

SERIAL COMMUNICATION PROTOCOL

User Reference Manual

Version 3.3
February 20, 2013

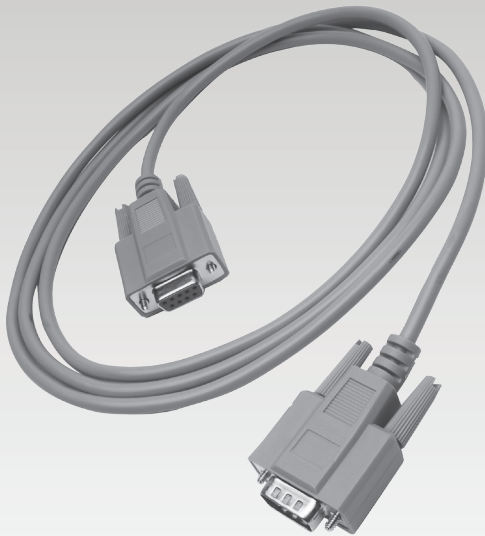


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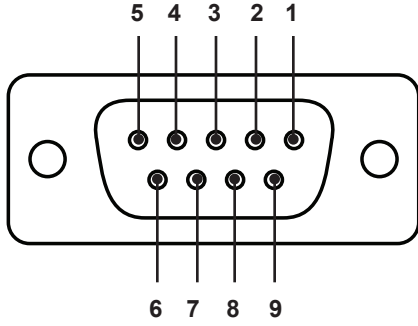
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SERIAL COMMUNICATION PROTOCOL

01 Commands

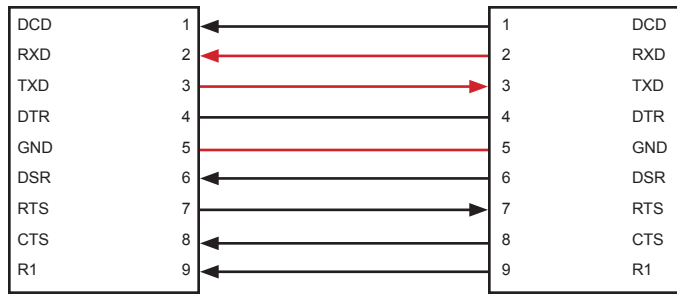
RS-232 Configuration

RS-232 Interface



RS-232 Controller

Scaler



Only TXD, RXD, and GND are used.

RS-232 Settings

Description	Setting
Baud rate	115200
Data bits	8
Parity	None
Stop bits	1
Hardware flow control	None

IMPORTANT: When sending RS-232 commands, a carriage return must be included at the end of the command. A space *must* be included between the command and each parameter.

Commands

#aspect

The #aspect command sets the aspect ratio of the output signal.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#aspect param1
```

Parameters:

param1 Aspect ratio [1 ... 5]

Value	Description
1	Full screen
2	Letter / Pillar box
3	Panoramic
4	Extract
5	Through

Notes:

If the Extract or Through mode is selected, the default values are used. To modify the parameters for Extract or Through mode refer to these commands in this manual.

#audio

The #audio command changes the audio channel. The default value is 1.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
	✓	

Syntax:

```
#audio param1
```

Parameters:

param1 Audio channel [1 ... 8]

#autolock

The #autolock command enables or disables the Genlock mode. The default value is 0 (disable).

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#autolock param1
```

Parameters:

param1 Aspect ratio [0 ... 2]

Value	Description
0	Disable
1	Video input reference
2	Reference input

#blacklev

The #blacklev command sets the black level of the output signal.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#blacklev param1
```

Parameters:

param1 Level [0 ... 1023]

#bright

The #bright command sets the color brightness for the specified color component. The default value for *param2* (for each color component) is 50.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#bright param1 param2
```

Parameters:

param1 Color [0 ... 2]

Value	Description
0	Red
1	Green
2	Blue

param2 Color level [0 ... 100]

#cleanaper

The #cleanaper command allows adjustment of the input signal position. Each parameter allows an area within the production aperture to be defined. The minimum clean aperture size is 0 pixels by 0 lines. The default value for *param1* and *param2* is 100. The default value for *param3* and *param4* is 50.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#cleanaper param1 param2 param3 param4
```

Parameters:

<i>param1</i>	Horizontal size (default = 100)	[1 ... 100]
<i>param2</i>	Vertical size (default = 100)	[1 ... 100]
<i>param3</i>	Horizontal position (default = 50)	[1 ... 100]
<i>param4</i>	Vertical position	[1 ... 100]

#colrange

The #colrange command sets the color range. The color range can be set to *limited* (16 - 235) or *full* (0 - 255) color range. The default setting is 0 (*limited*).

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#colrange param1
```

Parameters:

param1 Color range [0 ... 1]

Value	Description
0	Limited (16 - 235)
1	Full (0 - 255)

Notes:

Full (0 - 255) color range is only available for 4:4:4 RGB output link configuration.

#contrast

The `#contrast` command sets the contrast level for the specified color component. The default value for *param2* (for each color component) is 50.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#contrast param1 param2
```

Parameters:

param1 Color [0 ... 2]

Value	Description
0	Red
1	Green
2	Blue

param2 Contrast [0 ... 100]

#custom

The #custom command is used to change the output format. The default, maximum, and minimum values are dependent upon the current output format. Only one value can be modified at a time. If param1 = 8, then see the next page for a list of Refresh Rates.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
	✓	

Syntax:

```
#custom param1 param2
```

Parameters:

param1 Parameter [0 ... 8]

Value	Description	Value (min.)	Value (max.)
0	Horizontal Total	(H. Active) + (H. Sync Back Porch)	3500
1	Horizontal Active	1	(H. Total) - (H. Sync Back Porch)
2	H. Sync Back Porch	1	(H. Total) - (H. Active)
3	H. Sync Width	1	H. Sync Back Porch
4	Vertical Total	(V. Active) + (V. Sync Back Porch)	3500
5	Vertical Active	1	(V. Total) - (V. Sync Back Porch)*
6	V. Sync Back Porch	1	(V. Total) - (V. Active)
7	V. Sync Width	1	V. Sync Back Porch
8	Refresh Rate	0	13

param2 Parameter value [see table above]

(continued on next page)

***Notes:**

If the maximum value for Verical Sync Back Porch reaches 2048, then the maximum value is set to 2048.

Value	Frame Rate
0	23.98 Hz
1	24 Hz
2	25 Hz
3	29.97 Hz
4	30 Hz
5	48 Hz
6	50 Hz
7	59.94 Hz
8	60 Hz
9	65 Hz
10	70 Hz
11	75 Hz
12	80 Hz
13	85 Hz

#deepcolor

The `#deepcolor` command sets the deep color mode. If `param1` is set to 0 (*Auto*), then the deep color is set according to the EDID of the sink device. The default value is *Auto*.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
	✓	

Syntax:

```
#deepcolor param1
```

Parameters:

`param1` Color mode [0 ... 1]

Value	Description
0	Auto
1	Force 8 bits

#devtype

The `#devtype` command returns the currently connected device. If a 3G-SDI to HDMI device is used, then `#DEVTYPE_3GSDItoHDMI` is returned. If an HDMI to 3G-SDI device is used, then `#DEVTYPE_HDMITo3GSDI` is returned.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#devtype
```

Parameters:

None

#deversion

The #deversion command returns the current hardware and software version of the device.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#deversion
```

Parameters:

None

#edid

The #edid command programs the EDID PROM with the Default EDID or a specified EDID file in binary (.bin) format. The EDID can be 128 or 256 bytes in length.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓		

Syntax:

```
#edid param1
```

Parameters:

param1 EDID type [0 ... 2]

Value	Description
0	Default EDID
1	128-byte EDID file (.bin)
2	256-byte EDID file (.bin)

#edid

The #edid command programs the EDID PROM with the Default EDID or a specified EDID file in binary (.bin) format. The EDID can be 128 or 256 bytes in length.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
		✓

Syntax:

```
#edid param1 param2
```

Parameters:

param1 EDID type [0 ... 2]

Value	Description
0	Default EDID
1	128-byte EDID file (.bin)
2	256-byte EDID file (.bin)

param2 Address [0 ... 2]

Value	Description
0	EDID address 0
1	EDID address 1
2	EDID address 2

#enhance

The #enhance command improves the detail of the output signal. The default value is 0.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#enhance param1
```

Parameters:

<i>param1</i>	Level	[0 ... 100]
---------------	-------	-------------

#extract

The #extract command zooms-in on specified are of the input video signal. The default value for *param1* is 100. The default value for *param2* and *param3* is 50.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#bright param1 param2
```

Parameters:

<i>param1</i>	Extract size	[1 ... 100]
<i>param2</i>	Horizontal position	[1 ... 100]
<i>param3</i>	Vertical position	[1 ... 100]

#filmmode

The #filmmode command, when enabled, produces a progressive output signal from an interlaced input signal. This feature automatically detects repeated field sequences present in interlaced signals, such as 50 Hz or 60 Hz field sequences (no repeated fields), 60 Hz 3:2 pull-down, including broken or edited sequence detection, 60 Hz 2:2: pull-down, 50 Hz 2:2 pull-down, static frames, and multi-directional and inter-field motion.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#filmmode param1
```

Parameters:

param1 Value [0 ... 1]

Value	Description
0	Disable film mode
1	Enable film mode

#frame

The #frame command sets the frame rate of the output image.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
	✓	

Syntax:

```
#frame param1
```

Parameters:

param1 Frame rate [5 ... 8, 11, 13]

Value	Description
5	48 Hz
6	50 Hz
7	59.94 Hz
8	60 Hz
11	75 Hz
13	85 Hz

#gamma

The `#gamma` command sets the gamma correction mode of the output signal. See the [Gamma Look-up Table](#) for more information on using Gamma Look-up Tables.

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#gamma param1 param2
```

Parameters:

param1 Gamma setting [0 ... 3]

Value	Description
0	Default
1	sRGB
2	Custom
3	User table

param2 Mode [see below]

Notes:

If the *Custom* mode is used, then set the gamma coefficient value in the second parameter. If *User Table* is used, then set *param2* = 1 to use the table currently saved in the EEPROM. To write a new gamma LUT (Look-Up Table) file, you must use the updater with the following command:

```
updater %comport% gamma [filename].csv
```

Example: `updater com1 gamma mygamma.csv`

If the *Default* or *sRGB* mode is used, then set *param2* = 0.

#genoffset

The #genoffset command sets the genlock offset. The output value for both *param1* and *param2* is 0.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#genoffset param1 param2
```

Parameters:

<i>param1</i>	Output lines	[Current output V. resolution]
<i>param2</i>	Output pixels	[Current output H. resolution]

#input

The #input command sets the input format of the image. See [Supported Video and Graphic Formats](#) for a list of available input formats.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#input param1
```

Parameters:

<i>param1</i>	Value (input format)
---------------	----------------------

#insel

The #insel command sets the input channel selection. The default value is *Channel A*.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
	✓	✓

Syntax:

```
#insel param1
```

Parameters:

param1 Channel [1 ... 2]

Value	Description
1	Channel A
2	Channel B

#key

The #key command emulates the same control used on the IR remote control. Either the full word or the first letter of the word can be used.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#key param1
```

Parameters:

param1

String

Value	Description
menu	MENU button
up	↑ (Up arrow button)
down	↓ (Down arrow button)
left	← (Left arrow button)
right	→ (Right arrow button)
enter	ENTER button
source	SOURCE button
output	OUTPUT button

#language

The #language command sets the OSD to the specified language.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#language param1
```

Parameters:

param1 Language [0 ... 1]

Value	Description
0	English
1	French

#linkconf

The #language command sets the link configuration. This option is not available for all formats. The grayed-out values in the table at the bottom of the page are currently not supported when using HDMI / HDVI to SDI scalers.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#linkconf param1
```

Parameters (SDI to HDMI only):

param1 Link mode [0 ... 3]

Value	Description
0	Single Link (default)
1	Dual Link YCbCr (4:4:4)
2	Dual Link RGB (4:4:4)
3	Dual Link 1080p / 576p / 480p

Parameters (HDMI / HDVI to SDI only):

param1 Link mode [0, 3 ... 6]

Value	Description
0	Single Link YCbCr (default)
1	3G Single Link YCbCr (4:4:4)
2	3G Single Link RGB
3	3G (Level B) 1080p
4	Dual Link YCbCr (4:4:4)
5	Dual Link RGB (4:4:4)
6	Dual Link 1080p / 576p / 480p

(continued on next page)

Supported formats for dual link YCbCr and RGB	
Timing	Value
720p / 23.98 Hz	15
720p / 24 Hz	14
720p / 25 Hz	13
720p / 30 Hz	11
720p / 50 Hz	10
720p / 59.94 Hz	9
720p / 60 Hz	8
1035i / 59.94 Hz	17
1035i / 60 Hz	16
1080i / 50 Hz	24
1080i / 50M Hz	25
1080i / 59.94	23
1080i / 60 Hz	22
1080sf / 23.98 Hz	35
1080sf / 24 Hz	33
1080sf / 25 Hz	31
1080sf / 29.97 Hz	29
1080sf / 30 Hz	27
1080p / 23.98 Hz	34
1080p / 24 Hz	32
1080p / 25 Hz	30
1080p / 29.97 Hz	28
1080p / 30 Hz	26
2K-sf / 23.97 Hz	73
2K-sf / 24 Hz	74
2Kp / 23.98	75
2Kp / 24 Hz	76

(continued on next page)

Supported formats for dual link 1080p / 576p / 480p	
Timing	Value
1080p / 60 Hz	18
1080p / 59.94 Hz	19
1080p / 50 Hz	20
480p / 59.94 Hz	6
576p / 50 Hz	7

Supported formats for 3G Level B	
Timing	Value
1080p / 60 Hz	18
1080p / 59.94 Hz	19
1080p / 50 Hz	20

#motionthres

The #motionthres command sets the intra-frame motion detection threshold for the deinterlacer on the VXP processor. Video artifacts can be created when deinterlacing (creating interlaced fields from progressive fields). This function allows adjustment of the threshold used by the de-interlacer motion detection algorithm, removing / minimizing motion artifacts in the converted video. The default value is 4.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#motionthres param1
```

Parameters:

param1 Threshold value [0 ... 15]

#noisereduc

The #noisereduc command sets the noise-reduction value. The default value is 0.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#noisereduc param1
```

Parameters:

param1 Value [0 ... 100]

#noisethres

The #noisethres command sets the noise threshold value. The default value is 0.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#noisethres param1
```

Parameters:

<i>param1</i>	Value	[0 ... 100]
---------------	-------	-------------

#outconf

The #outconf command sets the output link configuration. The default value is 0.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
	✓	

Syntax:

```
#outconf param1
```

Parameters:

<i>param1</i>	Link mode	[0 ... 2]
---------------	-----------	-----------

Value	Description
0	RGB (4:4:4)
1	YCbCr (4:4:4)
2	YCbCr (4:2:2)

#output

The #output command sets the output format. See [Supported Video and Graphic Formats](#) for a list of available output formats.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#output param1
```

Parameters:

param1 Value

#pattern

The `#pattern` command selects the test pattern to be used on the output. When a test pattern is selected, the input (source) is temporarily masked on the output. The default value is 0 (no pattern).

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#pattern param1
```

Parameters:

param1 Pattern [0 ... 2]

Value	Description
0	No pattern
1	Color bar
2	Cross hatch

#rb

The `#rb` command resets the unit.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#rb
```

Parameters:

None

#remotchan

The `#remotchan` command sets the IR channel of the unit. The IR channel of unit must match the IR channel of the IR remote control unit. For more information, see the User Manual for the product that was purchased.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#remotchan param1
```

Parameters:

param1 IR channel [0 ... 3]

#restore

The `#restore` command resets the unit to factory default settings.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#restore
```

Parameters:

None

#save

The #save command saves the current settings to the PROM. All settings will be loaded when the unit is rebooted.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

#save

Parameters:

None

#sizepos

The #sizepos command sets the size and the position of the image. This option is not available when the Aspect Mode is set to Panoramic.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#sizepos param1 param2 param3 param4
```

Parameters:

<i>param1</i>	Horizontal size	[1 ... max]
<i>param2</i>	Vertical size	[1 ... max]
<i>param3</i>	Horizontal position	[0 ... max]
<i>param4</i>	Vertical position	[0 ... max]

Notes:

Use the following formulas to calculate the maximum values for each parameter:

<i>param1</i> :	Current horizontal resolution - current horizontal position
<i>param2</i> :	Current vertical resolution - current vertical position
<i>param3</i> :	Current horizontal resolution - current horizontal size
<i>param4</i> :	Current vertical resolution - current vertical size

#through

The `#through` command defines a sub-window that is always centered on the screen. The position of the sub-window is relative to the size and position of the original output signal.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#through param1 param2 param3 param4
```

Parameters:

<i>param1</i>	Horizontal size	[1 ... 100]
<i>param2</i>	Vertical size	[1 ... 100]
<i>param3</i>	Horizontal position	[0 ... 100]
<i>param4</i>	Vertical position	[0 ... 100]

#version

The `#version` command displays the current version of host firmware, Kernel, and the configuration version.

Compatibility:

HDMI to SDI	SDI to HDMI	HDVI to SDI
✓	✓	✓

Syntax:

```
#version
```

Parameters:

None

SERIAL COMMUNICATION PROTOCOL

02 Appendix

Gamma Look-up Table

The Gamma Look Up Table (LUT) can be programmed using the `GefenUpdater.exe` program from the Gefen software package which can be downloaded from the Gefen Web site.

- 1 Create the Gamma LUT.
- 2 Create a standard ASCII text file with the following line:

```
GefenUpdater GAMMA filename.csv
```

where `filename.csv` is the name of the Gamma LUT file.

- 3 Save the file as `UpdateGamma.bat`. Make sure that the `GefenUpdater.exe` file resides in the same directory (or is in the path) as the `UpdateGamma.bat` file.
- 4 Connect a USB cable from the computer to the scaler.
- 5 Once the scaler has powered up, run the `UpdateGamma.bat` file.

The LUT is a standard .CSV file. Each line contains Red, Green and Blue values separate by comma ",". A value must be between 0 and 1023. A file must contain 1024 lines:

```
1023,0,0          (Line 1)
1023,0,0
1023,0,0
1023,0,0
1023,0,0
1023,0,0
1023,0,0
...
...
1023,0,0          (Line 1024)
```


Supported Video and Graphic Formats

DVI to SDI / HDMI to SDI

Input		Output	
Format	Value	Format	Value
480i	0	480i	0
480p / 59.94 Hz	6	480p / 59.94 Hz	6
576i	1	576	1
576p / 50 Hz	7	576p	7
720p / 23.97 Hz	15	720p / 23.97	15
720p / 24 Hz	14	720p / 24	14
720p / 25	13	720p / 25	13
720p / 29.97	12	720p / 29.97	12
720p / 30	11	720p / 30	11
720p / 50	10	720p / 50	10
720p / 60	8	720p / 60	8
720p / 59.94	9	720p / 59.94	9
1035i / 59.94	64	1035i / 59.94	64
1035i / 50	63	1035i / 50	63
1080i / 50	24	1080i / 50	24
1080i / 50M	25	1080i / 50M	25
1080i / 59.94	23	1080i / 59.94	23
1080i / 60	22	1080i / 60	22
1080p / 23.98	34	1080p / 23.98	34
1080p / 24	32	1080p / 24	32
1080p / 25	30	1080p / 25	30
1080p / 29.97	28	1080p / 29.97	28
1080p / 30	26	1080p / 30	26
1080p / 50	20	1080p / 50	20
1080p / 50M	21	1080p / 50M	21
1080p / 59.94	19	1080p / 59.94	19
1080p / 60	18	1080p / 60	18
2K-p / 23.98	73	1080sf / 23.98	35
2K-p / 24 Hz	74	1080sf / 24 Hz	33

(continued on next page)

Input		Output	
Format	Value	Format	Value
640 x 350 / 85 Hz	36	1080sf / 25 Hz	31
640 x 400 / 85 Hz	37	1080sf / 29.97 Hz	29
640 x 480 / 60 Hz	38	1080sf / 30 Hz	27
640 x 480 / 75 Hz	39	2K-p / 23.98	75
640 x 480 / 85 Hz	40	2K-p / 24 Hz	76
800 x 600 / 60 Hz	41	2K-sf / 23.98 Hz	73
800 x 600 / 75 Hz	42	2K-sf / 24 Hz	74
800 x 600 / 85 Hz	43		
1024 x 768 / 60 Hz	44		
1024 x 768 / 75 Hz	45		
1024 x 768 / 85 Hz	46		
1280 x 854	65		
1152 x 864 / 75 Hz	47		
1280 x 768 / 60 Hz	48		
1280 x 960 / 60 Hz	49		
1280 x 960 / 85 Hz	50		
1280 x 1024 / 60 Hz	51		
1280 x 1024 / 75 Hz	52		
1280 x 1024 / 85 Hz	53		
1366 x 768 / 60 Hz	54		
1366 x 768 / 60 Hz	56		
1366 x 923 / 50 Hz	55		
1440 x 900 / 60 Hz	66		
1440 x 1080 / 60 Hz	67		
1600 x 1024	68		
1600 x 1200 / 60 Hz	57		
1600 x 1200 / 65 Hz	58		
1600 x 1200 / 70 Hz	59		
1600 x 1200 / 75 Hz	69		
1680 x 1050 / 60 Hz	70		
1920 x 1200 / 60 Hz	71		
2048 x 1080	72		

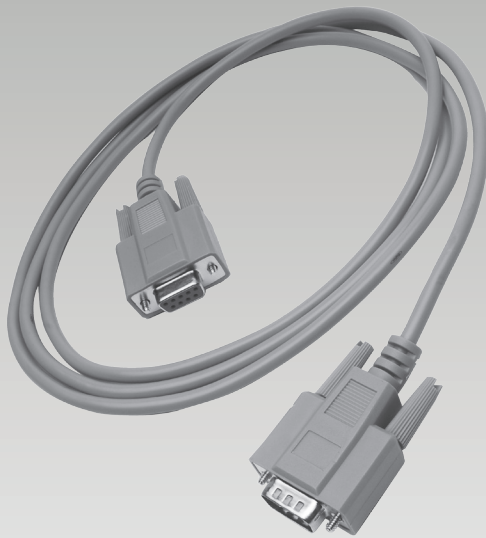
SDI to DVI / SDI to HDMI

Input		Output	
Format	Value	Format	Value
480i	0	480i	0
480p / 59.94 Hz	6	480p / 59.94 Hz	6
576i	1	576	1
576p / 50 Hz	7	576p	7
720p / 23.97 Hz	15	720p / 23.97	15
720p / 24 Hz	14	720p / 24	14
720p / 25	13	720p / 25	13
720p / 29.97	12	720p / 29.97	12
720p / 30	11	720p / 30	11
720p / 50	10	720p / 50	10
720p / 60	8	720p / 60	8
720p / 59.94	9	720p / 59.94	9
1035i / 59.94	64	1035i / 59.94	64
1035i / 50	63	1035i / 50	63
1080i / 50	24	1080i / 50	24
1080i / 50M	25	1080i / 50M	25
1080i / 59.94	23	1080i / 59.94	23
1080i / 60	22	1080i / 60	22
1080p / 23.98	34	1080p / 23.98	34
1080p / 24	32	1080p / 24	32
1080p / 25	30	1080p / 25	30
1080p / 29.97	28	1080p / 29.97	28
1080p / 30	26	1080p / 30	26
1080p / 50	20	1080p / 50	20
1080p / 50M	21	1080p / 50M	21
1080p / 59.94	19	1080p / 59.94	19
1080p / 60	18	1080p / 60	18
1080sf / 23.98	35	2K-p / 24	75
1080sf / 24	33	2K-p / 24	76
1080sf / 25	31	640 x 350 / 85	36

(continued on next page)

Supported Video and Graphic Formats

Input		Output	
Format	Value	Format	Value
1080sf / 29.97	29	640 x 400 / 85	37
1080sf / 30	27	640 x 480 / 60	38
2K-p / 23.98	73	640 x 480 / 75	39
2K-p / 24 Hz	74	640 x 480 / 85	40
2K-p / 24	75	800 x 600 / 60	41
2K-sf / 24	76	800 x 600 / 75	42
Auto Detect	255	800 x 600 / 85	43
		1024 x 768 / 60 Hz	44
		1024 x 768 / 75 Hz	45
		1024 x 768 / 85 Hz	46
		1280 x 854	65
		1152 x 864 / 75 Hz	47
		1280 x 768 / 60 Hz	48
		1280 x 960 / 60 Hz	49
		1280 x 960 / 85 Hz	50
		1280 x 1024 / 60 Hz	51
		1280 x 1024 / 75 Hz	52
		1280 x 1024 / 85 Hz	53
		1360 x 768 / 60 Hz	54
		1366 x 768 / 60 Hz	56
		1366 x 923 / 50 Hz	55
		1440 x 900 / 60 Hz	66
		1440 x 1080 / 60 Hz	67
		1600 x 1024	68
		1600 x 1200 / 60 Hz	57
		1600 x 1200 / 65 Hz	58
		1600 x 1200 / 70 Hz	59
		1600 x 1200 / 75 Hz	69
		1680 x 1050 / 60 Hz	70
		1920 x 1200 / 60 Hz	71
		2048 x 1080	72



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