

**Procedure for Connecting the RLC-II Controller  
To an ICOM RP-XX20 Series Repeater**

**Preface:**

Link Communications holds no liability in the modification or adjustments of any piece of equipment. The installation guide is one way to interface the RLC-II to the repeater. This interfacing was tested on an ICOM 4020 repeater system.

**Steps:**

1. Turn off the repeater's power
2. Unscrew the bottom of the repeater unit  
- Once removed you will see ICOM'S controller
3. Carefully clip one end of D4. This diode is located next to connector J1, and J2. This mod. disables the internal PTT path from the ICOM Controller.
4. With a small screwdriver, turn down R33. This controls the ICOM's internal CW audio. This pot is located between J2, and J7.
5. Set dip switch S4-2 on the switch board to the "OFF" position to disable the internal CW generator.
6. Button up the repeater once completed, no more work is needed inside.
7. Locate the ACC Connector in the rear of the repeater
8. The Pins of interest are:

ICOM Repeater

RLC-II Controller

- |                        |                                     |
|------------------------|-------------------------------------|
| (2) Ground ..          | Connect to RLC-II Pin (8 and 9) GND |
| (3) PTT IN ..          | Connect to RLC-II Pin (3) PTT       |
| (4) Audio IN..         | Connect to RLC-II Pin (4) Audio Out |
| (5) Audio Out..        | Connect to RLC-II Pin (5) Audio In  |
| (7) +12 Volts ..       | Connect to RLC-II Power Connector   |
| (1) Optional PL Output | (2) PL IN                           |

**Cor Interfacing:**

(6) is an active low COR output from the ICOM Repeater. This point may need to be connected to the base of a PNP transistor. The Collector is connected to ground, and the Emitter is connected to RLC-II Pin (7).

2N3906 or Equ.

Refer to your ICOM  
Service Manual for  
ACC Pin-Out

PNP Diagram

ICOM ACC Plug Soldier Side  
of the Connector.

## PL Modifications:

1. Locate "T-SQL" on Connector J1/P18 on the Logic Unit.
  - This pin is numbered 6
2. This is the active high PL detect Line
3. Cut the trace that connects pin 13 to pin 14 on IC4
  - This is an unused gate on the 74HC14 Inverter Chip
4. Connect Pin 6 J1 to Pin 13 IC4.
5. Your Inverted PL is available on pin 12 of IC4
6. Connect PL Detect Line (IC4 Pin 12) to Acc. Conn. Pin 8

The PL is working correctly if there is 5 Volts when PL is Gone, and 0 Volts when PL is present.