Media Commander® MC-20PRO Jog/Shuttle Controller
A Closer Look

Introduction

FutureVideo's new MC-20PRO is one of the most advanced, flexible multi-function media controllers ever offered. It *starts* where simple jog/shuttle control surfaces *stop*. It's ideal for applications involving any type of media and system control—including video editing, audio editing, audio/video capture, and media playback. MC-20PRO is equally well-suited to sports, security, presentation, transcription, and military debriefing systems.

The 22 programmable buttons and jog dial/shuttle ring provide for multiple GUI hot-key/command mapping using the associated FutureVideo KeyAssigner™ application software. In addition, when connected to FutureVideo's MC-100 device control units, a network of up to 16 tape decks (analog or digital) can be directly controlled from the MC-20PRO.

It can also be easily re-purposed to keep pace with software GUI revisions, particularly during rapid product evolution. No other control surface offers these capabilities.

A Task-oriented Approach

The MC-20PRO is an ergonomic "task-oriented" control surface. Meaning, the design and mapping of the controls align with the various tasks being performed by the software application(s). This can be better accommodated by a control surface which has intelligent grouping of its controls and also has the capability to switch the mapping of the controls instantly to follow the task. The task-oriented design approach of the MC-20PRO provides increased efficiency and therefore enhances the user's productivity.

The MC-20PRO controls have been grouped into two different areas (Figure 1): Function keys and Command keys (including the jog/shuttle dials). Typically, the Function keys can be assigned system or control functions of the GUI. The Command keys and jog/shuttle would typically be mapped to the media playback/record operations. Mapping the buttons this way is not mandatory, but in most applications this would be most efficient.

Each Function key can be assigned/mapped 3 different possible hot-key/macro functions (indicated as Normal, Alt-1, Alt-2 and called the "key sets"). The LEDs next to the Standby/Alt button indicate which key set is active. The Command

keys can be assigned/mapped in the same way or by using a separate "Shift" key set instead. The LED above the jog/shuttle dials can be used as the "Shift" key set indicator. These alternate or shift functions can either be activated with an assigned MC-20PRO button—or dynamically from a command sent to the MC-20PRO by the application software.

A distinguishing feature of the MC-20PRO is that Function keys 1-4 may also be pre-assigned to immediately switch among 4 entirely different key map tables (or modes). This will change the assignments of *all* the other Function and Command keys—including the jog/shuttle. This is useful when the task changes. One of the LEDs above buttons 1-4 will light to indicate the specific mode for the key map table in use. The application software also can send a command to the MC-20PRO to switch modes. If the application requires a sub-task—or a completely different task change is required for a new application—the application can immediately switch the key map table to match the task at hand.

Note: When the buttons 1-4 are used as Mode keys, the Alt-1 and Alt-2 key sets do not affect these 4 keys.

In certain cases, a key might be assigned the *same* function regardless of the mode selected. Rather than having to define the key assignment 4 times, in this case, any key may be defined as "global." Irrespective of which mode is selected, the key will always have the same assignment.

A Visual way to Assign the Controls—KeyAssigner Software
FutureVideo provides a visual, easy-to-use way to assign a function, command, or macro to any of the MC-20PRO's controls. Called KeyAssigner (Figure 2), this program allows selection from among hot-keys, deck commands, macros—even MC-20 configuration operations—that may be assigned to any of the controls. For example, assigning a button as a PC hot-key is as simple as highlighting the button, typing the label for the button, choosing the type of command (in this case "PC-short-cut" key), then directly typing the hot-key on the PC keyboard—e.g., "Ctrl A." Each control's assignment can be easily displayed and printed out for creating a template of labels or a table of assignments for easy reference. All information is saved in a ".jst" file with the application or reference name.

When using the available 4 key sets (Normal, Alt-1, Alt-2, Shift) and 4 modes together, 180 possible key assignments for the buttons and 72 assignments for the jog and shuttle controls are possible under a single application—all of which are held in the MC-20PRO flash memory. An unlimited number of applications can be stored on disk in .jst files and loaded into the MC-20 flash memory when required via the KeyAssigner software.

Dynamic Configurable Jog & Shuttle Controls
Assignment of hot-keys or deck commands to the jog and shuttle control is where typical jog/shuttle controllers end. For a better "feel," the MC-20PRO has the

ability to also select the dynamics and behavior of these controls to make the jog and shuttle operate the media more like a high-performance automobile. Features like *jog and shuttle smooth scroll*^{TM} and 15 possible step positions accommodate a variety of situations. In addition, the sensitivity, latency, and limit speed can be set for the jog dial. These customizable parameters are important, especially when dealing with an application software GUI that is controlling digital or tape media and cannot respond immediately to frame stepping or sudden changes in speed settings.

Key Set Auto Release or Lock On Option
Each of the key sets (Alt-1, Alt-2, Shift) can be programmed to either "lock" on or auto-release to the normal key set following a key press. For example, one button can serve two related functions—one may be the inverse of the other. In this example, when the "normal" key set is active, a button labeled "Mark In/Clear" would send the appropriate hot-key command to the GUI for marking a segment's start point. If the user then selects the Alt-1 key set and auto-release is enabled, and then presses the Mark In/Clear button again, it would send a hot-key for clearing the start segment mark. A subsequent press of the Mark In/Clear button would send the start segment command again without having to press the Alt key twice to return to the normal key set .

When the key set option is "Lock On," the Alt key can be pressed twice to return to the normal key set.

Flash Programmable Keys
All controls' hot-key, macro, and command assignments are held in the MC-20PRO flash memory. If power is removed, the key-assignments are retained. When power is re-applied, the same assignments will immediately be active. The control surface can also be pre-configured for a particular application for a targeted system. System Integrators or System Providers can be assured that the MC-20PRO controls have the correct assignments and the jog/shuttle dynamics are set properly for the application.

Standby Mode
A simple command sent from the application software program can either enable or disable the control surface so that when not in use it will not introduce any unintended commands. Holding down the Standby button for 3 seconds will disable it as well.

Firmware Upgrade via USB Port
The unique, open-ended design of the MC-20PRO permits the unit's internal firmware to be upgraded via the USB port when a new feature or change is required.

EditLink® Device Interface Port
The MC-20PRO has the ability to interface with RS-232C external devices—including the MC-100 device control modules for tape deck control. For special applications, this port may be used to connect to other devices or input controls such as a Joy Stick. FutureVideo can also customize this port for special applications to satisfy a variety of input and output control applications.

In Depth Technical Information
FutureVideo's *Media Commander MC-20 Engineering Overview* was written to provide greater technical insight to Product Managers and Project Engineers for OEM product applications. Please contact FutureVideo to obtain this publication.

| 8-pin Mini-DIN Editlink Device Control Port (for MC-100's) | 3.5mm phone jack GPI Port |
| 7.5vDC Mains Power Connector | USB Control Port |

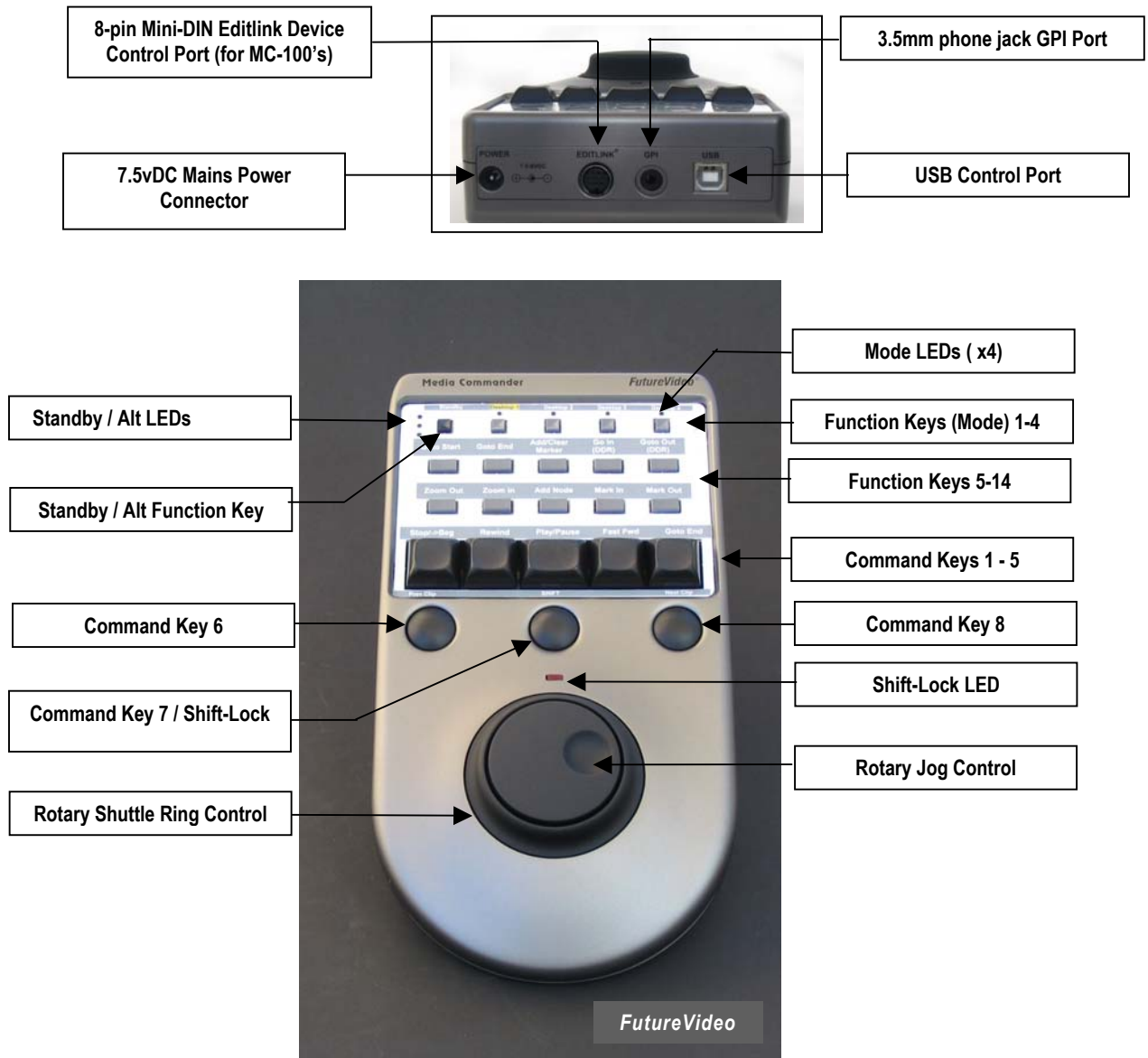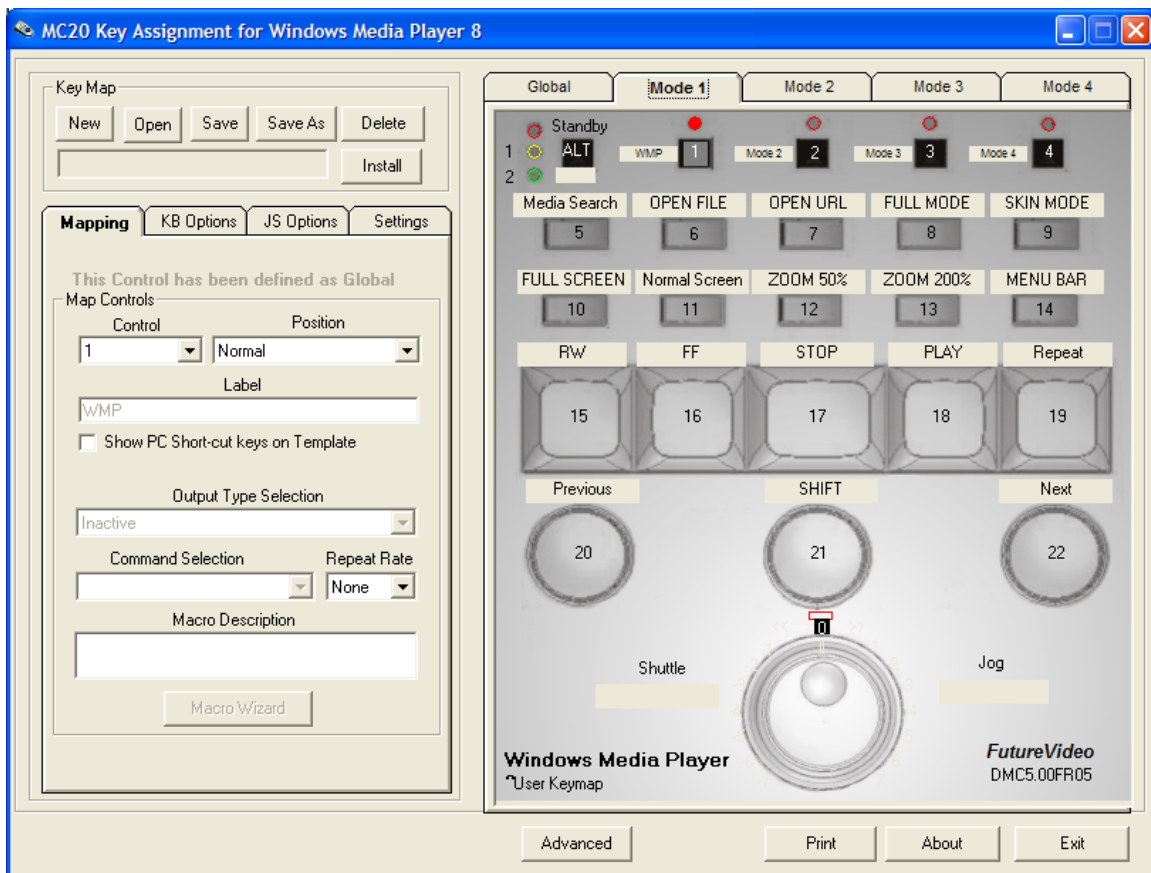| Standby / Alt LEDs | Mode LEDs (x4) |
	Function Keys (Mode) 1-4
Standby / Alt Function Key	Function Keys 5-14
	Command Keys 1 - 5
Command Key 6	Command Key 8
Command Key 7 / Shift-Lock	Shift-Lock LED
	Rotary Jog Control
Rotary Shuttle Ring Control	

Figure 1. MC-20PRO Control layout

Figure 2. KeyAssigner Software Mapping Panel