CODAN
RADIO COMMUNICATIONS

# CI-RC-4M-G2 MULTIPLE LINK CONTROLLER

## FEATURES AT A GLANCE

- **Control capability for up to four receiver/transmitter pairs**

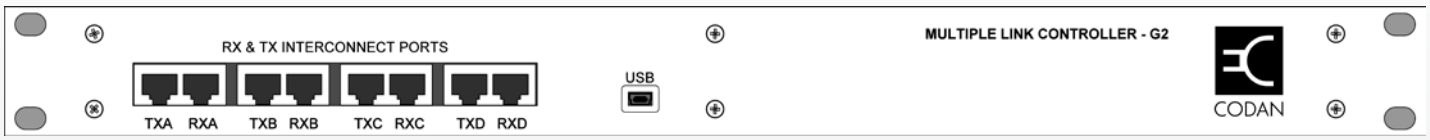
The CI-RC-4M-G2 Multiple Link Controller provides control capability for up to four receiver/transmitter pairs in an MT-4 repeater radio system. The CI-RC-4M-G2 controller provides the following features:

- Interconnection (LVDS Serial Data routing, COR-PTT routing) of up to four receiver and four transmitter modules In any configuration (repeater, repeater with links, crossband systems, etc.).
- Multiple CTCSS tones and NAC codes may be selected to operate each connection between receivers and Transmitters (up to seven CTCSS/NAC for each link).
- DTMF control of receiver to transmitter links.
- Setting of receiver priorities.
- Transmitter channel switching based on received CTCSS or NAC.
- Current draw of 8 mA to 75 mA dependant on system configuration.
- Four independent general purpose outputs that can be controlled by NAC, CTCSS or DTMF (open collector 750 mA/30 V DC max).

The MT-4 receiver and transmitter modules all plug into the CI-RC-4M-G2 repeater controller via cables that plug into the RJ45 jacks on the front panel of all the modules. The CI-RC-4M-G2 comes with eight different cable lengths to plug into the eight repeater receiver and repeater transmitter modules. If the system only uses some of the cables, the other cables can be kept for future system expansion or as spare cables. The CI-RC-4M-G2 is 19" rack-mountable in 1 RU of rack space.

The CI-RC-4M-G2 replaces the previous CI-RC-4M-00 and CI-RC-4M-01 models. The CI-RC-4M-G2 has all the capabilities of the older versions plus a new 4-way audio bridge on a single board. The front panel RJ45 connections allow for analog and digital routing with up to 4 pairs of receivers and transmitters. The back panel connections allow for E&M, a new 4-way audio bridge, CTCSS decoding, DTMF decoding and Channel Selections.

The new 4-way audio bridge enables the CI-RC-4M-G2 to link analog and digital repeater pairs together in one system. The connections for this are available on the back of the CI-RC-4M-G2 using the two DB25 connectors. Newer versions of subracks (60003-xx) also have DB25 connections for easy connectivity from the controller to the subrack.



## INSTALLATION

In addition to the RJ45 interconnect cables on the front panel, the +9.5 V DC power must be connected on the back panel. Figure 1 shows a diagram of the back panel of the CI-RC-4M-G2.

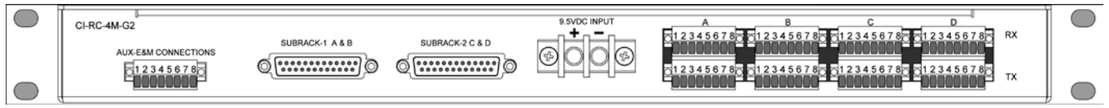



Figure 1:CI-RC-4M-G2 Back Panel

Depending on the features used on the CI-RC-4M-G2, further connections may be required by connecting the Codan subrack with A-PNL-AUX96-3 auxiliary connector to the CI-RC-4M-G2 as shown in Figure 2. The information in brackets is the function that uses that particular connection. For example, if you are using CTCSS tones, the Rx Disc O/P must be connected. The diagram only shows connections for Receiver and Transmitter A.

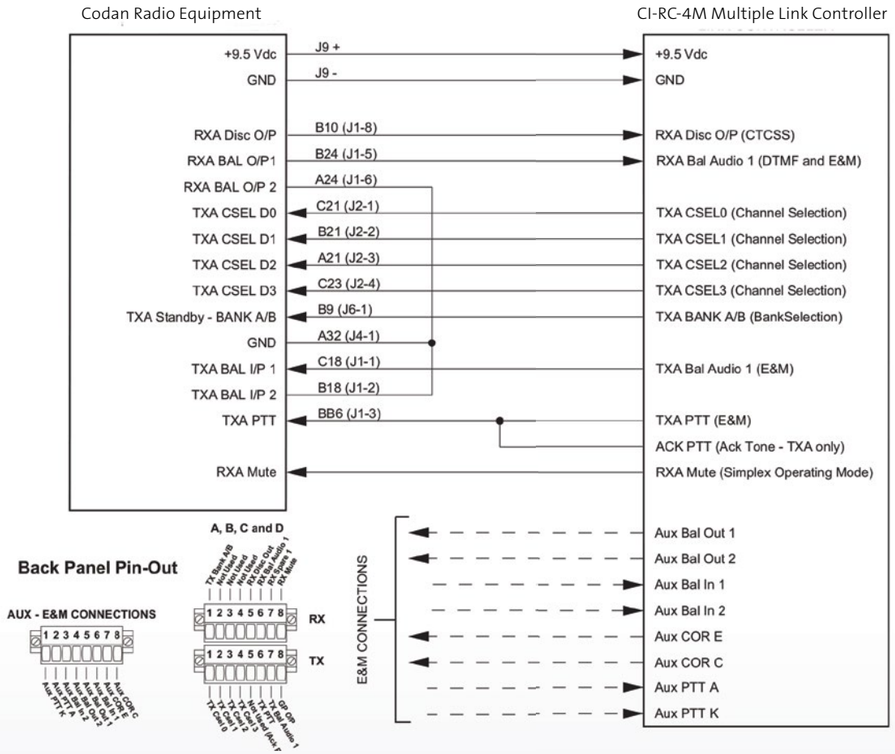



Figure 2: CI-RC-4M-G2 Connection Diagram

## MULTIPLE LINK CONTROLLER PROGRAMMING

The CI-RC-4M-G2 multiple link controller is software programmable using the MLCS (Multiple Link Controller Software). The MLCS allows flexible programming options for the radio system. The MLCS connects to the CI-RC-4M-G2 using the computer's serial port through a standard serial or USB cable to the front panel of the controller. Both cables are supplied with the controller. The System Settings and Receiver/Transmitter Links windows are shown in Figure 3.

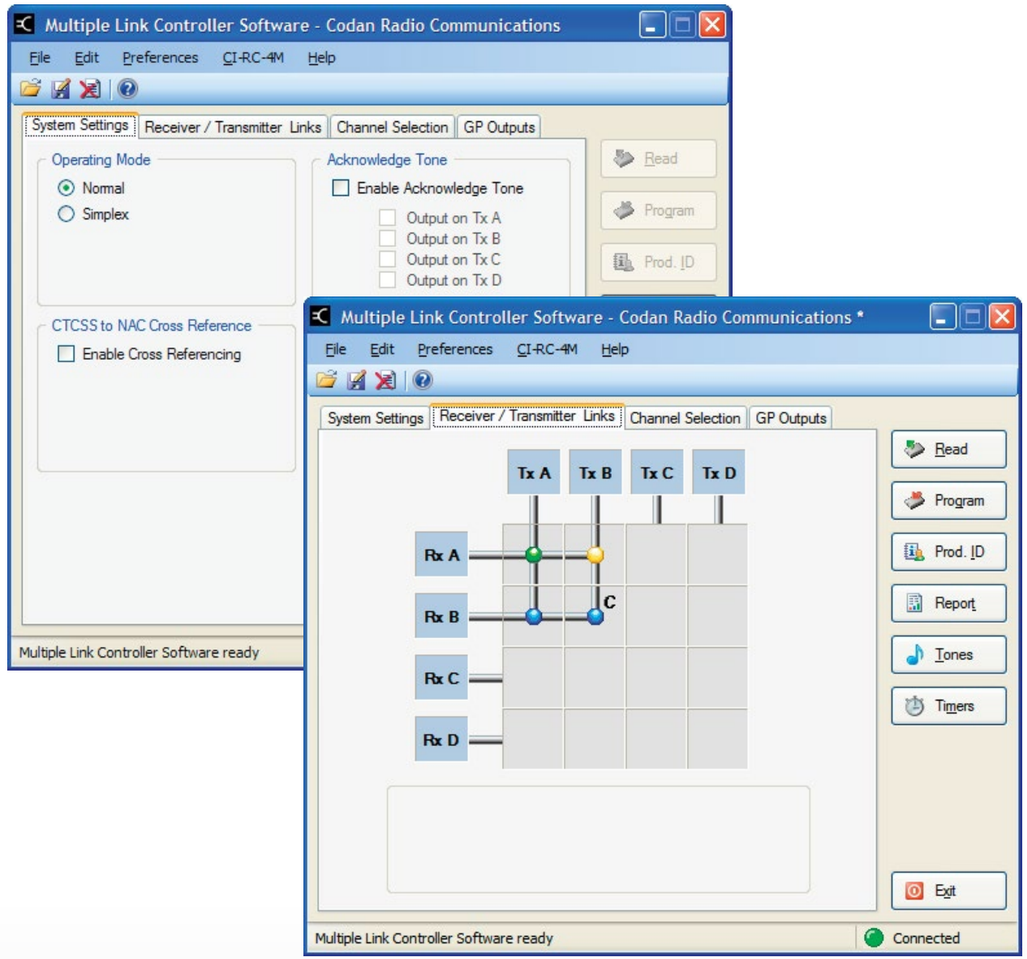



Figure 3: System Settings and Receiver/Transmitter Links

The Receiver/Transmitter Links window allows for a wide variety of complex repeater configurations using a link configuration grid. The grid uses color coding to indicate different connection settings.

Each link on the grid can be programmed separately for a different configuration. Three different link configurations are shown in Figure 4: COR Controlled Link, DTMF Controlled Link and a Conditional Link (with both CTCSS and NAC conditions, as well as Channel Selection capability).

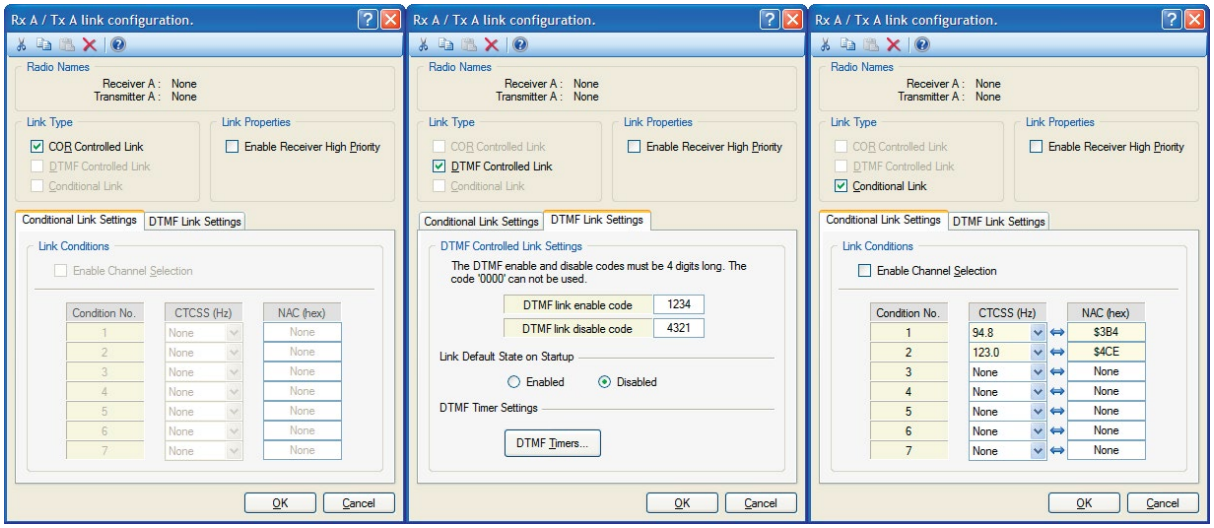



Figure 4: Link Configurations

Figure 5 shows the CTCSS selection window (CTCSS tones need to selected globally for the CI-RC-4M-G2), Channel Selection window and General Purpose Output window.

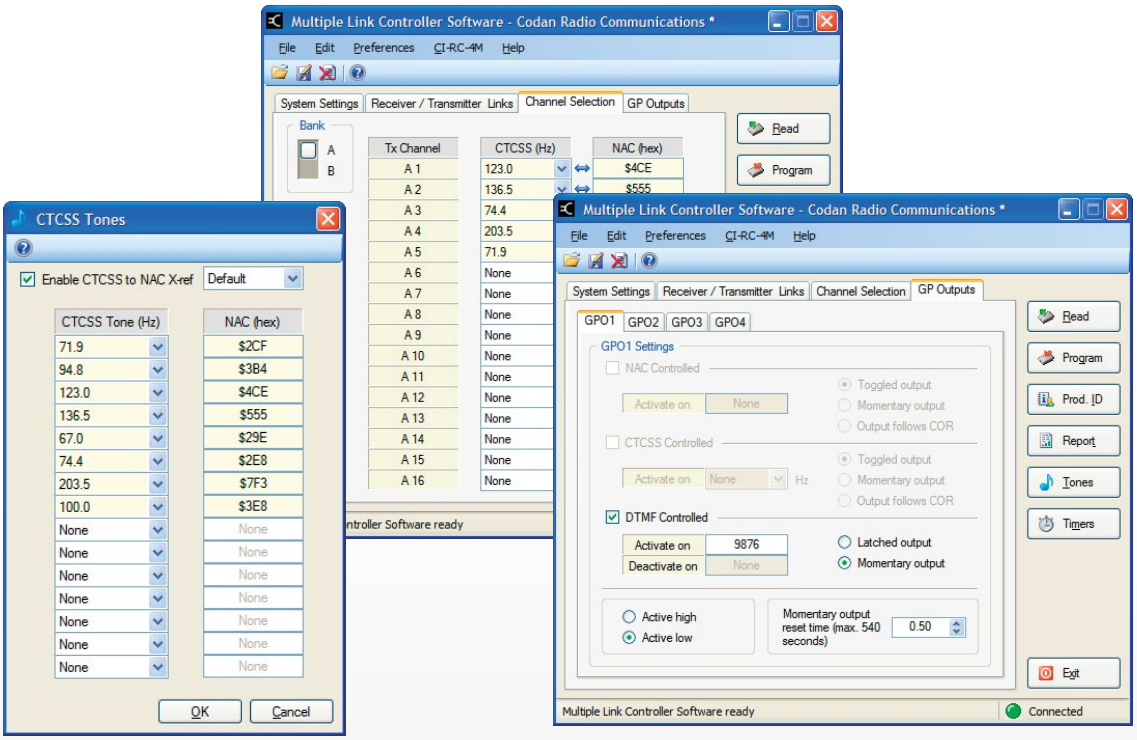



Figure 5: CTCSS Tones, Channel Select and General Purpose Outputs



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