TAKSTAR
TKX-800 Digital Matrix Processor

TAKSTAR TKX-800 Digital Matrix Processor User Manual

Contents

TAKSTAR®

TAKSTAR TKX-800 Digital Matrix Processor

Specifications

- 24-bit sigma-delta A/D/D/A
- 32-bit DSP, 96kHz
- AC: 95-264V, 50/60Hz

- Dimensions: 482 x 254 x 44mm
- Weight: 2.7kg
- Frequency Response: 20Hz-20kHz, -0.3dB
- Dynamic Range: 115dBu
- THD: 78dBu, 1kHz Balance
- +48V DC: 50dBu, 2k ohm Balance
- Input Impedance: 35dBu, +18dBu >10k ohm Balance

Product Usage Instructions
Power Connection
Connect the product to an AC power source within the specified voltage range (95-264V, 50-60Hz).

Signal Input and Output
Connect your audio sources to the specified input ports with appropriate cables. Ensure proper impedance matching for optimal performance.

DSP Settings
Access the digital signal processing settings to adjust parameters such as equalization (PEQ), delay, noise reduction (NR), and volume control (VCS).

USB Connectivity
Utilize the USB ports for firmware updates or connecting the product to a computer for configuration purposes.

Frequently Asked Questions (FAQ):
Q: What is the power requirement for the TKX-800?
A: The TKX-800 operates on AC power within the range of 95-264V and at a frequency of 50-60Hz.

Functions

- 32 bit DSP, 96kHz sampling rate, 24bit AD/DA.
- Input including, high-cut, low-cut, AGC, PEQ, independent feedback inhibition, noise gate, gain, mute, phase, delay, link.
- All PEQ Gain, bandwidth, frequency continues adjustment. type can be select by PEAK, H-SHELF, L- SHELF, LOW CUT, HIGH CUT, ALLPASS1, ALLPASS2.
- All inputs/outputs can do Matrix, and all the input and output channel name can be changed.
- All the input and output with independent phase curve adjust function, PEQ style choose ALLPASS1 is 180° curve adjust, ALLPASS2 is 360° curve adjust.
- Maximal delay time 680mS for all output channels.
- Pre settings can copy for every single channel, every channel can do link adjust.
- Every input and output channel PEQ curve adjusting picture can be found when you are in any input and output.
- Unique design for AUX channels, mixing all microphone inputs, and professional ECHO & REVERB effects inside. easy adjustment the sound and full support karaoke function. wide-applications, such as conference system, multi-functions hall. etc…
- AUX channel has powerful mixing function, weight, gain, attenuation ratio parameters can be adjusted continuously. also with the automatic function of camera-tracking. threshold, level, attack&release time. etc… AEC automatic echo cancellation and system environment noise cancellation function,effectively eliminate

environmental noise that generated by the feedback of pickup, moreover the noise of air Inside single generator(pink,white noise and 20~20K sine wave, amplitude adjustable).

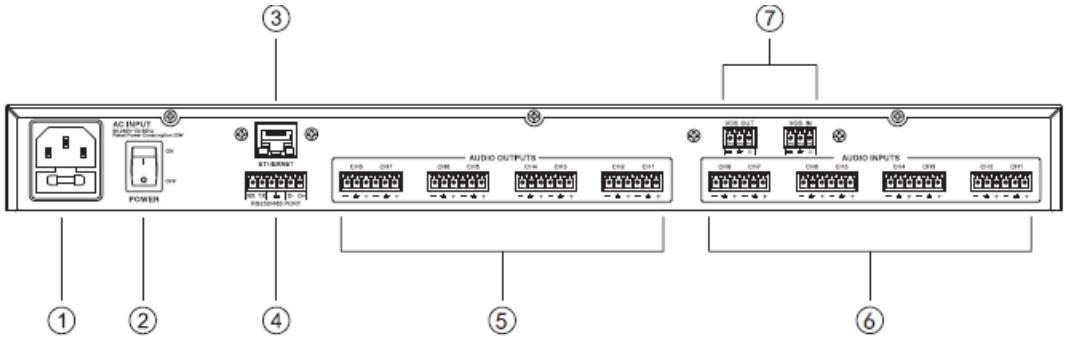
- Front panel has level indicator for input/output ,USB port, RS232,485 and net ports remote control at rear panel. easy for user's operations.
- 21 user presets can be save and recall, maximal 255 units can be link together via ID settings. password protection function for high level applications.

Front Panel

1. **INPUT CHANNEL LEVEL INDICATORS**
   2 segment high precision level indicate lights show the current input channel level status.
2. **OUTPUT CHANNEL LEVEL INDICATORS**
   2 segment high precision level indicate lights show the current output channel level status.
3. **WORKING STATUS**
   USB, internet connection signal and power indicate lights.
4. **USB INTERFACE**
   Used to connect with PC and center-control equipment, remote control.

Rear Panel

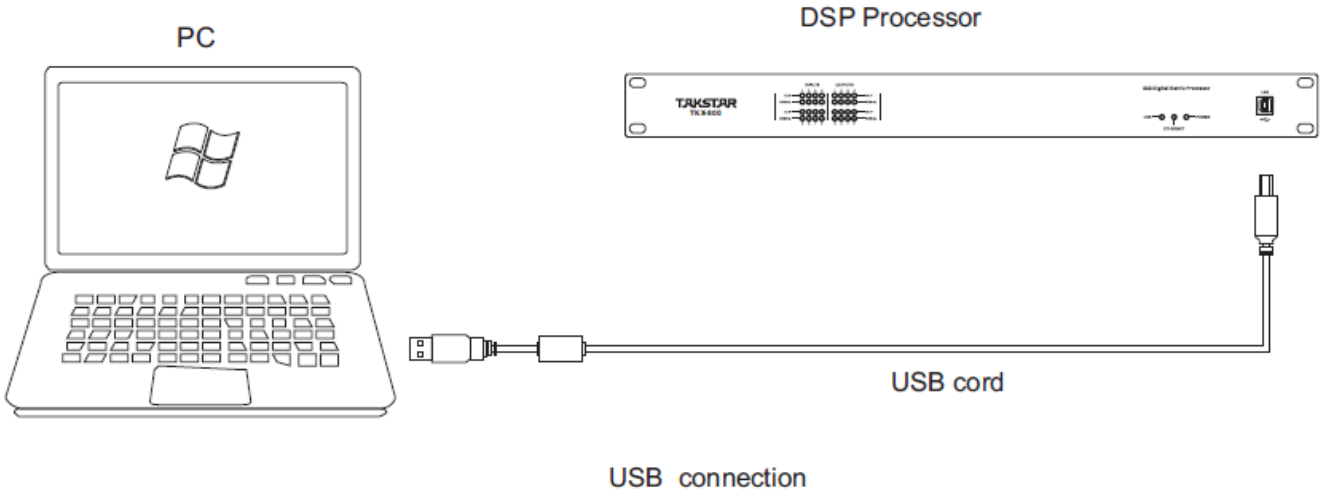
1. **POWER SOCKET**
   AC~95-264V 50-60Hz.
2. **POWER SWITCH**
3. **ETHERNET CONNECTION AND CONTROLLING PORT**
   Setting IP addresses to remote control by CAT-5 cable or WIFI control, also support internet control for long-distance application.
4. **RS232/485**
   Realize remote real-time control of center-control device through Rs232, or control by one USB cord, link control by RS485.
5. **SIGNAL OUTPUT CH1~CH8**
6. **SIGNAL INPUT CH1~CH8**
7. **AEC far IN and far OUT port**
   VCS IN is the input port for signals sent from the far port, and VCS OUT is the signal interface for signals sent to the far port.



PC Software

NOTICE: User manual, PC software are on the attached CD, due to the software upgrades time by time, please do control your DSP processor ONLY by this CD!

USB CONNECTION STEPS

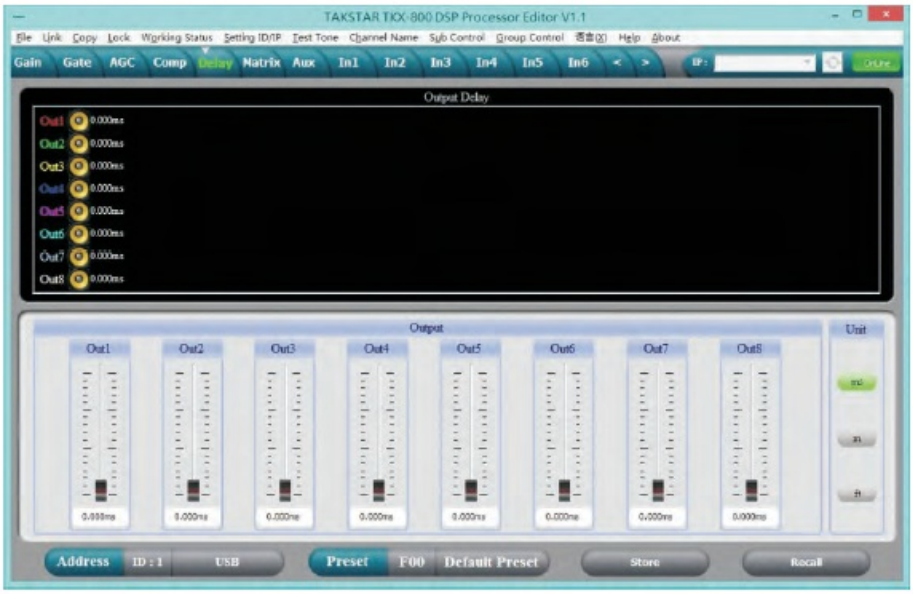


USB connection

Digital Matrix Processor

1. Click the PC software on the CD, press next step to continue according to the instruction until finish setup, then exit.

2. Connect the processor to the computer by USB, after power on the device, the computer will searching new hardware automatically, then it will show the message: hardware setup success and can be used.
3. Open PC controlling software, PC software will find USB and connection device, after this the online key change into green at the top right corner and show ” Online”, you can operate the processor by controlling software, Click “Online” button before exit.



PC Software Specifications

VOLUME CONTROLLING INTERFACE

- Menu

File	download to the device.
Link	Input and output channels can be set freely to adjust all of the parameter sad are.
Copy	Parameter copy freely between the input and Output channels.
Lock	Setting password of the panel to ensure the safety of the device.
Working Status	The working status could be set as; not memory ; immediate memory (under U01-21 user mode) , not memory but can be back to U01 mode when power on.
Setting ID/IP	To cascade control more than 254 device by setting different ID Setting IP address for Lon g-distance and wireless WIFI control.
Test Tone	
Channel Name	The whole channel name are revisable.
Sub Control	Any channel volume are revisable.
Group Control	Independent input and output 4 group control, can control different areas through the wall panel.
Language	Chinese and English language is switchable.

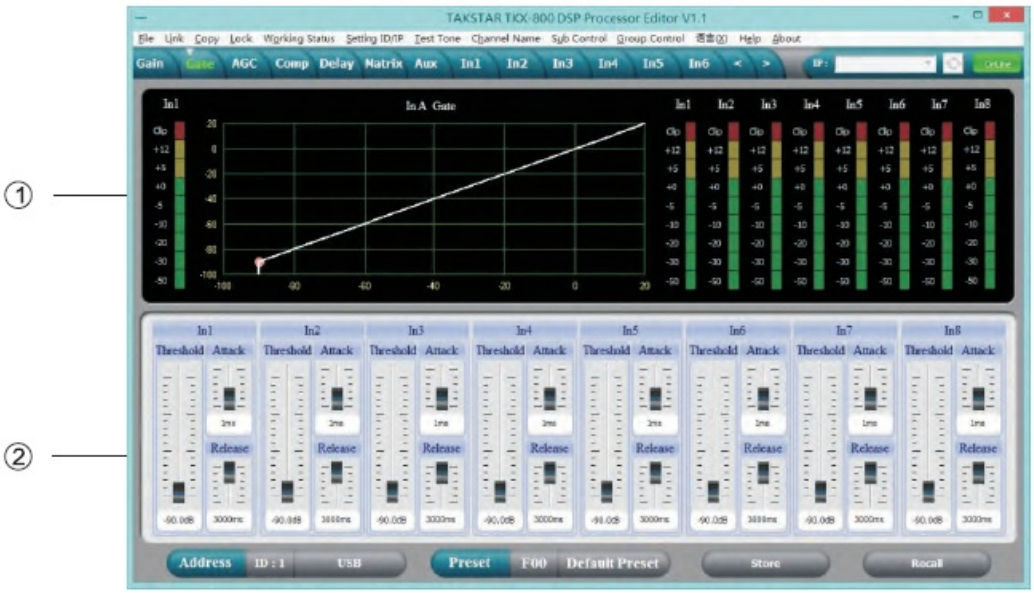
- Spectrum Area: You can choose PEQ and phase freely which show the input and output channels.
- The Volume Control Area:

  Gain, Phase, Mute control for all input & output channels.
- Preset Operation Area:

  Save or recall preset parameter and show current preset parameter status.

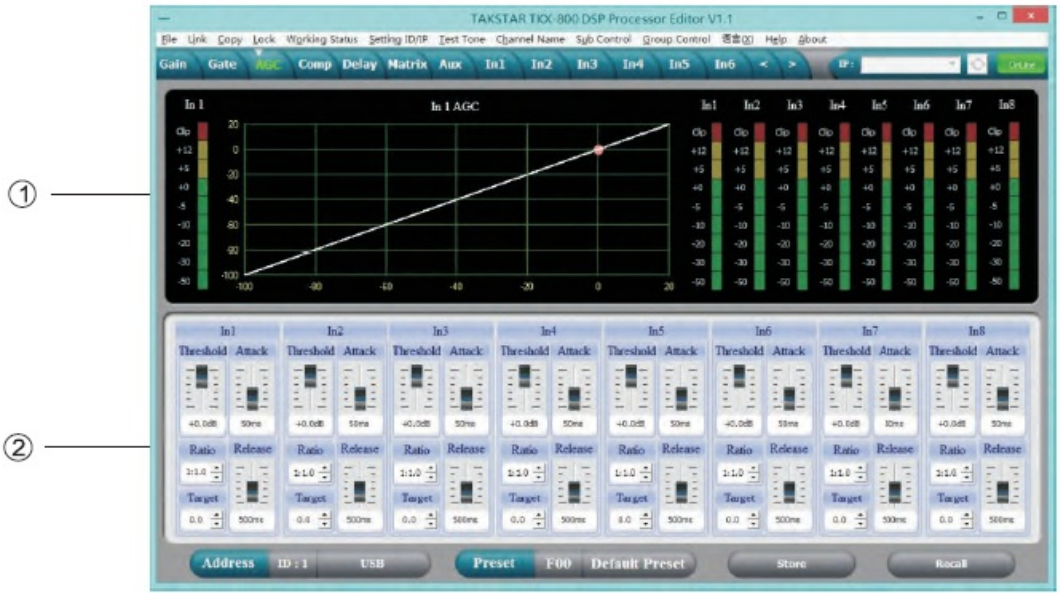
NOISE GATE INTERFACE

1. Show threshold curve, level indicators and compression status for all channels.
2. Setting noise gate parameters for all input channels, the threshold is -90dB–20dB, start Time is: 1- 999ms, recovery time is 1-3000ms.



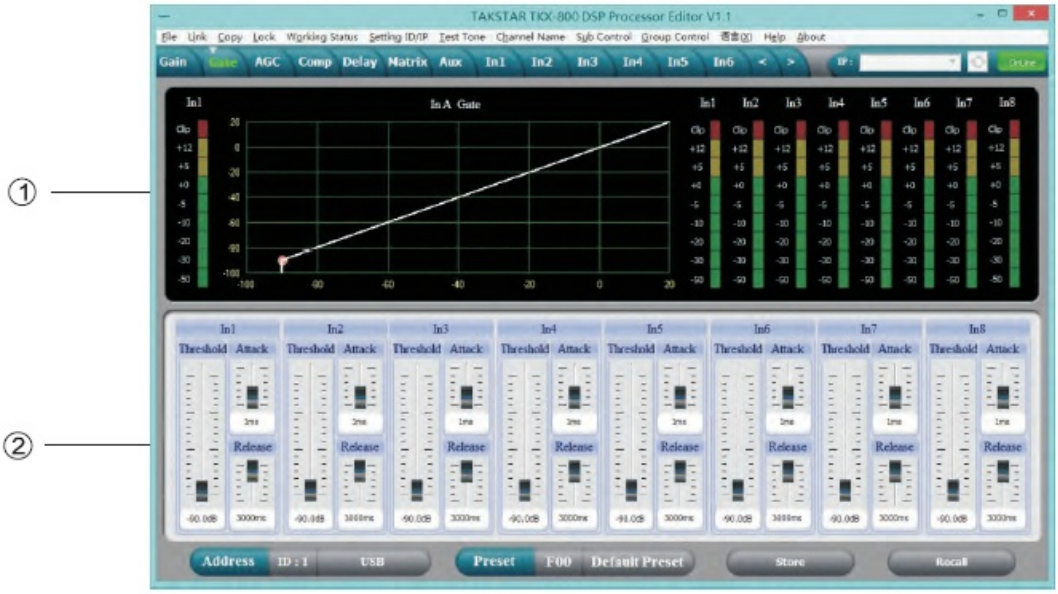
AGC CONTROL INTERFACE

1. Graph showing automatic gain changes and level indicator lights for all channels.
2. AGC control parameters of all input channels can be set: threshold value -60dB to 0dB, target level -60dB to 0dB, attack time 1-999ms, recovery time 10-3000ms, ratio 1:1.0-1:20-limit continuously adjustable.



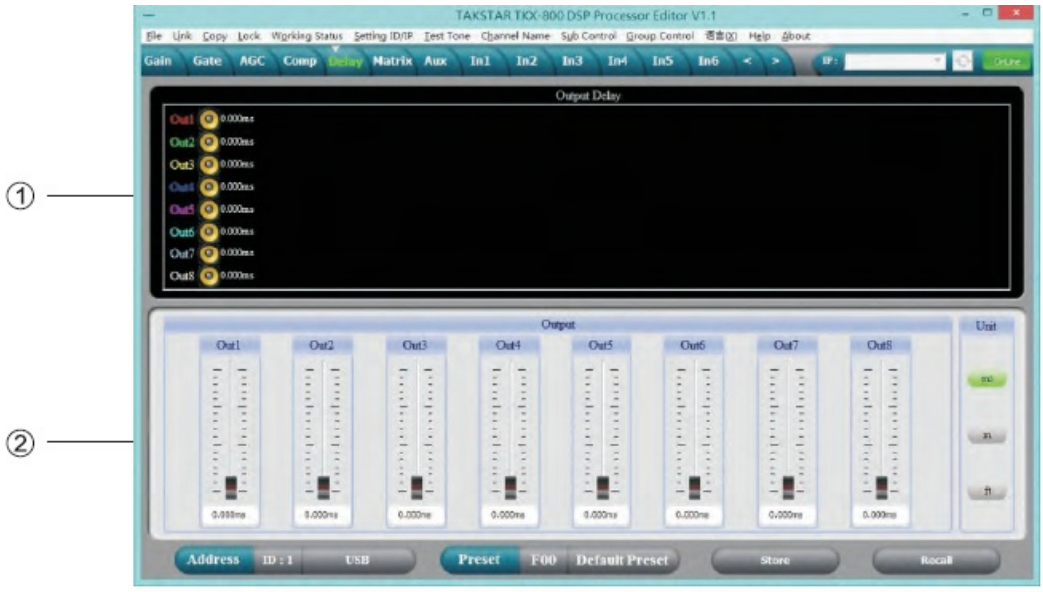
COMPRESSOR INTERFACE

1. Show compression status level indicators and compression status of all channels.
2. Set the whole compression parameters for output channels, the compression range is -60dB–+20dB, ration is 1:1, 1:10, LIMIT, start time is: 1-999ms, recovery time is 1-3000ms.



DELAY INTERFACE

1. Show the delay parameter status of all channels.
2. Can adjust delay parameter of all channels, the scale is 0-680ms , there are millisecond, meter and feet units for choose.



MATRIX INTERFACE

1. Show connections of the device, users can enter and edit relevant channel by clicking the square button, every channel name is revisable.
2. All output channels can choose any input channels.

AUX CHANNEL INTERFACE

1. Select “Mag” interface, you can adjust the PEQ, High-cut and Low-cut parameters, select “PHASE” Interface, you can adjust the phase curve, also you can choose the non-current channel’s PEQ And phase curve to show in sync.
2. Adjustable Gain, Q, Frequency and Type for all PEQs, Bypass function is an option, we can choose PEQ style: Balance, High-shelf, Low-shelf, High-cut, Low-cut, Phase 180° or 360°of phase.
3. The Gain, Q, Frequency of PEQ can be adjusted by fader, and can be controlled by pressing the Up, Down, Left, Right key on the computer’s keyboard.
4. With compression adjusting fader on Aux channel, click” Set ” button, enter compression parameters setting: the compression range is: -90dB- +20dB,ration is 0,LIMIT,start time:0-999ms, recovery time: 0-999ms, the

compression indicators be showed too.

5. . Auto-mixing ON/OFF switch, click “Set” button, enter auto-mixing parameters setting: Each input equipped with automatic mixer switch, and the microphone priority gain can be set independently, corresponding to the level display of each channel. The total volume can be controlled independently. Auto-mixing is gain – sharing, and the depth of attenuation ratio can be set separately.
6. Aux channels effect switch, click “Set” button, enter effect parameters setting, adjustable echo parameters for volume, repeat, delay, pre-delay. Adjustable reverb volume parameters for volume, reflect, time, pre-delay.and with a adjustment fader for whole effect of volume.
7. Camera tracking ON/OFF switch, click”Set”button,enter camera tracking parameters setting: choose the corresponding input channel which want to enter the camera tracking first(only the Chosen channel can enter to tracking channel),then choose the proper parameters of threshold (-50-0dB), start time (0-5000ms),recovery time(0-5000ms), when the any one channel signal is over the threshold, the channel will open automatically and camera start to track according to the Priority order from input ch A ~ ch H.
8. Input selection fader, can choose the input 1-8 channels to mix in Aux channels.
9. Aux’s Gain controlling fader, mute&level indicators.
10. ECHO cancellation ON/OFF, Click the “Set” key to enter the interface of echo cancellation volume control and noise reduction function. The microphone of echo cancellation input volume, and the far in and far out volume can be adjusted independently. Note that the local microphone volume is about the same as the far IN signal volume when used, so that the effect is best, and the VCS IN and AEC OUT volume can be adjusted appropriately for optimal handling IN different environments. NR noise reduction function is optional at 6-15dB. Note that there will be a certain delay after opening NR.

INPUT INTERFACE

1. Select “Mag” interface,you can adjust the PEQ,High-cut,Low-Cut for the input channel, select “PHASE” interface, you can adjust the current phase channel, also you can choose the non-current PEQ and phase curve to show in sync.
2. Adjustable Gain, Mute, Q , Frequency, Type for all PEQ, Bypass function is an option,we can choose PEQ style: Balance, High-shelf, Low-shelf, High-cut, Low-cut,180° or 360° of phase.

Left, Right key on the computer's keyboard.

3. Low-cut frequency 20HZ-20KHZ is adjustable, you can choose slope rate : Butterworth, Bessel, the scale is: -6dB- -48dB.
4. High-cut frequency 20HZ-20KHZ is adjustable, you can choose slope rate : Butterworth, Bessel, the scale is: -6dB- -48dB.
5. Input can select the level of feedback inhibition, level 1-4 can be chosen.
6. The Gain, Mute, Phase of the input channels can be control separately, as same as the level display lights.

OUTPUT INTERFACE

1. Select "Mag" interface, you can adjust the PEQ, High-cut, Low-Cut for the output channels, select "PHASE" interface, you can adjust the current phase channel, also you can choose the non- current PEQ and phase curve to show in sync.
2. Adjustable Gain, Mute, Q, Frequency, Type of all PEQ, Bypass function is an option, we can choose PEQ style: Balance, High-shelf, Low-shelf, High-cut, Low-cut, Phase 180° , 360° of phase.
3. Left, Right key on the computer's keyboard.
4. Low-cut frequency 20HZ-20KHZ is adjustable, you can choose slope rate: Butterworth, Bessel, Linkwitz-Riley, the scale is: -6dB- -48dB.
5. High-cut frequency 20HZ-20KHZ is adjustable, you can choose slope rate: Butterworth, Bessel, the scale is: -6dB- -48dB.
6. The Gain, Mute, Phase of the output channels can be control separately, as same as the level Display, lights.

Specifications

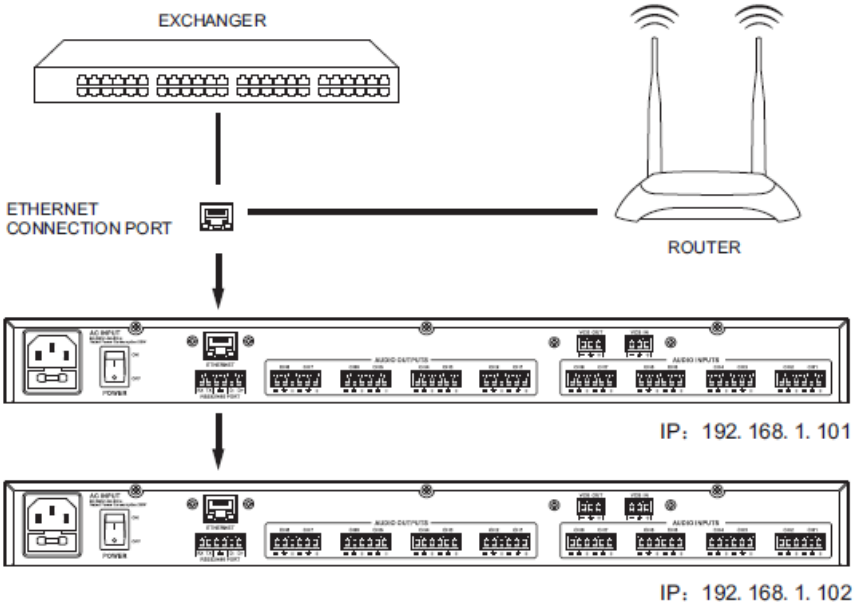
SPEC	Frequency Response	20Hz-20kHz,-0.3dB
	Dynamic range	
	THD	<0.005% at 1kHz(0dBu)
	Crosstalk	>72dBu, 20Hz-20kHz
	C.M.R.R	>78dBu 1KHz
MIC input	Type	Balance
	Phantom power	+48V DC
	Gain	50dBu
	Impedance	2k ohm
Music input	Type	Balance
	Gain	35dBu
	Max input level	+18dBu
	Impedance	>10k ohm
Output	Type	Balance
	Max output level	+18dBu
	Impedance	<500Ω
Digital processing	24bit sigma-delta A/D D/A	
	32 bit DSP, 96kHz	
AC POWER	AC 95V-264V 50/60Hz	
	482*254*44MM	
	2.7KG	

Accessories

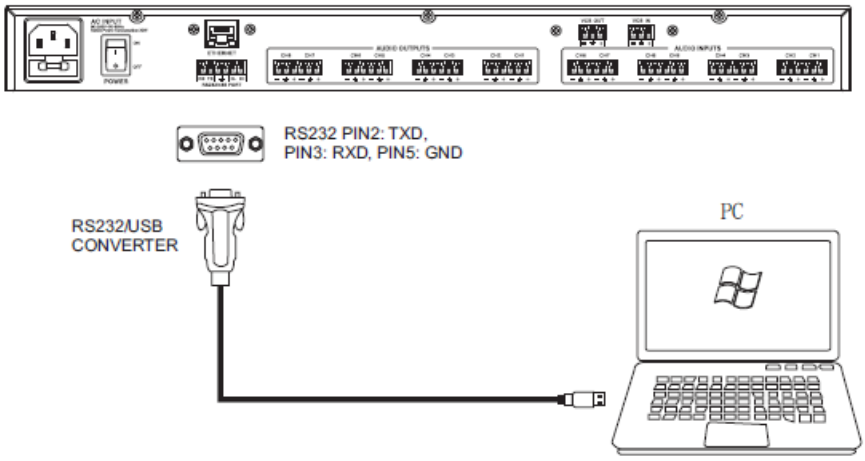
1. CD (Include PC software and user's manual).
2. One USB cord.
3. One Power cord.

Rear panel control port connection

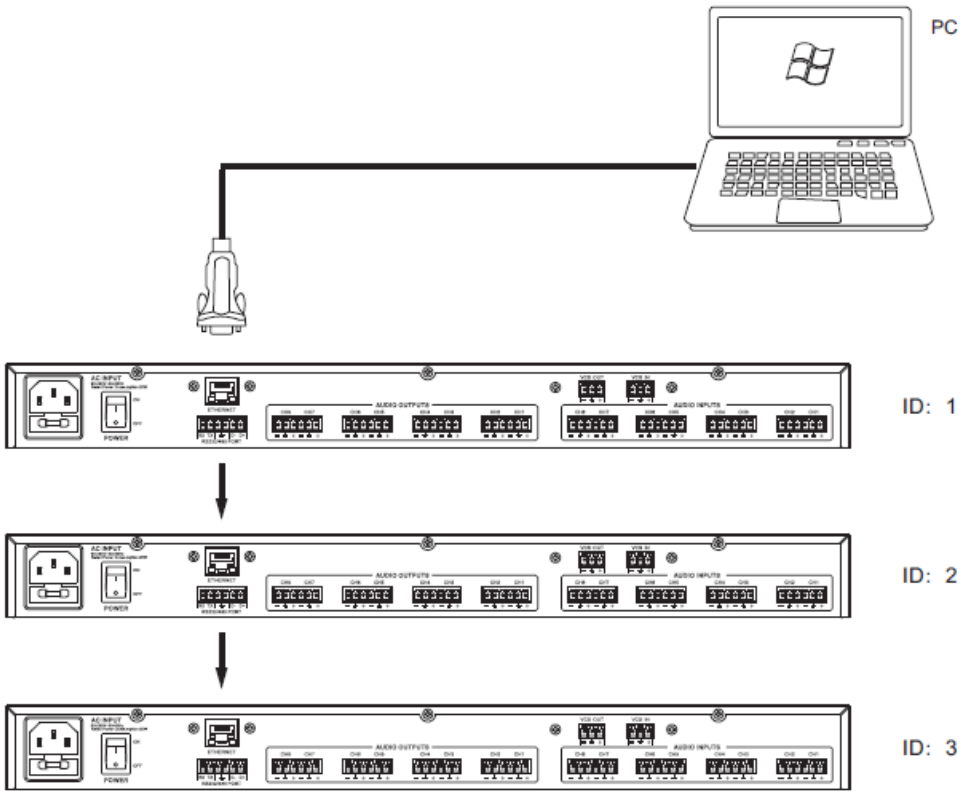
1. Ethernet connection port:you can choose to connect the computer by wire, connect several devices by switch, or use WIFI by router to control, but need to set different IP address and ID code for each device, otherwise, it might be can't connect successfully due to the IP addresses conflict.



2. RS232 connection port: Central control and connect to PC through RS232 port.

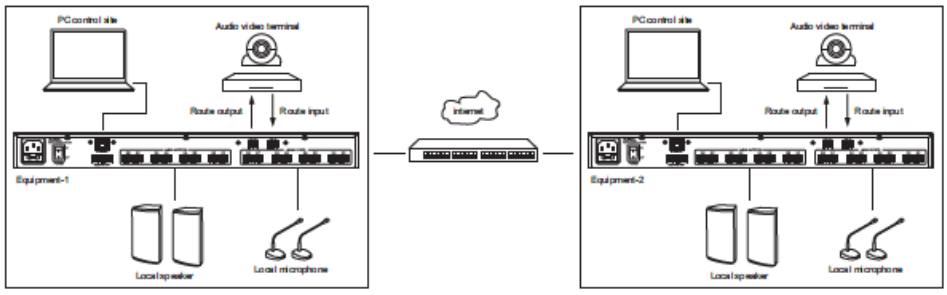


3. RS485 cascade control port: link connect several devices by RS485, you can choose different ID to control separately. Contact multiple devices 480 port D+ and D- together, can cascade control for multiple machines after setting the machine with different ID Numbers.

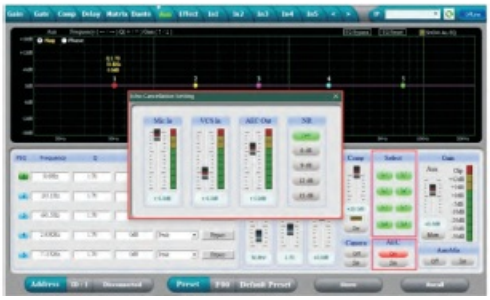


4. AEC echo cancellation function operating instructions

AEC echo cancellation system connection diagram



- Firstly, turn on the gain and phantom power of the input channel microphone.
- Then choose AUX channel route to the output channel in the Matrix interface. Since AEC function is in AUX channel, AEC can be arbitrarily routed to the output channel (be careful not to direct the input channel to the output channel without AUX).
- Finally enter AUX interface, choose to mixed with AUX channel input to the MIC channel at first, then open AEC switch ON, click the set key can enter the AEC echo cancellation after volume control interface, under normal circumstances without the echo can be eliminated, if echo cancellation effect is not ideal, can fine-tune VCS IN and the volume of the AEC OUT to match the level (note that MIC IN level also want as far into the volume of VCS IN fairly). NR is noise reduction function. If there is background noise (such as fan, air conditioner, etc.), it can be turned on and used. However, it should be noted that NR has a certain delay in noise reduction and the timbre of the local output is the same as that of the remote output.



232 communication protocol control code

- Control Package Format

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Data1	Data2	Date3	STX	DLE
Packet	0x7B	0x7D	1 254	0x40~0x5C	0x??	0x??	0x??	0x7D	0x7B

Command Detail

- Load Preset Matrix (0x40)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Factory/User	Preset	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x40	F: 0, U: 1	0~12	0	0x7D	0x7B

Example (Load Preset Matrix U02) : 7B7D01400101007D7B

- Gain Control (0x41)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	In/Out	Channel	+/-	STX	DLE
Packet	0x7B	0x7D	1 254	0x41	In:0 Out:1	00~15	+: 0, -:1	0x7D	0x7B

Example (In1 Gain +) : 7B7D01410000007D7B

- Mute Control (0x42)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	In/Out	Channel	No/Yes	STX	DLE
Packet	0x7B	0x7D	1 254	0x42	In:0 Out:1	00~15	No:0 Yes:1	0x7D	0x7B

Example (Out1 Un Mute) : 7B7D01420100007D7B

- Load Preset Control (0x43)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Channel	HI-VOL	LO-VOL	STX	DLE
Packet	0x7B	0x7D	1 254	0x44	00~15	0x??	0x??	0x7D	0x7B

Example (Set In1 Volume +0.0dB) : 7B7D01440001187D7B

- Output Volume Control (0x45

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Channel	HI-VOL	LO-VOL	STX	DLE
Packet	0x7B	0x7D	1 254	0x45	00~15	0x??	0x??	0x7D	0x7B

Example (Set Out2 Volume -3.0dB): 7B7D01450100FA7D7B

- Sub Volume Control (0x46)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	In/Out	Gain	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x46	In:0 Out:1	0~100	0	0x7D	0x7B

Example (Sub Input Gain 90%): 7B7D0146005A007D7B

- Sub Gain Control (0x47)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	In/Out	+/-	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x47	In:0 Out:1	+: 0, -: 1	0	0x7D	0x7B

Example (Sub Input Gain+): 7B7D01470000007D7B

- Get Now Gain (0x48)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	In/Out	Channel	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x48	In:0 Out:1	00~15	0	0x7D	0x7B

MCU Return: 1st Byte: In/Out, 2nd Byte = Channel, 3rd Byte: 0-80(-60~-20): 0.5dB/Step, 80-280(-20~0): 0.1dB/Step, 280-400(0~+12): 0.1dB/Step
Example (Read In1 volume parameter): 7B7D01480000007D7B

Get Now Mute (0x49)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	In/Out	Channel	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x49	In:0, Out: 1	00~15	0	0x7D	0x7B

MCU Return: 1st Byte: In/Out, 2nd Byte = Channel, 3rd Byte: 0x00 or 0x01 = Un-Mute or Mute Example (Read In1 mute parameter): 7B7D01490000007D7B

- Get Now Preset (0x4A)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	0x30	0x00	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x4A	0	0	0	0x7D	0x7B

MCU Return: 0x00 ~ 0x0C = 0: F00, 1~12: U01~U12 Example (Read preset parameter): 7B7D014A0000007D7B

- Get Now Sub (0x4B)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	In/Out	0x00	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x4B	In:0 Out:1	0	0	0x7D	0x7B

MCU Return: 1st Byte: 0 ~ 100%, 2nd Byte = 0x00 or 0x01 = Un-Mute or Mute Example (Read Sub Input parameter): 7B7D014B0000007D7B

- Sub Mute Control (0x4C)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	In/Out	No/Yes	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x4C	In:0 Out:1	No:0, Yes :1	0	0x7D	0x7B

Example (Sub Output Mute) : 7B7D014C0101007D7B

- Get Now Level (0x4D)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	In/Out	Channel	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x4D	In: 0, Out: 1 Aux: 2	00~15	0	0x7D	0x7B

MCU Return: 1st Byte: In/Out, 2nd Byte = Channel, 3rd Byte: -128 ~ -1, 0~ +127dB = 0x80 ~ 0xFF, 0x00 ~ 0x7F
Example (Read In1 level): 7B7D014D0000007D7B
Example (Read Out1 level): 7B7D014D0100007D7B
Example (Read Aux level): 7B7D014D0200007D7B

- Matrix Control (0x4E)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Channel	In	On/Off	STX	DLE
Packet	0x7B	0x7D	1 254	0x4E	00~15	00~15	On: 1 Off: 0	0x7D	0x7B

Example (Out4 Matrix In2 On): 7B7D014E0301017D7

- (16) Get Matrix (0x4F)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Channel	In	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x4F	00~15	00~15	0	0x7D	0x7B

Example (Aux Gain): 7B7D01510200007D7B

- Aux Mute Control (0x52)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Aux	0x00	+/-	STX	DLE
Packet	0x7B	0x7D	1 254	0x51	0x02	0x00	+:0,-:1	0x7D	0x7B

Example (Aux Mute): 7B7D01520200017D7B

- (19) Aux Volume Control (0x53)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Aux	0x00	No/Yes	STX	DLE
Packet	0x7B	0x7D	1 254	0x52	0x02	0x00	No:0,Yes:1	0x7D	0x7B

Example (Aux Volume +0.0dB): 7B7D01530201187D7B

- Volume Step Control (0x54)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Aux	HI-VOL	HI-VOL	STX	DLE
Packet	0x7B	0x7D	1 254	0x53	0x02	0x??	0x??	0x7D	0x7B

-60dB~-20dB: 2dB/Step, -20dB~+12dB: 1dB/Step Example (Volume): 7B7D01540000007D7B

- Aux On Off Control (0x55)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	In/Out	Channel	+/-	STX	DLE
Packet	0x7B	0x7D	1 254	0x54	In:0, Out:1	00~15	+:0, -:1	0x7D	0x7B

Example (Effect On): 7B7D01550200017D7B
Example (Camera On): 7B7D01550201017D7B
Example (AutoMix On): 7B7D01550202017D7B
Example (ECHO On): 7B7D01550203017D7B
Example (Noise Redustion On): 7B7D01550204017D7B

- Aux Ch Select Control (0x56)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	0x02	Select	On/Off	STX	DLE
Packet	0x7B	0x7D	1 254	0x55	0x02	1: Camera 2: AutoMix 3: AEC 4: NR	0:Off 1: Yes	0x7D	0x7B

Example (Aux In1&In3): 7B7D01560000057D7B
Example (Aux Camera In2&In4): 7B7D015601000A7D7B
Example (Aux Auto Mix In5&In6): 7B7D01560200307D7B

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Select	Ch 16~9	Ch 8~1	STX	DLE
Packet	0x7B	0x7D	1 254	0x56	0: AUX 1: Camera 2: Auto Mix	Bit0 ~Bit7 : 0:No 1:Yes	Bit0 ~Bit7: 0:No 1:Yes	0x7D	0x7B

- FBQ Control (0x57)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	0X00	Channel	FBQ	STX	DLE
Packet	0x7B	0x7D	1 254	0x57	0X00	00 15	0:OFF, 1~4: Level	0x7D	0x7B

Example (In3 FBQ Level3): 7B7D01570002037D7B (

1. Get Aux Now Gain (0x58)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Aux	0x00	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x58	0x02	0x00	0x00	0x7D	0x7B

MCU Return: 1st Byte: Aux/Effect, 2nd and 3rd Byte: 0-80(-60~-20): 0.5dB/Step, 80-280(-20~0): 0.1dB/Step, 280-400 (0~+12): 0.1dB/Step
Example (Get Aux Gain): 7B7D01580200007D7B

- Get Aux Now Mute (0x59)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Aux	0x00	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x59	0x02	0x00	0x00	0x7D	0x7B

MCU Return: 1st Byte: Aux/Effect, 2nd Byte: 0x00 or 0x01 = Un-Mute or Mute Example (Get Aux Mute): 7B7D01590200007D7B

- Get Aux On Off (0x5B)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	0x02	Select	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x5B	0x02	1: Camera 2: AutoMix 3: AEC 4: NR	0x00	0x7D	0x7B

- MCU Return: 1st Byte: Select, 2nd Byte: 0x00 or 0x01 = On or Off
- Example (Effect Switch Parameter): 7B7D015B0200007D7B

- Example (Get Aux Camera Switch Parameter): 7B7D015B0201007D7B
- Example (Get Aux Auto Mixing Parameter): 7B7D015B0202007D7B
- Example (Get Aux ECHO Parameter): 7B7D015B0203007D7B
- Example (Get Aux Noise Reduction Parameter): 7B7D015B0204007D7B

Get Aux Now Ch Select (0x5C)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	0x02	Select	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x5C	0x02	0:AUX 1:Camera 2:AutoMix	0x00	0x7D	0x7B

MCU Return: 1st Byte: Select, 2nd Byte: Matrix
Example (Get Aux Ch Select): 7B7D015C0200007D7B

- Get Now FBQ (0x5E)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	0x00	Channel	FBQ	STX	DLE
Packet	0x7B	0x7D	1 254	0x5E	0x00	0~15	0: off 1~4: Level	0x7D	0x7B

MCU Return: 1st Byte: Channel, 2nd Byte = Level
Example (Get In5 FBQ): 7B7D015E0004007D7B

- Get Full Matrix (0x61)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	0x00	0x00	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x61	0x00	0x00	0x00	0x7D	0x7B

MCU Return: 1st Byte: Channel, 2nd Byte = Matrix, total 5 x 32 = 160 Bytes Example (Get Full Matrix code Parameter): 7B7D01610000007D7B

- Get Group Parameter (0x63)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Group In1 Gro up Out4	0x00	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x63	0~7	0x00	0x00	0x7D	0x7B

MCU Return: 1st Byte: Channel, 2nd Byte: Volume, 3rd Byte: Mute, 4 th Byte = Matrix, total 2 Bytes Example (Get Group Parameter): 7B7D01630000007D7B

- Group Volume Control (0x66)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Group In1 Gro up Out4	Gain	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x66	0~7	0~100	0	0x7D	0x7B

Example (Input Group 2 Volume 90%) 7B7D0166015A007D7B

- Group Gain Control (0x67)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Group In1 G roup Out4	+/-	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x67	0~7	+ : 0, – : 1	0	0x7D	0x7B

Example (Promote Output Group 3 Increasing Marshalling) 7B7D01670600007D7B

- Group Mute Control (0x68)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Group In1 G roup Out4	No/Yes	0x00	STX	DLE
Packet	0x7B	0x7D	1 254	0x68	0~7	No: 0,Yes : 1	0	0x7D	0x7B

Example (Output Group 4 Mute): 7B7D01680701007D7B

- Group Matrix Control (0x69)

	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Address	CMD	Group In1 Group Out4	Ch 16~9	Ch 8~1	STX	DLE
Packet	0x7B	0x7D	1 254	0x69	0~7	Bit0~Bit7: 0:No 1:Yes	Bit0~Bit7: 0:No 1:Yes	0x7D	0x7B

Example (Input Group 3 In 11& In13): 7B7D01690214007D7B
Mcu Will Return The “OK” For Correct Control Command: 0x4F 0x4B

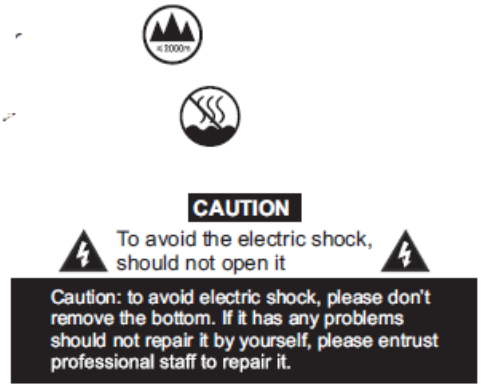
Communicate Paramete	Baud Rate	115200	Stop Bit	1
	Data Bit	8	Step	>=200ms
	Parity	None	ID	Default 1

Safety Instruction

PLEASE READ THESE SAFETY MATTERS CAREFULLY BEFORE USE:

- This product must make sure connect to the ground correctly. If it has broken down, to avoid any electric shock, the device power cord and plug both equipped safety ground connection. The power cord should according to the requirement to install and ground connection. Warning: Incorrect ground connection might be caused electric shock happen! If you have any inquiry about the ground connection, please let qualified people checking it or fix it, do not change it by yourself. If the power plug is unsuitable, you can entrust electrician or professional staff to install the suitable power plug.
- To avoid the risk of injury, please close supervision when using the product near child
- Please do not use the device at wet place, such as: near bathtub, washbasin, kitchen sink, wet basement or near swimming pool and lake.
- It should not be placed near the device which filled with liquids such as the vase.
- This product should install at draughty place or dry environment.
- The power source type must be match to the operation instruction or the volts type which on the product
- The product must keep away from heat source, such as: electric heater, electric blanket or other heat source products.
- The product equipped one power cord that complied with safety certification. If you can’t insert the power cord into the plug, please contact electrician or professional staff to change the old plug. Attention that should not break the power plug safety device.
- If the product not for operation for a long time. Please pull out the power cord from power plug. Don’t drag the power cord
- This product use coupler as a make and break device, should be maintained convenient operation
- Please don’t operate the product when following things opened, should call qualified people checking it or fix it: A. Power cord damaged. B. Objects or liquid get into the product. C. The product is sopping with rain. D. The product can not operate correctly or show obvious unusual. E.
- The product dropped down, damaged.

- Any inquiries about the product which not mentioned in the user manuals, please contact the eligible electrician or professional staff to repair.
- Only apply to security use which area below altitude of 2000m.
- Only apply to security use which condition except tropical climate.



Please do not let the heavy extrusion or stamp on the power cord, avoid by all pull or distort the power cord. To avoid the risk of fire or electric shock, please do not use unqualified power cord.

Scan for more product information

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Documents / Resources

	**TAKSTAR TKX-800 Digital Matrix Processor** [pdf] User Manual TKX-800 Digital Matrix Processor, TKX-800, Digital Matrix Processor, Matrix Processor, Processor

References

- **User Manual**