



TEK 1201-HD Presentation Switcher



User's Manual

February 4, 2014

Please read this manual carefully before using the system.

Attention:

This manual only includes operational instructions and specifications, and is not intended to be used for service. Specifications are subject to change without notice. Please ask your local dealer for detailed information.

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Please check website or contact local supplier for updates.
www.tekvox.com

Operation Notice

In order to ensure the proper use of the product and the user's safety, please comply with the following items during installation and maintenance:

①

The system must be properly connected to earth ground. Do not use ungrounded or two bladed plugs and ensure the alternating power supply ranged from 100v to 240v and from 50Hz to 60Hz.

②

Do not operate the device in locations above 100° F and below 30°F.

③

To avoid any damage by over heat, please provide adequate ventilation to radiate the heat when operating the device.

④

The device should be turned off when in wet or humid areas.

⑤

The AC power supply line should be disconnected from main power during the following operations:

- Remove or reinstall any component on the device.
- Disconnect or re-connect any connector on the device.

⑥

Please do not attempt to remove the cover on the device. There are no serviceable components and high-voltage is present inside with risk of the electric shock.

⑦

Do not splash any chemical product or liquid on or near the equipment.

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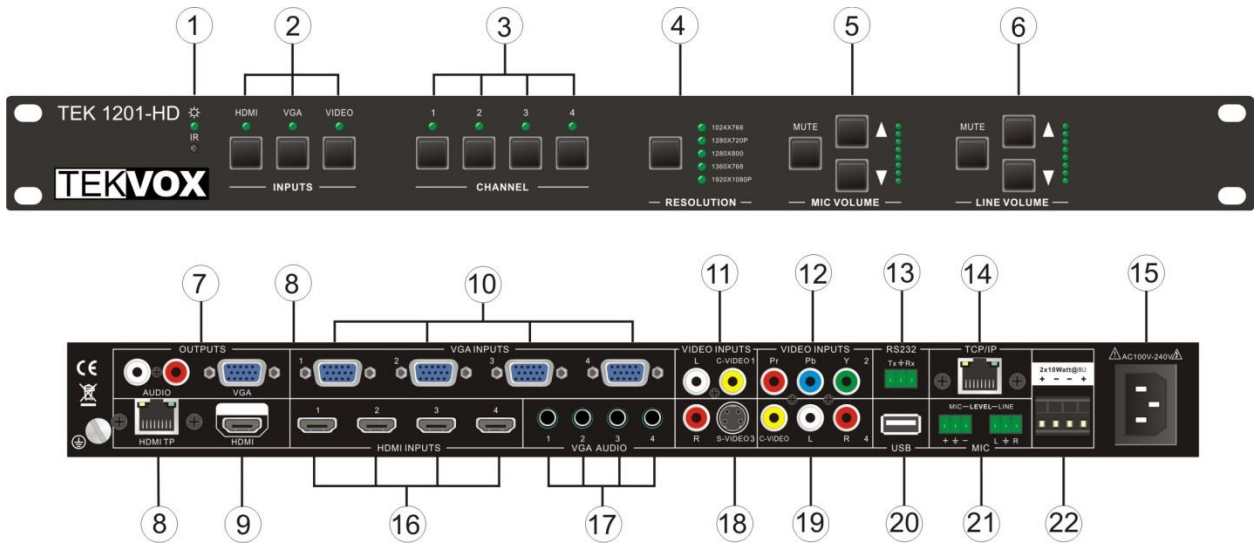
1. Description

The TEK 1201-HD presentation switcher scaler designed with enough inputs to fit most needs for classrooms and conference rooms. For easy installations the TEK 1201-HD not only has mirrored VGA and HDMI outputs, it also includes an HDBaseT Cat 5 output with a receiver. Other features include a microphone input, a stereo line input for mixing (iPod and VTC) and an integrated 20 watt amplifier. The most impressive feature is the TEK 1201-HD can be controlled from both the main unit and the RS-232 connection on the receiver or even control our TEK 2. This allows for the TEK 1201-HD to be controlled from a remote control system without having to run an additional RS-232 cable. Other options of the TEK 1201-HD are available by request such as lower cost version without the HDBaseT connection and a full version with a TCP/IP connection.

2. Features

- 4 HDMI 1.3 inputs with HDCP
- 4 VGA inputs
- 1 YPbPr input
- 2 Video inputs
- S-Video input
- Mirrored HDMI and VGA outputs
- Mirrored HDBaseT output
- HDBaseT receiver with RS-232
- Output Resolution: XGA, WXGA, 720P, HD 1360x768 and 1080P
- IR Remote Control with OSD
- RS-232 control from main unit or receiver
- 1 Microphone input
- 1 Stereo Line Level Mix input
- Speakers 10/20 Watts 8/4 Ohms
- Separate Volume Controls for both Sources and Microphone/Line Mix inputs

3. Front and Rear Panel Description



1. Power indicator and IR input
2. Input type selection – HDMI, VGA, VIDEO
3. Selects one of the four Channels of the selected type
4. Resolution selection – Please wait 5 seconds between selecting Resolution
5. Mic Volume Control – Controls the level of the Mic inputs
6. Line Volume Control – Controls the level of the Line/Video inputs
7. VGA and Audio outputs – All outputs are mirrored
8. HDBaseT output – Includes audio and control
9. HDMI Output – Includes audio
10. Four VGA inputs
11. Video input 1 Composite with audio
12. Video input 2 Component (YPbPr) – Shares audio with Video input 4
13. RS-232 control
14. TCP/IP - Optional
15. Line Power Connector
16. Four HDMI inputs – There are no separate audio inputs for HDMI
17. Four 3.5mm Stereo Audio input for the VGA inputs
18. S-Video input – Shares audio with the Video 1 input
19. Video input 4 Composite with audio
20. USB Input for firmware upgrading only
21. Mic and Line level stereo inputs
22. Stereo 10 Watts 8 ohm Amplifier per channel

4. TPHD402R

HDBaseT Receiver (200 feet)

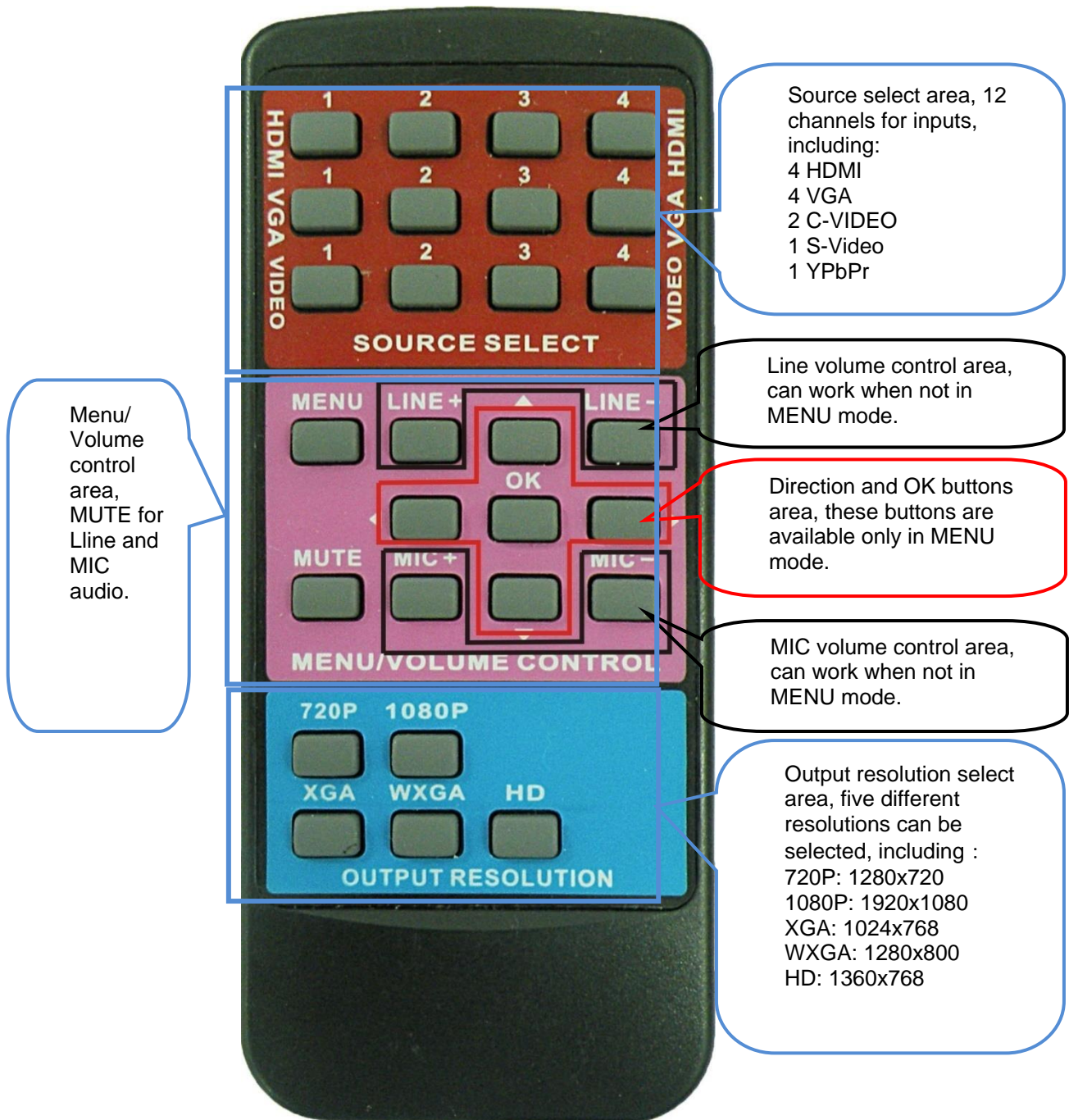
1. HDBaseT input – Includes audio and control
2. HDMI Output – Includes audio
3. Not used
4. RS-232 control for TEK 902-HD
5. 5 Volt power



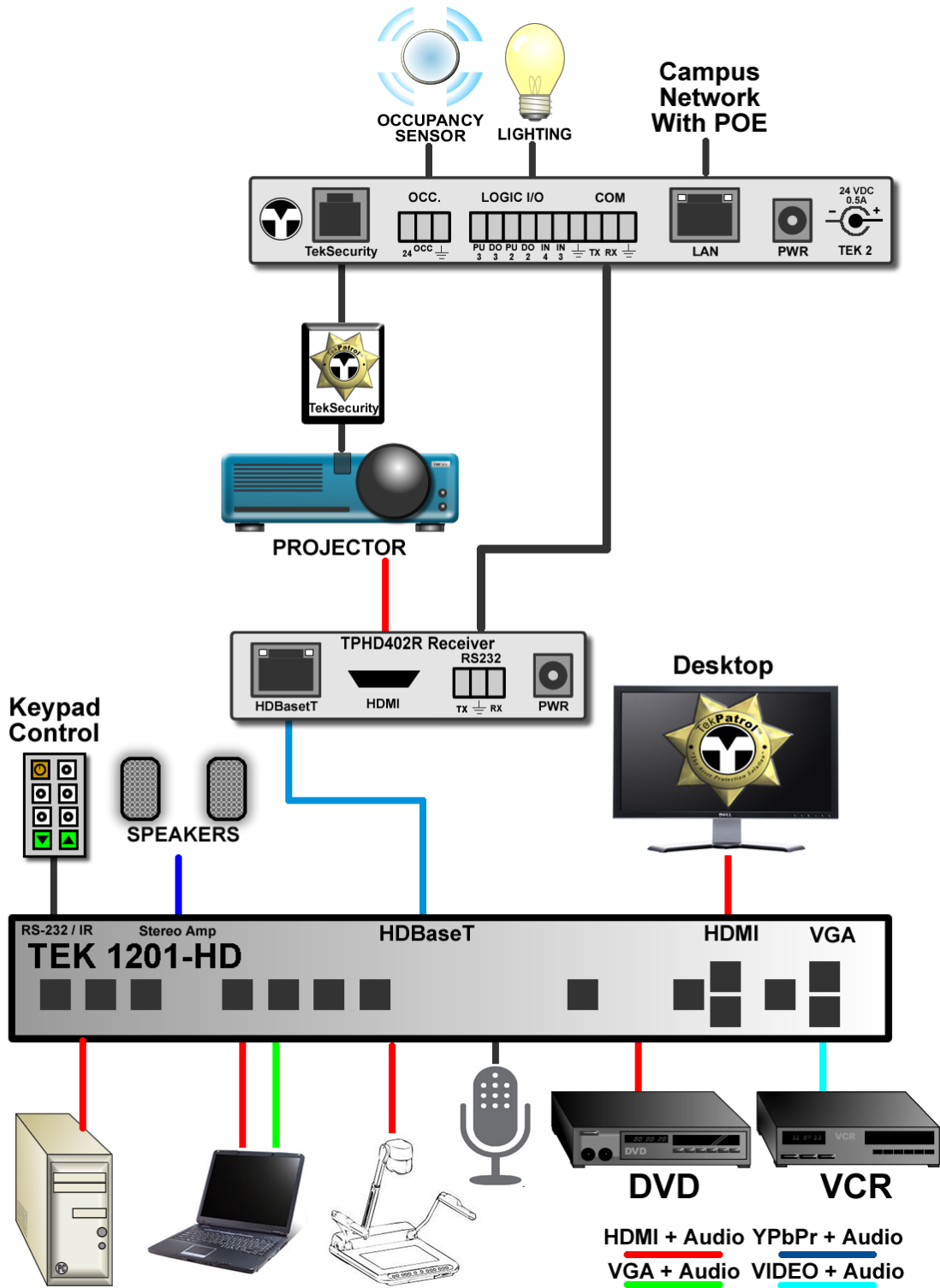
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5. IR Remote

Remote Operation



6. Connection Diagram



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7. Video/Audio Description

Below are the detailed descriptions of inputs and outputs.

7.1 Video and S-Video input

Supports PAL/SECAM/NTSC formats

Allows for changeable aspect ratios. (Full-screen, wide screen, 4:3)

Color RGB adjustable

7.2 YPbPr input

Input Resolution	Display Parameter				
	Frame frequency		Frame frequency		Frame frequency
720x480I	2:1	525	15.75	60	4:3
720x480P	1:1	525	31.5	60	4:3
720x576I	2:1	625	15.625	50	4:3
720x576P	1:1	625	31.25	50	4:3
1280x720P	1;1	750	45	60	16:9
1280x720P	1:1	750	37.50	50	16:9
1920x1080I	2:1	1125	28.125	50	16:9
1920x1080I	2:1	1125	33.75	60	16:9
1920x1080I	2:1	1250	31.25	50	16:9
1920x1080P	1:1	1250	62.5	50	16:9
1920x1080P	1:1	1250	67.5	50	16:9

The bandwidth is up to 170MHz.

Changeable aspect ratios. (Full-screen, wide screen, 4:3, auto-adjust)

Supporting HDTV input

7.3 VGA input

The VGA resolution is VESA standard, supporting:

No.	Resolution	No.	Resolution
1	720x400@70 Hz	8	1024x768@70 Hz
2	640x480@60 Hz	9	1024x768@75 Hz
3	640x480@72 Hz	10	1280x768
4	800x600@60 Hz	11	1280x1024@75 Hz
5	800x600@72 Hz	12	1360x768@60Hz
6	800x600@75 Hz	13	1920x1080
7	1024x768@60 Hz		

The bandwidth is up to 375MHz.

Changeable aspect ratios. (Full-screen, 4:3)

7.4 HDMI input

HDMI resolution support:

No.	Resolution	No.	Resolution
1	640×480@60 Hz	9	1024×768@70 Hz
2	640×480@72 Hz	10	1024×768@75 Hz
3	640×480@75 Hz	11	1280×1024@75 Hz
4	800×600@56 Hz	12	1280×720P
5	800×600@60 Hz	13	1360×768
6	800×600@72 Hz	14	1920×540
7	800×600@75 Hz	15	1920×1080I
8	1024×768@60 Hz	16	1920×1080P

Digital embedded audio decoding.

Changeable aspect ratios. (Full-screen, wide screen, 4:3, auto-adjust)

Support HDCP 1.3, compatible with DVI signal

7.5 Audio input/output

2 pairs of L/R analog audio input, 4 VGA audio and 2 MIC audio inputs

2x10W@8Ω amplifier output. L/R stereo audio output and HDMI embedded audio.

Volume/Bass/Treble adjustable

Audio status presets, changeable scene mode (Wall-mounted, Desk)

8. OSD Operation (On-Screen-Display)

The TEK 1201-HD provides On Screen Display (OSD) menu, with various functions and language.

The operation includes:

8.1 Picture Settings

The first icon from left of OSD menu is to set the picture parameters. It includes the pictures mode preset, color temperature, contrast, brightness, hue, saturation, sharpness, scale, VGA setting and Advance picture adjustments. Some parameters are available depending on the input type. For example: VGA setting can be set only when a VGA input is displayed.

The Advance Picture Adjust can set the Digital Noise Reduction, dynamic color, skin tone and Adaptive Luma adjustments. DNR is suggested to be on, it can make the output image clear and smooth.



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8.2 Audio Setting

The Second icon from left of OSD menu is used to set the audio/sound parameters. It includes the sound effect preset, bass, treble, balance, scene mode, surround and smart volume setting. Some parameters are available depending on different type of input.



8.3 System Setting

The Third icon from left of OSD menu is the system setting. It includes the OSD language setting, audio listen only, and freeze output picture etc. Please check the picture below:



9. RS-232 Control

Send data without carriage return or line feed. Data cannot be typed in using a terminal program. You must use a program that can send the complete command.

9.1 Protocol

Protocol: Baud: 9600bps 8, n, 1 format: ASCII without carriage return
Connector: 3.5mm EURO type connector, Left to Right: TX, GND, RX

Any change in status is automatically transmitted to the controller followed by a CR LF.

9.2 RS-232 Commands:

Command (ASCII)	Function Description	Feedback (example) (ASCII)
0600%	MUTE Line	LINE Mute On
0601%	Un-Mute Line	LINE Mute Off
0602%	Line Audio Up	LINE Volume: XX
0603%	Line Audio Down	LINE Volume: XX
0604%	Lock the front panel button	Panel Locked
0605%	Unlock the front panel button	Panel Un-Locked
01XX%	Set Volume Level. XX = 00 to 99	Volume: XX
02XX%	Set brightness. XX = 00 to 99	Brightness: XX
03XX%	Set Contrast. XX = 00 to 99	Contrast: XX
04XX%	Set Saturation. XX = 00 to 99	Saturation: XX
05XX%	Set Sharpness. XX = 00 to 99	Sharpness: XX
0606%	Auto-adjust the input parameter(VGA only)	Adjustment
0607%	Auto-adjust the color temperature	Color Temp: XX
0608%	ZOOM the image, set the aspect ratio	Aspect Ratio: XX
0609%	OSD OK	OK
0610%	OSD Left	Left
0611%	OSD Right	Right
0612%	OSD Up	Up
0613%	OSD Down	Down
0614%	Set the picture mode	Picture Mode : XX
0615%	SM Mode	Sound Mode: XX
0616%	OSD MENU	MENU
0617%	Command to reset to factory defaults	Factory reset
0618%	Set Resolution to 1360X768 HD	Resolution: HD 1360X768
0626%	Set Resolution to 1024X768 XGA	Resolution: XGA 1024X768
0627%	Set Resolution to 1280X720 720P	Resolution: 720P 1280X720
0628%	Set Resolution to 1280X800 WXGA	Resolution: WXGA 1280X800
0629%	Set Resolution to 1920X1080 1080P	Resolution: 1080P 1920X1080

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Command (ASCII)	Function Description	Feedback (example) (ASCII)
0630%	Get the volume level	LINE Volume: XX/MIC Volume: XX
0631%	Get the input source	Source: XXXXXX
0632%	Get the output resolution	Resolution: XXXXXXXX
0633%	Get the image mode	Picture Mode : XX
0634%	Get the audio mode	Sound Mode: XX
0635%	Get the image aspect ratio	Aspect Ratio: XX
0636%	Get the brightness	Brightness: XX
0637%	Get the contrast	Contrast: XX
0638%	Get the saturation	Saturation: XX
0639%	Get the sharpness	Sharpness: XX
0640%	Get the color temperature	Color Temp: XX
0644%	Display OSD CHANNEL	OSD Source: Display
0645%	Disable OSD CHANNEL	OSD Channel (Source): No Display
0646%	Display Volume Bar	Volume Bar: Display
0647%	Disable Volume Bar	Volume Bar: No Display
0648%	Enable Digital audio (HDMI and SPDIF) output	Digital Sound Output: Enable
0649%	Disable Digital audio (HDMI and SPDIF) output	Digital Sound Output: Disable
0650%	Get OSD CHANNEL display status	OSD Source: Display
0651%	Get Volume Bar display status	Volume Bar: Display
0652%	Get Digital audio output status	Digital Sound Output: Enable
0655%	Freeze output image	Freeze: Enable
0656%	Cancel the freezing of output image	Freeze: Disable
0698%	Firmware update	

Command (ASCII)	Function Description	Feedback (example) (ASCII)
0701%	Select HDMI1 input	Source: HDMI 1
0702%	Select HDMI2 input	Source: HDMI 2
0703%	Select HDMI3 input	Source: HDMI 3
0704%	Select HDMI4 input	Source: HDMI 4
0705%	Select VGA1 input	Source: VGA1
0706%	Select VGA2 input	Source: VGA2
0707%	Select VGA3 input	Source: VGA3
0708%	Select VGA4 input	Source: VGA4
0709%	Select Composite Video AV1 input	Source: CVIDEO1
0710%	Select YPbPr input	Source: YPbPr
0711%	Select S-Video input	Source: SVIDEO
0712%	Select Composite Video AV2 input	Source: CVIDEO2
0720%	Mute Line and MIC	LINE Mute On/MIC Mute On
0721%	Un-Mute Line and MIC	LINE Mute Off/MIC Mute Off
0722%	Mute MIC	MIC Mute On
0723%	Un-Mute MIC	MIC Mute Off
0724%	MIC Volume Up	MIC Volume: XX
0725%	MIC Volume Down	MIC Volume: XX
08XX%	Set MIC Volume Level. XX = 00 to 60	MIC Volume: XX
99XX%	Send Macro Command To Version 2 TekMonitor XX = 10 to 19 = Macro 10-19	CMD: XX

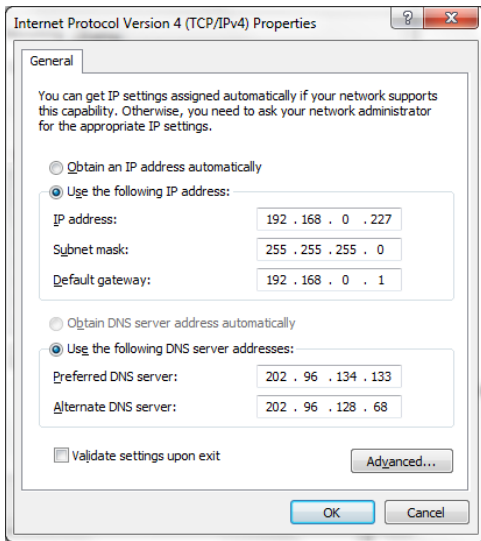
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10. TCP/IP Controlling

The optional network port of TEK 1201-HD is used for sending commands using TCP/IP control. These commands are sent the same as when using RS-232 control. There is no Web based control for the unit. The Web interface is used for network configuration only.

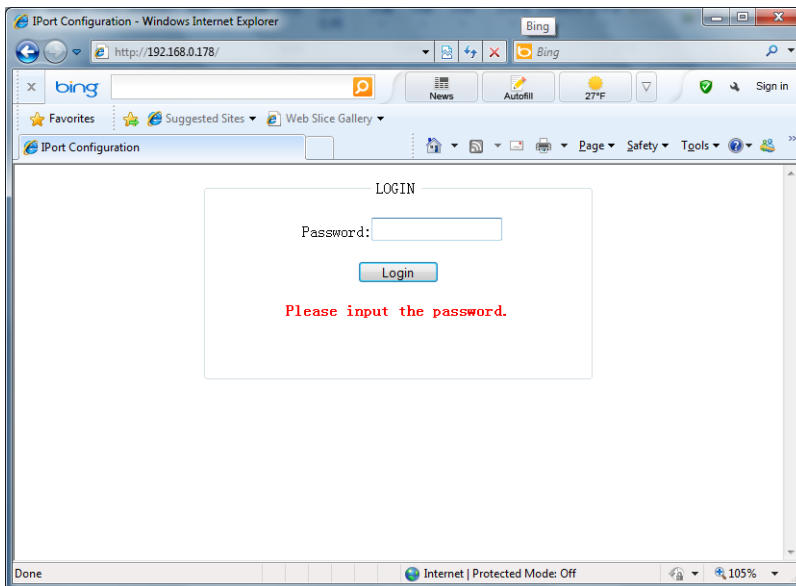
10.1 IP Configuration

To connect a computer to the network port you must use a crossover network cable or network switch. Set its IP address of the PC to the same IP VLAN as the default IP is address or the unit (192.168.0.178).



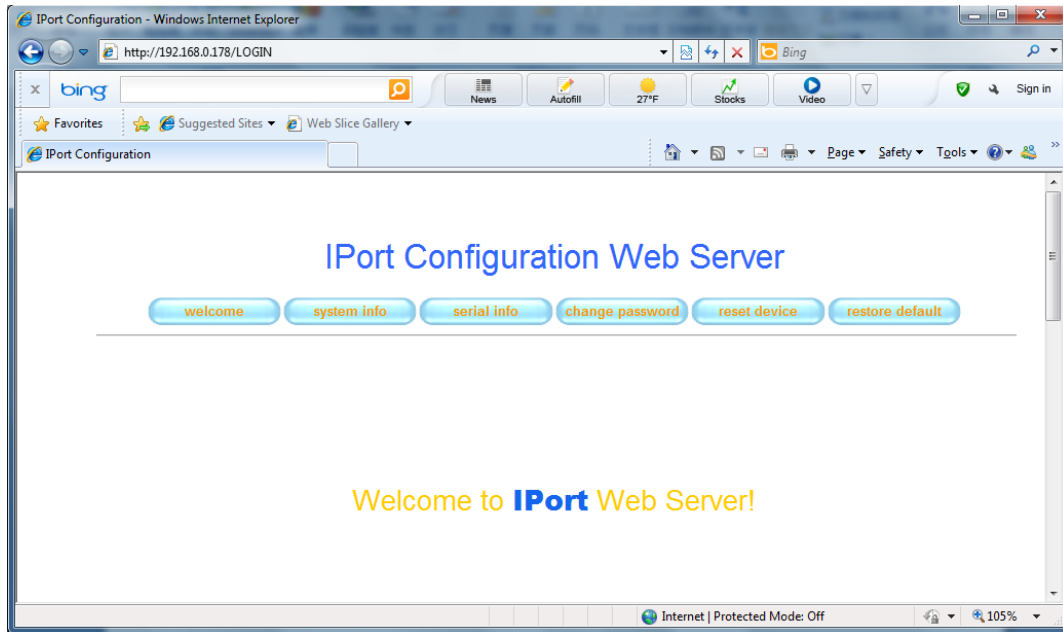
Same IP section but cannot be 192.168.0.178

Enter the IP address 192.168.0.178 into Internet Explorer, you will see the LOGIN page as below:



Enter the password “88888”, and then you can enter the configuration page to configure the IP port, including the IP reset, PW reset etc.

Notice: Serial configuration cannot be changed.



After configuration, reset device, then you can use the new IP address for controlling.

10.2 Connection and Control

To send IP commands to the TEK 1201-HD connect using TCP/IP port 4001 and the set IP address of the unit. Use the standard serial commands from a control system or program that can send a complete command line. You cannot type the command using a Telnet program.

11. Firmware Updating

The TEK 1201-HD supports firmware field-updating, by USB flash disk.

- 1: Copy the file “MT23ATV.bin” to a USB flash disk.
- 2: Plug the USB flash disk to the USB port on the unit.
- 3: Pressing the button “HDMI” on the front panel for 6 seconds or sending RS232 command 0698% for updating, then press the button “OK” on the remote or send RS232 command 0609% to confirm update. The unit will capture the new firmware from USB flash disk.
- 4: After updating is completed, reboot and send the command “0617%” to reset to factory settings. This command must be sent using a command line program set to 115200.
- 5: After reset, reboot again.

Notice: The name of the update file must be **MT23ATV.bin**.

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12. Technical Specification

Inputs

- 4 - HDMI 1.3 HDCP Compliant.
 - 4 - VGA with 1/8" stereo audio
 - 1 - YPbPr with RCA stereo audio
 - 2 - Video with audio shard with S-Video
 - 1 - S-Video
- Video and S-Video support PAL/SECAM/NTSC

Note: There are no audio inserts for DVI type signals unless you use the Mix input with separate volume control.

Serial control interface

- COM..... One - RS-232 serial (TX and RX only)
- Protocol 9600, 8-bit, 1 stop bit, no parity

Output

- HDMI..... HDMI 1.3 Supports HDCP
- RJ45 HDBaseT (200 feet using Cat 6. Best to use shielded cable)
- VGA DB-15HD Female
- Resolution XGA, WXGA, 720P, HD 1360x768 and 1080P
- Speakers..... 10/20 watts per channel into 8/4 ohms respectively

General

- Power Supply 100-240VAC, 50/60 Hz, 65 watts
- Temperature/humidity Storage -40° to +158°F (-40° to +70°C) /10% to 90%
- Non-Condensing Operation +32° to +122°F (0° to +50°C) /10% to 90%
- Enclosure type Aluminum
- Enclosure dimensions 1.75" H x 19.1" W x 9.25" D / 44 mm H x 483 mm W x 235 mm (Depth excludes connectors.)
- Product weight 7.1 lbs (3.2 kg)
- Shipping weight..... 9 lbs (1 kg)
- Compliances CE
- MTBF 30,000 hours
- Warranty 3 years parts and labor

Specifications are subject to change without notice.

13. Problems solving & Maintenance

- 1) If displayed images have reflections or ghosting check the projector's settings or try a higher quality VGA cable.
- 2) If output signal is not preset or there is a loss of color, please check the input and output connections on VGA and video cables. Also check for correct source selection.
- 3) If the IR remote controller does not work:
Check or replace the battery.
Check for objects blocking the IR receiver.
The controller may be broken, please return it for repair.
- 4) If the unit cannot be controlled through its COM port, please check the COM port number in the software and make sure the COM port, Baud rate and cable connections are correct.
- 5) If a source is selected and audio is not heard, please check for cables connected to the correct audio input.
- 6) If microphone is not heard, check that the microphone does not require phantom power.
- 7) If the output image is noisy, please make sure the system is properly grounded.
- 8) If the switcher cannot be controlled by its front buttons, RS232 port or remote controller, the switchers may be bad. Please send it to the dealer for repair.

14. Warranty

TEKVOX, Inc. warrants this product against defects in workmanship and materials for a period of Three Years from the date of purchase. During the warranty period, if failure is caused from faulty workmanship and/or materials, TEKVOX, Inc. will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction.

This Limited Warranty does not apply if fault is caused by misuse, improper handling, electrical or mechanical abuse, abnormal operating conditions or non-TEKVOX authorized modifications to said product.

If it has been determined product is defective, please call TEKVOX and ask for an Applications Engineer at (210) 348-6565 (USA) to receive an RMA # (Return Material Authorization Number) to begin the repair process as quickly as possible.

Units must be returned with prepaid shipping charges. Please insure package. If not insured you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the contact person in case there are any questions.

TEKVOX, Inc. makes no further warranties either expressed or implied with respect to said product, or its quality, performance, or operation for any particular use. In no event will TEKVOX, Inc. be liable for direct, indirect, or consequential damages resulting from any defect in this product even if TEKVOX, Inc. has been advised of such damage. Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.