TekFlex-32 User's Manual

(79202)

32 Port Seamless Matrix
With Interchangeable Inputs and outputs.
Outputs 25-32 are outputs only.

Preface

Read this user manual carefully before using this product. This manual is only for operational instructions and not intended for maintenance of the unit. Please refer to your dealer for the latest details.

Trademarks

FCC Statement

This equipment generates and radiates radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference

Any changes or modifications not expressly approved by the manufacture would void the user’s authority to operate the equipment.

SAFETY PRECAUTIONS

To insure the best performance from this product please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment
- Follow basic safety precautions to reduce the risk of fire, electrical shock, and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration, or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the unit in a place with adequate ventilation to avoid damage caused by overheating.
- Keep the unit away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the unit immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: Do not burn or mix with general household waste, please treat them as normal electrical wastes.

Contents

1. Introduction

1.1 Introduction to TekFlex-32

TekFlex-32 is a high-performance seamless HD-AV modular matrix switcher providing 12 flexible slots for single VGA/ DVI/ HDBaseT input / output cards and 4 fixed output slots for HDMI and HDBT.

With its advanced modular design, the TekFlex-32 can make up any combination of a 24x8 to 1x33 HD Matrix. Input cards consist of HDMI, DVI, SDI, HDBaseT and VGA. Output cards consist of HDMI, DVI, HDBaseT and VGA. All the cards support plug-and-play and are hot swappable. Seamless switching is supported on all cards with Scalers on all outputs. 4K cards are available but all cards must be 4K to maintain seamless switching.

1.2 Features

- 24 card slots with flexible input/output combination with 8 fixed output card slots
- Comprehensive signal card compatibility: HDMI, DVI, SDI, VGA, HDBaseT
- Automatically recognizes input and output cards
- Powerful EDID management
- Web based GUI
- 4K Cards available (Cannot mix 4K cards with 1080 cards)
- HDCP Compliant
- Seamless AV distribution through different AV signals
- All outputs have adjustable output resolution
- Controllable via front panel buttons, IR, RS232 & TCP/IP
- Control endpoints with routable RS232 commands.

1.3 Package List

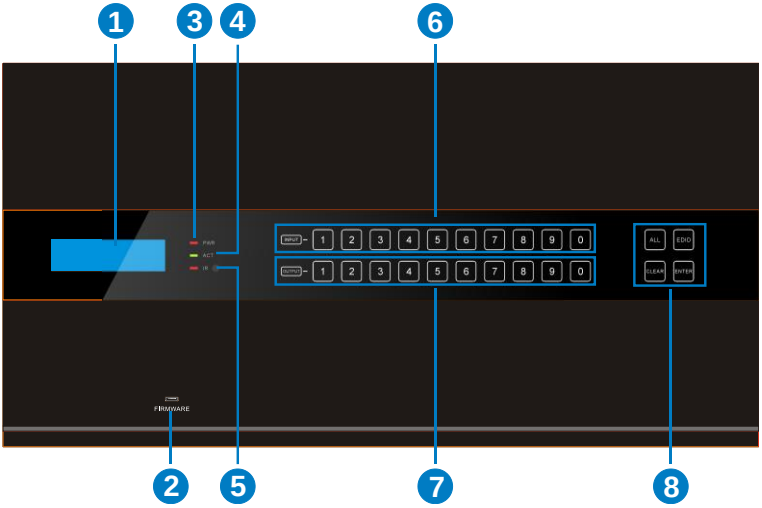
- ✓ 1 x TekFlex-32
- ✓ 1 x IR Remote
- ✓ 4 x Plastic cushions
- ✓ 1 x User Manual
- ✓ 1 x IR Receiver
- ✓ 2 x Pluggable Terminal Blocks
- ✓ 1 x Power Cord
- ✓ 2 x Mounting ears

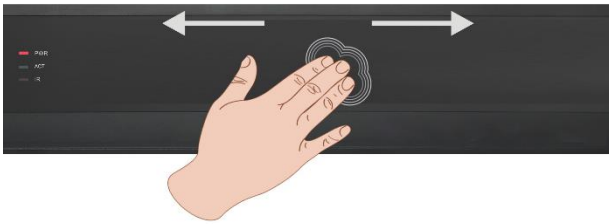
🕮 Signal cards are sold and packed separately; all the items listed above are for TekFlex-32 solely. Confirm all the accessories are included, if not, please contact with the dealers.

2. Panel Description

2.1 TekFlex-32

2.1.1 Front Panel



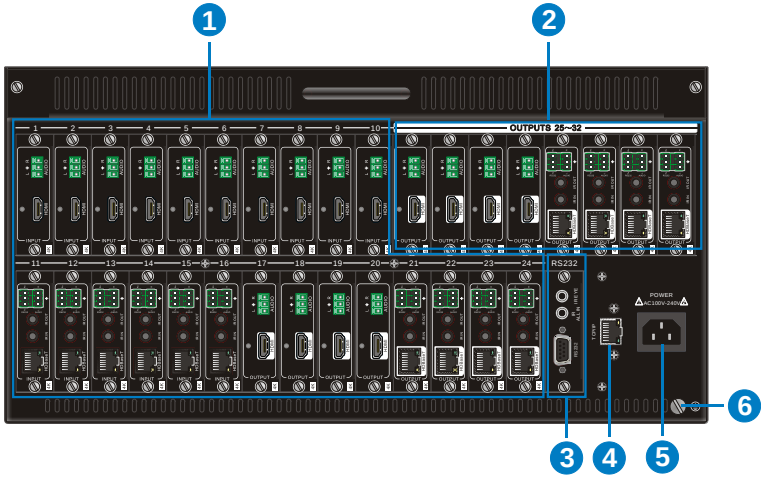
No.	Name	Description
	Description for Touch Screen	● Touch any button to awake touch screen and white backlight will appear. If without any operations within 8 seconds, touch screen will enter sleep mode and the white backlight will goes out. Note: If buttons are not working or the touch screen does not appear, please slide your finger left and right as shown below.  ● When the touch screen is awaking, press any button, the white backlight of this buttons will turn into blue.

		● Press the button of IR remote, the corresponding button will appear blue backlight.
①	LCD screen	Display real-time operation status.
②	FIRMWARE	Micro USB port, used for firmware update.
③	PWR	Power indicator: ● OFF: No power. ● RED: Normal work. ● Green: Standby.
④	ACT	RS232 Link indicator: OFF: No RS232 serial signal. Blinking Green: Transmit RS232 serial signal.
⑤	IR	IR indicator: ● OFF: No IR signal. ● Blinking red: when the built-in IR sensor receive IR signal.
⑥	INPUTS	Back-lit buttons for input selection, ranges from 0~9, 12 selectable channels in total.
⑦	OUTPUTS	Back-lit buttons for output selection, ranges from 0 ~ 9, 16 selectable channels in total.
⑧	MENU	**ALL**: Select all inputs/ outputs.
		EDID: EDID management button, enable input port to learn the EDID data from output devices.
		CLEAR: Withdraw an operation before it comes into effect/ exit inquiry mode.
		ENTER: confirm operation/ long-press (3s or more) to enter inquiry mode.

1) Input/ output channels are recognized as double-digit, so press channel 1~9 as 01~09.

2) Operations are automatically canceled after 8 seconds unless pressing ENTER to confirm.

2.1.2 Rear Panel



No.	Name	Description
①	1~24 Card Slots	Flexible card slots, 24 in total, insert input / output signal cards here.
②	25~32 Card Slots	8 in total. Insert output signal cards here.
③	RS232	Serial control port, connect with the RS232 port of control device to control the Matrix Switcher or the 3rd party device connected to I-BT &O-BT.
④	IR ALL IN	Input port for IR control signal, connect with IR receiver (5V, with carrier), and work with IR emitters connected to IR OUT of far-end HDBT receivers.
⑤	IR EYE	Connect with IR receiver (5V, with carrier) to control the switcher.
⑥	TCP/IP	TCP/IP control port, connect with control device (e.g. a PC).
⑦	Ground	Connect to grounding.
⑧	Power port	Connect with 100~240V AC outlet.

1) TekFlex-32 supports flexible card connection to and form 24x8～3x33 matrix.

2) Pictures shown in this manual are for reference only.

2.2 1080 Signal Cards

TekFlex-32 has 24 card slots for flexible input & output signal card combinations and 8 output slots. Various signal cards can be selected, including VGA, DVI, SDI, HDBT, HDMI, according to specific need. All signal cards support seamless distribution and are hot-swappable. The TekFlex-32 can support both 1080 and 4K cards, but not in the same matrix.

The chart below shows all 1080 signal cards TekFlex-32 supported:

Input		**Output**	
Card	**Ports**	**Card**	**Ports**
TFX-ITP (79213)	HDBT& Analog Audio& RS232	TFX-OTP (79223)	HDBT & Analog Audio& RS232
TFX-ISD (79214)	SDI & Loop output		
TFX-IVG (79211)	VGA & Analog audio	TFX-OVG (79221)	VGA & Analog audio
TFX-IDV (79212)	DVI & Analog Audio	TFX-ODV (79222)	DVI & Analog Audio
TFX-IHD (79210)	HDMI& Analog Audio	TFX-OHD (79220)	HDMI & Analog Audio

2.2.1 TFX-ITP & TFX-OTP

HDBaseT signal card (refer to *6.2.1* for detailed specification)

- HDMI 1.3 & HDCP 1.3 compliant
- Works with PoE HDBT transmitter / receiver to attain long-distance (up to 70m via qualified CAT6 cable) transmission for 1080p signal and bi-directional RS232 control
- Real-time status indicator: Green LED blinks once powered on; Yellow LED lights when the port is connected with HDBT devices
- HDBT port supports PoE with control options to enable and disable PoE
- Input card supports selectable audio embedding
- Output card supports audio de-embedding
- Output resolution adjustable via command or GUI
- Support EDID management and DDC communication

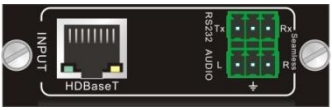
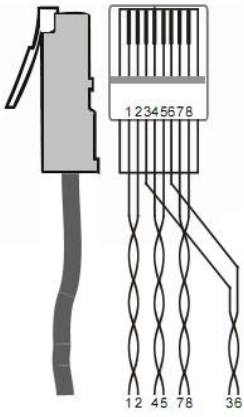


Figure 2- 1 TFX-ITP

Figure 2- 2 TFX-OTP



Pin	Color
1	orange white
2	orange
3	green white
4	blue
5	blue white
6	green
7	brown white
8	brown

Twist the pure-color cables with their half-color cables.

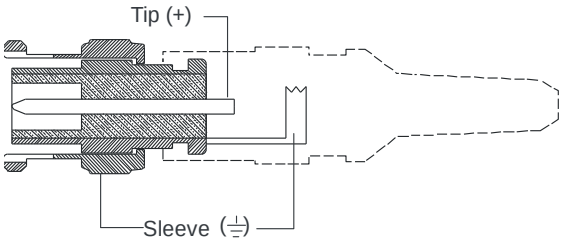
2.2.2 TFX-ISD

Single SDI input card (refer to *6.2.2* for detailed specification)

- 1 SDI input transmits high-definition 3G-SDI/HD-SDI/SDI signal
- Resolution range: 1080p, 1080i, 720p
- Transmit 1080p signal up to 100m
- 1 loop output for local monitoring

Figure 2- 3 TFX-ISD

The BNC connector is shown as the figure below.



BNC Connector

2.2.3 TFX-IVG & TFX-OVG

Single VGA signal card (refer to *6.2.3* for detailed specification)

- VGA port supports VGA C-Video, YPbPr
- Input card automatically recognizes input signal format
- Output signal format adjustable via commands or GUI
- Output resolution adjustable via commands or GUI

Resolution range for VGA signal: 800x600, 1024x768, 720p, 1280x1024, 1080i, 1080p (default), 1920x1200.

Resolution range for YPbPr signal: 720p, 1080i, 1080p.

Resolution range for CVBS signal: 480i, 576i.

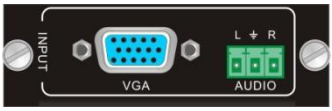
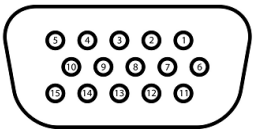


Figure 2- 4 TFX-IVG

Figure 2- 5 TFX-OVG

Pin layout of the VGA connectors (female):



Pin	Signal	Pin	Signal
1	RED	9	KEY/PWR
2	GREEN	10	GND
3	BLUE	11	ID0/RES
4	ID2/RES	12	ID1/SDA
5	GND	13	HSync
6	RED_RTN	14	VSync
7	GREEN_RTN	15	ID3/SCL
8	BLUE_RTN		

When connecting to YPbPr or CVBS signal, insert converting cables according to specific pin definitions (see the figures below):

VGA- YPbPr:

Figure 2- 6

VGA-YPbPr converting guide

Pin	Signal	Pin	Signal
1	RED	6	GND
2	GREEN	7	GND
3	BLUE	8	GND
Other pins are not used.			

VGA- CVBS:

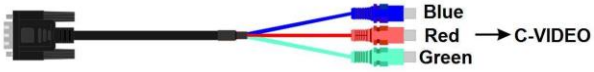


Figure 2- 7 VGA-C-Video converting guide

Pin	Signal	Pin	Signal
1	RED	6	GND
7	GND	8	GND
Other pins are not used.			

2.2.4 TFX-IDV & TFX-ODV

Single DVI signal card (refer to *6.2.4* for detailed specification)

- HDMI 1.3 & HDCP 1.3 compliant, capable to transmit DVI/ HDMI signal
- Output resolution adjustable via commands or GUI: including auto, 800x600, 1024x768, 720p, 1280x1024, 1080i, 1080p (default), 1920x1200
- Input / Output audio can be enabled/ disabled via commands (default settings: input audio: disabled; output audio: enabled)
- Features EDID management and DDC communication

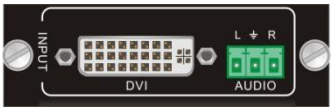


Figure 2- 8 TFX-IDV

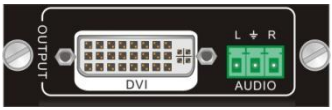
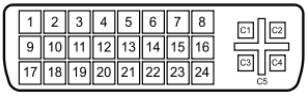


Figure 2- 9 TFX-ODV

Pin Layout of the DVI-I connector (Dual-Link). (Female)



Pin	Function	Pin	Function
1	T.M.D.S.Data2-	13	T.M.D.S.Data3+
2	T.M.D.S.Data2+	14	+5V Power
3	T.M.D.S. Data 2/4 Shield	15	Ground (return for +5V, Hsync and Vsync)
4	T.M.D.S. Data 4-	16	Hot Plug Detect
5	T.M.D.S. Data 4+	17	T.M.D.S. Data 0-
6	DDC Clock	18	T.M.D.S. Data 0+
7	DDC Data	19	T.M.D.S. Data 0/5 Shield
8	Analog Vertical Sync	20	T.M.D.S.Data5-
9	T.M.D.S.Data1-	21	T.M.D.S.Data5+
10	T.M.D.S.Data1+	22	T.M.D.S. Clock Shield
11	T.M.D.S.Data1/3 Shield	23	T.M.D. S. Clock +
12	T.M.D.S.Data3-	13	T.M.D.S.Data3+

2.2.5 TFX-IHD & TFX-OHD

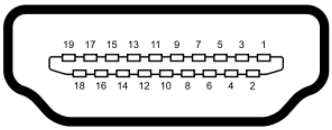
Single HDMI signal card (refer to *6.2.5* for detailed specification)

- HDMI1.3& HDCP1.3 compliant, capable to transmit DVI/ HDMI signal
- Auto-detect input resolution
- Max resolution: 1080p@60Hz
- Output resolution adjustable via commands or GUI: including auto, 800x600, 1024x768, 720p, 1280x1024, 1080i, 1080p (default), 1920x1200
- Support EDID Management and DDC communication
- Input audio source selectable via command, including HDMI embedded audio (default), and analog audio
- Analog output audio can be enabled/ disabled via commands (default: enabled)
- Support EDID management& DDC communication

Figure 2- 10 TFX-IHD

Figure 2- 11 TFX-OHD

Pin layout of the HDMI connector (female).



No.	Signal	No.	Signal
1	TMDS Data 2+	**11**	TMDS Clock Shield
2	TMDS Data 2 Shield	**12**	TMDS Clock-
3	TMDS Data 2-	**13**	CEC
4	TMDS Data 1+	**14**	N.C.
5	TMDS Data 1 Shield	**15**	SCL
6	TMDS Data 1-	**16**	SDA
7	TMDS Data 0+	**17**	DDC/CEC Ground
8	TMDS Data 0 Shield	**18**	+5V Power
9	TMDS Data 0-	**19**	Hot Plug Detect
10	TMDS Clock+		TMDS Clock Shield

2.3 4K Signal Cards

The Matrix Switcher 4K signal cards for HDMI and HDBT. All the signal cards support seamless switching and hot-plug as long as they all 4K.

The chart below shows all signal cards:

Input		**Output**	
Card	**Ports**	**Card**	**Ports**
TFX-IUH (79230)	4K HDMI & Analog Audio	TFX-OUH (79223)	4K HDMI & Analog Audio
TFX-IBT (79233)	4K 100M HDBT & Analog Audio & RS232 & IR	TFX-OBT (79243)	4K 100M HDBT & Analog Audio& RS232&IR

2.3.1 TFX-IUH & TFX-OUH

Single 4K seamless HDMI signal card (refer to *5.2.1* for detailed specification).

HDMI2.0 & HDCP2.2 compliant, capable to transmit HDMI/ DVI-I/DVI-D signal;

Auto-detect input resolution;

Max resolution: 4K×2K@60Hz;

The default output resolution is 4K×2K@30Hz and it can be adjusted via commands or GUI, support 4K×2K@60Hz、1024×768@60Hz、1920×1080p@60Hz、1280×720@60Hz;

Support EDID Management（default EDID: 4K×2K@30Hz）and DDC communication;

Input audio source selectable via command or GUI, including HDMI embedded audio (default), and external analog audio.

Figure 2- 12 TFX-IUH

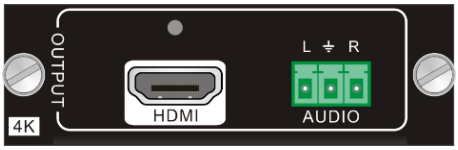
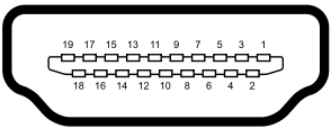


Figure 2- 13 TFX-OUH

Pin layout of the HDMI connector (female).



No.	Signal	No.	Signal
1	TMDS Data 2+	**11**	TMDS Clock Shield
2	TMDS Data 2 Shield	**12**	TMDS Clock-
3	TMDS Data 2-	**13**	CEC
4	TMDS Data 1+	**14**	N.C.
5	TMDS Data 1 Shield	**15**	SCL
6	TMDS Data 1-	**16**	SDA
7	TMDS Data 0+	**17**	DDC/CEC Ground
8	TMDS Data 0 Shield	**18**	+5V Power
9	TMDS Data 0-	**19**	Hot Plug Detect
10	TMDS Clock+		TMDS Clock Shield

2.3.2 TFX-IBT & TFX-OBT

4K seamless HDBT signal card (refer to *5.2.2* for detailed specification)

Max resolution: 4K×2K@60Hz;

Adaptive HDCP input and support HDCP2.2, the output signal supports HDCP1.4;

Work with HDBT transmitter/ receiver to attain long-distance transmission (up to 100m via qualified CAT6 cable for 1080P or 70m for 4K signal);

Real-time work status indicator: yellow LED blinks once powered on; green LED lights when the port is connected with HDBT devices;

HDBT port supports PoE;

Input audio source selectable via command or GUI, including HDMI embedded audio (default), and external analog audio;

The default output resolution is 4K×2K@30Hz and it can be adjusted via commands or GUI, support 4K×2K@60Hz、1024×768@60Hz、1920×1080p@60Hz、1280×720@60Hz;

Support bi-directional RS232 control;

Support bi-directional IR control, compatible with 5V/12V IR receiver (default: 5V);

Support EDID Management（default EDID: 4K×2K@30Hz）and DDC communication.

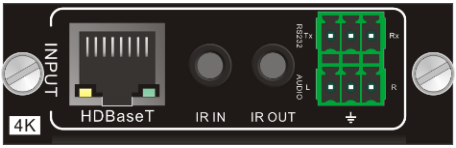


Figure 2- 14 I-BT

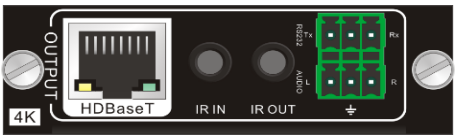
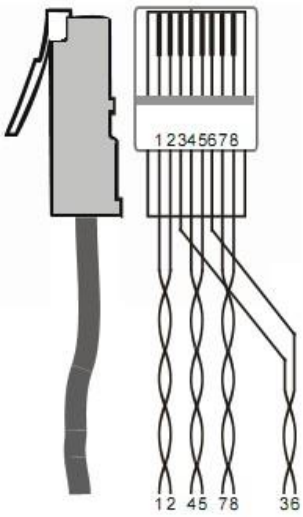


Figure 2- 15 O-BT

Pin layout of the HDBT connector:



Pin	Color
1	orange white
2	orange
3	green white
4	blue
5	blue white
6	green
7	brown white
8	brown

Twist the pure-color cables with their half-color cables.

2.3.3 I-UV

4K seamless VGA signal input card (refer to 8.2.3 for detailed specification);

Max VGA input resolutions: 1920×1200p@60Hz;

External analog audio input for VGA video signal;

Work with O-UH/ O-BT output cards to switch video & audio input signal, and the video signal can be adjusted as 4K@30Hz 4:4:4.

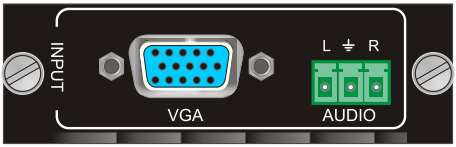
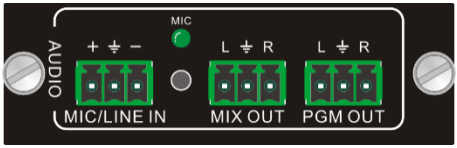
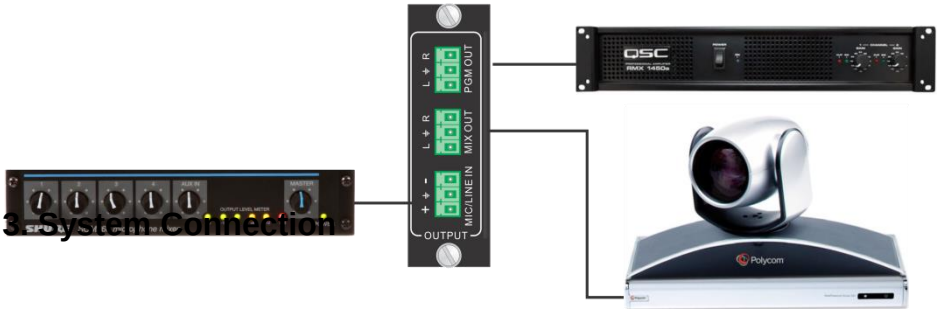


Figure 2- 16 I-UV

2.4 TFX-O-AU

The audio card for TekFlex allows for both source and Mic volume control. There is also a MIX OUT that can be used for VTC and Lecture Capture.





3 System Connection

3.1 Precautions

1) System should be installed in a clean environment with proper temperature and humidity.

2) All of the power switches, plugs, sockets, and power cords should be insulated and safe.

3) All devices should be connected before power on.

Figure 3- 1 Connection Diagram

3.2 Application

With its flexible port and card design the TekFlex-32 is a great solution for many types of systems. This product is ideal for large systems allowing for easy expand expansion in the future. When used with video conferencing or lecture capture, the TekFlex-32 solves switching issues with its seamless switching and scaling.

TekFlex is ideal for videoconferencing and lecture capture applications by providing seamless switching and lower resolutions to the codec or lecture capture system.

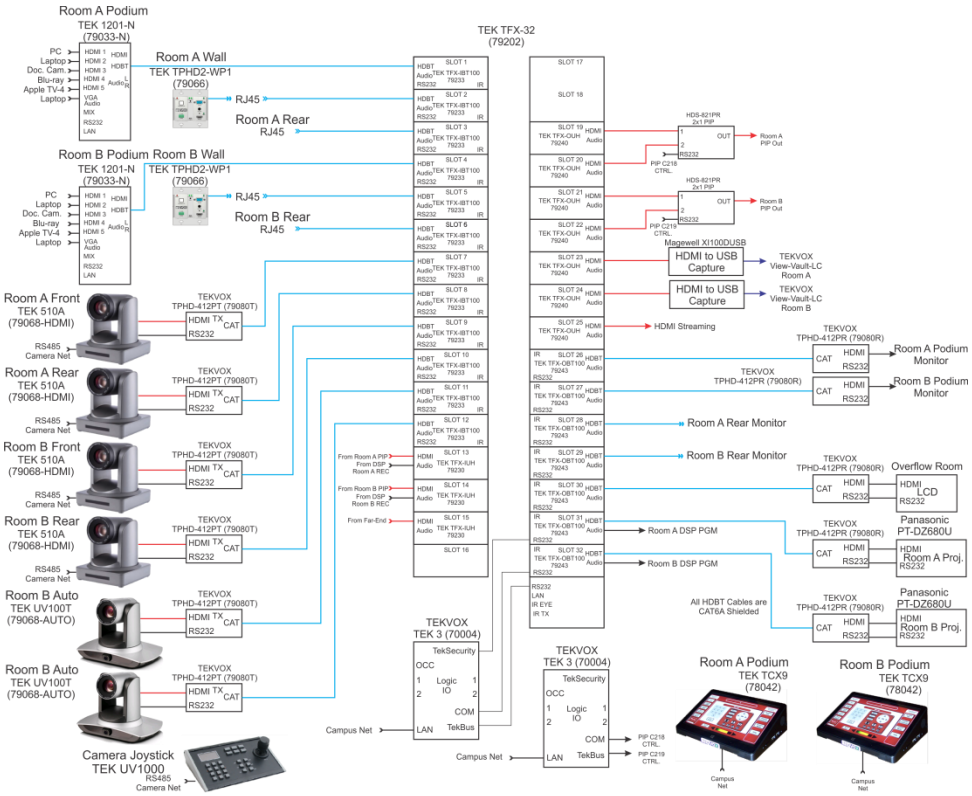
One of the great features is TekFlex ability to control endpoints using embedded RS232 commands across HDBaseT. The embedded control commands allow for selecting the slot number and the baud rate of the endpoint device. The command is structure as follows:

/+[Y]/[X]:******.

Where Y is the slot number, X is the baud rate and ***** is the data. At the end of the data a "." must be sent.

3.3 System Diagram

This diagram illustrates a large two room combining conference center with lecture capture, overflow and steaming. At the podium a TEK 1201-N is used to switch sources and CEC control of the Blu-ray and Apple TV. Control of the 1201-N is via HDBaseT. The TEKVOX camera system allows for control by Joystick, RS232 over HDBaseT or Auto-tracking. Main control of the system is provided by two TEK 3s and the podium TCX9s. Two other control interfaces can be used that can run on a PC, iOS or Android.



4. Operations

4.1 Front Panel Control

TekFlex-32 provides easy front panel button control for I/O switch, EDID management, and system inquiry.

4.1.1 Switching I/O connection

Input / output channels are recognized in double-digit, press 01~09 for channel 1~9.

1) To convert one input to an output:

Operation: "INPUT"+"OUTPUT"+"ENTER"

Example: transfer input 1 to output 5:

2) To convert an input to several outputs:

Operation: "INPUT" + "OUTPUT" + "OUTPUT" +… + "ENTER"

Example: Switch input 2 to output 2, 4

3) To convert an input to all outputs:

Operation: "input" + "ALL" + "ENTER"

Example: Convert input 2 to all outputs

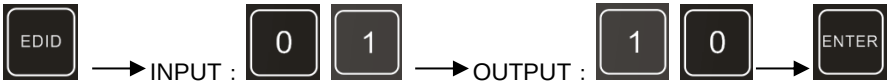
4.1.2 EDID Learning

The Matrix Switcher features EDID management to maintain compatibility between all devices.

- One input port learns the EDID data of one output port

Operation: "EDID"+"INPUT"+"OUTPUT"+"ENTER".

Example: Input 1 learns EDID data from output 10.



➢ All input ports learn EDID data from one output port

Operation: "EDID"+"ALL"+"OUTPUT"+"ENTER"

Example: All input ports learn EDID data from output 6

4.1.3 Inquiry

Press and hold the button "ENTER" for 3 seconds to enter system inquiry mode. The chart below shows information that can be inquired:

Function Items	Description	Example
Check customer serial	Interface shown after entering inquiry mode, customer serial can be changed via RS232 command.	K181201E01A15070 001 customer
Check output resolution	In inquiry mode, press output channel to check its resolution	Resolution: out02 1920×1080P
Correspondence between inputs and outputs	"**OUTPUT**" + "**ENTER**"	Matrix Switch AV: 06 ->08

4.1.4 Clear operation

Function: clear the previous operations before pressing **ENTER** to enforce it. Press **CLEAR** can only erase the operations not confirmed by pressing **ENTER**.

1) Input/ output channels are recognized in double-digit, press 01~09 instead of 1~9.

2) The input delay time between two numbers of every input& output channel must be less than 8 seconds; otherwise the operation will be cancelled.

3) The input/output channels on the rear panel are counting from left to right no matter whether there is signal card.

4.2 IR Control

Connect an IR receiver to **IR EYE** on the rear panel and users can control the switcher with the included IR remote (shown as below):

① Standby: enter/ exit standby mode

② INPUTS: input selection buttons, channels 1~9 should be pressed as 01~09

③ Function Buttons: share the same operation with front panel buttons

④ ENTER:

- confirm operation
- long-press (3 seconds or more) to enter inquiry mode

Note: navigation buttons are unavailable.

⑤ OUTPUTS: output selection buttons, channels 1~9 should be pressed as 01~09

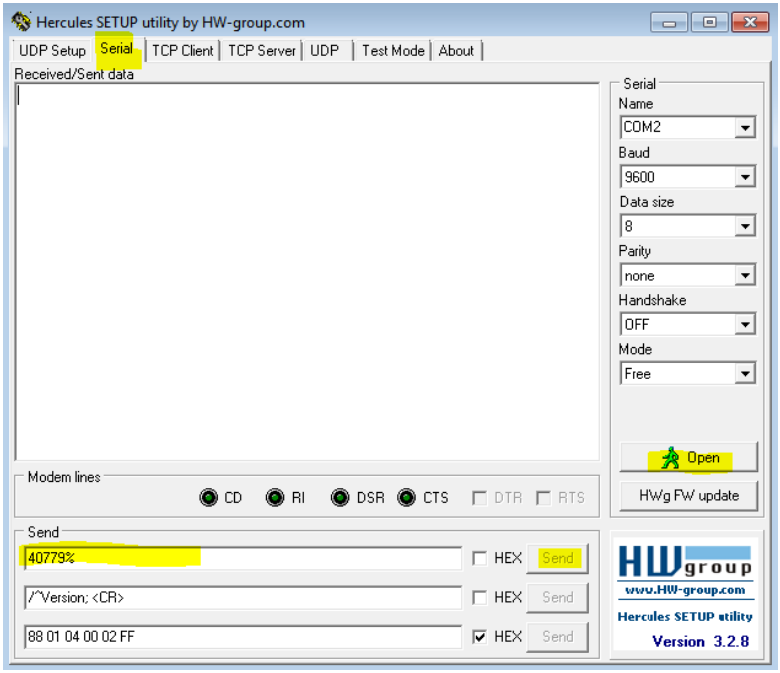
4.3 RS232 Control

TekFlex-32 provides a 3.5mm captive screw RS232 port for serial port control. Connect TekFlex-32 to the control device (e.g. a PC) with RS232 cable and set the correct parameters, the control device is capable to control TekFlex-32 via designed software.

4.3.1 RS232 PC Operation

To send commands to the TekFlex-32 an RS232 utility program like Hercules from HW Group http://new.hwg.cz/files/download/sw/version/hercules_3-2-8.exe or CommWatch must be used. The commands cannot be sent using a terminal program as one character at a time, and must be sent as a group of characters.

When using Hercules to control the TekFlex-32, select the serial port tab, set the serial settings and press the Open button. Enter the command you want to send and press the Send button.



Hercules

4.3.2 RS232 Communication Commands

1. Case insensitive.
2. In following commands, "["and "]" are symbols for easy reading and do not need to be typed in actual operation.
3. Type in the complete commands including ending symbol "." or ";".
4. For input/output channels 1~9 in the commands, type in 01~09 instead of 1~9.
5. After sending command "%0911." to restore factory default, wait for 10s or so before you reboot the device. Or the restoration may fail, and it will prompt "Default failed, please try again!" in the feedback.

Communication Protocol: Baud rate: 9600; Data bit: 8; Stop bit: 1; Parity bit: none.

Command	Description	Feedback
System Command		
/*Type;	Inquire the model	TekFlex-32
/%Lock;	Lock the front panel buttons	System Locked!
/%Unlock;	Unlock the front panel buttons	System Unlock!
/^Version;	Inquire the firmware version	VX.X.X
/:MessageOff;	Turn off the feedback from the com port. It only shows "switcher OK".	/:MessageOff;
/:MessageOn;	Turn on the feedback from the com port.	/:MessageOn;
Operation Command		
Undo.	Cancel the previous operation.	Undo Ok!
Demo.	Switch to the "demo" mode, 02->01, 2->2, 3->3 … and so on.	Demo Mode AV: 02->01 ……
[x]All.	Transfer signal from Input [x] to all outputs	02 To All.
All@.	Switch on all the outputs	All Open.
[x]@.	Switch on output [x]	02 Open.
All$.	Switch off all the outputs	All Closed.
[x]$.	Switch off output [x]	01 Closed.

Command	Description	Feedback
[x1]V[x2],[x3],[x4]…	Transfer signal from input [x1] to output [x2],[x3],[x4].., separate output channels with ","	AV: 01->07 AV: 01->08 …
Save[Y].	Save the present operation to the preset command [Y], [Y]=0~9	Save To F1
Recall[Y].	Recall the preset command [Y]	Recall From F1 AV: 02->04 AV: 02->06 …
Clear[Y].	Clear the preset command [Y]	Clear F1
EDIDMInit.	Reset factory default EDID	EDIDMInit.
EDIDM[X]B[Y].	Manage EDID, enable input [Y] learn EDID data from output [X]	EDIDM07B03
PWON.	Work normally	PWON
PWOFF.	Enter standby mode	PWOFF
STANDBY.	Enter standby mode, can be awaken via front panel button operations	STANDBY
CustomerSerial:11111111111111111.	Set the customer serial number	customer serial is 1111111111111111111

Command	Description	Feedback
/+[Y]/[X]:******. /+N[Y]/[X]:******. /+F[Y]/[X]:******.	Embedded control command: **a.** Y is the Slot # connected to the far end device. **b.** N - Send this command to the corresponding HDBaseT receiver when TekFlex-32 is powered on **c.** F - Send this command to the corresponding HDBaseT receiver when TekFlex-32 is powered off ① X is for baud rate, its value ranges from 1 to 7 (1--2400, 2--4800, 3--9600, 4--19200, 5--38400, 6—57600, 7--115200) ② ***** is for data (max 48 Byte)	601% Volume of MIC : 60 (****** and feedback from HDBT receiver)
%0911.	Reset factory default	Factory Default
Inquiry Command		
Status[x].	Inquire the respective input for output [x]	AV: 01-> 02
Status.	Inquire respective inputs for all outputs	AV: 01->02 AV: 03->06 … …
CheckInKatype.	Get the input signal card type *-- no available input signal card/ output card, 1--VGA, 2--DVI, 4--BT, 5--SDI, 6--HDMI	Channel IN:*11*4**11*4*.
CheckOutKatype.	Get the output signal card type *-- no available output signal card/ input card, 1--VGA, 2--DVI, 4--BT, 6--HDMI	Channel OUT:***4*62**1**.

Command	Description	Feedback
%9961.	Get current keylock status	System Unlock!/ System Locked!
%9962.	Inquire current working status	PWON/STANDBY /PWOFF
%9963.	Return all input & output connection status	Port 01 02 03 04 Mode In In In In Port 05 06 07 08 Mode In Ou In In Port 09 10 11 12 Mode Ou Ou In Ou Port 13 14 15 16 Mode Ou Ou Ou Ou
%9964.	Inquire the IP	IP: 192.168.0.178
%9973.	Return resolutions of all outputs	Resolution Out02 1920x1080P 60 Resolution Out04 1920x1080P 60 … …
%9974.	Get current HDCP Status of output port. "X" means input port or no signal cards. "Y" means the output signal traffic with HDCP; "N" means not.	Out 01 02 03 04 HDCP X X X X Out 05 06 07 08 HDCP X N X X Out 09 10 11 12 HDCP N N X N Out 13 14 15 16 HDCP N N N N
%9975.	Get current input & output card correspondence status	Out 01 02 03 04 In 00 00 00 00 Out 05 06 07 08 In 00 01 00 00 Out 09 10 11 12 In 01 01 00 01 Out 13 14 15 16 In 01 01 01 01

Command	Description	Feedback
%9976.	Get the output card type	Channel 4 output mode is Digital Channel 6 output mode is VGA Channel 7 output mode is Digital Channel 10 output mode is VGA
%9978.	Inquire output resolution configuration mode (manual/ auto EDID)	Channel xx is auto/manual signal format
%9979.	Inquire the customer serial number	customer serial is 1111111111111111111
%9981.	Inquire input/output type of current inserted cards Note: If there is no card inserted in a slot, it will show "Nc" instead of In/ Ou.	Port 01 02 03 04 Mode In In Ou In Port 05 06 07 08 Mode Ou Ou Ou Ou Port 09 10 11 12 Mode Ou Ou Nc Nc Channel status has changed
%8800.	Get the command sent to port 1 when PWON	Port 1: 1A1. when PWON
%8801.	Get the command sent to port 2 when PWON	Port 2: 1A1. when PWON
%8802.	Get the command sent to port 3 when PWON	Port 3: 1A1. when PWON
%8803.	Get the command sent to port 4 when PWON	Port 4: 1A1. when PWON
%8804.	Get the command sent to port 5 when PWON	Port 5: 1A1. when PWON
%8805.	Get the command sent to port 6 when PWON	Port 6: 1A1. when PWON

Command	Description	Feedback
%8806.	Get the command sent to port 7 when PWON	Port 7: 1A1. when PWON
%8807.	Get the command sent to port 8 when PWON	Port 8: 1A1. when PWON
%8808.	Get the command sent to port 9 when PWON	Port 9: 1A1. when PWON
%8809.	Get the command sent to port 10 when PWON	Port 10: 1A1. when PWON
%8810.	Get the command sent to port 11 when PWON	Port 11: 1A1. when PWON
%8811.	Get the command sent to port 12 when PWON	Port 12: 1A1. when PWON
%8812.	Get the command sent to port 13 when PWON	Port 13: NO Data when PWON
%8813.	Get the command sent to port 14 when PWON	Port 14: NO Data when PWON
%8814.	Get the command sent to port 15 when PWON	Port 15: NO Data when PWON
%8815.	Get the command sent to port 16 when PWON	Port 16: NO Data when PWON
%8816.	Get the command sent to port 17 when PWON	Port 17: NO Data when PWON
%8817.	Get the command sent to port 18 when PWON	Port 18: NO Data when PWON
%8818.	Get the command sent to port 19 when PWON	Port 19: NO Data when PWON
%8819.	Get the command sent to port 20 when PWON	Port 20: NO Data when PWON
%8820.	Get the command sent to port 21 when PWON	Port 21: NO Data when PWON
%8821.	Get the command sent to port 22 when PWON	Port 22: NO Data when PWON
%8822.	Get the command sent to port 23 when PWON	Port 23: NO Data when PWON

Command	Description	Feedback
%8823.	Get the command sent to port 24 when PWON	Port 24: NO Data when PWON
%8824.	Get the command sent to port 25 when PWON	Port 25: NO Data when PWON
%8825.	Get the command sent to port 26 when PWON	Port 26: NO Data when PWON
%8826.	Get the command sent to port 27 when PWON	Port 27: NO Data when PWON
%8827.	Get the command sent to port 28 when PWON	Port 28: NO Data when PWON
%8828.	Get the command sent to port 29 when PWON	Port 29: NO Data when PWON
%8829.	Get the command sent to port 30 when PWON	Port 30: NO Data when PWON
%8830.	Get the command sent to port 31 when PWON	Port 31: NO Data when PWON
%8831.	Get the command sent to port 32 when PWON	Port 32: NO Data when PWON
%8832.	Get the command sent to port 1 when PWOFF	Port 1: 2A1. when PWOFF
%8833.	Get the command sent to port 2 when PWOFF	Port 2: 2A1. when PWOFF
%8834.	Get the command sent to port 3 when PWOFF	Port 3: 2A1. when PWOFF
%8835.	Get the command sent to port 4 when PWOFF	Port 4: 2A1. when PWOFF
%8836.	Get the command sent to port 5 when PWOFF	Port 5: 2A1. when PWOFF
%8837.	Get the command sent to port 6 when PWOFF	Port 6: 2A1. when PWOFF
%8838.	Get the command sent to port 7 when PWOFF	Port 7: 2A1. when PWOFF
%8839.	Get the command sent to port 8 when PWOFF	Port 8: 2A1. when PWOFF

Command	Description	Feedback
%8840.	Get the command sent to port 9 when PWOFF	Port 9: 2A1. when PWOFF
%8841.	Get the command sent to port 10 when PWOFF	Port 10: 2A1. when PWOFF
%8842.	Get the command sent to port 11 when PWOFF	Port 11: 2A1. when PWOFF
%8843.	Get the command sent to port 12 when PWOFF	Port 12: 2A1. when PWOFF
%8844.	Get the command sent to port 13 when PWOFF	Port 13: 2A1. when PWOFF
%8845.	Get the command sent to port 14 when PWOFF	Port 14: 2A1. when PWOFF
%8846.	Get the command sent to port 15 when PWOFF	Port 15: 2A1. when PWOFF
%8847.	Get the command sent to port 16 when PWOFF	Port 16: 2A1. when PWOFF
%8848.	Get the command sent to port 17 when PWOFF	Port 17: 2A1. when PWOFF
%8849.	Get the command sent to port 18 when PWOFF	Port 18: 2A1. when PWOFF
%8850.	Get the command sent to port 19 when PWOFF	Port 19: 2A1. when PWOFF
%8851.	Get the command sent to port 20 when PWOFF	Port 20: 2A1. when PWOFF
%8852.	Get the command sent to port 21 when PWOFF	Port 21: 2A1. when PWOFF
%8853.	Get the command sent to port 22 when PWOFF	Port 22: 2A1. when PWOFF
%8854.	Get the command sent to port 23 when PWOFF	Port 23: 2A1. when PWOFF
%8855.	Get the command sent to port 24 when PWOFF	Port 24: 2A1. when PWOFF
%8856.	Get the command sent to port 25 when PWOFF	Port 25: 2A1. when PWOFF

Command	Description	Feedback
%8857.	Get the command sent to port 26 when PWOFF	Port 26: 2A1. when PWOFF
%8858.	Get the command sent to port 27 when PWOFF	Port 27: 2A1. when PWOFF
%8859.	Get the command sent to port 28 when PWOFF	Port 28: 2A1. when PWOFF
%8860.	Get the command sent to port 29 when PWOFF	Port 29: 2A1. when PWOFF
%8861.	Get the command sent to port 30 when PWOFF	Port 30: 2A1. when PWOFF
%8862.	Get the command sent to port 31 when PWOFF	Port 31: 2A1. when PWOFF
%8863.	Get the command sent to port 32 when PWOFF	Port 32: 2A1. when PWOFF

Commands for Signal Cards		
TFX-OTP/VG/ DV/ HD		
Command	**Description**	**Feedback**
USER/O/[x]:0804%;	Set the resolution of output [x] to 720P 60Hz	Resolution Out08 1280x720P
USER/O/[x]:0810%;	Set the resolution of output [x] to 1080I 30Hz	Resolution Out08 1920x1080I
USER/O/[x]:0813%;	Set the resolution of output [x] to 1080P 60Hz	Resolution Out08 1920x1080P
USER/O/[x]:0822%;	Set the resolution of output [x] to 800X600 60Hz	Resolution Out08 800x600
USER/O/[x]:0824%;	Set the resolution of output [x] to 1024x768 60Hz	Resolution Out08 1024x768
USER/O/[x]:0826%;	Set the resolution of output [x] to 1280X1024 60Hz	Resolution Out08 1280x1024
USER/O/[x]:0837%;	Set the resolution of output [x] to 1920X1200 60Hz	Resolution Out08 1920x1200
TFX-OVG		
USER/O/[x]:0900%;	Set the resolution of CVBS output [x] to 480i	Resolution Out 01 720x480 I
USER/O/[x]:0901%;	Set the resolution of CVBS output [x] to 576i	Resolution Out 02 720x576 I
USER/O/[x]:0201%;	Set the signal format of VGA output [x] to YPBPR	0201%
USER/O/[x]:0202%;	Set the signal format of VGA output [x] to VGA	0202%
USER/O/[x]:0203%;	Set the signal format of VGA output [x] to CVBS	0203%
USER/O/[x]:0110%;	Enable analog audio output for output [x]	Channel 11 out audio command is:0110%
USER/O/[x]:0111%;	Disable analog audio output for output [x]	Channel 11 out audio command is:0111%
USER/O/[x]:0710%;	Inquire analog audio output status for output [x]	Channel 11 audio output is mute

TFX-ITP		
Command	**Description**	**Feedback**
USER/I/[x]:0706%;	Set the audio source of input [x] to HDMI embedded audio	Channel 01 in audio command is:0706%
USER/I/[x]:0707%;	Set the audio source of input [x] to analog audio	Channel 01 in audio command is:0707%
USER/I/[x]:0708%;	Get the audio source of input [x]	Channel 08 in audio is HDMI
TFX-OTP		
USER/O/[x]:0108%;	Enable analog audio output for channel [x]	Channel 02 out audio command is:0108%
USER/O/[x]:0109%;	Disable analog audio output for channel [x]	Channel 02 out audio command is:0109%
USER/O/[x]:0710%;	Inquire analog audio output status for output [x]	Channel 11 audio output is mute
USER/O/[x]:0103%;	Set the output signal to HDMI and neglect hot-plug detection	0103%
USER/O/[x]:0104%;	Set the output signal to DVI and neglect hot-plug detection	0104%
USER/O/[x]:0105%;	Capture the best resolution of far-end display connected to output [x] and enable hot-plug detection	0105%
USER/O/[x]:0106%;	Normal Operation	0106%
USER/O/[x]:0107%;	VTC or Lecture Capture Mode	0107%

TFX-ODV		
Command	**Description**	**Feedback**
USER/O/[x]:0101%;	Set the resolution of output [x] through auto EDID (after detected new output, automatically capture the output device's EDID)	Resolution Out 02 Auto
USER/O/[x]:0110%;	Enable analog audio output for output [x]	Channel 11 out audio command is:0110%
USER/O/[x]:0111%;	Disable analog audio output for output [x]	Channel 11 out audio command is:0111%
USER/O/[x]:0710%;	Inquire analog audio output status for output [x]	Channel 11 audio output is mute
USER/O/[x]:0103%;	Set the output signal to HDMI and neglect hot-plug detect	0103%
USER/O/[x]:0104%;	Set the output signal to DVI and neglect hot-plug detect	0104%
USER/O/[x]:0105%;	Set normal hot-plug detect for DVI output [x]	0105%
USER/O/[x]:0106%;	Normal Operation	0106%
USER/O/[x]:0107%;	VTC or Lecture Capture Mode	0107%
TFX-IHD		
USER/I/[x]:0706%;	Set the audio source of input [x] to HDMI embedded audio	Channel 04 in audio command is:0706%
USER/I/[x]:0707%;	Set the audio source of input [x] to analog audio	Channel 04 in audio command is:0707%
USER/I/[x]:0708%;	Get the audio source of input [x]	Channel 01 in audio is HDMI
TFX-OHD		
USER/O/[x]:0110%;	Enable analog audio output for output [x]	Channel 11 out audio command is:0110%
USER/O/[x]:0111%;	Disable analog audio output for output [x]	Channel 11 out audio command is:0111%
USER/O/[x]:0710%;	Inquire analog audio output status for output [x]	Channel 11 audio output is mute
USER/O/[x]:0106%;	Normal Operation	0106%
USER/O/[x]:0107%;	VTC or Lecture Capture Mode	0107%

TFX-IUH		
USER/I/[x]:0706%;	Set the audio source of input [x] to HDMI embedded audio	Channel 04 in audio command is:0706%
USER/I/[x]:0707%;	Set the audio source of input [x] to analog audio	Channel 04 in audio command is:0707%
USER/I/[x]:0408%;	Restore the signal card to its factory default settings.	
TFX-OUH		
USER/O/[x]:0804%;	Set the resolution of output [x] to 720P 60Hz	Resolution Out08 1280x720P
USER/O/[x]:0813%;	Set the resolution of output [x] to 1080P 60Hz	Resolution Out08 1920x1080P
USER/O/[x]:0824%;	Set the resolution of output [x] to 1024x768 60Hz	Resolution Out08 1024x768
USER/O/[x]:0840%;	Set the resolution of output [x] to 3840x2160 30Hz	Resolution Out08 3840x2160 30Hz
USER/O/[x]:0841%;	Set the resolution of output [x] to 3840x2160 60Hz	Resolution Out08 3840x2160 60Hz
USER/I/[x]:0408%;	Restore the signal card to its factory default settings.	
TFX-IBT		
USER/I/[x]:0706%;	Set the audio source of input [x] to HDMI embedded audio	Channel 04 in audio command is:0706%
USER/I/[x]:0707%;	Set the audio source of input [x] to analog audio	Channel 04 in audio command is:0707%
USER/I/[x]:0408%;	Restore the signal card to its factory default settings.	
USER/I/[x]:0409%;	RS232 pass-through control mode 1: Control far-end device from the RS232 port of this input card.	
USER/I/[x]:0410%;	RS232 pass-through control mode 2(factory default): Control far-end device from the RS232 port of this Matrix Switcher.	
TFX-OBT		
USER/O/[x]:0804%;	Set the resolution of output [x] to 720P 60Hz	Resolution Out08 1280x720P
USER/O/[x]:0813%;	Set the resolution of output [x] to 1080P 60Hz	Resolution Out08 1920x1080P

USER/O/[x]:0824%;	Set the resolution of output [x] to 1024x768 60Hz	Resolution Out08 1024x768
USER/O/[x]:0840%;	Set the resolution of output [x] to 3840x2160 30Hz	Resolution Out08 3840x2160 30Hz
USER/O/[x]:0841%;	Set the resolution of output [x] to 3840x2160 60Hz	Resolution Out08 3840x2160 60Hz
USER/I/[x]:0408%;	Restore the signal card to its factory default settings.	
USER/I/[x]:0409%;	RS232 pass-through control mode 1: Control far-end device from the RS232 port of this input card.	
USER/I/[x]:0410%;	RS232 pass-through control mode 2(factory default): Control far-end device from the RS232 port of this Matrix Switcher.	
TFX-OAU2		
PortXX/InputMic.	Switch the audio input channel of port xx to MIC.	Port XX Switch to mic.
PortXX/InputLine.	Switch the audio input channel of port xx to LINE.	Port XX Switch to line.
PortXX/SetMicVol:XX.	Set the MIC volume of port xx to xx.	Port XX Volume of MIC: xx. (xx can be 0-60)
PortXX/SetSourceVol:XX.	Set the source volume of port xx to xx.	Port XX Volume of SOURCE : xx. (xx can be 0-60)
PortXX/MicVolume+.	Increase the MIC volume of port xx.	Port XX Volume of MIC : xx. (xx can be 0-60)
PortXX/MicVolume-.	Decrease the MIC volume of port xx.	Port XX Volume of MIC : xx. (xx can be 0-60)
PortXX/SourceVolume+.	Increase the source volume of port xx.	Port XX Volume of SOURCE : xx.
PortXX/SourceVolume-.	Decrease the source volume of port xx.	Port XX Volume of SOURCE : xx.
PortXX/SetStereo.	Switch the output audio mode of port xx to stereo.	Port XX Output is stereo mode.
PortXX/SetMono.	Switch the output audio mode of port xx to mono.	Port XX Output is mono mode.
PortXX/MicMute.	Mute the MIC audio of port xx.	Port XX Mic Mute.
PortXX/MicUnmute.	Unmute the MIC audio of port xx.	Port XX Mic Unmute.
PortXX/SourceMute.	Mute the source audio of port xx.	Port XX Source Mute.
PortXX/SourceUnmute.	Unmute the source audio of port xx.	Port XX Source Unmute.

Inquire commands		
%9921.	Inquire the input audio channel.	Port XX Switch to mic. Port XX Switch to line.
%9922.	Inquire the output audio mode.	Port XX Output is stereo mode. Port XX Output is mono mode.
%9923.	Inquire the mute status of MIC audio.	Port XX Mic Mute. Port XX Mic Unmute.
%9925.	Inquire the mute status of source audio.	Port XX Source Mute. Port XX Source Unmute.
%9926.	Inquire the volume of MIC audio.	Port XX Volume of MIC : xx.
%9928.	Inquire the volume of source audio.	Port XX Volume of SOURCE : xx.

4.4 TCP/IP Control

TekFlex-32 has the ability to be controlled via TCP/IP.

Default settings: IP: 192.168.0.178; Subnet Mast: 255.255.255.0; Gateway: 192.168.0.1; Serial Port: 4001.

IP & gateway can be changed as you need, Serial Port cannot be changed.

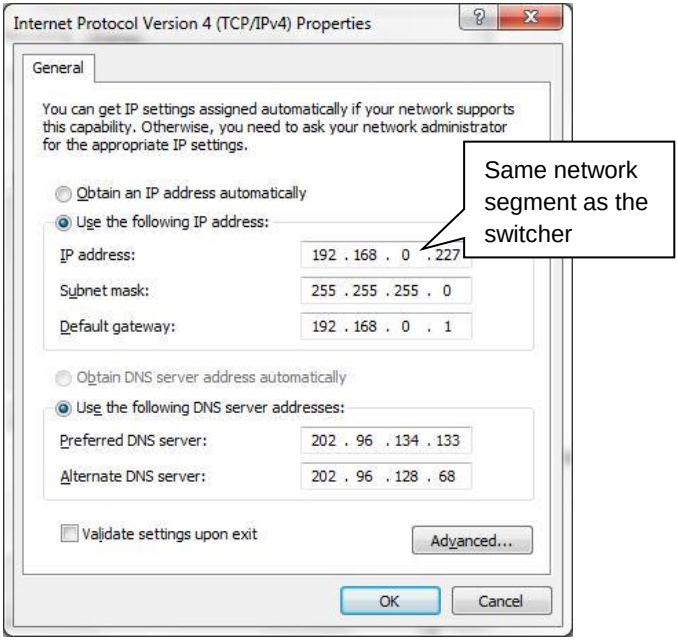
Connect the Ethernet port of control device and TCP/IP port of TekFlex-32, and set same network segment for the 2 devices, users are able to control the device via web-based GUI or designed TCP/IP communication software.

4.4.1 Control Modes

TekFlex-32 can be controlled by PC or 3rd party control system using both static and DHCP. Connection can be direct cabling between PC and TekFlex-32.

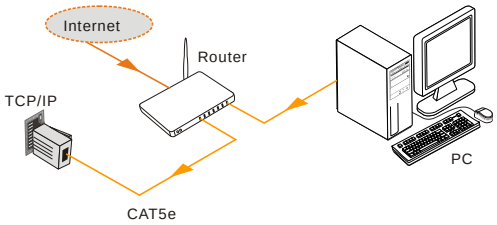
- **Controlled by PC directly**

Connect a computer to the TCP/IP port of the TekFlex-32, and set its network segment to the same as the TekFlex-32's.



- **Controlled by PC(s) using DHCP server**

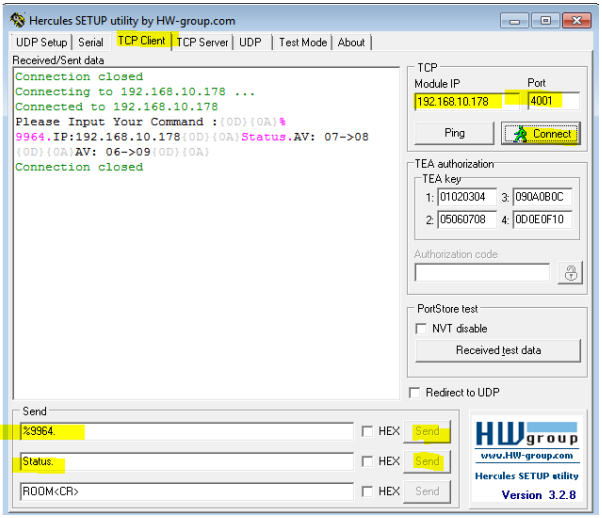
In this mode you will first need to connect to the TekFlex-32 using the direct method to set the IP address of the unit to match the VLAN it is connected to. The TekFlex-32 can be set to DHCP and reserved by the DHCP server. Now just enter the IP address of the TekFlex-32 into your browser or control program.



4.4.2 Control via TCP/IP communication software

(Exampled by TCPUDP software)

1) Connect a computer and TekFlex-32 to the same network. Open the TCPUDP software (or any other TCP/IP communication software like Hercules from HW Group http://new.hwg.cz/files/download/sw/version/hercules_3-2-8.exe) and create a TCP Client connection by entering the IP address and port of TekFlex-32 (default IP: 192.168.0.178, port: 4001).



2) After connecting successfully, you can enter commands to control the TekFlex-32.

4.4.3 Control via web-based GUI

TekFlex-32 provides with built-in GUI for convenient TCP/IP control. GUI allows users to interact with TekFlex-32 through graphical icons and visual indicators.

Access GUI interface through any one of the following methods:

1) Access through UPnP: Go to **My Network Place** in your PC, and click the icon named TekFlex-32.
2) Access through web browser: Type the IP of the device (default: 192.168.0.178, changeable) in the browser.

🕮 PCs running Windows XP system may occur issues in finding UPnP icon, follow these steps to switch on UPnP protocol:

1) Add UPnP component: go to "**Control Panel**" -> double-click "**Add/ Delete Programs**" -> double-click "Add/ Delete windows component" ->tick "UPnP" -> click "Next" -> click "OK"
2) Enable Windows Firewall: go to "**Control Panel**" -> double-click "**Windows Firewall**" -> click "Others" -> tick "UPnP framework"
3) Enable UPnP auto-starting: go to "**Control Panel**" -> double-click "**Administrative Tools** " -> double-click "Services" -> find and click **SSDP Discovery Service** and **Universal Plug and Play Device Host** -> click "OK"

   UPnP will now automatically start when you turn on your computer.
4) Reboot the device.

The log-in interface is shown below:

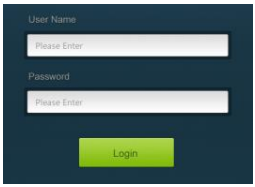


Figure 4-1 Log-in interface

There are two selectable accounts to log in. Type the right name and password in relative column and click **Login** to enter configuration interfaces.

- **Admin Mode**
  - User Name: **admin**; Password: **admin** (default setting, changeable via GUI)
- **User Mode**
  - User Name: **user**; Password: **user** (default setting, changeable via GUI)

After login in, browser enters the user management interface to provide the user with

access to system operation as either an administrator or user. The chart below illustrates the main structure of GUI interfaces:

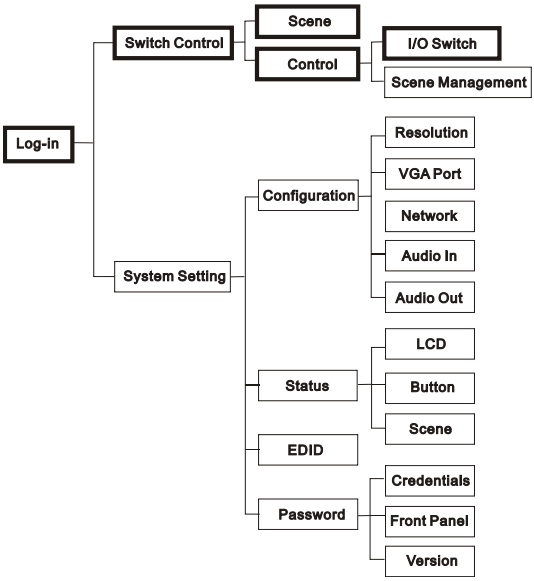


Figure 4-2 GUI Structure

Log in as user will only access interfaces in bold in **Figure 4-2**.

Switch Control: Two selectable interfaces in total, including scene switch interface and I/O switch interface

Figure 4-3 Scene Switch

Figure 4-4 I/O Switch

The following are available from Switch Control pages:

- Scene select: scene button + Load
- I/O switch: "input" + "output 1 + …/ All" +"Confirm"
- Scene management (save/ delete/ modify)
- Switch to system setting interfaces by pressing ⚙ at the left-bottom corner

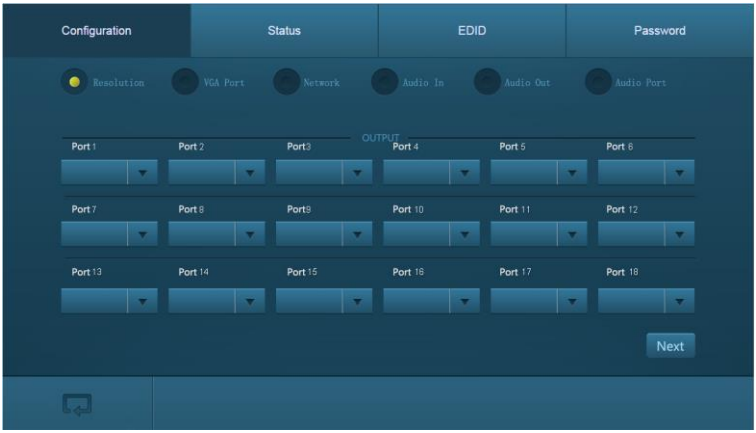
4.4.4 System Setting

This menu boasts 4 submenu items in total, including configuration, status, EDID and password.

Configuration

6 submenu items in total, including Resolution, VGA Port, Network, Audio In, Audio Out and Audio port.

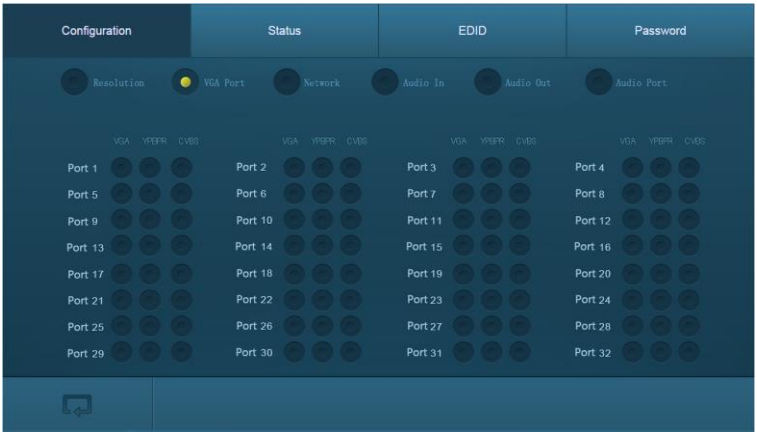
① **Configure output resolution**



O-UH& O-BT: 4K×2K@60Hz、4K×2K@30Hz、1024×768@60Hz、1920×1080p@60Hz、1280×720@60Hz.

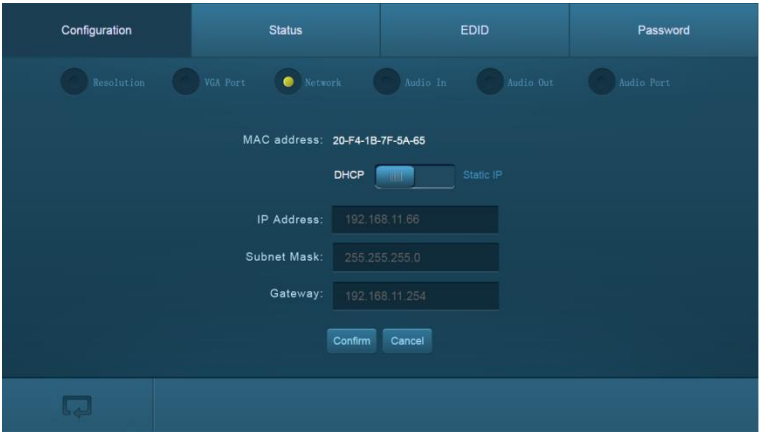
O-AU: Unavailable.

② Configure VGA port



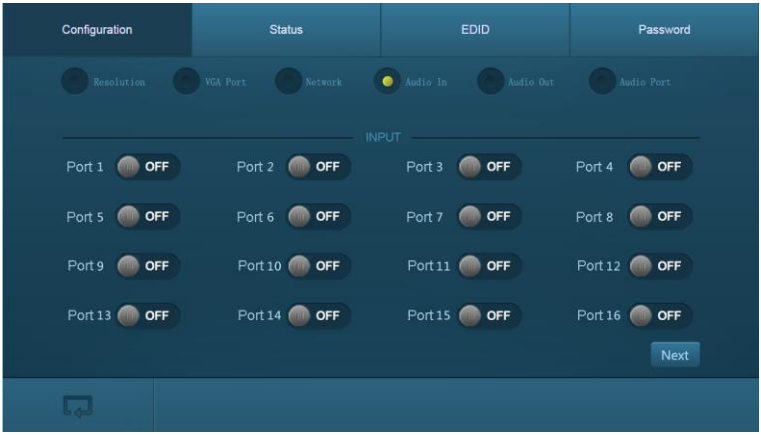
Set the VGA signal format of I-UV: including VGA, YPBPR, and CVBS.

③ Configure network



In this interface, you can set DHCP (automatically assign IP by router) or static IP (manually set IP).

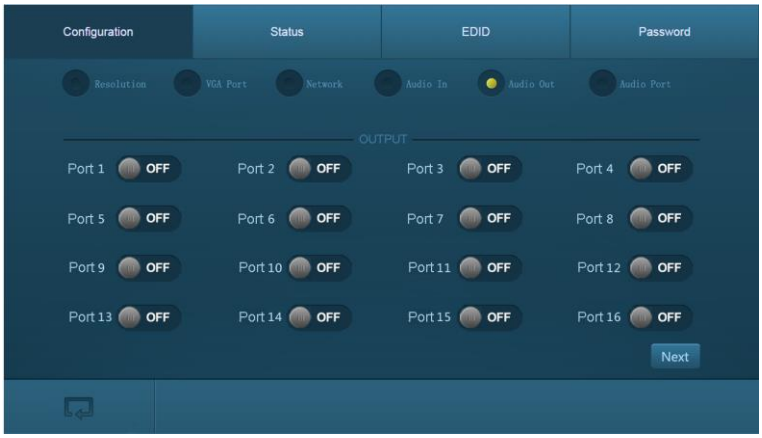
④ Configure audio input



In this interface, you can switch on/ off audio input port of I-UH, I-BT, and I-UV.

O-AU: Unavailable.

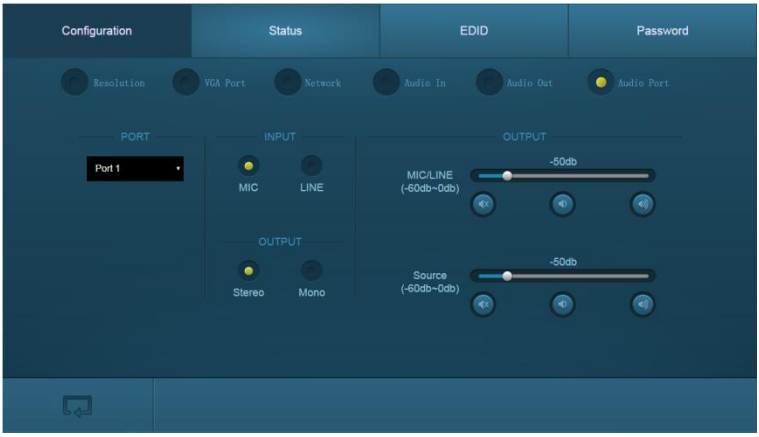
⑤ Configure audio output



In this interface, you can switch on/ off audio output port of O-UH and O-BT.

O-AU: Unavailable.

⑥ Configure PGM OUT audio port



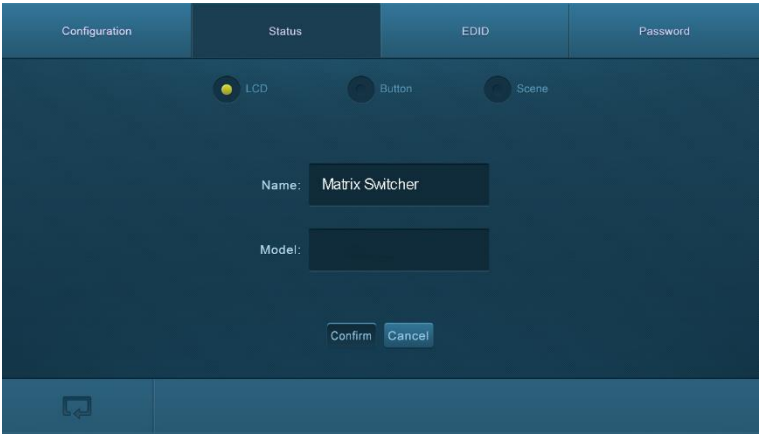
In this interface, you can adjust the mixed audio volume, select stereo or mono audio channel, and select mic or line audio input.

This menu is only used for controlling the PGM port of O-AU signal card.

Status

3 submenu items in total, including LCD, Button, and Scene

1) Configure LCD display

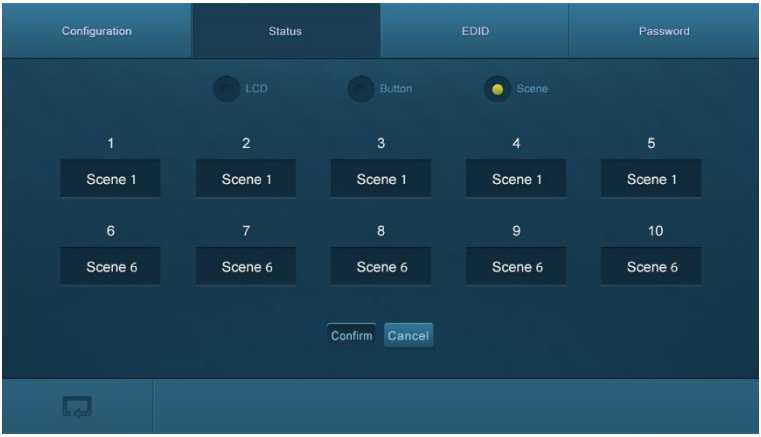


In this interface, you can configure LCD display information: max at 16 numbers/ letters.

2) Set button labels

In this interface, you can set button labels: max at 7 numbers/ letters/ Chinese characters.

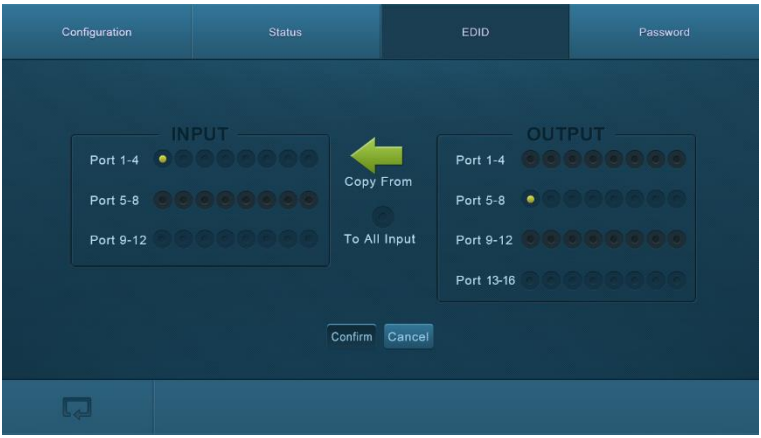
3) Name scene



In this interface, name scenes: max at 7 numbers/ letters/ Chinese characters.

EDID

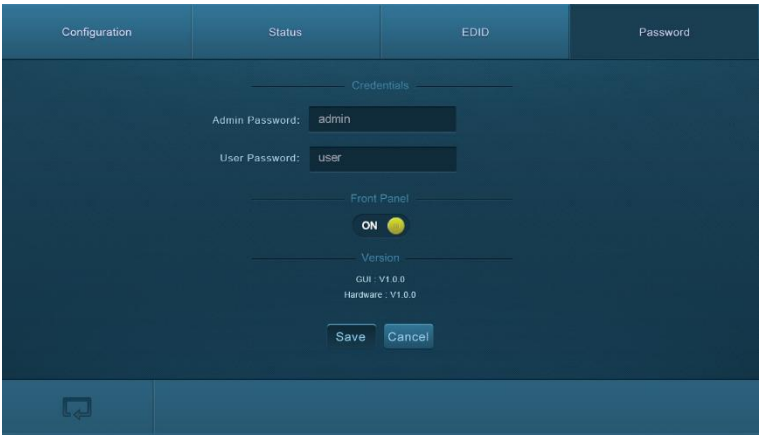
EDID management interface, enable 1/all input(s) capture and learn the EDID data from 1 output.



In this interfaces, you can:

- 1 input learns EDID from 1 output: **Output** + **Input** + **Confirm**
- All inputs learn EDID from 1 output: **Output** + T**o All Inputs**
- Undo the previous input: click **Cancel**

Password



In this interfaces, you can:

- Set password: max at 10 numbers/ letters
- Configure front panel lock status
- Inquire GUI& Hardware versions

Remember to click **Save** to save the settings.

🕮 Notes on the front panel icon:

Icon Status	Description
	Front panel button unlock
	Front panel button locked

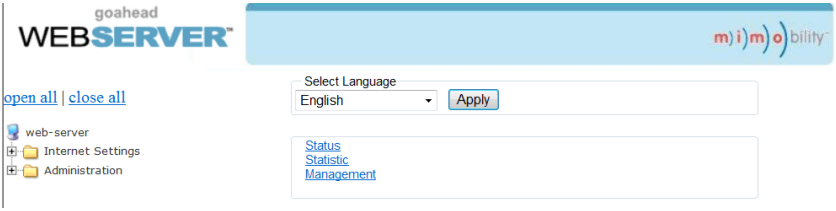
Press the button to switch between the 2 states.

🕮 Clear the cache of the browser beforehand to ensure reliable GUI operation.

4.4.5 Port Management

Type the designed website 192.168.0.178:100 (Default, changeable via GUI) in your browser. Enter correct username and password (same with GUI name and password) to log in the Webserver:

Here is the main configuration interface of the Webserver:



In this interface, you can:

- ➢ Change website display language
- ➢ Modify network settings: Go to Internet Settings -> WAN
- ➢ Upgrade TCP/IP module: Go to Administration -> Upload Program -> Select program file -> Start upgrading

  Reboot the device after upgrading.

5. Firmware Upgrade

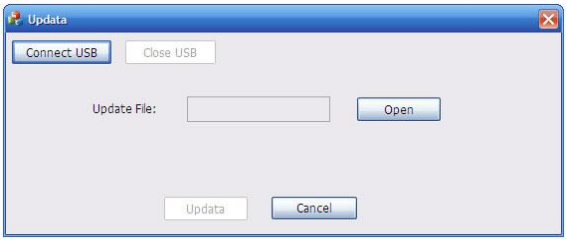
The switcher boasts a USB port for online firmware upgrade on the front panel. Follow these steps to upgrade firmware:

Step1. Copy the upgrade software and the latest upgrade file (.bin) to PC.

Step2. Connect the USB ports of the switcher and the PC via USB cable.

Step3. Double-click the update software icon (see as below).

It will enter the upgrade interface shown as below:



Step4. Click **Connect USB**.

Step5. Click **Open** to load the upgrade file, then click **Update** to start firmware upgrading.

Note: To ensure available control, the COM number of the PC should be 1~9.

6. Specification

6.1 Main Unit

TekFlex-32 (79201)			
Connectors			
Control	1 IR EYE, 1 RS232, 1 TCP/IP	Card Slot	12 PCI-E
Control Connectors	1 3.5mm mini jack, 1 3-pin pluggable terminal block, 1 RJ45		
General			
1080 Card Standards	HDMI 1.4 & HDCP 1.3	Resolution	1080p (max)
4K Card Standards	HDMI 2.0 & HDCP 2.2	Resolution	4K×2K@60Hz (max)
Power Supply	100~240V AC	Power Consumption	508w fully loaded
Temperature	0~50℃	Reference Humility	10%~90%
Dimension (W*H*D)	17.2 x 8.72 x 15.1 inches	Weight	26.1 lbs.

6.2 Signal Cards

6.2.1 TFX-ITP & TFX-OTP

TFX-ITP (79213)		**TFX-OTP (79223)**	
Input	1 HDBT, 1 Audio	Output	1 HDBT, 1 Audio
Input Connector	1 Female RJ45 1 3-pin pluggable terminal block	Output Connector	1 Female RJ45 1 3-pin pluggable terminal block
Power Consumption	13.5w	Power Consumption	14w
General			
Transmission Distance	(1080p)≤70m	Switching Speed	＜100ns
Working Temperature	0~50℃	Reference Humility	10%~90%
Standard	HDMI 1.3, DVI 1.0 & HDCP 1.3		
Audio	PCM		
EDID	Supports EDID Management		
Output Resolution	Auto, 800x600, 1024x768, 720p, 1280x1024, 1080i, 1080p, 1920x1200		

6.2.2 TFX-ISD

TFX-ISD (79214)			
Input		**Output**	
Input	1 SDI	Output	1 SDI LOOP
Connector	Female BNC	Output Connector	Female BNC
General			
Signal	3G-SDI/HD-SDI/SDI	Resolution	1080p (max)
Transmission Distance	(1080p)≤160m	Data Type	8 & 10 & 12bit
Working Temperature	0~50℃	Reference Humility	10%~90%
Power Consumption	6.1w		

6.2.3 TFX-IVG & TFX-OVG

TFX-IVG (79211)		**TFX-OVG (79221)**	
Input	1 VGA, 1 Audio	Output	1 VGA, 1 Audio
Input Connector	Female 15 pin HD 1 3-pin pluggable terminal block	Output Connector	Female 15 pin HD 1 3-pin pluggable terminal block
Power Consumption	4.6w	Power Consumption	4w
General			
Video Signal	VGA, CVBS, YPbPr	Switching Speed	＜100ns
Output Resolution	**VGA:** 800x600, 1024x768, 720p, 1280x1024, 1080i, 1080p, 1920x1200 **YPbPr**: 720p, 1080i, 1080p **CVBS**: 480i, 576i		
Working Temperature	0~50℃	Reference Humility	10%～90%

6.2.4 TFX-IDV & TFX-ODV

TFX-IDV (79212)		**TFX-ODV (79222)**	
Input	1 DVI, 1 Audio	Output	1 DVI, 1 Audio
Input Connector	Female DB24+5/HDMI 1 3-pin pluggable terminal block	Output Connector	Female DB24+5/HDMI 1 3-pin pluggable terminal block
Power Consumption	4.5w	Power Consumption	3.5w
General			
Working Temperature	0~50℃	Reference Humility	10%～90%
Switching Speed	＜100ns	Standard	HDMI 1.3 & HDCP
EDID	Supports EDID Management		
Output Resolution	Auto, 800x600, 1024x768, 720p, 1280x1024, 1080i, 1080p, 1920x1200		

6.2.5 TFX-IHD & TFX-OHD

TFX-IHD (79210)		**TFX-OHD (79220)**	
Input	1 HDMI, 1 Analog audio	Output	1 HDMI, 1 Analog audio
Input Connector	19-pin Type A Female HDMI 3-pin pluggable terminal block	Output Connector	19-pin Type A Female HDMI 3-pin pluggable terminal block
Power Consumption	5w	Power Consumption	2.7w
General			
Audio	PCM	Bandwidth	6.75 Gbps
Switching Speed	＜100ns	Standard	HDMI1.3 & HDCP1.3
Working Temperature	0~50℃	Reference Humility	10%～90%
EDID	Supports EDID Management		
Output Resolution	Auto, 800x600, 1024x768, 720p, 1280x1024, 1080i, 1080p, 1920x1200		

6.2.6 TFX-IBT & TFX-OBT

TFX-IBT (79233)		**TFX-OBT (79243)**	
Input	1 HDBT, 1 Audio, 1 IR IN, 1 IR OUT	Output	1 HDBT, 1 Audio, 1 IR IN, 1 IR OUT
Input Connector	1 Female RJ45 2 3-pin pluggable terminal block 2 3.5mm mini jack	Output Connector	1 Female RJ45 2 3-pin pluggable terminal block 2 3.5mm mini jack
Power Consumption	15w	Power Consumption	17w
General			
Transmission Distance	1080p ≤ 330' (Cat6A) 4K×2K ≤ 230' (Cat6A)	Switching Speed	＜100ns
Working Temperature	0~50℃	Reference Humility	10%~90%
Standard	HDMI 2.0 & HDCP 2.2		
Audio	PCM		
EDID	Supports EDID Management		
Output Resolution	Auto, 4K×2K@60Hz、4K×2K@30Hz、1024×768@60Hz、1920×1080p@60Hz、1280×720@60Hz		

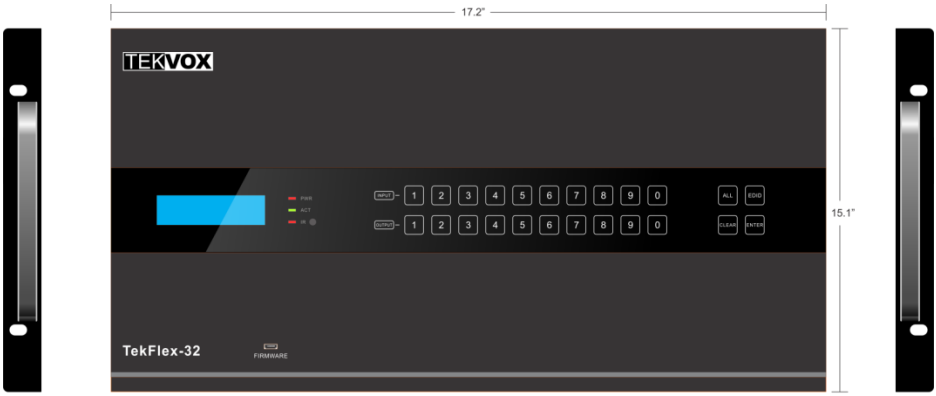
6.2.7 TFX-IUH & TFX-OUH

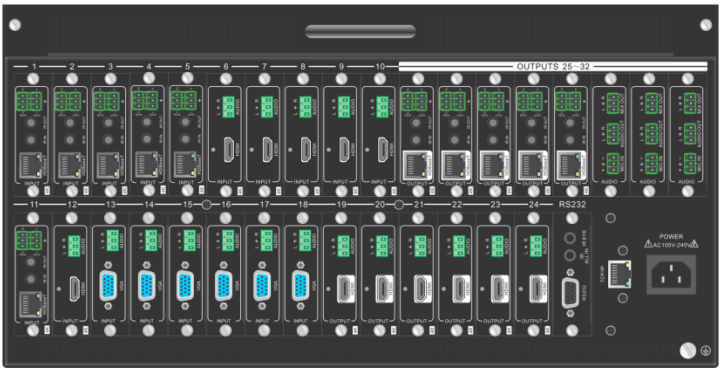
TFX-IUH (79230)		**TFX-OUH (79233)**	
Input	1 HDMI, 1 Analog audio	Output	1 HDMI, 1 Analog audio
Input Connector	19-pin Type A Female HDMI 3-pin pluggable terminal block	Output Connector	19-pin Type A Female HDMI 3-pin pluggable terminal block
Power Consumption	4w	Power Consumption	1.5w
General			
Audio	PCM	Bandwidth	6.75 Gbps
Switching Speed	＜100ns	Standard	HDMI2.0 & HDCP2.2
Working Temperature	0~50℃	Reference Humility	10%～90%
EDID	Supports EDID Management		
Output Resolution	Auto, 4K×2K@60Hz、4K×2K@30Hz、1024×768@60Hz、1920×1080p@60Hz、1280×720@60Hz		

6.2.8 TEK-OAU

Input	1 MIC/LINE IN
Input Connector	1 3-pin pluggable terminal block
Output	1 MIX OUT; 1 PGM OUT
Output Connector	2 3-pin pluggable terminal block
General	
Signal Format	PCM
Power Consumption	5W
Frequency Response	20Hz~20KHz, ±0.5dB
CMRR	>85dB@20Hz~20KHz
Working Temperature	-10~50℃
Reference Humility	10%~90%

Panel Drawing





7. Troubleshooting & Maintenance

Problems	Causes	Solutions
Loss of color or no video signal at output	The connecting cables may not be connected correctly	Check whether the cables are connected correctly and in working condition.
No HDMI signal output in display while local input is working normally	Loose cable connection	Reconnect the devices and make sure they're well contacted.
	The display doesn't support the resolution	Set output resolution to other supportive ones or Auto.
No Video Splash screen on output devices	Poor quality of the connecting cable	Change for another cable of good quality.
	Input source not displaying	Reconnect the devices and make sure they're well contacted.
Cannot control the device via front panel buttons	Front panel buttons are locked	Send "/%Unlock;" to unlock.
Cannot control TekFlex-32 by control device (e.g. a PC) through RS232 port	Wrong RS232 communication parameters	Make sure the RS232 communication parameters are correct.
	TekFlex-32 is broken	Send it to authorized dealer for repairing.
Static becomes stronger when connecting the video connectors	Bad grounding	Check the grounding and make sure it is connected well.

If your problem persists after following the above troubleshooting steps, seek further help from authorized dealer or our technical support at support@tekvox.com .

8. After-sales Service

If there appear some problems when running the device, please check and deal with the problems reference to this user manual.

1) **Product Limited Warranty:** We warrant that our products will be free from defects in materials and workmanship for **three years,** which starts from the first day the product leaves warehouse (check the SN mark on the product).
   Proof of purchase in the form of a bill of sale or receipted invoice must be presented to obtain warranty service.

2) **What the warranty does not cover:**
   - Warranty expiration.
   - Factory applied serial number has been altered or removed from the product.
   - Damage, deterioration or malfunction caused by:
     - Normal wear and tear
     - Use of supplies or parts not meeting our specifications
     - No certificate or invoice as the proof of warranty.
     - The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
     - Damage caused by force majeure.
     - Servicing not authorized
     - Other causes which does not relate to a product defect
   - Delivery, installation or labor charges for installation or setup of the product

3) **Technical Support:** Email to our after-sales department or make a call, please inform us the following information about your cases.
   - Product version and name.
   - Detailed failure situations.
   - The formation of the cases.

Remarks: For any questions or problems, please try to get help from your local distributor at support@tekvox.com.