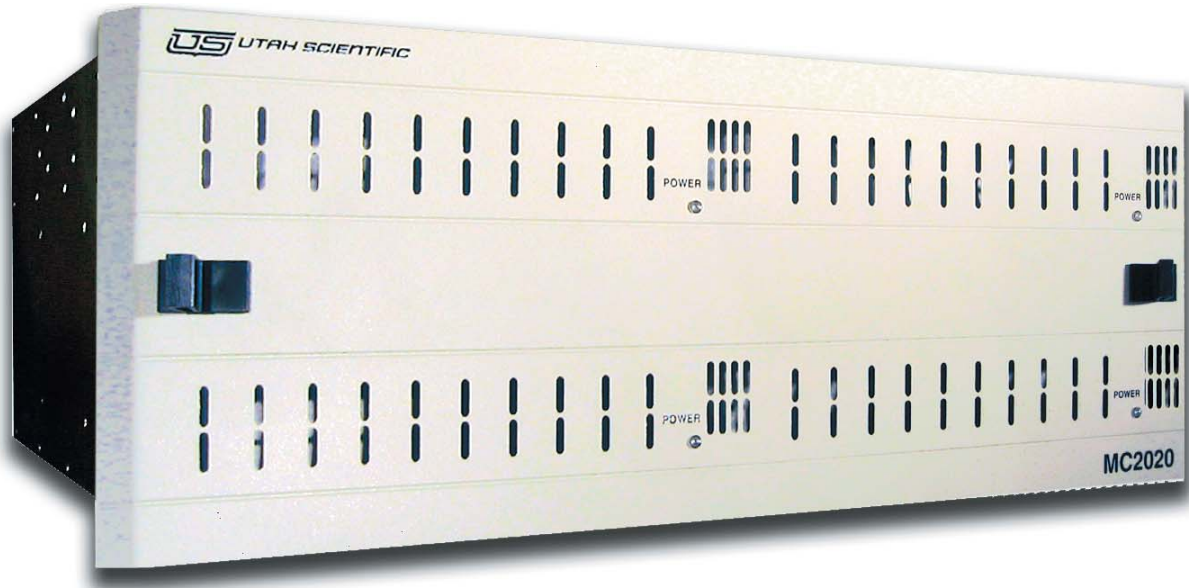


HD / SD-2020

MASTER CONTROL PROCESSORS



The HD/SD-2020 Digital Master Control Processors provide digital audio and video processing for master control switching applications. Designed to be fully compatible with all previous generations of Utah Scientific Master Control Switchers, the 2020 processors offer a convenient and cost-effective upgrade path for owners of existing Utah Scientific MC-500-series analog switchers who wish to upgrade their on-air facilities to digital operation.

The 2020 Processor frame can hold two independent signal processing channels, allowing users to build a system in one frame that supports both standard definition and high definition signal formats, as well as dual channel configurations for either format.

The HD/SD-2020 provides a full range of mixing and keying functionality with one keyer included in the standard package and up to three additional keyers available as plug-in options. Each of the keyers can be placed into the signal processing chain either before or after the mix/effects block, allowing an extremely flexible approach to clean-feed and regional feed applications.

The 2020 processors provide full audio mixing facilities, using embedded audio or separate audio inputs. External audio inputs are also provided for voice-over mixing.

When used with an existing MC-500-series control panel, the HD/SD-2020 emulates all of the functions of the earlier signal processing units, making the change-over from analog to digital operation completely transparent to the operator.

PRODUCT DESCRIPTION

The HD/SD-2020 rack frame can house one or two fully independent signal processor channels. Each channel has its own dual redundant power supplies. Each of the channels can be fitted for high definition or standard definition operation.

Each signal processing channel consists of a motherboard assembly, a basic three-board video processor package and five option slots for additional keyers or audio processors.

The 2020 signal channels offer a three-bus architecture (PROGRAM, PRESET, and PREVIEW) with inputs selected by an external routing switcher. There are four external key inputs (key and fill signals) and four external audio inputs for voice-over mixing.

Audio features such as master gain control, mix level control, channel swapping and mixing are all available in the basic 2020 processing channel. These functions work identically whether the audio inputs are provided as embedded signals or as a separate signal layer, or a combination of the two.

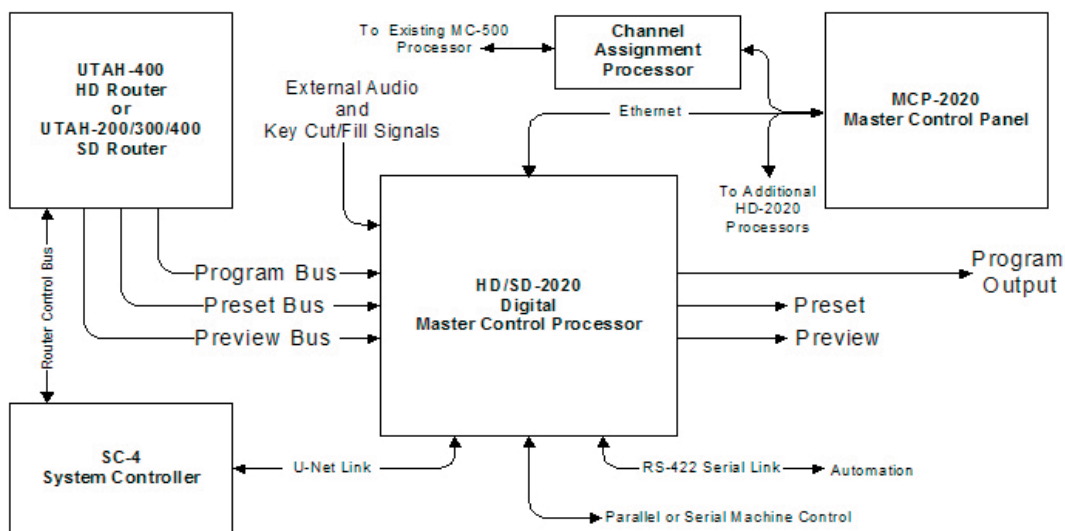
Each 2020 channel offers an RS-422 automation port which uses a similar control protocol to the MC-500 series switchers for full compatibility. The system offers machine control in either contact closure or serial communications to further assist the operator in manual operations.

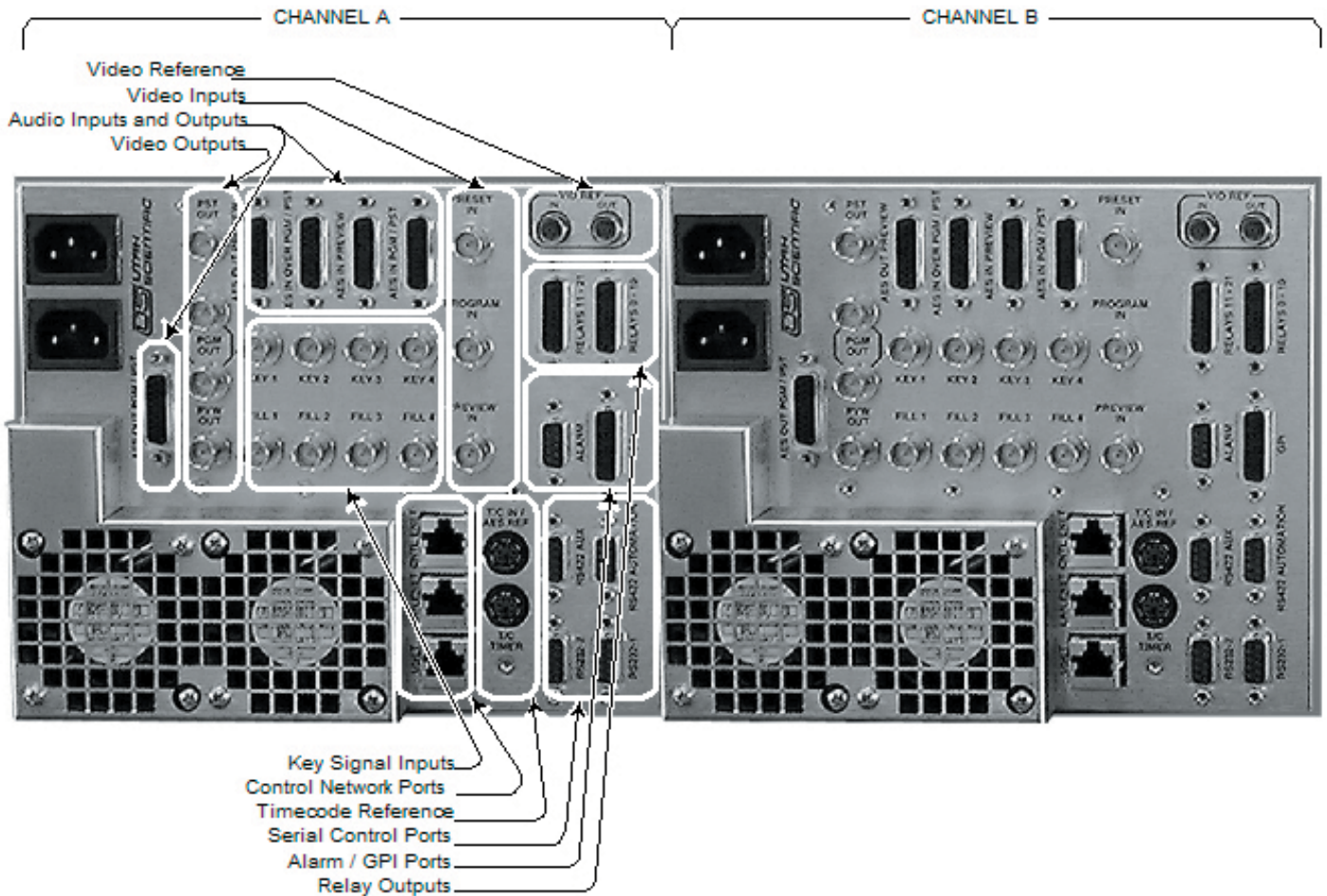
To simplify multi-channel operation, the HD/SD-2020 communicates with the control panel over an Ethernet LAN. Using this LAN, up to eight individual signal channels can be controlled from a single panel.

APPLICATIONS

The HD/SD-2020 was designed specifically for use in updating existing Utah Scientific MC-500 series Master Control Switchers for digital operation. Here are some typical upgrade scenarios:

Replacing an analog MC-500-series switcher—In this case, the 2020 frame is installed in place of the existing MC-500 card cage. Depending on the age of the MC-500 control panel, an updated control interface card may need to be installed





in the control panel tub to provide Ethernet communications with the HD/SD-2020. A digital routing switcher must be installed – a UTAH-400 or UTAH-1500 for HD operation or a UTAH-400, UTAH-200 or UTAH-300 for SD operation. In this configuration, the updated system is ready for operation with embedded audio signals. If separate audio operation is required, a digital audio matrix must be added to match the new digital video routing switcher.

Adding a digital channel to an analog MC-500-series switcher—In this case, the 2020 frame is installed in addition to the existing MC-500 card cage. An updated control interface card may need to be installed in the control panel tub to provide Ethernet communications with the HD-2020. As in the previous example, digital video and audio routing switchers are added as required.

To enable multi-channel control from a single MC-500 series control panel, a Channel Assignment Processor is added. This unit will switch the panel among as many as eight separate signal processors – one MC-500 frame and up to seven channels of 2020 processors.

Adding multiple digital channels—The 2020 frame can house one or two completely independent signal processing channels. An HD or an SD channel can be installed in either of the frame positions. This makes it simple to set up a system for HD/SD simulcasting where the two program feeds are switched at the same schedule from a different set of source devices.

The Channel Assignment Processor takes care of routing the commands from the Control Panel to the appropriate signal channel unit. The processor supports a unique “Master Mode” function that allows one or more channels to exactly follow the operation of a master channel – switching at the same times among a set of inputs specifically assigned to each channel.

HD / SD-2020 Product Information Sheet

HD / SD-2020 DIGITAL MASTER CONTROL PROCESSOR PRODUCT SPECIFICATIONS

Mechanical Dimensions:		19"W x 22" D x 7.0"H (4 ru EIA rack mount)
Connectors:	Video: Digital Audio; Serial I/O Ports: Relay Outputs: Serial Control Ports:	BNC DB-25F Subminiature 25-pin D connector with female pins.DB-9F Subminiature 9-pin D connector with female pins.DB-25F Sub- miniature 15-pin D connector with female pins. DB-9F Subminiature 9-pin D connector with female pins.
Environmental :	Temperature: Relative Humidity:	10-40°C 0-90% (non-condensing)
AC Power 110/240VAC	Chassis consumption is 100 VA max. (2 channels operating) Dual redundant power supplies are standard equipment	

HD / SD-2020 DIGITAL MASTER CONTROL PROCESSOR ORDERING INFORMATION

	Description
HD-2020/1	Master Control Processor with 1 HD channel installed
HD-2020/2	Master Control Processor with 2 HD channels installed
SD-2020/1	Master Control Processor Unit with 1 SD channel installed
SD-2020/2	Master Control Processor Unit with 2 SD channels installed
HD/SD-2020	Master Control Processor Unit with 1 HD and 1 SD channel installed



4750 Wiley Post Way Suite 150 Salt Lake City, Utah 84116
 Phone: (801) 575-8801 Fax: (801) 537-3099
 EMail: sales@utsci.com www.utahscientific.com