

TECHNICAL BULLETIN

RR1092B 8-Port Audio/Data Matrix

June 2008

1. Introduction

Raven Research has supplied a variety of audio/PTT matrix systems to cover the requirement for allocating HF transceivers to various operators consoles and/or modems. The RR1092B extends this facility to include full duplex audio channels, push-to-talk, squelch and RS232 serial point-to-point data connection, so providing a complete routing system for connectivity between terminals.

The RR1092B is a dedicated 8-way routing matrix, including one full duplex audio interface and up to 8 additional data port interfaces. The matrix is non-blocking in both directions and will transfer audio and digital data from any one of the interfaces to any one or all of the other seven interfaces in real time.

Features

- Provides non-blocking cross connection for up to 8 transceivers/modem interfaces
- Single D-type connector interface for audio/PTT/Squelch/RS232
- 600 Ohm input/output impedance for audio interface
- CCIT audio standard maintained through the routing circuit
- Opto-isolated interface for PTT and squelch input
- Conventional closing-contact relay for PTT and Squelch output
- RS232 data and conventional flow control (RTS/CTS) included.
- RS232 Data rate up to 19.2kb

The requirement has been interpreted in the form of the diagram as shown below

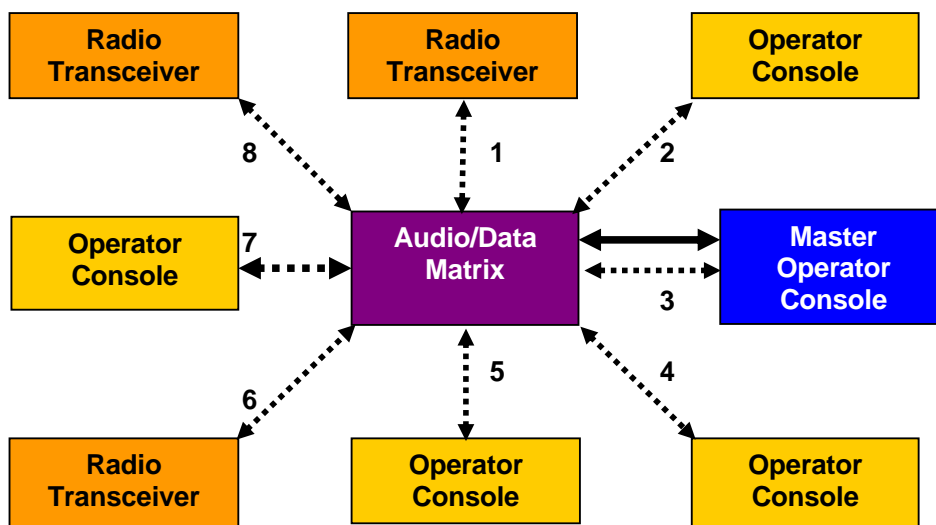


Figure 1 - System Application

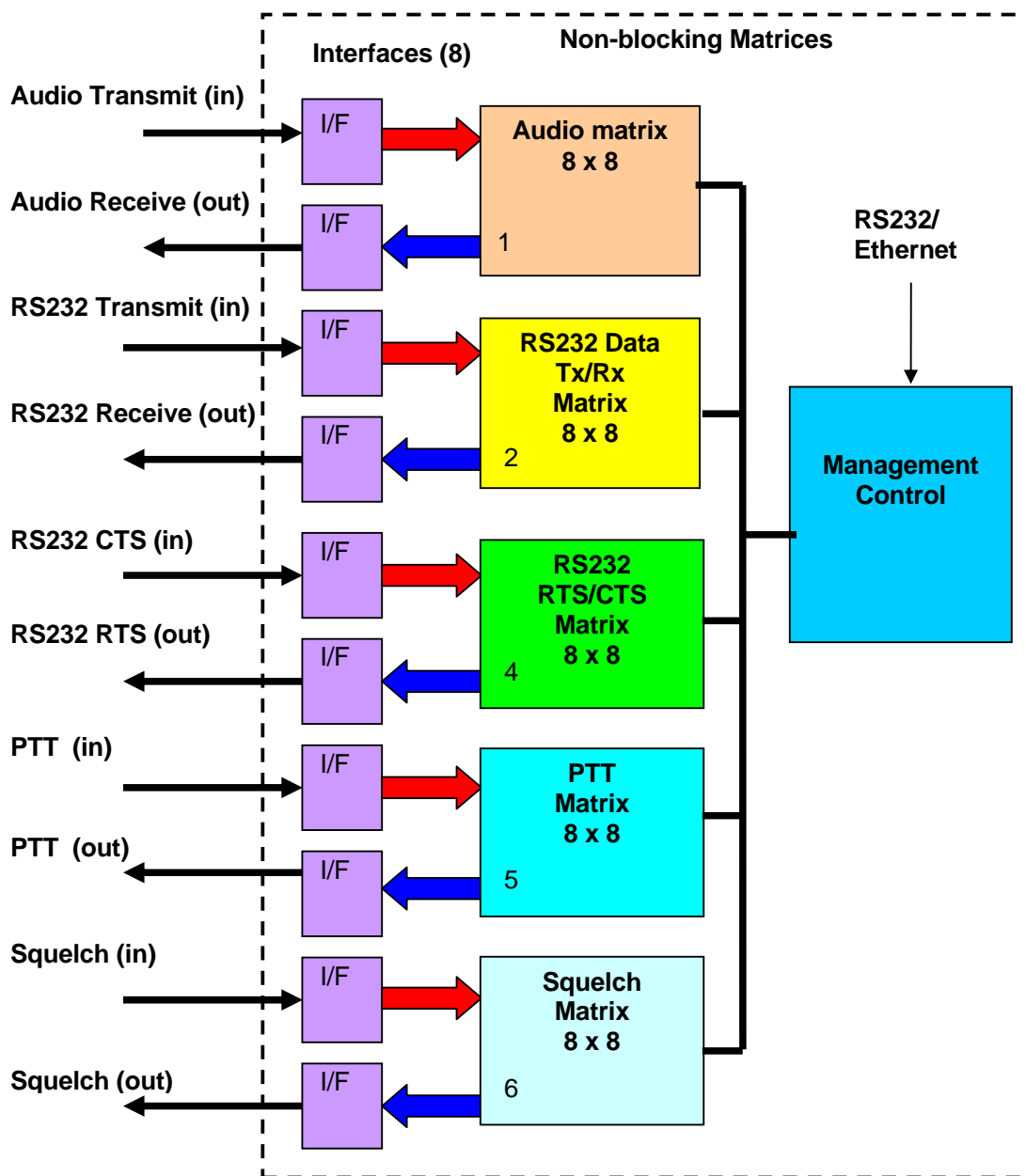
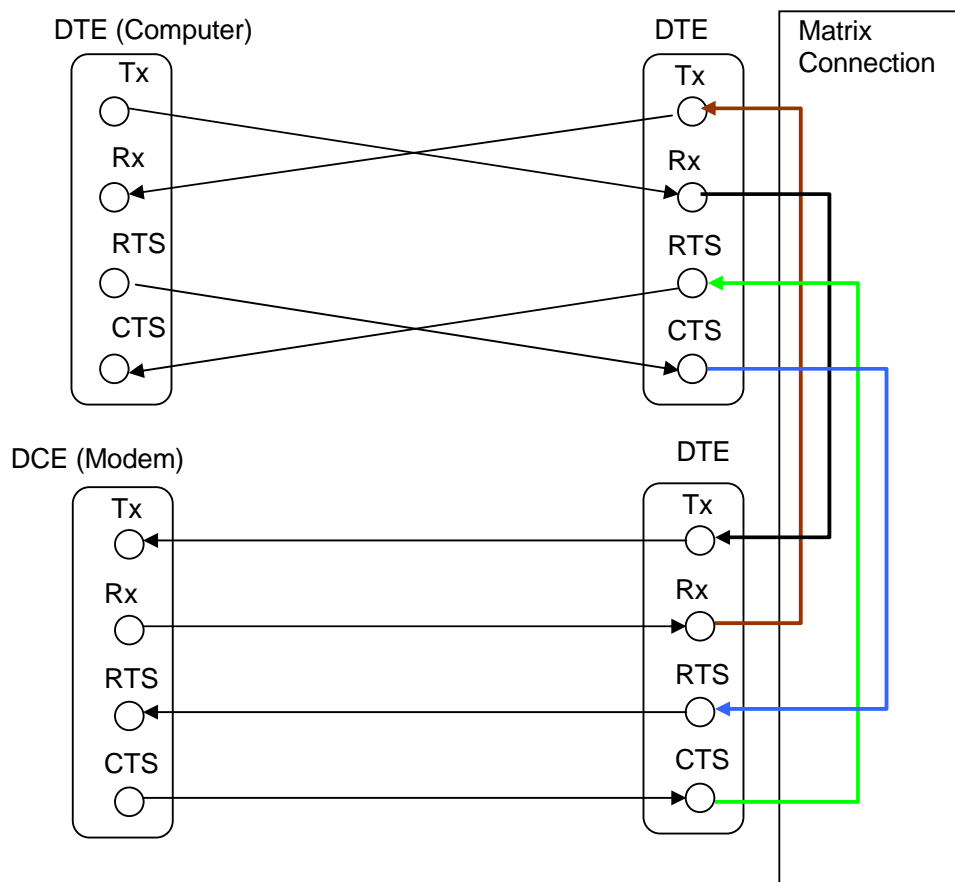


Figure 2 - Functional Block Diagram - Audio/Data Matrix

It is assumed that the matrix must interface between operator consoles and transceivers, able to allow any one of the consoles to take control of any one of the transceivers and pass audio and data between the two. The functions required of the matrix are illustrated in Figure 2 above.

### 1.1 RS232 set-up

Each Interface is configured as a Data Terminal Equipment (DTE). This means that the interface to other equipment also wired as a DTE (Computer) must be wired accordingly. The conventional transfer interface is shown diagrammatically below. Each input/output interface actually comprises a twisted wire pair, so comprises 8 wires for RS232 in this equipment. [A further eight wires are required for audio/PTT/Squelch.]



**Figure 3 - RS232 conventional cross connections**

This set-up assumes that RTS is always a request from the asserting computer to receive data and CTS is always a signal received by the computer, clearing the computer to send data (to the modem or other destination).

# Raven Research

## 1.2 Interface Specifications

No. of Interfaces		: 8
Audio Transmit Interface	- Output impedance	: 600 Ohm Bandwidth 20-4000 Hz
Audio Receive Interface	- Input Impedance	: 600 Ohm Bandwidth 20-4000 Hz
RS232 Transmit (input)	- Tx – Voltage	: +/- 5Vdc min
	- baud rate	: 20 kb
RS232 Rx (output)	- Rx Voltage	: +/-3 V min
	- baud rate	: 20 kb
CTS Input	- Volts	: +/-2.5 Vdc min
CTS Output	- volts	: +15 Vdc max
RTS input	- volts	: +/-2.5 Vdc min
RTS Output	- volts	: +/-15 Vdc max
PTT (in)	Voltage	: +12 Vdc to grd
	Sink Current	: 0.5 mA max
PTT (out)	closing relay contact	: 0.5 mA current max.
Squelch (In)	Voltage	: -12 Vdc to grd
	Sink Current	: 0.5 mA max
Squelch (out)	closing relay contact	: 0.5 mA current max.

Control Interface: RS322 Serial and/or Ethernet (option)

Control Connector: 15-way D-type

Prime Power: 230Vac single phase

Power Connector: IEC plug

Dimensions: 487 (wide) x 230 (deep) x 134 (high) (3U)

Weight: 1.5kg

## 2. Outline Drawing

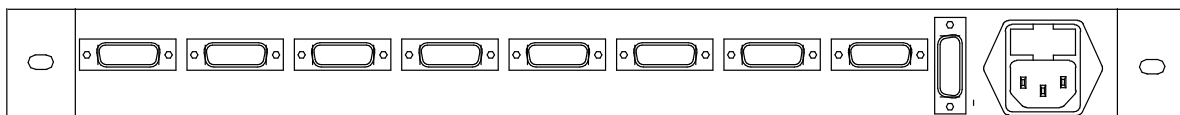


Figure 4 - RR1092B ( 8-way) Rear Panel Layout