

The following document describes the operational changes to the 8074 related to firmware version 990715. References to the 8074 manual are to version 1.0 printed February 1998.

## 1. Overview of New Features

- Serial Port B may be configured to echo out serial commands received through other serial ports.
- Closed caption data may be extracted and output directly to serial port B.
- Closed caption data may be input through port B and inserted directly into the outgoing SDI video.
- Text article line length has been increased to accommodate longer WebTV links.

## 2. Port Passthrough Features

Through the Engineering Setup menu system, the user may now place the 8074 into one of several serial port passthrough modes. The new modes are referred to as "Port Passthrough" and "Caption Data Passthrough". These modes allow control commands or closed caption data to be cascaded from one 8074 to another through the serial ports. This functionality is useful for copying captions from one video stream to another, or to re-insert captions that have been removed or damaged by processing operations.

All of the new port B passthrough modes require port B of the 8074 unit to be connected to a serial port of another 8074, an 8075 or an 8070 depending on the application.

### 2.1 Port Echo Modes

These modes cause serial commands received on the respective serial port or modem port to be echoed out of serial port B. These commands may then be cascaded to a second 8074 using a serial interface cable as described in section 2.3. The successive unit(s) will then receive the same serial commands as the first unit, after a slight propagation delay. The receiving unit does not need to be placed in a special operating mode, and may be another 8074, an 8075 or an 8070 unit.

The following figure depicts a typical configuration to use the Port Echo Modes.

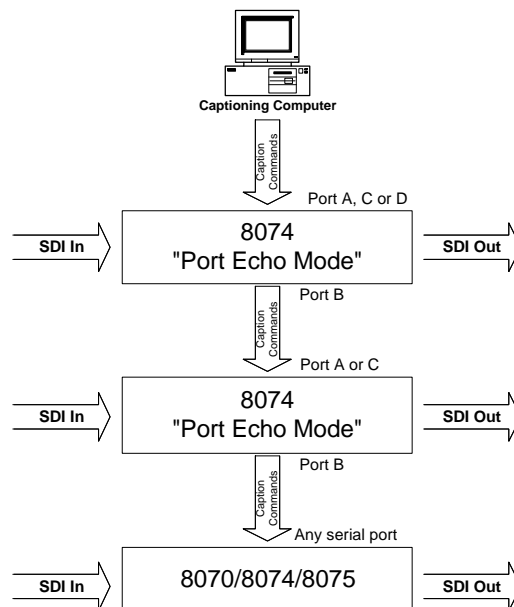


Figure 1: Connections for Port Echo Mode

## 2.2 Caption Data Passthrough Modes

To use these modes, one 8074 is configured to extract caption data and transmit it via the serial port. Another 8074 unit is configured to receive caption data over the serial port and insert it into the SDI video. This ability is useful for copying captions from one video stream to another, or reinserting captions into video after it has been passed through a standards converter or other device that damages the caption data.

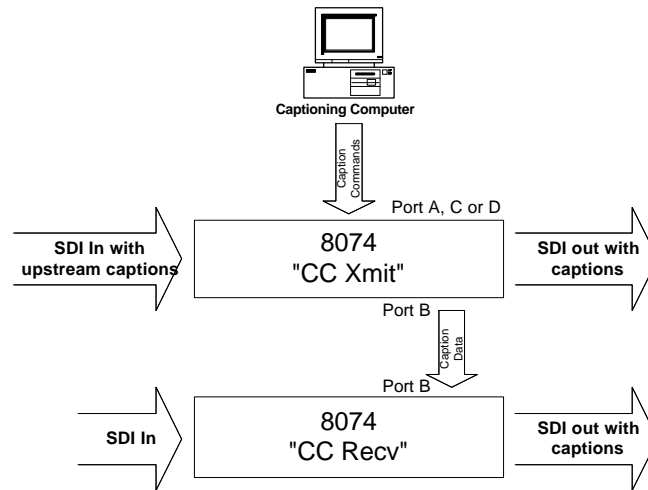


Figure 2: Setup to Copy Captions Between Video Streams

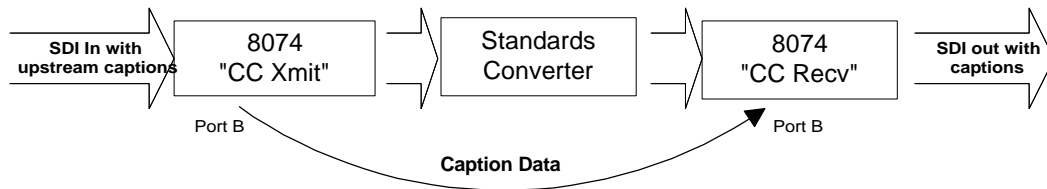
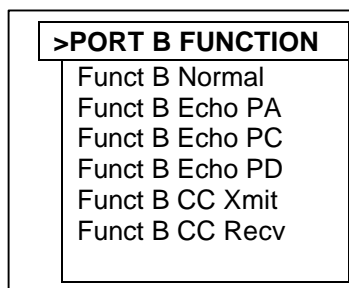


Figure 3: Re-Inserting Captions Into a Video Stream

## 2.3 Configuring 8074 for Port Passthrough Modes

This new functionality must be enabled through the 8074 front panel controls. A new Engineering Setup menu item has been added called **>PORT B FUNCTION**. This menu is accessed by entering the Engineering Setup menus using the **SHIFT+SETUP** key combination. Then use the up arrow until the **>PORT B FUNCTION** prompt is displayed. Use the LEFT ARROW or RIGHT ARROW keys until the desired function is displayed (the currently active function will be blinking). Press the SELECT key to change the function of Port B to the currently displayed function. (The function text should start blinking). Use the SETUP key to exit the menus.



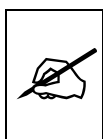
**PORT B FUNCTION** is used to select the operating mode of the Port B serial port.

**Funct B Normal** is used for standard 8074 interface to captioning computers and software.

**Funct B Echo Px** where x=(A, C or D) initiates one of the "Port Echo" passthrough modes.

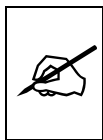
For any "Funct B Echo Px" (Port Echo) mode, use the cable described by Figure 4 if you wish to connect to port B or port C of the cascaded encoder unit.

The 8074 may also be connected to port A of the receiving encoder, which may be an 8070, 8074 or 8075. To connect to port A of the receiving encoder, use a cable with the pinout described in Figure 5.



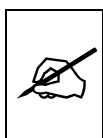
**In this mode the user is responsible for configuring identical baud rates and data words on the serial ports of the transmitting and receiving units.**

**Funct B CC Xmit** will extract all captions from the output video and transmit them out of serial port B. To use this "Caption Data Passthrough" mode, port B must be connected to port B of another 8074 that is configured for **Funct B CC Recv** mode (see below). To connect the units, use a standard "NULL MODEM CABLE" having the pinout described in section 2.3.

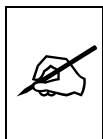


In this mode the port B data word is set and locked to “8 none”. The user is responsible for configuring identical baud rates on serial ports B of the transmitting and receiving units.

**Funct B CC Recv** configures an 8074 to encode closed caption data received over serial port B directly into the video. This is the receiver side of “Caption Data Passthrough” mode. When this function is selected, the 8074 encoder is placed and locked into field mode. All upstream captions are blocked. All other communications ports are blocked so that they will not provide caption data. Additionally, the internal test message is disabled.



In this mode the port B data word is set and locked to “8 none”. The user is responsible for configuring identical baud rates on the serial ports of the transmitting and receiving 8074 units.



It is not possible to select “Funct B CC Recv” operation if any other port is currently supplying caption data to be encoded into the video stream.



The Caption Data Passthrough setup will introduce a delay in the captions on the receiver side, typically one to three frames. Other equipment in the SDI video stream also influences the length of this delay.

## 2.3 Physical Connections for Passthrough Modes

8074 Port B Female		Other Encoder Port B or Port C Female	
Description	DB-9	DB-9	Description
Shield	-----		Shield
RS 232 Transmit	3-----	2	RS 232 Receive
Ground	5-----	5	Signal Ground
RS 232 Receive	2-----	3	RS 232 Transmit
RS 232 CTS	8-----	7	RS 232 RTS
RS 232 DTR	4-----	6	RS 232 DSR
RS 232 RTS	7-----	8	RS 232 CTS
RS 232 DSR	6-----	4	RS 232 DTR

Figure 4: "NULL MODEM" Cable Wiring Diagram 8074 Port B to Port B or Port C

8074 Port B Female		Other Encoder Port A Male	
Description	DB-9	DB-9	Description
Shield	-----		Shield
Ground	1-----	1	Ground
RS 232 Receive	2-----	5	RS 232 Transmit
RS 232 Transmit	3-----	8	RS 232 Receive
Ground	5-----	6	Ground
RS 232 CTS	8-----	4	RS 232 RTS

Figure 5: Cable Wiring Diagram 8074 Port B to Port A