DESIGN AND
MANUFACTURE OF
INNOVATIVE AUDIO
DEVICES AND
MULTIMEDIA
APPLICATIONS

NTB Paging System
Product Brief

NTB Serial
2011   P/N: Version: 1.1

NTB instruction

NTB system

NTB (Network Talk Back) is a network paging system, which is based on CobraNet technology. Connecting the NTB devices to LAN, the terminal station NTB-20T and master station NTB-20 can establish a paging system controlled by the software.

A NTB system must including a master device NTB-20 and several terminal device NTB-20T, both of them have one channel analog input, one XLR microphone input; And one channel analog output, one 3.5mm headphone connector and one internal speaker output.

NTB devices

Model	Description
NTB-20 Master	One channel analog input and one channel analog output; One XLR microphone input connector; One 3.5mm microphone input connector; One 3.5mm headphone output connector; Call any NTB terminal and answer the calling from any terminal, could establish more than one talk link at the same time. Support group broadcasting and whole net broadcasting.
NTB-20T Terminal	One channel analog input and one channel analog output; One XLR microphone input connector; One 3.5mm microphone input connector; One 3.5mm headphone output connector; Could call the master or one of the other terminals and answer the calling from the master of one of the other terminals, but only could establish one talk link at the same time. Support to set the master calling first and automatic answer.

NTB device connector define

Rear panel define

The picture shows the rear panel

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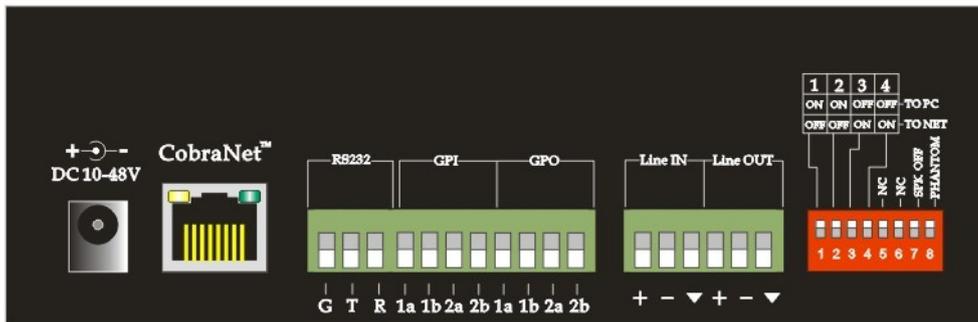
NTB-20&20T rear panel

NTB-20 master and the NTB-20T terminal have the same rear panel.

- DC 10-48V power connector;
- RJ45 CobraNet network connector;
- RS232 3 Pin Euro block connector; (reserved)
- GPIO 8 Pin Euro block connector;
- One channel input, 3 Pin Euro block connector;
- One channel output, 3 Pin Euro block connector;
- 8 switch to set the ON/OFF of the RS232 connector, network function, phantom power and microphone.

Front panel define

NTB-20 front panel

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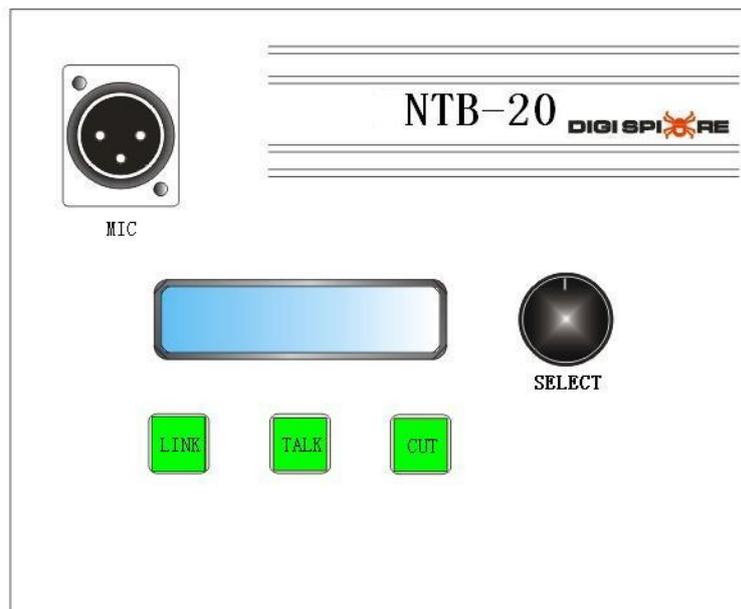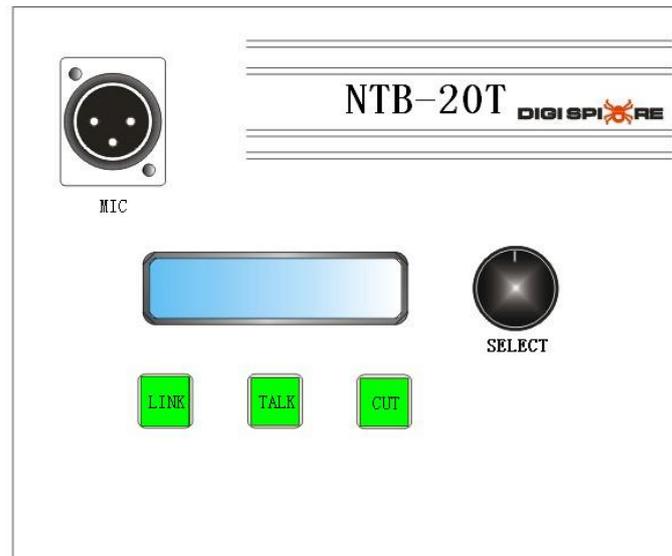
NTB-20T front panel

As the picture shows the different between the NTB-20 and NTB-20T is just only the device model name on the upper right corner.

● A microphone connector for external microphone, it supports the phantom power supply.

● A LCD display panel.

Display the device's information and the paging system information like the other devices' name, talking link and so on.

● A "LINK" button;

By press this button could initiate a calling or answer a calling request.

● A "TALK" button;

It would be light automatically when the talk link is established. And it also shows the device whether have the talk commission in the talk link which the master is joining.（there no talk commission between the terminals）.

The master always has talk commission, and the master could cancel the talk commission of the selected device by press the button. The terminal could cancel its own talk commission or send the request to the master for resume its own talk commission by press its own TALK button.

● A "CUT" button;

It could end the present talk link or the calling, and it could reject the calling request from others. It doesn't have the LED lighter.

● A "SELECT" rotary knob;

It could rotary as a knob and press as a button to change and select the display menu items;

Turn the knob to right or left to change the display menu item.

Press the knob to select the items. And it could press the knob to check the last four characters of the device's information.

Side panel define

The NTB-20 and the NTB-20T have the same side panel. The NTB device's left side panel shows

as below. There are a 3.5mm TRS microphone connector and the3.5mm TRS headphone connector. The NTB device's right side panel just only has a speaker.
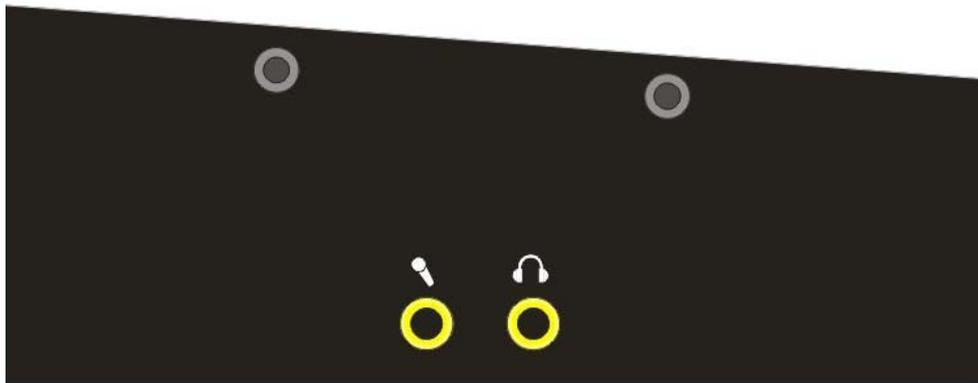
NTB device left side panel

Dimension

NTB-20 and NTB-20T have the same dimension.
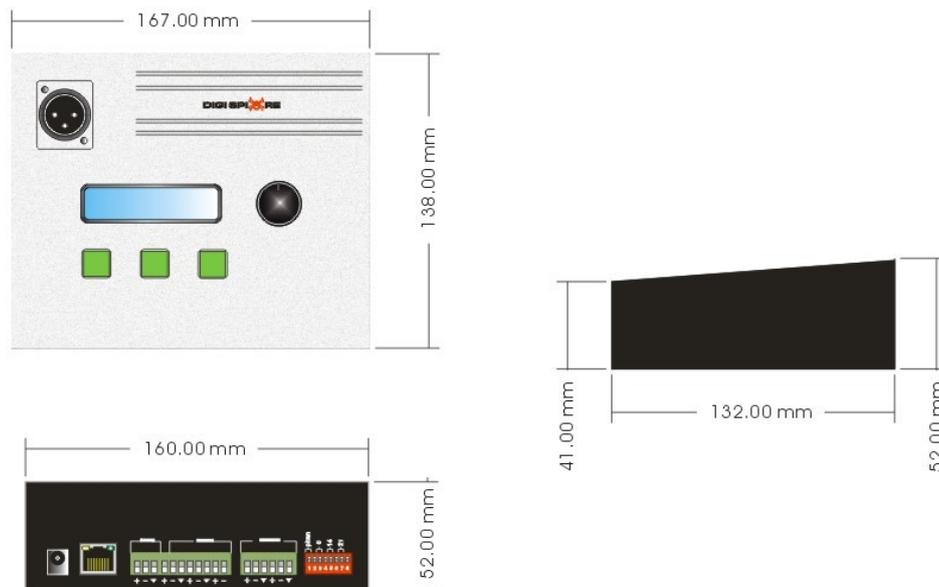
NTB device dimension

LCD display menu instruction

The LCD of the NTB device could display two line information, it only display the first line information when the device is idle, and it display both of the two line information when the device is linked or calling or being called.

The first line displays the target devices' information, like the device number, name and the status.

It could change to show the different device information by to rotate the "SELECT" knob.

Note: the master device has the group and broadcast mode could to be selected.

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The second line displays the linked device's information, like the device name, amount.

Idle - LCD display status
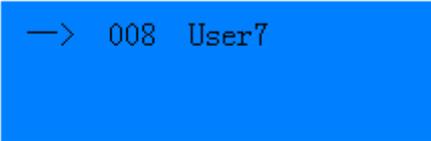
```
—>  008  User7
```

Idle LCD display

Calling – LCD display status

```
—> Calling  User7   O
       User7  ⬆     001
```

Calling LCD display

Talk linked - LCD display status

```
—>  008  User7      T
        User7    T   001
```

Talk linked LCD display
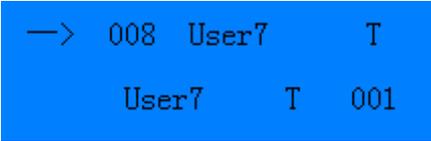
Master NTB-20 application

The master NTB-20 has 3 different applications.

Application 1：

The master could call any terminals at any time with any mode. The user could select the terminals, groups or broadcast mode by the "SELECT" knob to calling. When the target NTB-20T device has been selected, just push the "LINK" button to calling. It will have the alarm sound except the master is calling as the group or broadcast mode, then waiting for the terminal answer if the terminals not opened the auto answer mode. When terminals answered the calling, the talk link will be found and the "LINK" button will always light and at the same time, the "TALK" button will also light. The master and terminal could talk with each other.

If the master wants to cancel one terminal's talking right, it could select the terminal device by rotate the "SELECT" button, then push the "TALK" button. At the same time, the selected terminal's "TALK" button will flash, and it's voice couldn't be hear by the others.

If the master wants to cut down the talk link with one of the terminals, it could select the terminal device by rotate the "SELECT" button, then push the "CUT" button. If want to cut down all of the talk links, it could select the broadcast mode and push the "CUT" button to end all of the talk links. When pushed the "CUT" button, the master front panel's light will be all OFF.

Application 2：

The terminals call the master NTB-20 when it is idle, the master NTB-20 device's "LINK" button on the front panel will light and flash, and also will have the alarm sound. Push the

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"LINK" button to establish the talk link. After the link has found, the "LINK" button will always light and the "TALK" button will light at the same time. Then the master and the terminal could talk with each other.

Application 3：

The terminal call the master when the master is talking with the other terminals, the "LINK" button on the master device front panel will light and flash, and also have the alarm sound. The user could to check the information to know which terminal is calling the master and push the "LINK" to found the new talking link if needed.

Terminal NTB-20T application

The terminal NTB-20T also has 3 different applications.

Application 1：

A terminal could call the master and one of any other terminals at any time. The user could select the master or one terminal by the "SELECT" knob to calling. When the target device has been selected, just push the "LINK" button to calling. It will have the alarm sound and wait for the answer if the other terminals not opened the auto answer mode. When the master or the terminal answered the calling, the talk link will be found and the "LINK" button will always light and at the same time, the "TALK" button will also light. The master and terminal could talk with each other.

Just pushed the "CUT" button to cut down the talk link, the terminal front panel's light will be all OFF.

Application 2：

The master or the other terminals call the terminal NTB-20T when it is idle, the terminal NTB-20T device's "LINK" button on the front panel will light and flash, and also will have the alarm sound(if the NIS software have configured). Push the "LINK" button to establish the talk link. After the link has found, the "LINK" button will always light and the "TALK" button will light at the same time. Then it could talk with each other.

Push the terminal's "TALK" button to cancel the terminal itself talk right.

Just pushed the "CUT" button to cut down the current talk link, the terminal front panel's light will be all OFF.

And the terminal could set the auto answer mode and establish the talk link automatically under the idle status, don't need to push the "LINK" button to answer. Please refer to the NIS software configure description.

Application 3：

The an another device call the terminal when the terminal is talking with the other device, the "LINK" button on the terminal device front panel will light and flash, and also have the alarm sound if the NIS software have configured. The user could to check the information to know which device is calling and push the "LINK" to cut down the current talk link and found the new talking link at the same time if needed. After the new talk link has found, the

"LINK" button is always light and the "TALK" button is light too. It could talk with each other through the new talk link. If the master is calling the local terminal device when the terminal device is linked with another terminal, it could set the master calling priority in the NIS software to auto cut down the current talk link and auto answer the master calling. Please refer to the NIS configure description.

NTB paging system

NTB paging system

A NTB paging system at least needs the device listed below:

Device	QTY	Remark
NTB-20 master	1	
NTB-20T terminal	≥2	
Ethernet Switch	1	Depend on the connectors quantity
Control PC with the NIS software	1	

System connecting:

Connect the NTB-20T, NTB-20 and the control PC to the Ethernet switch by the CAT-5 cable. It could use the optical switch if the distance between the devices is far away.
This is the system connecting diagram as below:
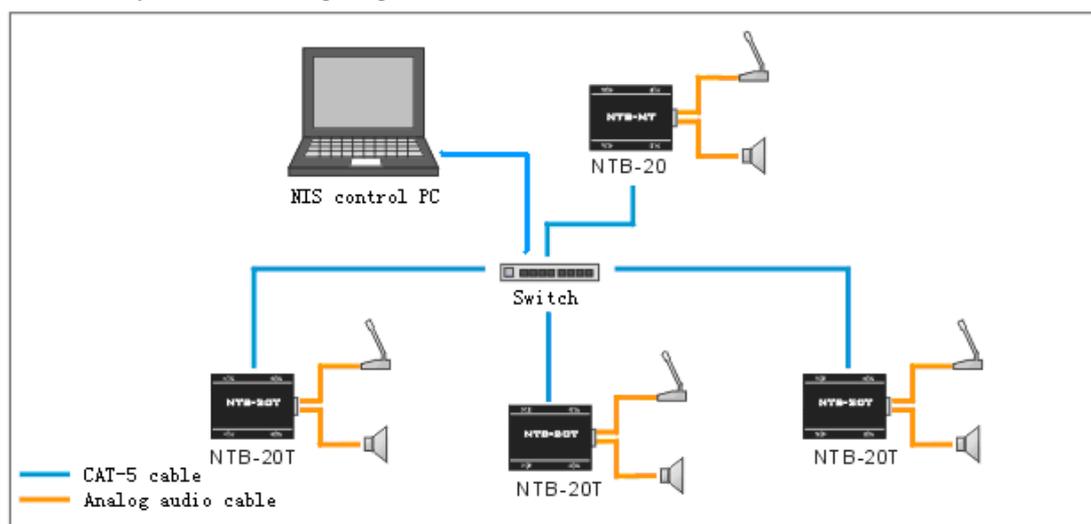
System connecting

NIS Software

Software Setting

Double click the icon [icon] to run the software NIS.

NIS Operation Console

The picture above is the NIS operation console interface.
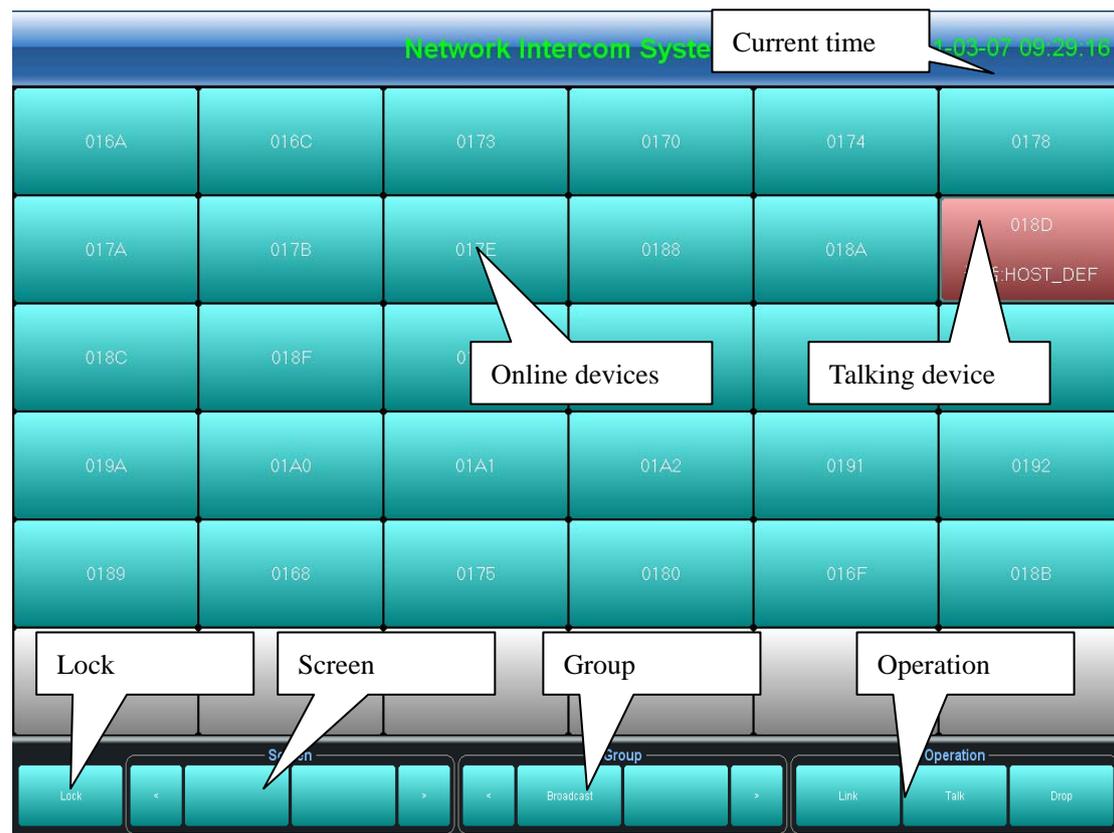
Each block of the NIS operation console means a NTB terminal and it displays the terminal's customized name. The user could customize define the blocks quantity of each screen, the maximum blocks quantity of each screen is 10 x10. When a terminal is calling the master, the block of the terminal would flash. Then the user could select the block and click the "Link" on the bottom right to establish a talk link. And it could select the block and click the "Drop" to end the talk and cut down the link.

The bottom left is the "Lock" button, the screen would be locked after clicked this button. Click it again it will unlock.

On the middle of the bottom are the "Group" and "Screen" button. User could define several terminals into a customized group and to manage them as a group. It would be very easy to establish or cut down the talk link between the master and several terminals by click the "Group" button. The first button of the "Group" is default the broadcast.

And the "Screen" button is used for the user to select several terminals to displayed on the same screen.

On the bottom right are the three operation buttons, "Link", "Talk", "Drop". They are mapped the buttons on the front panel and have the same function. Select a terminal block and make the needed operation.

Device Management

Right click on the NIS operation console interface, it will pop up the device management menu.

Device Management

The device management window shows devices that have added in the system, including a master device NTB-20 and several NTB-20T terminals. NTB-20 master device's information is in red font, and it only could be modified. But the NTB-20T terminal devices could be added, modified and deleted. After all the devices have been configured, then click the "download" button to download the configured setting information to the system devices and wait the devices auto restart to according the setting.

NTB Device Setting

User could add the new device into the device list according the system.

The first device default is the NTB-20 master, it couldn't be deleted. The user could modify the master device's MAC address and device name .etc. Click "modify" to setting the master device property. The user could define and fill the device name according the application. And the user could also edit the "Call Devices" list that could call according the system.

And user could add the NTB terminal devices into the list.

The terminal device could set the "Answer Mode" which has two modes: Principal and Subordinate. The "Principal" means the answer need be operated by manual. The "Subordinate" means the answer would auto operate. If selected the "Subordinate", the "Host Priority" and the "Auto Answer" items would be selectable. "Host Priority" means when the terminal is talking

with other terminals, if the master calling this terminal at the same time, the terminal will auto cut down the talk link with the other terminal and auto establish the talk link with the master. "Auto Answer" means when the terminal is idle, if the master and other terminals calling, it will auto answer the calling and establish the talk link.

The "Call Devices" list of the NTB-20T terminal could be defined by the user according the application. For example, the user could only add the master into the call device list of the each terminal, and the terminal could only call the master under this condition.

Voice Record

The record function is used to record the dialogue between the NTB-20 master and NTB20T terminal. The dialogue between the NTB-20T terminals couldn't be record.

The picture as below is the record setting window, user could set to auto record, choose the record files saving path, setting the record files saving period.

Voice Record setting

The picture as below shows the record history. User could check the record files during some period and open the record file under the saving path.

Record History