



DCI401MCS



Command Set Primer

Introduction

This document outlines some basic command set features of the DCI401MCS which can be implemented from the COM1000 system. These features are intended to be used by system operators in order to achieve a centralized control and command of these boxes when deployed throughout a property. This document will explain a few of the more useful features. Not all features are explained here. Full documentation of all command features will be introduced in the next release of the COM1000 Integrator's Manual.

The DCI401MCS was designed to be used specifically with the COM1000 head-end and all of these features have been thoroughly tested to work within this system, in particular, the QAM24/QAM6 product. While some features may work using other head-end sources, if a Technicolor QAM is not a part of the system, there is little chance that these features will work.

Because the COM1000/DCI401MCS system does not have a back channel, correct execution of a command by a DCI401MCS can only be verified by inspection of the 401.

401 Link

You may access the DCI401MCS control tab in the COM24 web page by clicking on "401". If your COM24 web management page does not have a 401 link, please update your COM24 software to the latest available from Technicolor.

DirecTV COM1000



Commands: [Discover](#), [PairingInfo](#), [TuneAll](#), [Help](#)

[Scan](#), [Refresh](#), [Display](#), [SysInfo](#), [HealthInfo](#), [EPG](#), [Syslog](#), [ATSC](#), [40L](#), [QAM](#)

DCI401MCS

MessageType:	<input type="text" value="0 = Download"/>
Receiver_ID:	<input type="text" value="0xffffffff"/>
Major_Number:	<input type="text" value="0"/>
Minor_Number:	<input type="text" value="0"/>
Filename/Text:	<input type="text"/>
TFTP_IP:	<input type="text" value="192.168.1.254"/>
For ChannelMap: freqIndex-programNum MajorNum-MinorNum ChannelName	
<div style="border: 1px solid black; height: 100px; width: 100%;"></div>	
<input type="button" value="Submit"/> <input type="button" value="Channel_Close"/>	

From this page, you may select 13 different commands from the MessageType: pulldown menu which can control the DCI401MCS in a variety of different ways. The Receiver_ID field is used to route command messages to the right DCI401MCS box or boxes

Receiver_ID:

For every option, you may choose to broadcast the control message to a specific receiver, or to the entire network of receivers. When you first access the control page, you will see the Receiver_ID field set to 0xffffffff. This setting will broadcast the control message to every DCI401MCS powered on in the network and tuned to a channel originating from the COM1000. If you desire to send messages to a specific receiver, you may replace the 0xffffffff with the 10 digit Unit Identifier located on the bottom of the receiver or on the product packaging.

MessageType: 0 = Download

This feature is used to update the software of the DCI401MCS. Using a TFTP server such as TFTPd32, put the file name of the new software in the Filename field, enter the correct TFTP_IP: address for the TFTP server, then press SUBMIT. You should notice the software transfer on the TFTP server, then the broadcast of the software to the network. Connected DCI401MCSs eligible for this software update should immediately begin the update process.

MessageType: 3 = Feature

This allows operators to turn on or off specific features of the DCI401MCS including the remote power button, function buttons and menu access. Nearly every menu item or feature in the DCI401MCS can be controlled, but for this document's purpose, only a few key items will be provided. Specific features are controlled by a 32 bit field entered as an 8 digit hex number.

Select 3 = Feature,

Set your desired Receiver_ID,

In the Major_Number field, enter the desired code to turn on or off device features.

Hit Submit to broadcast this feature.

Example: Disable channel change

DCI401MCS

MessageType:	<input type="text" value="3 = Feature"/>
Receiver_ID:	<input type="text" value="3513524774"/>
Major_Number:	<input type="text" value="0x20000000"/>
Minor_Number:	<input type="text" value="0"/>
Filename/Text:	<input type="text"/>
TFTP_IP:	<input type="text" value="192.168.1.254"/>
<u>For ChannelMap: freqIndex-programNum Maj</u>	

In this example, entering hex value 0x20000000 in the Major_Number field, will turn off the ability of each DCI401MCS to change from the channel the device is currently tuned to, essentially locking the DCI401MCS to a specific channel.

The below table lists some features commonly used in controlling a DCI401MCS

Reset device to original configuration - Remove any disabled features	0x00000000
Disable Power Key from the Remote	0x01000000
Disable the Menu Key from the Remote	0x02000000
Disable the Guide Key from the Remote	0x04000000
Disable the Close Caption Key from the Remote	0x08000000
Disable the Zoom Key from the Remote	0x10000000
Disable channel change from the Remote	0x20000000

If several of these features are desired, they can be combined such that one number can be entered to disable several features. For instance, if you'd like to turn off both the menu and power buttons from the remote, you can combine the numbers to be 0x03000000. Sending this feature command, both features will be disabled.

MessageType: 5 = Tune

You can force tune each of the DCI401MCS's to a desired channel. Enter the Major_Number and Minor_Number for the desired channel, then press Submit. This will either change channels for a specific unit or the entire network of DCI401MCS's.

MessageType: 6 = Scan

This will force one or more DCI401MCS's to do a channel scan. No other fields are required to be filled in.

MessageType: 7 = Display

This feature allows for an Alert Message to be presented on the DCI401MCS as a pop-up message for users. Simply type the desired alert message into the Filename/Text: field, then press SUBMIT. An Alert Message will be viewable for 20 seconds or until the user selects OK from their unit.

MessageType: 9 = Guide Channel

This feature allows you to select the guide channel which will be associated with the GUIDE button on the remote control. Simply enter the Major_Number and Minor_Number of the desired channel, then press SUBMIT.

MessageType: 10 = Text

When the DCI401MCS loses signal or is tuned to a channel without any video, the default message appears, “We’ve detected an interruption in your service. Please check the connections. We’re sorry for the inconvenience.” Using the Text option, you may insert your own service interruption message and add contact information such as a telephone number or email address. Type the desired display text in the Filename/Text: field, then press SUBMIT.

MessageType: 11 = Graphics

Custom graphics can be inserted into the menu page of the DCI401MCS to be displayed in the lower left-hand corner of the menu. These graphics are sent to the DCI401MCS using the TFTP server just as software updates are transferred. Enter the name of the graphics file in Filename/Text: field, enter the correct TFTP server address, then press SUBMIT. The graphic must be a .bmp file with a resolution of 50 x 200 pixels.

MessageType: 12 = Channel_Map

Channels generated by the COM1000 are easily mapped on the DCI401MCS using the PSIP feature of the COM1000. Please read and understand this capability first, then if you are unable to utilize PSIP, or you have channels being generated outside the COM1000 system which require mapping, the DCI401MCS can enable this capability.

In the box below the input fields, you may type or paste in your desired channel map. In the example below, it is desired that channel 30-1 be mapped to be channel 12 and channel 30-2 be mapped to be channel 13. The channels are CNNHD and ESPNHD respectively.

Example: Creating a channel map

DCI401MCS

MessageType:
Receiver_ID:
Major_Number:
Minor_Number:
Filename/Text:
TFTP_IP:

For ChannelMap: freqIndex-programNum MajorNum-MinorNum ChannelName

```
30-1 12-0 CNNHD  
30-2 13-0 ESPNHD
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Pressing SUBMIT will remap the physical RF channels so that they appear as more desirable virtual channels 12 and 13.

Appendix

The entire feature list is included for advanced users who may be interested in other feature capabilities of the DCI401MCS.

Byte	Bit	Feature Controlled	Mnemonic	Hex Value (Major_Number)
0	0	Power Key	FEATURE_LIST_POWER_KEY_NDX	0x01000000
	1	Menu Key	FEATURE_LIST_MENU_KEY_NDX	0x02000000
	2	Guide Key	FEATURE_LIST_GUIDE_KEY_NDX	0x04000000
	3	CC Key	FEATURE_LIST_CC_KEY_NDX	0x08000000
	4	Format Key	FEATURE_LIST_ZOOM_KEY_NDX	0x10000000
	5	Allow Channel Change	FEATURE_LIST_ALLOW_CHANNEL_CHANGE_NDX	0x20000000
	6	Allow User Password Override	FEATURE_LIST_ALLOW_USER_OVERRIDE_NDX	0x40000000
	7	Main Menu: Audio Selection	FEATURE_LIST_MM_AUDIO_NDX	0x80000000
Byte	Bit	Feature Controlled	Mnemonic	Hex Value (Major_Number)
1	0	Main Menu: Locks	FEATURE_LIST_MM_LOCKS_NDX	0x00010000
	1	Main Menu: Settings	FEATURE_LIST_MM_SETTINGS_NDX	0x00020000

	2	Main Menu: Channel Scan	FEATURE_LIST_MM_SCAN_NDX	0x00040000
	3	Locks: Master Locks	FEATURE_LIST_LCK_MASTER_NDX	0x00080000
	4	Locks: Master Locks: Remove All	FEATURE_LIST_LCK_MASTER_REMOVE_NDX	0x00100000
	5	Locks: Master Locks: Lock All	FEATURE_LIST_LCK_MASTER_LOCK_ALL_NDX	0x00200000
	6	Locks: Rating Limits	FEATURE_LIST_LCK_RATINGS_NDX	0x00400000
	7	Locks: Rating: Lock Ratings	FEATURE_LIST_RATINGS_LOCK_RATINGS_NDX	0x00800000
Byte	Bit	Feature Controlled	Mnemonic	Hex Value (Major_Number)
2	0	Locks: Rating: Movie Limits	FEATURE_LIST_RATINGS_MOVIE_LIMITS_NDX	0x00000100
	1	Locks: Rating: TV Limits	FEATURE_LIST_RATINGS_TV_LIMITS_NDX	0x00000200
	2	Locks: Rating: Unrated	FEATURE_LIST_RATINGS_UNRATED_LIMITS_NDX	0x00000400

		Limit		
	3	Locks: Channel Locks	FEATURE_LIST_LCK_CHANLIST_NDX	0x00000800
	4	Settings: System Info	FEATURE_LIST_SET_SYSINFO_NDX	0x00001000
	5	Settings: System Info: Model	FEATURE_LIST_SET_SYSINFO_MODEL_NDX	0x00002000
	6	Settings: System Info: UID	FEATURE_LIST_SET_SYSINFO_UID_NDX	0x00004000
	7	Settings: System Info: Serial Number	FEATURE_LIST_SET_SYSINFO_SERIAL_NO_NDX	0x00008000
Byte	Bit	Feature Controlled	Mnemonic	Hex Value (Major_Number)
3	0	Settings: System Info: SW Version	FEATURE_LIST_SET_SYSINFO_SW_VER_NDX	0x00000001
	1	Settings: System Info: Power Level	FEATURE_LIST_SET_SYSINFO_POWER_LVL_NDX	0x00000002
	2	Settings: System Info: SNR	FEATURE_LIST_SET_SYSINFO_SNR_NDX	0x00000004
	3	Settings: Closed Captioning	FEATURE_LIST_SET_CC_NDX	0x00000008

	4	Settings: CC: Enable	FEATURE_LIST_SET_CC_ENABLE_NDX	0x00000010
	5	Settings: CC: Analog	FEATURE_LIST_SET_CC_ANALOG_NDX	0x00000020
	6	Settings: CC: Digital	FEATURE_LIST_SET_CC_DIGITAL_NDX	0x00000040
	7	Settings: CC: Font	FEATURE_LIST_SET_CC_FONT_NDX	0x00000080
Byte	Bit	Feature Controlled	Mnemonic	Hex Value (Minor_Number)
4	0	Settings: CC: Font Size	FEATURE_LIST_SET_CC_FONT_SZ_NDX	0x01000000
	1	Settings: CC: Font Style	FEATURE_LIST_SET_CC_FONT_STYLE_NDX	0x02000000
	2	Settings: CC: Font Color	FEATURE_LIST_SET_CC_FONT_COLOR_NDX	0x04000000
	3	Settings: CC: Font Opacity	FEATURE_LIST_SET_CC_FONT_OPACITY_NDX	0x08000000
	4	Settings: CC: Font Edge Type	FEATURE_LIST_SET_CC_FONT_EDGE_TYPE_NDX	0x10000000
	5	Settings: CC: Font Edge Color	FEATURE_LIST_SET_CC_FONT_EDGE_COLOR_NDX	0x20000000
	6	Settings: CC: Font BG Color	FEATURE_LIST_SET_CC_FONT_BG_COLOR_NDX	0x40000000

	7	Settings: CC: Font BG Opacity	FEATURE_LIST_SET_CC_FONT_BG_OPACITY_NDX	0x80000000
Byte	Bit	Feature Controlled	Mnemonic	Hex Value (Minor_Number)
5	0	Settings: HDMI Setup	FEATURE_LIST_SET_HDMI_NDX	0x00010000
	1	Settings: HDMI: Aspect Ratio	FEATURE_LIST_SET_HDMI_AR_NDX	0x00020000
	2	Settings: HDMI: Resolution	FEATURE_LIST_SET_HDMI_RES_NDX	0x00040000
	3	Settings: Remote Control	FEATURE_LIST_SET_RC_NDX	0x00080000
	4	Settings: Remote: Pair	FEATURE_LIST_SET_RC_PAIR_NDX	0x00100000
	5	Settings: Remote: Clear Pairing	FEATURE_LIST_SET_RC_CLEAR_NDX	0x00200000
	6	Settings: Remote: Disable Pairing	FEATURE_LIST_SET_RC_DIABLE_RF_NDX	0x00400000
	7	Settings: Remote: IR Setup	FEATURE_LIST_SET_RC_IR_SETUP_NDX	0x00800000
Byte	Bit	Feature	Mnemonic	Hex Value

		Controlled		(Major_Number)
6	0	Settings: Look & Feel	FEATURE_LIST_SET_LOOK_NDX	0x00000100
	1	Settings: Look & Feel: Banner Color	FEATURE_LIST_SET_LOOK_BANNER_CLR_NDX	0x00000200
	2	Hidden Menu	FEATURE_LIST_HIDDEN_NDX	0x00000400
	3	Settings: HDMI: Audio Format	FEATURE_LIST_SET_AUDIO_FMT_NDX	0x00000800
	4	Settings: Look & Feel: Guide Key	FEATURE_LIST_SET_LOOK_GUIDE_KEY_NDX	0x00001000
	5	Reserved		0x00002000
	6	Reserved		0x00004000
	7	Reserved		0x00008000
Byte	Bit	Feature Controlled	Mnemonic	Hex Value (Major_Number)
7	0	Reserved		0x00000001
	1	Reserved		0x00000002
	2	Reserved		0x00000004
	3	Reserved		0x00000008
	4	Reserved		0x00000010
	5	Reserved		0x00000020

	6	Action Code bit 0	See next table for bit definition	0x00000040
	7	Action Code bit 1	See next table for bit definition	0x00000080