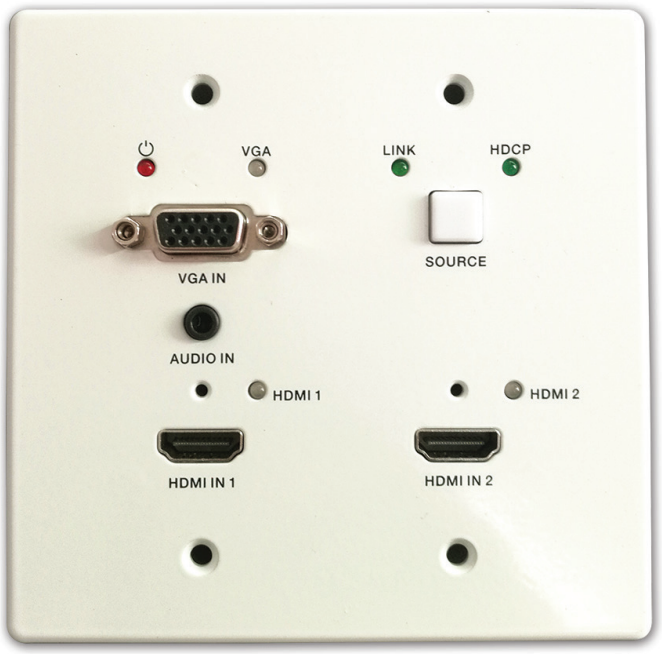
USER MANUAL



Front View

Back View

Covid Part Numbers

Black Anodized: S3MBW-200-BA
Clear Anodized: S3MBW-200-CA
Antique White: S3MBW-200-AW
Black PC: S3MBW-200-BL
White PC: S3MBW-200-WH

S3MBW-200 - HDMI Multi-format Extender Over CAT5e/CAT6

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USER MANUAL

Table of Contents

Thank you for purchasing this product

For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

S3MBW-200 - HDMI Multi-format Extender Over CAT5e/CAT6

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Introduction

This HDBaseT transmitter switcher can extend two HDMI and one VGA signal inputs over a single CAT5e/6/6A cable. This product offers RS-232 and Bi-directional PoC making any professional A/V set-up more efficient and easy to use. Uncompressed video and audio can be transmitted up to 230ft/70m. This design of HDBaseT™ technology allows for full usage of HDMI and controls over CAT5e/6/6A cable. This unit can be paired with any Covid HDBase-T receiver product.

Features

- HDMI 1.4b, HDCP 2.2 and 1.4
- Video resolutions up to 4K2K@30Hz
- Audio up to 7.1 channels of High Definition audio pass through (LPCM, Dolby TrueHD, and DTS-HD Master Audio).
- POC (Power Over Cable) functionality is supported, either TX or RX is powered by a 24V@1A power supply. POC Power consumption is less than 10W.
- Support multi-VESA Standard VGA input formats.
- Supports auto, manual, hybrid and priority switching modes
- Multiple plate colors available

Package Contents

- HDMI 2-gang Transmitter - 1PC
- 24V1A DC Power Supply - 1PC
- 3pin Screw Terminal Plug - 1PCS
- Operation Manual - 1PC

S3MBW-200 - HDMI Multi-format Extender Over CAT5e/CAT6

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Technical Specifications

Technical	
HDMI Compliance	HDMI 1.4b
HDCP Compliance	HDCP 2.2 and HDCP 1.4
Video Bandwidth	10.2Gbps
Video Resolutions	up to 4K2K@50/60Hz(4:2:0),4K2K@30Hz,1080P@120Hz, and 1080P 3D@60Hz
Color Space	RGB, YCbCr 4:4:4, YCbCr 4:2:2
Color Depth	8-bit,10-bit, 12-bit
HDMI Audio Formats (Pass-through)	LPCM 2/5.1/7.1CH, Dolby Digital, DTS 5.1, Dolby Digital+, Dolby TrueHD, DTS-HD Master Audio, Dolby Atmos, DTS:X
ESD Protection	Human body model - +/- 8kV (air-gap discharge) & +/-4kV (contact discharge)

Connections	
Transmitter	
Inputs	2x HDMI Type A (19-pin female) 1x VGA (HD15 VGA female) 1x AUDIO IN (3.5mm Stereo Mini-jack) 1x DC Power In
Outputs	1x HDBaseT Out (RJ45) 1x RS-232 (Screw Terminal)

Mechanical	
Housing	2 Gang Wall Plate
Color	White
Dimensions	115.9mm (W) x 114.3mm (D) x 38.7mm (H)
Weight	220g
Power Supply	Input: AC100 - 240V 50/60Hz Output: DC 24V/1A (US/EU standards, CE/FCC/UL certified)
Power Consumption	6W (Max)
Operation Temperature	32 - 104 °F / 0 - 40 °C
Storage Temperature	-4 - 140°F / -20 - 60°C
Relative Humidity	20-90% RH (no condensation)

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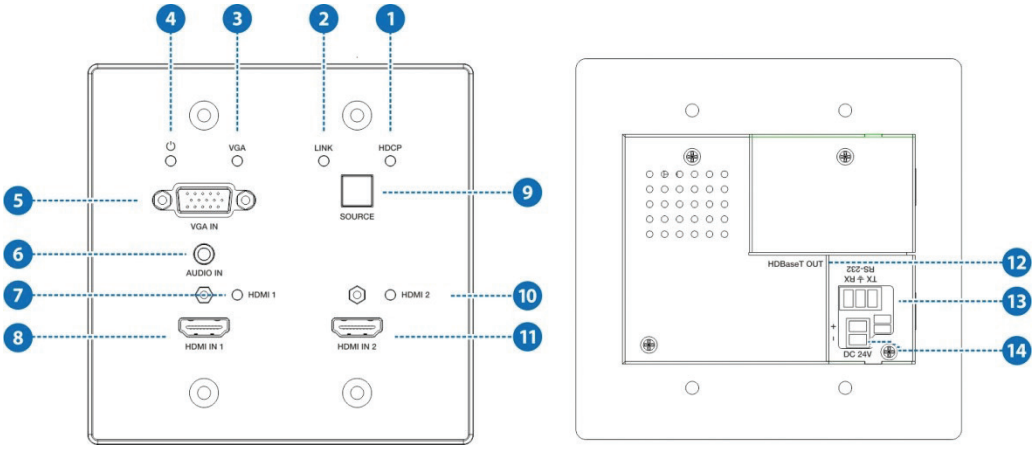
Operation Controls and Functions

5.1 Transmitter Front and Rear Panel



1. HDCP LED: HDCP compliance indicator

- **OFF:** HDMI input is not carrying HDCP content
- **ON:** HDMI input is carrying HDCP content

2. LINK LED: HDBaseT Link status indicator

- **OFF:** No connection between transmitter and receiver
- **GREEN:** Transmitter and receiver are connected and communicating

3. VGA LED: VGA signal indicator

- **OFF:** There is no +5V HPD or VGA signal detected on input
- **GREEN:** VGA is active input and VGA signal is detected
- **FLASHING:** +5V HPD or VGA signal is detected

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4. POWER LED: System power indicator.

5. VGA IN: VGA source input.

6. AUDIO IN: Connect with external audio source for VGA signal.

7. HDMI 1 LED: HDMI 1 signal indicator
- **OFF:** There is no +5V HPD or HDMI signal detected on input
- **GREEN:** HDMI is active input and HDMI signal is detected
- **FLASHING:** +5V HPD or HDMI signal is detected

8. HDMI 1 IN: Connects to HDMI source device.

9. SOURCE: Press to select next active source.

10. HDMI 2 LED: HDMI 2 signal indicator
- **OFF:** There is no +5V HPD or HDMI signal detected on input
- **GREEN:** HDMI is active input and HDMI signal is detected
- **FLASHING:** +5V HPD or HDMI signal is detected

11. HDMI 2 IN: Connects to HDMI source device.

12. HDBaseT OUT: Connects to HDBaseT Receiver with a Cat5e/6/6a cable.

13. RS-232: Connects to any devices with RS-232 port for RS-232 command transmission.

14. 24VDC (OPTIONAL): Connects 24V/1A adapter to AC wall outlet for power supply.

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Switching Modes

The S3MBW-200 has four switching modes available to help customize a unique solution to your specific needs. The switching modes on the S3MBW-200 can be setup and changed by connecting to the RS-232 port and sending the appropriate command using the Covid configuration utility software. You can also use terminal software and send the correct RS-232 command string.

Manual Mode: In this mode the S3MBW-200 will not auto-switch at all. Even if the currently active input is disconnected, the S3MBW-200 will not switch. The only way to initiate a switch is by using the button on the front interface or RS232 commands.

Hybrid Mode: In this mode, the S3MBW-200 will auto switch to the first connected active source. From then on, the S3MBW-200 will only switch by using the button on the front interface or RS232 commands. If the currently active source is disconnected, the S3MBW-200 will then auto-switch to another active source input.

Auto Mode: (Default) In this mode the S3MBW-200 will switch automatically to any new source, So whenever a new input is connected, the S3MBW-200 will auto-switch to that input. If the active input is disconnected, the S3MBW-200 will switch to another active input. The front interface button and RS232 switching commands can also still be used in this mode for manual override.

Priority Mode: In this mode the user assigns a hierarchy for the inputs to the S3MBW-200. When an input that is assigned a higher priority is connected the S3MBW-200 will auto-switch to it. If an input with a lower priority is connected, the S3MBW-200 does nothing. When the highest priority input is disconnected, the S3MBW-200 switches to the next highest priority connected. The front interface button and RS232 switching commands can still be used; however, if a higher priority input is connected after manually switching, the S3MBW-200 switches to the higher priority input still. The port hierarchy can be set on the Input/Output Config Tab.

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RS232 Commands

Action	Basic ASCII String	Variables	Example Settings	Example String	Example Response
Setup Baud Rate	>BR:a,b,p<CR>	a = Baud rate (9600, 19200, 38400, 57600, 115200) b=bits, p=parity (Even = E, Odd = O, None = N)	Set RS232 Baud Rate to 9600 with 8 bits and No Parity	>BR:9600,8,N<CR>	(BR:9600,8,N)
Switching Inputs for Output	>SW:i<CR>	i = Input (V= VGA & Audio, H1 = HDMI IN 1, H2 = HDMI IN 2)	Switch to VGA > Audio	>SW:V<CR>	(VGA Active)
			Switch to HDMI1	>SW:H1<CR>	(HDMI1 Active)
			Switch to HDMI2	>SW:H2<CR>	(HDMI2 Active)
Query Active Signal	?SW<CR>		Request the active source	?SW<CR>	([Value] Active)
Changing Switch Modes	>SM:a<CR>	a = Switching Mode (M = Manual, H = Hybrid, A = Auto, P = Priority)	Set Switch Mode to Manual	>SM:M<CR>	(Manual Mode)
			Set Switch Mode to Hybrid	>SM:H<CR>	(Hybrid Mode)
			Set Switch Mode to Auto	>SM:A<CR>	(Auto Mode)
			Set Switch Mode to Priority	>SM:P<CR>	(Priority Mode)
Quarry switching mode	?SM<CR>		Request active mode	?SM<CR>	([value] Mode)
Setting Input Priority	>SMP:[a,b,c]<CR>	Port prioritization : "a" the highest priority followed by b (V = VGA & Audio, H1 = HDMI IN 1, H2 = HDMI IN 2)	Setting switch to have the following priority from Highest to lowest; HDMI VGA	>SMP:[H1,H2,V]<CR>	(Priority [H1,H2,V])
Query Port Priority	?SMP<CR>		Request the current Priority of Inputs for Auto Switching	?SMP<CR>	(Priority [H1,H2,V])
Setting the Select Button mode	>PB:a<CR>	a = Button Status (0 = Disabled 1 = Enabled)	Enable Front Panel Button	>PB:1<CR>	(Button Enabled)
			Disable Front Panel Button	>PB:0<CR>	(Button Disabled)
Query Button Status	?PB<CR>		Request Button Status	?PB<CR>	(Button Status)
Factory Reset	>RESET<CR>		Perform Factory Reset	>RESET<Cr>	(RESET)
Update Firmware	>UPDATE:FW<CR>		Update firware	>UPDATE:FW<CR>	(Firmware Ver X.X.X)

> - Command, ? - Query, ()- Response

<CR> = 0x0D Hex / 13 Decimal

Note: The default communication settings are 9600 8N1 None.

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Preparing RS232 Cable

What you will need:

- A two-conductor cable with ground, optionally terminated with DB9 connectors.
- Wire strippers
- Screwdriver (flat head)
- 3.5mm captive screw connector with 3 positions (included with plate)
- Heat gun and heat shrink (optional)
- Multimeter (optional)

Depending on your setup, you will need an RS232 cable with terminal block on one end to connect to the unit and either another terminal block or DB9 on the other side. The focus of this section will be on terminating the terminal block side with the proper pinout because that is what is connected to the unit. The other end of the cable is dependent on what the unit is connecting too, but all the information in this section will help to get the proper pinout in any case. As a tip, if connecting to a computer without a serial port, a USB to serial port converter can be used to communicate with RS232.

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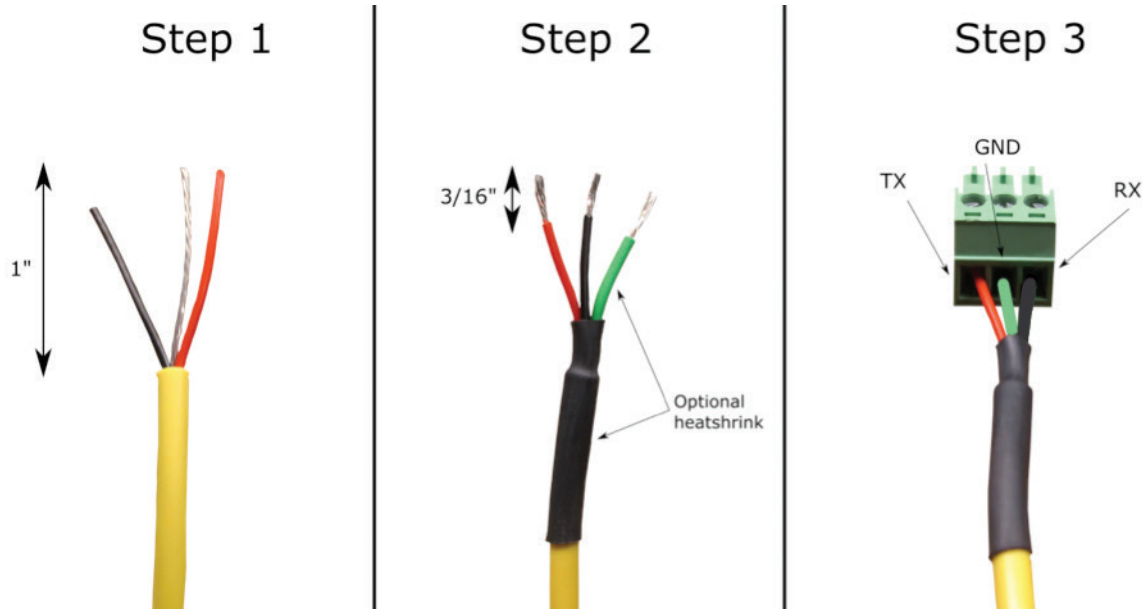
If the cable is terminated on both sides, start by cutting off the end that will be used for connecting to the unit. Then, strip the outer jacket of the cable back by about 1 inch like what is shown in Step 1 below. Once the outer jacket is removed, you can optionally add heat shrink around the conductors and over the exposed drain wire like in the picture of step 2. Next, strip the ends of the conductors back about 3/16" in order to make good contact inside of the captive screw connector. The final step is to attach the captive screw connector to the end of the cable matching the conductors on the other side of the cable to what is shown in step 3, use the connectors shown in the following figure as a reference if using DB9 male or female. Test the conductors with a multimeter to confirm termination.



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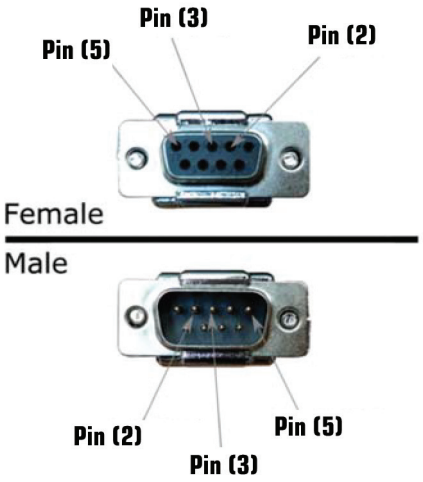

DB9 Pin	S3MBW Pin
2 (Rx)	TX
3 (Tx)	RX
GND	GND

NOTE:

When using the device for pass-through, keep in mind that the side (either Tx or RX) that is connected to the device that the commands are getting sent to will require that the Tx and Rx pins get swapped around (serial null modem wiring). This means pin 2 of the DB9 connector will connect to the Rx pin of the HDBaseT device and pin 3 of the DB9 connector will connect to the Tx pin of the HDBaseT device.

Communicating with RS232

RS232 commands can be sent to the unit using a computer or other RS232 devices. If using a computer, a serial program has to be used. The serial program can be a general purpose serial terminal like Termite from CompuPhase. Termite is a minimalistic, easy-to-use serial terminal that will do everything the unit requires from a serial terminal so this section of the manual will use it as an example to send commands from a computer.

Open up termite to see the screen next page:

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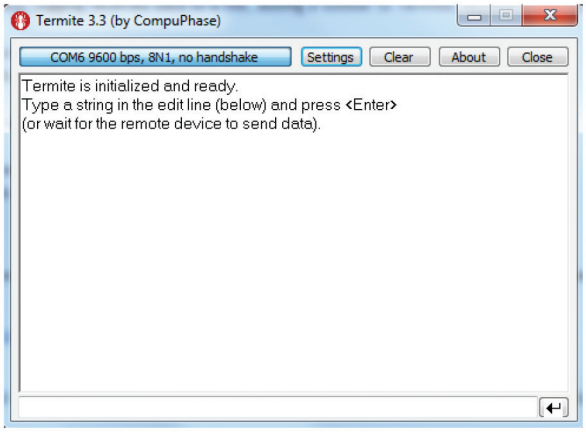
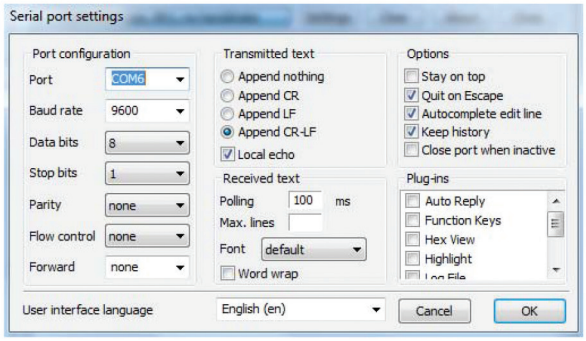
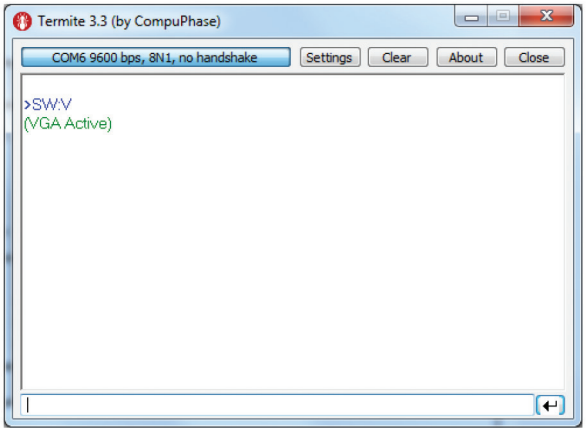


From the main screen, open the settings menu to adjust the COM settings if needed. The default settings for the unit are 96008N1. To make sending commands easier, check the "Append CR-LF" setting so that the "<cr>" character does not have to be added to the RS232 commands listed in the command table of this manual. If the serial terminal program does not support this feature, the hexadecimal characters 0D can be added to the end of the command to get the same effect. If using default settings, the settings menu should look like the image on the left.



Using the RS232 command table from within this manual, enter a valid command in the text field at the bottom of the main menu and press enter. The sent command should show up in the dialogue window as well as a response from the unit. If you are not getting a response, check connections settings and the command that was entered.



The unit can also be used as RS232 pass-through, that is, commands can be sent to the receiver and then carried over the HDBaseT link and sent out of the receiver to control a device on the far end of the signal chain. When sending commands to the unit, all unrecognized commands and commands sent with different communication settings will be passed through to the receiver end of the signal chain. There is no need to match the communication settings of the unit to the communication settings of the device on the receiver end, if the pass-through function is only going to be used.

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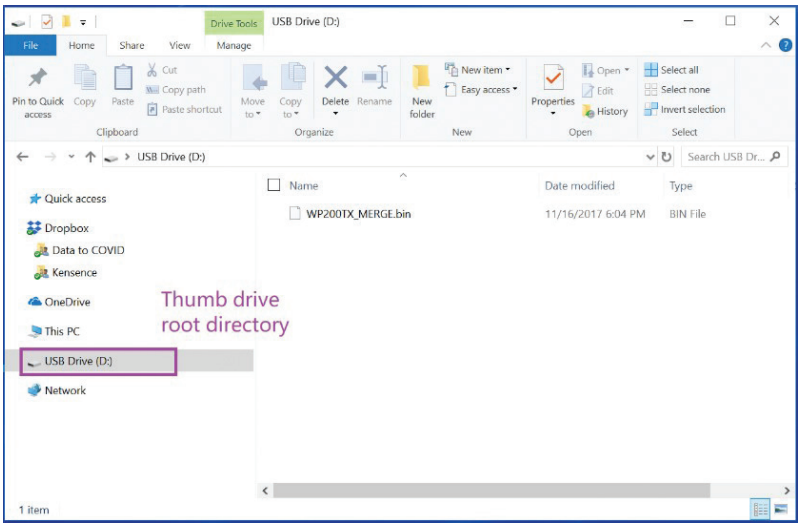
Firmware Update Process

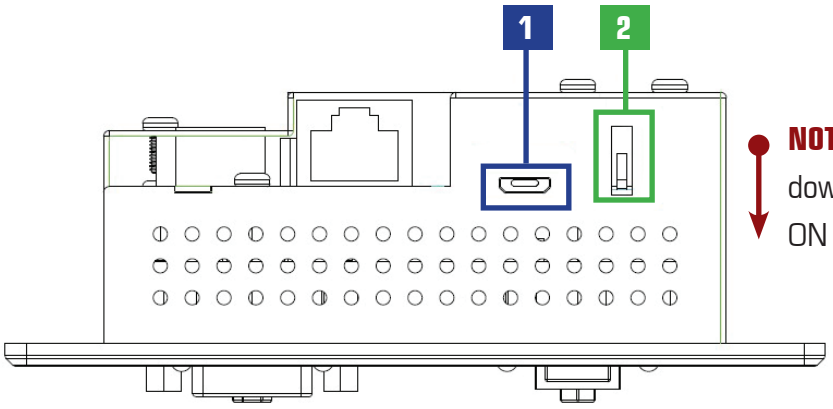
1. Copy the firmware on to a USB thumb drive root directory.
MUST be in root directory without folder option.



2. Remove the USB thumb drive from the PC.

1. Use the USB micro adapter to plug the thumb drive into the micro USB port of the unit.

2. Move the dip switch to the ON position. (This is the small red switch adjacent the USB micro.)



NOTE: Push the dip switch down toward the plate for ON Position.

3. Connect the Rs232 port on the unit then open the serial terminal.
Default baud rate 9600, data bits = 8, stop bits = 1, parity = none.

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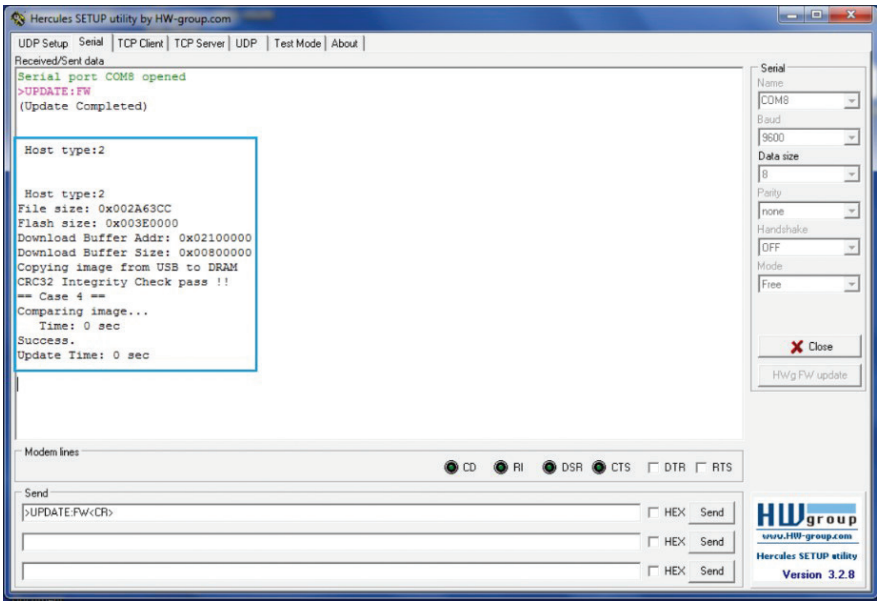
4. Enter the update command as below :

>UPDATE:FW<CR>

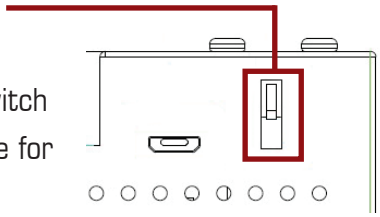
5. The update process should begin. Please wait until the copy process from the USB thumb drive to the DRAM is done before disconnecting the setup. When the serial terminal prints out the info in the box below, the update process is done.

If after 1 minute there is still no print out info, please retype the >UPDATE:FW<CR> and re-try the process again.



6. Once the update process is completed and successful, please remove the USB thumb drive. Now move the dip switch to the OFF position and then recycle the power.
(The dip switch is the small red switch adjacent the USB micro.)

NOTE: Push the dip switch up away from the plate for OFF Position.



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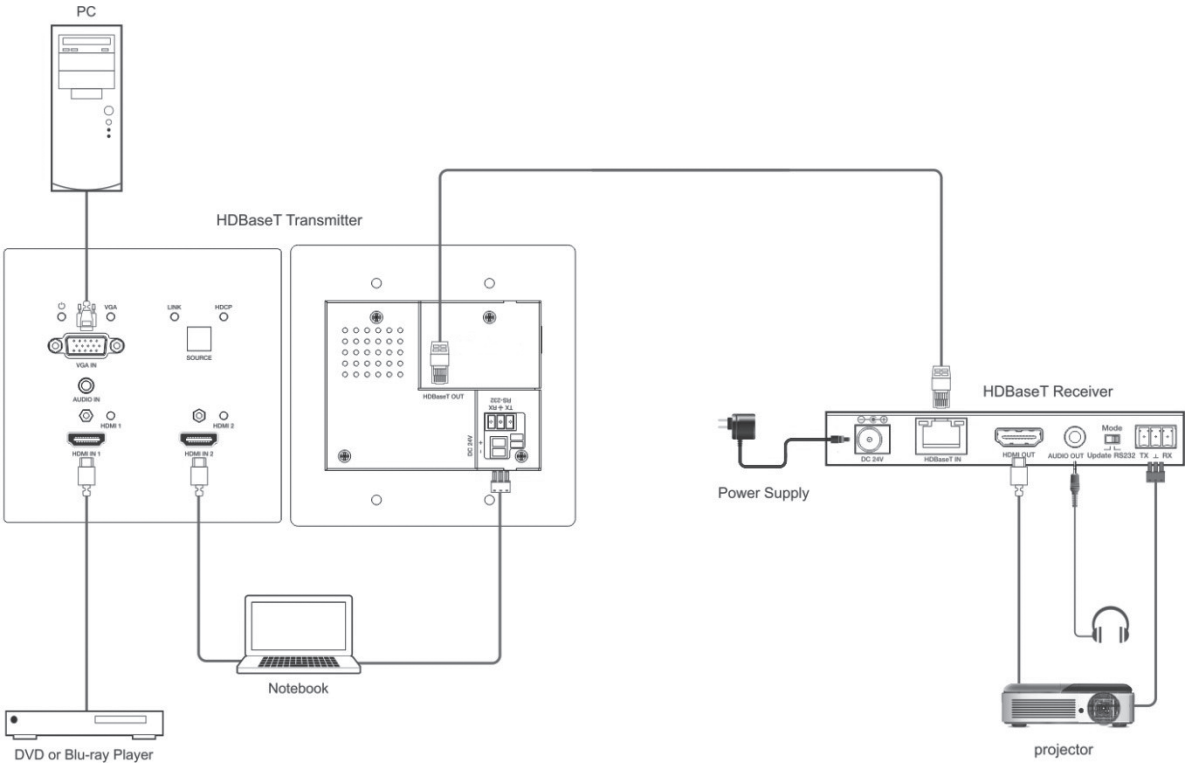
Connection Diagram



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Warranty

Covid brand products carry a 2 year parts and labor warranty. This warranty covers defective material or workmanship only and DOES NOT apply to misuse or use under extreme conditions. Covid has the right to evaluate all merchandise claimed as defective. Products must be shipped to Covid prepaid freight along with proof of purchase. Products will only be evaluated after obtaining a Return Authorization Number from a Covid representative. After a product is determined defective, at Covid's sole discretion the item will be repaired or replaced at no charge. Return shipping is customers responsibility.

All other products sold by Covid are under warranty to the customer in accordance to the terms and conditions of the original manufacturer's warranty policy. Warranty takes effect on the date of shipment of product from Covid or vendor direct. The manufacturer's warranty is subject to change without notice. For specific product warranties contact a Covid representative.

Safety Information

To reduce the risk of electric shock, do not expose this product to rain or moisture.

Do not modify the wall plug. Doing so will void the warranty and safety features.

If the wall plug does not fit into your local power socket, hire an electrician to replace your obsolete socket.

This equipment should be installed near the socket outlet and the device should be easily accessible in the case it requires disconnection.

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