16*Voice Over Ethernet

User’ s manual

Dear user：

Sincerely thank you for purchasing our transmission products!

In order for your work to proceed more smoothly, we solemnly suggest that you must read this manual carefully before connecting and operating this product, and pay special attention to the various precautions in it.

1、Overview

Thank you for choosing 30 voice over Ethernet interface converter, the converter encapsulates voice data in IP data packets, supports UDP packet mode, realizes the conversion of 32 channels of voice services to 2 channels of 100M Ethernet, realizes communication in the same network segment and communication of different network segments through routers.

In order to adapt to different network environments and applications, this product can set and adjust parameters through Web page management, Telnet management and console management interfaces. It is recommended that you read this manual carefully before use.

2、Features

- Support Web management, Telnet management and Console management, easy for installation and opening;
- Ethernet interface rate is 10M/100M，full/half duplex is self-adaptive；
- Support auto reset when power-off or Ethernet is not connected；
- Support Ethernet packet out-of-order recovery and buffering to resist network delay;

- Adjustable frame length to balance bandwidth and transmission delay;
- based on hardware design, fast startup speed;
- Various power is optional：AC220V、DC-48V/DC24V,etc.；DC-48V/DC24V power supply has the function of automatic polarity detection, and there is no need to distinguish the positive and negative poles when installing.

3、Parameters

◆ FXS user phone interface

Ring voltage： 75V
Ring frequency： 25HZ
Two line input impedance： 600Ω(pick up)
Return loss： 40 dB

◆ FXO relay

Ring detect voltage：35V

Ring detect frequency： 17HZ-60HZ

Two line input impedance： 600Ω(pick up)

Return loss： 40 dB

◆ Ethernet interface（10/100M)

Rate ： 10/100M self-adaptive，full/half duplex completely adaptive
Protocol ： support IEEE 802.3，IEEE 802.1Q(VLAN)
Physical interface： RJ45 , support Auto-MDIX（crossover/straight connection is self-adaptive)

◆ Power

System power： AC180V ~ 260V；DC –48V；DC +24V
Power consumption: ≤38W

◆ Working environment

Working temperature: -10℃ ~60℃

Working humidity: 5% ~ 95% (no condensation)

Storage temperature: -40 ℃~ 80℃

Storage humidity: 5%~ 95% (no condensation)

◆ Size

19 inch 1U: 483（length）X200（width）X44（height）mm

4、Panel

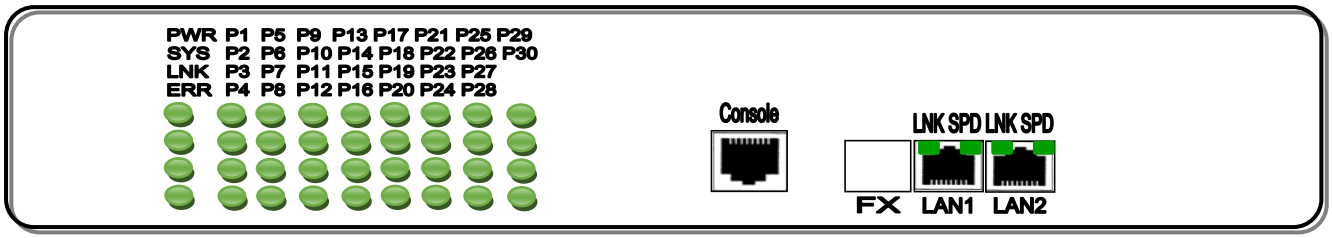


Figure 1：front panel

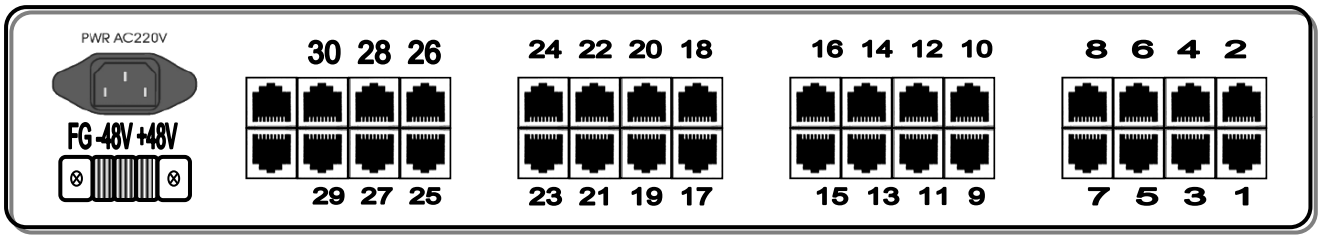


Figure 2：rear panel（different by configuration）

5、Indicator lights description

NAME	COLOR	STATE	DESCRIPTION
	The device indicator lights as the follows		
PWR	Green	ON	Local power is connected
		OFF	Local power is not connected
SYS	Green	ON	System works normally
		OFF	System not working or works abnormally
LNK	Green	ON	Establish a connection with the peer
		OFF	No connection with the peer has established
ERR	Green	ON	Receive packets normally
		OFF	No packets received or lost

6、Phone interface

There are 32 RJ45 ports on the rear panel of the device, supporting a total of 1-32 analog audio accesses. The device supports various interfaces：FXO, FXS, E&M2-4/magnet. The outgoing table of each type of user interface module corresponding to the RJ45 user line interface connector:

The user must make the user cable according to the type of the optional user interface module and refer to the following user cable wiring table.

RJ45 socket	FXS/FX0 module	Magnet module	4 wire audio (EM) module	2 wire audio (EM) module
1				
2			4wire receive	
3			4wire receive	
4	2wire(Tip)	2wire(Tip)	4wire transmit	2wire receive/transmit
5	2wire(Ring)	2wire(Ring)	4wire transmit	2wire receive/transmit
6			M wire	M wire
7			E wire	E wire
8	Signal ground	Signal ground	Signal ground	Signal ground

E wire indicator：

Max current： 22mA

M wire indicator：

constant current： 7 mA

Saturation voltage： 3V　　Min detect current： 5 mA

Dialing rate： >20pps　　Dialing identification： >20pps

7、Ethernet electric interface

Support 10/100M, full/half duplex self-adaptive，crossover/straight connection adaptive 。

LNK	Green	ON	Ethernet is connected
		OFF	Ethernet is not connected
SPD	Green	ON/Flash	Ethernet rate is 100M
		OFF	Ethernet is not connected

RJ45 port and crystal head PIN as the follows：

10/100MEthernet interface

RJ45crystal head and PIN order

✳ Line order

A end crystal head		Straight connection B end crystal head		Crossover connection B end crystal head	
TP color	PIN order	PIN order	TP color	PIN order	TP color
White orange	1	1	White orange	1	White green
orange	2	2	orange	2	green
White green	3	3	White green	3	White orange
blue	4	4	blue	4	blue
White blue	5	5	White blue	5	White

					blue
green	6	6	green	6	orange
White brown	7	7	White brown	7	White brown
brown	8	8	brown	8	brown

Ethernet optic interface

Physical interface type is LC，single fiber or dual fiber is optional。

Dual fiber：TX—transmit RX—receive

Single fiber：transmit and receive on the same fiber （note：under the situation of single fiber interface, 1310nm and 1550nm device must used in pair)

8、Console network management

The rear panel of the device has a Console interface, which is an RJ45 interface and provides the device Console control interface.

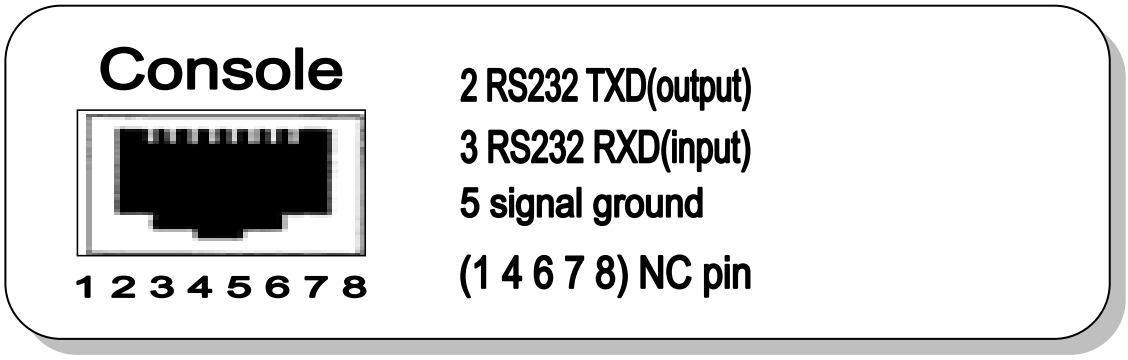


Figure 4. Console interface PIN definition picture

Use a serial cable to connect the COM port of the PC terminal to the CONSOLE port；Under the WINDOWS system, run the "Hyper Terminal"

program that comes with the system, or other third-party serial port connection tool software, and configure the default parameters as follows:

Baud rate ：9600； data bit ：8； parity check：none； stop bit：1； traffic control ： none

After booting, enter the following interface:

```
========================= main menu ==========================
== 1.query setting information, please enter '1'
== 2.device parameters setting，please enter '2'
== 3.Switch between Chinese and English，please enter '3'
== 4.system reset，please enter '4'
== 5.reset，please enter '5'
==============================================================
[FCT /]:
```

sub-menu description

1. To query the current Ethernet setting information, please enter in the main menu '1'

```
[FCT /]:1
The device settings are as follows :
  The machine IP address :192.168.0.148
  target IP address  :192.168.0.149
  Gateway address    :192.168.0.1
  Sub-net mask    :255.255.255.0
  Machine mac address :00:00:00:fc:fc:00
  Machine network port:30000
  target network port :30000
  Buffer depth      :4
```

```
  Frame length        :2

Device state as follows:

  Machine IP address :192.168.0.148

  Target IP address :192.168.0.149

  gateway address    :192.168.0.1

  sub-net mask    :255.255.255.0

  machine MAC address:00:00:00:fc:fc:00

  target MAC address:00:00:00:00:00:00

  machine network port:30000

  target network port:30000

  buffer depth    :4

  Frame length        :2

The port status is as follows:

  port1-link: connected
  port2-link: not connected
========================== main menu ==========================

== 1.query setting information，please enter'1'

== 2.device parameters setting，please enter'2'

== 3.Switch between Chinese and English，please enter'3'

== 4.system reset，please enter'4'

== 5.reset，please enter'5'

===============================================================
[FCT /]:
```

2. Enter the setting menu, please enter under the main menu '2'

```
[FCT /]:2
 ======================== menu setting ========================
== 1. local IP parameter configuration, please enter '1'
== 2. local MAC address configuration, please enter '2'
== 3.TDMIP parameter configuration, please enter '3'
== 9. Query current configuration, please enter '9'
== 0. return to the previous, please enter '0'
==============================================================
[FCT /]:
```

After a new device or resetting, you need to configure the source IP address and mac address, target IP address, gateway and sub-net mask of the machine.

Example 1： The machine IP address is set to 192.168.0.145, and the MAC address is set to 00:00:00:fc:fc:11. To communicate with the computer at 192.168.0.30, the gateway to pass through is 192.168.0.1, and the sub-net mask is 255.255.255.0. The settings are as follows:

Under the setting menu, enter 1 to enter the local IP parameter device menu

set 0 192.168.0.145 (IP address setting, “Enter” to take effect)

set 1 255.255.255.0 (sub-net mask setting, “Enter” to take effect)

set 2 192.168.0.1 (Gateway setting, “Enter” to take effect)

Enter “0” and press “Enter” to return to the settings menu

Under the settings menu, enter “2” to enter the local MAC settings menu

set 00.00.00.fc.fc.11 (MAC address setting, “Enter” to take

effect)

Enter “0” and press Enter to return to the settings menu

Under the setting menu, enter “3” to enter the TDMIP parameter setting menu

dstip 192.168.0.30 (target IP address setting, “Enter” to take effect)

Enter “0” and press “Enter” to return to the settings menu

Enter “9”, and press “Enter” to confirm that all device parameters are successfully set (after changing the setting parameters, the device status will take effect only after restarting the device), and power on the device again.

Example 2: When the network quality is poor, increase the buffer depth to absorb the packet transmission delay, and the buffer depth can be adjusted. The settings are as follows:

Under the setting menu, enter “3” to enter the TDMIP parameter setting menu

buf 8 (buffer depth setting number from 1 to 15, “Enter” to take effect)

Enter “0” and press Enter to return to the settings menu

Enter “9”, and press Enter to confirm that all device parameters are successfully set (after changing the setting parameters, the device status will take effect only after restarting the device), and power on

the device again.

9、Telnet network management

Telnet address is local IP address (local IP address default 192.168.0.148)。

Telnet user IP is admin, password is admin。

Telnet menu is same as Console menu, for specific menu status and settings, please refer to the description of the console interface.

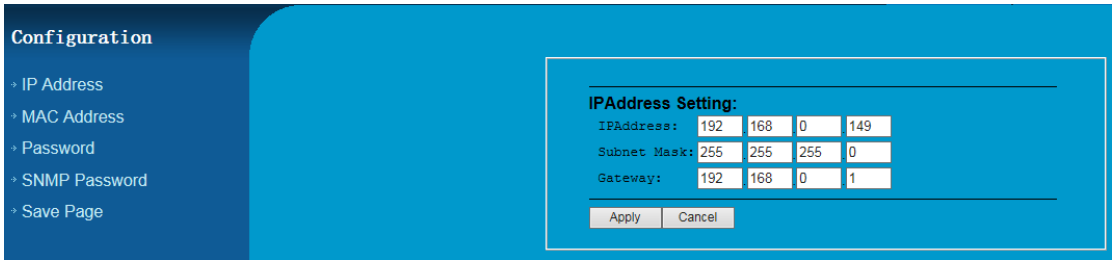
10、Web network management

1. Device default IP address :192.168.0.148.

User IP is admin,password is admin;

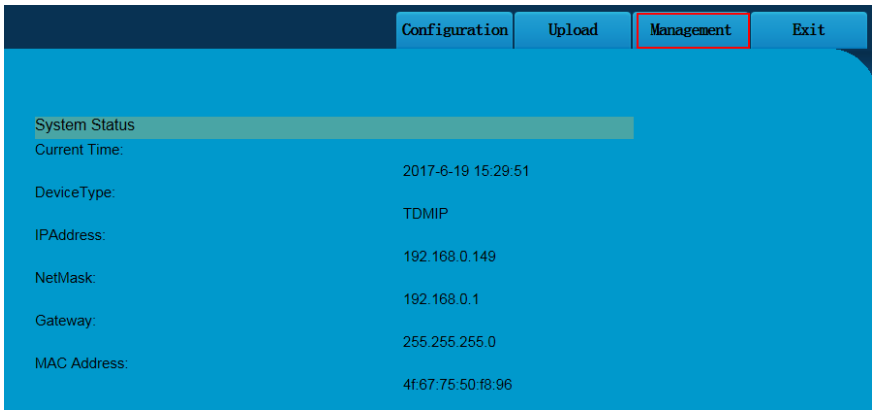
2. After entering the user name and password, select the network management language

3.System setting

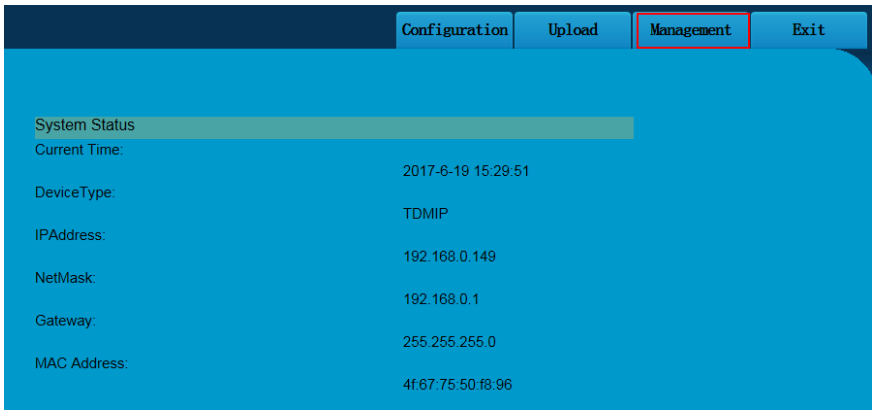


System settings can set the local IP address, sub-net mask, gateway, MAC address.

After the machine is set up, you need to click to save the settings, as shown below:



4.Firmware update



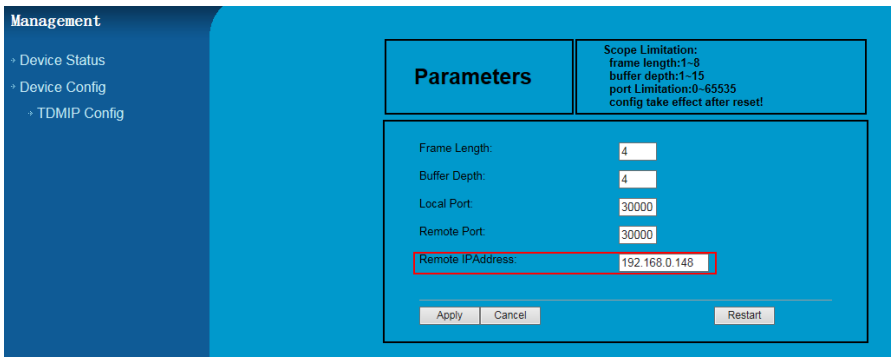
5.Device management

device management-setting state

Check the state of the machine, as shown below:

device management-device setting

Setting parameters of TDMIP, as shown below:



11、Power

The device supports AC220V/DC-48V/DC+24V multiple power sources (optional).

If AC220V power supply is selected, use the random power cord to connect the power input port of the device with the power socket to provide AC220V power supply to the device.

If the DC power supply mode is selected, take DC-48V as an example, the connection method is as follows:

Normal connection way

“FG” pole connect to ground;

“-48V” pole connect to the negative pole;

“+48V” pole connect to the positive pole

Note: The equipment has polarity protection measures. When the positive and negative poles of the power supply are reversed, the equipment will not be damaged and can work normally, which is convenient for equipment maintenance and installation. (including DC48V, DC-48V, DC24V, DC-24V and so on）。

12、After-sales service

For the series of products produced by the company, the company promises a three-year warranty.

During the product warranty period, the company provides free maintenance services, but in the following cases, the cost of materials and

labor will be charged:

☆ Damage caused by non-compliance with the manual.

☆ Defects caused by unauthorized disassembly.

☆ Lightning strikes, fires and natural disasters.

☆ Damage caused by matching problems due to poor design of other products.

13、Company statement

☆ Due to our continuous adoption of new technologies, product parameters are subject to change without notice.

☆ The final interpretation right of this instruction manual belongs to the company.