity with an audio path from Port #1 to Port #3. COR #3 activity will produce PTT #1 activity with an audio path from Port #3 to Port #1.

Full-duplex (Control 1-3)

In full-duplex, with control #1 and #3 grounded, COR #1 activity will produce PTT #1 and PTT #3 activity with an audio path from Port #1 to Port #3. COR #3 activity will produce PTT #1 activity with an audio path from Port #3 to Port #1. To wrap around the audio, jumper JP6 must be installed.

Half-duplex (Control 2-3)

In half-duplex, with control #2 and #3 grounded, COR #2 activity will produce PTT #3 activity with an audio path from Port #2 to Port #3. COR #3 activity will produce PTT #2 activity with an audio path from Port #3 to Port #2.

Full-duplex (Control 2-3)

In full-duplex, with control #2 and #3 grounded, COR #2 activity will produce PTT #2 and PTT #3 activity with an audio path from Port #2 to Port #3. COR #3 activity will produce PTT #2 activity with an audio path from Port #3 to Port #2. To wrap around the audio, jumper JP4 must be installed.

COR Input Polarity Jumper

Jumpers on J7 select COR polarity. With these jumpers installed, the LPS-1000 will operate when the COR inputs are active LOW. In this configuration the COR inputs at J1, J2 and J3 must be pulled-up to a positive voltage with the R23 resistor network and the jumpers on J5. If the COR is active HIGH remove the jumper on J7.

COR Output Polarity

The COR output will always be active LOW, irregardless of the input and the setting of jumpers on J7. The COR polarity dip-switch #2 on the CAT-1000 must be set to the ON position.

Audio Input Output

The audio input and output circuits are identical to the CAT-1000 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.

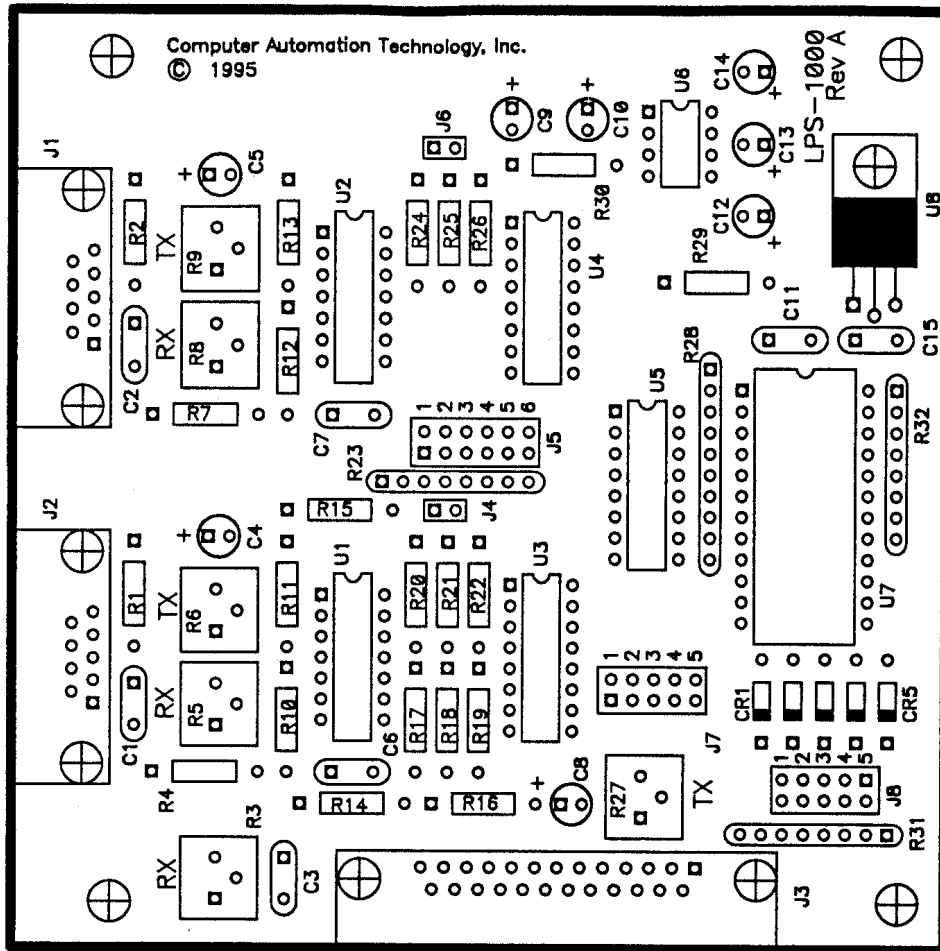
Receiver Audio Response

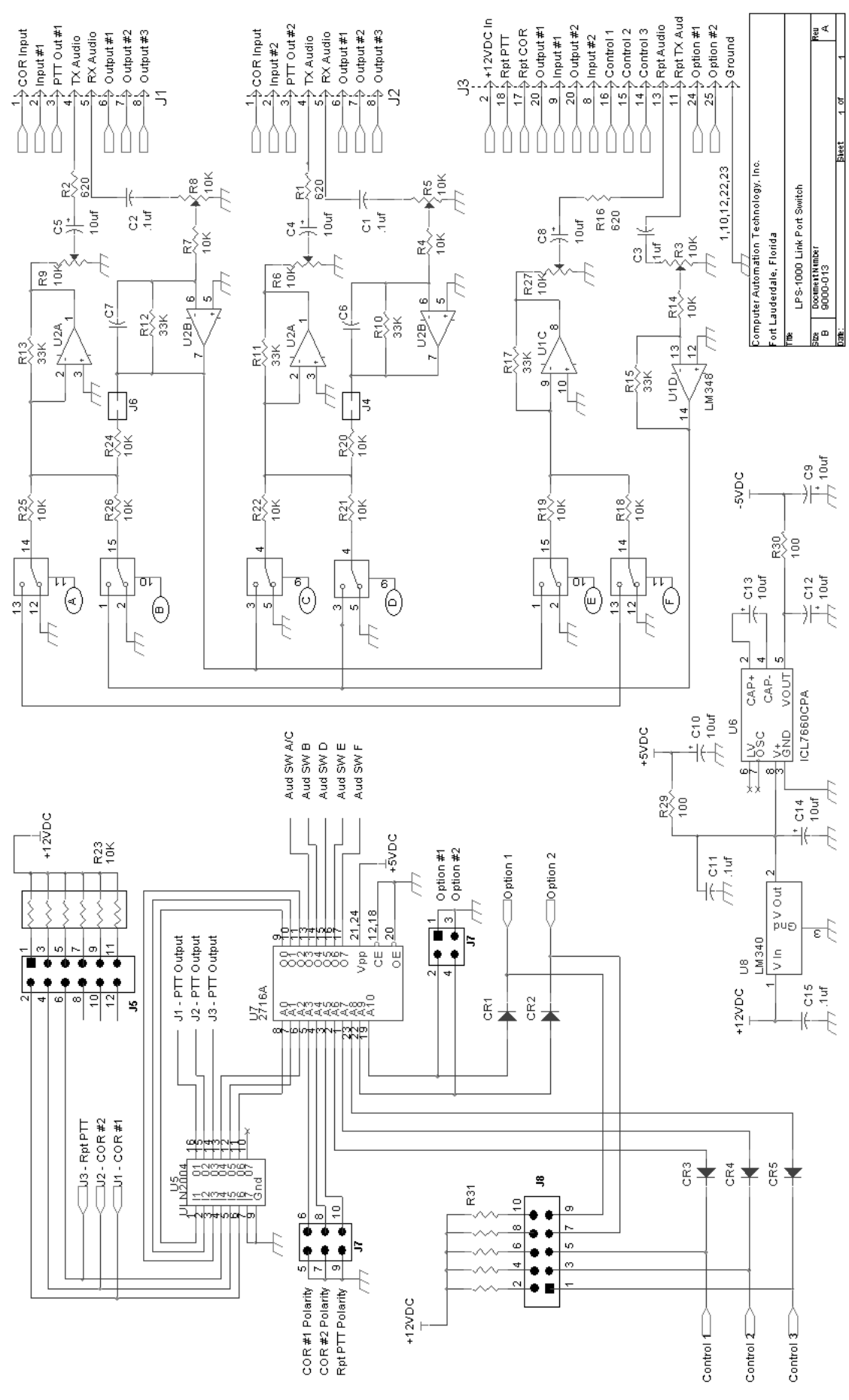
Each receiver input has a buffer amplifier with a gain of three. The frequency response is flat over a range of 300 to 3000 Hz. If discriminator audio is being used, it may be necessary to add some high frequency roll off. Space is provided to install a capacitor across the feedback resistor on each receive audio amplifier. These locations are identified on the LPS-1000 board as C6 and C7. Start with a .001uF capacitor and increase the value as required.

LPS-1000 Parts List

5	Capacitor	0.1uF 50V	C1,C2,C3,C11,C15
7	Capacitor	10uF 16V	C4,C5,C8,C9,C10,C12,C13,C14
2	Capacitor	Select Value	C6,C7
2	Connector	DB-9F	J1,J2
1	Connector	DB-25F	J3
5	Diode	1N4005	CR1,CR2,CR3,CR4,CR5
1	Header	1X2	J4,J6
2	Header	2X5	J7,J8
1	Header	2X6	J5
1	I.C.	LM340T-5	U8
1	I.C.	ICL7660	U6
2	I.C.	LM348	U1,U2
2	I.C.	MC4053	U3,U4
1	I.C.	ULN2003	U5
1	I.C.	D2716	U7
18	Jumpers		JP4,JP6,JP5-(6),JP7-(5),JP8-(5)
6	Resistor	10K Variable	R3,R5,R6,R8,R9,R27
3	Resistor	10K Network 8Pin	R23,R31,R32
6	Resistor	33K .25W	R10,R11,R12,R13,R15,R17
2	Resistor	100 .25W	R29,R30
3	Resistor	620 .25W	R1,R2,R16
11	Resistor	10K .25W	R4,R7,R14,R18,R19,R20,R21,R22,R24,R25,R26

LPS-1000 Drawing





Computer Automation Technology, Inc.
 Fort Lauderdale, Florida

Title	LPS-1000 Link-Port Switch
Size	Docu# 17# 9000-013
Rev	A
Page	1 of 1