

CNP888 Network Audio Matrix Processor

Product Manual

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CNP888 Serial
2010 P/N:20101102

Version: 1.6

Thanks for your purchasing CNP888 series Network Audio Processor developed by our company. Human and high-tech essences are fused in our products. CNP888 series will give you one brand-new application experiences.

Please follow the steps to protect your products, work area and personal safety, in order to avoid the potential danger of damage.

When you are using CNP888 equipments:

Please follow the steps when you are using CNP888 equipments,



Warning: Don't operate CNP888 equipments when you demount the covers (including cover, front panel, and back panel and so on).

- Please make sure the voltage of the CNP888 according to local AC voltage standard, in order to avoid to damage CNP888 equipments.
 - There are 115V/60Hz in most of countries and districts in South America, North America and Far East, e.g. Japan, Korea and Taiwan.
 - There are 230V/50Hz in most of countries in Europe, Middle East and Far East.
- Please make sure the electrical outlet is unplugged before interior setup of CNP888 equipments, in order to avoid to damage main board of CNP888 equipments. Some main boards are electrified still when the equipment is plugged.
- Installation and servicing should be performed by qualified and experienced personnel.
- Please make sure all the cables of CNP888 equipments and peripheral equipment are connected to the correct ground electrical outlets, in order to avoid electrical shock. All the cables are equipped three-phase plug to ensure they are grounded correctly. Don't use the unidirectional plug and don't remove the pins from the cable. Please use three-phase cable with correct ground electrical outlet if you need to use extension cords.

Don't use CNP888 equipments in thunderstorm, in order to avoid the potential risk of electrical shock.

- Don't connect or disconnect any cable and don't repair or reconfigure the product in thunderstorm, in order to avoid the potential risk of electrical shock.
- Please make sure the connection of CNP888 equipments and electrical outlet is severed before cleaning.
- Make sure that CNP888 equipment's power is off when you clean it. Clean your CNP888 equipment exterior casing regularly with a soft and dry cloth or a fluff brush. Do not use liquid or aerosol cleaners which maybe include caustic or flammable substance.
- Wait for a period about ten seconds before severing the connection of peripheral equipment and CNP888 equipment, in order to avoid damage to the system board.
- Pull out the cable from the network adapter which is on the back of CNP888 equipment first and then pull out the cable from the network hole, in order to avoid short circuit when you sever the connection. Plug the cable into network hole first and then plug the cable into network adapter when you reconnect the products.
- Please use surge protective device, circuitry adjuster and UPS, in order to avoid instantaneous high or low voltage damage to CNP888 equipment.
- Make sure there are no goods exert pressure on cables. Do not make cables exposure, which will cause trample and stumble.
- Never push objects of any kind through openings of CNP888 equipment as that may cause interior short circuit and result in fire, electric shock, or other hazards.
- Do not use CNP888 equipment near a source of heat and don't jam the refrigeration vent. Don't make paper underlie CNP888 equipment. Use CNP888 equipment in ventilated area and don't locate CNP888 equipment on bed, sofa or carpet.
- Never spill food or liquid of any kind on the CNP888 equipment.
- Do not use the CNP888 near water or other liquids, or in rainy/moist situations. If liquid gets into your CNP888, turn it off and take it to your dealer for inspection.
- Water and/or Moisture Do not use this equipment near water or in contact with water.

Technical instructions



Warning: Perhaps there are some mistakes of description and printing in technical instructions

- With the rapid technical development, our products keep on improving and renewing, so there are may some demoded or useless specifications about some standards in this manual.
- We are very conscientious for reorganizing this manual, but we do not guarantee there is no negligence or mistake in this manual, and we can't exclude the possibility that this manual will be renewed again. If there are any revises, we will not give notice any more.
- If there is any revises in this manual, it will be promulgated in Digispider Website:<http://www.digispider.net>

Do not tear up any label



Warning: Please do not voluntarily tear up any label on CNP888 equipment; otherwise it will affect to recognize the standard of product maintenance deadline.

- All labels on CNP888 equipment show information when the products are manufactured and sold, these labels are very important for technology recognition and maintenance of products.
- All labels on CNP888 equipment are belonged to recognized standard of product maintenance deadline. If you voluntarily tear up them, it will affect to recognize the standard of product maintenance deadline.

Looking for help



Warning: Do not attempt to repair this equipment yourself, or it will damage your equipment and result in serious results, e.g. personal injury.

- All CNP888 products are manufactured by DigiSpider Inc., All maintenance should be performed only by authorized Units.
- Do not attempt to repair this equipment yourself. Refer all repairs to qualified service personnel.
- If there is any question, please contact the dealer you purchased CNP888 equipments from, you also can call Digispider customer service, ask for help.

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ABOUT THIS GUIDE

This manual will help you to be acquainted with the products and functions of CNP888 Network Audio Matrix Processor, by presenting the methods of installation, configuration, operations and maintenance. If you encounter any problem, or it is the first time for you to use Digispider's CNP888 Series, please read this manual first for relevant information and technical supports. As for its upgrades and updates, some descriptions and illustrations in the manual may be different with your hardware. Please visit <http://www.digispider.net> from time to time for the latest documentation.

HOW TO USE THIS MANUAL

Read it in any order you like.

You may begin with any page and skip to the desired one. It will surely provide you with a complete flowchart if you read it from the beginning to the end.

There are Table of Content and Index in the manual, providing different research methods for various reading habits.

If you encounter any unknown words or expressions, please refer to the attached "Glossary".

For the person who use the system for the first times:

We recommend you read all the content of the manual, especially the information with words of "Note, Caution and Warning". You are required to operate strictly according to the prospectuses in the manual.

During the installation of hardware, frequently read the "Safety Guidelines" section of the manual.

For ordinary users:

As for system administrator and operator, they may read the necessary information at their own choice. Please refer to the "General description" section of the manual for specific description. If the manual can't solve the problem, please contact the technical support personnel and trained & qualified engineers for the solution.

For experienced and qualified engineers:

For the reason that our products keep on upgrading and updating, please make attention to the update information of the manual. The specific update information is easily accessible at the all time on our service and support website, which will be incorporated into the last version of manual.

ANNOUNCEMENT AND PROVISIONS

The manual prepared by Digispider Inc. does not provide any form of guarantee, clear or implied, including but not limited to, implied guarantees or a special-purpose commercial reasonableness. In some areas of specific transactions is a clear or implied guarantees, therefore, this statement may not apply to you.

The manual may contain technical inaccuracies or typographical errors terminology. Identify changes and updating information regularly updated content will be updated to version. Digispider Inc may make improvement or updates for the products and procedures described in this document, at any time as it sees fit. The manual applies to CNP888 Network Audio Matrix Processor configured with different channels.

For more technical information, please consult your Digispider Inc sales representative and retailers.

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CHAPTER 1 CNP888 SYNOPSIS

The CNP888 is a 1U CobraNet multipurpose mixing, routing, and processing device which simultaneously handles up to 8-16 audio channels in a CobraNet network system. It utilizes a SHARC processor to manipulate audio with 40-bit floating-point precision using DigiSpider's NSP-100 software.

1.1 THE CNP888 FEATURES

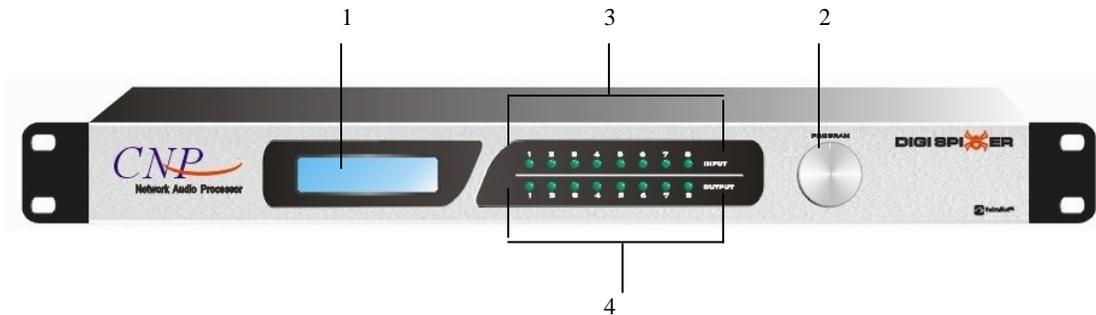
- Powerful DSP processing capability
- Gain from 0dB up to +66dB (12 steps) and 48V phantom power individually selectable for each MIC/Line input.
- 8 different DSP preset mode can be selected via the front panel.
- Configured and controlled by the NSP-100 software using SNMP network protocol .
- Providing CobraNet port.
- Audio data sharing with: TR2000,TR800,CFM, and the third party standard CobraNet compliant products.
- The feedback inhibitor could detect and inhibit the howl frequency automatically
- The Wise Mixer could automatically modify the ratio of each input channel in the output mix volume according the different input volumes. The channel which its input volume is more aloud, its ratio in the mixer output volume is bigger.

1.2 THE CNP888 DSP FUNCTIONS

- Delays: 5ms,10ms,20ms,50ms,100ms.
- Level control, Compressors, Limiters, Noise Gates, Expanders.
- Signal Generator: Sine, White Noise.
- EQ: Parameter EQ, Graphic EQ.
- Filters: High-pass, Low-pass, Shelf.
- Crossovers: 2-way, 3-way, 4-way.
- Level Meters: 1-channel, 2-channel, 8-channel.
- Feedback inhibitor: 4 band; 8 band; 16 band; 32 band;
- Wise Mixer: 8x8, 16x16;

1.3 FRONT PANEL

The front panel of CNP888 is shown as below



Front Panel of CNP888

1—LCD DISPLAY

Display the DSP mode name of the CNP888, and the local analog input/output setting information.

2—PROGRAM SELECT KNOB

Turn the knob, the LCD will display the DSP mode and the setting information of the local analog input/output. Push the knob to choose the item you want to change.

For example, when the LCD displays the DSP mode, the DSP mode No. would be selected after push the knob, then turn the knob, the DSP mode No. would change, to choose the needed DSP mode and push the knob, then this DSP mode would be initiated and run by the CNP888 device.

3—THE INPUT STATUS INDICATOR LED

The input status indicator LED (green or red), each LED indicate the status of the corresponding input channel. When the CNP888 is power on, all the led would flash green once time and red once time. The led would be green when the corresponding input channel has the normal audio signal input. When the input signal level below the minimum setting value, the led would be off. When the input signal level above the maximum setting value, the led would be red.

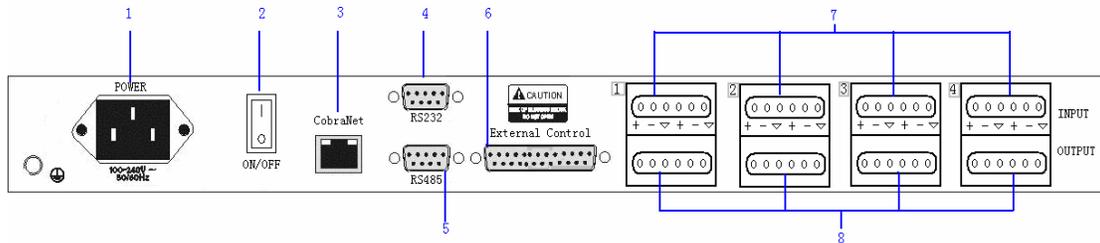
4—THE OUTPUT STATUS INDICATOR LED STATUS

The define of the output status indicator LED is as same as the input LED.

Note: The LED indicators would be all on or off, or other status when the device power on, it is the normal status before the initialization.

1.4 REAR PANEL

CNP888 rear panel



Rear Panel of CNP888

1—Power socket 100-240V AC 50/60Hz

2—Power switch ON/OFF

3—CobraNet/RJ45 connector

CobraNet interface connects to 100M switches with using CAT-5 cable, and allows receiving Cobranet audio signals and sending Cobranet audio signals while it is controlled by NSP-100 control software.

The CobraNet interface also is a Ethernet interface for transmitting control data.

4—RS-232 port: DB9 female connector, could communicate with other device base on the RS232 protocol.

Note: Please don't plug and play the RS232 connector while the device is running.

5—RS-485 port: DB9 female connector, could communicate with other device base on the RS485 protocol.

6—GPIO port: 8 analog voltages or TTL level control input.

7—MIC/LINE input ports: 4x6 pole Euro-block connectors. It can provide 0dB-66dB MIC gain, 48V phantom power. All of the operation can be controlled via dedicated software "NSP-100".

8—Line output ports: 4x6 pole Euro-block connectors,output the processed signal.

All of the operation can be controlled via dedicated software "NSP-100".

1.5 APPLICATION FIELD

- Stadiums
- Music Clubs
- Arenas
- Auditoriums
- Hotel Meeting Rooms
- Civic Centers
- Conference Centers
- Schools
- Theaters
- Churches
- Bars
- Theme Parks
- Paging Systems
- University Campus Buildings
- Any facility requiring distribution of multiple line-level signals

CHAPTER 2 TECHNIQUE SPECIFICATION

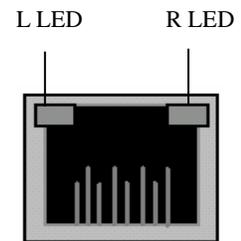
2.1 ANALOG INPUT/OUTPUT SPECIFICATION

- Analog input converted to 24-bit ,48khz digital audio
- 20-bit ,48khz digital audio converted to analog output
- Frequency response +/-0.2dB, 20Hz~20kHz
- Maximum gain: +66 dB, 12 steps
- Phantom power: +48VDC(10mA /input)
- THD + noise : <0.01% @4dBu 1KHz
- Dynamic range : 103dBA, 101dB
- Maximum input level: +30dBu,balanced differential
- Maximum output level: +24dBu,balanced differential
- Input impedance: >10k Ohms
- Output impedance: 100 Ohms, designed to drive a minimum load of 600 Ohms

2.2 INTERFACE SPECIFICATION

CNP888 Model	Process channel	Analog Input channel	Analog Output channel	CobraNet receive channel	CobraNet transmit channel	RS232	GPIO	RS485
CNP888	12	8	8	4	8	1	8 channels analog voltage or TTL level control input	1

- RJ45 connector:
 Normal: the left LED always green, the right LED flash yellow or green) .
 Error: the left LED always red or flash, the right LED off;

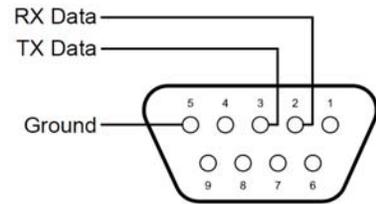


RJ45

- RS232 connector(DB9 female connector)

Pin definition:

- 1,4,6,7,8,9: NC, not defined
- 2: RX Data: data receive
- 3: TX Data: data transmit
- 5: GND



RS-232

- RS485 connector(DB9 female connector)

As same as RS232 connector

Pin definition:

- 1,4,6,7,8,9: NC, not defined
- 2: RX Data: data receive
- 3: TX Data: data transmit
- 5: GND

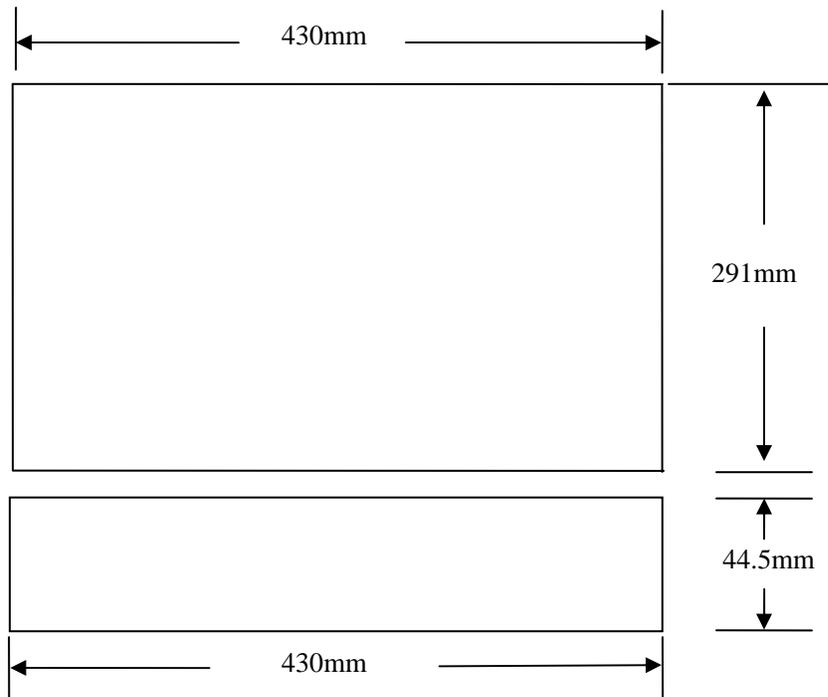
- GPIO controlconnector:DB25 female connector, could be connected with outside controller to adjust the output volume and so on;
- 8 Line/Mic input: 4x6 pole Euro-Block connector;
- 8 Line output: 4x6 pole Euro-Block connector;

2.3 OTHER SPECIFICATION

- Power supply:100-240V AC,50~60Hz
- Power consumption: less than 30W
- Operating Environment Temperature Range: 5-40° C
- Operating Environment Humidity Range: 5-85%

2.4 DIMENSION SPECIFICATION

- Dimensions (L×W×H): 430 x 291 x 44.5 mm without rack mounts
- Dimension diagram:



CHAPTER 3 BASIC OPERATION

The CNP888 is connected to the CobraNet audio system using its CobraNet interface, so it is very easy to install. You don't need to change the structure of the audio system — all you need do is connect the CNP888 to the CobraNet audio system using CAT-5 Ethernet cable, and then you can simultaneously process the audio channels from the local analog input or from the CobraNet input using the NSP-100 software. According to different application situation, it can divide into two modes: stand alone mode and network mode.

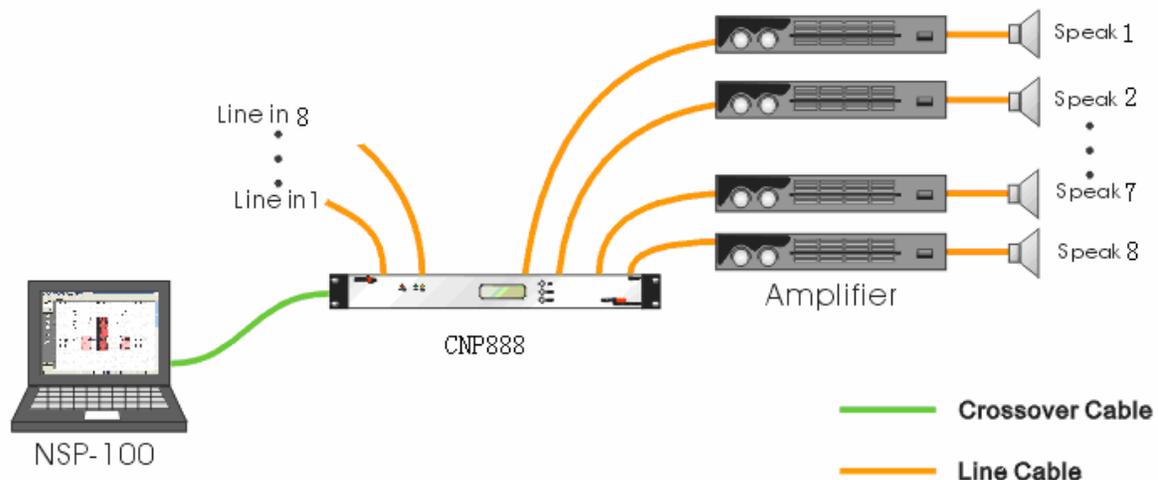
3.1 STAND ALONE MODE

The CNP888 can work in stand alone mode as a small console, controlled by NSP-100 software. Recommend to use this mode in small audio system (the number of input channel less than 8 and number of output channel less than 8)

In stand alone, connect the computer network card to the CNP888, whose functions are controlled via dedicated software NSP-100, with cross-over cable. The operation is listed below.

Step 1

Connect the computer network card to the CNP888 with cross-over cable, audio source to the Line/Mic input ports at the rear panel and output equipment to the Line output ports. The maximum length of the CAT-5 cable is 100m.



CNP888 stand alone mode

Step 2

Startup CNP888, and wait for CNP888 start to work in normal status with all LCD and indicator lights turn light.

Step 3

Add the CNP888 into the NSP-100 software in a right way; please refer to [chapter 3 "NSP-100 quick start for CNP888"](#).

Step 4

According to the situations, it is possible to adjust the DSP parameter of the CNP888 device via the NSP-100 software.

Step 5

Users can confirm the previous DSP parameter and next time can use CNP888 independently without computers.

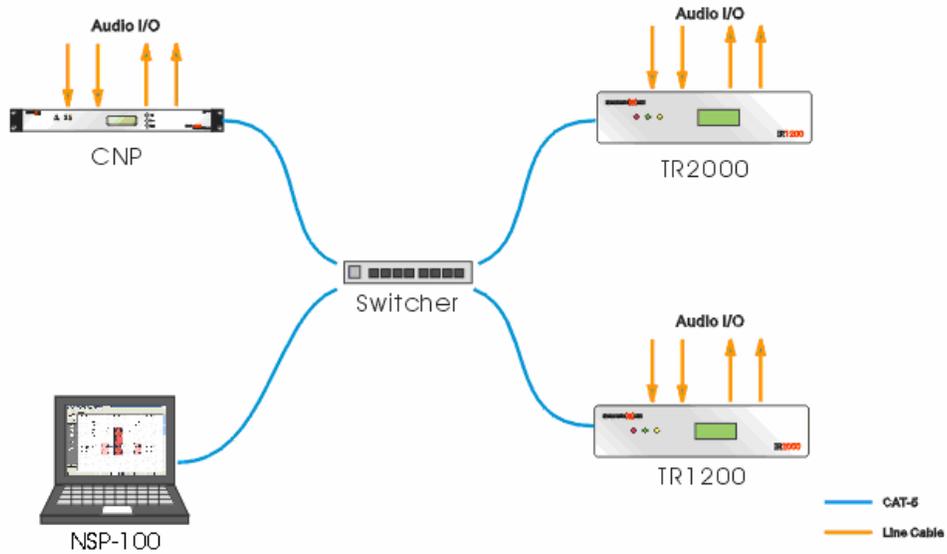
3.2 NETWORK MODE

To satisfy the demands of large CobraNet audio system, the CNP888 can be used in the Network mode.

In the network mode, the CNP888 can receive the audio signal from the CobraNet audio network, and transmit the processed audio signal to the audio network or local line output. The operation is listed below:

Step 1

Use the straight CAT-5 cable to connect the CNP888 device, CobraNet device and control computer together with the switch. But it should be noticed that the length of every single net cable is less than 100m as far as possible. The maximum length of the CAT-5 cable between the switch and CNP888 device is 100m.



CNP888 Network mode

Step 2

Startup CNP888 device, and add every equipment into the NSP-100 software system. Then, set up the receiving/sending relation between them. Please refer to [chapter 3 "NSP-100 quick start for CNP888"](#).

Step 3

According to the situation, the function of the CNP888 can be controlled by the NSP-100 software.

CHAPTER 4 NSP-100 QUICK START FOR CNP888

NSP-100 is an application software to design, edit, control the audio processing and transmitting system constructed by the Digispider device like the CNP888 series, TR2000 etc. NSP-100 is running on a standard Windows PC(Windows XP).After the design and configure have finished, the audio system would operate normally, the PC and the NSP-100 software could be removed.

Here is the brief introduction of the NSP-100 installment and application, if you want to more detail information, please refer to the “NSP-100 user manual”.

Step 1: Install the software

1) Install the CNOT and WinPcap software.

CNOT and WinPcap software must be installed in advance prior to the setup of NSP-100. If your PC have already installed these two software, it don't need to install again.

2) Install the NSP-100 software.

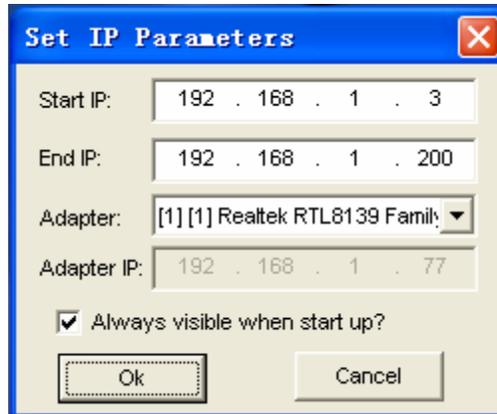
Note: the NSP-100 setup package would automatic install the CNOT and WinPcap software at first.

Step 2: Launch NSP-100 software

Double click the NSP-100 icon on the desktop.

When the NSP-100 software is launched, a dialog box would display, requesting you to enter the password for the user. **The initial password is “1”**.

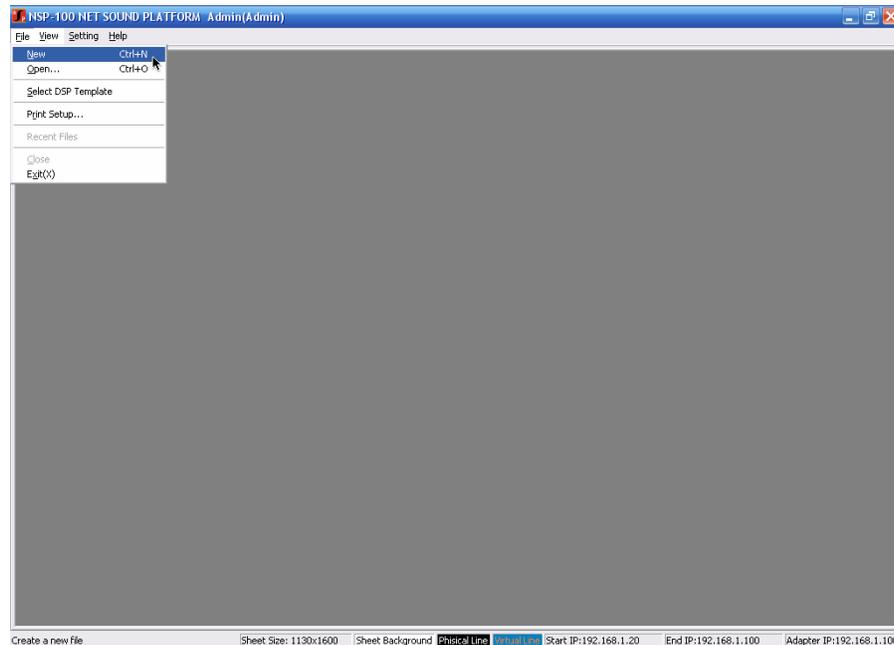




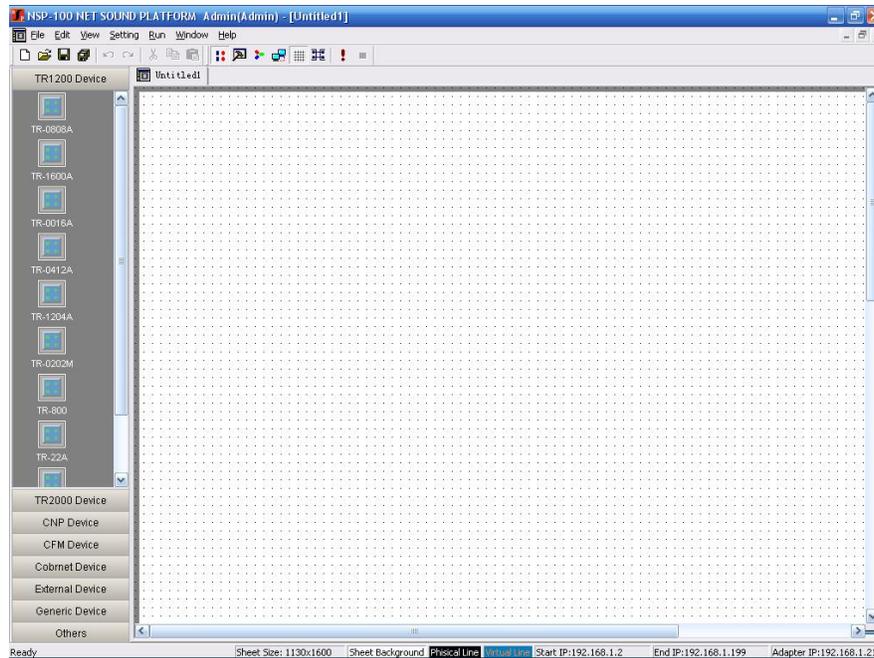
Make sure the beginning IP and the end IP are configured within the IP range, of which the first 3 segments of IP address are identical to that of the adapter, otherwise the NSP-100 will not be started normally. After all configure have done. The NSP-100 could be launched normally.

Step 3: Create a new project for the test system

Click the "File-New" to create a new project.



The main interface of NSP-100 after created a new project.



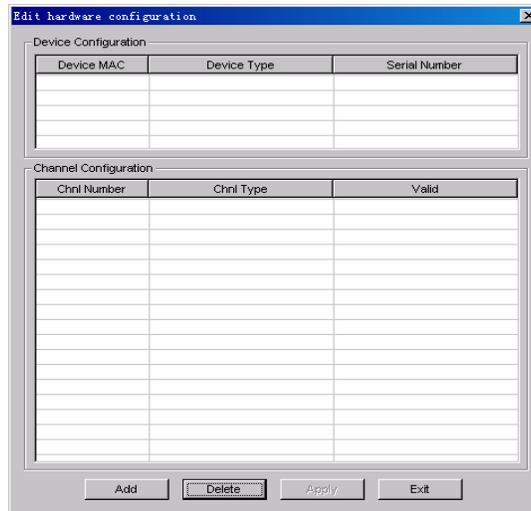
Step 4: Add the CNP888 to the NSP-100 device library

Click "Settings->Device Setting"



Access To The Hardware Configuration Requires Password Authentication. **The initial Password is "1". Please be careful to modify and safe to keep the Password.**

Enter the NSP-100 device library.



Clicks "Add" to add CNP888 device.



Enter the serial number of CNP888 device and select the correct device type (the serial number is labeled on the rear panel of the CNP888 device). Click "OK" to add the configuration.

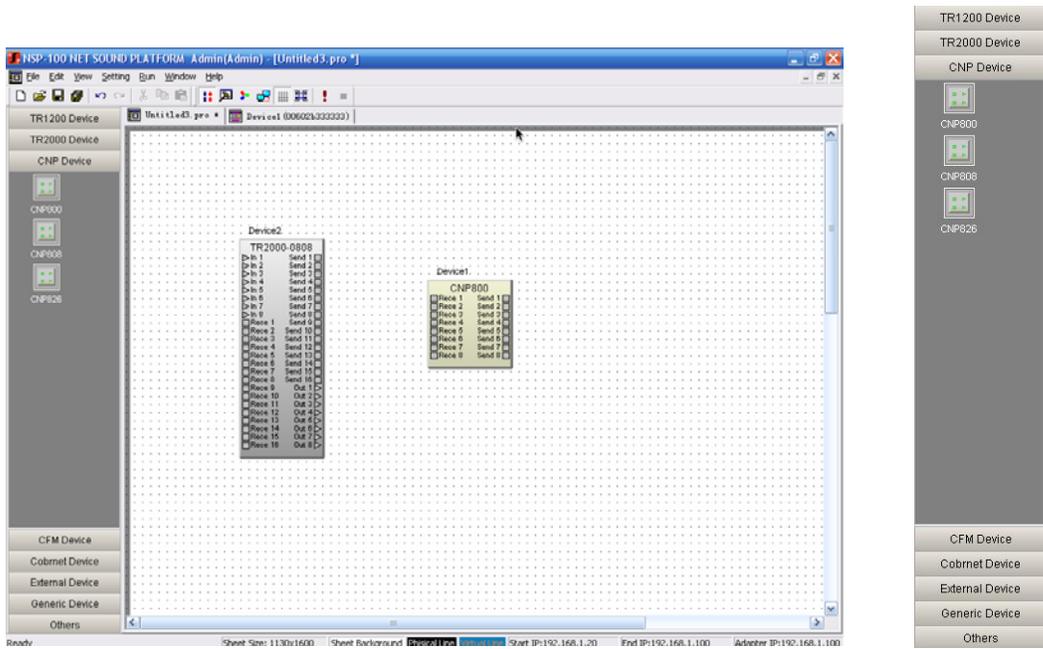
Serial number instruction: the serial number is composed by three segments.
 Segment 1: six characters, means the MAC address (the last six characters of the MAC address, the prefix-six characters are fixed "00602b") of the CobraNet device.
 Segment 2: four characters, means the TX1 bundle number (must be hex. for example Tx bundle 1=500(DEC)=01F4(HEX) of the CobraNet device.

Note: TX2=TX1+1

Step 5: Add the CNP888 device into the NSP-100 project design

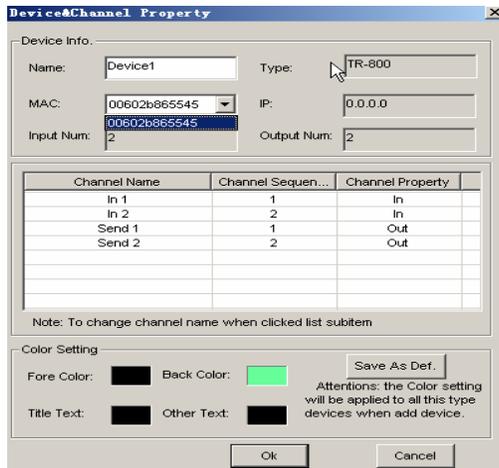
The CNP888 is in the "CNP888 net device"

User can drag the CNP888 device from the device column at the left side and add them into the document. Only one device can be added once time.

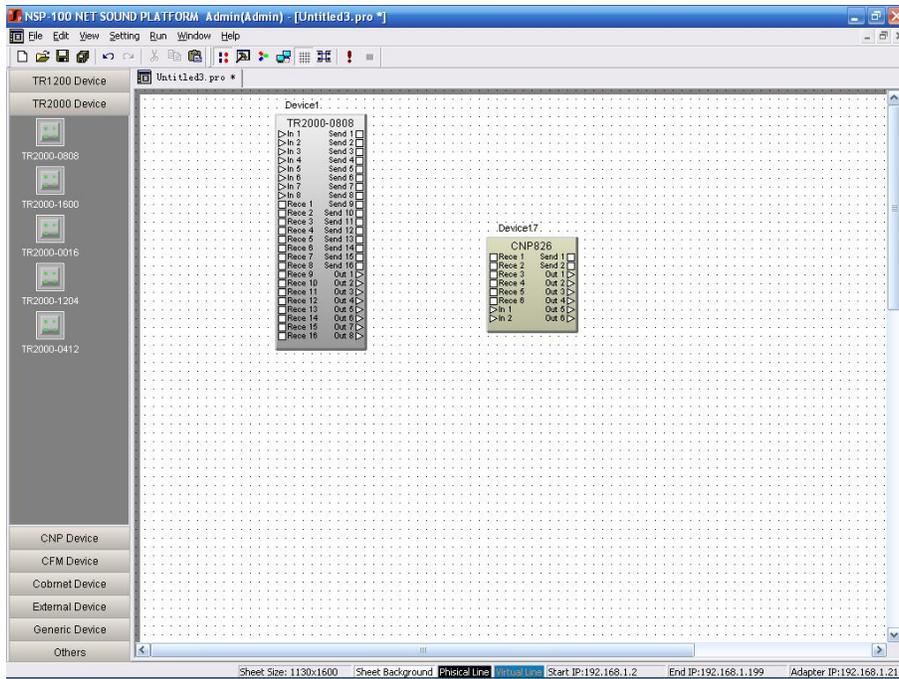


Step 6: Configure the serial number for CNP888 device.

Right click on the device, click the "Property" and select the right MAC for CNP888 device and then click "OK".



After allocated the MAC address of the CobraNet device, the port of the device will be valid.



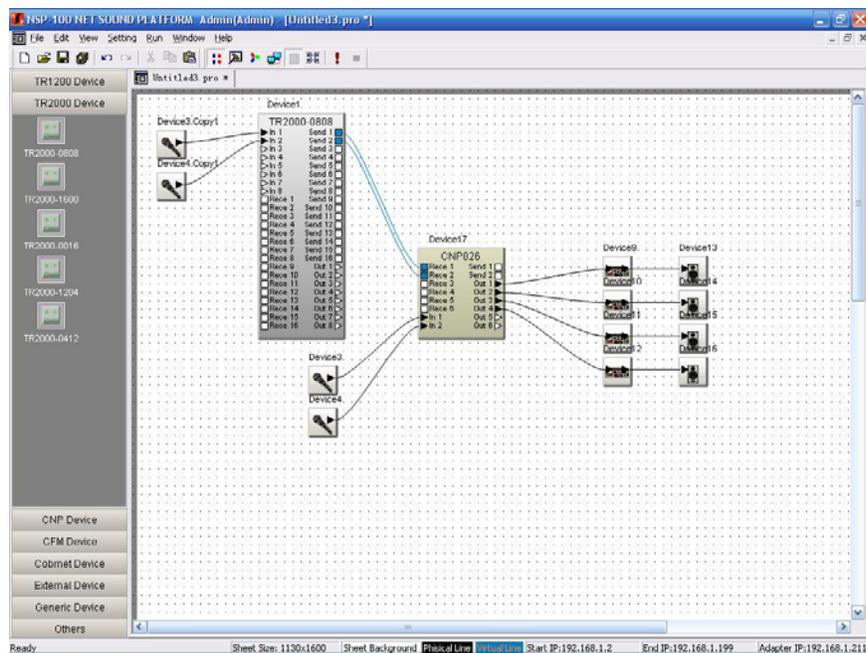
Step7: Establish virtual connection

It must be clarified that CobraNet device has 2 type ports:

Triangle is the physical port (non-CobraNet devices belong to this type);

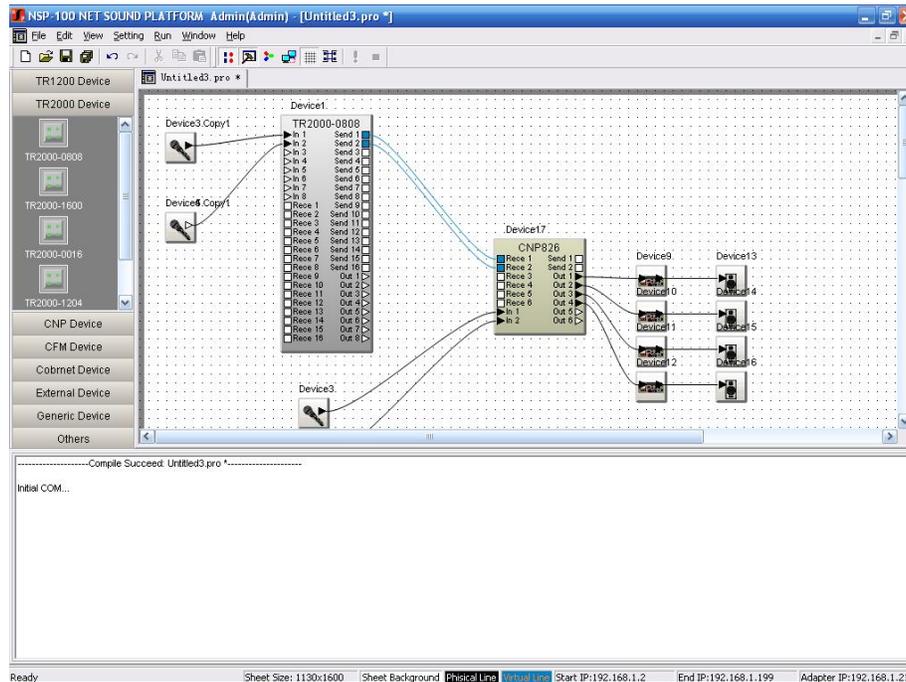
Square is the network ports.

The user could connect the network ports for the virtual connection.



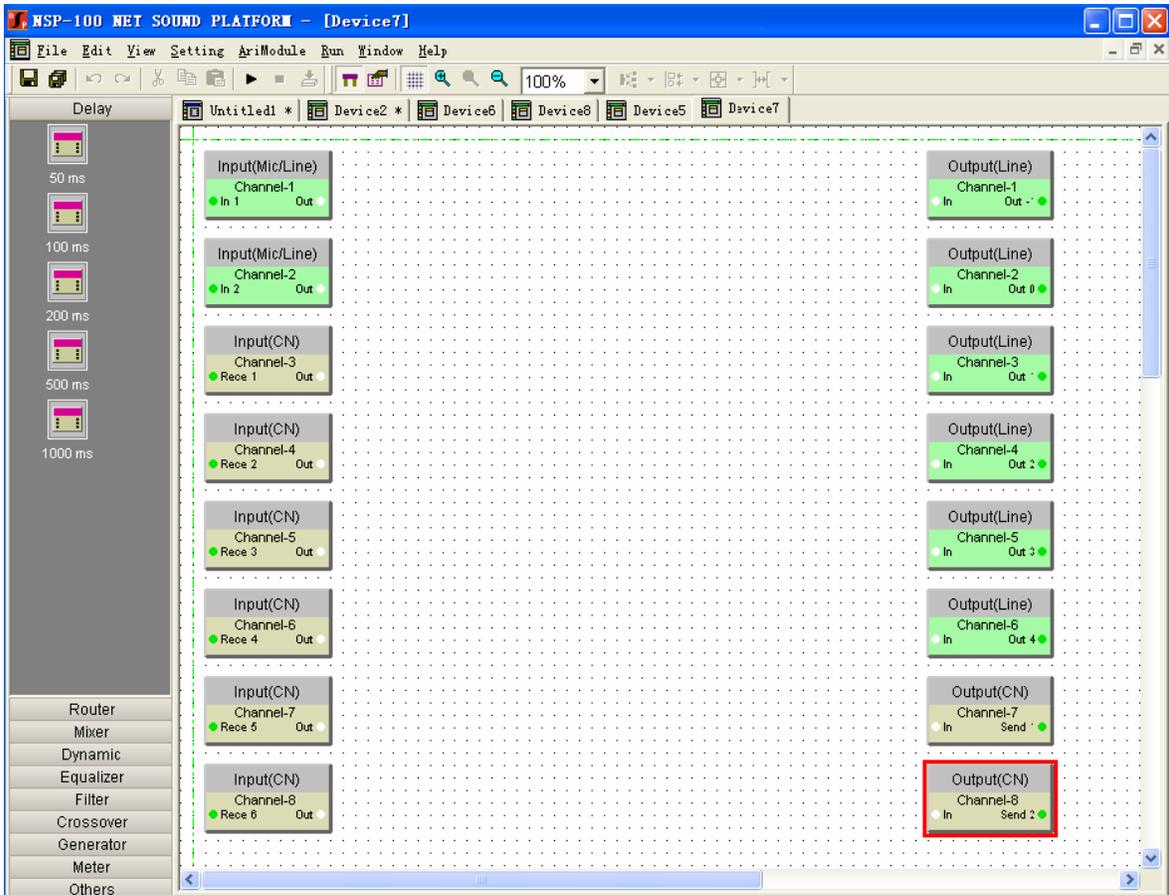
Step 8: Compile

After established the virtual connection, user can click the  button on the toolbar to download the existing active routing document to the corresponding CobraNet device.



Step 9: Configure and download the CNP888 device DSP parameters.

Right click on CNP888 icon, and select "DSP edit", open its CNP888 control interface.



CobraNet input



Physical input

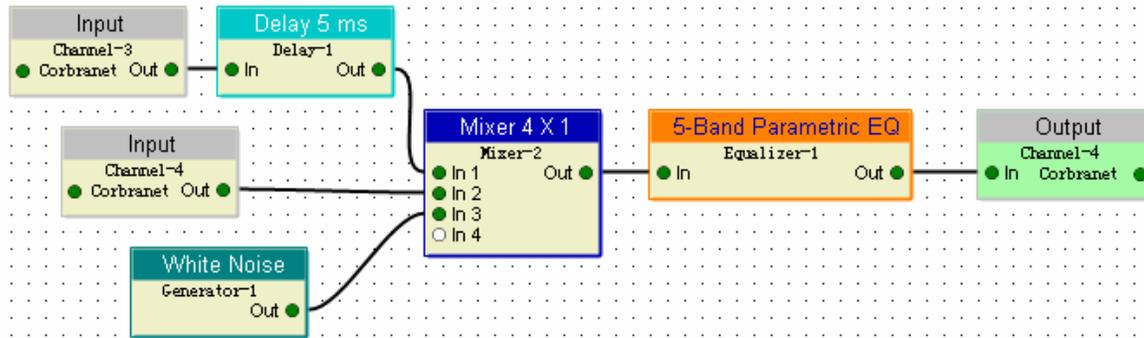


CobraNet output



Physical output

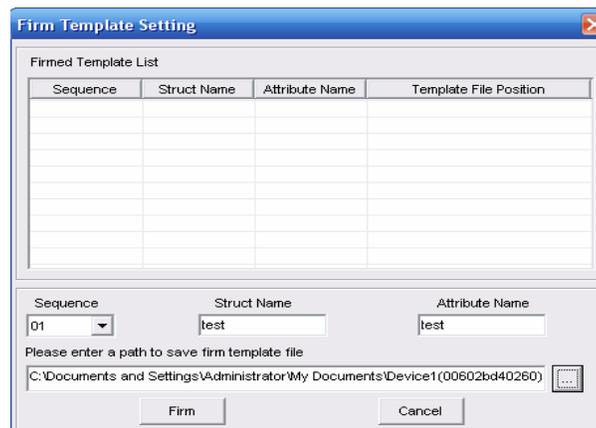
CNP888 provides various and powerful DSP arithmetic so could be used in different applications, user just needs to drag the icon of the arithmetic into editing column, and connect the different modules by planned flow.



Finally, press "Run" button  in the function key's bar, the DSP arithmetic is initiated. During the process running, user can adjust the setting by double click arithmetic module. The finished DSP arithmetic can be solidified into the CNP888 by the action "menu-->run-->solidify template", It can save 8 different templates at the most. User just need to choose it from the template, don't need to re-edit. If you want to stop downloading or add/remove any operation module, click "Stop" button.

Step 10: solidify the DSP parameter to the CNP888

If you need to maintain the current DSP setting after restart the CNP888 device, you can adopt mode function. Click "Run">"Solidify Template" from menu and name it after have chosen a saving path. You should remember the template name and select the template via the front panel after restart the device. There are 8 templates can be stored.



CHAPTER 5 FAQ

1. How to confirm arithmetic into CNP888?

First of all you must be sure that the current editing arithmetic is correct and will be for future use, you can click "Download">"Firm Template" from menu and name it after you have chosen a saving path.

2. Why the keys on the panel are invalid when NSP-100 is running?

CNP888 can save 8 different arithmetic templates at the most, so that user can choose one from them and no need for re-edit, but when CNP888 is under control of NSP-100, in order to keep the same arithmetic with current running software, the key of CNP888 is locked automatically in order to prevent changing arithmetic module by user.

3. Does Digispider Inc. recommend any specific Ethernet switches for CNP888 device?

No, but you must use 100BaseT Ethernet switches.

4. Is CNP888 compatible with other companies' CobraNet devices?

Yes, CNP888 is compatible with and integrated by other companies' devices with CobraNet interfaces since CobraNet is a standard protocol.

5. Where can I use CNP888?

CNP888 may be extensively used in gym, campus, hotels and parks etc, where the transmitting direction is always fixed without any real-time switches. CNP888 will enable the long distance audio transmitting with existing network environment.

CHAPTER 6 GLOSSARY

CobraNet:

Developed by Peak Audio, CobraNet technology allows real-time uncompressed digital audio distribution over industry standard 100Base-T Ethernet networks. Up to 128 channels, 64 in each direction, can be carried simultaneously over a switched 100Base-T network (64 channels on repeater networks). CobraNet currently supports a 48 kHz sampling rate with 16, 20, or 24-bit resolution. CobraNet devices can happily coexist with networked computers, printers, etc., on a switched 100Base-T Ethernet network, however, a dedicated network infrastructure is strongly recommended.

CobraNet audio channel:

In CobraNet terminology, an audio channel is one 48 kHz digital audio signal with a 16, 20, or 24-bit resolution.

CobraNet primary/secondary ports:

CobraNet interfaces feature built-in redundancy, with primary and secondary ports for connection to primary and secondary networks. If an unrecoverable fault should occur on the primary network, CobraNet automatically switches to the secondary network, providing uninterrupted operation. Both ports are transformer isolated and fully comply with the IEEE 802.3 standard.

Conductor:

The device on a CobraNet network that acts as work clock master and network arbitrator. Only one device can be Conductor at any one time. If that device is unplugged or fails, another device automatically takes over as Conductor. The conductor ensures that only one device transmits data in each bundle at any one time. See also Performer.

LAN (Local Area Network):

A network that exists in the same building or group of buildings. CobraNet is a LAN technology. See also WAN.

RS-232:

A serial interface for connecting serial devices, offering a transmission distance of approximately 15 meters, typically using 9- pin or 25-pin D-sub connectors.

Switch:

Switch know the network address of each device on the network and automatically route network traffic accordingly, so each device receives only data addressed to it.

COBRANET device

A device is designed according to COBRANET technology to receive and transmit audio data.

CHAPTER 7 APPENDIX

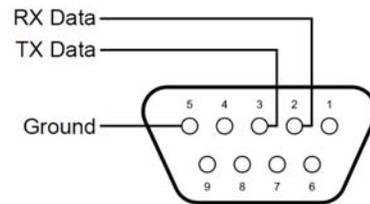
CNP888 RS232 control protocol instruction(ver1.0)

I . Protocol basis

1. RS232 communication regulation
Baud rate: 9600/19200
Parity: None
Data bits: 8
Stop bits: 1
2. Command basic format: *COMMMzxxxccbb#
Command start character: *
Command: COMMM(usually 5 characters length)
Command end character: #
Command characters: 5 parameters
Command parameter:
z—input/output character,1—input, 2—output
xx—Channel No.(Start from 01, 00 stand for all the channels)
Please refer to the details below for the others.
Return Value:
(1) If no specified, it will return "*OK#" after execute the command correctly.
(2) If return "*ERRxx#", indicate the command execute has error, xx---is the error code.
xx=00 the command is wrong, there has no relative command could match with.
xx=01 verify failed
xx=02 command execute failed

3. RS232 hardware interface

PIN#2—TXD PIN#3—RXD PIN#5—GND
PIN#1, 4, 6, 7, 8, 9—NC -3-



II . Command list

No.	Command	Function
1	*TESTA#	Test command
2	*DISINxxPMaaa#	Set the input channel
3	*DISOTxxPMaa#	Set the output channel
4	*GMODEi#	Switch the mode
5	*FIRMW#	Firm the DSP parameters

III. Command details

1. TESTA—test command

Command format: *TESTA#

Parameters	Function	Byte	Value
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N/A N/A N/A N/A
 Return value: return "*OK#" if correct.

2. *SETIN—Input channel setting

Command format: *SETINiimpsgn#

Parameters	Function	byte	Value
ii	input channel No.	01 (DEC)	01~08
m	MIC or Line	1 (HEX)	1—MIC,0--line
p	Phantom power	1 (HEX)	1—ON,0—OFF
s	Input sensitivity	1 (HEX)	1—30, 2-24, 3-18, 4-12
gn	Gain	aa (DEC)	MIC have 0~71 steps 15db~50.5DB each step increase 0.5db TRIM have 32steps 0~31(-6.3~+6.5)

3. *DISOTxxPMaa#—Output channel setting

Command format: *DISOTxxPMaa#

Parameters	Function	Byte	Value
xx	Channel No.	2 (DEC)	01~08
P	Phase invert	1 (DEC)	1—Invert, 0---Normal
M	Mute	1 (DEC)	1—Mute, 0---Normal
aa	Trim	2 (HEX)	0/1/2/3 corresponding to 24/18/12/6DB

4. *GMODE—Swith the DSP mode i

Command format: *GMODEi#

Parameters	Function	Byte	Value
i	Mode No.	1 (HEX)	1~8

5. *FIRMW#—Firm the DSP parameter to CNP888 device

Command format: *FIRMW#

Parameters	Function	Byte	Value
N/A	N/A	N/A	N/A