

Enabling RS485 on early model RAVEs

All RAVE products ship with the ability to bridge serial data onto Ethernet. Serial bridging can be useful for tunneling proprietary control protocols or for device configuration such as with QSC's DSP products. Each RAVE comes with a female DB9 connector on the rear panel. Connecting a standard straight-through serial cable from a PC or control device to the DB9 connector establishes RS232 communications in half-duplex mode. Proprietary applications or terminal emulators, such as SimpTerm or HyperTerminal, can then communicate with other remote devices over the Ethernet LAN. Data rate and delivery method (one-to-one or one-to-many) can be configured through the management interface (MI) using SNMP.

In addition to the RS232 interface, early model RAVE products shipped with the ability to bridge RS485. RS485 was included for a specific application requiring differential serial bridging. The RS485 interface was rarely used and software support was limiting. Eventually this capability was removed from the RAVE product line. The RS485 interface on these early model RAVEs can be identified by the 6-pin RJ-11 connector next to the Ethernet jack on the rear panel.

Invoking RS485

Unfortunately, there is no auto-detection process on RAVE to determine which serial interface is in use. Enabling the RS485 interface requires pacing the RS232 transmit (Tx) and receive (Rx) signals in loop back. This can be done by placing a jumper on the internal RS232 header on the RAVE's printed circuit board (PCB) or by connecting a serial cable or male DB9 to the rear panel RS232 connector with the TX and RX pins shorted together.

The RAVE chassis must be removed in order to jumper the internal serial header on the PCB. The process for opening the RAVE chassis is discussed in the RAVE User Manual. Once the chassis is opened, the serial ribbon cable must be disconnected from the internal header with reference designator **J74**. J74 is a 10-pin header located on the PCB near the rear panel of the RAVE. J74 is on the left portion of the PCB just behind the BNC connectors. It should be easy to locate since there is only one ribbon connector on the RAVE products. Pin 1 of J74 is actually the lower rightmost pin. The pins are numbered right to left, bottom to top. The pins to be jumpered are numbers 3 and 5. The jumper required is a standard PC type jumper. This is the same type of jumpers that are used to

configure the input sensitivity and output levels on the analog models. Figure 1 shows J74 with the jumper correctly placed.

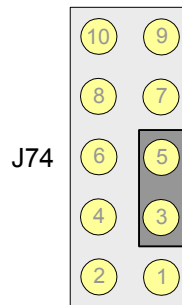


Figure 1

To enable the RS485 interface from the rear panel DB9 connector, pins 2 and 3 of the RS232 connector must be bridged. Figure 2 shows the female DB9 connector looking into the pinholes on the RAVE's rear panel. Looking closely reveals the pin numbers marked on the connector face. A special cable or male connector can be assembled to provide the correct pin jumpers. Note that the cable pins will be a mirror image of Figure 2. Care must be taken to avoid damage caused by incorrectly bridging the connector.

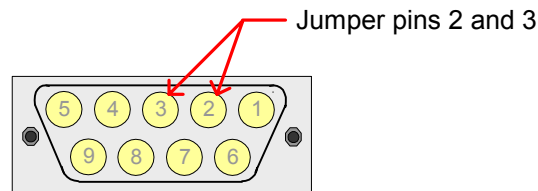


Figure 2

The RS485 interface was intended for version 1 CobraNet. QSC's last shipment of version 1 firmware in RAVE was release 1.5.3. These older versions do not support operation on switched networks. It should also be noted that only one serial protocol can operate on the RAVE. RS232 is disabled when RS485 is active and RS485 is disabled when RS232 is active.