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Rev 0 – Apr 2016

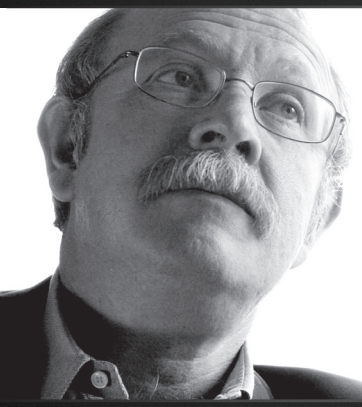
HDBT™ HDMI® HDCP 2.2

BUILT-IN COMPASS CONTROL®

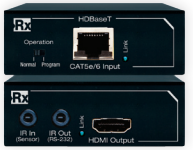
KD-Pro8x8CC
KD-Pro6x6CC

HDBaseT/HDMI via Single CAT5e/6 Matrix Switchers with built-in Compass Control®, support Ultra HD/4K & HDCP 2.2

Operating Instructions



Key Digital®, led by digital video pioneer Mike Tsinberg, develops and manufactures high quality, cutting-edge technology solutions for virtually all applications where high-end video and control are important. Key Digital® is at the forefront of the video industry for Home Theater Retailers, Custom Installers, System Integrators, Broadcasters, Manufacturers, and Consumers.



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Key digital®
The Experts in Digital Video Technology and Solutions™

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Always follow the instructions provided in this Operating Manual.
Please check the Key Digital Website for the most up-to-date Manual.

About KD-Pro6x6/8x8CC

Key Digital® KD-Pro6x6/8x8CC are HDBaseT®/HDMI via CAT5e/6 Matrix Switchers with built-in Compass Control® master controller, capable of switching 6/8 HDMI Inputs to 6/8 Independent Zones via Single CAT5e/6 with UHD/4K and HDCP 2.2 support.

Key Features

- **Simultaneously Active:** 6/8 HDBaseT (CAT5e/6 RJ45) and 6/8 HDMI outputs with fully automatic CAT5e/6 cable equalization. Supports up to 12/16 TVs (6/8 mirrored)
- **Compass Control® Inside:** Key Digital's Compass Control® control system is built-in, negating the need for an external master controller (supports up to 27/33 control ports)
- **Includes:** 3/4 KD-XSWRx Receiver Extenders
- **HDBaseT:** Utilized on CAT5e/6 RJ45 outputs
- **Signal Extension:**
  - Up to **250 feet** @ 1080p/60, 1080p/24, 1080i, 720p
  - Up to **150 feet** @ 4K/Ultra HD with KD-XSWRx extenders and approved Key Digital CAT5e/6 cabling. Compatible with third-party CAT5e/6 with lesser distance performance.
- **Ultra HD/4K:** 4096x2160/24 video resolution support for Ultra HD capable TVs and commercial applications such as Digital Movie Theaters, CAD, Post Production
- **HDR:** Supports High Dynamic Range technology with EDID copy from HDR supporting display
- **3D Ready:** Capability to pass 3D stereoscopic signal formats
- **Audio Return Channel:** Allows audio to be returned from a display to an HDMI output, for audio distribution (HDMI outputs only, using 3.5mm I/O port and 3.5mm to PCM cable)
- **EDID:** Internal library with 15 default EDID configurations for each input, in addition to native EDID data for any Output/Display
- **Full Buffer™ Technology**: Full buffering of HDCP and EDID, for the fastest possible switching and viewing of any source/input to any display/output, regardless of multiple output viewing relation
- **TMDS re-clocking**: Support for long HDBaseT/CAT5e/6 or HDMI connections and many layers of connectivity.
- **Voltage Trigger:** I/O ports may be used as a voltage trigger in Compass Control® system
- **Relay Support:** 3.5mm I/O ports may be used as relays to support contact closure/opening, when used with an external relay board
- **Lossless Compressed Digital Audio:** Dolby® TrueHD, Dolby® Digital Plus, Dolby® Atmos and DTS-HD Master Audio™
- **Deep Color Support:** Up to 12 bits/color
- **Control Routing:** Enables bi-directional IR/RS-232 control signal extension
- **Control:** Front panel push buttons and LEDs, TCP/IP, USB Port, Optical IR front/rear, Serial IR, RS-232 with full bi-directional operation
- **Control System Support:** Compatible with Compass Control®, AMX®, Control4®, Crestron®, KNX®, RTI®, Savant, URC®, Leviton®, etc.

Accessories

- 3/4 KD-XSWRx Receiver Extenders
- Two external power supplies. Main: +6V/11.6A (70W); POH for KD-XSWRX : +12V/6.6A (80W)
- IR Remote control, 6 ft. USB Data Cable

Rack Mounting:

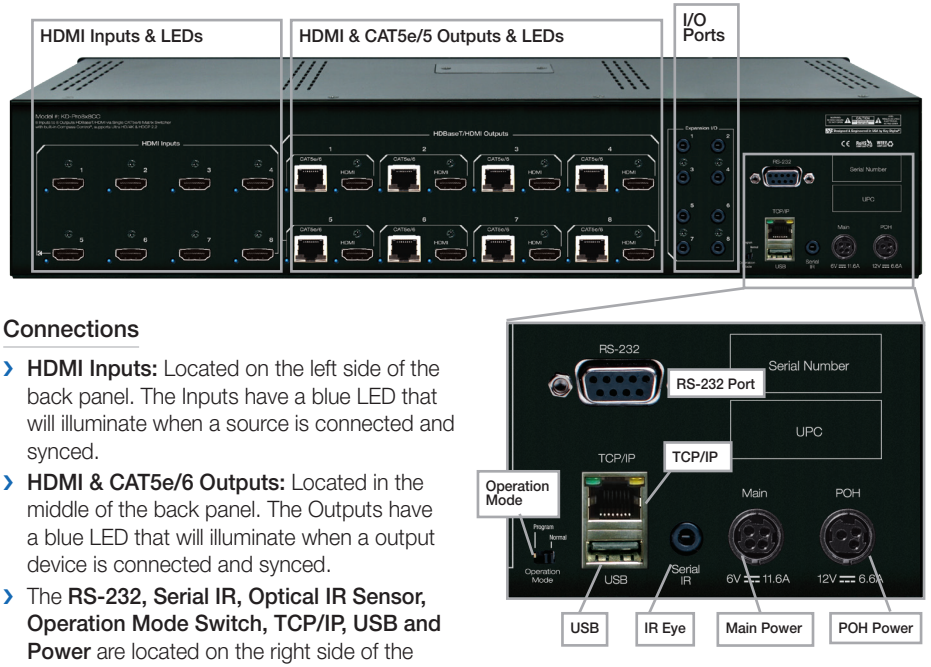
› Secure the rack ears to each side of the KD-Pro6x6/8x8CC with the supplied hardware, then, fasten the unit to the rack rails with the included machine screws.

About KD-XSWRx

› **Signal Extension:**
  » Up to 150 ft. @ 4K 24/25/30(4:4:4)/60(4:2:0) using KD-CAT6STP1X cabling
  » Up to 125 ft. @ 4K 24/25/30(4:4:4)/60(4:2:0) using third-party CAT5e/6 UTP/STP cabling
  » Up to 250 ft. @ 1080p / 1920x1200 using KD-CAT6STP1X cabling
  » Up to 230 ft. @ 1080p / 1920x1200 using third-party CAT5e/6 UTP/STP cabling
› **4K/Ultra HD Resolution:** Support for 4096x2160 or 3840x2160 24/25/30Hz at 4:4:4/8 Bit or 60Hz at 4:2:0/8 Bit
› **HDMI® and HDCP Licensing:** Fully licensed and compatible with HDCP 2.2 and HDMI latest technology such as 4K/UHD 4:2:0/8bit at 60f/s
› **EDID Control:** Internal library features 15 default EDID configurations and native EDID data from Output/Display devices connected via Rx
› **Full Buffer System™:** Manages TMDS re-clocking / signal re-generation, HDCP authentication with source & display, EDID Control handshake, and Hot Plug control
› **IR Sensor:** Sensor powering via +5V on Rx unit's IR In port collects line-of-sight IR from remote(s) without external IR connecting block
› **Up/Down IR:** Two channels of IR enable control to/from connected devices
› **RS-232:** Bi-Directional control to/from on 3.5mm connector

Connections, Buttons and LEDs

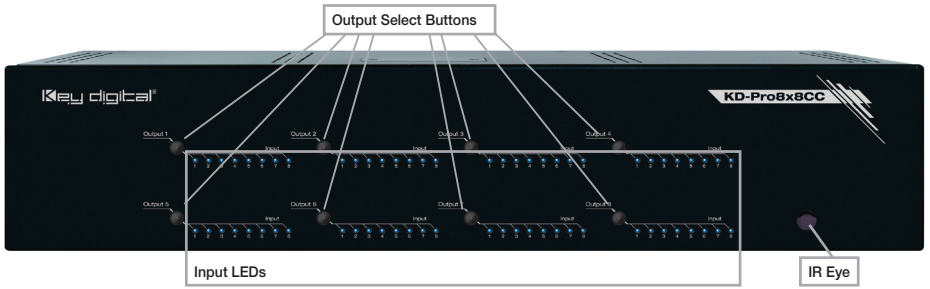
Rear Panel Connections:



Connections

› **HDMI Inputs:** Located on the left side of the back panel. The Inputs have a blue LED that will illuminate when a source is connected and synced.
› **HDMI & CAT5e/6 Outputs:** Located in the middle of the back panel. The Outputs have a blue LED that will illuminate when a output device is connected and synced.
› The **RS-232, Serial IR, Optical IR Sensor, Operation Mode Switch, TCP/IP, USB and Power** are located on the right side of the back panel.
  » **Two power connections are necessary. Main Unit power and POH power.**
› **I/O Ports:** Located to the right of the Outputs
  » Used for control extension/routing and ARC.
› The **Operation Mode** switch is used to update the unit's firmware, which is done via RS-232, USB or TCP/IP. The firmware version as well as all RS-232 commands is available through the RS-232 command 'H'. A detailed list of RS-232 commands are available later in this guide.
› If newer firmware is made available, complete updating instructions will be included with it. Check the Key Digital website for any firmware updates.
  » www.keydigital.com/items.asp?ItemCode=KDPro8x8CC&Company=KEY

Front Panel Buttons and LEDs

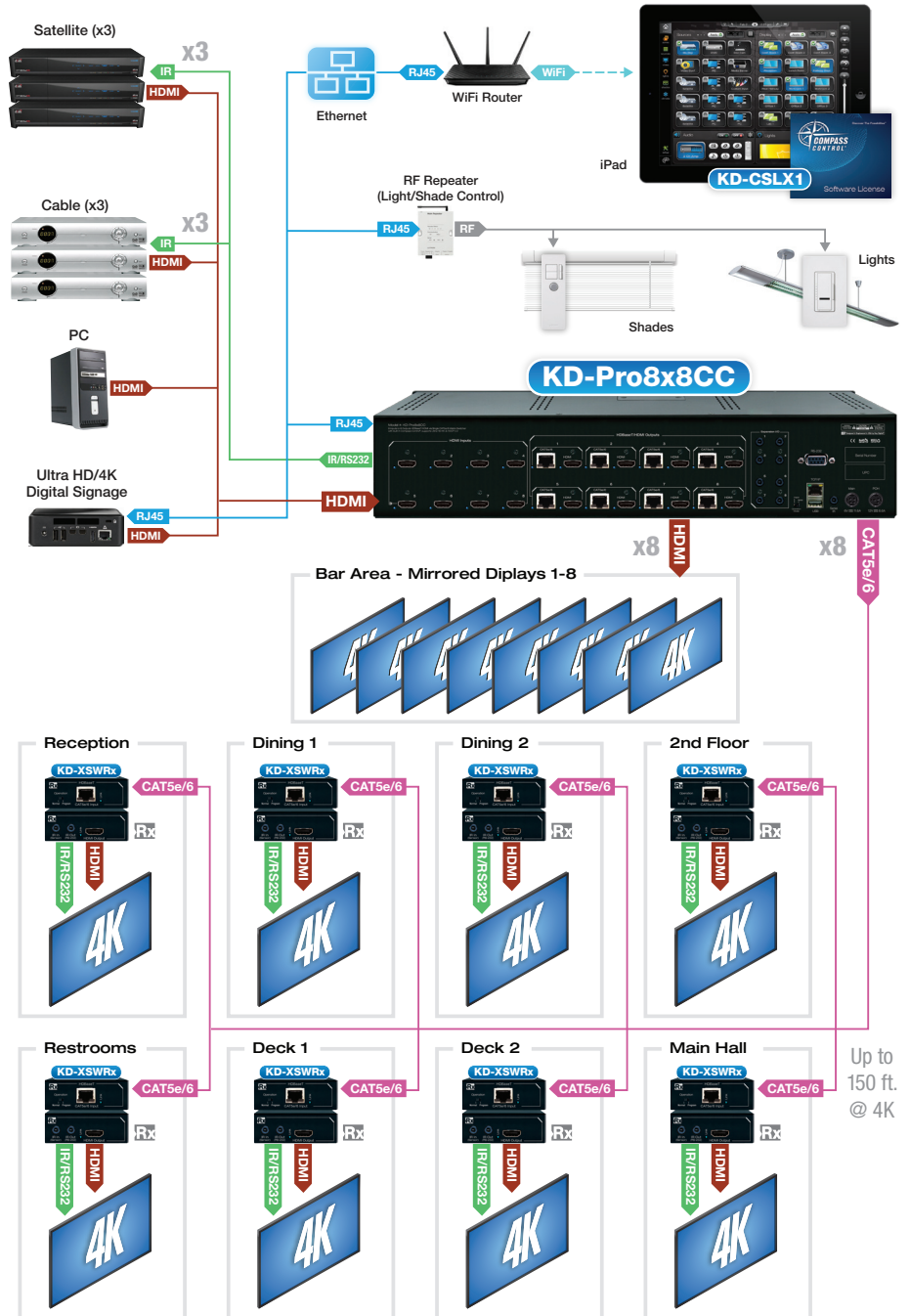


- There are 6/8 Output buttons along the front panel.
- Pressing an output button will select the next HDMI input.
- A blue LED will indicate which Input has been selected for each Output.
- There is also an Optical IR window located on the right side of the front panel for IR remote control signals.
- Video Output MUTE is indicated by the outermost LEDs remaining illuminated, while the inner LEDs are not.
- Video Output Off is indicated when the innermost LEDs are illuminated, while the outermost are not.
- **Reset** is optional by holding the input select buttons “1” and “4” for 10 seconds.
  - Successful reset indicated by reboot.
  - Reboot will flash all input lights on the front panel in a back and forth motion until only one input is selected per output.

KD-XSWRx LED Indicator Lights

- Power:
  - **Color:** Green
  - Solid illumination during power ON state, as provided by healthy connection with power supply
  - Steady blink if power is not adequate and/or if there is a connectivity problem with KD-Pro6x6/8x8CC unit
- HDMI Active (HDMI Input/Output):
  - **Color:** Blue
  - Solid illumination from active Hot Plug Detection voltage with connected display/output device
  - If Hot Plug Detection is forced to input device from Tx unit, the HDMI Active light will illuminate solid regardless of HDMI signal from connected device.
- CAT5e/6 Input/Output:
  - **Color:** Blue
  - Solid illumination from active link with KD-Pro6x6/8x8CC unit

Application Example



Quick Setup Guide

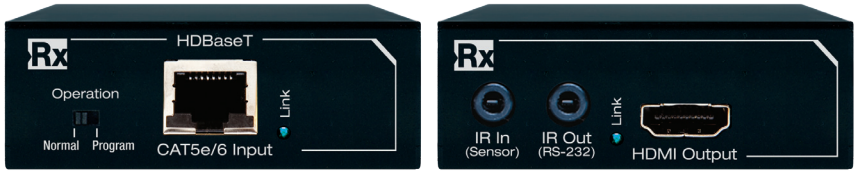
1. Begin with the KD-Pro6x6/8x8CC and all input/output devices turned off and power cables removed.
2. Connect HDMI sources to the appropriate input ports on the KD-Pro6x6/8x8CC.
3. Connect CAT5e/6 outputs to the KD-XSWRx extenders via CAT5e/6 cables, then connect the extenders to the output devices (display, projector, AV Receiver, etc).
4. Connect HDMI outputs to the appropriate output device (outputs will mirror CAT5e/6).
5. Connect both power supplies (one for the Matrix and one for the POH Extenders) to the KD-Pro6x6/8x8CC and all other input and output devices and turn them on.
6. Operate the KD-Pro6x6/8x8CC switcher via front panel buttons, IR Remote, Serial IR or RS-232 control.
7. If TCP/IP control is desired, load latest firmware and set the IP address using Device Manager software. See firmware upgrade section.

Operation:

After performing the setup above, the unit is ready for operation.

There are several options for controlling the unit. Commands can be issued via IR remote control, RS-232, TCP/IP or by using the front panel buttons. Note that the advanced commands are available only via TCP/IP and RS-232 protocol.

KD-XSWRx Baluns



If you will be utilizing the KD-XSWRx extender, please follow this procedure.

- One CAT5e/6 UTP or STP cable needs to be used.
- Use the shortest possible HDMI cable when connecting the KD-XSWRx to the Display. Key Digital recommends cables 6 ft. or shorter for optimum performance.
- Ensure the CAT5e/6 cable runs directly from the switcher to the KD-XSWRx.
- Do not use patch panels, punch downs, keystones, couplers, wall plates, etc..
  - Key Digital recommends the use of CAT5e/6 STP cable with shielded RJ45 connectors for optimum performance and distances from your extender.

Extending and Routing Control Signals

- The KD-Pro6x6/8x8CC feature powerful and useful control routing features. The switchers have the ability to matrix control signals just like it can HDMI signals.
- KD-Pro6x6/8x8CC can consolidate incoming IR/RS-232 signals to control any display/output connected via CAT5/6 or via HDMI (control signal extension via HDMI only available with Key Digital **KD-IQJUMP12FM**, female to male HDMI jumper cable for insertion or extraction of IR or Bi-Directional RS-232).

- KD-Pro6x6/8x8CC can consolidate incoming IR/RS-232 signals to control any source/input connected via HDMI, with Key Digital's KD-IQJUMP12FM jumper cable.
- IR and RS-232 control signals are bi-directional, and may flow from the matrix to the zone or from the zone to the matrix.
- The default signal path for control signals is to route IR control signals from Expansion I/O Port 1 to RJ45 output 1…Expansion I/O Port 8 to RJ45 Output 8 (the path and control signal type can be manipulated by using the desired RS-232 command).
- When connecting the IR Emitter to the device you wish to control, make sure to find the IR receiver area on the device.

Control Signal Extension from External I/O Ports:

The default setting for control signal extension is to route IR signals from Expansion I/O Port 1 to RJ45 output 1…Expansion I/O Port 8 to RJ45 Output 8 (the path and control signal type can be manipulated by using the desired RS-232 command). When routing control signals to/from an HDMI input/output, Key Digital's KD-IQJUMP12FM jumper cable must be used.

- Point-to-Point control routing is established by using commands containing "IRR" or "RSS".
- Point-to-Many control routing is established by using commands containing "IR" or "RS".

Extension I/O and Digital Audio Output (ARC) Port Configuration

Supports IR or RS-232 routing or ARC output. See chart below for 3.5mm jack configuration:

	Tip	Ring
IR	TX or RX	None
RS232	TxD	RxD
ARC	NONE	ARC OUT

Note: If ARC is enabled, IR and RS-232 signal routing will be disabled.

Point-to-Point IR Control Routing:

- To configure the path of IR control signals from an External I/O Port to an RJ45 output, use the command "**SPOC xx IRR 1 S yy**". xx=IR destination, yy=IR source
- To configure the path of IR control signals from an External I/O Port to an HDMI output, use the command "**SPOH xx IRR 1 S yy**". xx=IR destination, yy=IR source
- To configure the path of IR control signals from an External I/O Port to an HDMI input, use the command "**SPI xx IRR 1 S yy**". xx=IR destination, yy=IR source

Point-to-Point RS-232 Control Routing:

- To configure the path of RS-232 control signals from an External I/O Port to an RJ45 output, use the command "**SPOC xx RSS 1 S yy**". xx=RS-232 destination, yy=RS-232 source
- To configure the path of RS-232 control signals from an External I/O Port to an HDMI output, use the command "**SPOH xx RSS 1 S yy**". xx= RS-232 destination, yy= RS-232 source
- To configure the path of RS-232 control signals from an External I/O Port to an HDMI input, use the command "**SPI xx RSS 1 S yy**". xx= RS-232 destination, yy= RS-232 source

Point-to-Many IR Control Routing

- To configure the path of IR control signals from an External I/O Port to multiple RJ45 outputs, use the command "**SPOC xx IR 1 S yy**". xx=IR destination, yy=IR source.
  - Then repeat the "**SPOC xx IR 1 S yy**" command for each additional destination.
- To configure the path of IR control signals from an External I/O Port to multiple HDMI outputs, use the command "**SPOH xx IR 1 S yy**". xx=IR destination, yy=IR source.
  - Then repeat the "**SPOH xx IR 1 S yy**" command for each additional destination.
- To configure the path of IR control signals from an External I/O Port to multiple HDMI inputs, use the command "**SPI xx IR 1 S yy**". xx=IR destination, yy=IR source.
  - Then repeat the "**SPI xx IR 1 S yy**" command for each additional destination.

Point-to-Many RS-232 Control Routing

- To configure the path of RS-232 control signals from an External I/O Port to multiple RJ45 outputs, use the command "**SPOC xx RS 1 S yy**". xx=RS-232 destination, yy=RS-232 source. .
  - Then repeat the "**SPOC xx RS 1 S yy**" command for each additional destination.
- To configure the path of RS-232 control signals from an External I/O Port to multiple HDMI outputs, use the command "**SPOH xx RS 1 S yy**". xx= RS-232 destination, yy= RS-232 source.
  - Then repeat the "**SPOH xx RS 1 S yy**" command for each additional destination.
- To configure the path of RS-232 control signals from an External I/O Port to multiple HDMI inputs, use the command "**SPI xx RS 1 S yy**". xx= RS-232 destination, yy= RS-232 source.
  - Then repeat the "**SPI xx RS 1 S yy**" command for each additional destination.

Settings

The KD-Pro6x6/8x8CC features a library of 15 internal EDID (Extended Display Identification Data) files, in addition to allowing any Input source to receive a copy of the EDID information of any display connected via HDMI or CAT cable. Changing EDID settings may be necessary when connecting to or from an AV Receiver, or for passing 3D content.

The default EDID setting is "07" – 4Kx2K@30/3D 2ch Digital Audio.

The possible EDID settings can range from '01' to '15'. ('07' is the default).

00	Copy EDID from HDMI Output 1
01	1080i@60, 2Ch PCM Audio
02	1080i@60, Dolby/DTS 5.1 PCM Audio
03	1080i@60, Dolby/DTS HD PCM Audio
04	1080p@60, 2Ch PCM Audio
05	1080p@60, Dolby/DTS 5.1 PCM Audio
06	1080p@60, Dolby/DTS HD PCM Audio
07	4Kx2K@30/3D, 2Ch PCM Audio
08	4Kx2K@30/3D, Dolby/DTS 5.1 PCM Audio
09	4Kx2K@30/3D, Dolby/DTS HD PCM Audio
10	4Kx2K@60, 2Ch PCM Audio
11	4Kx2K@60/3D, Dolby/DTS 5.1 PCM Audio
12	4Kx2K@603D, Dolby/DTS HD PCM Audio
13	1280x720p@60 DVI, No Audio
14	1920x1080p@60 DVI, No Audio
15	3840x2160p@60 DVI, No Audio

When selecting an EDID from the library (settings 01-15), your source device will see the KD-Pro6x6/8x8CC EDID choice instead of the display's EDID, overriding the display's own EDID information.

If your display is not capable of accepting the video resolution or audio type selected, you may not see a picture or hear sound. In this case please choose another more compatible EDID, or use the default EDID.

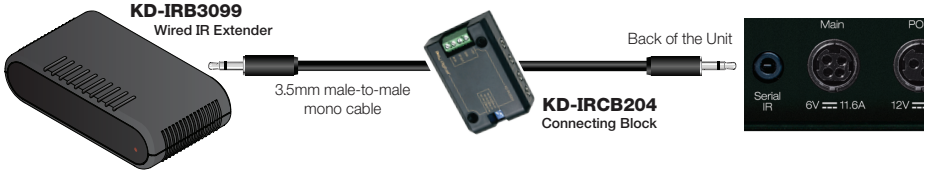
Remote Control

You may switch inputs on the KD-Pro6x6/8x8CC by using the supplied IR Remote control. You can also perform basic EDID adjustments with the IR remote.

Please see the below chart for IR remote commands.

IR Extender:

You may want to use an IR extender, such as the KD-IRKIT300. Front and Rear panel sensors are available for use with the IR extender. A wired IR serial connector is also provided at the rear of the unit. Wired IR Extender KD-IRB3099 in the KD-IRKIT300 uses a 3.5mm male-to-male Mono cable. (Not Included with KD-Pro6x6/8x8CC)



IR/Remote Control Command List

Command	Description
Power On	Power On
Power Off	Power Off
Video Output Setup Commands XX = [01-08], YY = [01-08] or X = [1-8], Y = [1-8]	
R1 » XX » Video Mode » Mute	Set Output XX Video Mute ON
R1 » Video Mode » All Mute	Set All Outputs to Video Mute ON
R1 » XX » Video Mode » Restore	Set Output XX to Video Mute OFF
R1 » Video Mode » All Restore	Set All Output to Video Mute OFF
Video Mode » X » Y	Set Output X to Video Input Y
R1 » Video Mode » XX	Set All Output to Video Input YY
System Control Setup Commands	
EDID Setup, XX = [01-08], YY = [01-08], ZZ = [01-15]	
R2 » XX » Bass » YY	Copy EDID from Output YY to Input XX
R2 » Bass » YY	Copy EDID from Output YY to All Inputs
R2 » XX » Treble » ZZ	Copy EDID from Default EDID ZZ to Input XX
R2 » Treble » ZZ	Copy EDID from Default EDID ZZ to All InputS

The possible EDID settings can range from '01' to '15'. ('07' is the default).

00	Copy EDID from HDMI Output 1
01	1080i@60, 2Ch PCM Audio
02	1080i@60, Dolby/DTS 5.1 PCM Audio
03	1080i@60, Dolby/DTS HD PCM Audio
04	1080p@60, 2Ch PCM Audio
05	1080p@60, Dolby/DTS 5.1 PCM Audio
06	1080p@60, Dolby/DTS HD PCM Audio
07	4Kx2K@30/3D, 2Ch PCM Audio
08	4Kx2K@30/3D, Dolby/DTS 5.1 PCM Audio
09	4Kx2K@30/3D, Dolby/DTS HD PCM Audio
10	4Kx2K@60, 2Ch PCM Audio
11	4Kx2K@60/3D, Dolby/DTS 5.1 PCM Audio
12	4Kx2K@603D, Dolby/DTS HD PCM Audio
13	1280x720p@60 DVI, No Audio
14	1920x1080p@60 DVI, No Audio
15	3840x2160p@60 DVI, No Audio

System Addressing Mode	
R3 » R2 » R4 » X » X	Set System Address xx [xx=00-99]
R4 » X » X	Prefix Command for Addressing Mode xx [xx=00-99]

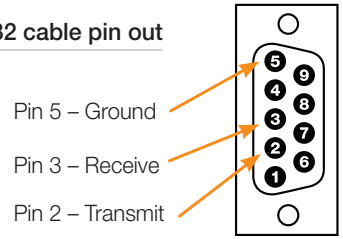
RS-232 & TCP/IP Commands

The KD-Pro6x6/8x8CC provide access to all functions when used with an RS-232 control system.

The connection protocol is as follows:

- Baud rate: 57,600
- Data Bits: 8
- Parity: None
- Stop Bits: 1
- Flow Control: None
- Carriage Return: Required
- Line Feed: Required

RS-232 cable pin out



NOTE: Commands are not case sensitive. Spaces are shown for clarity; commands should not have any spaces. Every command below requires a carriage return at the end of the string for the command to be executed. If a new command is received, a prompt should be sent back.

Most Common RS-232 Commands:

- **H:** **Help** - Help command. List of all RS-232 commands and Firmware version.
- **STA:** **Status Command** - Displays unit status for all internal variables such as Video Input, and EDID selected for each Input.
- **PF:** **Power Off** - Power Off command
- **PN:** **Power ON** - Power ON command

Commands:

Video Switch:

- **'SP O xx SI yy'** To switch the desired Video Input to the desired Output:
- xx = the Output number [01-06/08] –OR- [A] for 'All'
- yy = the Input number [01-06/08] –OR- [U, D] for 'Up',' Down' respectively.
- 'U/D' will increase/decrease the input number from its current position.
- This command will switch Inputs to your desired Output.
- *Example:* To switch Output 3 to Input 1, issue the command; **'SPO01SI03'**
- *Example:* To incrementally switch the Input Up from its present number for Output 1, issue the command: **'SPO01SIU'**
- *Example:* To switch All Outputs to Input 3, issue the command: **'SPOASI03'**

EDID Copy and Default EDID Library:

- **'SP C EDID xx H/C/D yy':** To Copy EDID to Input from HDMI Output, or from a Default Library
- xx = Input numbers [01-06/08] –OR- [A] for 'All' Inputs
- H = EDID Copy from HDMI Output
- C = EDID Copy from CAT Output
- D = Default EDID Library selection (see list below)
- yy = Output numbers [01-06/08] when 'H' variable is selected –OR- Default EDID library settings [01-15] when 'D' variable is selected.
- This command will either copy the EDID information from a selected Output to a specific Input (or All Inputs), or, write EDID information from an internal library of default EDID settings to a specific Input (or All Inputs).
- *Example:* To copy the EDID information from HDMI Output 2 to Input 4, issue the command: **'SPCEDID04H02'**
- *Example:* To write the EDID information from the built-in default EDID library using default EDID 1 to Input 2, issue the command; **'SPCEDID02D01'**

The possible EDID settings can range from '01' to '15'. ('07' is the default).

00	Copy EDID from HDMI Output 1
01	1080i@60, 2Ch PCM Audio
02	1080i@60, Dolby/DTS 5.1 PCM Audio
03	1080i@60, Dolby/DTS HD PCM Audio
04	1080p@60, 2Ch PCM Audio
05	1080p@60, Dolby/DTS 5.1 PCM Audio
06	1080p@60, Dolby/DTS HD PCM Audio
07	4Kx2K@30/3D, 2Ch PCM Audio
08	4Kx2K@30/3D, Dolby/DTS 5.1 PCM Audio
09	4Kx2K@30/3D, Dolby/DTS HD PCM Audio
10	4Kx2K@60, 2Ch PCM Audio
11	4Kx2K@60/3D, Dolby/DTS 5.1 PCM Audio
12	4Kx2K@603D, Dolby/DTS HD PCM Audio
13	1280x720p@60 DVI, No Audio
14	1920x1080p@60 DVI, No Audio
15	3840x2160p@60 DVI, No Audio

Front Panel Buttons Enabled/Disabled:

- **'SP C FB E/D'**
- Where 'E' will Enable the front panel buttons and 'D' will Disable the front panel buttons.
- *Example:* To Disable the front panel buttons, issue the command; **'SPCFBD'**

Reset to Factory Defaults:

- **'SP C DF xx'**
- xx = [01-15] and is the default EDID library loaded during a factory reset.
- This command will return the unit to its factory default settings including a user chosen default EDID setting. (See above for a list of possible default EDID library settings available)
- *Example:* To reset the unit to factory default with an EDID setting of **1080i@60, 2CH PCM Audio**, issue the command; **'SPCDF01'**
- *Example:* To reset the unit to factory default with an EDID setting of **4Kx2K@30/3D, 2Ch PCM Audio**, issue the command; **'SPCDF07'**

RS-232, USB, TCP/IP Command List:

No	Command	Description
1	Azz	Commands may require an address prefix if unit has been addressed (zz=[00-99])
2	H	Help
3	PHO	Help for Output Setup Commands
4	PHE	Help for EDID Setup Commands
5	PHC	Help for Control I/O Setup Commands
6	PHT	Help for Status Commands
7	PF	Power Off
8	PN	Power ON
System Control Setup Commands		
9	SPC A xx	Set System Address, xx = [00-99] (00=Single)
10	SPC CM x	Set System Command Mode, x = [0-9], Default 0, Reserved for master control feature with Compass Control
11	SPC UM x	Set System User Mode, x = [0-1], Default 1. If x is 0, return message is by micro-code, and if x is 1, return is by string message.
12	SPC FB E/D/T	Front Panel Buttons Enabled/Disabled/Toggle
13	SPC BIRS z	IR Source for HD8x8, z = [1-2] (1-Wired,2-Sensor)
14	SPCDF	Set Factory Default without changing EDID
15	SPCDF zz	Set Factory Default with updated EDID zz=[01-15] (DEFAULT EDID 07-12)
Network Setup, xxx = [000-255], zzzz = [0001-9999]		
16	SPC ETIPA xxx.xxx.xxx.xxx	Set Host (unit) IP Address to xxx.xxx.xxx.xxx
17	SPC ETIPM xxx.xxx.xxx.xxx	Net Mask to xxx.xxx.xxx.xxx
18	SPC ETIPR xxx.xxx.xxx.xxx	Set Router IP Address to xxx.xxx.xxx.xxx
19	SPC ETIPP zzzz	Set TCP/IP Port to zzzz
Video Output Setup Commands xx = [01-08,A], yy = [01-08] (A=All)		
20	SPOxx VM E/D/T	Set Video Mute for Output xx Video Mute Enabled/Disabled/Toggle
21	SPOxx ON/OFF	Set Output ON/OFF
22	SPOxx SI yy	Set Output xx to Video Input yy
23	SPO A PT	Set All Input/Output Video to Pass-Through (Ex, Output1 = Input1, Output2 = Input2…., Output8 = Input 8)
24	SPOxx HFM A/D/H	Set Output xx Video Format: Auto: Set output video format automatically based on connected display Forced DVI: Set video format to DVI H(Bypass): Set output video format according to selected input video format. DVI in => DVI out, HDMI in => HDMI out
Control I/O Setup Commands xx = [01-08,A], yy = [01-08] (A=All), z = [1-6] 1 = External I/O, 2 = HDMI Input, 3= HDMI Ouput, 4 = CAT5e/6 Output, 5 = Over IP		
25	SPI xx IR z S yy	Route IR from xx to HDMI input yy from z; xx=IR destination, yy=IR source, z=IR Origin Port Type
26	SPI xx IRR z S yy	Route IR from xx to HDMI input yy from z; xx=IR destination, yy=IR source, z=IR Origin Port Type
27	SPI xx RS z S yy	Route RS232 from xx to HDMI input yy from z; xx=RS232destination, yy=RS232 source, z=RS232 Origin Port Type
28	SPI xx RSS z S yy	Route RS232 from xx to HDMI input yy from z; xx=RS232destination, yy=RS232 source, z=RS232 Origin Port Type
29	SPOH xx IR z S yy	Route IR from xx to HDMI Output yy from z; xx=IR destination, yy=IR source, z=IR Origin Port Type
30	SPOH xx IRR z S yy	Route IR from xx to HDMI Output yy from z; xx=IR destination, yy=IR source, z=IR Origin Port Type
31	SPOH xx RS z S yy	Route RS232 from xx to HDMI Output yy from z; xx=RS232destination, yy=RS232 source, z=RS232 Origin Port Type
32	SPOH xx RSS z S yy	Route RS232 from xx to HDMI Output yy from z; xx=RS232destination, yy=RS232 source, z=RS232 Origin Port Type
33	SPOC xx IR z S yy	Route IR from xx to RJ45 Output yy from z; xx=IR destination, yy=IR source, z=IR Origin Port Type
34	SPOC xx IRR z S yy	Route IR from xx to RJ45 Output yy from z; xx=IR destination, yy=IR source, z=IR Origin Port Type
35	SPOC xx RS z S yy	Route RS232 from xx to RJ45 Output yy from z; xx=RS232destination, yy=RS232 source, z=RS232 Origin Port Type
36	SPOC xx RSS z S yy	Route RS232 from xx to RJ45 Output yy from z; xx=RS232destination, yy=RS232 source, z=RS232 Origin Port Type
37	SPE xx IR z S yy	Route IR from xx to I/O Port yy from z; xx=IR destination, yy=IR source, z=IR Origin Port Type
38	SPE xx IRR z S yy	Route IR from xx to I/O Port yy from z; xx=IR destination, yy=IR source, z=IR Origin Port Type

39	SPE xx RS z S yy	Route RS232 from xx to I/O Port yy from z; xx=RS232destination, yy=RS232 source, z=RS232 Origin Port Type
40	SPE xx RSS z S yy	Route RS232 from xx to I/O Port yy from z; xx=RS232destination, yy=RS232 source, z=RS232 Origin Port Type
41	SPC ARCxx ON/OFF	Set Output xx ARC ON/OFF
EDID Setup, xx = [01-08,A], yy = [01-08], zz = [01-15]		
42	SPC EDID xx H yy	Copy EDID from HDMI Output yy to Input xx
43	SPC EDID xx C yy	Copy EDID from RJ45 Output yy to Input xx
44	SPC EDID xx D zz	Copy EDID from Default EDID zz to Input xx

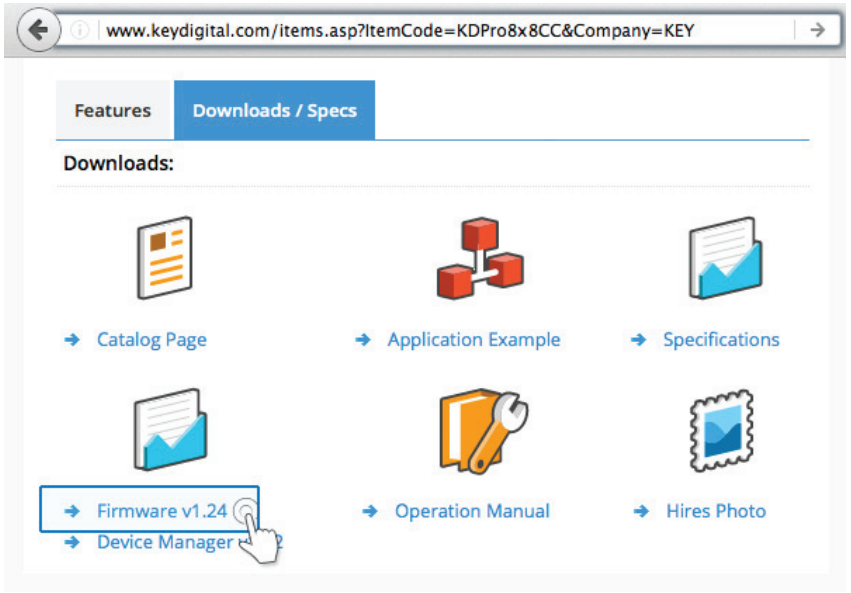
00	Copy EDID from HDMI Output 1
01	1080i@60, 2Ch PCM Audio
02	1080i@60, Dolby/DTS 5.1 PCM Audio
03	1080i@60, Dolby/DTS HD PCM Audio
04	1080p@60, 2Ch PCM Audio
05	1080p@60, Dolby/DTS 5.1 PCM Audio
06	1080p@60, Dolby/DTS HD PCM Audio
07	4Kx2K@30/3D, 2Ch PCM Audio
08	4Kx2K@30/3D, Dolby/DTS 5.1 PCM Audio
09	4Kx2K@30/3D, Dolby/DTS HD PCM Audio
10	4Kx2K@60, 2Ch PCM Audio
11	4Kx2K@60/3D, Dolby/DTS 5.1 PCM Audio
12	4Kx2K@603D, Dolby/DTS HD PCM Audio
13	1280x720p@60 DVI, No Audio
14	1920x1080p@60 DVI, No Audio
15	3840x2160p@60 DVI, No Audio

Status Commands: xx = [01-08, A=all]		
45	STA	Show Global System Status
46	STPC	Show Control System Setup Status
47	STPExx	Show Expansion I/O xx Status
48	STPIxx	Show Video Input xx Status
49	STPOxx	Show Video Output xx Status
50	STMA	Show Global System Status by Micro-Code
51	STMC	Show Control System Setup Status by Micro-Code
52	STMExx	Show Expansion I/O xx Status by Micro-Code
53	STMIxx	Show Video Input xx Status by Micro-Code
54	STMOxx	Show Video Output xx Status by Micro-Code

Firmware Upgrade

Download the latest firmware to the KD-Pro6x6/8x8CC unit

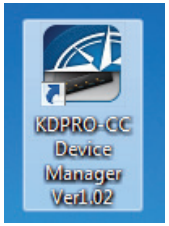
› Download the KD-ProCC Device Manager from the product page:
  » The KD-ProCC Device Manager software supports both KD-Pro6x6CC & KD-Pro8x8CC matrix models)
  » www.keydigital.com/items.asp?ItemCode=KDPro8x8CC&Company=KEY
  » Select Downloads/Specs tab and select Firmware Upgrade download:



› Connect the KD-Pro6x6/8x8CC unit to your PC computer with the included USB A cable
  » Allow the USB drivers to load
  » If the USB driver fails to load, you can manually load the USB driver from its default directory:
  COMPUTER ➔ PROGRAM FILES (X86) ➔ KDPRO-CC Device Manager ➔ DRIVERS

›

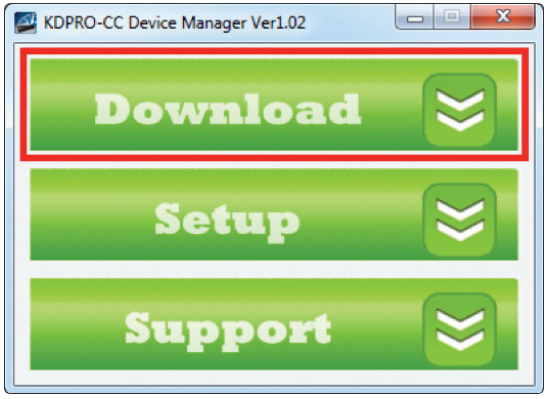
› Open the **KDPRO-CC Device Manager** software on your desktop:



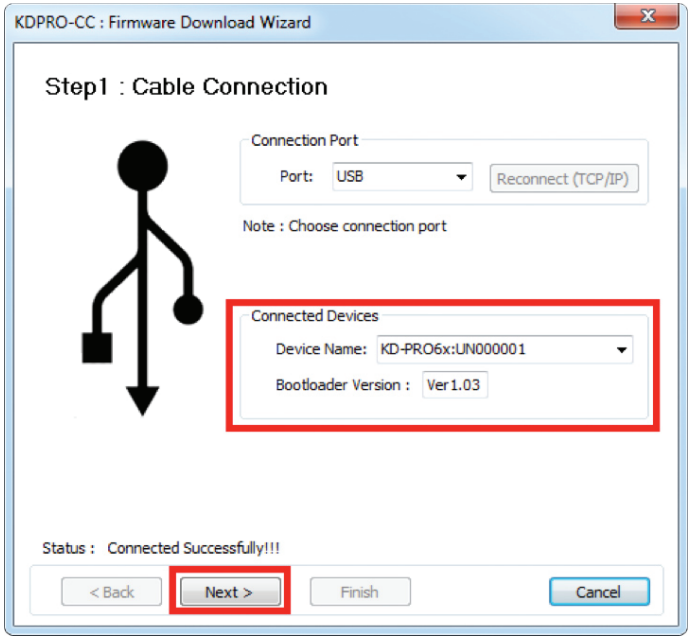
Firmware Upgrade Procedure

› Connect the KD-Pro6x6/8x8CC unit to your PC via USB

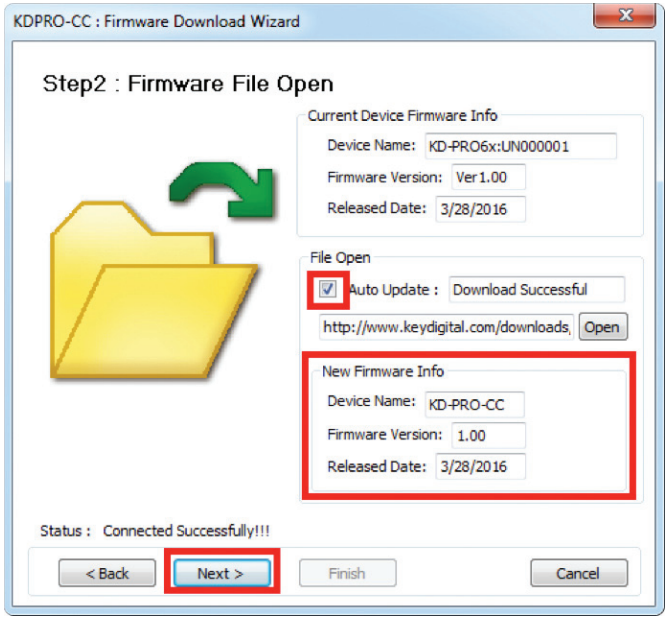
› Open the Device Manager software and select **Download** on the Home Page:



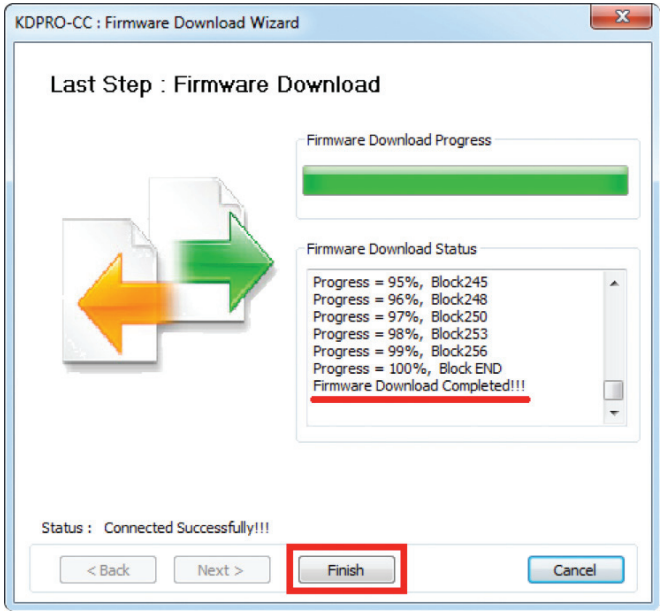
› Wait for confirmation that the PC has established a connection with the KD-Pro6x6/8x8CC unit



› Select Auto Update selection box, and then begin the firmware update by selecting Next



› Observe status of the firmware update through completion



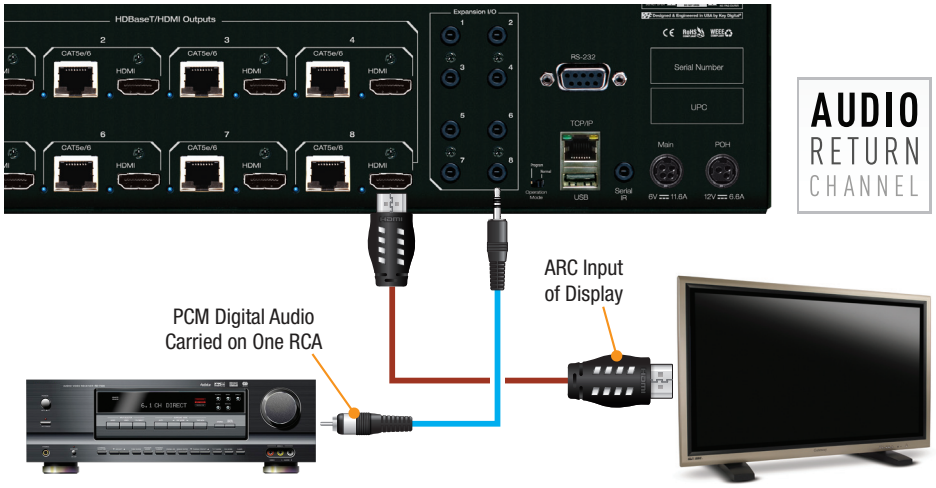
› Select **Finish** to close

Audio Return Channel

Audio Return Channel features rely on CEC to work effectively. CEC is enabled through the KD-Pro6x6/8x8CC matrix switcher.

ARC is supported by the HDMI Output ports only, NOT on the HDBaseT Output ports. The audio return channel is not output via HDMI, but instead it is sent to the corresponding 3.5mm expansion port of the output to which the ARC audio is connected to. A common 3.5mm stereo to L/R RCA Y-cable may be used to connect to your AVR, however, the audio output signal will be PCM digital and will only be carried on one of the RCA leads.

Example: An ARC compatible display is connected to output 8. The audio will be sent to 3.5mm expansion port number 8.



Enable or disable ARC by sending the RS-232 command.

› SPC ARCxx ON/OFF I Set Output xx ARC ON/OFF
  » xx = Output

Extension I/O and Digital Audio Output (ARC) Port Configuration

Supports IR or RS-232 routing or ARC output. See chart below for 3.5mm jack configuration:

	Tip	Ring
IR	TX or RX	None
RS232	TxD	RxD
ARC	NONE	ARC OUT

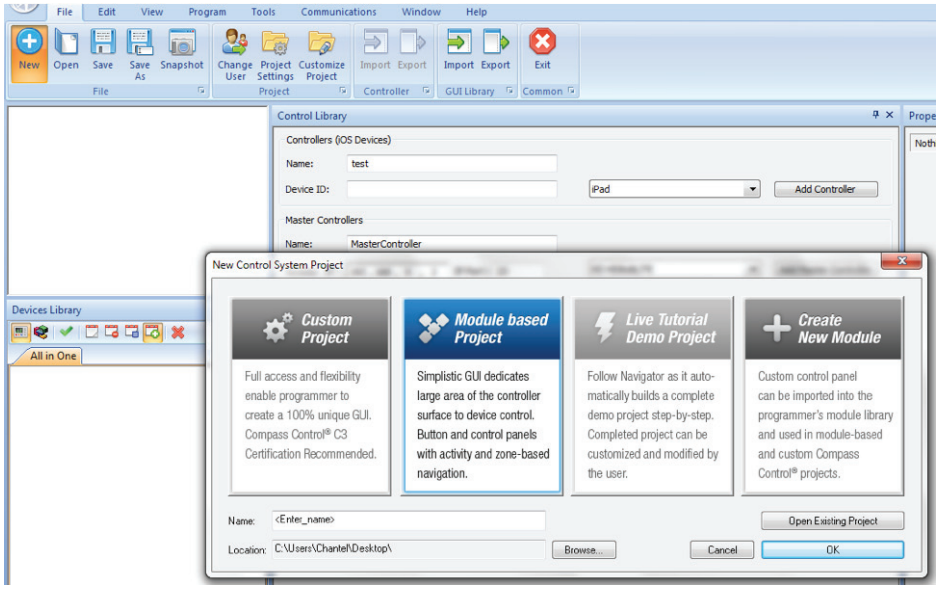
Note: If ARC is enabled, IR and RS-232 signal routing will be disabled.

ARC Requirements:

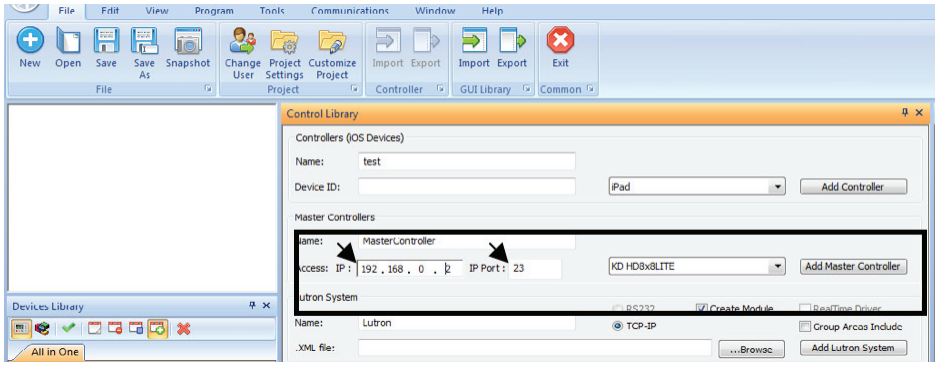
» Display that supports ARC
» AV Receiver or Audio Amplifier with Coax (Digital Audio Input)
» 3.5mm to RCA cable

Using the KD-Pro6x6/8x8CC in a Compass Control project

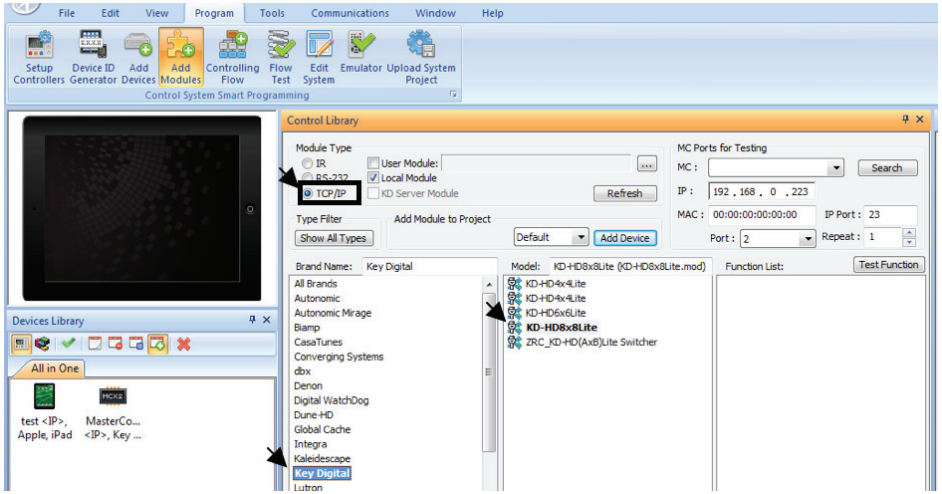
› **Create a new Compass Control project** (Note: The below images depict KD-HD8x8Lite. Simply select the desired KD-Pro6x6/8x8CC modules in the below steps as they become available in Compass Navigator software.):
  » a. Select Custom or Modular.
  » b. Name the project.
  » c. Save the file in a different folder; rather than the default as displayed below.



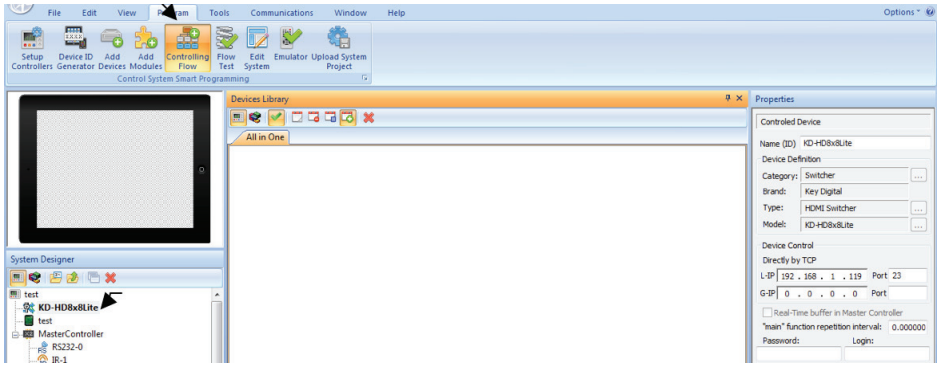
› Add the KD-ProCC unit as a Master controller
  » Assign the appropriate IP address and IP Port (corresponding with section)



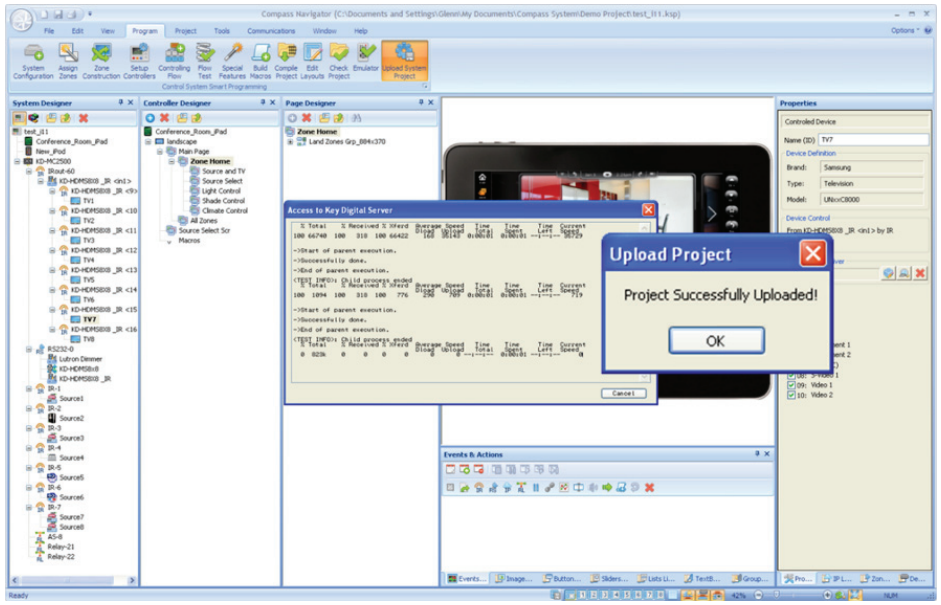
› Then add the KD-ProCC module/library in order to control the HDMI matrix switching functions
  » Choose TCP/IP Module Type
  » Then, select the Key Digital brand
  » Choose your respective KD-ProCC model (KD-Pro6x6CC or KD-Pro8x8CC) and press **Add Device**



› Add the module/library to the Controlling Flow tree as an IP device
› After selecting the KD-ProCC unit, apply the corresponding IP address and port number of the unit on the right hand side of the screen in the L-IP (local IP) cell



› Complete your Compass Control programming and upload the project.



› Download the new project from the Compass Control cloud to the iOS controller(s)

- Ensure your iOS controller(s) are on the same network as the KD-ProCC unit and press **Start** in the Compass Control app
- Allow a few moments for the iOS Controller(s) to synchronize information with the Master controller.
  - If there are additional iOS controllers, before pressing any control buttons in the Compass Control app, press Start on the remaining iOS controllers and let each synchronize with the MC before advancing to the next
  - After the final iOS controller has synchronized, you may now use the Compass Control app to control your integration system.

Specifications

Technical:

- Input (Each): 1 HDMI Connector, Type A, 19 Pin Female
- Output (Each): 1 HDMI Connector, Type A, 19 Pin Female; Single CAT5e/6 on RJ45 connectors
- Bandwidth: TMDS bandwidth 3.4 Gb/s
- Link: Single Link
- DDC Signal (Data): Input DDC Signal - 5 Volts p-p (TTL)
- HDMI Video/Audio Signal: Input Video Signal - 1.2 Volts p-p
- DDC Communication: EDID and HDCP Bi-directional Transparency from Display to Source
- Wired IR: modulated IR signal input, 0-5V TTL or -10to +10V.
- Power: KD-Pro6x6/8x8CC: +6V/11.6A (70W); KD-XSWRx:+12V/6.6A (80W)

General:

- Regulation: CE, RoHS, WEEE
- Rack Mount: 2U, Full Rack Width (rack ears included)
- Enclosure: Black Metal
- Product Dimensions: 17.3” x 6.6” x 3.46”
- Shipping Dimensions: 18.9” x 10.7” x 8.6”
- Product Weight: 6.6 lb.
- Shipping Weight:
  - KD-Pro8x8CC: 16.5 lb.
  - KD-Pro6x6CC: 14.3 lb.

Important Product Warnings:

1. Connect all cables before providing power to the unit.
2. Test for proper operation before securing unit behind walls or in hard to access spaces.
3. If installing the unit into wall or mounting bracket into sheet-rock, provide proper screw support with bolts or sheet-rock anchors.

Safety Instructions:

Please be sure to follow these instructions for safe operation of your unit.

1. Read and follow all instructions.
2. Heed all warnings.
3. Do not use this device near water.
4. Clean only with dry cloth.
5. Install in accordance with the manufacturer's instructions.
6. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
7. Only use attachments/accessories specified by the manufacturer.
8. Refer all servicing to qualified service personnel. Servicing is required when the device has been damaged in any way including:
   - Damage to the power supply or power plug
   - Exposure to rain or moisture

Power Supply Use:

You MUST use the Power Supply provided with your unit or you VOID the Key Digital® Warranty and risk damage to your unit and associated equipment.

How to Contact Key Digital®

System Design Group (SDG)

For system design questions please contact us at:

- Phone: 914-667-9700
- E-mail: sdg@keydigital.com

Customer Support

For customer support questions please contact us at:

- Phone: 914-667-9700
- E-mail: customersupport@keydigital.com

Technical Support

For technical questions about using Key Digital® products, please contact us at:

- Phone: 914-667-9700
- E-mail: tech@keydigital.com

Repairs and Warranty Service

Should your product require warranty service or repair, please obtain a Key Digital® Return Material Authorization (RMA) number by contacting us at:

- Phone: 914-667-9700
- E-mail: rma@keydigital.com

Feedback

Please email any comments/questions about the manual to:

- E-mail: customersupport@keydigital.com

LIMITED
10 YEAR
WARRANTY

Warranty Information

All Key Digital® products are built to high manufacturing standards and should provide years of trouble-free operation. They are backed by a Key Digital Limited 10 Year Product Warranty Policy.

http://www.keydigital.com/warranty.htm