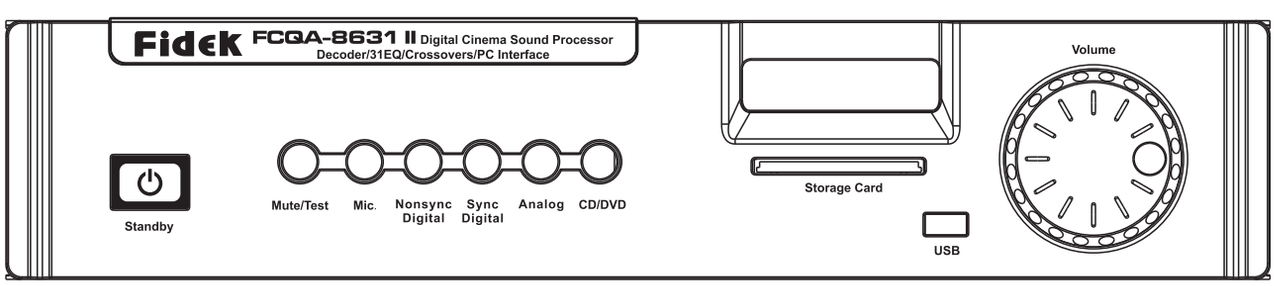
Fidek®

FCQA-8631II

Digital Cinema Sound Processor



USER'S MANUAL

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FCQA-8631 II is a professional digital cinema processor in high quality and with excellent performance.

FEATURES:

- Brand-new cosmetic & software design, simple & convenient operation and stable working.
- Adopting high-speed DSP chip & technology to make digital processing to the audio signal.
- Complete digital audio processing can reduce noise.
- Variant signal inputs are very convenient for user to make relative selection in actual usage.
- Support 25pins D type analog audio inputs.
- Support 1.3K and 2K digital cinema server 8 channels digital audio signal input.
- Support Crossover, EQ, Gain, Bypass, Two-way, Three-way etc. adjustments to loudspeakers.
- It is built in the technical parameters of Fidek cinema loudspeaker series and simplifies the whole debugging processes. The standard program, testing signal and testing microphone functions are very helpful for precise debugging for the sound reinforced equipments of a cinema.
- Through the network in a cinema, in the machine room it can be for user to achieve centralized debugging, monitoring and controlling management to many cinema rooms connected.
- Supplied with data backup card, one unit has one card, insert card for back-up & refreshing.

CHECK LIST

It includes the following things in the package:

Name	**Quantity**
FCQA-8631 II	1PC
Power cord	1PC
USB cable	1PC
25 pins D type connector (male)	1PC
25 pins D type connector (female)	2PCS
IC backup card	1PC
User Manual	1PC
Net cable-2M	1PC

IMPORTANT SAFETY INSTRUCTIONS

CAUTION
RISK OF ELECTRIC SHOCK. DO NOT OPEN

The lightning flash with arrowhead symbol inside an equilateral triangle is intended to alert the user to the presence of uninsulated "hazardous voltage" within the product's enclosure,which may be of sufficient magnitude to induce a risk of electric shock to persons.

The exclamation mark inside an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing)instructions in the literature accompanying the product.

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

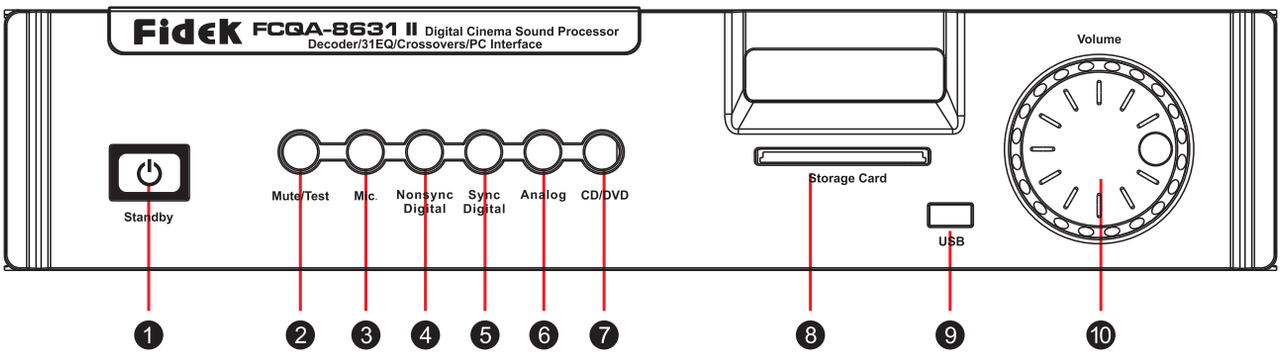
1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart,stand,tripod, bracket, or table specified by the manufacturer,or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

Portable Cart Warning

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel.Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.
16. The MAINS plug is used as the disconnect device, which shall remain readily operable
17. The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.

FUNCTION INSTRUCTIONS AND OPERATION WAYS

Front Panel



1 Standby Button

Press the Standby button, its back light will be lighted, the unit will enter standby mode. When the unit is in standby mode, press this button or through network software can send working order to the unit.

2 Mute/Test Button

Press the Mute/Test button, its back light will be lighted, the unit will mute the audio output to all channels without disturbing the current setting. Press it again to resume. Hold pressing this button for 3 seconds the unit will start automatic testing of loudspeaker system and the sequence is as following:
Left channel→Center channel→Right channel→Right surround channel→
Right back surround →channel→Left back surround channel→Left surround channel
→Subwoofer channel

3 Mic. Button

Press the Mic. button to select microphone input, its back light will be lighted, now if without connection with compute software, it just can open the conference microphone and signal just will be sent to Left, Center and Right channels.
But in the software interface in computer connected, to choose the Mic. button, the unit will enter microphone testing & tuning mode available for cinema sound system tuning according to internal standard signal.

4 Nonsync Digital Button

Press the Nonsync Digital button to select nonsync digital input, its back light will be lighted and the input will be in optical / coaxial input. Optical / coaxial input is just available for one audio source input at one time and the unit will automatically recognize signal input.

5 Sync Digital Button

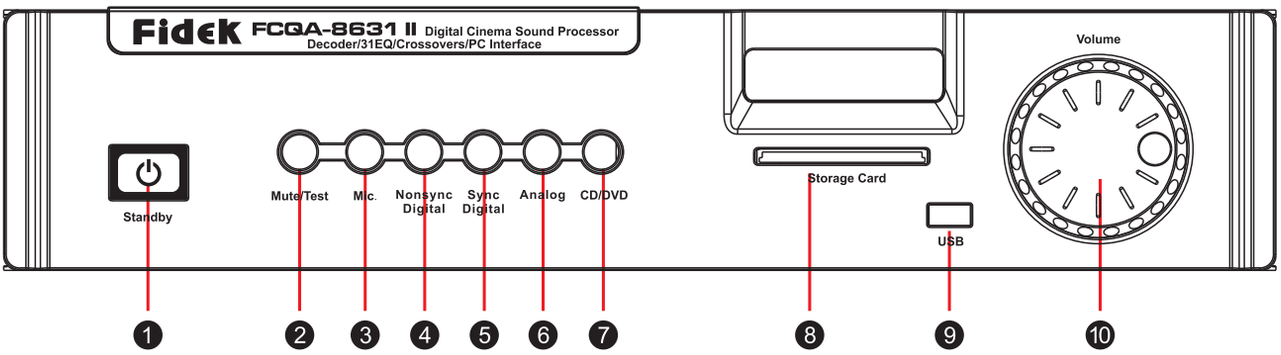
Press the Sync Digital button to switch to digital cinema signal input. But before, the 8 channel outputs of the digital cinema server need to be well connected to the corresponding input ports at the back panel of this processor, and then the sync digital cinema audio signal can be input.

6 Analog Button

Press the Analog button to switch to analog cinema signal input. And the analog input port supports the analog audio signal output from CP750 or decoded analog audio signal from DVD.

FUNCTION INSTRUCTIONS AND OPERATION WAYS

Front Panel



❼ CD/DVD Button

Press the CD/DVD button to switch to CD/DVD input, and the corresponding ports are 8 channels RCA input jacks, they are 8 channels non balance analog audio signal inputs.

❽ Backup IC Card Port

Insert the backup IC card to the port to save data of the unit. On the debugging interface, it is available for card read-writing through the corresponding menu.

It is required management password before read-writing card. The card need be initialized and written into identification code before usage.

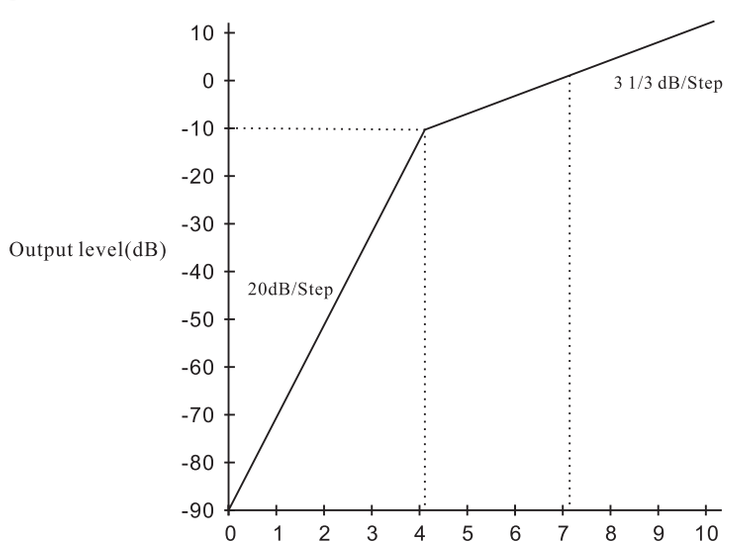
If without connection with computer software, after the unit is turn on and then insert the card it will automatically update the data and IP address of the unit.

❾ USB Port

User can use the supplied USB cable to connect with computer, and through debugging interface to debug the various parameter configurations.

❿ Volume Control Knob

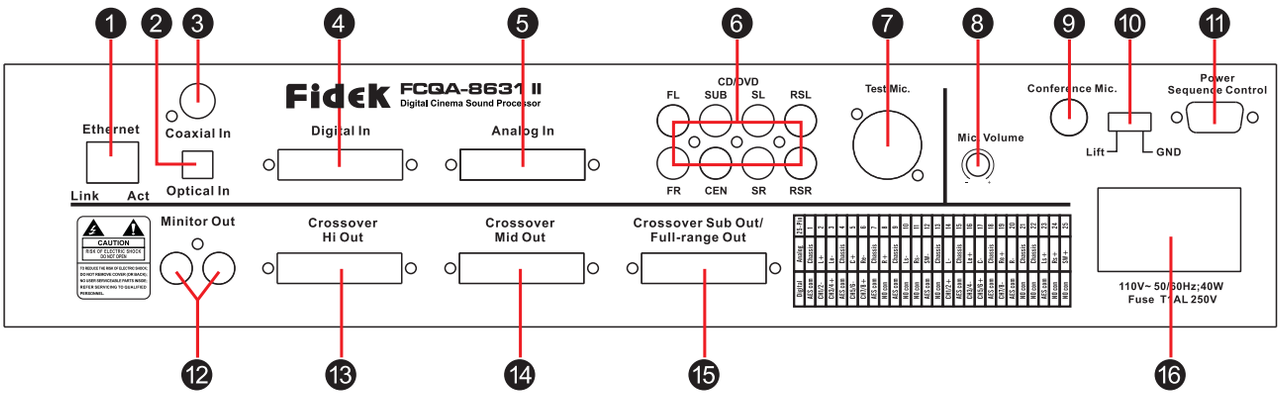
It is the master volume control of the 8 channels, volume display maximum is 10 and minimum is 0, the step is 0.1, the volume slope and the corresponding figures are as following:



Volume adjustment level curve

FUNCTION INSTRUCTIONS AND OPERATION WAYS

Back Panel



1 Ethernet Port

RJ45 port is for remote control through digital cinema network to the single unit or to make network management and control to multi cinemas.

2 Optical In Jack

Optical S/PDIF input connector.

3 Coaxial In Jack

Coaxial S/PDIF input connector

4 Digital In Port

It supports 8 channels AES-EBU digital film signal input from 1.3K and 2K digital film server.

For the corresponding pins connection please refer to the attached list Table 1 on page 7.

5 Analog In Port

It supports 1 channel DB-25 port analog film signal input. For the corresponding pins connection please refer to the attached list Table 3 on page 7.

6 CD/DVD Audio Input Jacks

8 channels non-balance input ports support 8 channel analog signal input.

7 Test Mic. Jack

Microphone jack for connection with specialized microphone for testing the duly sound parameters of the cinema and through modify EQ to correct the sound system defects to meet the sound effect requirements of cinema.

8 Mic. Volume Control

It is the volume control for conference microphone.

9 Conference Mic. Jack

There is conference microphone jack for connection with microphone for public address or emergency call.

10 Lift/GND Switch

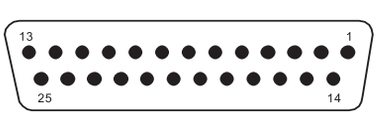
This switch is available to choose lift or grounding if noise caused from grounding.

FUNCTION INSTRUCTIONS AND OPERATION WAYS

Back Panel

Pins connections of digital signal input

25-Pin	Digital
1	AES com
2	CH1/2-
3	CH3/4+
4	AES com
5	CH5/6-
6	CH7/8+
7	AES com
8	NO con
9	AES com
10	NO con
11	NO con
12	AES com
13	NO con
14	CH1/2+
15	AES com
16	CH3/4-
17	CH5/6+
18	AES com
19	CH7/8-
20	AES com
21	NO con
22	NO con
23	AES com
24	NO con
25	NO con

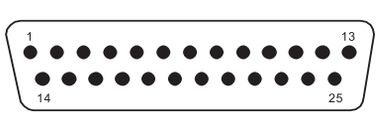


Female

Table 1

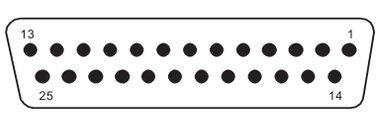
Pins connections of analog signal input

25-Pin	Analog
1	Chassis
2	L+
3	Le-
4	Chassis
5	C+
6	Re-
7	Chassis
8	R+
9	Chassis
10	Ls-
11	Rs-
12	SW-
13	Chassis
14	L-
15	Chassis
16	Le+
17	C-
18	Chassis
19	Re+
20	R-
21	Chassis
22	Chassis
23	Ls+
24	Rs+
25	SW+



Male

Table 2

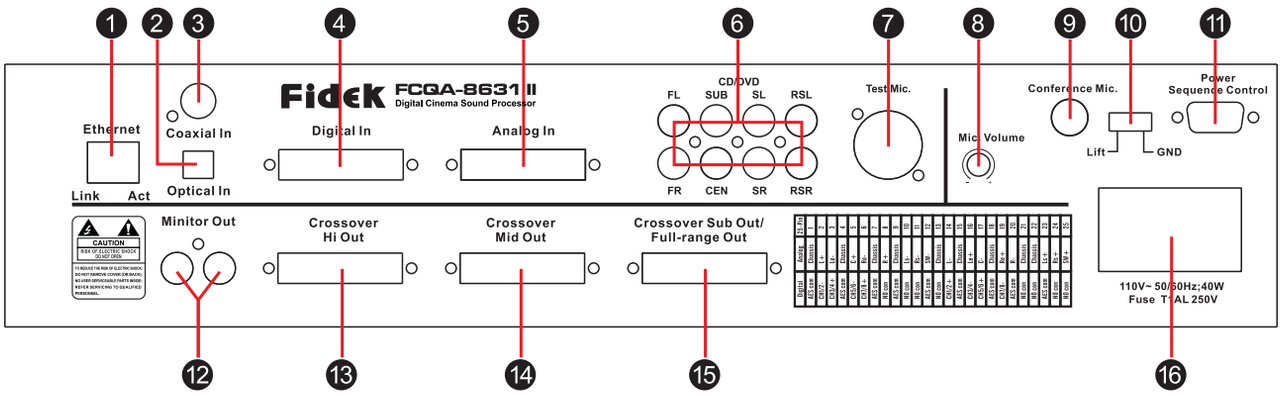


Female

Table 3

FUNCTION INSTRUCTIONS AND OPERATION WAYS

Back Panel



⓫ Power Sequence Control Port

Through the port the unit is available to control on / off of the power sequence to control the power source of the equipments connected.

⓬ Mointor Out RCA Jacks

It is composite output for monitoring the left, right and center channels sound.

⓭⓮⓯

Channels Output Ports

There are 3 ports for 8 channel output: left, center, right, left surround, right surround, rear left surround, rear right surround and subwoofer.

When the unit crossover is set to full range status, the sound signal will be output through port of Crossover Sub Out/Full-range Out.

When the unit crossover is set to two-frequency-division status, the sound signal high frequency will be output through port of Crossover Hi Out, midrange no output of Crossover Mid Out, low frequency will be output through port of Crossover Sub Out/Full-range Out.

When the unit crossover is set to three-frequency-division status, the sound signal high frequency will be output through port of Crossover Hi Out, midrange will be output through port of Crossover Mid Out, low frequency will be output through port of Crossover Sub Out/Full-range Out.

Please refer to the following table for output under different crossover status:

	Crossover Hi Out	Crossover Mid Out	Crossover Sub Out/Full-range Out
Full range			Full range
Two-frequency-division	High frequency		Low frequency
Three-frequency-division	High frequency	Midrange	Low frequency

Note: for pins connections of these output ports, please refer to Table 2 on page 7.

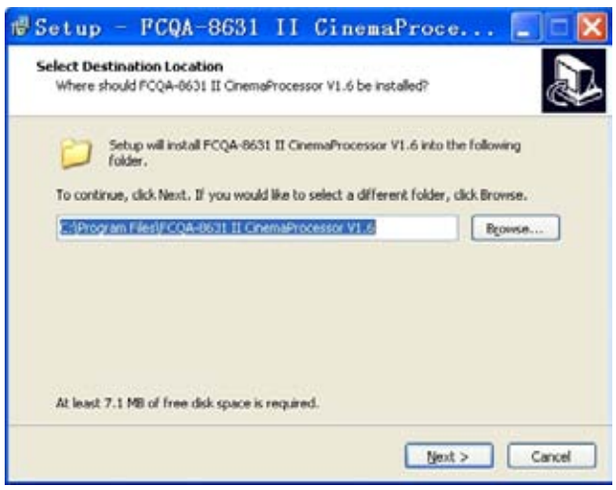
⓰ AC Power Socket with Fuse

This unit can be used on voltage 110-240V~, and fuse T1AL 250V.

SOFTWARE INSTALLATION PROCEDURES

Please follow the following processes for setup of FCQA-8631 II digital cinema processor software to your computer:

1. It is recommended that you close all other applications before continuing. Click Next to continue, or Cancel to exit Setup.



2. Select Destination Location
   Where should FCQA-8631 II cinema processor software be installed?
   Setup will install FCQA-8631 II cinema software into the following folder.
   To continue, click Next. If you would like to select a different folder, click Browse.
   Note: at least 7.0MB of free disk space is required.

SOFTWARE INSTALLATION PROCEDURES

3. Select Additional Tasks

Which additional tasks should be performed?

Select the additional tasks you would like to Setup to perform while installing FCQA-8631 II cinema processor software, then click Next.

Additional Icons

-Create a desktop icon -Create a Quick launch icon

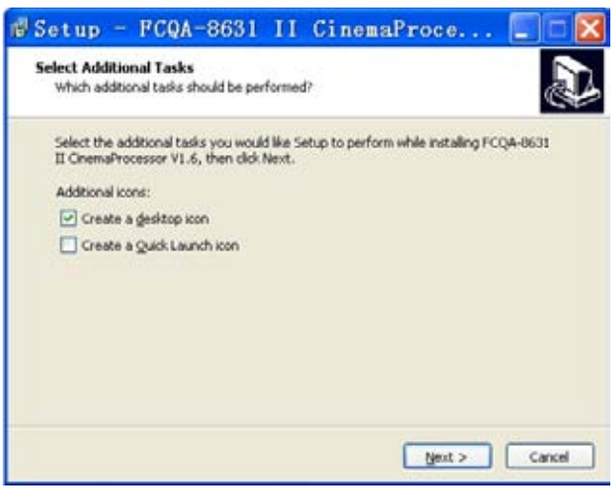
Ready to Install

Setup is now ready to begin installing FCQA-8631 II cinema processor software on your computer. Click Install to continue with the installation, or click Back if you want to review or change any settings.

Review following settings you selected in the previous steps:

-Destination location -Start Menu folder -Additional tasks

Additional icons

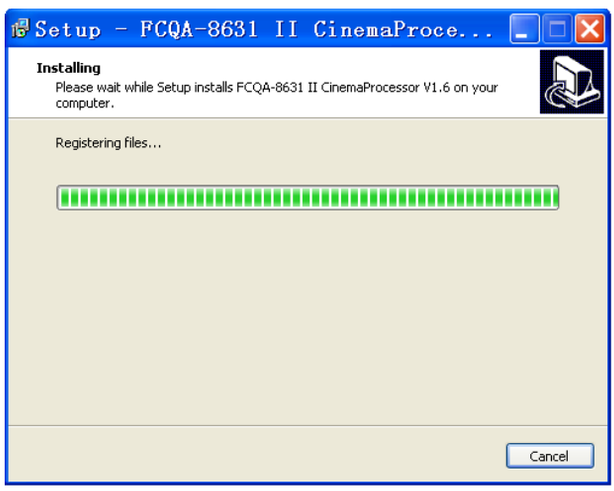


4. Intalling

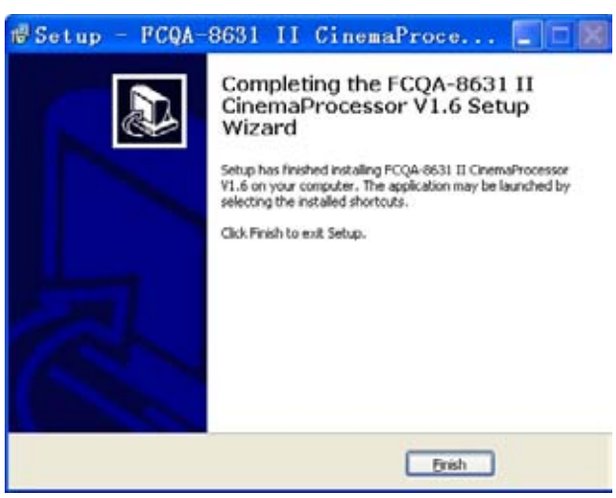
Please wait while Setup installs FCQA-8631 II cinema processor software on your computer.

SOFTWARE INSTALLATION PROCEDURES

5. Completing the FCQA-8631 II
   Cinema Processor Software Setup
   To complete the installation of FCQA-8631 II cinema software setup must restart your computer.
   Would you like to restart now?
   -Yes, restart the computer now
   -No, I will restart the computer later



6. Click Finish to exit Setup.



SYSTEM CONNECTION

1. Turn on FCQA-8631 II Cinema Processor

Plug the power cord to the unit and get through AC power source (100V-250V~) and then turn on the power switch on the rear panel of unit, the unit will be in Standby mode, now press the Standby button on the front button, or through network connection with computer on the application interface it click Standby button icon then the unit will enter working mode.

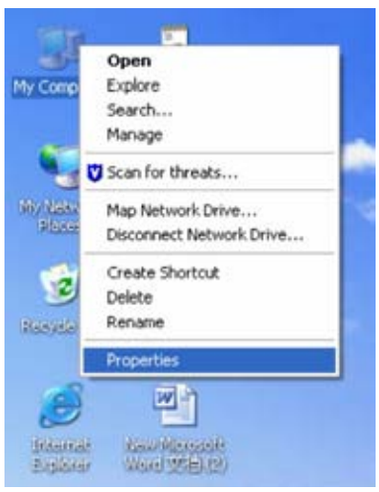
2. USB and TCP/IP Connections

I. Install FCQA-8631 II cinema processor application software to your computer.

II. Through USB cable to connect FCQA-8631 II with computer, there is a USB port for connection on the front panel of FCQA-8631 II.

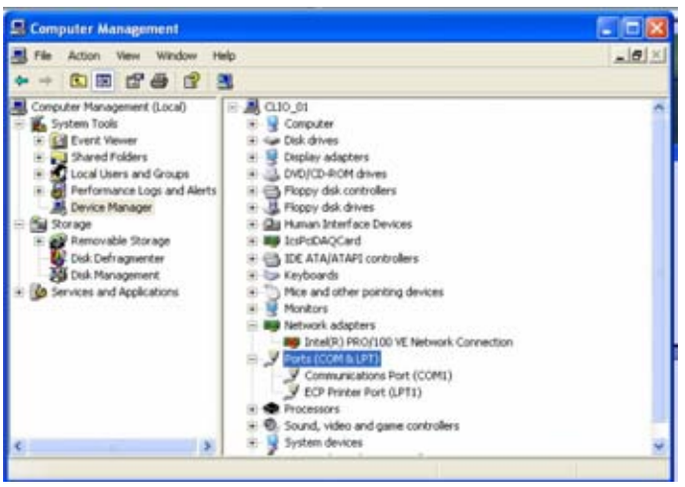
III. Check the assignment number of the USB port, because many notebook computers may have different assignment number due to ever connected with different USB equipments, please follow the following processes to make changes.

A. Right click My Computer → click Properties →click Device Manager→click on Equipment Management, please refer to the figure on the right.

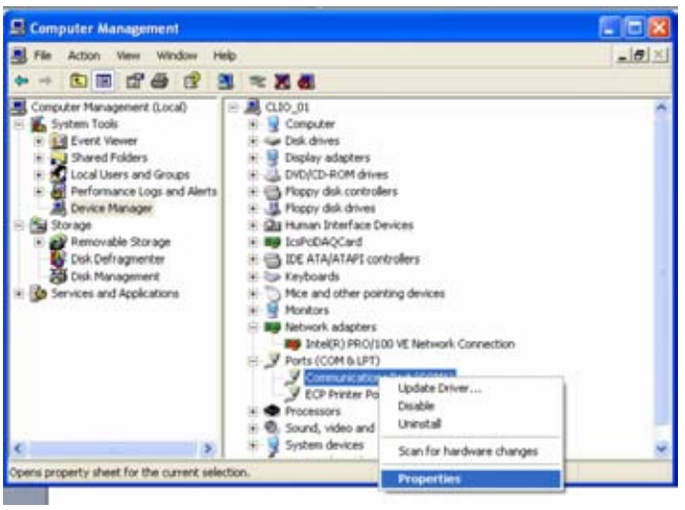


B. Click Device Manager.

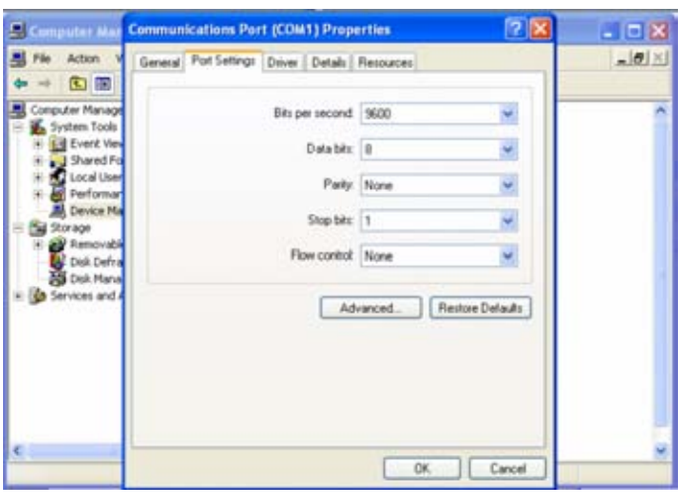
C. Click on Ports (COM & LPT)



D. Right click Communications Port (COM1),
click Properties.

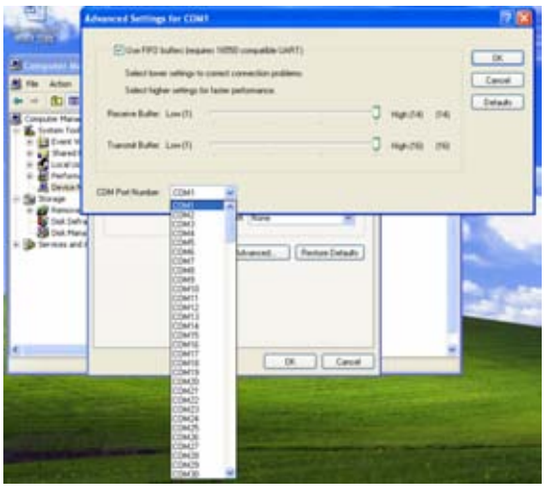


E. Click Port Settings.



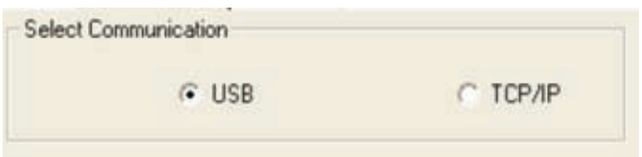
SYSTEM CONNECTION

F. Click Advance Settings for COM1.

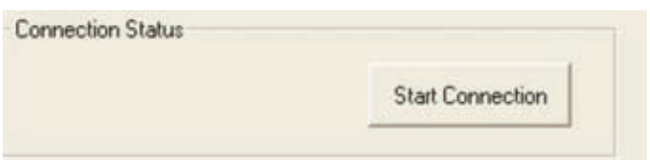


Finally click OK to confirm, then remove the USB cable and insert again, then changes will be applied successfully.

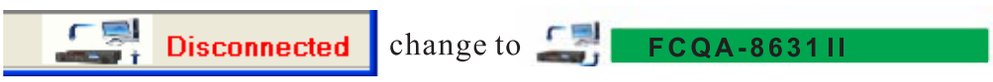
IV. Open software interface, on Selection Communication of the submenu Network/Log, select USB communication.



V. Click Start Connection to complete communication. Each new unit need to pull out USB cable and insert again, then communication.



VI. After communication successfully, the below icon will become green.

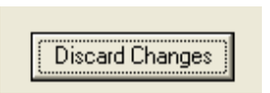


SYSTEM CONNECTION

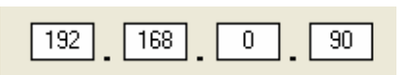
3. Through USB communication to read and change the IP address

A. First complete USB communication successfully.

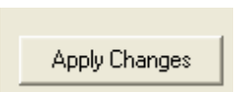
B. Click Discard Change button icon, input general password “fcqa8631”to read the IP address of current unit.



C. Change the IP address.



D. Click Apply Changes button icon to apply the changes of IP address.

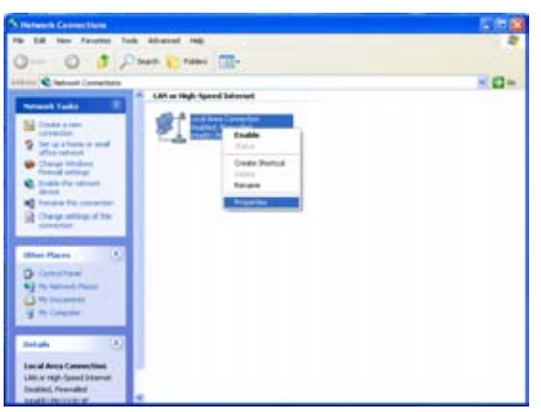


E. The unit need to restart to make the new IP valid.

4. Through Network to complete communication

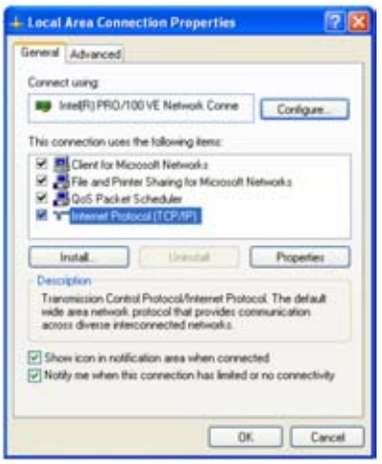
A. Right click Network Connections and click Property as below figure:

B. Right click Local Area Connection and click Properties.



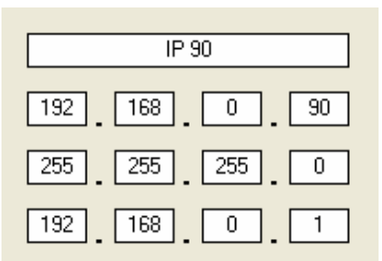
SYSTEM CONNECTION

C. Double click Internet Protocol (TCP/IP).



D. Enter its Property submenu and select Use below IP Address and DNS Server Address.

E. Set the addresses same as those of current FCQA-8631 II connected and make sure FCQA-8631 II and computer connected are in the same domain addresses.



SYSTEM INTERFACE INSTRUCTION

1. Interface analog panel functions instructions

In communication status, first click Stand By to start the software and at the same time turn on the unit, wait for about 3~5 seconds, after the normal starting of unit the analog panel functions on interface are same at those on the panel of the real unit.

Note: when communication it is just available to operate through the buttons on the analog panel on the interface.

2. Alignment Interface

A. Enter Alignment interface, the password is FCQA8631 II.

B. Click on the Power/Sandby icon to activate the interface.

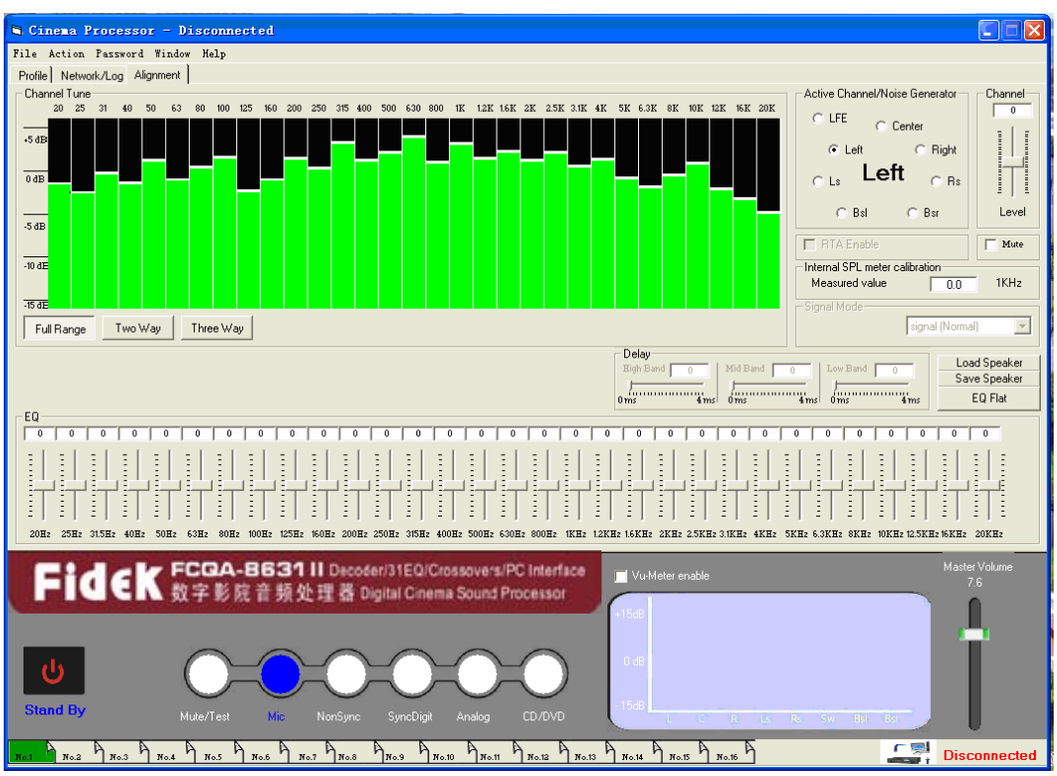
C. Choose Mic input channel.

D. Connect test microphone through cable to the Test Mic. Connector on the rear of unit. The test microhone need to be placed at the 2/3 position from the back wall to the screen in the cinema room, also at the center between left and right walls.

Turn amplifier volume to the maximum and turn processor volume to a reasonable level.

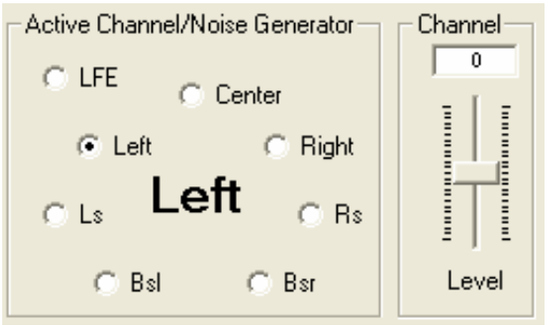
This microphone test is to get the actual sound pressure level of each channels so as to know how much need to adjust at the EQ to get the standard optimized levels.

Interface sample as below:

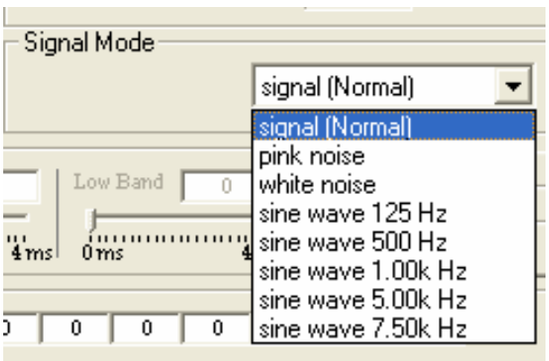


SYSTEM INTERFACE INSTRUCTION

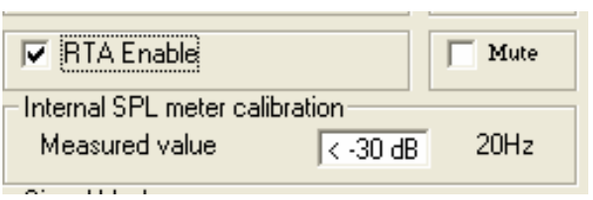
E. Select the channel you need to test and adjust.



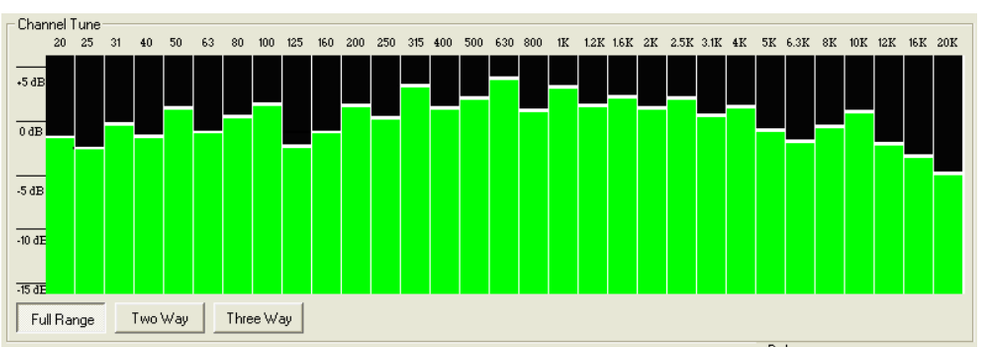
F. Select the signal mode for test, normally to choose pink noise signal.



G. Choose RTA Enable to activate the test.



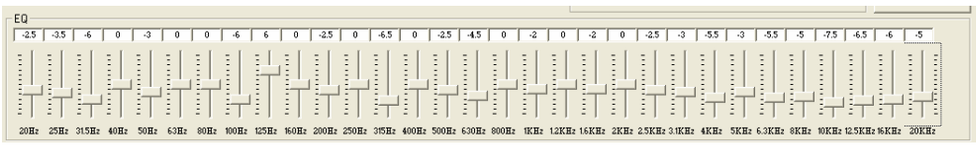
H. Then it will display the actual timely tested levels, such as below:



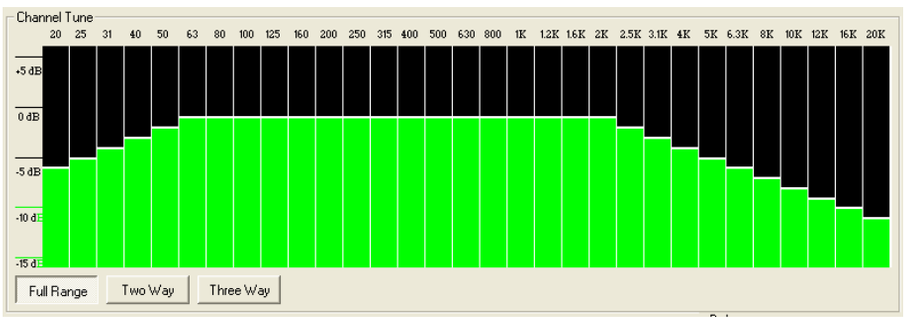
I. According to the parameters of selected speakers, choose the crossover status and crossover point, such as crossover status is two way and crossover point is 800Hz.

SYSTEM INTERFACE INSTRUCTION

J. Through analysis of the timely tested 2969 level curve, adjust the below 31 band EQ to make it compliant with the 2969 standard curve requirement.

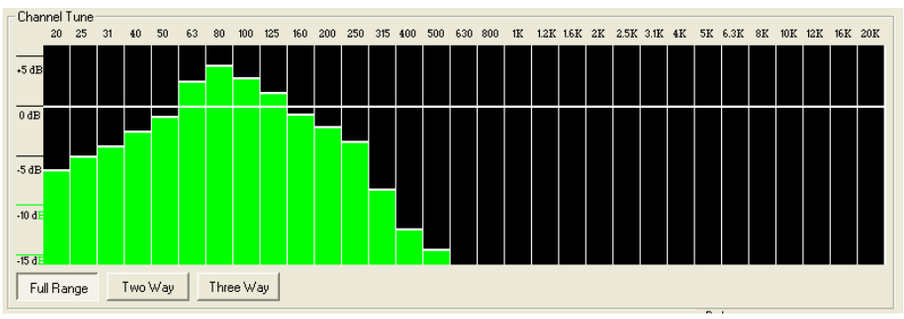


K. Left, Center, Right, RS, LS, BSL, BSR these seven full range channels, their each timely display of compliance with 2969 curve requirement is as below:

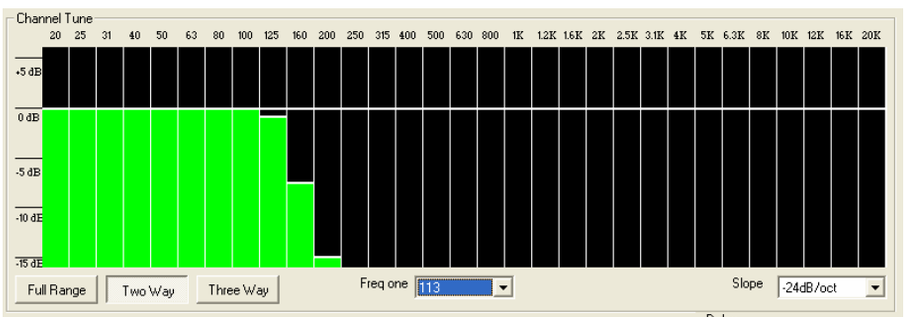


L. The same processes must be done to each of these seven channels for tuning to meet the requirements.

M. Subwoofer channel timely tested levels for example as below:



N. Through two-way crossover and select 113Hz crossover point to process, 24dB slope, afer EQ tuning to correct to meet standard requirements as below:



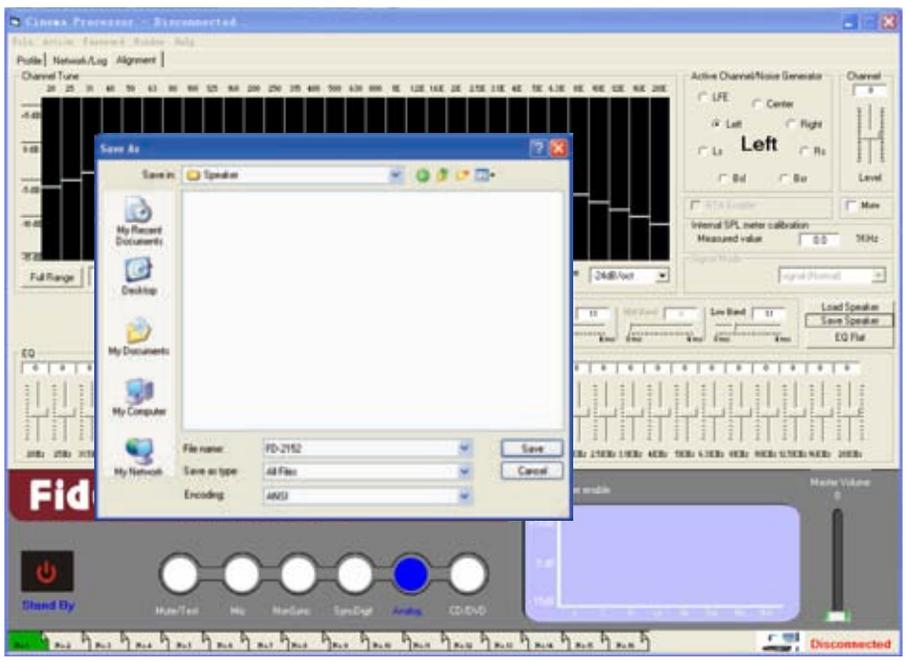
Remark:Because of limit of the DSP resource, so if to tune one channel, the software will automatically close pink noise of previous channel tuned. So it means each channel's tuning must be separately processed but with same steps.

SYSTEM INTERFACE INSTRUCTION

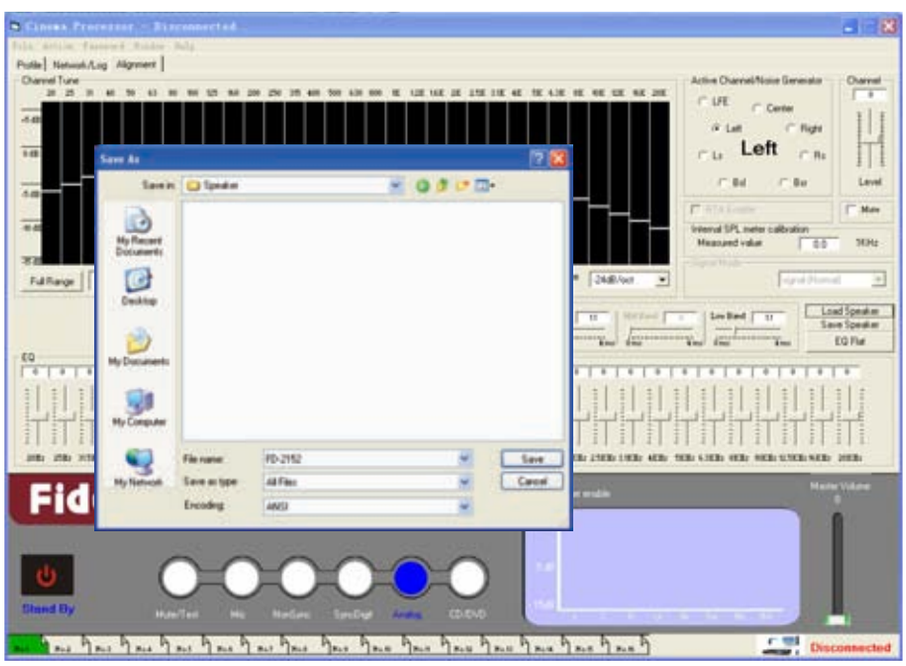
3. Crossover Setting

According to the parameters of speakers used in the cinema, first set the left, center and right channels speakers to be two-frequency-division or three-frequency-division, and select reasonable crossover point.

4. Software can save the system setting alignment, click Save Alignment to save, as below figure.



5. Software can open the system setting alignment which already previously saved, click Open Alignment to call it out, as below figure.

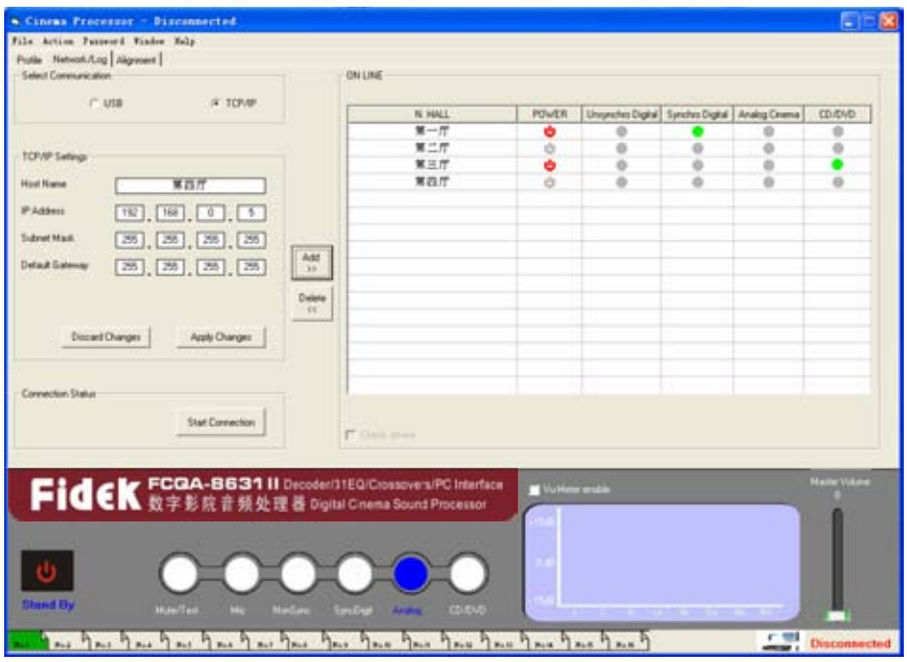


SYSTEM INTERFACE INSTRUCTION

6. Multi-Cinema Room Management

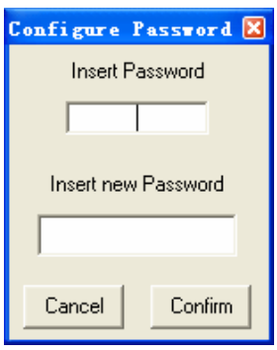
Through network router or network switch, multi-FCQA-8631 II can be used to complete management of multi-room. Though network, up to 16 cinema rooms can be monitored and managed, such as open and close the speaker system, switch to different audio source input.

Note: each time just can manage the unit in the corresponding TCP/IP cinema room. See below figure.



7. Password Modification

Click Password, select Modify Password and click, below submenu will come out, through this it is available to modify the password.

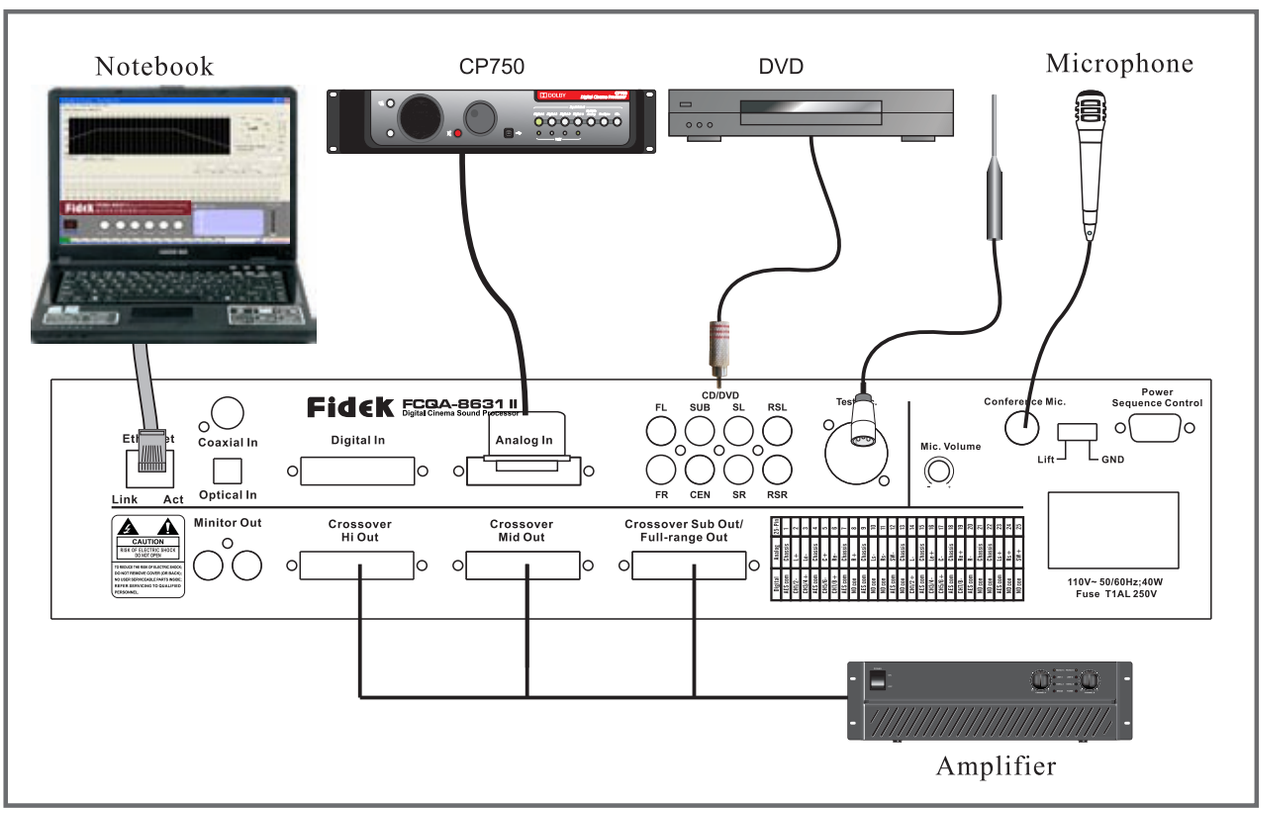


Note: universal password is FCQA8631, and all are capital letter.

PRODUCT SYSTEM CONNECTION

FCQA-8631 II supports the following three type ports connection audio signal inputs:
1. Analog film audio signal output from CP750 25 pins D type port.
2. Digital film audio signal output from 1.3K & 2K digital film server.
3. 8 channel analog audio signal output from other film player or DVD.

System connection is as below figure.



Usage Instructions

1. Connect the film audio source with the FCQA-8631 II and select the right input channel.
2. Connect with 8 channel speakers and the 8 channel speakers can be full-range, 2 two-way or three-way speakers. And then check and insure the cable connection of each channel speakers is correct and tight, check and insure the cable connection of high, mid, low frequency speakers is correct and tight.
3. Connect with computer through USB or network TCP/IP, get through communication, correctly select the right port and then process debugging to the system parameter settings.
4. After all the parameters are well set to meet requirements, please save the setting data and save into the data backup card, well label the card and keep it for future maintenance if needed.
5. Remove the computer, the system will work separately. If next time need to modify and then just connect with computer again. And keep well the password to avoid any inconvenience to your job due to lost of password.
6. When communication with computer, the panel of the unit will be locked and all buttons will become invalid.
7. After turn on the unit, insert the backup card, the unit will use the data on card for refreshing, so if the data backup card is not used, please keep it well by special person and clearly labeled.

SPECIFICATIONS

Analog/Line Input(Analog,CD/DVD)	
S/N RATIO	⩾100dB (A-weighted)
Max input level	12dBu
Max output level	12dBu
Frequency response	20Hz~20kHz ±0.5dB
THD	⩽0.1%
Digital Input (Syncdigit, NonSync)	
S/N RATIO	⩾100dB (A-weighted)
Max output level	Syncdigi 12dBu, NonSync 12dBu
Frequency response	20Hz~20kHz ±0.5dB
THD	⩽0.1%
Microphone Input(MIC)	
S/N RATIO	⩾100dB(A-weighted)
Max input level	-13.5dBu output: 18dB (tested under human voice input volume at maximum)
Frequency response	20Hz~20kHz ±0.5dB
THD	⩽0.1%
EQ	31 bands EQ±12dB(±0. 1dB)
Slope	-12dB/oct -24dB/oct
Delay after crossover	HF, MF, LF 0-4ms, step is 0.1ms
Surround sound delay	0-200, step is 1ms
Power source	AC 110V-240V~ 50/60Hz
Size	486x327x98mm(WxDxH)
Weight	5.2kg

Specifications and features are subject to change without notice.

Fidek®