



QSC Cinema Technical Notes

Q-SYS Core Processors

Using external commands via TCP from Doremi or DOLBY IMS Cinema Servers

Introduction

QSC Q-SYS core processors can be set up to accept external commands from media servers by Doremi and Dolby. This technical note describes how to make use of this ability. The media network will be set up in a way that AES67 traffic is on the core processor's LAN A, while management traffic, including commands, flows on LAN B.

Named Controls enabled for external control

The Q-SYS design must have Named Controls set up, and they must be made available for external control. See *Making Controls Available for External Control* in the Q-SYS Designer Help file for details. The external commands from the media server will be TCP packets to Port 1702 on LAN B. The server will have to be configured to send its commands to this port on the core processor's IP address.

Command format

All commands and responses end with the End of Message (EOM) character, **<LF>** (0x0A). The core processor will not start parsing and executing a command until it also receives the EOM.

The core processor will ignore **<CR>** (0x0D) if it immediately precedes the EOM. This allows you to use Telnet for testing and debugging because pressing **Enter** produces the two-character string **<CR><LF>** (carriage return + line feed). It also allows you to execute commands through your computer using a terminal program such as PuTTY.

The core processor will terminate all responses with **<CR><LF>**. This is useful for testing and debugging because each response will therefore appear as a separate line in Telnet. But this also requires that the client (in this case, the media server) must ignore the **<CR>** character.

If a command contains extra arguments before the EOM, the core processor's response will be a **bad_command** error message. For example:

```
cg text extra
-> bad_command "expected EOM"
```

NOTE: (**cg** = Control Get)

A string argument may contain an **<LF>** and/or a **<CR>** character, but they must be coded differently so they will be interpreted correctly by the core processor:

```
\n = <LF>
\r = <CR>
```

For example:

```
cg text
-> cv "text" "" 0 0
css text "multi\r\nline (this will show as two lines of text in the GUI)
-> cv "text" "multi\r\nline" 0 0
```

The Doremi and Dolby IMS servers and some other external devices use specific characters for specific functions. For example, Doremi advises:

- Use `\r` to send a carriage return at the end of a string defined for a raw device.
- Use `\t` to insert a tab in an automation string.
- Use `\w` to insert a short wait in a command.

The proper structure of a command line from a Doremi or Dolby IMS server to the core processor should therefore be this:

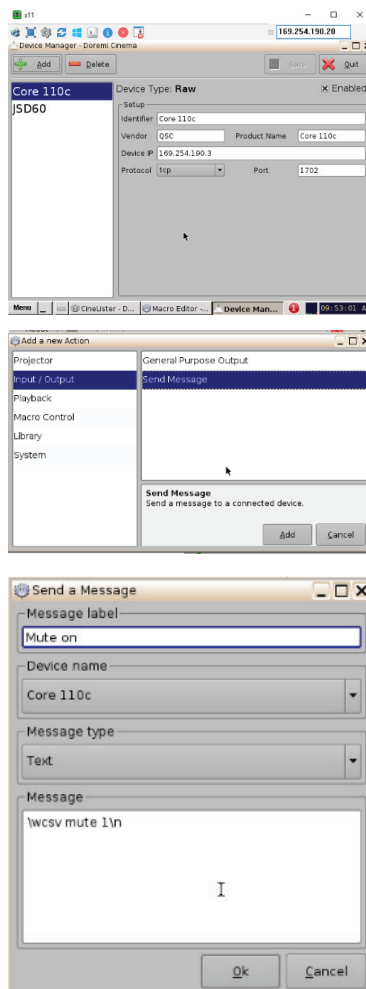
`\w 'command_string' syntax\EOM`

For example, if your Named Control in the Q-SYS design is a toggle button called mute, a typical command might be:

`\wcsv mute 1\n`

NOTE: (`csv` = Control Set Value)

Set up the core processor as a raw device with the server



Set up the Q-SYS core processor in the device manager of the server's software. The example at left depicts the Doremi Device Manager.

Use the server's macro editor to build a library of commands for the core processor. Each command uses one or more messages associated with Named Controls in the core processor.