

EIA2000 VoIP Gateway

USER MANUAL



ALLYWLL INFORMATION

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1 Product overview

EIA series device is media Gateway provide voice/fax (VoIP/FoIP) on base of IP network.It is important part to provide VoIP/FoIP solving for carriers,enterprises ,and personal users, manufactured by Allywll info&tech co,. ltd. Under the control of calling control center,EIA can realize the switch function from ordinary phone sound switch to IP package, and communicates via Internet.

1.1 Product profile and interfaces



Figure1.1EIA2008 voip gateway profile

Show as Figure1.1,EIA2000 is a kind of case device ,using local power supply,It is very convenient to put on desk or be fixed on wall.



The interfaces of EIA2000 :

- 1 Port for 10base-T Ethernet .This port may connect with LAN or directly with broadband network.
- 4 Port、 8 ports or 16 ports for ordinary telephone.Ordinary telephone port contain two types: FXO and FXS.FXS port is use for connecting telephone set and fax machine. FXO port is used to connect PSTN user line.
- 1 USB interface.This inerface is used to connect debugging terminal or bill meter terminal system.

1.2 Product functions

EIA2000 VOIP Gateway equal to PBX group phone running in Internet environment. The devices have the functions as follows:

- Provide enterprise PBX group phone service and fax service.
 - 1、 Only if the branch of the company opened telecom ADSL, and other broadband Internet service, any phone made between each point is free. The long distant phone to any other branch's PSTN phone is equal to local phone. It can save large phone fee.
 - 2、 Support T.38 real time fax , it can send several pages continuously. The copy is highly clear .



- 3、 Support calling transfer, computer telephonist , hotline, FXO port limits of authority etc several practical phone service.
 - 4、 Good quality of service. It can rival that of PSTN. Complies with several ITU-Tdecoding standard, such as G.711,G.729A,G.723.1. support JitterBuffer management,echo cancellation algorithm (complies with ITU-T G.168/165 standard),package compensation technology, VAD and CNG.
 - 5、 Good compatibility with traditional PSTN phone. Simple dialing formula . Completely like the traditional phone using custom.
 - 6、 It takes up only a little Internet resource. All the ports can be used at the same time. For example ,EIA2016 can support 16 phone lines for communication at the same time.
- Flexible to organize the net ,adapt easily to complicated enterprise Internet environment.
- 1、 EIA2000 device can be set directly behind of the ADSL modem ,automatically running PPPoE protocol . It can redial automatically when PPPoE stopped.
 - 2、 EIA2000 device can support DHCP ,DNS client's protocol, running in LAN environment which IP address is assigned dynamically by DHCP Server, gaining IP address automactically.



- 3、 Able to traverse enterprise inside firewalls, NATdevice. In the LAN behind of the NAT ,it is able to run several EIA device and they will not interfere each other .
 - 4、 Net configuration is easier than windows operation.
- Provide all-sided security mechanism .enhance reliability ofservice.
- 1、 Complies with 802.1q and 802.1p. Able to configure prior grade of voice data stream and VLAN Identity, highly promote the protective capability ofservice.
 - 2、 Even up-going Internet interface closed ,EIA2000 device can make internal call, EIA2000 equipment still be able to receive and make call through traditional PSTN from FXO interface,It will not effect basicservice.
 - 3、 There is a standby calling control center in the net, when primary one is attacked, it will switch shortly, ensure reduces the service loss to minimum.
- Easy ,practicality and varied method to maintain.
- 1、 Offer Amanager T1000 graphic configuraion terminal . Configure EIA device locally. Operation management and configuration method are very easy .
 - 2、 Offer locally and long-distant supervisal and diagnosis service to EIA2000 through serial interface or Telnet method.



- Support patch and automatic upguede function. At the time of EIA device is upgrading ,the usual business will not be affected.



2 Installing hardware

2.1 Package content

Name	Quantity
EIA2000 series IP voice gateway	1 PCS
Power supply line	1 line
1.5m cross Ethernet line	1 line
1.5m usual phone line	1 line
User's manual	1 book
CD(software,specification etc)	1 PCS

2.2 Installation requirement

Power is supplied by 110v or 220v AC to EIA2000 device. The reliability and stability of power supply is needed. Or device's nature life will be affected.



In addition, connect to ground correctly will reduce the level of damage to surge pressure caused by lightning. Please take measures as follows:

- (1) Insure all power supply devices in building connect ground correctly conform to clause 250 in NEC(National Electric Code)manual.
- (2) Insure the copper line connecting the panel of power supply and ground line is high quality. The standard of copper conform to Clause 250 sect 94/95 in NEC Manual .Connecting ground cable is concluding one connecting ground line or several connecting ground line together under construction 2.44m deep or one line around and under the construction at least 0.76m deep (see clause 250 sect 94/95 in NEC)
- (3) Install safeguard against surge pressure between EIA2000 device and point connecting ground .Other computer device such as terminal or printer,connecting to EIA2000,ought to connect safeguard too. Configure the safeguard against surge pressure correct according the specific device connected.

2.3 LED light

Following is the specification of LED light on the back of EIA2000



LED Name	Status	Color
RUN	Status	System run normally
		0.1second on , off ,flash swiftly(system run normally, the internet have connected to calling control center)
		On in 1.5 second, off. Flash swiftly (system run normally ,the internet connecting to calling control enter stopped)
		Off (the system is breakdown)
10Base-T	The Ethernet port status of 10Base-T	LINK light off (the Ethernet connecting is breakdown)
		LINK light green (The Ethernet connecting is normal)
		SPEED shift (The Ethernet is used to sending packages)
CHANNEL LED 1 – 16	Voice channel status	Off (Phone is hanged up)
		Green(Phone is unused)



3 Manual of T1000 figure configuration terminal

3.1 Prepare configuration

Before using EIA2000 device, user need to configure it simply in terms of the T1000 figure configuration terminal offered by Allywill Co.,Ltd. according the user's specific Internet environment.

Find the CD-SETUP.EXE, which is about installing program for T1000 figure configuration terminal . double click exe program to start installation, click Next Step according prompt till finished.It is very easy .

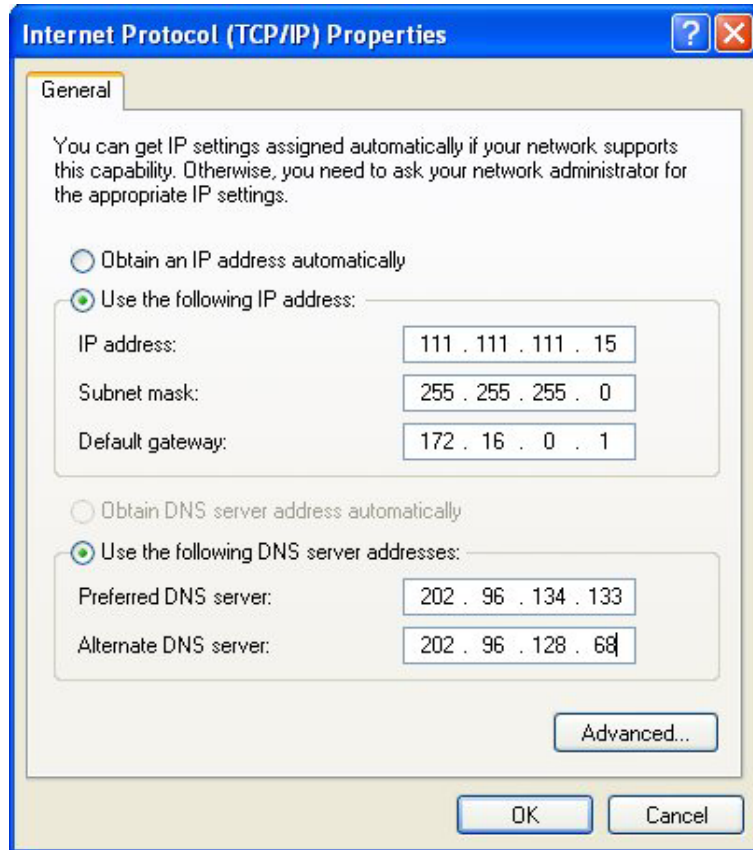
Find a cross Internet line in package. It is used for data configuration .See as the following figure. Connect EIA2000 and computer through cross line.



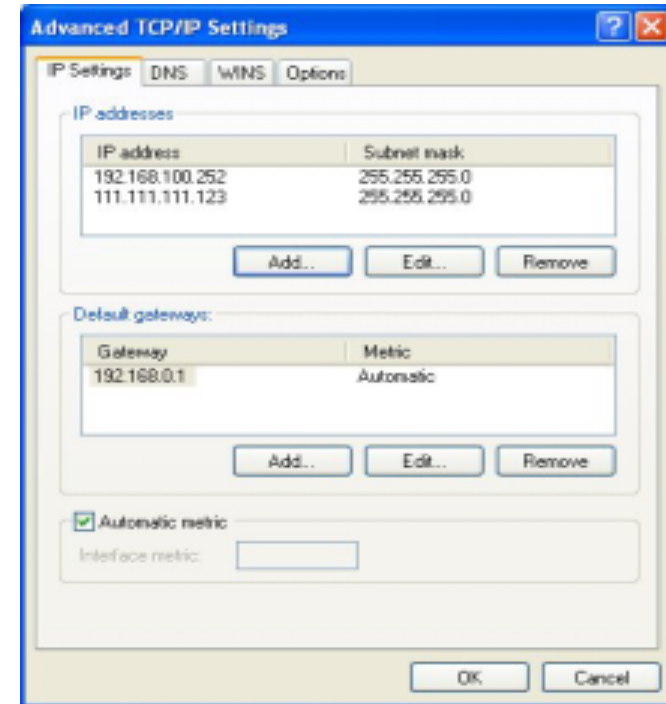
figure 3-1 EIA2000 configuration illustration

To avoid the change of EIA IP address leading to incapable of communication,the EIA device has two IP addresses ,one is for management IP address (It is a fix number 111.111.111.200, subnet Mask:255.255.255.0),the other is the IP address using for VoIP stream when it run normally. Through using T1000 local connect configuration gain the IP address.

Following is an example of configuration steps taking the operation system of PC as WIN2000. If your computer has configured fixed IP address. It is needed to add an IP address at the PC's Ethernet interface for managing communication. Click advanced key in " Internet Protocol (TCP/IP) Properties "

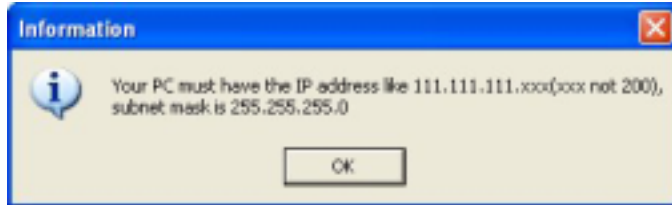


Add an IP address in "IP addresses". The form is "111.111.111.xxx", Subnet mask is "255.255.255.0". avoid xxx is 200. After that step, the computer is able to configure the data of EIA. It needn't to switch IP address of Internet card in PC anymore..

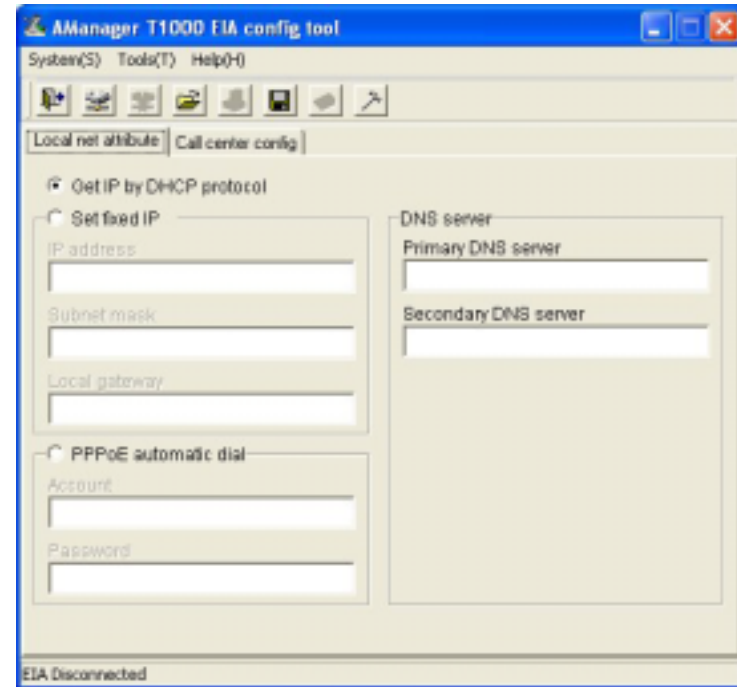


If the PC gains the IP address through DHCP usually, the IP address form need to be changed as "111.111.111.xxx", subnet Mask "255.255.255.0". To WIN2000, it needn't restart to change IP address. When problem appear, "ban using" then reusing "operation will solve it.

Then start T1000 figure configuration terminal, following prompt appear:



3.2 The using guide for T1000 figure configuration terminal



3.1 The simple steps to configure EIA

Open T1000 terminal “system” manual, click “connecting”, or click the swift key of “connecting” in tool column .If connecting succeeded, it will appear “EIA online” in the state column, or it appears “EIA off line”, It is needed to reconfirm the Internet configuration of PC and line connecting is correct or not.



Commonly, EIA have configured basic data , modifying original data is needed. The first step is gaining original data. Find and click “tool/gaining EIA data in device” from menu. Then modify it.

After configuration,click“appliance configuration to EIA” item in “tool” menu or “appliance configuration to EIA” swift key in tool column. EIA configuration information will be setup to current EIA device .

To configured data, it is better to save it. It can be used at when EIA is replaced or maintained, click “save file” item in “tool” menu or “save file” swift key in tool column. EIA configuration information will be saved to corresponding file. The postfix of file is “.ldf”. Suggest user save every EIA's configuration to corresponding file. For easy to lookup , name file as “A company (00-02-02-00-10-00).ldf”.00-02-02-00-10-00 means MAC address of EIA device (the sign of each EIA device in calling control center is different), User can get the MAC on the panel of EIA device .

Thus , configuration finished.data have been written to EIA device, the work of T1000 is over. Attention, T1000 is only configuration tool, not driver program. It will not be used during the douse of device running normally.

3.2 EIA device configuring data method

There are three methods to configure data after T1000 terminal connected EIA device:



1、 Start configuration from default data.

Click “resume default data” item in “tool”menu or “resume default data” swift key in tool column .Then get the fault configuration data.

2、 Get the original data from EIA device and configure them.

Click “get EIA configuration from device”in “tool” menu or “get EIA configuration from device” swift key in tool menu .Will get running configuration data EIA device.

3、 Load previous saved data file and configure it to EIA device

Click “gain EIA configuration from file” item in “tool” menu or “gain EIA configuration from file” swift key in tool column. User can choose previous data file.

The main function of T1000 terminal is configuring information of “local link” and “calling control center” for EIA device.

If user has more knowledge in the aspect of IP .he can choose advanced item through configuration for some special application occasion



3.3 EIA Local link data configuration

Local link configuration is similar with TCP/IP configuration method in Win2000 system. That is configuring IP address of EIA device. See figure as follows:

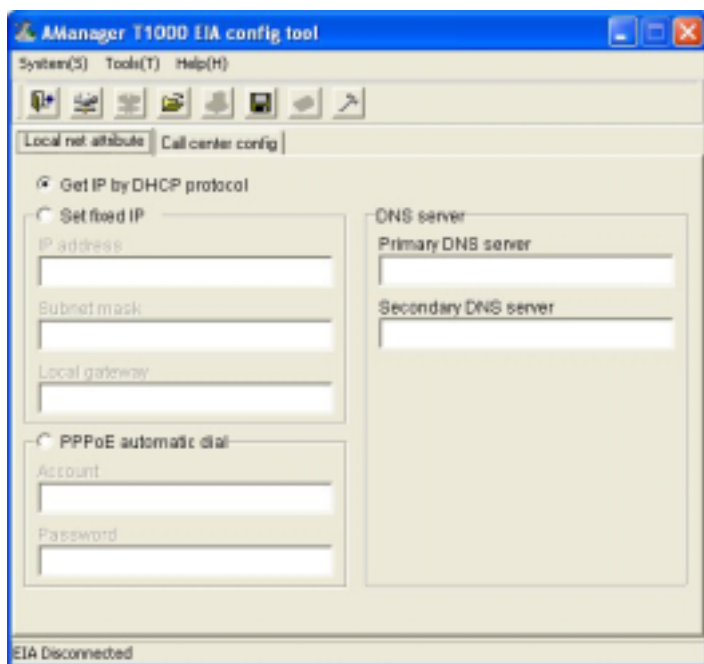


Figure3-5:local link configuration interface

Local link is gaining IP address method that used for running EIA .it is similar with computer Configuration in LAN. If



there is DHCP server in LAN,choose DHCP is ok,or it is needed to assign a fixed IP address for EIA,(attention:IP address should not conflict with that of other computers),configure subnet mask and gateway according to definite Internet condition,DNS server choose two addresses used by local city Internet (it is easy to get commonly. If it is fixed IP manner in calling control center.it is not needed to assign them) There are three configurations for your select:

- 1、 Get IP address automatically using DHCP

If IP address is assigned by DHCP server in LAN.select this item,it is not needed to configuration other content.

- 2、 Use fixed IP address:

IP address of EIA device is configured by manual.it is needed to input correspond IP address, subnet mask,gateway.

- 3、 Dialing automatically using PPPoE

EIA device connect user's Internet port directly ,then select this item .it will carry out PPPoE dialing automatically when EIA device started,then start Internet port ,When you select this item ,it is needed to configure "account" and "password"of PPPoE correctly .Internet carriers offer "account" and "password".



3.4 Data configuration in calling control center

Configuration in calling control center is softswitch .IP address,there are two items for selection ,gaining FreeLink automatically and fixed IP .User can select gaining FreeLink automatically according to specific condition or fill known fixed IP address in calling control center,Users had better select FreeLink automatically gaining manner for Internet standby and security

If select FreeLink automatic gaining,T1000 terminal will offer default data configuration .Users need not modify them Correspond content confer advanced selection

If select “fixed IP”, users need to input IP address in calling control

Center correctly, the address is offered by Allywll Co.Ltd or It’s agent.

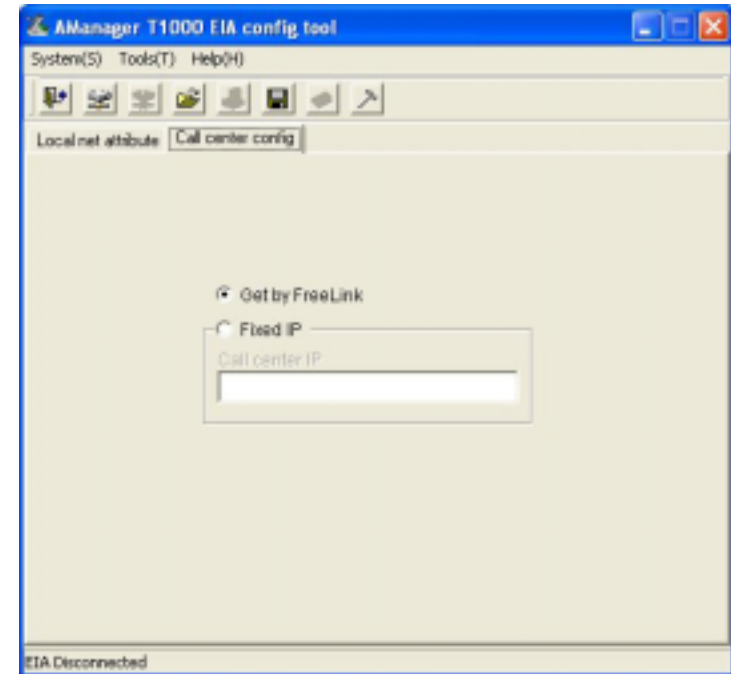


Figure3-6 configuration interface in calling control center

3.5 Advanced configuration

Usually, all advanced options have default data. Users needn’t configure them. When meet some special conditions. Such as hacker attack, it need help from Allywll Co. Ltd or his distributor for configuration

Click “advanced” item in “tool” menu,appear figure as follows:

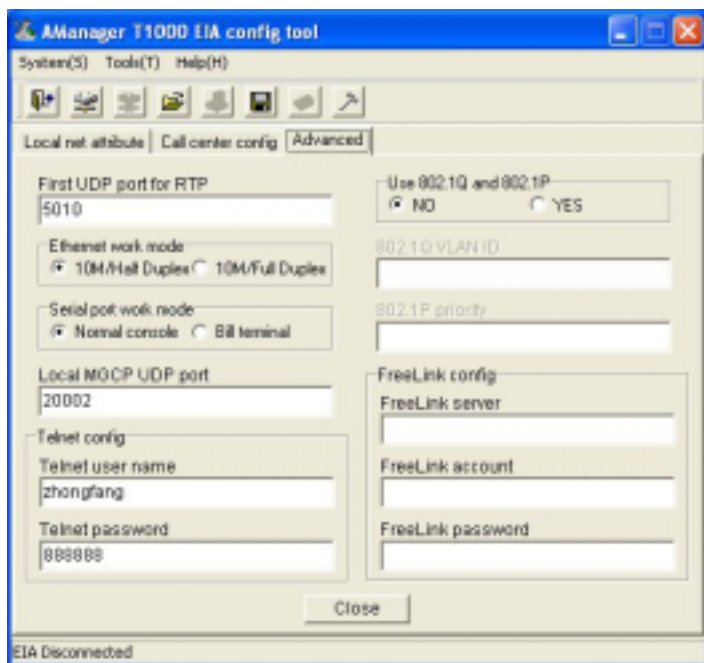


Figure3-7 advanced configuration interface

Following are some simple explain to advanced configuration

- 1、 RTP original port: RTP voice current original UDP port. default data is 5010 ; if it needed to modify,input figure from 5010 to 19000. if there are several EIA devices in LAN, attention port can't be repeated.



- 2、 Ethernet working method: it work when connect with Ethernet switch. Default data is 10M semiduplex
- 3、 Interface working method: interface can connect with price-meter terminal. Default is common interface method.
- 4、 Local MGCP port: use MGCP protocol in calling control center. Default data is 20002. if there are several EIA devices in LAN, attention port can't be repeated.
- 5、 TELNET configuration: check and maintain method, the default for TELNET users name is "zhongfang", password is "888888" users can modify this item.
- 6、 802.1p VLAN label. 802.2p business PRI:default is support. Configure these two items can guarantee the quality of service. Only specialized Internet management can configure this item.
- 7、 FreeLink configuration: use for configuration calling control center. Default is blank .Only under the guiding of Allywll Co.,Ltd. and his distributors can be modified. If modified incorrect. It will lead EIA device can't offer service. If the softswitch of device if maintained by Allywll Co.,Ltd. it only be turned to blank. And it will offer service.

3.6 Saving and application data configuration

When user finished data configuration ,click "saving file" in "tool" menu or "saving file" swift key in tool column .Then save



information configured in EIA to correspond file. The postfix of file is “ldf”.

Suggest users save correspond data configuration file to every EIA device. For easy check, name file “A” company (00-02-00-10-00).ldf. Among them, 00-02-00-10-00 represents MAC address of EIA device (The mark of each EIA device in control center is different). User can find it on the panel of device.

Click “application configuration to EIA” in “tool” menu or “application configuration to EIA” swift key in tool column.then setup information configured of EIA to current linked EIA device.

3.7 Operation method of EIA program software upgrade

Usually, the software in EIA can run stably. If it needed enlarge function or solve some hidden trouble for new edition. It will allow upgrade program software through T1000 at local. Click “load program file to EIA” in “tool”menu. you can load new software version to current linked EIA device.

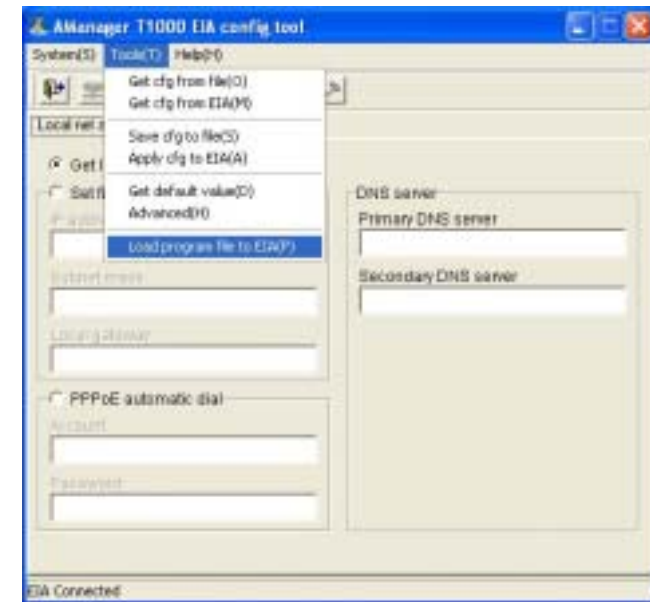


Figure3-8 upgrade EIA operation menu interface

Find the folder which program software eiaapp.ldf is in, Following Window will appear for reconfirm after confirm it. Press OK sign and load it.



Figure3-9 upgrade EIA operation confirmation



3.8 Close link

Click “close link ” in “ system ” menu or “close link” swift key in tool column. EIA device start automatically and run data configured just now.

Configure next EIA device.Repeat3.2.1

3.9 Connect EIA to LAN and run it

Using ordinary Internet line (Attention: not cross Internet line) connect EIA to HUB or LANSWITCH in LAN of your company. FXO port connect outside phone line, FXS port connect phone set. IF the data has been configured by soft switch, it can make internal call and local call where branches are.

If problem appear, please use PC (Better the configuration PC, also connect to HUB) ping EIA service IP address or 111.111.111.200. Confirm the HUB or LANSWITCH 's auto adaptation function is ok. . If it ping failures, maybe there are adaptation problems. Using work mode that can switch Ethernet in “tool/advanced” of T1000 , modify it to 10Mbps/Full duplexand try it again . Attention gain original data first from EIA then modify it so as not to lose original data .



4 Troubles shooting

➤ Common net environment of enterprise and points for attention

1. When EIA device use Internet broadband port. Commonly, it is needed to set PPPoE auto-dial while config the EIA.
2. Use a common PC running Windows operation system as gateway device in LAN. This gateway connects to Internet port .EIA device is put in LAN. It is needed to install MindCom service program offered by Allywll Co,. Ltd. in PC gateway to get more good quality of voice .
3. LAN connect Internet broadband port through IP sharer/SOHO Router. EIA device is put in LAN. Because the IP sharer in current market is faultiness, maybe it is needed to modify data configured to EIA device through T1000 configuration terminal. See following settlement for specific problem.

➤ The failing connect of T1000 terminal and EIA device

Settlement :

- 1、 Check Internet line connect of computer and EIA device is loss or not .



- 2、 Check cross line is good or not (try it through good cross Internet line)
- 3、 Check PC Ethernet card is good or not.
- 4、 Change EIA device, maybe it is bad in hardware.

➤ **EIA device connect LANSWITCH and Internet is not getting through .**

Settlement :

The Ethernet port of EIA device is 10M base-T. commonly, all **LANSWITCH** are self-adaptive. Some of **LANSWITCH** on current market have problems in this aspect. Change **LANSWITCH** or use a HUB .

➤ **There is only one EIA device in enterprise . Can't communicate normally after pick up the phone .**

Settlement:

- 1、 Firstly look at the state of RUN light of EIA device .If the RUN light is off, it means the EIA device is breakdown .Replace it.
- 2、 If the RUN light is swift flash(0.1 second off ,0.1second on),it means Internet is normal. Consult technician of Allywll co,.ltd. or his distributor.



- 3、 If RUN light is slow flash(1.5second off,5 second on),it mean EIA device cannotlogin tocalling control center. It is needed to check Internet problem according following method.
- 4、 Check problem in LAN .In PC in LAN ,try to ping through IP address correspond EIA device. If can't ping through it. Then take following steps :
 - (1) Look at port light state of **LANSWITCH**. Check Ethernet connecting is loss or not .
 - (2) Check the IP address of other device is conflict with EIA device in LAN (if the EIA device have fixed IP address. Show it on the label and stick on the panel of EIA device for easy maintain)
 - (3) Replace EIA device. See if can ping through EIA device or not. If can't ping through it. Consult to technician of Allywll co,.ltd. or his distributor.
- 5、 If PC can ping through EIA device , it means LAN is ok. Check Internet port is normal or not .
- 6、 Open Internet WEB page. See Internet port is normal or not .
- 7、 If the enterprise has set firewall in the out-going port of Internet, It is needed to open some UDP ports. For EIA using several UDP ports, so this configuration will be more complex. Suggest open UDP protocol directly.



8、 If the Internet port is normal. Maybe the data configuration of this EIA is not set in calling control center, Consult technician of Allywll co,. ltd. or his distributor.

➤ **There are two (or more than two) EIA device in LAN , one can communicate ,the other can't communicate normally.**

Settlement:

- 1、 According to previous item, rule out the possibility that EIA IP address is not conflict with other device.
- 2、 If enterprise use Router or IP sharer building LAN , and the NAT of current products have faultiness, so it will lead to several EIA can't penetrate NAT. take following method modify configuration data .
- 3、 Using T1000 figure configuration terminal and load two saved configuration data file of EIA. Open advanced selection. See "RTP start port", "local MGCP port" of two EIA devices are the same.
- 4、 If exit same data, take the configuration method in chapter three and modify them.
- 5、 If the data is normal, consult technician of Allywll co,.ltd. or his distributor.