INSTALLATION INSTRUCTIONS

MicroComm DXI

Remote Drivers and Receivers

1. Intent & Scope

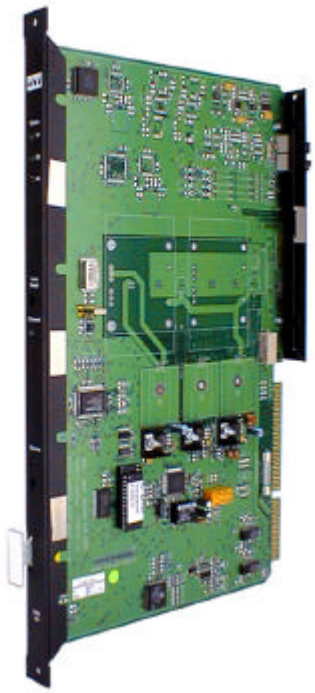
This document describes the installation procedure for Remote Driver Boards (RDB-100-1 and RDB-100-2), Remote Receiver Boards (RRB-100-11, RRB-100-12, RRB-100-21 and RRB-100-22), and Remote Receiver Racks (RRR-110 and RRR-120).

2. Description

Remote driver board and receiver board sets are used to locate any MicroComm DXI audio board at a location remote from a card cage. The driver board is situated in a card cage slot that the audio board would normally occupy. The driver board is connected by either a copper of fibre optic link to a receiver board located in a remote receiver rack. This receiver rack also contains the audio board. The operation of the audio board is transparent, i.e. it operates as though it occupied the card slot position occupied by the driver board.

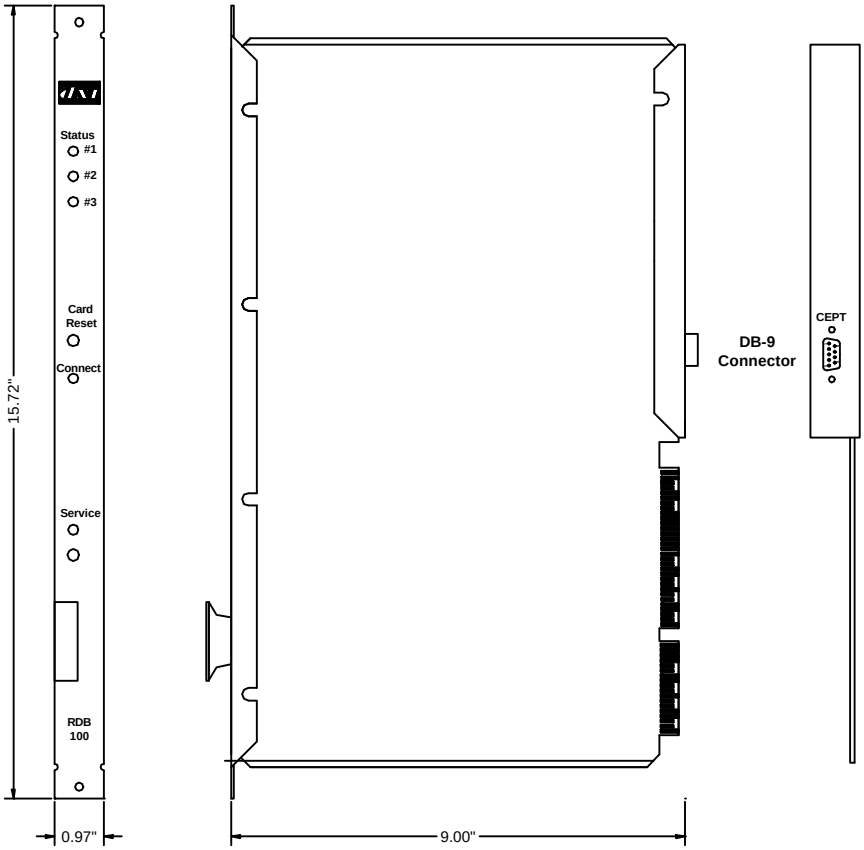
3. RDB-100 Remote Driver Board

The RDB-100 Remote Driver Board is located in the card cage and is connected to a Remote Receiver Board located in a Remote Receiver Rack. The Remote Receiver Rack also contains the individual audio board. The connection beween the driver and receiver boards can be either a copper wire or a fibre optic link.



RRB-100

3.1 RDB-100-1 Remote Driver Board - Copper Interface



RDB-100-1 Remote Driver Board with DB-9 Connector

For the copper conductor interface version, a female DB-9 connector is provided on the rear of the card. Connections from the driver card to a BIX block are made with a CBL-160 cable. The pin outs for a mating male connector on a CBL-160 cable with two unshielded twisted pairs are shown in the following table. Signals indicated are from the board's perspective, i.e. transmit is an output and receive is an input. These are differential signals carried on a pair of wires.

Female
DB 9 Connector

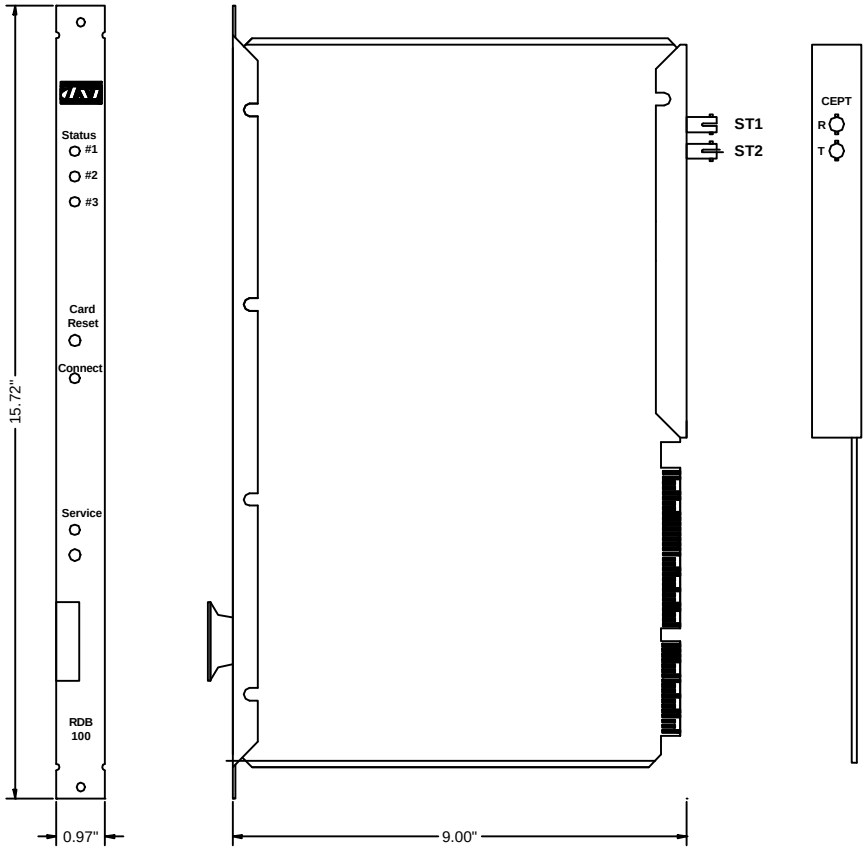
Male
DB 9 Connector

Pin	RDB Signal	Wire Color CBL-160
1	RTIP1	White-Blue
2	TTIP1	White-Orange
3	Ground	Shield
4	N/C	
5	N/c	
6	RRING1	Blue
7	TRING1	Orange
8	N/C	
9	N/C	

DB-9 Signals for RDB-100-1

3.2 RDB-100-2 Remote Driver Board - Fiber Optic Interface

The fiber optic interface version of the Remote Driver Board is supplied with two ST type fiber optic connectors located on the rear of the board. The upper connector is the Rx (receive) port and the lower connector is the Tx (transmit) port as viewed from the board's perspective. The following figure shows the connector positions and the table gives the signal associated with the connectors.



RDB-100-2 Remote Driver Board with Fibre Optic Interface

RDB ST Connector	RDB Signal
ST 1	Rx (receive from board perspective)
ST 2	Tx (transmit from board perspective)

RDB-100-2 Signals

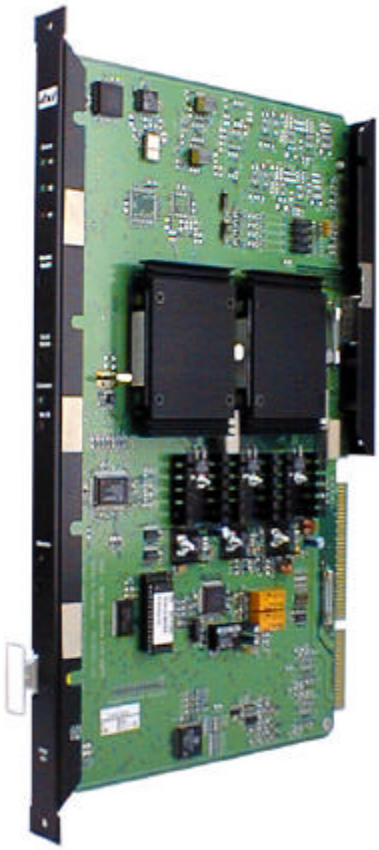
4. RRB-100 Remote Receiver Board

The remote receiver board has a depluggable terminal block for power located at the rear of the board. The mating field plug in connectors are supplied with the unit.

The remote receiver's power connection supplies power for both the receiver unit and its associated audio board. Depending on the model number the receiver should be powered by either a single 24 Vdc power supply or by a dual ± 12 Vdc power supply. The unused terminals should not be connected. The following table gives the power block connections for either version. The ±12 volt RRB requires 1 Amp (you should add to this the current required by the audio board inserted into the RRR to determine the total current requirements). The +24 volt RRB requires 1.5 Amp. In this case to find the total current requirements you should add the current required by the RRB and the audio board current multiplied by 1.25 (the dc-dc converter is 80% efficient).

RRU Power Block Pin	±12 Volt Connection (RRB-100-11 or RRB-100-21)	24 Volt Connections (RRB-100-12 or RRB-100-22)
1	N/C	Common (for 24 Vdc supply)
2	-12 Vdc	N/C
3	Gnd	N/C
4	+12 Vdc	N/C
5	N/C	+24 Vdc

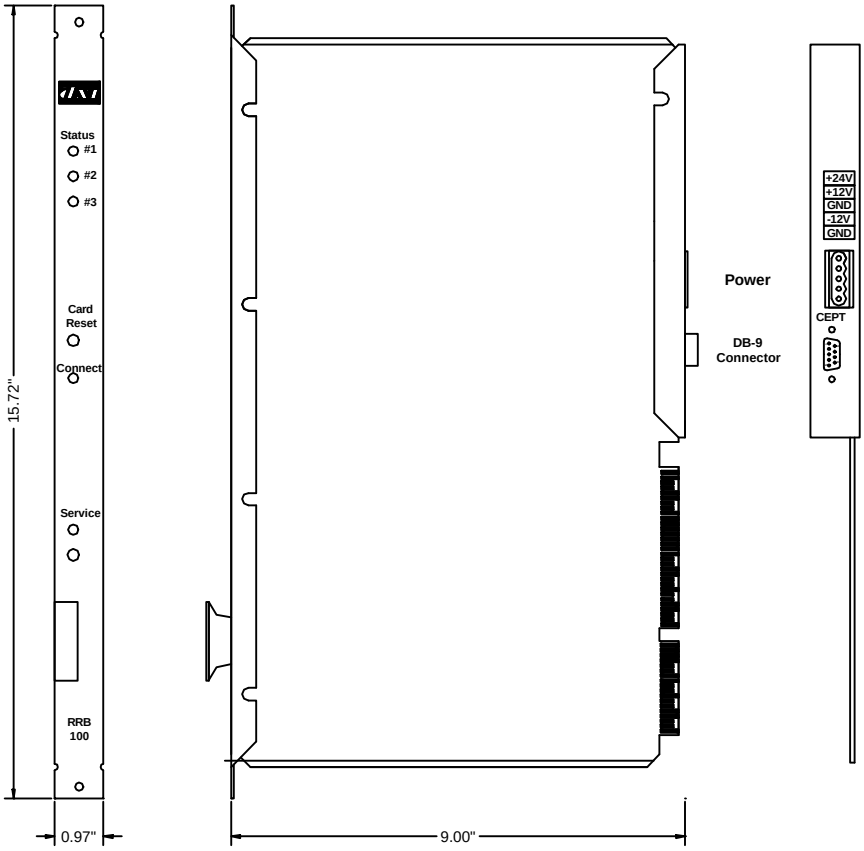
Power Block Connections



RRB-100

4.1 RRB-100-11 and RRB-100-12 - Copper Interface

Both the ±12 Vdc and +24 Vdc versions of the RRB-100-1x have a female DB-9 copper interface connector. The connector is located at the rear of the board in the position shown on the following figure.



RRB-100-1x Remote Receiver Board with DB-9 Connector

Communication between the copper network remote receiver unit and its associated remote driver board is via a rear mounted female DB-9 connector. A male field connector, supplied with the CBL-160, cable is used to bring the board's DB-9 signals to a BIX block. The following pin configuration is required for the interface. Note that signals are referenced from the remote receiver unit's perspective and this unit must communicate with an associated remote driver copper interface unit located in the card cage.

Pin	RDB Signal	Wire Color CBL-160
1	RTIP1	White-Blue
2	TTIP1	White-Orange
3	Ground	Shield
4	N/C	
5	N/c	
6	RRING1	Blue
7	TRING1	Orange
8	N/C	
9	N/C	

DB-9 Signals

The field wiring from the BIX block associated with the remote receiver unit to the BIX block associated with the remote driver unit requires a cable with two individually unshielded twisted #22 awg wire pairs. The remote receiver can be located up to 8200 feet (2500 metres) from its associated remote driver board.

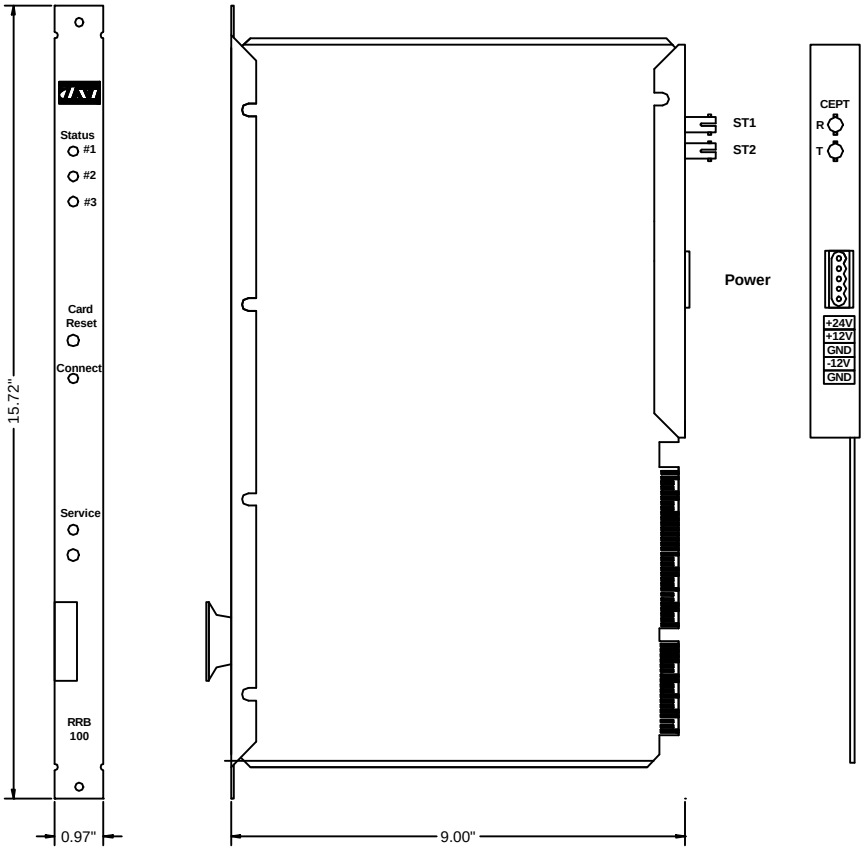
The pin to pin connection from the remote driver board to the remote receiver board are summarized in the following table.

Driver Board		Receiver Board	
Pin	RDB Signal	Pin	RRB Signal
1	RTIP1	2	TTIP1
6	RRING1	7	TRING1
2	TTIP1	1	RTIP1
7	TRING1	6	RRING1

Connections for the audio board mounted in each remote receiver unit are the same as if the board were mounted in a card cage.

4.2 RRB-100-21 or RRB-100-22 Remote Receiver Board - Fiber Optic Interface

The following figure shows the location of the two ST fibre optic connectors and the power block connector for the fibre optic versions of the remote receiver boards.



RRB-100 2x Remote Receiver Board with Fibre Optic Connectors

The fiber optic version of the remote receiver unit is the same size as the copper wired version of the unit. However, instead of a DB-9 connector for card cage communications, it is provided with two fiber optic ST type connectors and must communicate with a fiber optic version of a remote driver board.

Fiber optic connection for this unit are given in the following table and are viewed from the board's perspective:

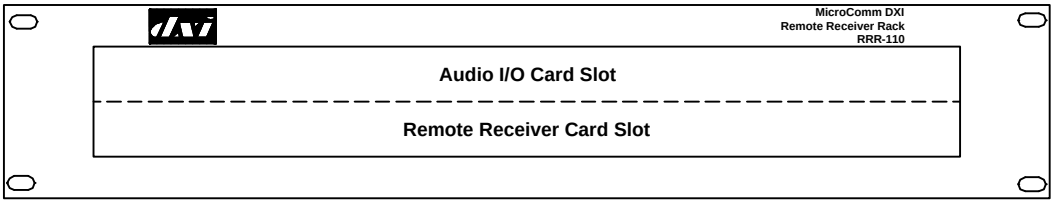
RRU ST Connector	RRU Signal
ST 1	Rx (receive from board perspective)
ST 2	Tx (transmit from board perspective)

The fiber optic version of the remote receiver unit requires two 62.5/125 micron multi-mode fibers for connection to the remote driver. Distance between the remote receiver and the card cage remote driver can extend up to 12,500 ft (3.8 Km) for a single cable without splices. If there are splices then the distance allowed must be calculated based on a total cable loss of less than 13dB. The fibre optic connections from remote driver to remote receiver are as follows:

Driver Board		Receiver Board	
Connector	Signal	Pin	Signal
ST1	Rx	ST2	Tx
ST2	Tx	ST1	Rx

5. RRR-110 Remote Receiver Rack - Rack Mount

The rack mount version of the remote receiver unit mounts in a standard 19” equipment rack and occupies 2u -100 inserts into the lower slot and the audio board into the upper slot.



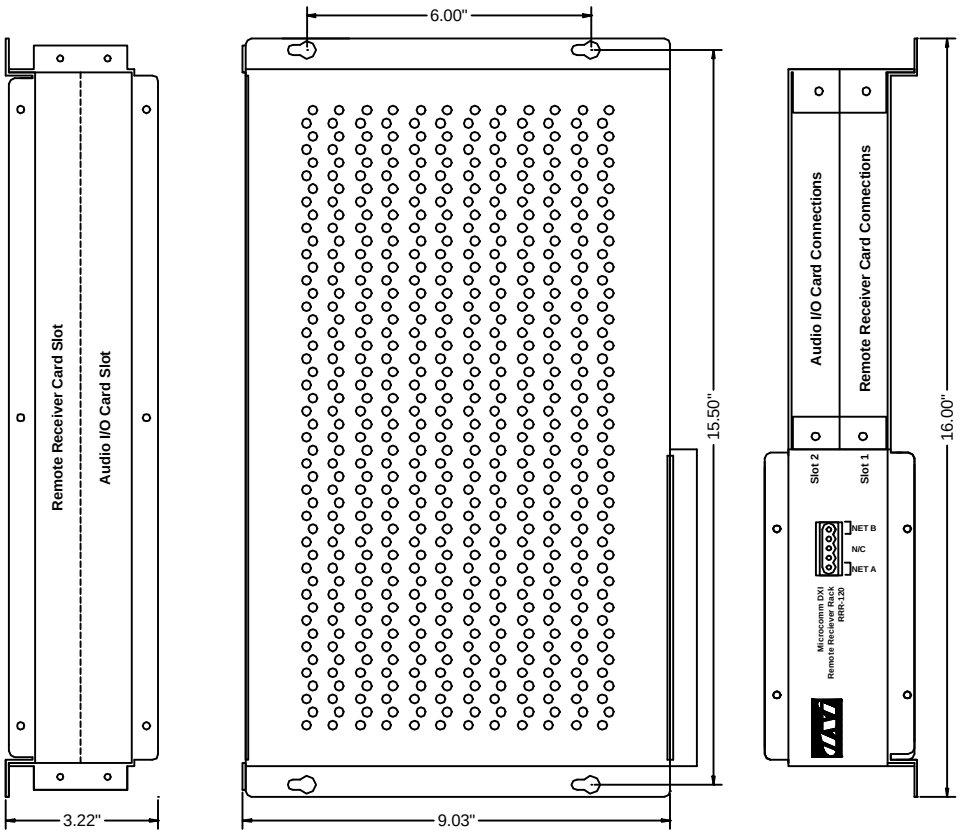
RRR-110 Front View

RRR-110

6. RRR-120 Remote Receiver Rack - Wall Mount

The wall mount version of the remote receiver unit is designed to be surface mounted on an equipment backboard or similar location. The unit be mounted with #8 or #10 round headed screws.

RRR-120
Wall Mount Remote Receive Rack



RRR-120 Showing Mounting Details