

KTA3000 INSTALL GUIDE

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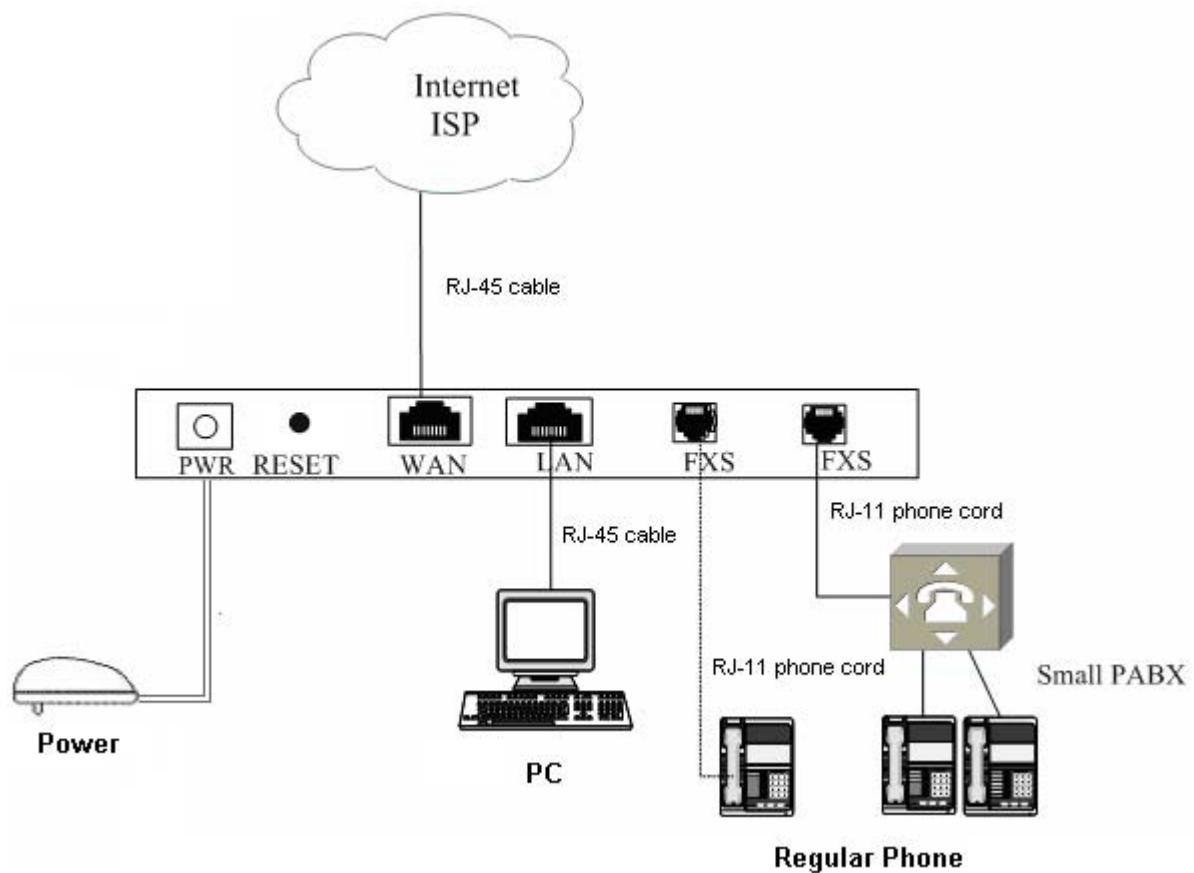
1 Check for Required Items

Please check to be sure that you have all of the following components:

- KTA 3000
- Broad internet access
- Regular phone
- RJ-11 phone cord
- One power adapter
- One Ethernet (RJ45) cable

2 Installation Steps

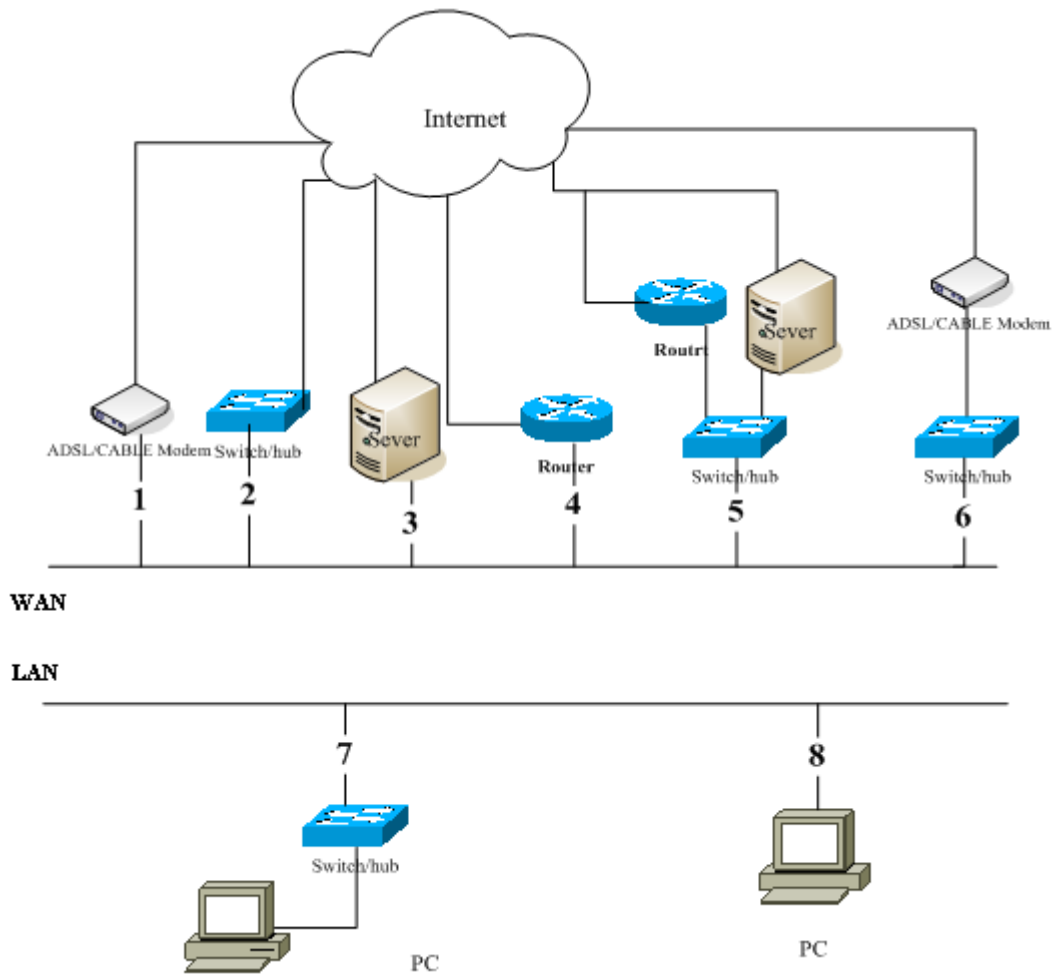
2.1 Installation View



Please install your terminal as the connection chart above.

Important: The KTA3000 is intended to be used as your secondary or only router. It is not intended to network a large number of network devices. Please do not connect more than 4 PCs through the LAN port of the device.

2.2 Connection Chart to determine cable types



To determine the type of cable that you will need to connect to your terminal, look at the above diagram and determine the number of your configuration. The types marked 2, 4, 5, 6, 7, 8 are Straight-through Ethernet cable; the type marked 3 is Crossover Ethernet cable. If the DSL/CABLE Modem has the auto-reversal function (it usually has this function), the line marked 1 is Straight-through Ethernet cable, and otherwise it is Crossover Ethernet cable.

! Note: When you are using the terminal as Bridge, in types 1, 2, and 6 you may not be able to get an IP address from the network. The Ethernet (RJ45) cable we put in the box is a straight-through cable.

3 Ready to Use

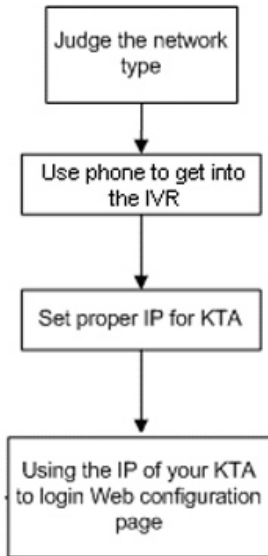
! Important Note: Network configuration of the KTA3000 should be undertaken by a technical expert. Please do not attempt to change any configuration setting unless you are familiar with configuring network settings.

3.1 Obtain IP

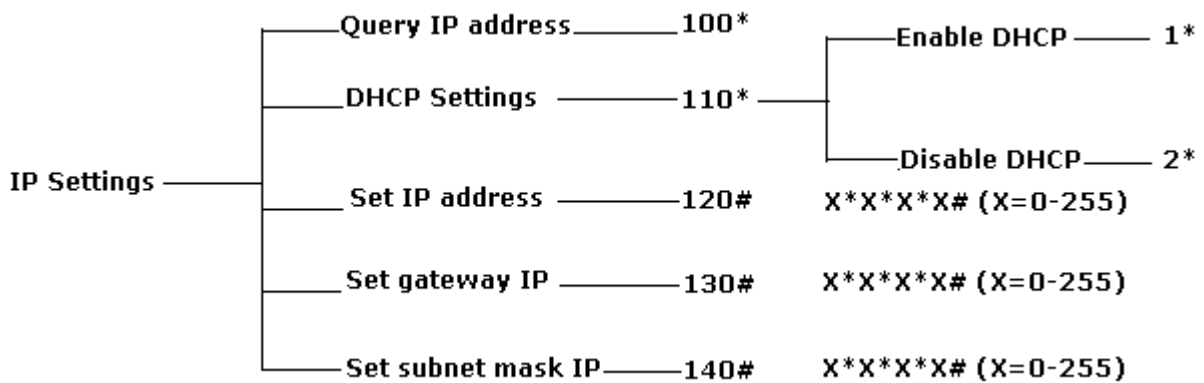
3.1.1 Obtain LAN port's IP

The IP of the LAN port is 192.168.20.1, subnet mask: 255.255.255.0.

3.1.2 Obtain WAN port's IP from a telephone handset



You may configure several aspects of your KTA simply by using the telephone connected to the Phone (FXS) port. Pick up handset and press * key four times, you will hear the voice prompt, then you should enter the configuration commands as follows:



3.2 Login Web Configuration Page

Method 1: You can connect your PC to the LAN port, set your PC's IP as: 192.168.20.100, set subnetmask as: 255.255.255.0. Then open an Internet browser on the PC, type the IP address 192.168.20.1 to the address bar and press "Enter".

Method 2: After you get WAN port's IP address, please make sure your PC can connect with the KTA, or you can ask your network administrator. Then open an Internet browser on the PC, type the IP address to the address bar and press "Enter".

This will take you to the login page.

Default account: user

Password : voip

Once logged in you can make changes (if necessary) to the settings.

3.2.1 Network settings

First, click **WAN>>WAN settings**. You can then select **Router** or **Bridge** from Device Operating Mode dropdown menu depending to your network configuration.

Second, if your network uses **DHCP** then select '**Obtain WAN configuration dynamically**' on the WAN configuration page. DHCP is default network status, your KTA will get the required network parameters such as IP, subnet mask automatically.

If your network uses static address then select '**Specify fixed WAN configuration**'. Type the network IP settings.

If your network uses **PPPoE** then click **WAN>>PPPoE**. Select **Yes** from the Enable PPPoE dropdown menu and enter user name and password.

! Note: If your network of KTA is using PPPoE and you want to change the network type to other, please press the ******> 110*>1*** on your phone connected to the KTA to enable DHCP, and you must reset your KTA to make the settings to be in effect, then refer to the **3.1** and **3.2** to login Web.

Important: if you can not remember your network settings, you can press the RESET button and plug in the power, after about 30 seconds. Then, the LAN port IP will be 192.168.20.1 and the subnet mask will be 255.255.255.0

3.2.2 Impedance settings

Click **System** on the top, and then select appropriate impedance from the dropdown menu for your phone. Following are impedance value corresponding to the options of dropdown menu, please check the standards of your phone and then select one, if it not match, you can try others:

600Ω [U.S.A., Korea, Taiwan area]

900Ω [Brazil]

600Ω+2.16μF

900Ω+2.16μF

270Ω+720Ω//150μF [CTR21]

220Ω+820Ω//120μF [Australia, New Zealand 1]

220Ω+820Ω//115μF [Slovakia, Slovenia, South Africa]

370Ω+620Ω//310μF [India, New Zealand 2]

! Note: After you changed settings, please **reset** this device. If the one you selected don't match you phone, you may lose the number you input or can not hear any thing.

Important: If your service provider makes presettings such as account, password, IP phone number, server address, you do not need to do the following operations.

3.2.3 SIP settings

First, click **SIP** at the top of the page and enter SIP configuration page. Fill in address and port of primary server as supplied by your Service Provider.

Second, set the phone status, you can set **User1** or **User2** on the left of the SIP configuration page. Please confirm you connect phone line to the appropriate FXS port. Enter the IP phone number, caller ID, user name and password for primary server.

Please set OOB Signalling according to your service provider's direction, if the settings is incorrect, you will not use the relative functions of DTMF normally, e.g. extension telephone number can not be identified when you dial extensions.

3.2.4 Save Settings

You should save the changes you make on the every configuration page before you turn to another page, some of the changes can take effect immediately after saving, but others not. To make all the changes take effect before you exit you should click on **Reset** at the top of the page and select '**Reset and execute main application**', all changes will now be in effect.

3.3 Work Normally

After the KTA3000 reboots, the **WAN** LEDs will flash and if the KTA was properly programmed, the **SYS** LED will come on and remain on. In addition, when the phone is off-hook, you will now hear a dial tone and can make calls.

4 Configuration Parameters

4.1 Homepage Parameters

Parameter	Description
System Uptime	Specifies the amount of time, which the system has been up. This time is reset every time the system is reset.
NTP Time	Network Time Protocol is available or not
LAN IP Address	Indicates the IP Address of your LAN
MAC Address	MAC address is the physical address supplied by the Ethernet NIC.
Serial Number	Displays the product's serial number
Application Code Version	Tells the version of the application code which you are using.
Security	For your password, which is configured in the "System" section.

Parameter	Description
Download Code Version	Tells the version of the download code which you are using
Software Version	The vesion of the software of the KTA

4.2 WAN configuration parameters

Parameter	Description
Device Operating Mode	Choose either Router or Bridge depending on your operation.
Router/Bridge	With Router or Bridge selected in Device Operating Mode drop down list, the KTA3000 is used as a router or bridge.
Obtain WAN Configuration Dynamically	If your KTA is configured to use DHCP, please check Obtain WAN Configuration Dynamically . The required network parameters such as IP, subnet mask will automatically be configured as soon as it is connected to the LAN and powered up.
Specify Fixed WAN Configuration	Select this item to authorize users set IP address, subnet mask and gateway IP address, DNS server, Domain name, host name of KTA manually.
IP Address/IP Netmask/ IP Gateway	With Specify Fixed WAN Configuration checked, please enter IP address, netmask and gateway IP of KTA here. Note that this address should match the IP address assigned to you by network administrator or your ISP.
IP DNS Server (2)	This field defines the primary or backup DNS (Domain Name Server) address. With Specify Fixed WAN Configuration checked, please enter DNS IP of KTA here.
Host Name/Domain Name	When the Router selected in Device Operating Mode drop down list, you should set the host name and domain name of your KTA. Please consult with your network administrator.
Uplink Bandwidth (kbits/sec)	Enter the uplink bandwidth rate to restrict the uplink speed
Fragment low-priority packets when bandwidth is	When bandwidth is low the low-priority packets will be discarded

low	
Broadcast/Mulicast Limit	The value specifies the maximum limit on the percentage of broadcast /multicast packets which will be bridged to the destination interface (as a percentage of the source side bandwidth)
Enable PPPoE	Select Yes or No to enable/disable PPPoE protocol, which is designed for ADSL and Cable Modem users. With this system, ADSL ISP automatically assigns all the required IP parameters to any device connected to it when the device log on.
Username, Password	Enter the PPPoE username and password given by your ISP
Echo Timeout	The duration for PPP echo requests sended to server.
Echo Count	The number of unanswered PPP echo requests before PPP connection is close
WAN MAC Address (Spoofed)	The physical address of WAN port

4.3 LAN Configuration Parameters

Parameter	Description
IP Address, Subnet Mask	Set the IP address and subnet mask of LAN port
Broadcast/Multicast Limit	The value specifies the maximum limit on the percentage of broadcast /multicast packets which will be bridged to the destination interface (as a percentage of the source side bandwidth)
PHY Speed Mode	Set up the transport type of LAN port
Server Settings	“Yes” or “No”, to enable/disable DHCP service of LAN port
Client IP Address Range	Minimum and Maximum limit on the DHCP IP address pool
Domain Name	LAN domain name provided to DHCP clients during the OFFER process.
DNS Server	The statically assigned DNS server IP address will be provided to clients during the OFFER process.
Static Address Assignment	Up to eight static DHCP address assignments can be configured. To add a static IP assignment, select LAN device’s host name (must be unique in the

Parameter	Description
	private network) and/or MAC address for identifying using, and enter host identifier. If the Internal address to be assigned and press the "Add" button.
Reserved Ports	Specified are the ports, which cannot be forwarded to the LAN.
Port Forwarding to LAN	You enter the specifications, which you will be forwarding to the LAN, including port range, protocol (Both, TCP or UDP), and destination IP address.
DeMilitarized Zone	Computer slang used for a protected network that sits between the Internet and the corporate network.

4.4 SIP Protocol Configuration Parameters

! Note: Please check with your ISP for the protocol settings. Changing the settings without proper guidance may result in the KTA not functioning.

Parameter	Description
Address	Enter the IP address or fully qualified domain name of SIP server. Please ask your service provider if you do not know what to fill in.
Port	Enter the port of server. Please ask your service provider if you do not know what to fill in.
Domain Name	Enter the domain name(SIP realm). Please ask your service provider if you do not know what to fill in.
Expiration Time	Enter expiration time unit, if you choose to send registration request with an expiration time.
Outbound Proxy IP/port	Enter the IP address or port of outbound proxy. Please ask your service provider if you do not know what to fill in.
RTP Port Number Setting(5000-65535)	Restrict the range of RTP of server
NAT traversal Settings	Select the type of network address translation
UPnP Control Point	Select NAT traversal style of UPnP
STUN Server IP/Port	Enter the IP address or port of STUN server

Parameter	Description
None	Don't use NAT traversal
Dial Plan	refer to appendix of this guide
#/* use as a quick dial function	If this box is checked, the dialed digits would be sent out when '#' or '*' key is pressed.
To enable #/* to be recognized as dial number	Allow '#' or '*' key to be appeared in the INVITE request URI
Support PRACK method with provisional response reliability	If you wish for the SIP stack to implement reliable transmission of provisional responses according to RFC 3262 (using the PRACK method) ,check the option
Encode SIP URI with user parameter	Include the user parameter "user=phone" in the SIP URI headers.
Session Timer use UPDATE method	Session timer use update instead of reinvite.
enable Global Number support (E.164)	Add prefix "+" for dialed numbers in sip invitation.
send NOTIFY for REFER request	Send out NOTIFY request to transferer for unattended and attended call transfer.
send Message Waiting Indicator (MWI) SUBSCRIBE command	Send SUBSCRIBE after registered to server to check if there are any messages to be read.
No Authorization Header in re-Register	If you check the box, the terminal will send re-register message without authorization header. Please check the box according the request of server
Check existence of To Tag in INVITE 2xx Response	When sending INVITE message out, KTA will add tag behind From of message header, and the server need receive the 2XX response with tag behind To normally. So if you check the box, server will send BYE to reject if it find the 2XX response without tag.
SIP Timers	Enable SIP session timer function.

Parameter	Description
Send INVITE with Timer header	Encode Timer header in all INVITE requests for ringing timeout
Conditional Call Forwarding Timer	Forward the call to the pre-configured number if the phone does not pick up within the timer.
Inbound IP relay function	<p>KTA3000 provide inbound IP relay function, after this function being in use, all FXS ports use the FXS1's setting. This function can let you put this device before/over your PABX and only use 1 account on all the FXS ports.</p> <p>! Note: (1) Inbound IP relay function and call waiting function can not work together. (2) When the inbound IP relay function is in using, Do not Disturb, Call forwarding of each FXS will use FXS1's settings. (3) Inbound IP relay function:OFF is a default setting for KTA3000.</p>
Disable Call Waiting	Disable call waiting feature
Disable Caller-ID Display	Don't send out caller-id display for incoming calls
Call Hold using C=0.0.0.0	Using the call hold method described in RFC 2543. If unchecked, the call hold would follow RFC 3263 method
Send NOTIFY	Send out NOTIFY request to transferee for unattended and attended call transfer.
Primary Server /Secondary Server	Enter the relation information of the primary and secondary SIP server. The secondary SIP server is used when there is a problem on primary server.
Line1~2 AEC Control	This is a echo cancellation options, if the echo from the party is loud, you can select AEC Control On to lower the echo.
Line1~2 Gain Control	Automatic gain control is used to adjust the volume of handset input or output
Input/output Gain Control (-12 ~ 12)db	Select adjusting the volume of handset input or output.
Supplementary Service Subscription	The settings for supplying gain control

Parameter	Description
Distinctive Ring Settings	Distinctive Ring Setting
Ring1 Caller-Ring8 Caller	Set 8 rings corresponding to 8 numbers
Speed Dial Settings	Set speed dial
Speed Dial1-8 Speed Dial	Set 8 speed dial number
OOB Signalling	The option here will affect the identification of dialing extension. If you do not know what to fill, please consult your ISP.
ToS/DiffServ	This sub-page is used to configure the Type-of-Service/Diffserv byte values which are to be used in the IP header of all transmitted SIP signaling packets and RTP packets. The ToS/DiffServ byte values are entered as two-digit hexadecimal values. If no special ToS/DiffServ value is to be used for a particular traffic type, enter "00" or leave the setting empty.
Dial Tone	Set dial tone
Recall Dial Tone	Set the tone for recall dialing
Confirm Tone	Confirmation the tone settings
Ring Back Tone	Set ring back tone
Busy Tone	Set the tone when the phone is busy
Reorder Tone	Set the tone for Reorder tone
Receiver-Off-Hook Tone	Set the tone for receiver off-hook
Message-Waiting Indicator Tone	Set the tone for the message waiting indicator
Call-Waiting Indicator Tone	Set the tone for call waiting
Default Ring	Set default ring

Parameter	Description
Call-Waiting Reminder Ring	Set ring when call waiting
Distinctive Ring Configuration	Set distinctive ring
Distinct Ring 1-Distinct Ring 8	Set 1~8 distinct rings
Service Code	Set the service code for the features: Conditional Call Forwarding, Call Forwarding On, Call Forwarding Off, Do not Disturb On, Do not Disturb Off, Call Transfer, Call Return, Speed Dial.
Dial Tone	Set dial tone
Recall Dial Tone	Set the tone for recall dialing
Confirm Tone	Confirmation the tone settings
Ring Back Tone	Set ring back tone
Busy Tone	Set the tone when the phone is busy
Reorder Tone	Set the tone for Reorder tone
Receiver-Off-Hook Tone	Set the tone for receiver off-hook
Message-Waiting Indicator Tone	Set the tone for the message waiting indicator
Call-Waiting Indicator Tone	Set the tone for call waiting
Default Ring	Set default ring
Call-Waiting Reminder Ring	Set ring when call waiting
Distinctive Ring Configuration	Set distinctive ring
Distinct Ring 1-8	Set 1~8 distinct rings

Parameter	Description
Service Code	Set the service code for the features: Conditional Call Forwarding, Call Forwarding On, Call Forwarding Off, Do not Disturb On, Do not Disturb Off, Call Transfer, Call Return, Speed Dial.

4.5 Audio/CODEC Configuration Parameters

Parameter	Description
CODECS	Configure the codec and silence suppression to your desired settings.
Packetization	Configure the packet sending increments.
Jitter Buffer	<p>Configure the timing of the voice buffering.</p> <p>Selection between adaptive or fixed jitter buffer. Default = ADAPTIVE</p> <p>Set the adaptive jitter buffer maximum playout delay. Default = 100ms or Fixed jitter buffer playout delay. Default = 40ms</p> <p>Whether or not to automatically switch from an adaptive jitter buffer to a fixed jitter buffer upon fax/modem tone detection</p>

4.6 System Configuration Parameters

Parameter	Description
Old Password	Enter your old account password
New Password	Enter your new account password
Confirm New Password	Retype your new account password
Two-wire Impedence	<p>Following are impedance value corresponding to the options of dropdown menu, please check the standards of your phone and then select one, if it not match, you can try others:</p> <p>600Ω [U.S.A., Korea, Taiwan area]</p> <p>900Ω [Brazil]</p> <p>600Ω+2.16μF</p> <p>900Ω+2.16μF</p> <p>270Ω+720Ω//150μF [CTR21]</p> <p>220Ω+820Ω//120μF [Australia, New Zealand 1]</p> <p>220Ω+820Ω//115μF [Slovakia, Slovenia, South Africa]</p> <p>370Ω+620Ω//310μF [India, New Zealand 2]</p>

Parameter	Description
HTTP Authentication Timeout	Set the time for user visiting Web page, if exceeding timeout value, system will ask user to retype account password.
Localization	Select appropriate country, NTP server and time zone.
Handset	Media hub handset configuration
Hook Flash Timer Min/Max	The min or max duration to judge the action of pressing hook. The action of pressing hook can be used in Call Hold feature.
SNMP	Simple Network Management Protocol
IP Address	Set the IP address of trap Host
Trap Community	The community name used by SNMP server to verify trap. Default: Public
Read Community	The community name used by the SNMP manager when reading SNMP data items from a client MIB. Default: Public
Write Community	The community name used by the SNMP manager when setting SNMP data items in a client's MIB. Default: Public
System Description	The description of the unit (e.g. "My phone")
System Object Id	A vendor's enterprise ID

4.7 Reset

Parameter	Description
Reset	<p>Choose the "Reset and execute Main Application" option for executing the main application which you have configured once you reset the system.</p> <p>Choose the "Reset and execute Downloader Application" option to be downloading once you reset the system.</p>

5 FAQ

Problem	Possible Cause	Solution
Unacceptable voice quality under VoIP	Your internet connection bandwidth is less than 30Kbps	Your internet connection may not be performing correctly. Please contact

Problem	Possible Cause	Solution
	Unstable network connection: Network delay > 400ms or network trembling > 100ms or network packet loss > 10%	your Internet Service Provider or Network administrator.
Login server failed (SYS LED off) SYS LED does not light, WAN LED light (Login failed)	The network is blocked	Please contact the service provider or network administrator to ensure the network and ports are available, and the data is not modified or filtered. If there are problems left, please contact your service provider for technical support.
	The connection to the server's SIP port is modified or filtered	
	Your network has a proxy server which is blocking the phone's connection to the internet.	
	The data to the phone's SIP port is modified or filtered	
	Your terminal is configured with incorrect account details.	Please correctly enter account and password. If there are problems left, please contact your service provider for technical support.
	Your terminal is configured with an incorrect server address.	Please contact your service provider for technical support.
Both SYS and WAN LED do not light (Network connection failed)	Improper physical connection to internet	Please make sure the physical connection to internet is correct and the connection to WAN port is normal. Please refer to chapter 2
	There may be something wrong with your network connection device	Please check your network connection device to make sure whether it runs well.
Login succeeded (SYS LED on), can't use phone: after picking up handset you cannot hear dial tone, or press key without sound	Something is wrong with KTA or its settings. Maybe the impedance of KTA is not match your phone	Reset the KTA Please check the KTA's impedance, if it not matches the phone connected, please change the impedance of the KTA.

6 Performance and Features

6.1 Electronic Specifications

- Power input: External Power Supply DC 12V, 500mA
- Network interface: IEEE 802.3 10/100 Base-T
- FCC Part15 CLASS B
- CE

6.2 Operating/Storage Environments

- Operational temperature: -10 degrees C to 40 degrees C
- Storage temperature: -30 degrees C to 65 degrees C
- Humidity: 5% - 95% non-condensing

6.3 Dimensions

- 178 × 123 × 34mm (L × W × H)

6.4 Features

- Basic Port— Two 10/100 BASE-TX Ethernet ports, Two loop-start FXS RJ-11 ports
- Router Integrated
- NAT with VPN Pass-through (network Address Transition)
- Call features: Call Transfer, Call waiting, Call hold, FAX, 3-way Calling, Caller number display and Do not disturb.
- Fax Support.
- QoS Support
- SNMP management agent based on MIB II
- Voice service is prioritized over data traffic
- Packet filter by IP address, port number and protocol
- Web-based Management- Internet Explorer v6 or later; Netscape Navigator v6 or later; or other Java - enabled browsers.
- Password Authentication Protocol/Challenge Handshake Authentication Protocol (PAP/CHAP)
- Administration password through Web
- TFTP: The built-in Trivial File Transfer Protocol provides
- Firmware upgrade

6.5 Standards and Agreements

- IEEE 802.3
- IEEE 802.3u
- TCP/IP, UDP, ARP, ICMP, TFTP, Telnet, HTTP

- DHCP: Dynamic Host Configuration Protocol, server and client
- NAT: Network Address Translation
- PPPoE
- SIP (RFC2543)
- G.711 (A-law and U-law), G.723, G.729a
- Type: Loop-Start FXS interfaces
- DTMF tone detection/generation
- T.38 FAX
- Echo Cancellation: G.165/G.168
- WAN: 10/100Base-TX Ethernet Port
- LAN: 10/100Base-TX Ethernet Ports

6.6 Recommend Network Conditions

- Delay: Less than 400ms
- Jitter: Less than 100ms
- Packet Loss: Less than 10%
- Bandwidth: Minimums 56Kbps