RLC-ADM
Technical Specifications

RLC-ADM specifications:

- Signal-Noise Ratio: -92dB
- Total Harmonic Distortion: 0.5%
- Module Current Draw: 23mA
- Operating Voltage: +7V..+15V
- Frequency Specifications: TBD
- Delay Times: 12.3mS-196.6mS in 16 steps

Applications:

1) Remove squelch tail from the repeater's audio when a receiver keys and unkeys

- When using the RLC-ADM, audio is delayed for up to 196mS. As the receiver unkeys a burst of squelch noise is received by the delay module. Because the noise burst is delayed, the controller can mute the audio before the noise burst is transmitted. If you are using un-squelched audio (discriminator audio) a special circuit is provided that allows muting of the audio when the squelch is closed, before it is delayed by the audio delay module. If this situation applies see application #2 for further details.

2) Using the receiver's COR input to control un-squelched audio

- The RLC-ADM provides an external control input that connects to the receiver's COR circuit. The COR input can be either high going or low going. If the COR is high going (Unsquelched COR goes high) connect to pin #3 (See diagram on the back). If the COR is low going (Unsquelched COR goes low) connect to pin #2 and remove the jumper between pin #1 and pin #2. When this feature is not used pin #2 needs to be tied to pin #1.

3) Remove DTMF "blip" from muted audio

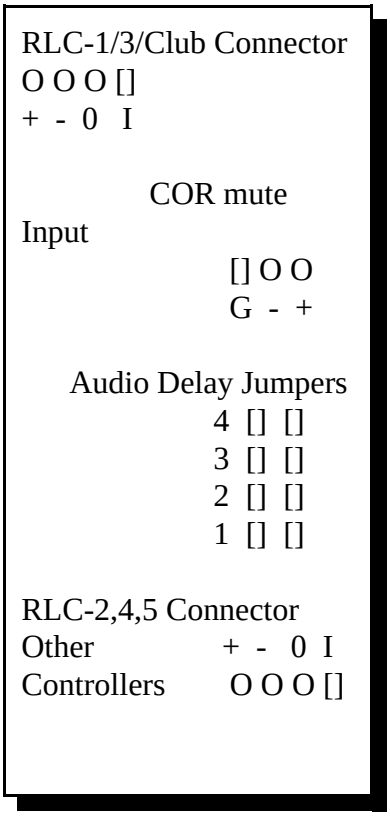
- The RLC-ADM can allow complete DTMF elimination in conjunction with the repeater controller. (RLC-2 versions A,B and RLC-1 version A do not support this feature). When the repeater controller is programmed for DTMF mute, the audio to the decoder is tapped before the delay module and the audio that goes over the repeater is tapped after the delay module. So when the controller detects a valid DTMF digit it mutes the receiver's audio and eliminates all traces of the DTMF digit before the user can hear it.

Connection Considerations:

1) Delay times are set using small solder bridges. (Use low power soldering iron when making bridges)

Delay	S4	S3	S2	S1
12.3mS	bridge	bridge	bridge	bridge
24.6mS	open	bridge	bridge	bridge
36.9mS	bridge	open	bridge	bridge
49.2mS	open	open	bridge	bridge
61.5mS	bridge	bridge	open	bridge
73.8mS	open	bridge	open	bridge
86.1mS	bridge	open	open	bridge
98.4mS	open	open	open	bridge (Default Delay Setting)
110.7mS	bridge	bridge	bridge	open
123.0mS	open	bridge	bridge	open
135.3mS	bridge	open	bridge	open
147.6mS	open	open	bridge	open
159.9mS	bridge	bridge	open	open
172.2mS	open	bridge	open	open
184.5mS	bridge	open	open	open
196.8mS	open	open	open	open

PC Board Jumper Locations:



RLC-ADM

Important considerations when installing the RLC-ADM

1) Determine your controller type and the appropriate connector to use ***before*** installing the delay module
2) RLC-3 controllers use the 'RX' 4 pin connector on the radio cards for RLC-ADM attachment
3) If you have problems or questions please contact Link Communications Inc.

Warranty:

Link Communications Inc. warrants that its products will be free from defects in materials and workmanship for a period of one year from the date of shipment. During this time, Link Communications Inc. will cover parts, labor and return shipping. If failure is caused by instances other than manufacturing defects, Link Communications Inc. will repair the product and bill the customer for parts and labor.

What Link Communications Inc. will not cover:

1. Too much voltage to the delay module. The RLC-ADM operates at +7V to +15V, negative ground.
2. Damage to the delay module by lightning, accident, or incorrect power hook-up.
3. Incorrect unit installation.
4. Damage caused by shipment (damage claims are handled by the carrier).
5. Repairs by other than Link Communications Inc.

<u>THIS WARRANTY HOLDS ONLY TO THE ORIGINAL PURCHASER</u>

Installation Directions, RLC-1 (version c,d), RLC-2, RLC-4, RLC-5

1) Locate the 4 pin header connector on the controller as pictured below
2) Remove the jumper that is located between pins 1 - (Input), and 2 - (Output)
3) Install the RLC-ADM with the 4-pin header as pictured below

Step 4 is only needed if pre-audio muting is needed to suppress before key-up noise burst
4) Attach a jumper wire from the COR - + muting connector to the following point

RLC-1 revision C,D: Cathode side of D18 (Main port), D16 (Link port)

RLC-2 revision A,B: Cathode side of D27 (Main port only supports RLC-ADM)

RLC-2 revision C: Cathode side of D31 (Main port 1), D29 (Link port 2), D27 (Link port 3)

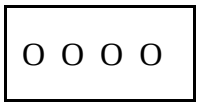
RLC-4: Cathode side of D1 (Link port 1), D3 (Link port 2), D5 (Link port 3), D7 (Link port 4)

RLC-5: Cathode side of D4 (Link 1 port 1), D6 (Link 2 port 2)

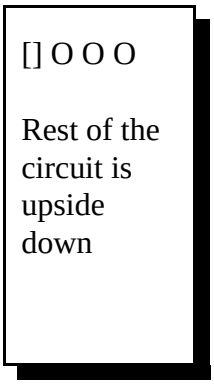
Installation Directions, RLC-3 radio cards

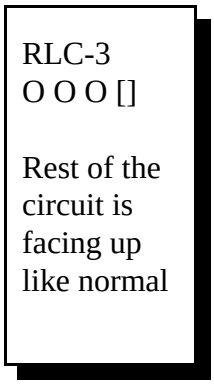
The installation directions are the same for the RLC-3 radio cards except the 4 pin header connector on the RLC-ADM needs to be on the 'RLC-3' side of the ADM board.

1) Locate the 2 sets of 4-pin header blocks on the radio card.
2) The top 4-pin header block is the port for the RLC-ADM
3) Locate cathode side of D2 (Common on all radio cards)
4) See above steps



Jumper Positions

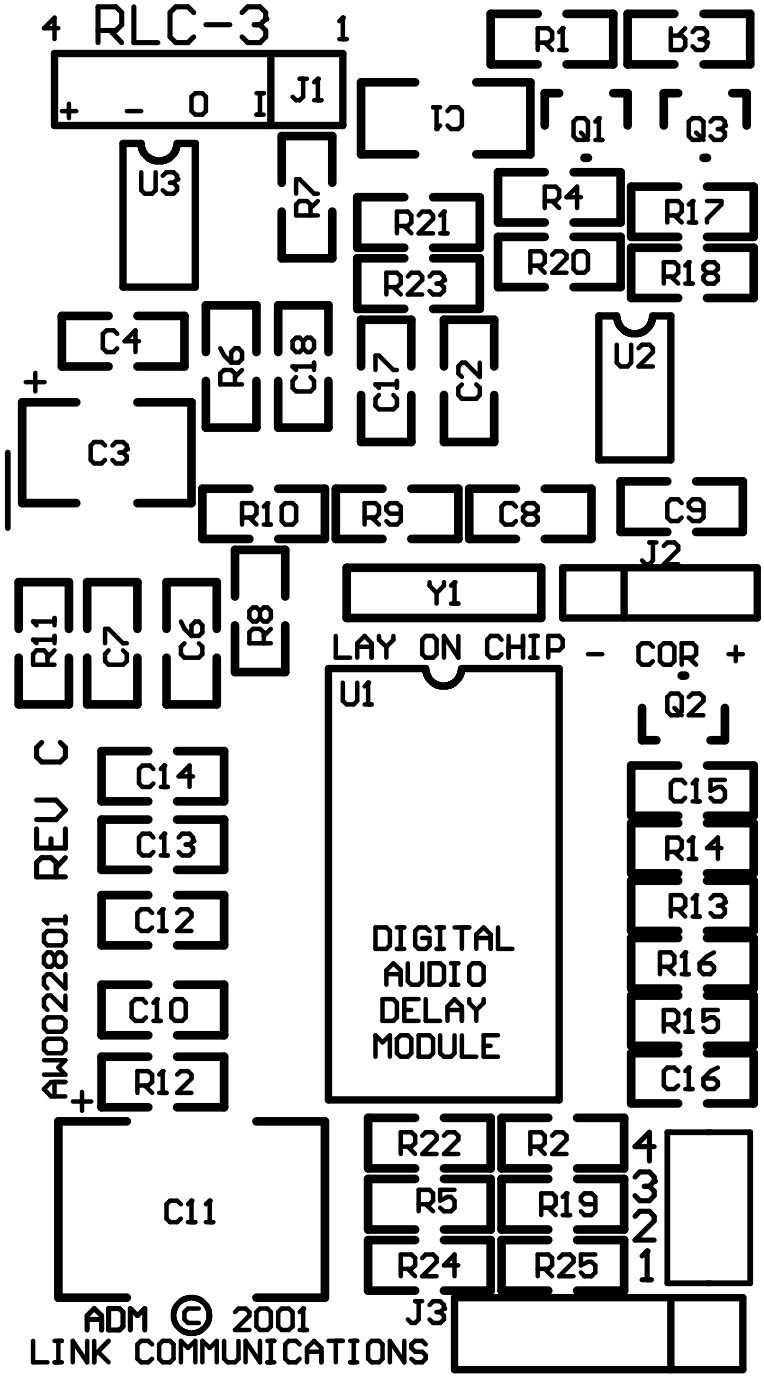




RLC-2,4,5 Generic ***RLC-1/3/Club***

Board Placement

C Active low COR inputs need to connect to pin (2) of the COR - + connector and remove the jumper.
C Active high COR inputs need to connect to pin (3) of the COR - + connector and jump pins 1 and 2.


4 RLC-3 1
+ - O I
J1
R1
R3
C1
Q1
Q3
U3
R7
R21
R4
R17
R20
R18
R23
C4
R6
C18
C17
C2
U2
C3
R10
R9
C8
C9
J2
Y1
LAY ON CHIP
- COR +
R11
C7
C6
R8
U1
Q2
C14
C15
C13
R14
C12
R13
R16
DIGITAL
AUDIO
DELAY
MODULE
C10
R15
R12
C16
C11
R22
R2
4
R5
R19
3
2
R24
R25
1
J3
ADM © 2001
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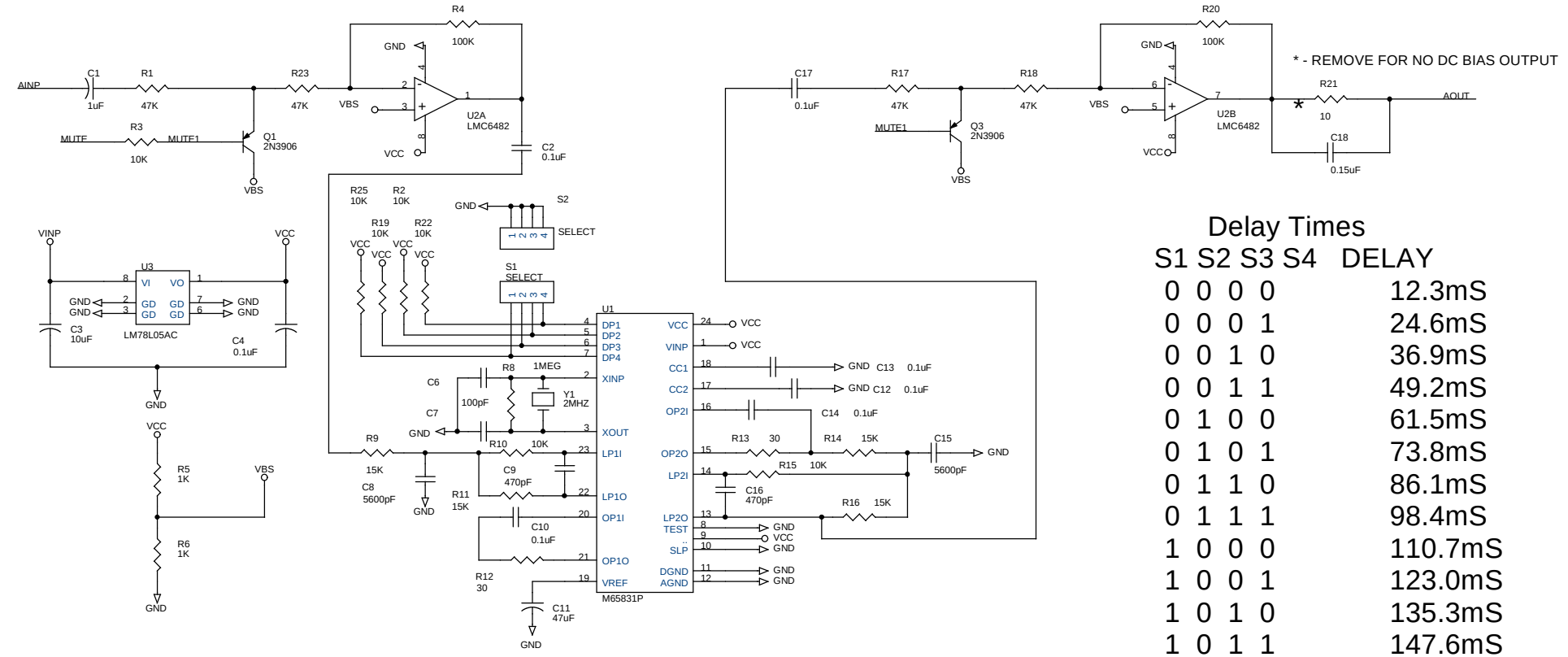


COR AUDIO MUTING CONTROL (OPTIONAL)

COR VOLTAGES MUST RANGE FROM 0-5V MAX

Delay Times

S1	S2	S3	S4	DELAY
0	0	0	0	12.3mS
0	0	0	1	24.6mS
0	0	1	0	36.9mS
0	0	1	1	49.2mS
0	1	0	0	61.5mS
0	1	0	1	73.8mS
0	1	1	0	86.1mS
0	1	1	1	98.4mS
1	0	0	0	110.7mS
1	0	0	1	123.0mS
1	0	1	0	135.3mS
1	0	1	1	147.6mS
1	1	0	0	159.9mS
1	1	0	1	172.2mS
1	1	1	0	184.5mS
1	1	1	1	196.8mS

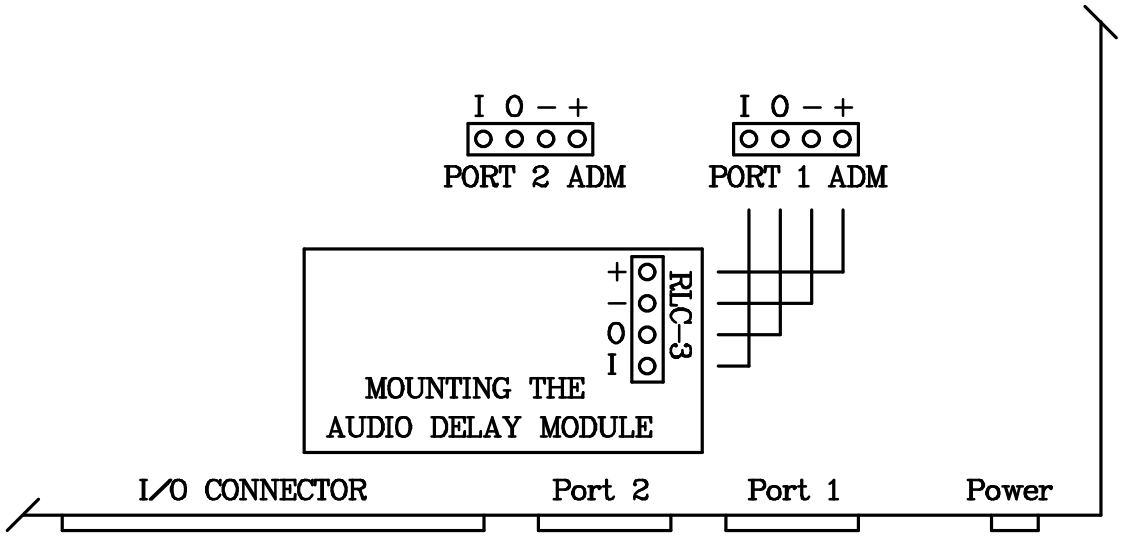
LINK COMMUNICATIONS INC.
DIGITAL AUDIO DELAY MODULE

Delay Time:12.3mS .. 196.8mS
THD = 0.5% typical
Dynamic Range -92dB..-95dB typical

Link Communications, Inc.
P.O. Box 1071 Sidney MT. 59270

Size	Document Number	Rev
B	DIGITAL AUDIO DELAY MODULE	B

Date: Wednesday, February 28,2001 Sheet 1 of 1



RLC–1 ⁄ RLC–1+ ADM MOUNTING

STEPS:

1) MAKE CONNECTIONS ON THE RLC–3 CONNECTION
2) VERIFY THE (+) AND (–) CONNECTIONS
3) REMOVE R21 (REMOVES THE DC BIAS)
4) SET THE DELAY JUMPERS (DEFAULTS TO 100mS)